Total vegetation cover soil protection Region:NRM Hunter NSW

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

Land use forest cover:

Date: October 2007

Results can be shown for the whole region (polygon), and separated by land use and forest cover classes which are likely to show different cover patterns and targets. Land use is divided into four broad classes: Conservation and natural environments, Agriculture, production native forests and plantation forests (no report), and other (no report). Agriculture is divided into grazing, crops and horticulture which are sub-divided into non-irrigated and irrigated. If forest is present land use is further divided into: non-forest, woodland forest and non-woodland forest. The area of each land use and forest class are shown as a map and chart. The report content is repeated for each land use and forest cover class that covers at least 1% of the area of the chosen region. Total vegetation Cover:

The total vegetation cover indicates where soil is likely to be protected from wind and or water hillslope erosion. Total vegetation cover for this month is shown on a map and chart classified into 4 classes.

- 71-100% High cover protected from wind and usually water erosion (high rainfall, steep slopes, and erodible soils may need greater than 80, 90, 95 and up to 100% cover)
 - 51-70% Moderate cover protected from wind erosion
 - 31-50% Low cover not protected
 - 0-30% Very Low cover not protected

Erosion protection: Wind erosion 50% total vegetation cover

The vegetation cover threshold required to prevent soil erosion is usually 50% to reduce wind erosion, 70% or 80% to reduce water (hillslope) erosion depending on the steepness and rainfall. Areas protected from erosion for the month:

- Map: water erosion protection (>70% cover) percentage area and hectares.
- Map: wind erosion protection (>50% cover) percentage area and hectares.

Comparison with previous years:

- Map: anomaly comparing this month to the average cover from the same month in previous years.
- Map: deciles rank of month against the same month in previous years.

Anomalies and deciles until September 2019 are calculated comparing to the same months 2001 to 2019. Extra monthly data will be used to calculate anomalies and deciles post September 2019 as they become available. Time series monthly from January 2001 to current:

Erosion protection

- Wind erosion protection time series: percentage of the area of the region with greater than 50% cover for each month (orange lines). Horizontal lines are 10th (cover target) and 50th percentiles.
- Water erosion protection time series: percentage of the area of the region with greater than 70% cover for each month (blue line). Horizontal lines are 10th (cover target) and 50th percentiles.

Rainfall

• Millimetres rainfall each month (black line).

Each time series is also stacked by year. The black line shows the current year of data. Water erosion protection for higher rainfall and steeper slopes:

Water erosion protection on higher slopes. As slope increases, more cover is required to control water erosion. The thresholds reported are:

- the percentage area with pixels greater than 80% total cover.
- the percentage area with pixels greater than 90% total cover.
- the percentage area with pixels greater than 95% total cover.

Acknowledgment of data:

- 1. http://www.agriculture.gov.au/abares/aclump/land-use/alum-classification
- 2. http://www.agriculture.gov.au/abares/forestsaustralia/sofr/sofr-2018
- 3. https://www.dpi.nsw.gov.au/agriculture/pastures-and-rangelands/establishment-mgmt/production-management2/groundcover
- 4. MODIS Fractional cover algorithm:

https://doi.org/10.4225/08/5848a3f19a7b3













Vegetation Cover Oct 2007

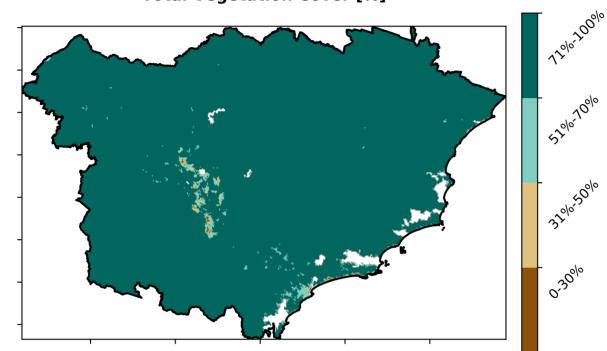
Land use and forest cover Legend with land class forest cover and number, i.e. Forests is 12 1 Conservation and natural environments -2 Conservation and natural environments -Catchment Scale Land Use and Forests 3 Conservation and natural environments -Non-Woodland forest of Australia (2018) 4 Agriculture - 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

13 Other uses

35 - 32.7% 30 - 25 - 25 - 20 - 25 - 10 - 10 - 5 - 4.2% 5 - 4.2% 36.9% 36.9% 36.9% 31.7% 32.7% 32.7%

Proportion of each land class in area

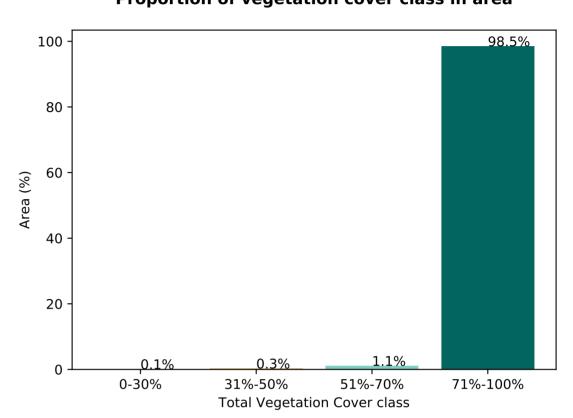
Total Vegetation Cover [%]



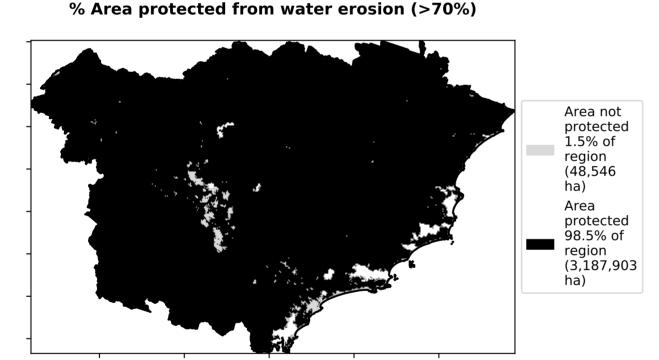
Proportion of vegetation cover class in area

Land use class

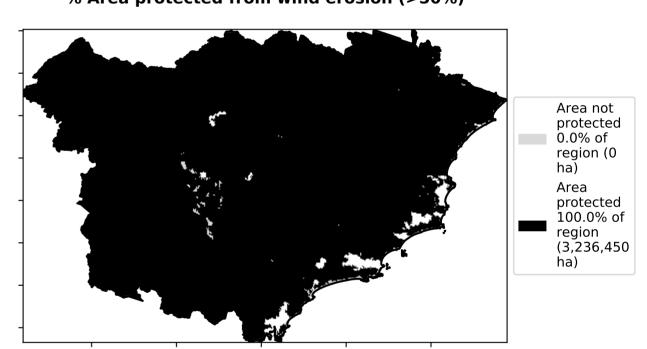
10 11 12 13



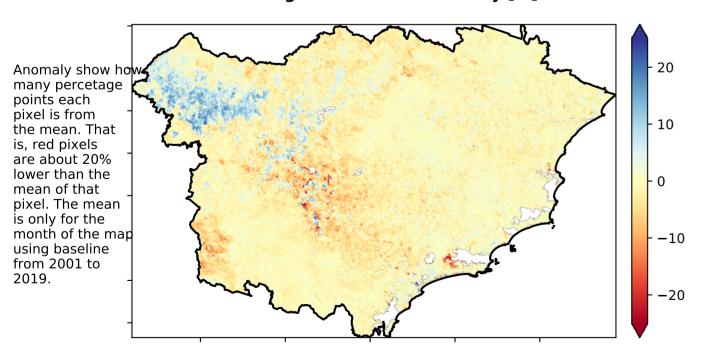
0/ Aven weeks at all from water avenies (> 700/)



% Area protected from wind erosion (>50%)

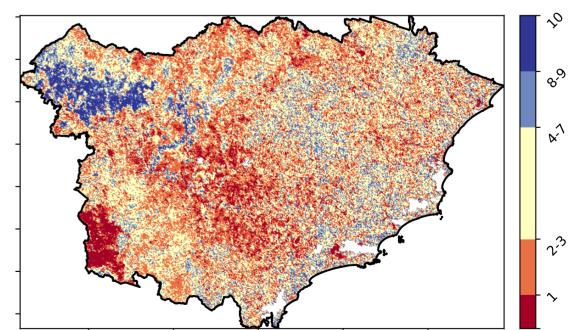


Total Vegetation Cover Anomaly [%]



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 [%]





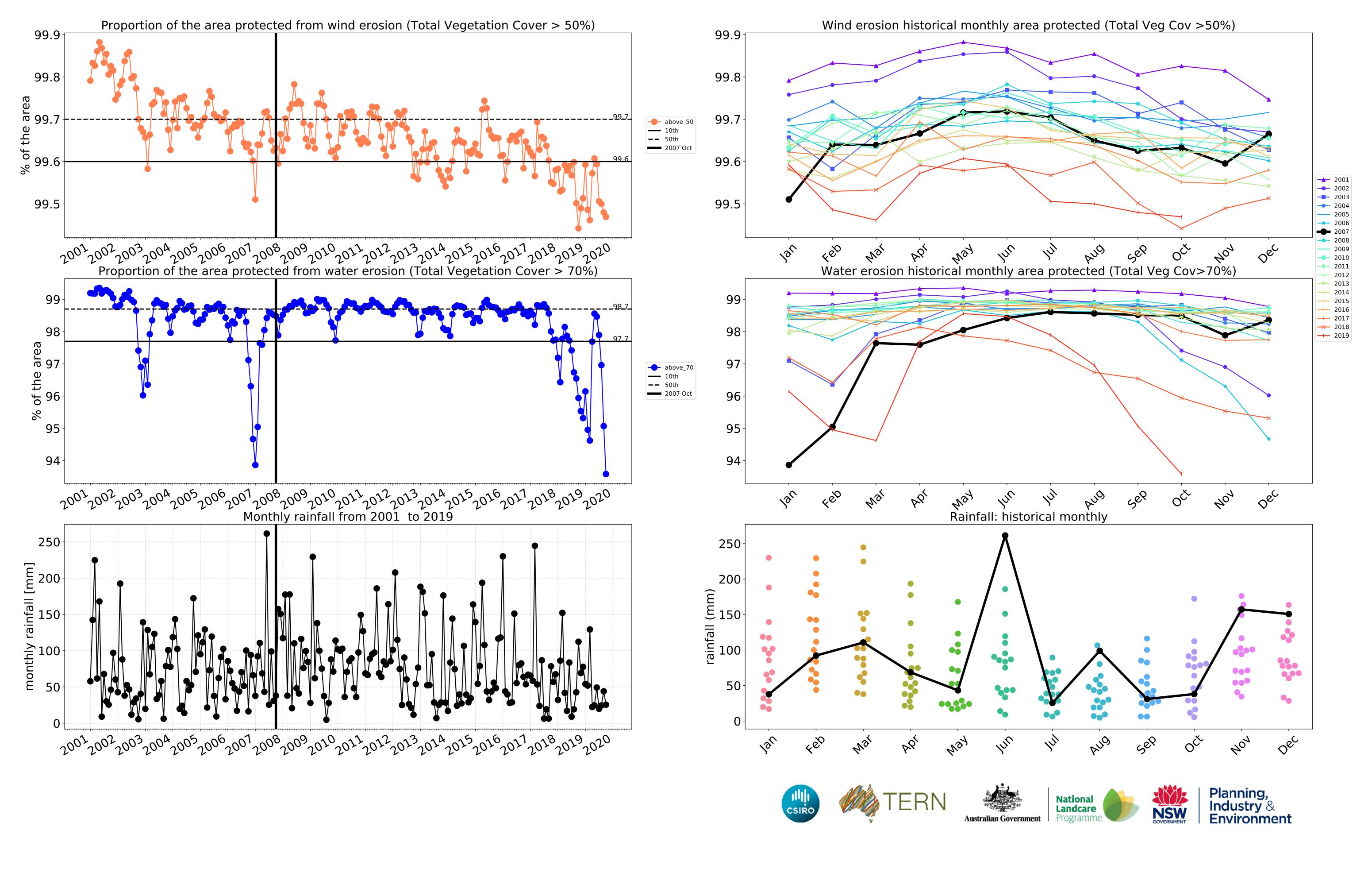


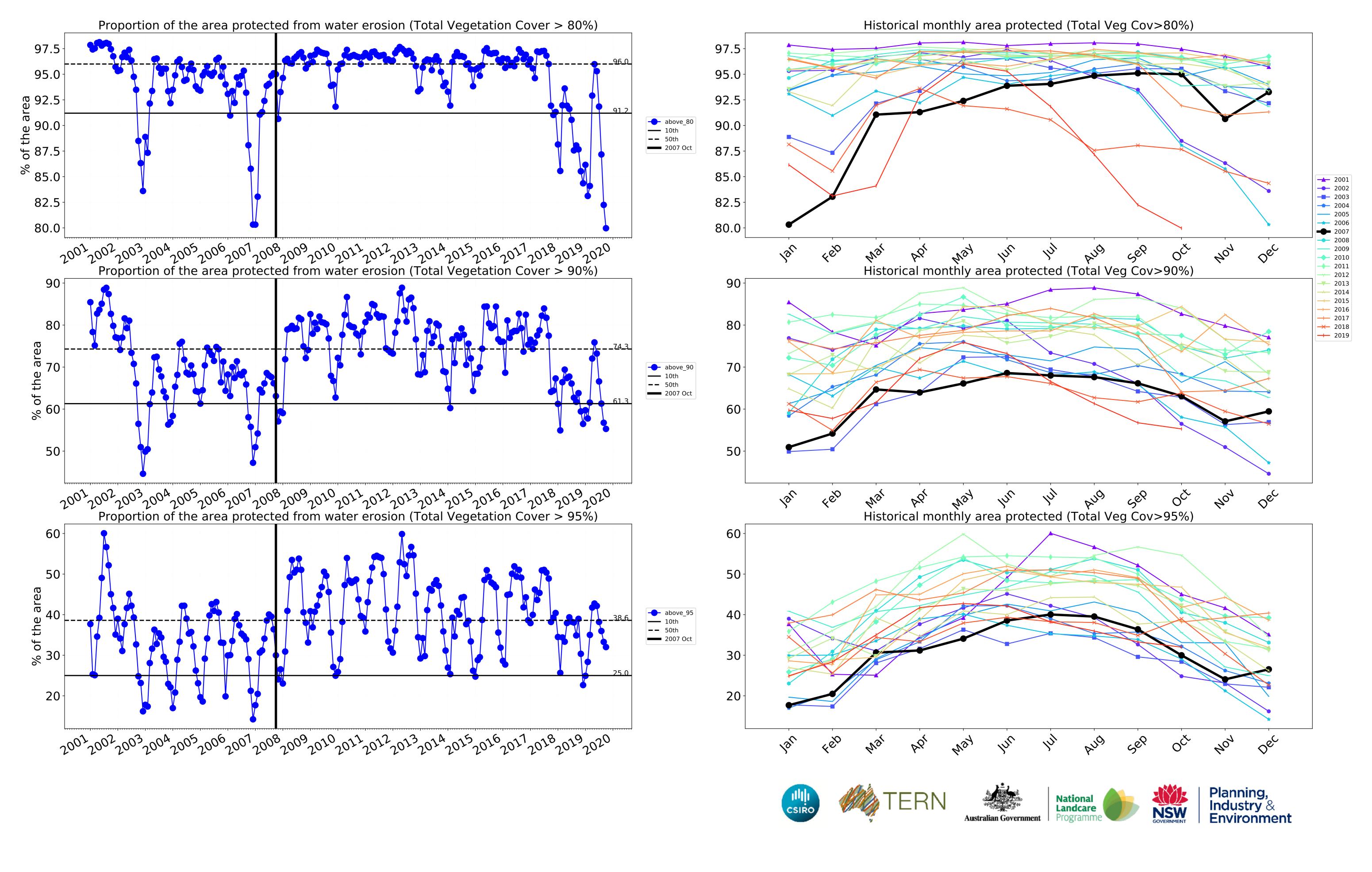






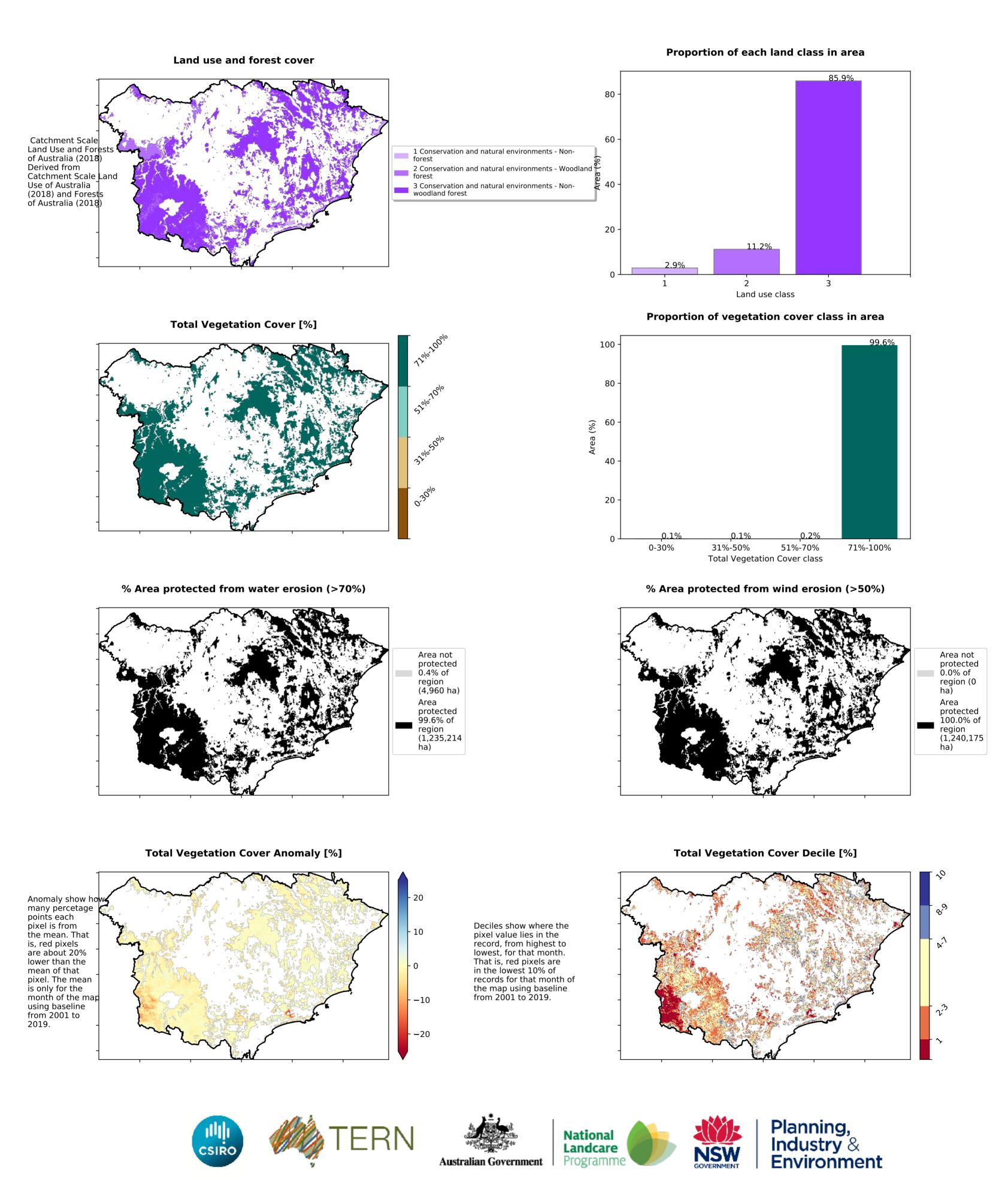




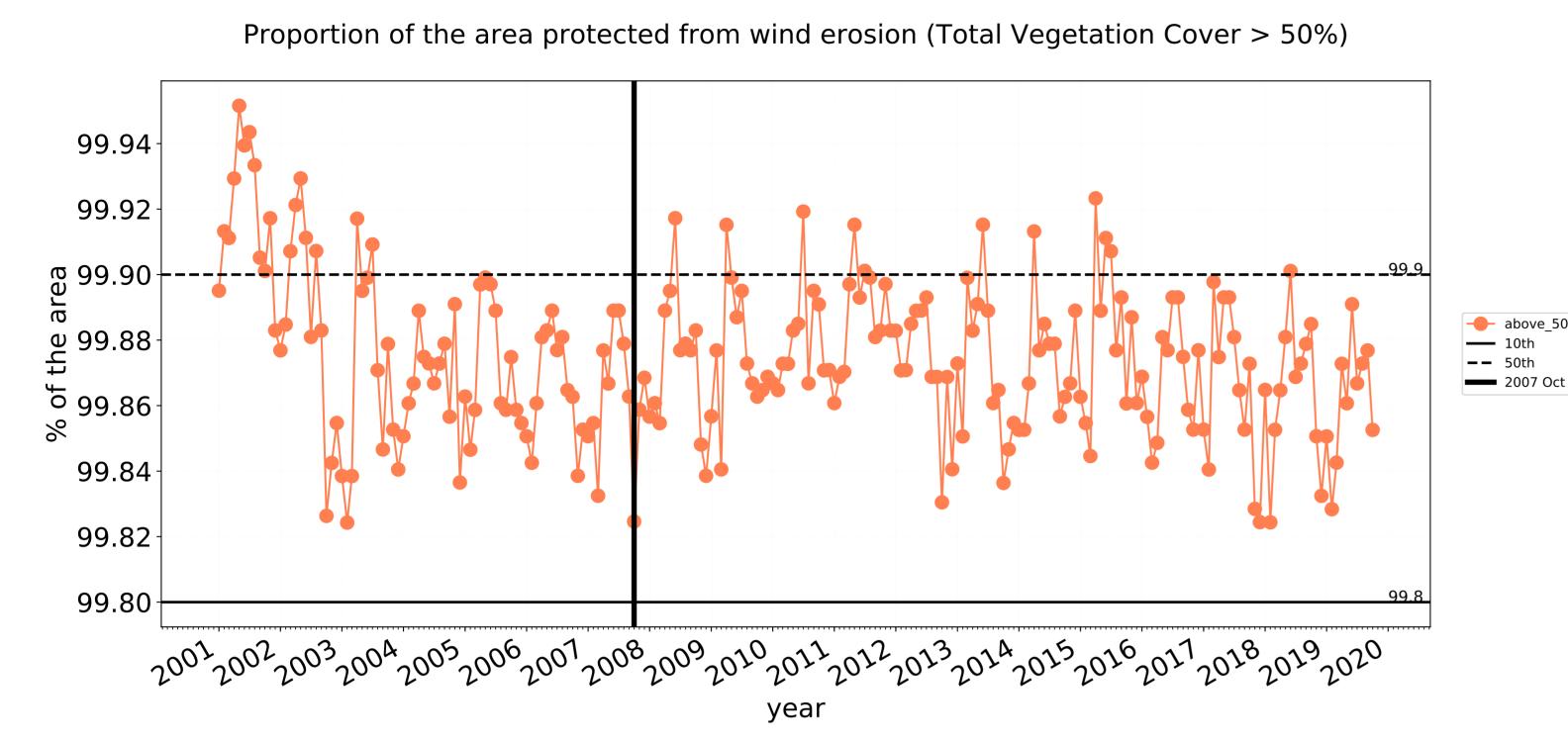


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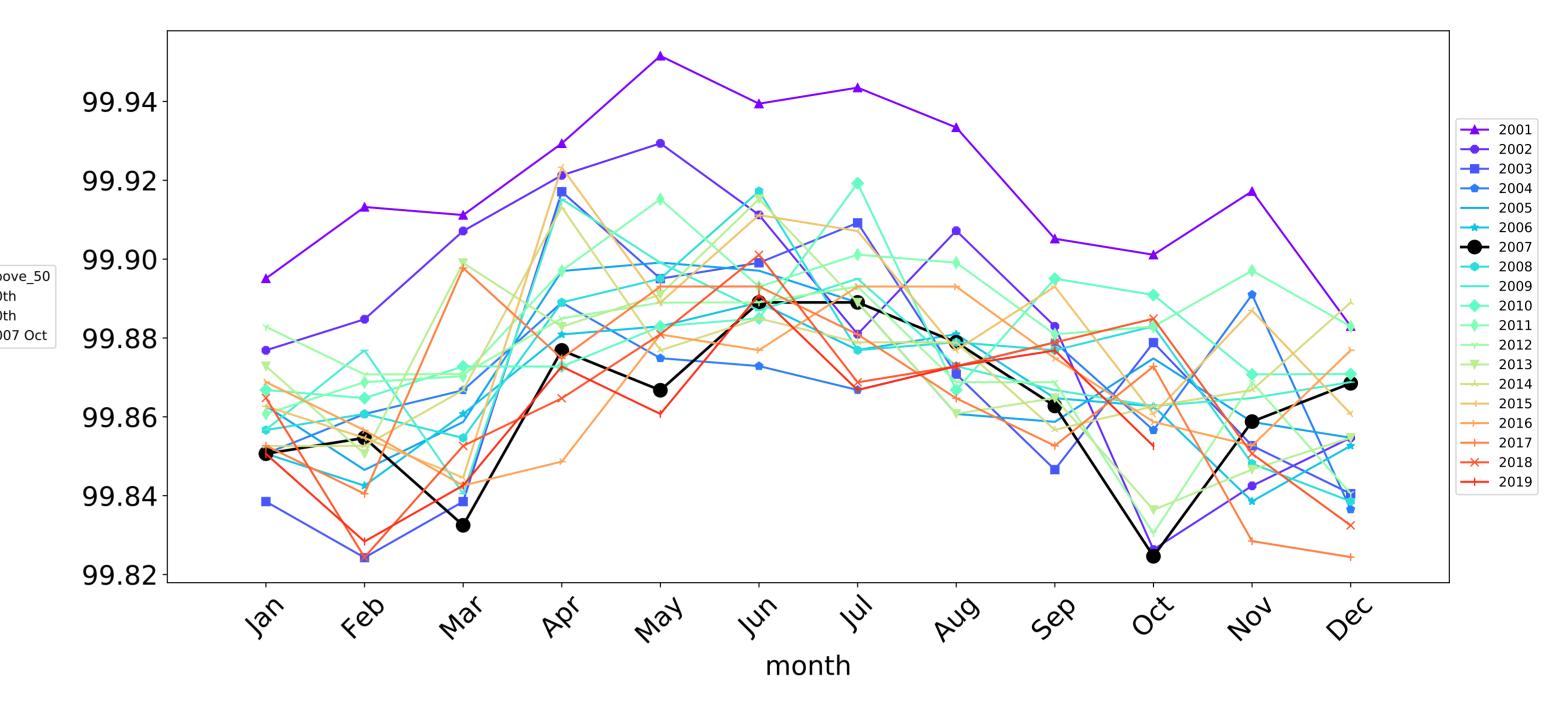
Conservation and natural environments

