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: December 2013

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





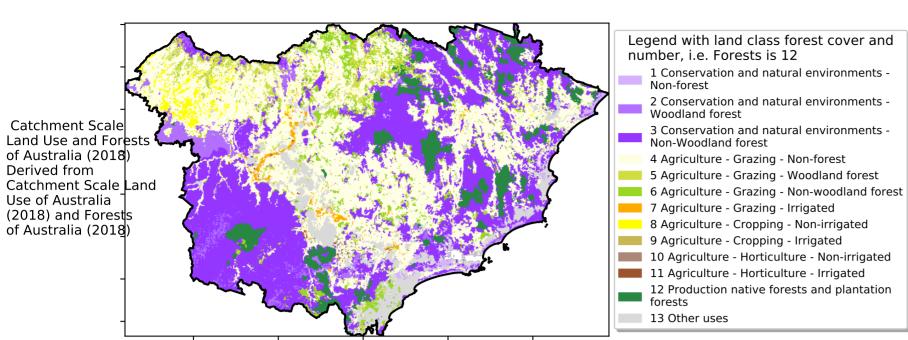




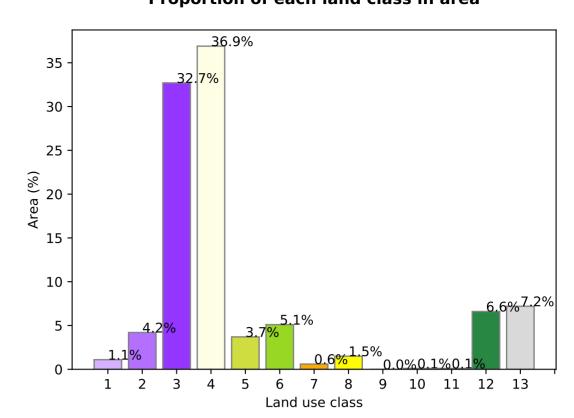


Vegetation Cover Dec 2013

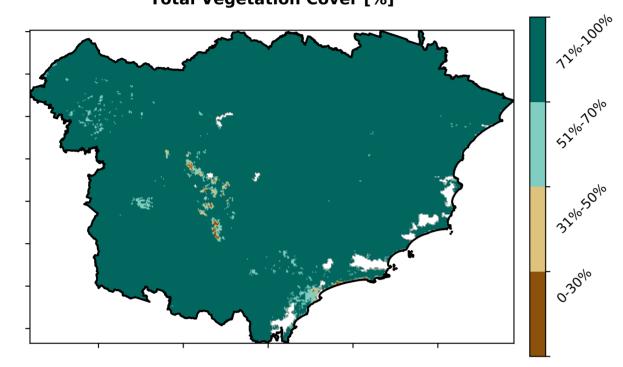
Land use and forest cover



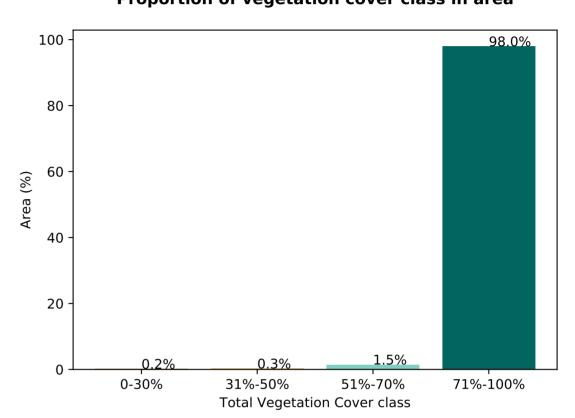
Proportion of each land class in area



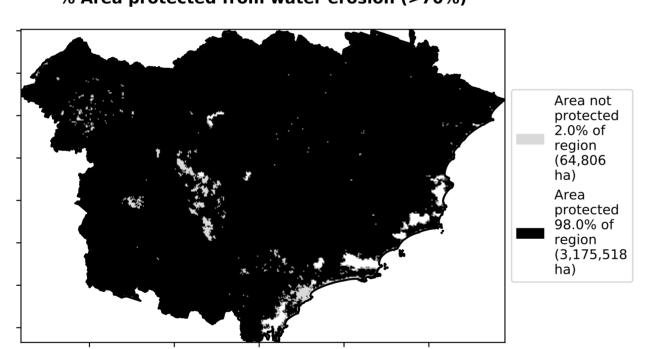
Total Vegetation Cover [%]



Proportion of vegetation cover class in area



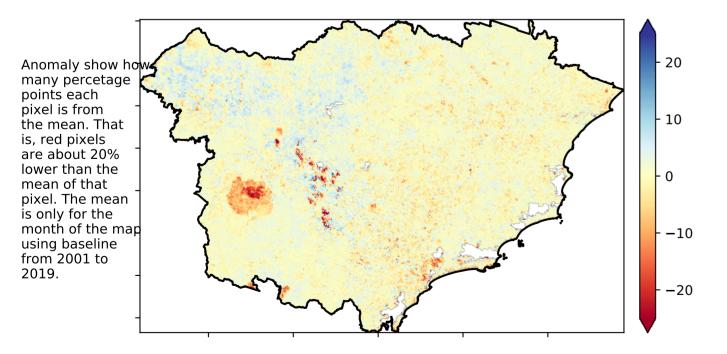
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

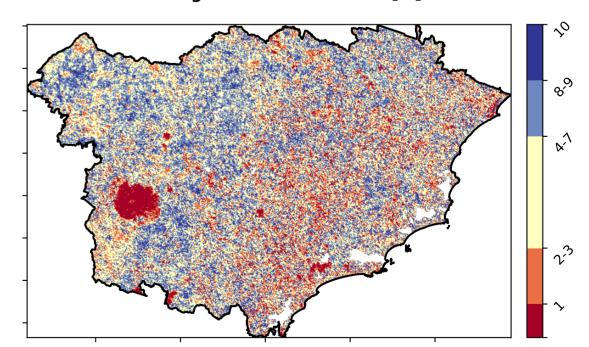


Total Vegetation Cover Anomaly [%]



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 [%]





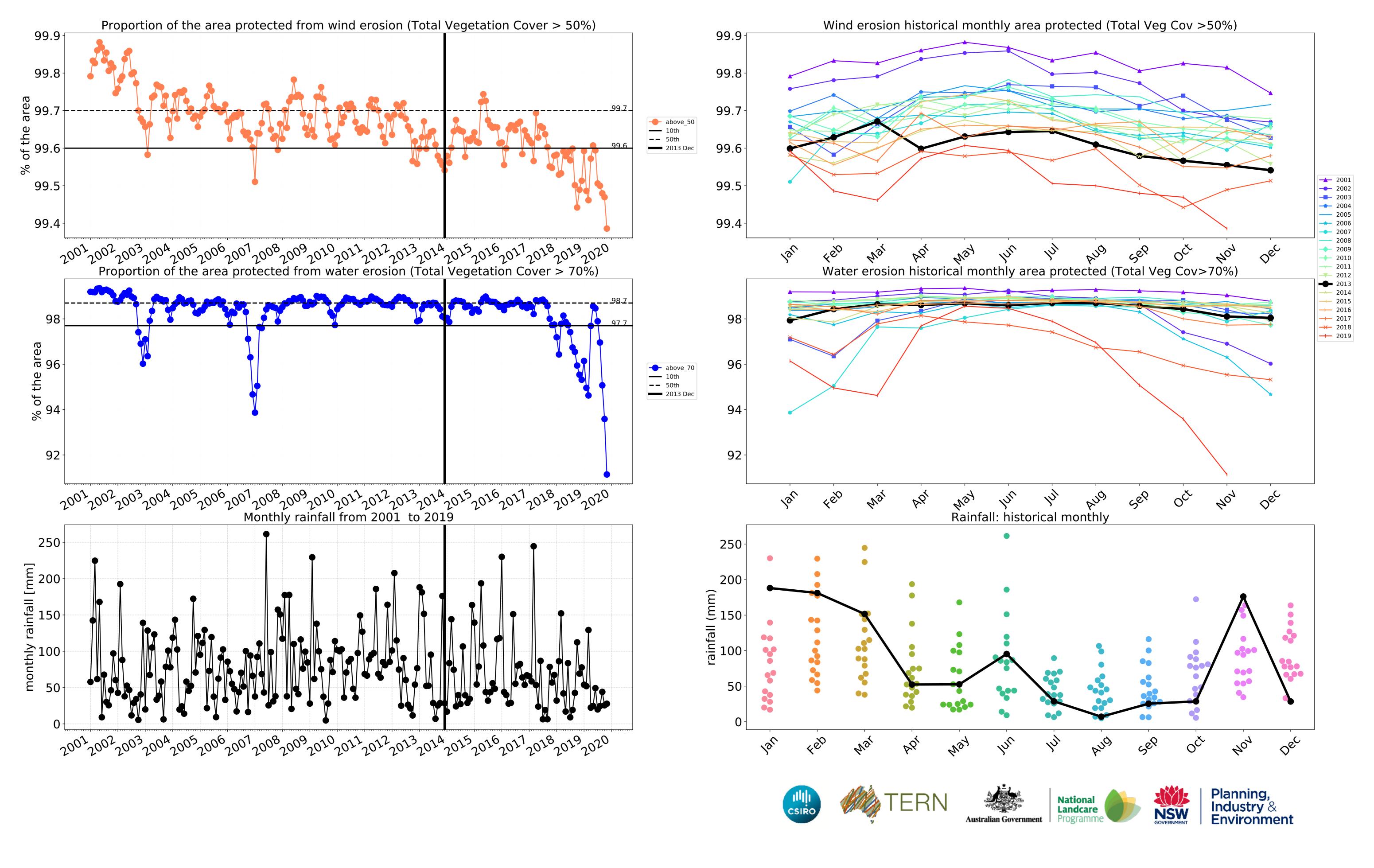


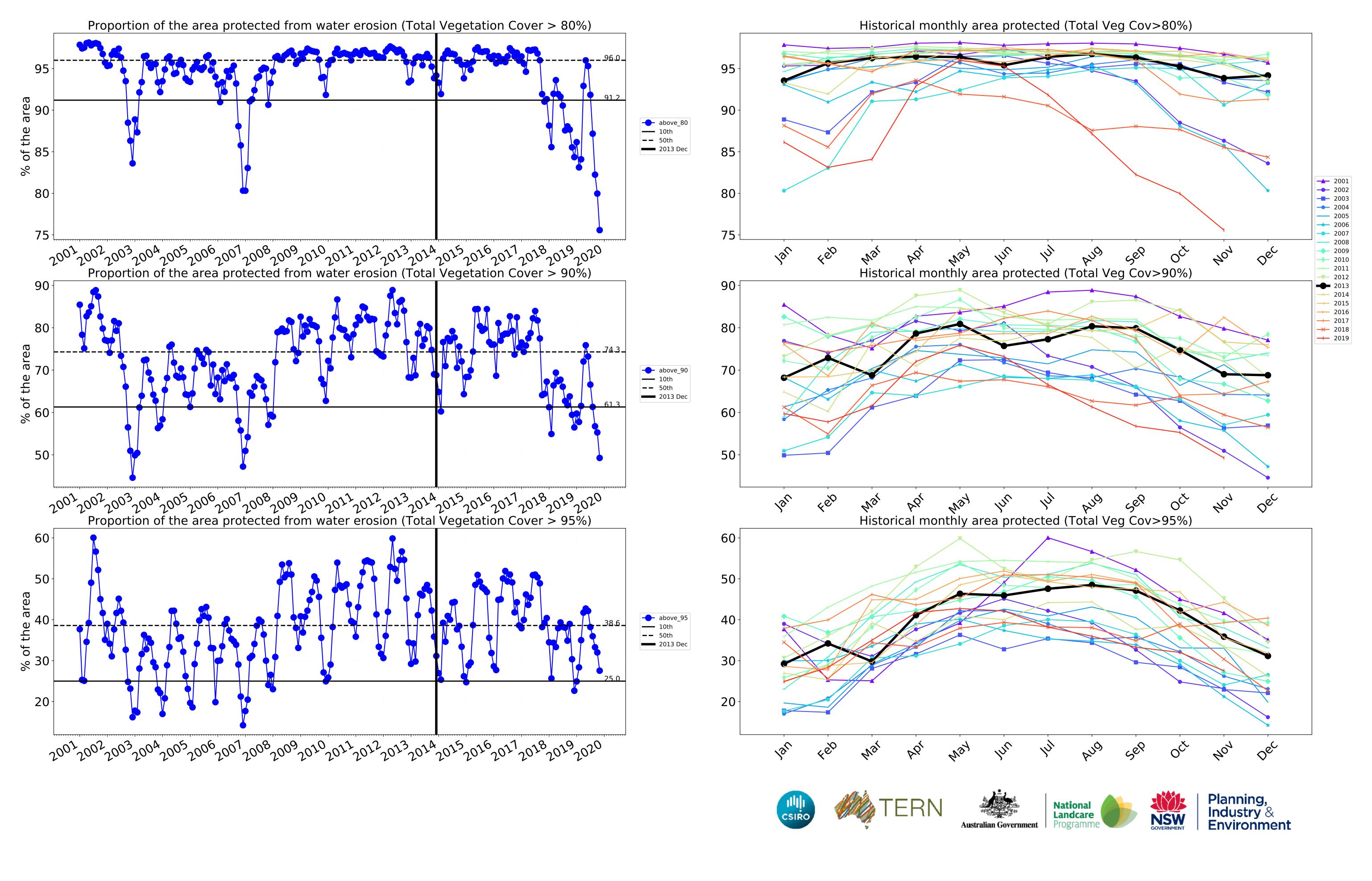




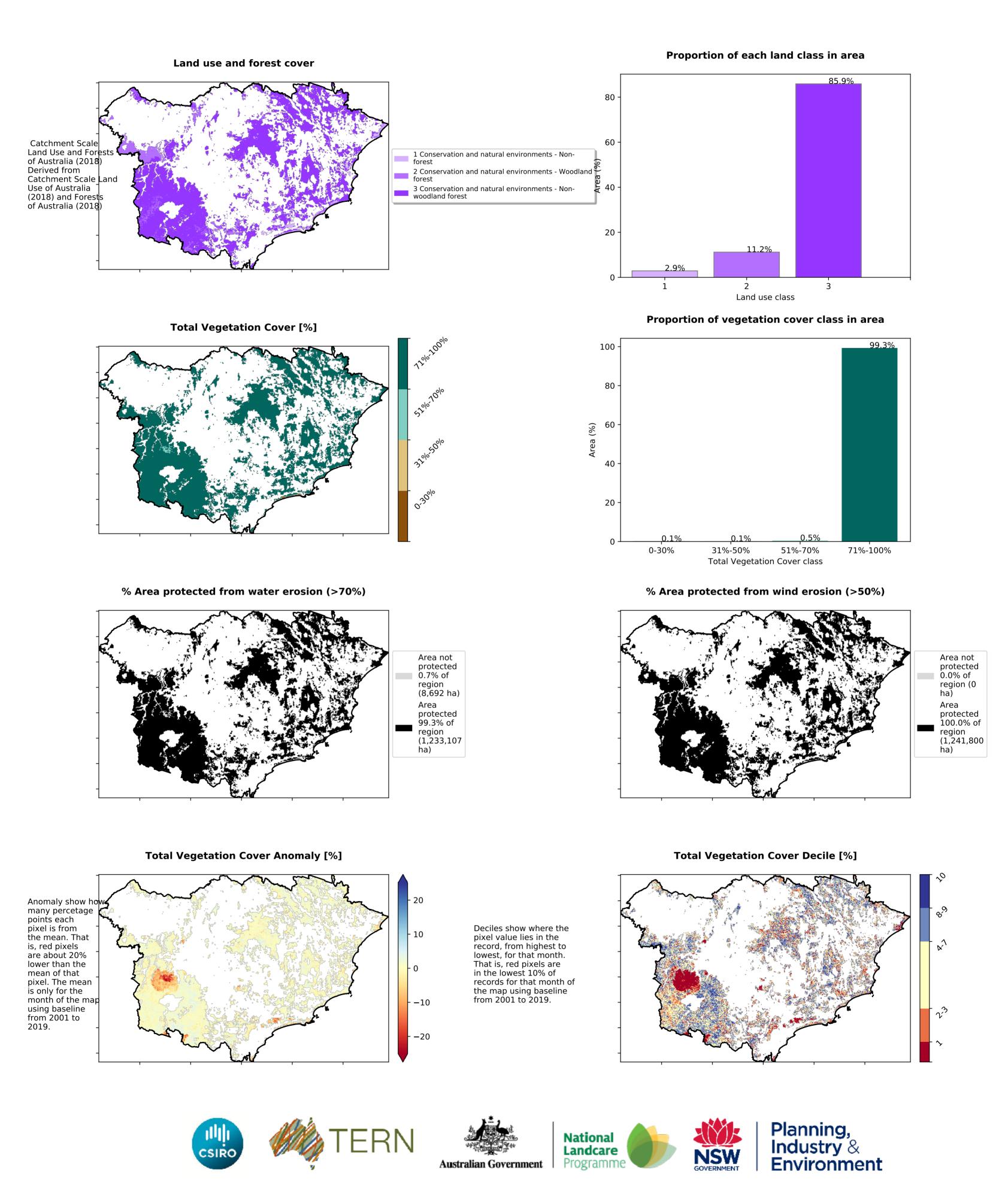




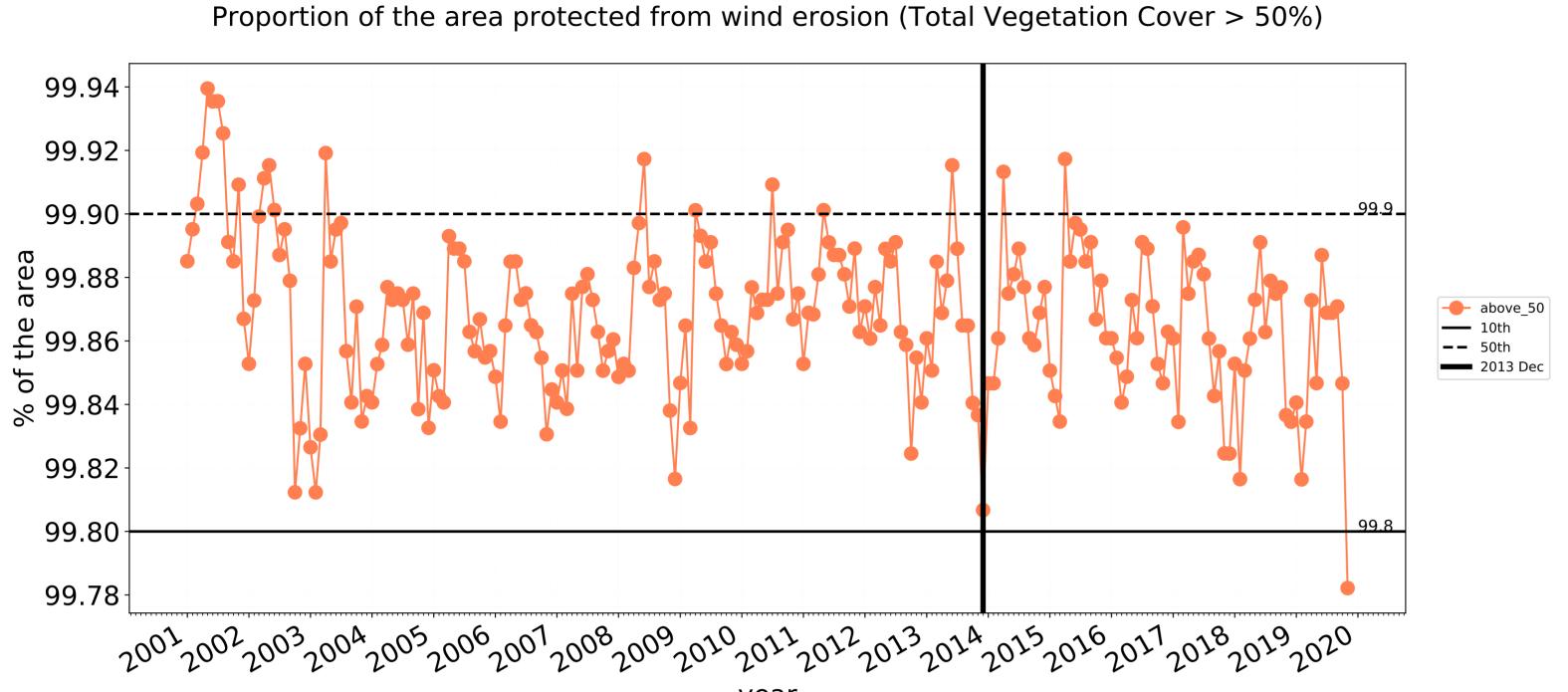


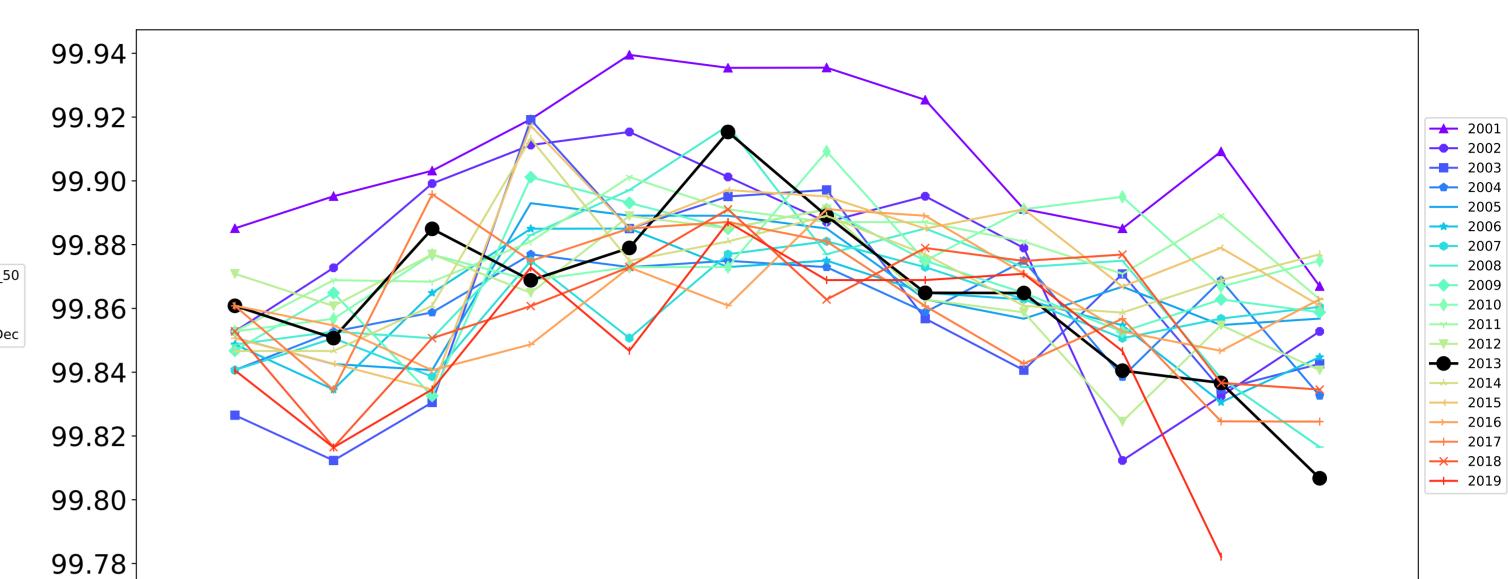


Conservation and natural environments



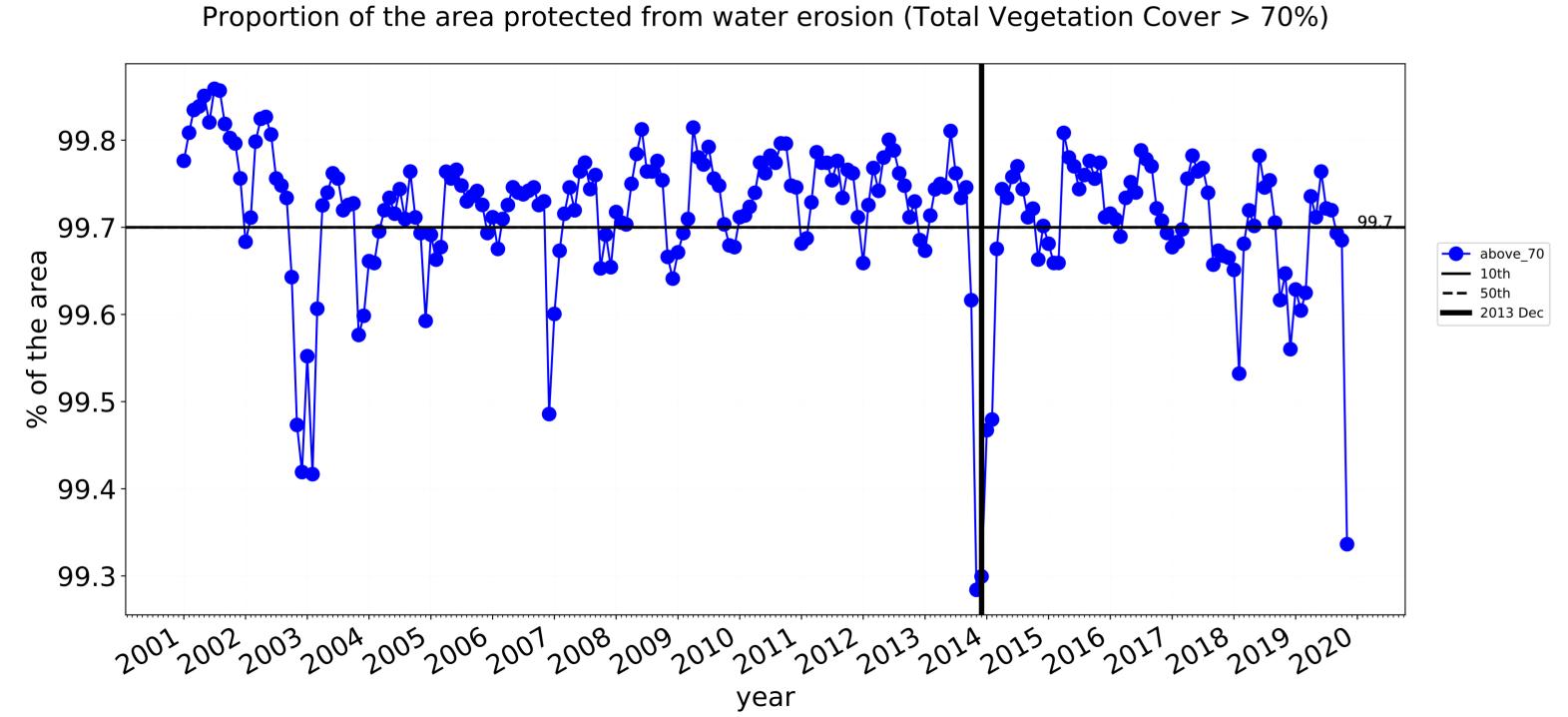
Conservation and natural environments timeseries

