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: October 2001

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







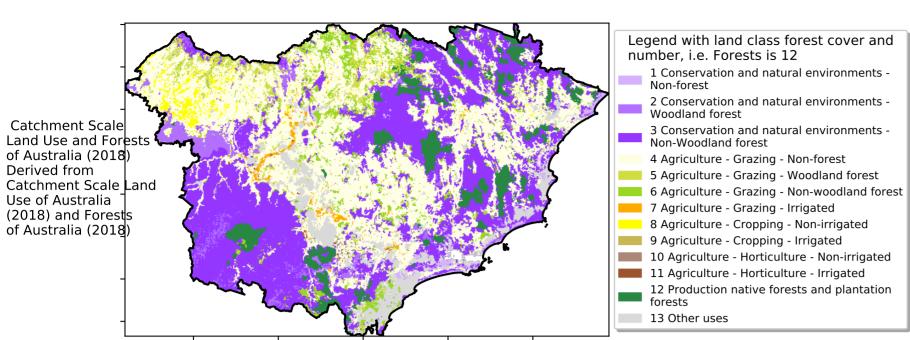




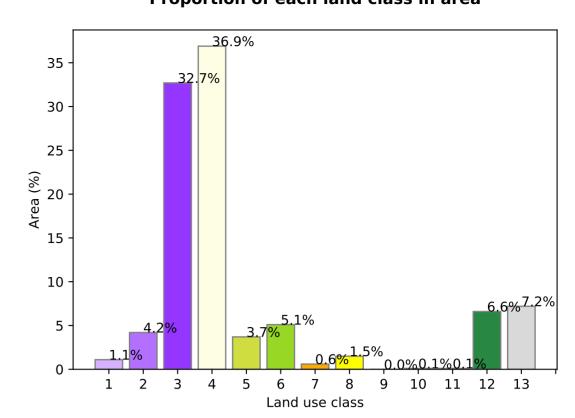


Vegetation Cover Oct 2001

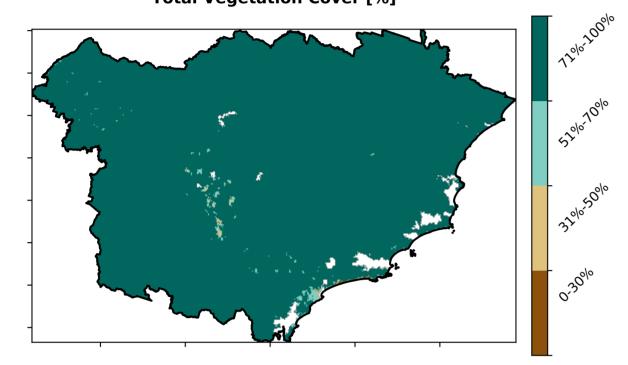
Land use and forest cover



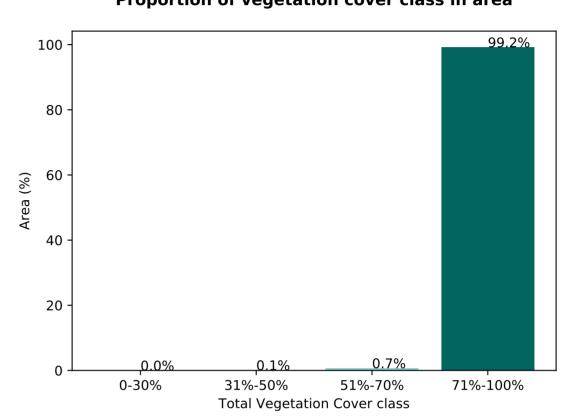
Proportion of each land class in area



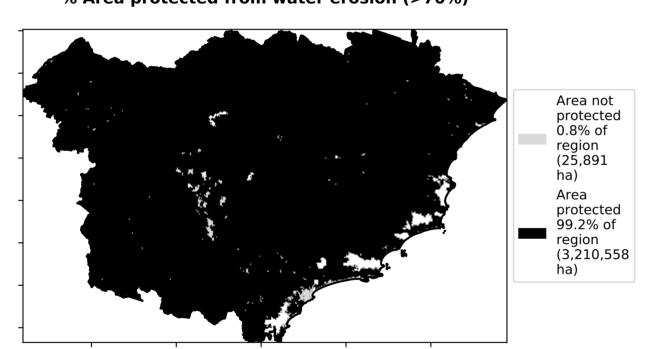
Total Vegetation Cover [%]



Proportion of vegetation cover class in area



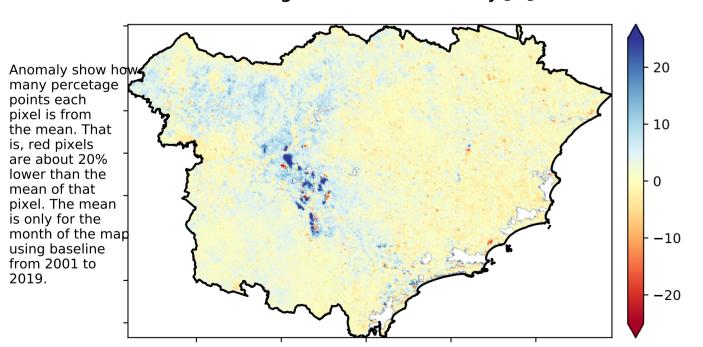
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

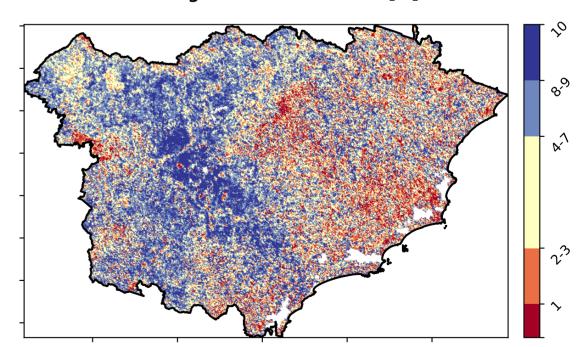


Total Vegetation Cover Anomaly [%]



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

Total Vegetation Cover Decile [%]





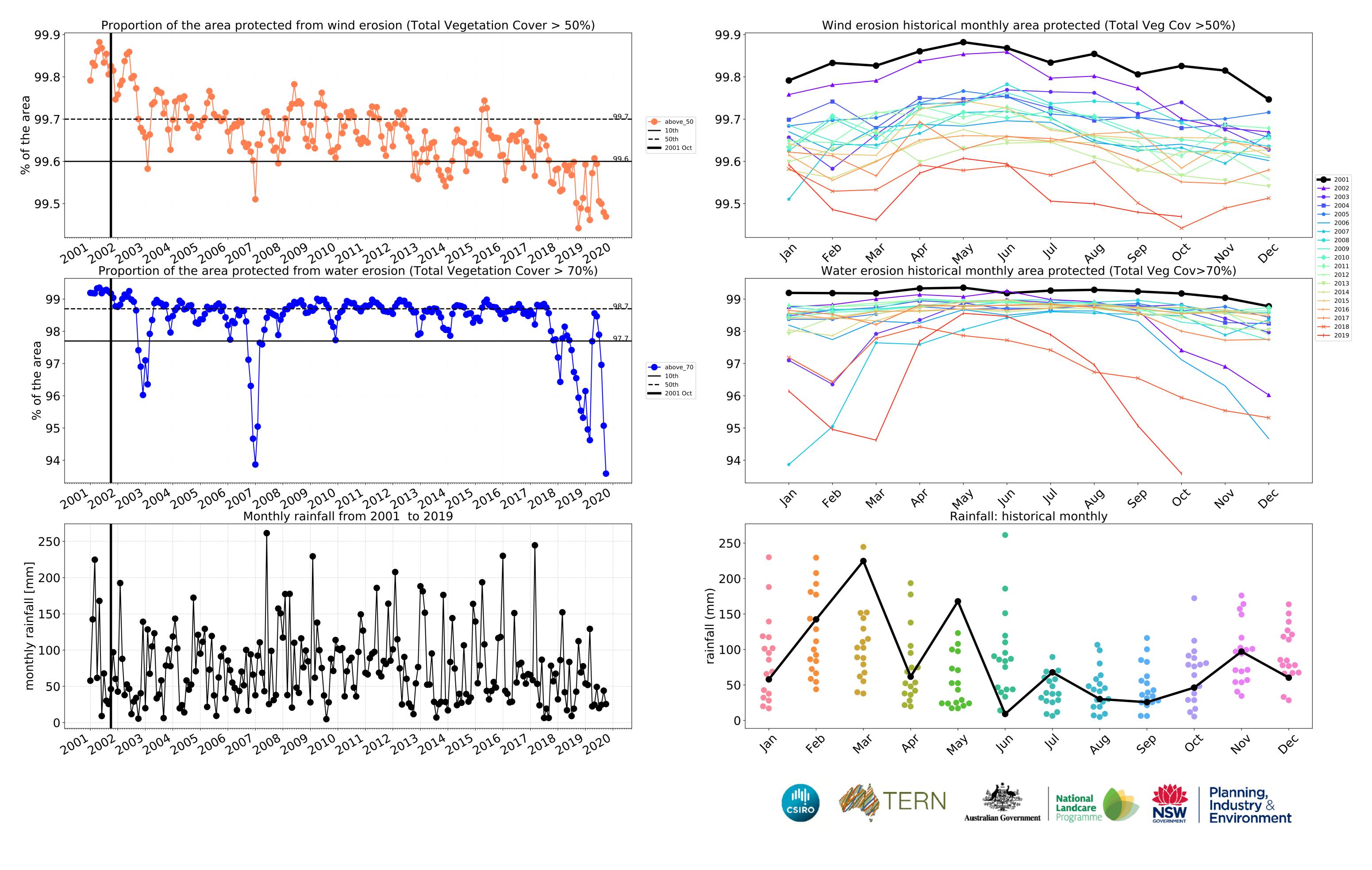




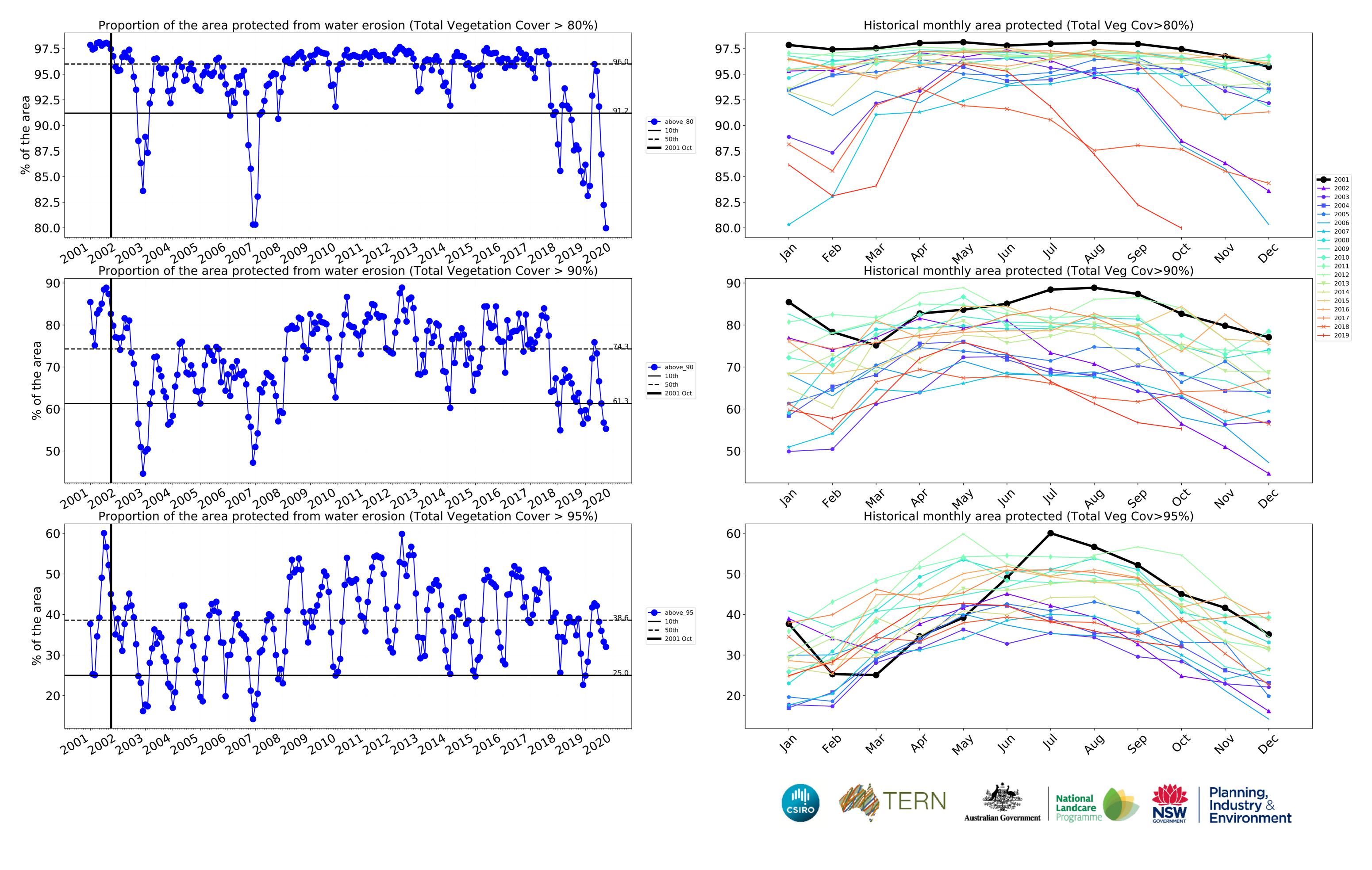




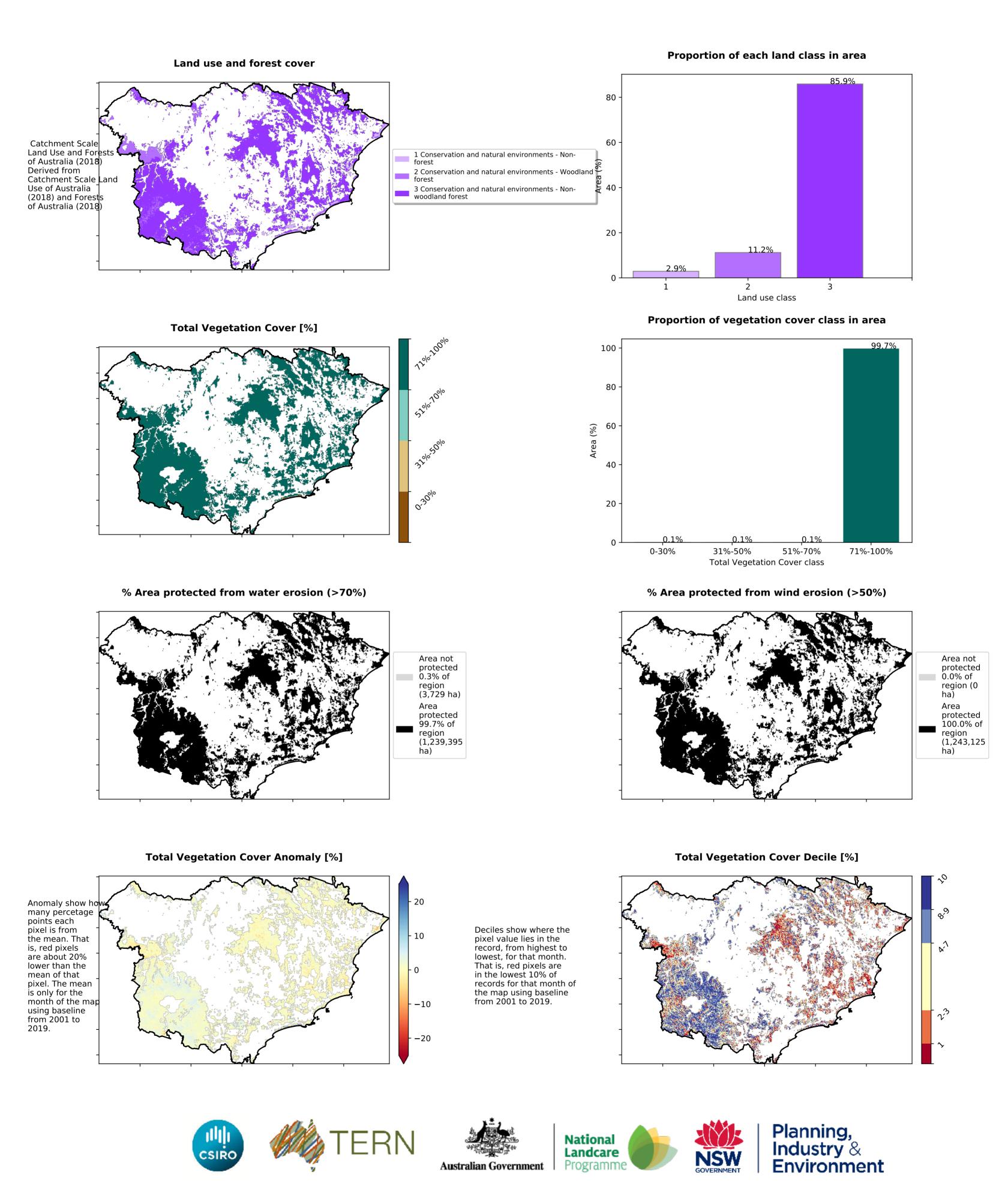




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Conservation and natural environments



Conservation and natural environments timeseries

99.94

99.92

99.90

99.88

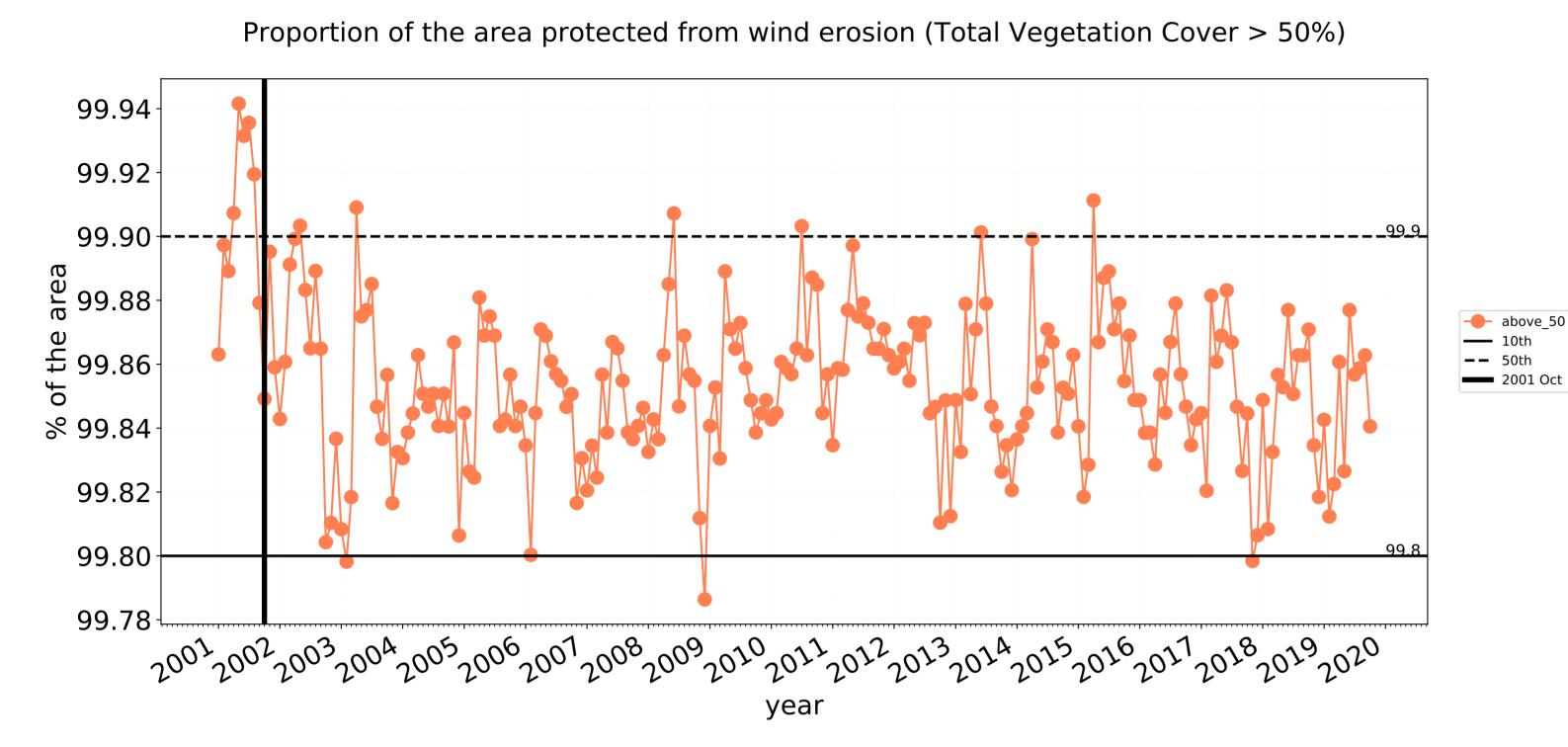
99.86

99.84

99.82

99.80

99.78

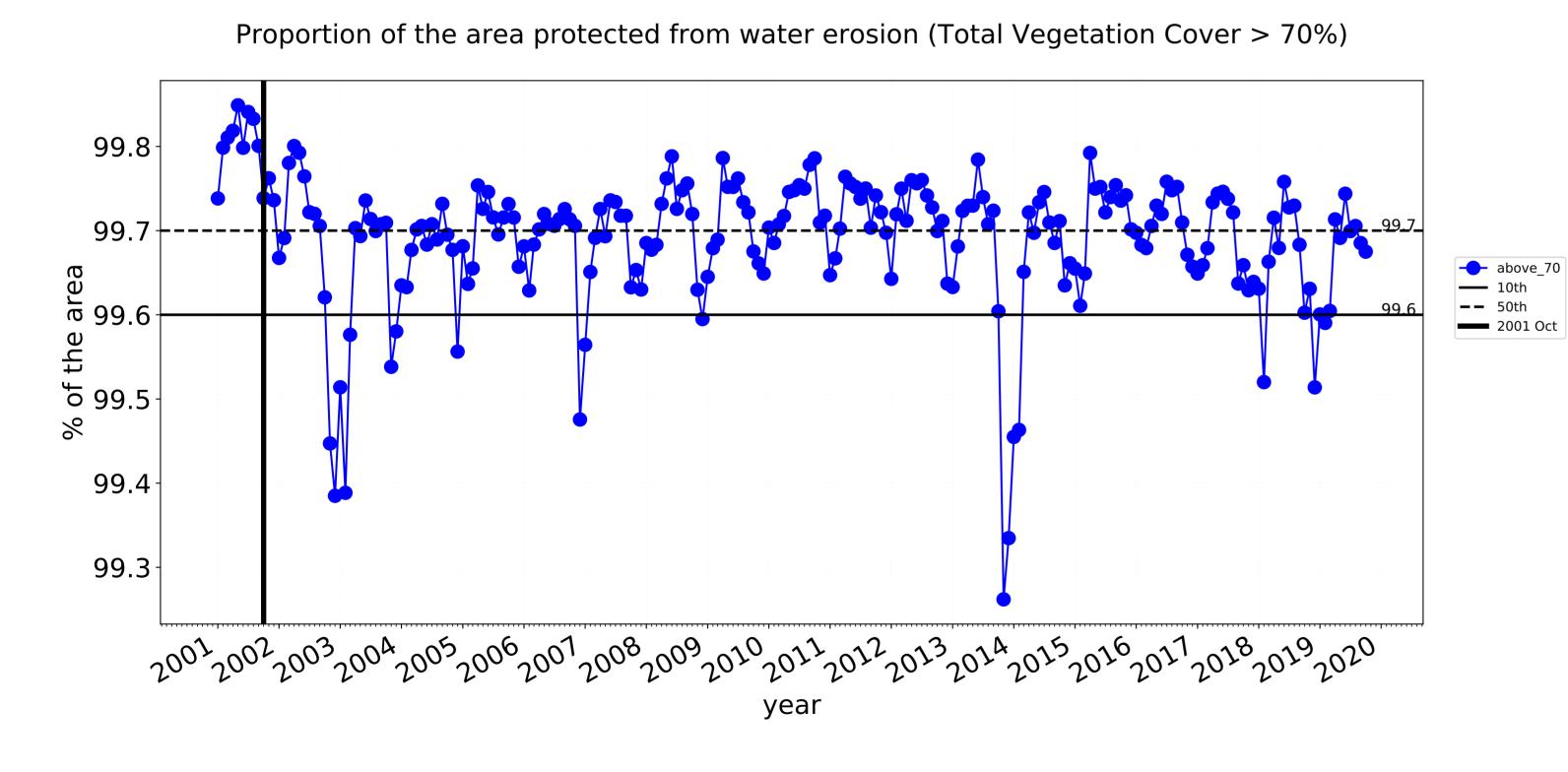


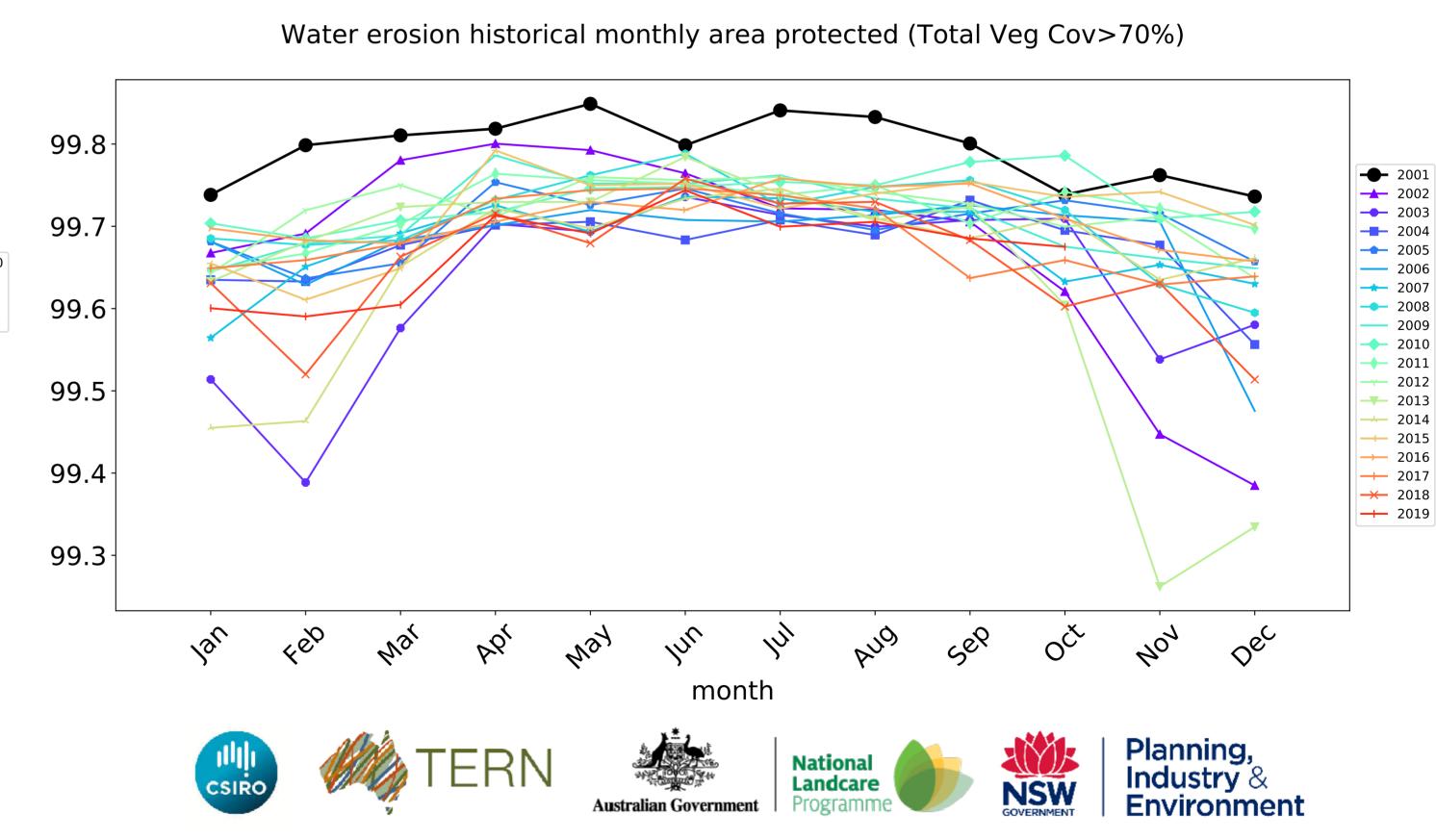
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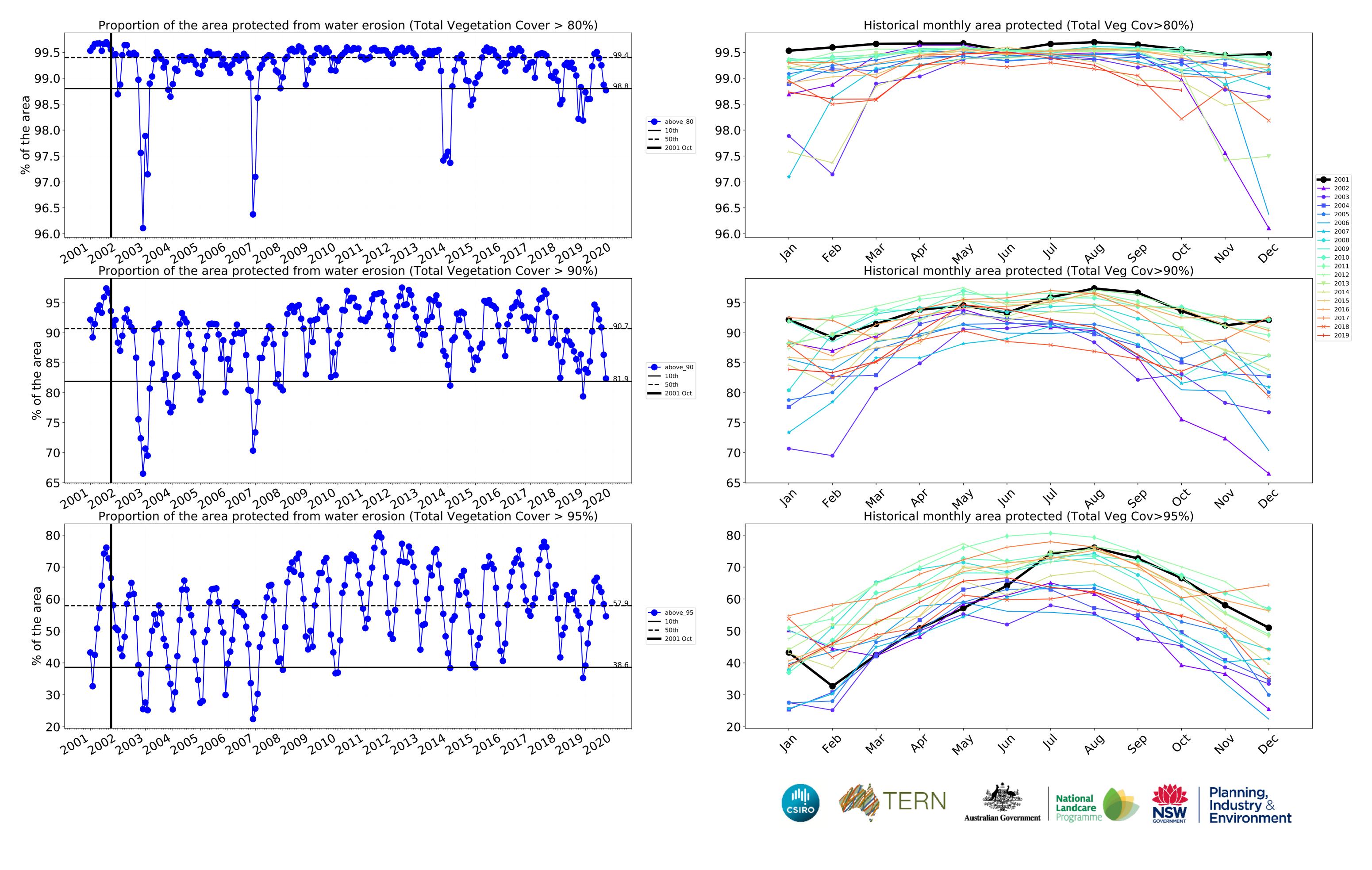
→ 2017 → 2018 → 2019

