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: July 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







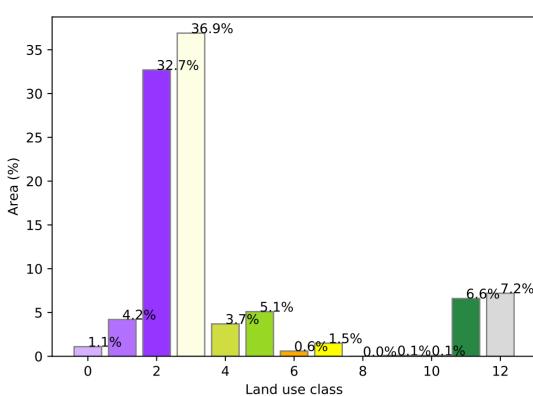


Vegetation Cover Jul 2022

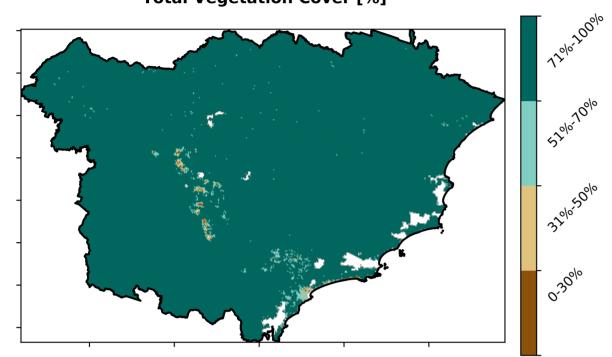
Land use and forest cover Legend with land class forest cover and number, i.e. Forests is 12 1 Conservation and natural environments - Non-forest 2 Conservation and natural environments - Woodland forest Catchment Scale Land Use and Forests 3 Conservation and natural environments - Non-Woodland forest of Australia (2018) 4 Agriculture - Grazing - Non-forest Derived from 5 Agriculture - Grazing - Woodland forest Catchment Scale Land 6 Agriculture - Grazing - Non-woodland forest Use of Australia 7 Agriculture - Grazing - Irrigated (2018) and Forests of Australia (2018) 8 Agriculture - Cropping - Non-irrigated 9 Agriculture - Cropping - Irrigated 10 Agriculture - Horticulture - Non-irrigated 11 Agriculture - Horticulture - Irrigated 12 Production native forests and plantation forests

13 Other uses

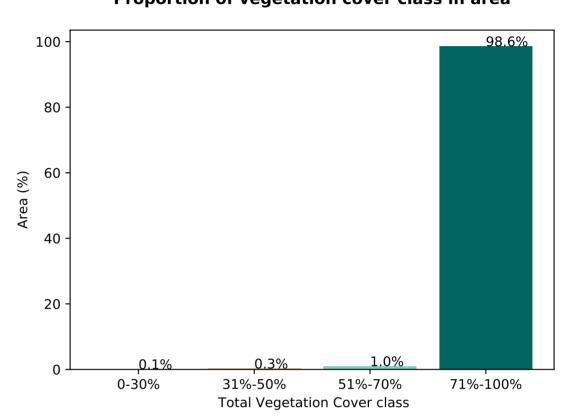
Proportion of each land class in area



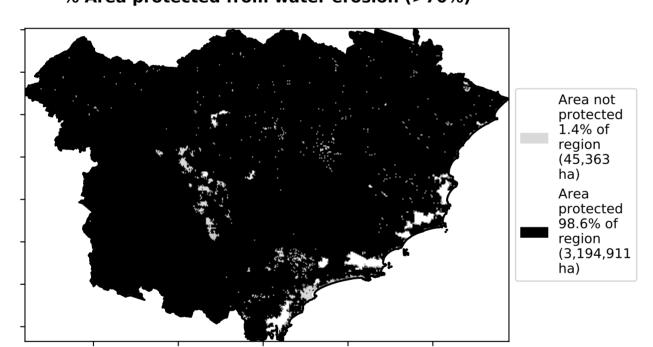
Total Vegetation Cover [%]



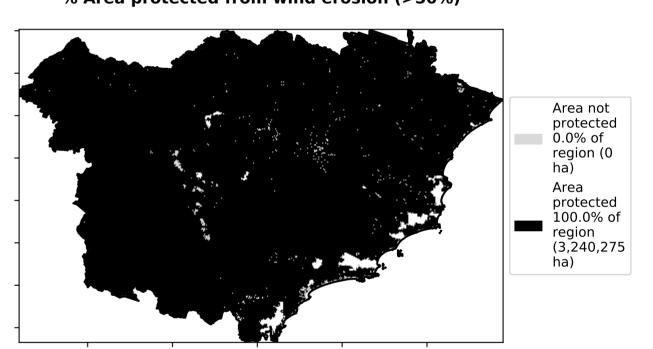
Proportion of vegetation cover class in area



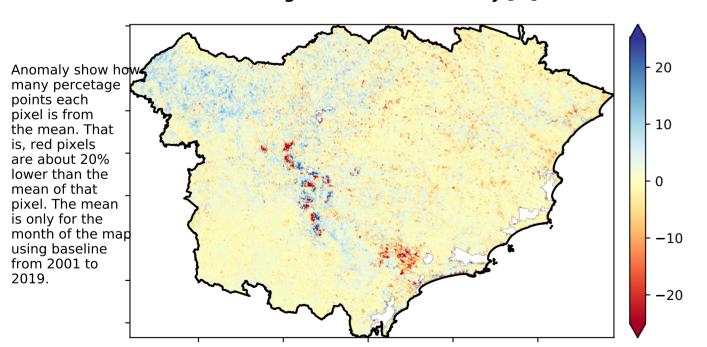
% Area protected from water erosion (>70%)



% 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.

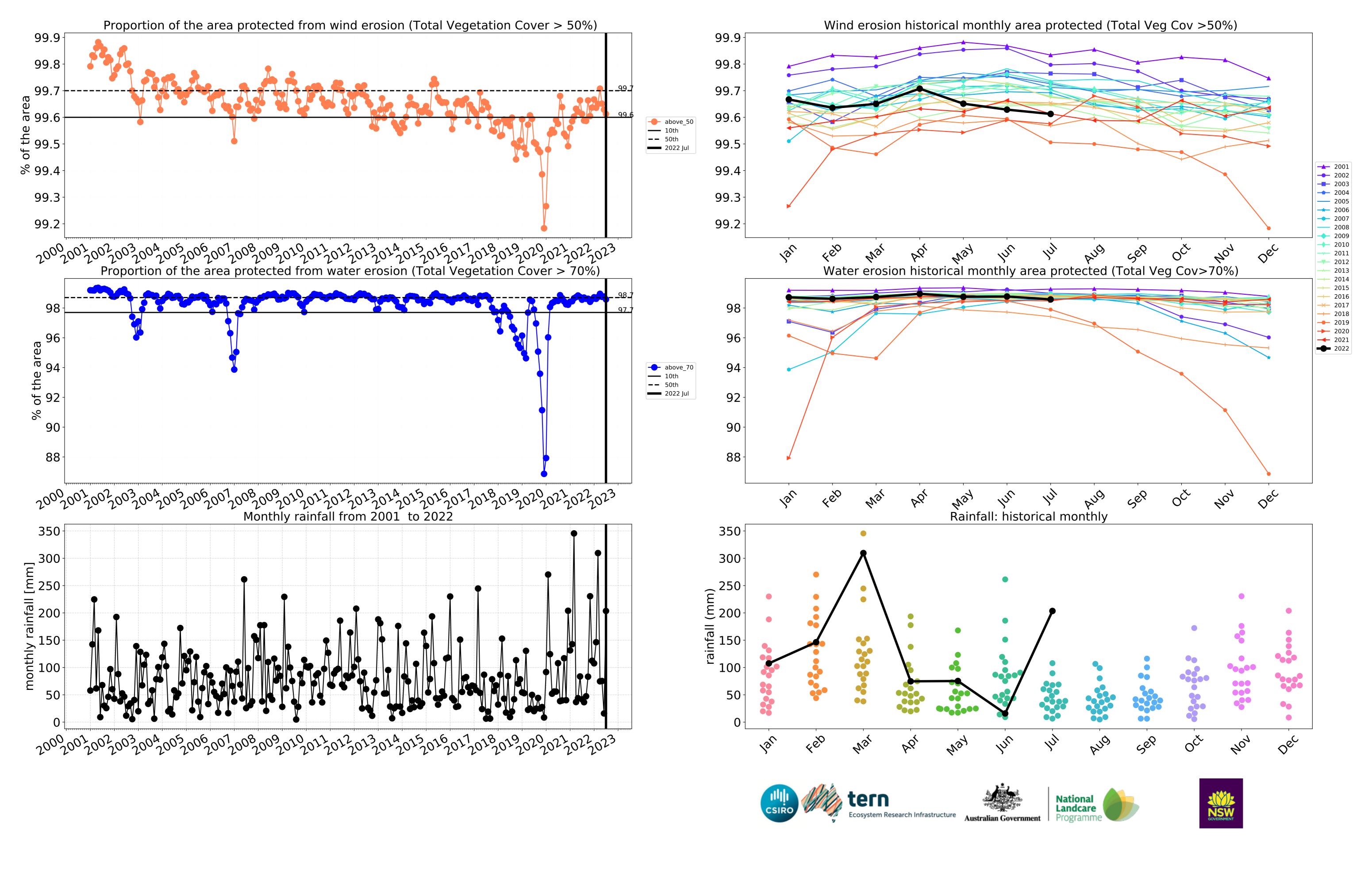
Total Vegetation Cover Decile [%]



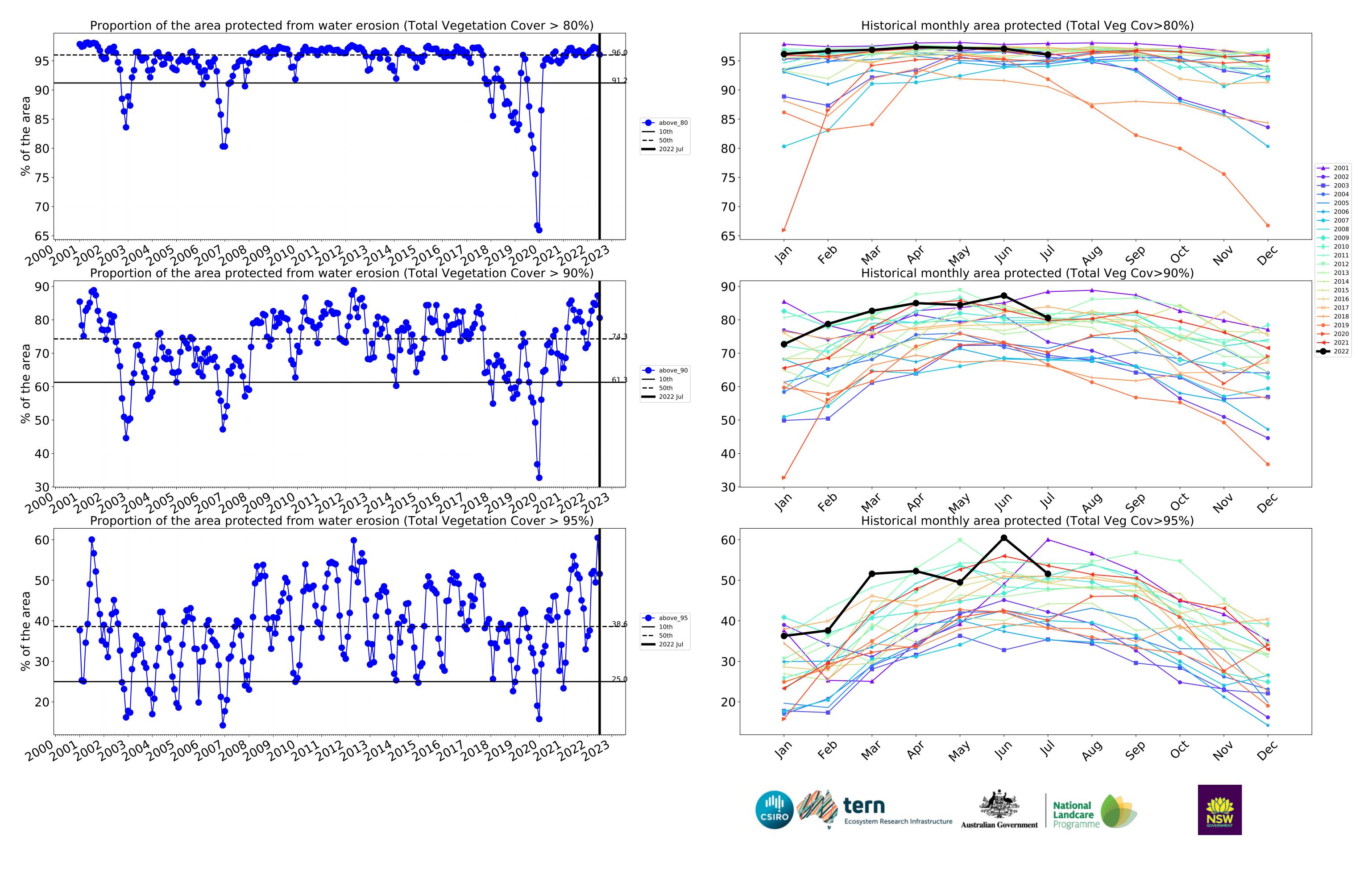




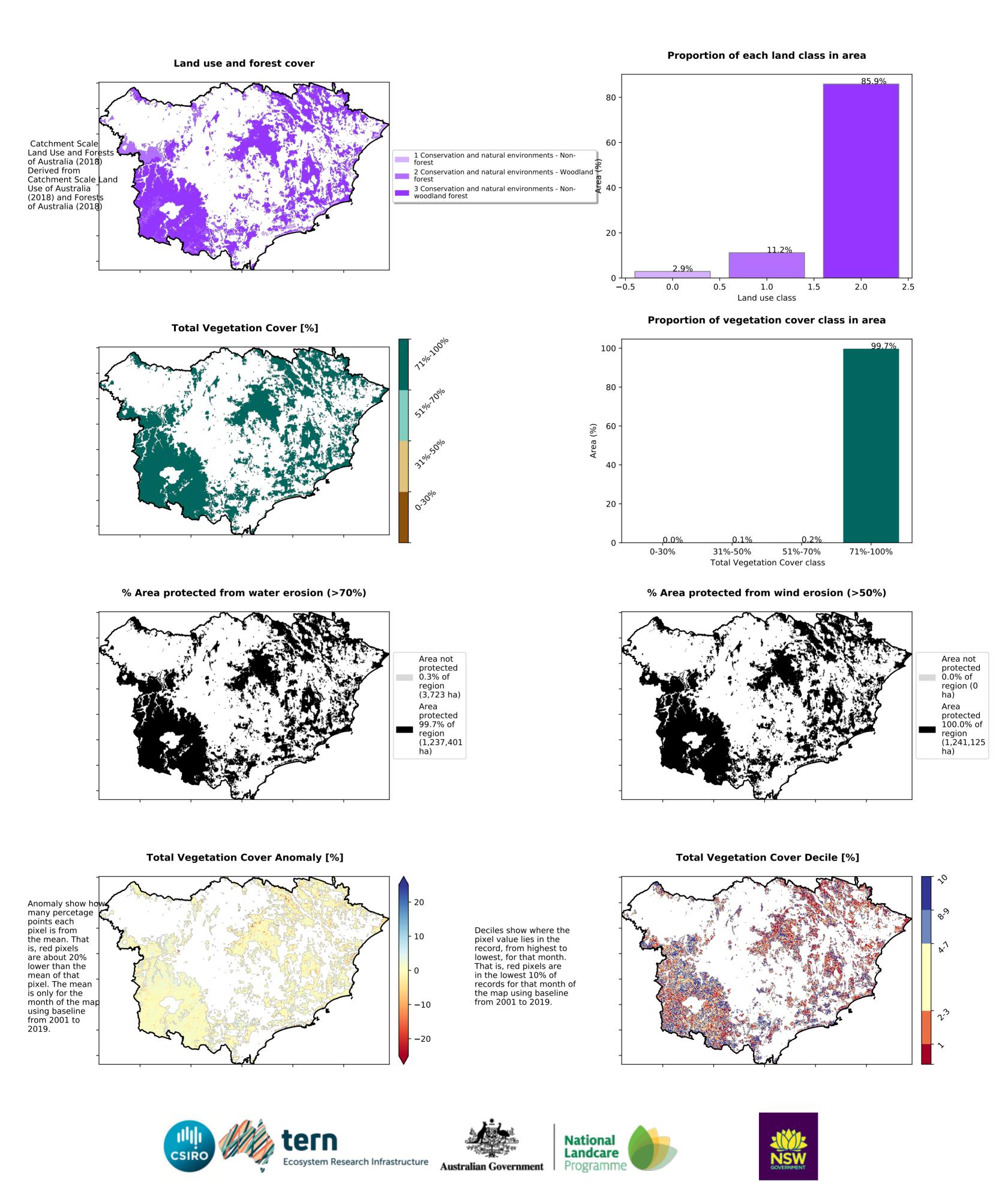




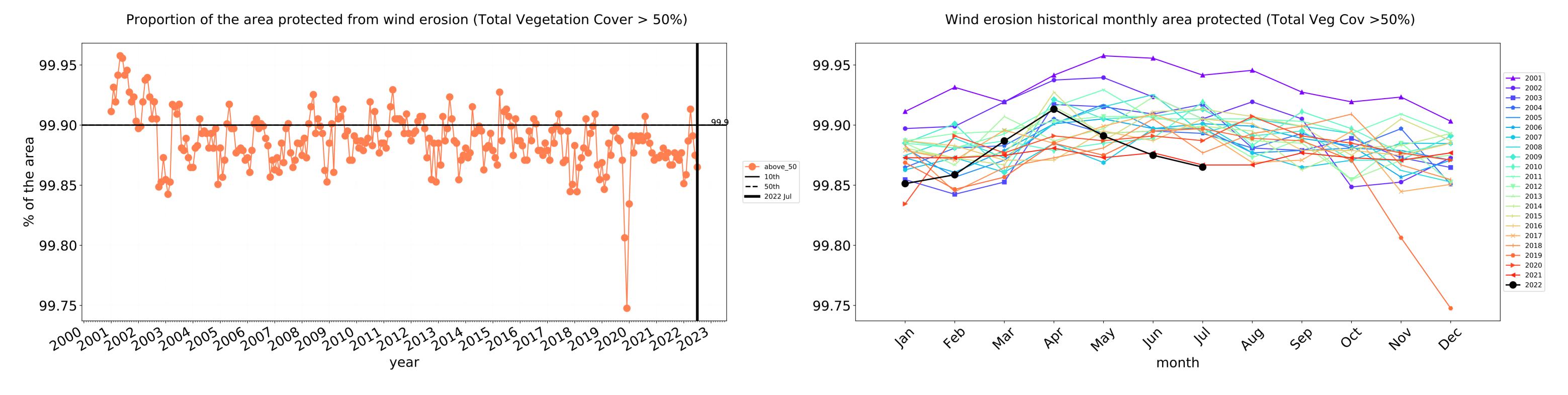
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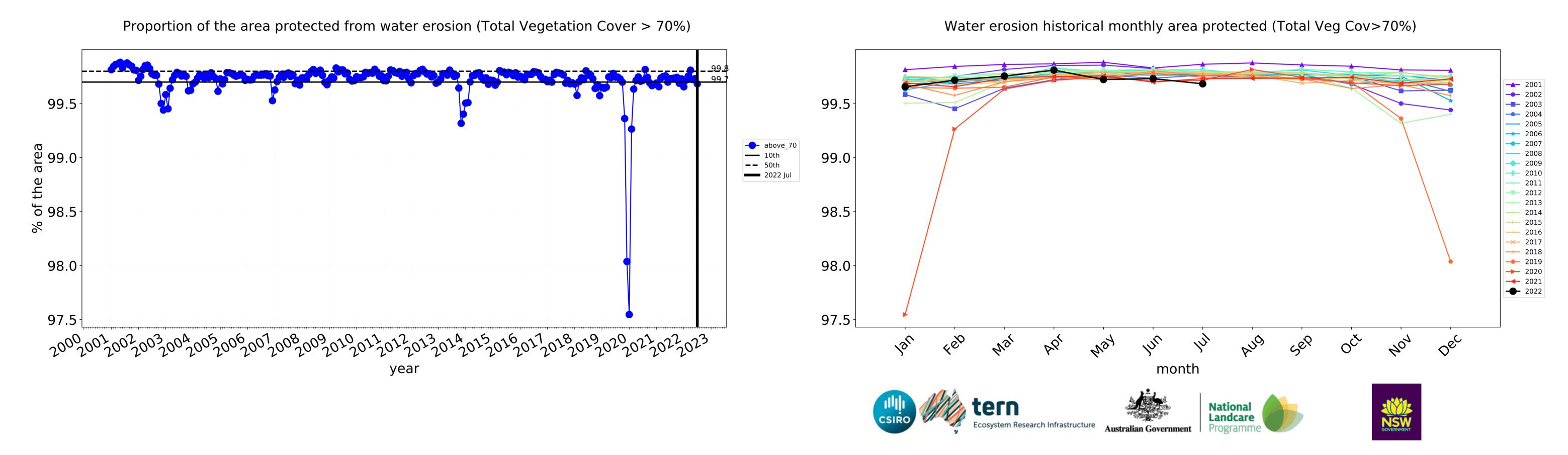


