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: June 2013

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

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

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

Erosion protection: Wind erosion 50% total vegetation cover

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

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

Comparison with previous years:

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

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

Erosion protection

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

Rainfall

• Millimetres rainfall each month (black line).

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

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

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

Acknowledgment of data:

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

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







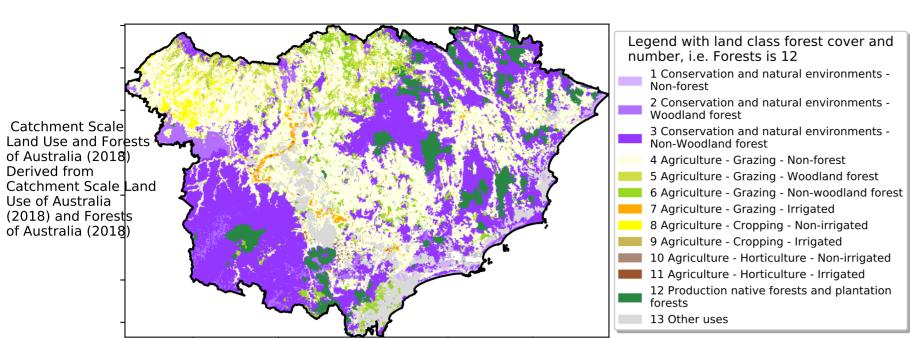




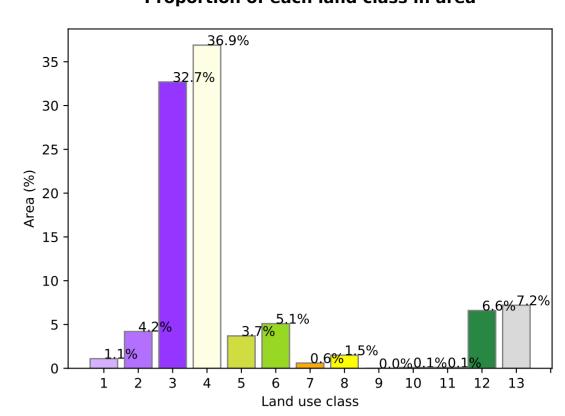


Vegetation Cover Jun 2013

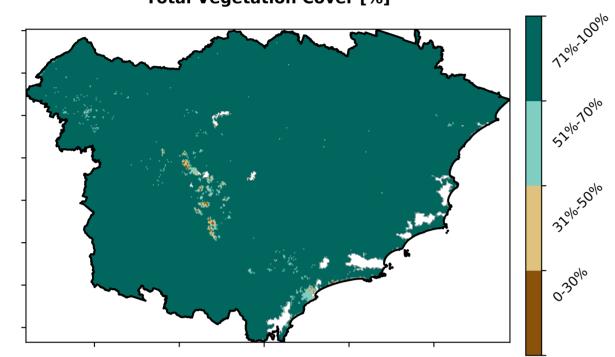
Land use and forest cover



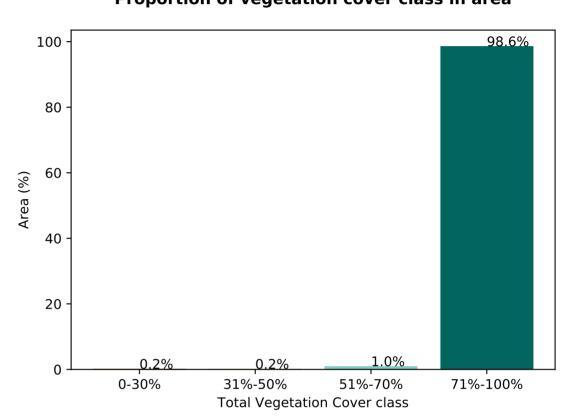
Proportion of each land class in area



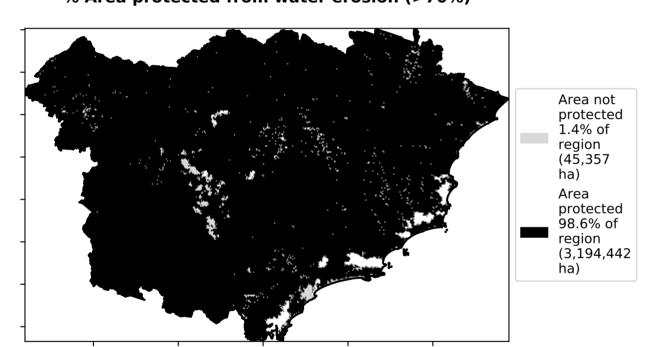
Total Vegetation Cover [%]



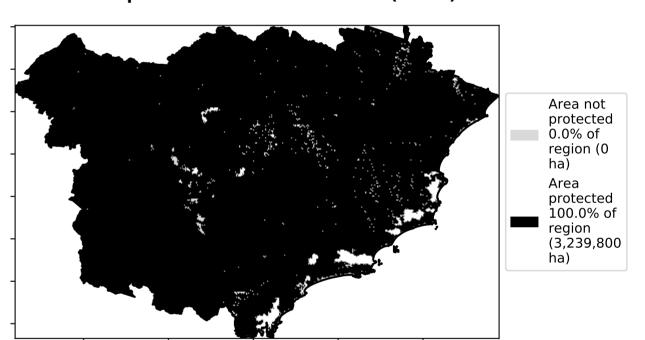
Proportion of vegetation cover class in area



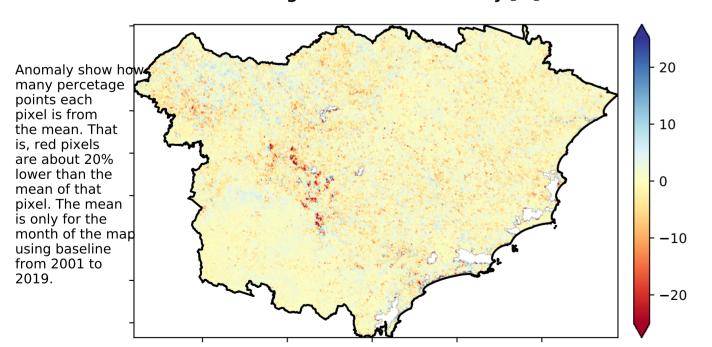
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

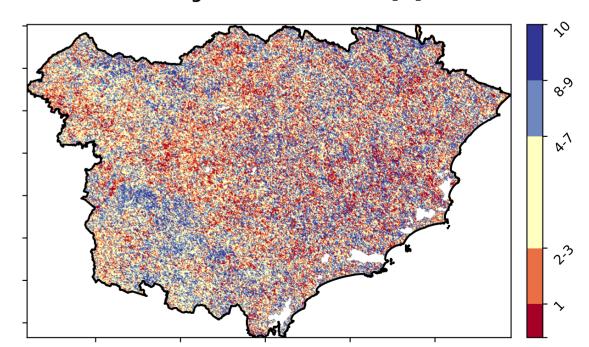


Total Vegetation Cover Anomaly [%]



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

Total Vegetation Cover Decile [%]





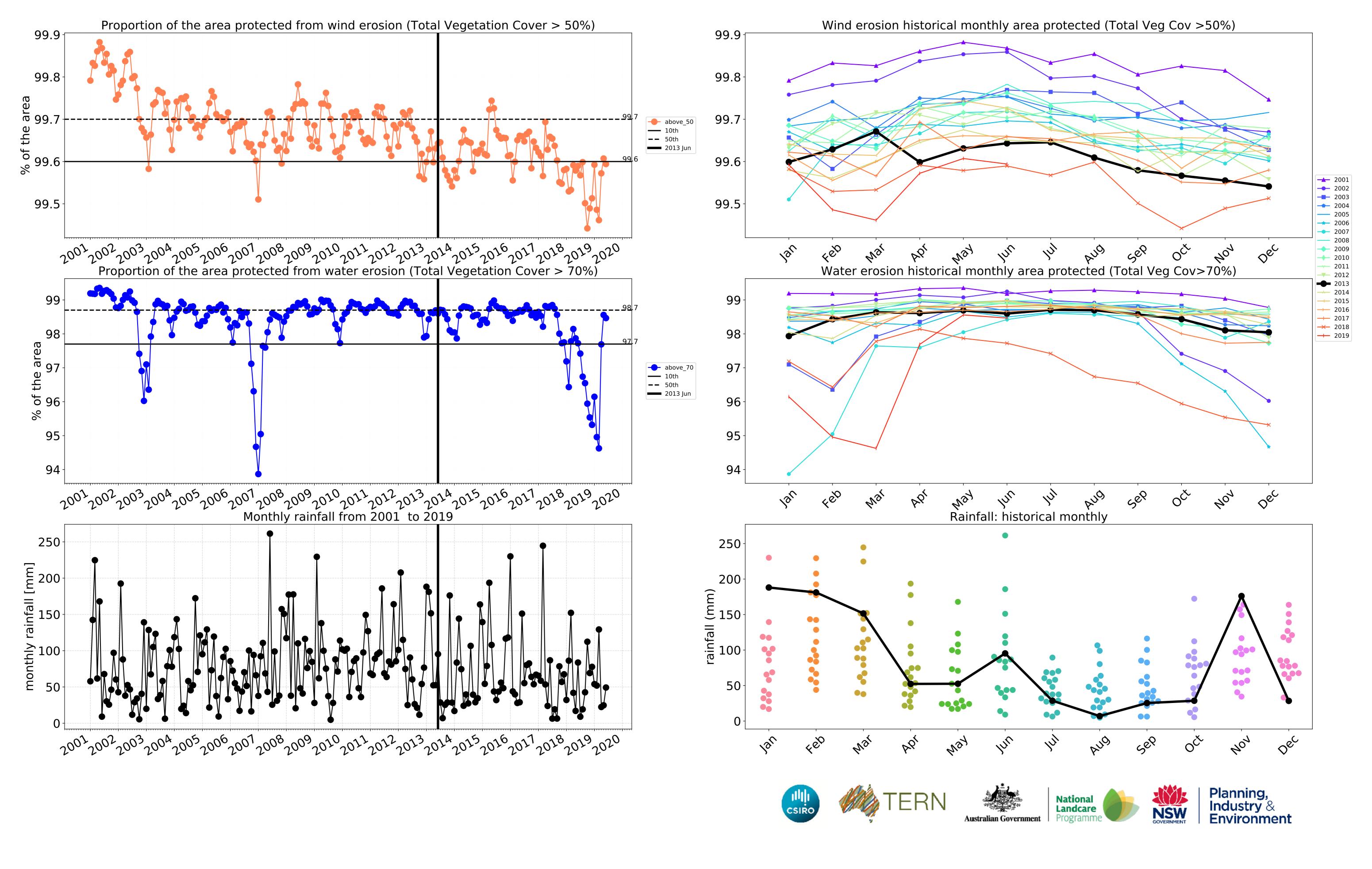


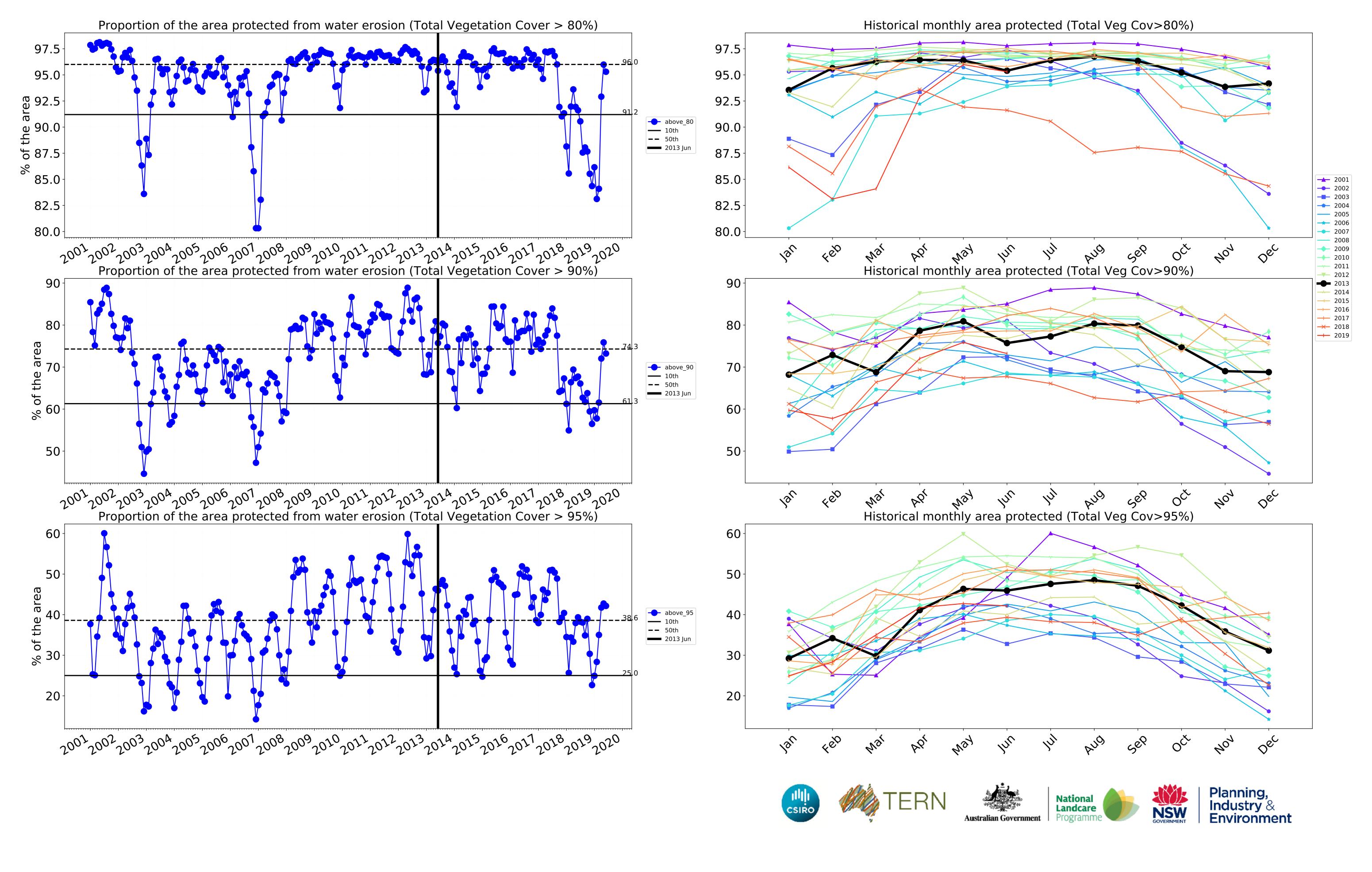






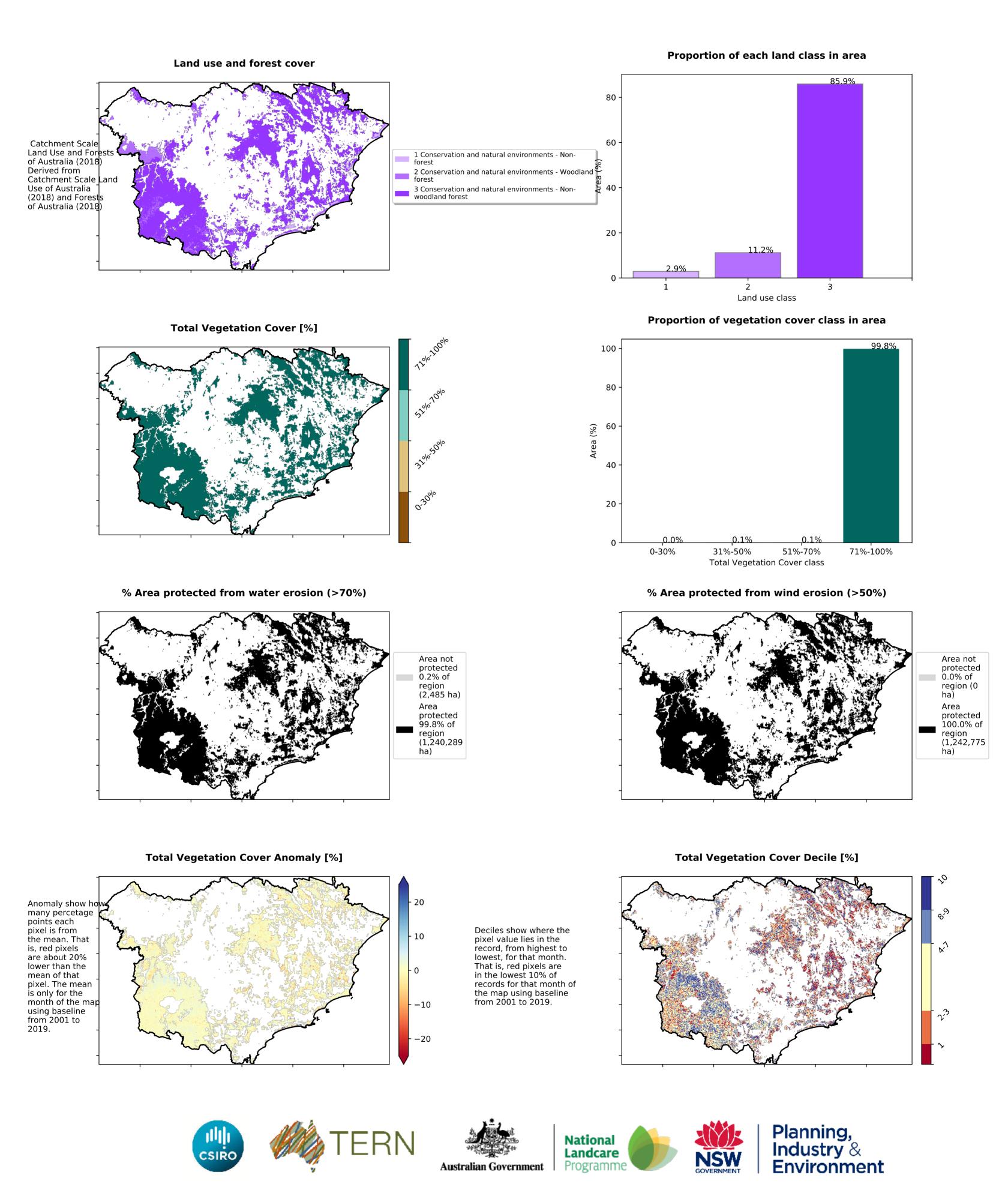




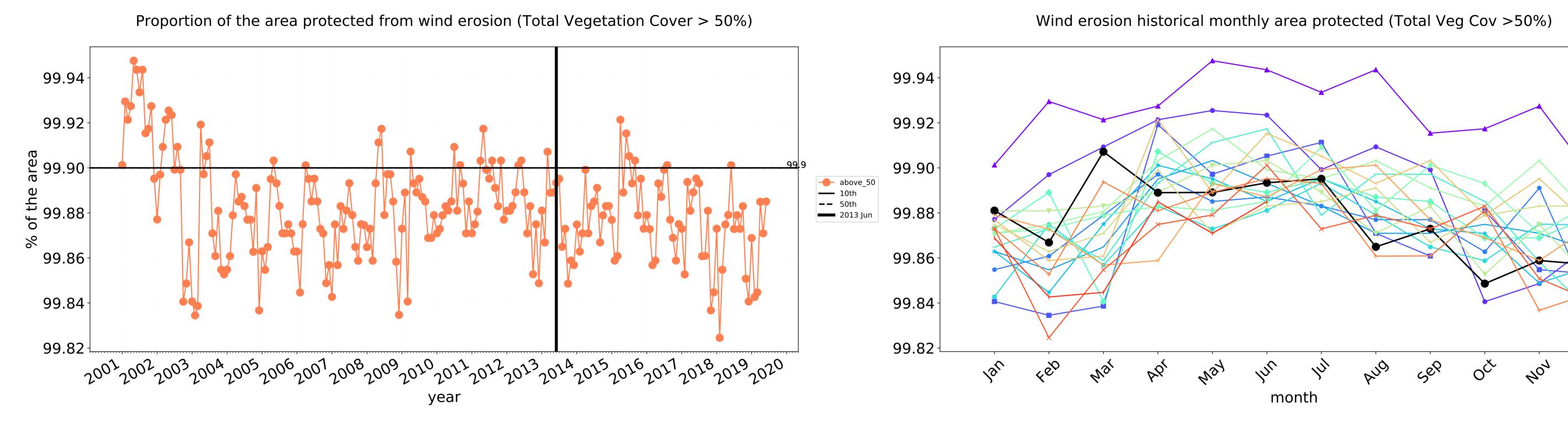


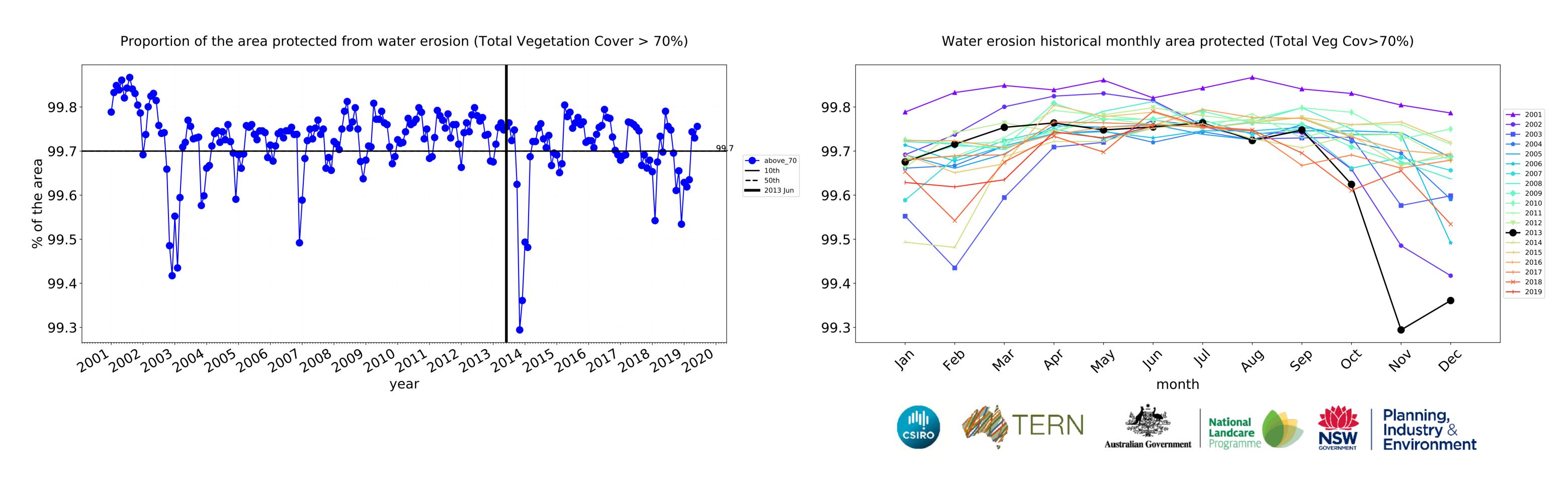
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Conservation and natural environments



