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: September 2019

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







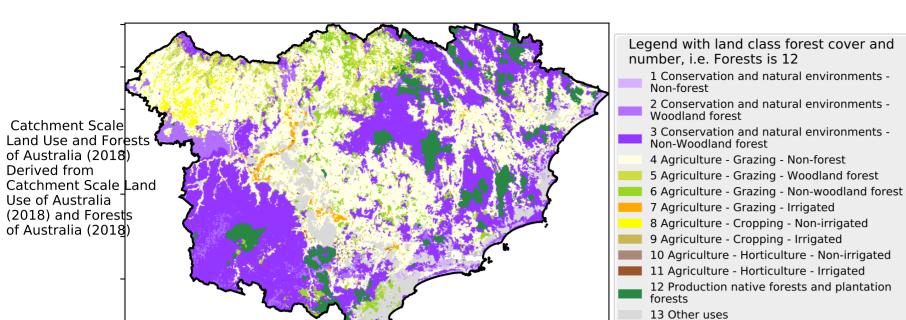




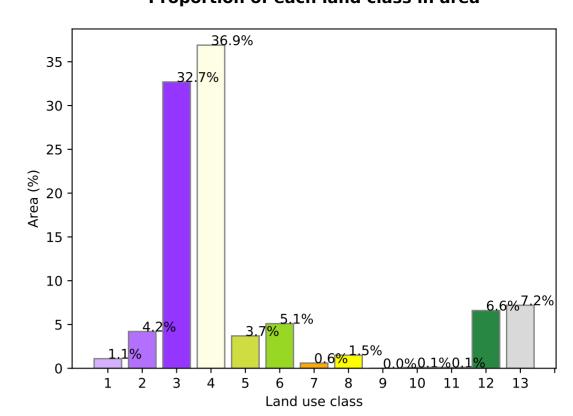


Vegetation Cover Sep 2019

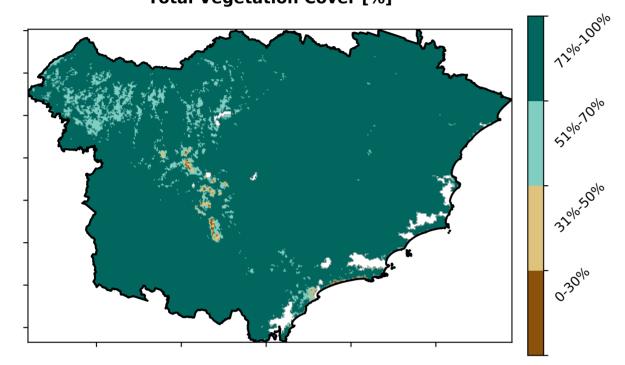
Land use and forest cover



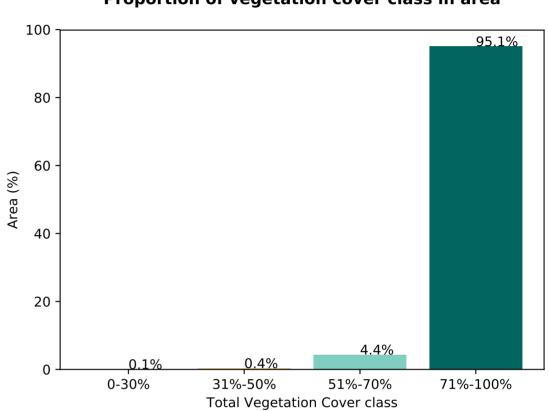
Proportion of each land class in area



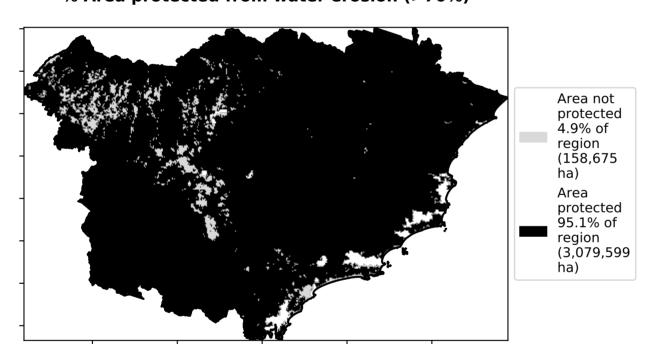
Total Vegetation Cover [%]



Proportion of vegetation cover class in area



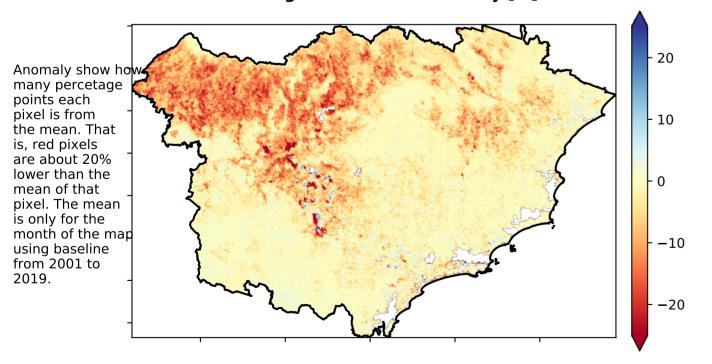
% Area protected from water erosion (>70%)

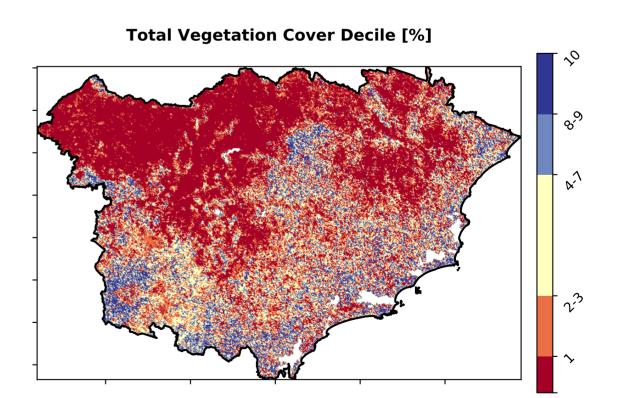


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]







