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: April 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 Apr 2018

8 Agriculture - Cropping - Non-irrigated
9 Agriculture - Cropping - Irrigated

11 Agriculture - Horticulture - Irrigated

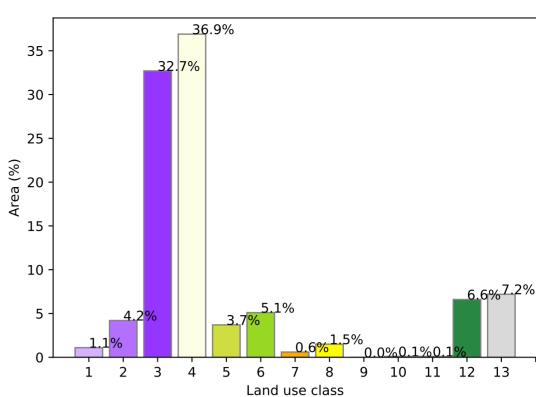
13 Other uses

10 Agriculture - Horticulture - Non-irrigated

12 Production native forests and plantation

Legend with land class forest cover and number, i.e. Forests is 12 1 Conservation and natural environments - Non-forest 2 Conservation and natural environments - Woodland forest 3 Conservation and natural environments - Non-Woodland forest 4 Agriculture - Grazing - Non-forest 5 Agriculture - Grazing - Woodland forest 6 Agriculture - Grazing - Non-woodland forest 7 Agriculture - Grazing - Irrigated

Proportion of each land class in area





Catchment Scale Land Use and Forests

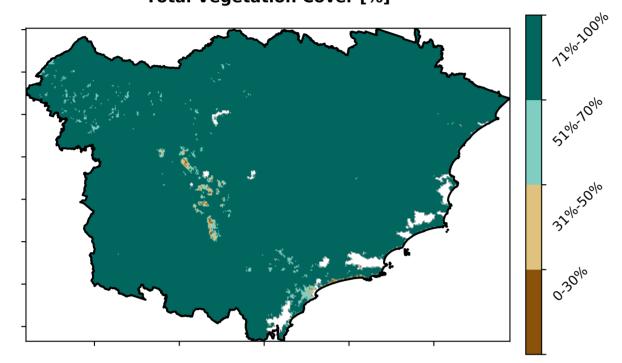
Catchment Scale Land

of Australia (2018)

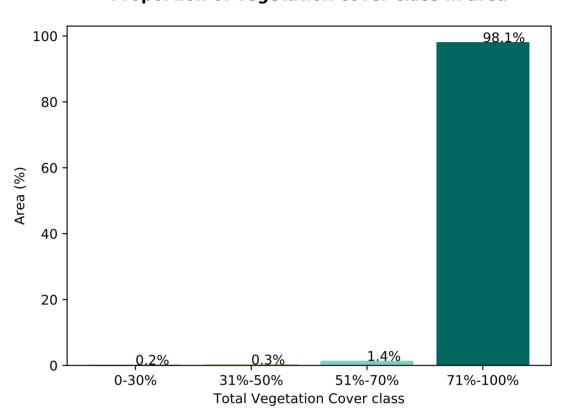
Derived from

Use of Australia

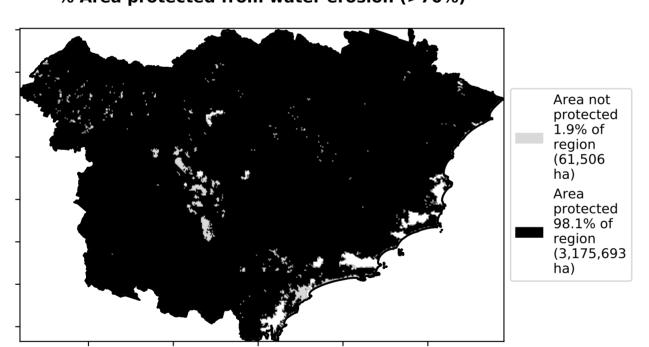
(2018) and Forests of Australia (2018)



Proportion of vegetation cover class in area



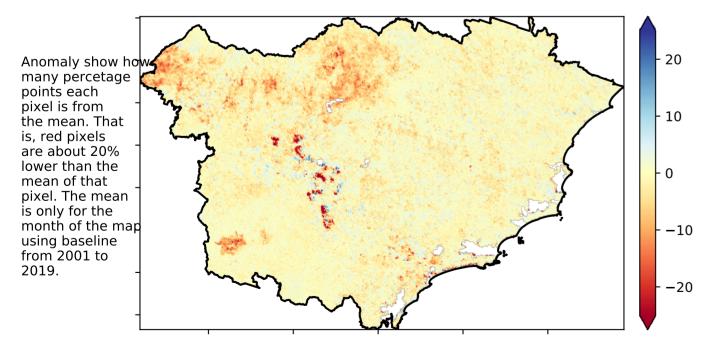
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

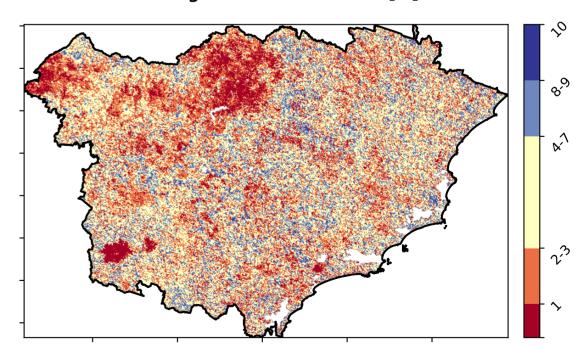


Total Vegetation Cover Anomaly [%]



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 [%]