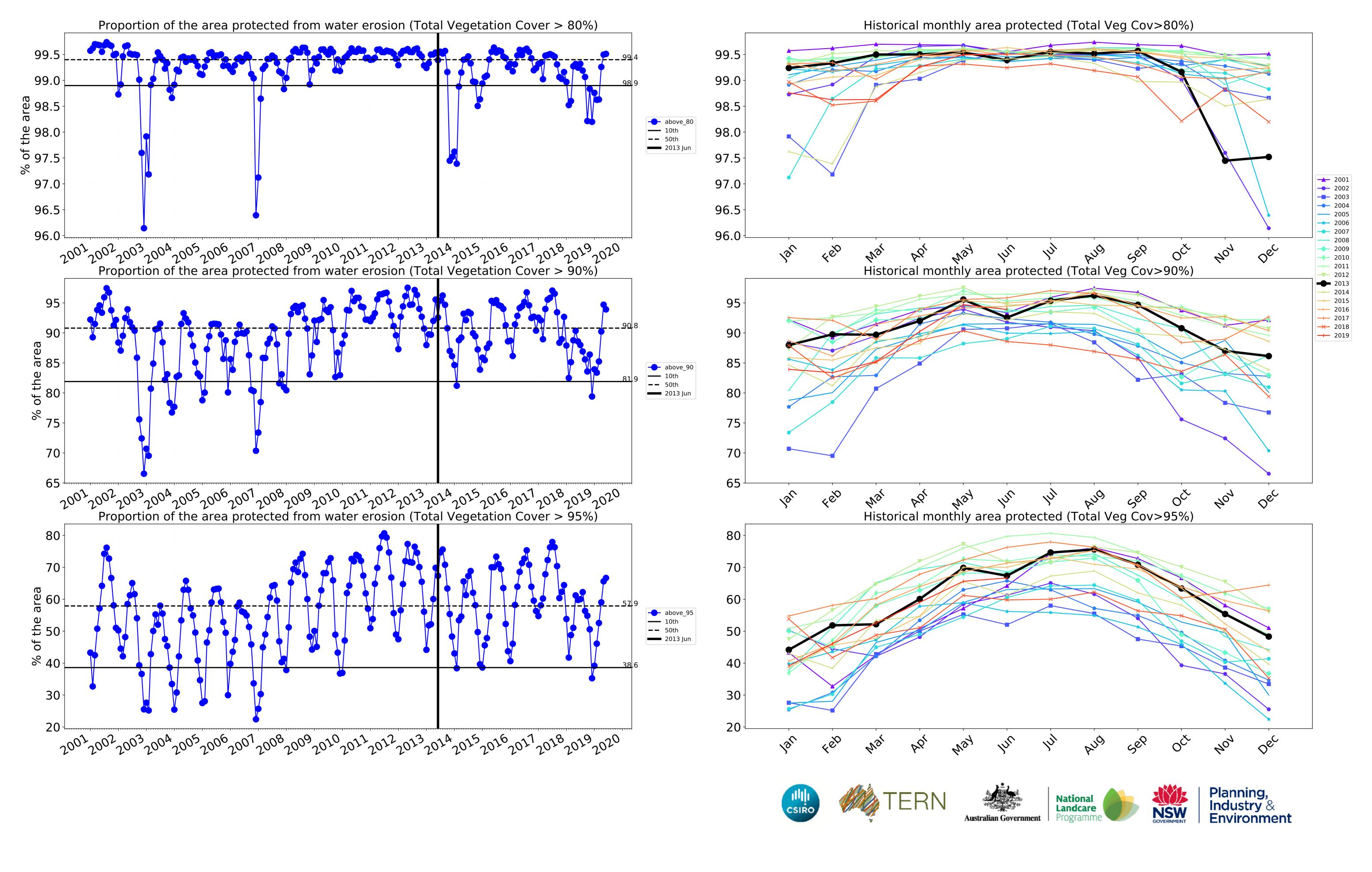
Conservation and natural environments timeseries



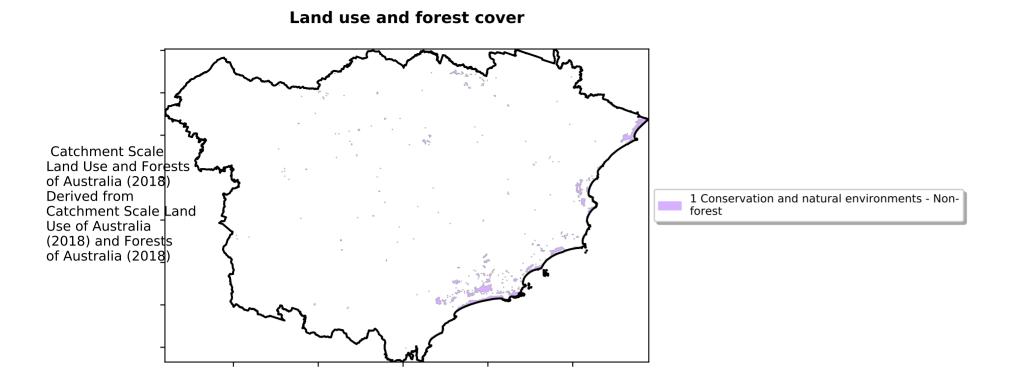


→ 2016

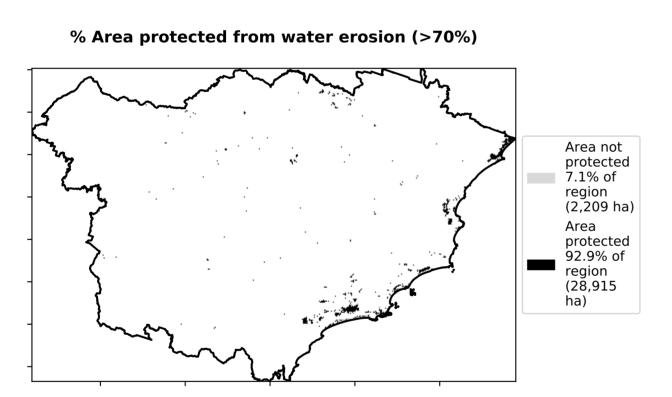
→ 2017 → 2018 → 2019

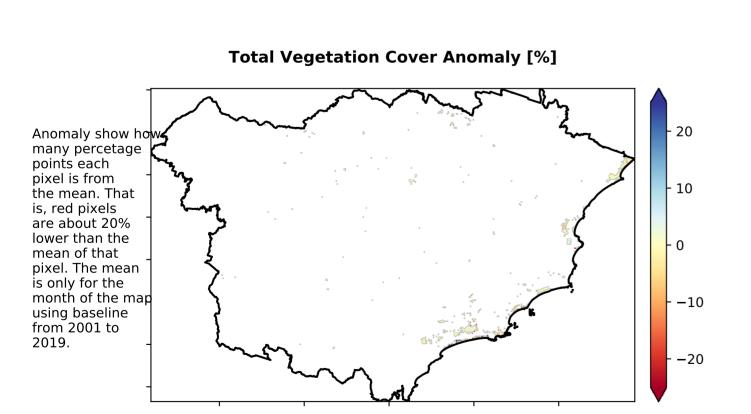


Conservation and natural environments non forest



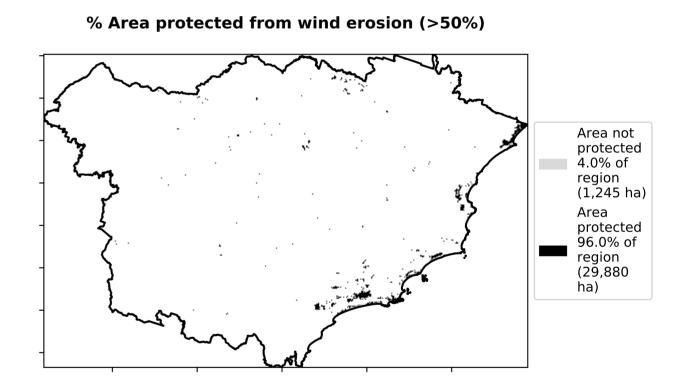
Total Vegetation Cover [%] Tipological and the state of the state of

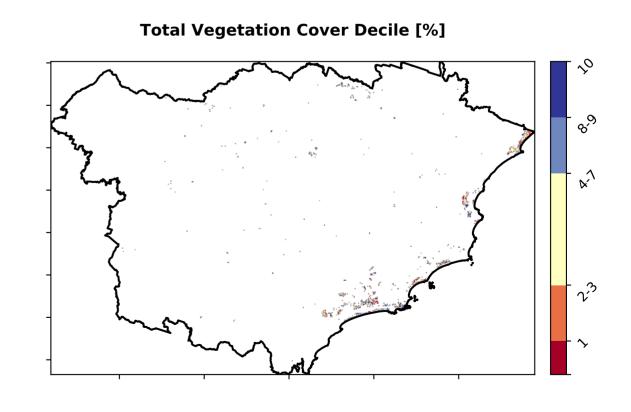




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area 92.9% 80 - 60 - 60 - 20 - 20 - 20 - 20 - 31%-50% 51%-70% 71%-100% Total Vegetation Cover class











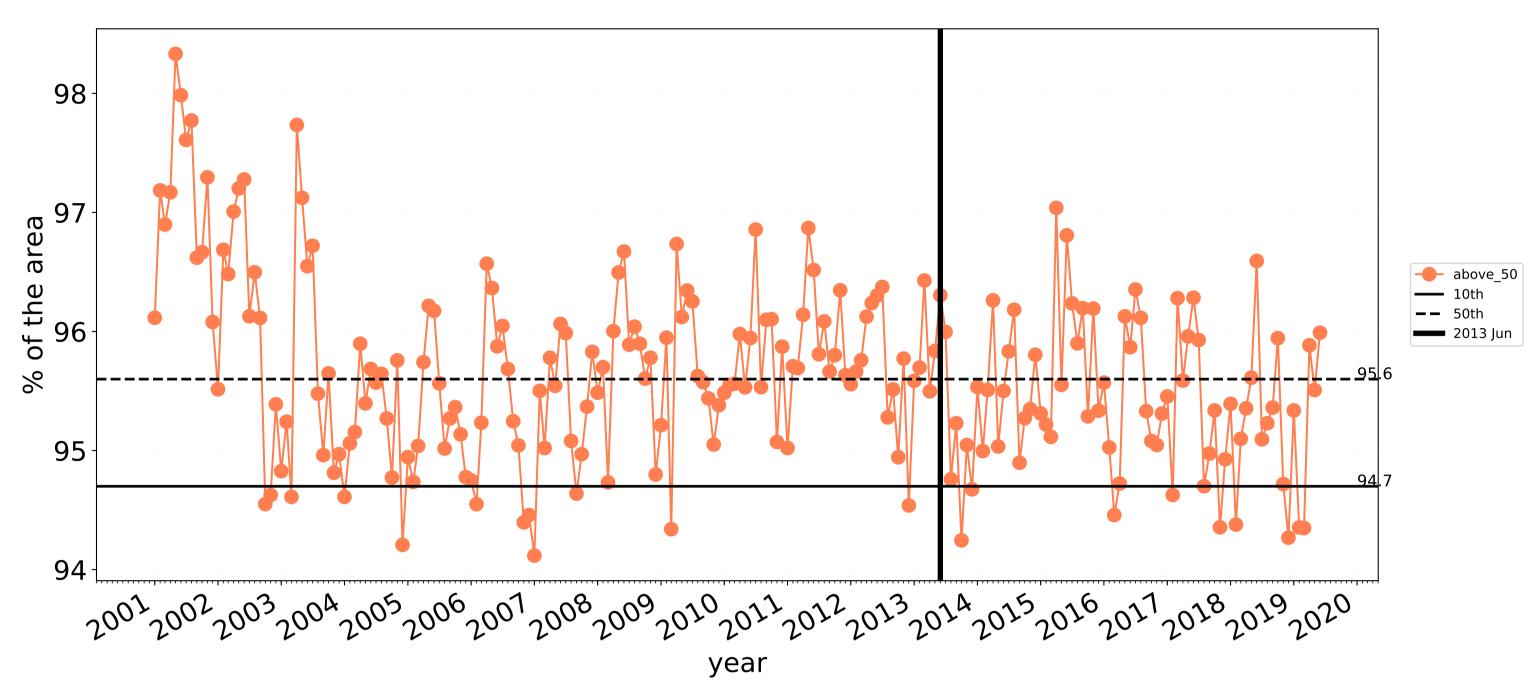




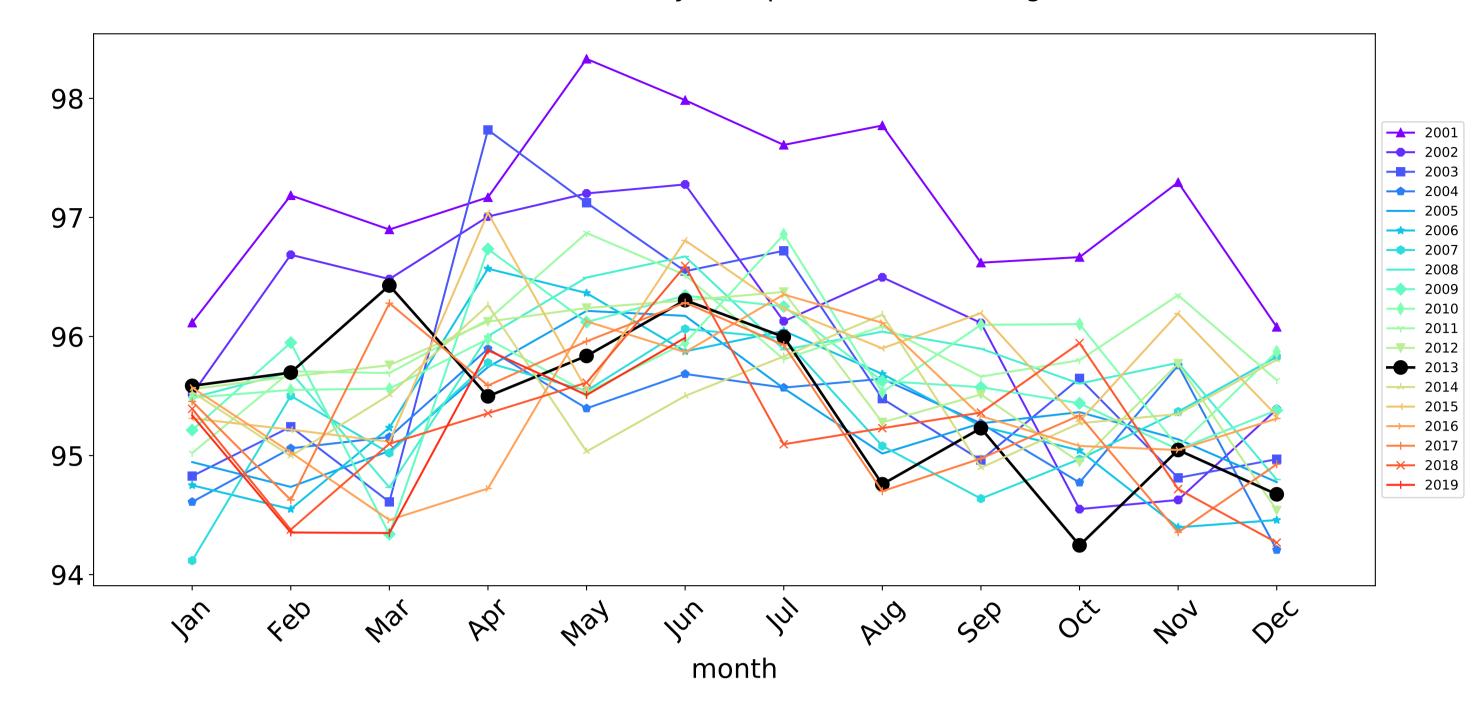


Conservation and natural environments non forest timeseries

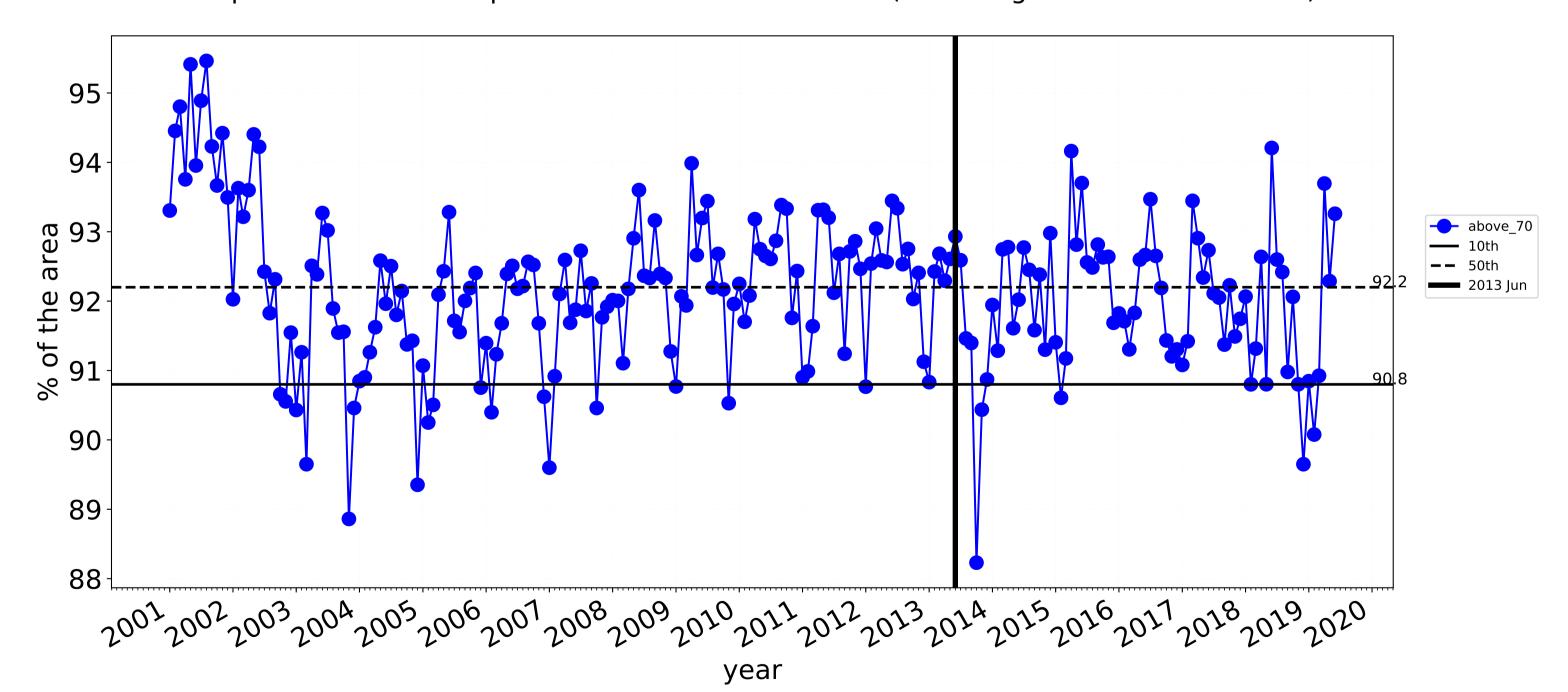




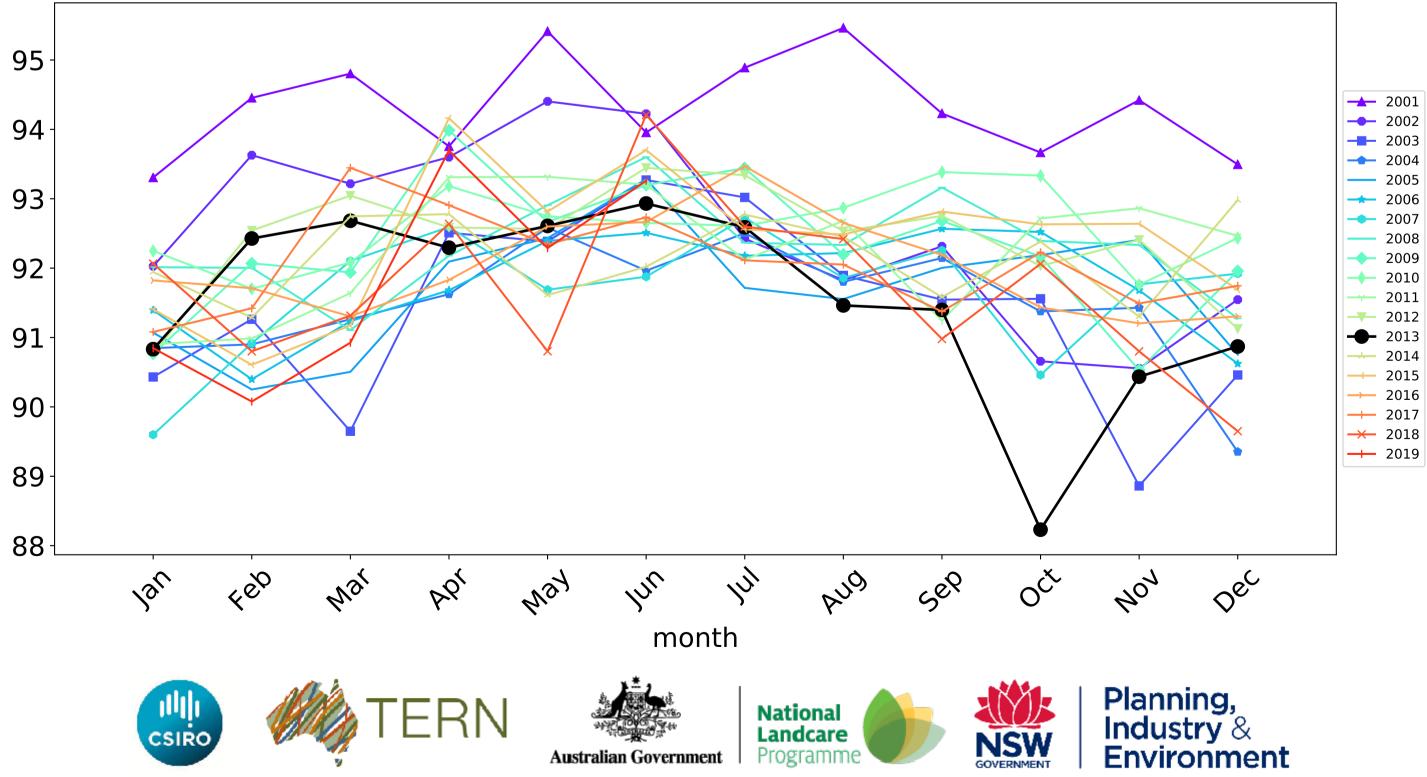
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



