Total vegetation cover soil protection Region:NRM Hunter NSW

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

Land use forest cover:

Date: July 2006

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

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

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

Erosion protection: Wind erosion 50% total vegetation cover

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

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

Comparison with previous years:

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

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

Erosion protection

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

Rainfall

• Millimetres rainfall each month (black line).

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

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

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

Acknowledgment of data:

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

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













Vegetation Cover Jul 2006

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

36.9% 35 30 -25 20 15 10

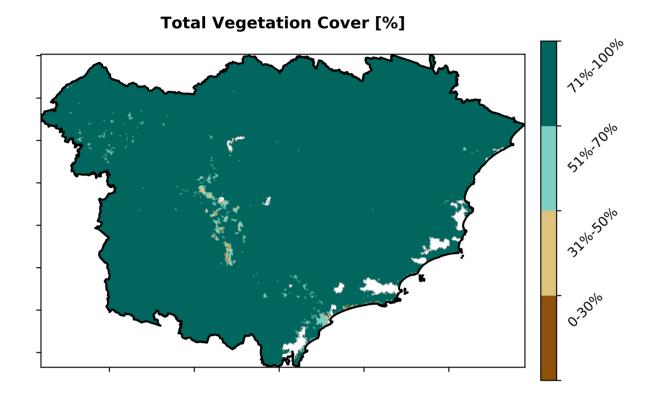
Proportion of each land class in area

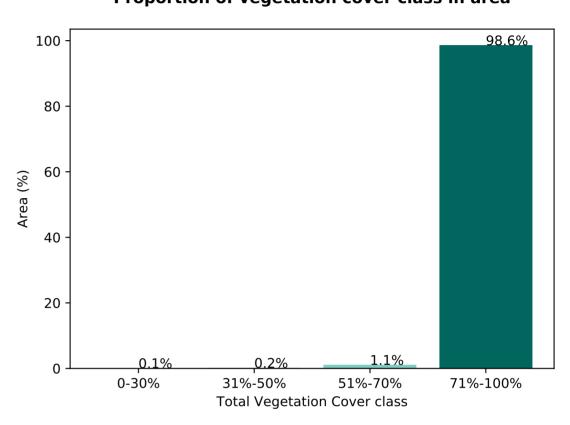
11 Agriculture - Horticulture - Irrigated 12 Production native forests and plantation 13 Other uses

Proportion of vegetation cover class in area

Land use class

10 11 12 13





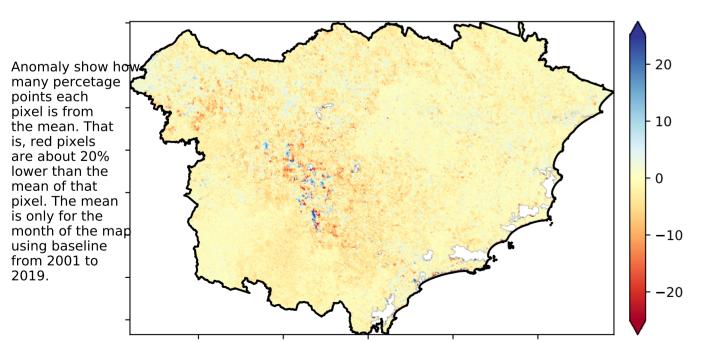
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

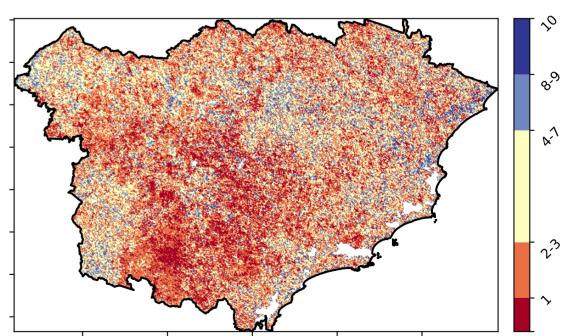






Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Total Vegetation Cover Decile [%]





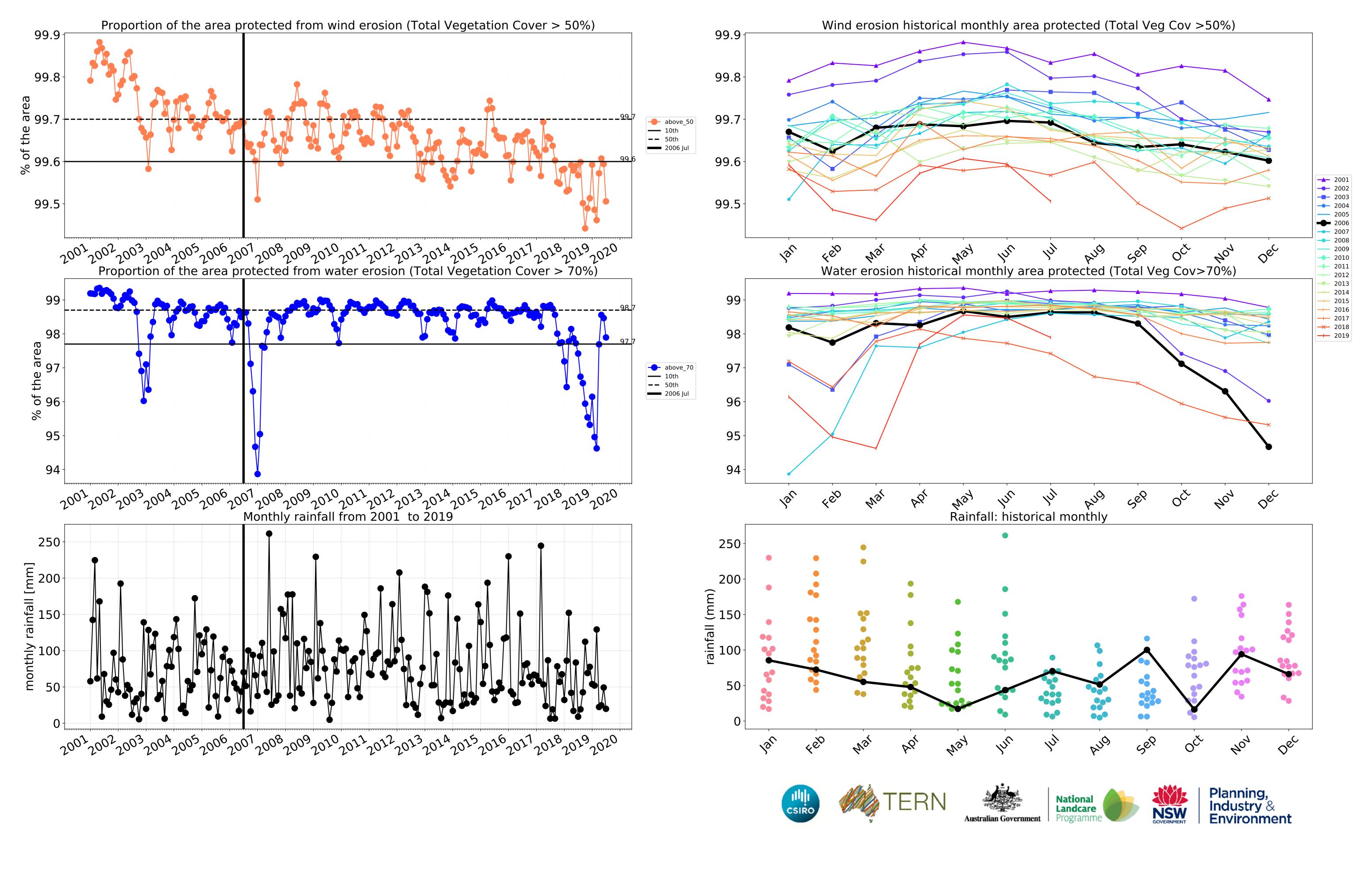


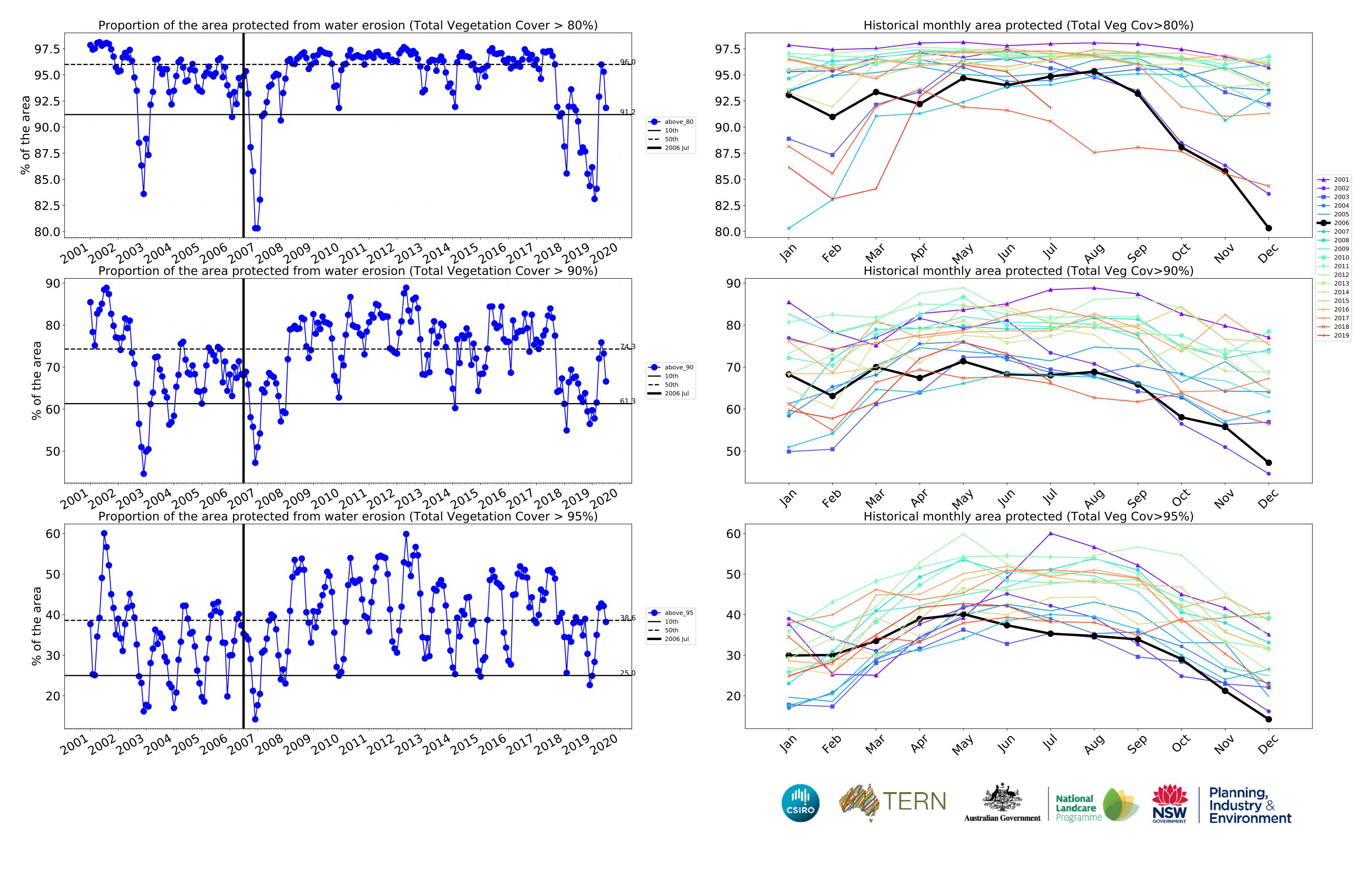






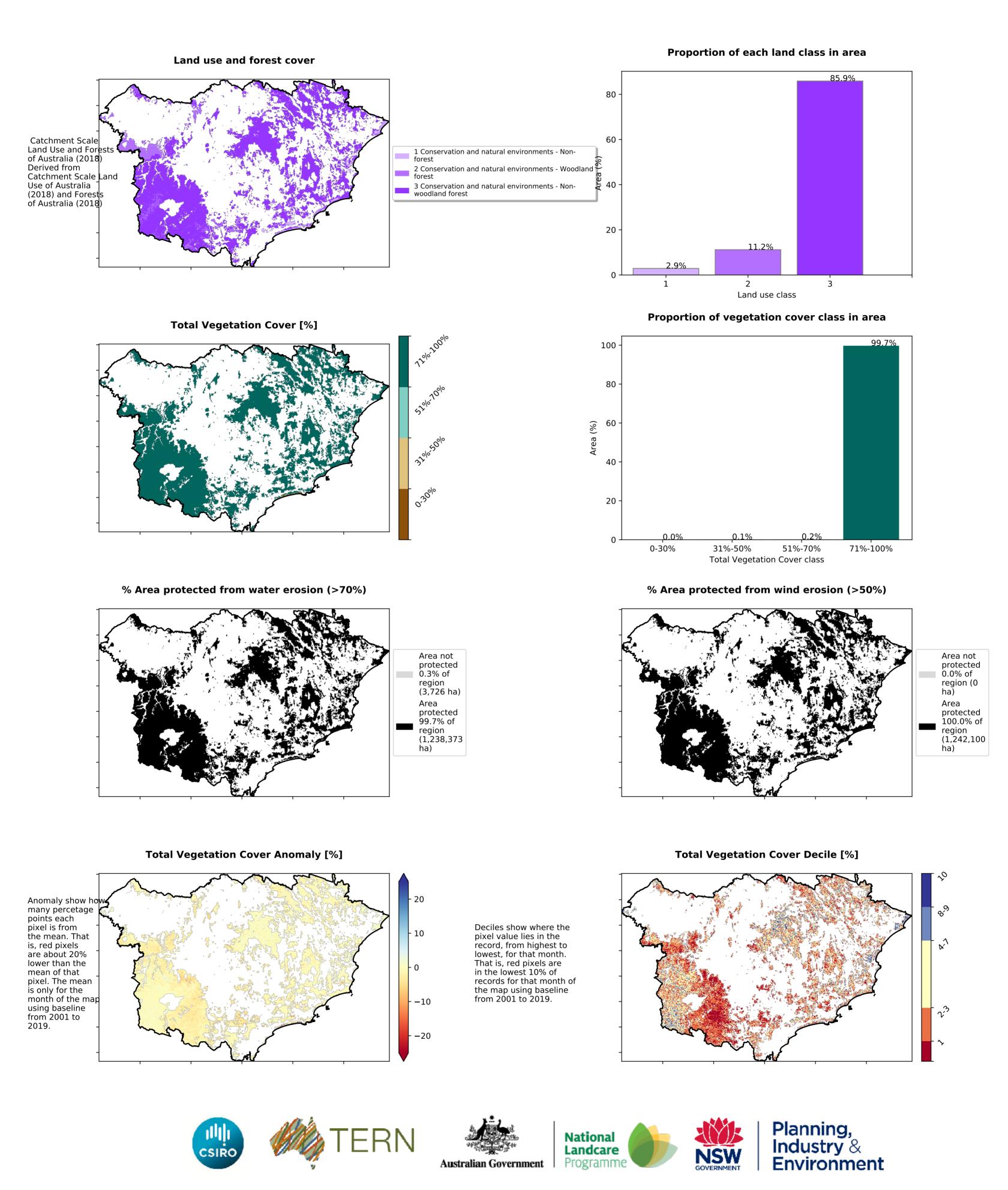




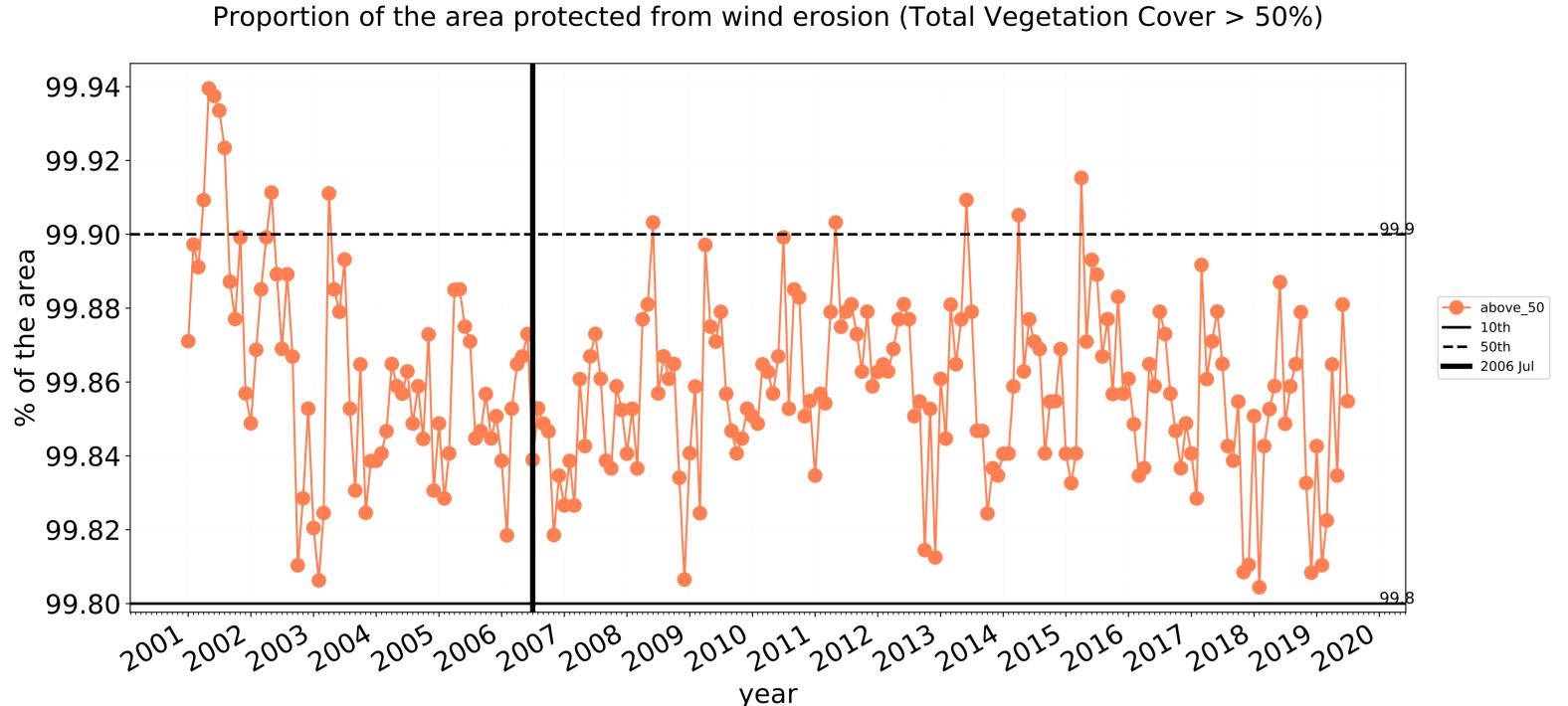


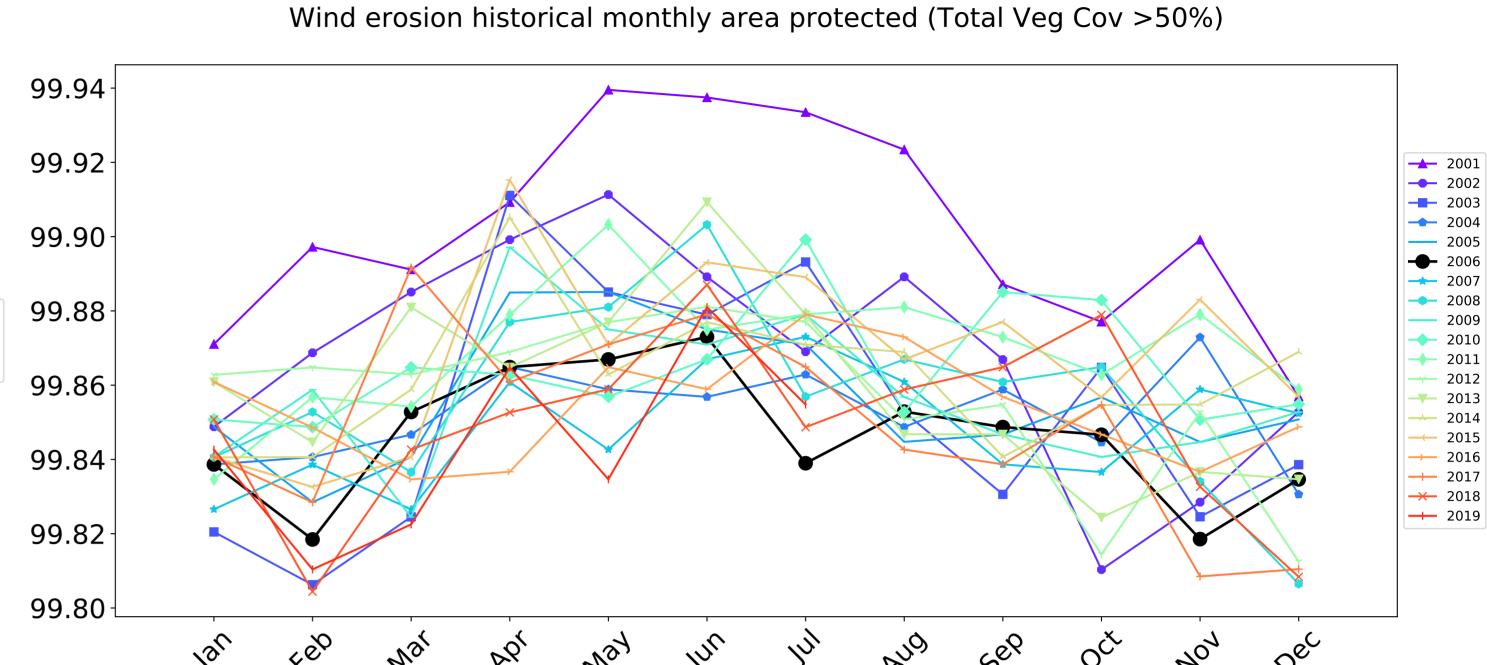
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Conservation and natural environments

