### Total vegetation cover soil protection Region:LGA Yankalilla\_(DC) SA

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: March 2021

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



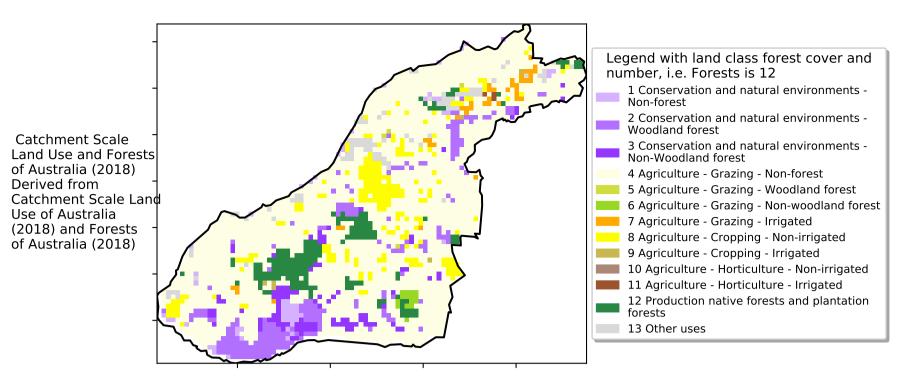




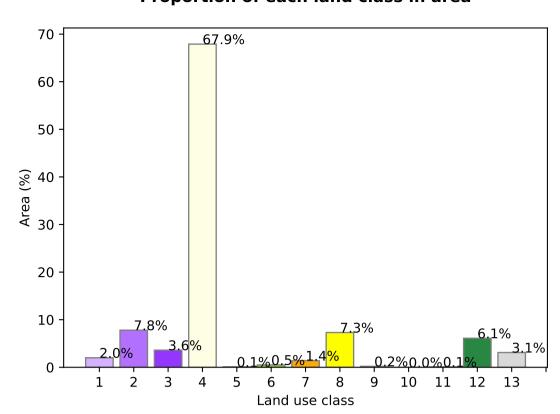


### **Vegetation Cover Mar 2021**

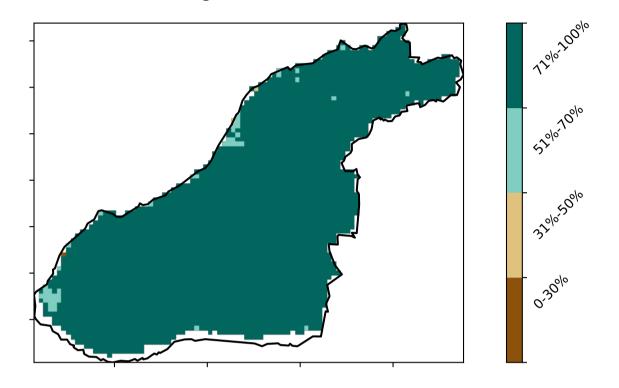
### Land use and forest cover



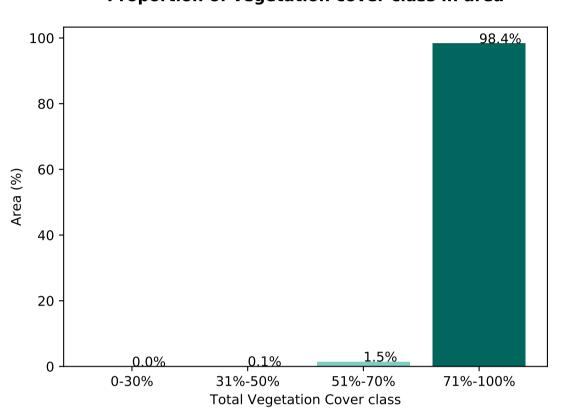
### Proportion of each land class in area

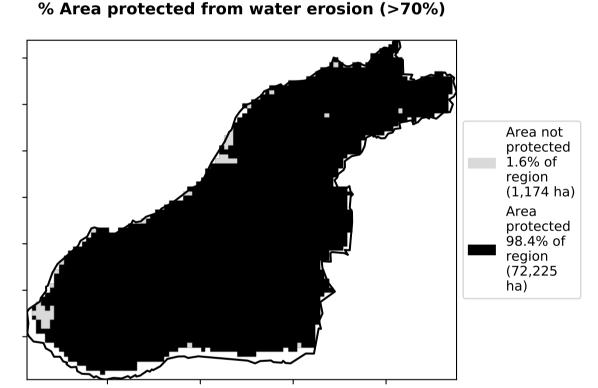


### **Total Vegetation Cover [%]**



Proportion of vegetation cover class in area





% Area protected from wind erosion (>50%)

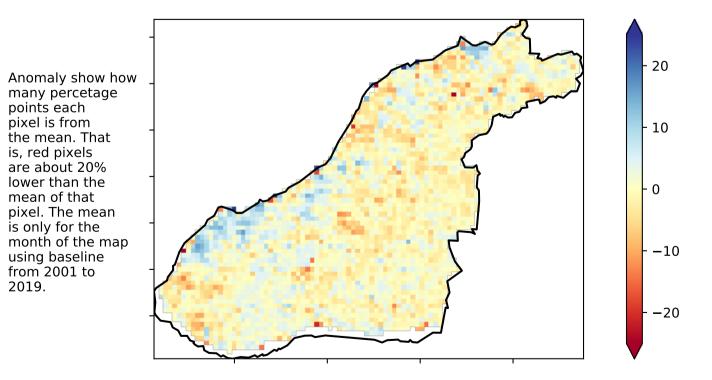


### **Total Vegetation Cover Anomaly [%]**

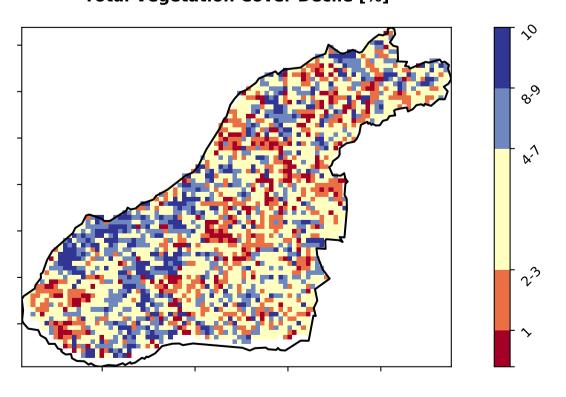
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Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

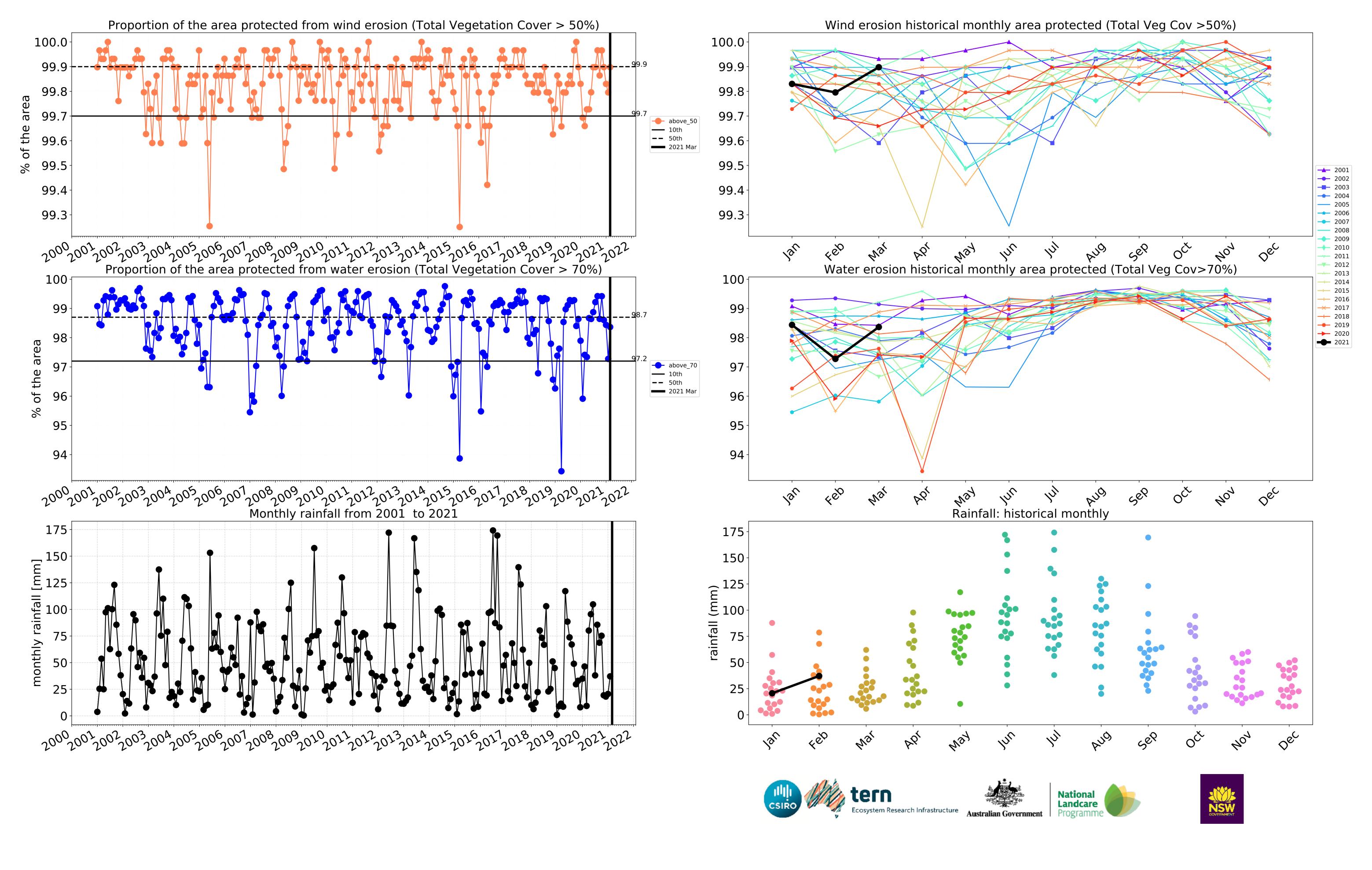


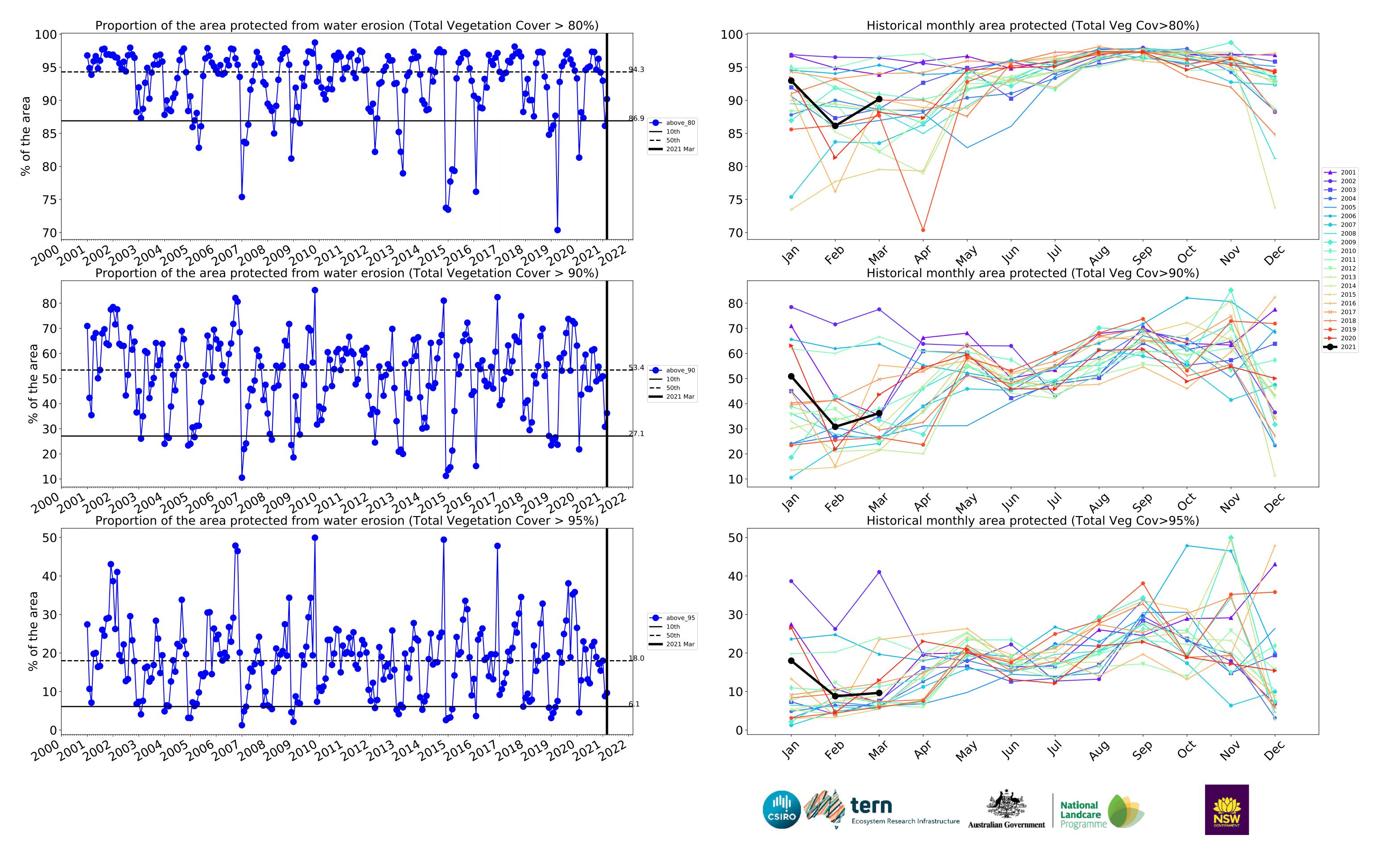




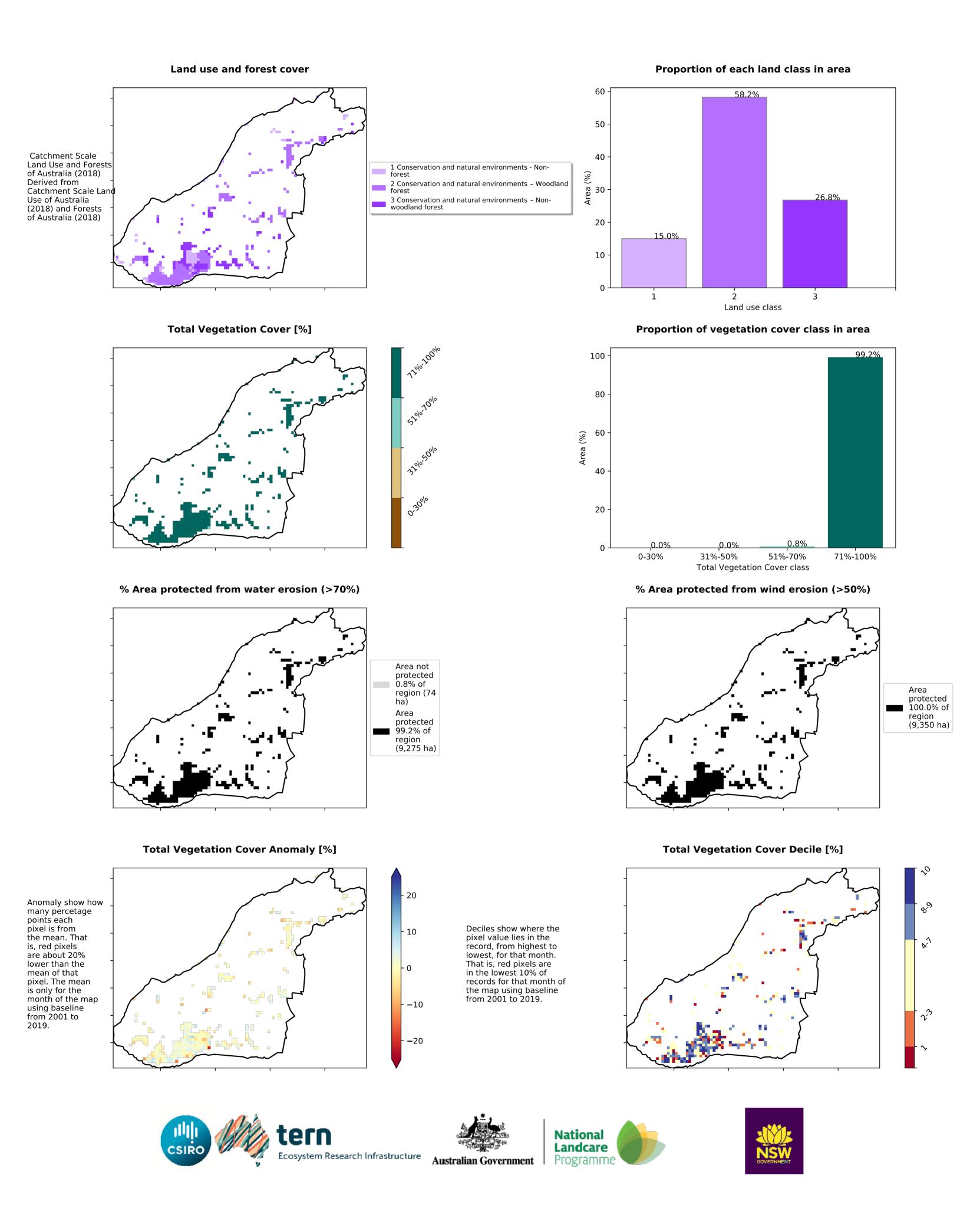




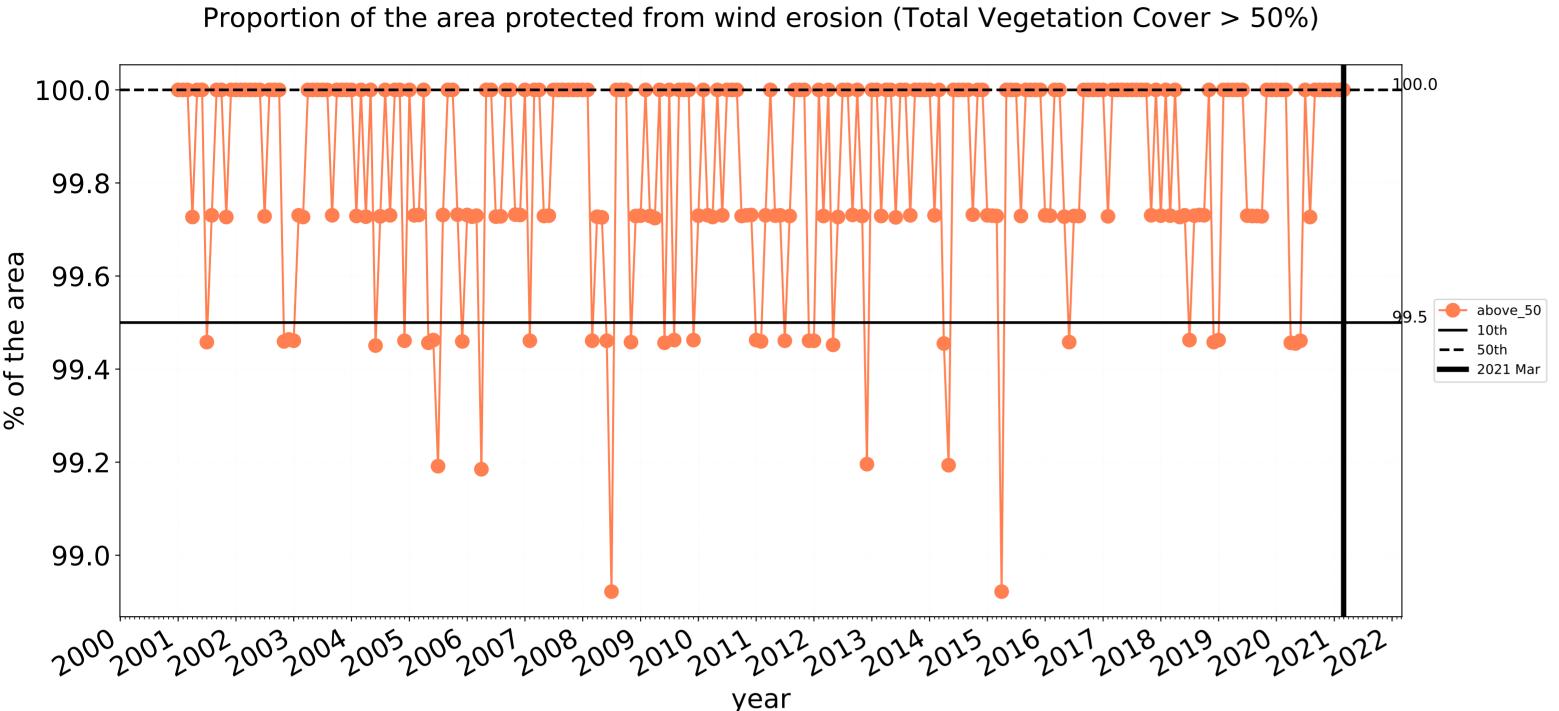


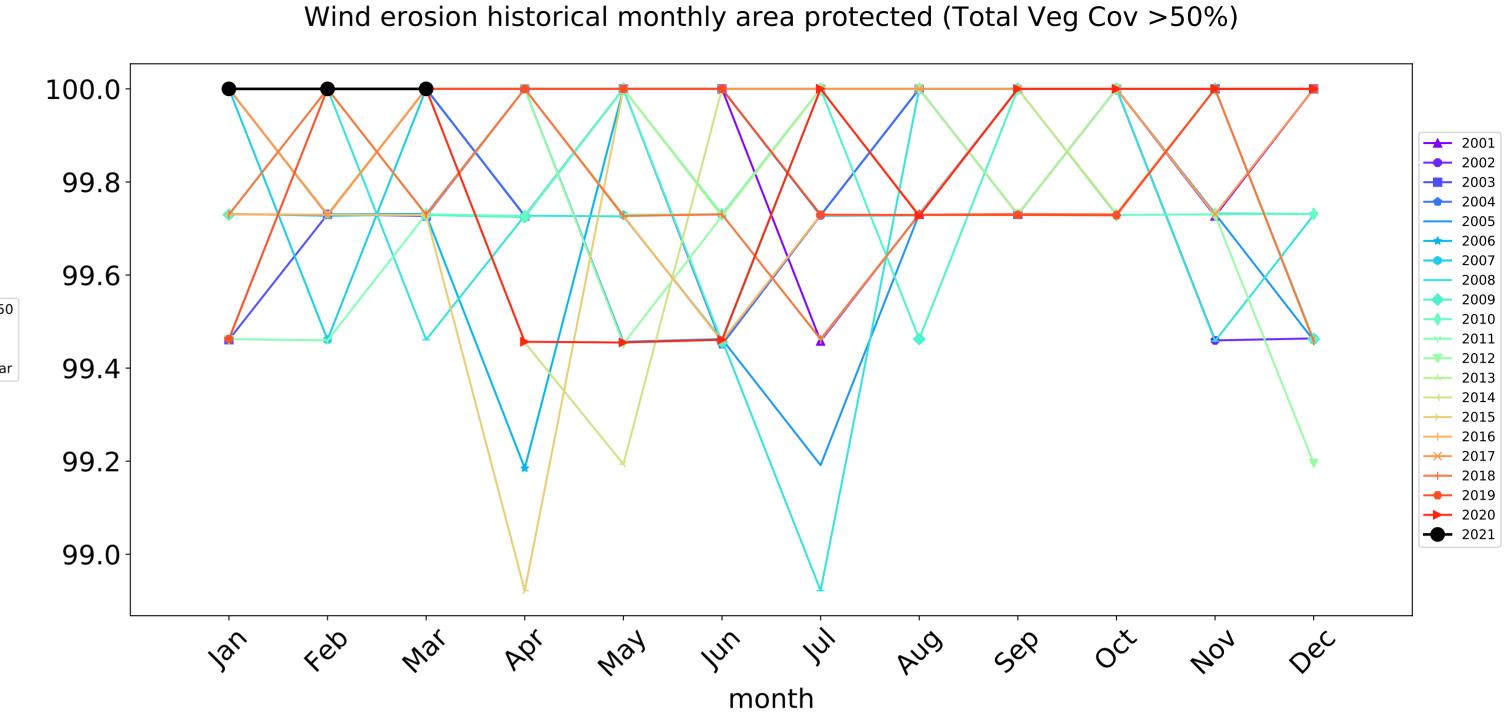


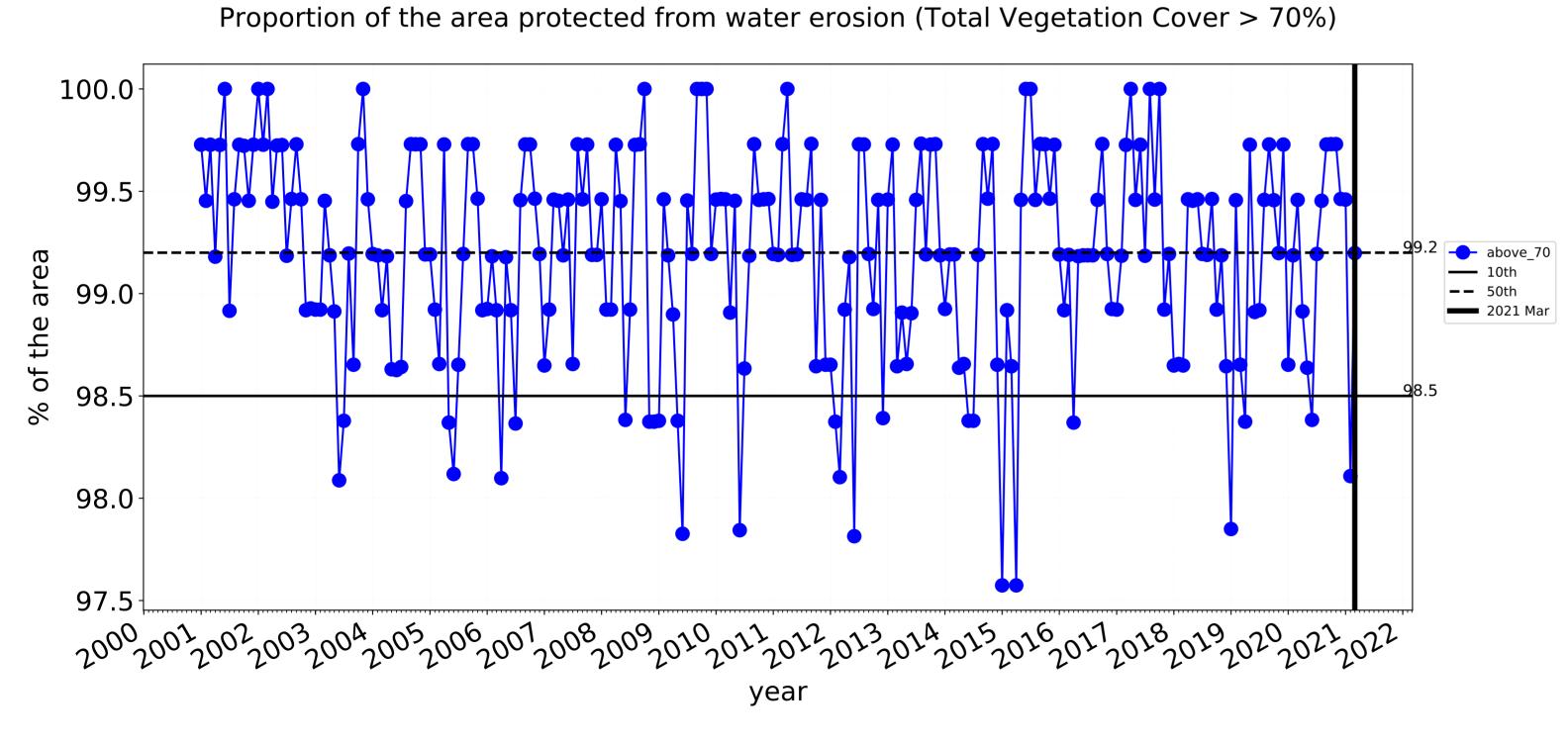
### **Conservation and natural environments**