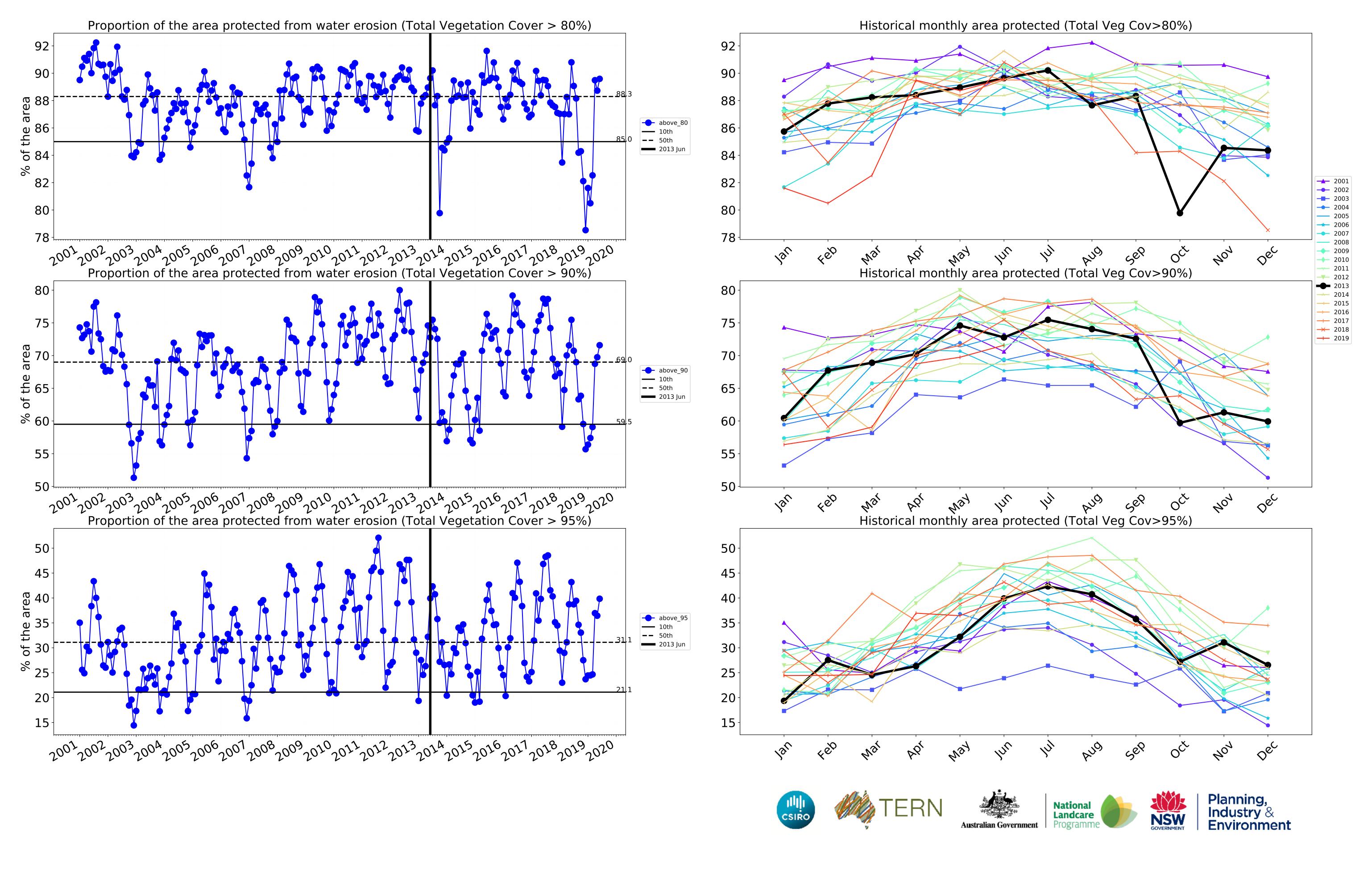
Water erosion historical monthly area protected (Total Veg Cov>70%)



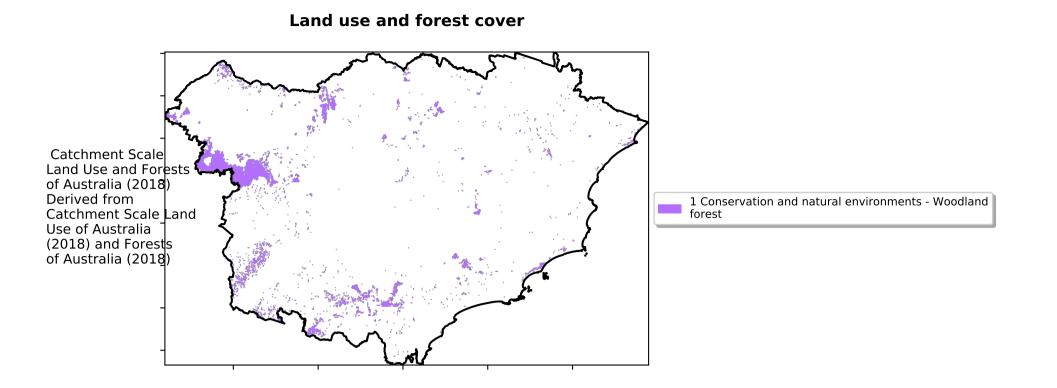


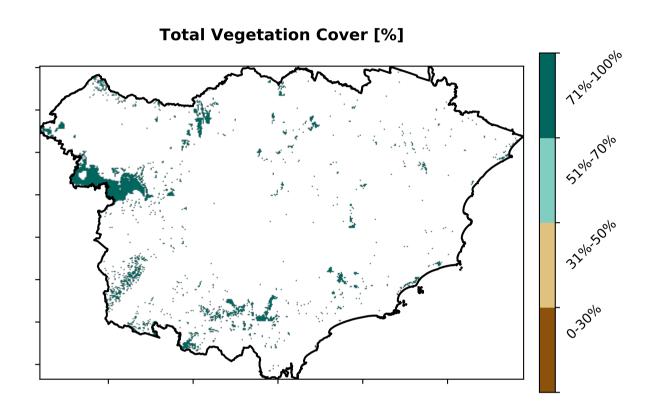


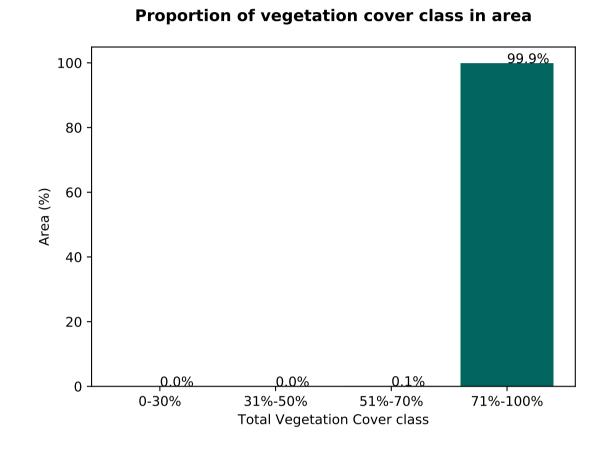


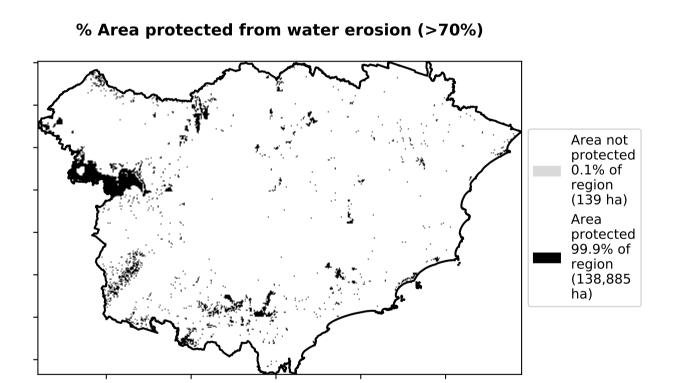


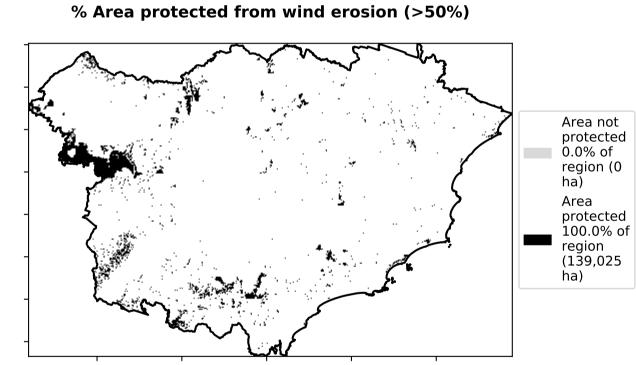
Conservation and natural environments Woodland forest

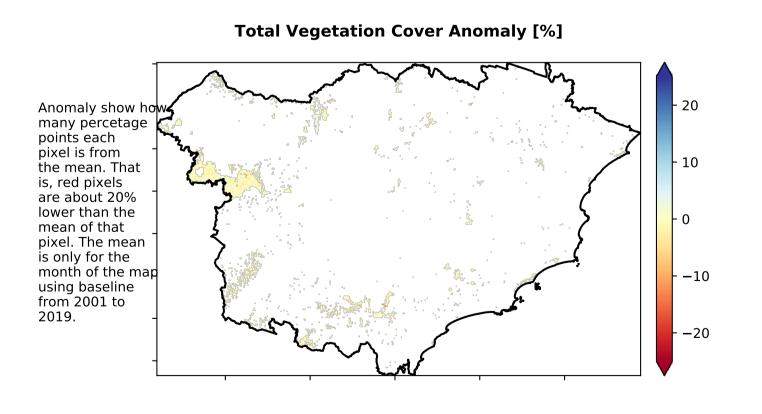


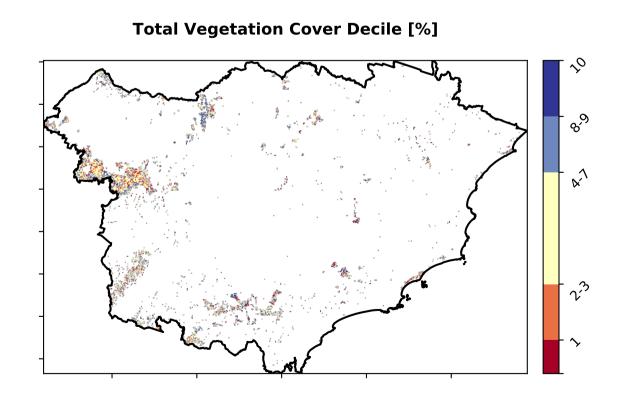
















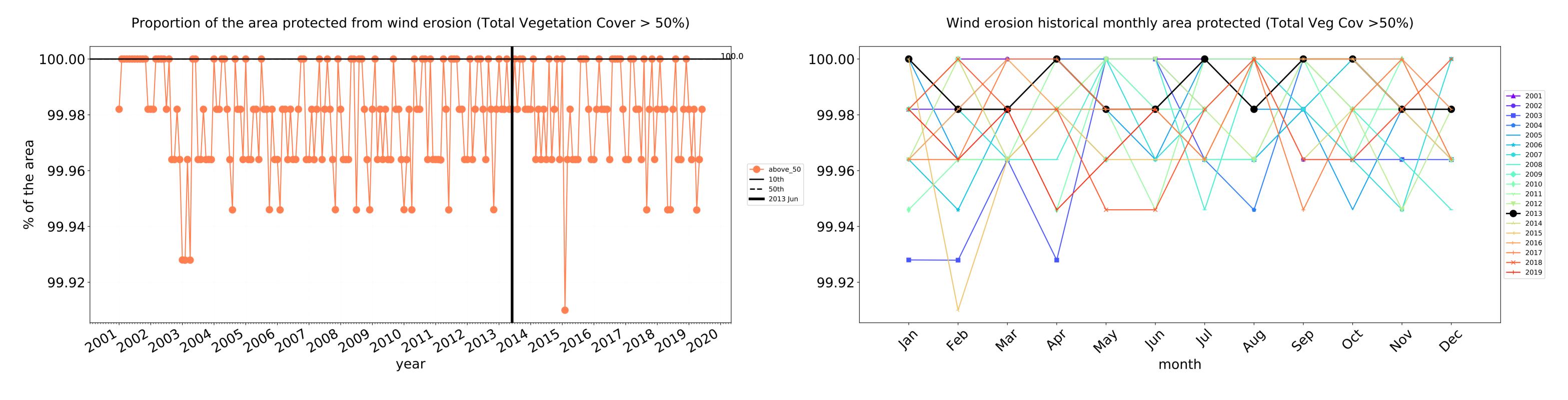


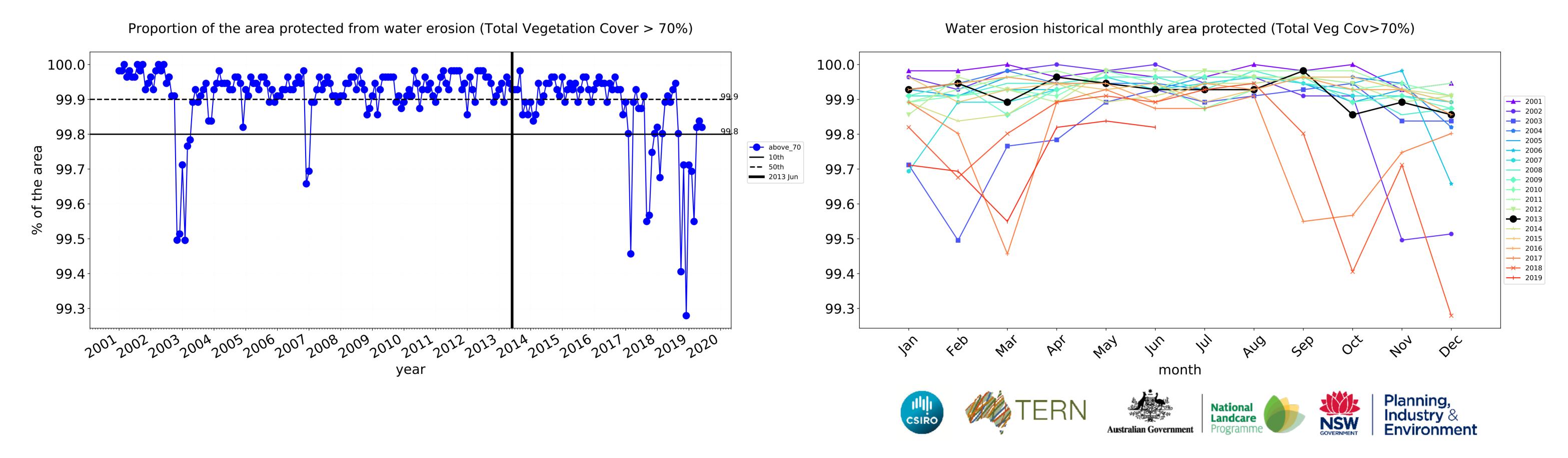


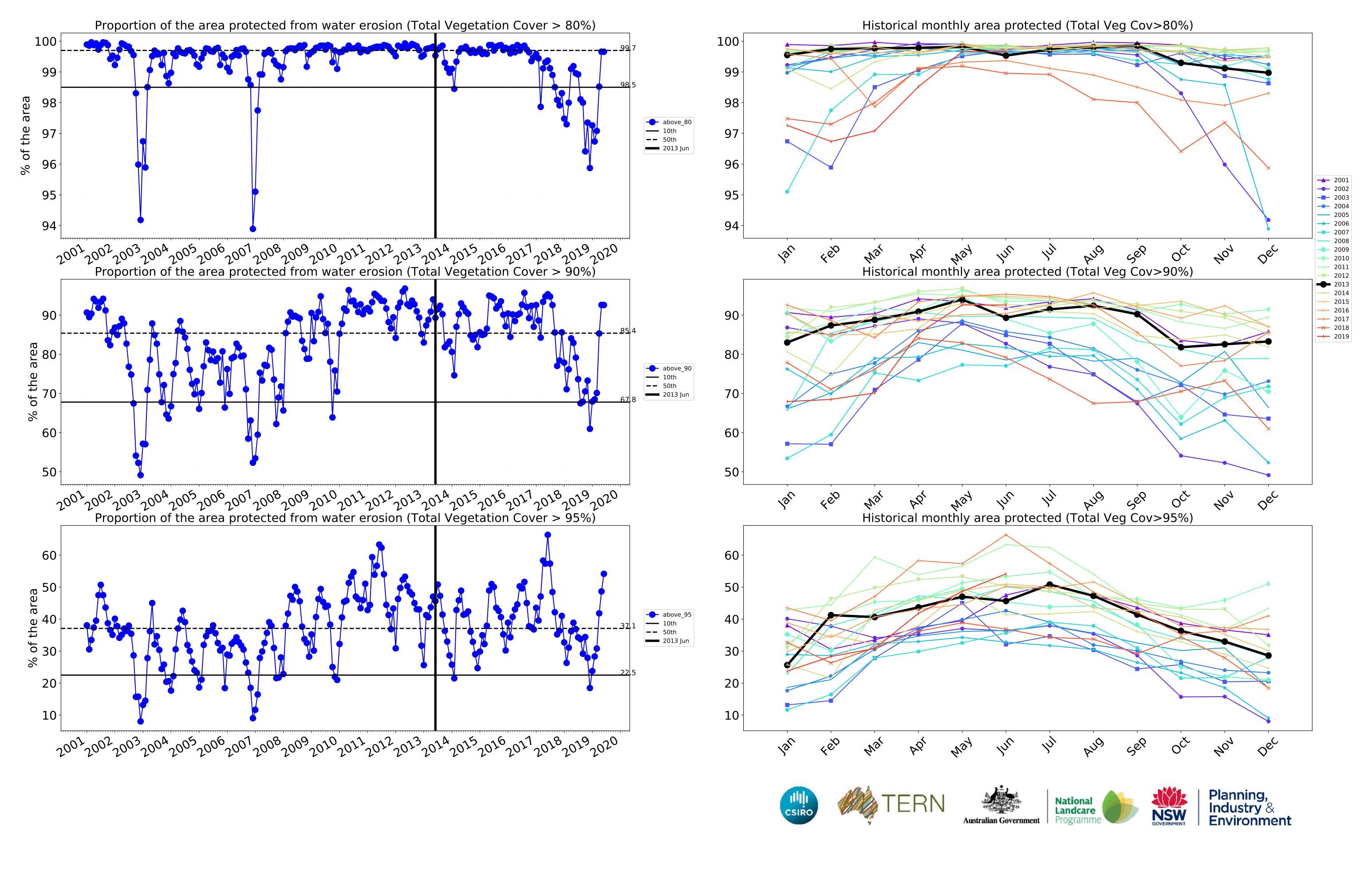




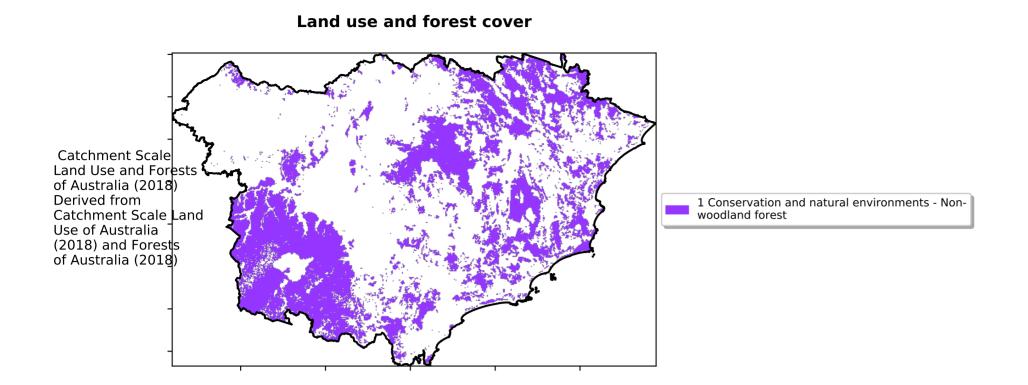
Conservation and natural environments Woodland forest timeseries



