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: August 2019

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







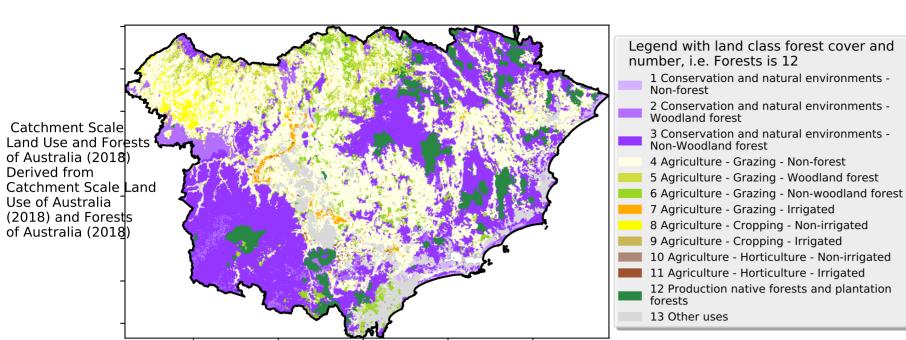




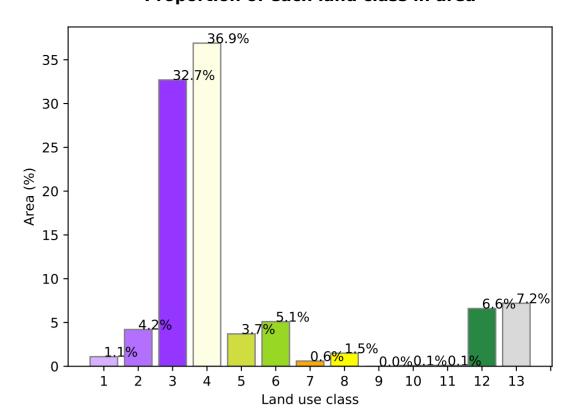


Vegetation Cover Aug 2019

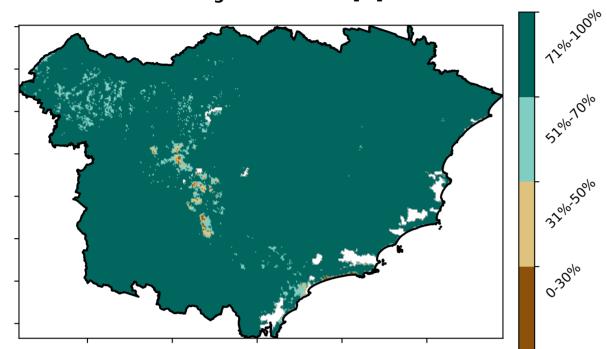
Land use and forest cover



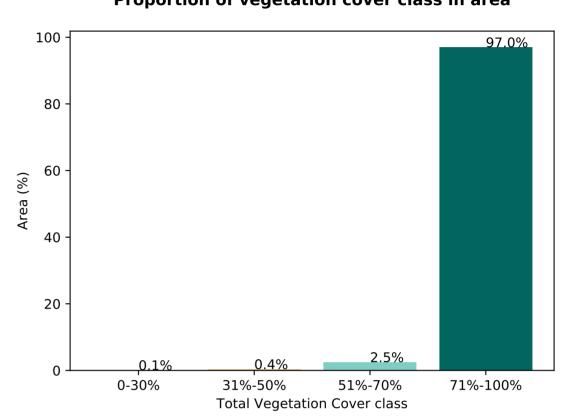
Proportion of each land class in area



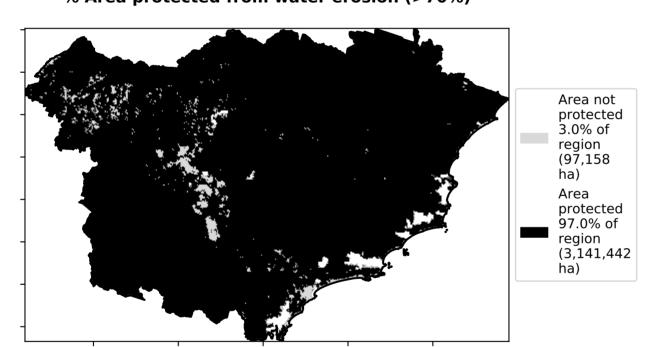
Total Vegetation Cover [%]



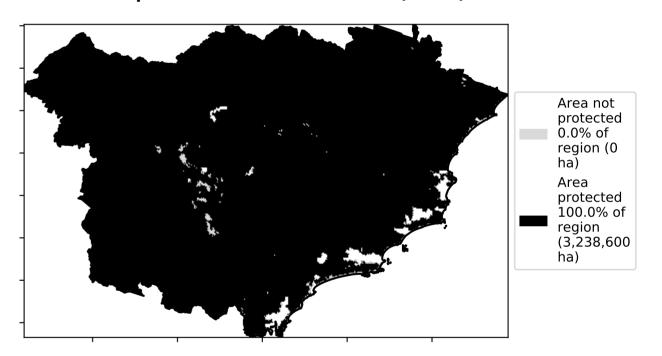
Proportion of vegetation cover class in area



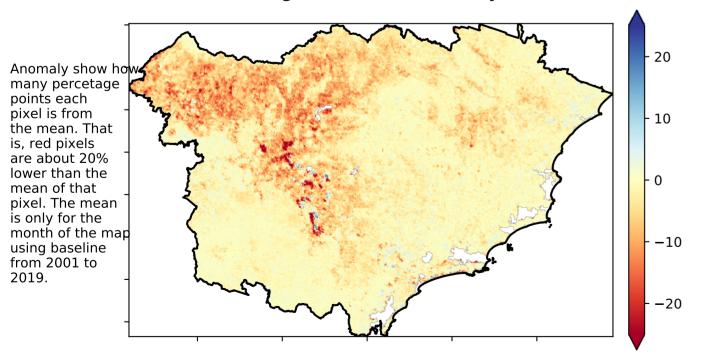
% Area protected from water erosion (>70%)

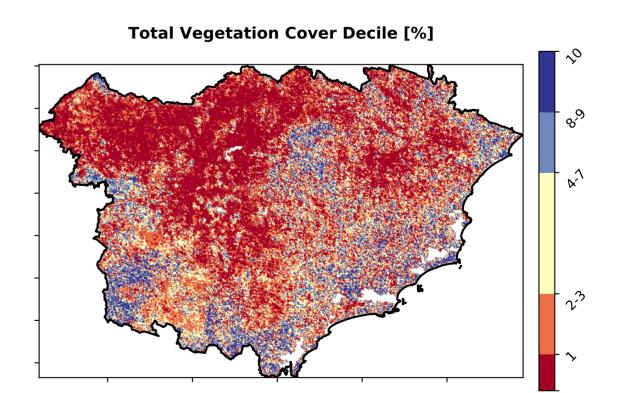


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]