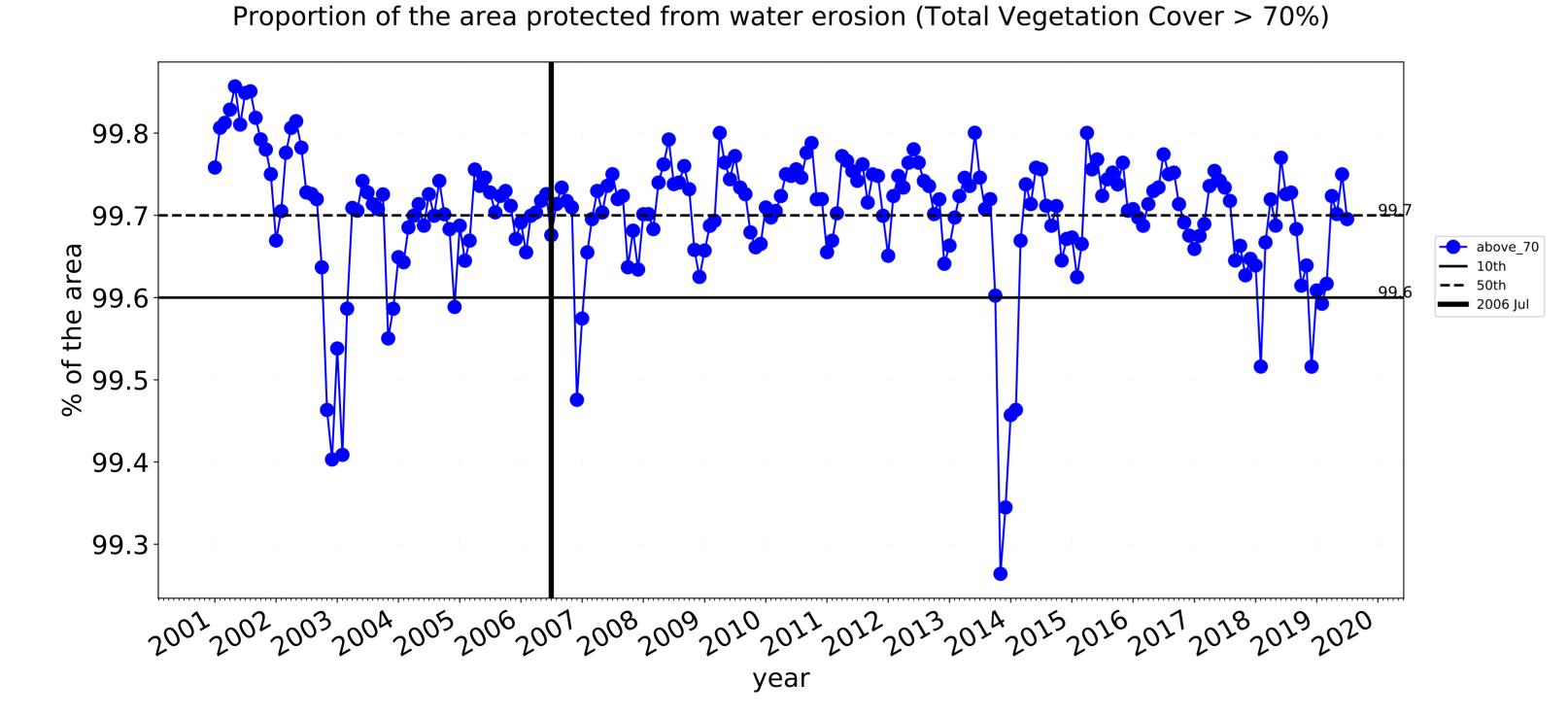


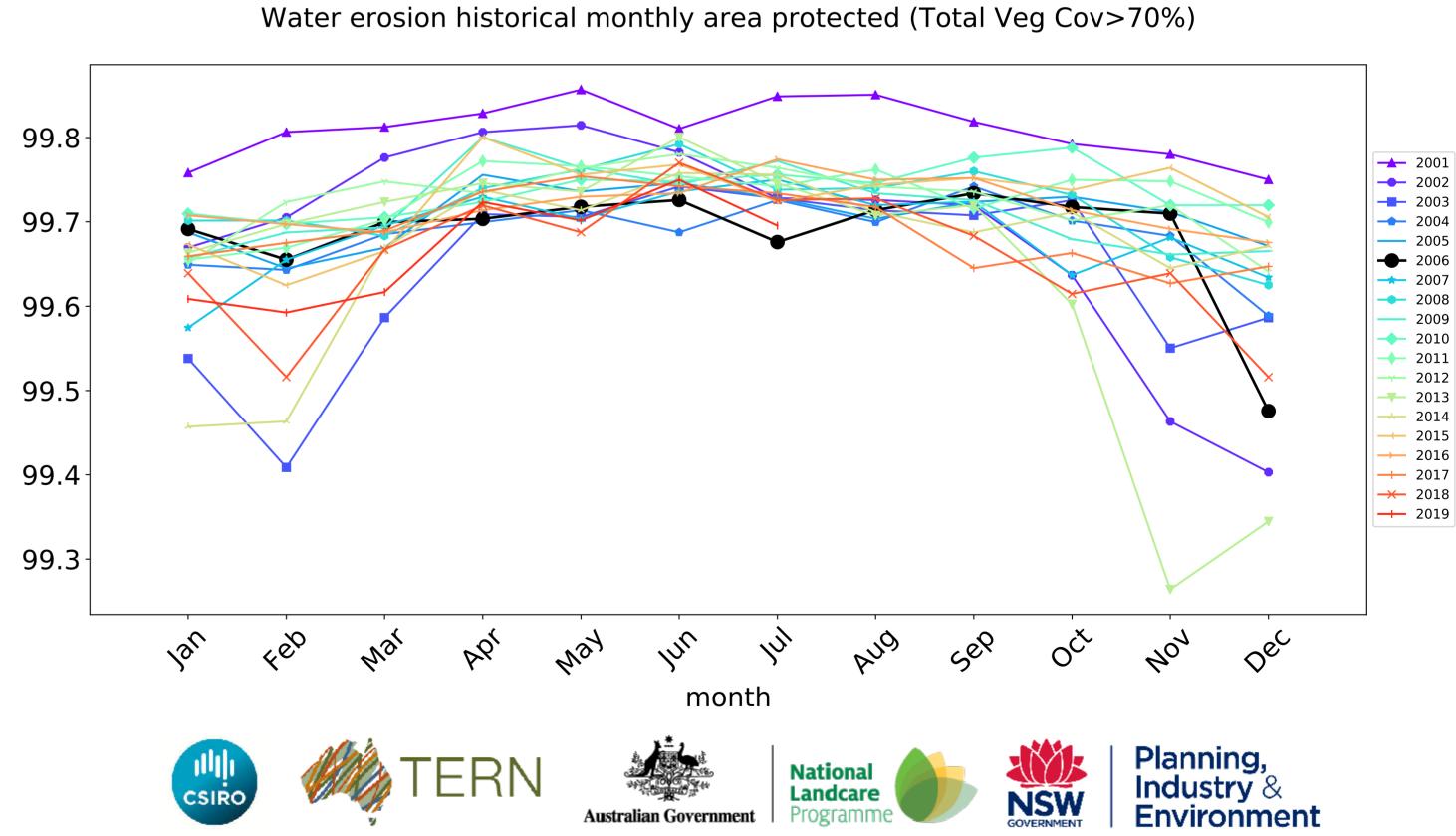
Conservation and natural environments timeseries

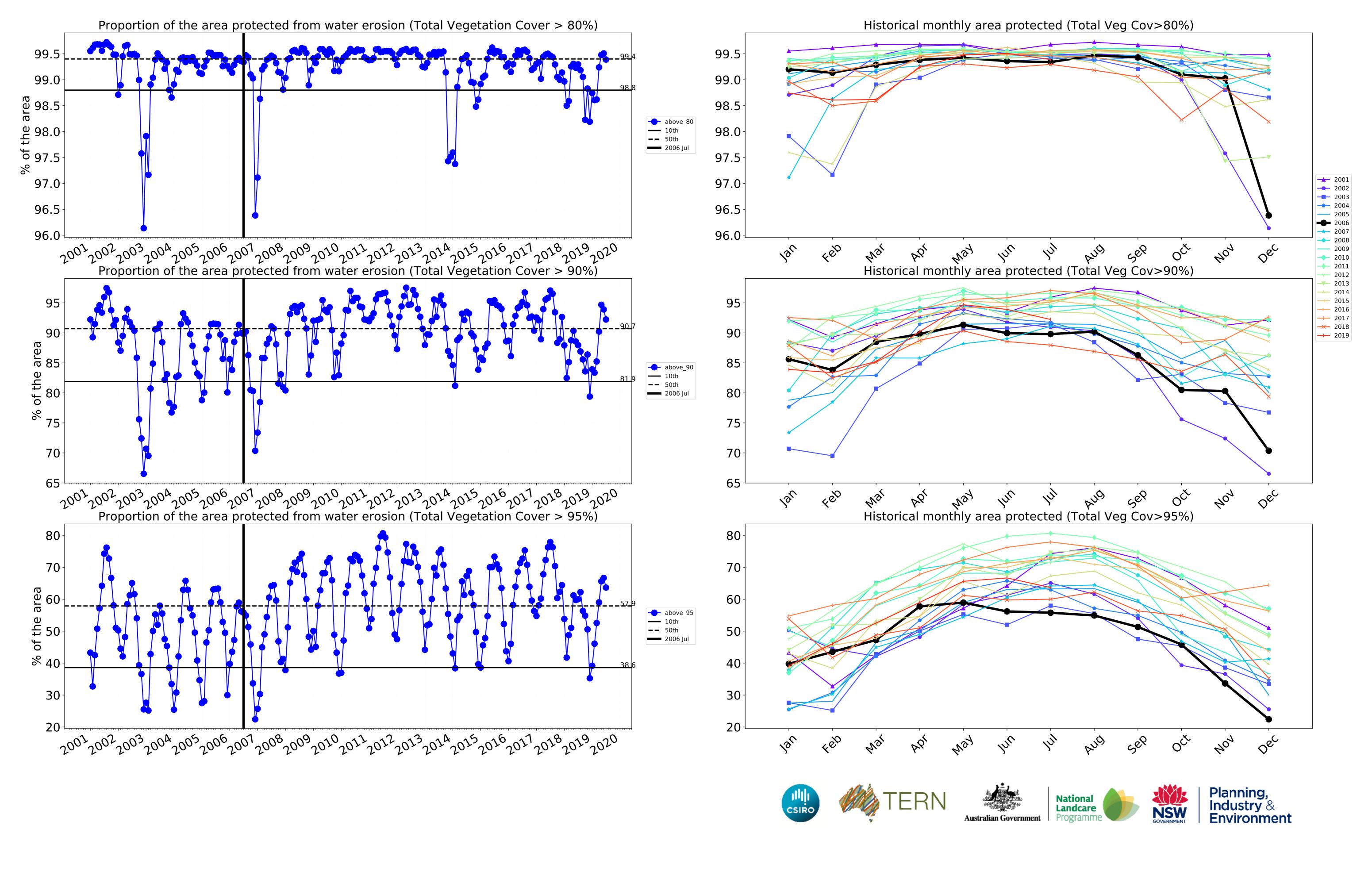




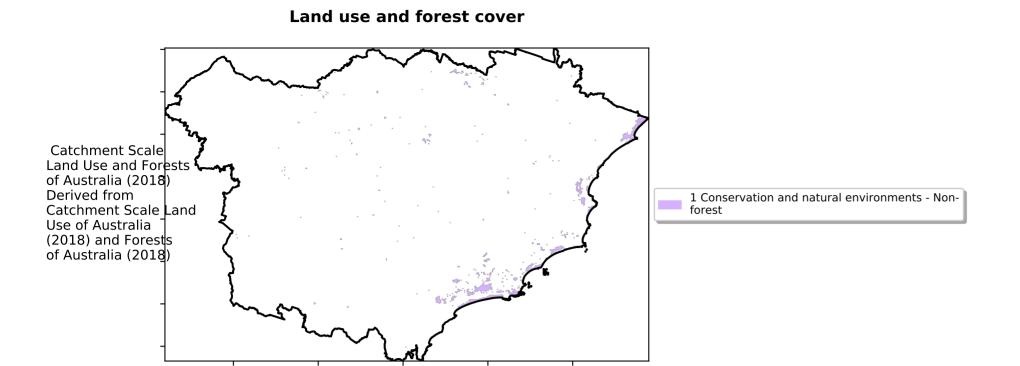
month





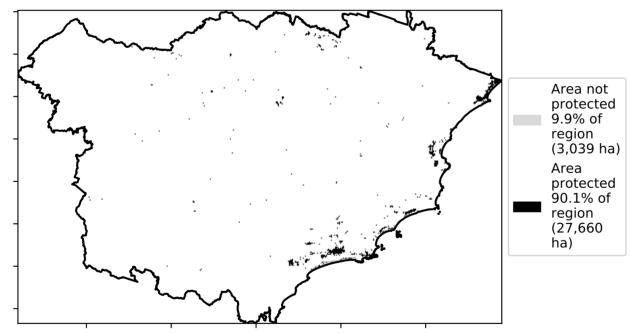


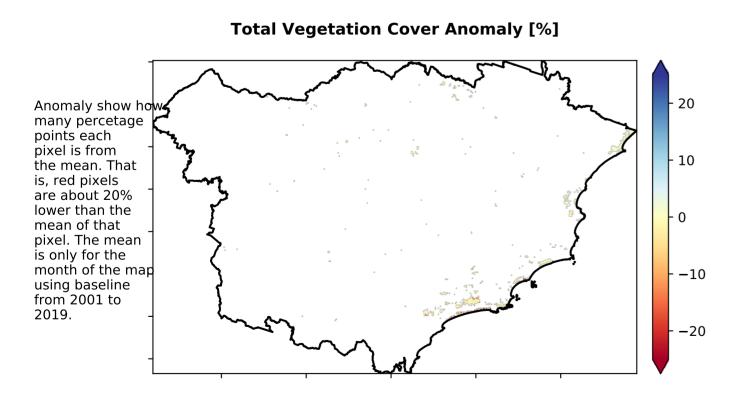
Conservation and natural environments non forest



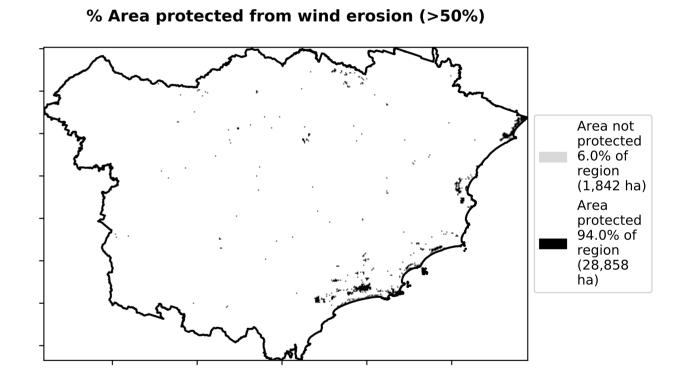
Total Vegetation Cover [%] Tipological and the state of the state of

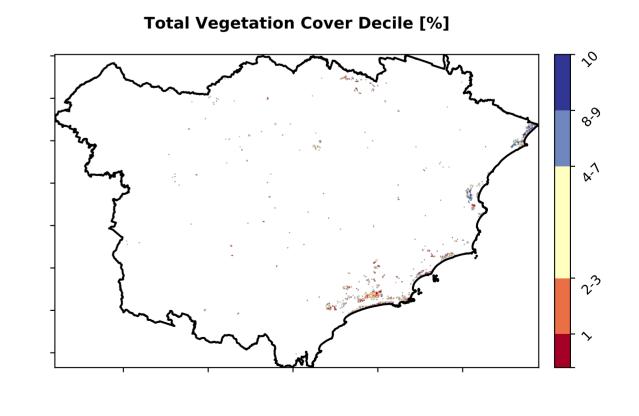
% Area protected from water erosion (>70%) Area not protected





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.









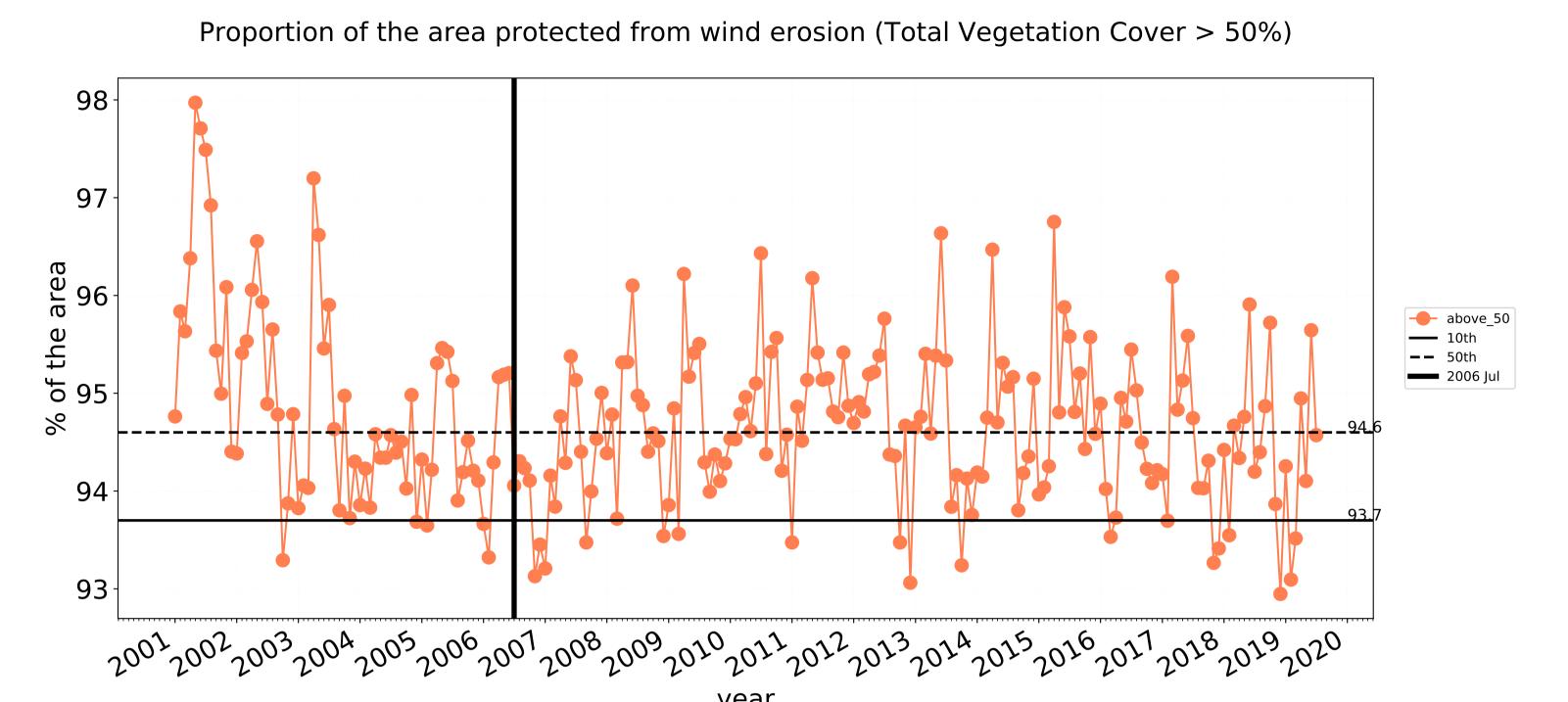




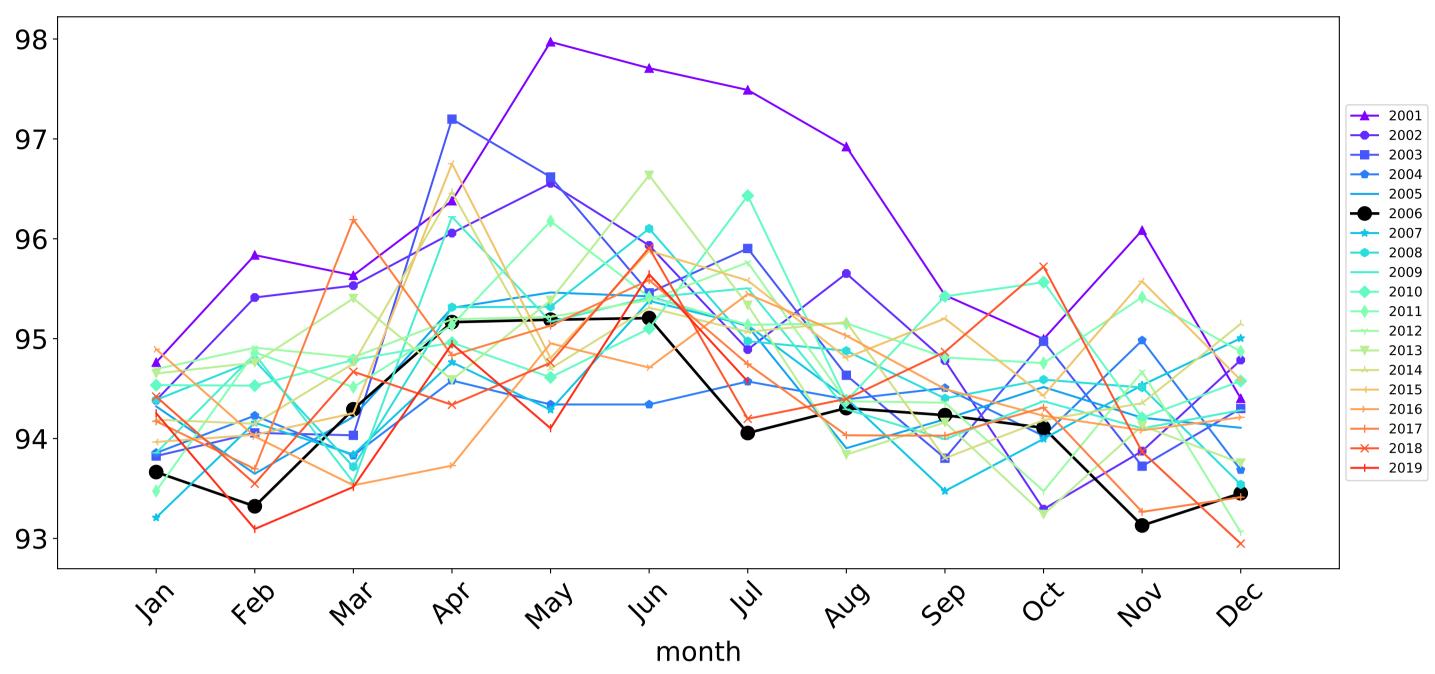




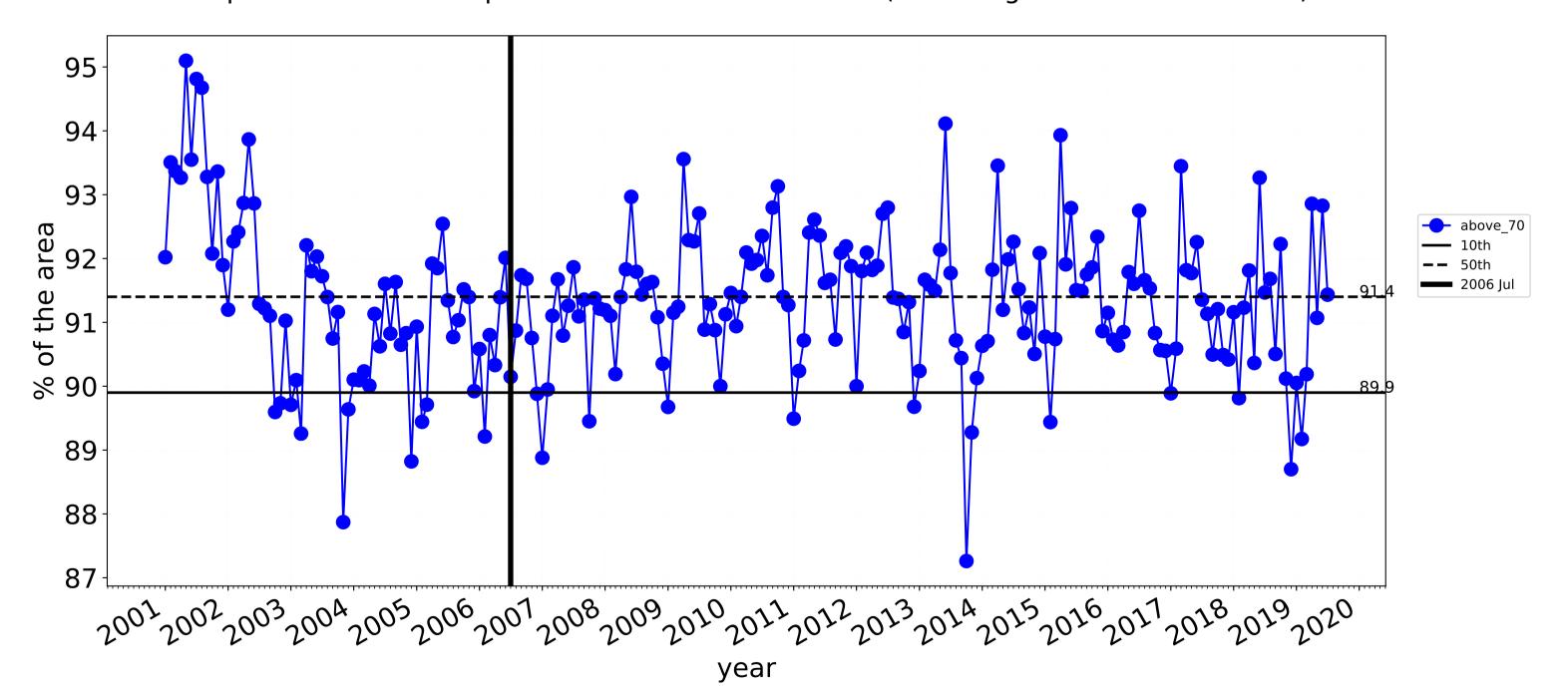
Conservation and natural environments non forest timeseries