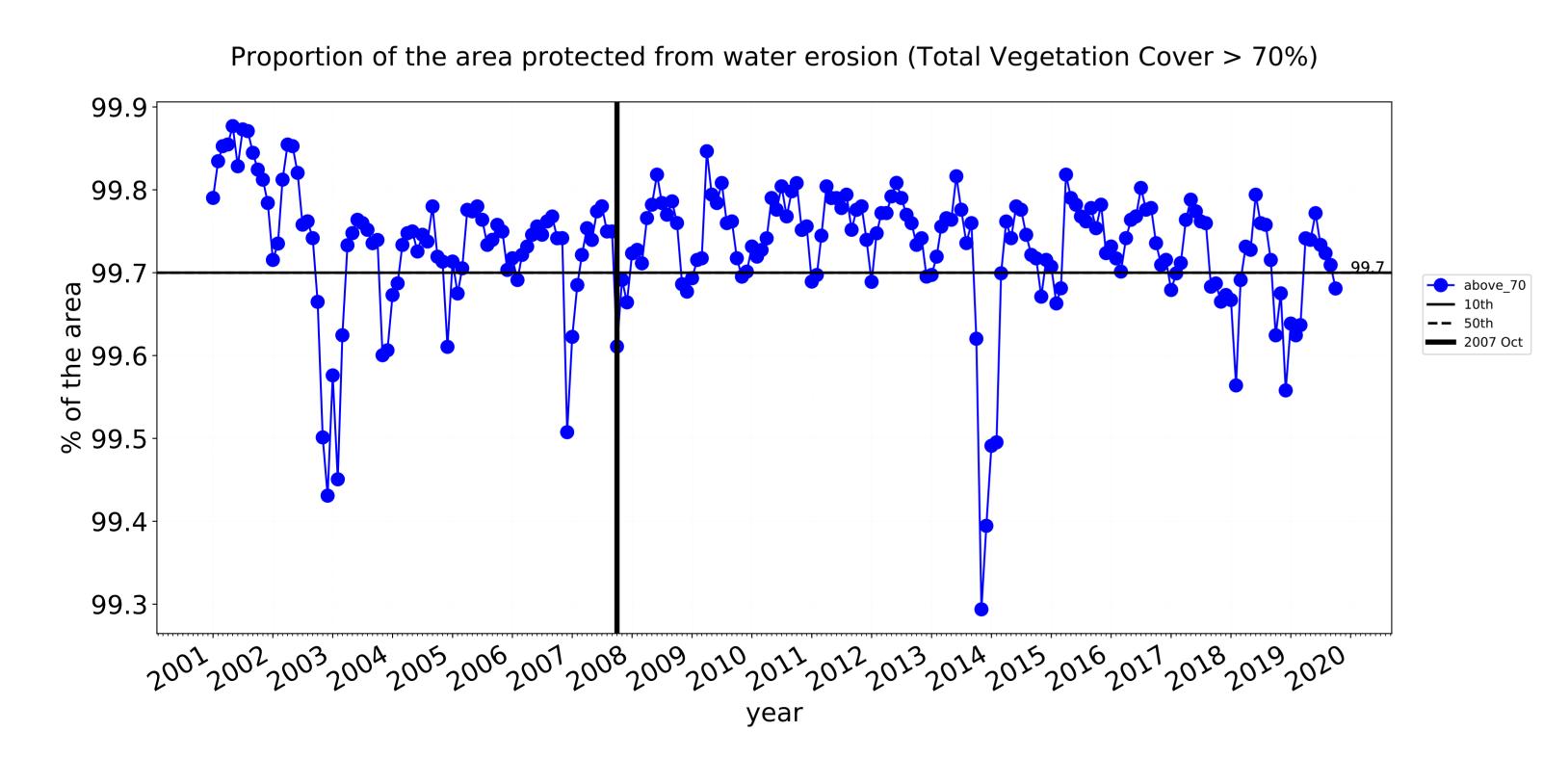


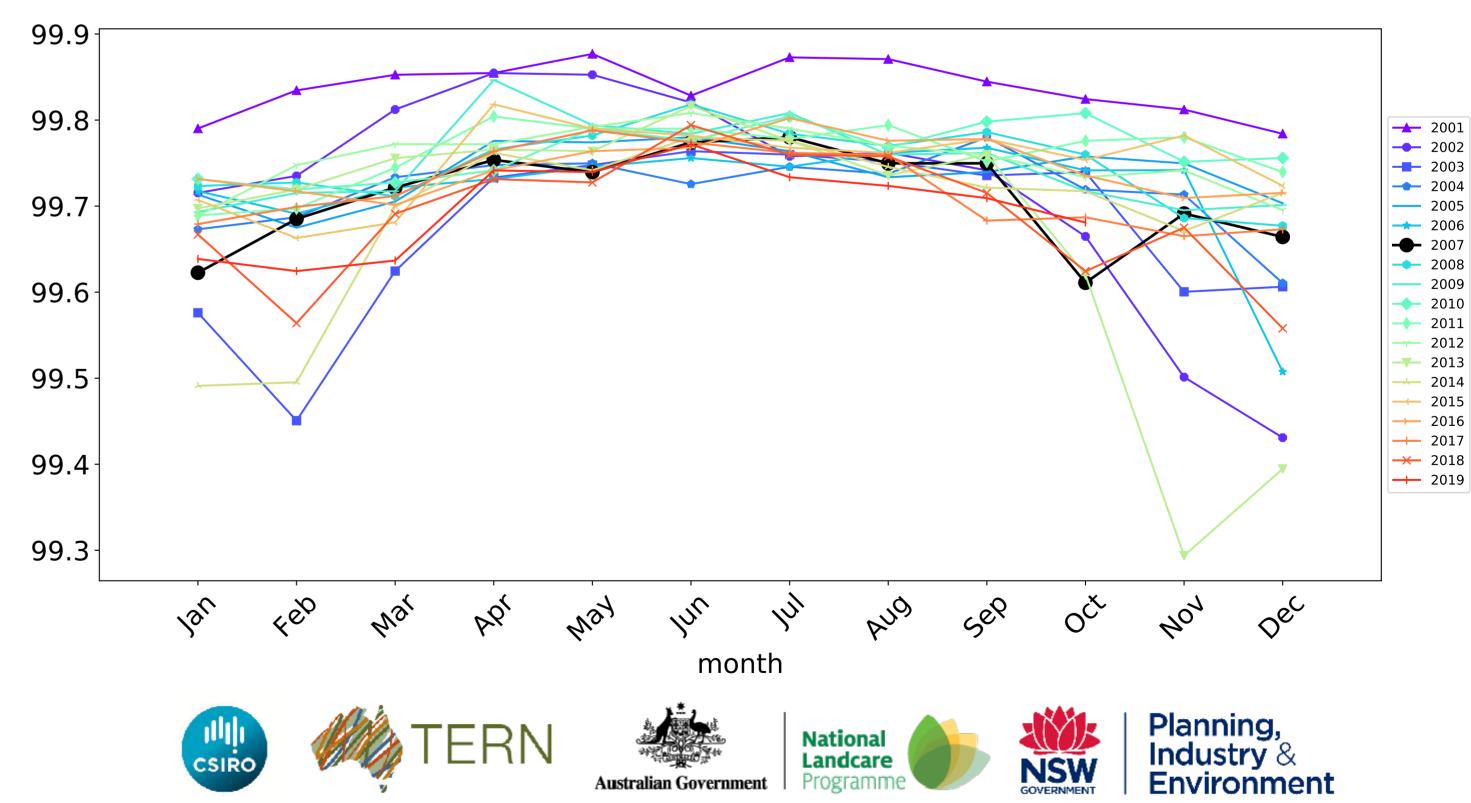
Conservation and natural environments timeseries



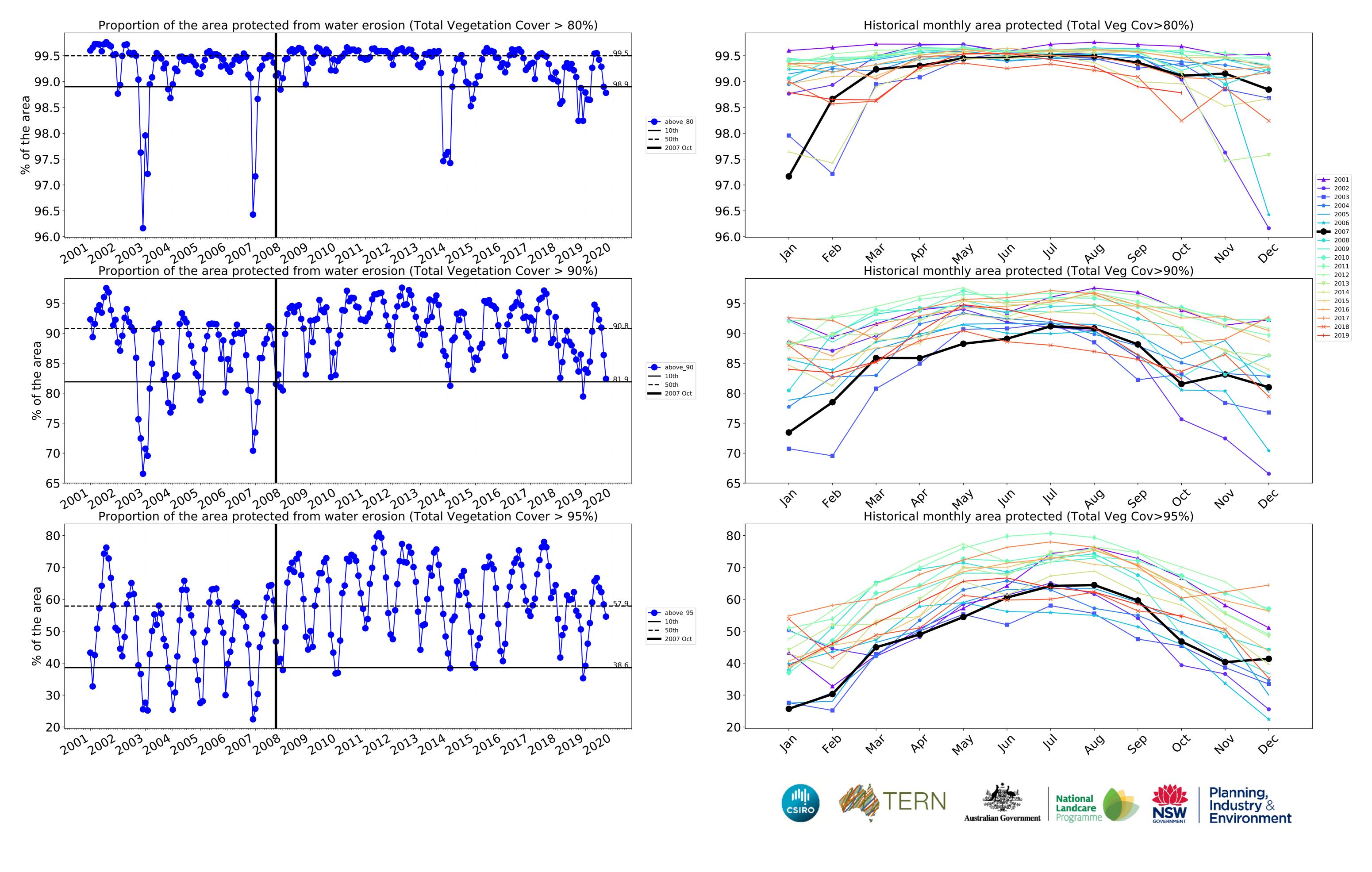
Wind erosion historical monthly area protected (Total Veg Cov >50%)







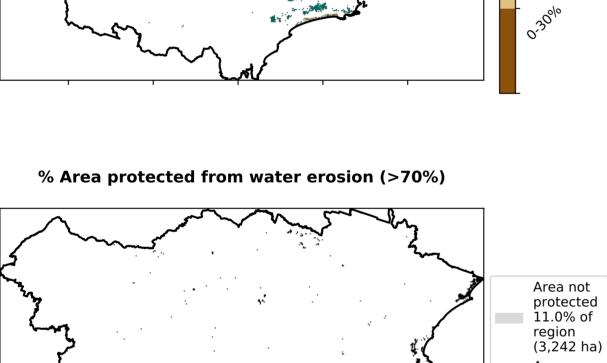
Water erosion historical monthly area protected (Total Veg Cov>70%)

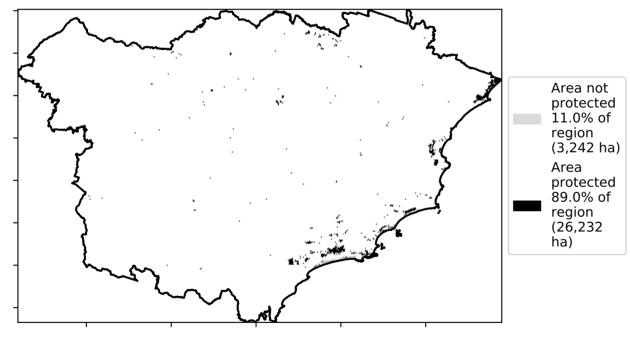


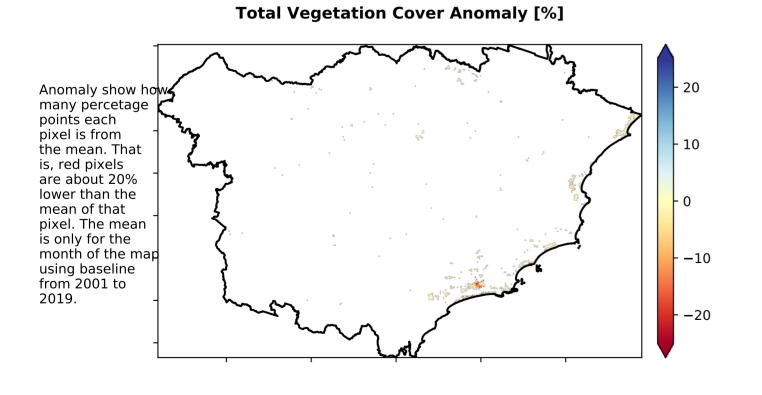
Conservation and natural environments non forest

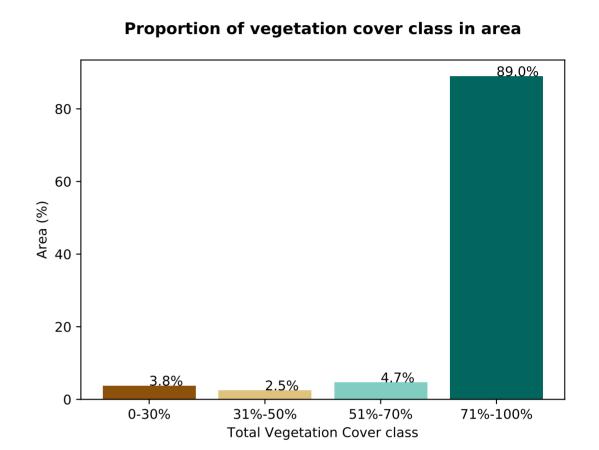
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) 1 Conservation and natural environments - Nonforest 1 Conservation and natural environments - Nonforest

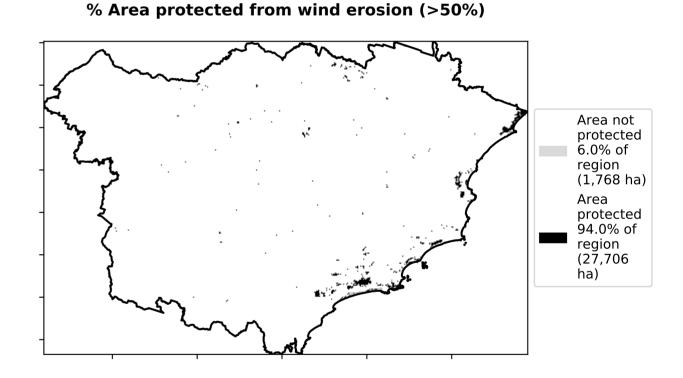
Total Vegetation Cover [%]

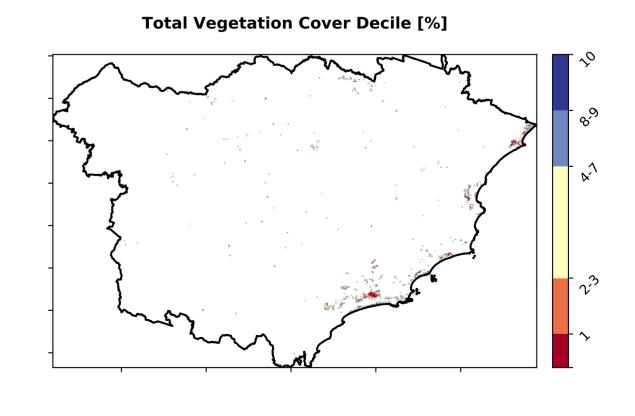
















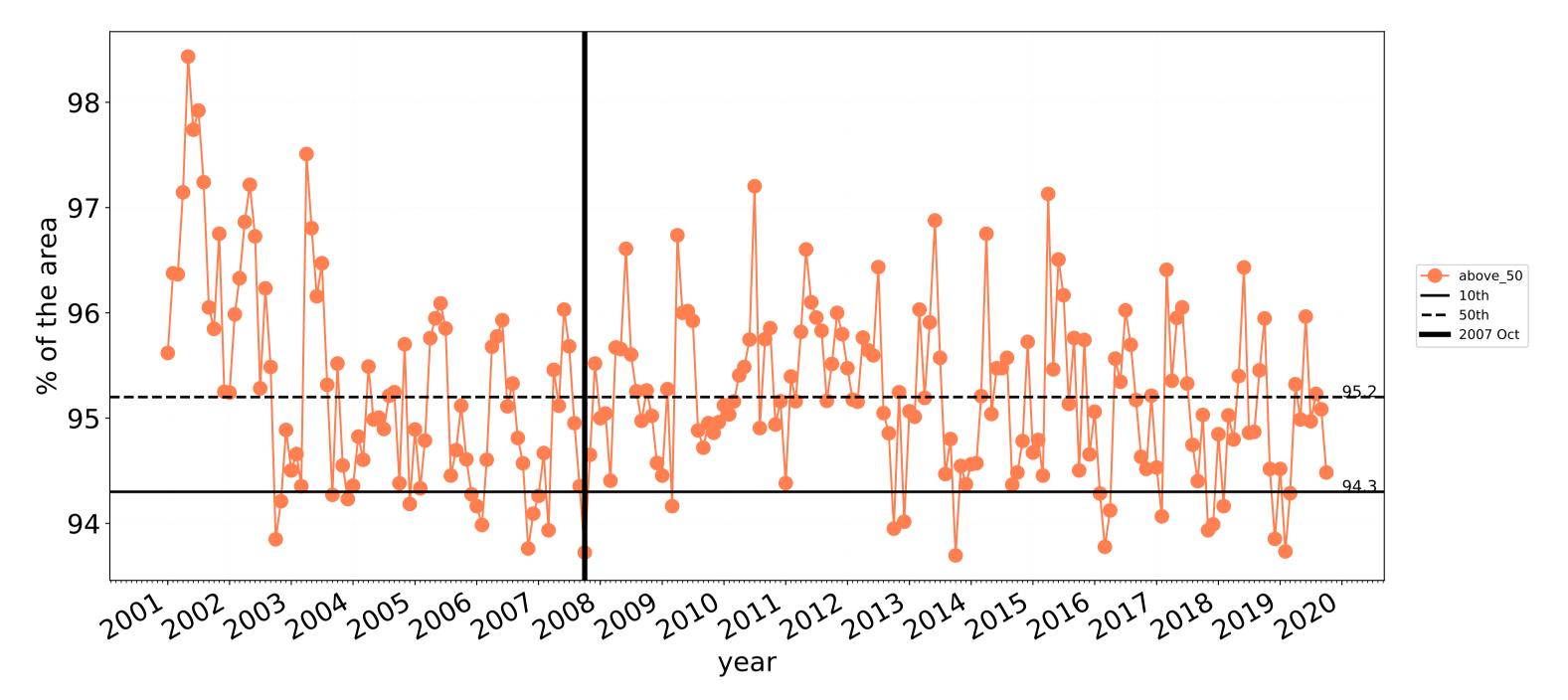




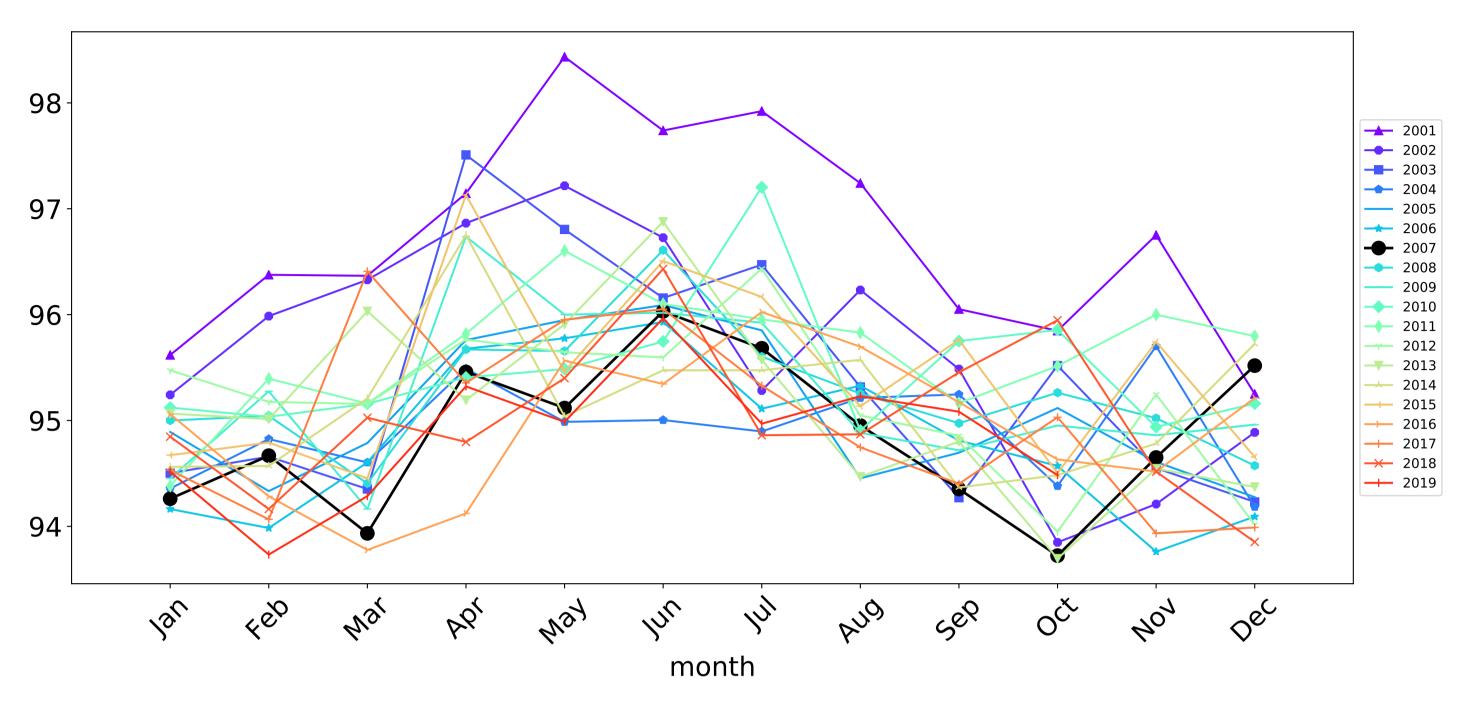




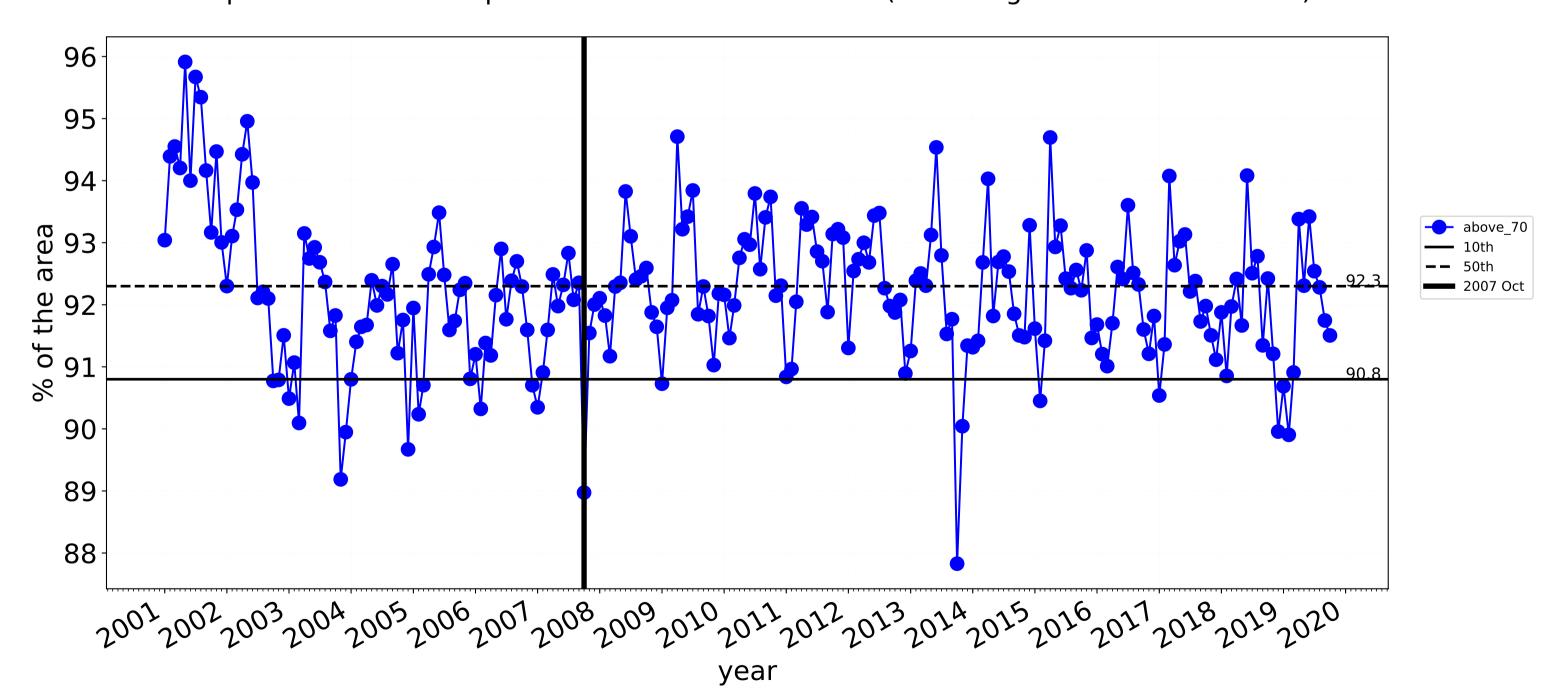




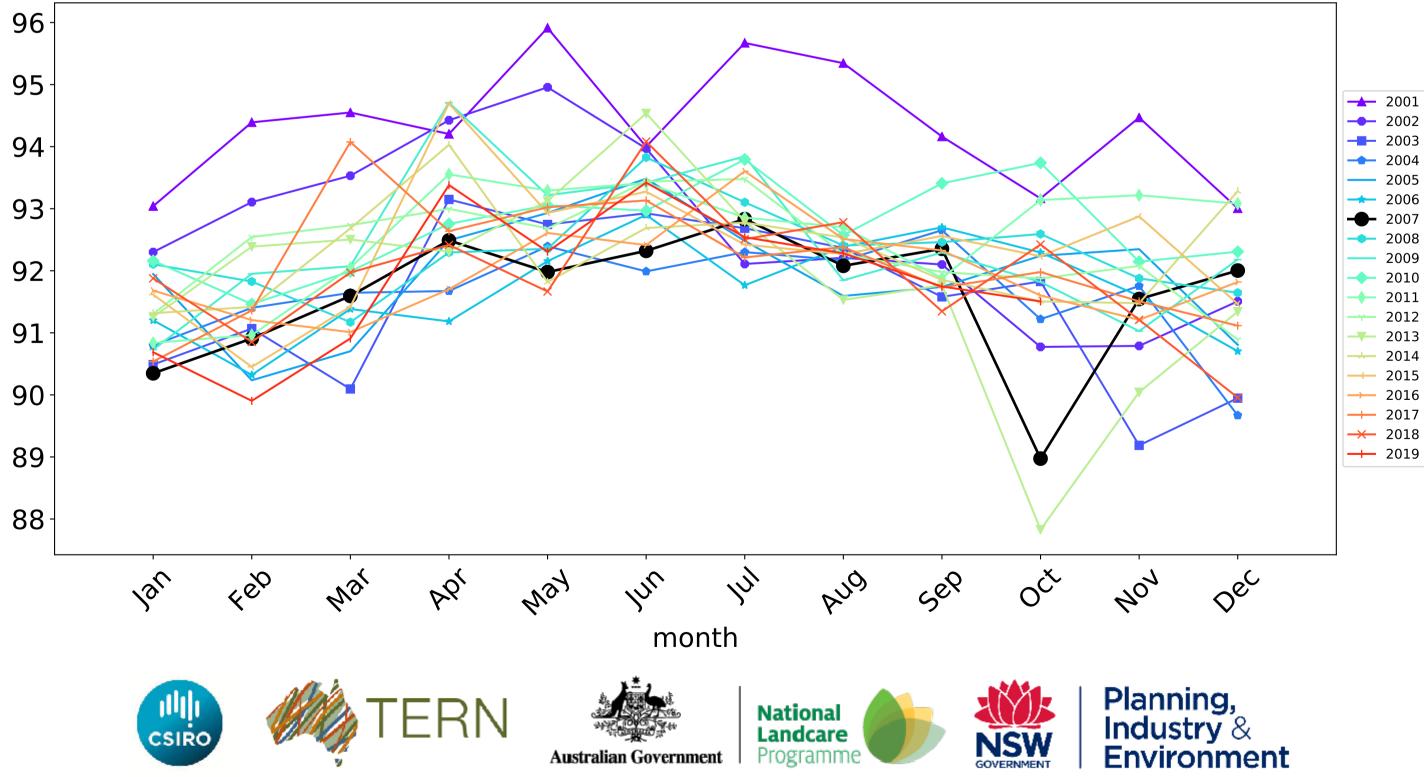
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