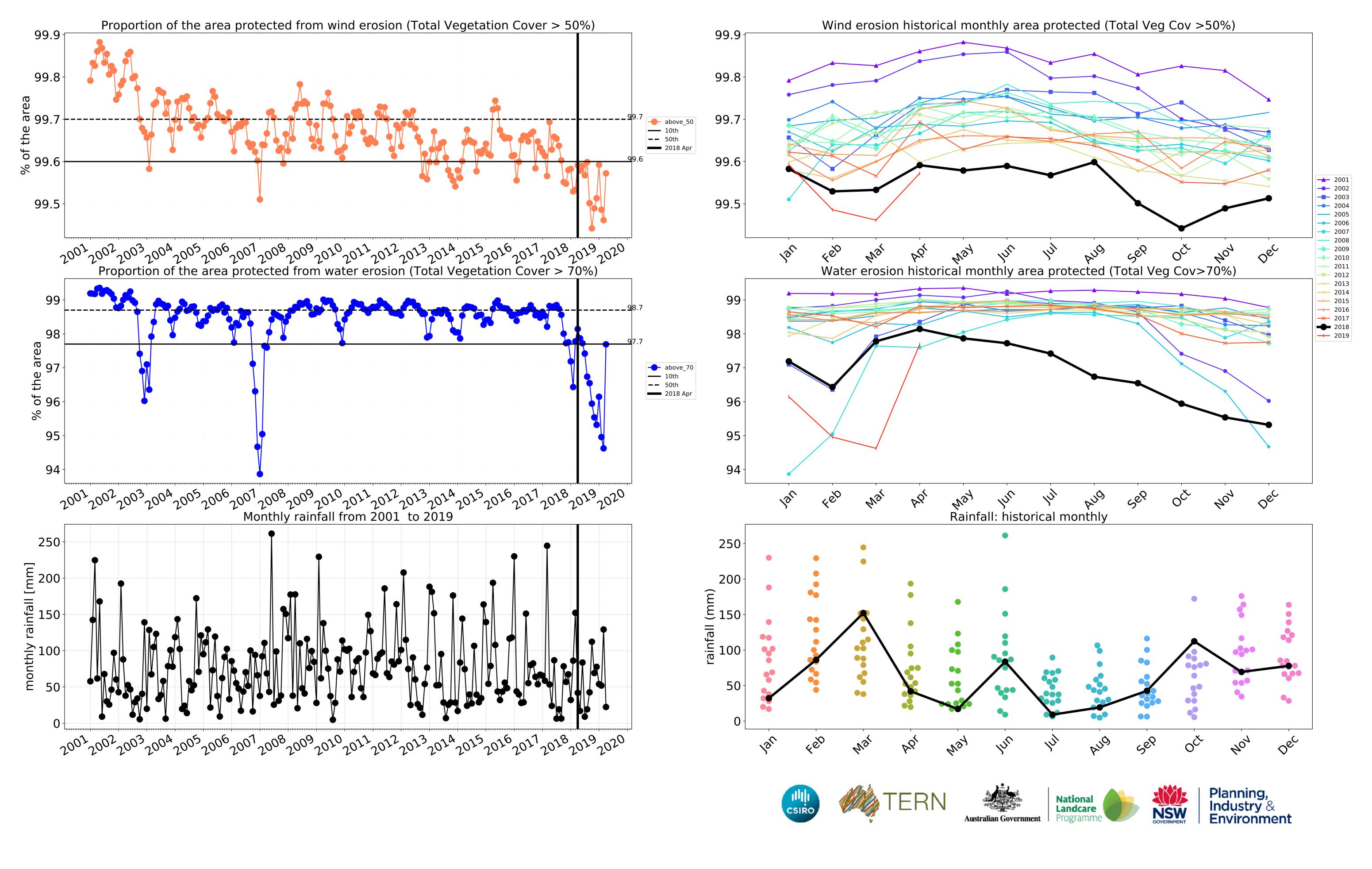


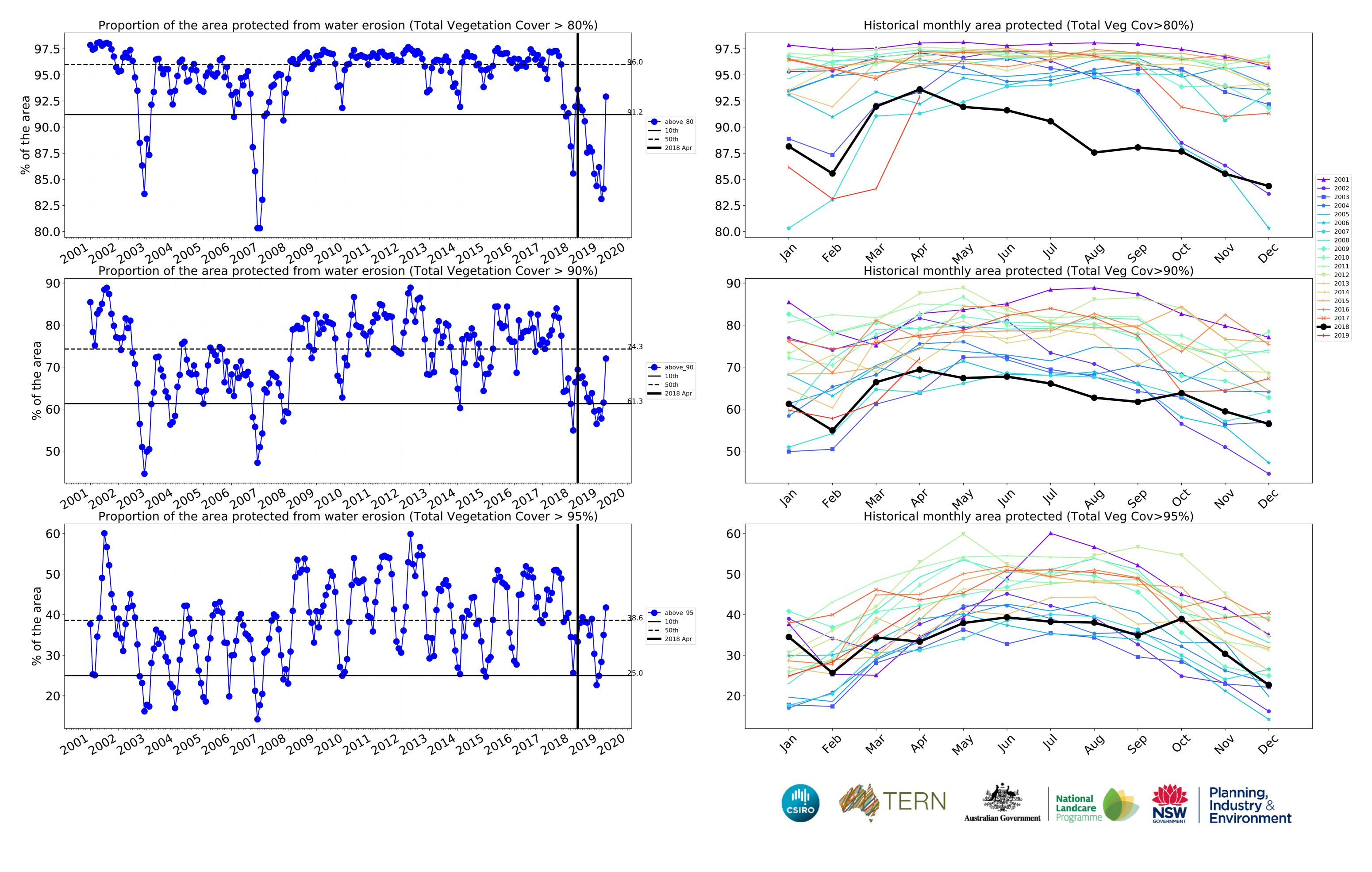






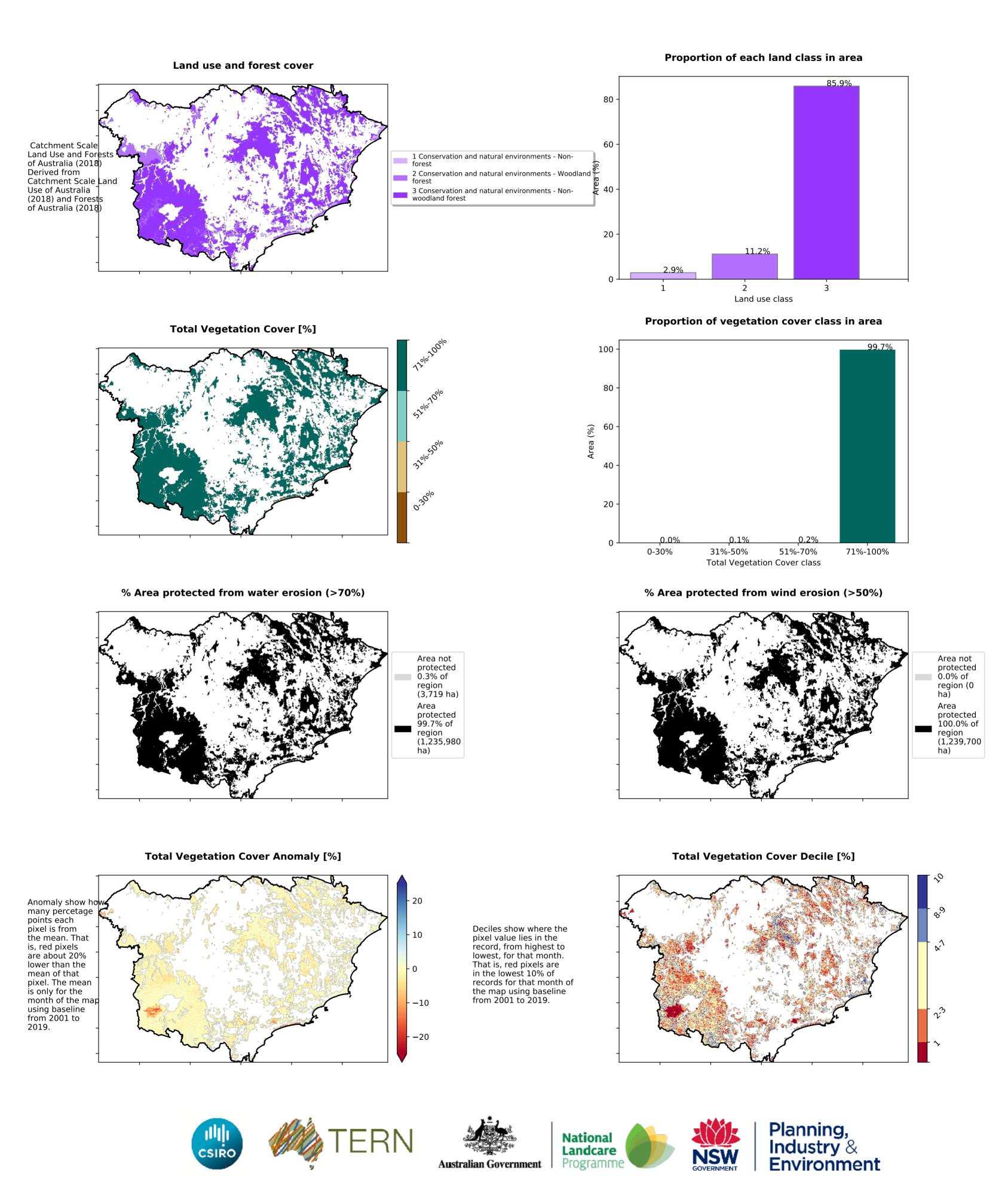




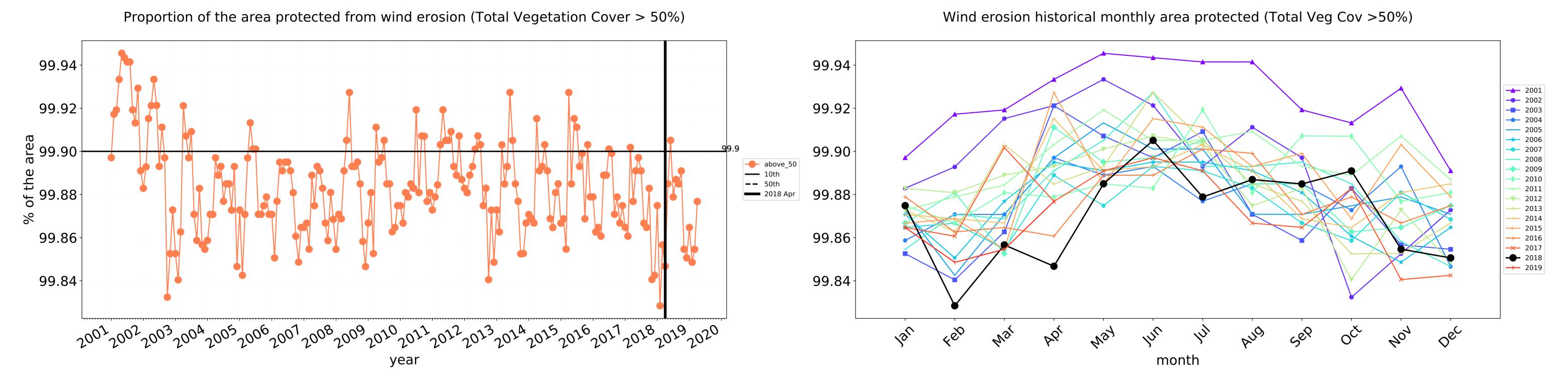


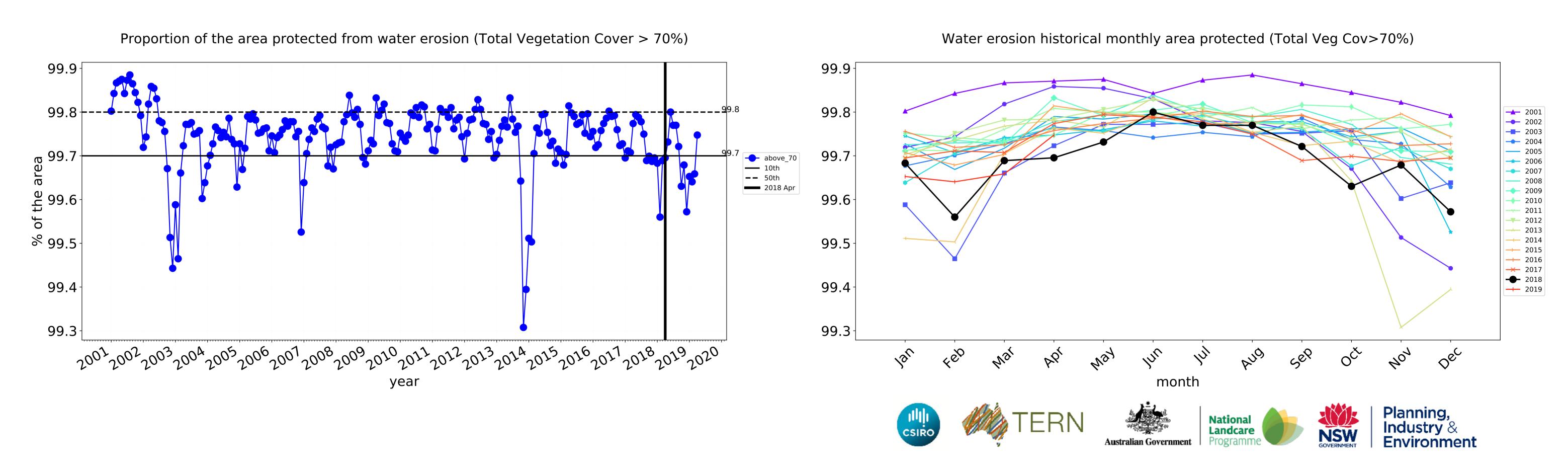
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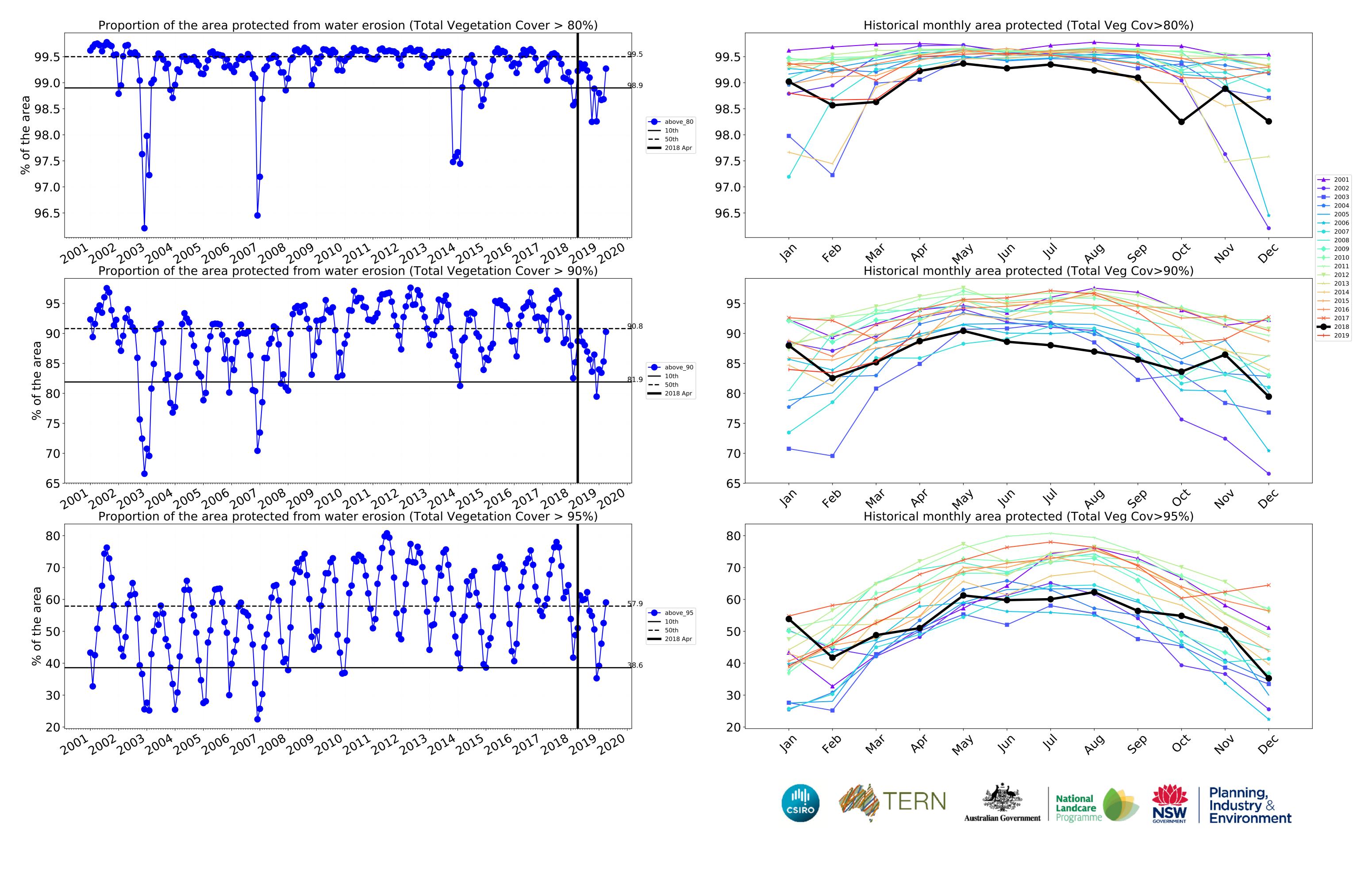
Conservation and natural environments



Conservation and natural environments timeseries



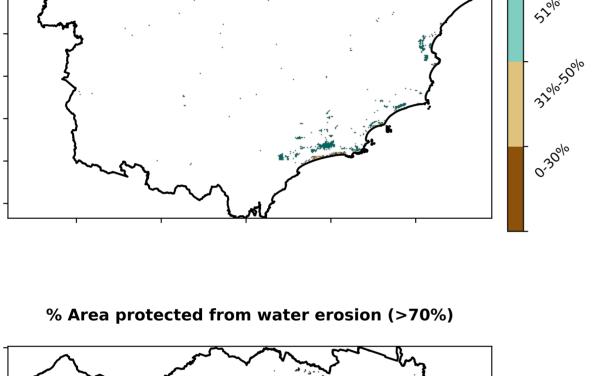


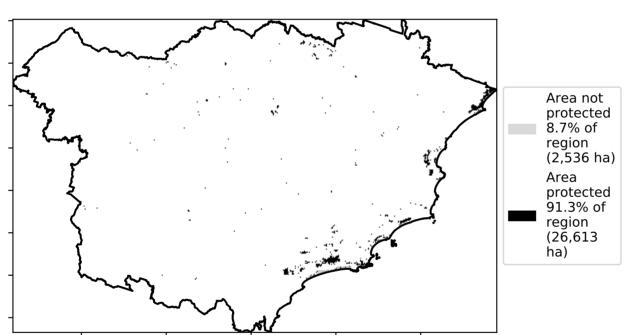


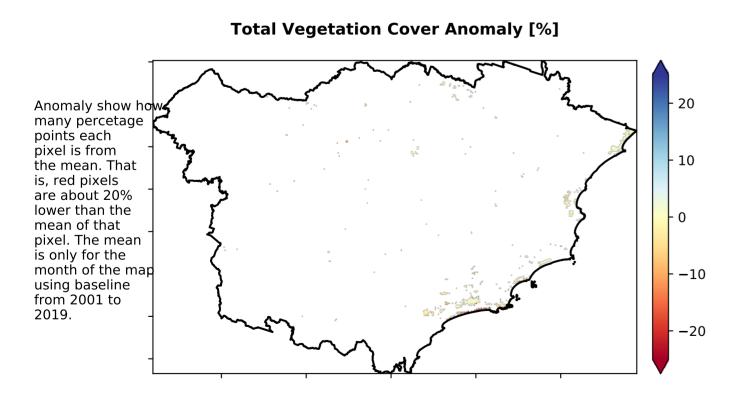
Conservation and natural environments non forest

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

Total Vegetation Cover [%]

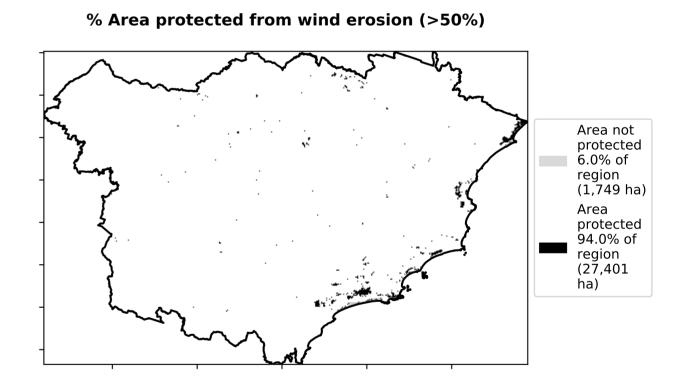


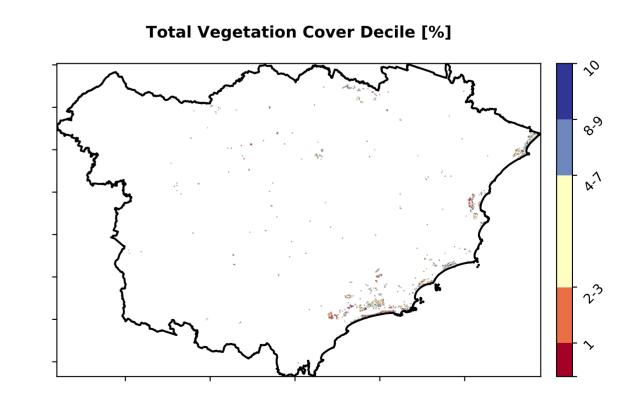




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area 91.3% 80 -60 Area (%) 20 2.1% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**









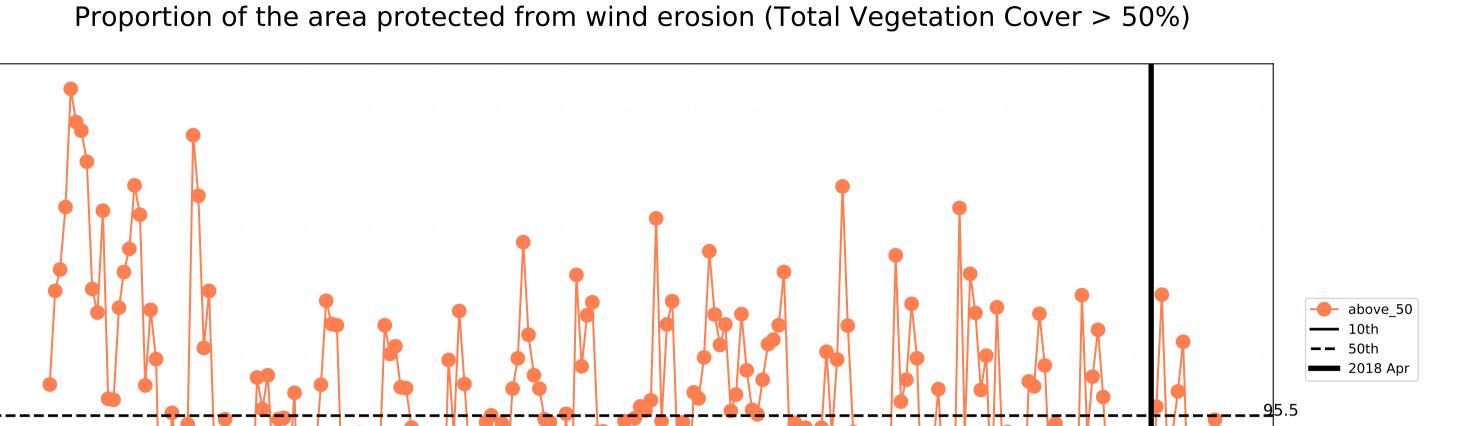








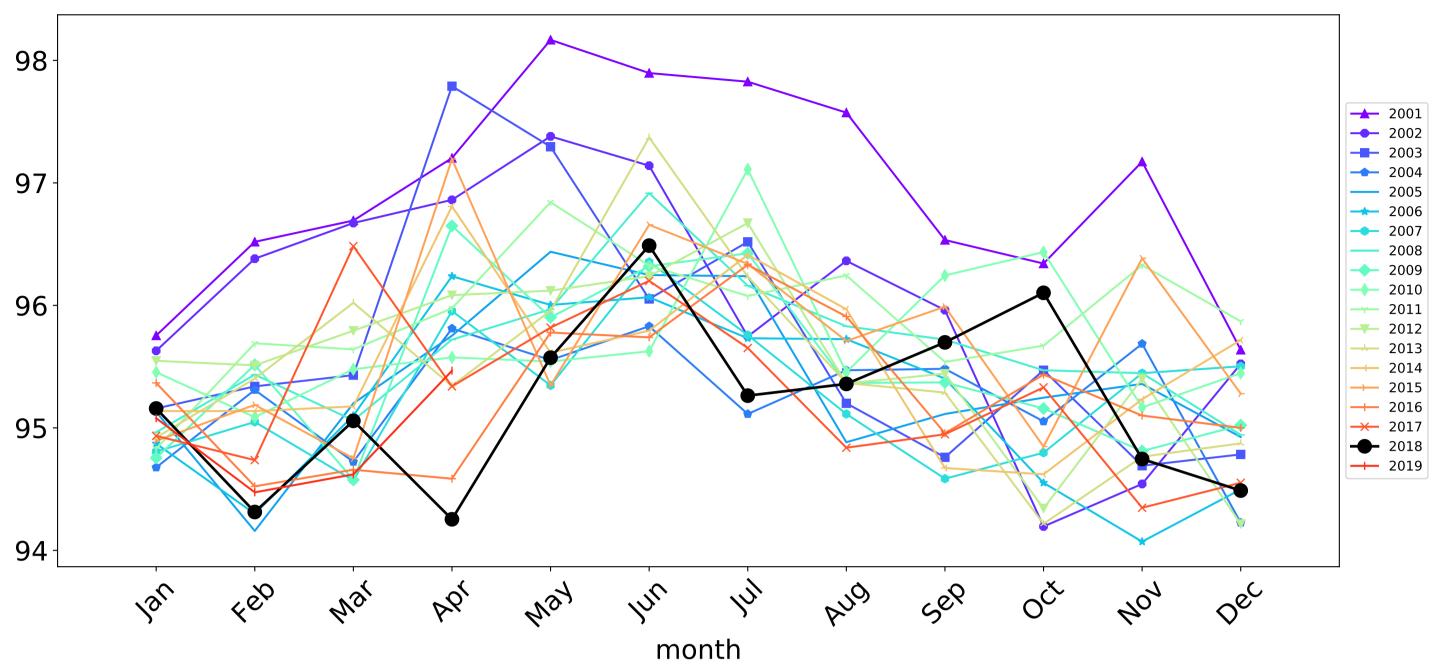
Conservation and natural environments non forest timeseries



98-

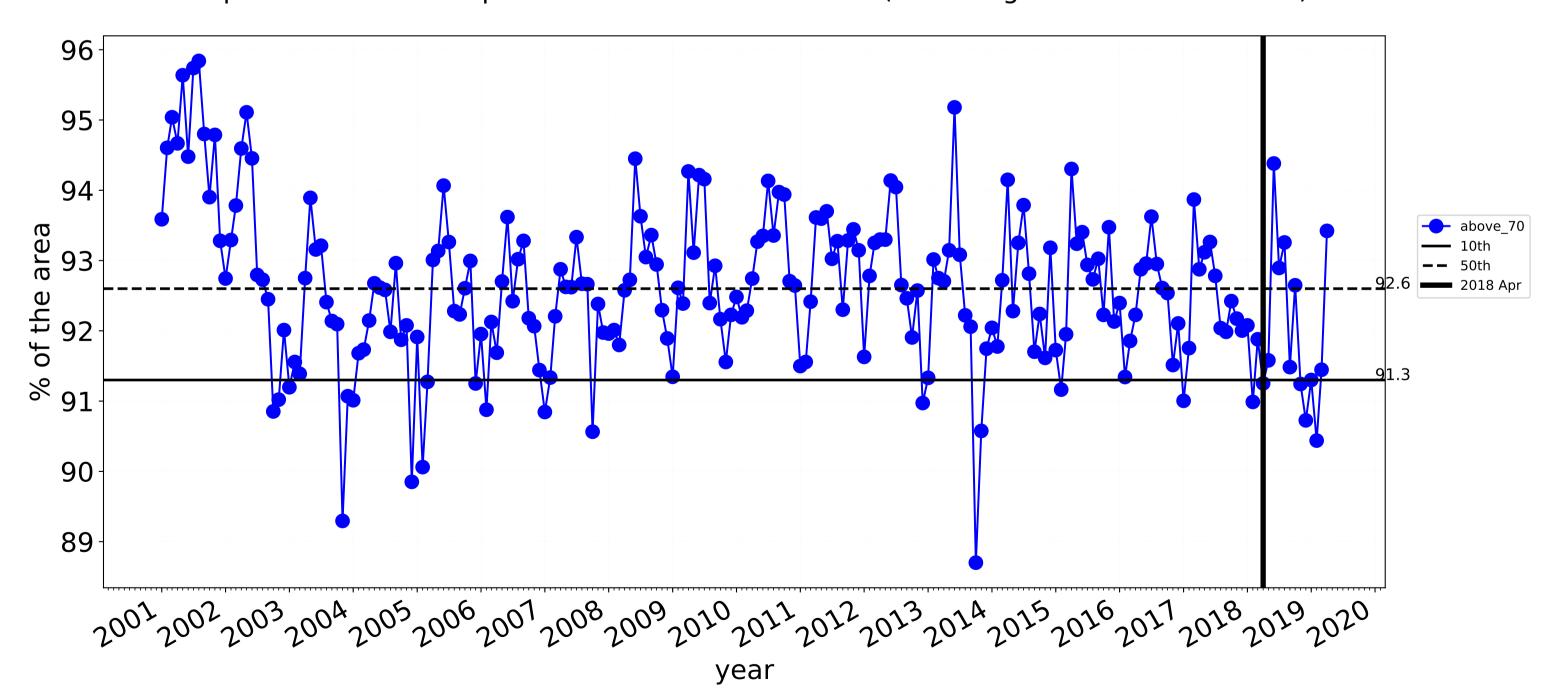
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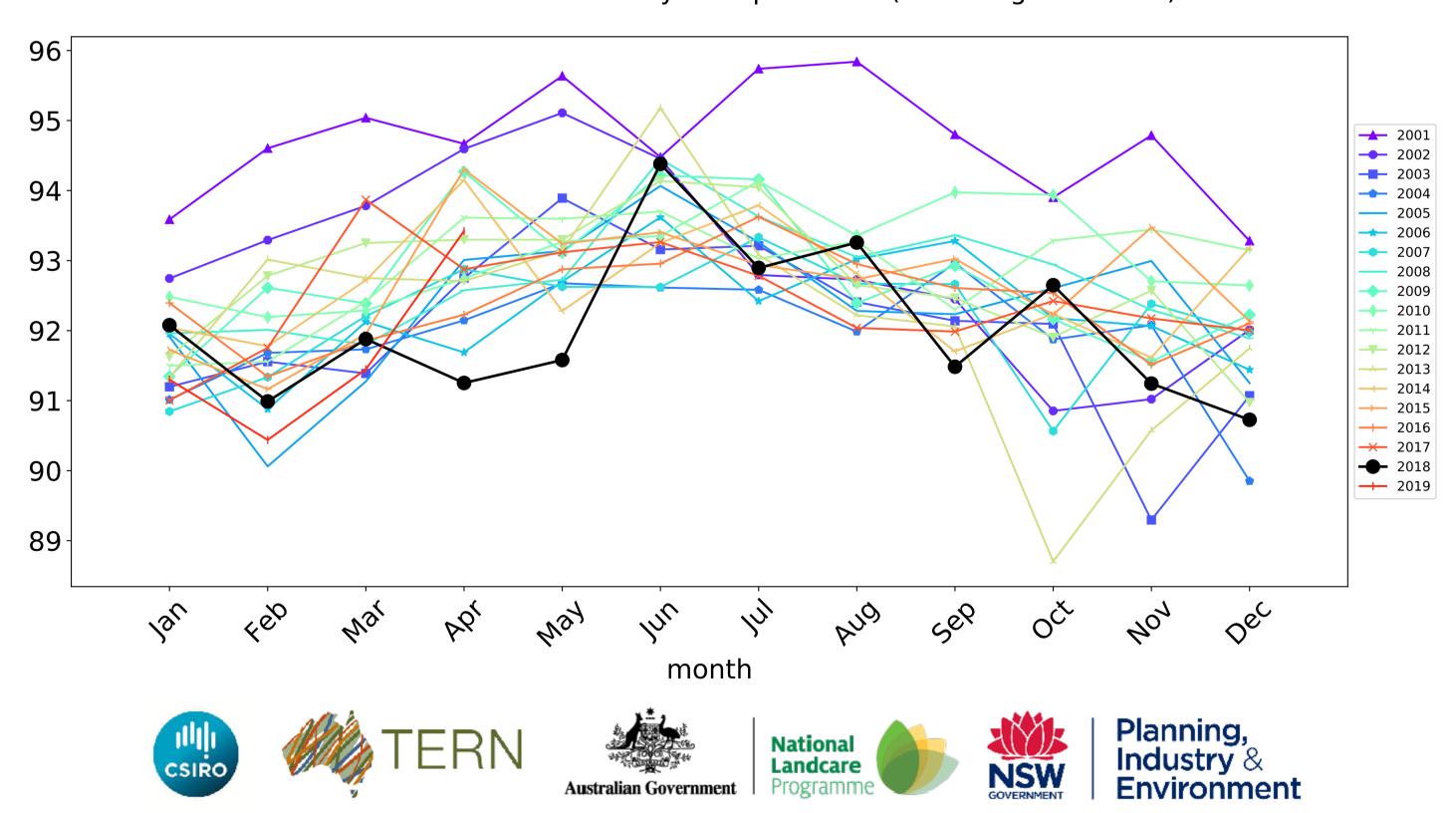