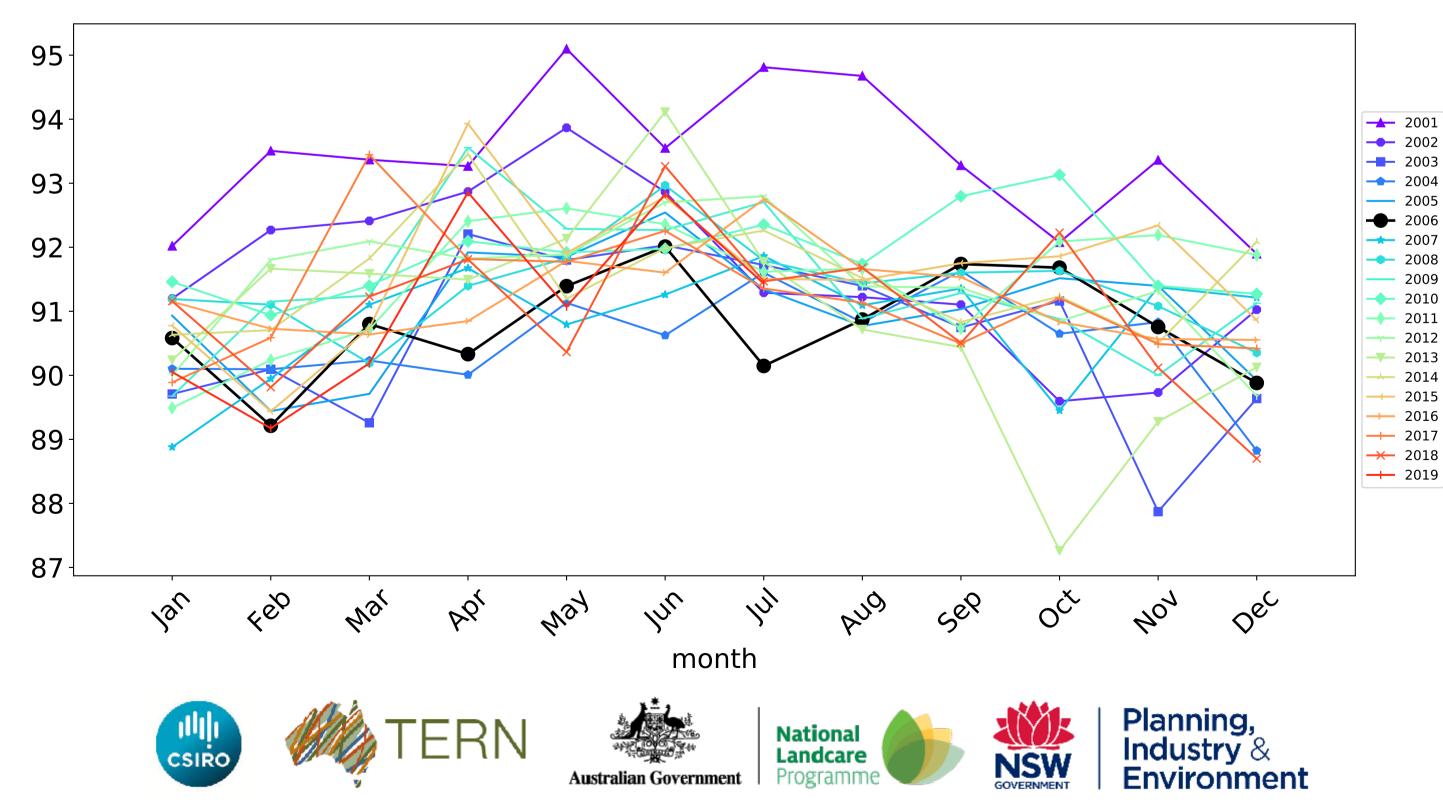


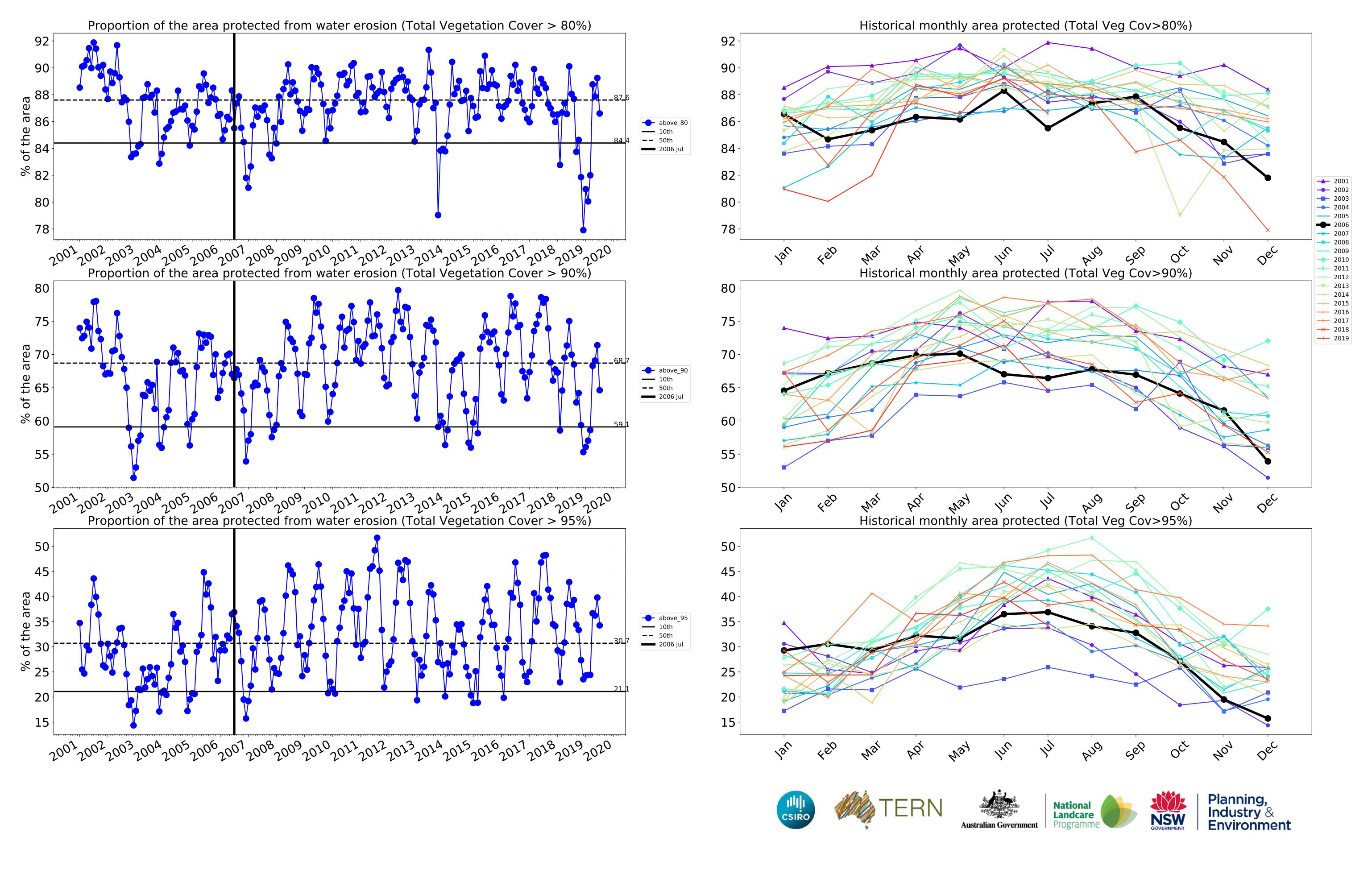


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

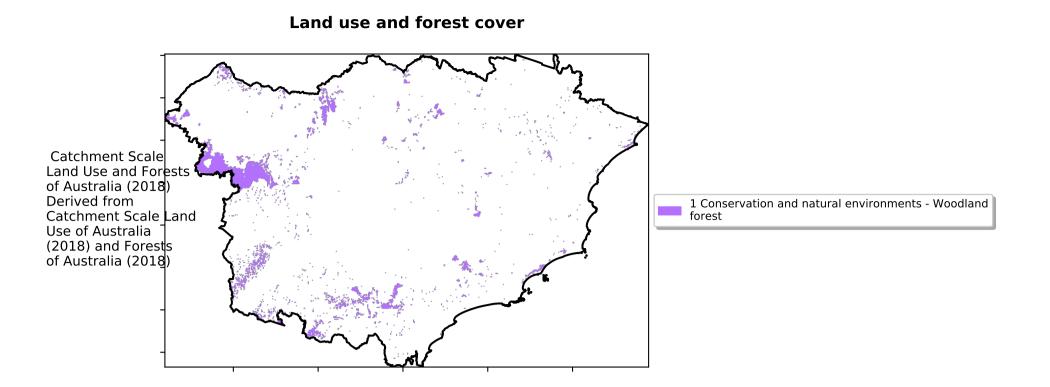


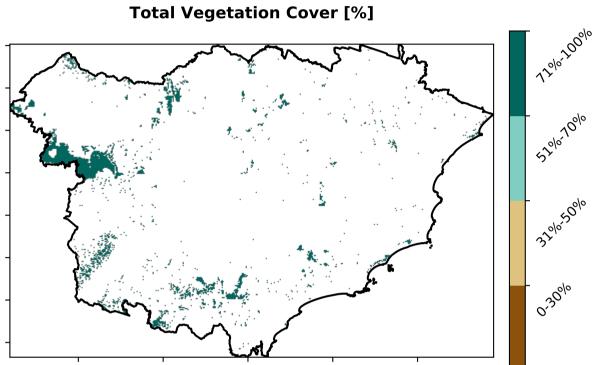
Water erosion historical monthly area protected (Total Veg Cov>70%)

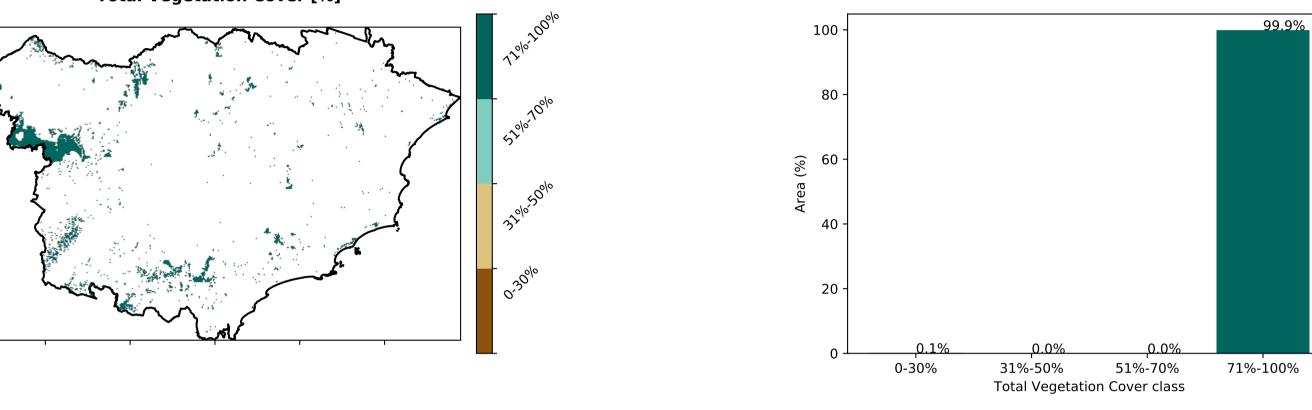


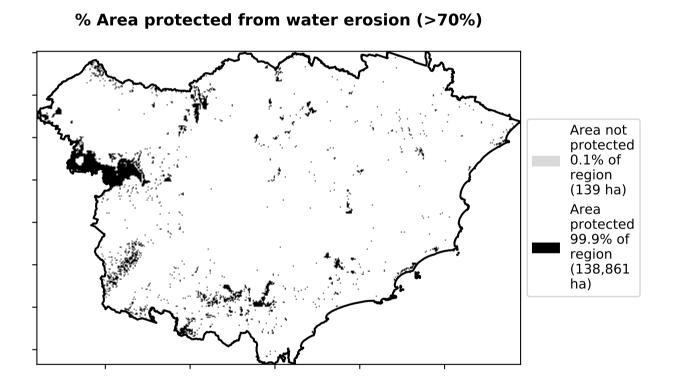


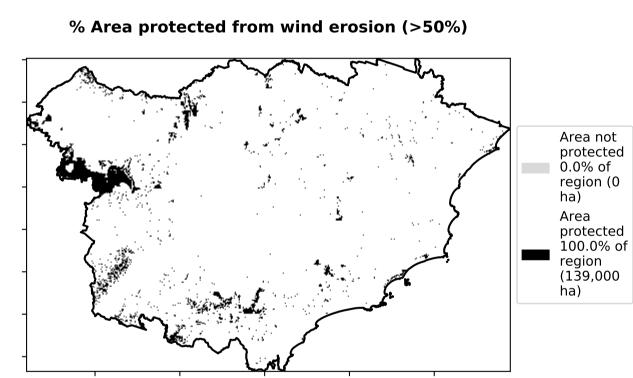
Conservation and natural environments Woodland forest



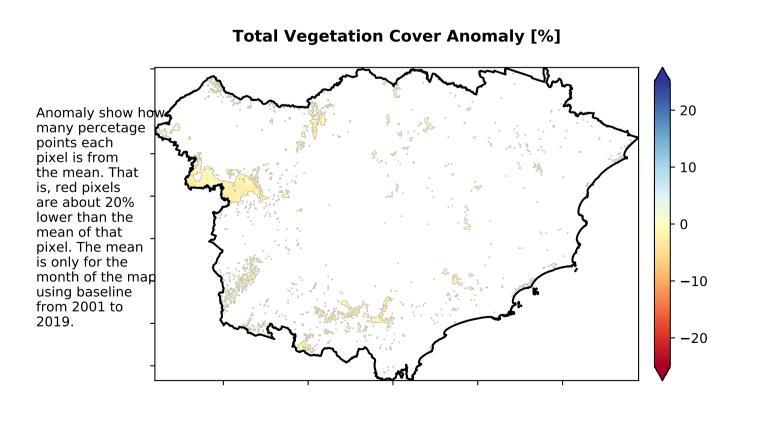




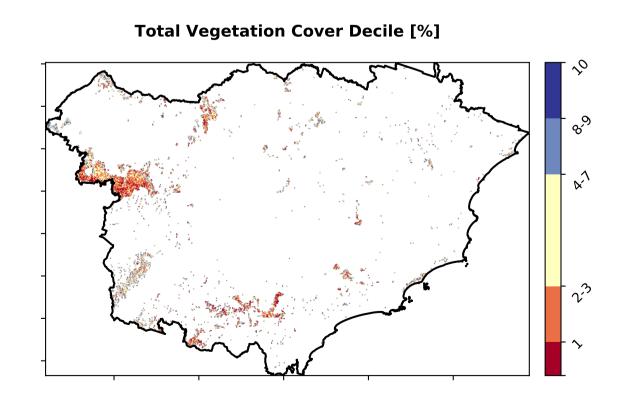




Proportion of vegetation cover class in area



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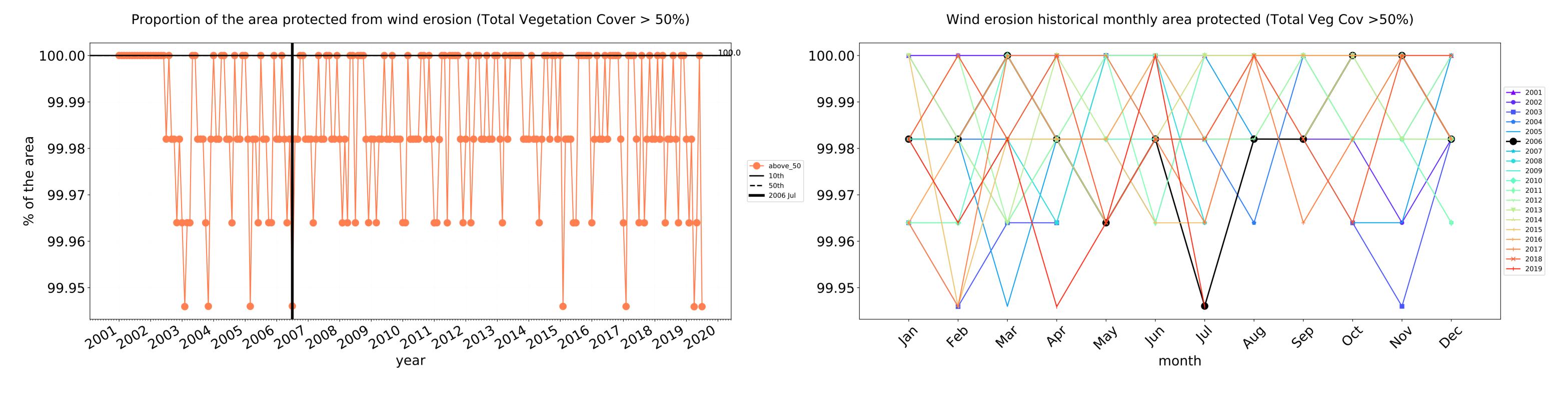


