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: March 2018

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







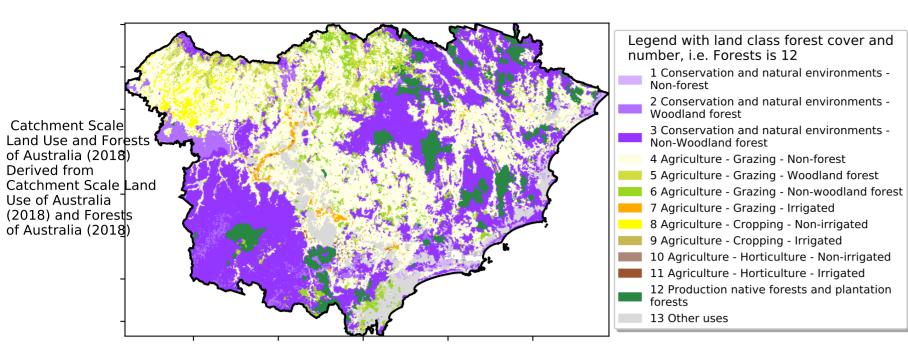




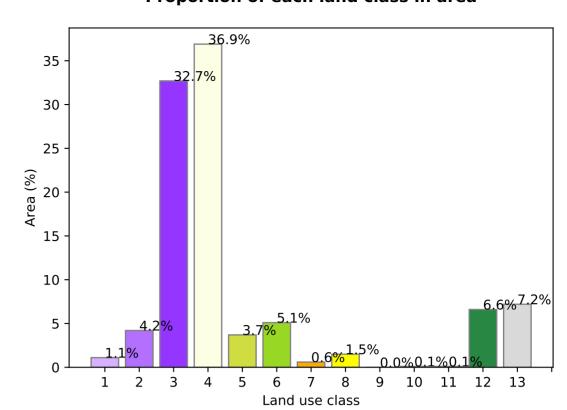


Vegetation Cover Mar 2018

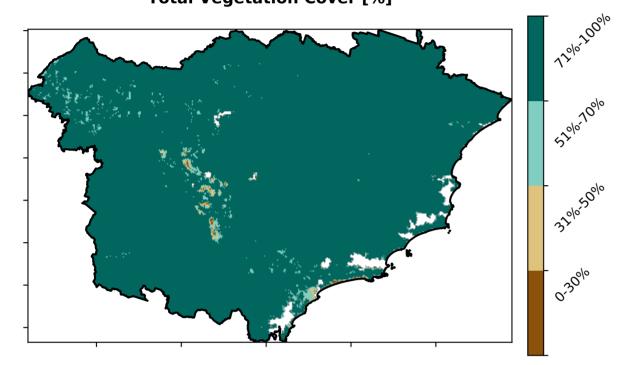
Land use and forest cover



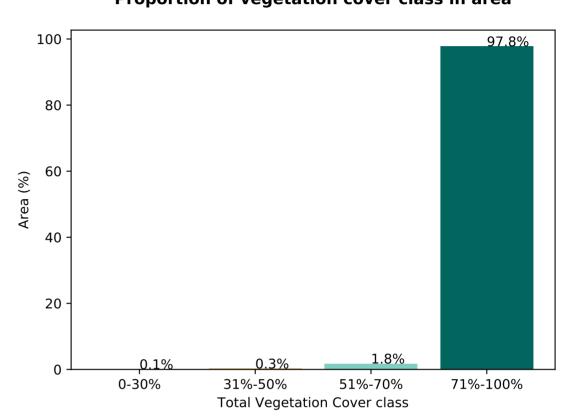
Proportion of each land class in area



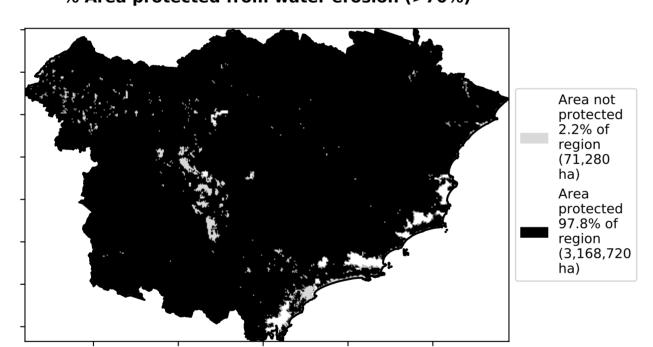
Total Vegetation Cover [%]



Proportion of vegetation cover class in area



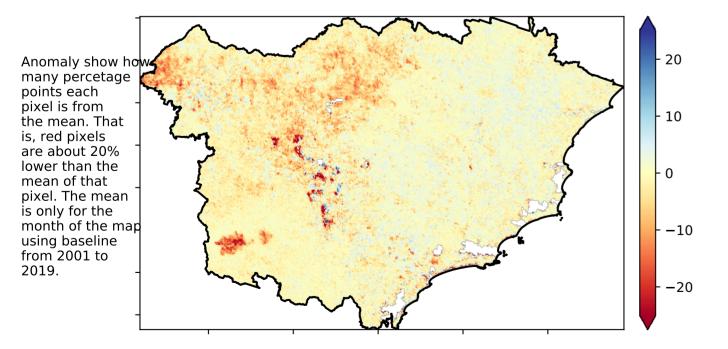
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

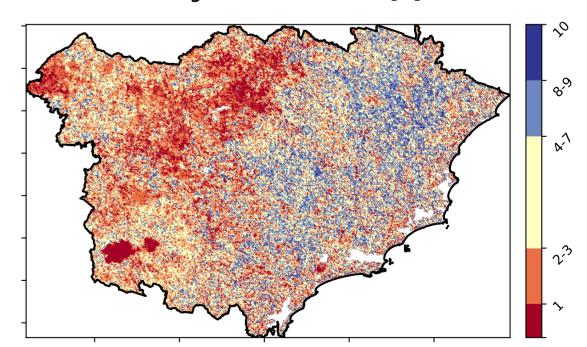


Total Vegetation Cover Anomaly [%]



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 [%]





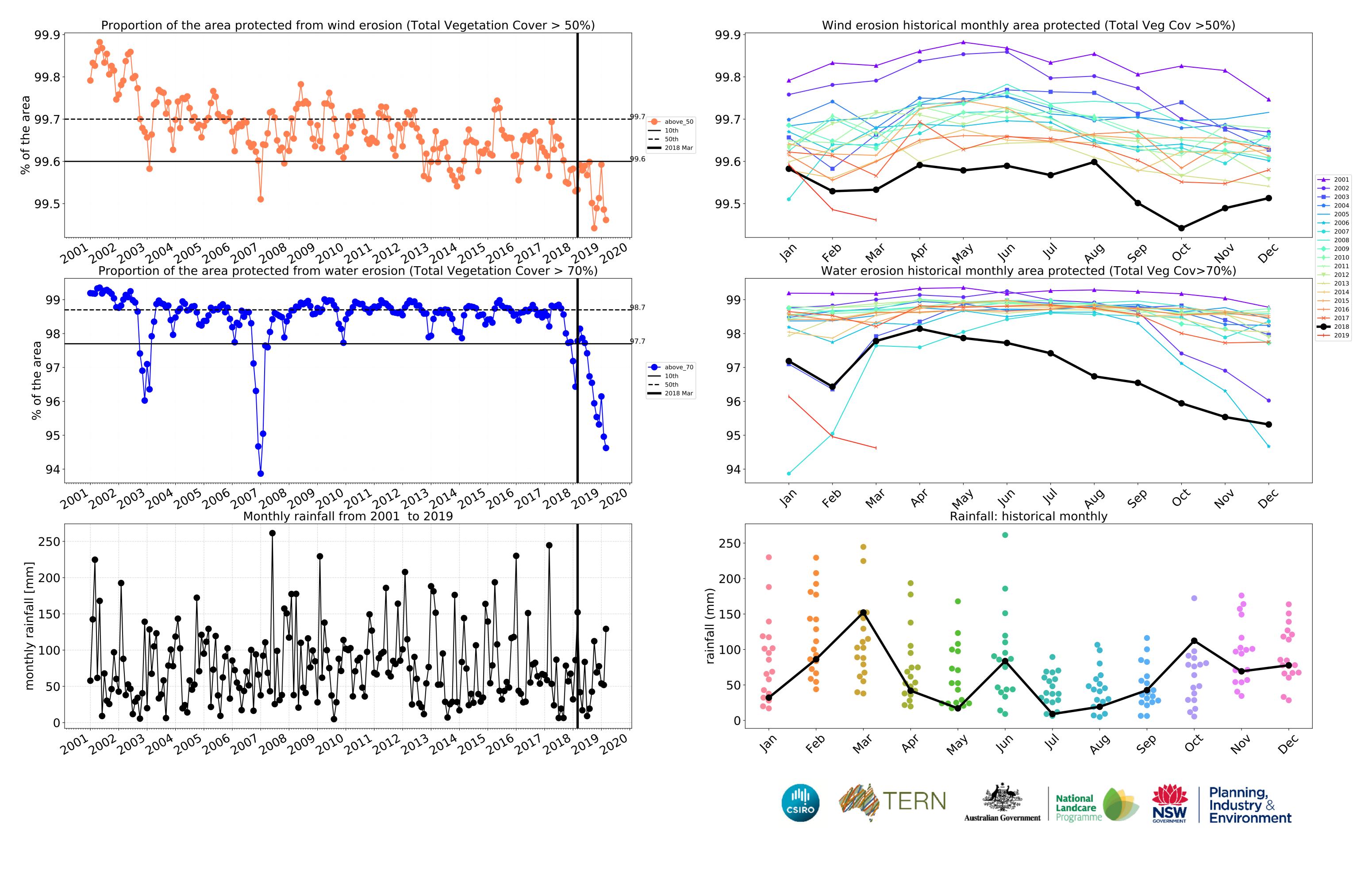




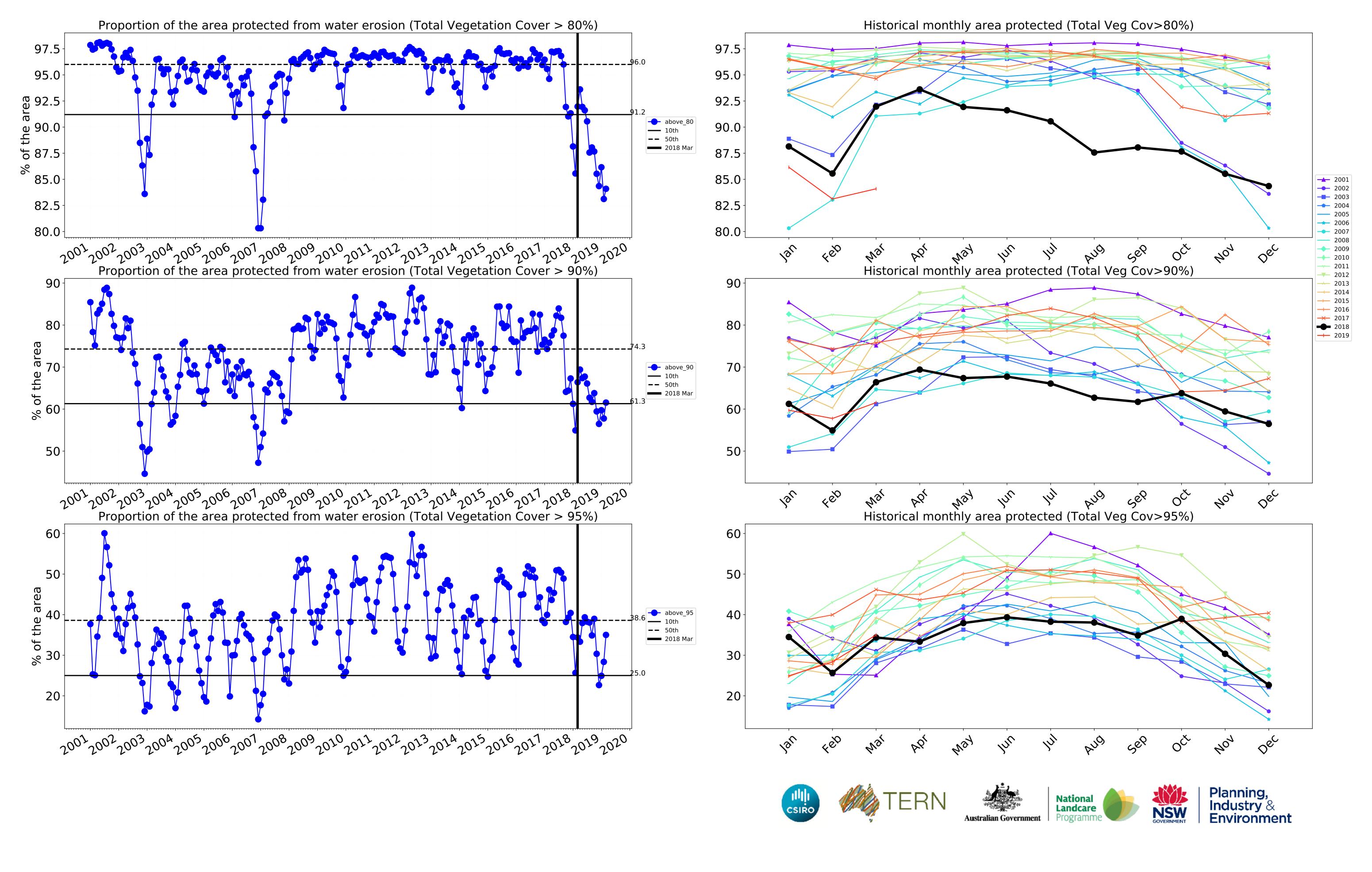






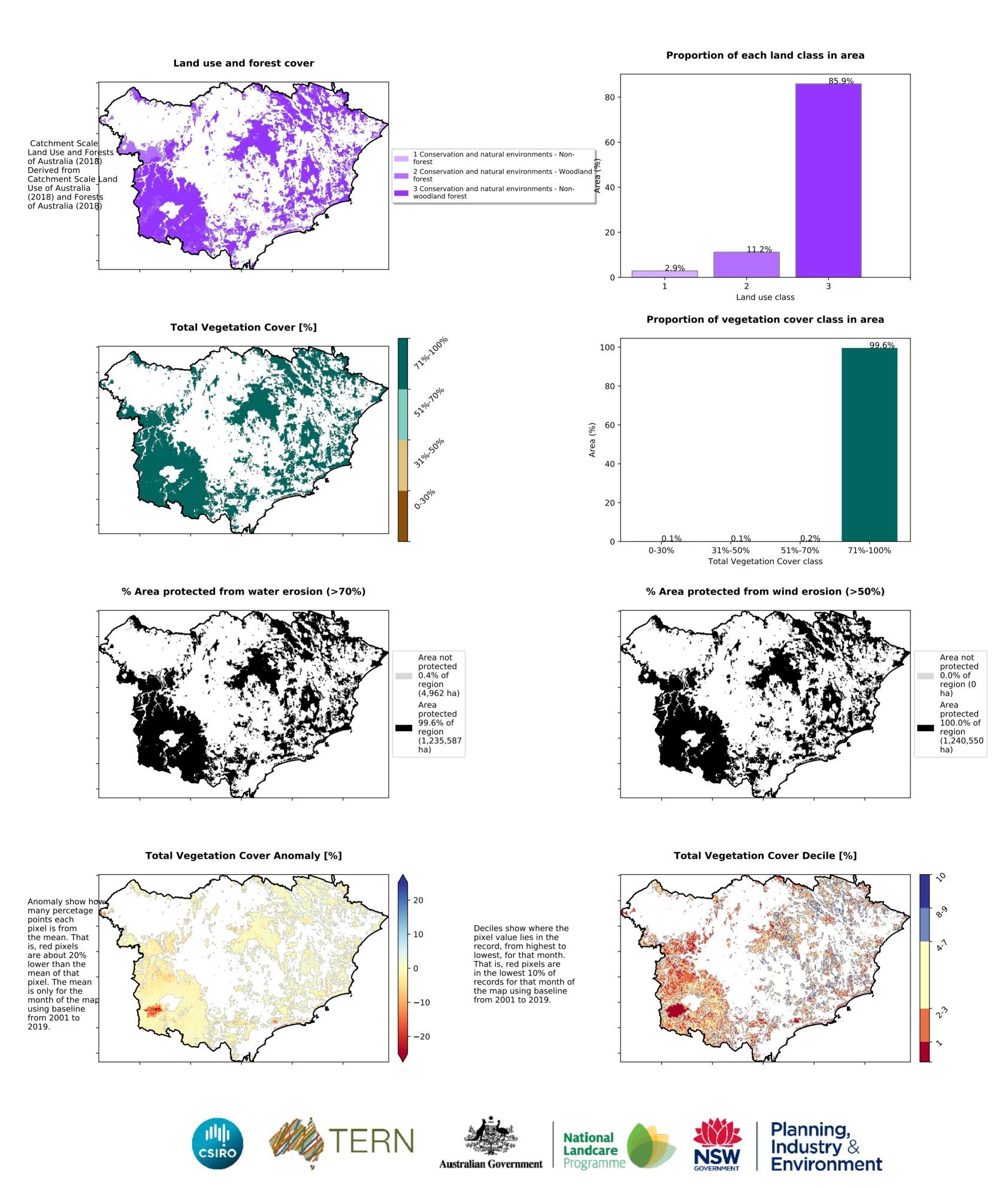


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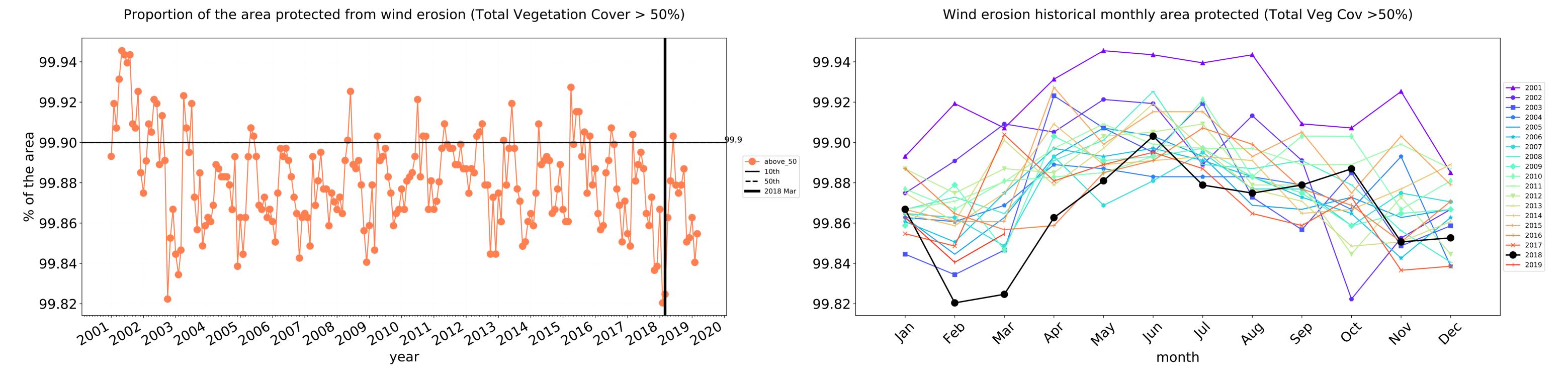


