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 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









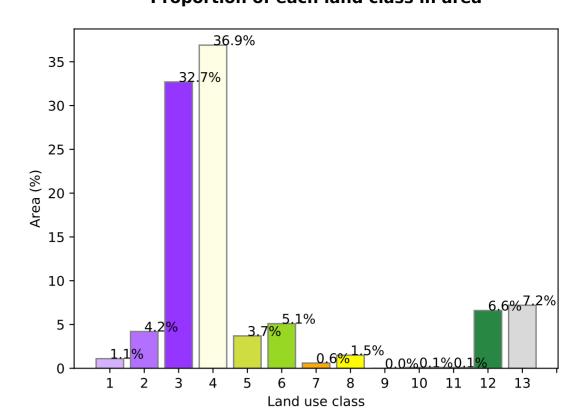


Vegetation Cover Apr 2019

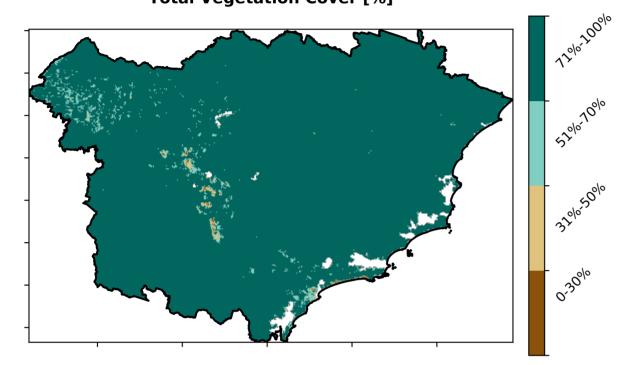
Land use and forest cover

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 Catchment Scale Land Use and Forests 3 Conservation and natural environments - Non-Woodland forest of Australia (2018) 4 Agriculture - Grazing - Non-forest Derived from 5 Agriculture - Grazing - Woodland forest Catchment Scale Land 6 Agriculture - Grazing - Non-woodland forest Use of Australia 7 Agriculture - Grazing - Irrigated (2018) and Forests of Australia (2018) 8 Agriculture - Cropping - Non-irrigated 9 Agriculture - Cropping - Irrigated 10 Agriculture - Horticulture - Non-irrigated 11 Agriculture - Horticulture - Irrigated 12 Production native forests and plantation forests 13 Other uses

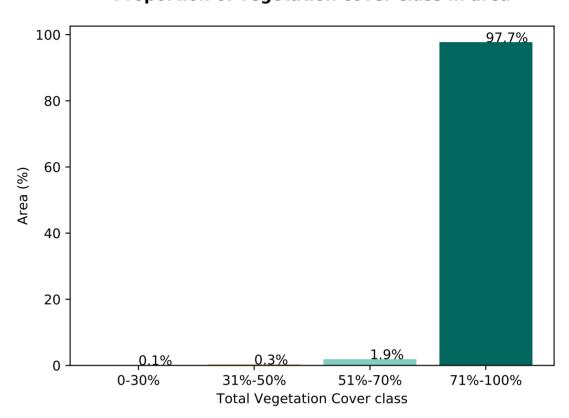
Proportion of each land class in area



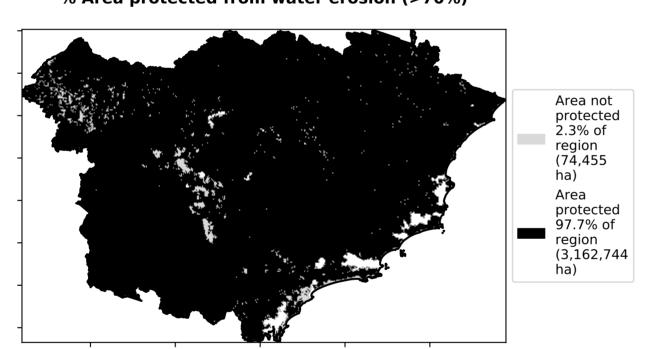
Total Vegetation Cover [%]



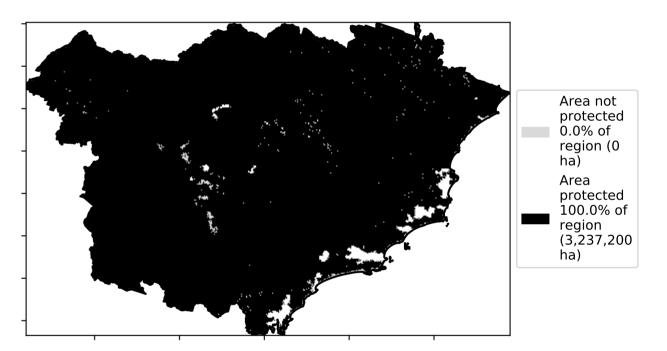
Proportion of vegetation cover class in area



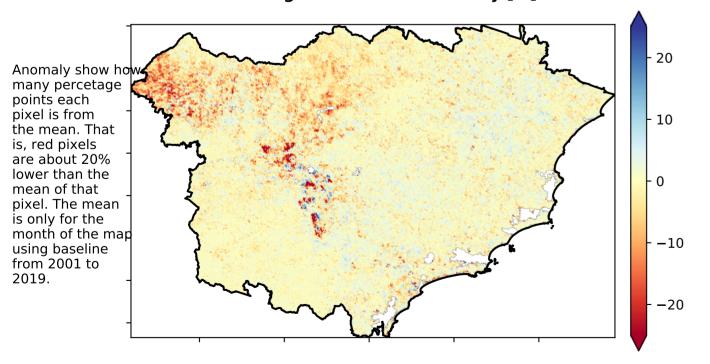
% Area protected from water erosion (>70%)

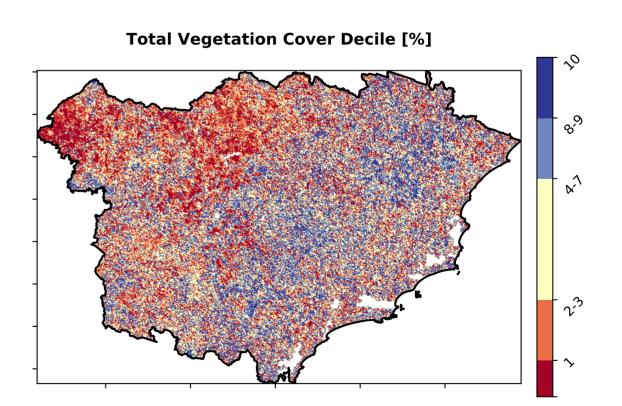


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]