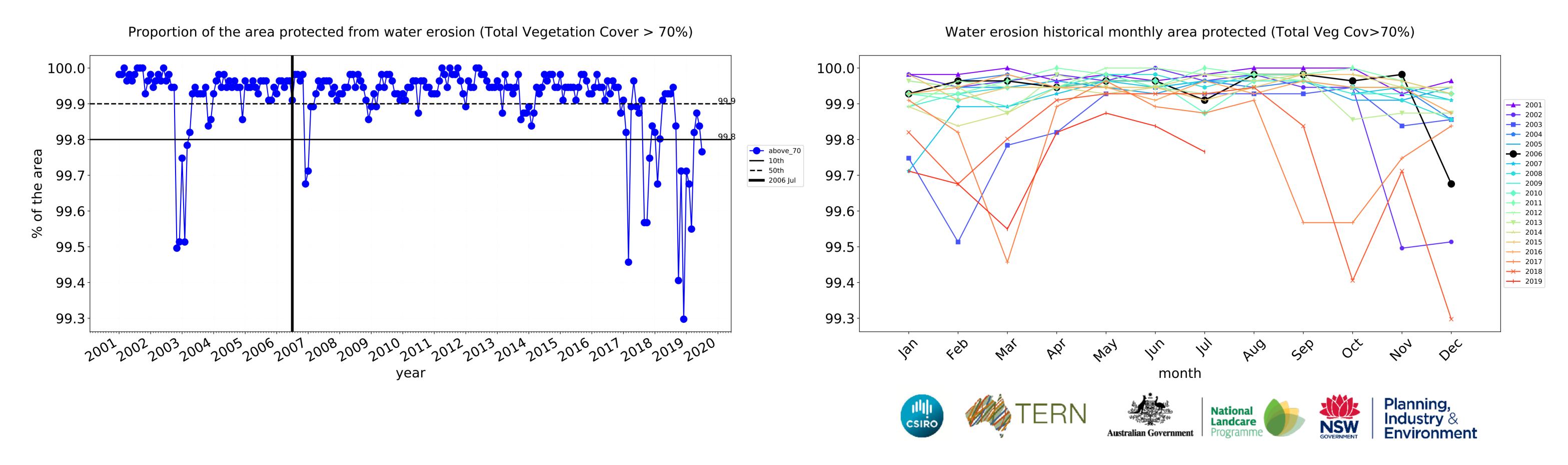


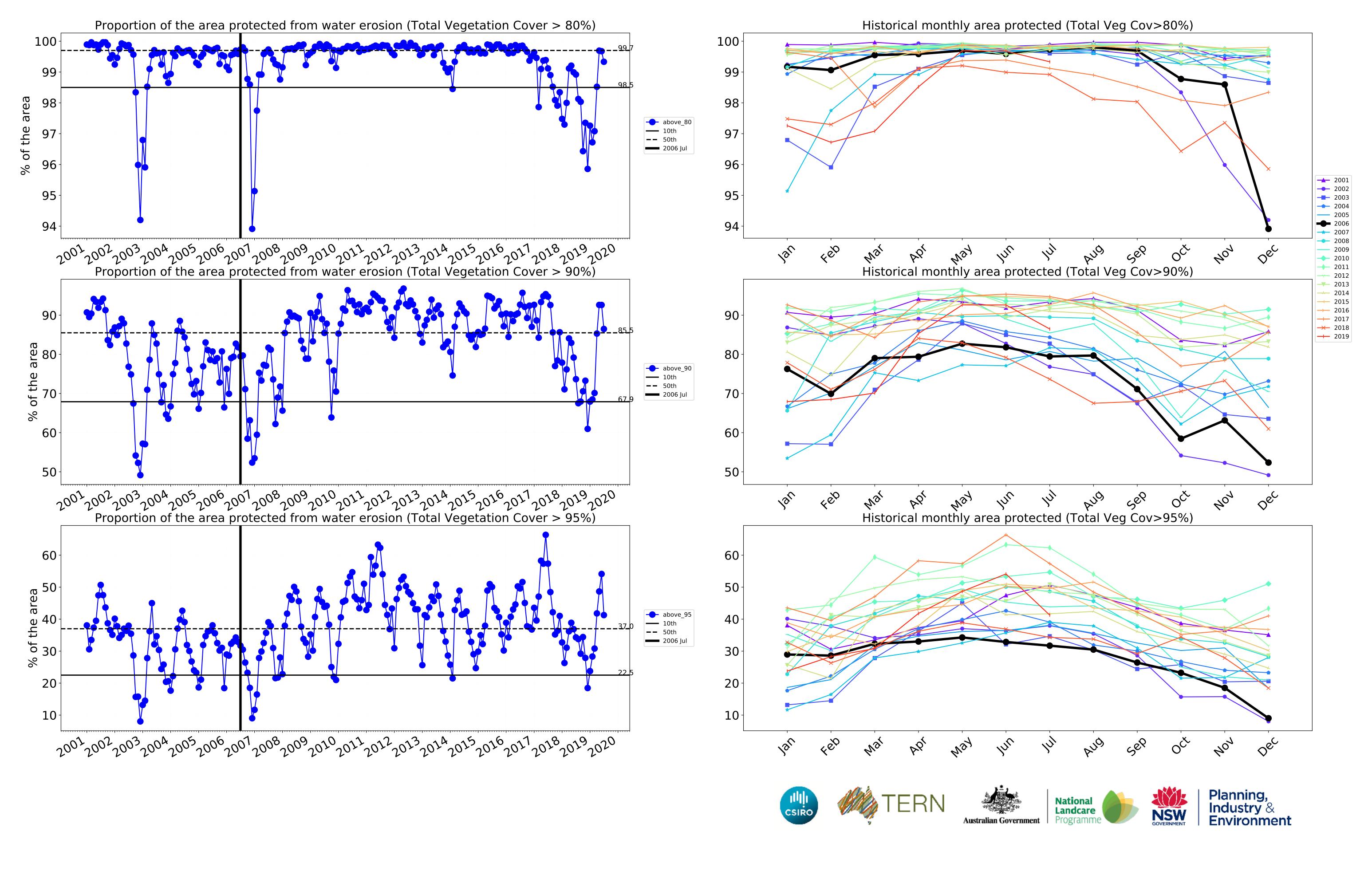


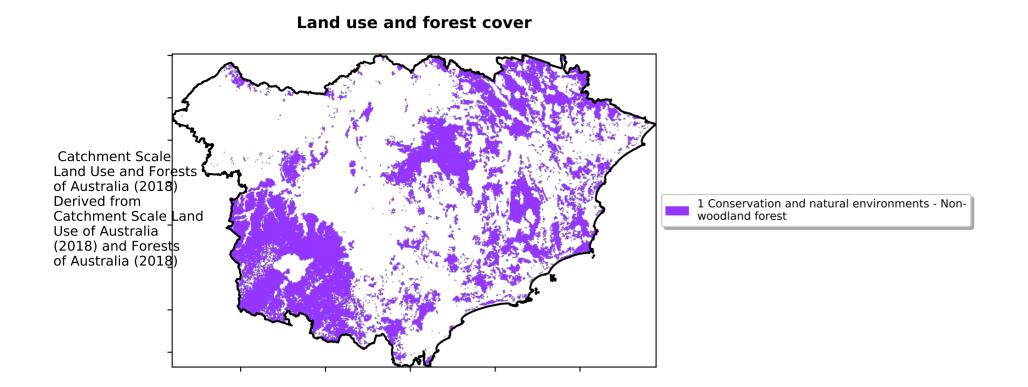


Conservation and natural environments Woodland forest timeseries

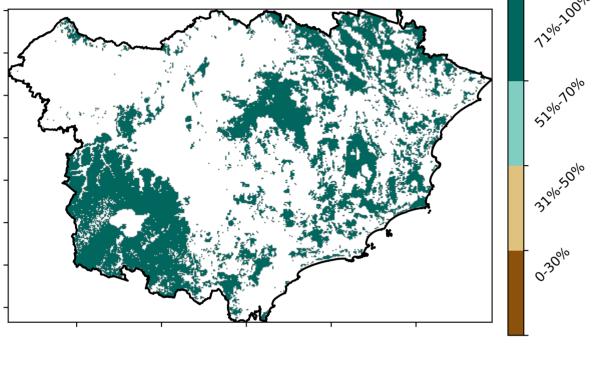


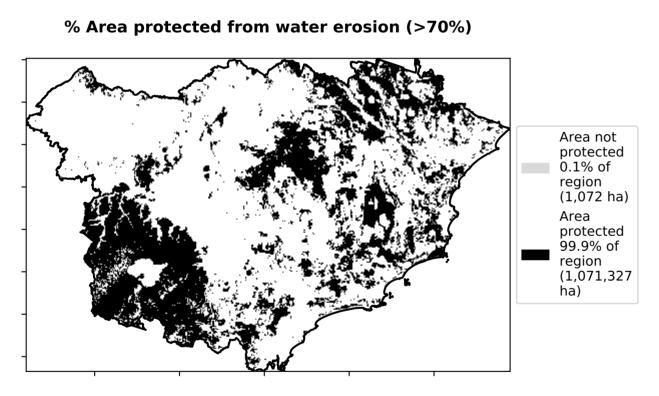


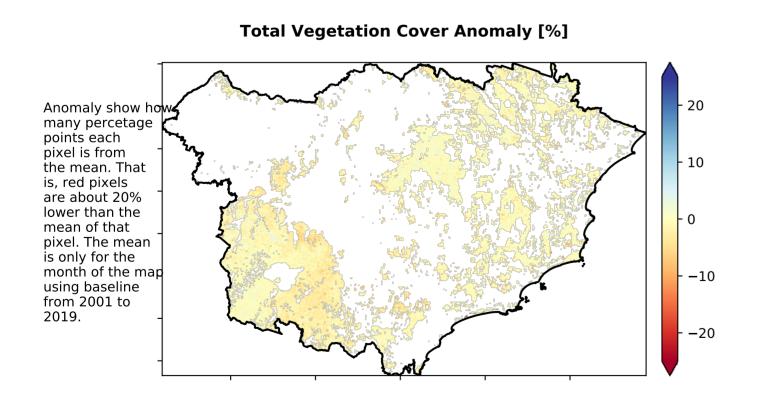




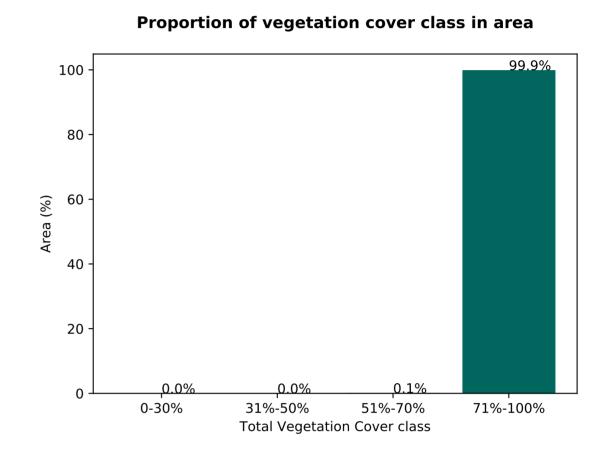
Total Vegetation Cover [%]

