### 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.

Date: July 2021

Land use forest cover:

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



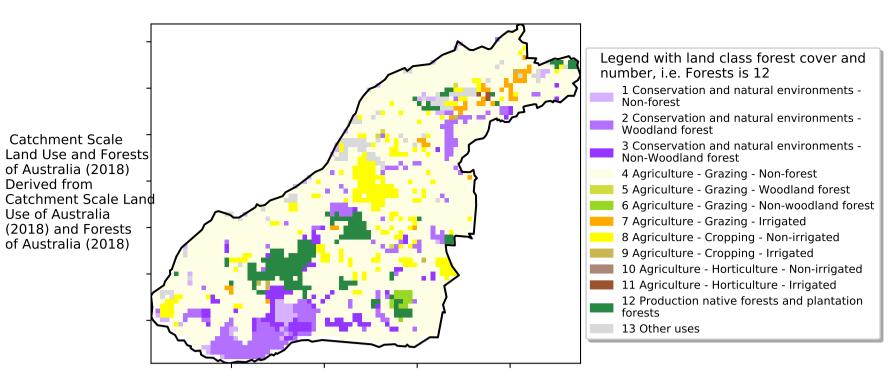




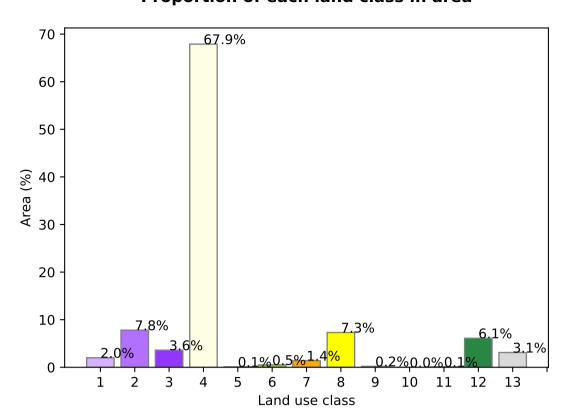


### **Vegetation Cover Jul 2021**

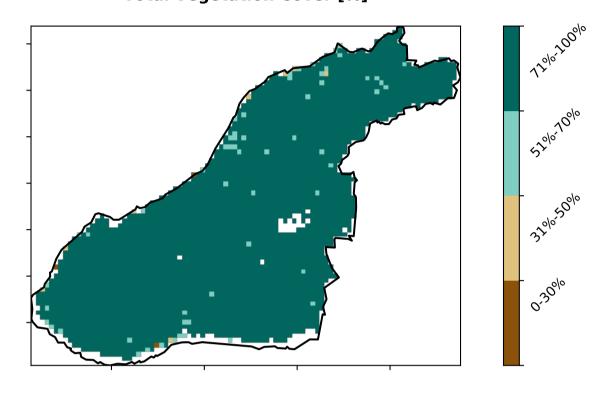
### Land use and forest cover



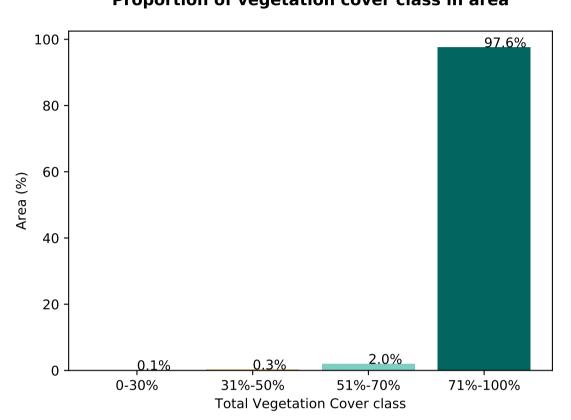
### Proportion of each land class in area



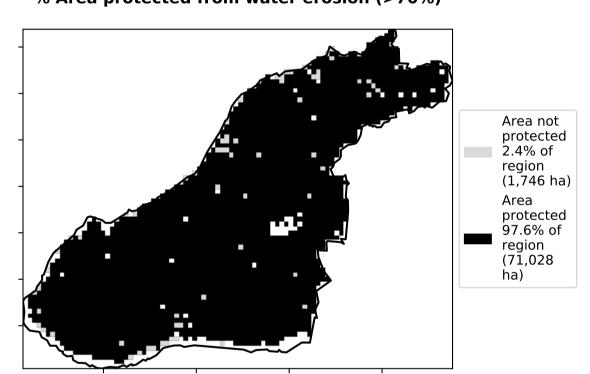
### Total Vegetation Cover [%]



Proportion of vegetation cover class in area



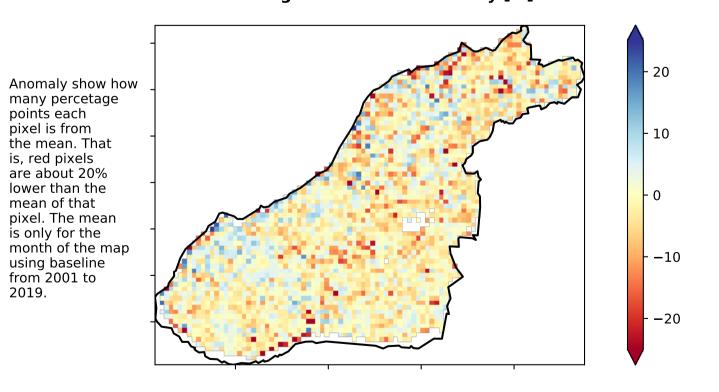
### % Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