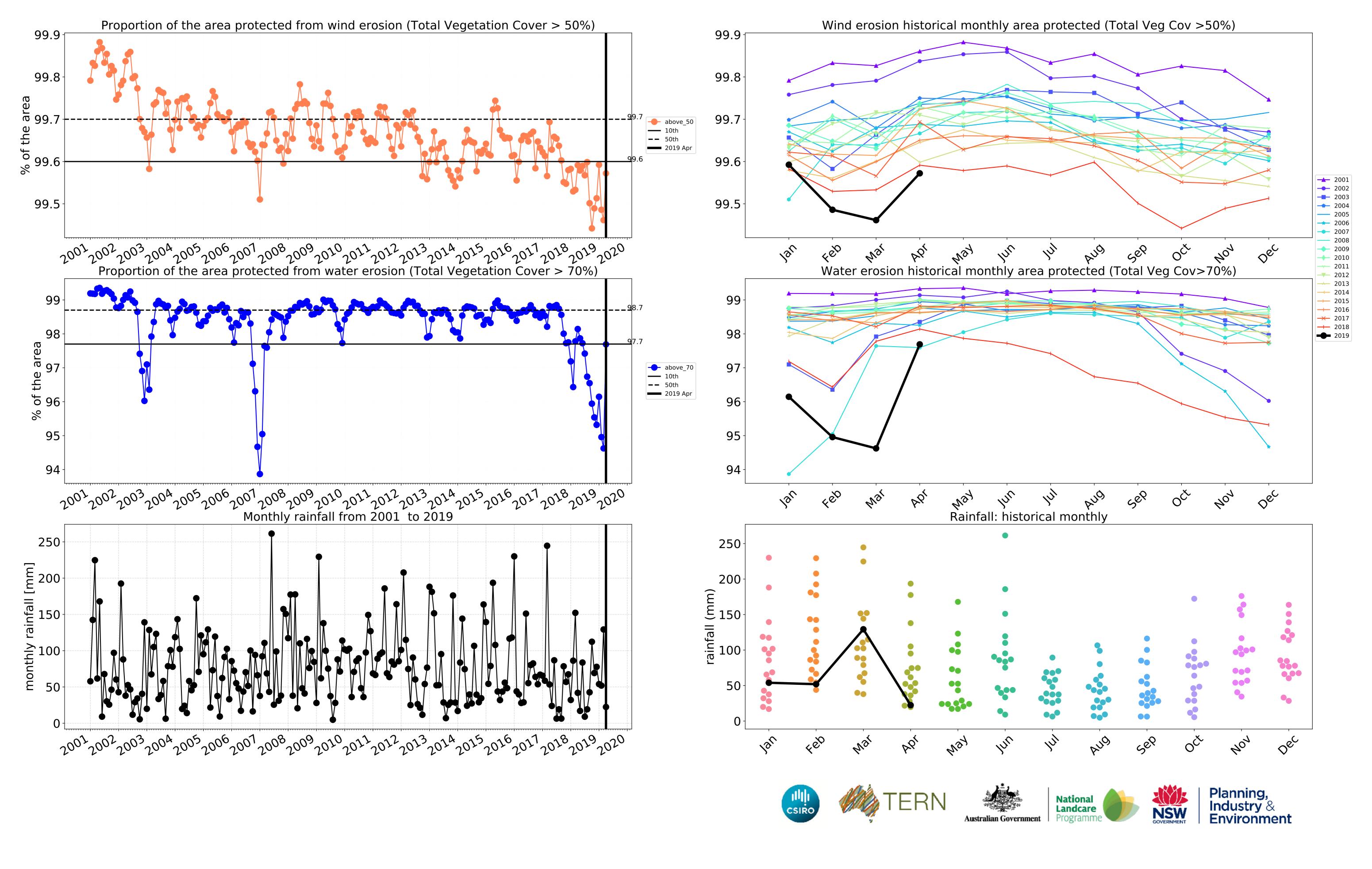


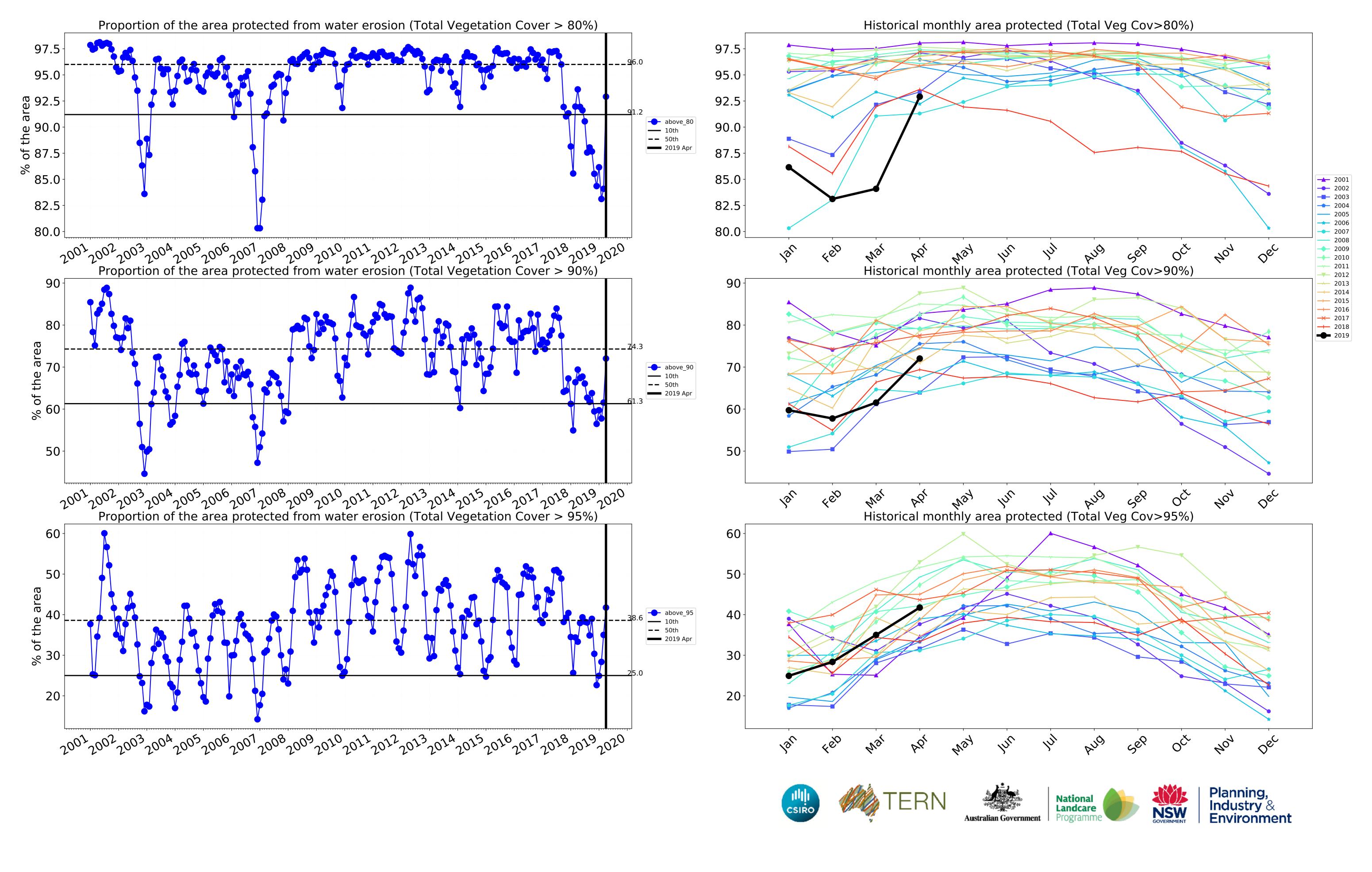






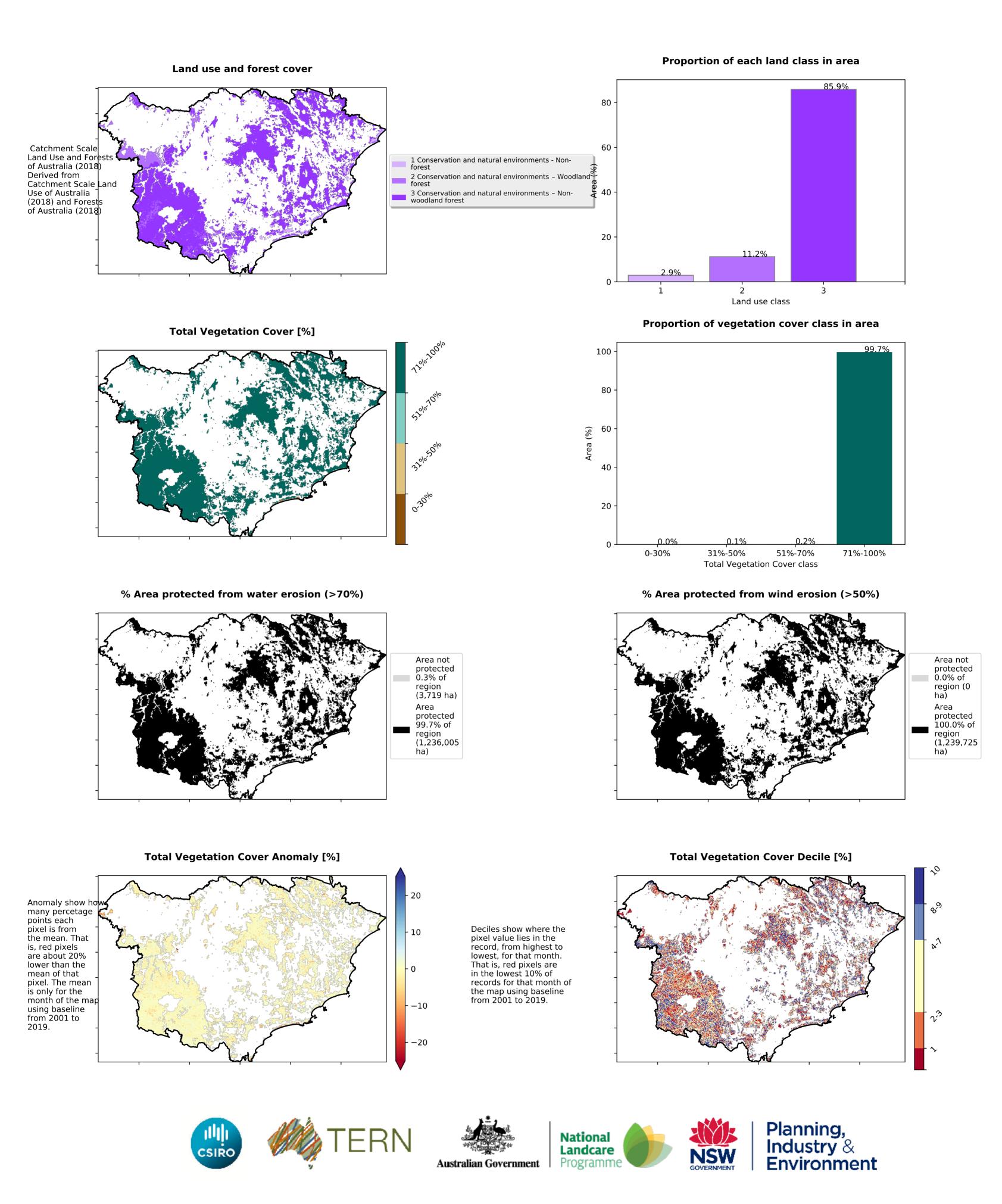




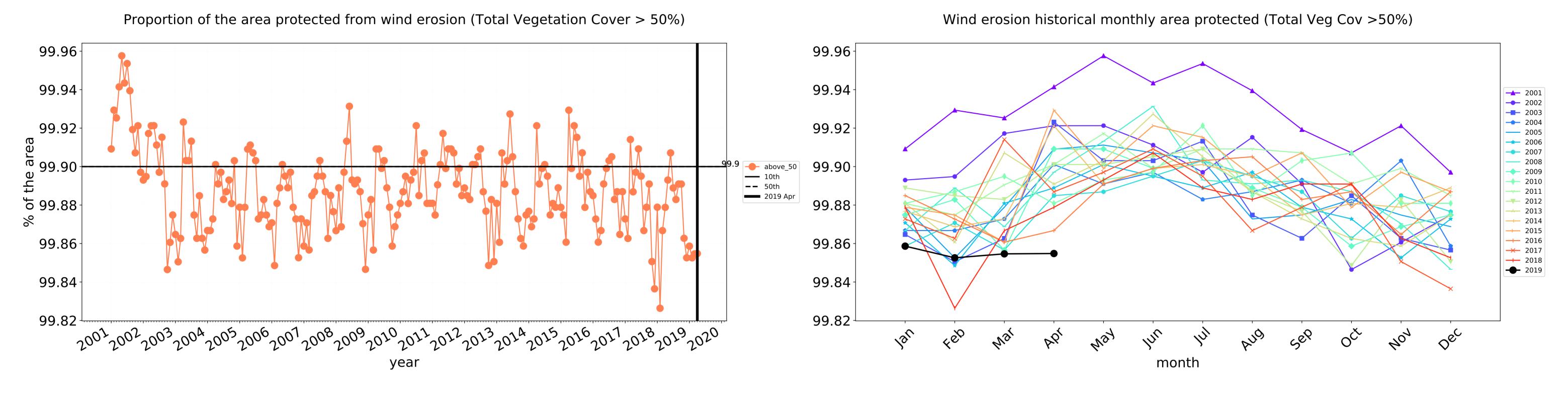


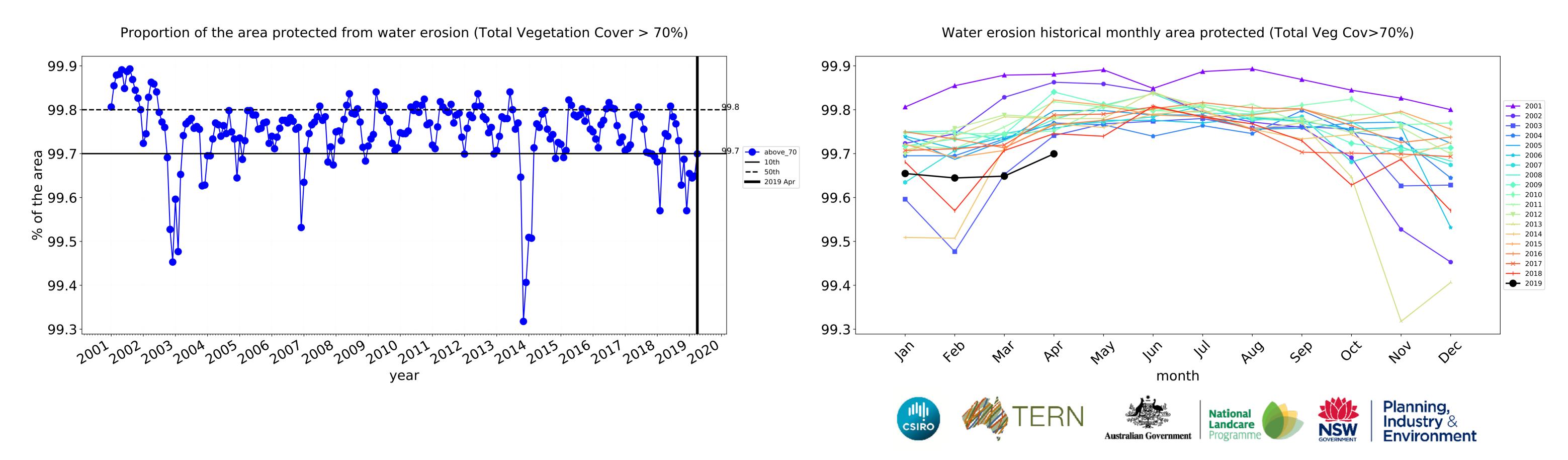
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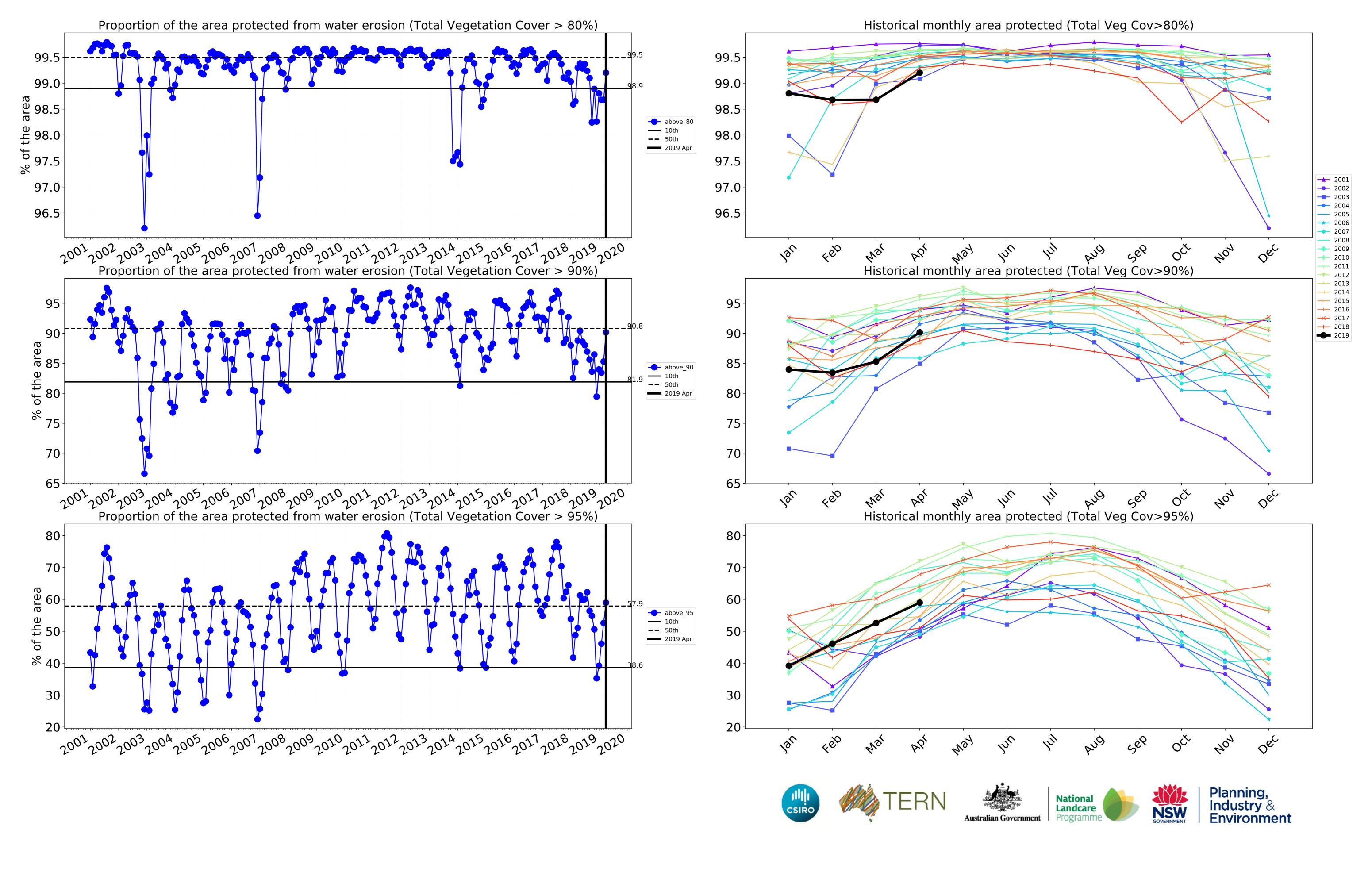
Conservation and natural environments



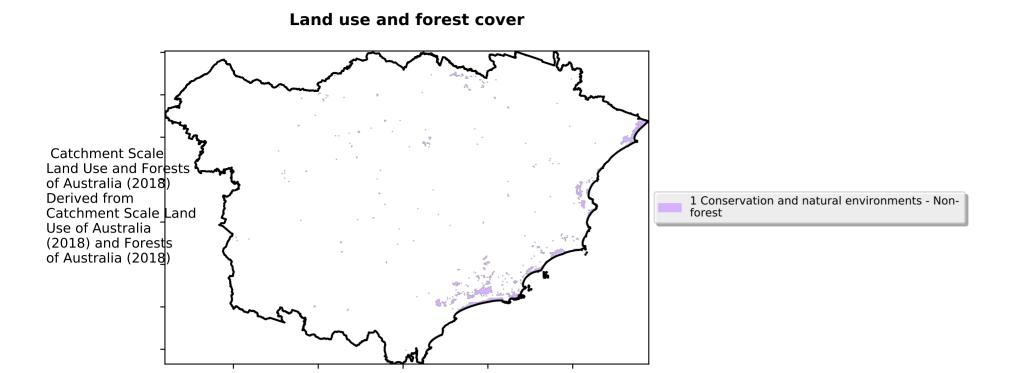
Conservation and natural environments timeseries



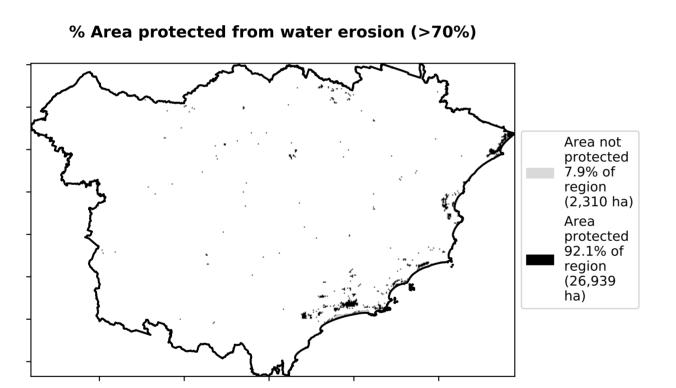


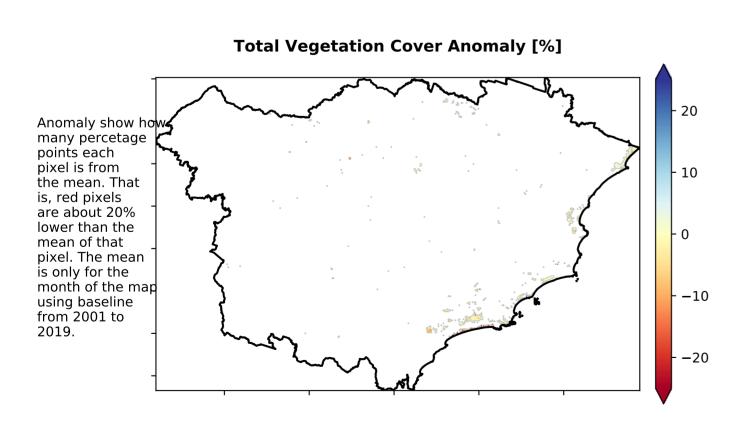


Conservation and natural environments non forest



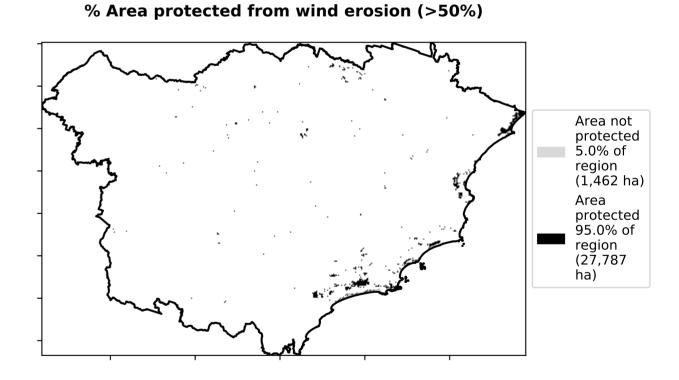
Total Vegetation Cover [%]

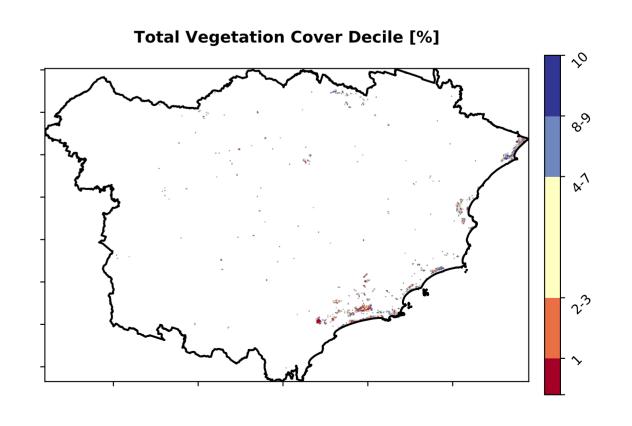




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area 92.1% 92.1% 92.1% 92.1% 92.1% 71%-100% Total Vegetation Cover class











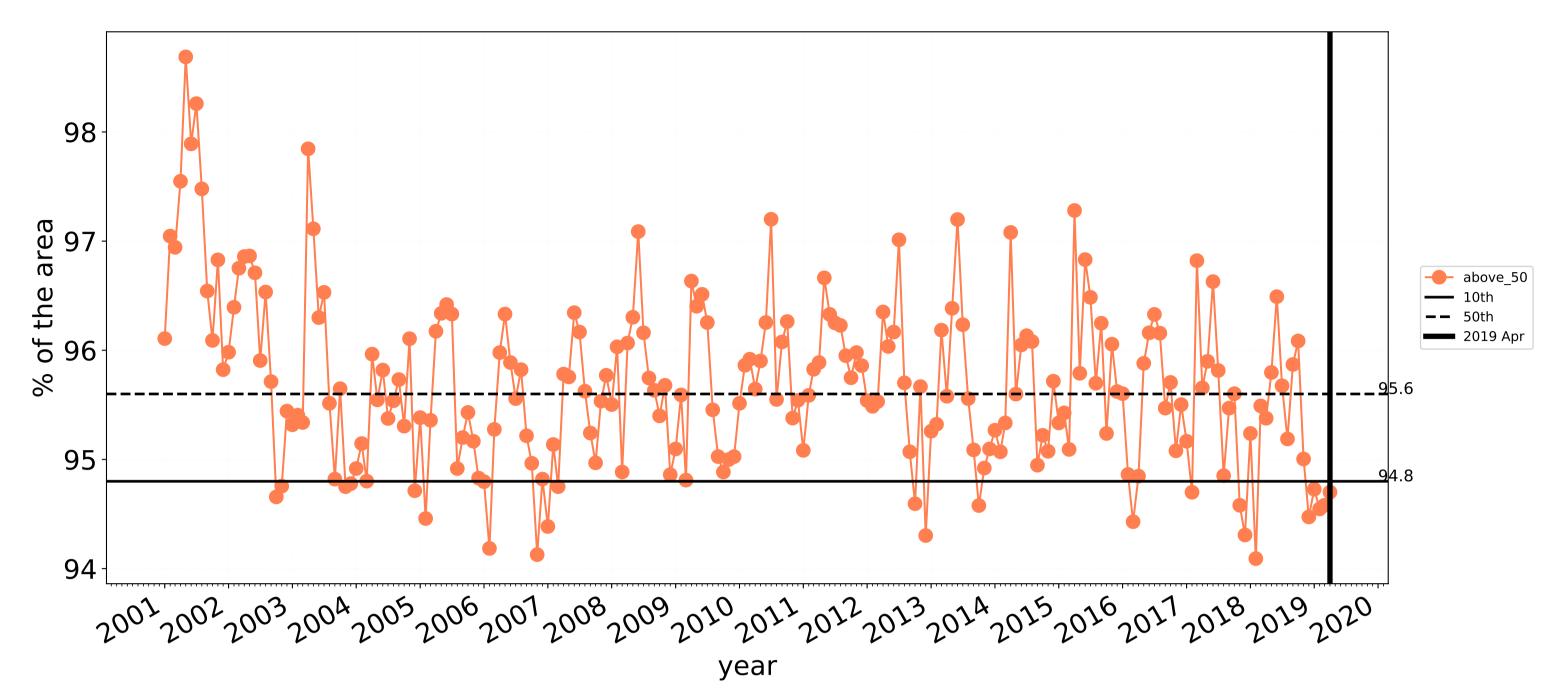




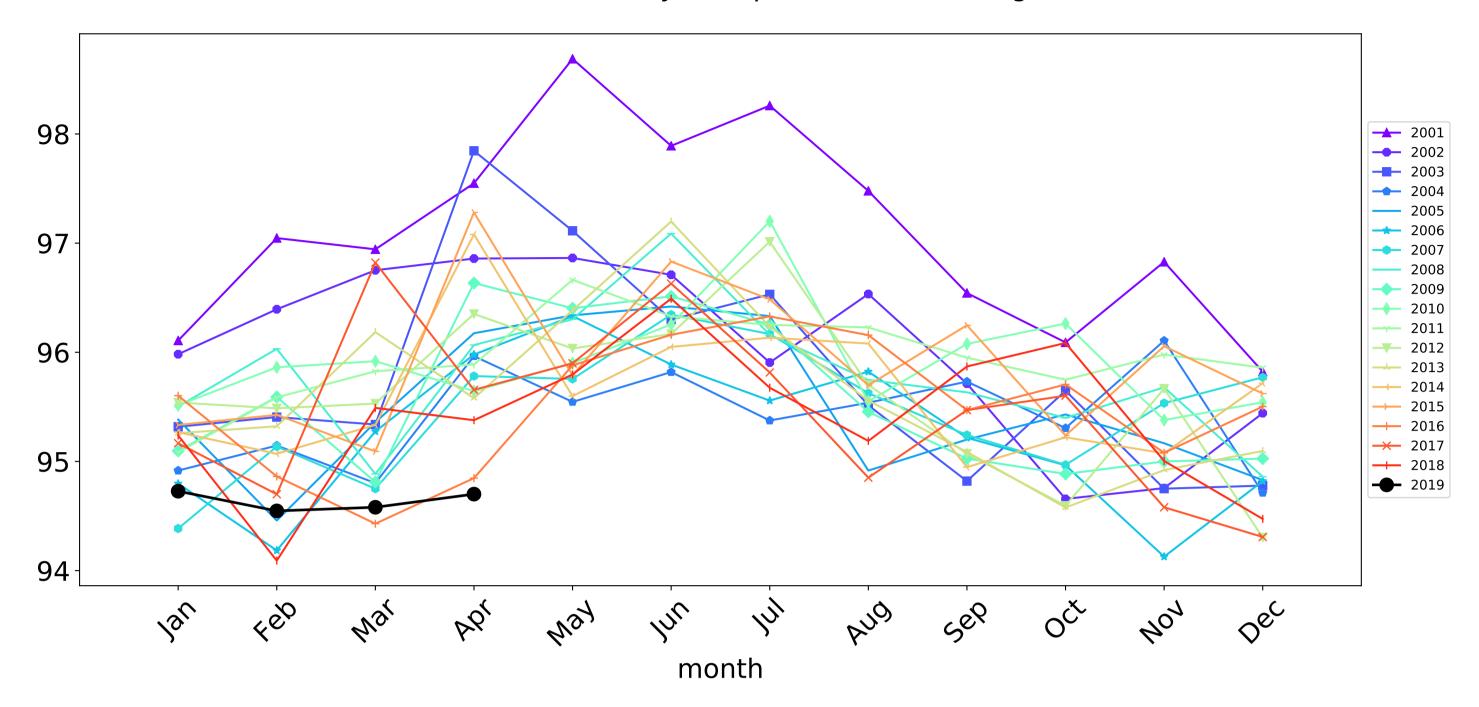


Conservation and natural environments non forest timeseries

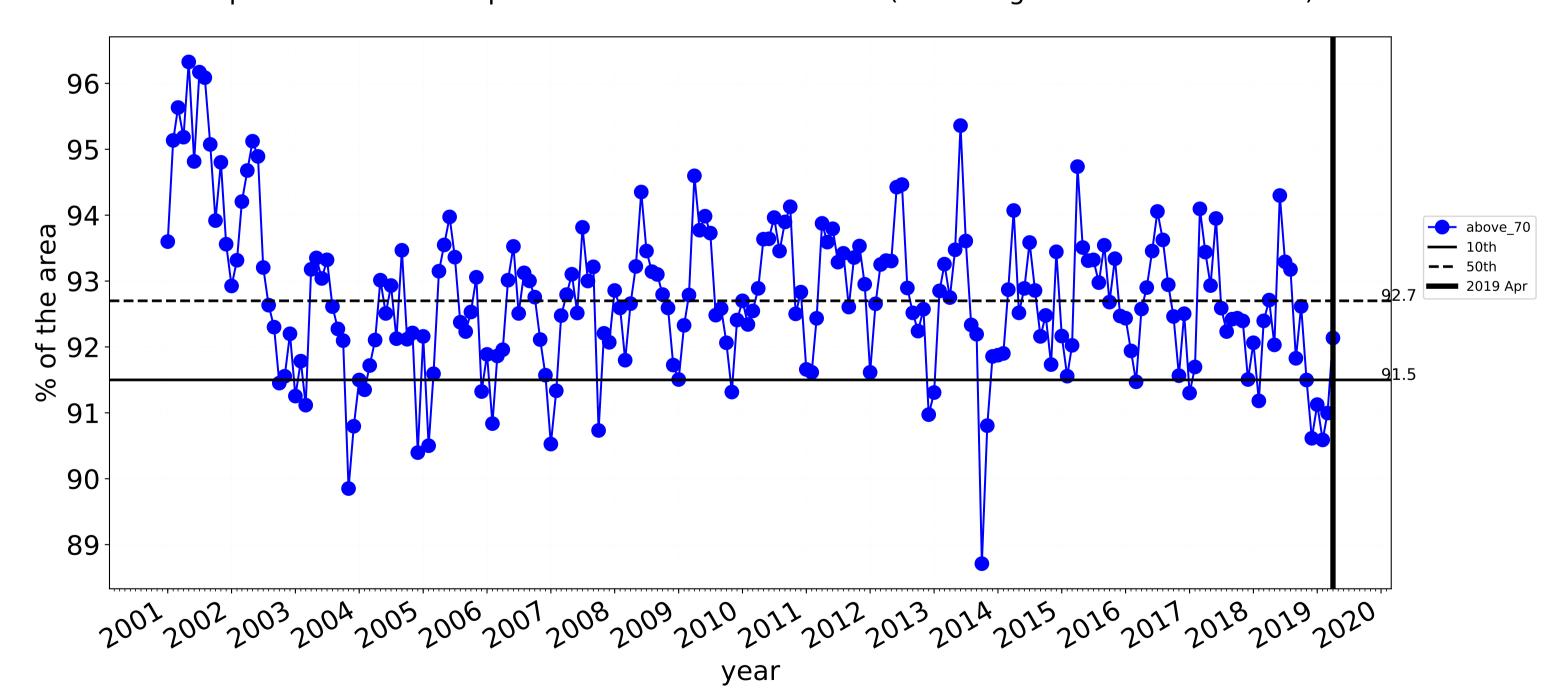




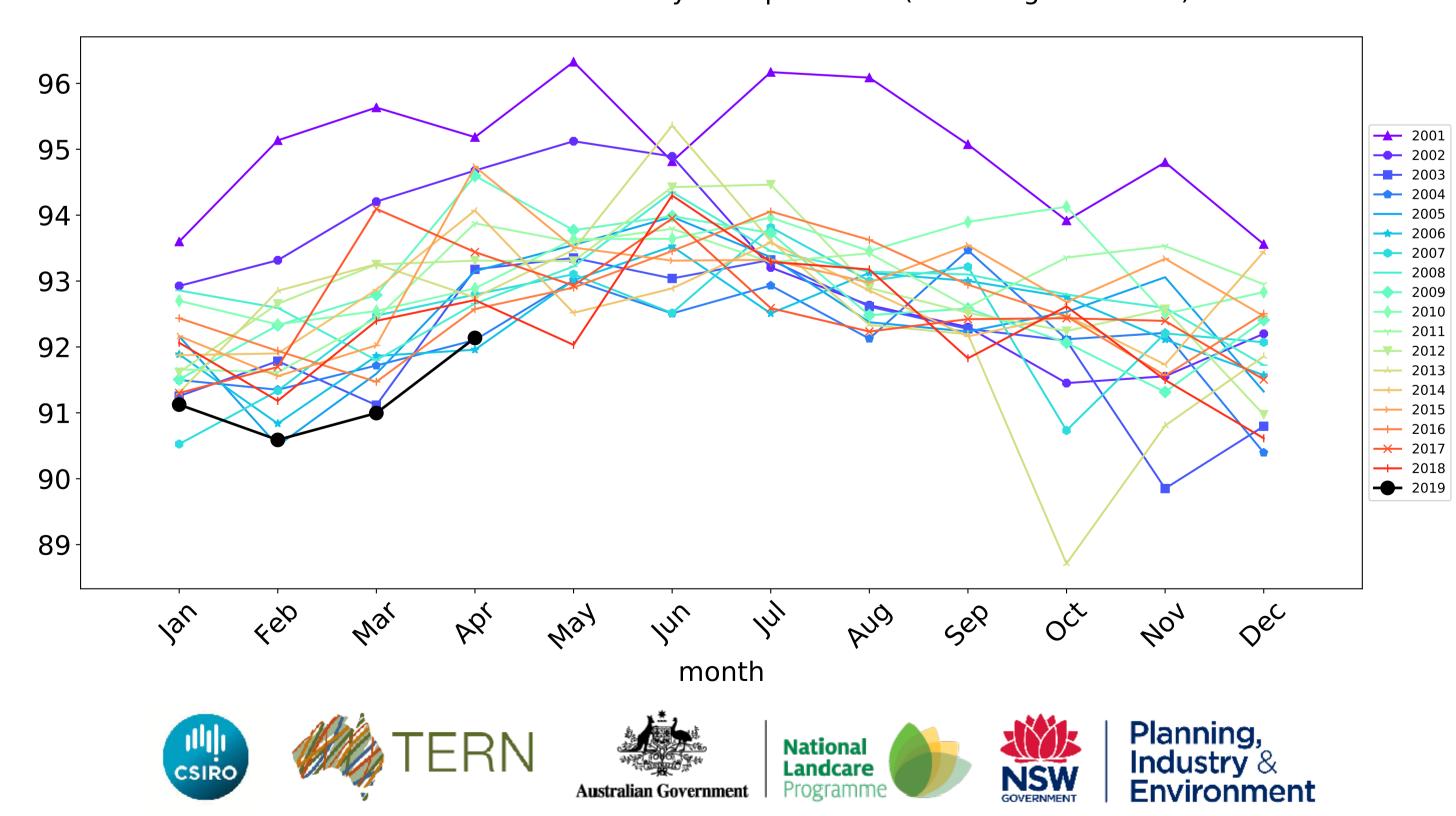
Wind erosion historical monthly area protected (Total Veg Cov >50%)