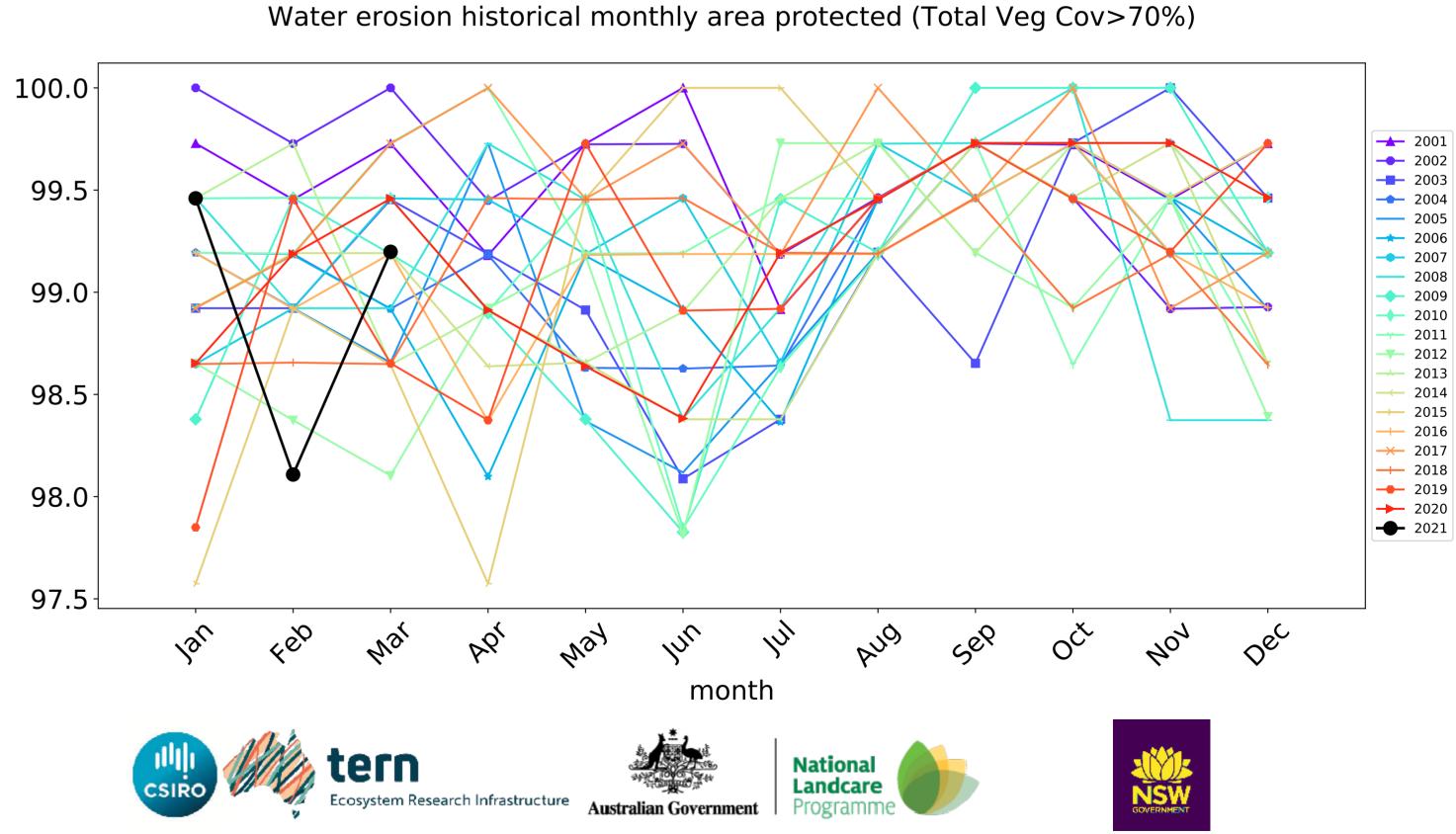


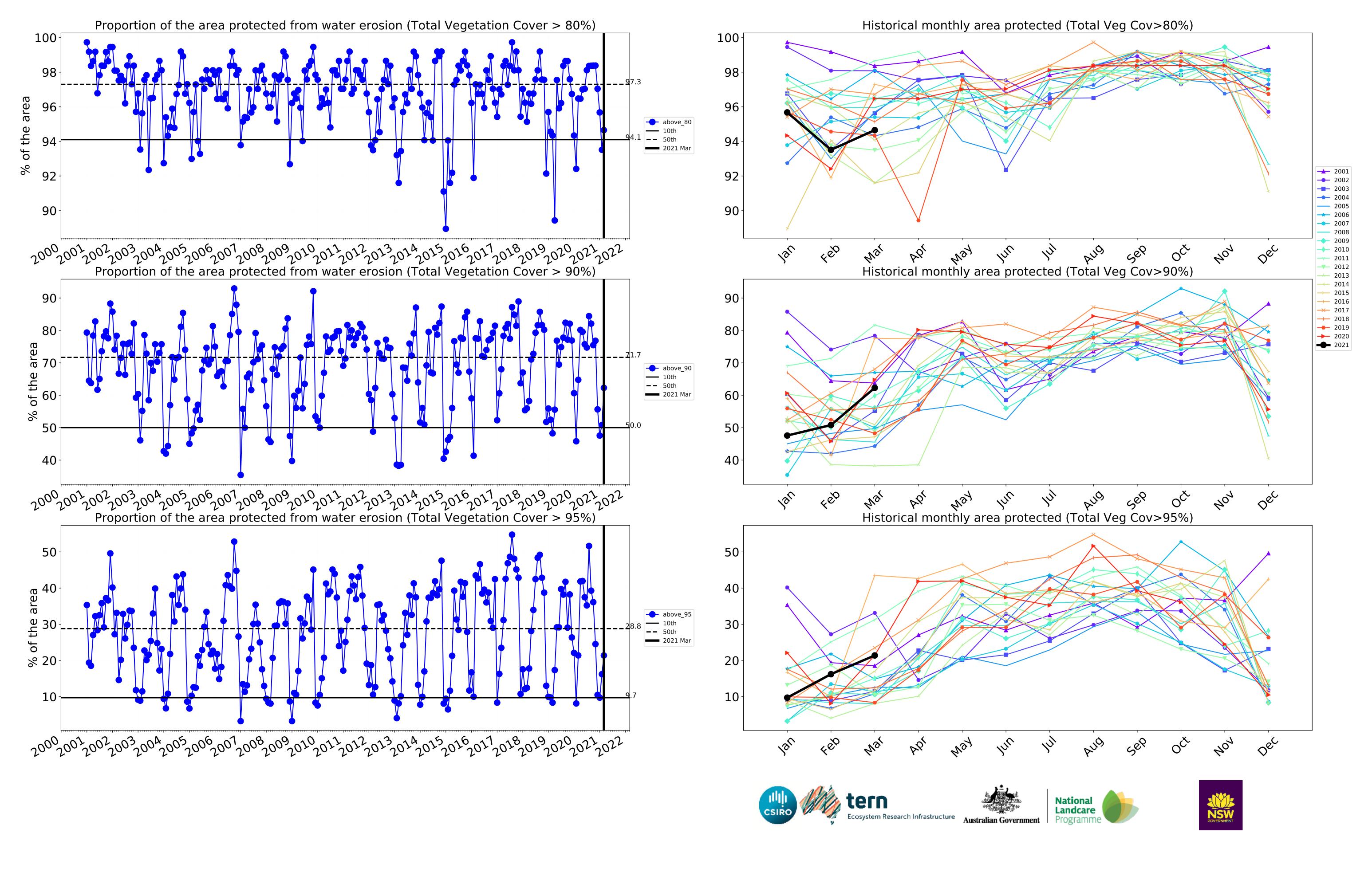
### **Conservation and natural environments timeseries**









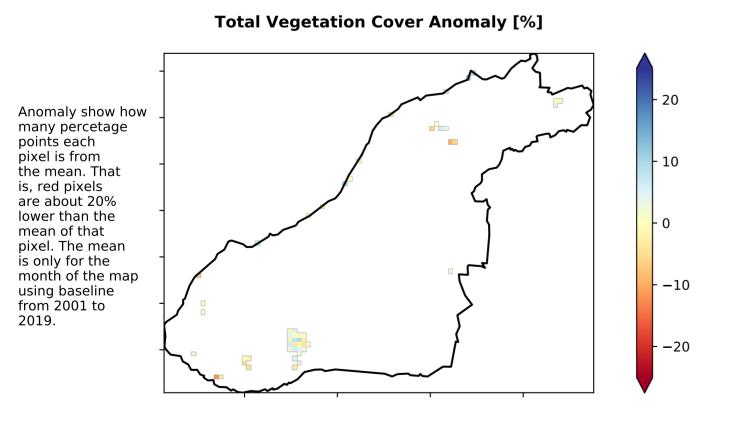


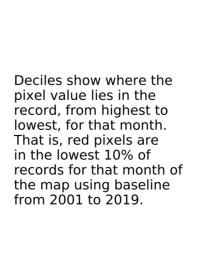
### **Conservation and natural environments non forest**

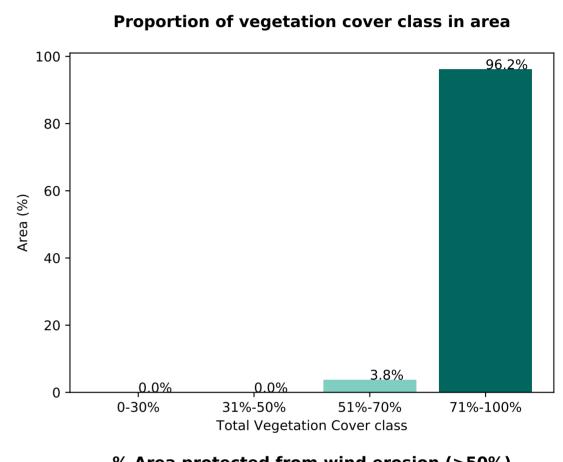
### Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

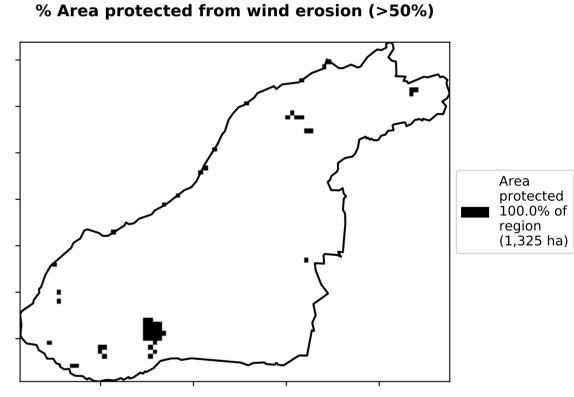
### Total Vegetation Cover [%] Total Vegetation Cover [%] Typic typi

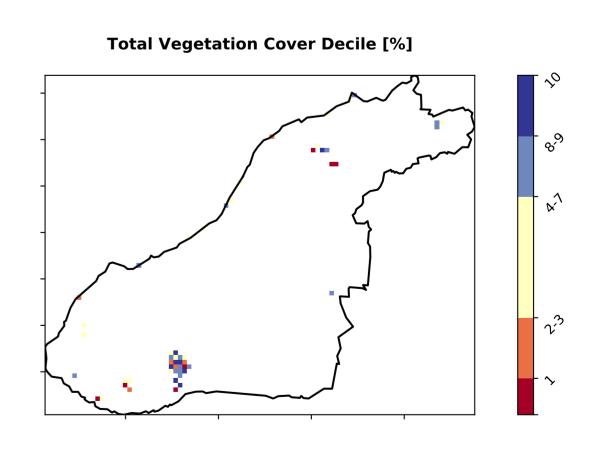
## Area not protected 3.8% of region (50 ha) Area protected 96.2% of region (1,274 ha)











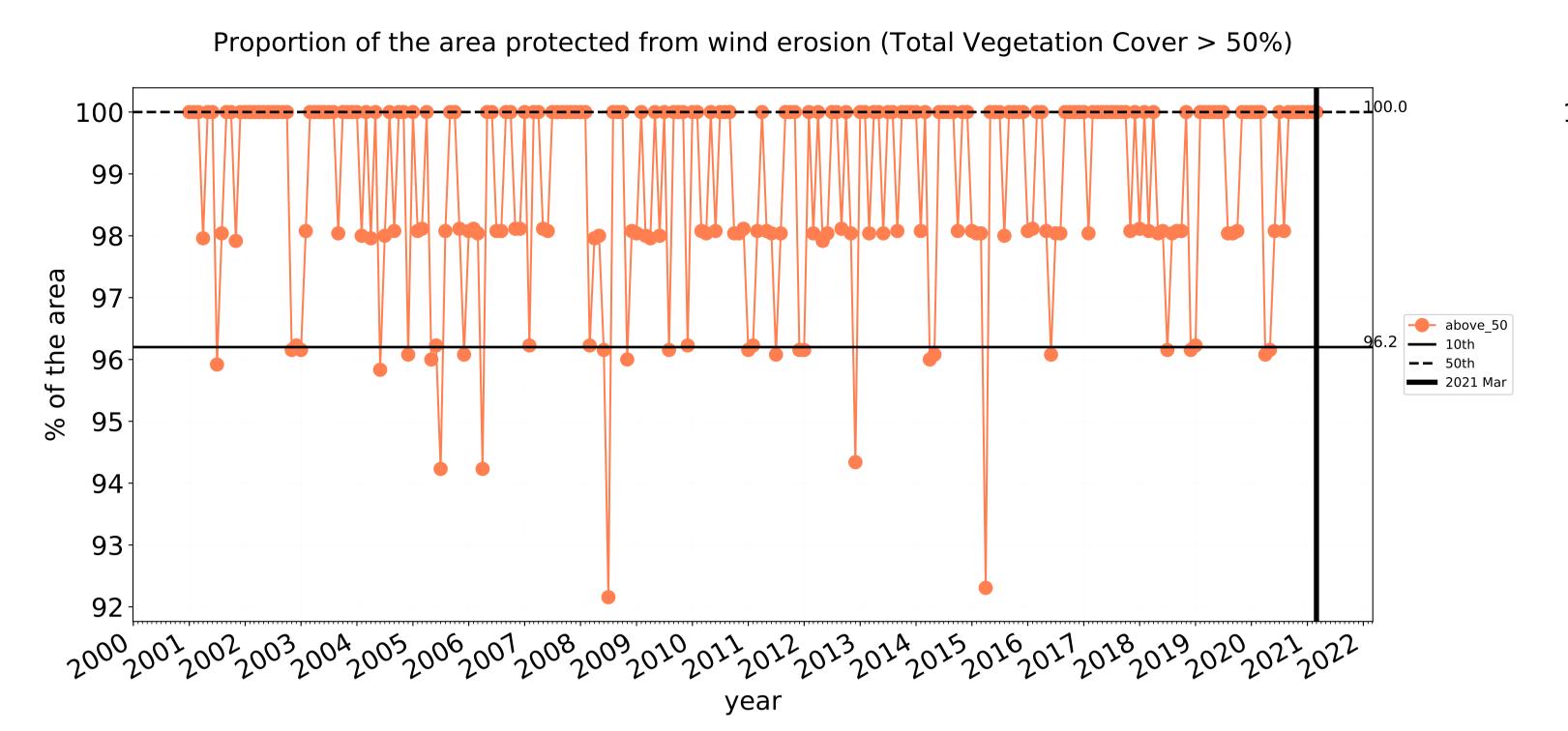


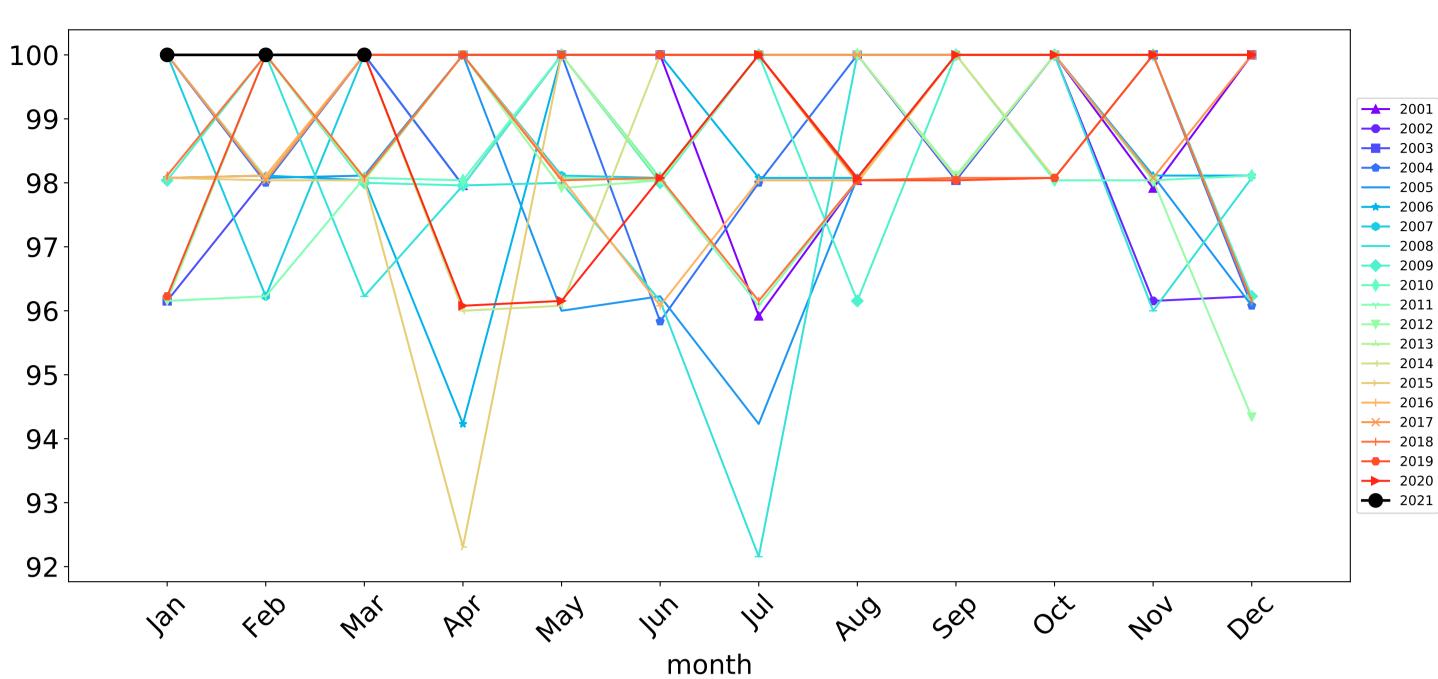




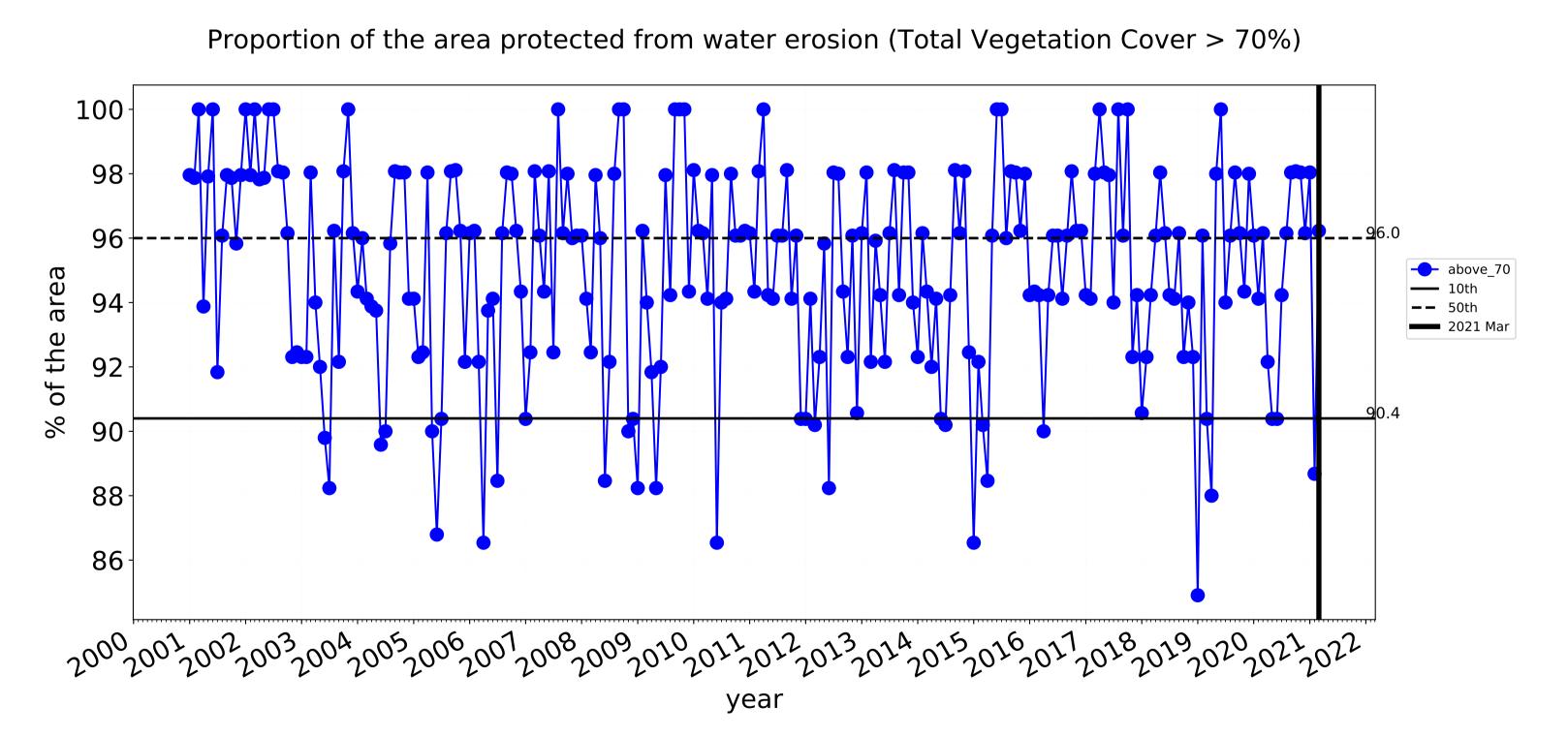


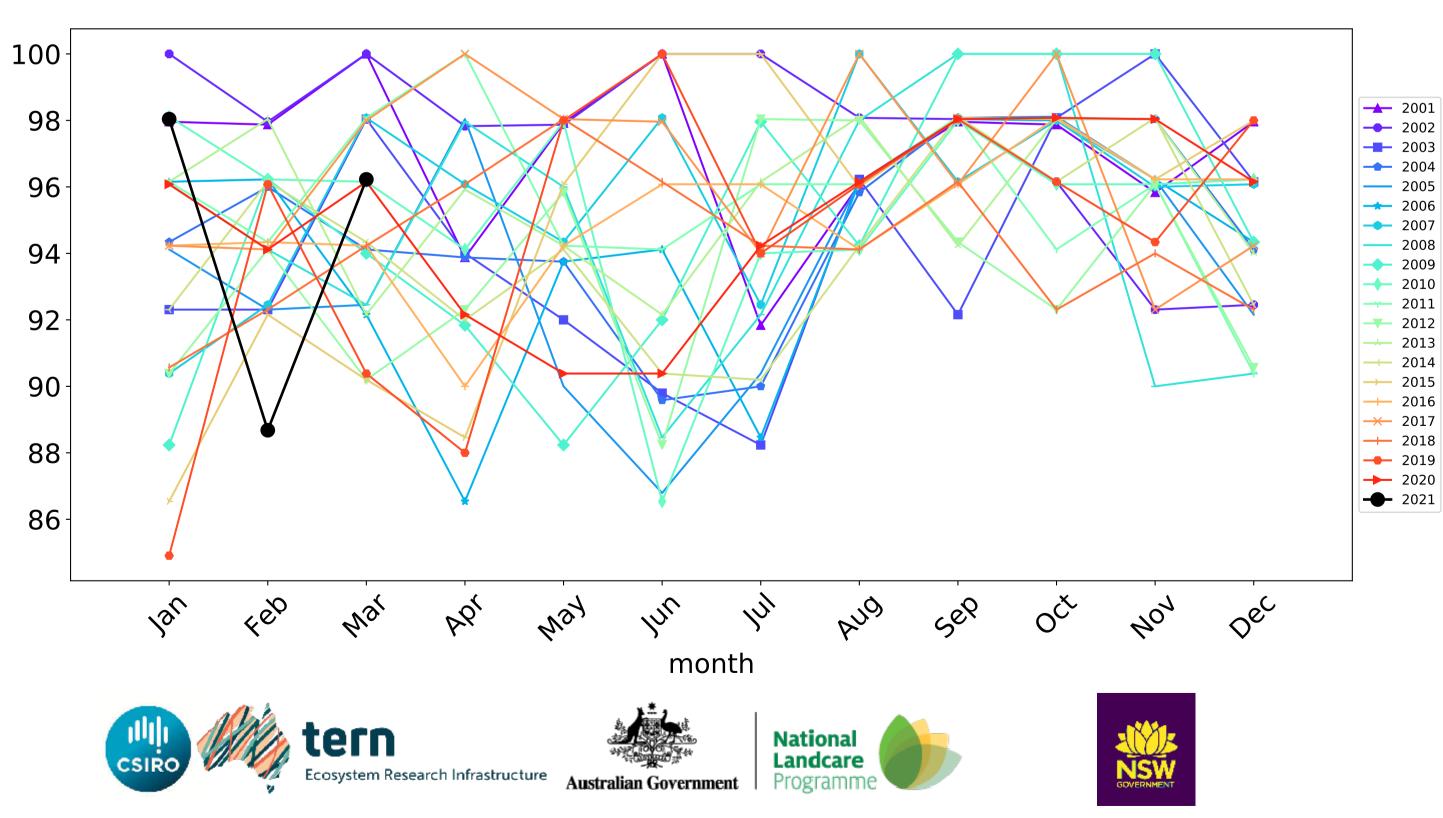
### **Conservation and natural environments non forest timeseries**



