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 2011

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 2011

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 -3 Conservation and natural environments -Non-Woodland forest 4 Agriculture - Grazing - Non-forest 5 Agriculture - Grazing - Woodland forest 6 Agriculture - Grazing - Non-woodland forest 7 Agriculture - Grazing - Irrigated

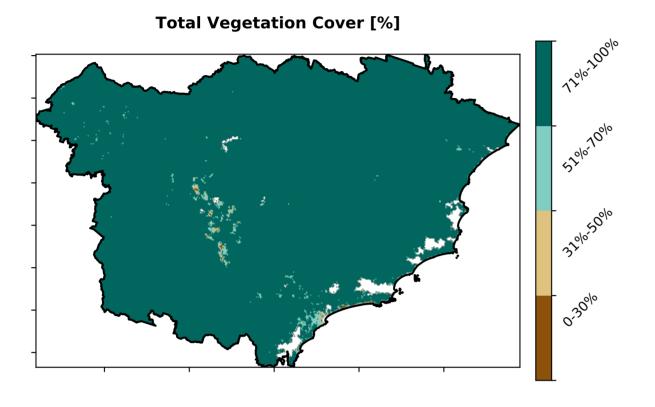
36.9% 35 30 -25 20 15 10 10 11 12 13

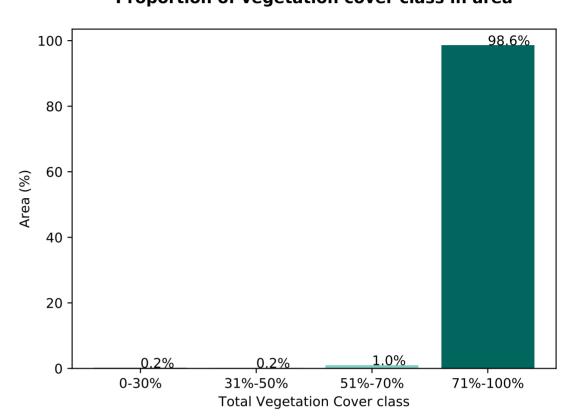
Proportion of each land class in area

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

Proportion of vegetation cover class in area

Land use class





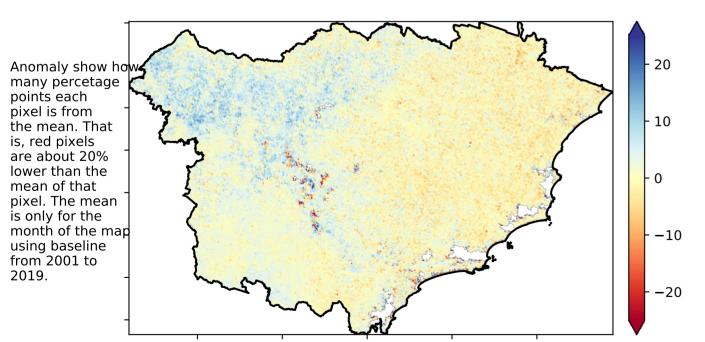




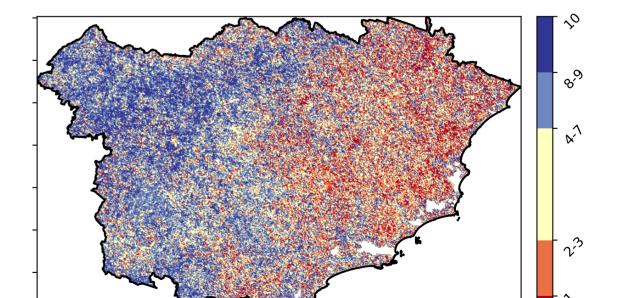
% Area protected from wind erosion (>50%)







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 [%]



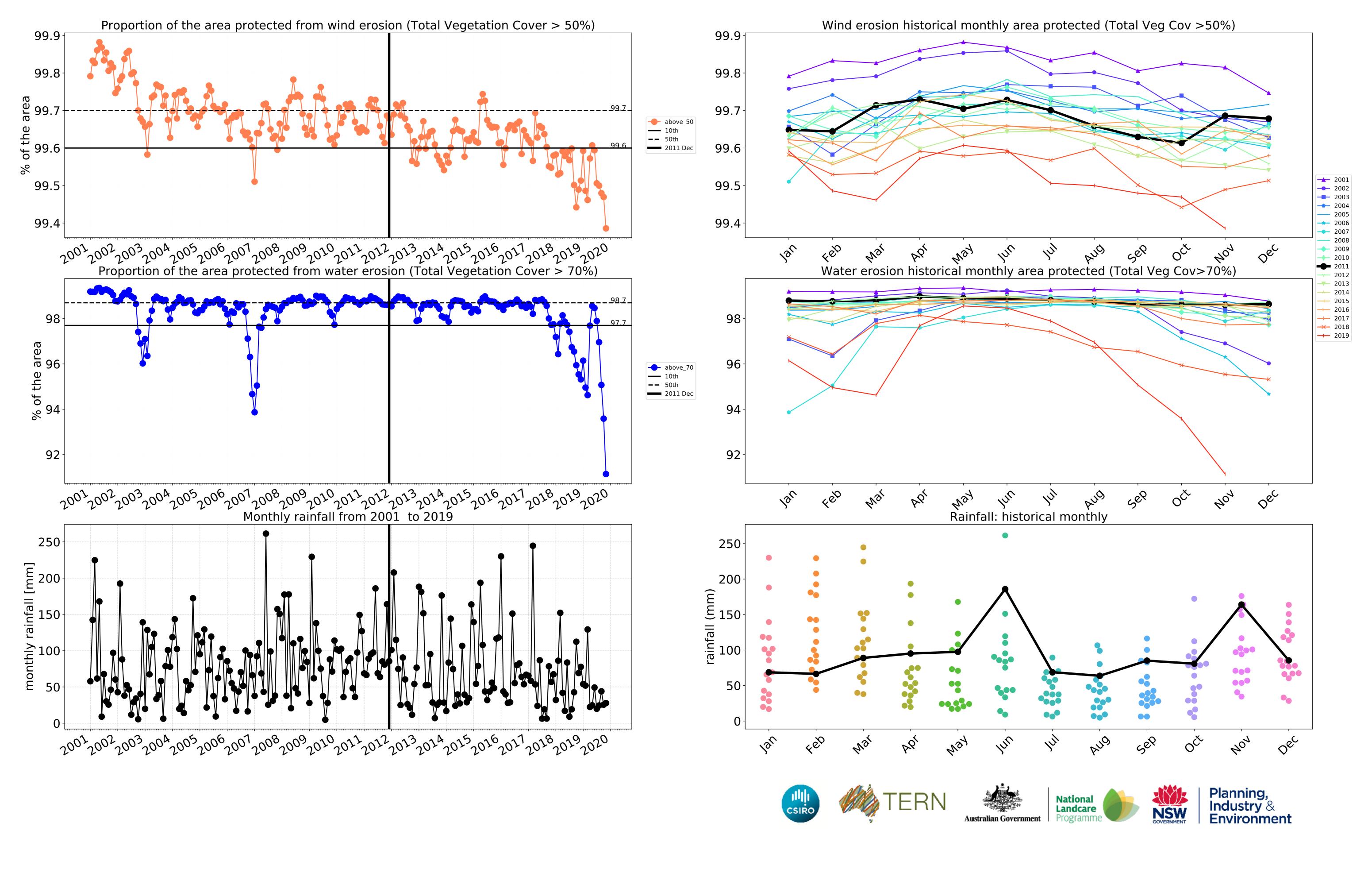


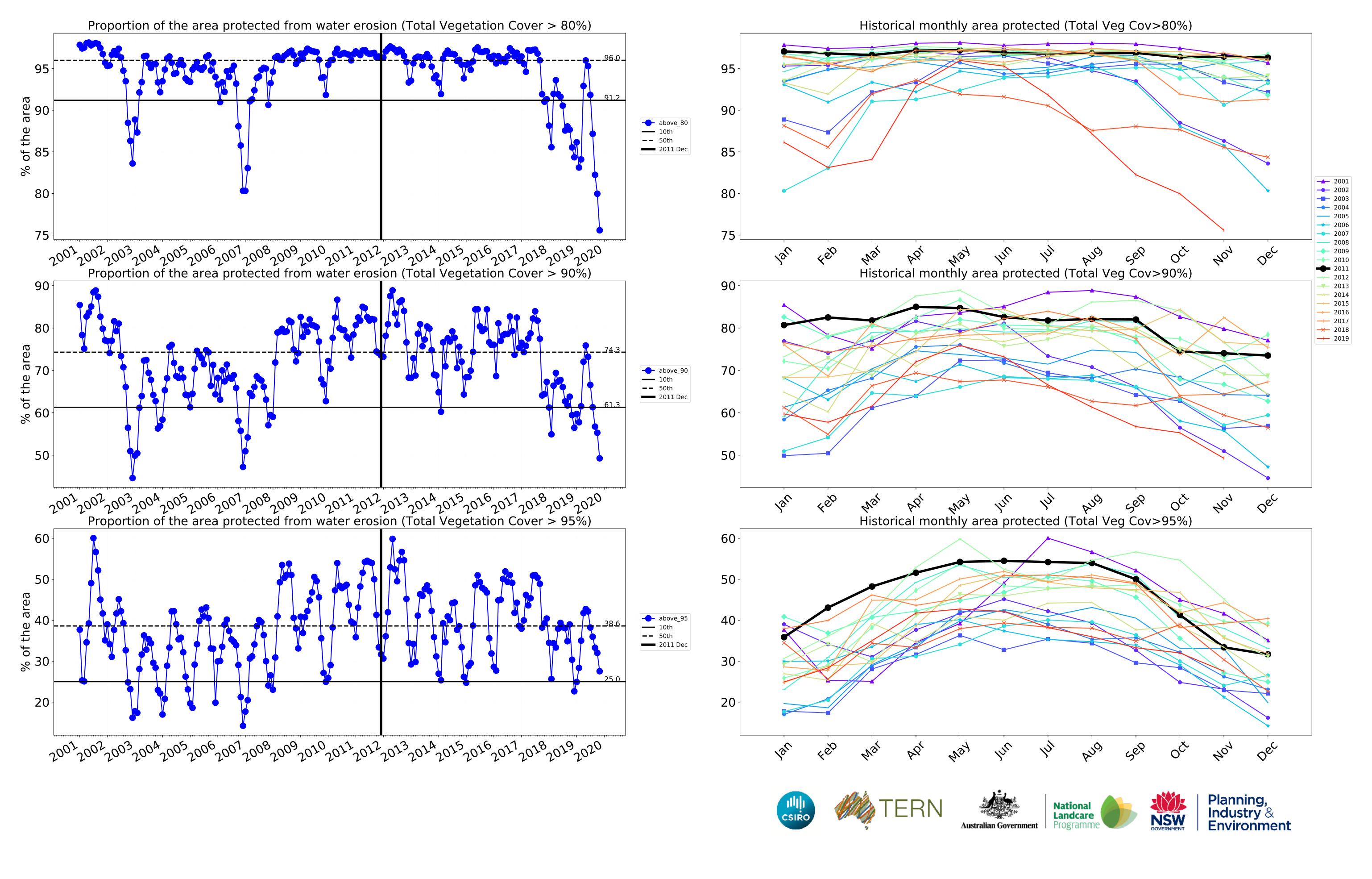




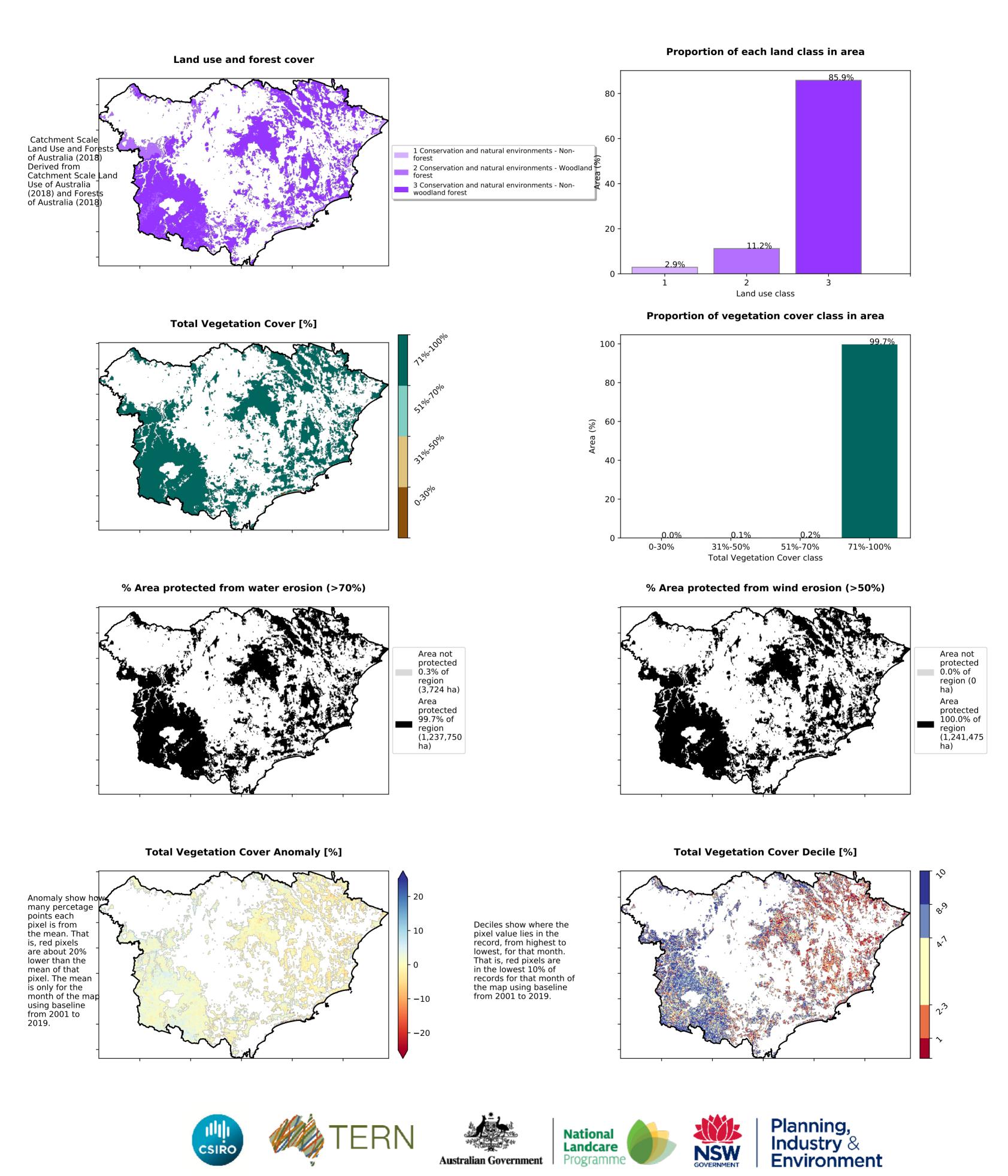




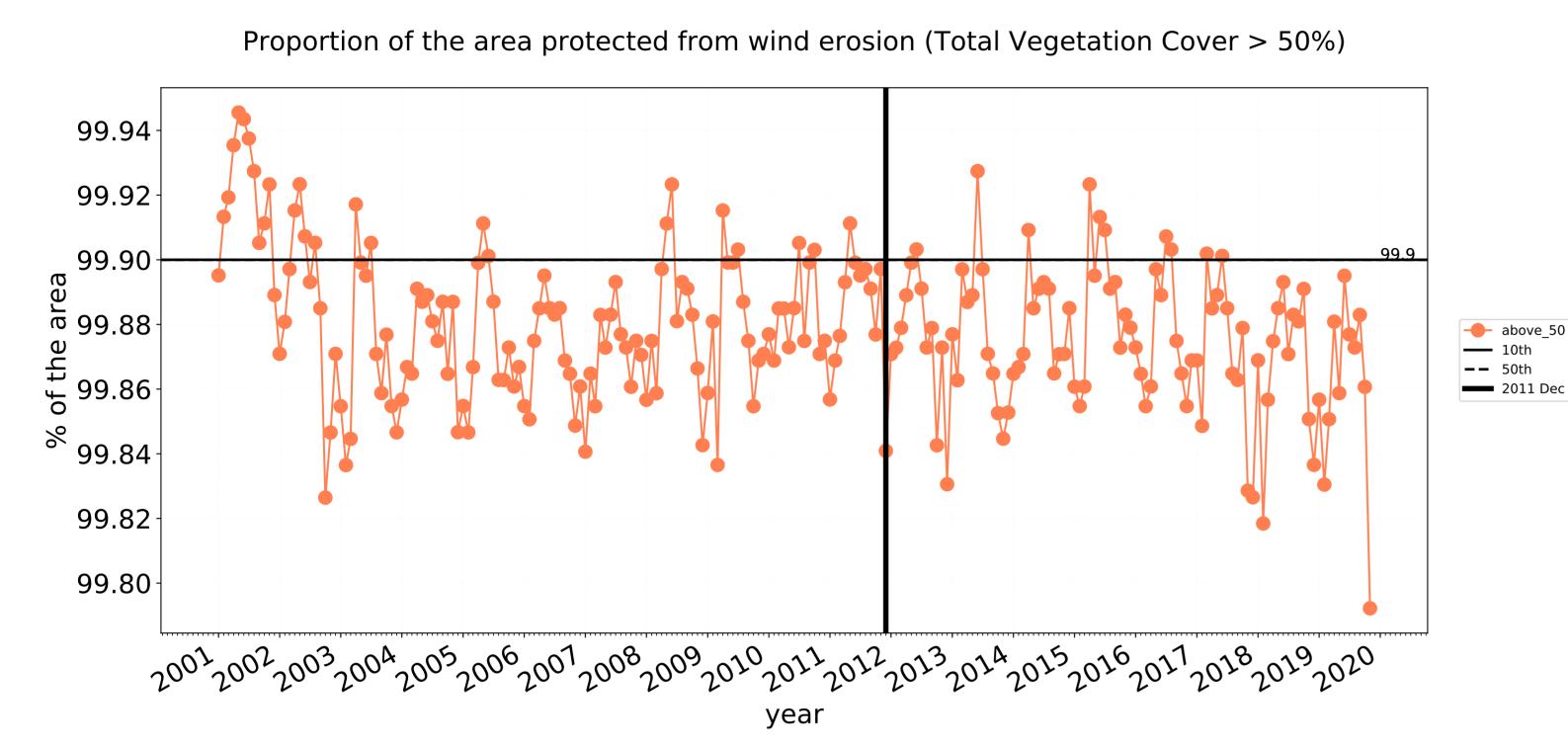


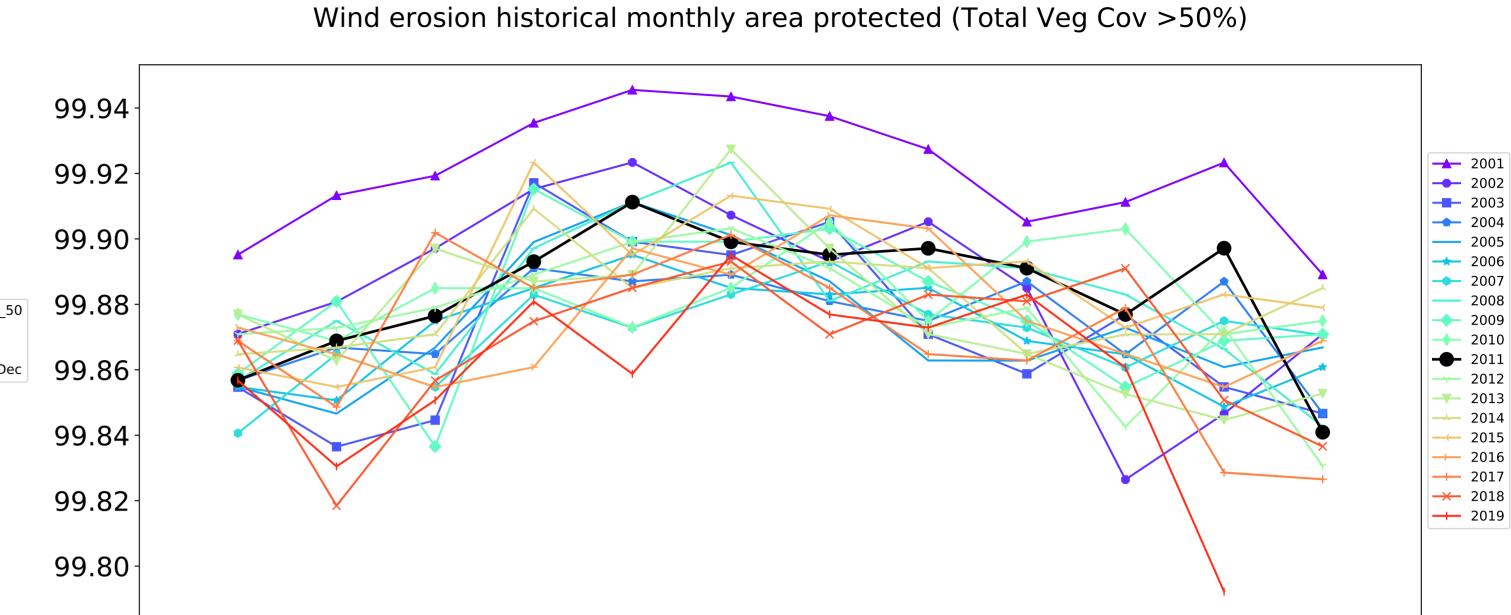


Conservation and natural environments

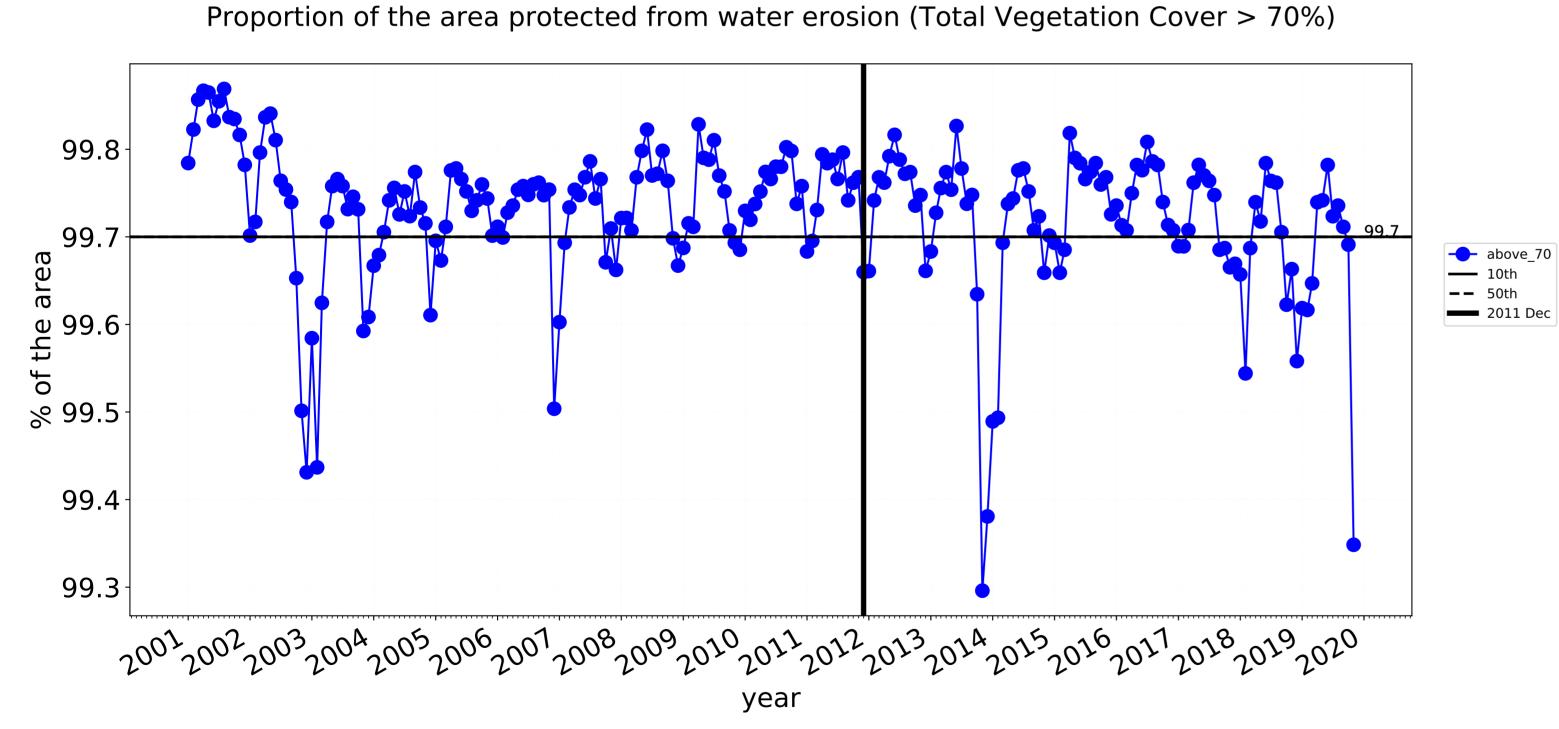


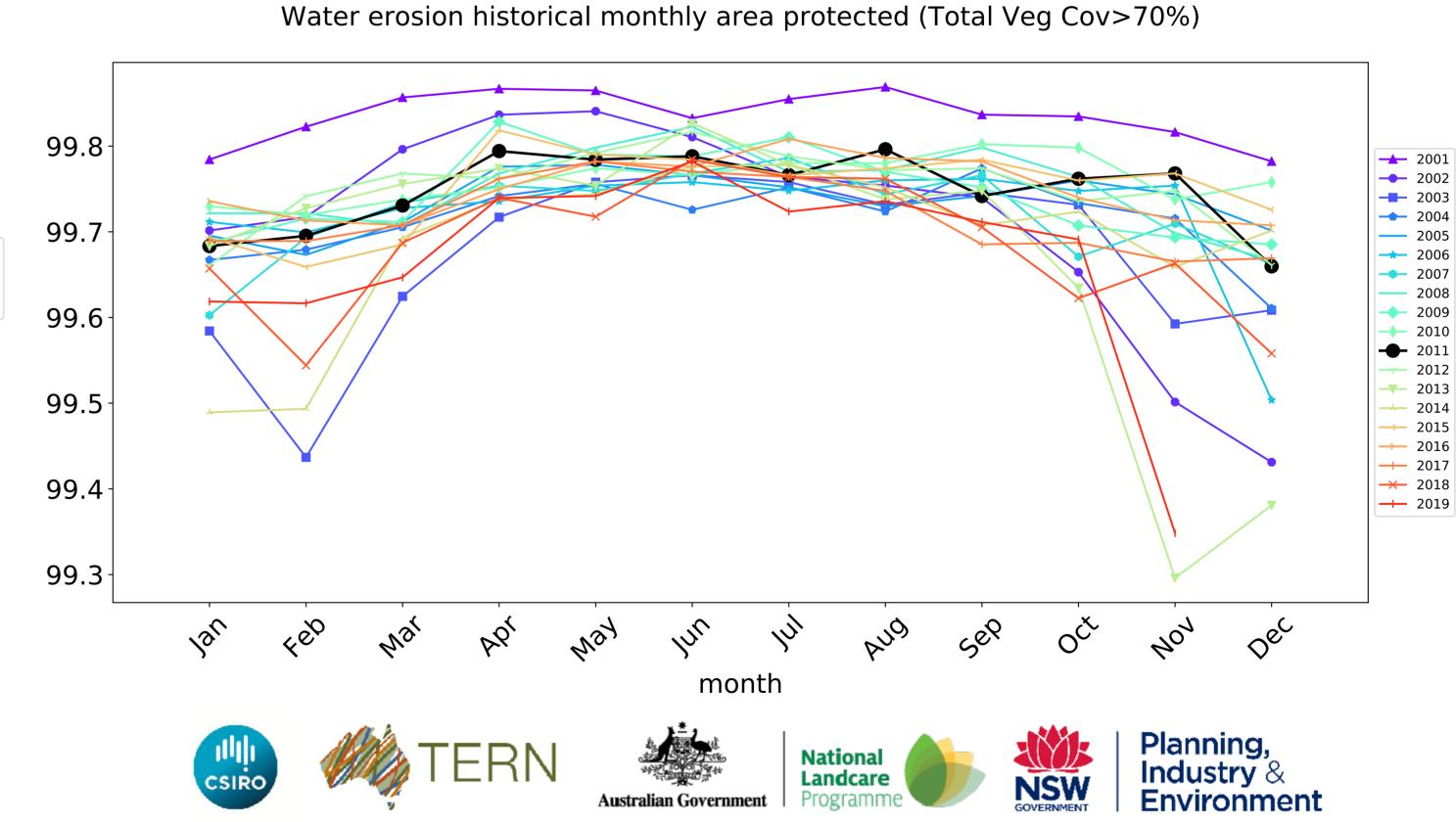
Conservation and natural environments timeseries