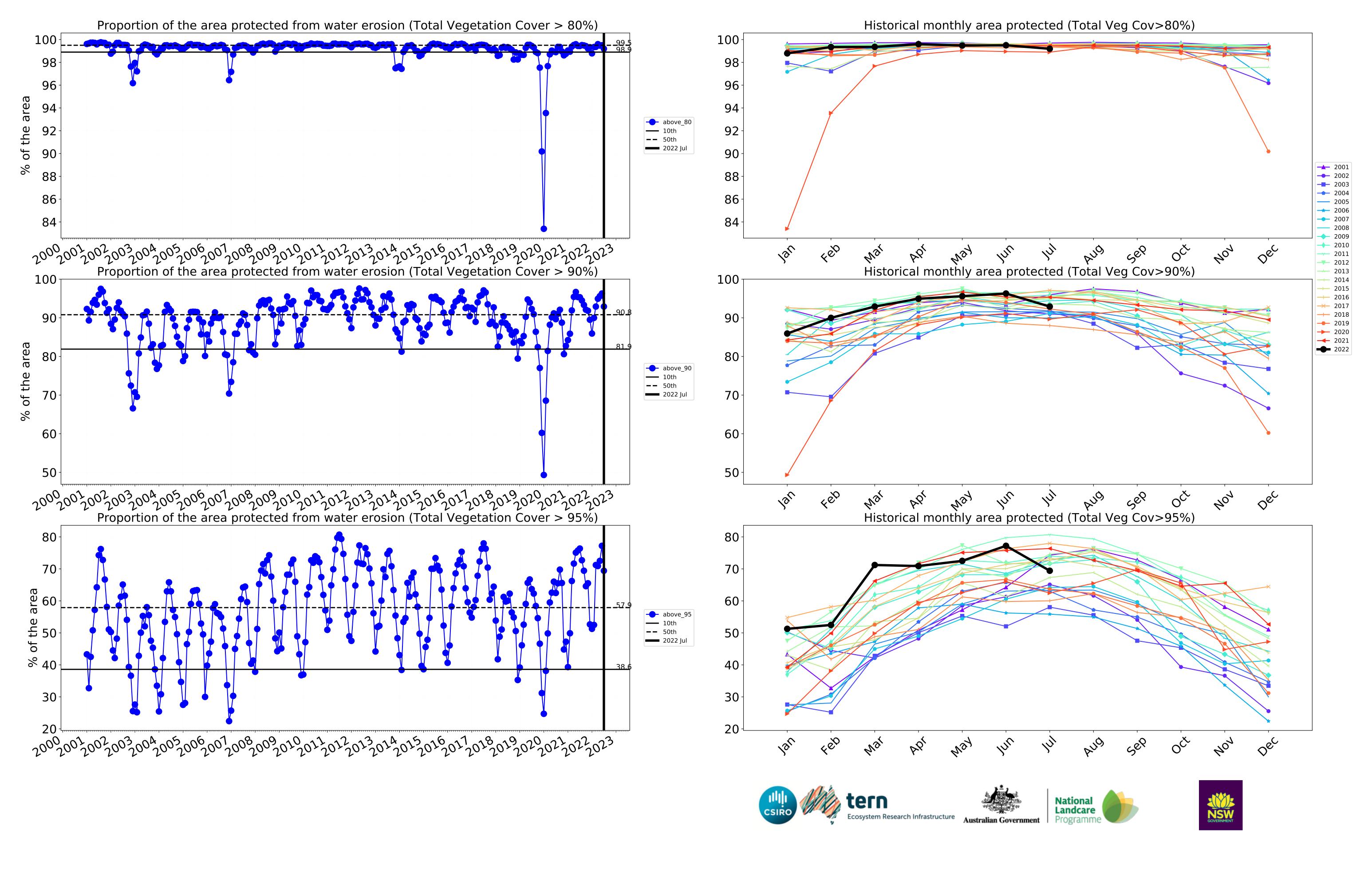
Conservation and natural environments



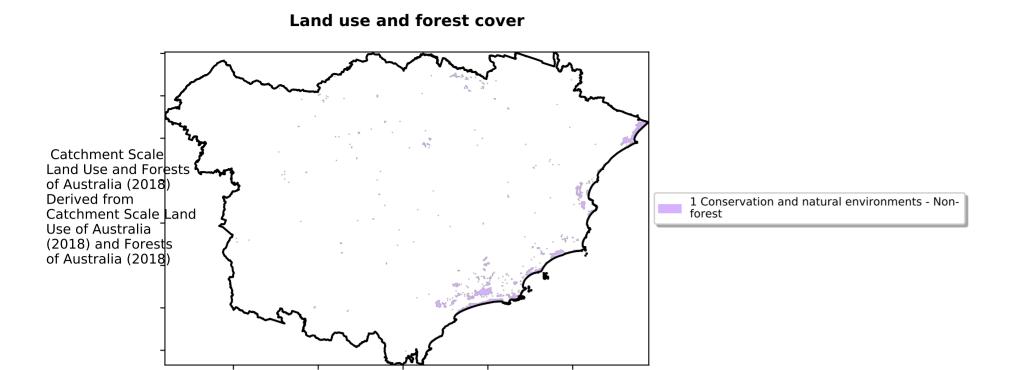
Conservation and natural environments timeseries



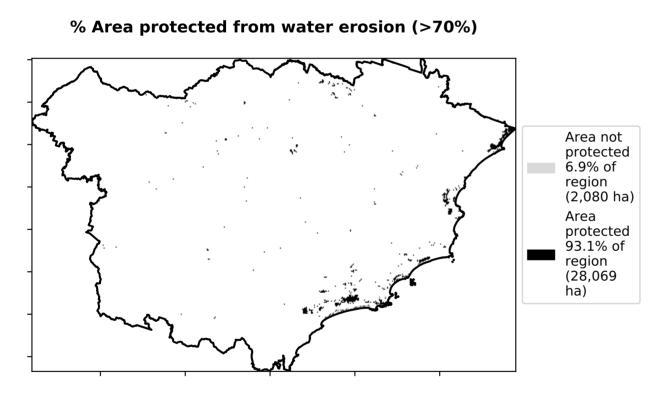


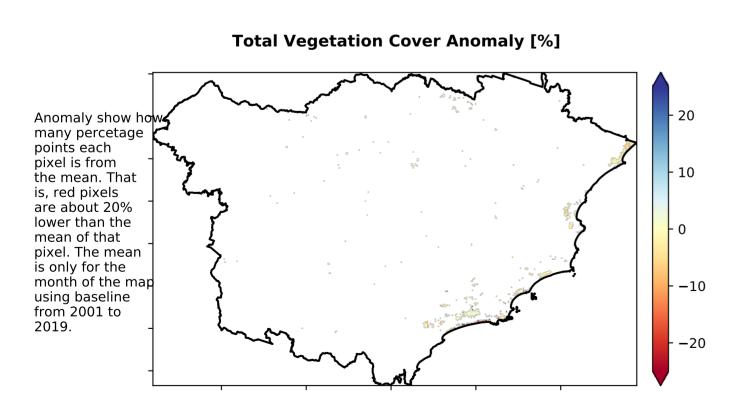


Conservation and natural environments non forest



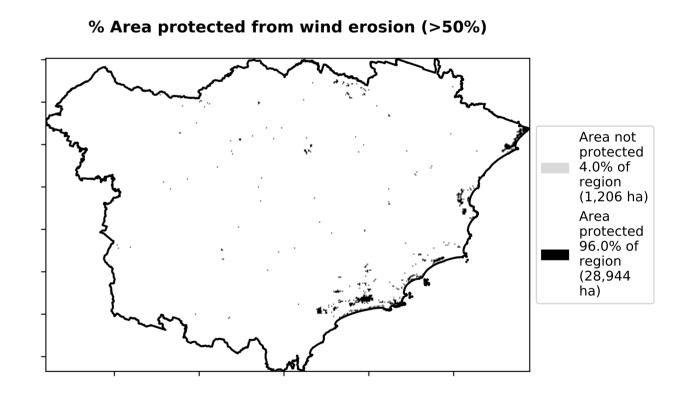
Total Vegetation Cover [%] Troportion Tr

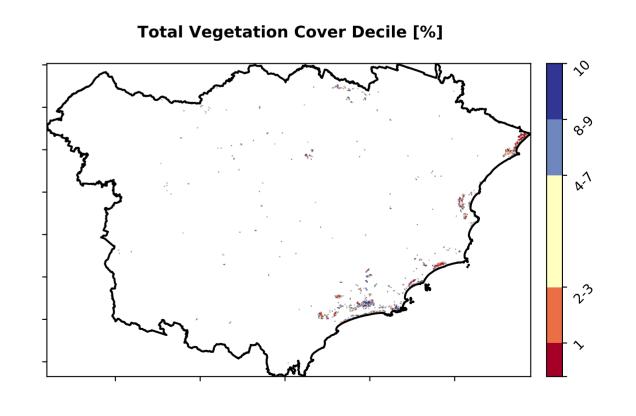




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area 93.1% 93.1% 40 20 0-30% 31%-50% 51%-70% Total Vegetation Cover class





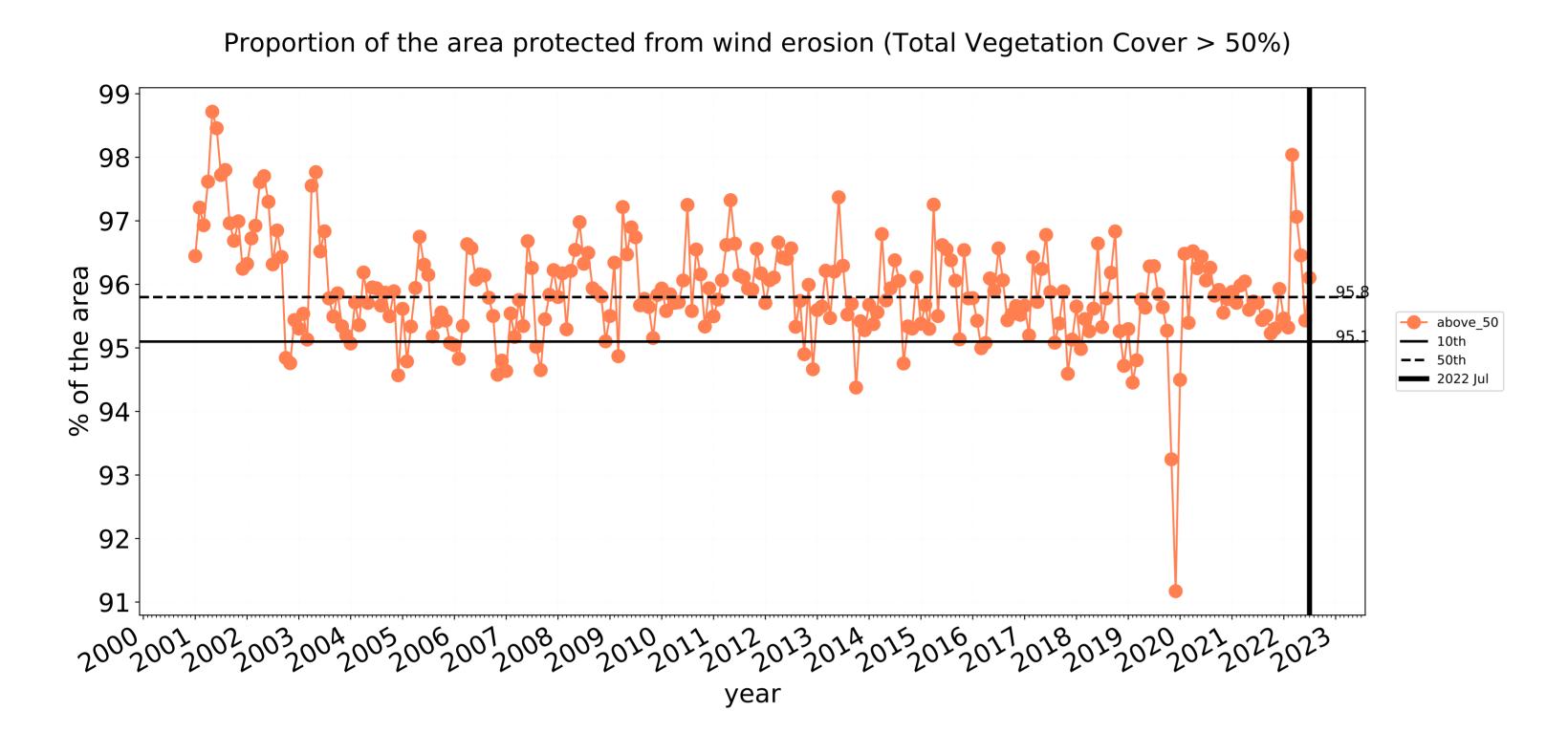


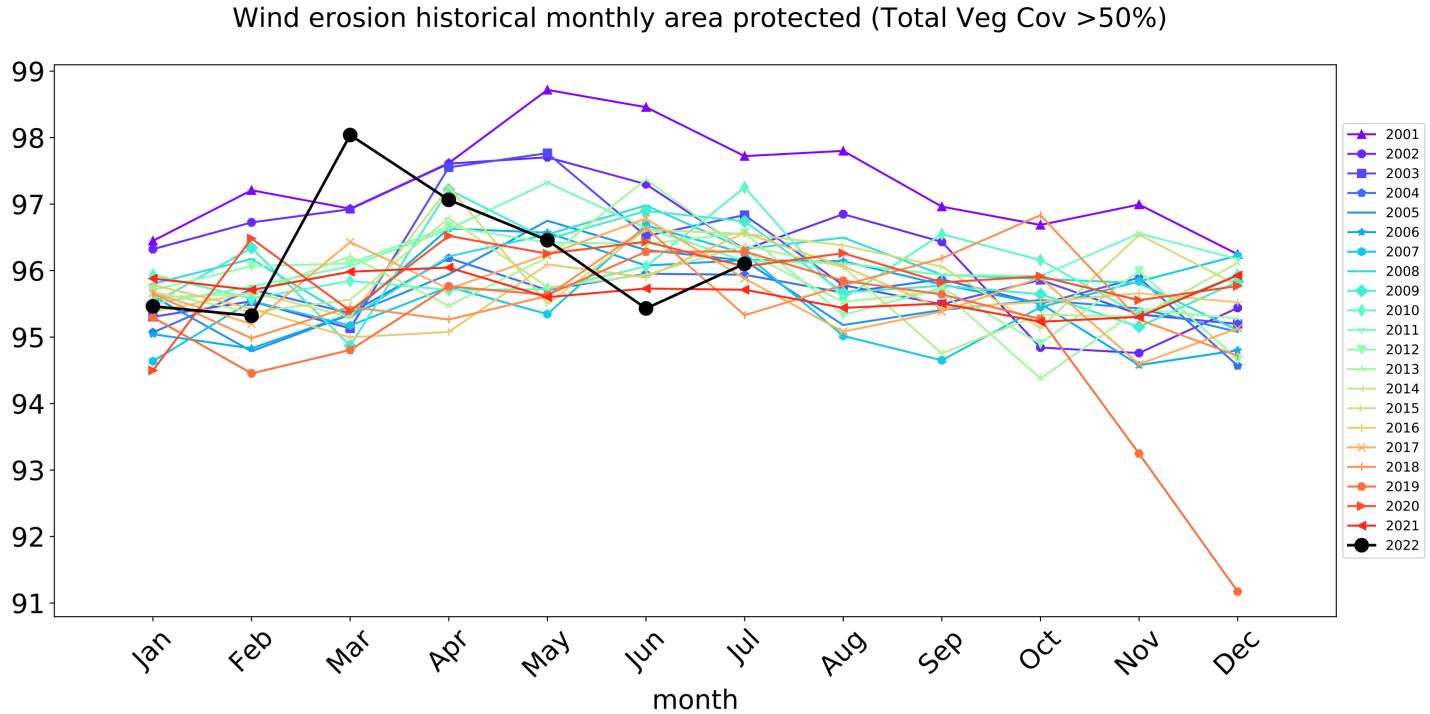


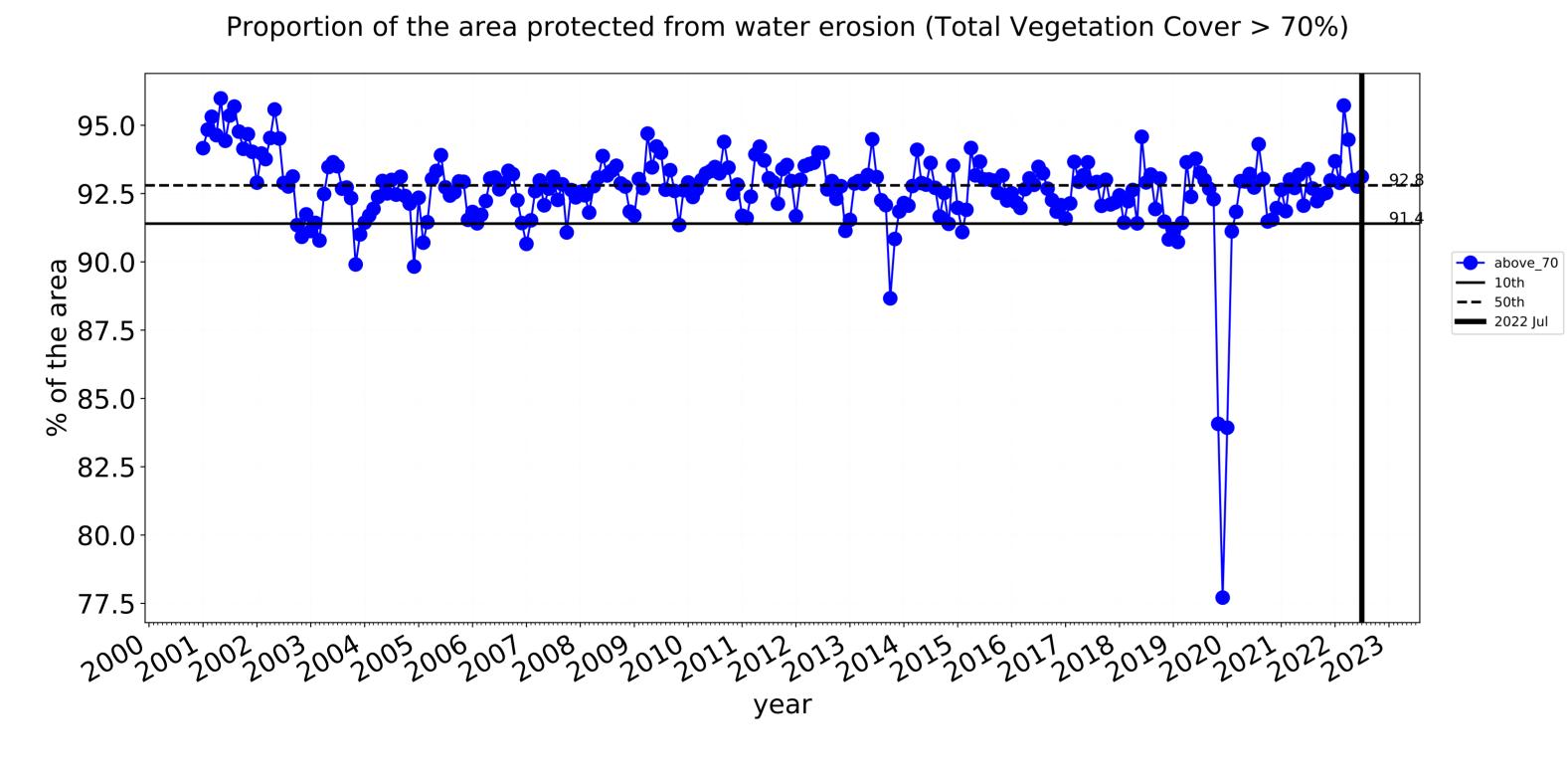


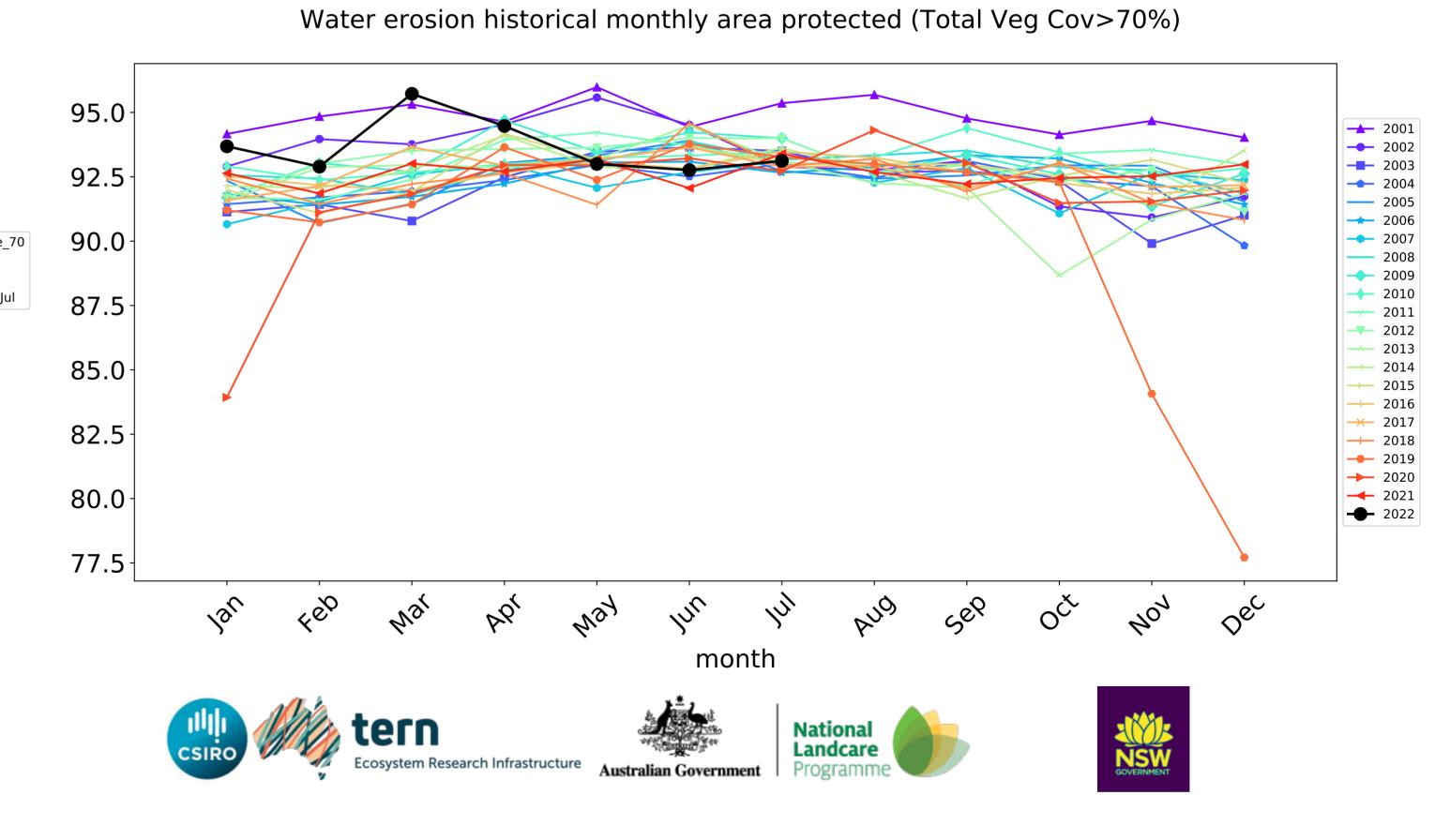


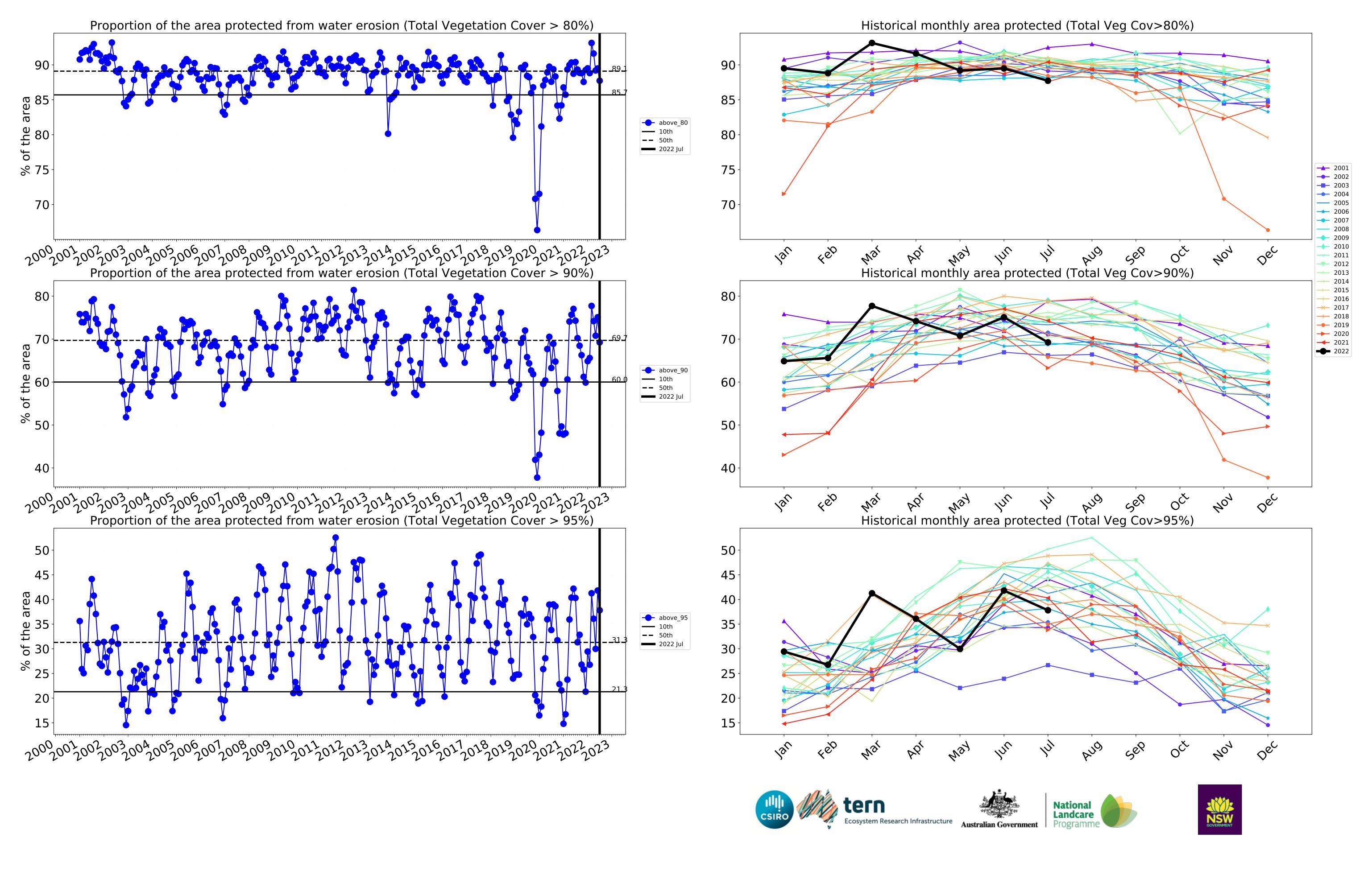
Conservation and natural environments non forest timeseries