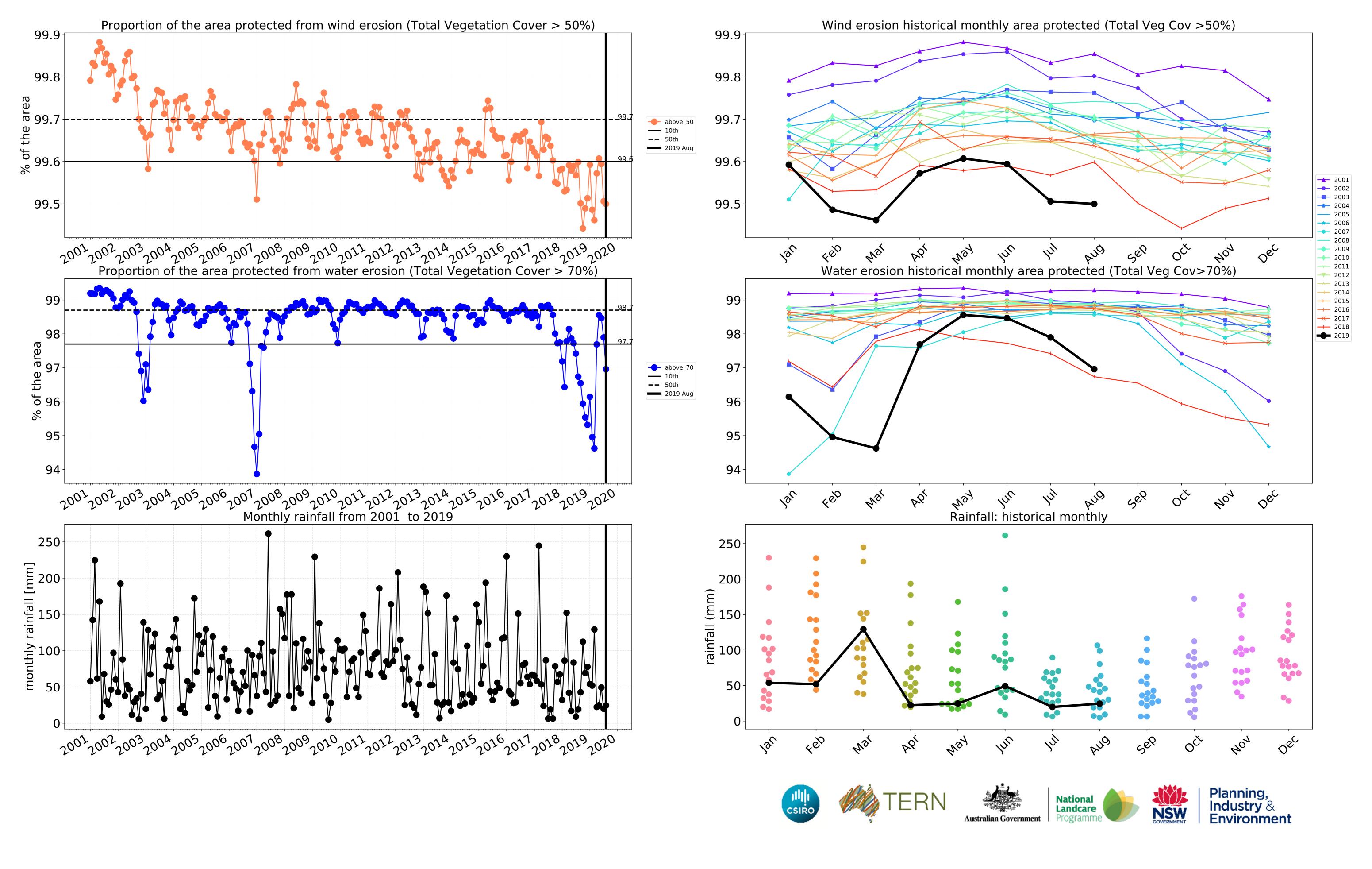


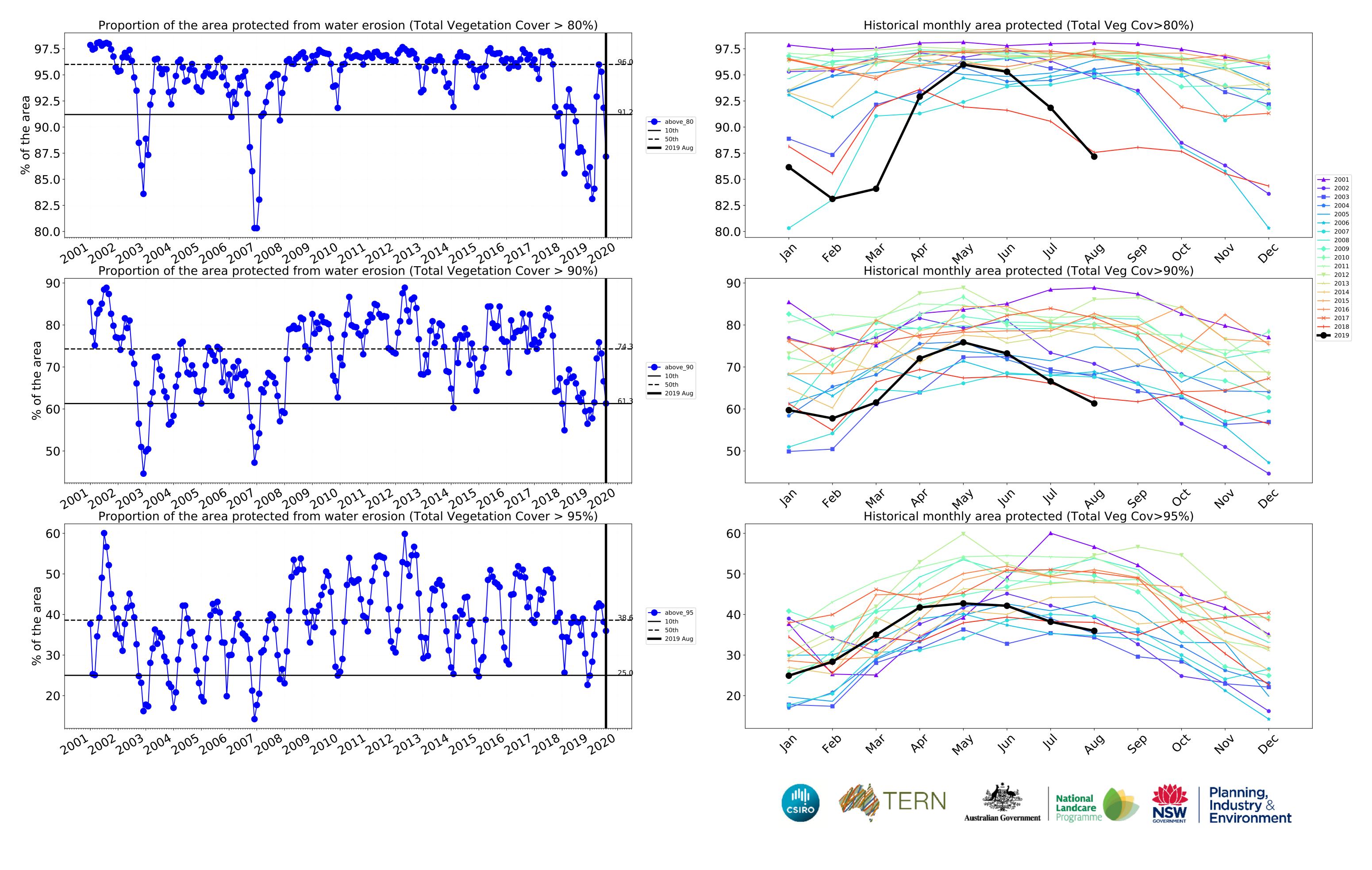




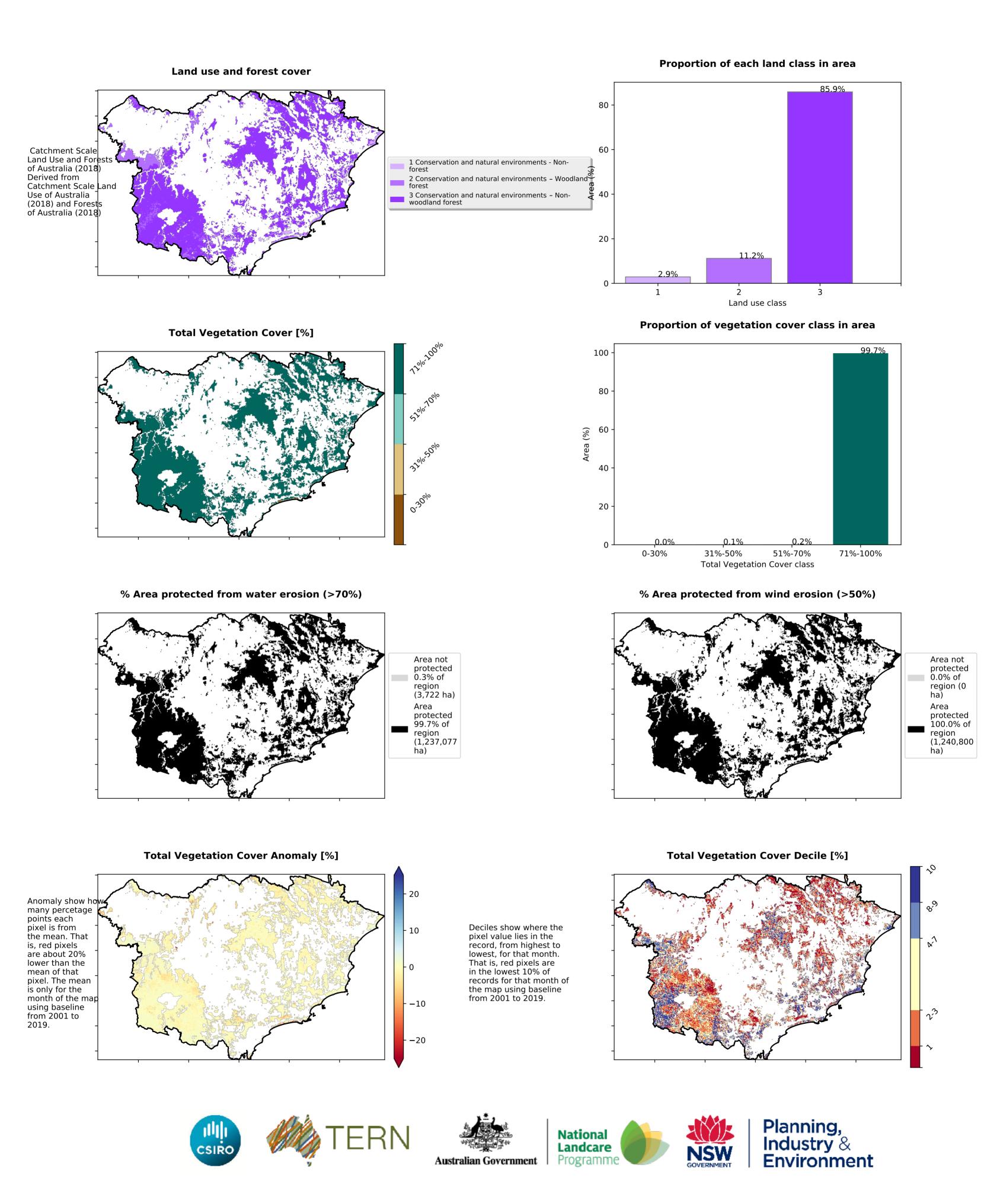




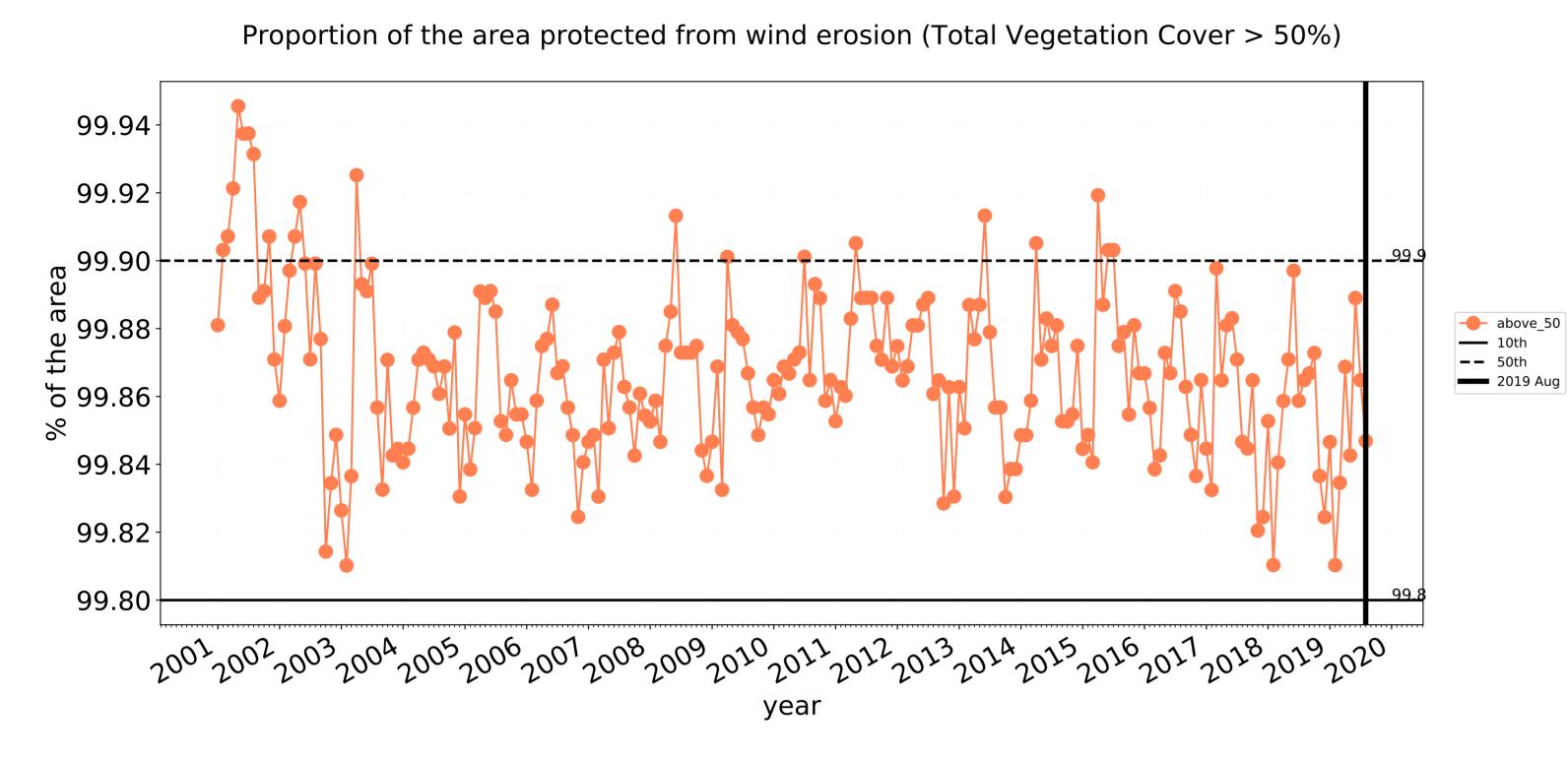




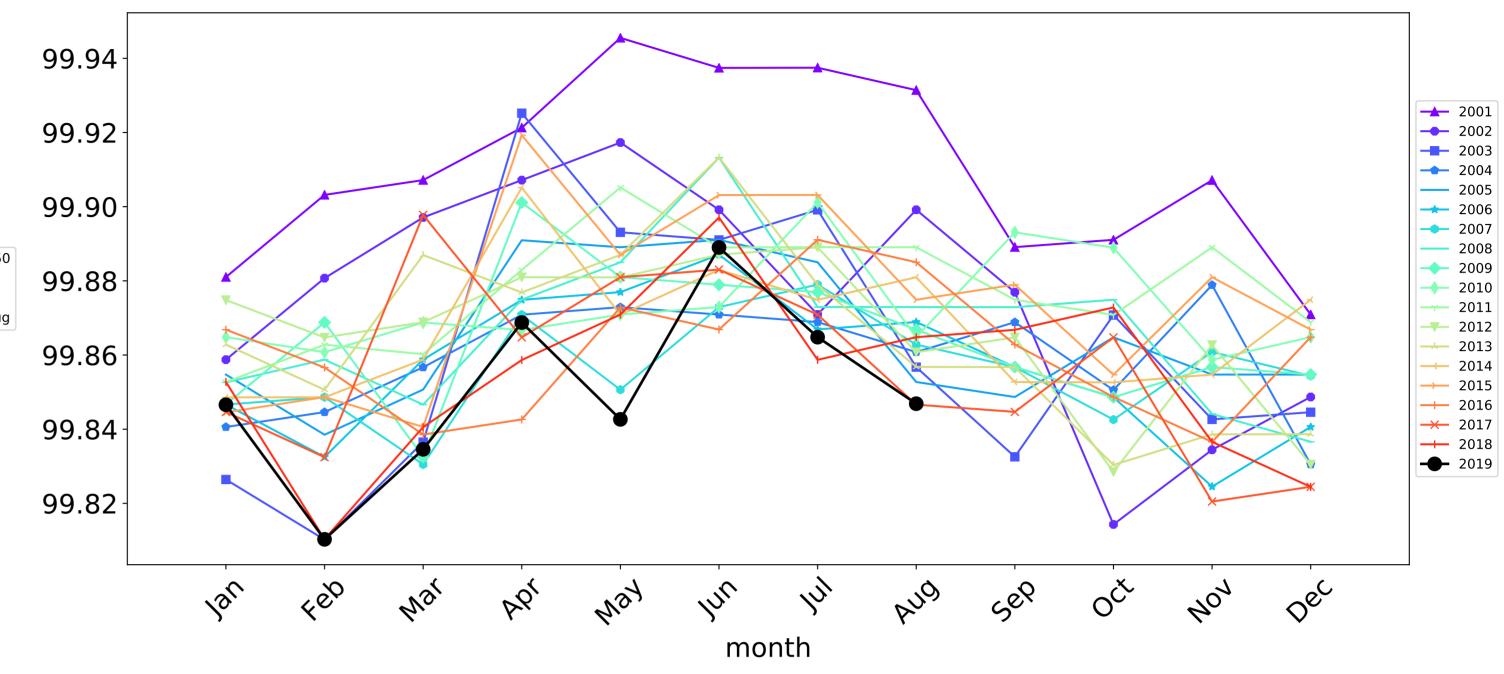
Conservation and natural environments

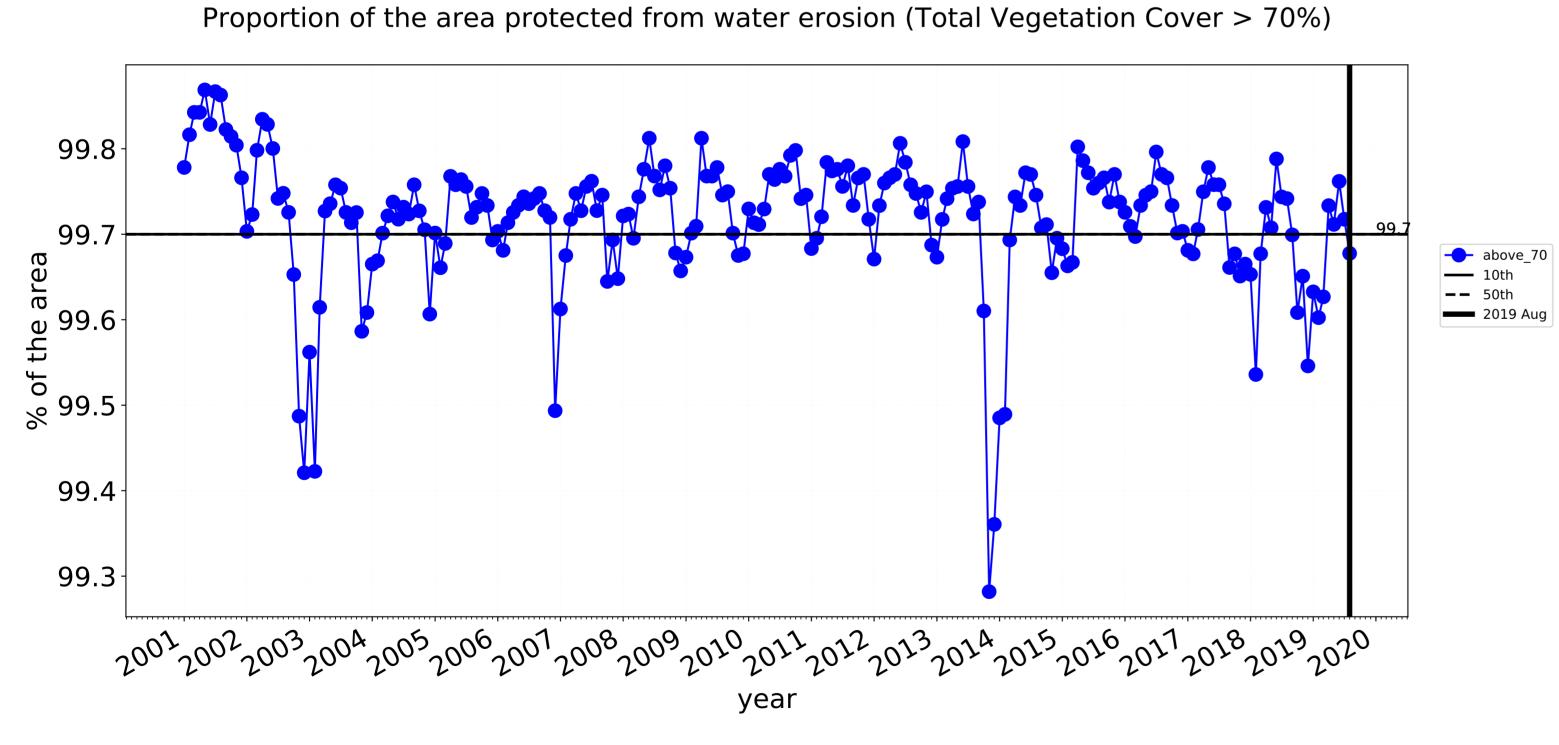


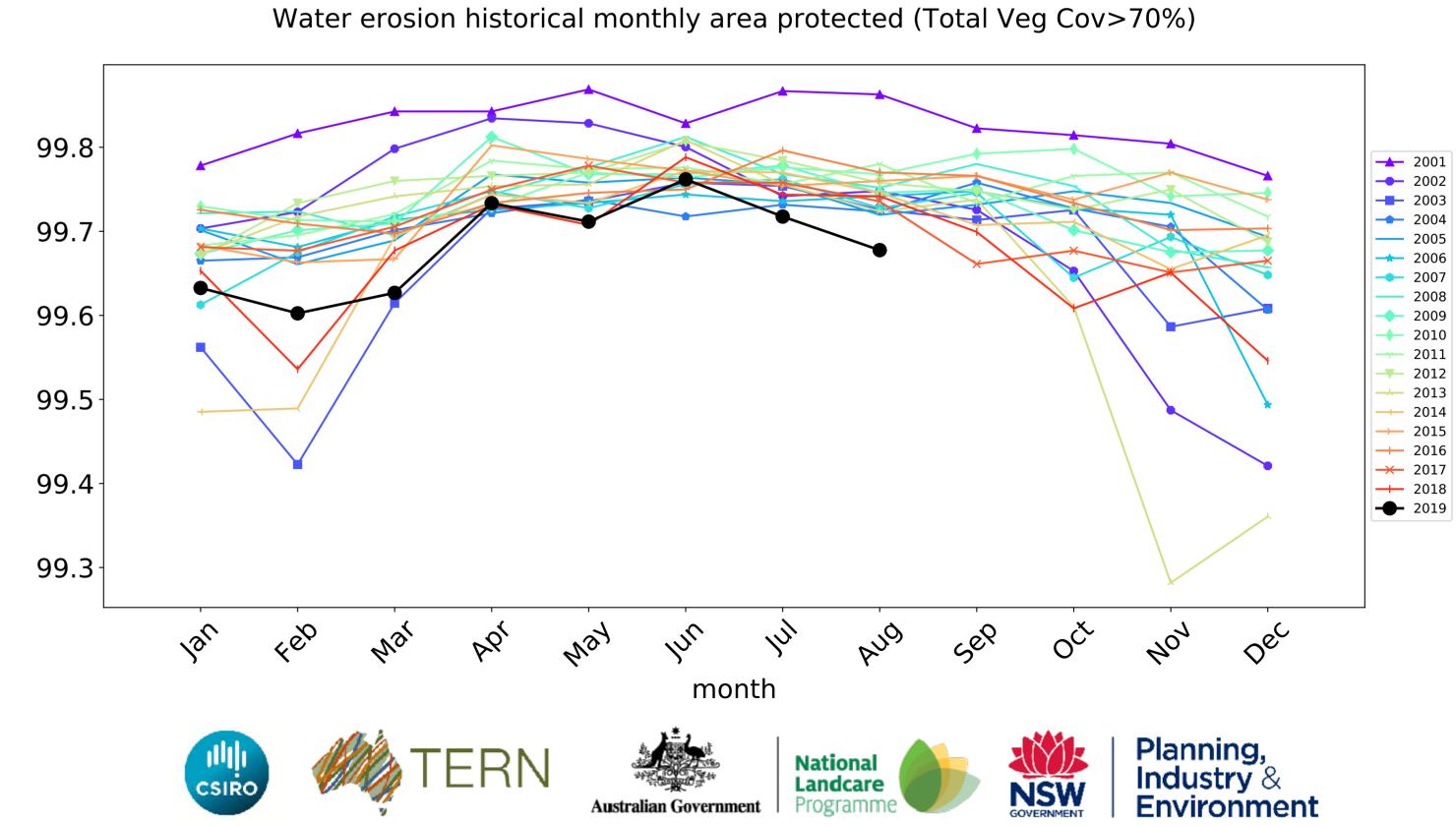
Conservation and natural environments timeseries

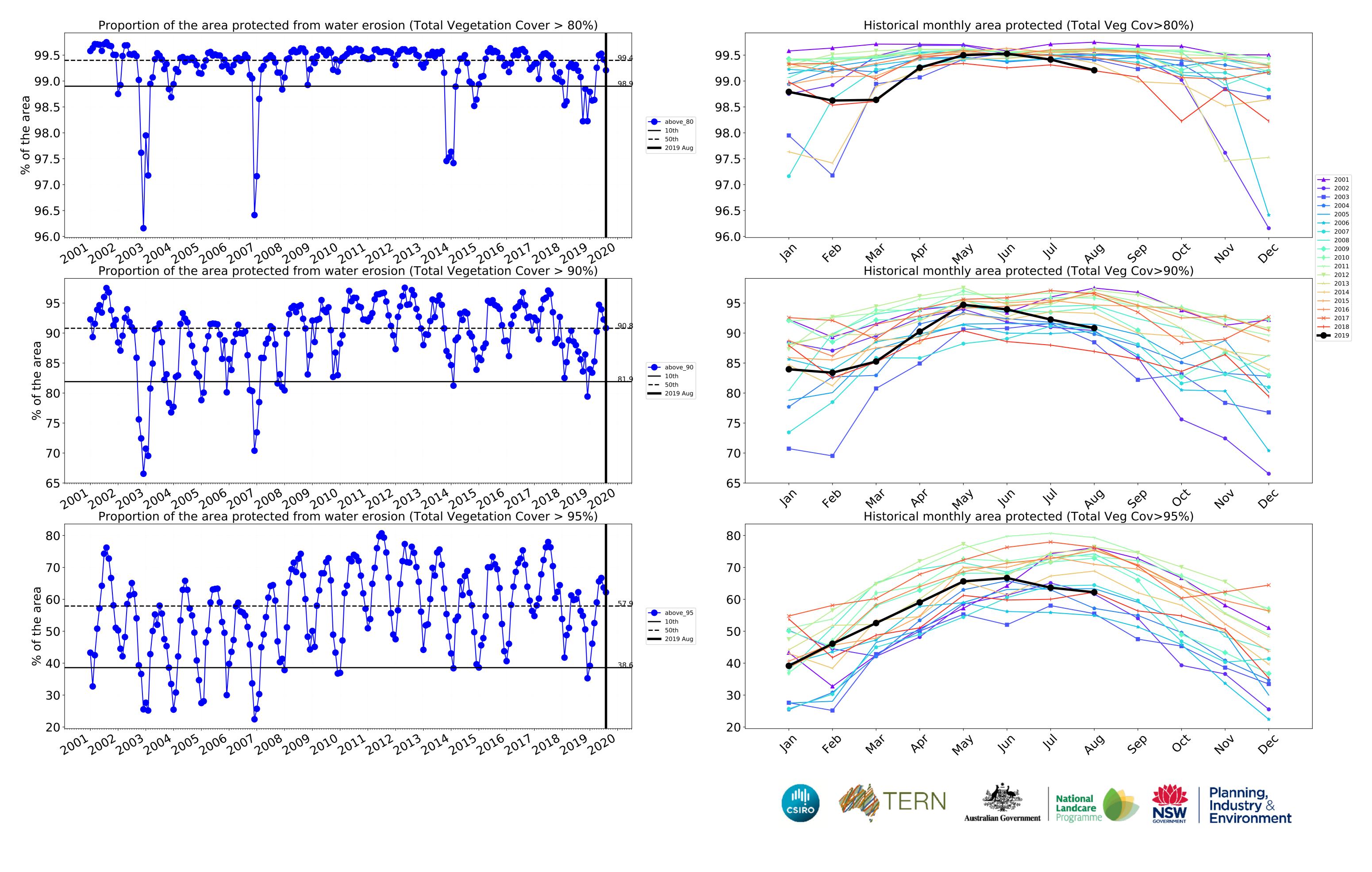


Wind erosion historical monthly area protected (Total Veg Cov >50%)





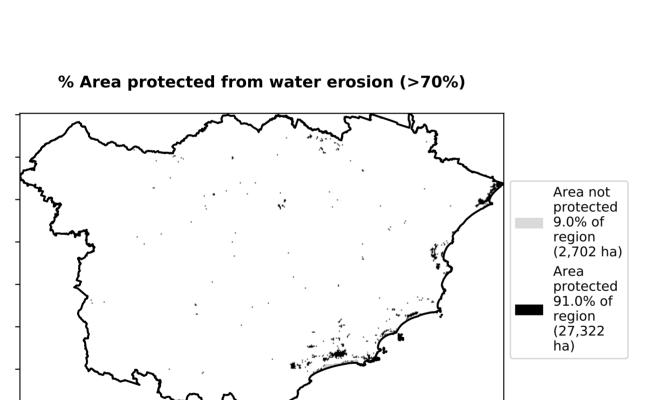


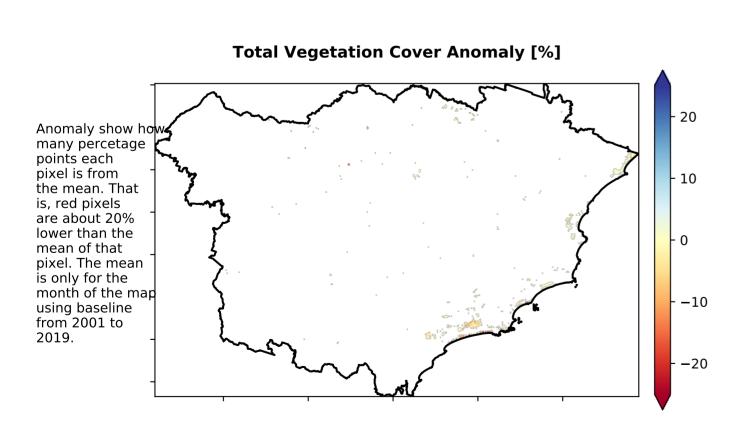


Conservation and natural environments non forest

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

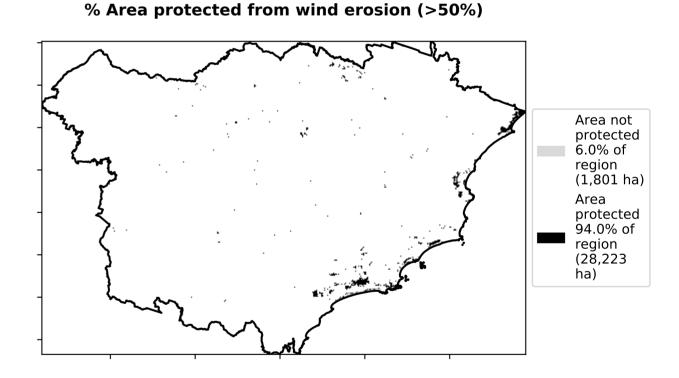
Total Vegetation Cover [%]

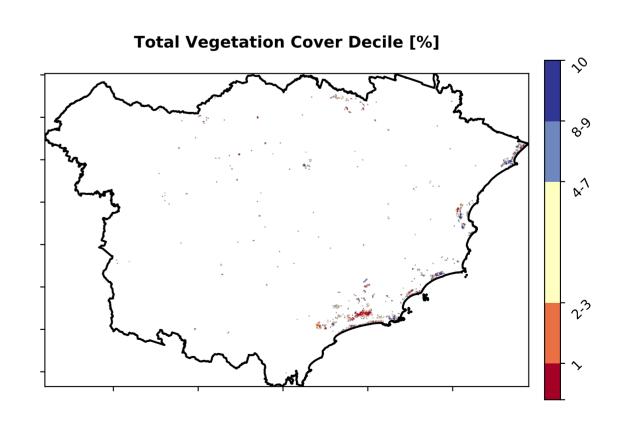




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area 91.0% 80 - 60 - 60 - 20 - 4.0% 0-30% 31%-50% Total Vegetation Cover class