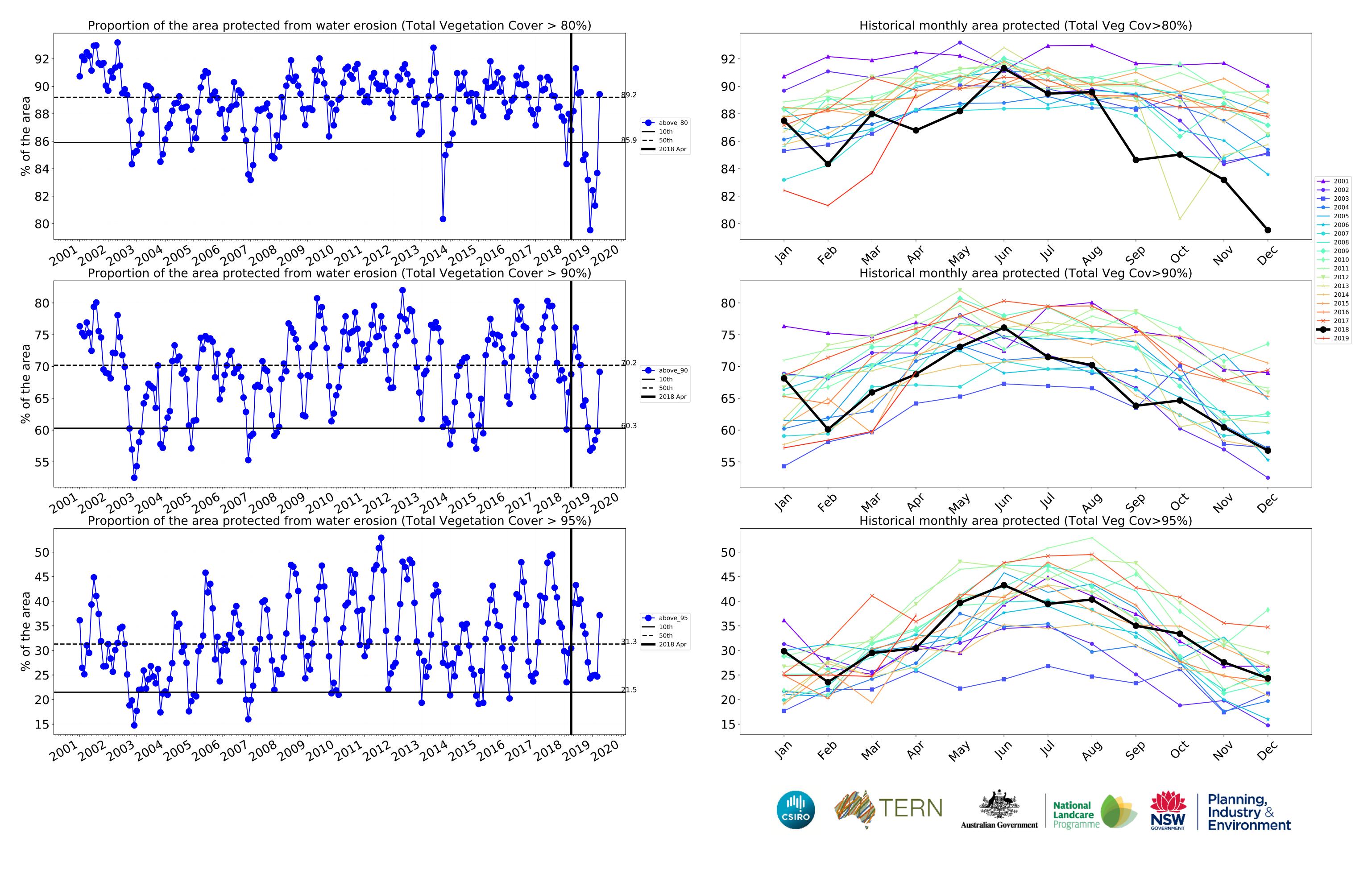


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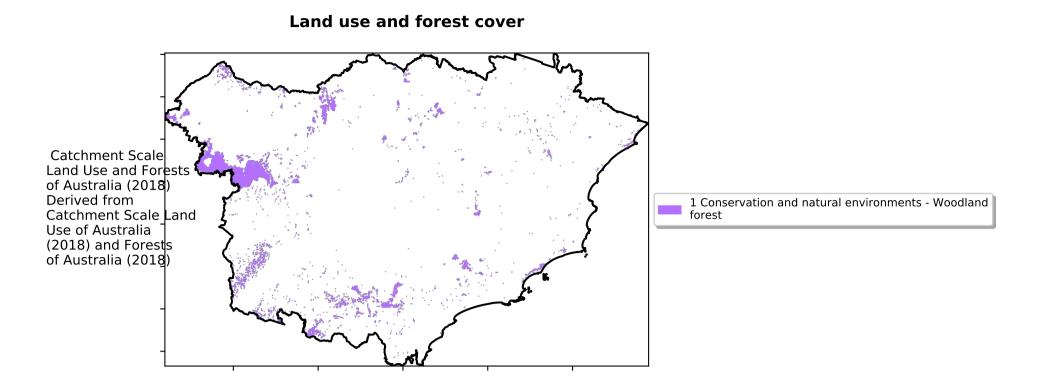


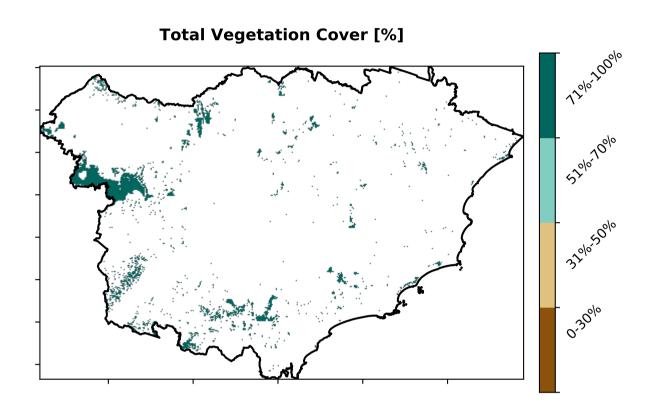
Water erosion historical monthly area protected (Total Veg Cov>70%)

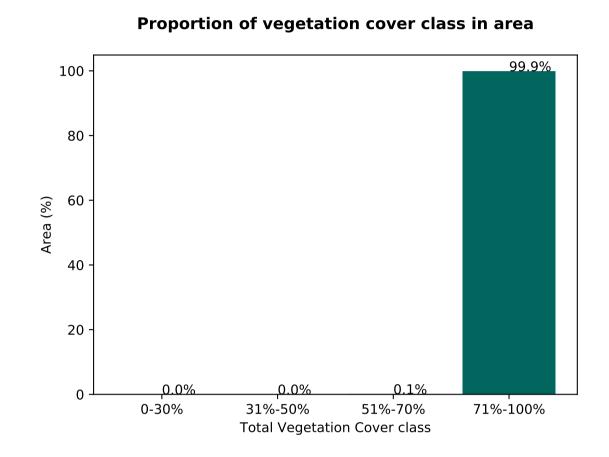


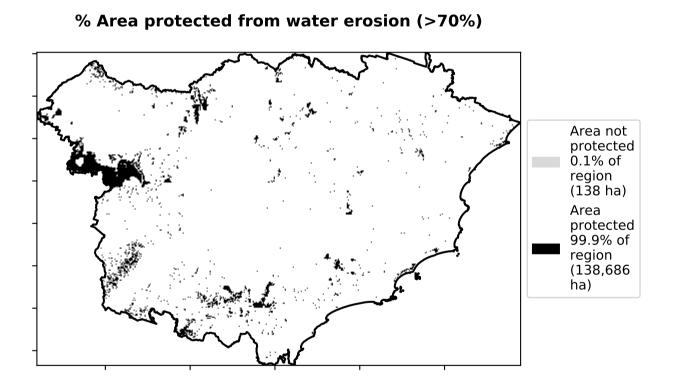


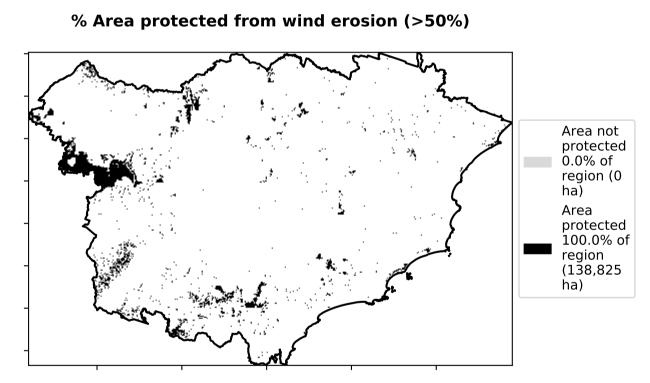
Conservation and natural environments Woodland forest

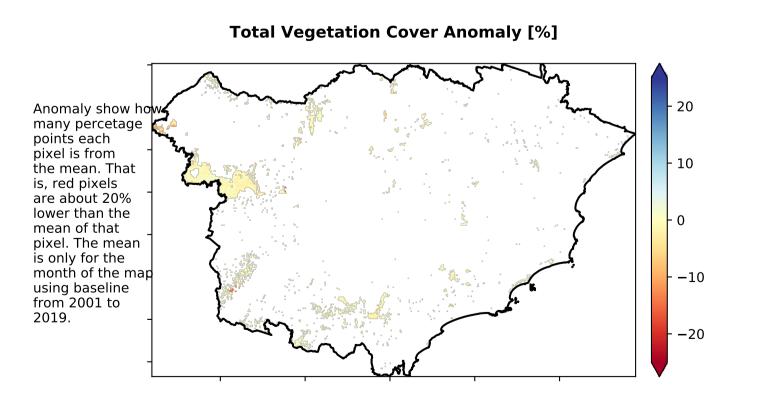


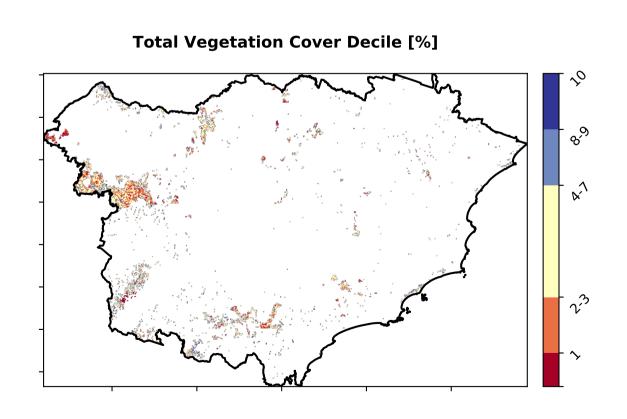














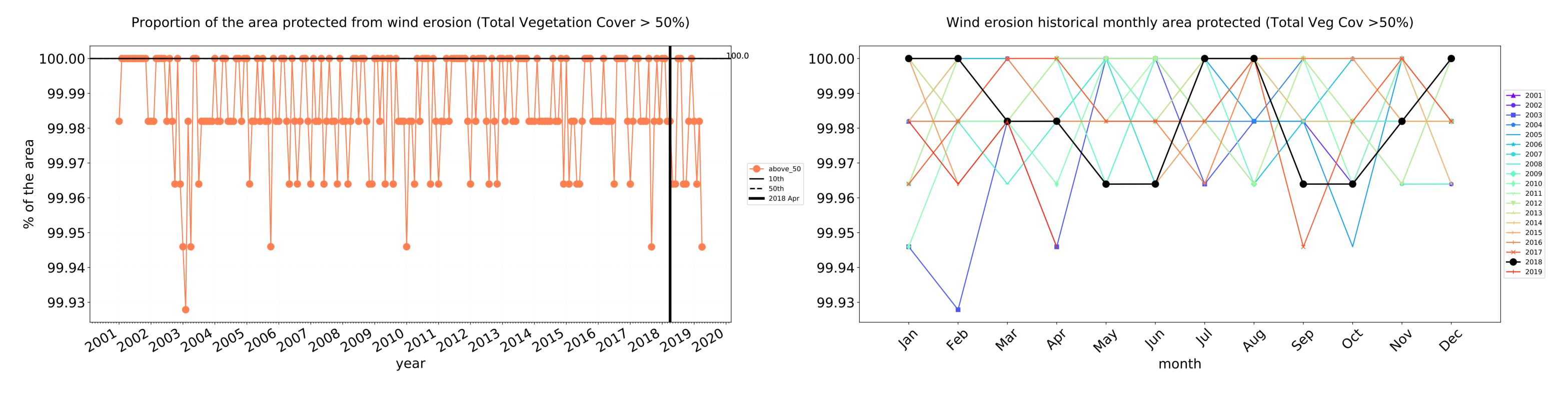


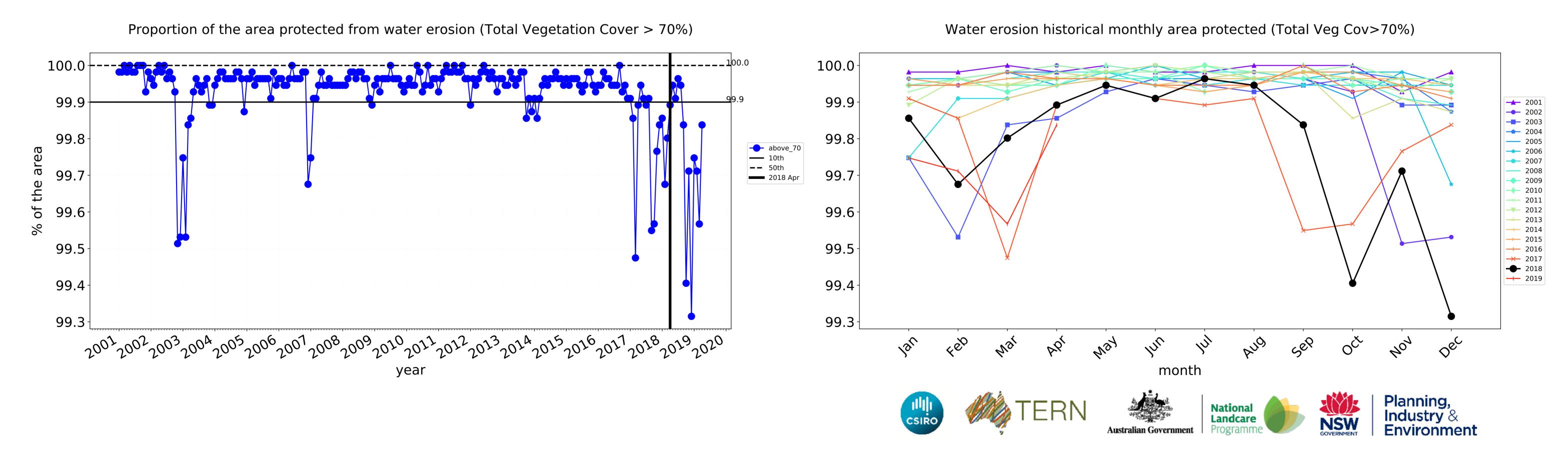


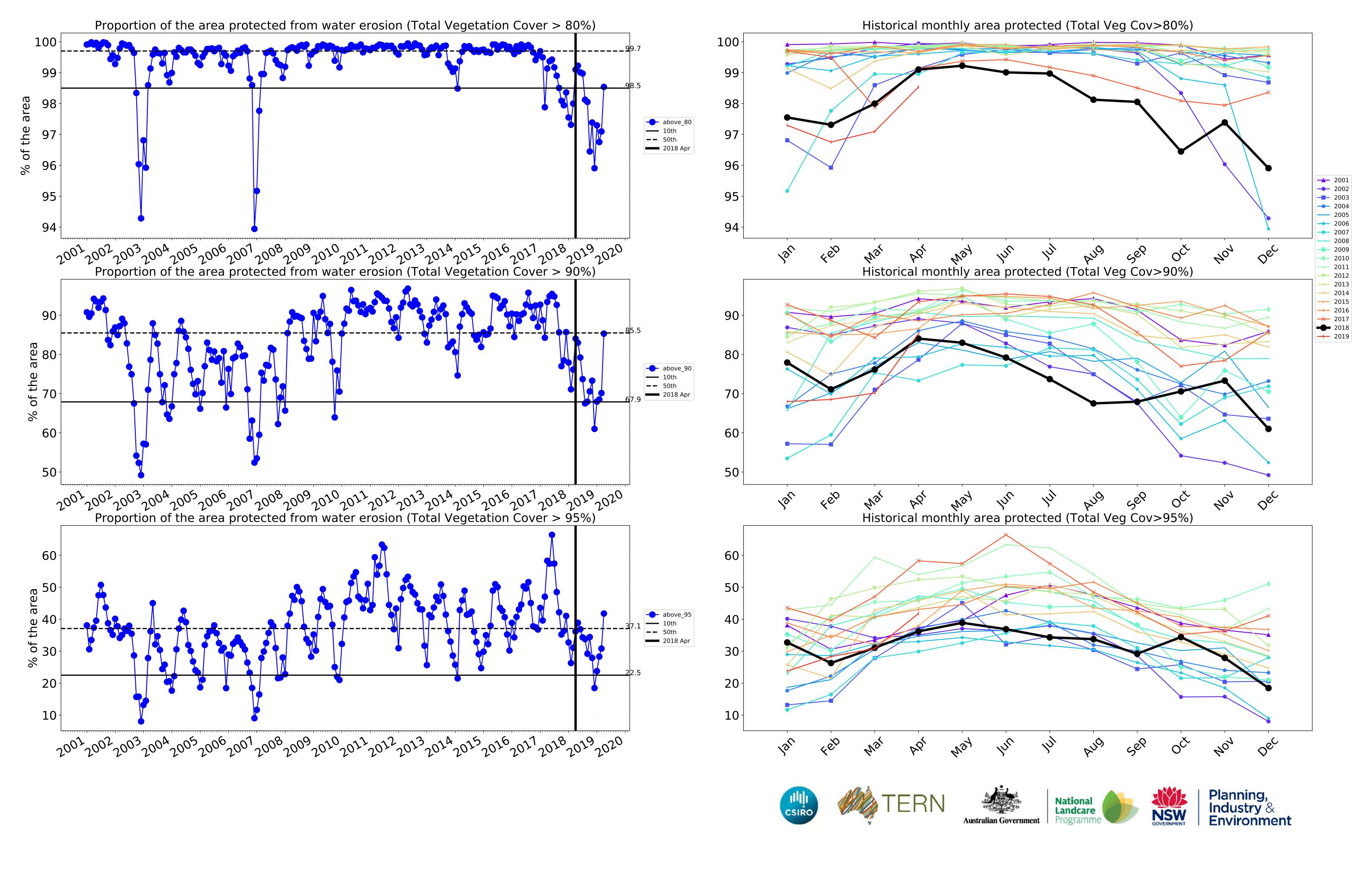




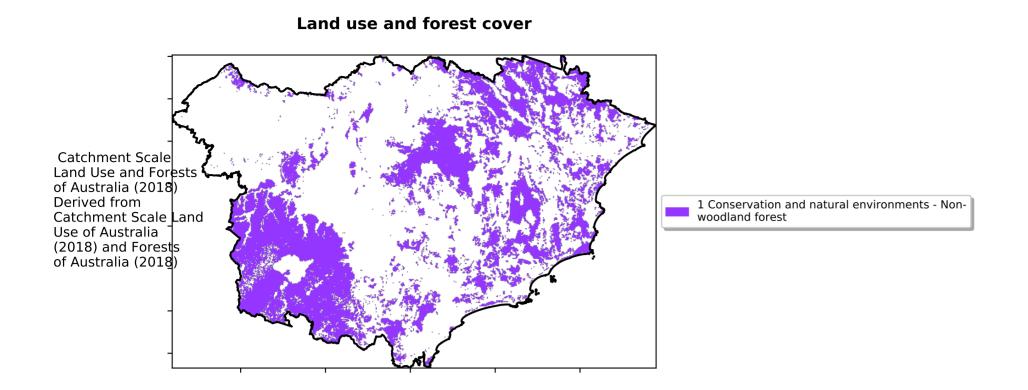




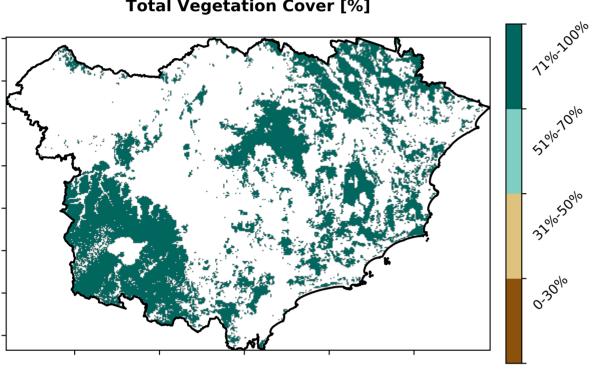


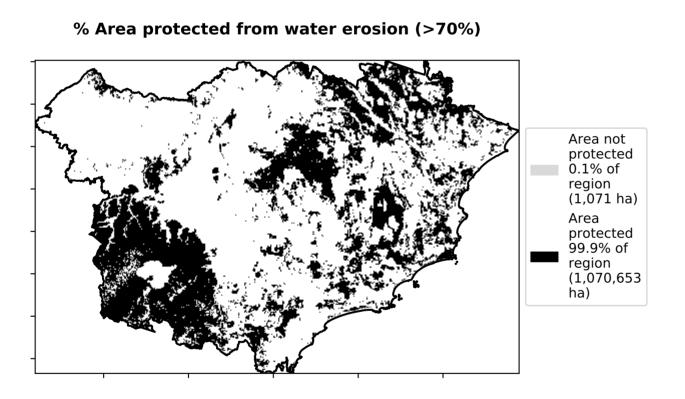


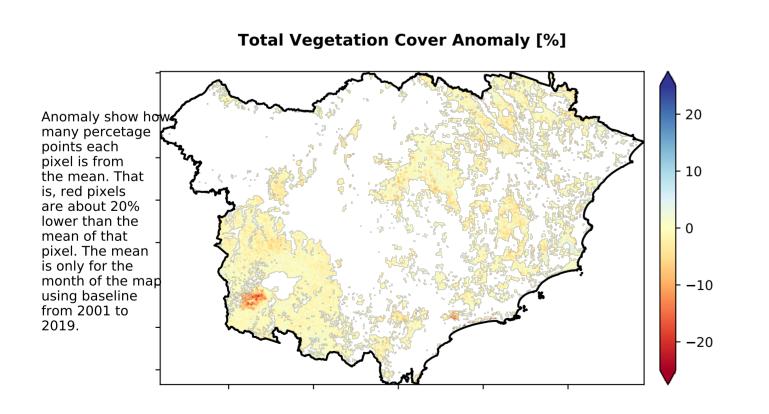
Conservation and natural environments Forest (non woodland)