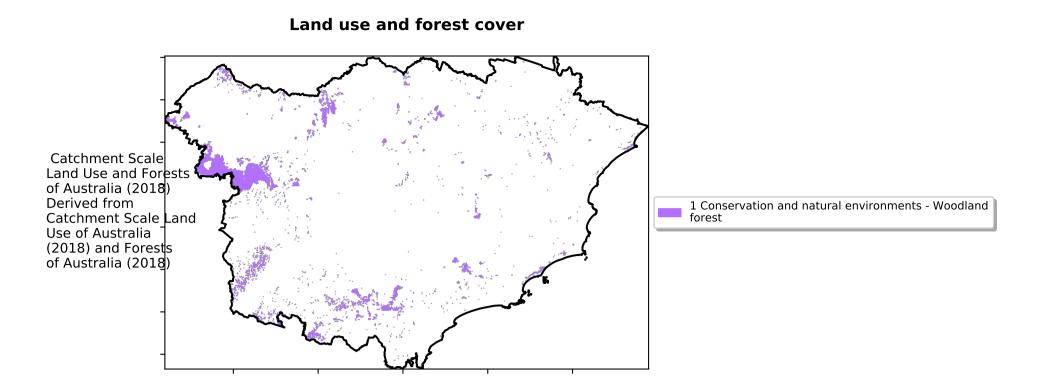




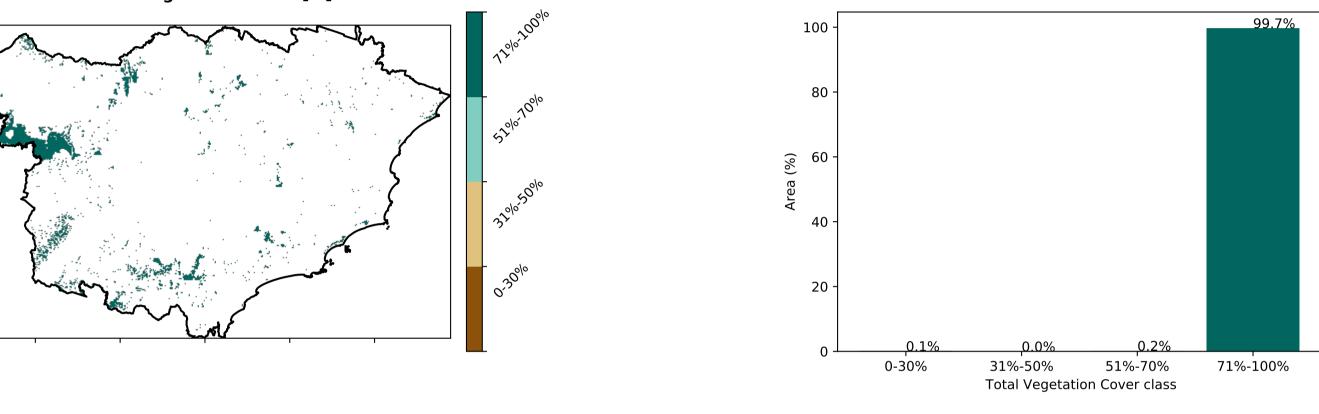


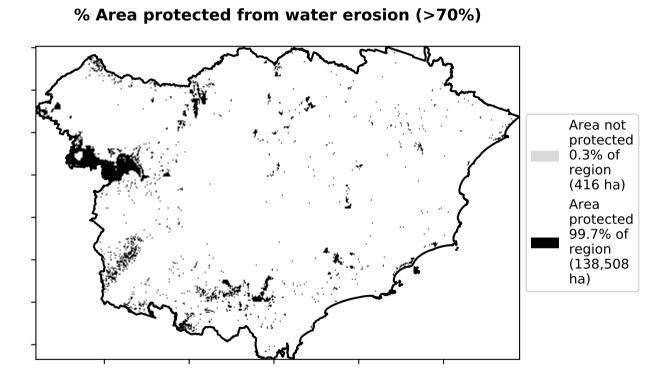


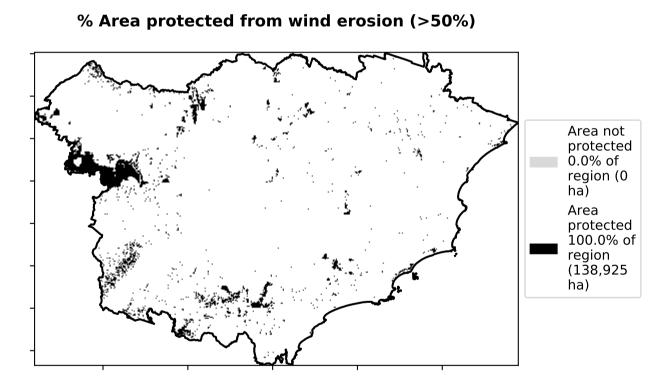
Conservation and natural environments Woodland forest



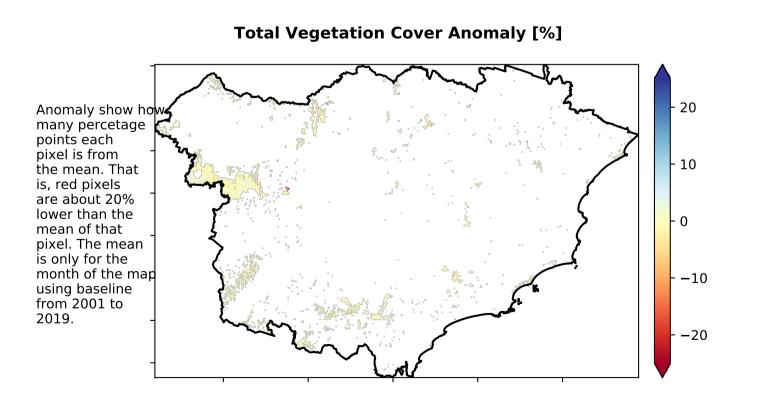
Total Vegetation Cover [%]

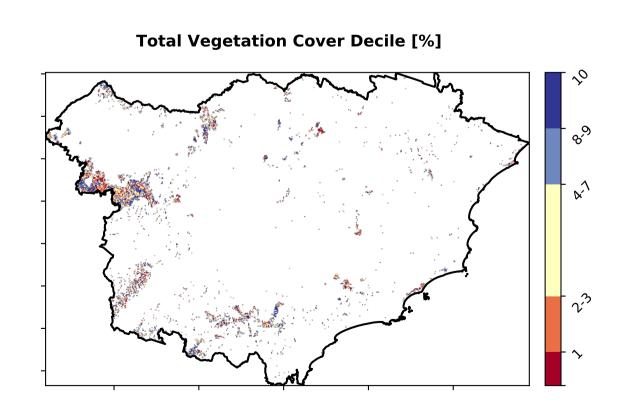






Proportion of vegetation cover class in area





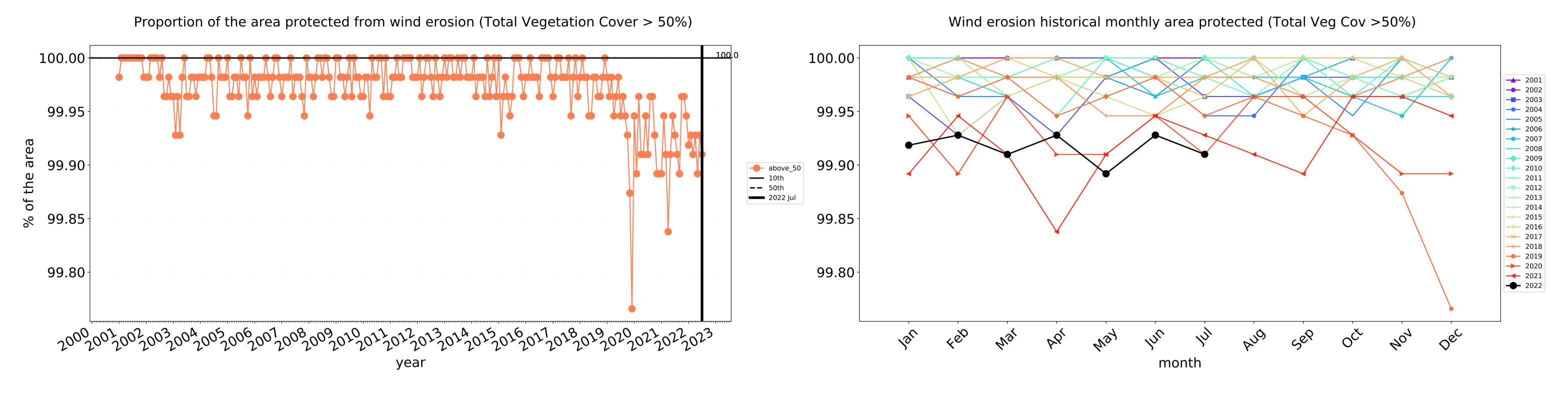


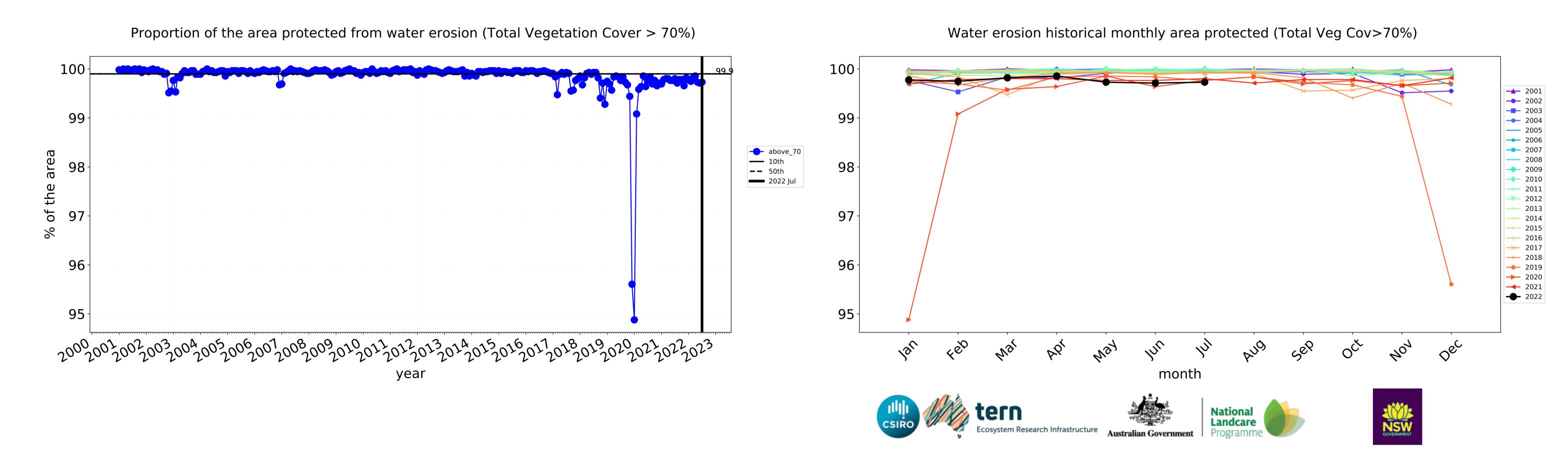


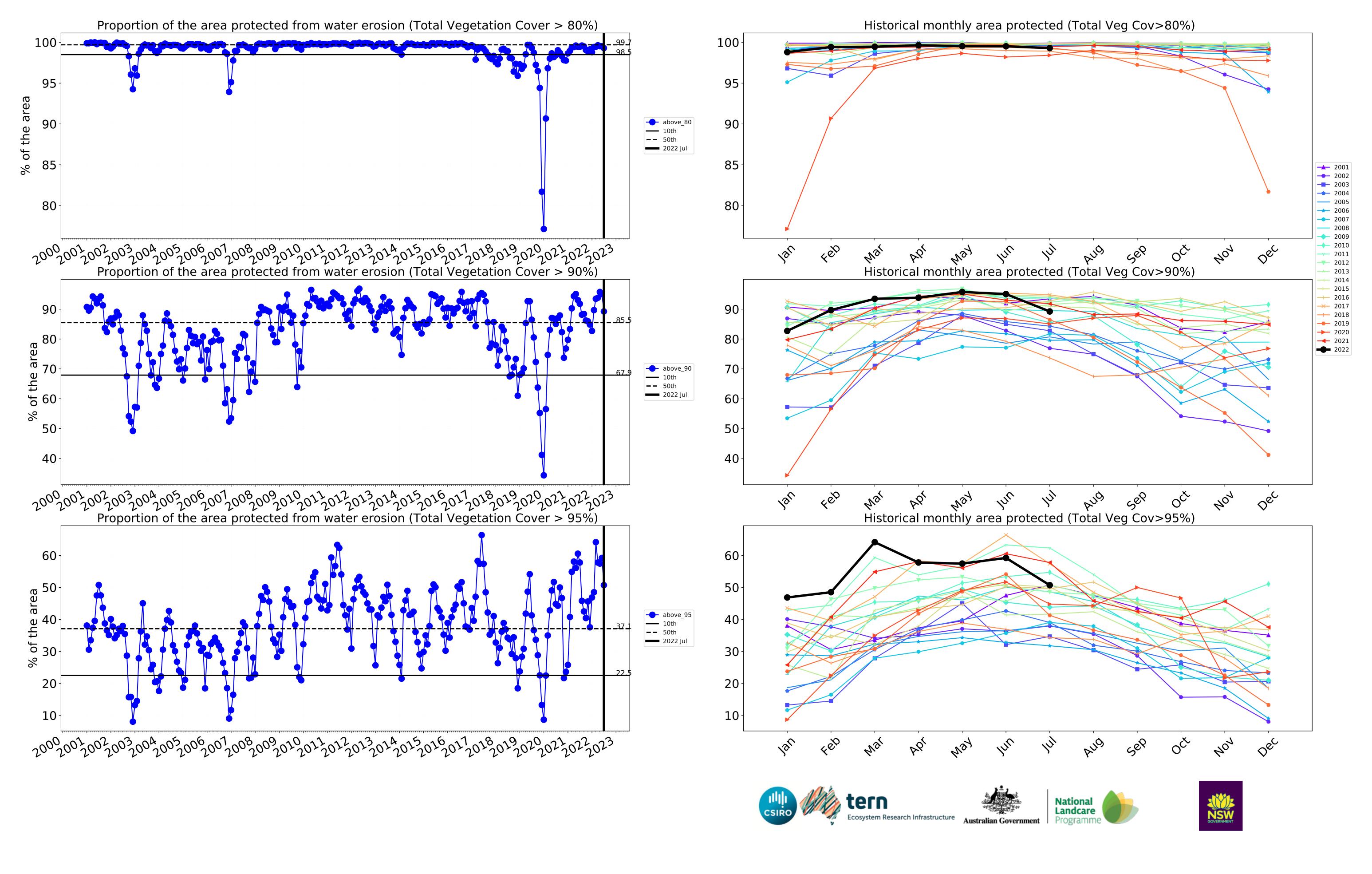




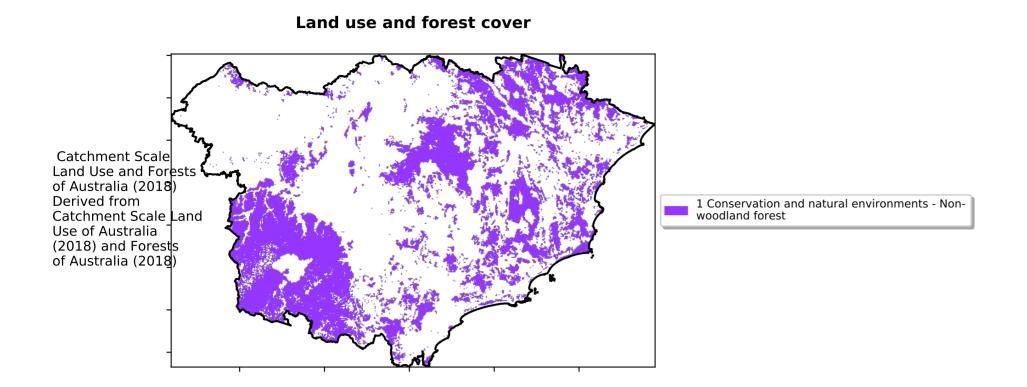
Conservation and natural environments Woodland forest timeseries



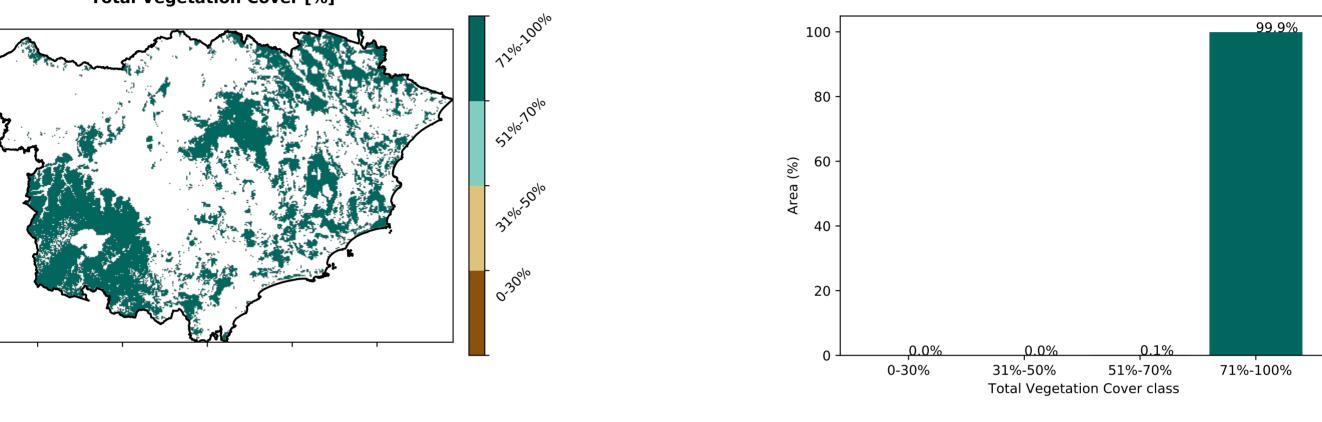


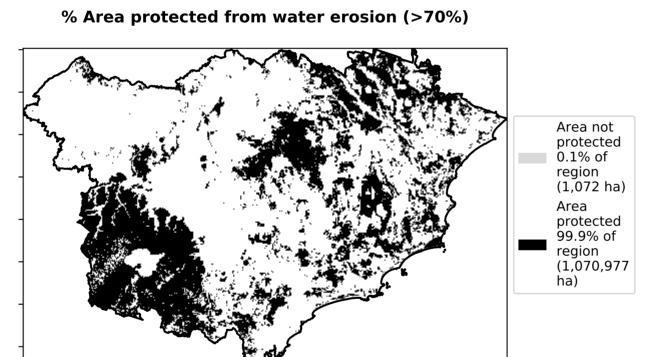


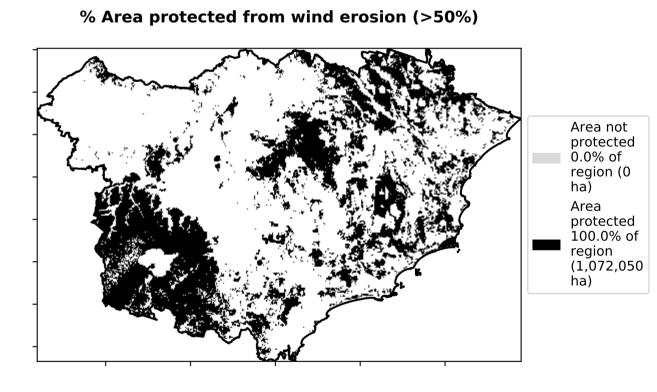
Conservation and natural environments Forest (non woodland)



Total Vegetation Cover [%]

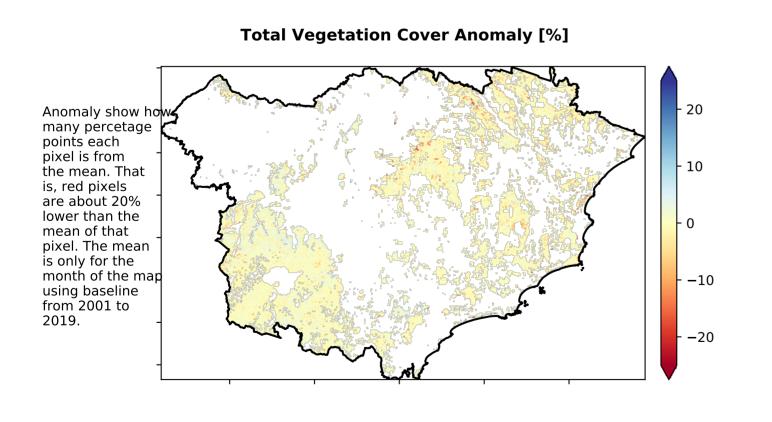






Total Vegetation Cover Decile [%]