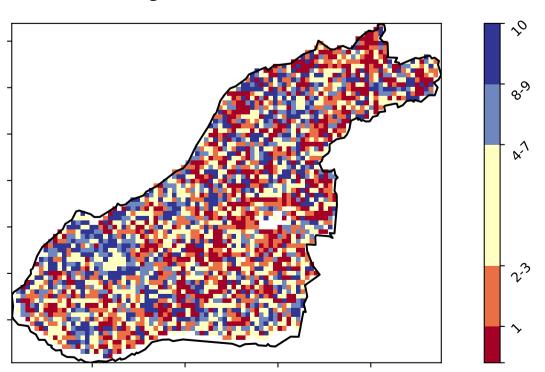


### Total Vegetation Cover Anomaly [%]



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 [%]**

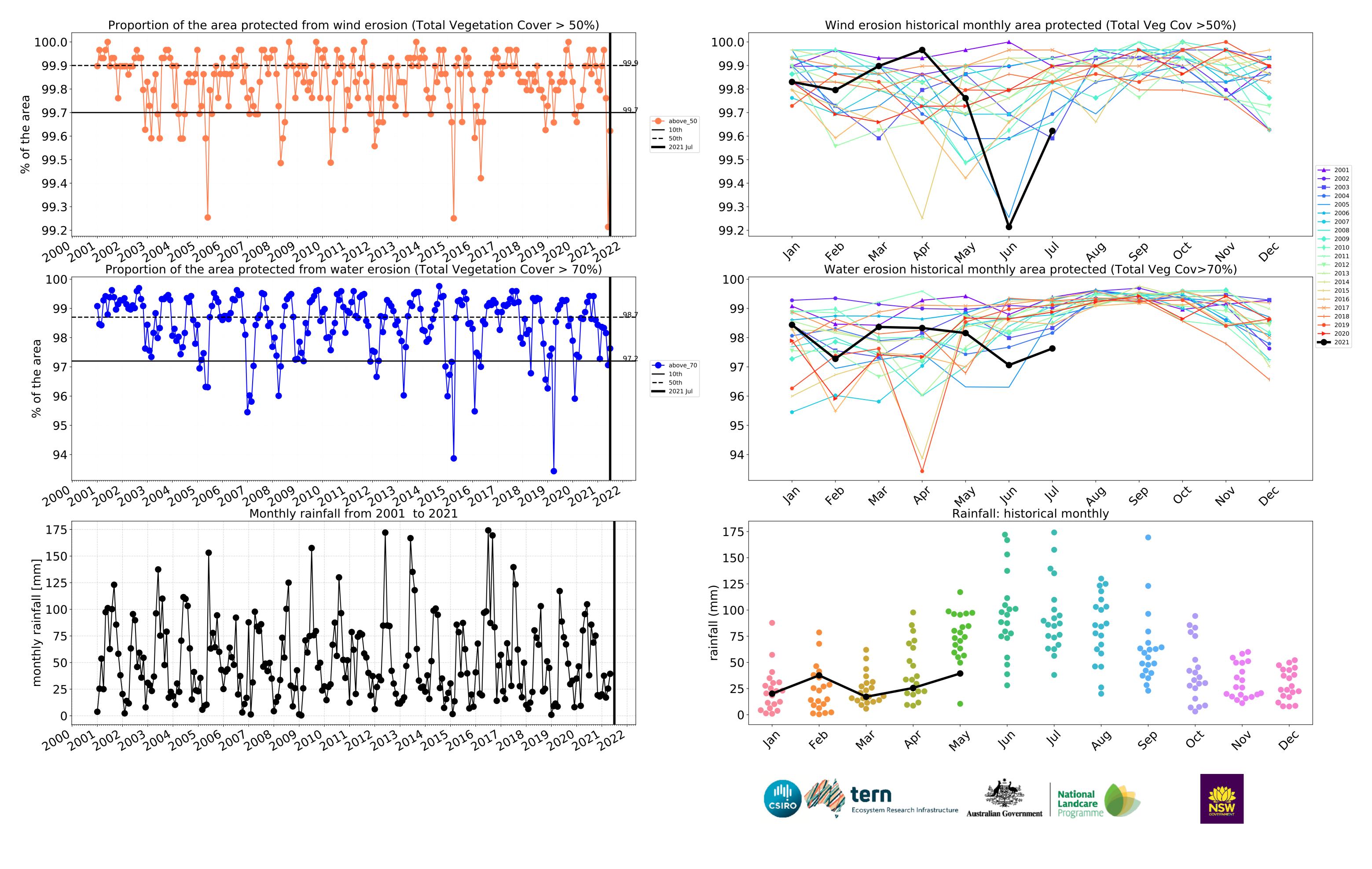


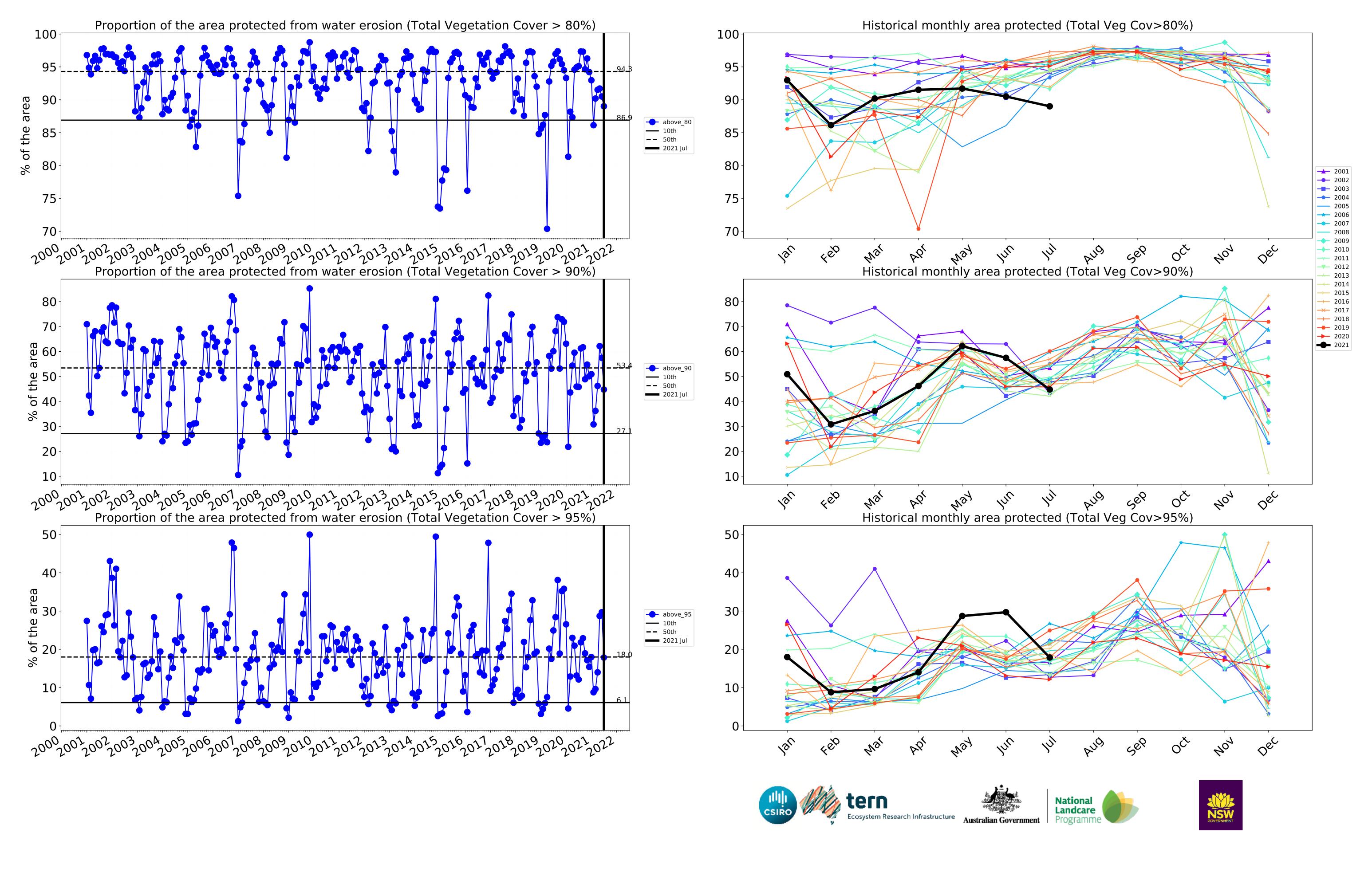




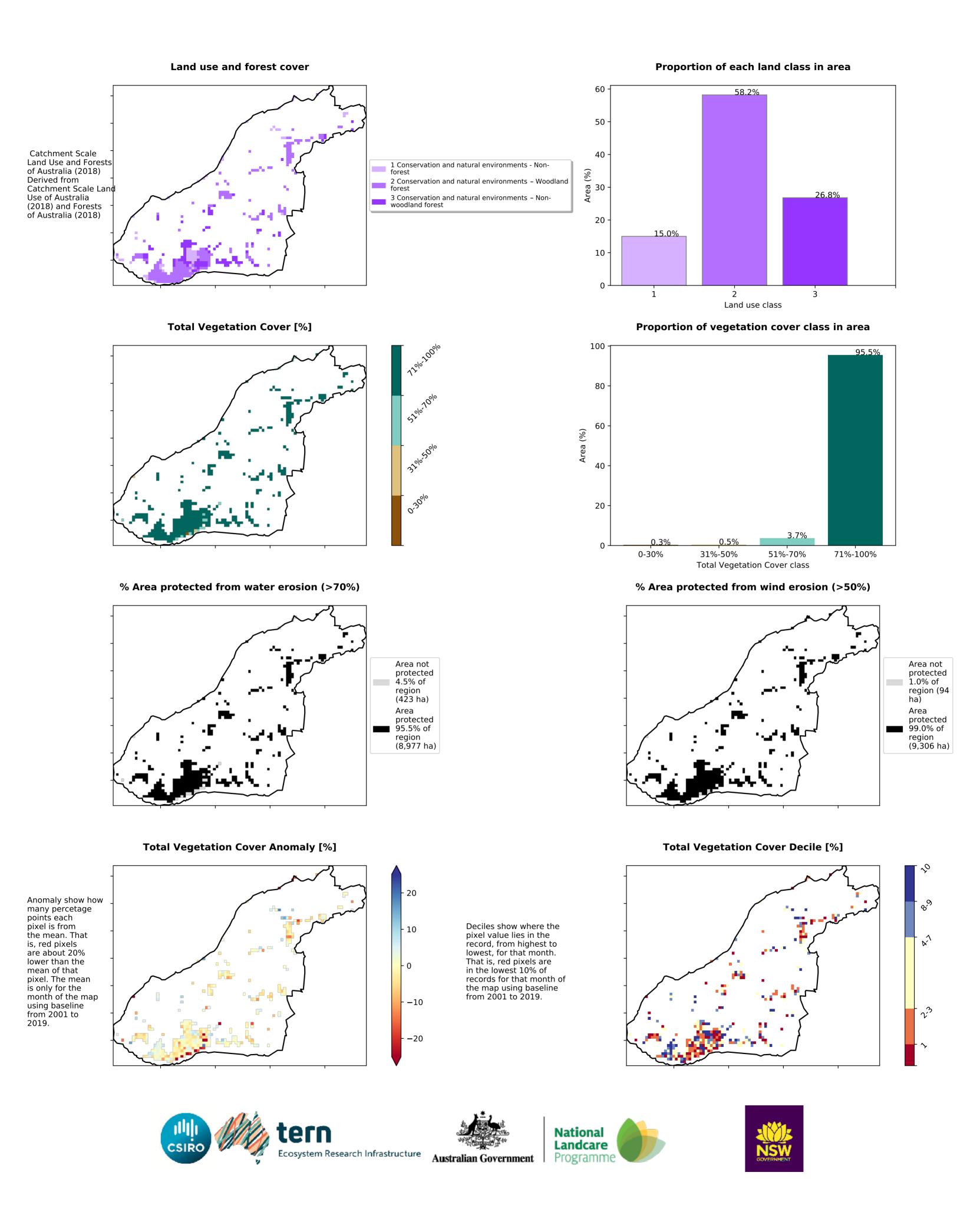




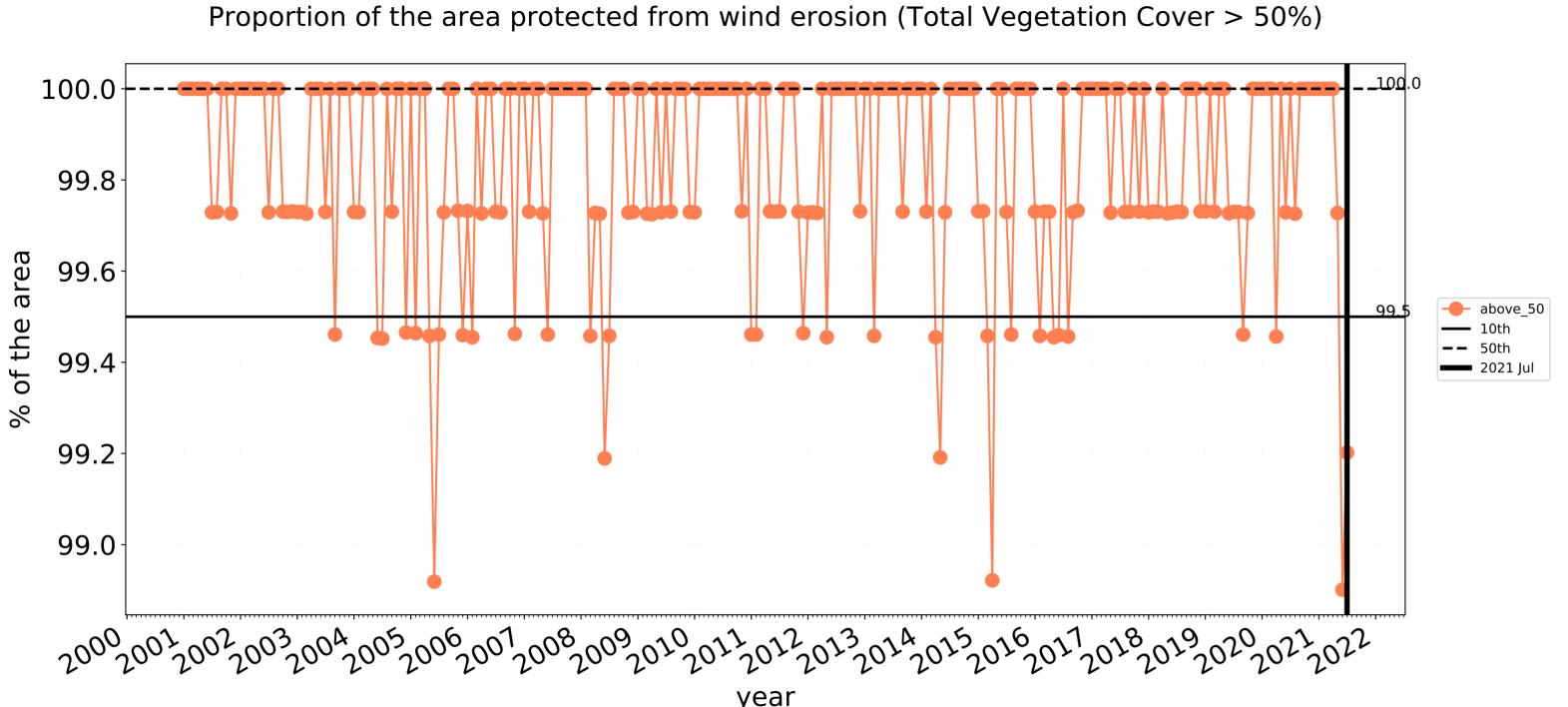


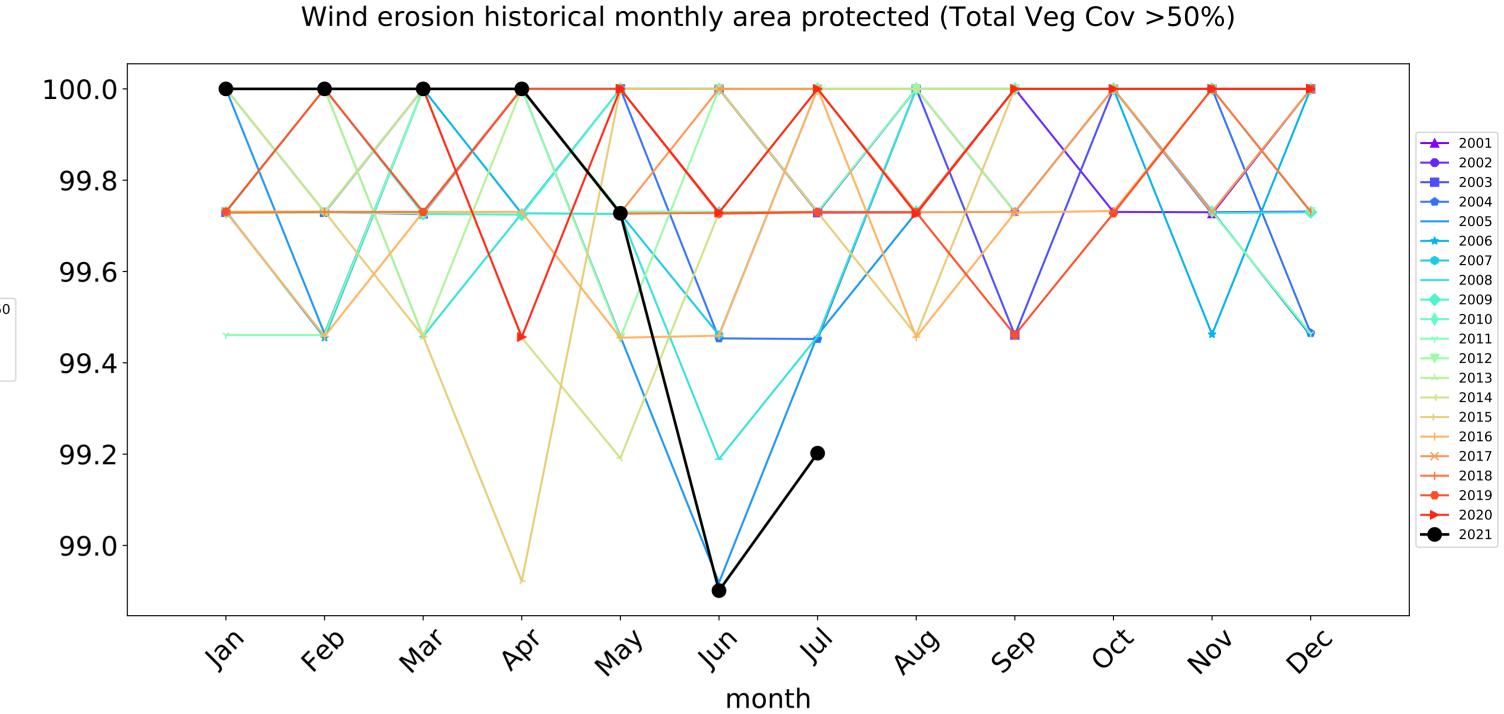


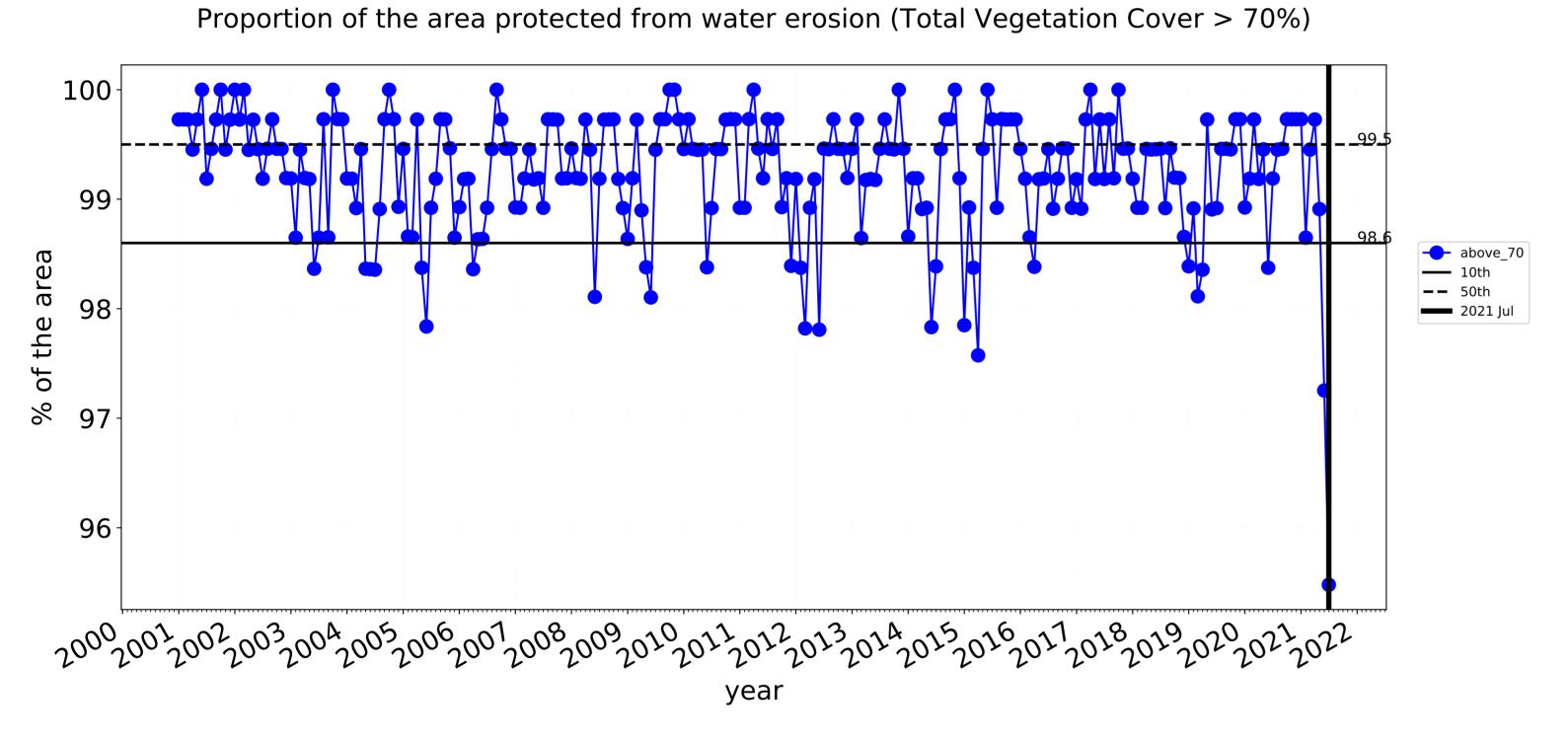
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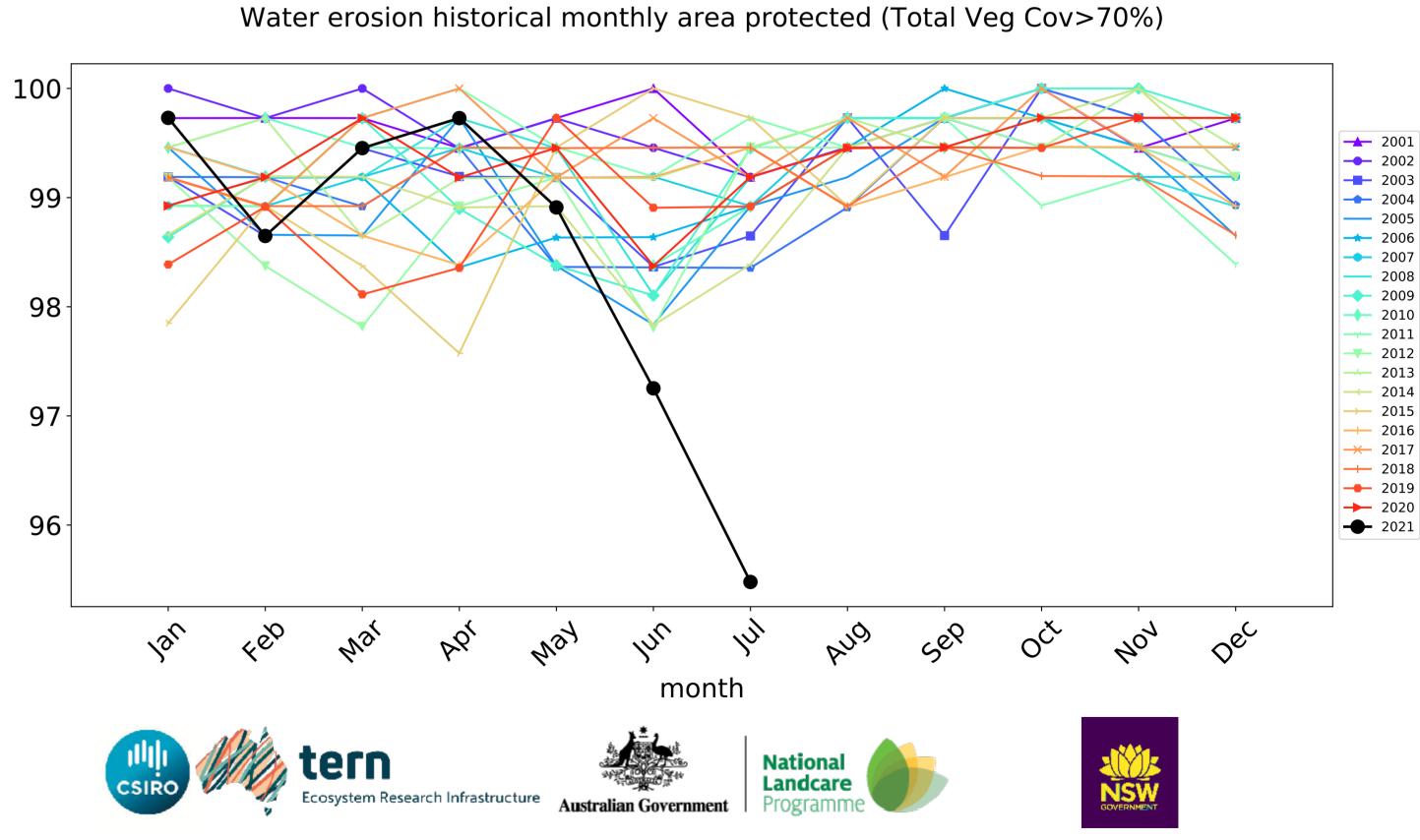


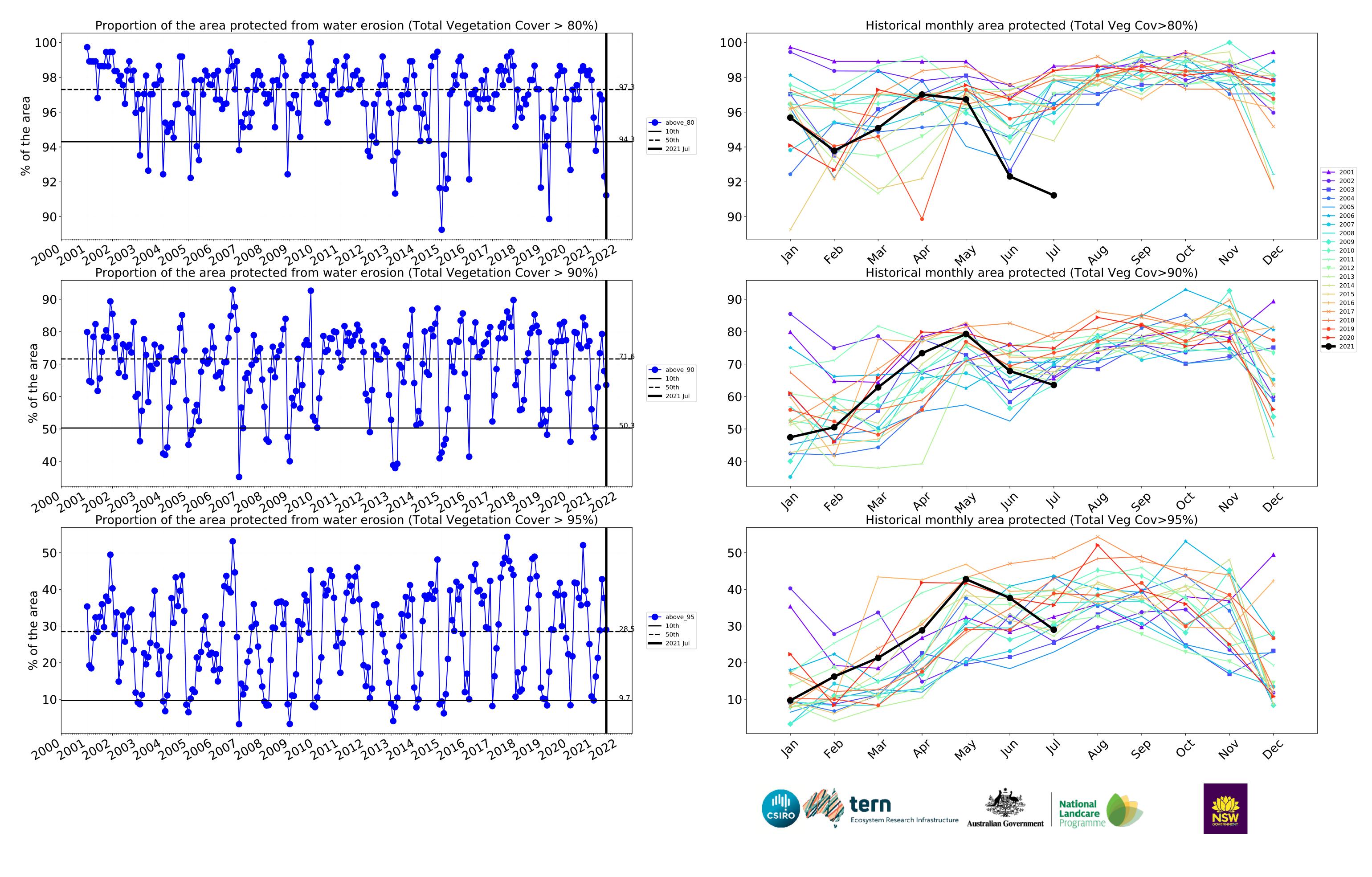
### **Conservation and natural environments timeseries**





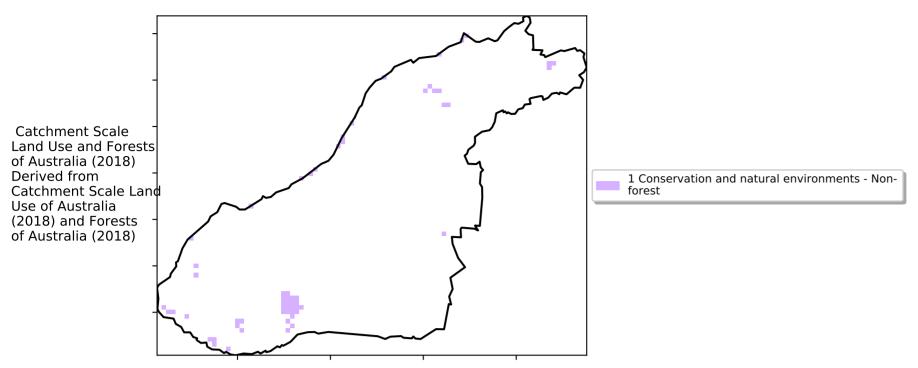




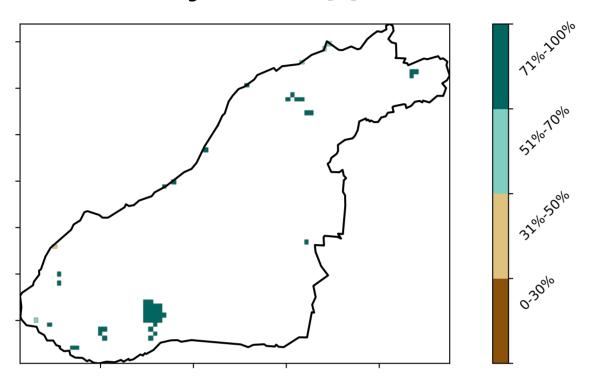


### **Conservation and natural environments non forest**

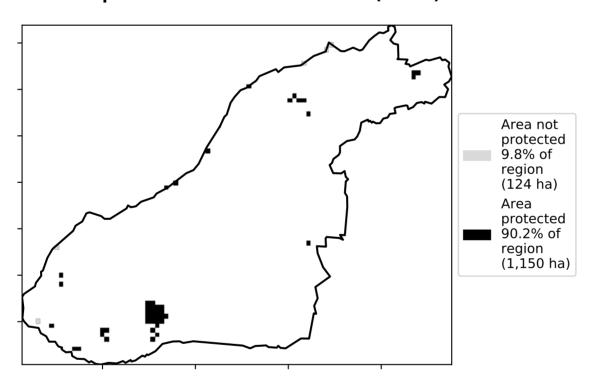
### Land use and forest cover



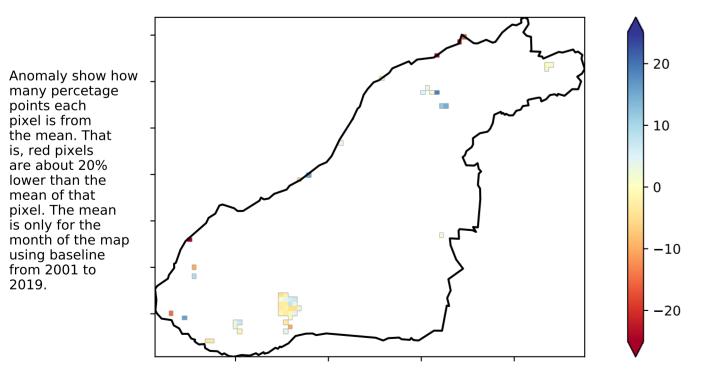
### **Total Vegetation Cover [%]**



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

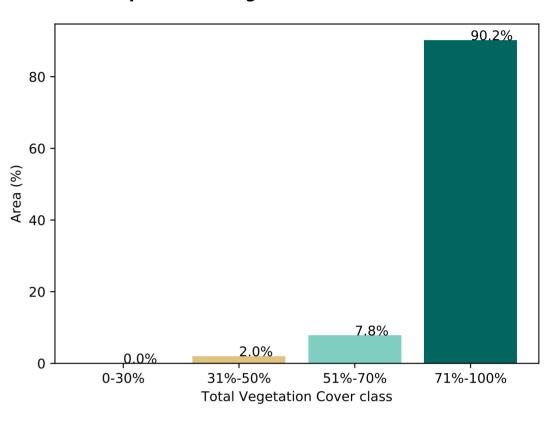


Total Vegetation Cover Anomaly [%]

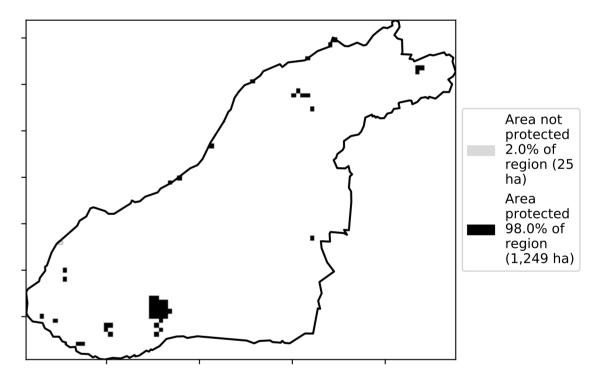


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

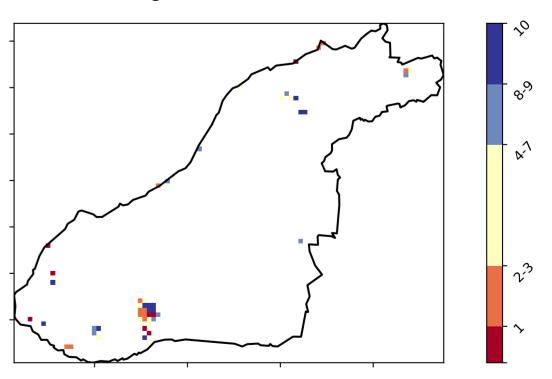
### Proportion of vegetation cover class in area



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



Total Vegetation Cover Decile [%]