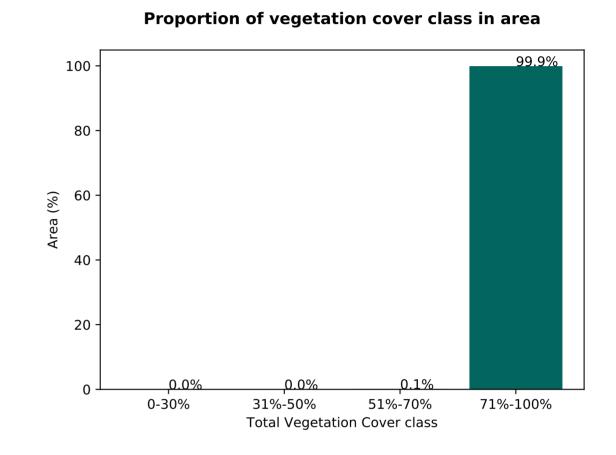


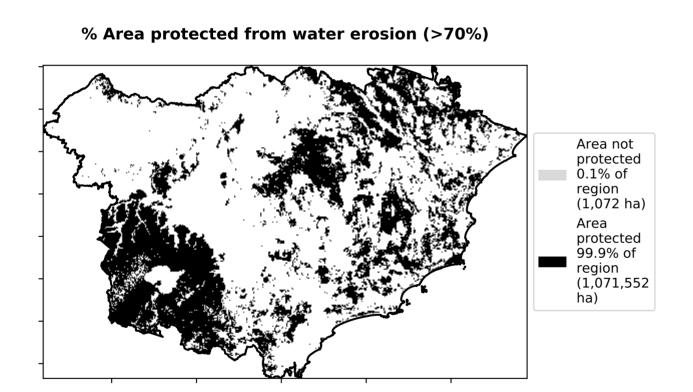


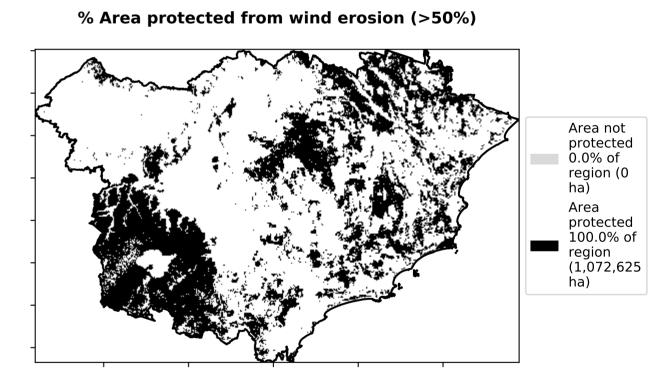
Conservation and natural environments Forest (non woodland)

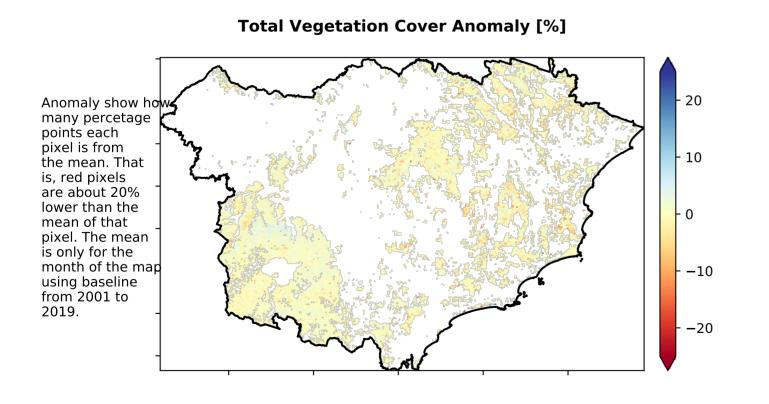


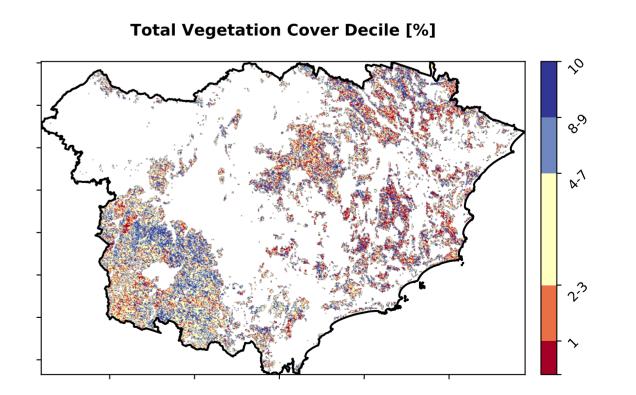
Total Vegetation Cover [%] Total Vegetation Cover [%] Total Vegetation Cover [%]













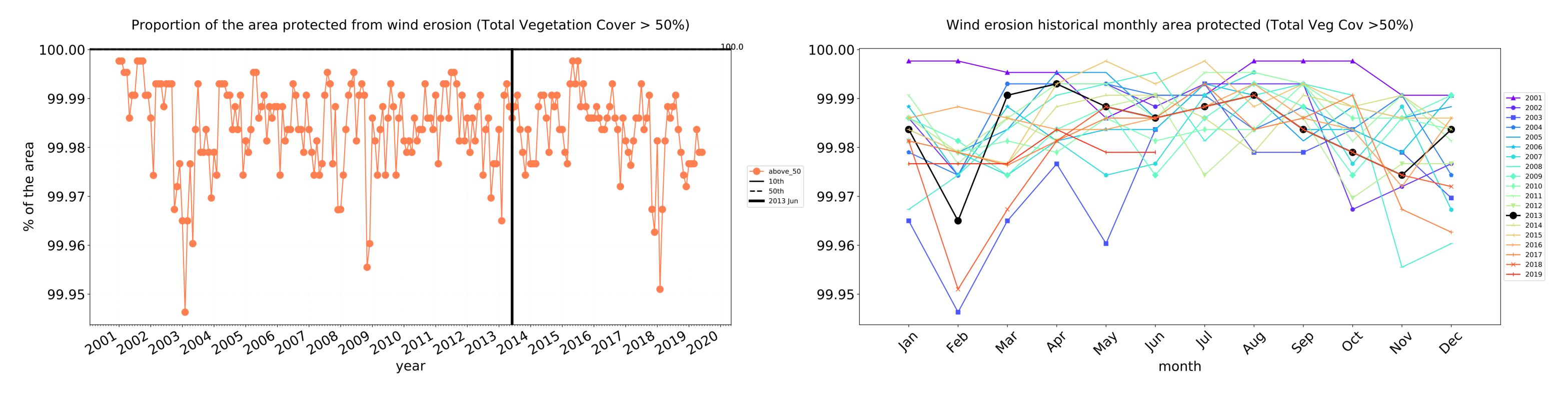


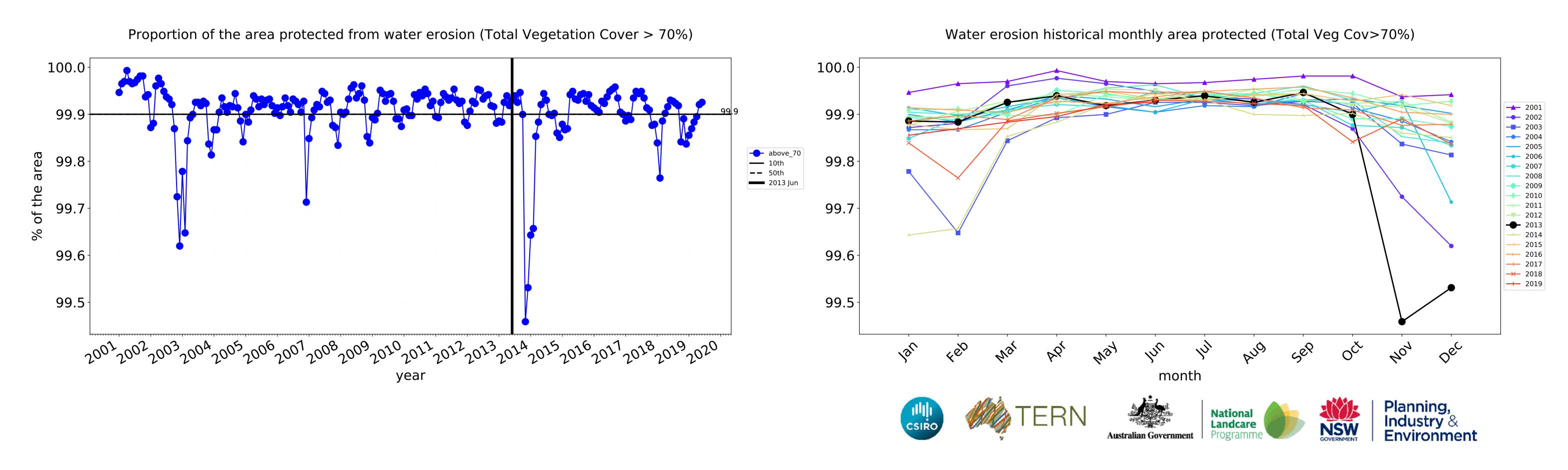


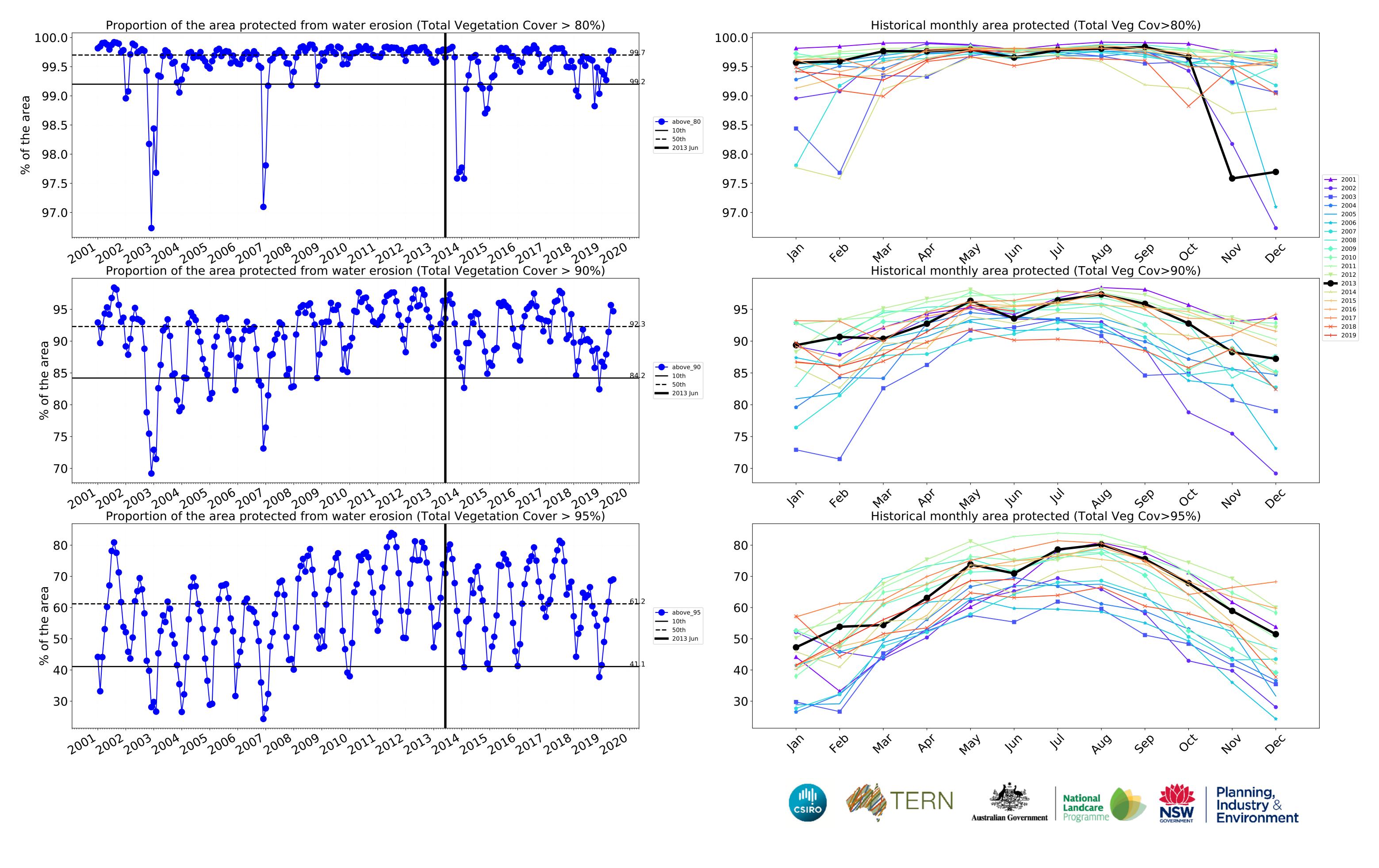






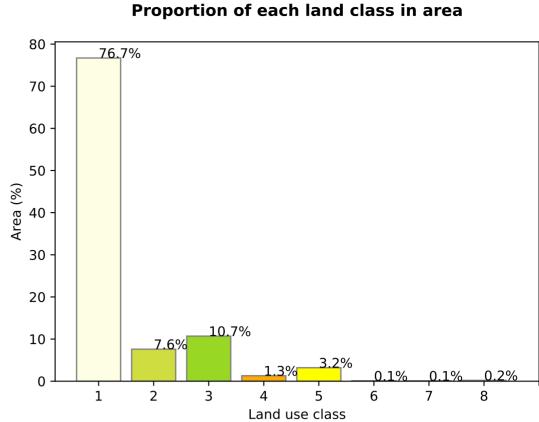




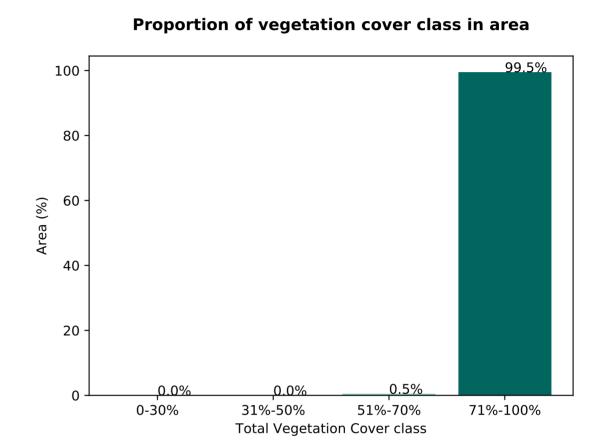


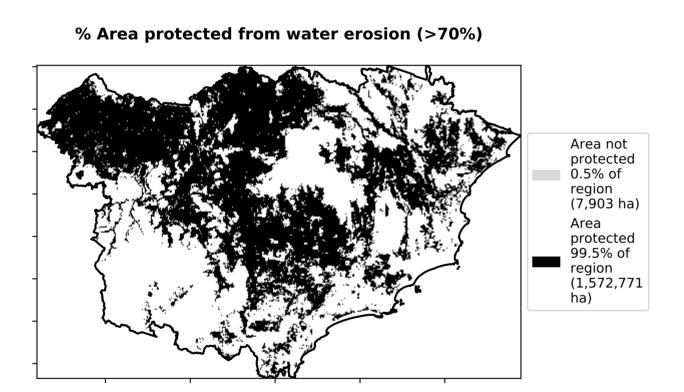
Agriculture

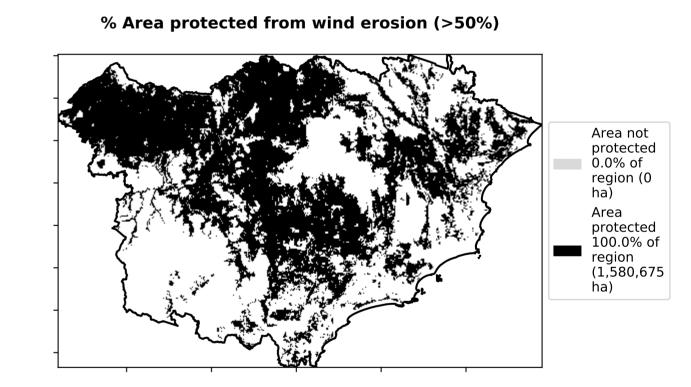


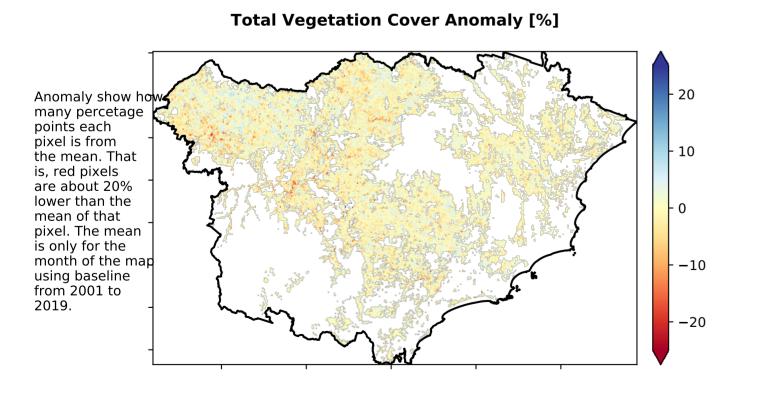


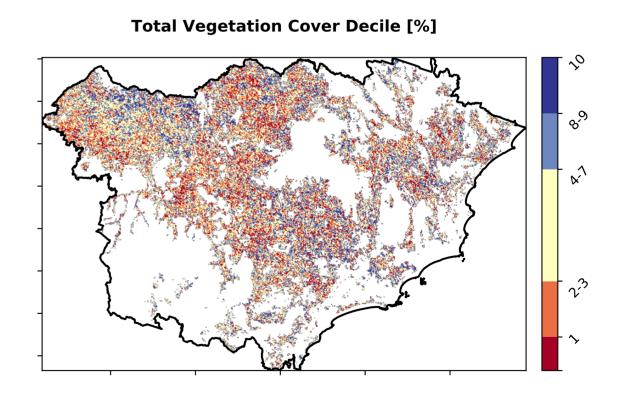
Total Vegetation Cover [%] Tiple Light Color Stole Light Color St