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

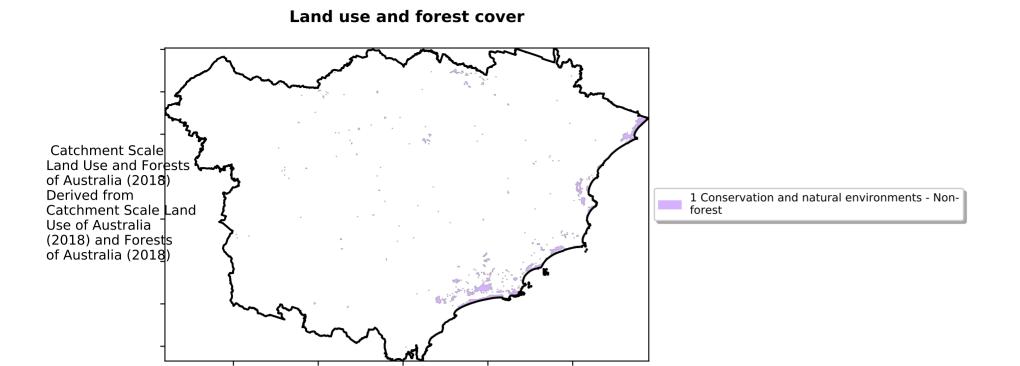
month





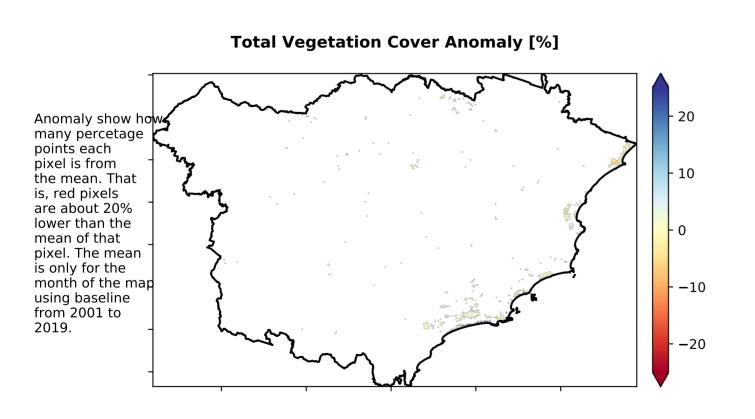


Conservation and natural environments non forest



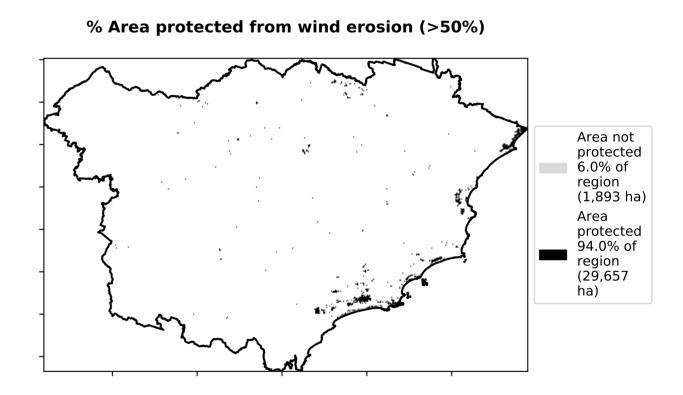
Total Vegetation Cover [%] Talestage Tales

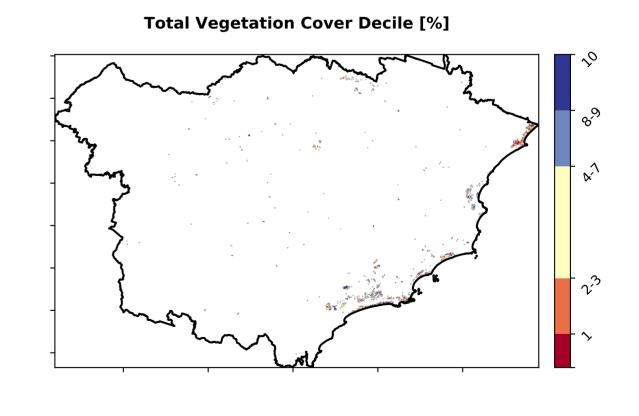
Area not protected 9.4% of region (2,965 ha) Area protected 90.6% of region (28,584 ha)



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

Proportion of vegetation cover class in area 90.6% 90.6% 90.6% 40 20 0-30% 31%-50% 51%-70% Total Vegetation Cover class









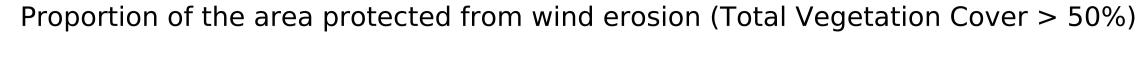


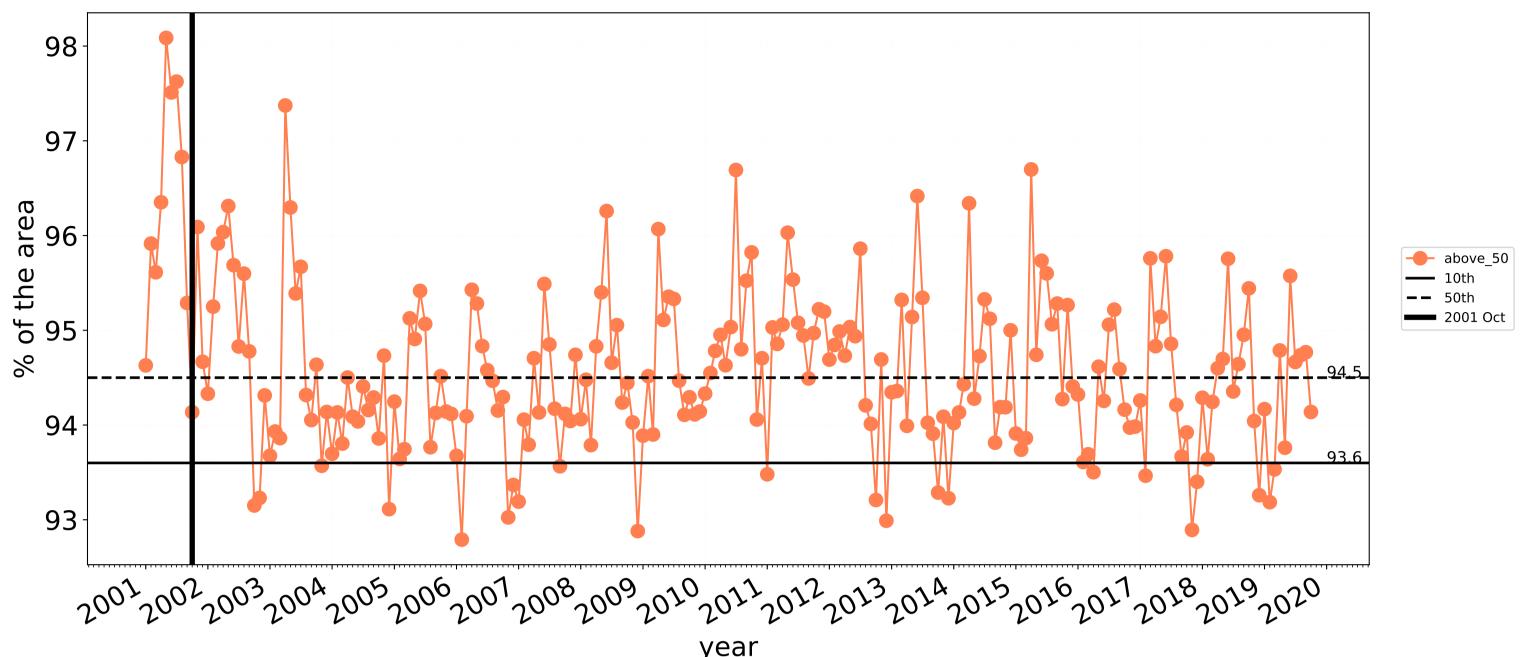




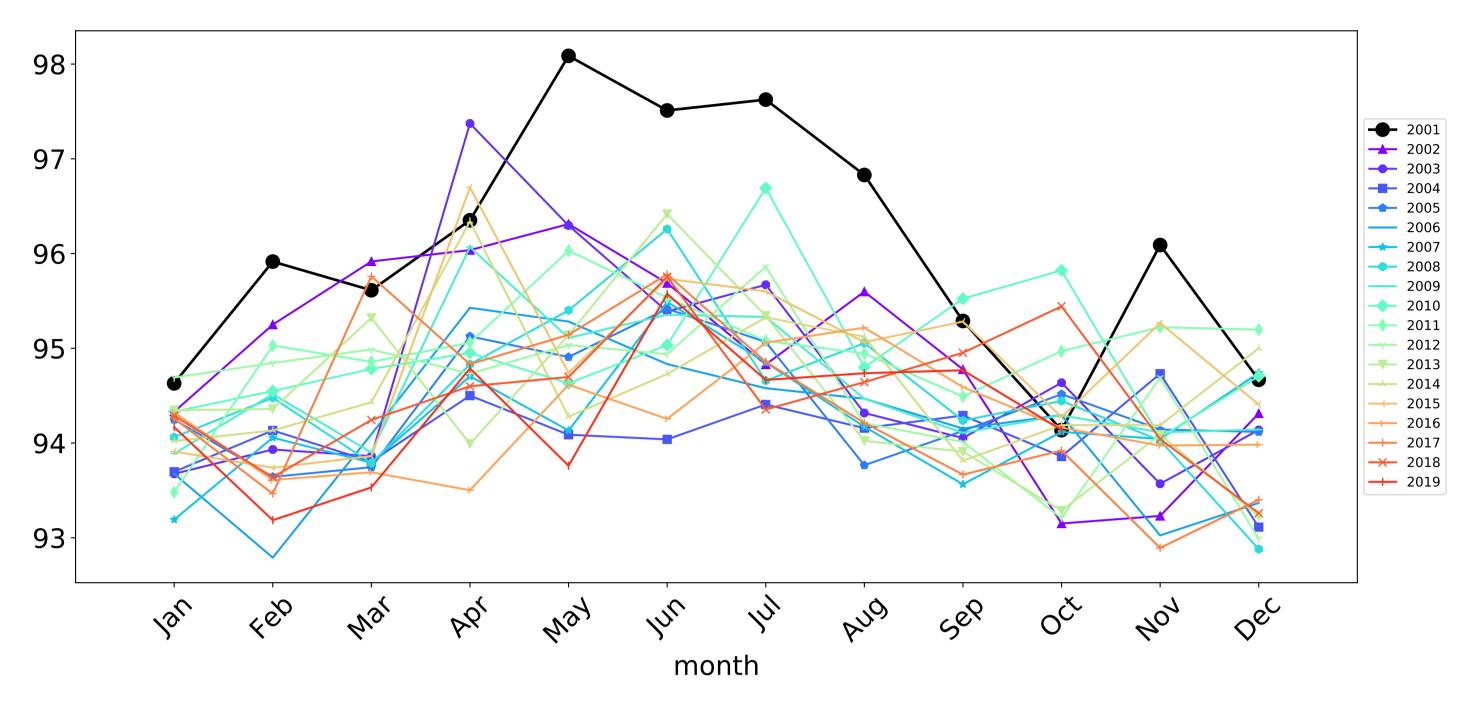


Conservation and natural environments non forest timeseries

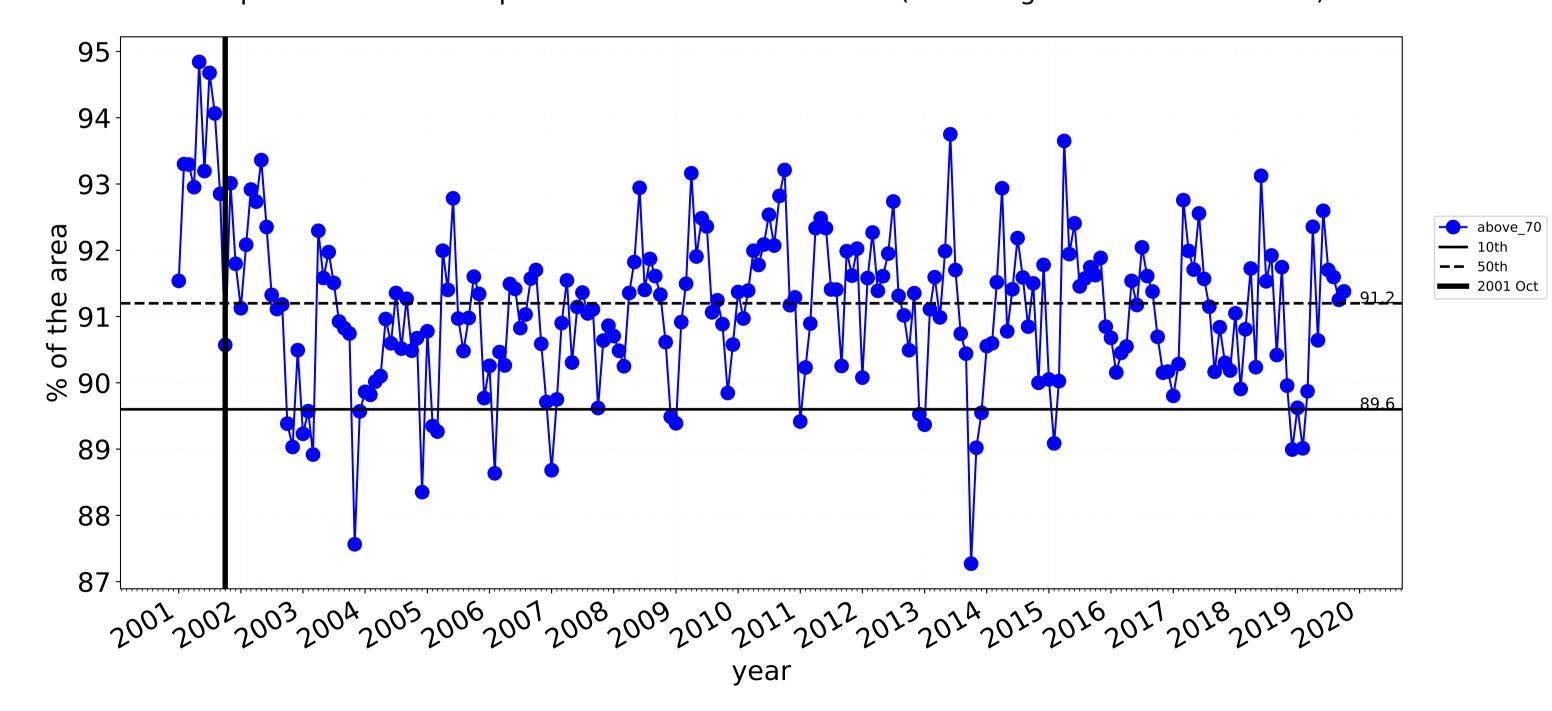




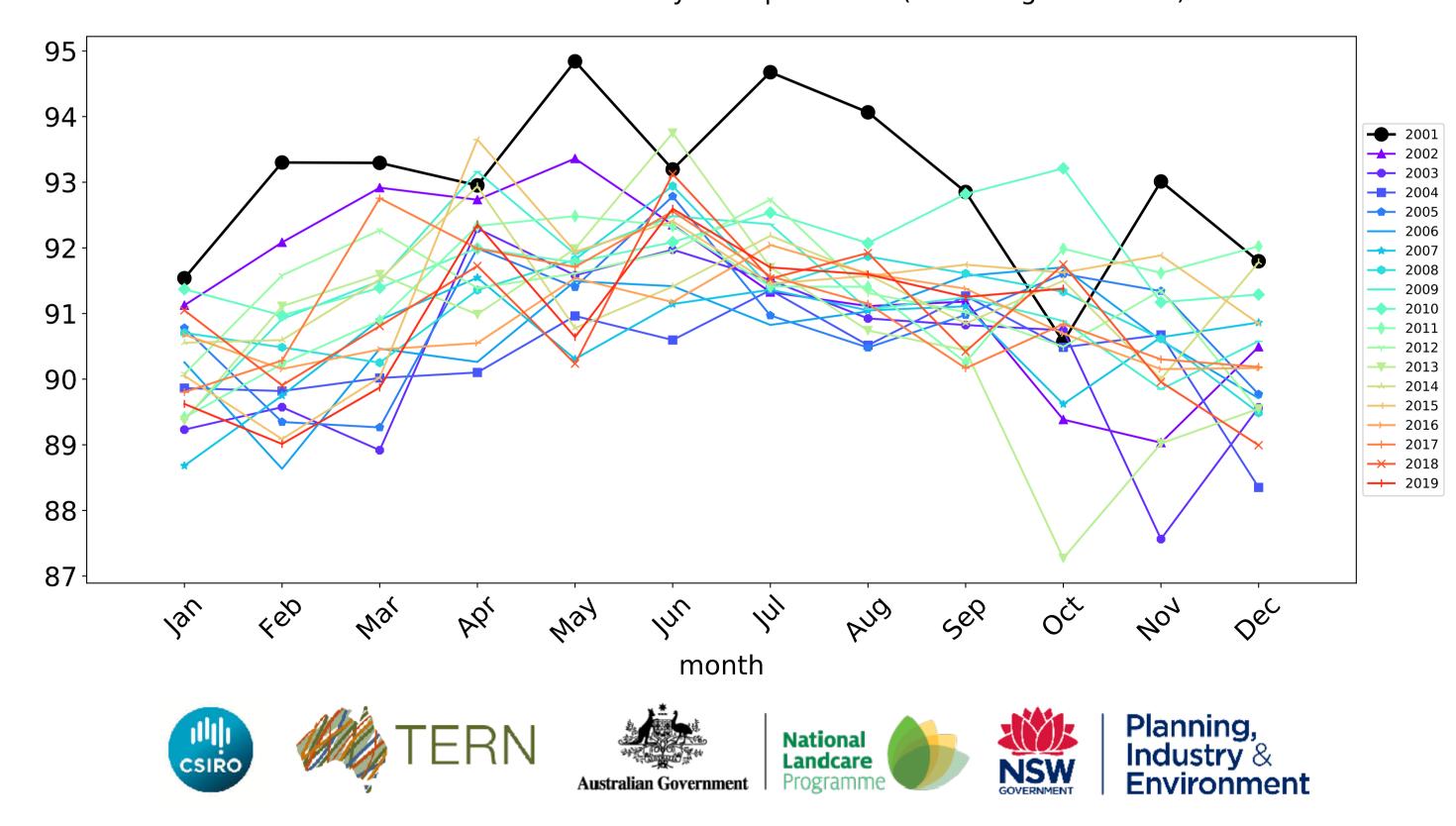
Wind erosion historical monthly area protected (Total Veg Cov >50%)

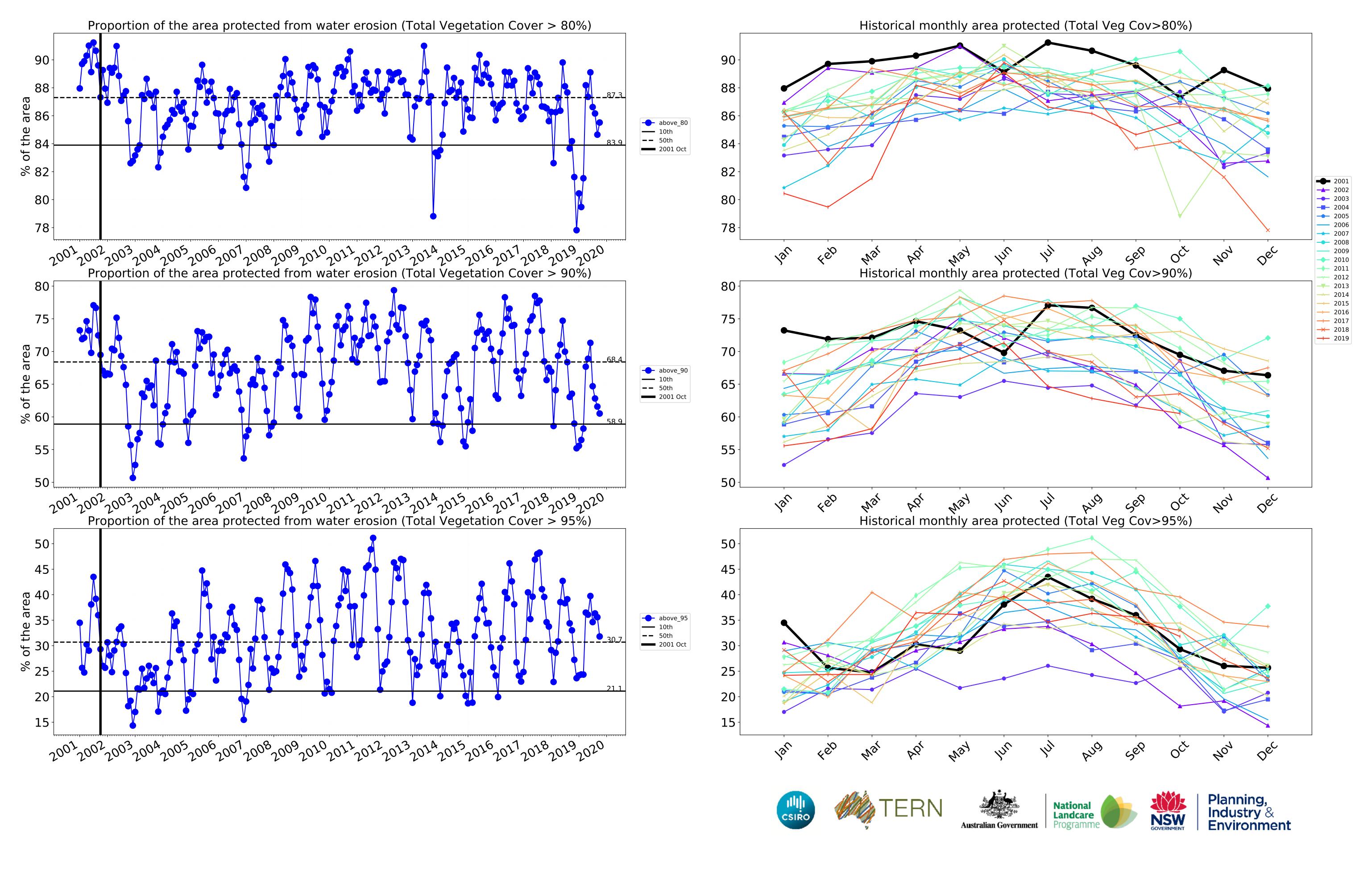


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

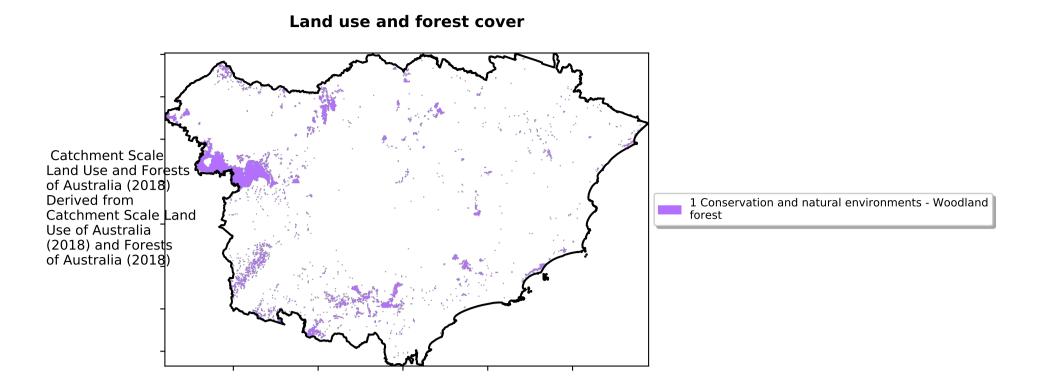


Water erosion historical monthly area protected (Total Veg Cov>70%)

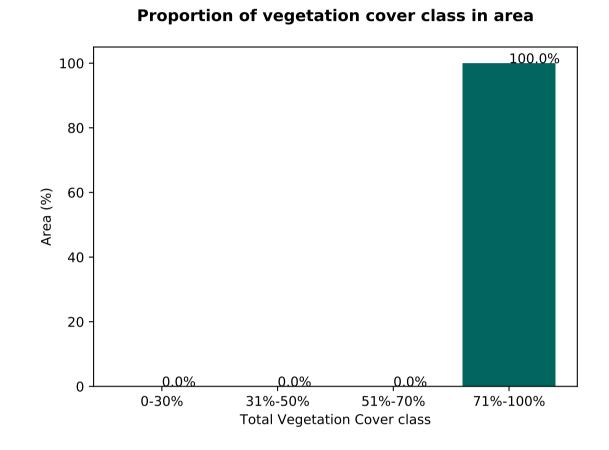


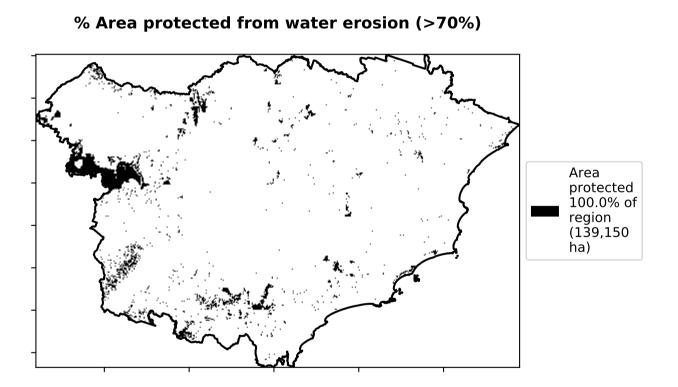


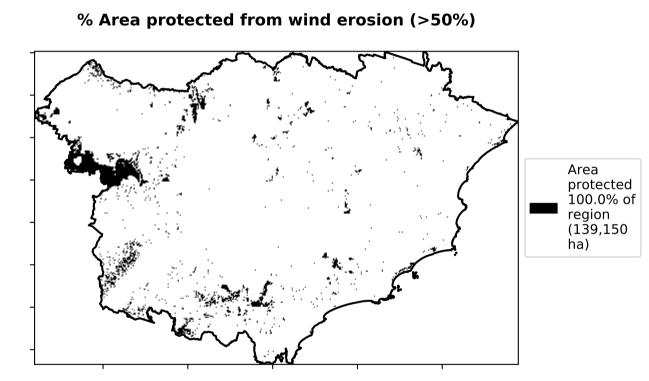
Conservation and natural environments Woodland forest

