### Total vegetation cover soil protection Region:LGA Kentish\_(M) TAS

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: December 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





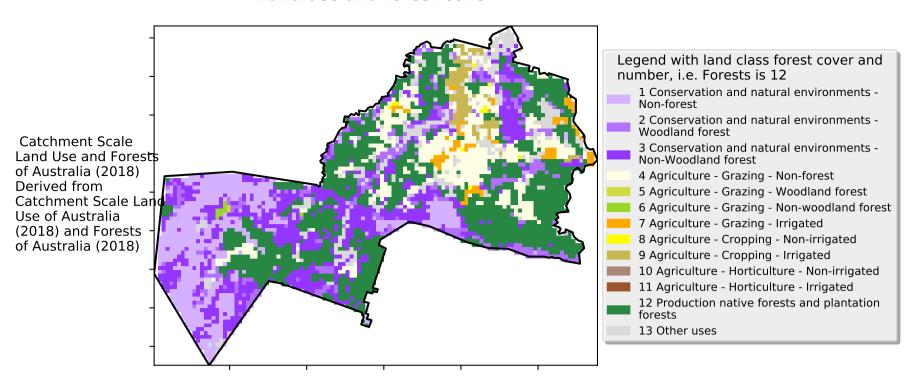




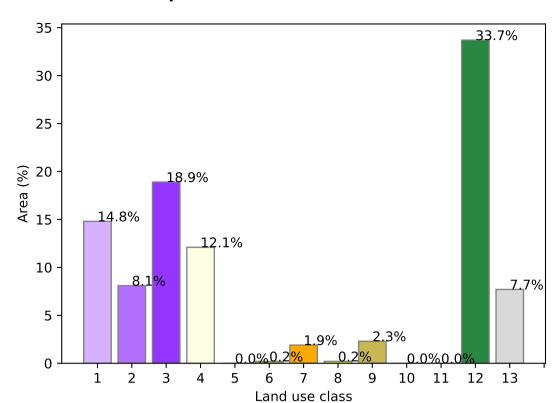


#### **Vegetation Cover Dec 2019**

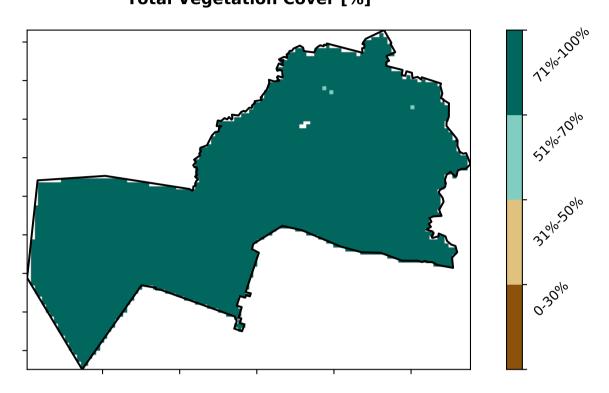
#### Land use and forest cover



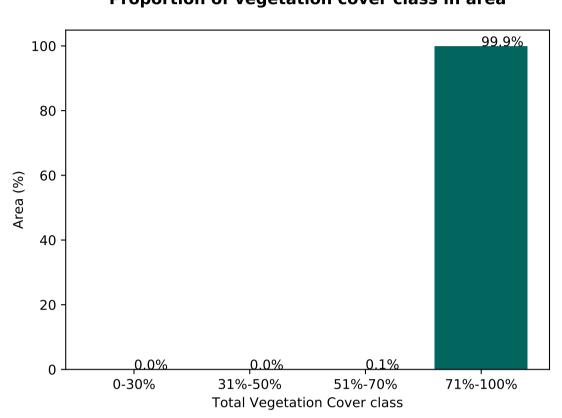
#### Proportion of each land class in area



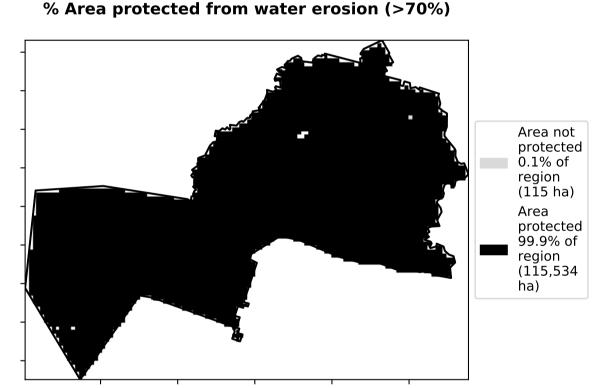
#### Total Vegetation Cover [%]



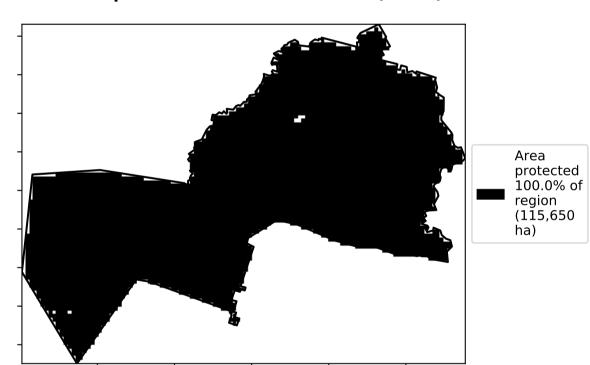
Proportion of vegetation cover class in area



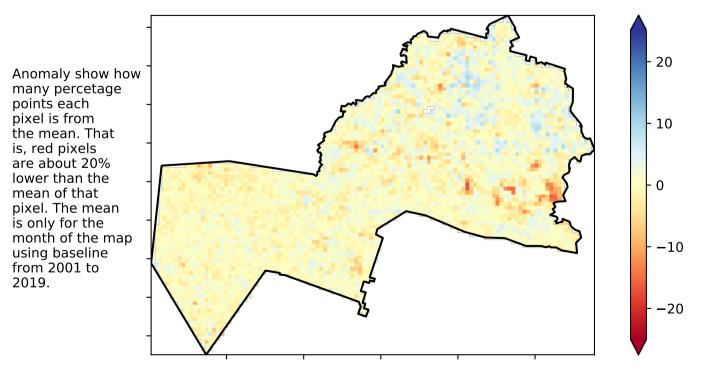
#### 0/ Aven protected from water exector (> 700/)



% 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.

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**Total Vegetation Cover Decile [%]** 

### csiro

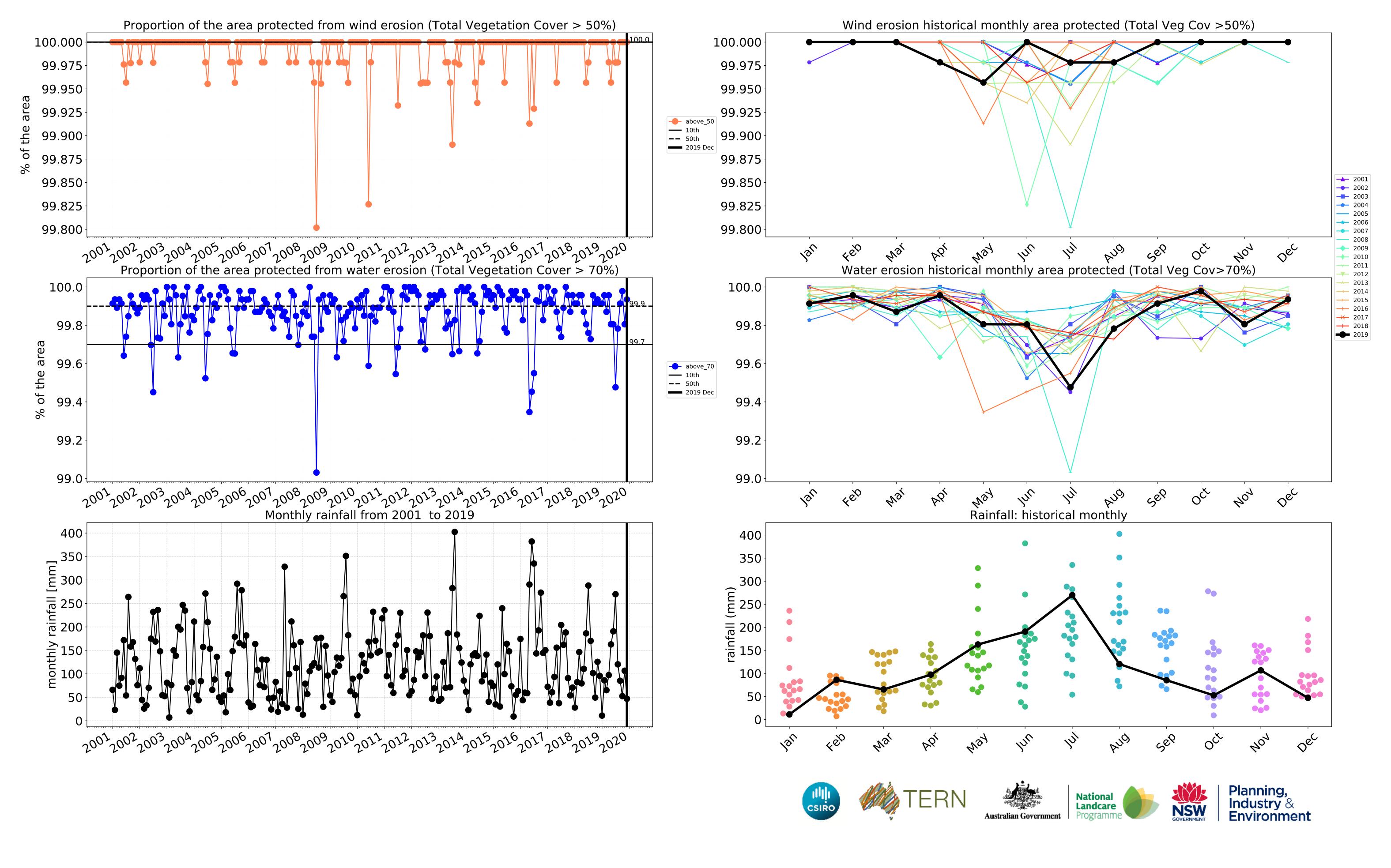


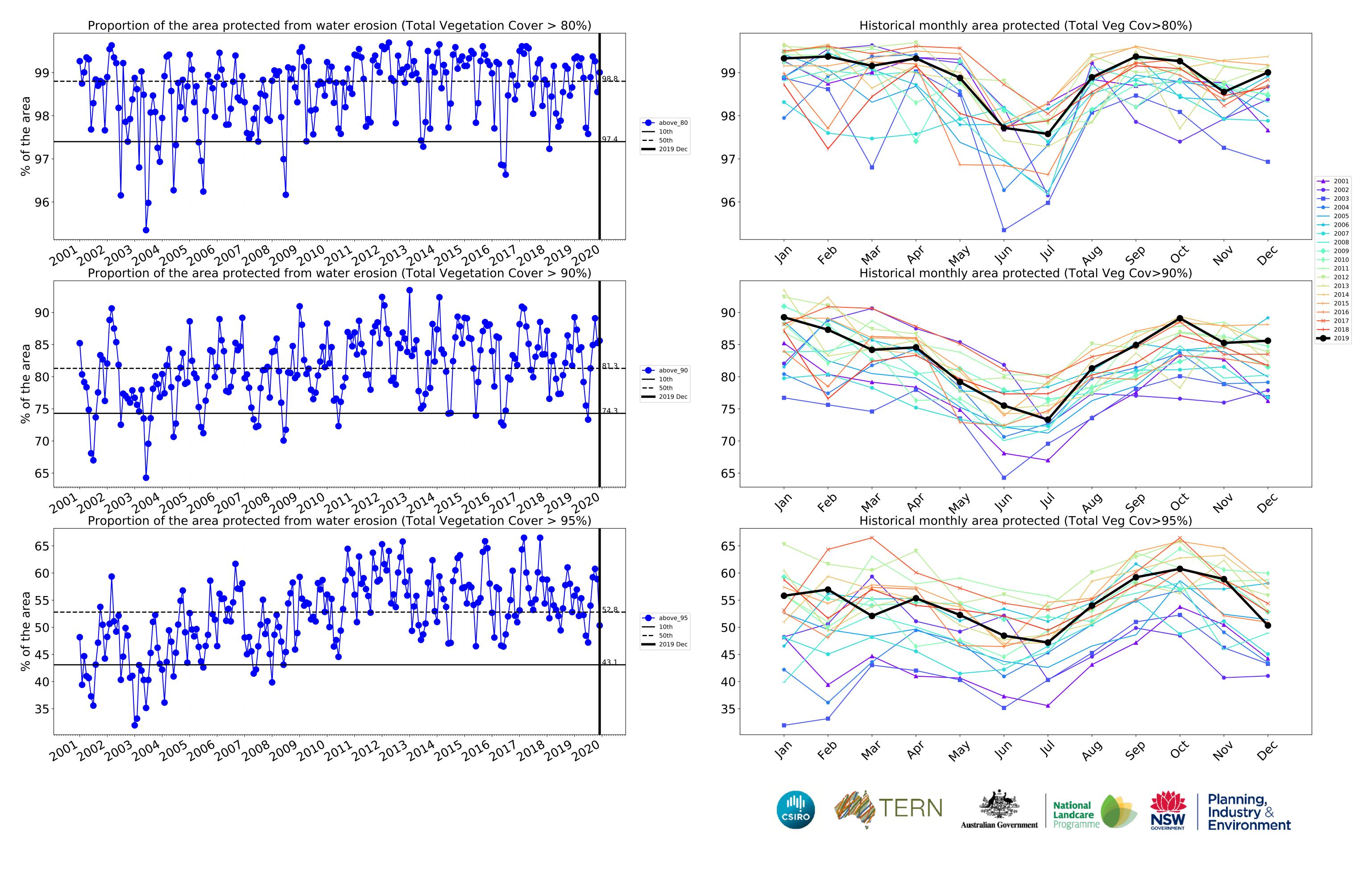




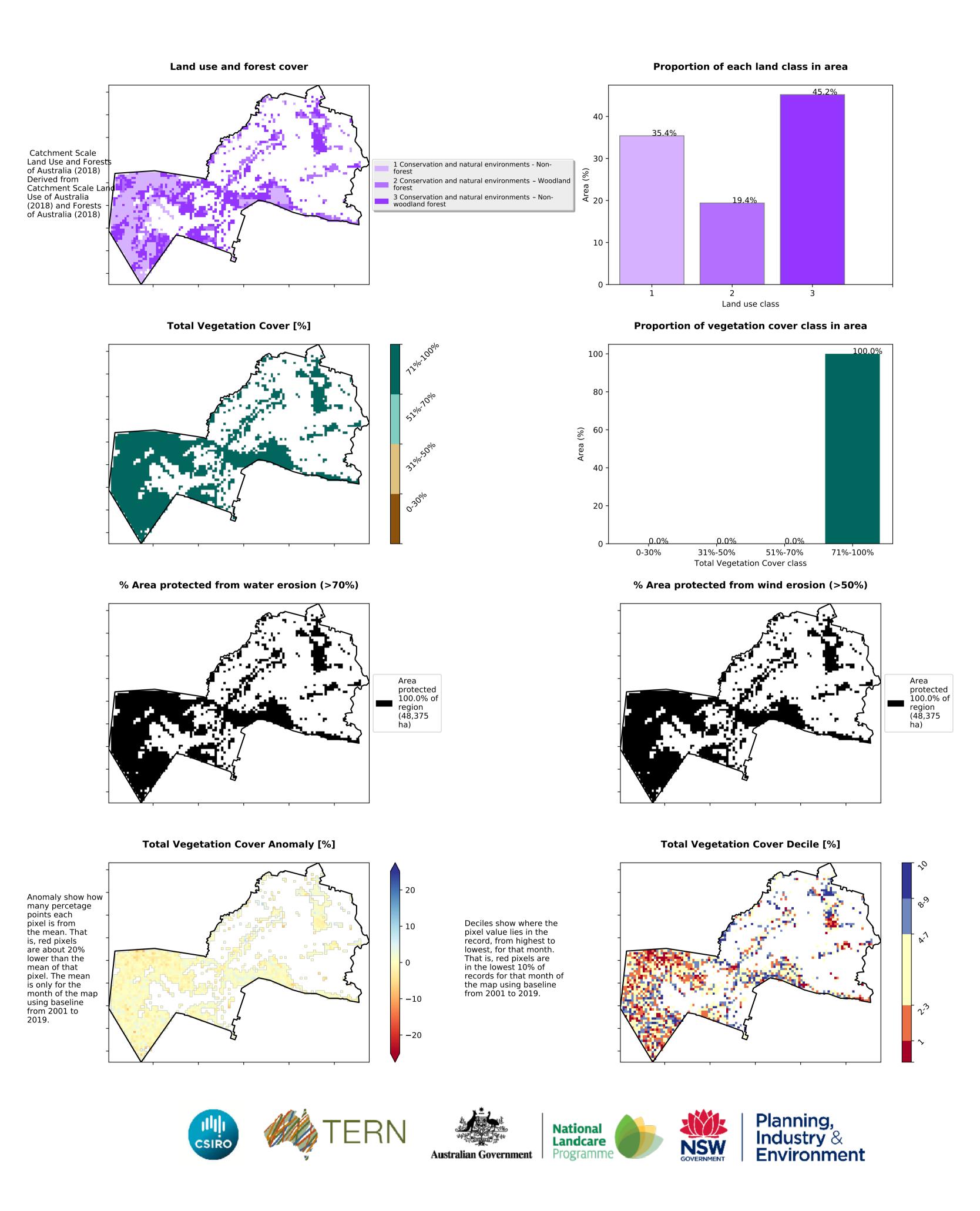




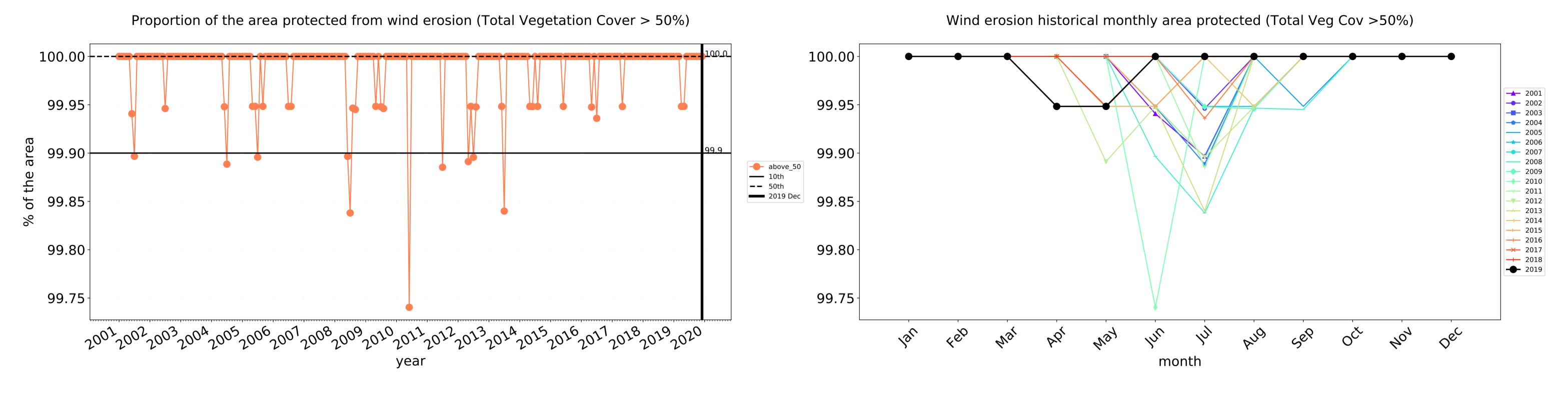


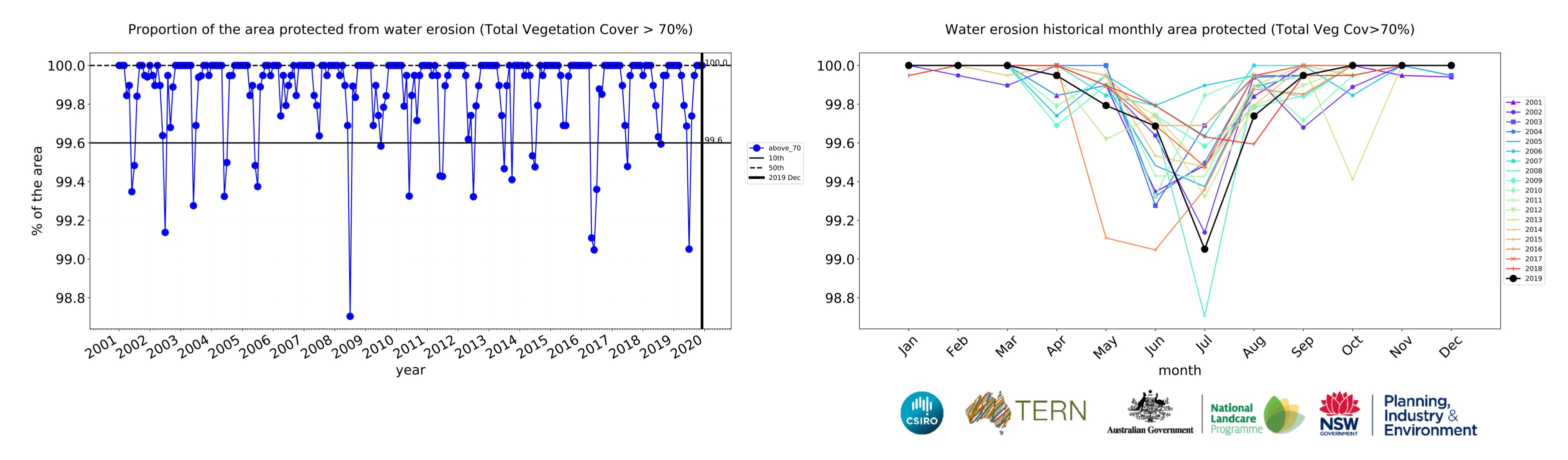


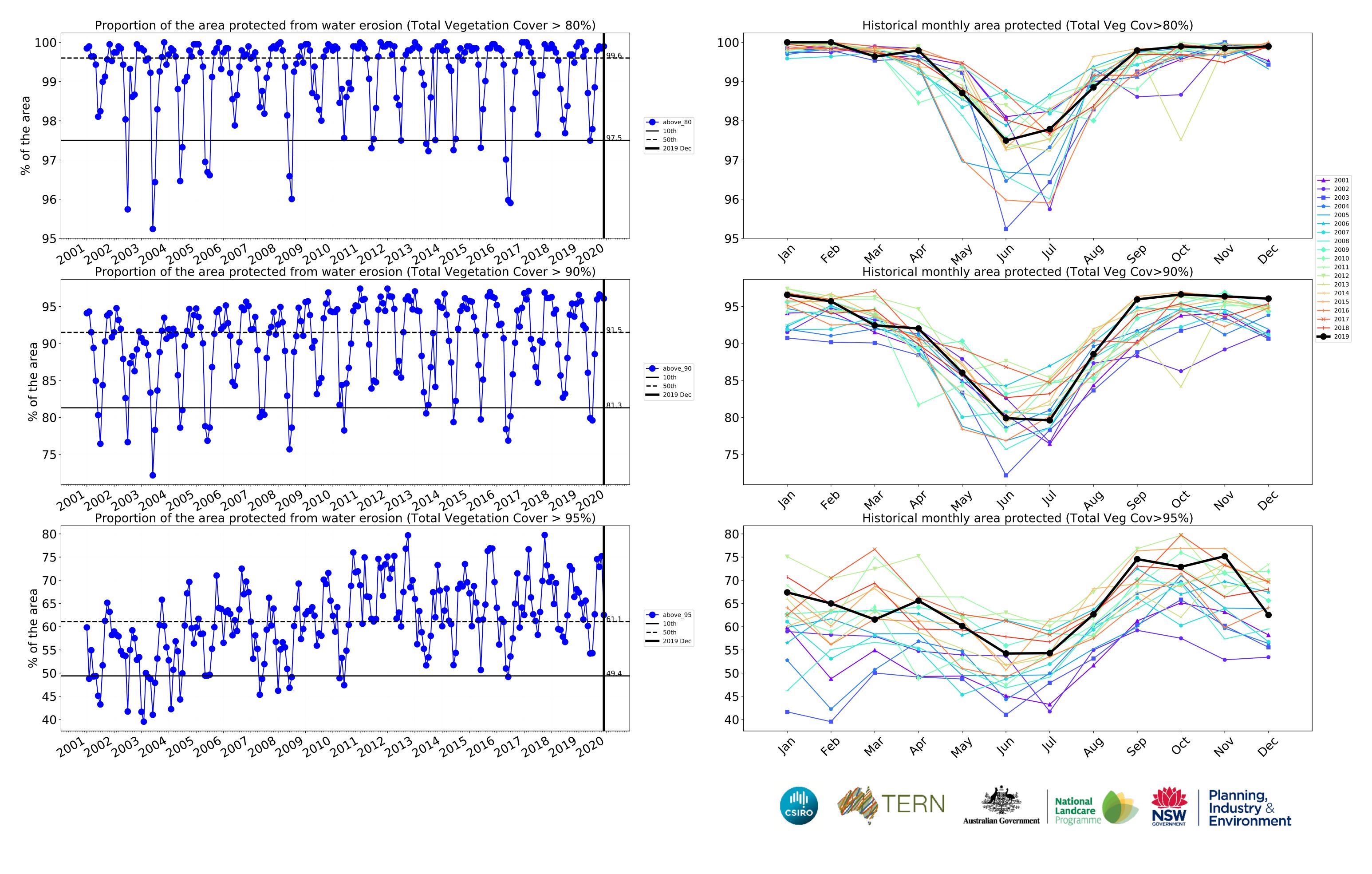
#### **Conservation and natural environments**