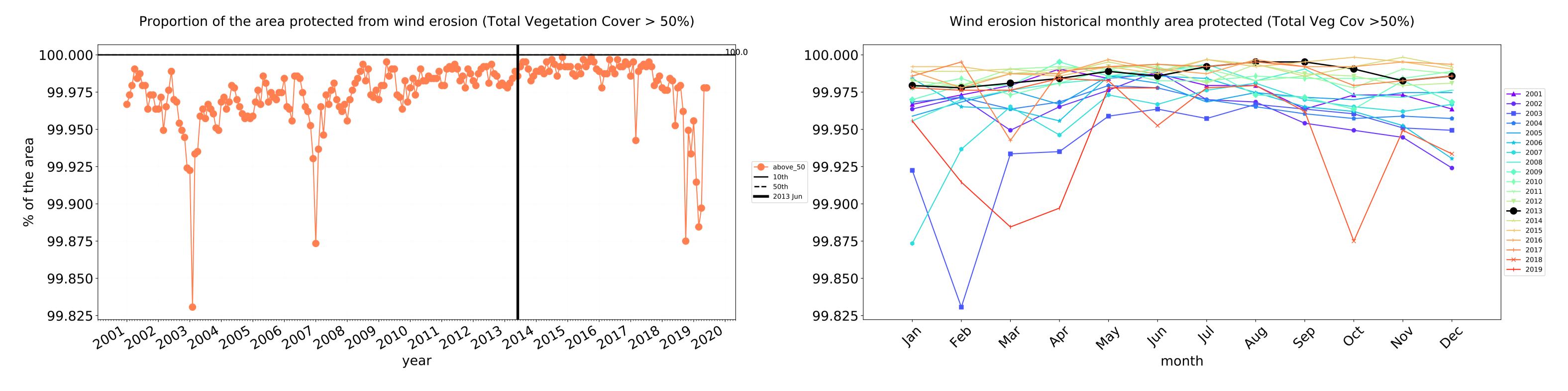


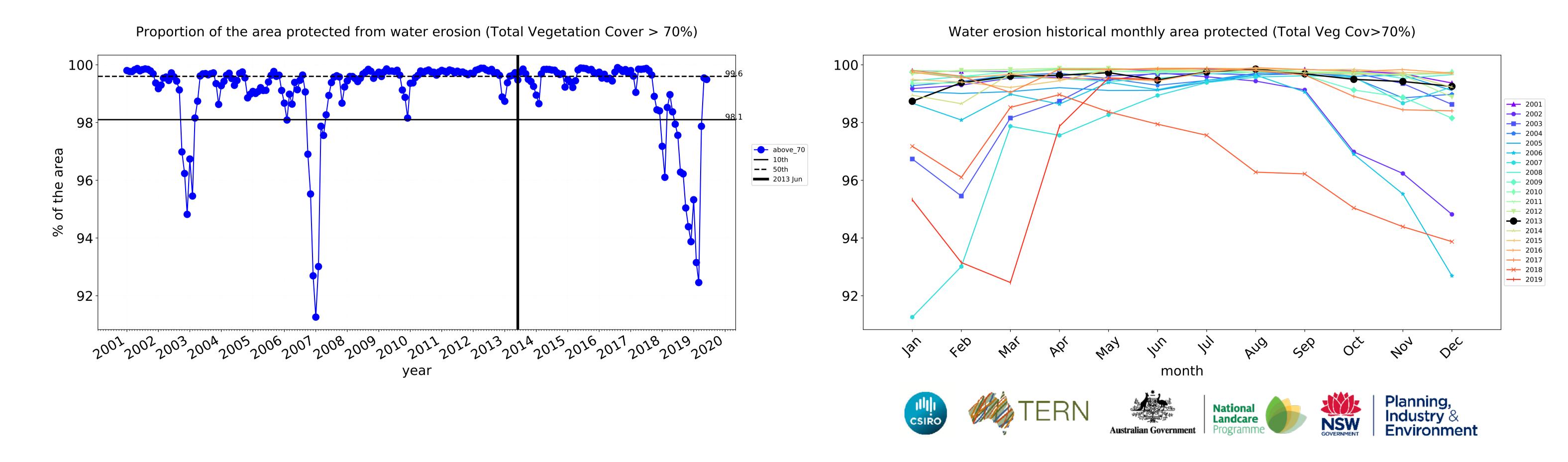


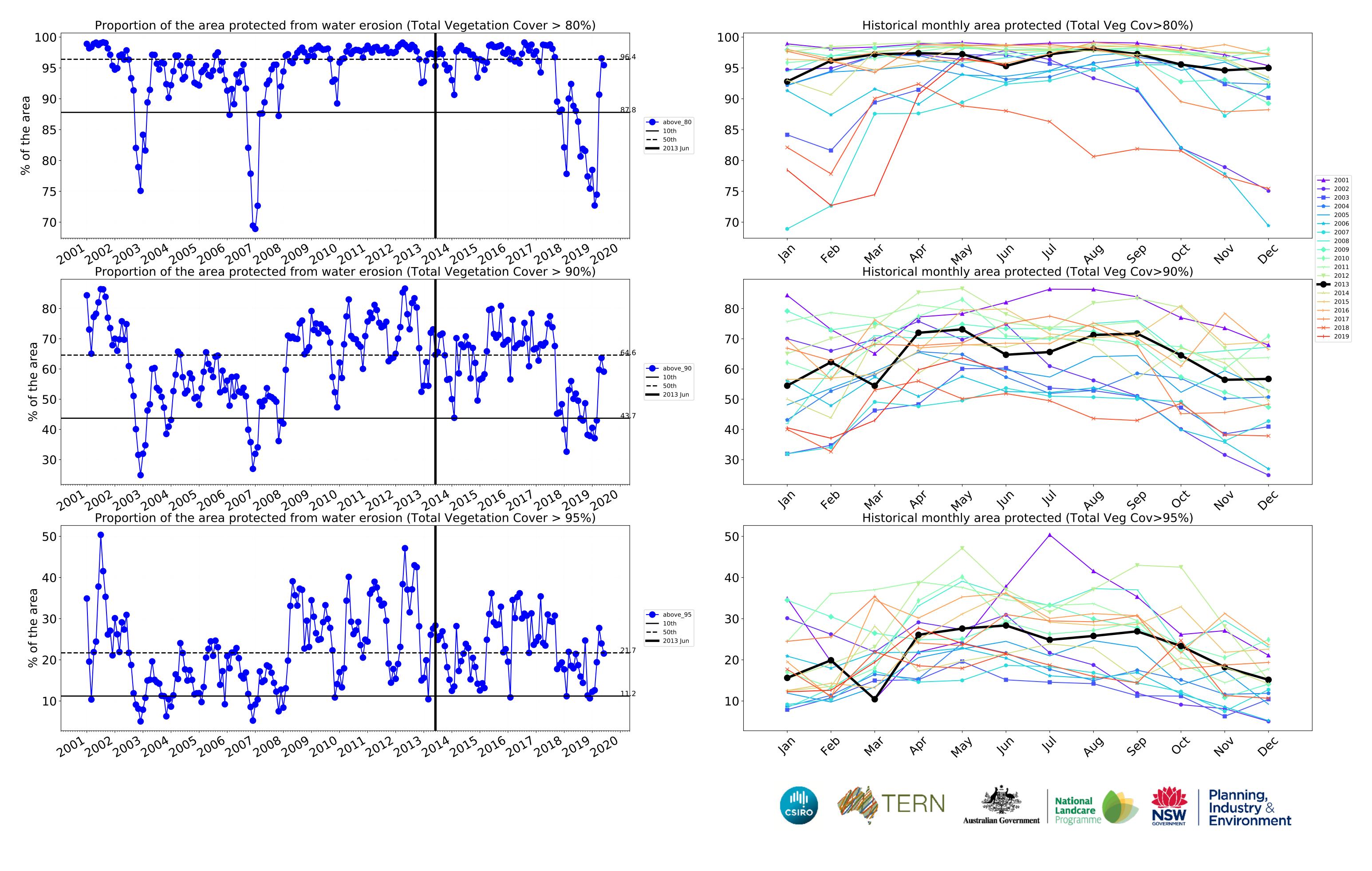




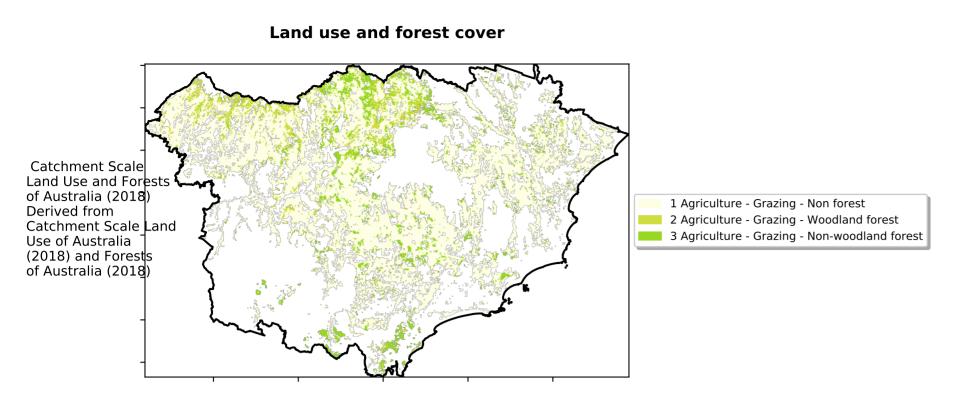
Agriculture timeseries



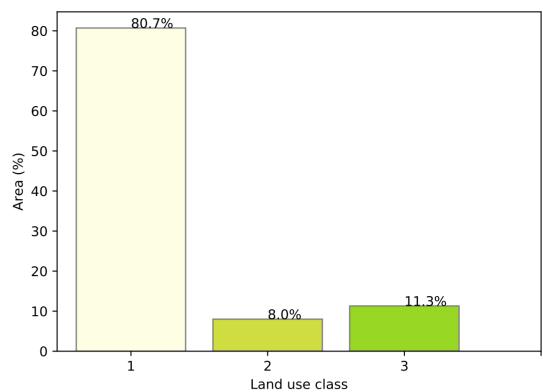




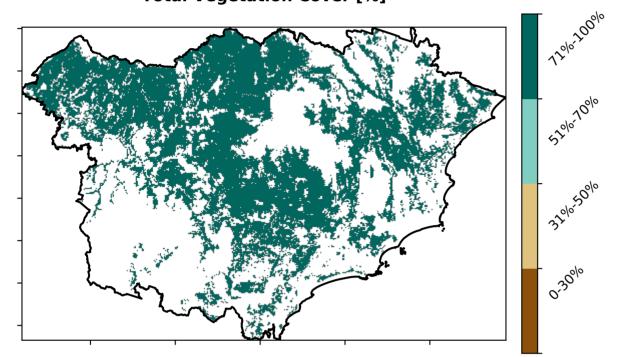
Grazing



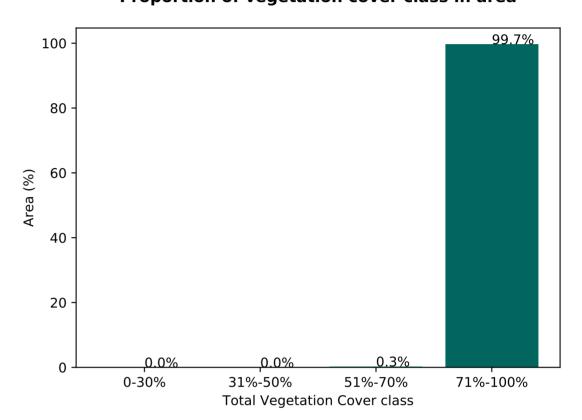
Proportion of each land class in area



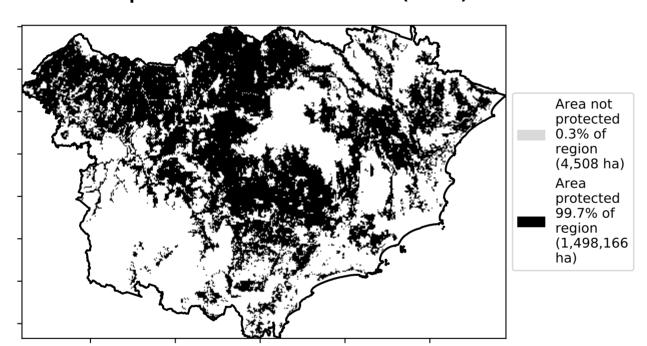
Total Vegetation Cover [%]



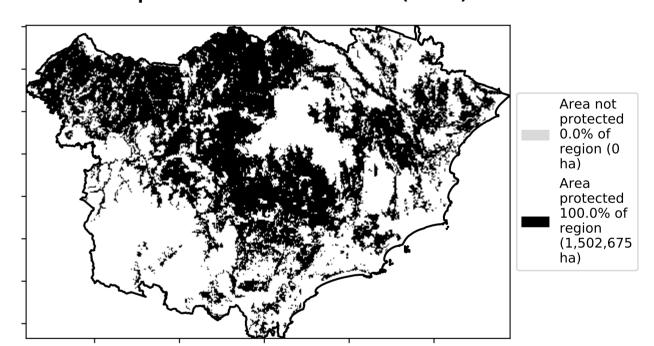
Proportion of vegetation cover class in area



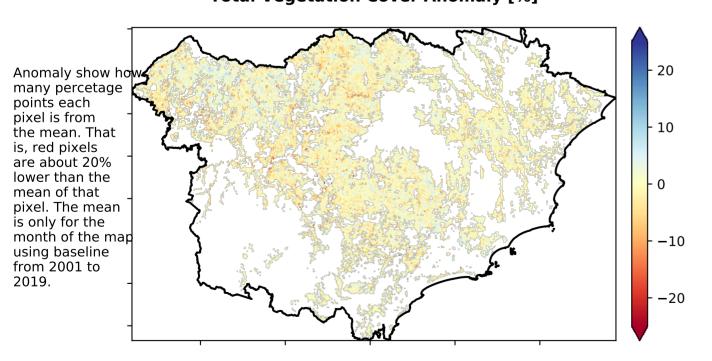
% Area protected from water erosion (>70%)

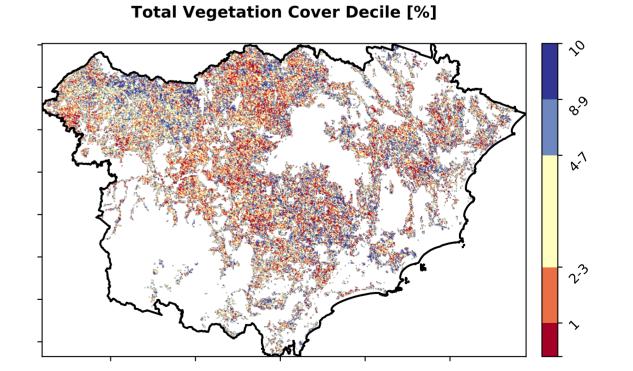


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]









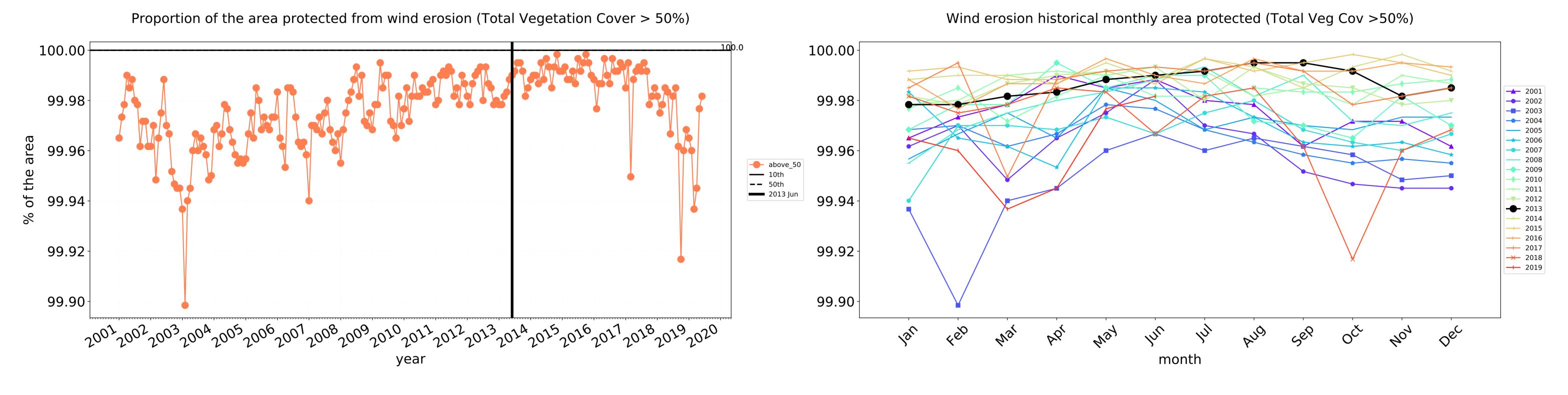


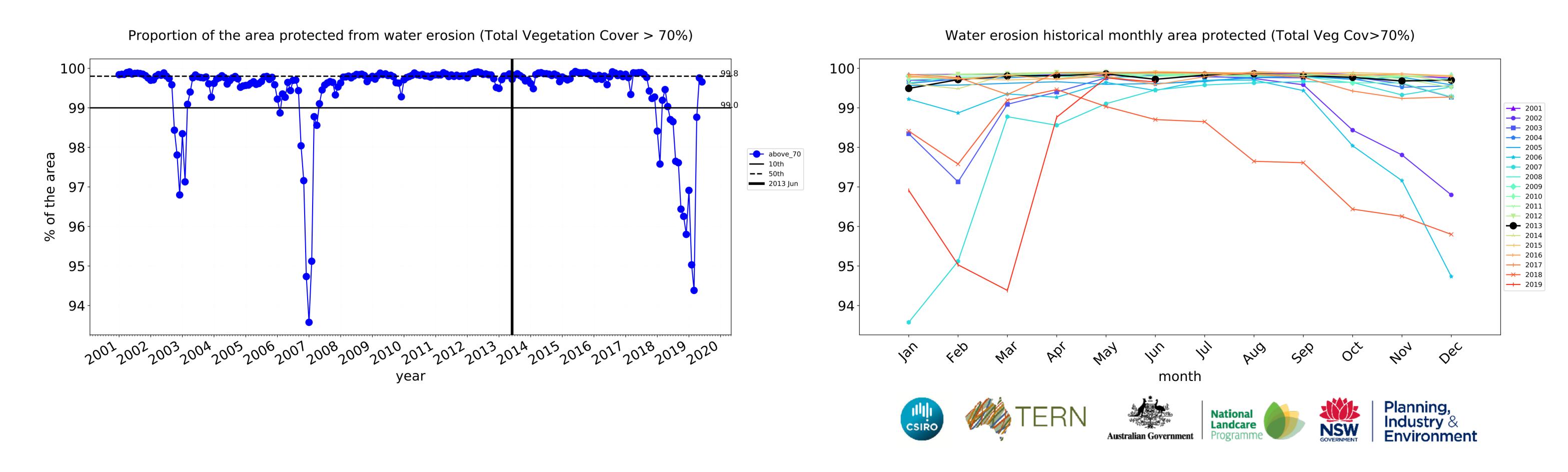


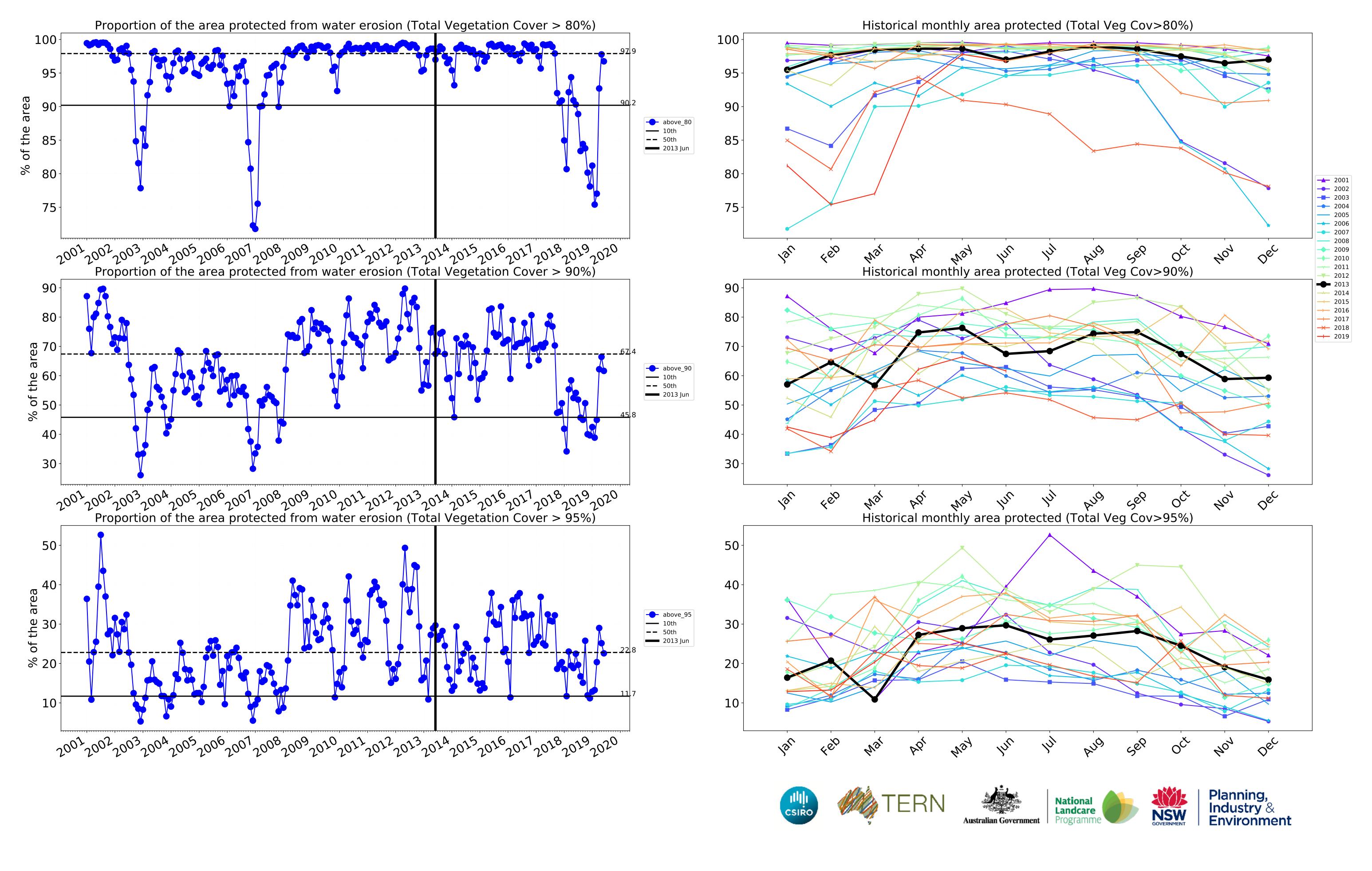




Grazing timeseries

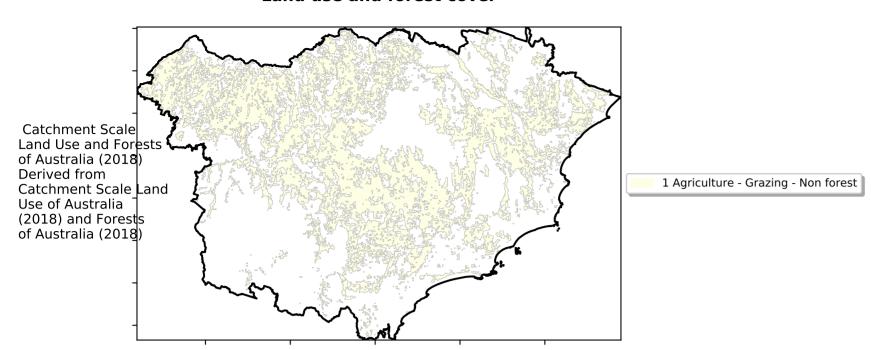




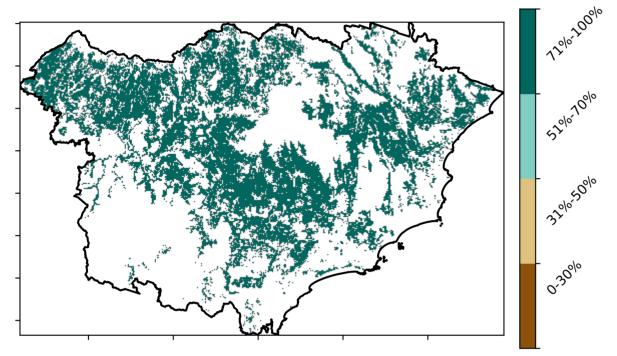


Grazing non forest

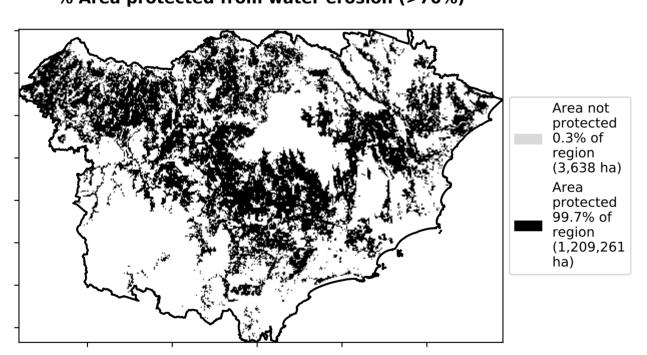
Land use and forest cover



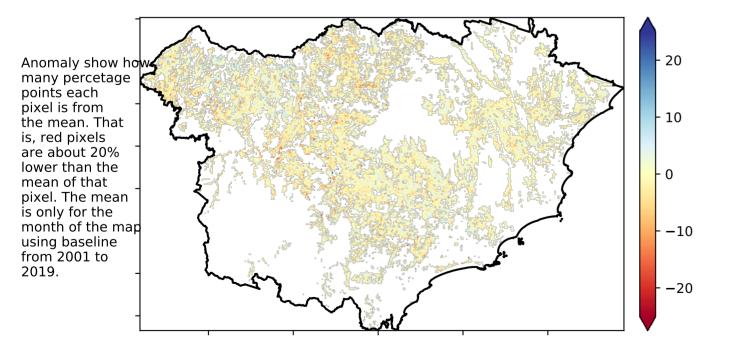
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