Total Vegetation Cover [%]

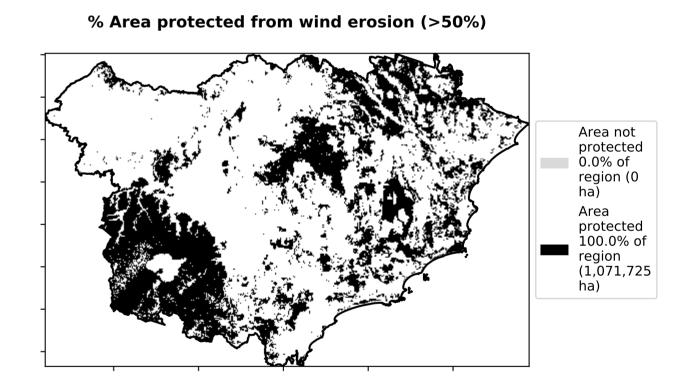


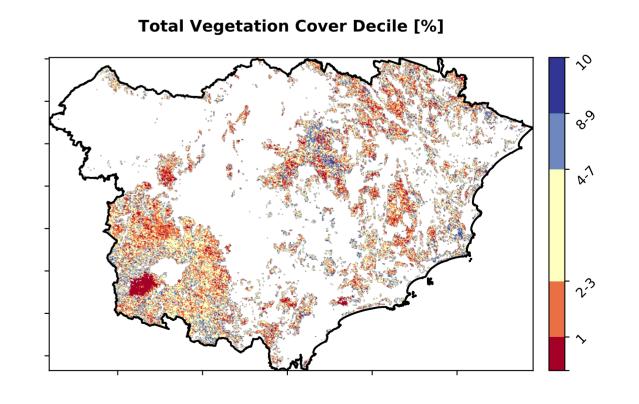




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Proportion of vegetation cover class in area 99.9% 100 80 60 40 20 0.1% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**







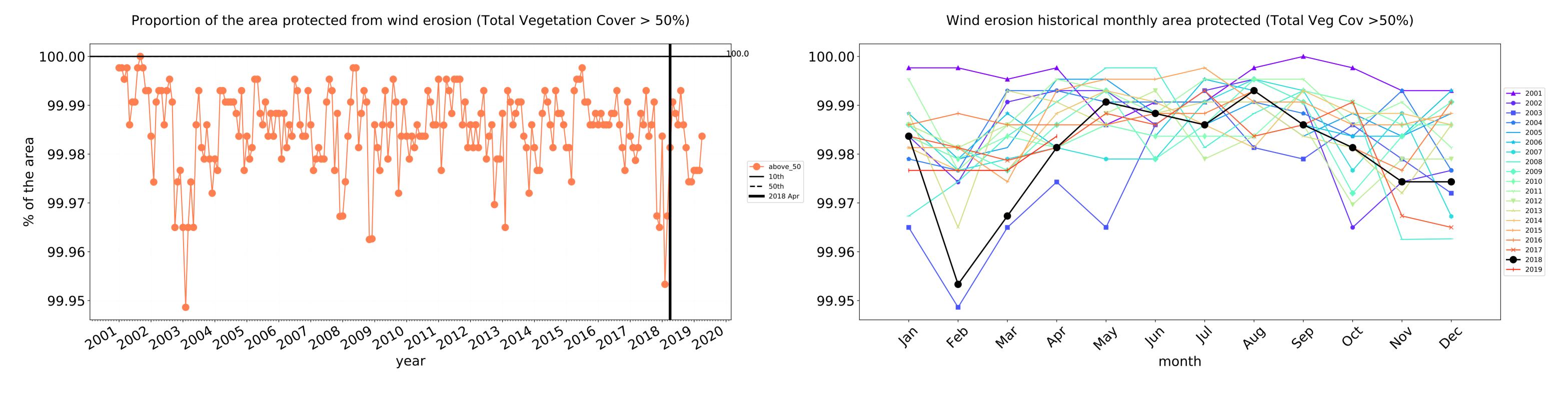


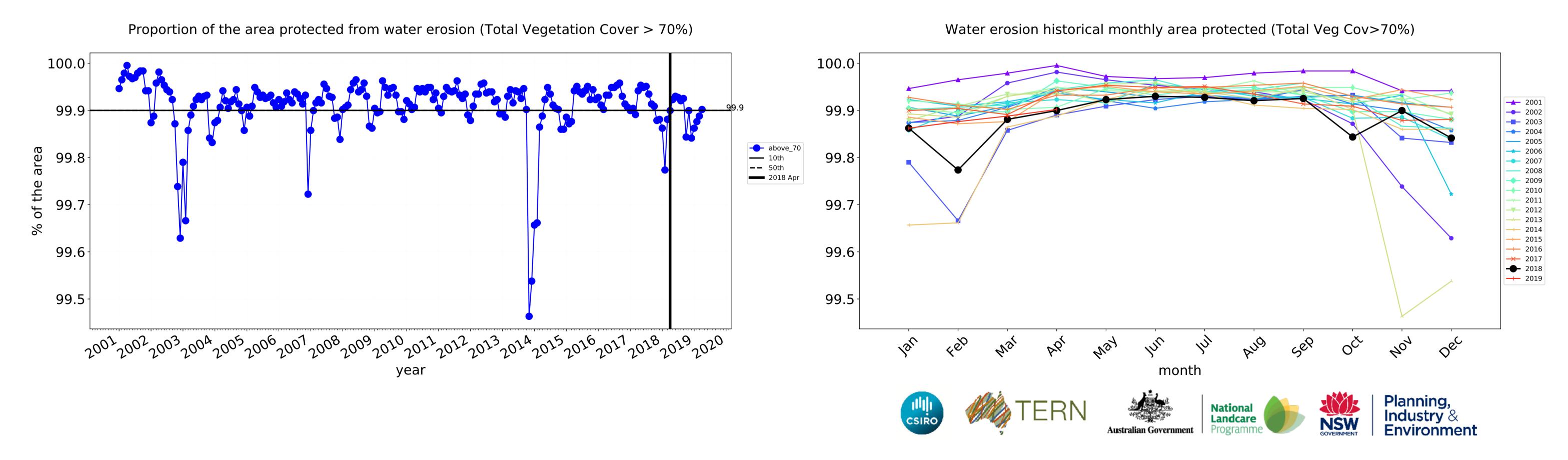


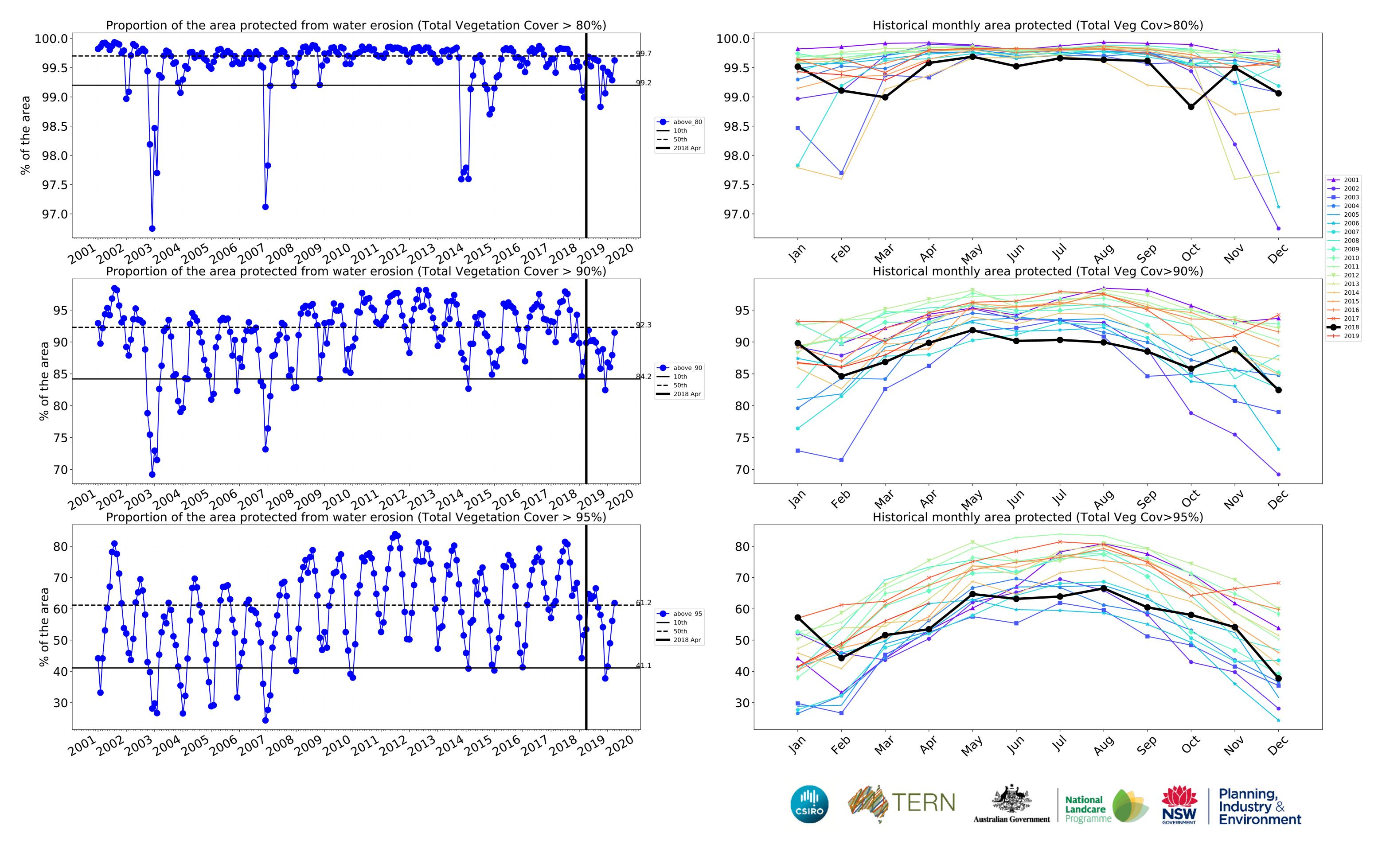




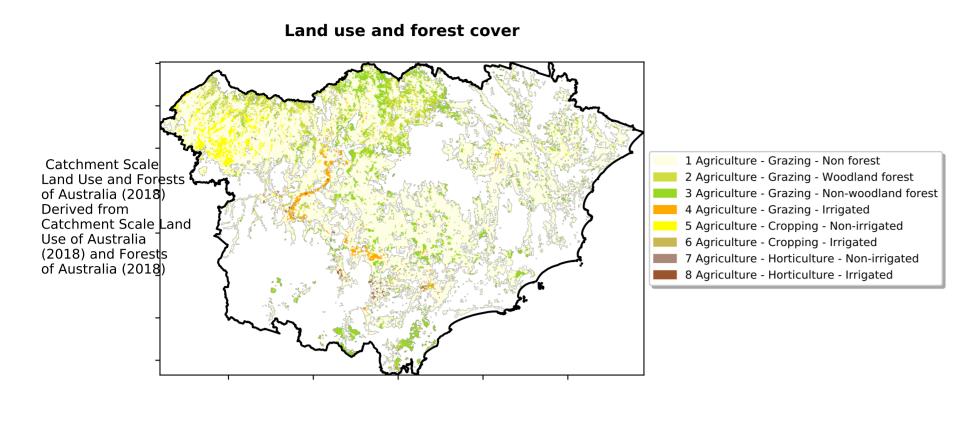






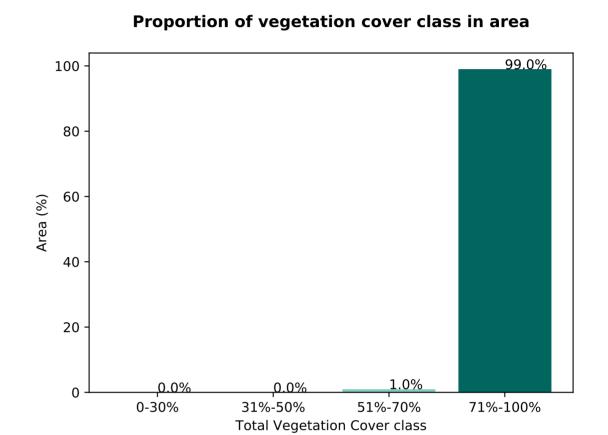


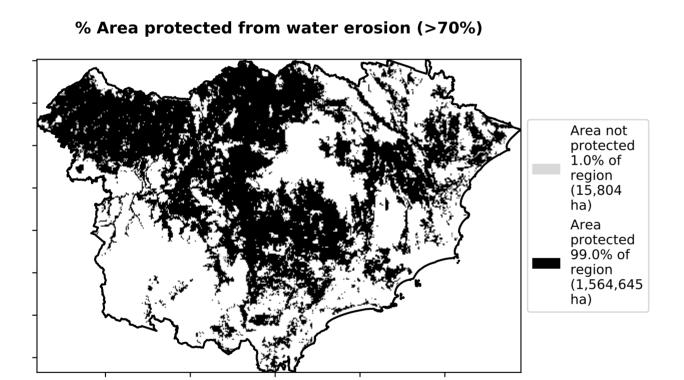
Agriculture

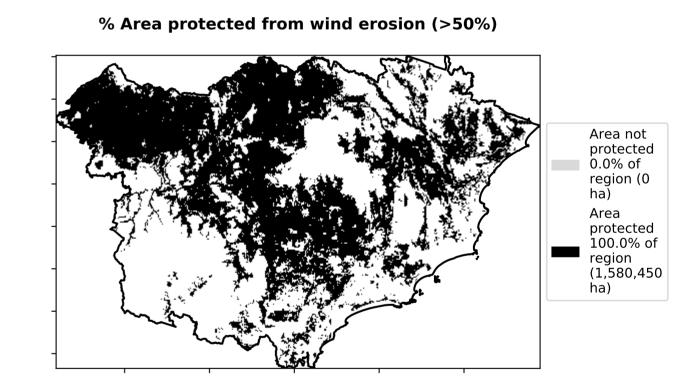


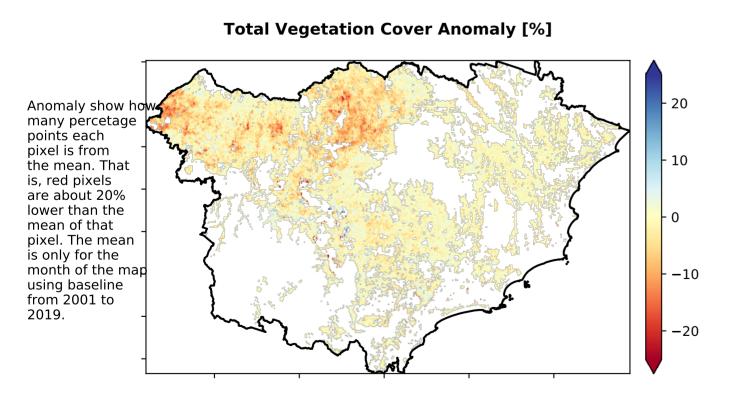
Proportion of each land class in area 80 76.7% 70 60 50 20 10 7.6% 10.7% 10.7% 1.3% 3.2% 0.1% 0.1% 0.2% Land use class

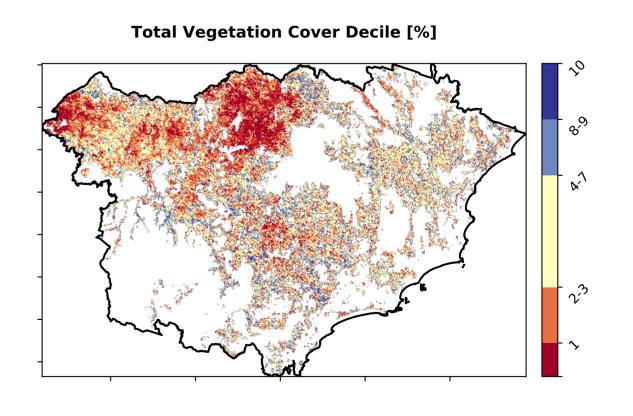
Total Vegetation Cover [%] Tiple Ludolo Ti