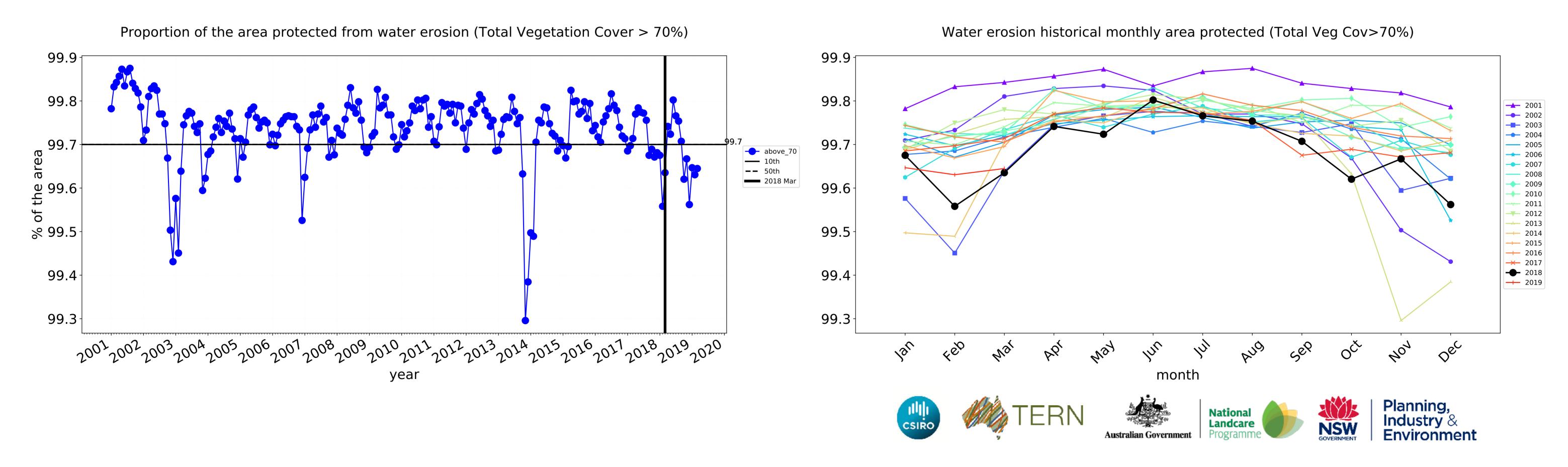
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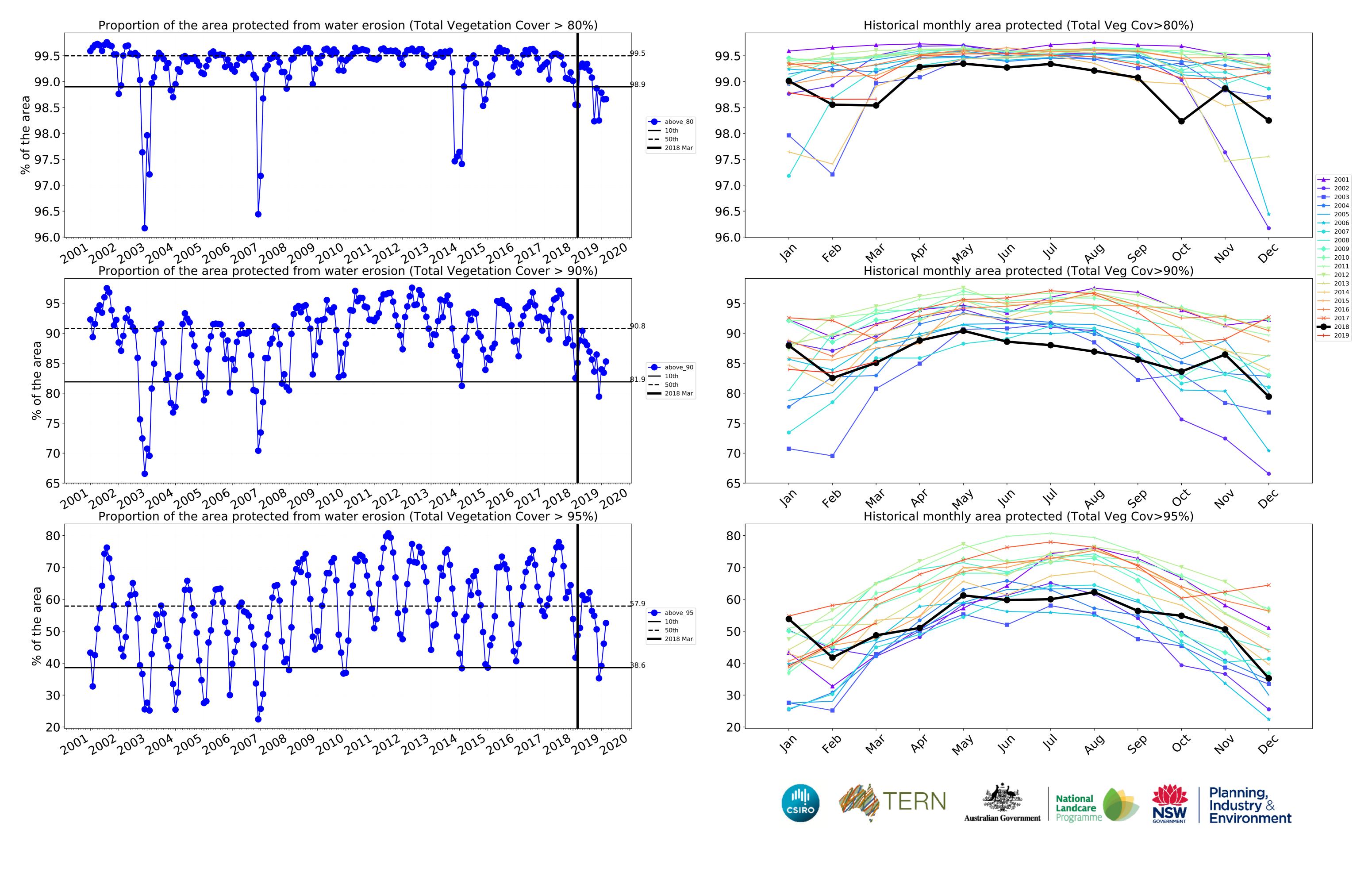
Conservation and natural environments



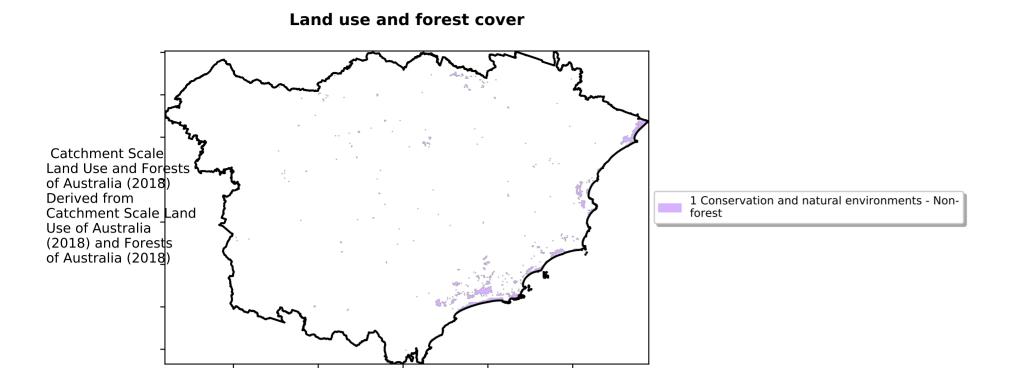
Conservation and natural environments timeseries





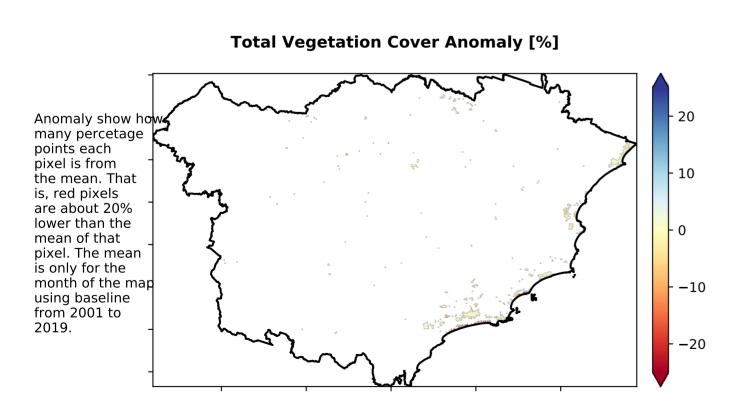


Conservation and natural environments non forest



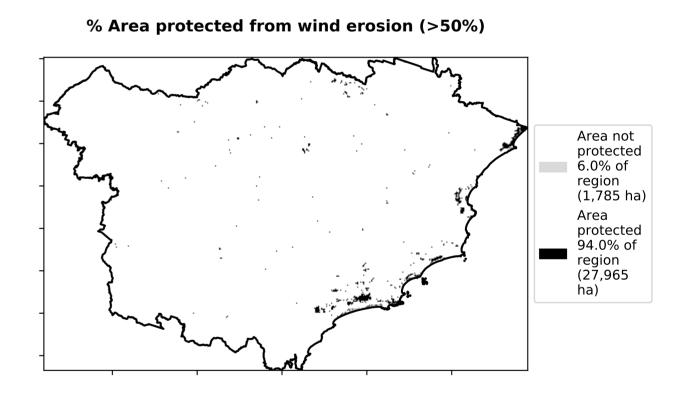
Total Vegetation Cover [%] Talestadolo Tal

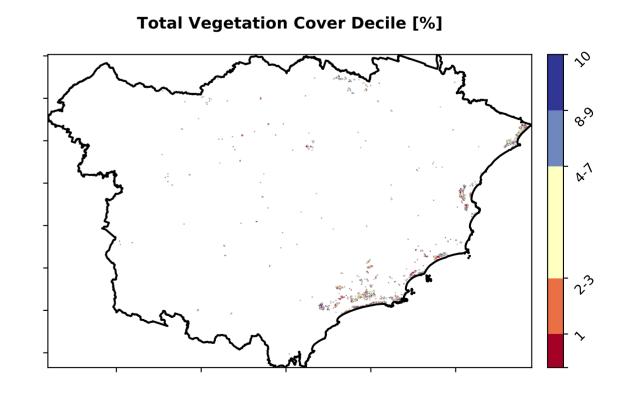
Area not protected 9.7% of region (2,885 ha) Area protected 90.3% of region (26,864 ha)



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

Proportion of vegetation cover class in area 90.3% 90.3% 90.3% 40 20 0-30% 31%-50% 51%-70% Total Vegetation Cover class









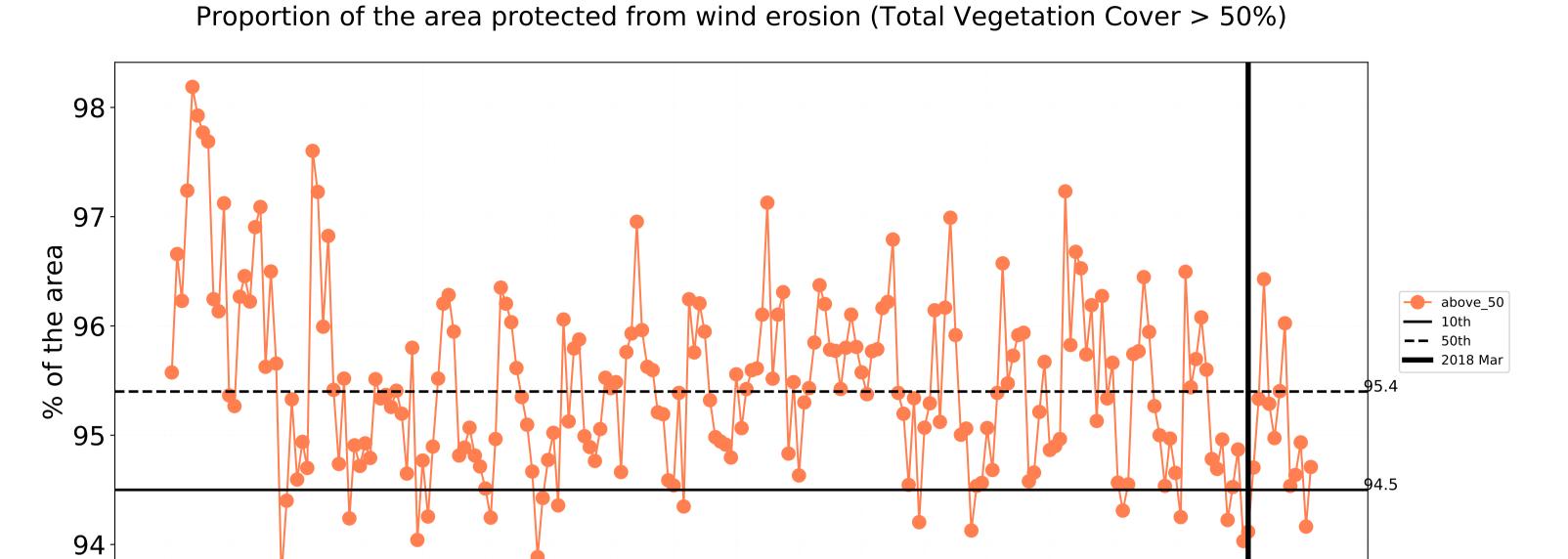






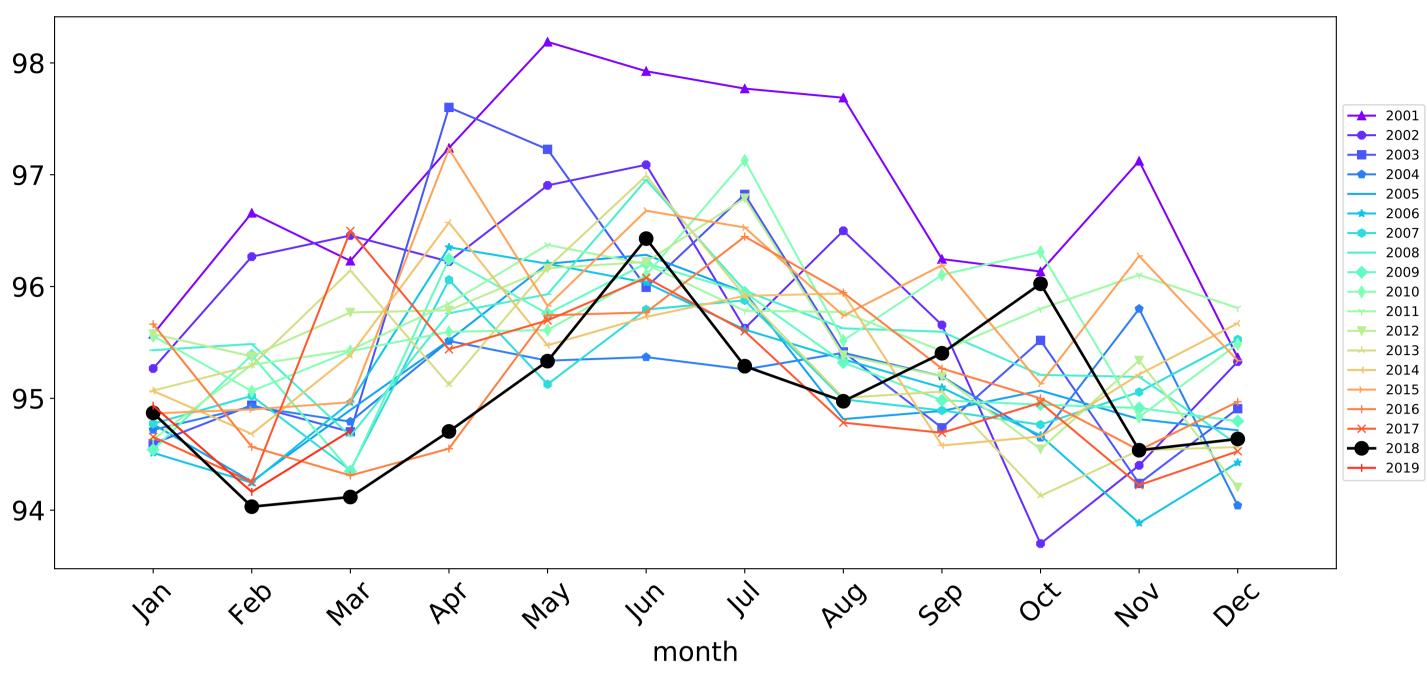


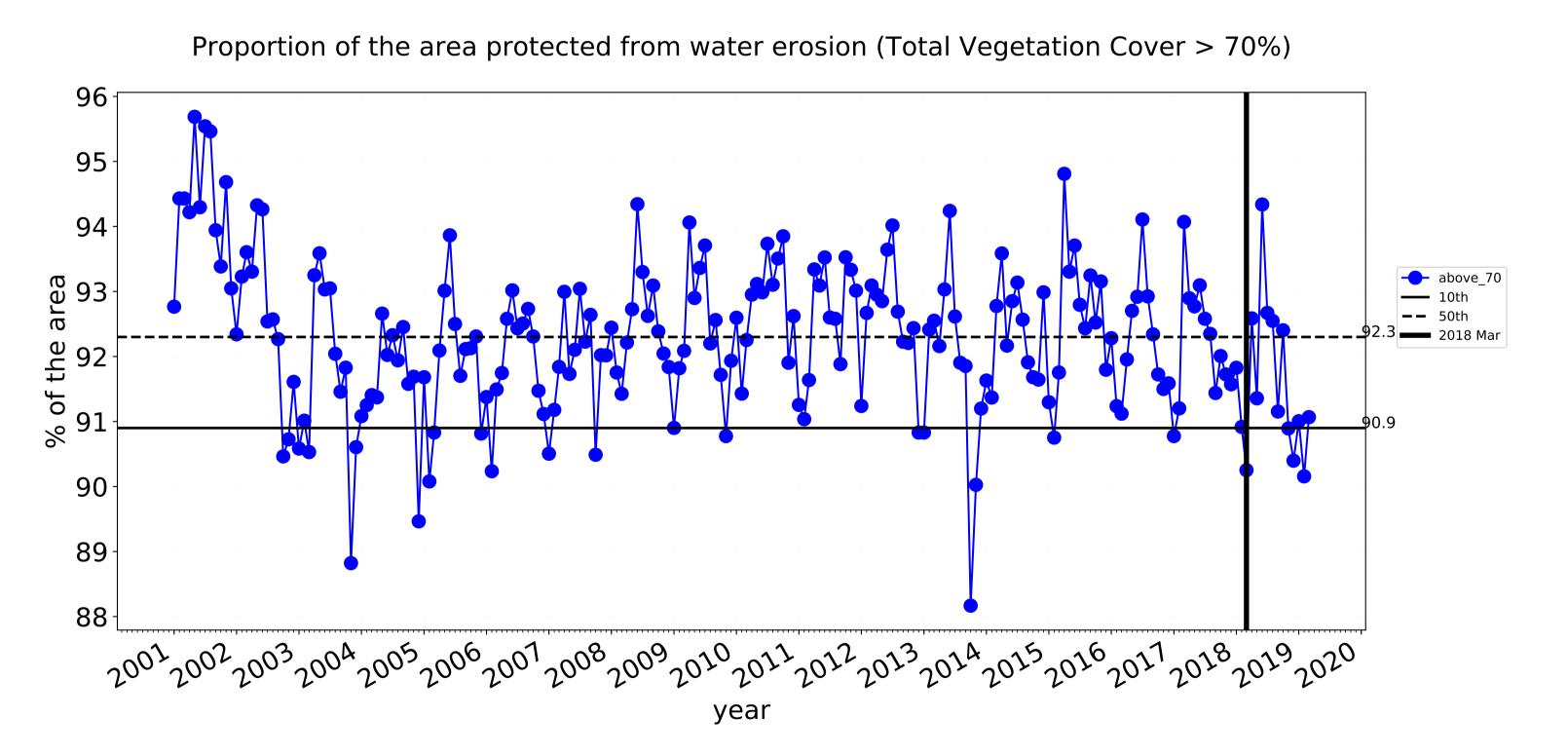
Conservation and natural environments non forest timeseries



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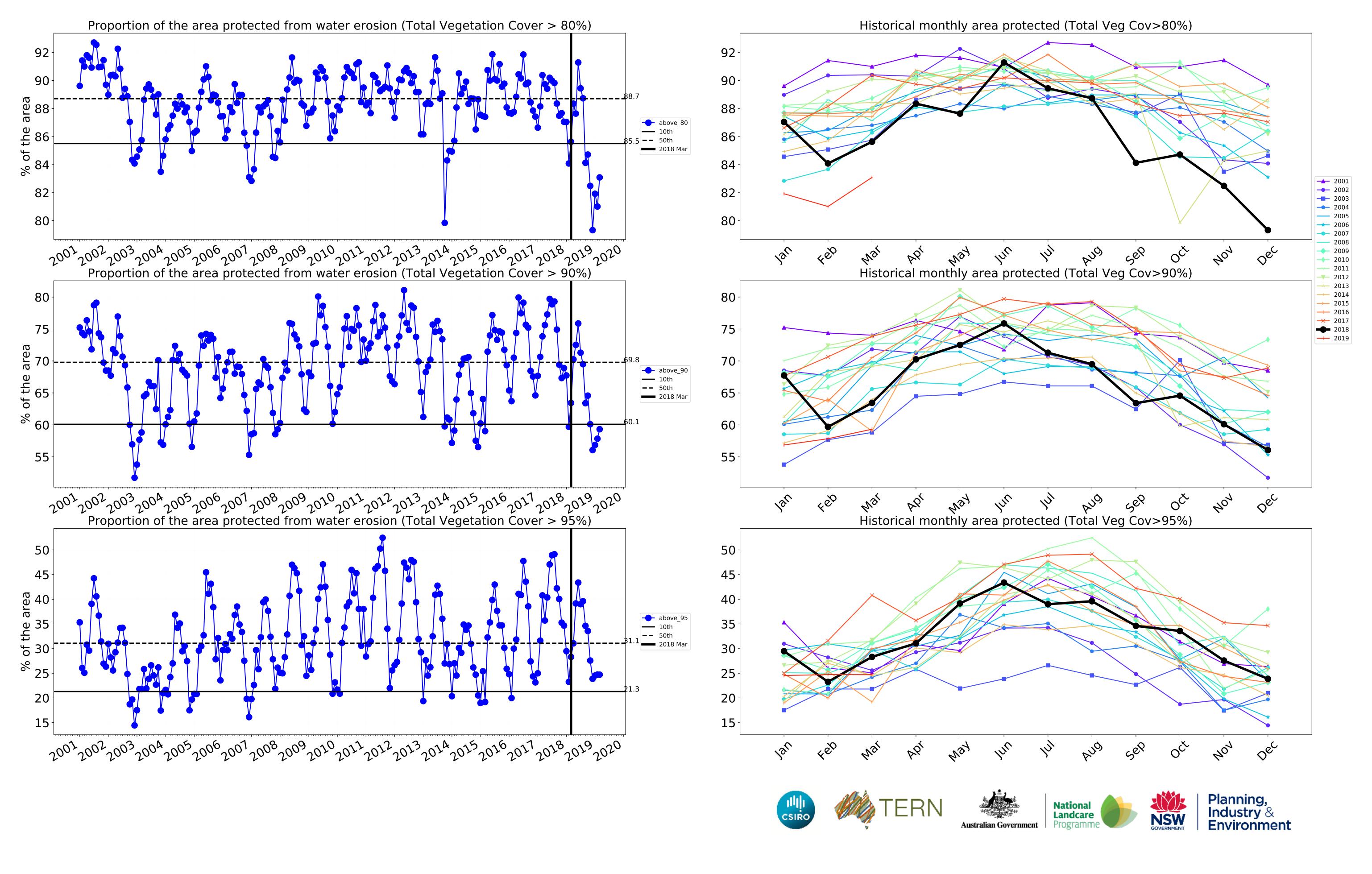