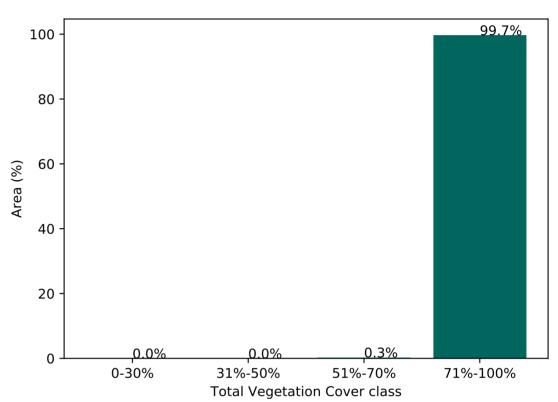


Total Vegetation Cover Anomaly [%]

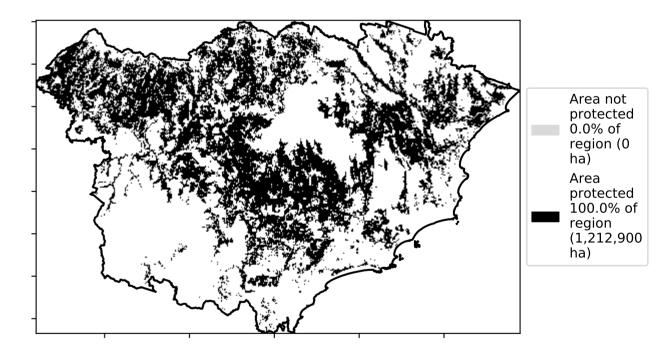


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

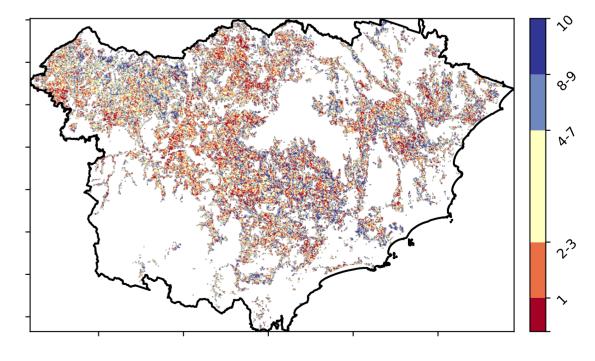
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







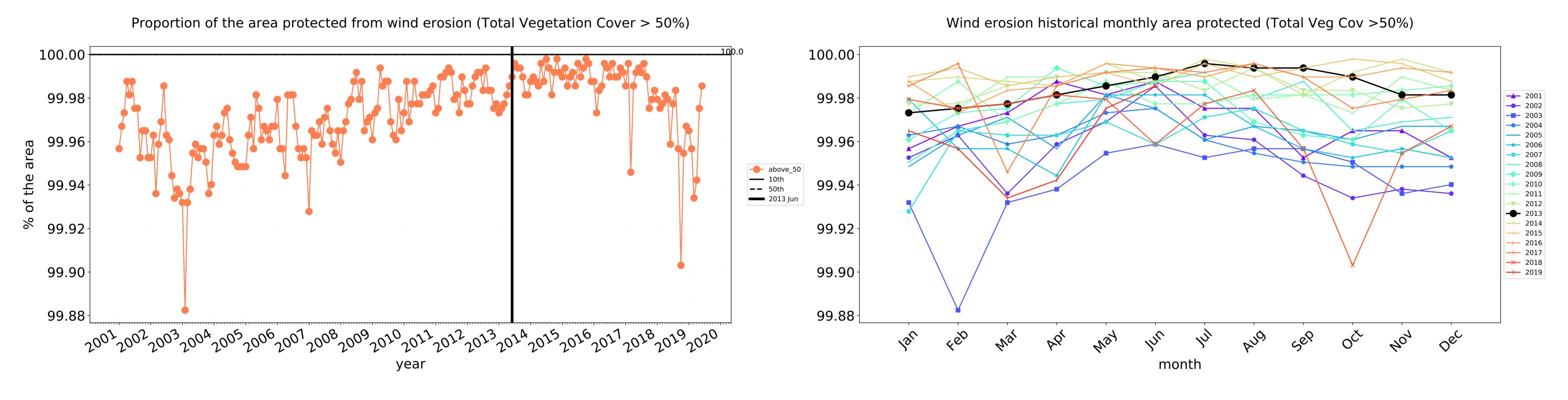


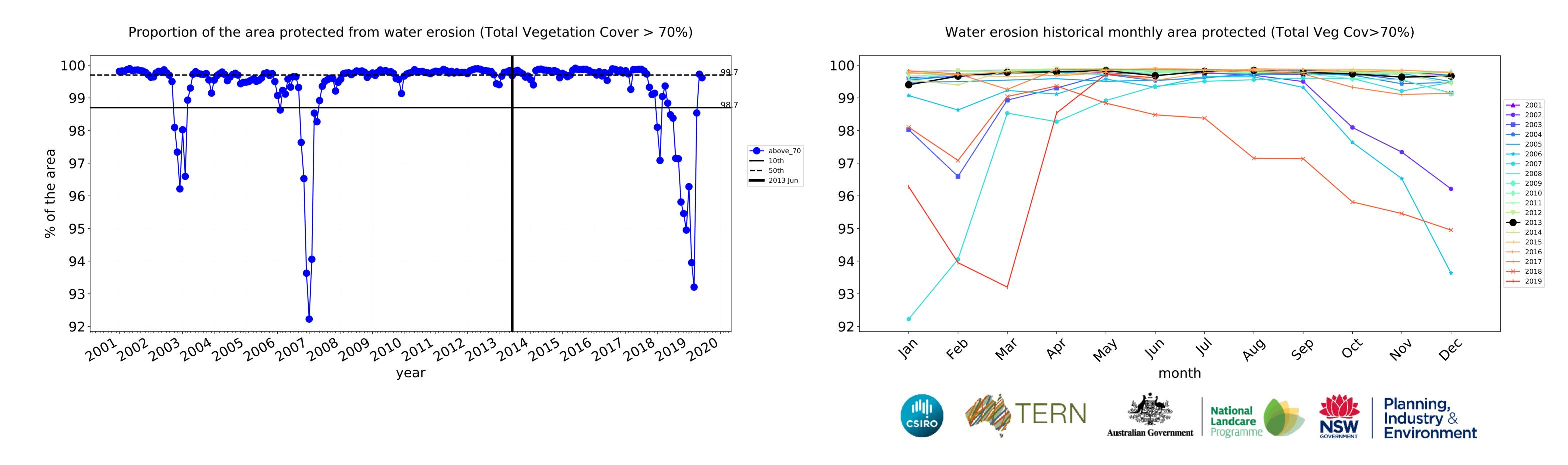


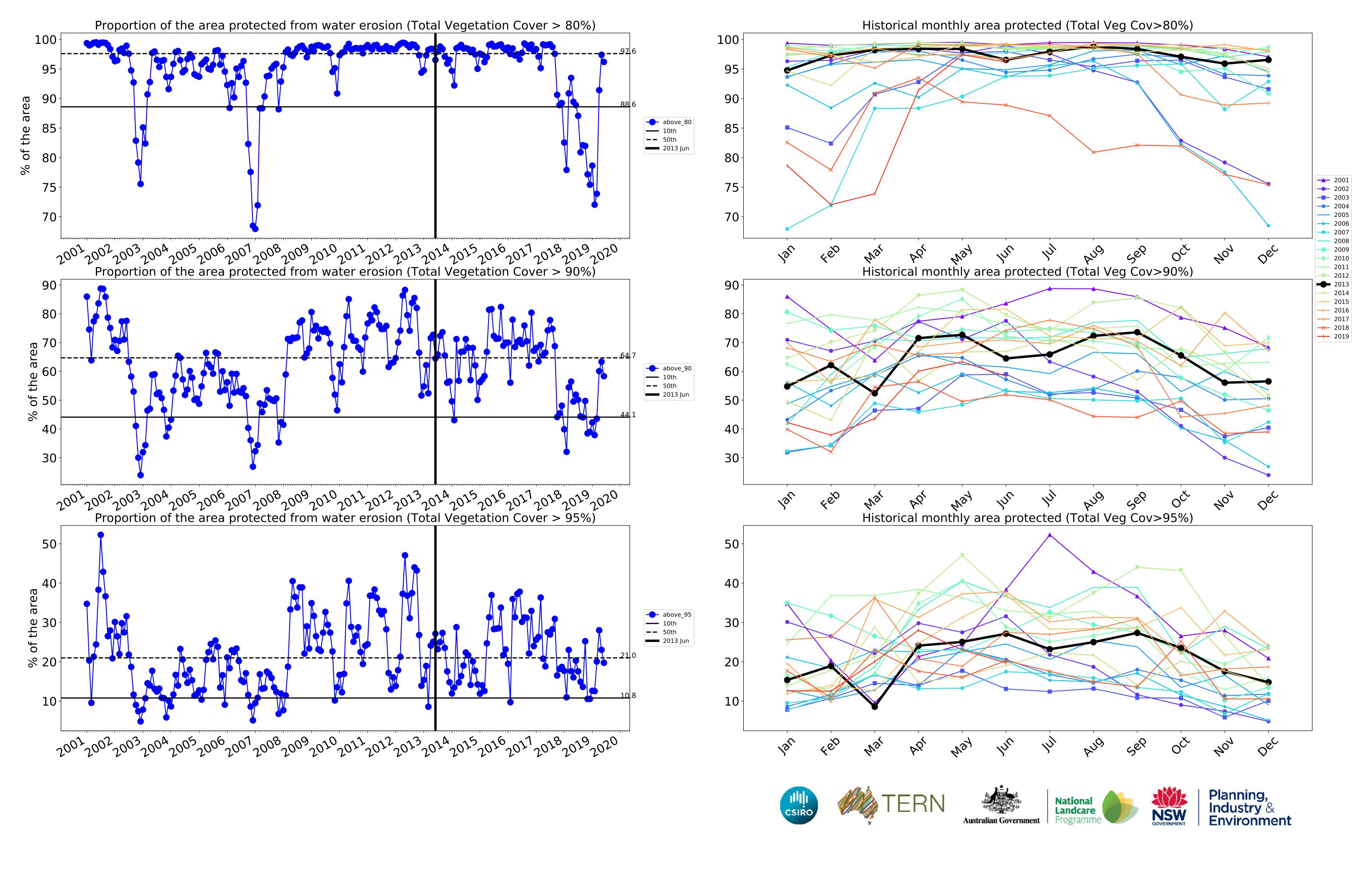




Grazing non forest timeseries





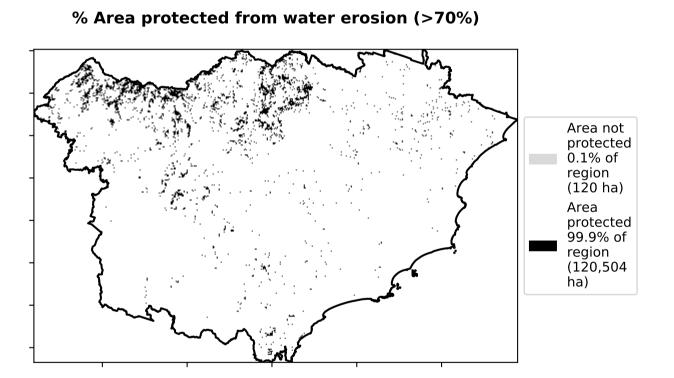


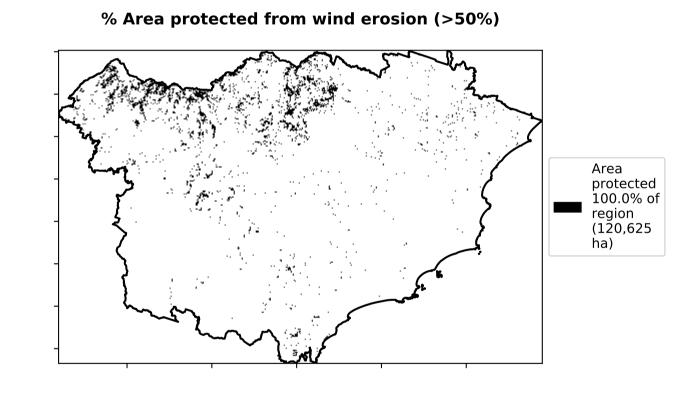
Grazing Woodland forest

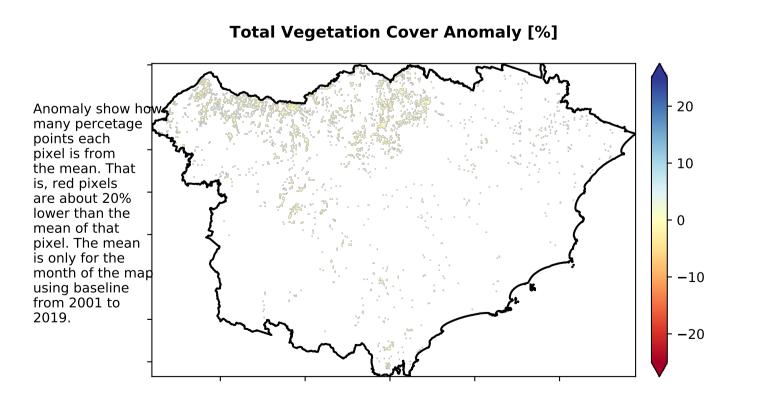
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Australia (2018) Of Australia (2018) I Agriculture - Grazing - Woodland forest and Use of Australia (2018)

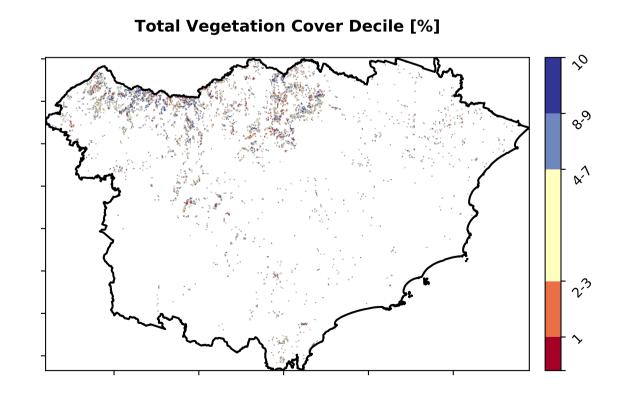
Total Vegetation Cover [%]

Proportion of vegetation cover class in area 100 - 99.9% 80 - 99.9% 40 - 20 - 0.0% 0.0% 0.1% 0-30% 31%-50% 51%-70% 71%-100% Total Vegetation Cover class