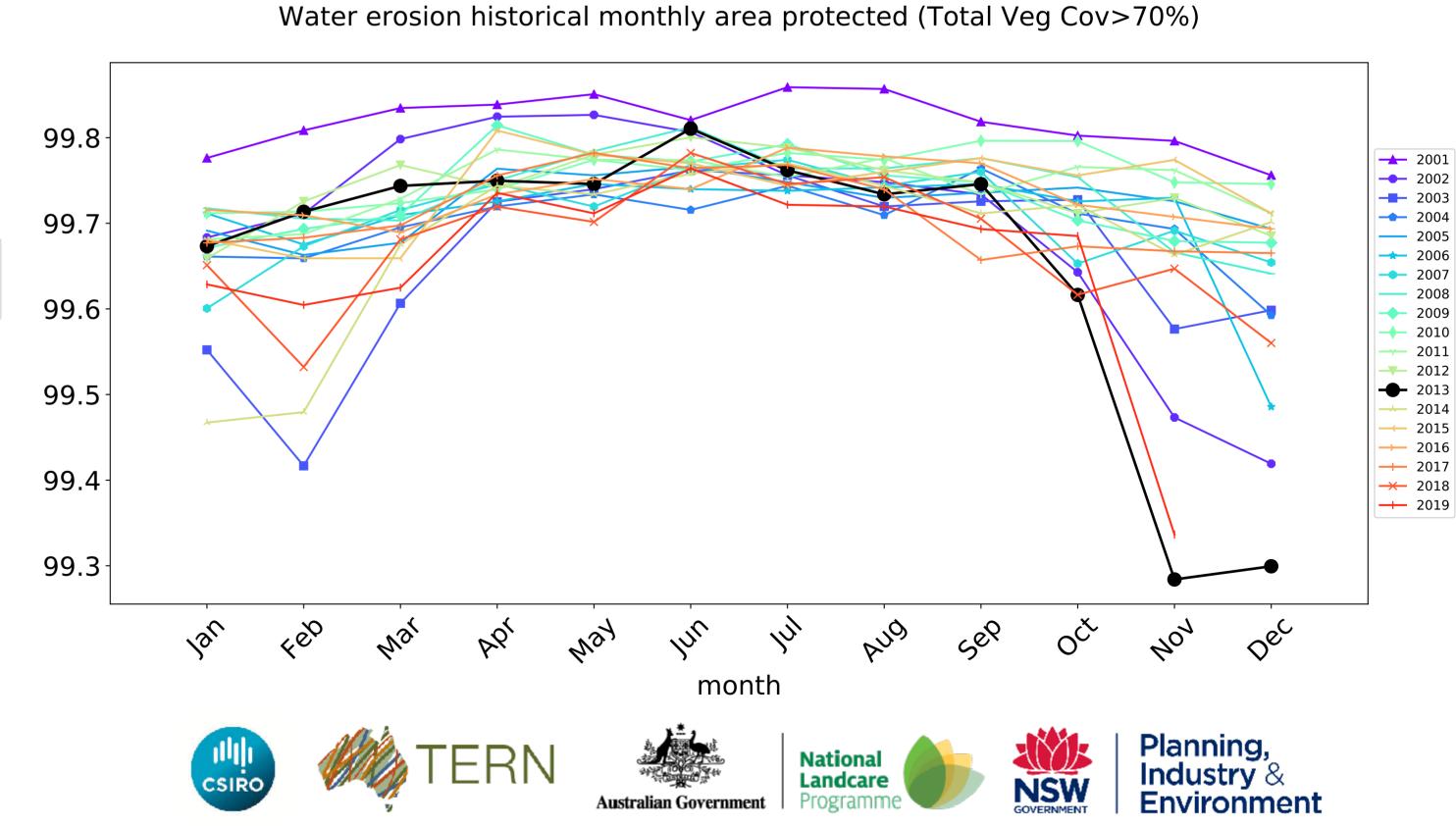


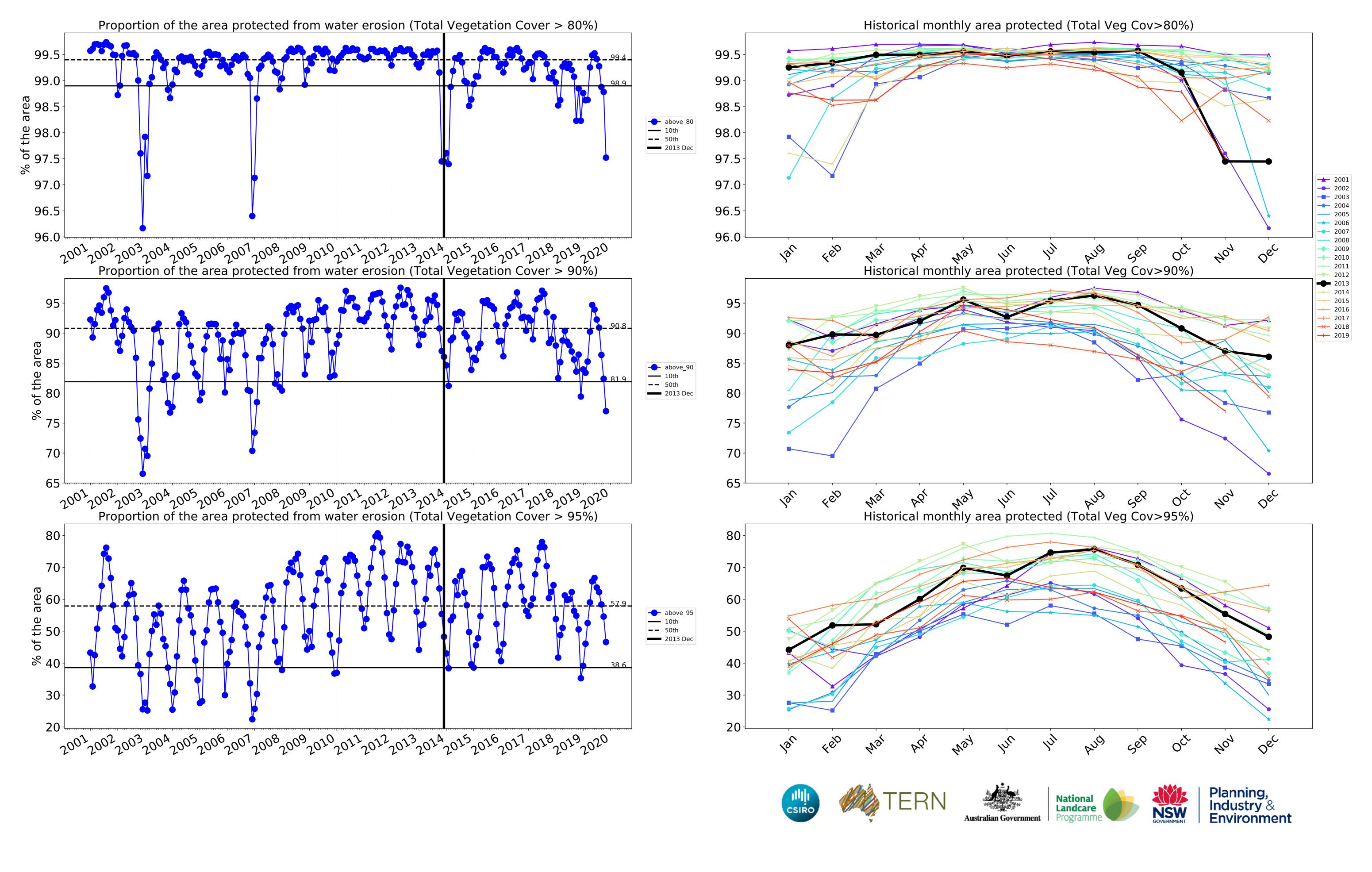


month

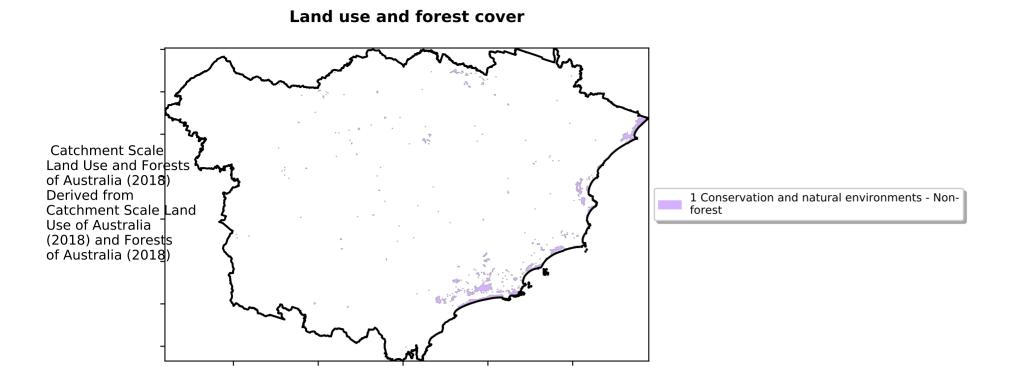
Wind erosion historical monthly area protected (Total Veg Cov >50%)





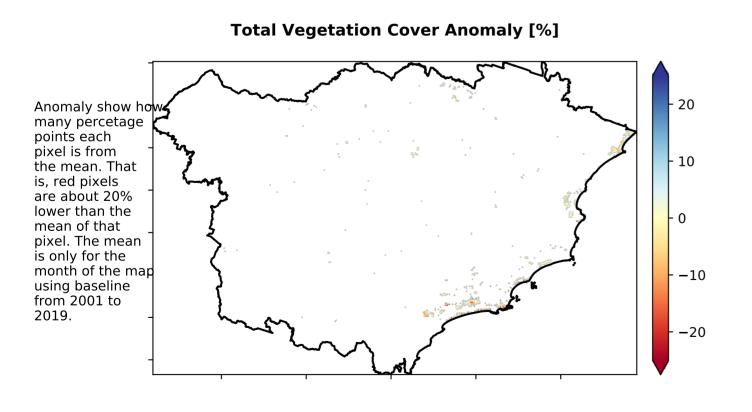


Conservation and natural environments non forest



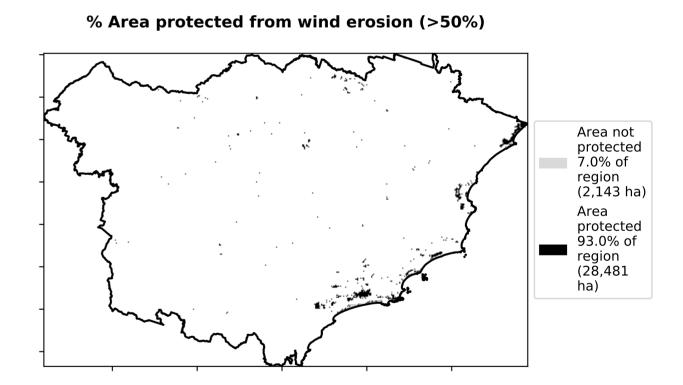
Total Vegetation Cover [%] Talestage Tales

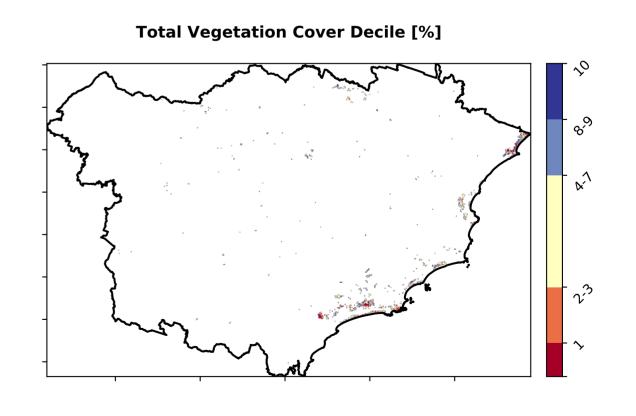
Area not protected 11.1% of region (3,399 ha) Area protected 88.9% of region (27,225 ha)



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

80 - 88.9% 80 - 60 - 60 - 20 - 4.6% 2.5% 0-30% 31%-50% Total Vegetation Cover class 88.9% 71%-100% Total Vegetation Cover class









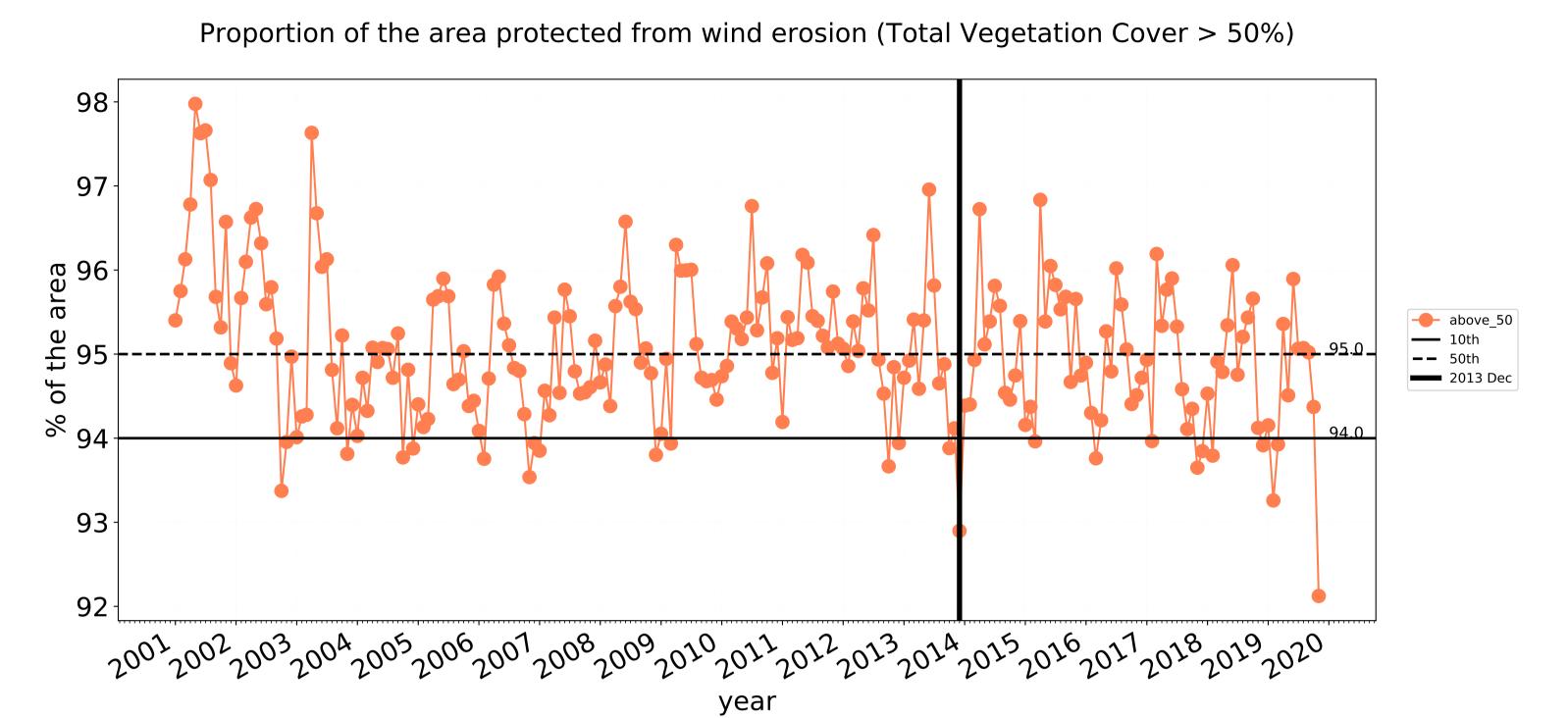




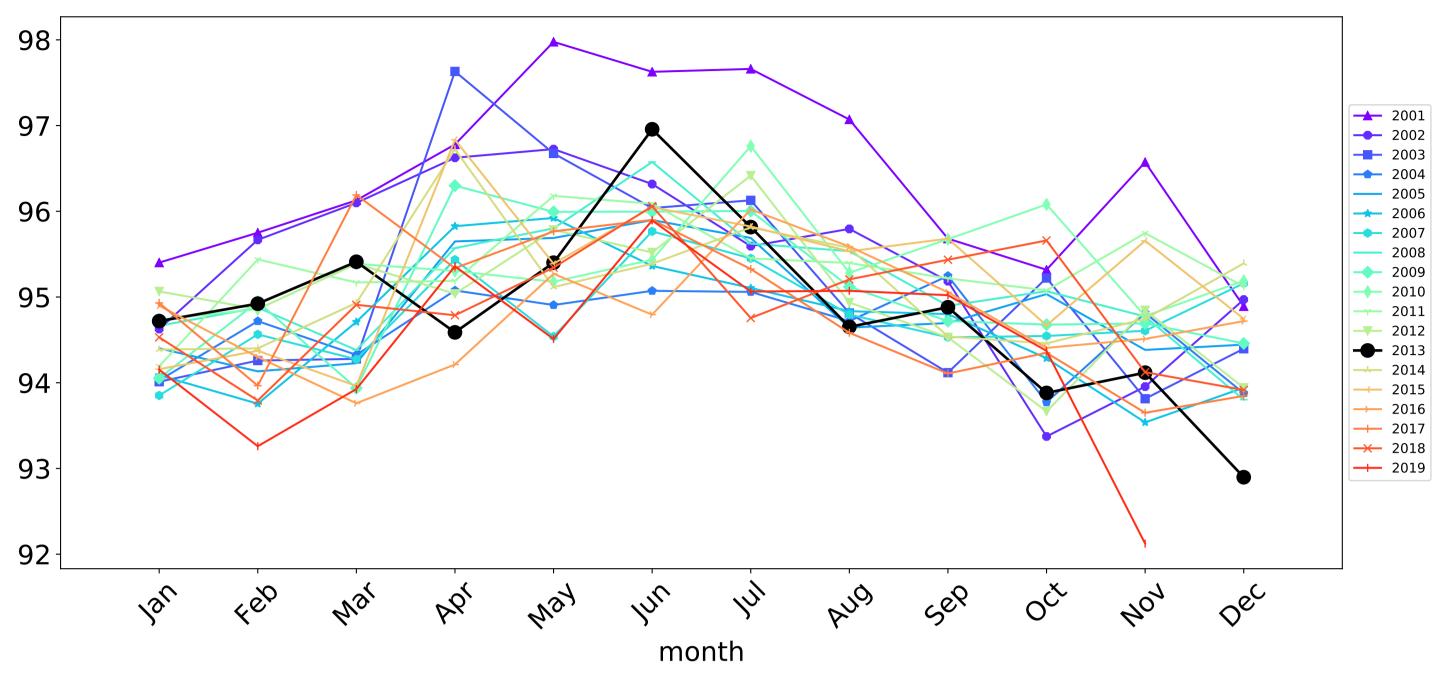




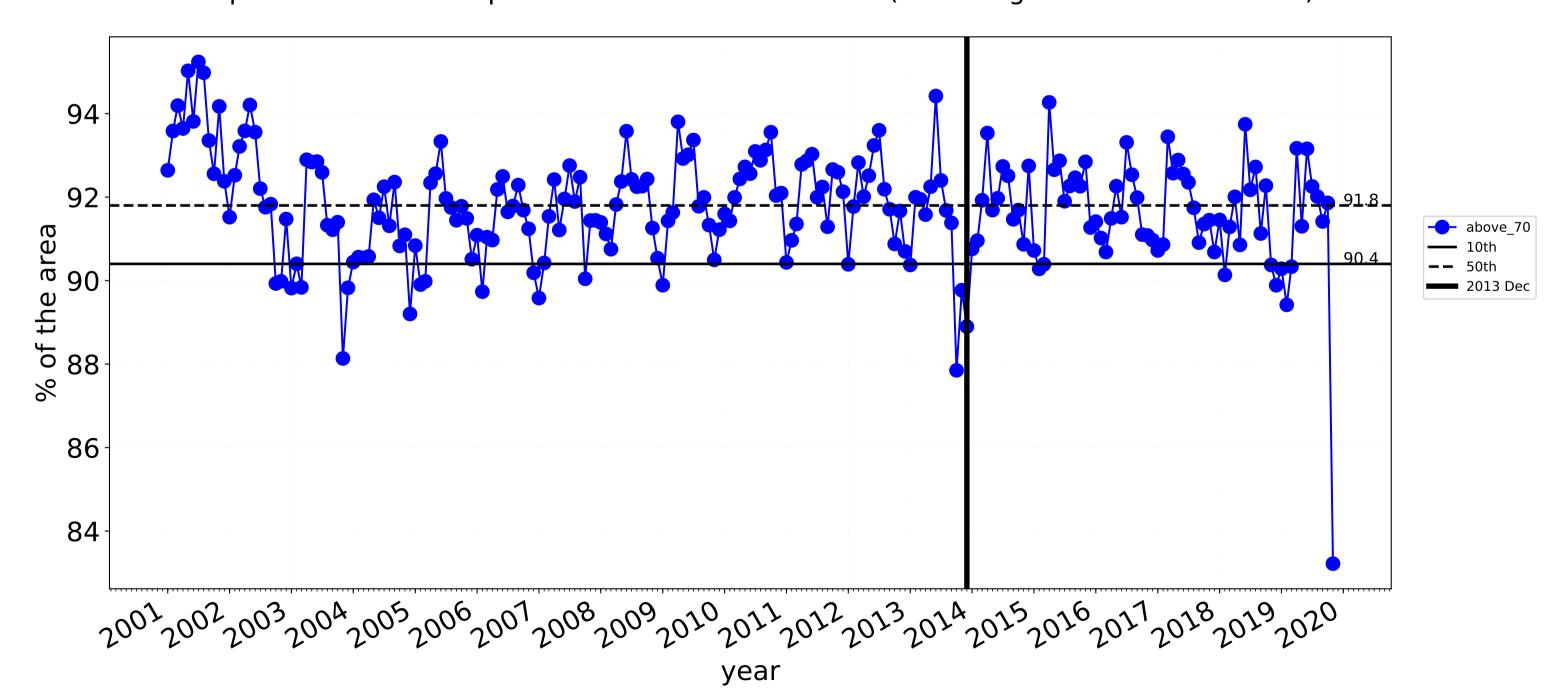
Conservation and natural environments non forest timeseries



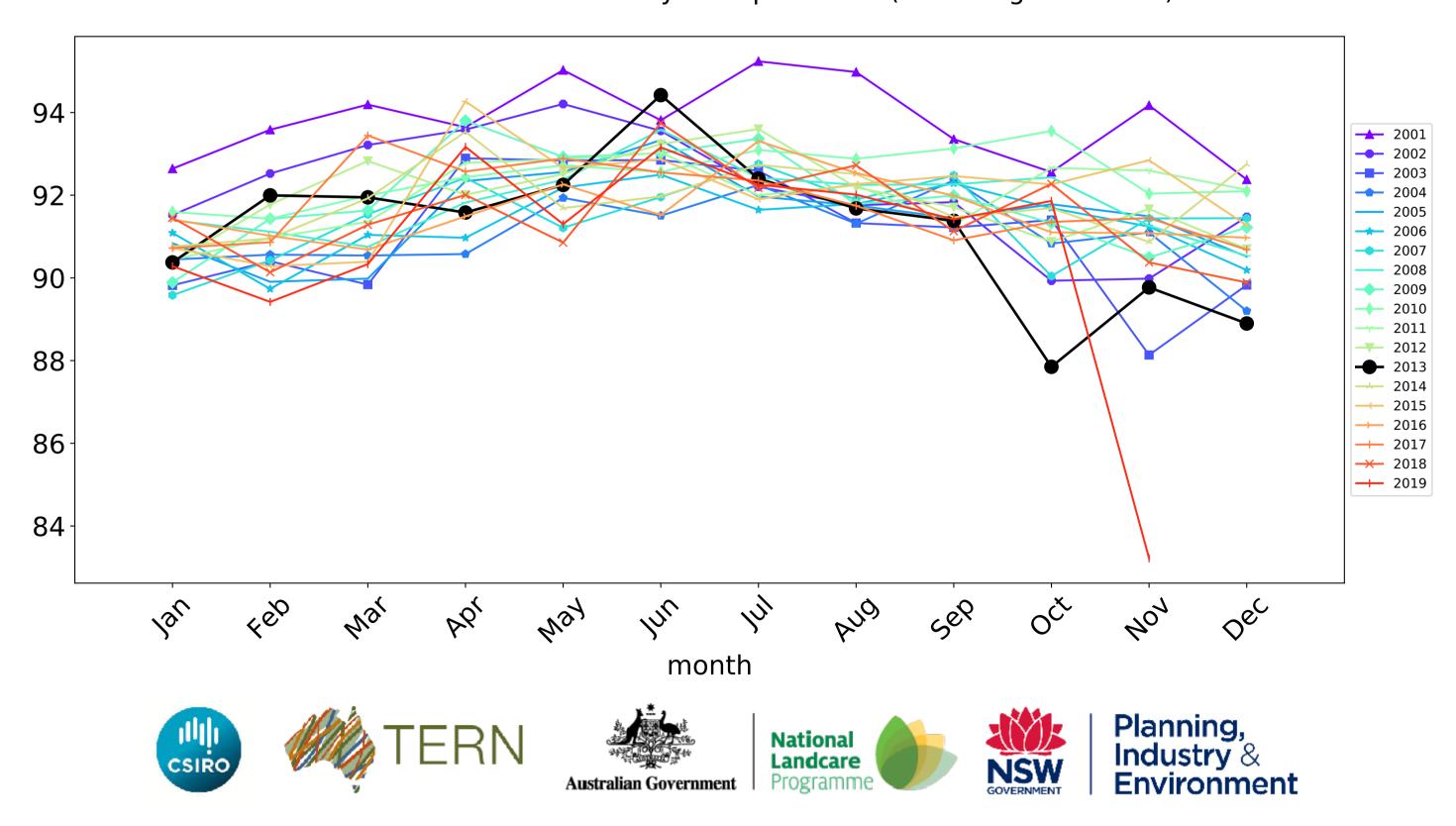


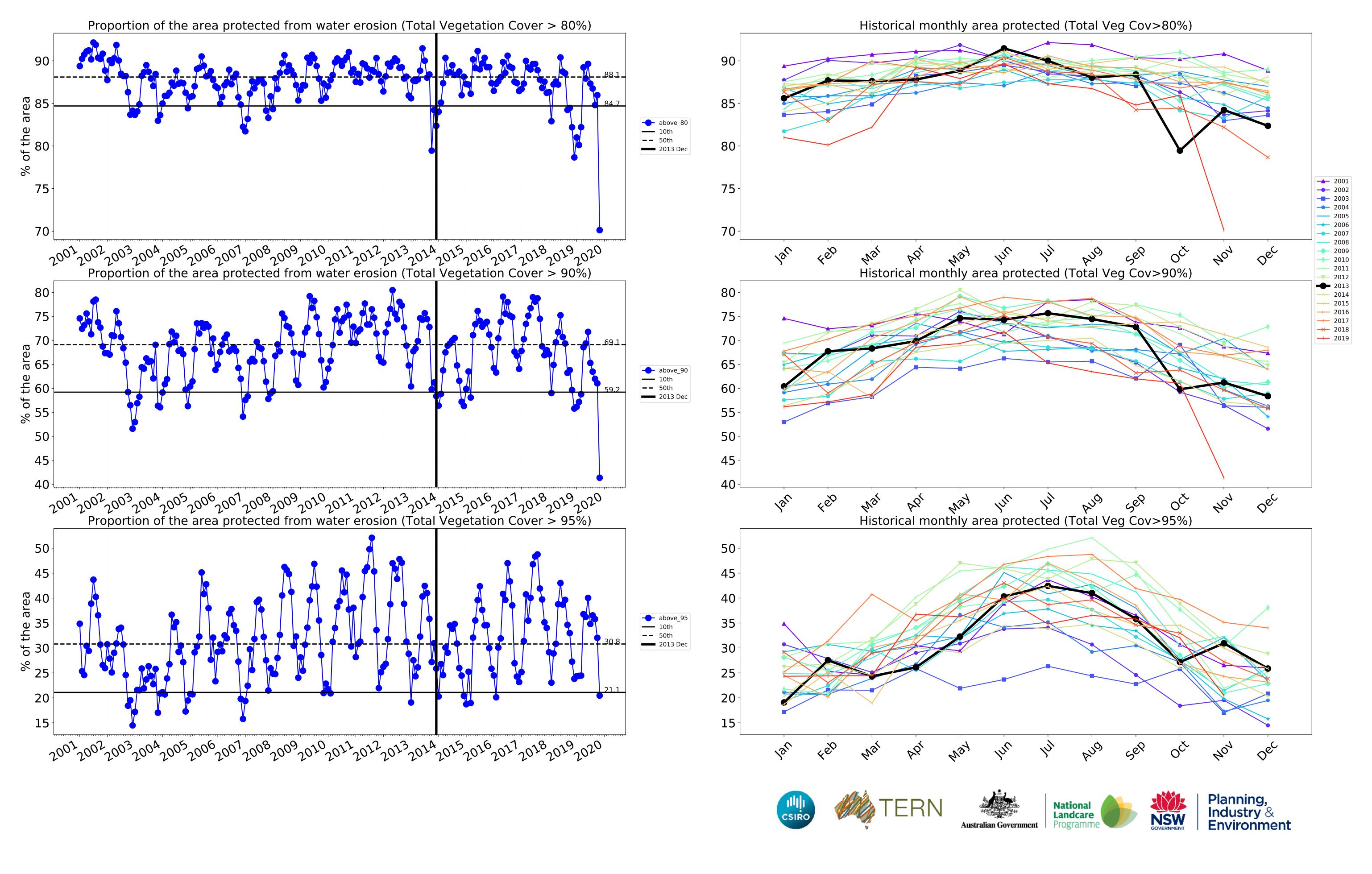


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

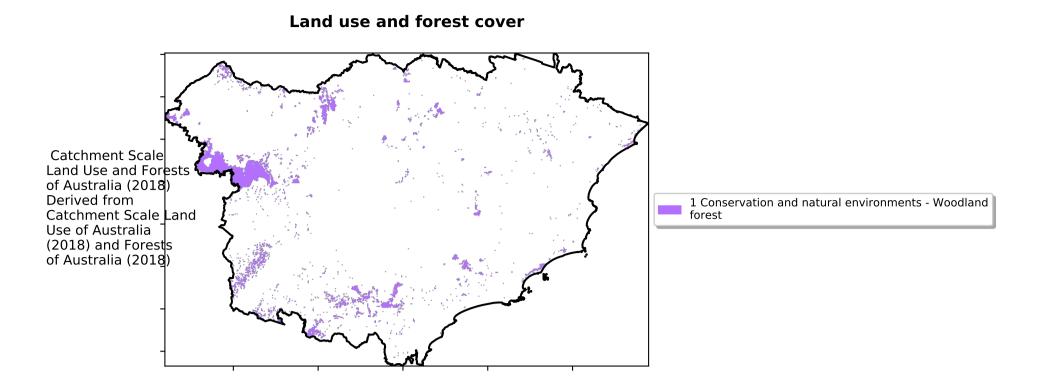


Water erosion historical monthly area protected (Total Veg Cov>70%)