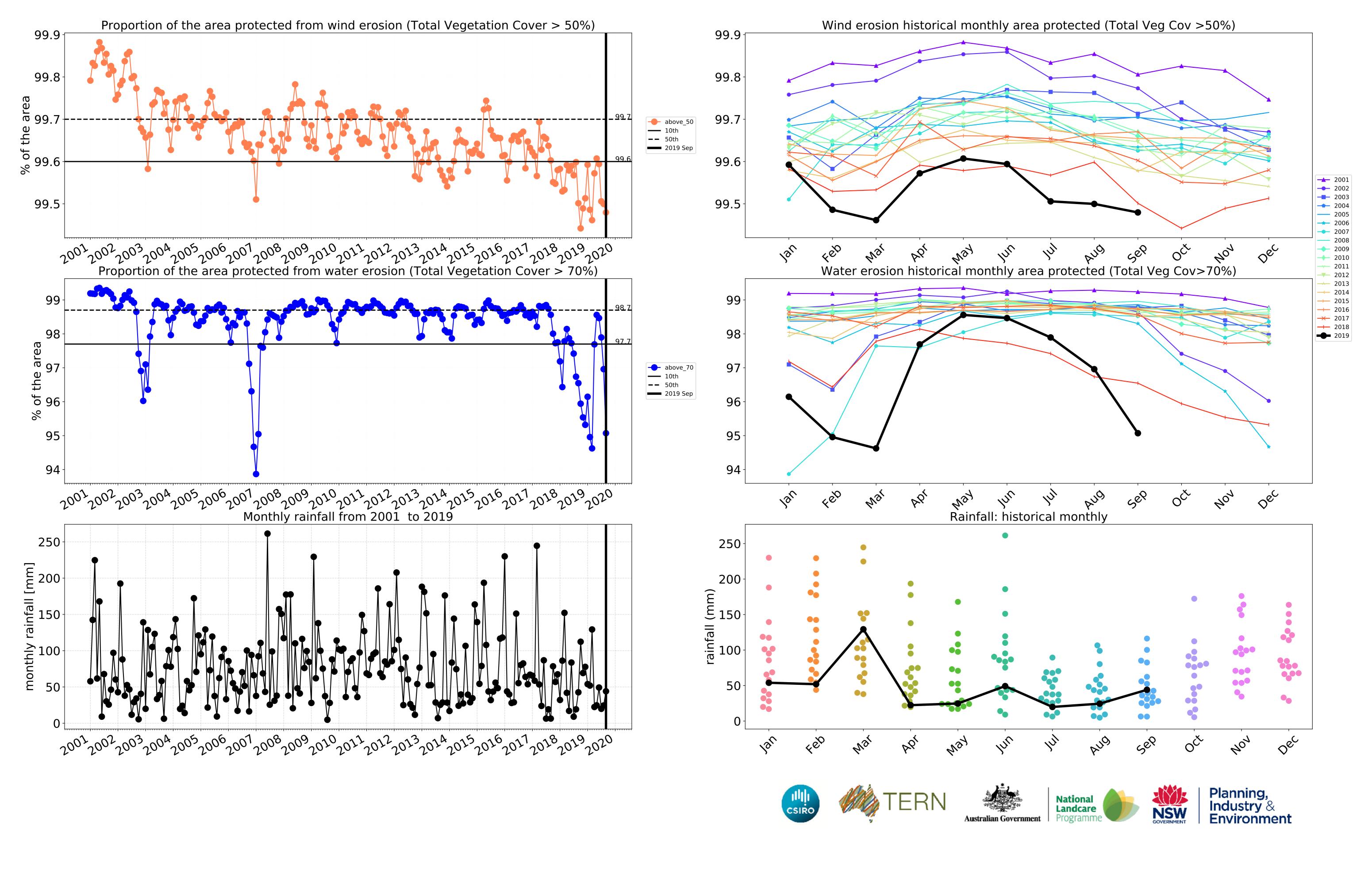


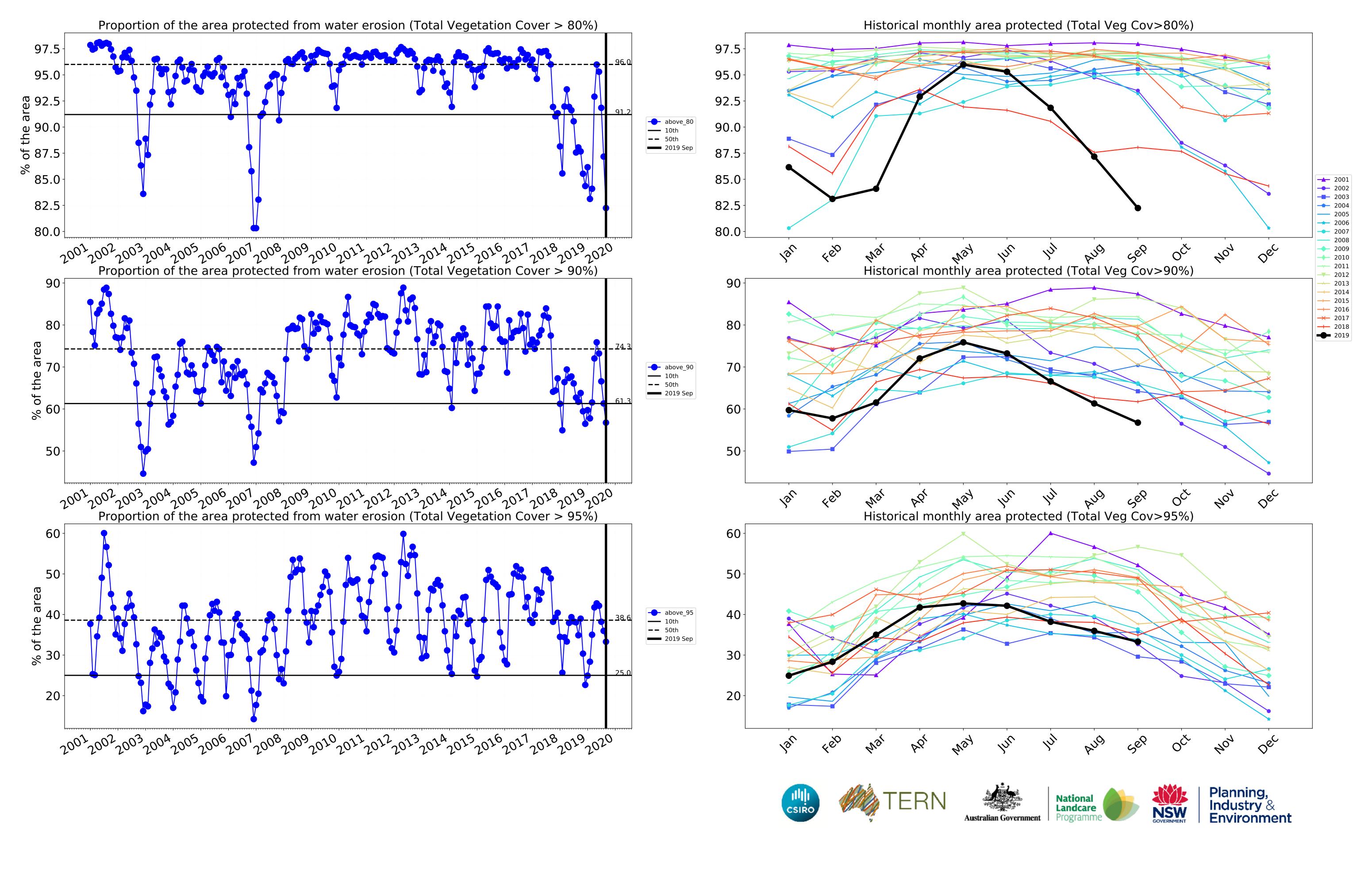




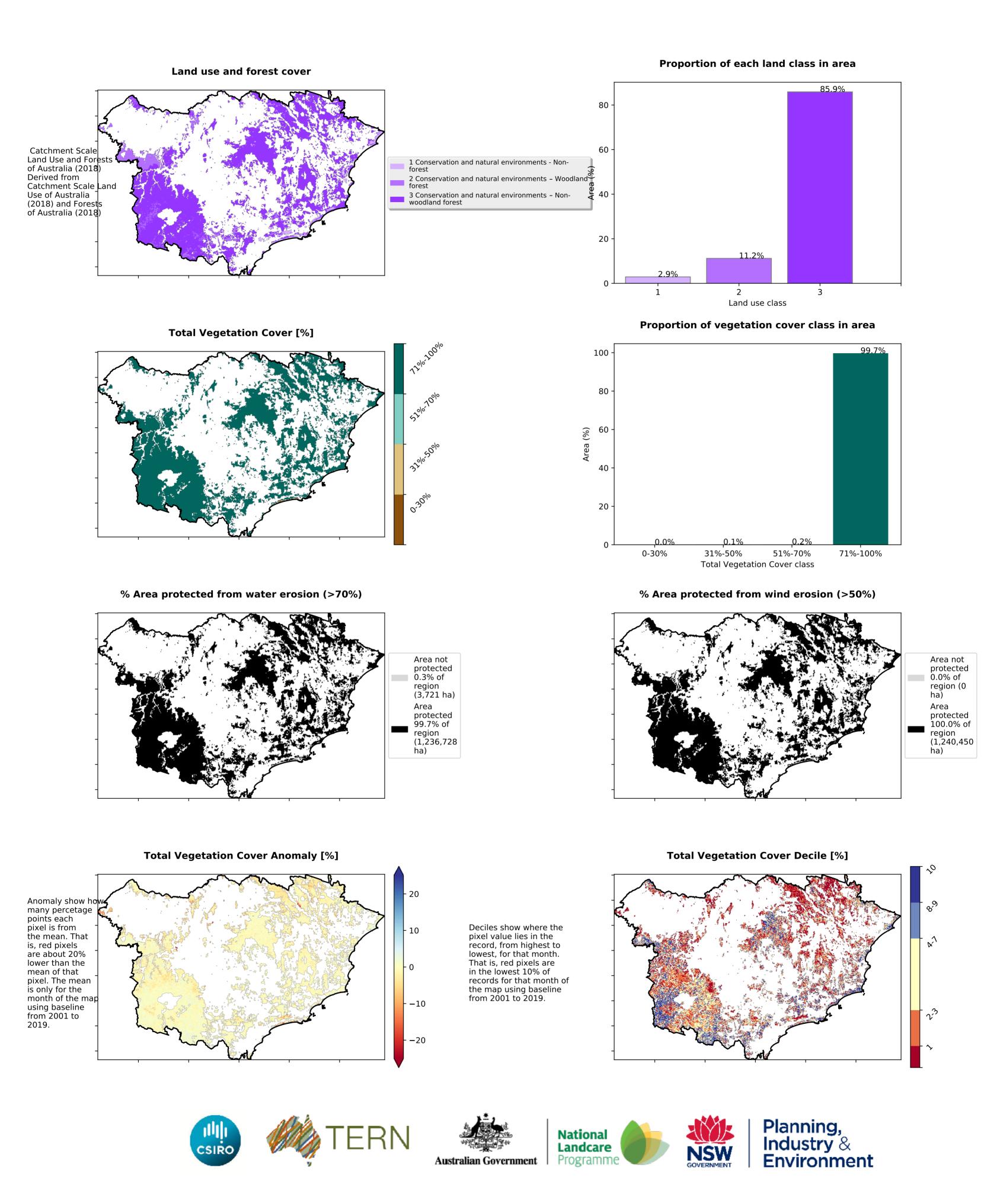




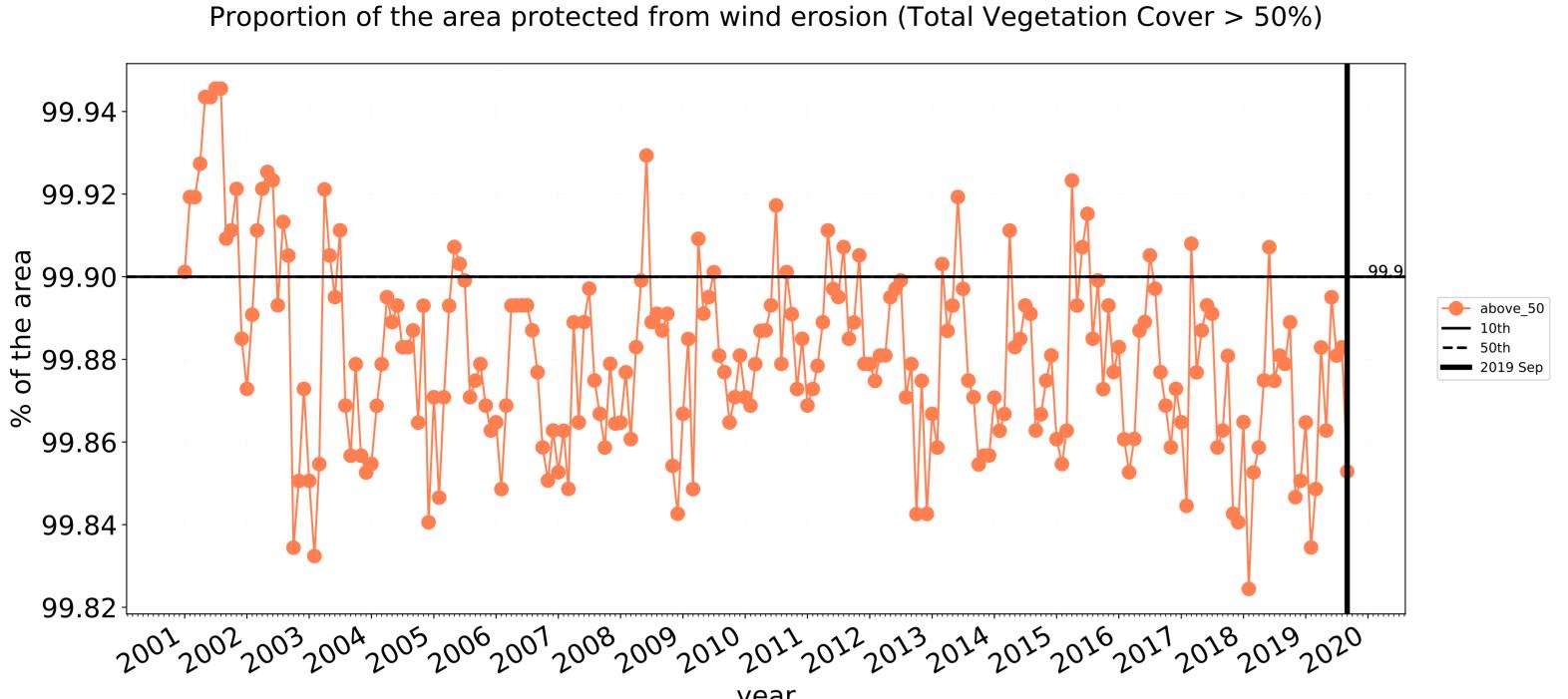


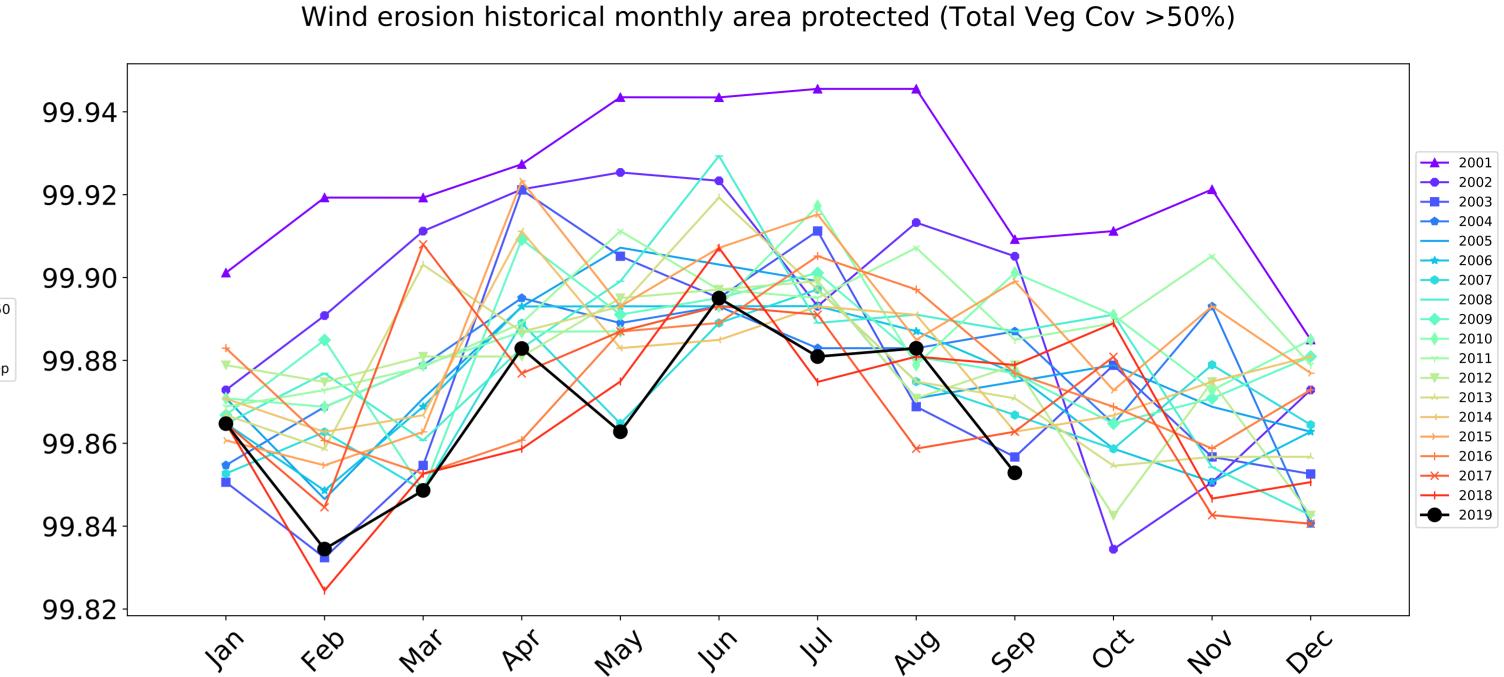


Conservation and natural environments

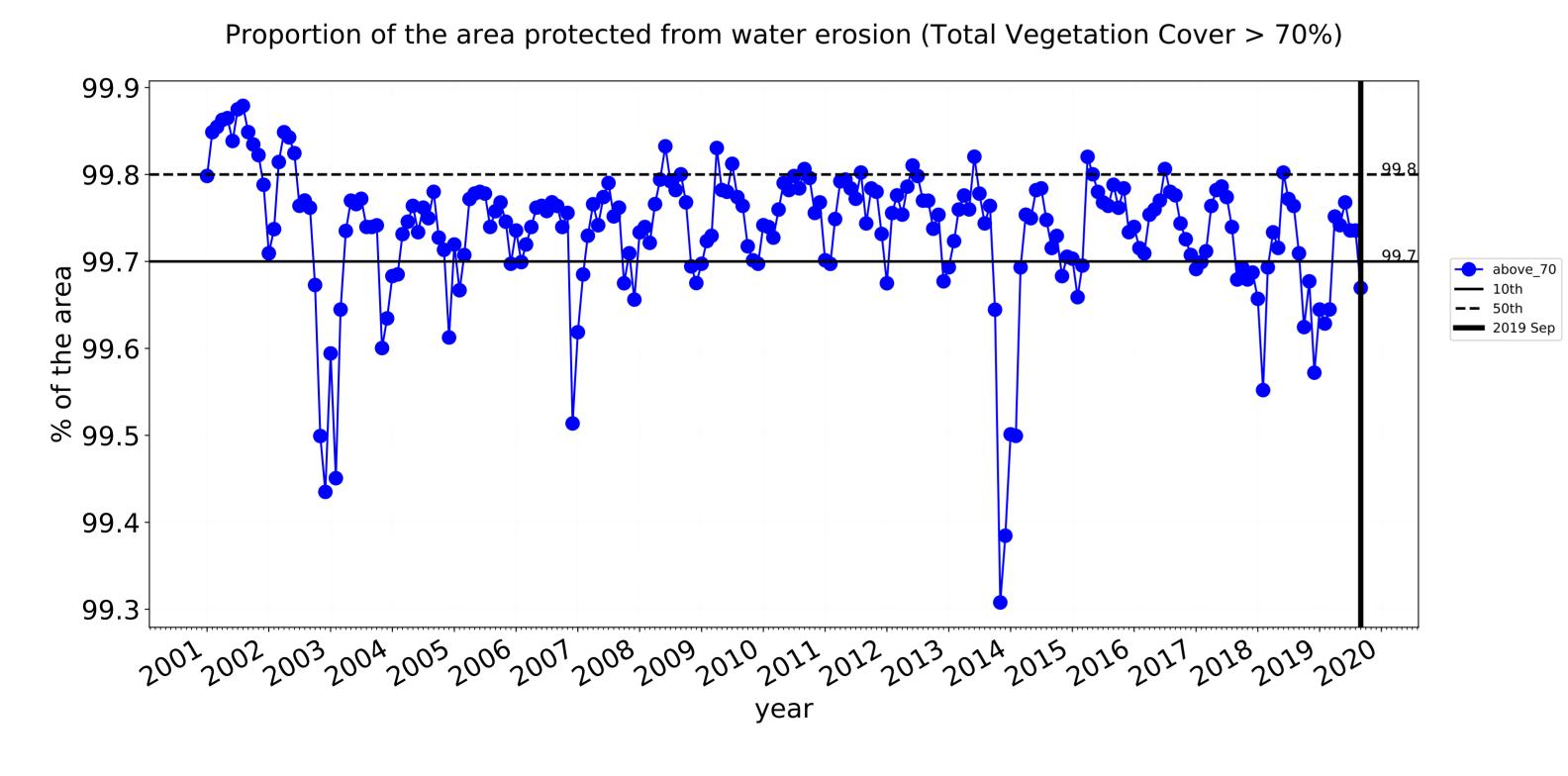


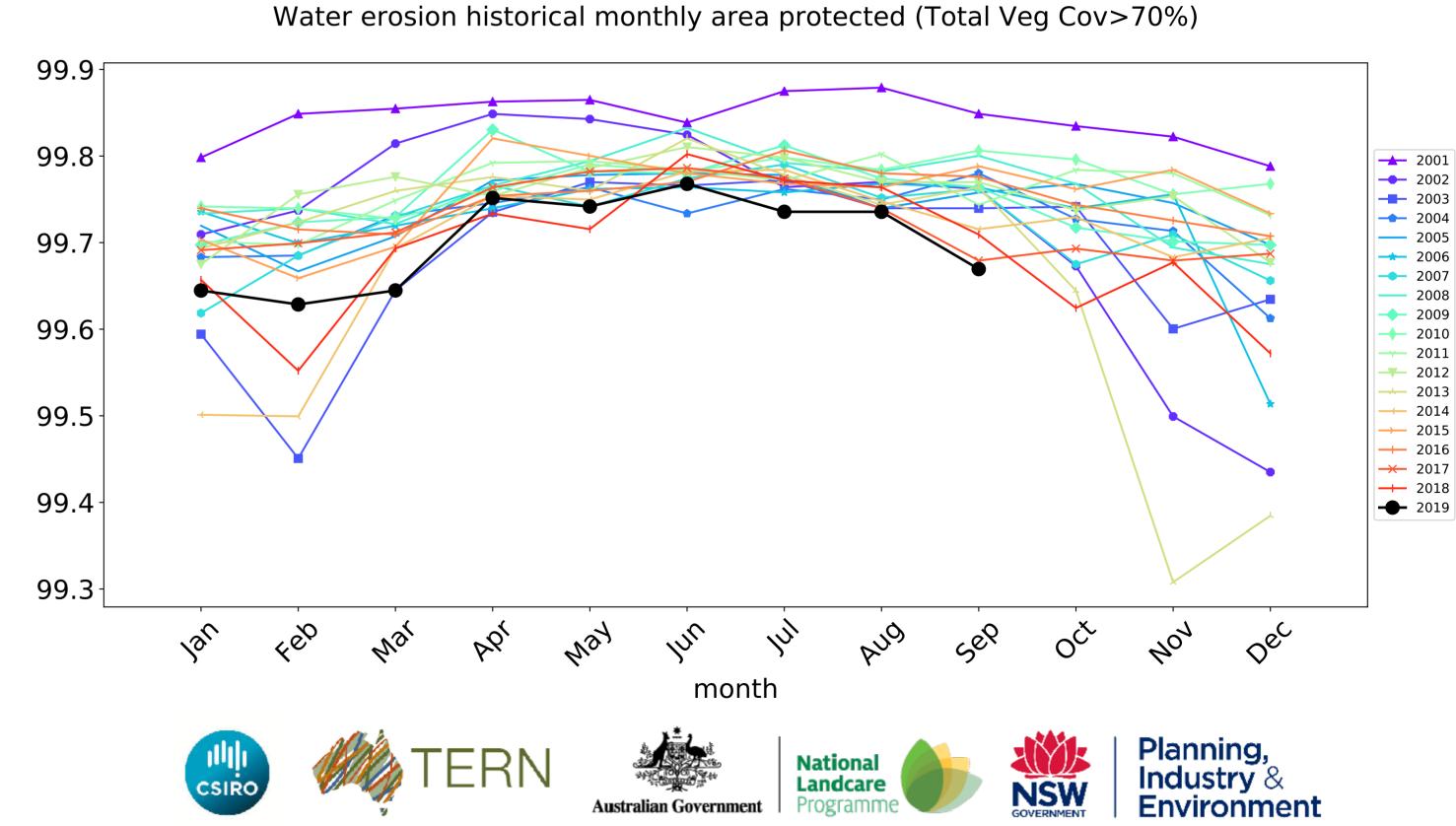
Conservation and natural environments timeseries

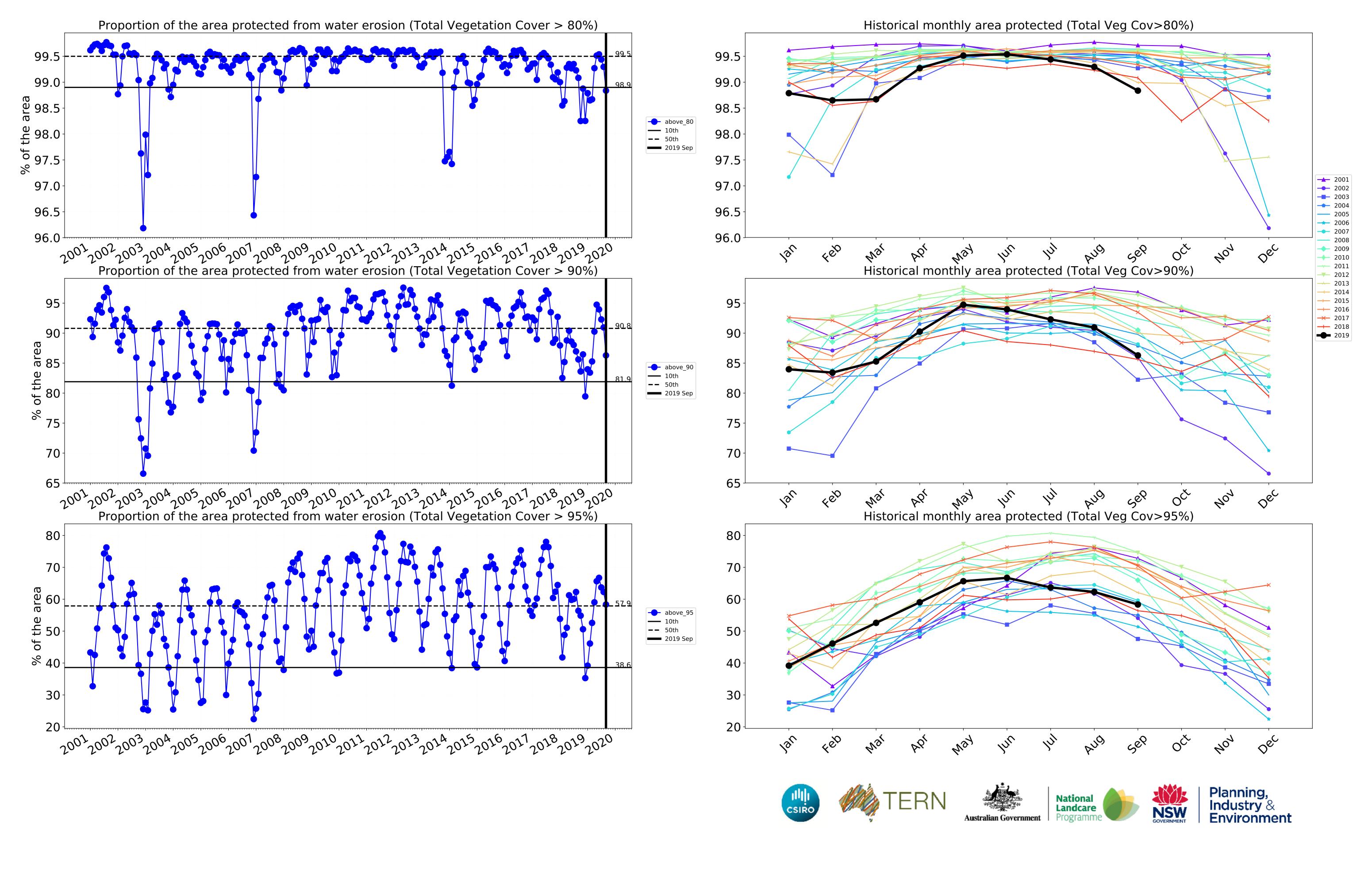




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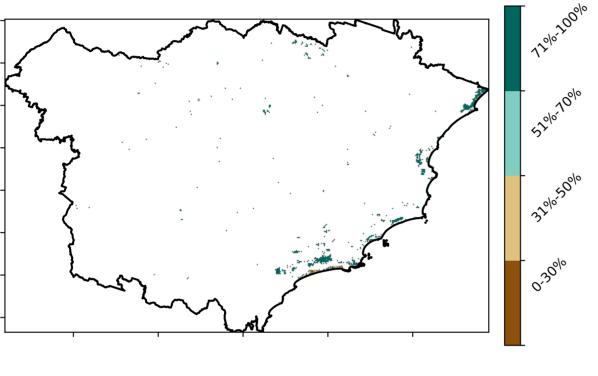


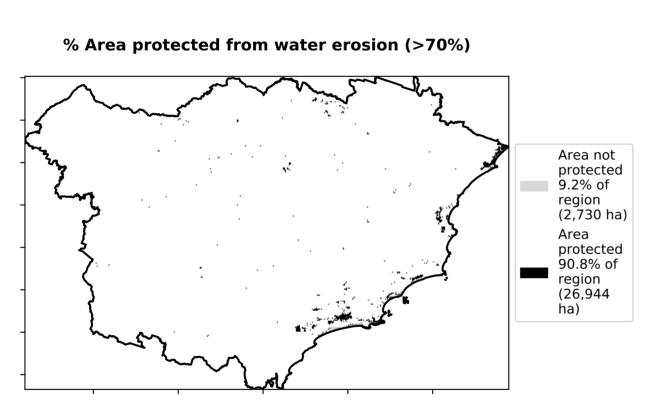


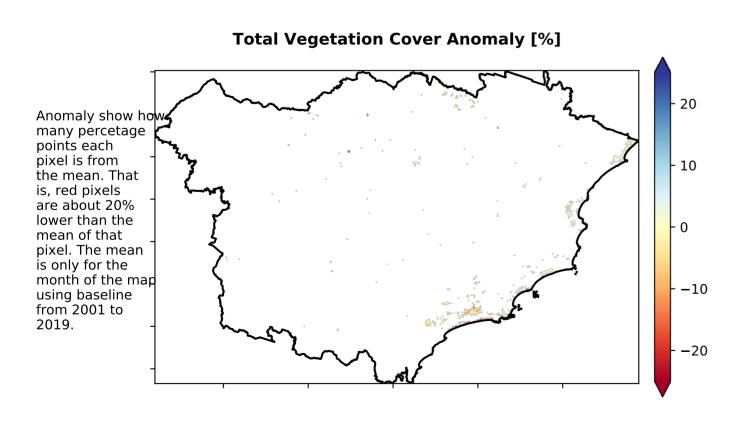
Conservation and natural environments non forest

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

Total Vegetation Cover [%]

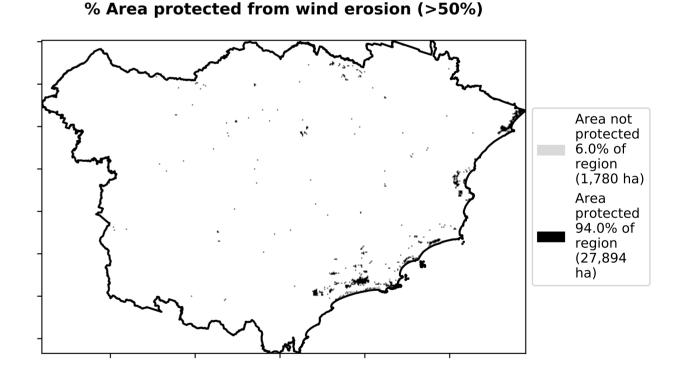


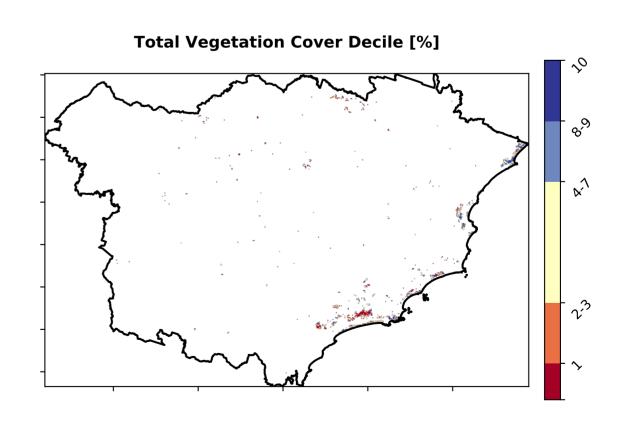




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Proportion of vegetation cover class in area 90.8% 80 -60 Area (%) 05 20 3.7% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**