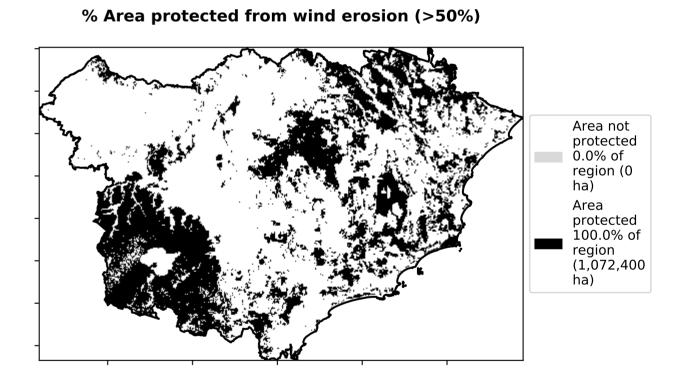


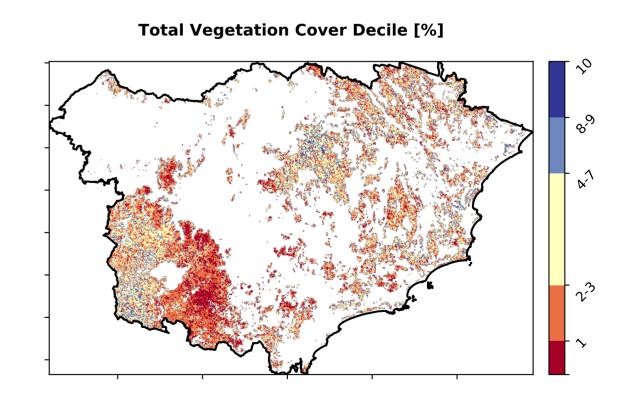














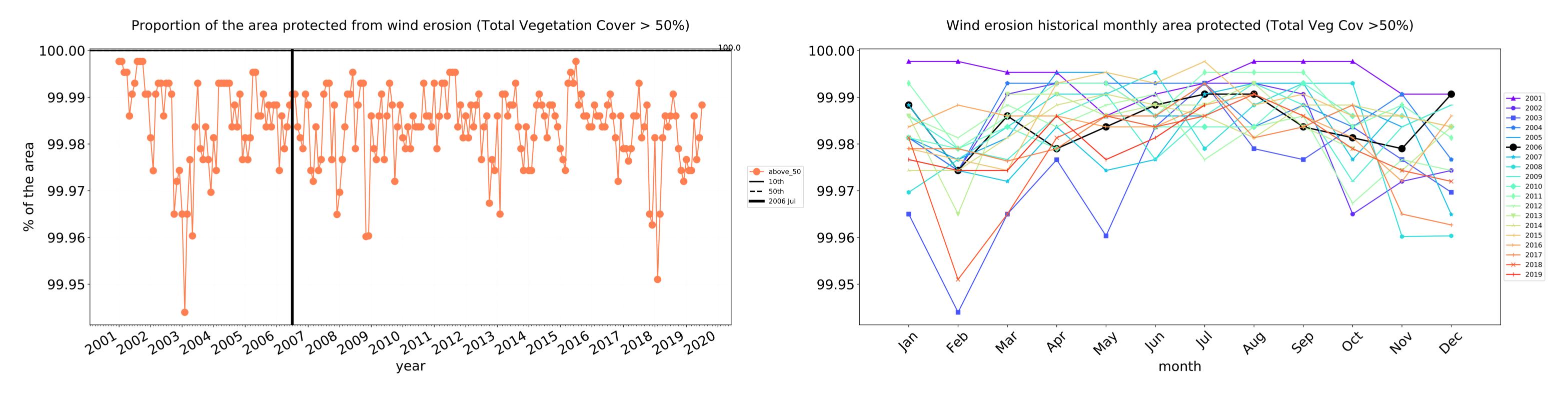


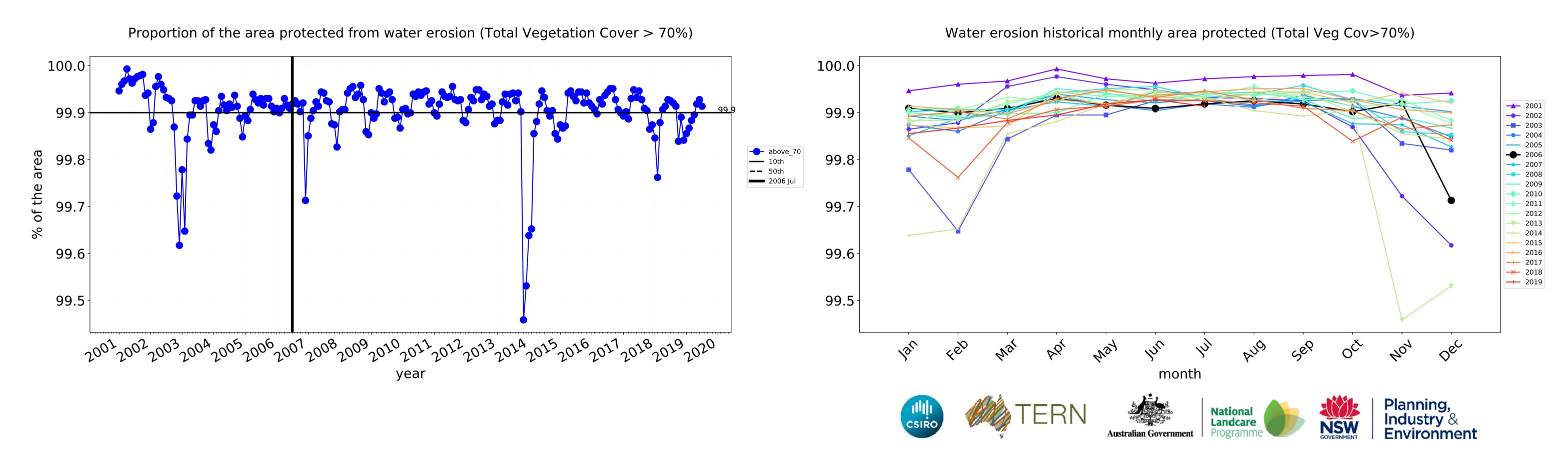


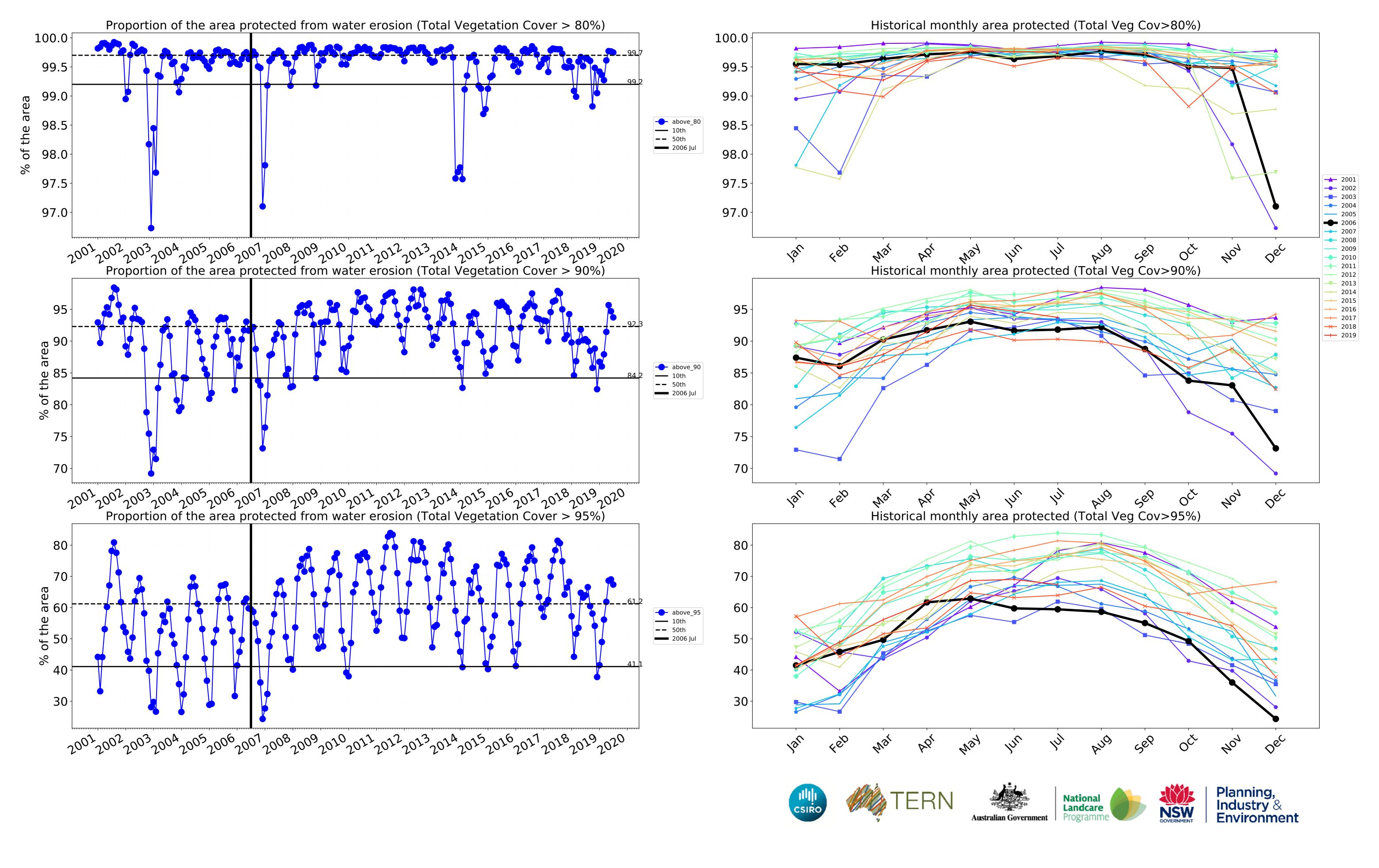




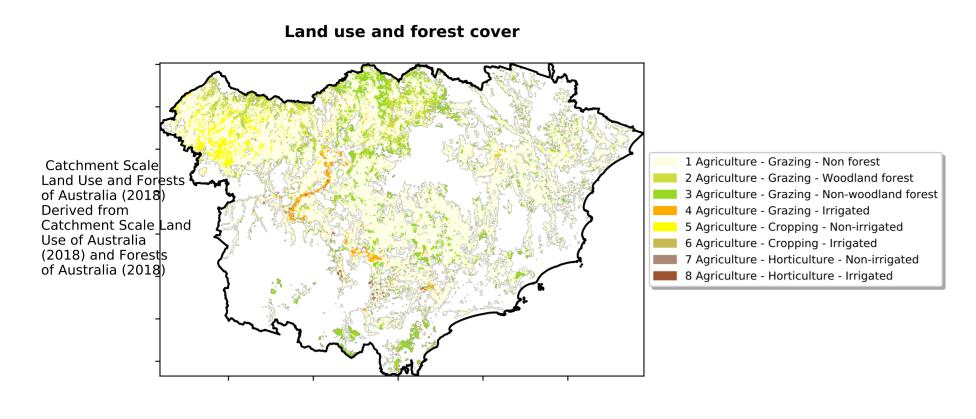


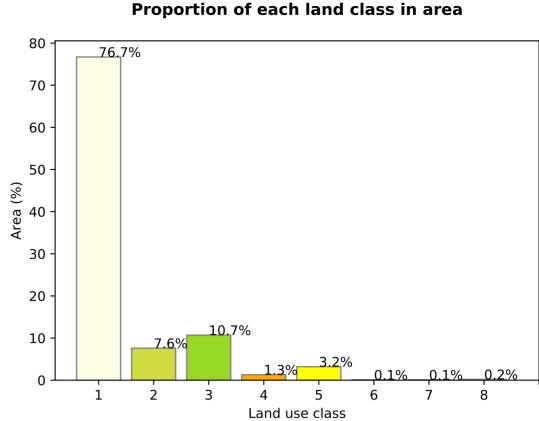


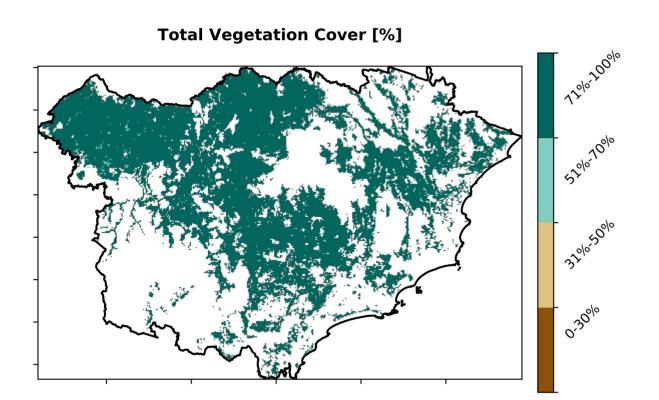


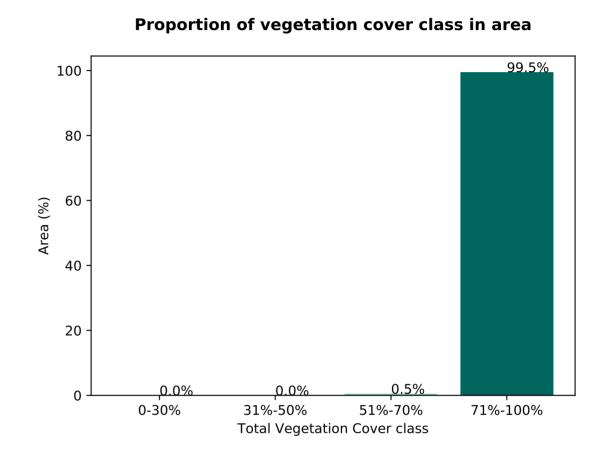


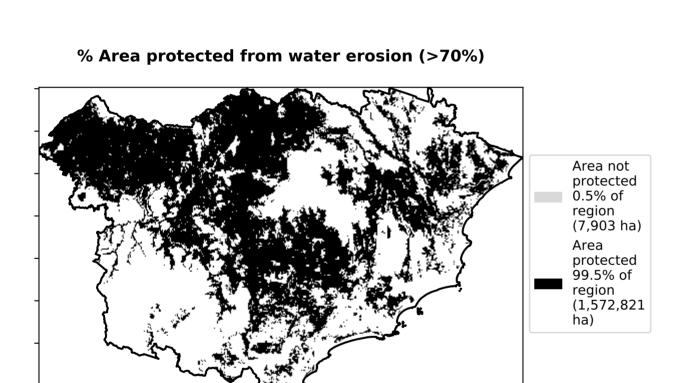
Agriculture

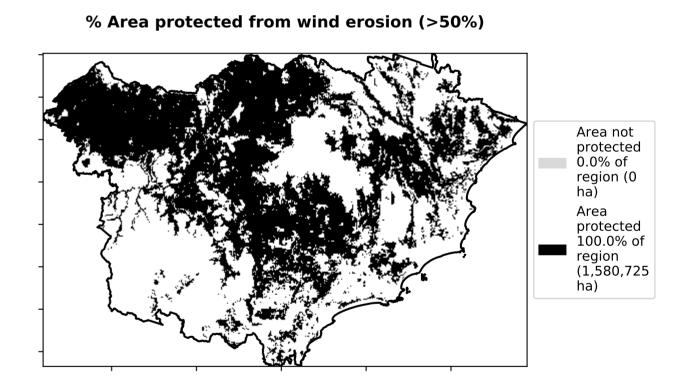


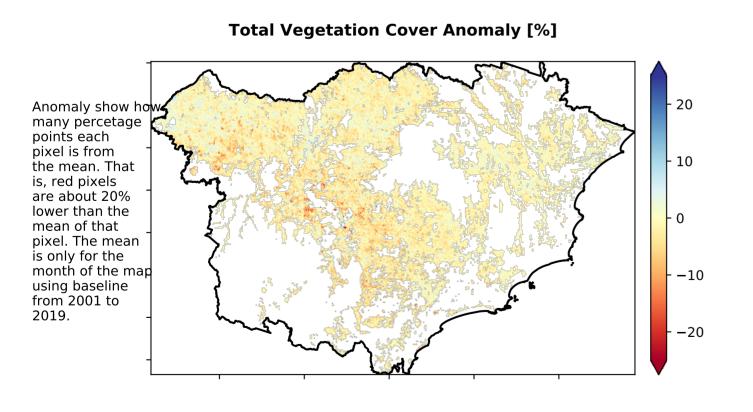




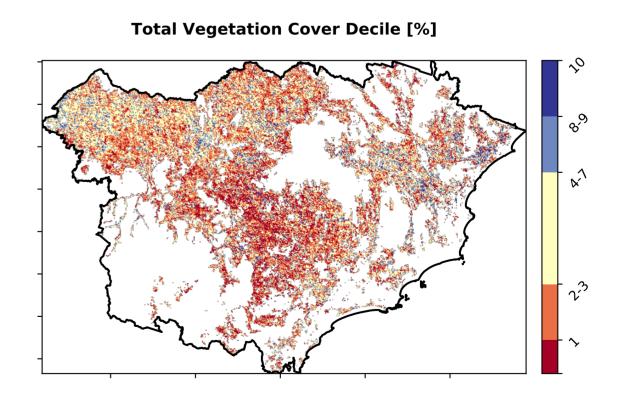








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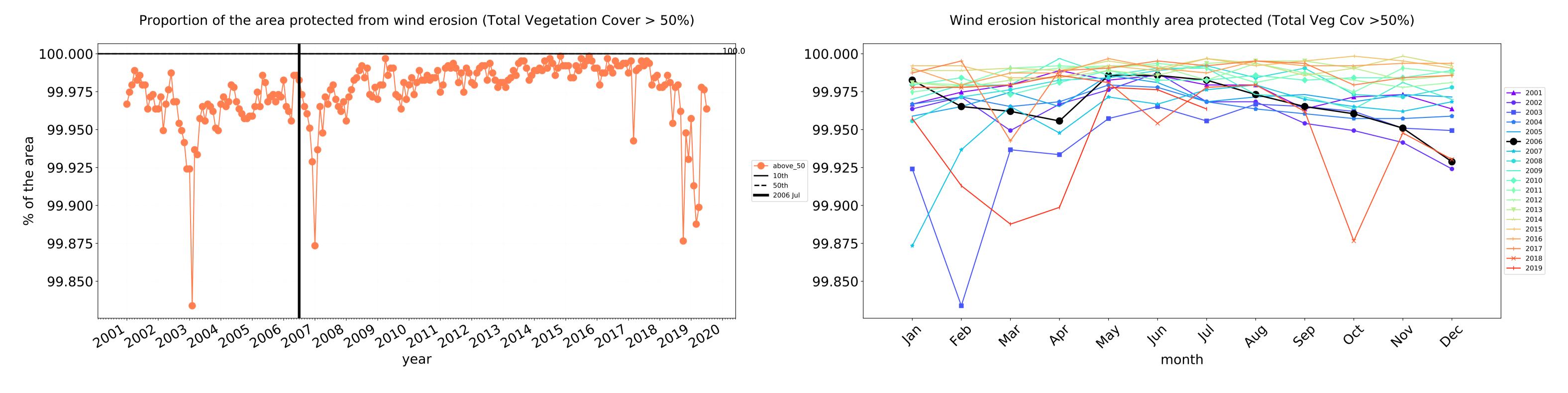


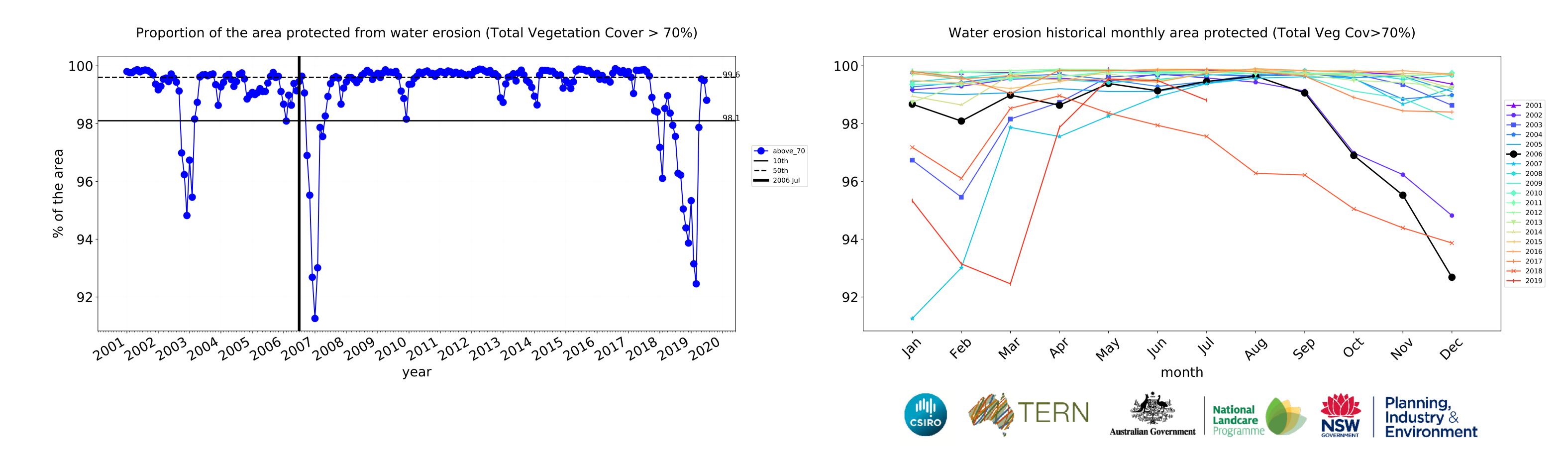


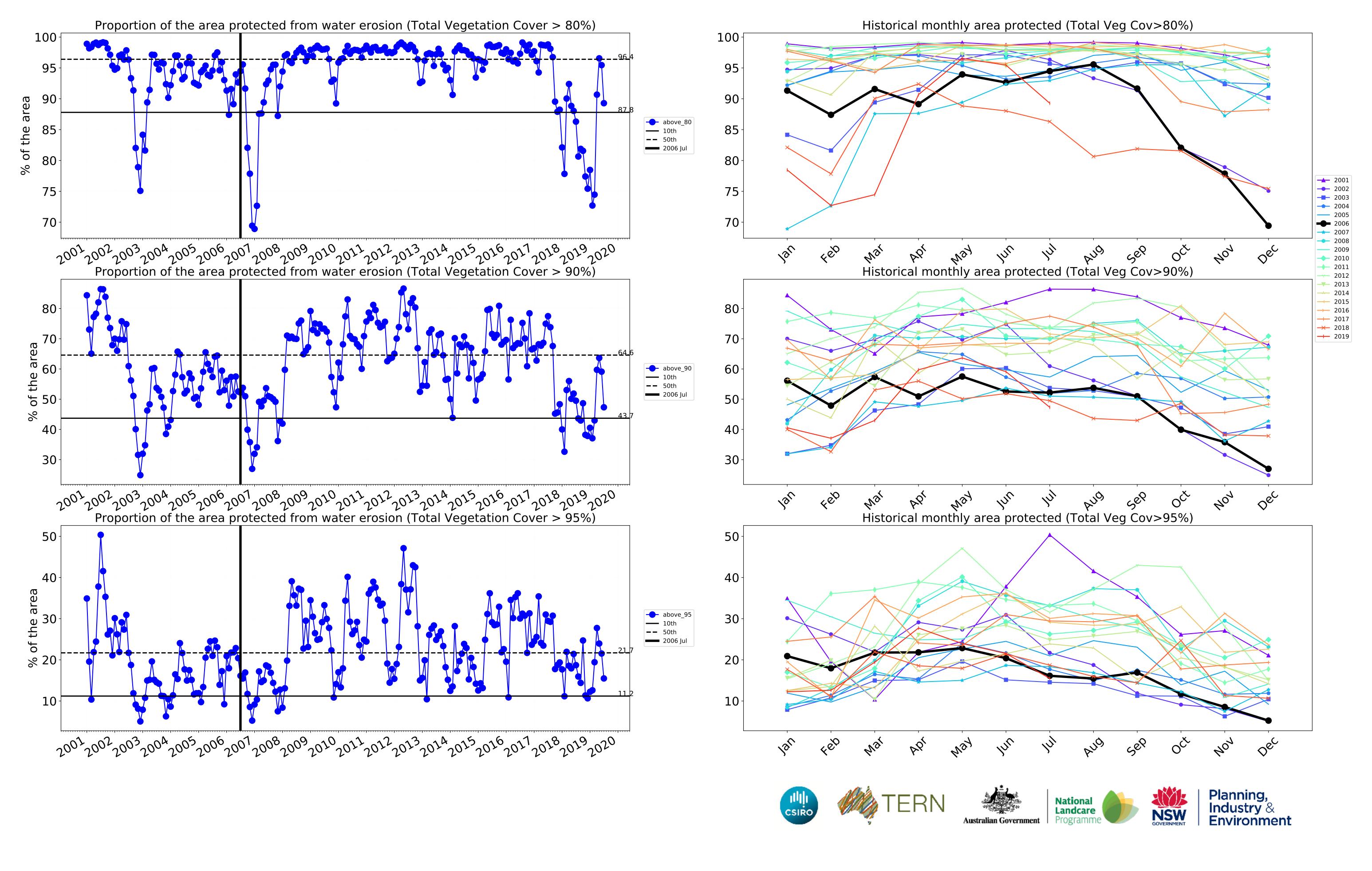




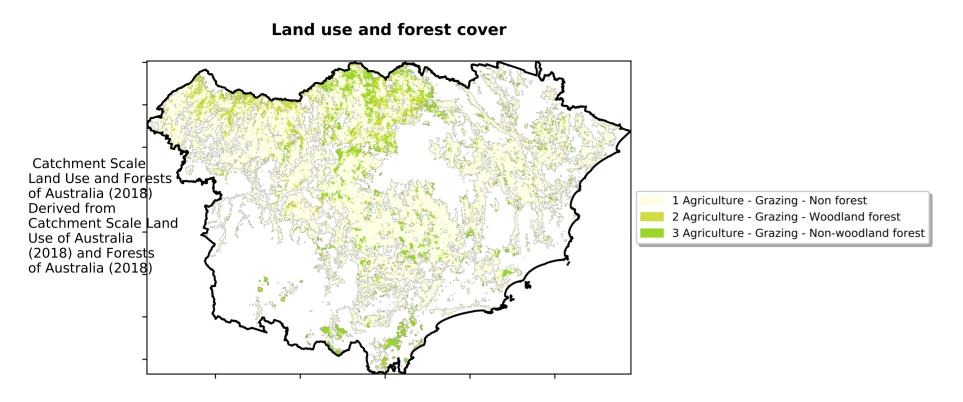
Agriculture timeseries



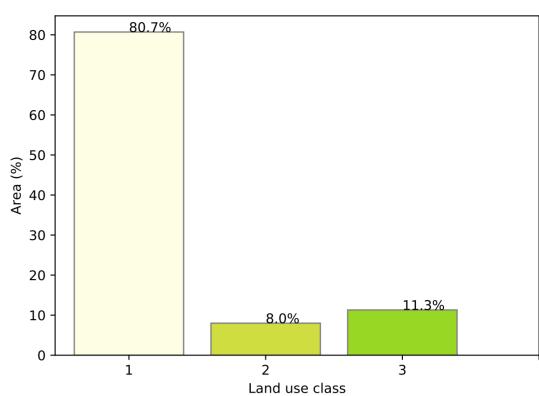




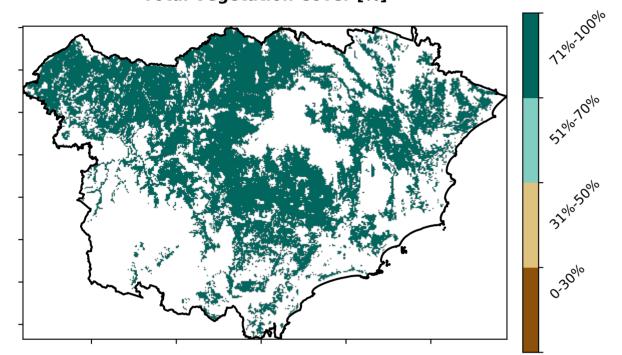
Grazing



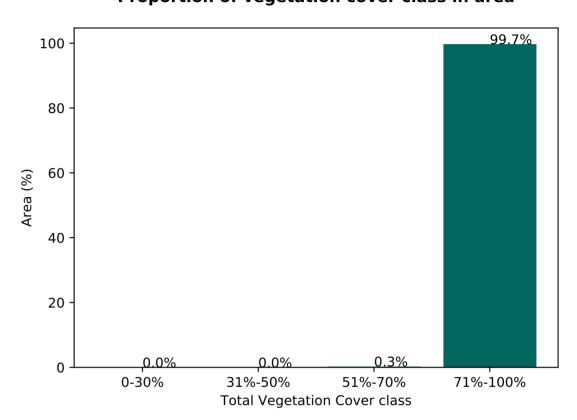
Proportion of each land class in area



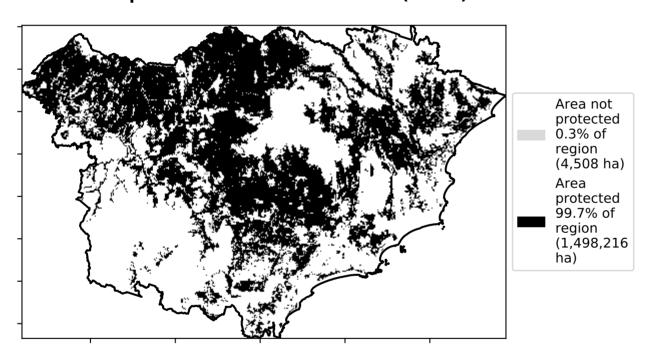




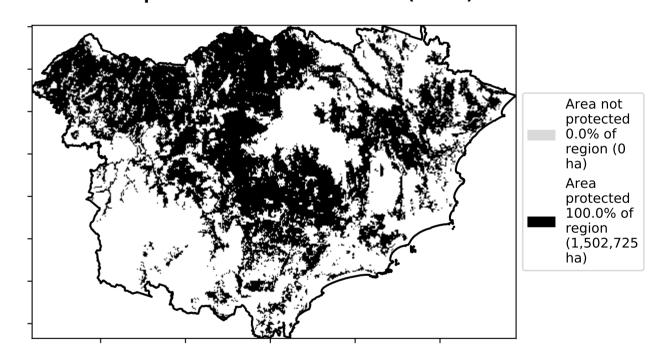
Proportion of vegetation cover class in area



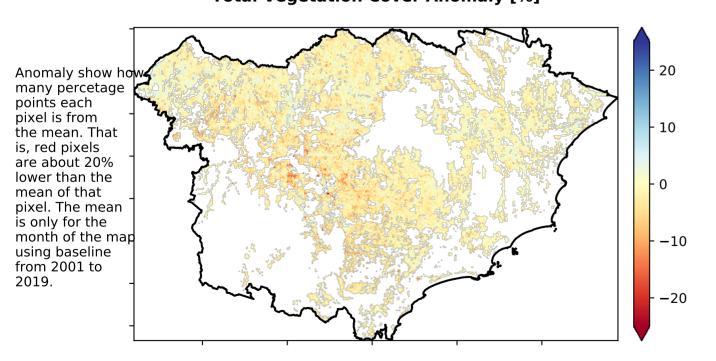
% Area protected from water erosion (>70%)



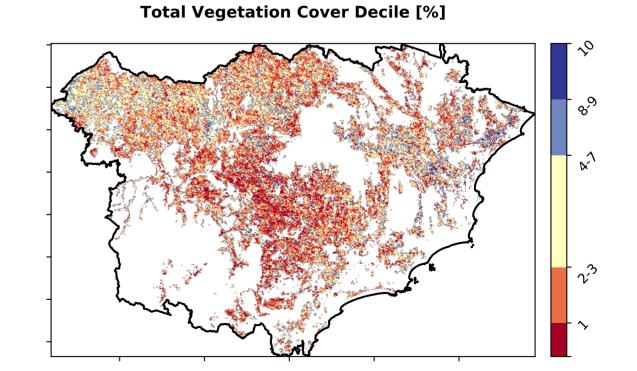
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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.