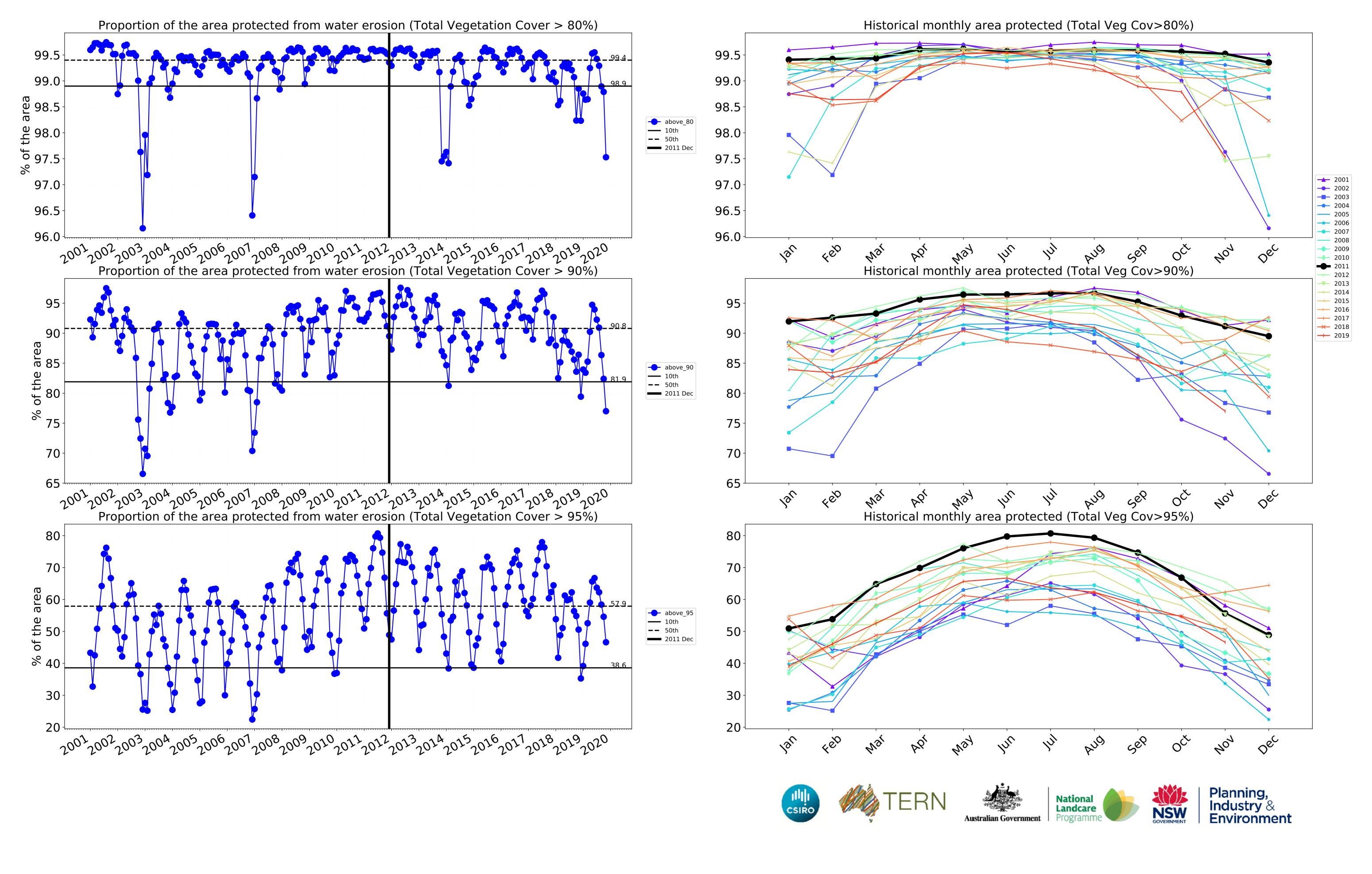




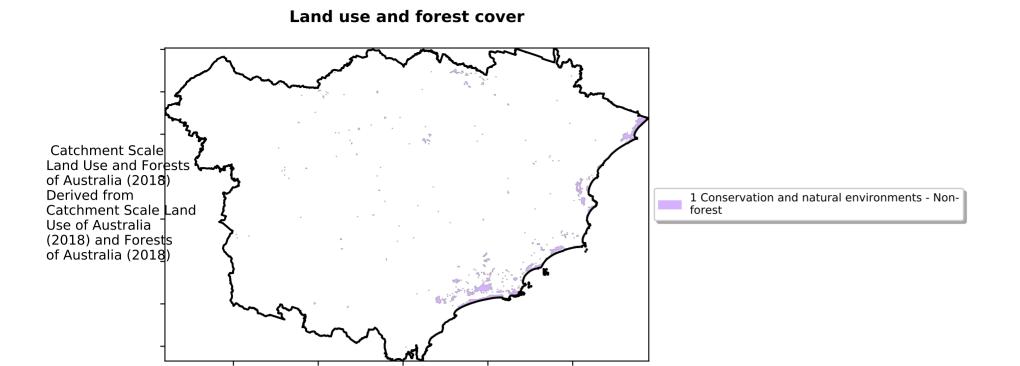
month



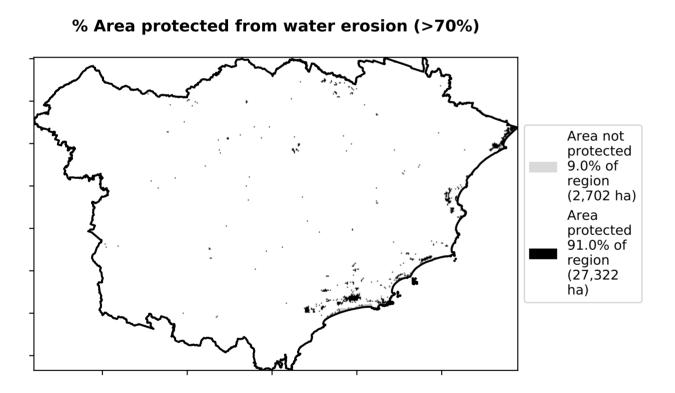


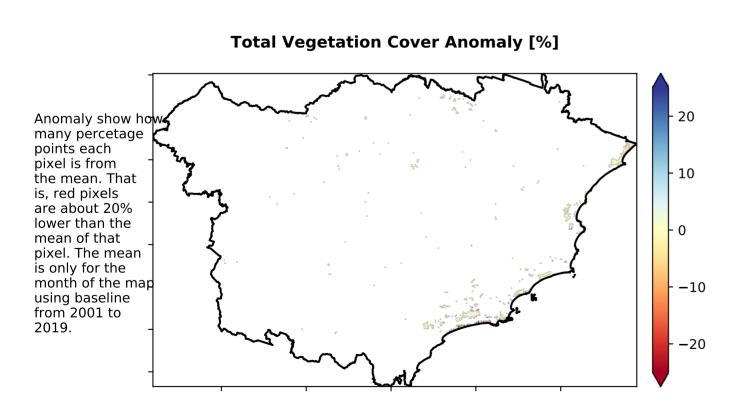


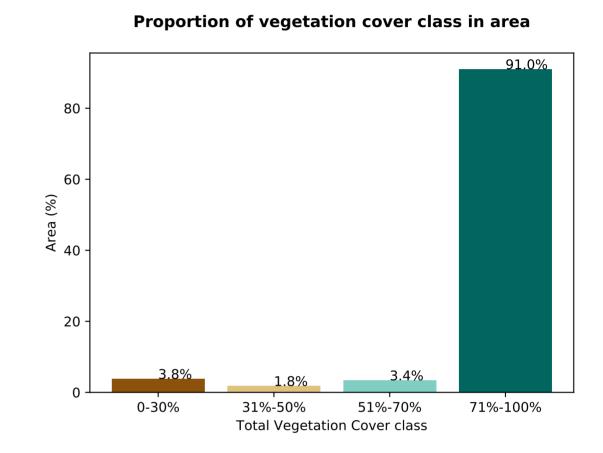
Conservation and natural environments non forest

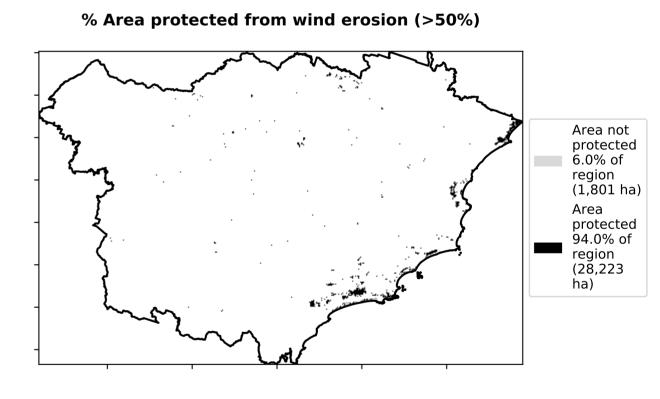


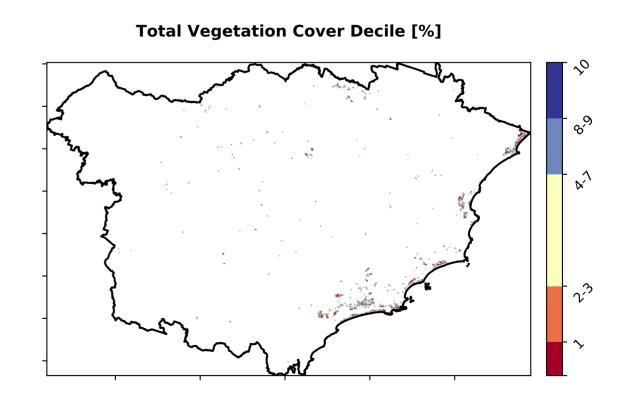
Total Vegetation Cover [%] Talestage Tales















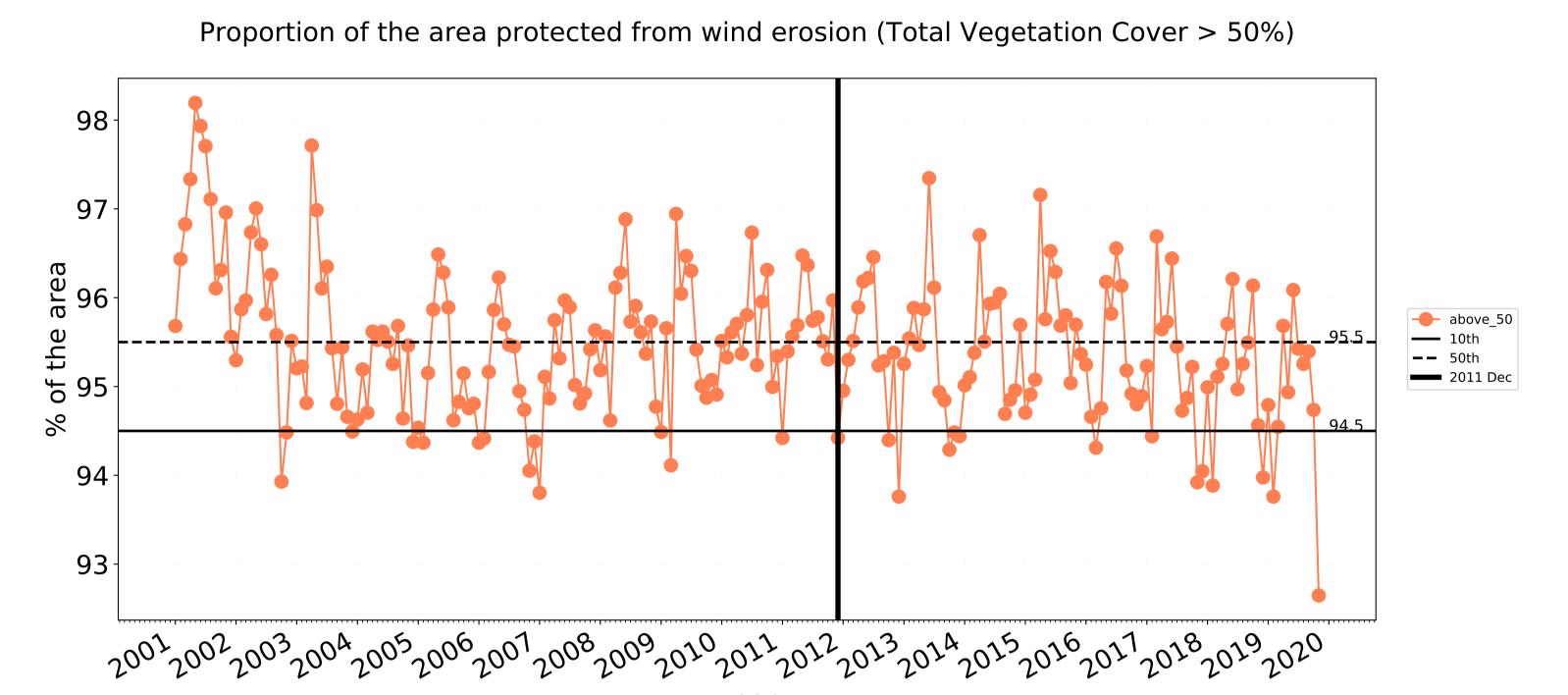




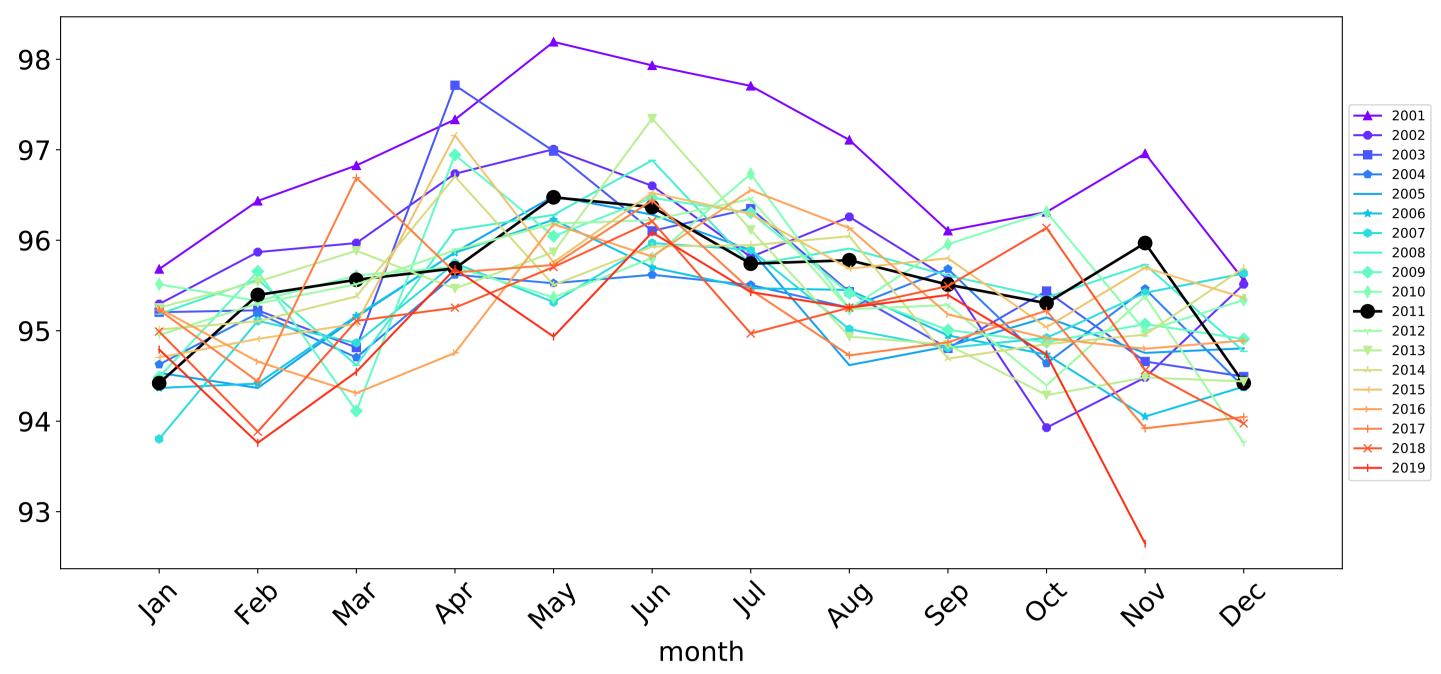


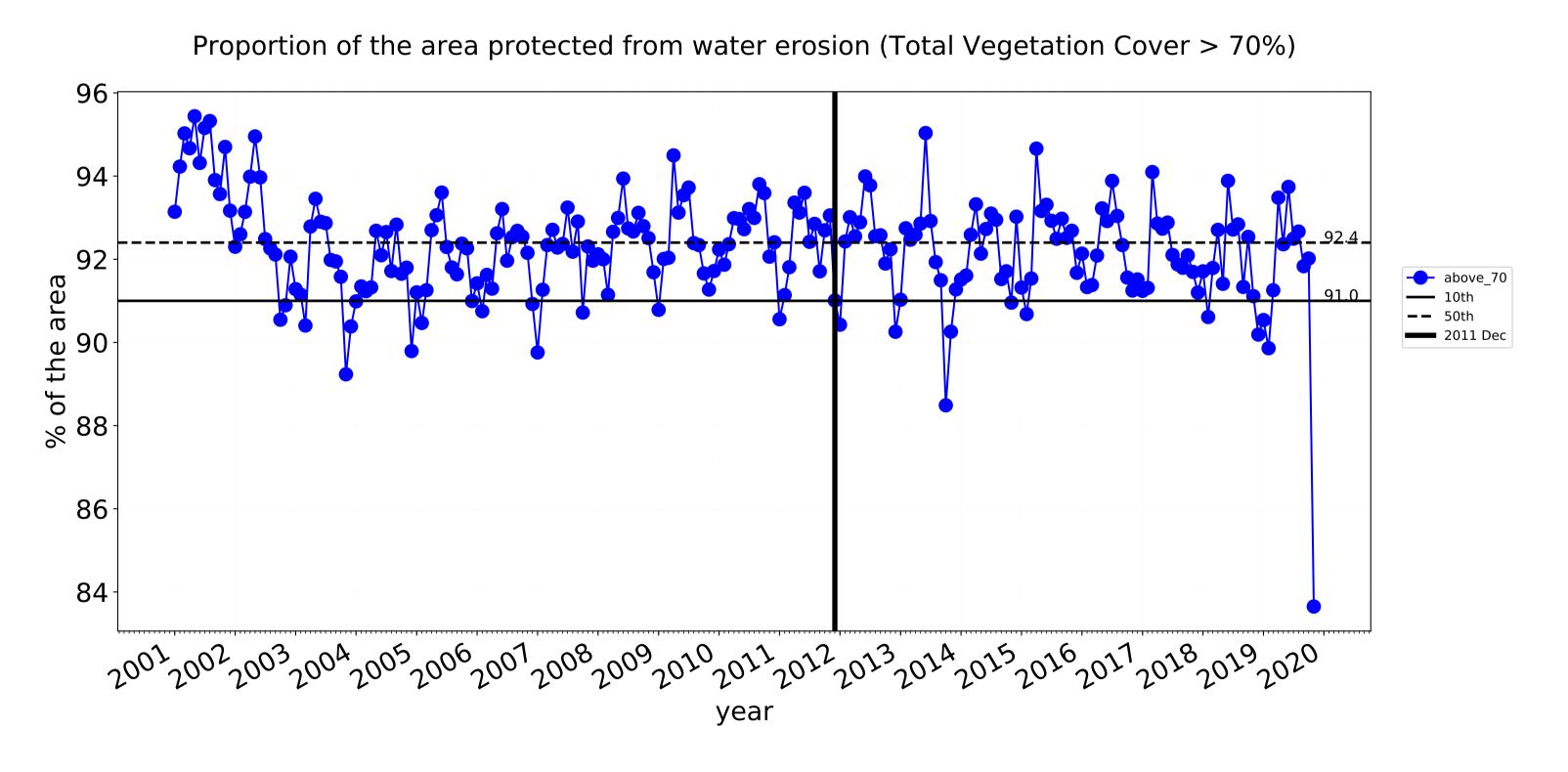


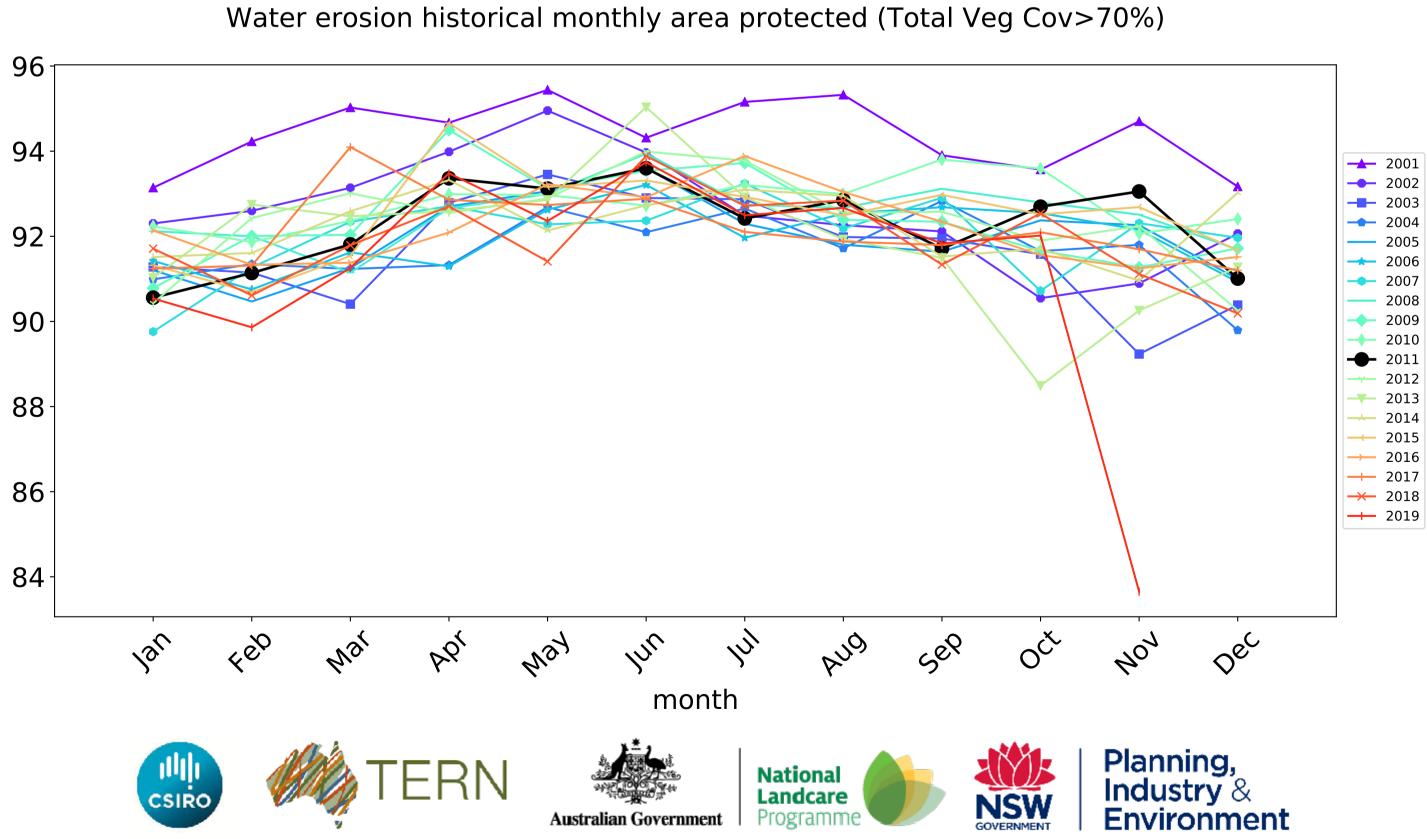
Conservation and natural environments non forest timeseries