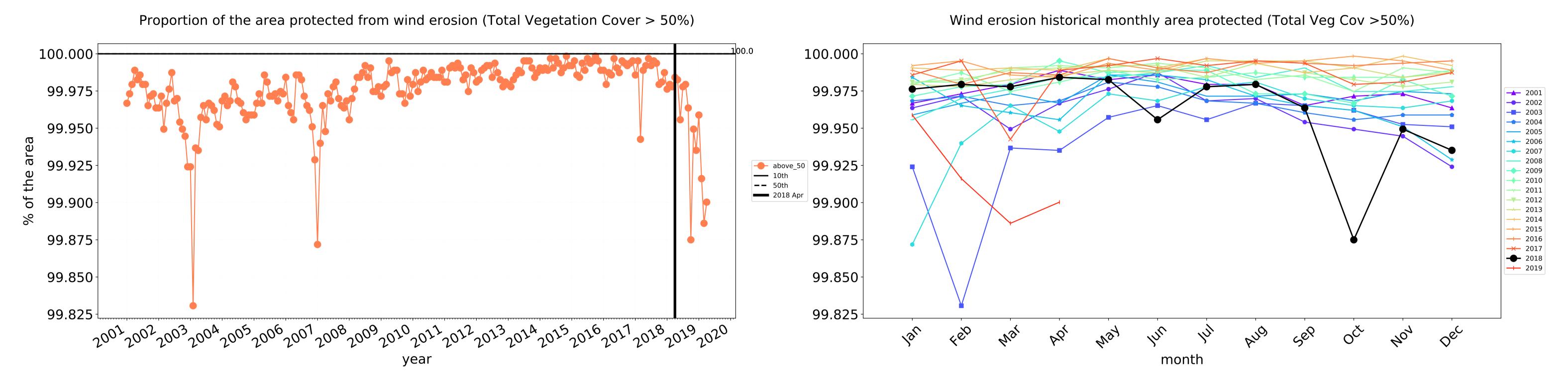


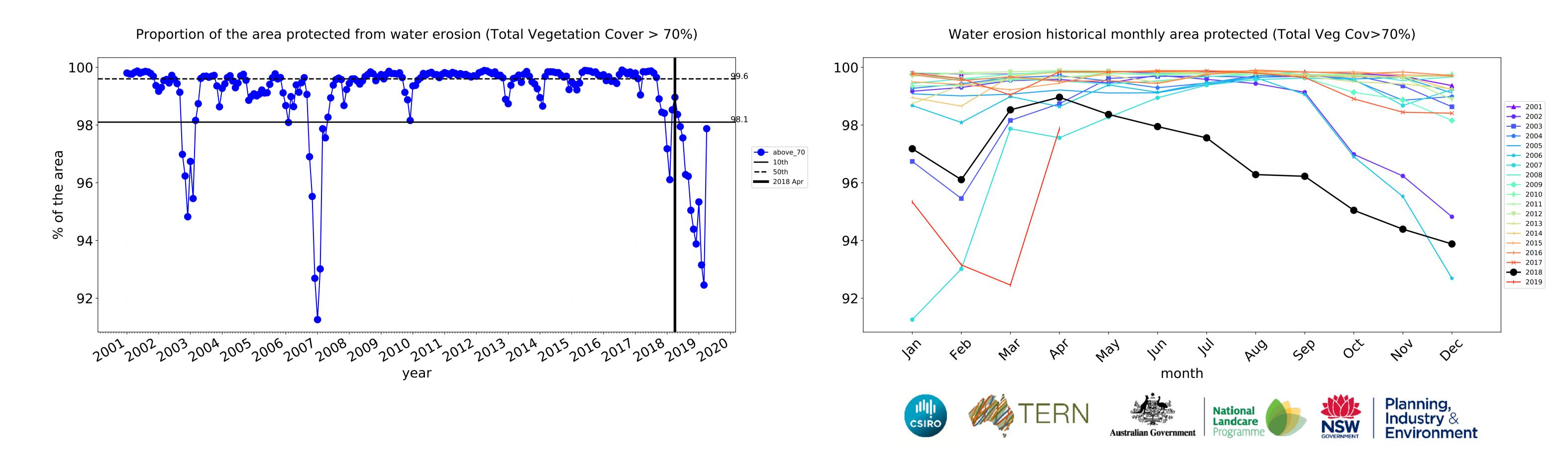


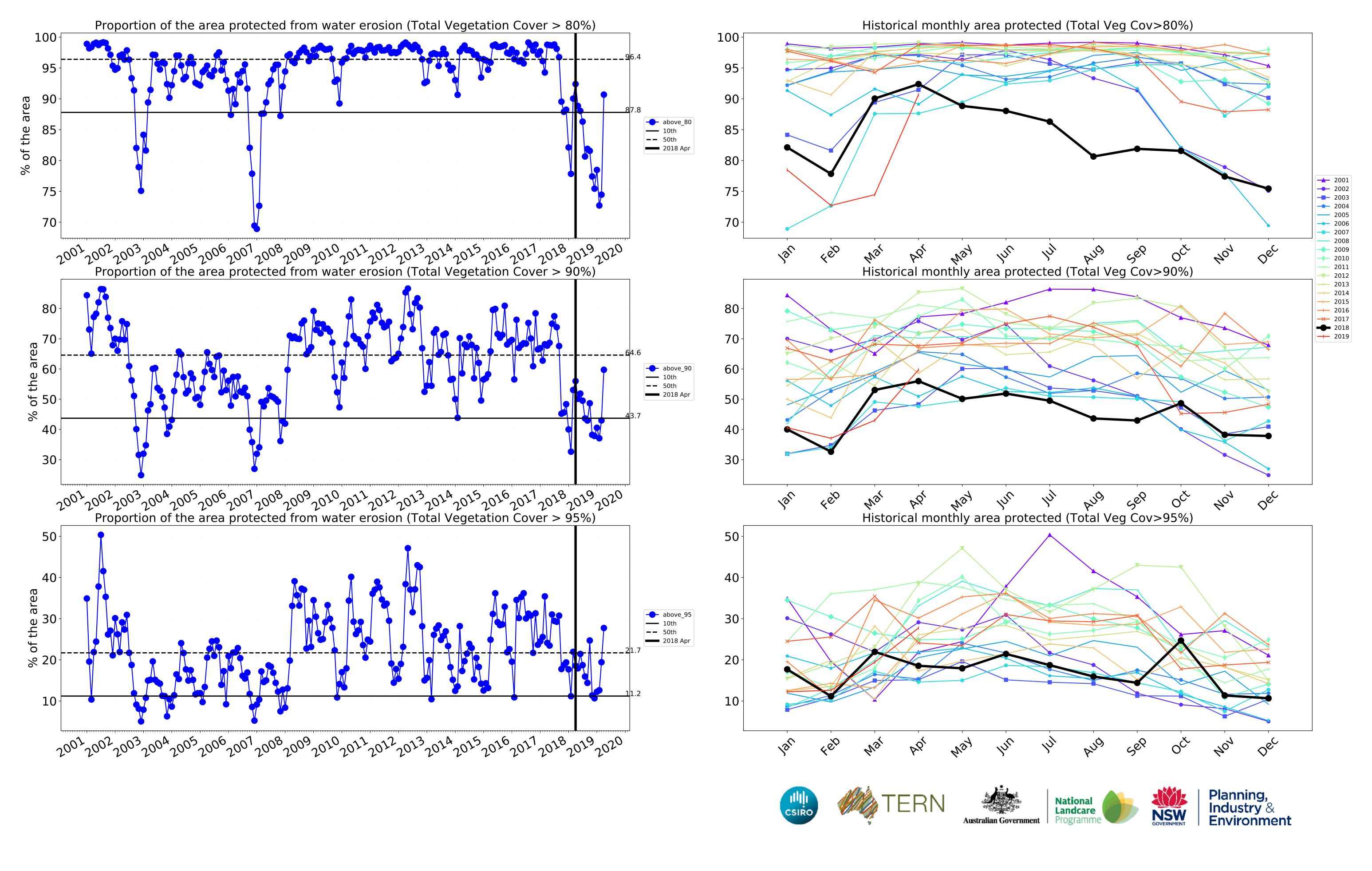




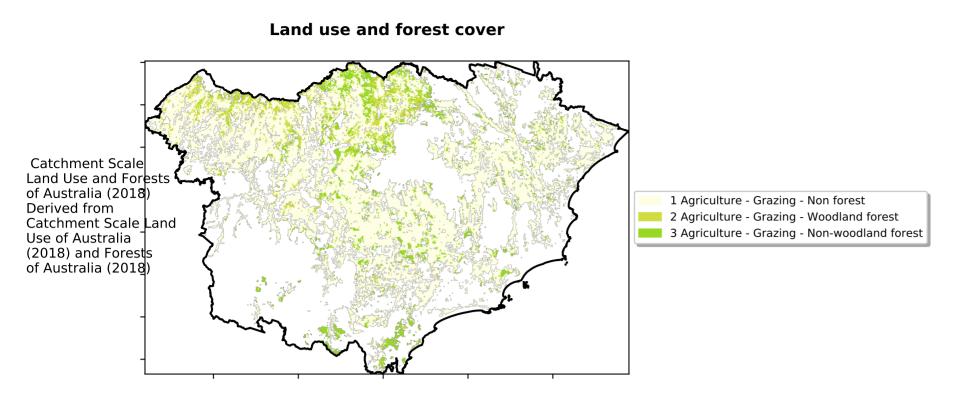
Agriculture timeseries



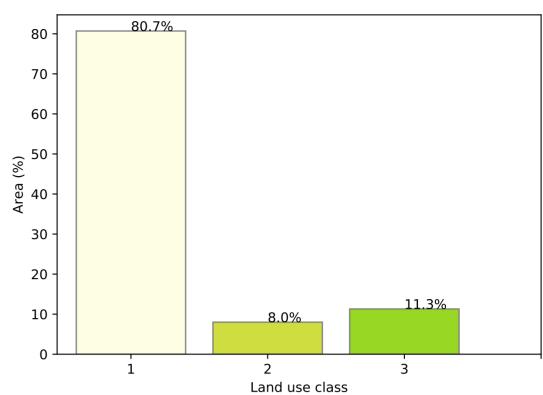




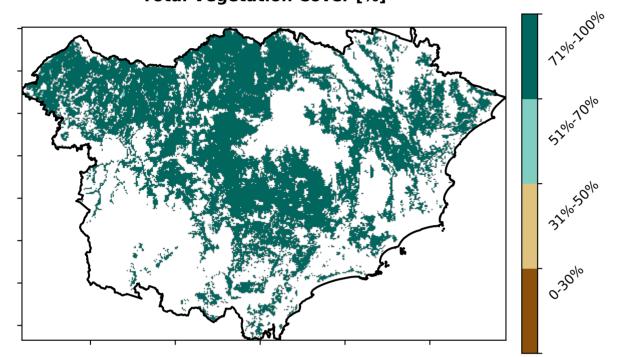
Grazing



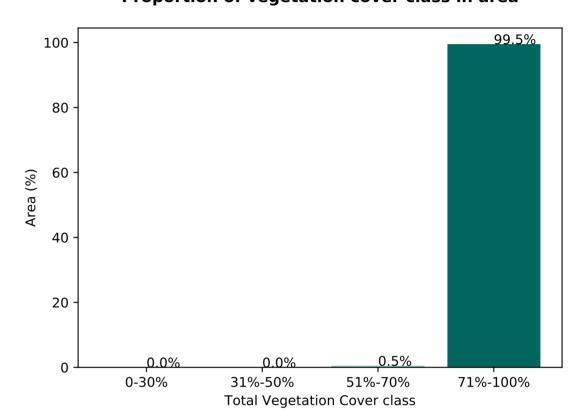
Proportion of each land class in area



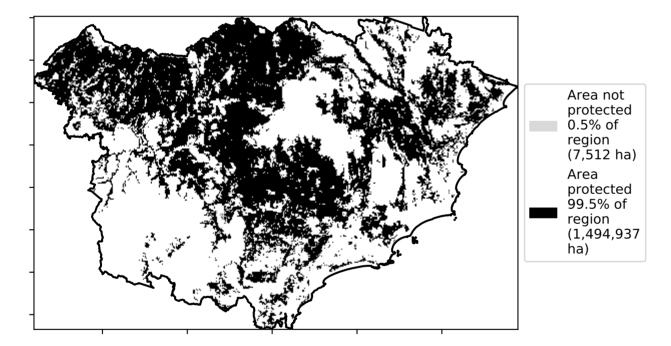
Total Vegetation Cover [%]



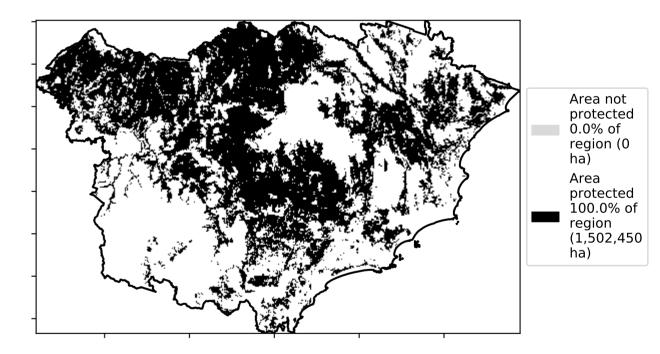
Proportion of vegetation cover class in area



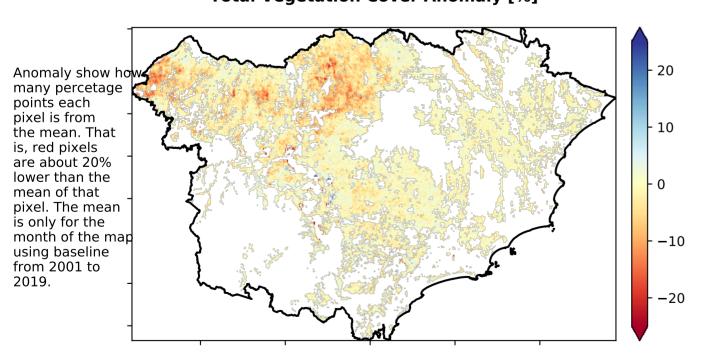
% Area protected from water erosion (>70%)

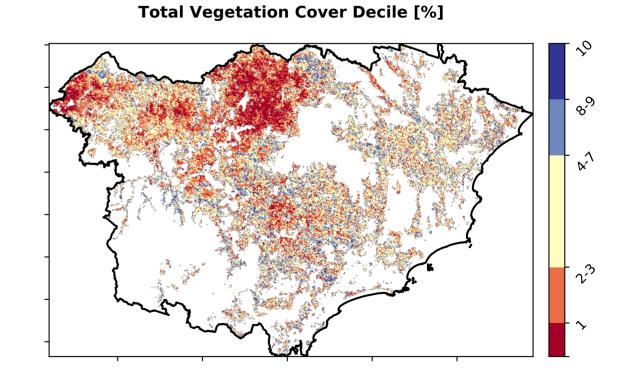


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]









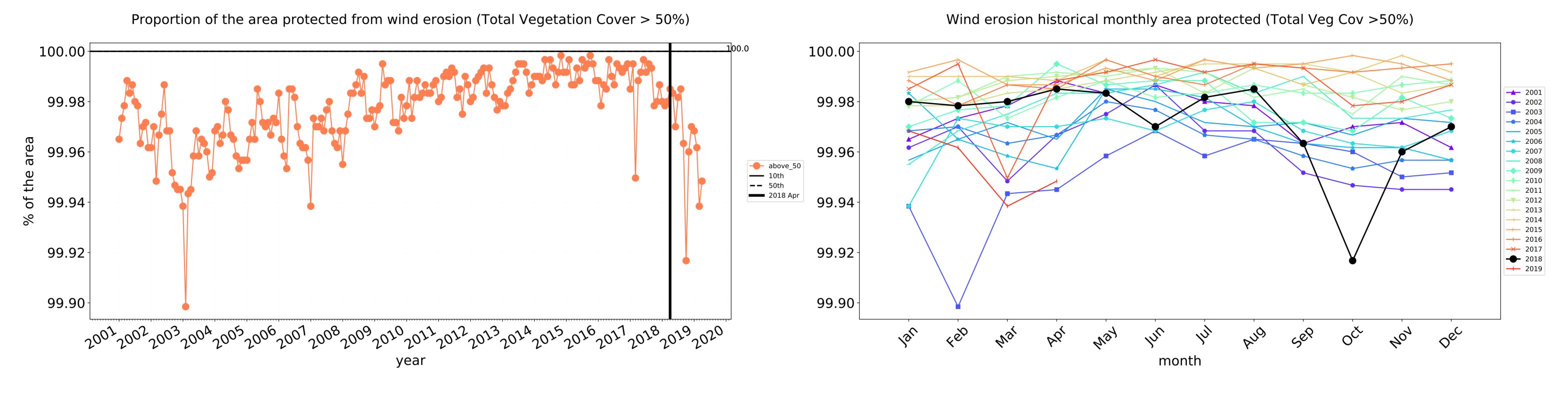


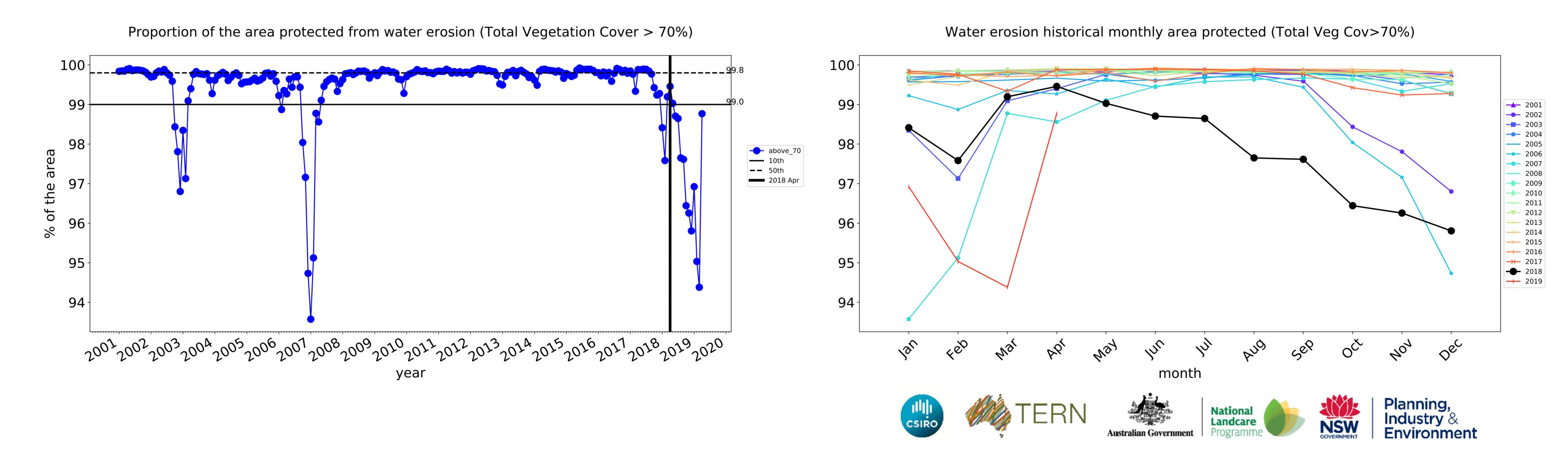


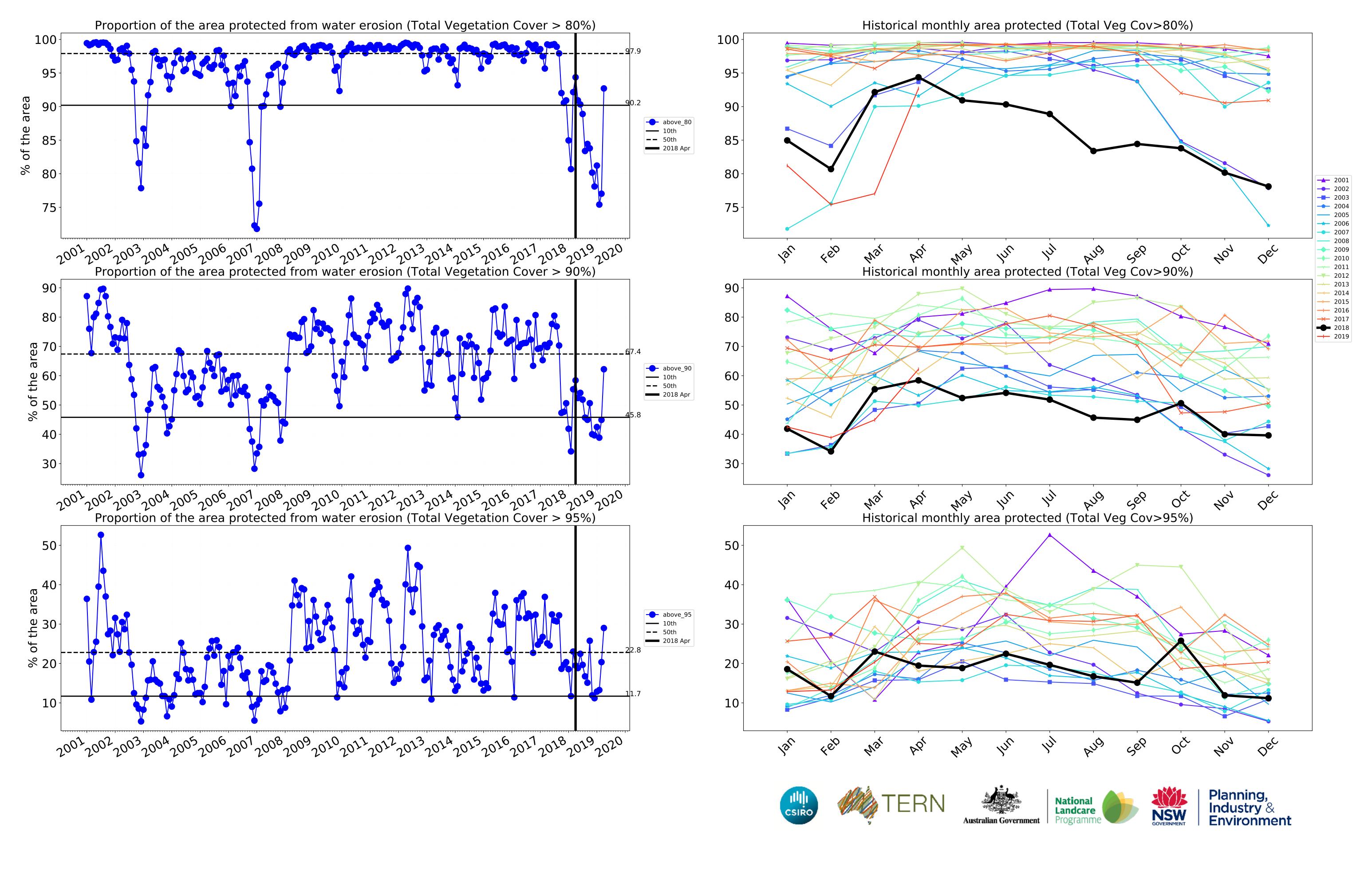




Grazing timeseries

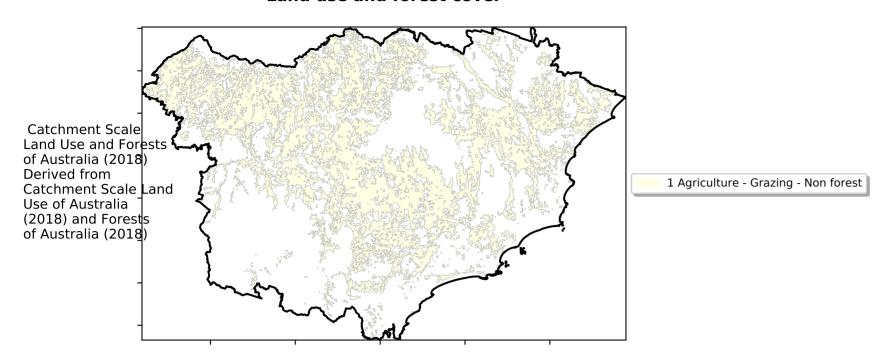




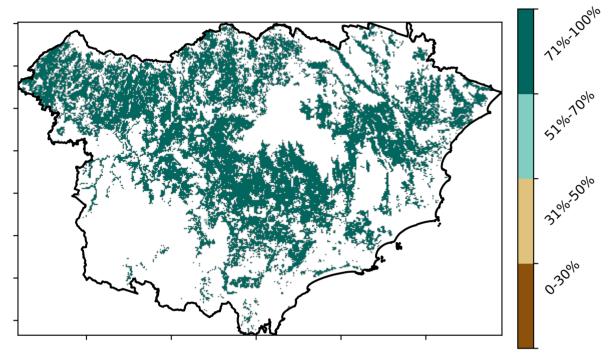


Grazing non forest

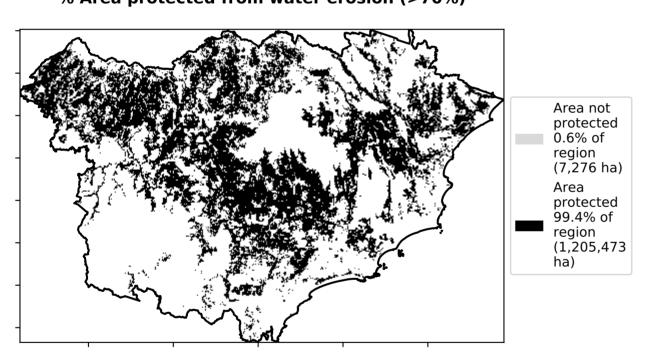
Land use and forest cover



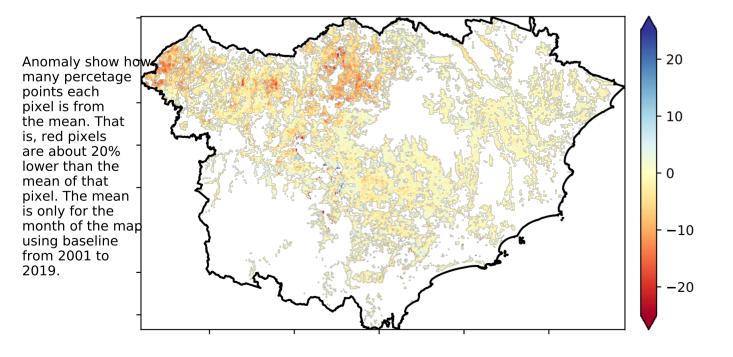
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