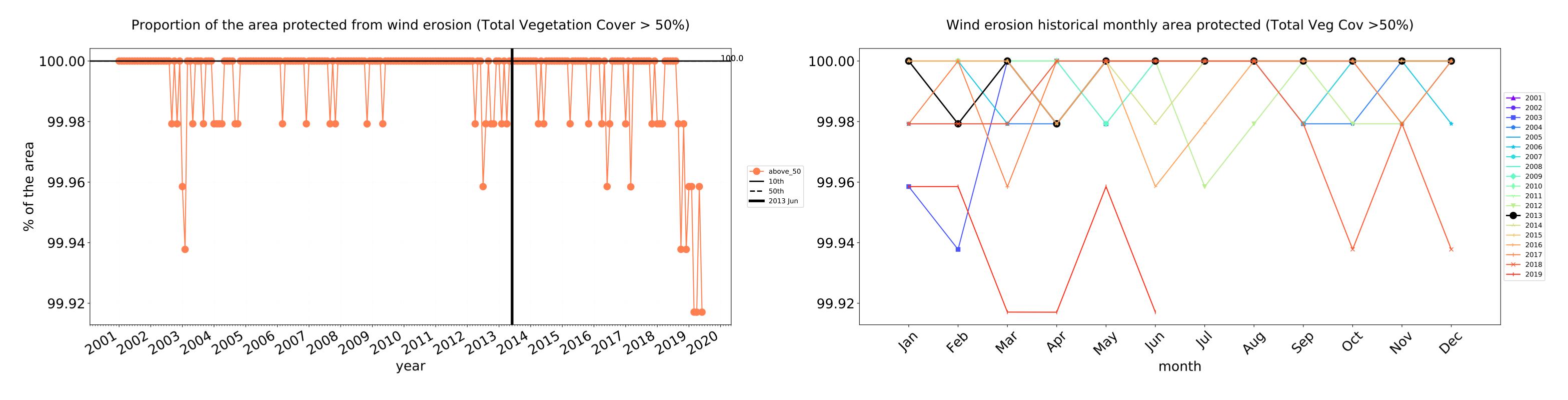


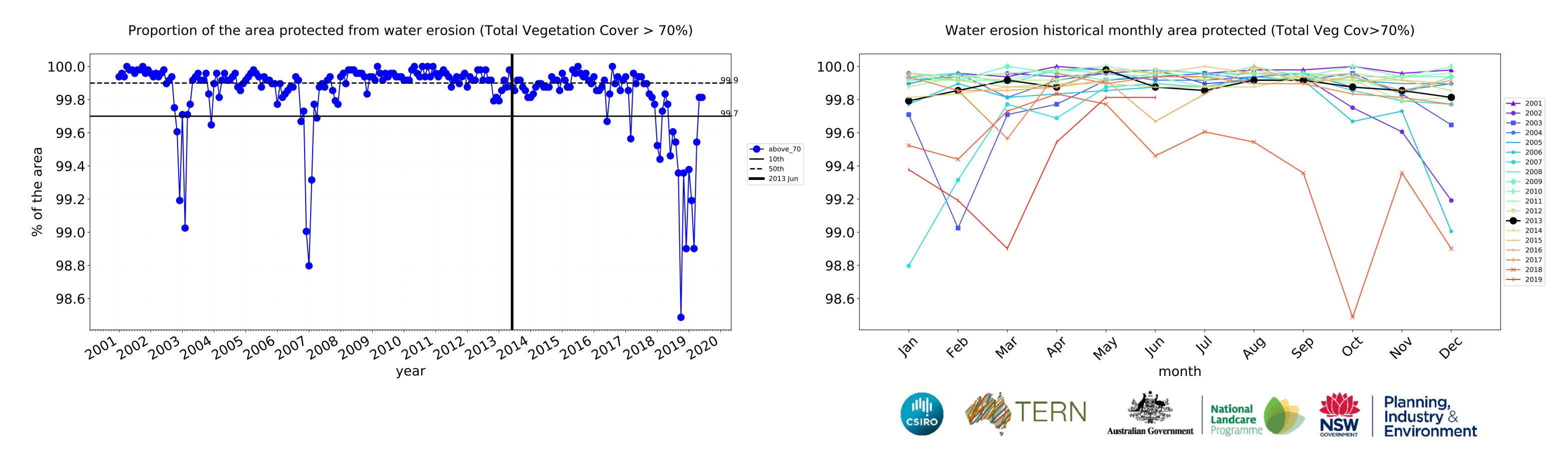


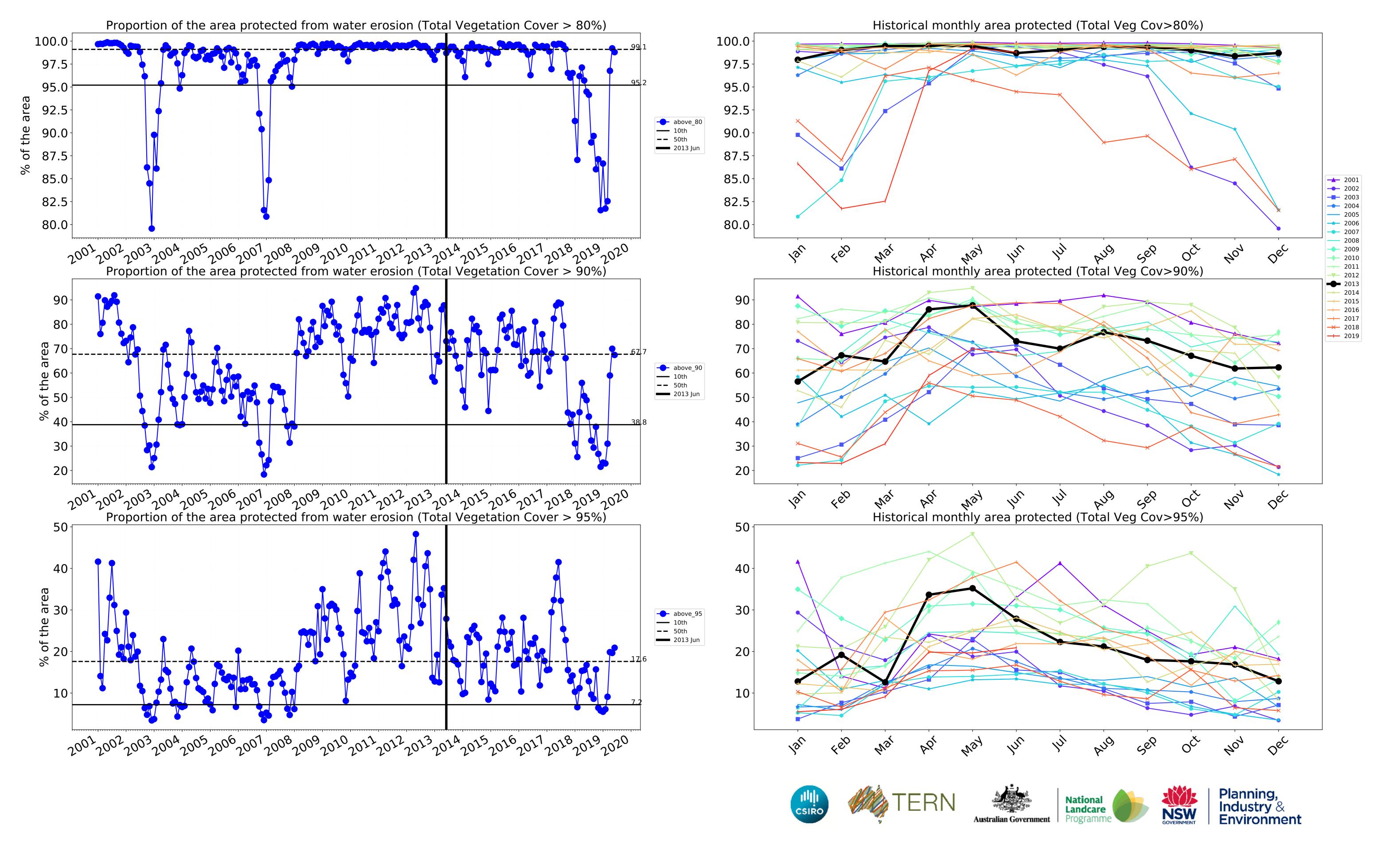




Grazing Woodland forest timeseries





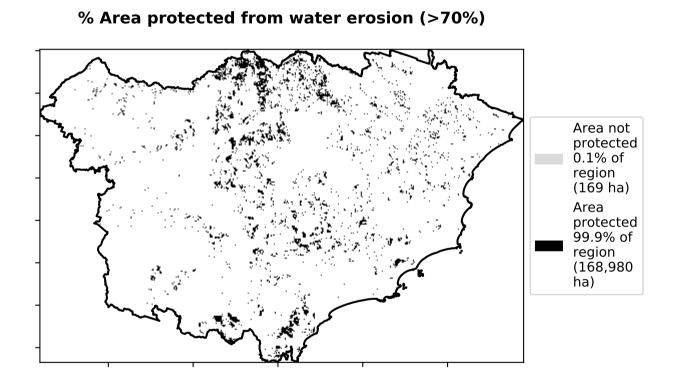


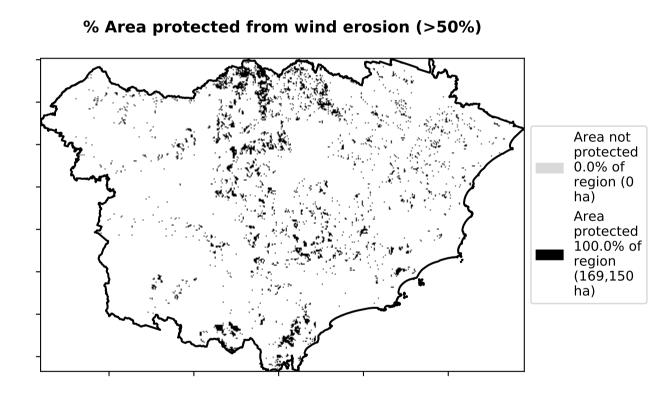
Grazing - Forest (non woodland)

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)

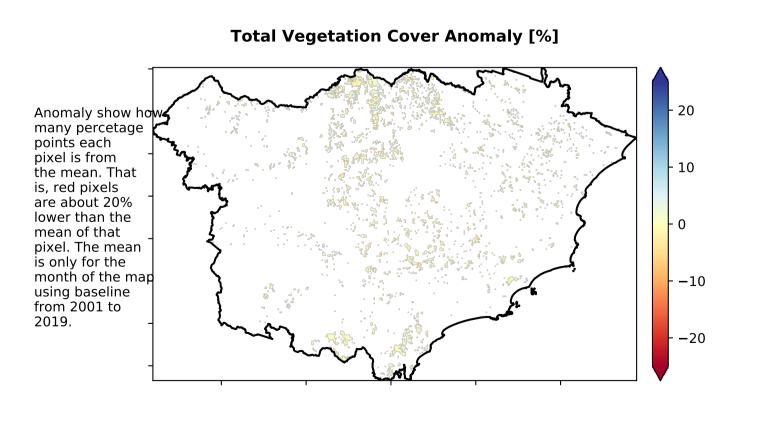
Total Vegetation Cover [%]

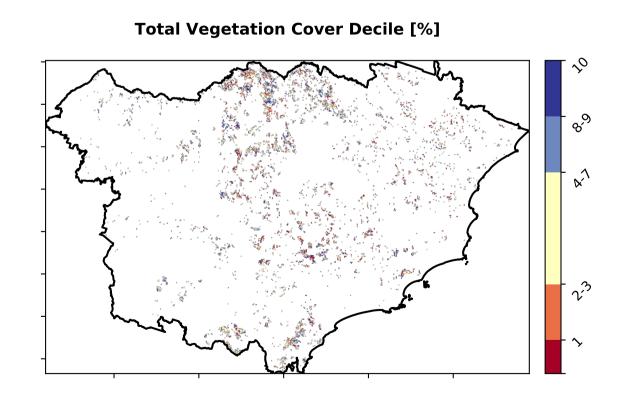
99.9% 100 Area (%) 60 40 20 -0.1% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**





Proportion of vegetation cover class in area







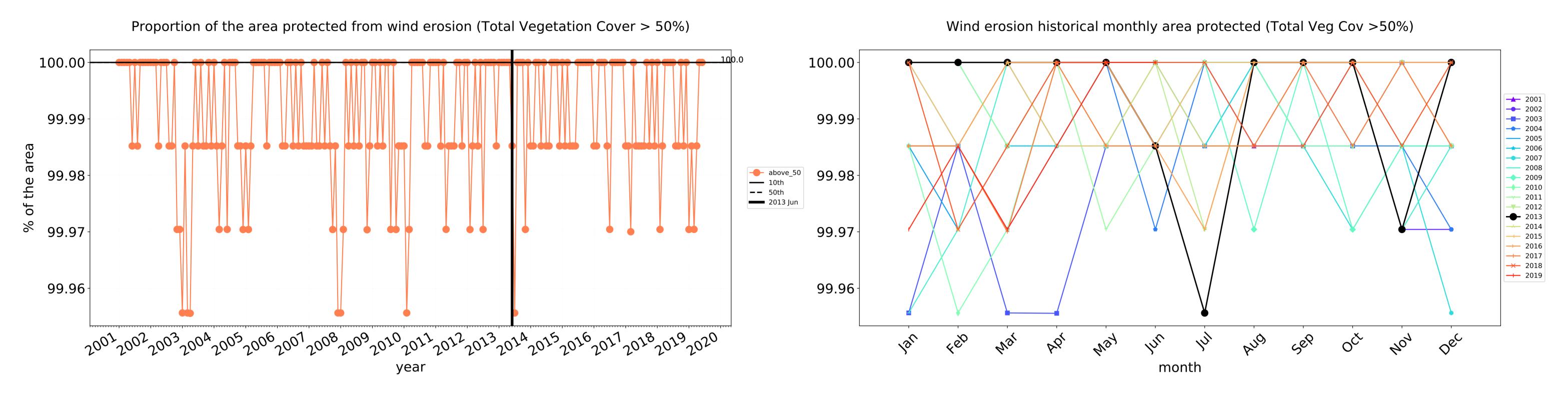


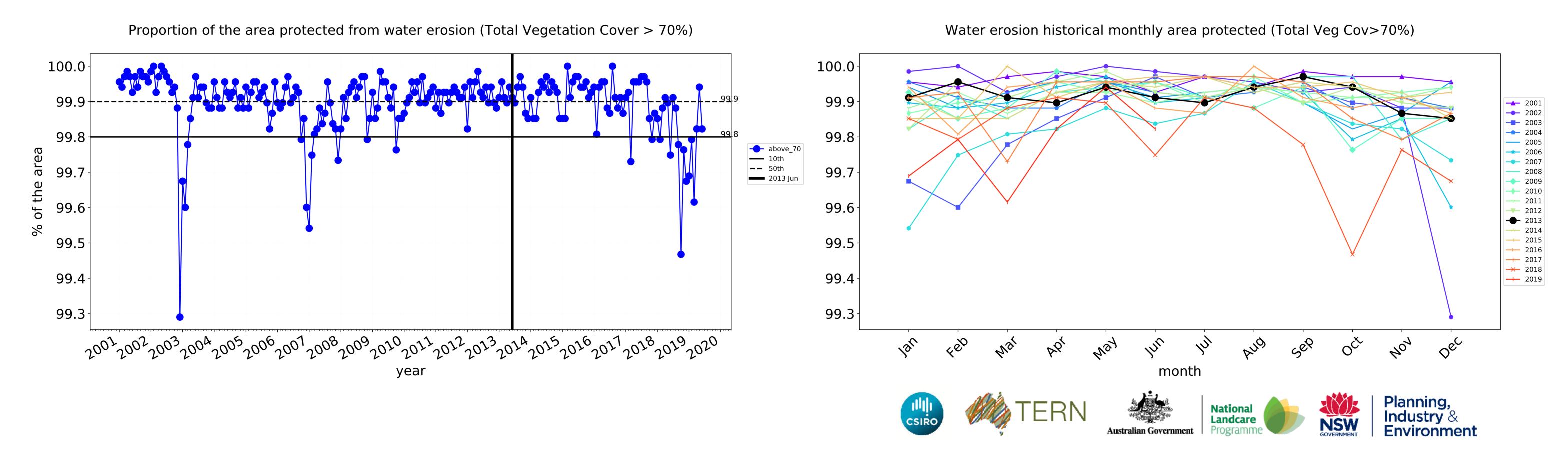


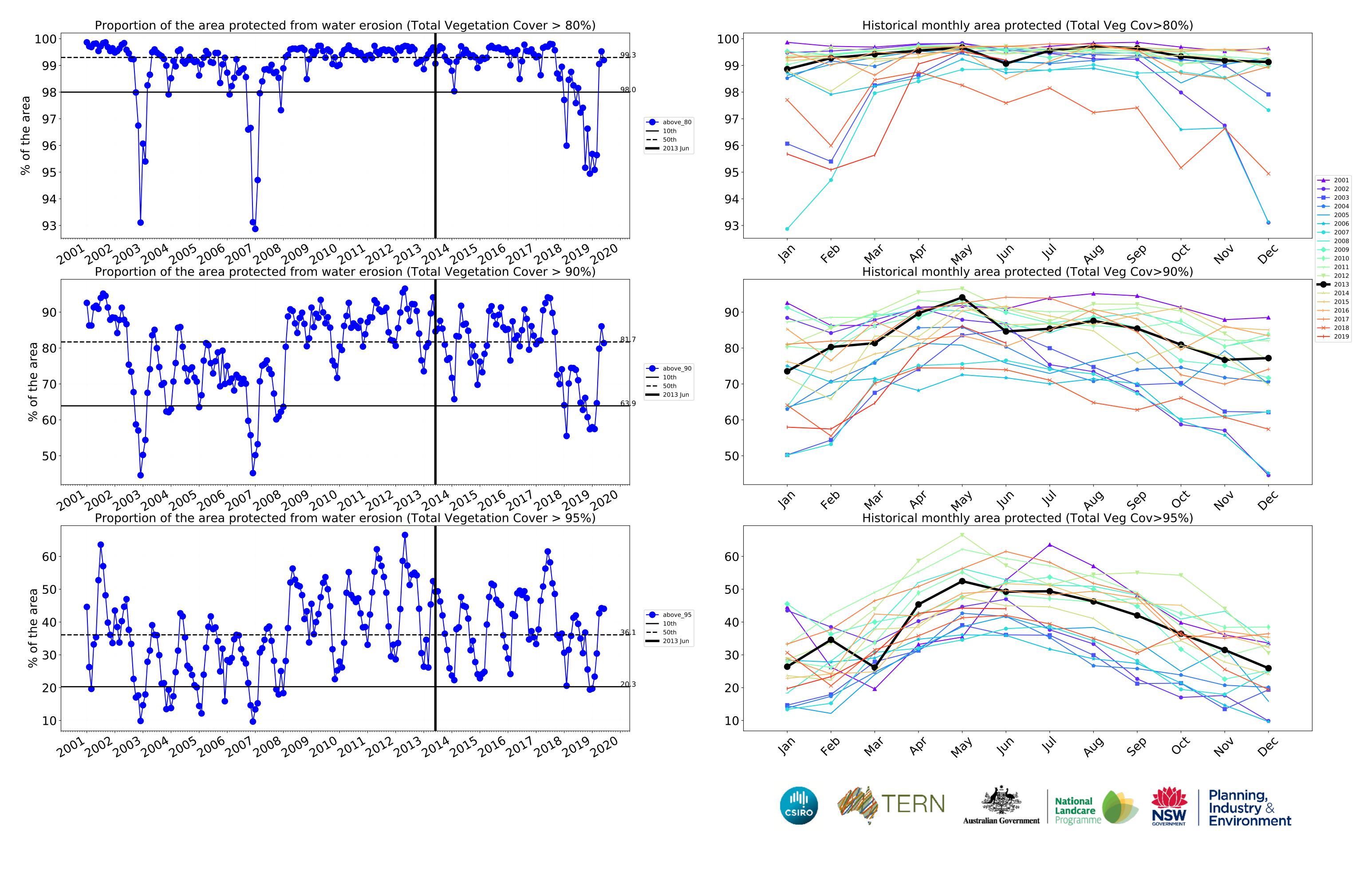






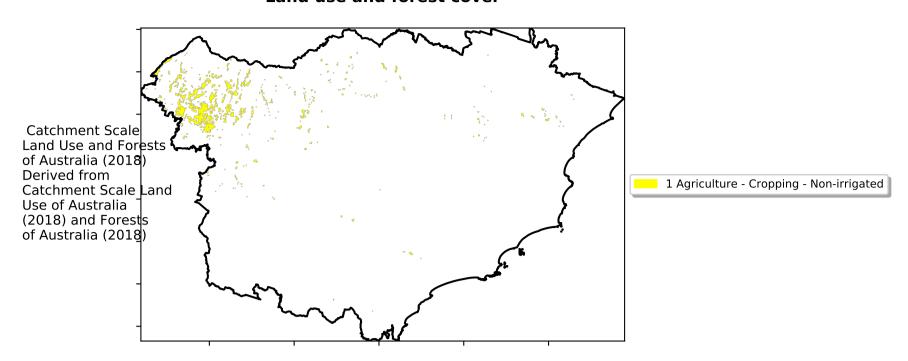




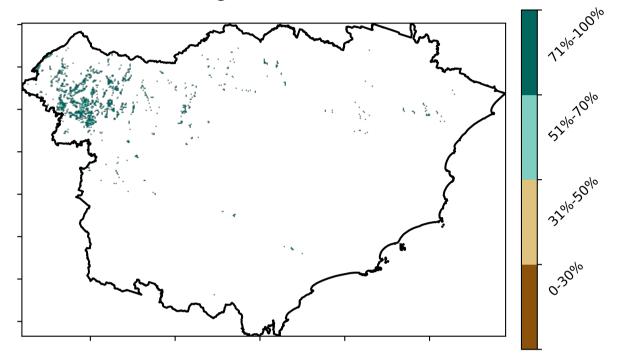


Cropping

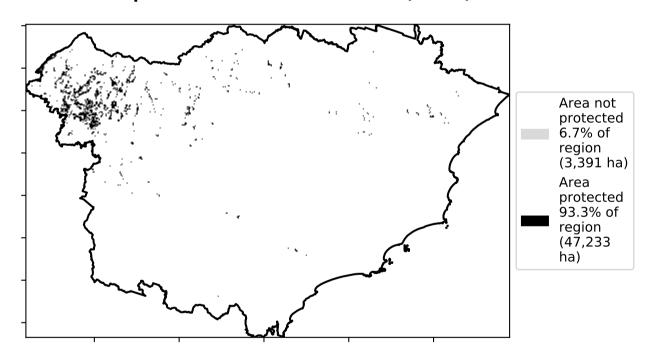
Land use and forest cover



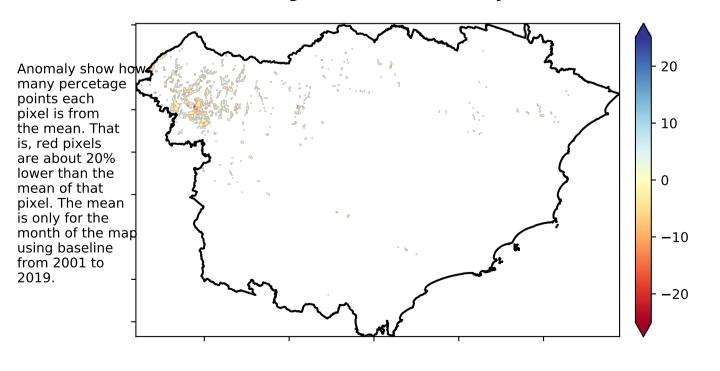
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

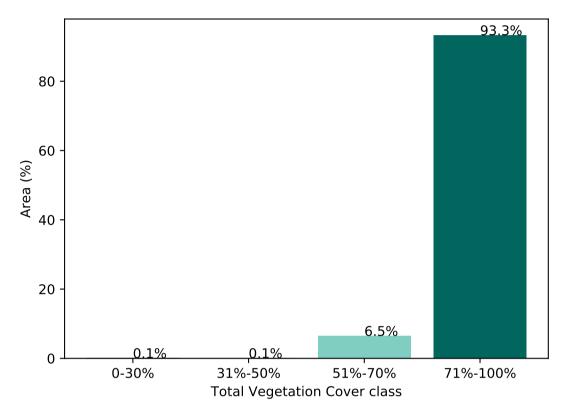


Total Vegetation Cover Anomaly [%]

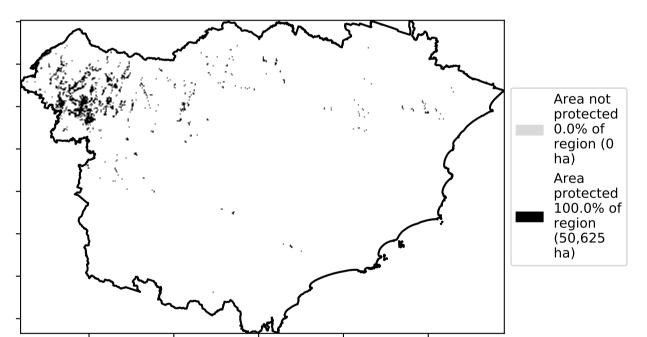


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

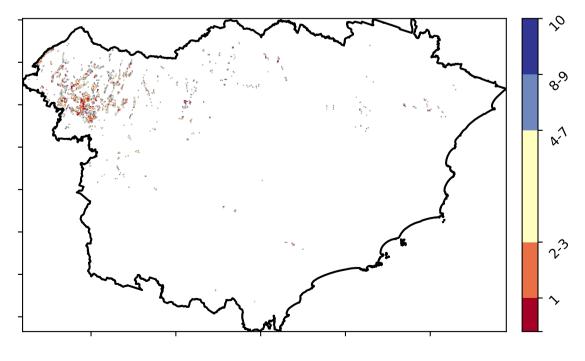
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