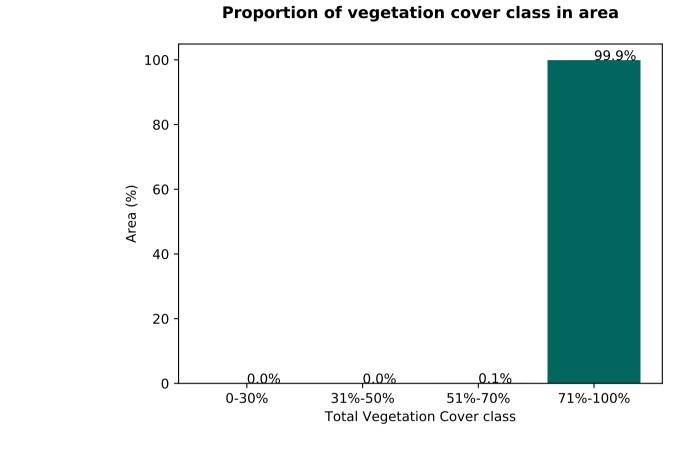


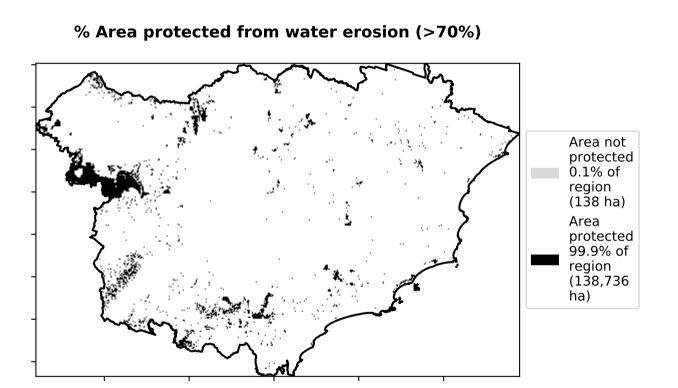


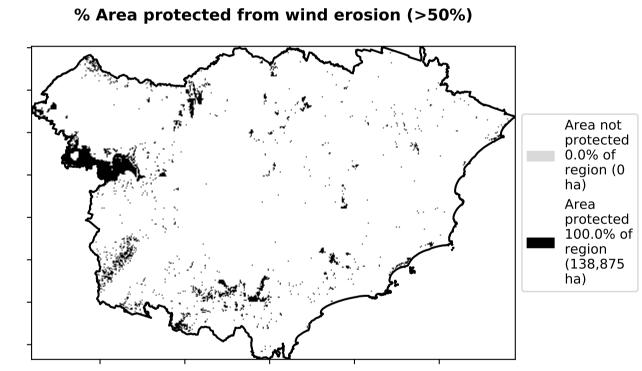
Conservation and natural environments Woodland forest

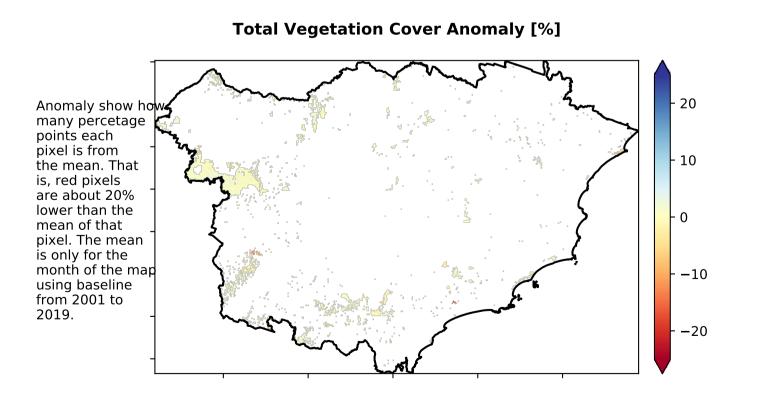


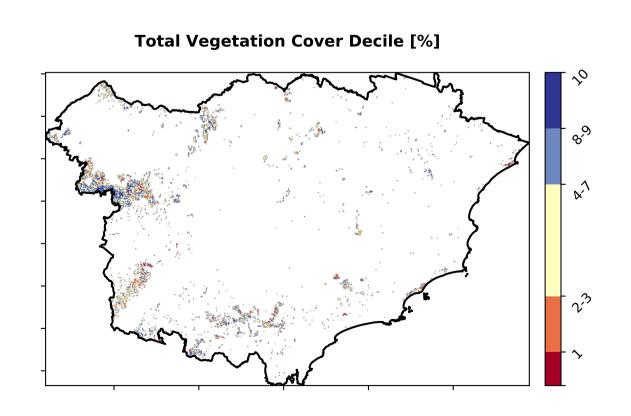
Total Vegetation Cover [%] Total Vegetation Cover [%] Total Vegetation Cover [%]















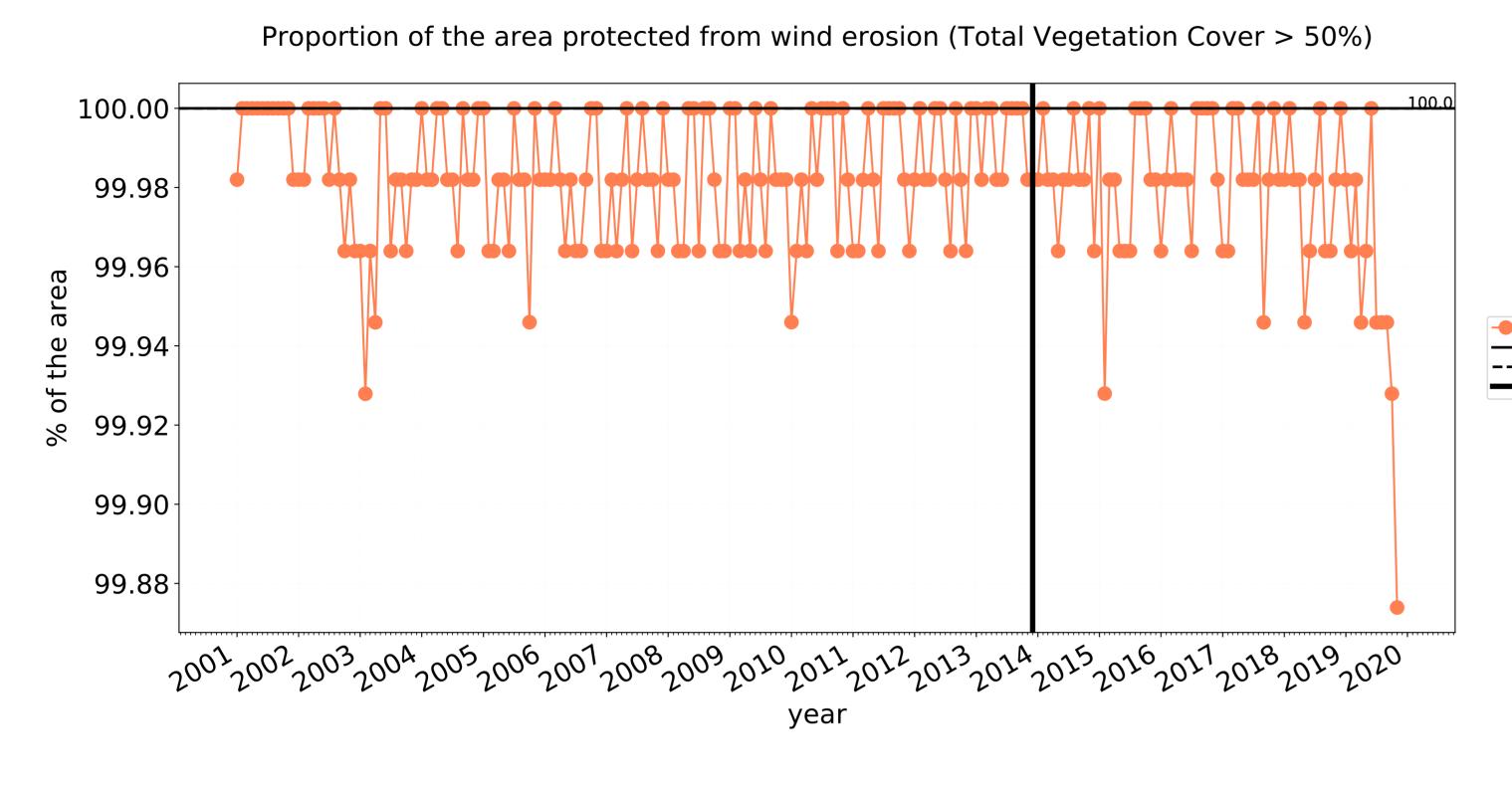


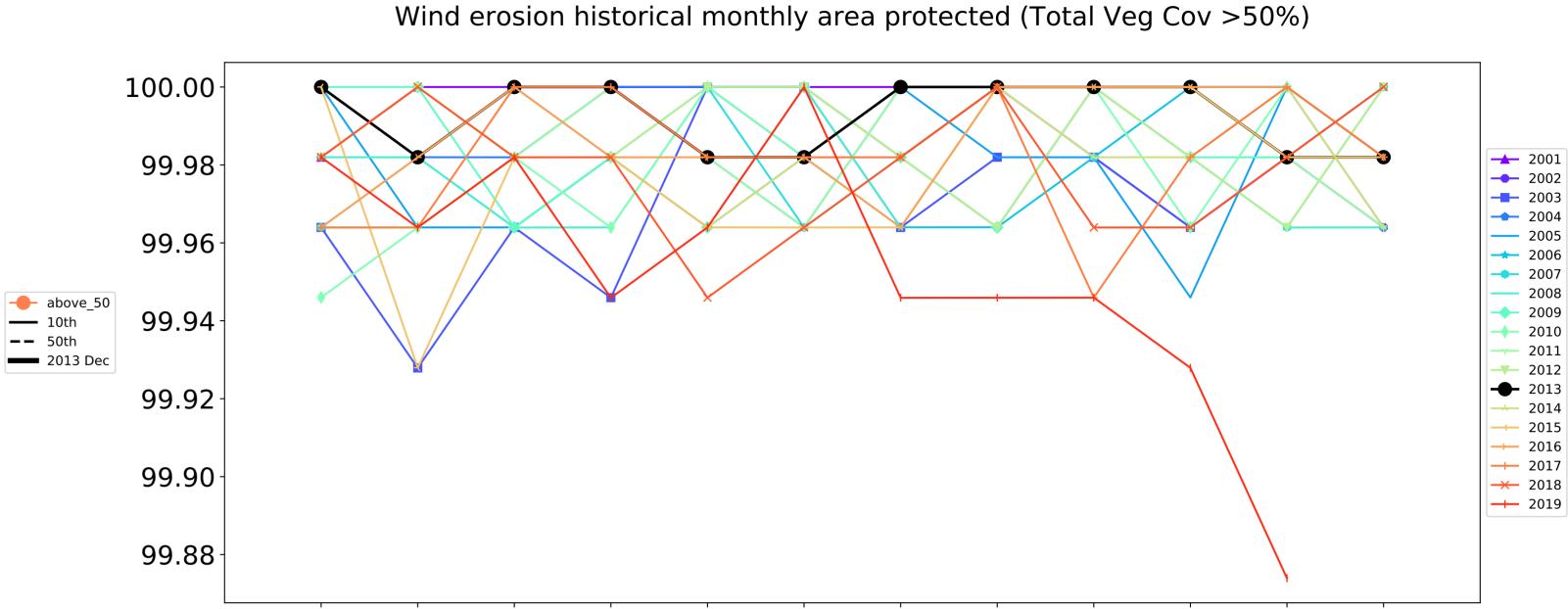




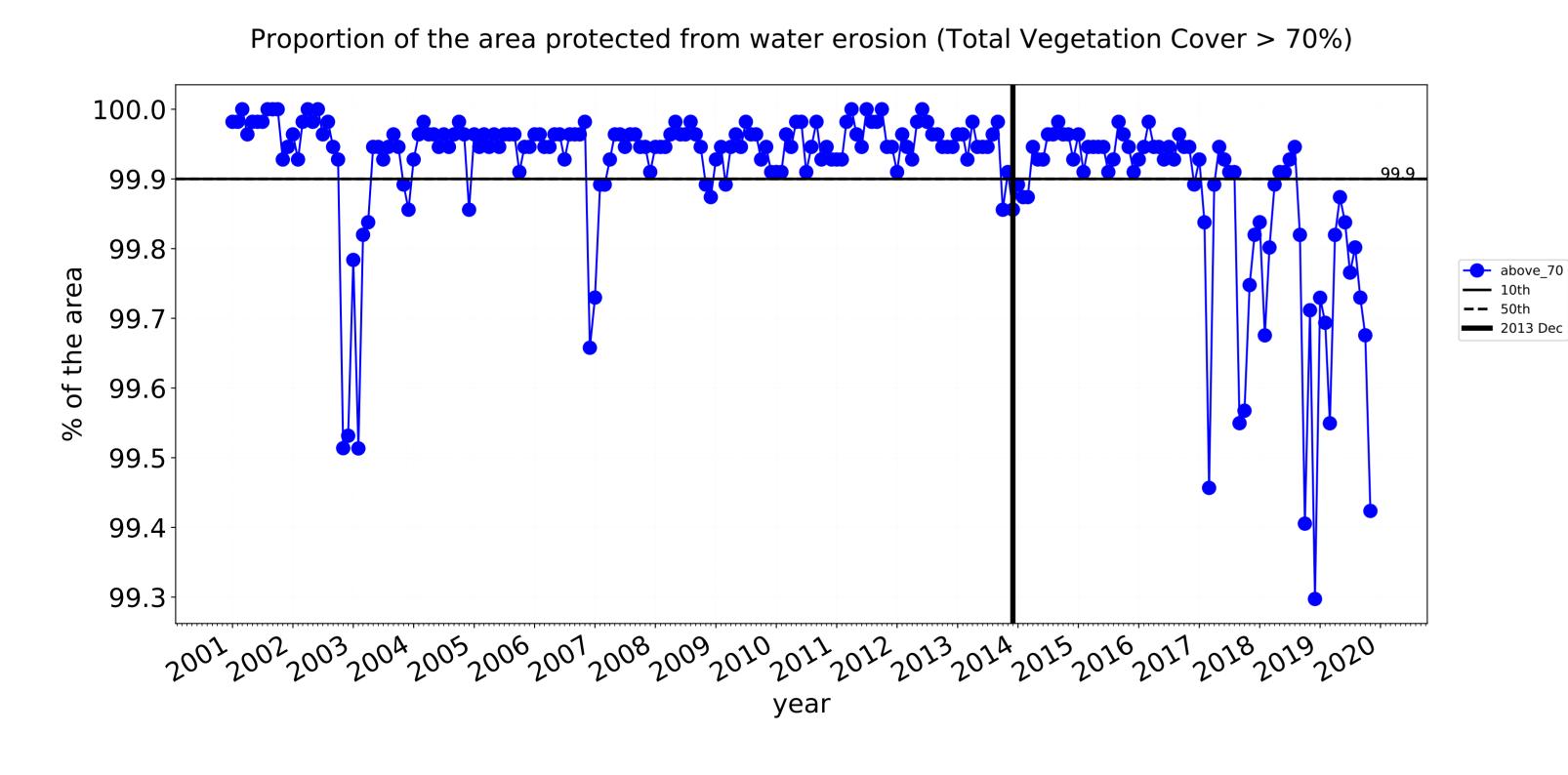


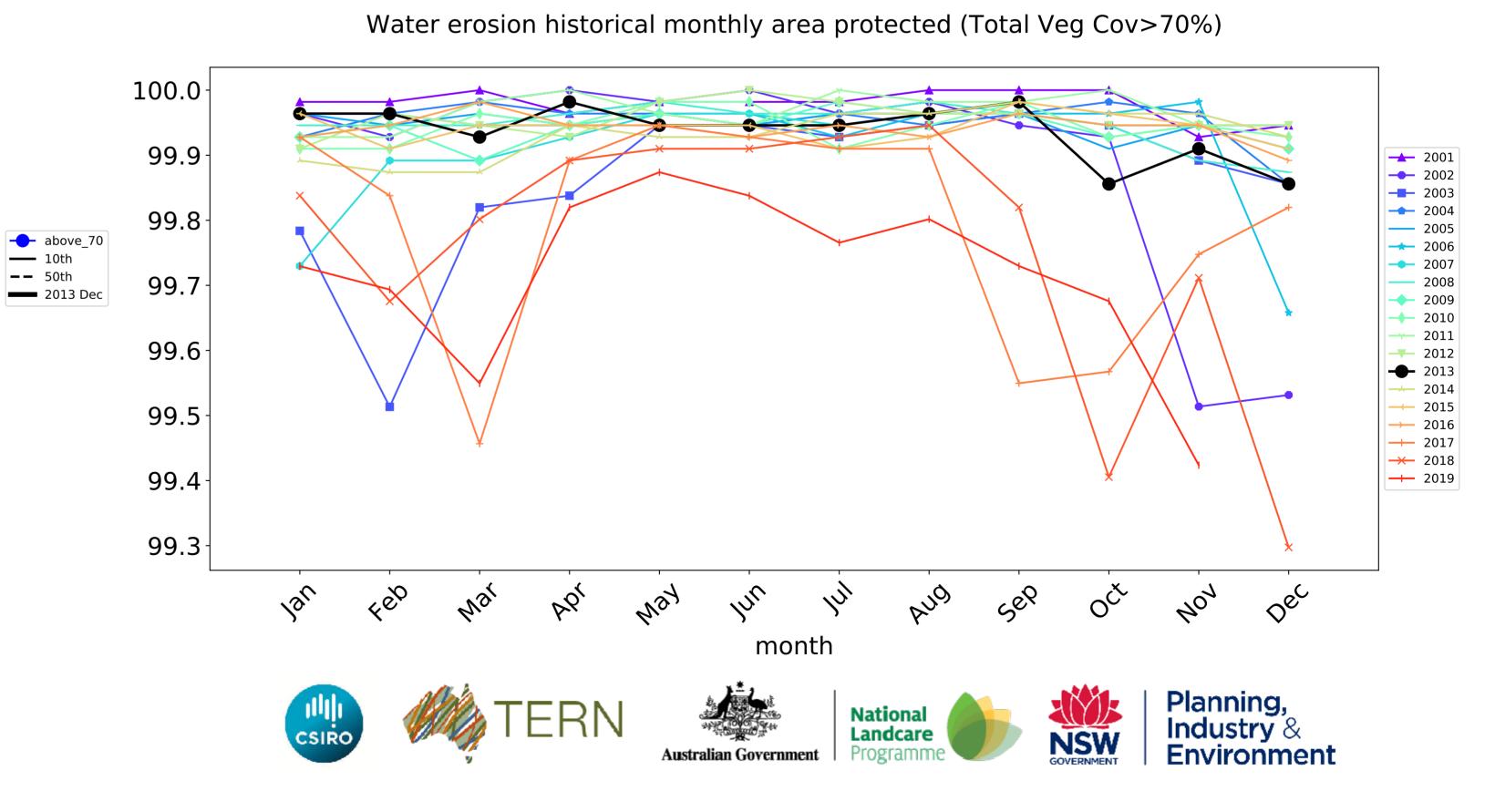
Conservation and natural environments Woodland forest timeseries

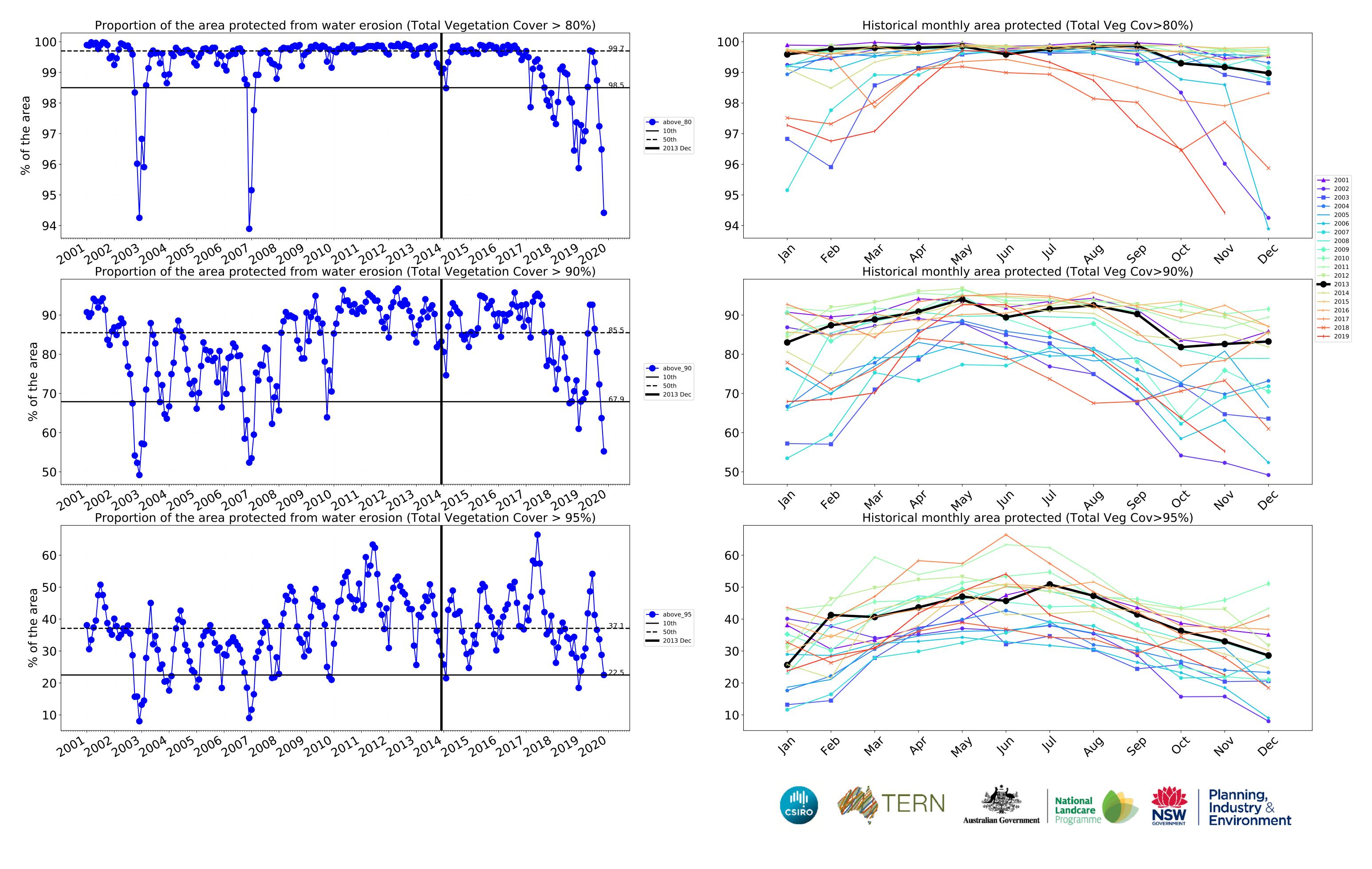




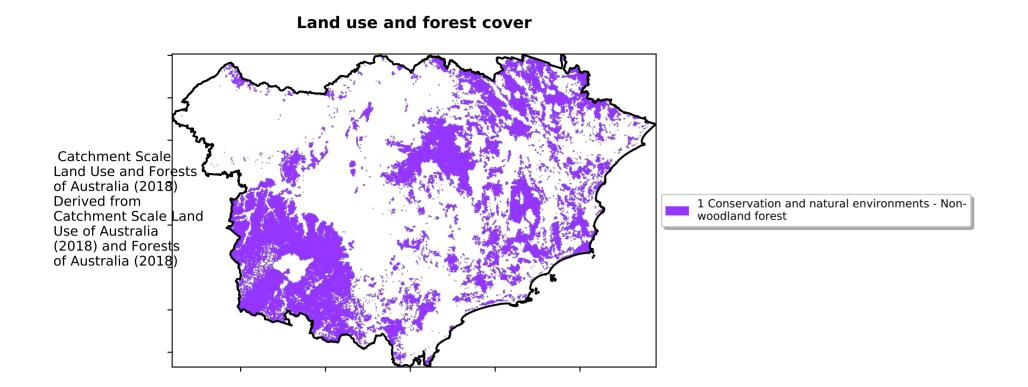
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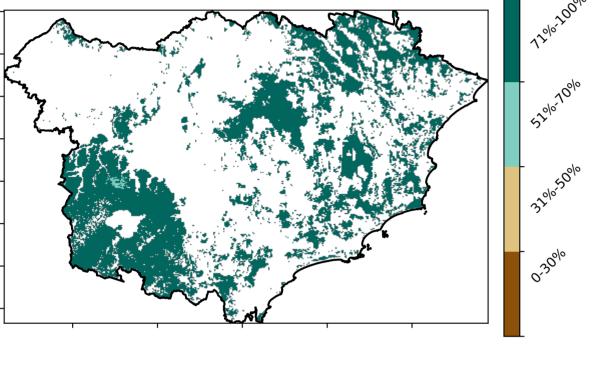