#### **Conservation and natural environments timeseries**



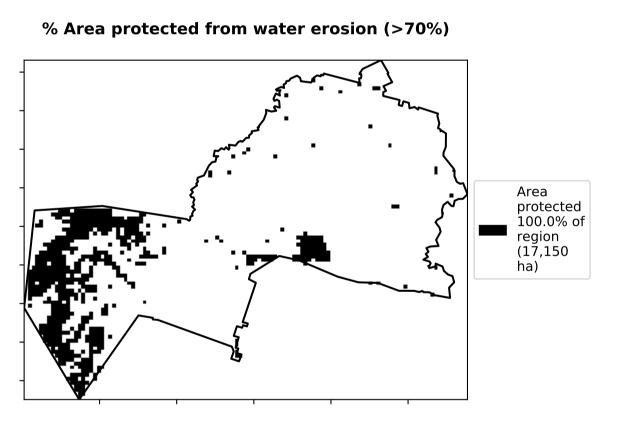


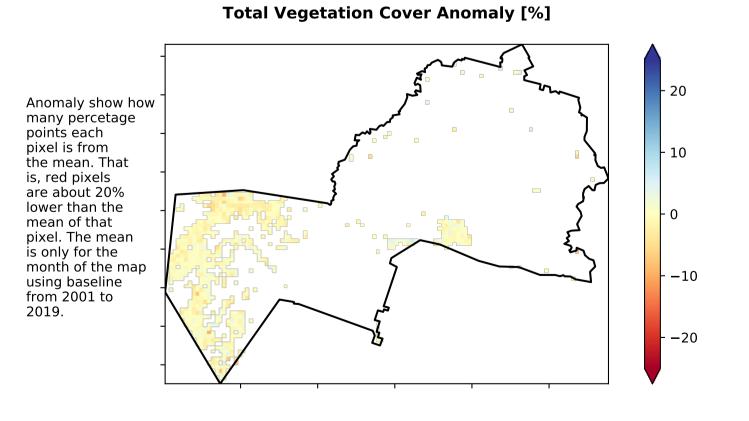


#### **Conservation and natural environments non forest**

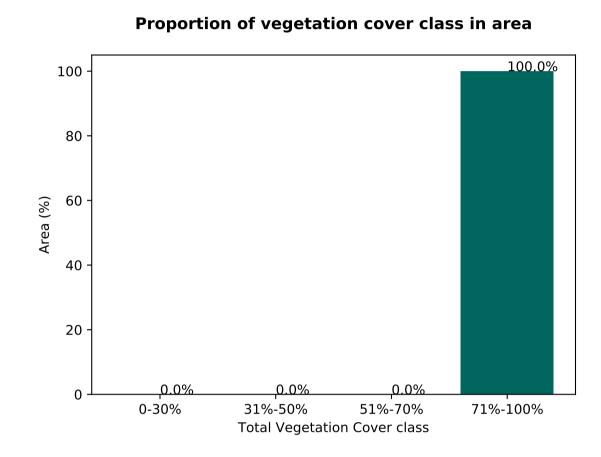
#### **Land use and forest cover** Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Conservation and natural environments - Non-Catchment Scale Lar Use of Australia (2018) and Forests of Australia (2018)