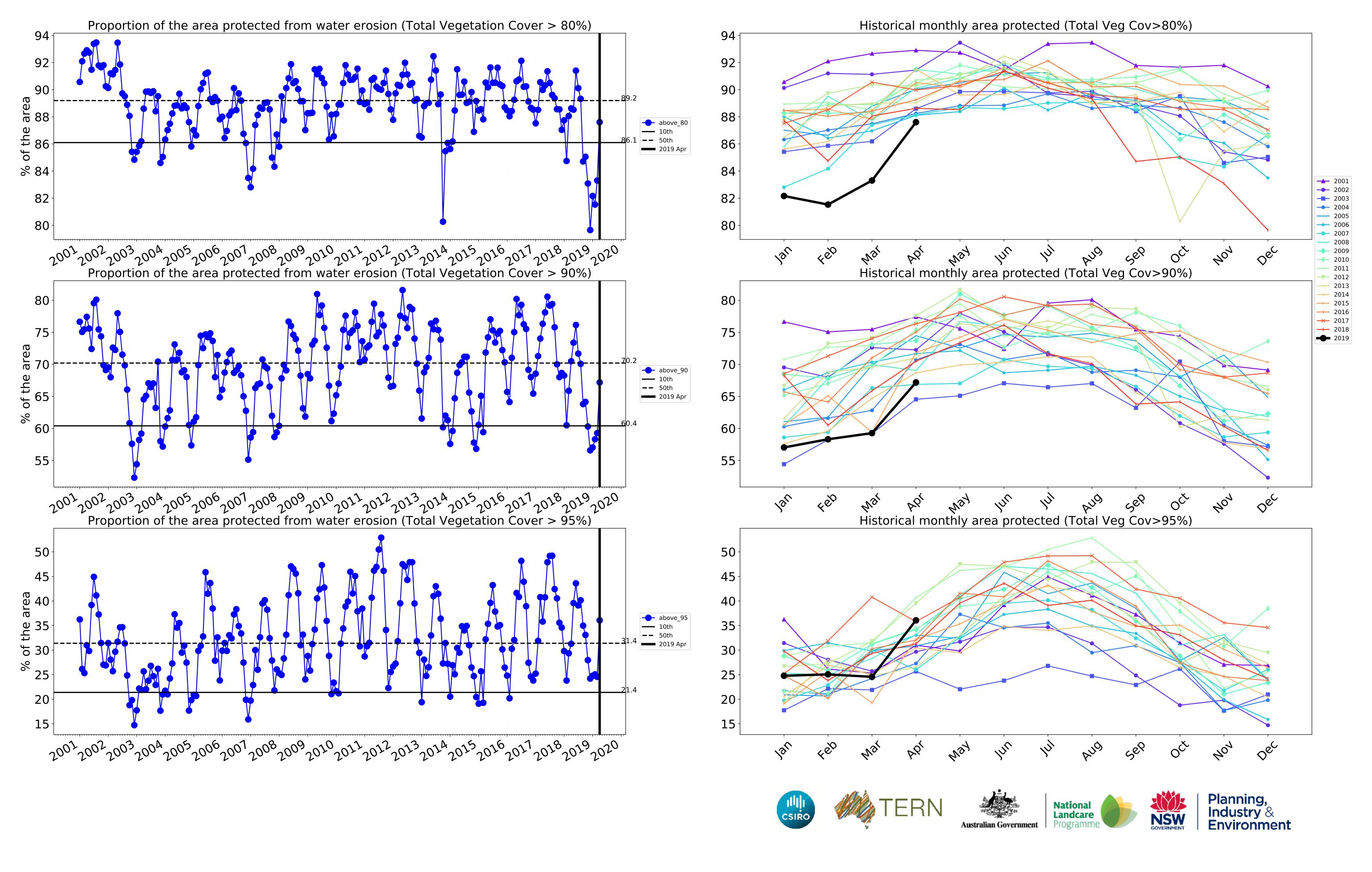


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

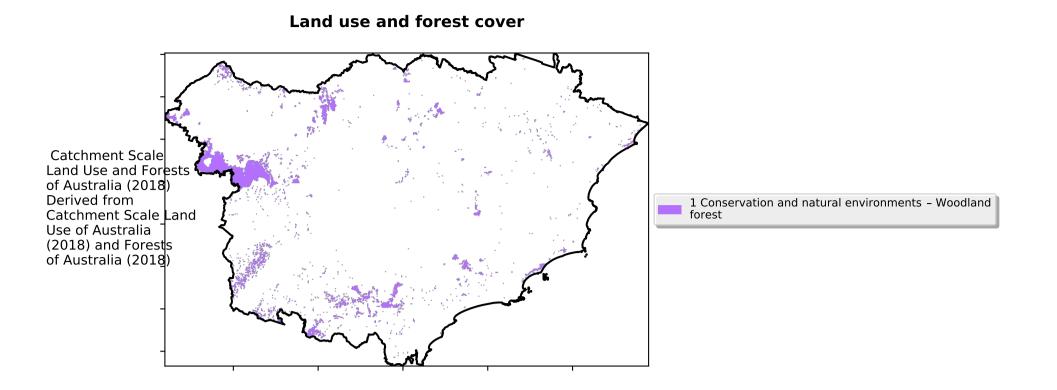


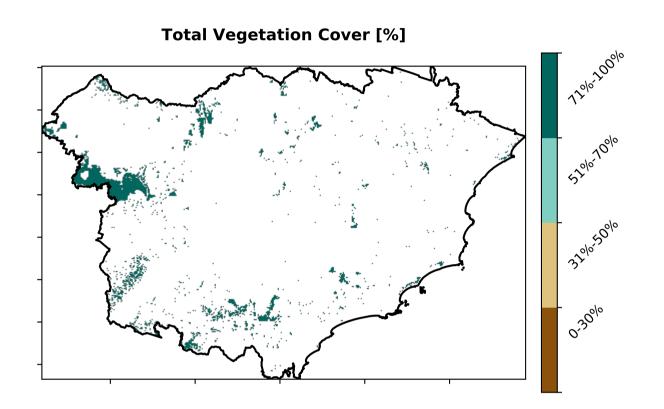
Water erosion historical monthly area protected (Total Veg Cov>70%)

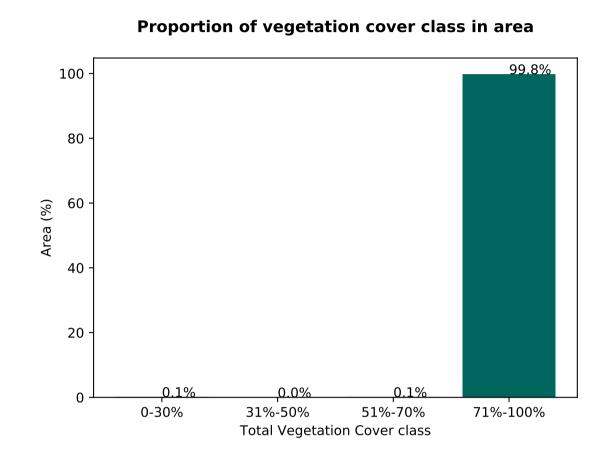


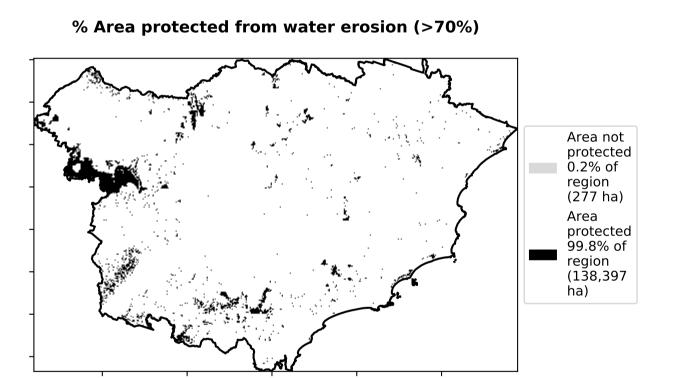


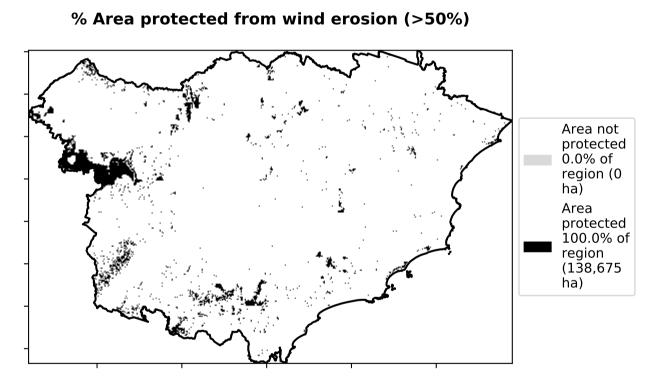
Conservation and natural environments Woodland forest

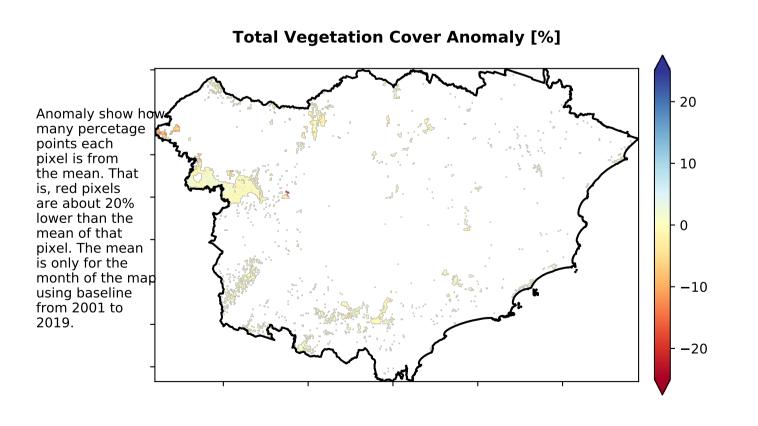


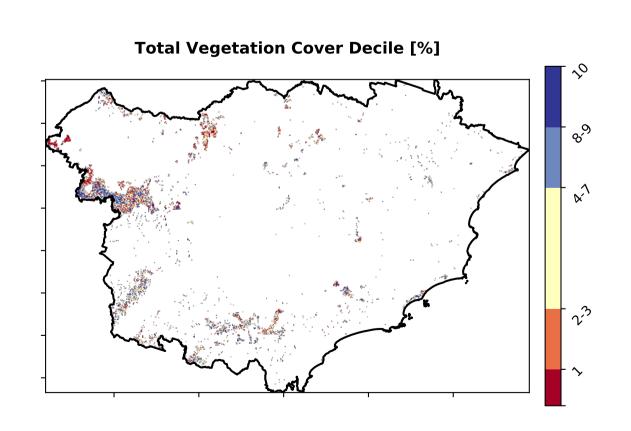
















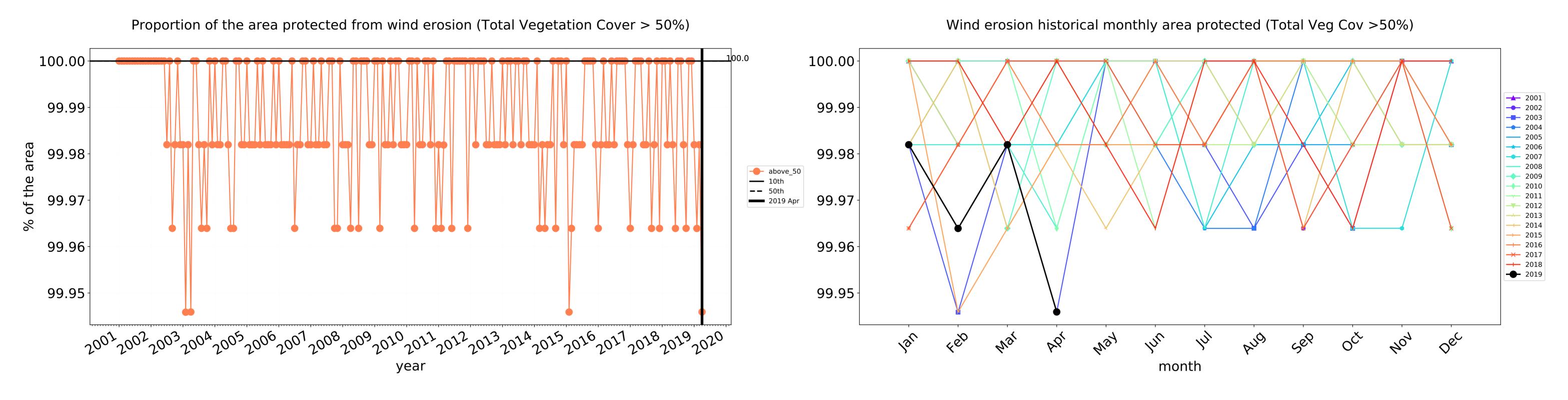


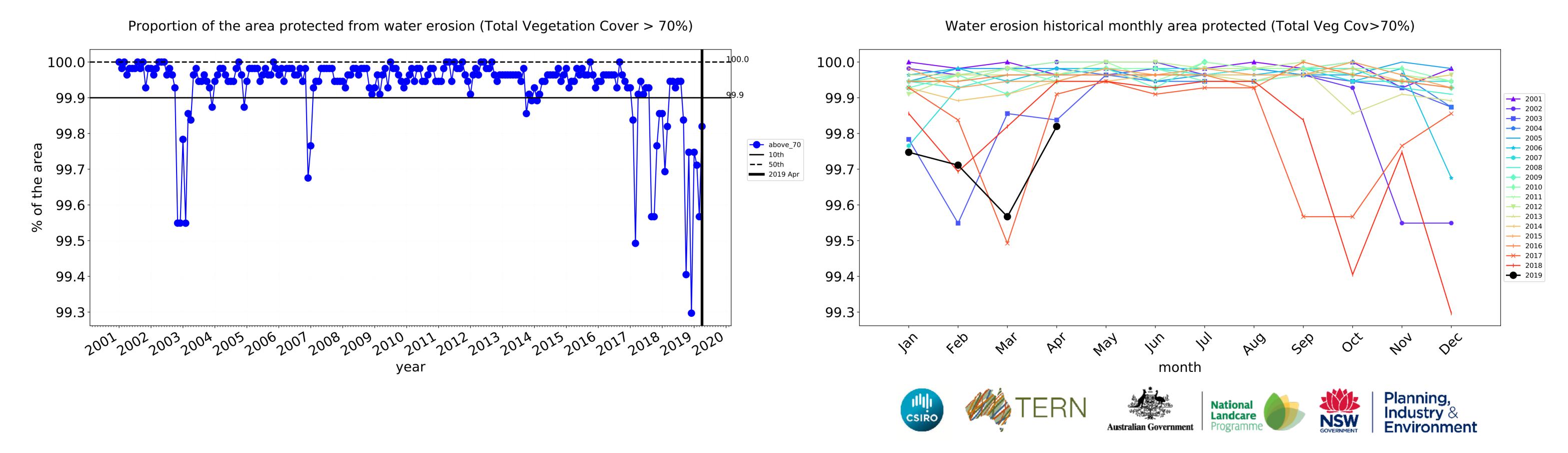


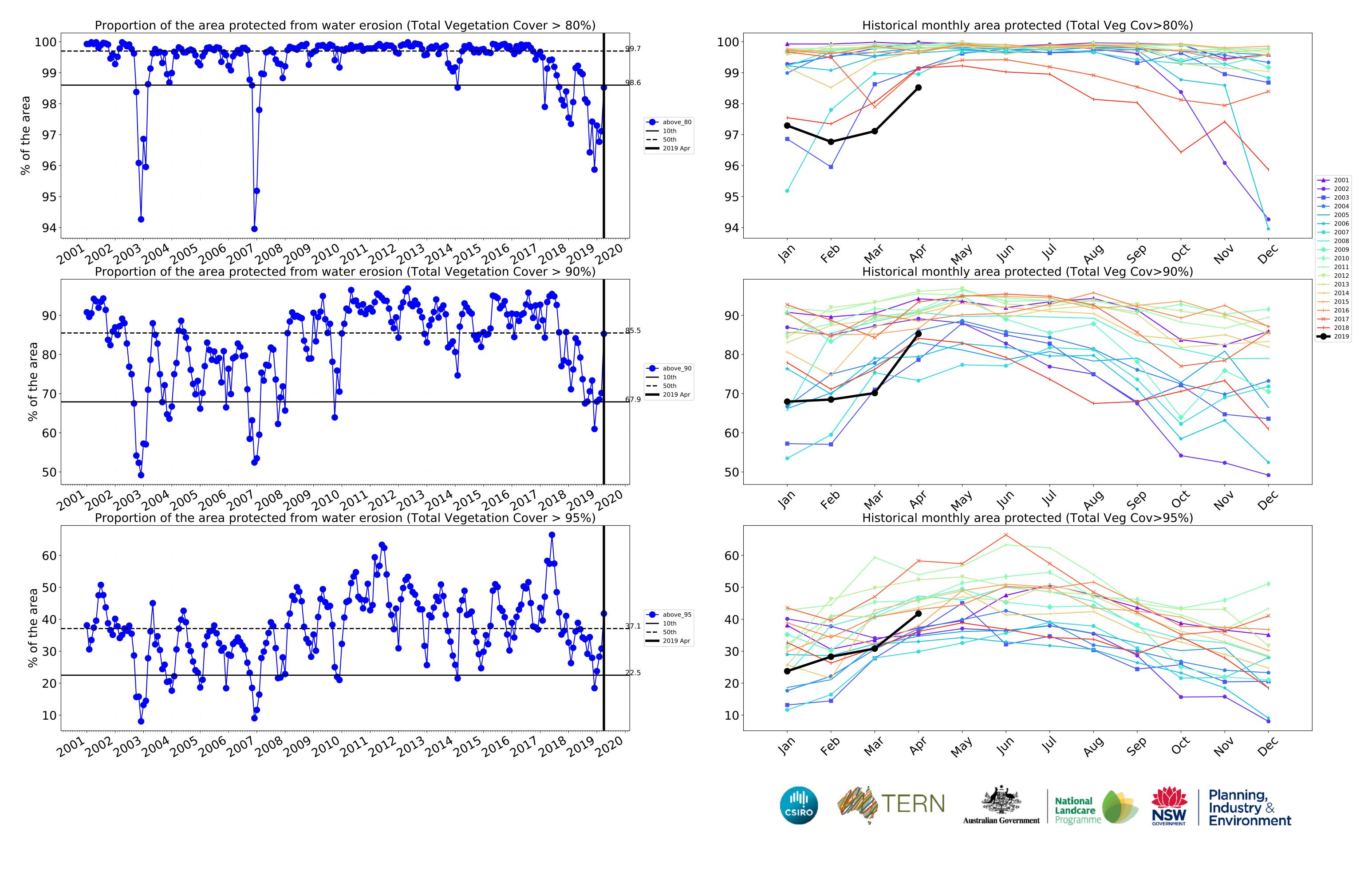


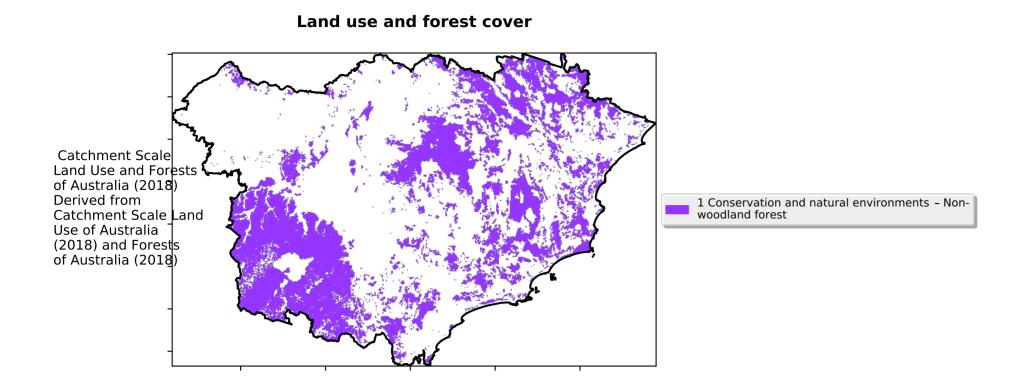


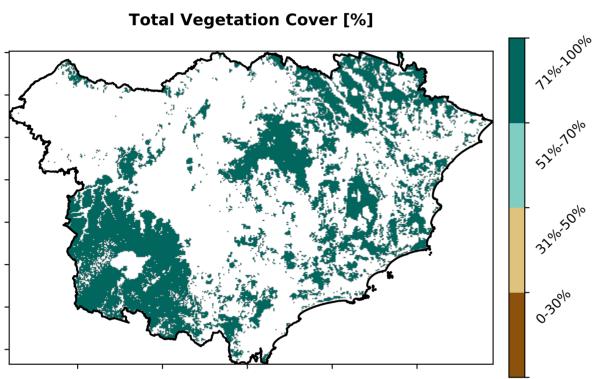
Conservation and natural environments Woodland forest timeseries