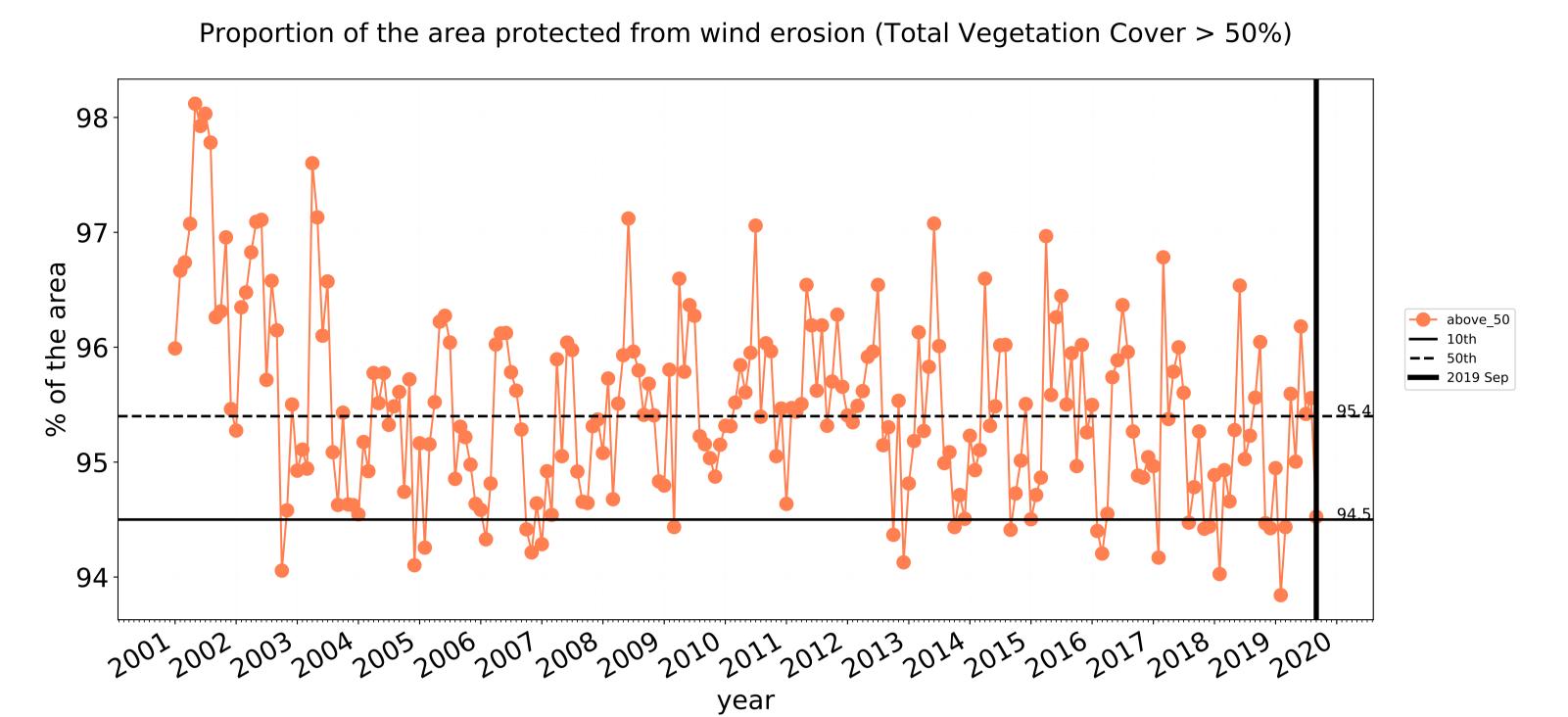




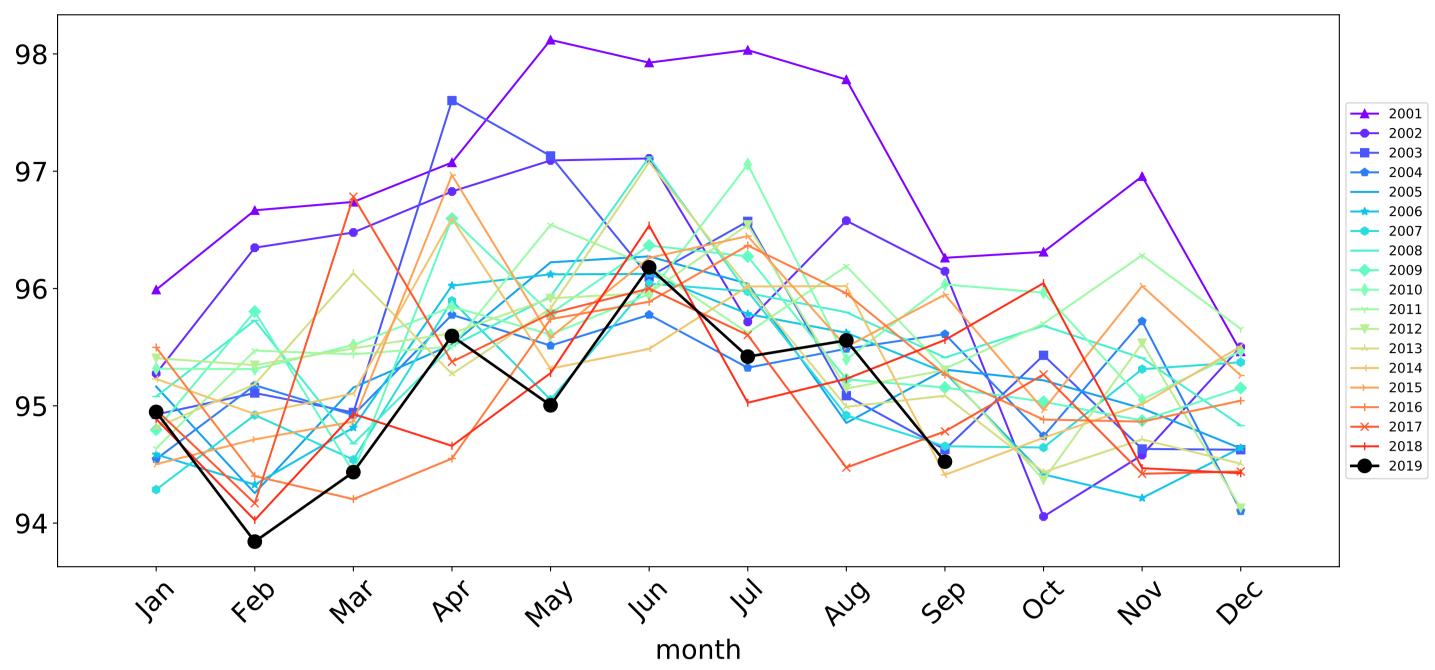


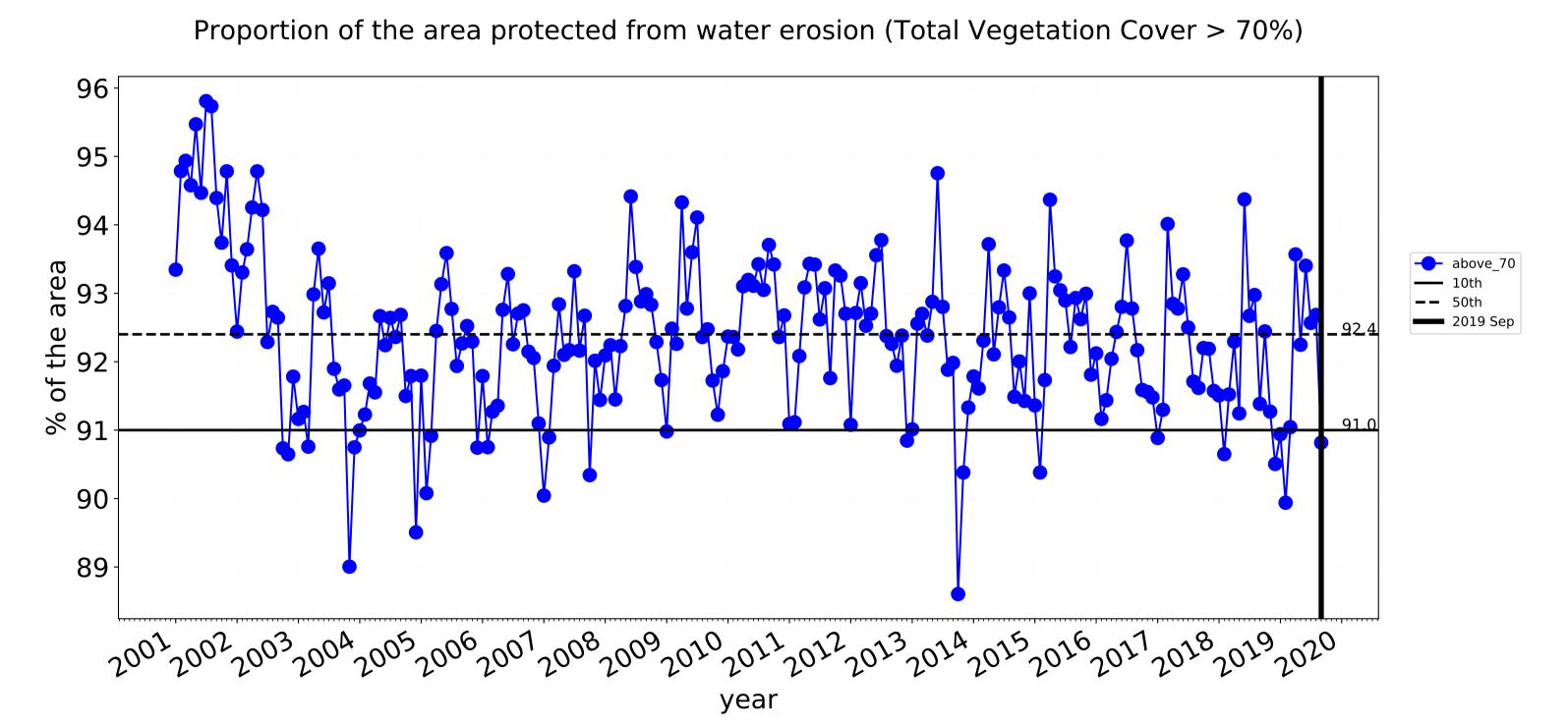


Conservation and natural environments non forest timeseries

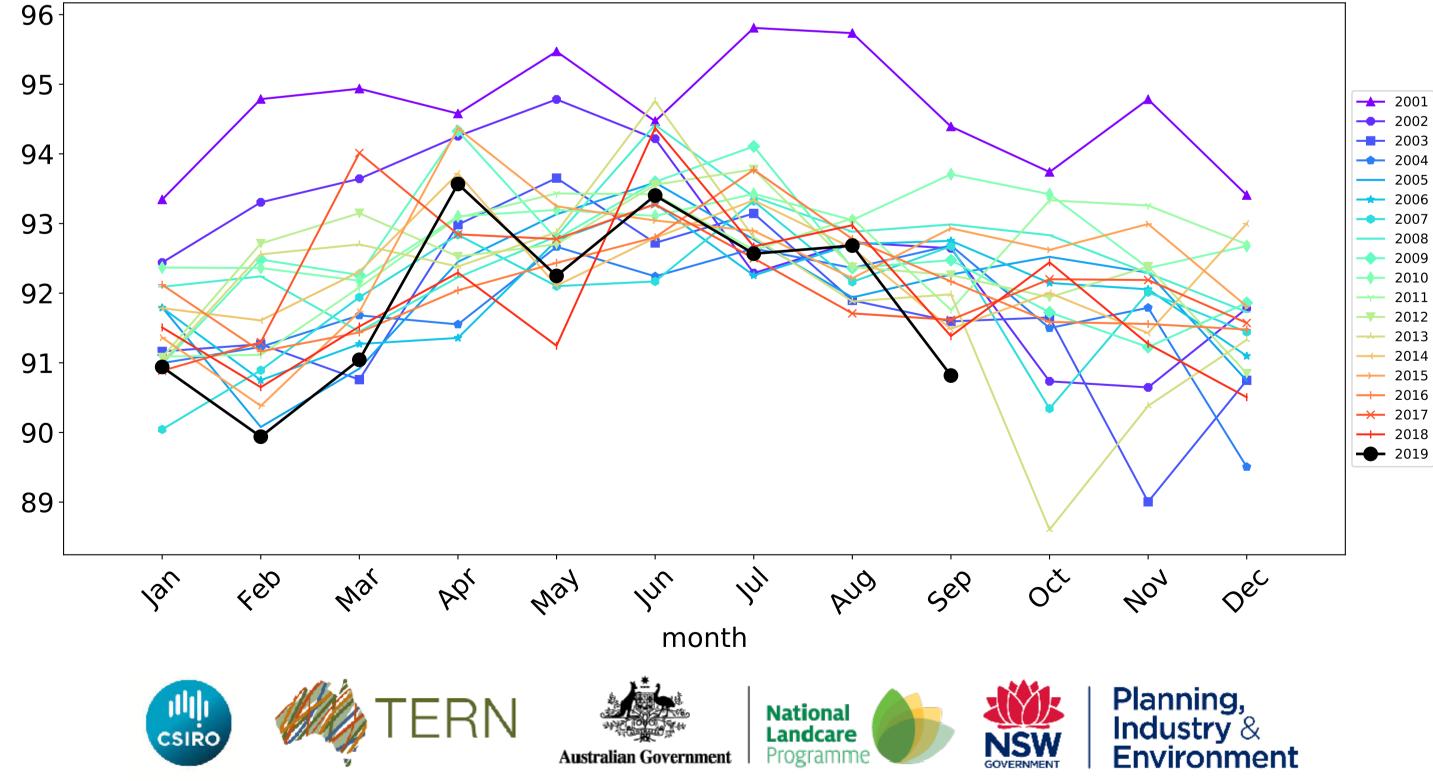


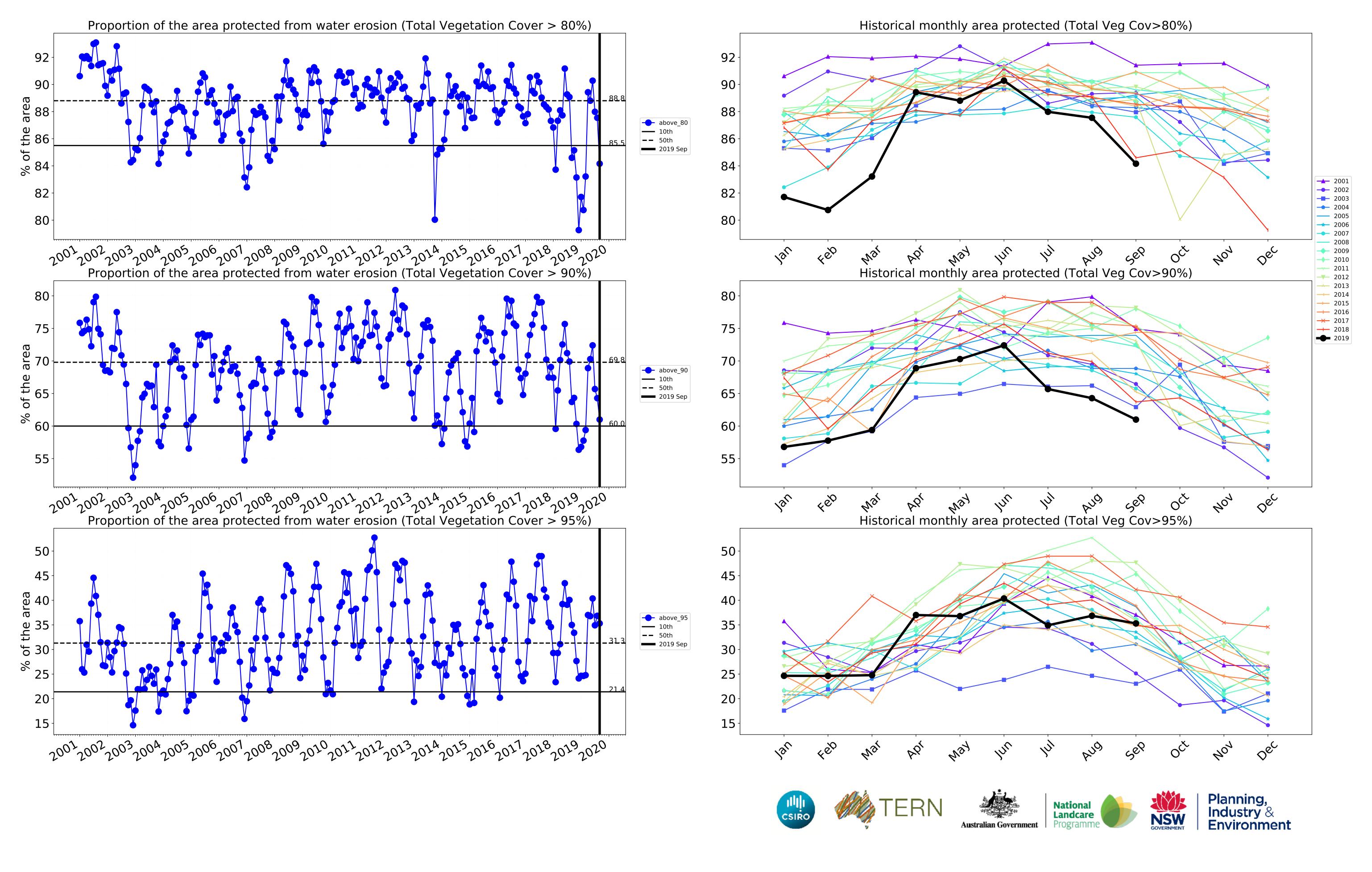




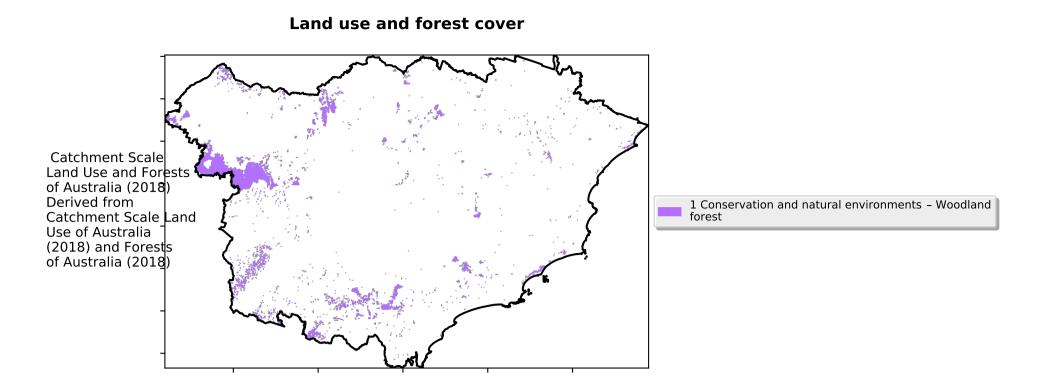


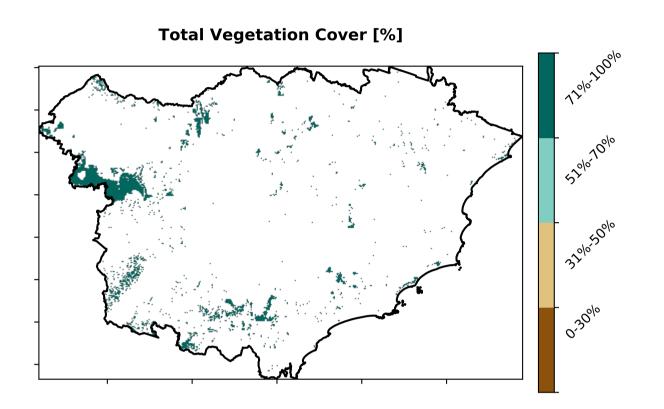


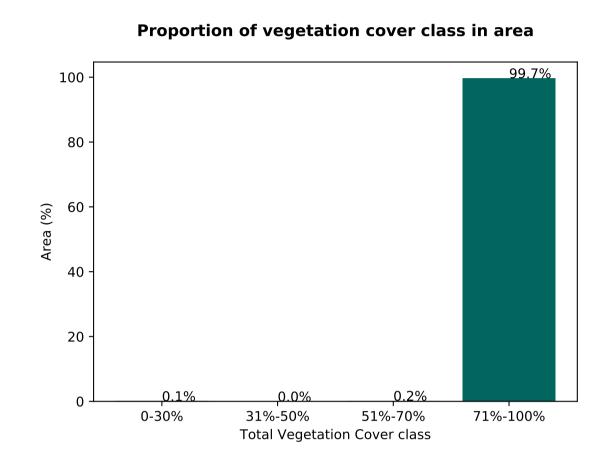


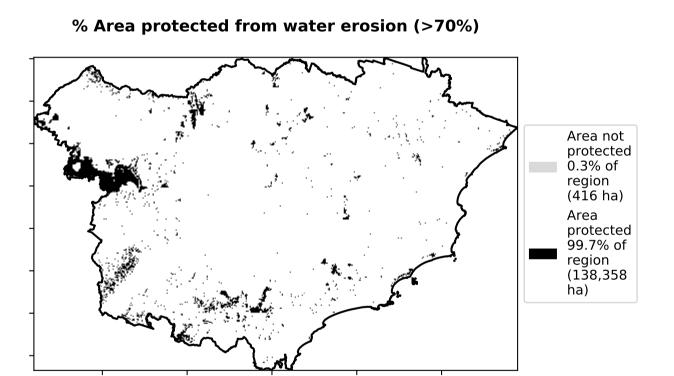


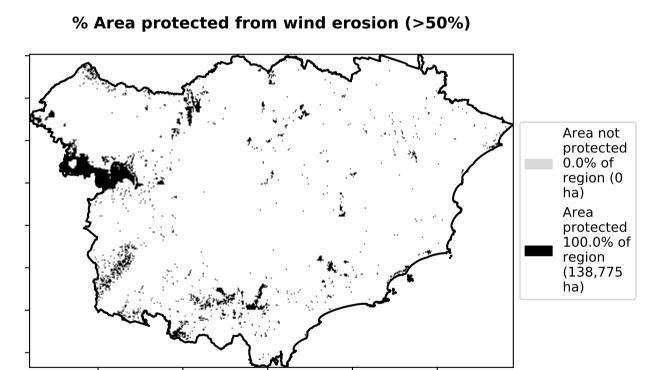
Conservation and natural environments Woodland forest

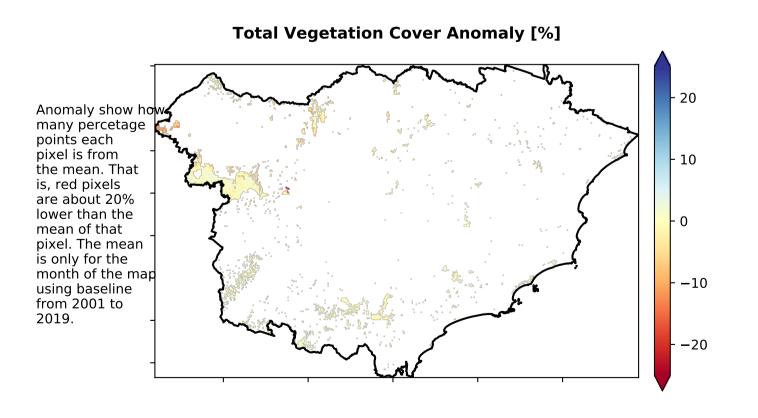


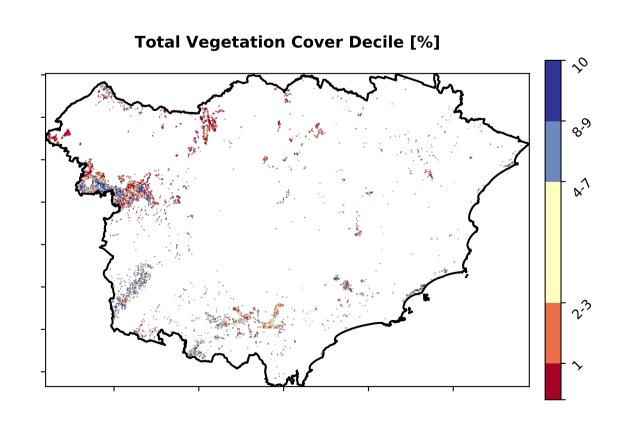
















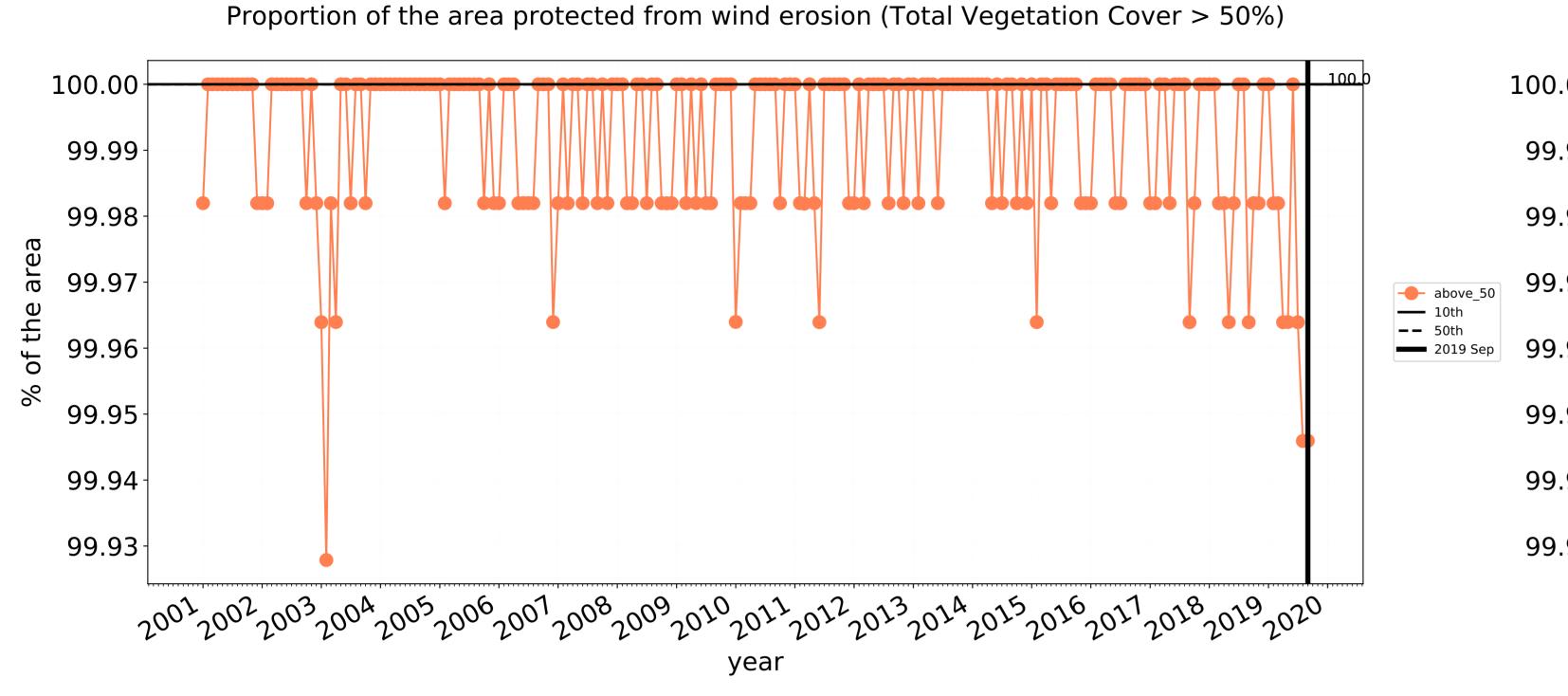


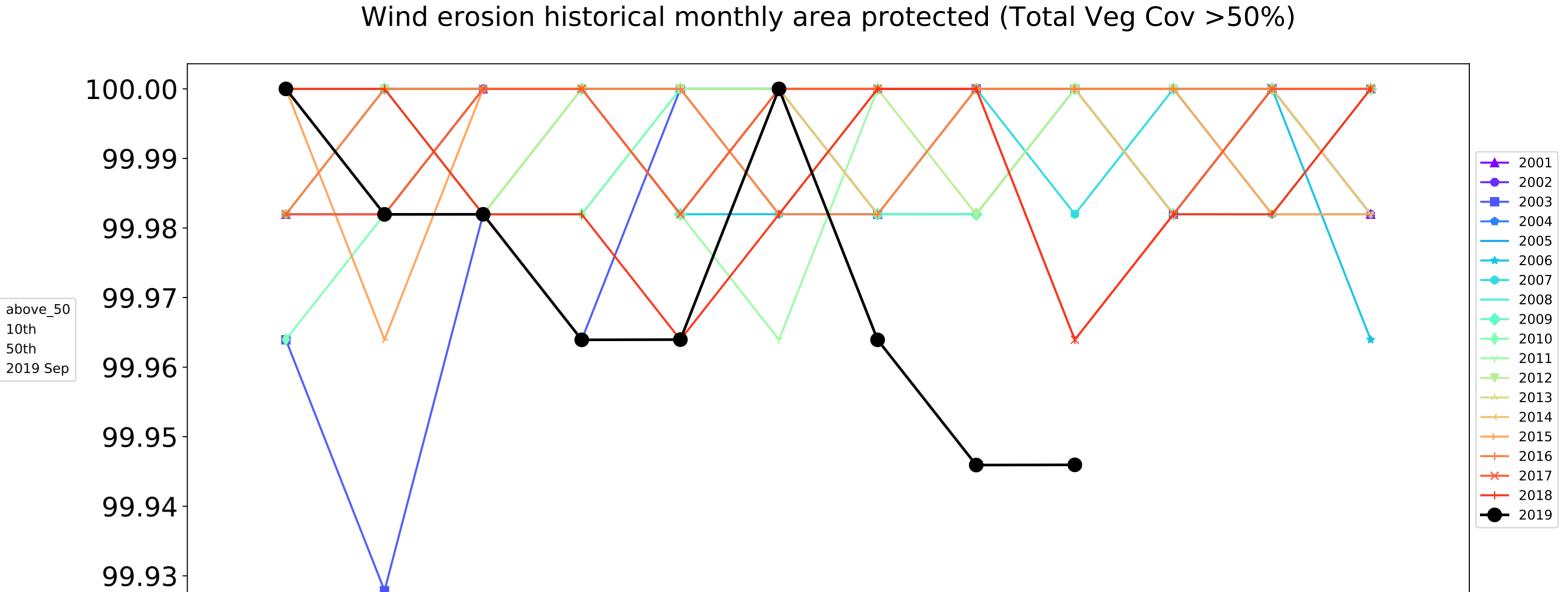






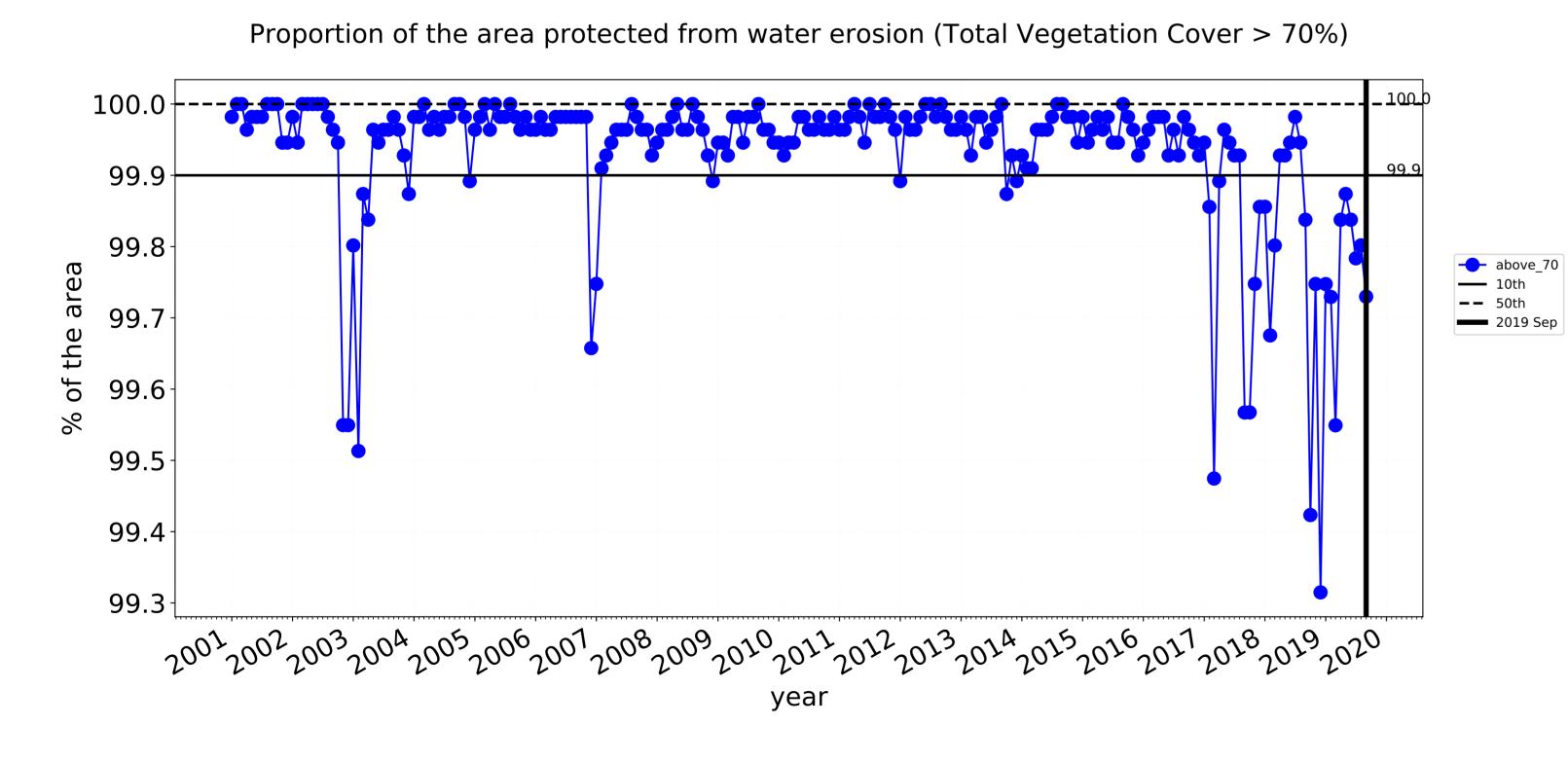
Conservation and natural environments Woodland forest timeseries