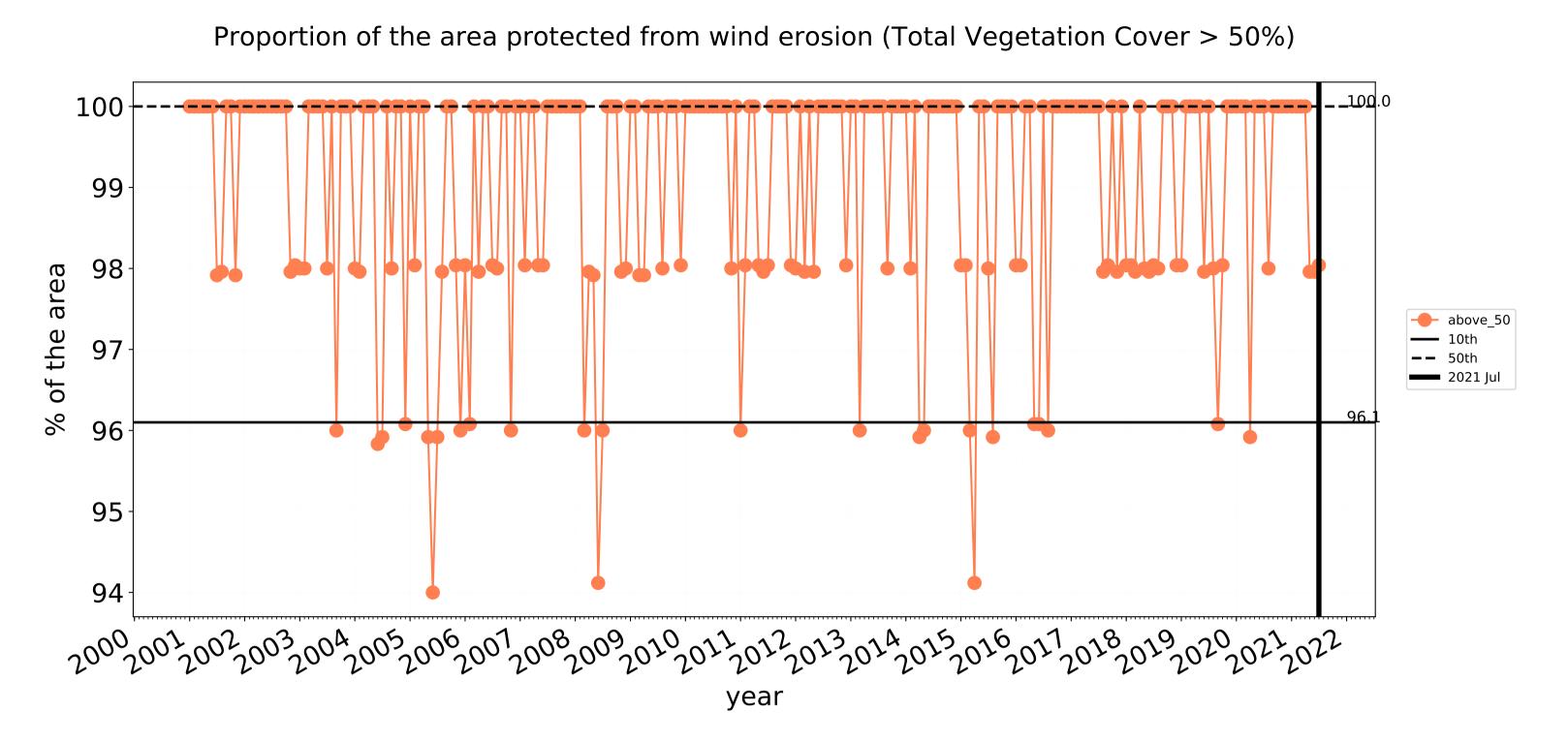


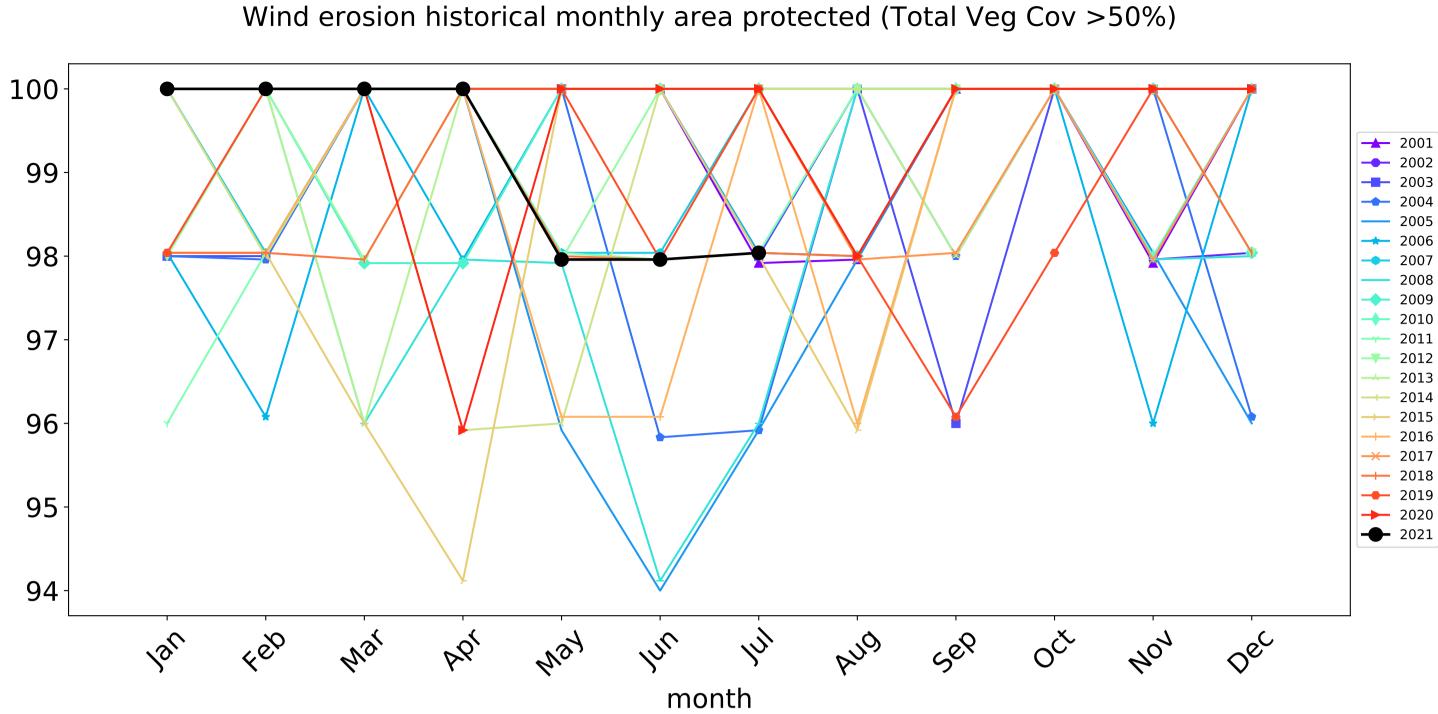


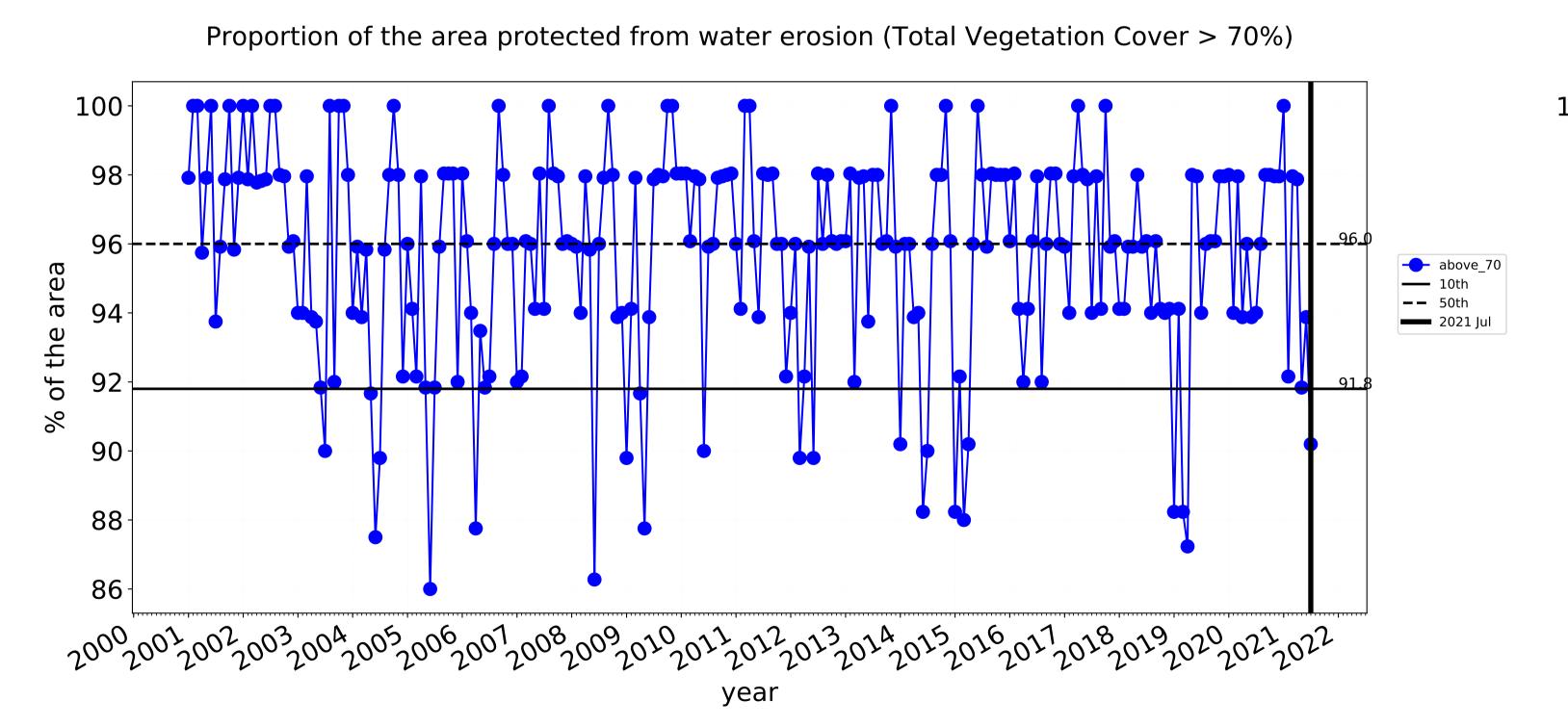


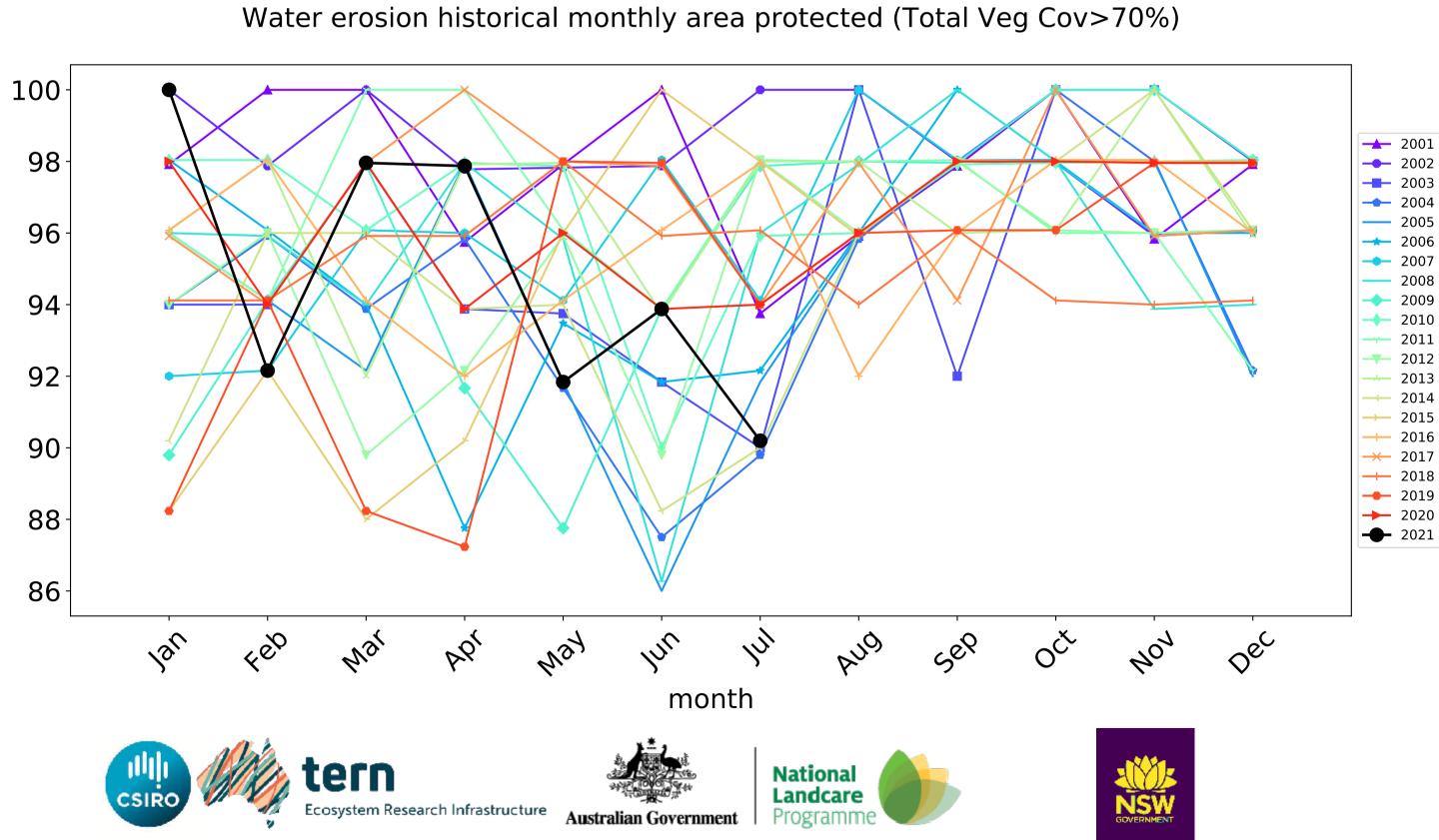


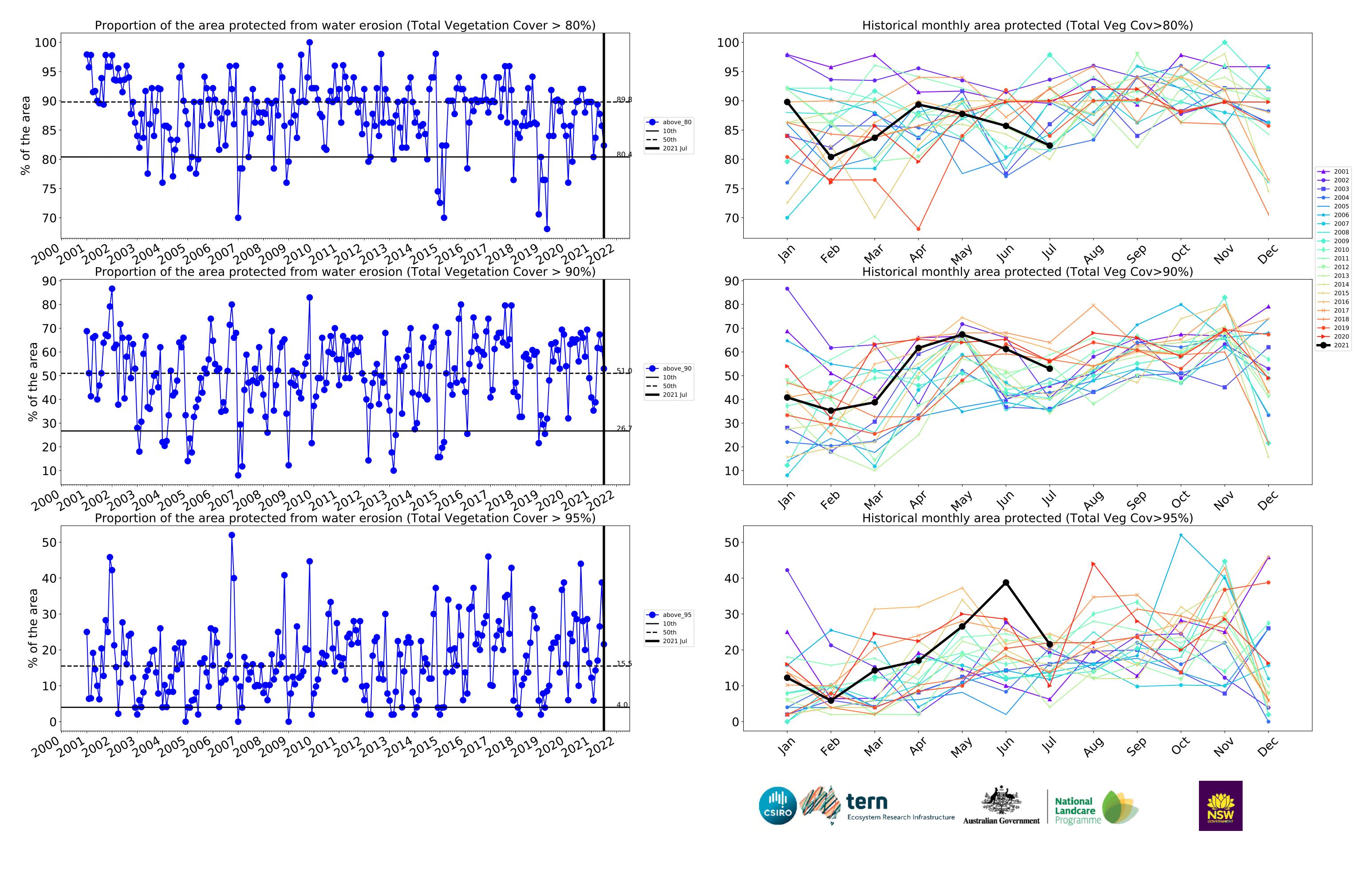
### **Conservation and natural environments non forest timeseries**









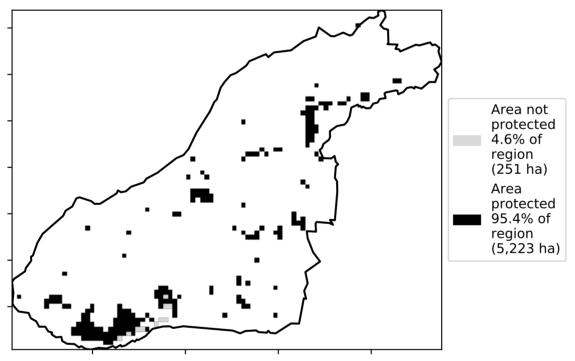


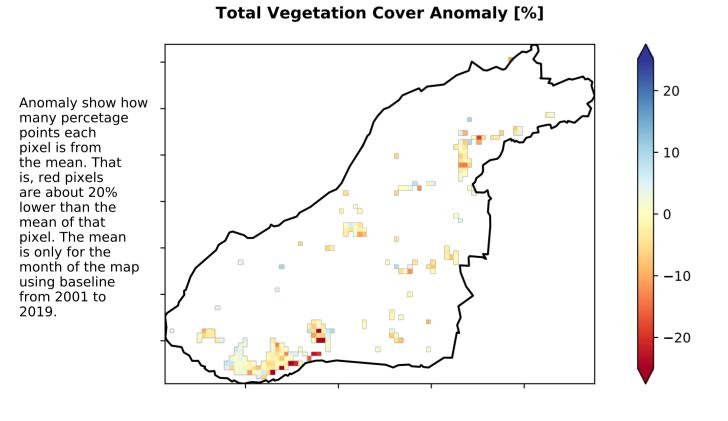
### **Conservation and natural environments Woodland forest**

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

### Total Vegetation Cover [%]

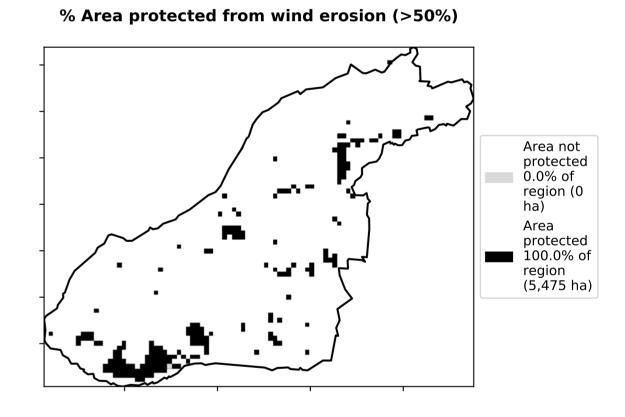
### % Area protected from water erosion (>70%)