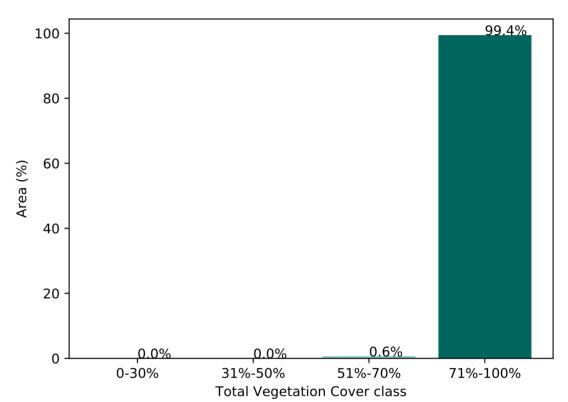


Total Vegetation Cover Anomaly [%]

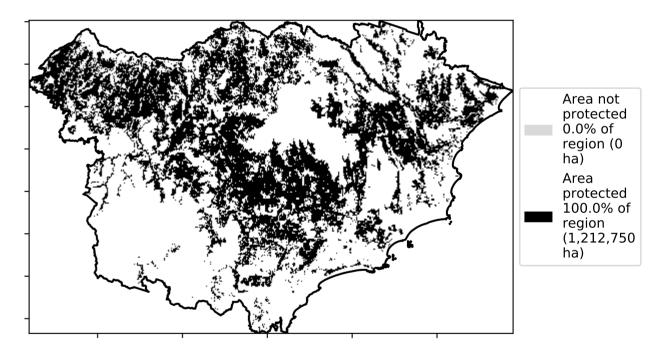


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

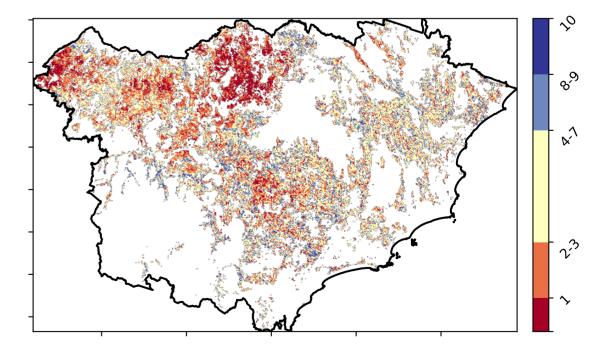
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







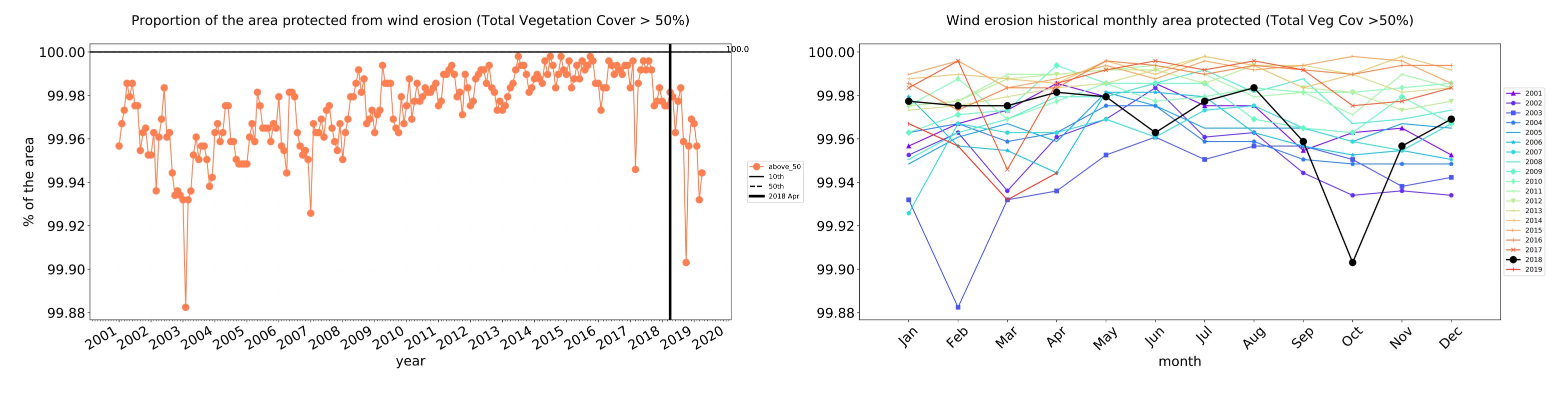


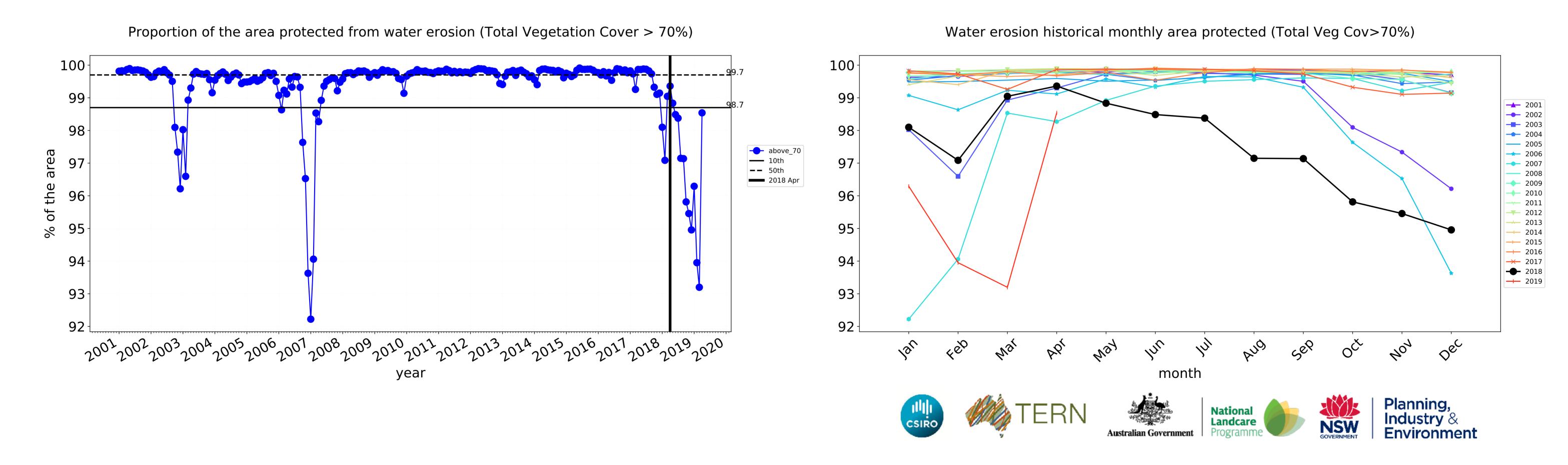


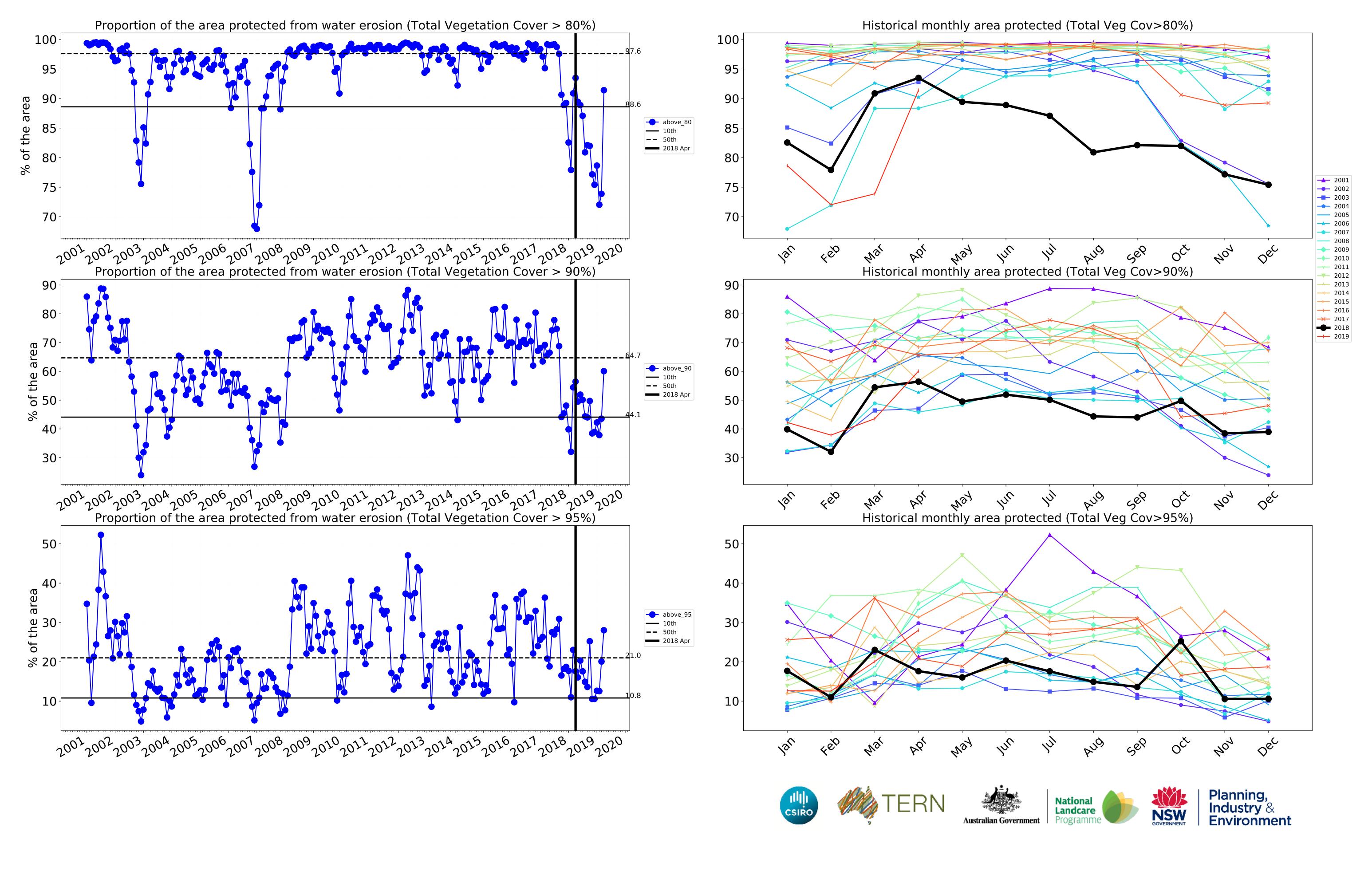




Grazing non forest timeseries





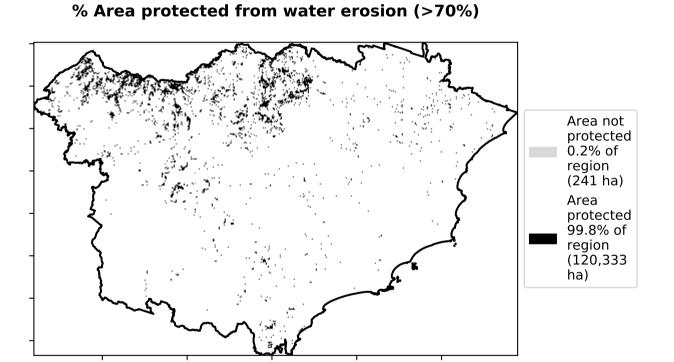


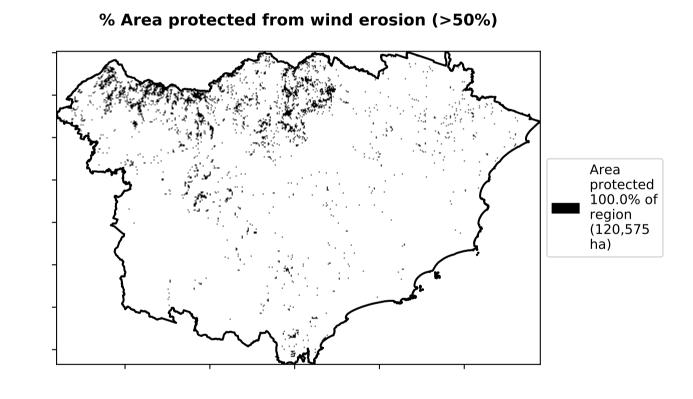
Grazing Woodland forest

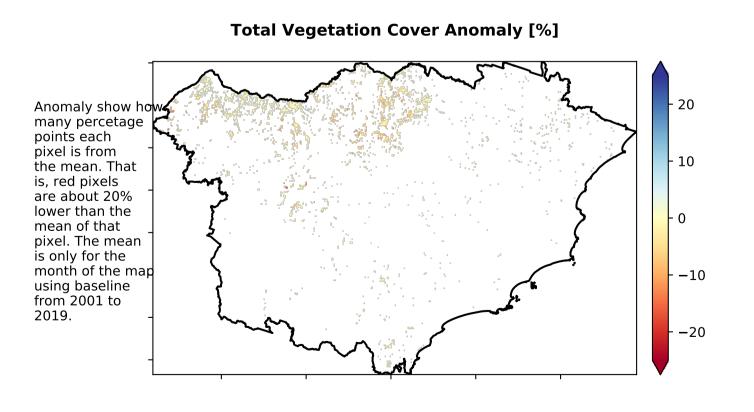
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Use of Australia (2018) and Forests of Australia (2018) Of Australia (2018)

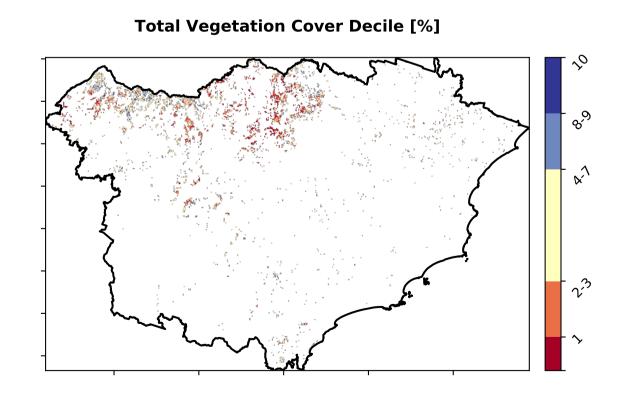
Total Vegetation Cover [%] Tiple: Ideal Ti

Proportion of vegetation cover class in area 100 - 99.8% 80 - 60 - 20 - 0.0% 0.0% 0.2% 0-30% 31%-50% 51%-70% 71%-100% Total Vegetation Cover class