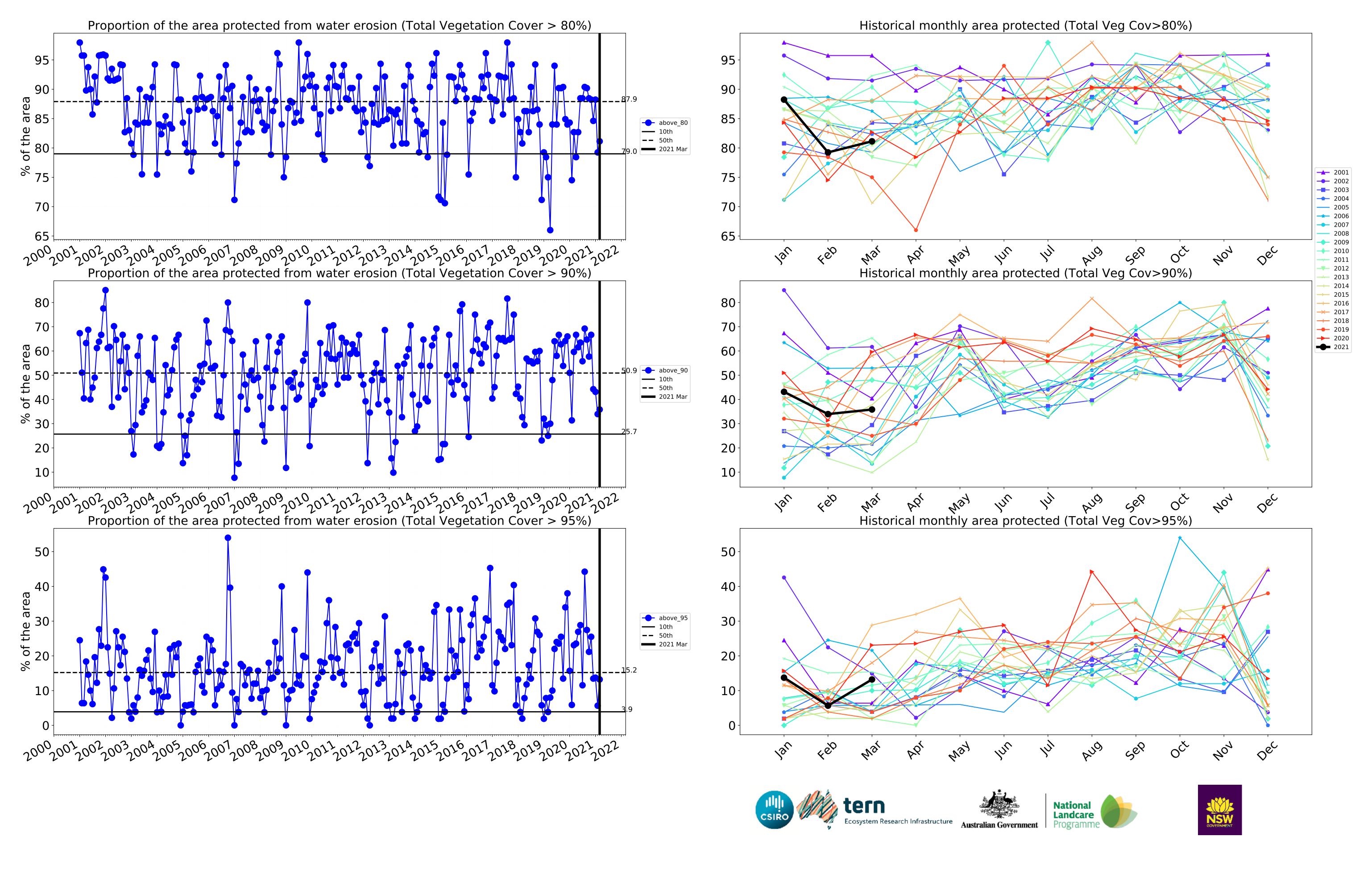


Wind erosion historical monthly area protected (Total Veg Cov >50%)





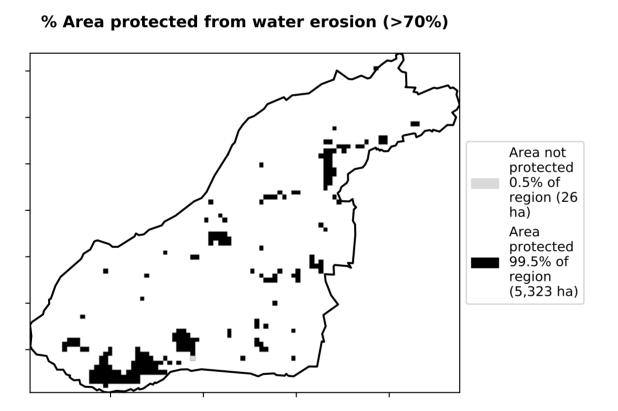
Water erosion historical monthly area protected (Total Veg Cov>70%)

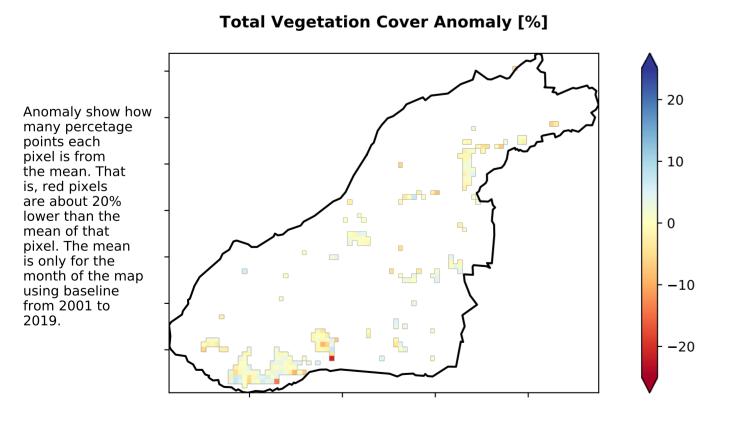


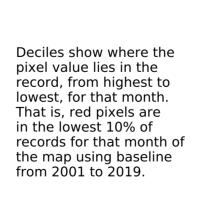
### **Conservation and natural environments Woodland forest**

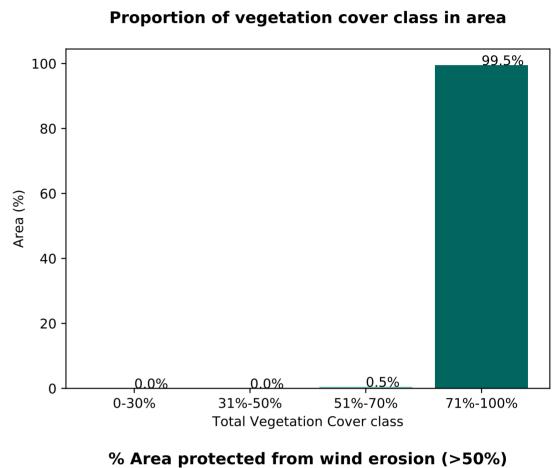
## Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Australia (2018)

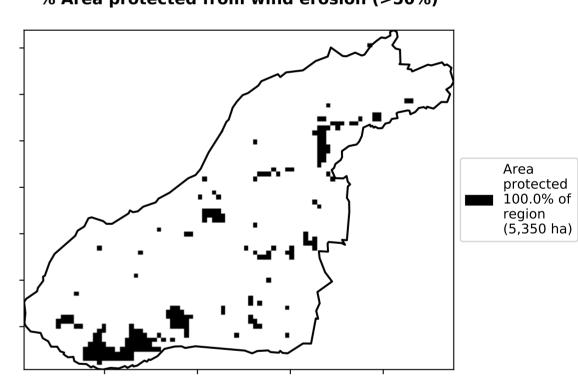
# Total Vegetation Cover [%]

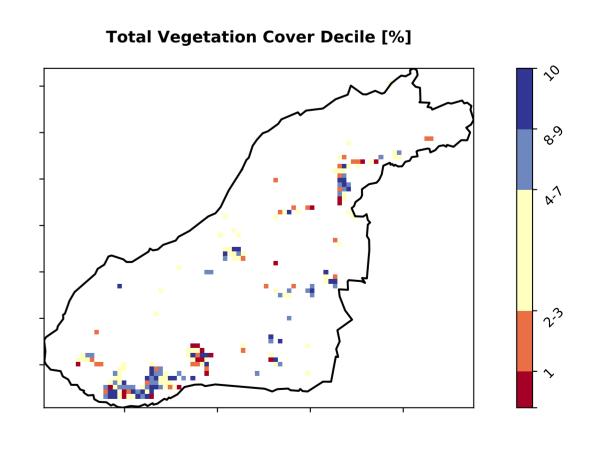












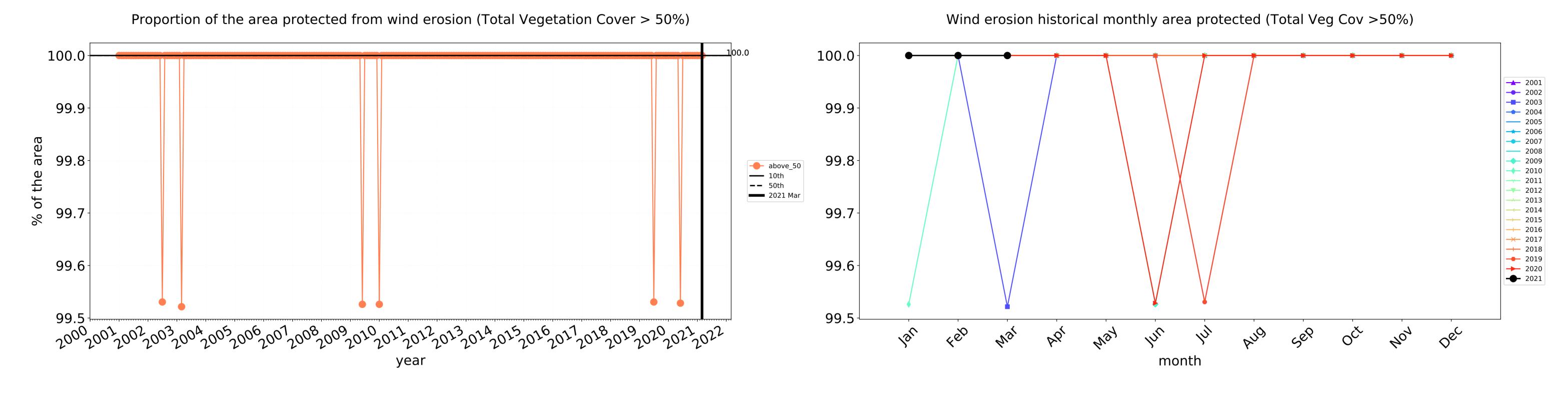


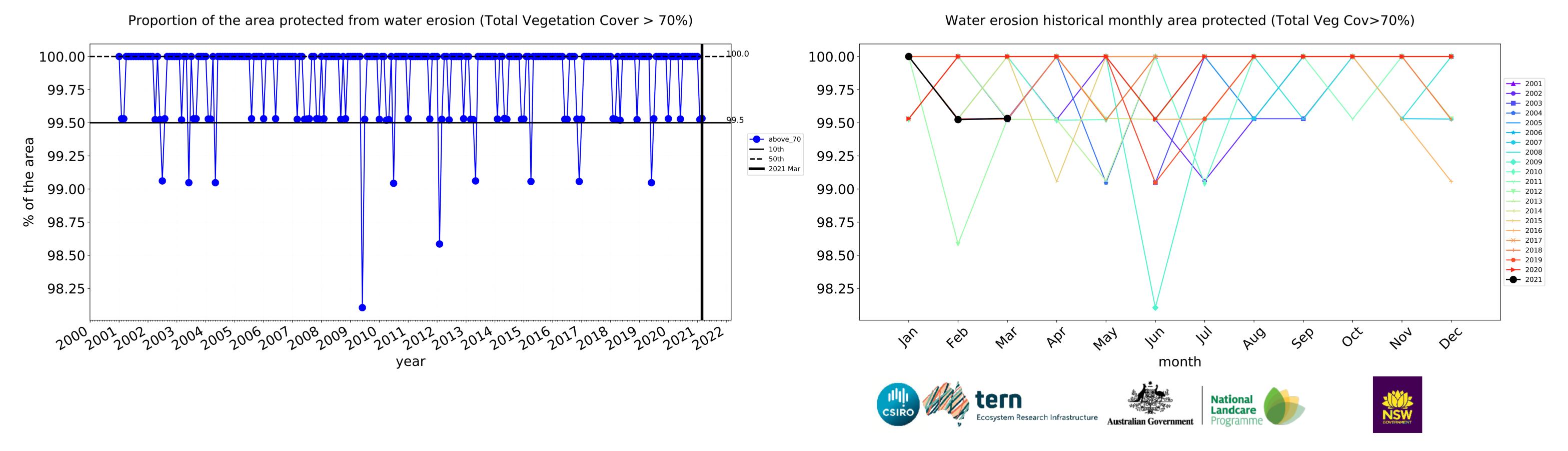


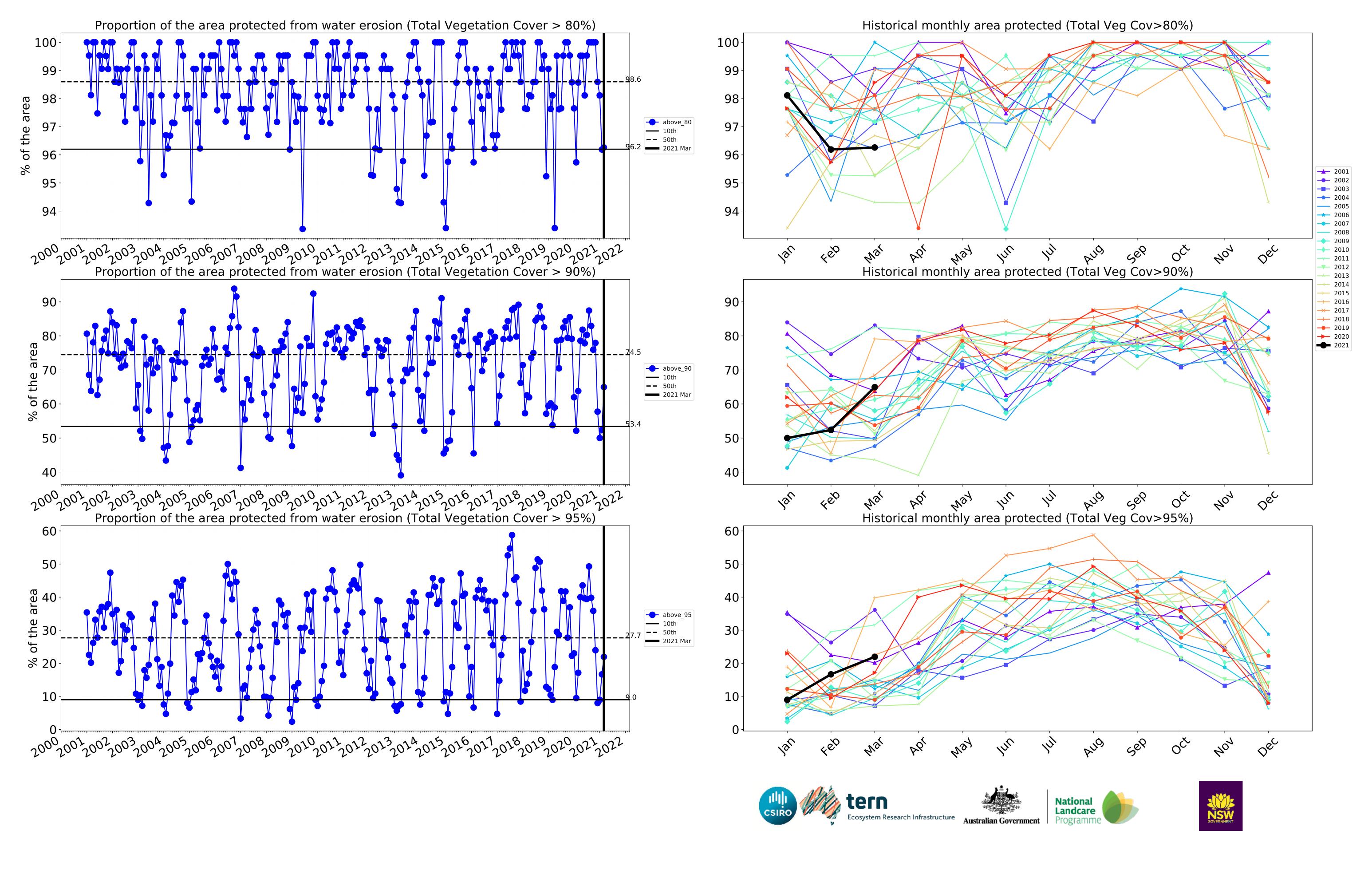




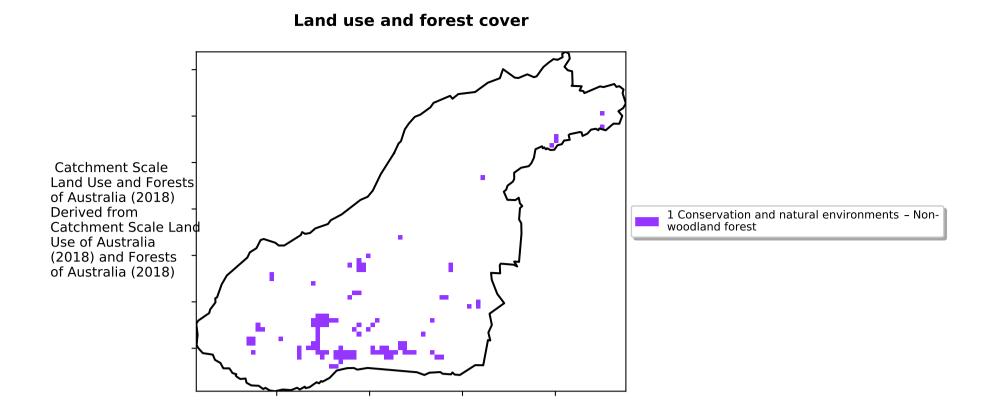
### **Conservation and natural environments Woodland forest timeseries**

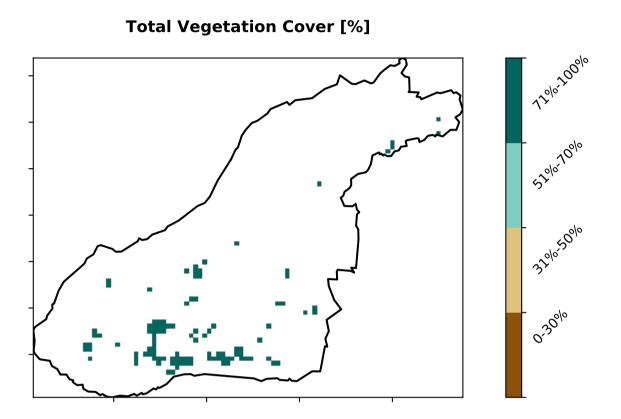


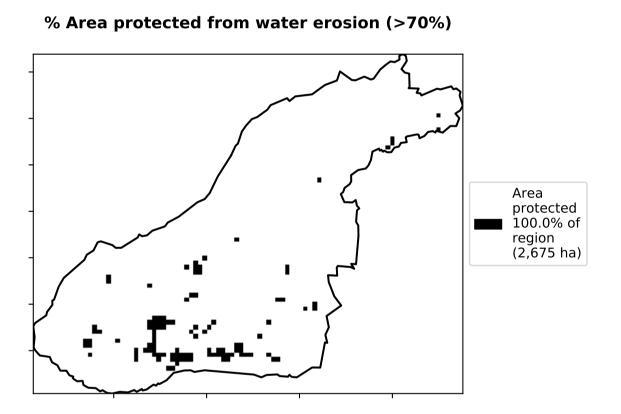


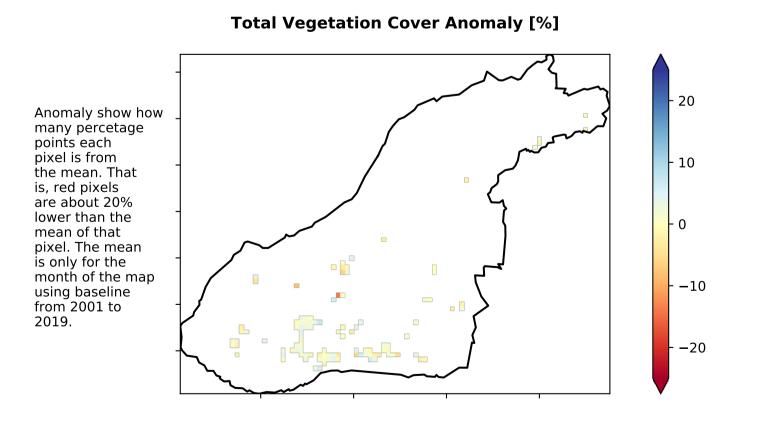


### **Conservation and natural environments Forest (non woodland)**







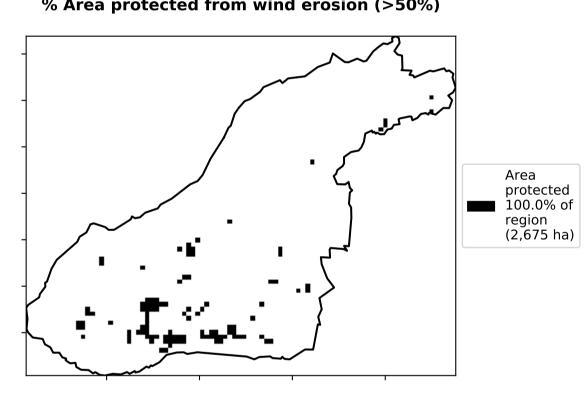


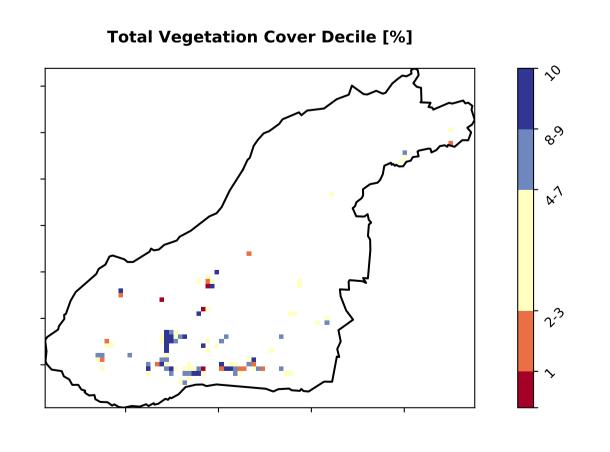
### 

Proportion of vegetation cover class in area

100

100.0%









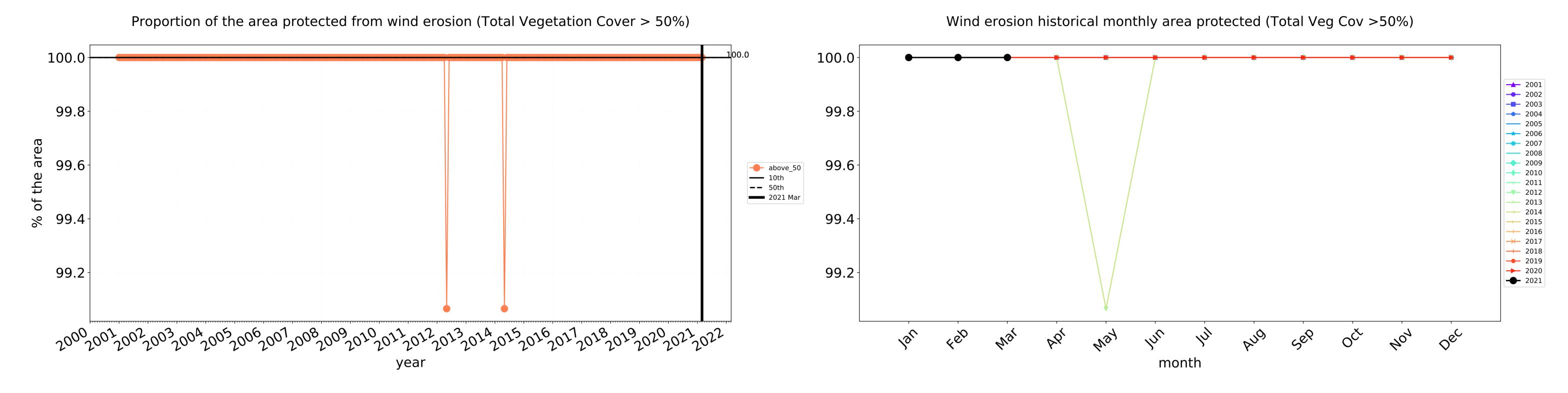
Deciles show where the pixel value lies in the

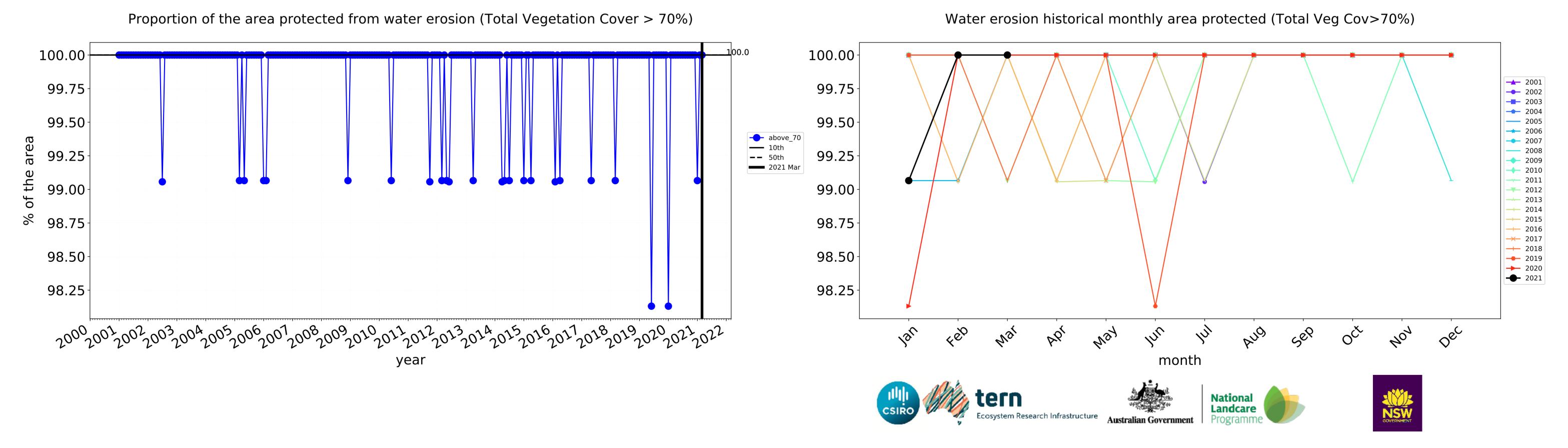
record, from highest to lowest, for that month.
That is, red pixels are in the lowest 10% of records for that month of