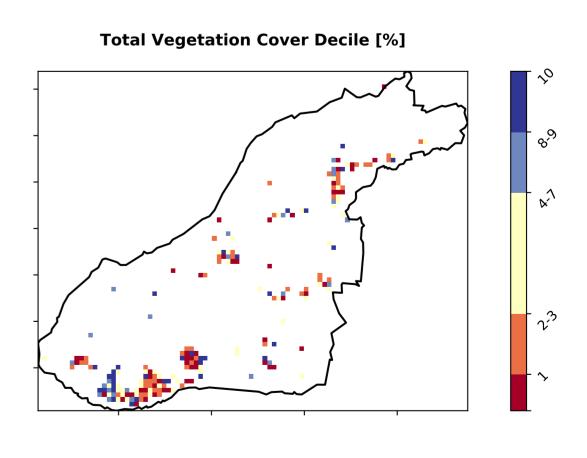




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

# Proportion of vegetation cover class in area 100 80 60 40 20 0-30% 31%-50% 51%-70% Total Vegetation Cover class



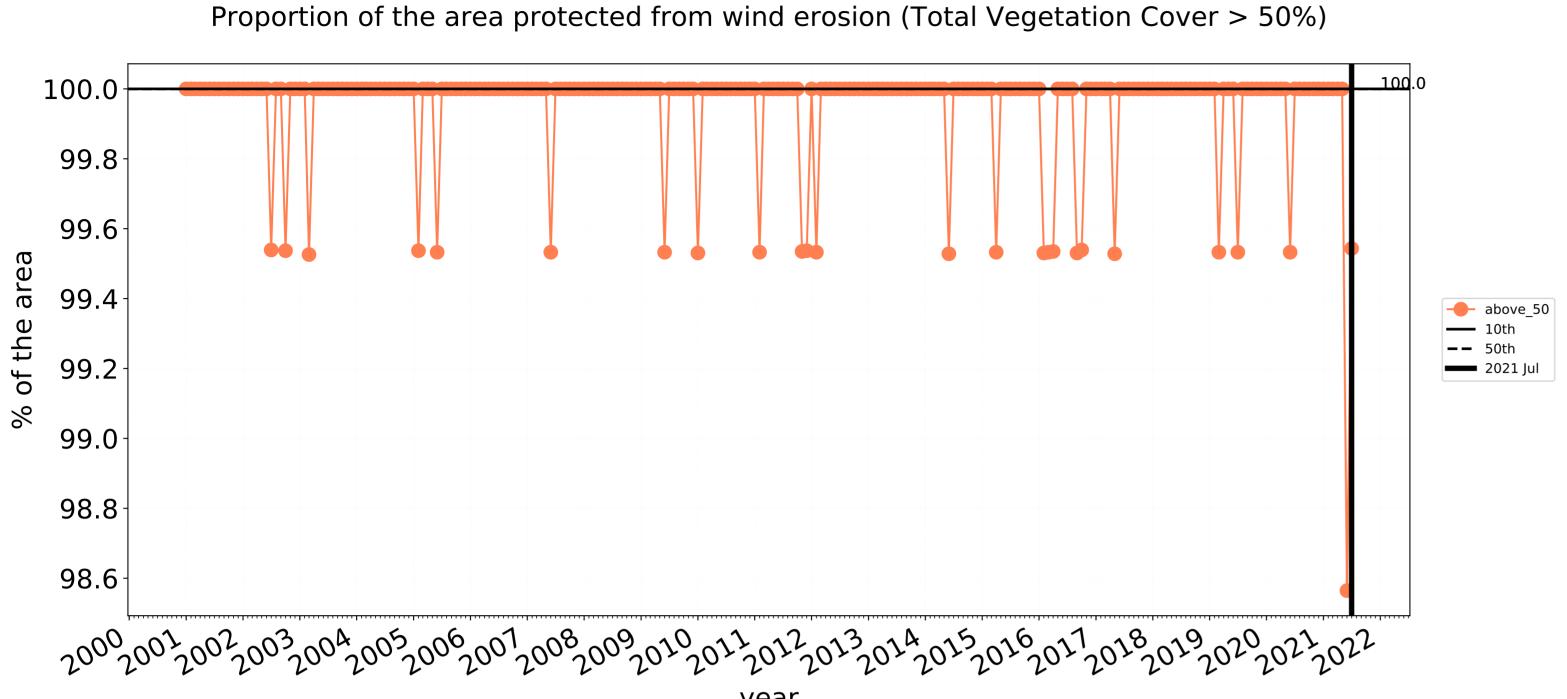


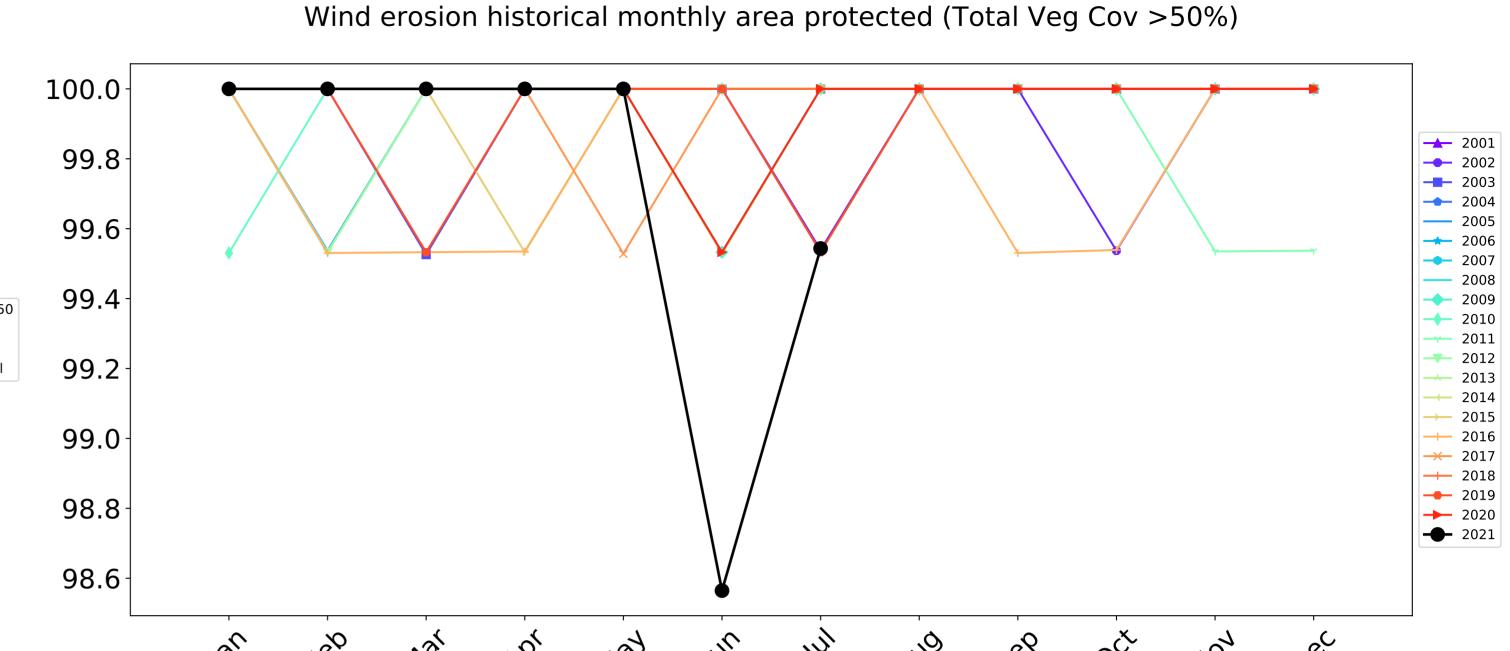




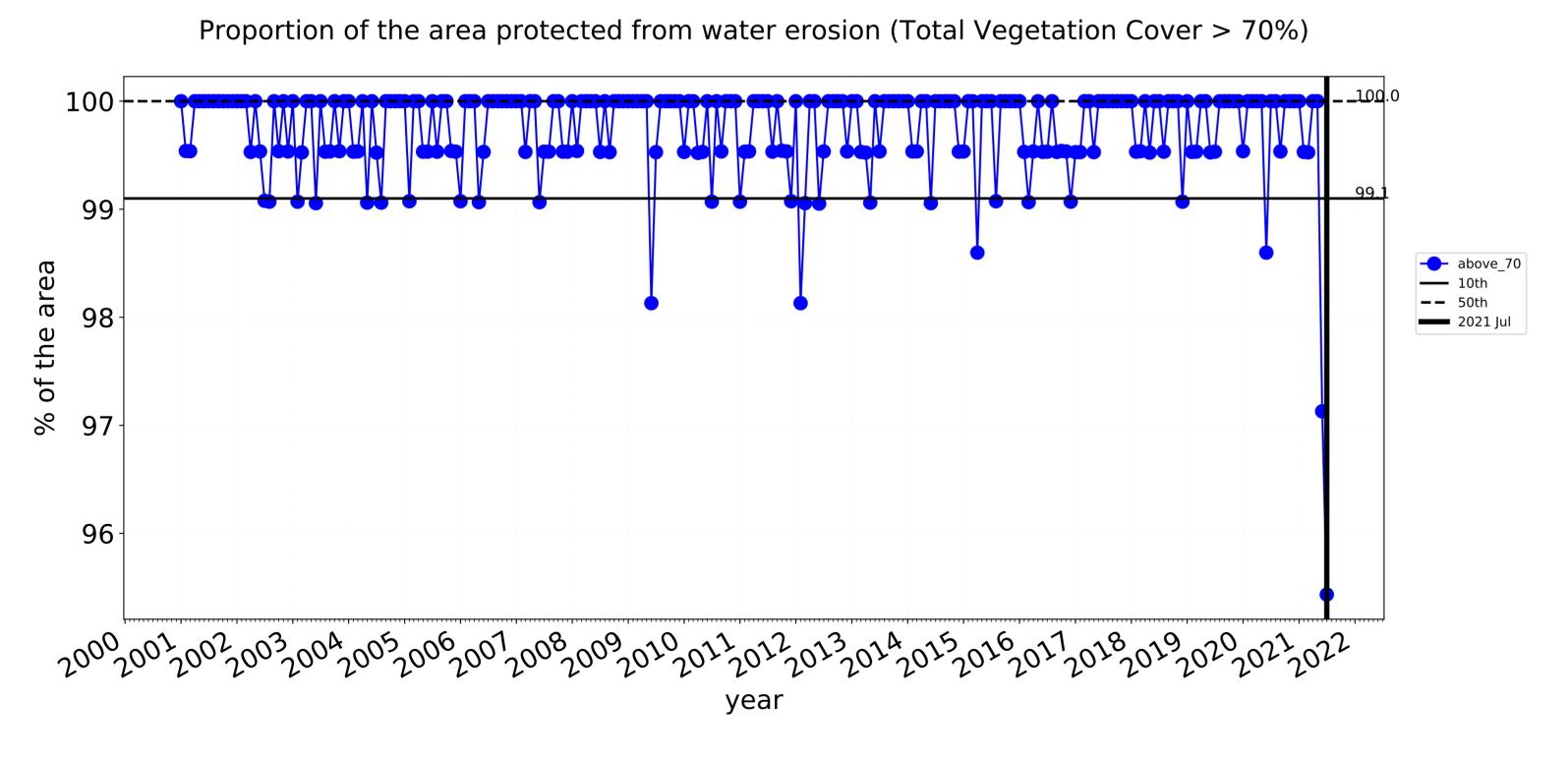


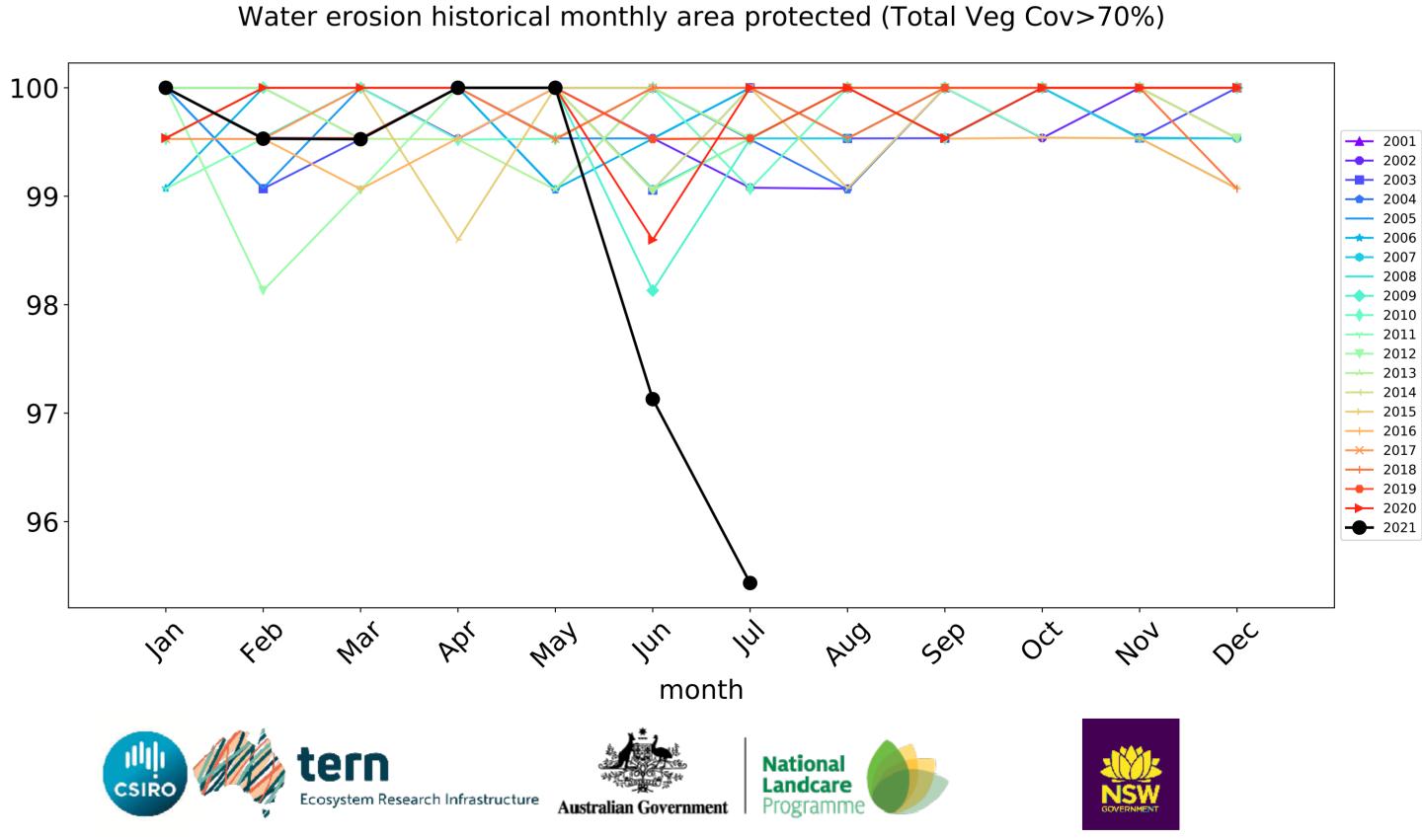


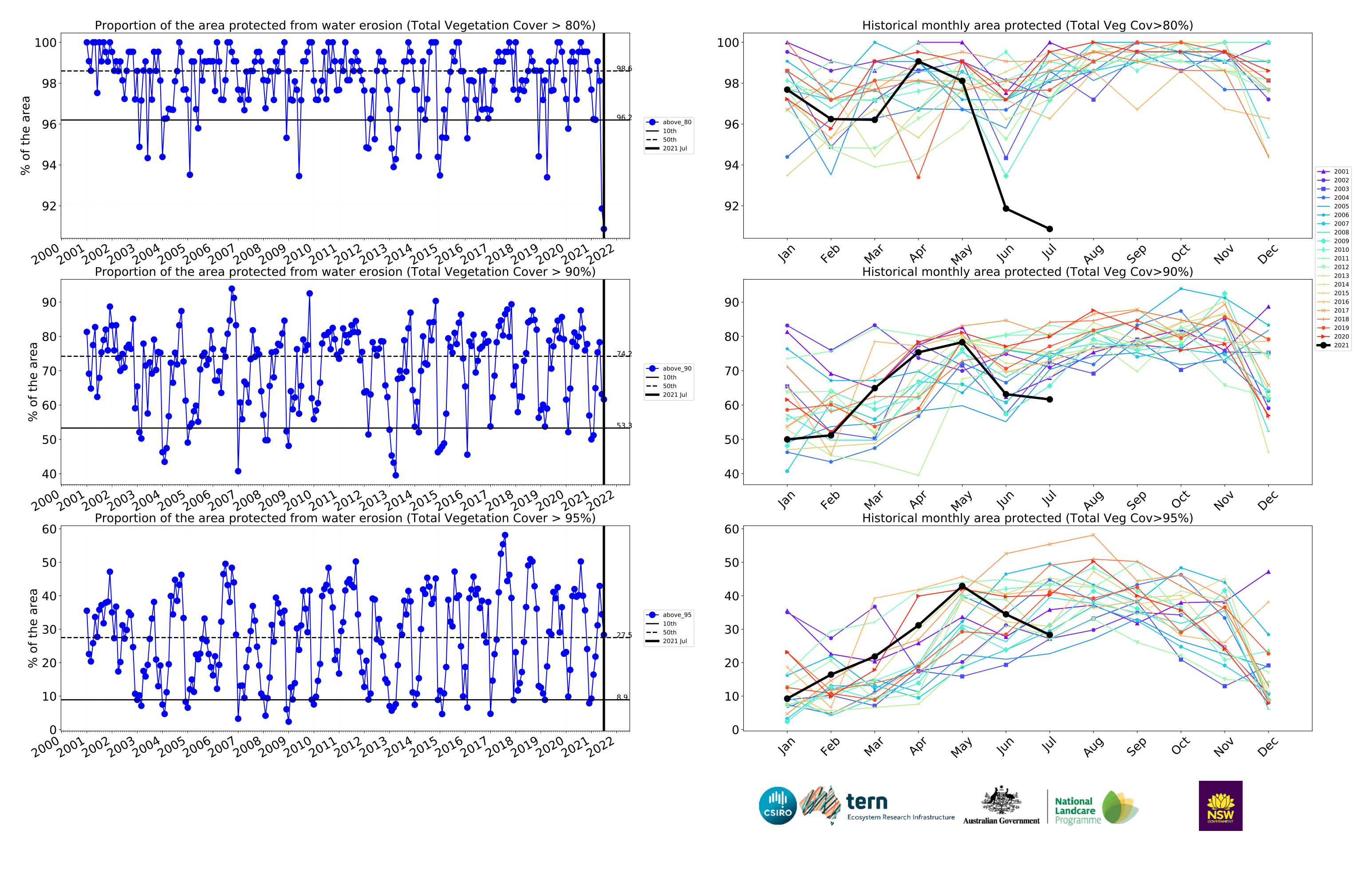




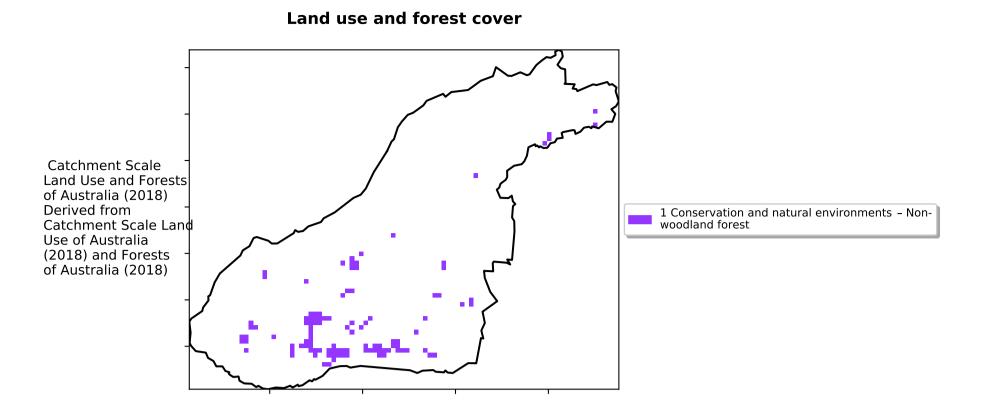
month

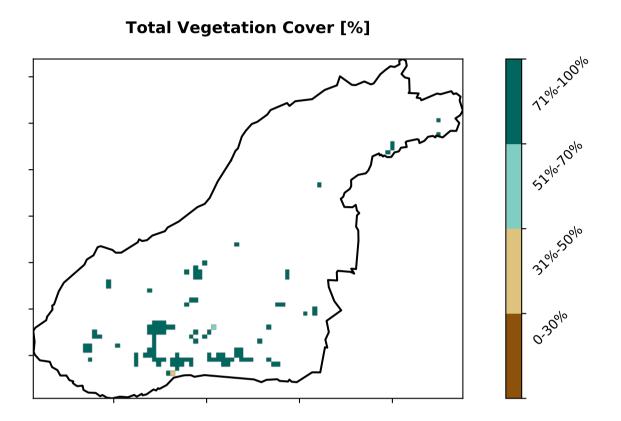


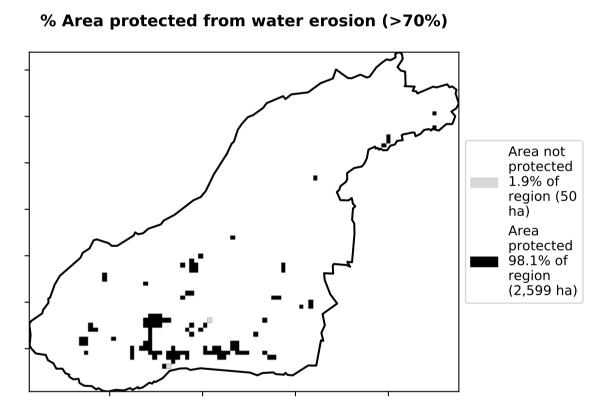


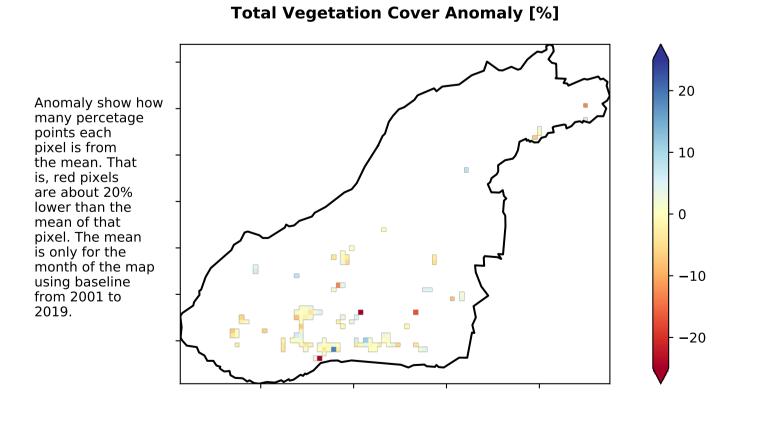


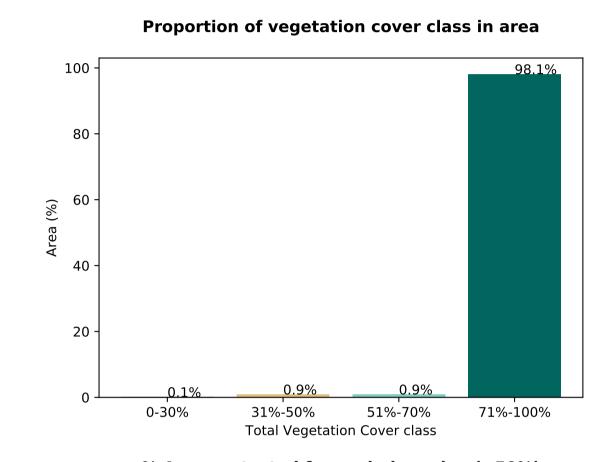
### **Conservation and natural environments Forest (non woodland)**

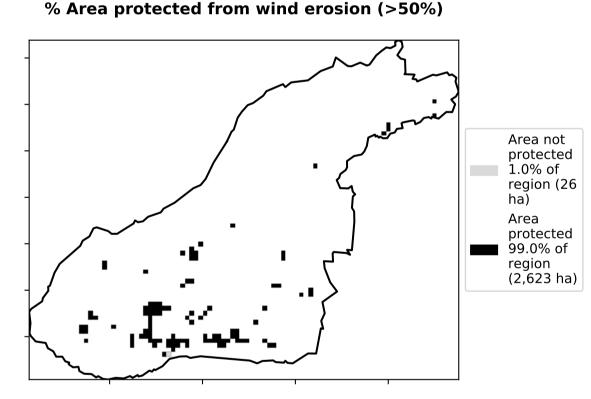


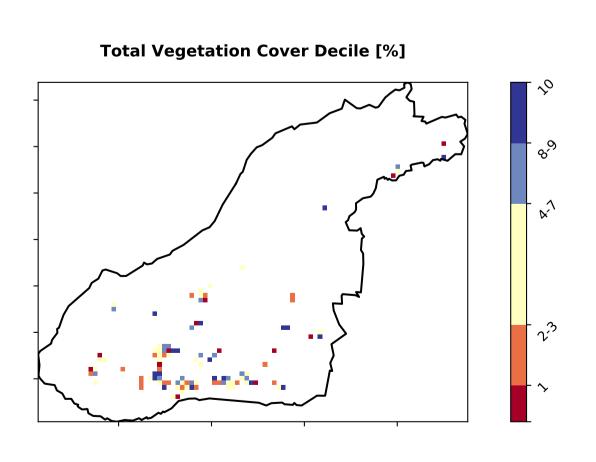
















Deciles show where the pixel value lies in the

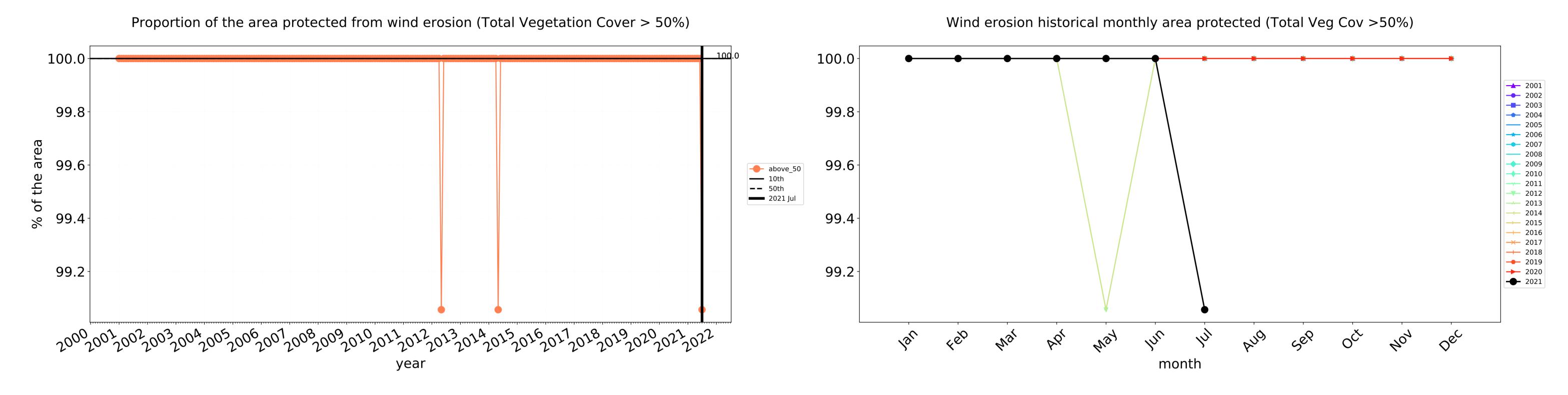
record, from highest to lowest, for that month.
That is, red pixels are in the lowest 10% of records for that month of

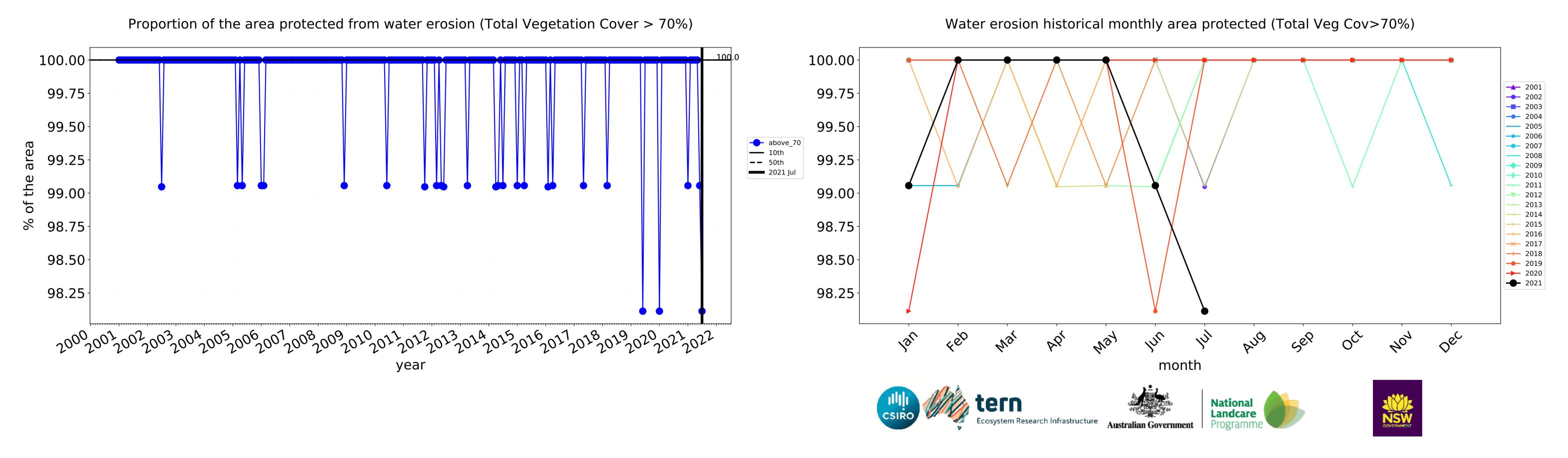
the map using baseline from 2001 to 2019.