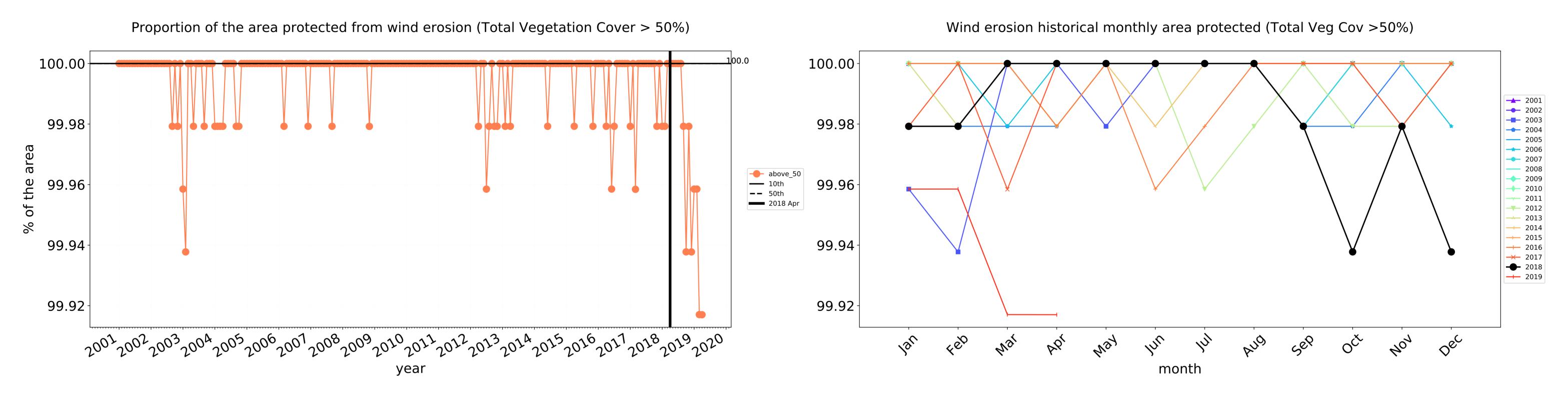


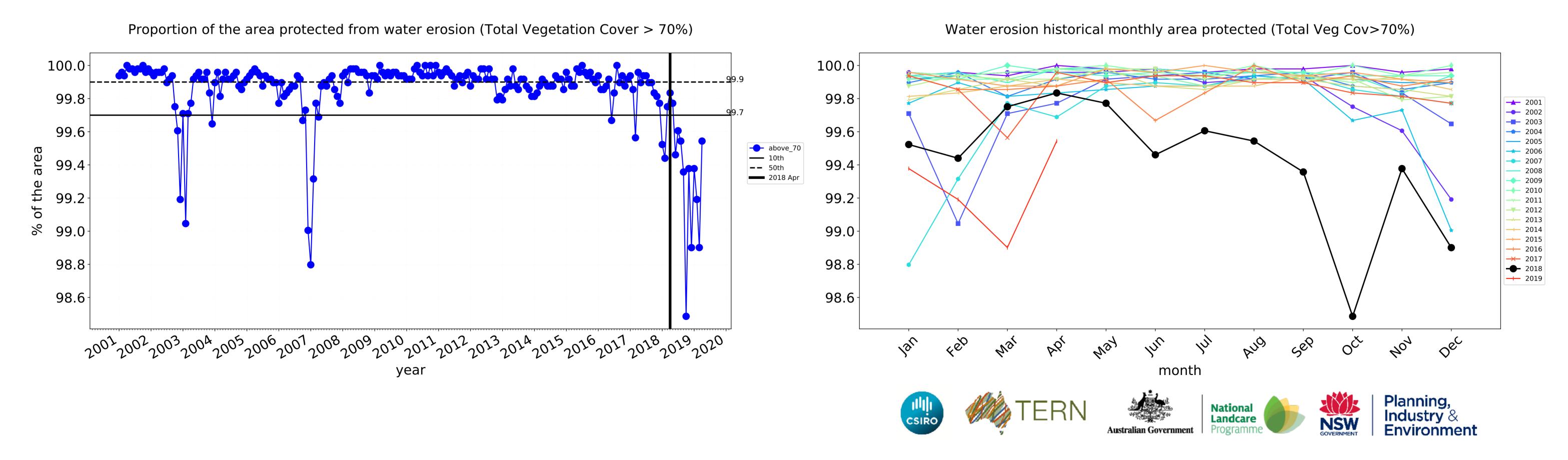


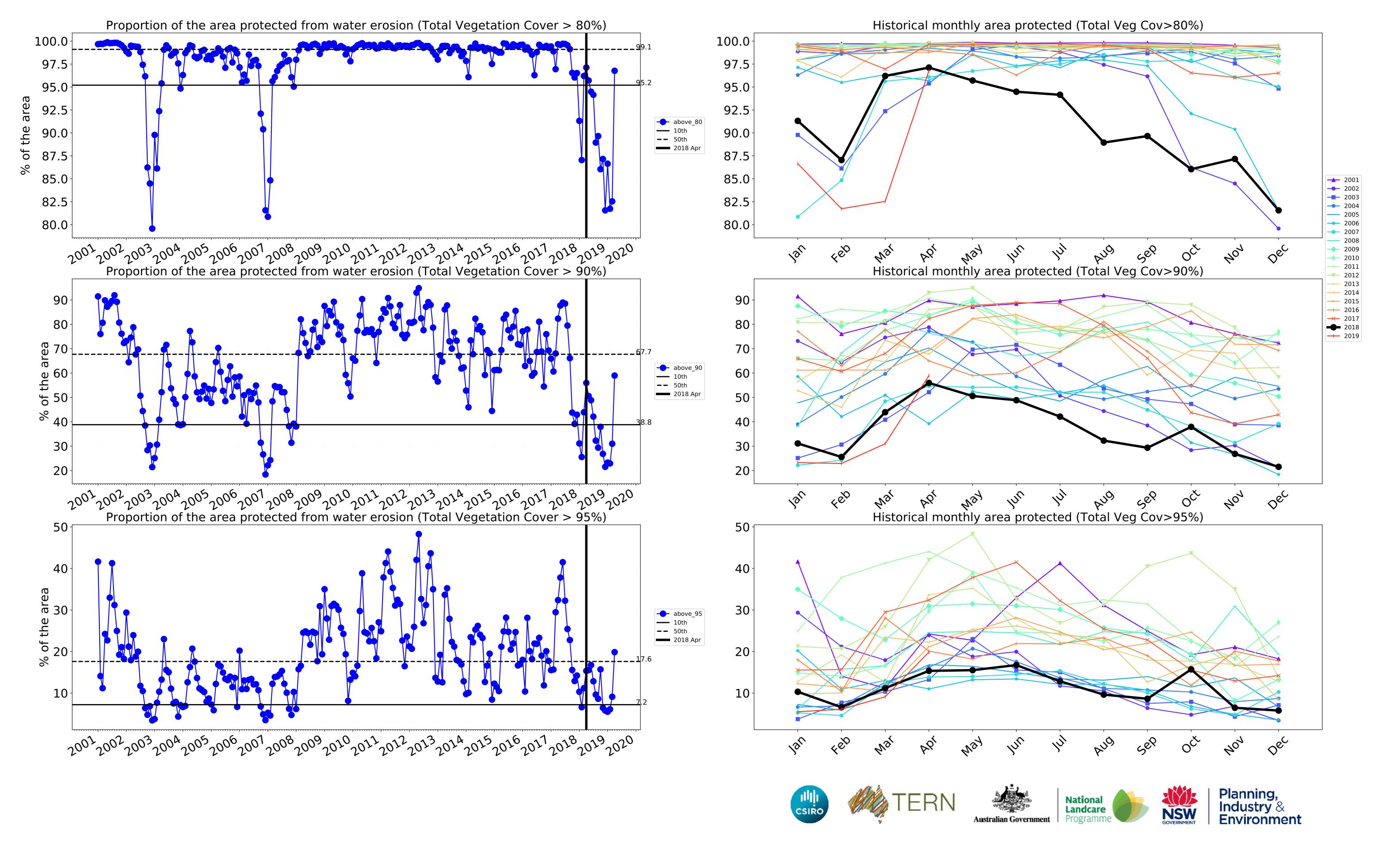




Grazing Woodland forest timeseries





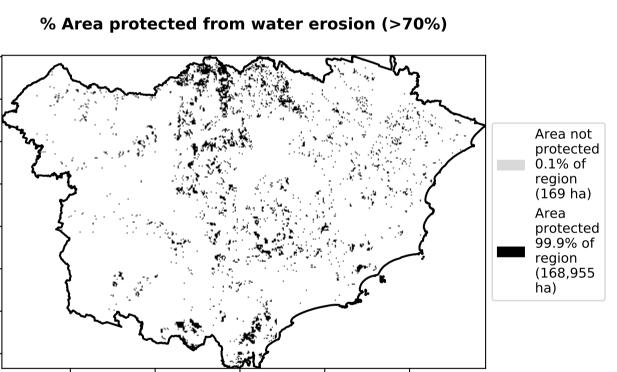


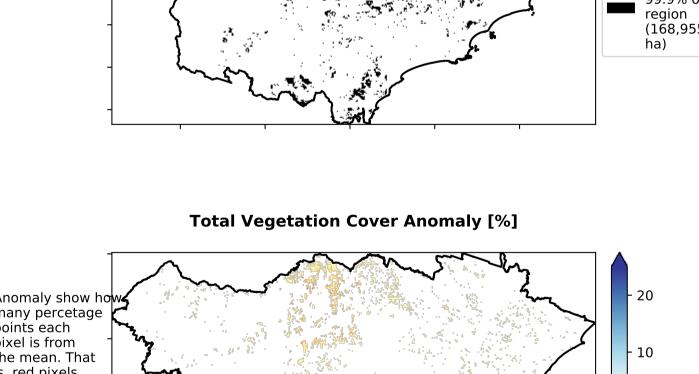
Grazing - Forest (non woodland)

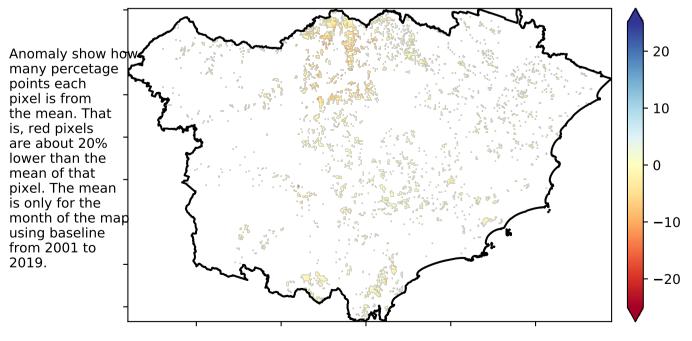
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Agriculture - Grazing - Non-woodland forest Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

Total Vegetation Cover [%]

100 Area (%) 60 40 20 -

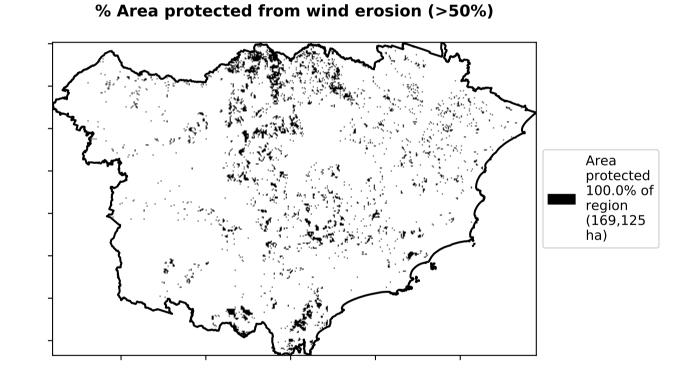


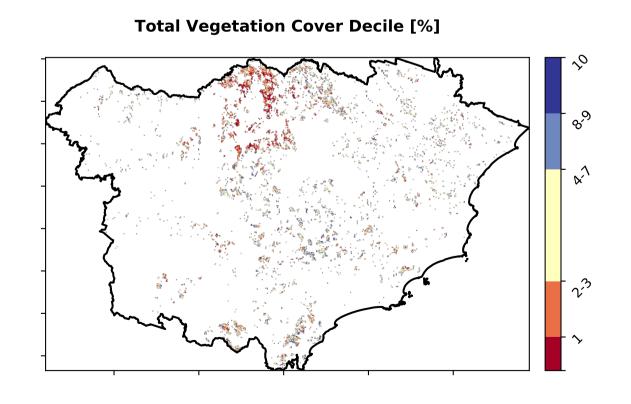




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseling. the map using baseline from 2001 to 2019.

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







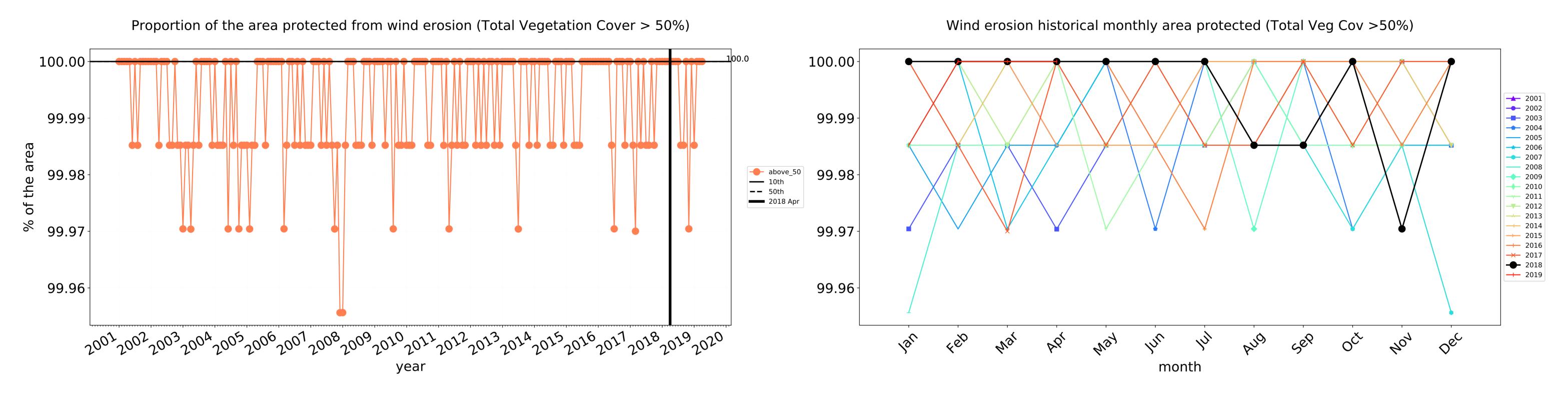


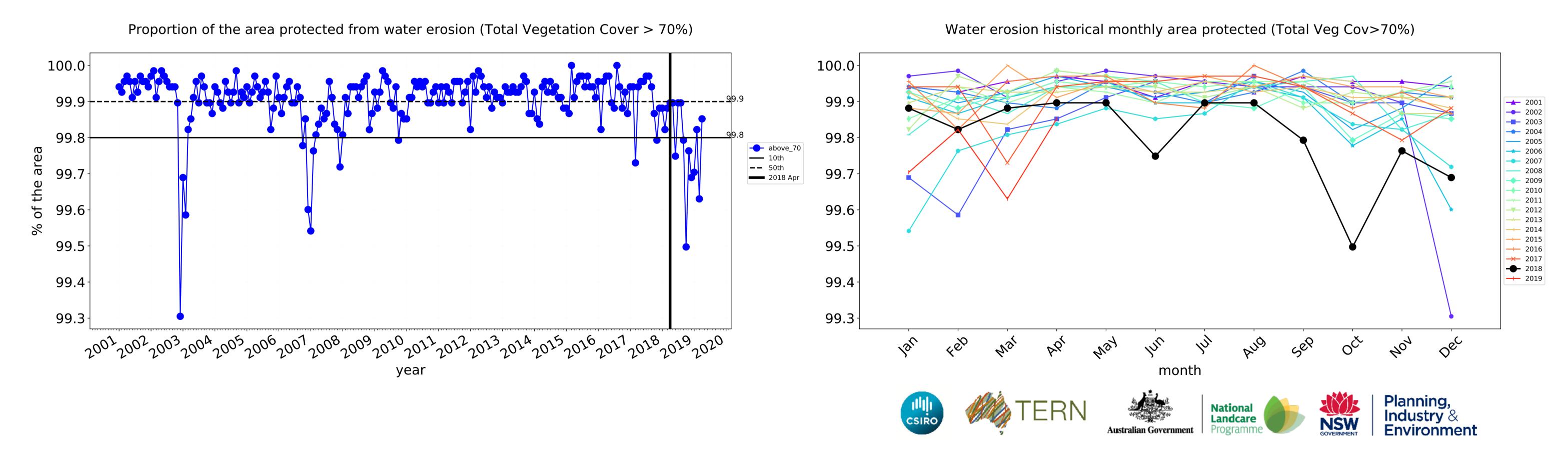


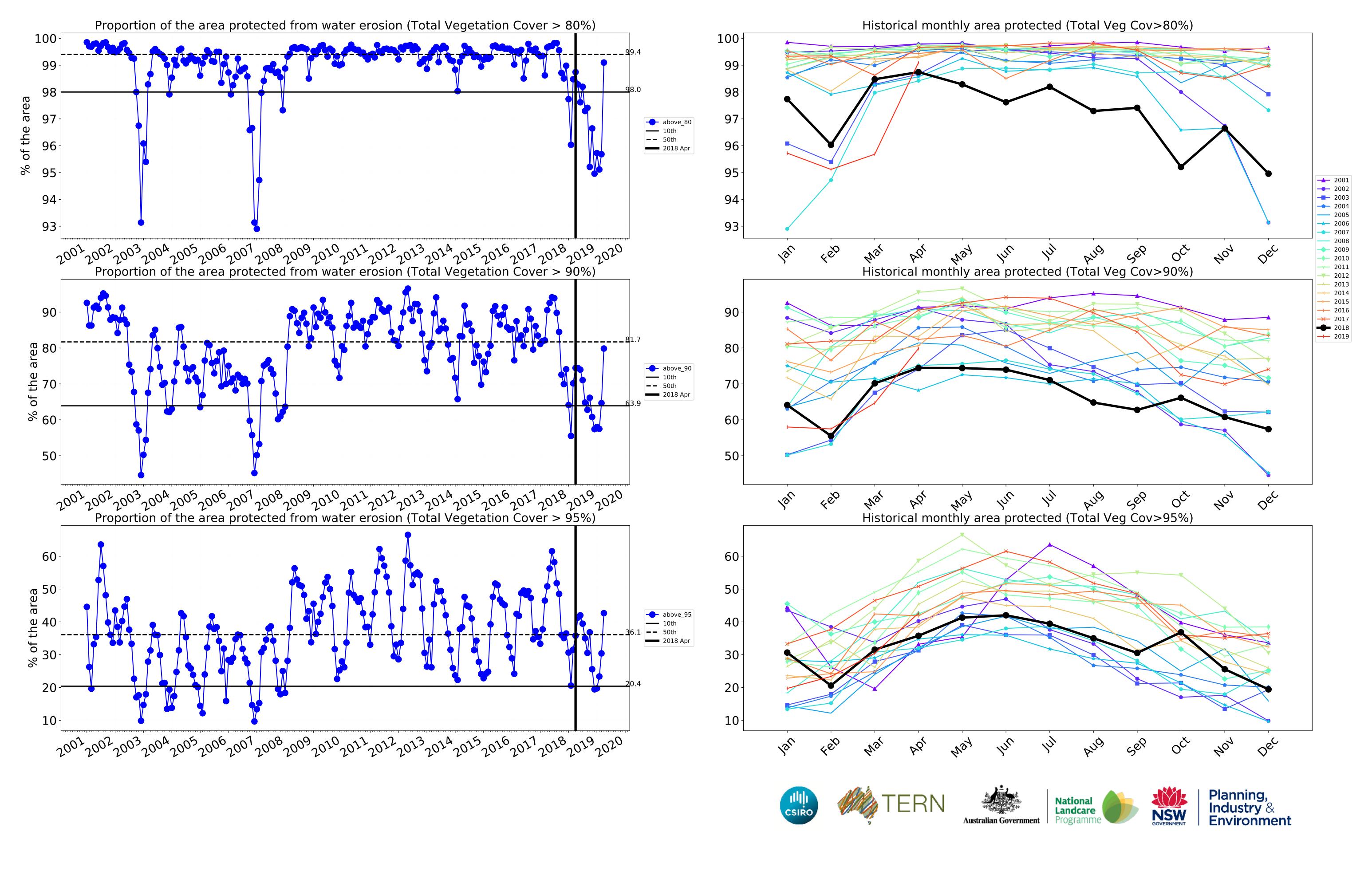






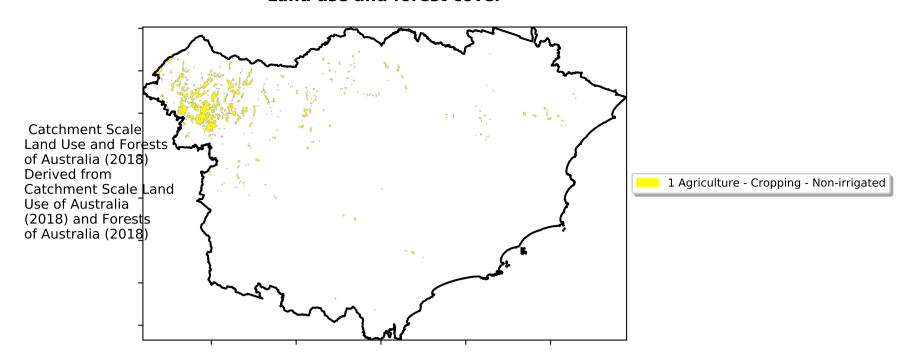




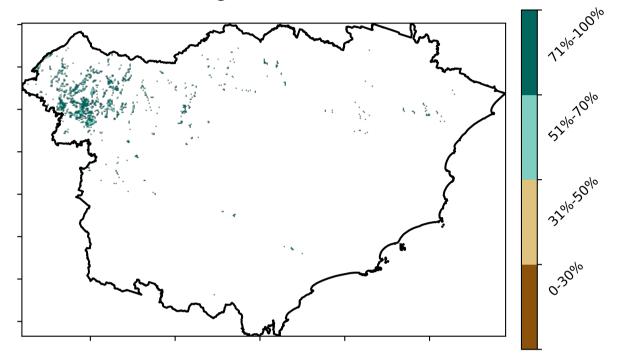


Cropping

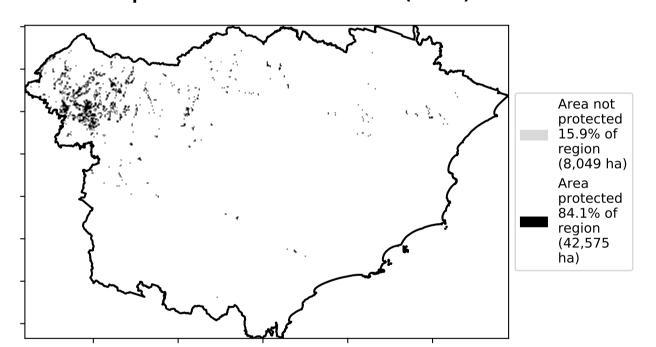
Land use and forest cover



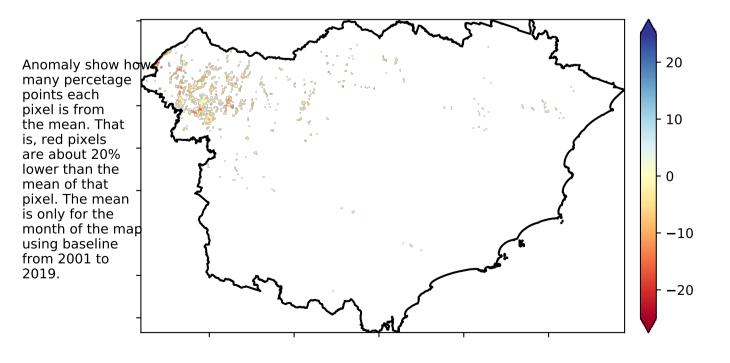
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

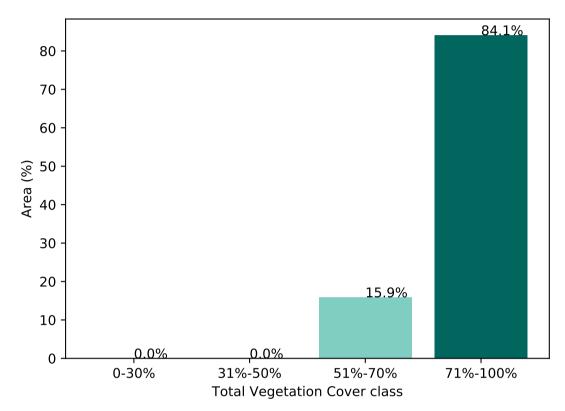


Total Vegetation Cover Anomaly [%]

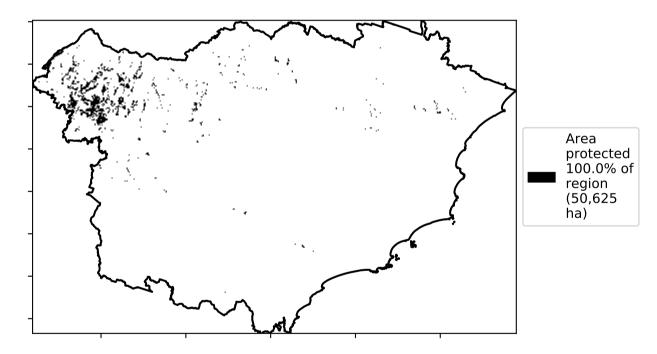


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

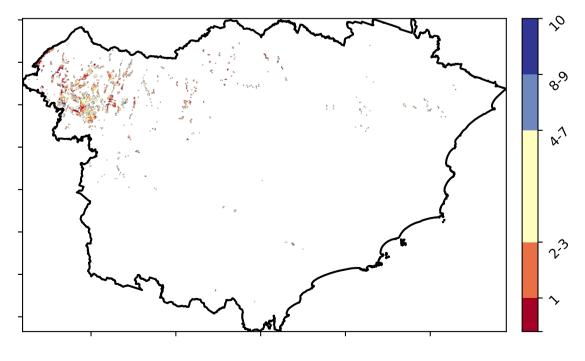
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