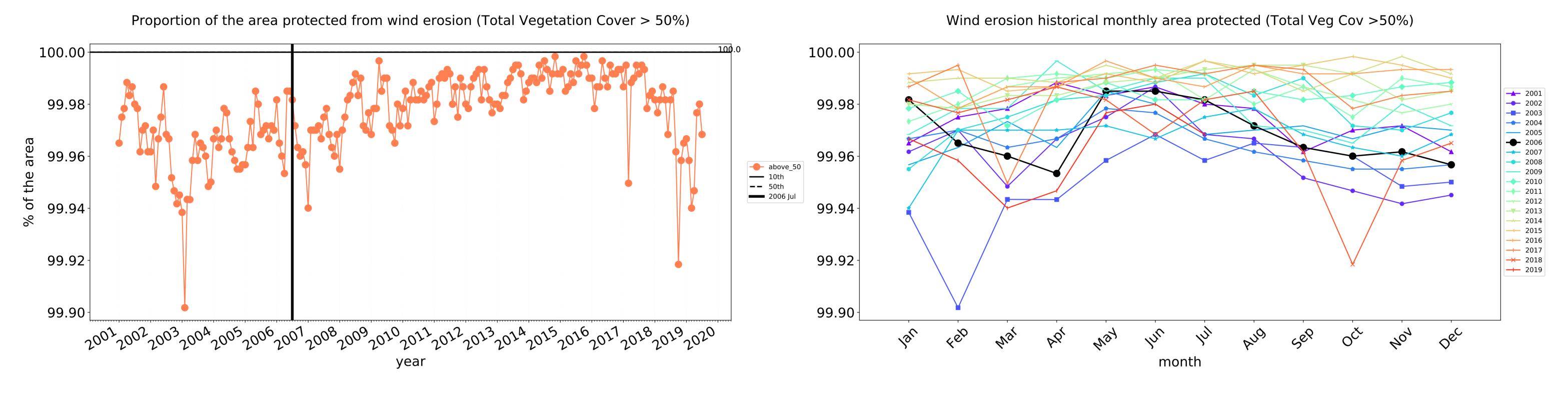


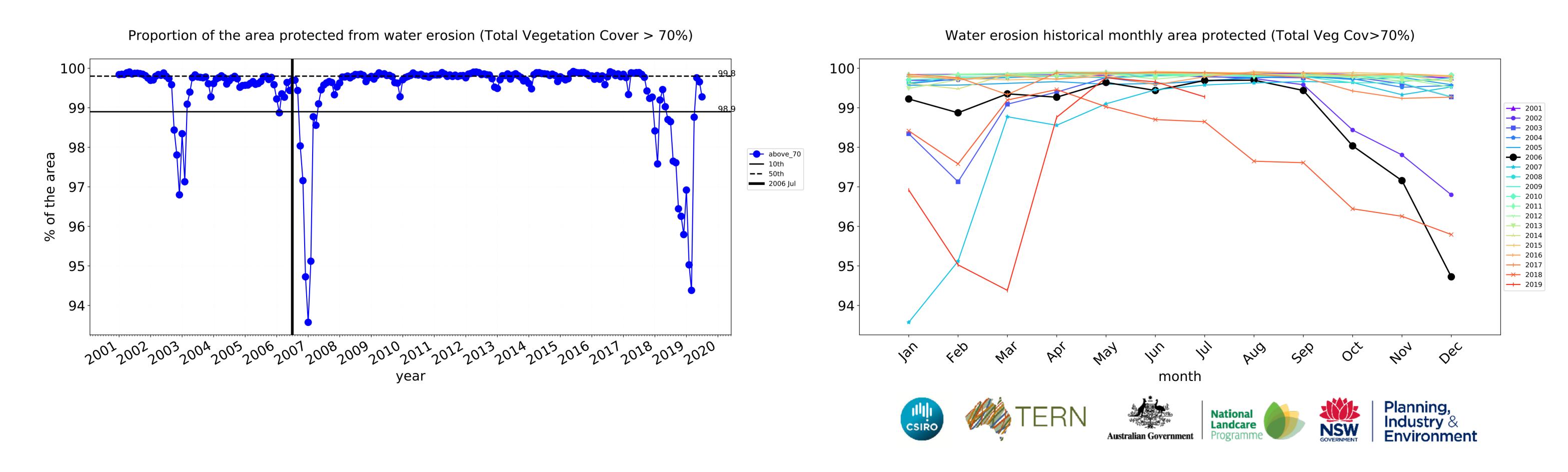


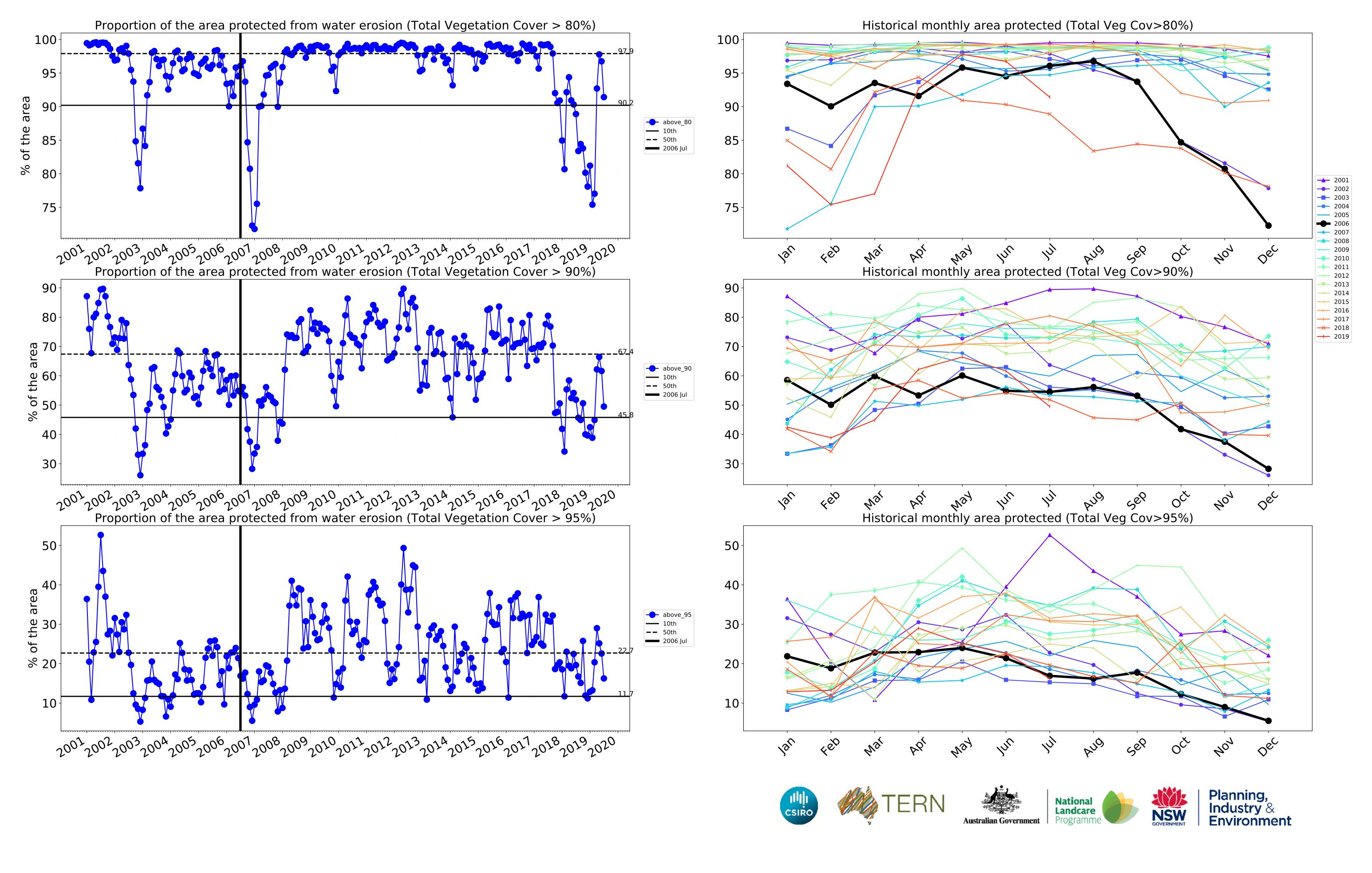




Grazing timeseries

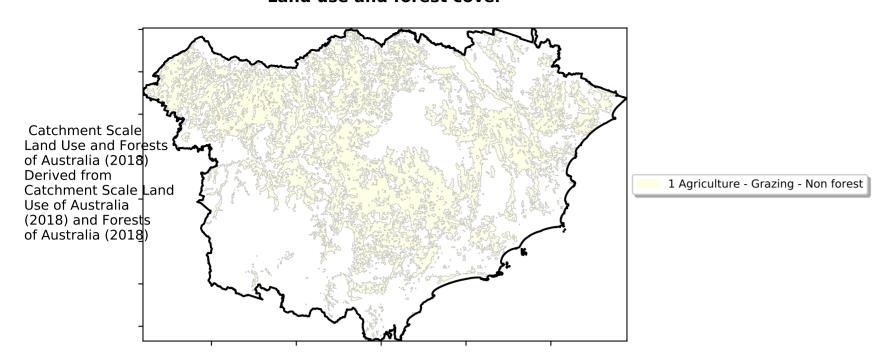




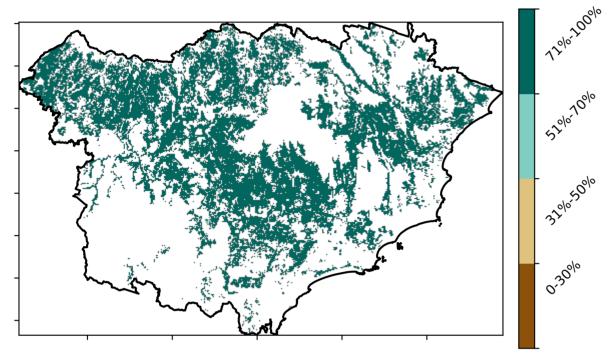


Grazing non forest

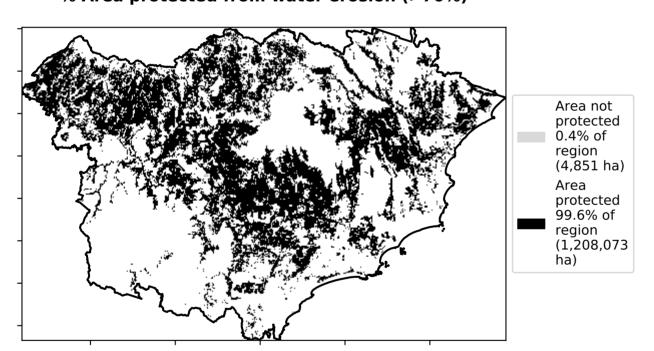
Land use and forest cover



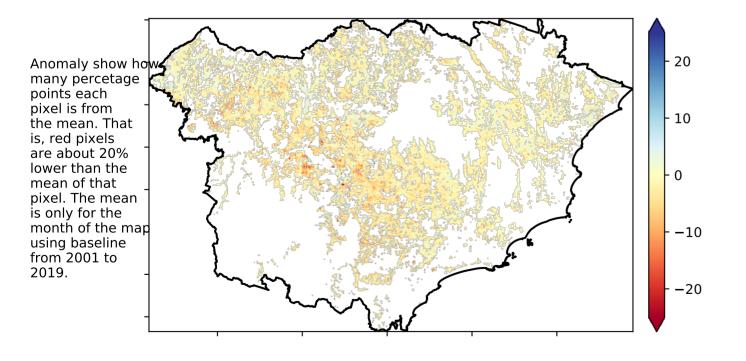
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

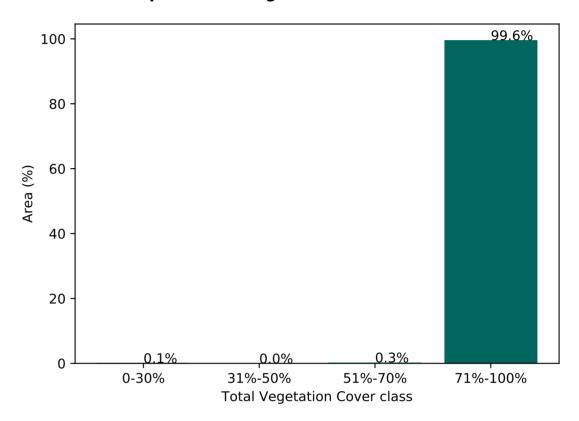


Total Vegetation Cover Anomaly [%]

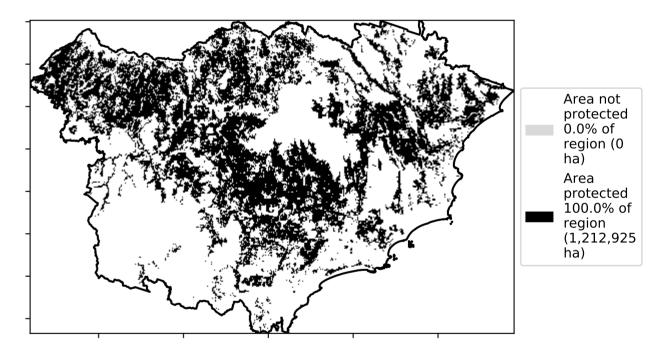


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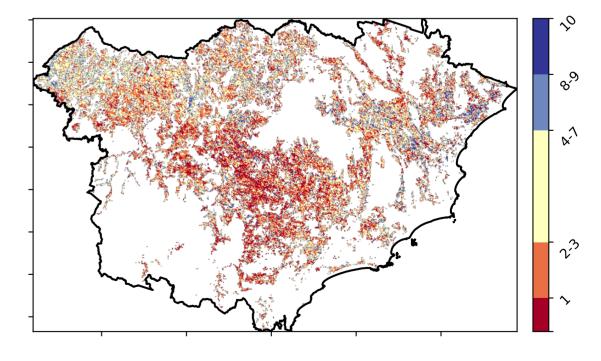
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







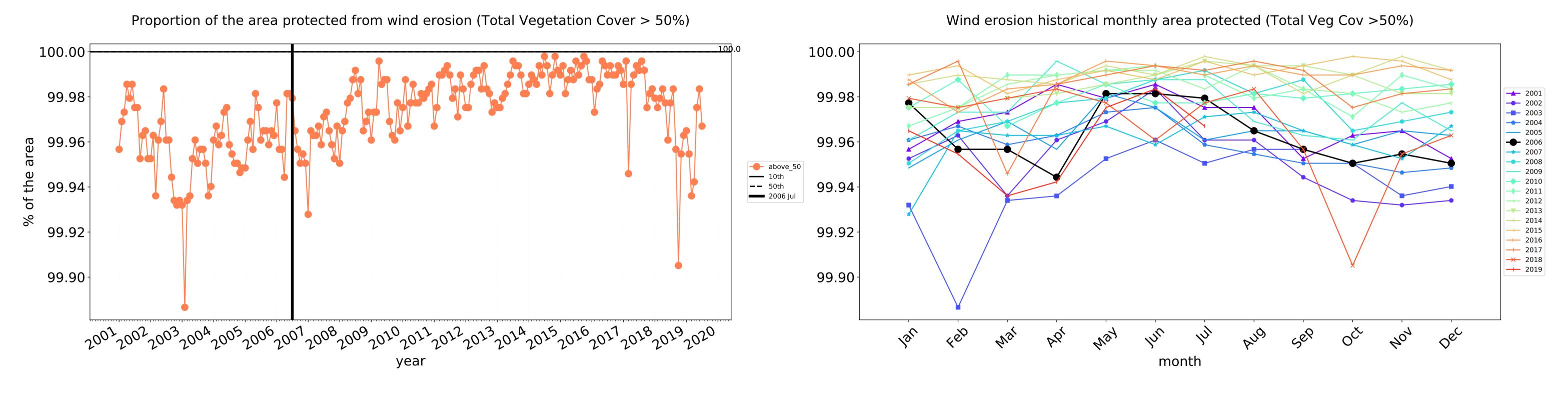


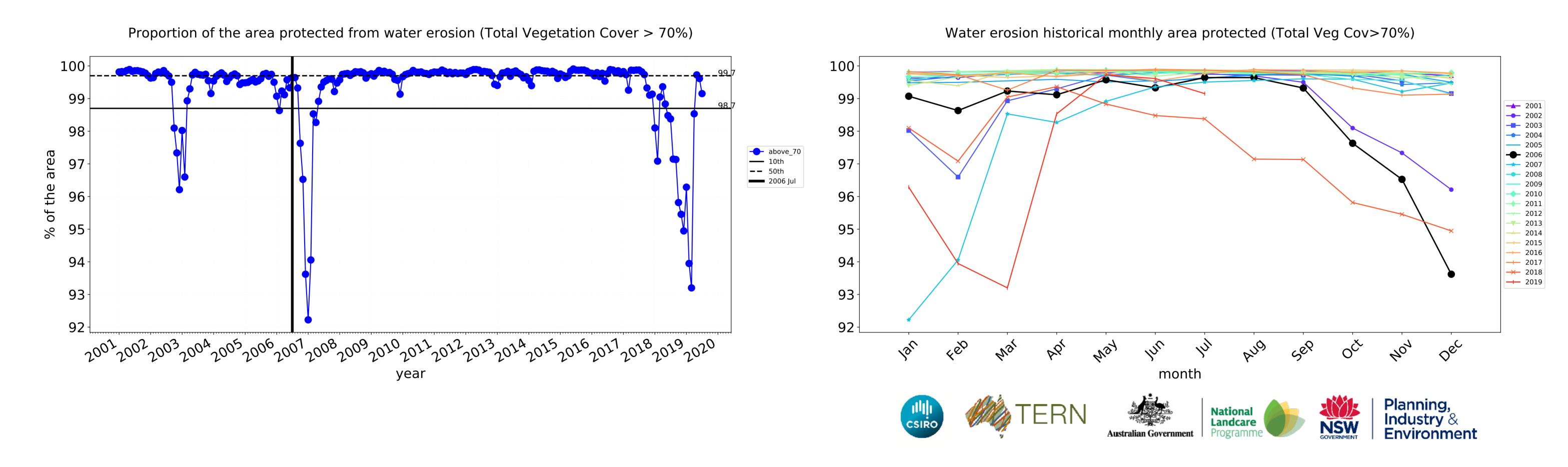


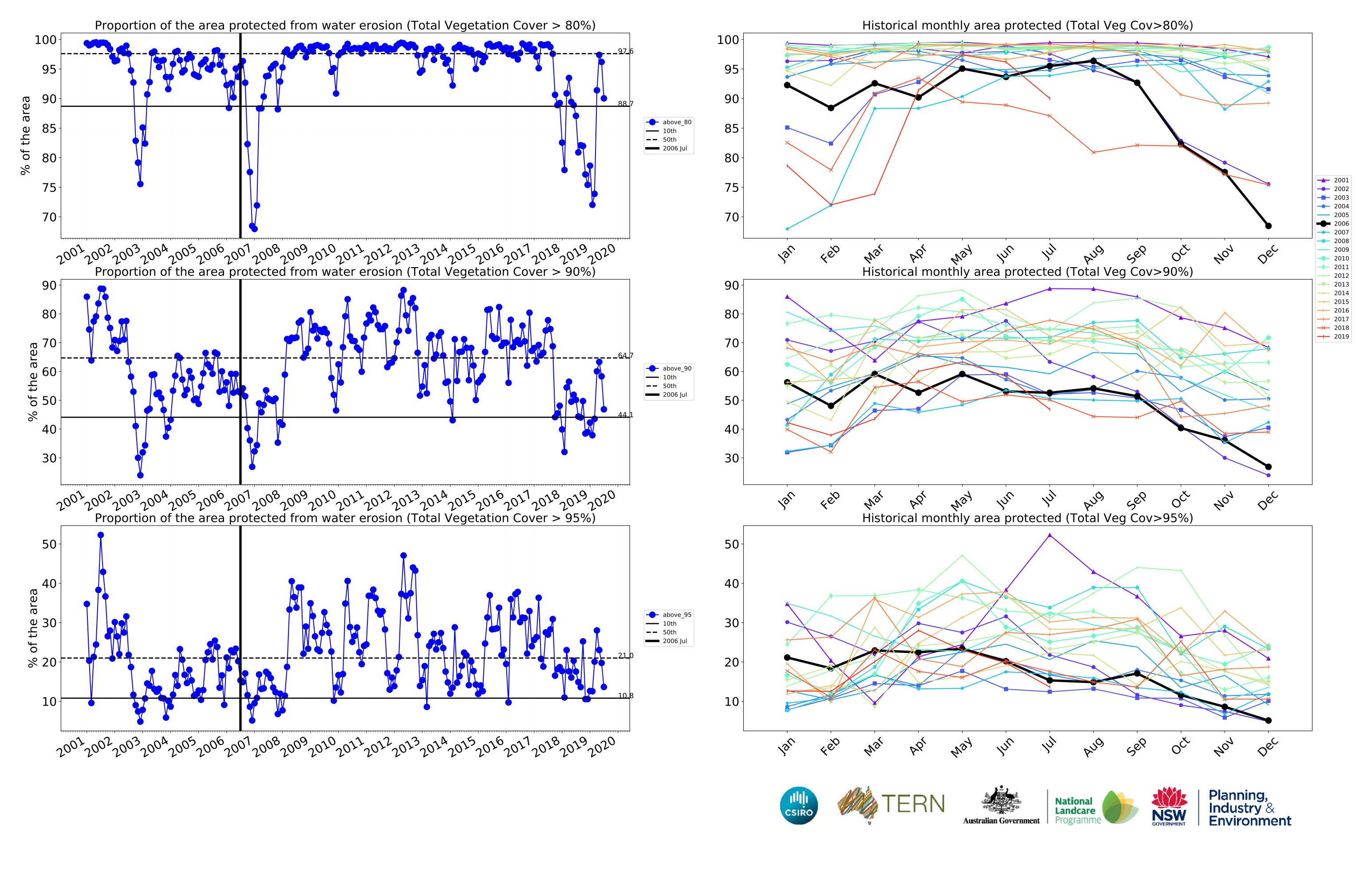




Grazing non forest timeseries



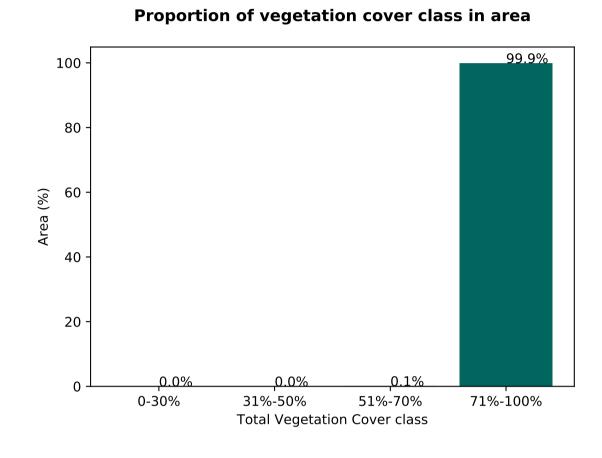


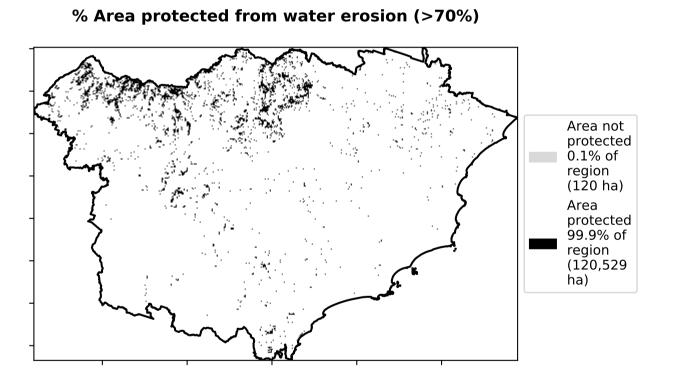


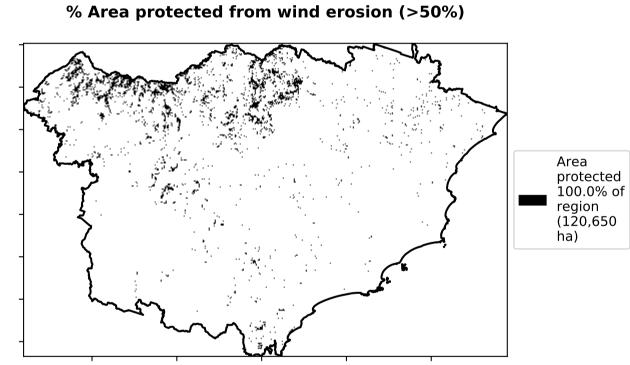
Grazing Woodland forest

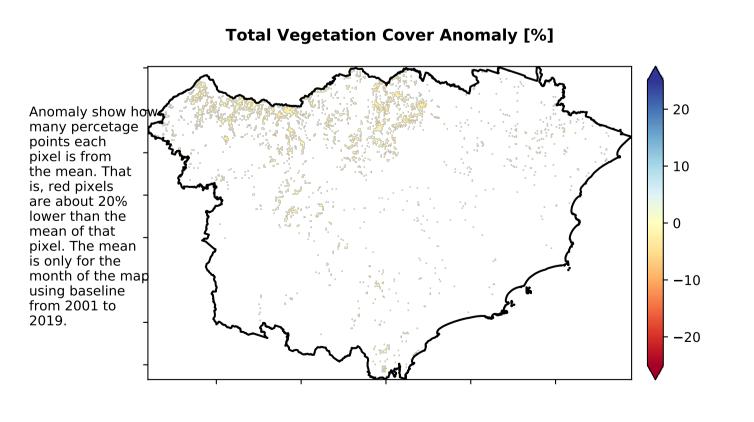
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Agriculture - Grazing - Woodland forest Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

Total Vegetation Cover [%]

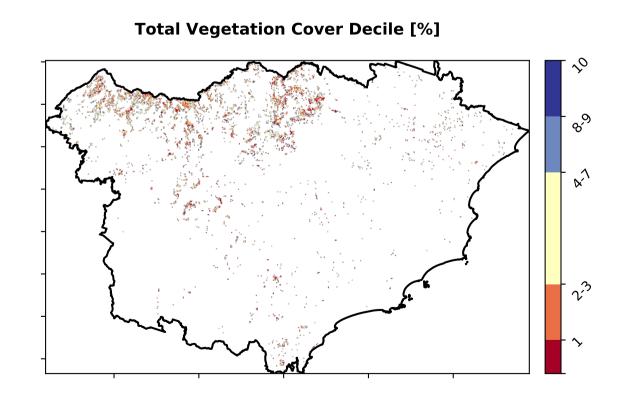








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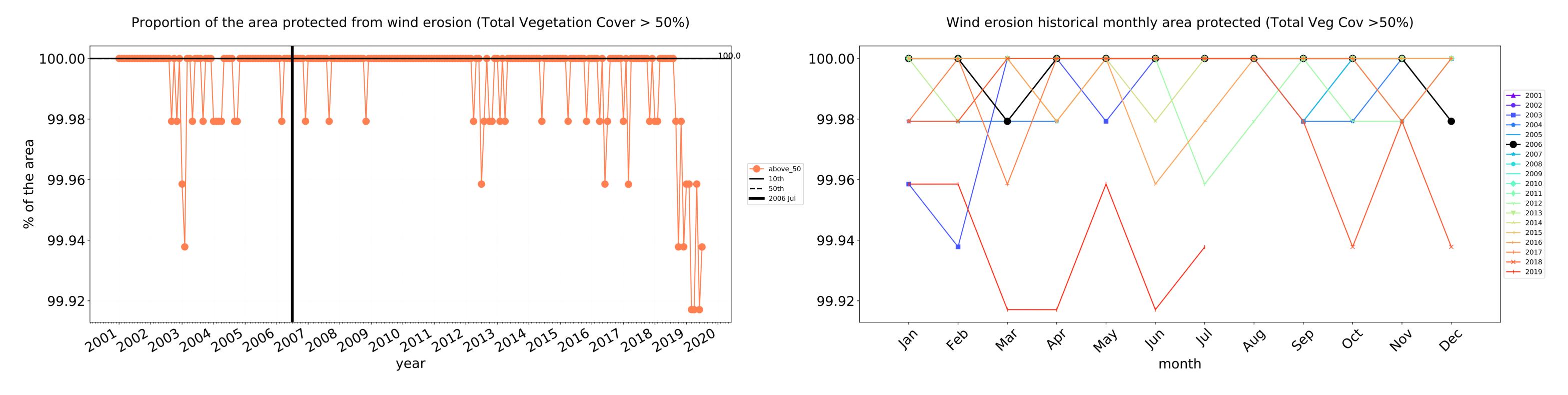