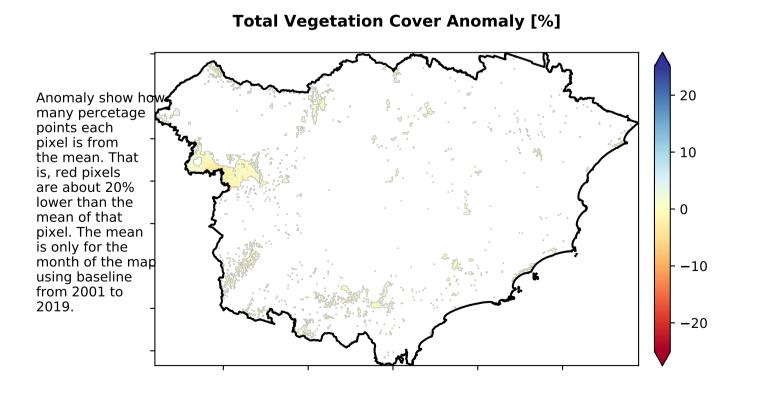


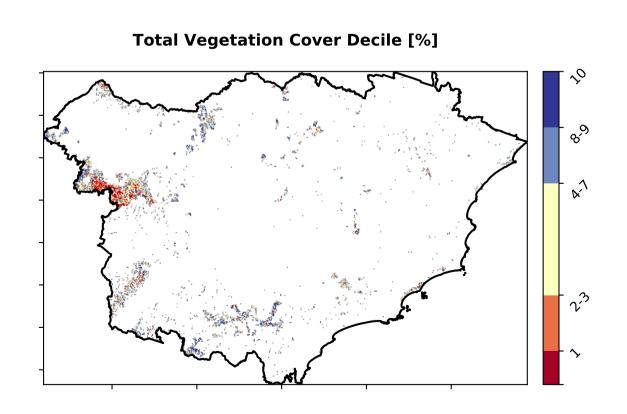
Total Vegetation Cover [%] Tiple: Ideal Ti















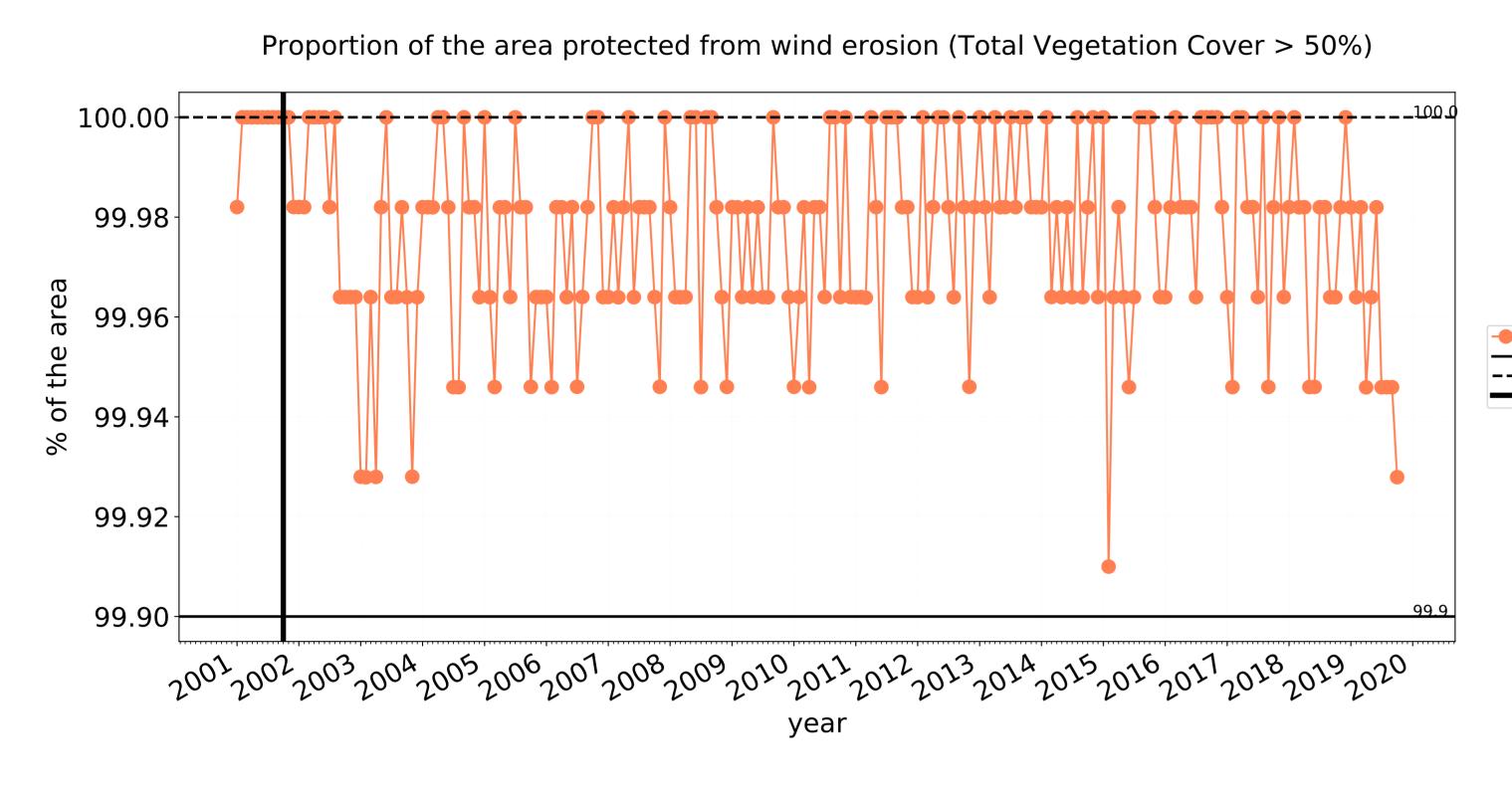


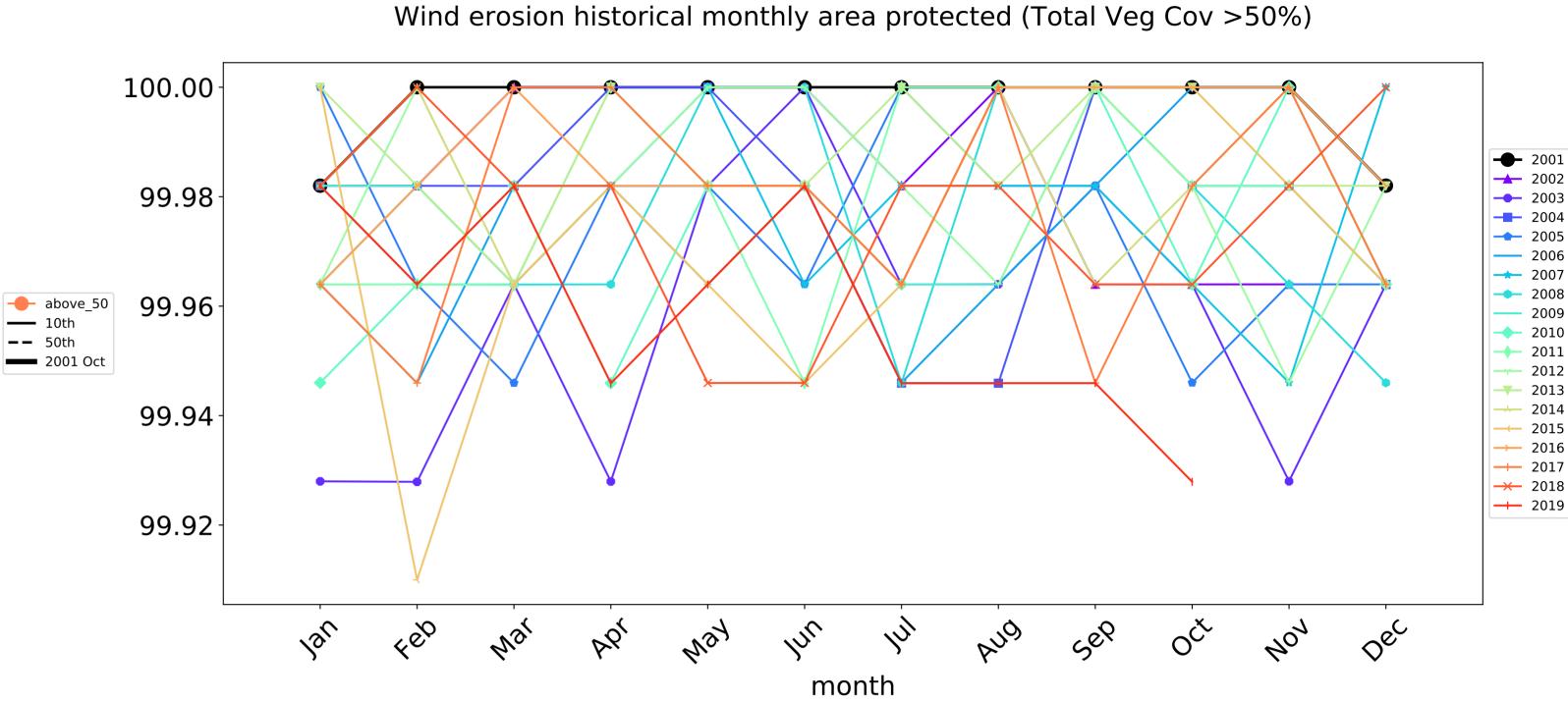


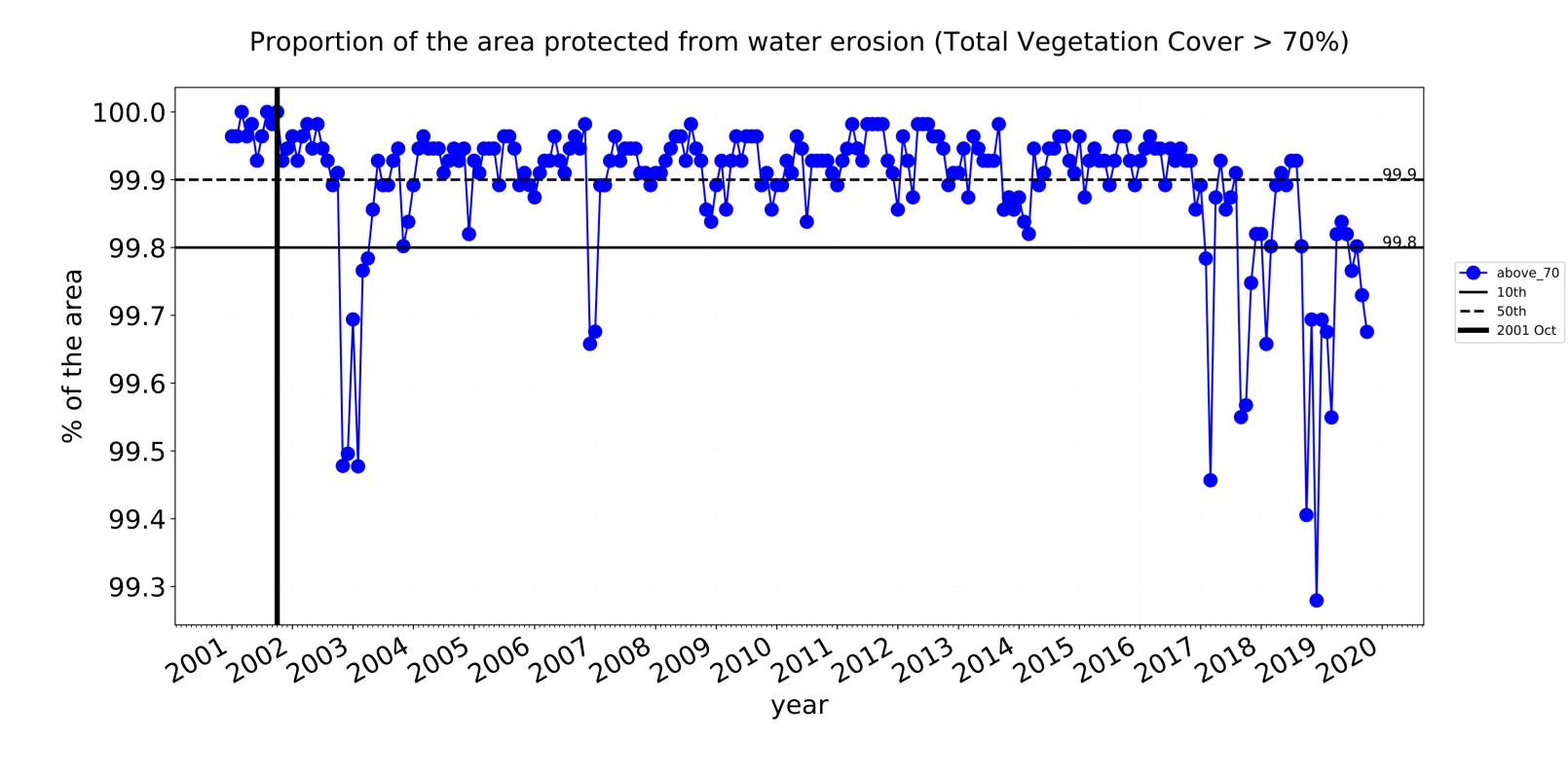


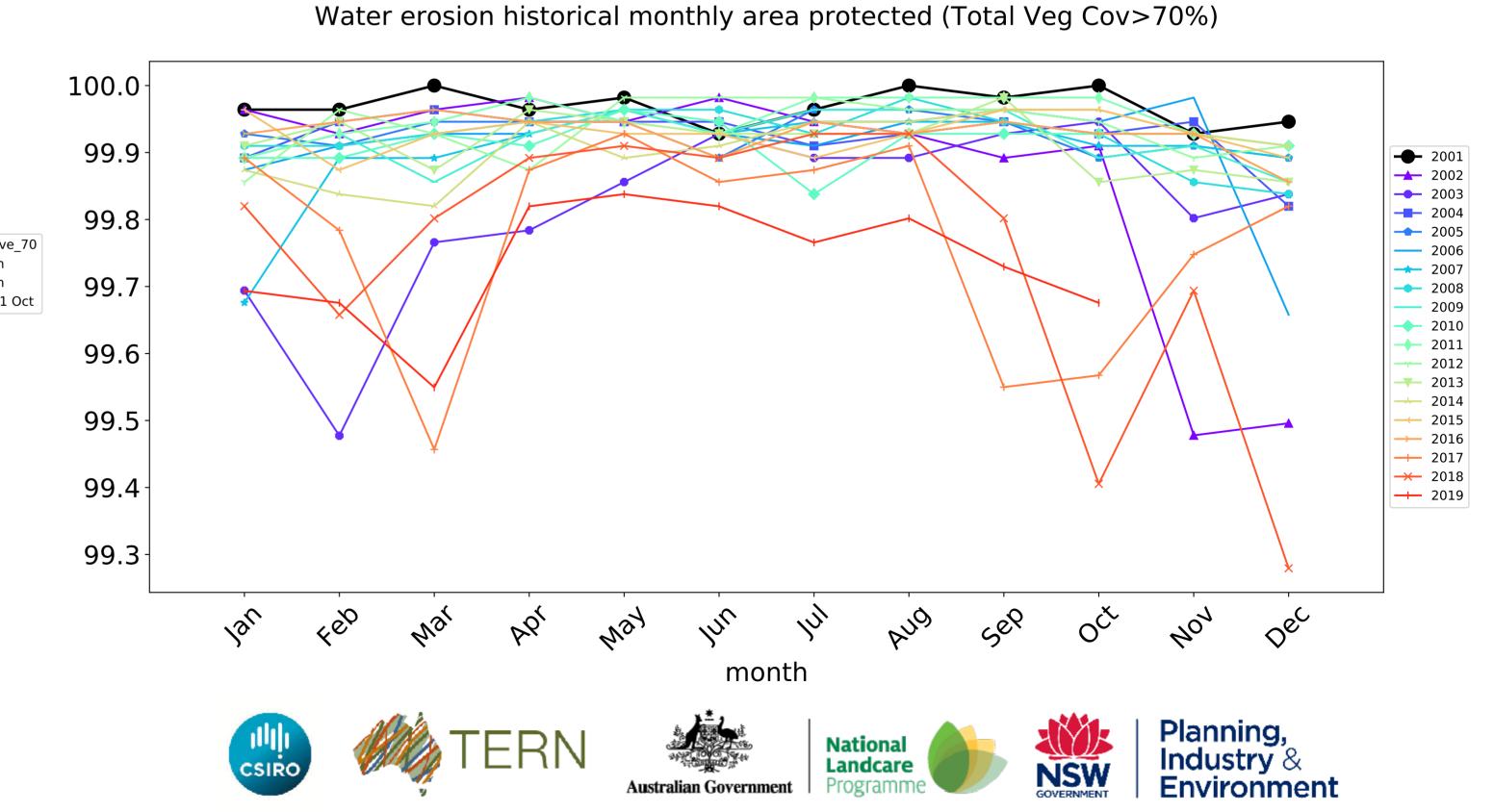


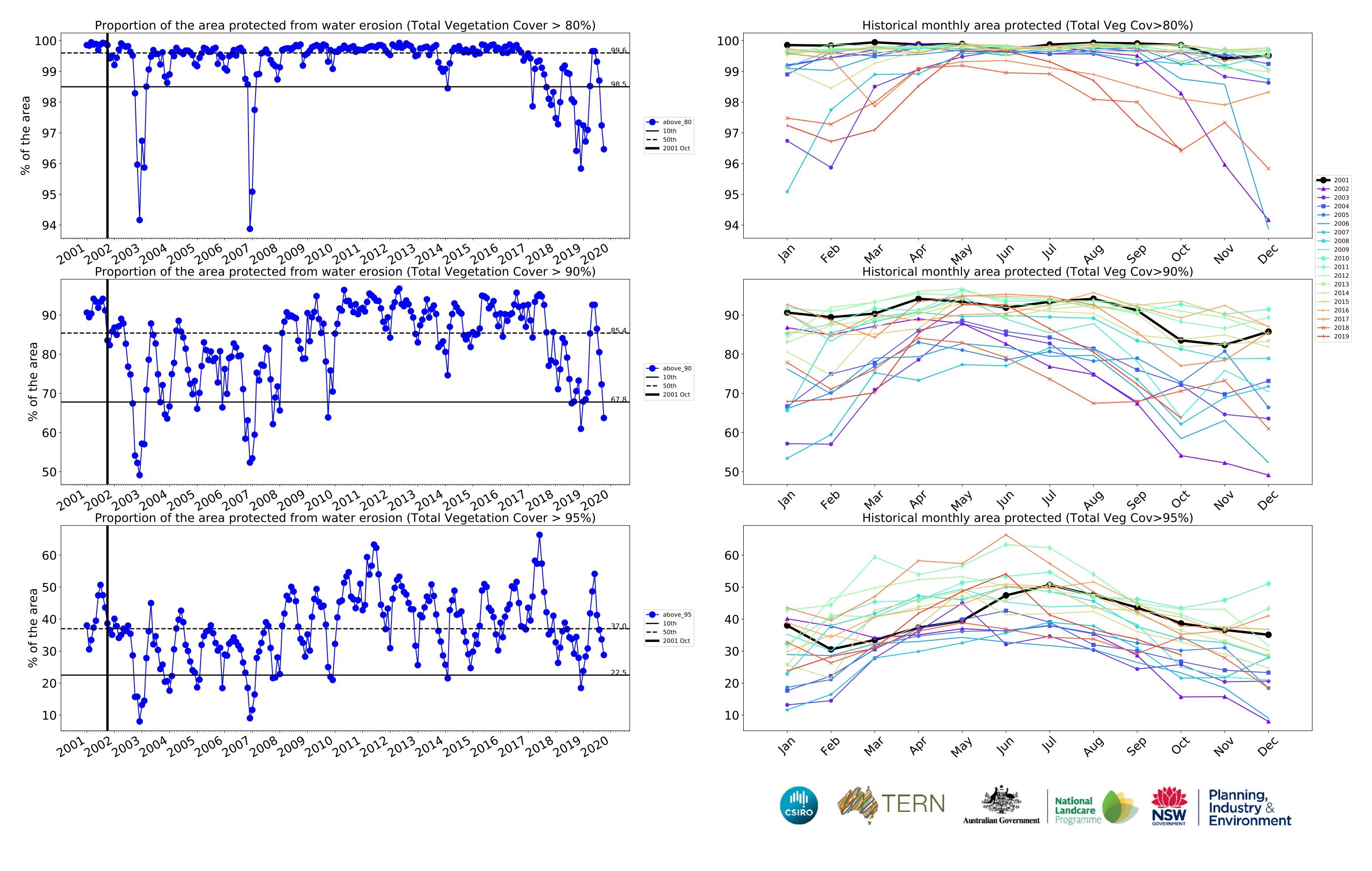
Conservation and natural environments Woodland forest timeseries

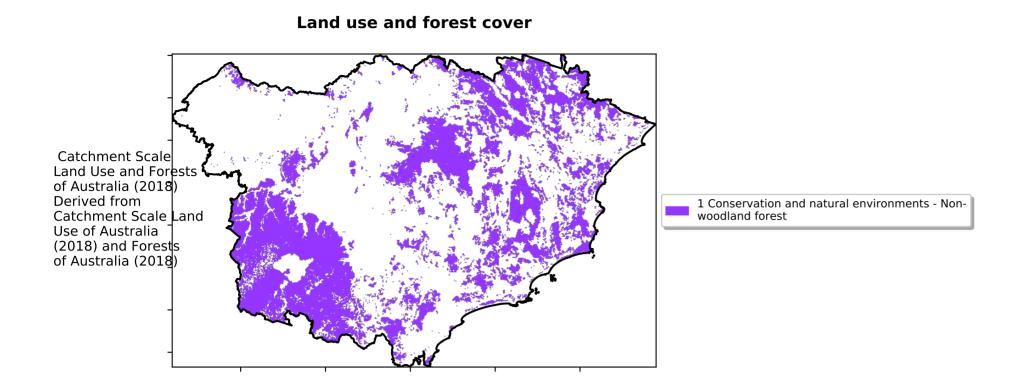




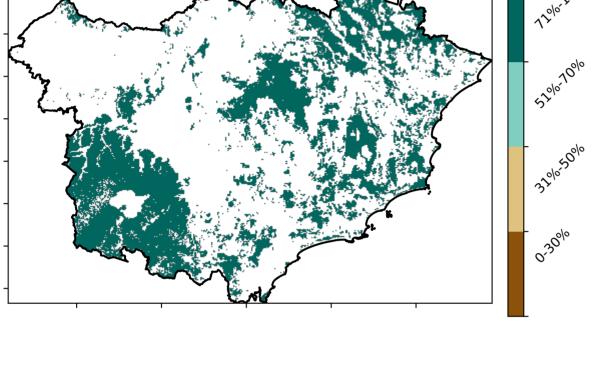


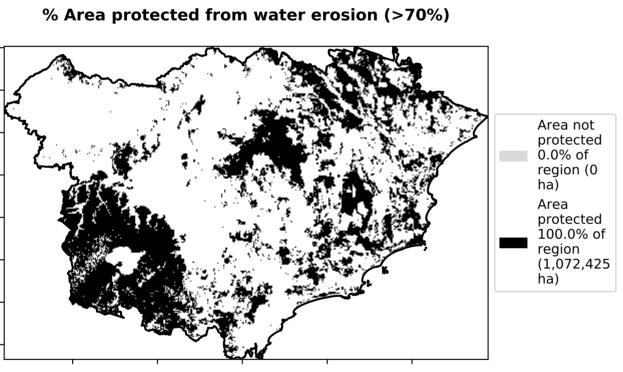


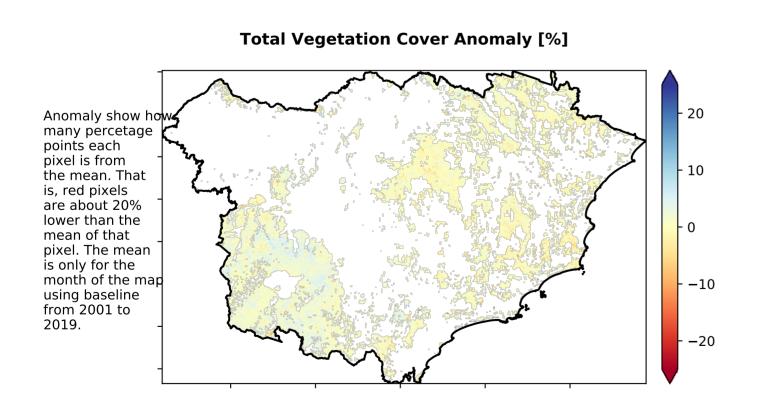


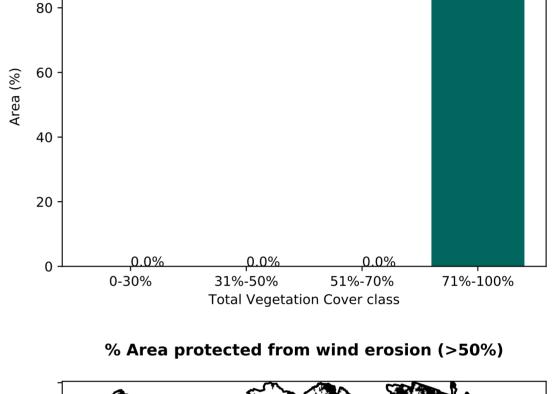


Total Vegetation Cover [%]