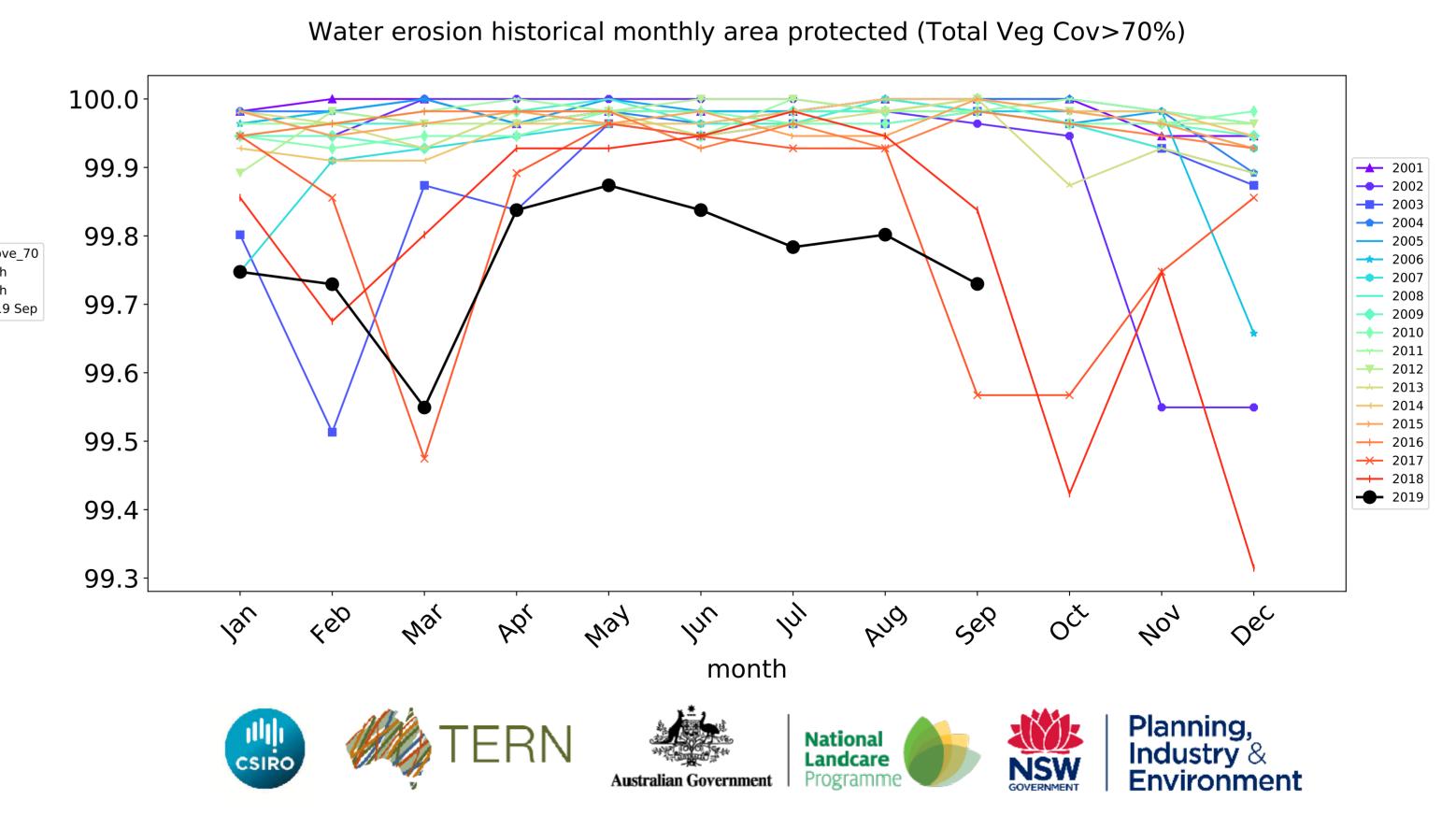


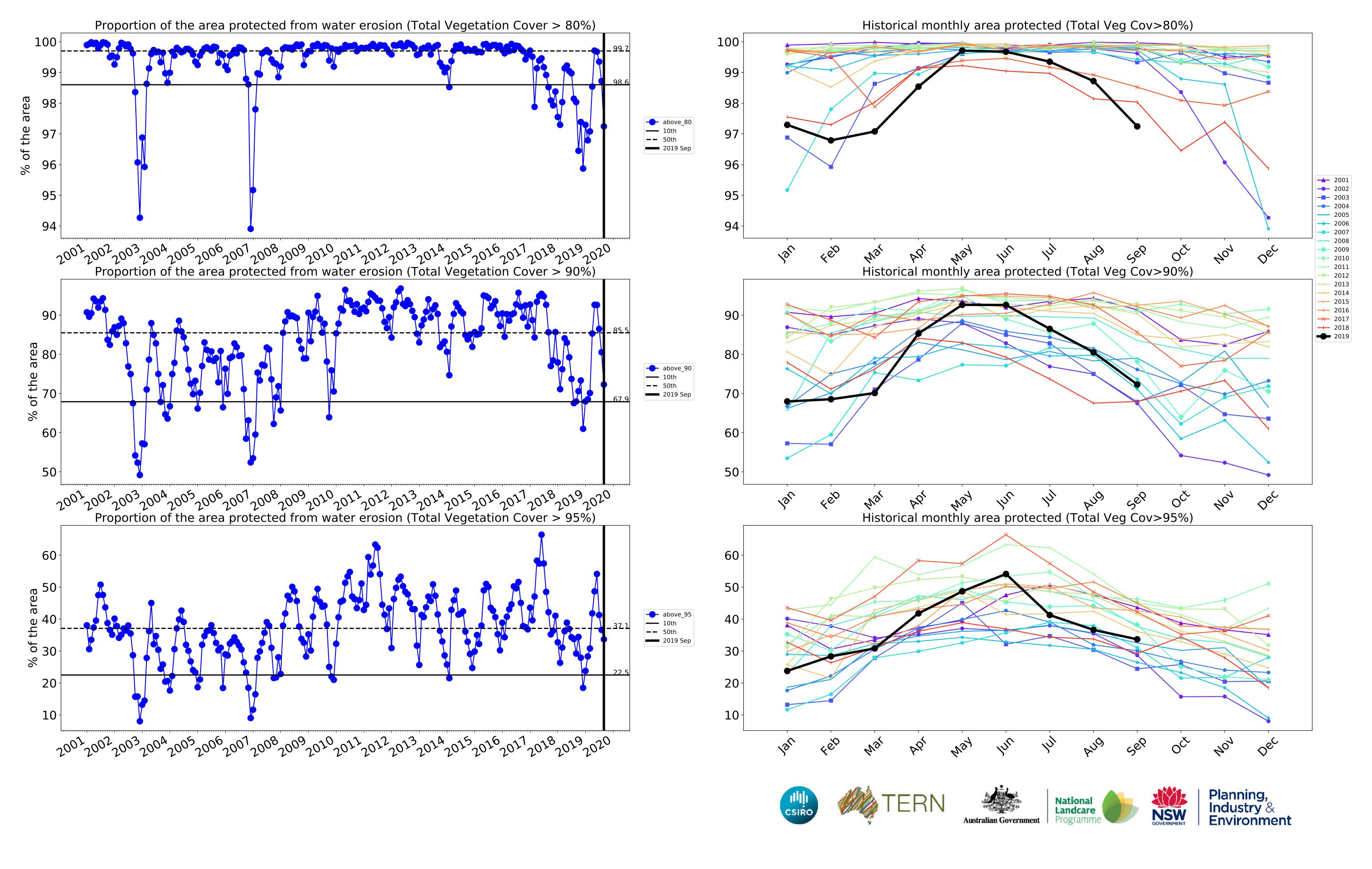


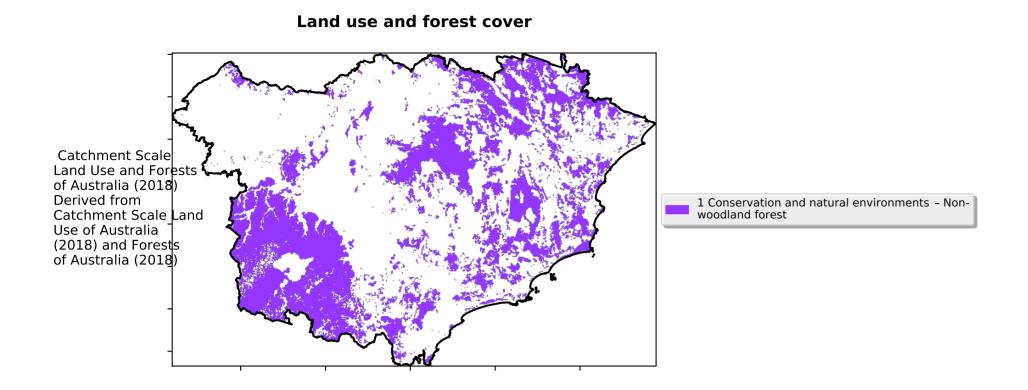
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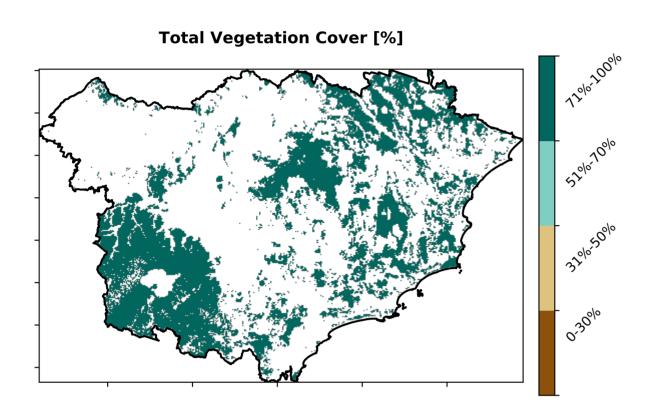
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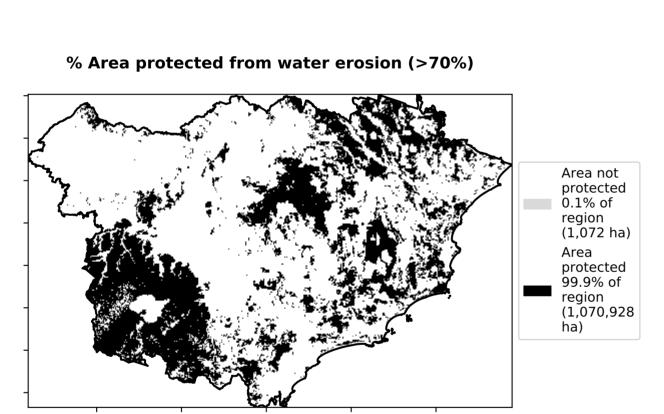