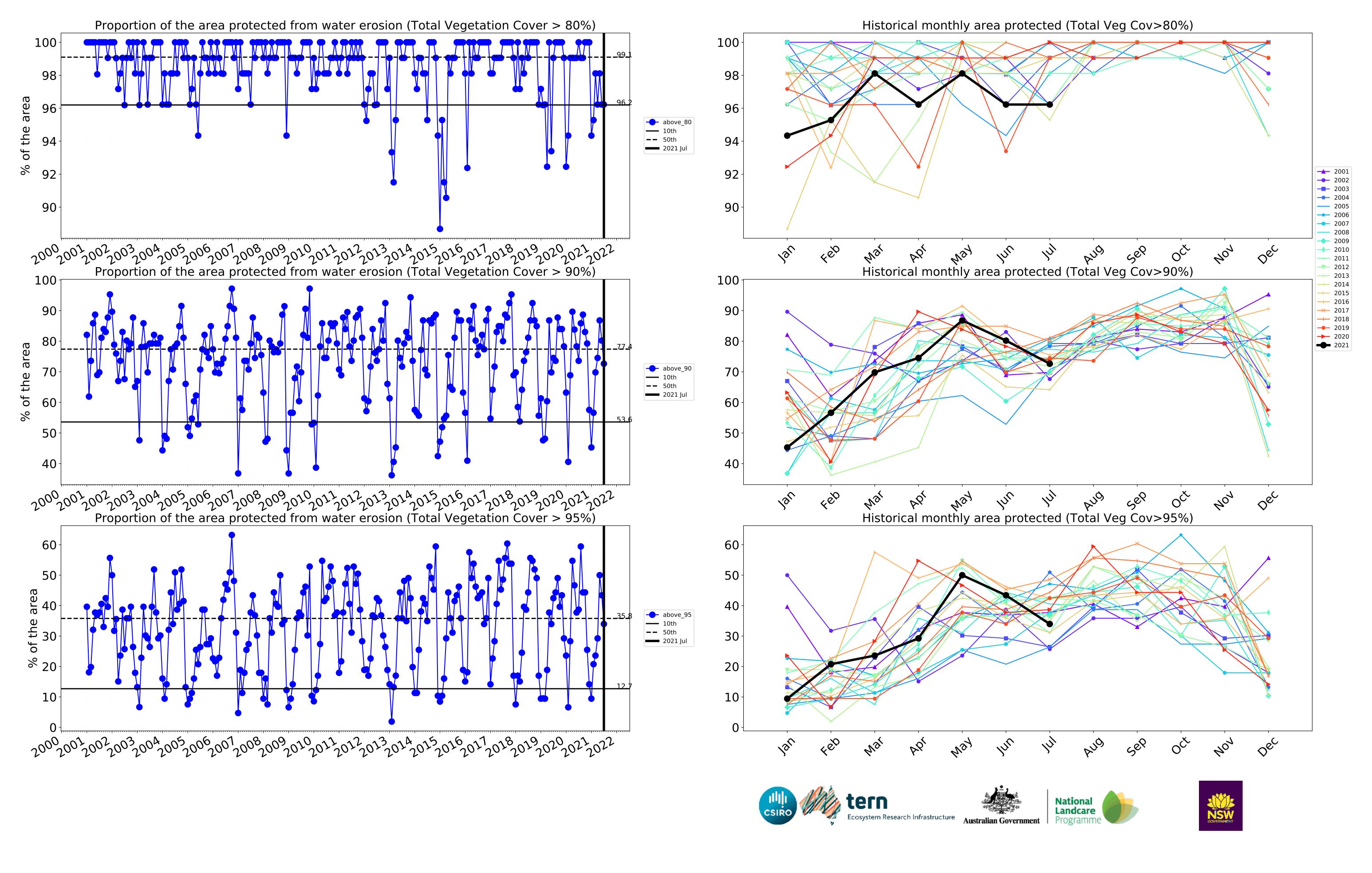




### Conservation and natural environments Forest (non woodland) timeseries



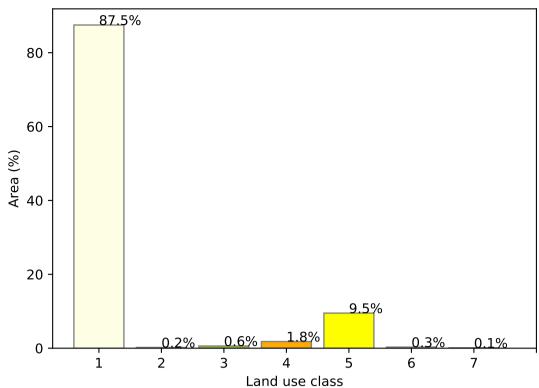




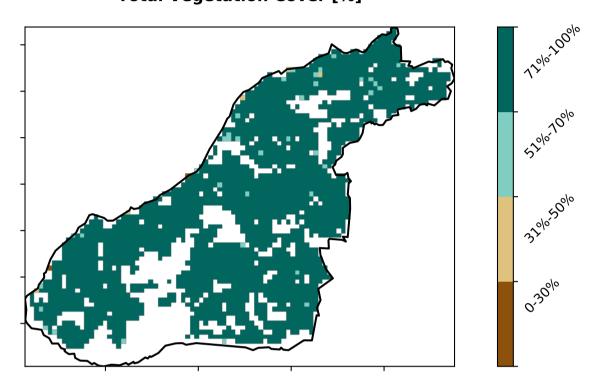
### **Agriculture**

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

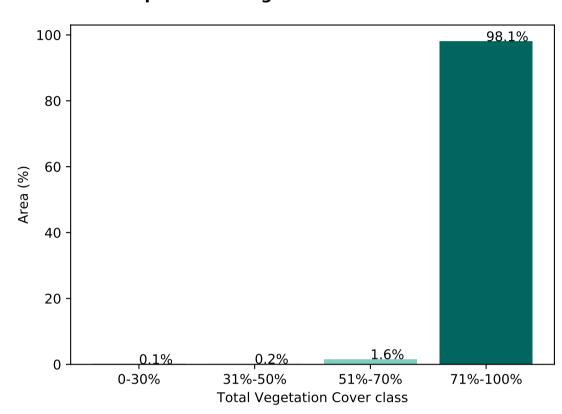
### Proportion of each land class in area



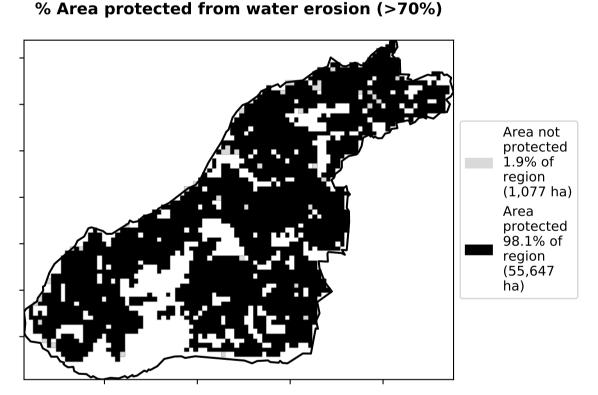
### **Total Vegetation Cover [%]**



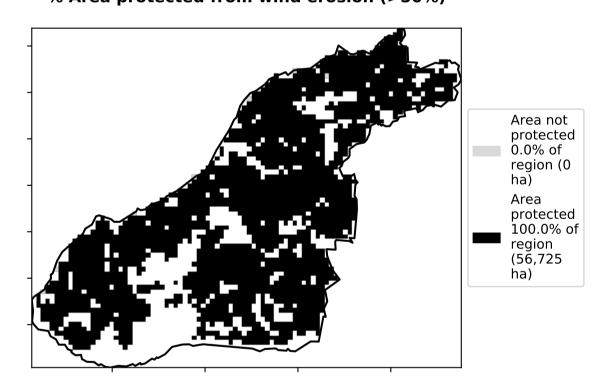
Proportion of vegetation cover class in area



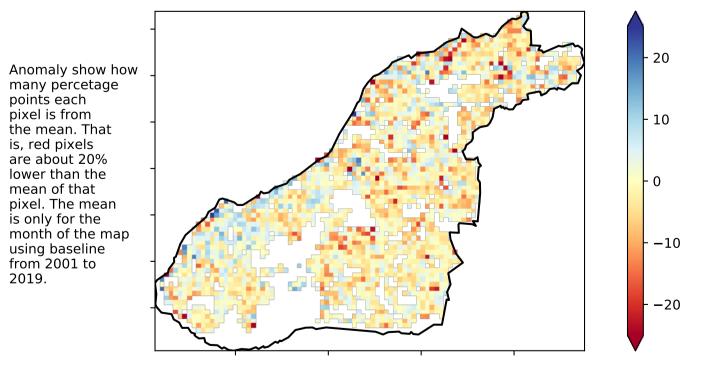
### 0/ Avec much stad furni water evenion (> 700/)



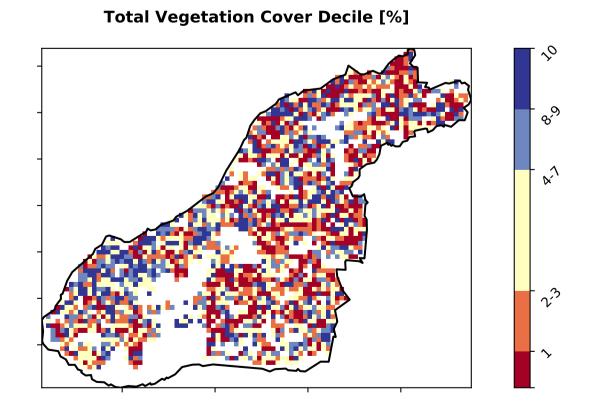
% Area protected from wind erosion (>50%)



**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.



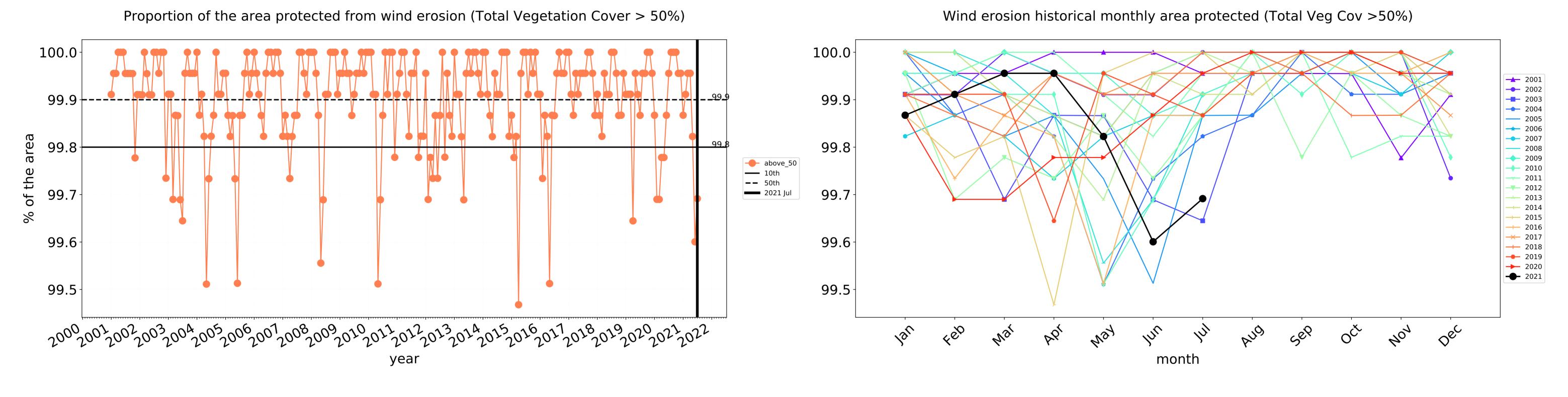


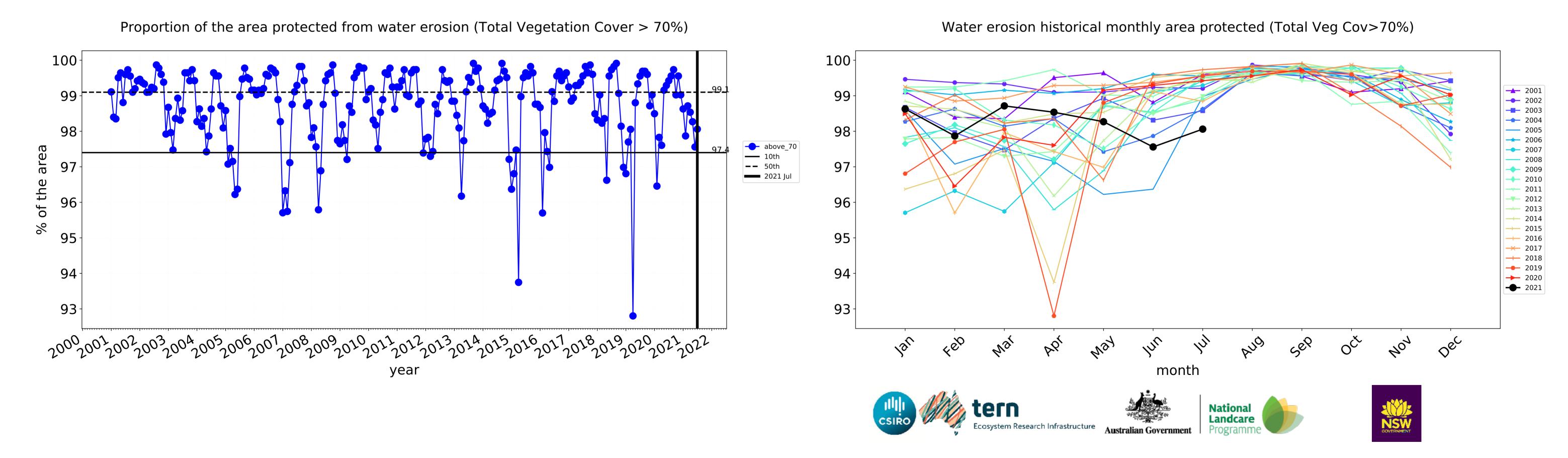


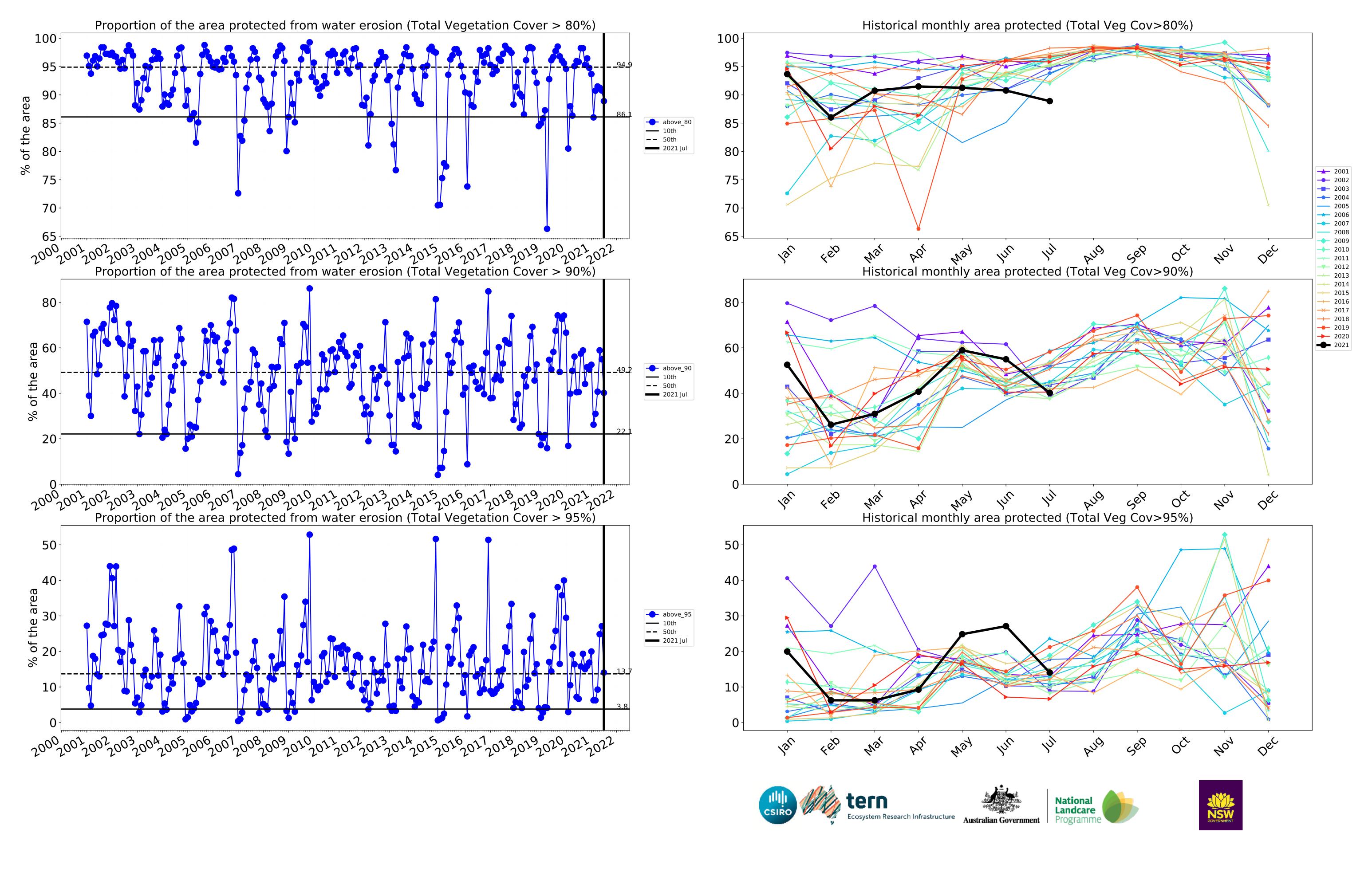




### **Agriculture timeseries**



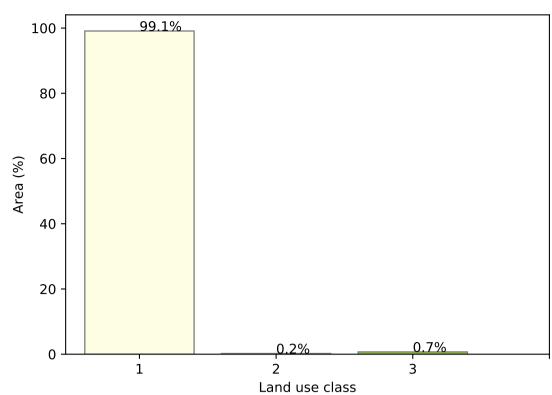




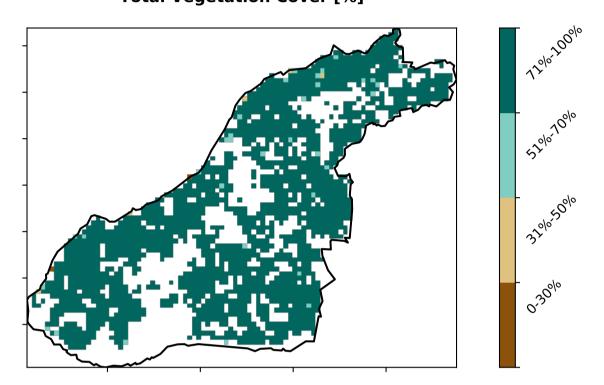
### Grazing

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

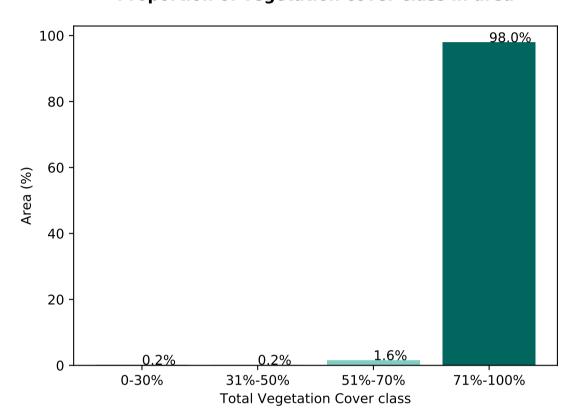
### Proportion of each land class in area



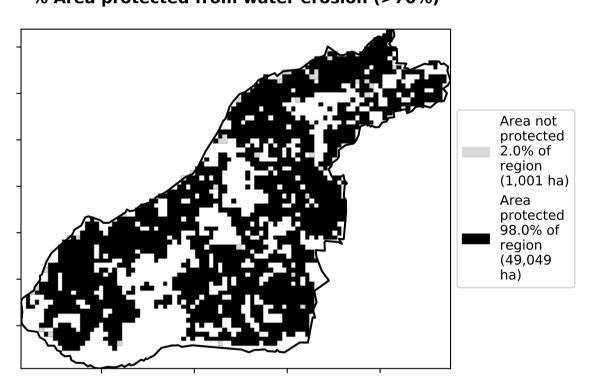
**Total Vegetation Cover [%]** 



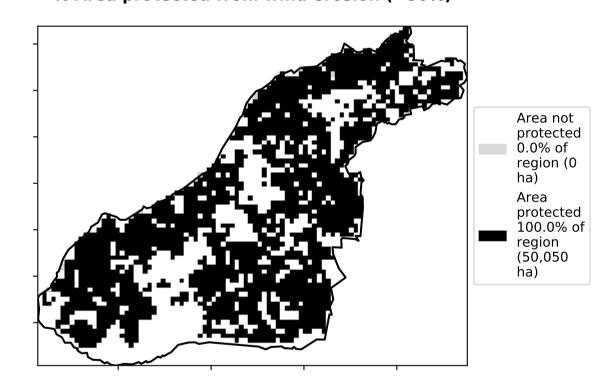
Proportion of vegetation cover class in area



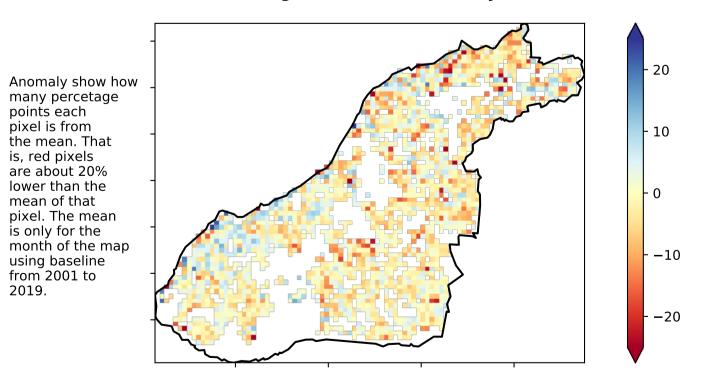
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)



**Total Vegetation Cover Anomaly [%]** 



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Total Vegetation Cover Decile [%]