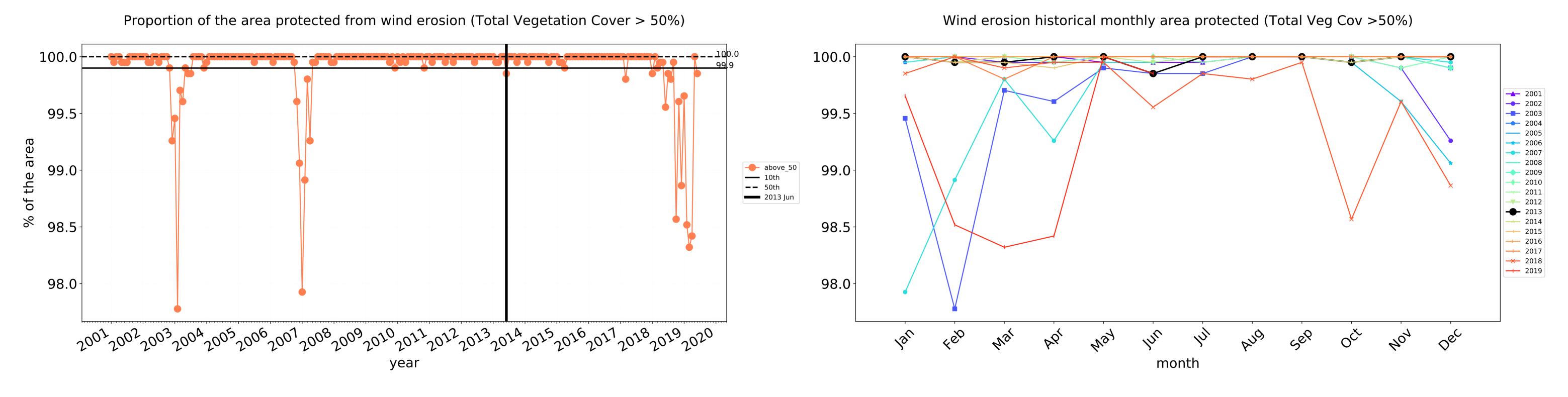


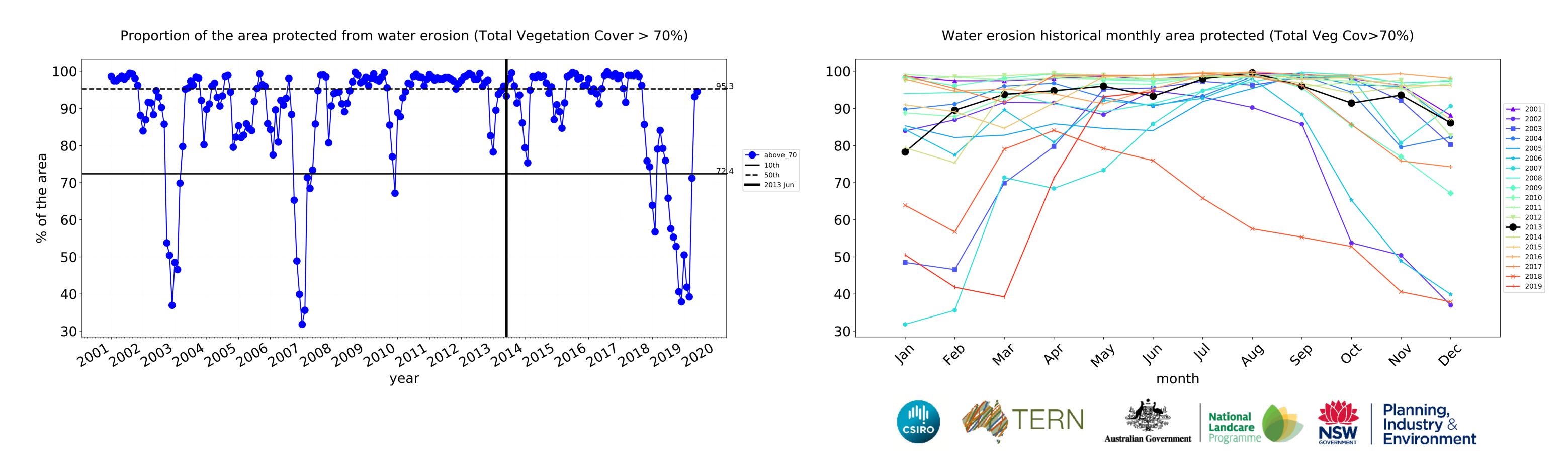


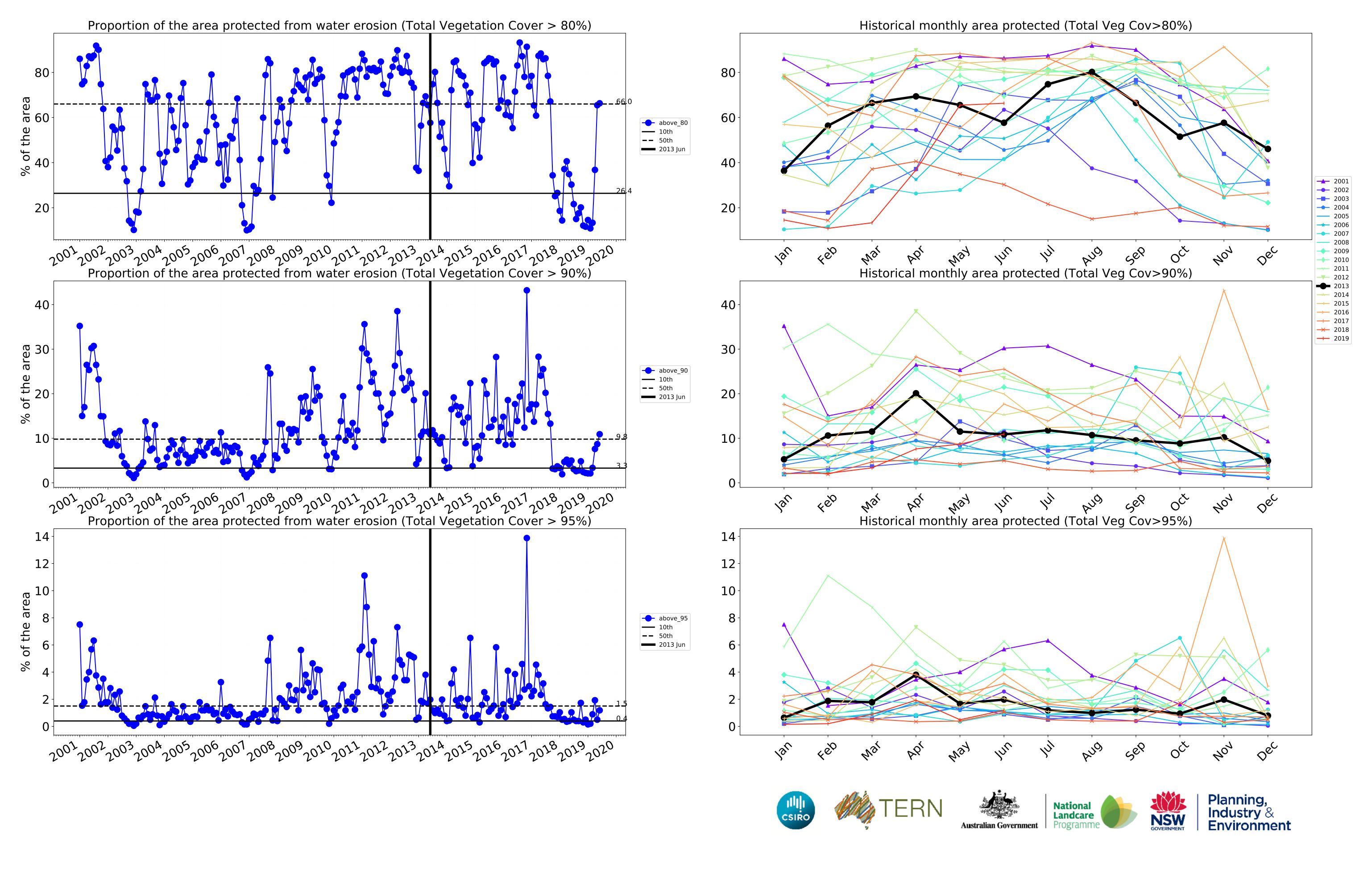




Cropping timeseries







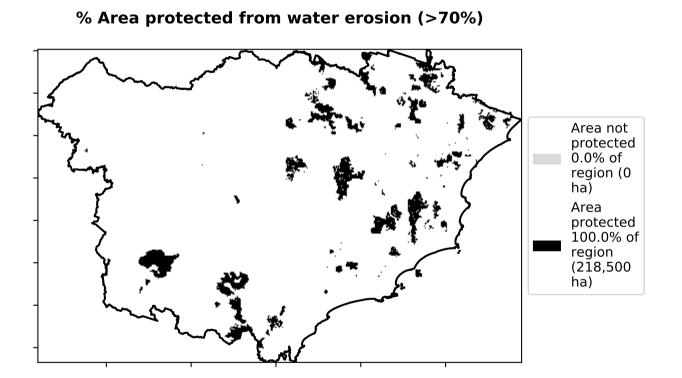
Production native forests and plantation forests

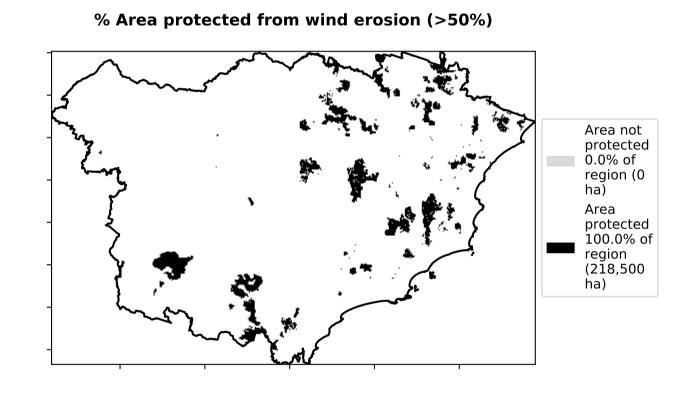
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) 1 Production native forests and plantation forests

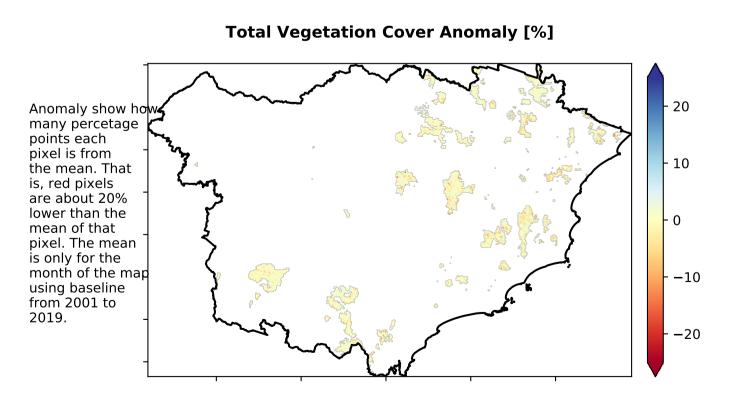
Total Vegetation Cover [%]

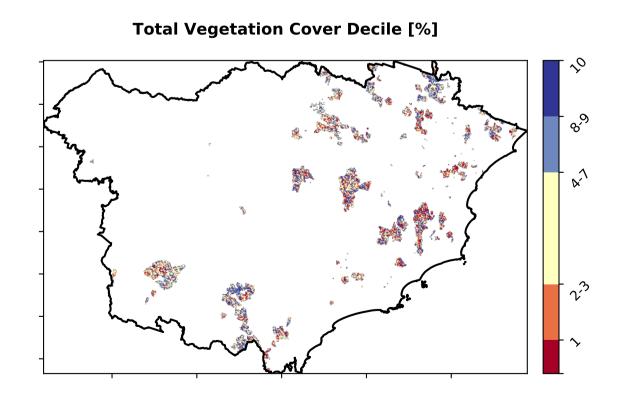
100.0% 100 Area (%) 40 20 0.0% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**

Proportion of vegetation cover class in area













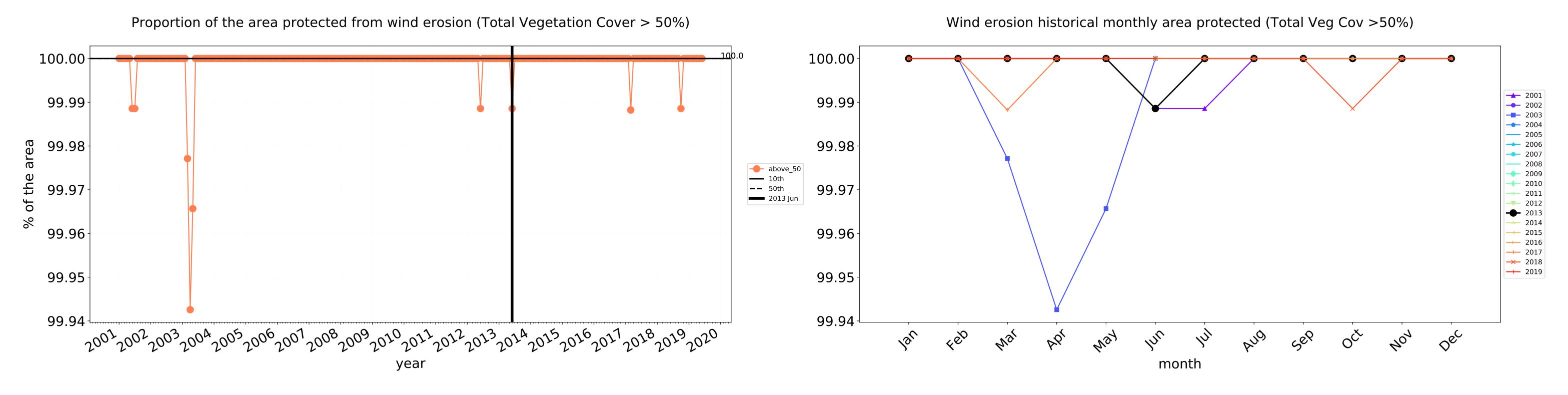


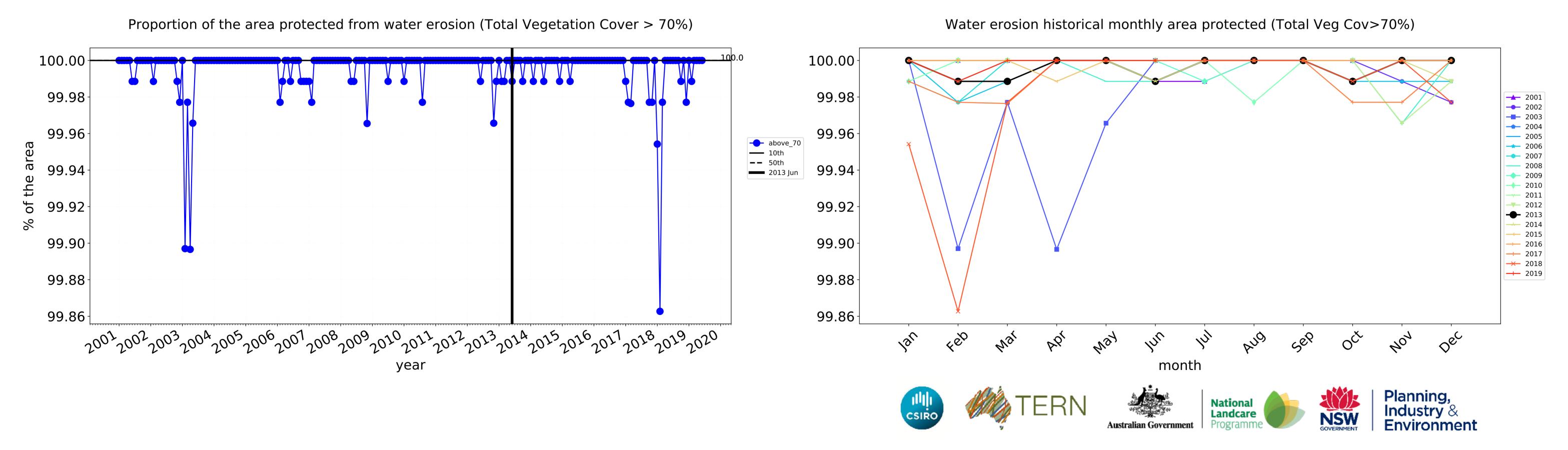


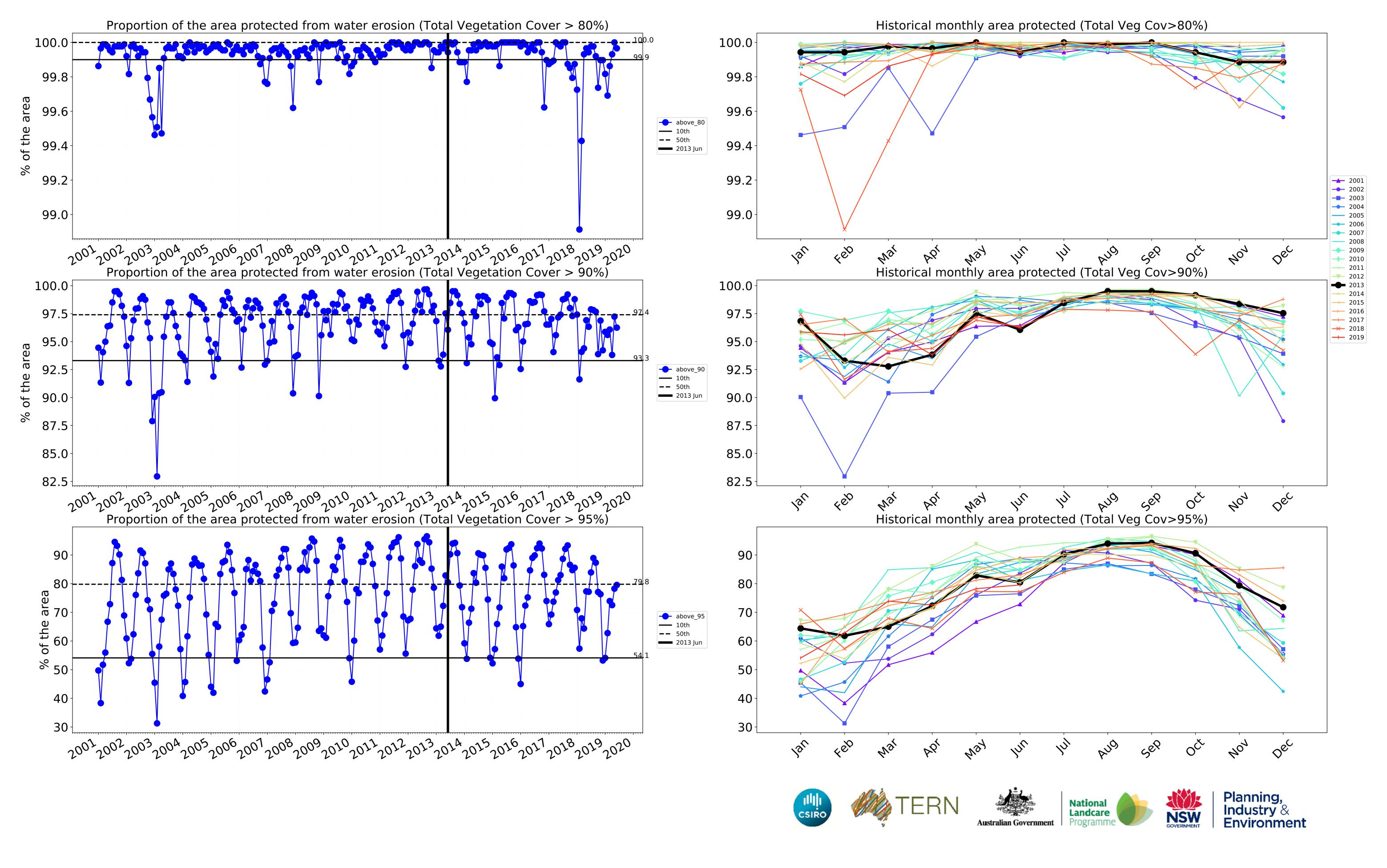




Production native forests and plantation forests timeseries







Hunter (3,239,800 ha and no data 60,625 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	3,239,800	99.9% 3,236,303	99.6% 3,228,236	98.6% 3,194,393	95.4% 3,090,693	75.7% 2,453,058	45.9% 1,488,089
Conservation and natural environments	1,242,775	100.0% 1,242,200	99.9% 1,241,450	99.8% 1,239,725	99.4% 1,235,225	92.6% 1,150,250	67.3% 836,925
Conservation and natural environments non forest	31,125	98.4% 30,625	96.3% 29,975	92.9% 28,925	89.6% 27,900	72.8% 22,650	39.9% 12,425
Conservation and natural environments Woodland forest	139,025	100.0% 139,025	100.0% 139,000	99.9% 138,925	99.5% 138,375	89.3% 124,200	45.7% 63,475
Conservation and natural environments Forest (non woodland)	1,072,625	100.0% 1,072,550	100.0% 1,072,475	99.9% 1,071,875	99.7% 1,068,950	93.5% 1,003,400	70.9% 761,025
Agriculture	1,580,675	100.0% 1,580,650	100.0% 1,580,450	99.5% 1,572,350	95.3% 1,506,575	64.7% 1,022,775	28.3% 448,025
Grazing	1,502,675	100.0% 1,502,650	100.0% 1,502,525	99.7% 1,498,500	97.0% 1,457,525	67.4% 1,013,375	29.7% 446,175
Grazing non forest	1,212,900	100.0% 1,212,875	100.0% 1,212,775	99.7% 1,209,025	96.5% 1,170,900	64.5% 782,150	27.1% 329,250
Grazing Woodland forest	120,625	100.0% 120,625	100.0% 120,625	99.9% 120,475	98.7% 119,050	73.0% 88,100	27.9% 33,625
Grazing - Forest (non woodland)	169,150	100.0% 169,150	100.0% 169,125	99.9% 169,000	99.1% 167,575	84.6% 143,125	49.2% 83,300
Cropping	50,625	100.0% 50,625	99.9% 50,550	93.3% 47,250	57.7% 29,200	10.9% 5,500	2.0% 1,000
Production native forests and plantation forests	218,500	100.0% 218,475	100.0% 218,475	100.0% 218,475	99.9% 218,375	96.1% 209,875	80.5% 175,825