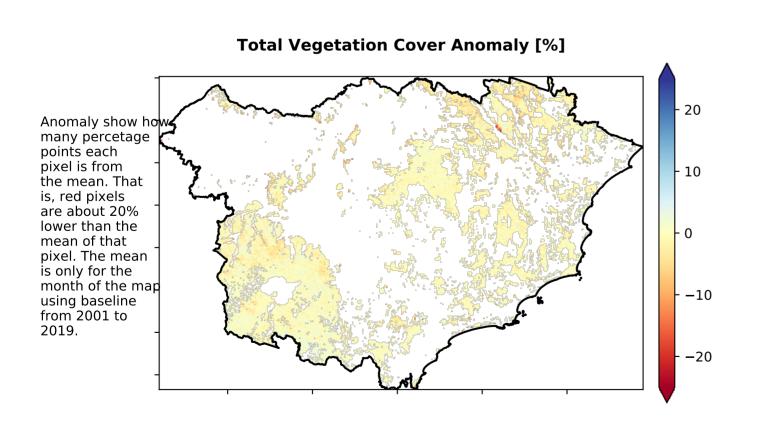


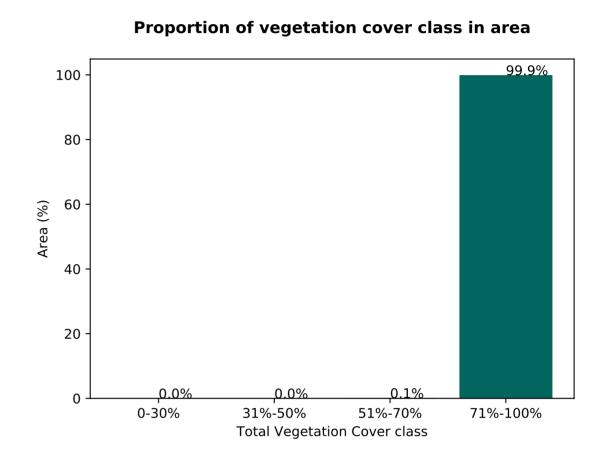


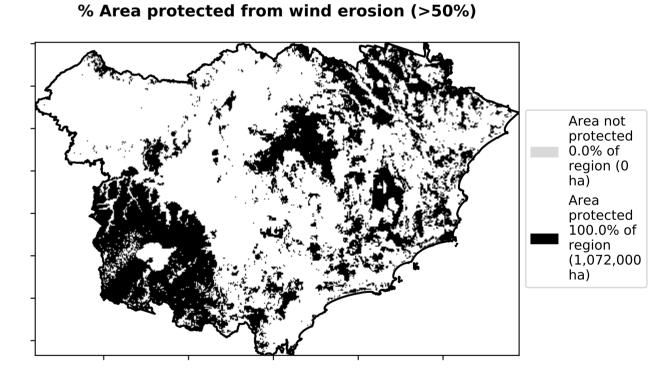


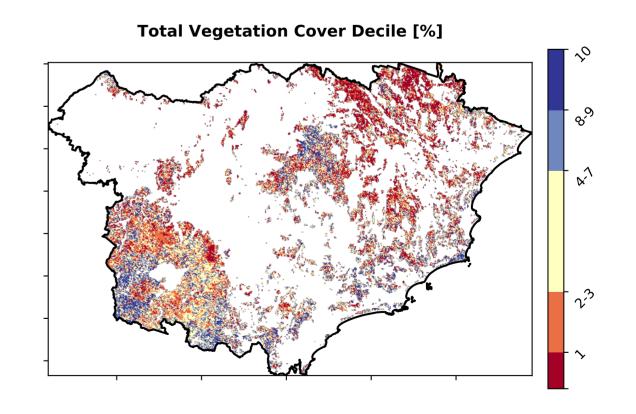
















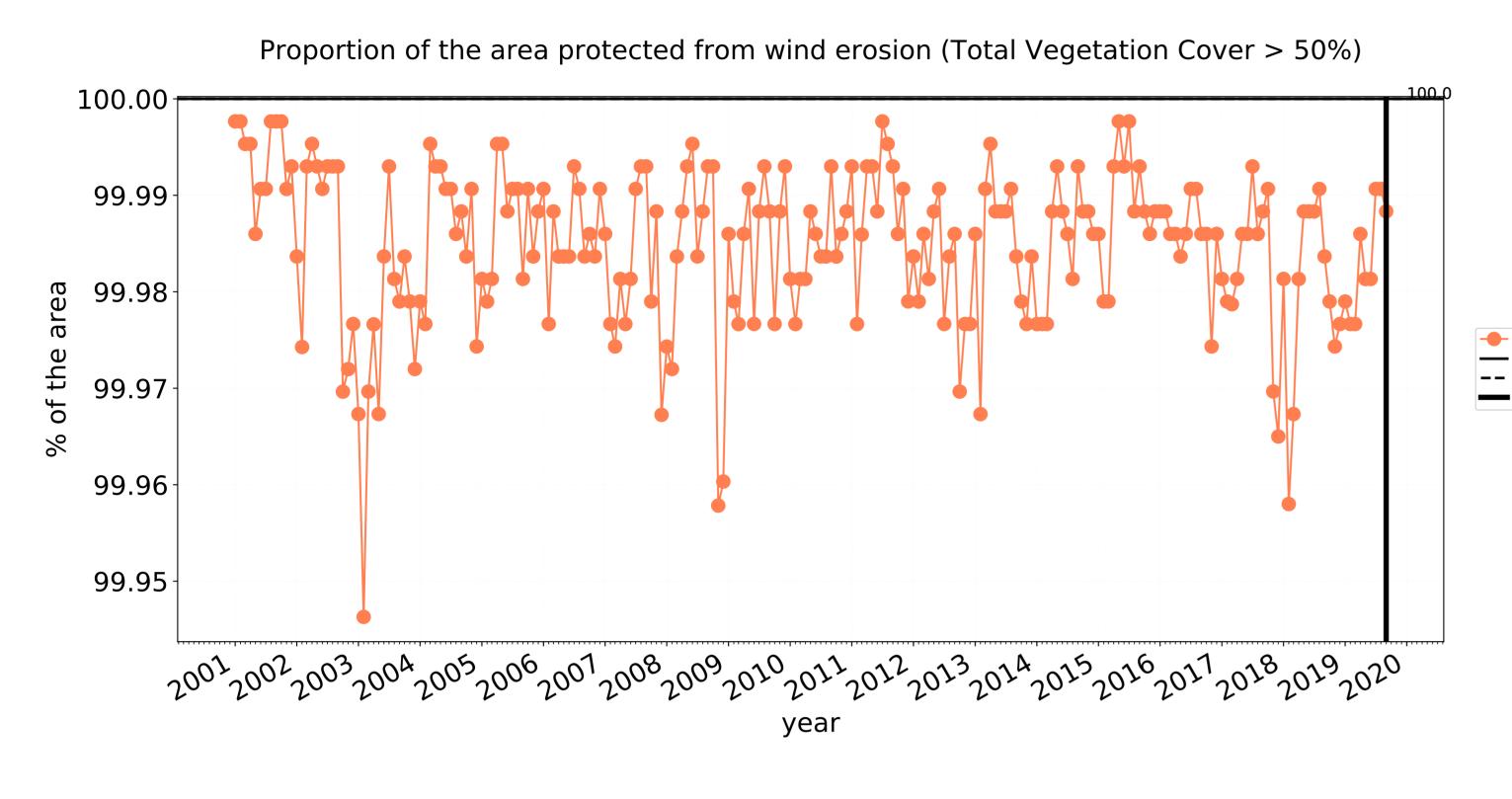


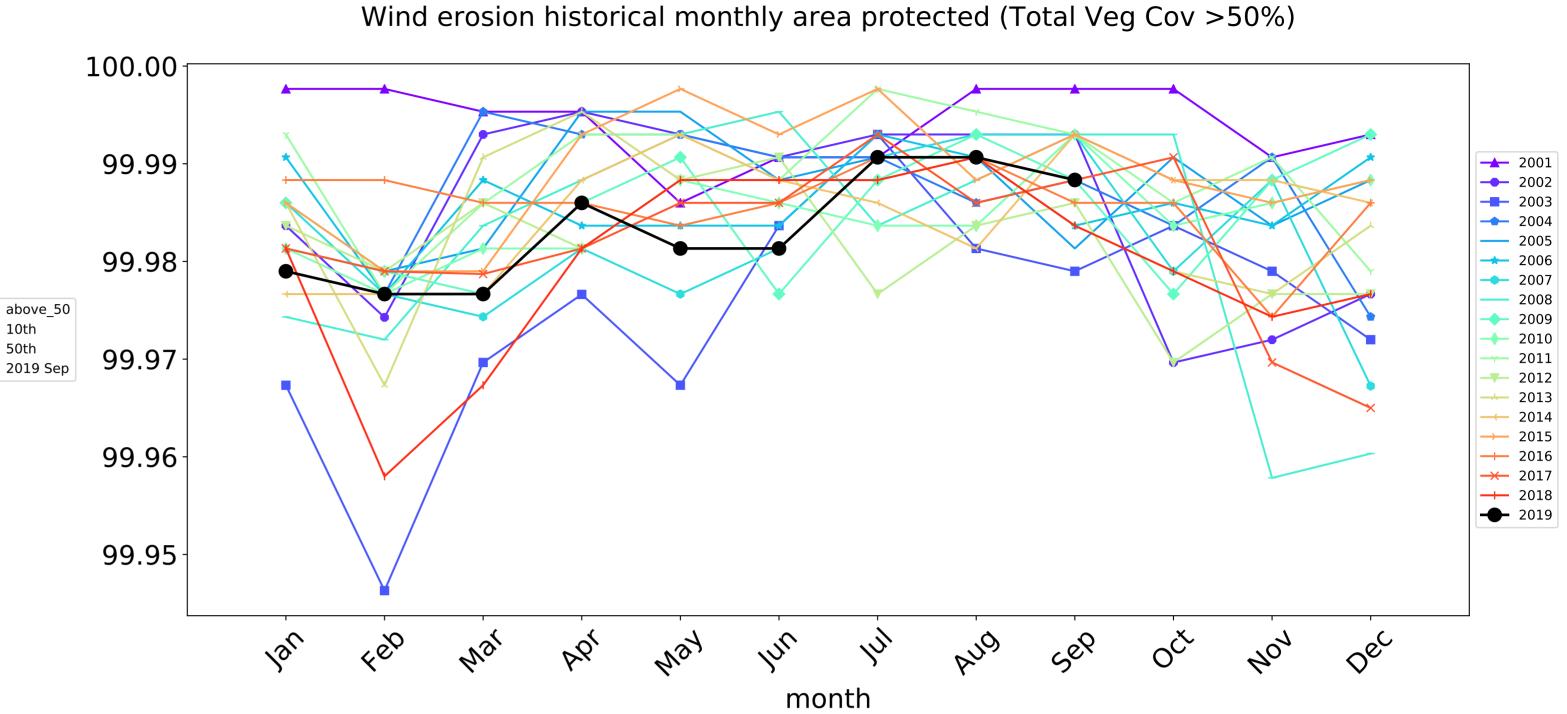


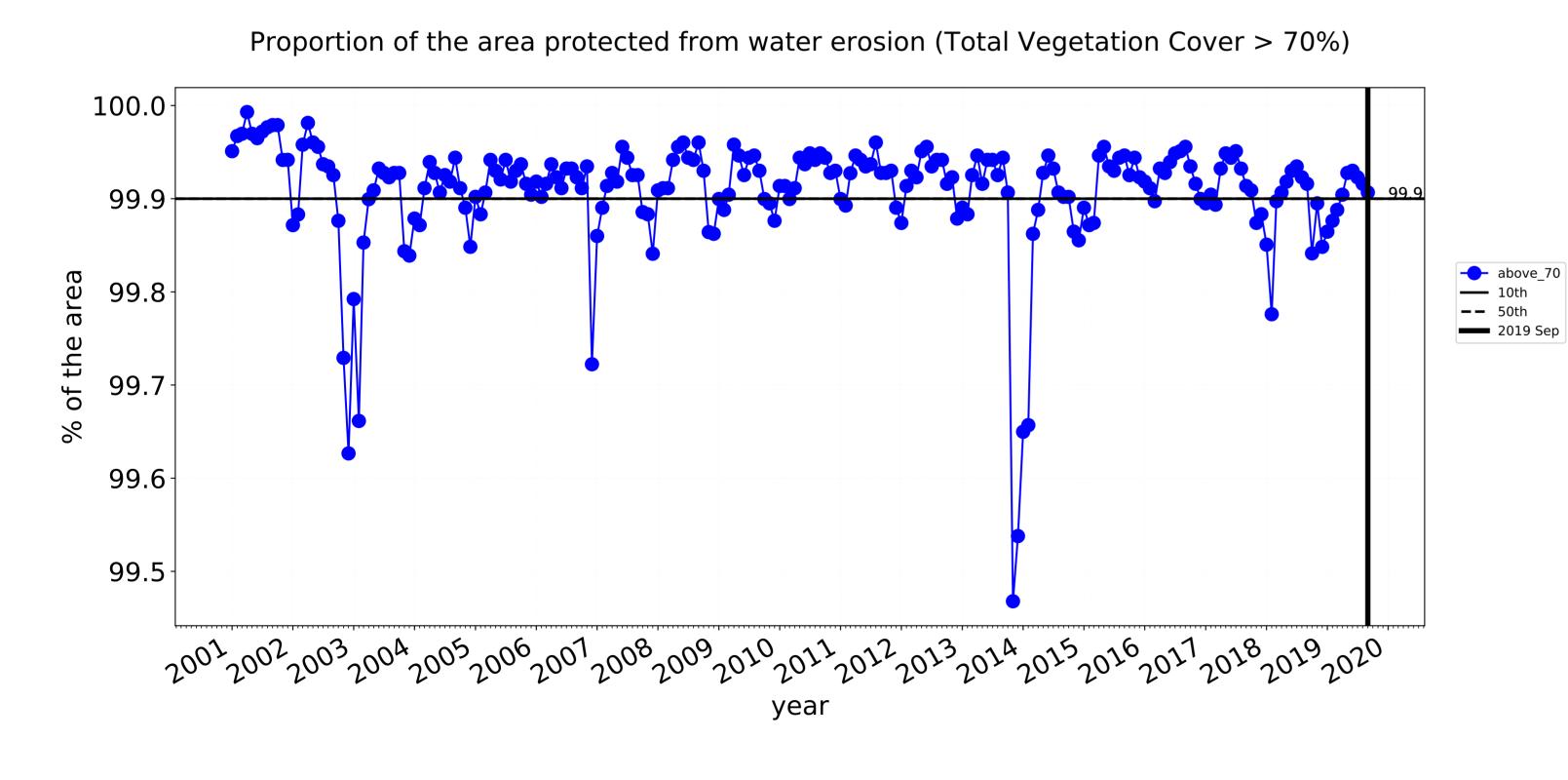


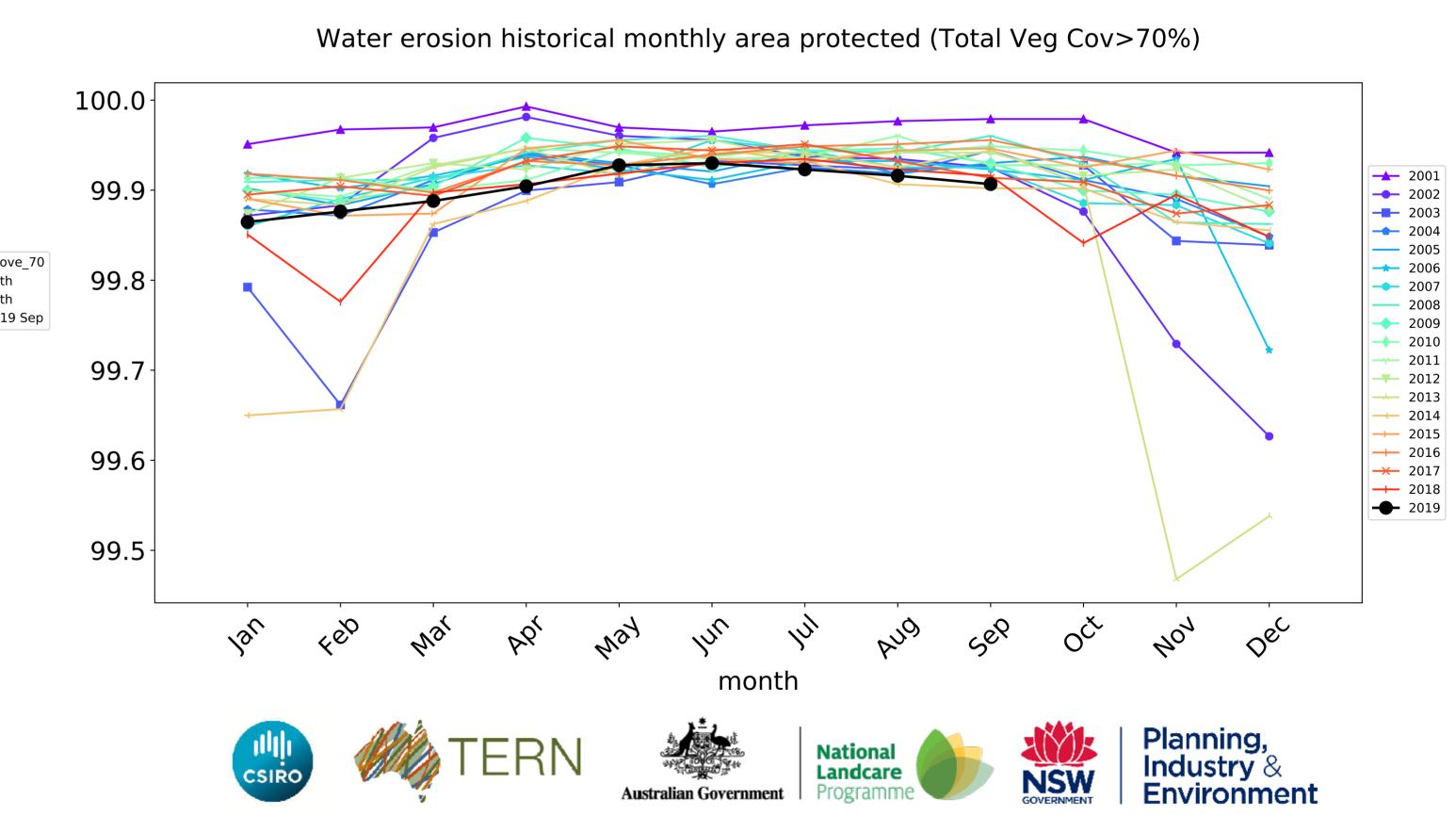


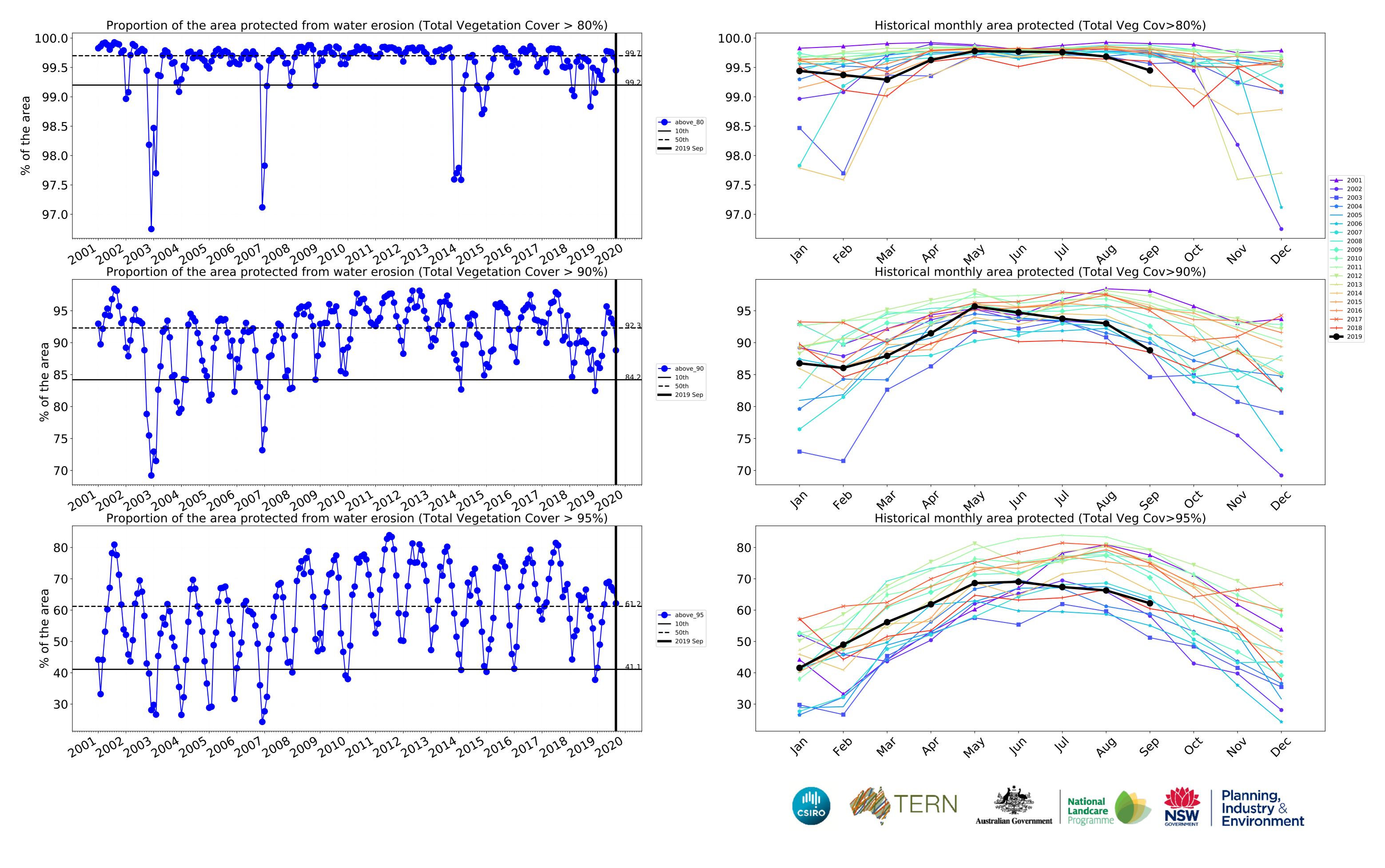
Conservation and natural environments Forest (non woodland) timeseries



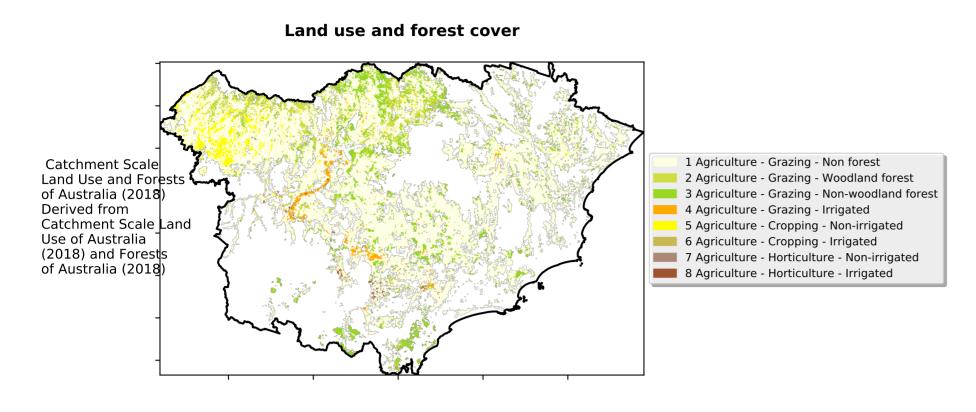


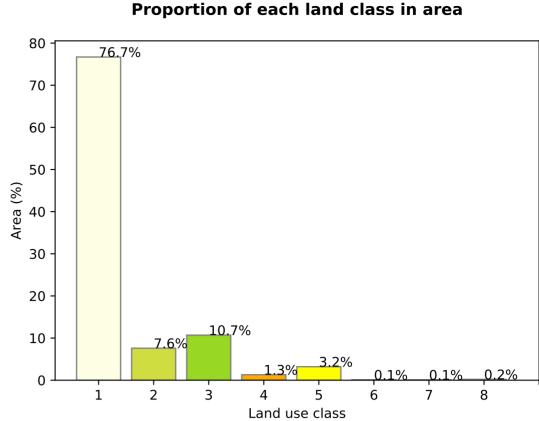


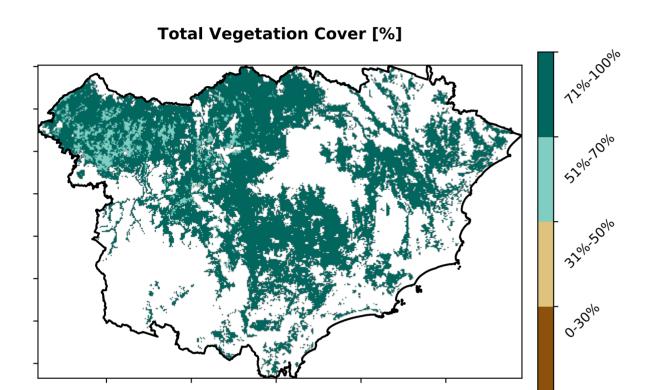


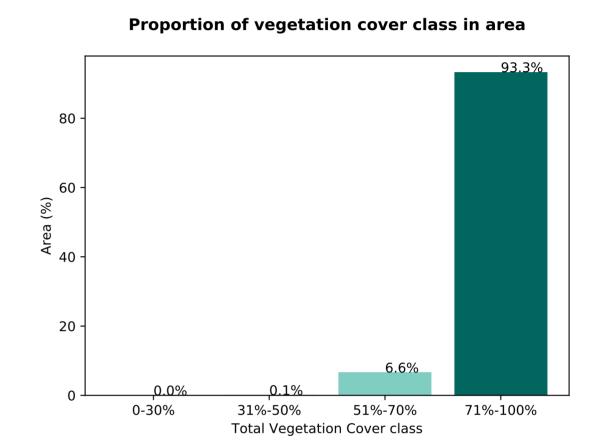


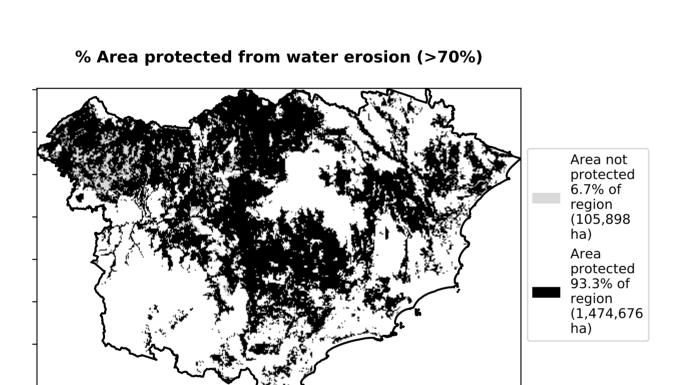
Agriculture

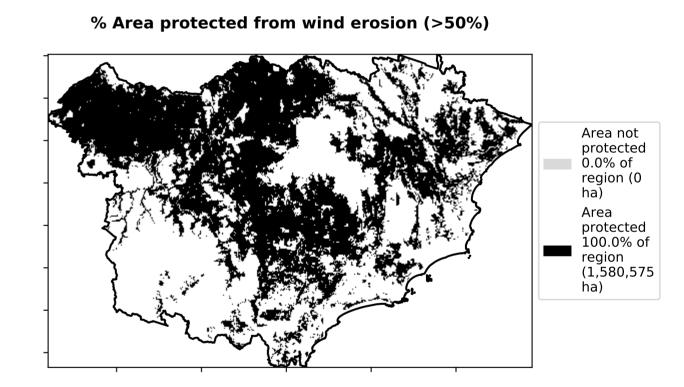


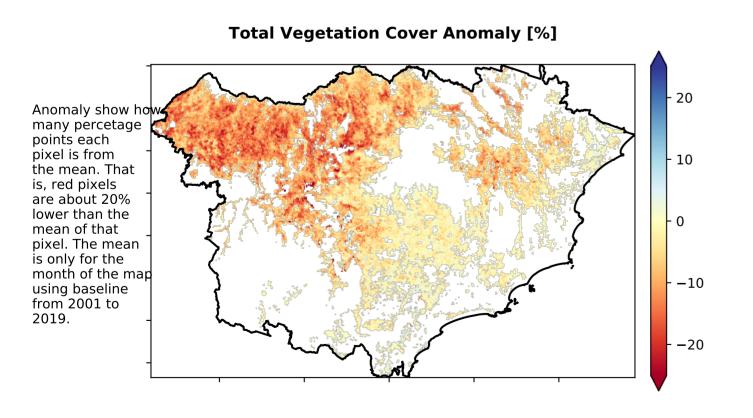




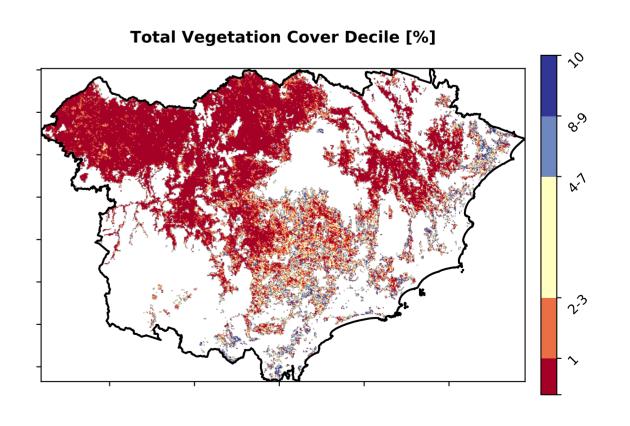








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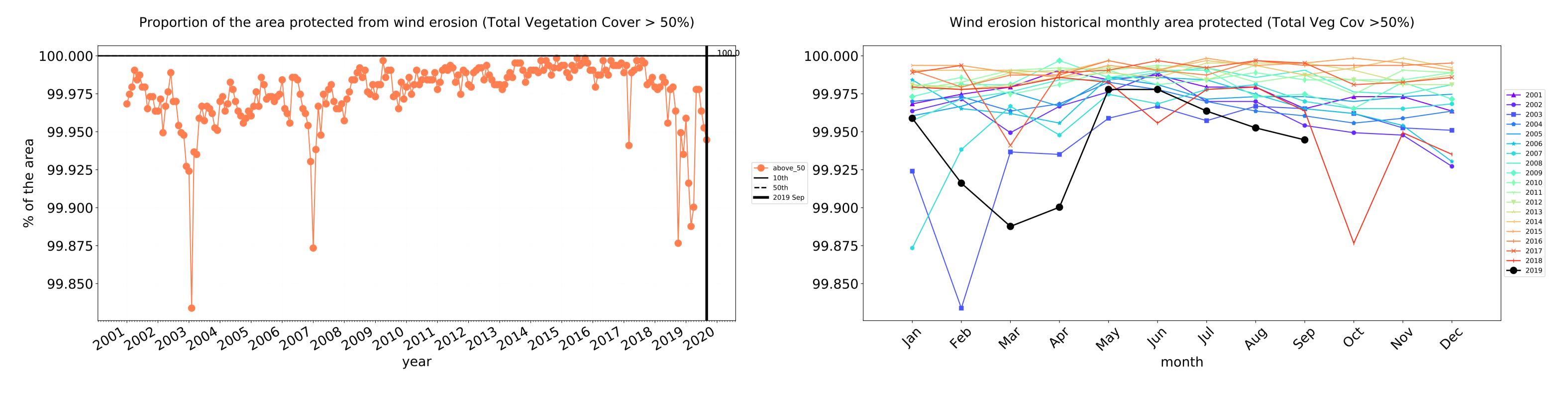


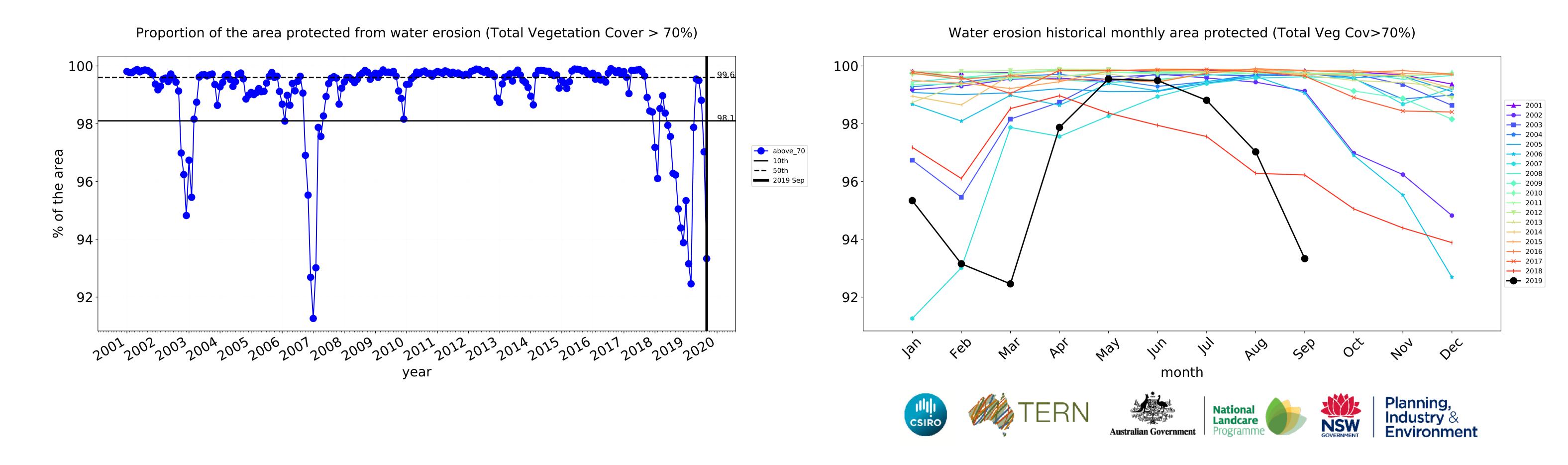


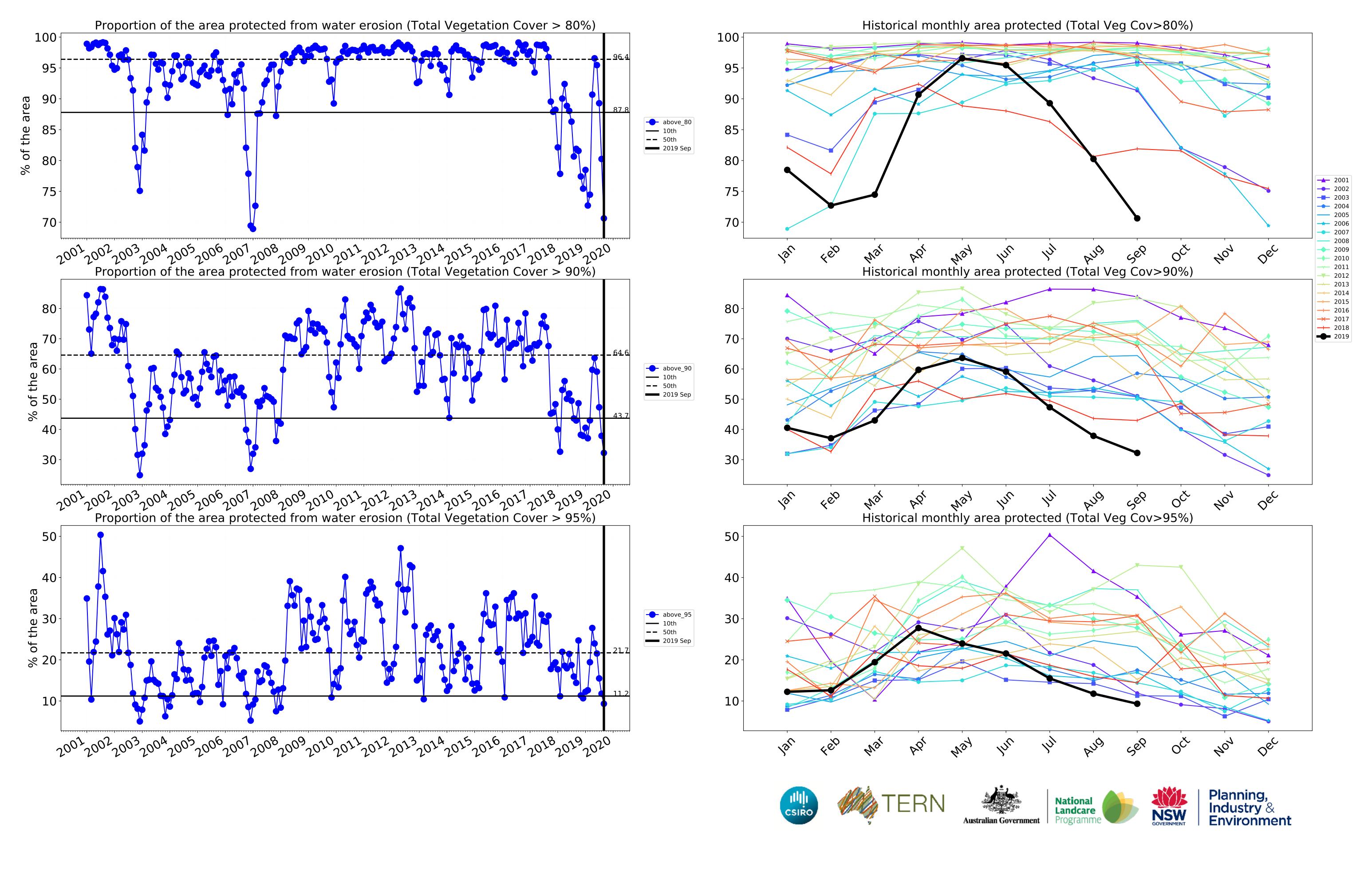


Planning, Industry & Environment

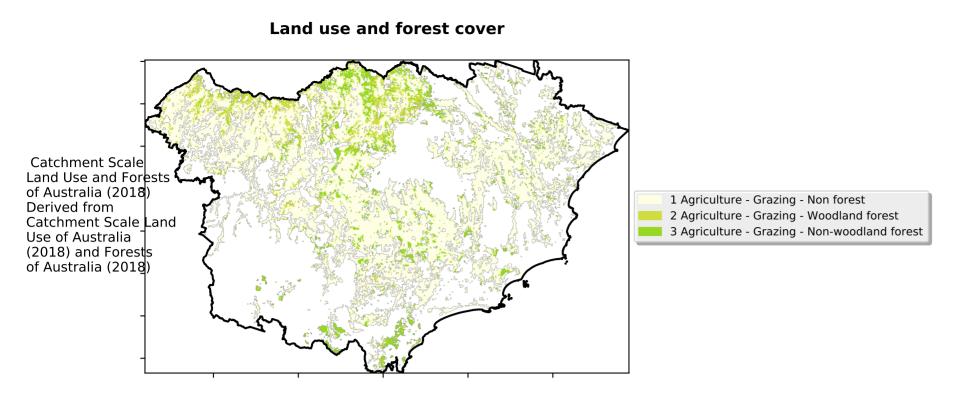
Agriculture timeseries



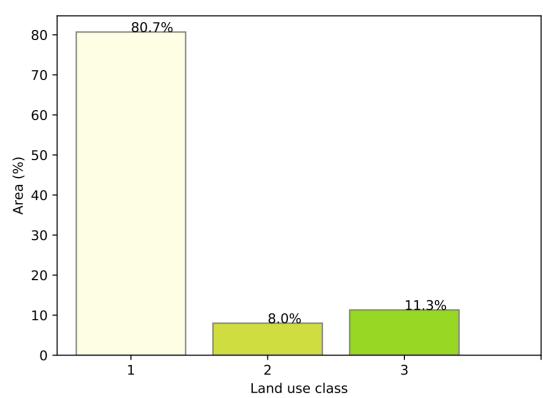




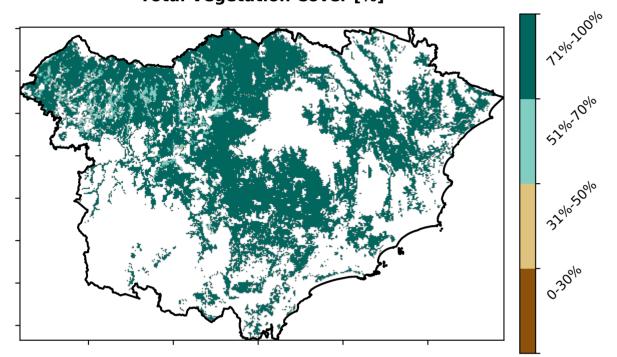
Grazing



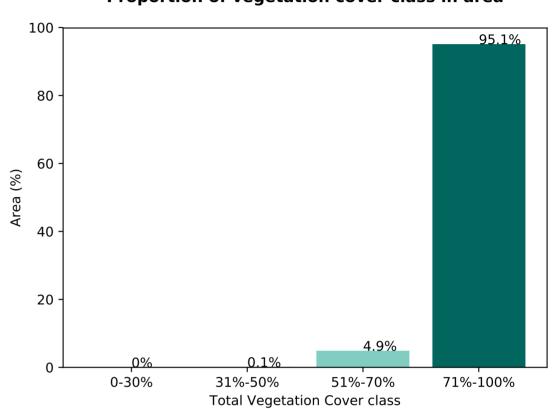
Proportion of each land class in area



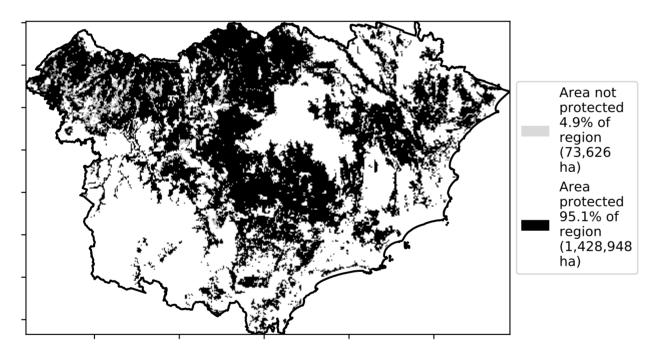
Total Vegetation Cover [%]



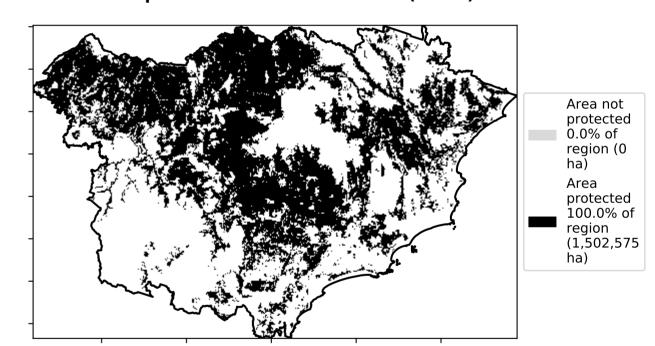
Proportion of vegetation cover class in area



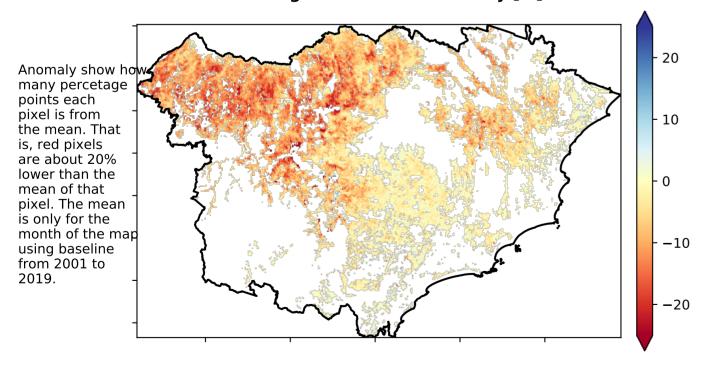
% Area protected from water erosion (>70%)