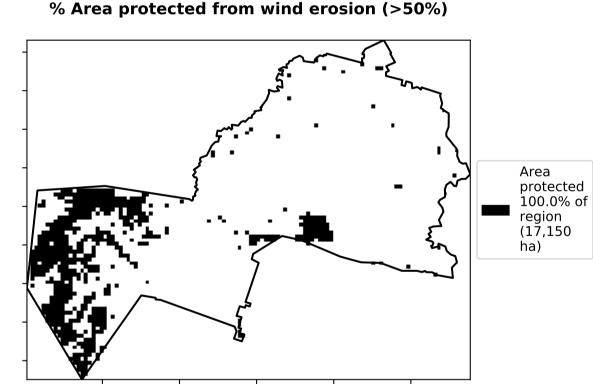
# **Total Vegetation Cover [%]**

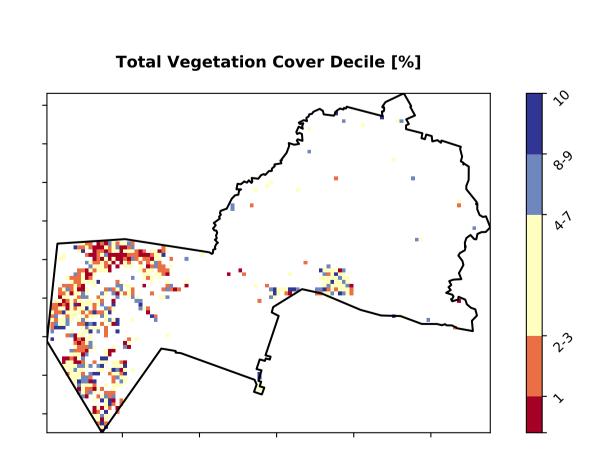
















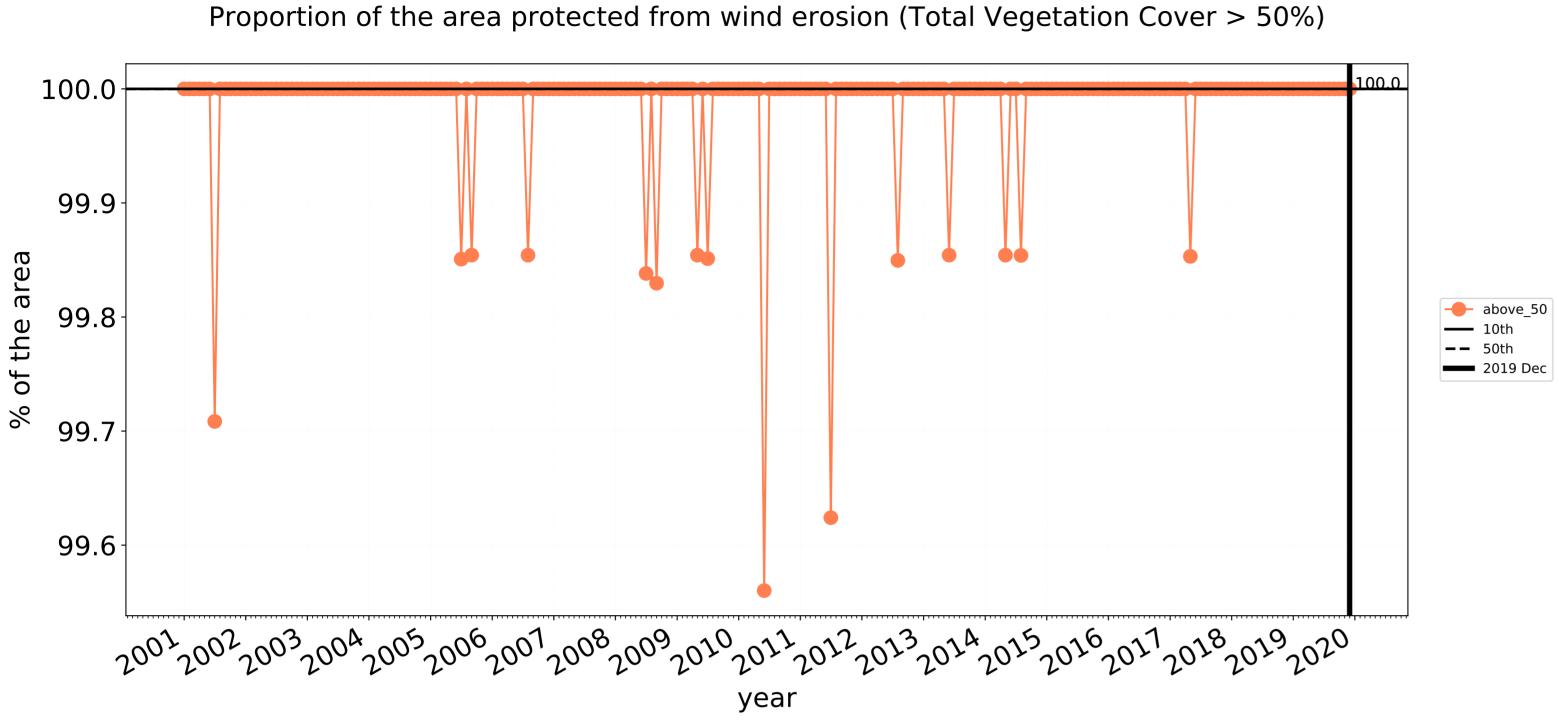


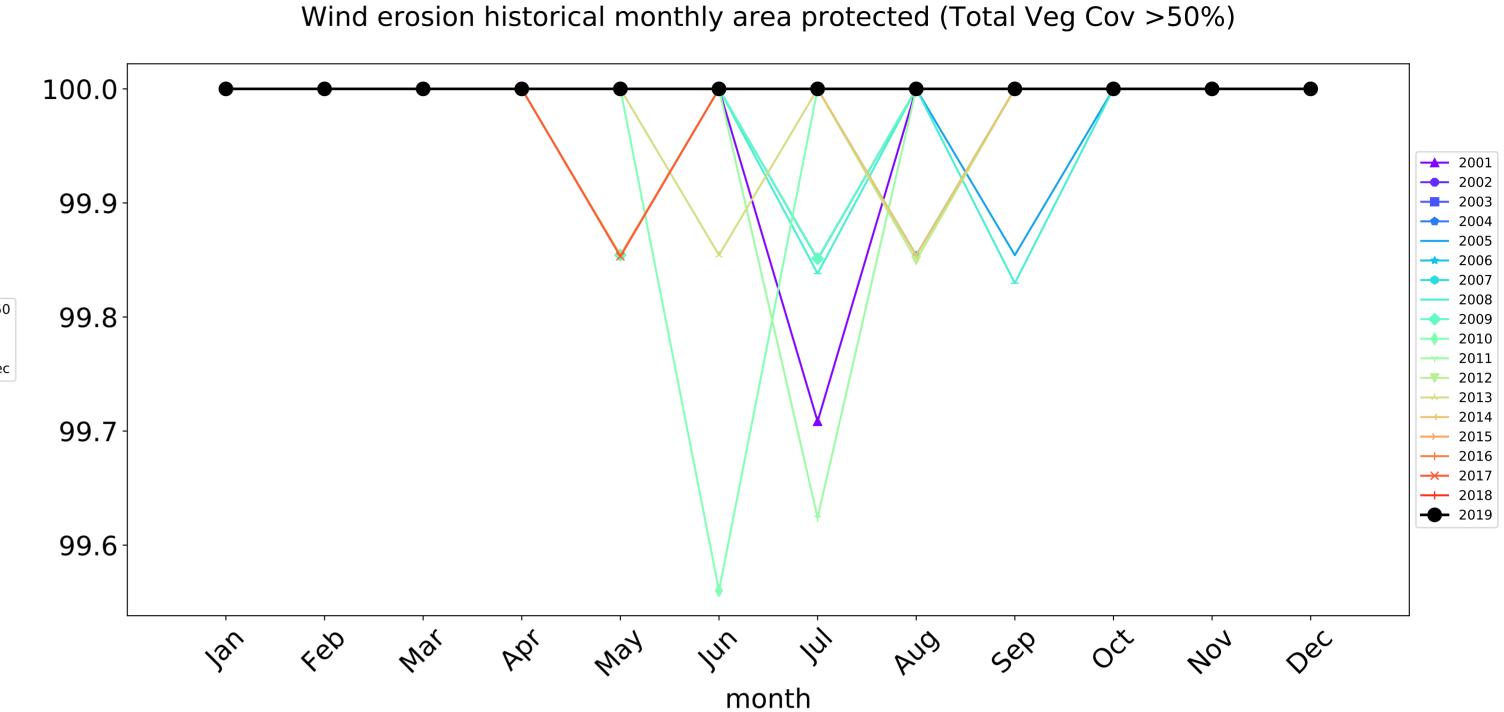


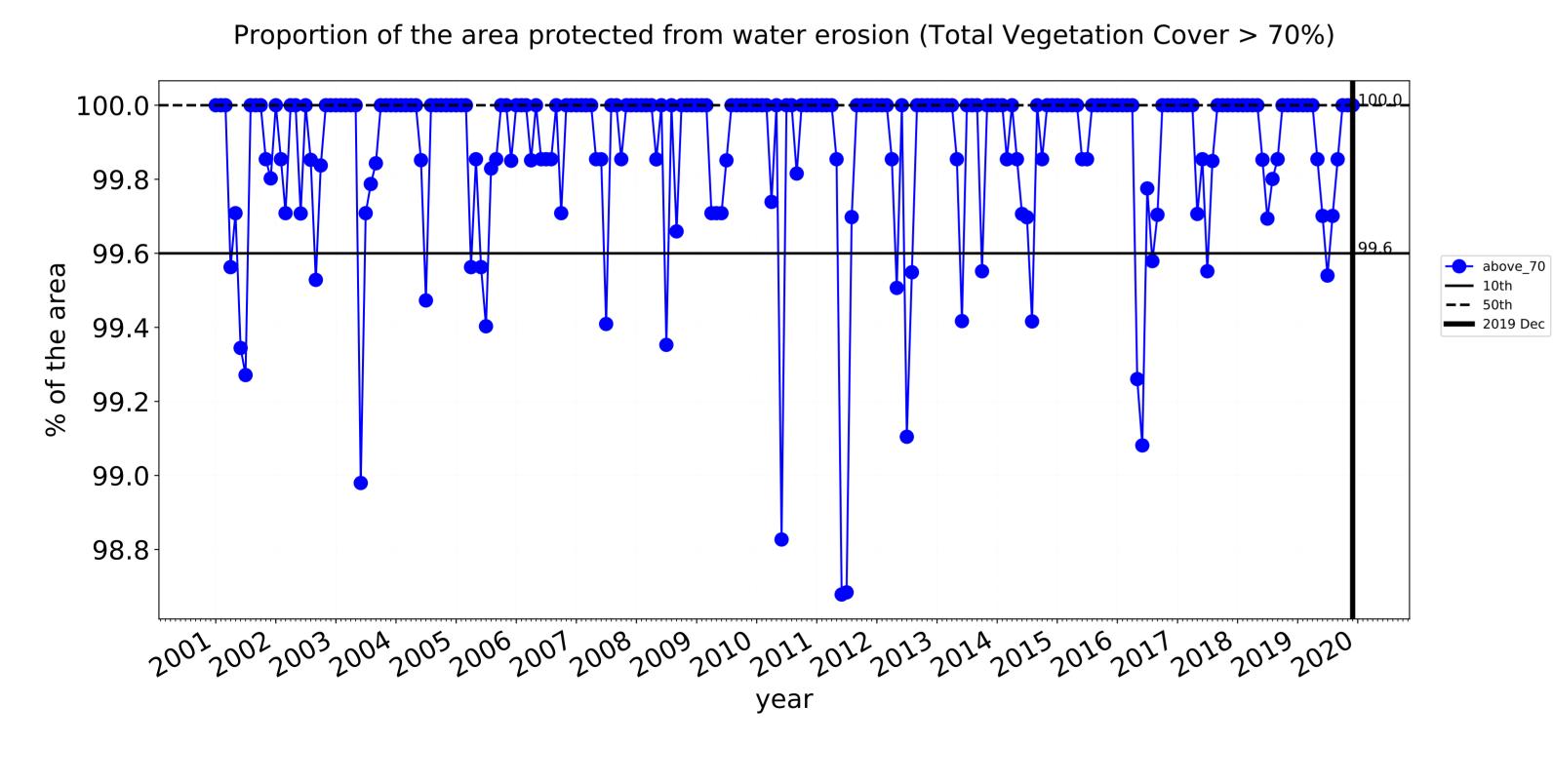


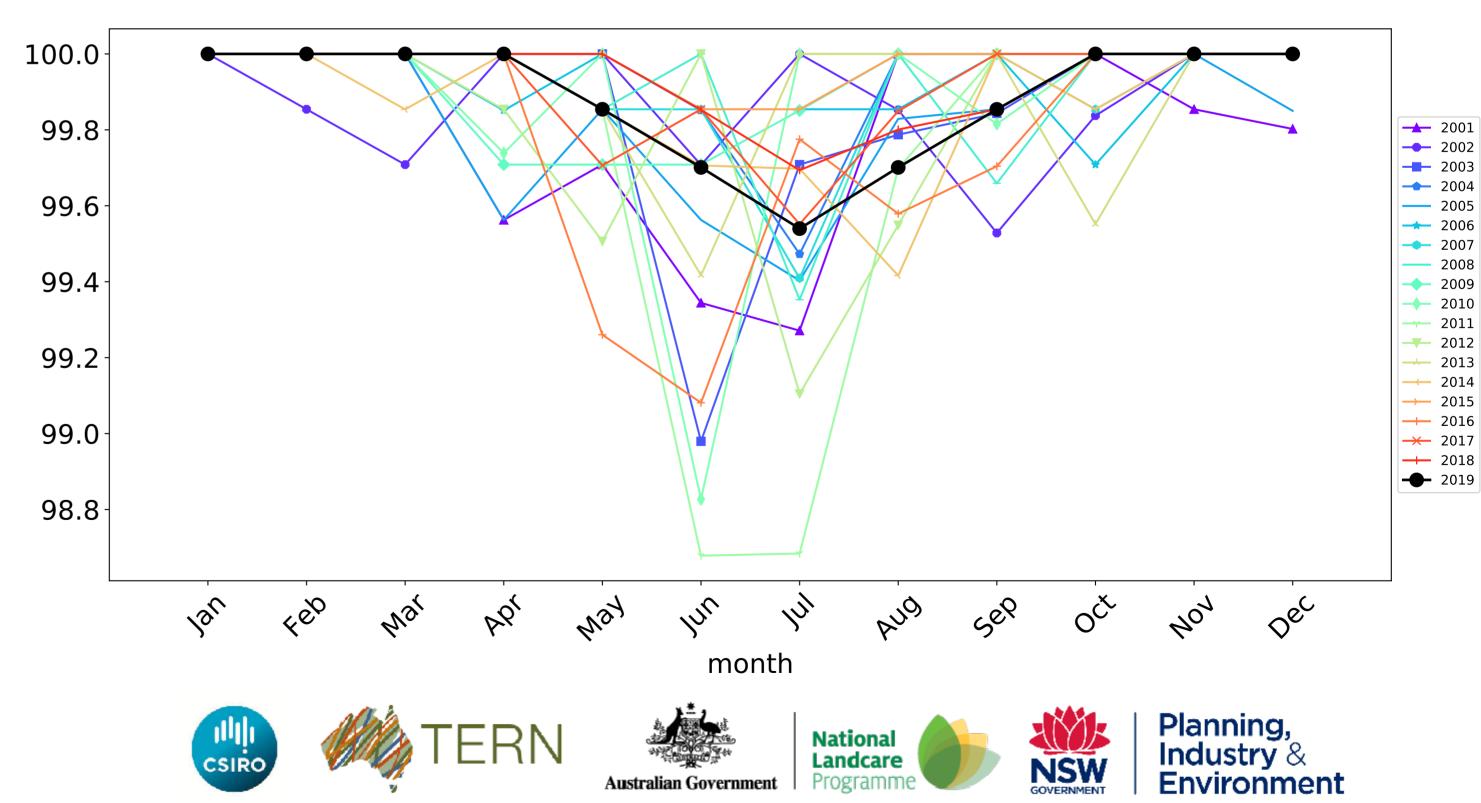


#### **Conservation and natural environments non forest timeseries**

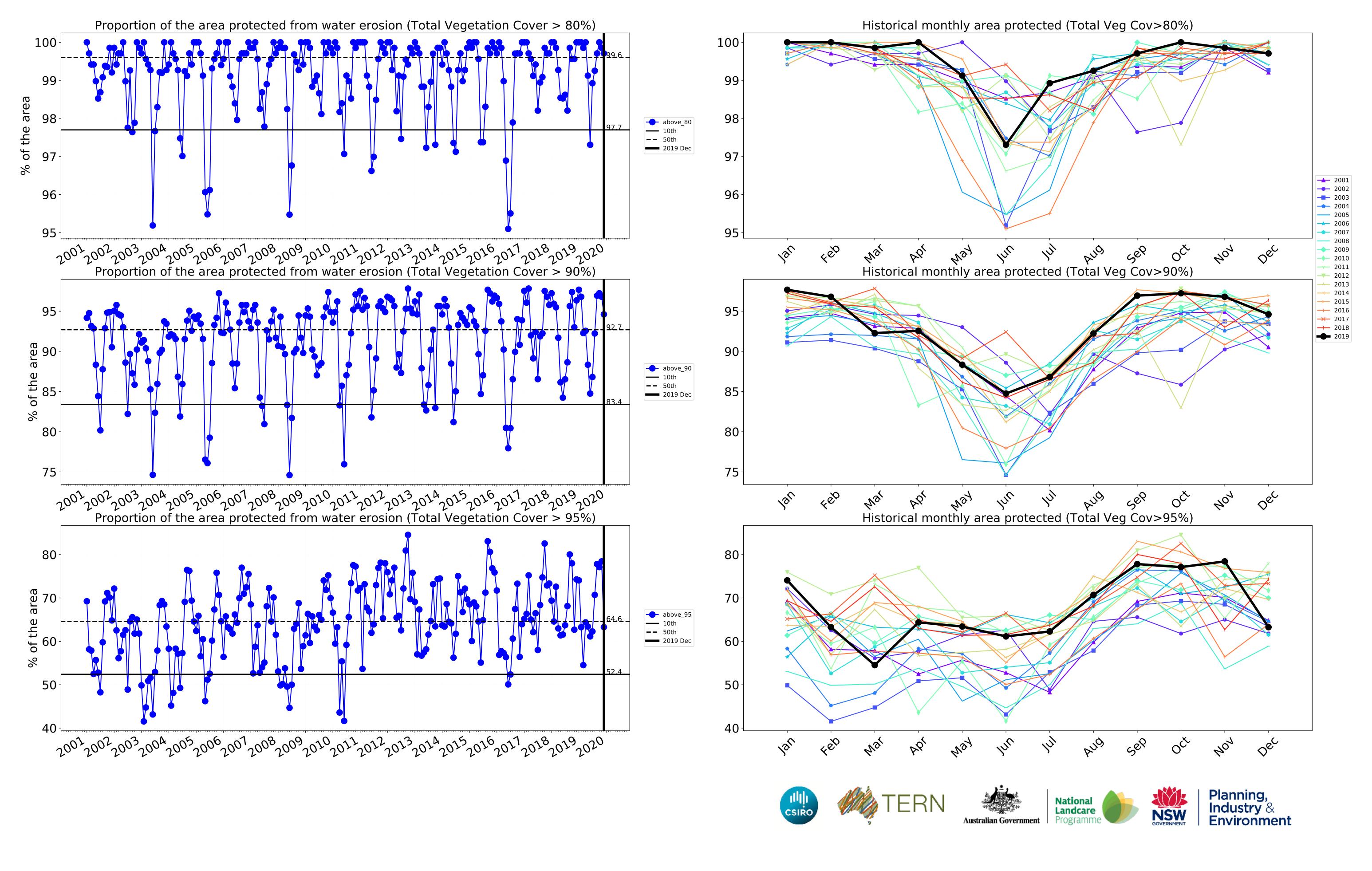




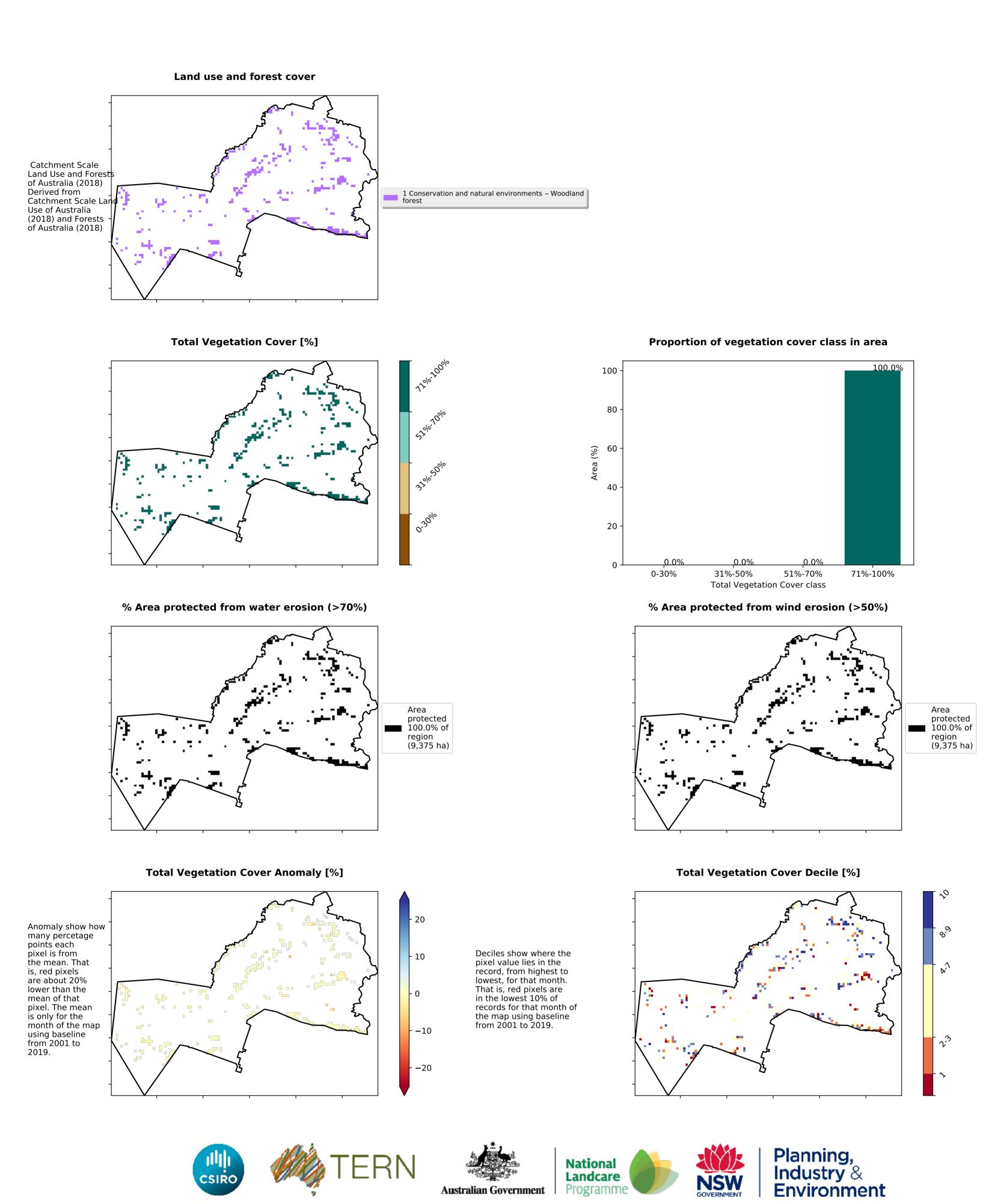


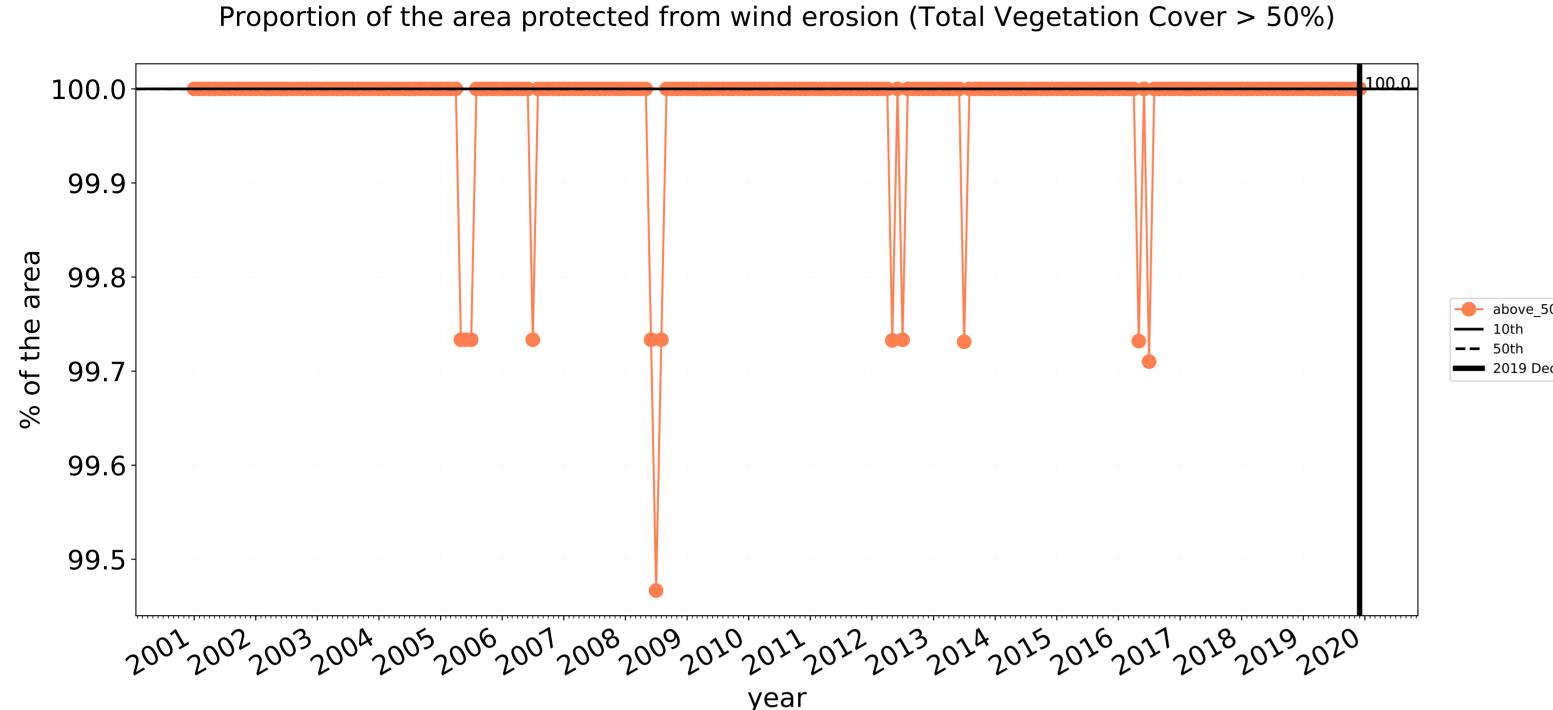


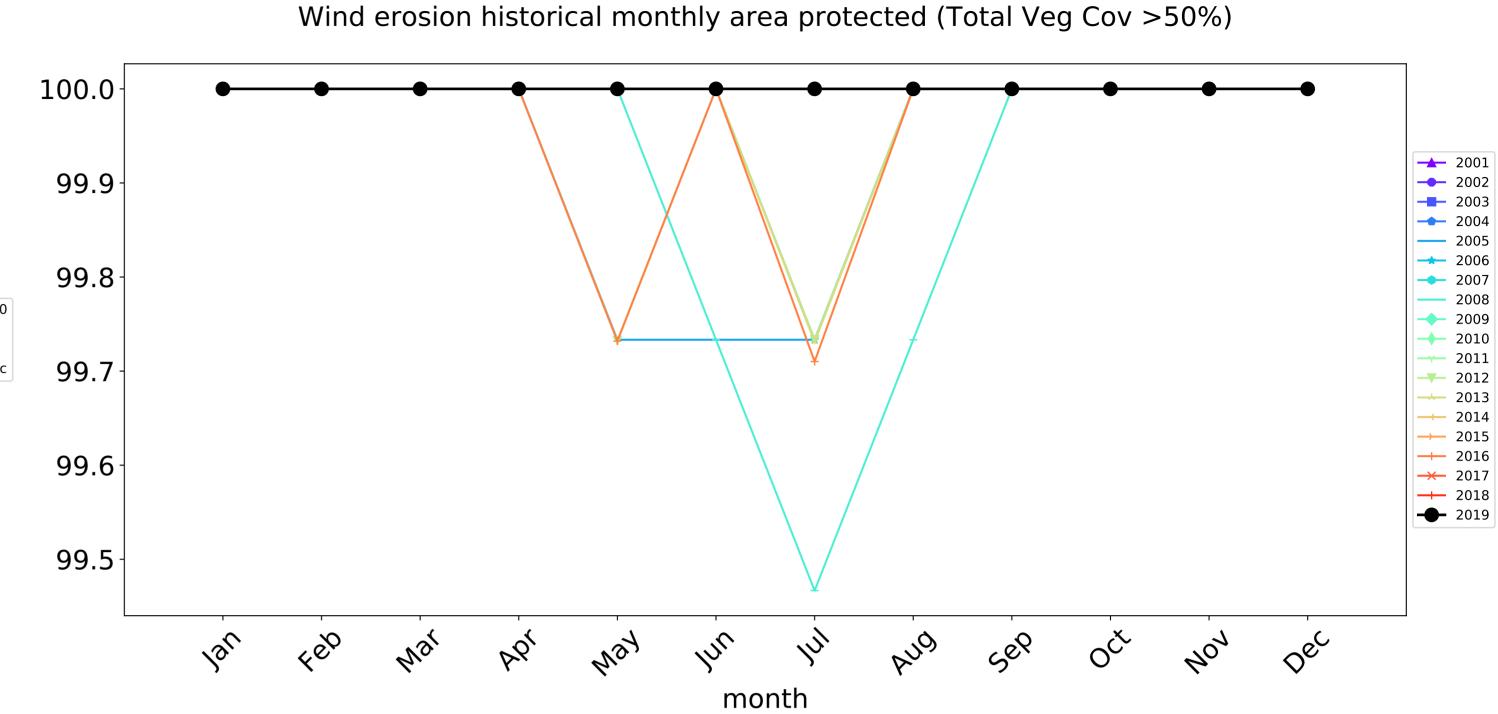
Water erosion historical monthly area protected (Total Veg Cov>70%)

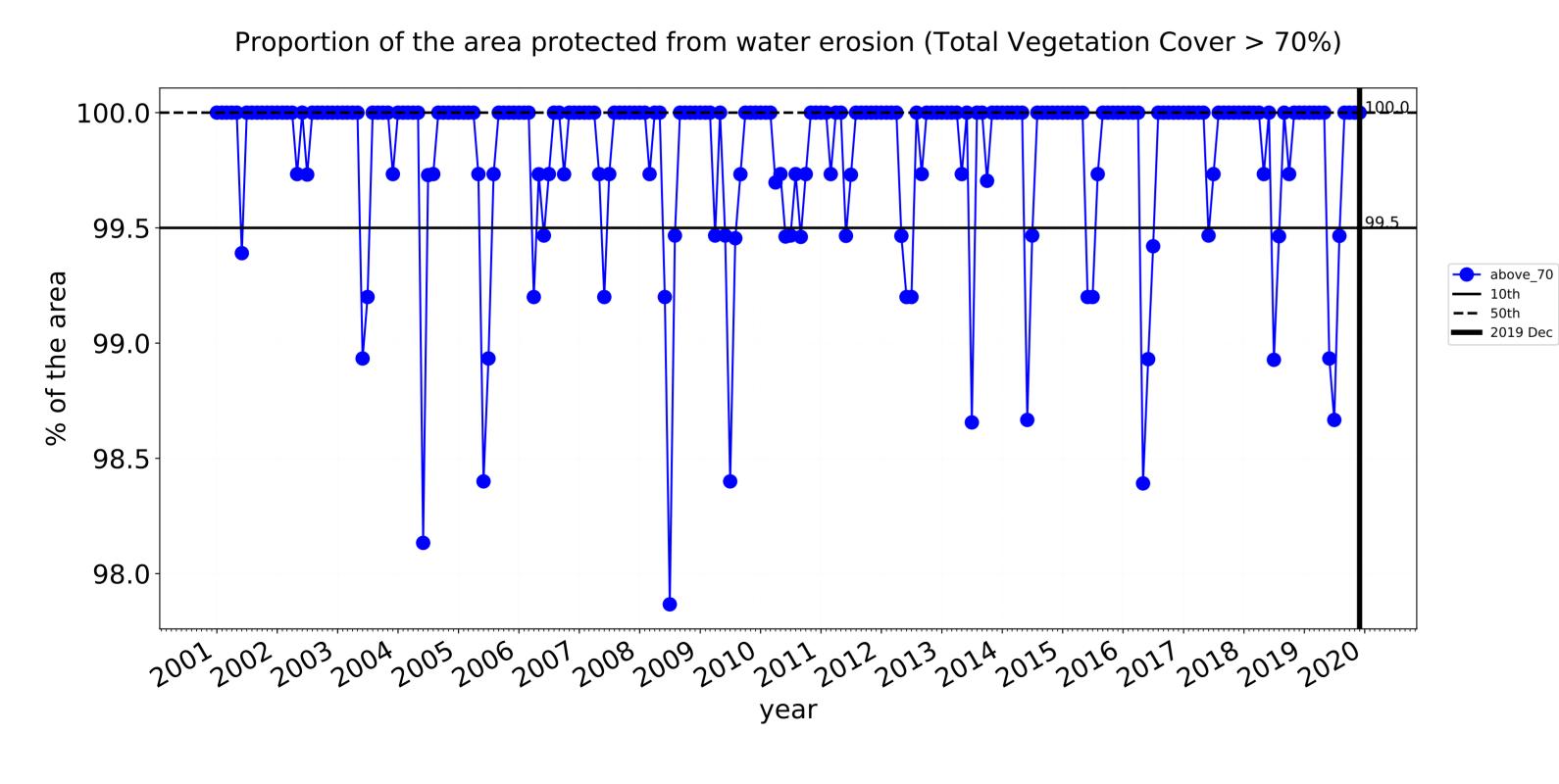


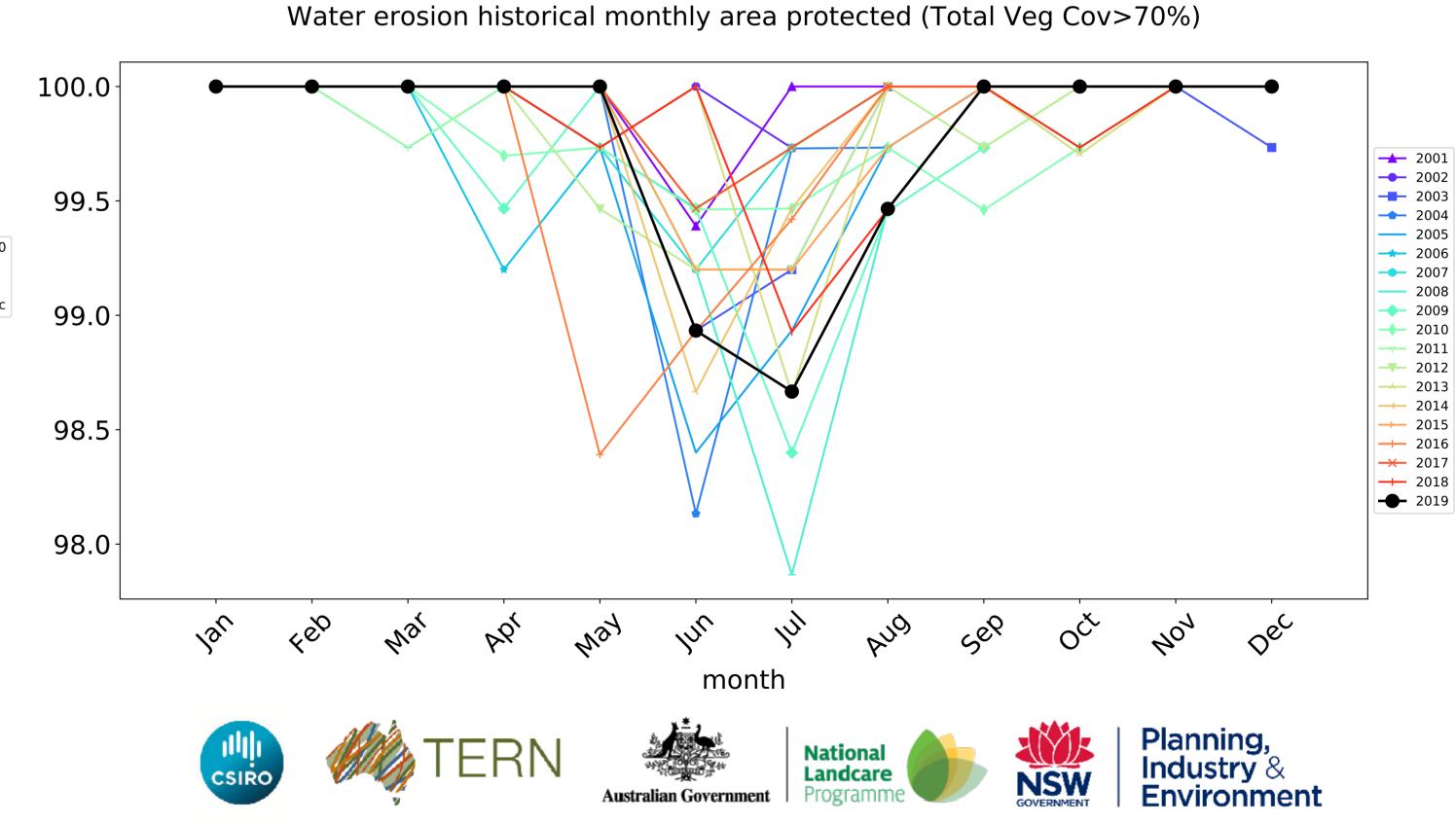
#### **Conservation and natural environments Woodland forest**

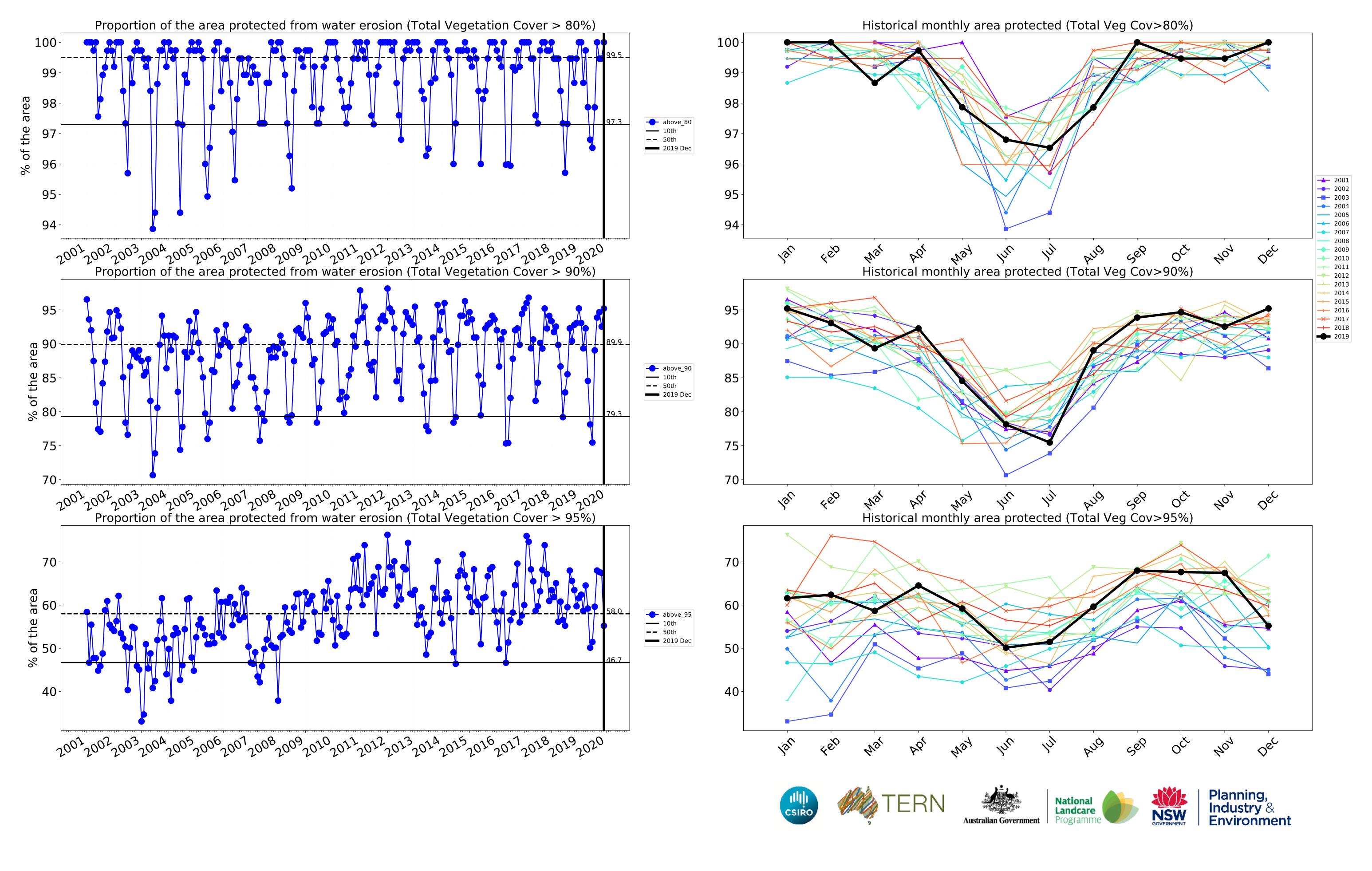




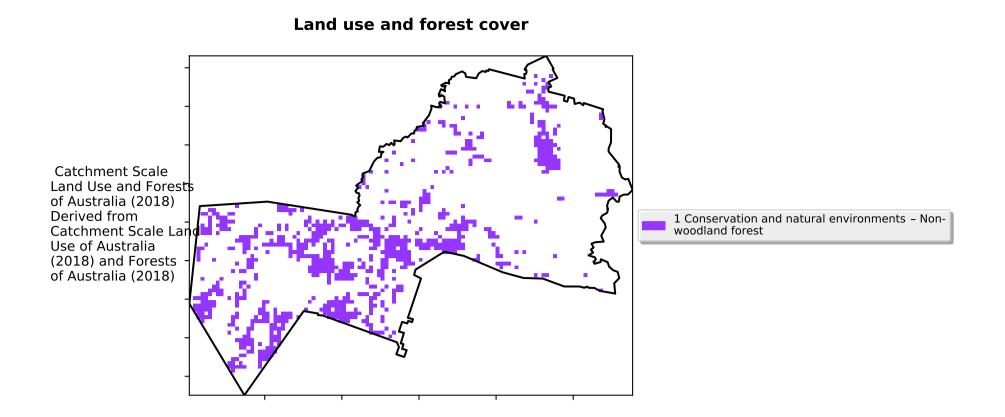




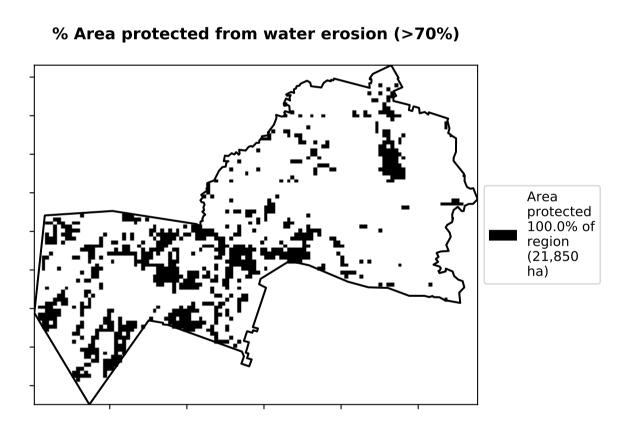


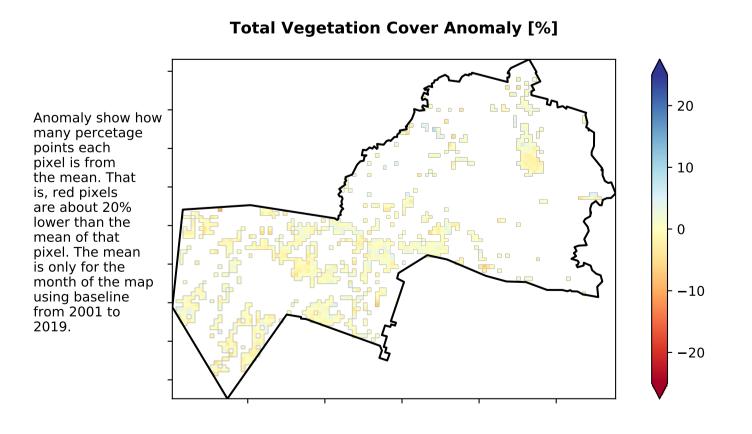


#### **Conservation and natural environments Forest (non woodland)**

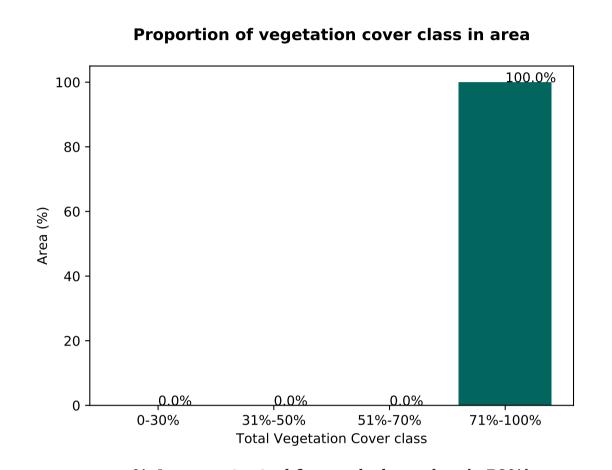


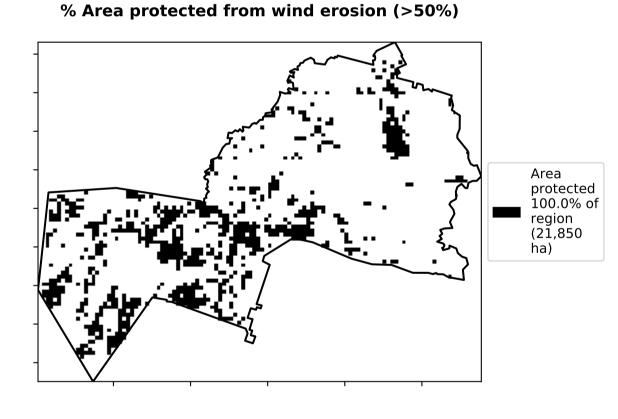
# Total Vegetation Cover [%]

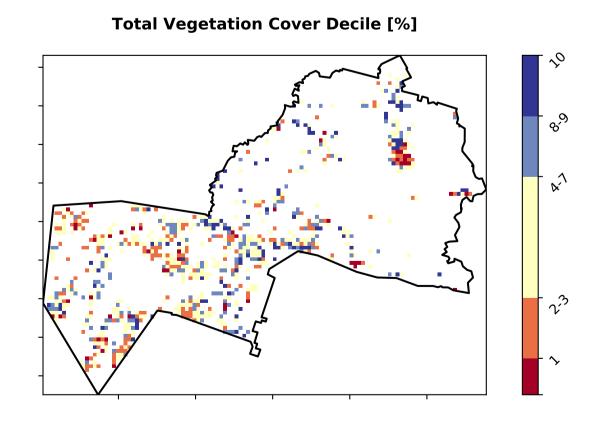




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.