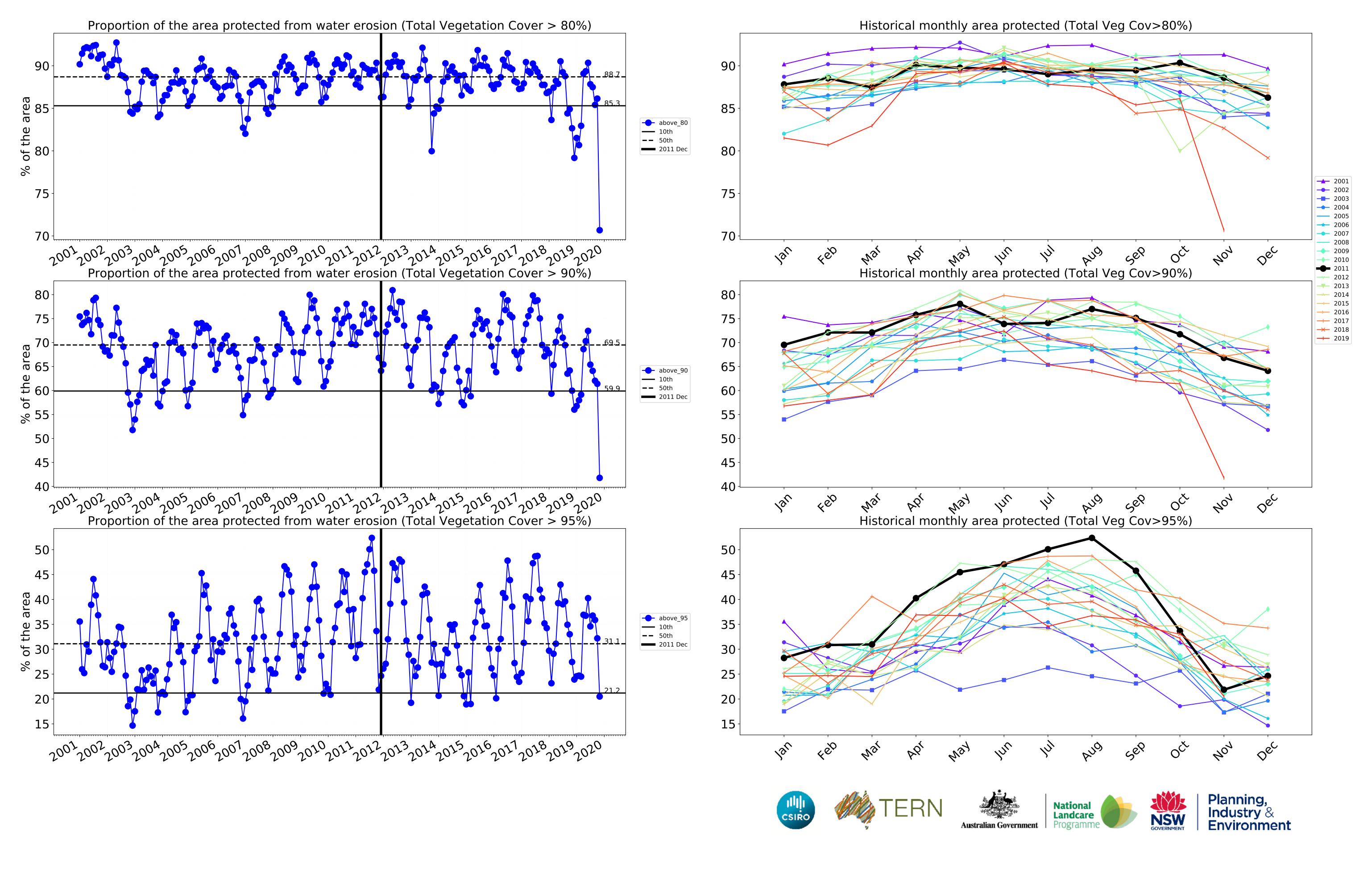




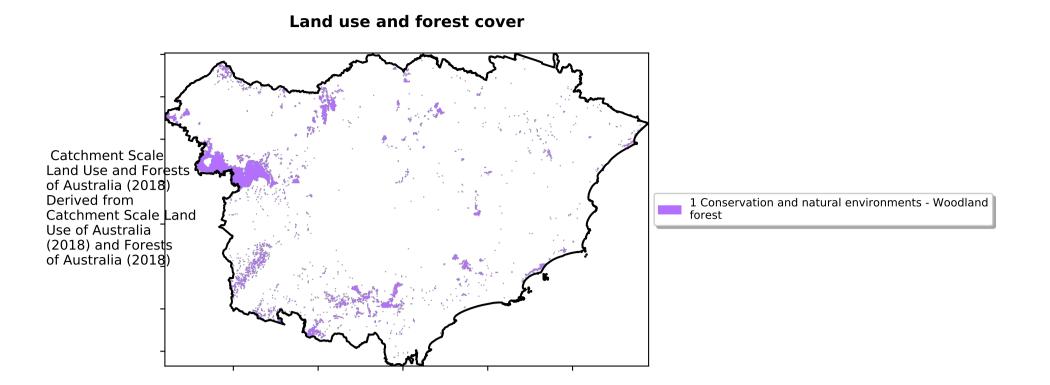


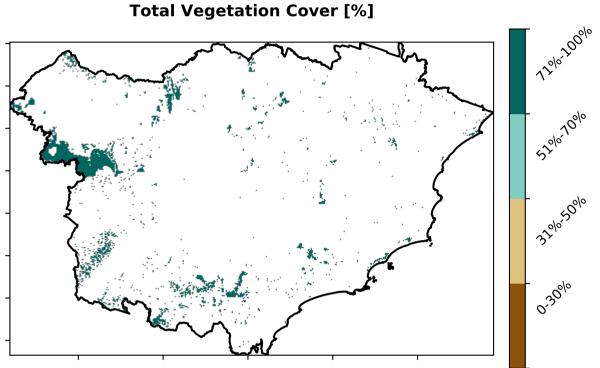


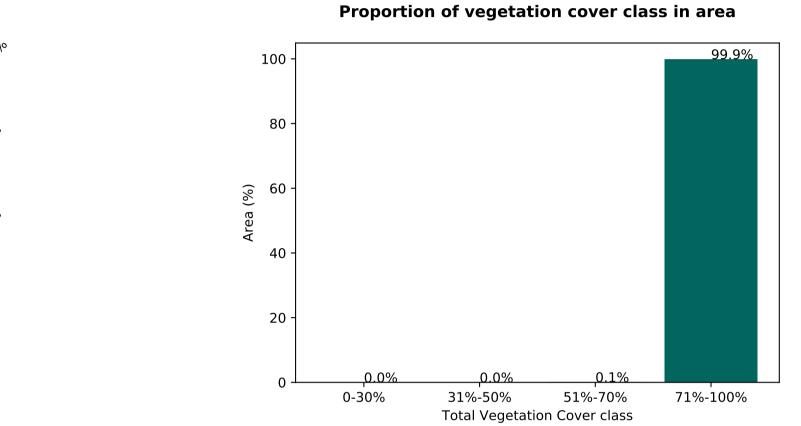


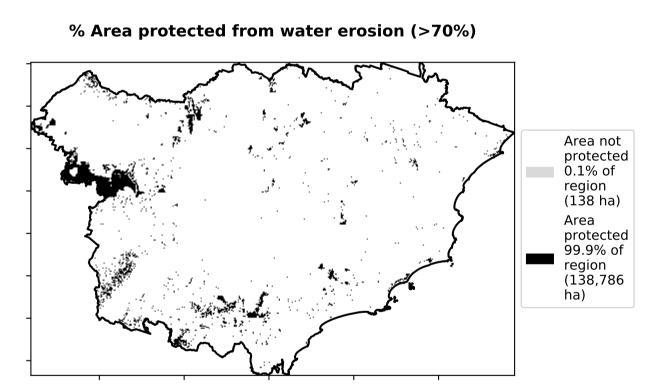


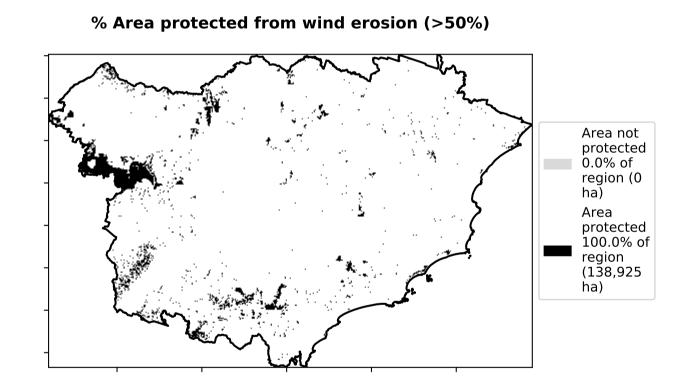
Conservation and natural environments Woodland forest

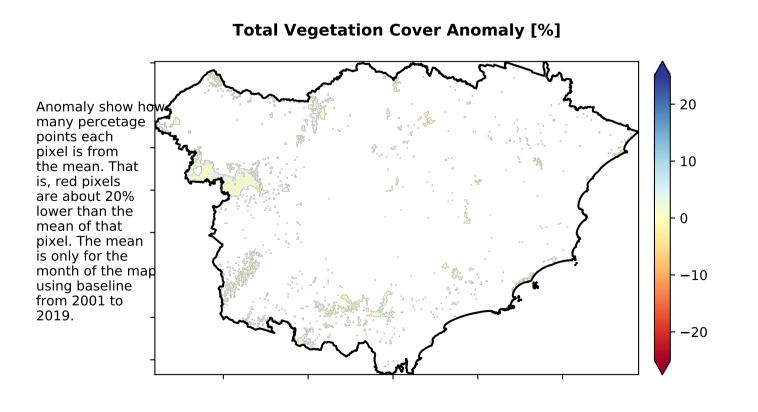


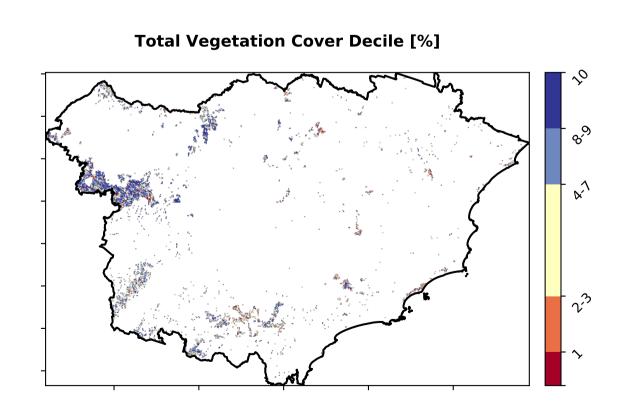
















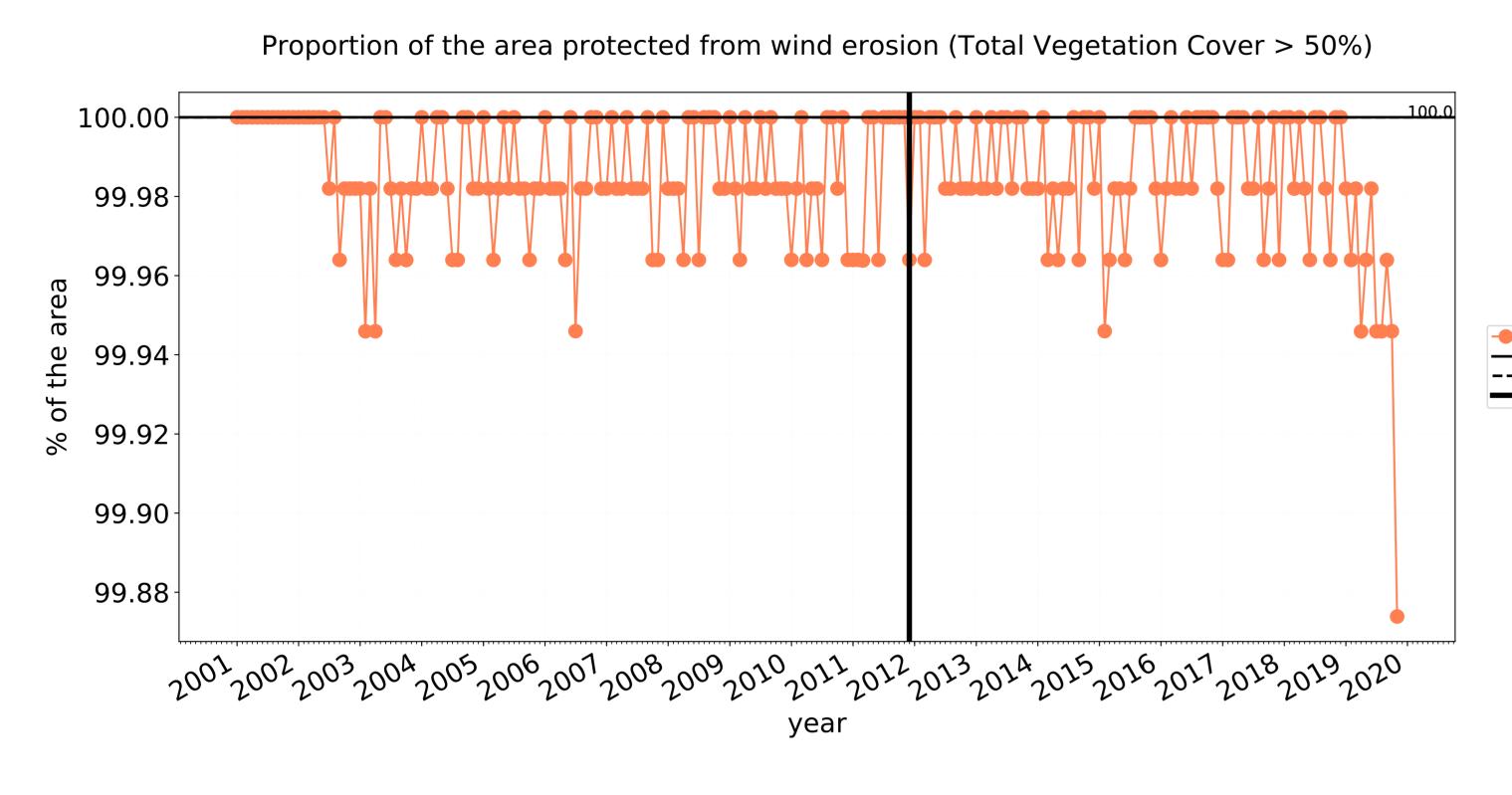


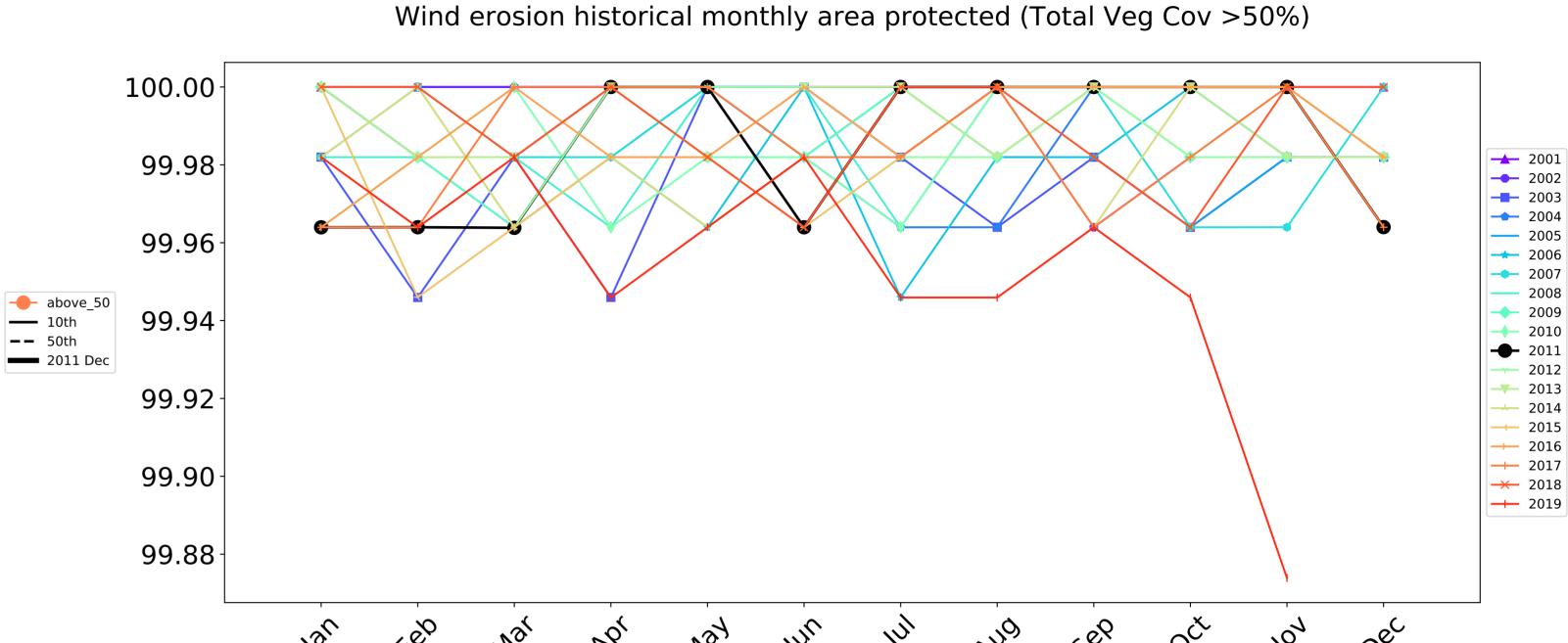




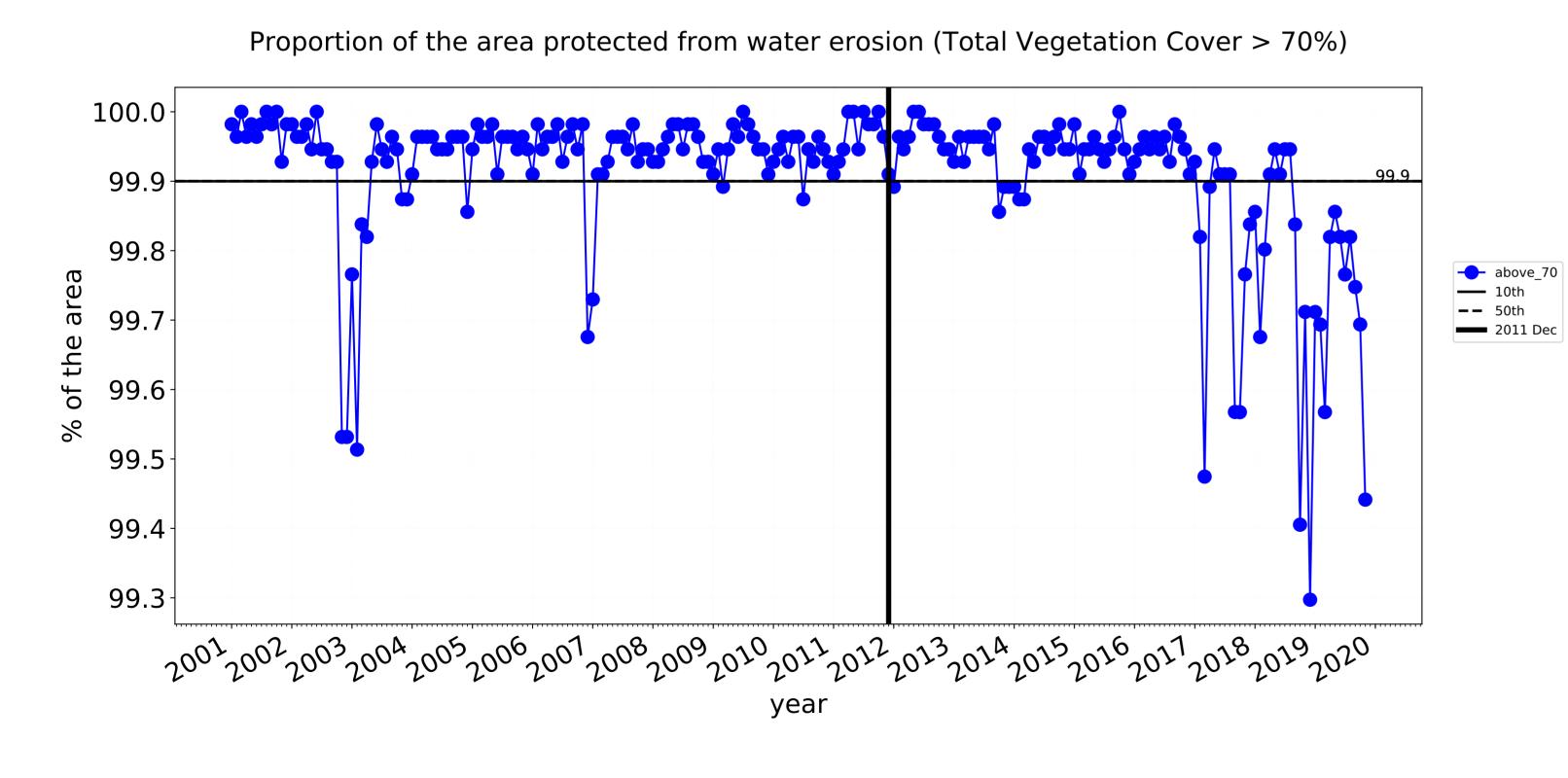


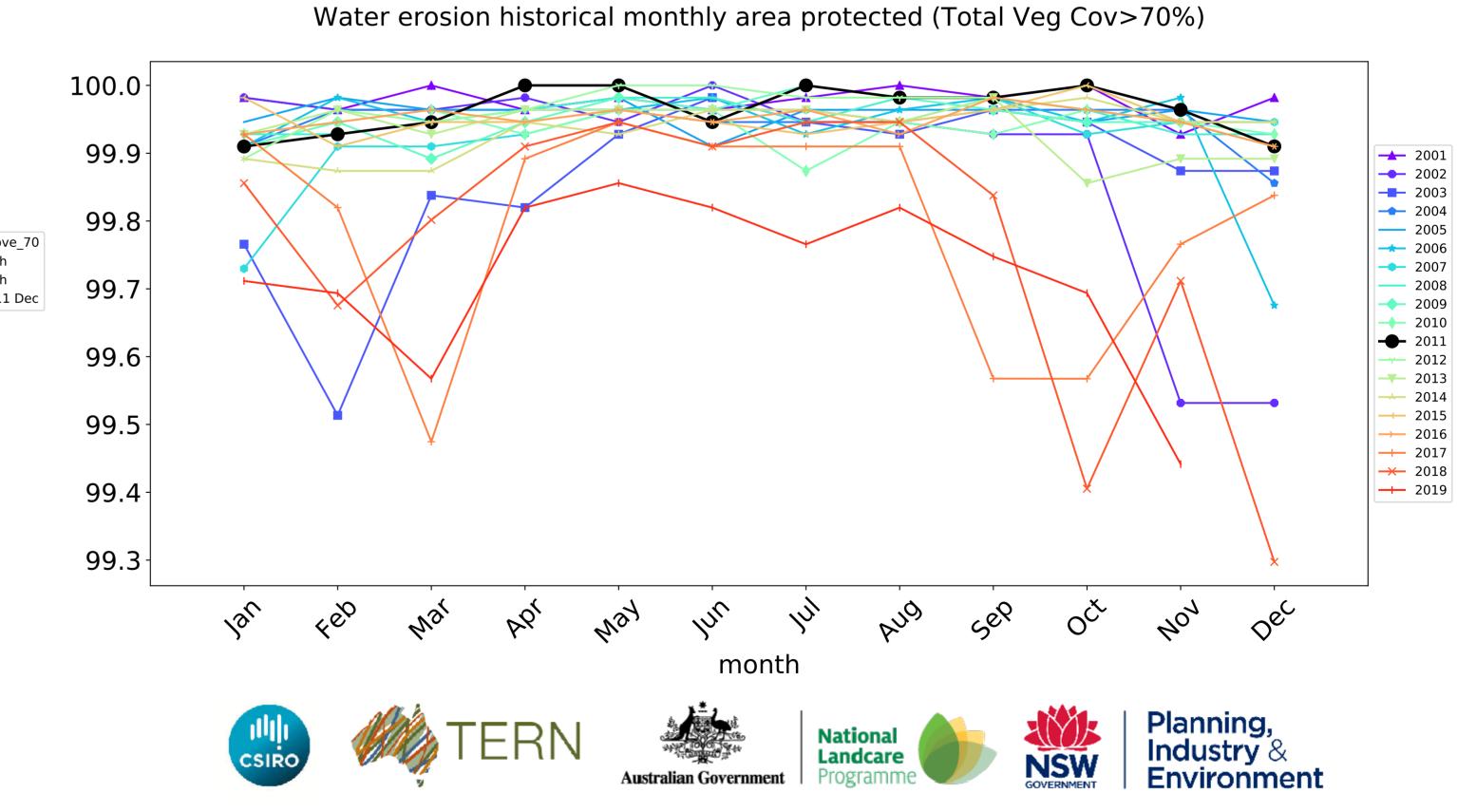
Conservation and natural environments Woodland forest timeseries

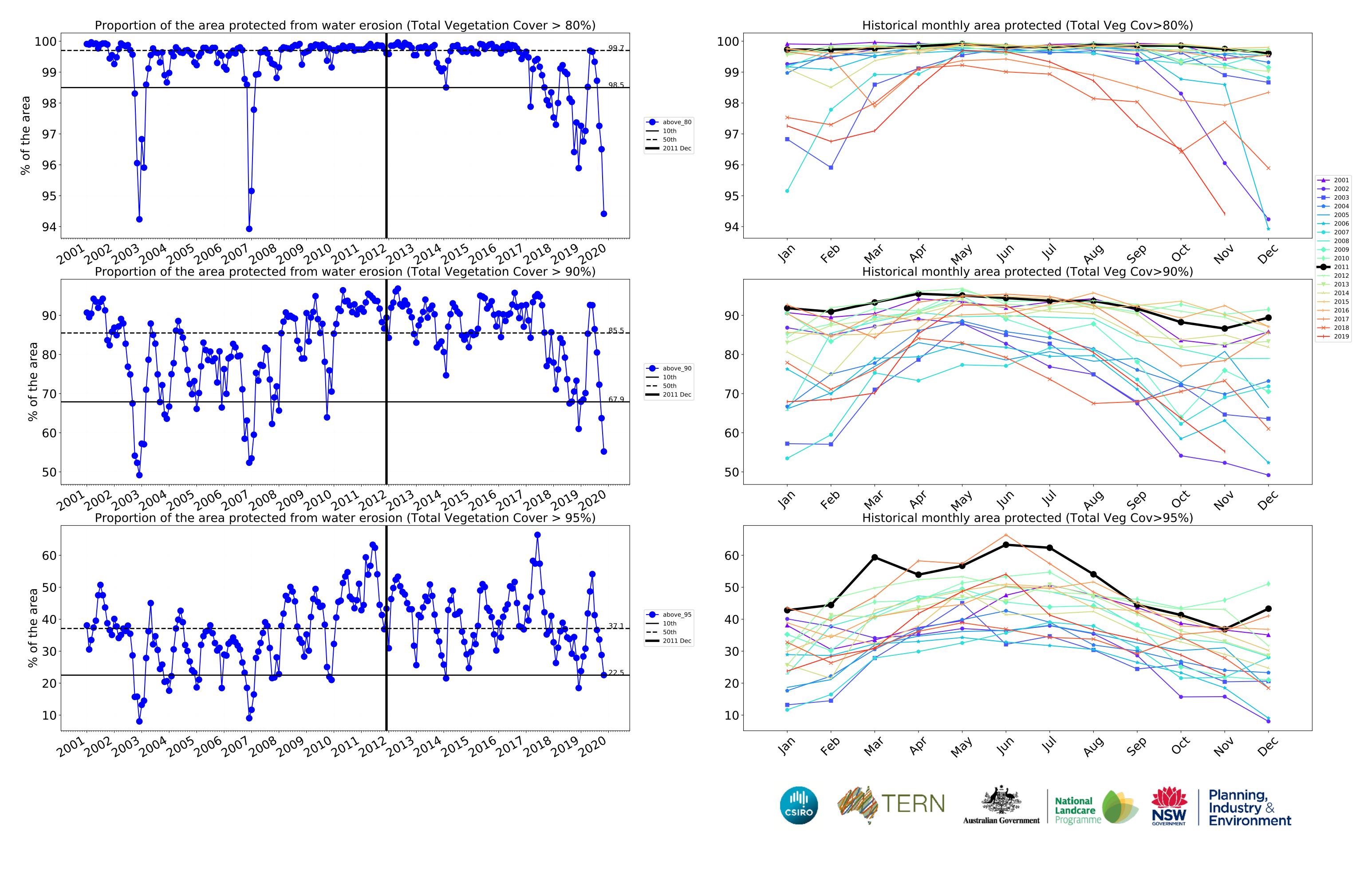




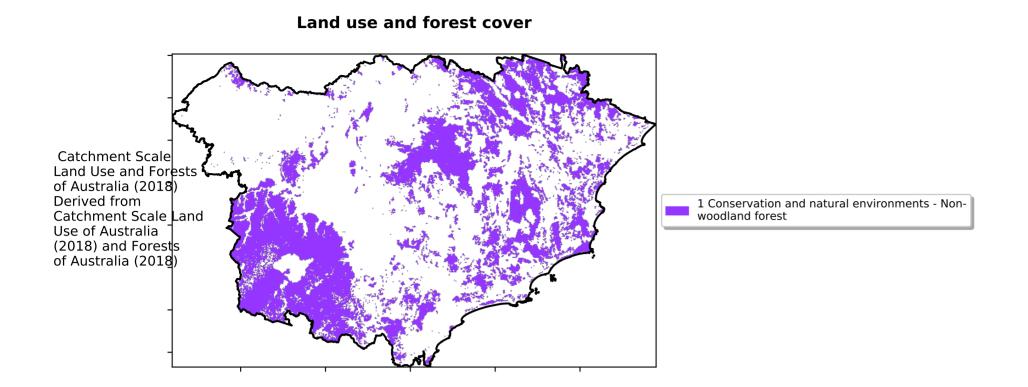
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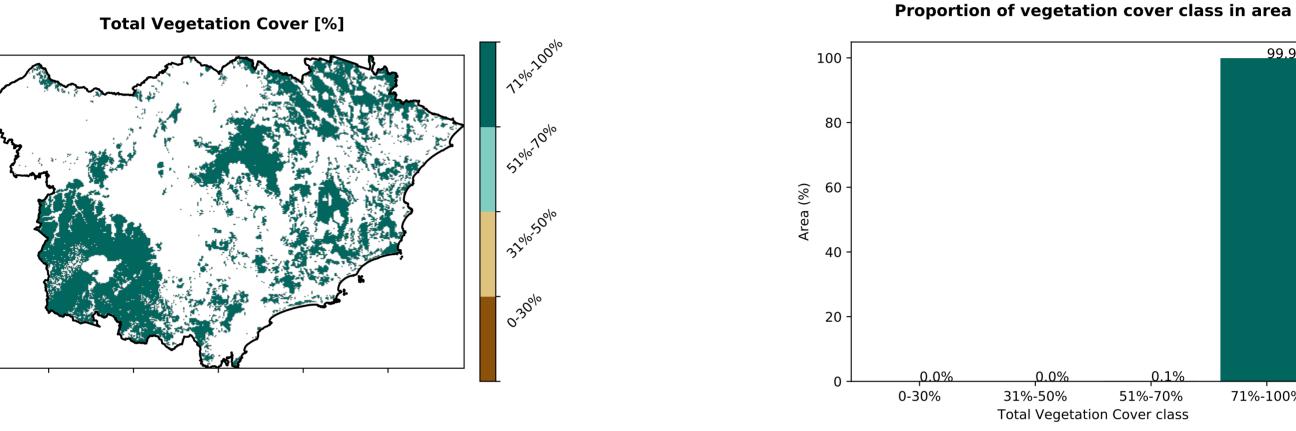