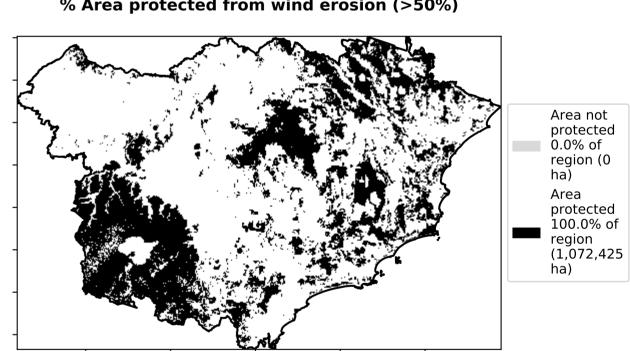


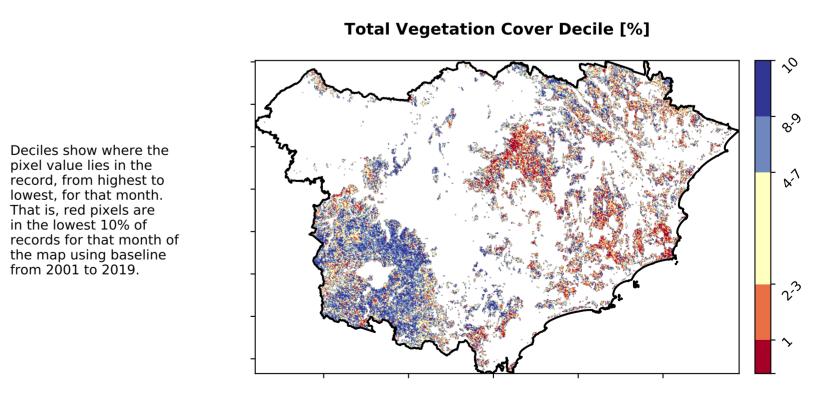


Proportion of vegetation cover class in area

100

100.0%







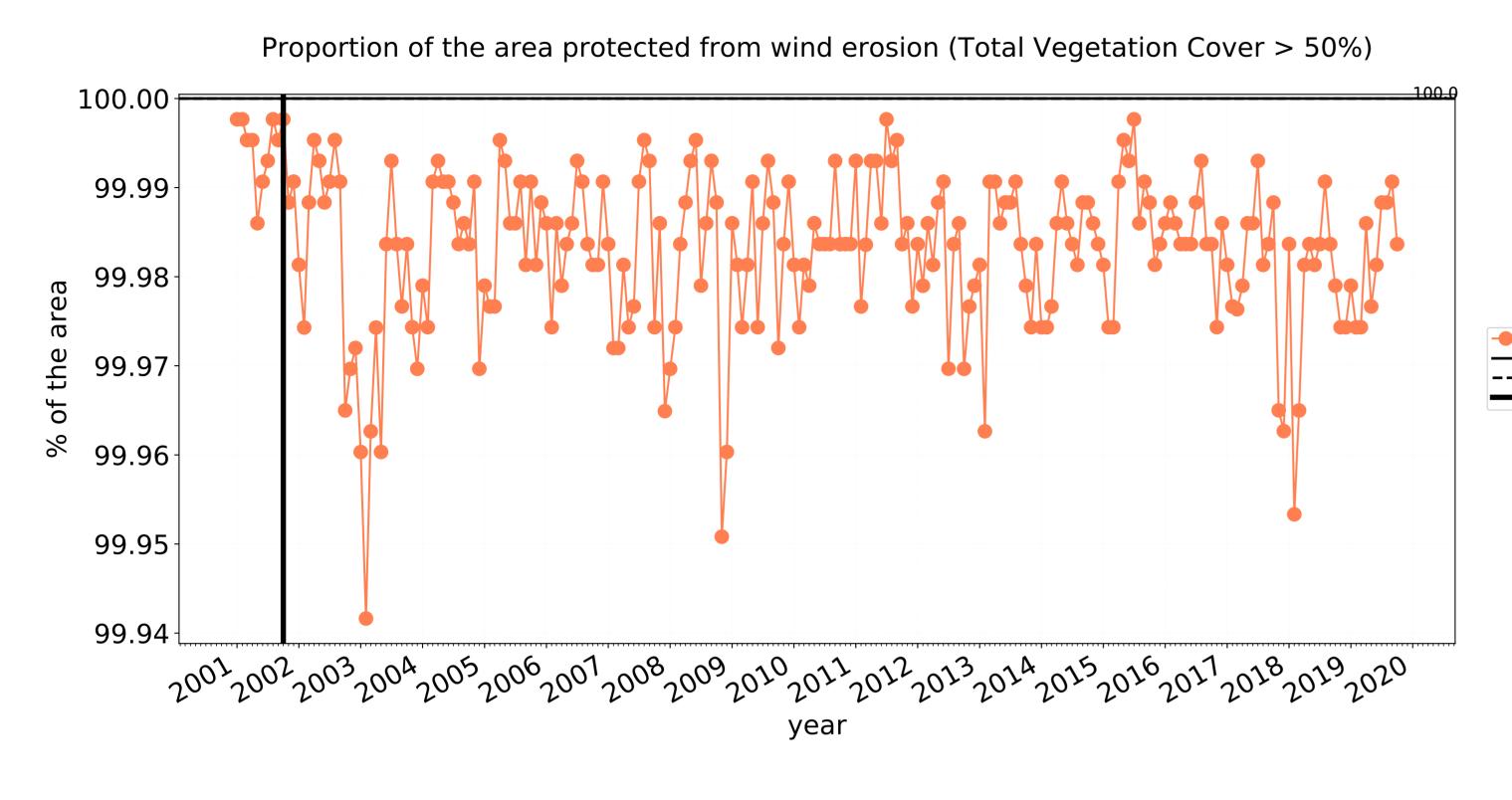


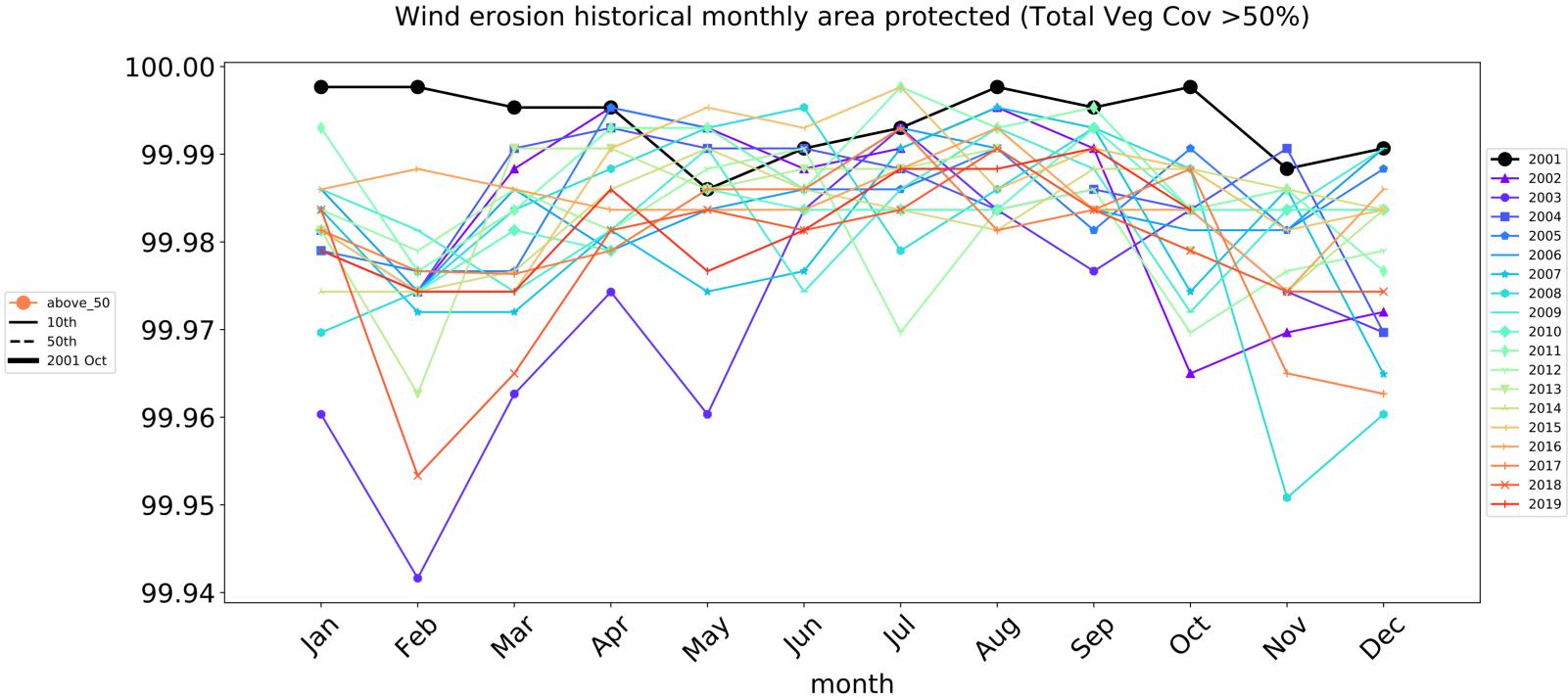


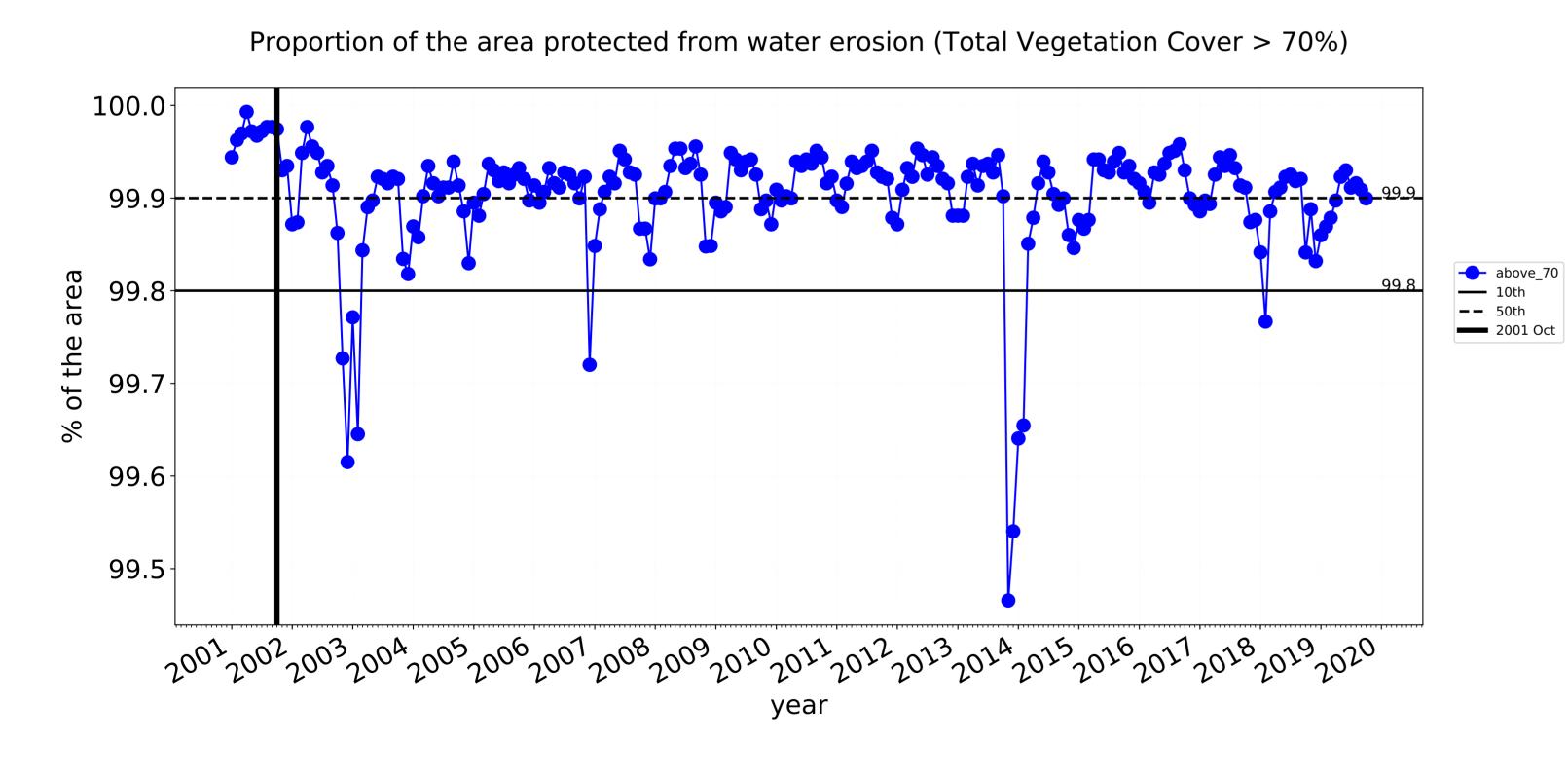


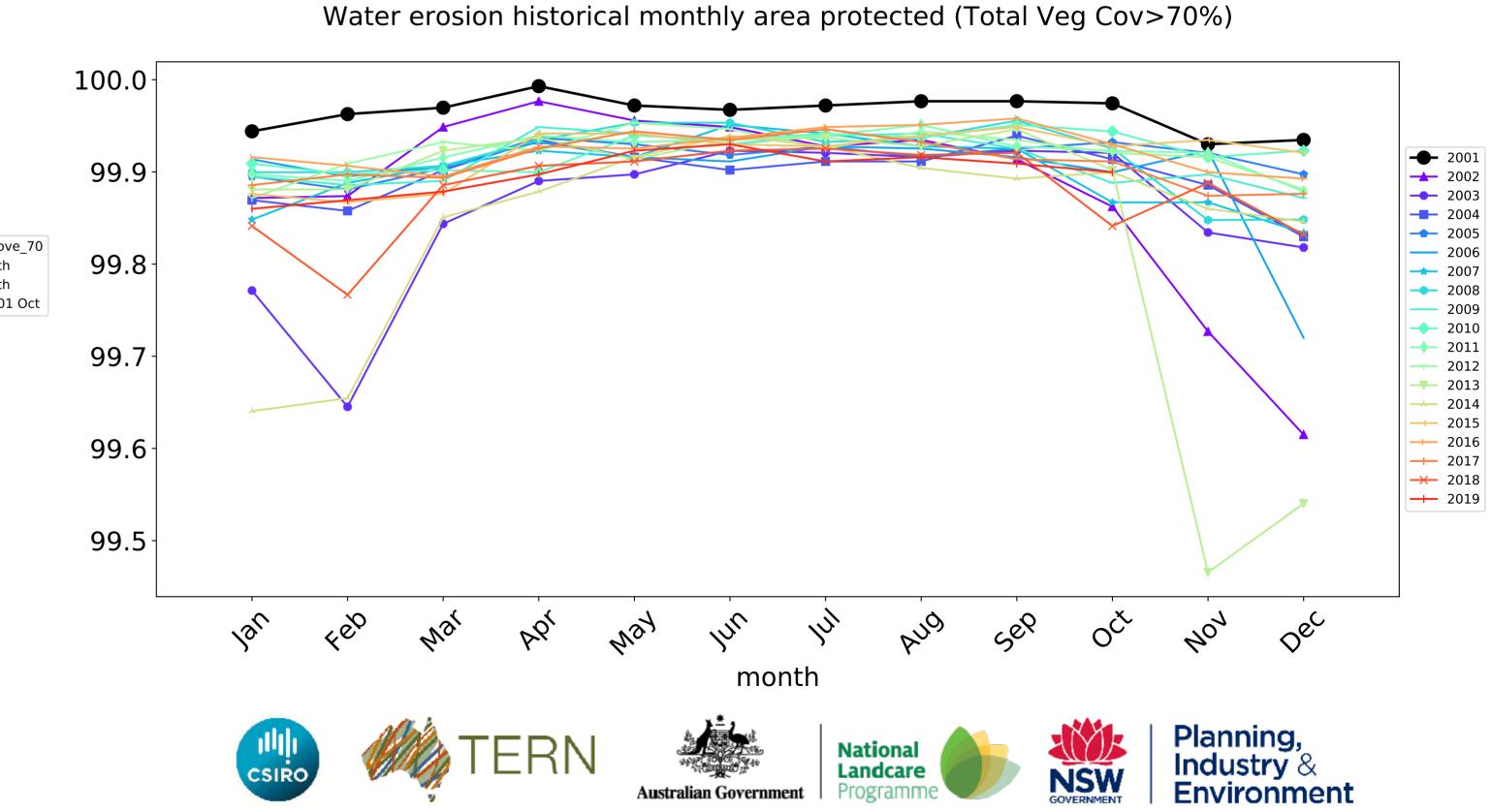


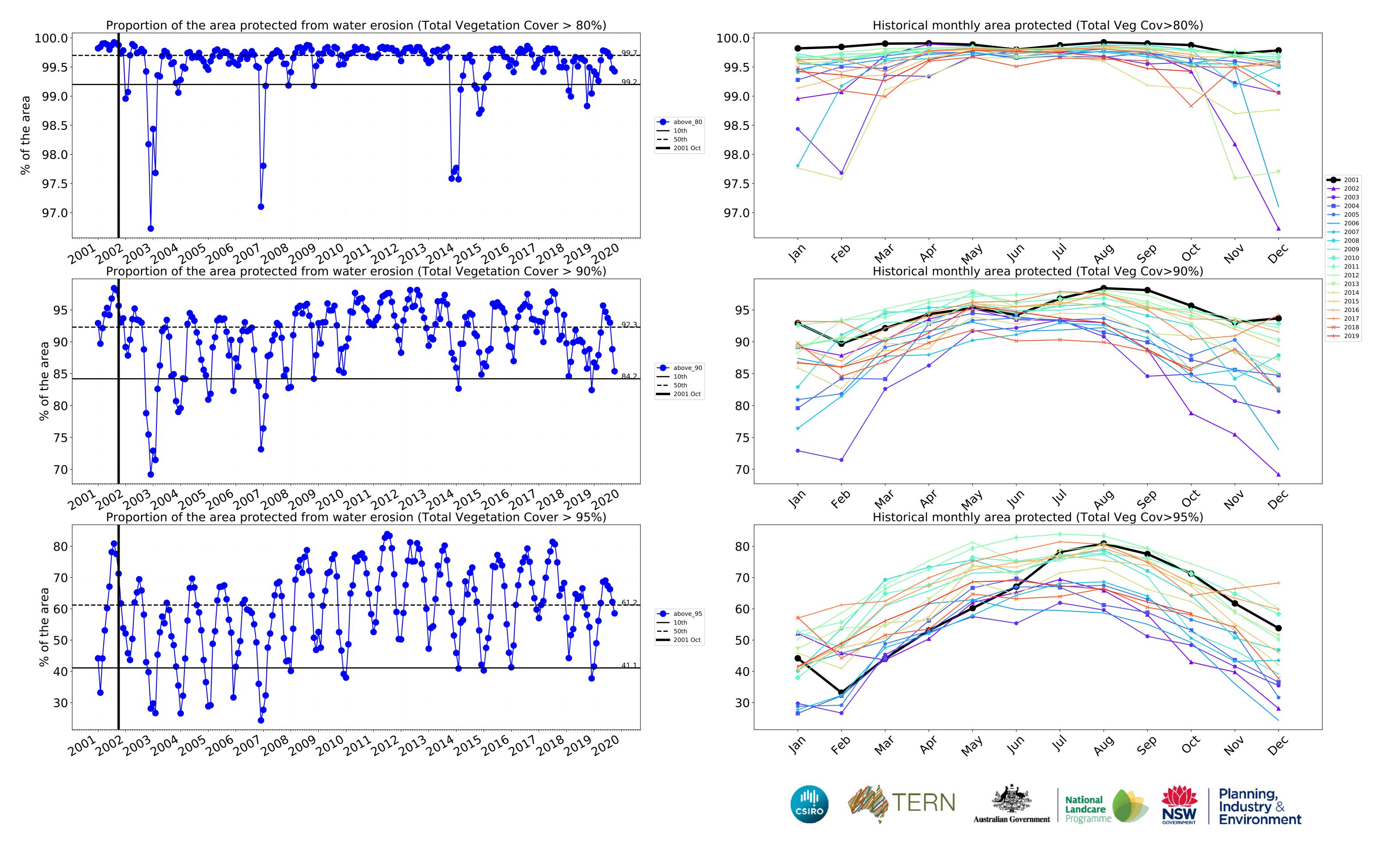




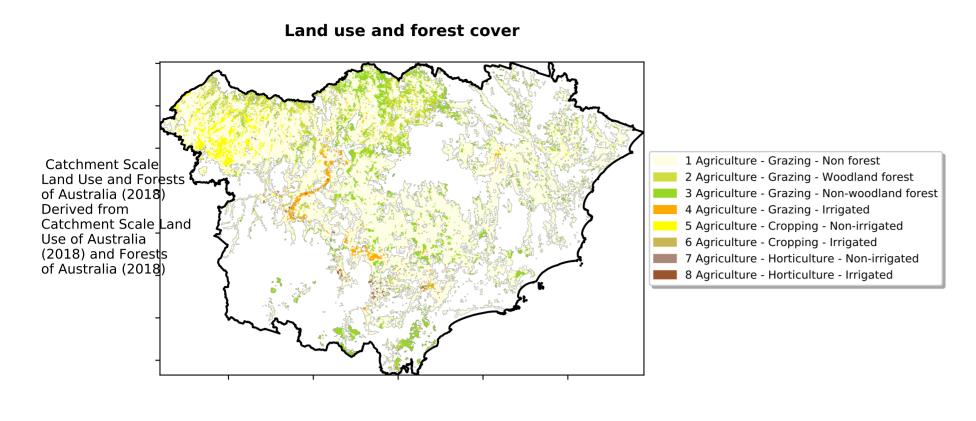




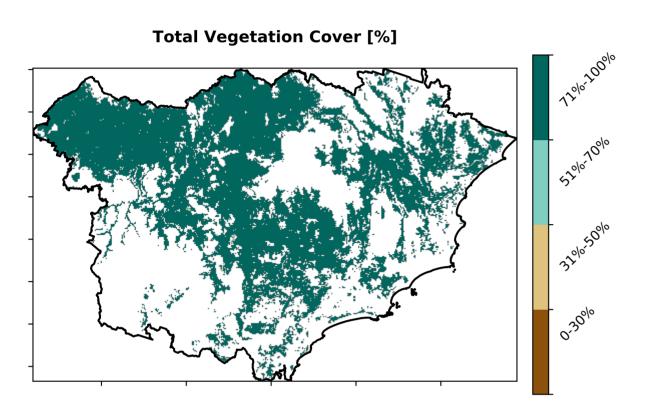


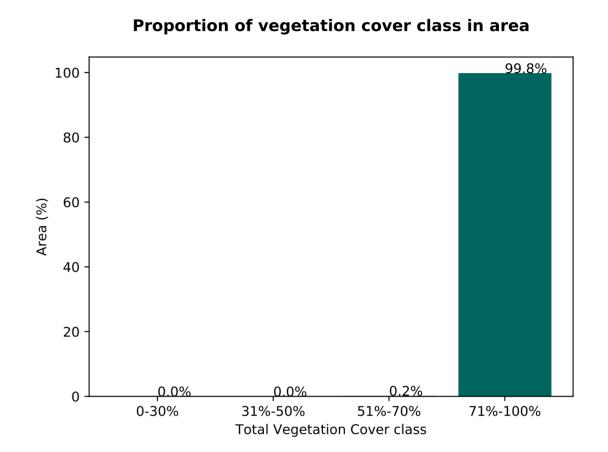


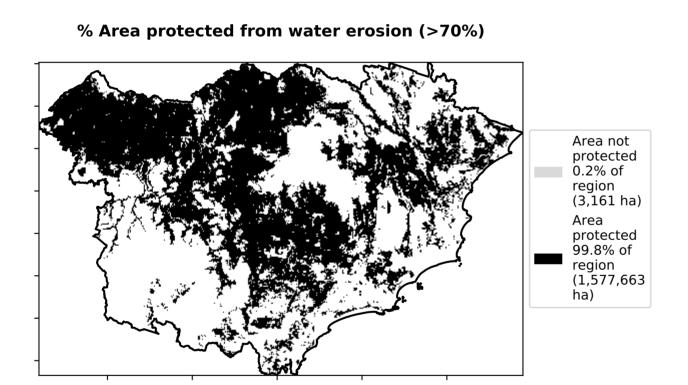
Agriculture

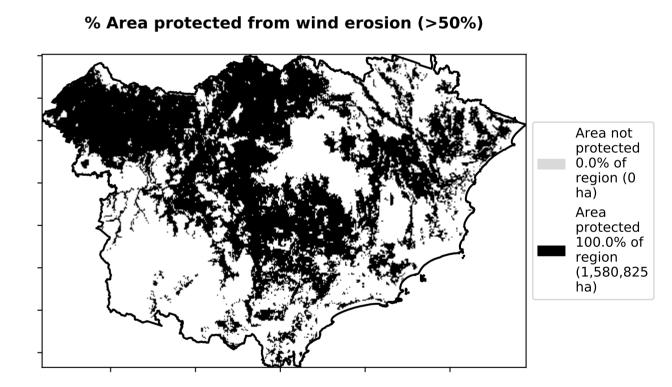


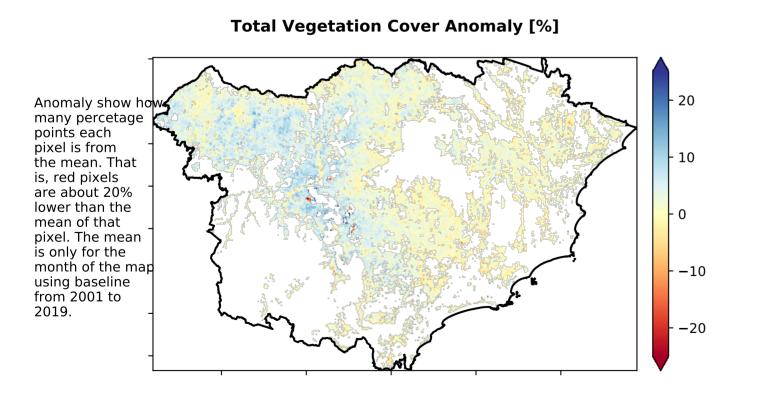
Proportion of each land class in area 80 76.7% 70 60 50 20 10 7.6% 10.7% 10.7% 1.3% 3.2% 0.1% 0.1% 0.2% Land use class