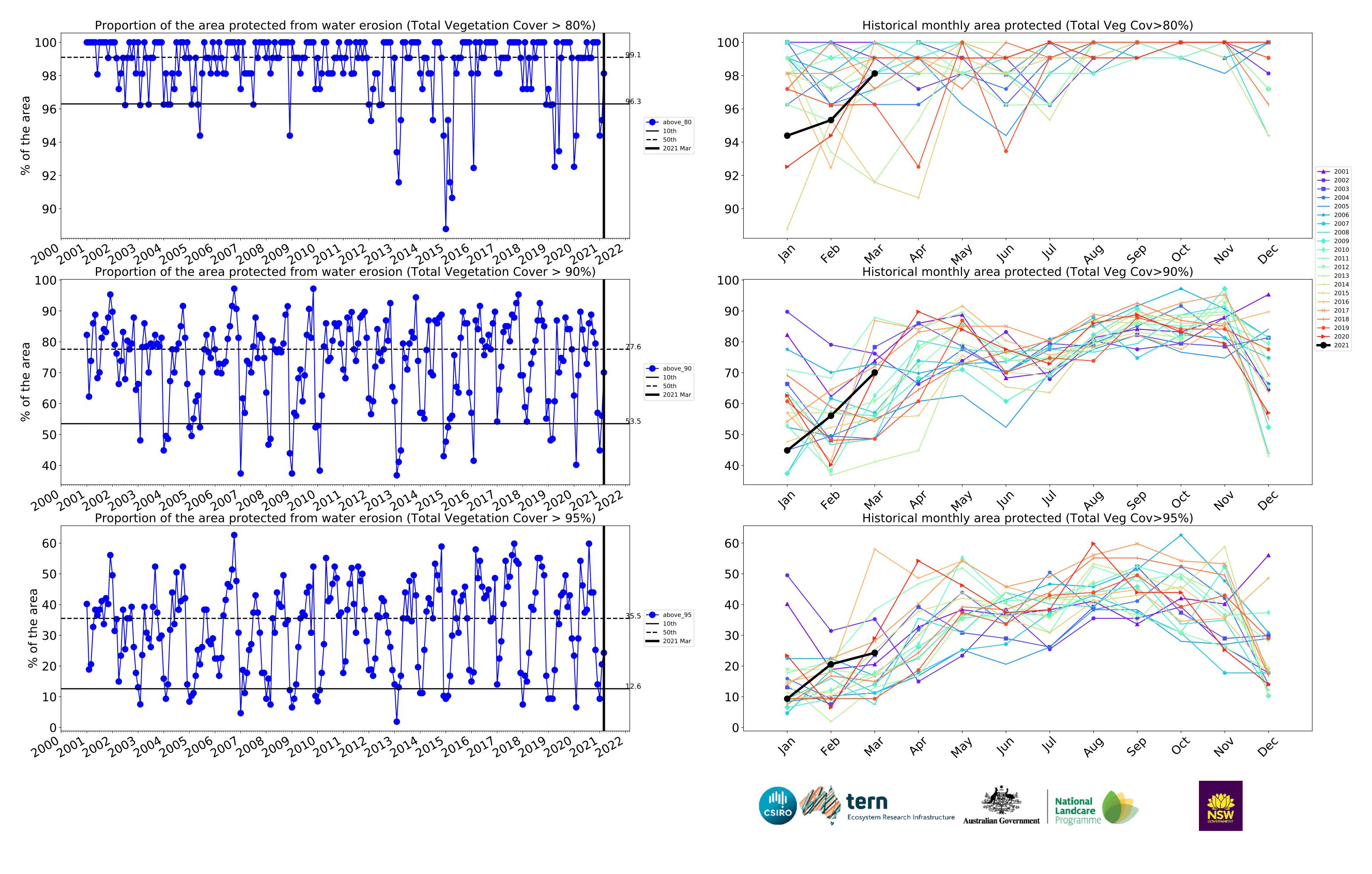
the map using baseline from 2001 to 2019.







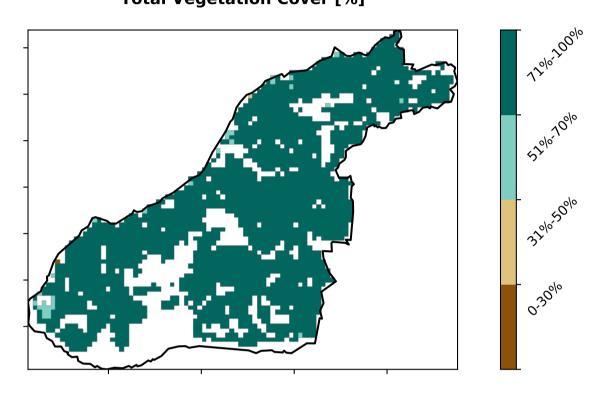




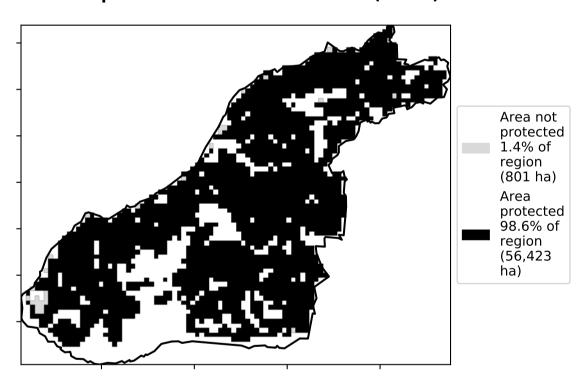
### **Agriculture**

# Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Of Australia (2018) Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Irrigated 4 Agriculture - Grazing - Irrigated 5 Agriculture - Cropping - Non-irrigated 6 Agriculture - Cropping - Irrigated 7 Agriculture - Horticulture - Irrigated

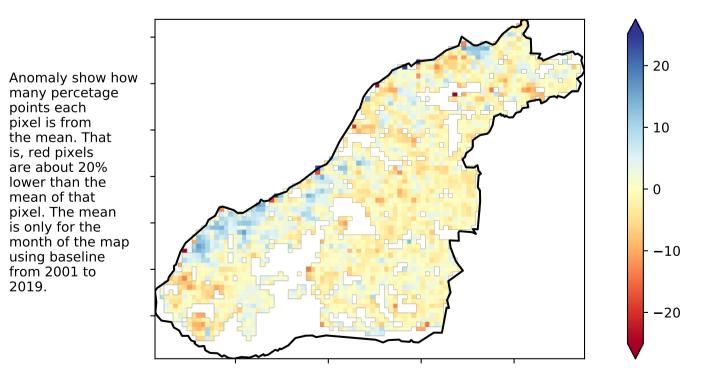
### Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

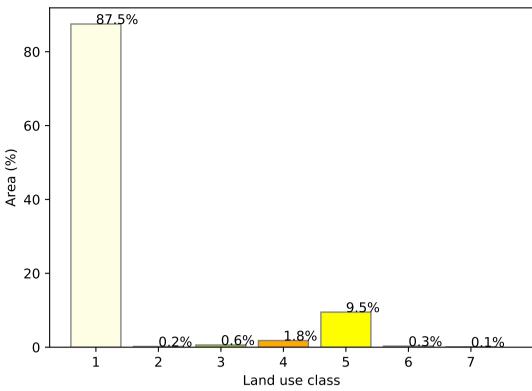


**Total Vegetation Cover Anomaly [%]** 

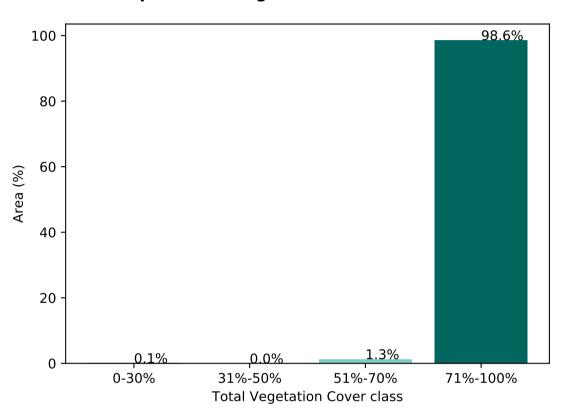


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

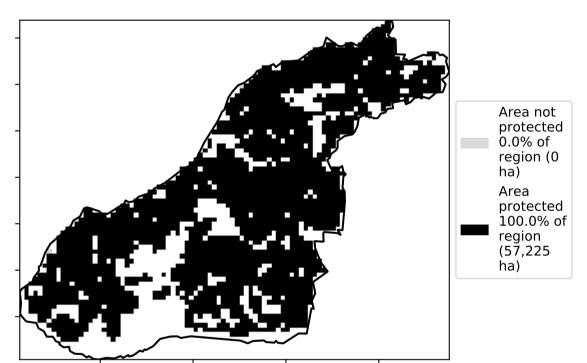
### Proportion of each land class in area



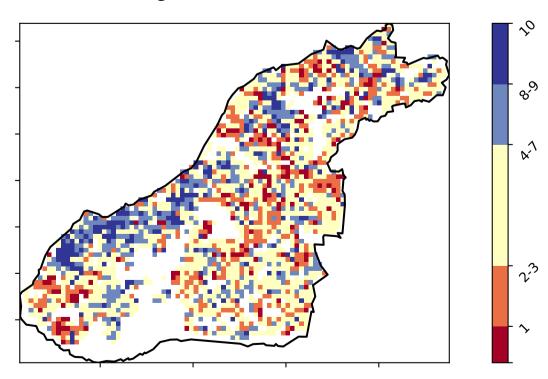
**Proportion of vegetation cover class in area** 



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]



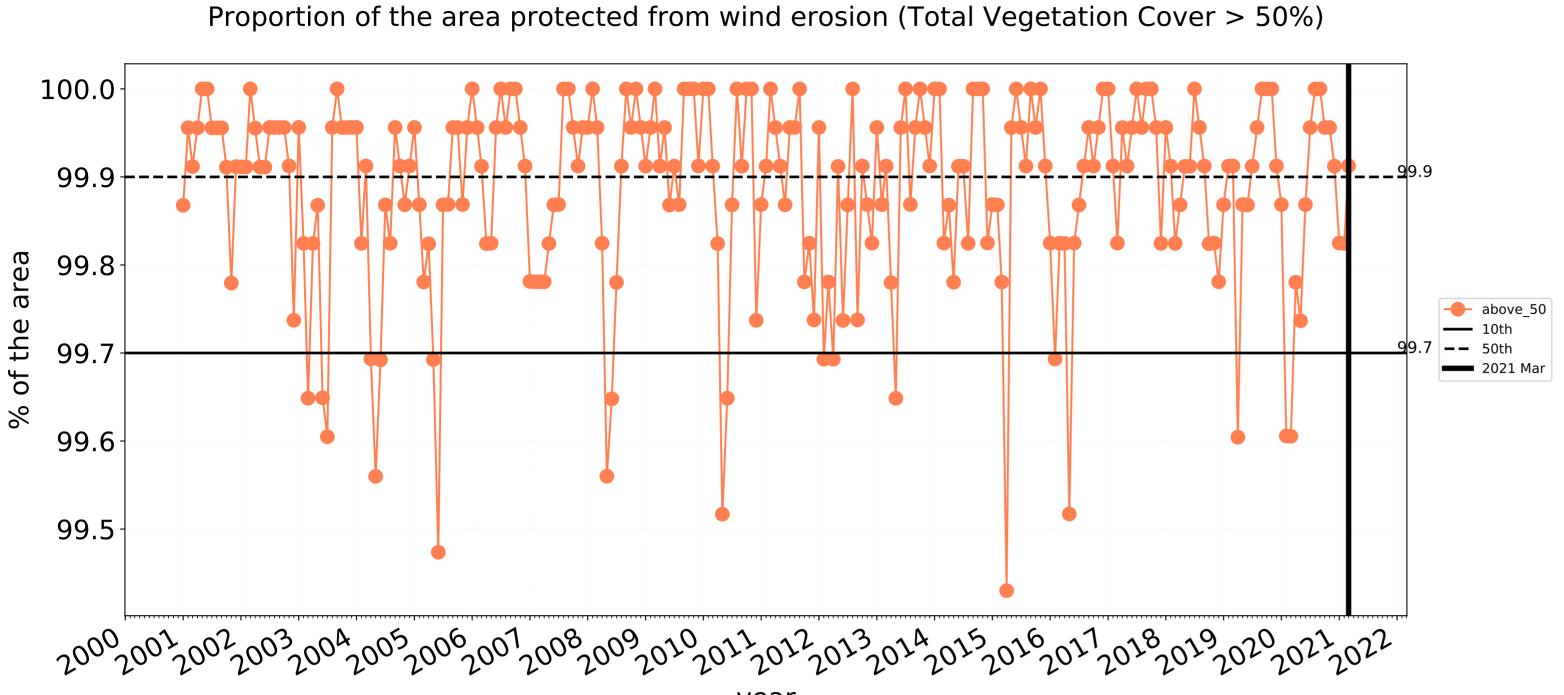




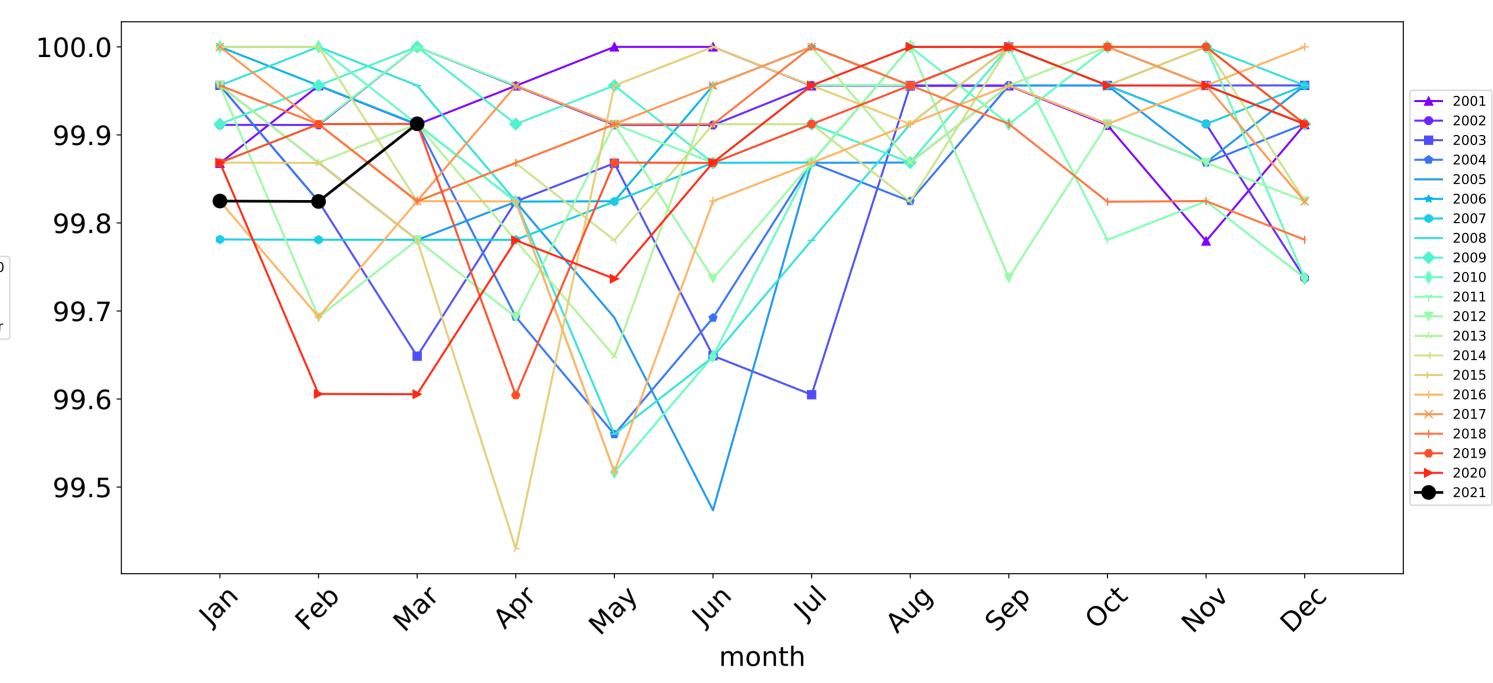


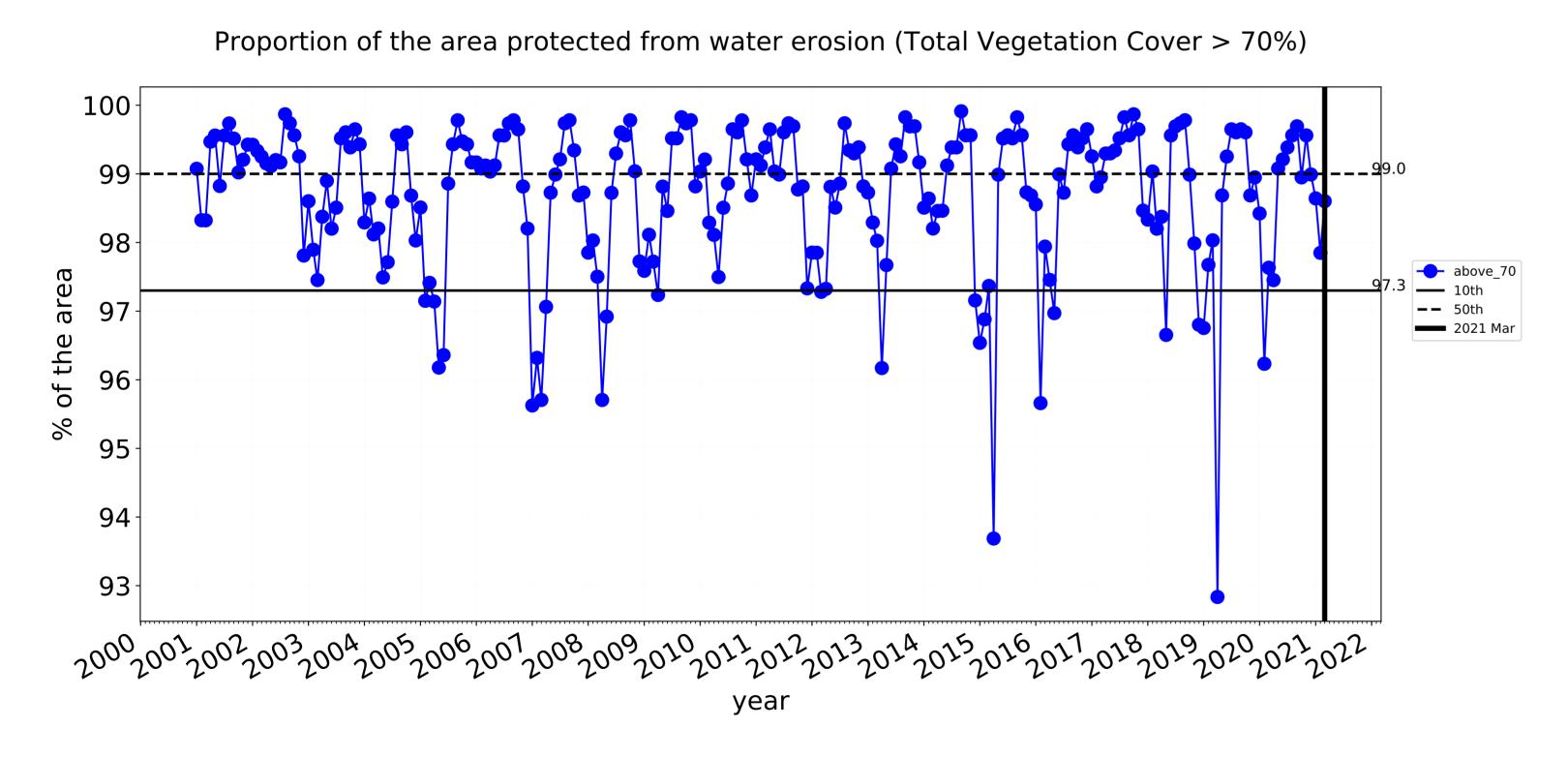


### **Agriculture timeseries**

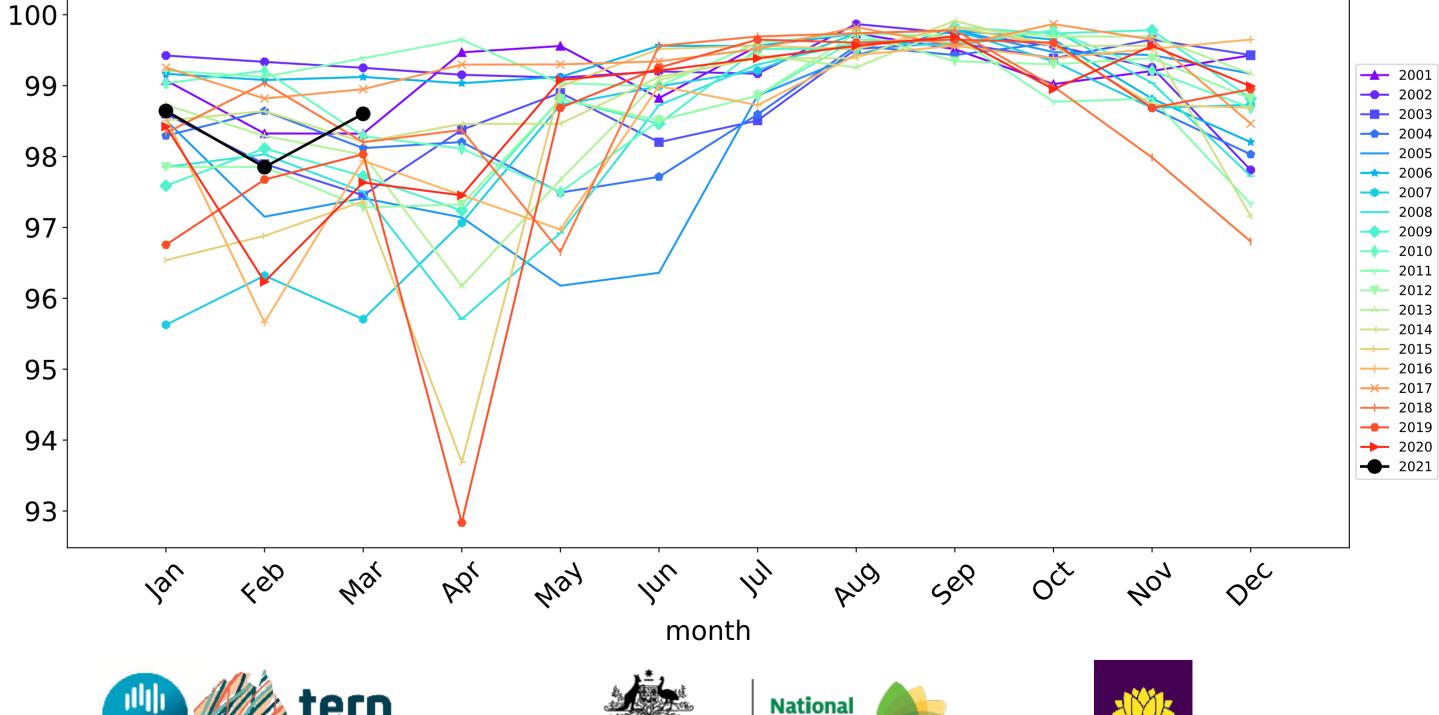


### Wind erosion historical monthly area protected (Total Veg Cov >50%)





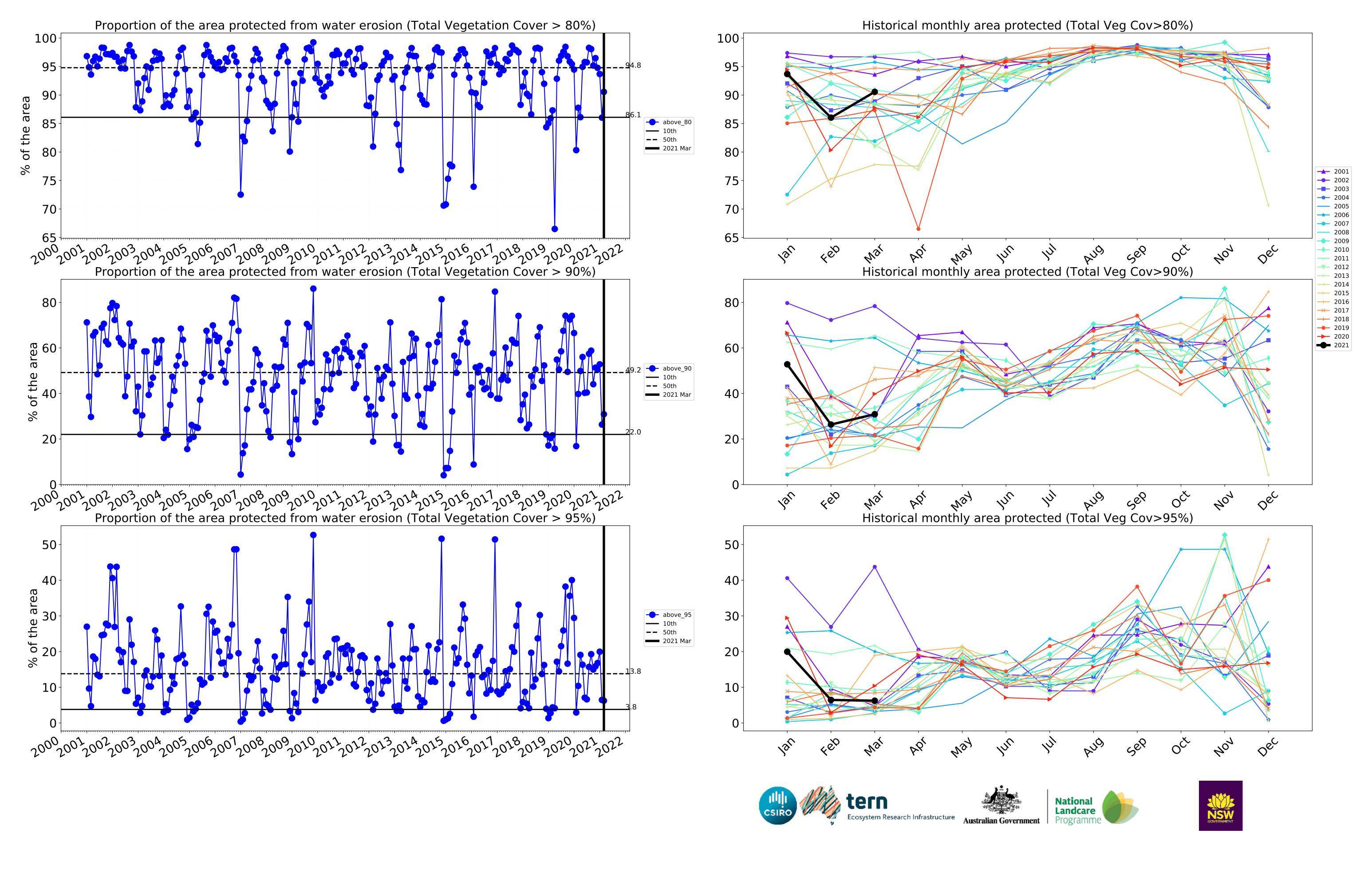
### Water erosion historical monthly area protected (Total Veg Cov>70%)