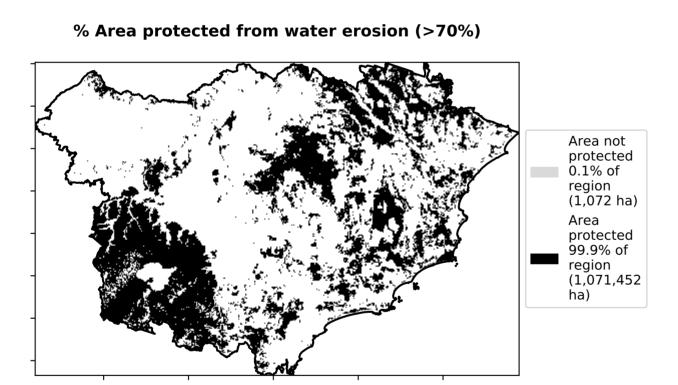


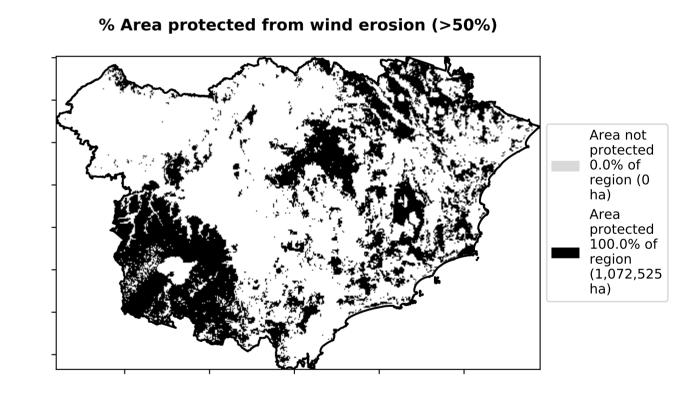
Conservation and natural environments Forest (non woodland)



Total Vegetation Cover [%]