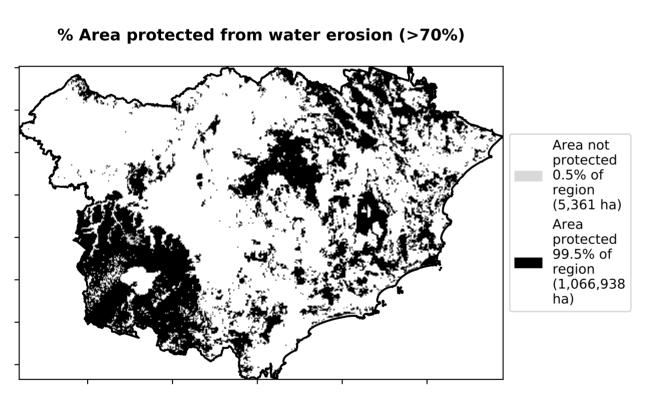


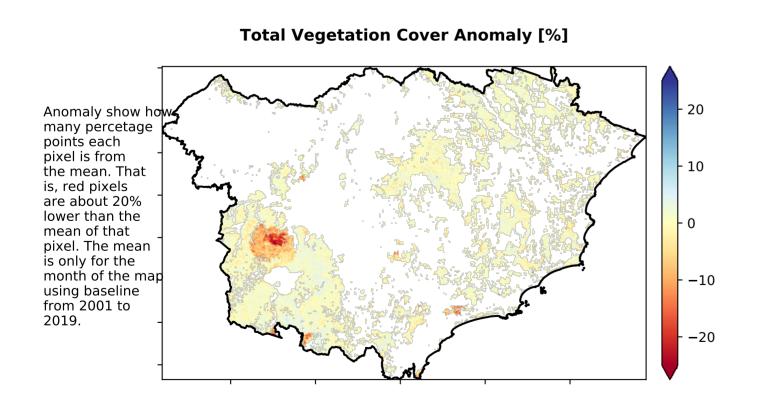
Conservation and natural environments Forest (non woodland)



Total Vegetation Cover [%]

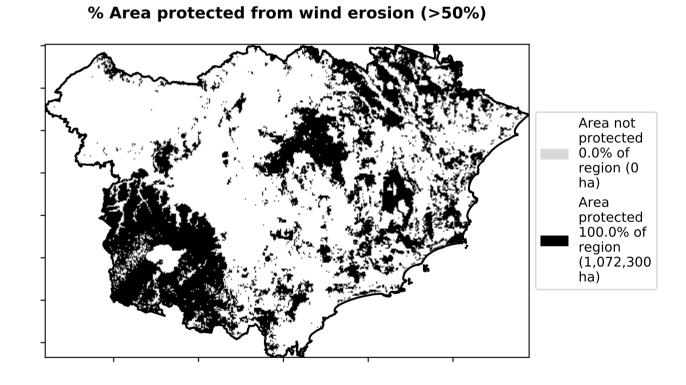


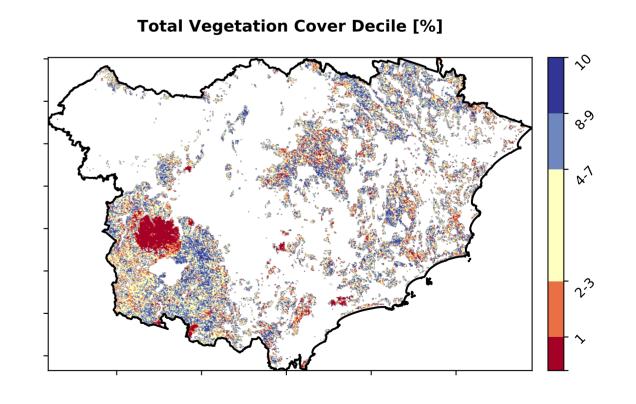




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Proportion of vegetation cover class in area 99.5% 100 80 20 0.0%0-30% 51%-70% 31%-50% 71%-100% **Total Vegetation Cover class**









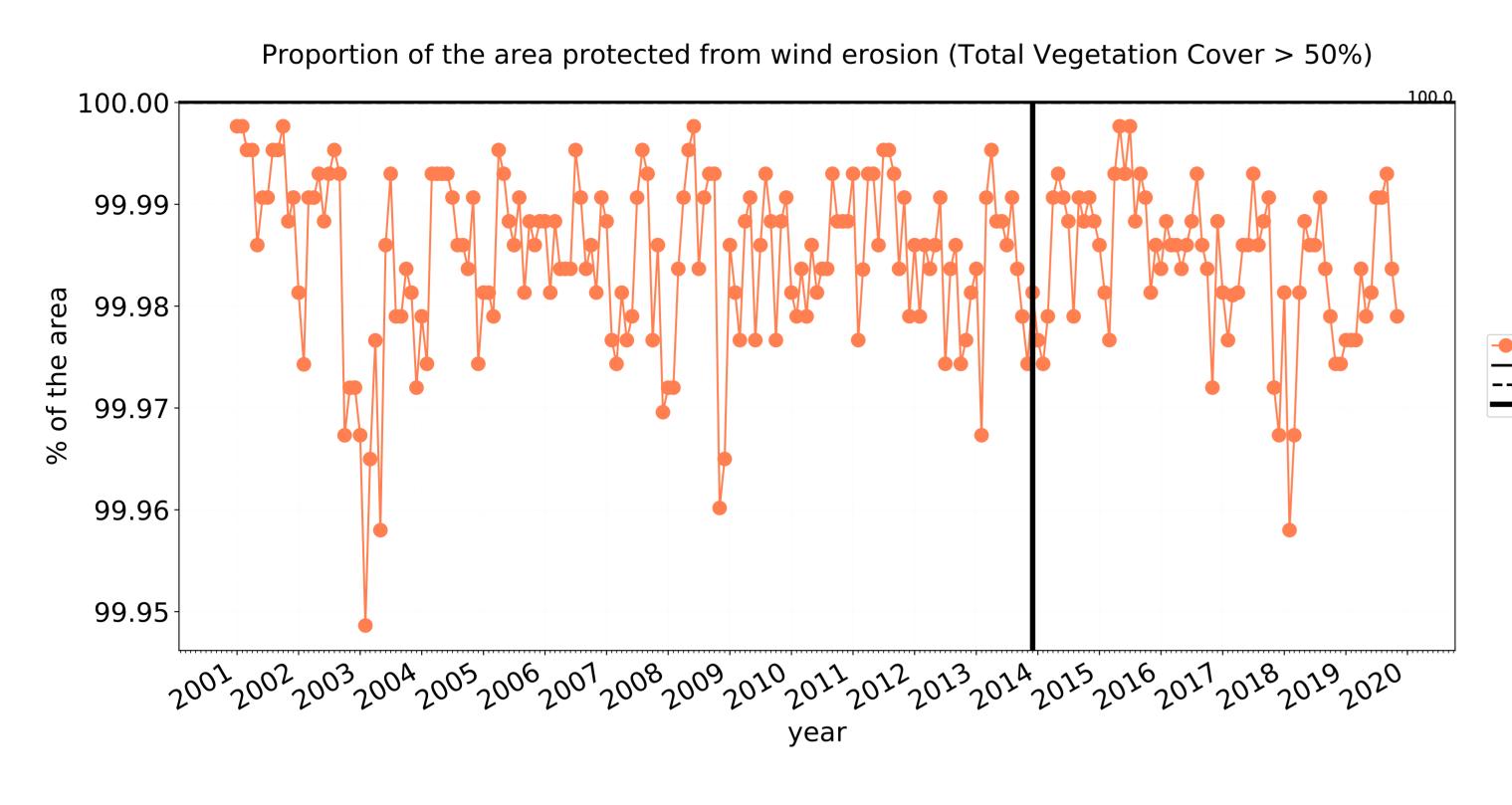


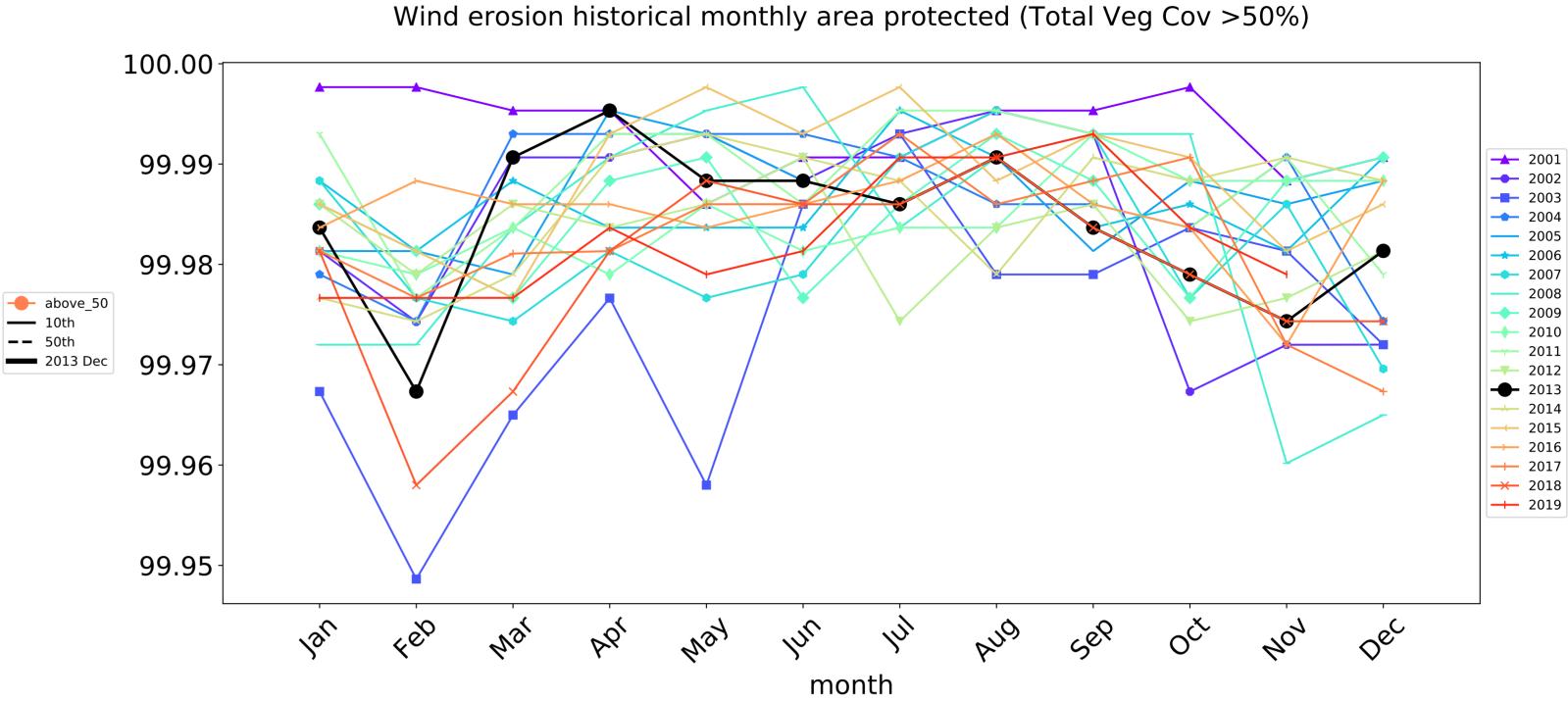


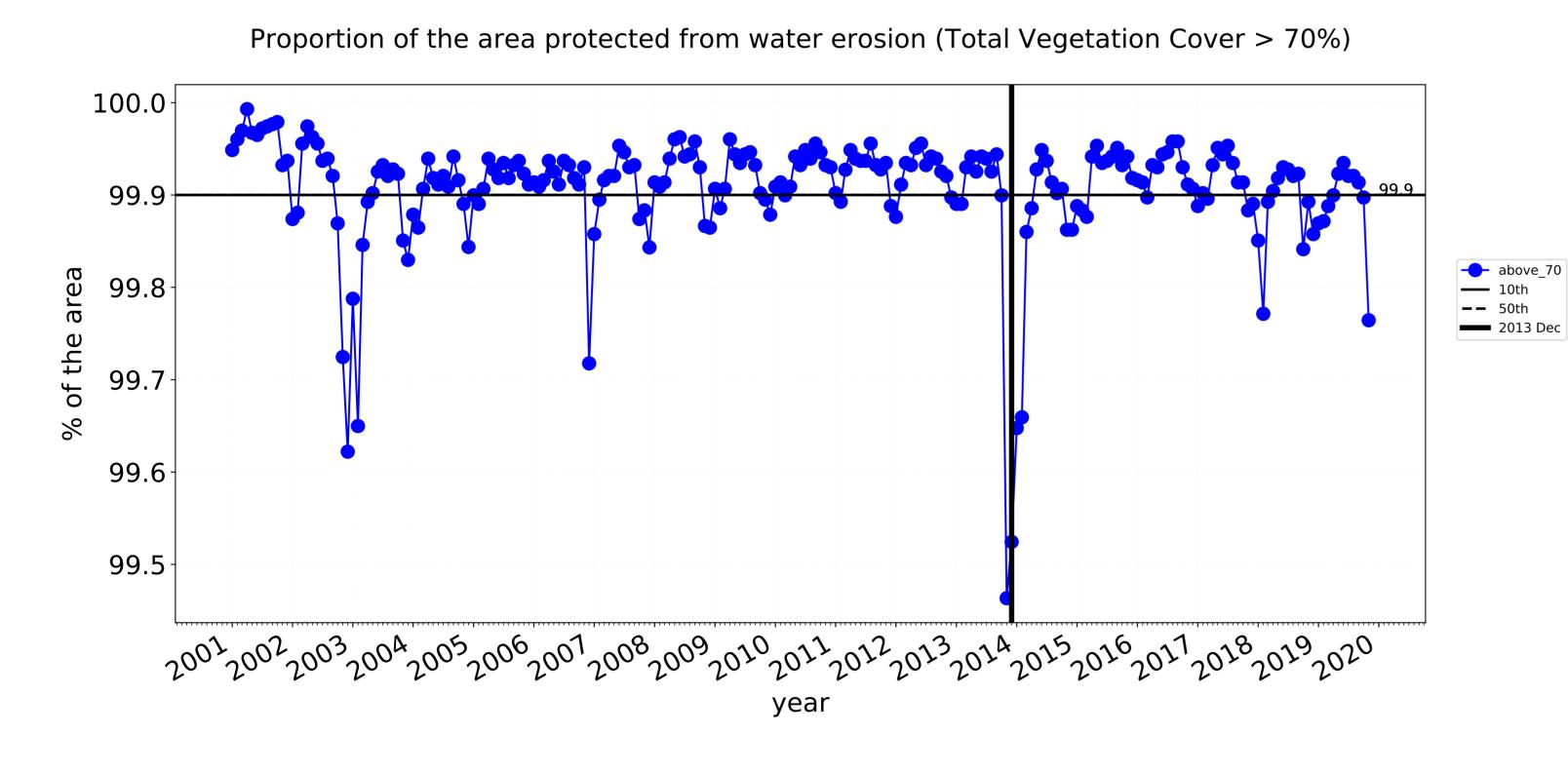


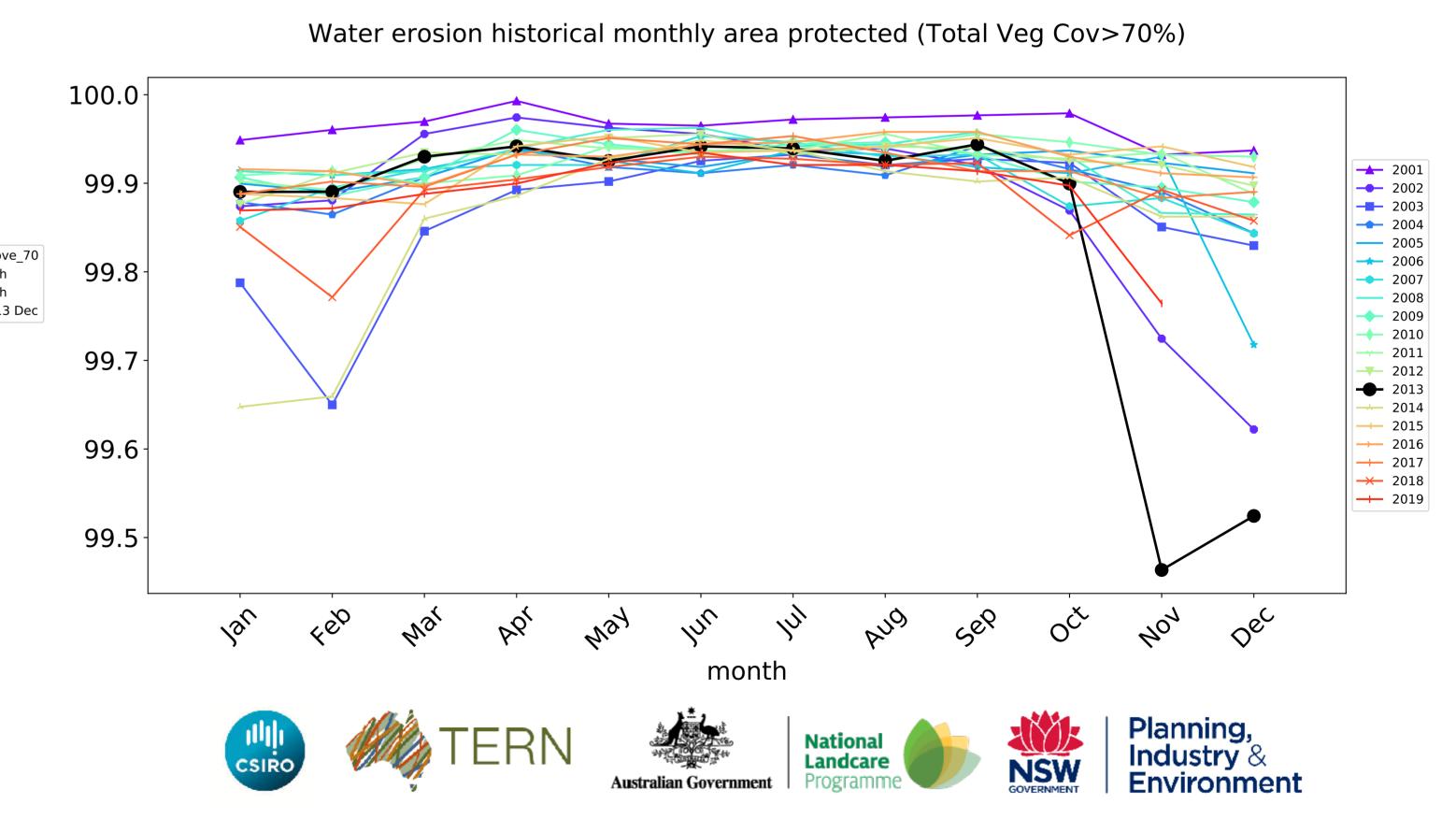


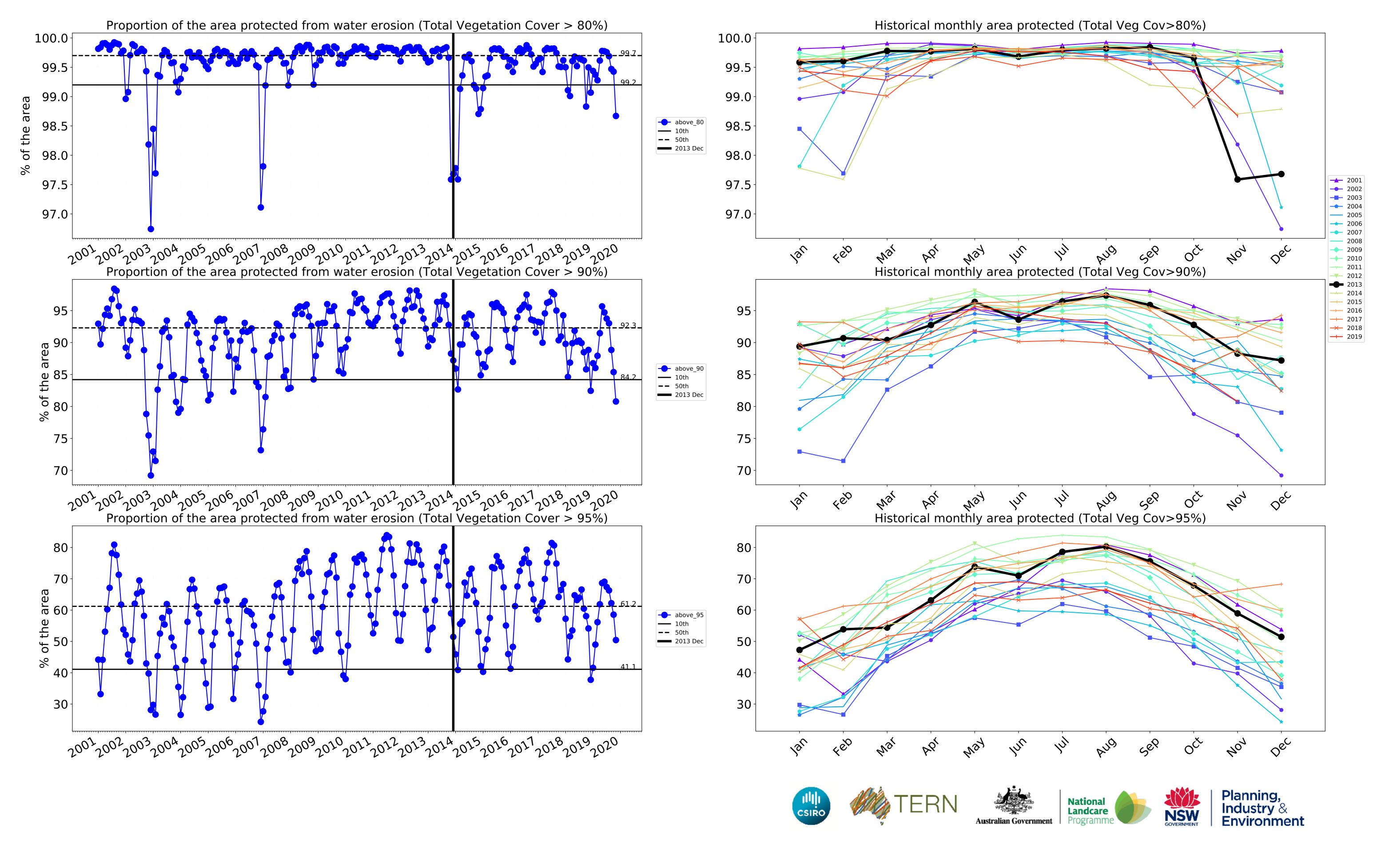
Conservation and natural environments Forest (non woodland) timeseries