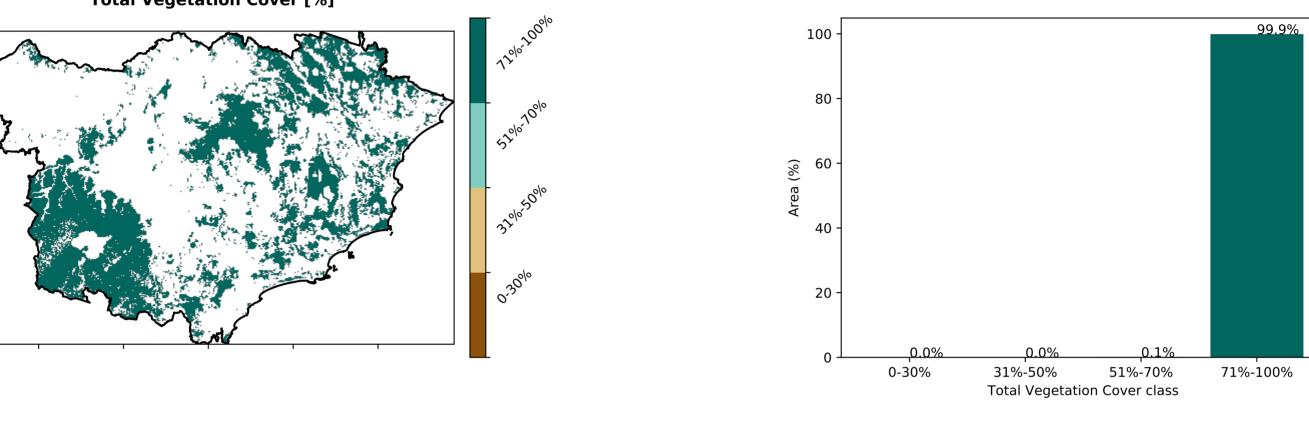


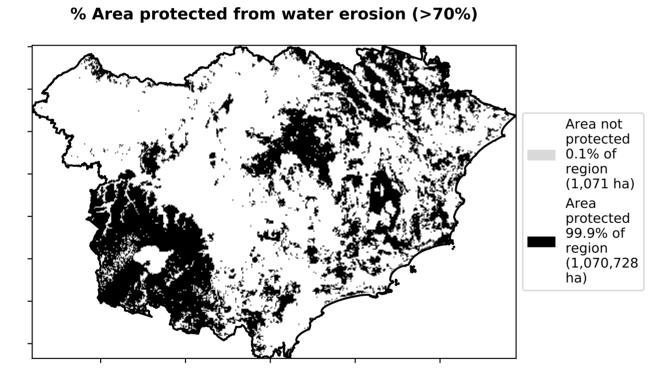


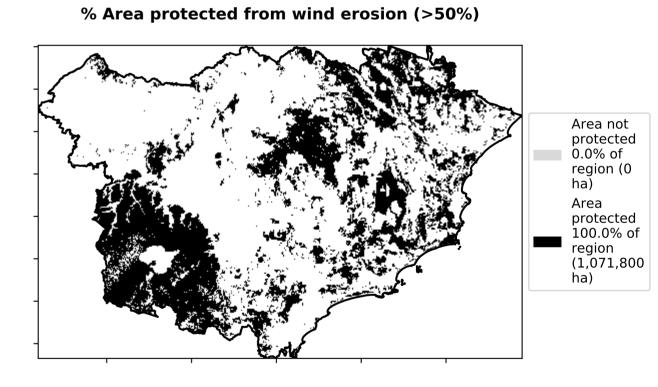




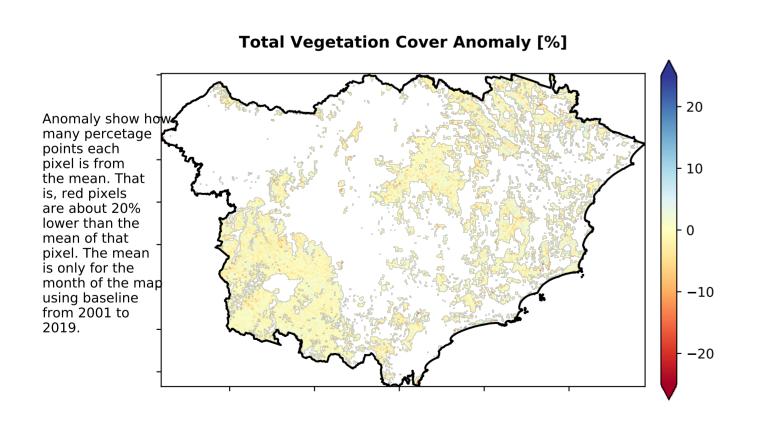


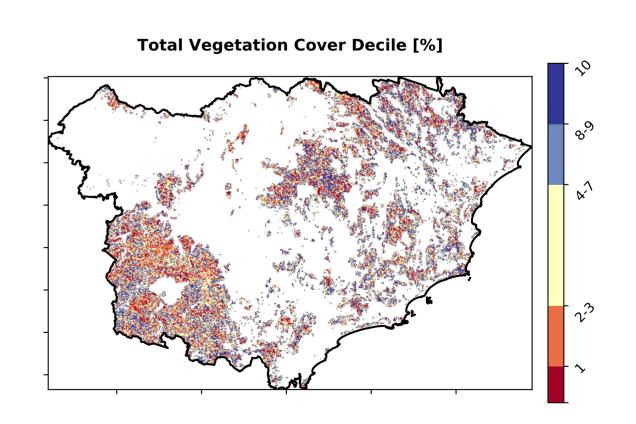






Proportion of vegetation cover class in area







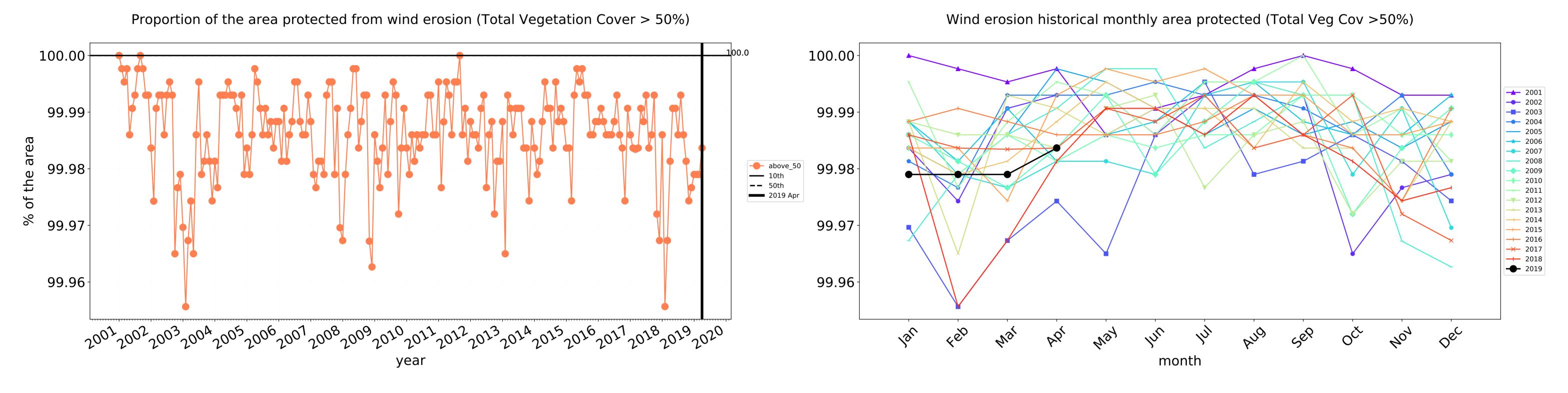


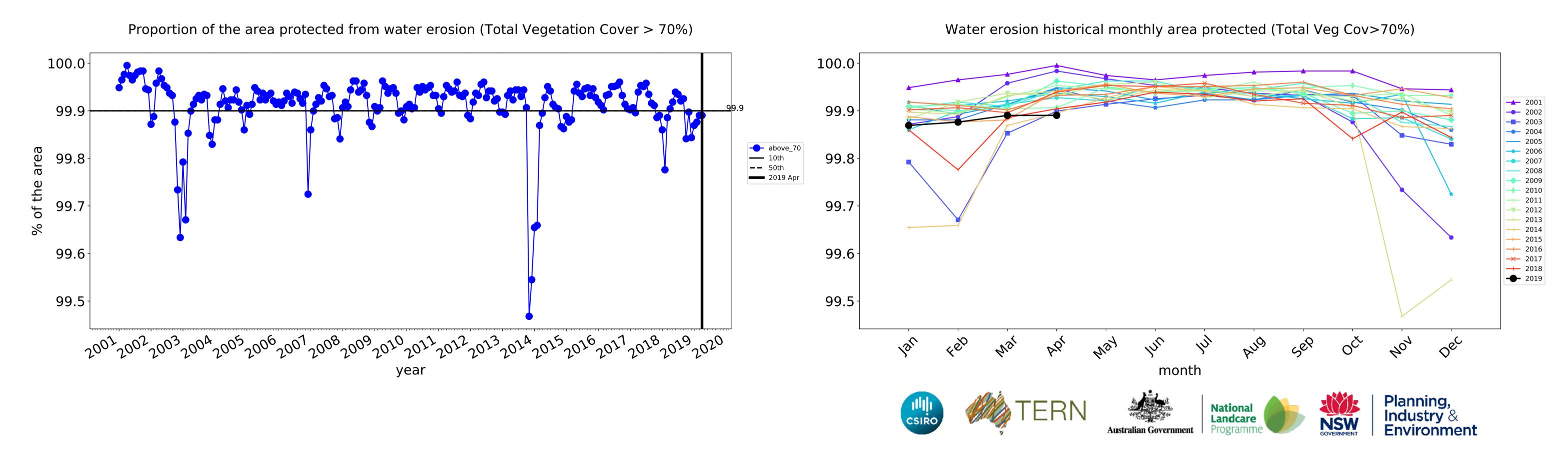


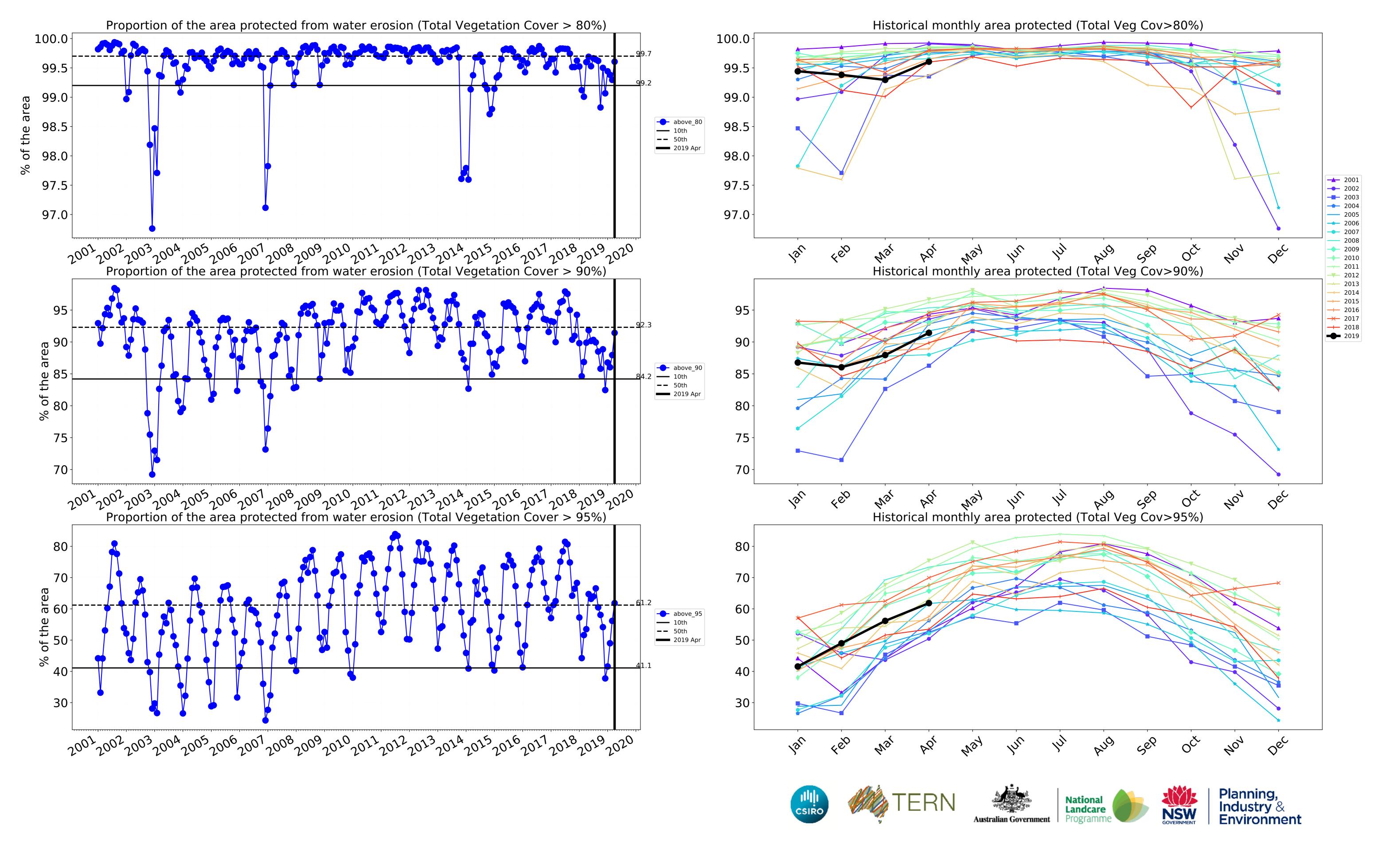




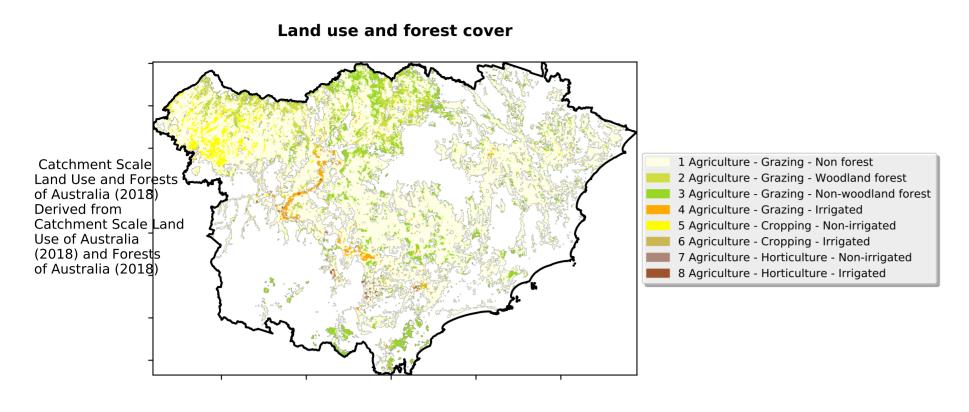


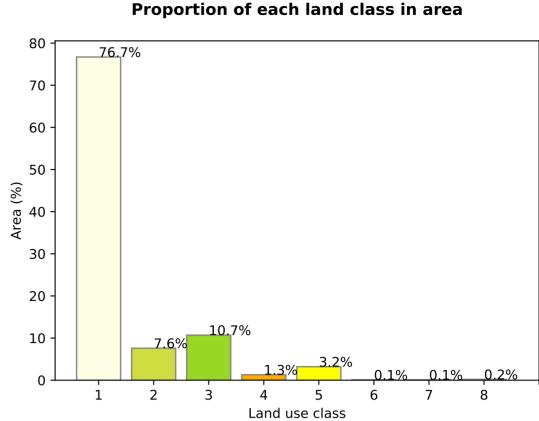


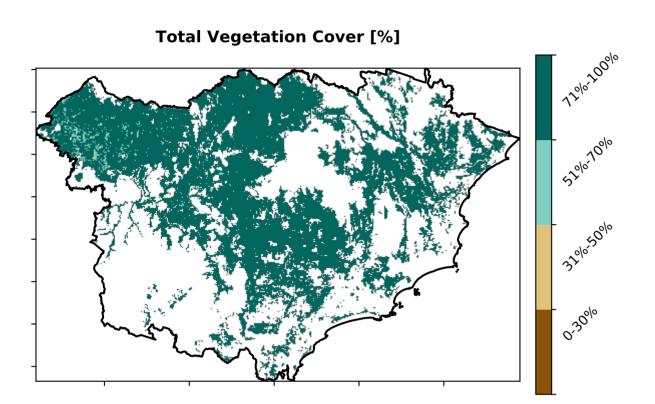


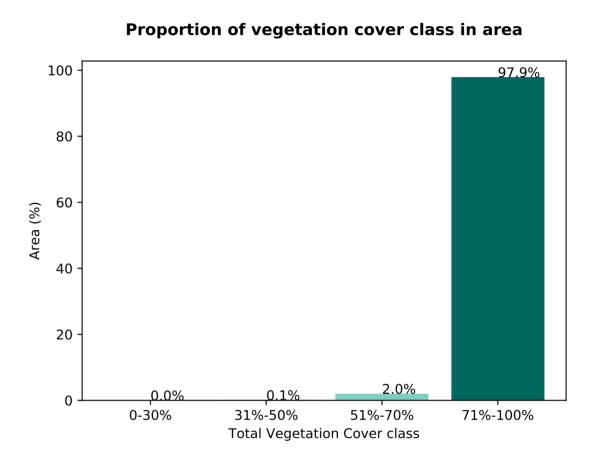


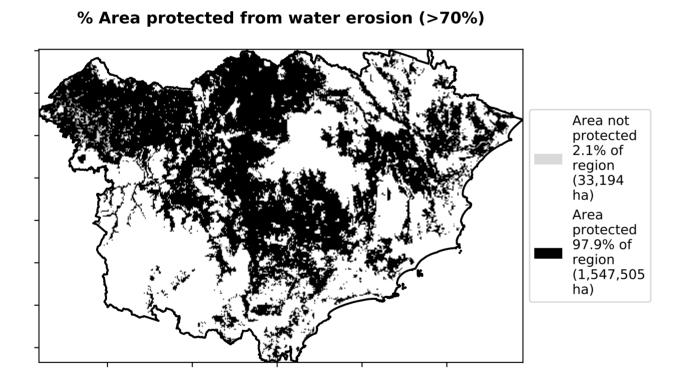
Agriculture

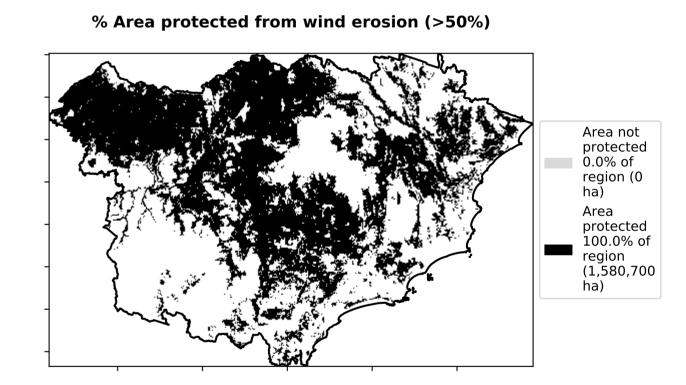


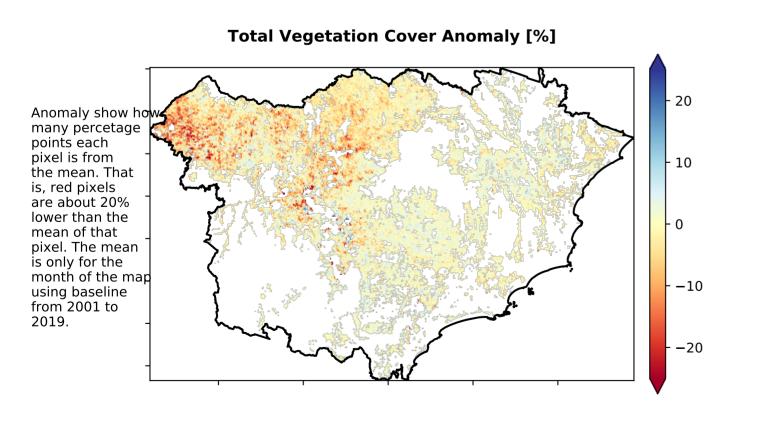


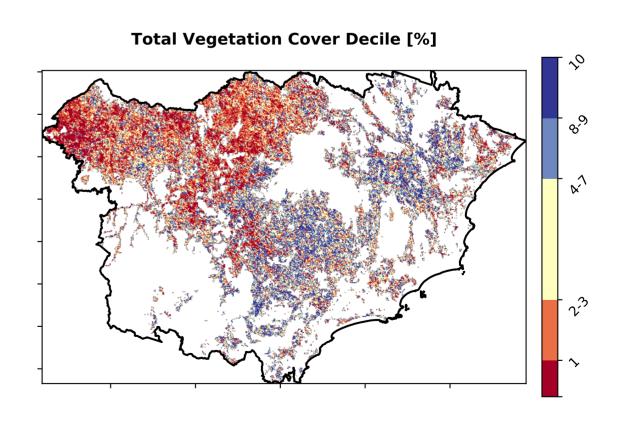
















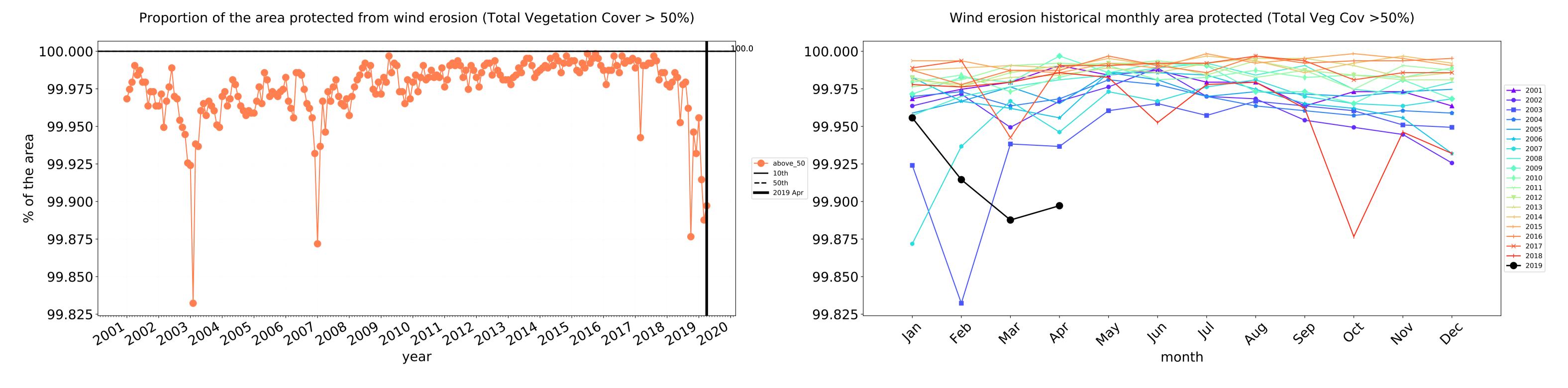


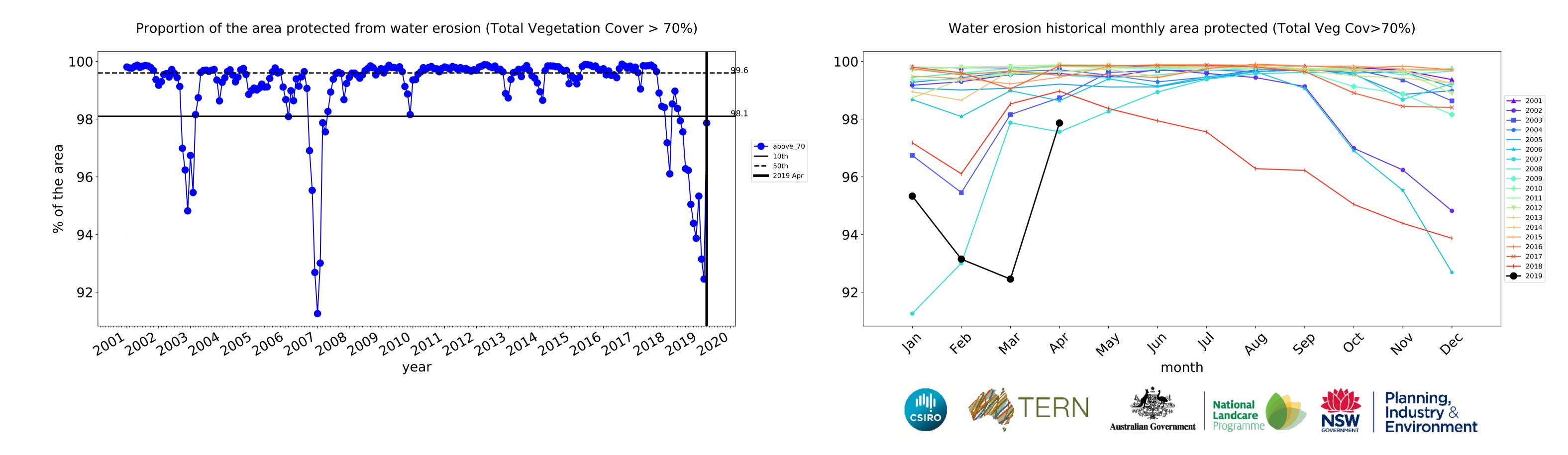


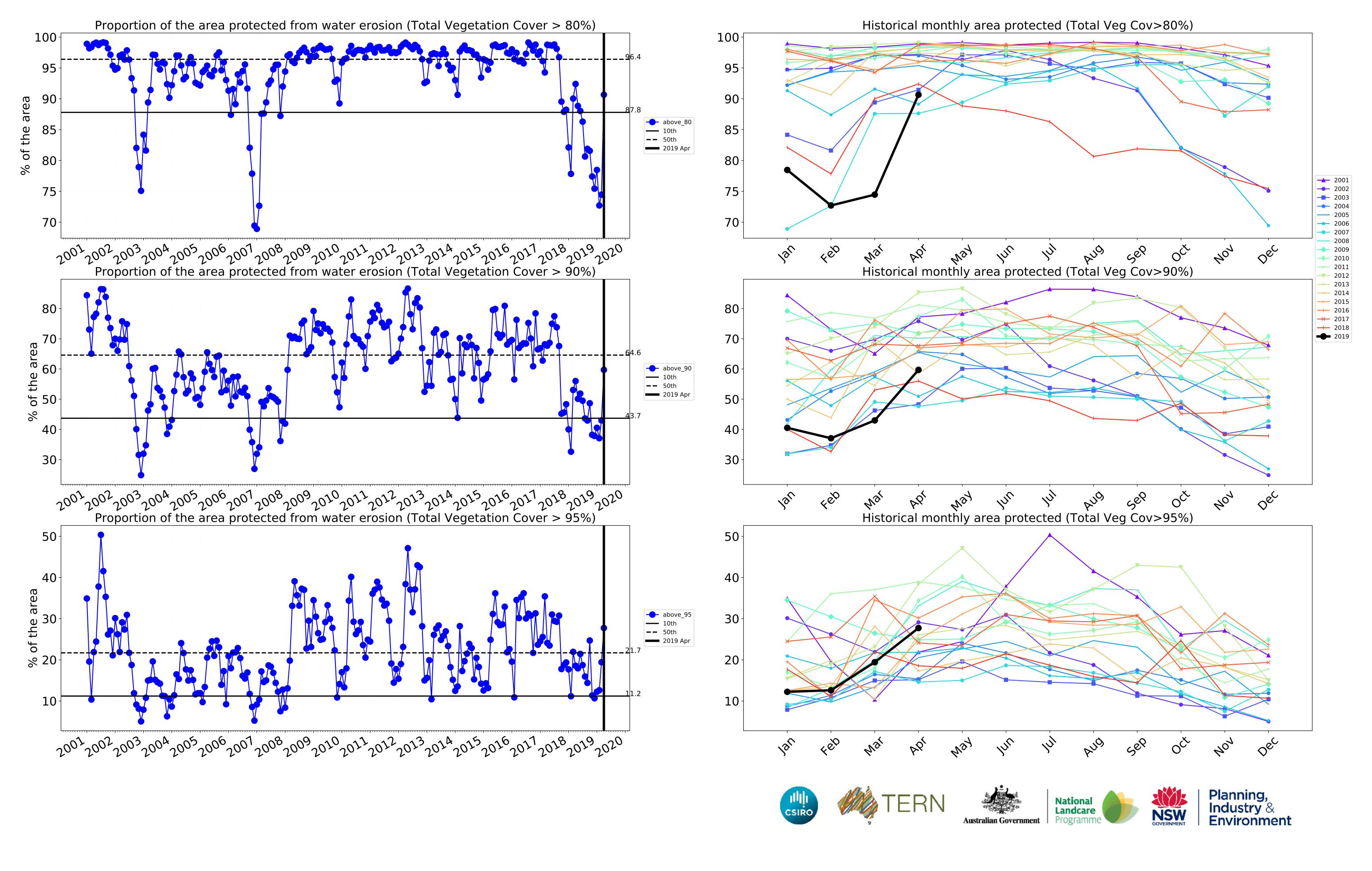




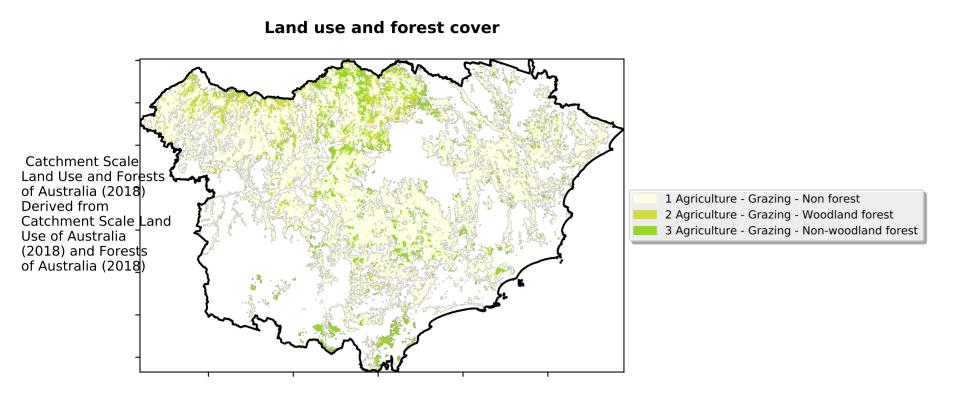