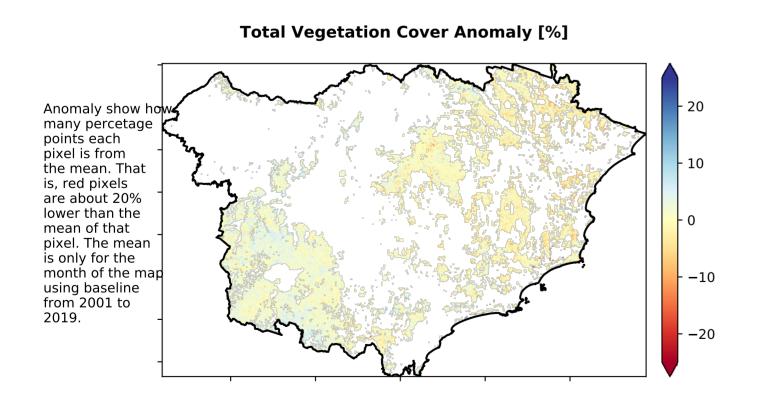


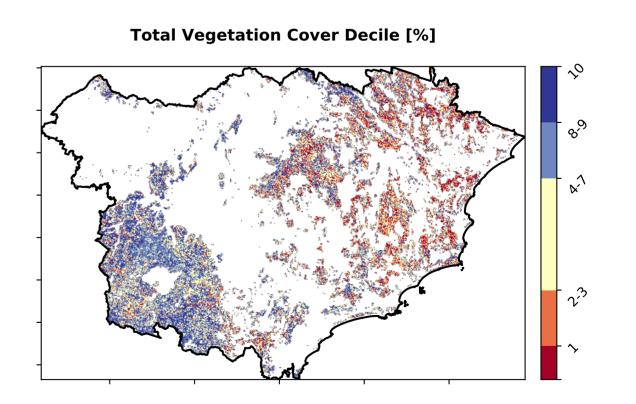




99.9%

71%-100%







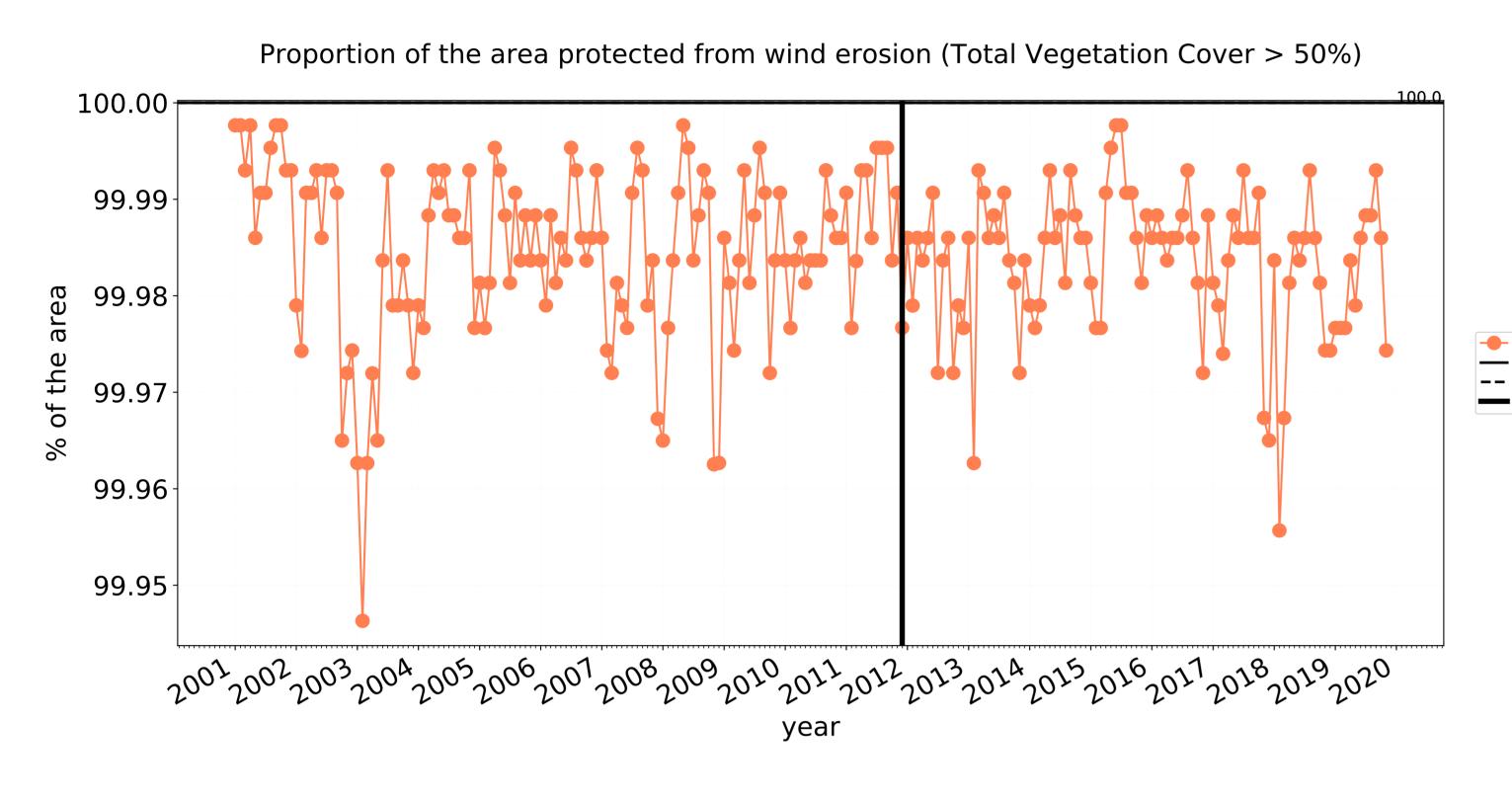


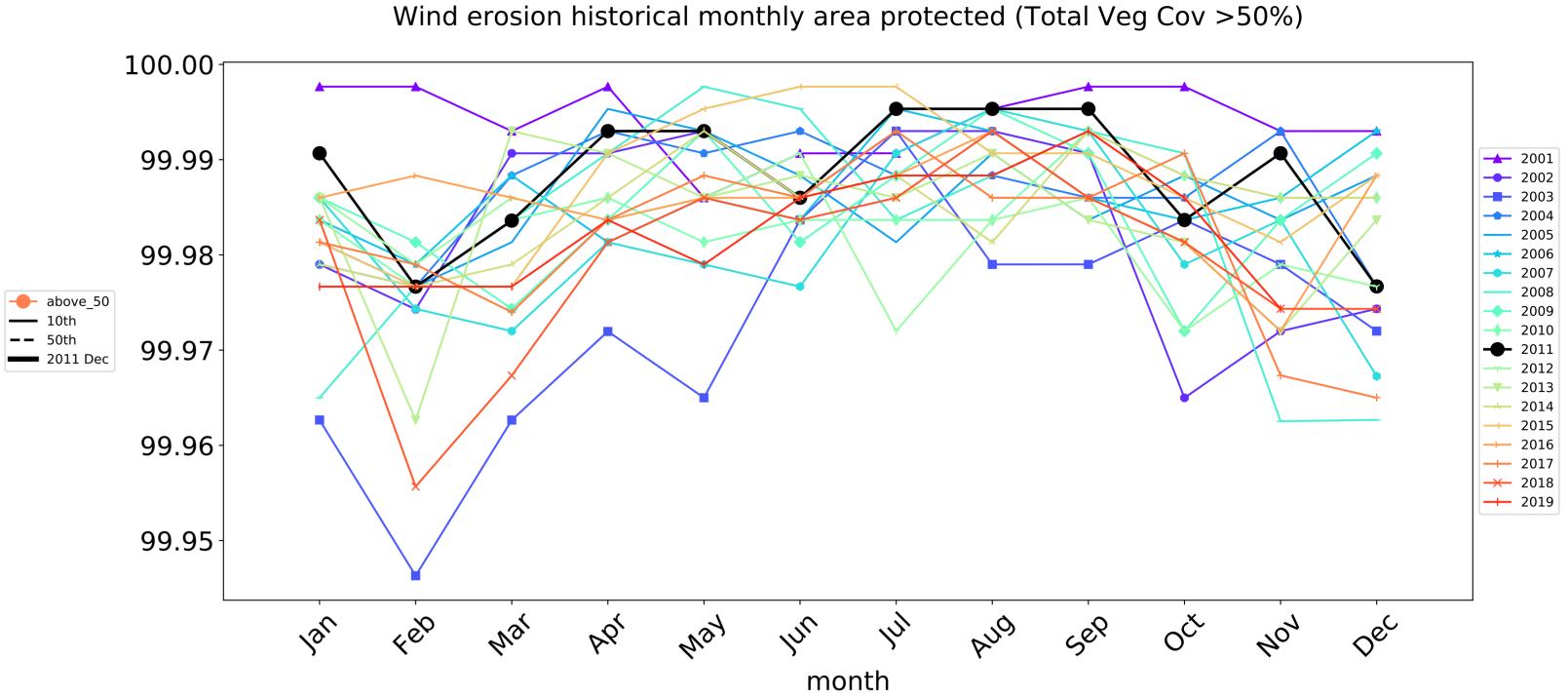


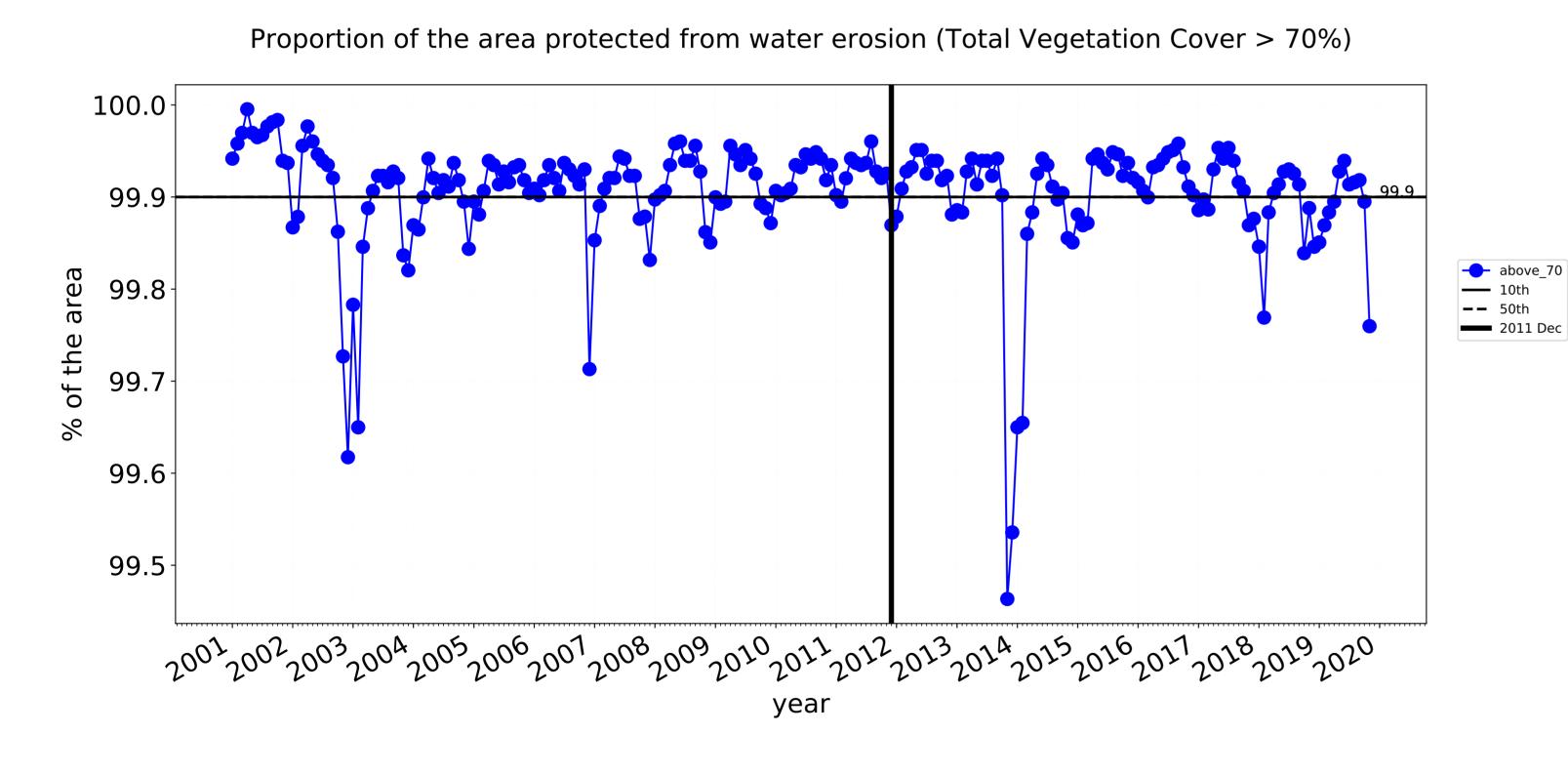


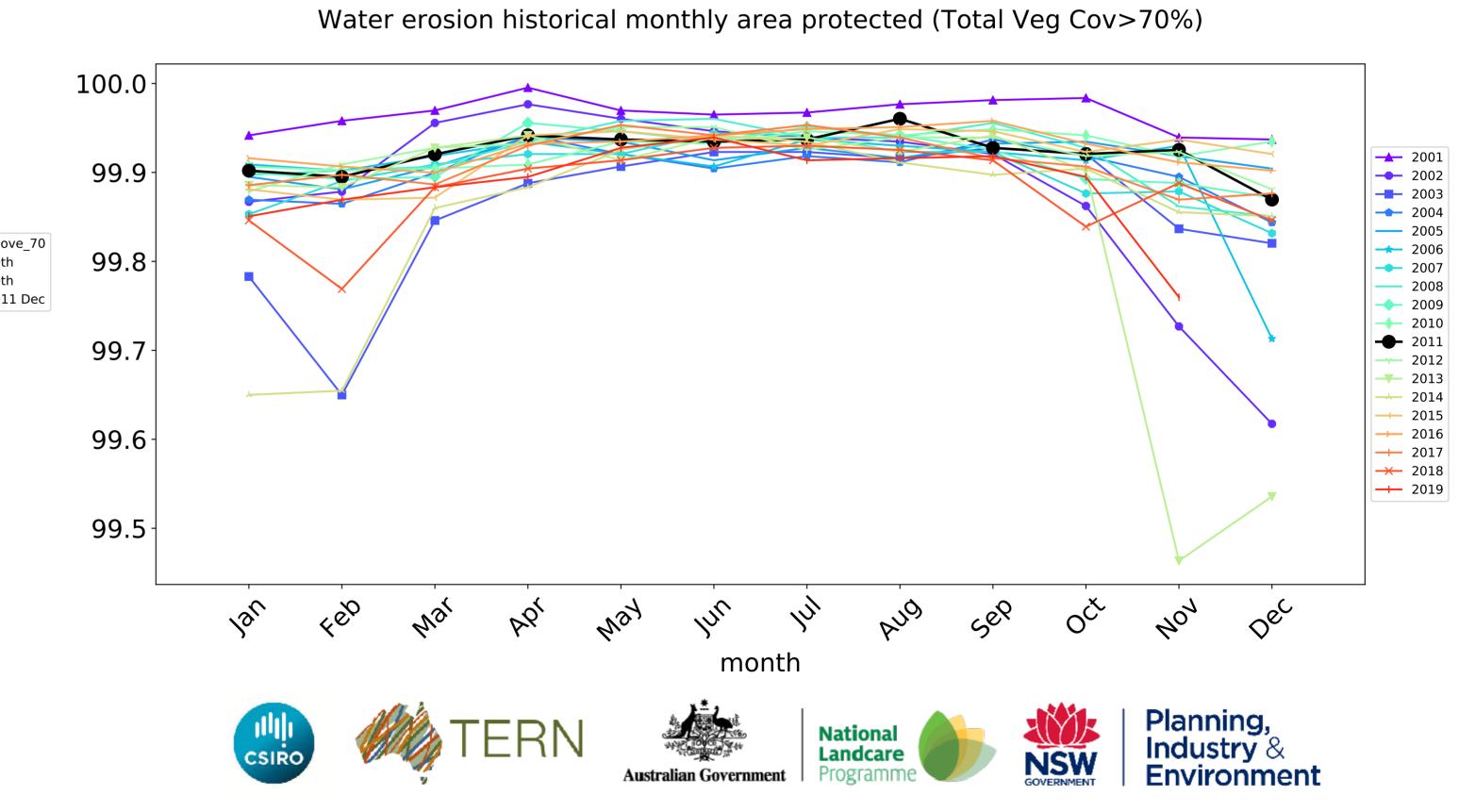


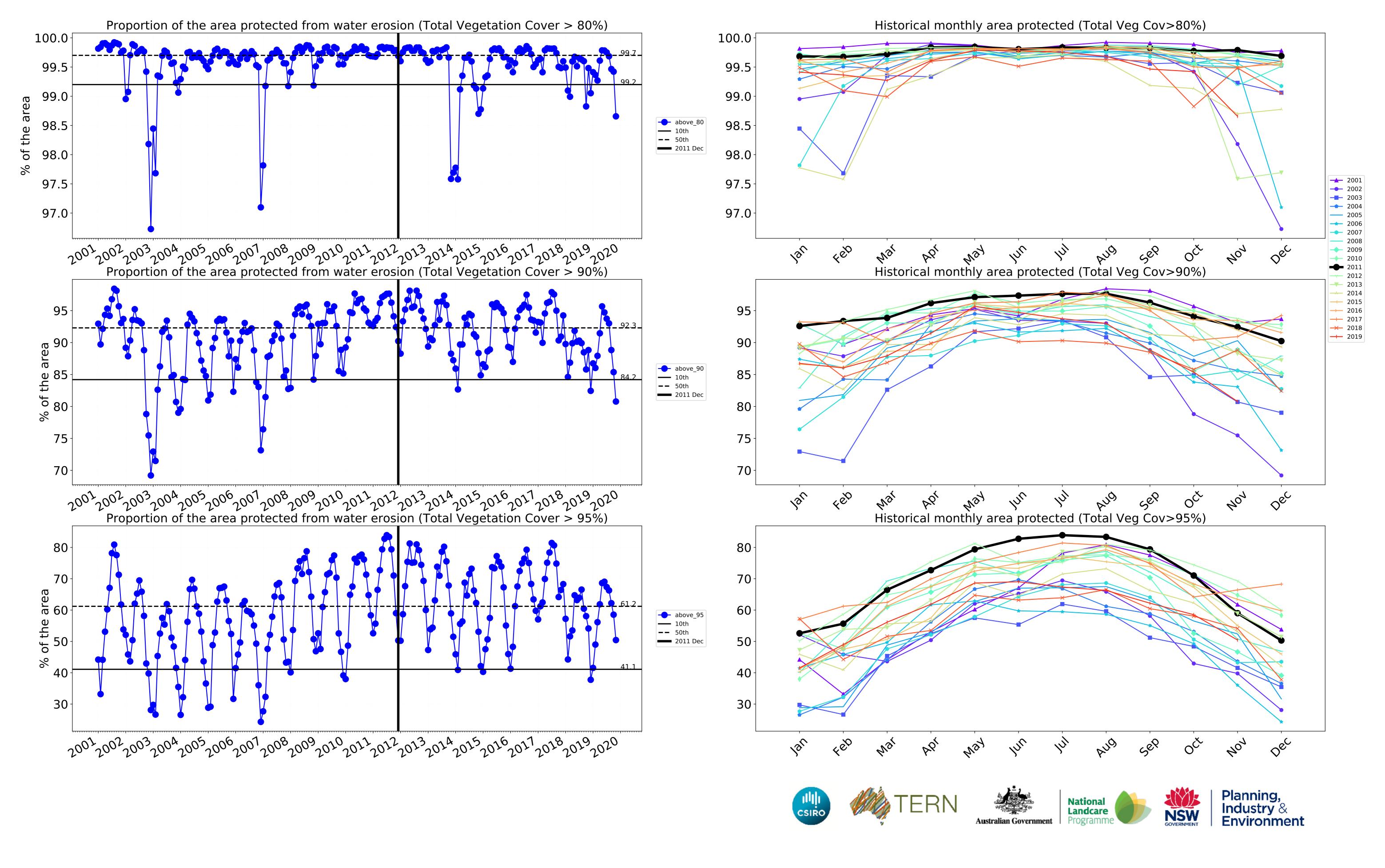








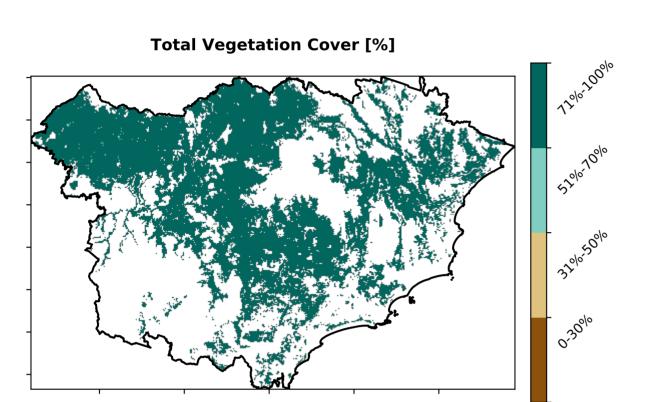


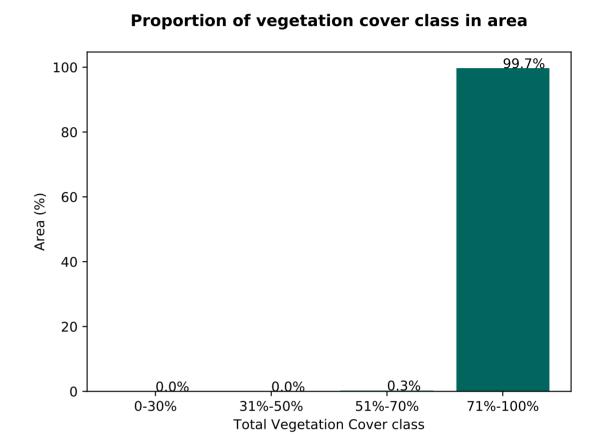


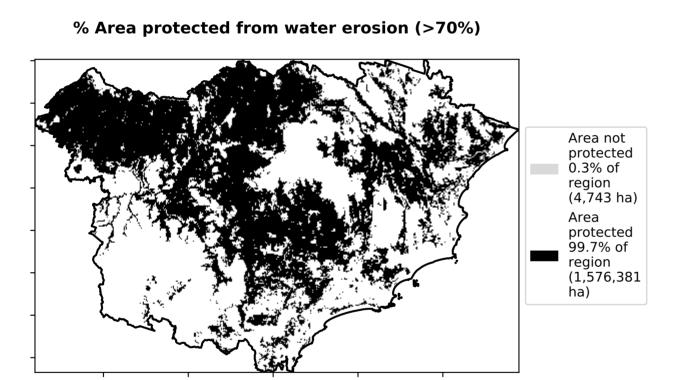
Agriculture

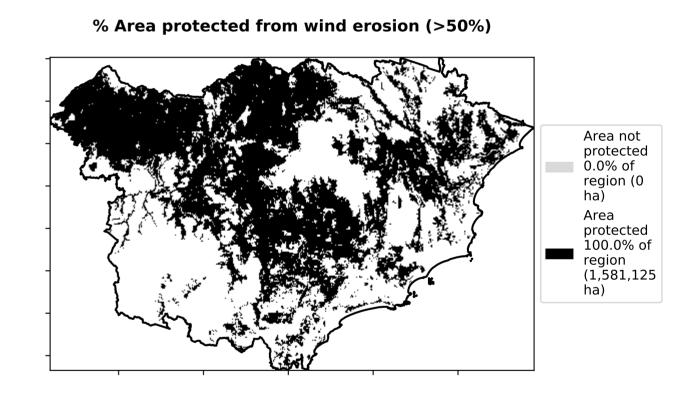


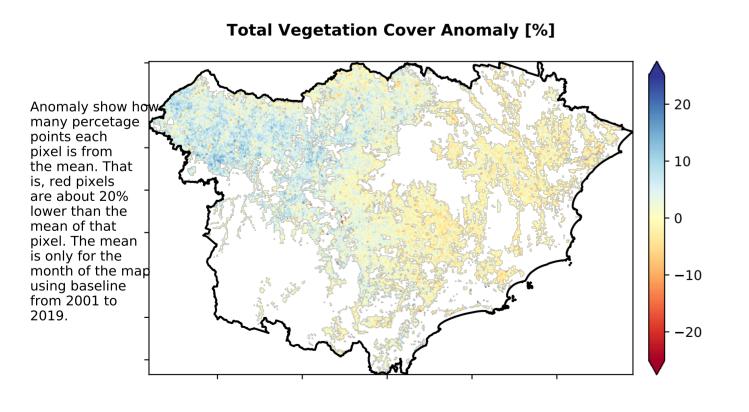


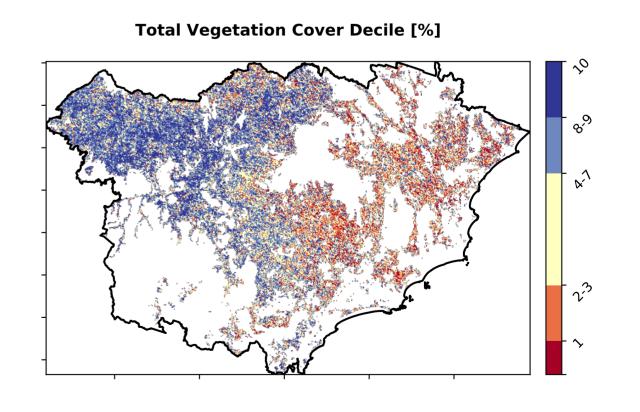
















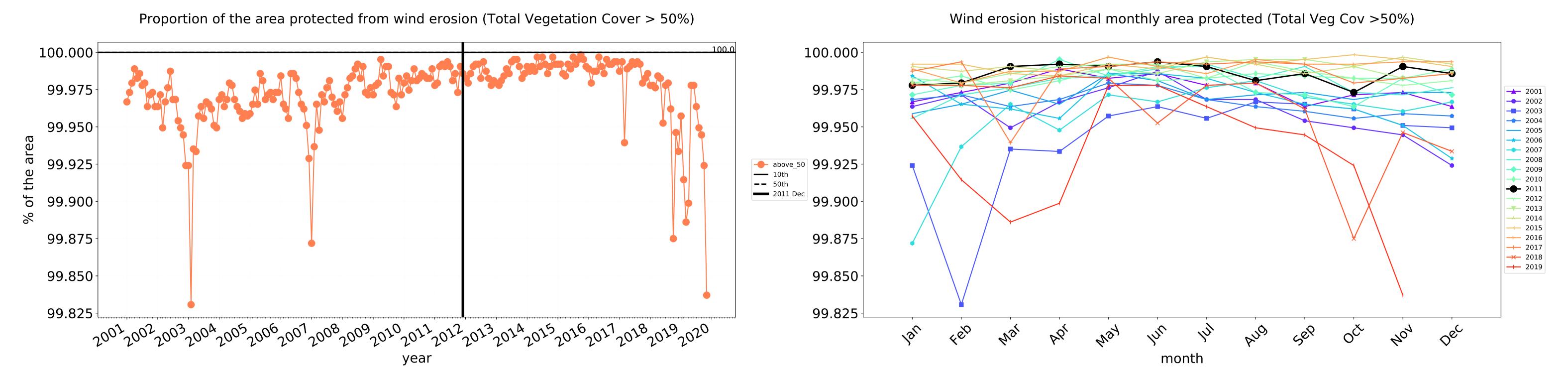


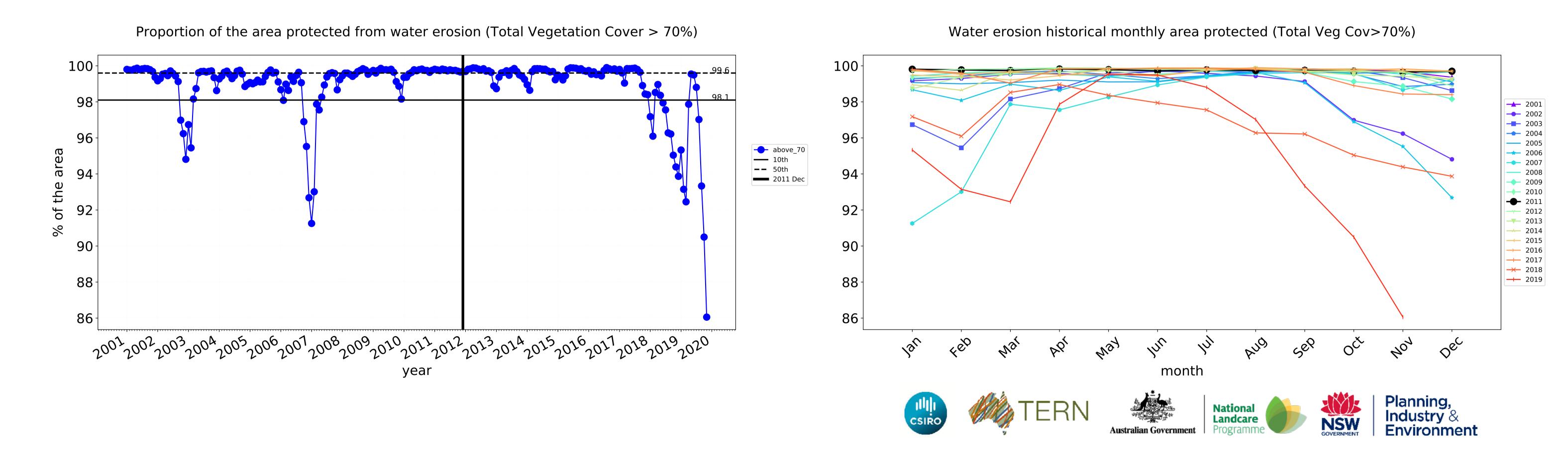


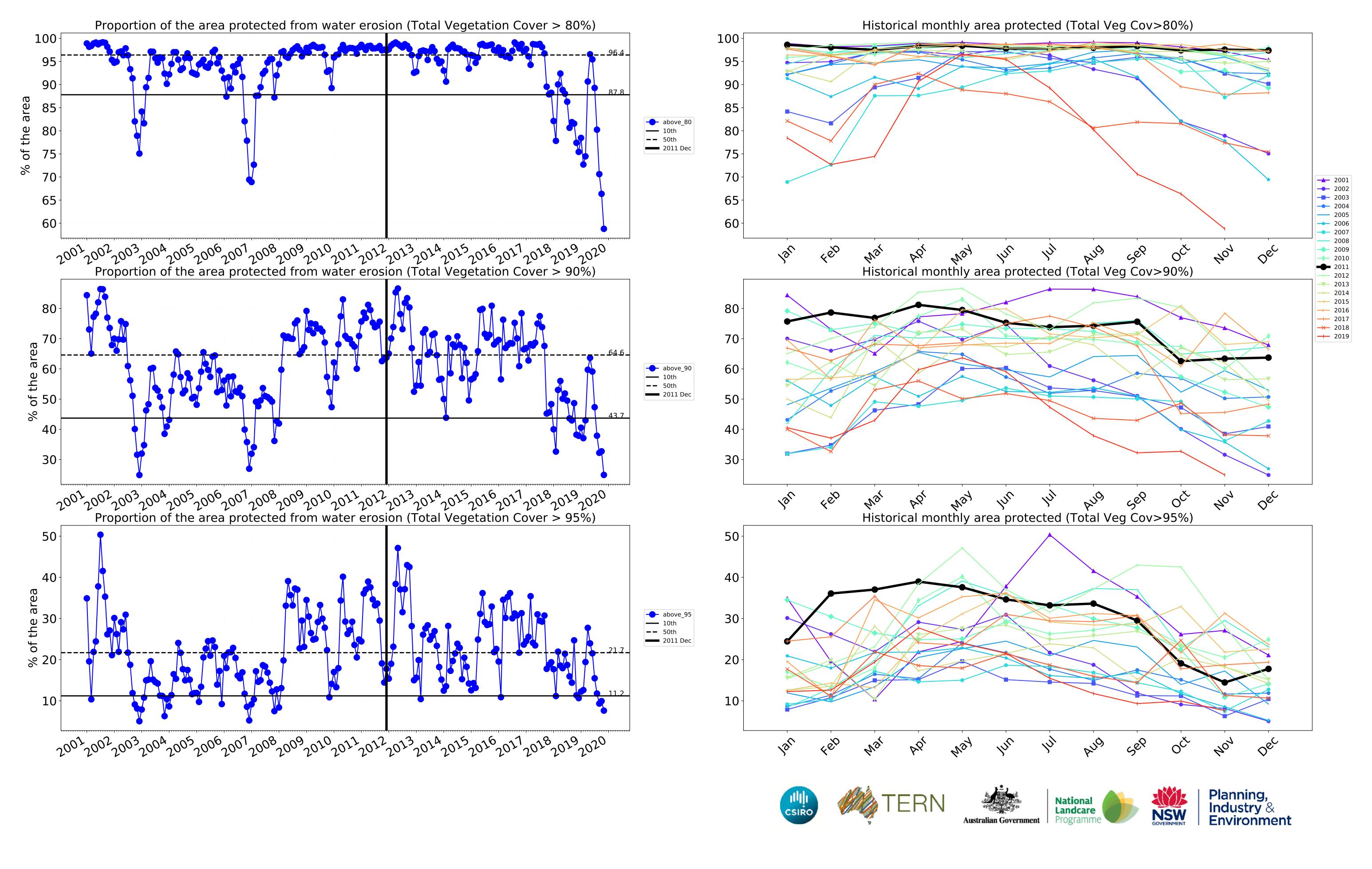




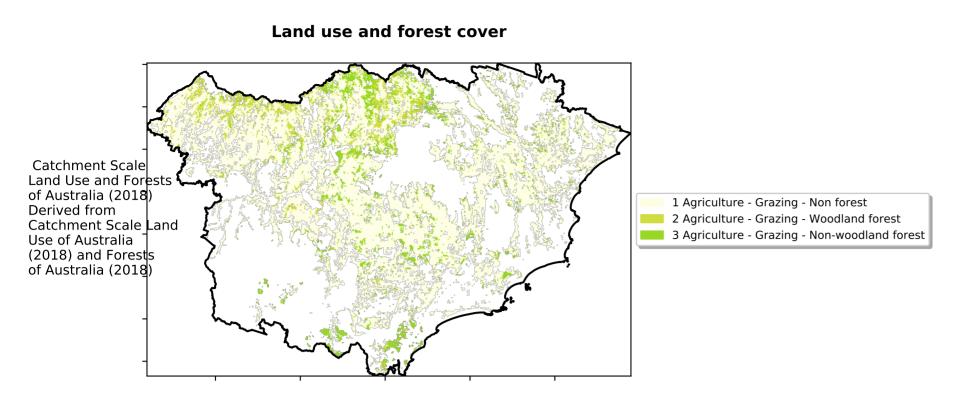
Agriculture timeseries



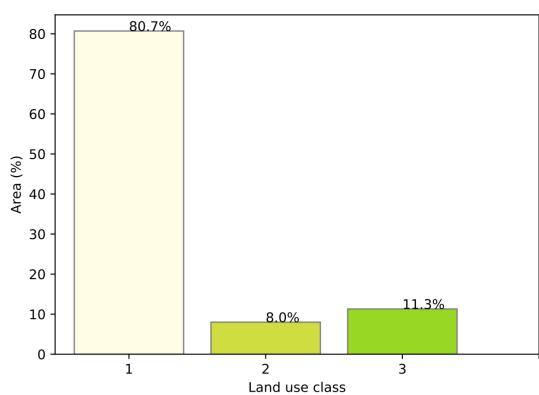




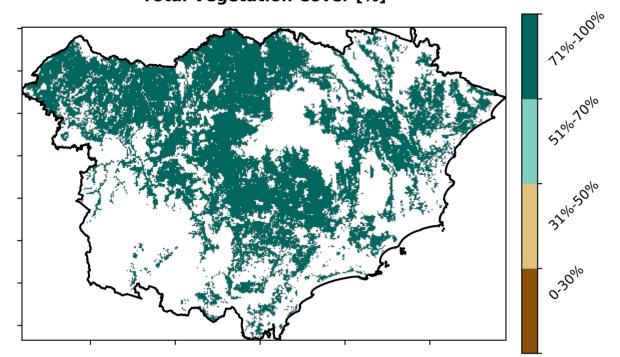
Grazing



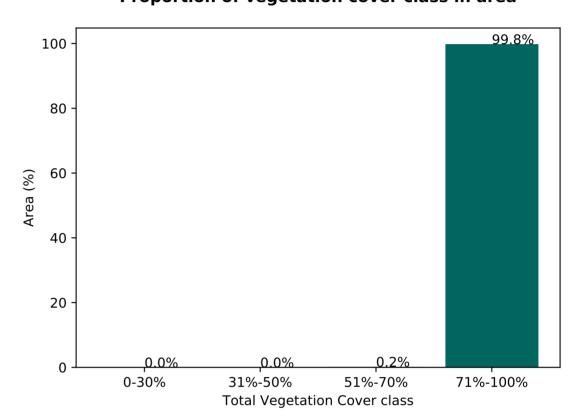
Proportion of each land class in area



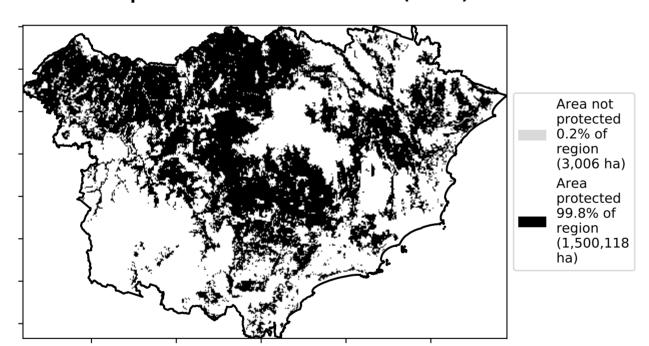
Total Vegetation Cover [%]



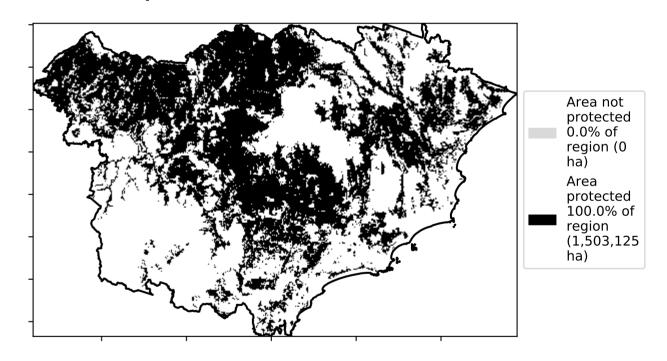
Proportion of vegetation cover class in area



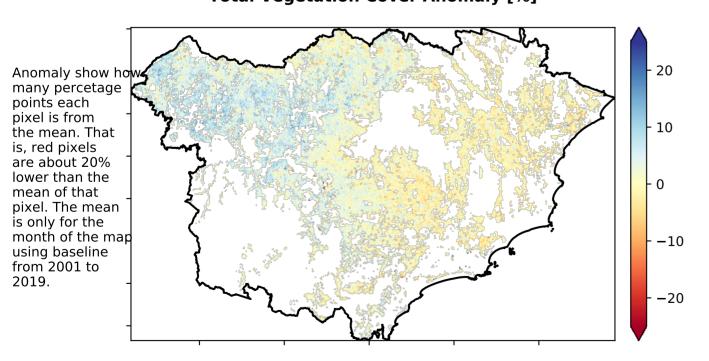
% Area protected from water erosion (>70%)

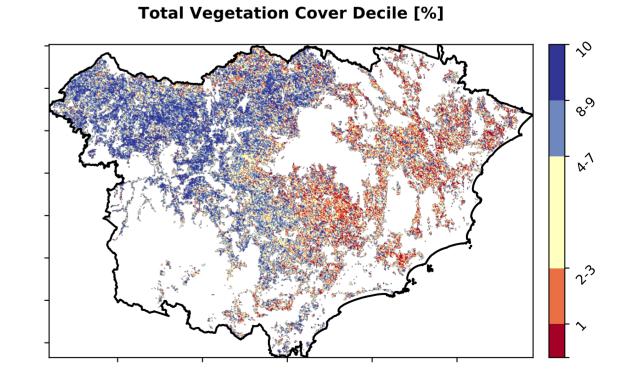


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]









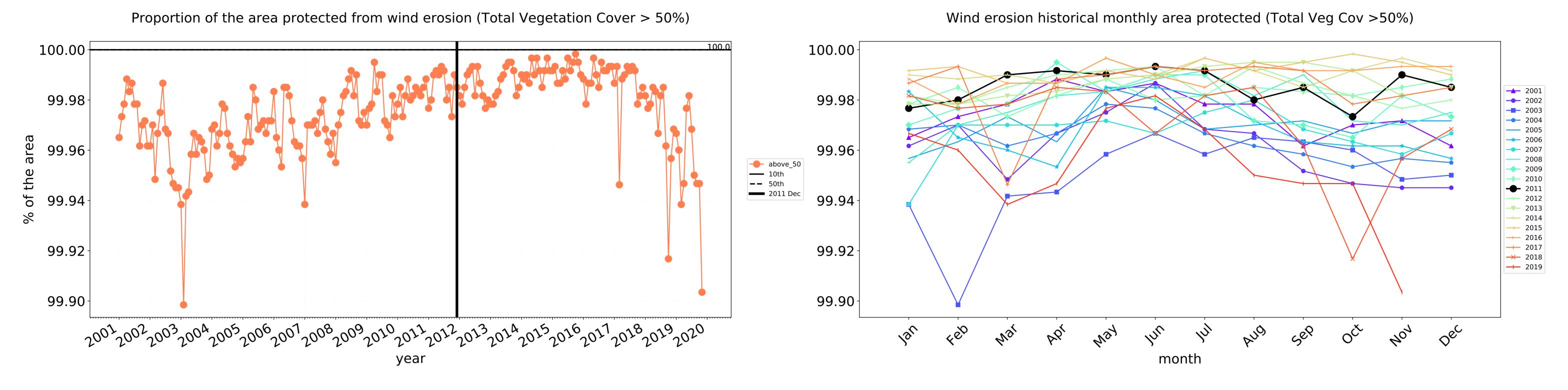


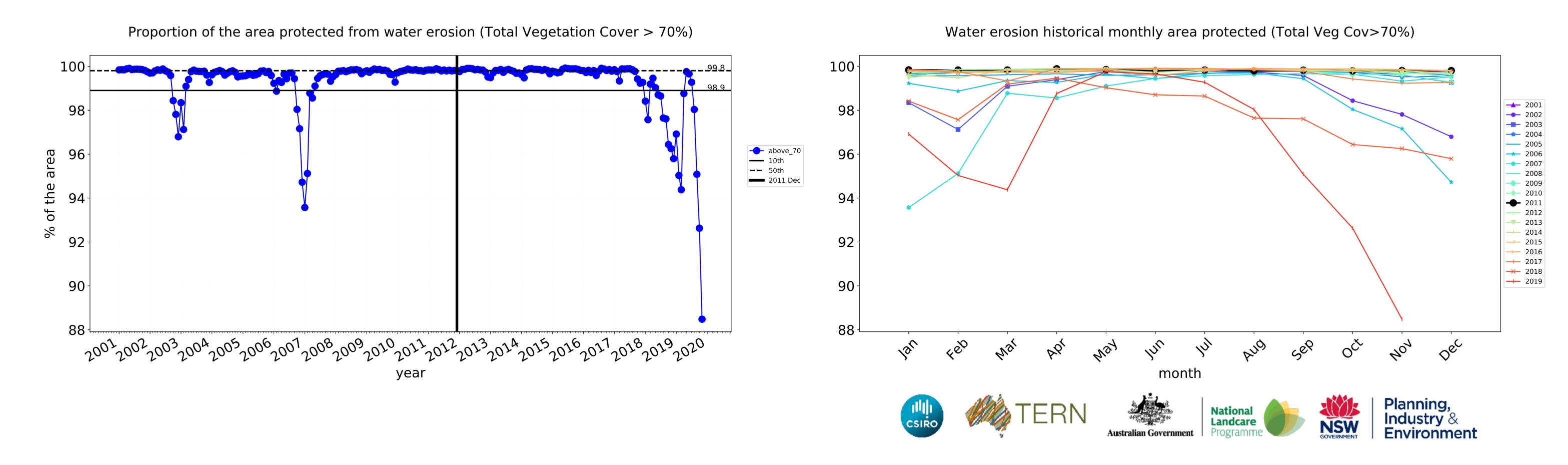


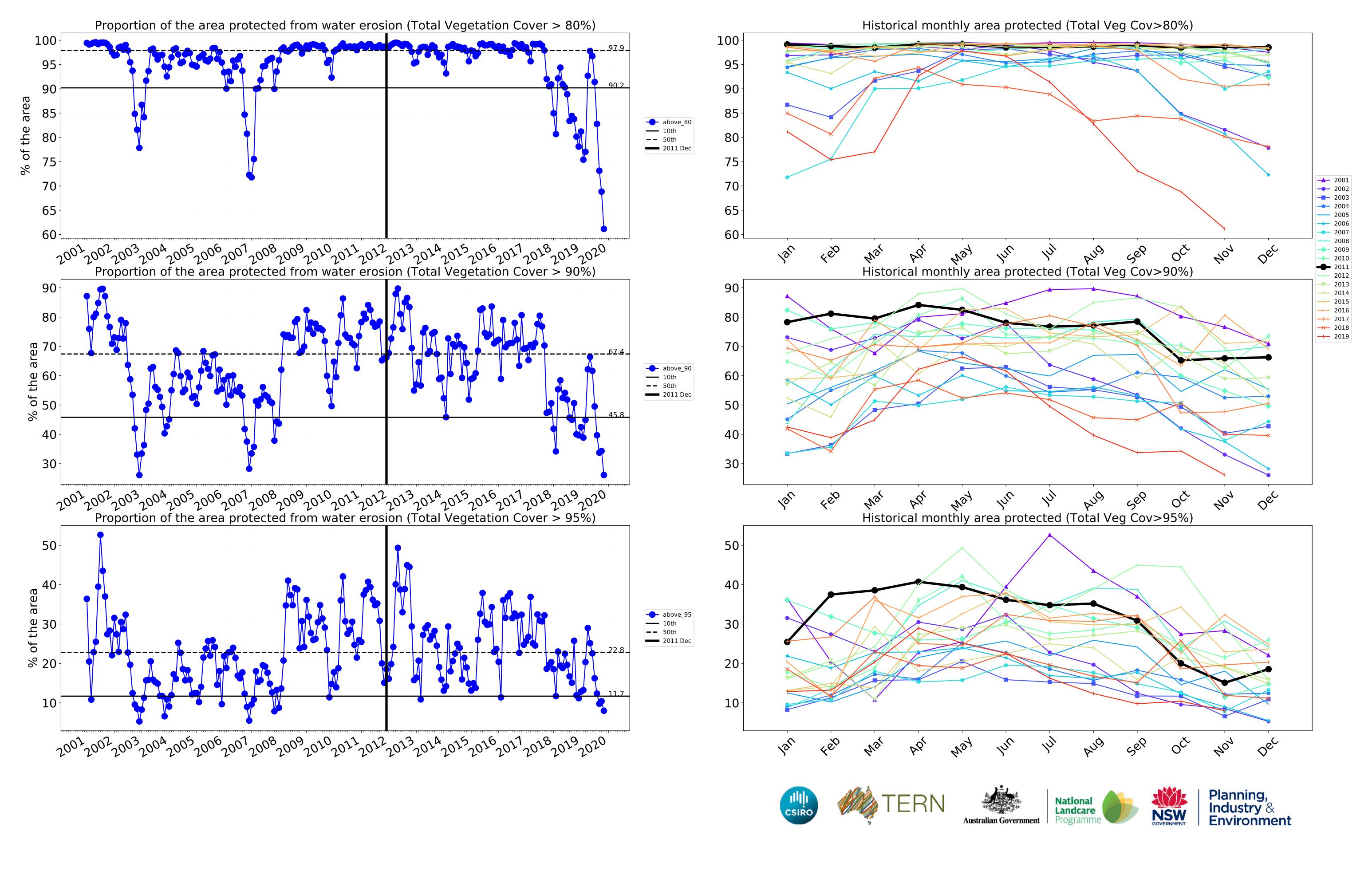




Grazing timeseries

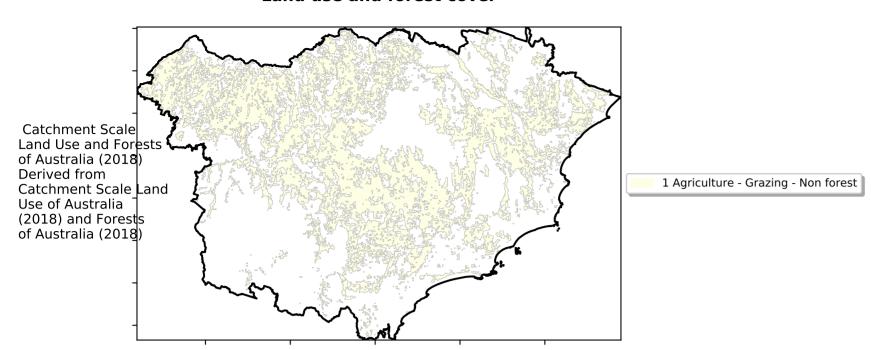




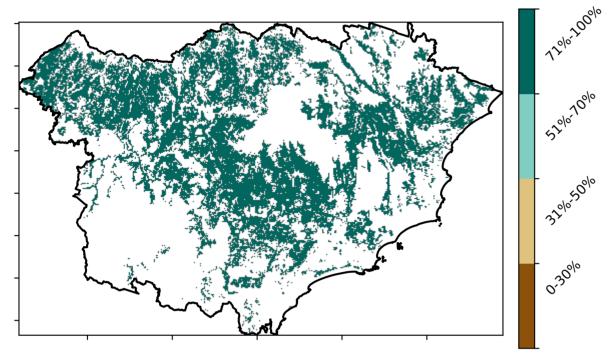


Grazing non forest

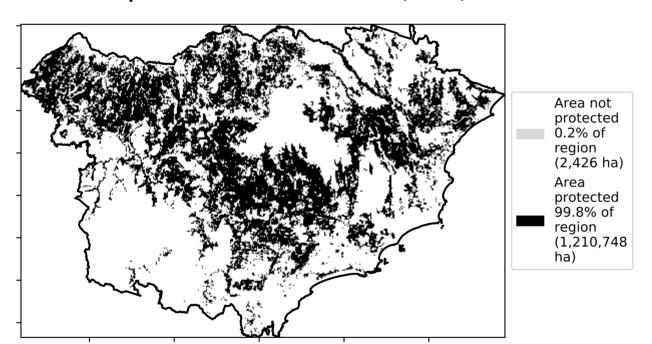
Land use and forest cover



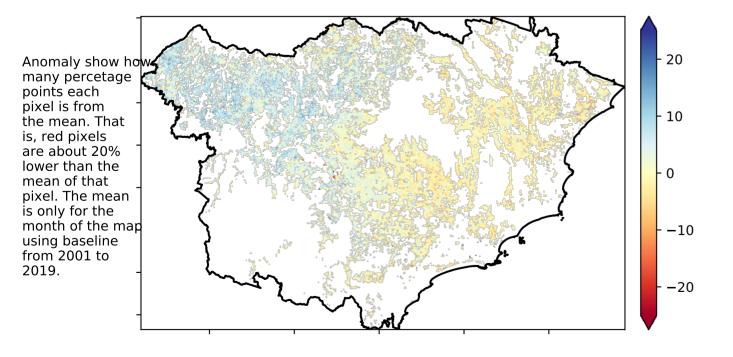
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