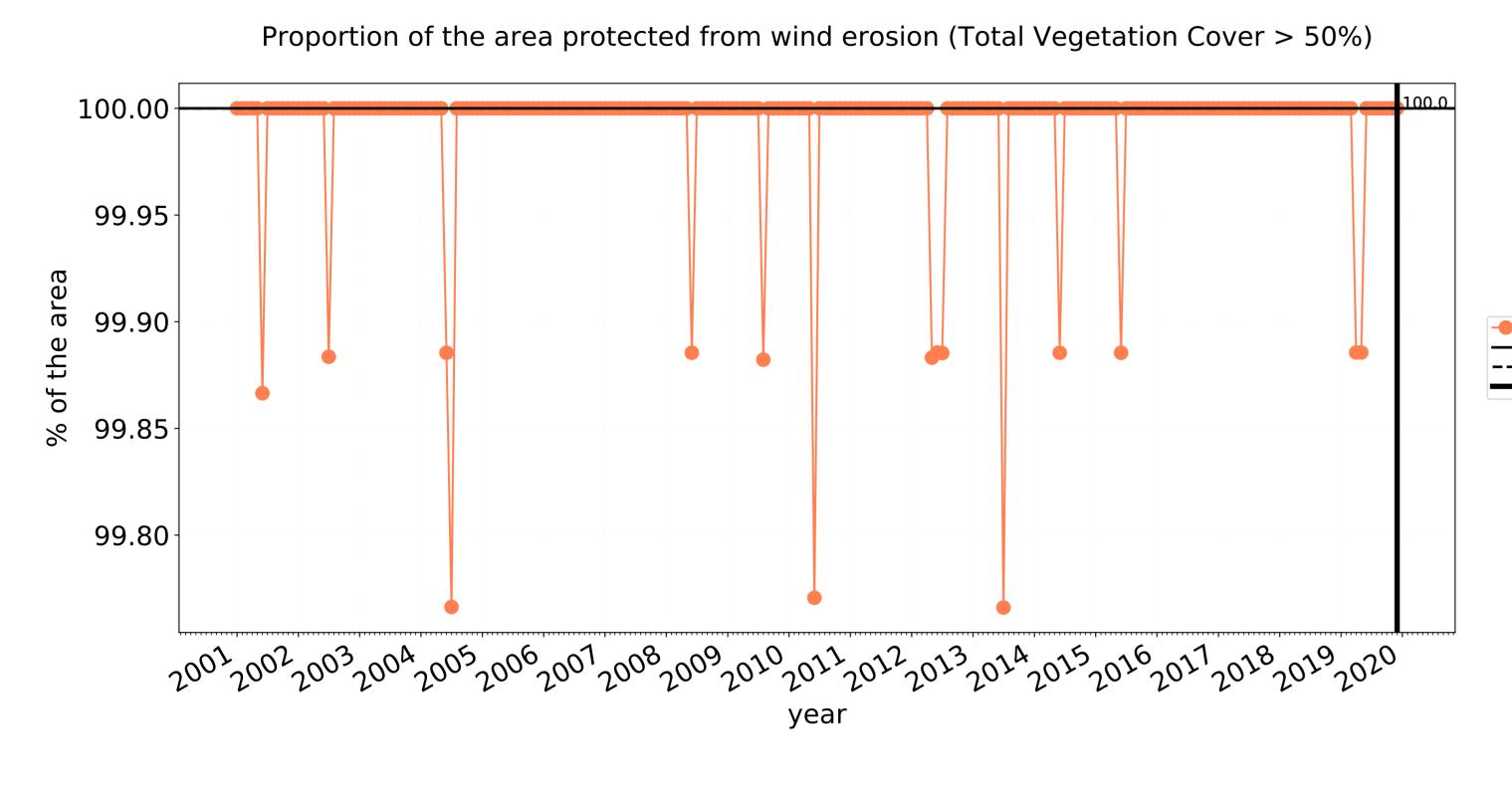


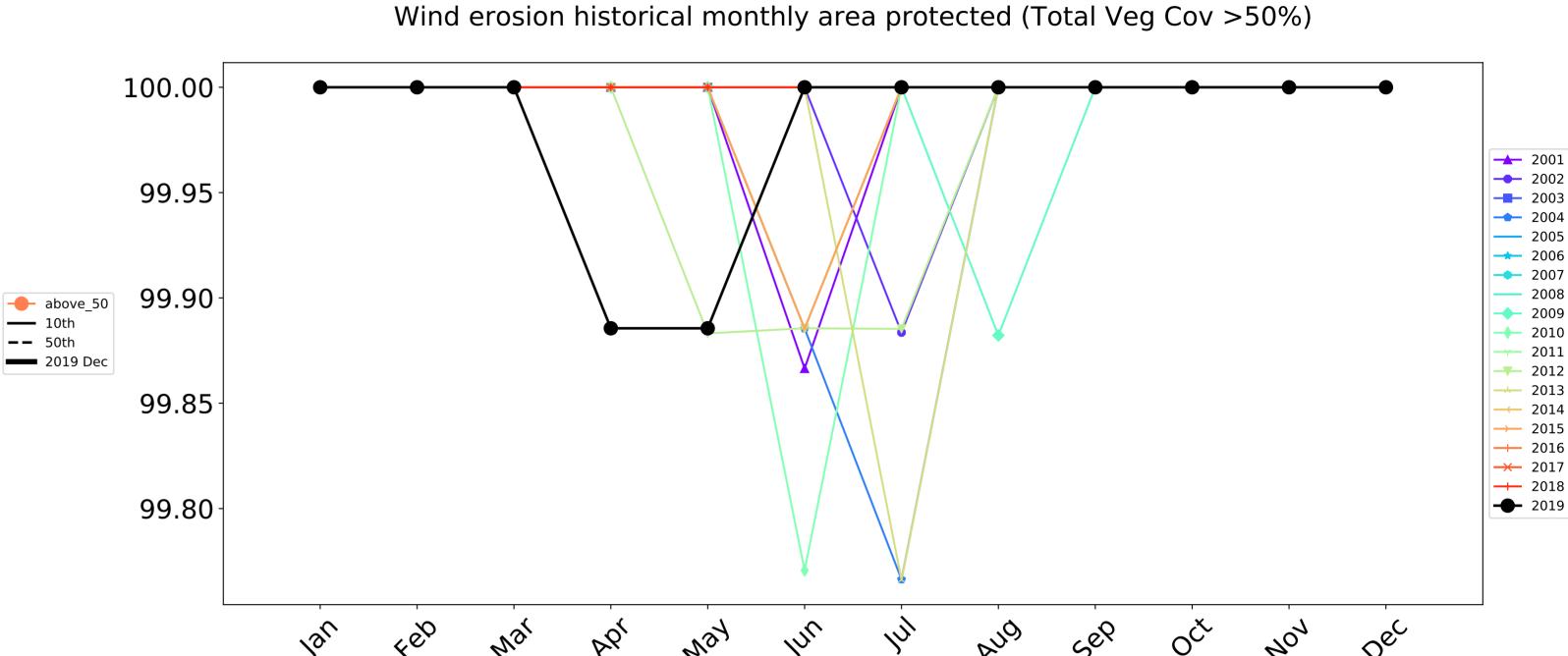




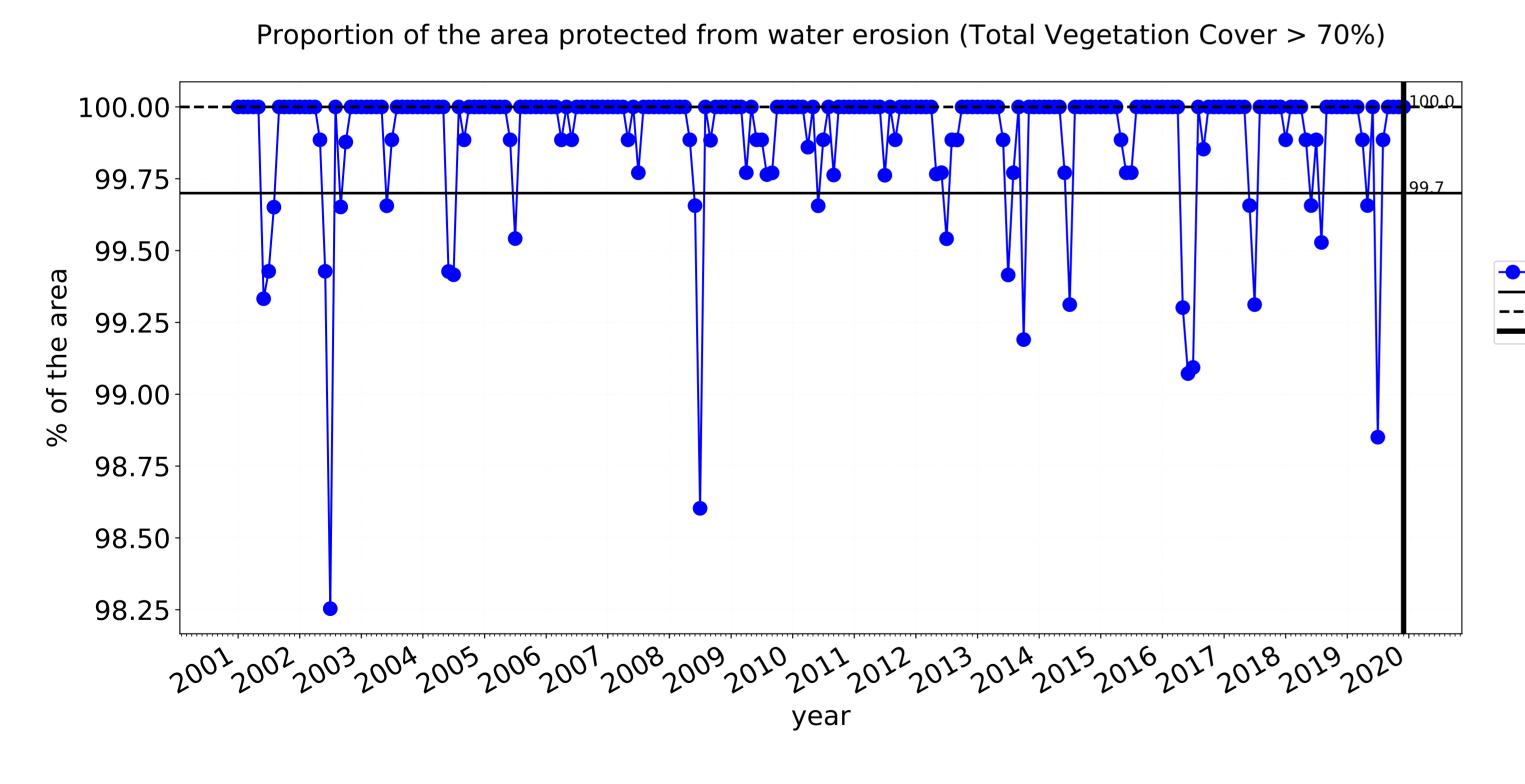


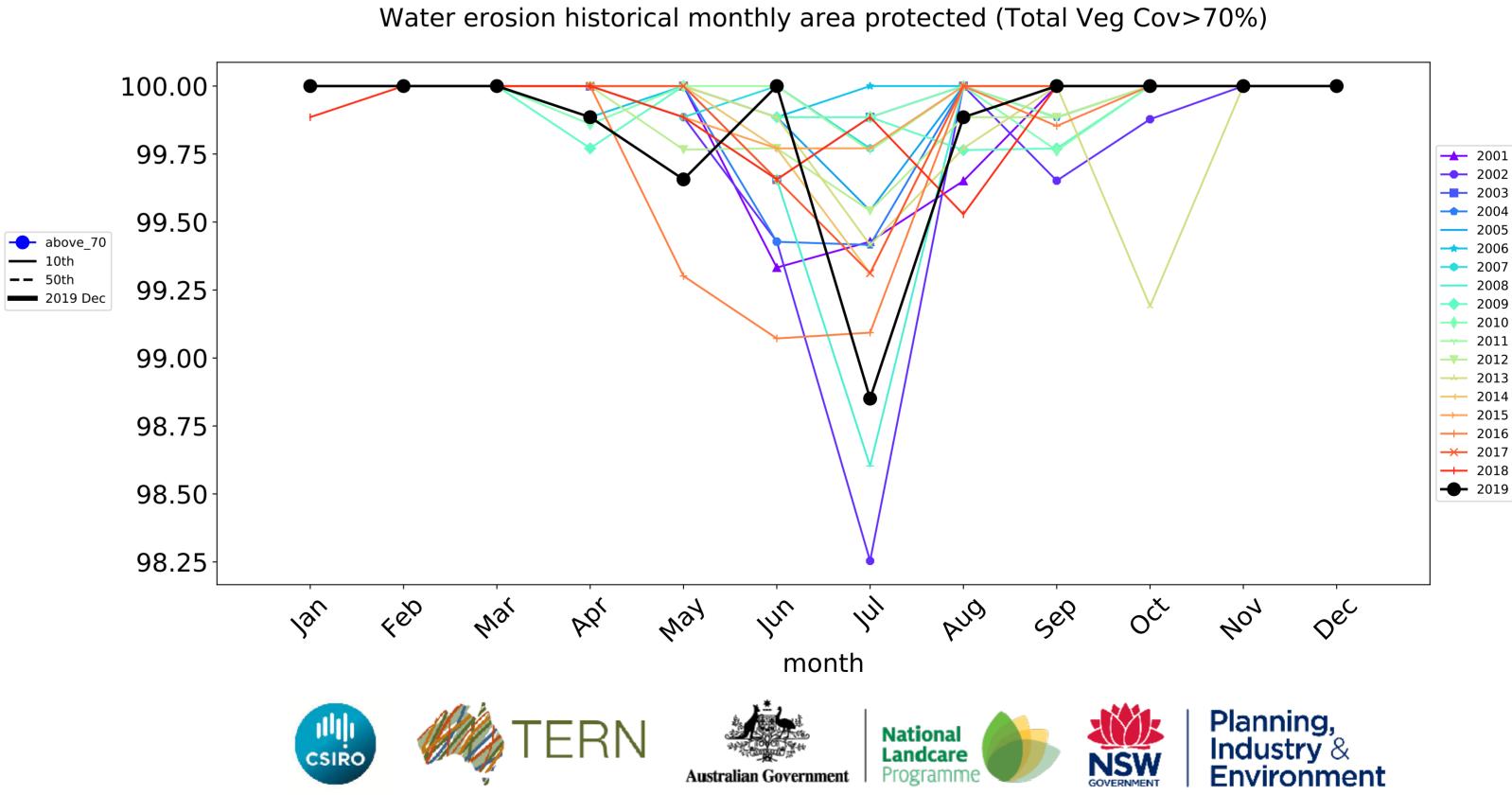


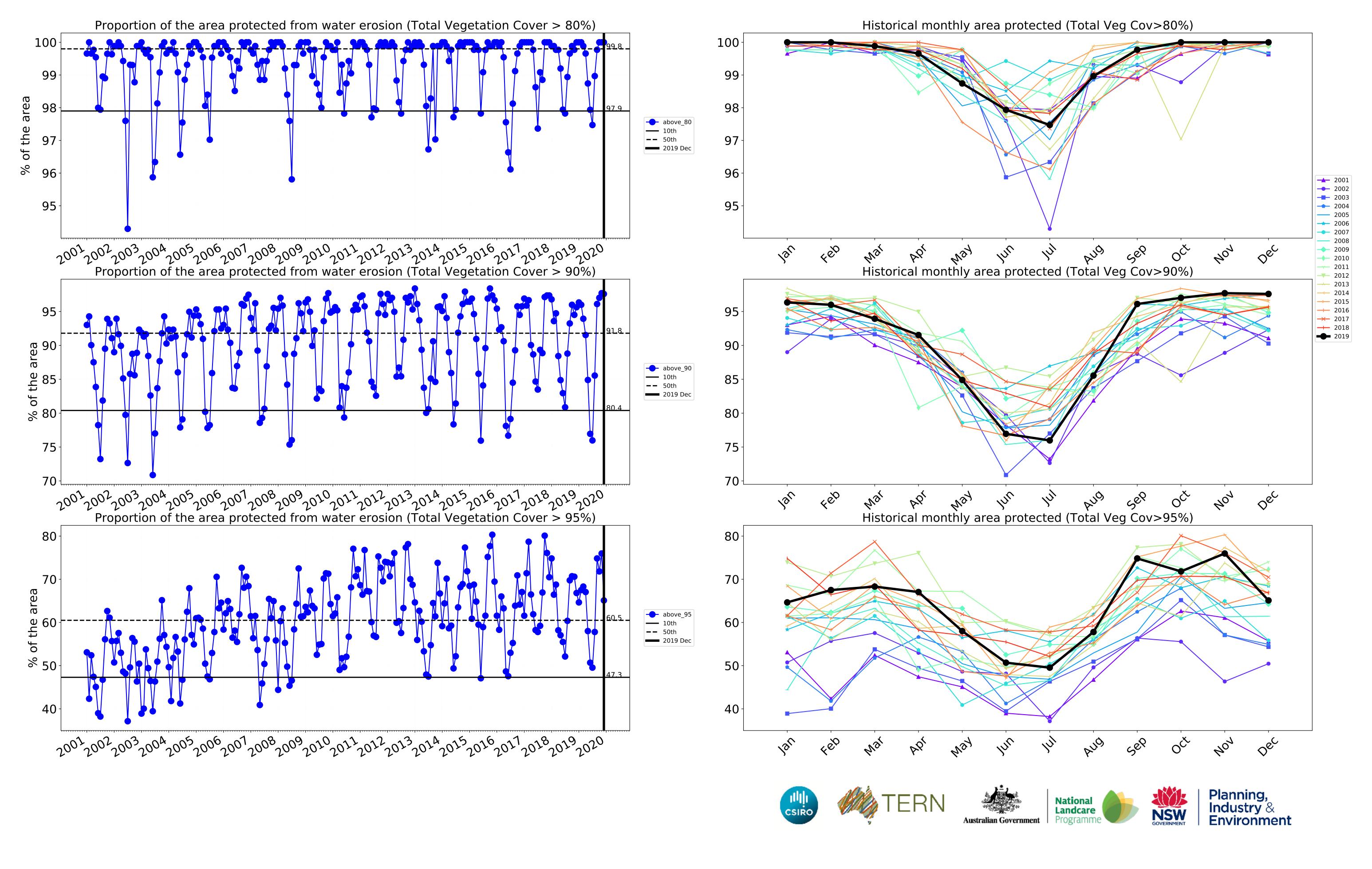




month







#### **Agriculture**

70

60

50

Area (%)

30

20

10

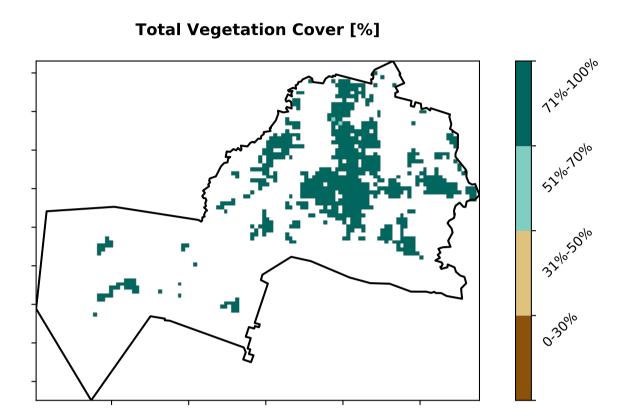
#### Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) 1 Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest 4 Agriculture - Grazing - Irrigated Use of Australia (2018) and Forests 5 Agriculture - Cropping - Non-irrigated 6 Agriculture - Cropping - Irrigated of Australia (2018)

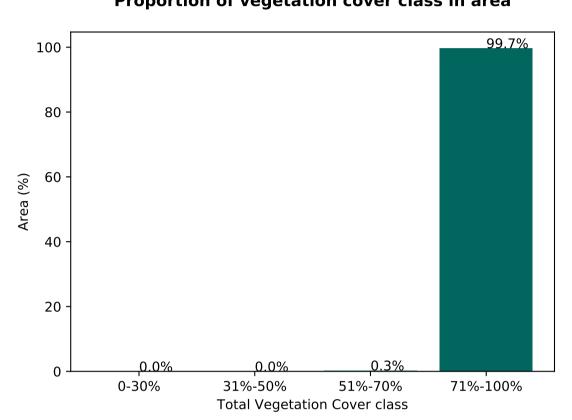
# 72.2%

13.5%

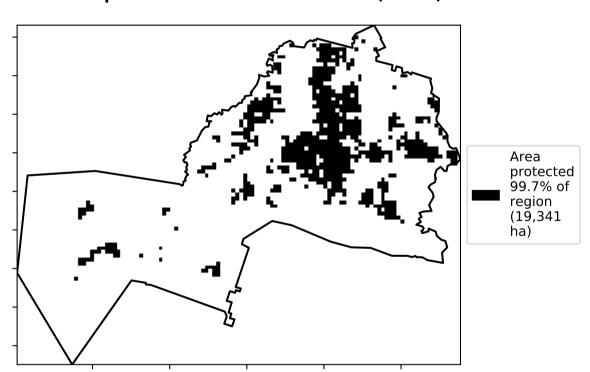
**Proportion of each land class in area** 