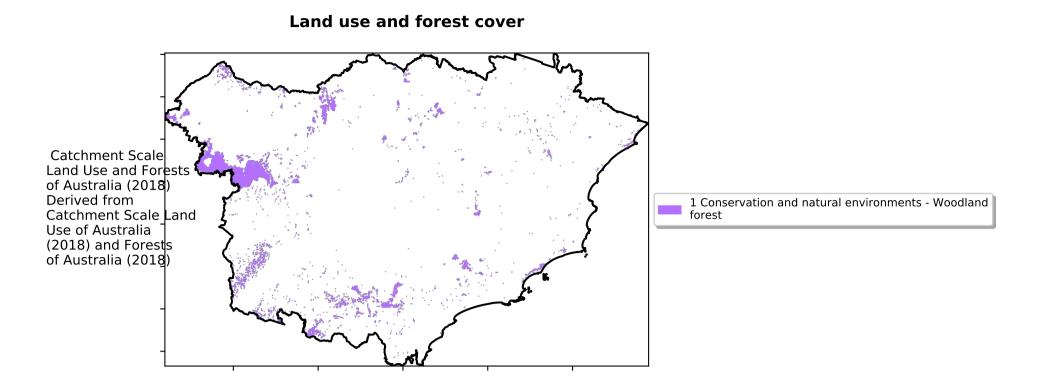


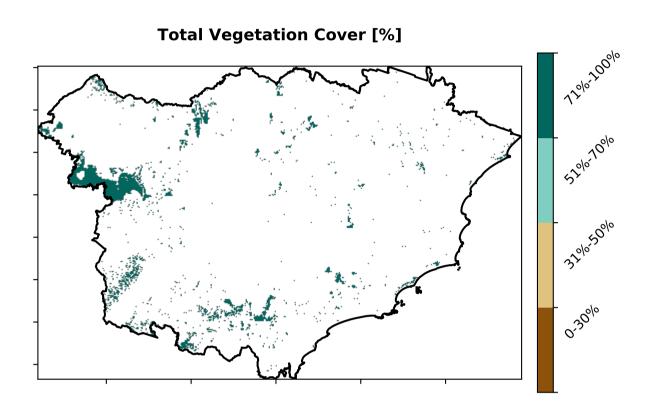
Water erosion historical monthly area protected (Total Veg Cov>70%) 96 95 94 → 2004 ____ 2005 93 92 2011 91 ← 2014 **→** 2015 90 × 2017 **---** 2018 **→** 2019 89 88 month Planning, Industry & Environment National Landcare

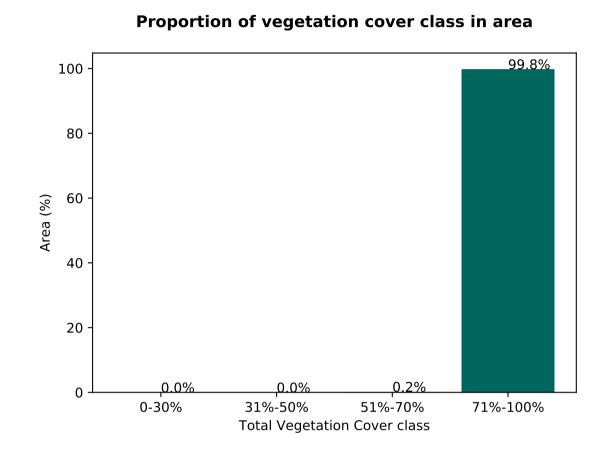
NSW GOVERNMENT

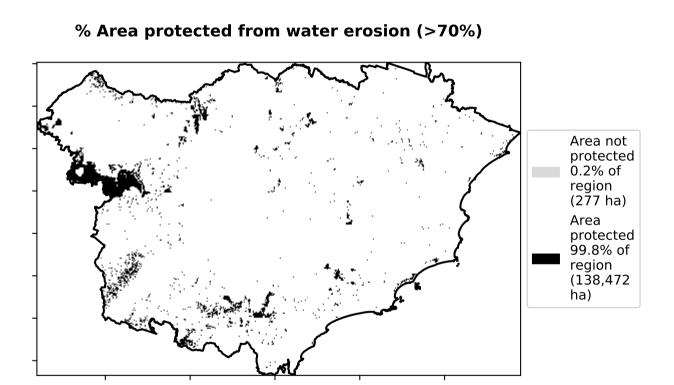


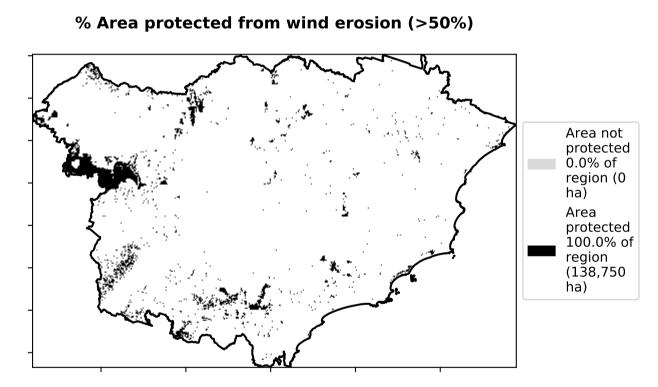
Conservation and natural environments Woodland forest

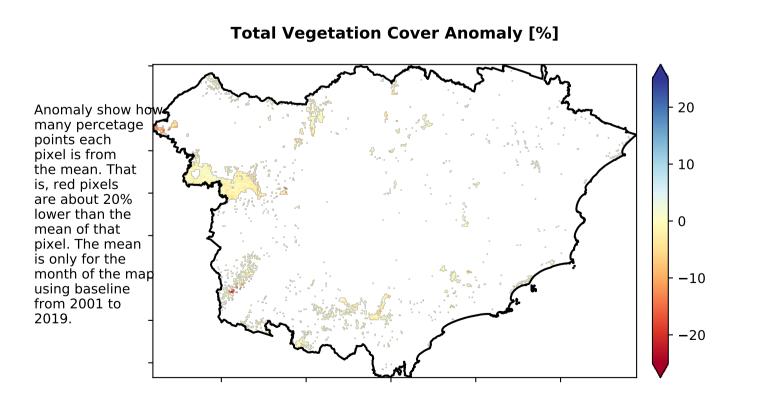




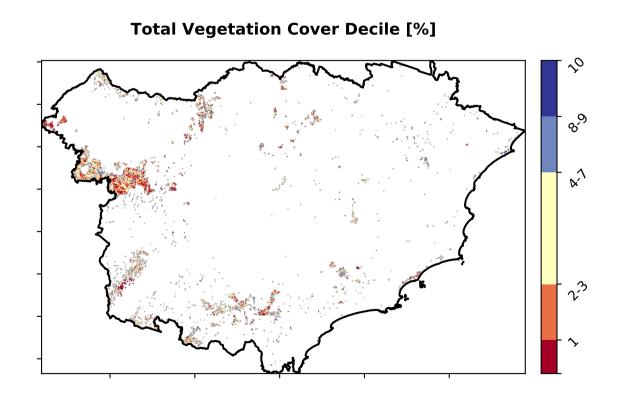








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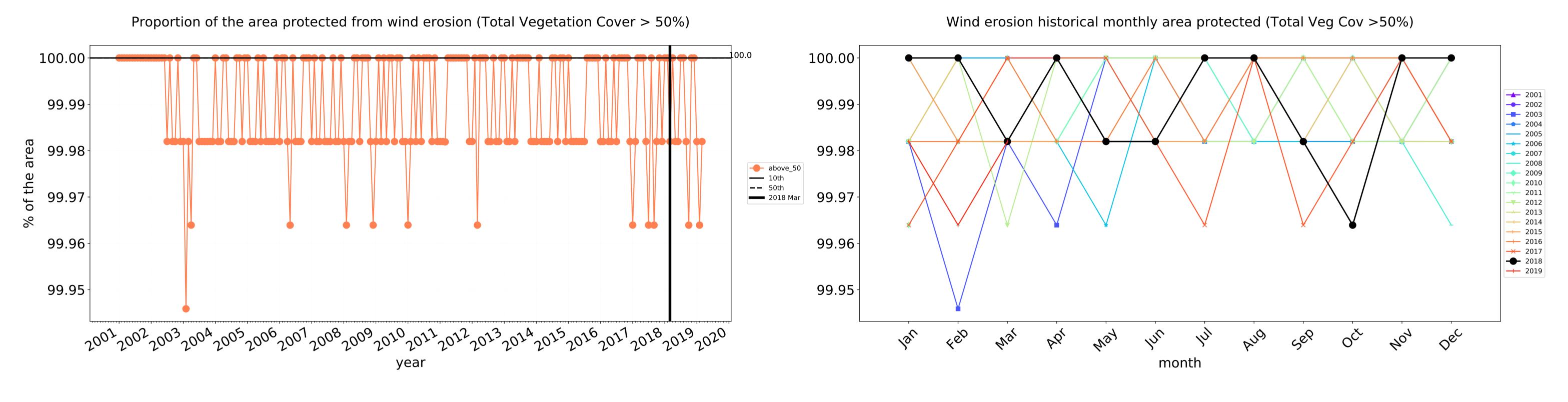


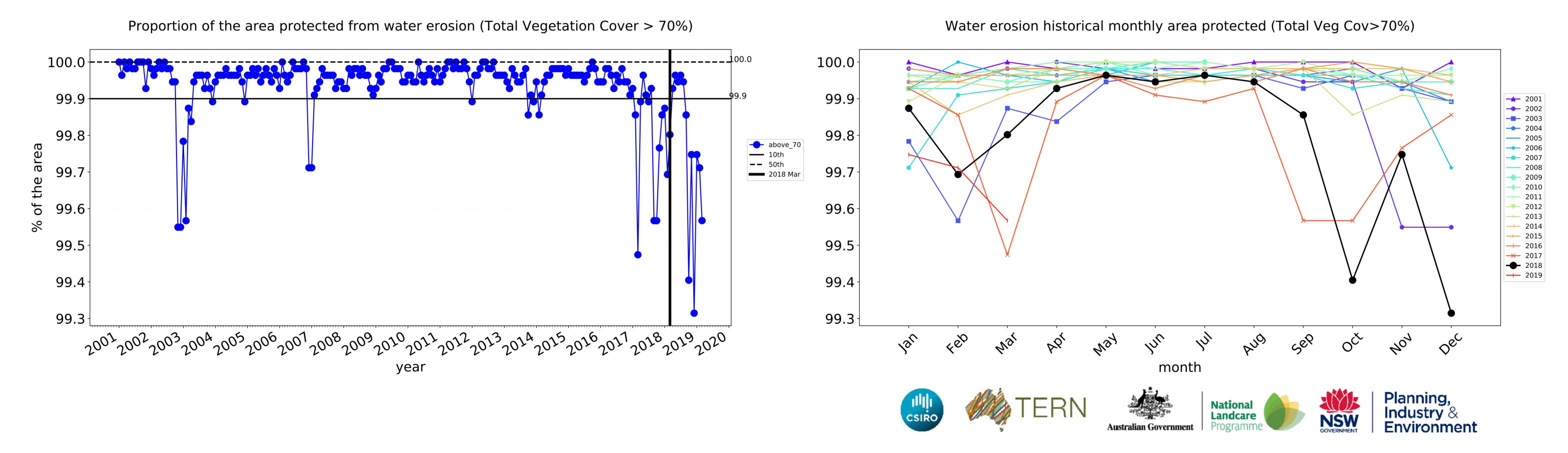


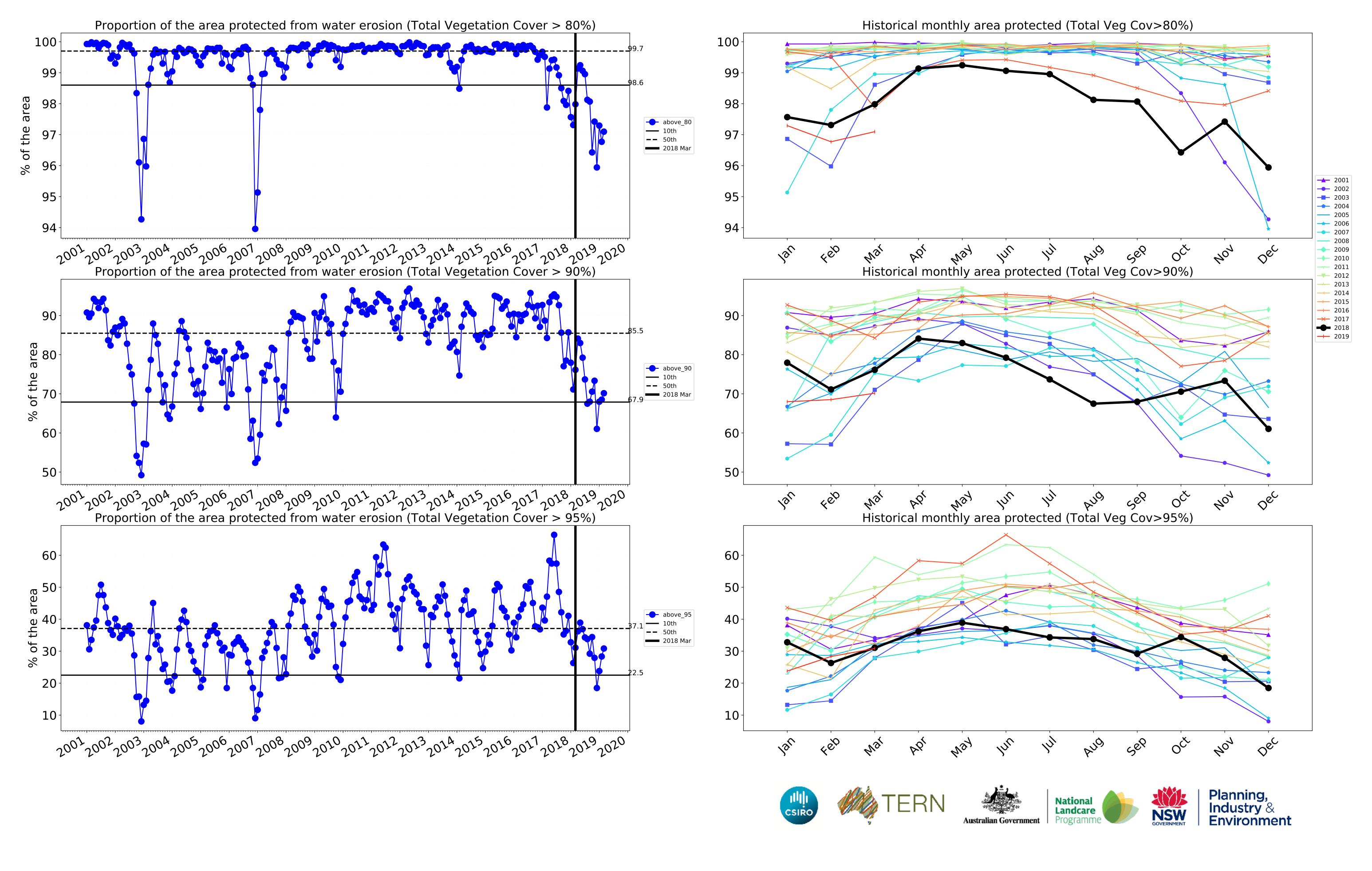




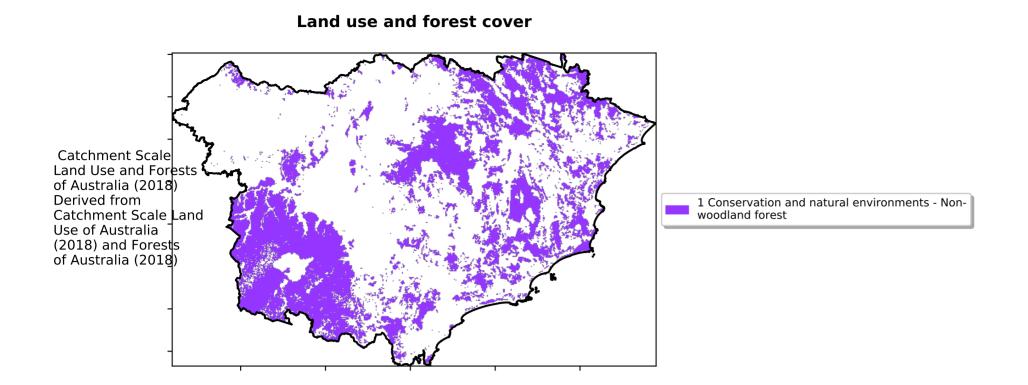
Conservation and natural environments Woodland forest timeseries



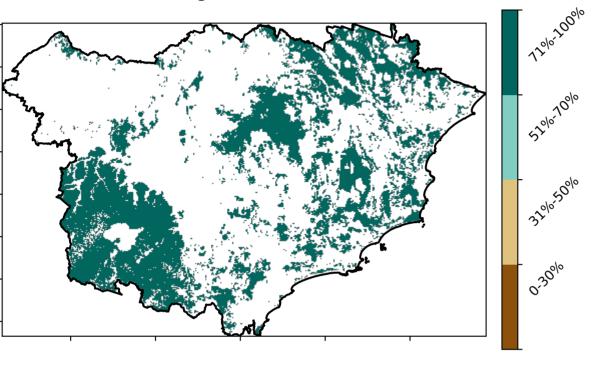


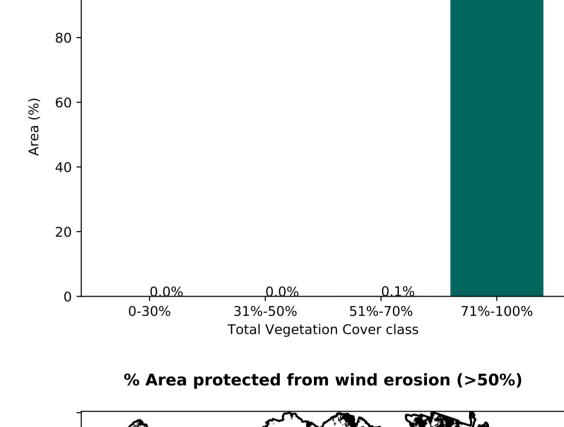


Conservation and natural environments Forest (non woodland)



Total Vegetation Cover [%]