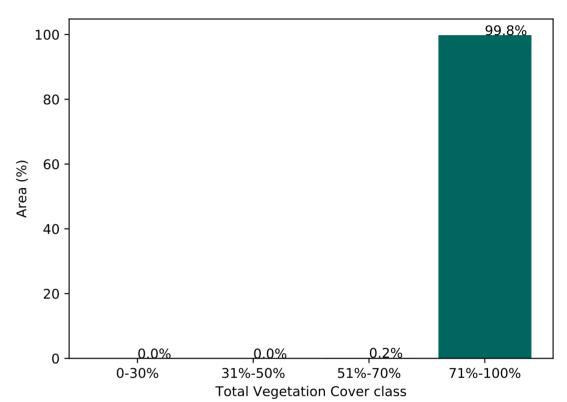


Total Vegetation Cover Anomaly [%]

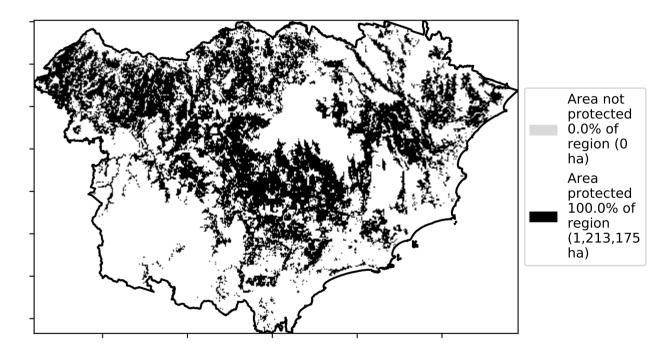


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

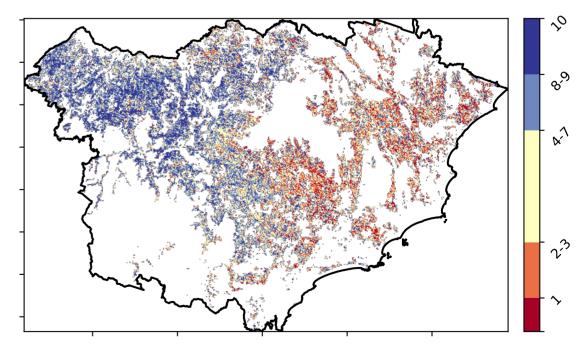
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







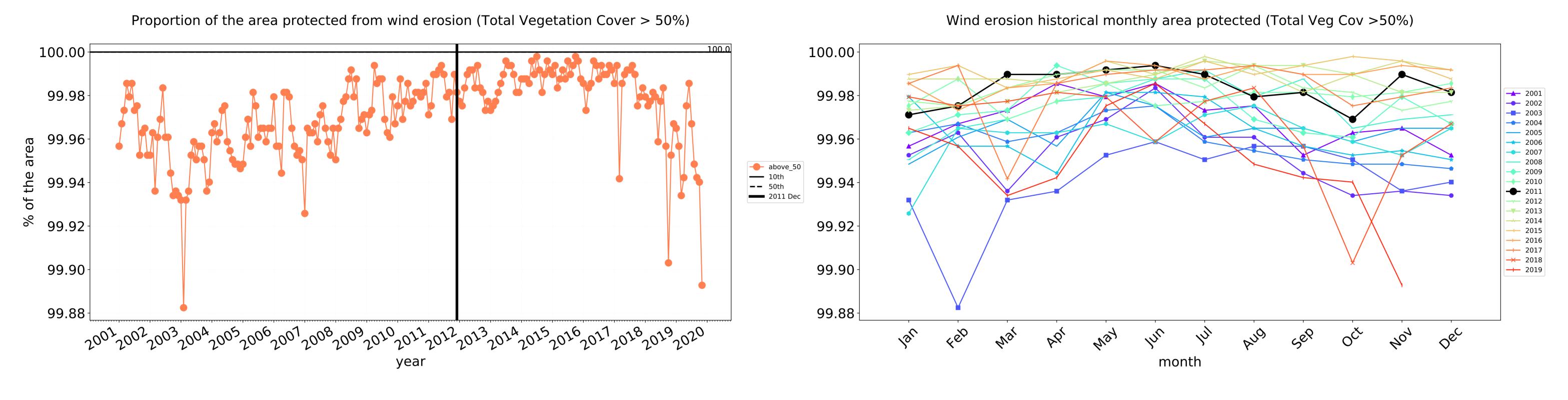


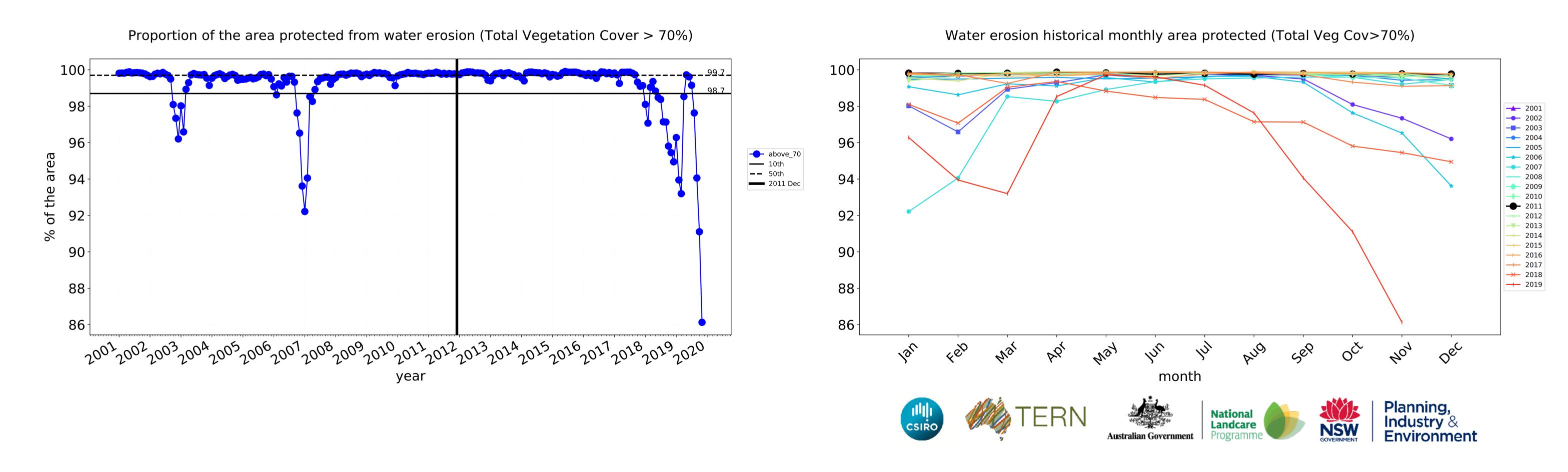


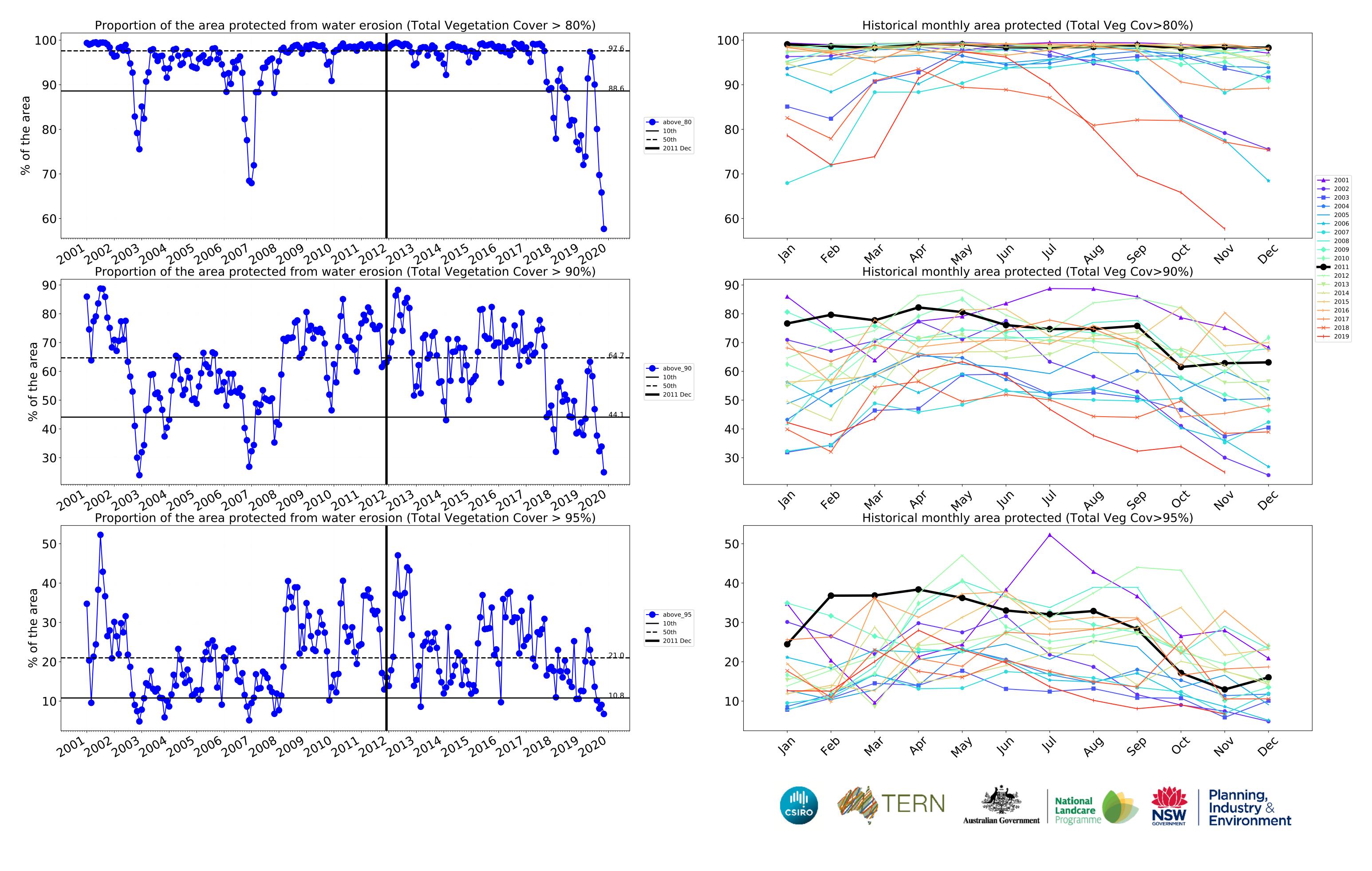




Grazing non forest timeseries





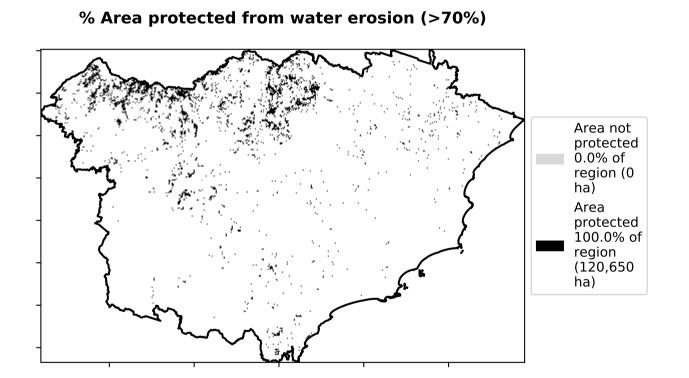


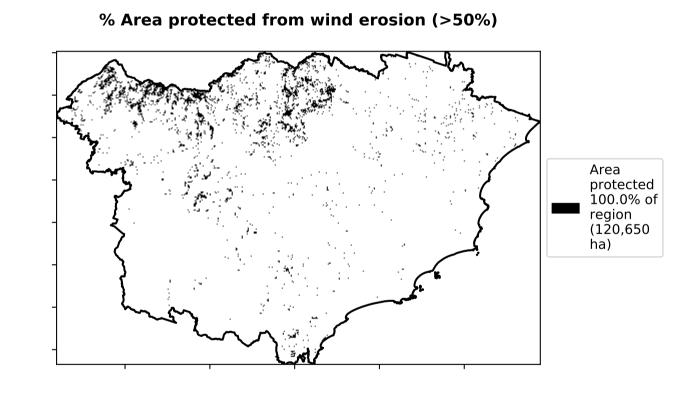
Grazing Woodland forest

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

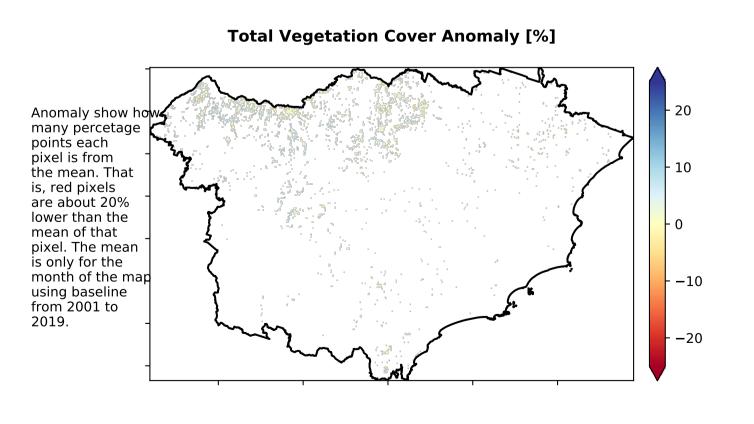
Total Vegetation Cover [%]

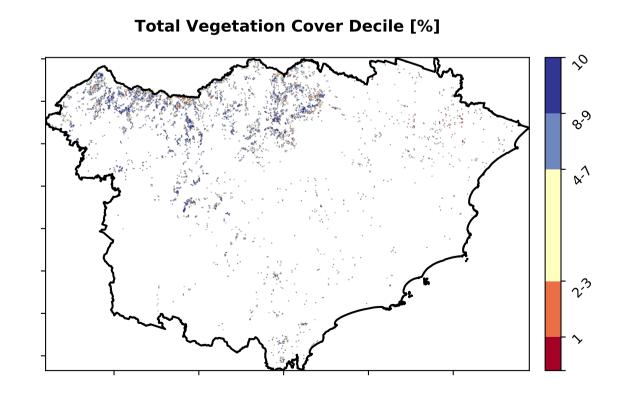
100.0% 100 Area (%) 60 40 20 -0.0% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**