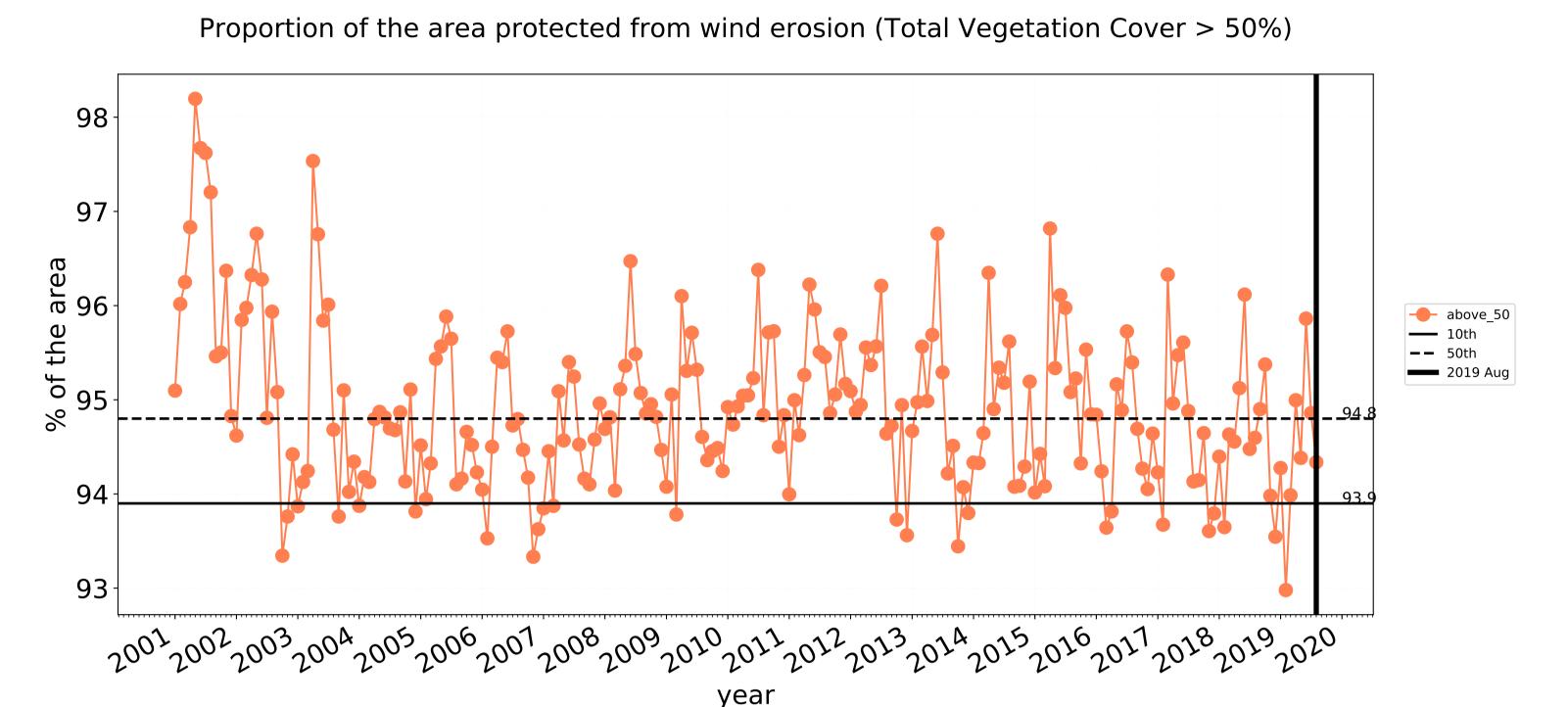




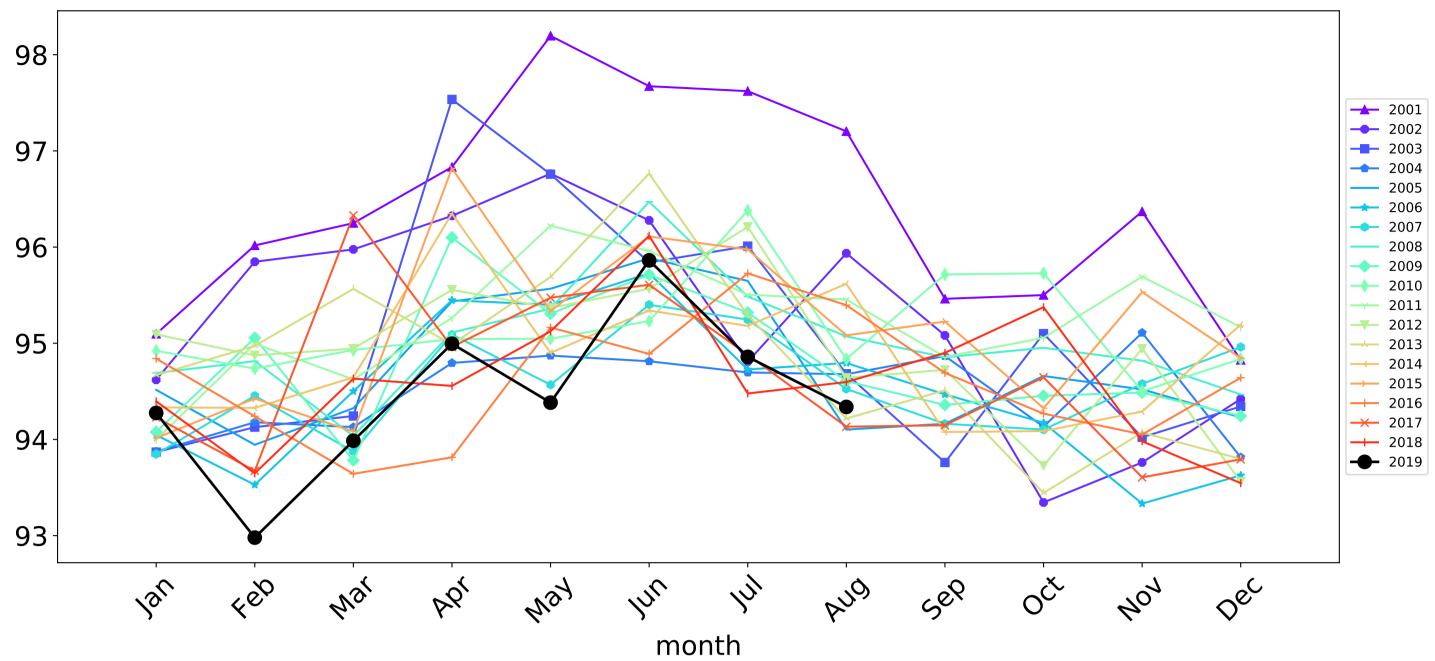




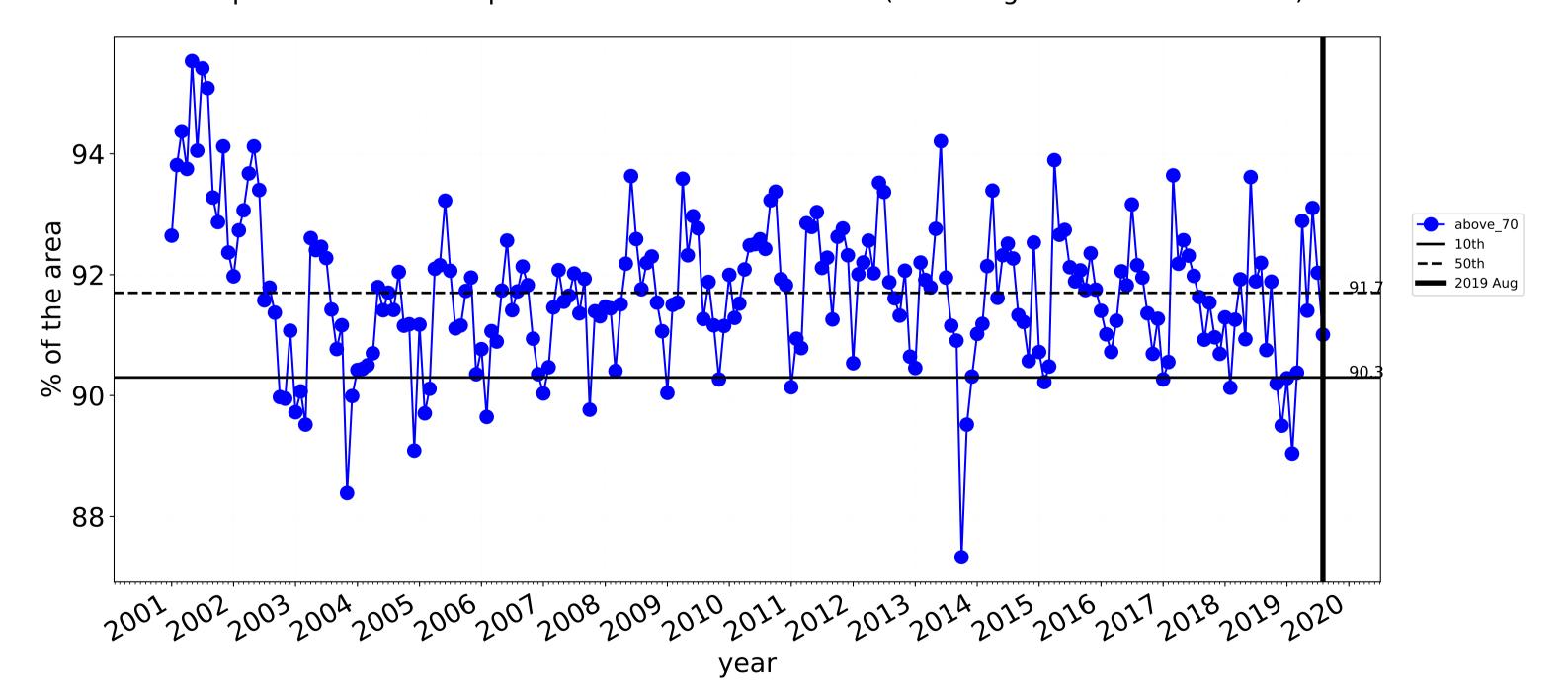
Conservation and natural environments non forest timeseries



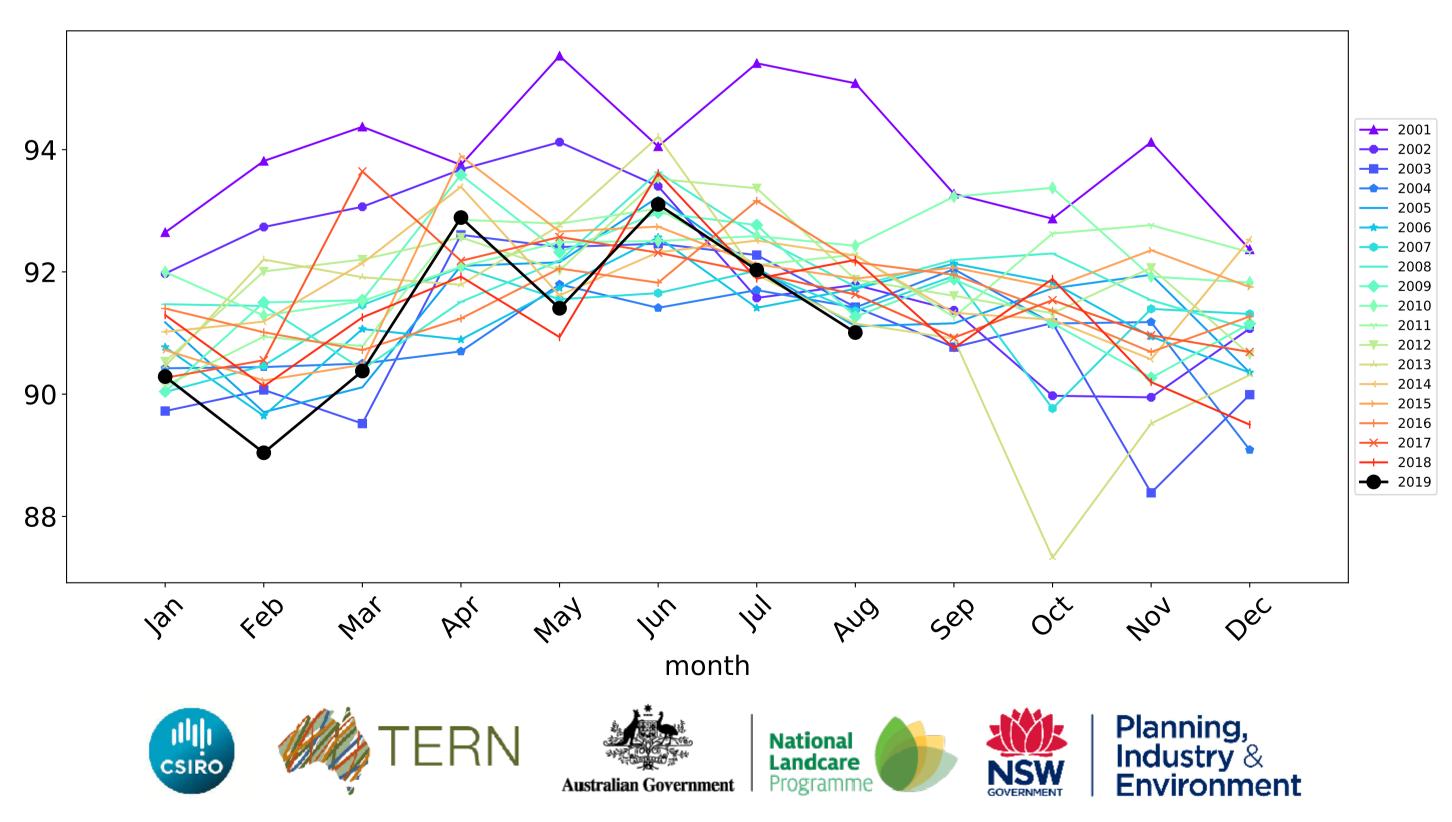


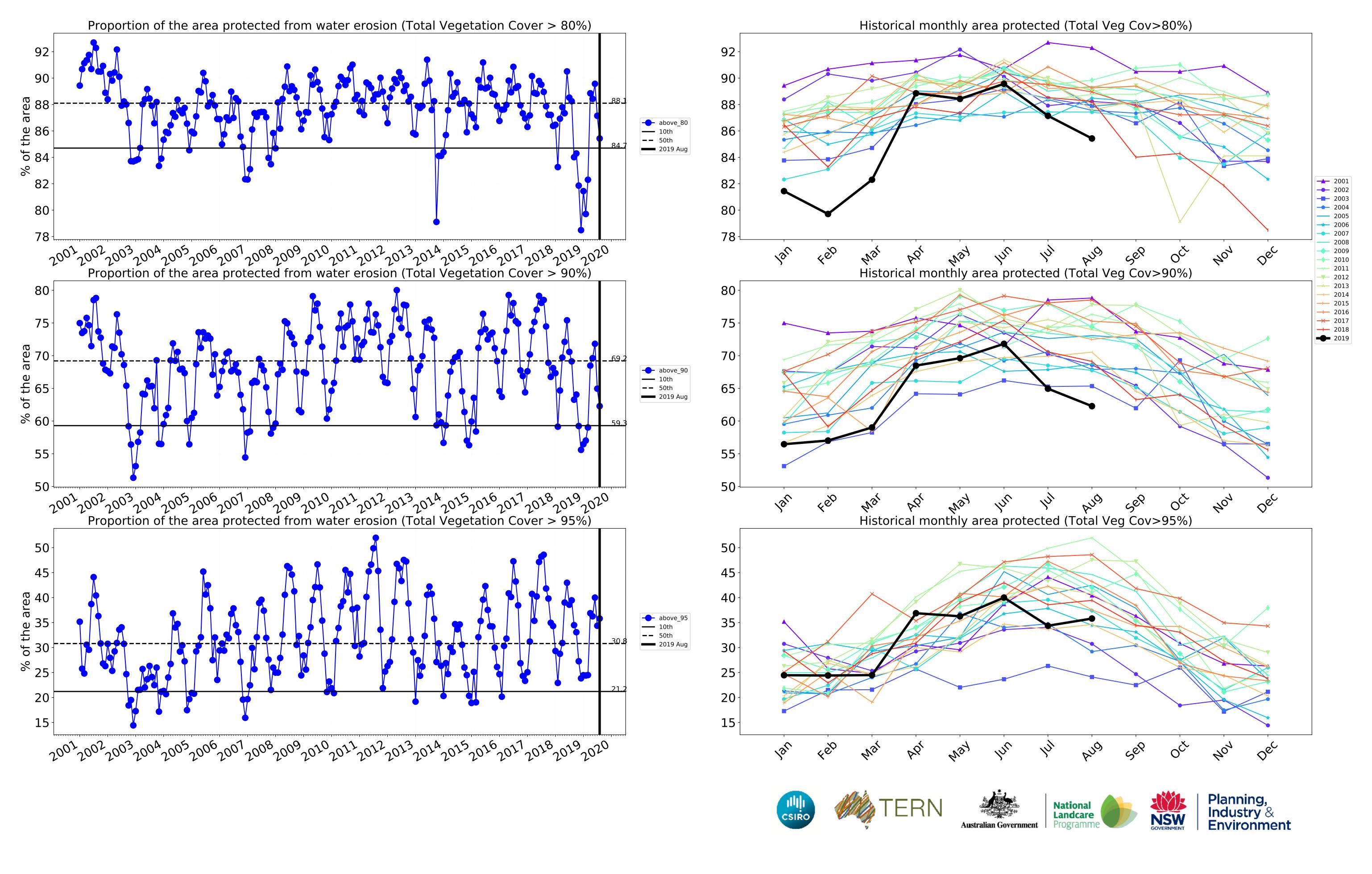


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

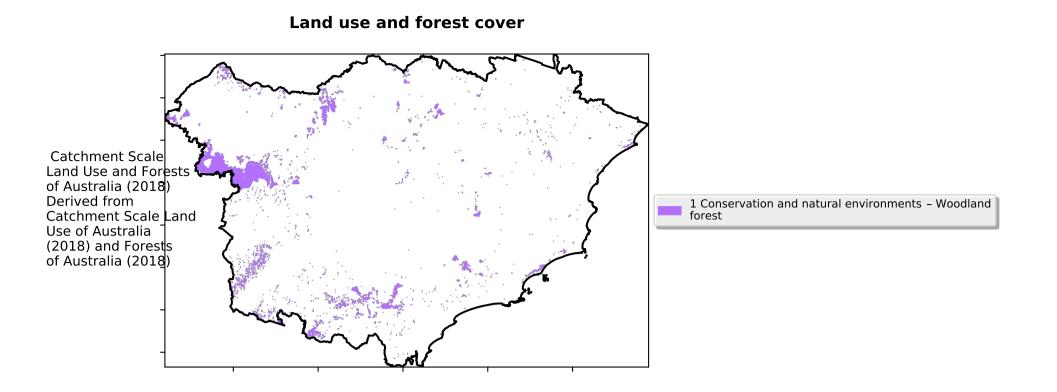


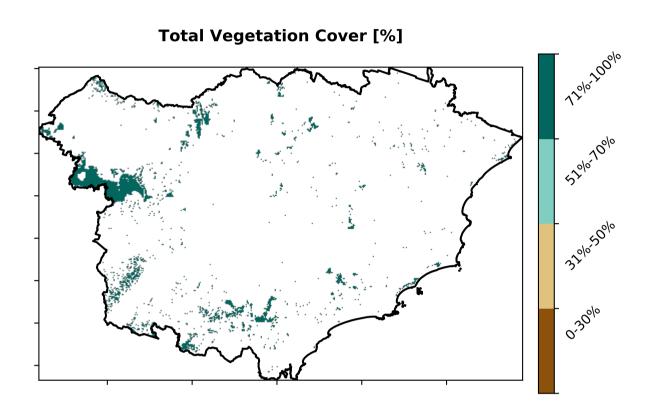
Water erosion historical monthly area protected (Total Veg Cov>70%)

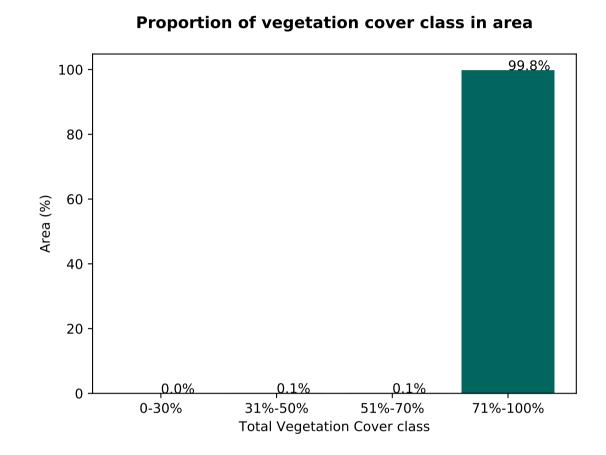


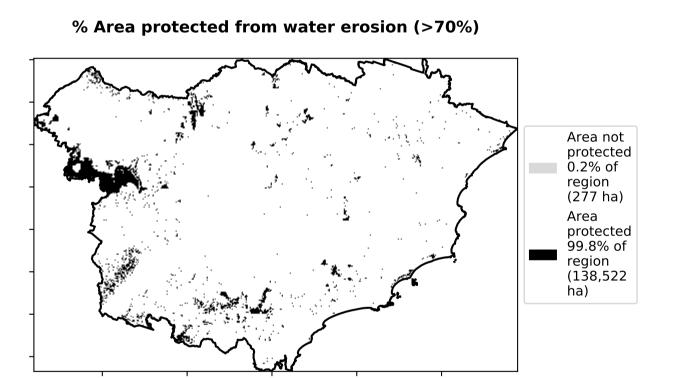


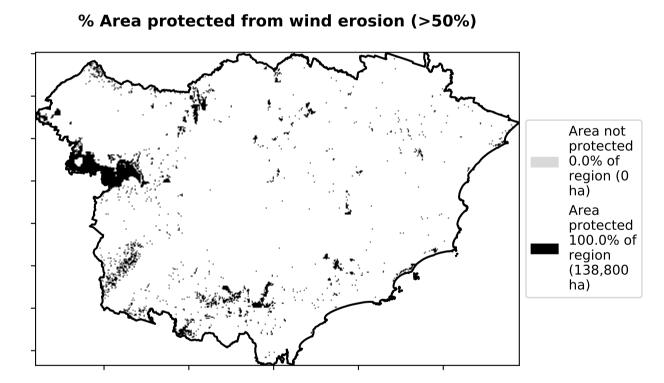
Conservation and natural environments Woodland forest