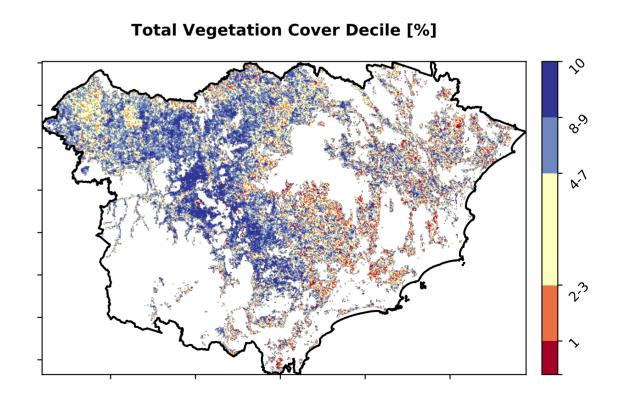
















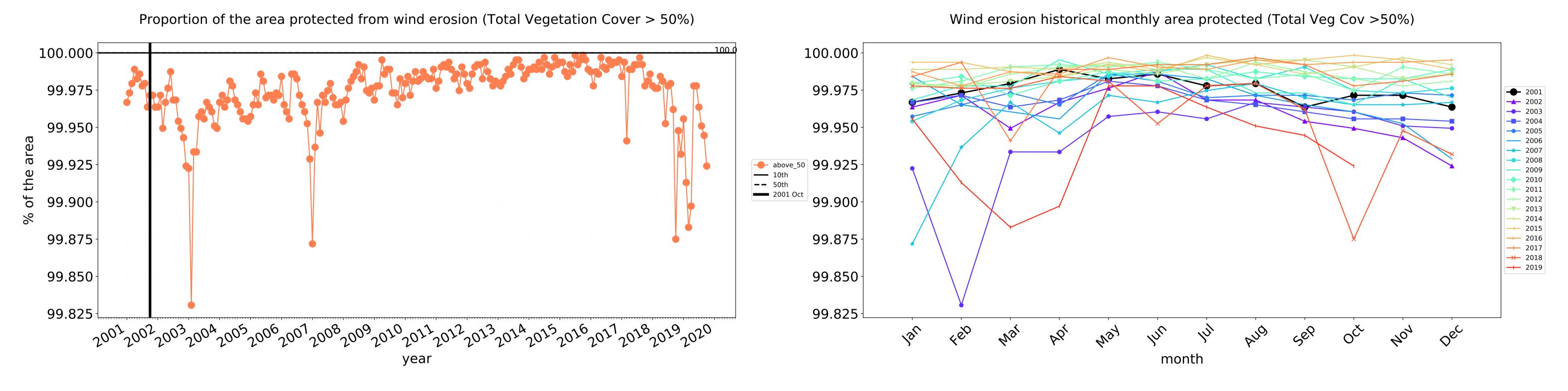


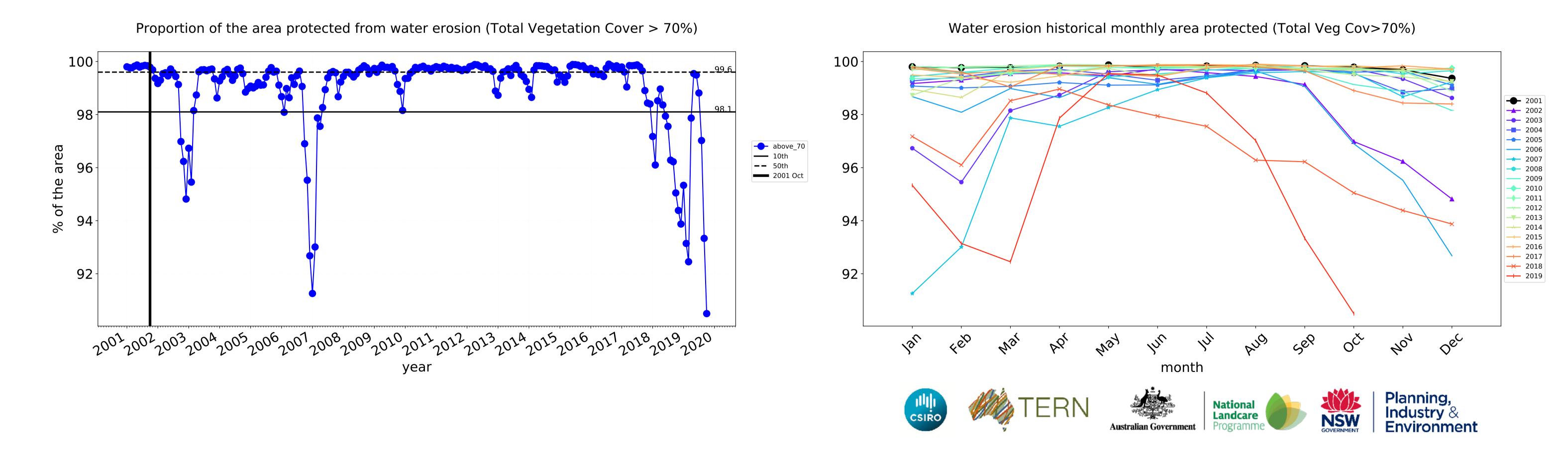


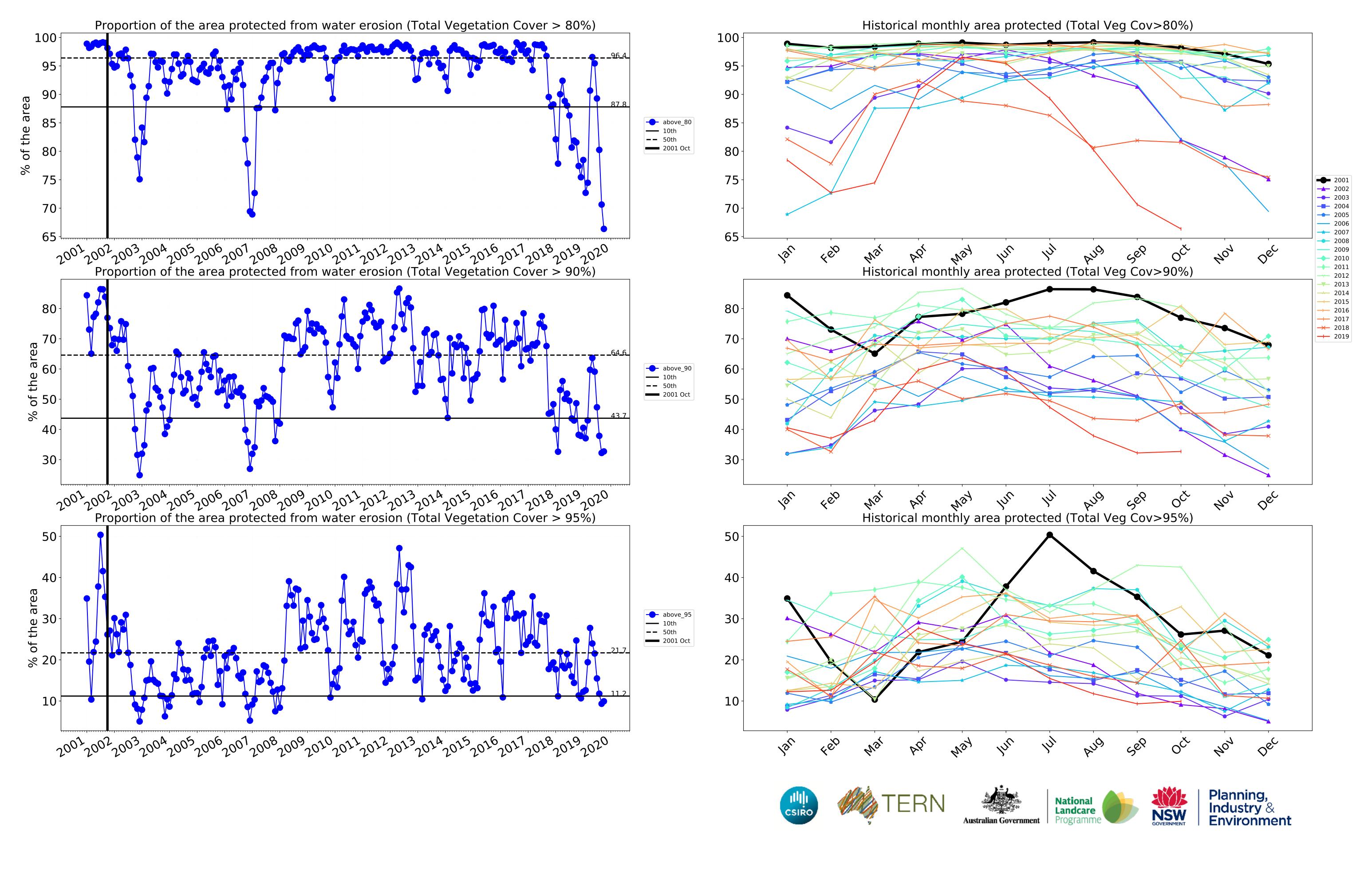




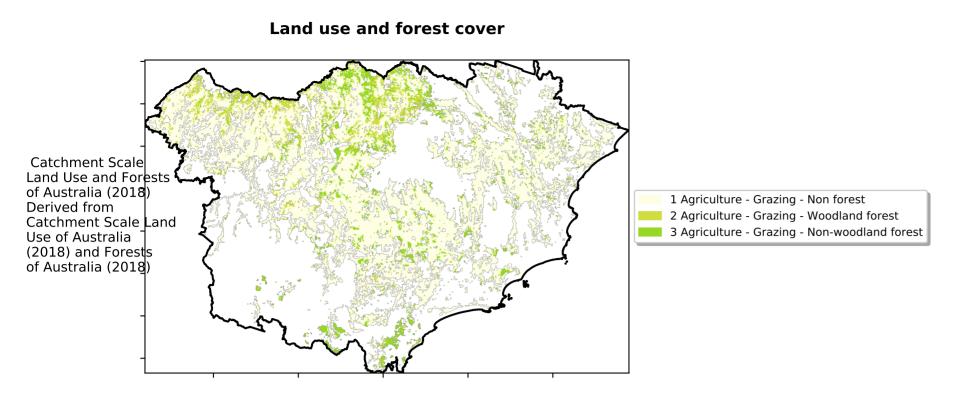
Agriculture timeseries



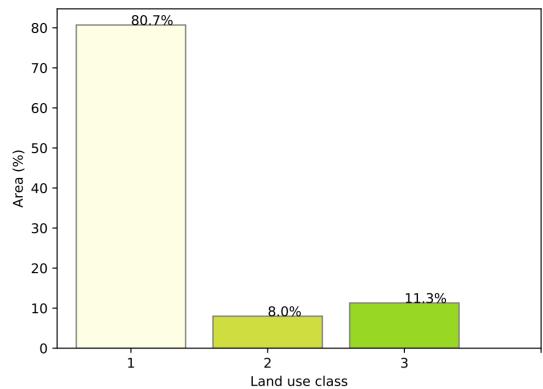




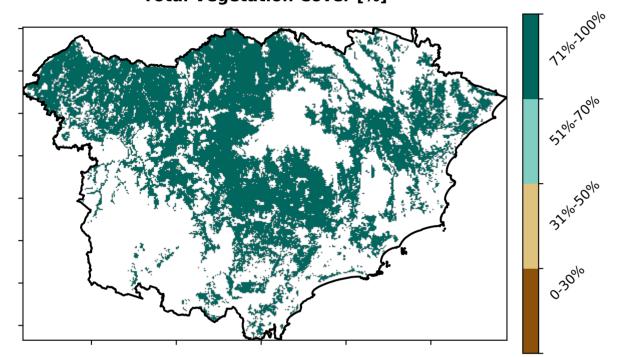
Grazing



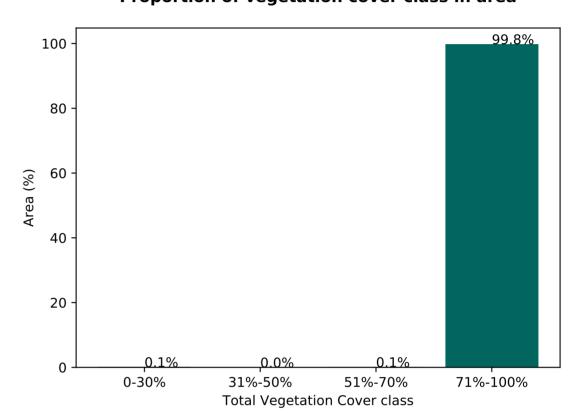
Proportion of each land class in area



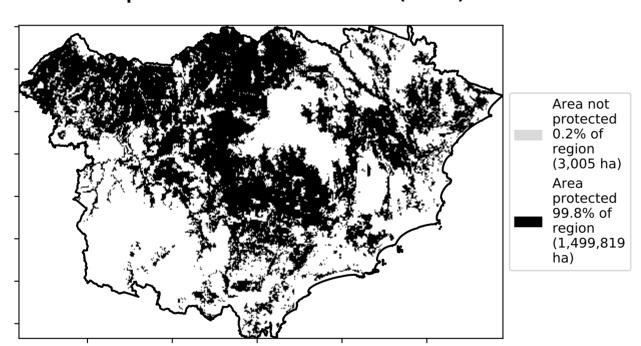
Total Vegetation Cover [%]



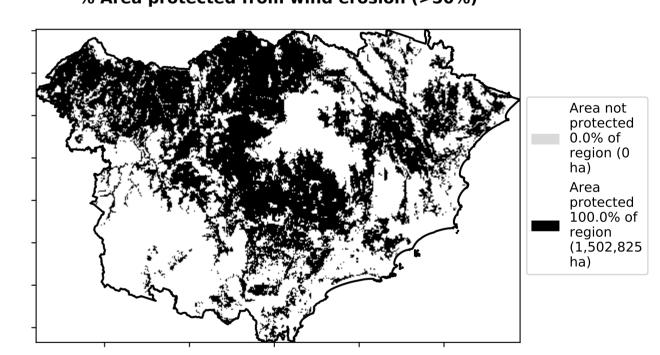
Proportion of vegetation cover class in area



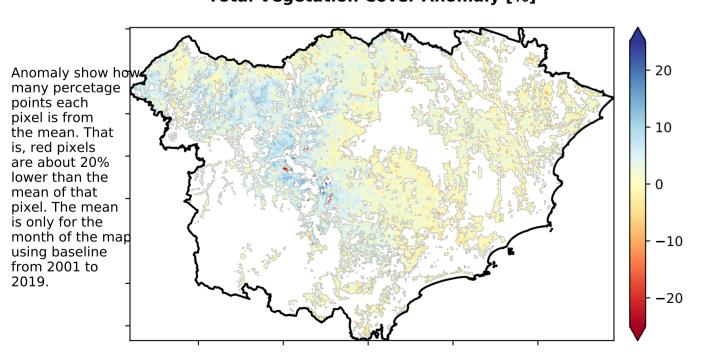
% Area protected from water erosion (>70%)

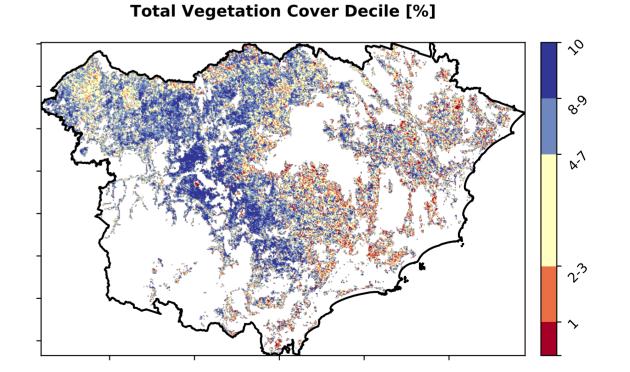


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]









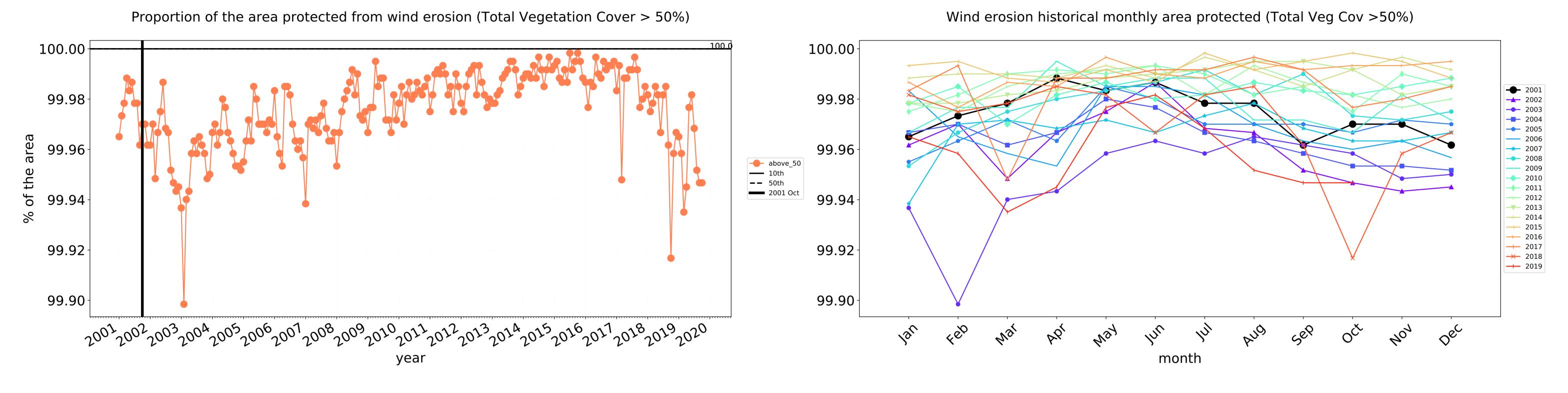


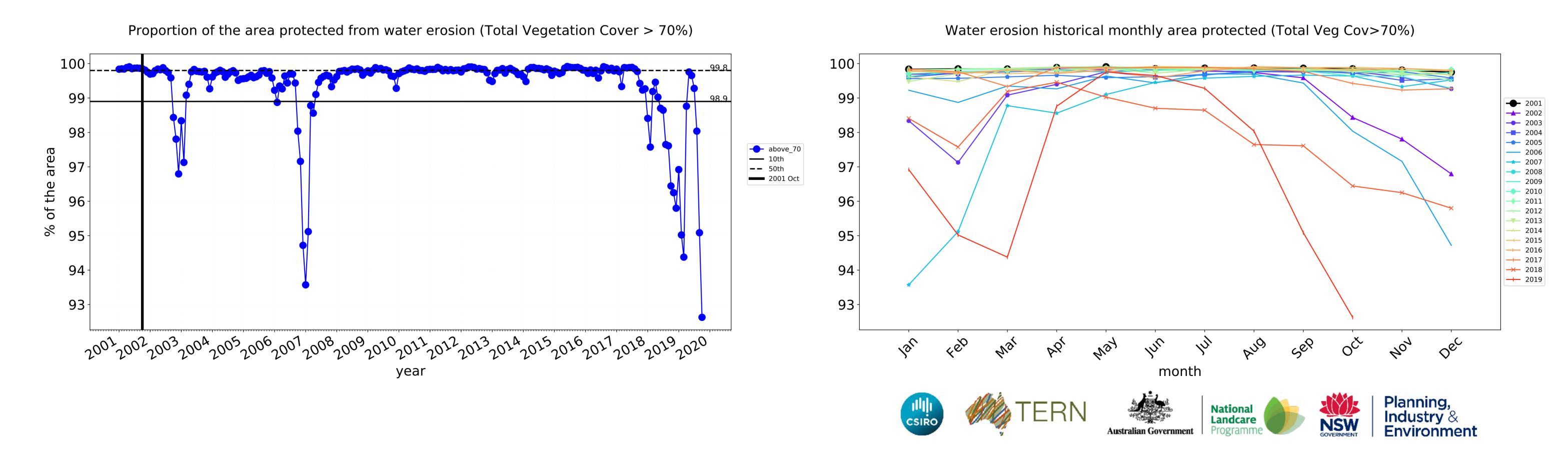


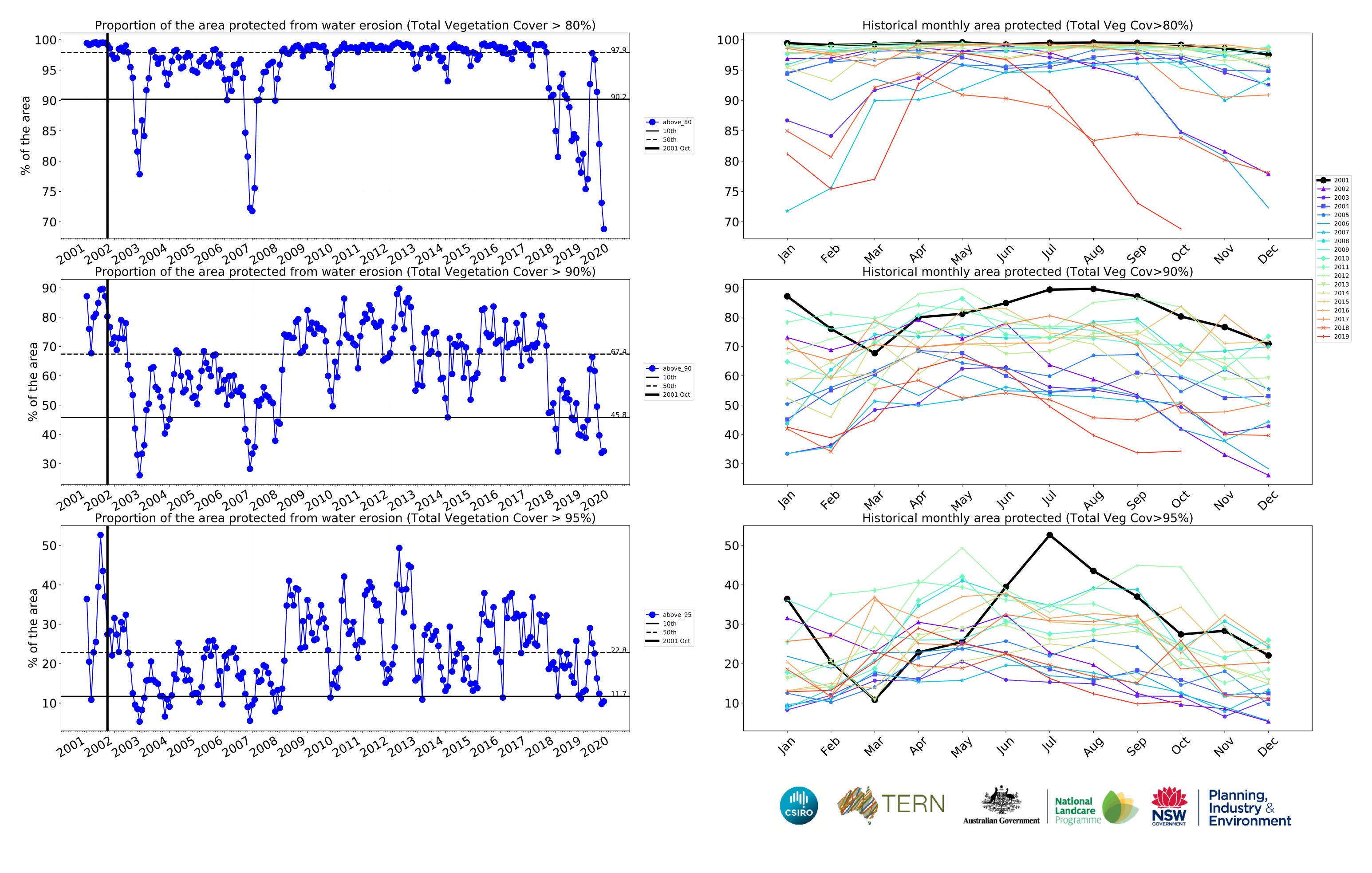




Grazing timeseries

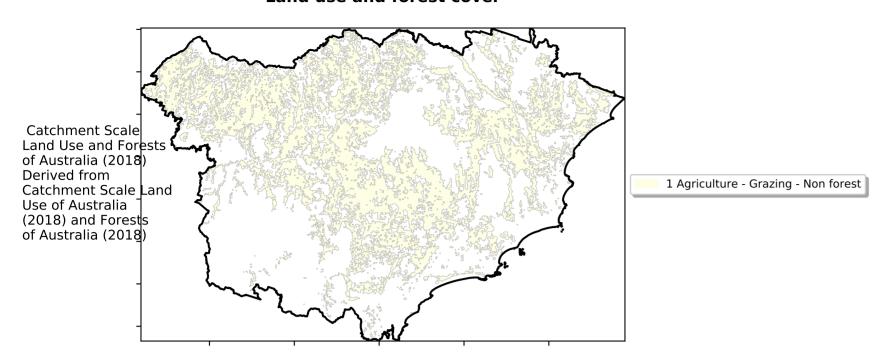




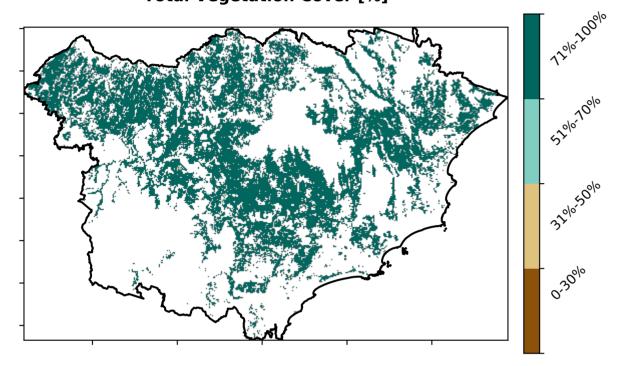


Grazing non forest

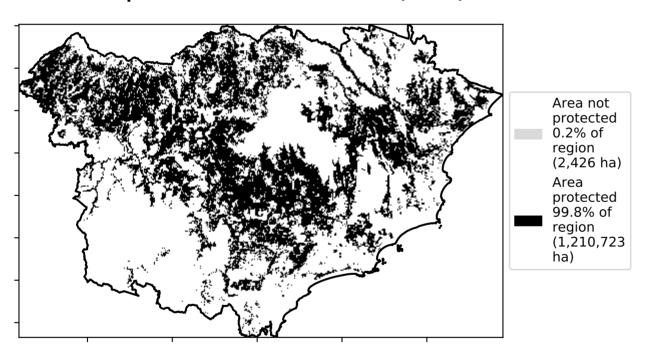
Land use and forest cover



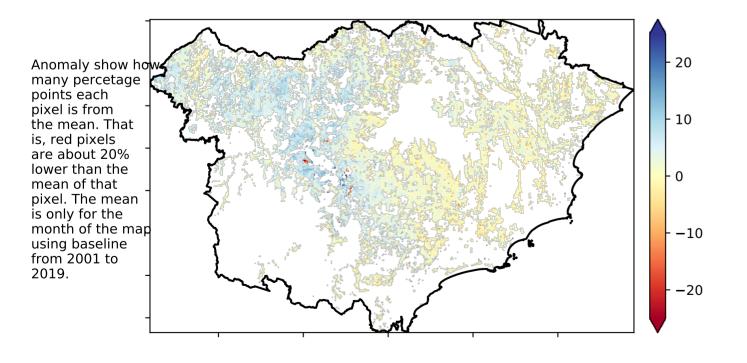
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

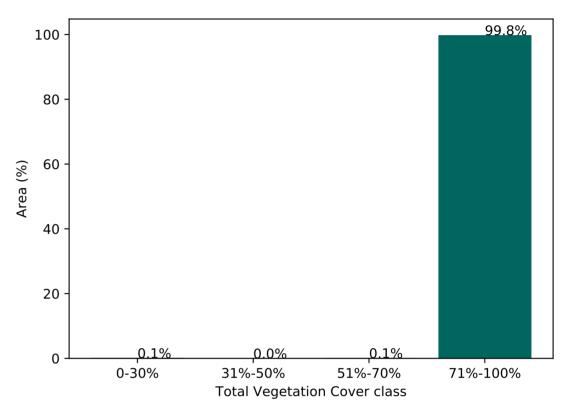


Total Vegetation Cover Anomaly [%]

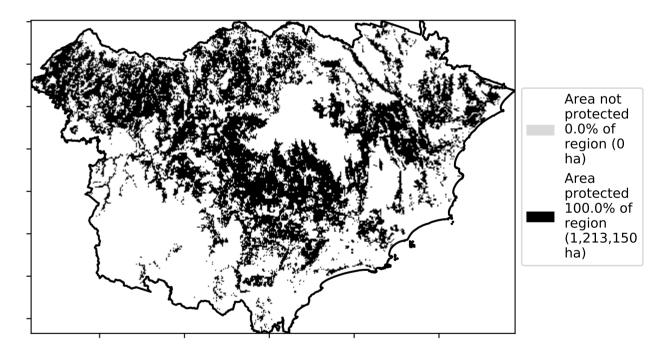


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

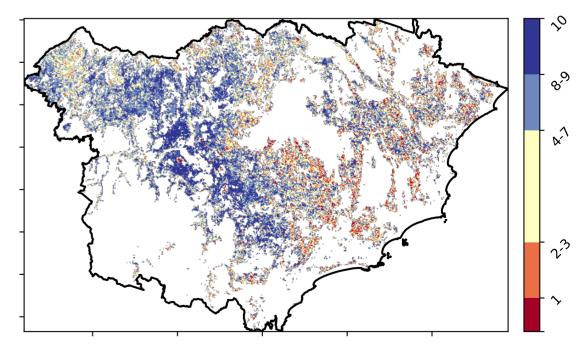
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