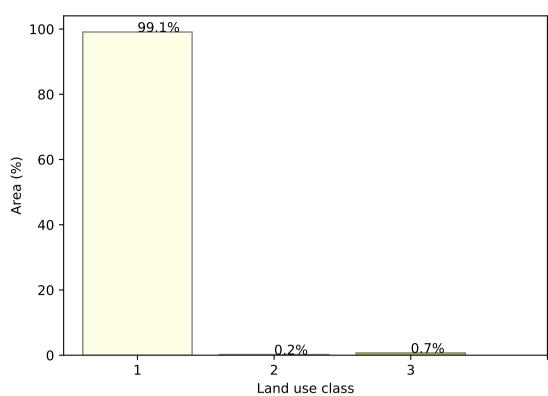




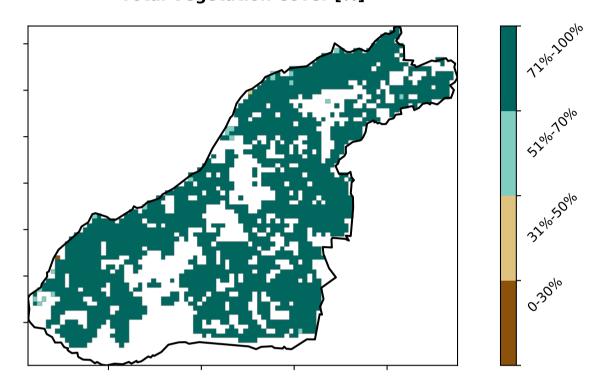
### Grazing

# Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest of Australia (2018)

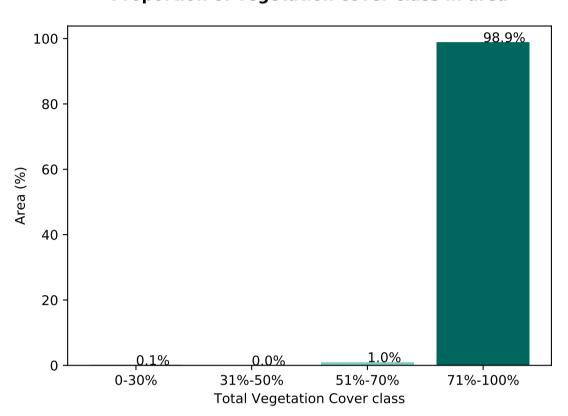
### Proportion of each land class in area



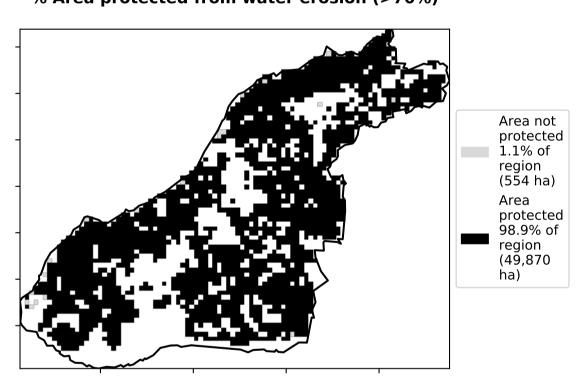
**Total Vegetation Cover [%]** 



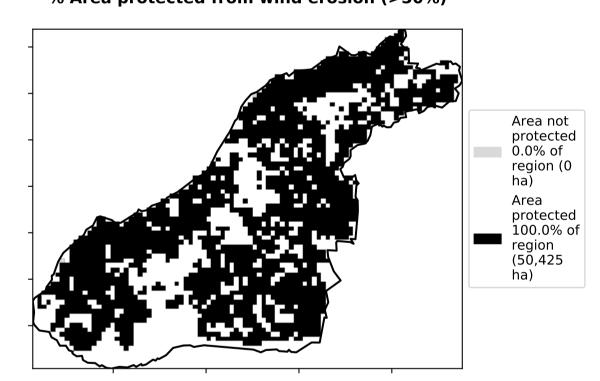
Proportion of vegetation cover class in area



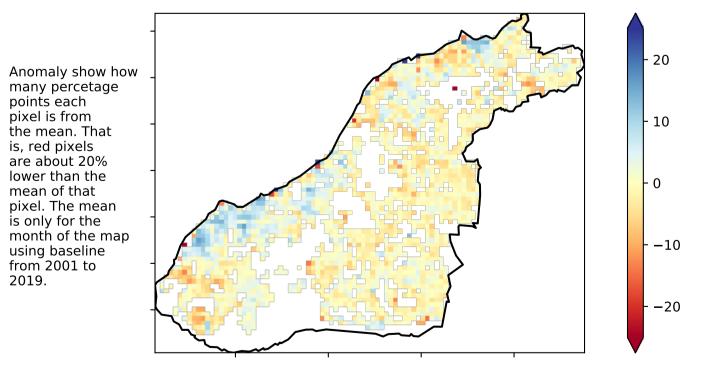
% Area protected from water erosion (>70%)



% 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.

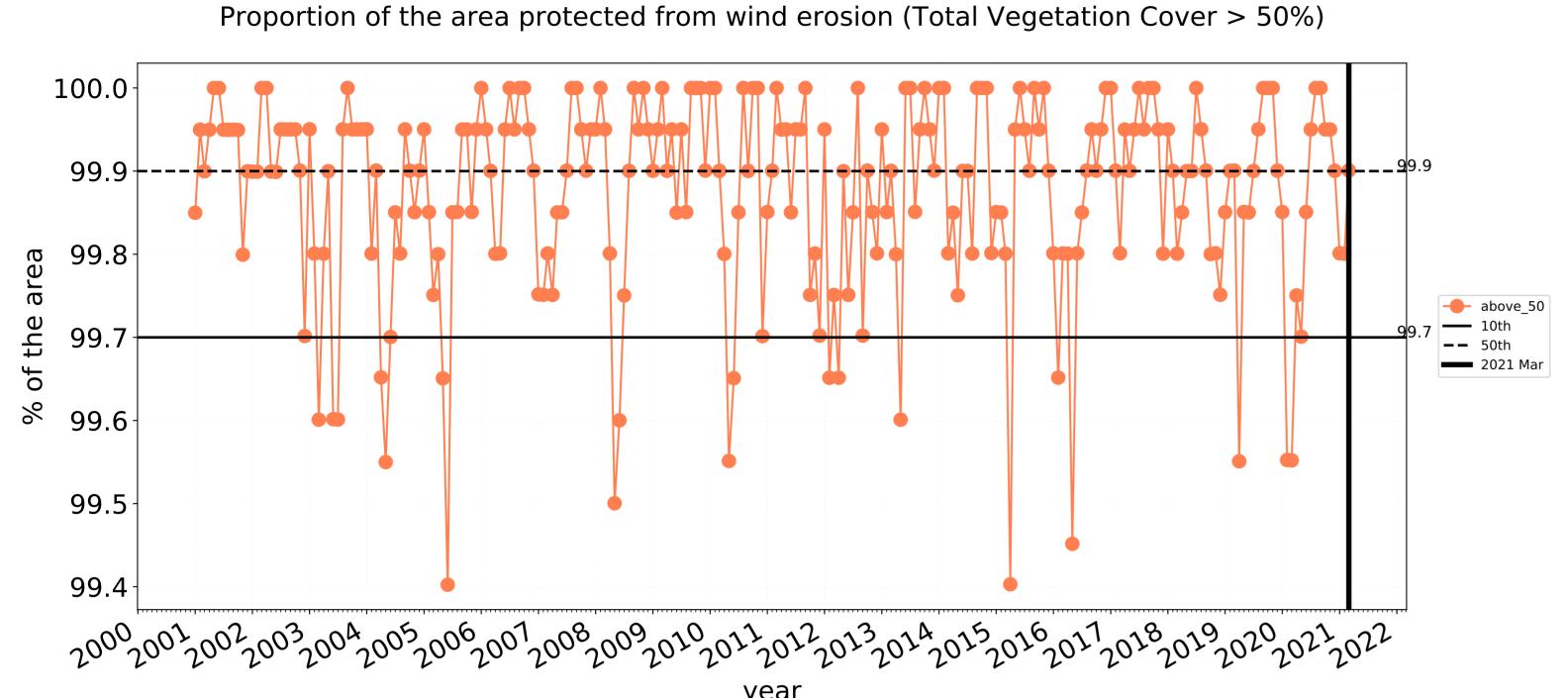


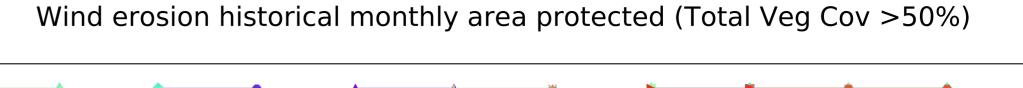


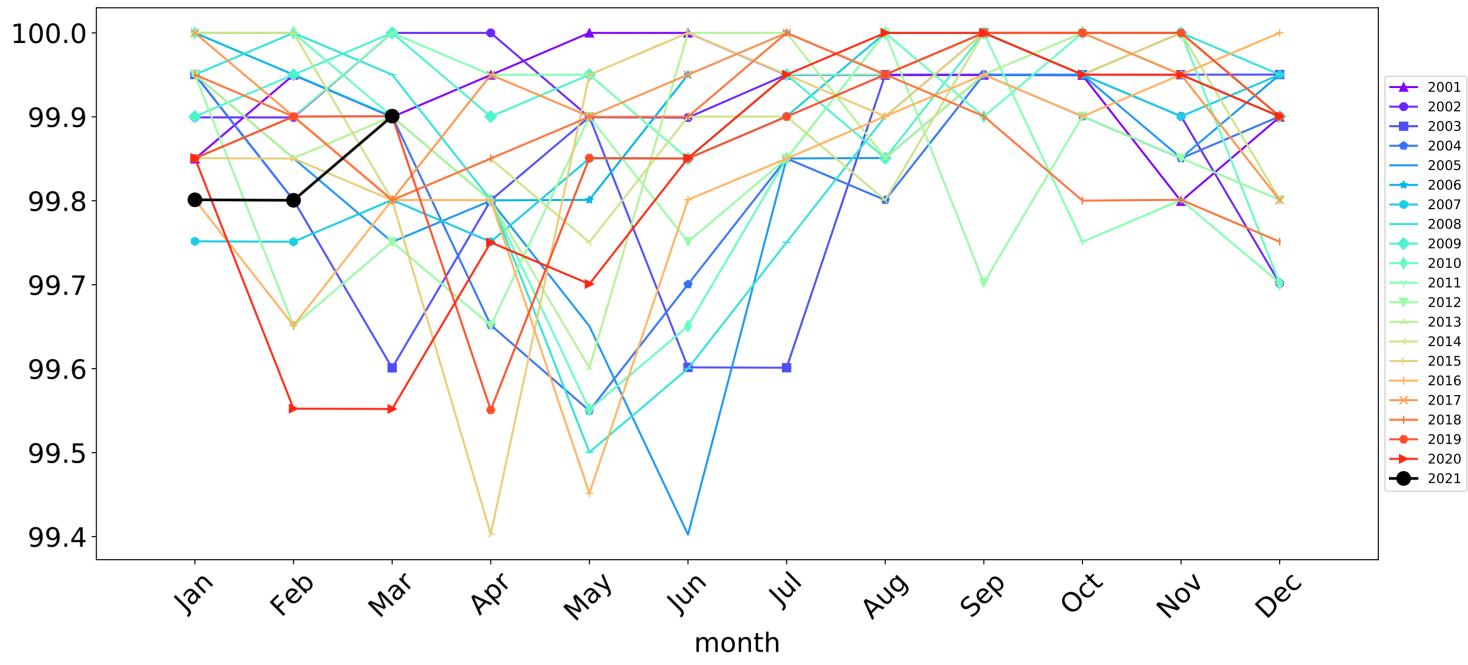


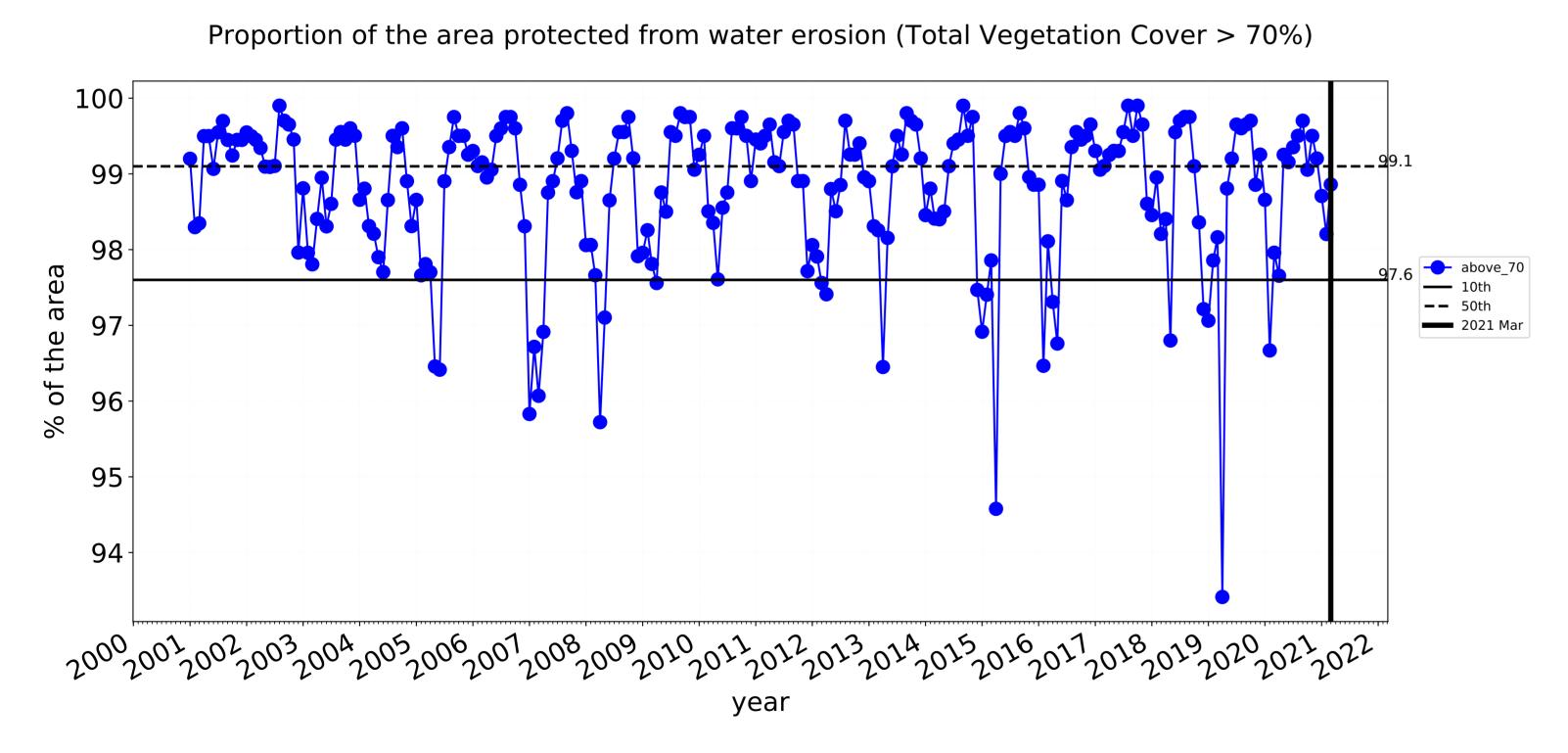


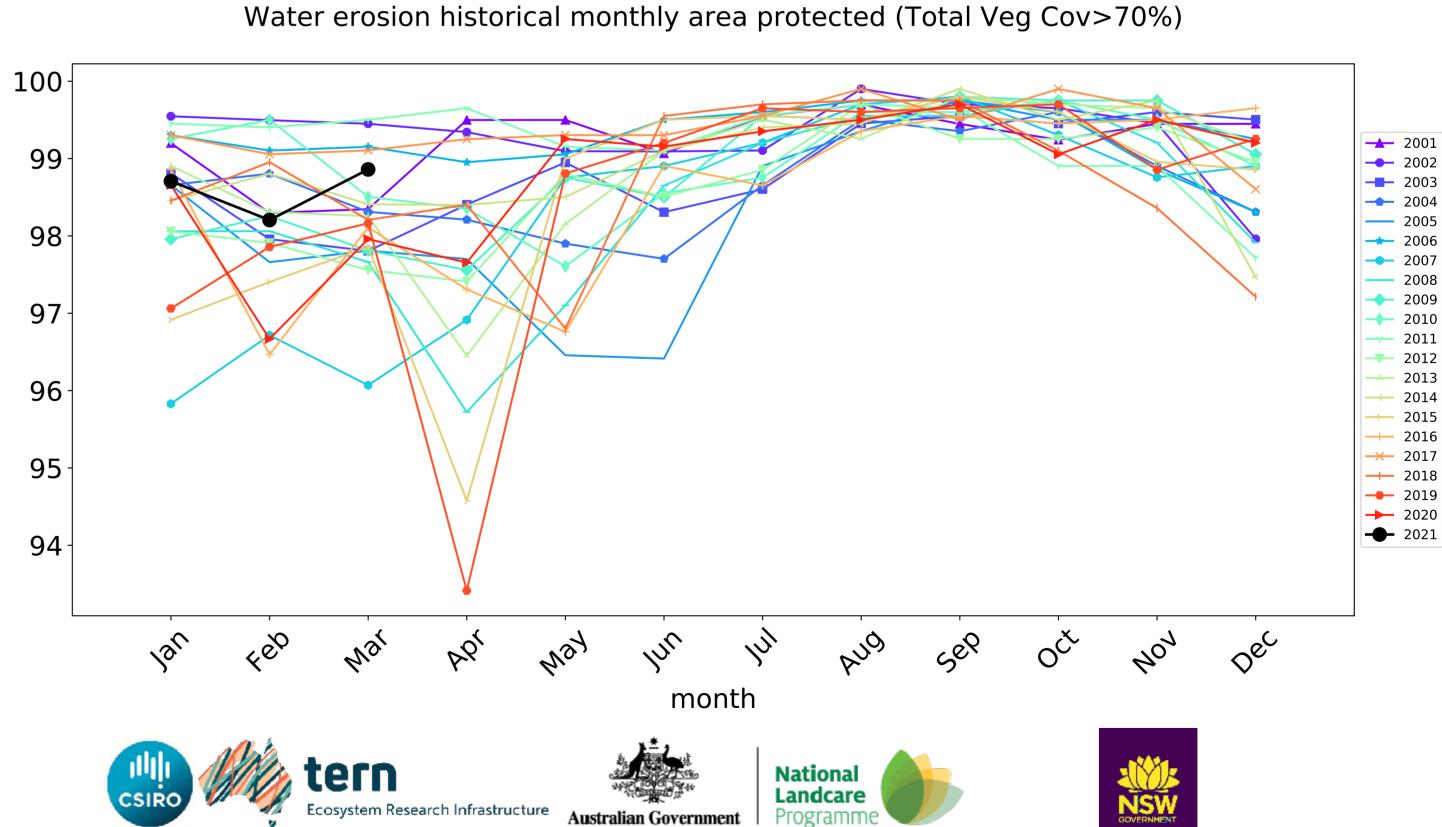
### **Grazing timeseries**

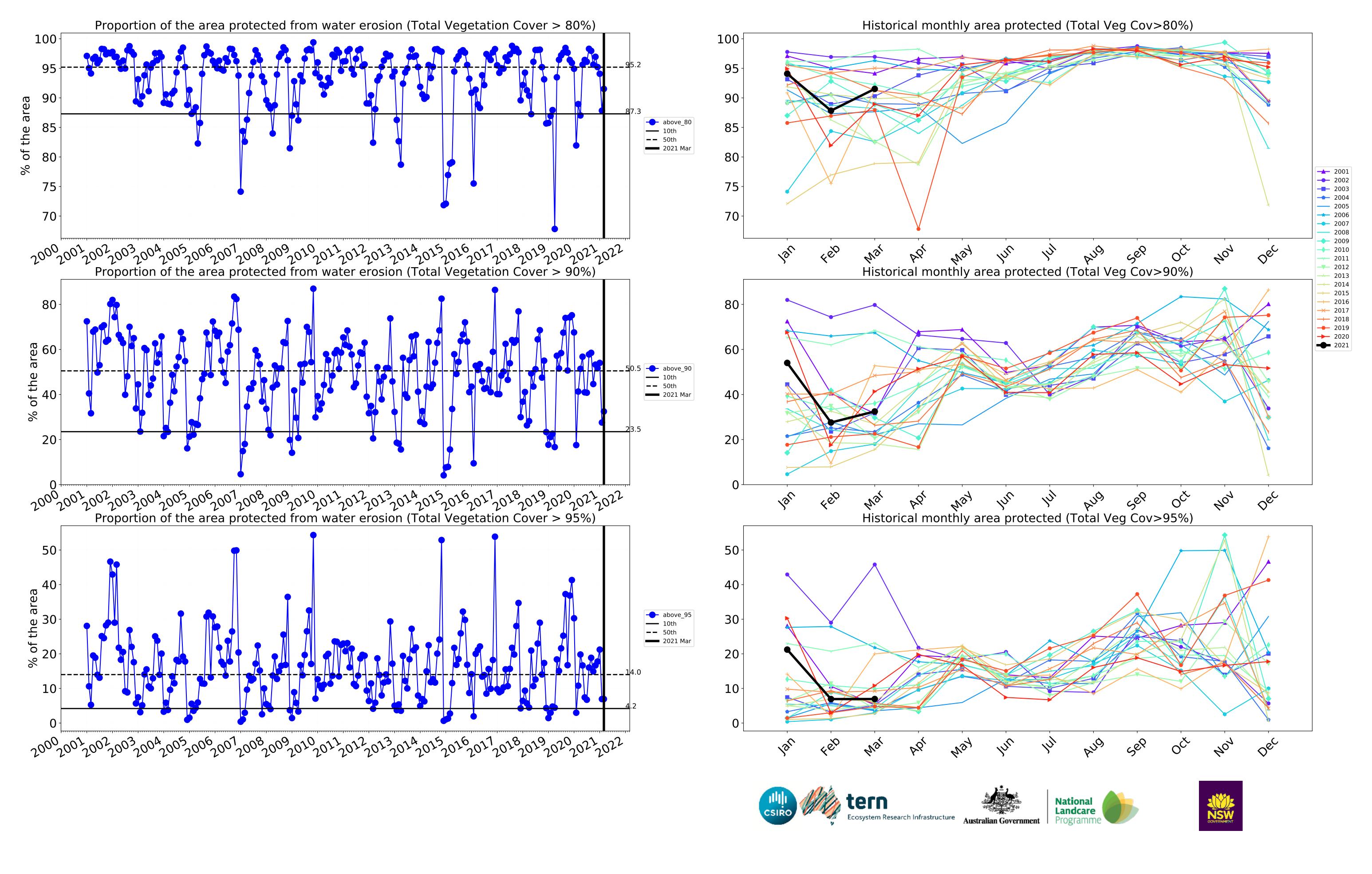






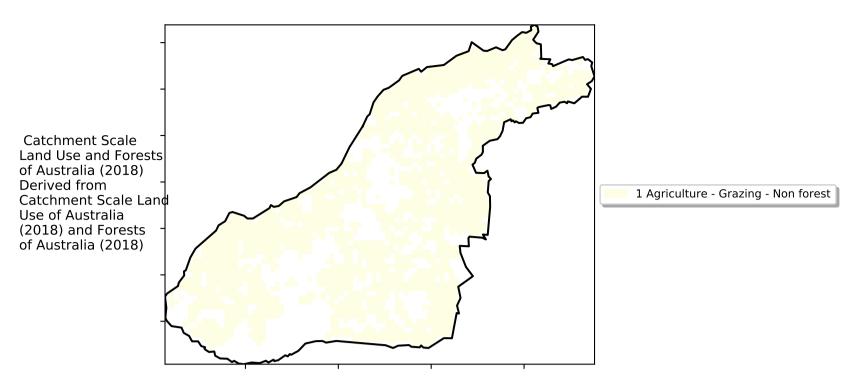




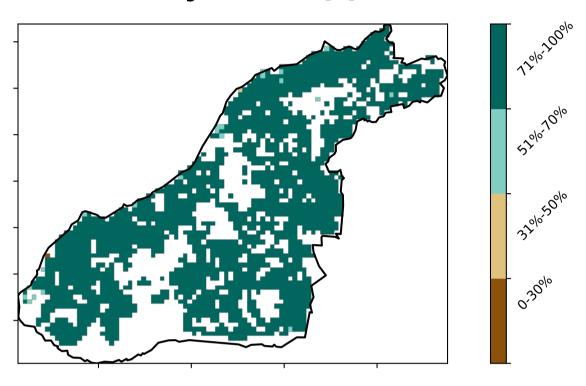


### **Grazing non forest**

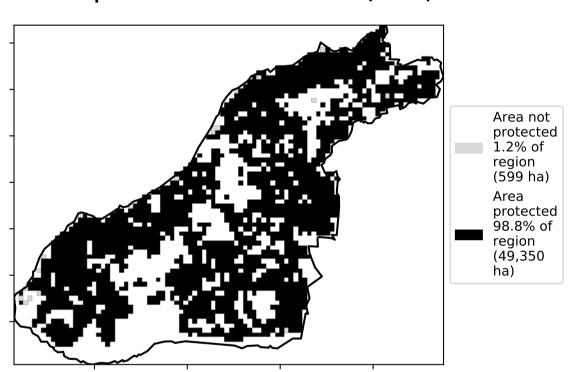
### Land use and forest cover



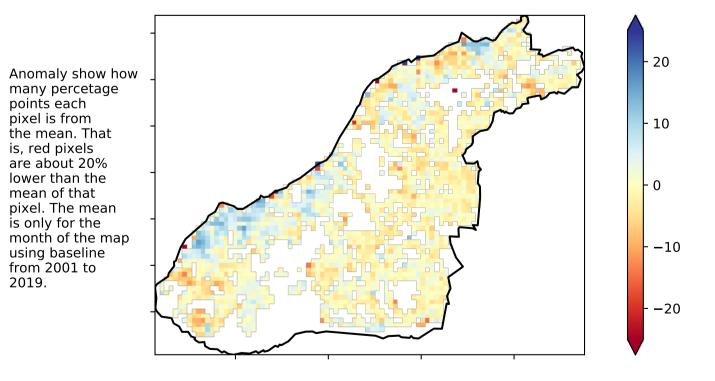
### **Total Vegetation Cover [%]**



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

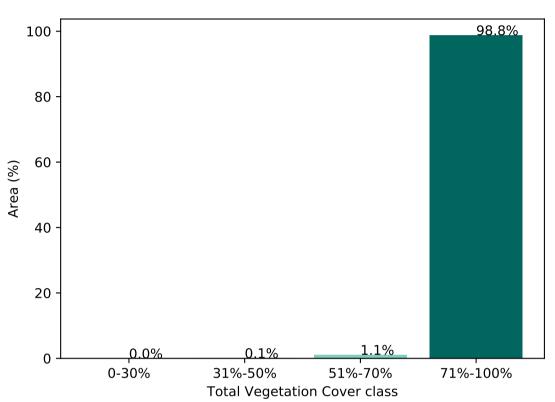


### **Total Vegetation Cover Anomaly [%]**

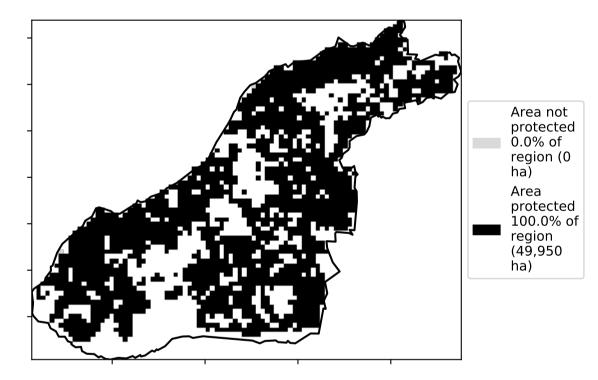


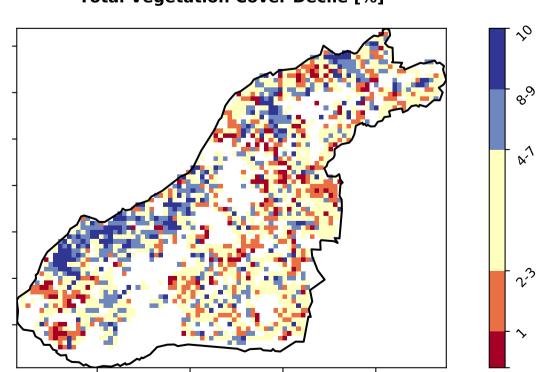
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline. the map using baseline from 2001 to 2019.