Proportion of vegetation cover class in area

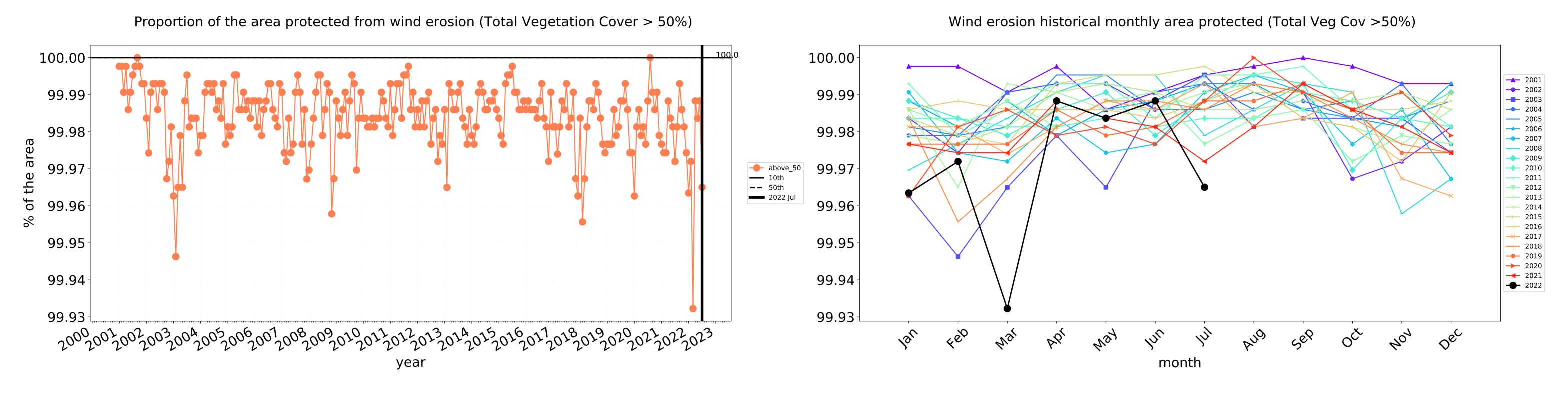


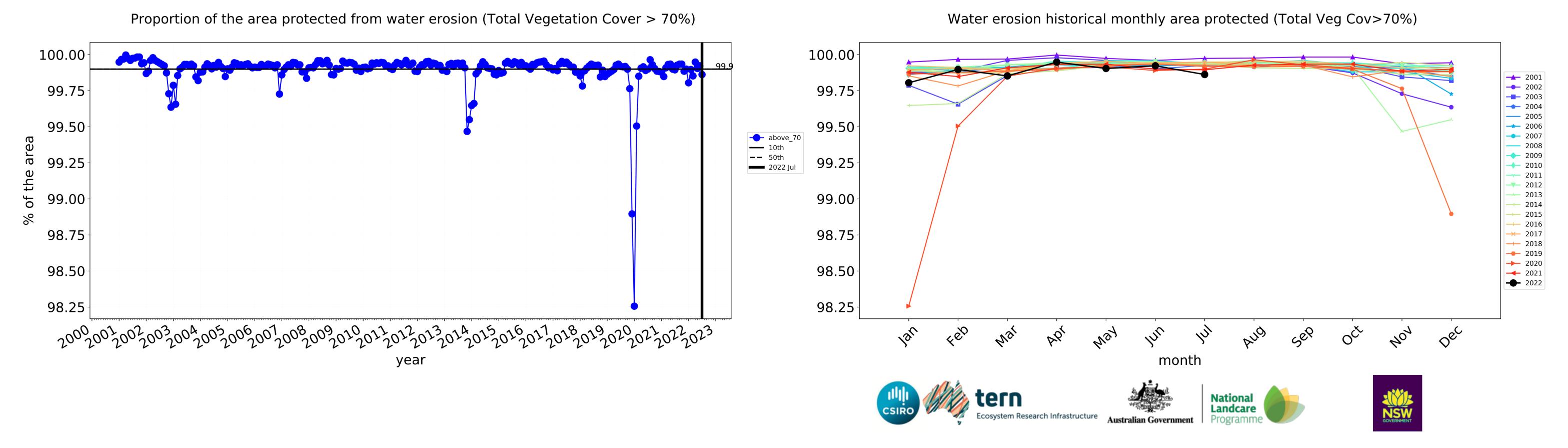


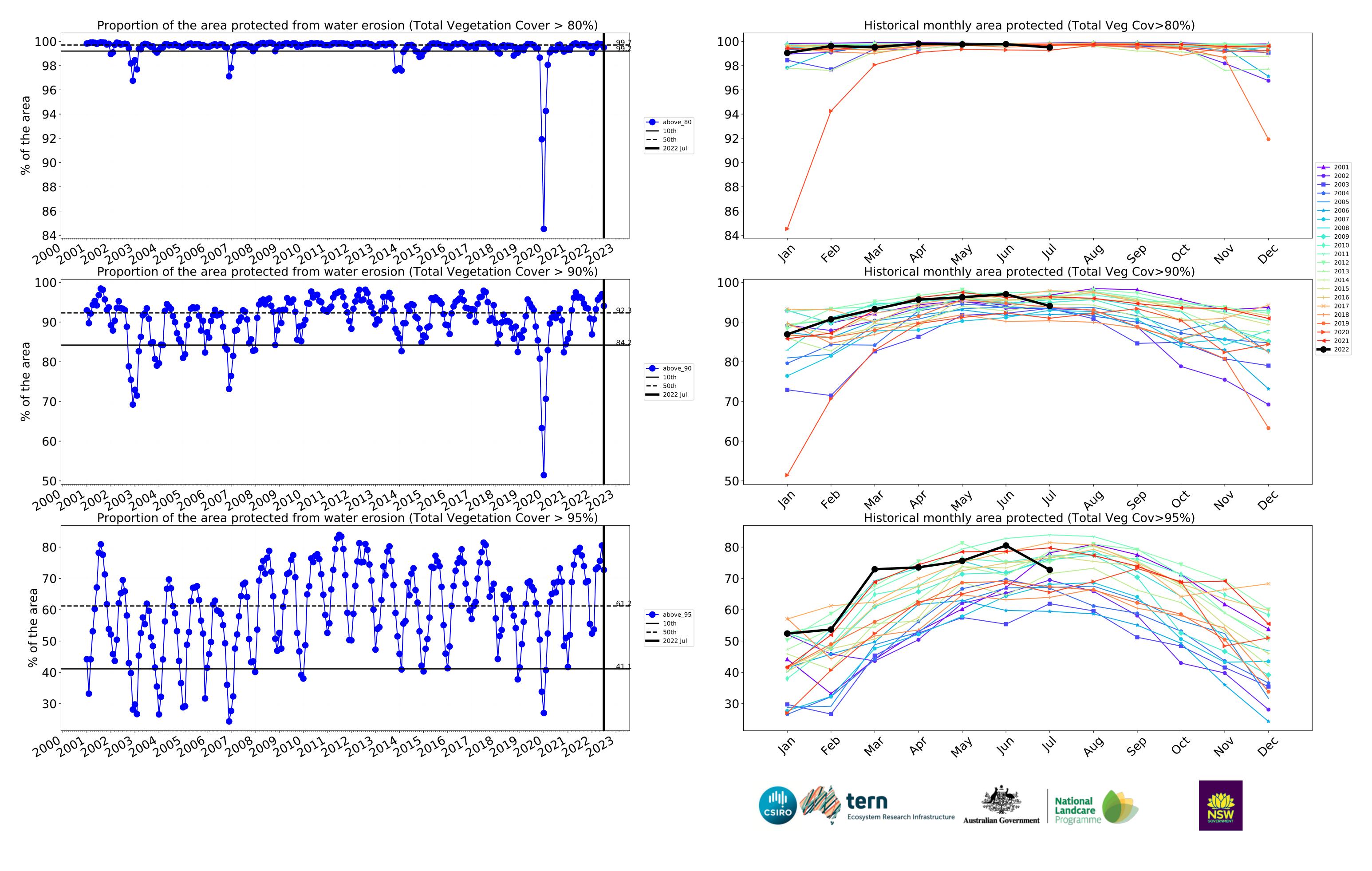




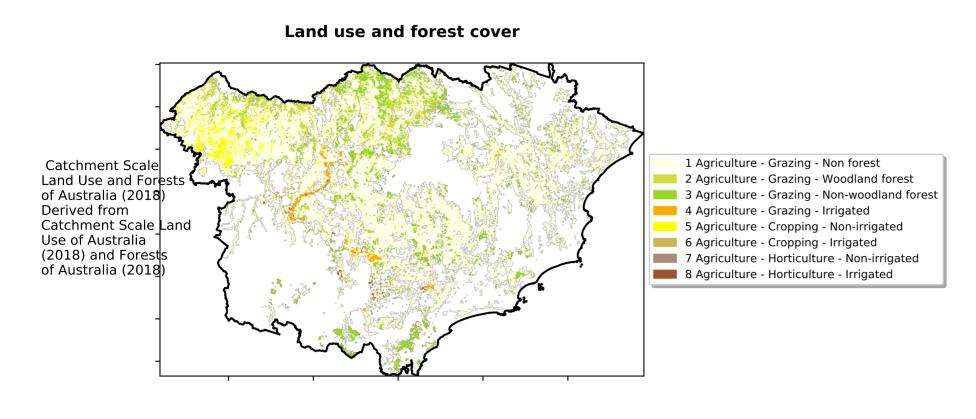


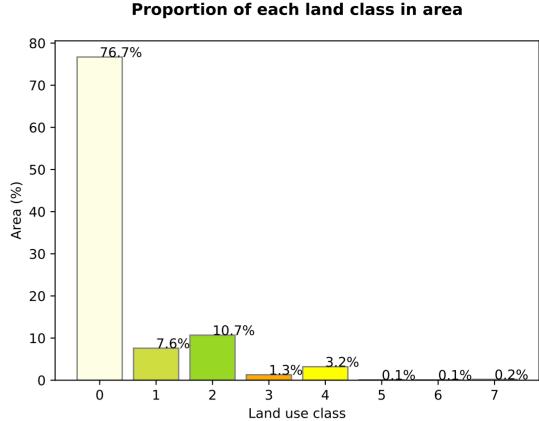


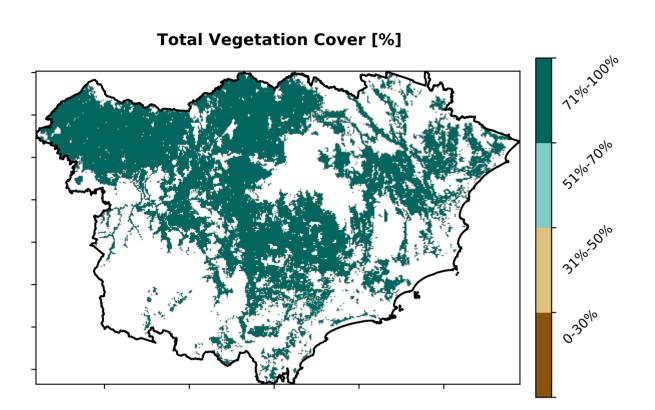


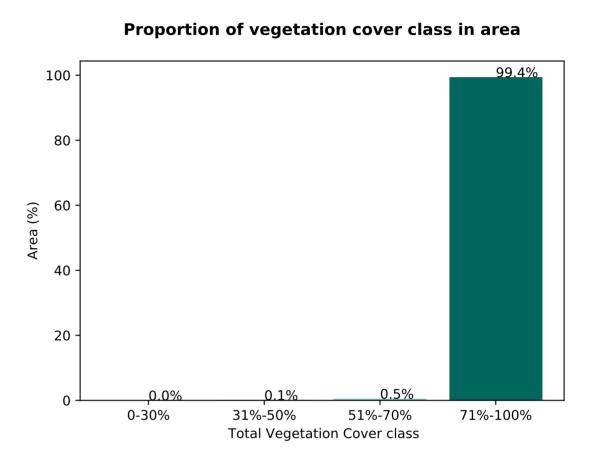


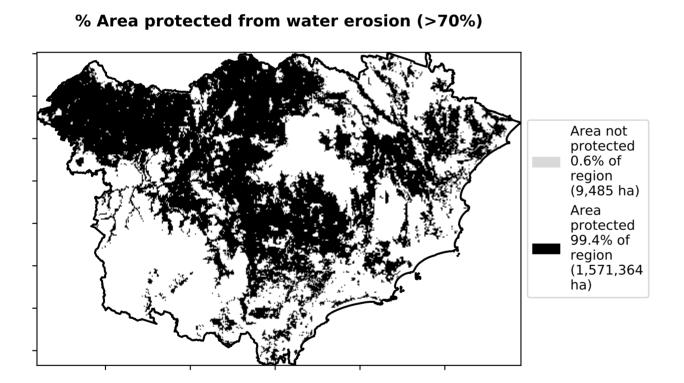
Agriculture

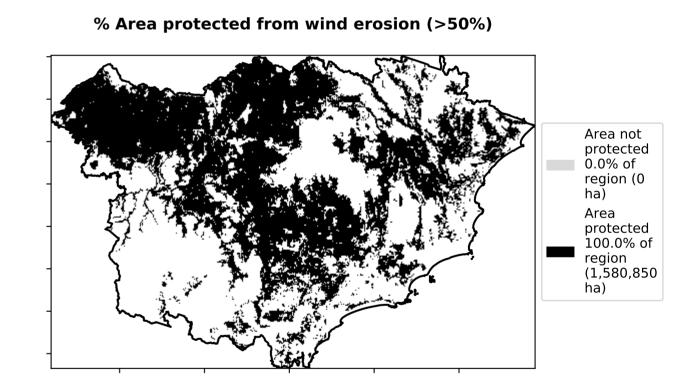


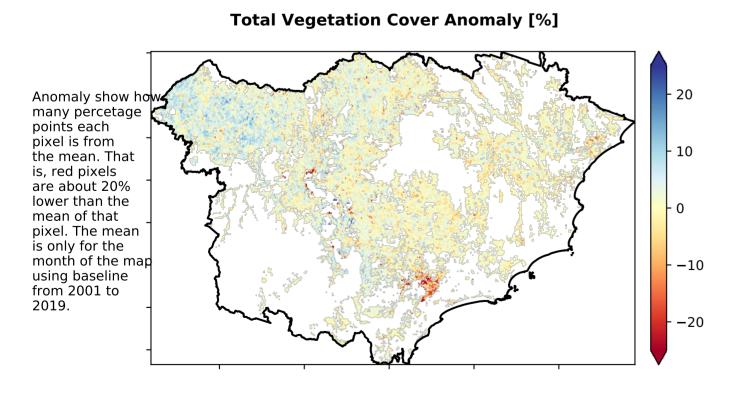


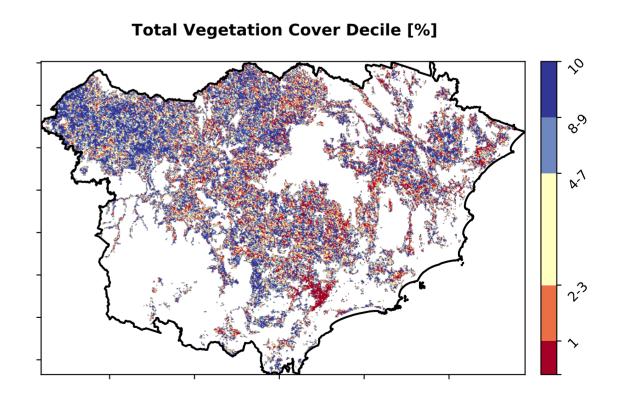












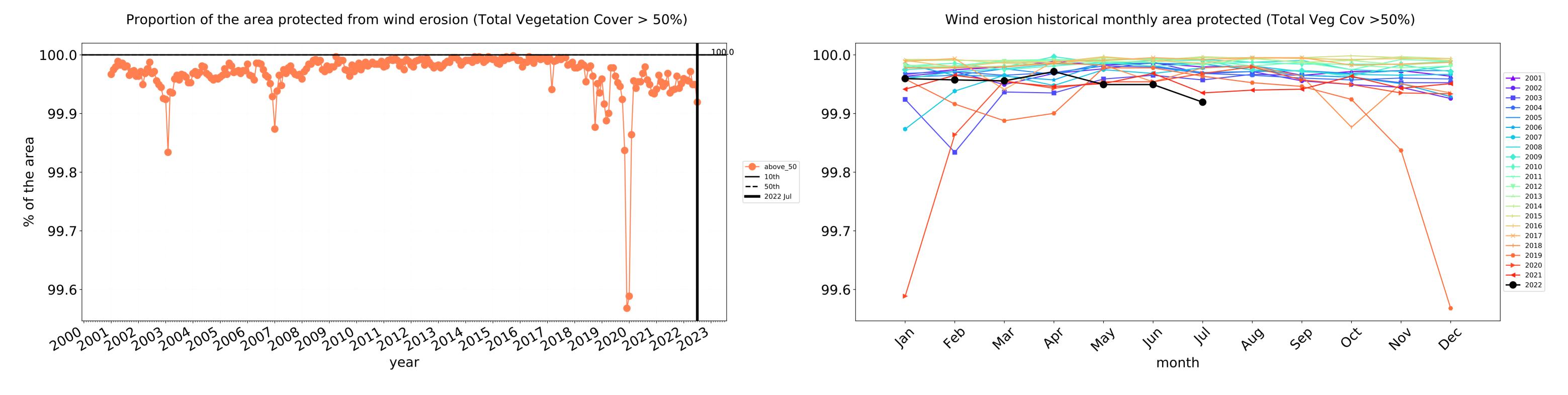


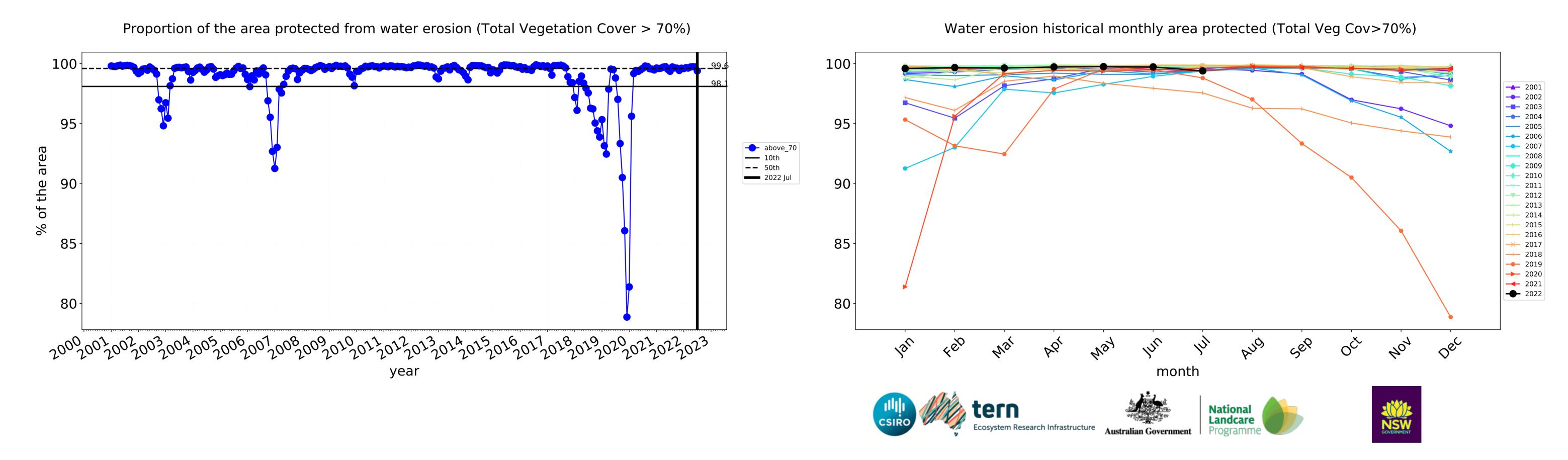


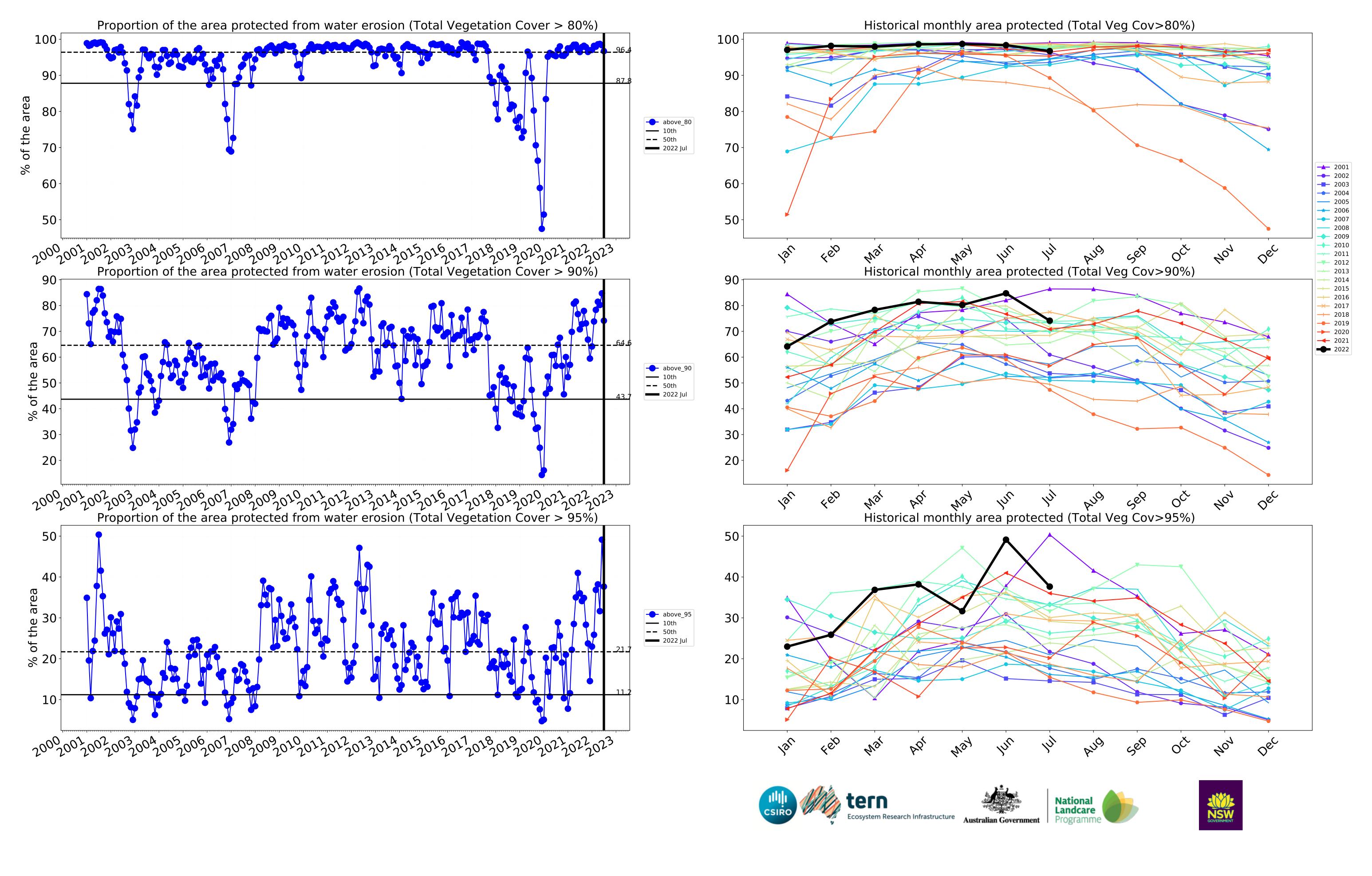




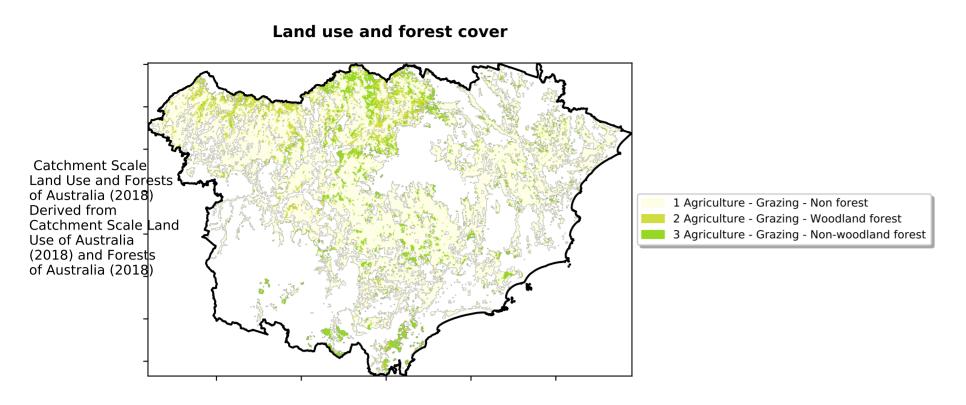
Agriculture timeseries



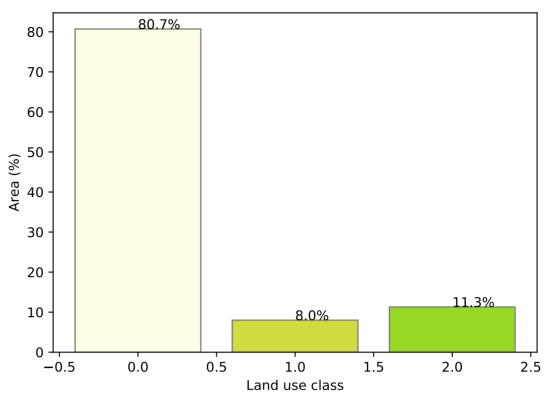




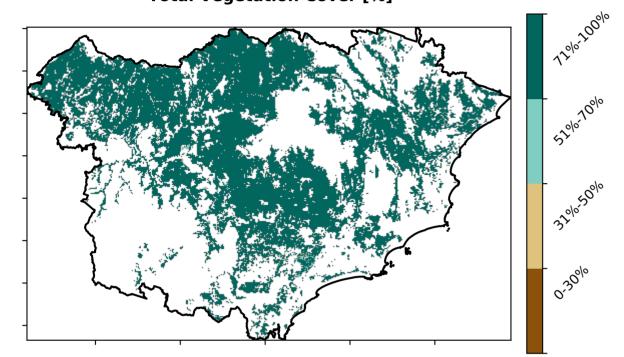
Grazing



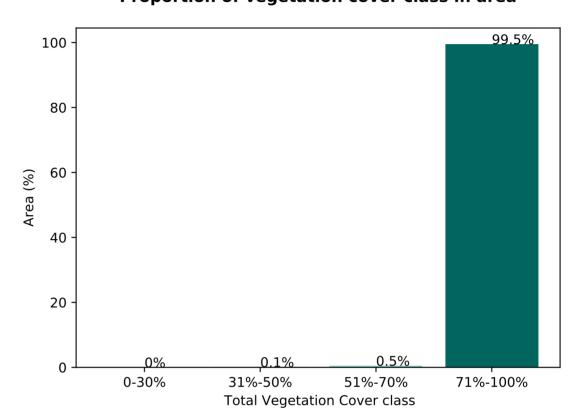
Proportion of each land class in area



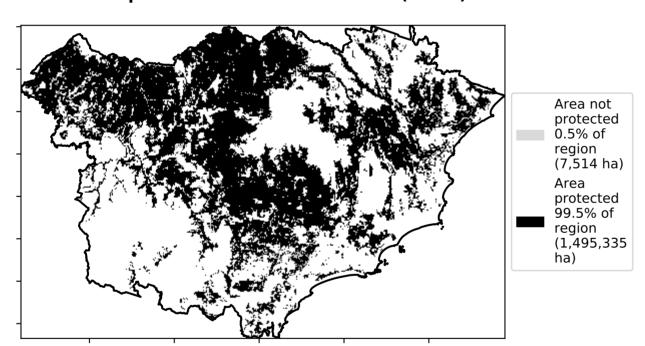