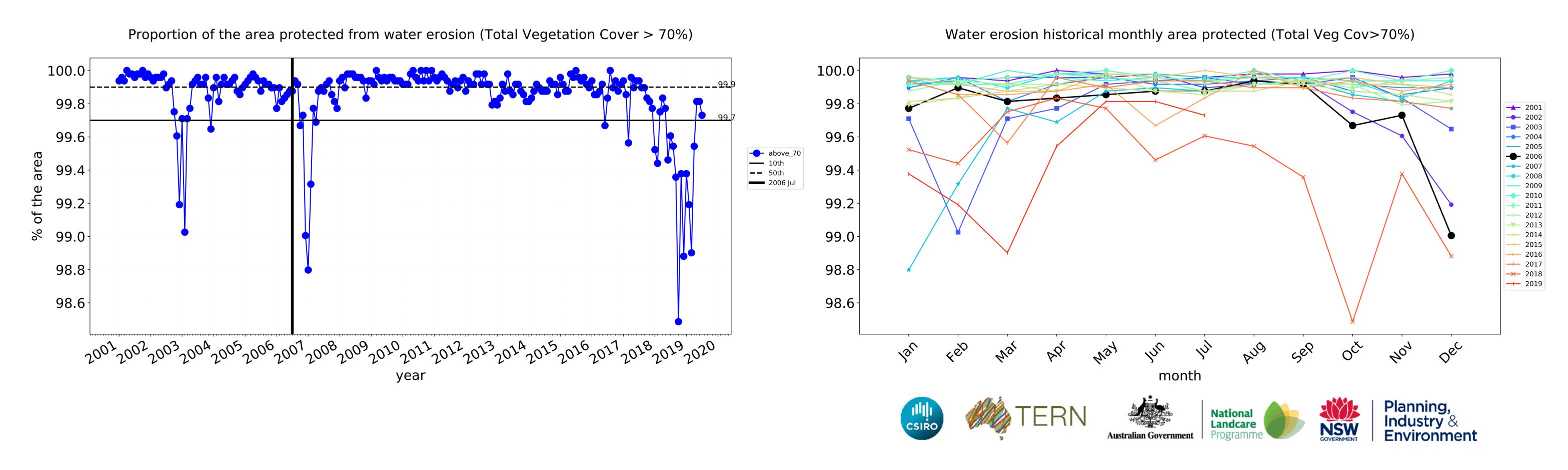


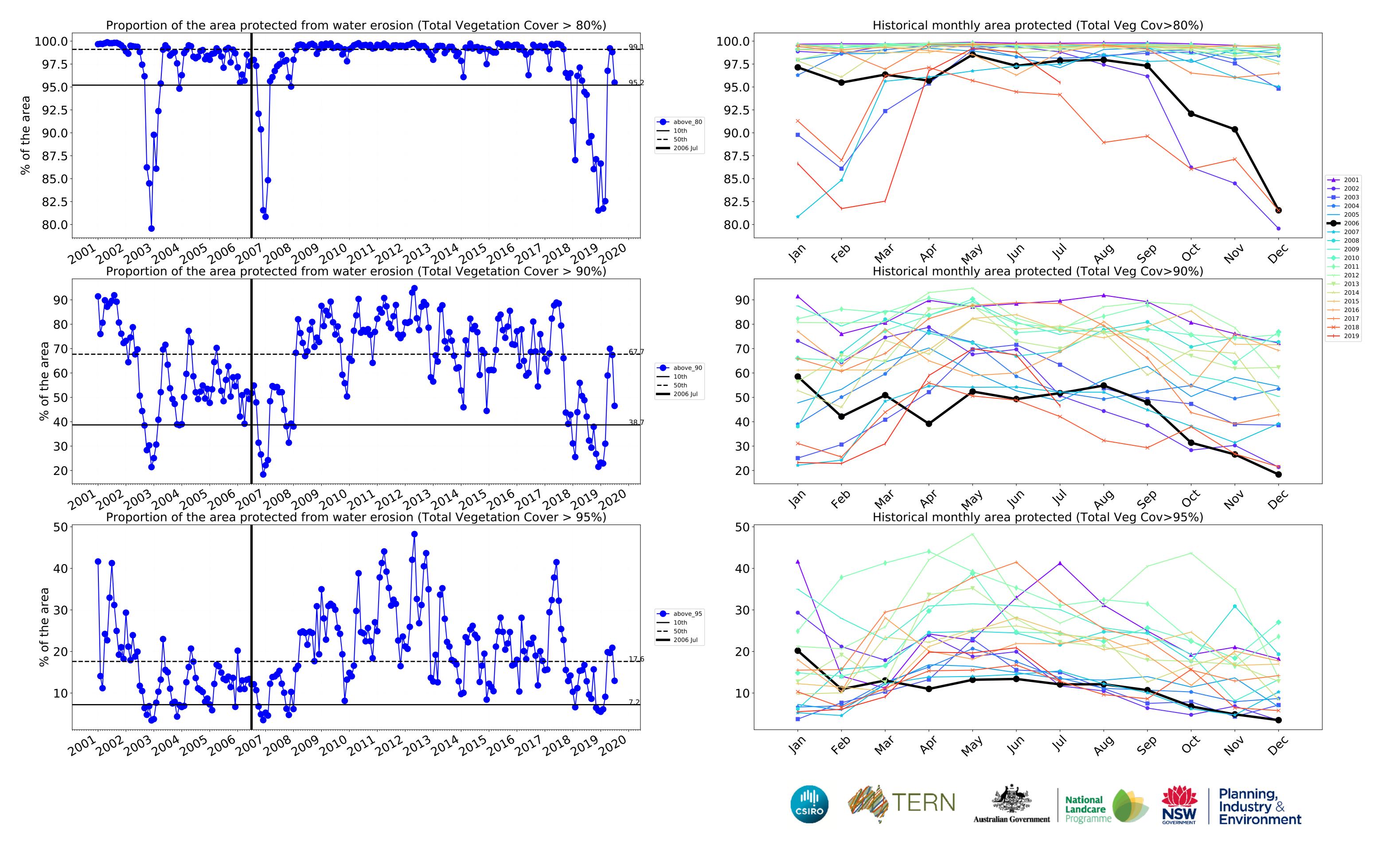




Grazing Woodland forest timeseries





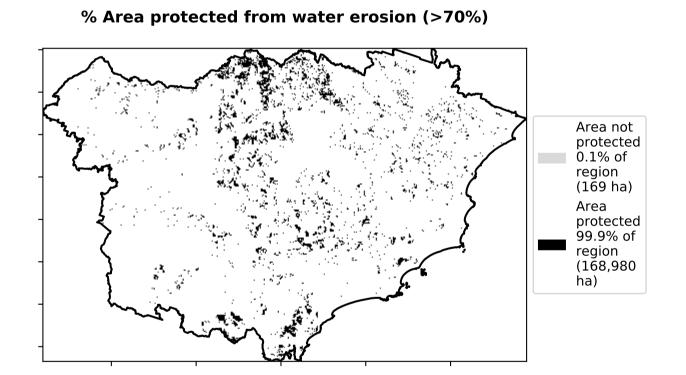


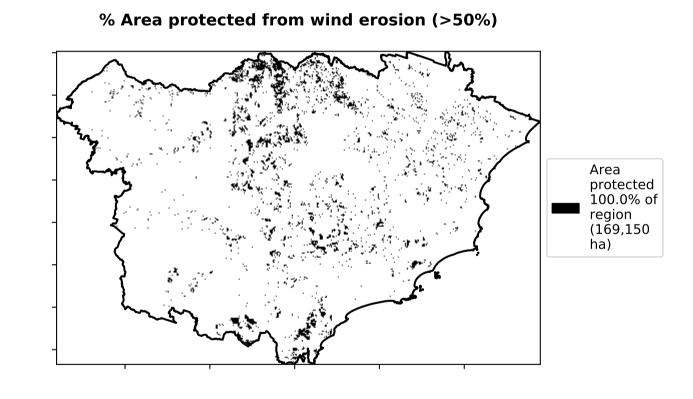
Grazing - Forest (non woodland)

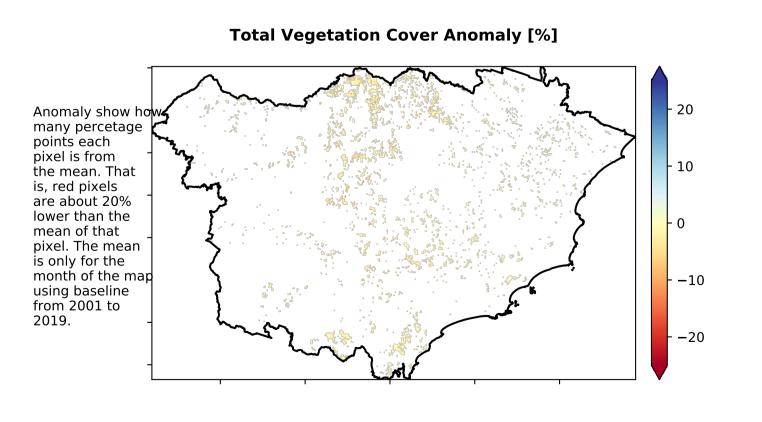
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Agriculture - Grazing - Non-woodland forest Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

Total Vegetation Cover [%]

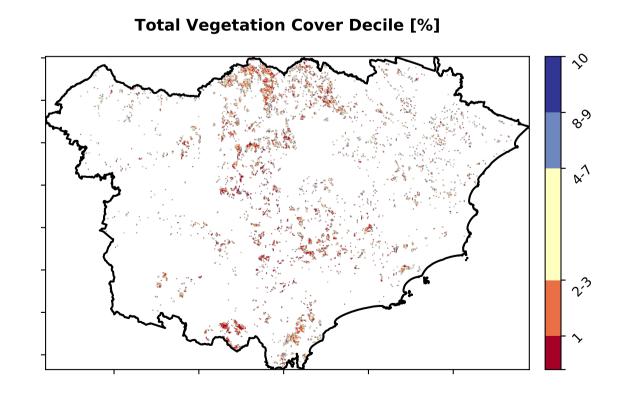
Proportion of vegetation cover class in area 99.9% 100 Area (%) 60 40 20 -0.1% 31%-50% 51%-70% 0-30% 71%-100% **Total Vegetation Cover class**







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





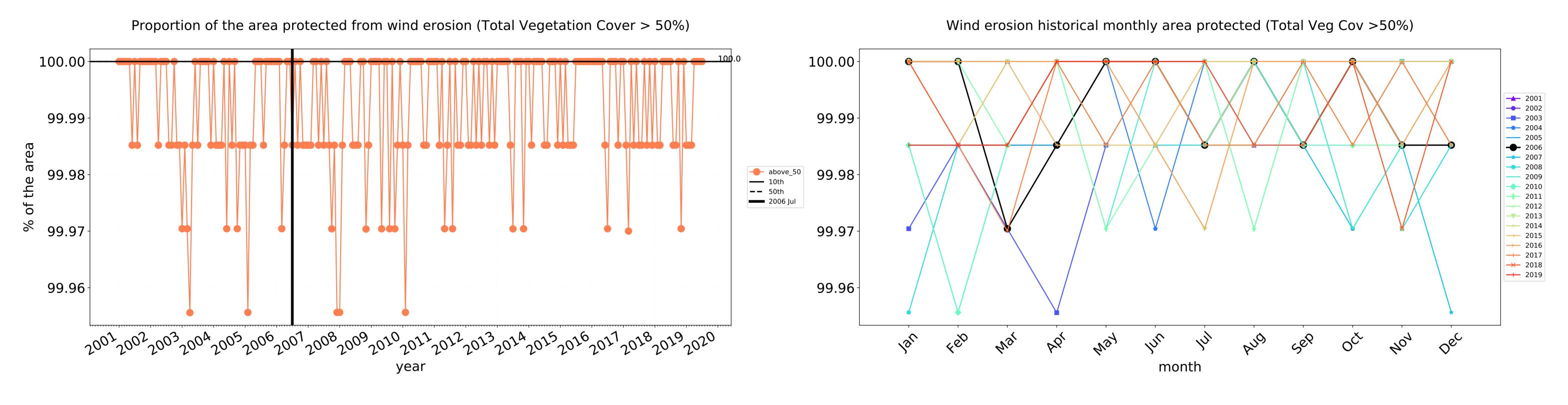


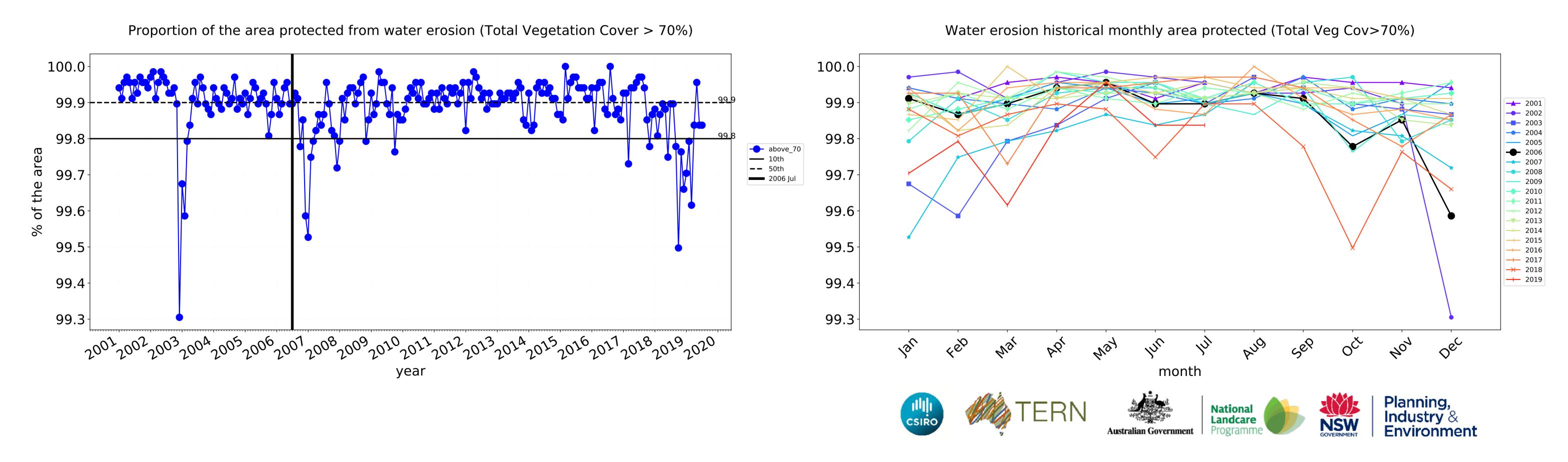


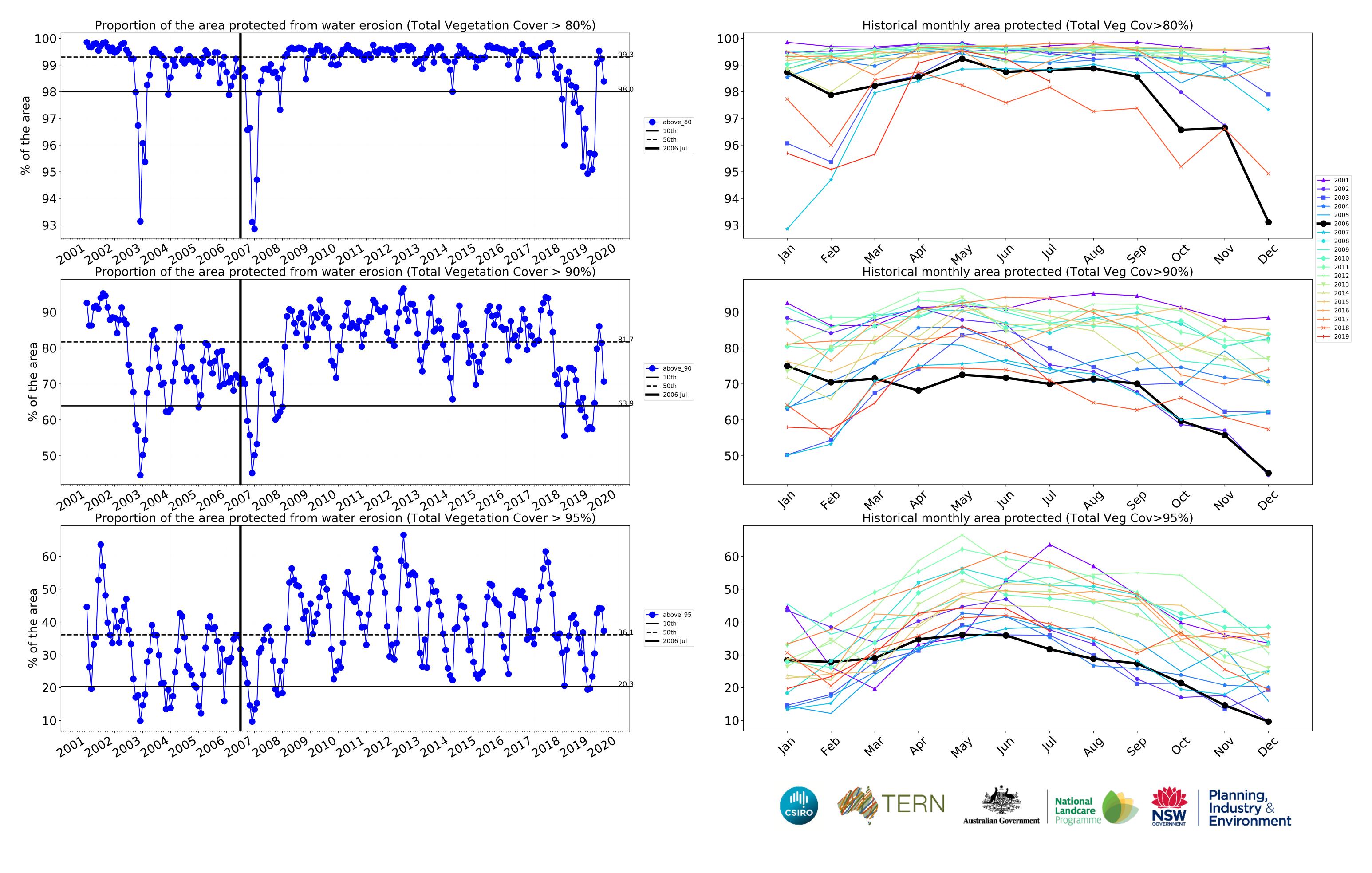






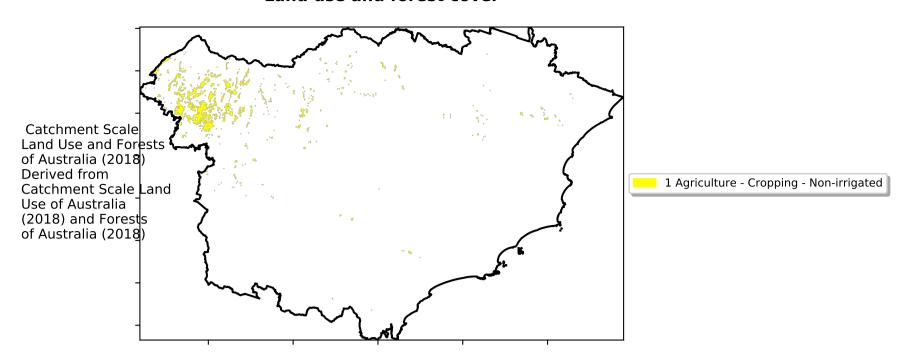




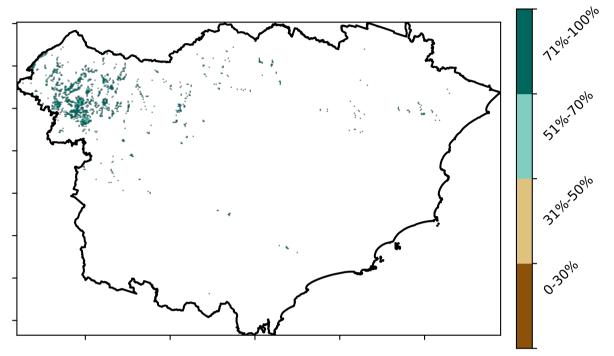


Cropping

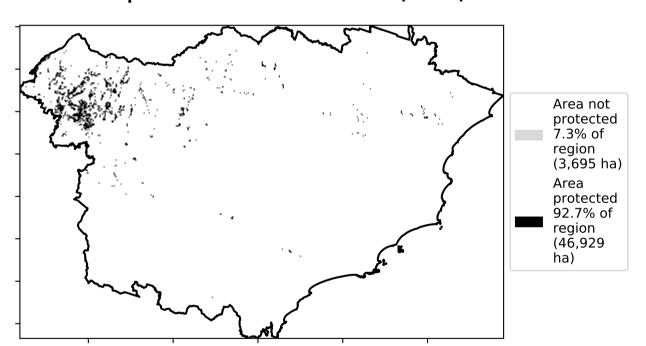
Land use and forest cover



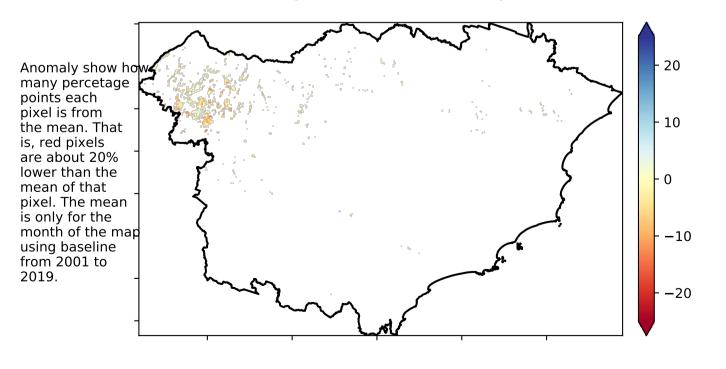
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

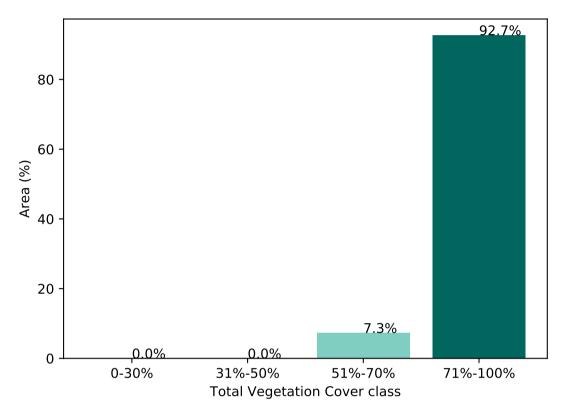


Total Vegetation Cover Anomaly [%]

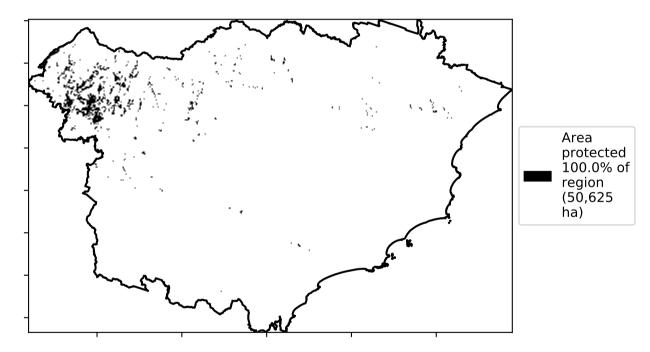


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

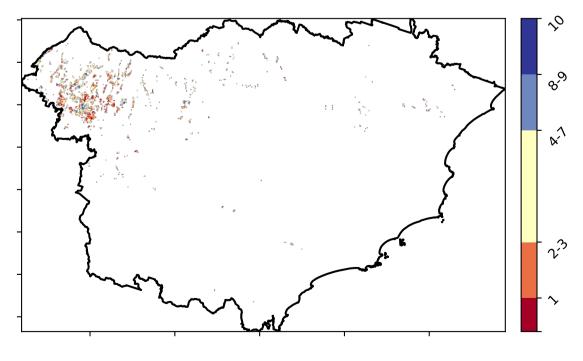
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