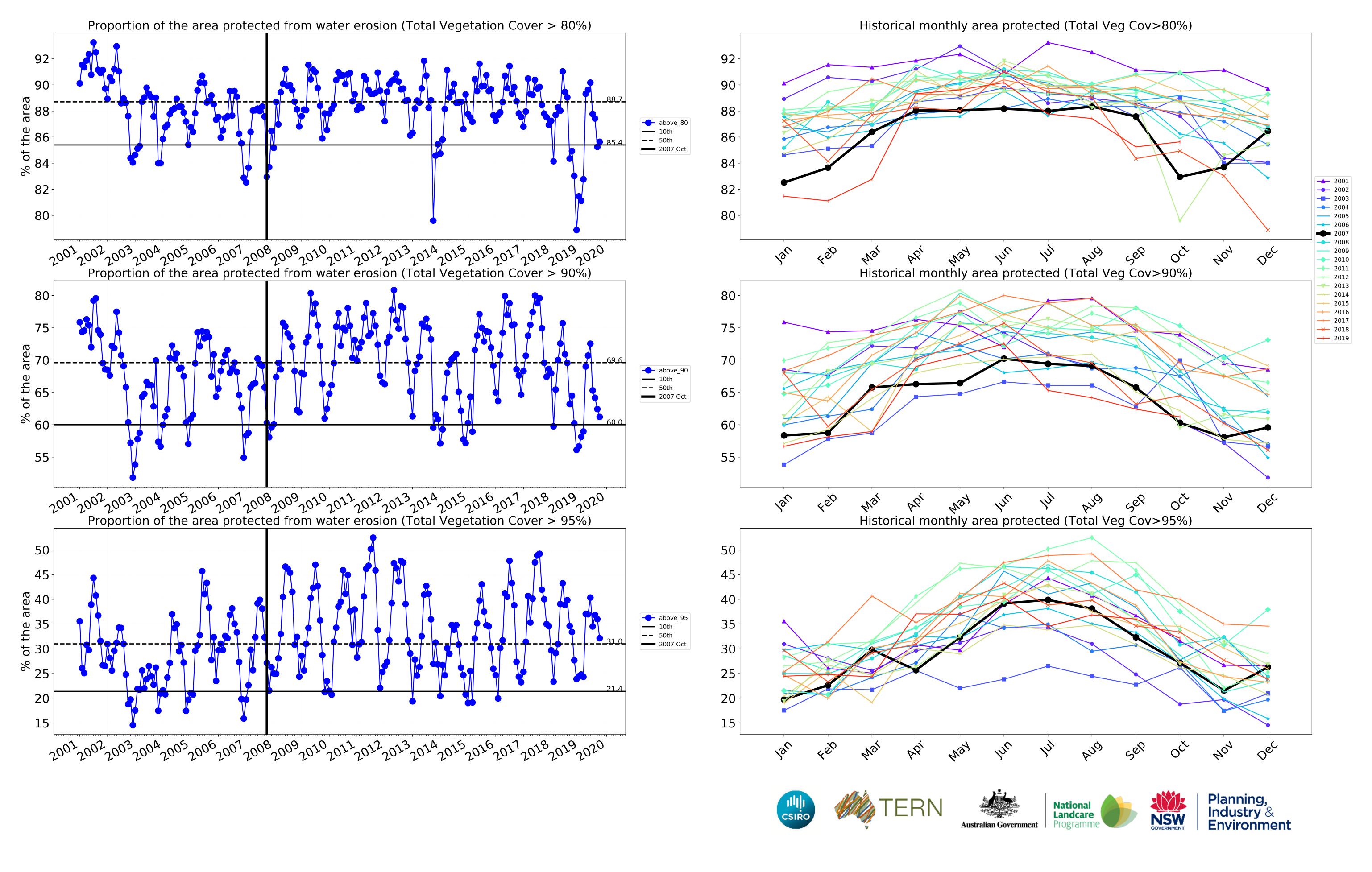
Water erosion historical monthly area protected (Total Veg Cov>70%)



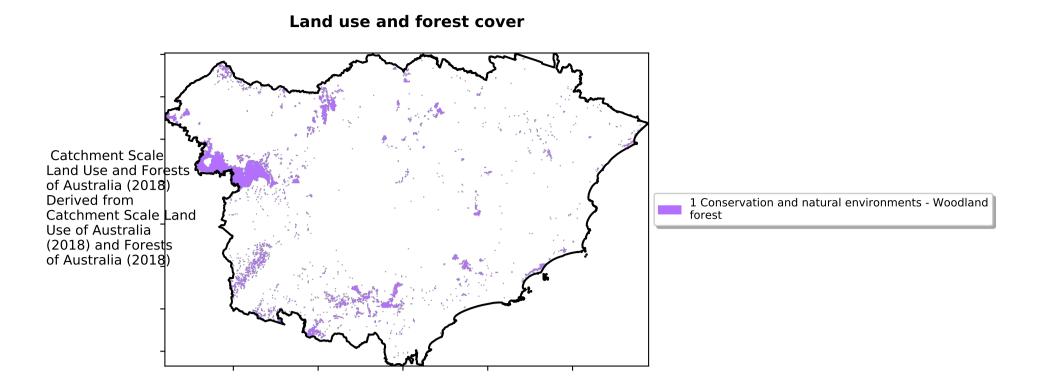


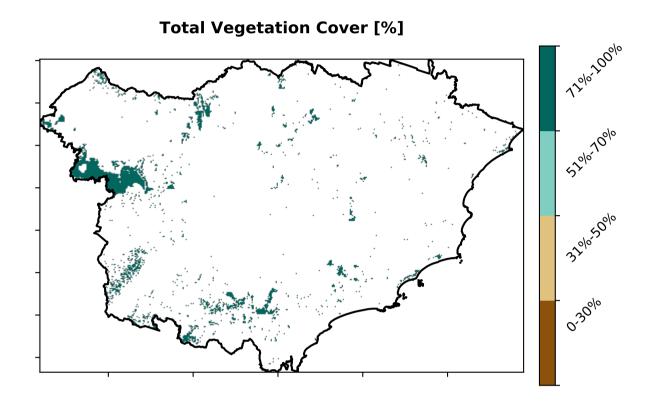


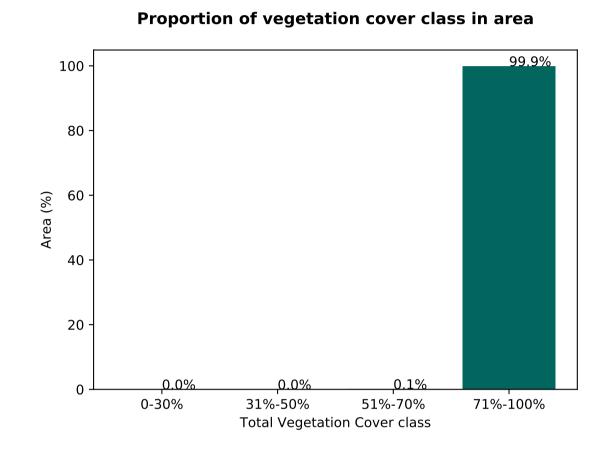


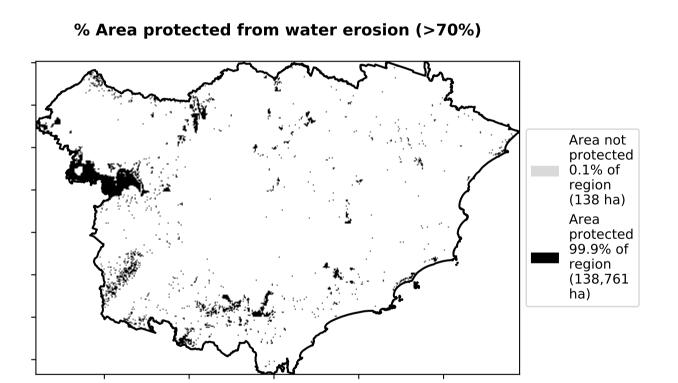


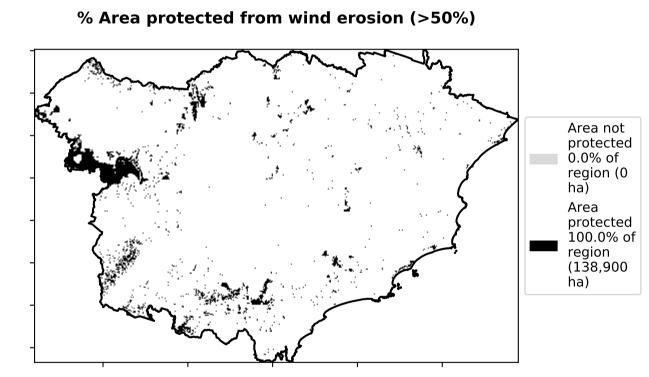
Conservation and natural environments Woodland forest

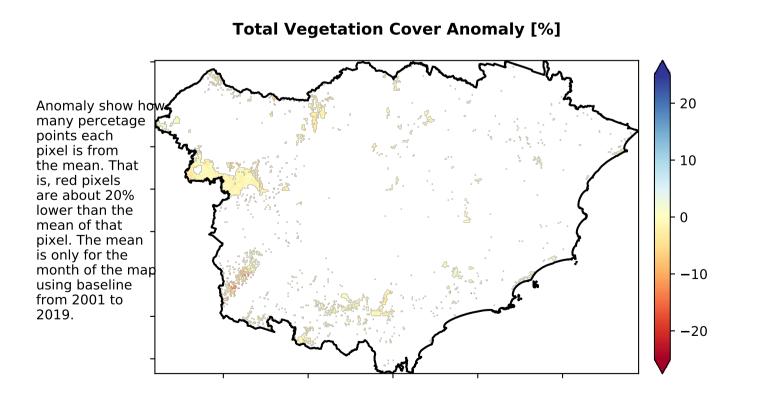


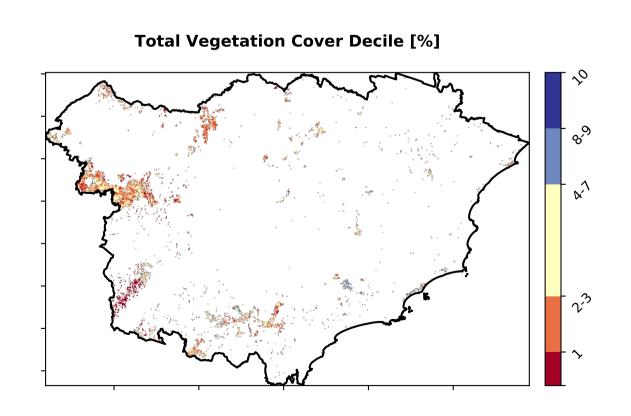
















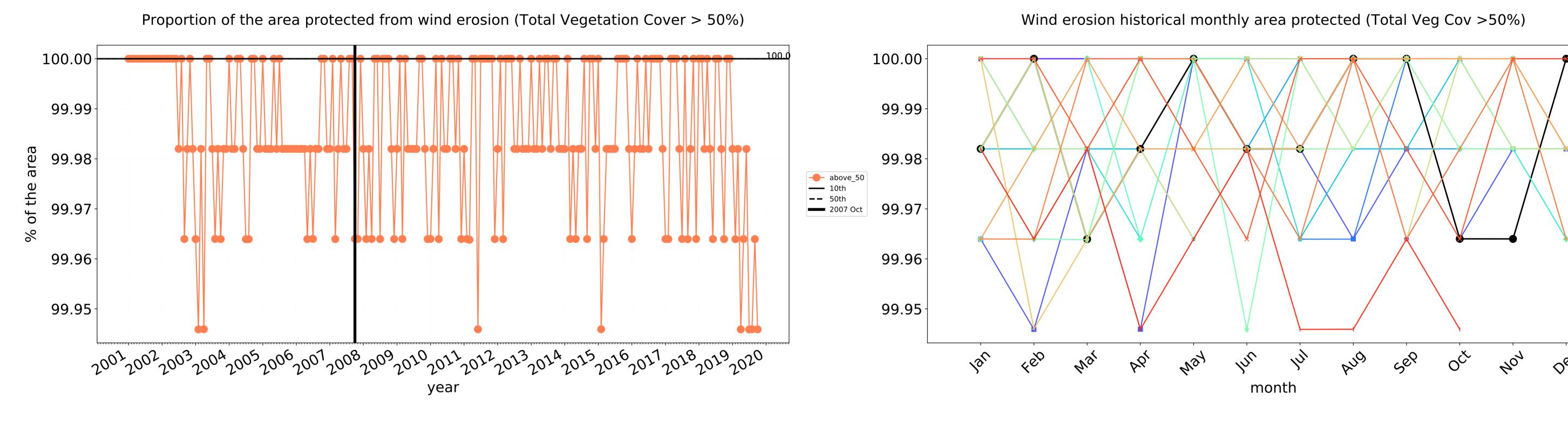


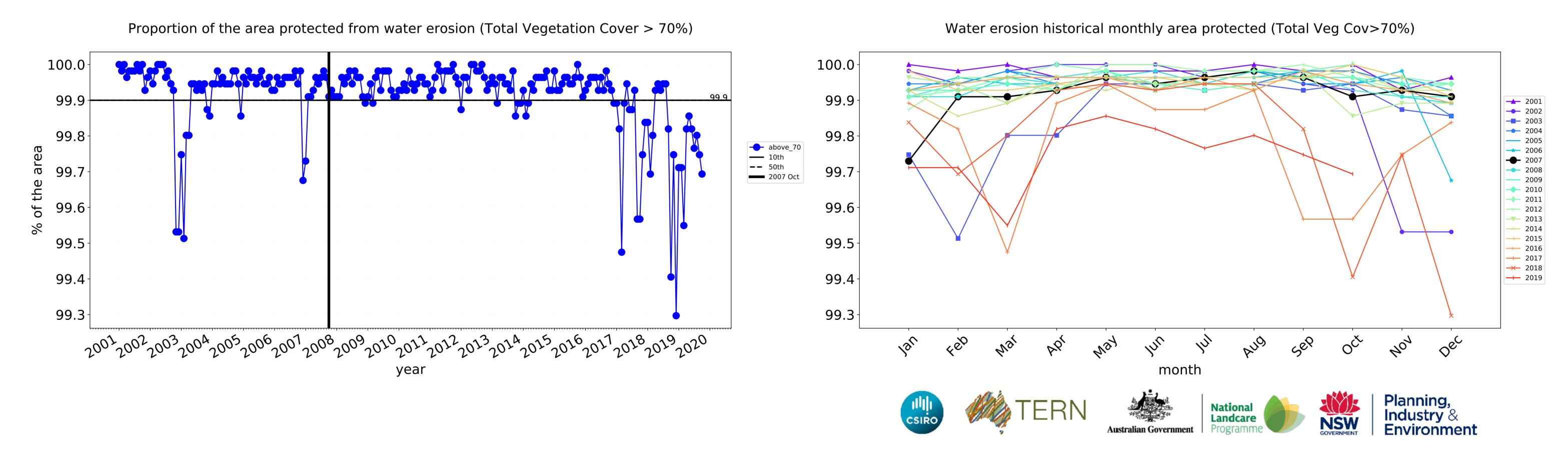






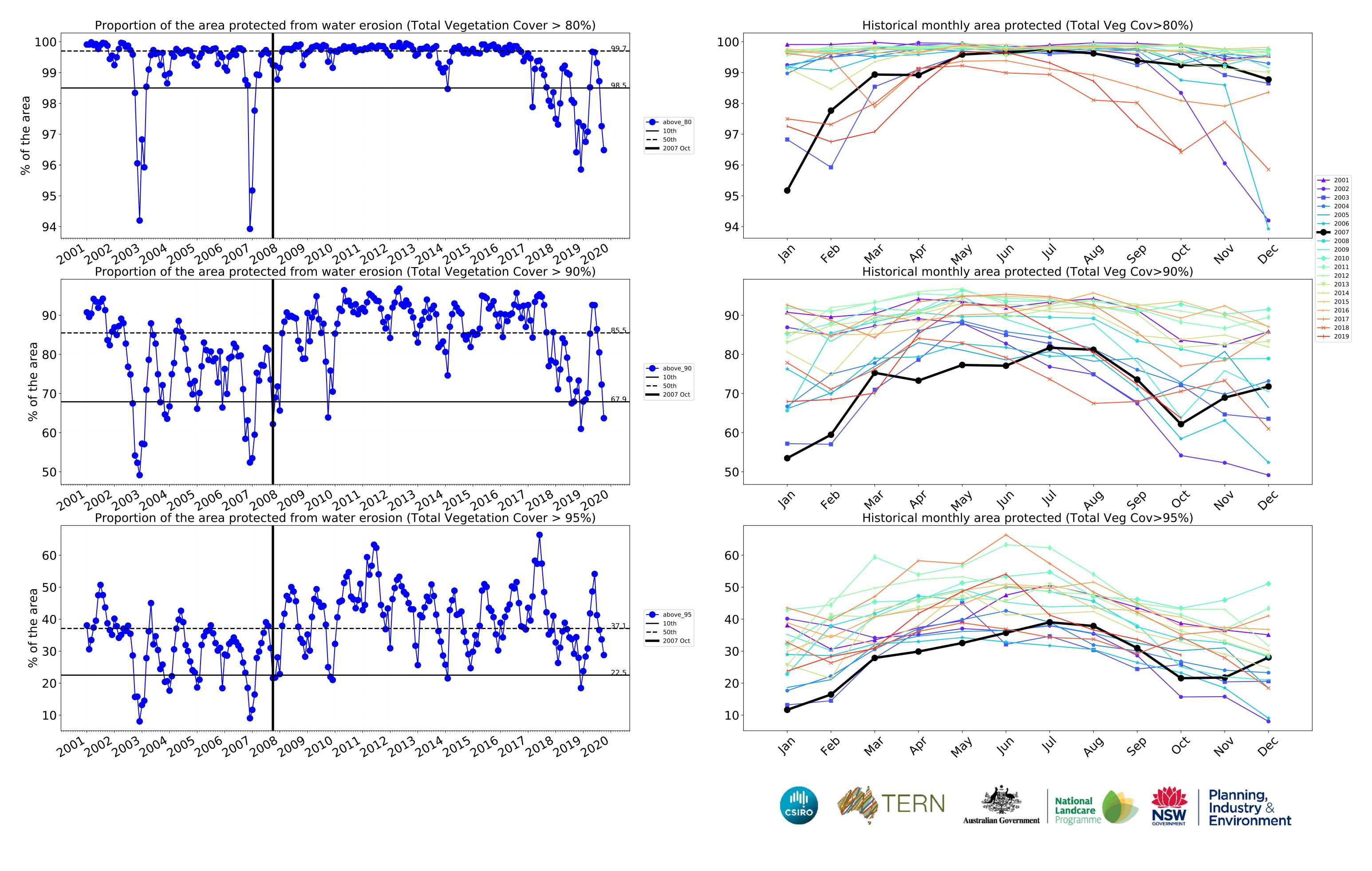
Conservation and natural environments Woodland forest timeseries

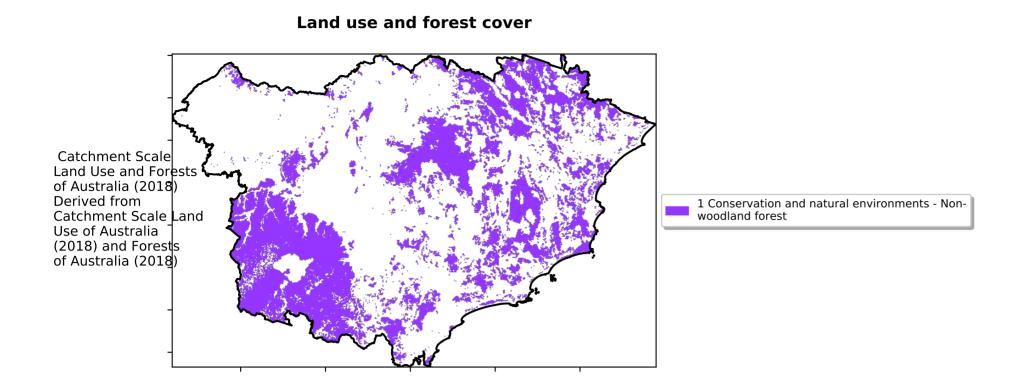




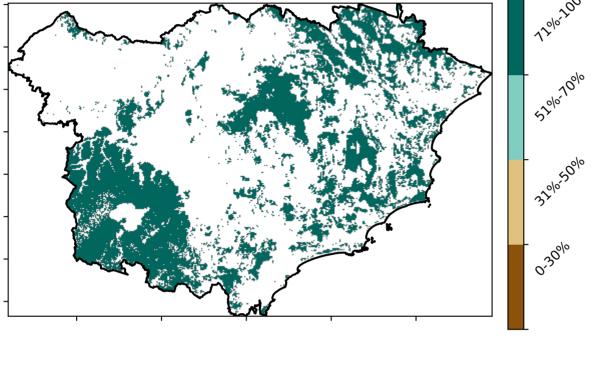
→ 2001

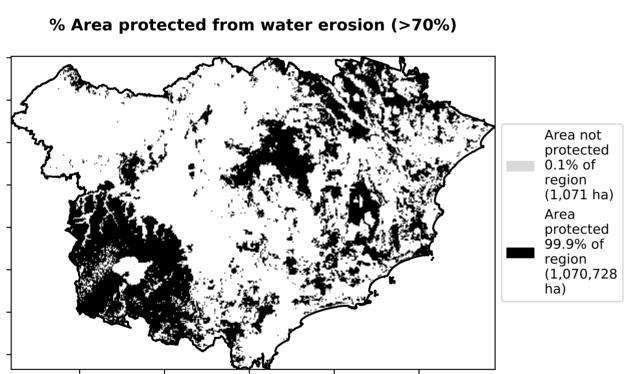
→ 2016 → 2017 → 2018 → 2019

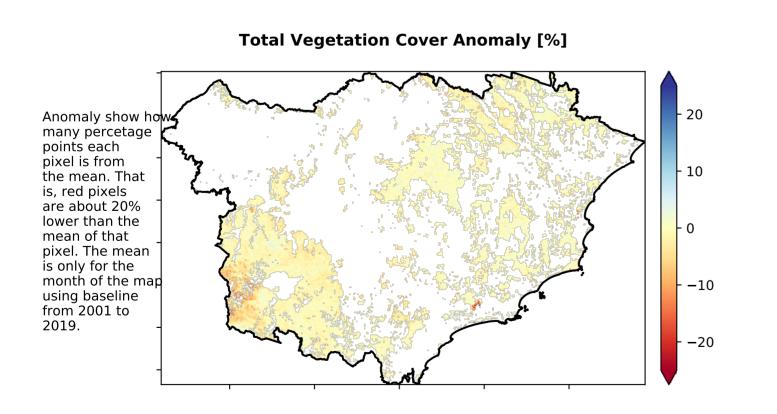




Total Vegetation Cover [%]

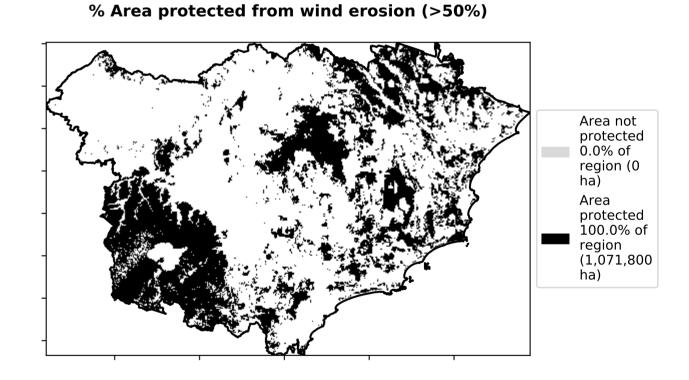


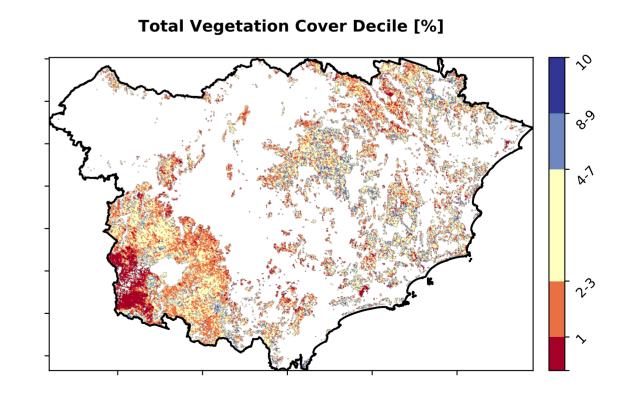




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline. the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area 99.9% 100 80 60 40 20 0.1% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**