Agriculture timeseries



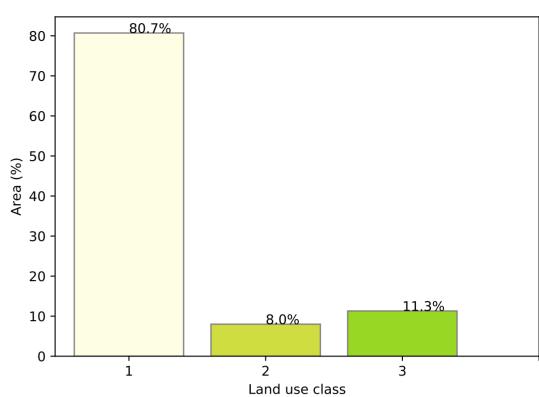




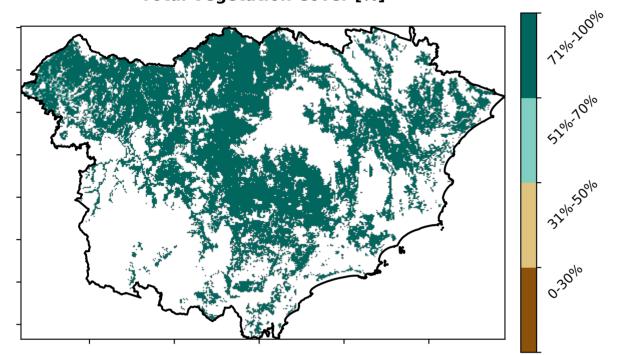
Grazing



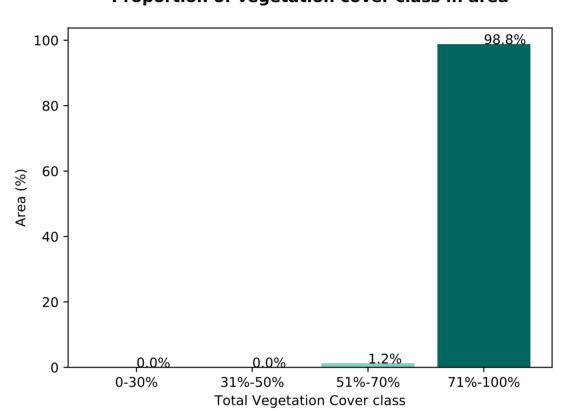
Proportion of each land class in area



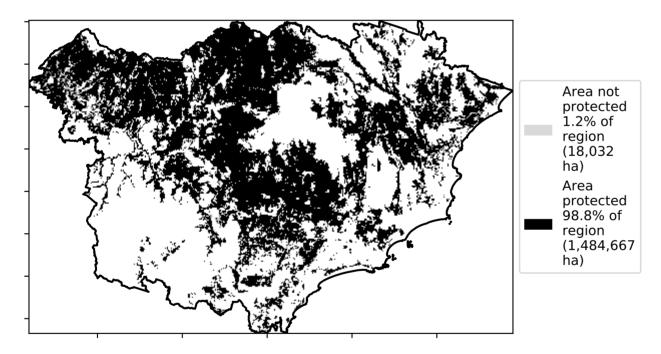




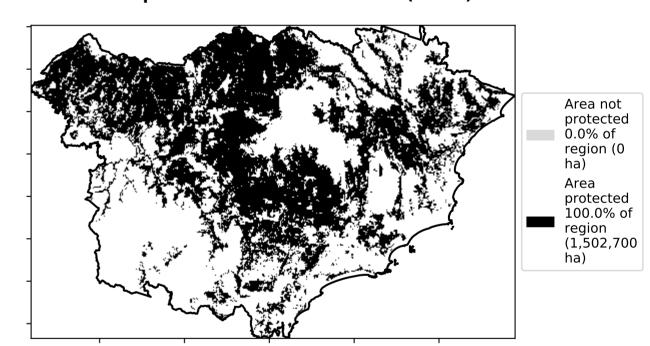
Proportion of vegetation cover class in area



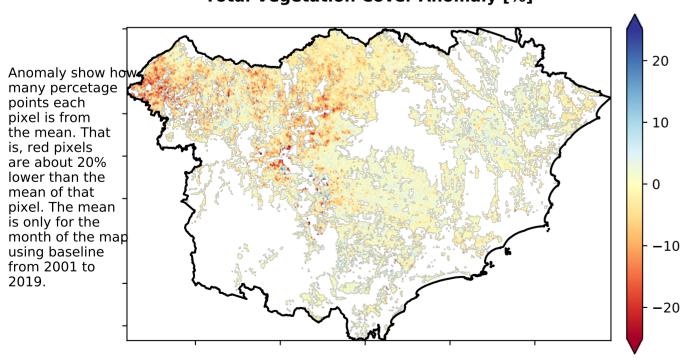
% Area protected from water erosion (>70%)

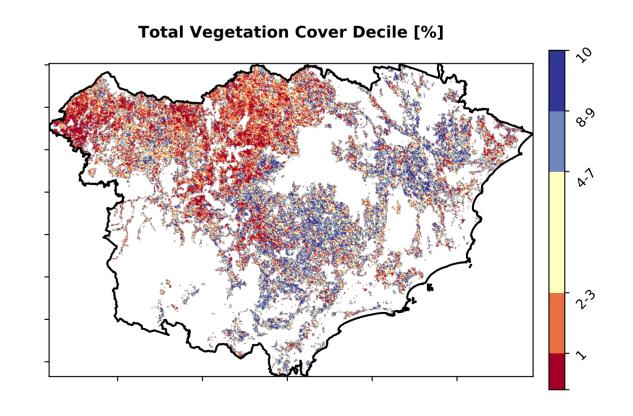


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]









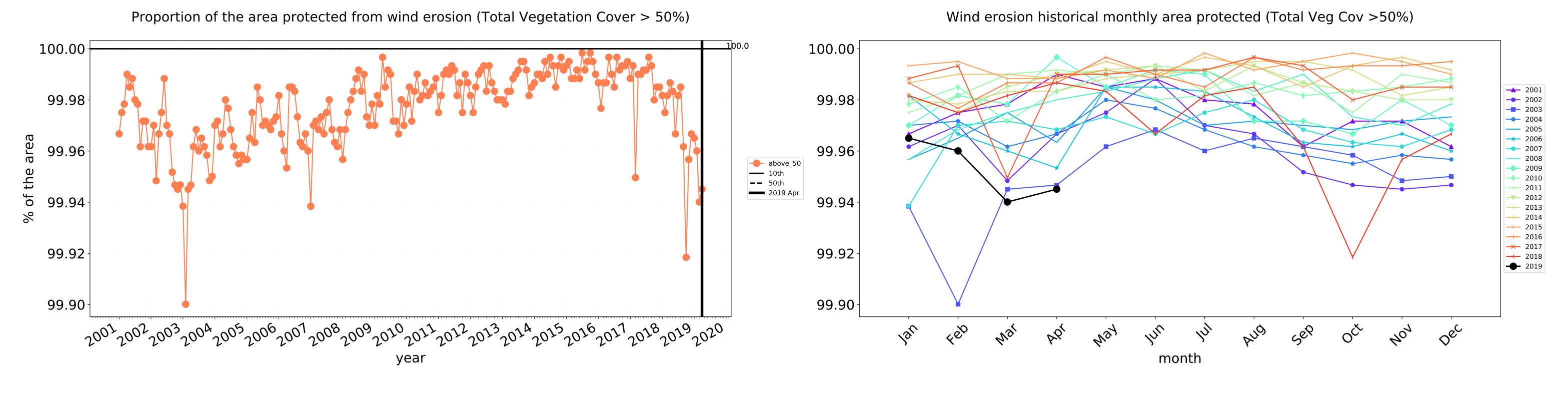


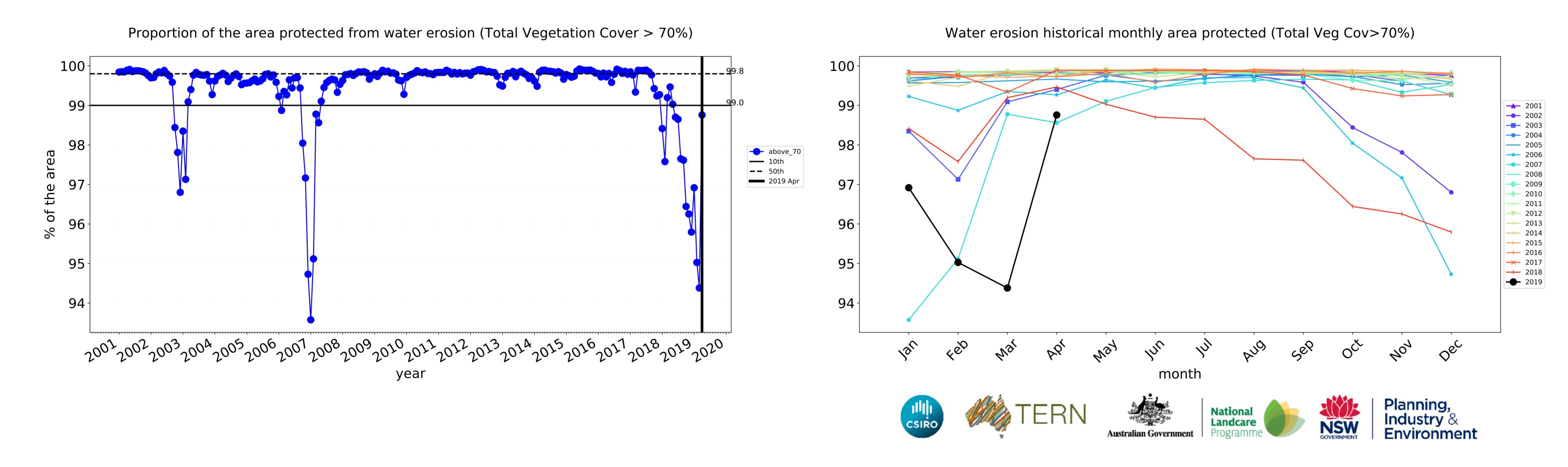


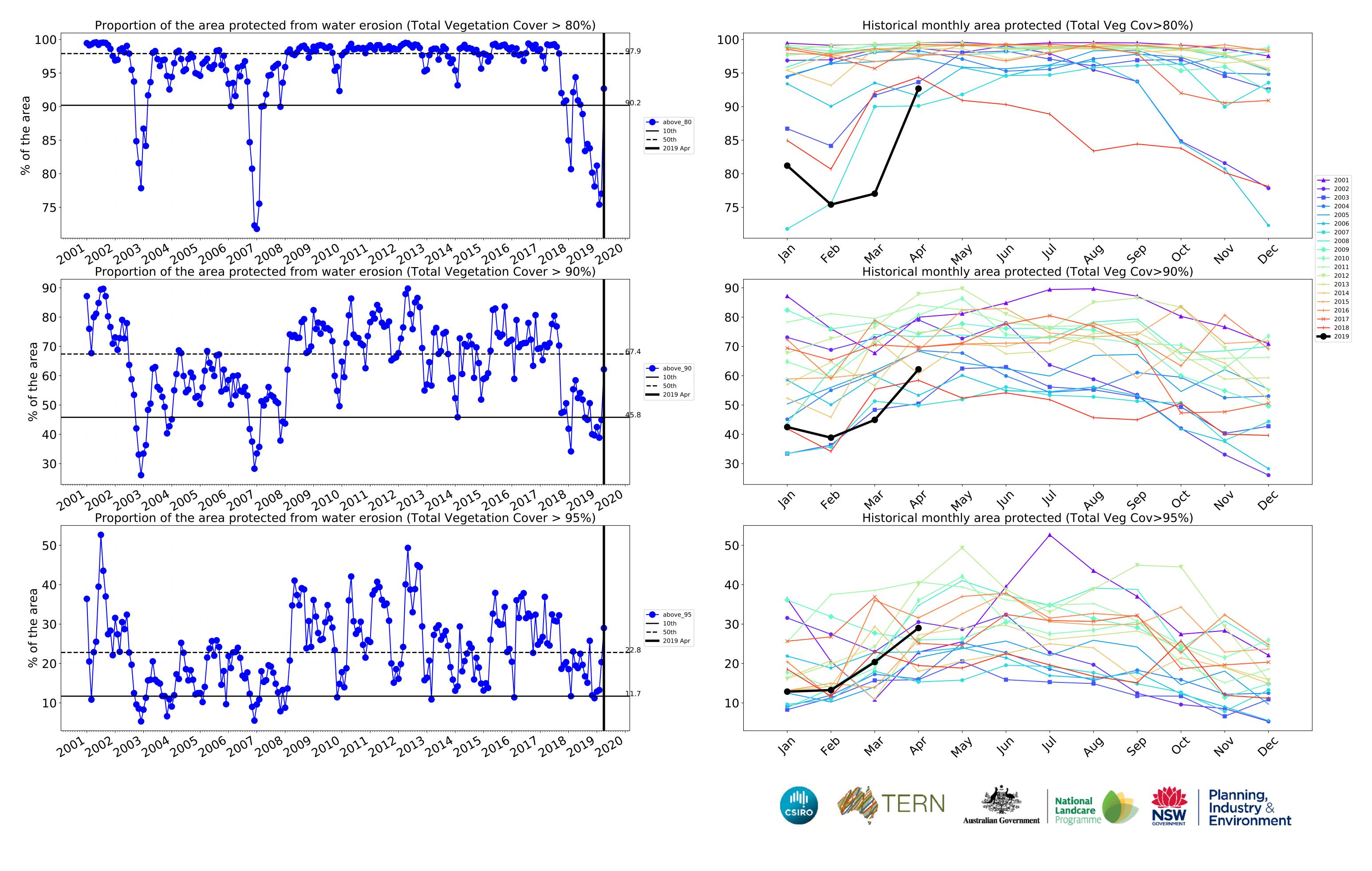




Grazing timeseries

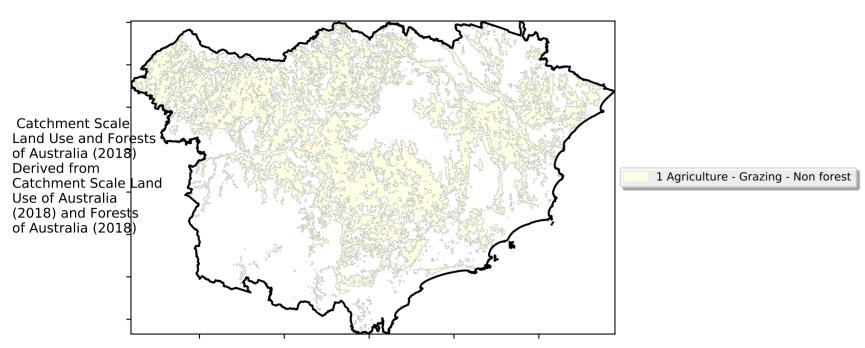




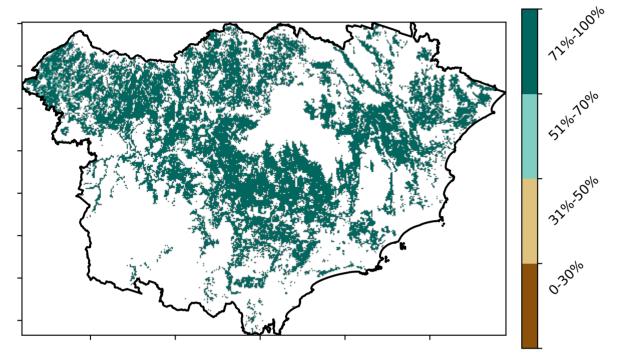


Grazing non forest

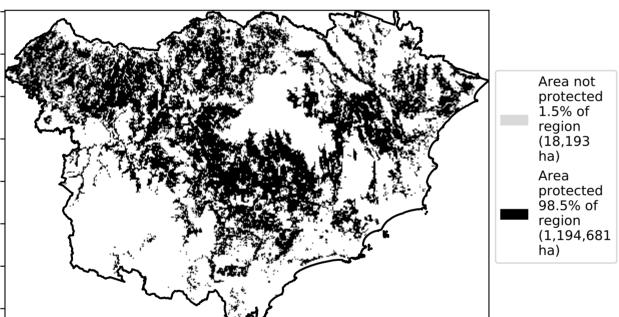
Land use and forest cover

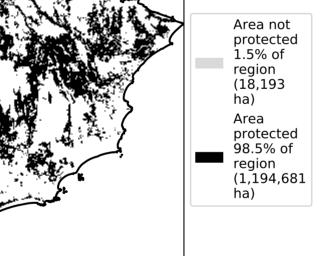


Total Vegetation Cover [%]