Proportion of vegetation cover class in area









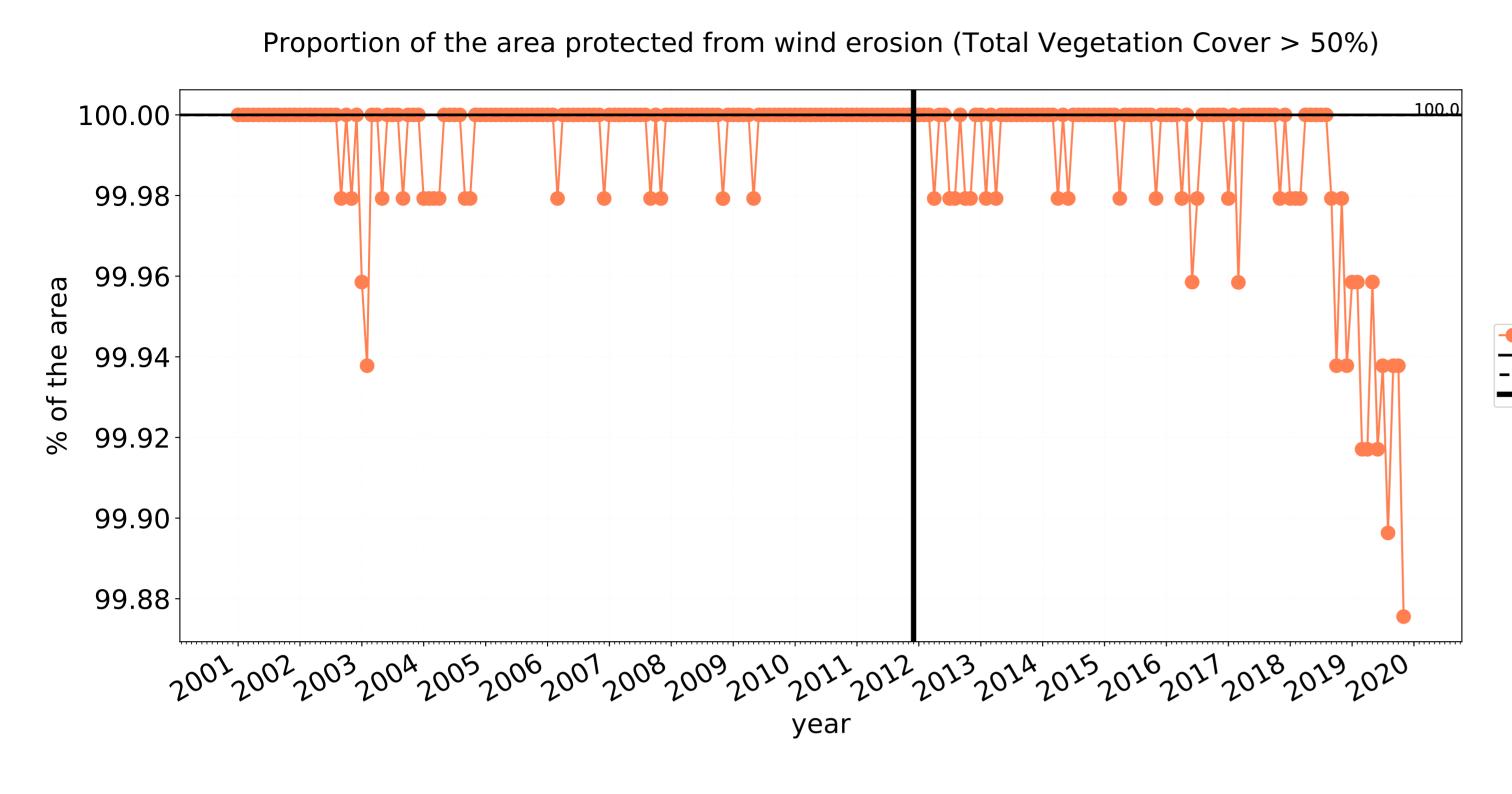


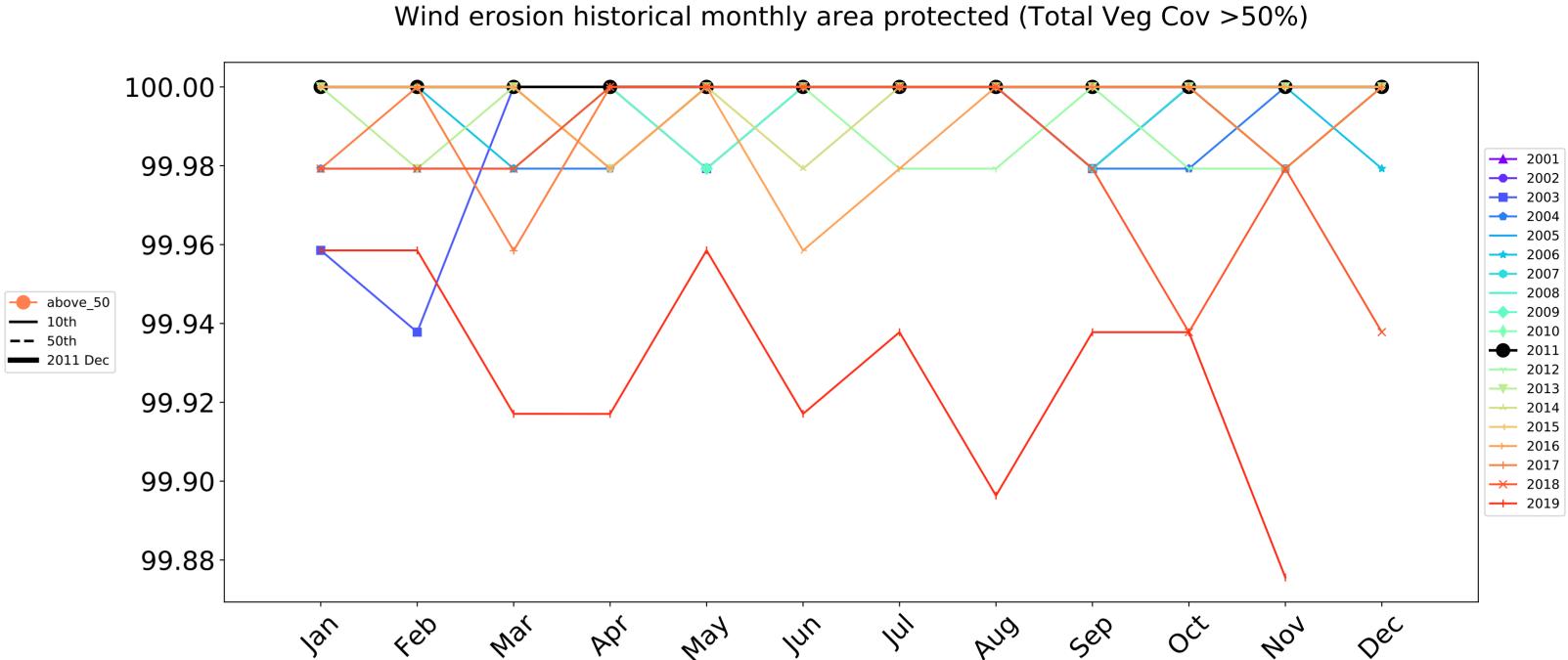




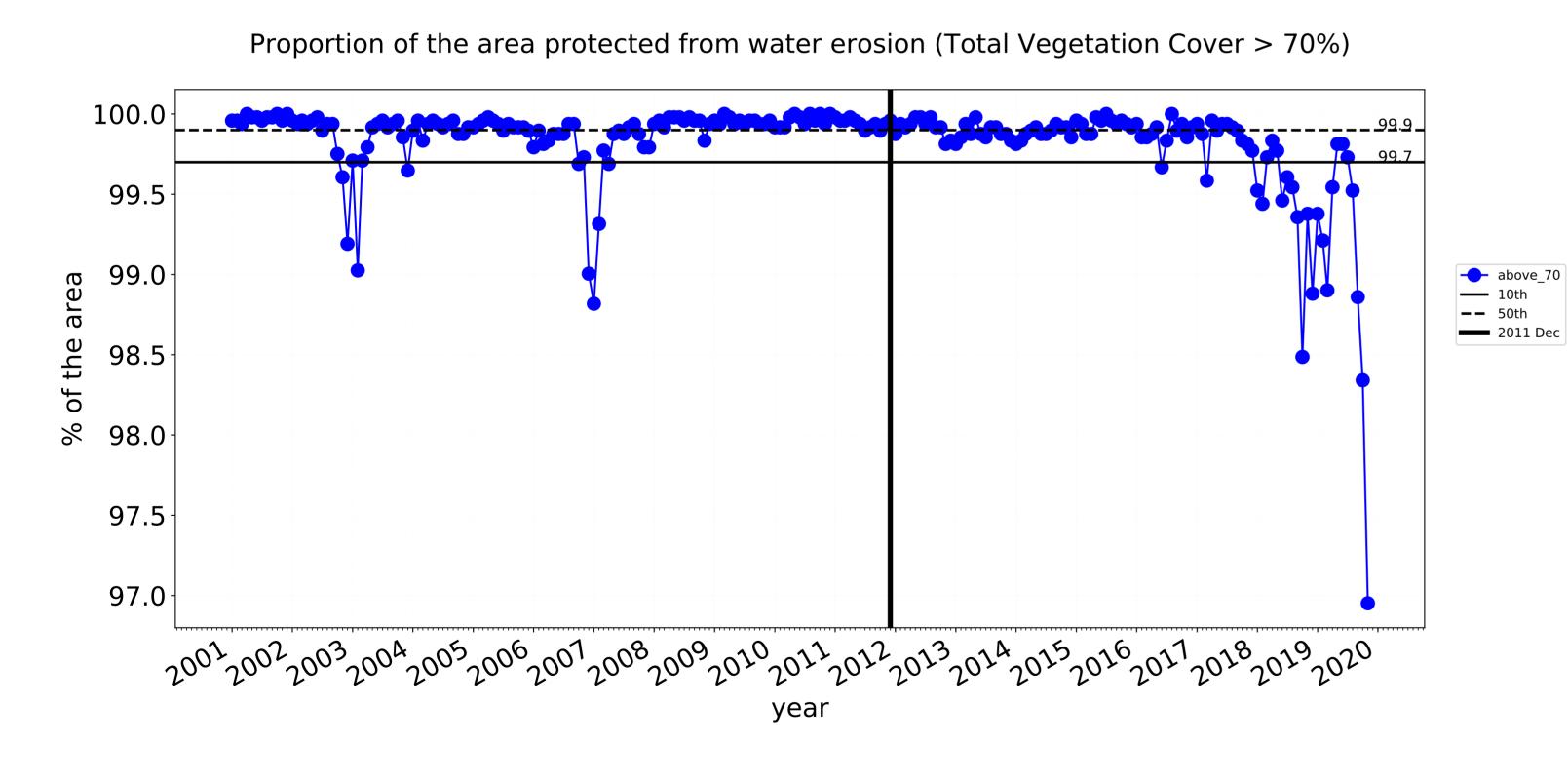


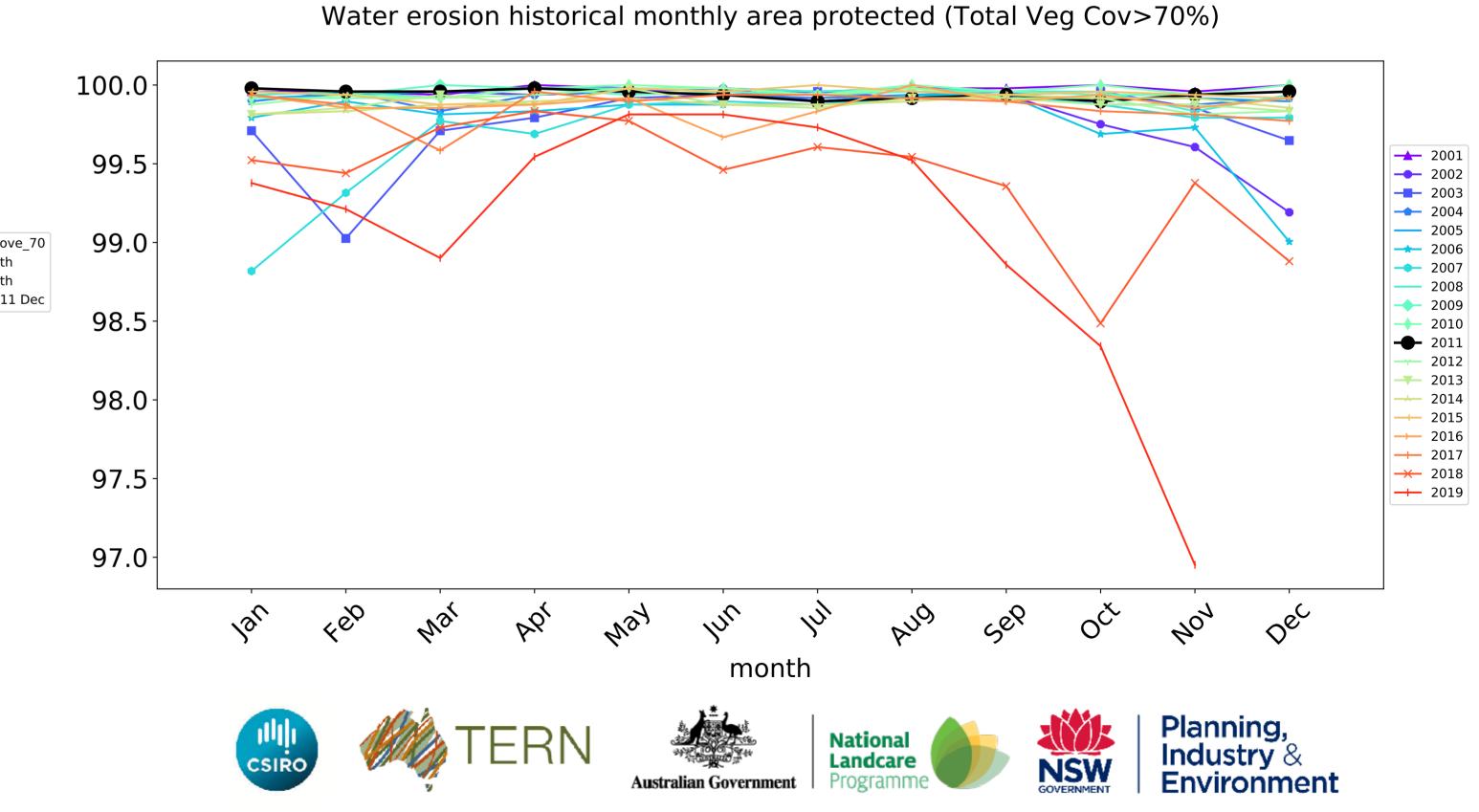
Grazing Woodland forest timeseries

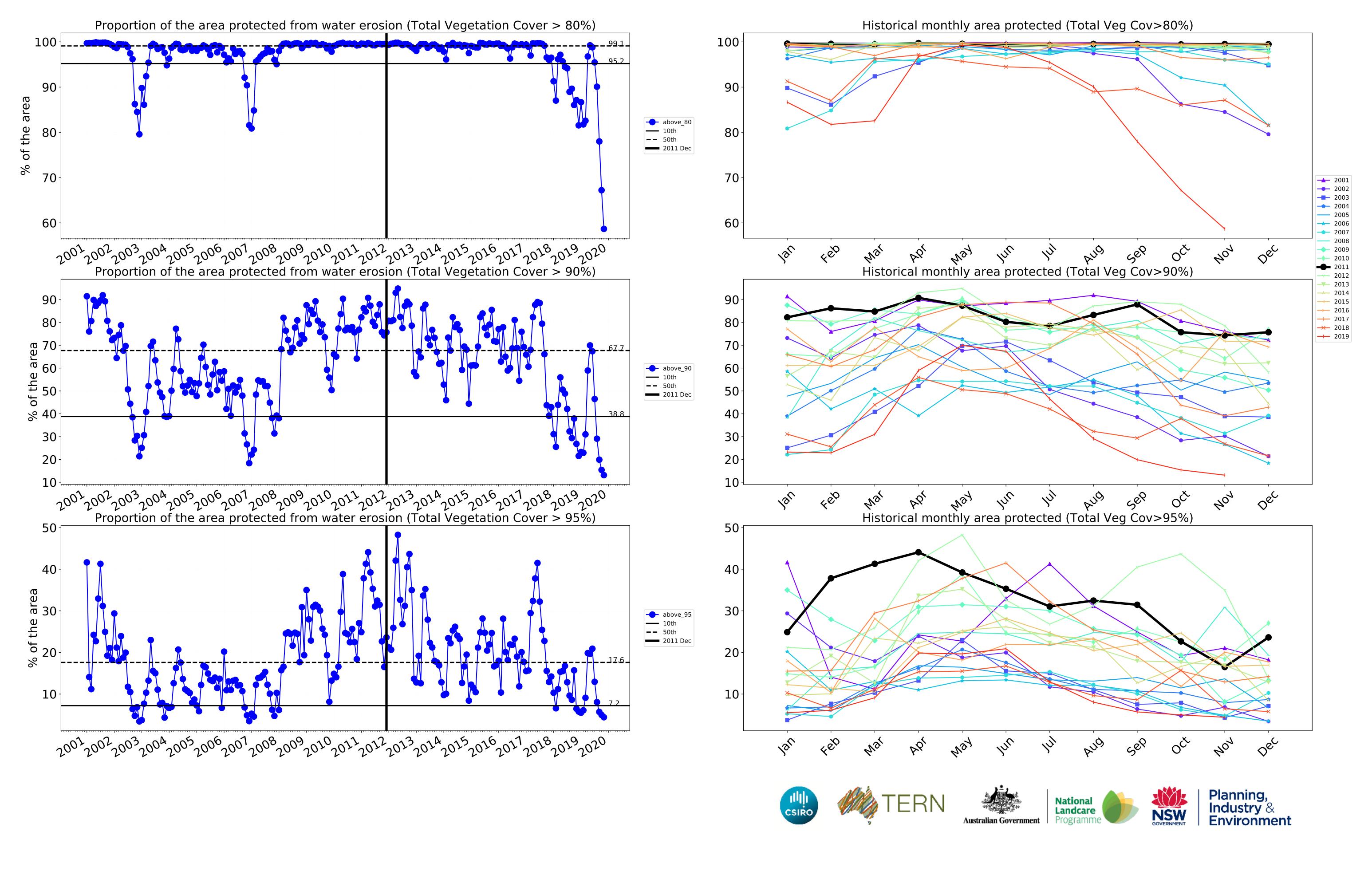




month





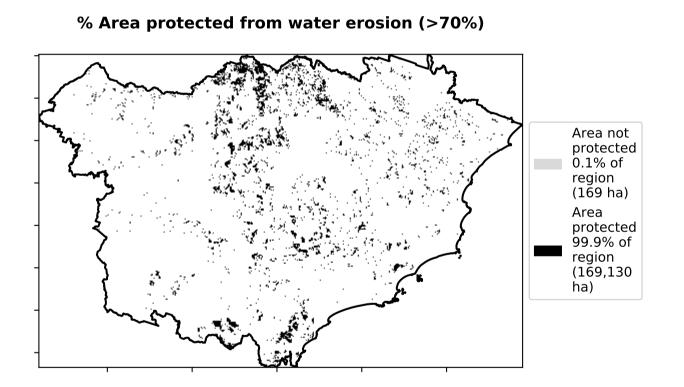


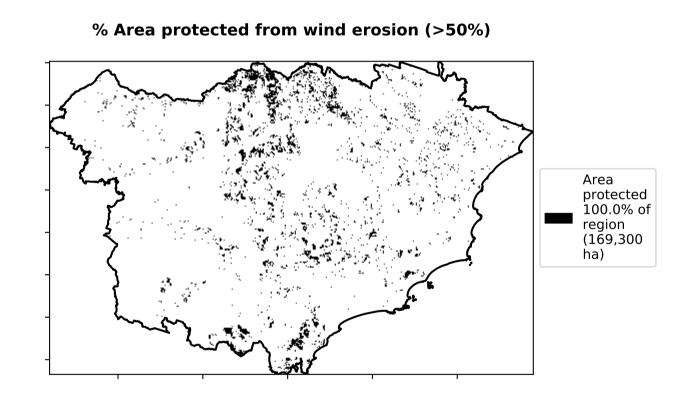
Grazing - Forest (non woodland)

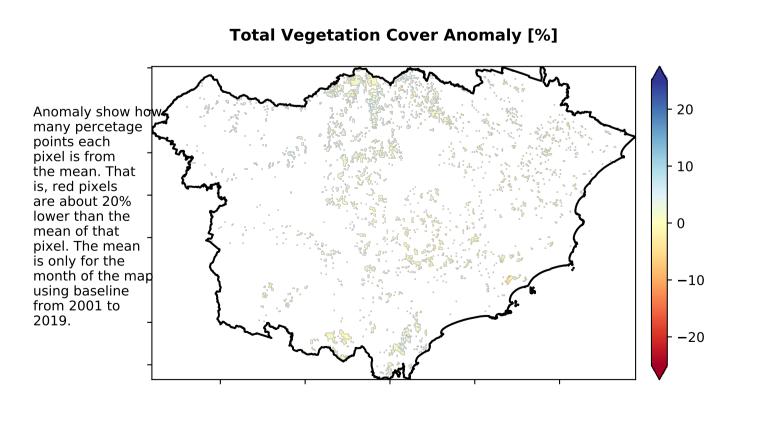
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Agriculture - Grazing - Non-woodland forest Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

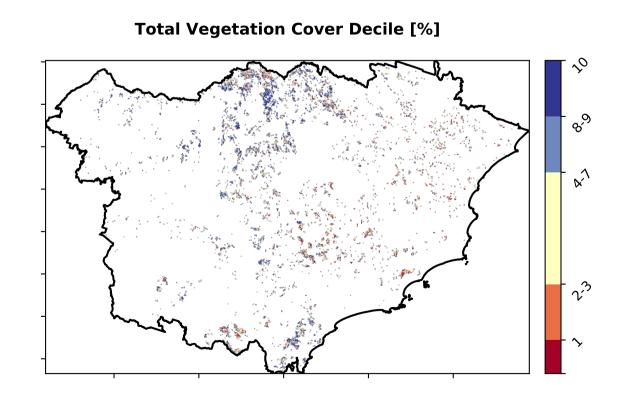
Total Vegetation Cover [%]

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











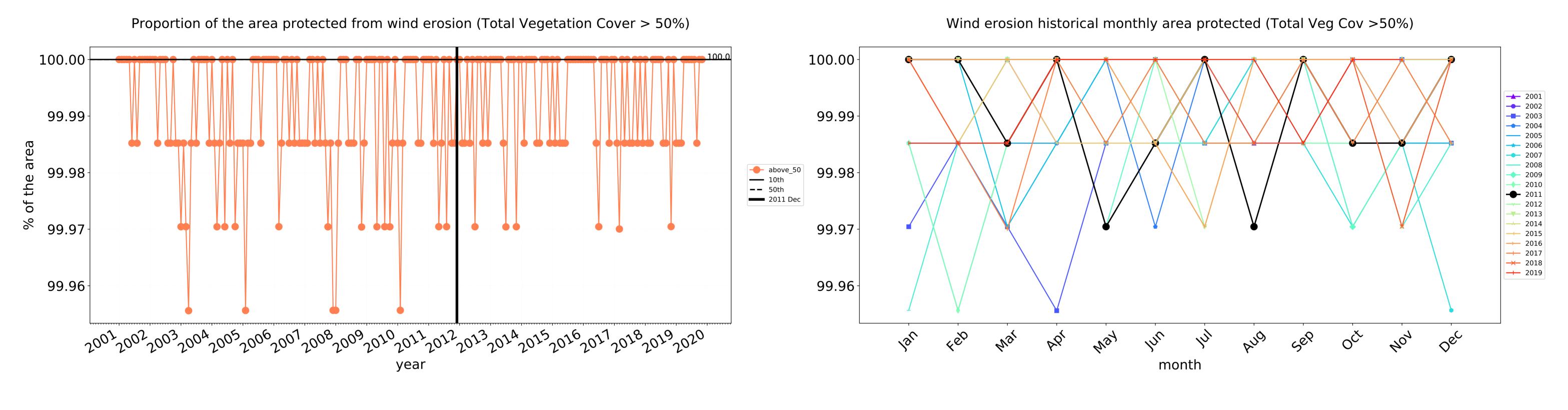


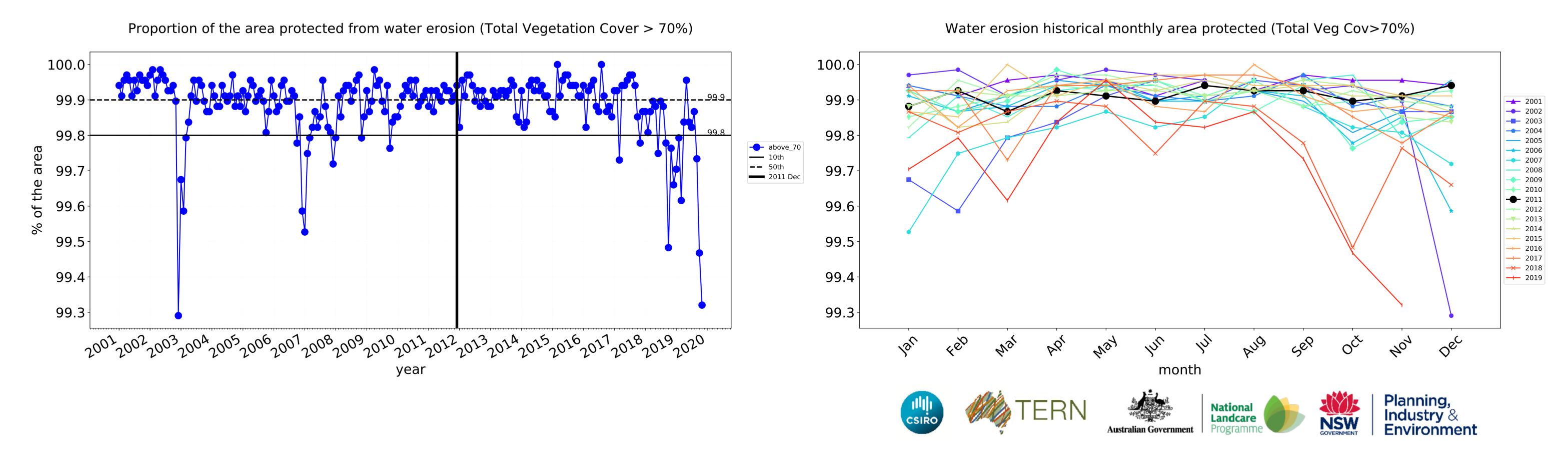


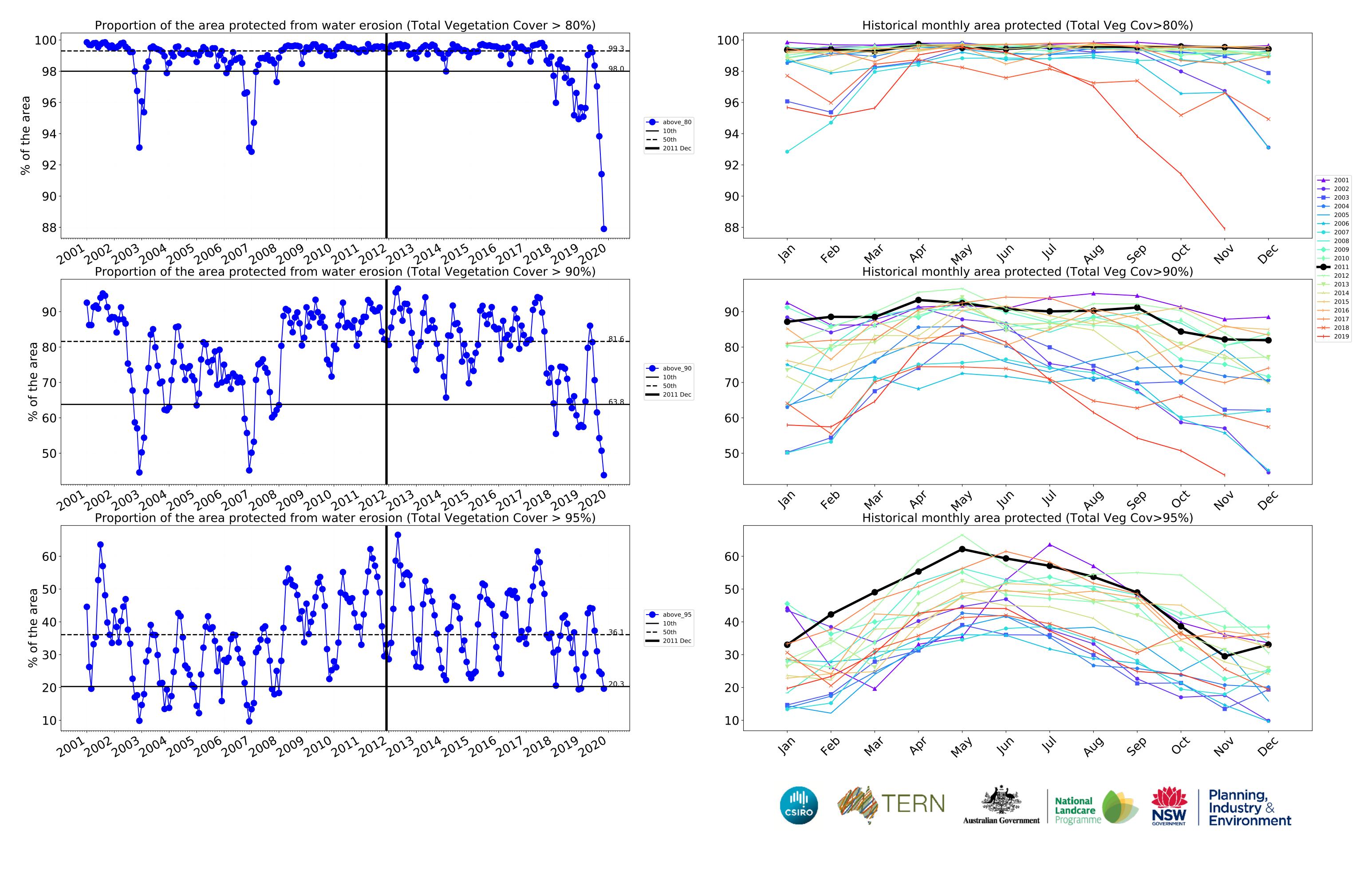






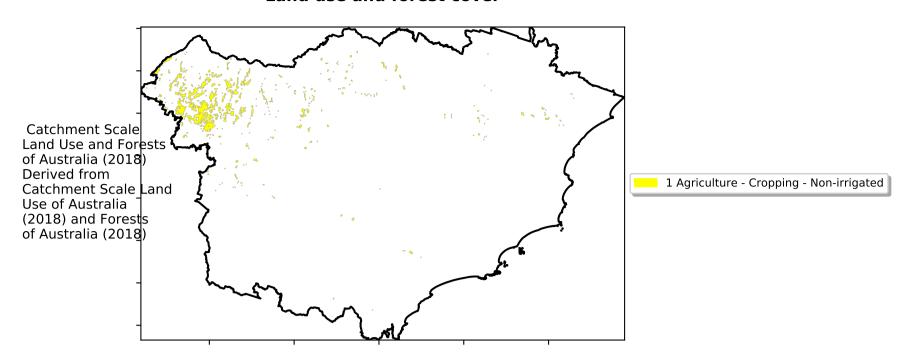




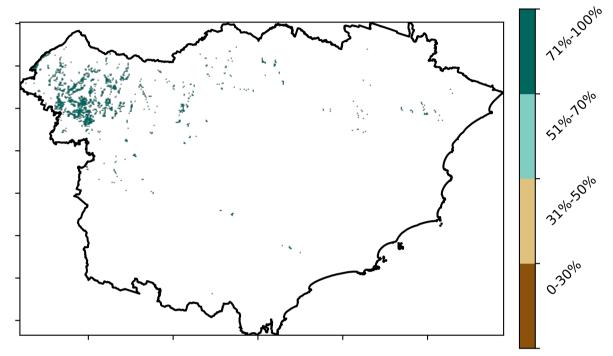


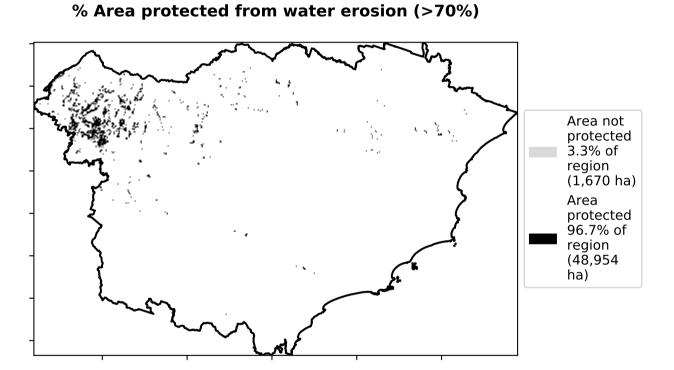
Cropping

Land use and forest cover

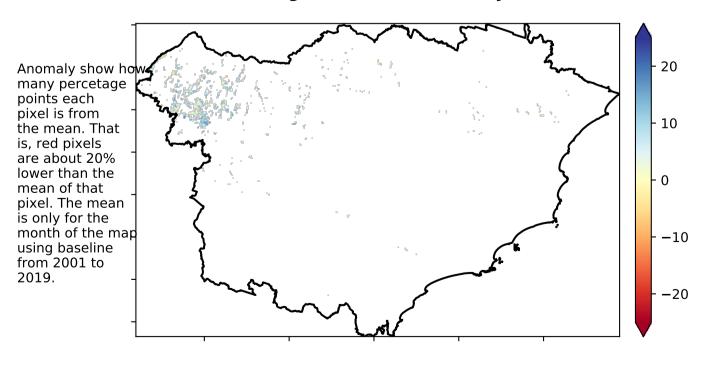


Total Vegetation Cover [%]



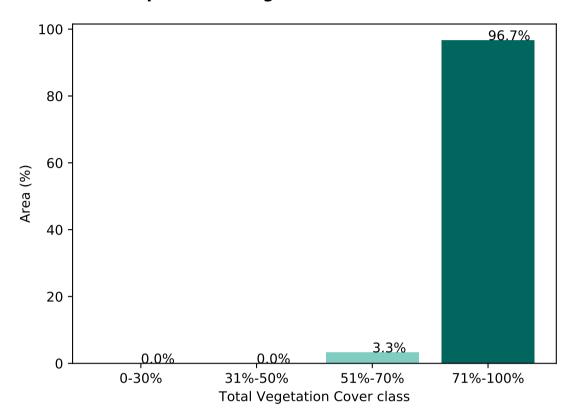


Total Vegetation Cover Anomaly [%]

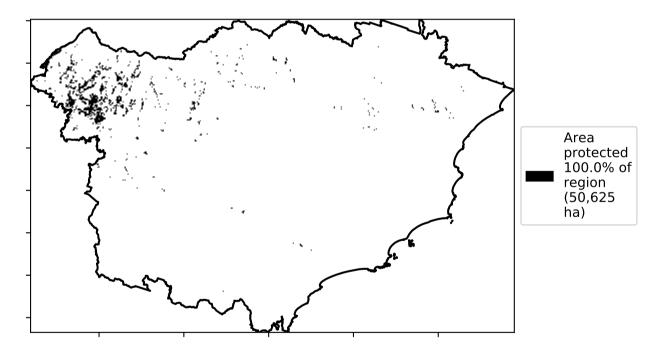


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

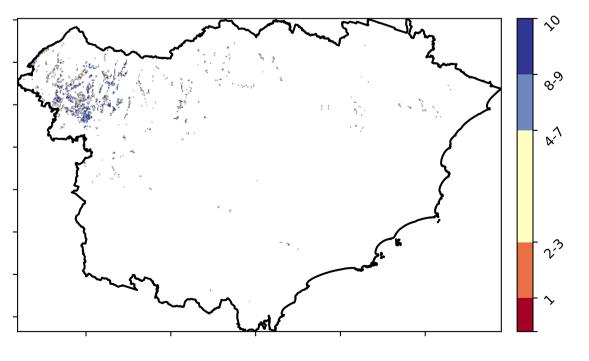
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