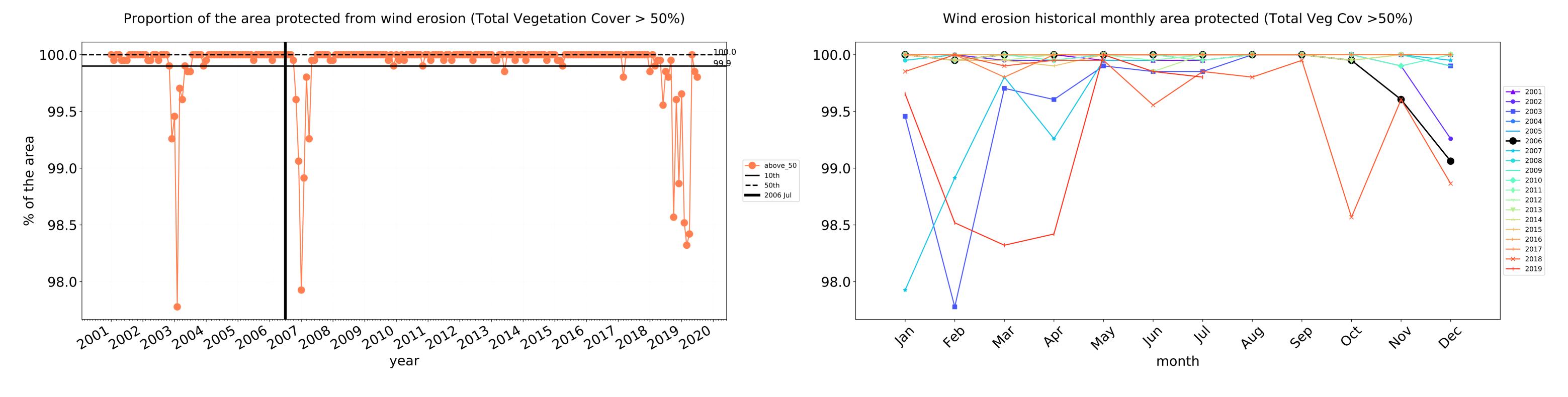


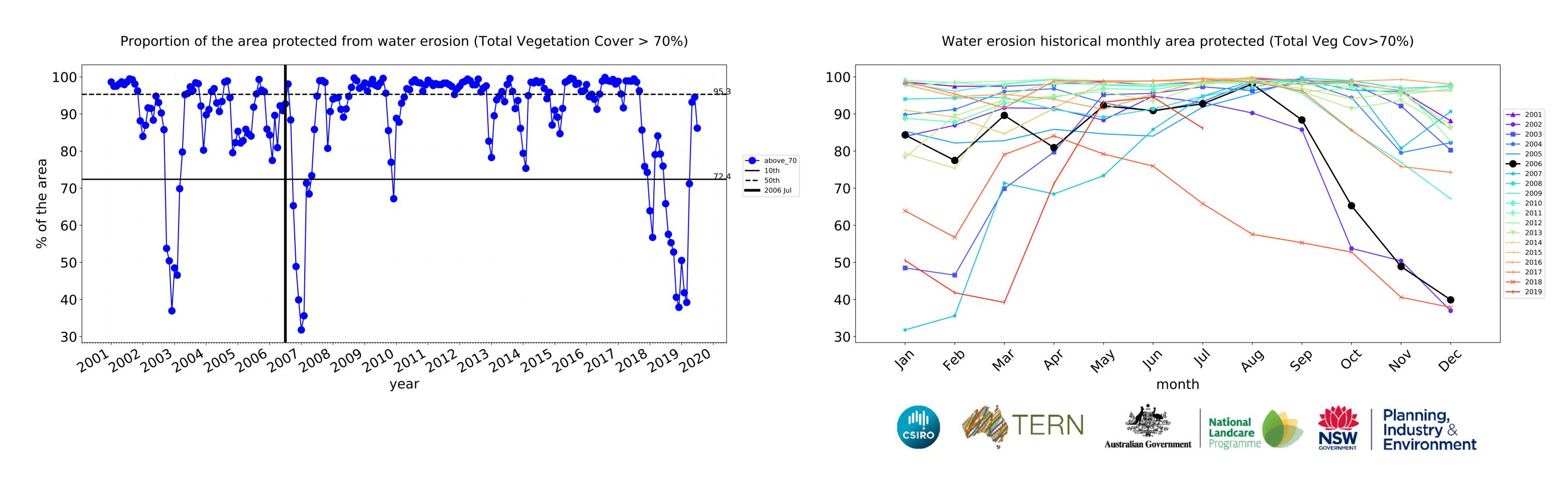


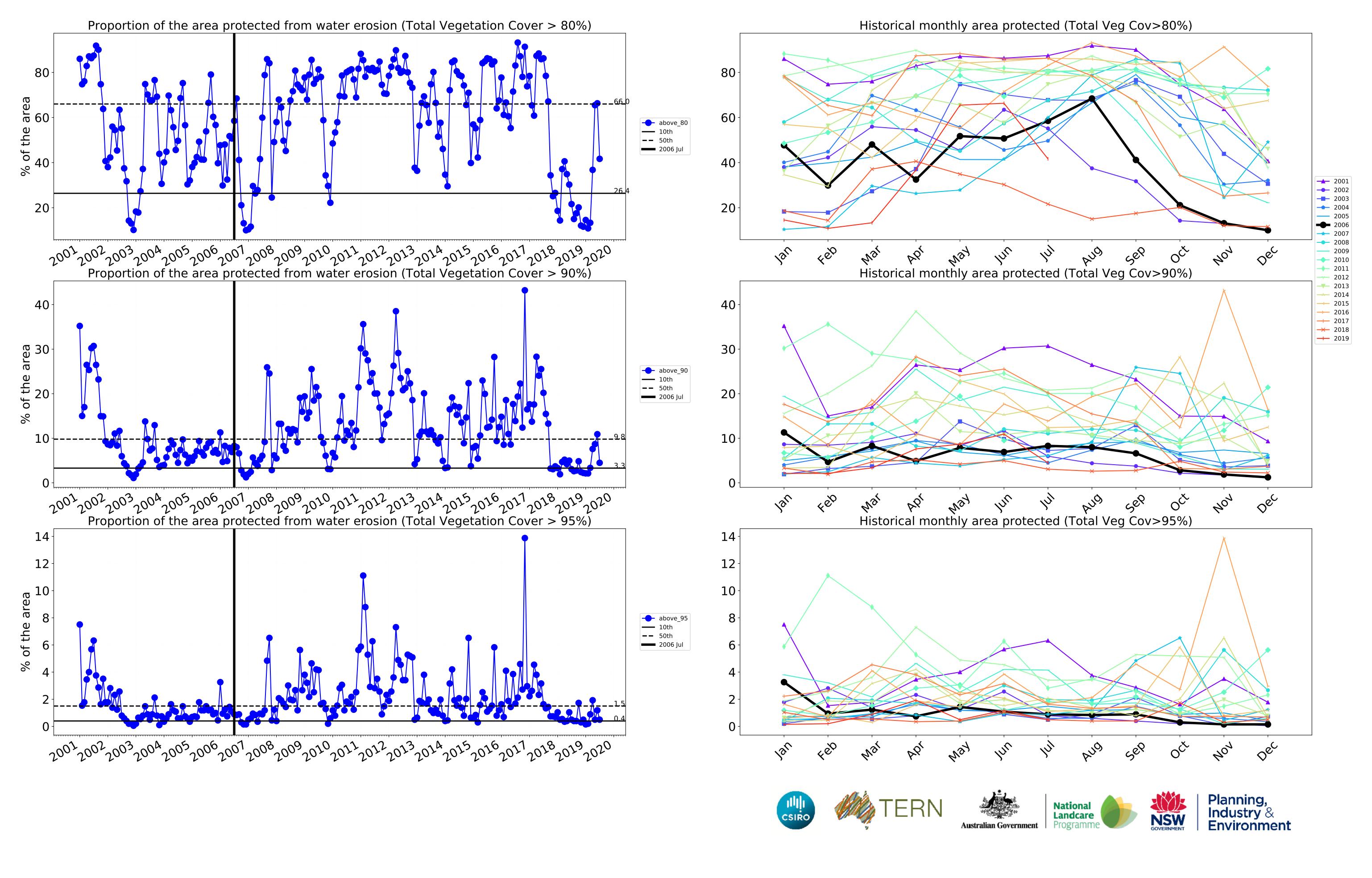




Cropping timeseries



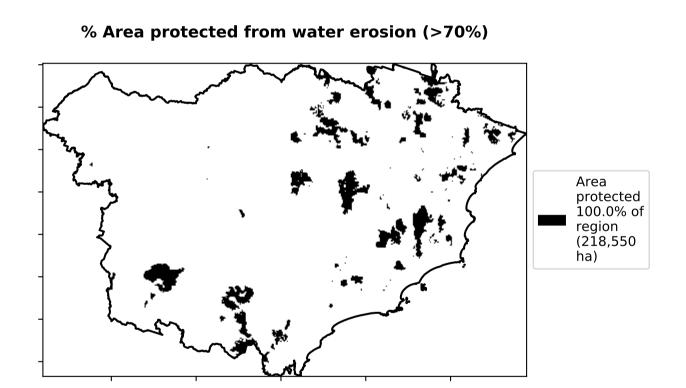


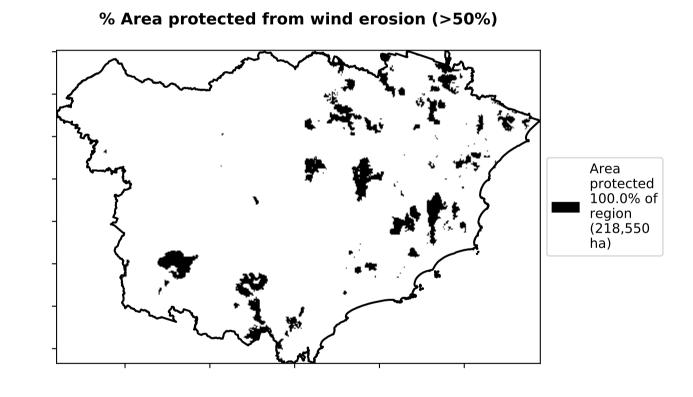


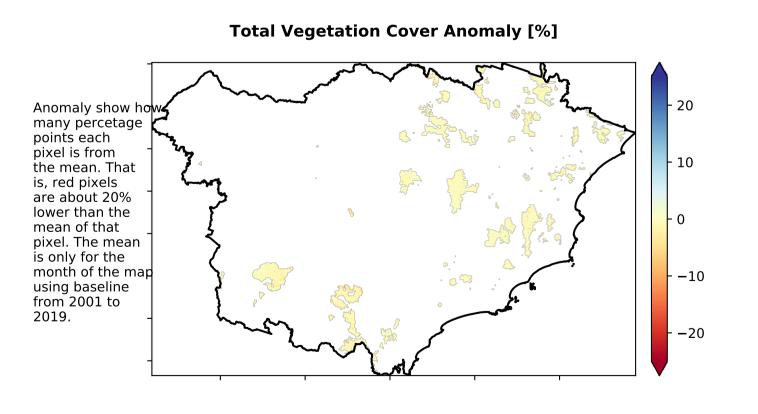
Production native forests and plantation forests

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

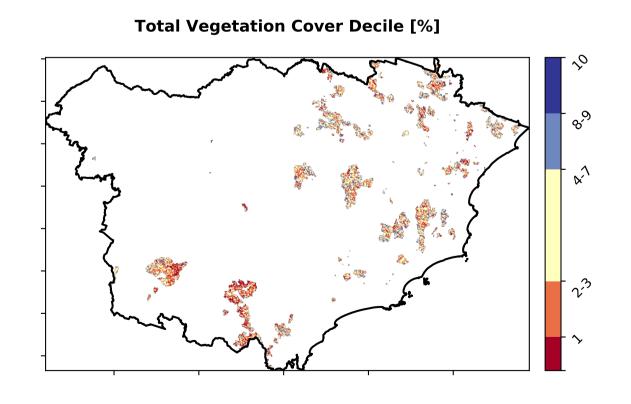
Total Vegetation Cover [%]







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







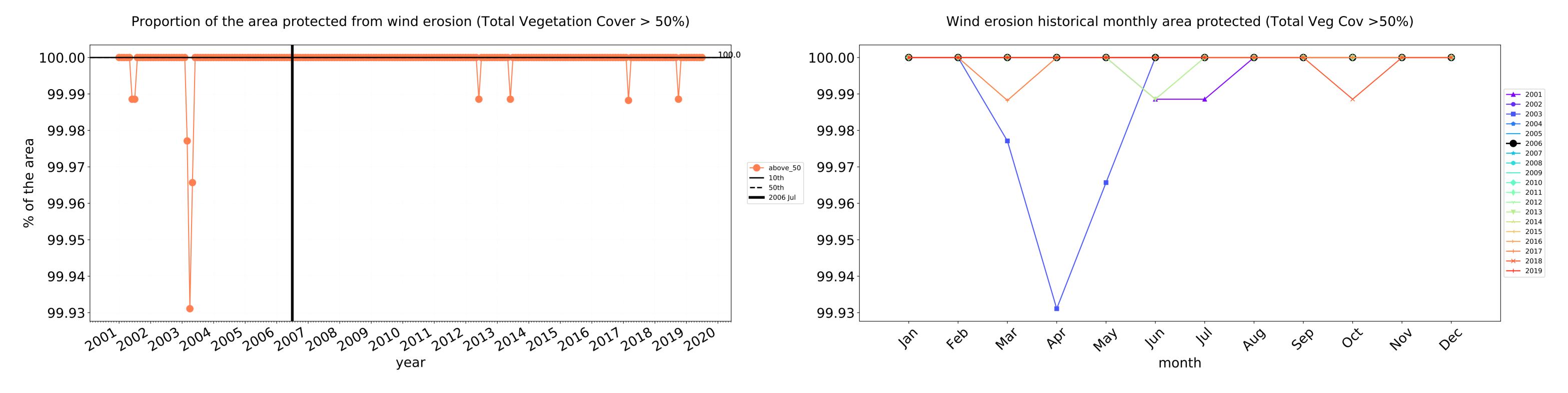


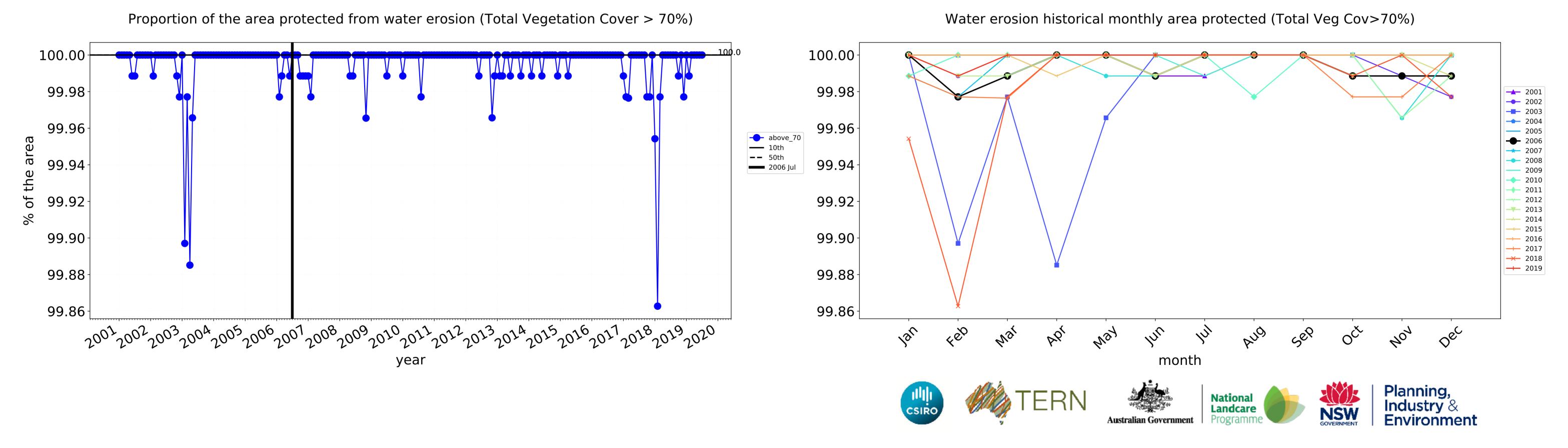


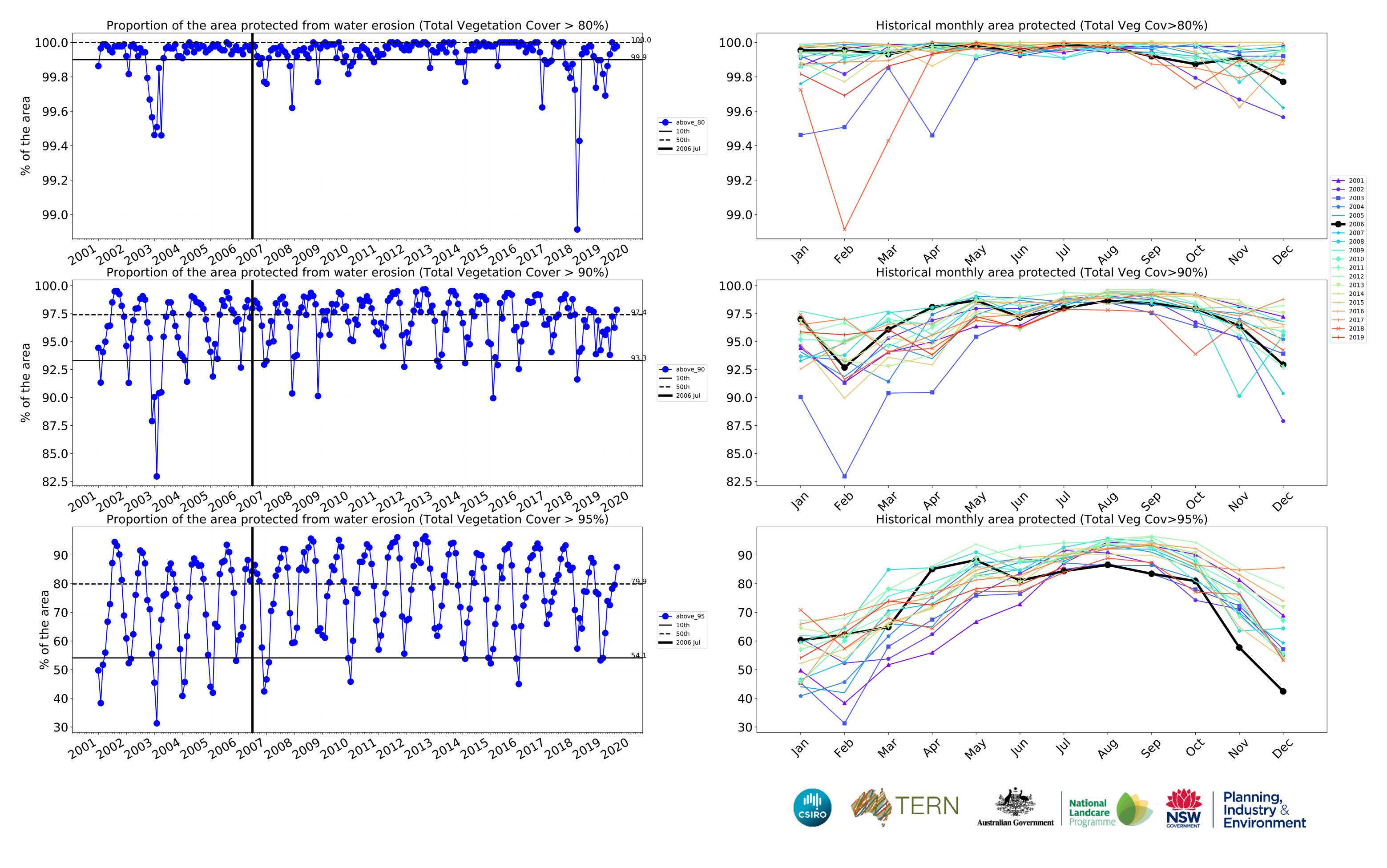




Production native forests and plantation forests timeseries







Hunter (3,238,275 ha and no data 62,150 ha) Percentage area and hectares protected with TVC threshold 30,50,70,80,90 and 95%

Land use and forest cover Class	area(ha)	above_30	above_50	above_70	above_80	above_90	above_95
Entire region	3,238,275	99.9% 3,235,552	99.7% 3,228,308	98.6% 3,193,986	94.8% 3,071,414	68.0% 2,203,237	35.3% 1,143,421
Conservation and natural environments	1,242,100	99.9% 1,240,875	99.8% 1,240,100	99.7% 1,238,075	99.3% 1,233,900	89.8% 1,115,425	55.8% 692,825
Conservation and natural environments non forest	30,700	96.3% 29,550	94.1% 28,875	90.1% 27,675	85.5% 26,250	66.4% 20,400	36.9% 11,325
Conservation and natural environments Woodland forest	139,000	100.0% 138,975	99.9% 138,925	99.9% 138,875	99.7% 138,625	79.5% 110,450	31.7% 44,075
natural environments Forest (non woodland)	1,072,400	100.0% 1,072,350	100.0% 1,072,300	99.9% 1,071,525	99.7% 1,069,025	91.8% 984,575	59.4% 637,425
Agriculture	1,580,725	100.0% 1,580,725	100.0% 1,580,450	99.5% 1,572,175	94.5% 1,493,525	52.2% 824,950	16.1% 254,850
Grazing	1,502,725	100.0% 1,502,725	100.0% 1,502,450	99.7% 1,498,075	96.1% 1,443,800	54.5% 818,850	16.9% 254,125
Grazing non forest	1,212,925	100.0% 1,212,925	100.0% 1,212,675	99.6% 1,208,600	95.5% 1,158,575	52.6% 638,050	15.3% 185,900
Grazing Woodland forest	120,650	100.0% 120,650	100.0% 120,650	99.9% 120,500	97.9% 118,075	51.7% 62,400	12.1% 14,575
Grazing - Forest (non woodland)	169,150	100.0% 169,150	100.0% 169,125	99.9% 168,975	98.8% 167,150	70.0% 118,400	31.7% 53,650
Cropping	50,625	100.0% 50,625	100.0% 50,625	92.7% 46,950	58.5% 29,625	8.3% 4,200	0.9% 450
Production native forests and plantation forests	218,550	100.0% 218,550	100.0% 218,550	100.0% 218,550	100.0% 218,525	98.0% 214,125	84.4% 184,400