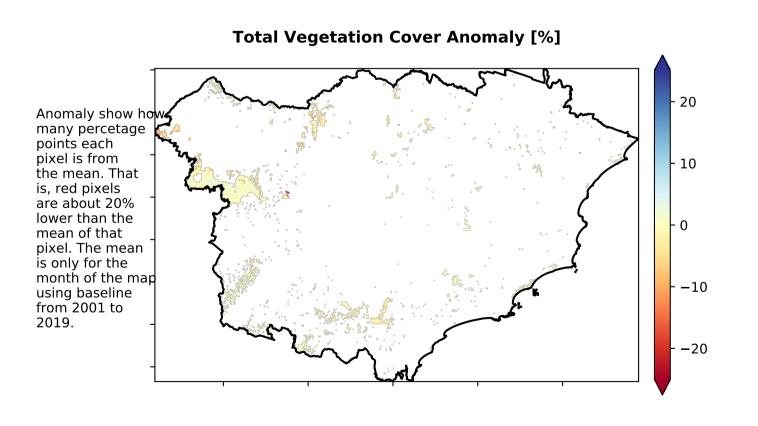


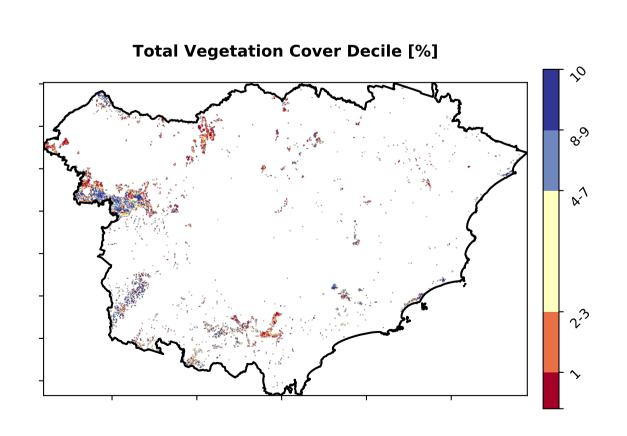














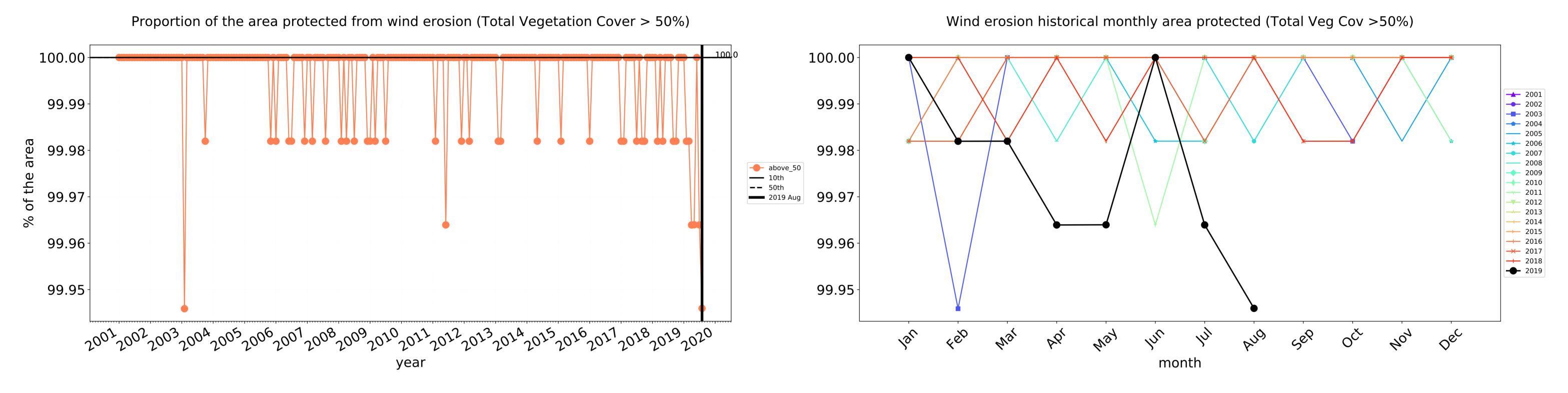


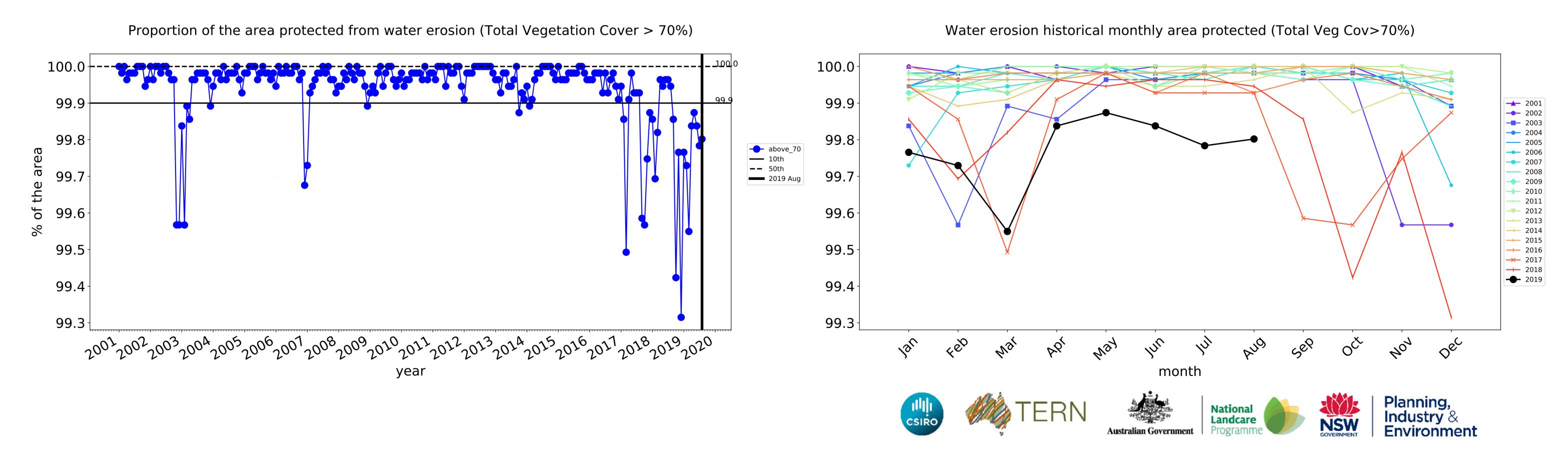


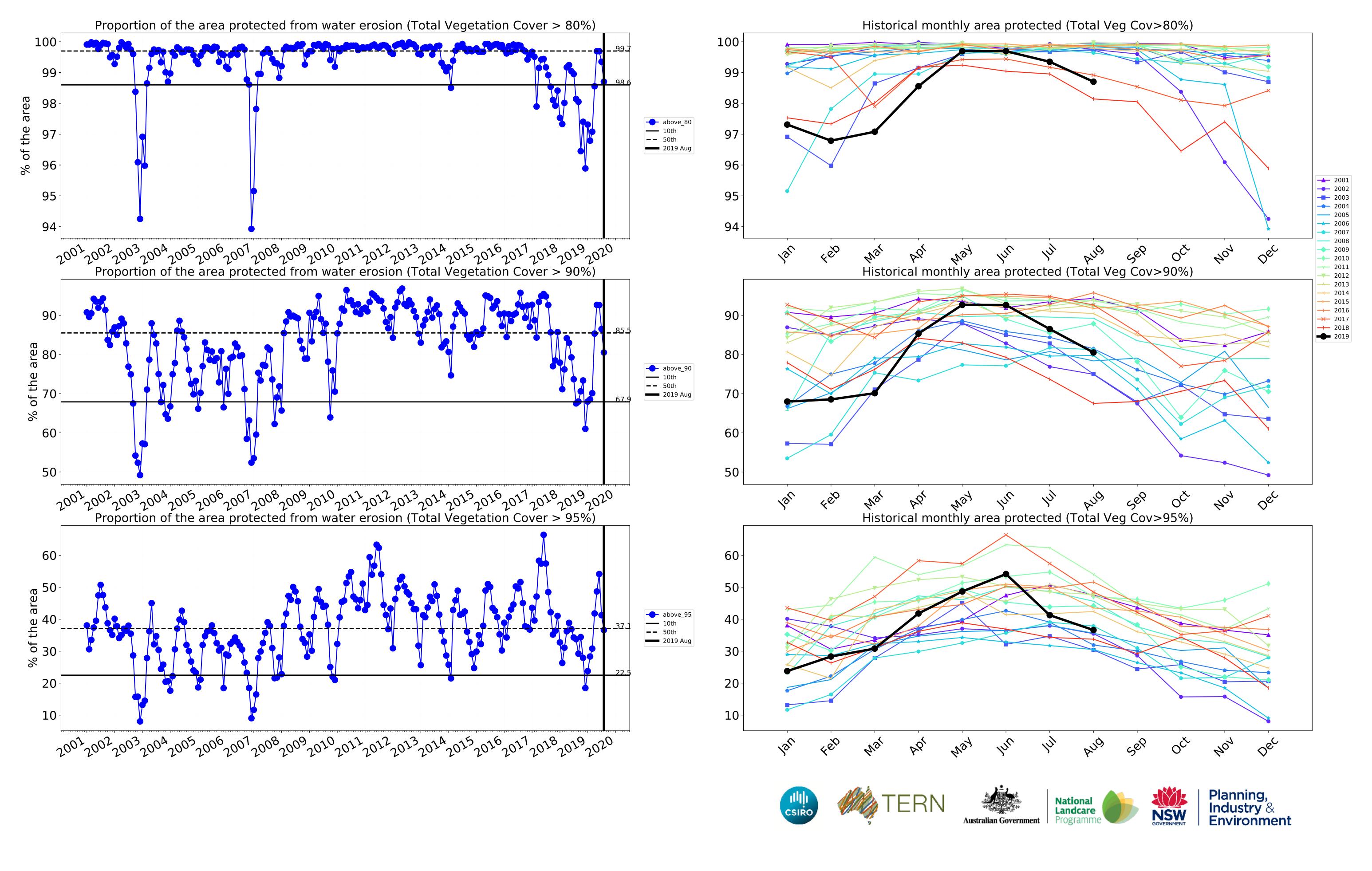


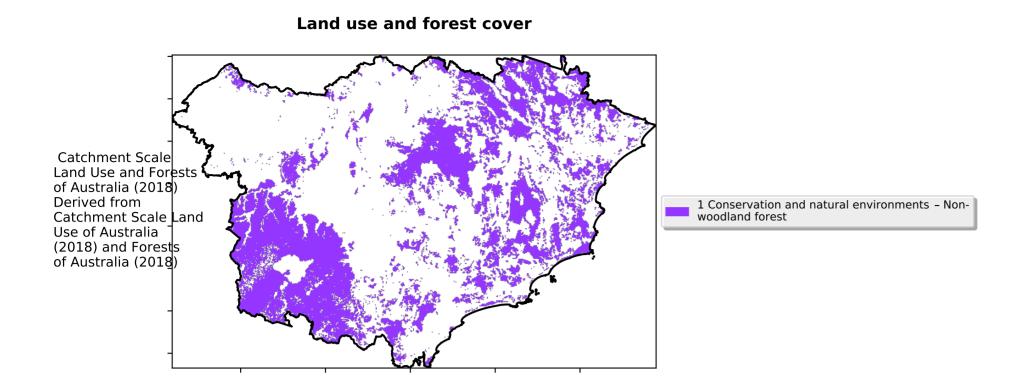




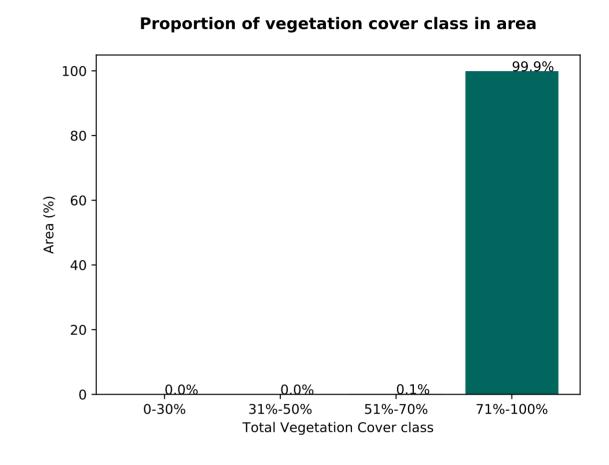


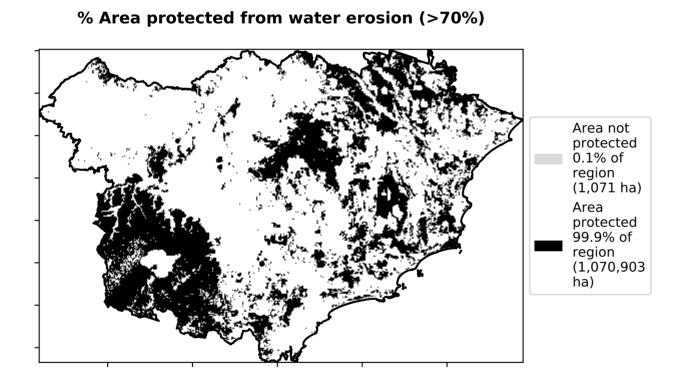


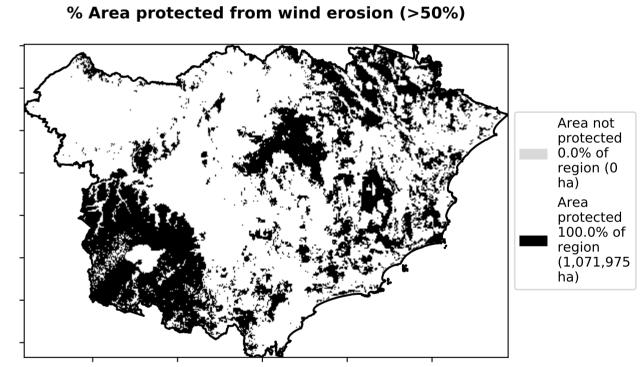


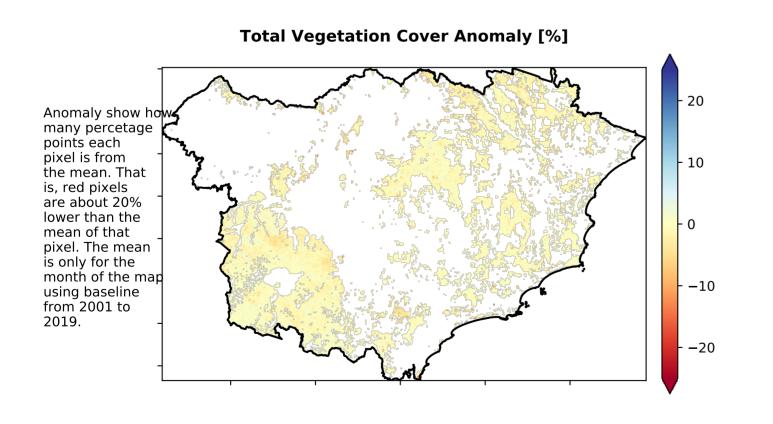


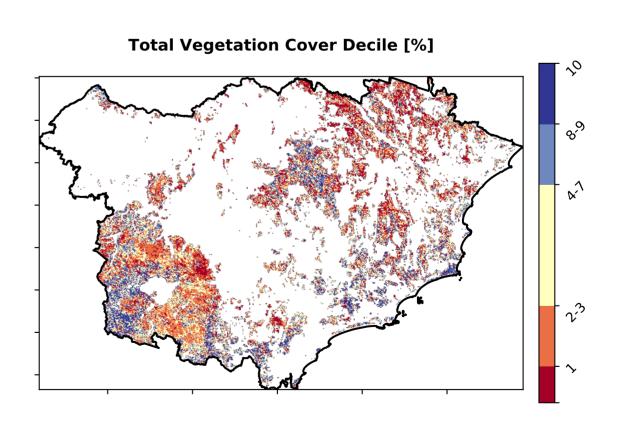
Total Vegetation Cover [%] Total Vegetation Cover [%] Total Vegetation Cover [%]













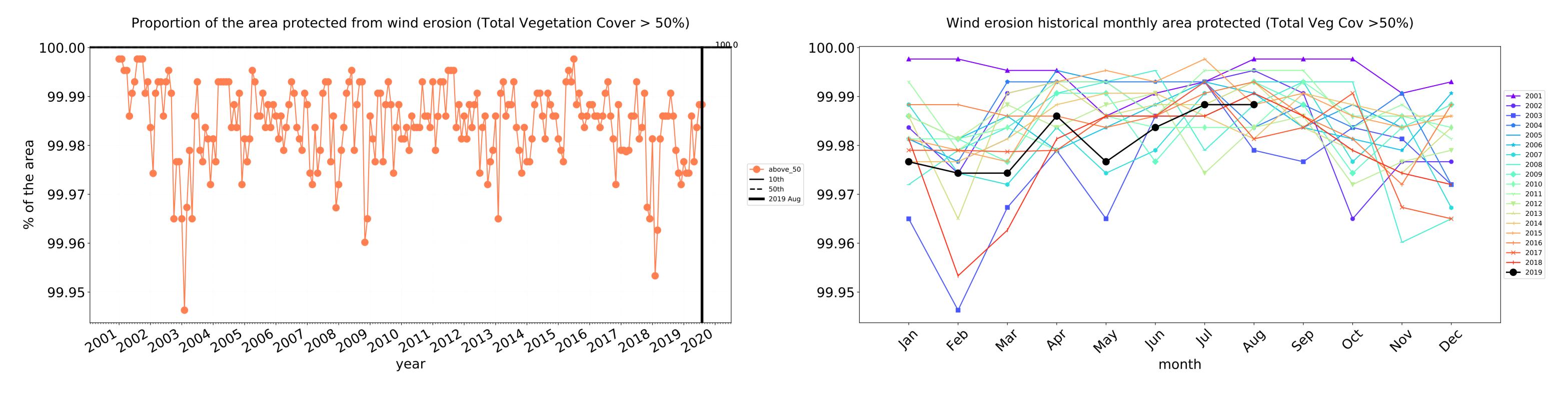


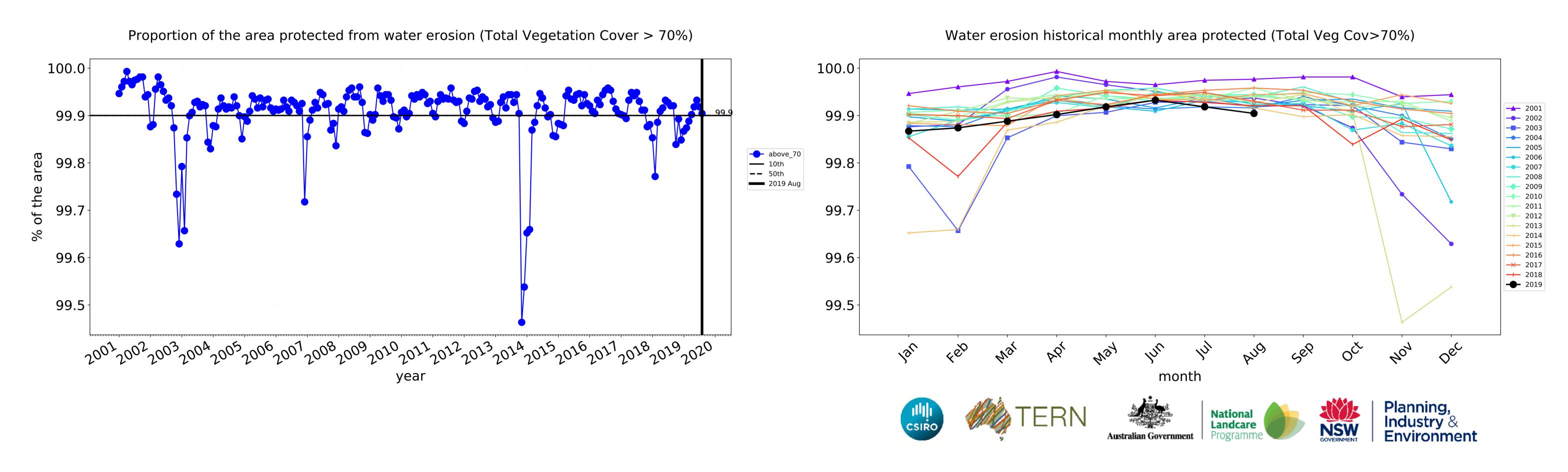


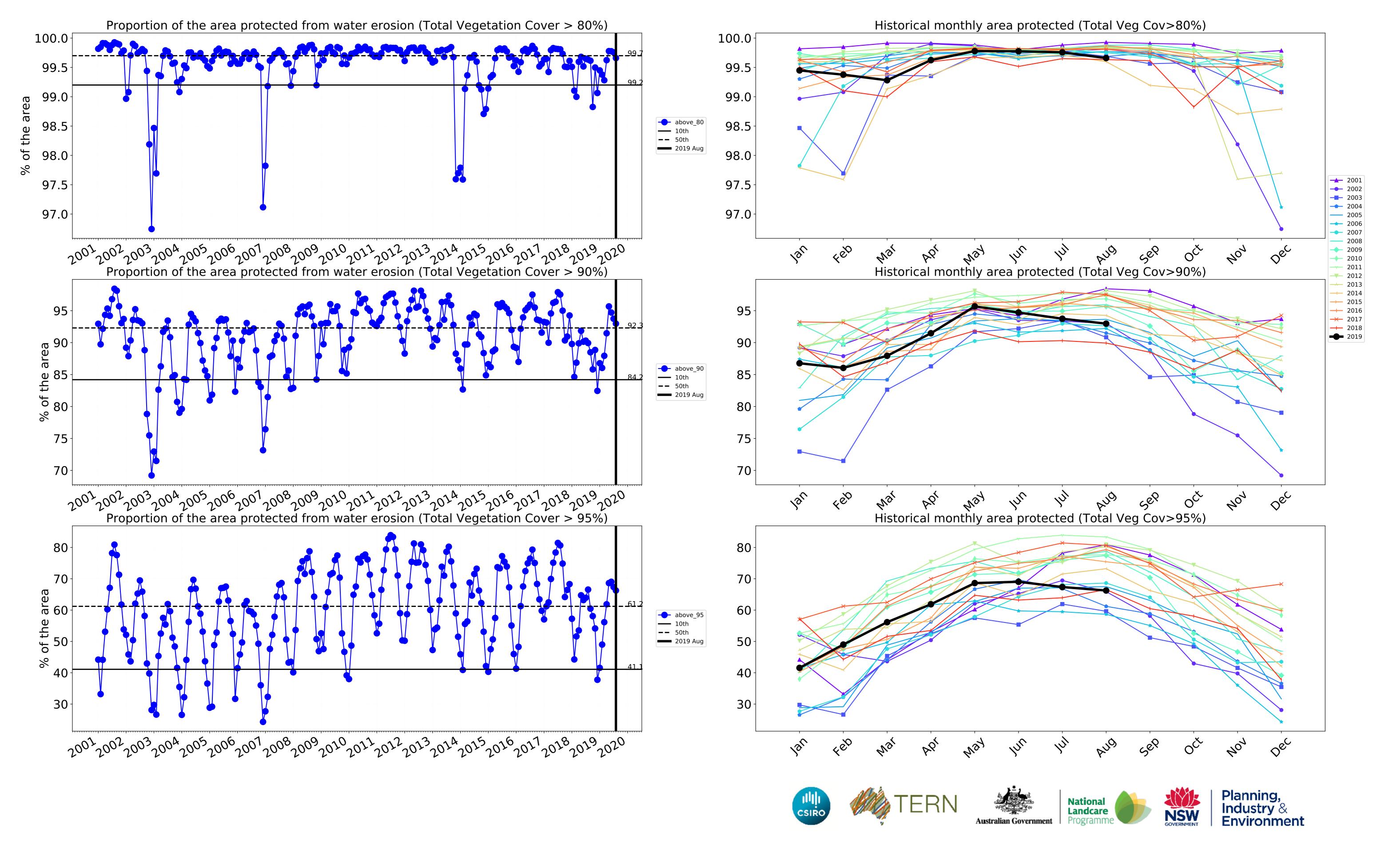




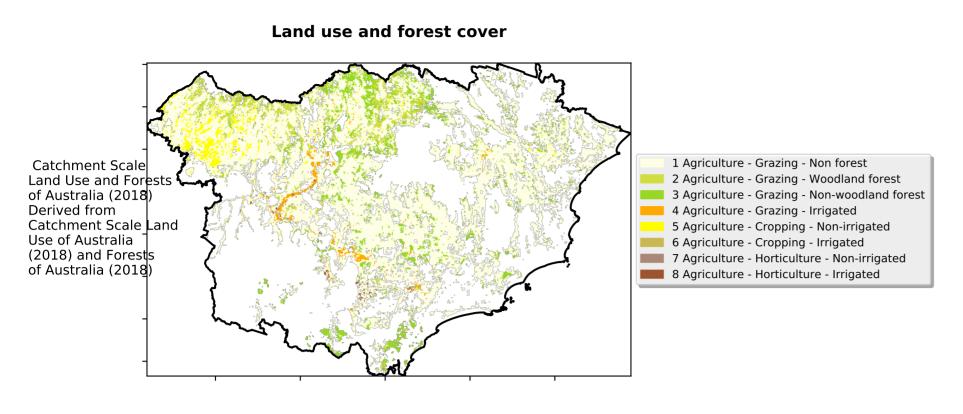




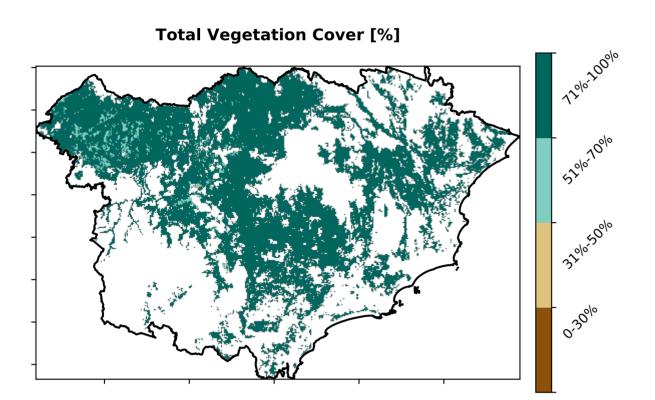


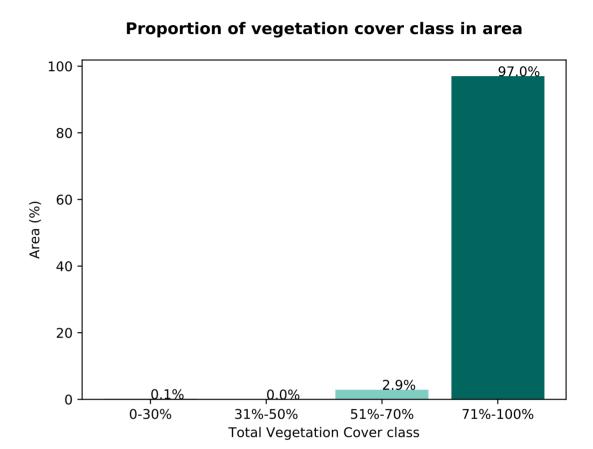


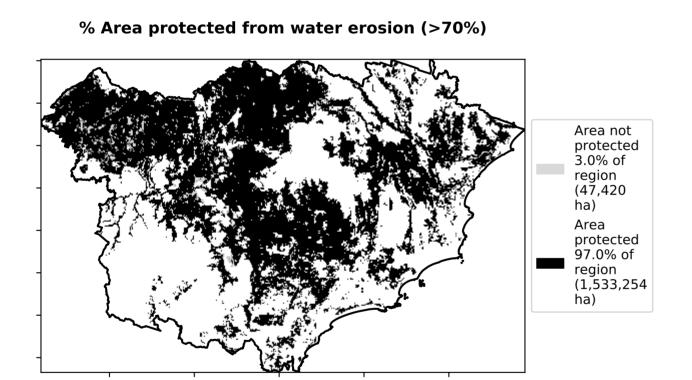
Agriculture

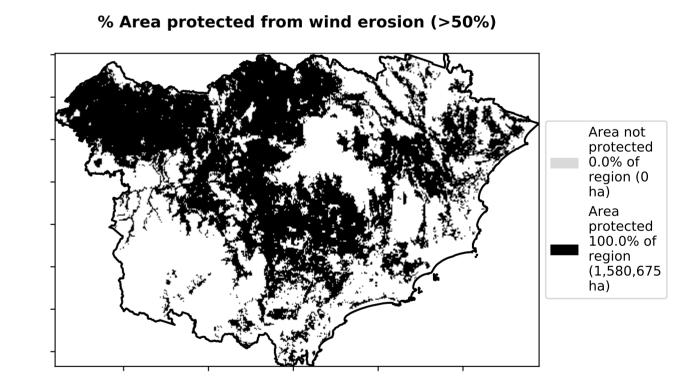


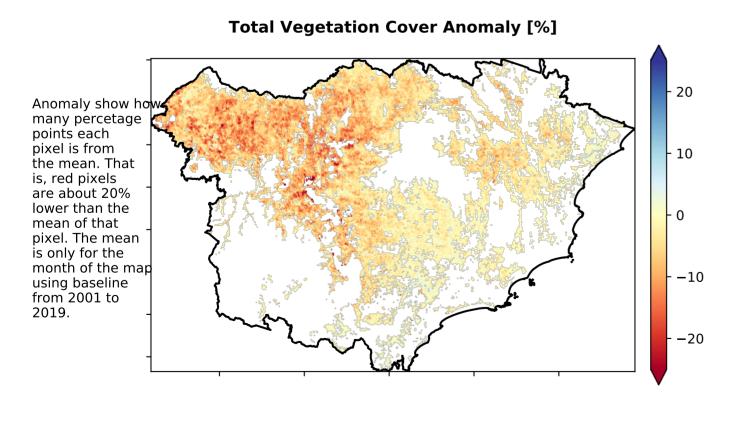
Proportion of each land class in area 80 76.7% 70 60 50 30 20 10 7.6% 10.7% 1.3% 3.2% 0.1% 0.1% 0.2% Land use class