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



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





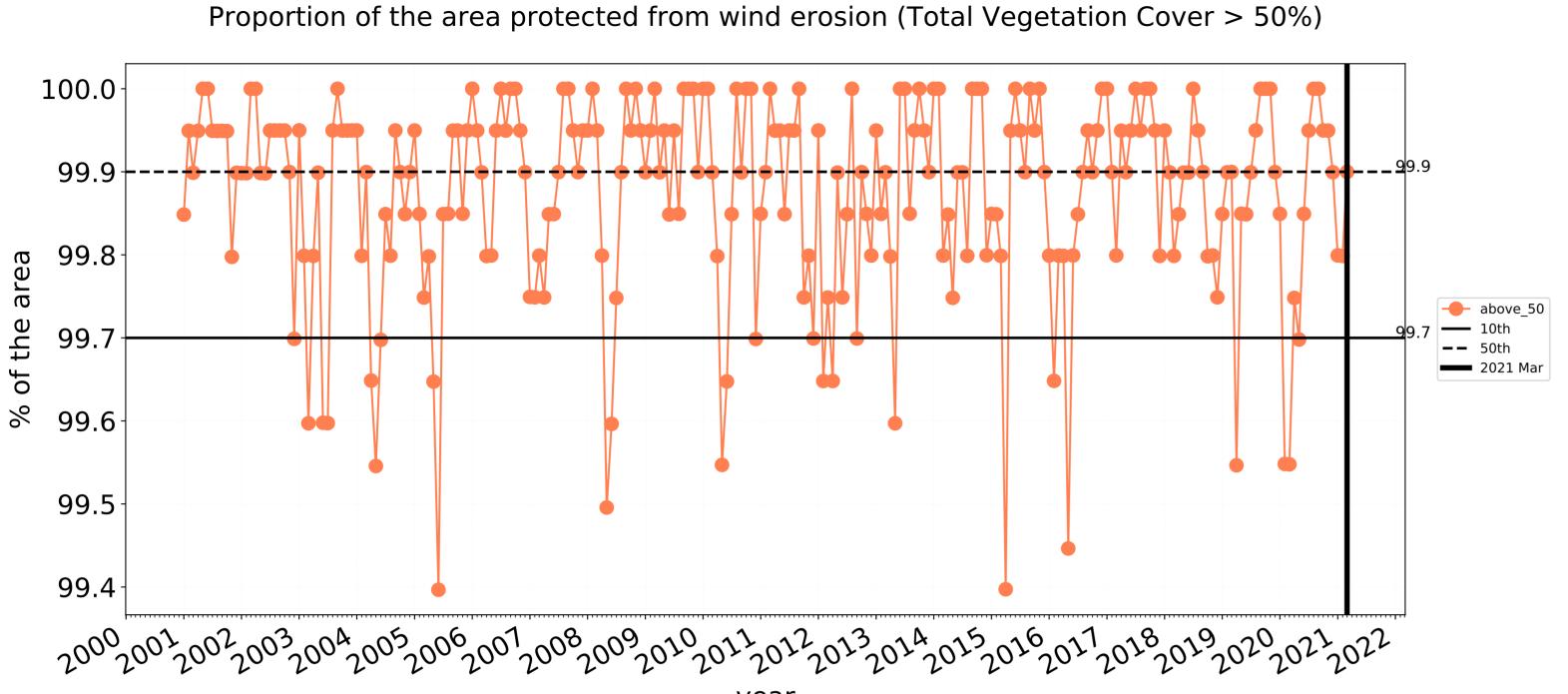


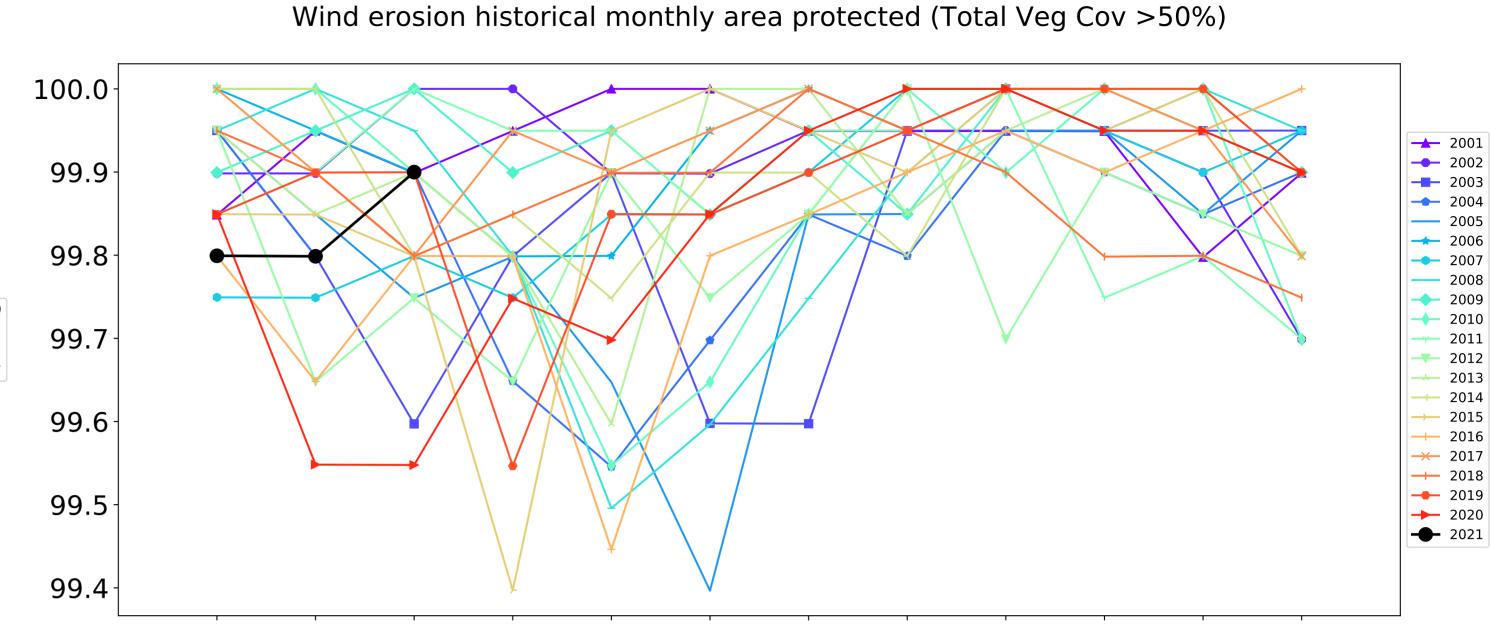




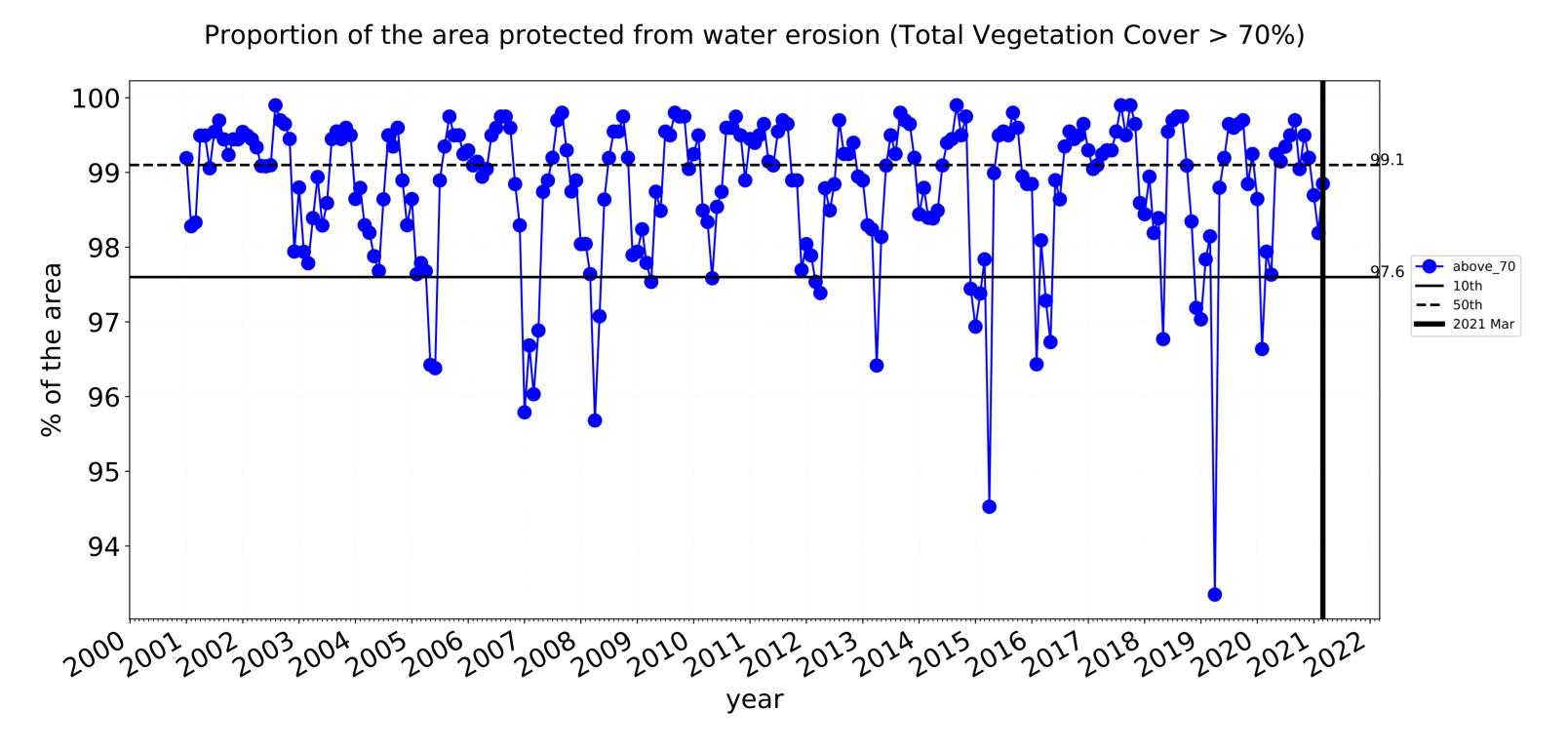


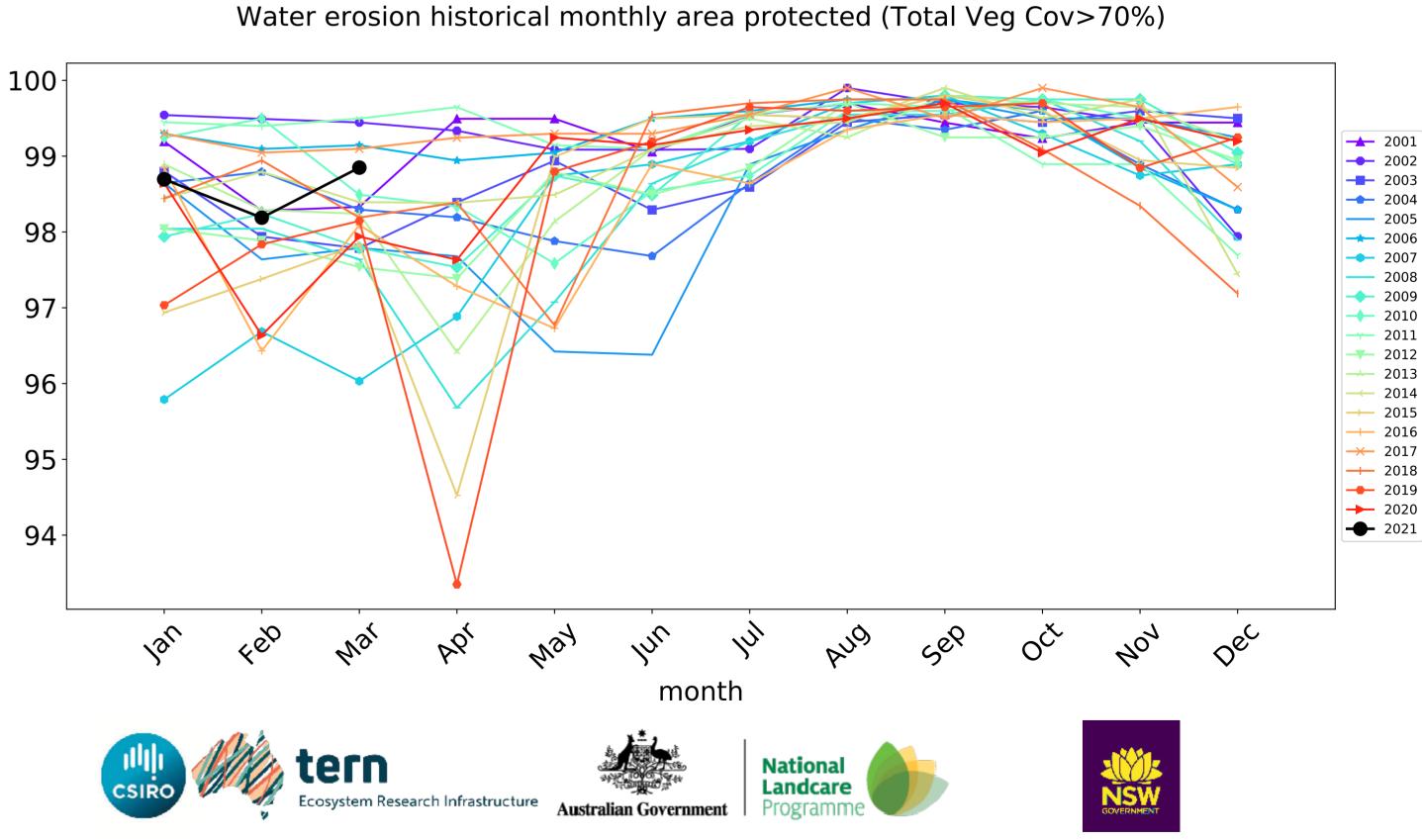
### **Grazing non forest timeseries**

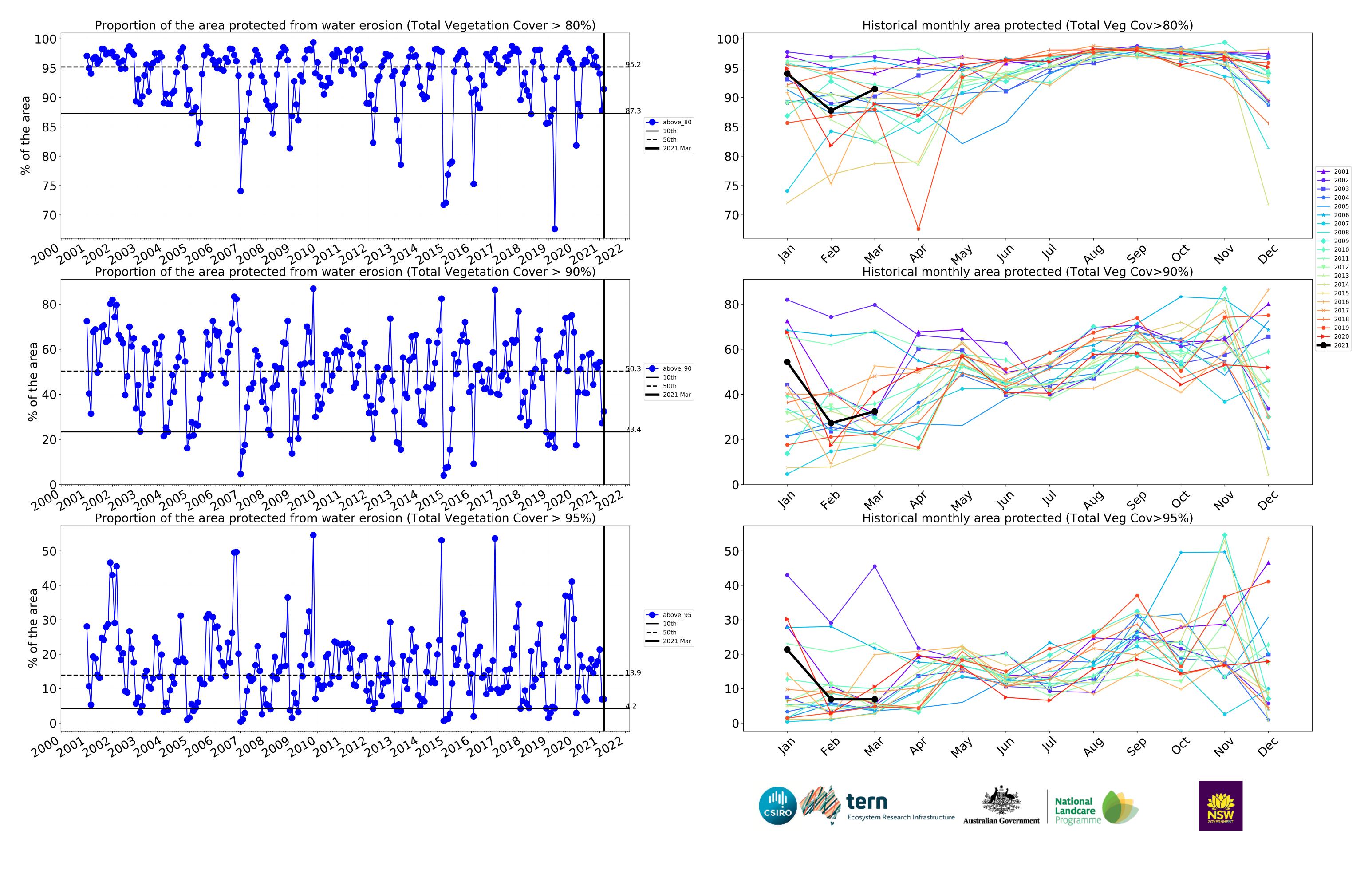




month

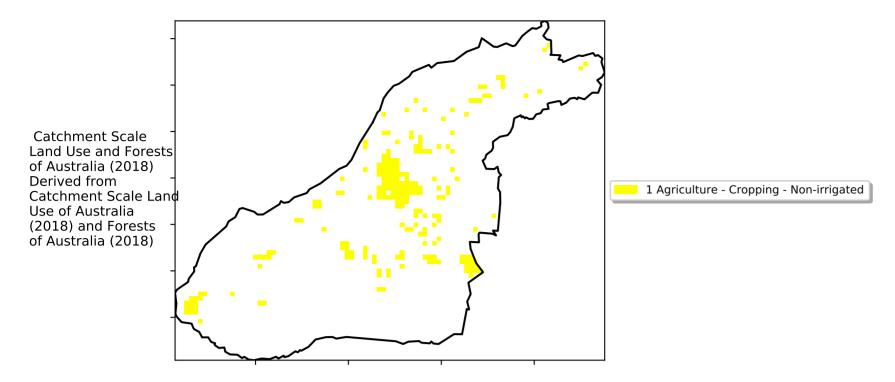




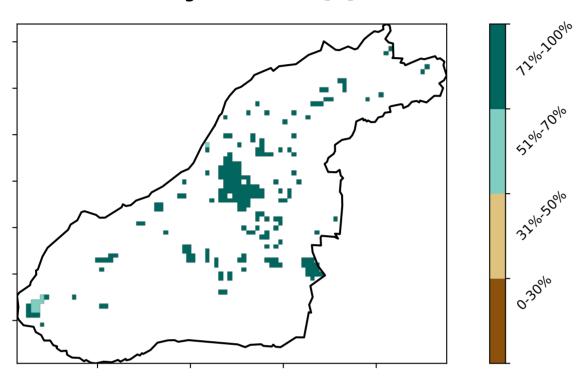


### Cropping

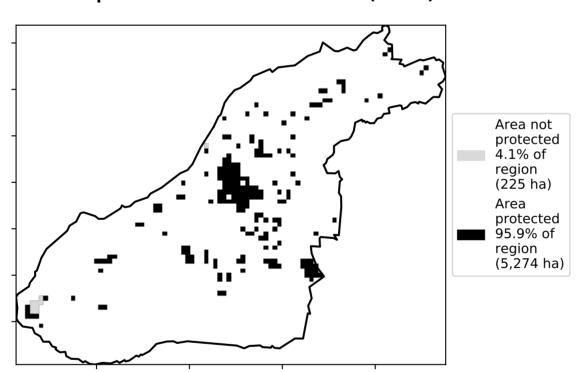
### Land use and forest cover



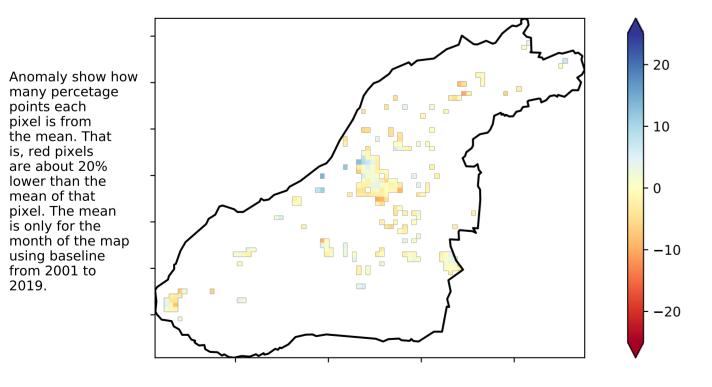
### **Total Vegetation Cover [%]**



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

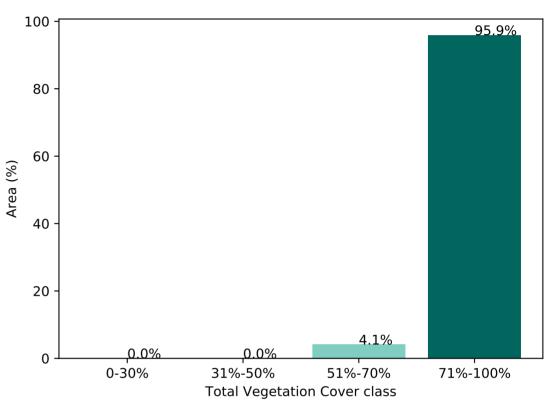


### Total Vegetation Cover Anomaly [%]

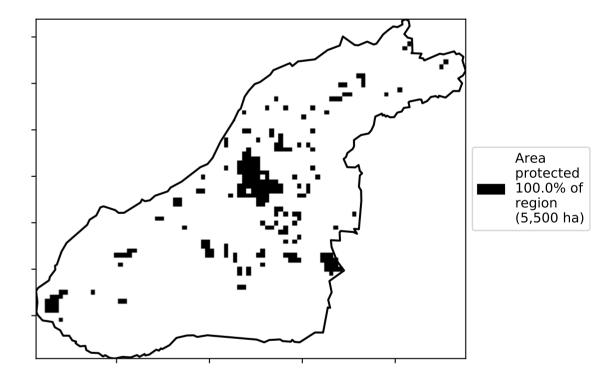


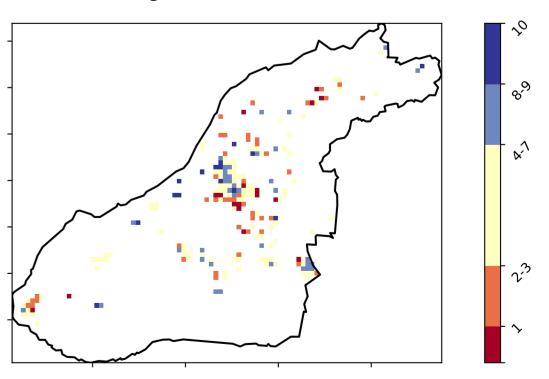
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