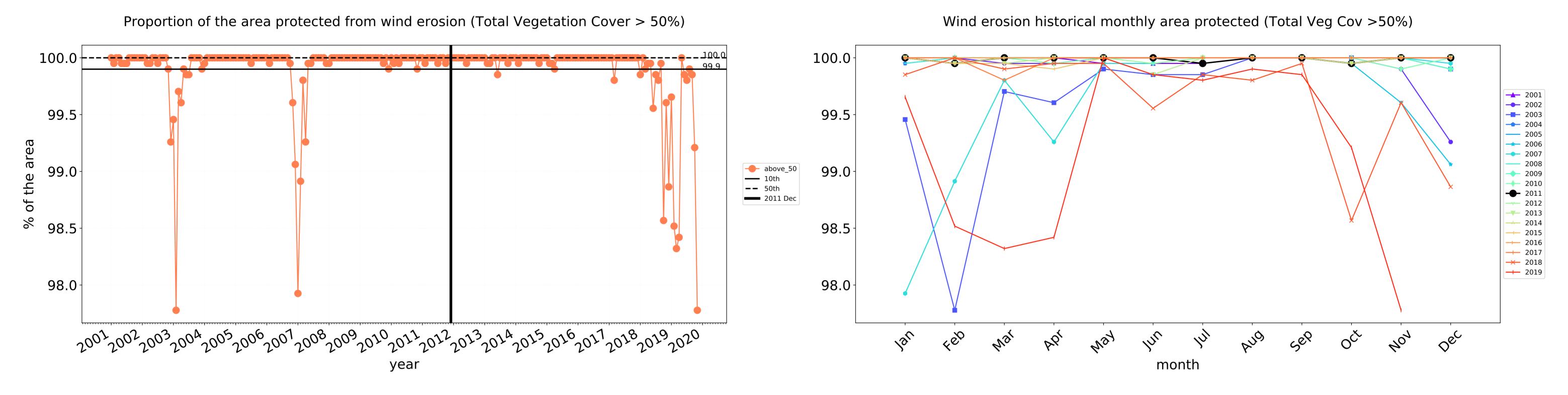


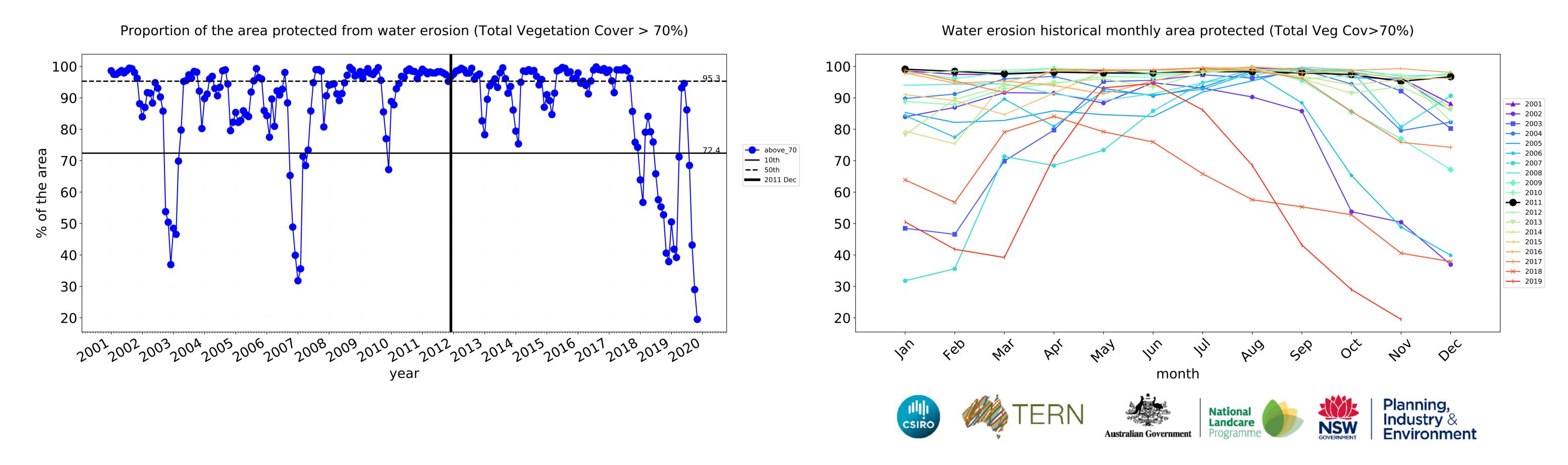


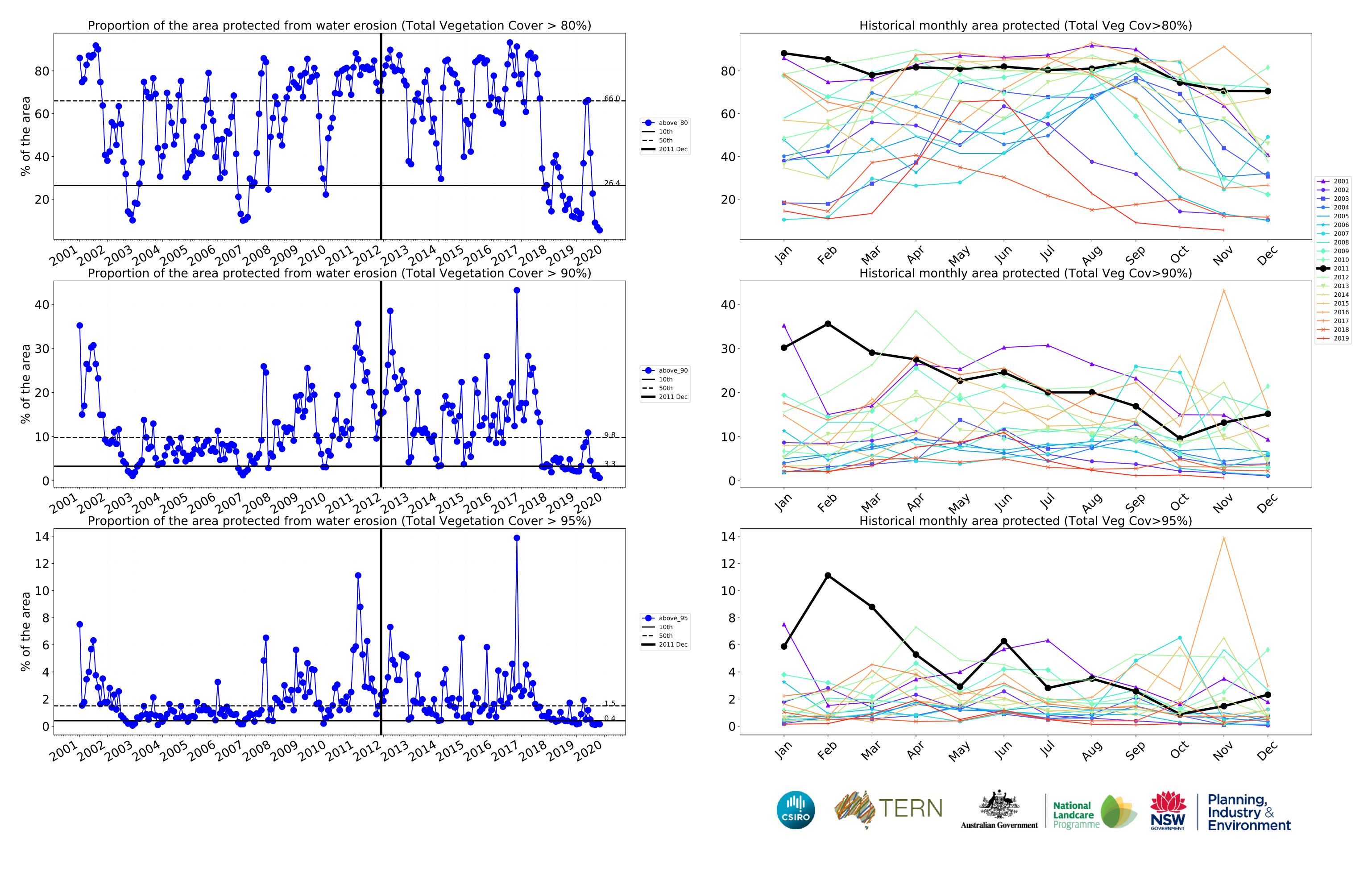




Cropping timeseries





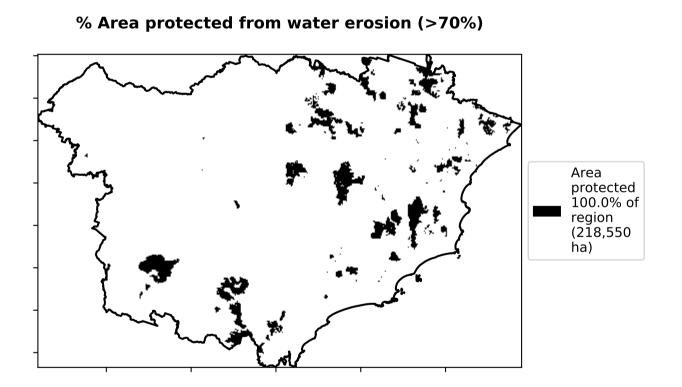


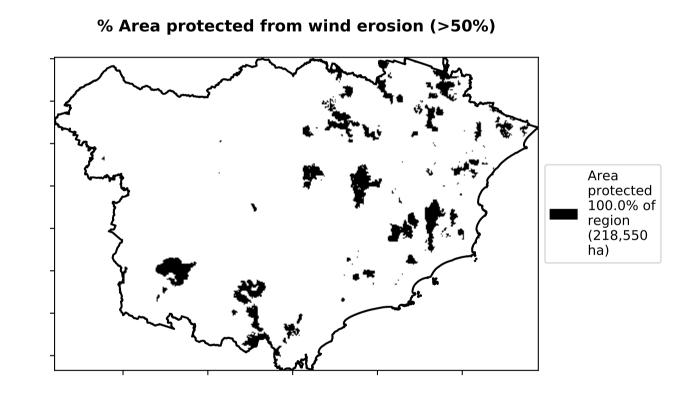
Production native forests and plantation forests

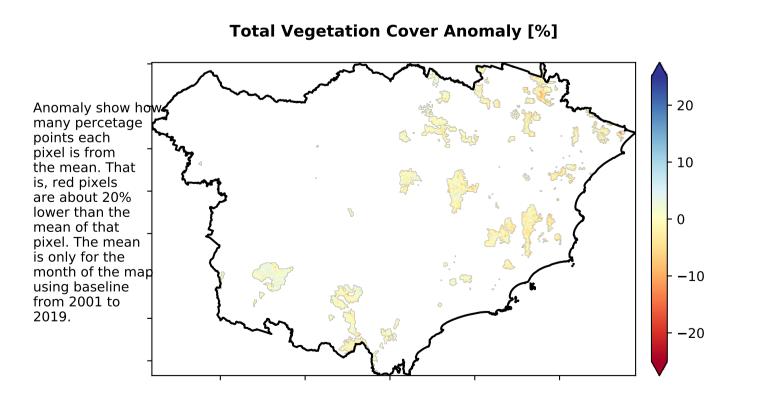
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) 1 Production native forests and plantation forests of Australia (2018)

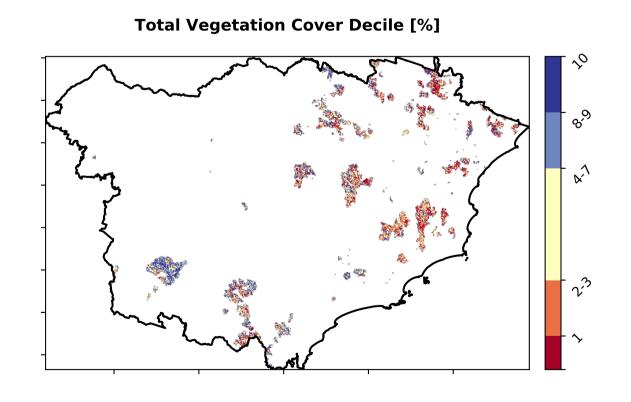
Total Vegetation Cover [%]

Proportion of vegetation cover class in area 100 - 100.0% 80 - 20 - 20 - 0.0% 0.0% 0.0% 0.0% Total Vegetation Cover class













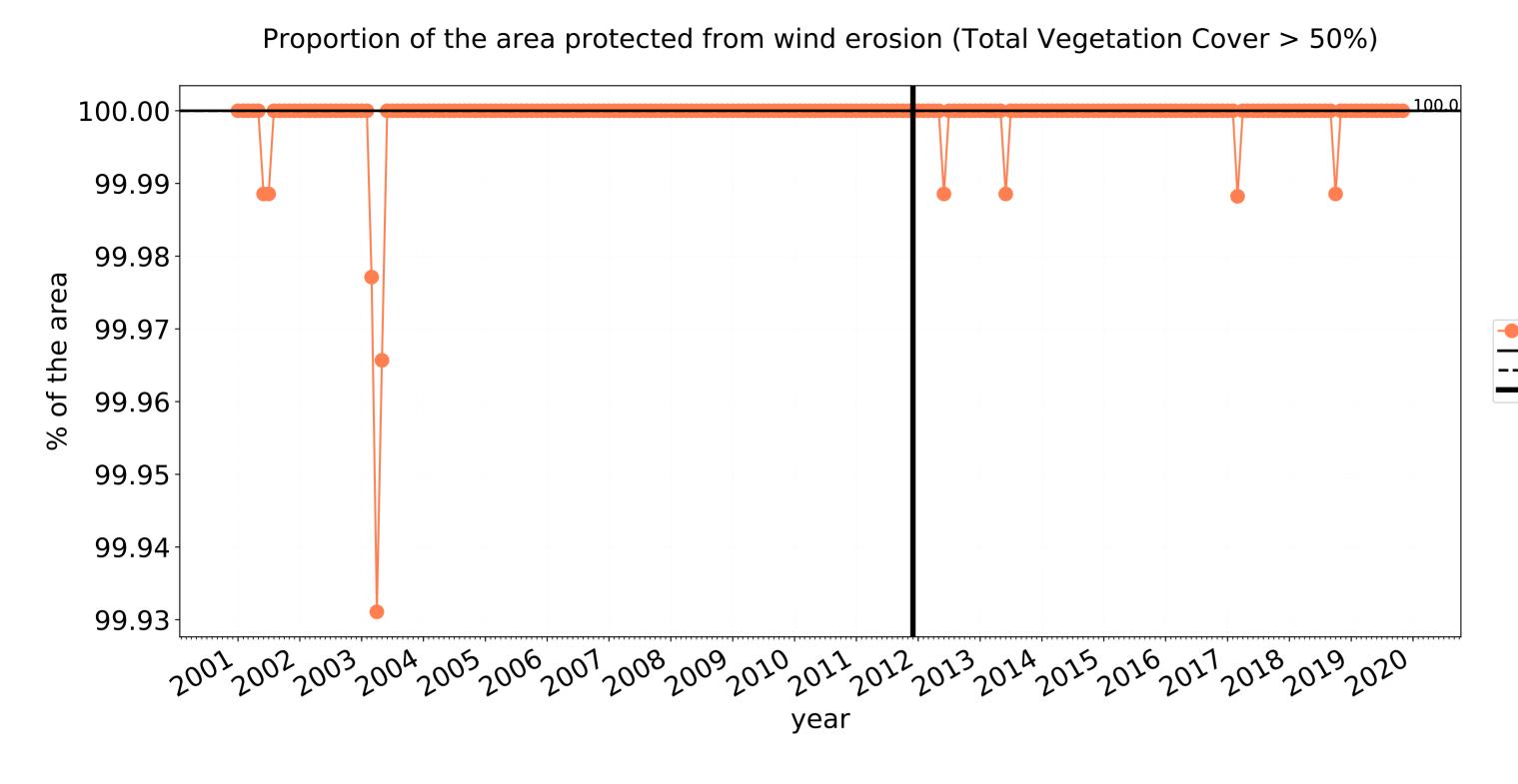


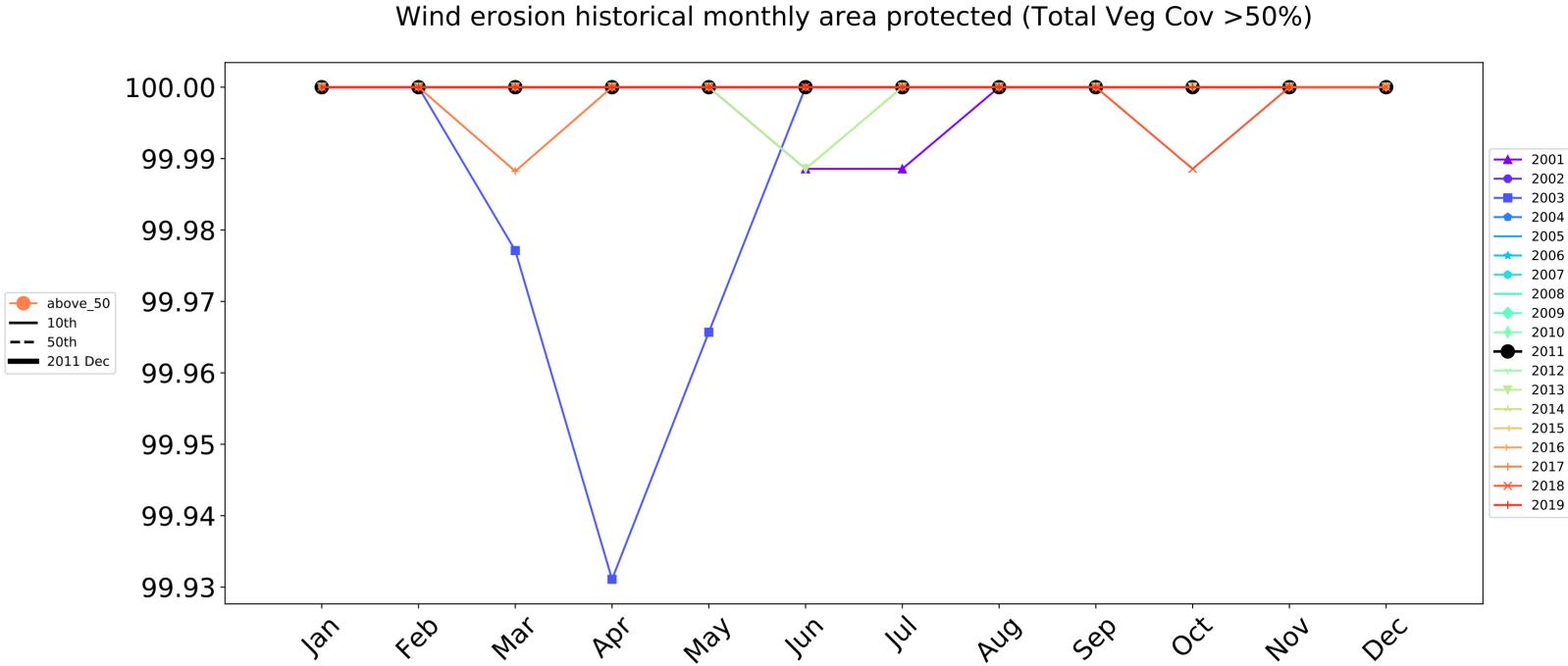




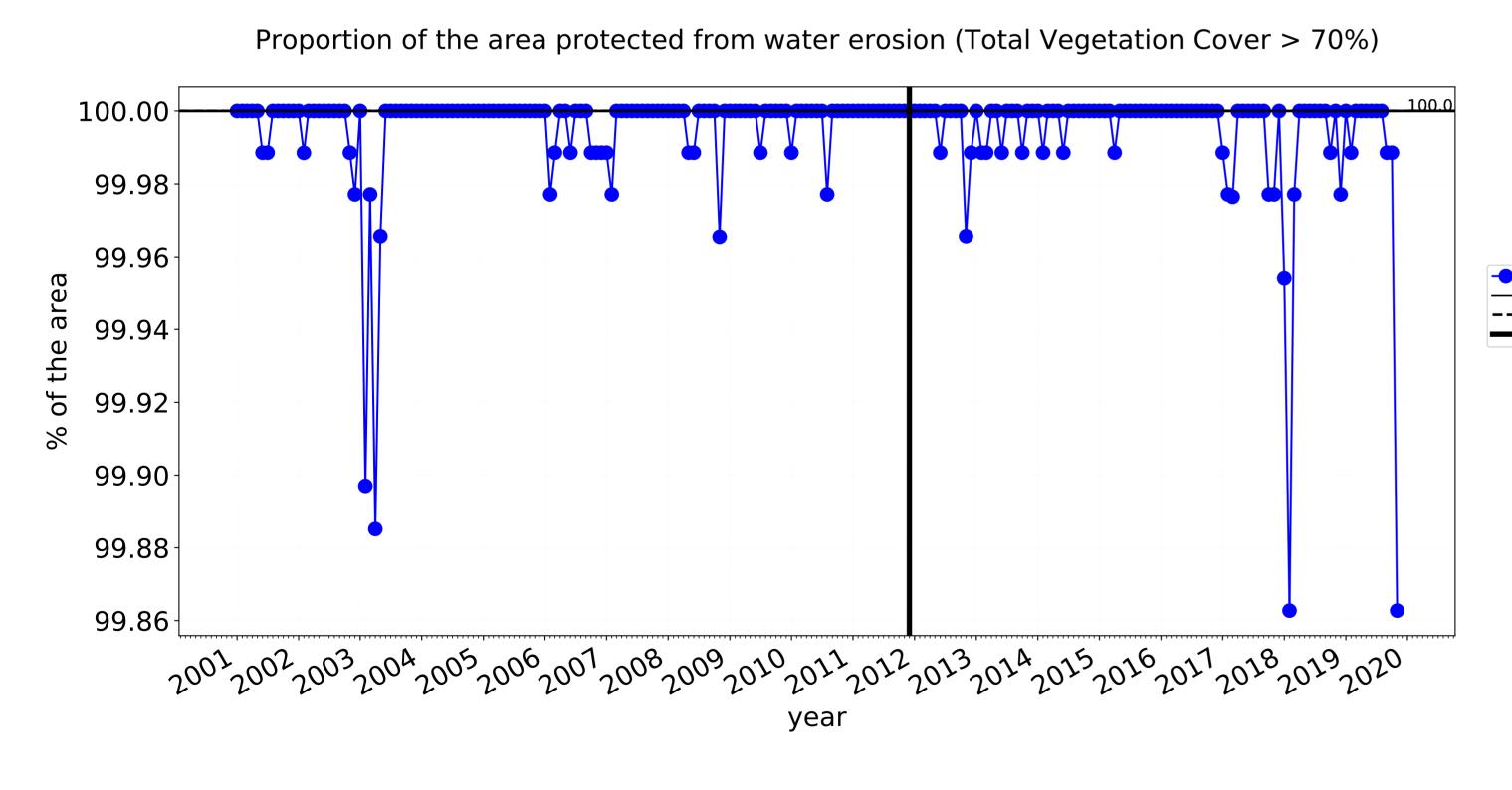


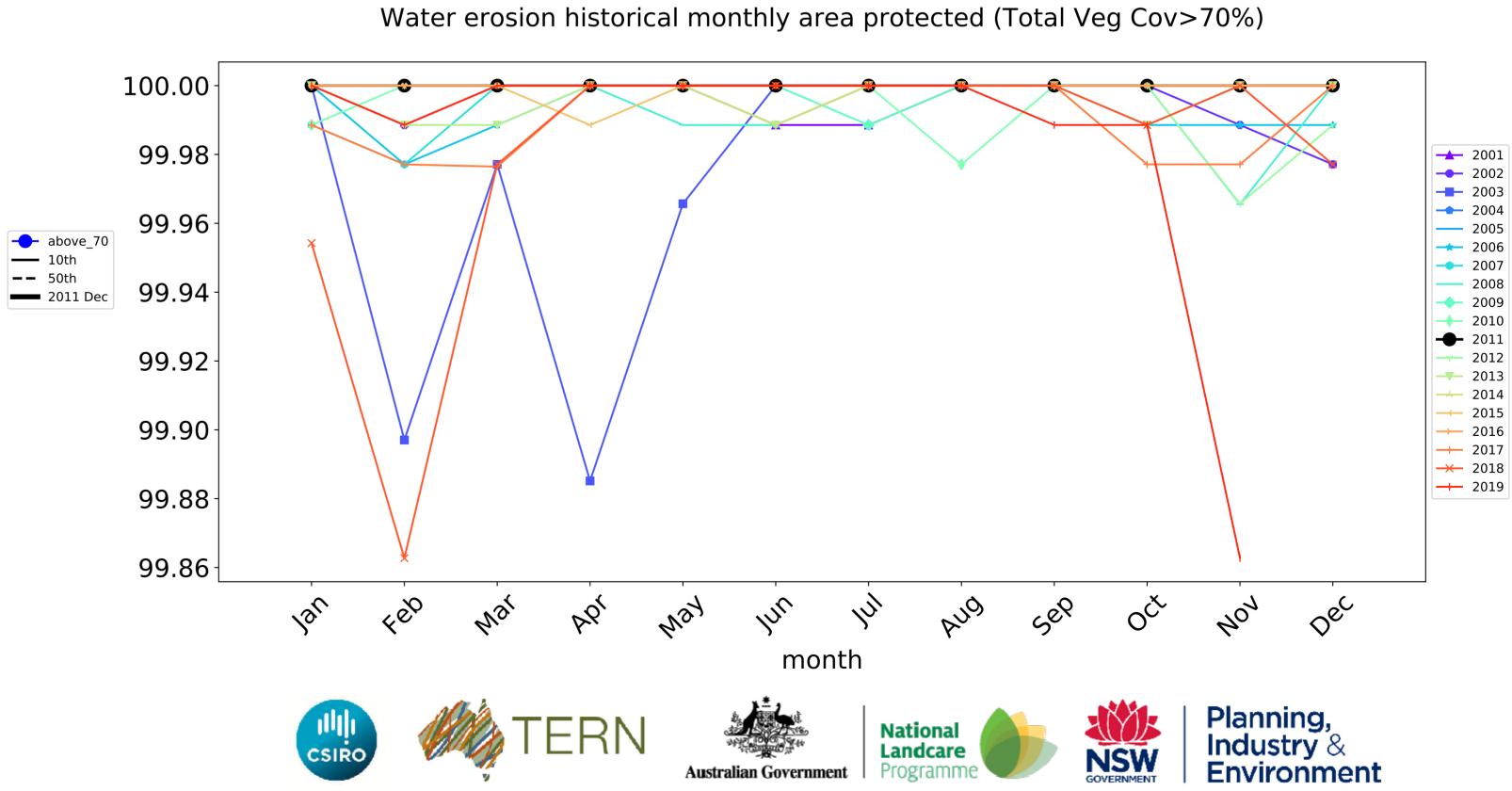
Production native forests and plantation forests timeseries

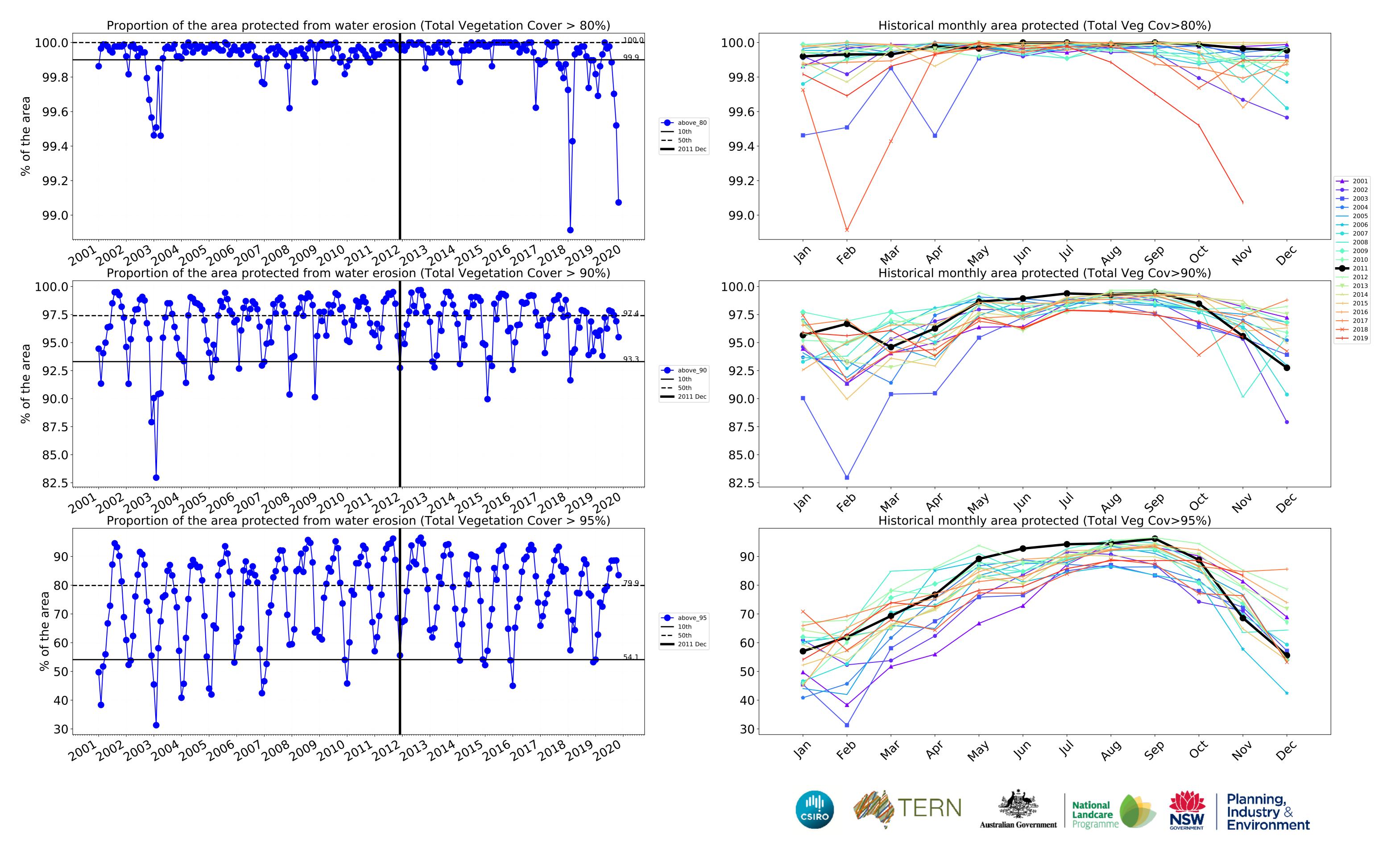




month







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	99.9% 3,236,802	99.7% 3,229,907	98.6% 3,196,282	96.3% 3,121,063	73.5% 2,381,960	31.7% 1,025,965
Conservation and natural environments	1,241,475	99.9% 1,240,225	99.8% 1,239,500	99.7% 1,237,250	99.4% 1,233,475	89.5% 1,111,250	48.9% 607,050
Conservation and natural environments non forest	30,025	96.3% 28,900	94.4% 28,350	91.0% 27,325	86.3% 25,900	64.1% 19,250	24.6% 7,400
Conservation and natural environments Woodland forest	138,925	100.0% 138,875	100.0% 138,875	99.9% 138,800	99.6% 138,375	89.4% 124,225	43.3% 60,150
natural environments Forest (non woodland)	1,072,525	100.0% 1,072,450	100.0% 1,072,275	99.9% 1,071,125	99.7% 1,069,200	90.2% 967,775	50.3% 539,500
Agriculture	1,581,125	100.0% 1,581,125	100.0% 1,580,900	99.7% 1,576,375	97.4% 1,539,700	63.7% 1,007,650	17.8% 280,825
Grazing	1,503,125	100.0% 1,503,125	100.0% 1,502,900	99.8% 1,500,200	98.5% 1,480,725	66.3% 995,925	18.6% 279,000
Grazing non forest	1,213,175	100.0% 1,213,175	100.0% 1,212,950	99.8% 1,210,400	98.3% 1,192,375	63.1% 765,875	16.0% 194,525
Grazing Woodland forest	120,650	100.0% 120,650	100.0% 120,650	100.0% 120,600	99.5% 120,025	75.7% 91,350	23.6% 28,500
Grazing - Forest (non woodland)	169,300	100.0% 169,300	100.0% 169,300	99.9% 169,200	99.4% 168,325	81.9% 138,700	33.1% 55,975
Cropping	50,625	100.0% 50,625	100.0% 50,625	96.7% 48,975	70.5% 35,700	15.2% 7,675	2.3% 1,175
Production native forests and plantation forests	218,550	100.0% 218,550	100.0% 218,550	100.0% 218,550	100.0% 218,450	92.7% 202,700	55.6% 121,475