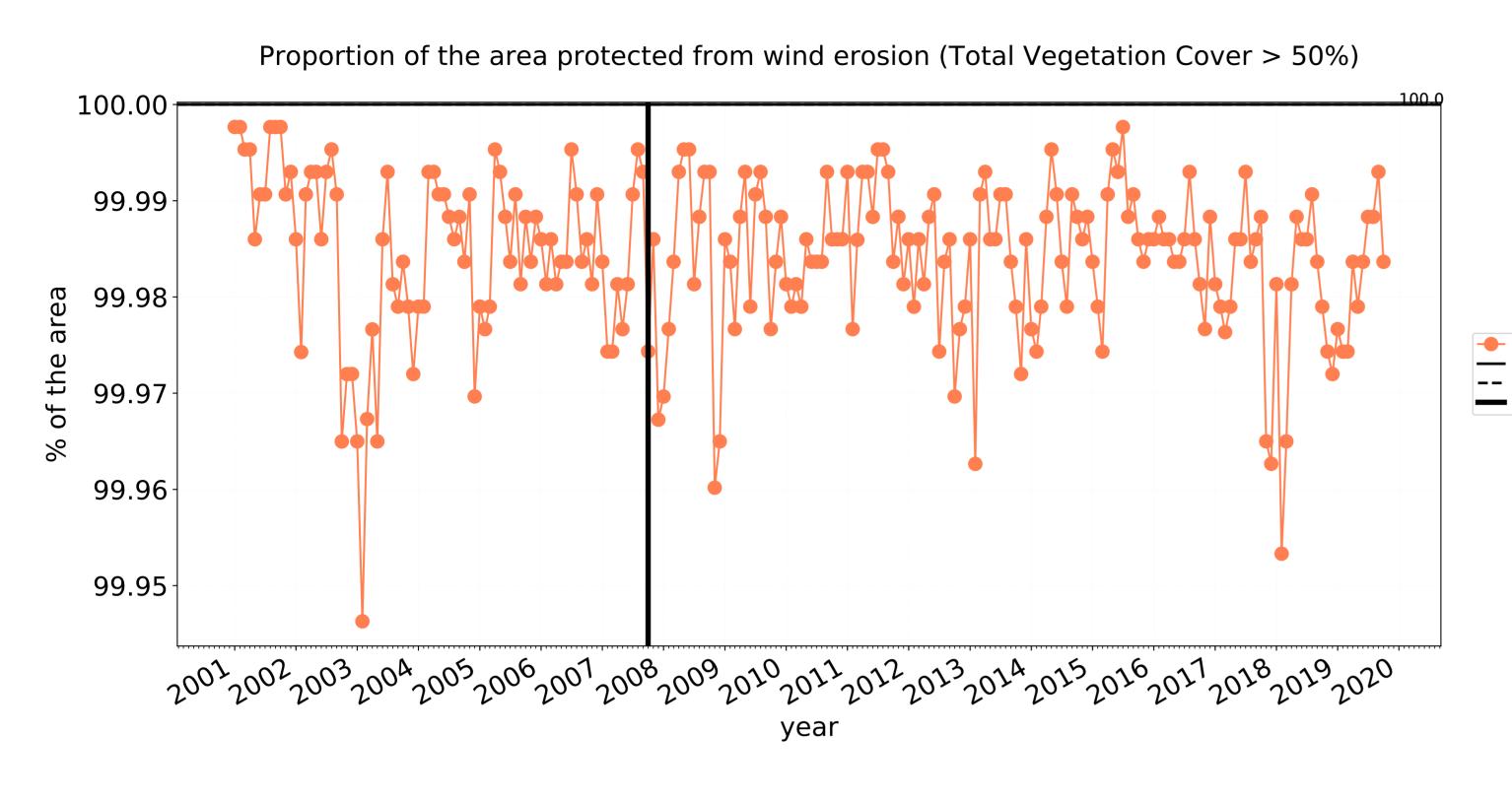


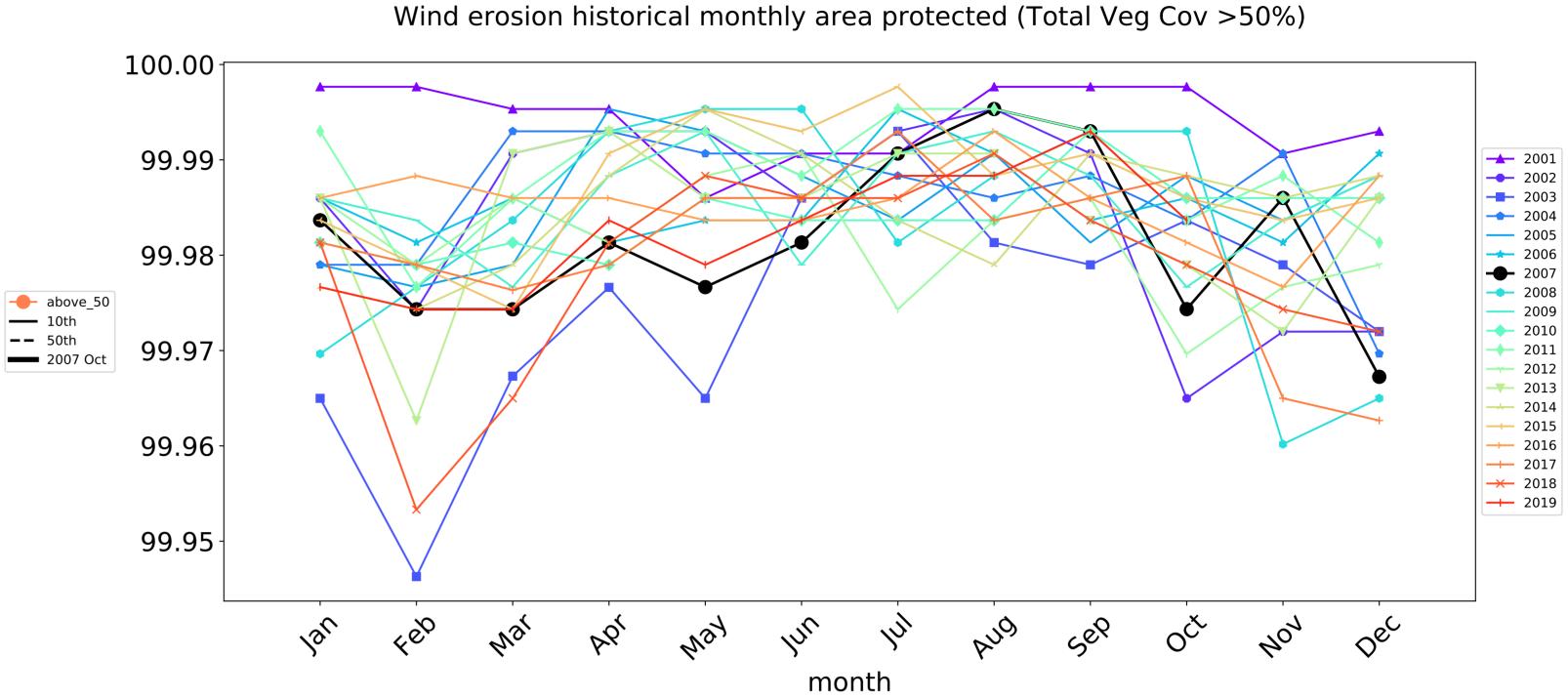


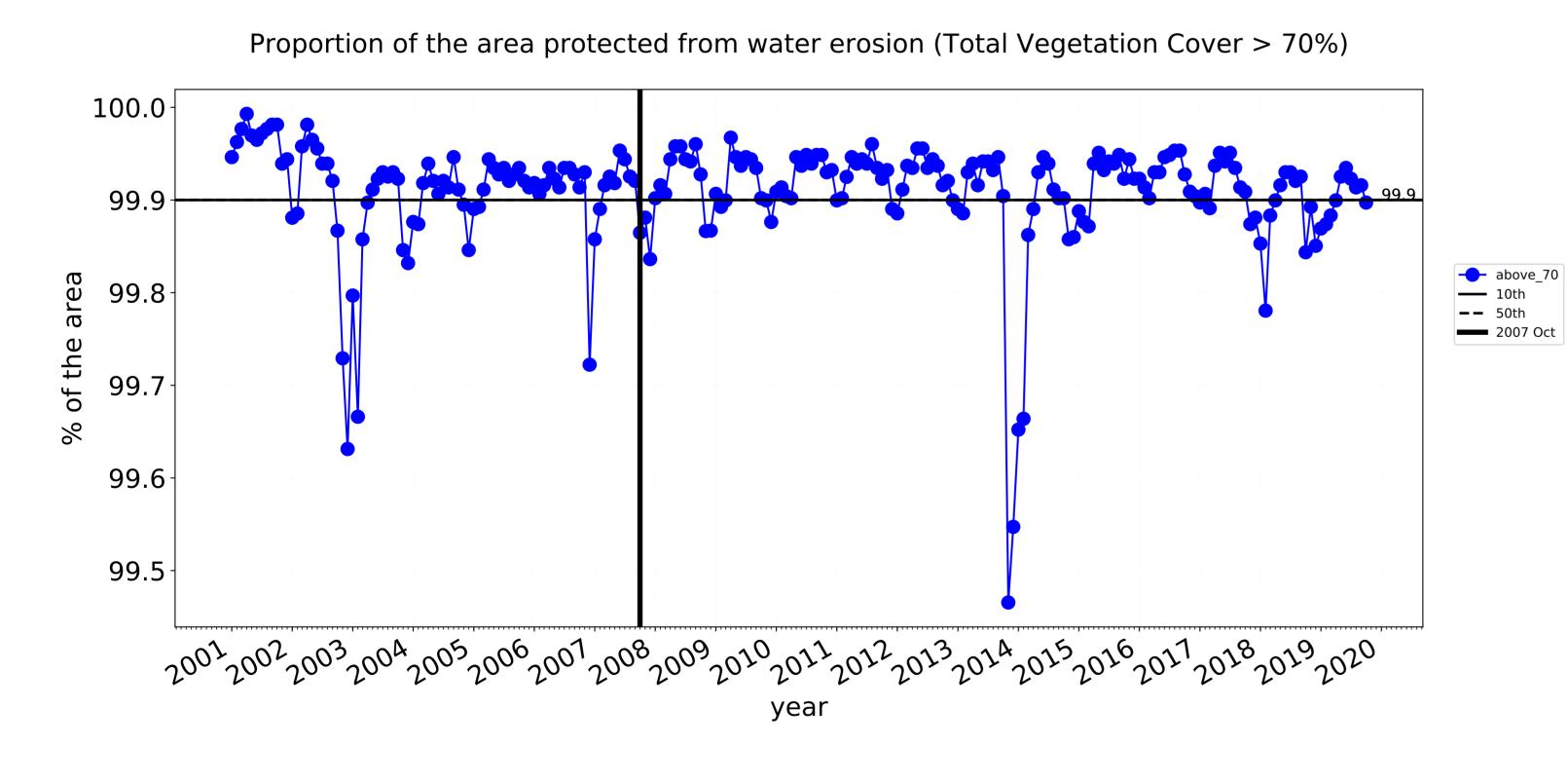


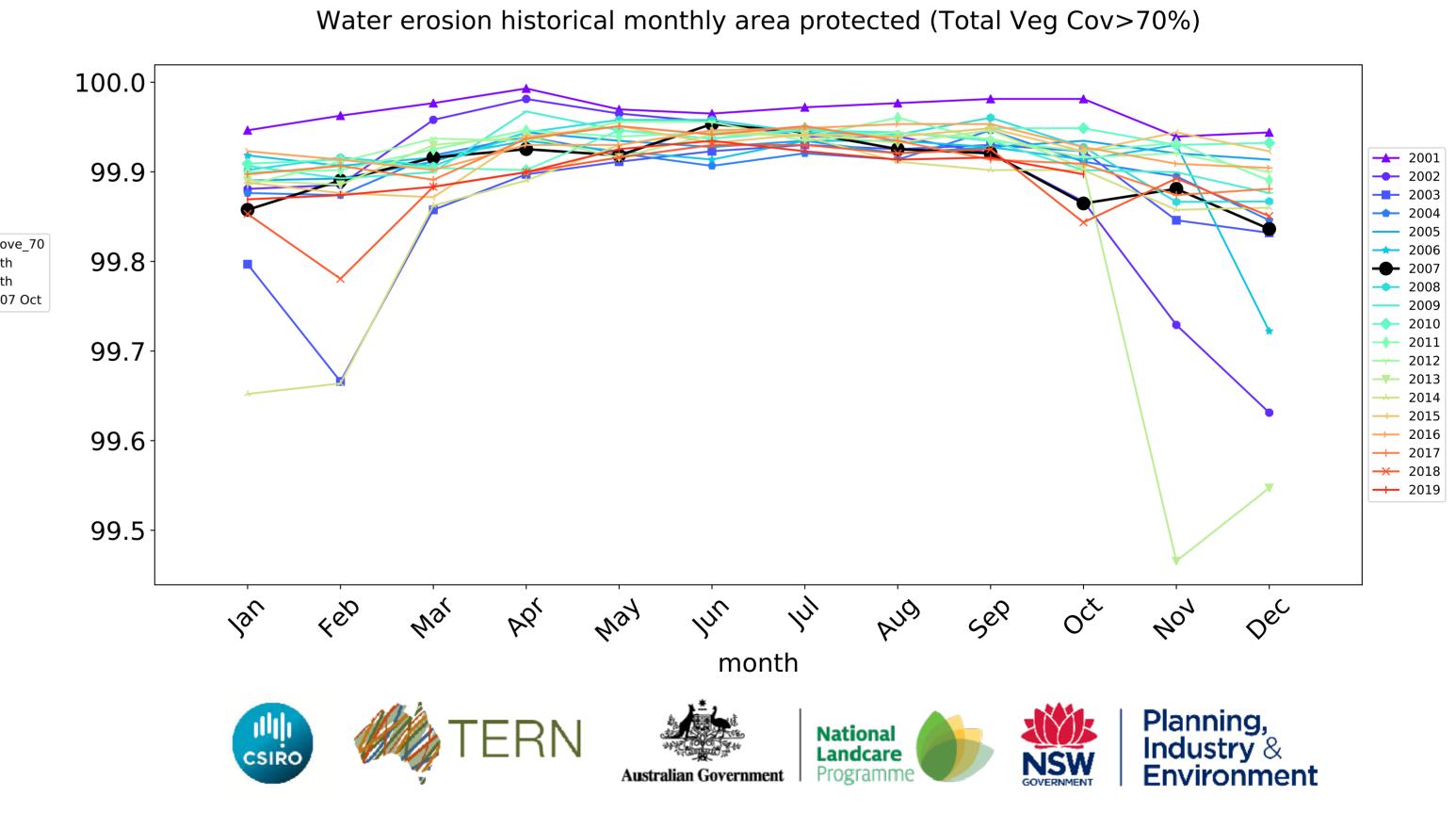


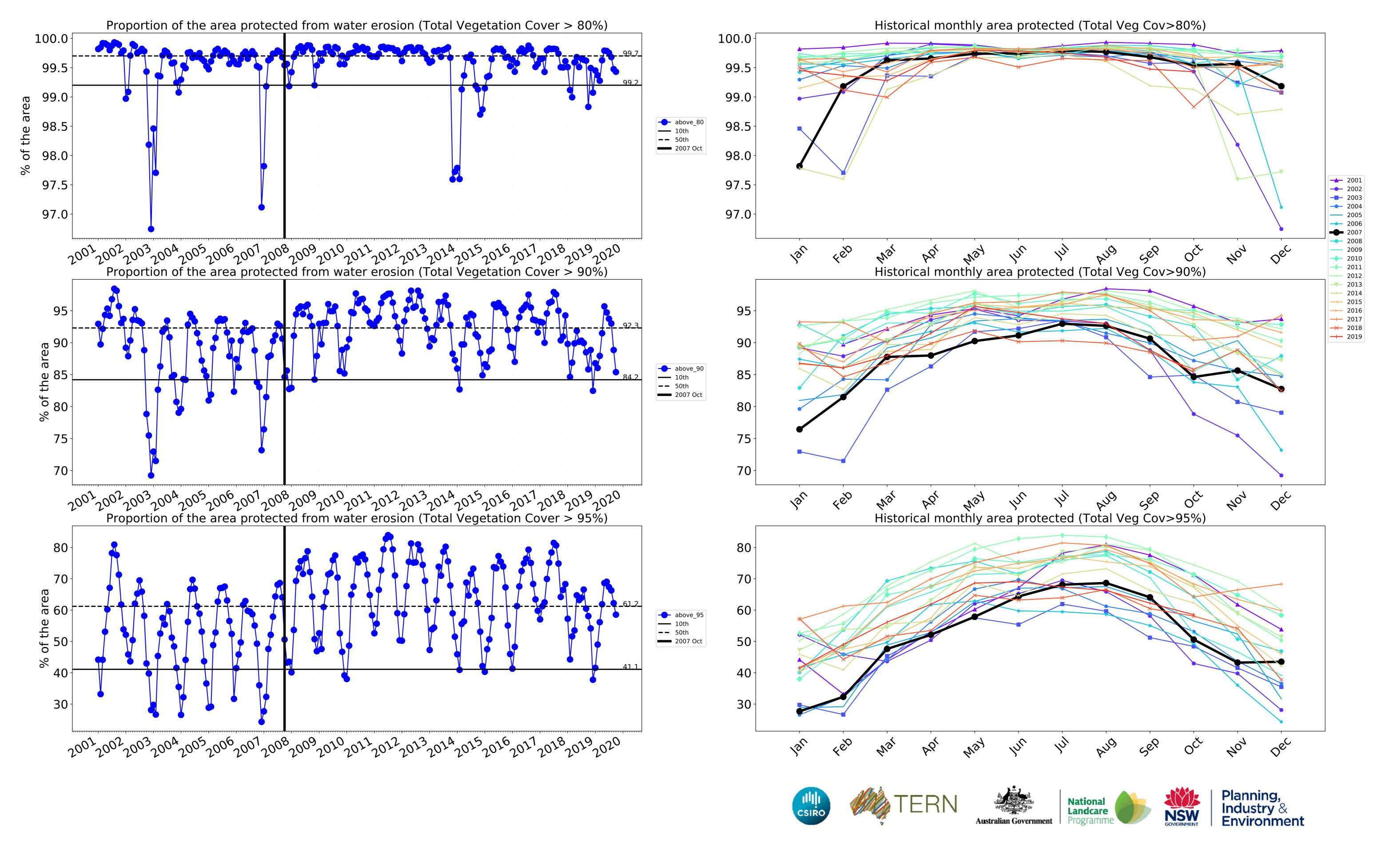




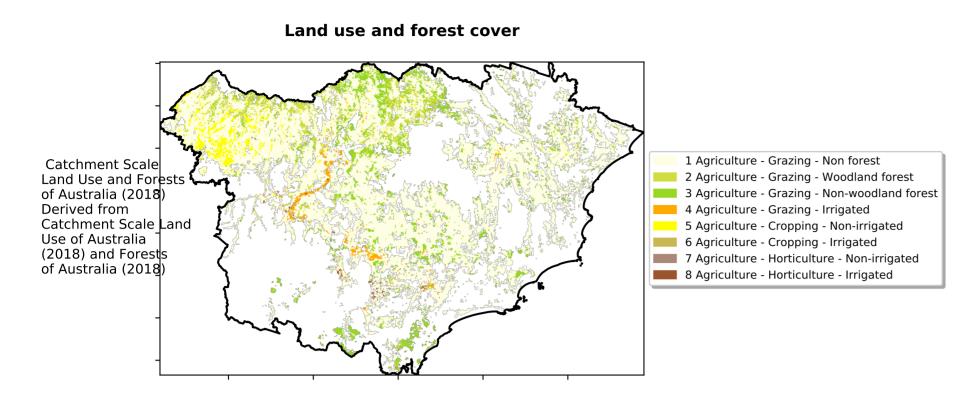


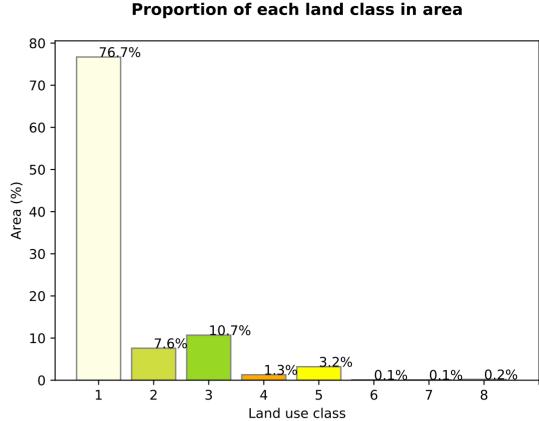




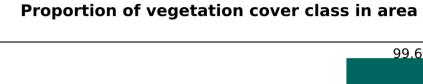


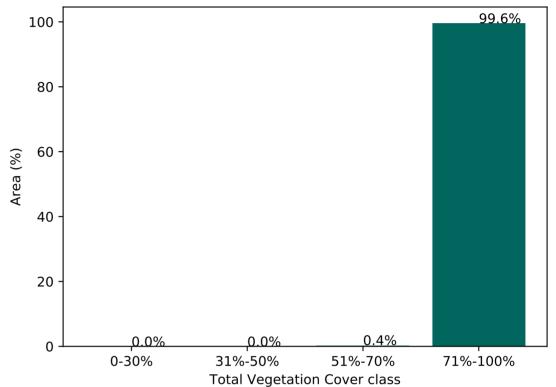
Agriculture

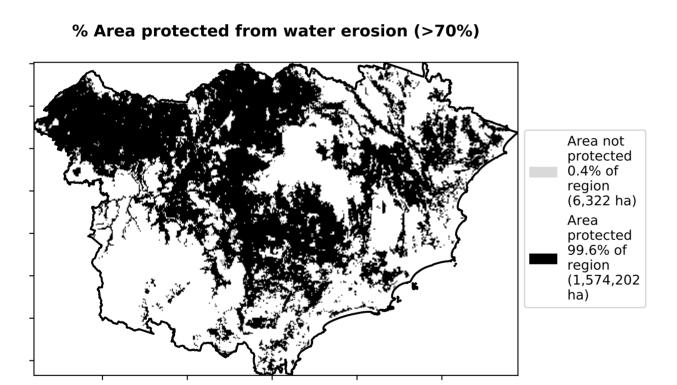




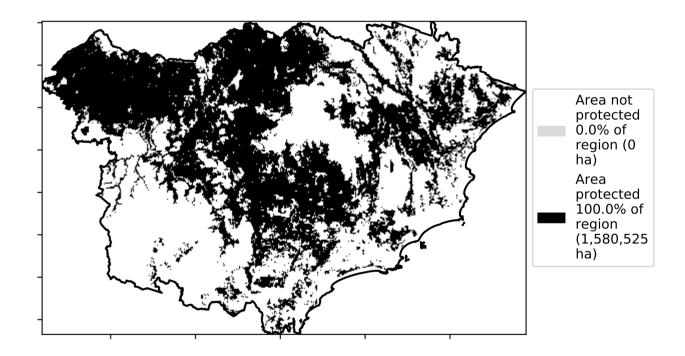
Total Vegetation Cover [%]

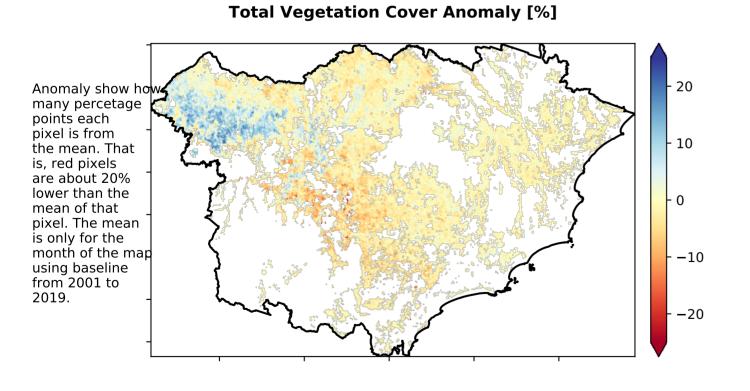


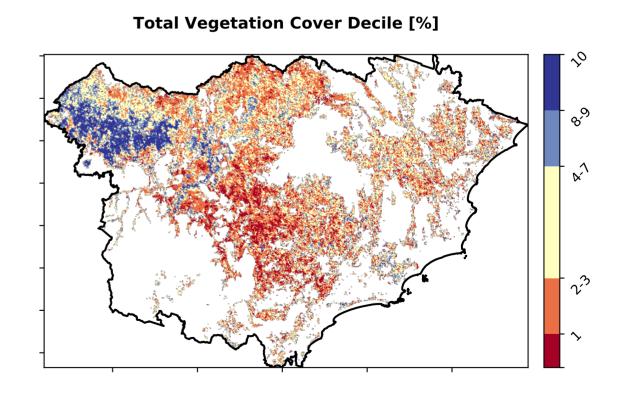




% Area protected from wind erosion (>50%)