### Proportion of vegetation cover class in area



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





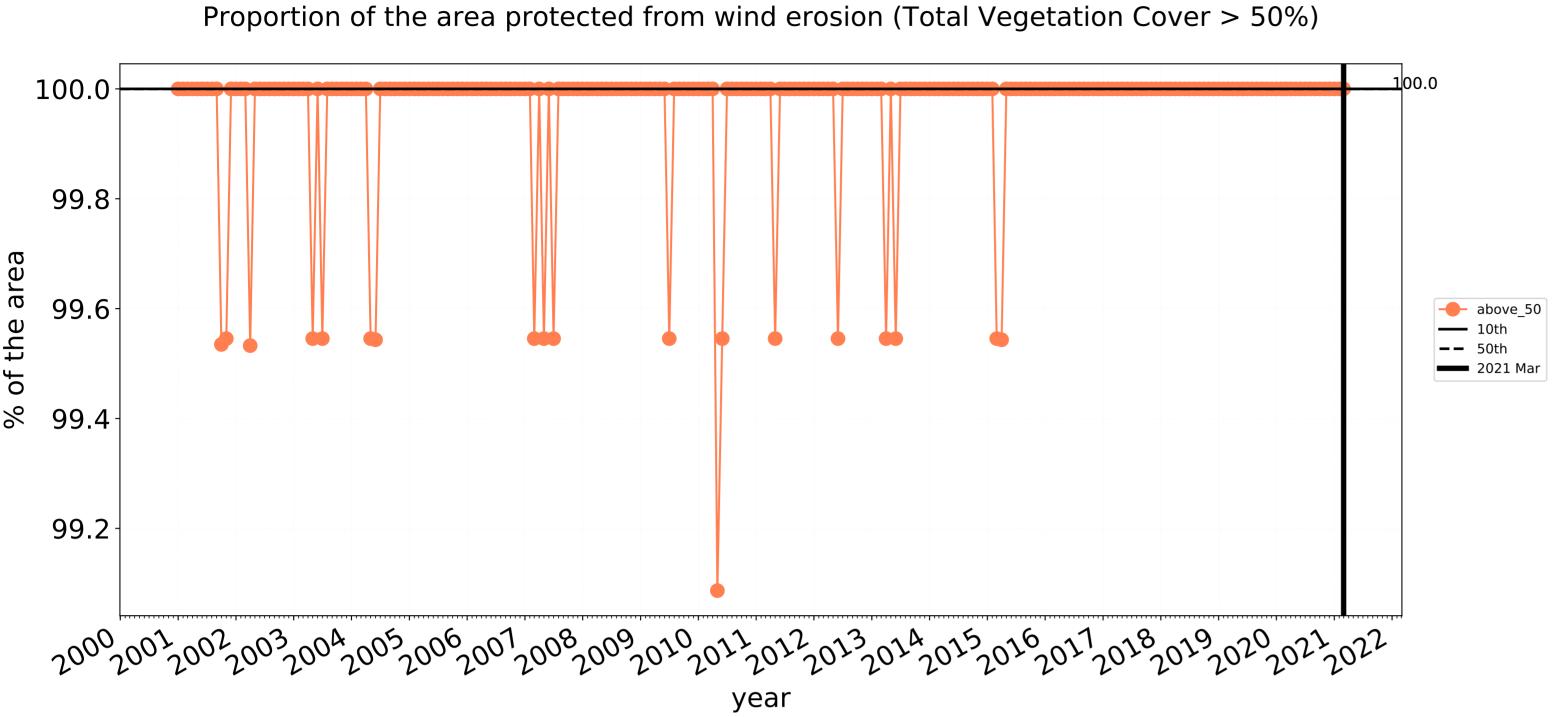


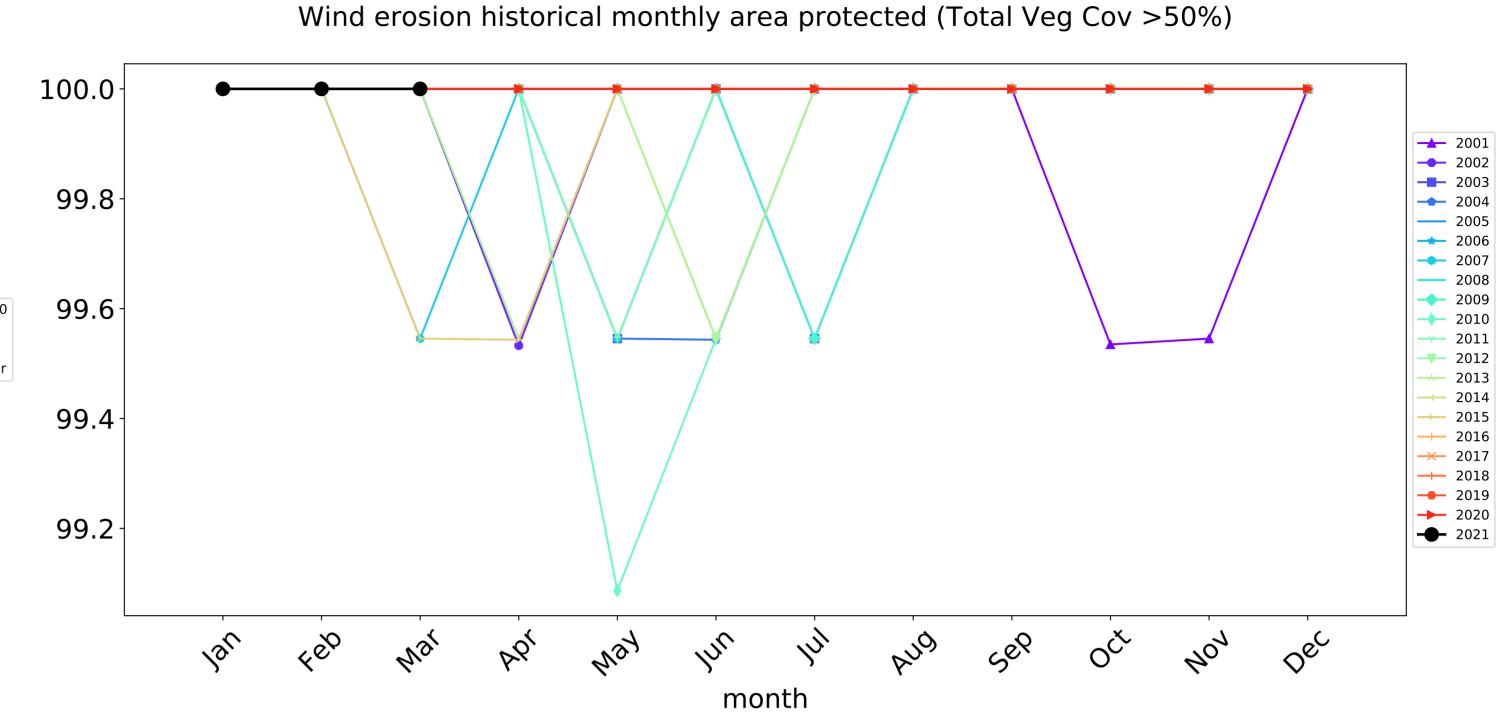


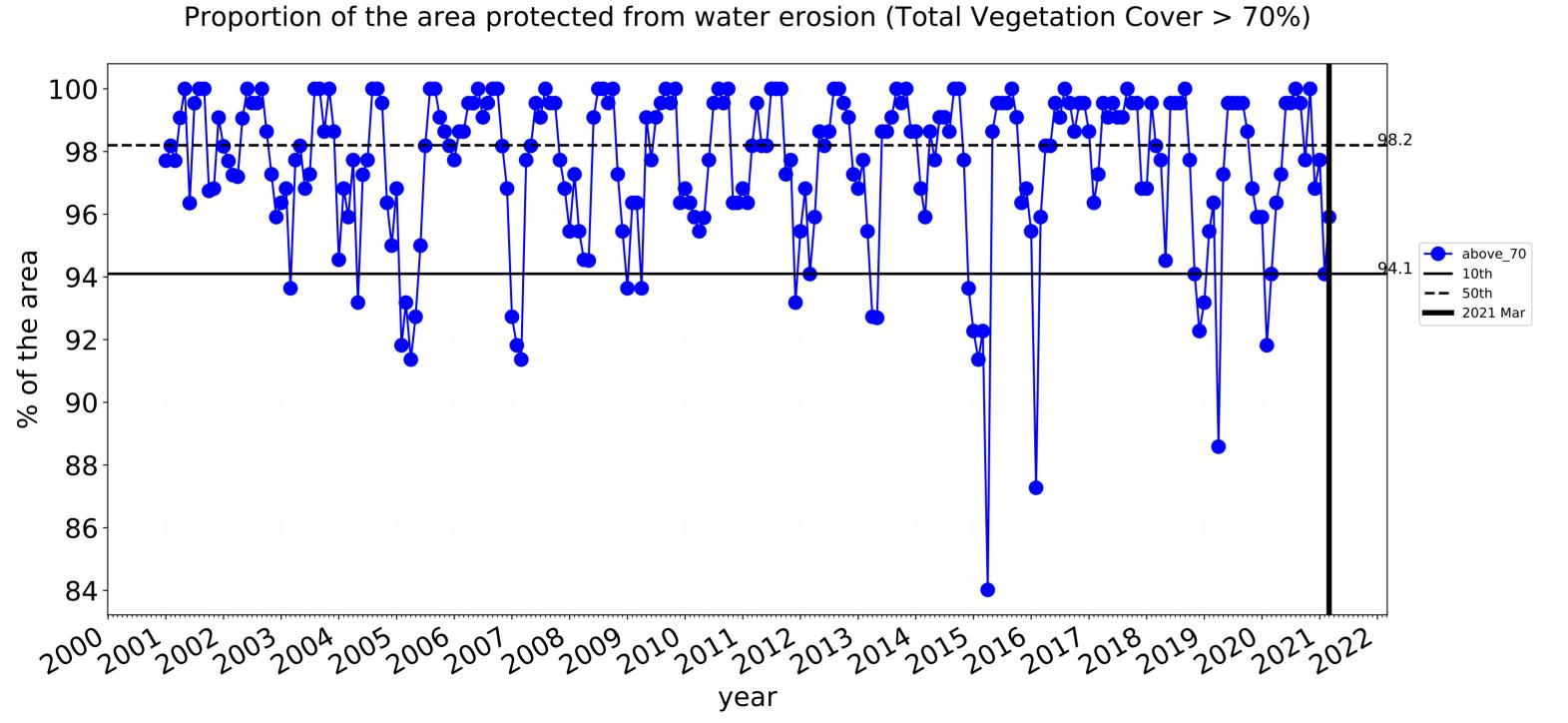


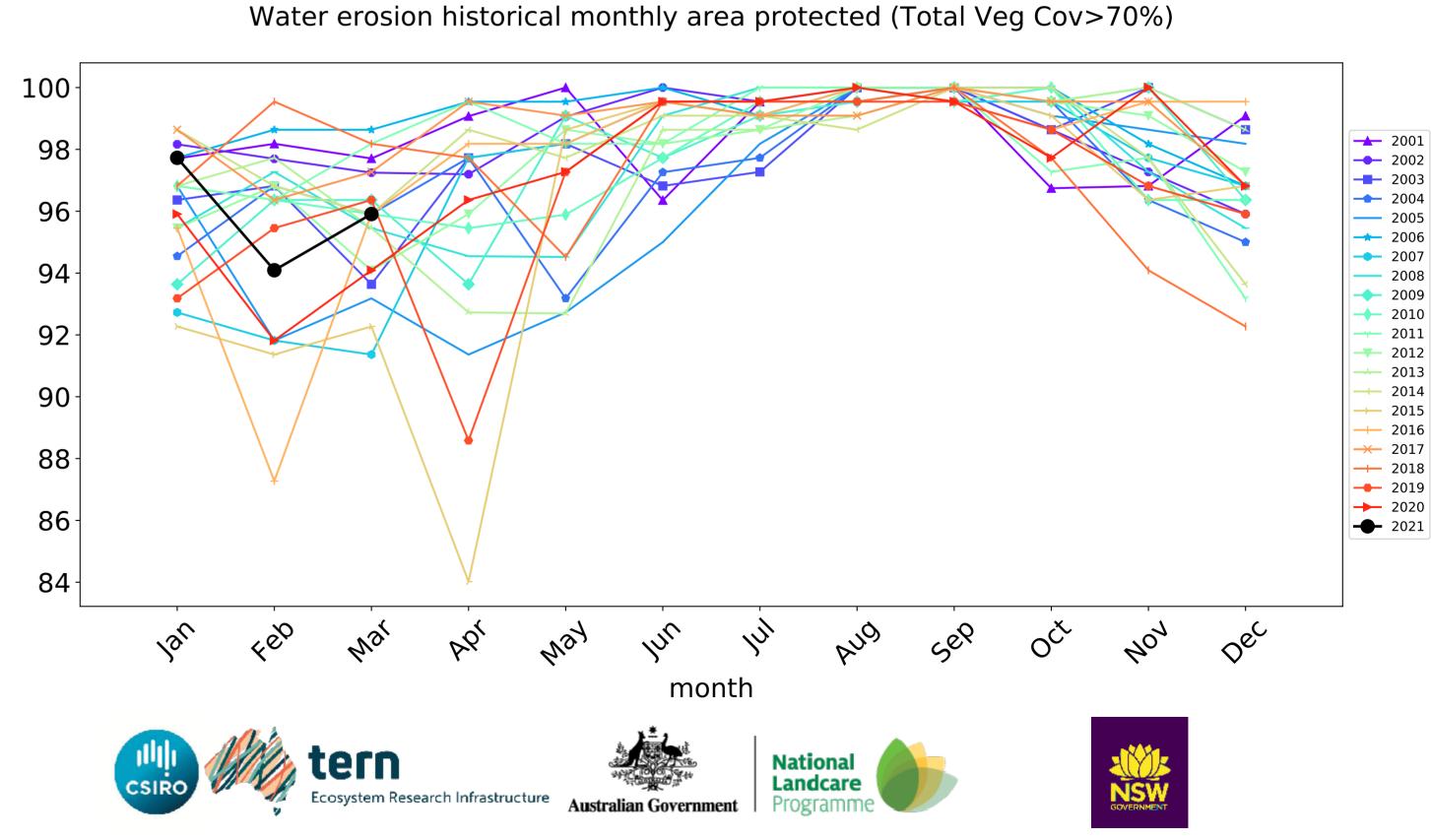


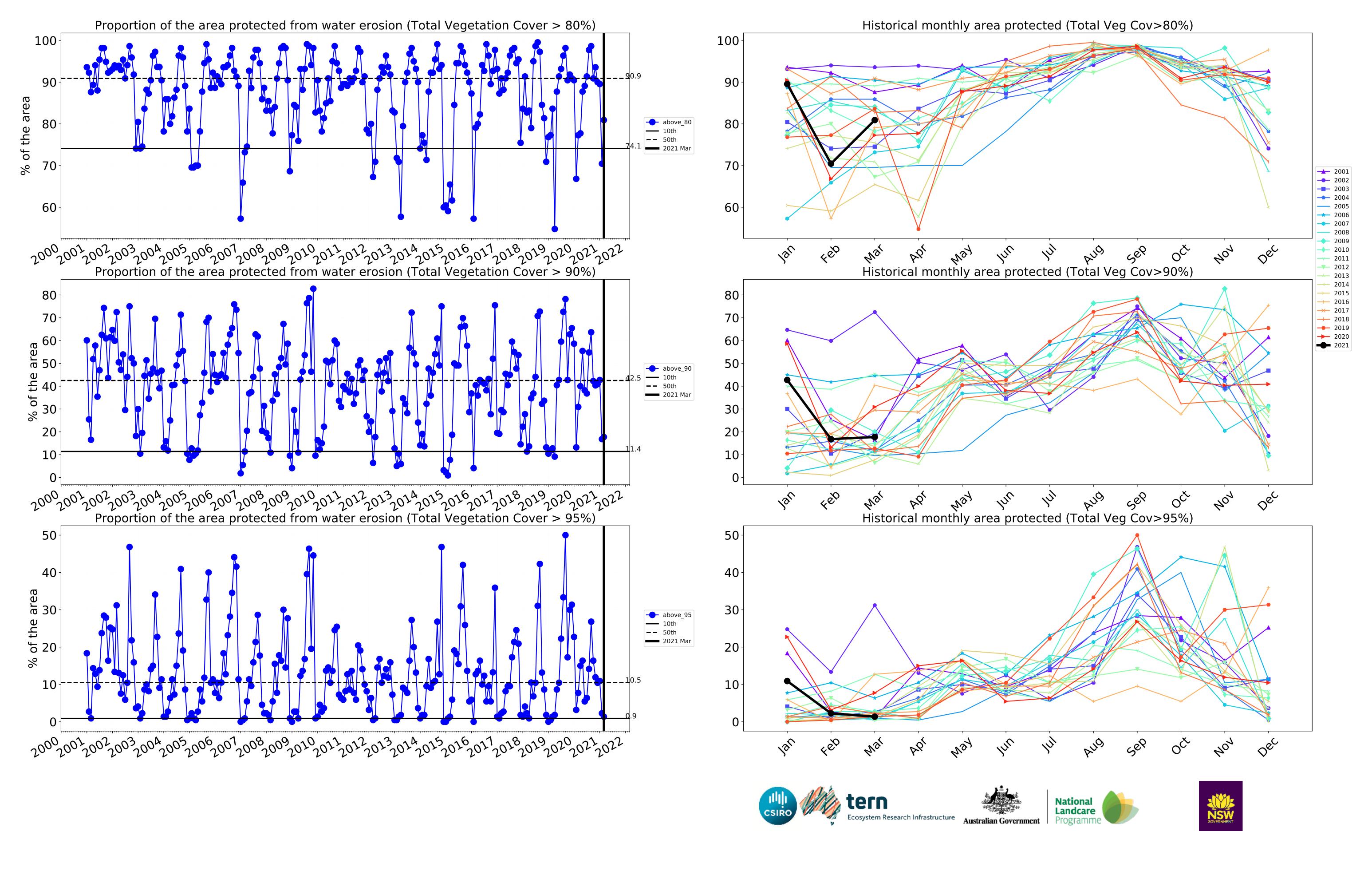
### **Cropping timeseries**







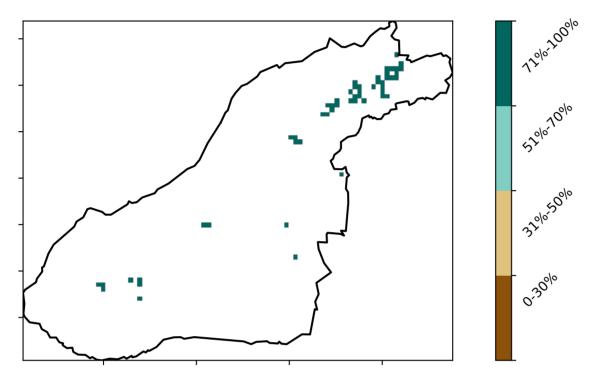




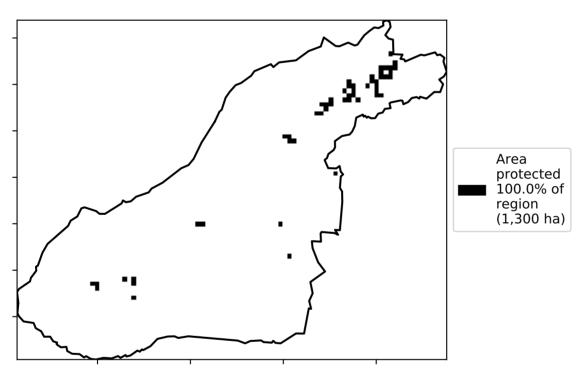
### Irrigation

# Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) Service of Australia (2018) Agriculture - Grazing - Irrigated 2 Agriculture - Cropping - Irrigated 3 Agriculture - Horticulture - Irrigated 3 Agriculture - Horticulture - Irrigated

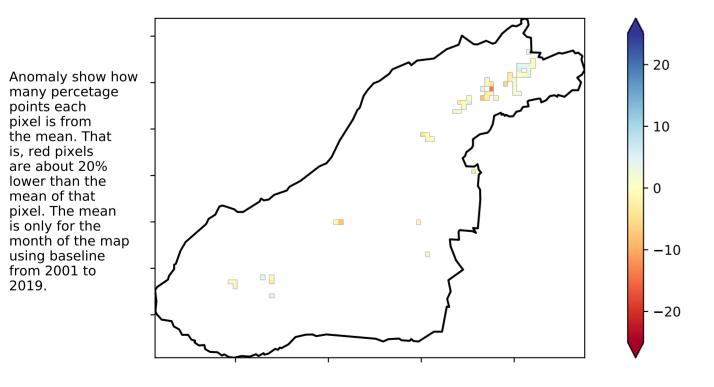
### **Total Vegetation Cover [%]**



### % 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.

### 

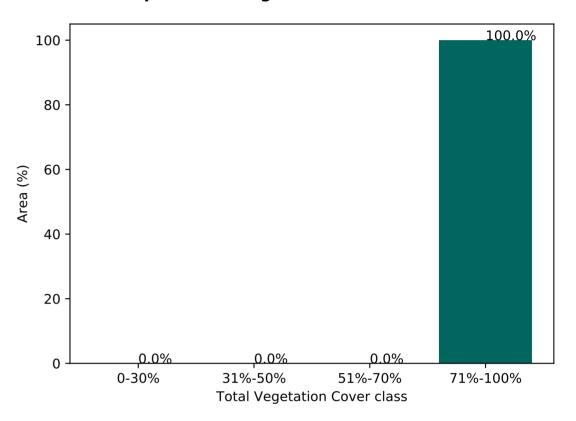
**Proportion of each land class in area** 

**Proportion of vegetation cover class in area** 

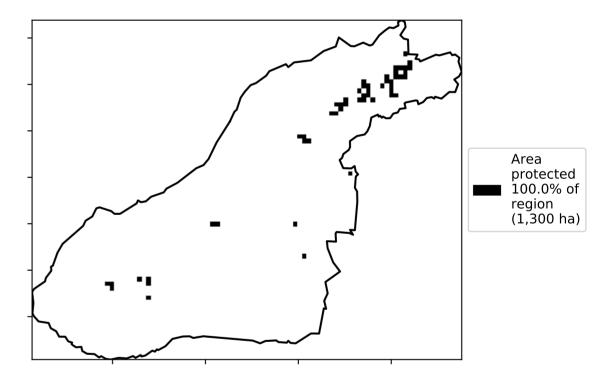
Land use class

2

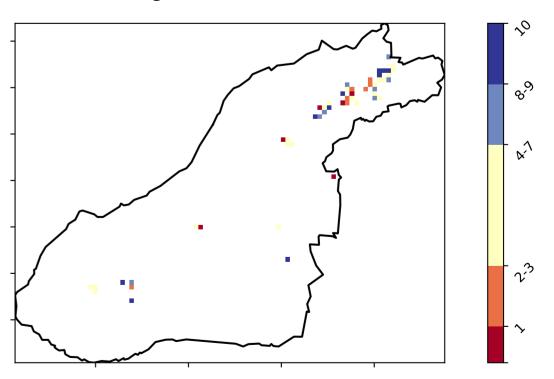
3



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]