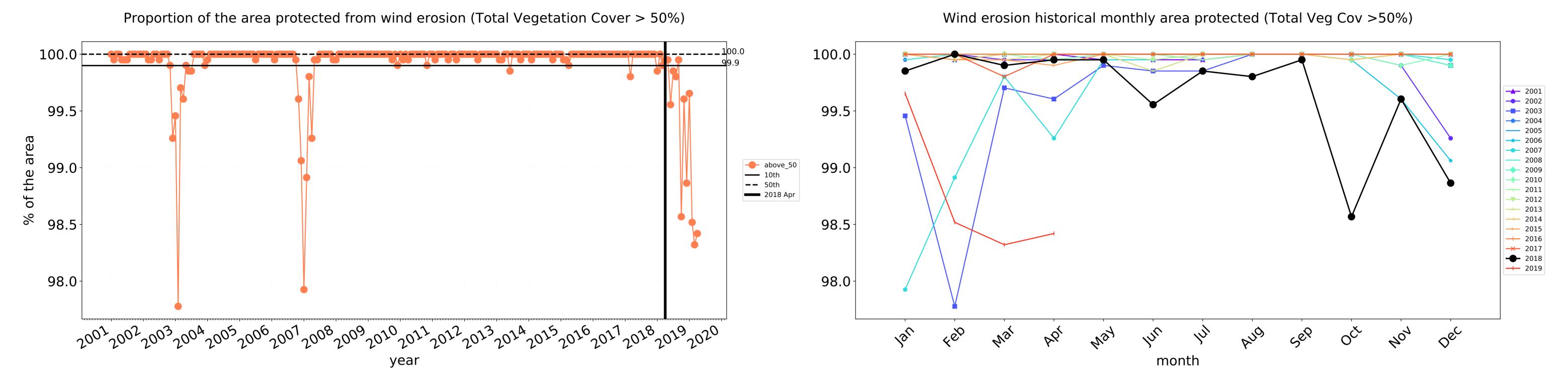


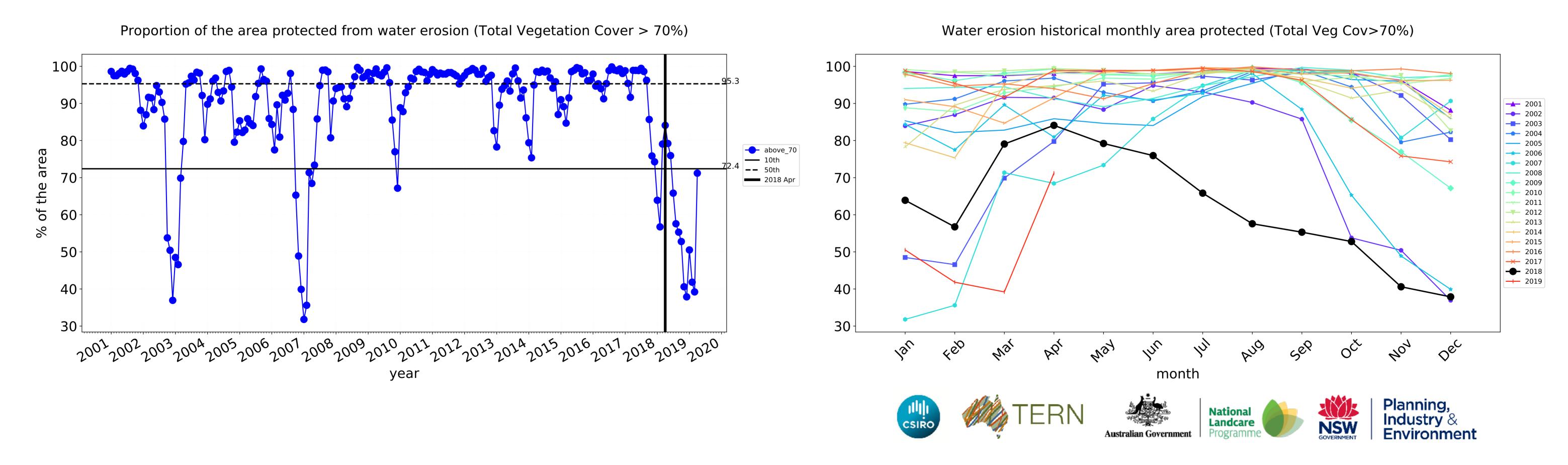


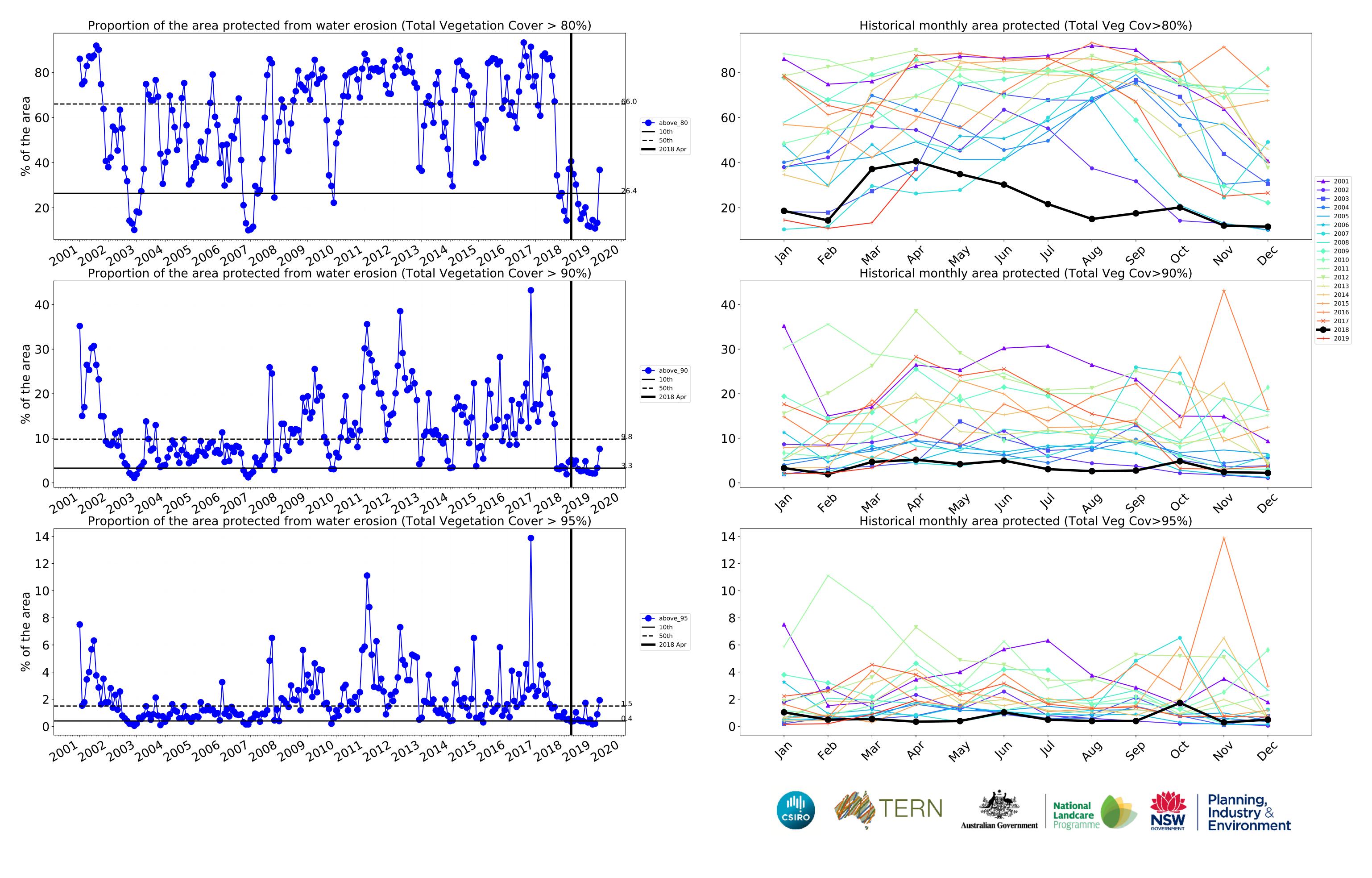




Cropping timeseries





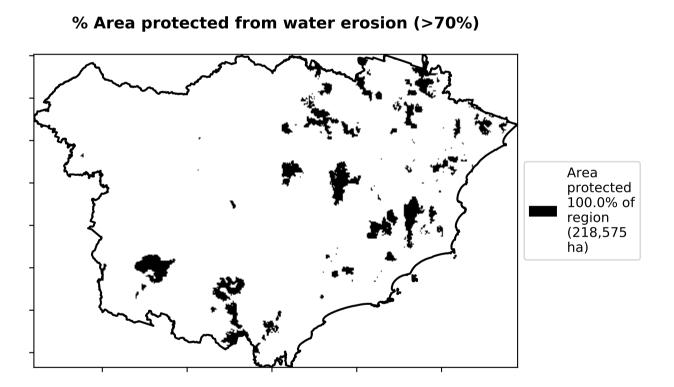


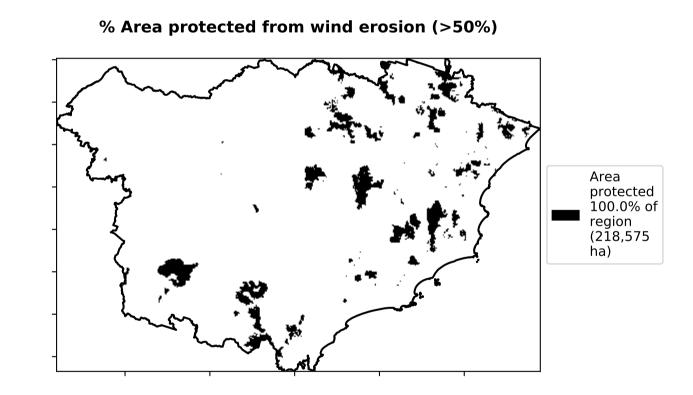
Production native forests and plantation forests

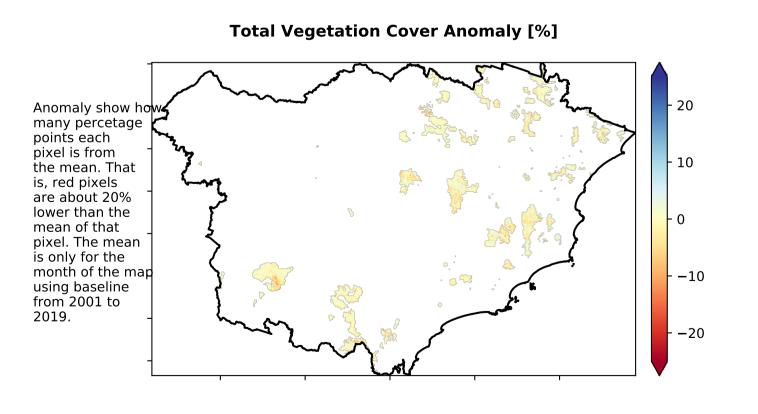
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) When the state of the stat

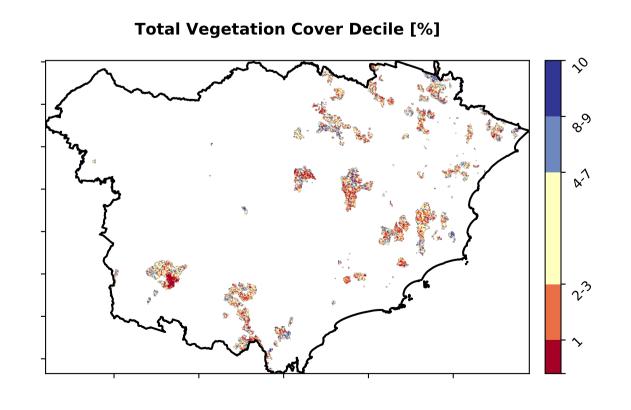
Total Vegetation Cover [%]

Proportion of vegetation cover class in area 100 - 100.0% 80 - 20 - 20 - 20 - 0.0% 0-30% 31%-50% 51%-70% 71%-100% Total Vegetation Cover class













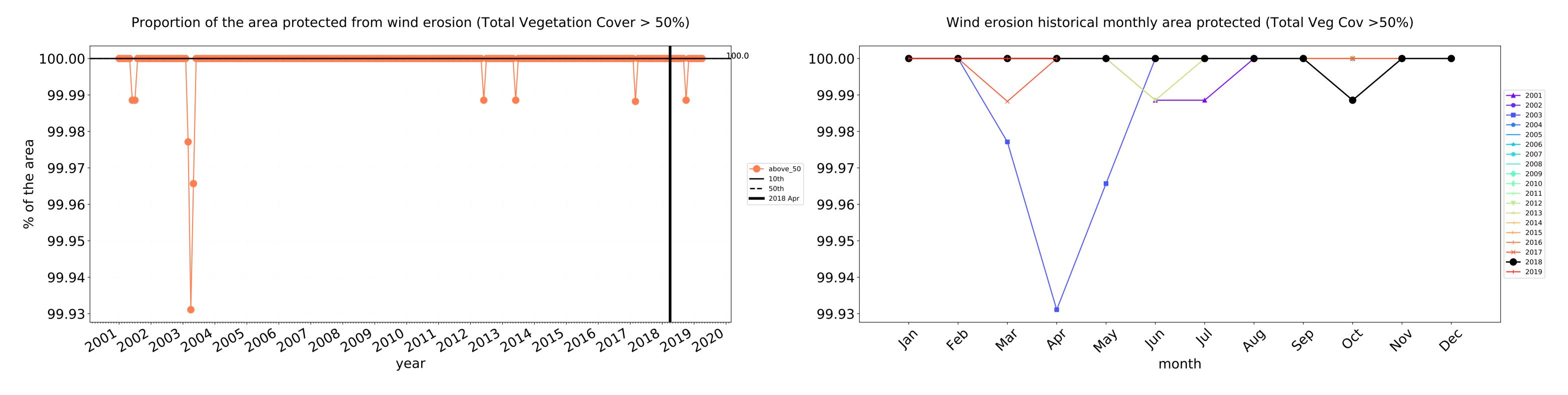


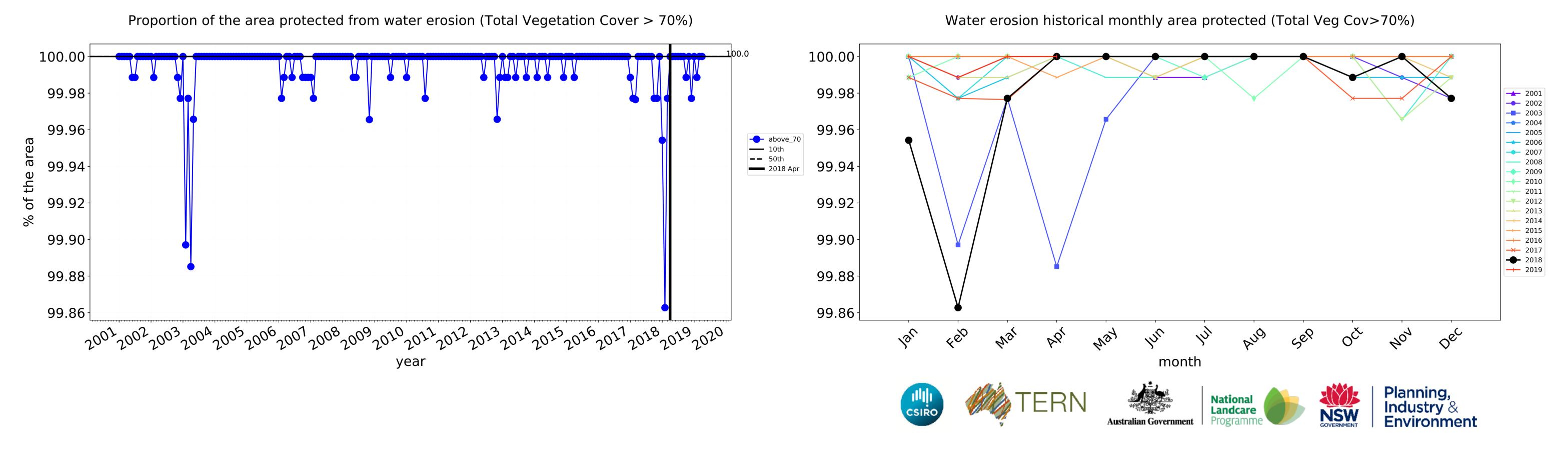


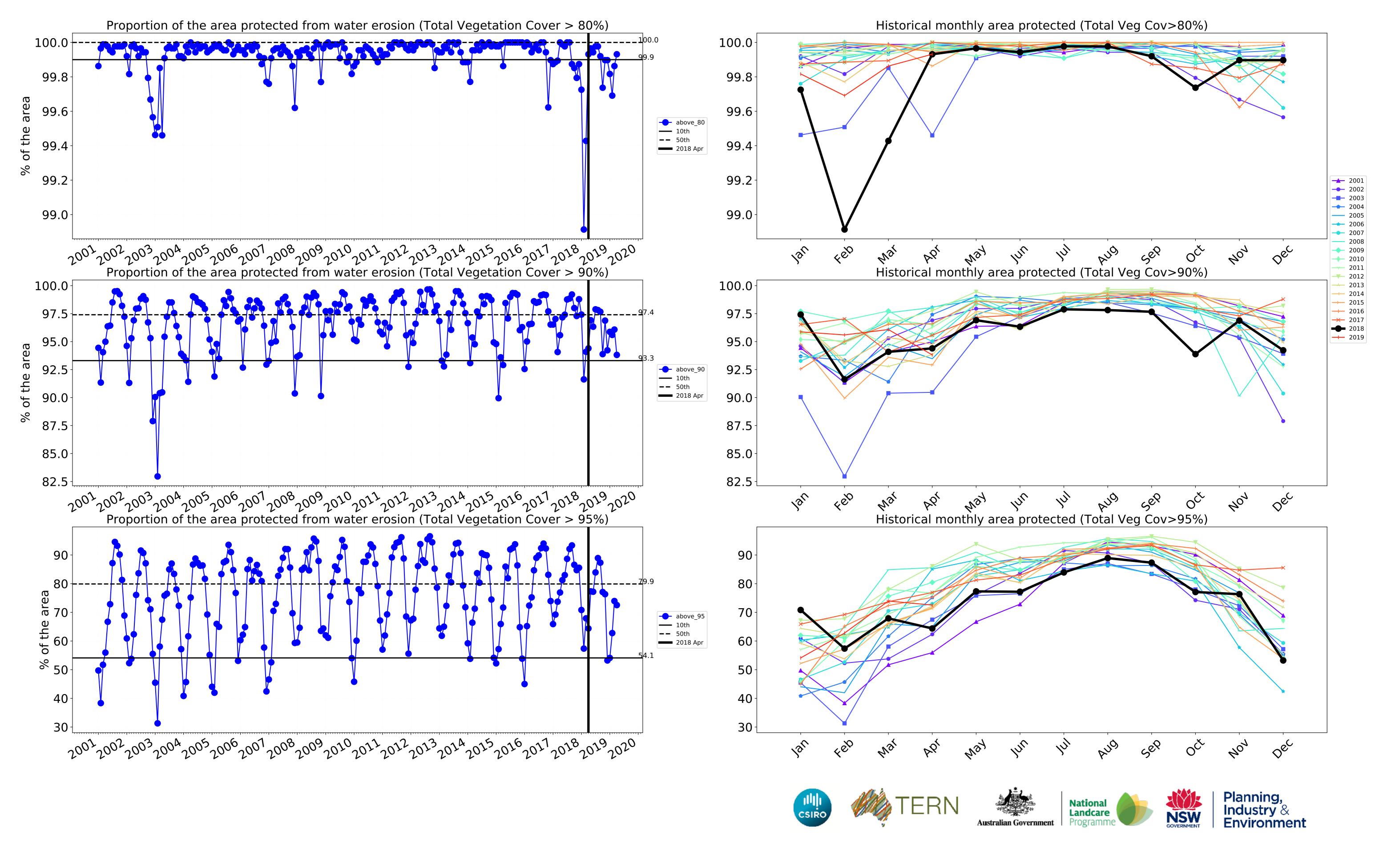




Production native forests and plantation forests timeseries







Hunter (3,237,200 ha and no data 63,225 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	3,237,200	99.9% 3,234,024	99.6% 3,223,972	98.1% 3,177,088	93.6% 3,030,386	69.4% 2,246,791	33.3% 1,079,300
Conservation and natural environments	1,239,700	99.9% 1,238,575	99.8% 1,237,800	99.7% 1,235,925	99.2% 1,230,100	88.7% 1,099,825	51.0% 632,325
Conservation and natural environments non forest	29,150	96.4% 28,100	94.3% 27,475	91.3% 26,600	86.8% 25,300	68.8% 20,050	30.4% 8,875
Conservation and natural environments Woodland forest	138,825	100.0% 138,825	100.0% 138,800	99.9% 138,675	99.1% 137,575	84.1% 116,700	36.2% 50,250
Conservation and natural environments Forest (non woodland)	1,071,725	100.0% 1,071,650	100.0% 1,071,525	99.9% 1,070,650	99.6% 1,067,225	89.9% 963,075	53.5% 573,200
Agriculture	1,580,450	100.0% 1,580,425	100.0% 1,580,200	99.0% 1,564,050	92.4% 1,460,150	56.0% 884,950	18.6% 293,200
Grazing	1,502,450	100.0% 1,502,425	100.0% 1,502,225	99.5% 1,494,300	94.4% 1,417,825	58.4% 877,750	19.5% 292,550
Grazing non forest	1,212,750	100.0% 1,212,725	100.0% 1,212,525	99.4% 1,204,975	93.5% 1,133,725	56.4% 684,400	17.6% 213,550
Grazing Woodland forest	120,575	100.0% 120,575	100.0% 120,575	99.8% 120,375	97.1% 117,100	55.9% 67,450	15.3% 18,500
Grazing - Forest (non woodland)	169,125	100.0% 169,125	100.0% 169,125	99.9% 168,950	98.7% 167,000	74.4% 125,900	35.8% 60,500
Cropping	50,625	100.0% 50,625	100.0% 50,600	84.1% 42,575	40.6% 20,550	5.2% 2,625	0.3% 175
Production native forests and plantation forests	218,575	100.0% 218,575	100.0% 218,575	100.0% 218,575	99.9% 218,425	94.4% 206,325	64.4% 140,700