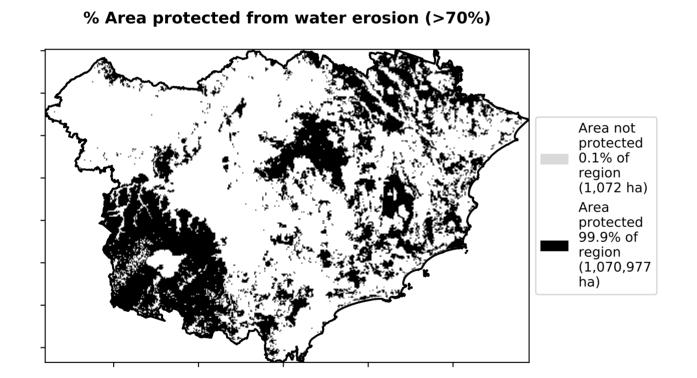


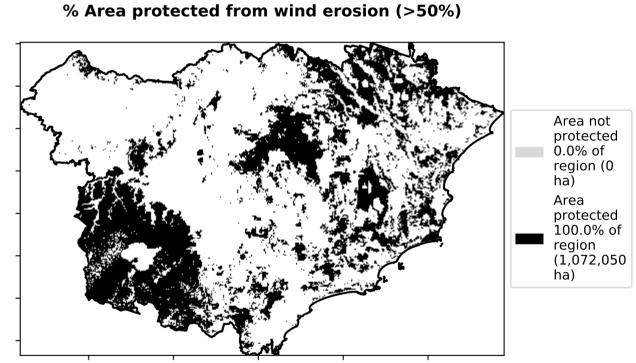


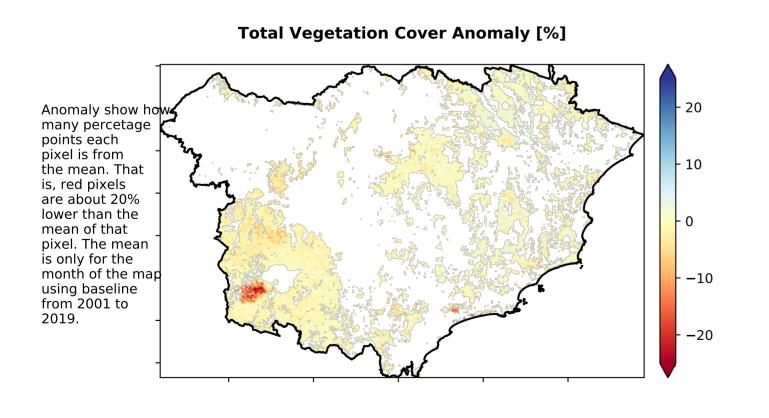
100

Proportion of vegetation cover class in area

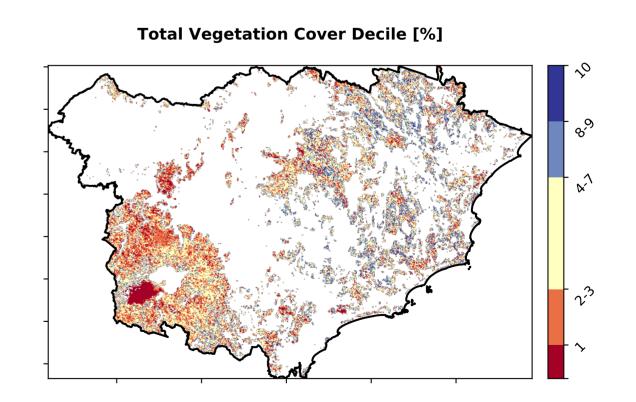
99.9%







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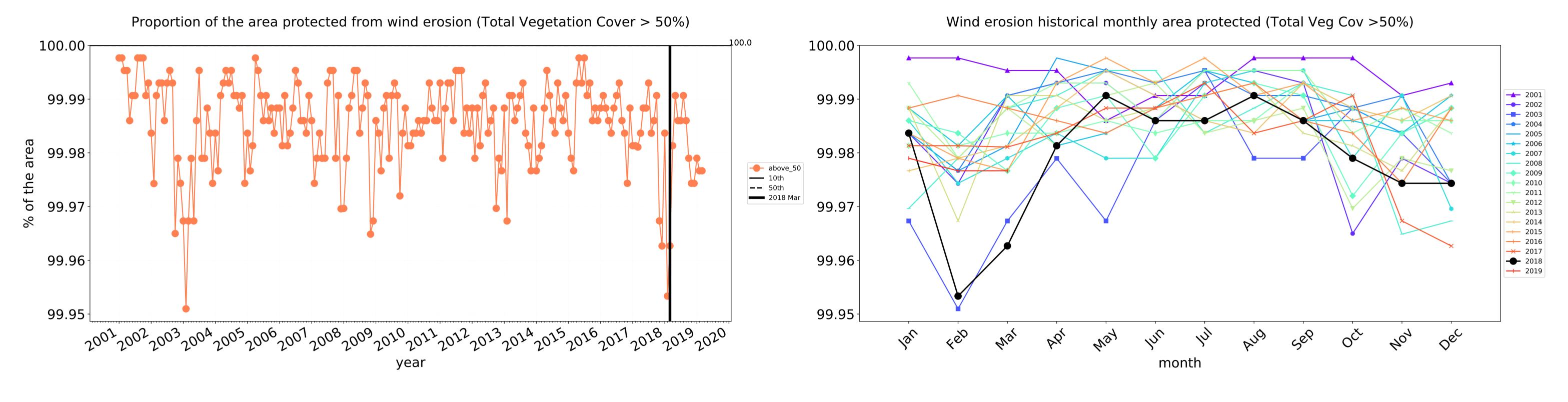


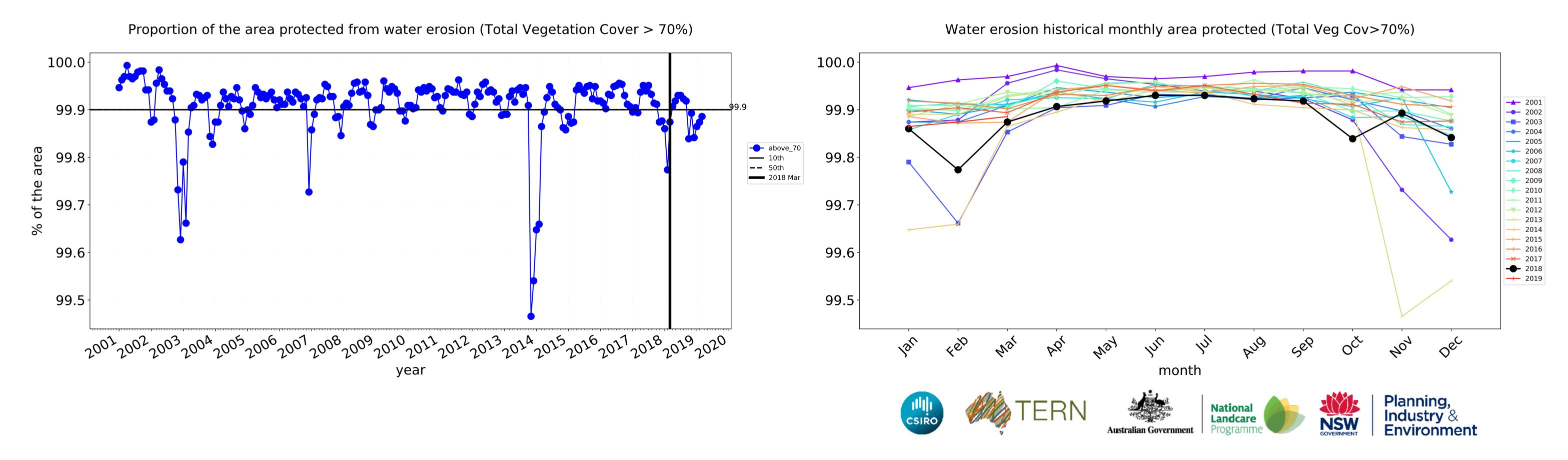


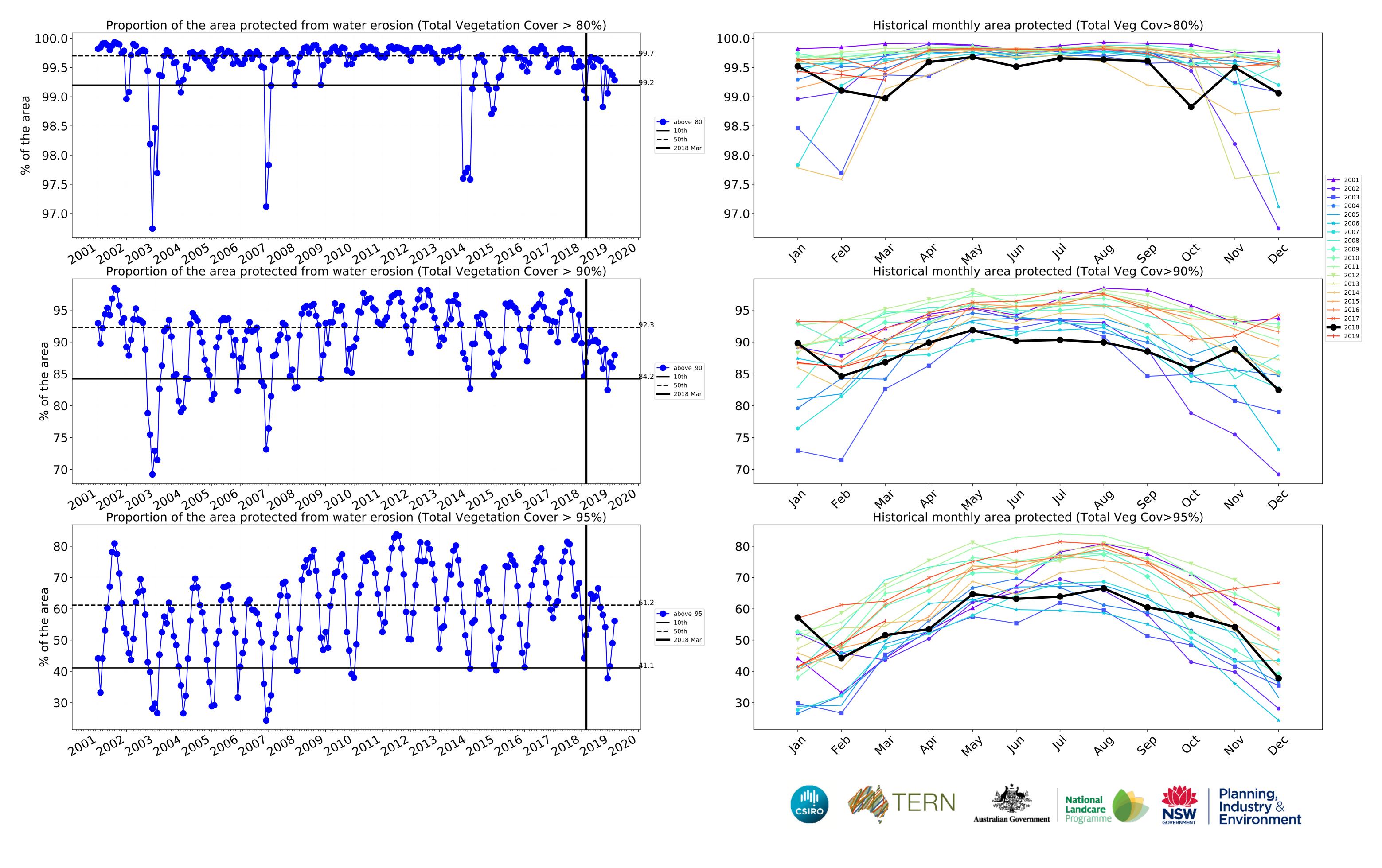




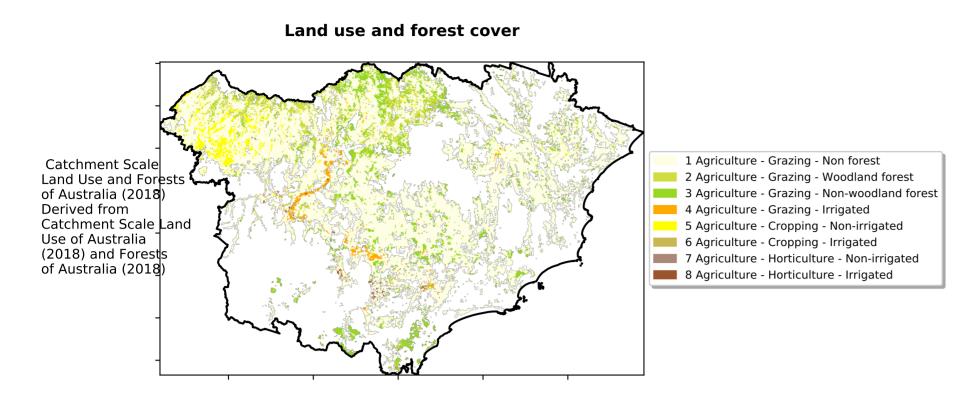
Conservation and natural environments Forest (non woodland) timeseries



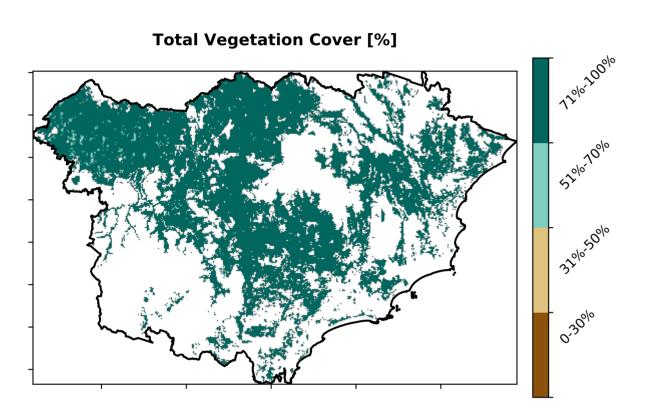


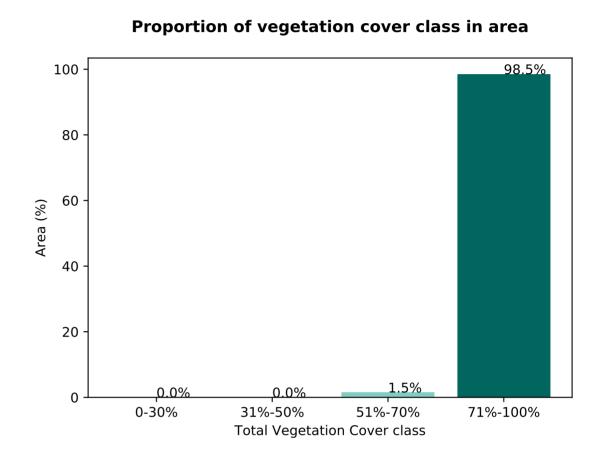


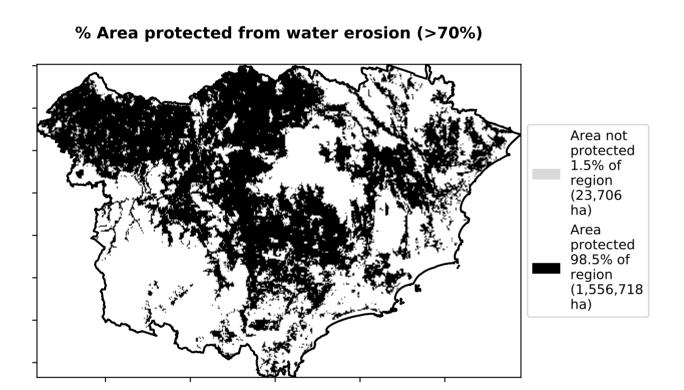
Agriculture

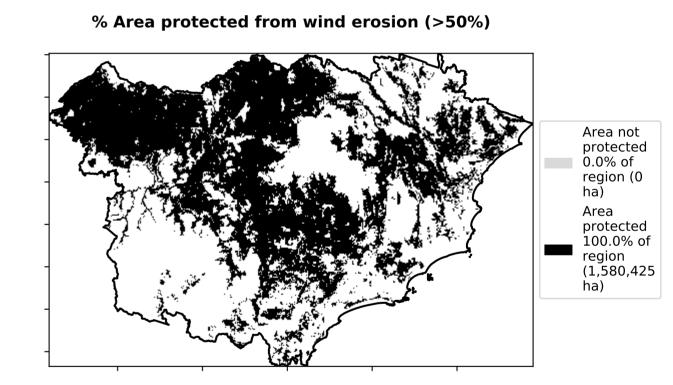


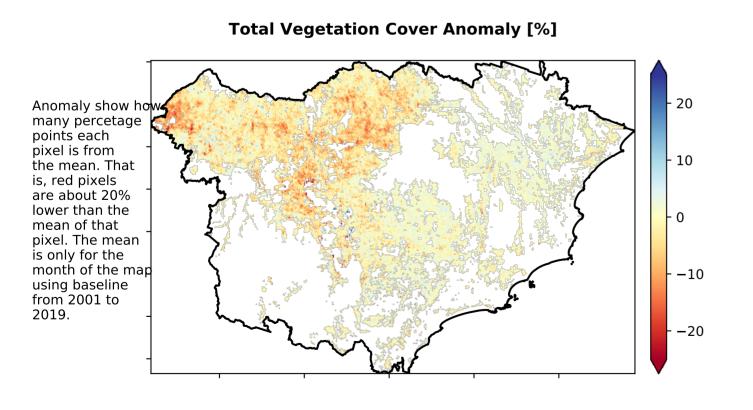




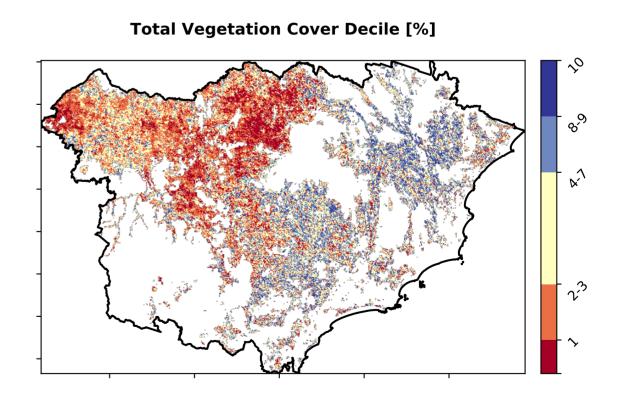








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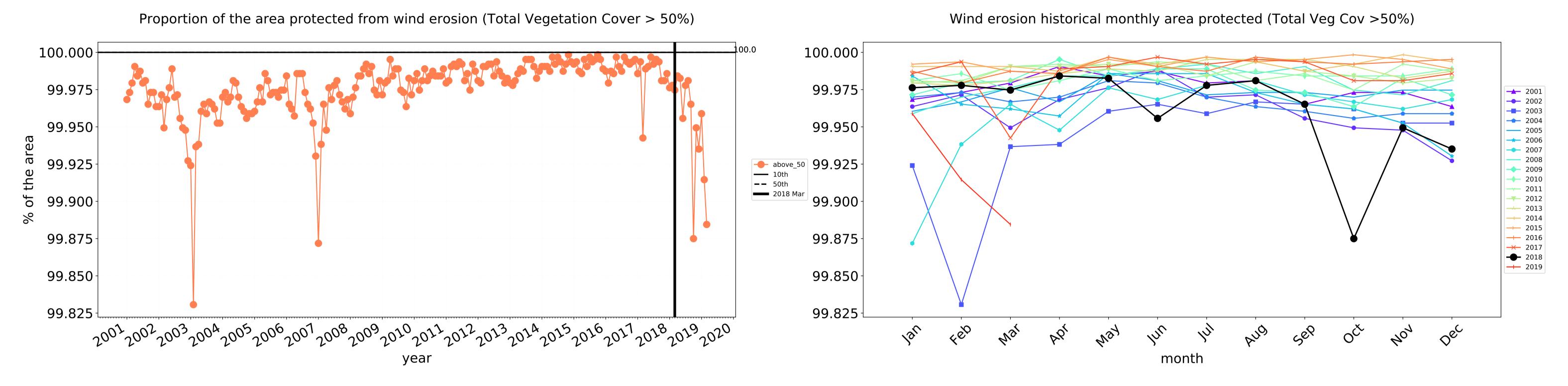