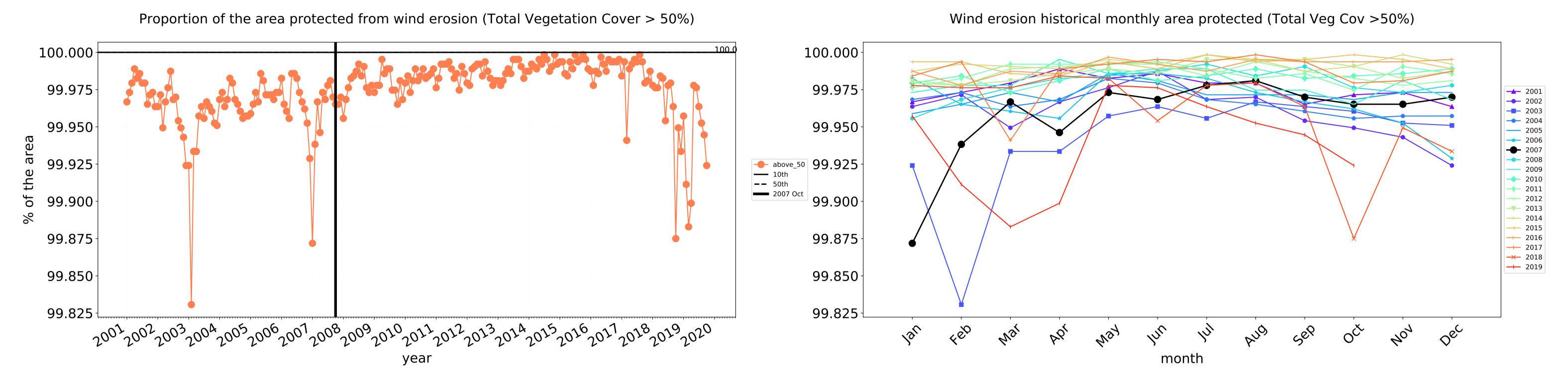


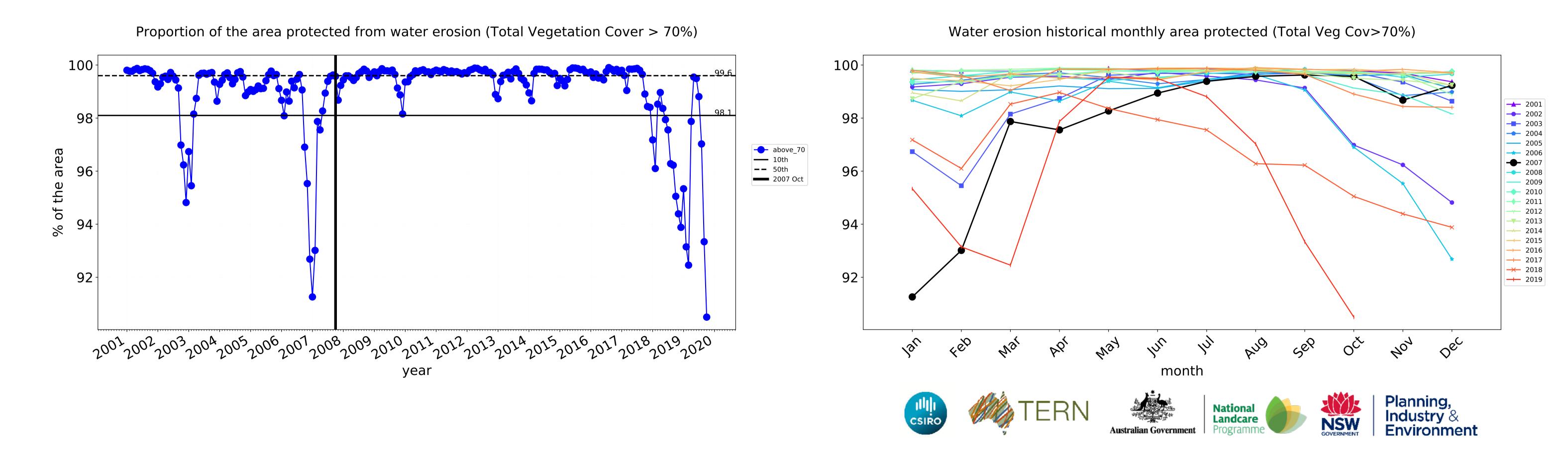


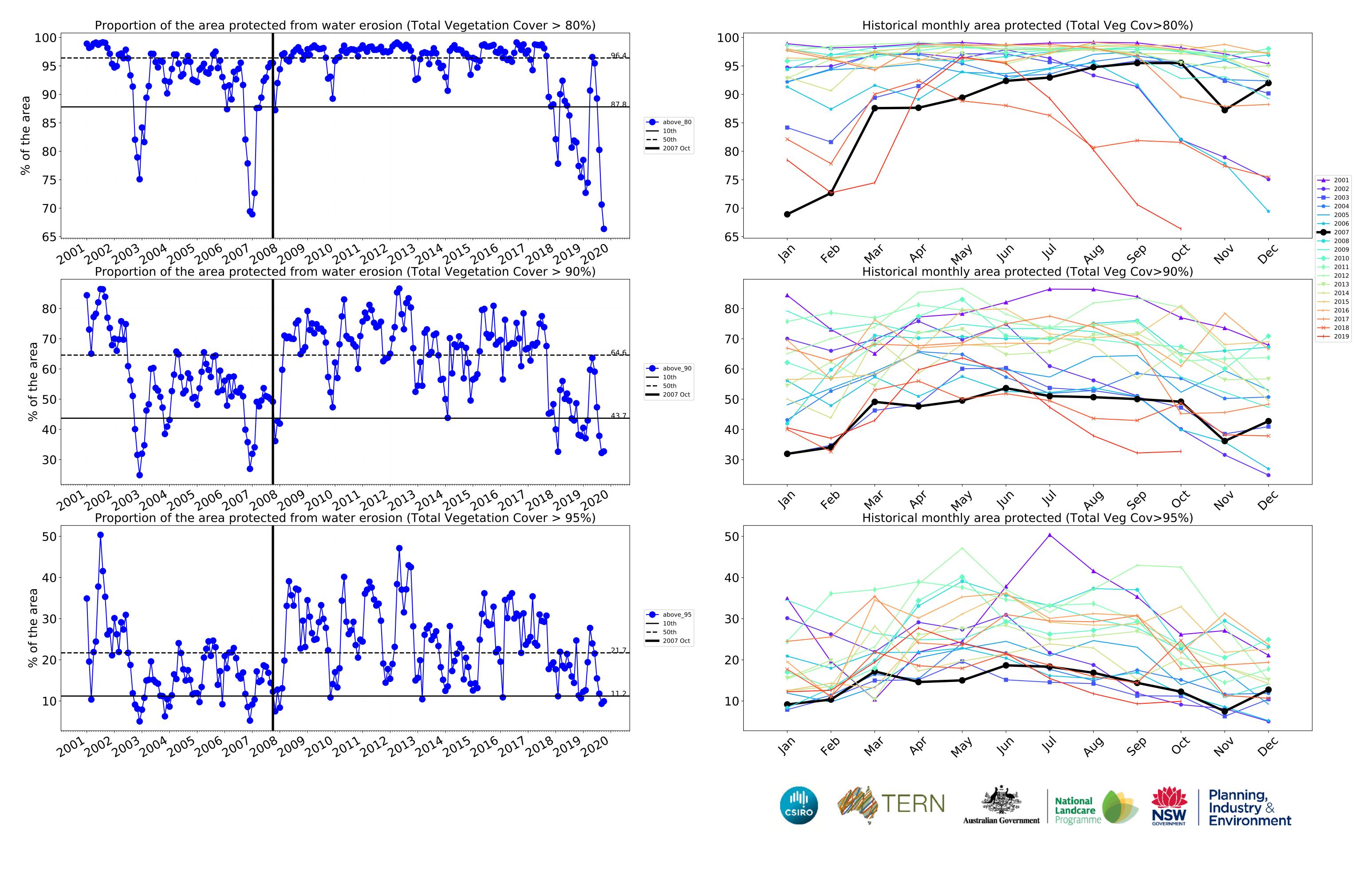




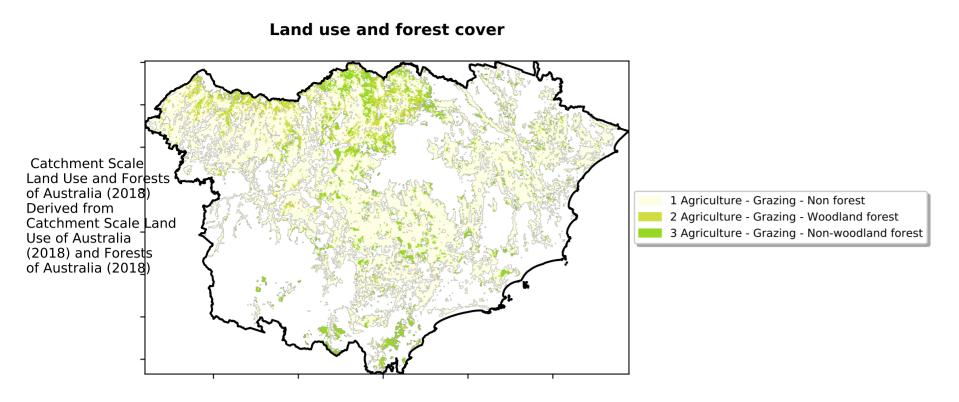
Agriculture timeseries



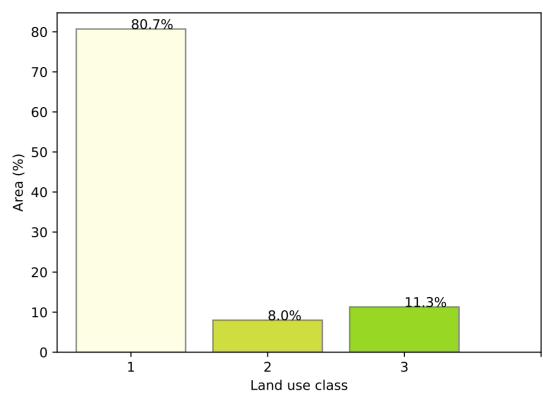




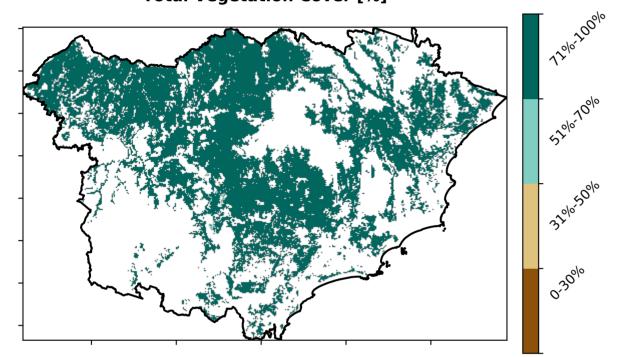
Grazing



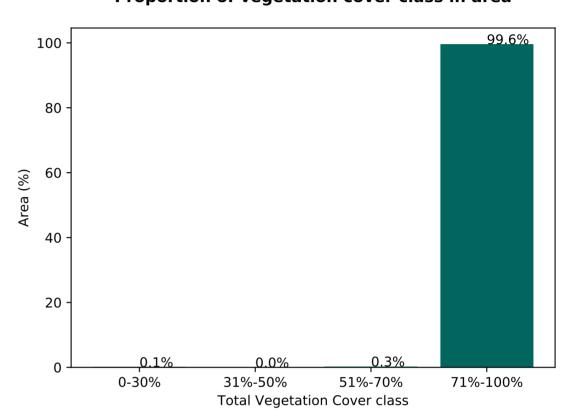
Proportion of each land class in area



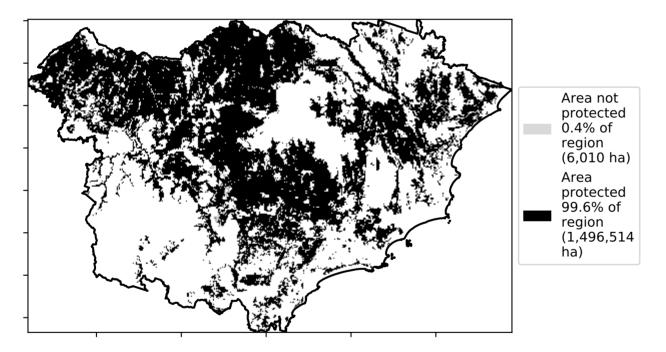
Total Vegetation Cover [%]



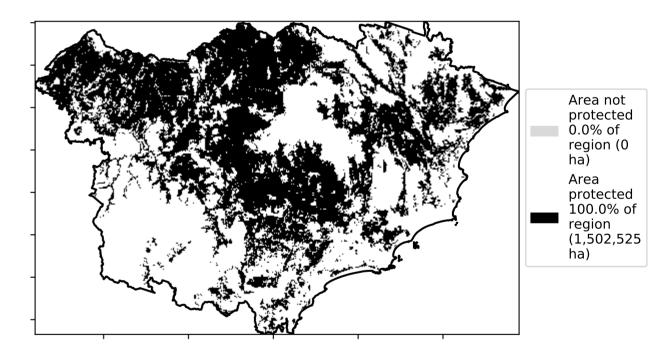
Proportion of vegetation cover class in area



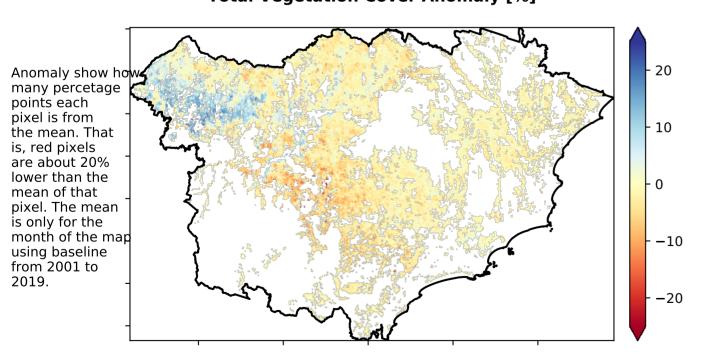
% Area protected from water erosion (>70%)

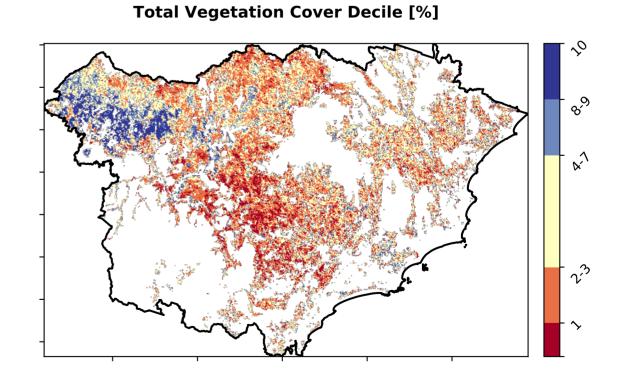


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]









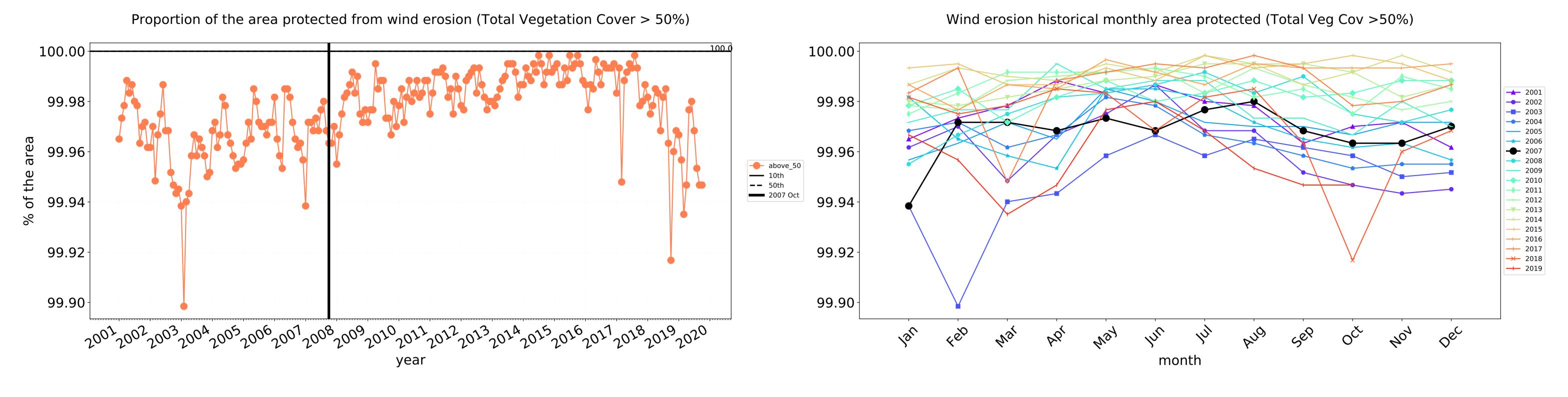


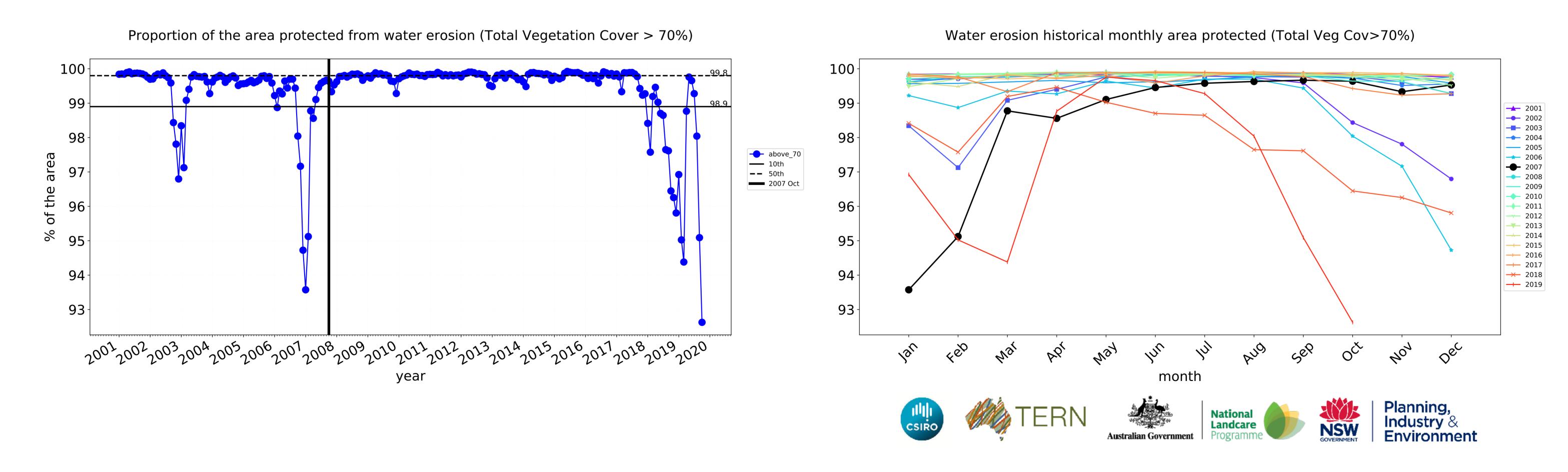


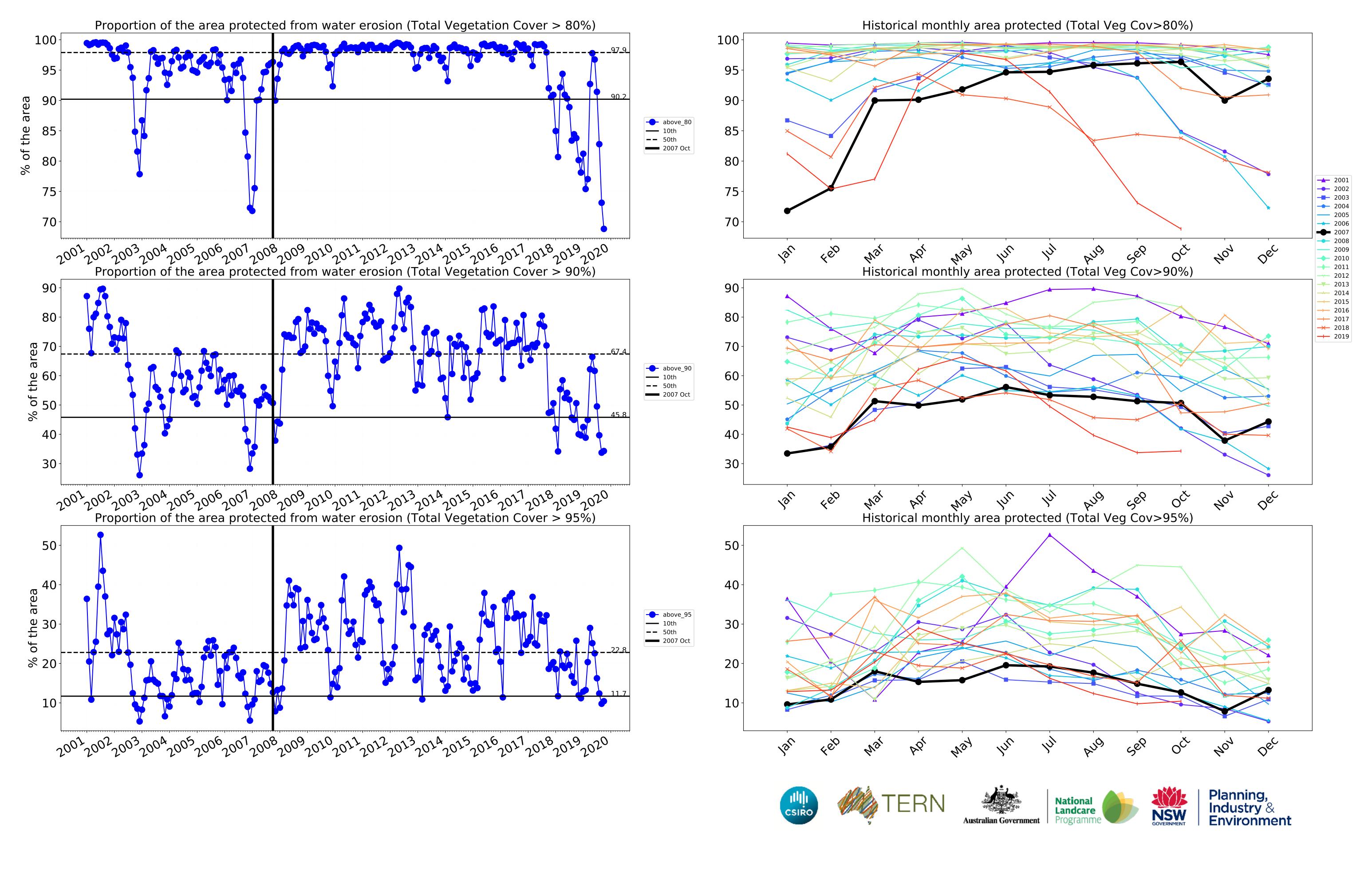




Grazing timeseries

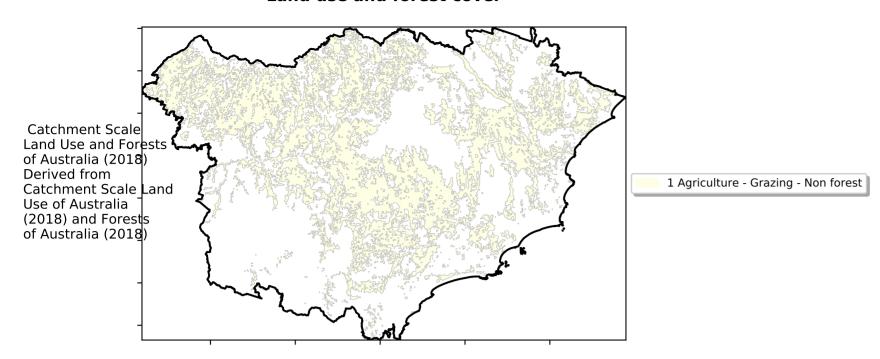




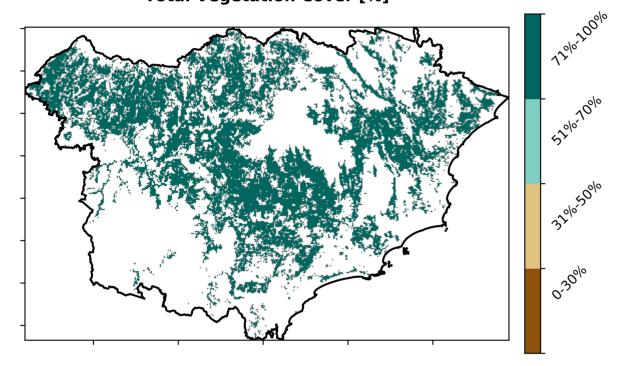


Grazing non forest

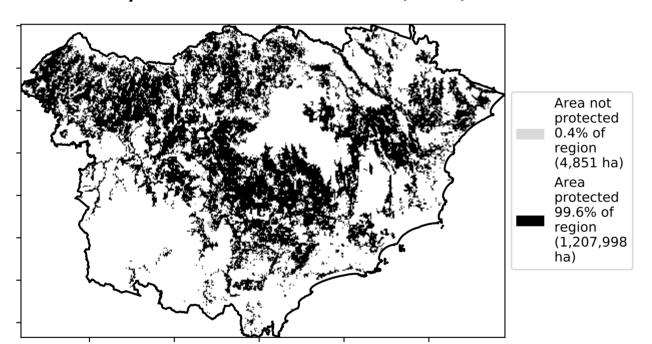
Land use and forest cover



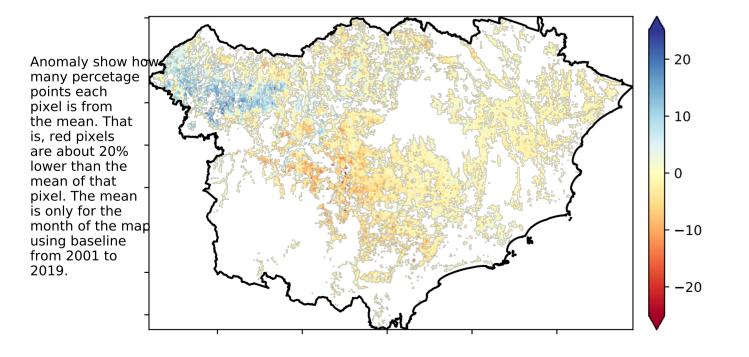
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

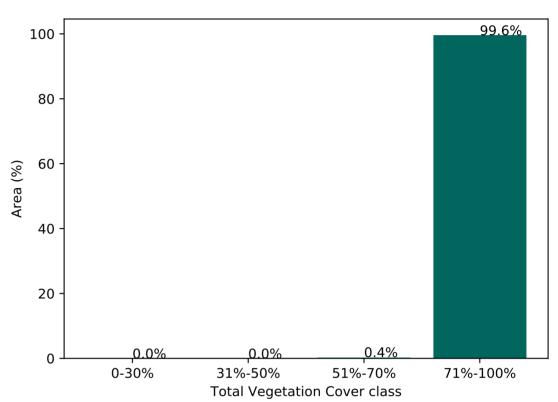


Total Vegetation Cover Anomaly [%]

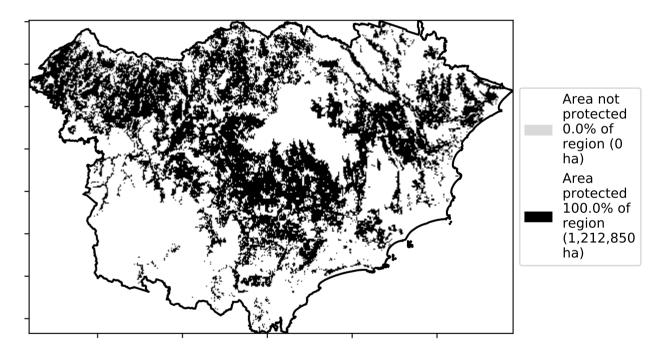


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

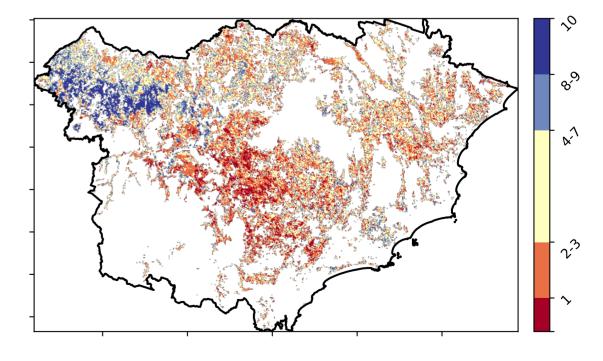
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