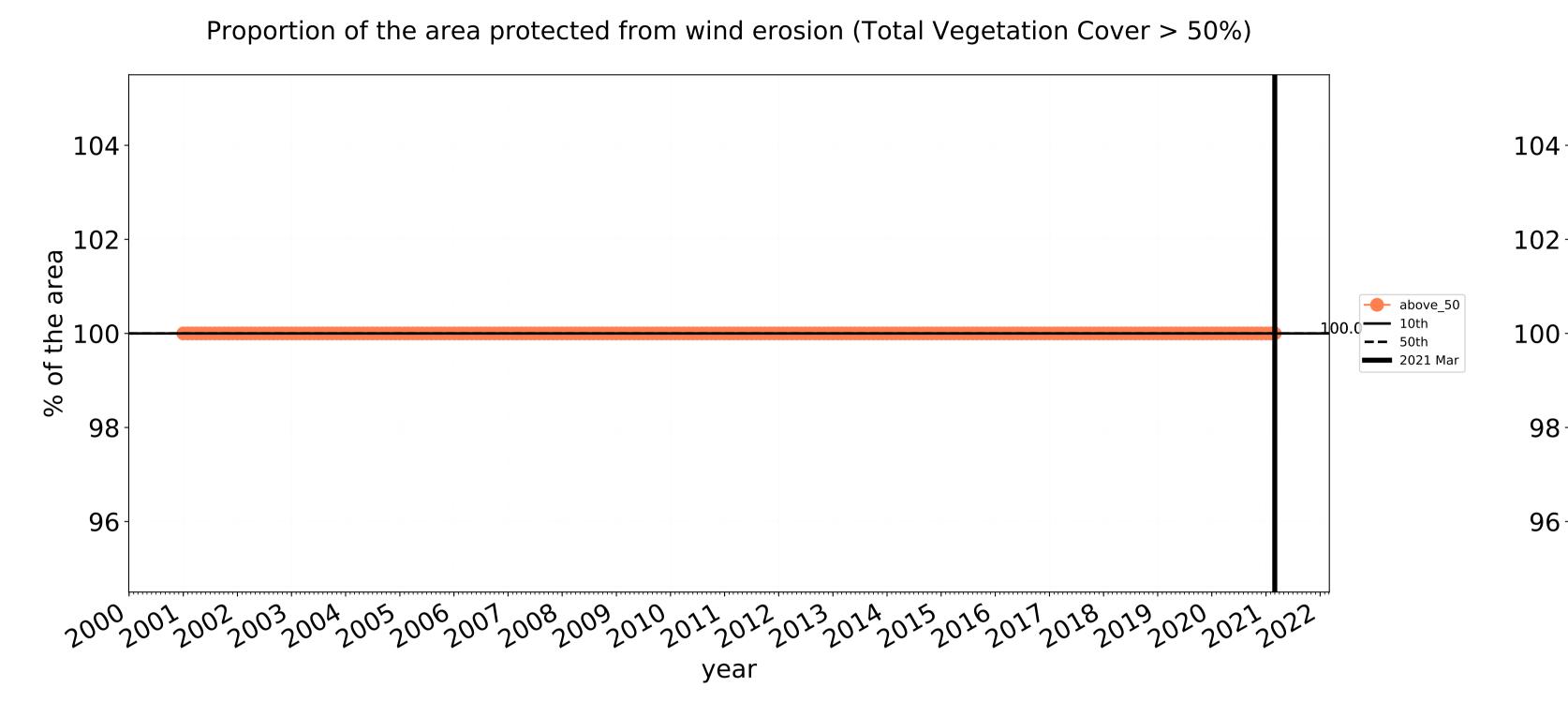


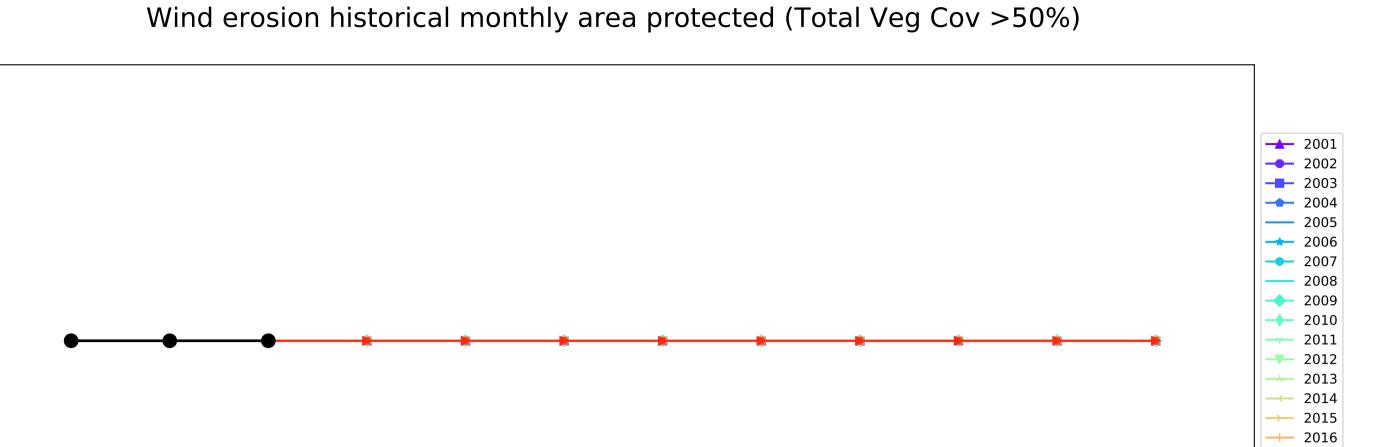




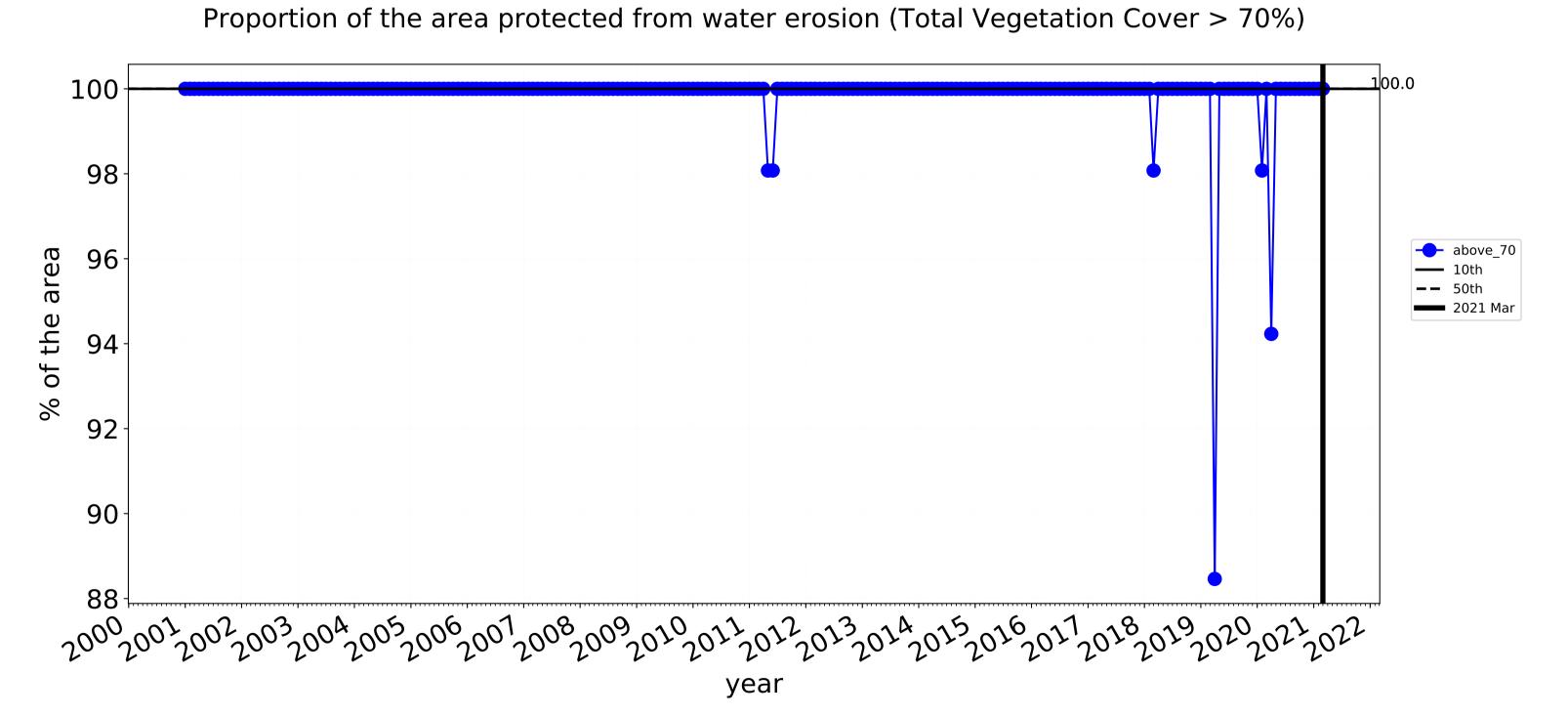


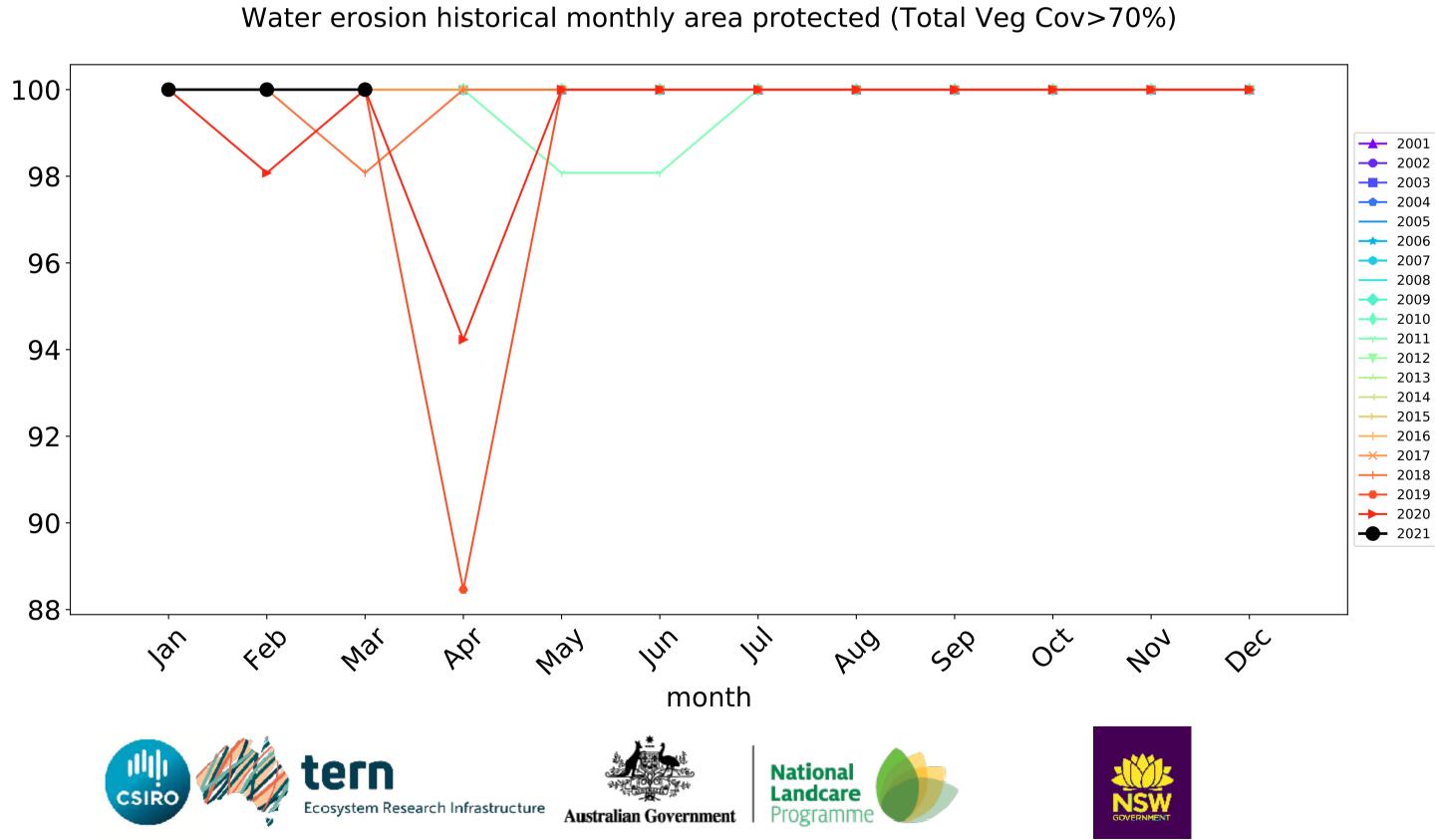






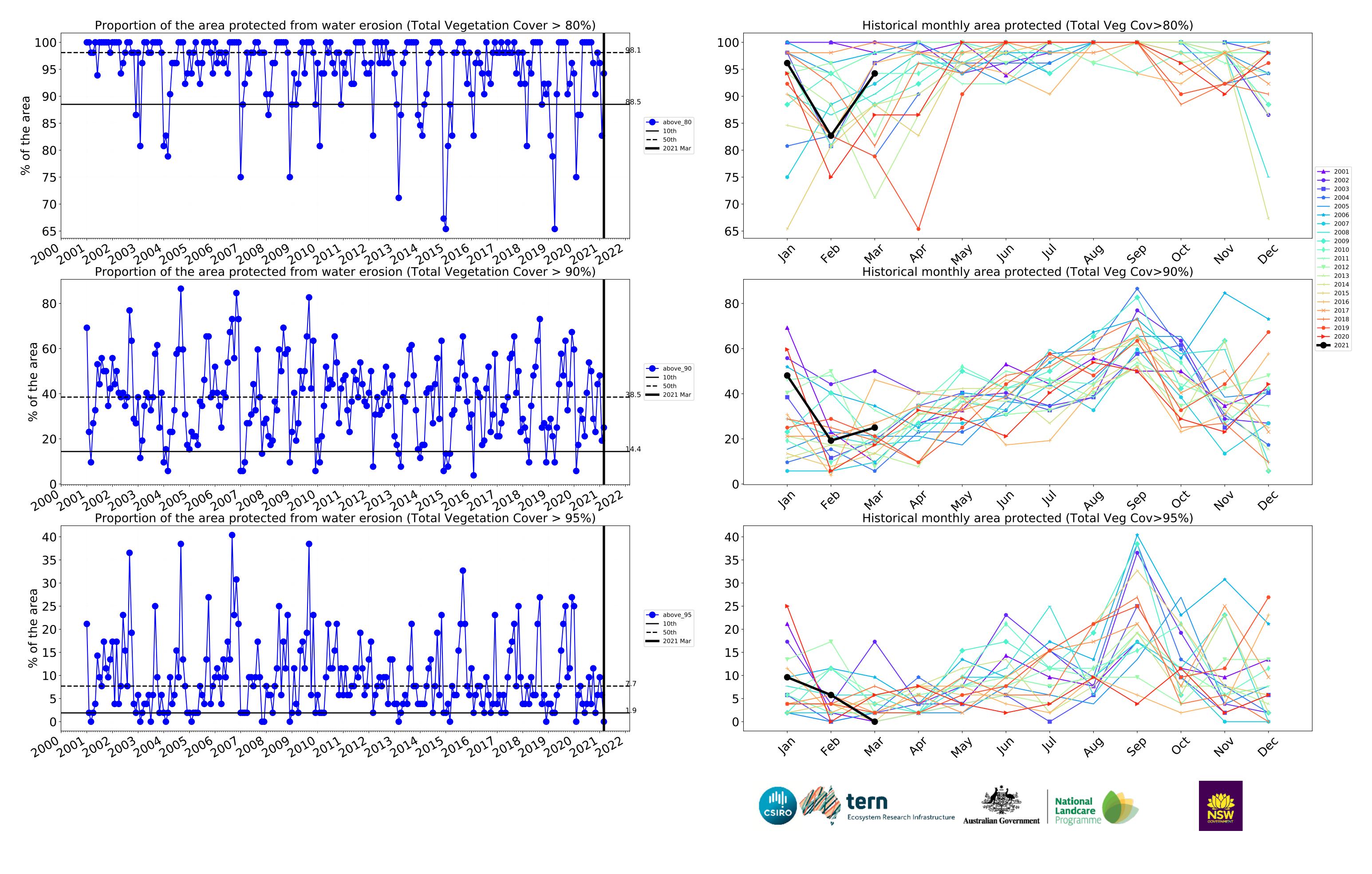
404





month

Nay



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

### Land use and forest cover 1 Production native forests and plantation forests

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

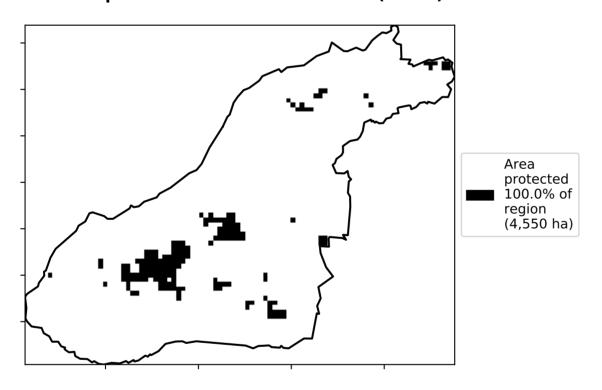
Catchment Scale Land Use and Forests of Australia (2018)

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

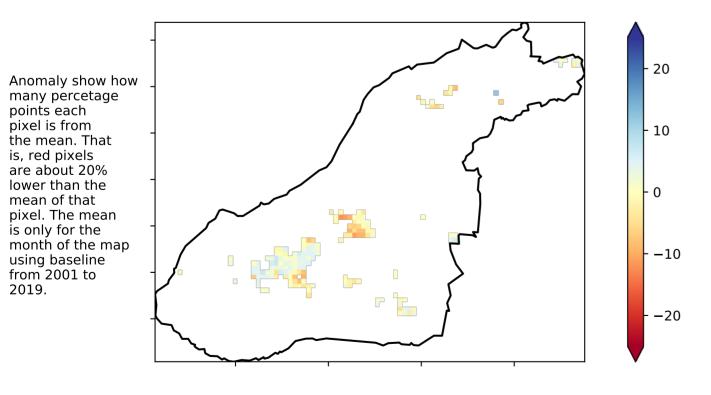
Derived from

### The state of the s

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

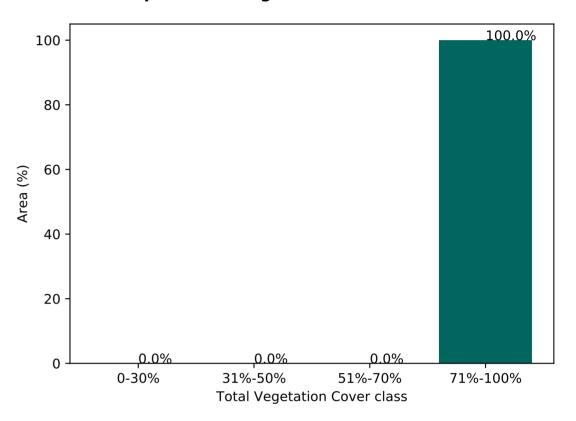


### Total Vegetation Cover Anomaly [%]

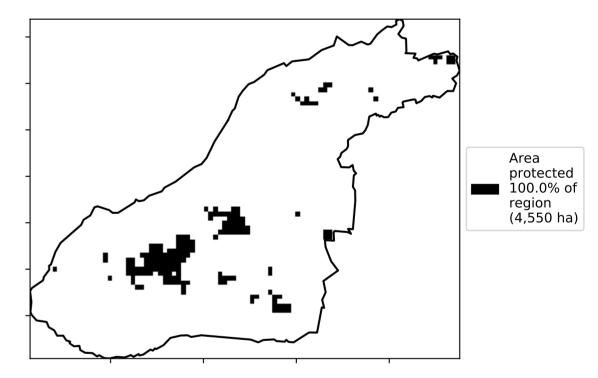


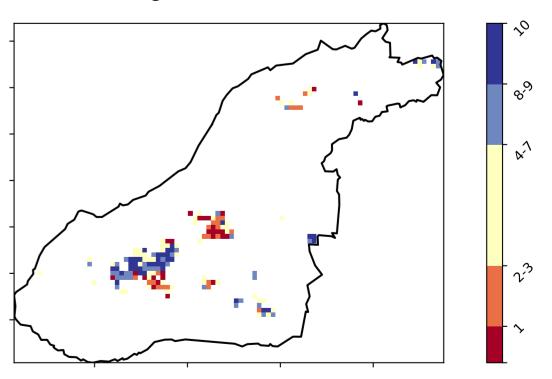
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

### Proportion of vegetation cover class in area



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





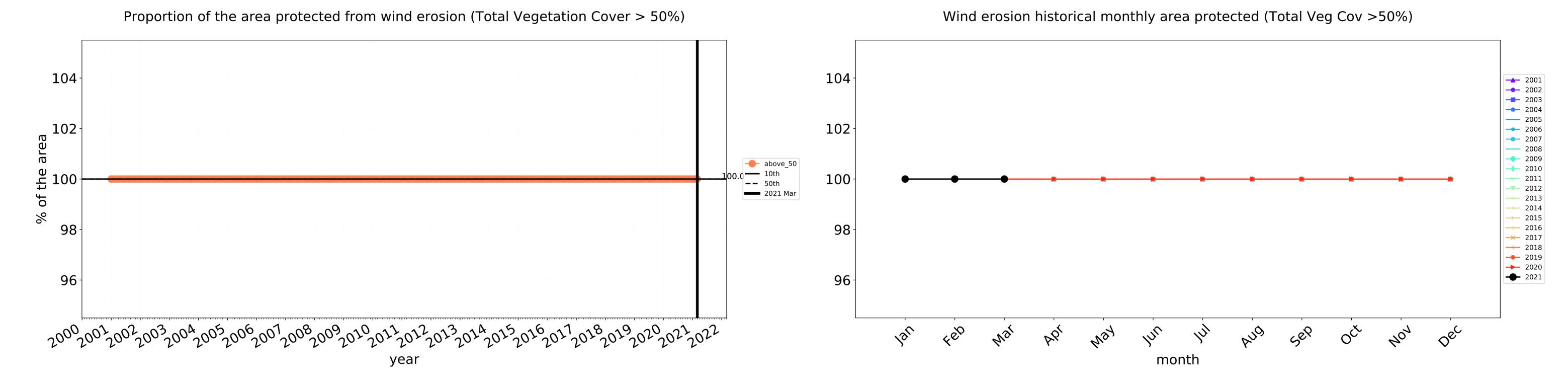


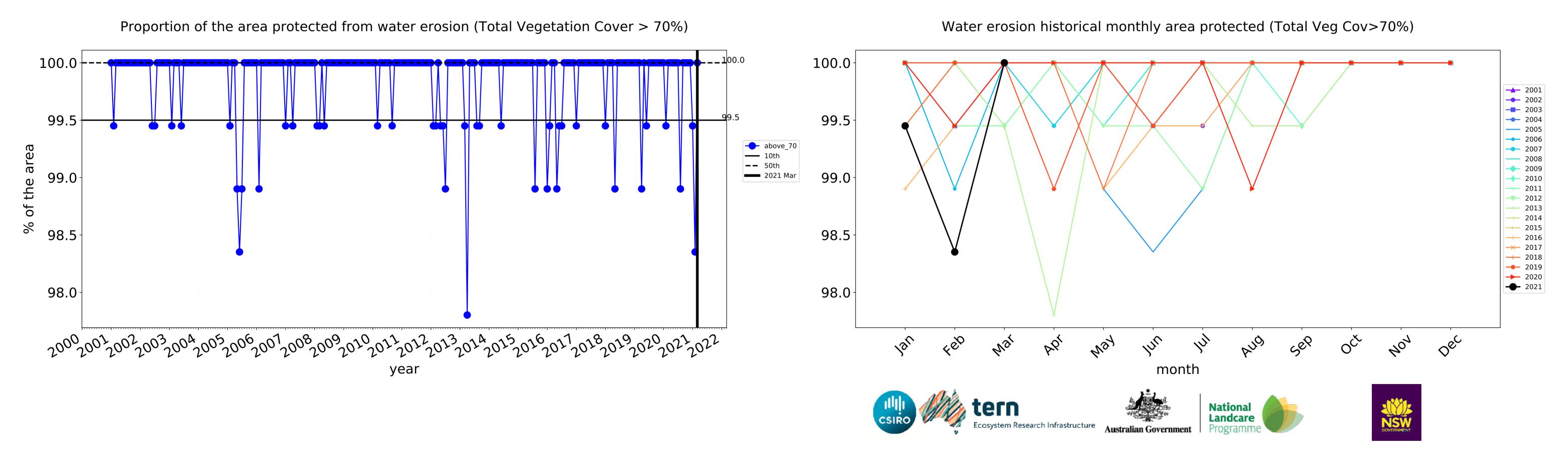


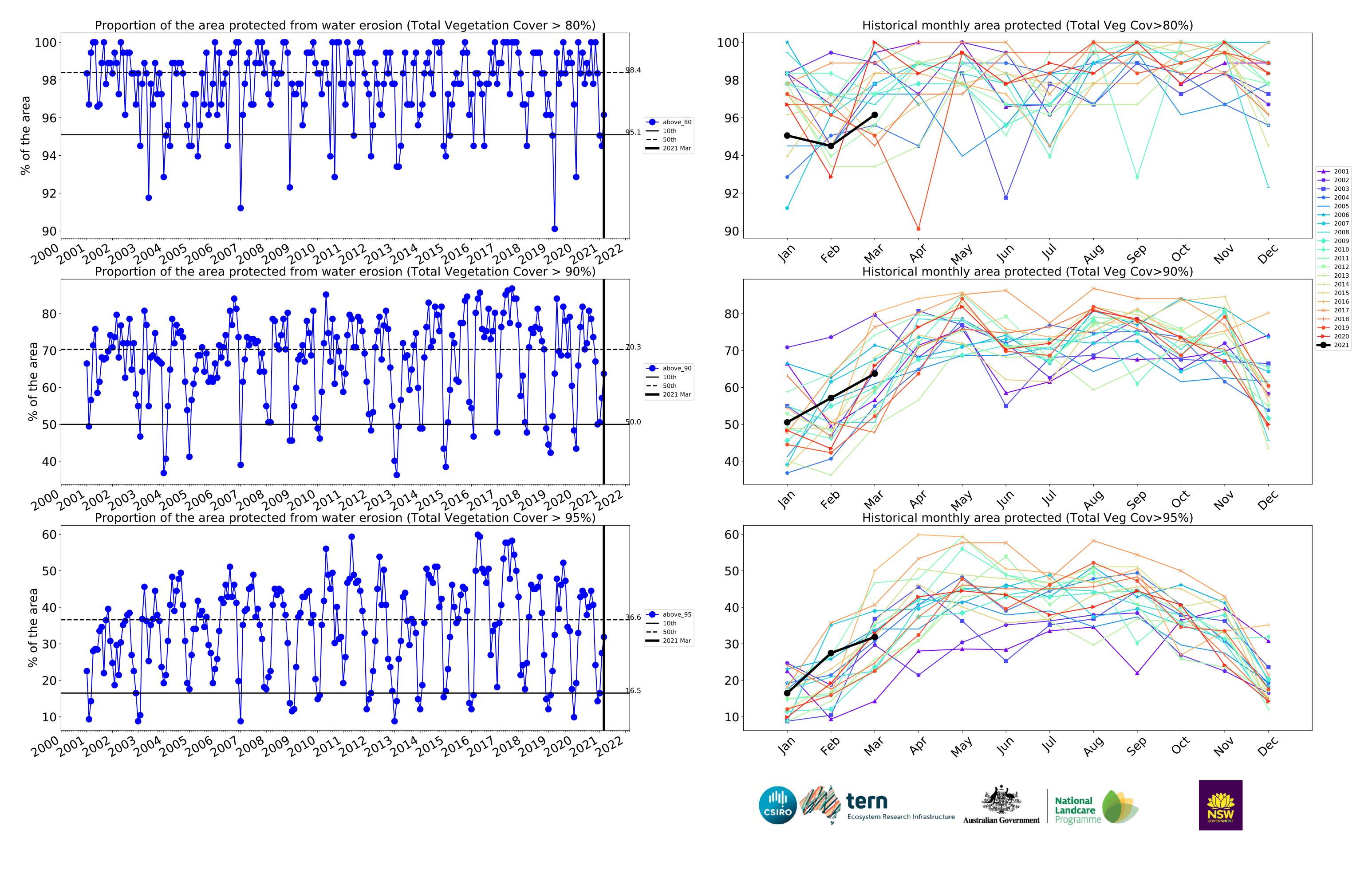




### **Production native forests and plantation forests timeseries**







### Yankalilla\_(DC) (73,400 ha and no data 1,737 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	73,400	100.0% 73,375	99.9% 73,325	98.4% 72,200	90.2% 66,200	36.2% 26,575	9.6% 7,075
Conservation and natural environments	9,350	100.0% 9,350	100.0% 9,350	99.2% 9,275	94.7% 8,850	62.3% 5,825	21.4% 2,000
Conservation and natural environments non forest	1,325	100.0% 1,325	100.0% 1,325	96.2% 1,275	81.1% 1,075	35.8% 475	13.2% 175
Conservation and natural environments Woodland forest	5,350	100.0% 5,350	100.0% 5,350	99.5% 5,325	96.3% 5,150	65.0% 3,475	22.0% 1,175
Conservation and natural environments Forest (non woodland)	2,675	100.0% 2,675	100.0% 2,675	100.0% 2,675	98.1% 2,625	70.1% 1,875	24.3% 650
Agriculture	57,225	100.0% 57,200	99.9% 57,175	98.6% 56,425	90.6% 51,825	30.9% 17,675	6.2% 3,575
Grazing	50,425	100.0% 50,400	99.9% 50,375	98.9% 49,850	91.5% 46,150	32.5% 16,375	6.9% 3,500
Grazing non forest	49,950	99.9% 49,925	99.9% 49,900	98.8% 49,375	91.4% 45,675	32.4% 16,200	6.9% 3,450
Cropping	5,500	100.0% 5,500	100.0% 5,500	95.9% 5,275	80.9% 4,450	17.7% 975	1.4% 75
Irrigation	1,300	100.0% 1,300	100.0% 1,300	100.0% 1,300	94.2% 1,225	25.0% 325	0.0%
Production native forests and plantation forests	4,550	100.0% 4,550	100.0% 4,550	100.0% 4,550	96.2% 4,375	63.7% 2,900	31.9% 1,450