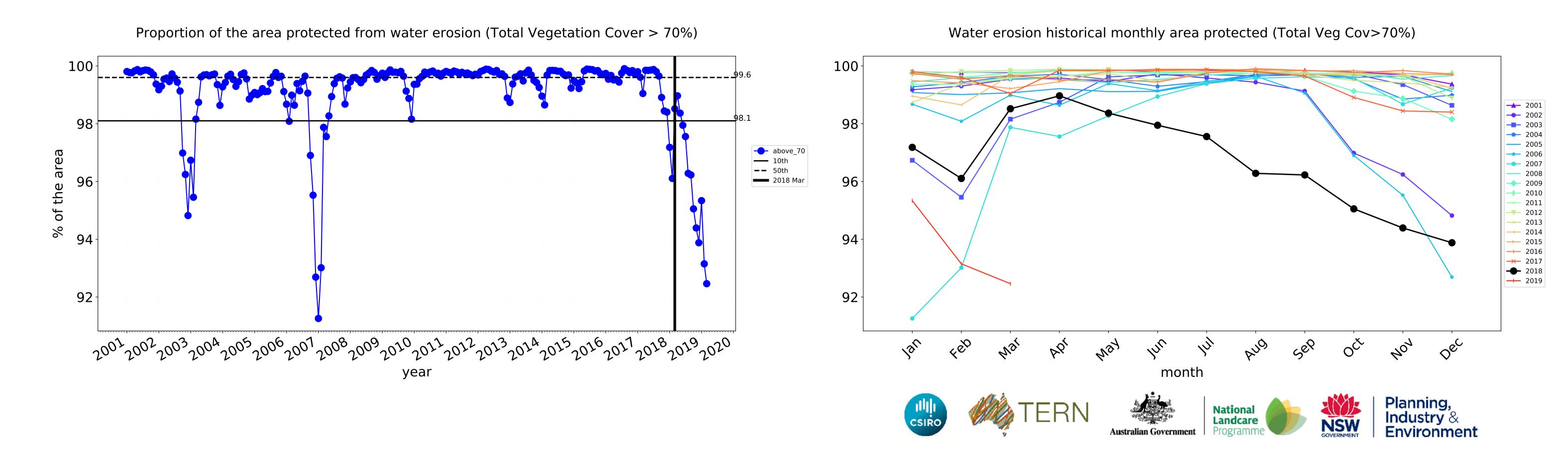


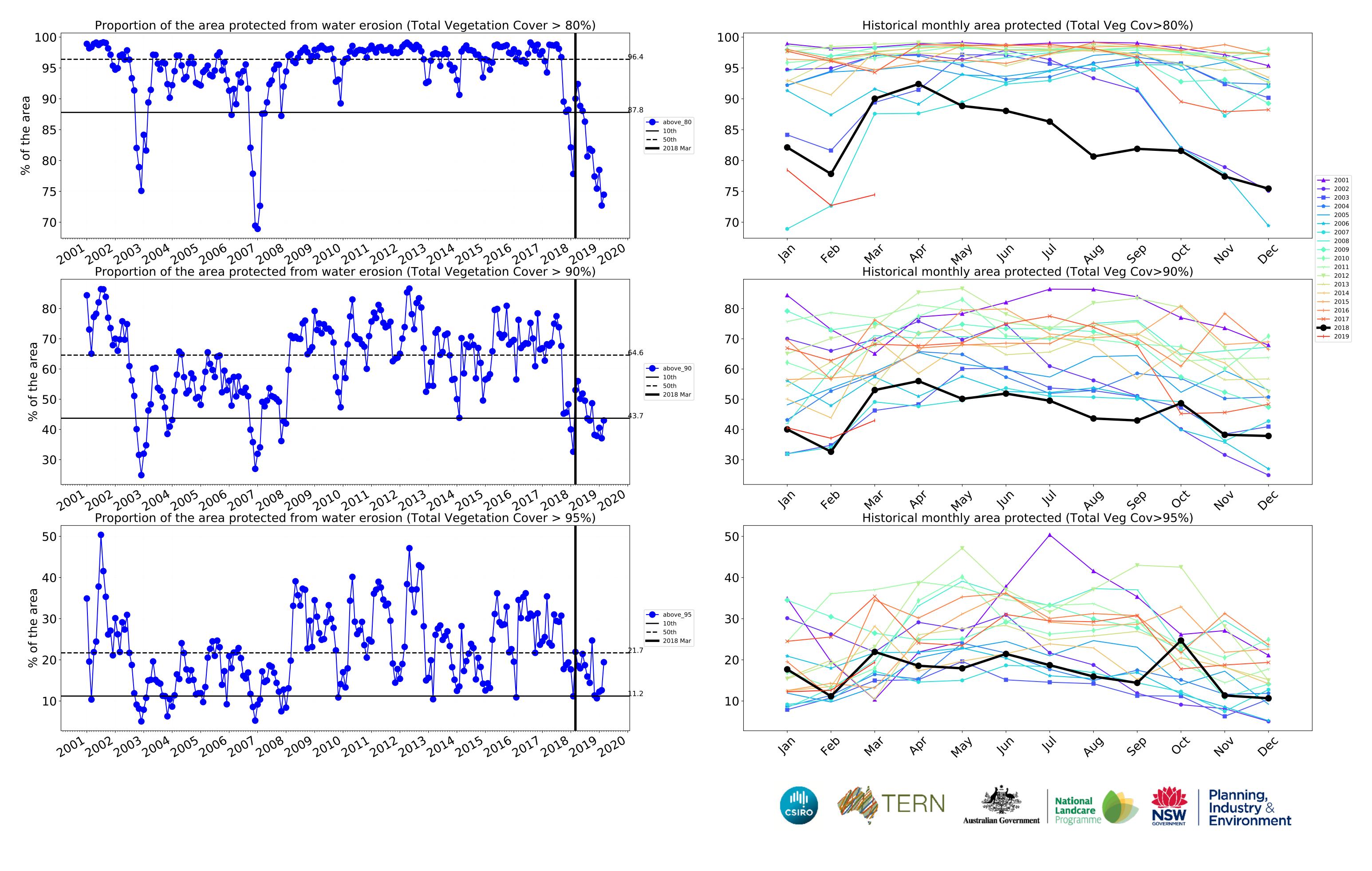




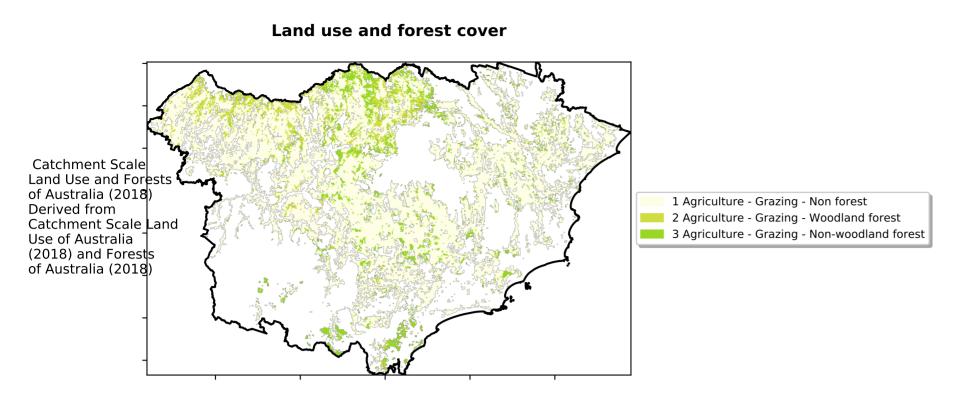
Agriculture timeseries



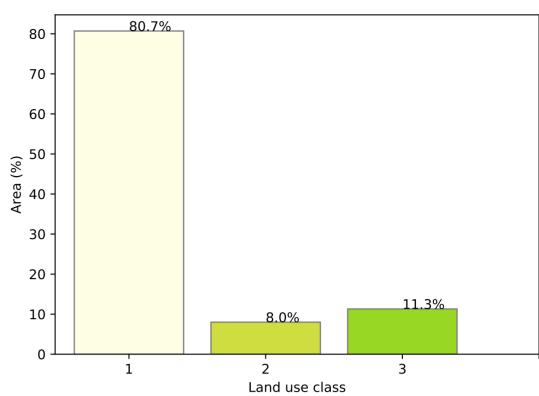




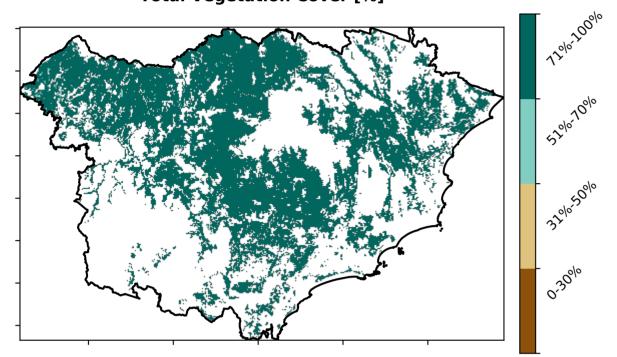
Grazing



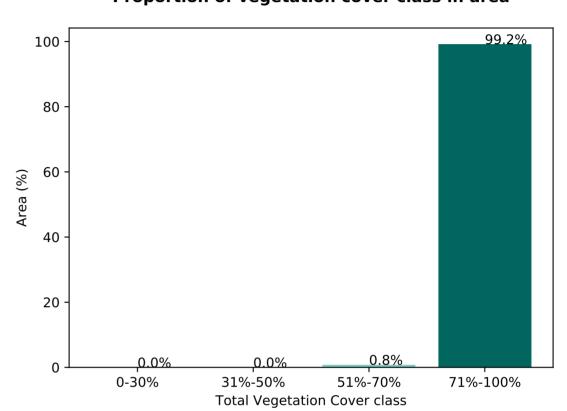
Proportion of each land class in area



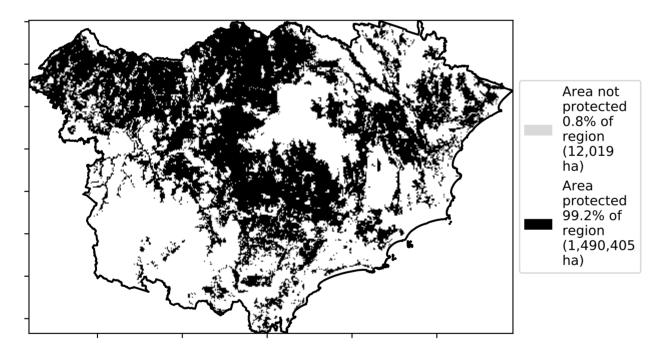
Total Vegetation Cover [%]



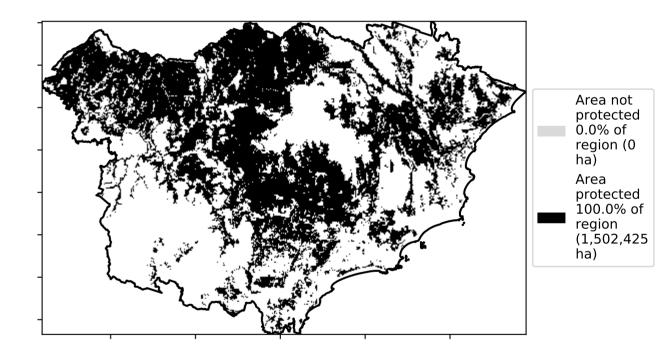
Proportion of vegetation cover class in area



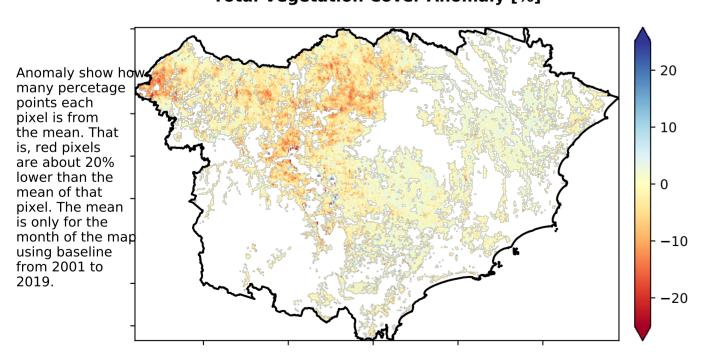
% Area protected from water erosion (>70%)



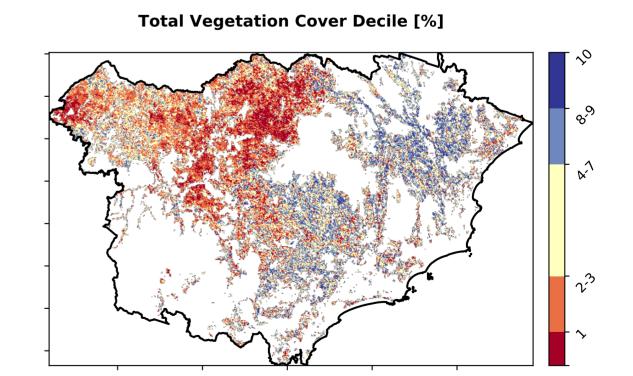
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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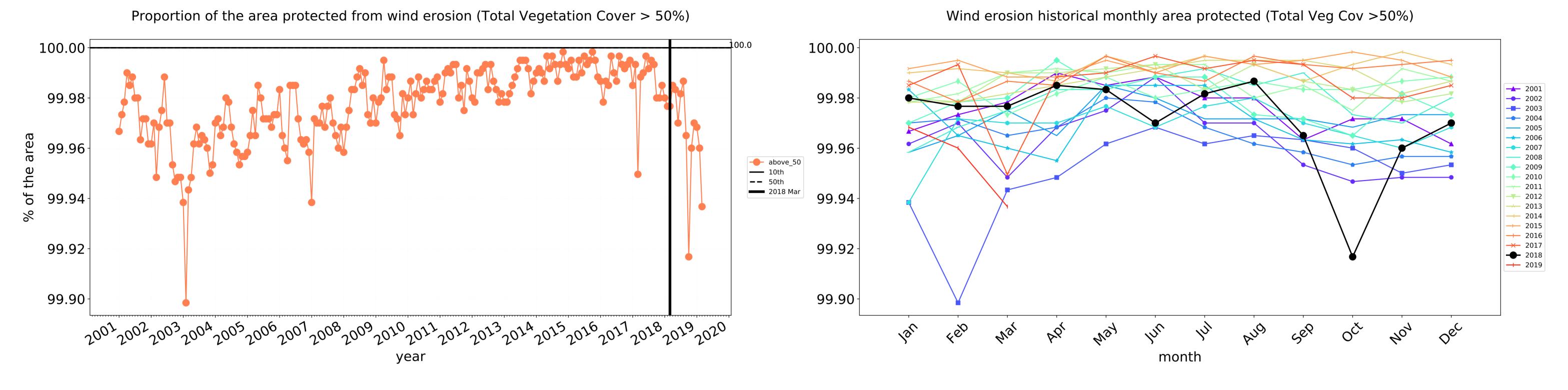


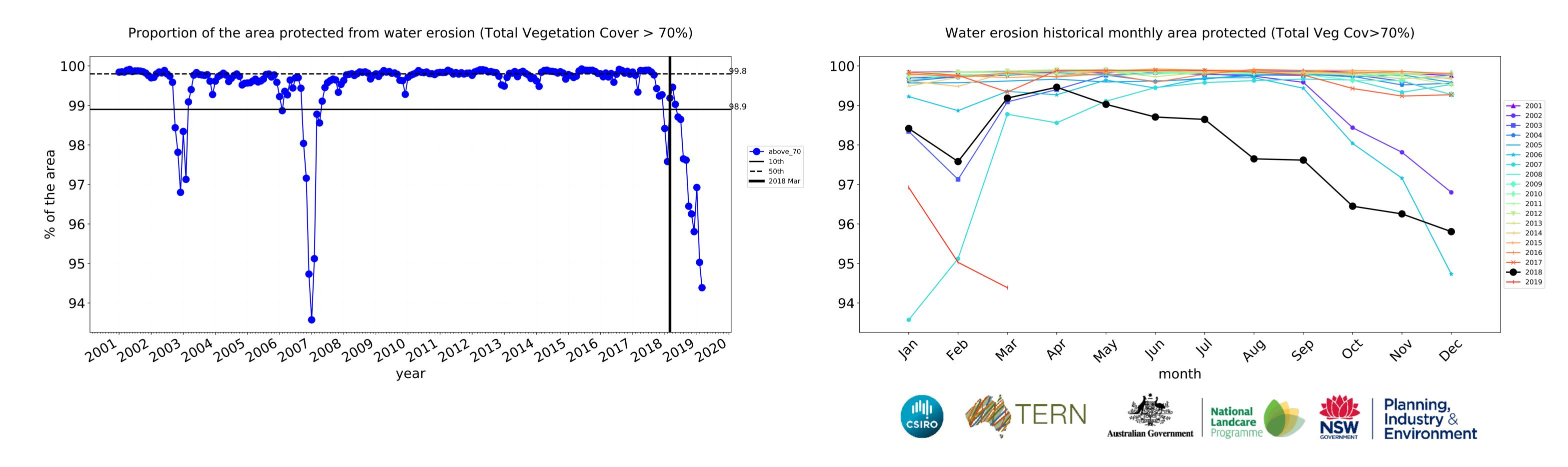


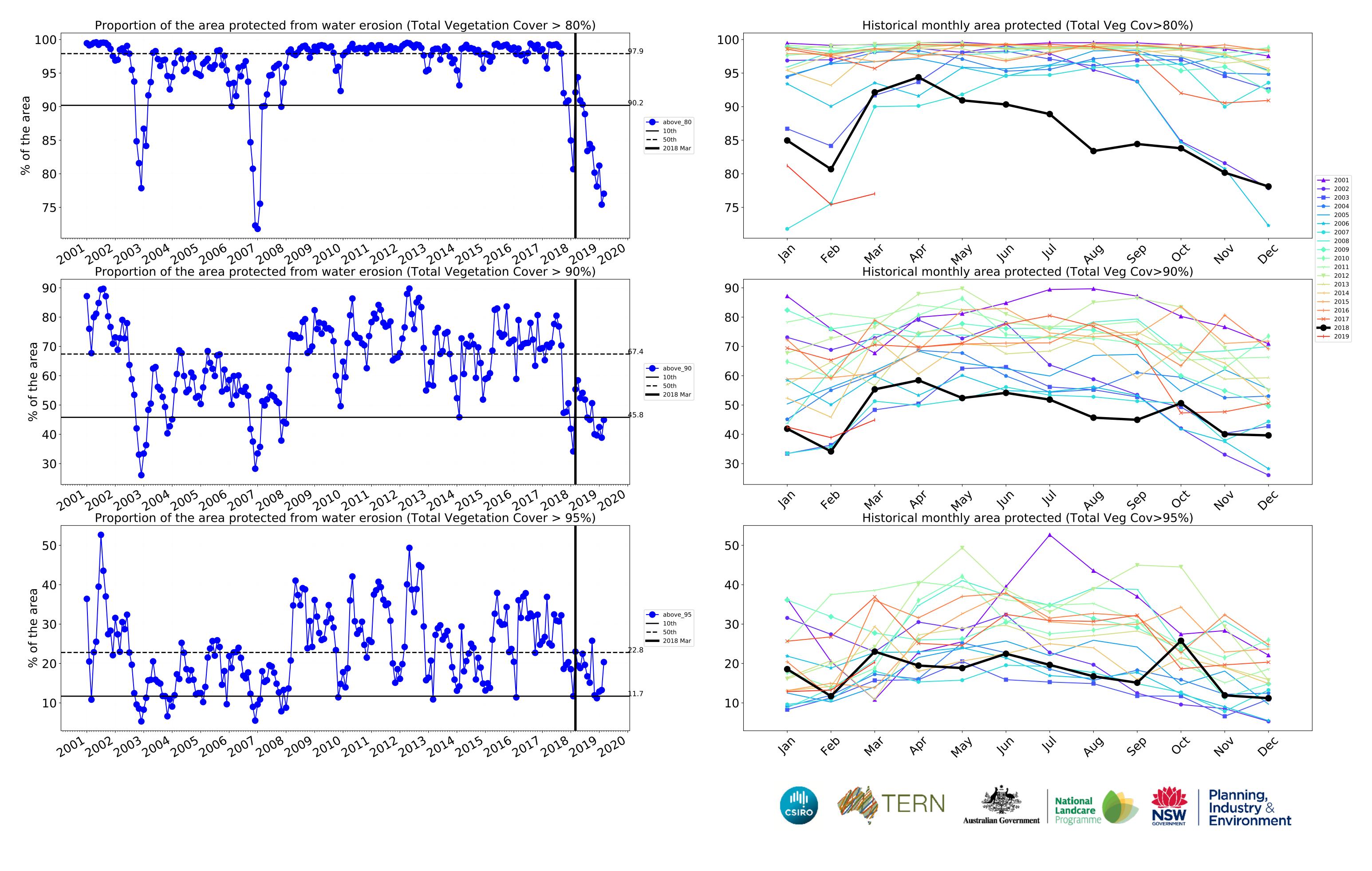




Grazing timeseries

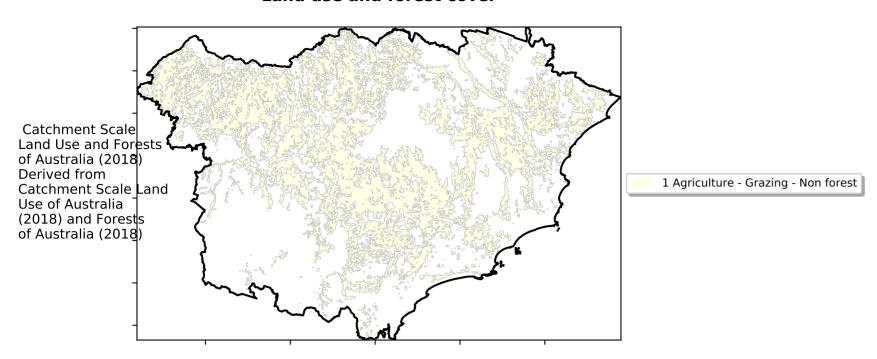




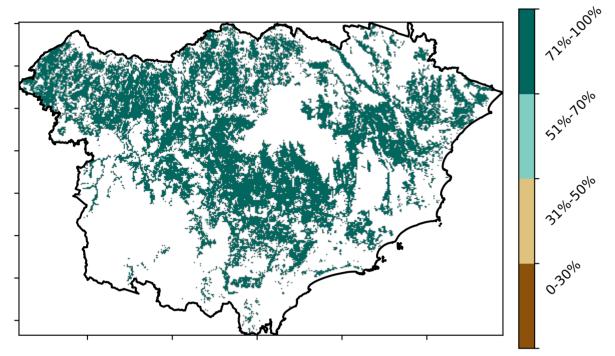


Grazing non forest

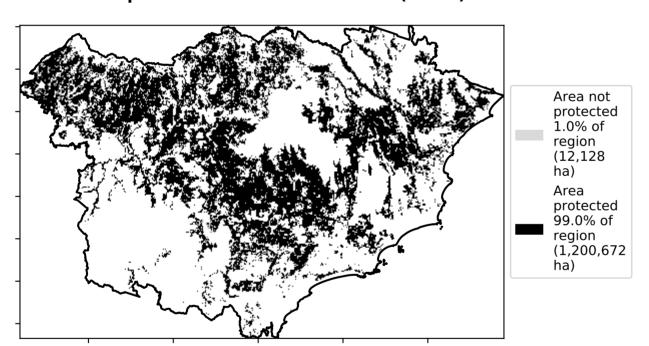
Land use and forest cover



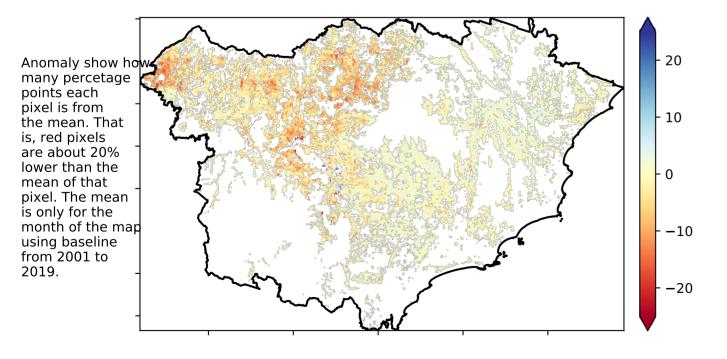
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