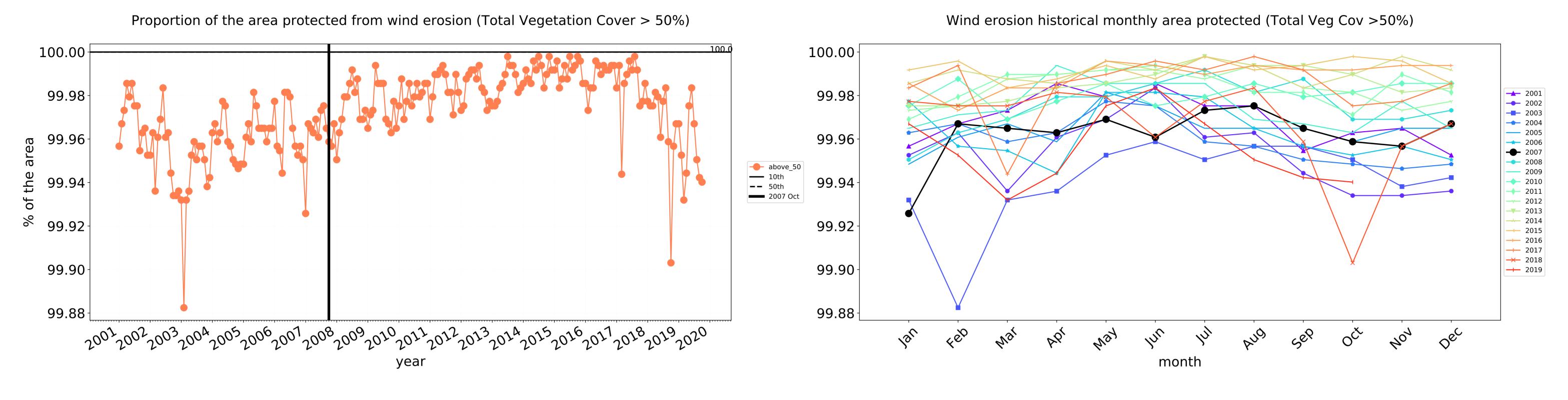


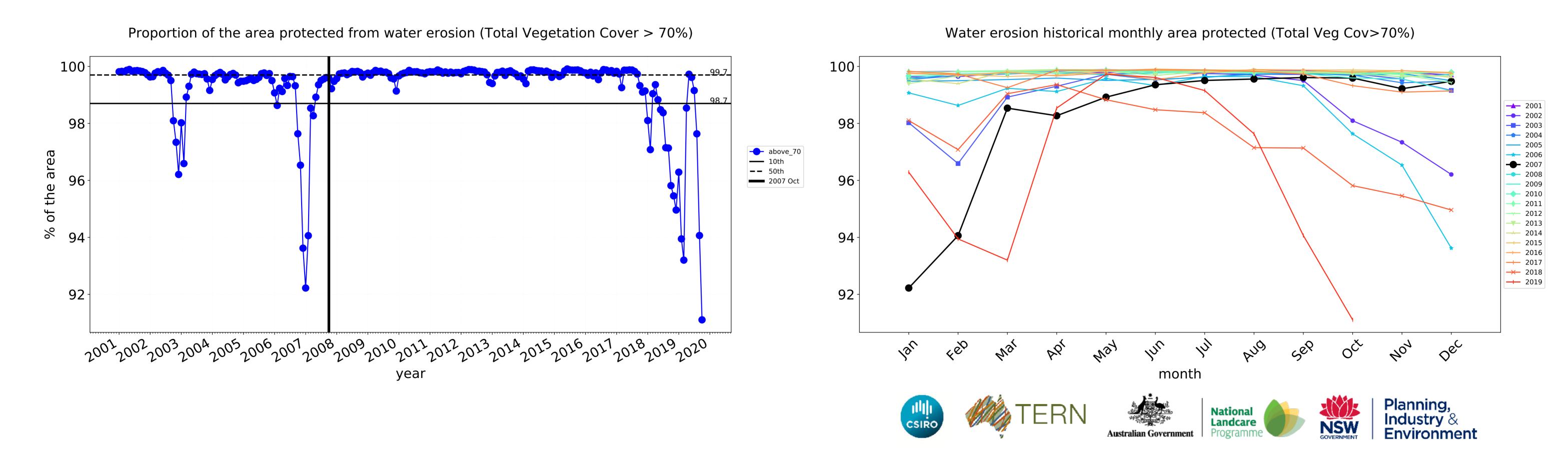


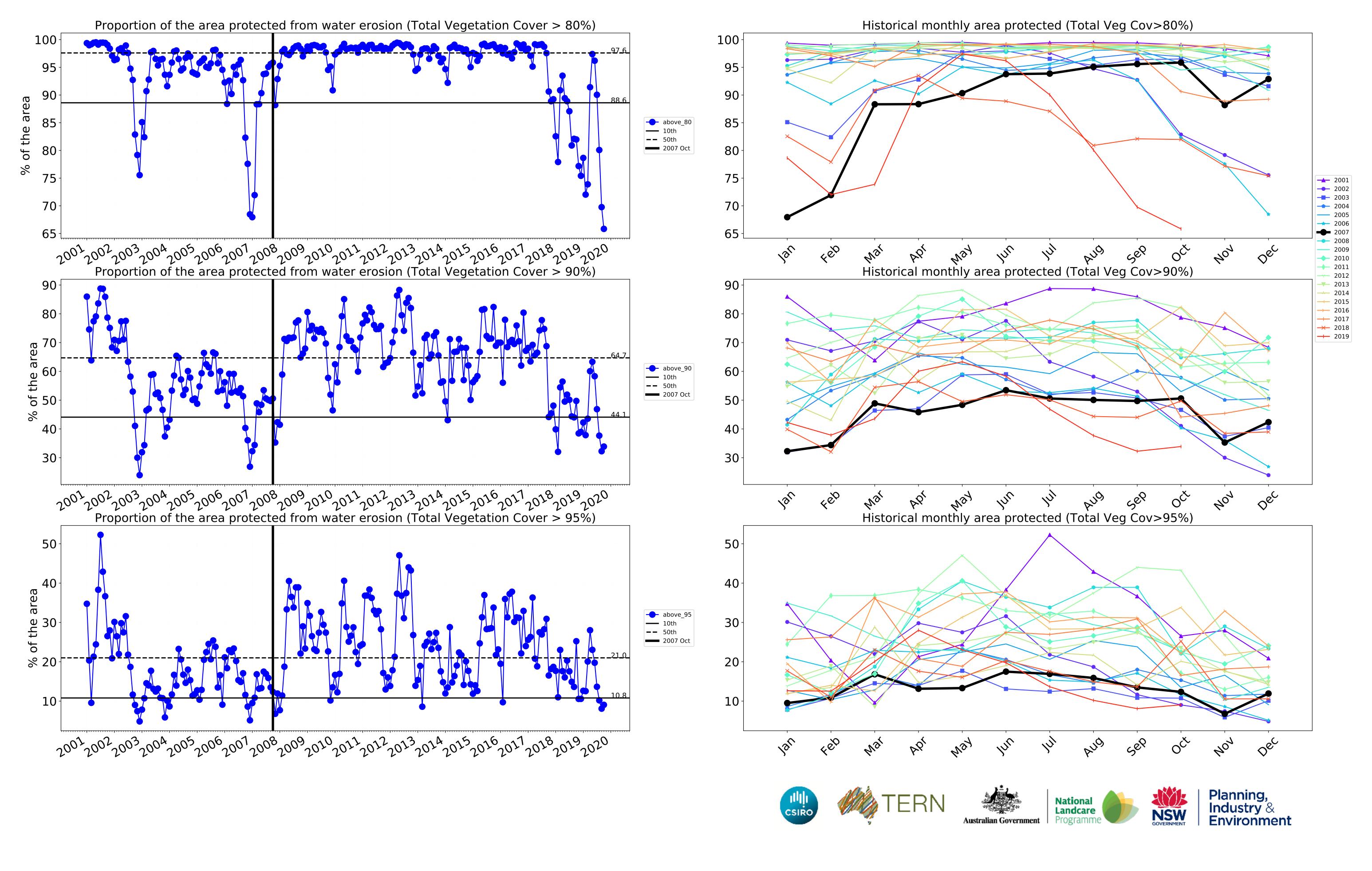




Grazing non forest timeseries





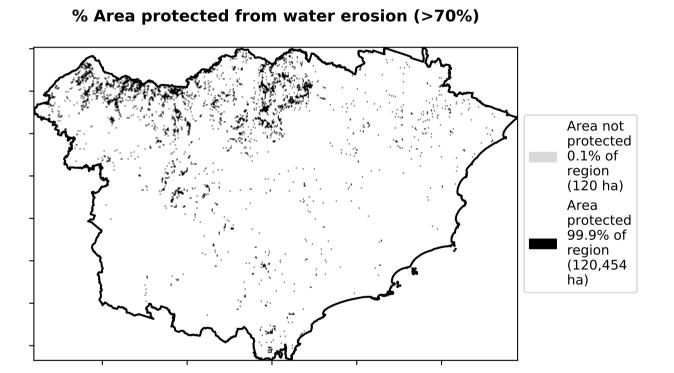


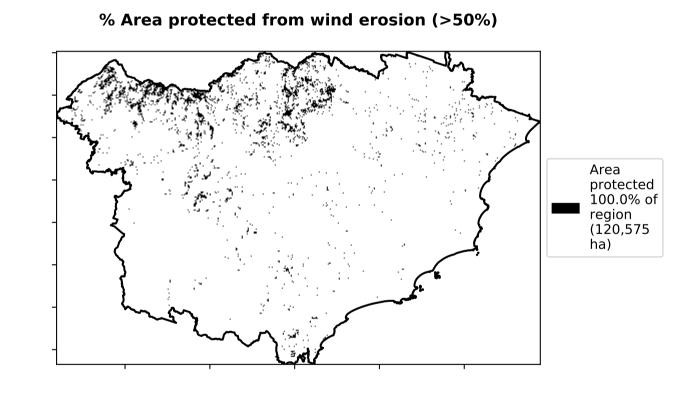
Grazing Woodland forest

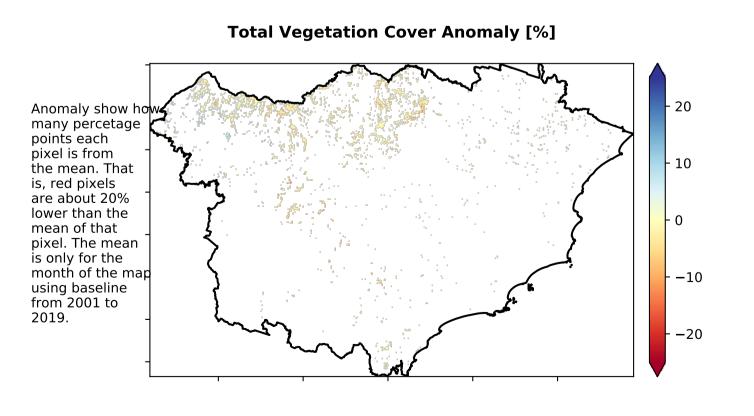
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Australia (2018) Of Australia (2018) I Agriculture - Grazing - Woodland forest and Use of Australia (2018)

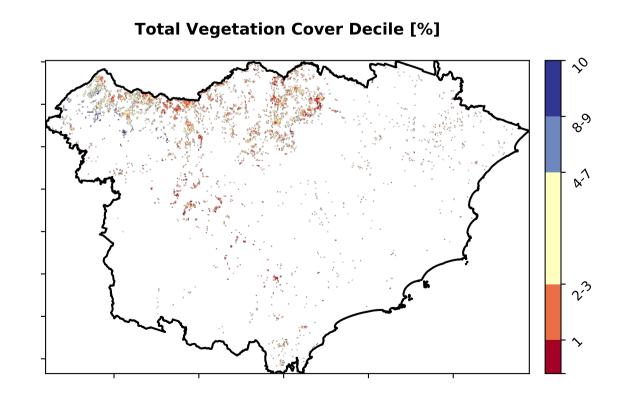
Total Vegetation Cover [%]

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













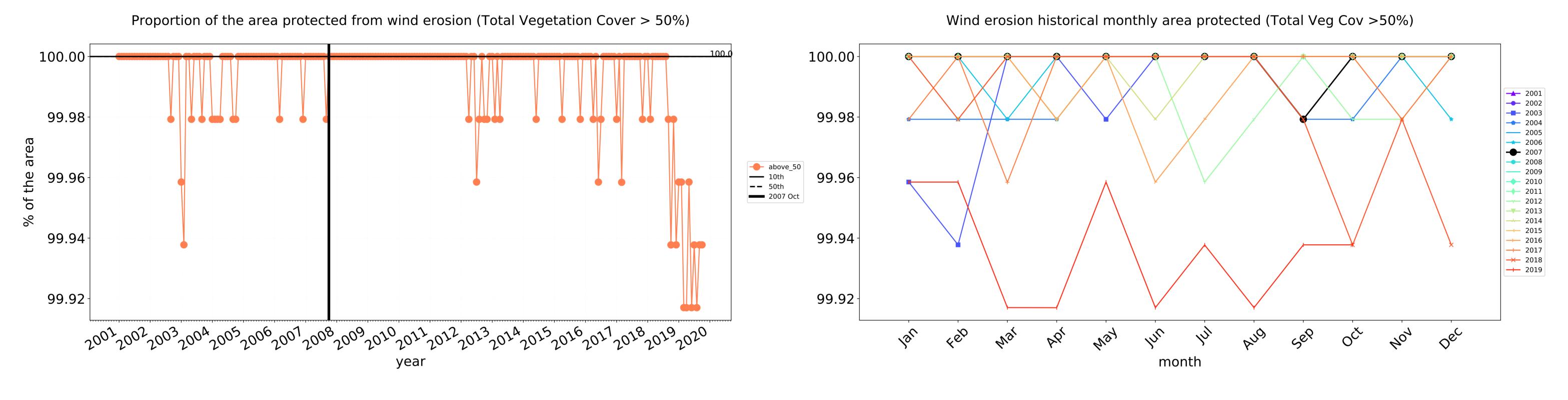


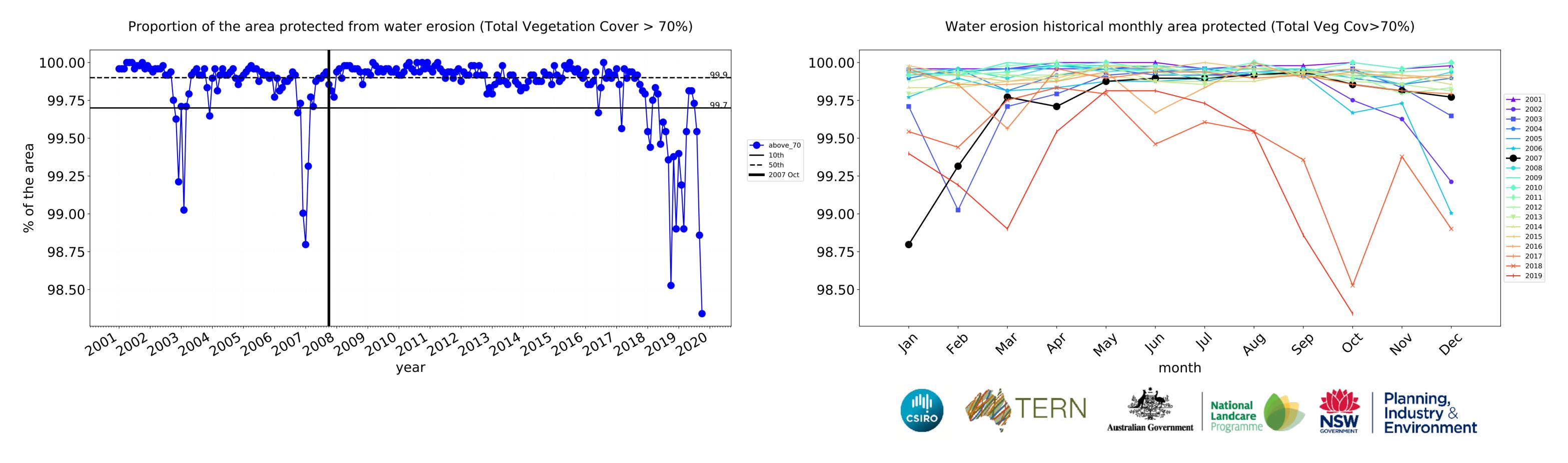


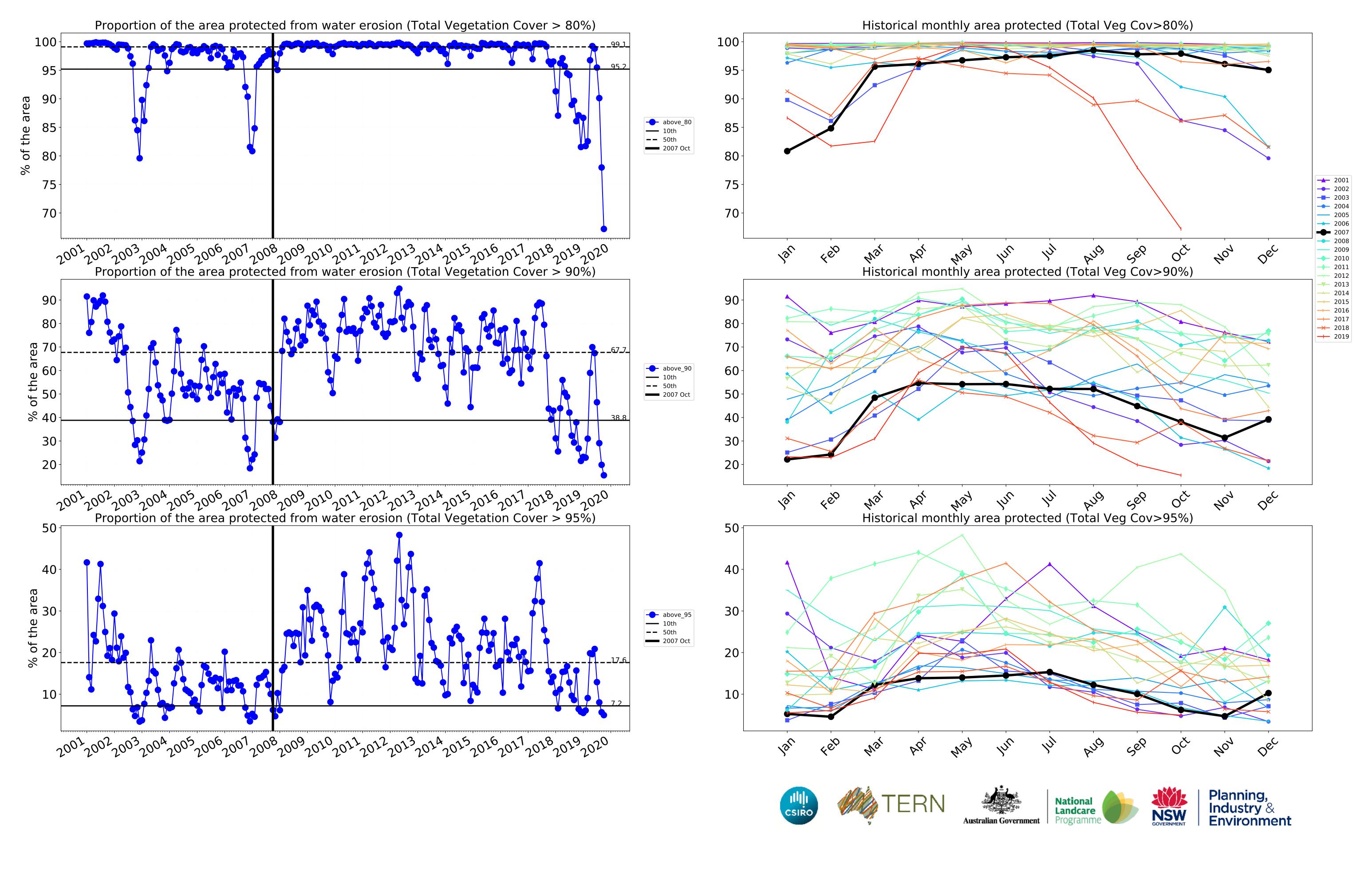




Grazing Woodland forest timeseries



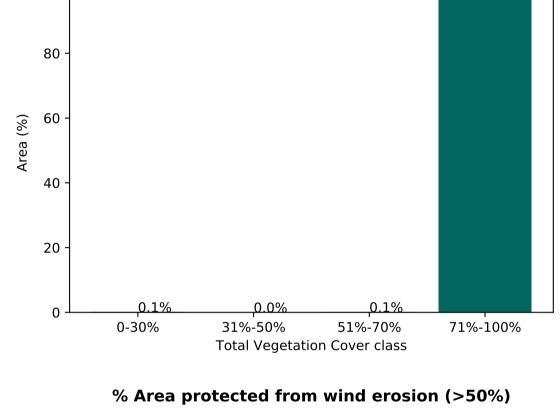




Grazing - Forest (non woodland)

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)

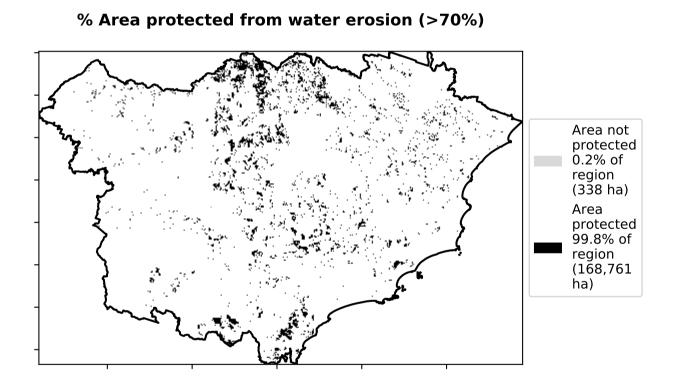
Total Vegetation Cover [%]

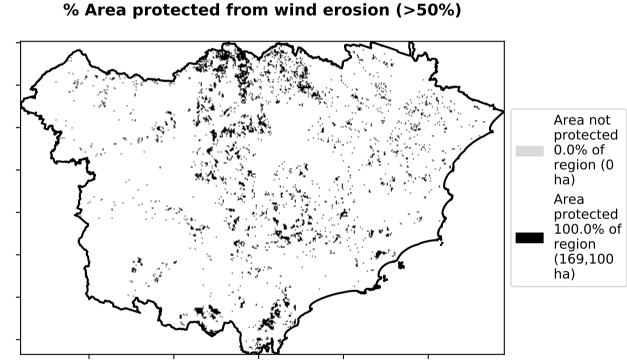


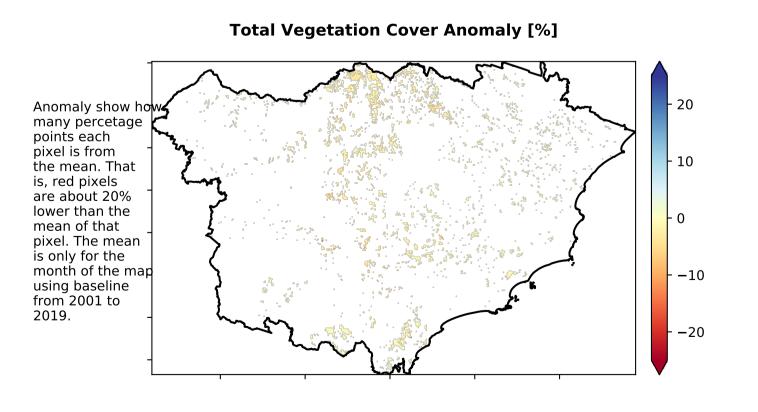
Proportion of vegetation cover class in area