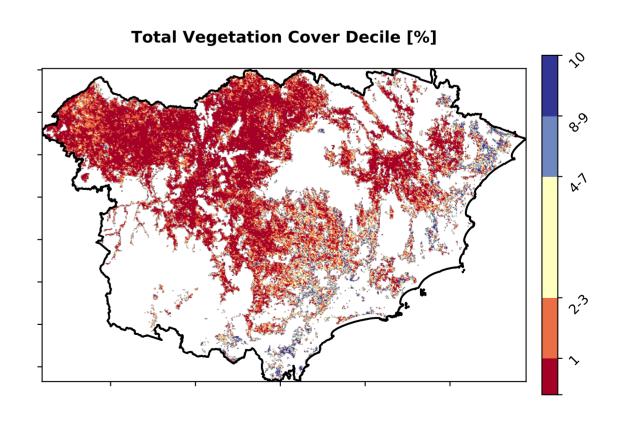
















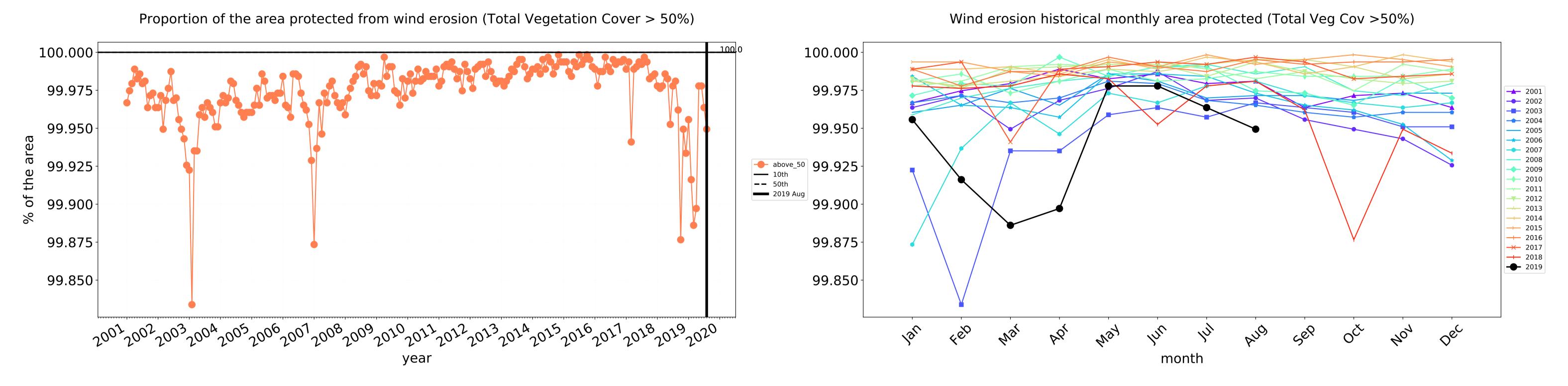


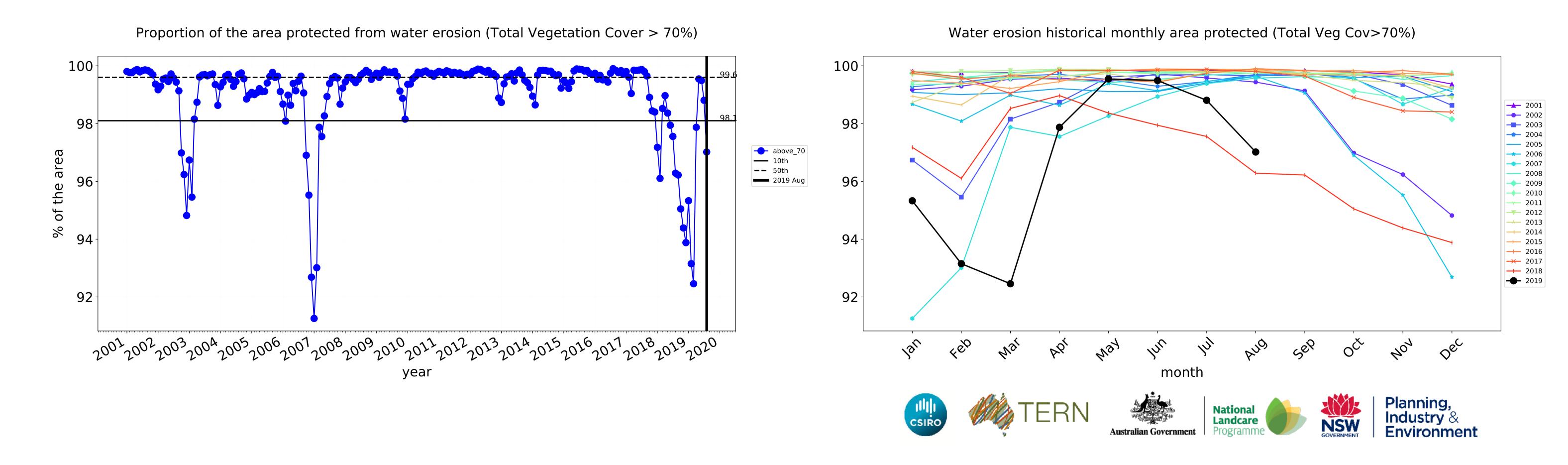


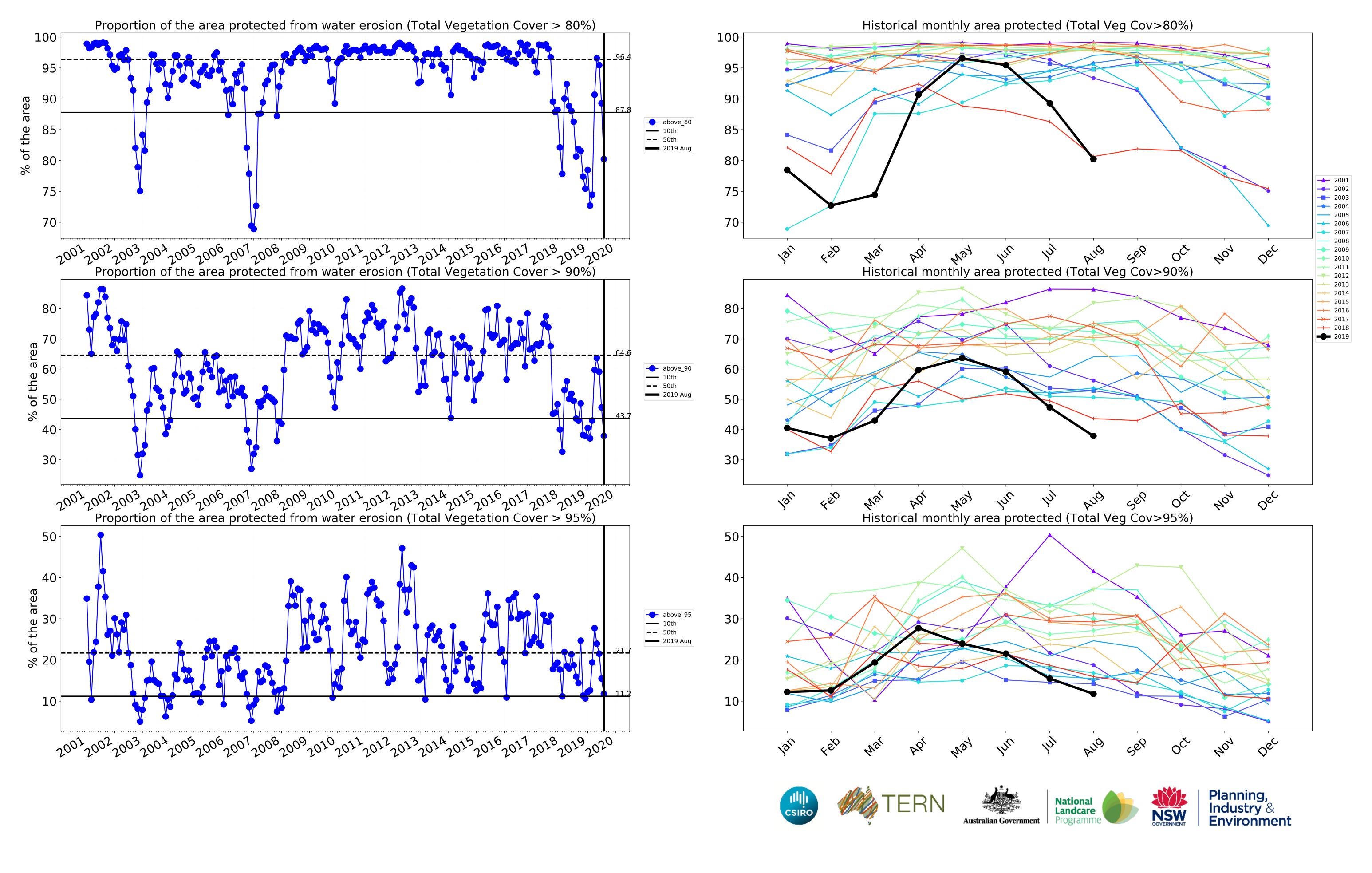




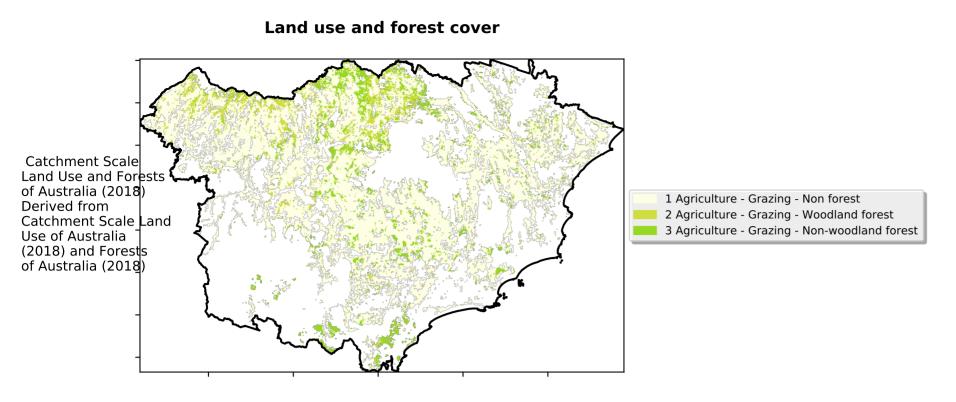
Agriculture timeseries



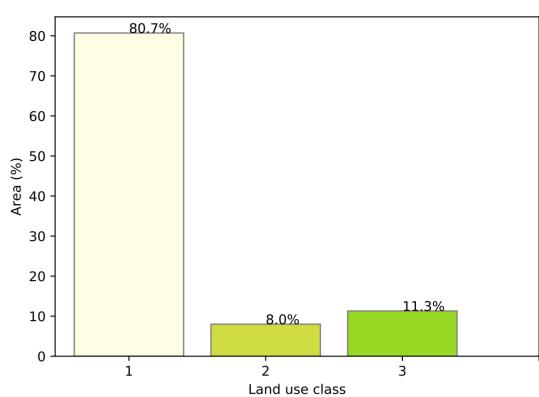




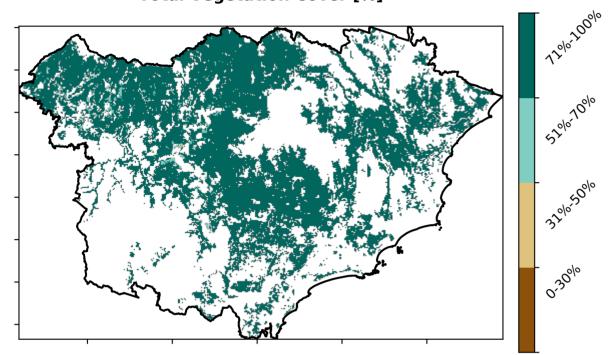
Grazing



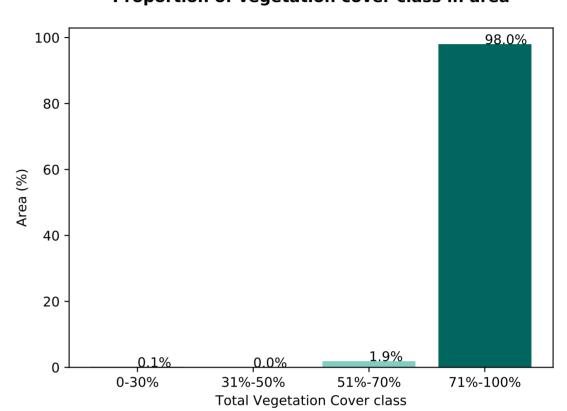
Proportion of each land class in area



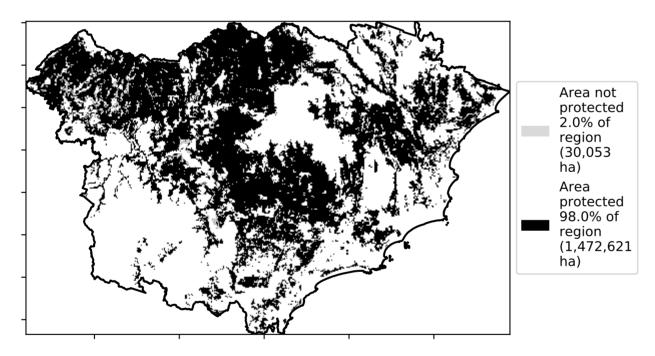




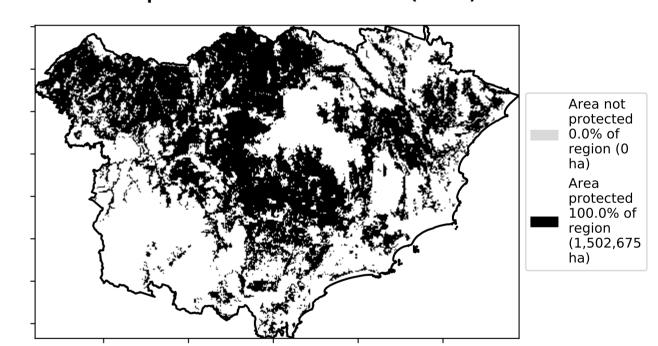
Proportion of vegetation cover class in area



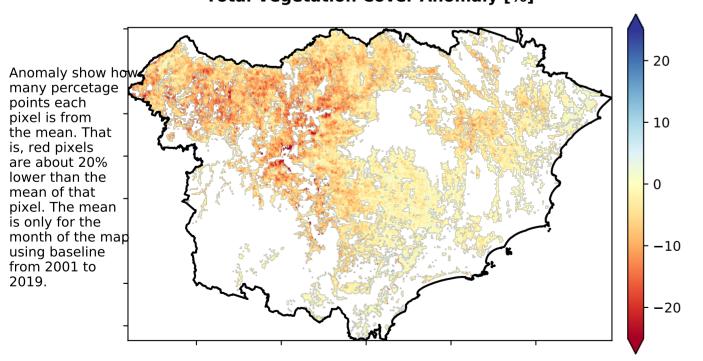
% Area protected from water erosion (>70%)

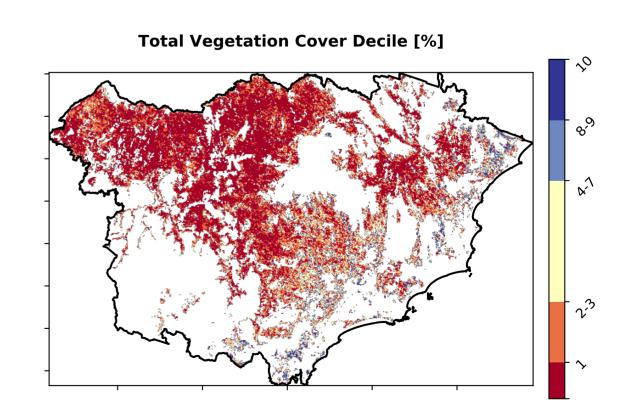


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]