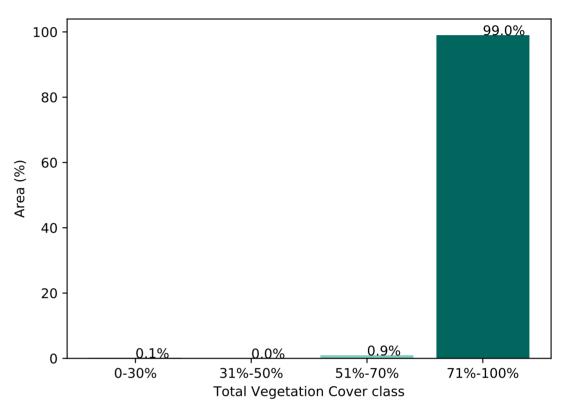


Total Vegetation Cover Anomaly [%]

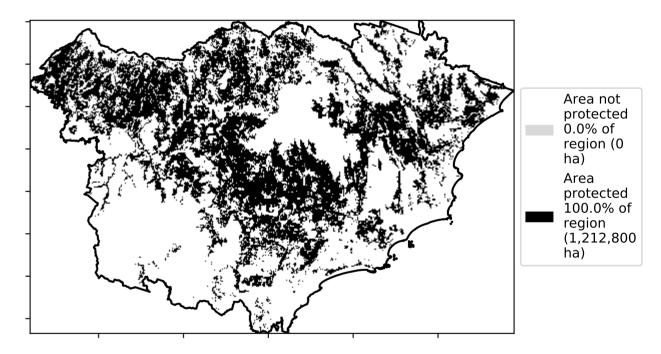


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

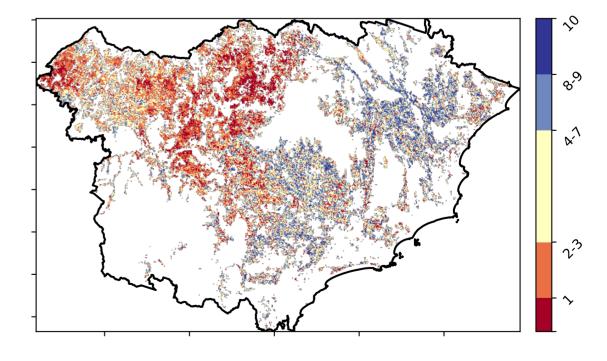
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







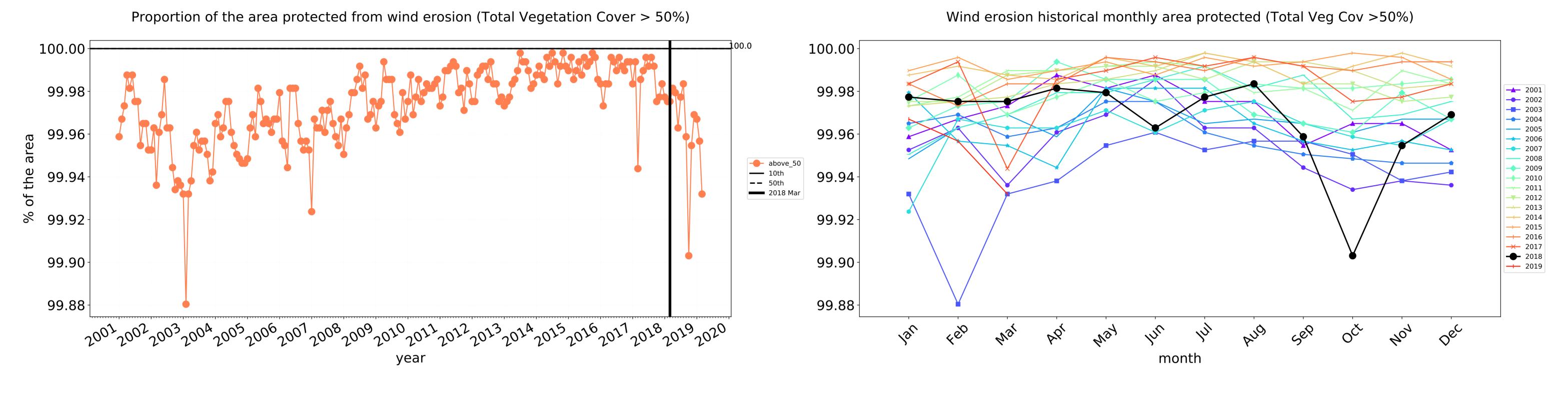


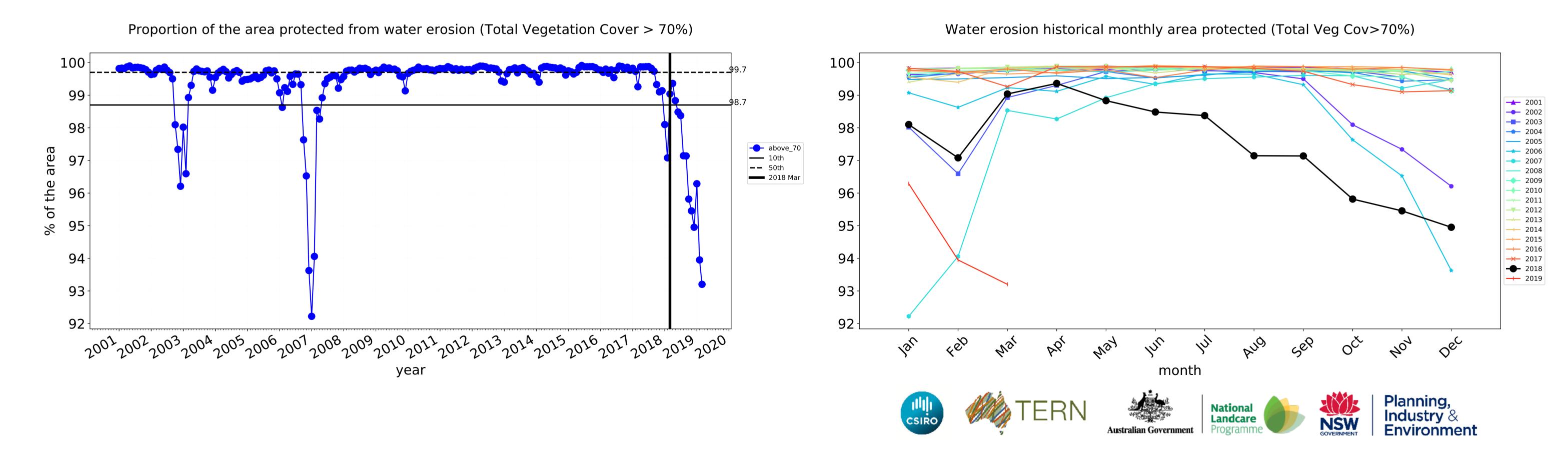


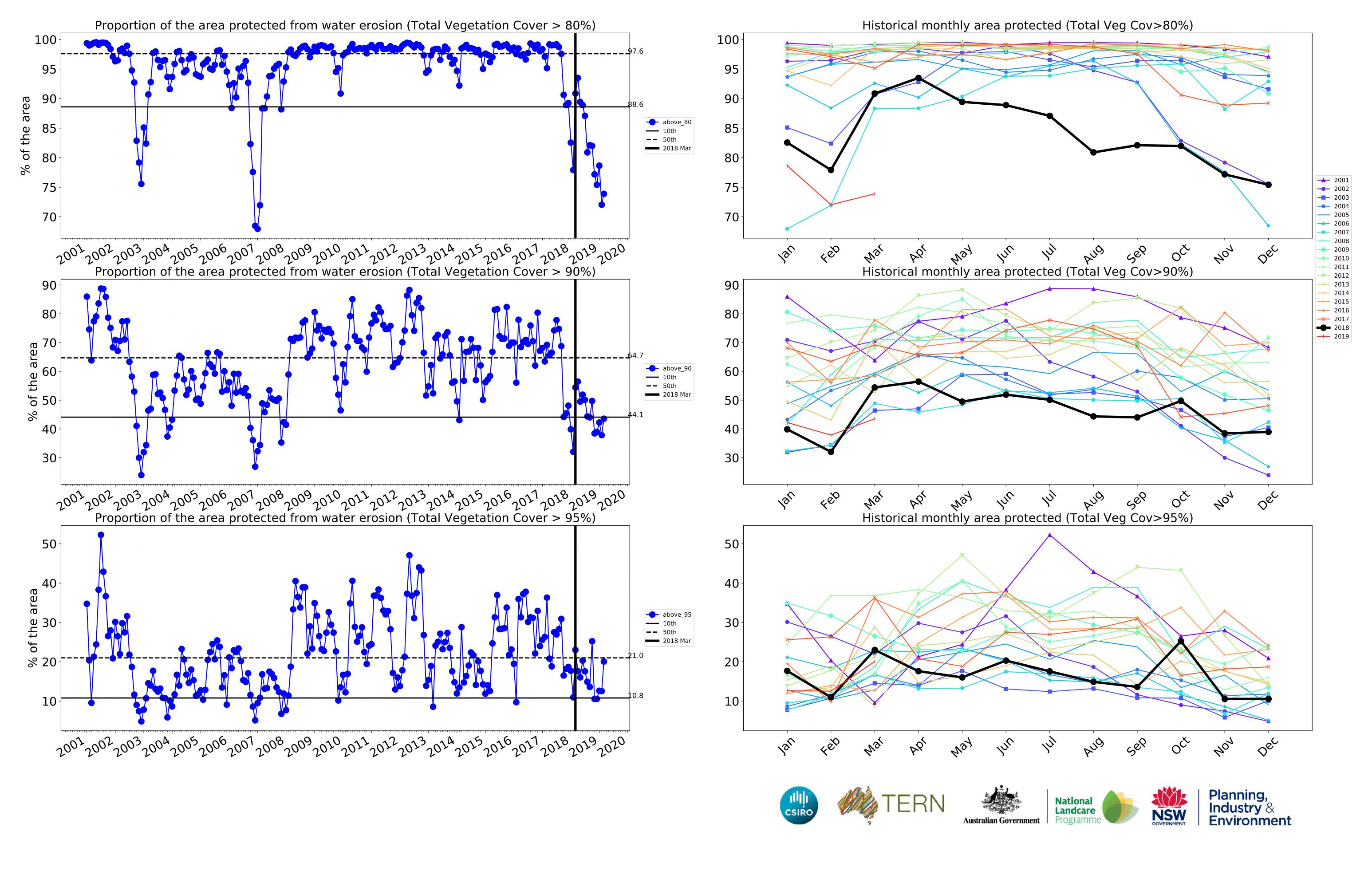




Grazing non forest timeseries







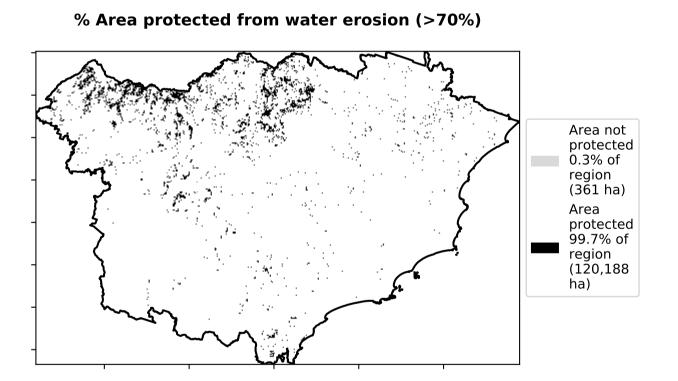
Grazing Woodland forest

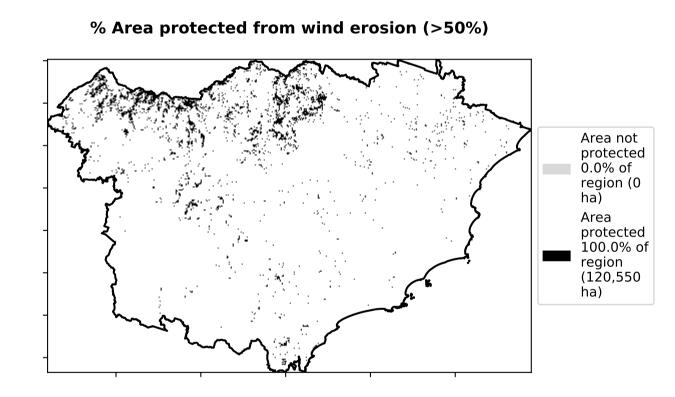
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) Of Australia (2018)

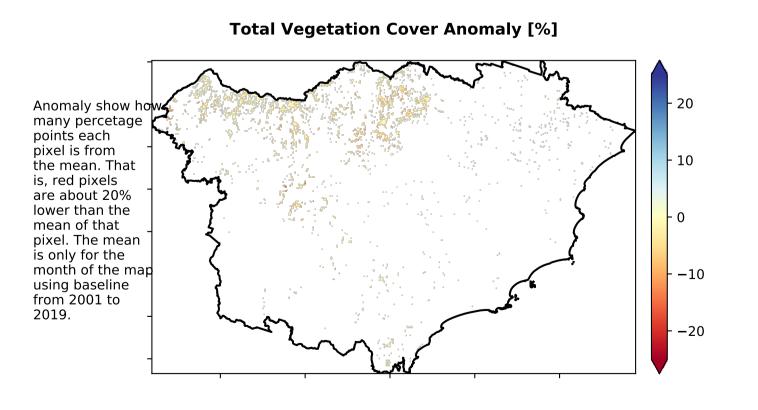
Total Vegetation Cover [%] Total Vegetation Cover [%] Total Vegetation Cover [%]

100 - 99.7% 80 - 99.7% 40 - 20 - 0.1% 0.0% 0.2% 0-30% 31%-50% 51%-70% 71%-100% Total Vegetation Cover class

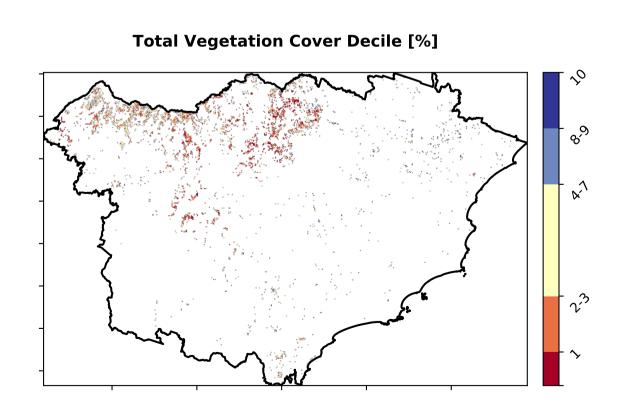
Proportion of vegetation cover class in area







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.