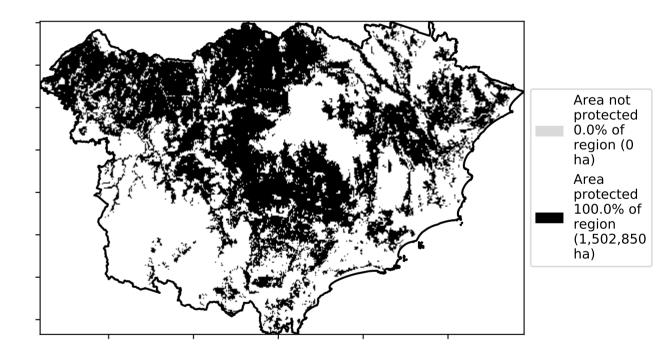
Proportion of vegetation cover class in area



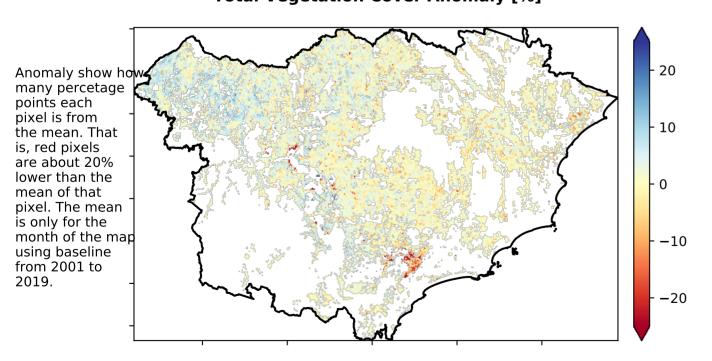
% Area protected from water erosion (>70%)

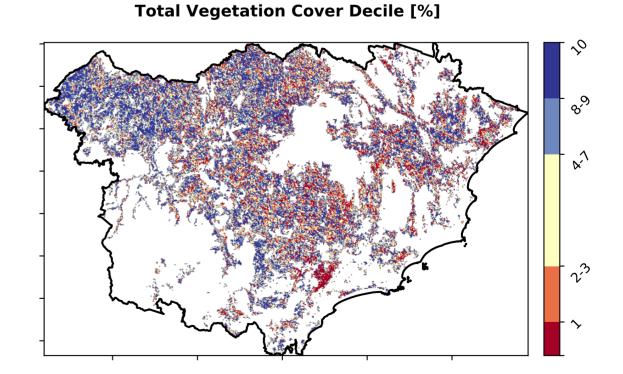


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]







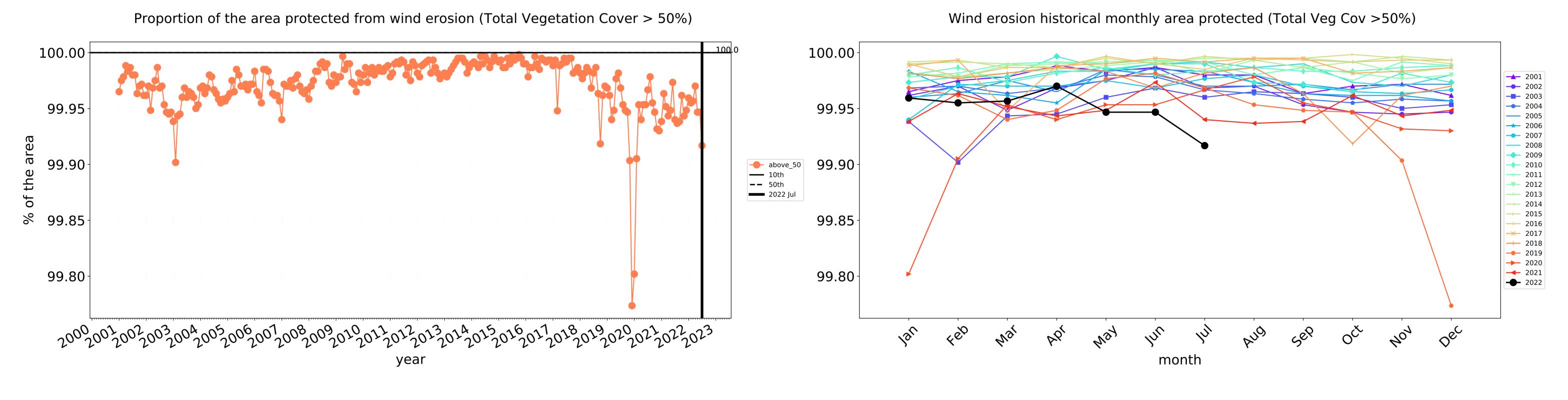


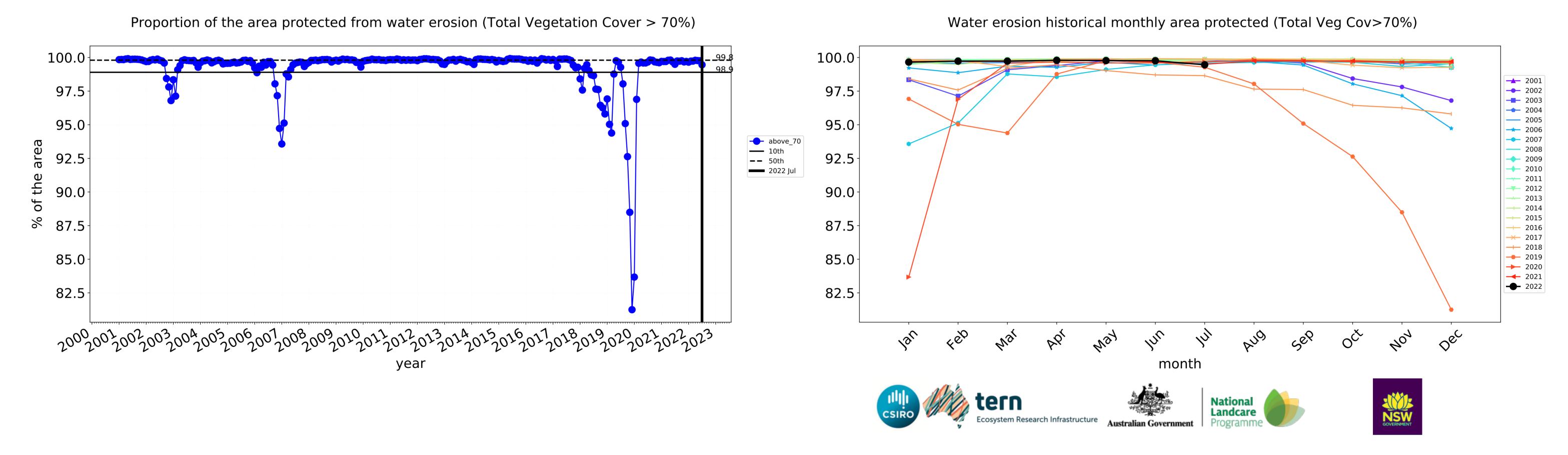


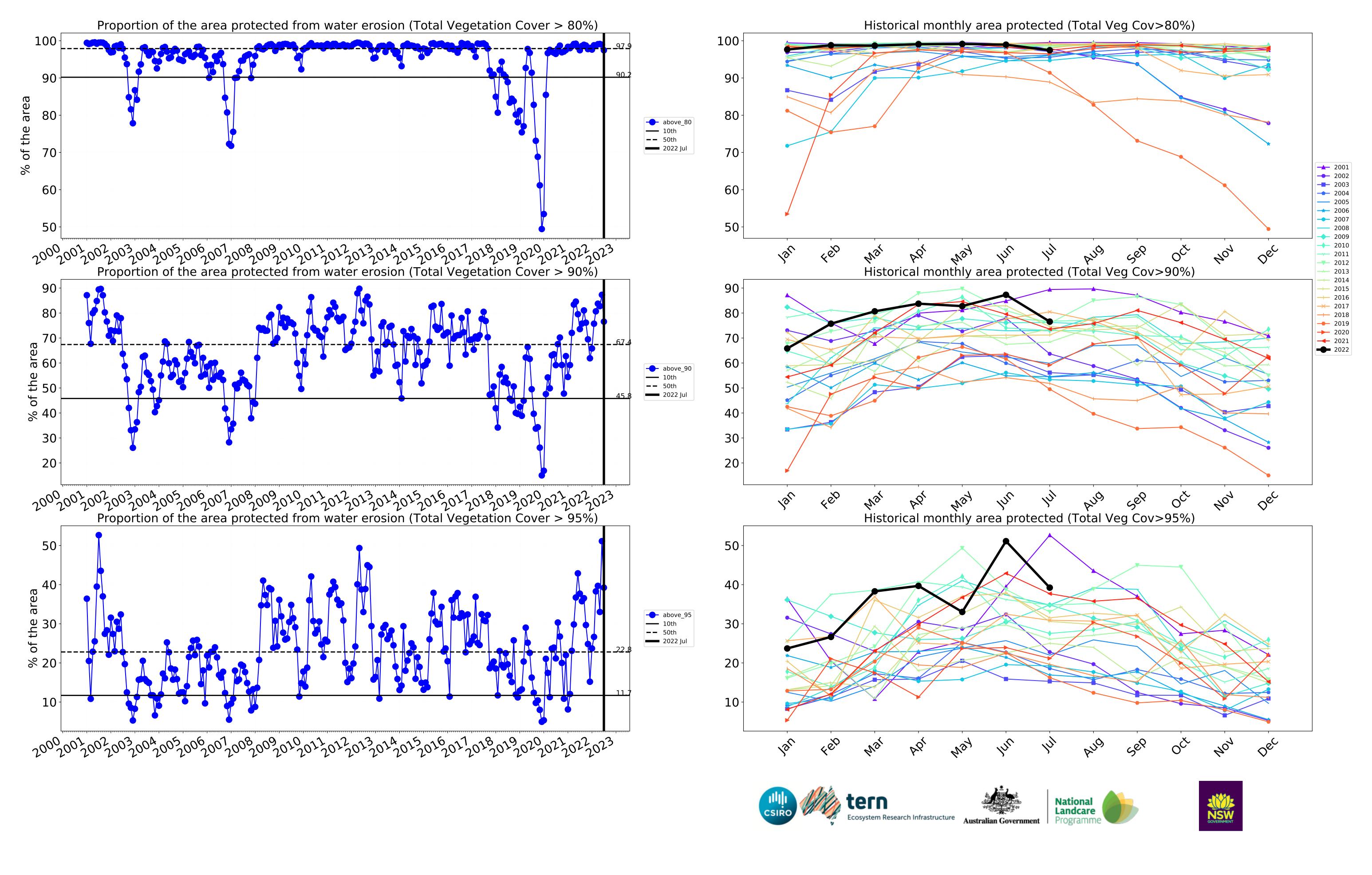




Grazing timeseries

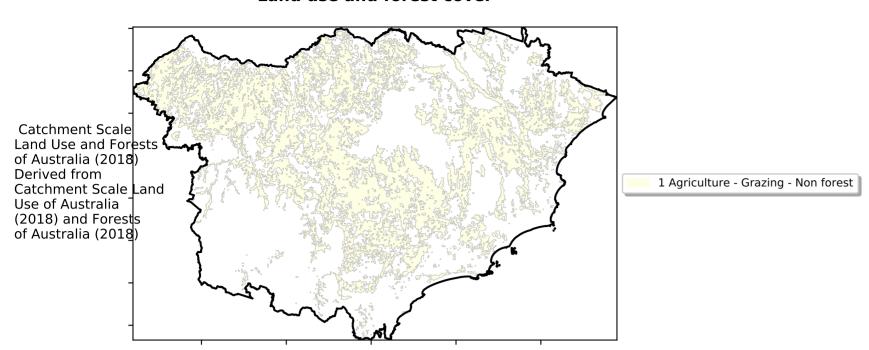




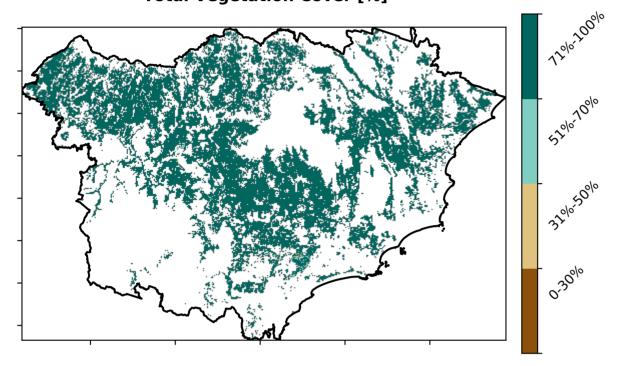


Grazing non forest

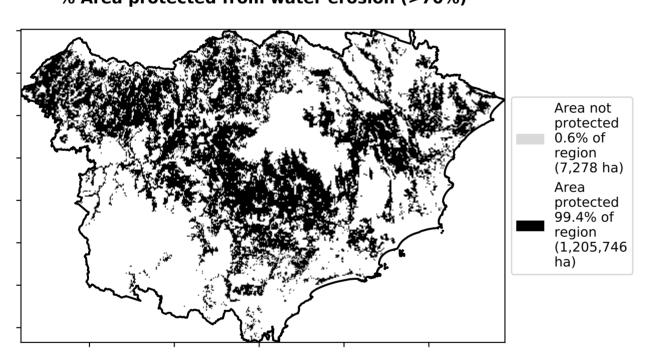
Land use and forest cover



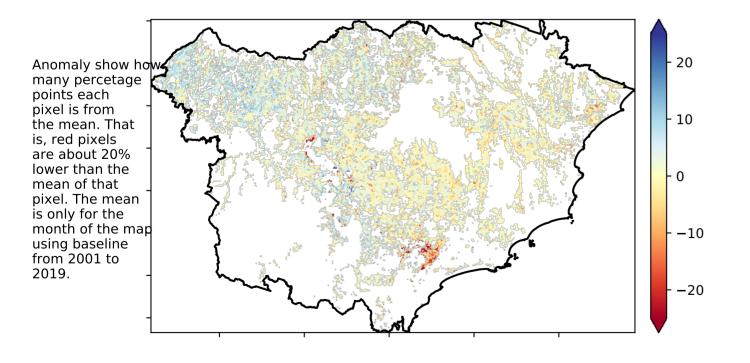
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

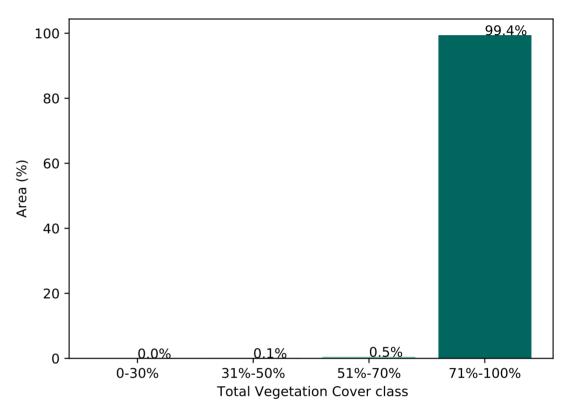


Total Vegetation Cover Anomaly [%]

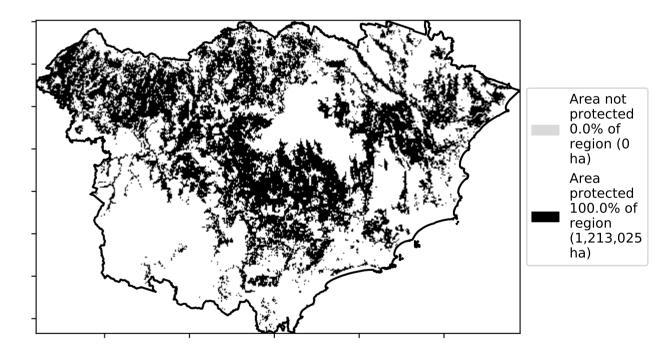


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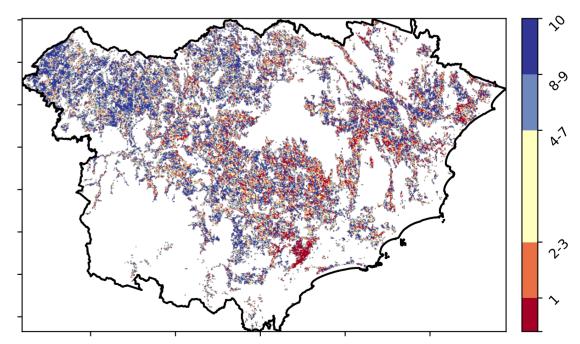
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]