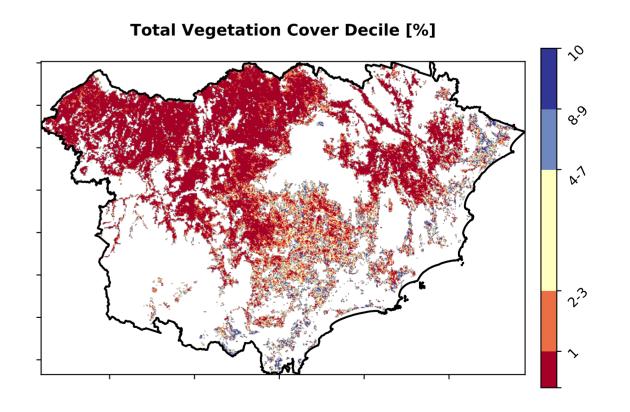


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]









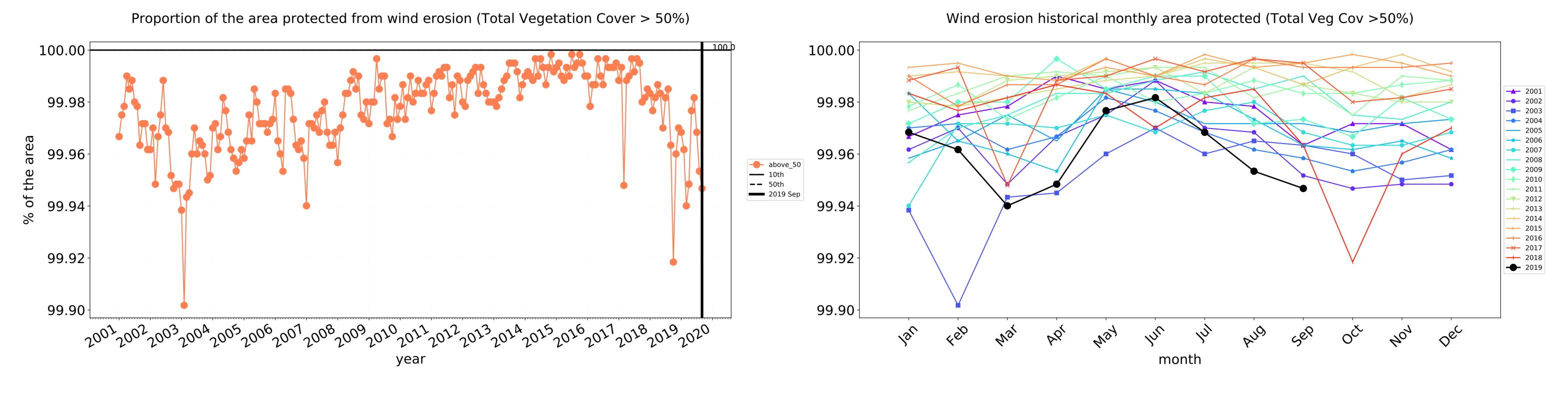


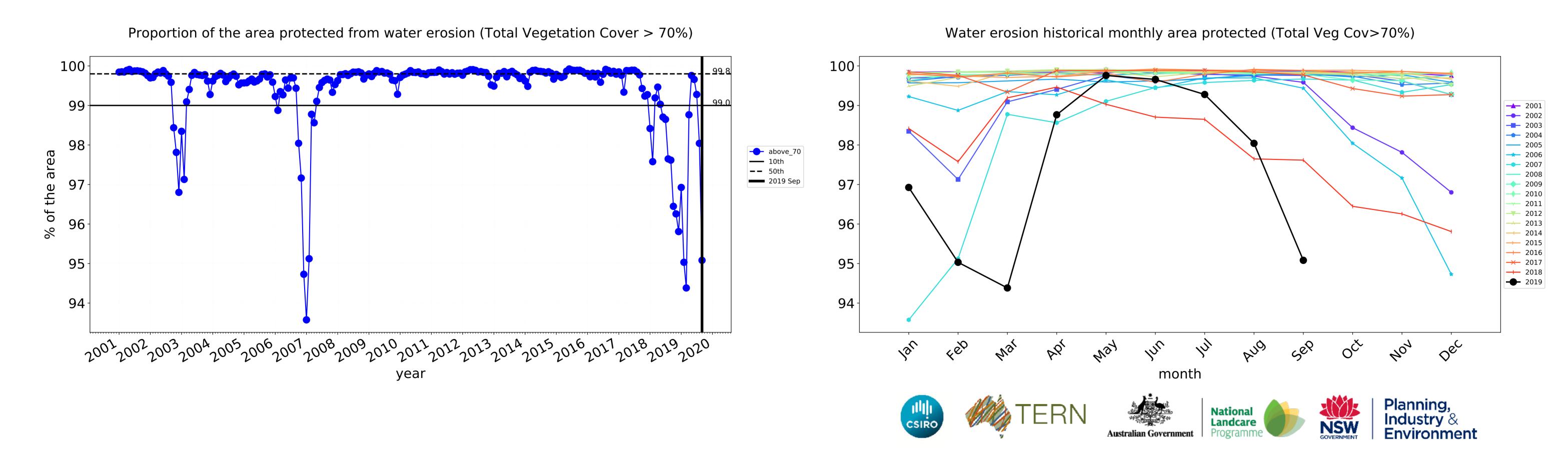


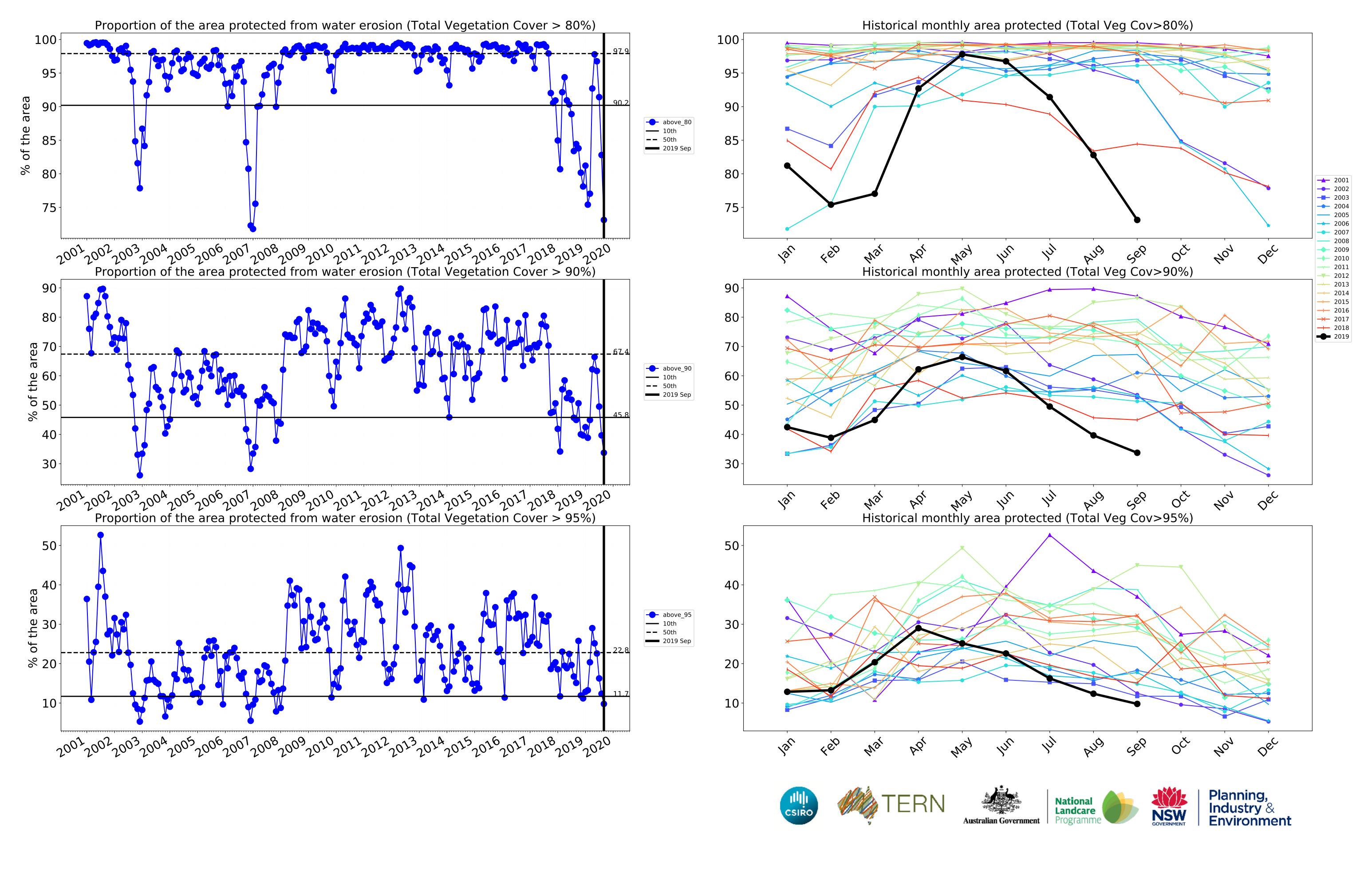




Grazing timeseries

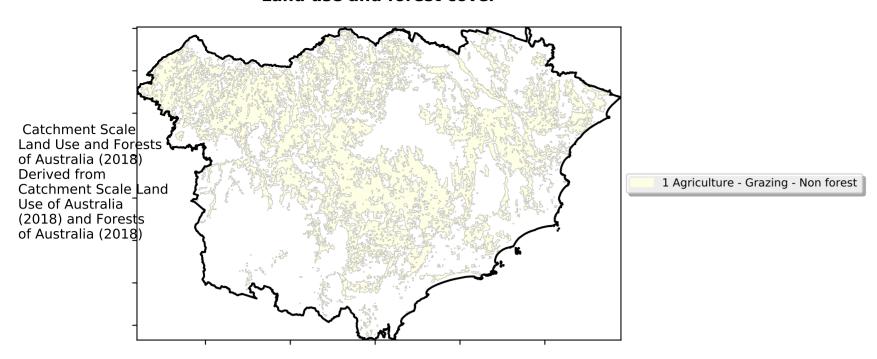




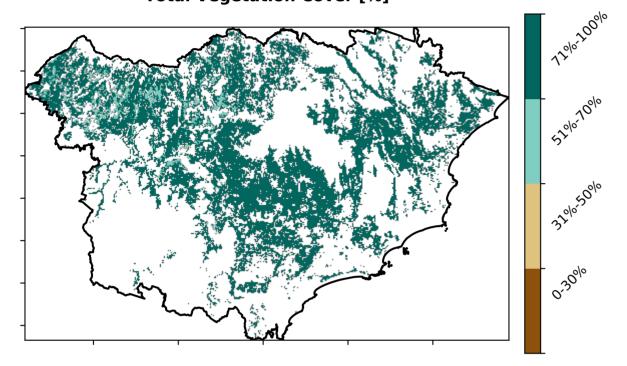


Grazing non forest

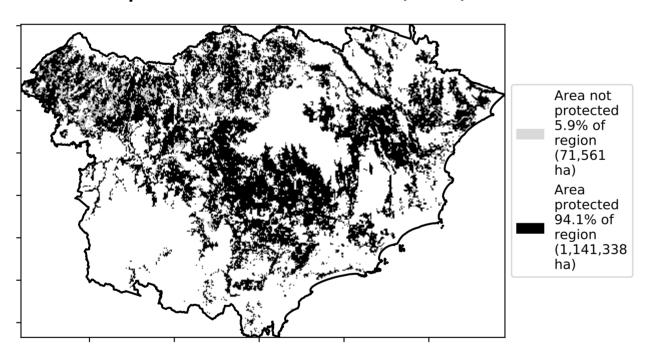
Land use and forest cover



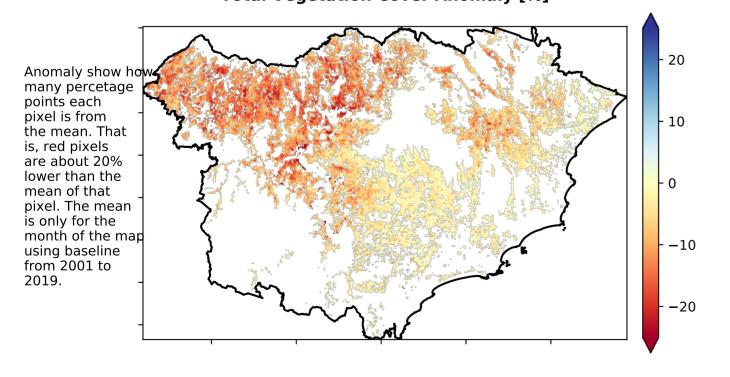
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

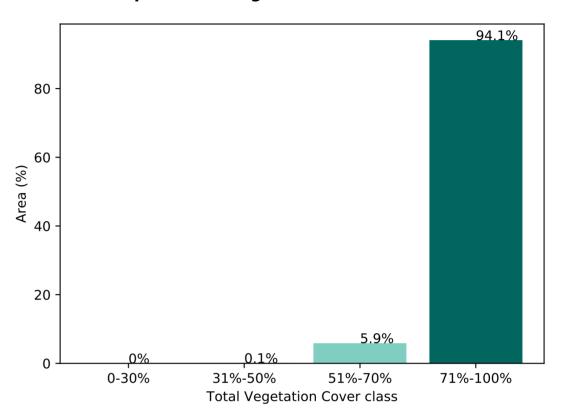


Total Vegetation Cover Anomaly [%]

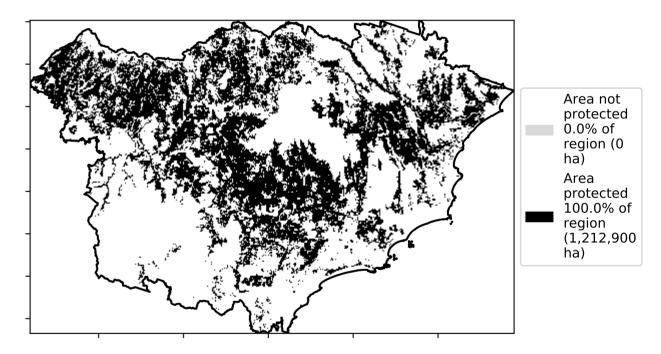


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

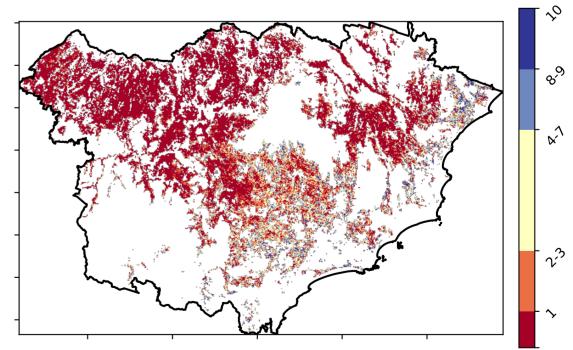
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







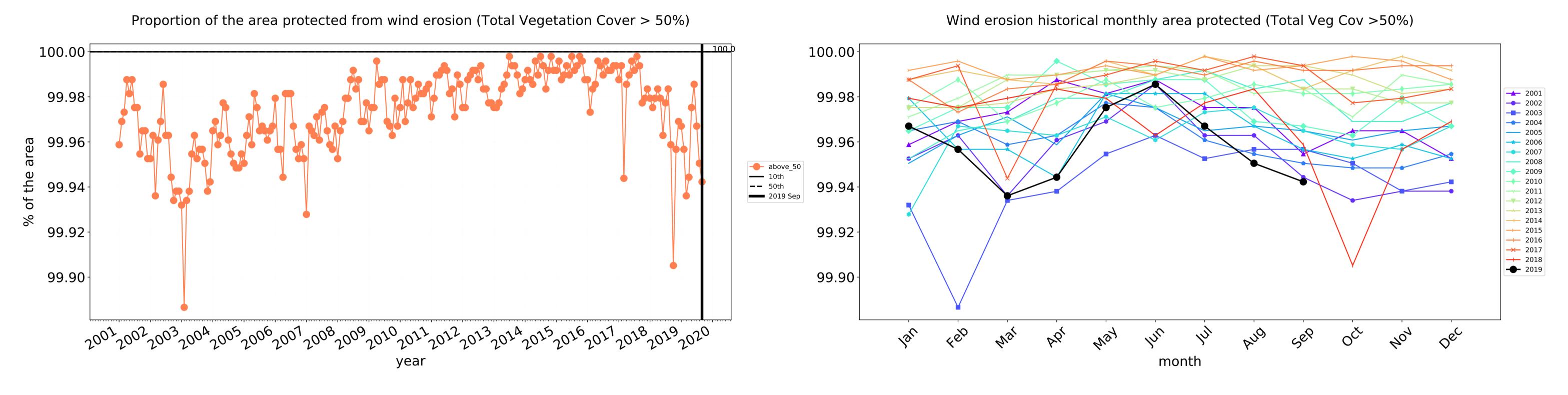


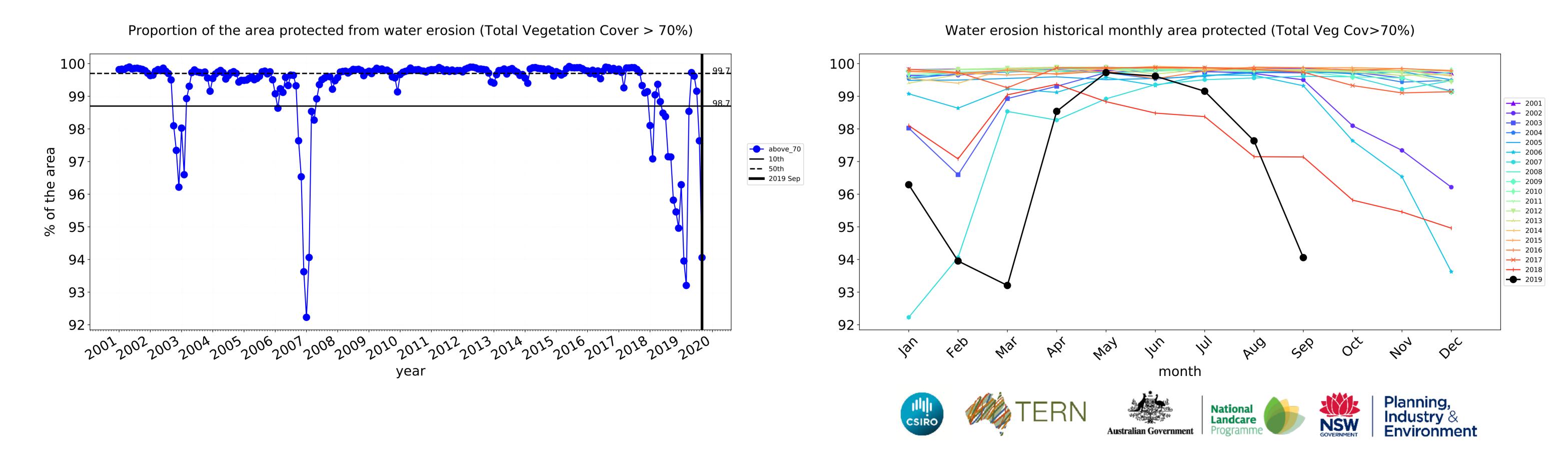


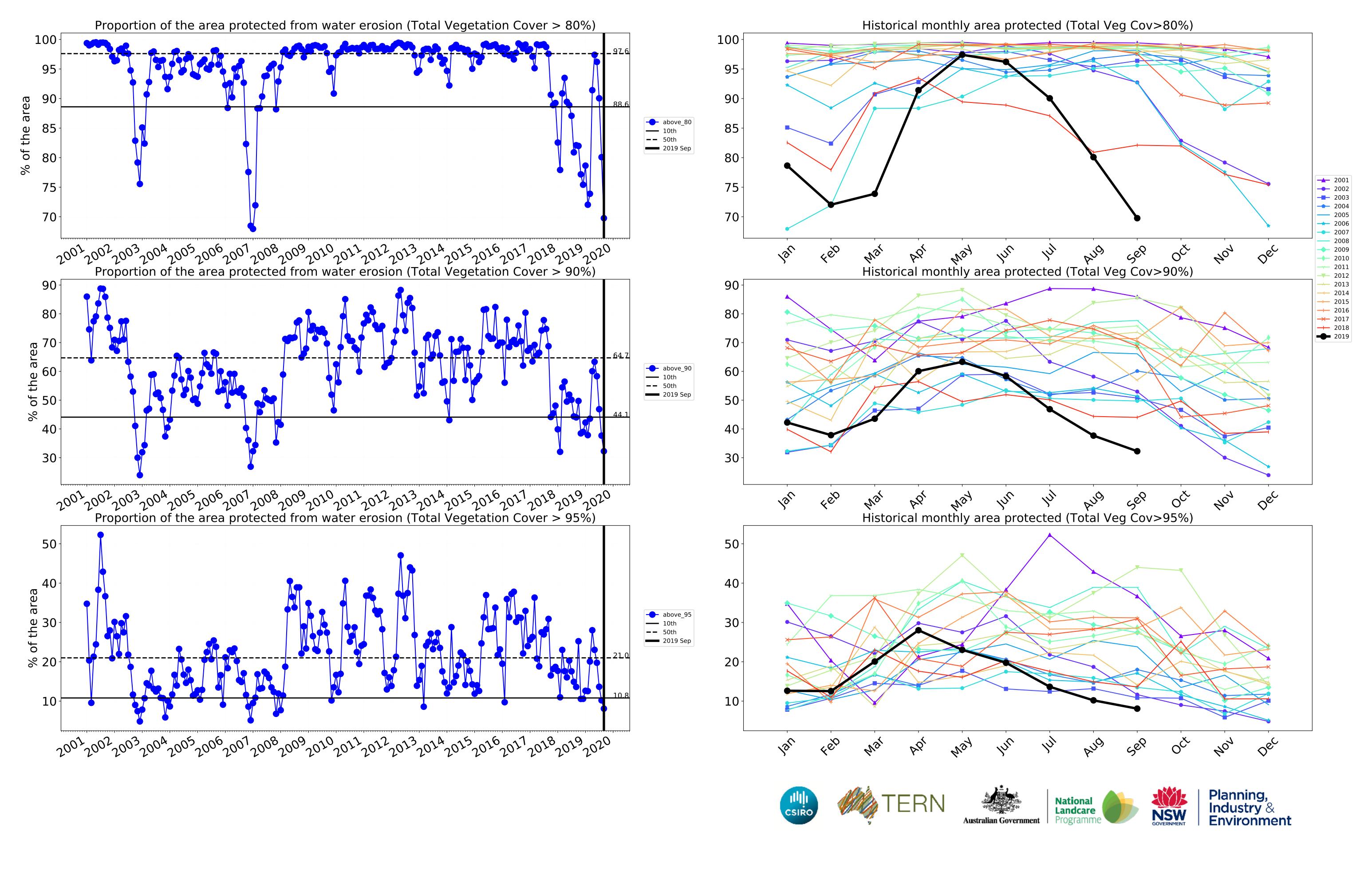




Grazing non forest timeseries





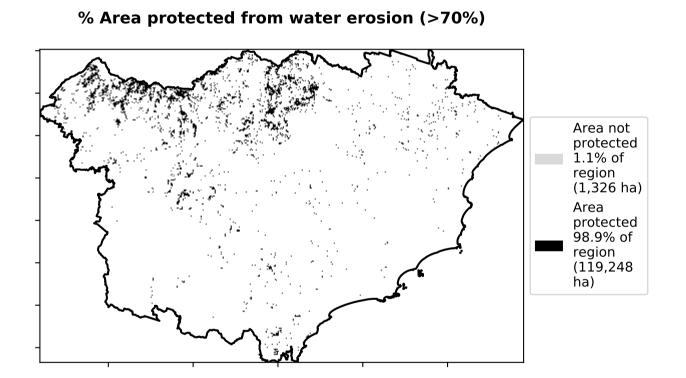


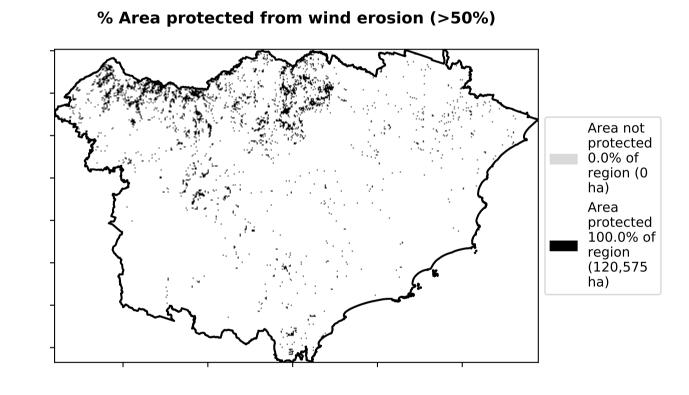
Grazing Woodland forest

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

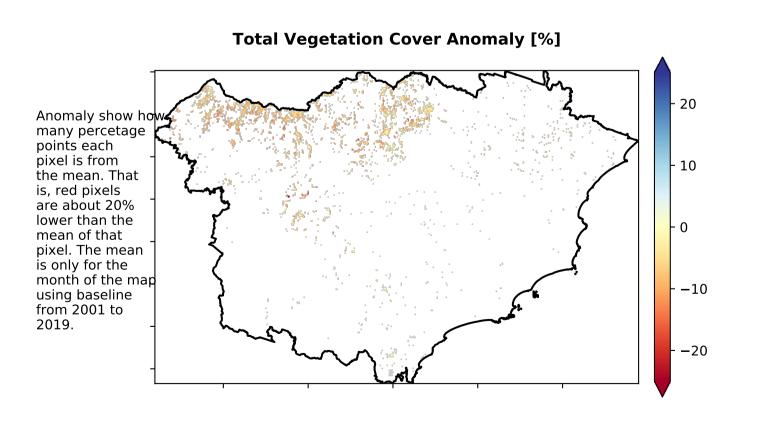
Total Vegetation Cover [%]