#### Land use class Proportion of vegetation cover class in area

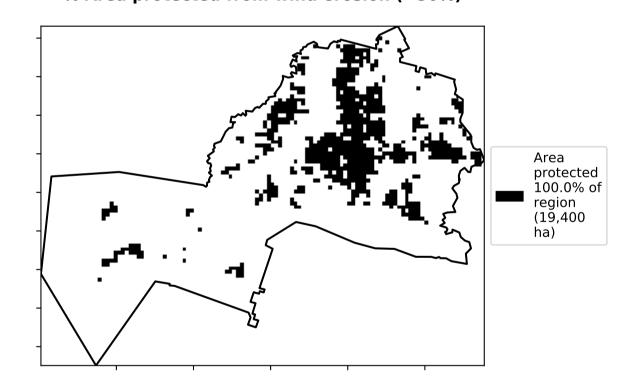




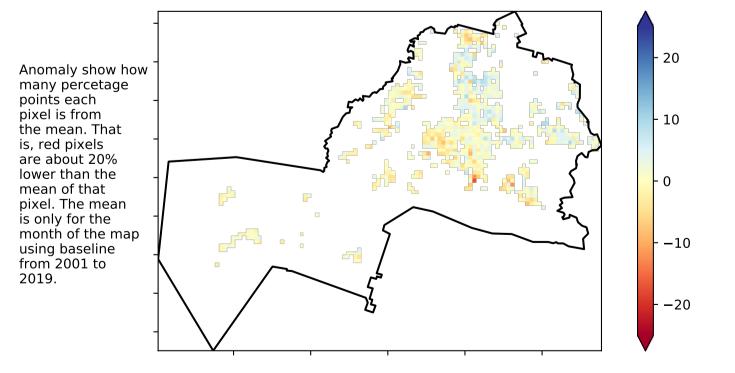
#### % Area protected from water erosion (>70%)



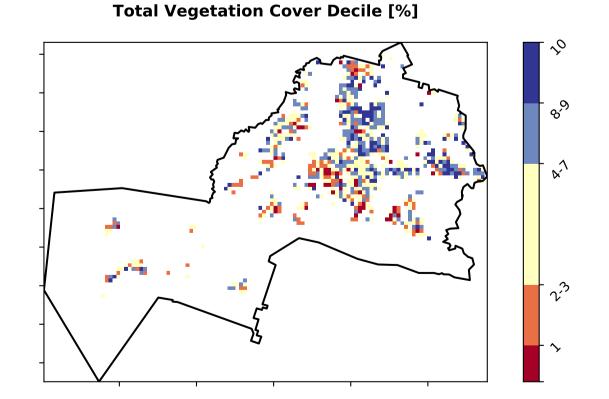
% Area protected from wind erosion (>50%)







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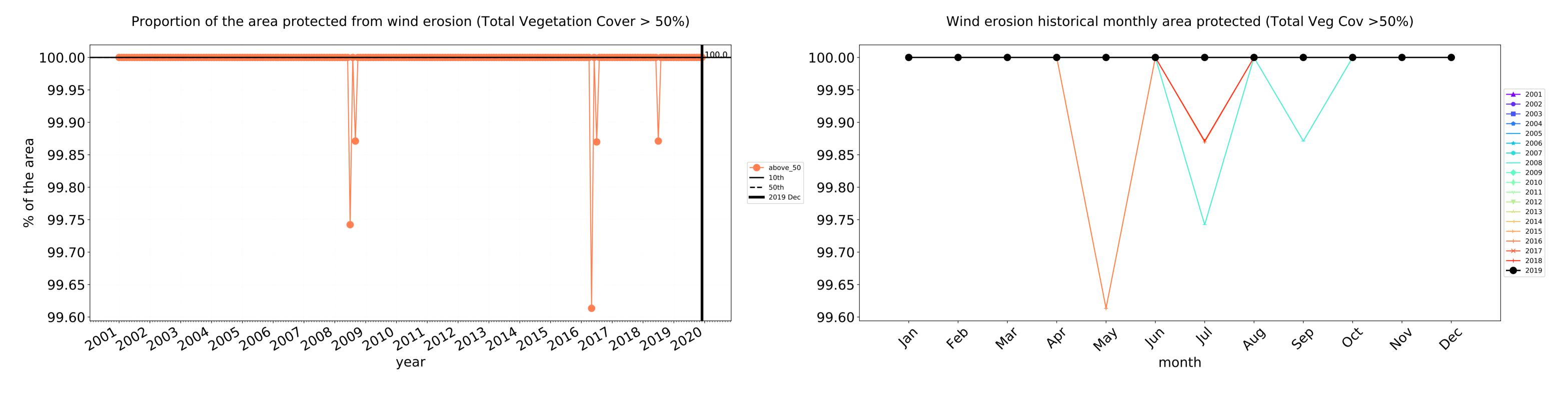