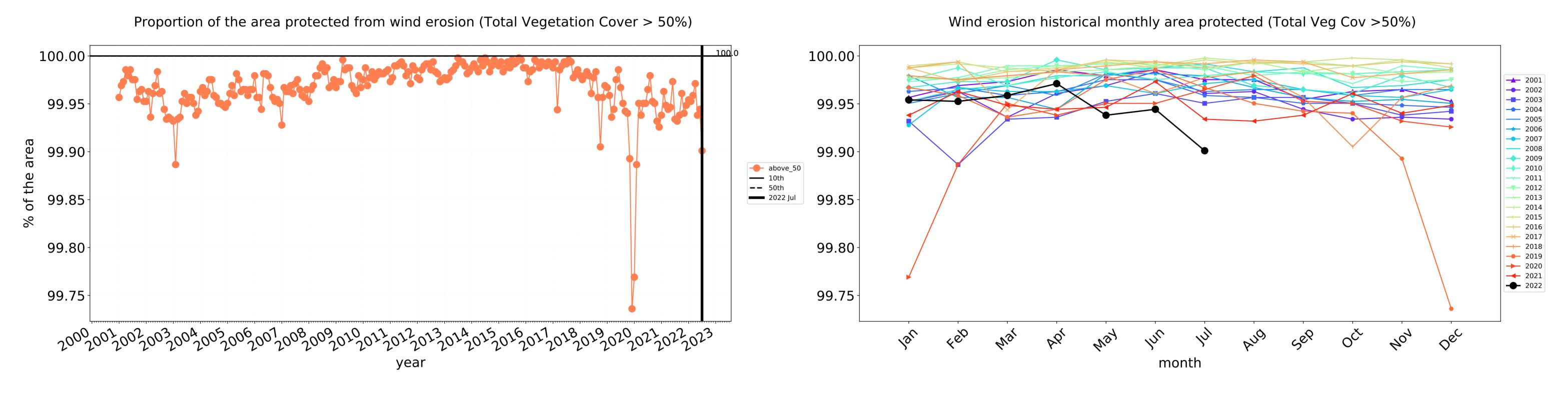


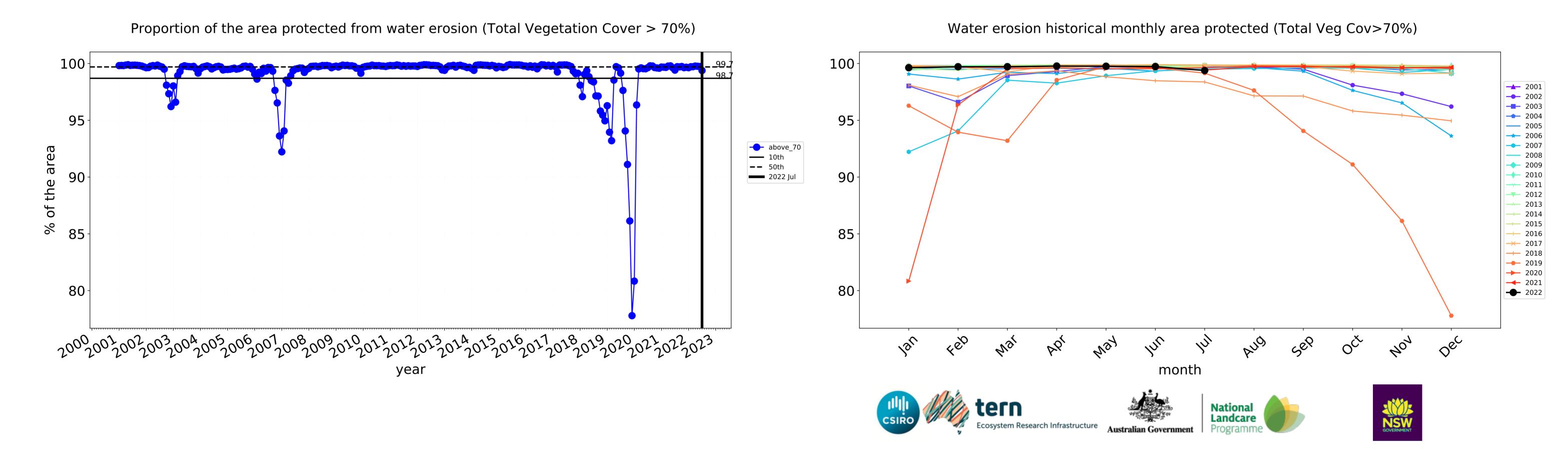


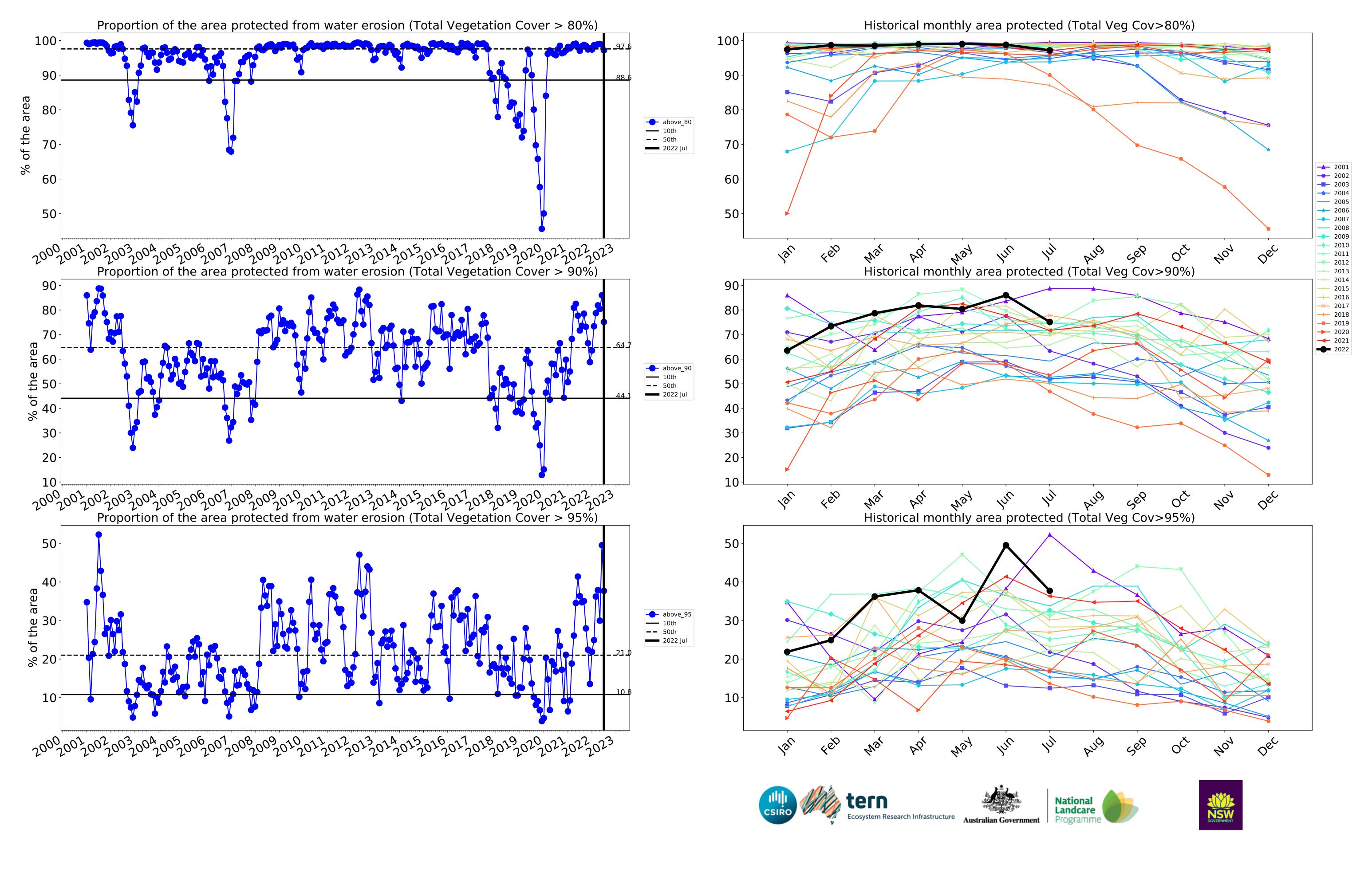




Grazing non forest timeseries



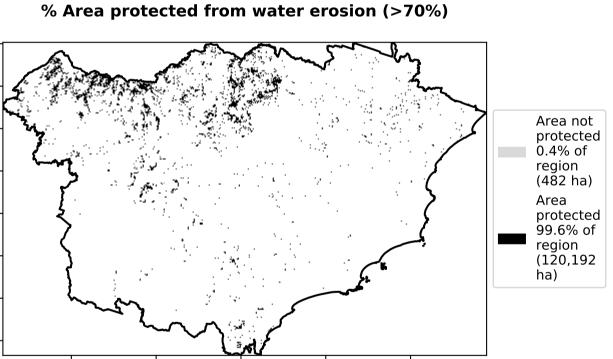


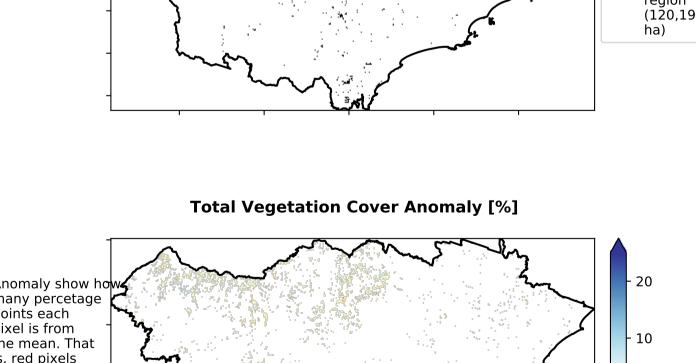


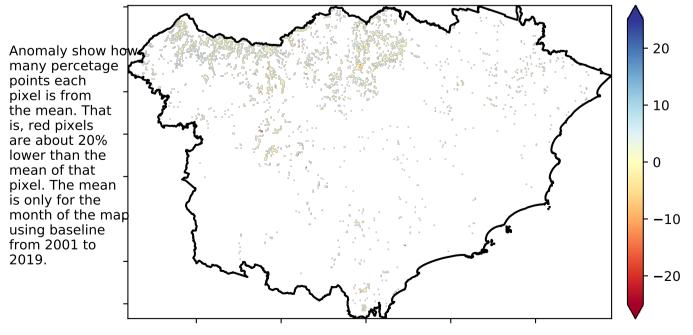
Grazing Woodland forest

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 [%]

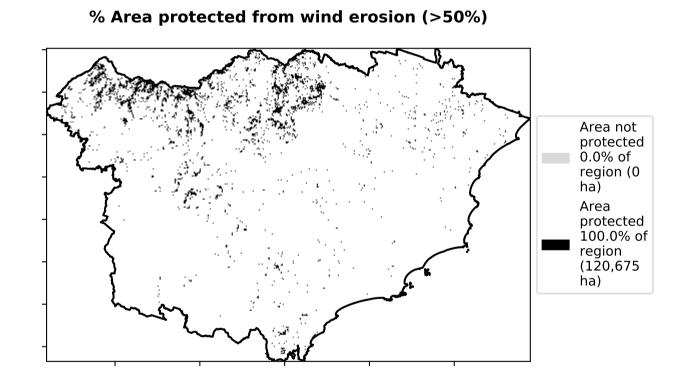


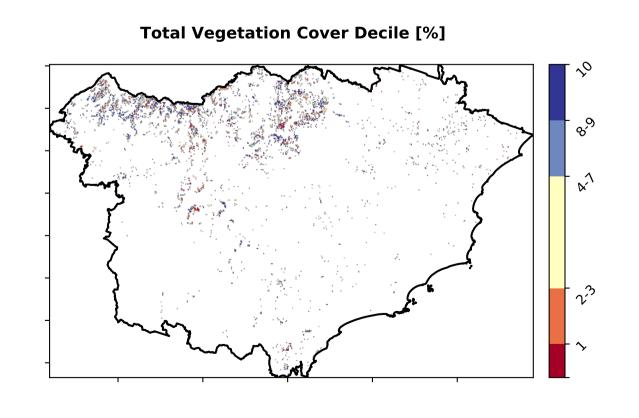




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseling. the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area 99.6% 100 80 Area (%) 20 -31%-50% 0-30% 51%-70% 71%-100% **Total Vegetation Cover class**





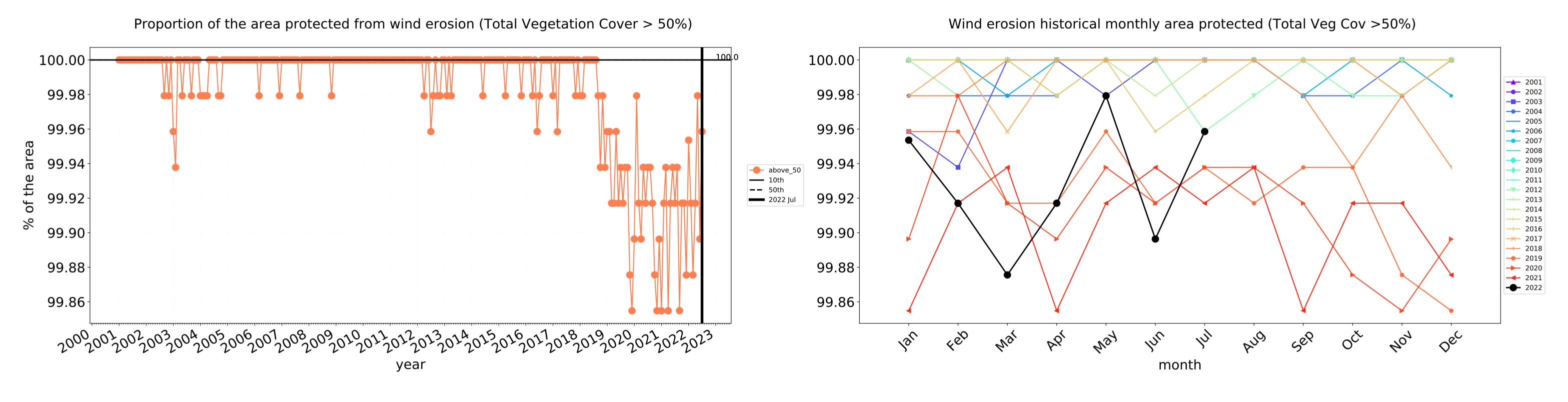


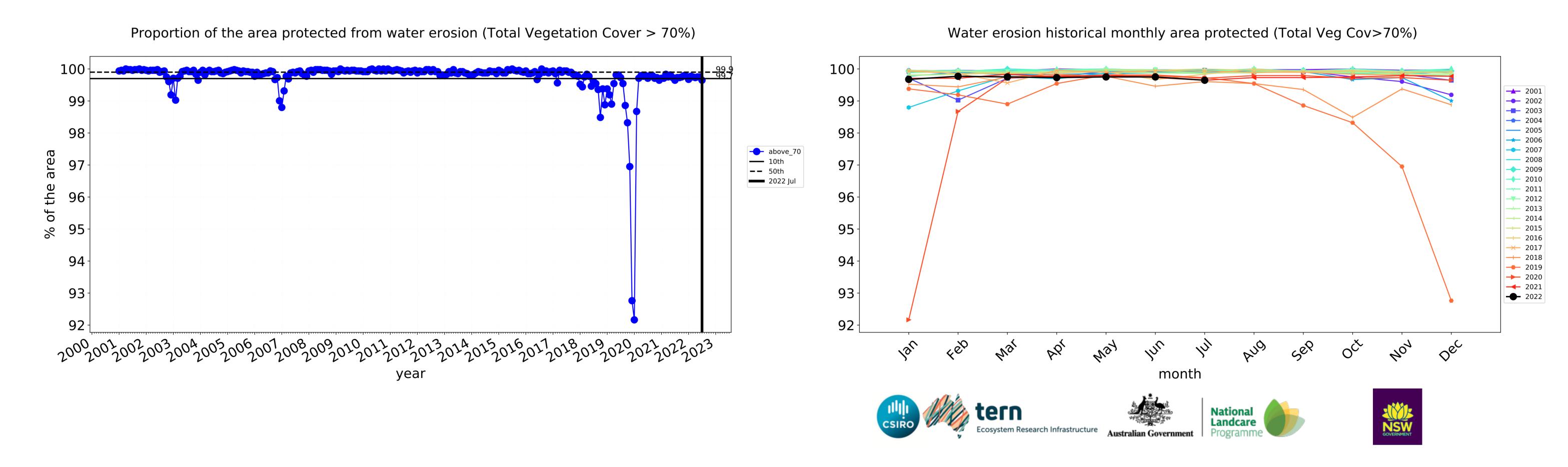


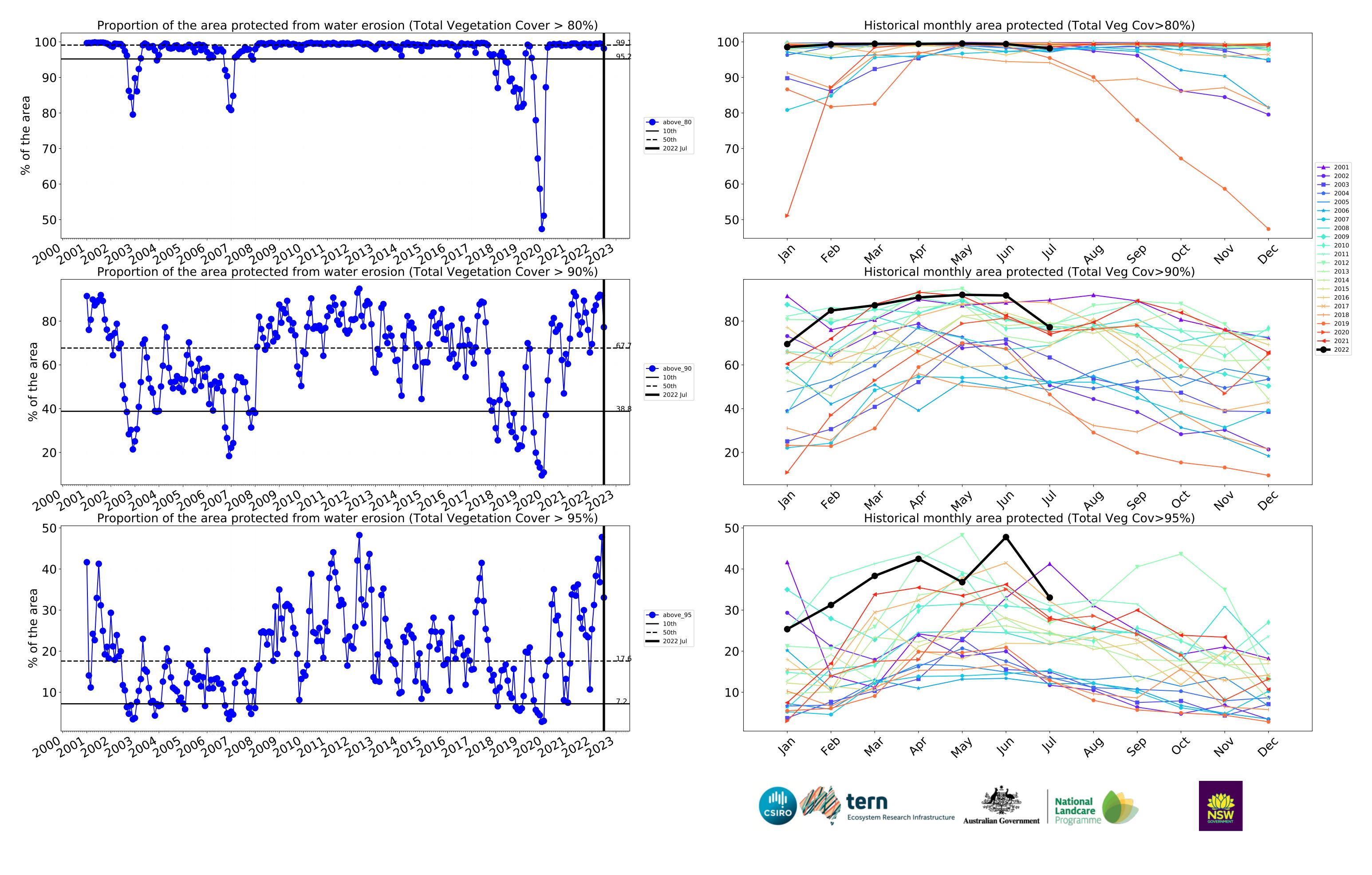




Grazing Woodland forest timeseries





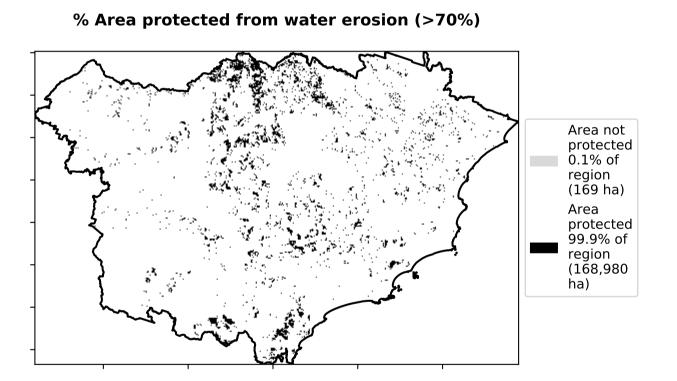


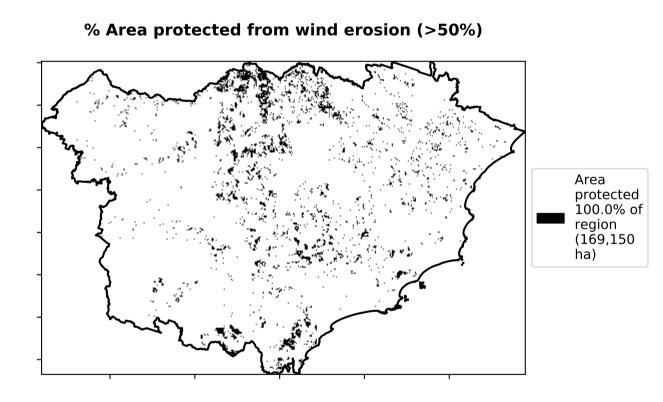
Grazing - Forest (non woodland)

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)

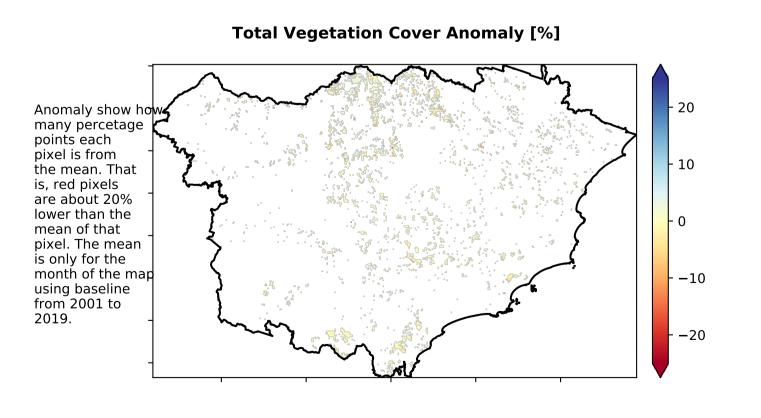
Total Vegetation Cover [%]

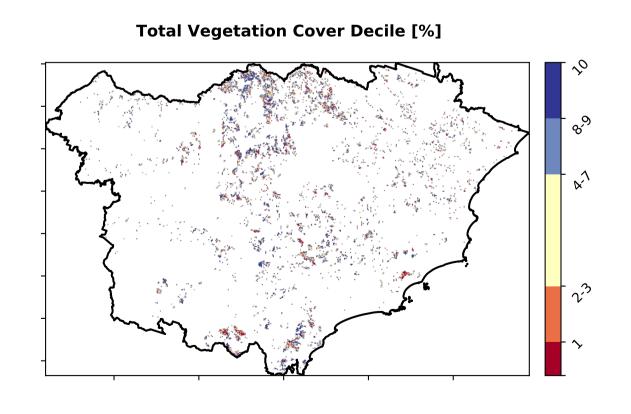
99.9% 100 Area (%) 60 40 20 -0.1% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**