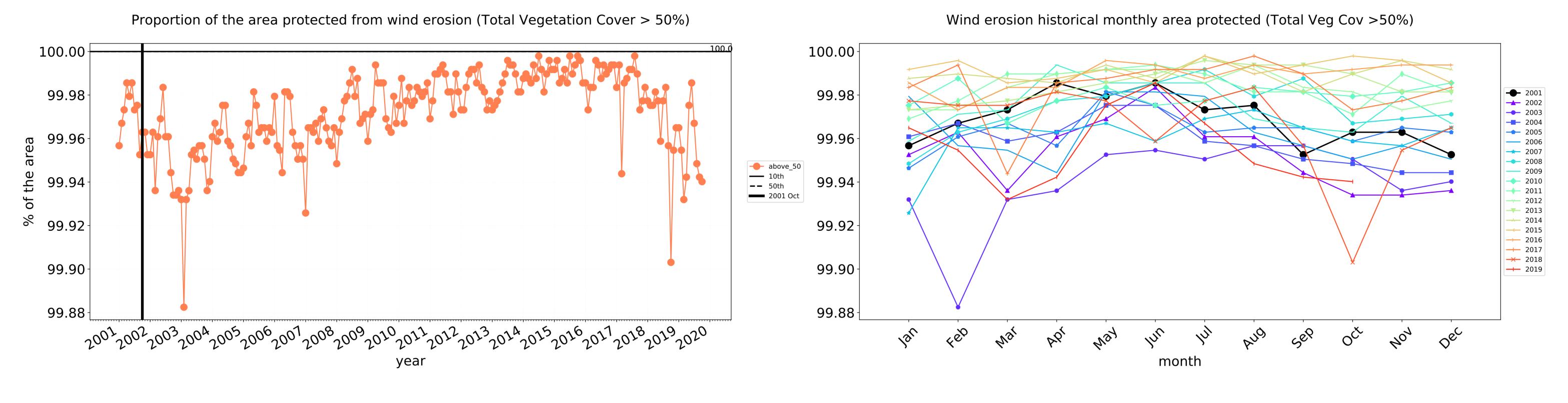


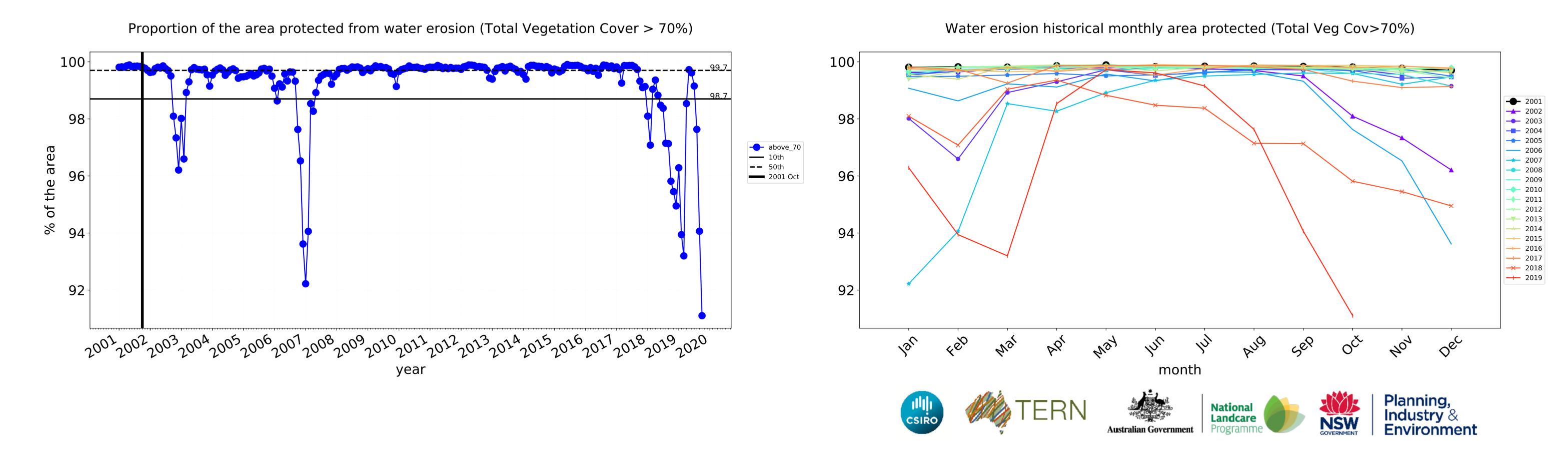


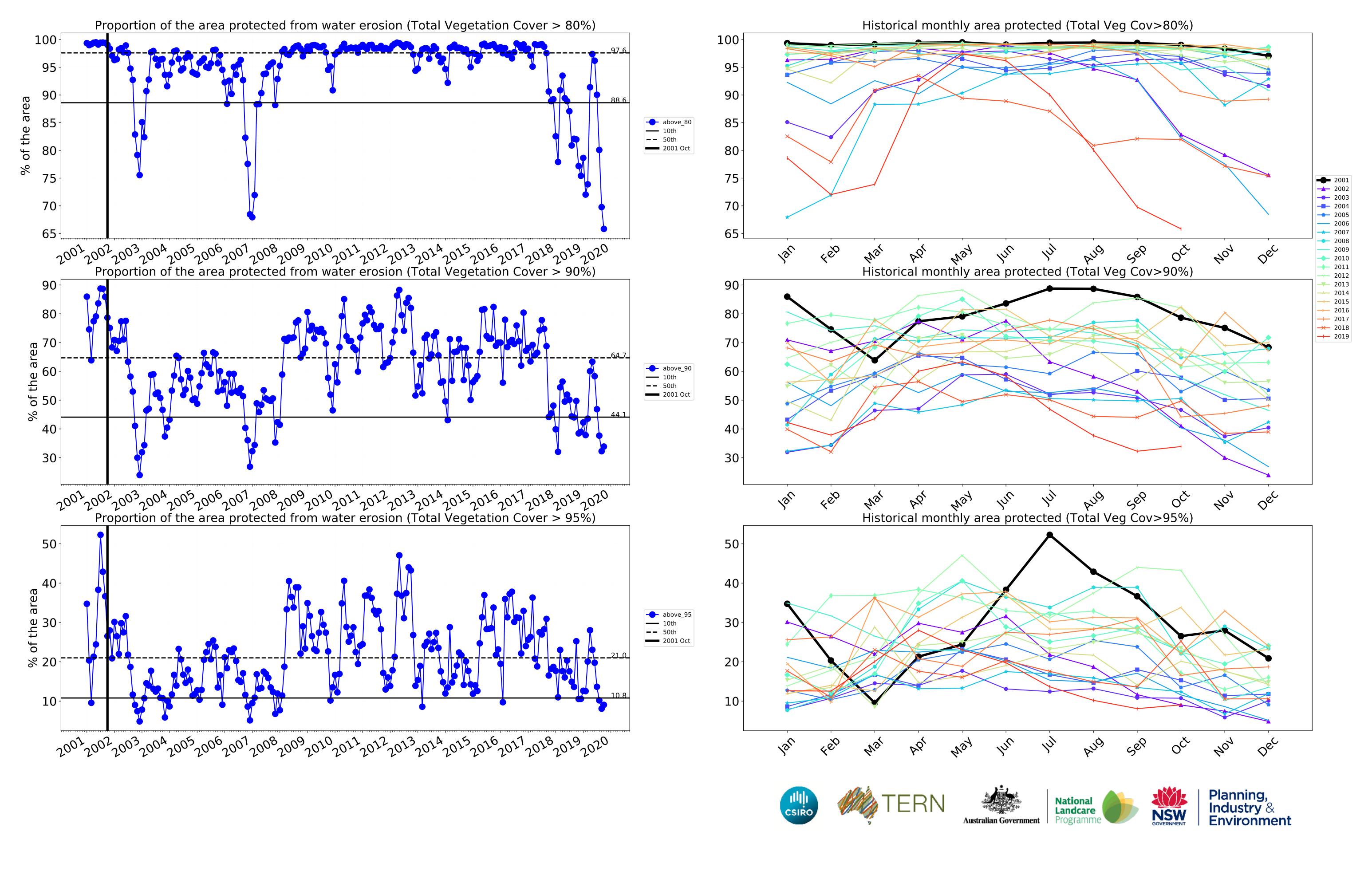




Grazing non forest timeseries





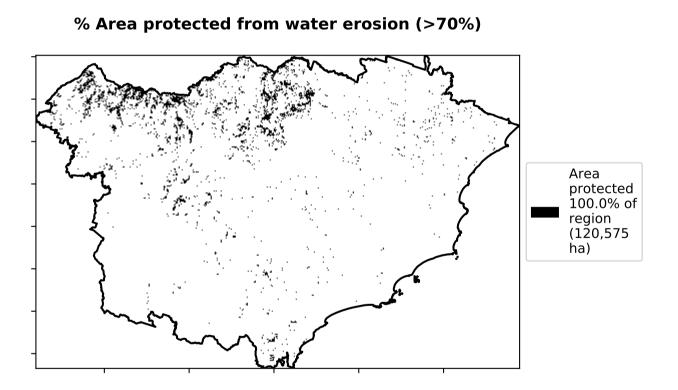


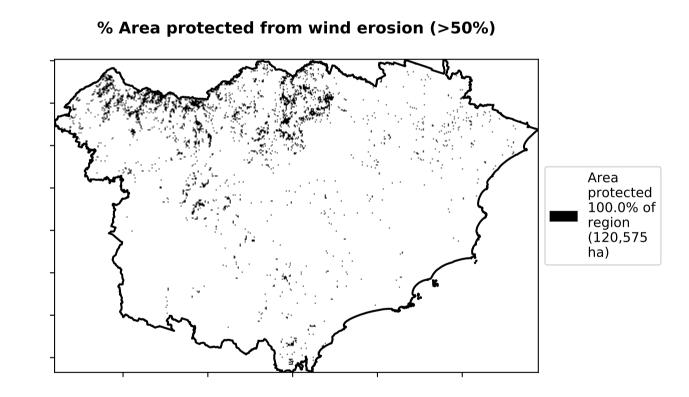
Grazing Woodland forest

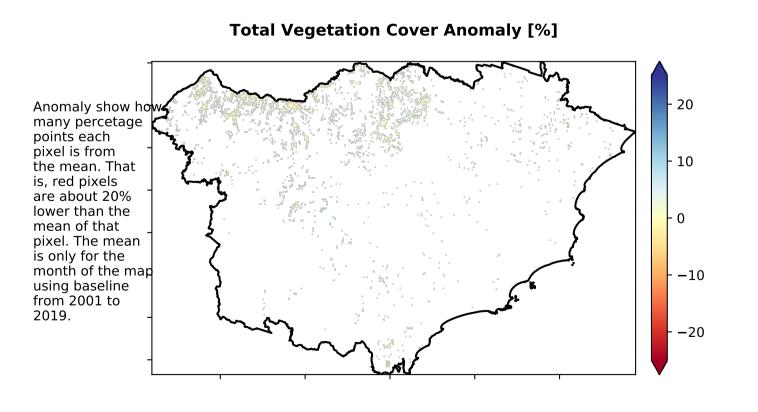
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) Of Australia (2018)

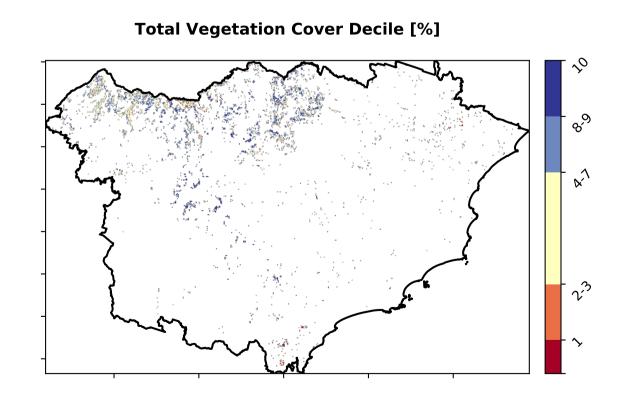
Total Vegetation Cover [%] Total Vegetation Cover [%] Total Vegetation Cover [%]

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













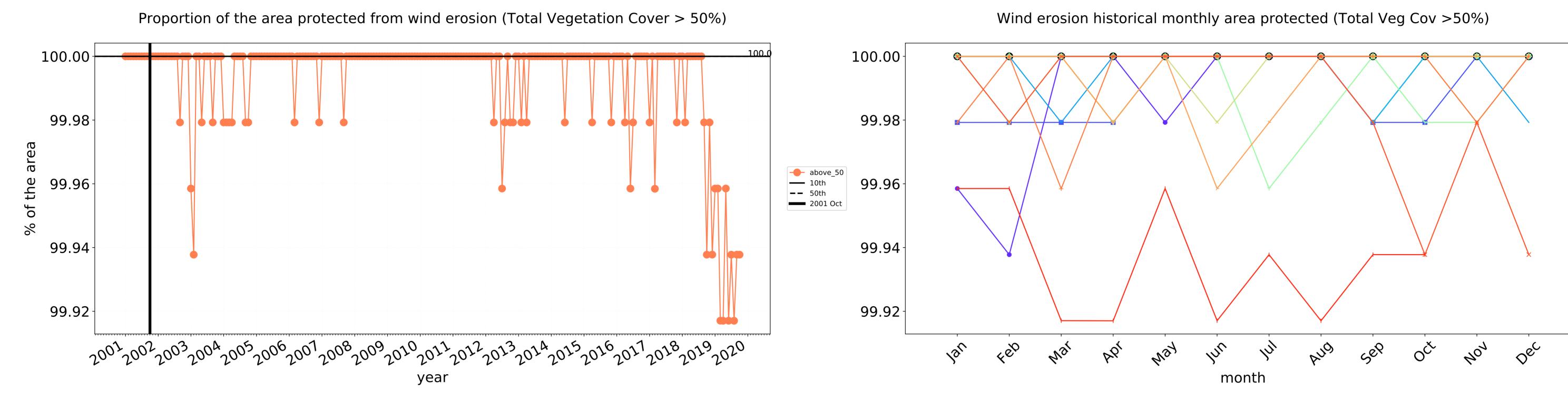


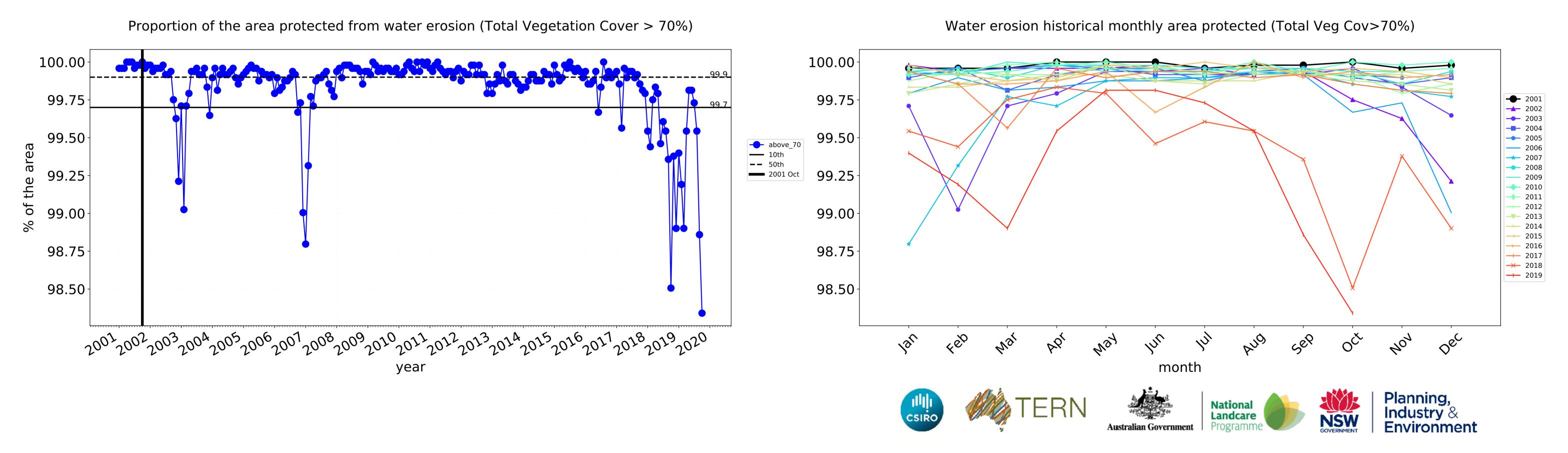






Grazing Woodland forest timeseries



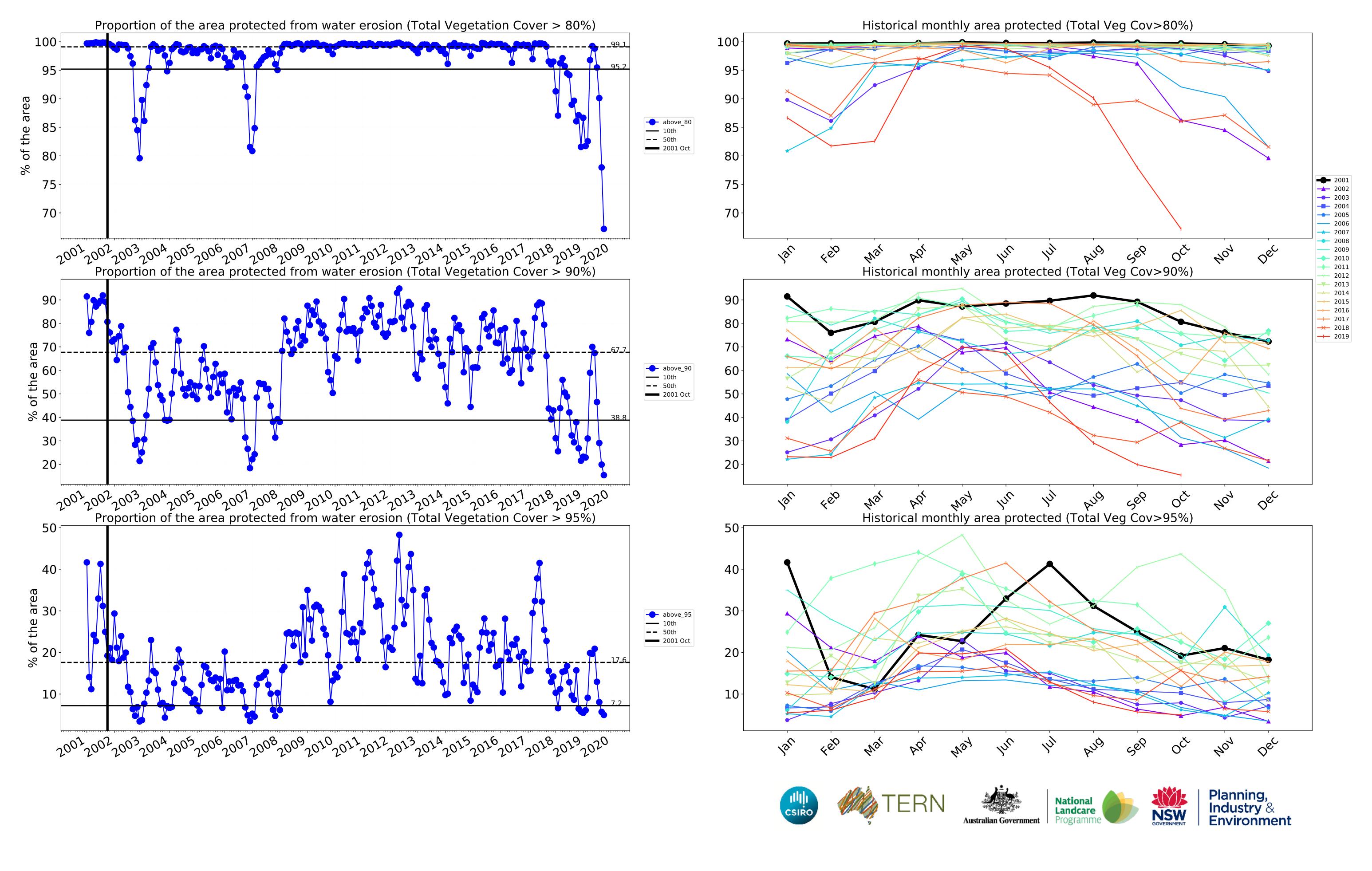


→ 2005

→ 2016

→ 2017 → 2018

→ 2019

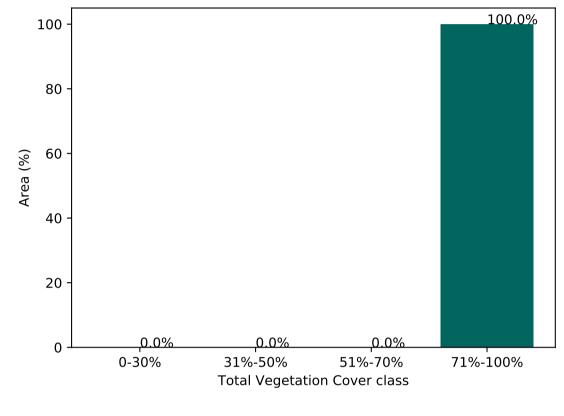


Grazing - Forest (non woodland)

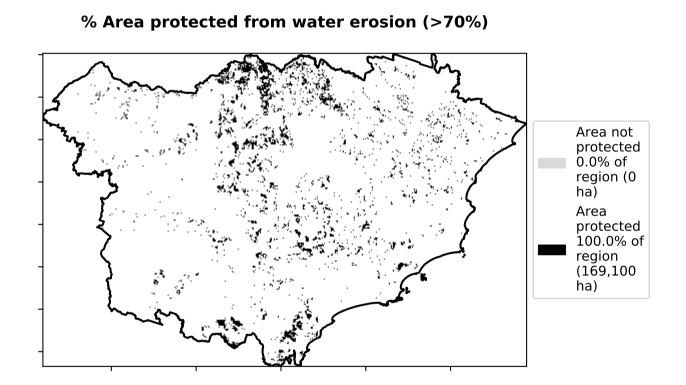
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Agriculture - Grazing - Non-woodland forest Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

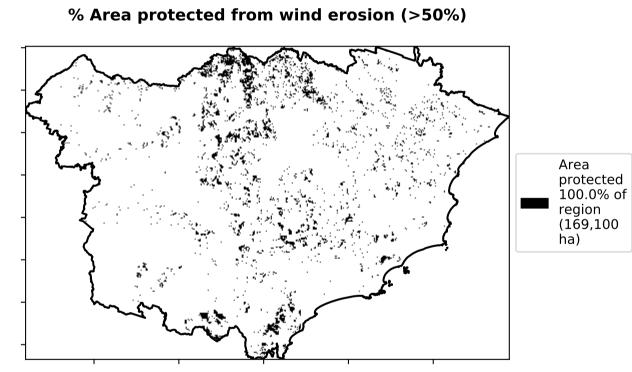
Total Vegetation Cover [%]