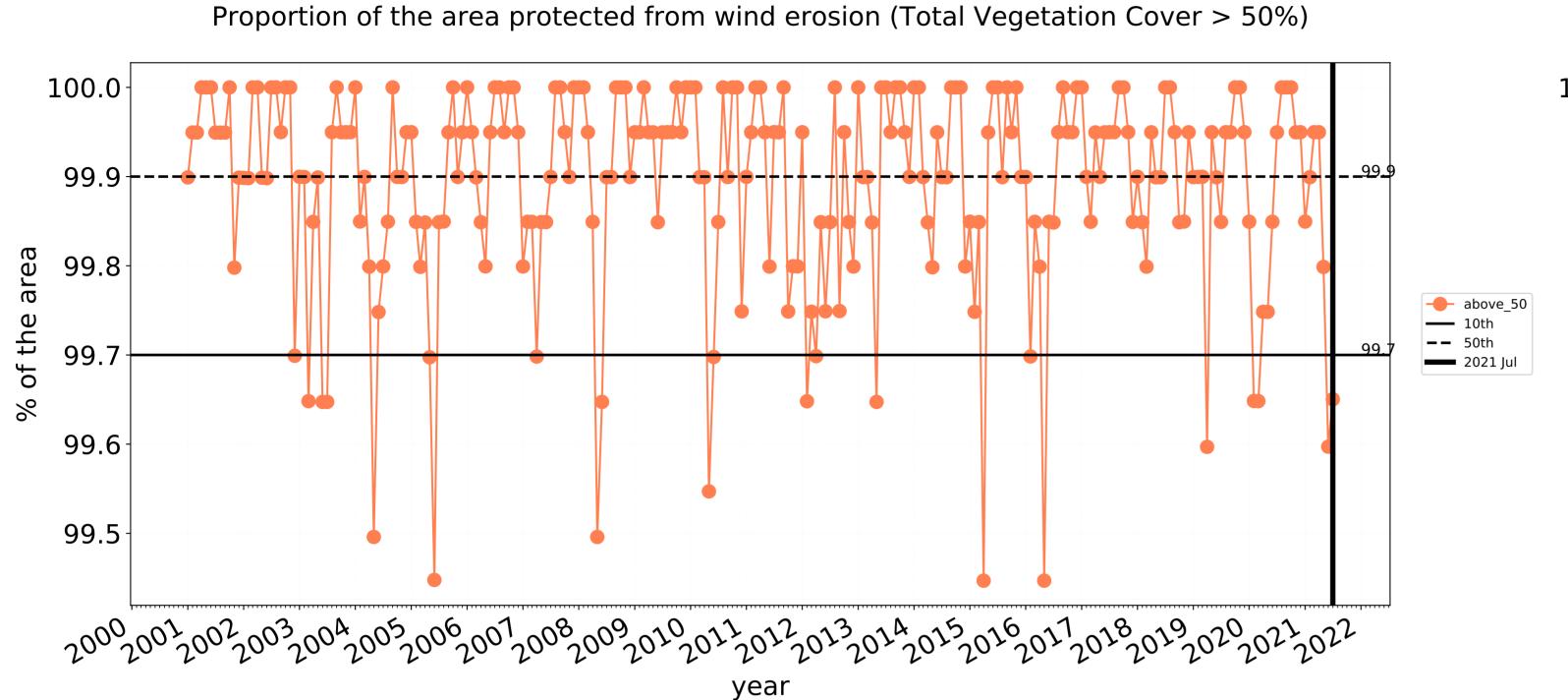


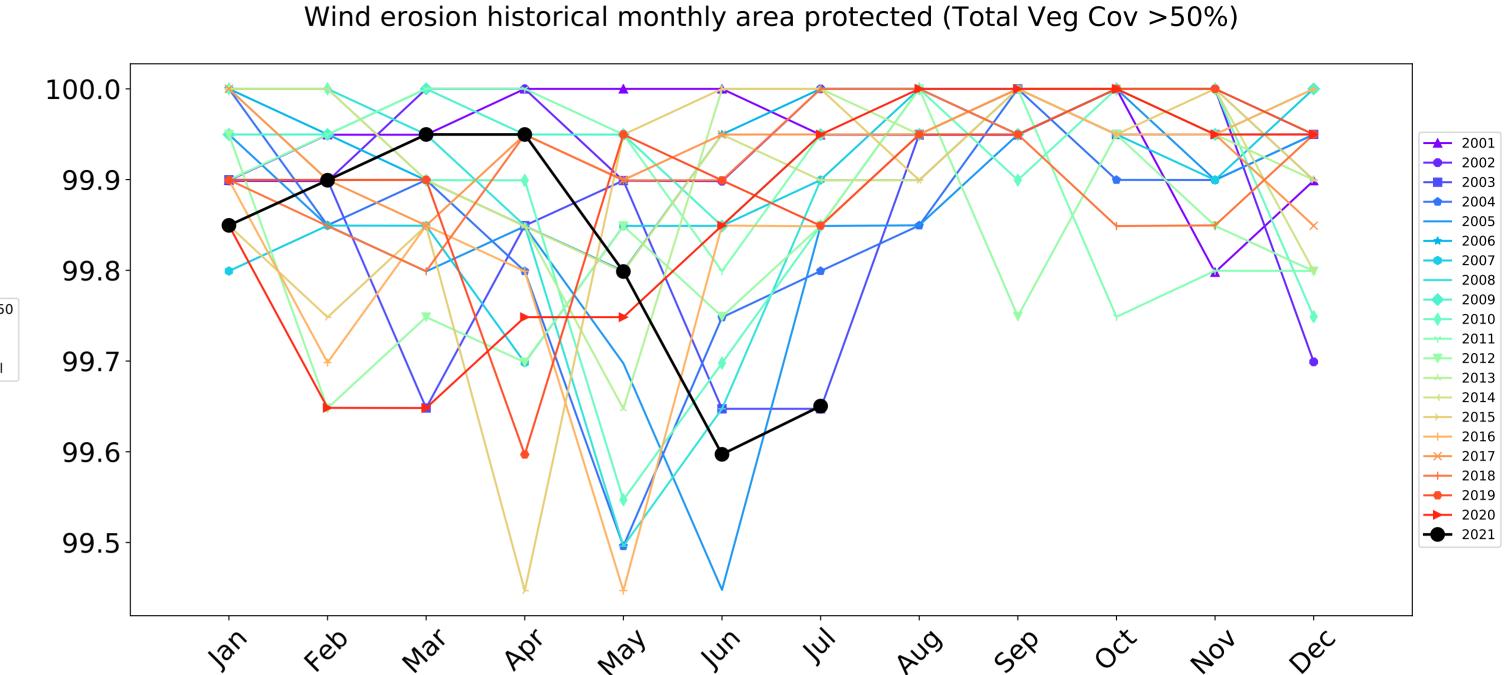




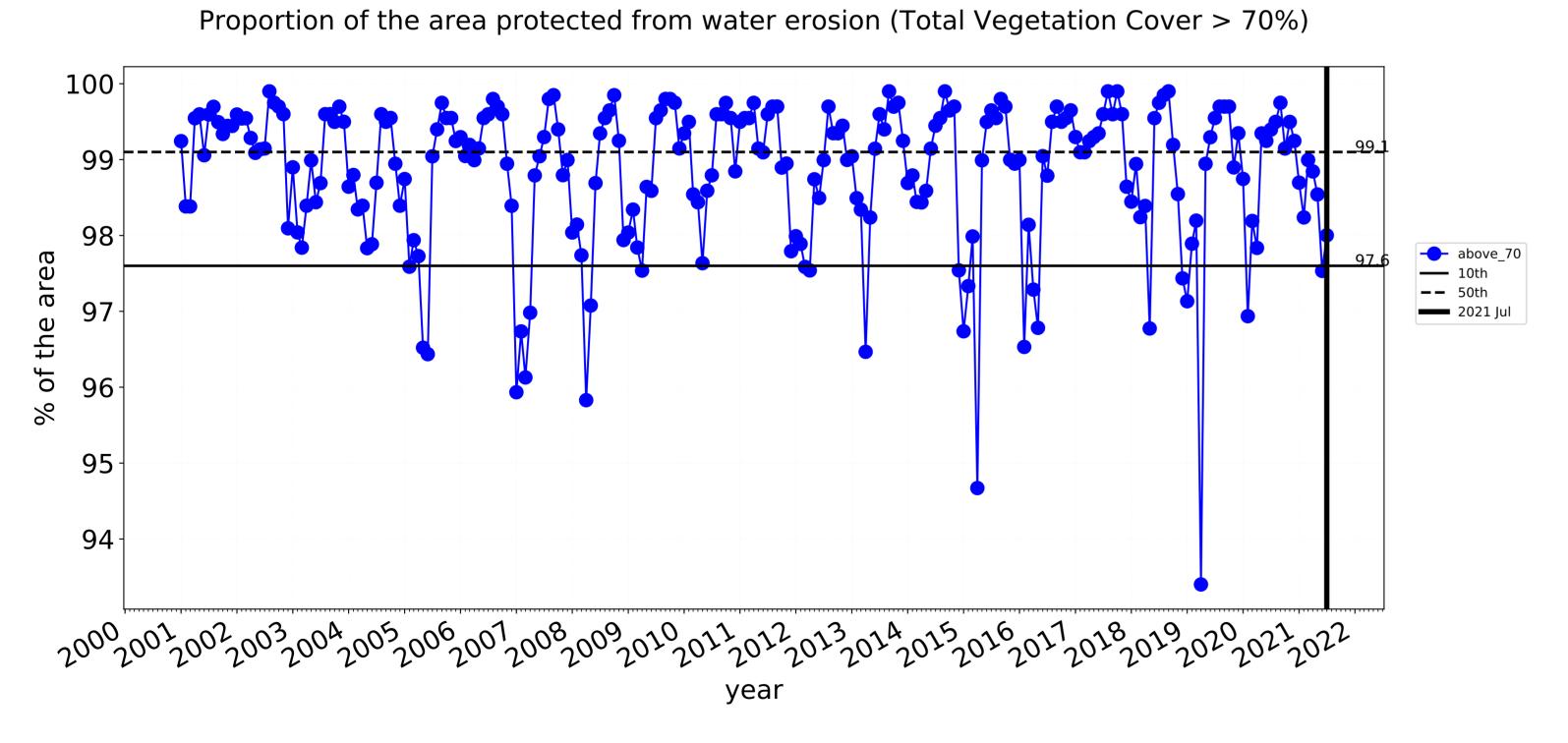


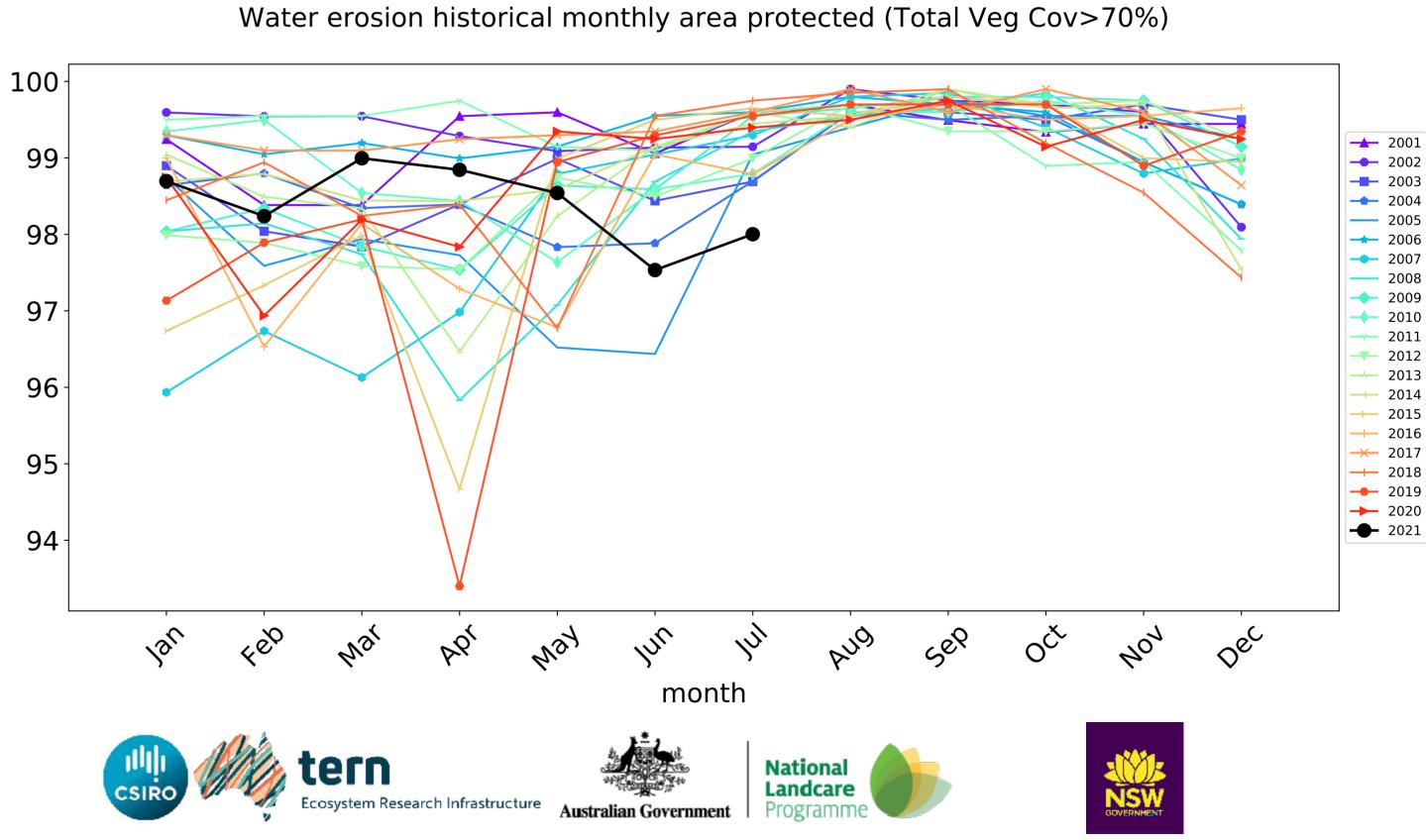
### **Grazing timeseries**

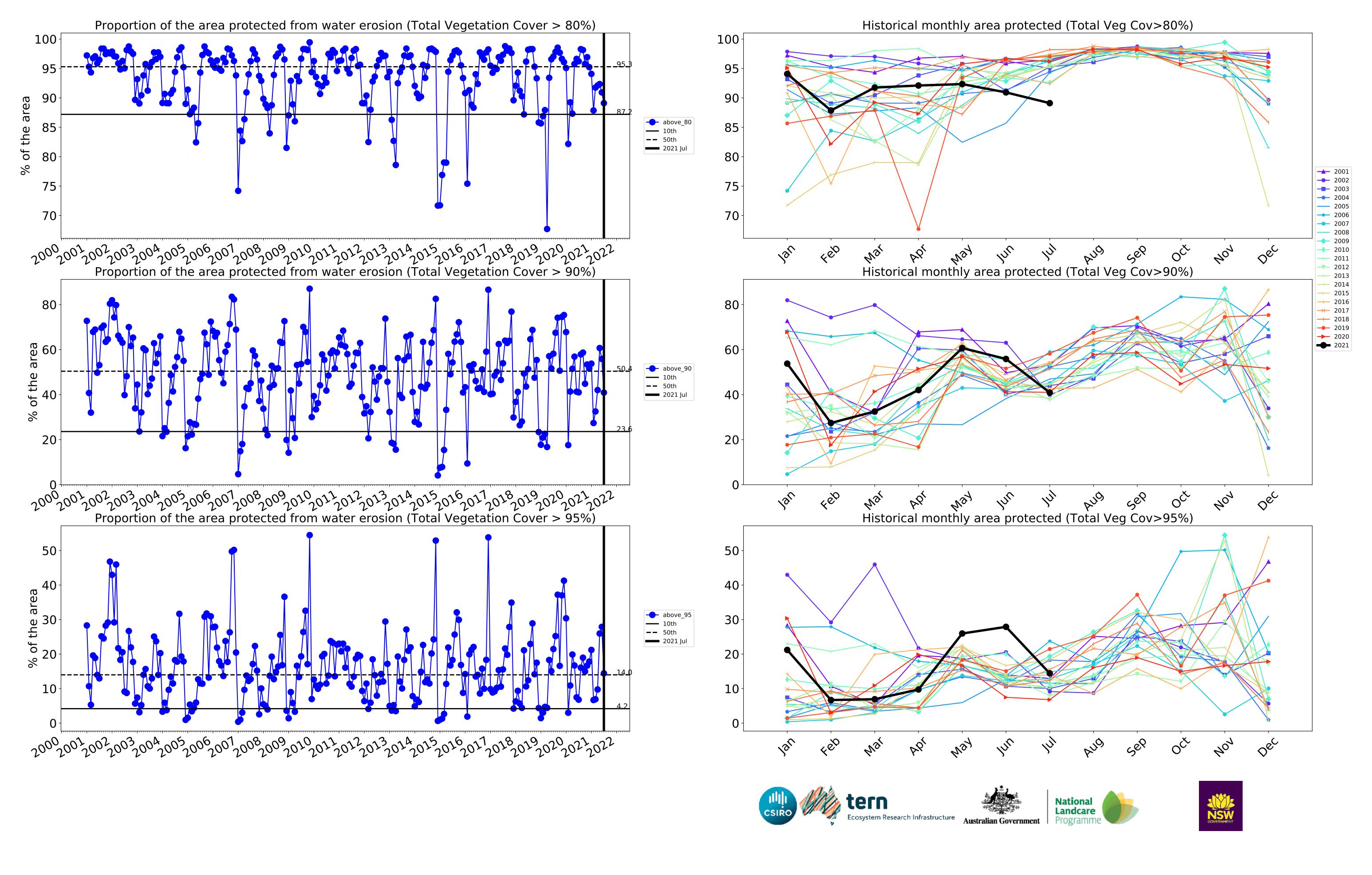




month

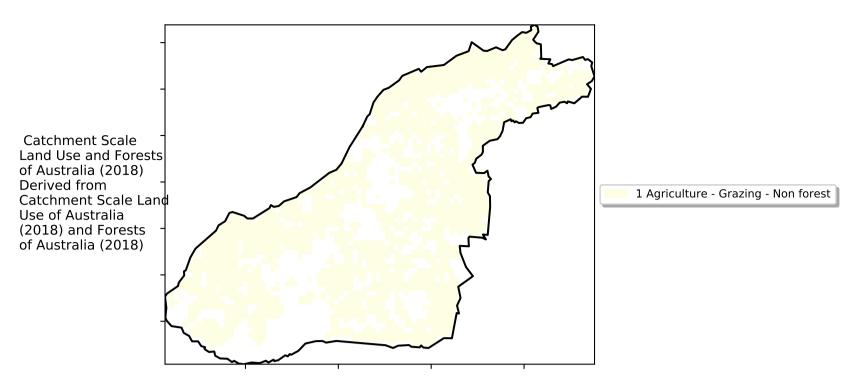




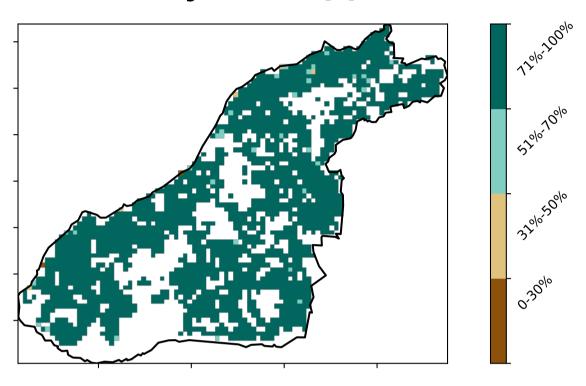


### **Grazing non forest**

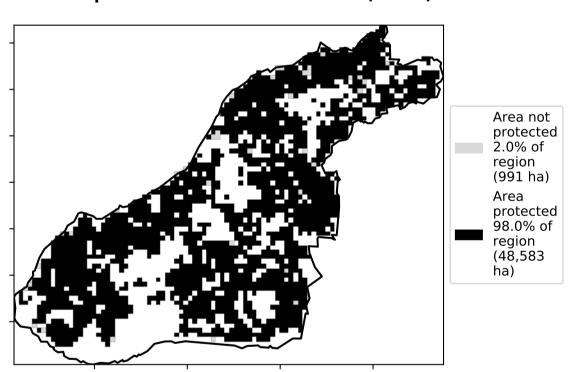
### Land use and forest cover



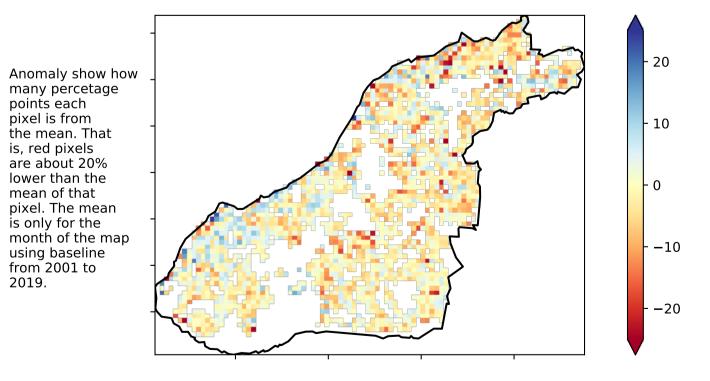
### **Total Vegetation Cover [%]**



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

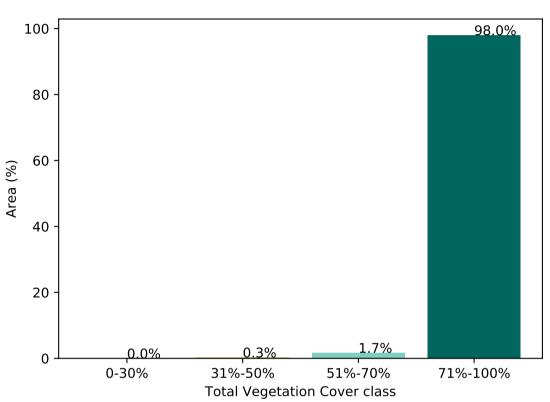


### **Total Vegetation Cover Anomaly [%]**

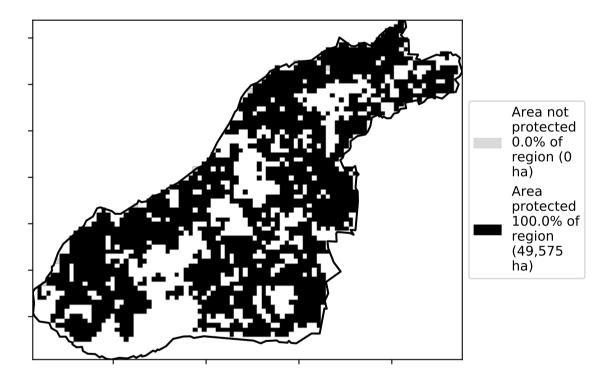


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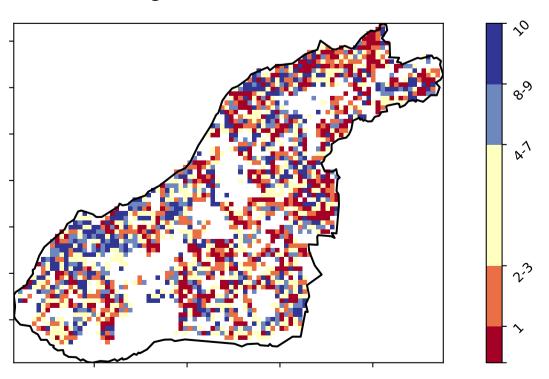
### **Proportion of vegetation cover class in area**