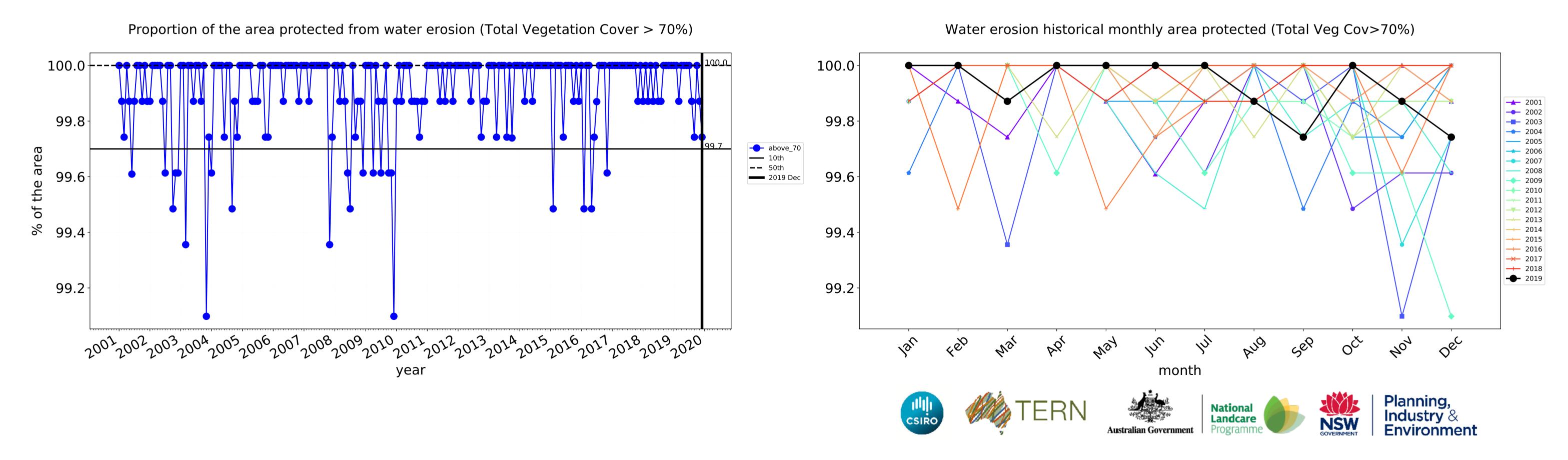


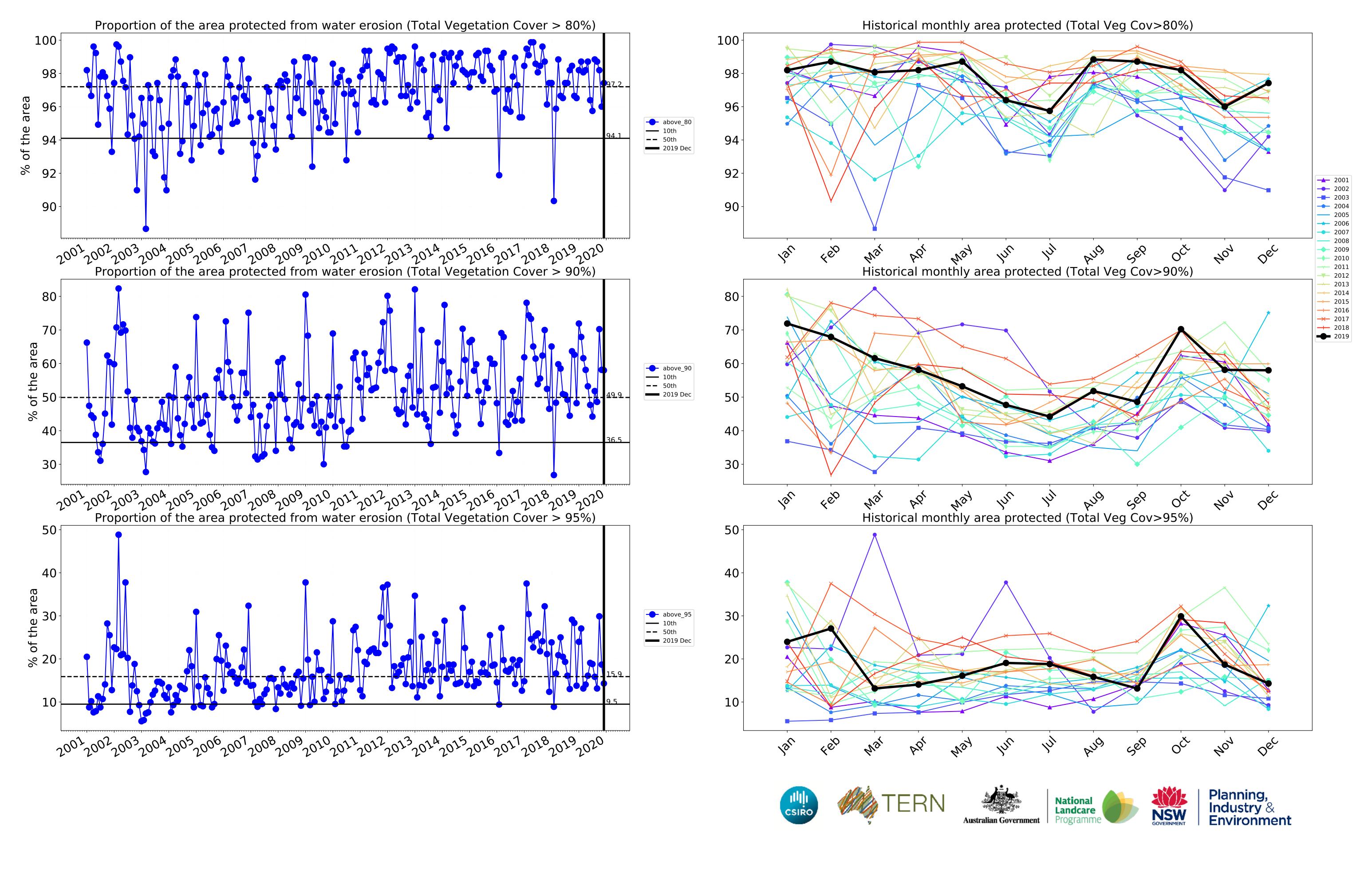




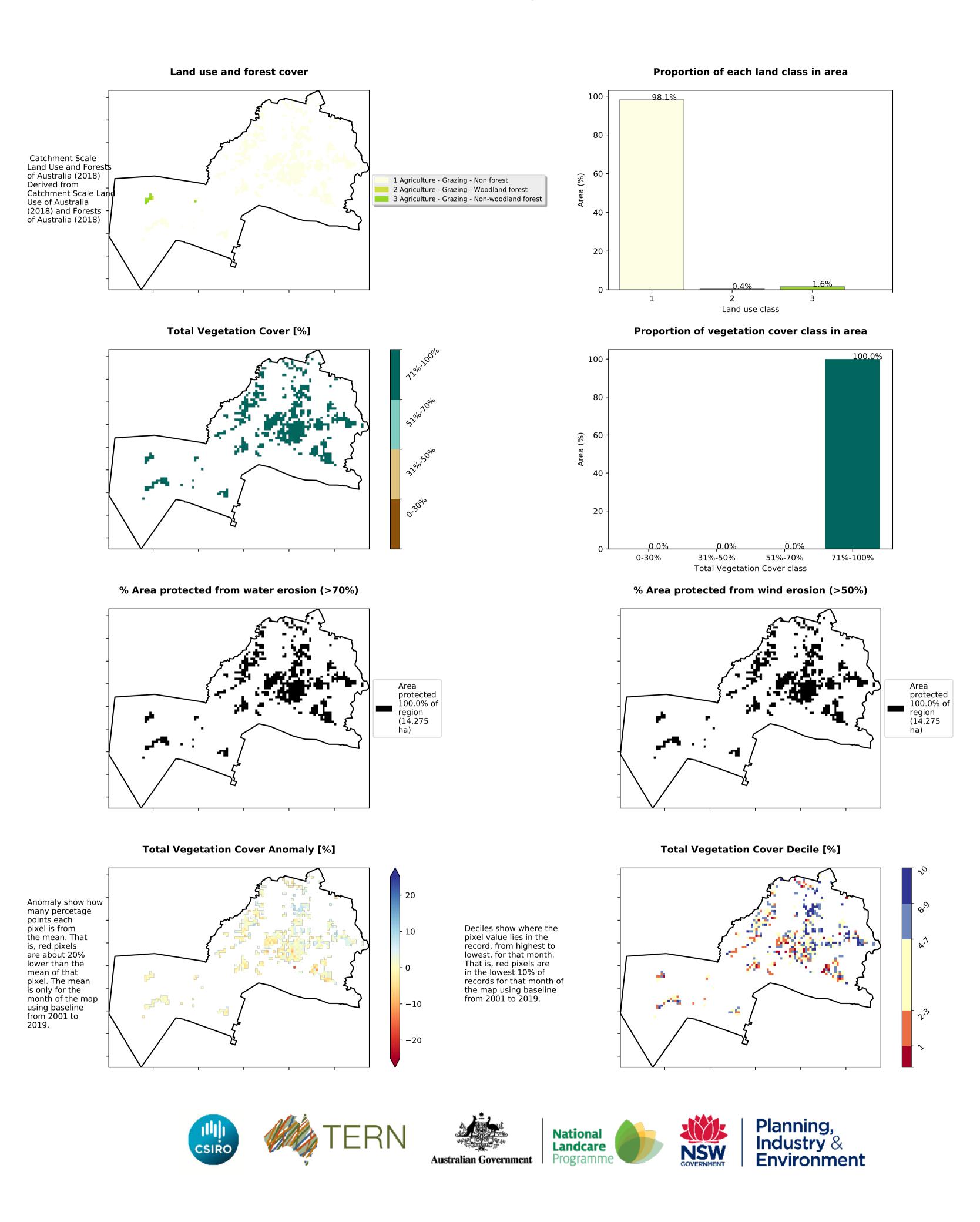
#### **Agriculture timeseries**



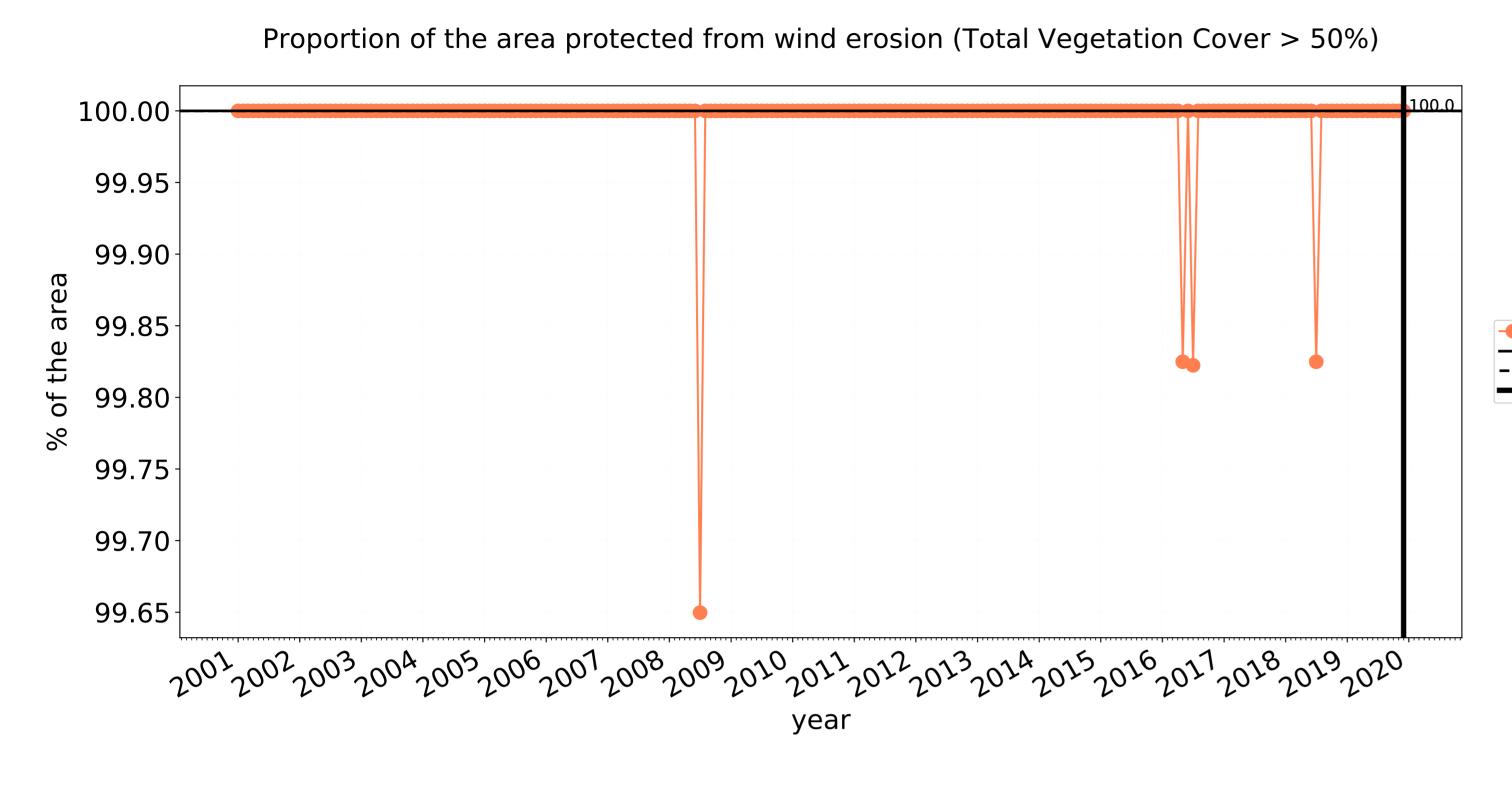


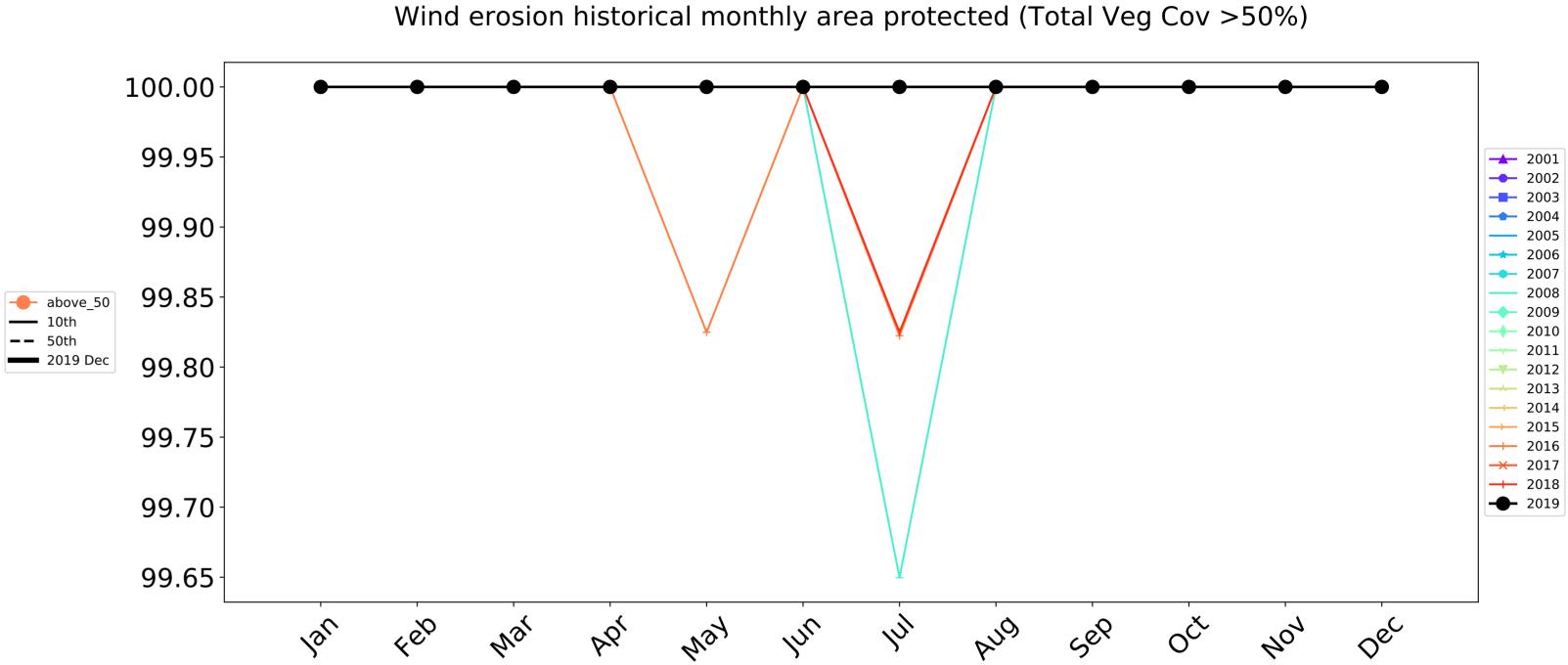


#### **Grazing**

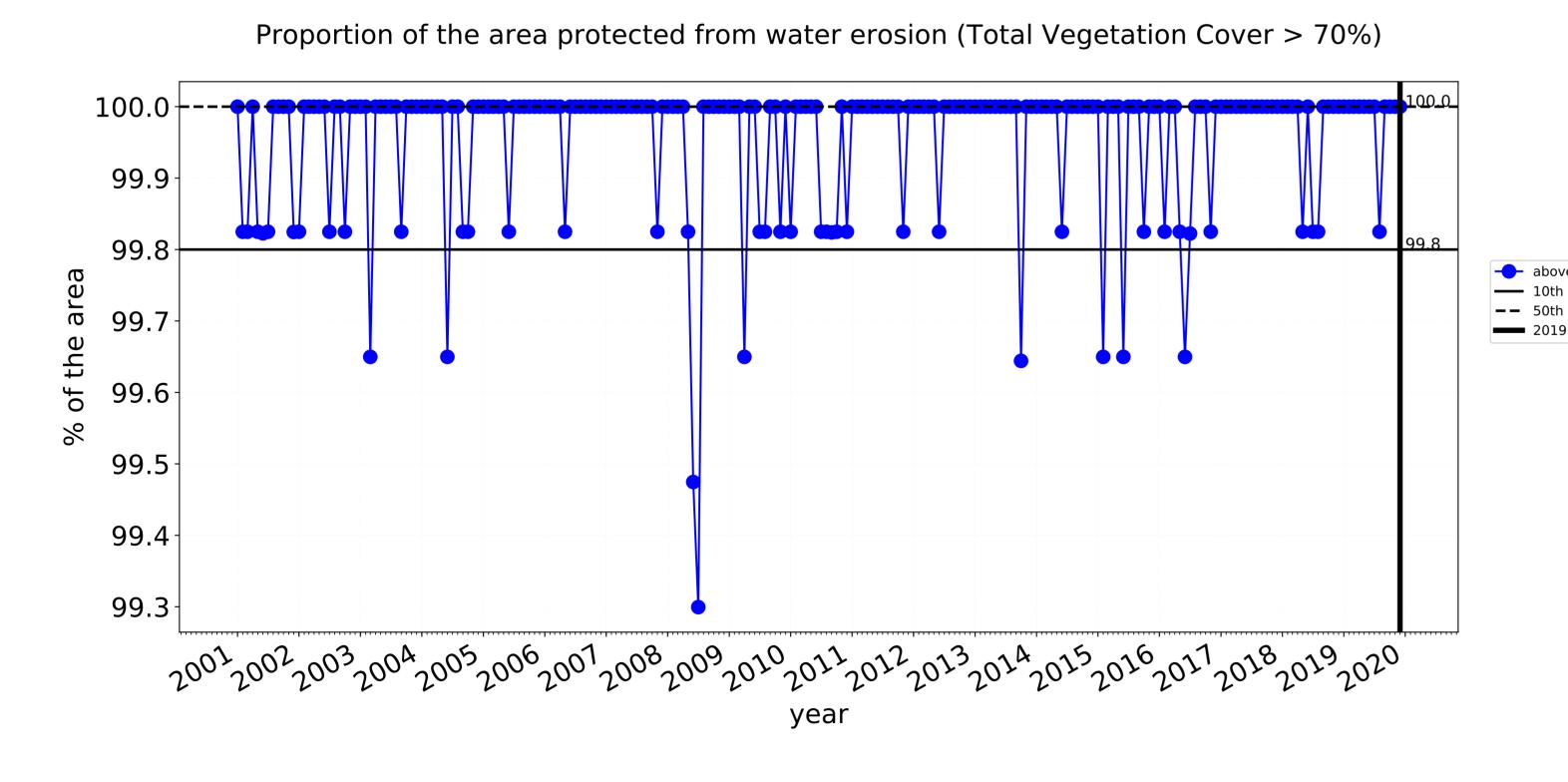


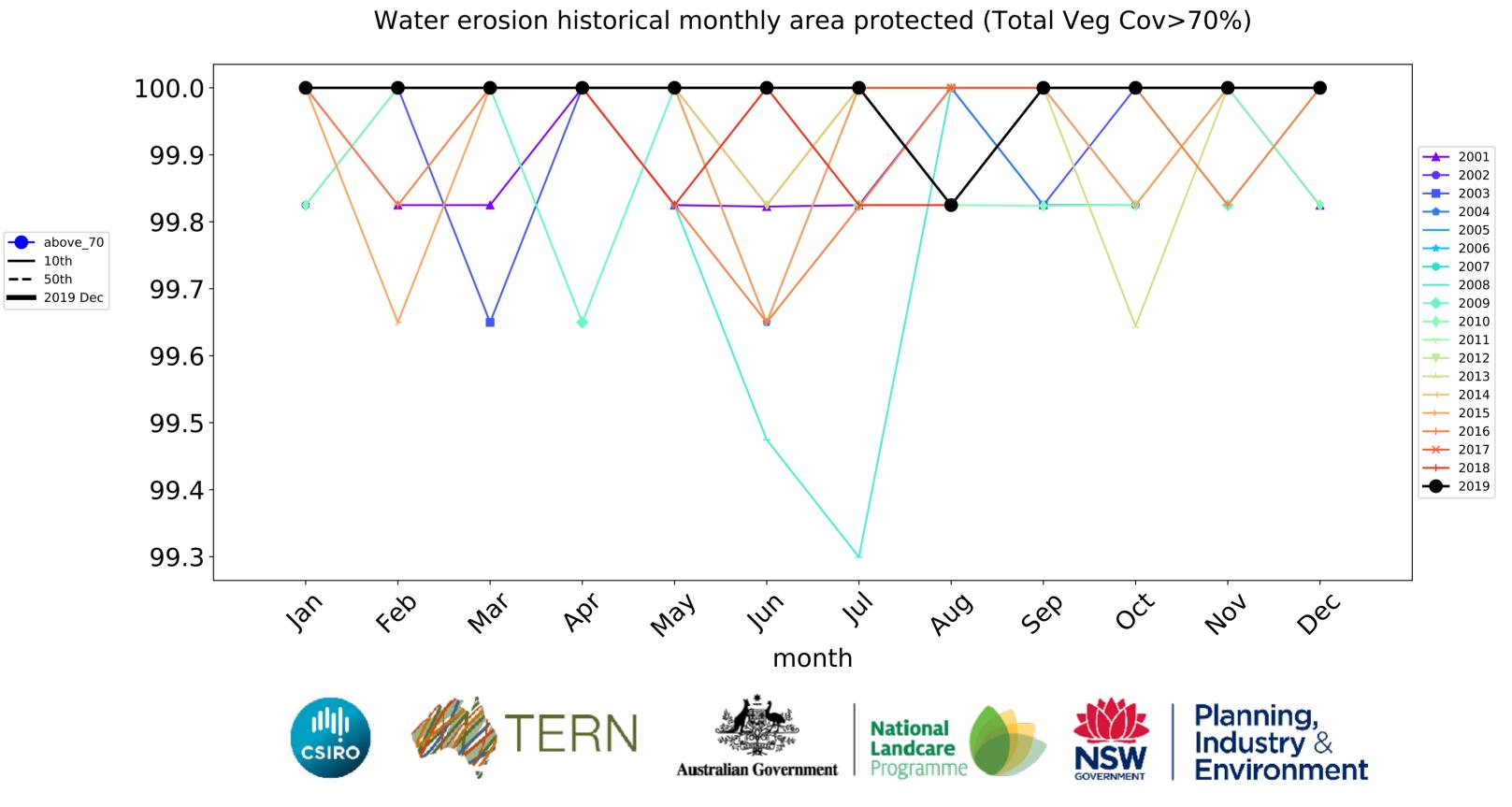
#### **Grazing timeseries**

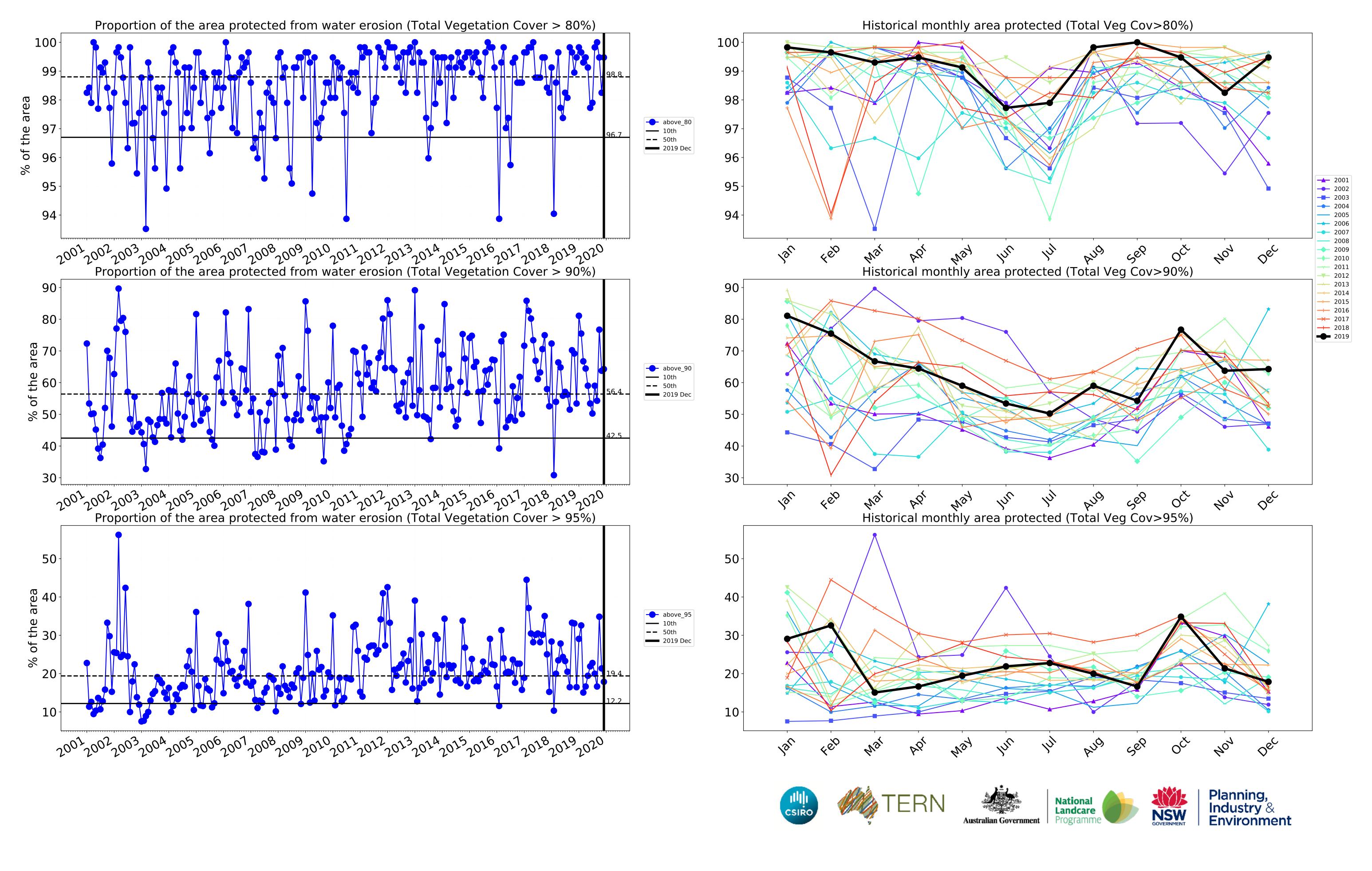




month

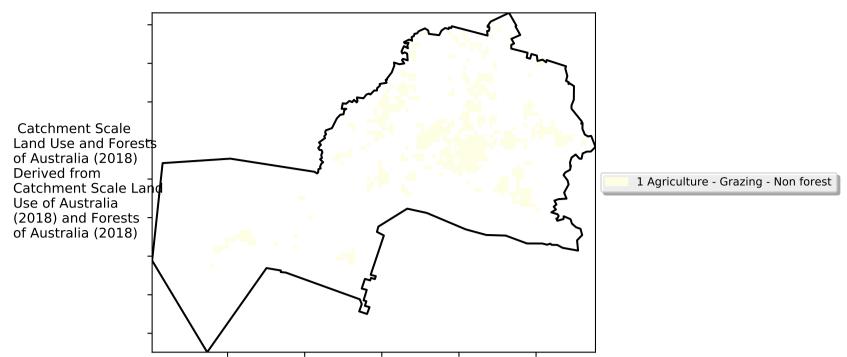




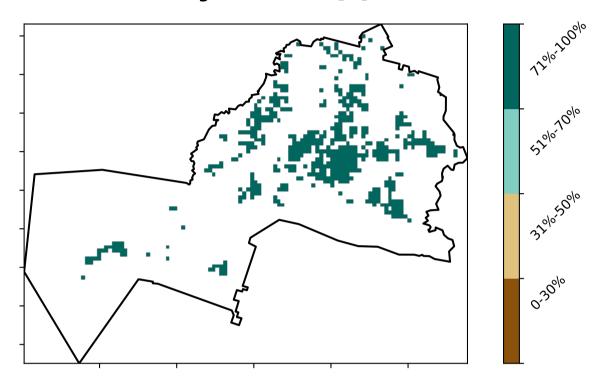


#### **Grazing non forest**

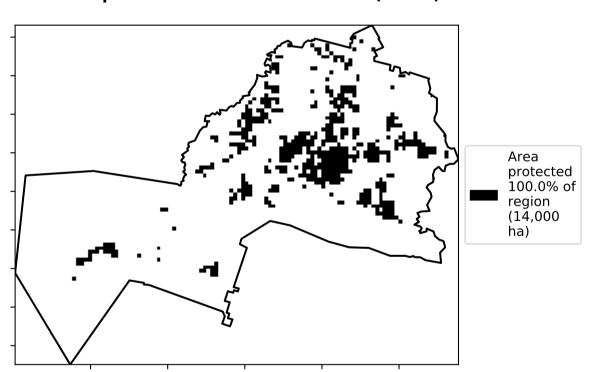
#### Land use and forest cover



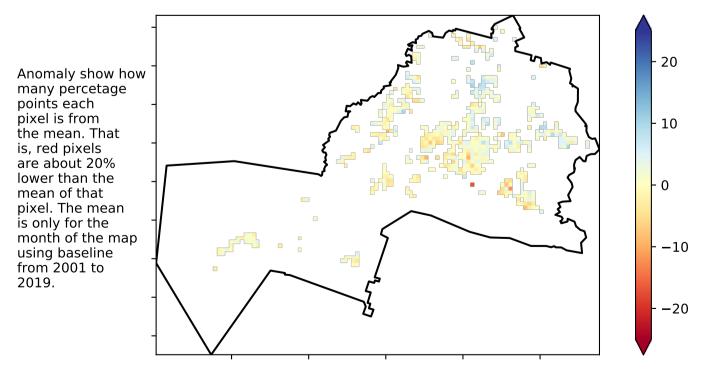
#### **Total Vegetation Cover [%]**



#### % Area protected from water erosion (>70%)

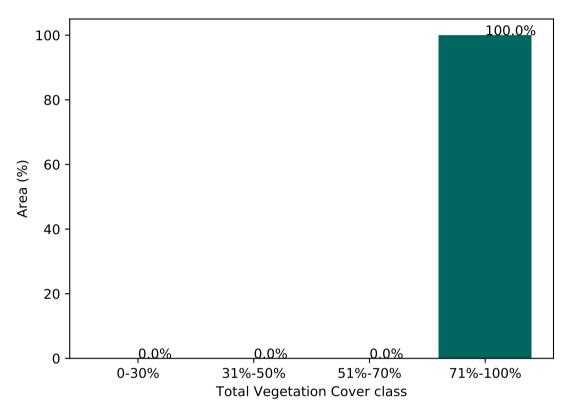


#### **Total Vegetation Cover Anomaly [%]**

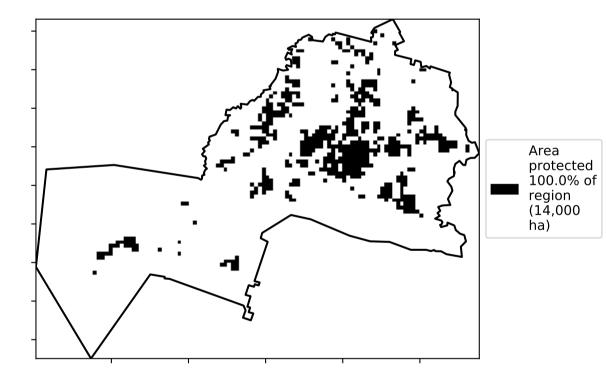


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

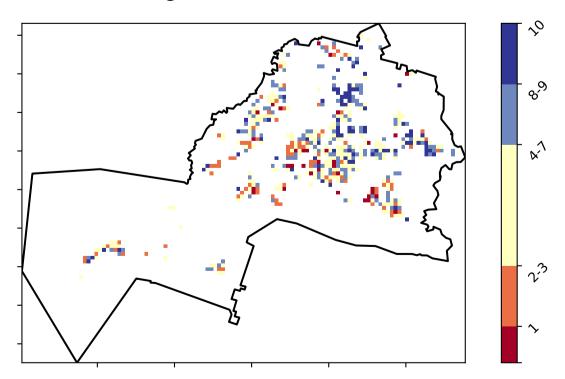
#### **Proportion of vegetation cover class in area**