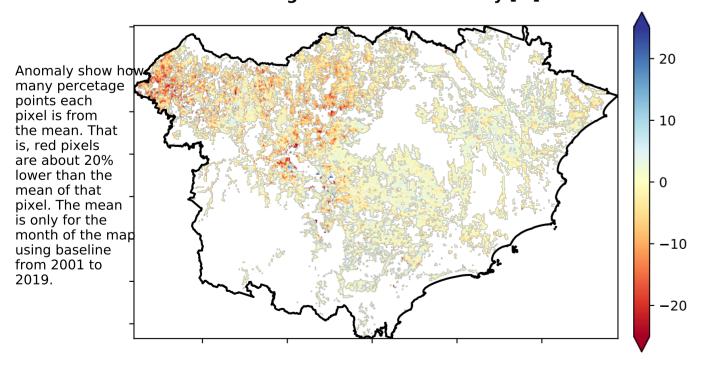


% Area protected from water erosion (>70%)



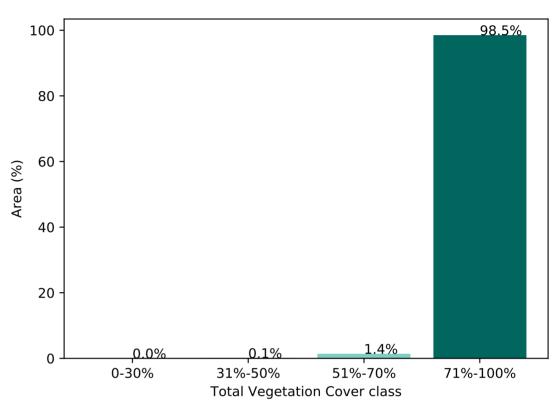


Total Vegetation Cover Anomaly [%]

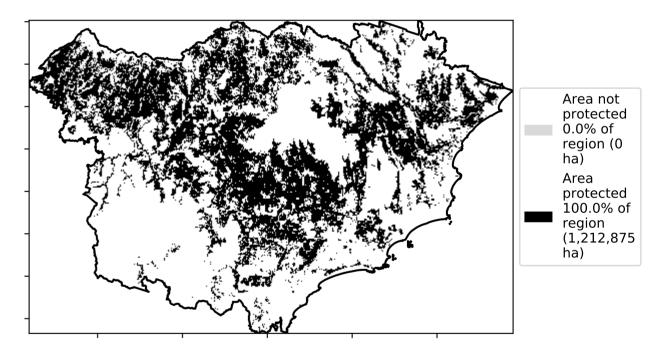


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline. the map using baseline from 2001 to 2019.

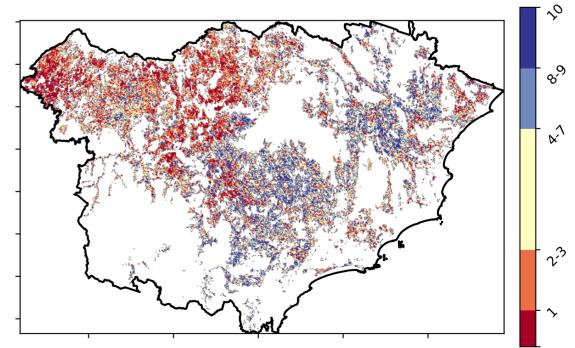
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]





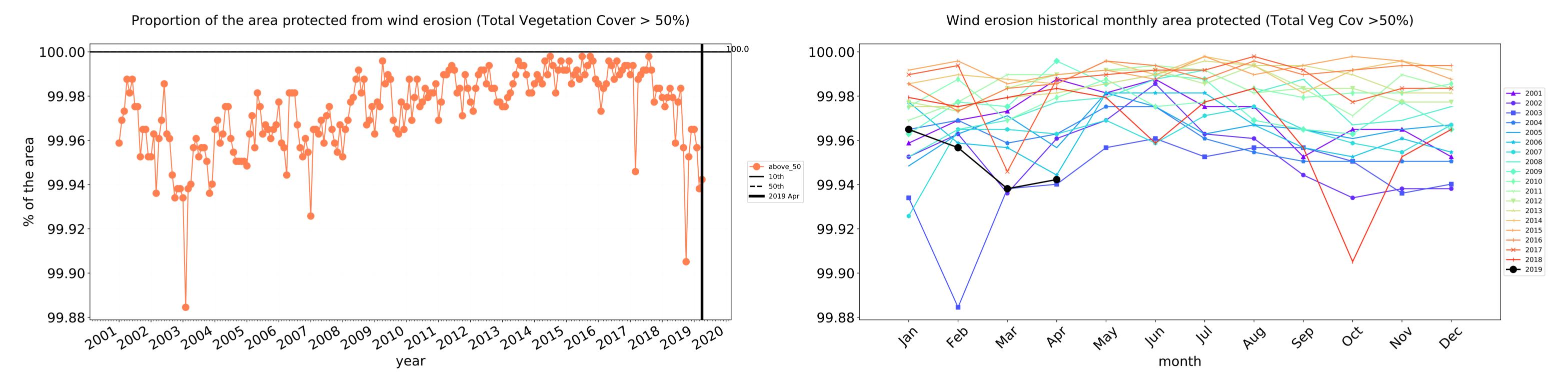


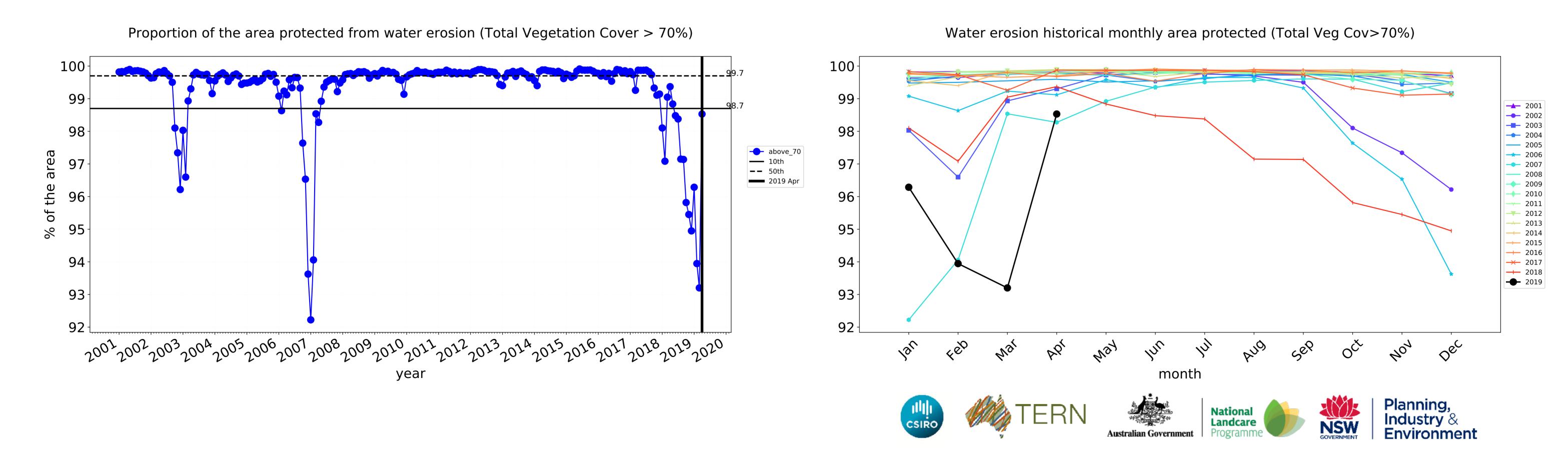


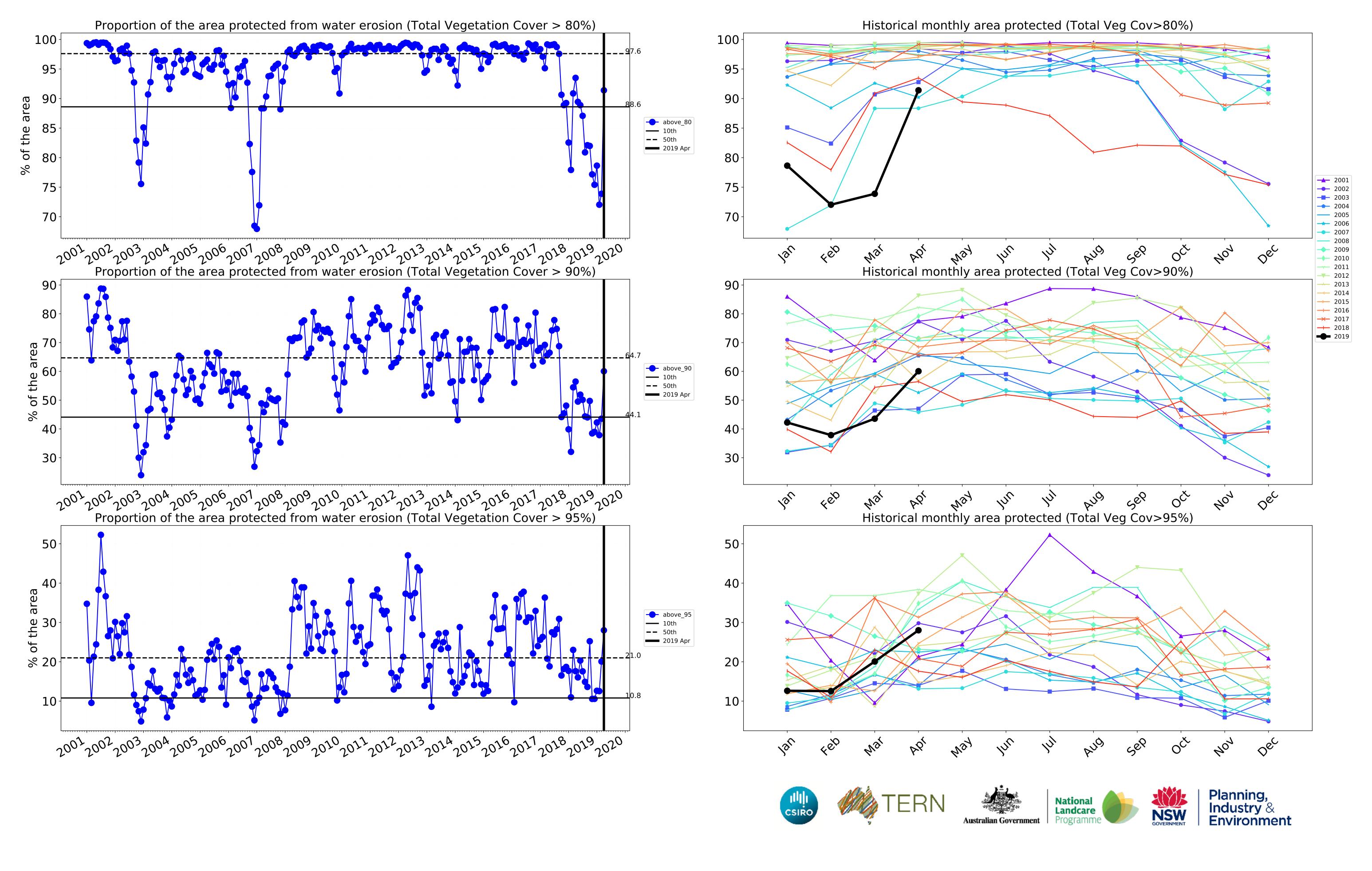










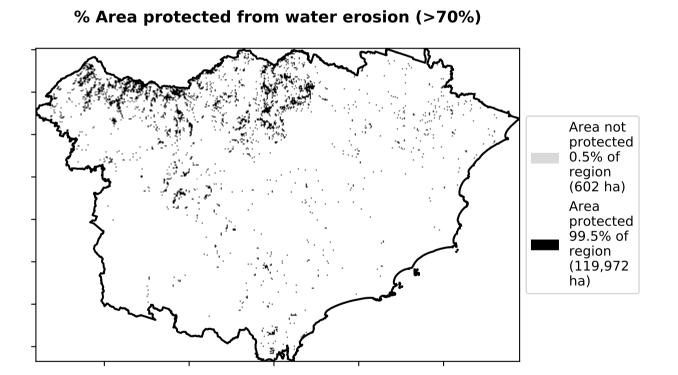


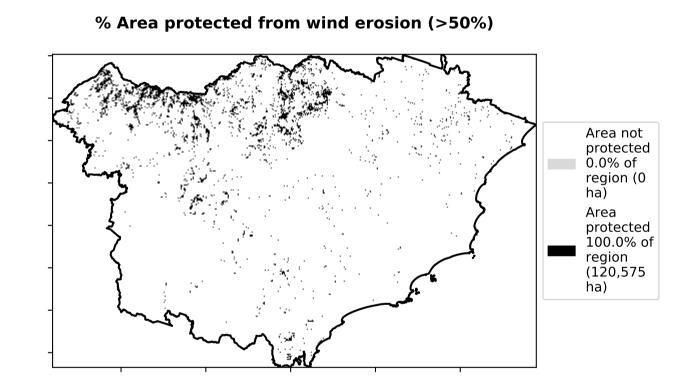
Grazing Woodland forest

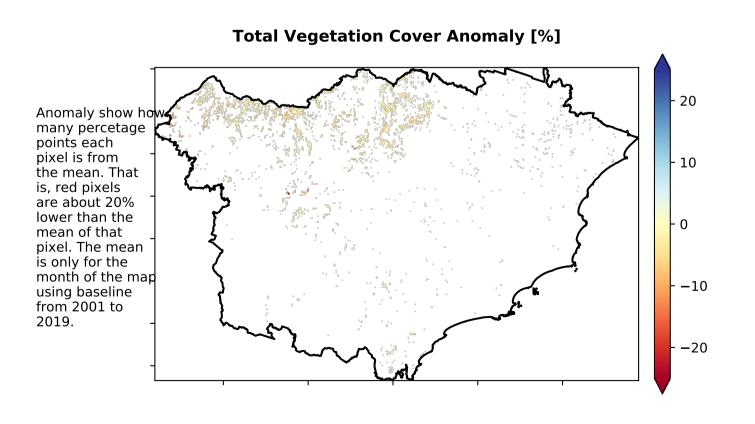
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Australia (2018) Of Australia (2018) Australia (2018) Australia (2018)

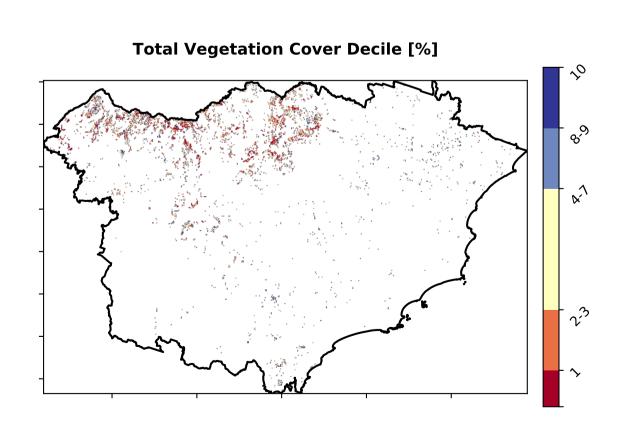
Total Vegetation Cover [%]

Proportion of vegetation cover class in area 100 - 99.5% 80 - 99.5% 40 - 20 - 0.1% 0.0% 0.4% 0-30% 31%-50% 51%-70% 71%-100% Total Vegetation Cover class