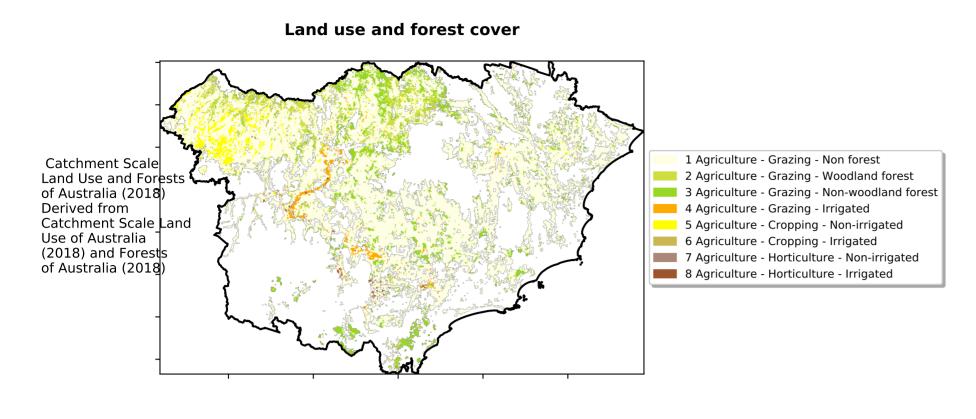


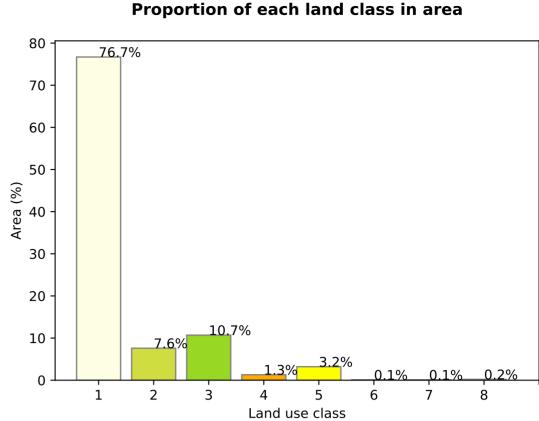


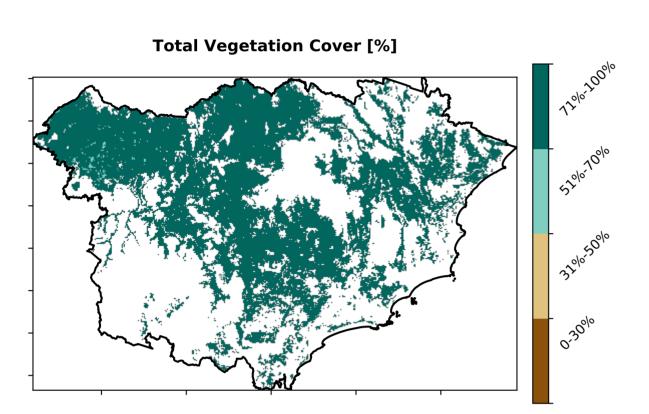


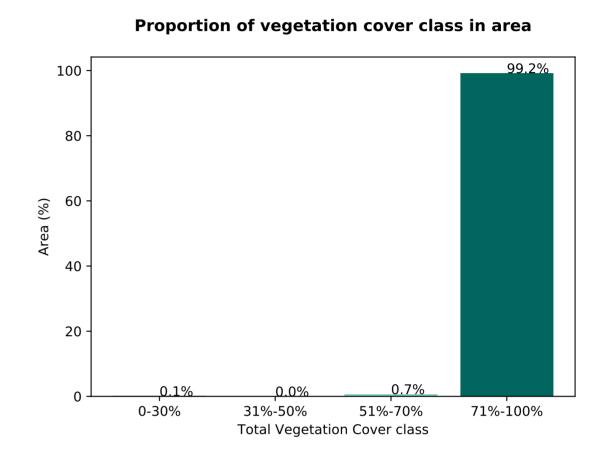


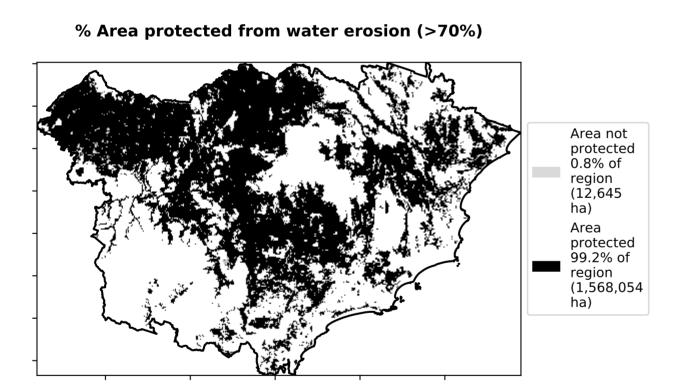
Agriculture

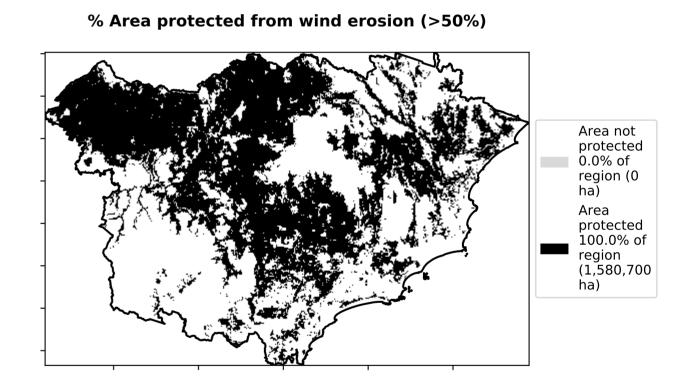


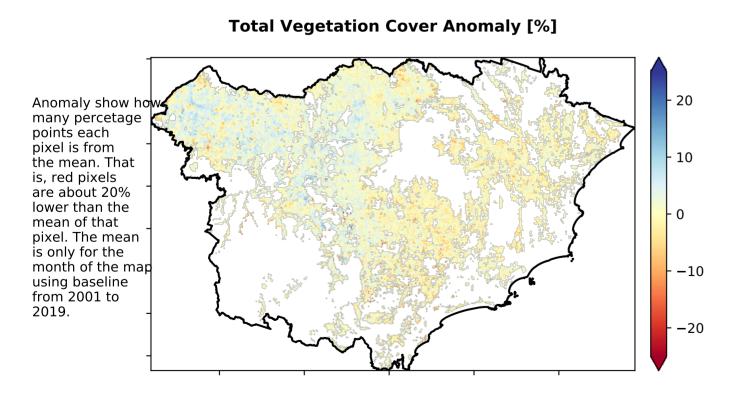


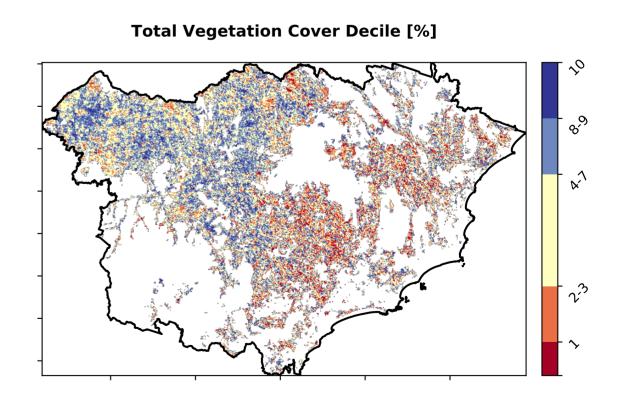
















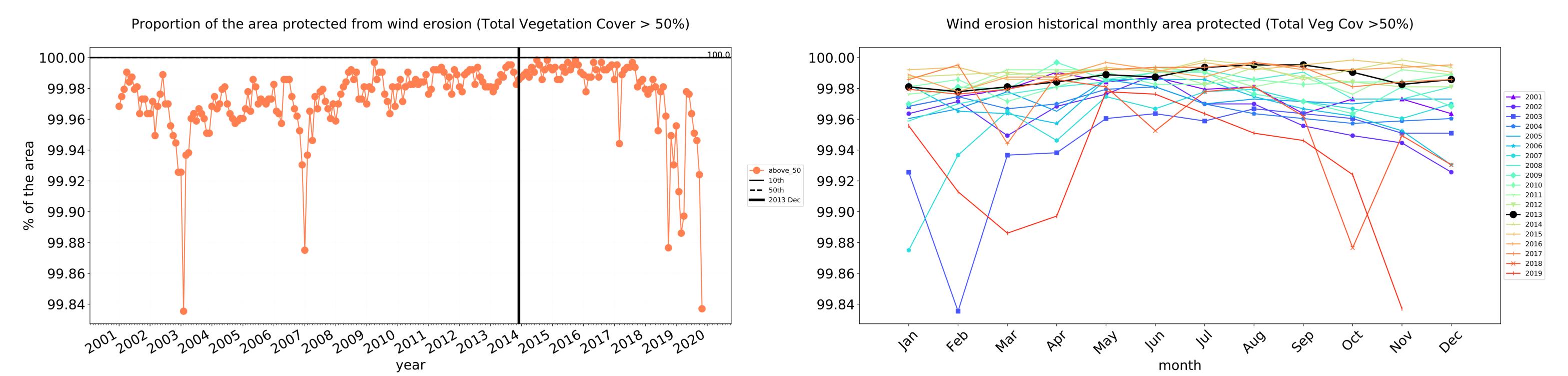


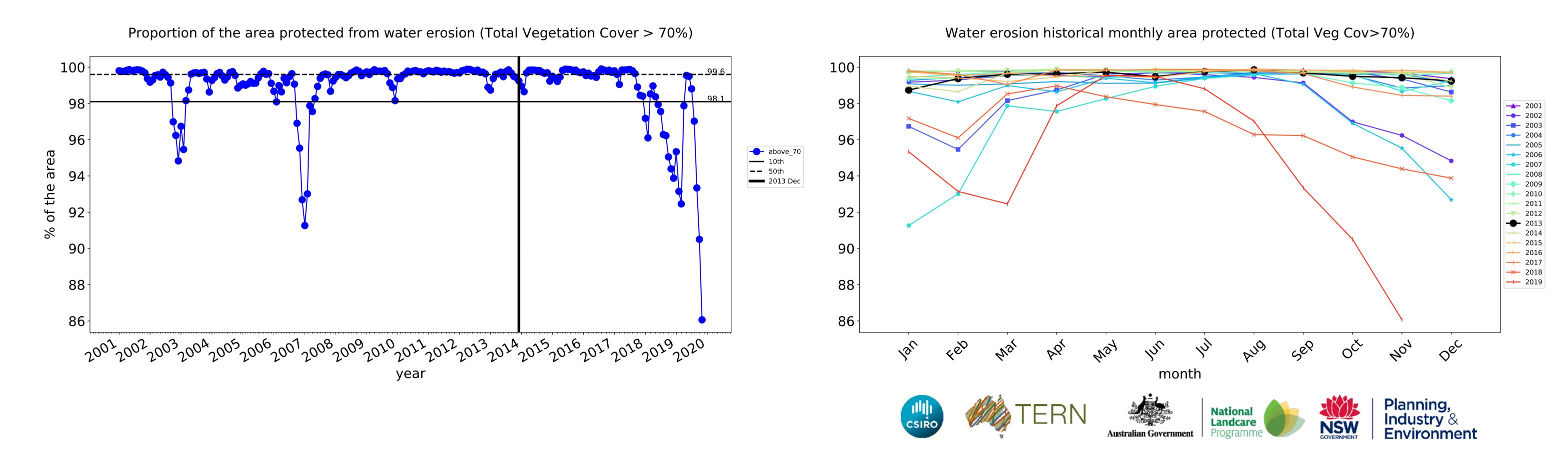


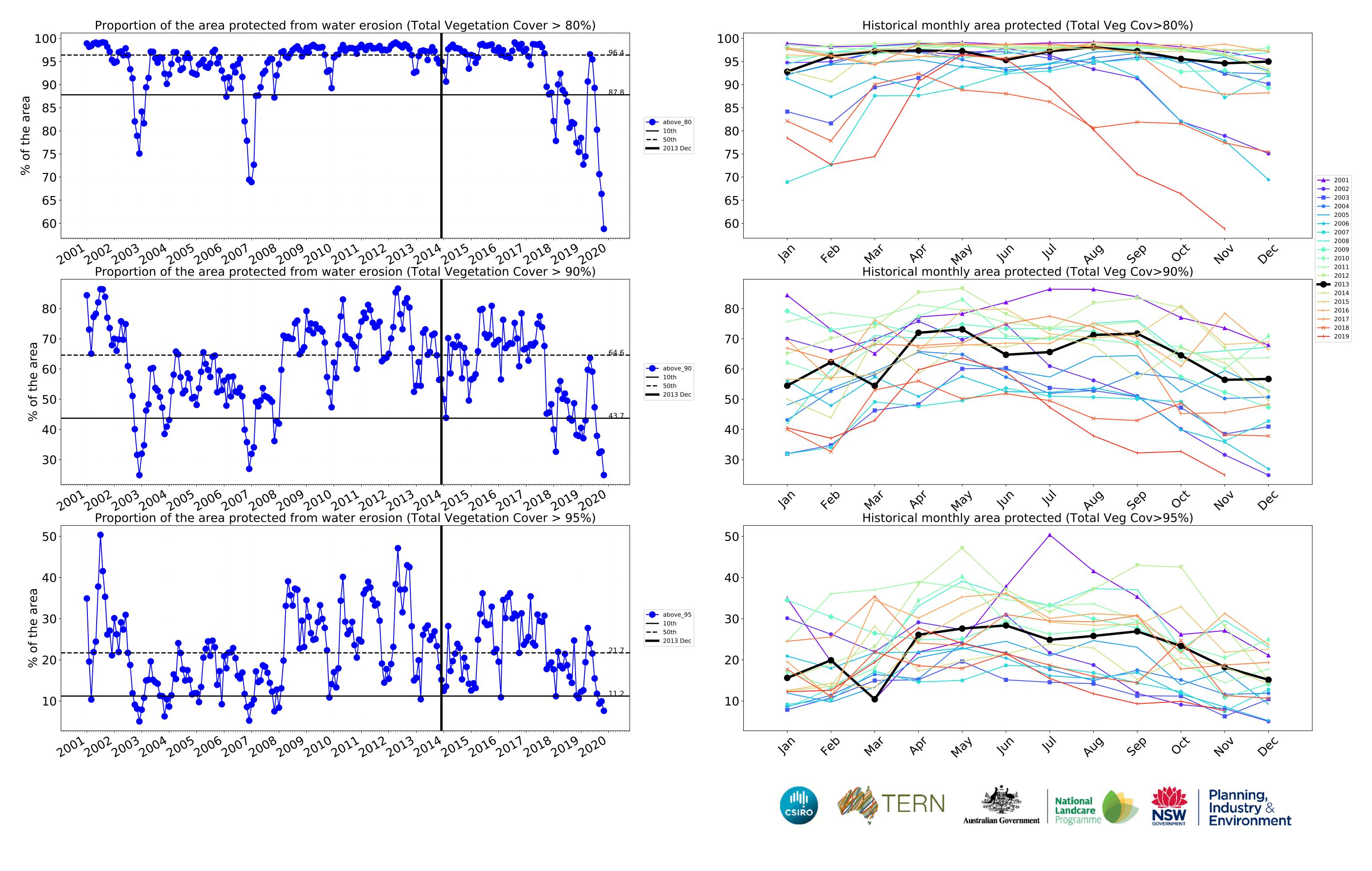




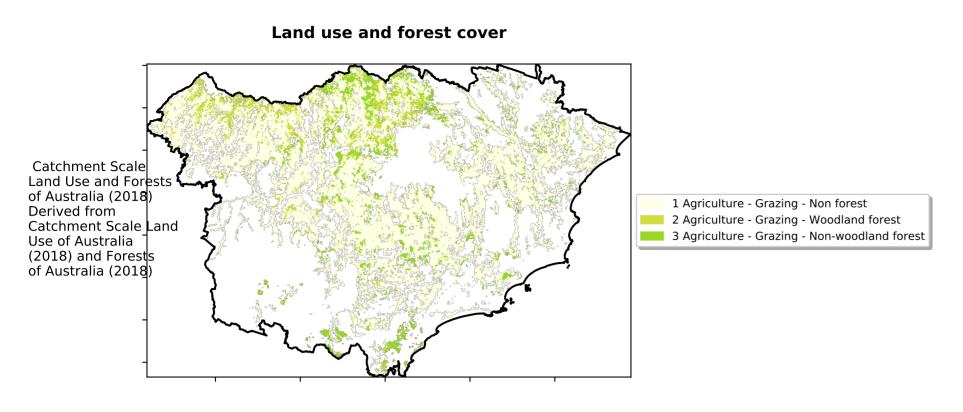
Agriculture timeseries



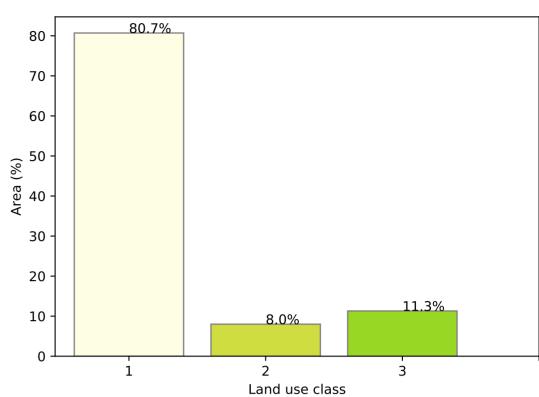




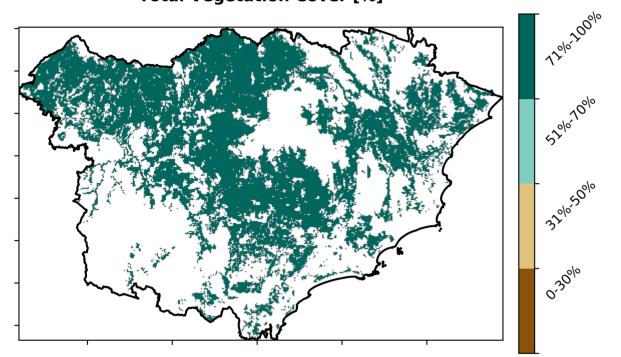
Grazing



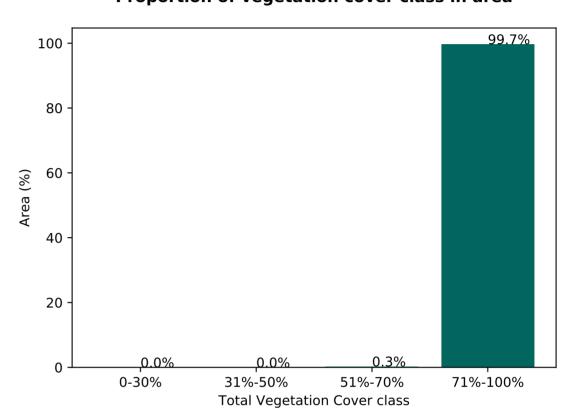
Proportion of each land class in area



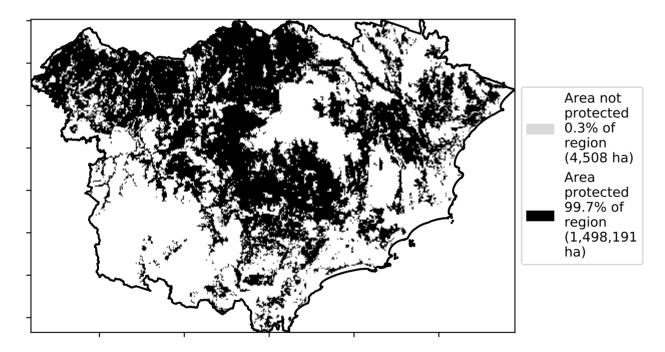
Total Vegetation Cover [%]



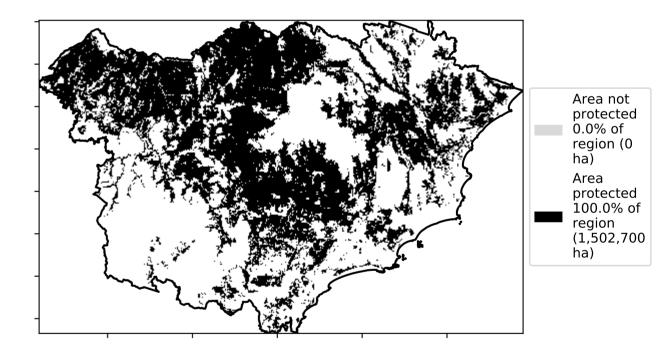
Proportion of vegetation cover class in area



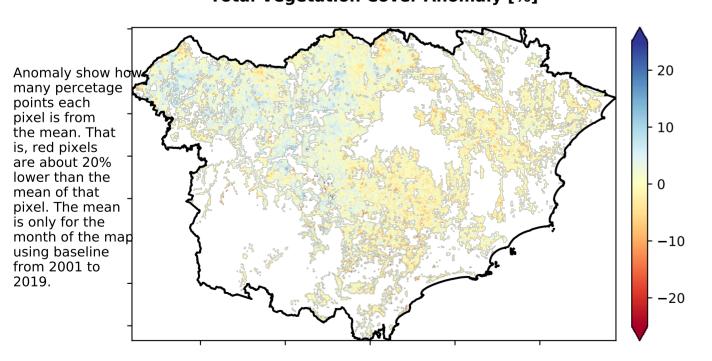
% Area protected from water erosion (>70%)

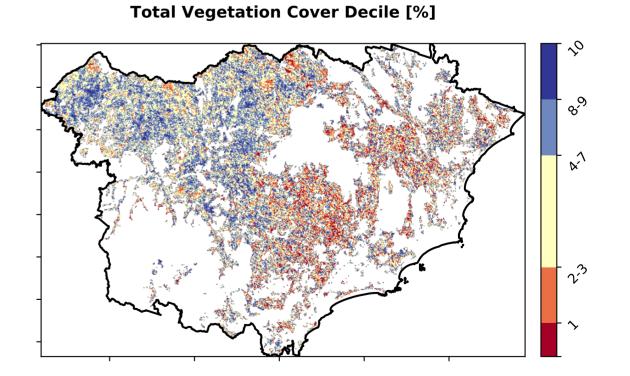


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]









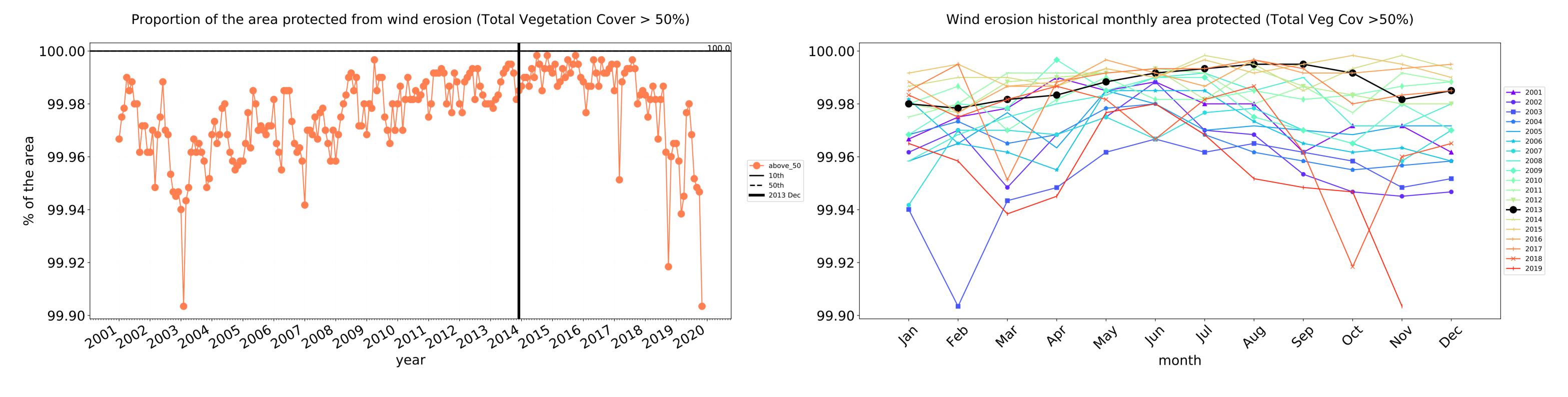


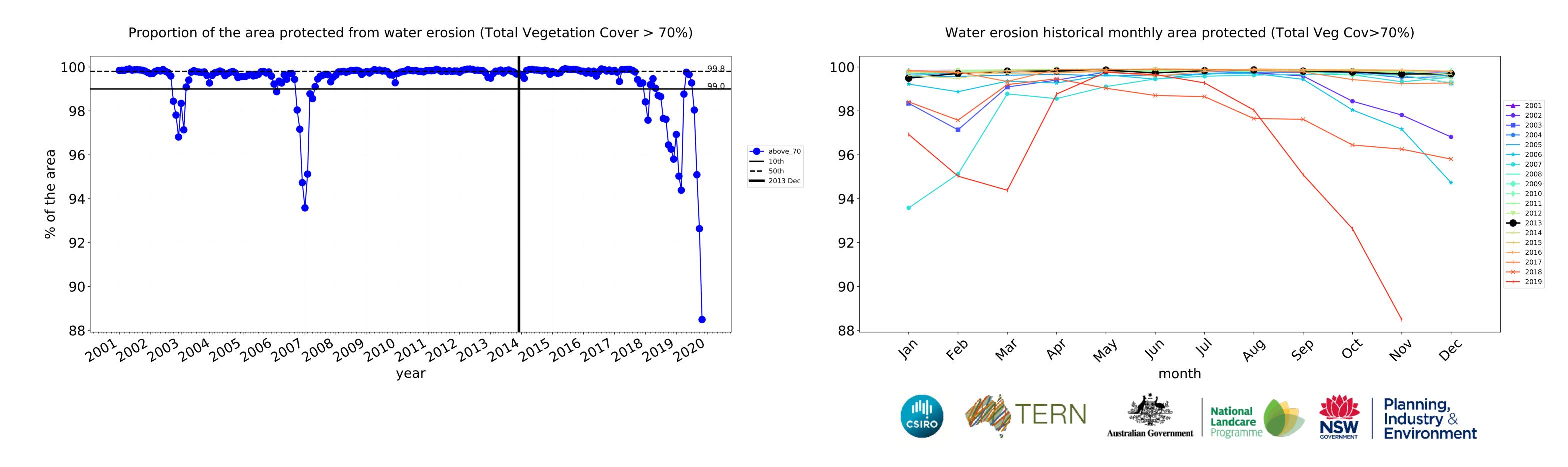


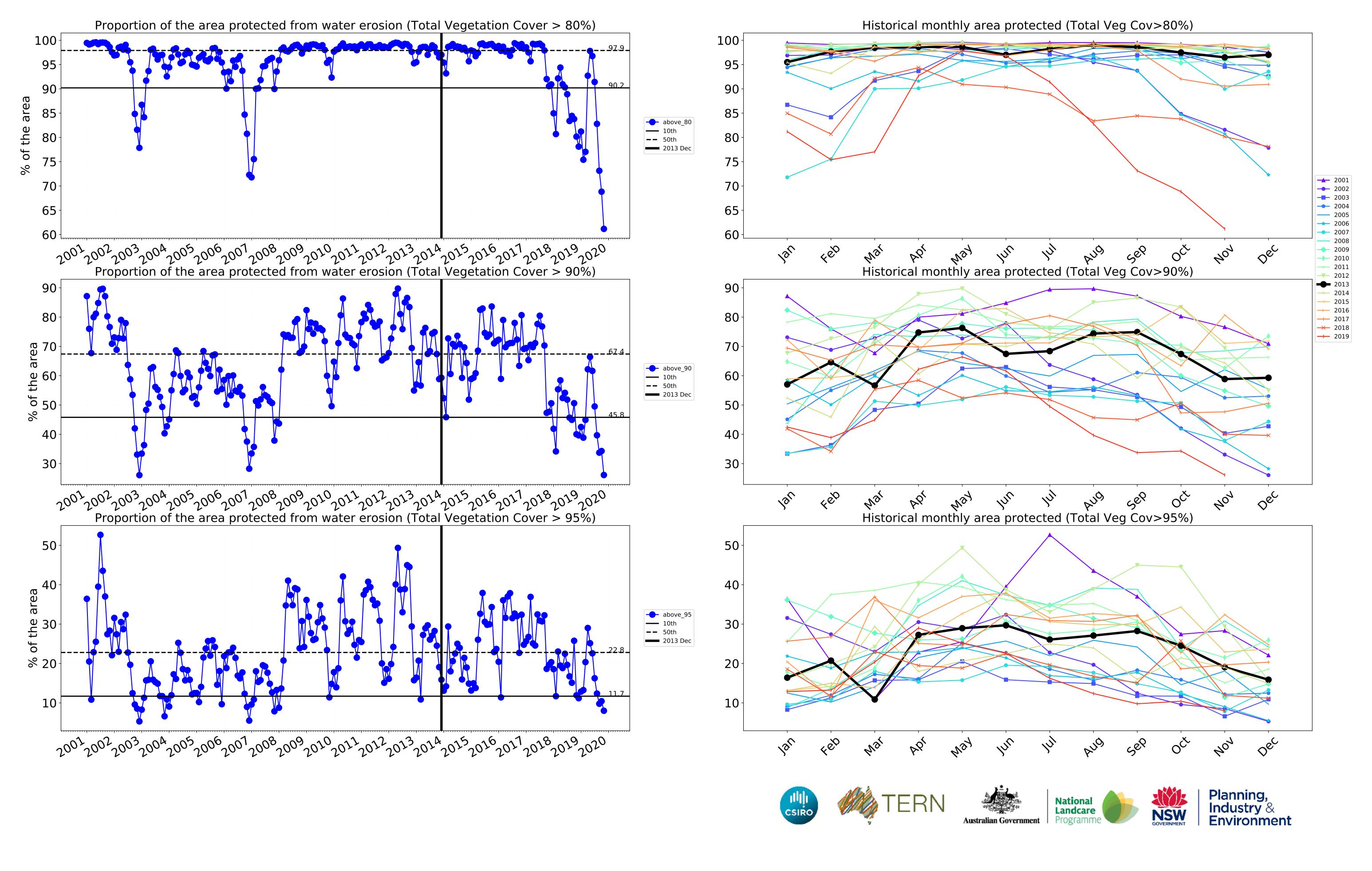




Grazing timeseries

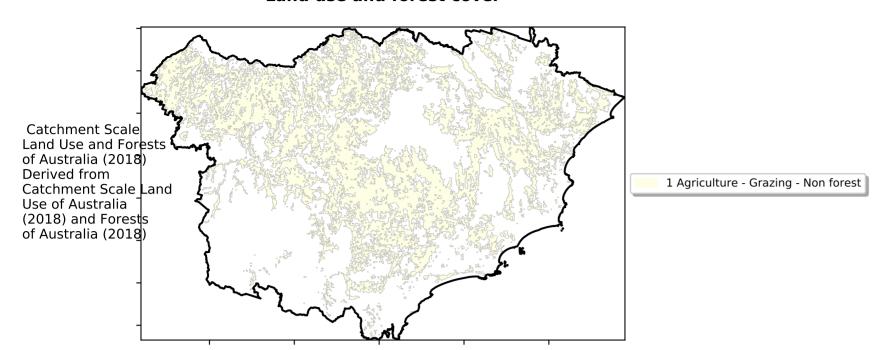




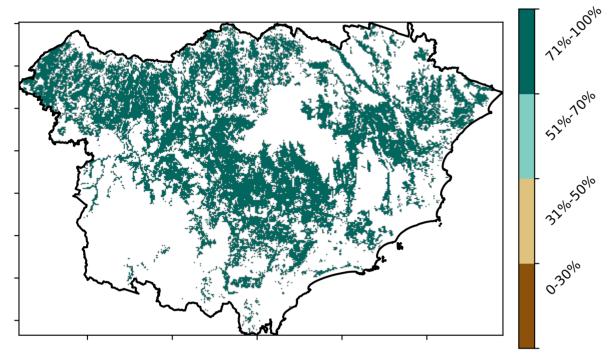


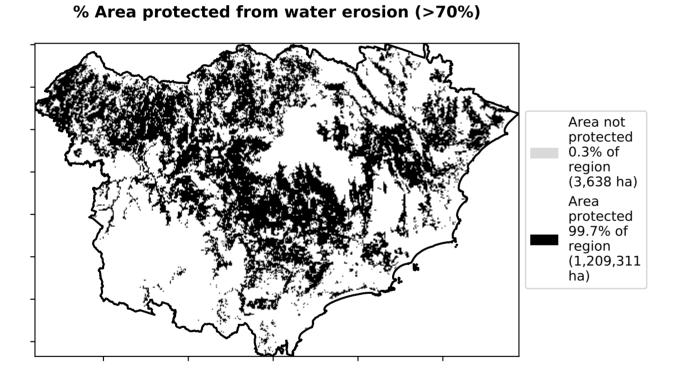
Grazing non forest

Land use and forest cover

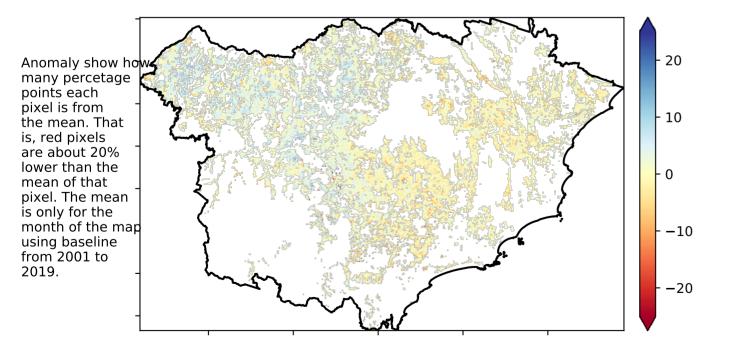


Total Vegetation Cover [%]