#### % Area protected from wind erosion (>50%)



#### Total Vegetation Cover Decile [%]







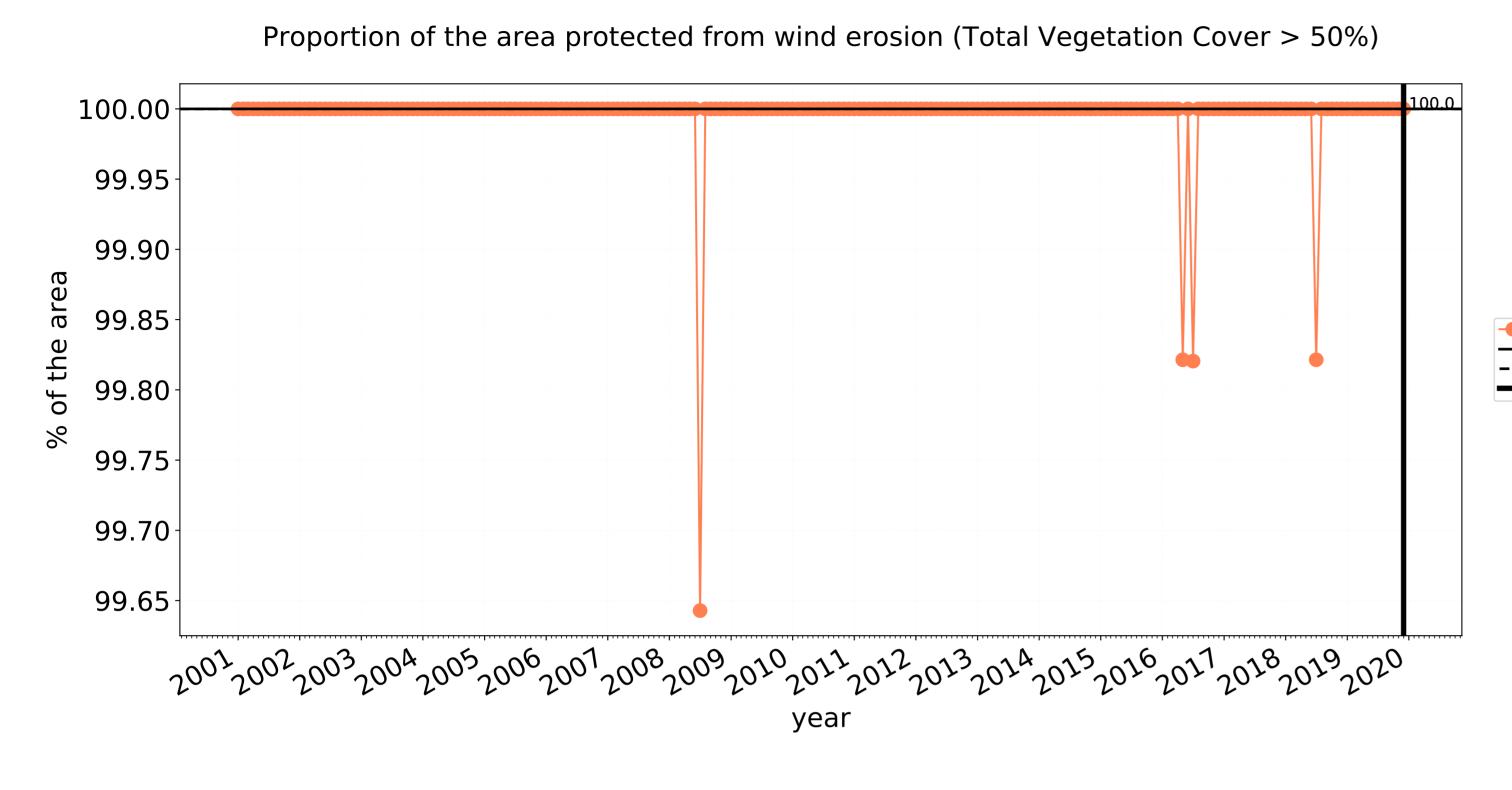


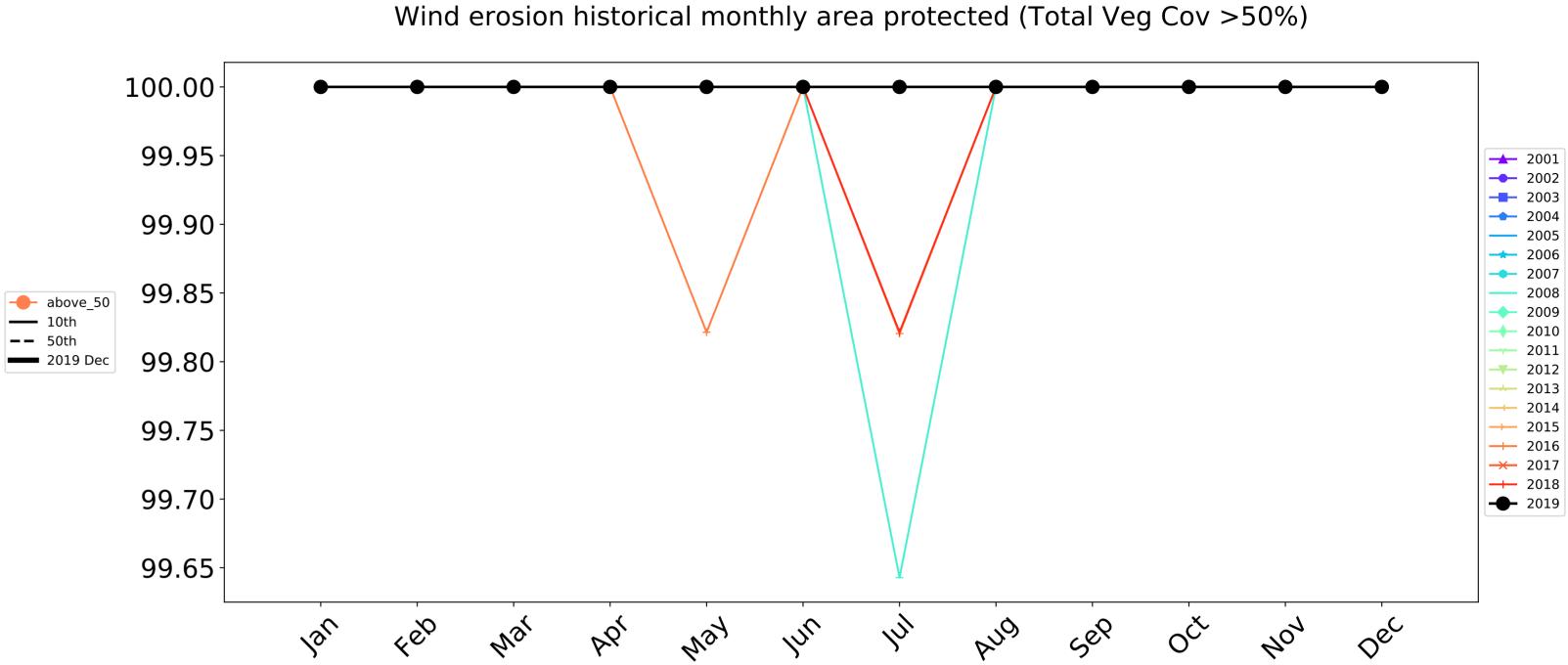




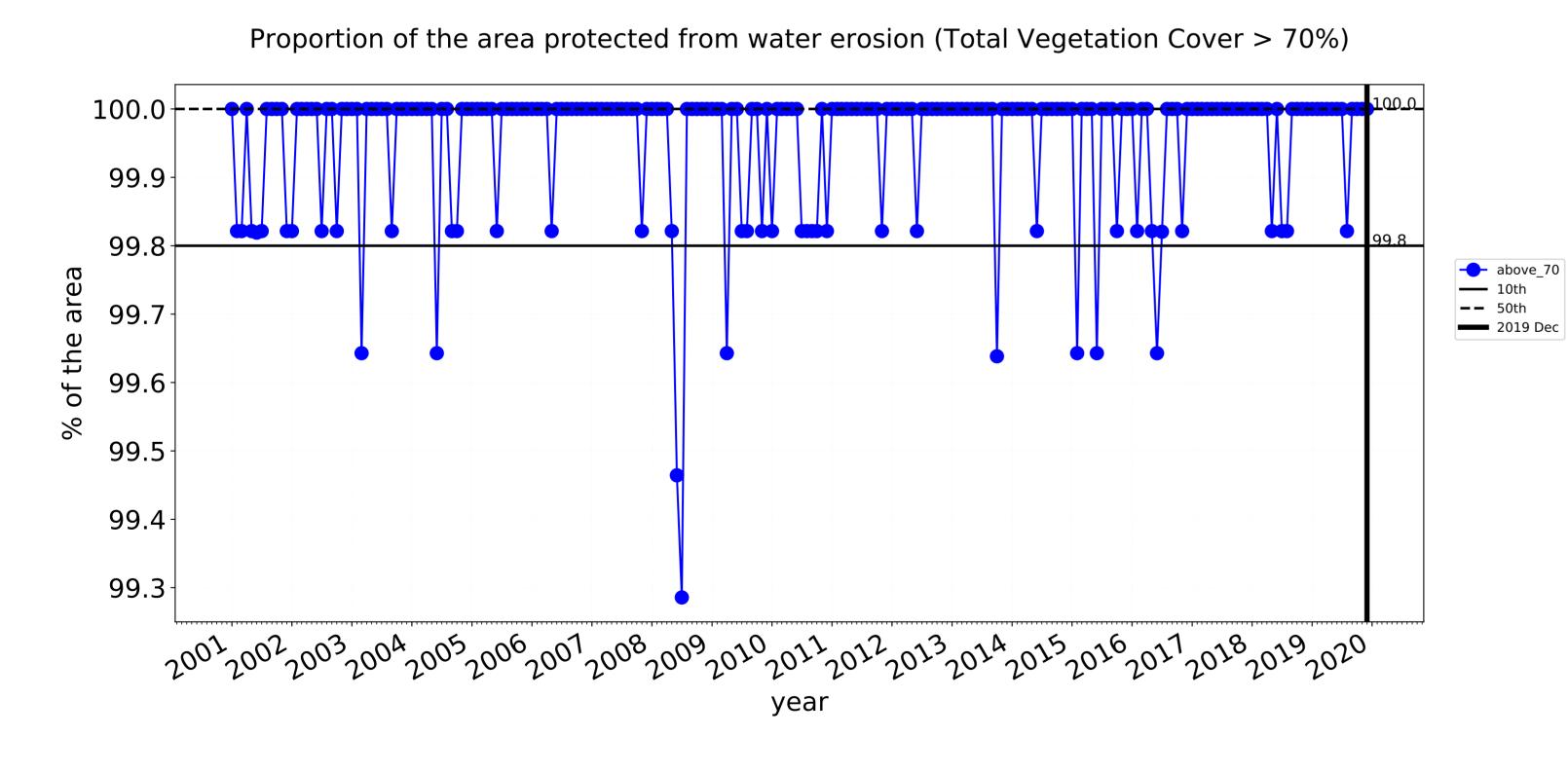


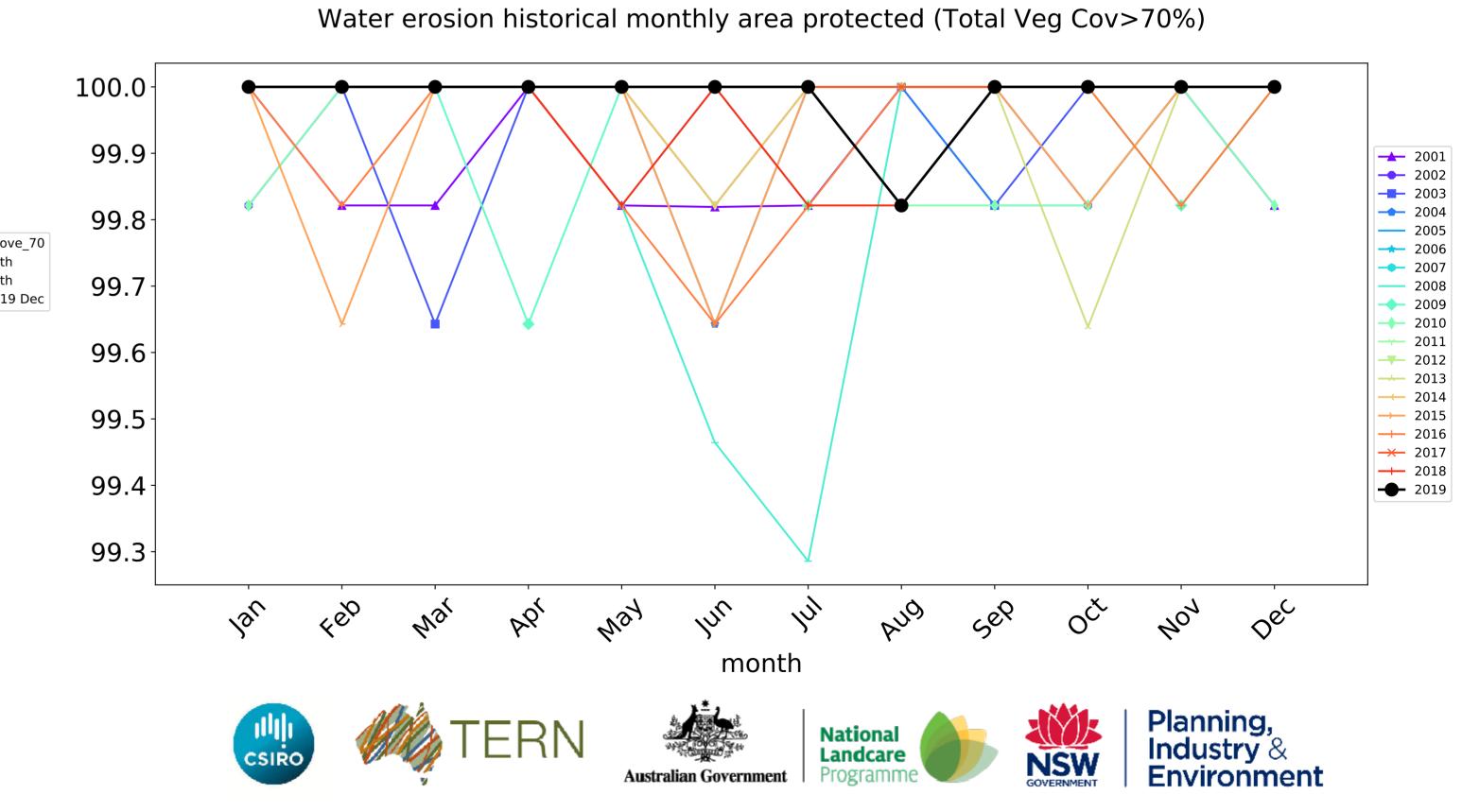
#### **Grazing non forest timeseries**

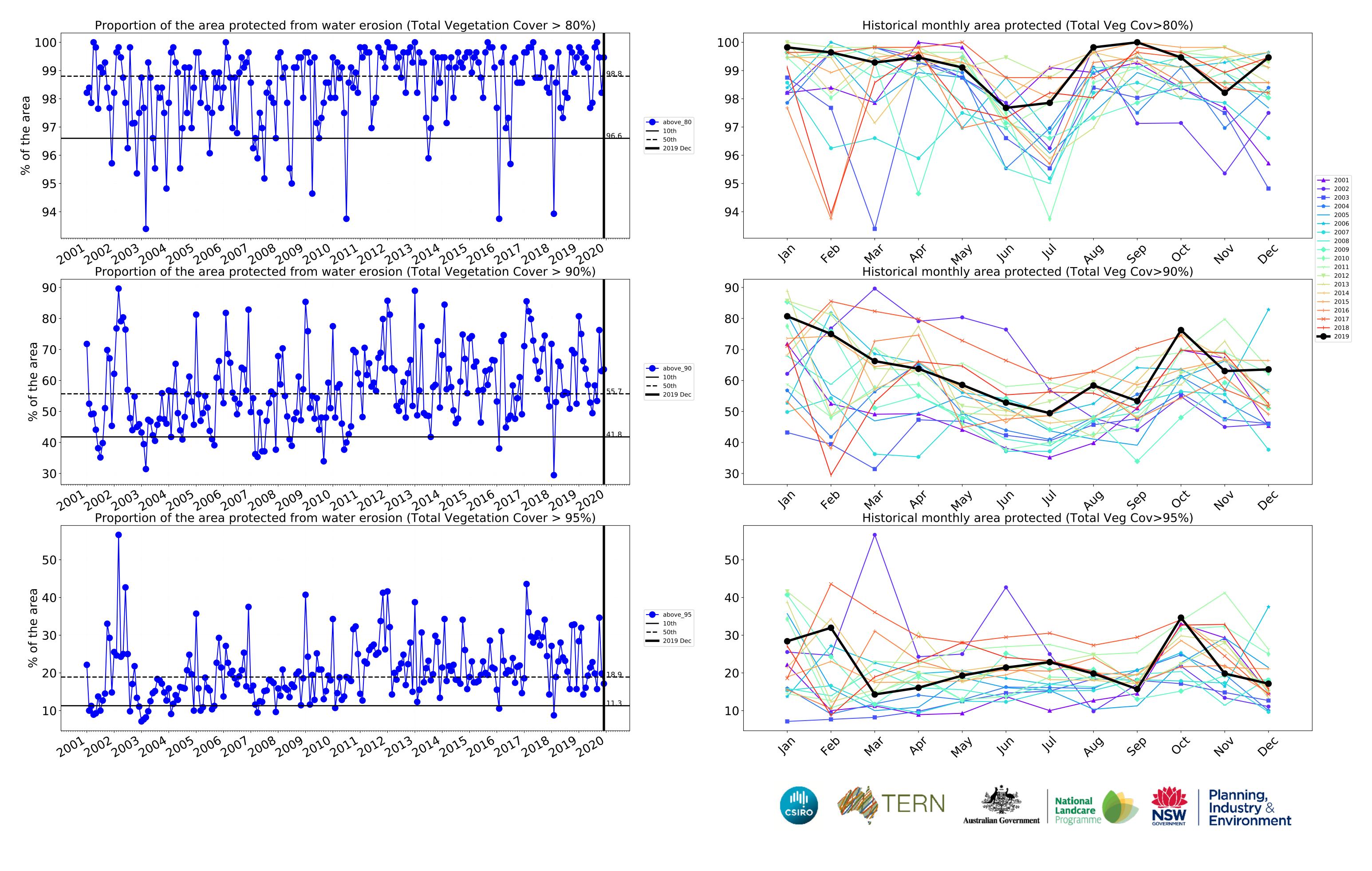




month

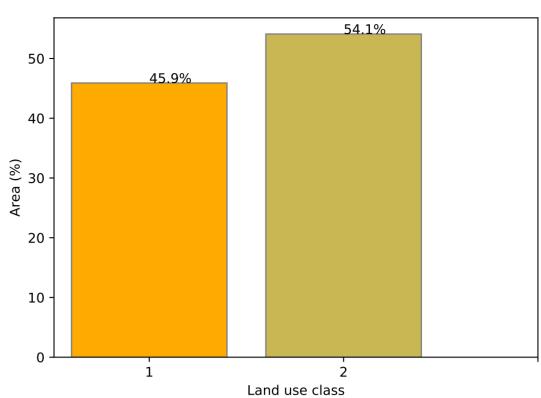




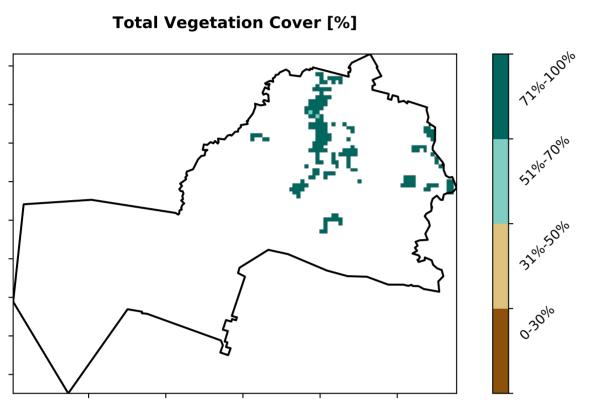


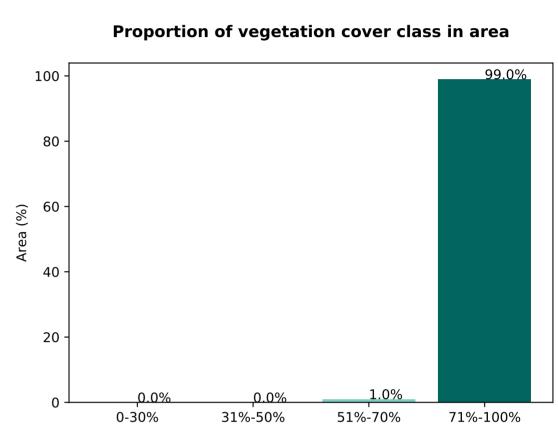
#### **Irrigation**

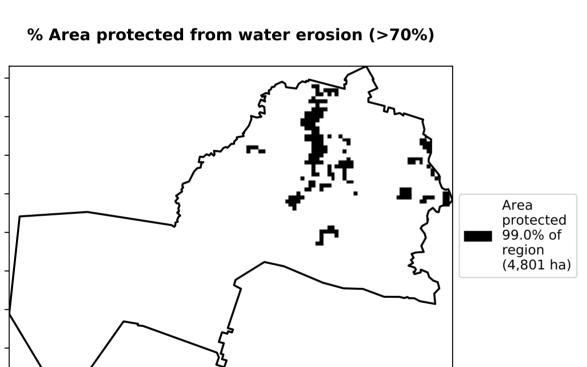
## Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) 1 Agriculture - Grazing - Irrigated 2 Agriculture - Cropping - Irrigated



Proportion of each land class in area



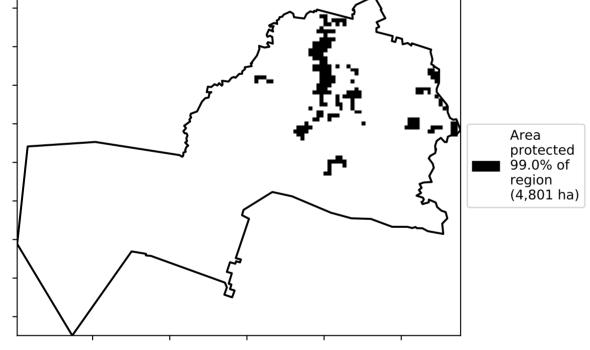


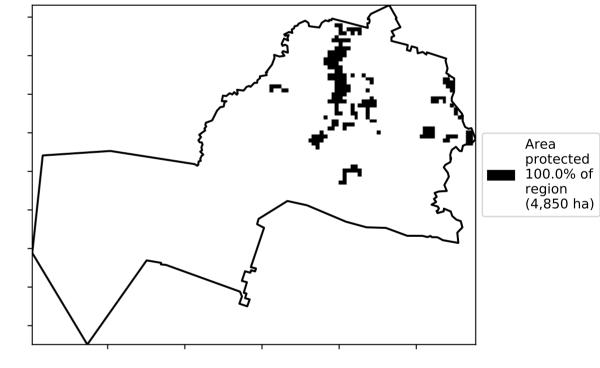


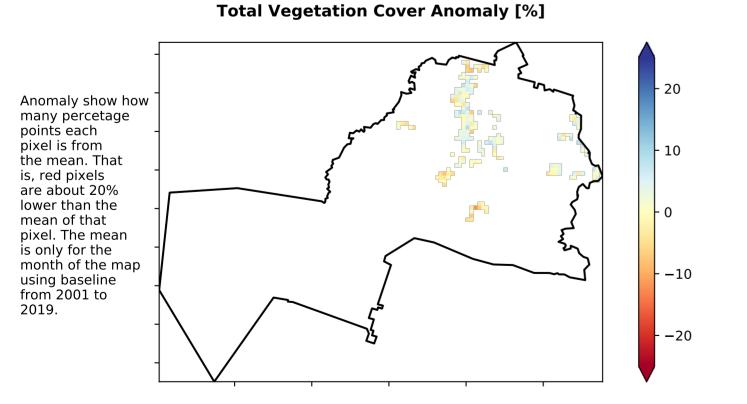


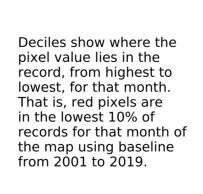
**Total Vegetation Cover class** 

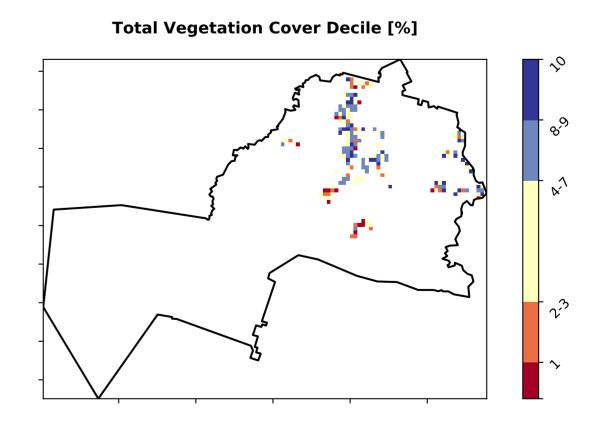
% Area protected from wind erosion (>50%)