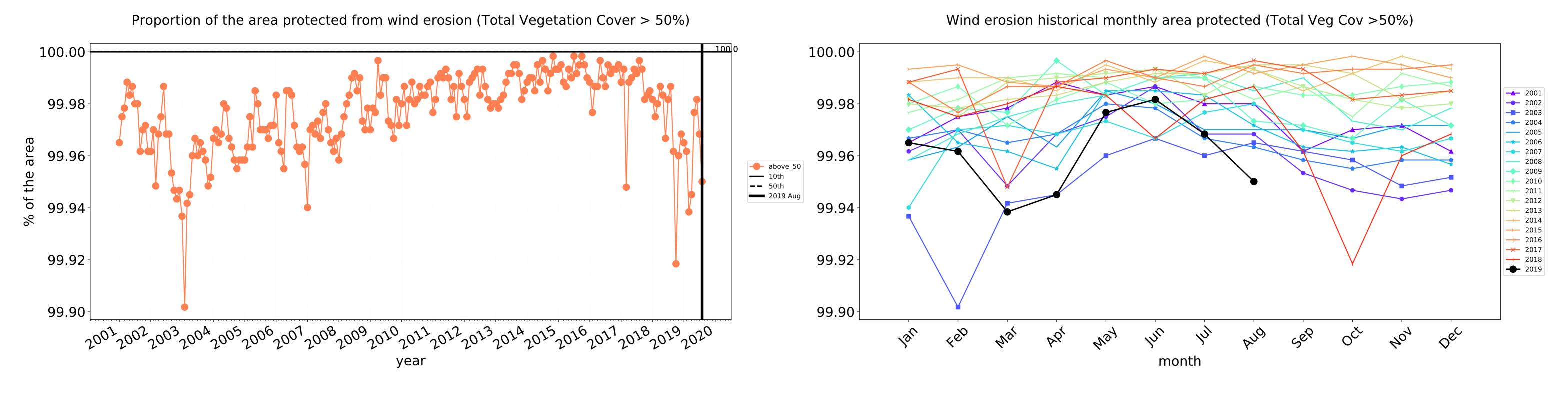


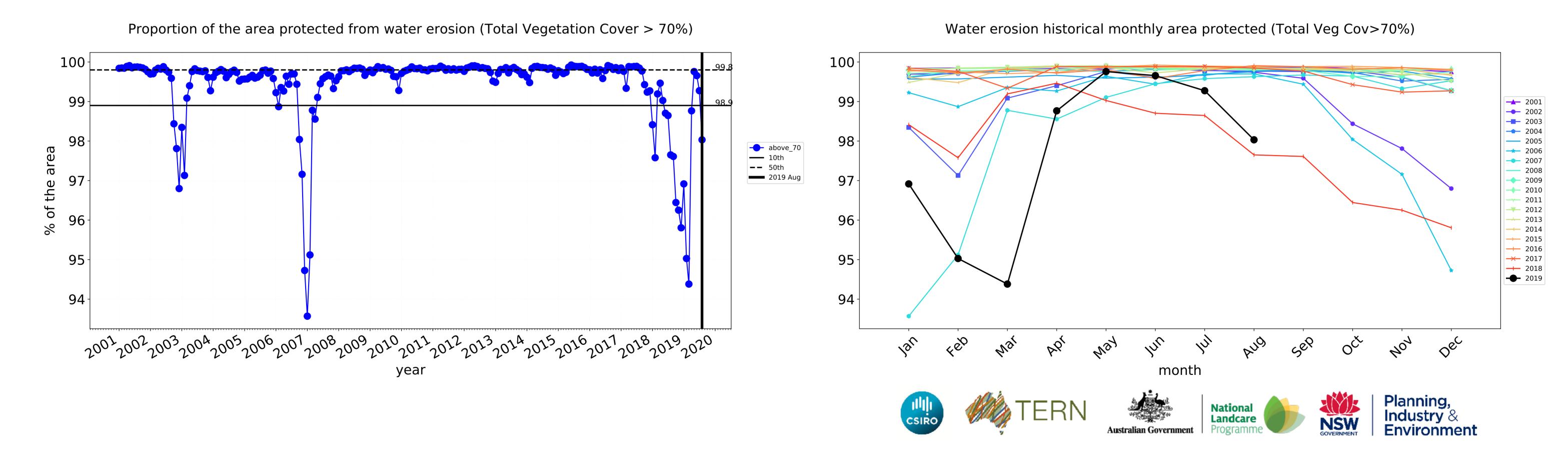


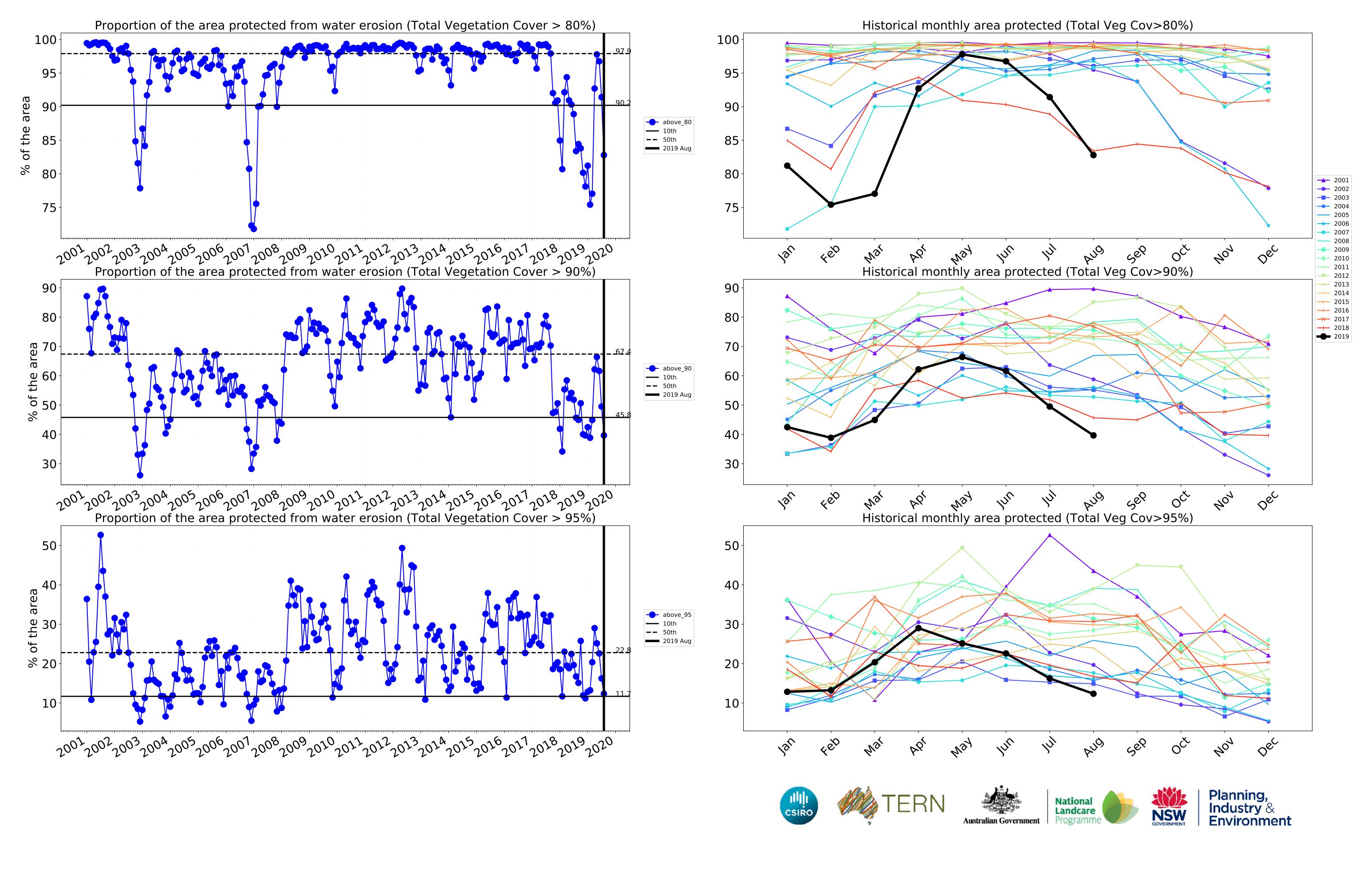




Grazing timeseries

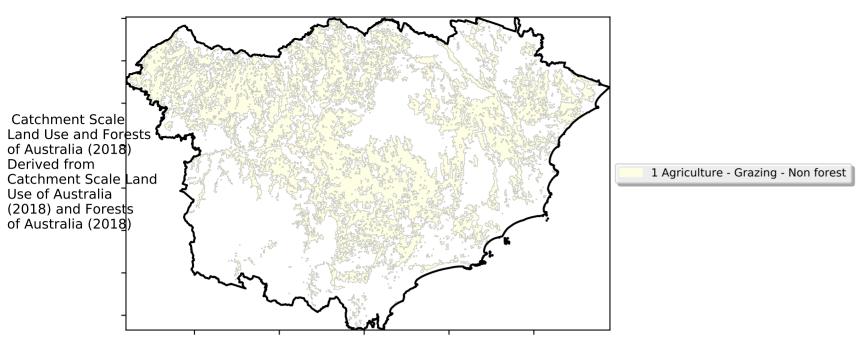




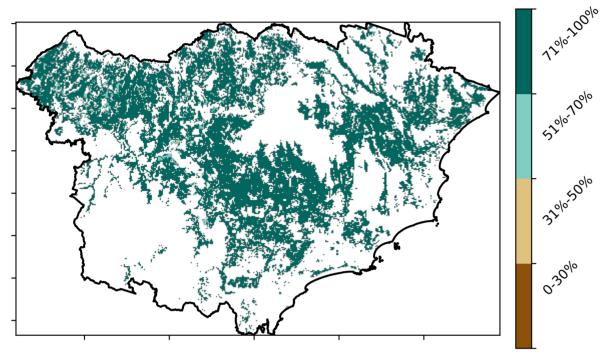


Grazing non forest

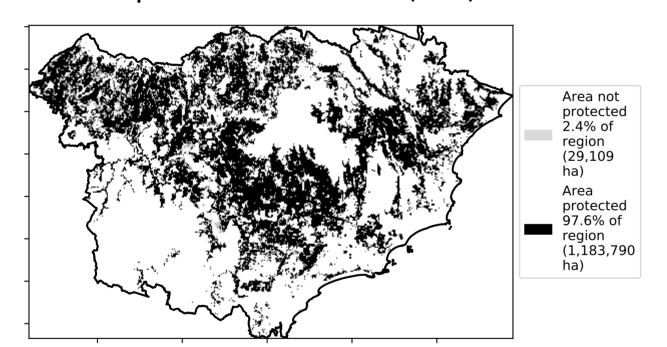
Land use and forest cover

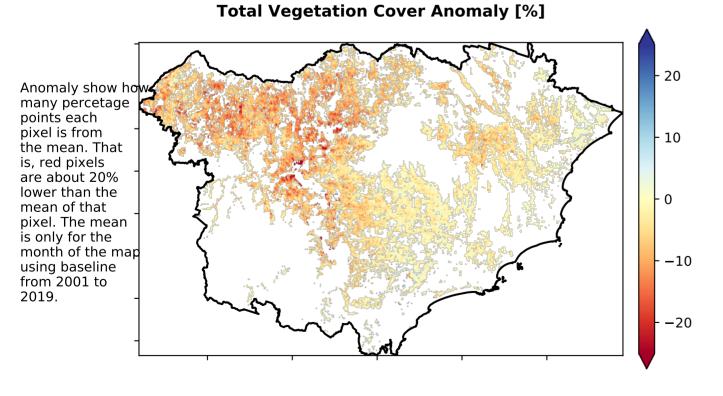


Total Vegetation Cover [%]



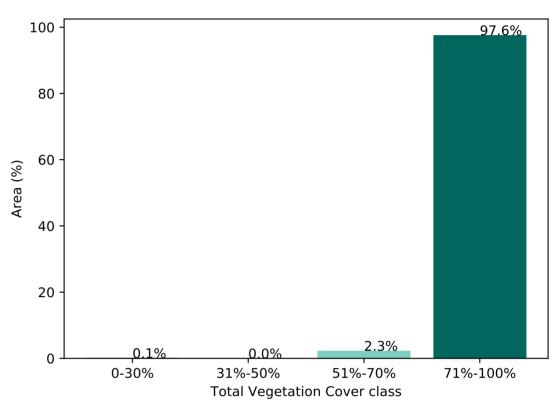
% Area protected from water erosion (>70%)



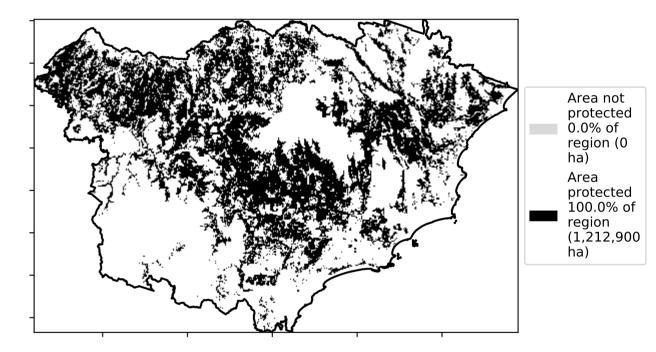


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

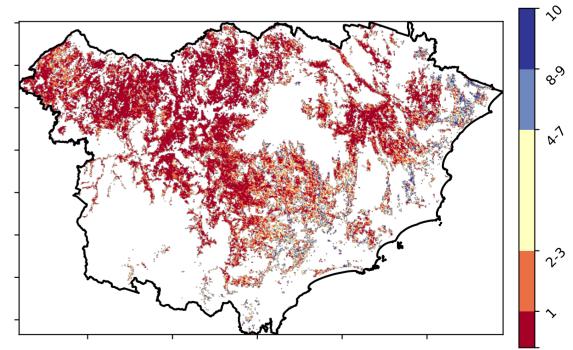
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]





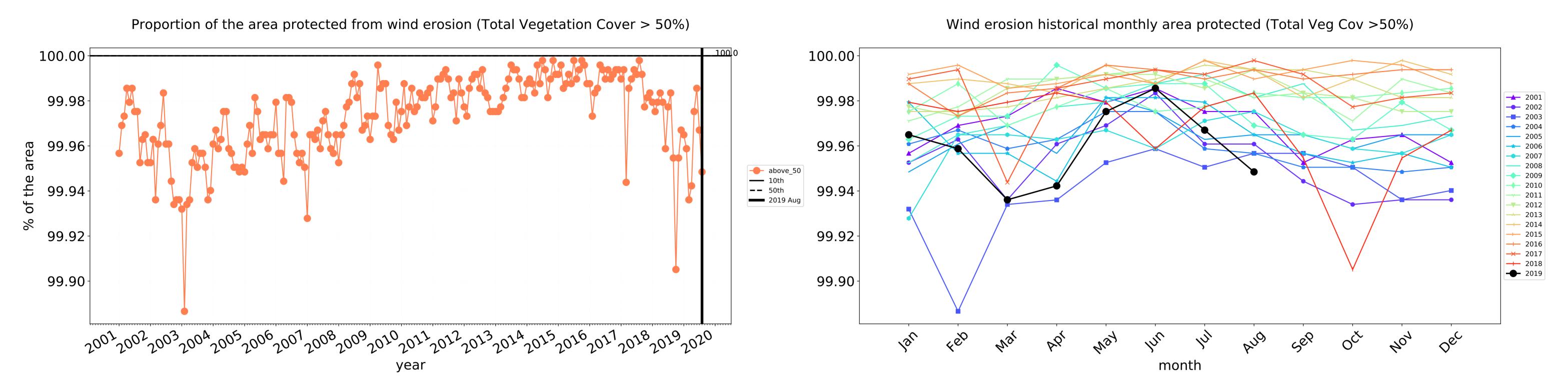


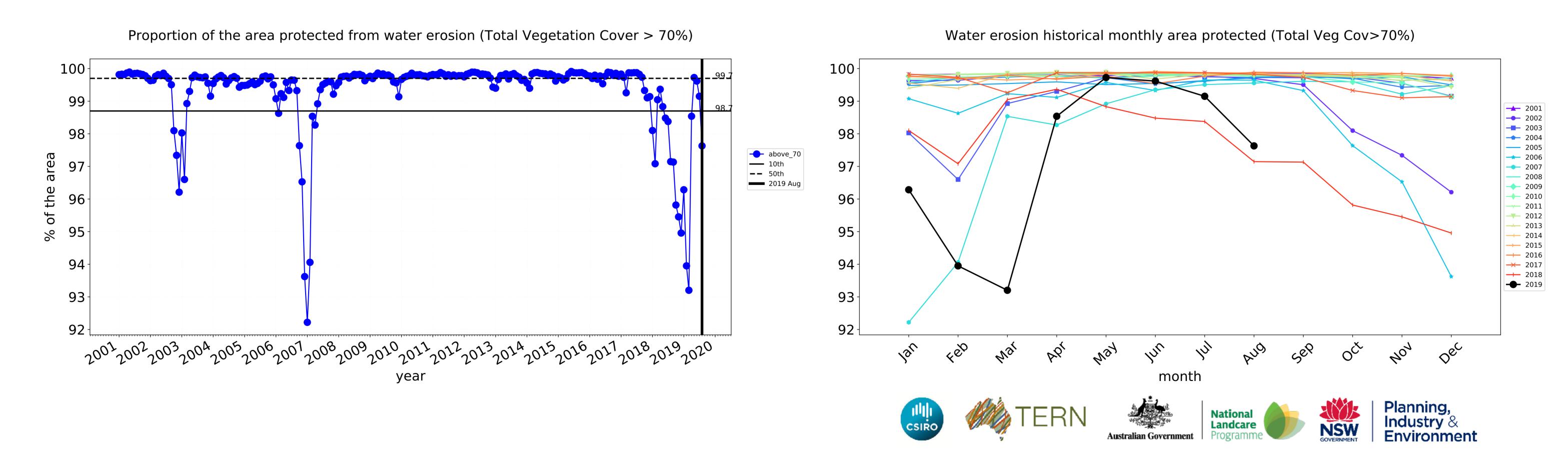


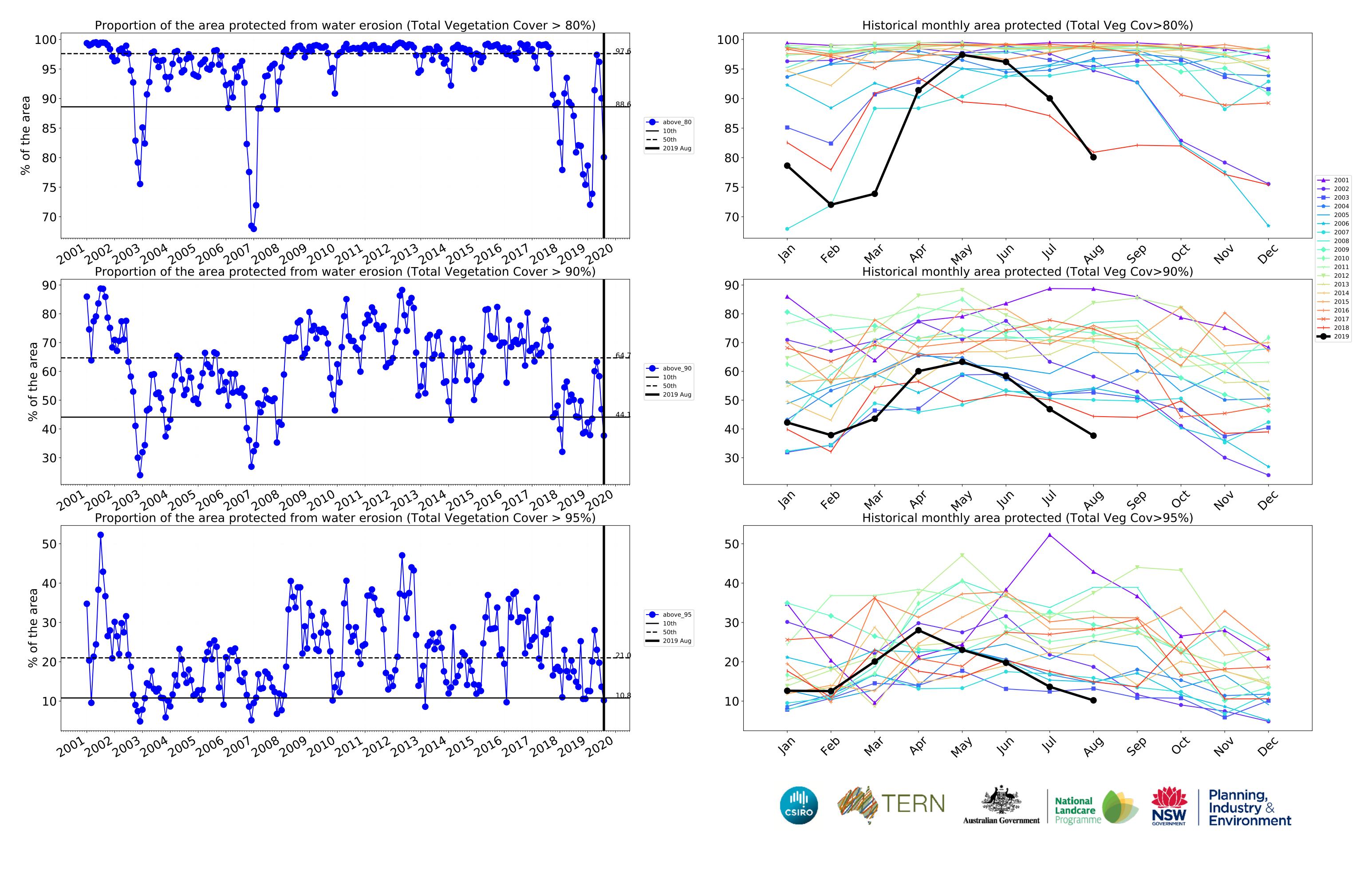








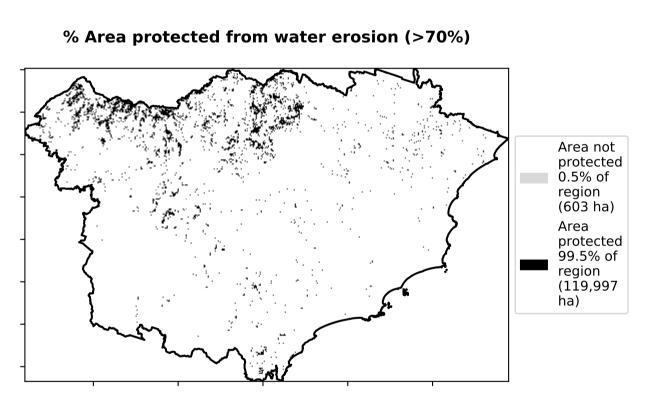


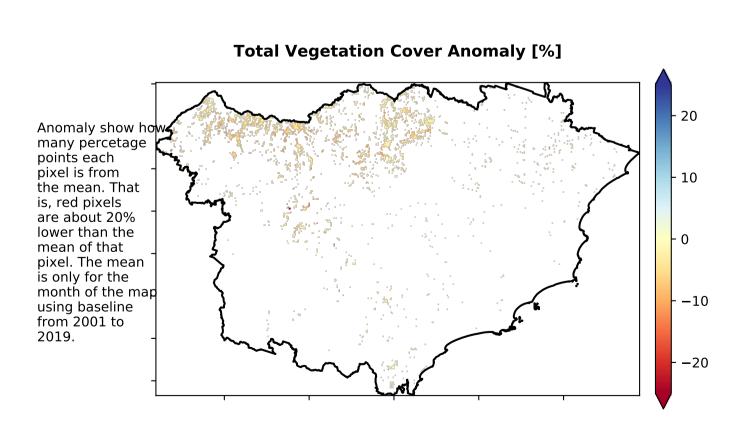


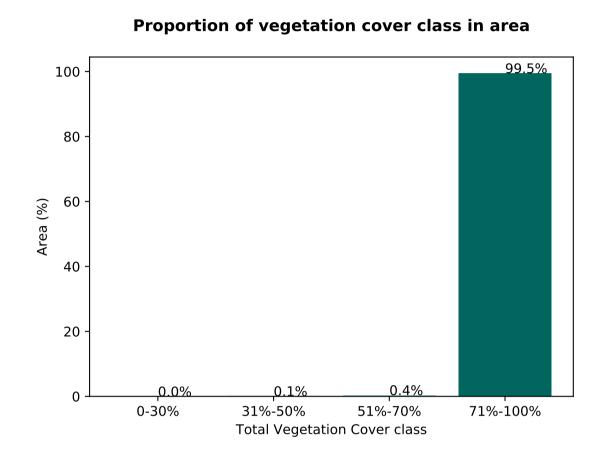
Grazing Woodland forest

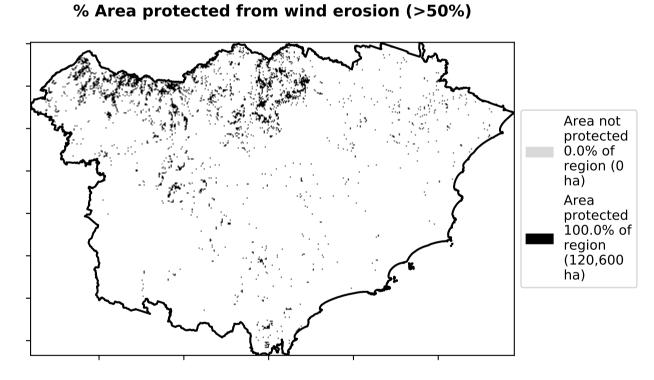
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Agriculture - Grazing - Woodland forest Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

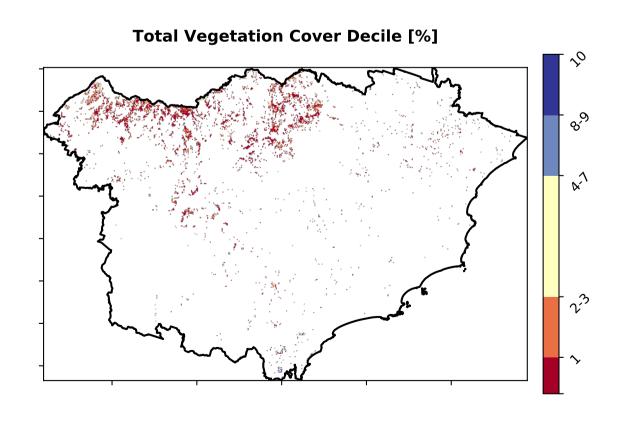
Total Vegetation Cover [%]