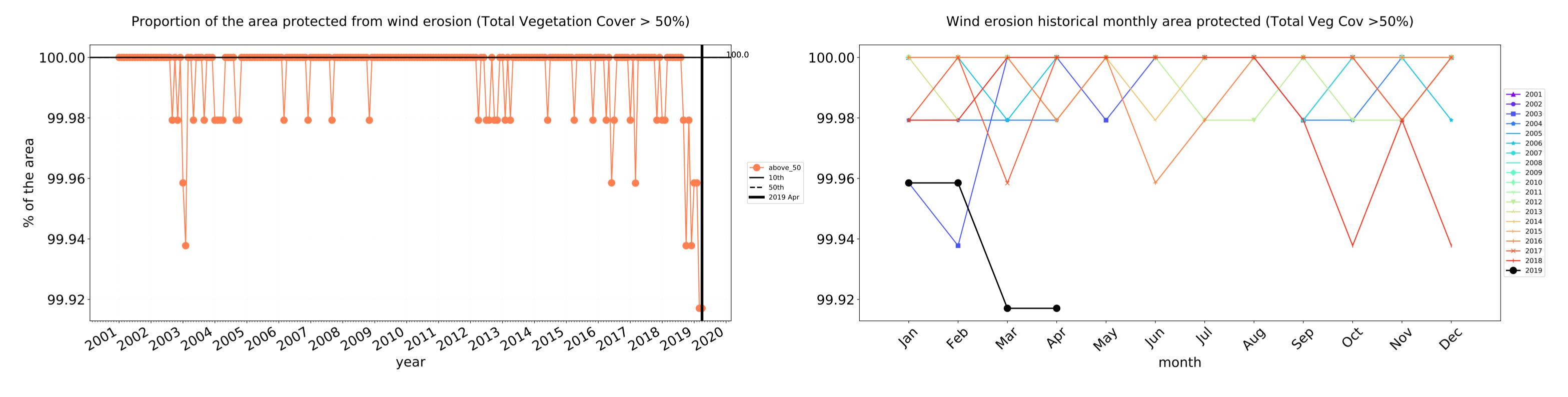


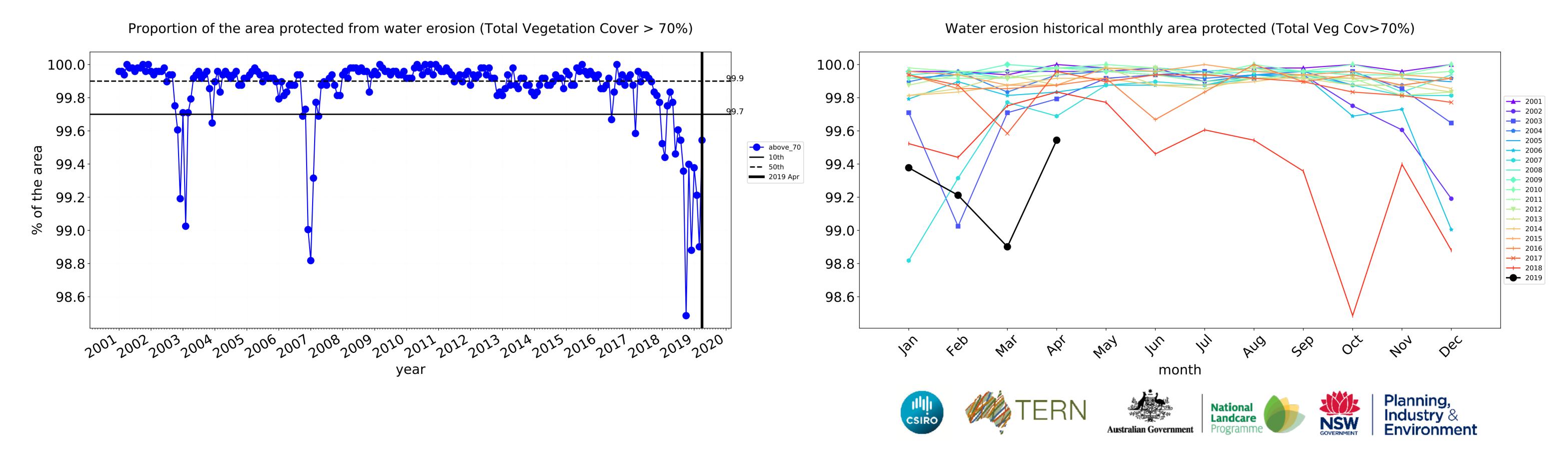


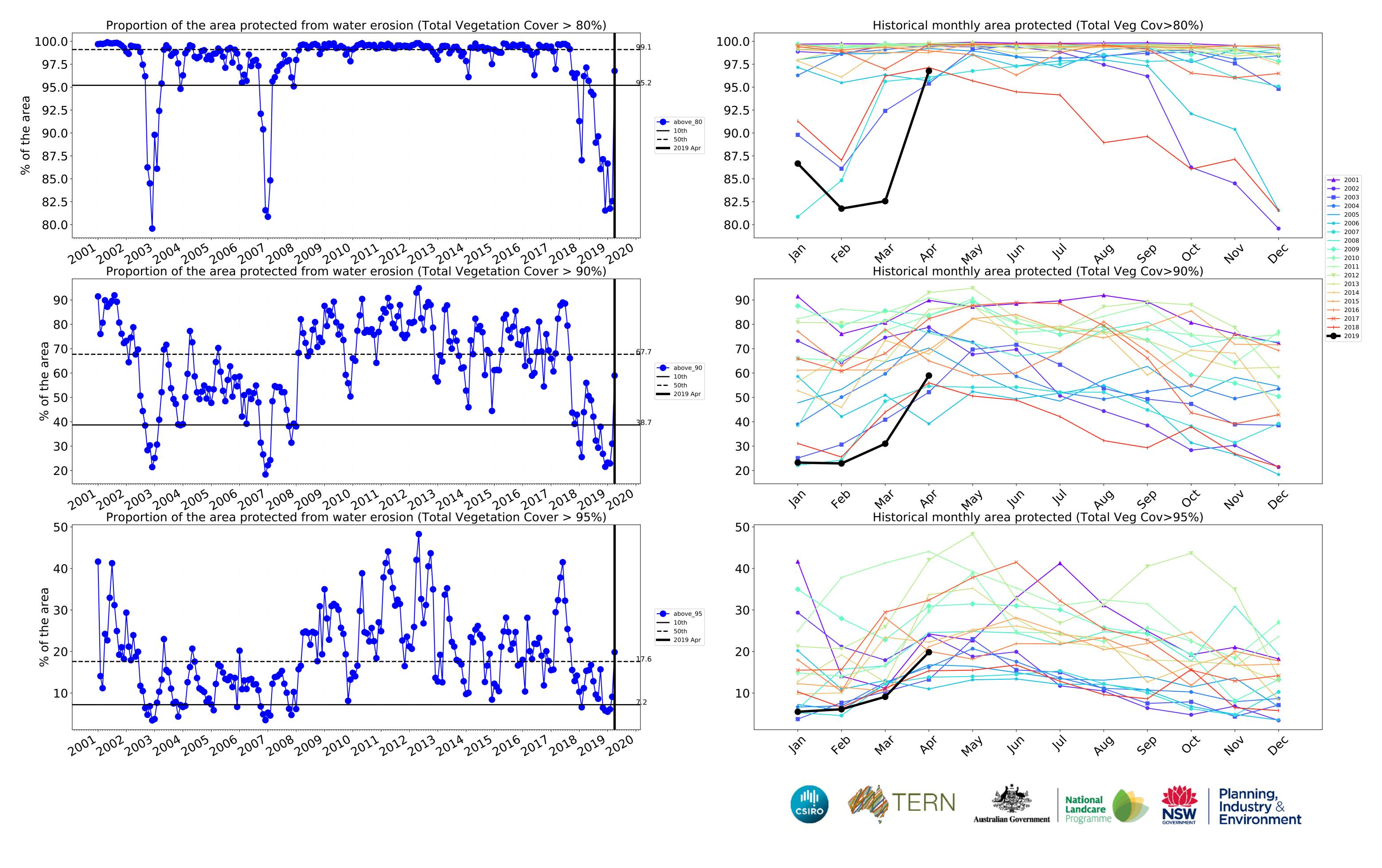




Grazing Woodland forest timeseries



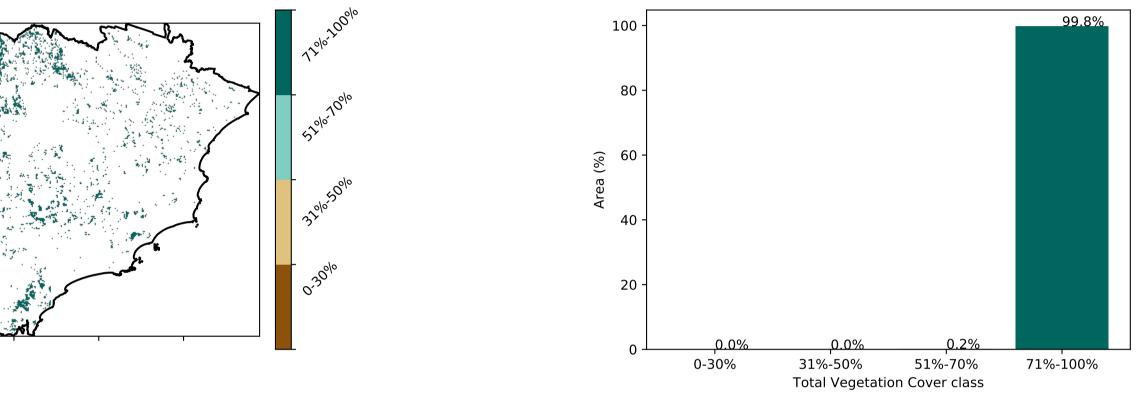


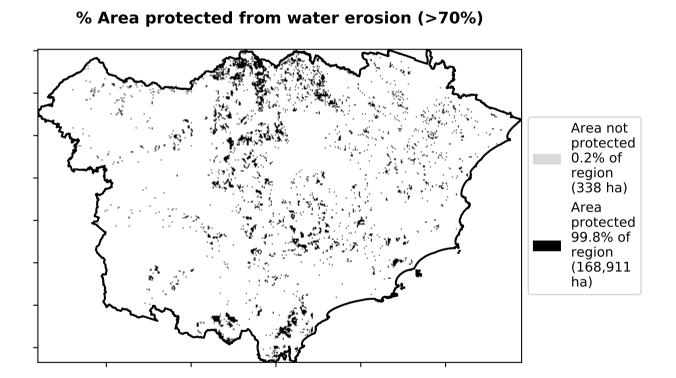


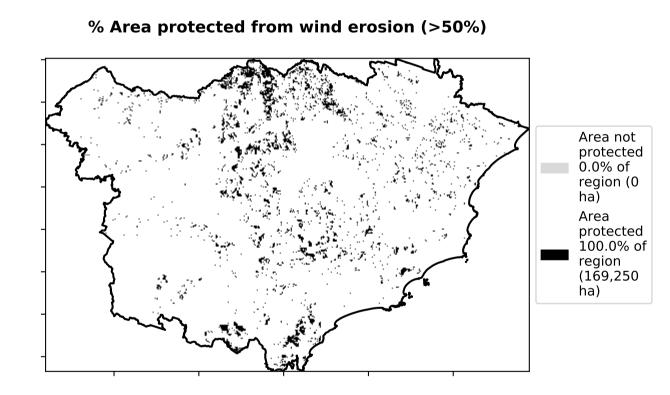
Grazing - Forest (non woodland)

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)

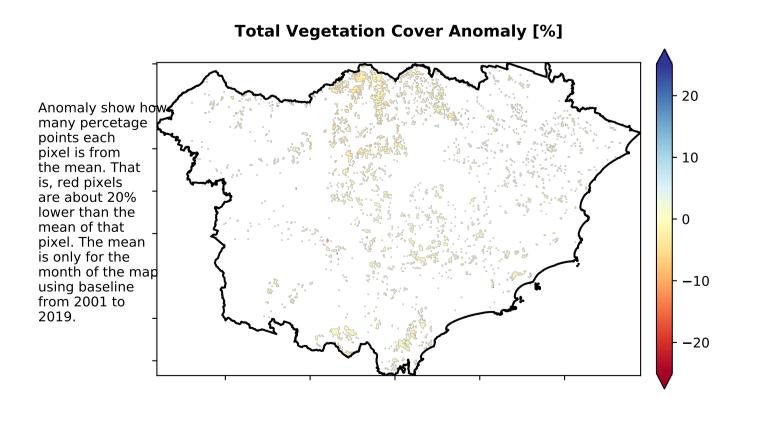
Total Vegetation Cover [%]

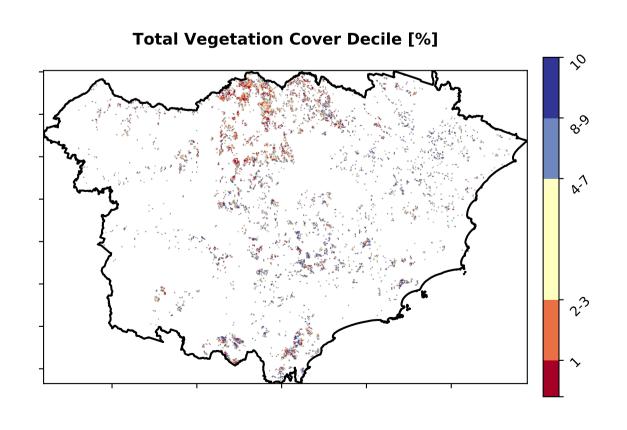






Proportion of vegetation cover class in area







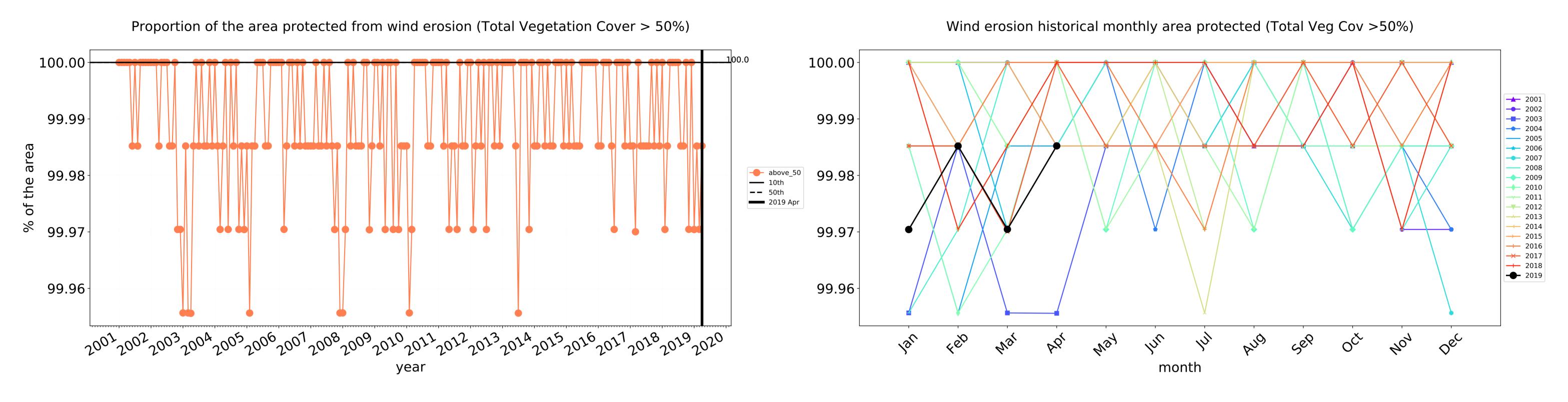


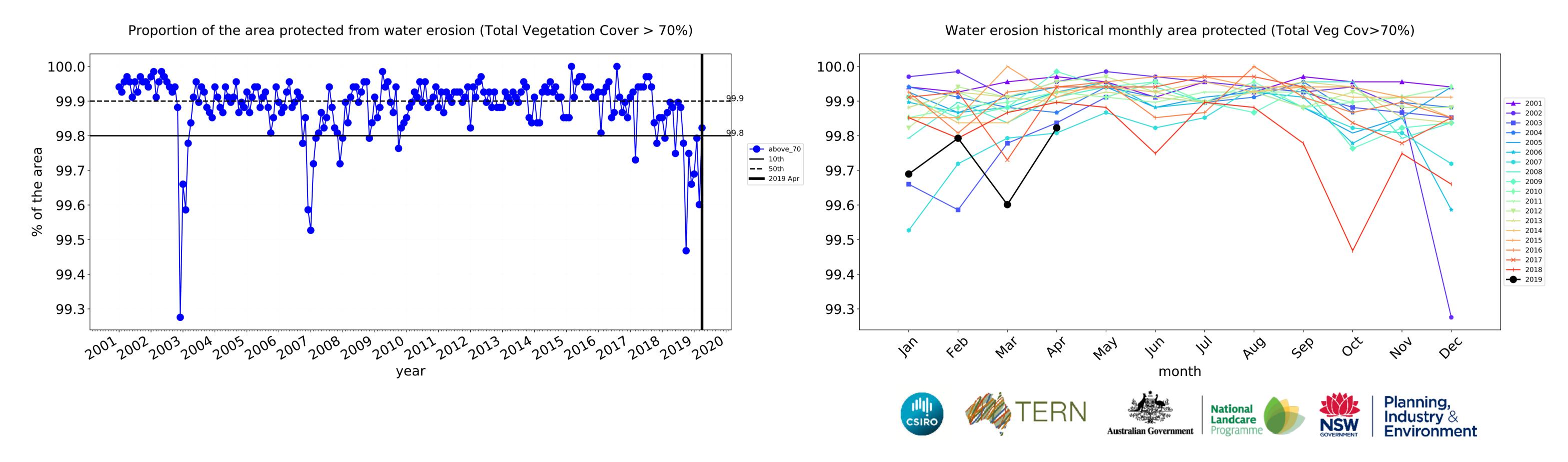


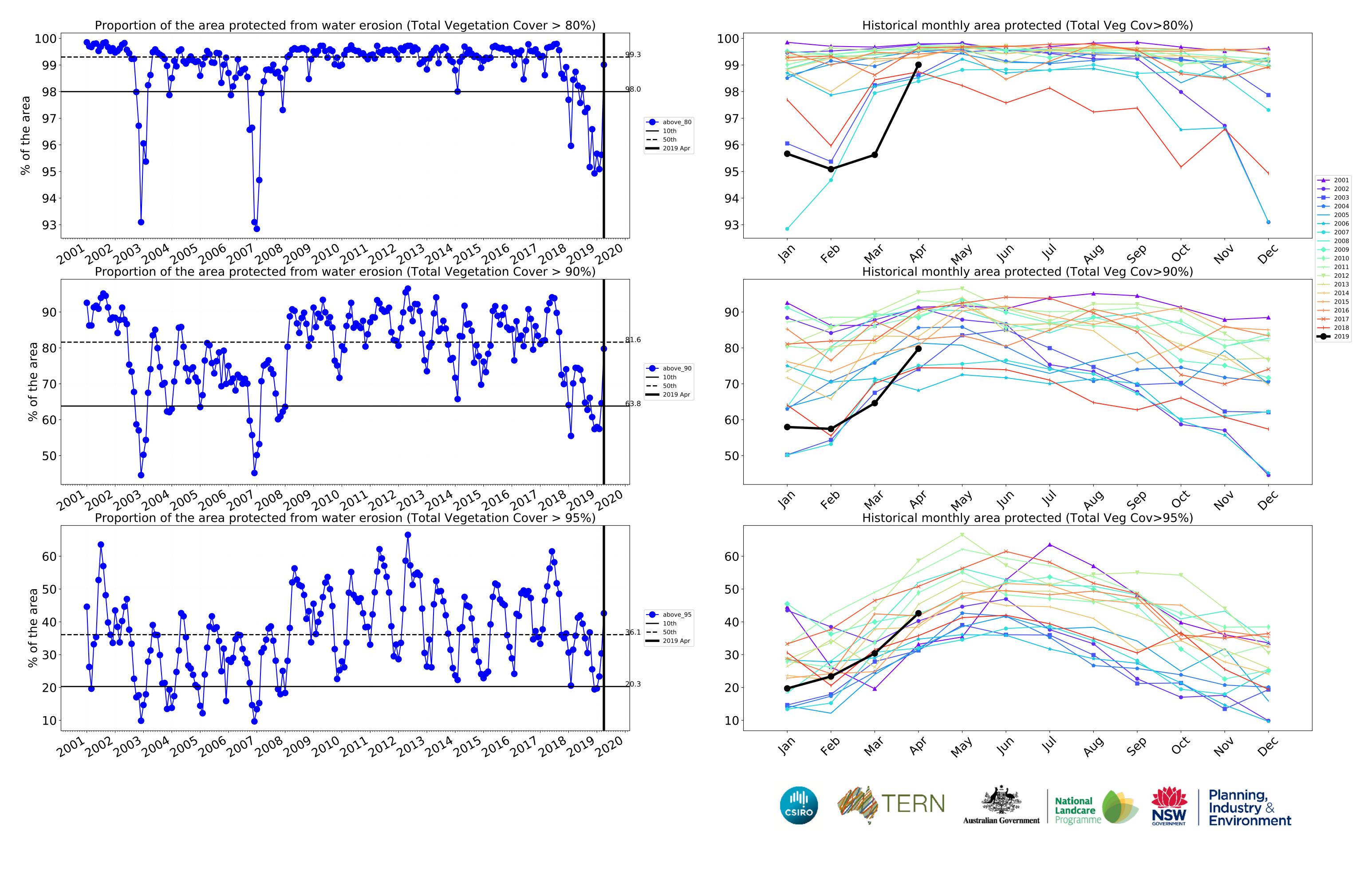






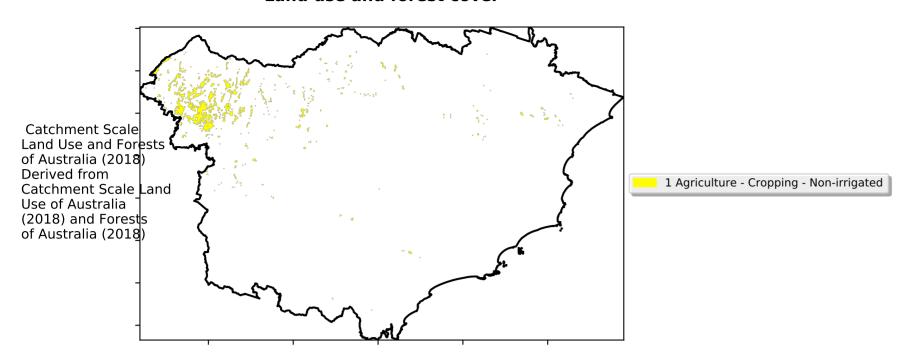




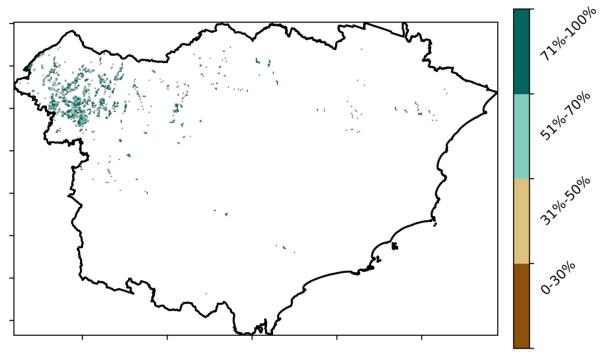


Cropping

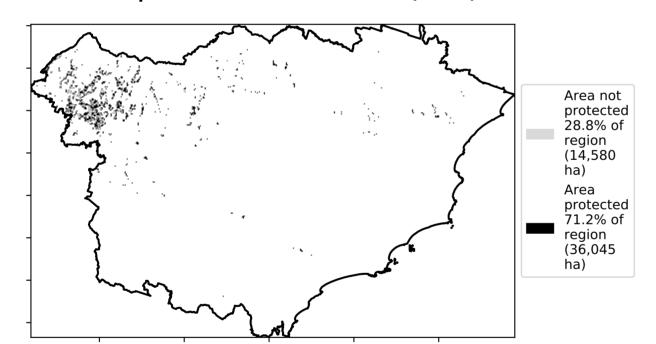
Land use and forest cover



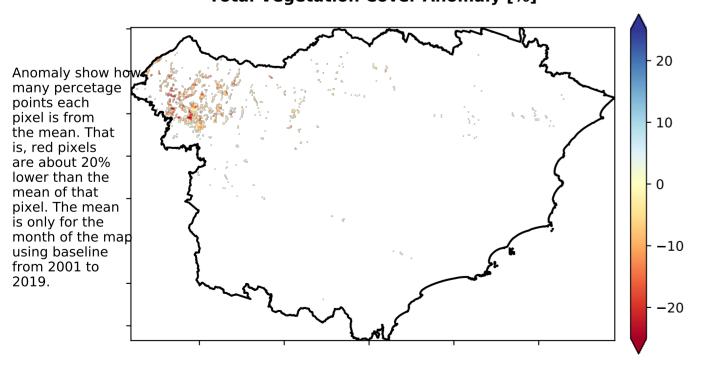
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

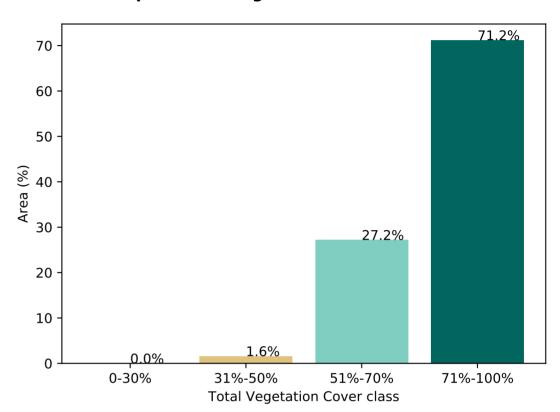


Total Vegetation Cover Anomaly [%]

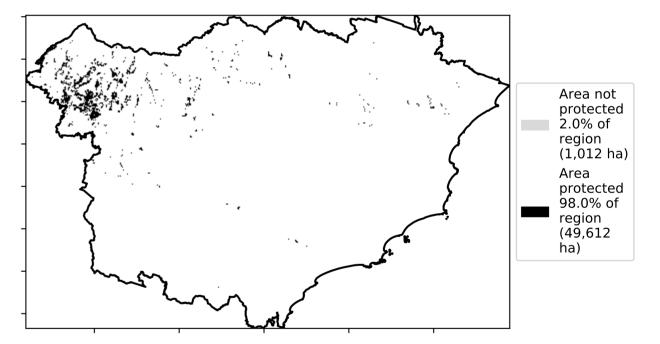


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

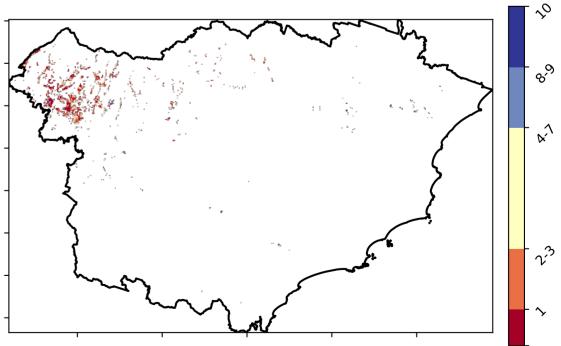
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