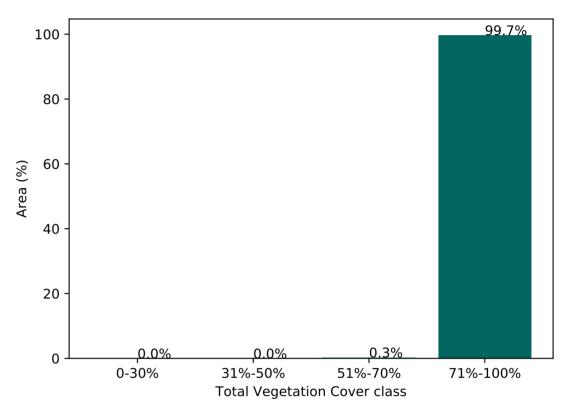


Total Vegetation Cover Anomaly [%]

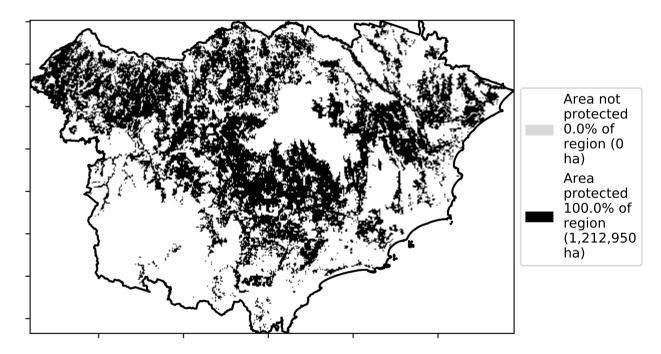


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

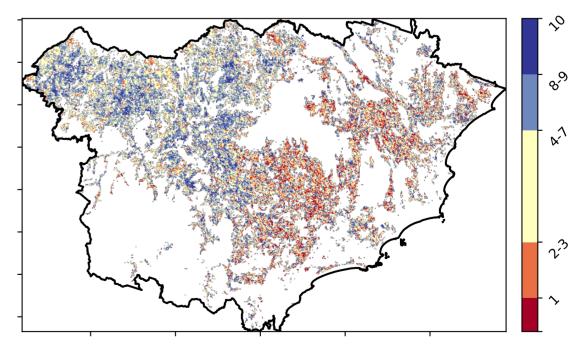
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







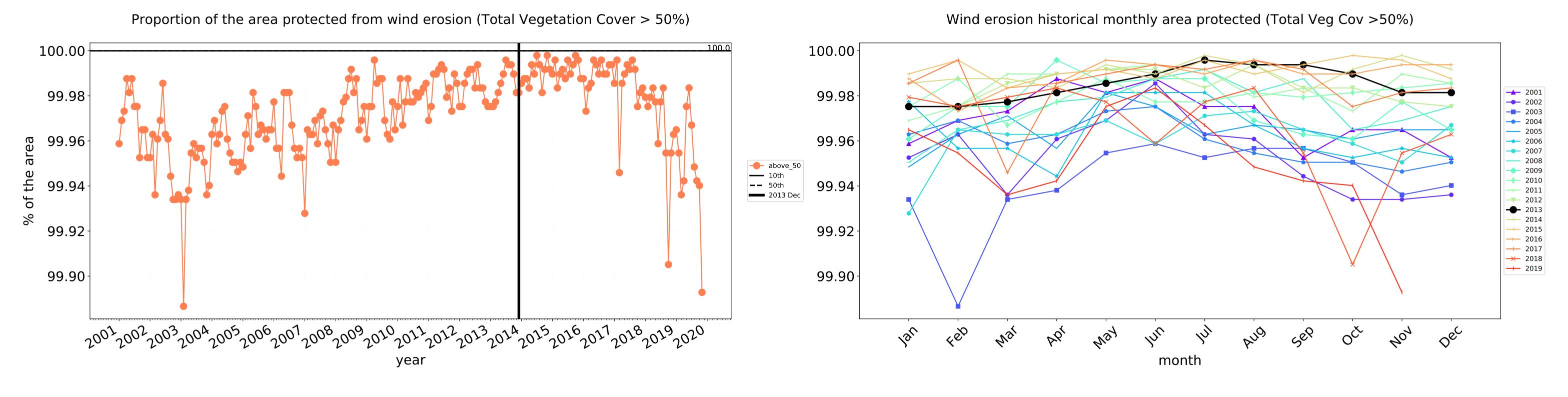


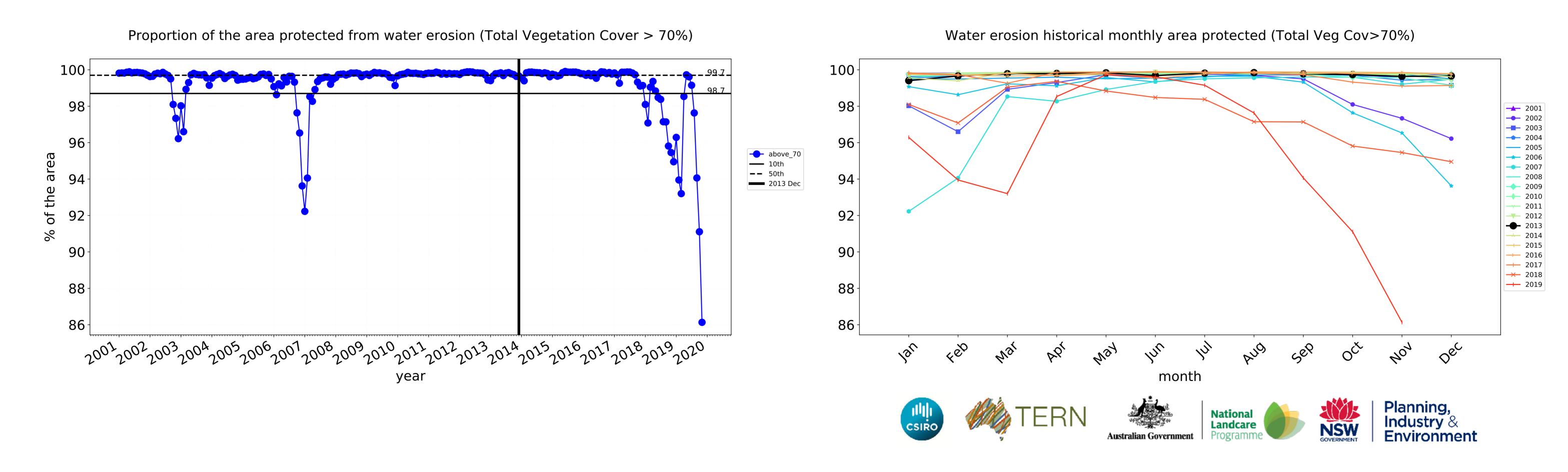


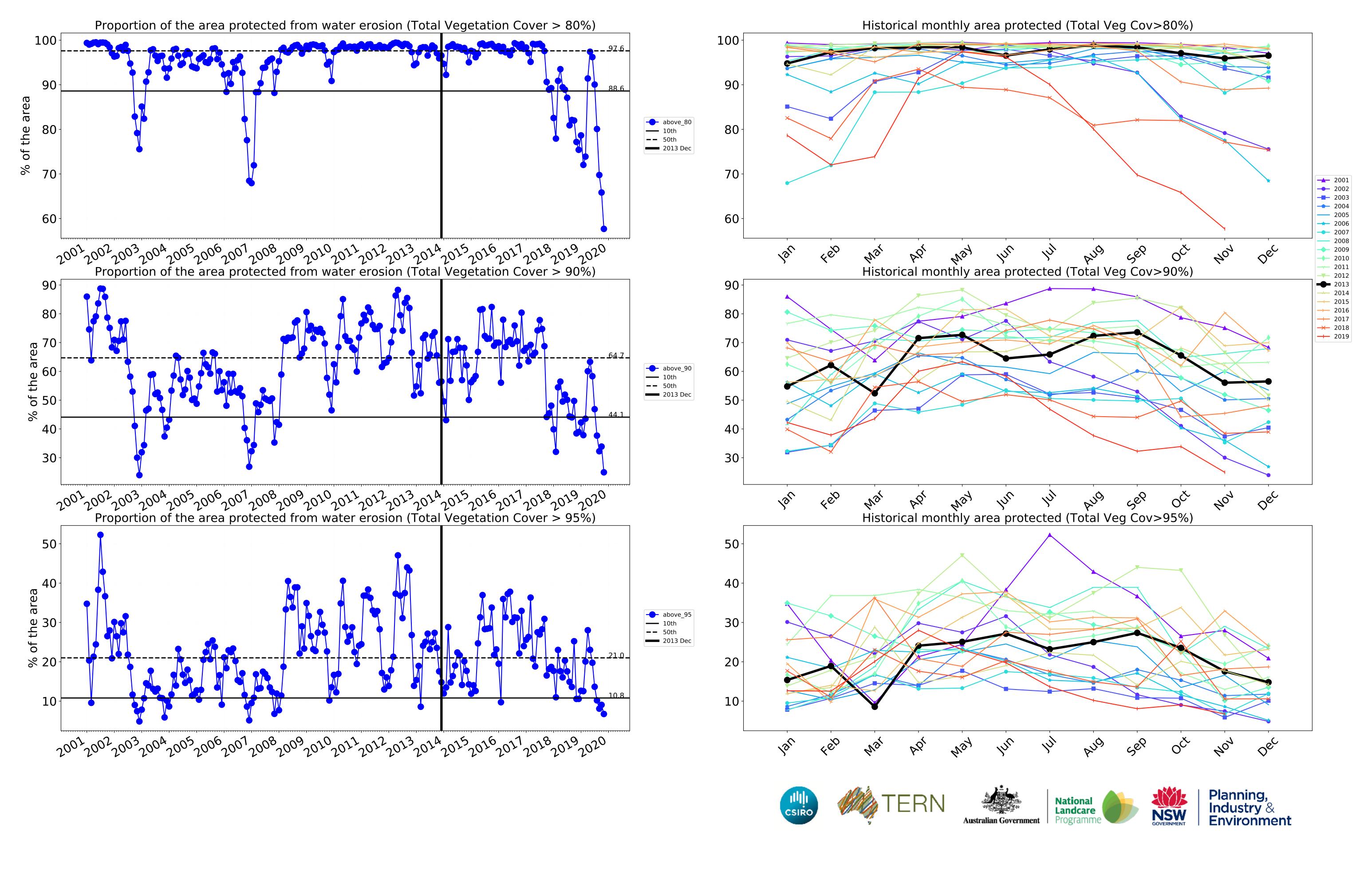




Grazing non forest timeseries





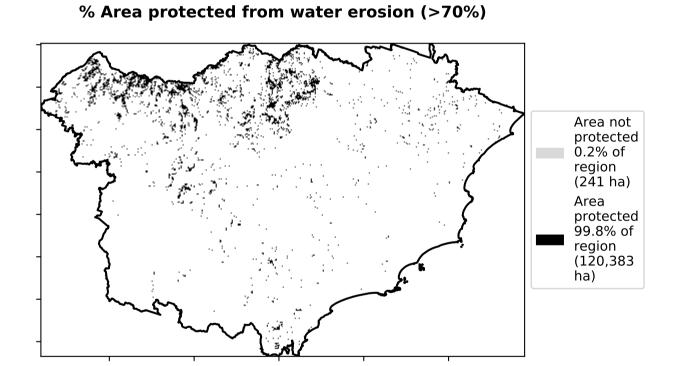


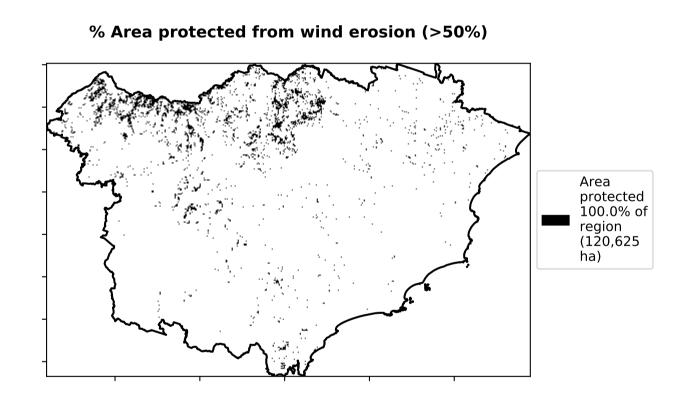
Grazing Woodland forest

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)

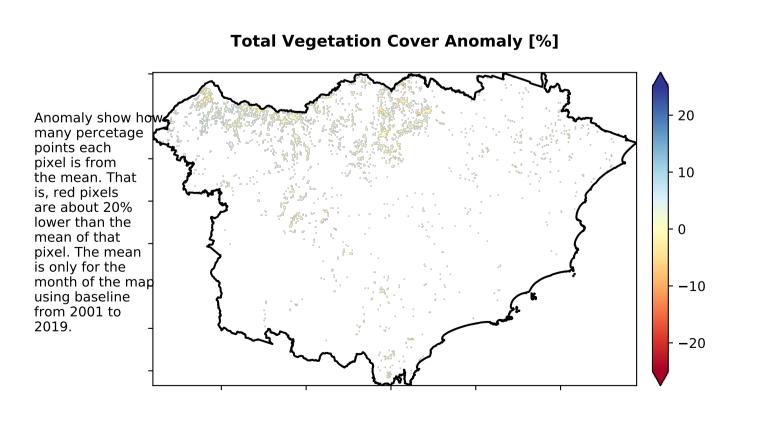
Total Vegetation Cover [%]

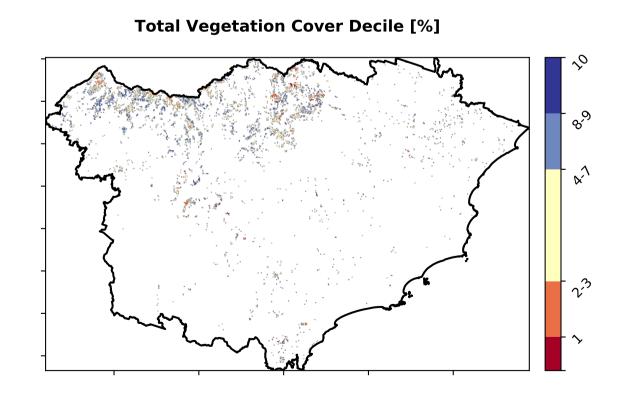
99.8% 100 80 Area (%) 40 20 -0.2% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**