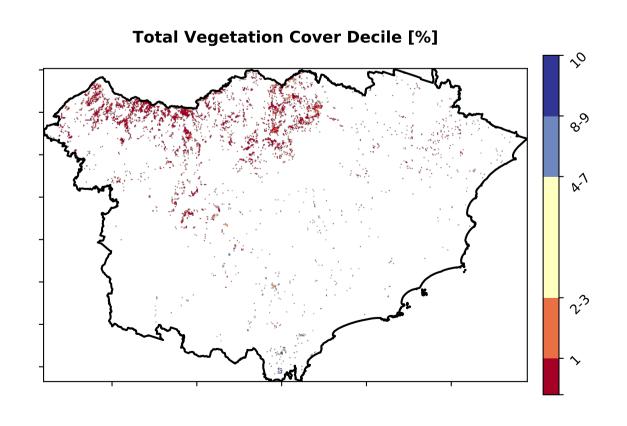
98.9% 100 80 Area (%) 60 20 0-30% 51%-70% 31%-50% 71%-100% **Total Vegetation Cover class**





Proportion of vegetation cover class in area









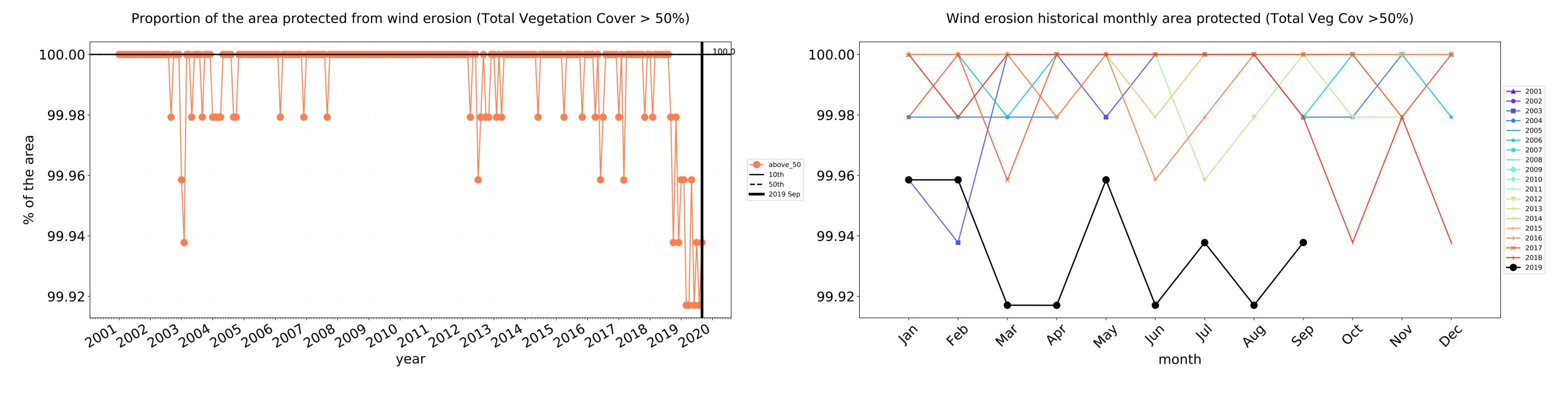


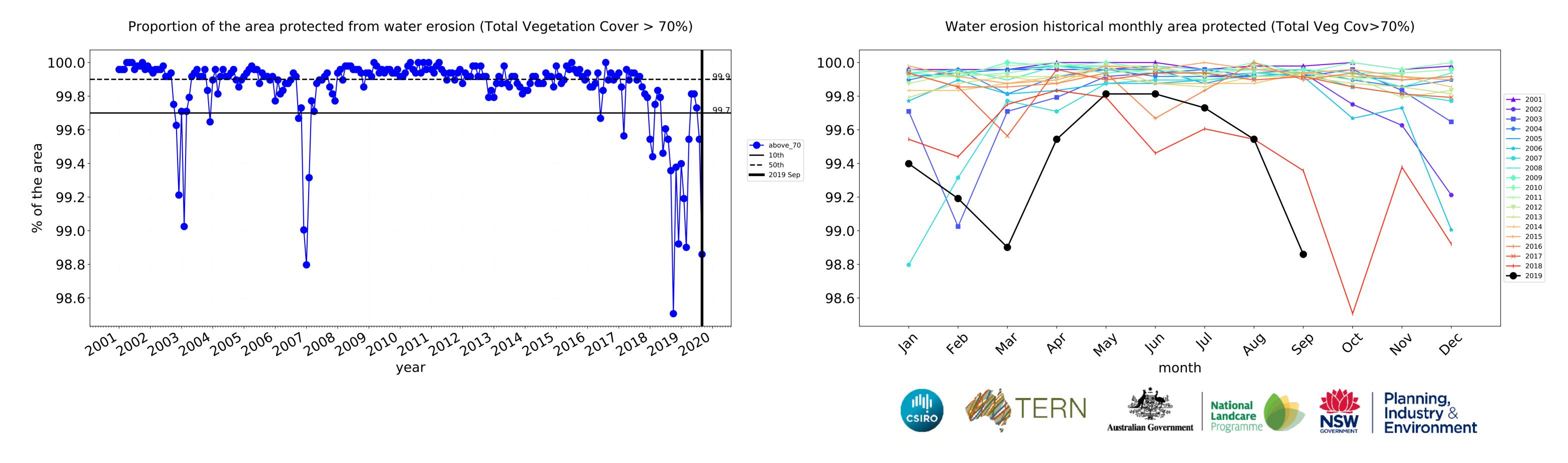


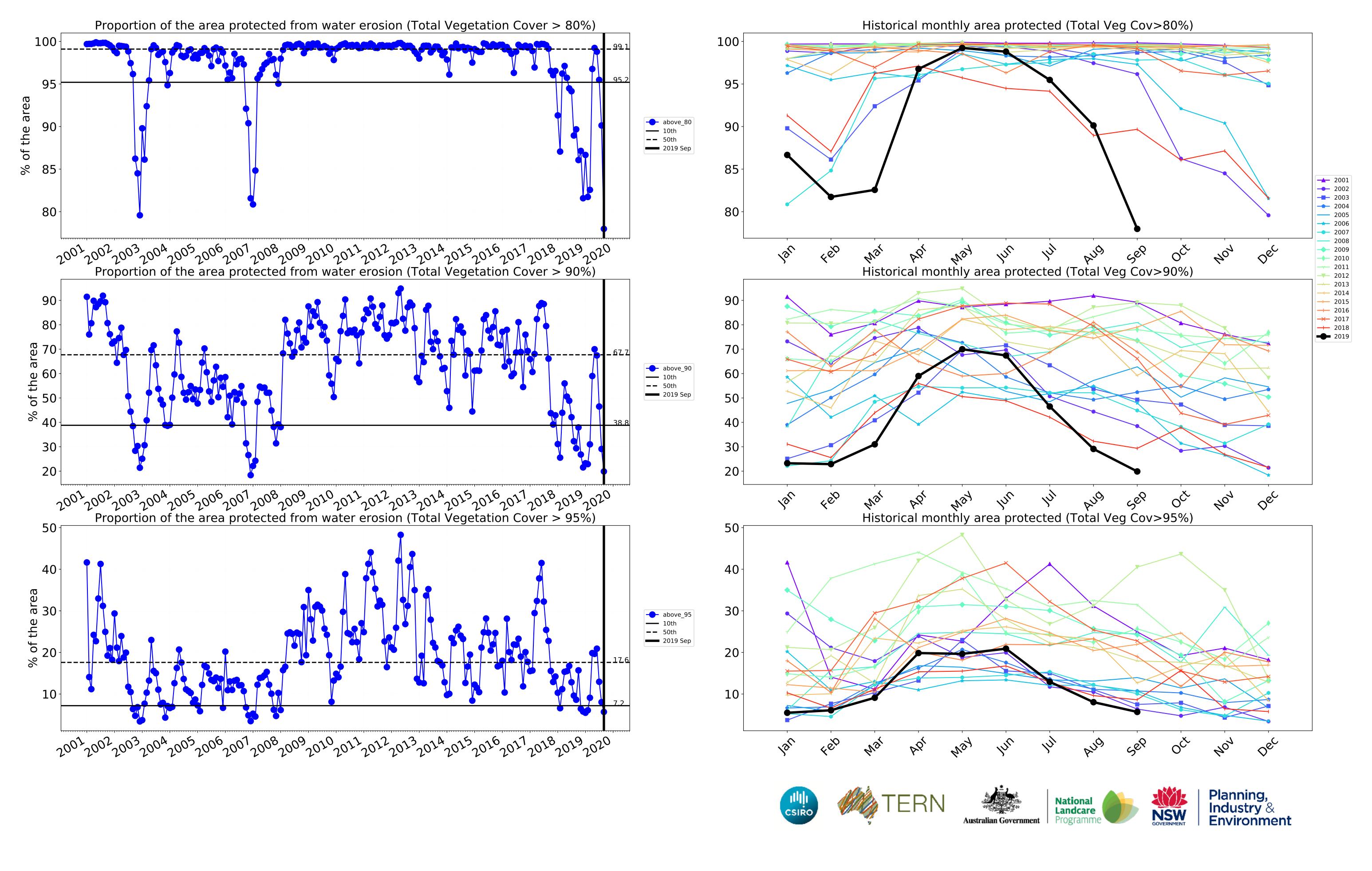




Grazing Woodland forest timeseries



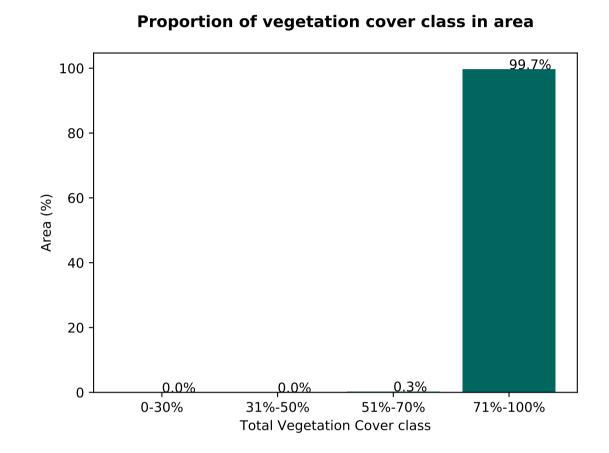


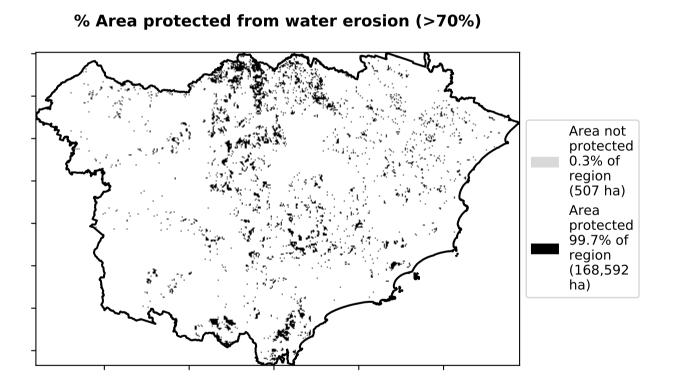


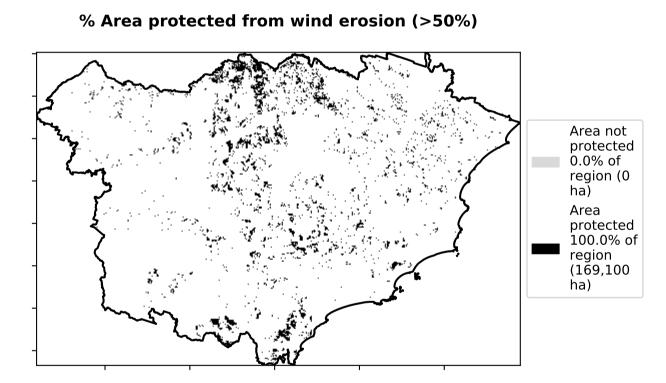
Grazing - Forest (non woodland)

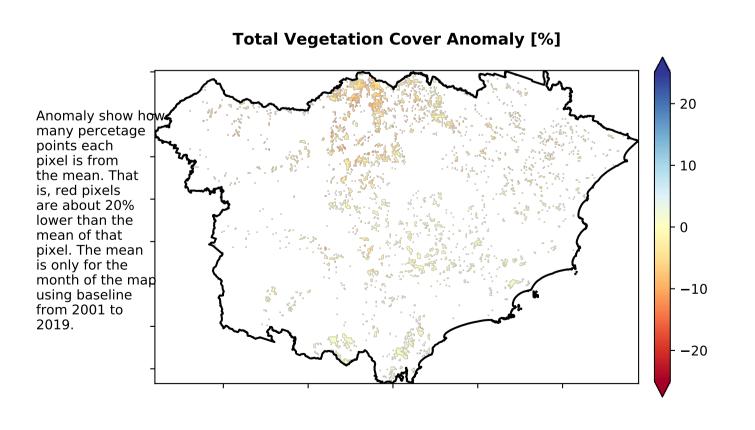
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Australia (2018) Of Australia (2018) Australia (2018) 1 Agriculture - Grazing - Non-woodland forest 1 Agriculture - Grazing - Non-woodland forest

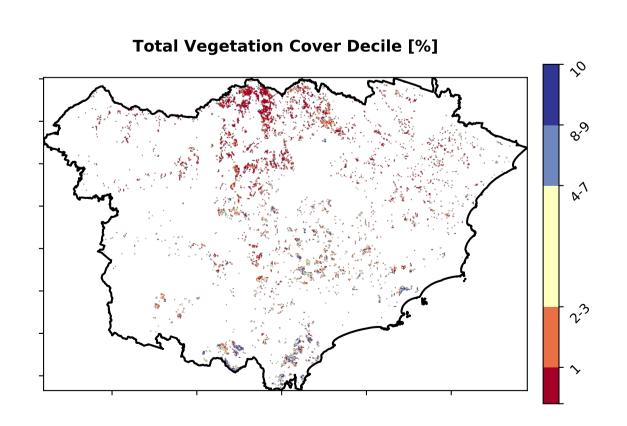
Total Vegetation Cover [%]













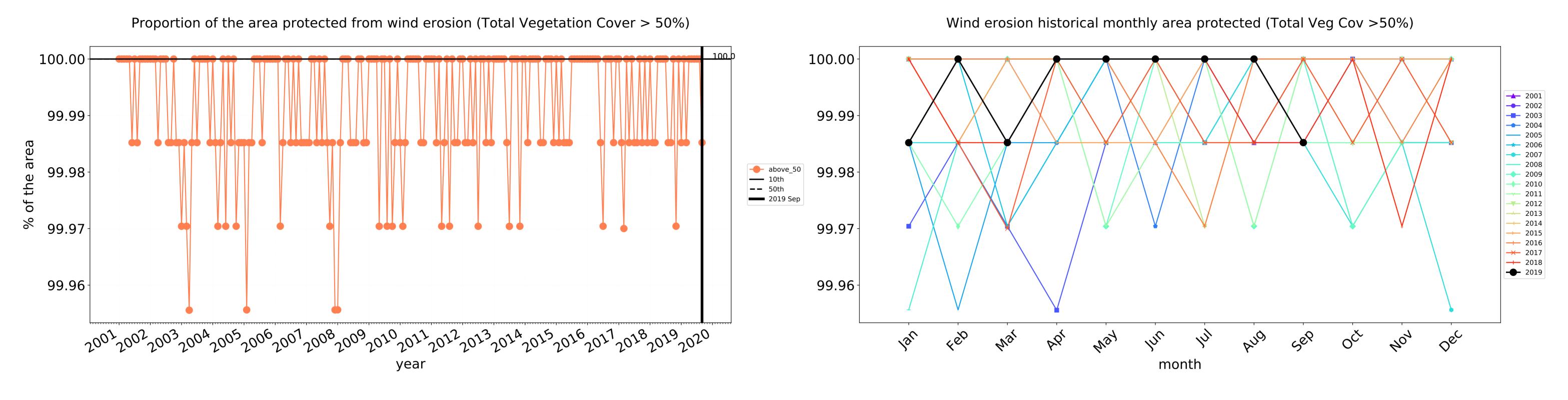


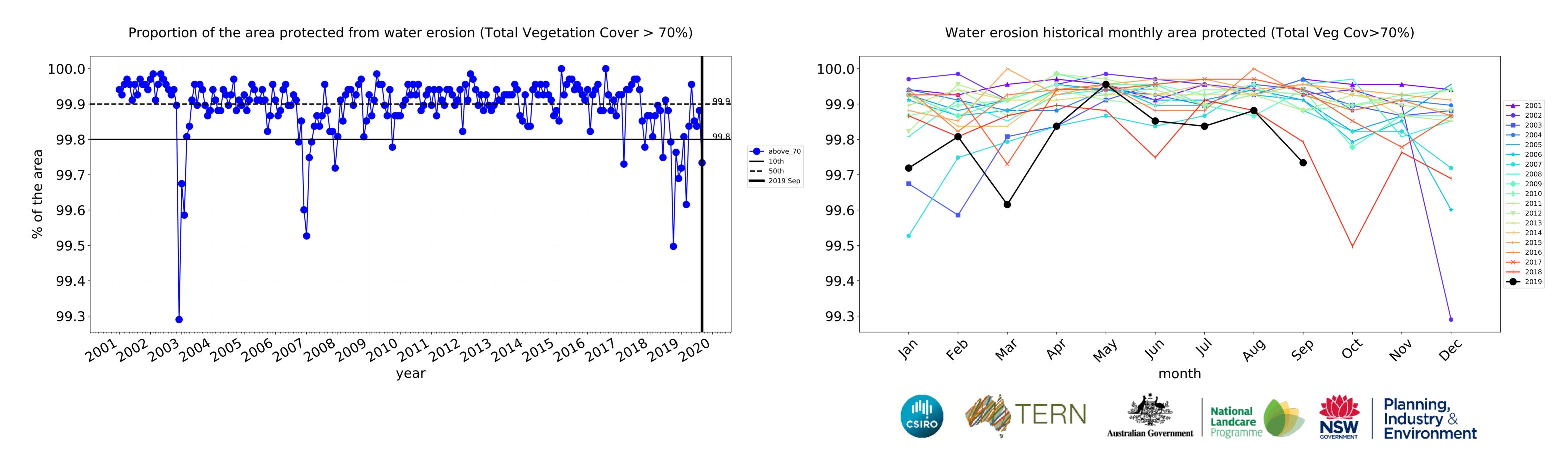


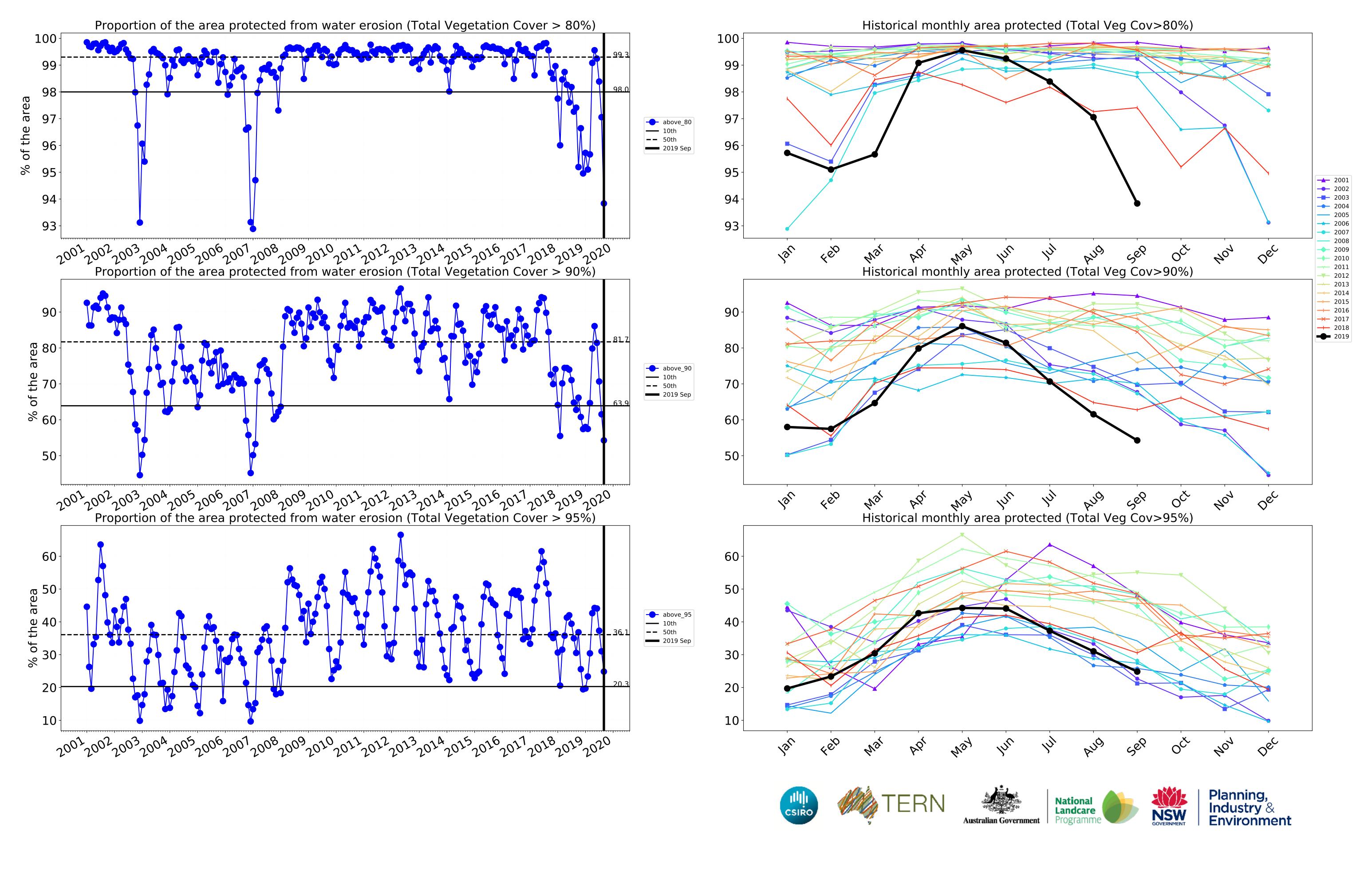






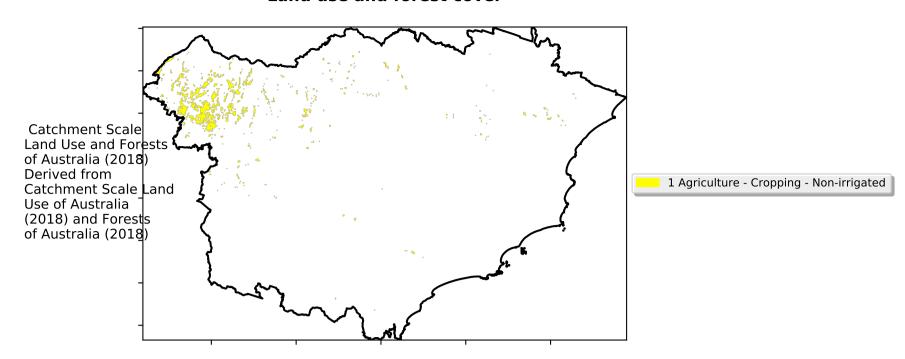




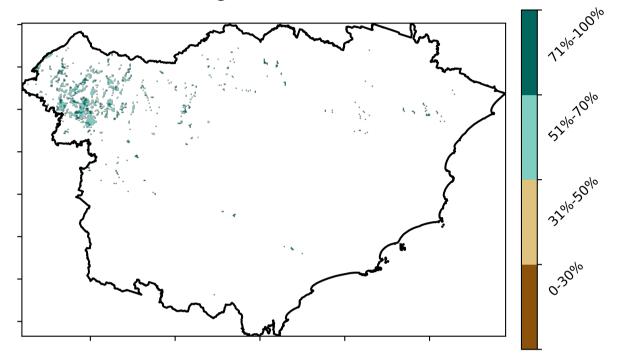


Cropping

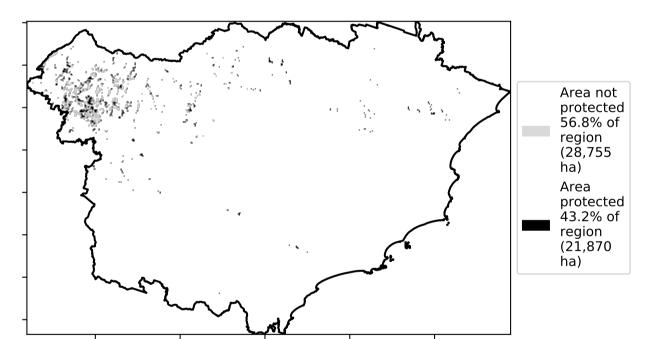
Land use and forest cover



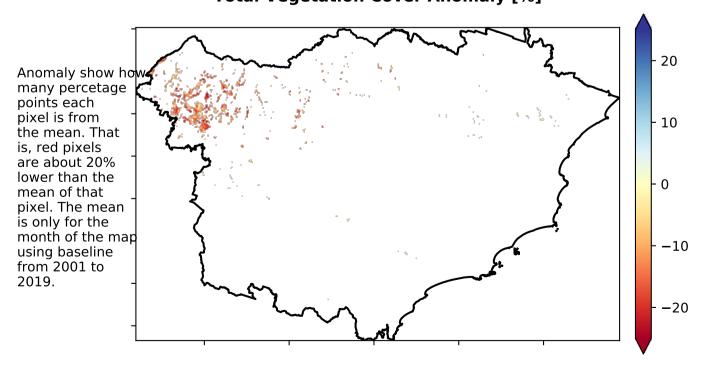
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