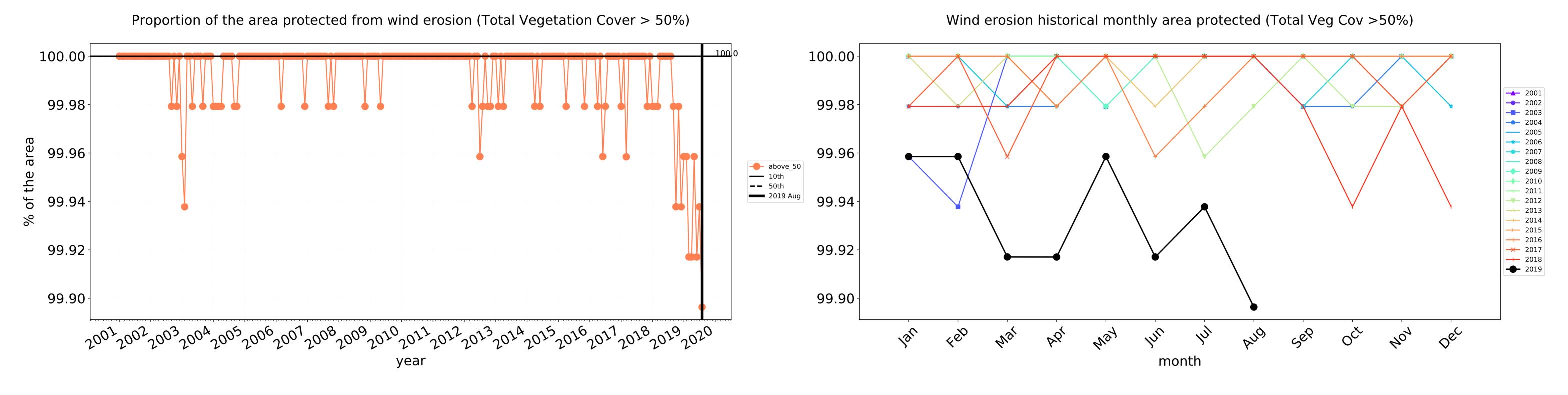


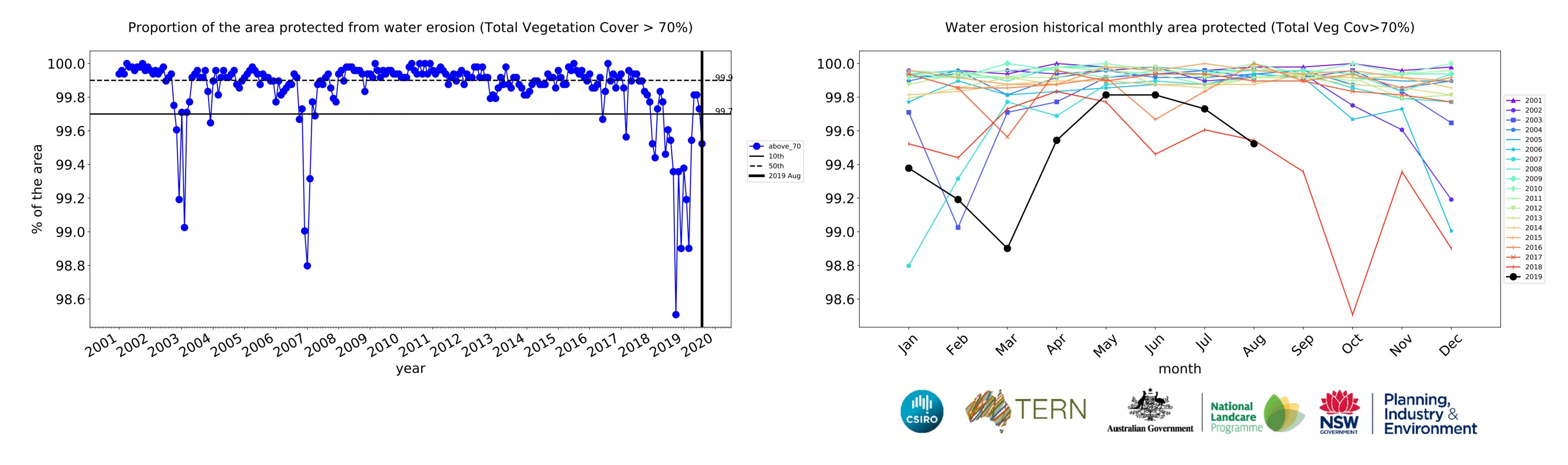


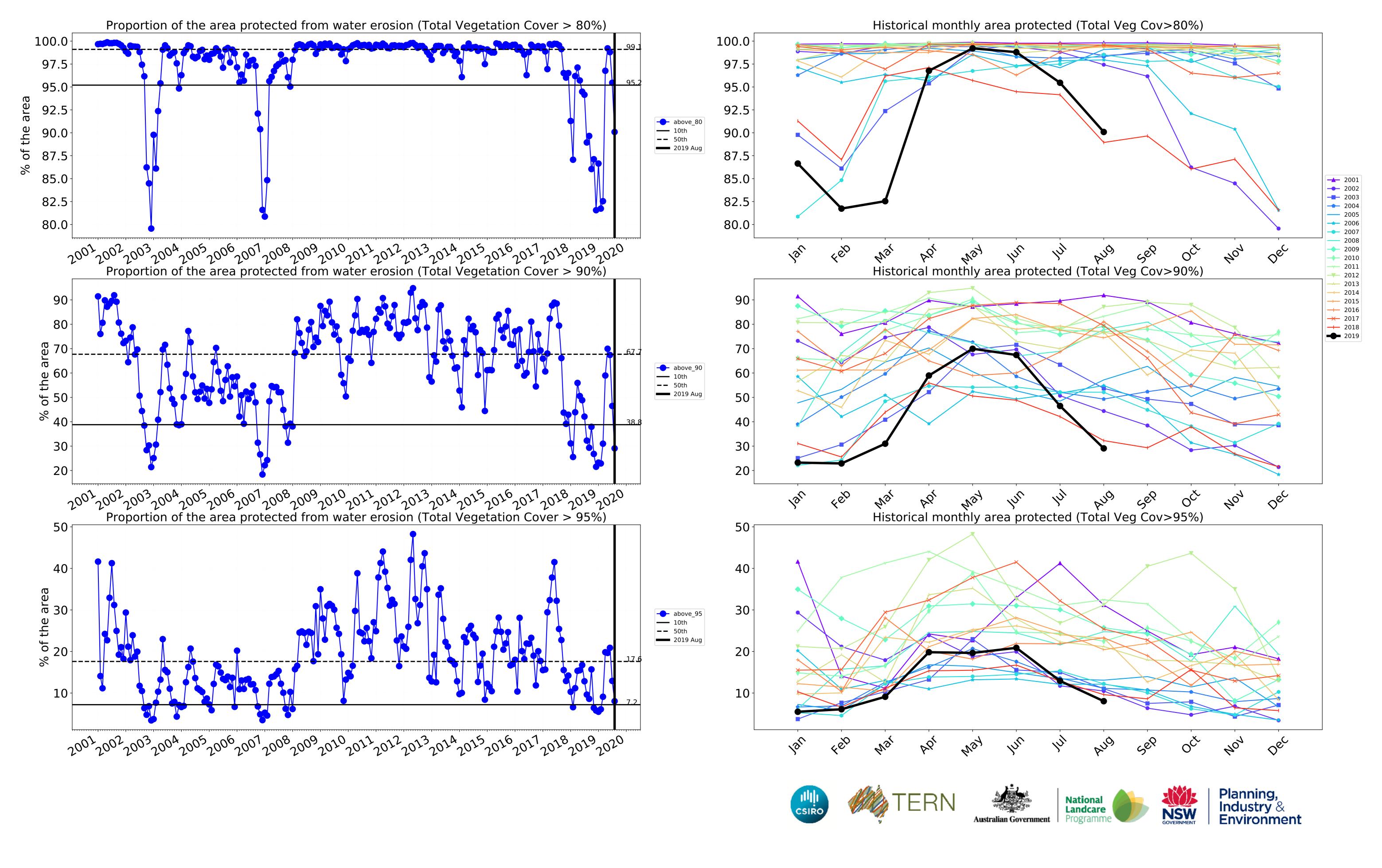




Grazing Woodland forest timeseries





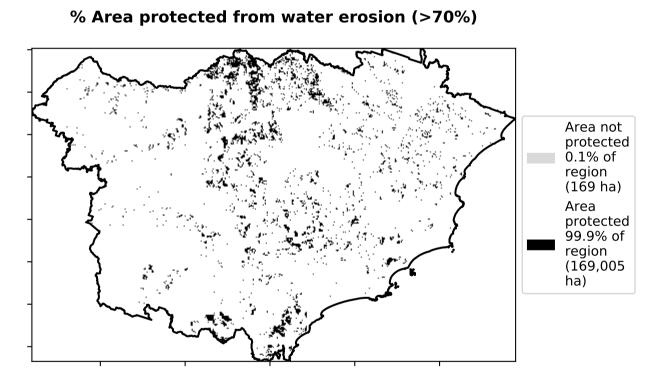


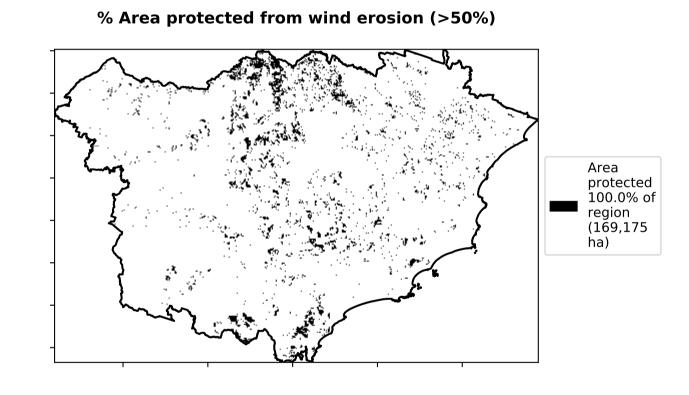
Grazing - Forest (non woodland)

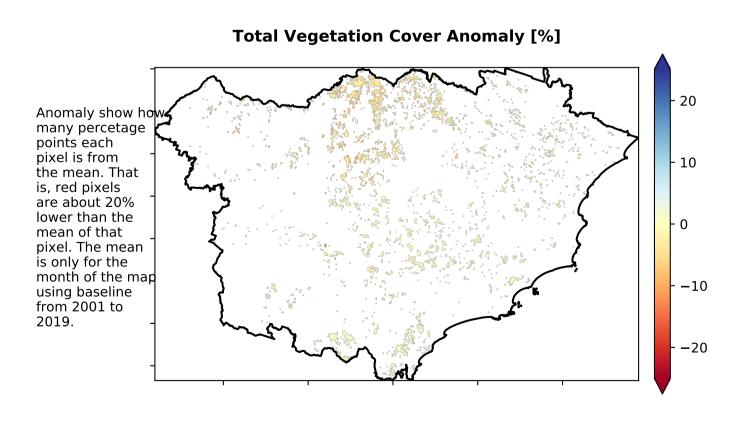
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) 1 Agriculture - Grazing - Non-woodland forest 1 Agriculture - Grazing - Non-woodland forest

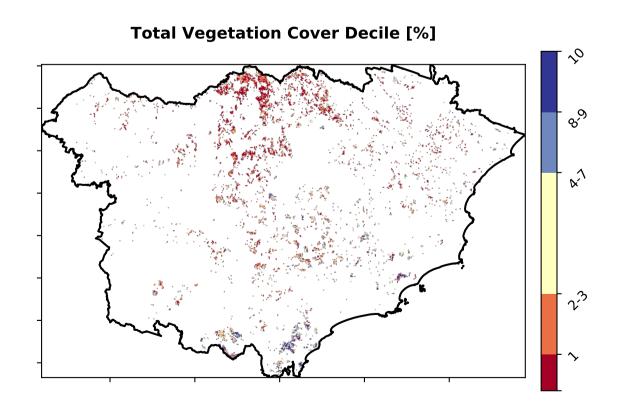
Total Vegetation Cover [%]

Proportion of vegetation cover class in area 100 99.9% 80 - 99.9% 40 - 20 - 0.0% 0.0% 0.1% Total Vegetation Cover class 71%-100% Total Vegetation Cover class











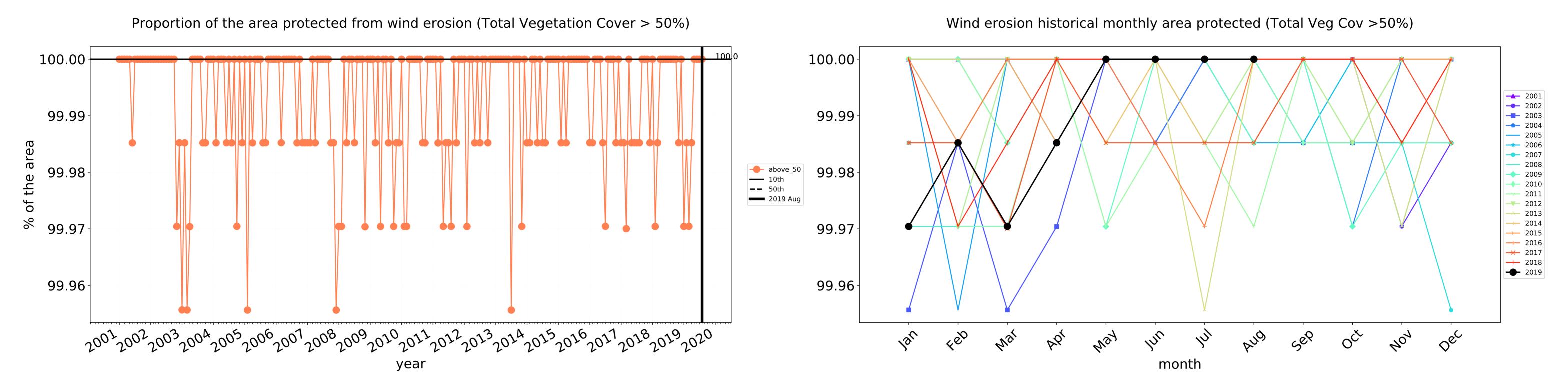


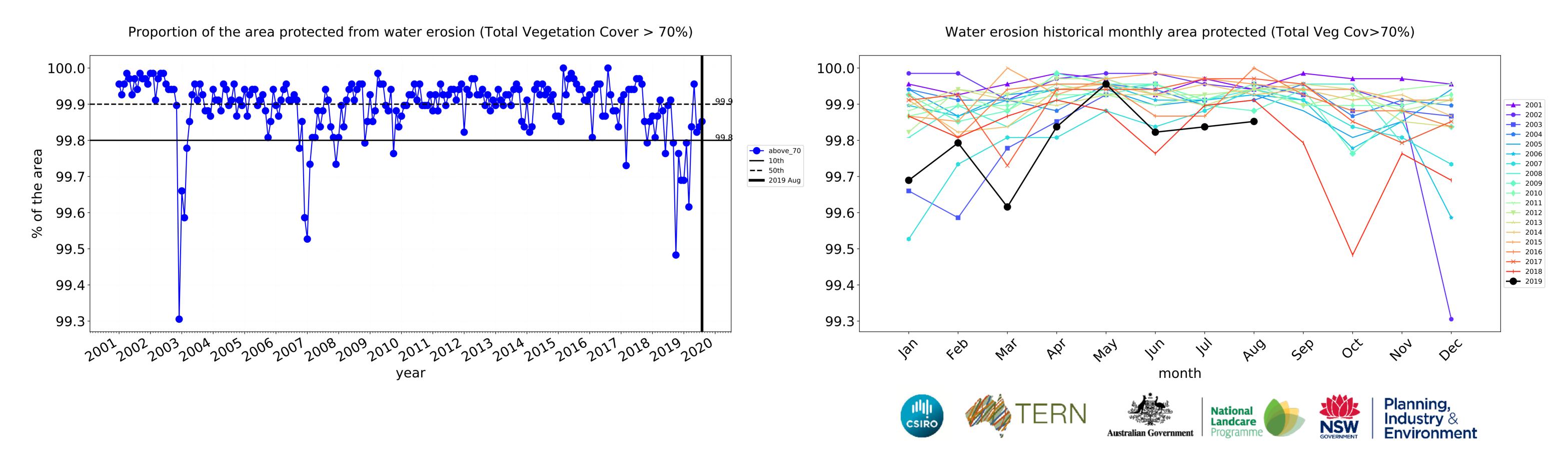


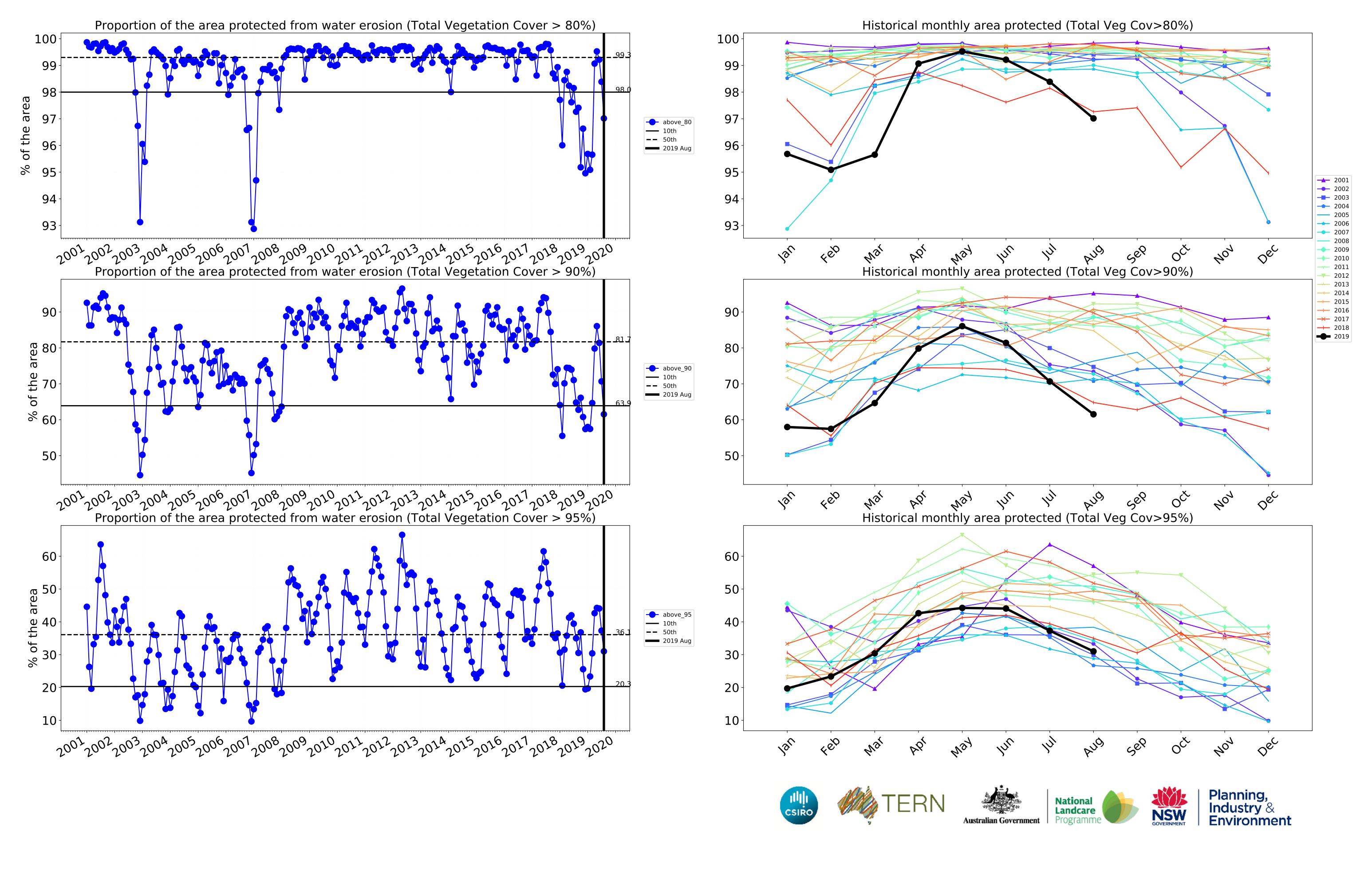






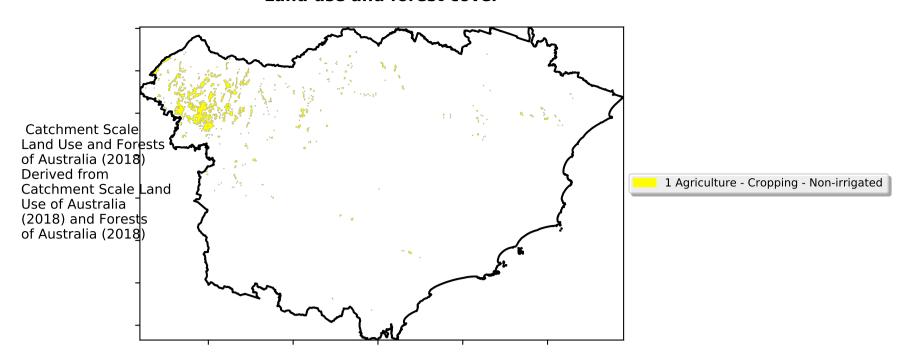




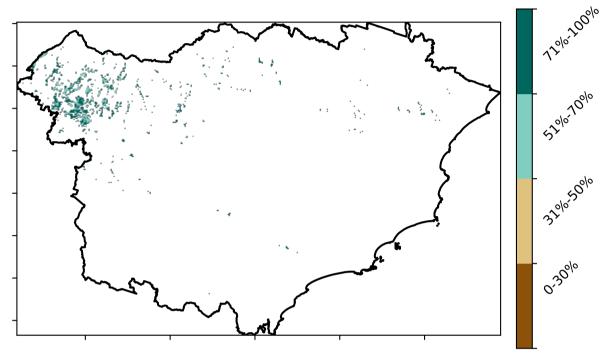


Cropping

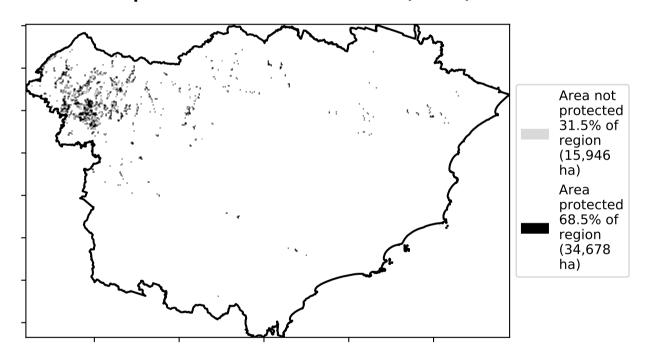
Land use and forest cover



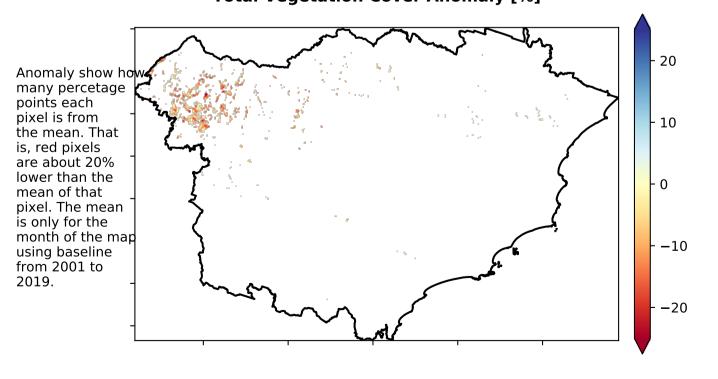
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

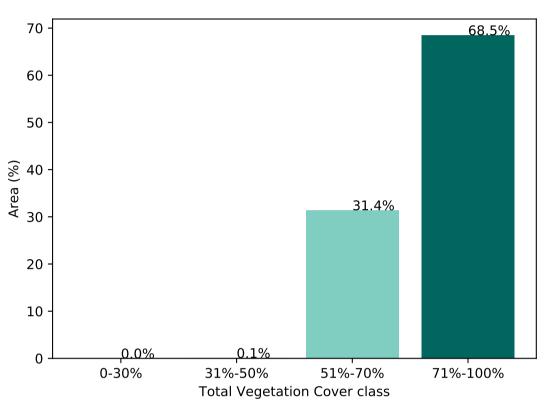


Total Vegetation Cover Anomaly [%]

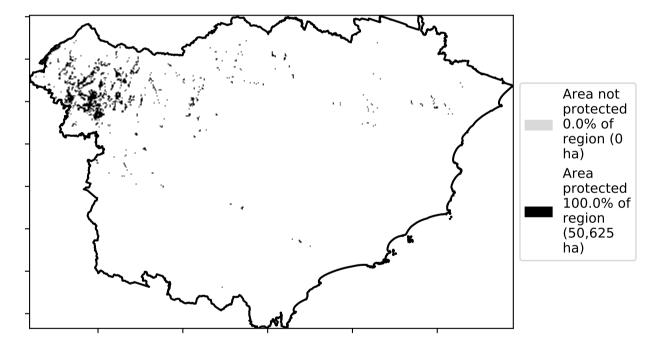


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

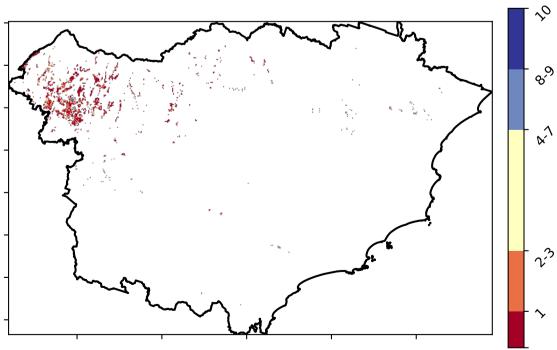
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