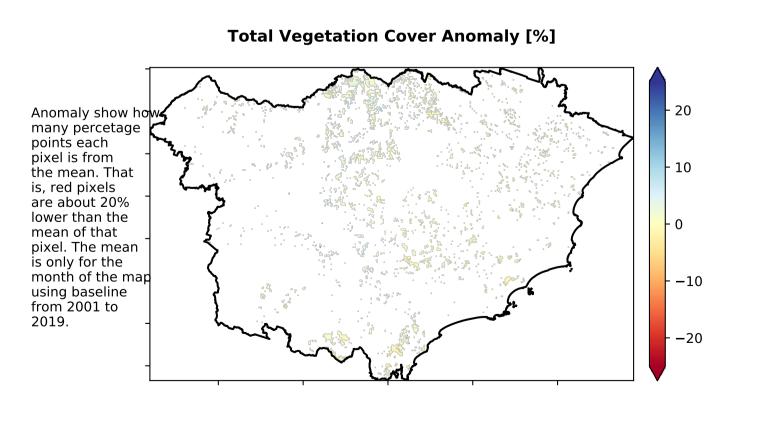
100 Area (%) 60 40 20 -0-30%

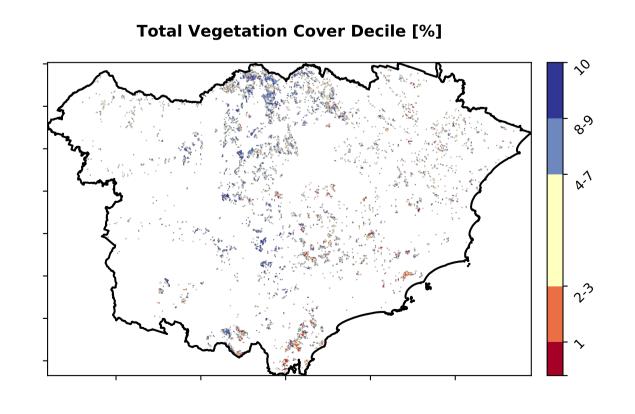


Proportion of vegetation cover class in area











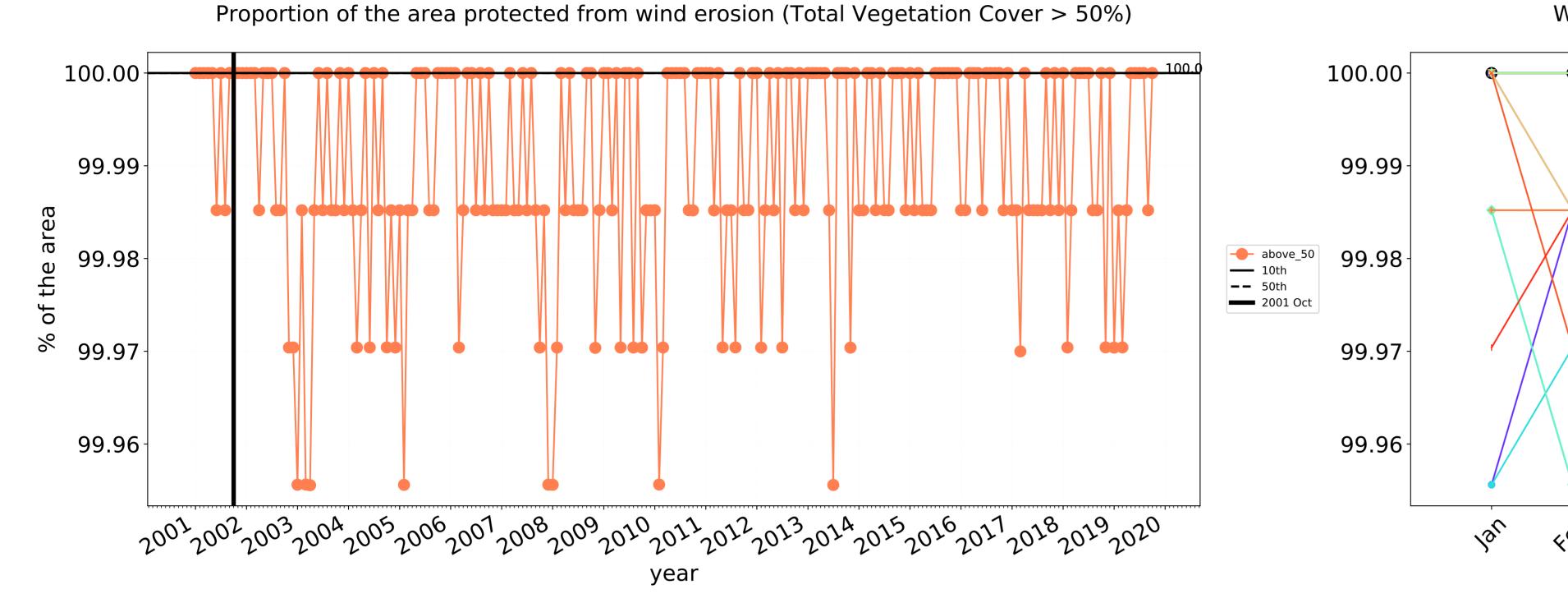


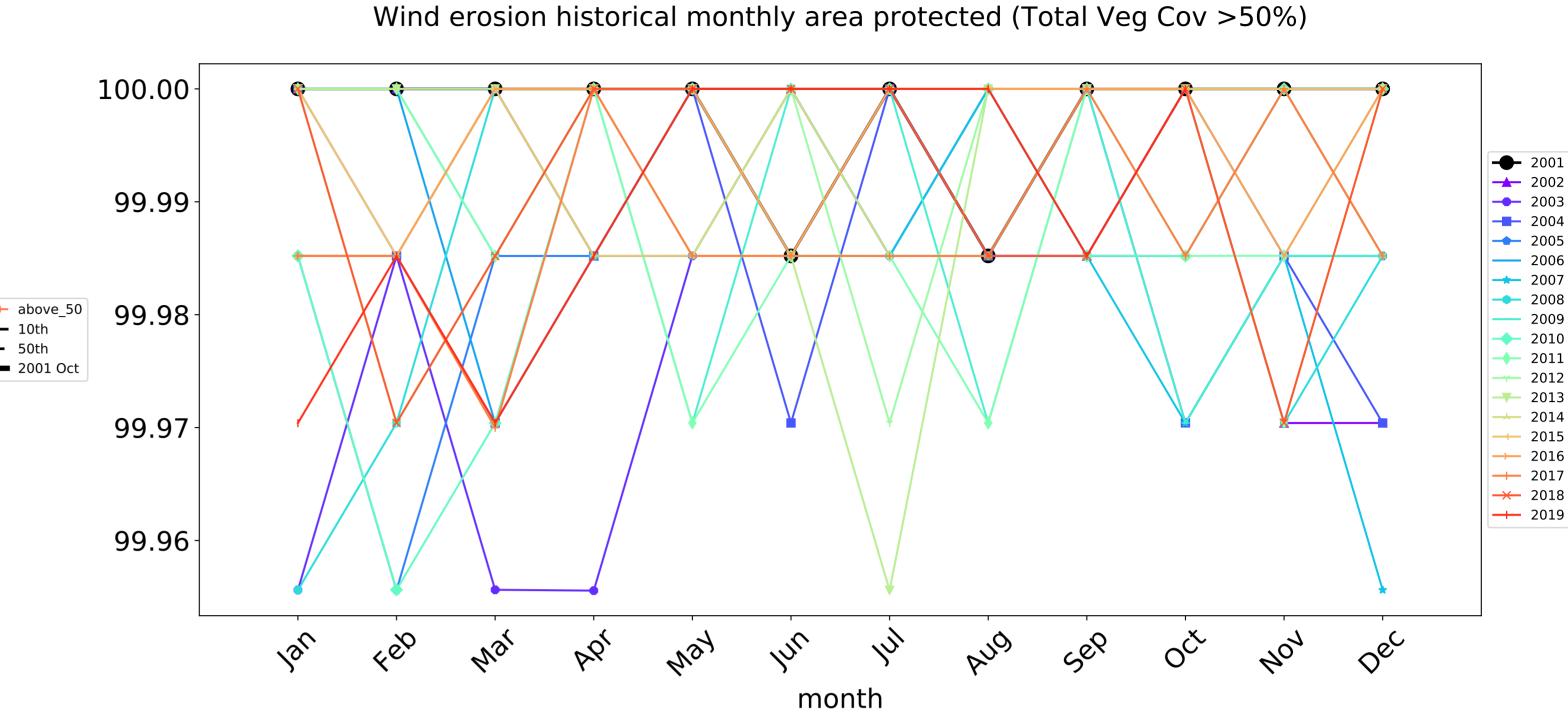


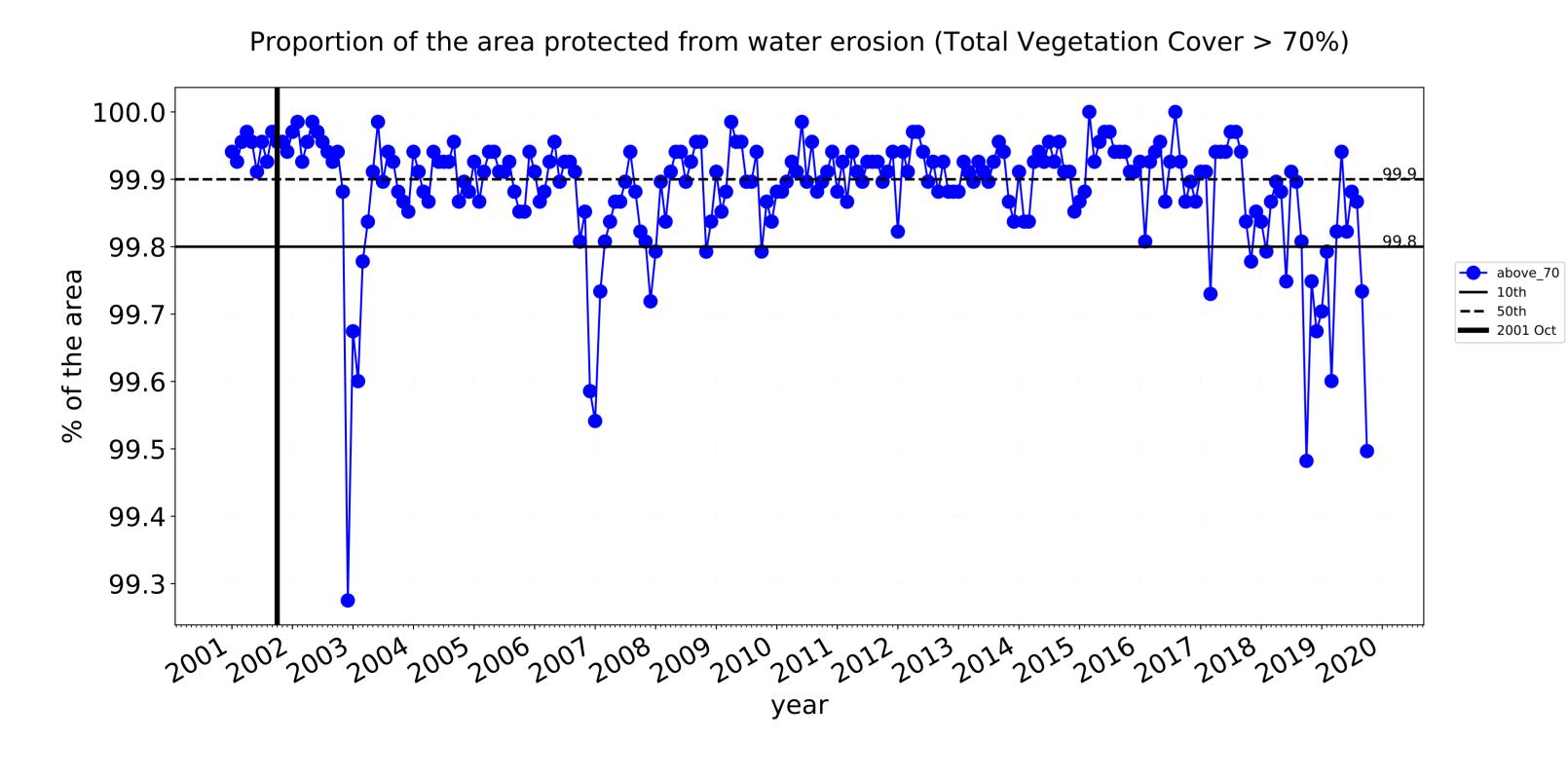


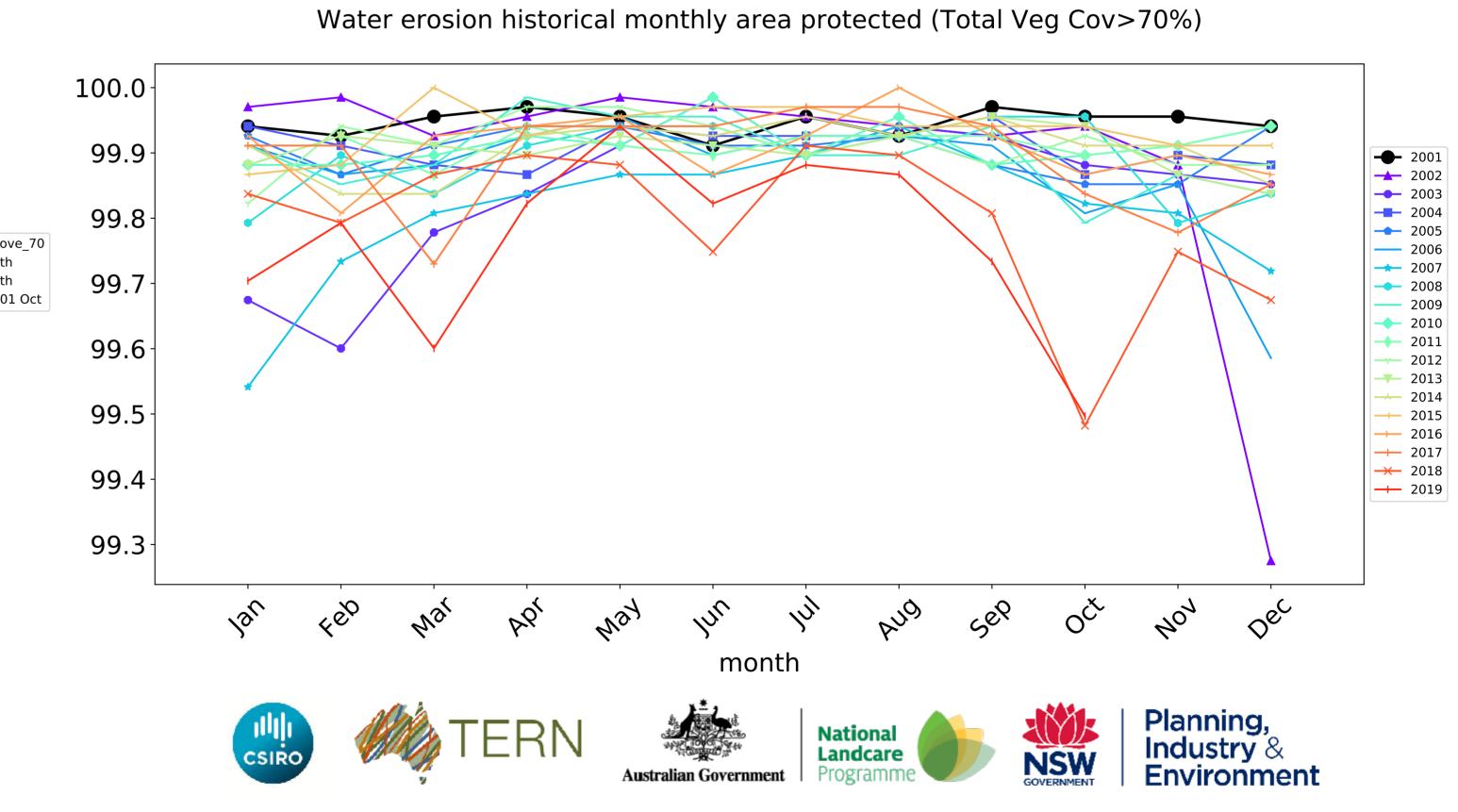


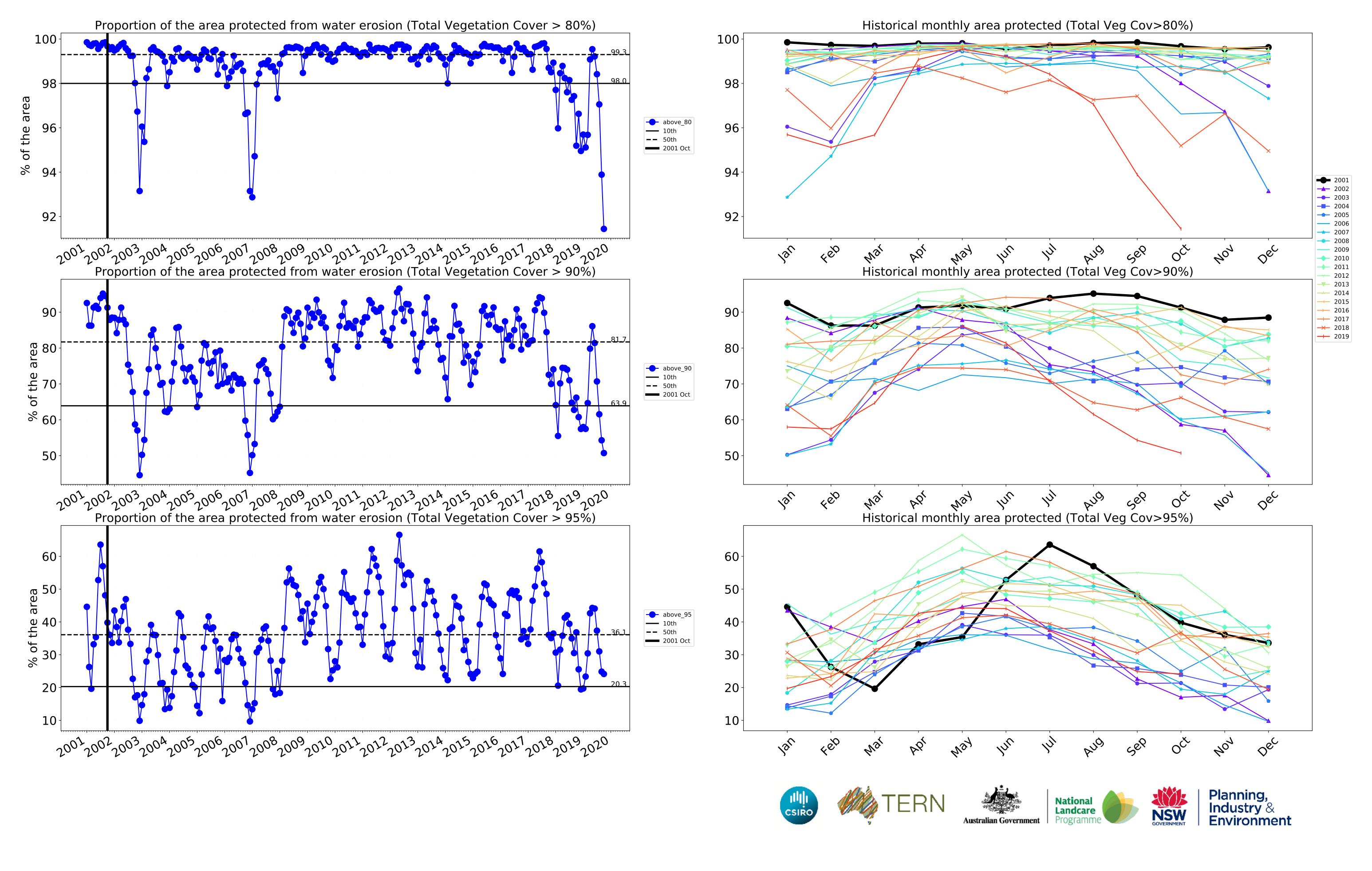






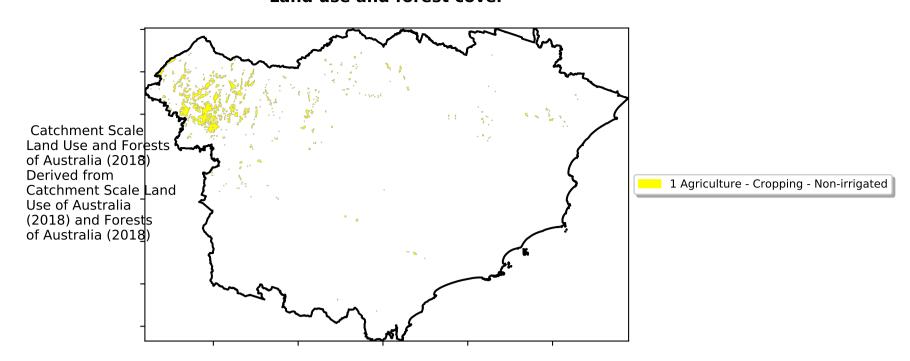




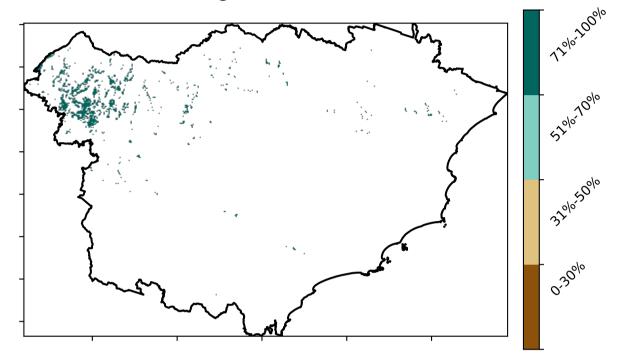


Cropping

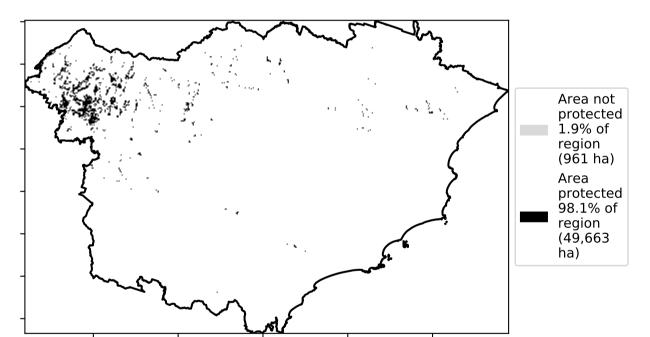
Land use and forest cover



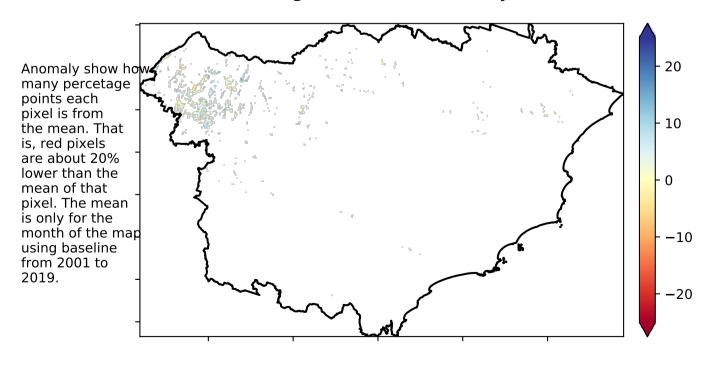
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

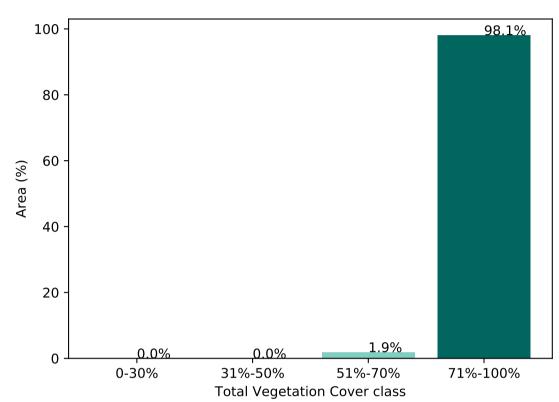


Total Vegetation Cover Anomaly [%]

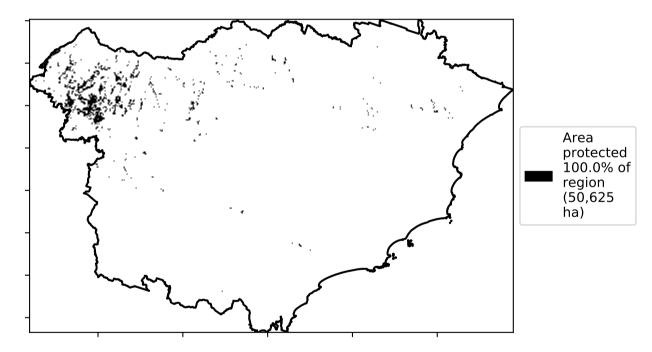


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

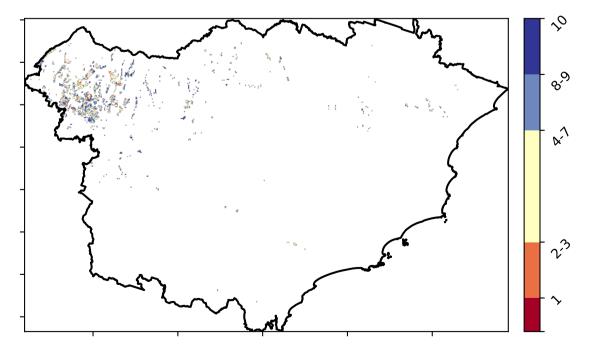
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