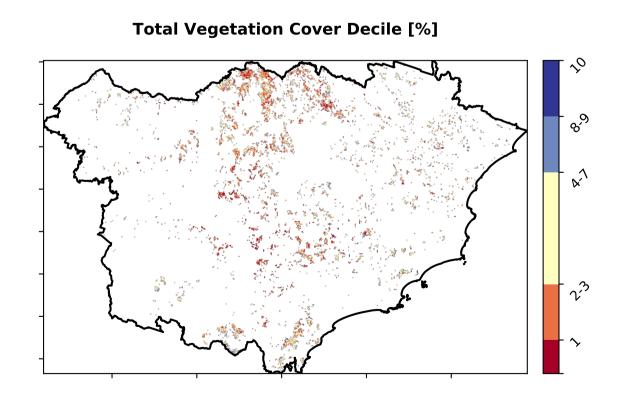
100

99.8%











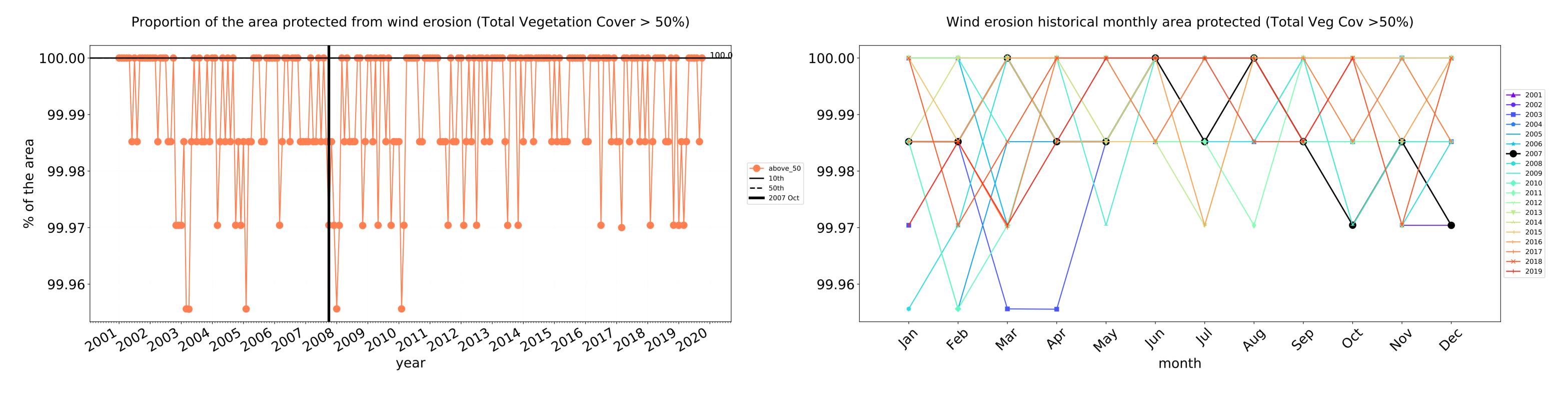


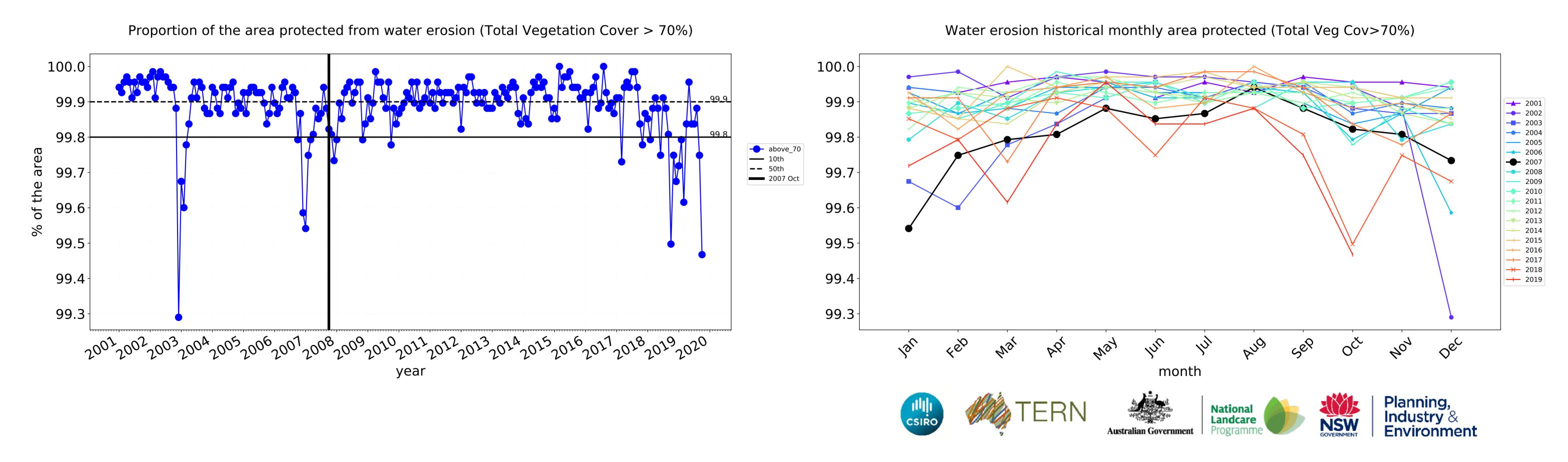


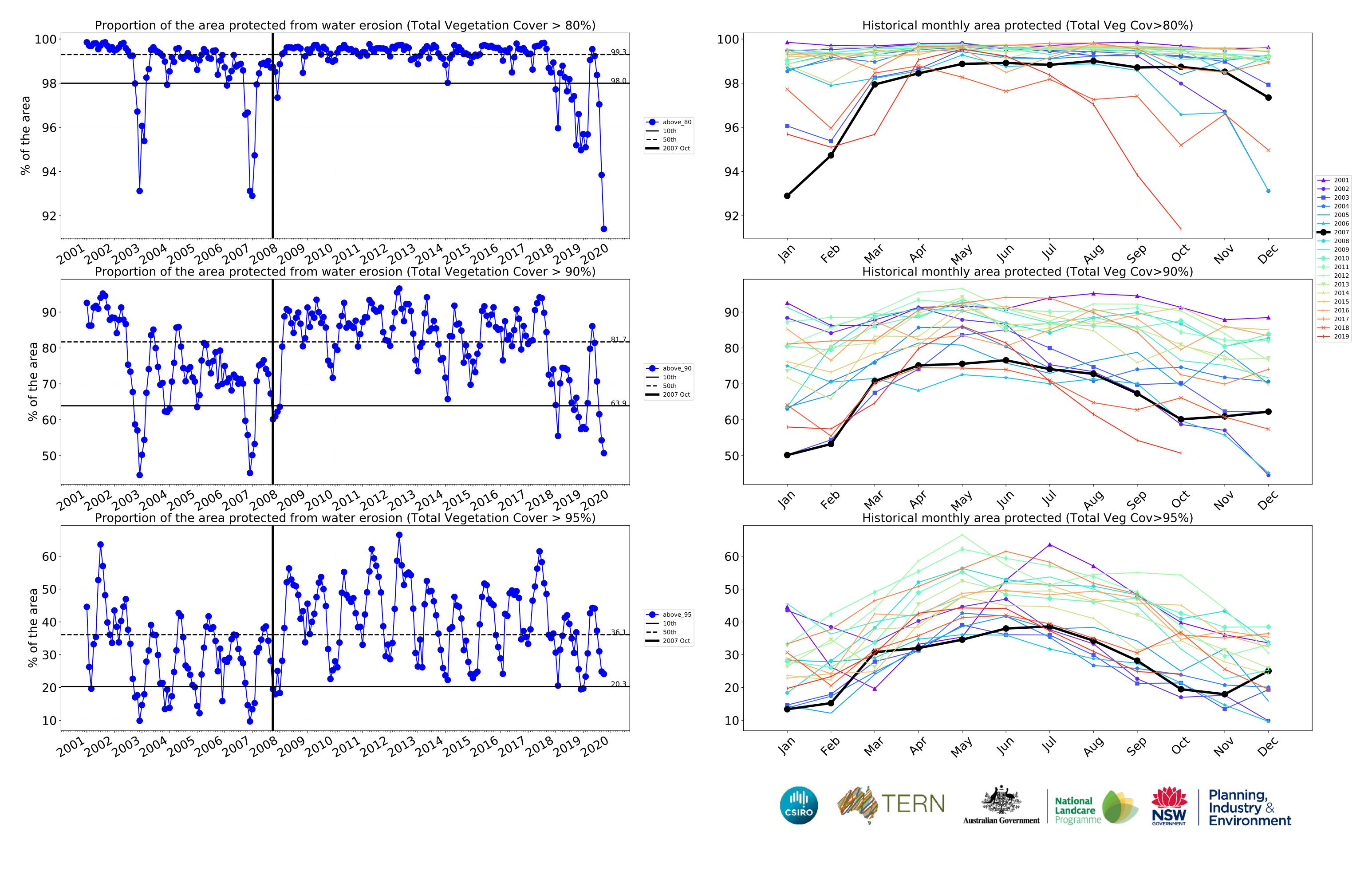






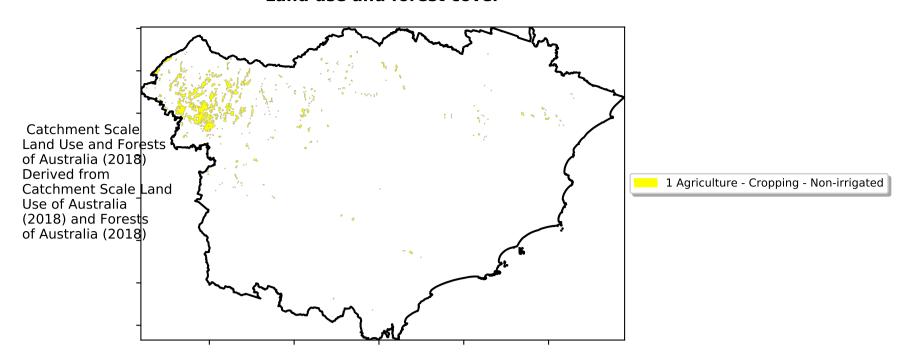




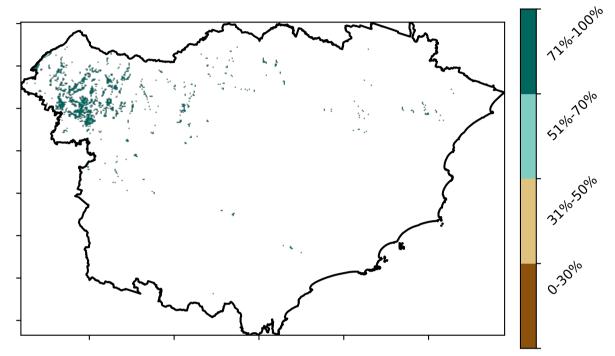


Cropping

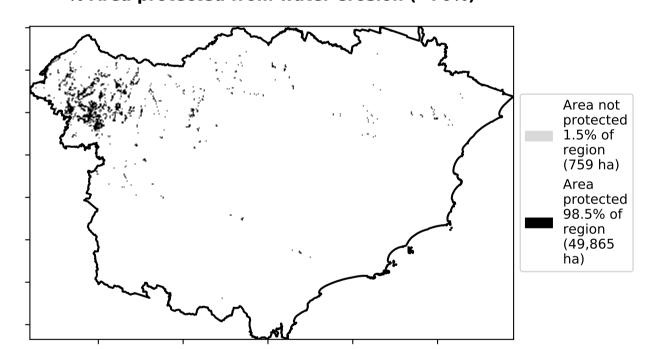
Land use and forest cover



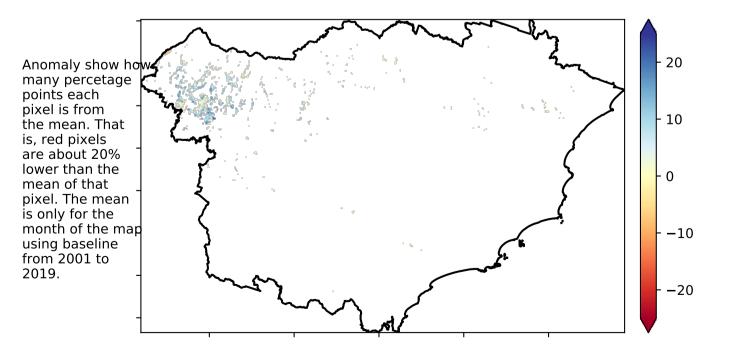
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

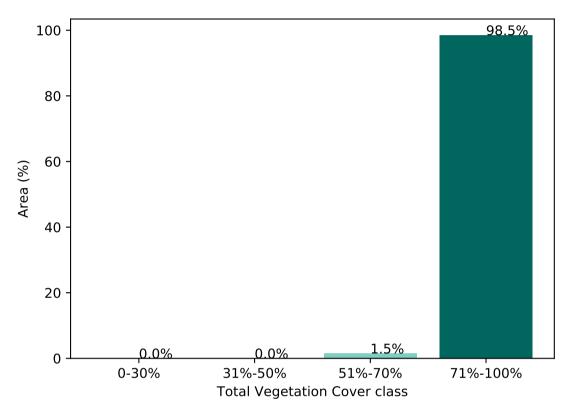


Total Vegetation Cover Anomaly [%]

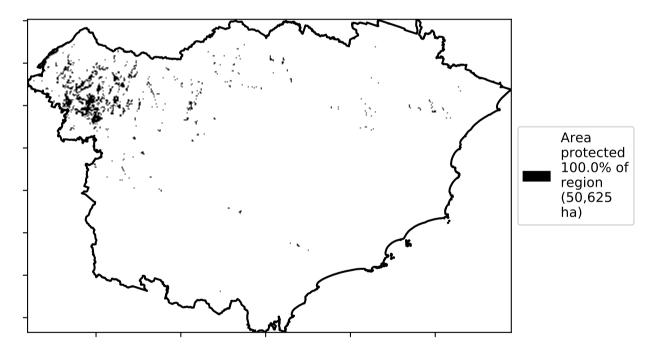


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

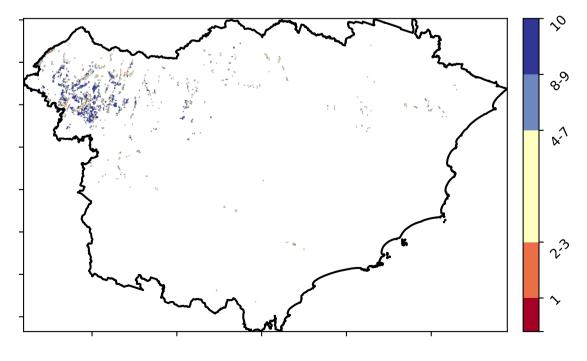
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