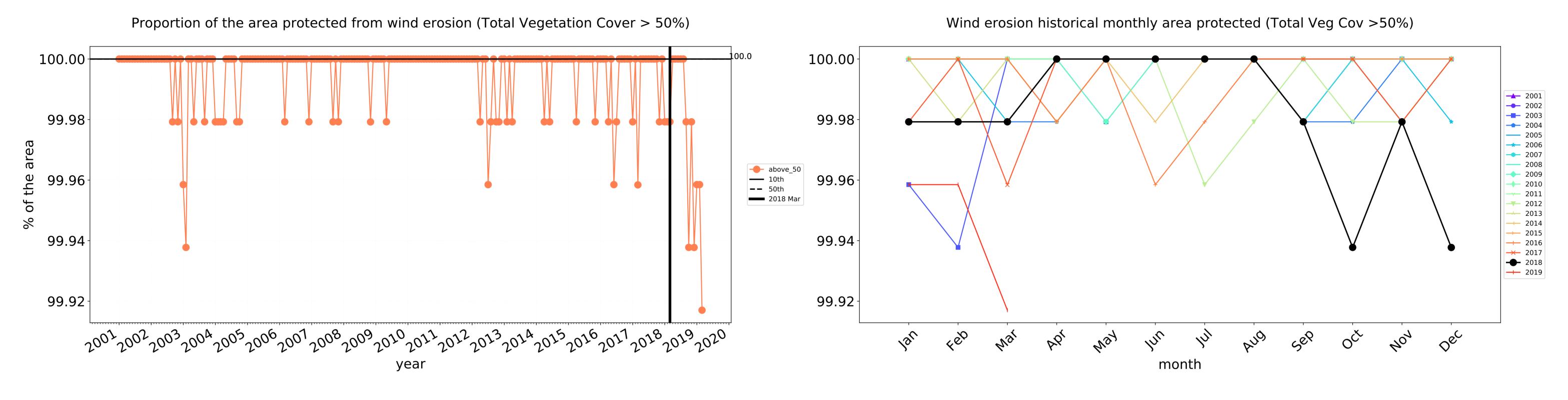


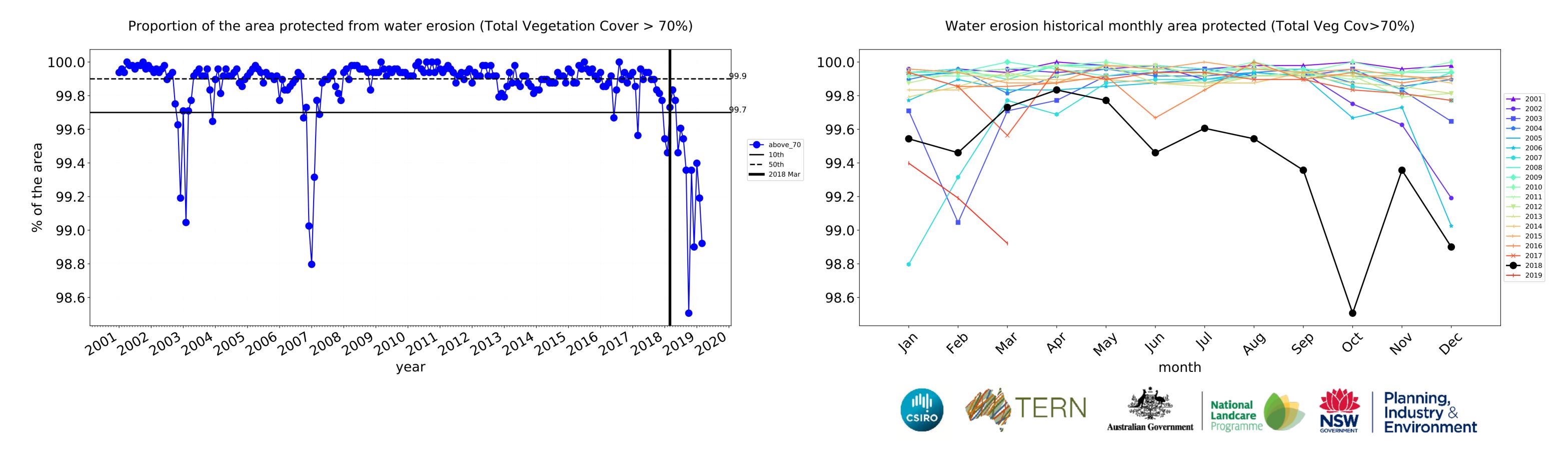


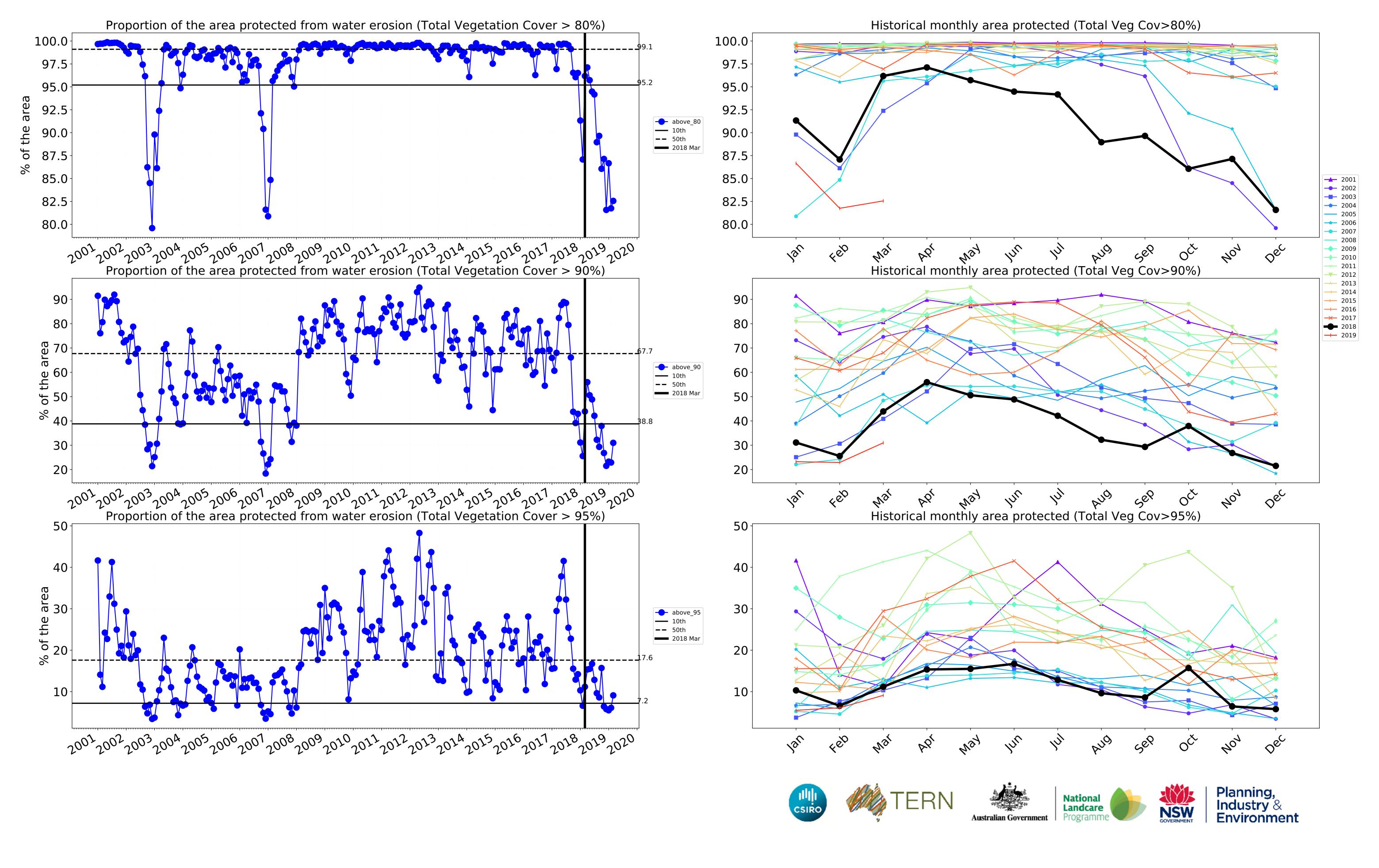




Grazing Woodland forest timeseries





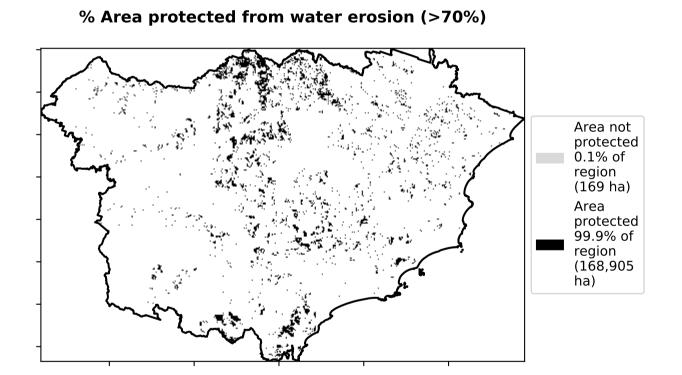


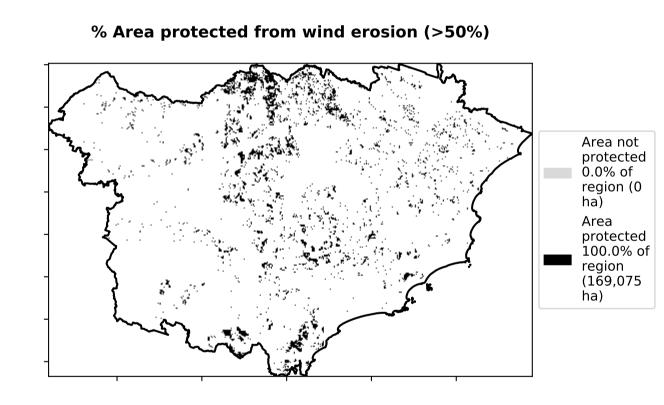
Grazing - Forest (non woodland)

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)

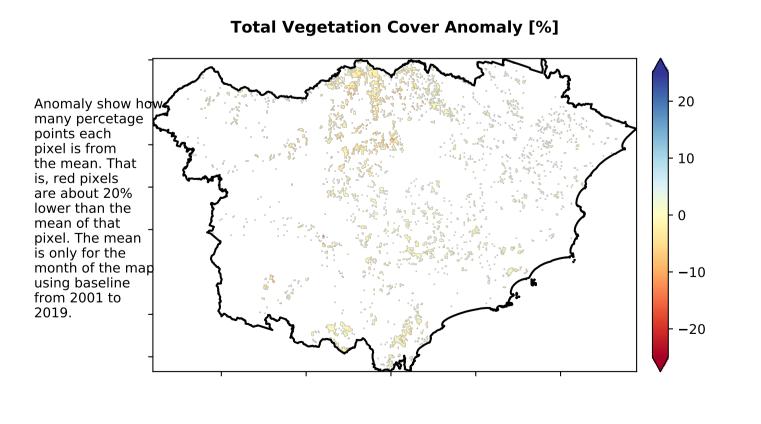
Total Vegetation Cover [%]

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

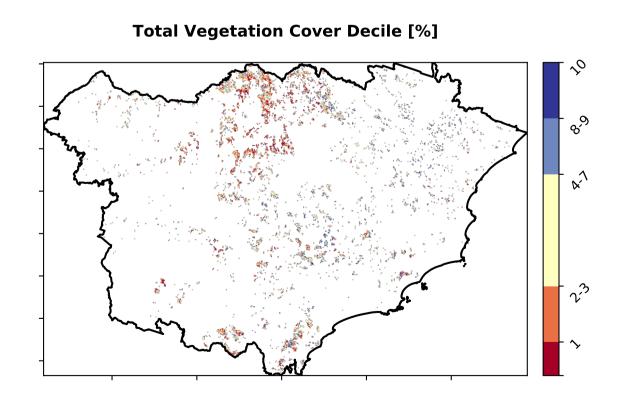




Proportion of vegetation cover class in area



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.





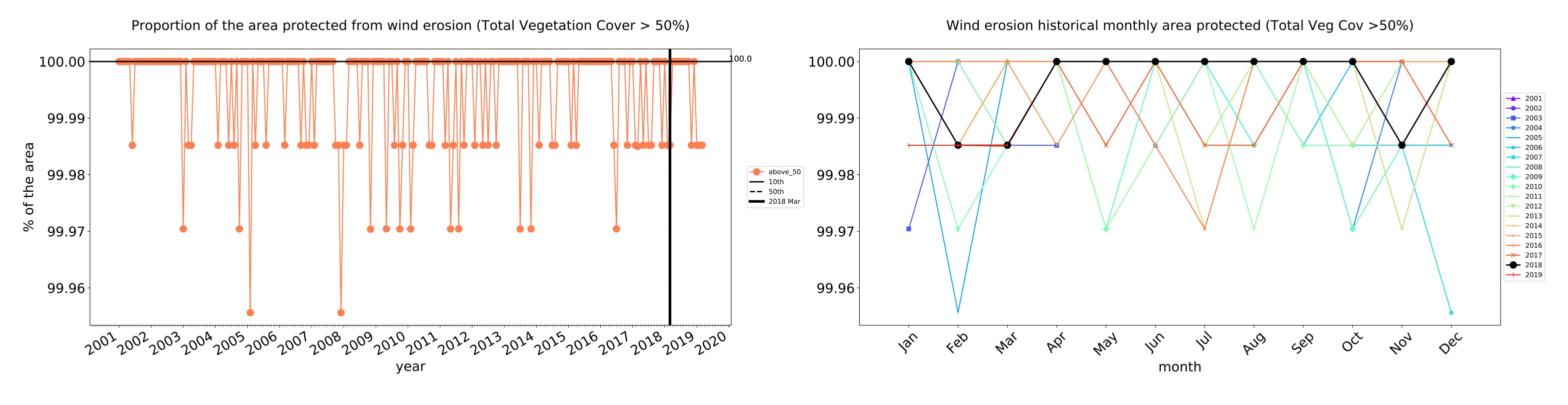


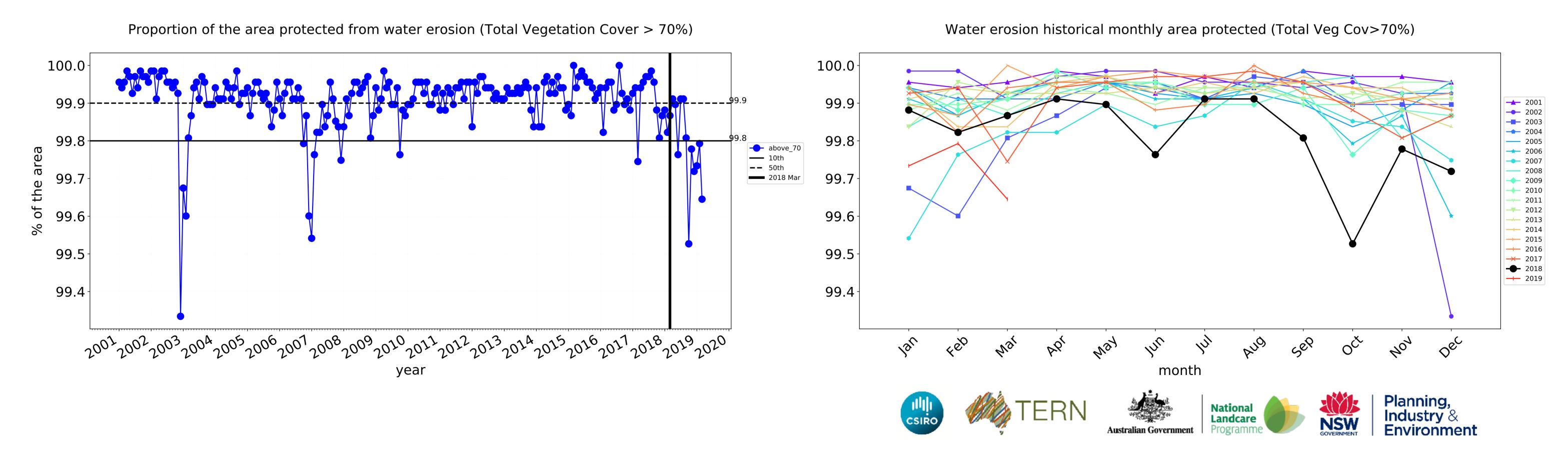


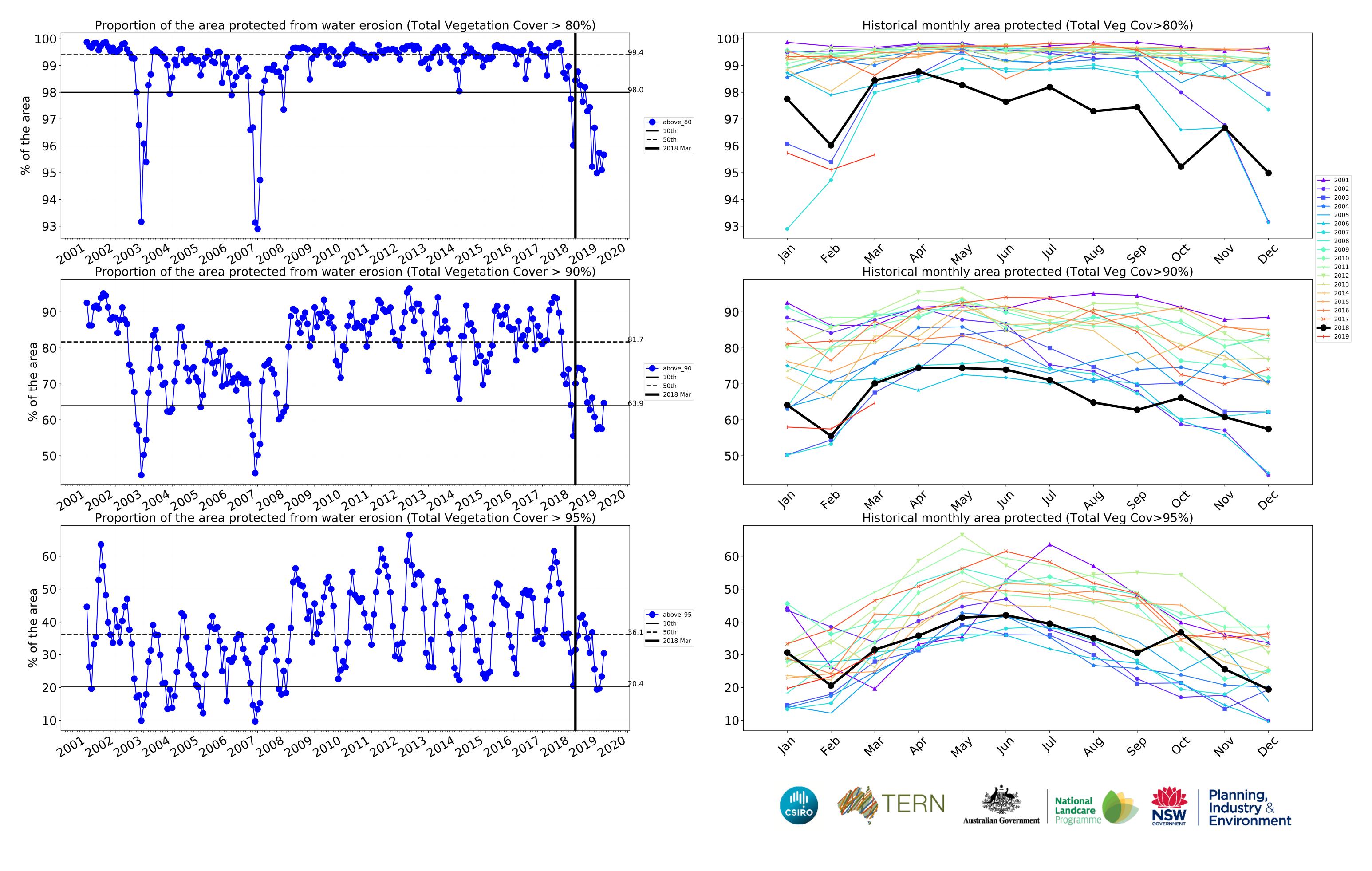






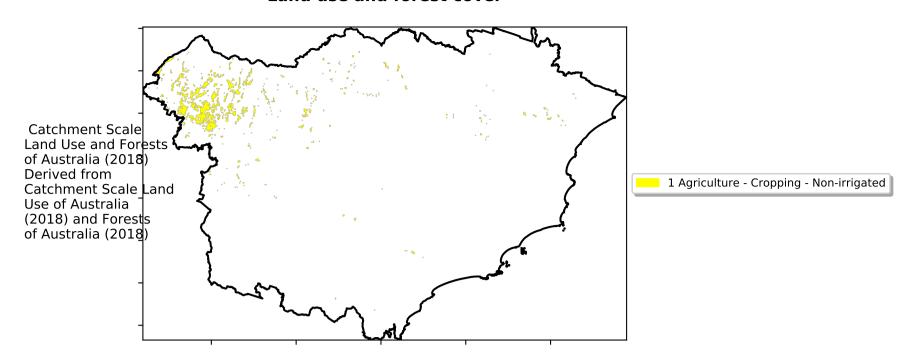




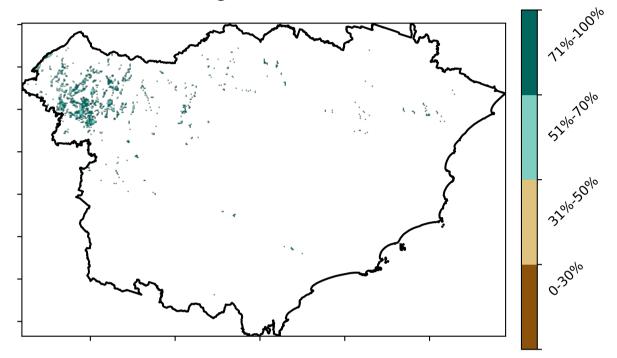


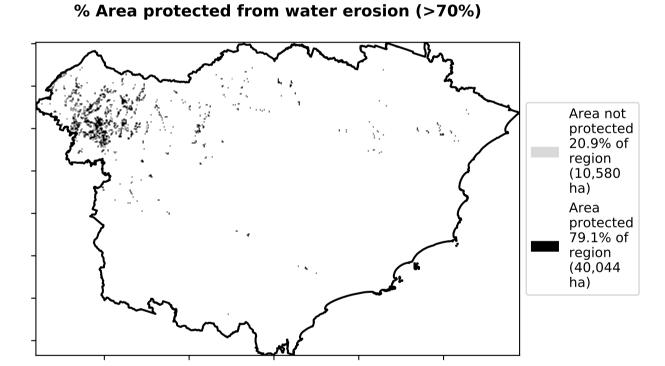
Cropping

Land use and forest cover

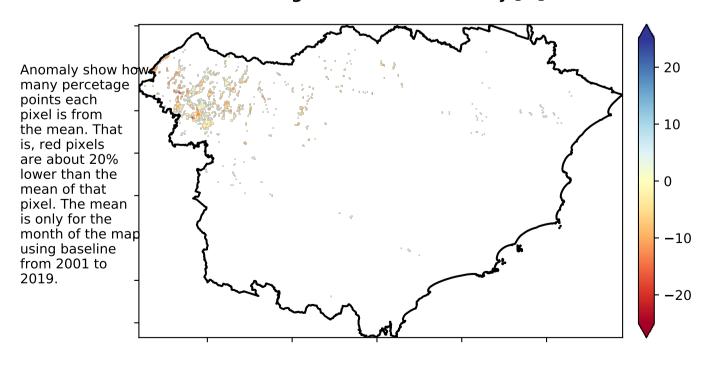


Total Vegetation Cover [%]



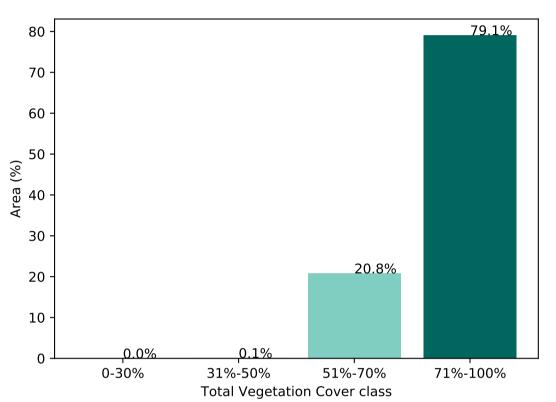


Total Vegetation Cover Anomaly [%]

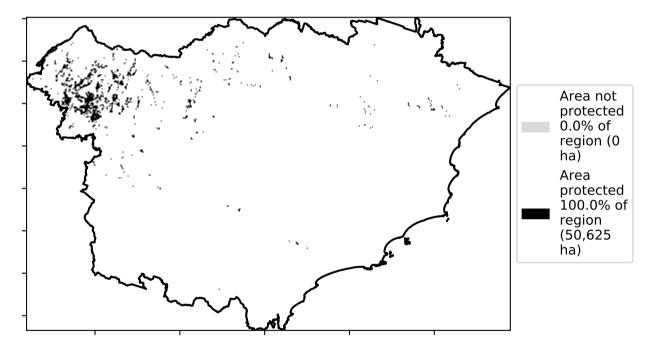


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

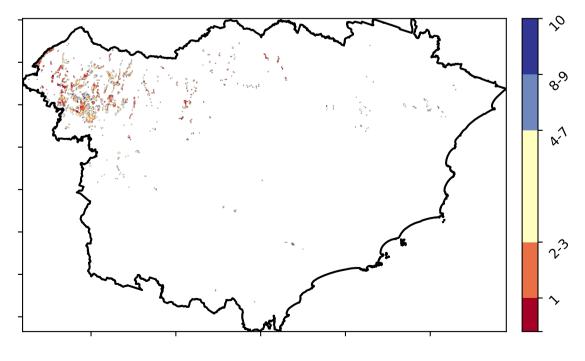
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