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



### Total Vegetation Cover Decile [%]



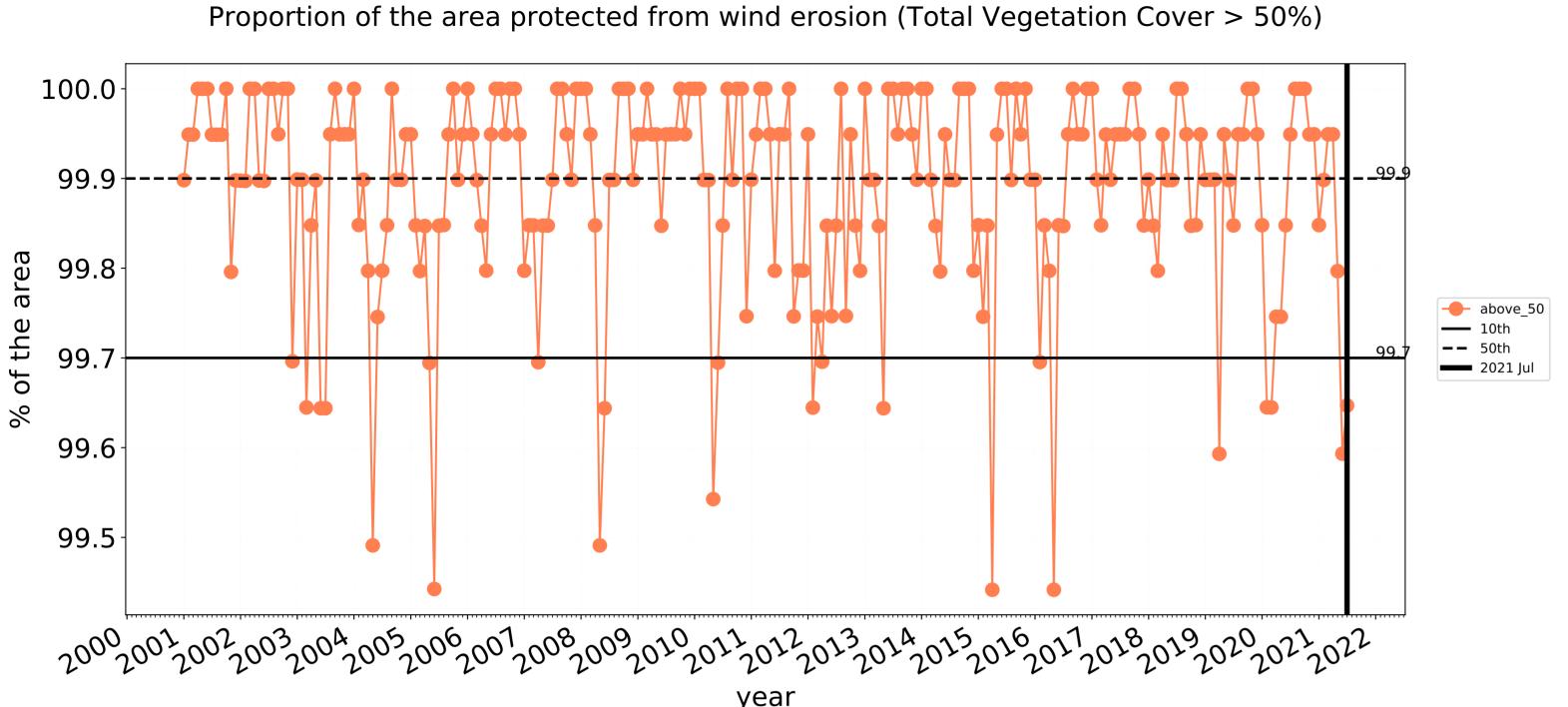


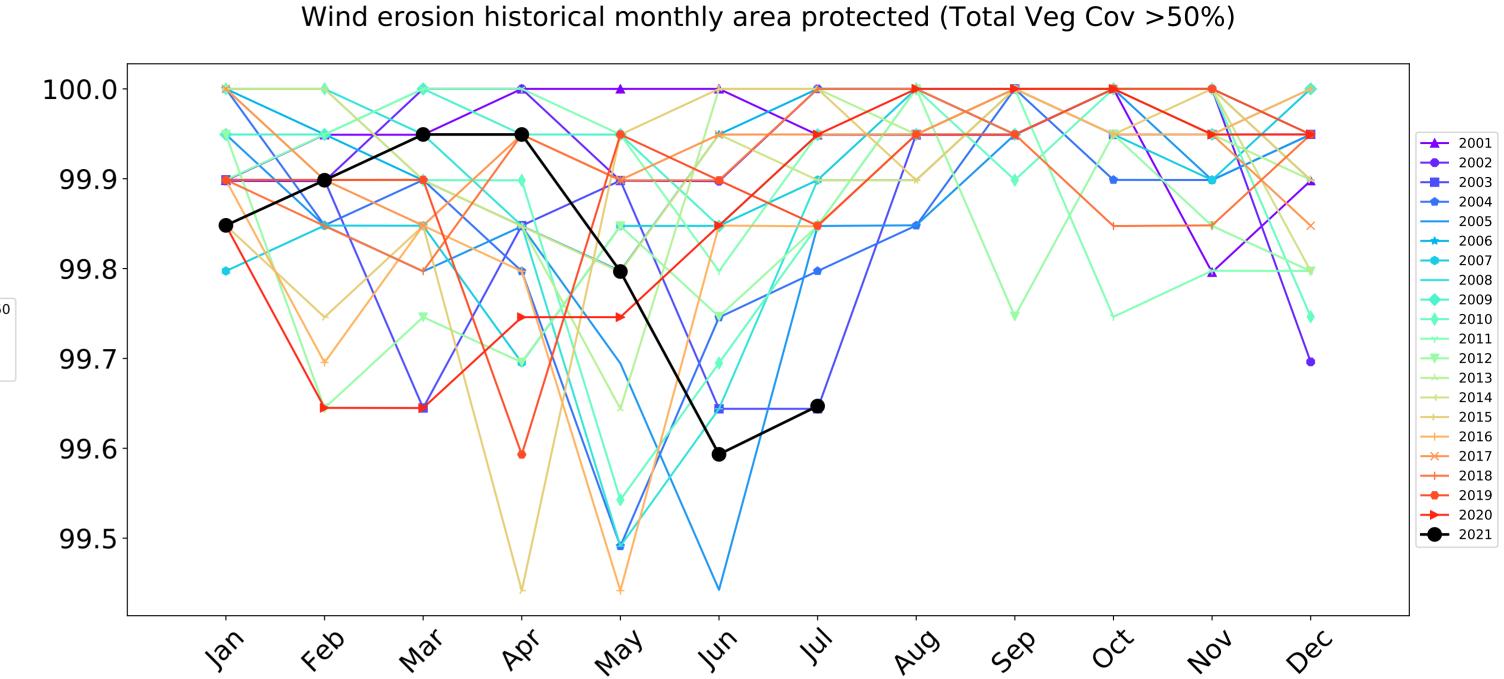




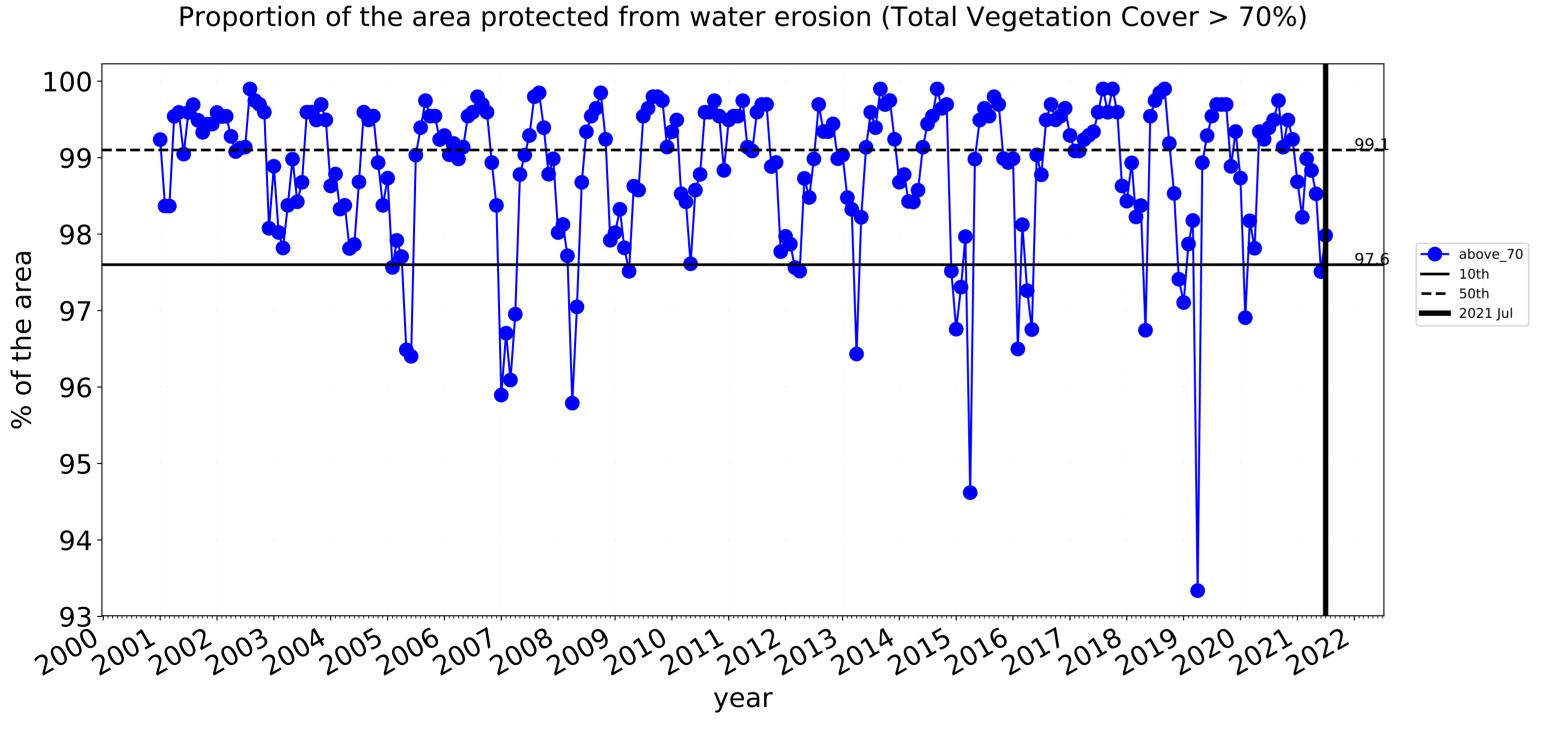


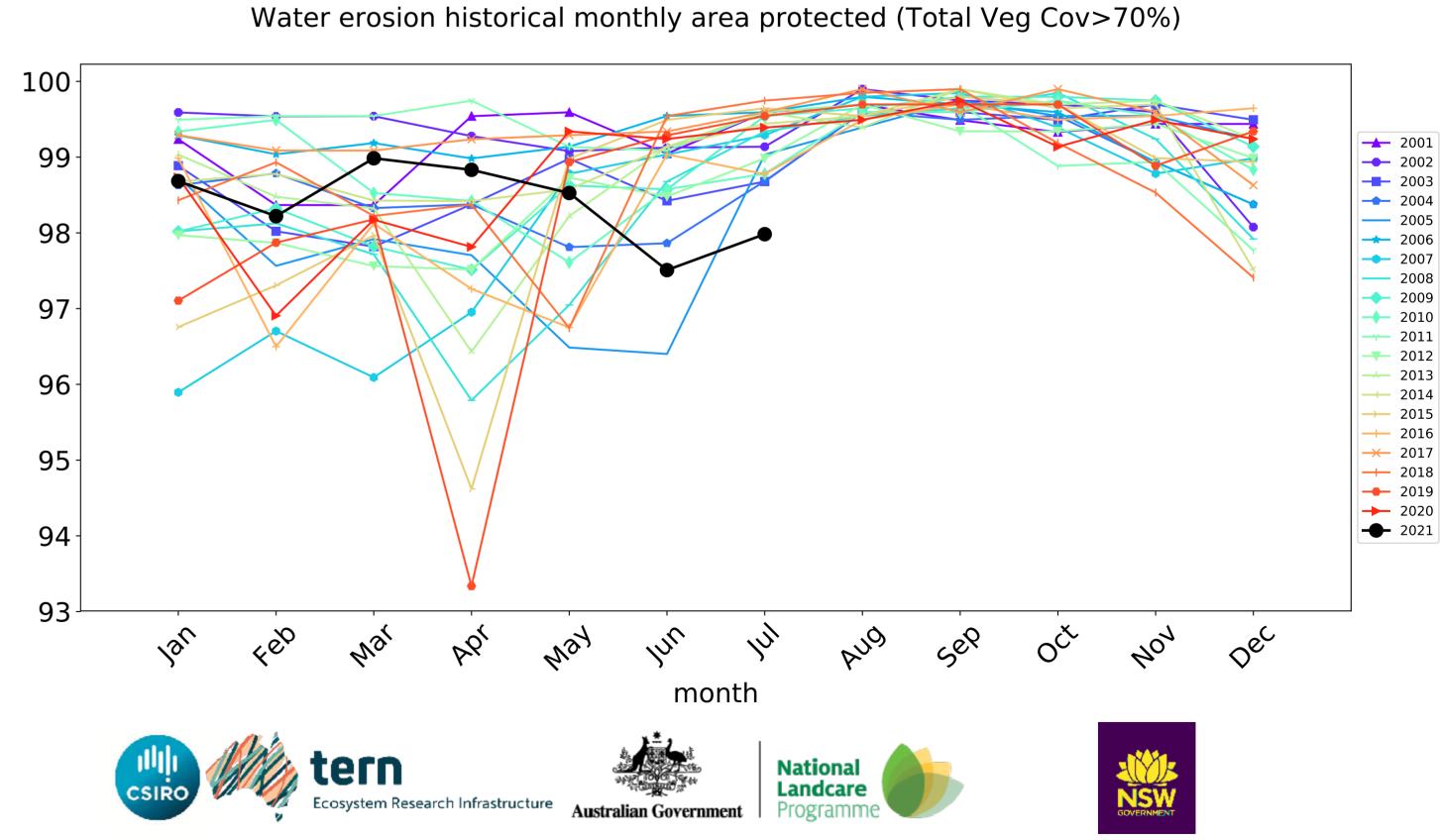
### **Grazing non forest timeseries**

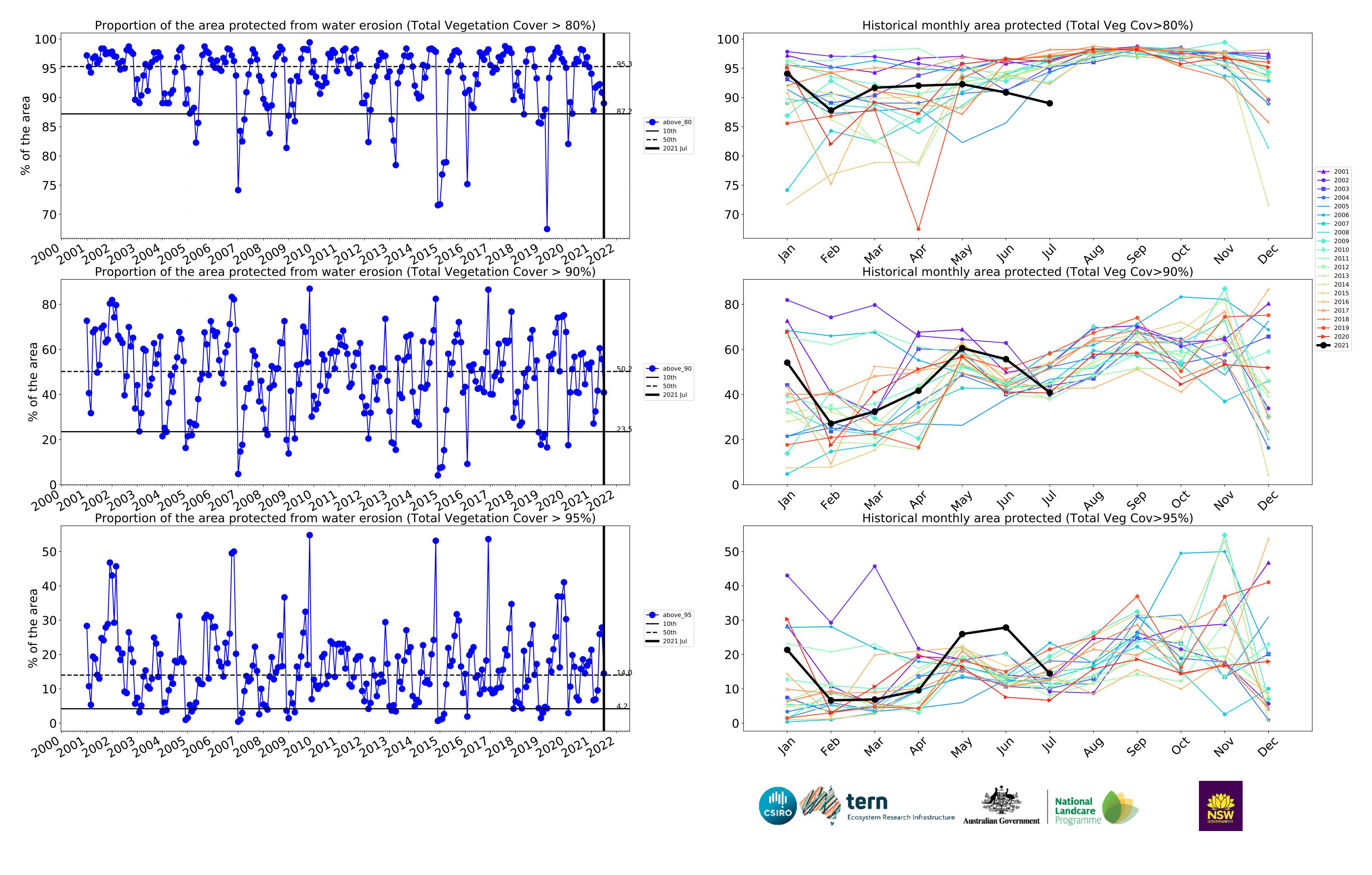




month

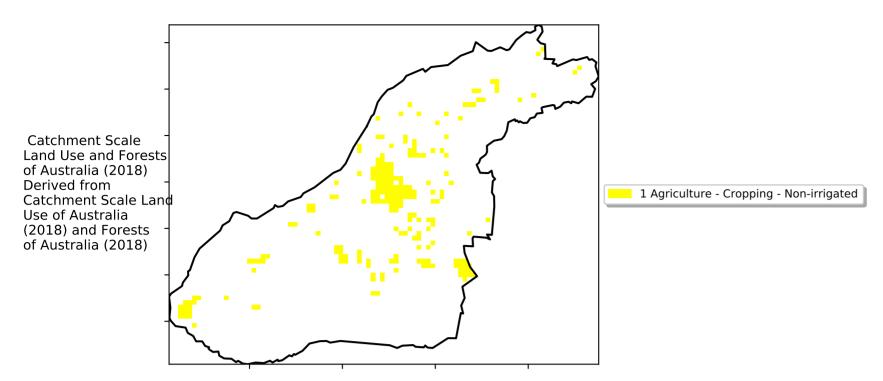




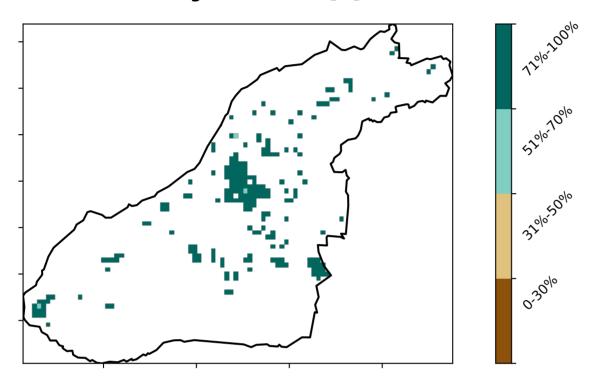


### **Cropping**

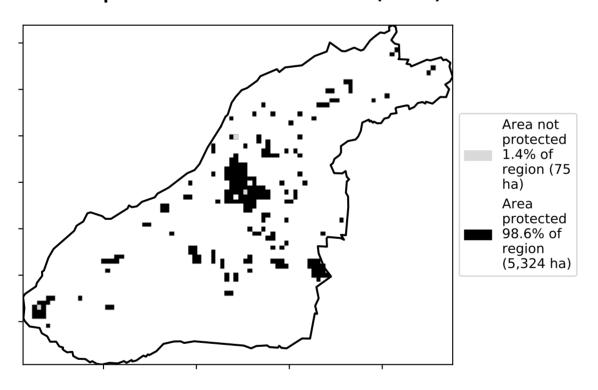
### Land use and forest cover



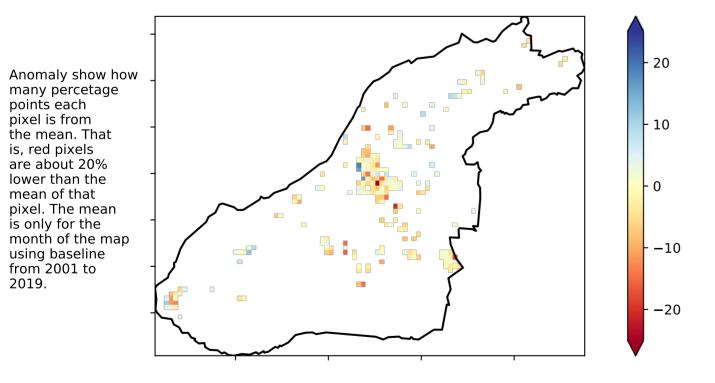
### **Total Vegetation Cover [%]**



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

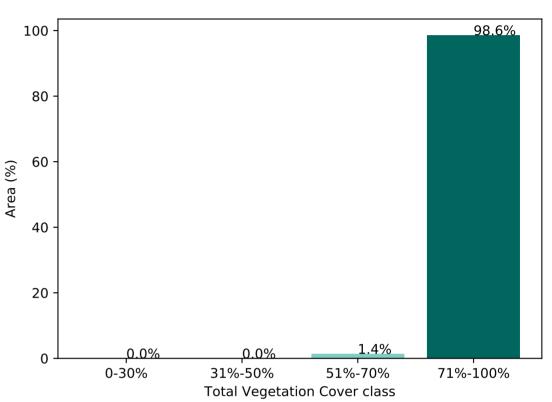


Total Vegetation Cover Anomaly [%]

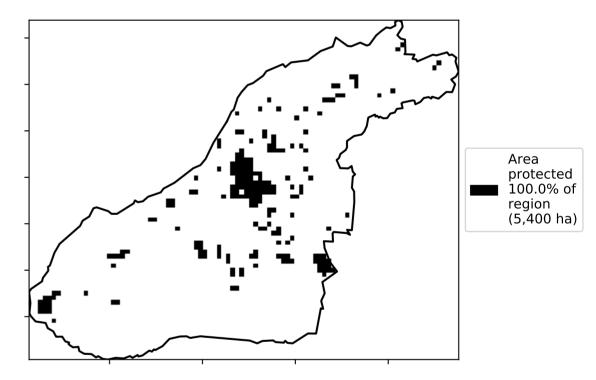


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

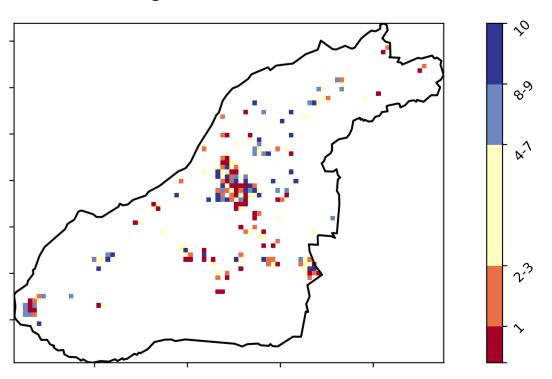
### Proportion of vegetation cover class in area



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



Total Vegetation Cover Decile [%]