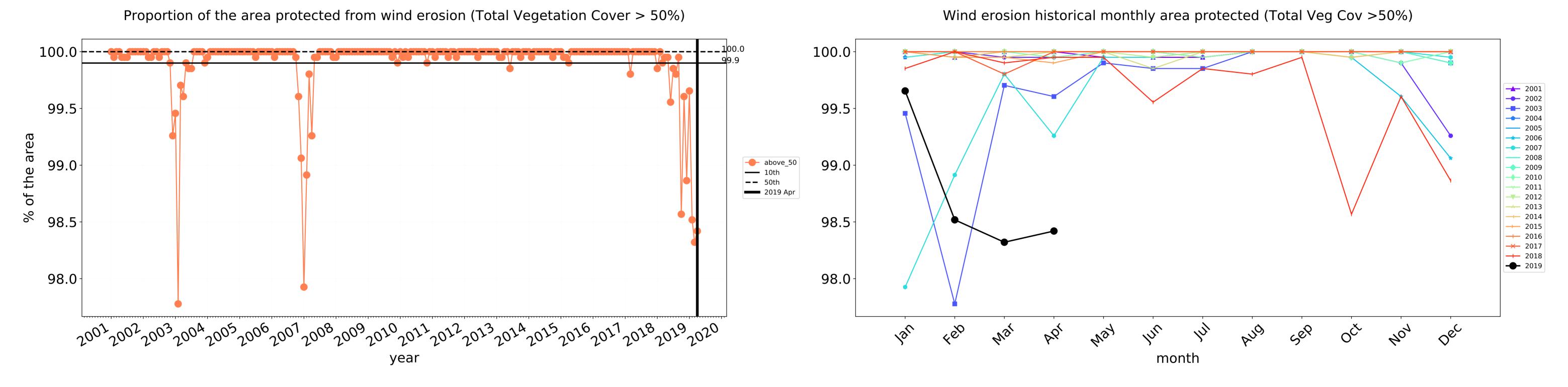


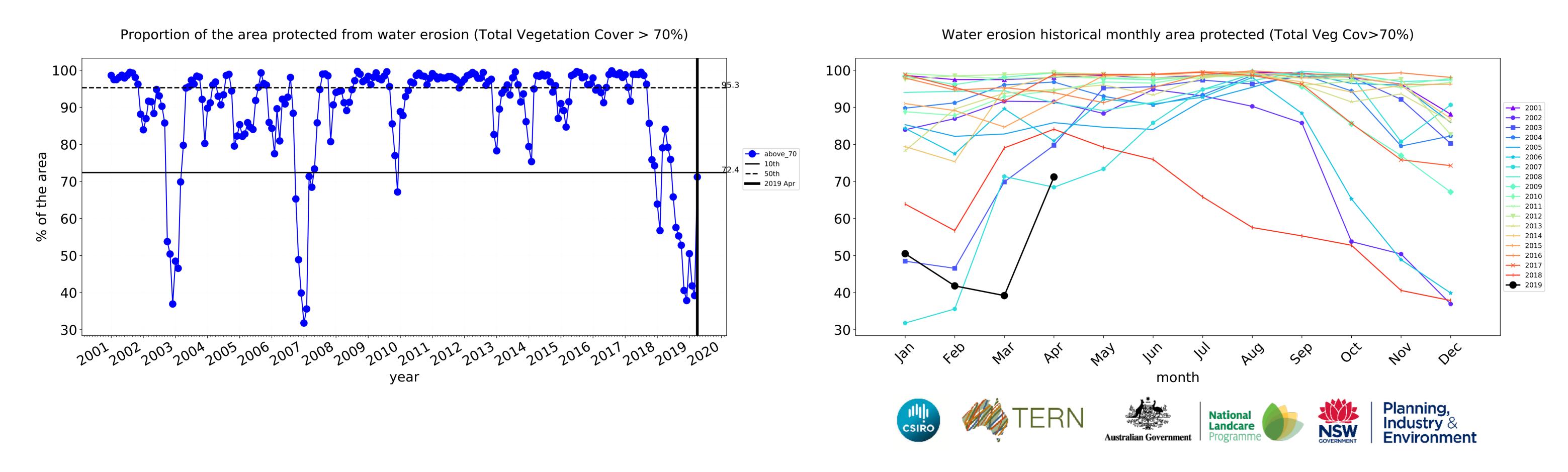


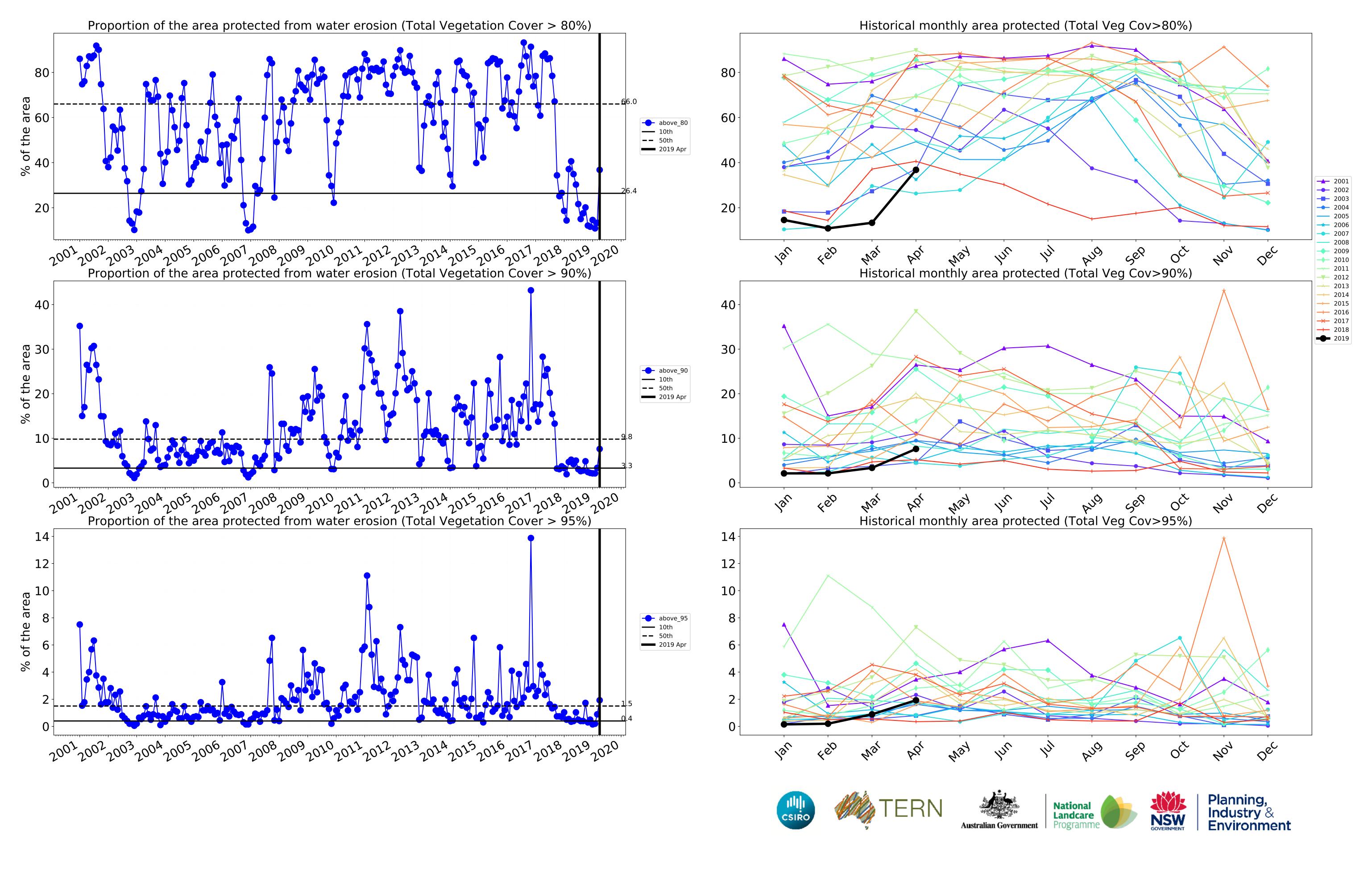




Cropping timeseries





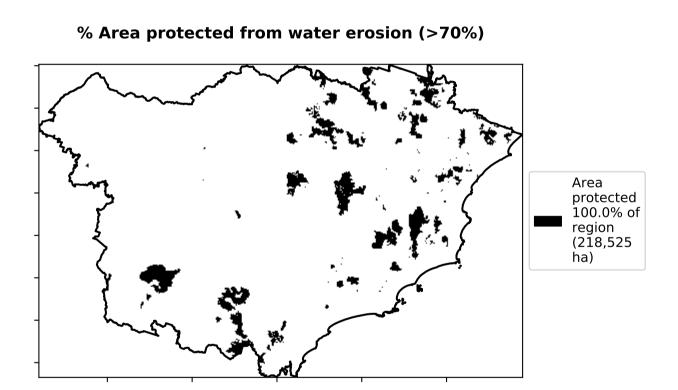


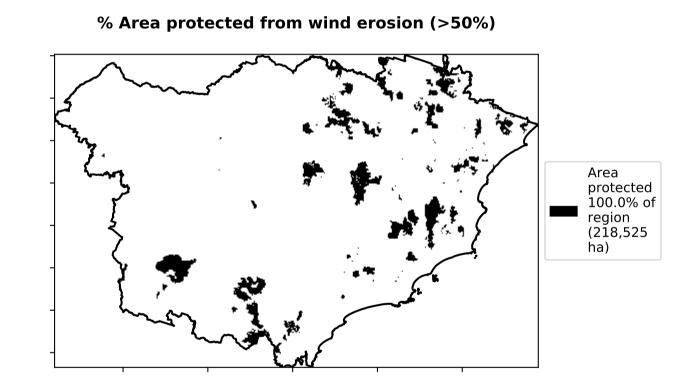
Production native forests and plantation forests

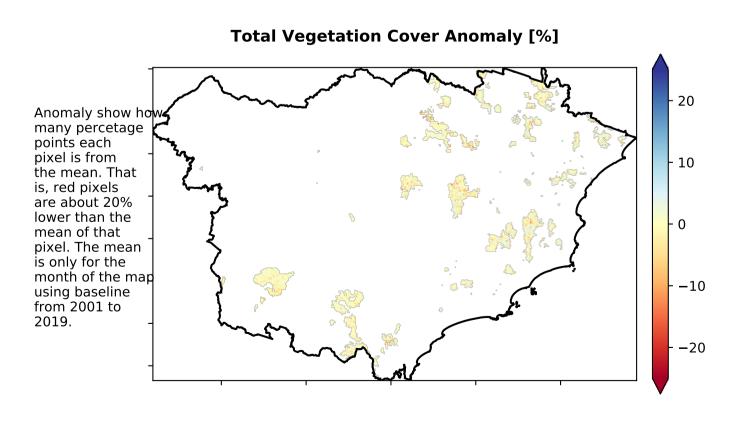
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) (2018) and Forests of Australia (2018)

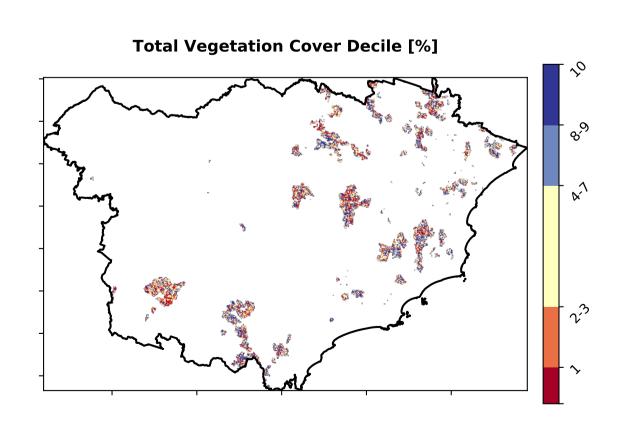
Total Vegetation Cover [%] Tolar Delay Transporter Total Vegetation Cover [%] Transporter Tr

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













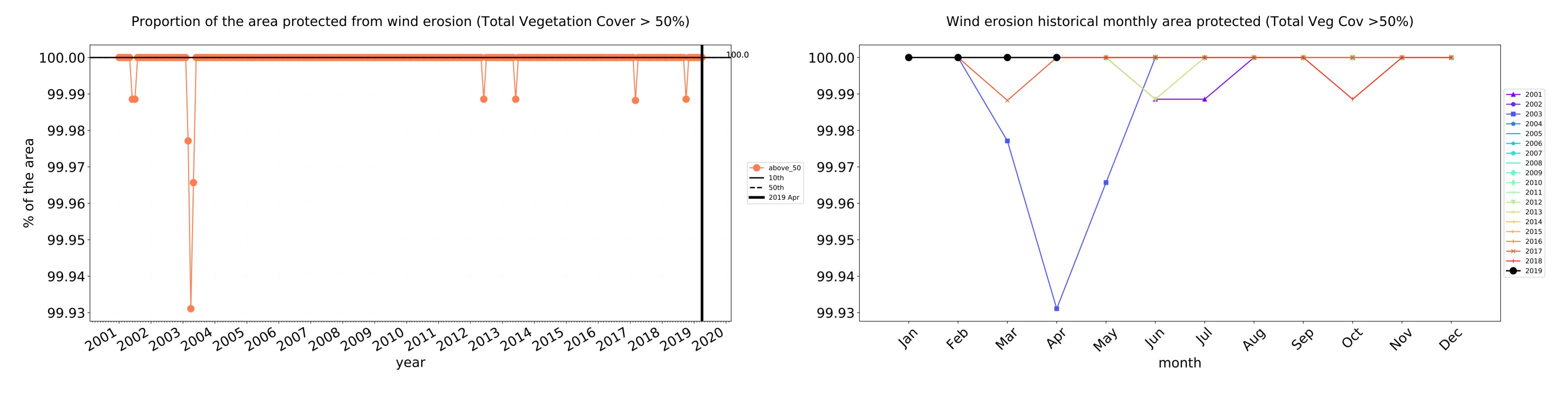


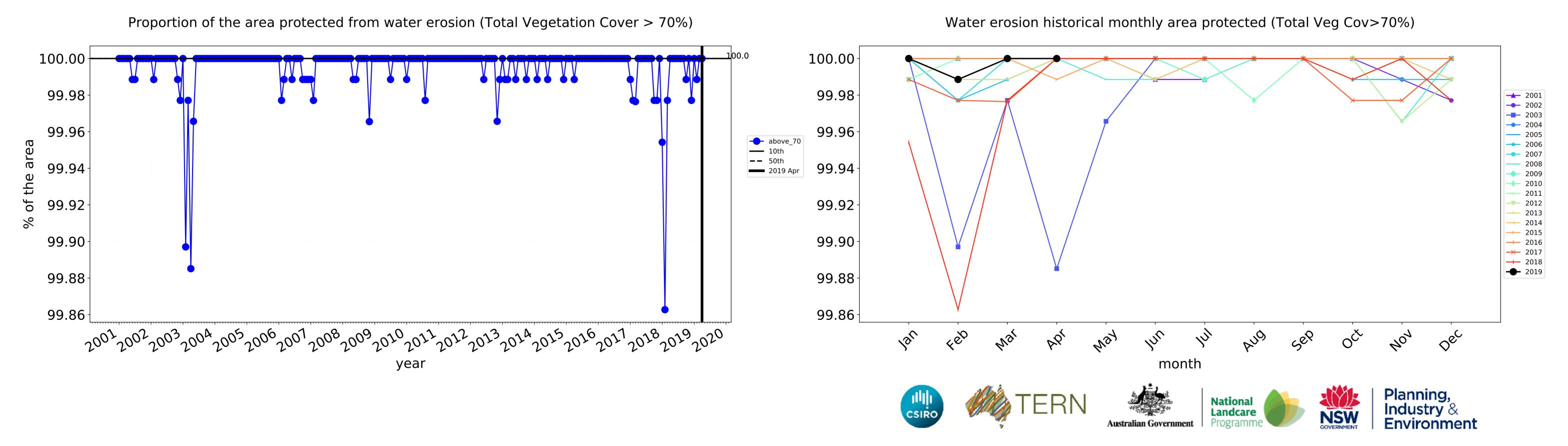


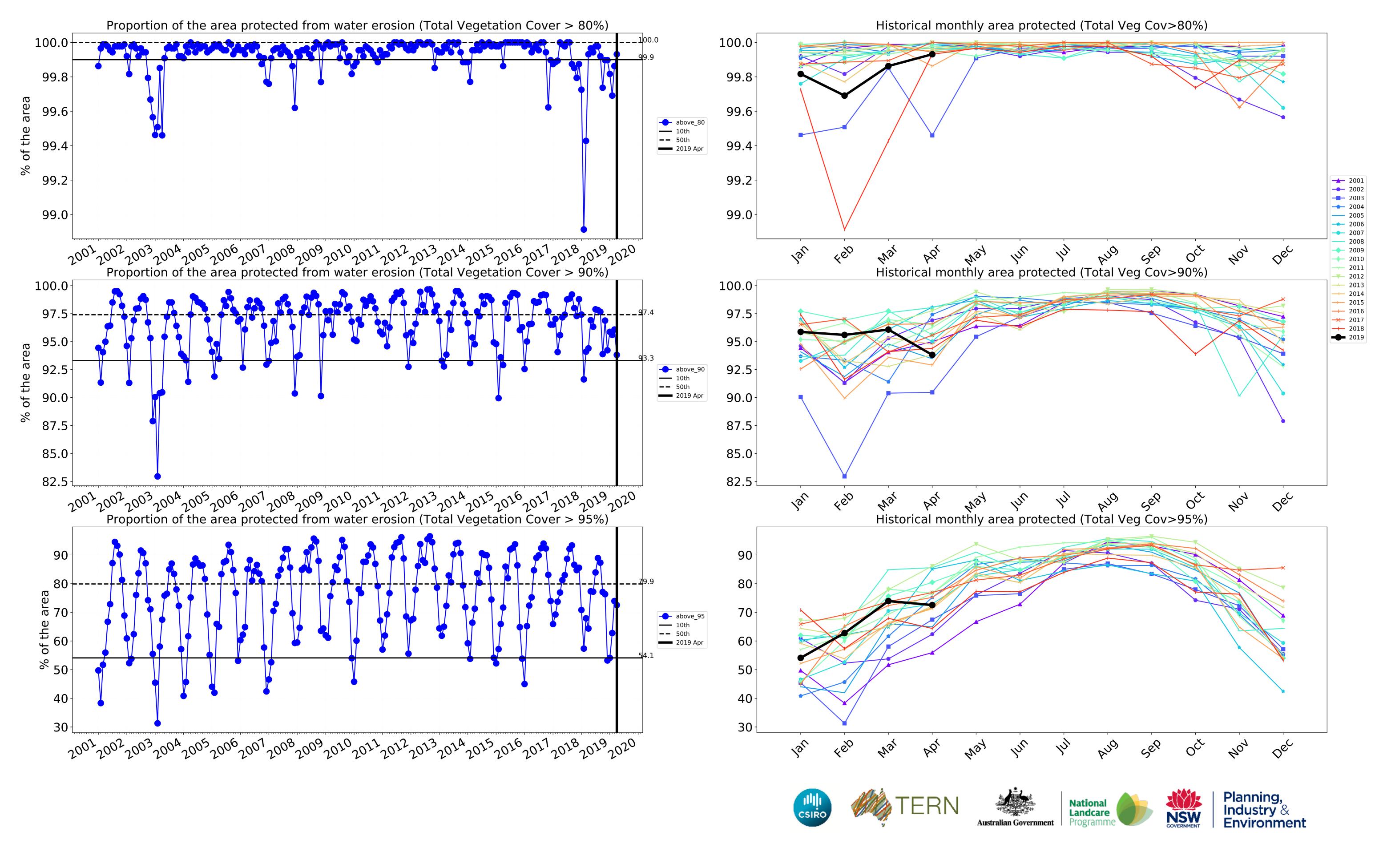




Production native forests and plantation forests timeseries







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% 3,234,000	99.6% 3,223,350	97.7% 3,162,450	92.9% 3,007,850	72.0% 2,331,875	41.7% 1,351,375
Conservation and natural environments	1,239,725	99.9% 1,238,750	99.9% 1,237,925	99.7% 1,236,000	99.2% 1,229,825	90.2% 1,117,875	59.0% 731,225
Conservation and natural environments non forest	29,250	96.8% 28,300	94.7% 27,700	92.1% 26,950	87.6% 25,625	67.2% 19,650	36.1% 10,550
Conservation and natural environments Woodland forest	138,675	100.0% 138,650	99.9% 138,600	99.8% 138,425	98.5% 136,625	85.3% 118,275	41.8% 57,950
natural environments Forest (non woodland)	1,071,800	100.0% 1,071,800	100.0% 1,071,625	99.9% 1,070,625	99.6% 1,067,575	91.4% 979,950	61.8% 662,725
Agriculture	1,580,700	100.0% 1,580,625	99.9% 1,579,075	97.9% 1,546,950	90.7% 1,433,075	59.7% 943,975	27.7% 438,250
Grazing	1,502,700	100.0% 1,502,625	99.9% 1,501,875	98.8% 1,484,025	92.7% 1,392,800	62.2% 934,425	29.0% 435,875
Grazing non forest	1,212,875	100.0% 1,212,850	99.9% 1,212,175	98.5% 1,195,050	91.4% 1,108,550	60.0% 728,325	28.0% 339,825
Grazing Woodland forest	120,575	100.0% 120,525	99.9% 120,475	99.5% 120,025	96.8% 116,675	59.0% 71,100	19.8% 23,925
Grazing - Forest (non woodland)	169,250	100.0% 169,250	100.0% 169,225	99.8% 168,950	99.0% 167,575	79.8% 135,000	42.6% 72,125
Cropping	50,625	100.0% 50,625	98.4% 49,825	71.2% 36,050	36.8% 18,625	7.6% 3,850	1.9% 975
Production native forests and plantation forests	218,525	100.0% 218,525	100.0% 218,525	100.0% 218,525	99.9% 218,375	93.8% 205,000	72.5% 158,500