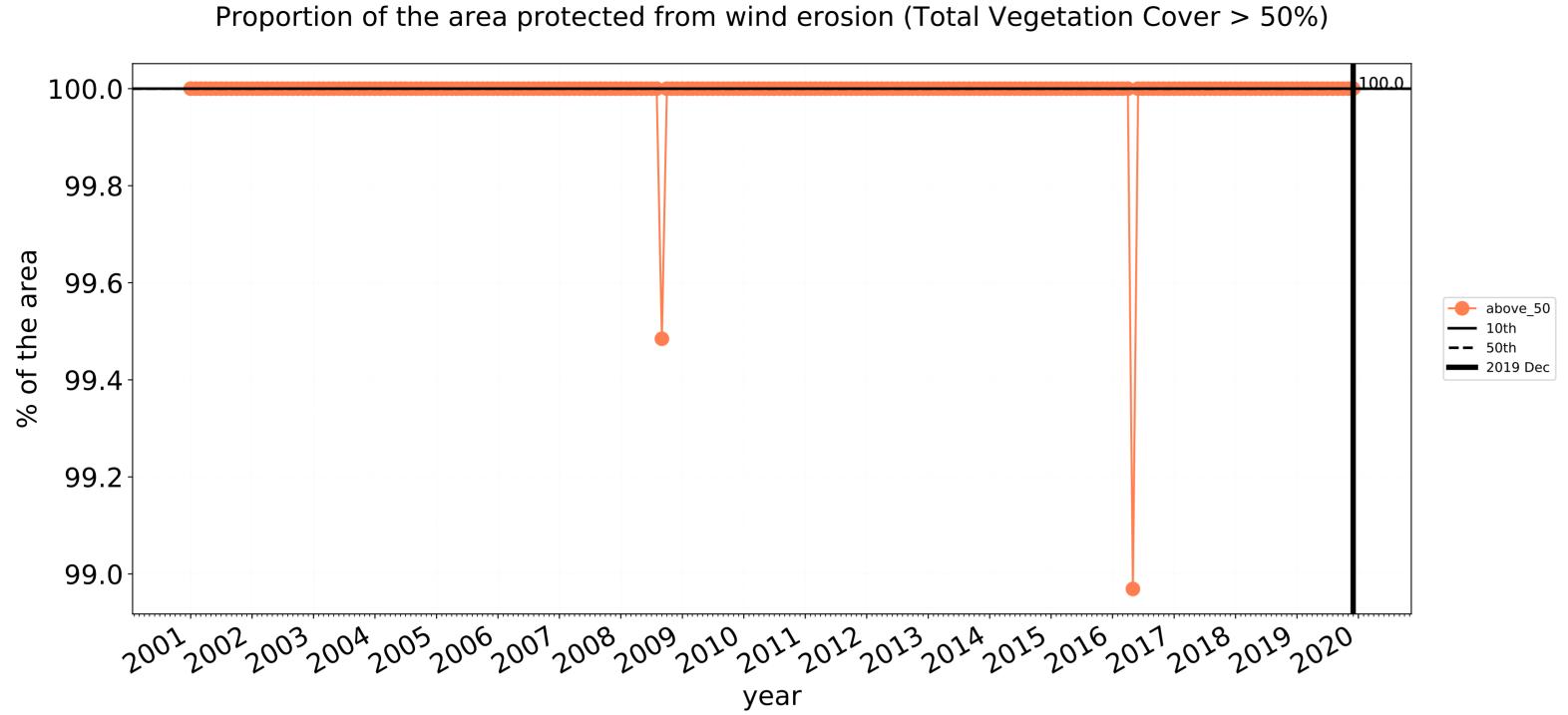


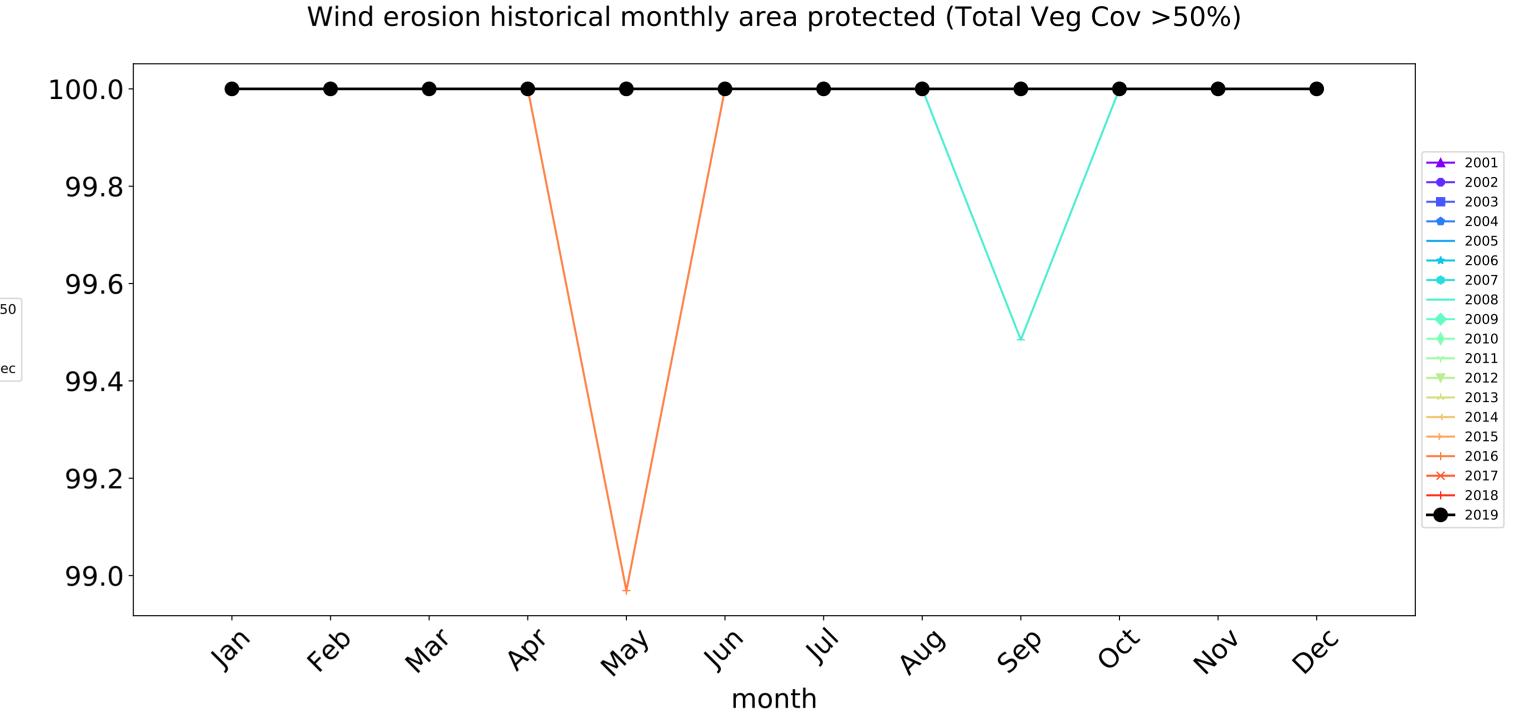


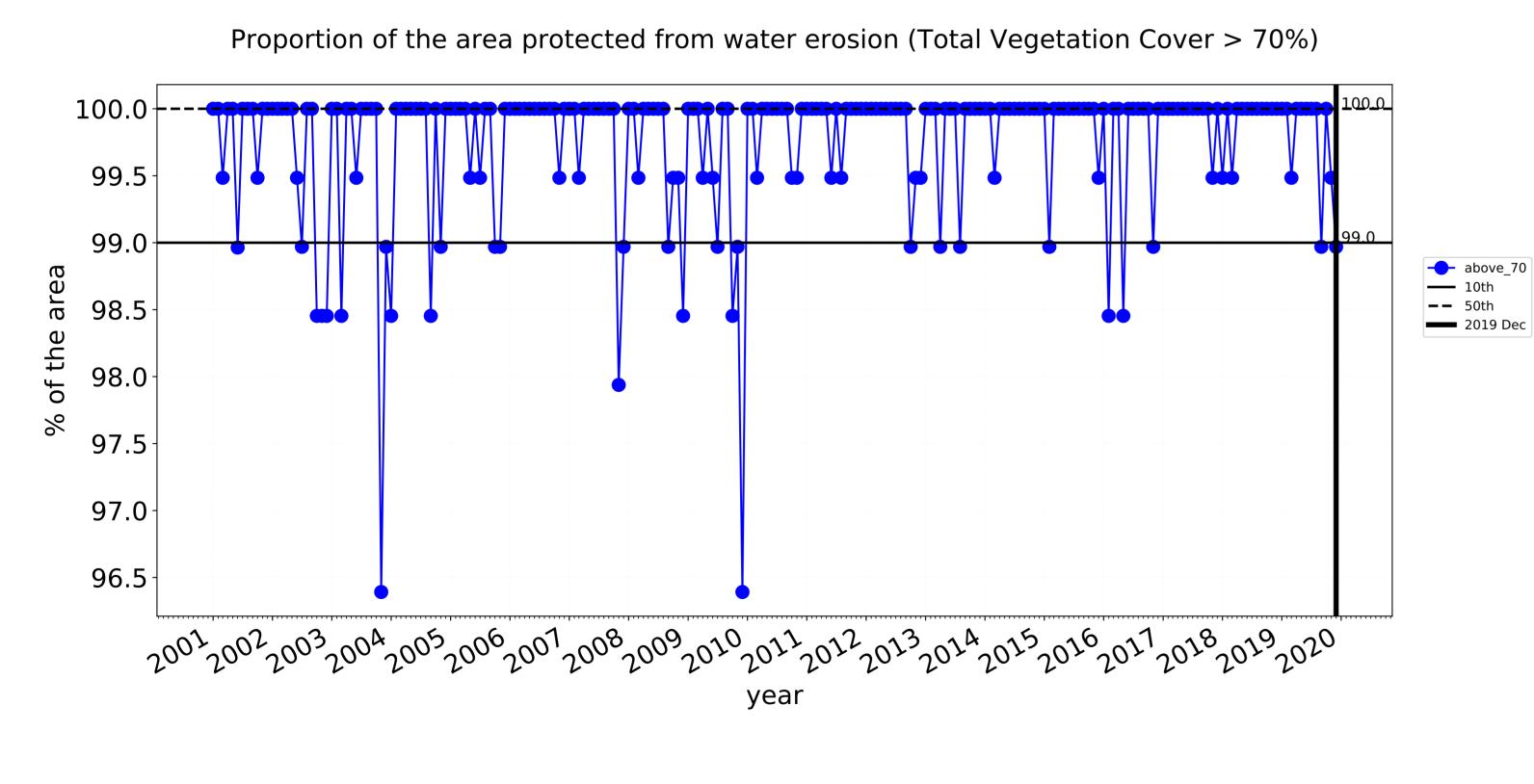


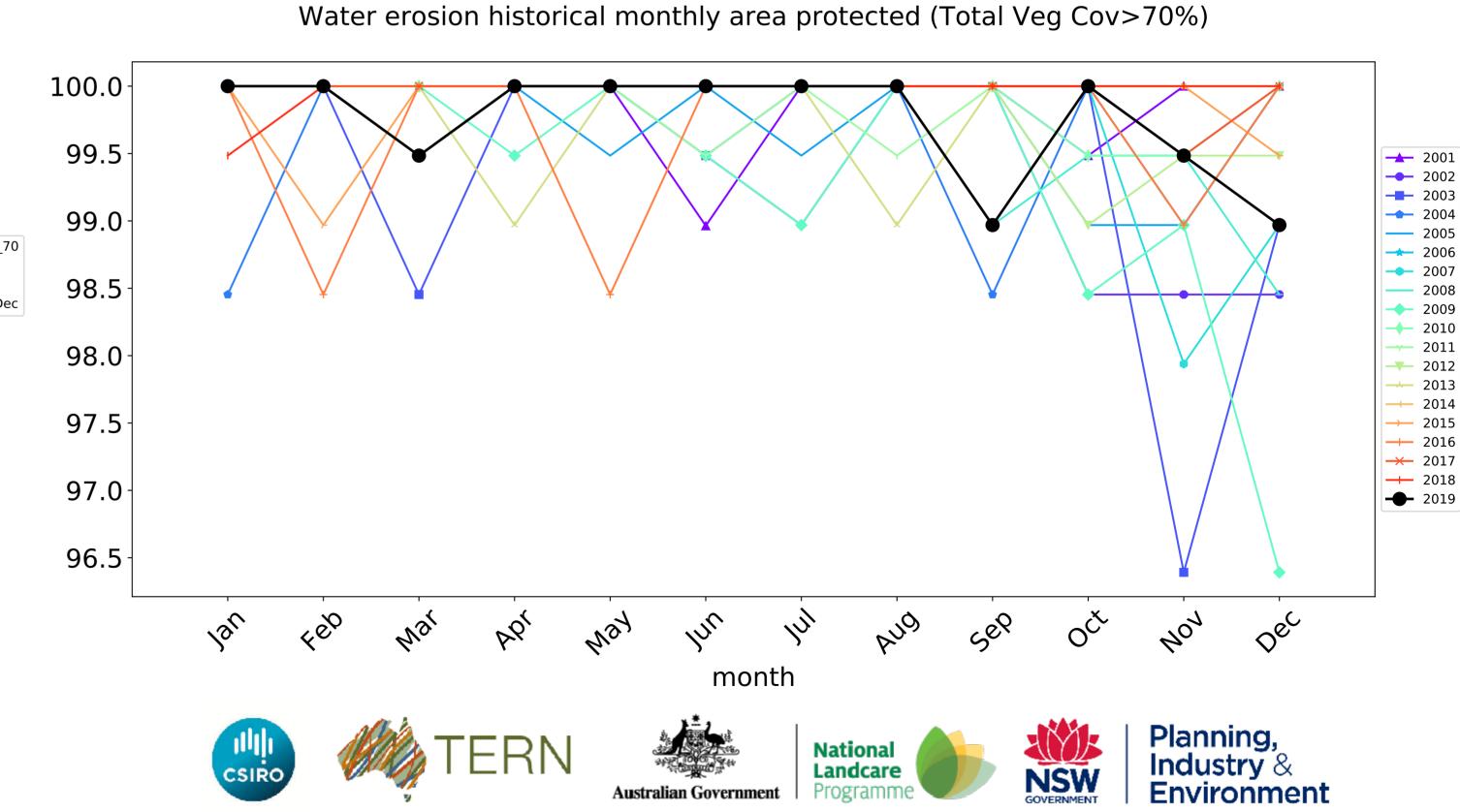


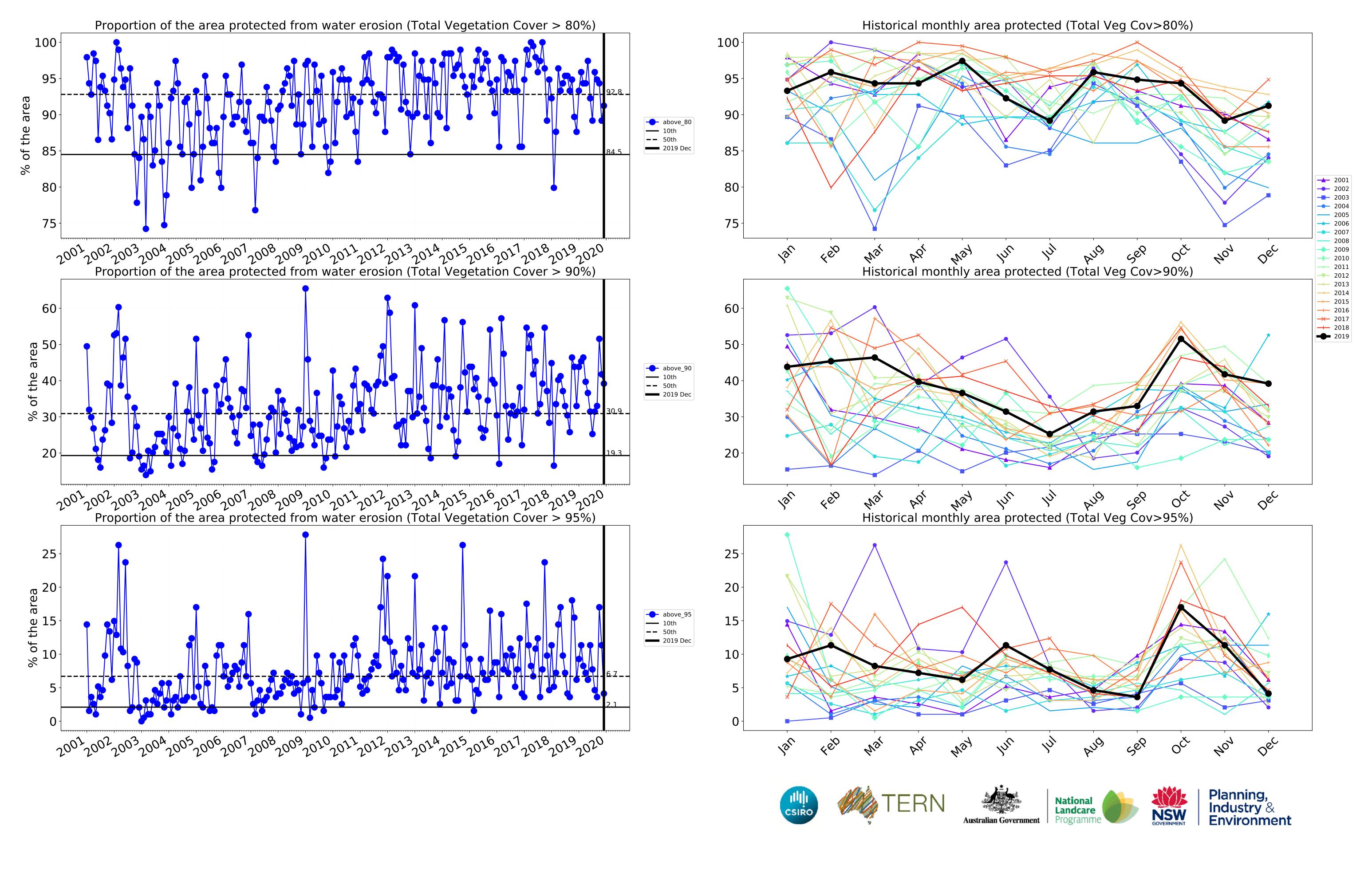
#### **Irrigation timeseries**





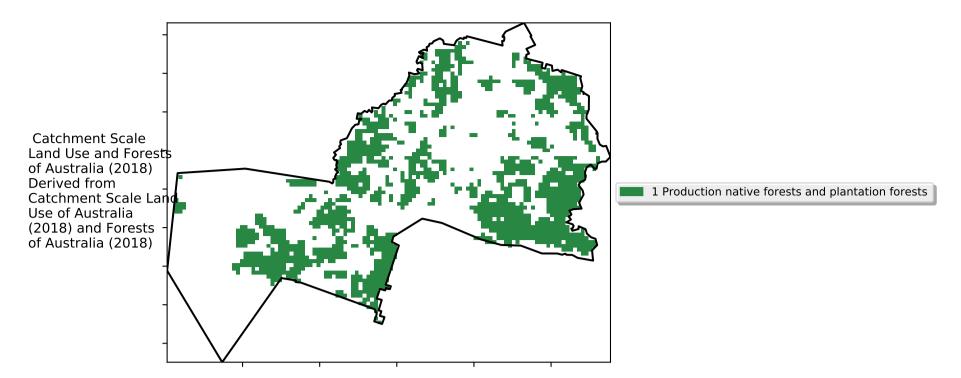




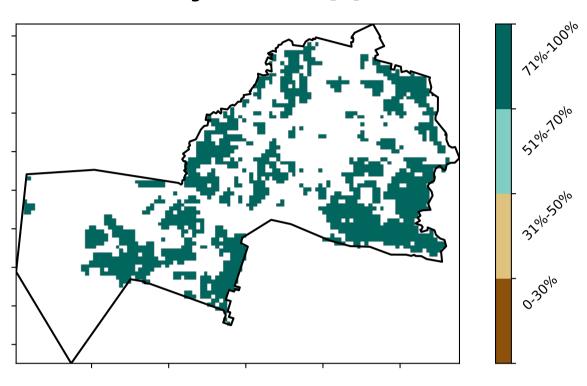


#### **Production native forests and plantation forests**

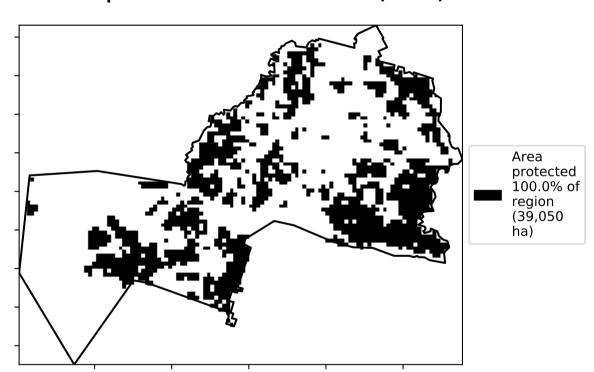
#### Land use and forest cover



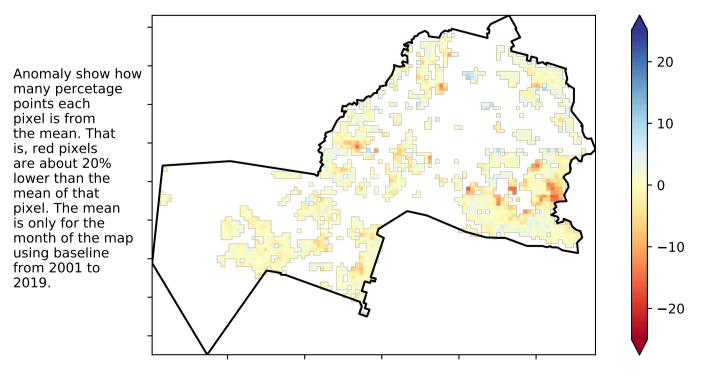
#### **Total Vegetation Cover [%]**



#### % Area protected from water erosion (>70%)

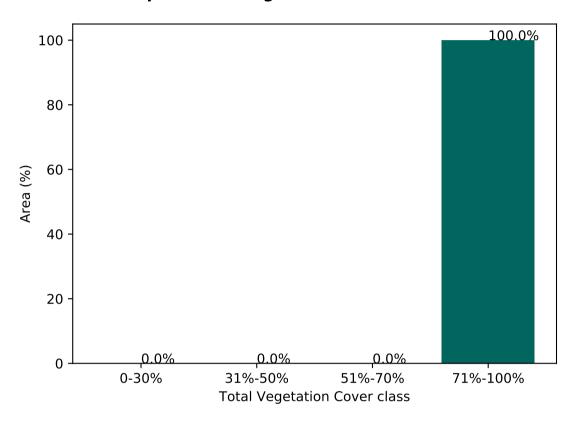


**Total Vegetation Cover Anomaly [%]** 

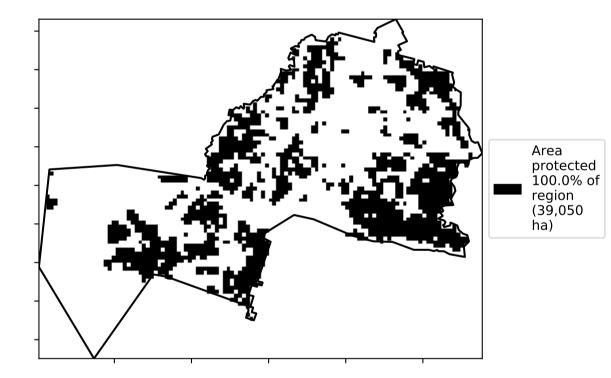


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

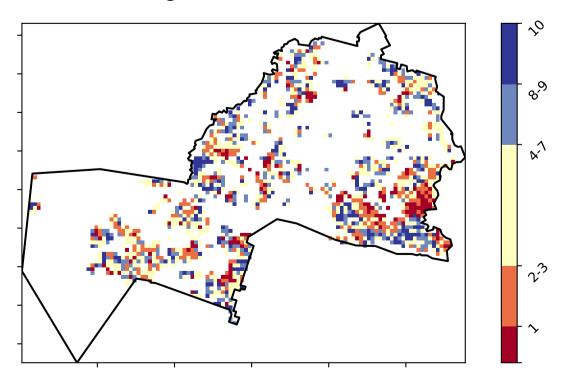
#### Proportion of vegetation cover class in area



#### % Area protected from wind erosion (>50%)



#### Total Vegetation Cover Decile [%]







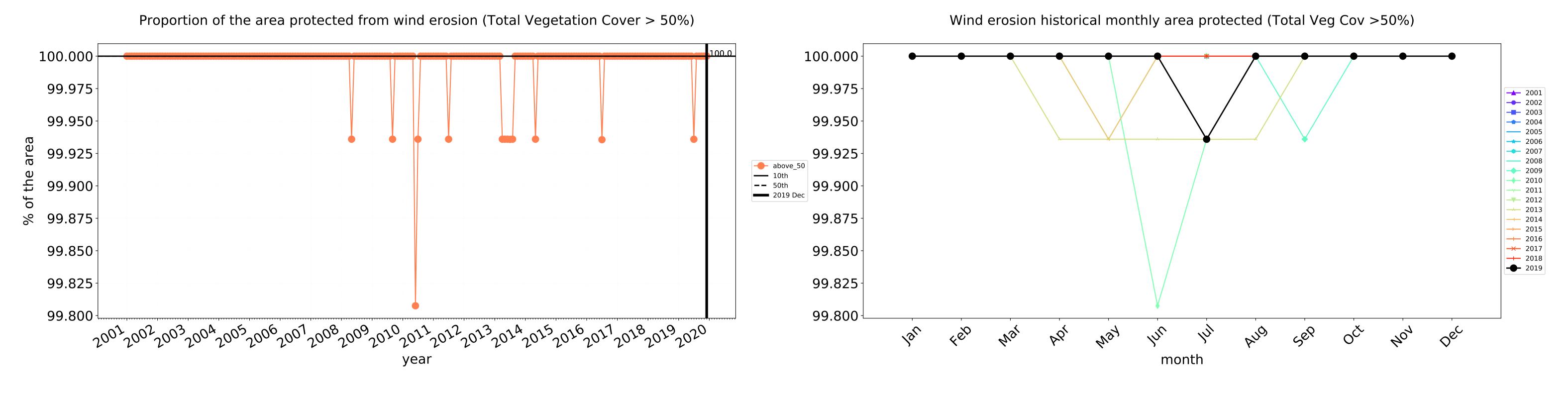


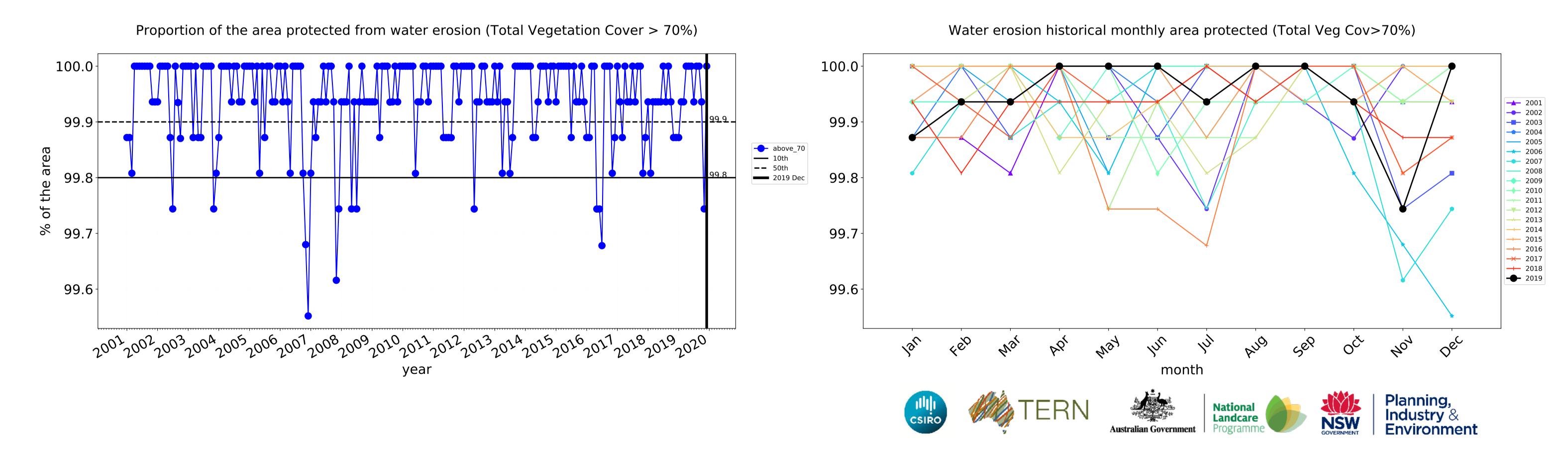


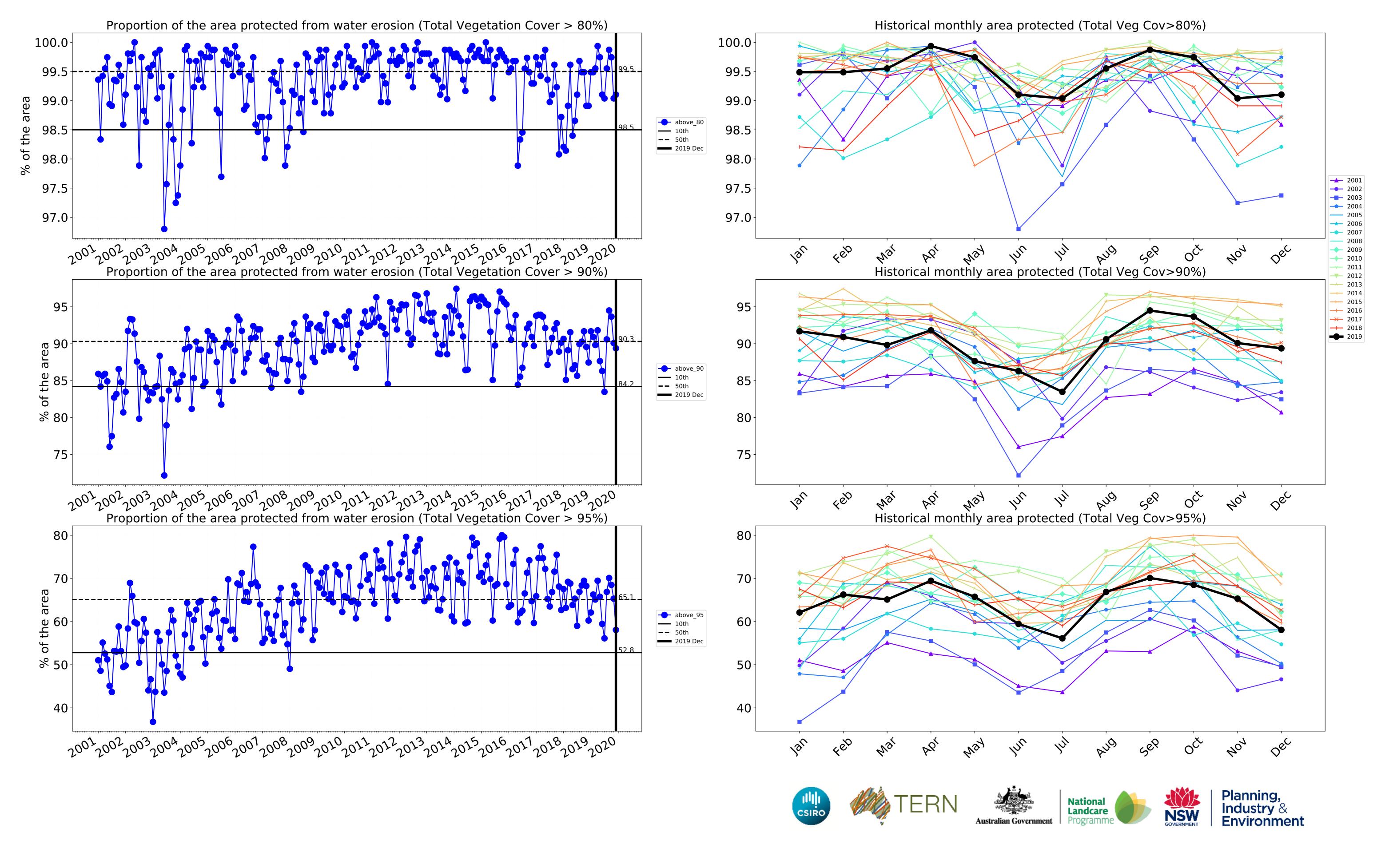




#### **Production native forests and plantation forests timeseries**







### Kentish\_(M) (115,650 ha and no data 21 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	115,650	100.0% 115,650	100.0% 115,650	99.9% 115,575	99.0% 114,500	85.6% 99,000	50.3% 58,225
Conservation and natural environments	48,375	100.0% 48,375	100.0% 48,375	100.0% 48,375	99.9% 48,325	96.1% 46,475	62.5% 30,250
Conservation and natural environments non forest	17,150	100.0% 17,150	100.0% 17,150	100.0% 17,150	99.7% 17,100	94.6% 16,225	63.3% 10,850
Conservation and natural environments Woodland forest	9,375	100.0% 9,375	100.0% 9,375	100.0% 9,375	100.0% 9,375	95.2% 8,925	55.2% 5,175
Conservation and natural environments Forest (non woodland)	21,850	100.0% 21,850	100.0% 21,850	100.0% 21,850	100.0% 21,850	97.6% 21,325	65.1% 14,225
Agriculture	19,400	100.0% 19,400	100.0% 19,400	99.7% 19,350	97.4% 18,900	58.0% 11,250	14.3% 2,775
Grazing	14,275	100.0% 14,275	100.0% 14,275	100.0% 14,275	99.5% 14,200	64.3% 9,175	17.9% 2,550
Grazing non forest	14,000	100.0% 14,000	100.0% 14,000	100.0% 14,000	99.5% 13,925	63.6% 8,900	17.1% 2,400
Irrigation	4,850	100.0% 4,850	100.0% 4,850	99.0% 4,800	91.2% 4,425	39.2% 1,900	4.1% 200
Production native forests and plantation forests	39,050	100.0% 39,050	100.0% 39,050	100.0% 39,050	99.1% 38,700	89.4% 34,900	58.1% 22,675