Proportion of vegetation cover class in area



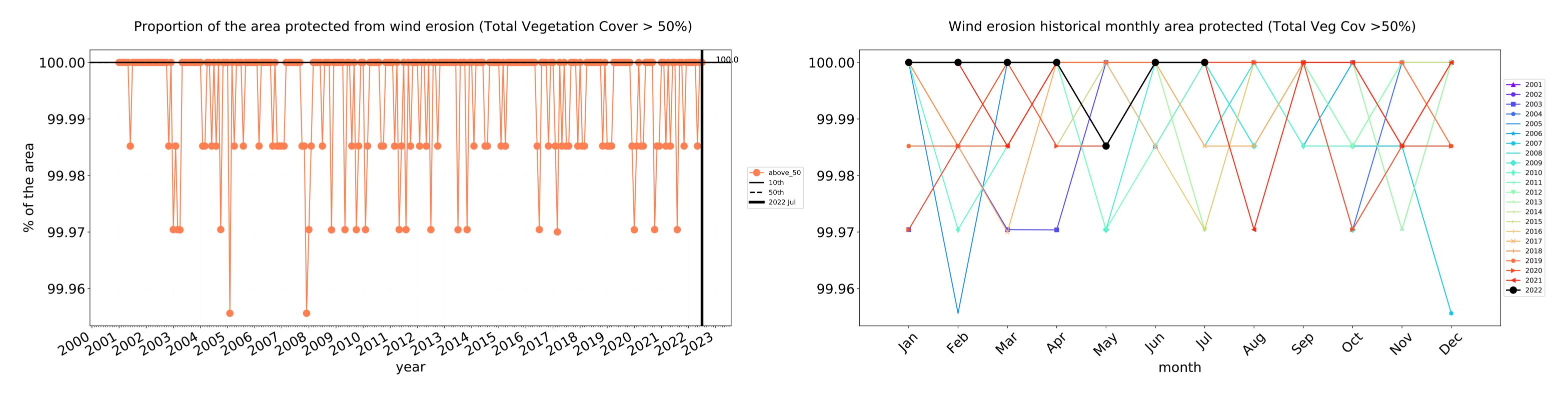


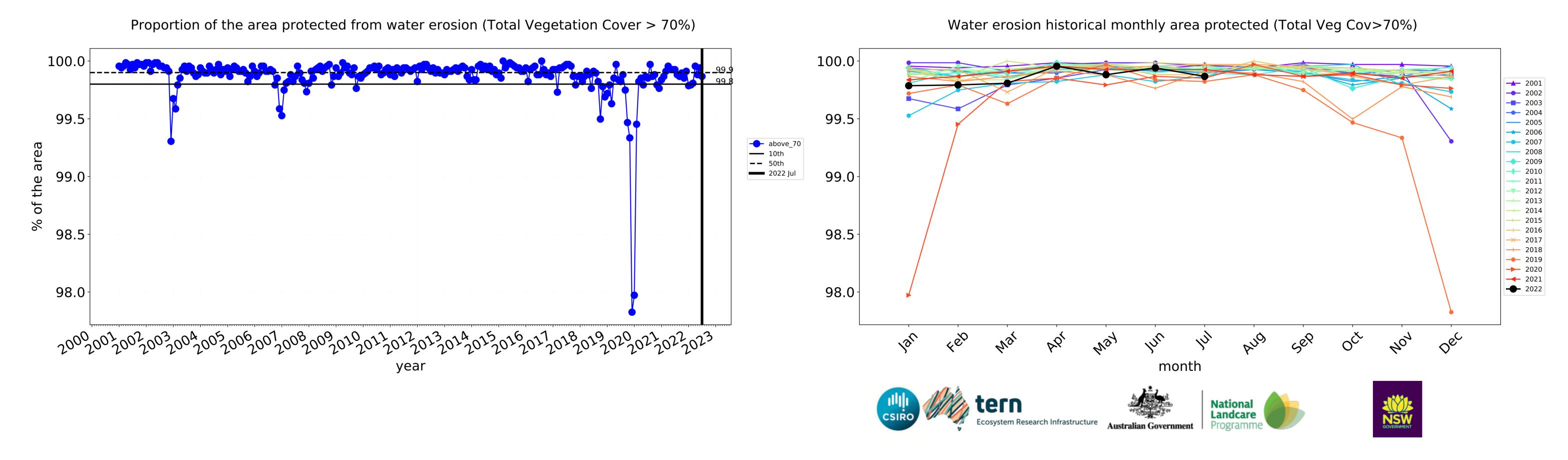


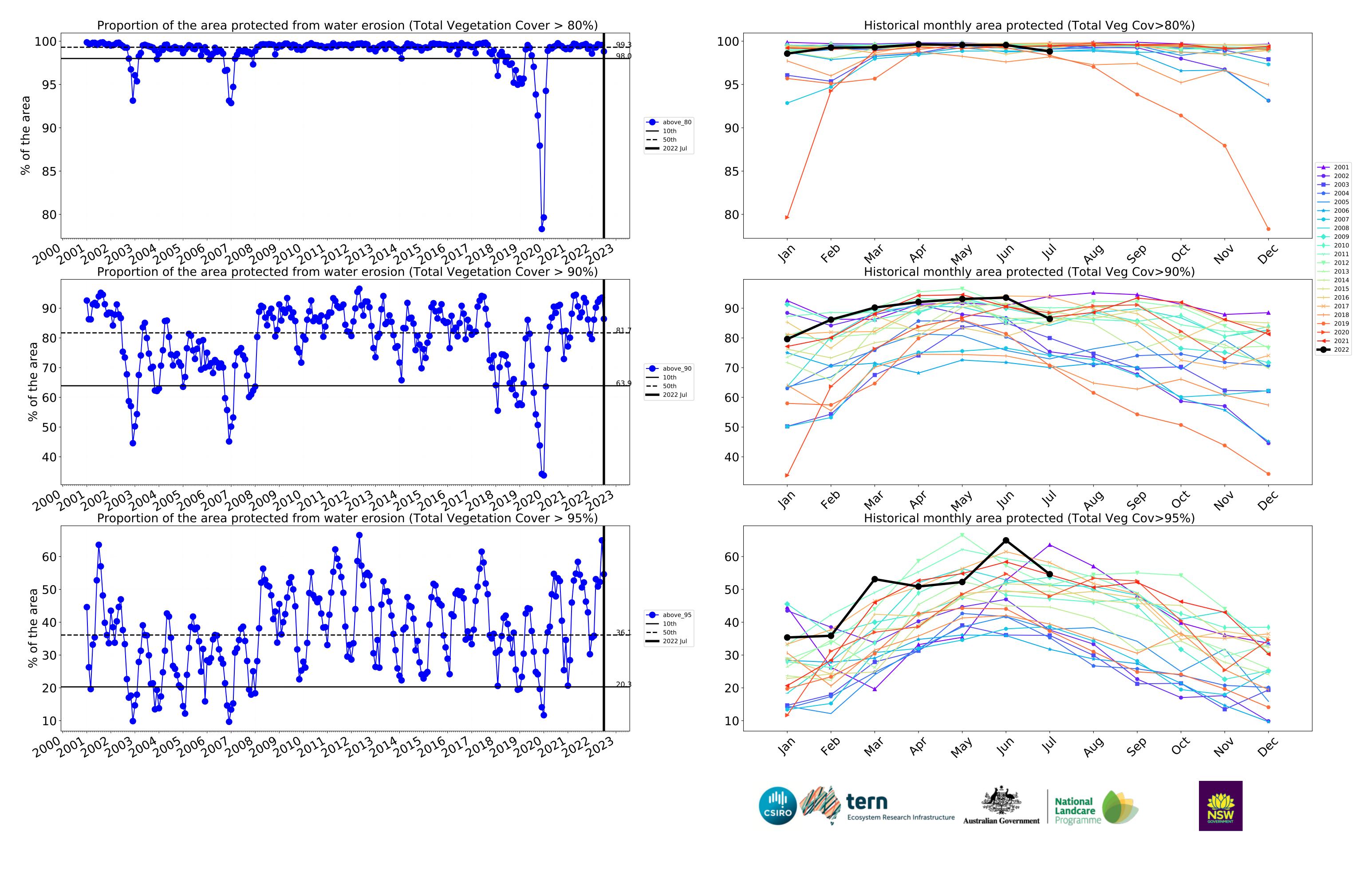






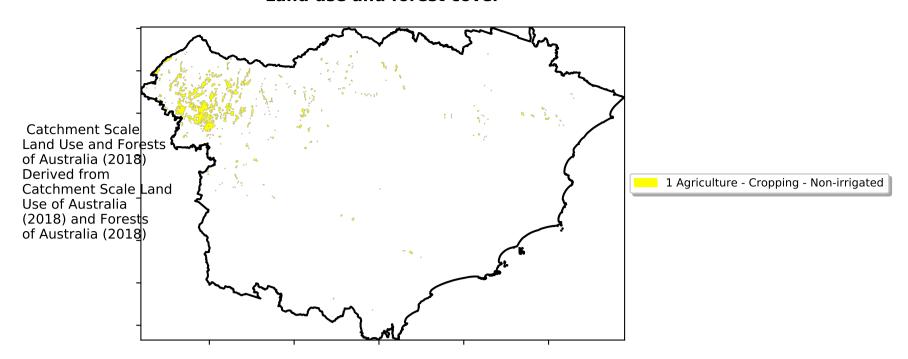




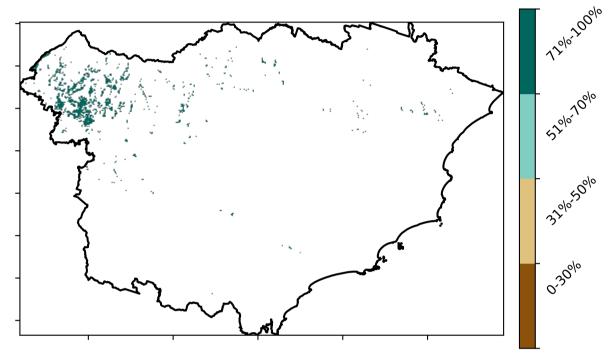


Cropping

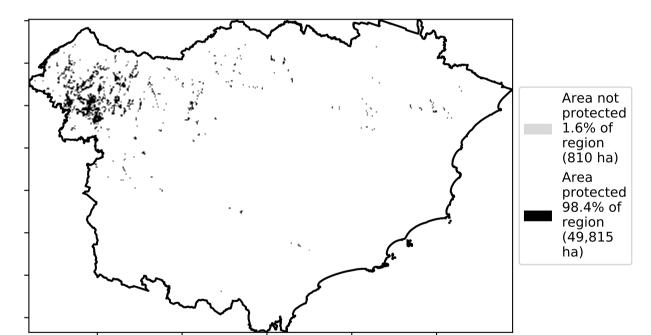
Land use and forest cover



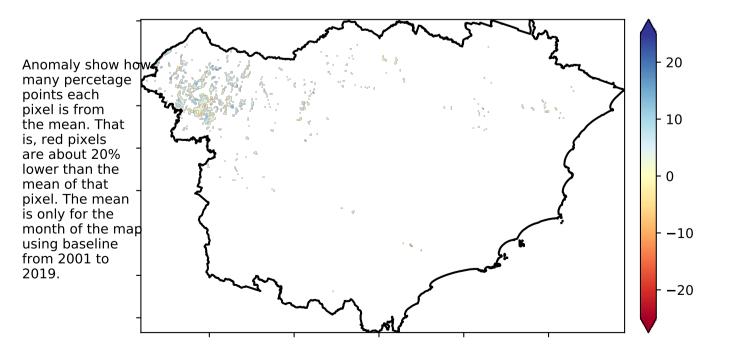
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

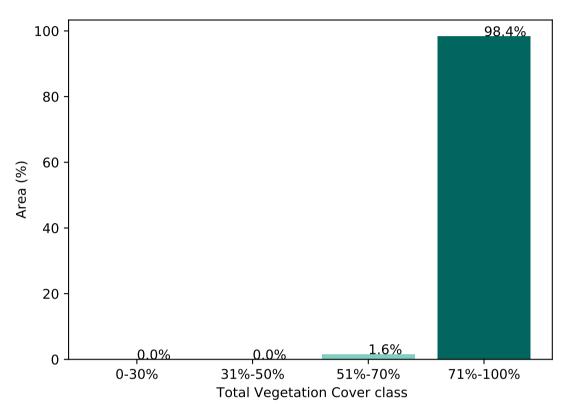


Total Vegetation Cover Anomaly [%]

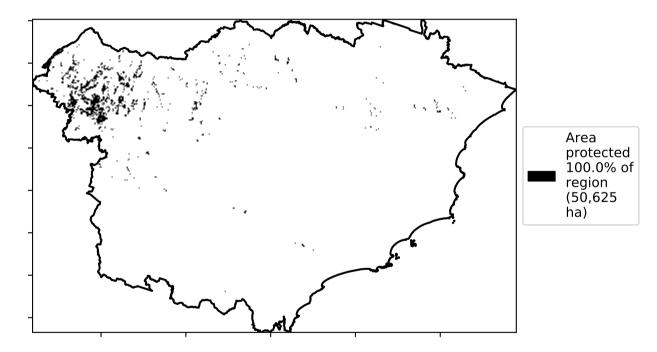


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

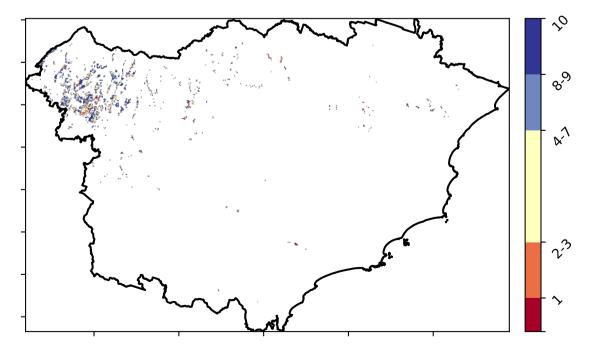
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]