Proportion of vegetation cover class in area









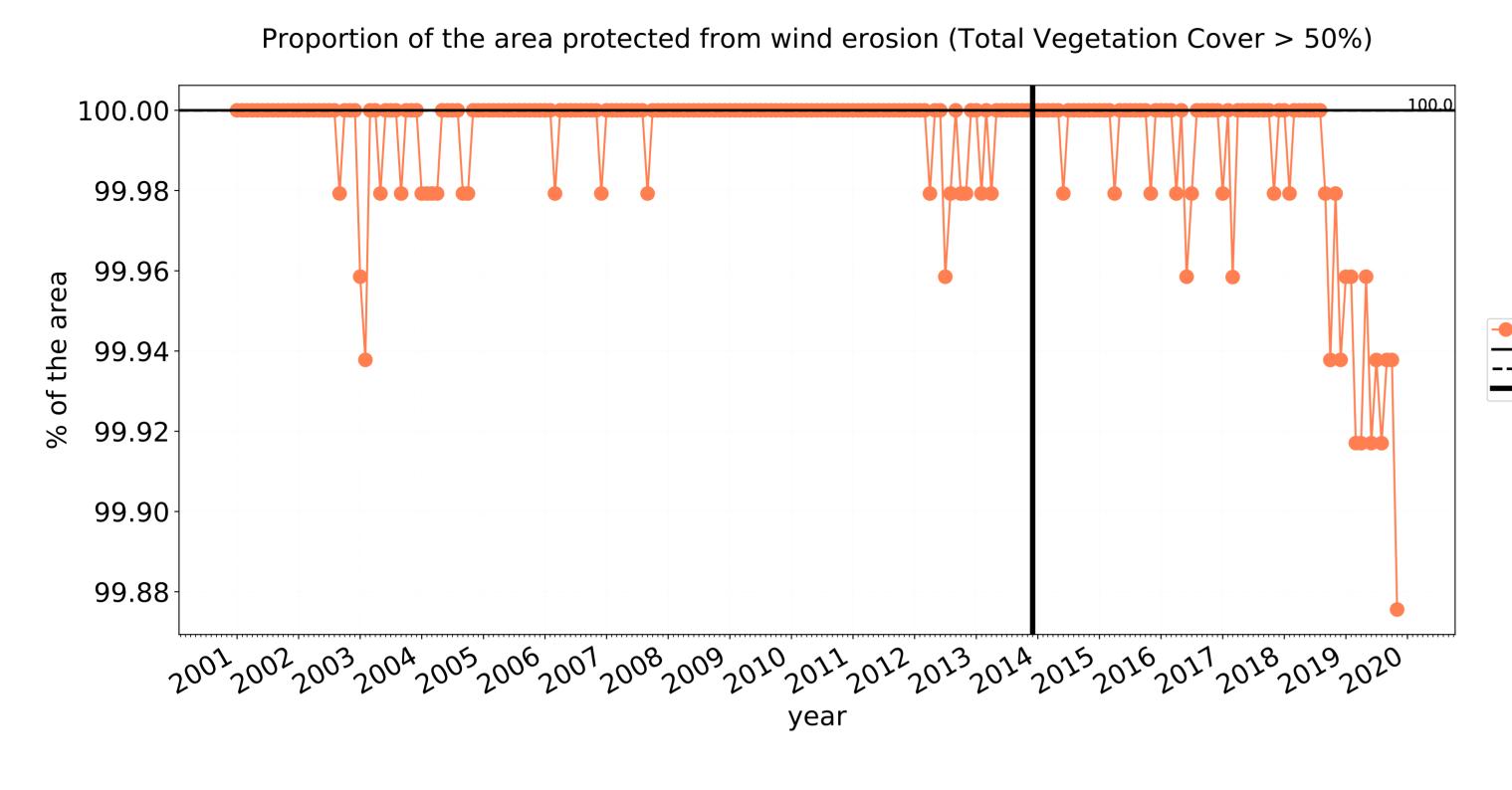


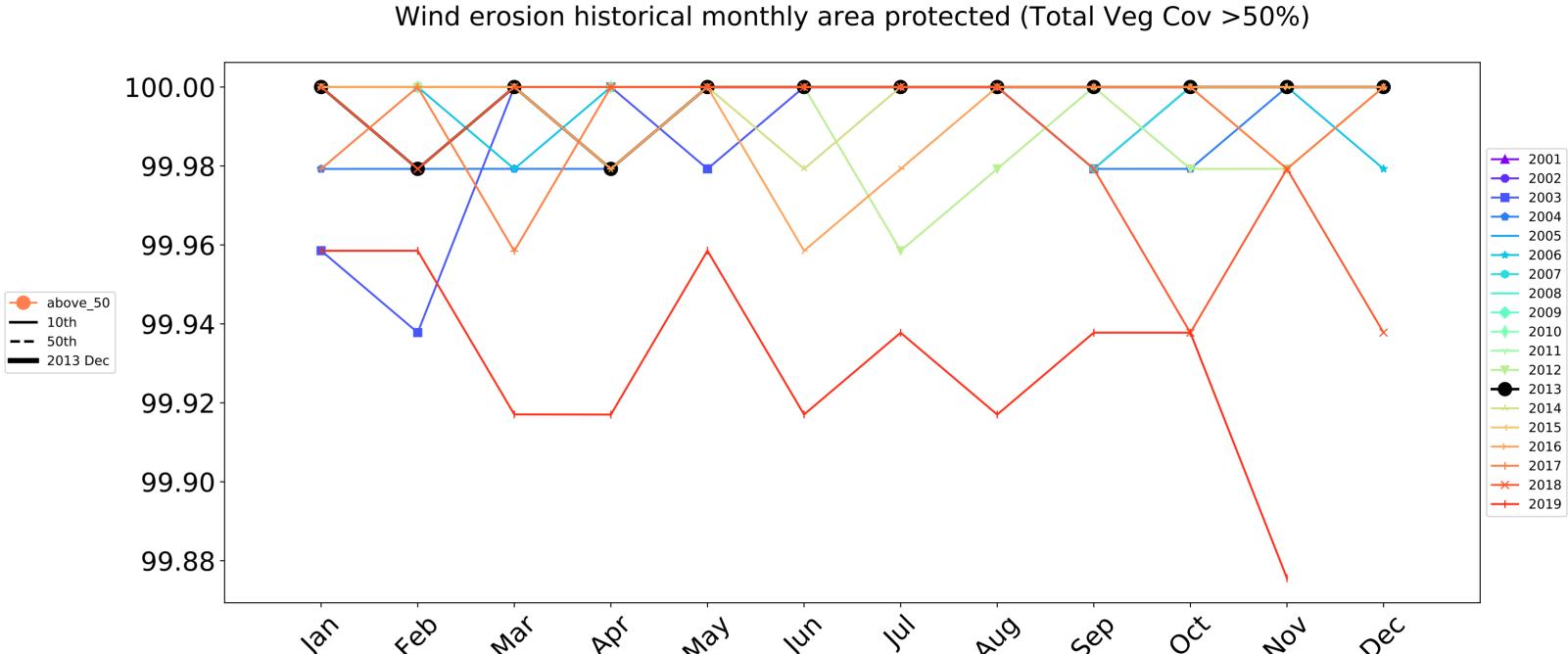




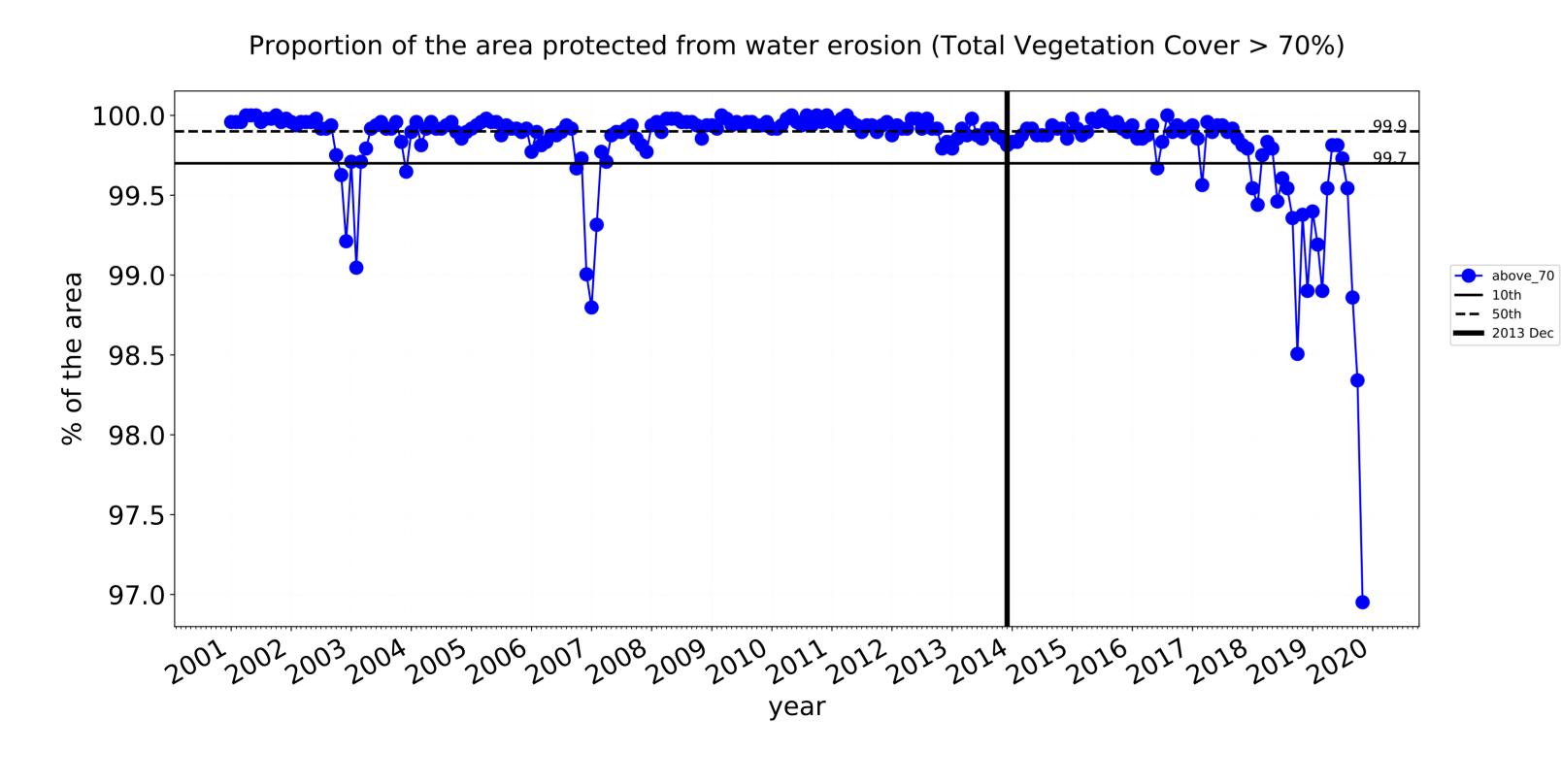


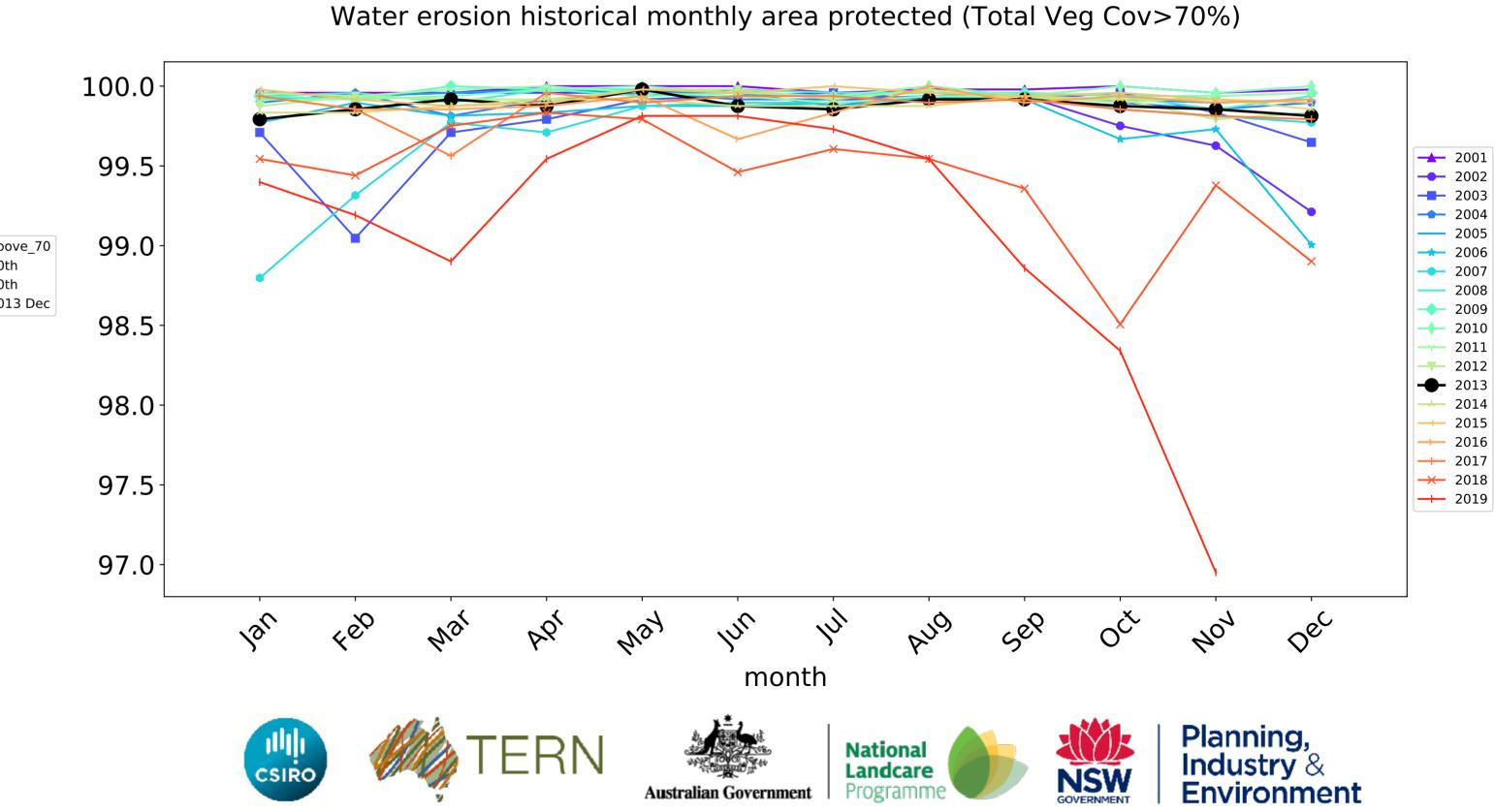
Grazing Woodland forest timeseries

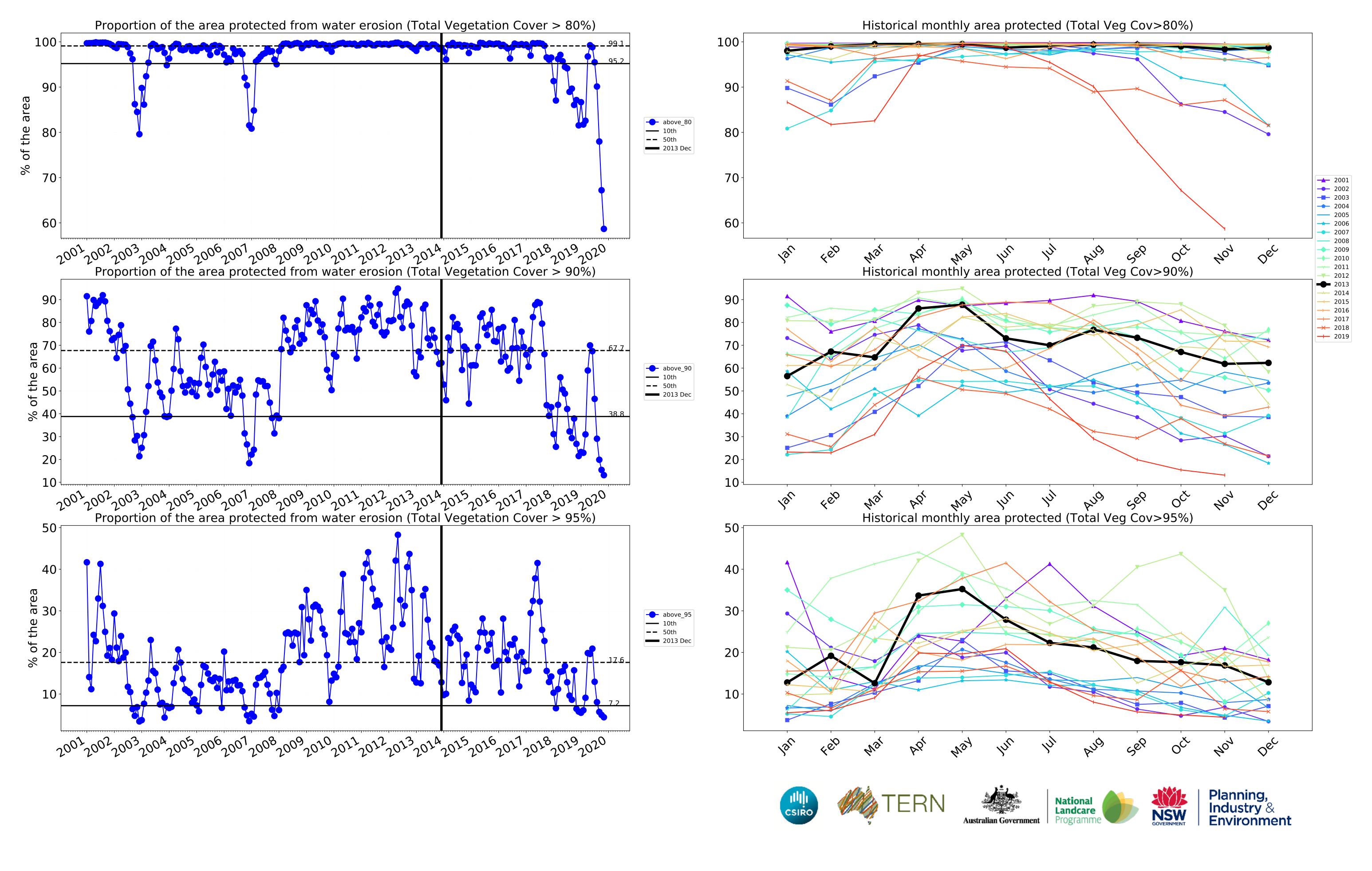




month



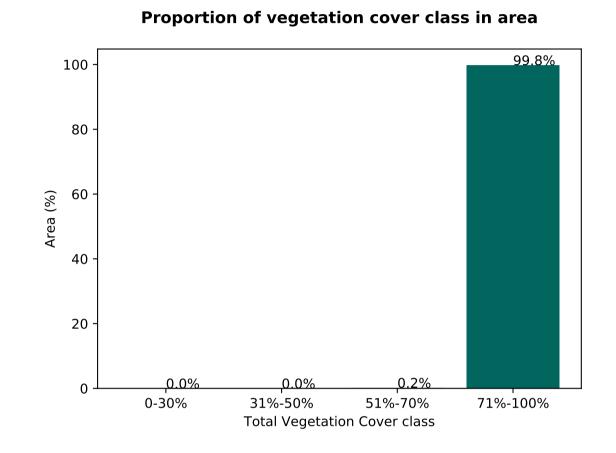


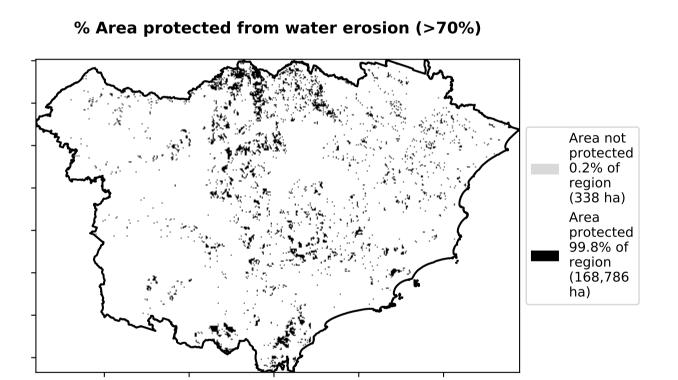


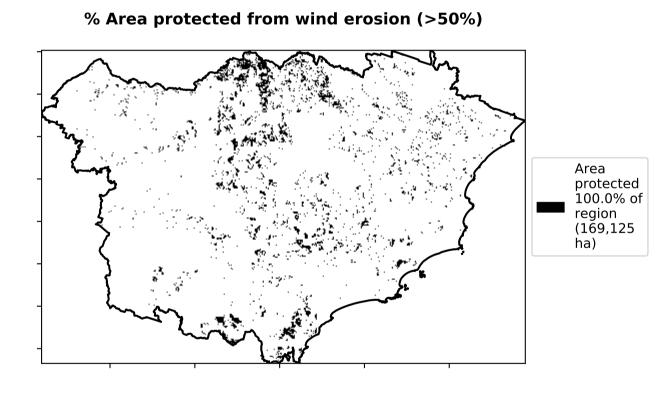
Grazing - Forest (non woodland)

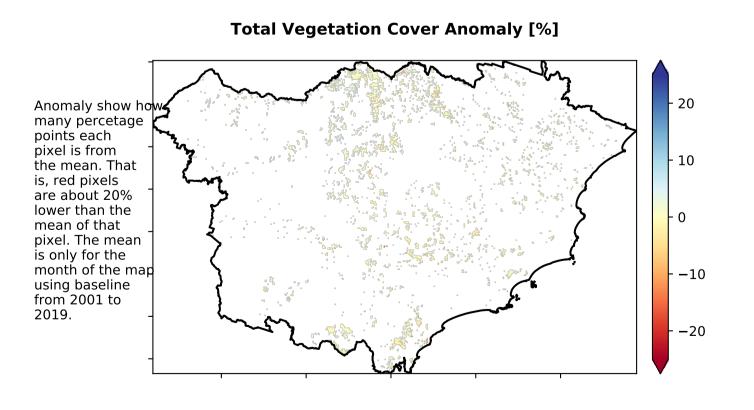
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Australia (2018) Orived from Catchment Scale Scale Land Use of Australia (2018) 1 Agriculture - Grazing - Non-woodland forest of Australia (2018)

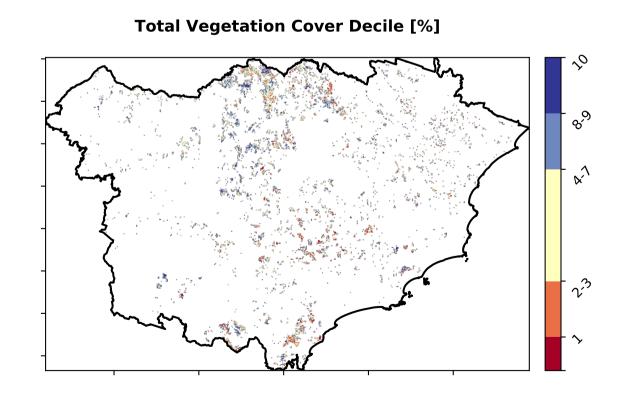
Total Vegetation Cover [%]













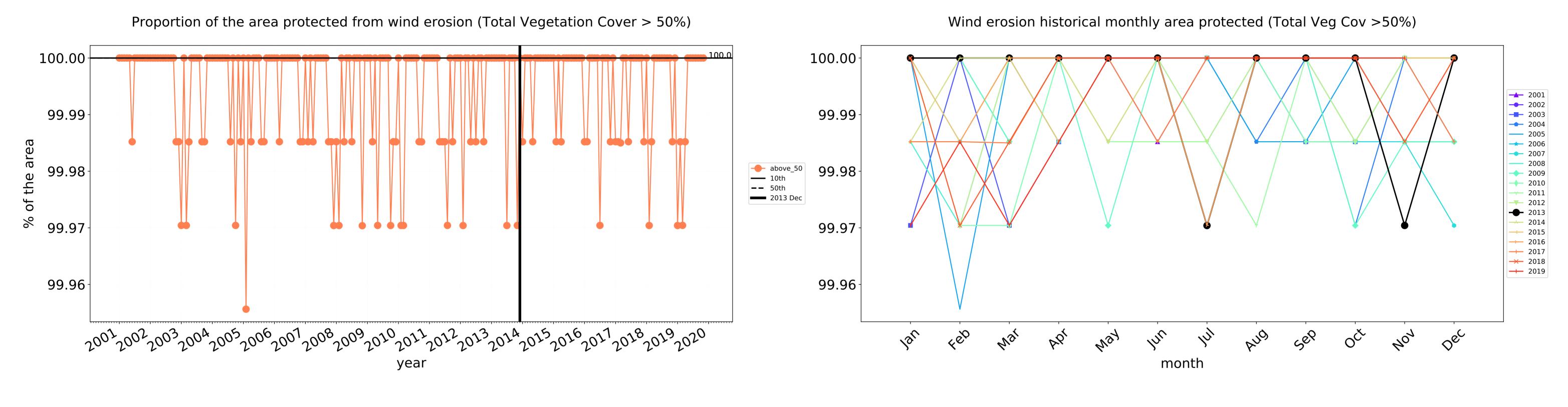


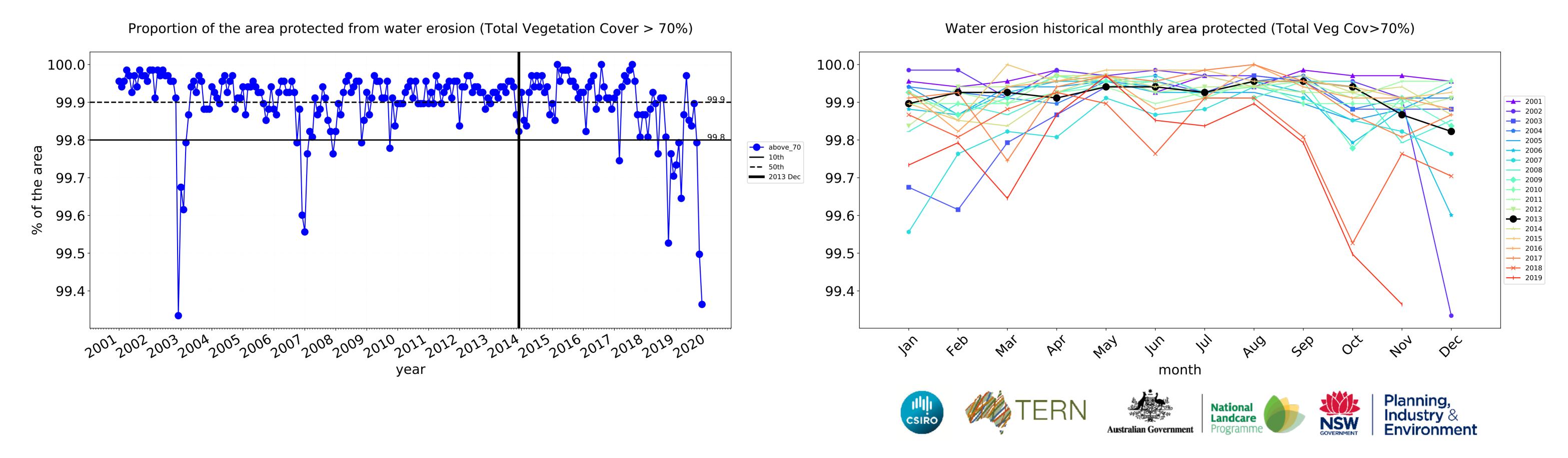


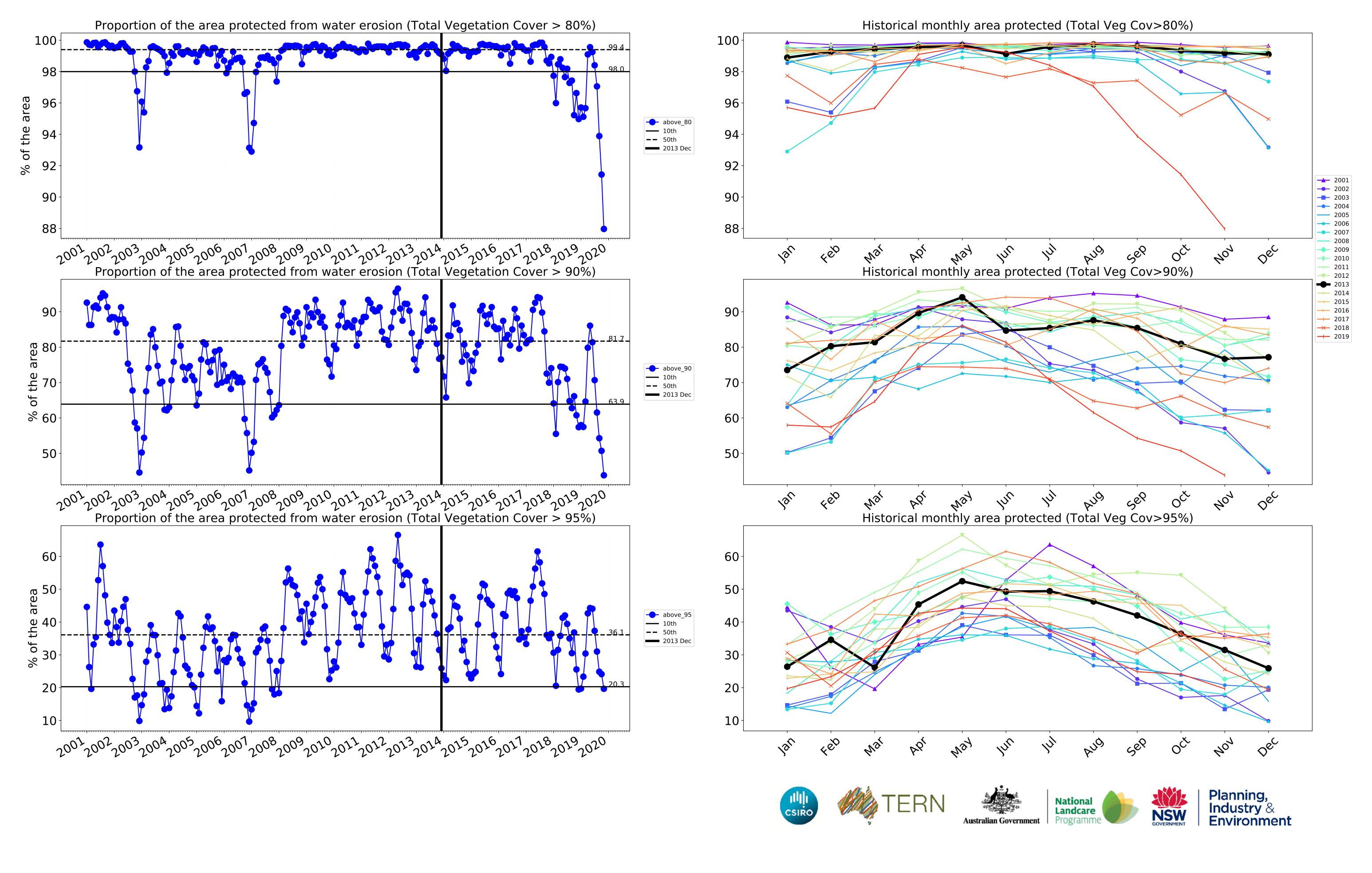






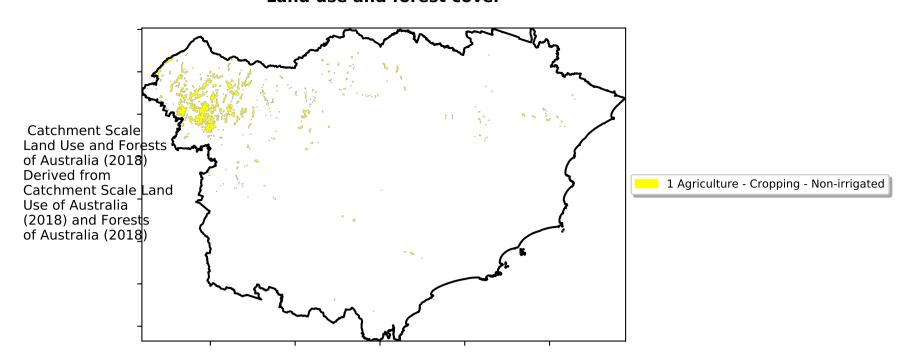




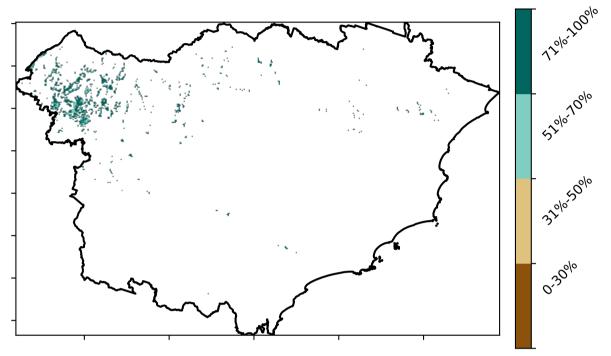


Cropping

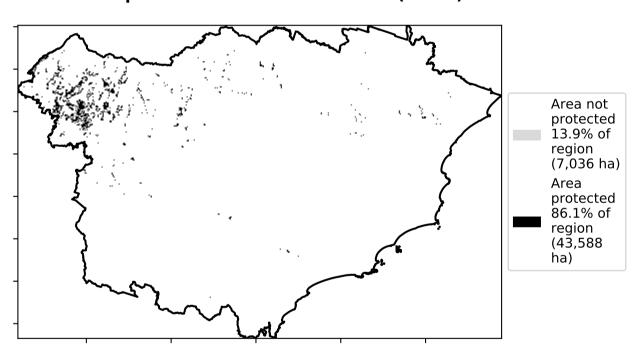
Land use and forest cover



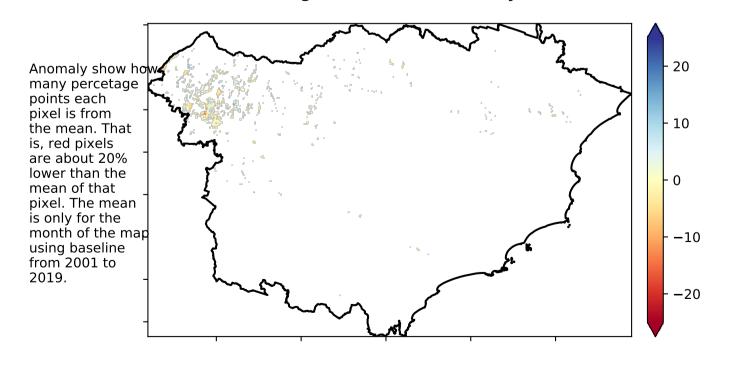
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

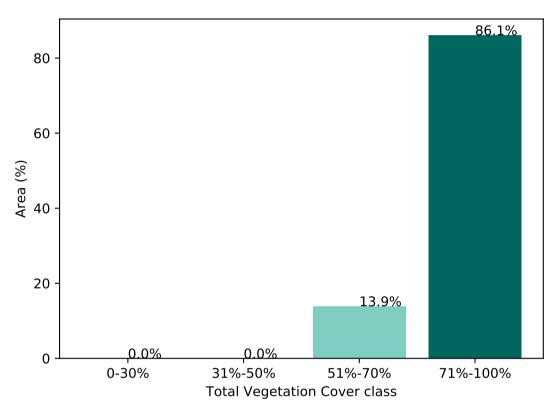


Total Vegetation Cover Anomaly [%]

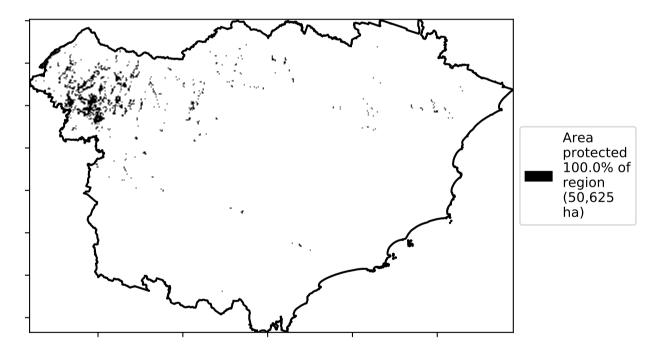


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

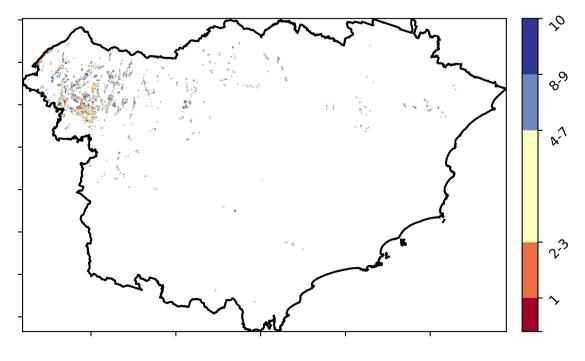
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