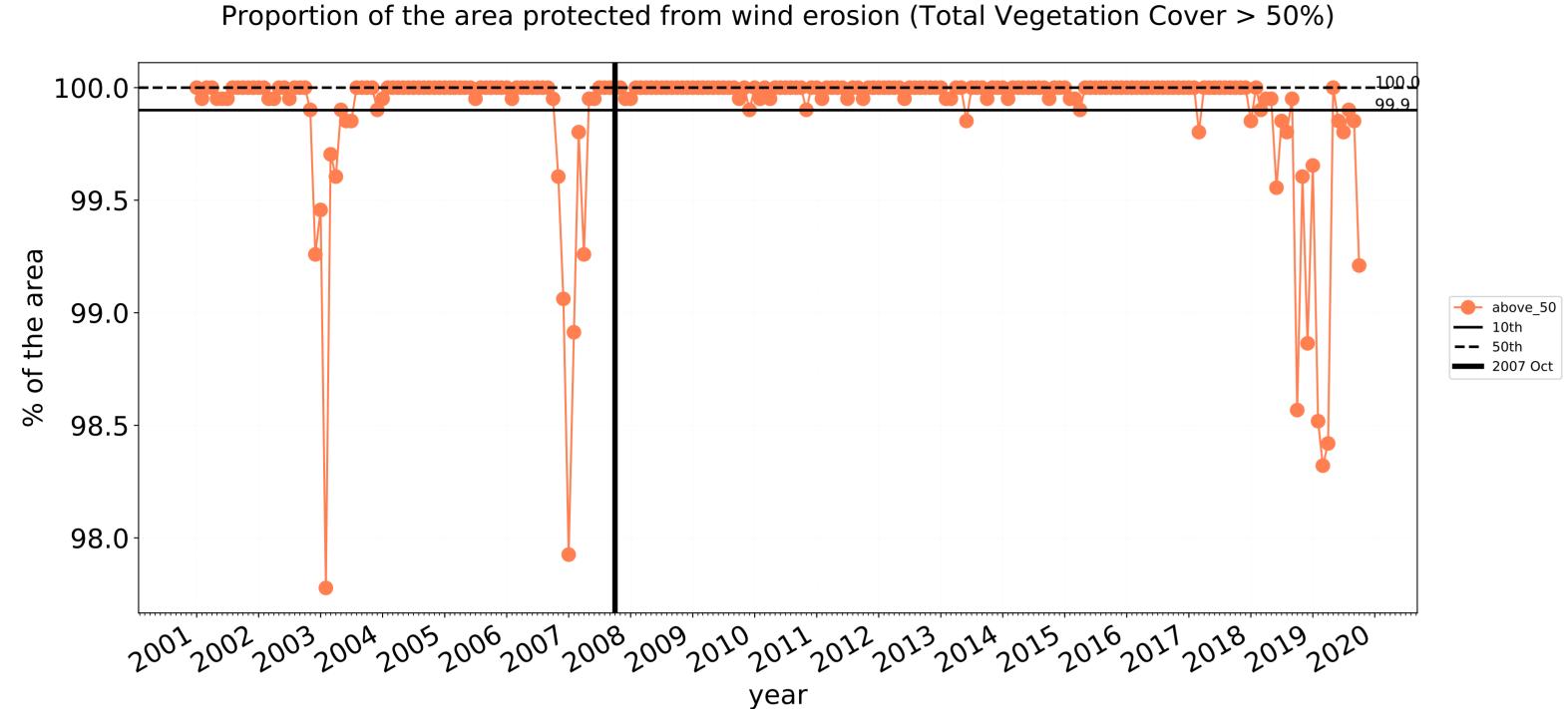


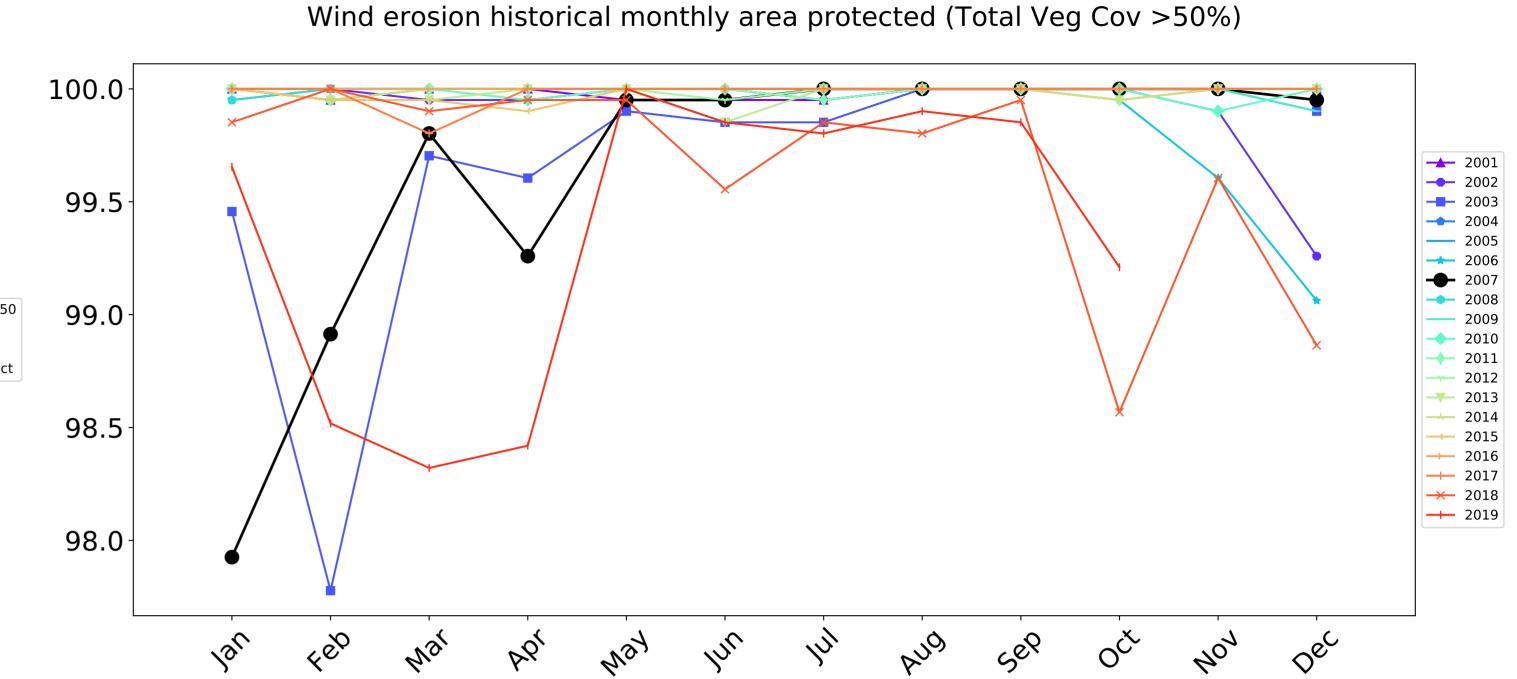




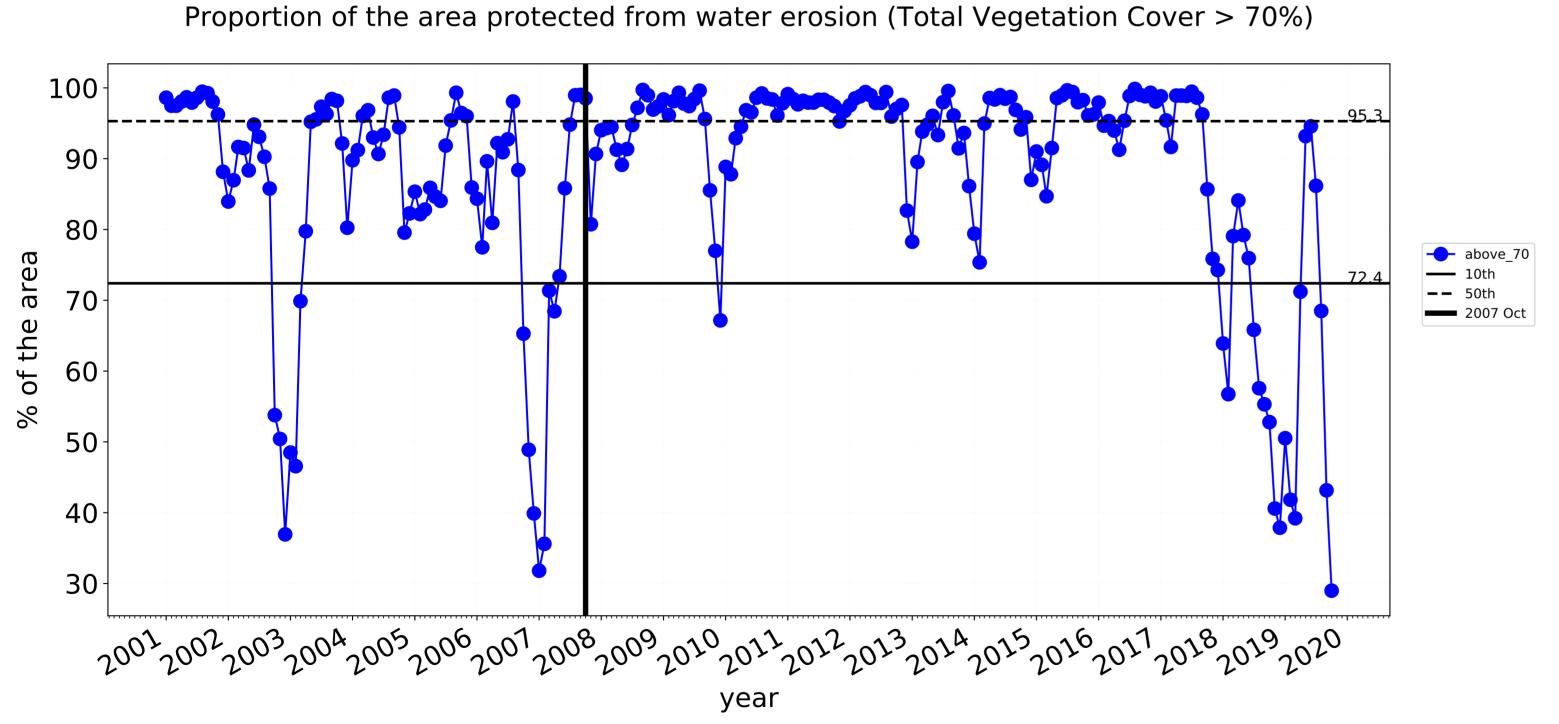


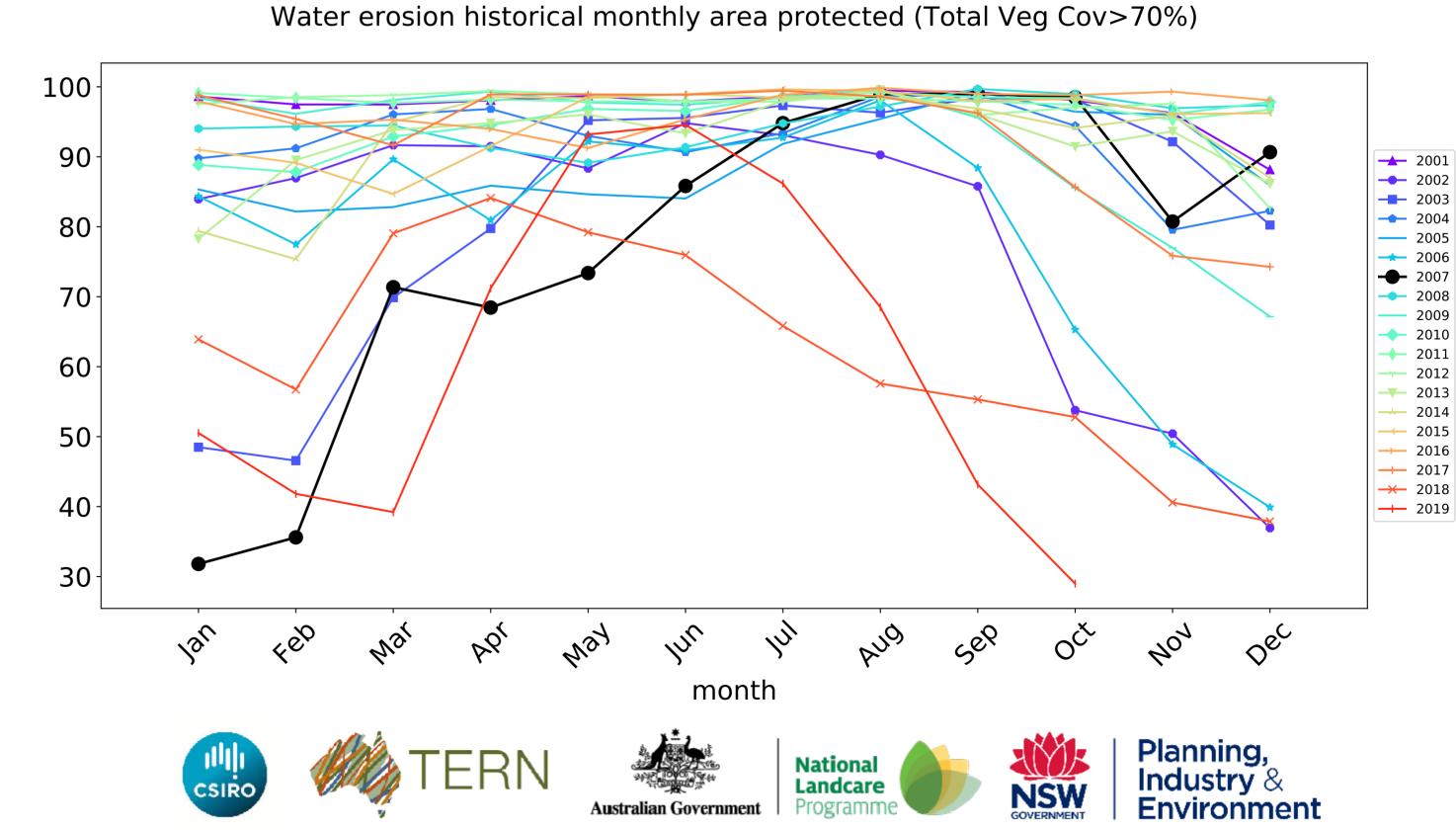
Cropping timeseries

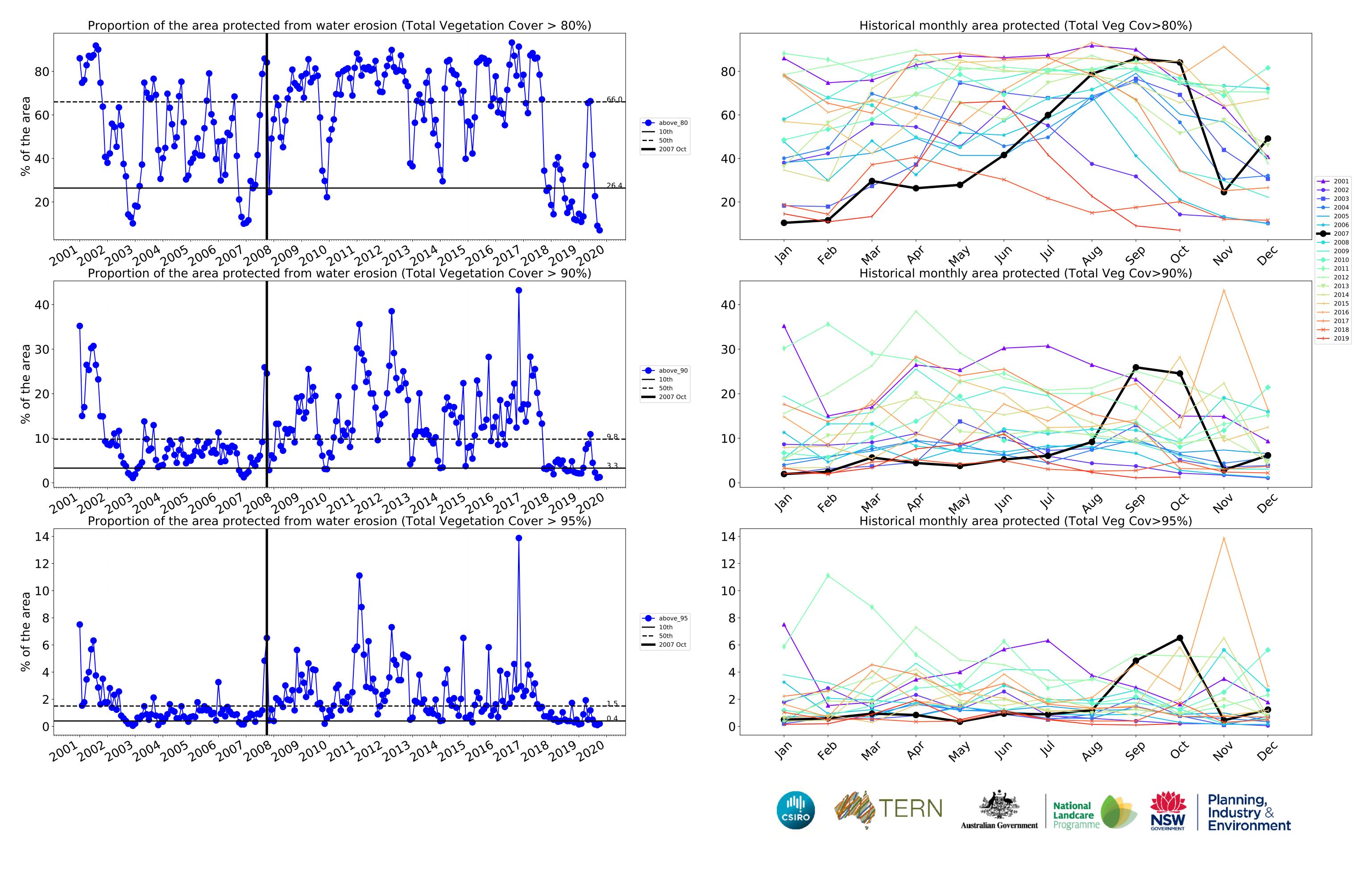




month





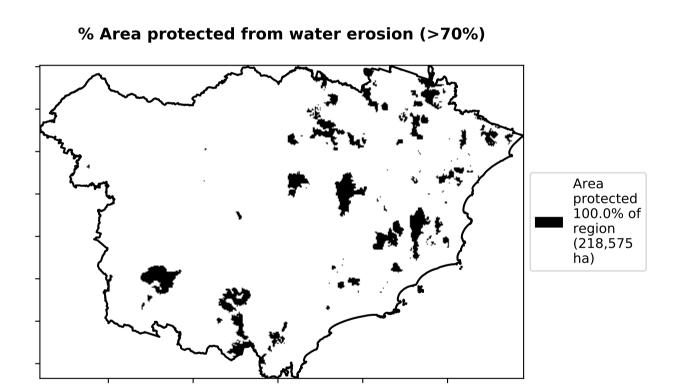


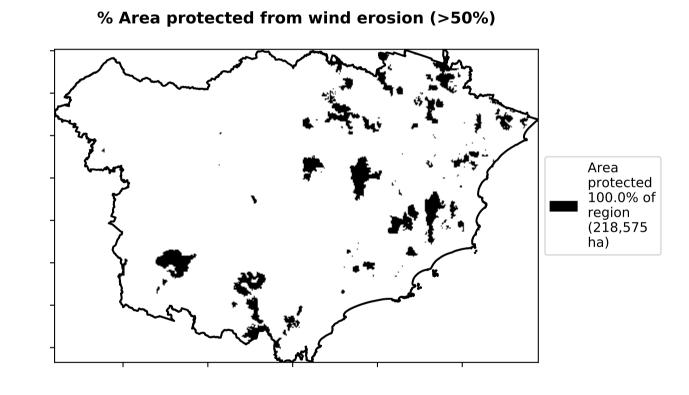
Production native forests and plantation forests

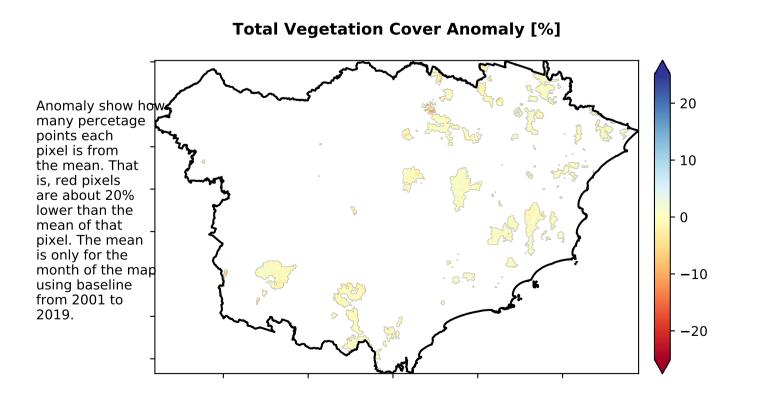
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) (2018) and Forests of Australia (2018)

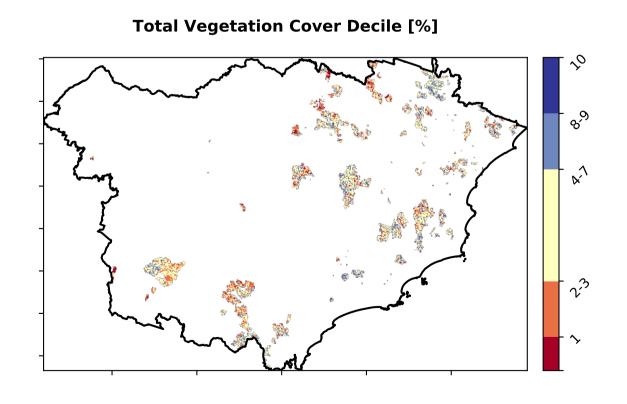
Total Vegetation Cover [%]

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













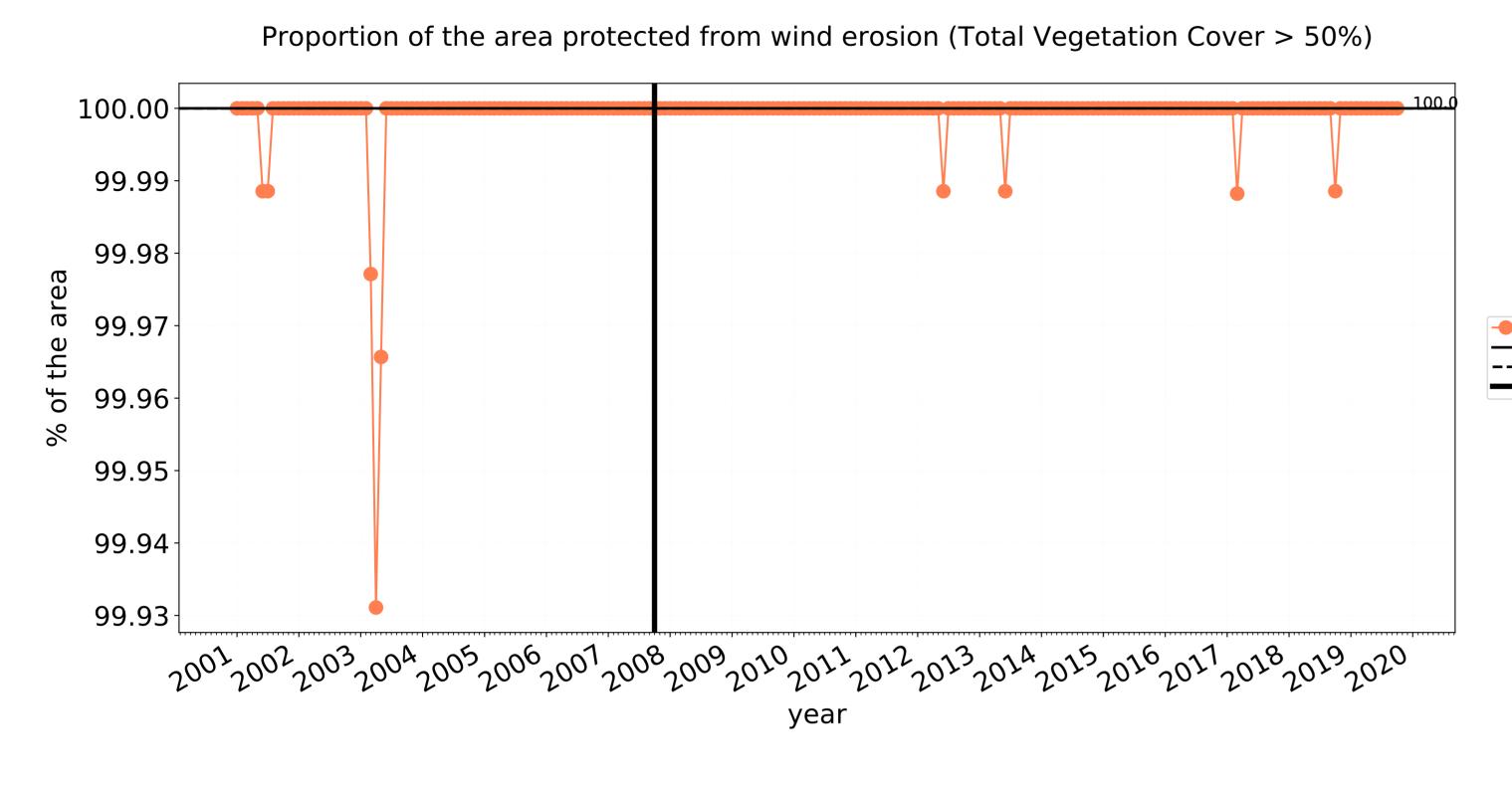


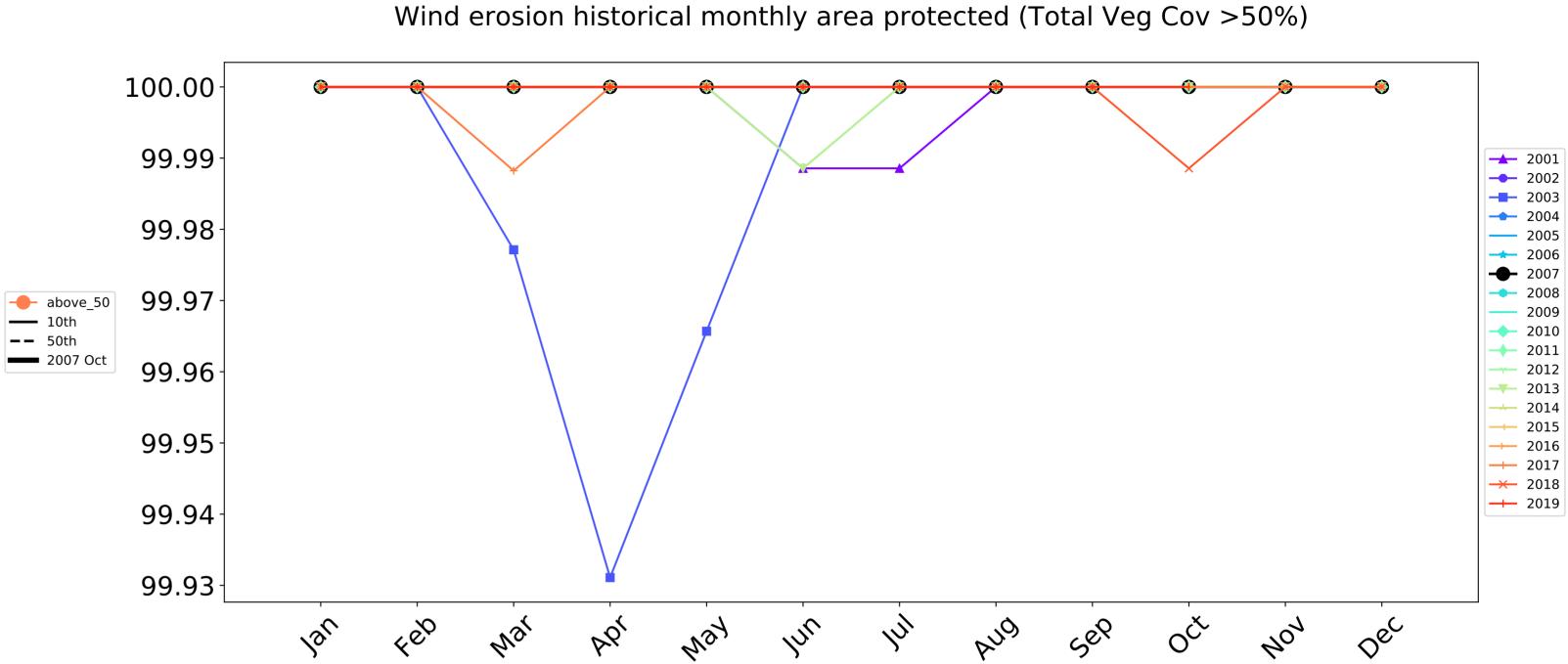




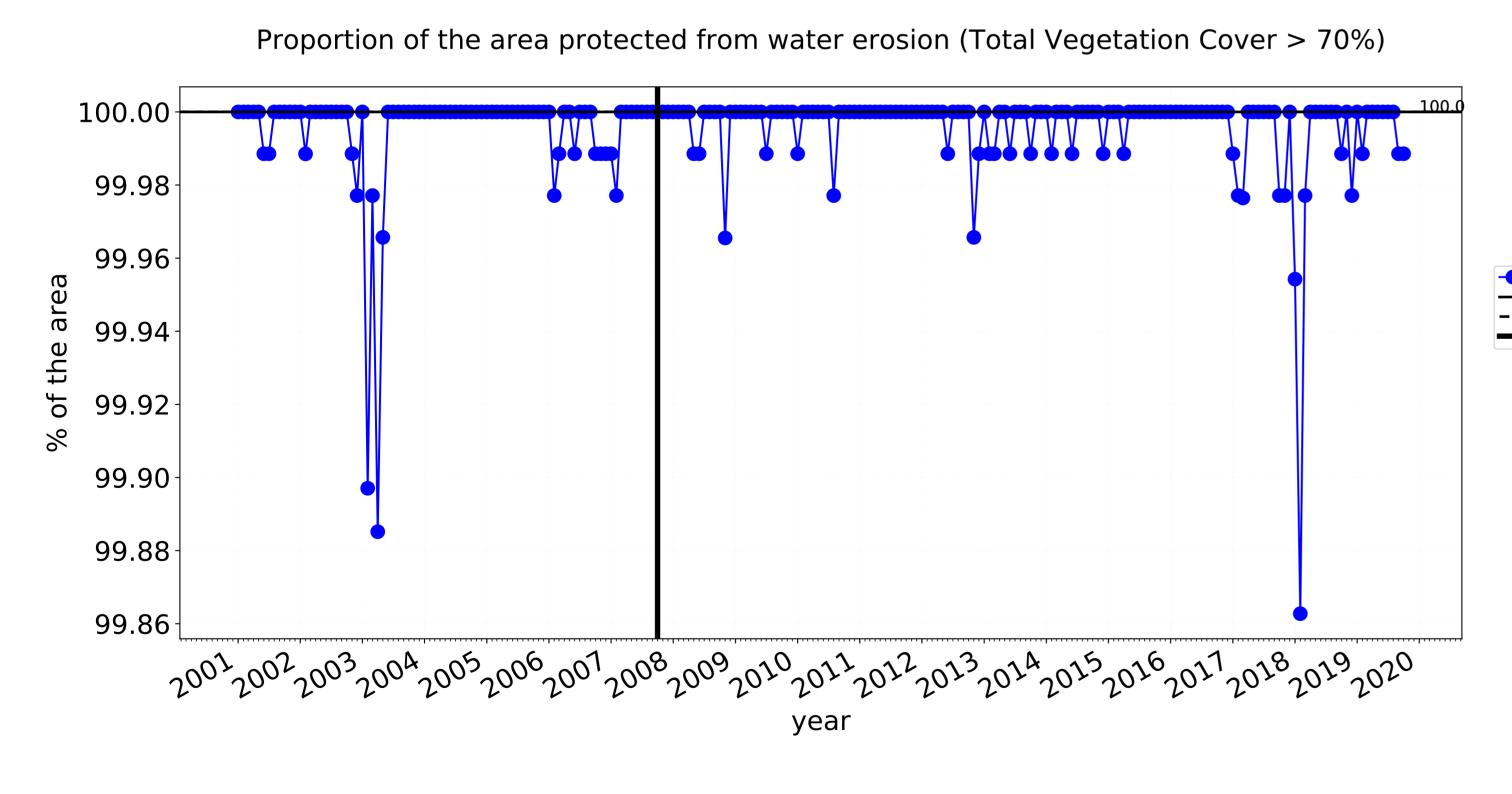


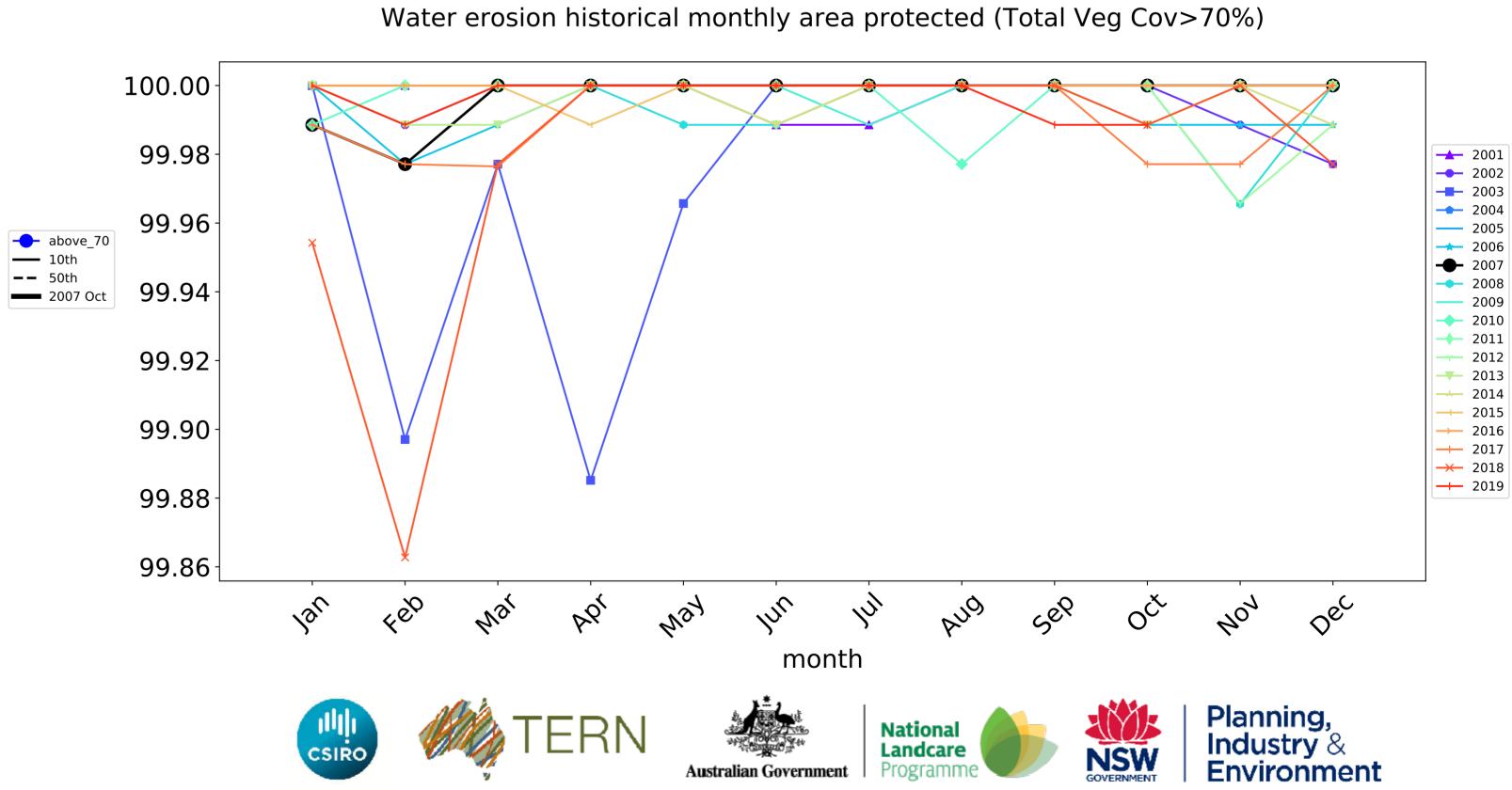
Production native forests and plantation forests timeseries

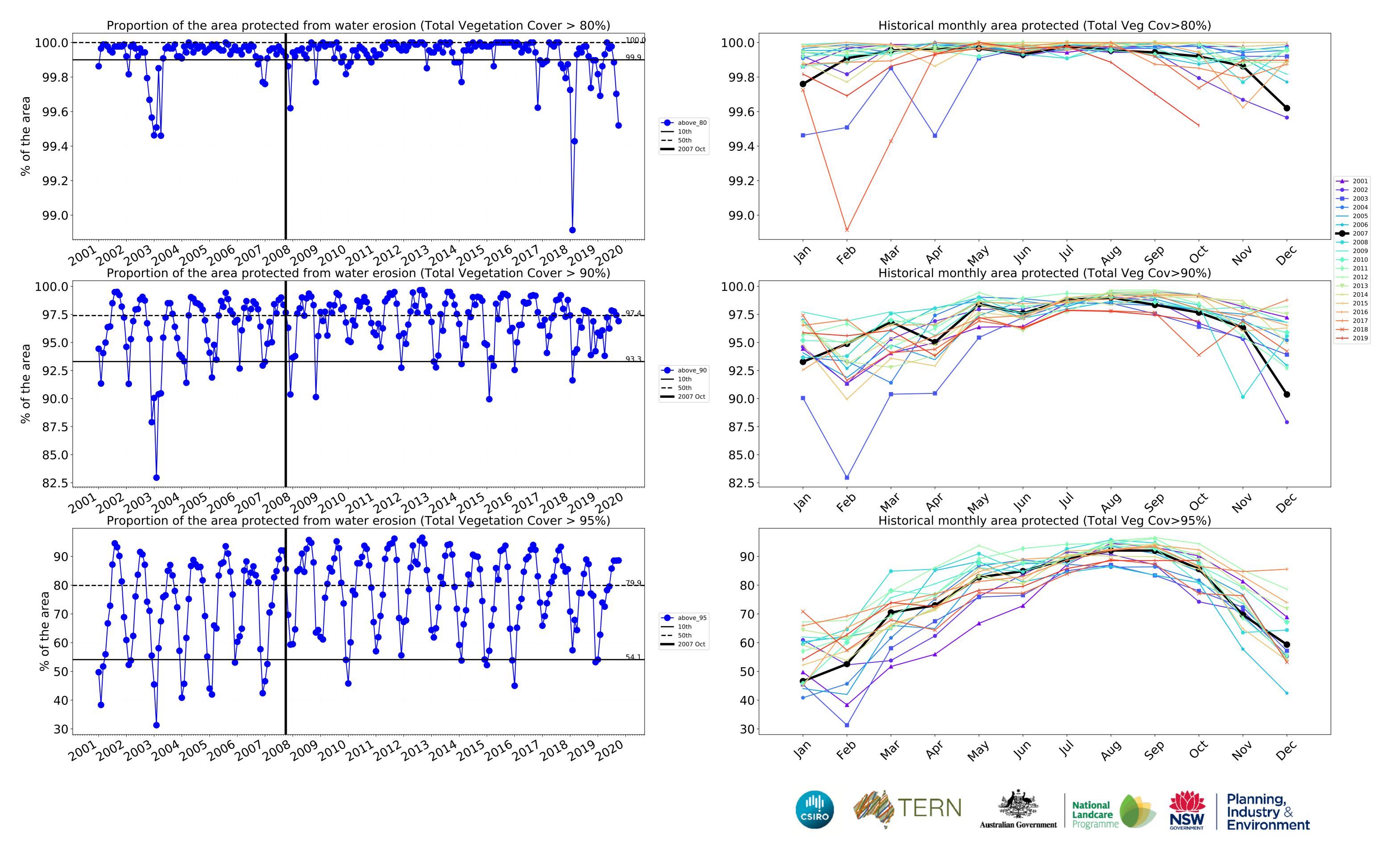




month







Hunter (3,236,450 ha and no data 63,975 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	3,236,450	99.9% 3,233,501	99.6% 3,224,554	98.5% 3,187,391	95.0% 3,074,729	63.1% 2,042,330	30.0% 970,520
Conservation and natural environments	1,240,175	99.9% 1,239,025	99.8% 1,238,000	99.6% 1,235,350	99.1% 1,229,175	81.5% 1,011,225	46.8% 580,250
Conservation and natural environments non forest	29,475	96.3% 28,375	93.7% 27,625	89.0% 26,225	83.0% 24,450	60.3% 17,775	27.1% 8,000
Conservation and natural environments Woodland forest	138,900	100.0% 138,900	100.0% 138,850	99.9% 138,775	99.2% 137,850	62.2% 86,375	21.5% 29,925
natural environments Forest (non woodland)	1,071,800	100.0% 1,071,750	100.0% 1,071,525	99.9% 1,070,350	99.5% 1,066,875	84.6% 907,075	50.6% 542,325
Agriculture	1,580,525	100.0% 1,580,525	100.0% 1,579,975	99.6% 1,573,800	95.5% 1,509,650	49.2% 777,050	12.3% 193,800
Grazing	1,502,525	100.0% 1,502,525	100.0% 1,501,975	99.6% 1,497,100	96.4% 1,447,750	50.7% 761,275	12.7% 190,250
Grazing non forest	1,212,850	100.0% 1,212,850	100.0% 1,212,350	99.6% 1,207,900	95.9% 1,162,700	50.6% 613,625	12.4% 149,800
Grazing Woodland forest	120,575	100.0% 120,575	100.0% 120,575	99.9% 120,400	97.9% 118,075	38.1% 45,975	6.2% 7,500
Grazing - Forest (non woodland)	169,100	100.0% 169,100	100.0% 169,050	99.8% 168,800	98.7% 166,975	60.1% 101,675	19.5% 32,950
Cropping	50,625	100.0% 50,625	100.0% 50,625	98.5% 49,875	84.1% 42,575	24.5% 12,425	6.5% 3,300
Production native forests and plantation forests	218,575	100.0% 218,575	100.0% 218,575	100.0% 218,575	99.9% 218,400	97.7% 213,475	85.6% 187,175