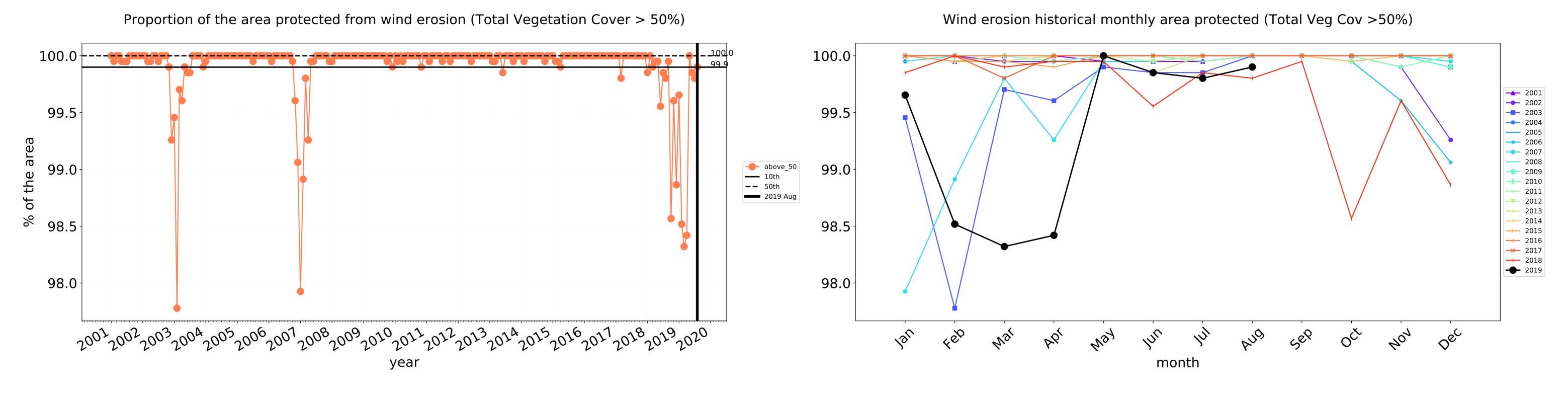


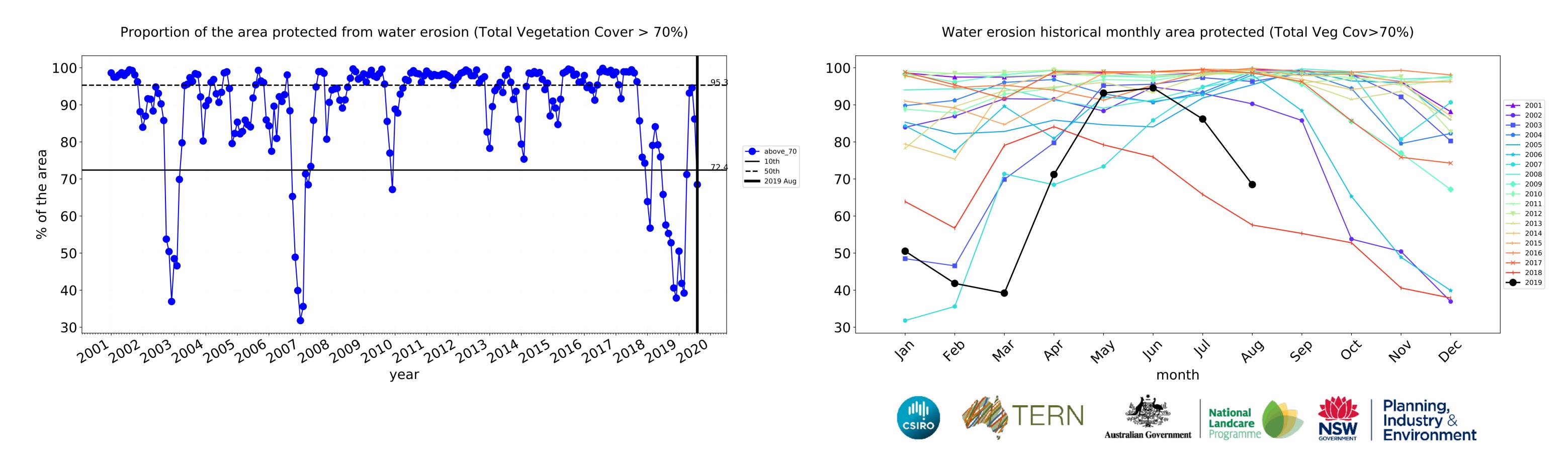


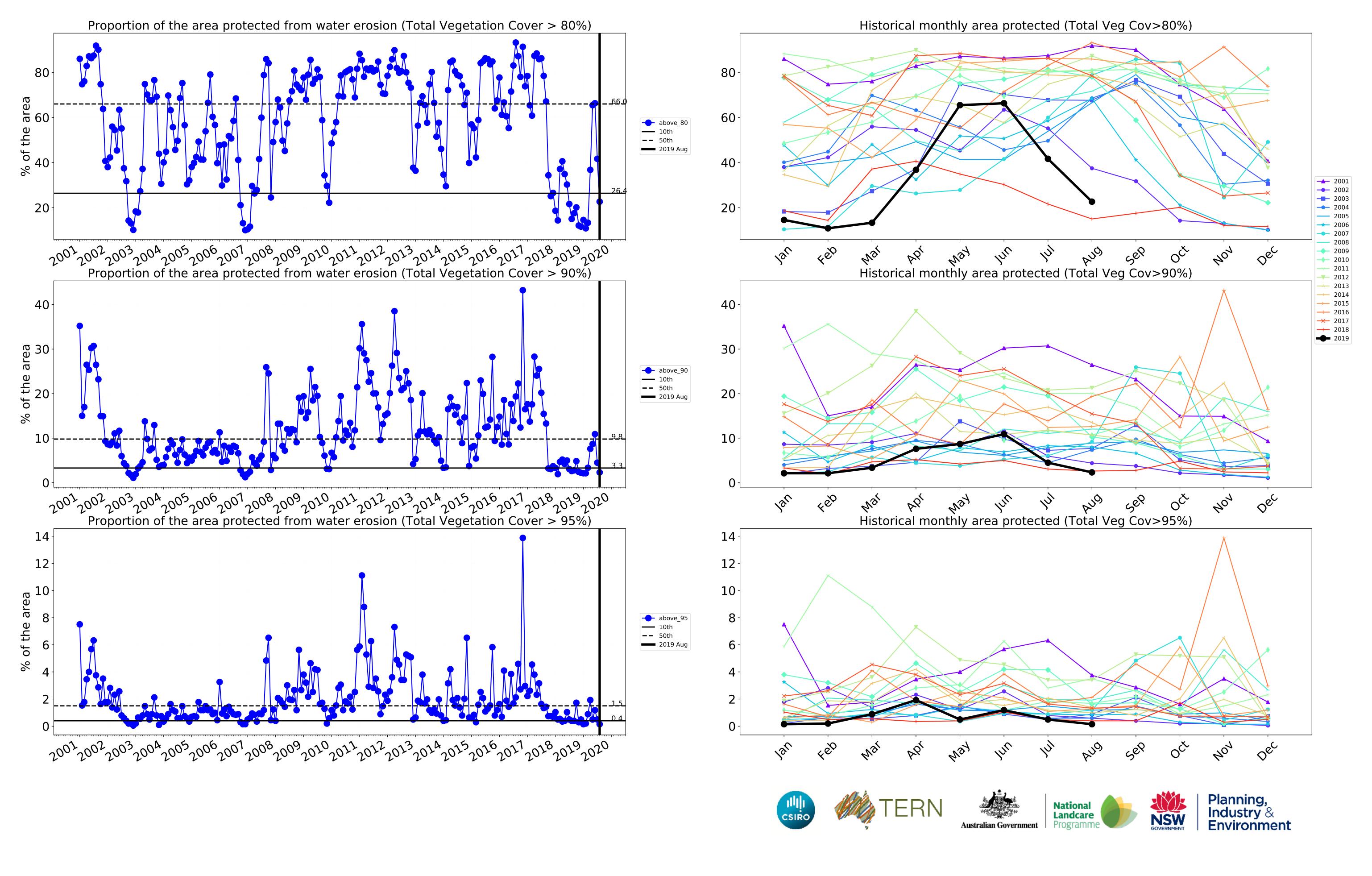




Cropping timeseries





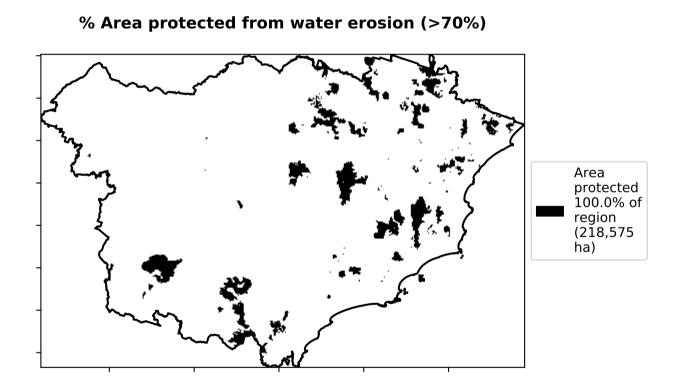


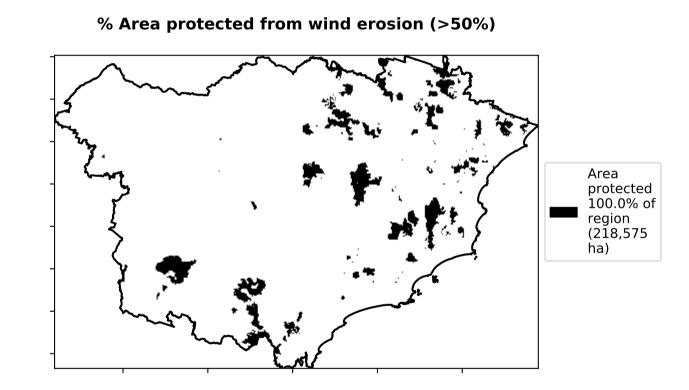
Production native forests and plantation forests

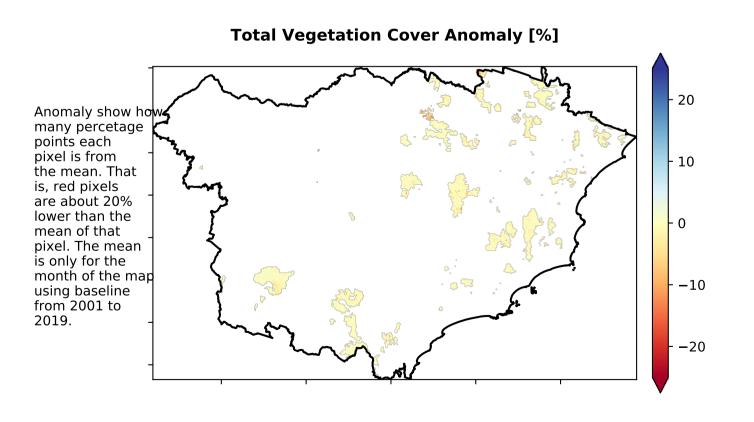
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Of Australia (2018) 1 Production native forests and plantation forests of Australia (2018)

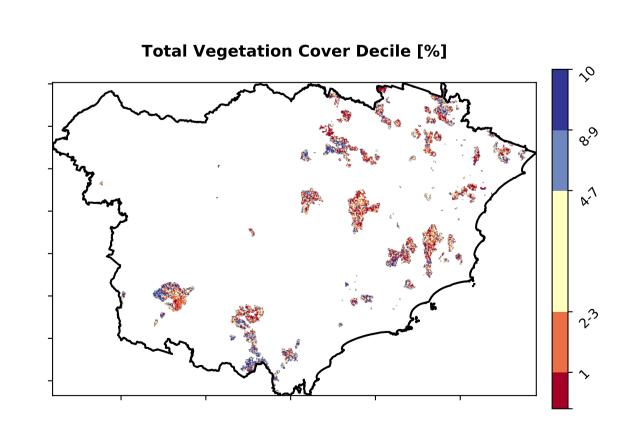
Total Vegetation Cover [%]

Proportion of vegetation cover class in area 100 - 100.0% 80 - 20 - 20 - 20 - 0.0% 0-30% 31%-50% 51%-70% 71%-100% Total Vegetation Cover class













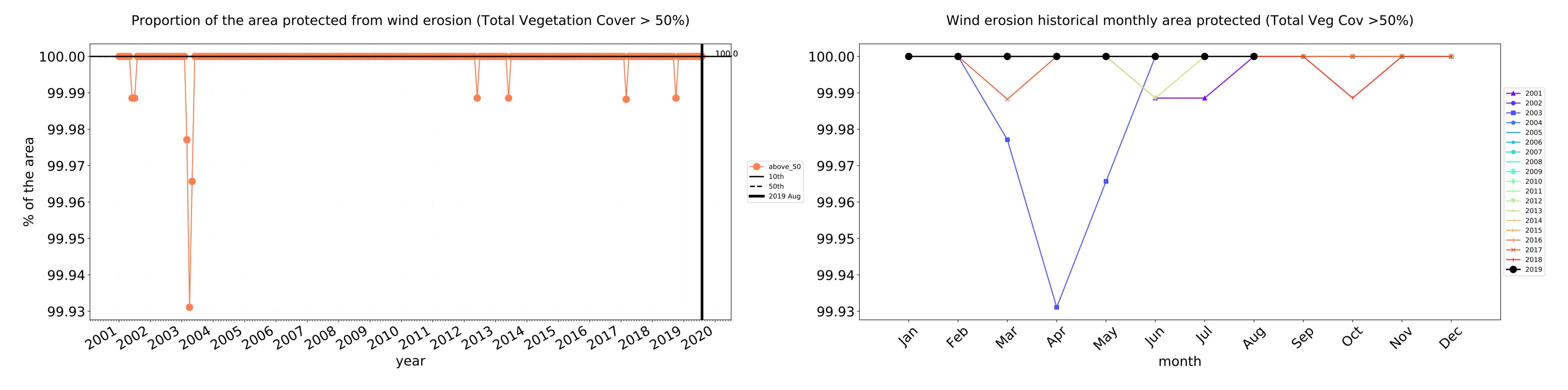


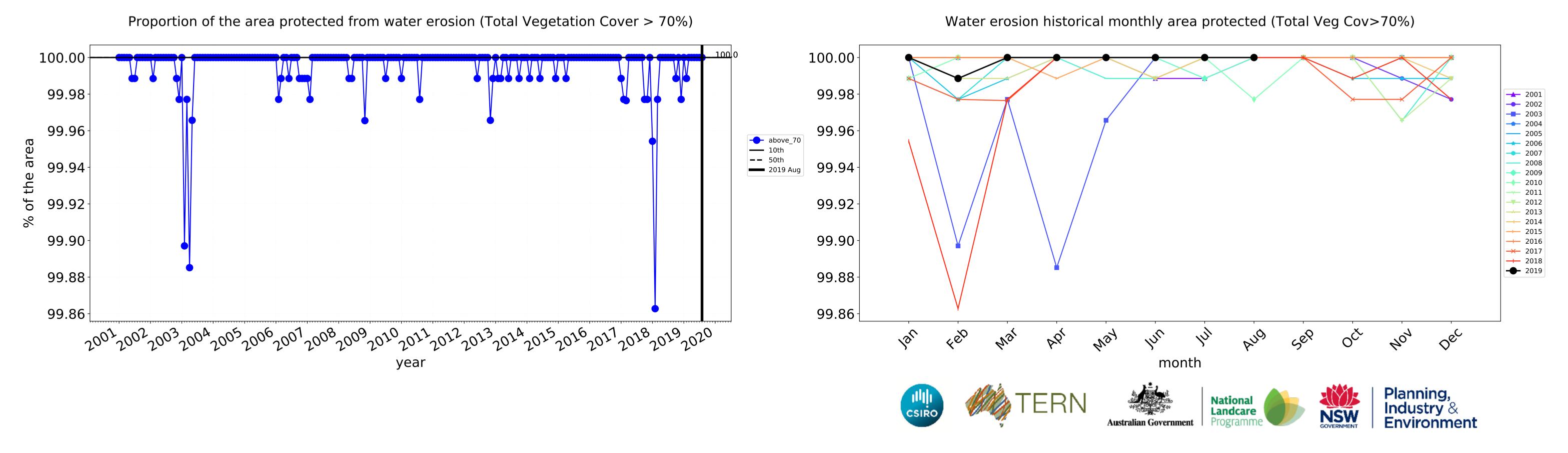


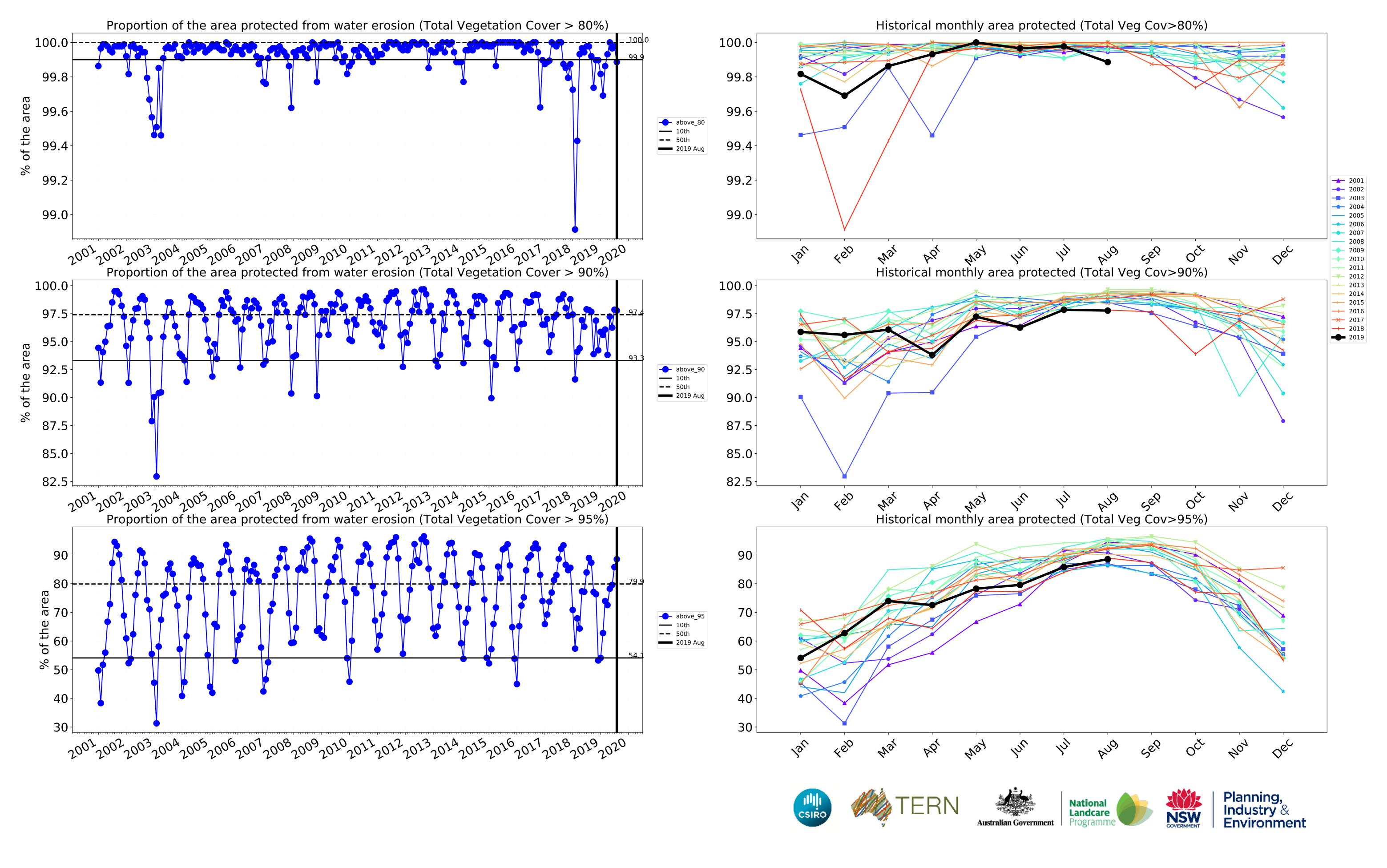




Production native forests and plantation forests timeseries







Hunter (3,238,600 ha and no data 61,825 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	3,238,600	99.9% 3,234,550	99.5% 3,222,400	97.0% 3,140,125	87.2% 2,823,100	61.3% 1,985,775	36.0% 1,164,750
Conservation and natural environments	1,240,800	99.9% 1,239,600	99.8% 1,238,900	99.7% 1,236,800	99.2% 1,230,975	90.8% 1,127,075	62.2% 771,825
Conservation and natural environments non forest	30,025	96.0% 28,825	94.3% 28,325	91.0% 27,325	85.4% 25,650	62.3% 18,700	35.8% 10,750
Conservation and natural environments Woodland forest	138,800	100.0% 138,800	99.9% 138,725	99.8% 138,525	98.7% 137,000	80.5% 111,750	36.6% 50,825
Conservation and natural environments Forest (non woodland)	1,071,975	100.0% 1,071,975	100.0% 1,071,850	99.9% 1,070,950	99.7% 1,068,325	93.0% 996,625	66.3% 710,250
Agriculture	1,580,675	100.0% 1,580,600	99.9% 1,579,875	97.0% 1,533,525	80.2% 1,268,225	37.9% 598,475	11.8% 186,025
Grazing	1,502,675	100.0% 1,502,600	100.0% 1,501,925	98.0% 1,473,100	82.8% 1,243,950	39.7% 596,100	12.4% 185,825
Grazing non forest	1,212,900	100.0% 1,212,875	99.9% 1,212,275	97.6% 1,184,150	80.1% 971,175	37.7% 456,950	10.2% 123,650
Grazing Woodland forest	120,600	100.0% 120,550	99.9% 120,475	99.5% 120,025	90.1% 108,650	29.1% 35,075	8.0% 9,700
Grazing - Forest (non woodland)	169,175	100.0% 169,175	100.0% 169,175	99.9% 168,925	97.0% 164,125	61.5% 104,075	31.0% 52,475
Cropping	50,625	100.0% 50,625	99.9% 50,575	68.5% 34,675	22.7% 11,475	2.3% 1,175	0.1% 75
Production native forests and plantation forests	218,575	100.0% 218,575	100.0% 218,575	100.0% 218,575	99.9% 218,325	97.8% 213,700	88.5% 193,525