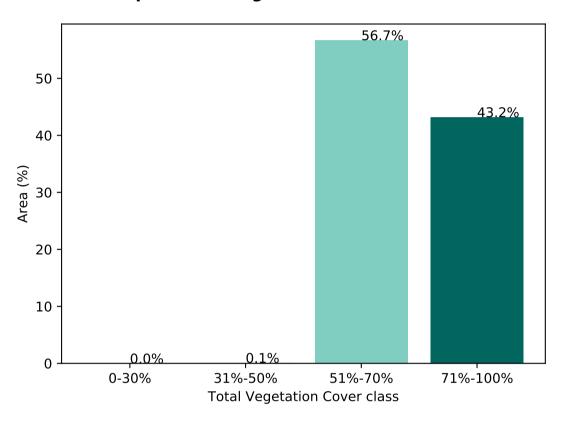


Total Vegetation Cover Anomaly [%]

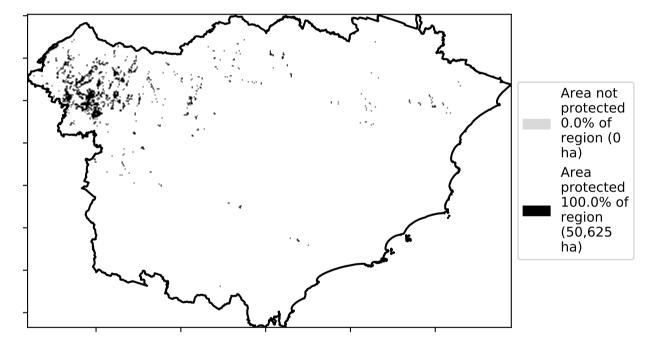


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

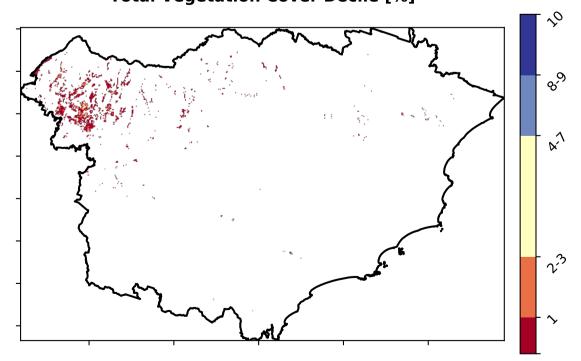
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







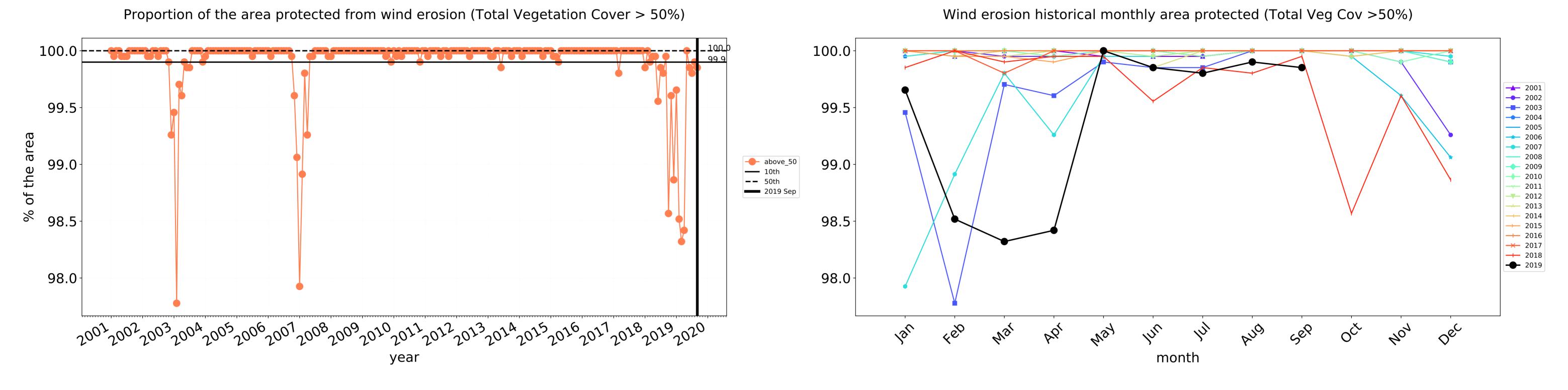


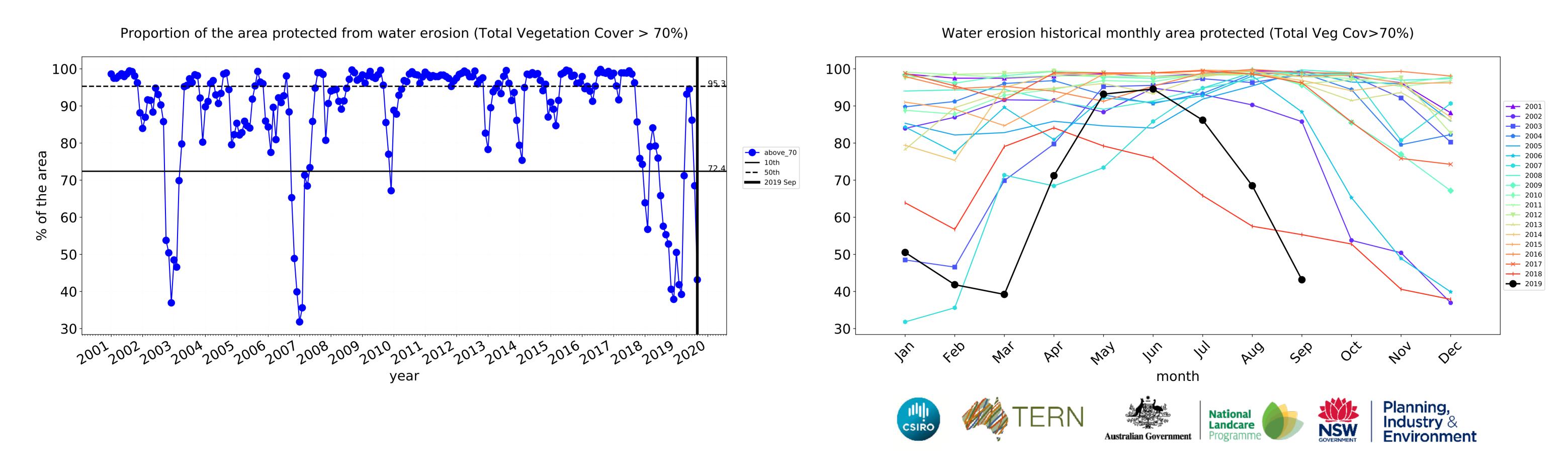


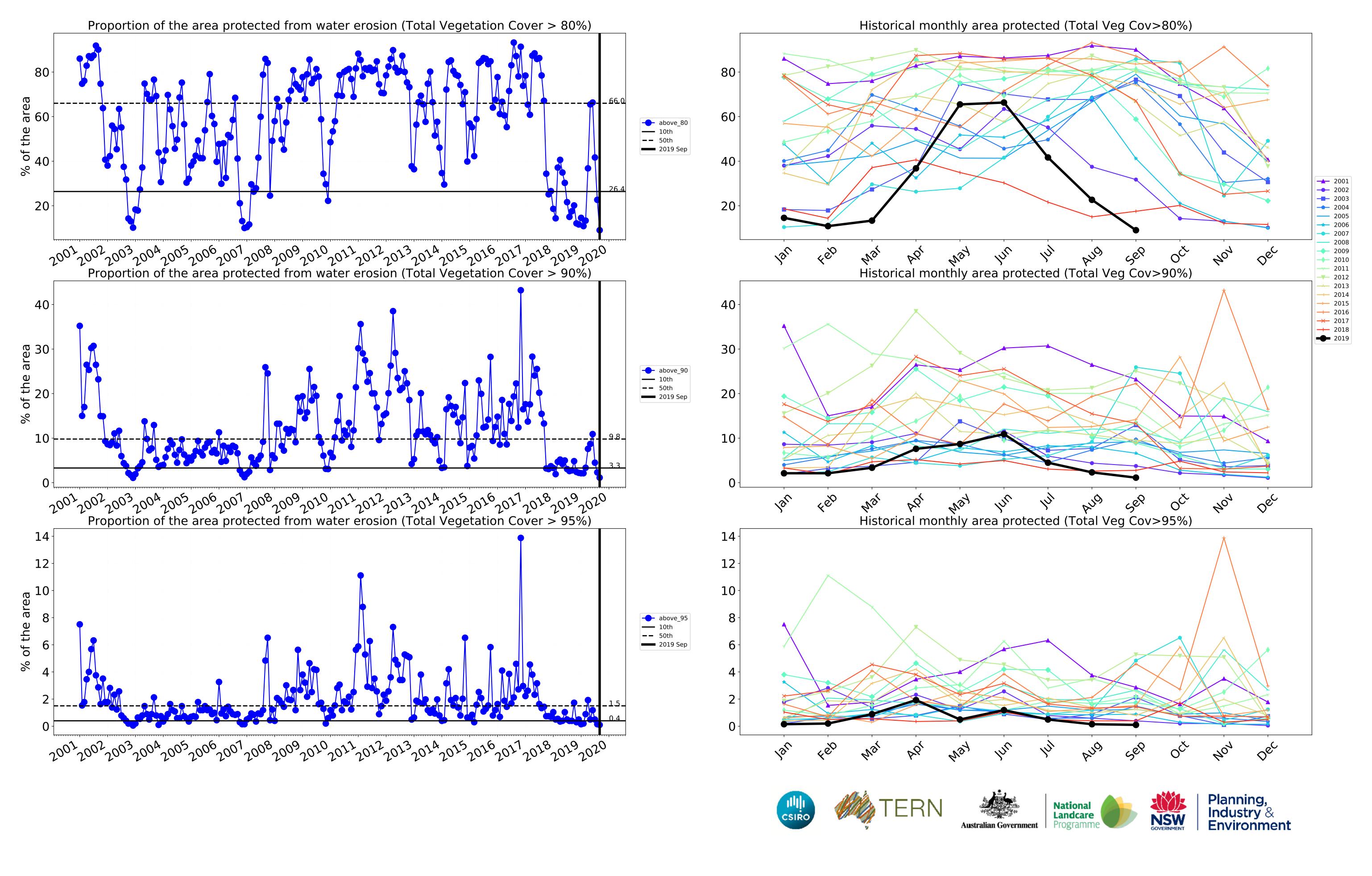




Cropping timeseries



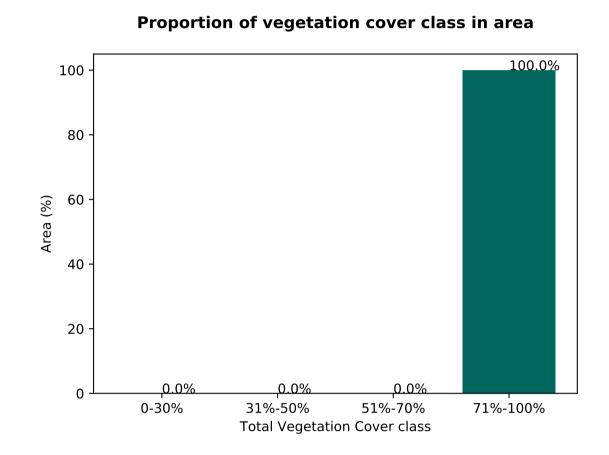


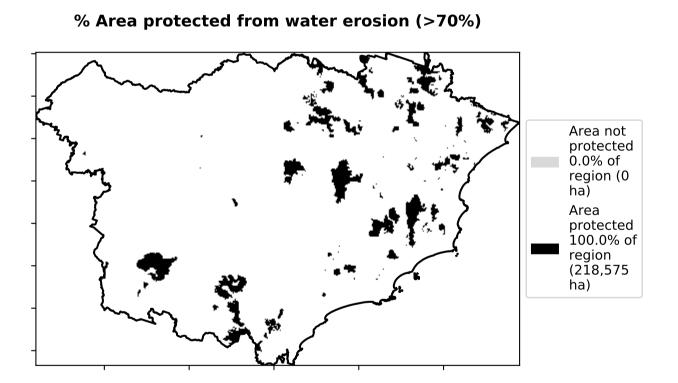


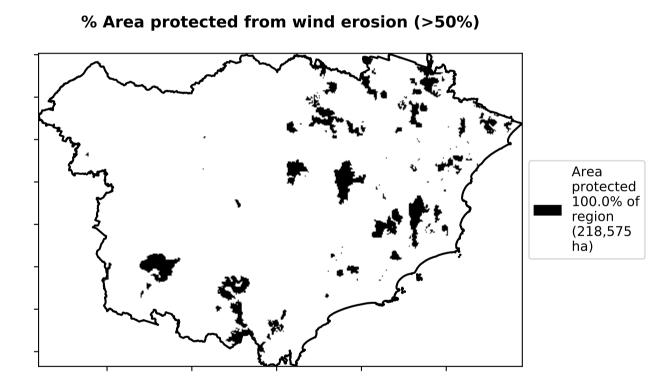
Production native forests and plantation forests

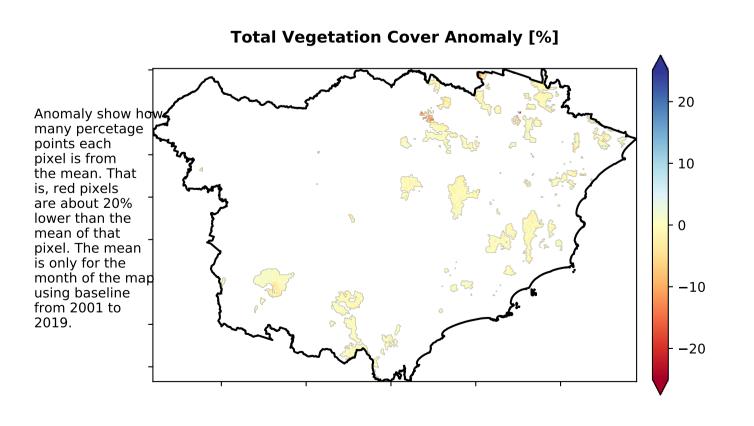
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Of Australia (2018) Australia (2018) Of Australia (2018)

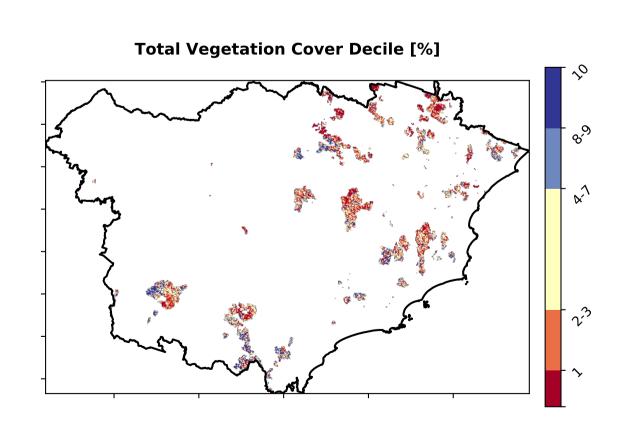
Total Vegetation Cover [%]















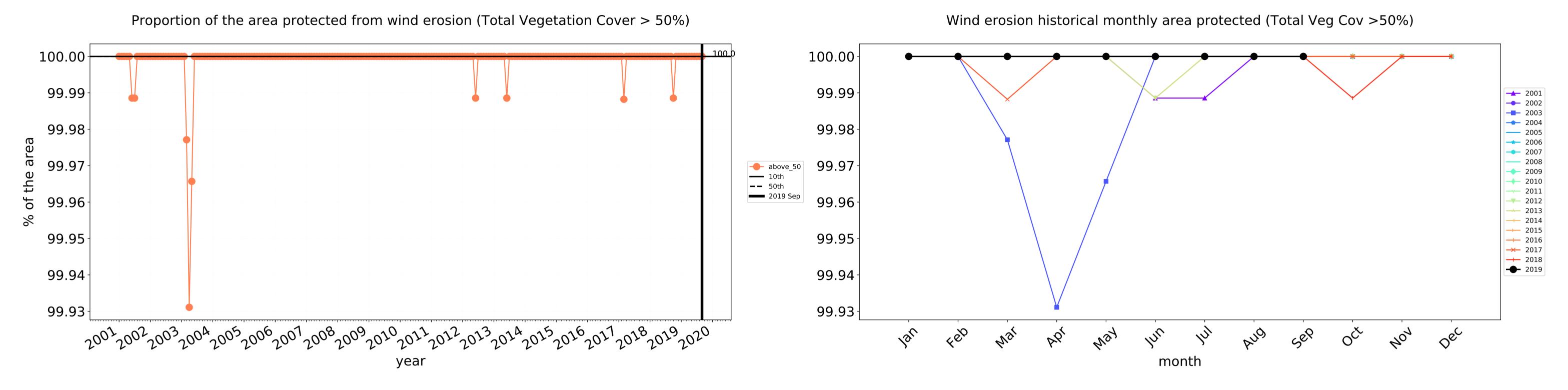


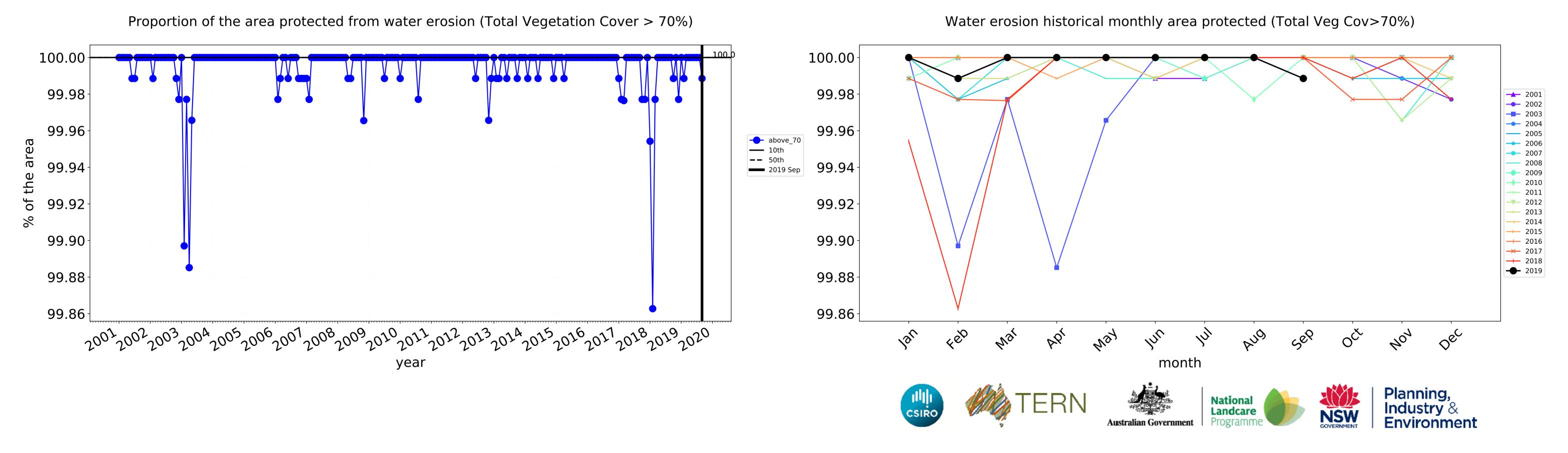


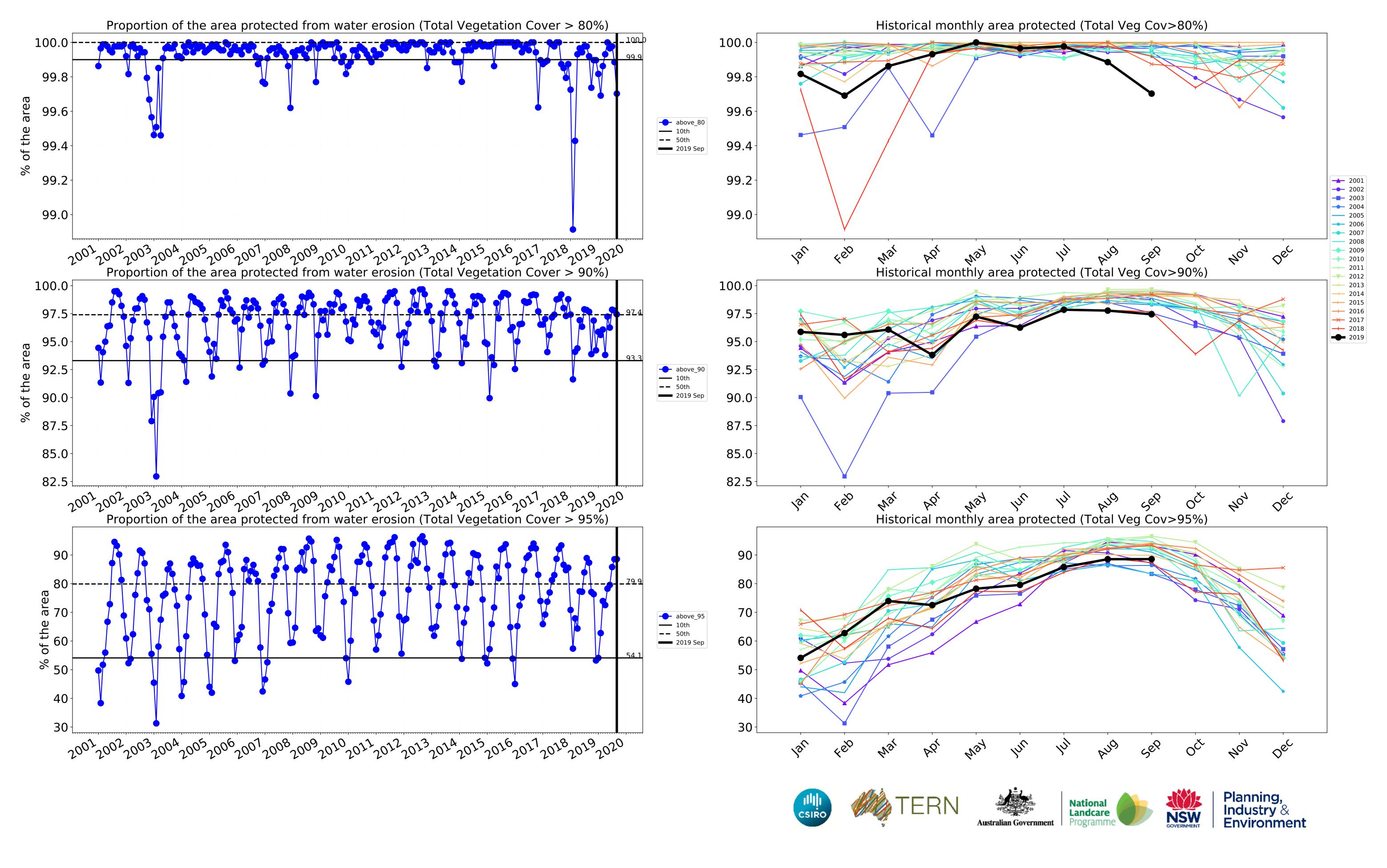




Production native forests and plantation forests timeseries







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

Land use and forest cover Class	area(ha)	above_30	above_50	above_70	above_80	above_90	above_95
Entire region	3,238,275	99.9% 3,234,100	99.5% 3,221,425	95.1% 3,078,675	82.2% 2,663,250	56.7% 1,837,550	33.3% 1,077,725
Conservation and natural environments	1,240,450	99.9% 1,239,300	99.9% 1,238,625	99.7% 1,236,350	98.8% 1,226,025	86.3% 1,070,400	58.3% 723,775
Conservation and natural environments non forest	29,675	96.5% 28,625	94.5% 28,050	90.8% 26,950	84.2% 24,975	61.0% 18,100	35.3% 10,475
Conservation and natural environments Woodland forest	138,775	100.0% 138,750	99.9% 138,700	99.7% 138,400	97.2% 134,950	72.3% 100,325	33.7% 46,725
Conservation and natural environments Forest (non woodland)	1,072,000	100.0% 1,071,925	100.0% 1,071,875	99.9% 1,071,000	99.4% 1,066,100	88.8% 951,975	62.2% 666,575
Agriculture	1,580,575	100.0% 1,580,550	99.9% 1,579,700	93.3% 1,475,175	70.6% 1,116,325	32.2% 509,025	9.3% 147,450
Grazing	1,502,575	100.0% 1,502,550	99.9% 1,501,775	95.1% 1,428,675	73.1% 1,098,850	33.7% 506,975	9.8% 146,975
Grazing non forest	1,212,900	100.0% 1,212,875	99.9% 1,212,200	94.1% 1,140,825	69.8% 846,150	32.3% 391,250	8.1% 98,075
Grazing Woodland forest	120,575	100.0% 120,575	99.9% 120,500	98.9% 119,200	78.0% 94,025	19.9% 23,975	5.7% 6,875
Grazing - Forest (non woodland)	169,100	100.0% 169,100	100.0% 169,075	99.7% 168,650	93.8% 158,675	54.3% 91,750	24.9% 42,025
Cropping	50,625	100.0% 50,625	99.9% 50,550	43.2% 21,850	9.0% 4,575	1.1% 575	0.1% 50
Production native forests and plantation forests	218,575	100.0% 218,575	100.0% 218,575	100.0% 218,550	99.7% 217,925	97.4% 212,975	88.6% 193,575