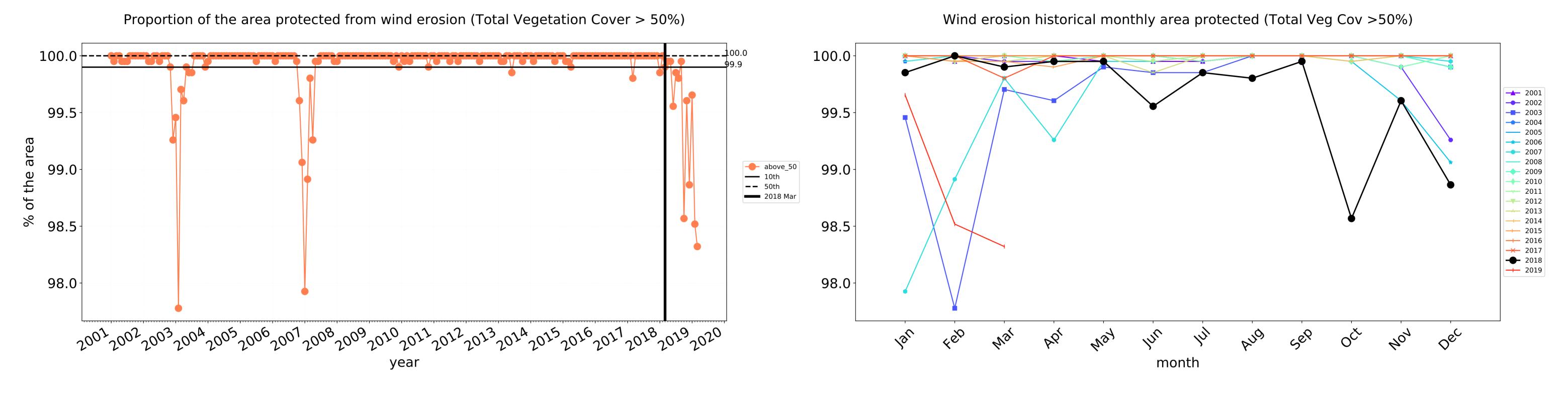


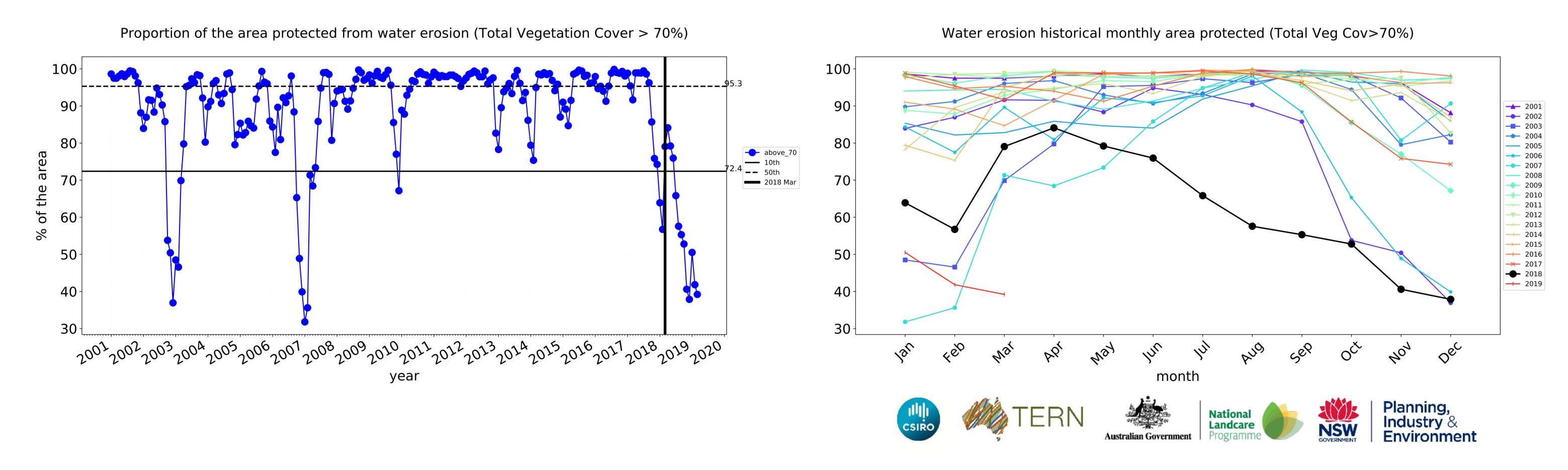


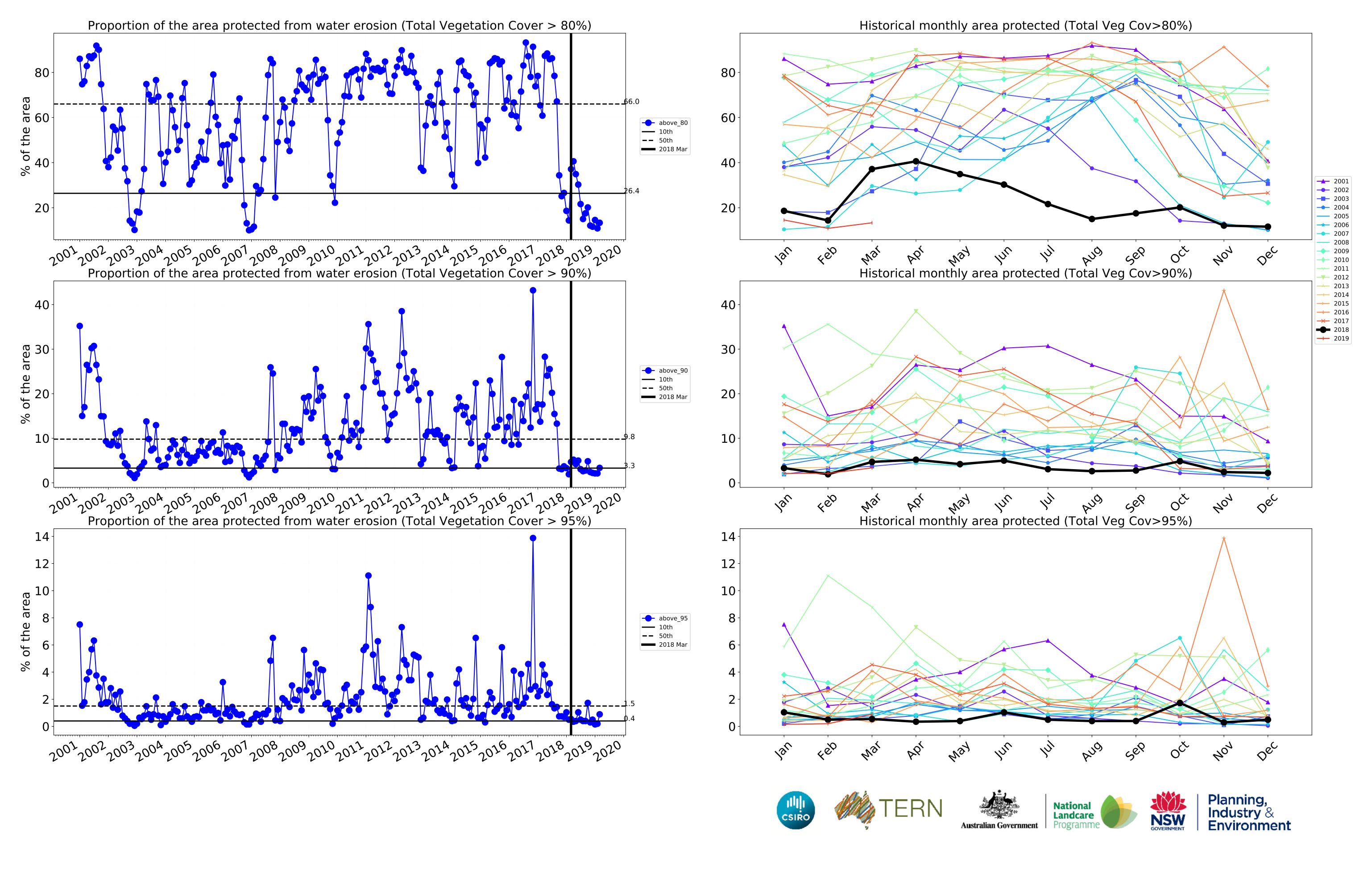




Cropping timeseries







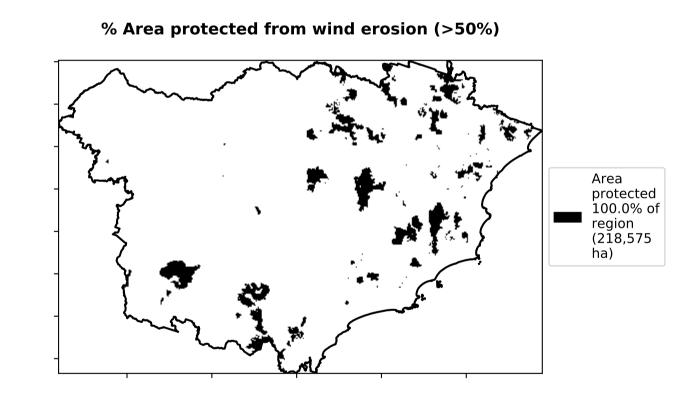
Production native forests and plantation forests

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

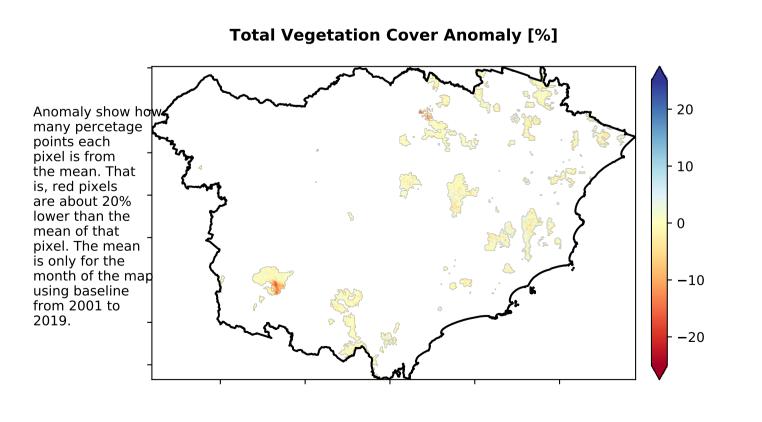
% Area protected from water erosion (>70%) Area not protected 0.0% of region (0 ha) Area protected 100.0% of region (218,575 ha)



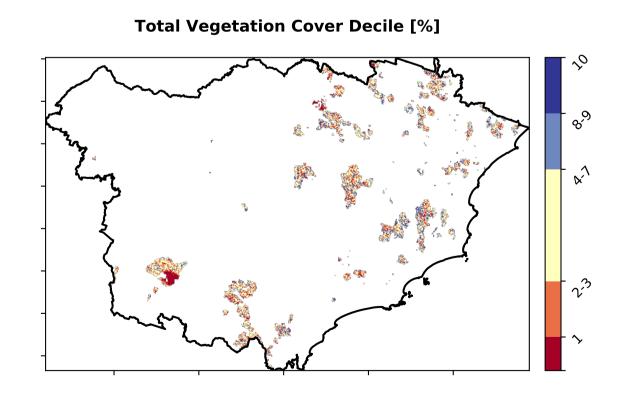
Proportion of vegetation cover class in area

100.0%

71%-100%



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.







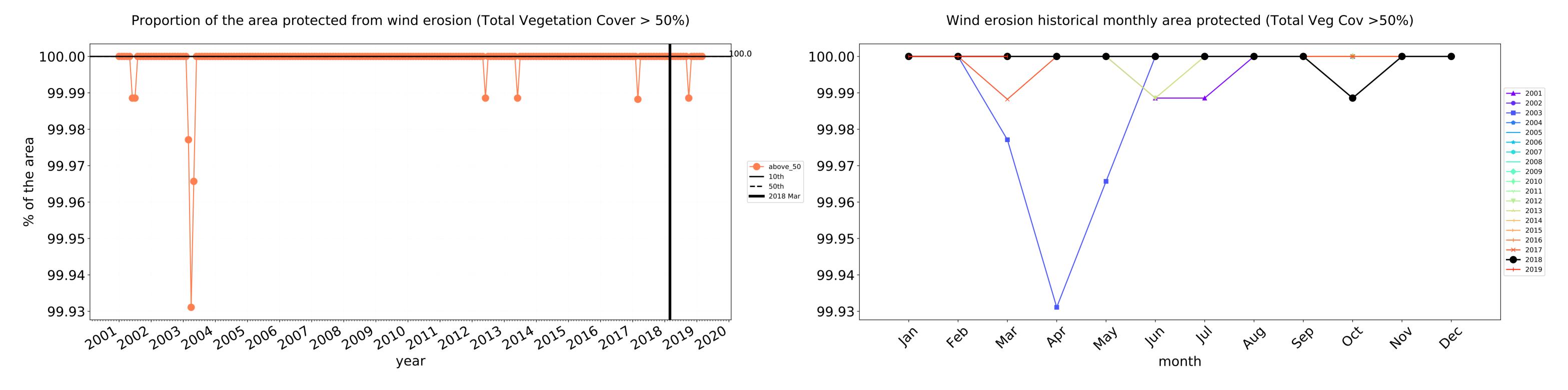


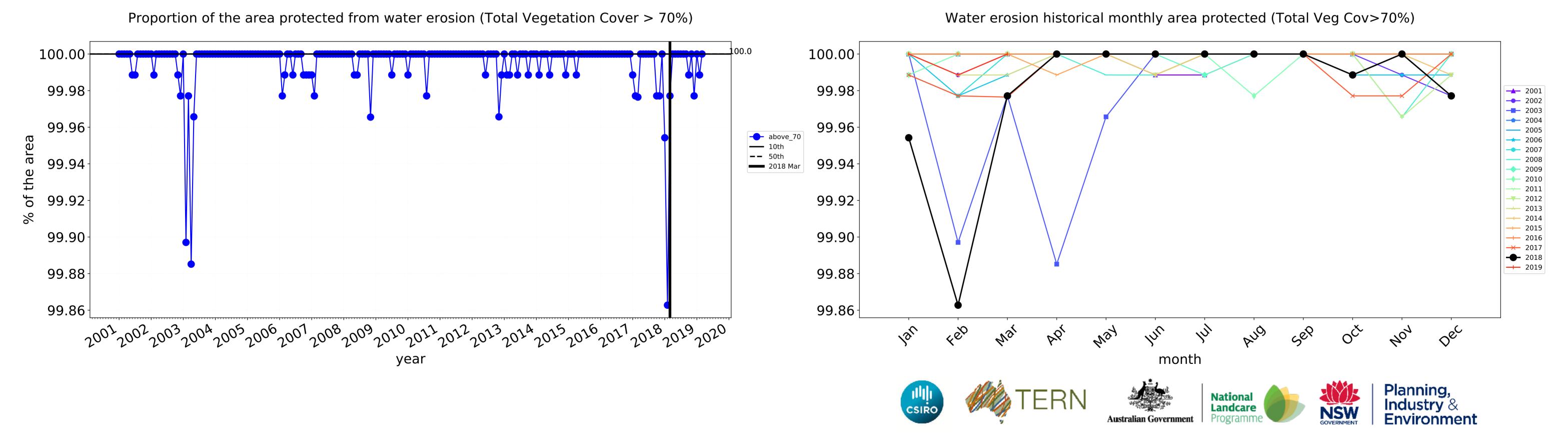


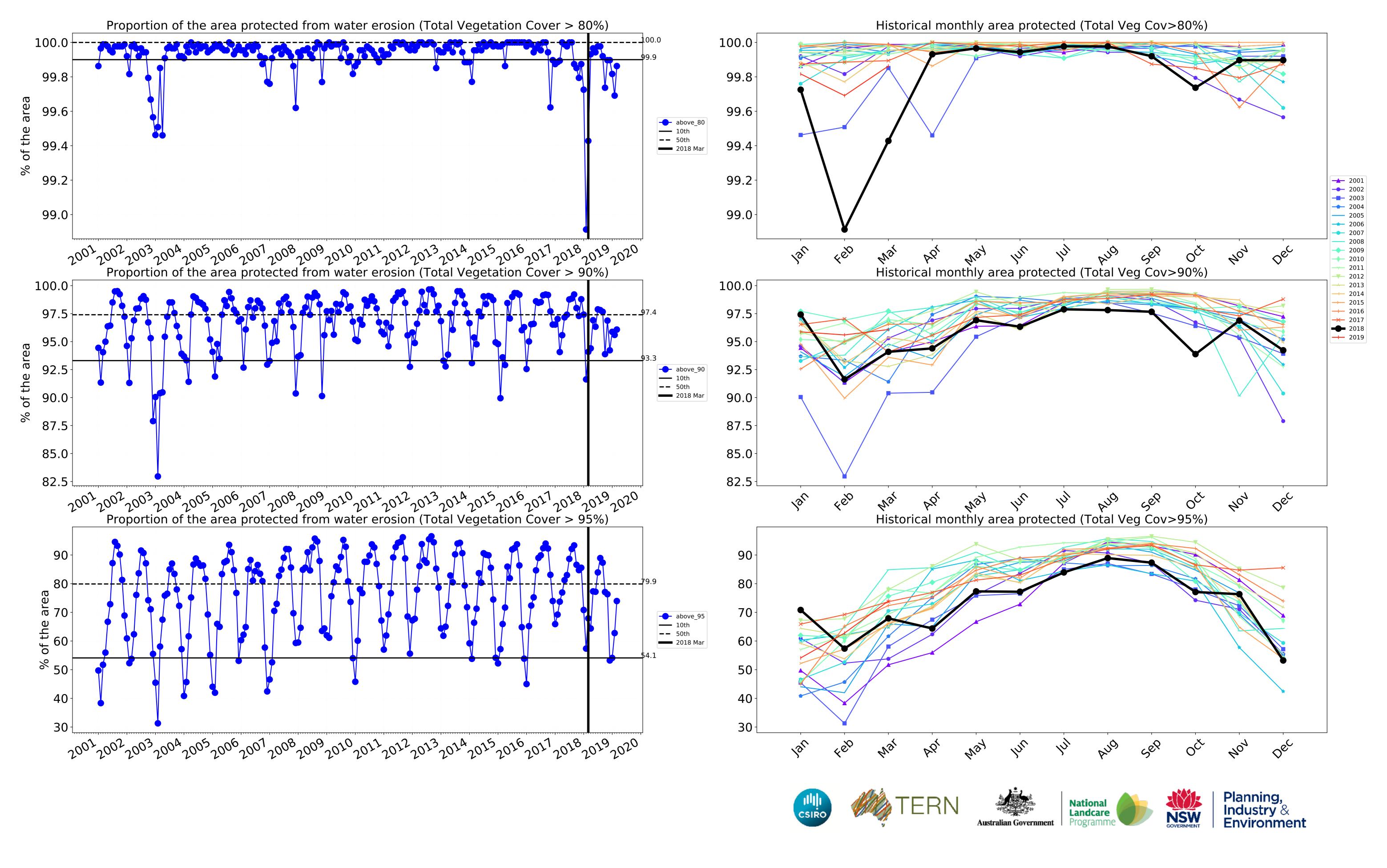




Production native forests and plantation forests timeseries







Hunter (3,240,000 ha and no data 60,425 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	3,240,000	99.9% 3,235,723	99.5% 3,224,869	97.8% 3,168,071	92.0% 2,979,772	66.4% 2,151,196	34.4% 1,113,813
Conservation and natural environments	1,240,550	99.9% 1,239,375	99.8% 1,238,375	99.6% 1,236,025	98.5% 1,222,450	85.1% 1,055,275	48.7% 604,550
Conservation and natural environments non forest	29,750	96.2% 28,625	94.1% 28,000	90.3% 26,850	85.6% 25,475	63.4% 18,875	28.3% 8,425
Conservation and natural environments Woodland forest	138,750	100.0% 138,750	100.0% 138,725	99.8% 138,475	98.0% 135,950	76.1% 105,650	31.1% 43,125
Conservation and natural environments Forest (non woodland)	1,072,050	100.0% 1,072,000	100.0% 1,071,650	99.9% 1,070,700	99.0% 1,061,025	86.8% 930,750	51.6% 553,000
Agriculture	1,580,425	100.0% 1,580,400	100.0% 1,580,025	98.5% 1,557,000	90.0% 1,422,750	53.0% 838,175	21.9% 346,650
Grazing	1,502,425	100.0% 1,502,400	100.0% 1,502,075	99.2% 1,490,200	92.1% 1,384,300	55.3% 831,575	23.0% 345,850
Grazing non forest	1,212,800	100.0% 1,212,800	100.0% 1,212,500	99.0% 1,201,125	90.9% 1,101,900	54.4% 660,100	23.0% 279,075
Grazing Woodland forest	120,550	100.0% 120,525	100.0% 120,525	99.7% 120,225	96.2% 115,950	43.9% 52,925	11.2% 13,475
Grazing - Forest (non woodland)	169,075	100.0% 169,075	100.0% 169,050	99.9% 168,850	98.4% 166,450	70.1% 118,550	31.5% 53,300
Cropping	50,625	100.0% 50,625	99.9% 50,575	79.1% 40,025	37.1% 18,800	4.7% 2,375	0.5% 275
Production native forests and plantation forests	218,575	100.0% 218,575	100.0% 218,575	100.0% 218,525	99.4% 217,325	94.1% 205,650	67.9% 148,425