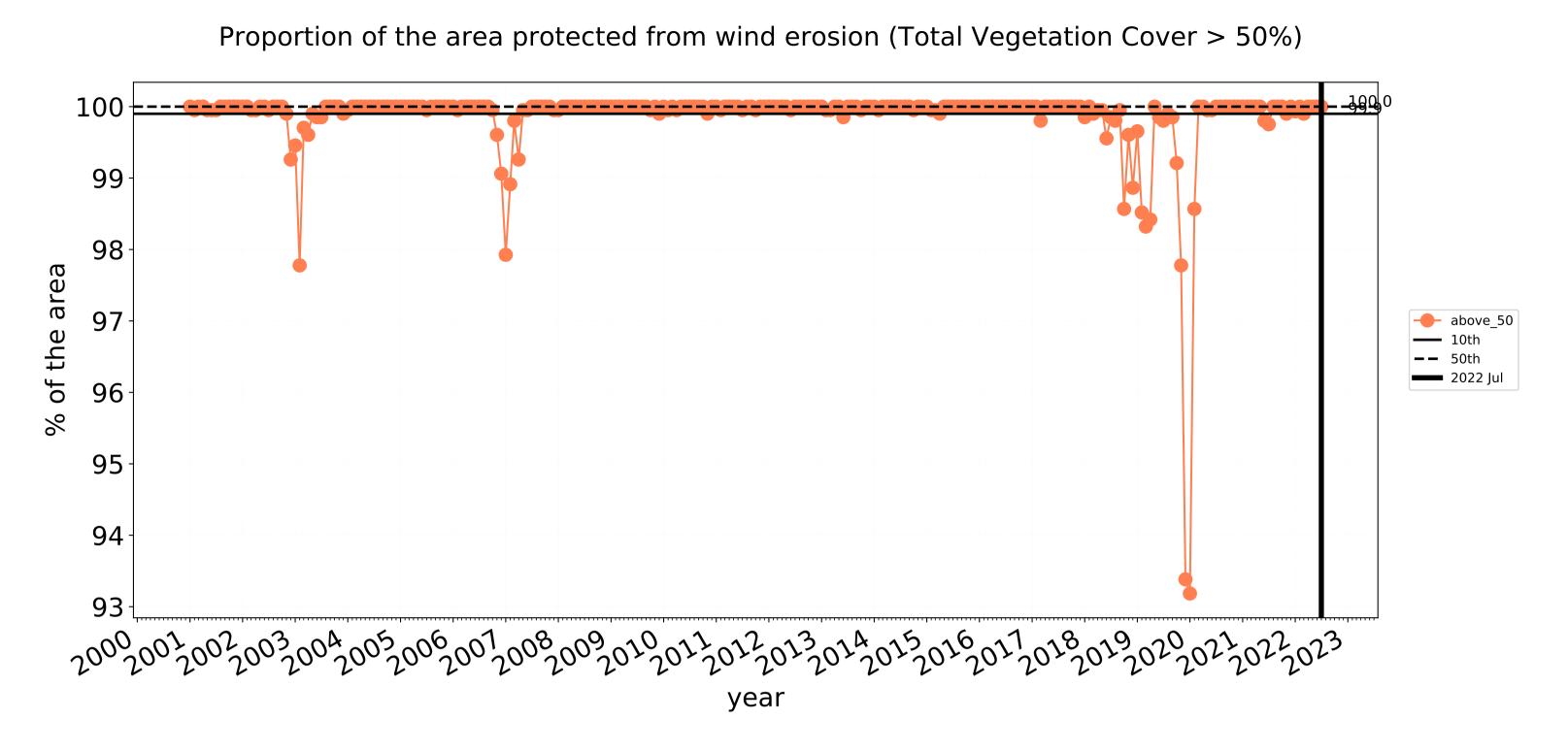


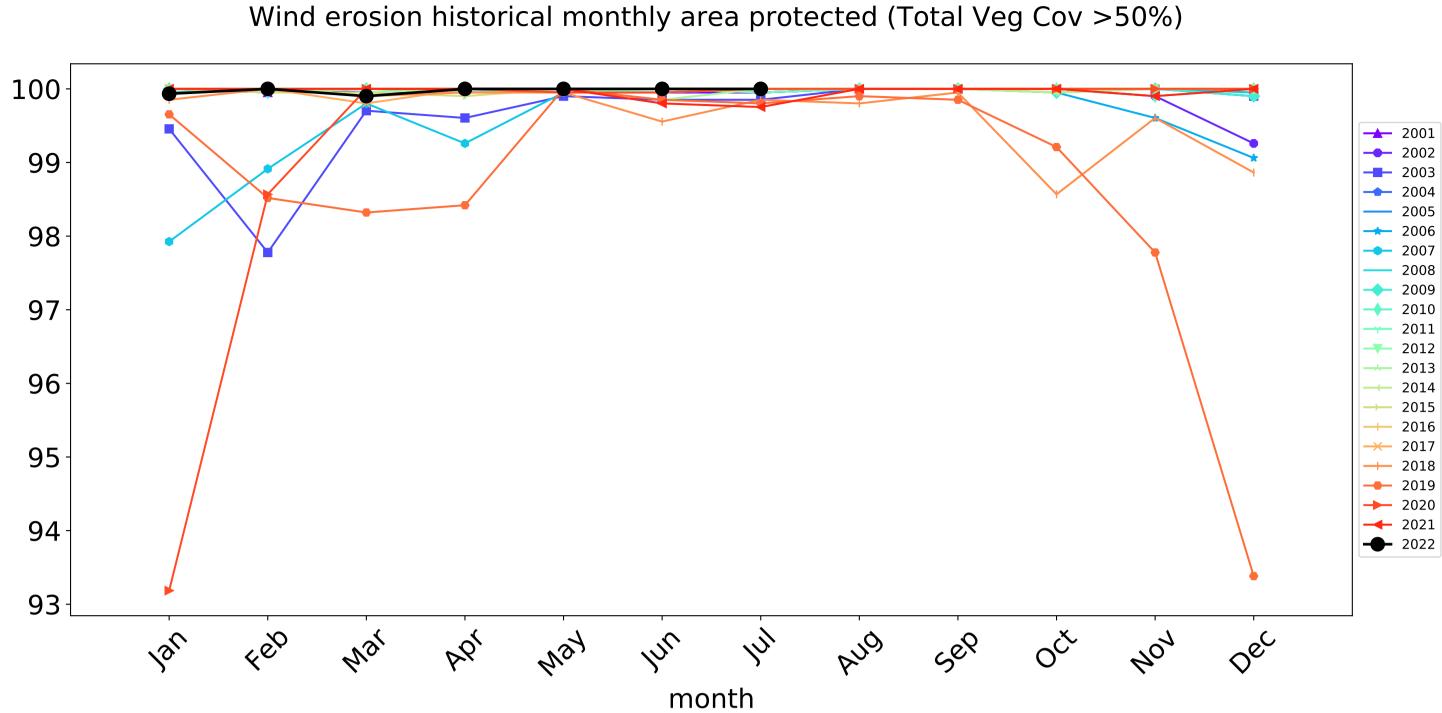


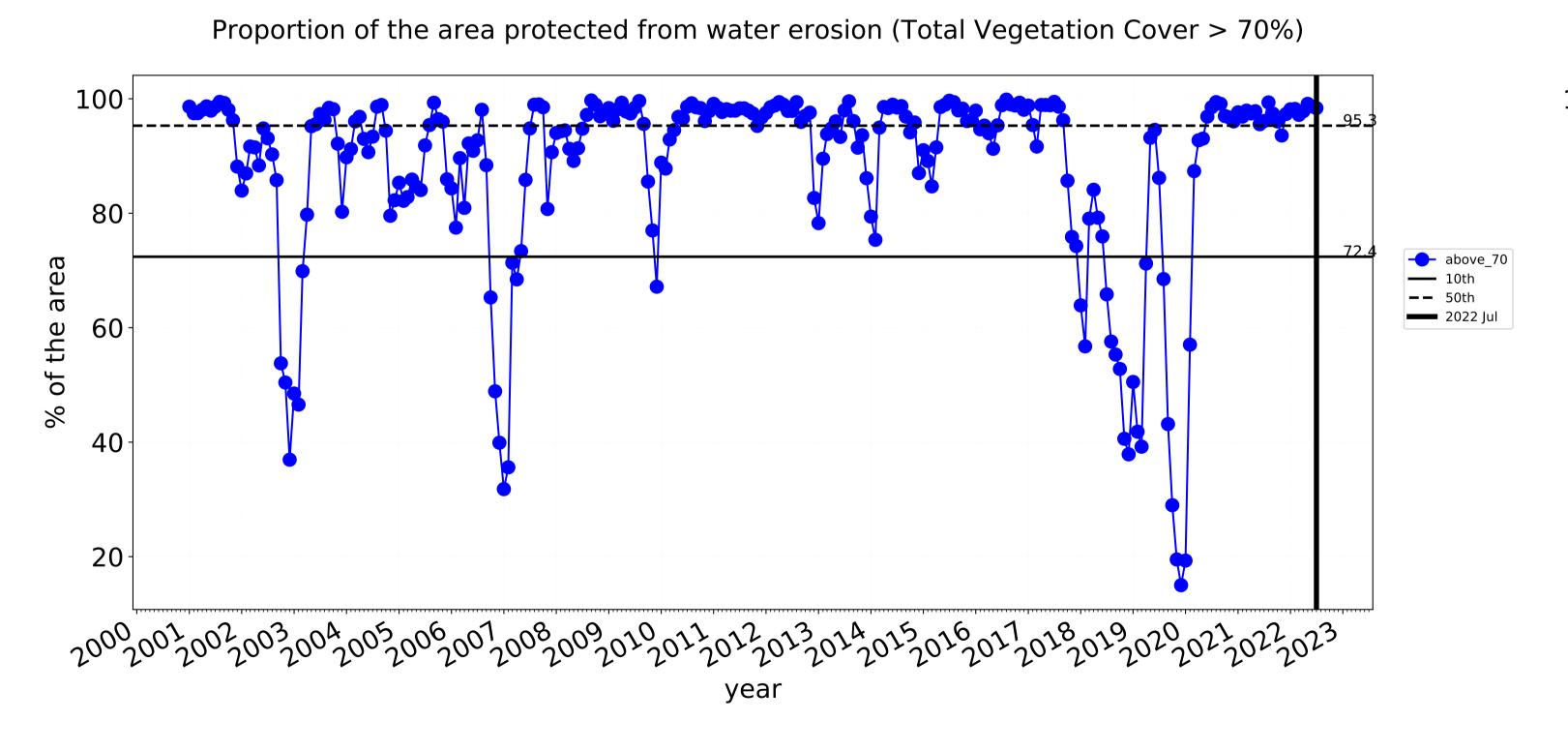


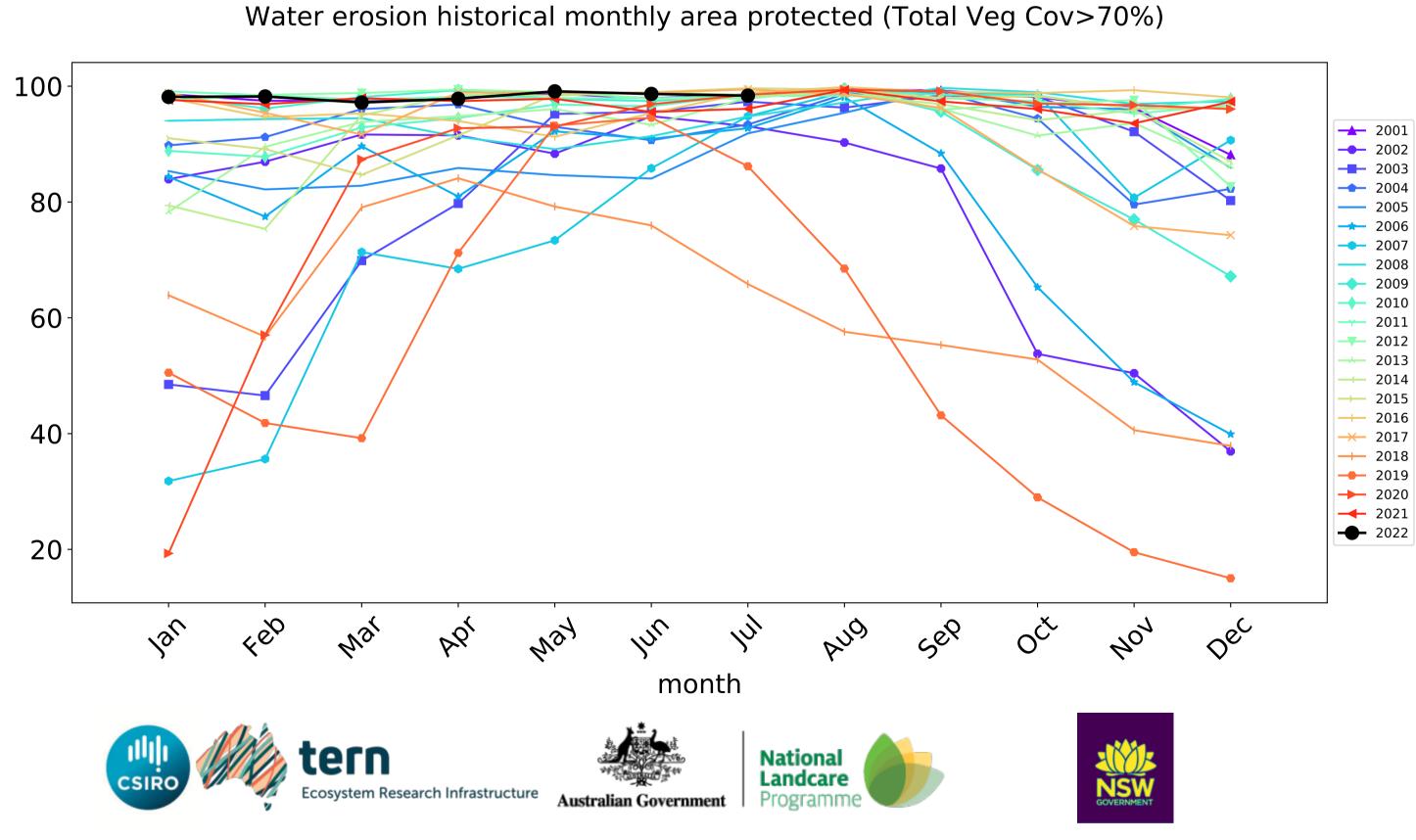


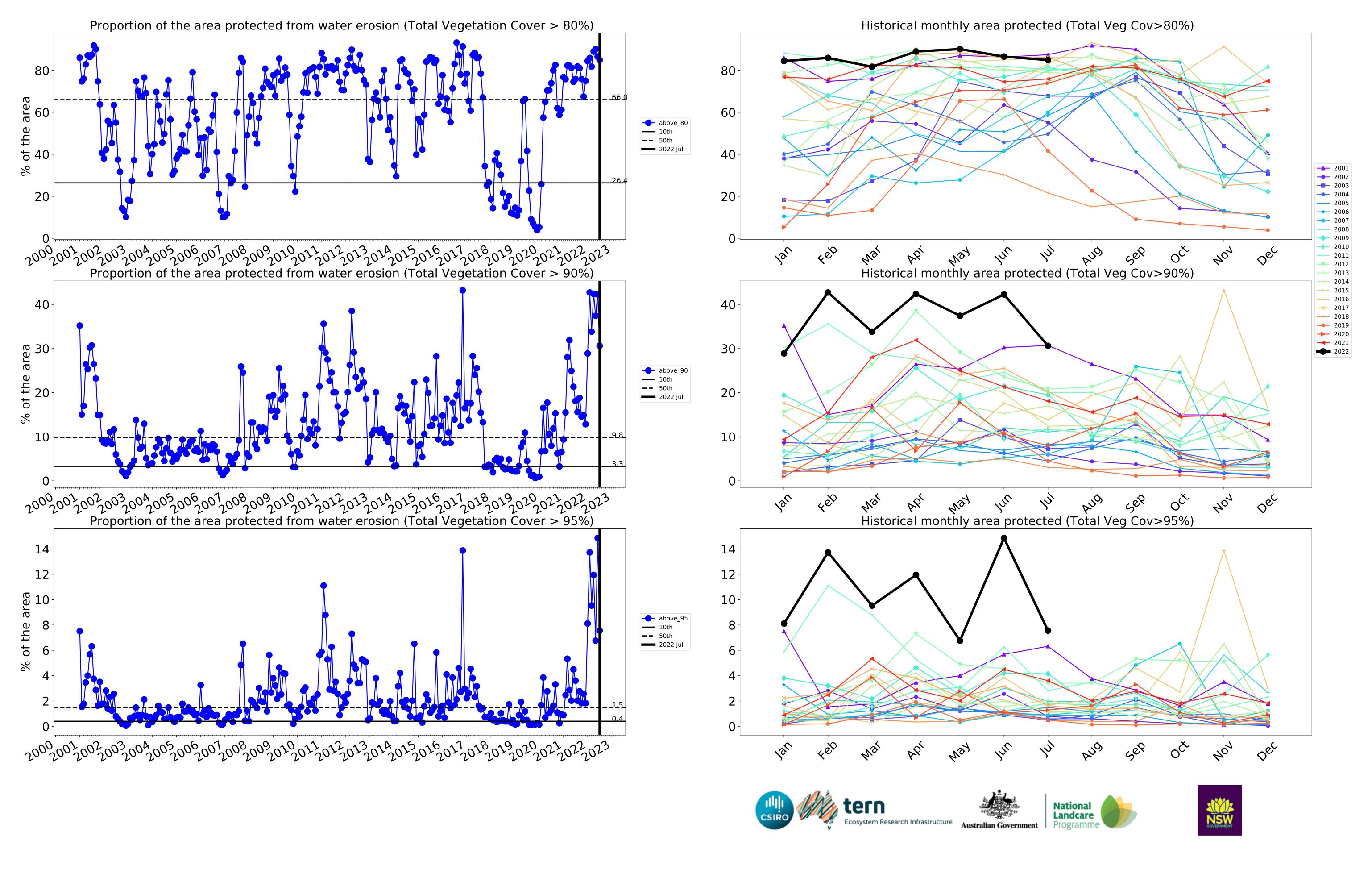
Cropping timeseries







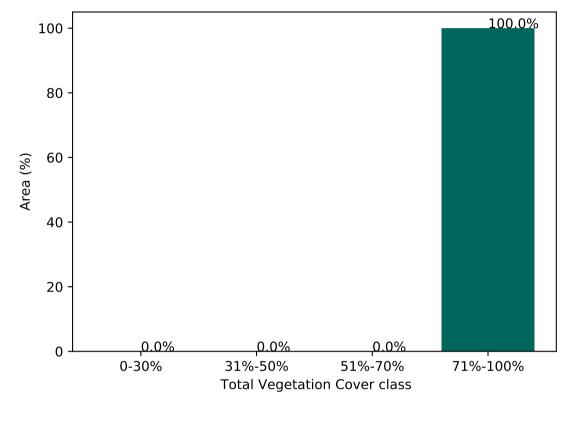




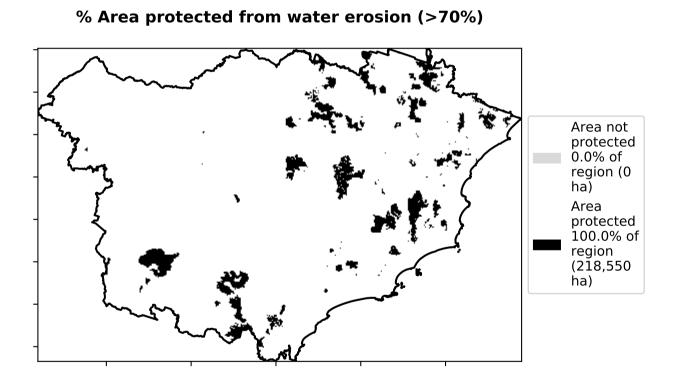
Production native forests and plantation forests

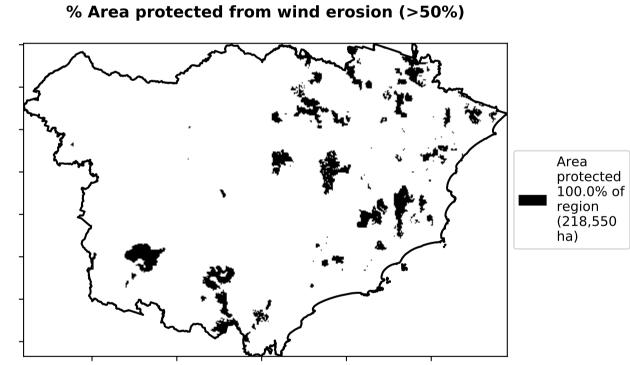
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Production native forests and plantation forests Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

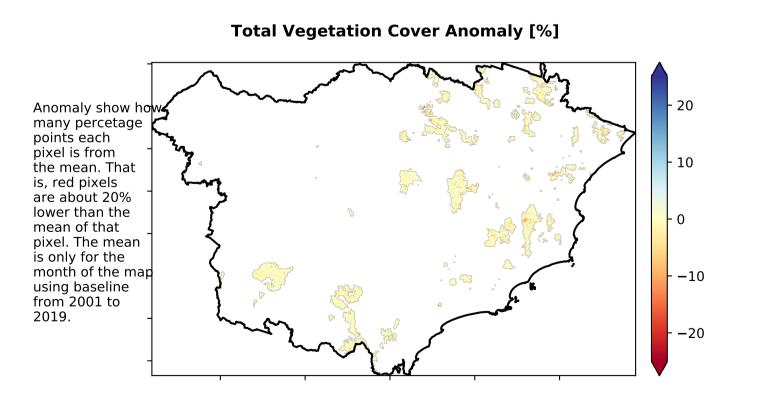
Total Vegetation Cover [%]

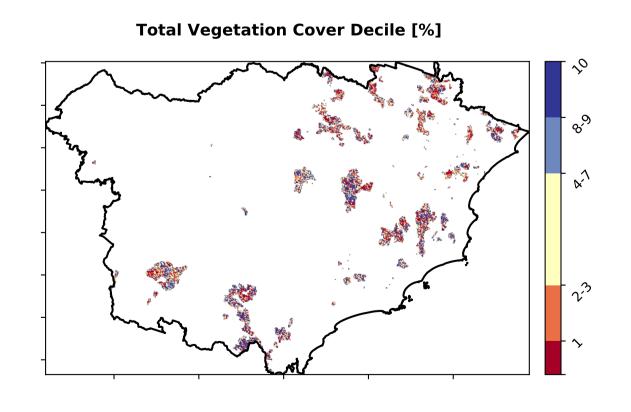


Proportion of vegetation cover class in area









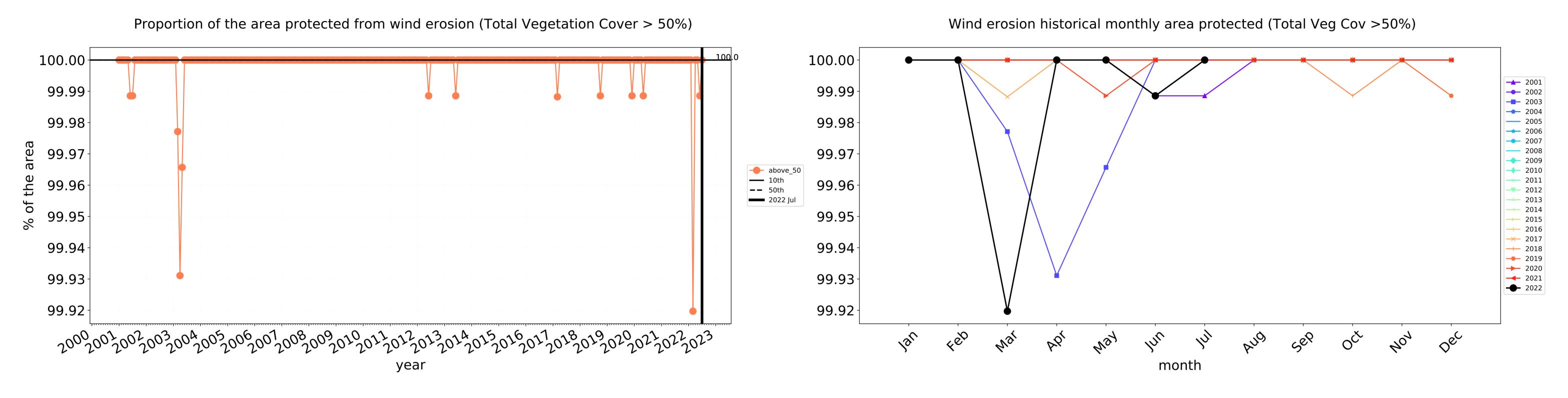


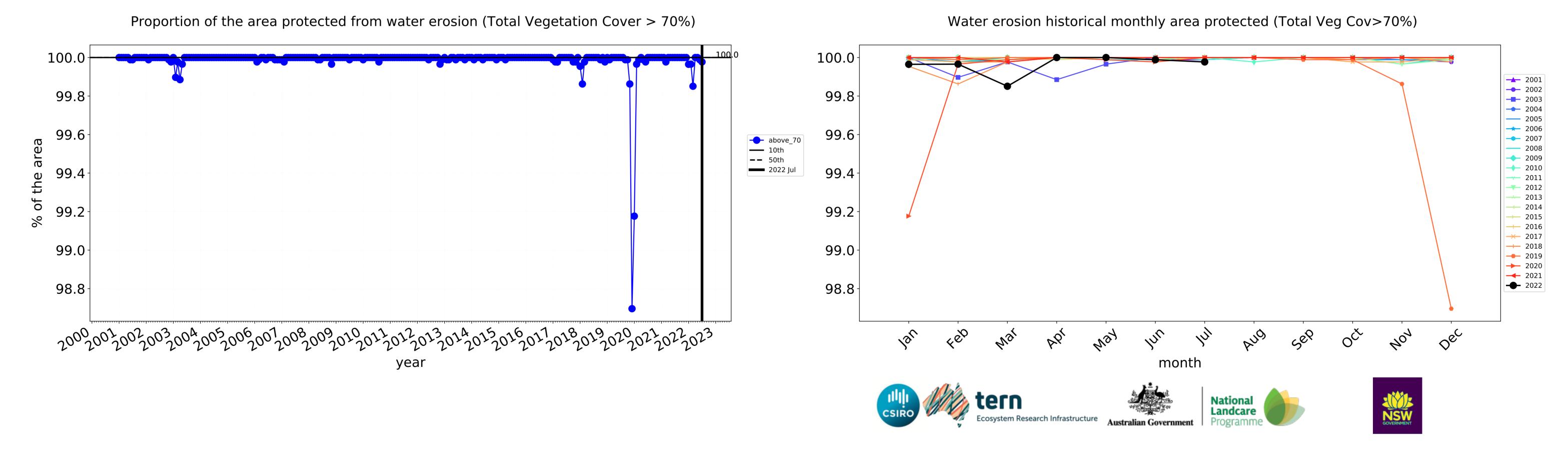


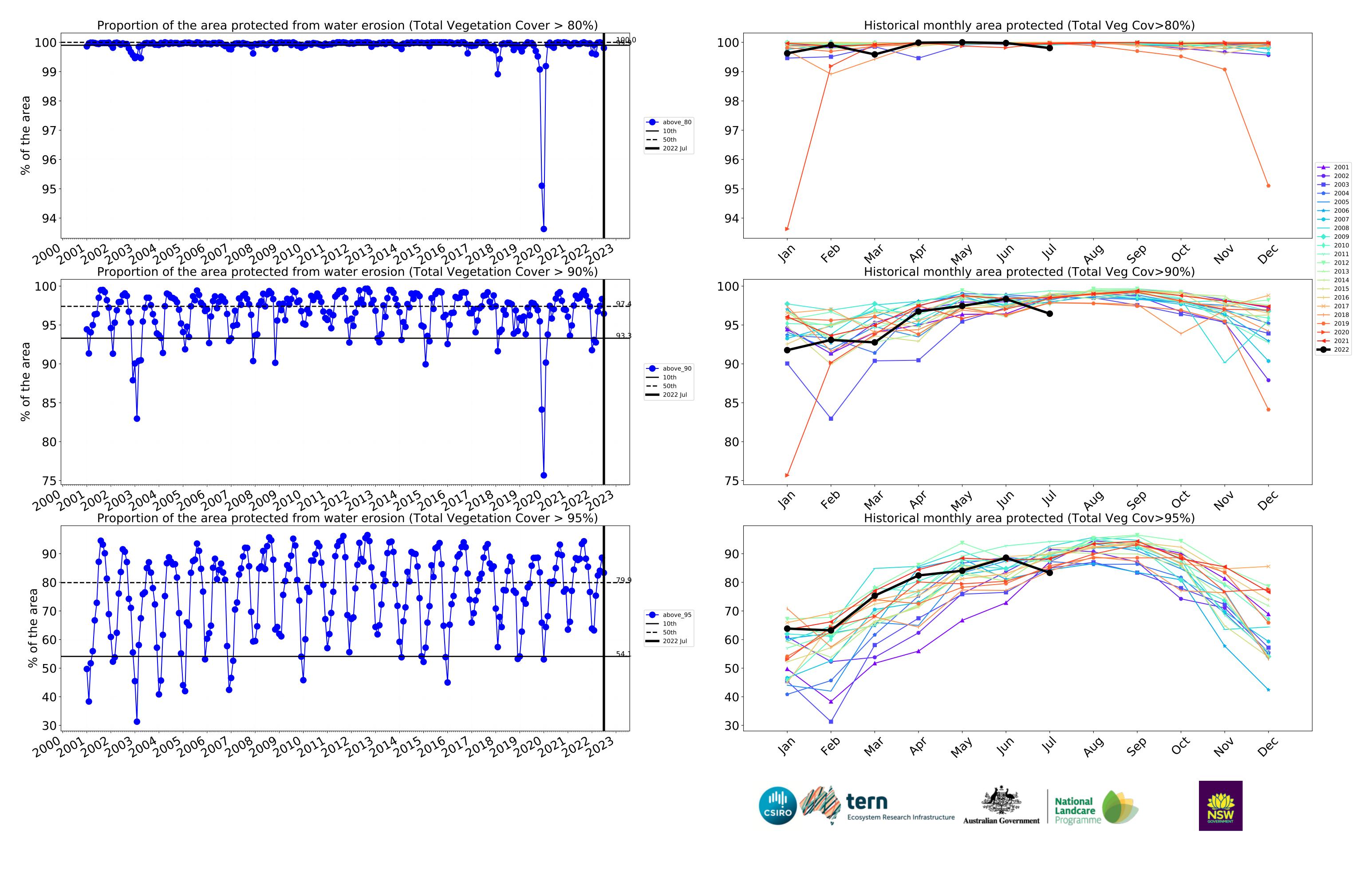




Production native forests and plantation forests timeseries







Hunter (3,240,275 ha and no data 60,150 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	3,240,275	99.9% 3,236,250	99.6% 3,227,725	98.6% 3,194,100	96.1% 3,112,750	80.6% 2,611,475	51.6% 1,671,850
Conservation and natural environments	1,241,125	99.9% 1,240,250	99.9% 1,239,450	99.7% 1,237,200	99.2% 1,231,100	92.9% 1,153,175	69.4% 861,600
Conservation and natural environments non forest	30,150	97.7% 29,450	96.1% 28,975	93.1% 28,075	87.7% 26,450	69.2% 20,875	37.8% 11,400
Conservation and natural environments Woodland forest	138,925	99.9% 138,850	99.9% 138,800	99.7% 138,550	99.3% 137,950	89.2% 123,975	50.7% 70,450
Conservation and natural environments Forest (non woodland)	1,072,050	100.0% 1,071,950	100.0% 1,071,675	99.9% 1,070,575	99.5% 1,066,700	94.1% 1,008,325	72.7% 779,750
Agriculture	1,580,850	100.0% 1,580,575	99.9% 1,579,575	99.4% 1,571,300	96.7% 1,528,925	74.1% 1,171,850	37.6% 595,025
Grazing	1,502,850	100.0% 1,502,575	99.9% 1,501,600	99.5% 1,494,725	97.5% 1,464,550	76.6% 1,150,575	39.2% 589,650
Grazing non forest	1,213,025	100.0% 1,212,750	99.9% 1,211,825	99.4% 1,205,550	97.2% 1,178,950	75.1% 911,250	37.7% 457,375
Grazing Woodland forest	120,675	100.0% 120,675	100.0% 120,625	99.6% 120,250	98.2% 118,450	77.2% 93,175	33.0% 39,875
Grazing - Forest (non woodland)	169,150	100.0% 169,150	100.0% 169,150	99.9% 168,925	98.8% 167,150	86.4% 146,150	54.6% 92,400
Cropping	50,625	100.0% 50,625	100.0% 50,625	98.4% 49,800	84.9% 42,975	30.6% 15,500	7.6% 3,825
Production native forests and plantation forests	218,550	100.0% 218,550	100.0% 218,550	100.0% 218,500	99.8% 218,125	96.5% 210,800	83.3% 182,125