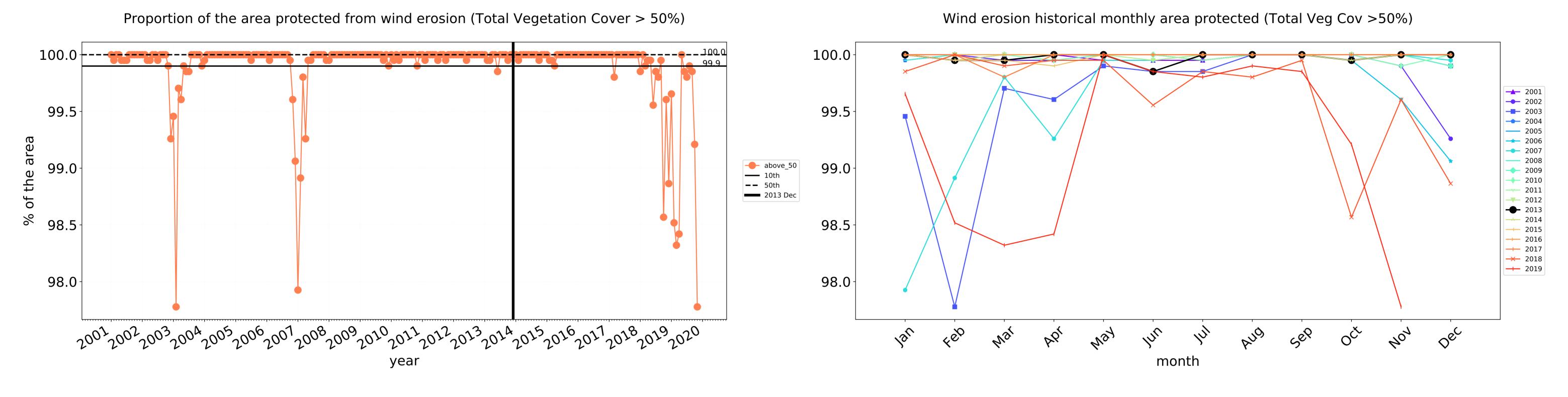


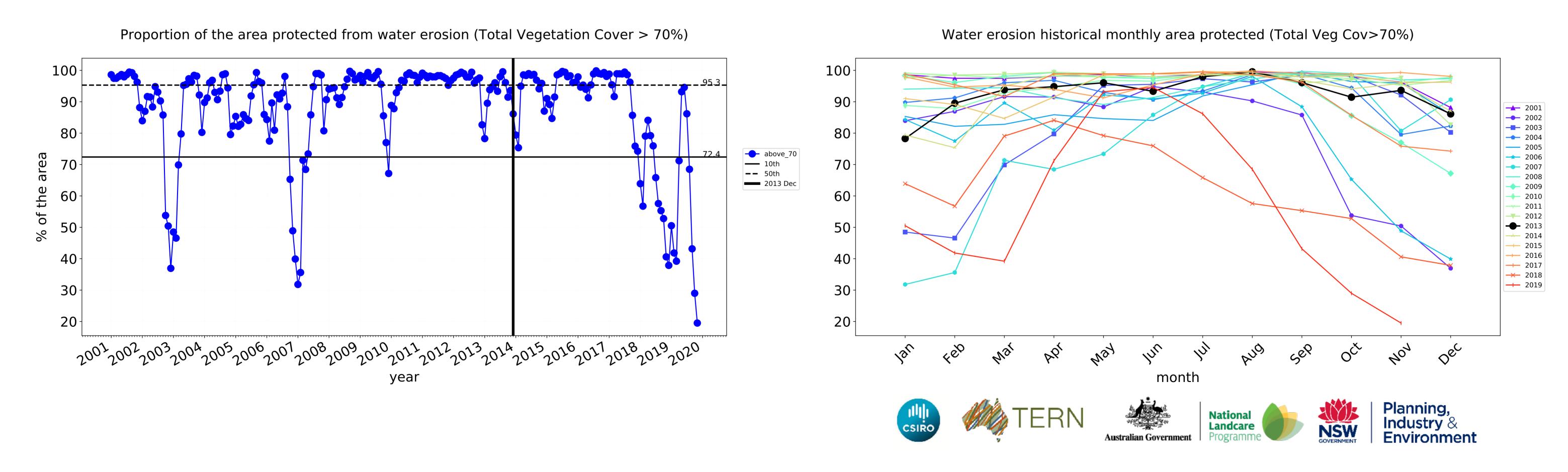


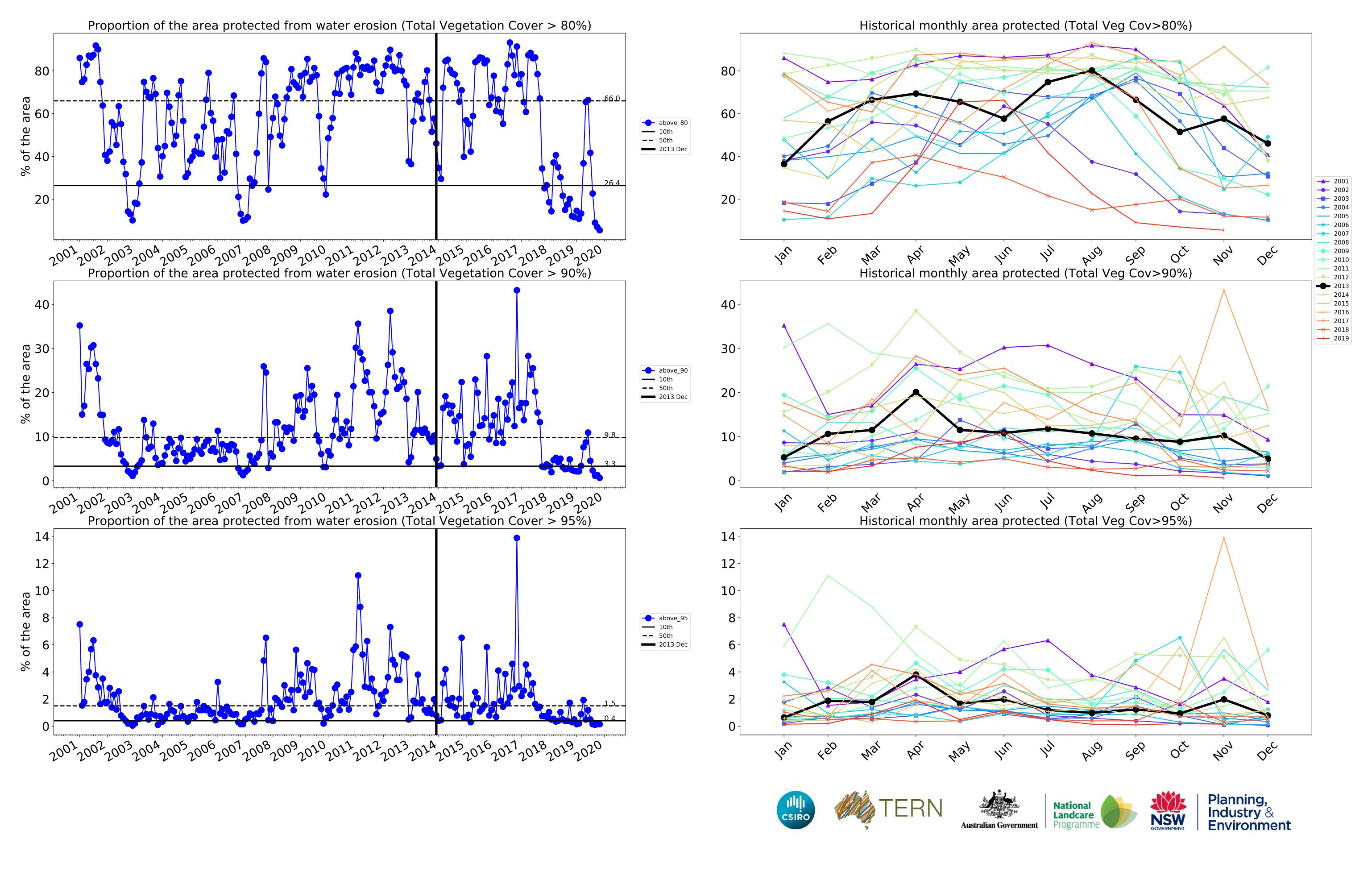




Cropping timeseries





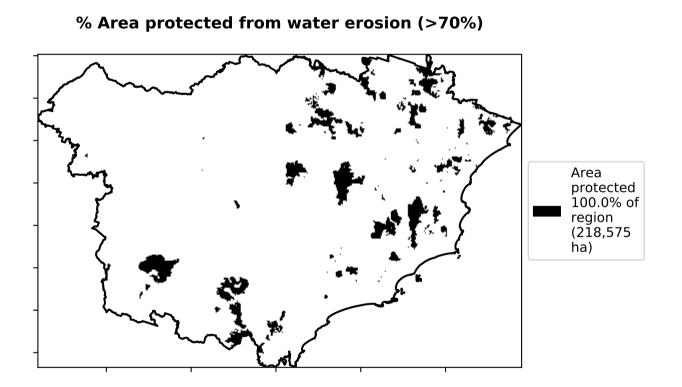


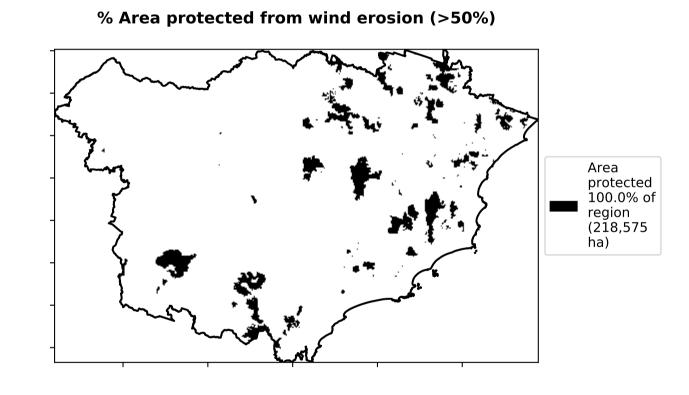
Production native forests and plantation forests

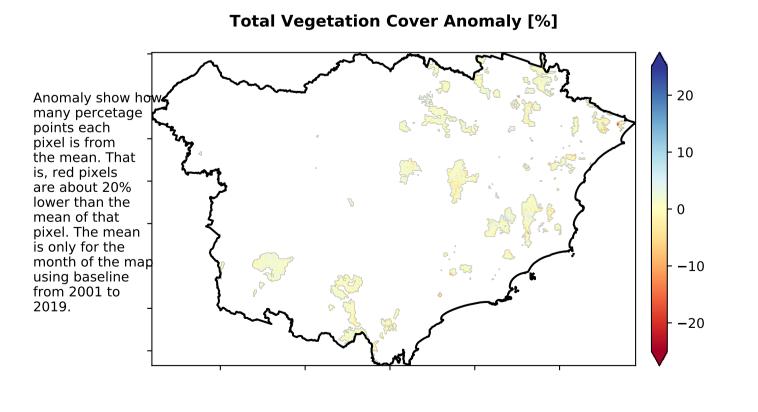
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) See of Australia (2018) See of Australia (2018)

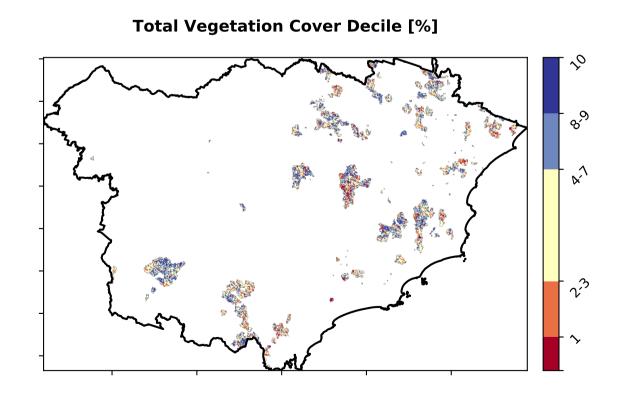
Total Vegetation Cover [%]

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













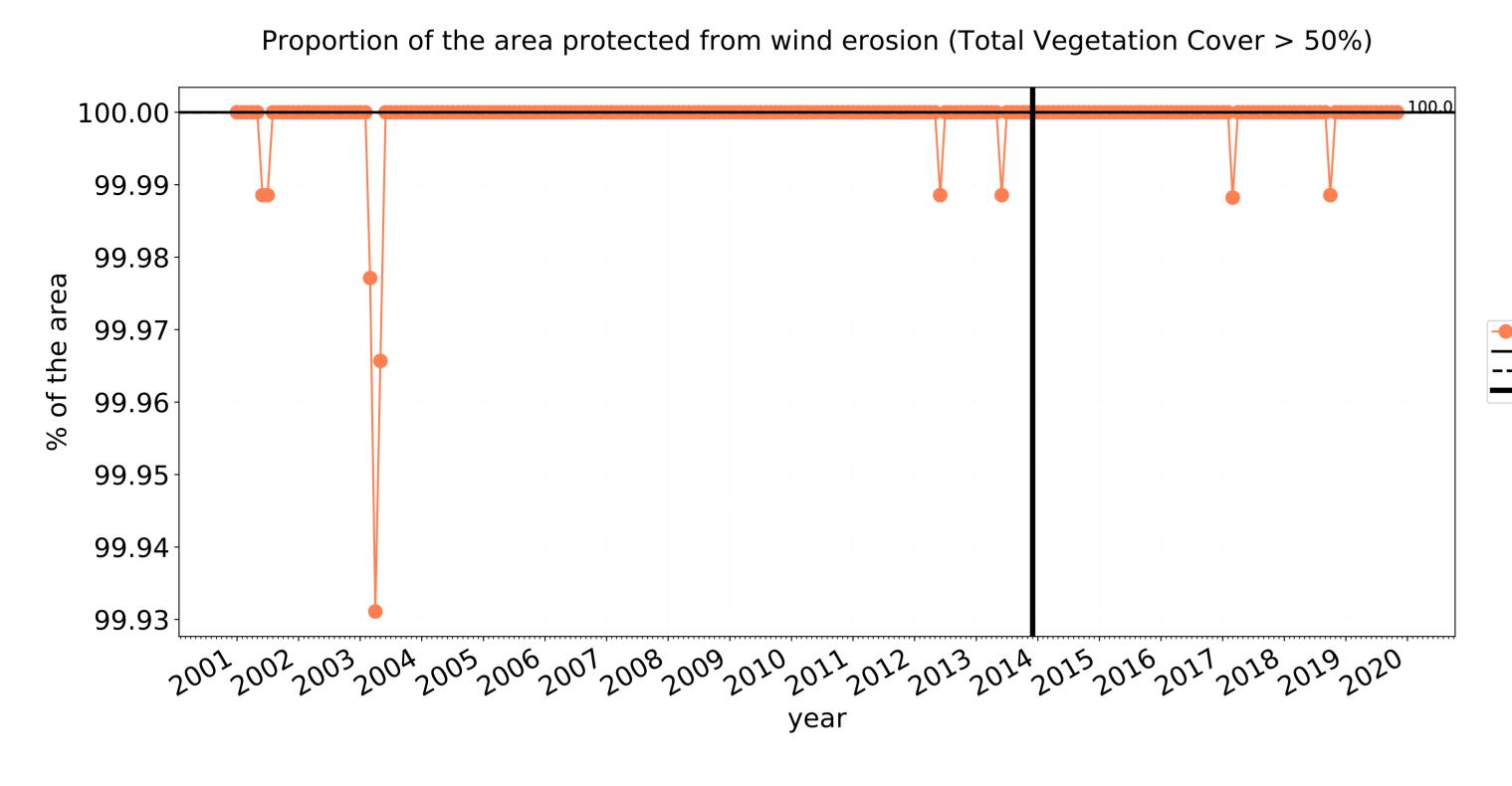


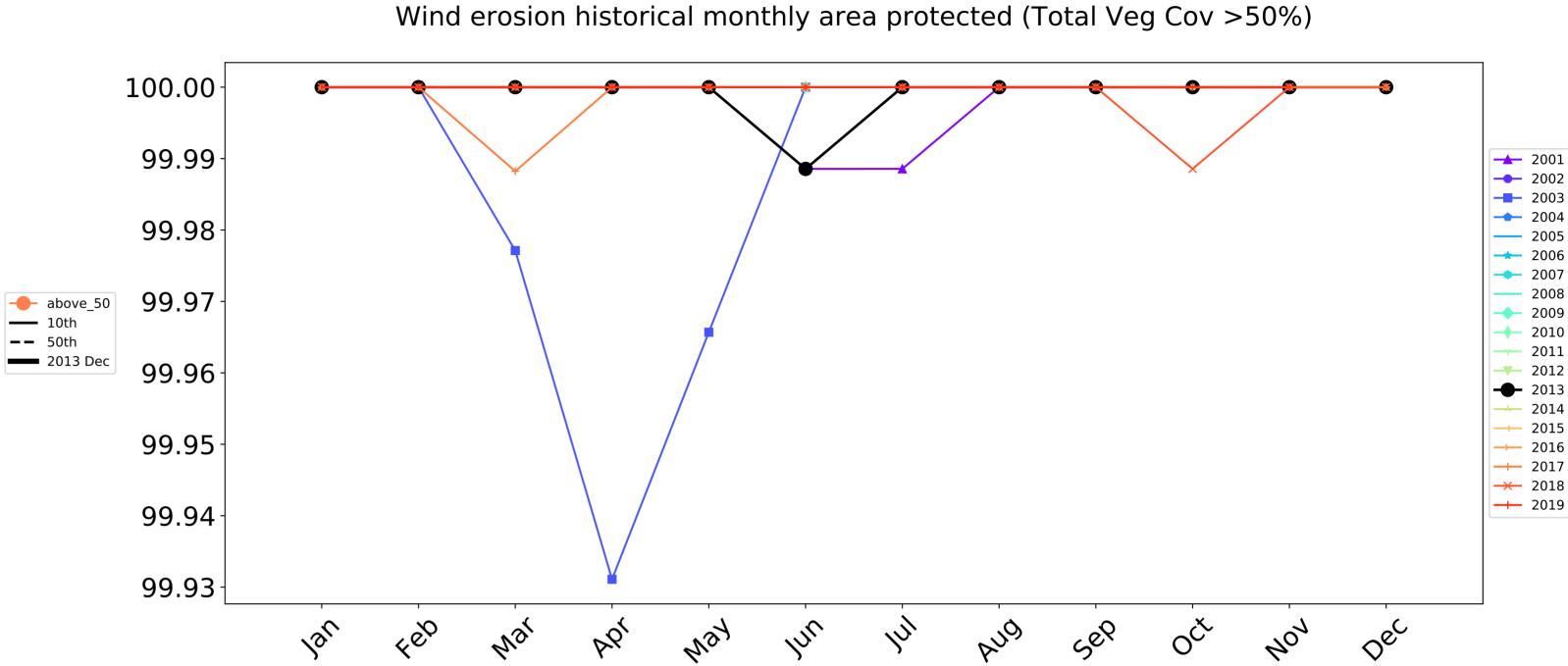




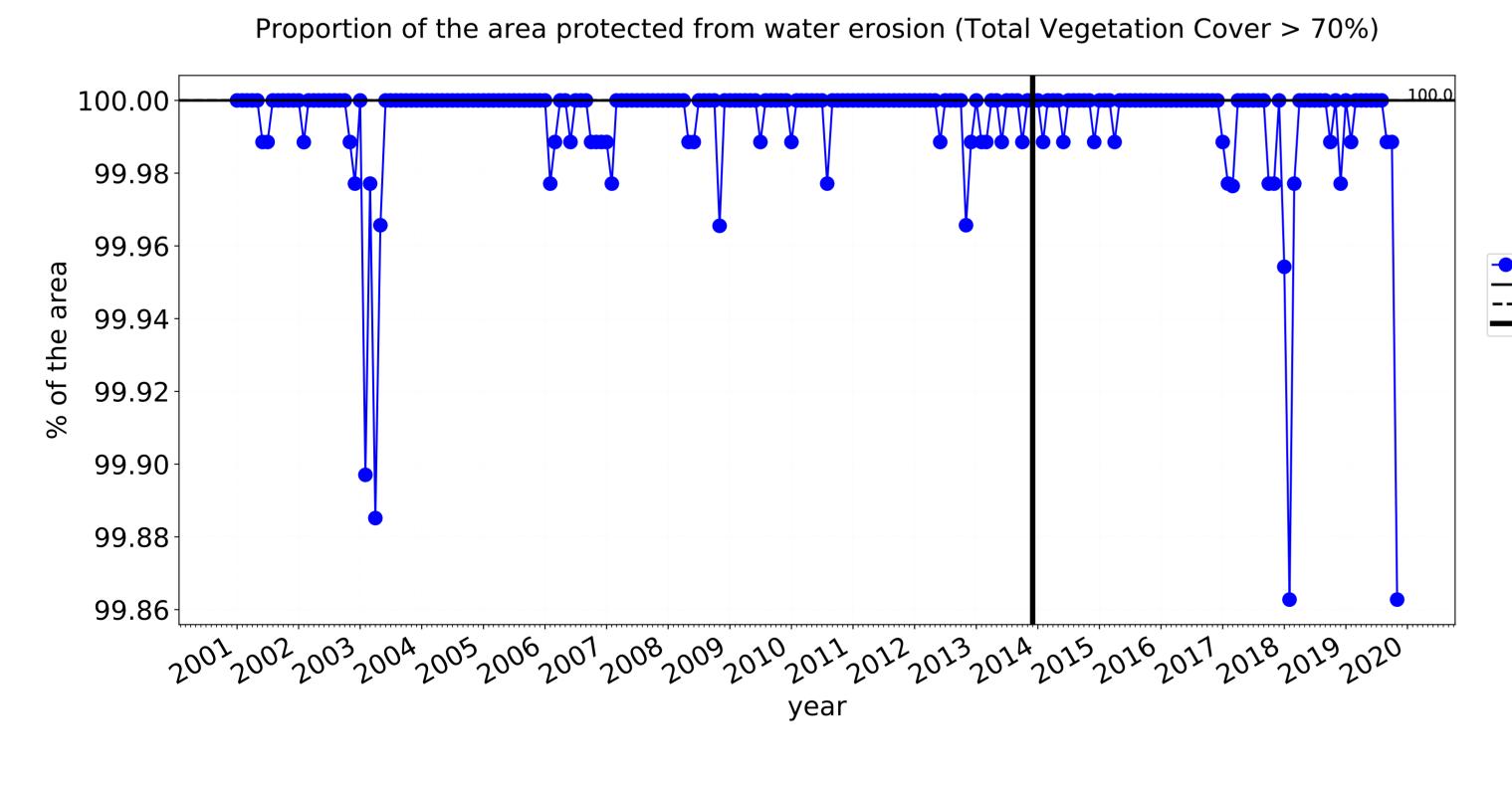


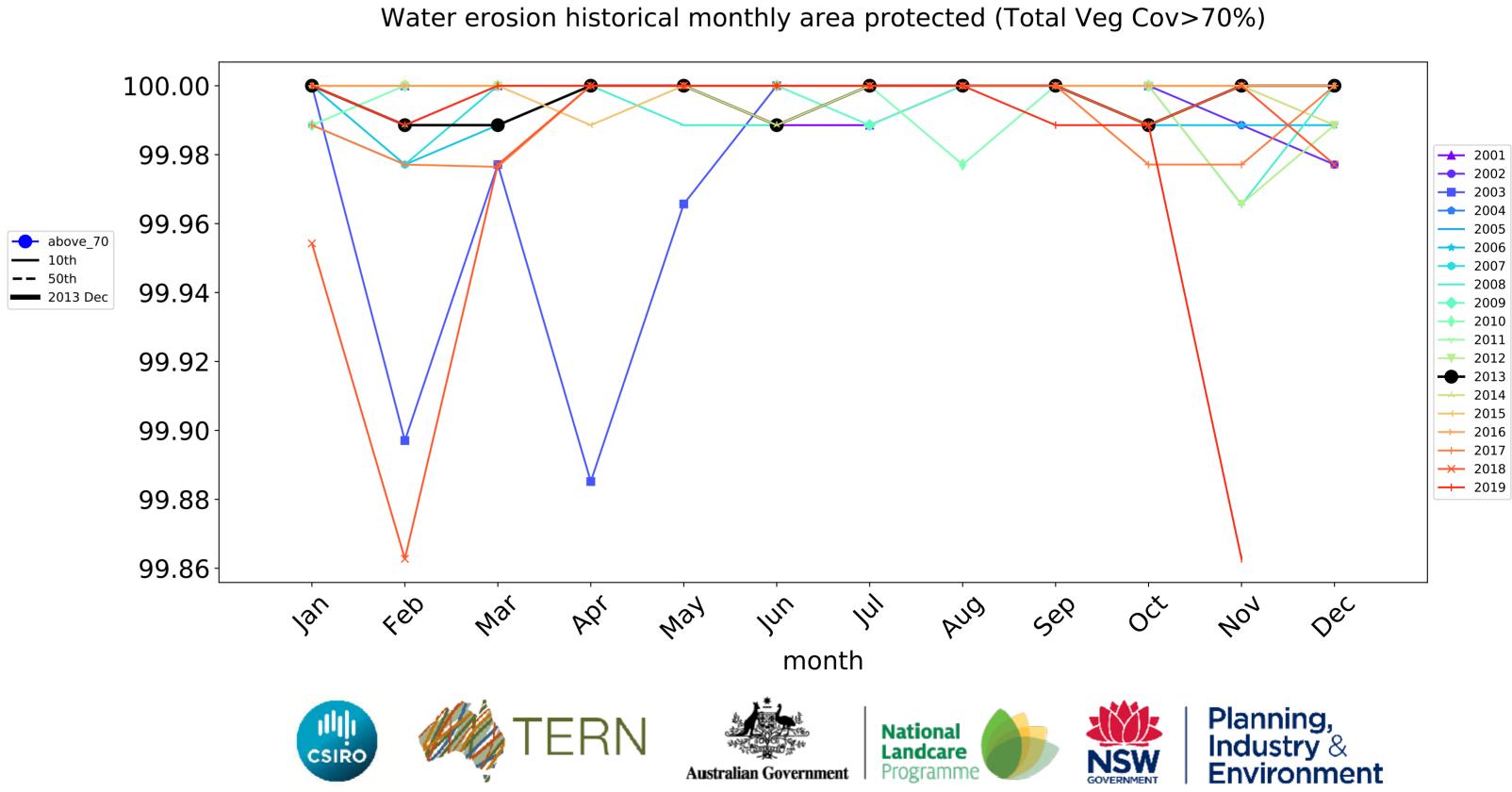
Production native forests and plantation forests timeseries

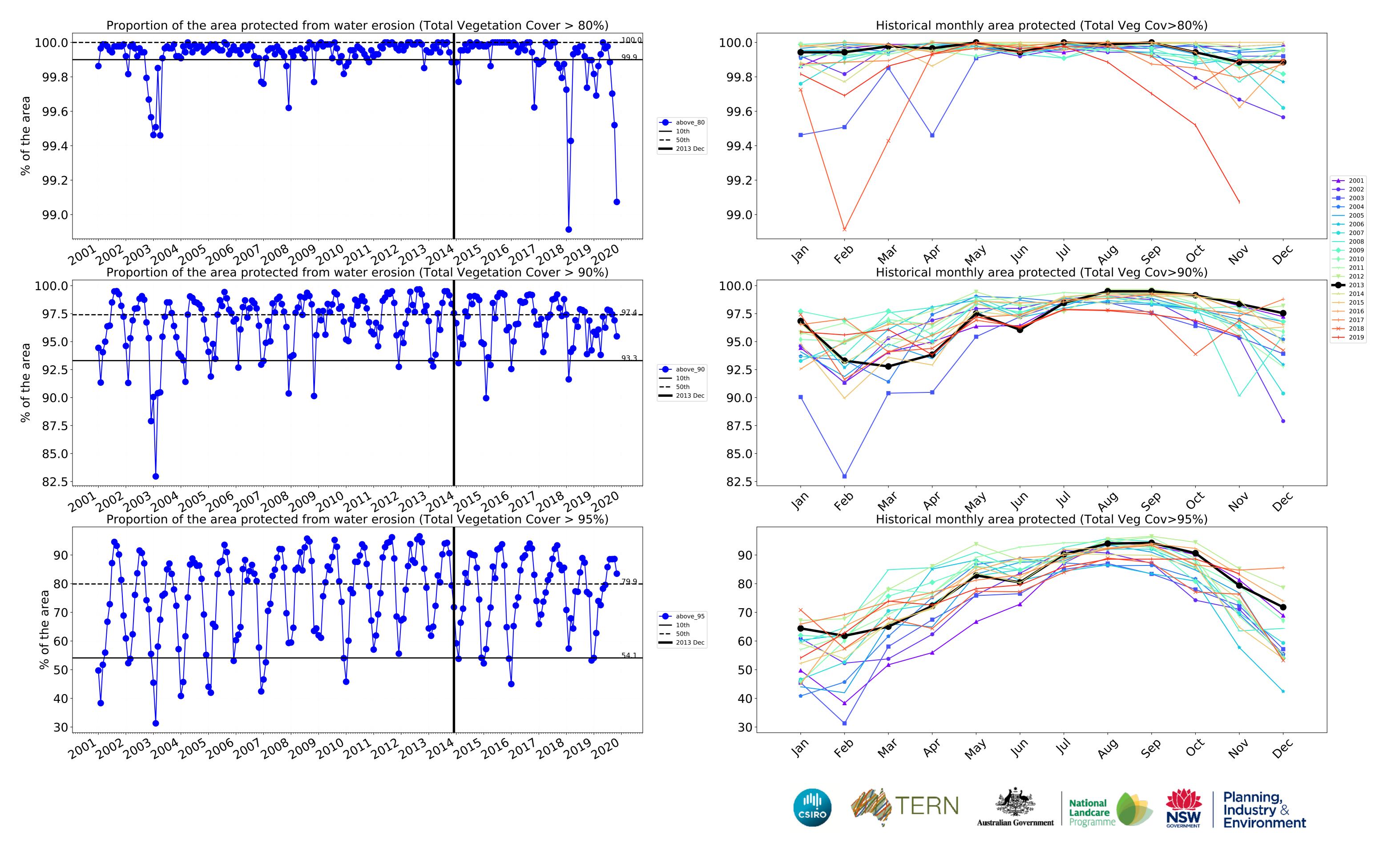




month







Hunter (3,240,325 ha and no data 60,100 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	3,240,325	99.8% 3,235,352	99.5% 3,225,456	98.0% 3,177,026	94.2% 3,051,530	68.8% 2,229,478	31.2% 1,009,521
Conservation and natural environments	1,241,800	99.9% 1,240,400	99.8% 1,239,400	99.3% 1,233,100	97.4% 1,210,100	86.0% 1,068,550	48.3% 599,400
Conservation and natural environments non forest	30,625	95.4% 29,225	92.9% 28,450	88.9% 27,225	82.4% 25,225	58.4% 17,875	25.9% 7,925
Conservation and natural environments Woodland forest	138,875	100.0% 138,875	100.0% 138,850	99.9% 138,675	99.0% 137,450	83.3% 115,625	28.6% 39,750
Conservation and natural environments Forest (non woodland)	1,072,300	100.0% 1,072,300	100.0% 1,072,100	99.5% 1,067,200	97.7% 1,047,425	87.2% 935,050	51.5% 551,725
Agriculture	1,580,700	100.0% 1,580,700	100.0% 1,580,475	99.2% 1,568,775	95.0% 1,501,450	56.7% 896,250	15.2% 239,525
Grazing	1,502,700	100.0% 1,502,700	100.0% 1,502,475	99.7% 1,498,075	97.0% 1,457,675	59.3% 891,025	15.9% 238,775
Grazing non forest	1,212,950	100.0% 1,212,950	100.0% 1,212,725	99.7% 1,208,850	96.5% 1,171,000	56.5% 685,375	14.8% 179,475
Grazing Woodland forest	120,625	100.0% 120,625	100.0% 120,625	99.8% 120,400	98.7% 119,075	62.3% 75,150	12.8% 15,475
Grazing - Forest (non woodland)	169,125	100.0% 169,125	100.0% 169,125	99.8% 168,825	99.1% 167,600	77.2% 130,500	25.9% 43,825
Cropping	50,625	100.0% 50,625	100.0% 50,625	86.1% 43,600	46.1% 23,325	4.9% 2,500	0.8% 400
Production native forests and plantation forests	218,575	100.0% 218,575	100.0% 218,575	100.0% 218,575	99.9% 218,325	97.5% 213,200	71.8% 156,925