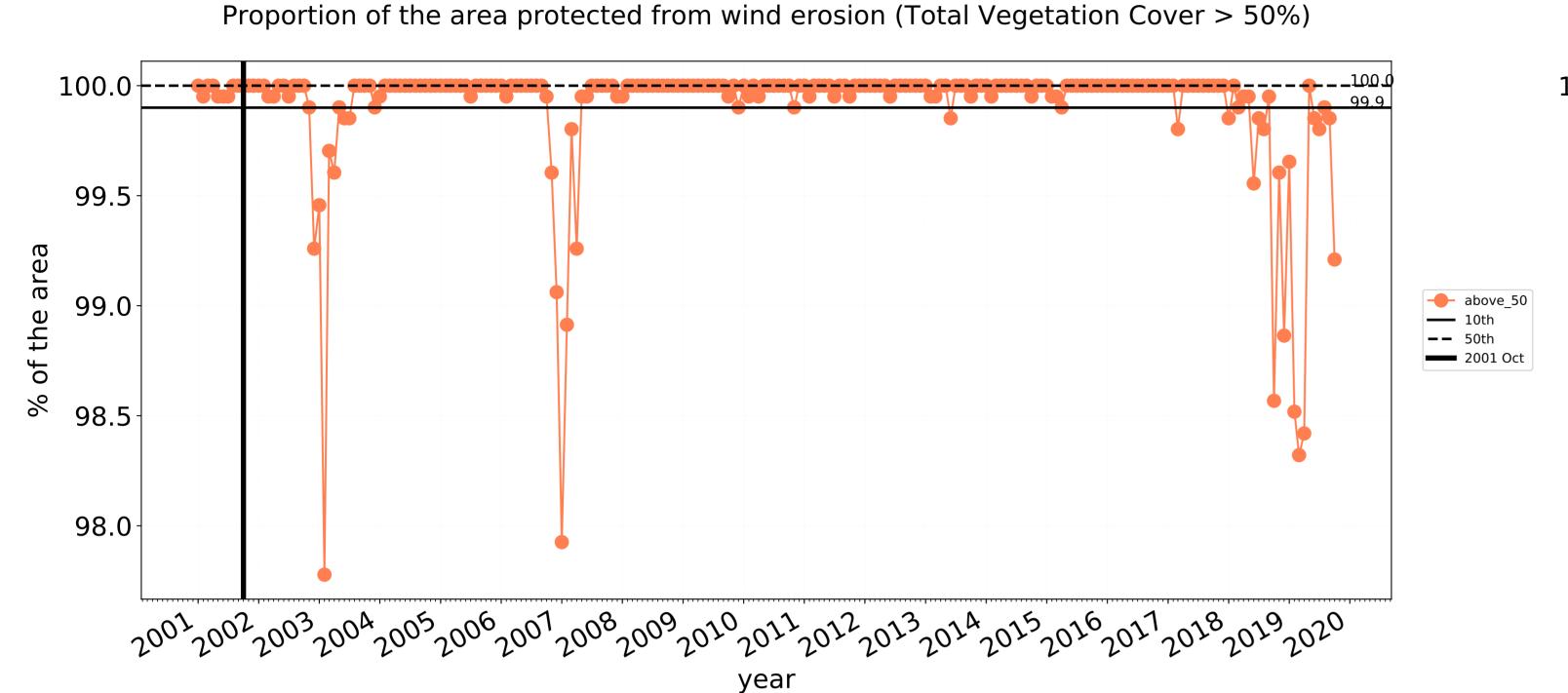


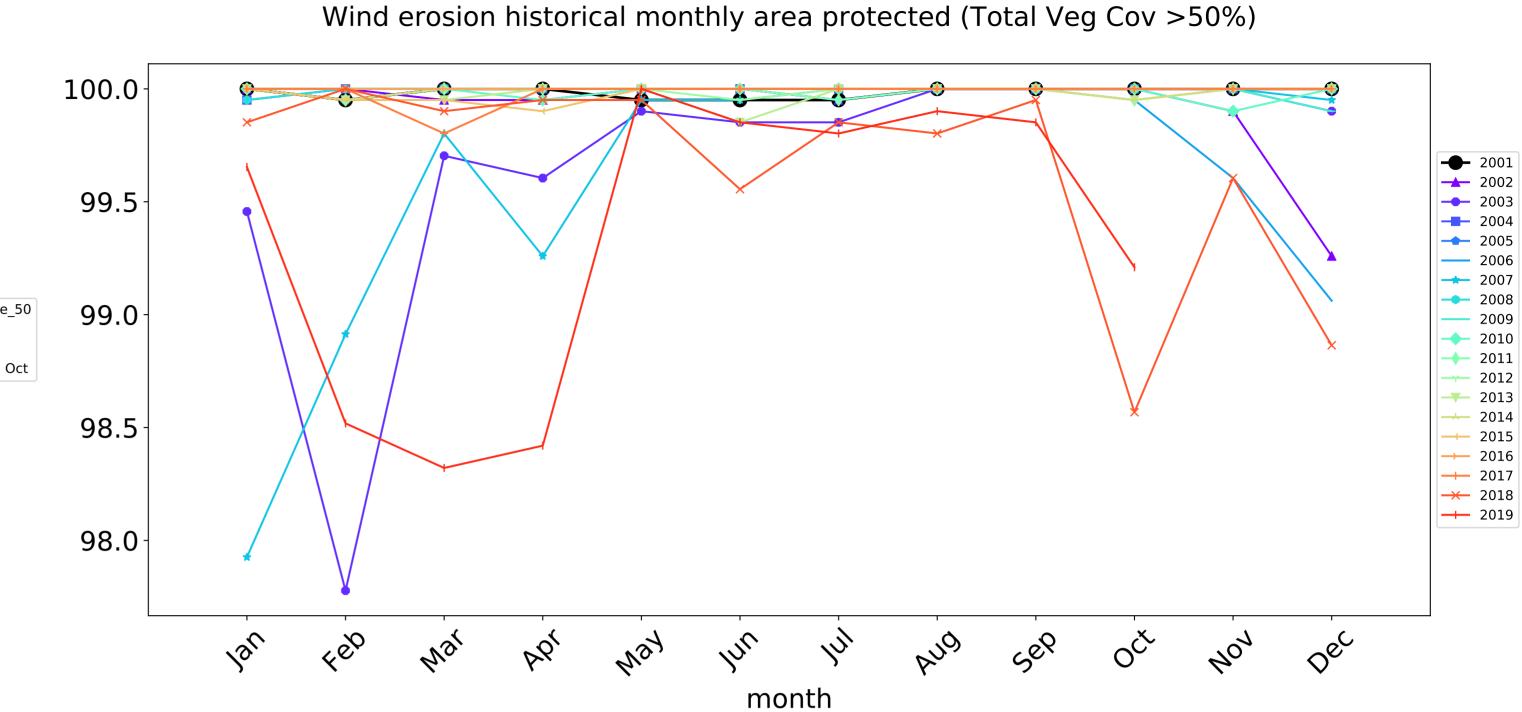


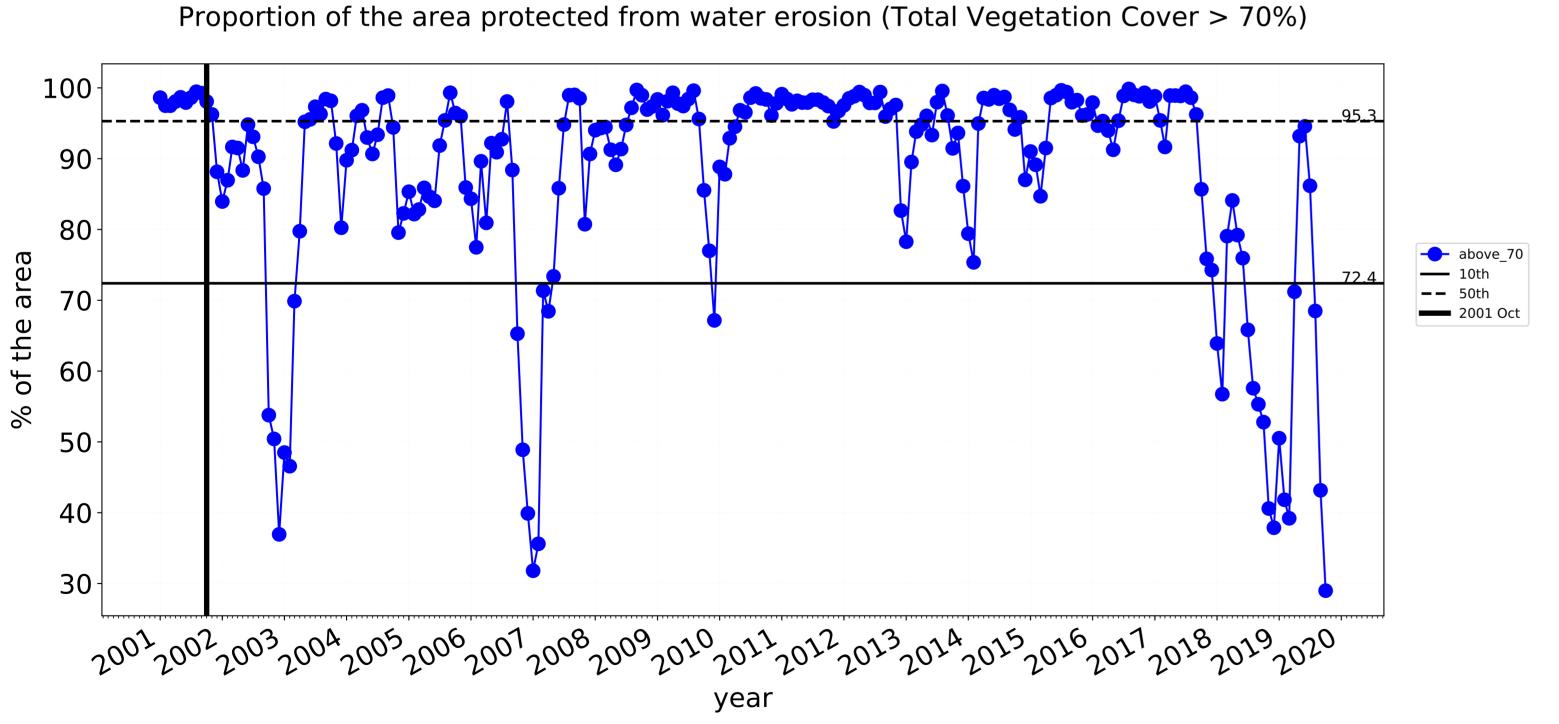


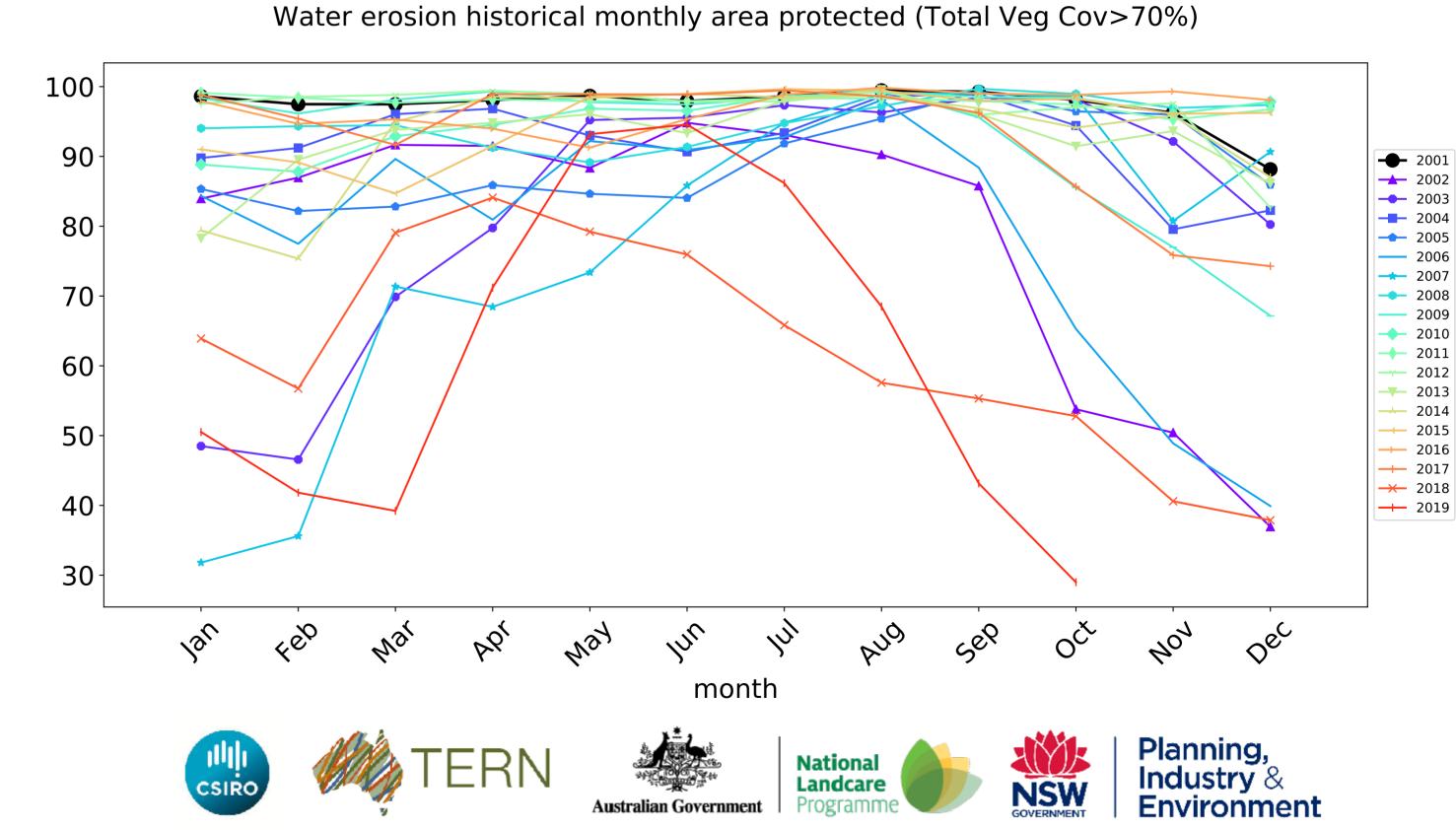


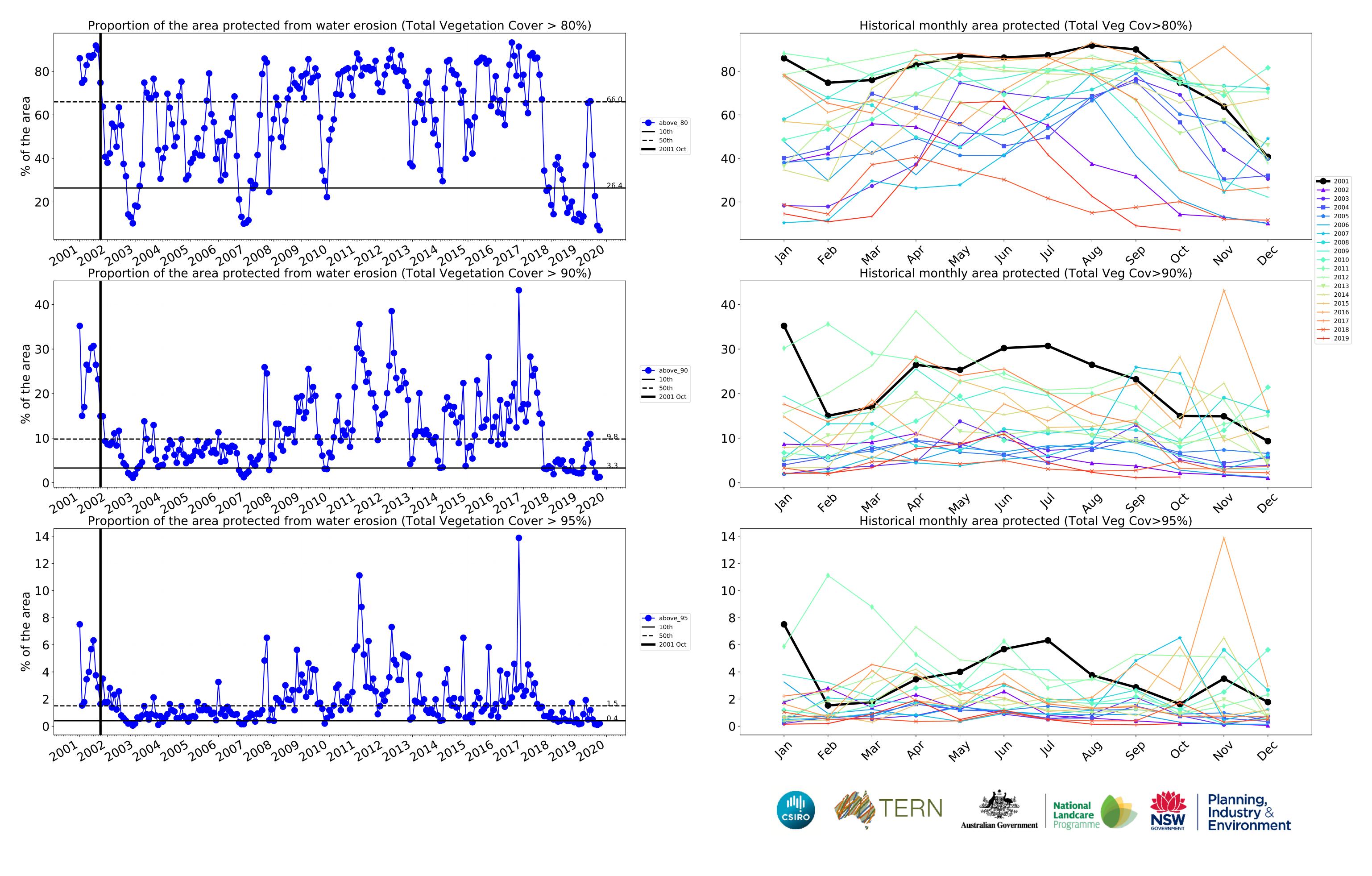
Cropping timeseries











Production native forests and plantation forests

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

Total Vegetation Cover [%]

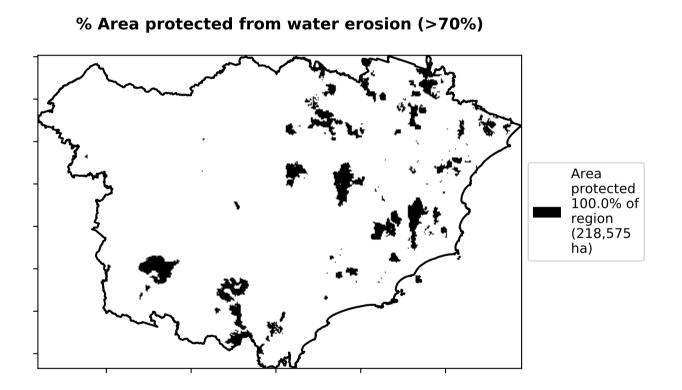
Proportion of vegetation cover class in area

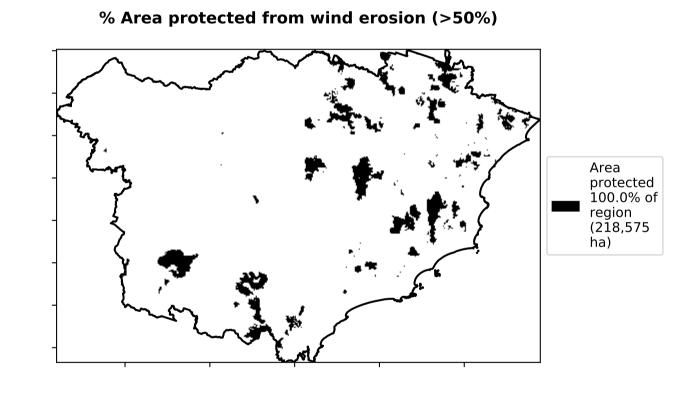
100 - 100.0%

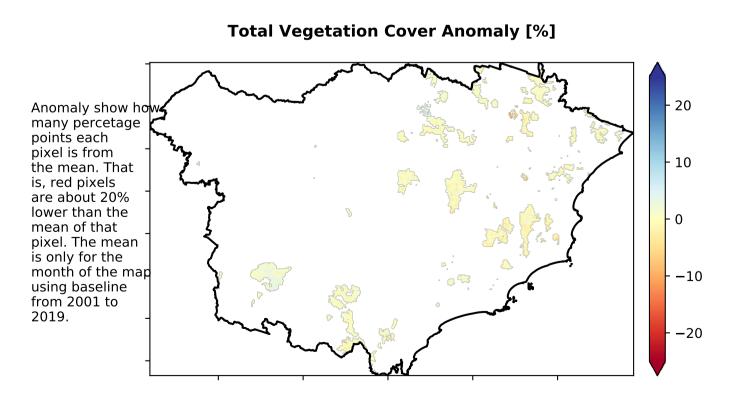
80 - 20 - 20 - 20 - 0.0%

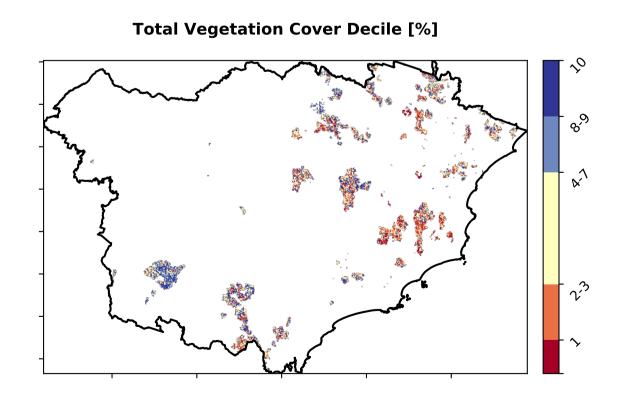
0-30% 31%-50% 51%-70% 71%-100%

Total Vegetation Cover class













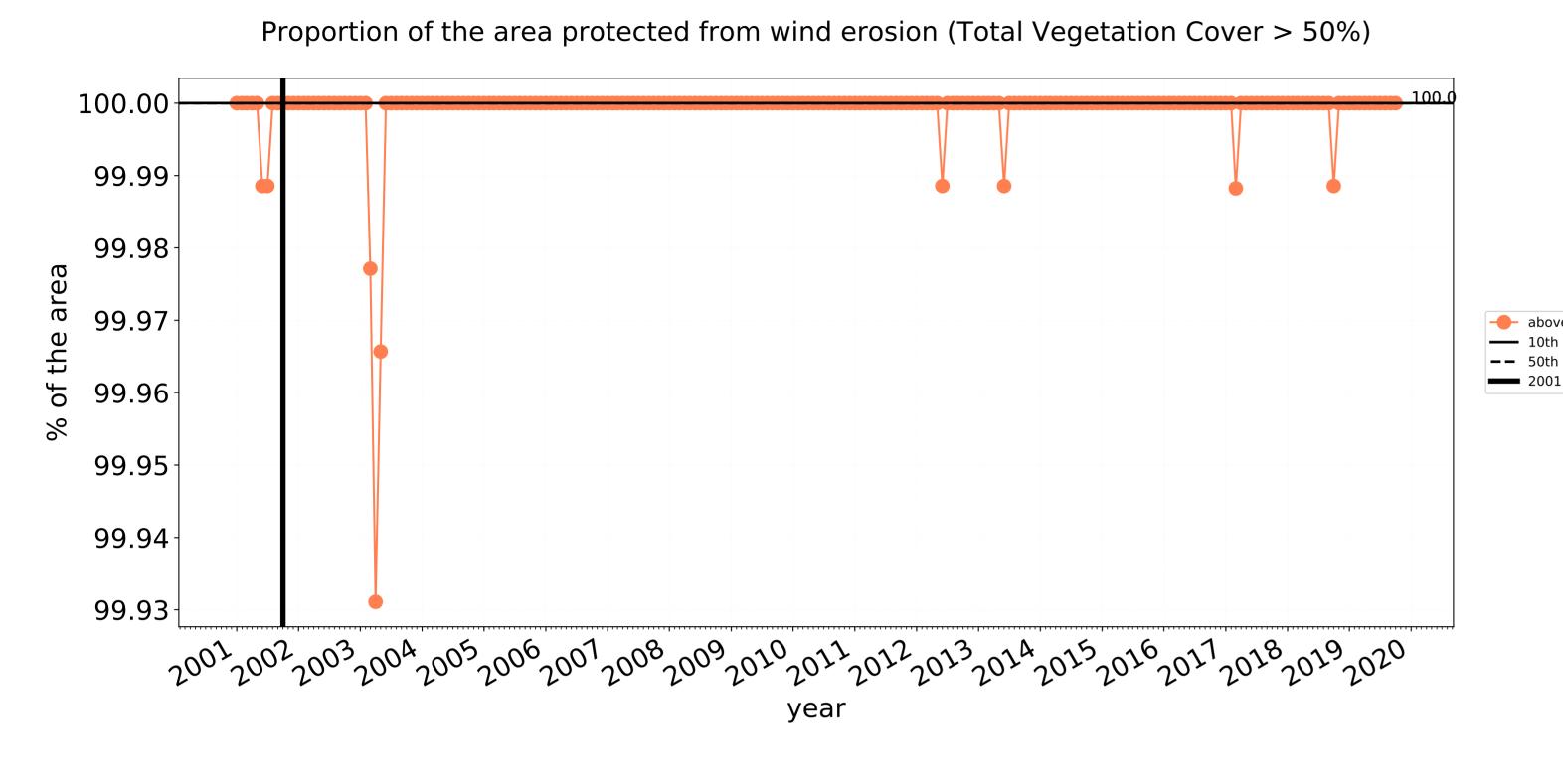


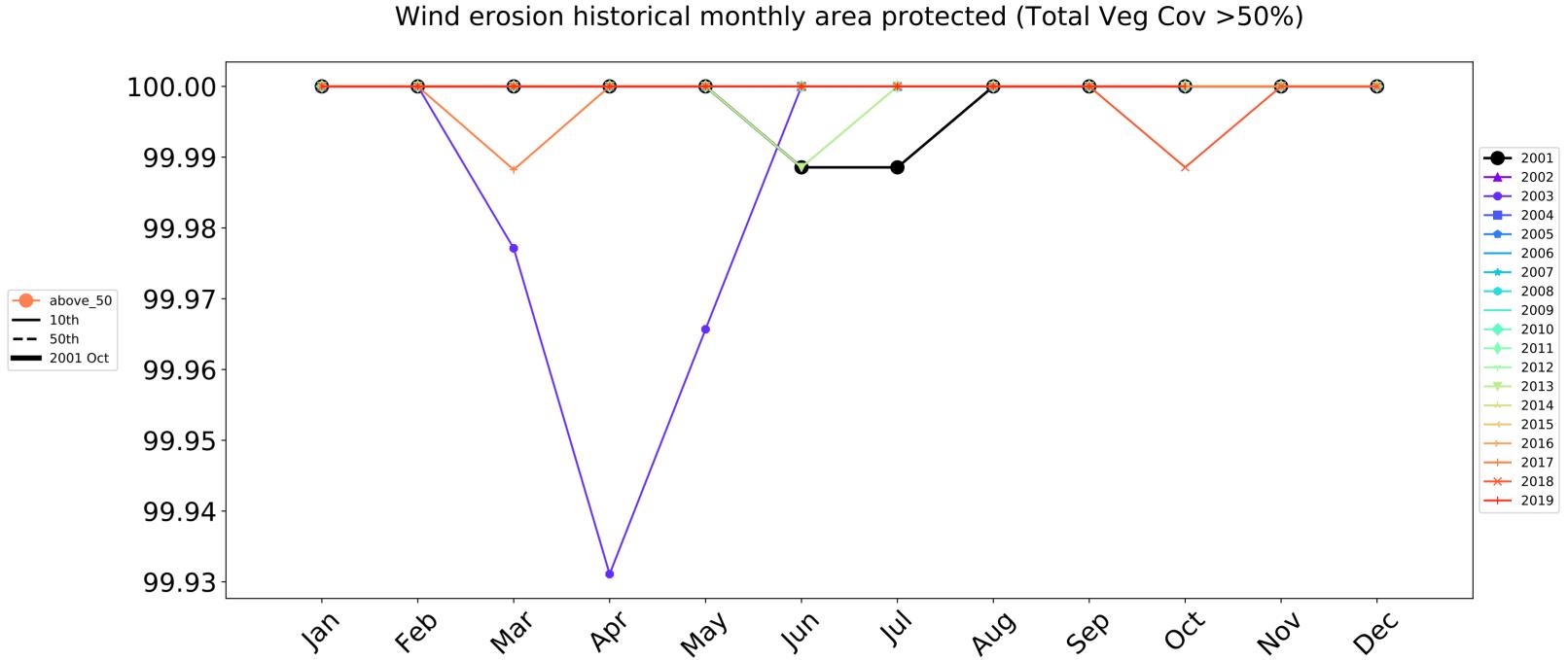




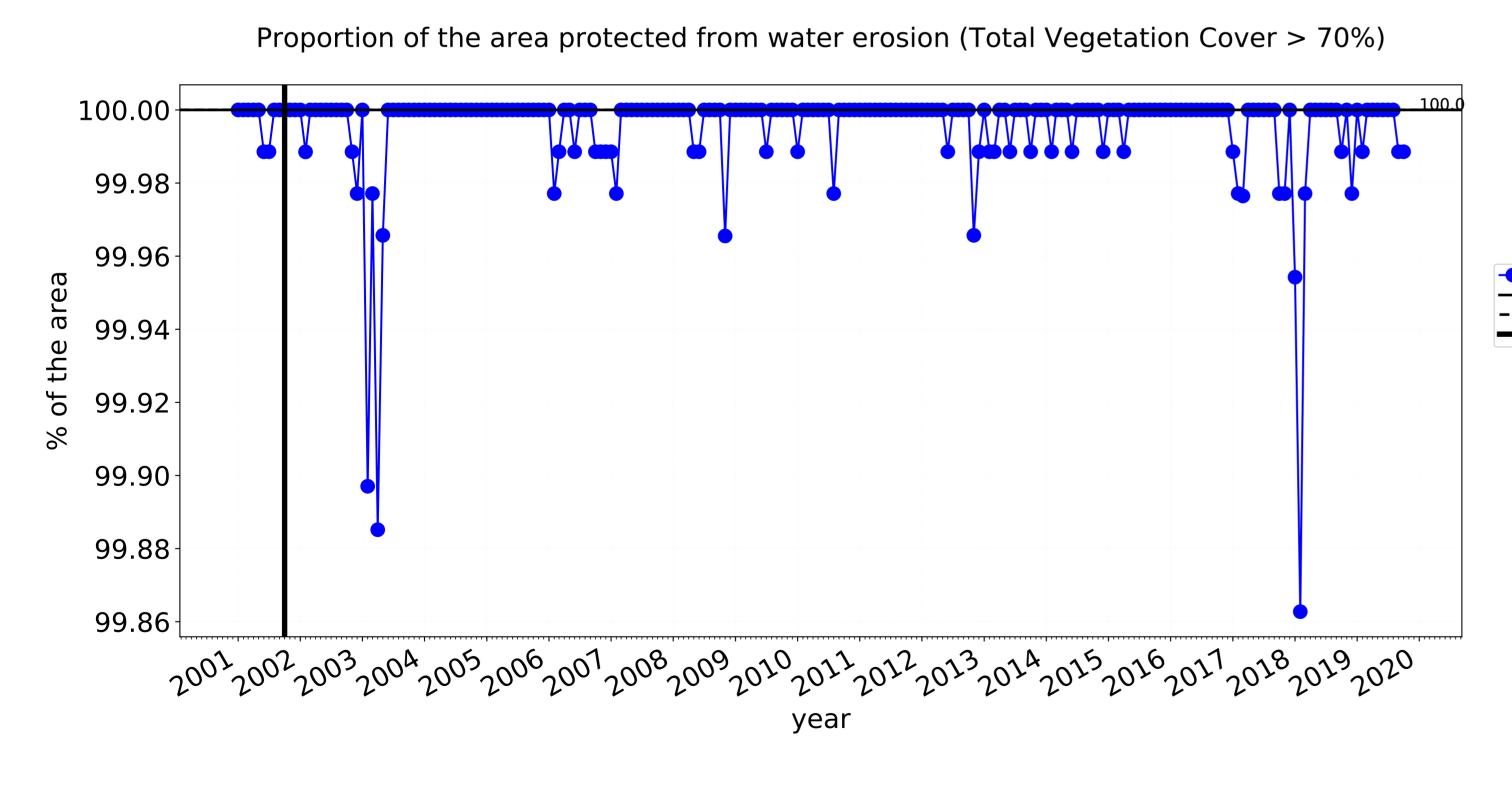


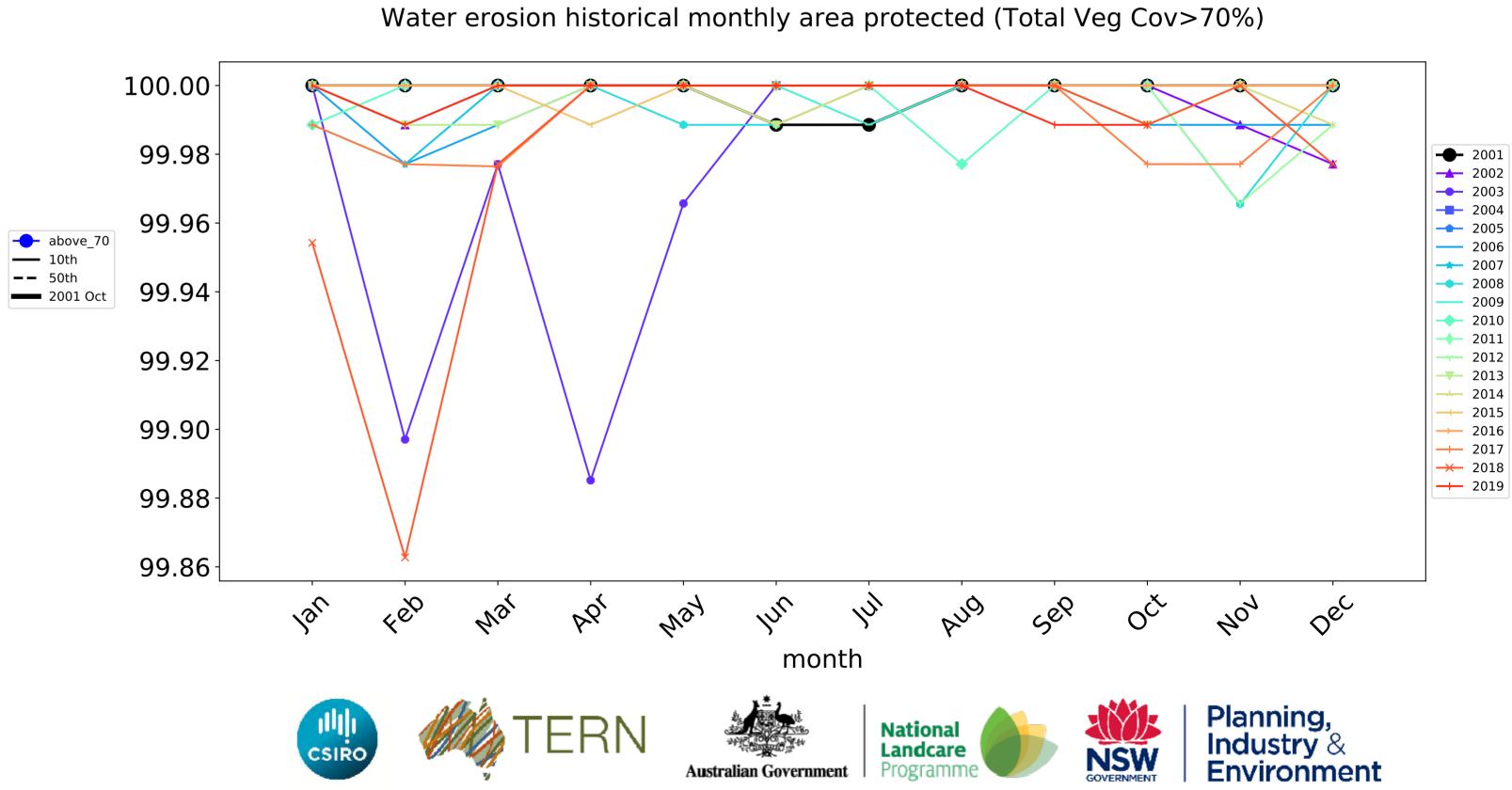
Production native forests and plantation forests timeseries

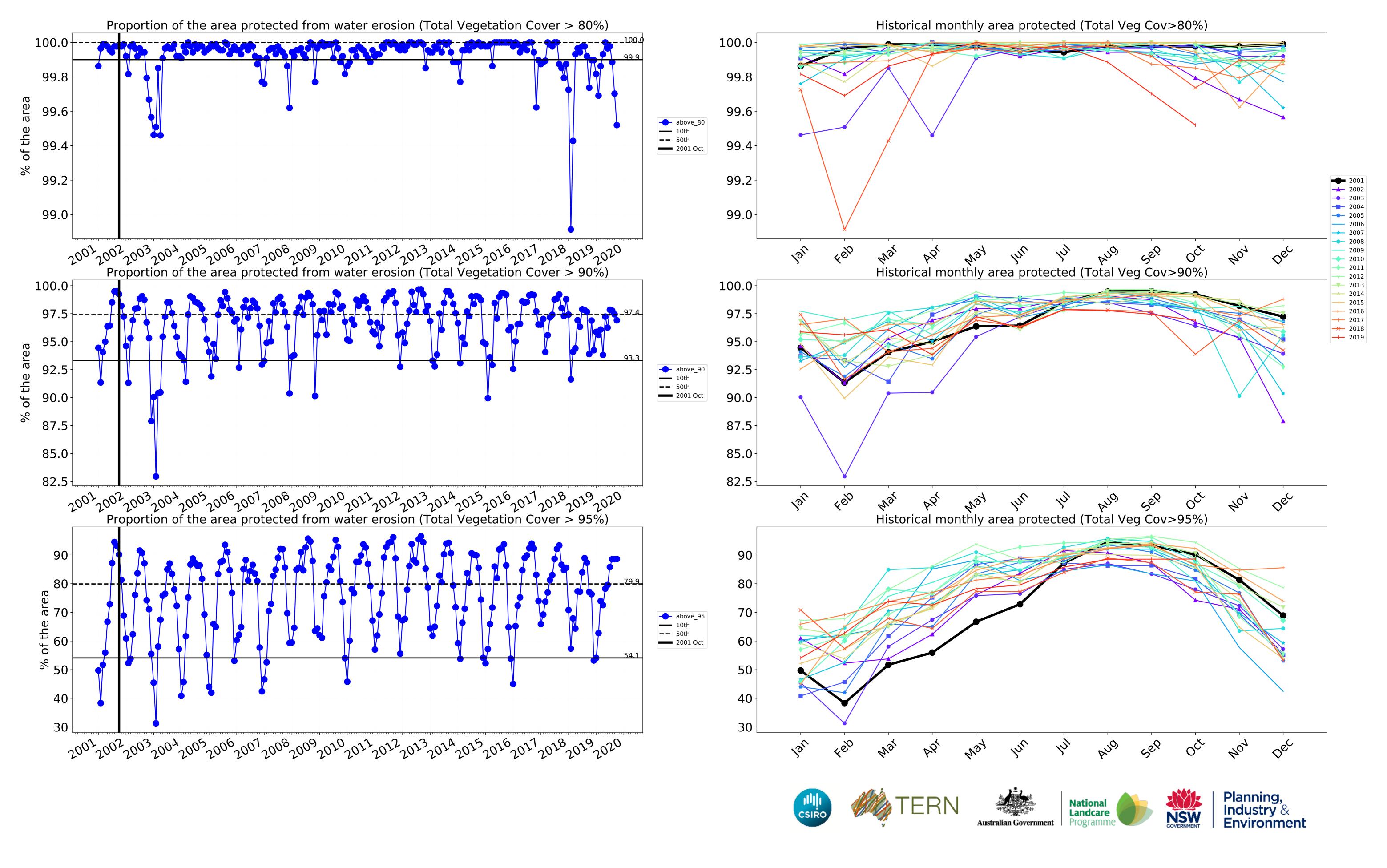




month







Hunter (3,236,450 ha and no data 63,975 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	3,236,450	99.9% 3,234,828	99.8% 3,230,811	99.2% 3,209,727	97.5% 3,154,087	82.7% 2,675,459	45.0% 1,457,542
Conservation and natural environments	1,243,125	99.9% 1,241,900	99.8% 1,241,250	99.7% 1,239,875	99.6% 1,237,600	93.6% 1,163,950	66.5% 827,000
Conservation and natural environments non forest	31,550	96.2% 30,350	94.1% 29,700	90.6% 28,575	87.3% 27,550	69.5% 21,925	29.3% 9,250
Conservation and natural environments Woodland forest	139,150	100.0% 139,150	100.0% 139,150	100.0% 139,150	99.9% 138,950	83.5% 116,225	38.7% 53,800
Conservation and natural environments Forest (non woodland)	1,072,425	100.0% 1,072,400	100.0% 1,072,400	100.0% 1,072,150	99.9% 1,071,100	95.7% 1,025,800	71.2% 763,950
Agriculture	1,580,825	100.0% 1,580,800	100.0% 1,580,375	99.8% 1,577,450	98.2% 1,551,725	77.0% 1,216,675	26.2% 413,425
Grazing	1,502,825	100.0% 1,502,800	100.0% 1,502,375	99.8% 1,500,550	99.2% 1,490,350	80.2% 1,205,900	27.4% 412,250
Grazing non forest	1,213,150	100.0% 1,213,125	100.0% 1,212,700	99.8% 1,210,950	99.0% 1,201,575	78.7% 954,250	26.5% 321,775
Grazing Woodland forest	120,575	100.0% 120,575	100.0% 120,575	100.0% 120,575	99.7% 120,225	80.7% 97,300	19.2% 23,175
Grazing - Forest (non woodland)	169,100	100.0% 169,100	100.0% 169,100	100.0% 169,025	99.7% 168,550	91.3% 154,350	39.8% 67,300
Cropping	50,625	100.0% 50,625	100.0% 50,625	98.1% 49,650	74.8% 37,850	15.0% 7,575	1.6% 825
Production native forests and plantation forests	218,575	100.0% 218,575	100.0% 218,575	100.0% 218,575	100.0% 218,525	99.2% 216,900	90.2% 197,075