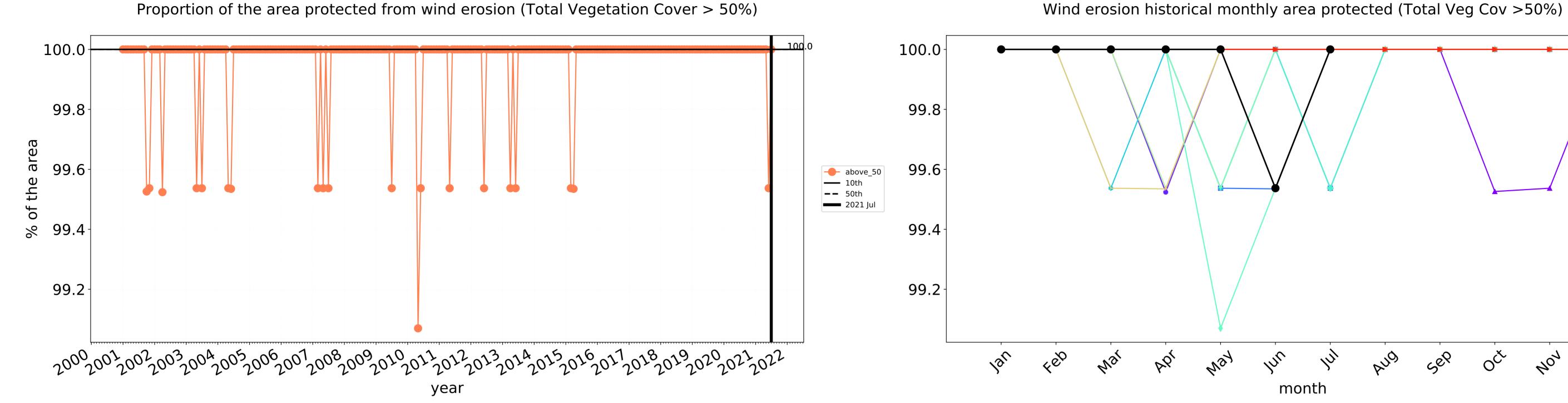


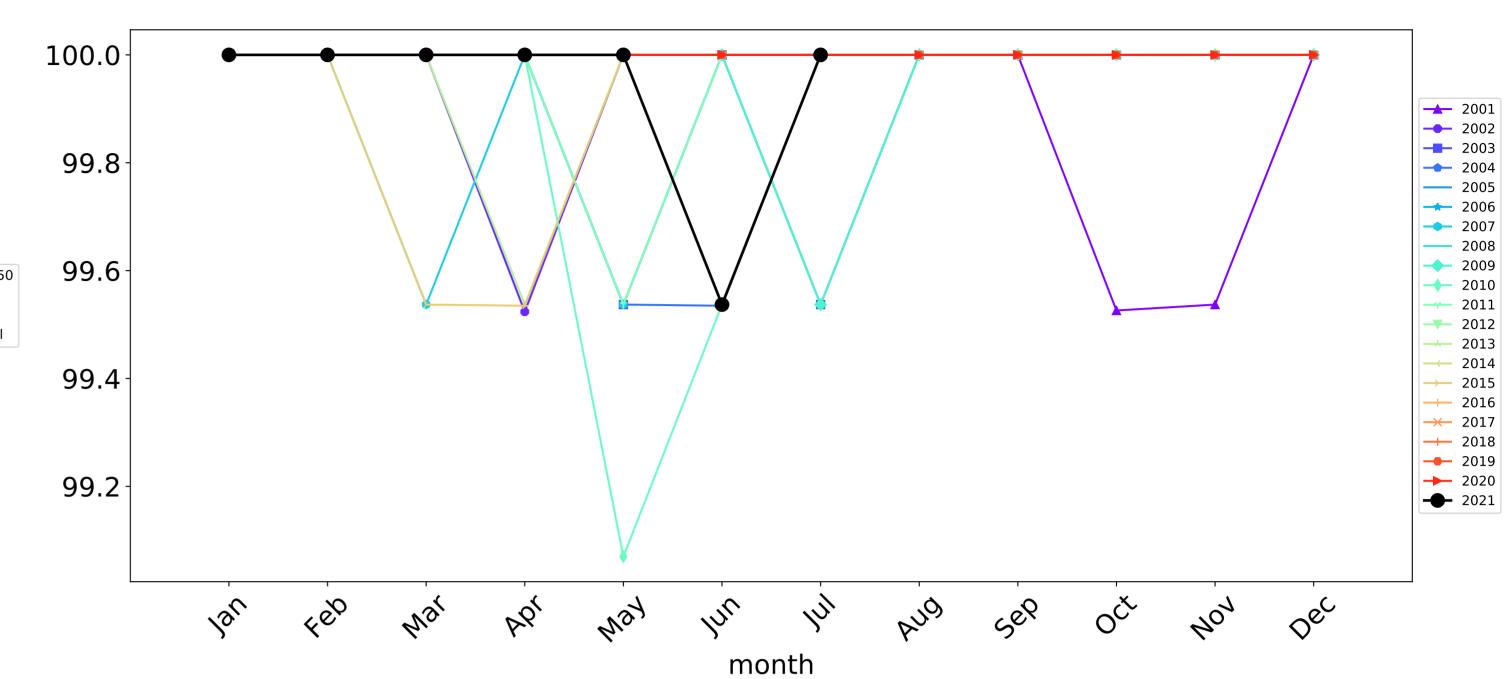


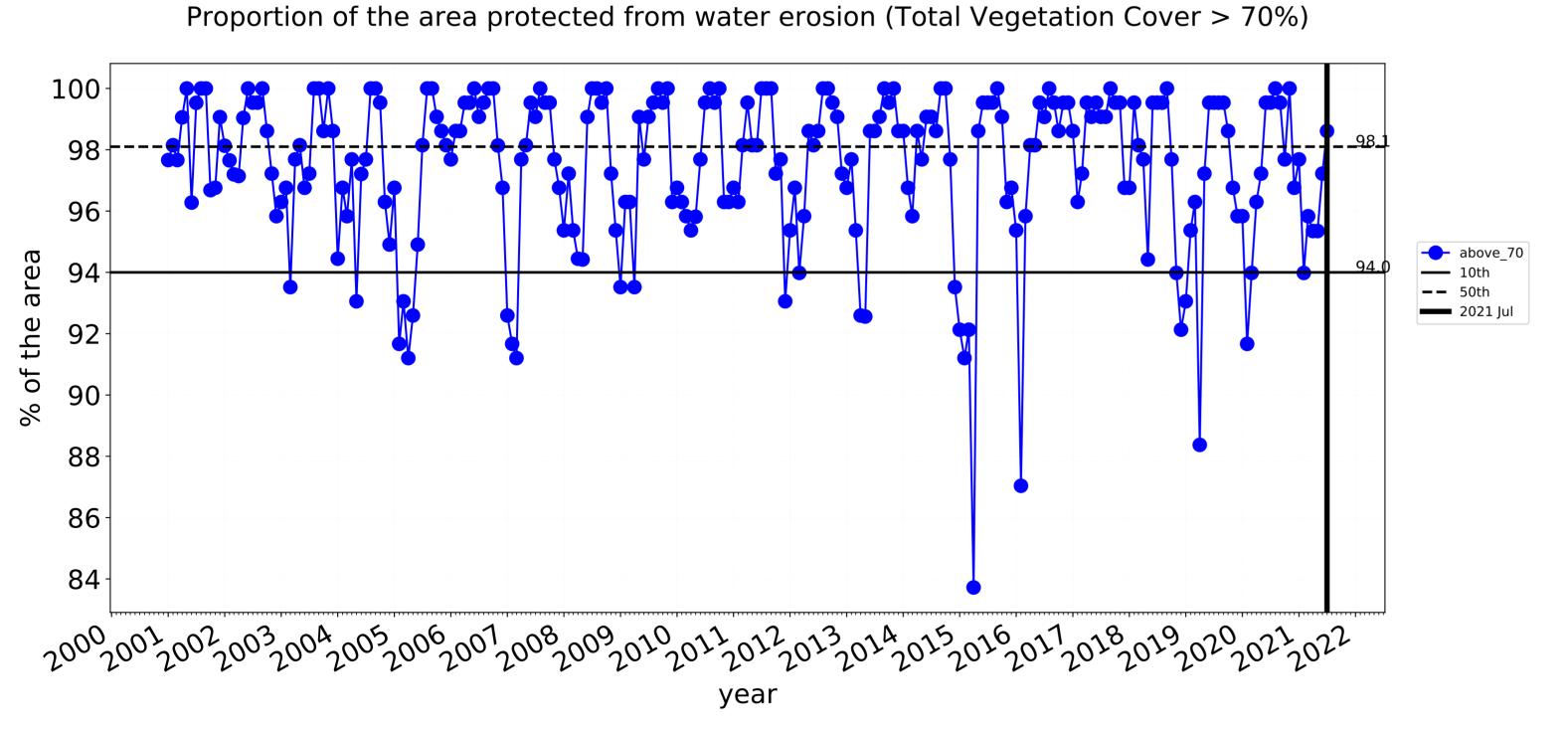


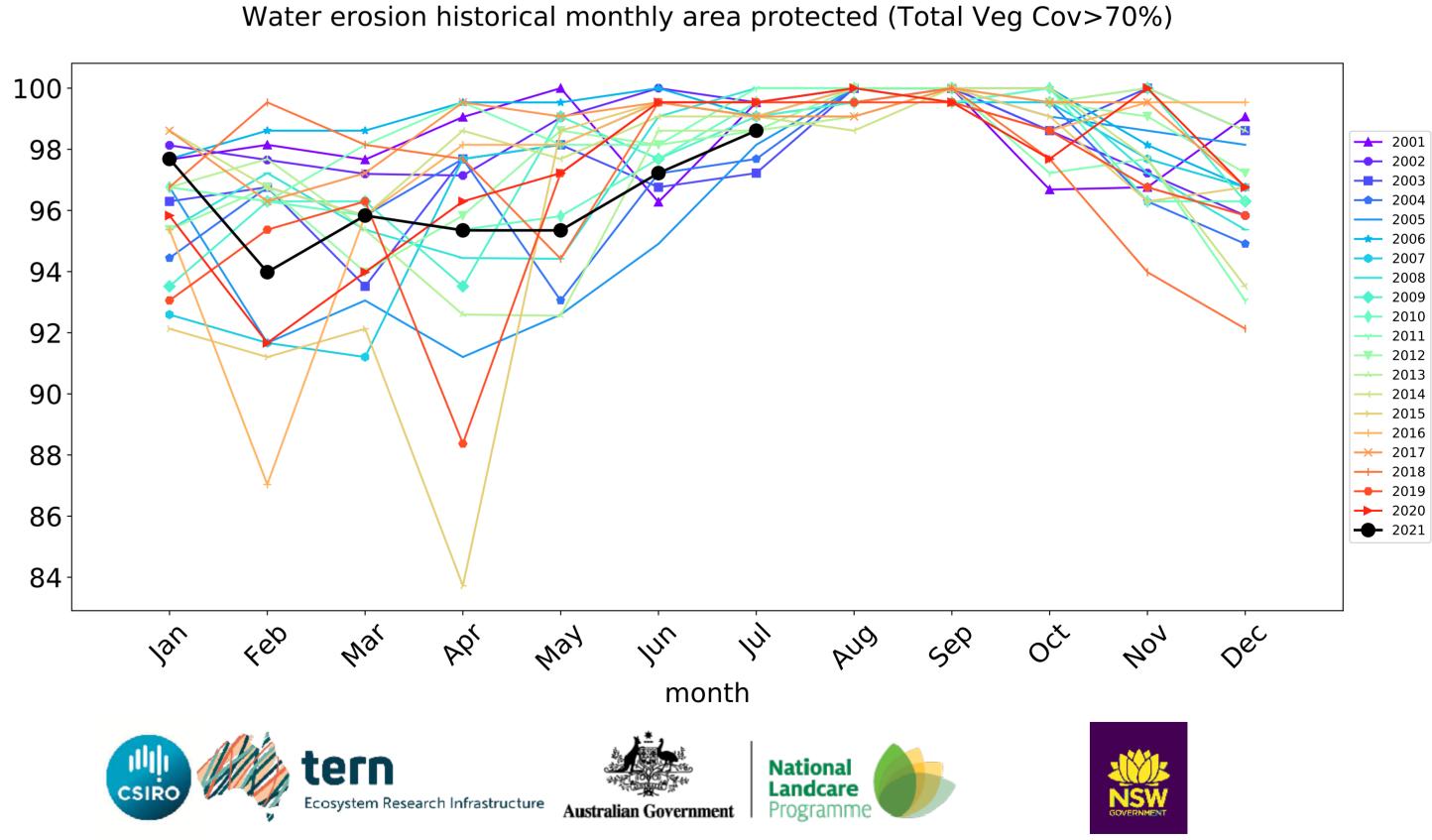


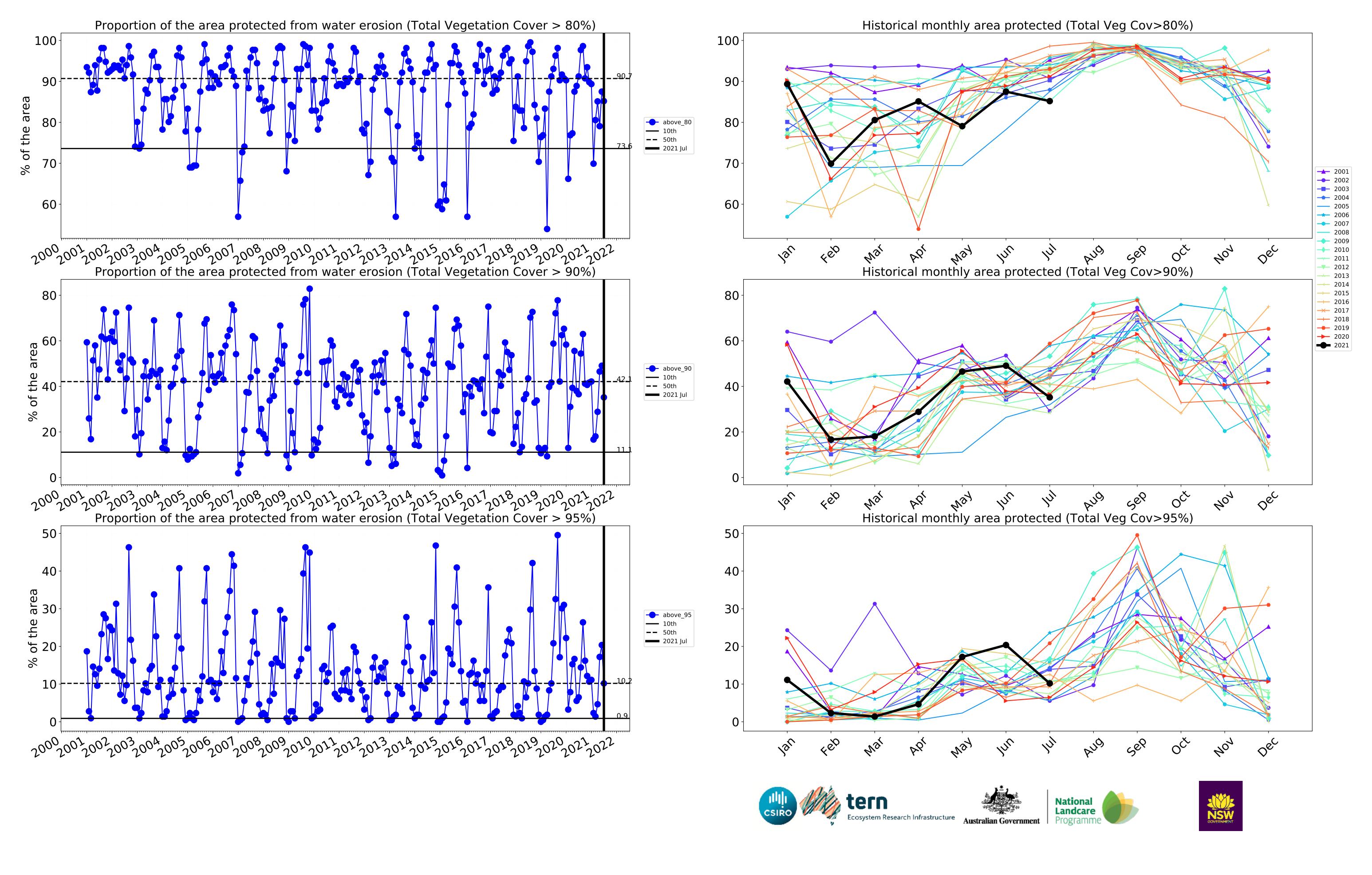
### **Cropping timeseries**







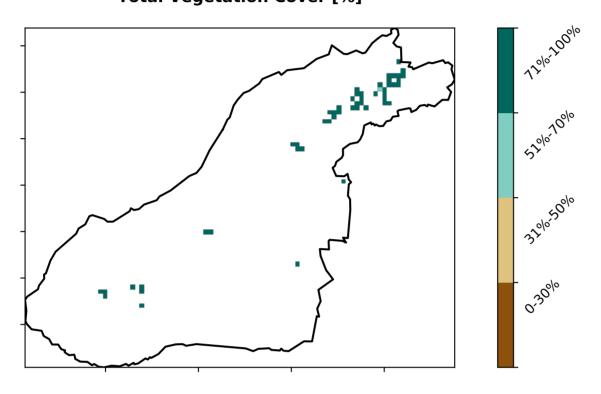




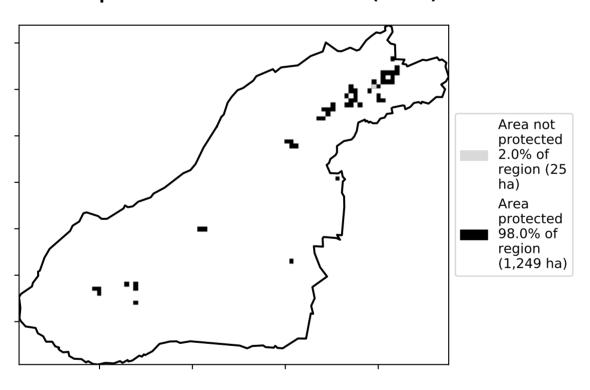
### Irrigation

### 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 Agriculture - Cropping - Irrigated Agriculture - Horticulture - Irrigated

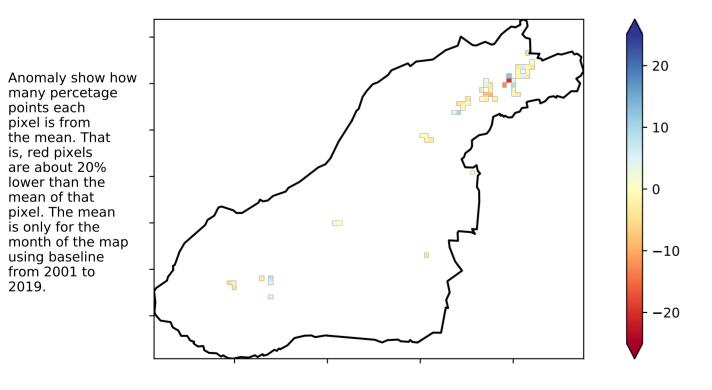
### Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

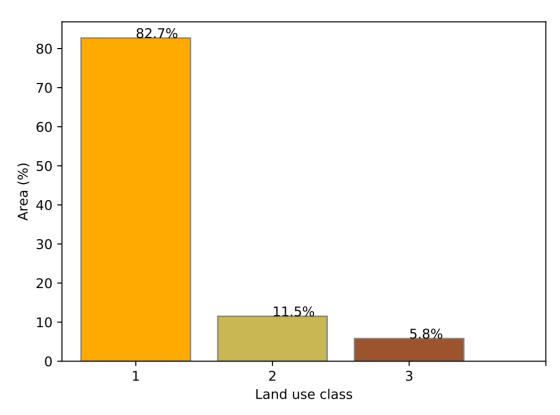


Total Vegetation Cover Anomaly [%]

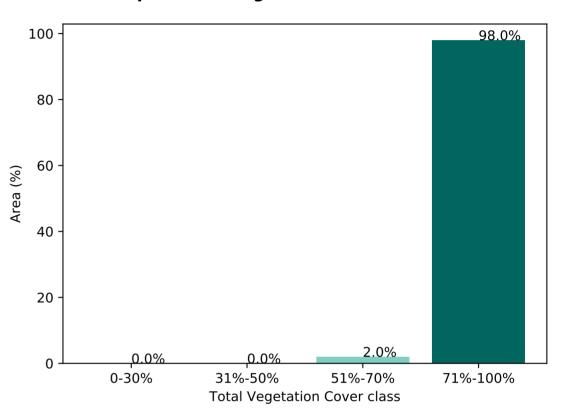


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

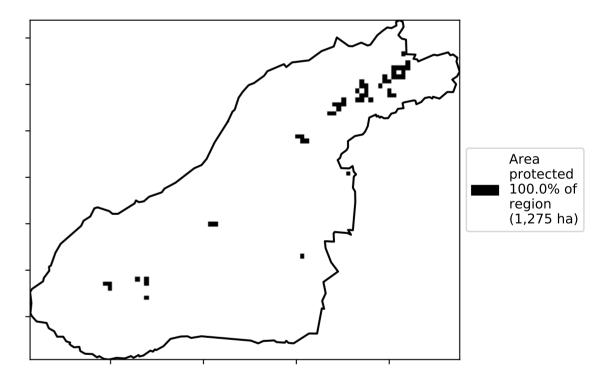
### Proportion of each land class in area



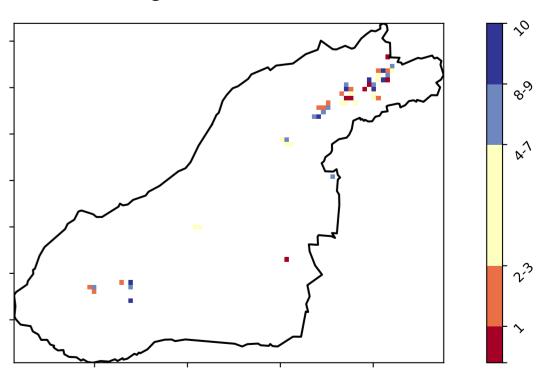
**Proportion of vegetation cover class in area** 



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]

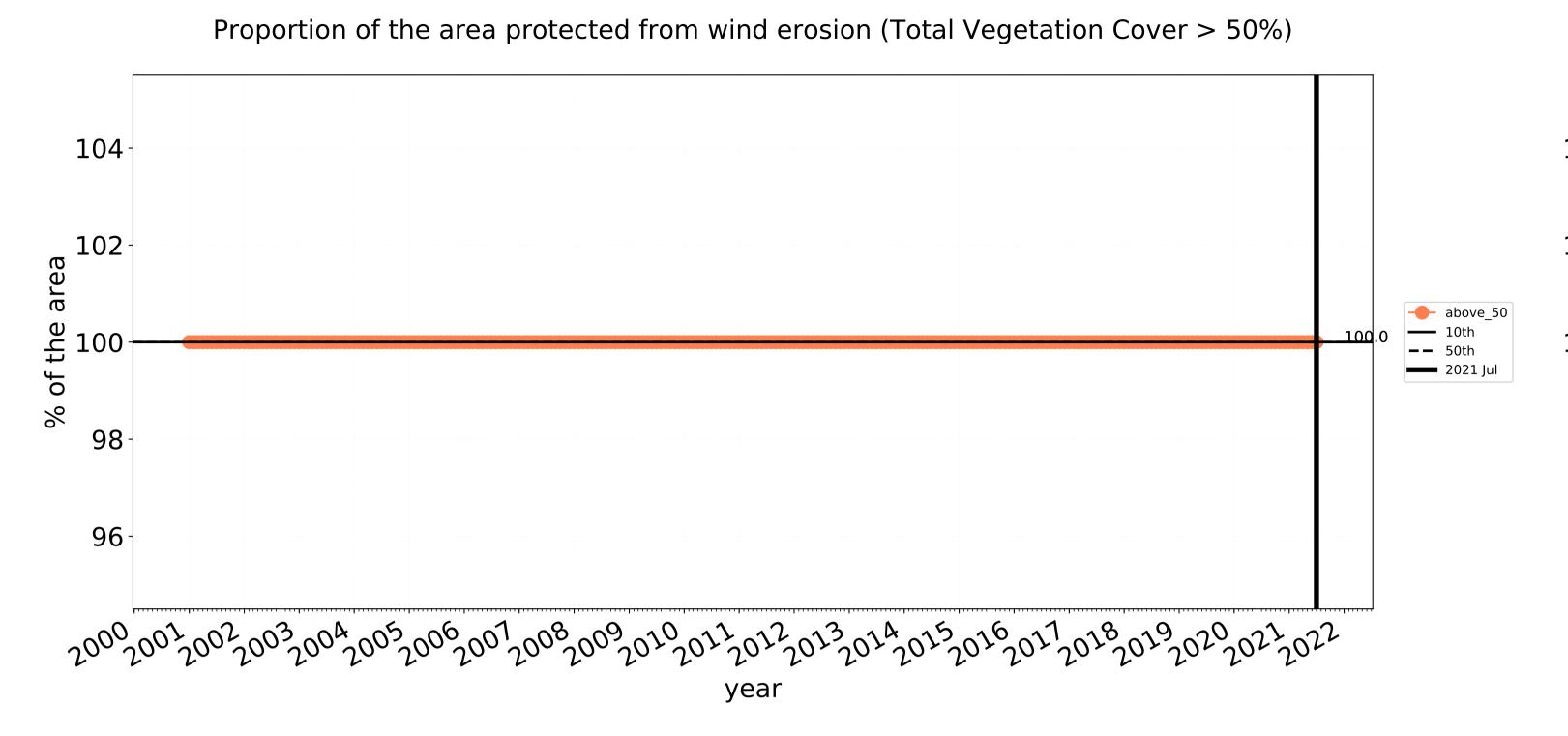


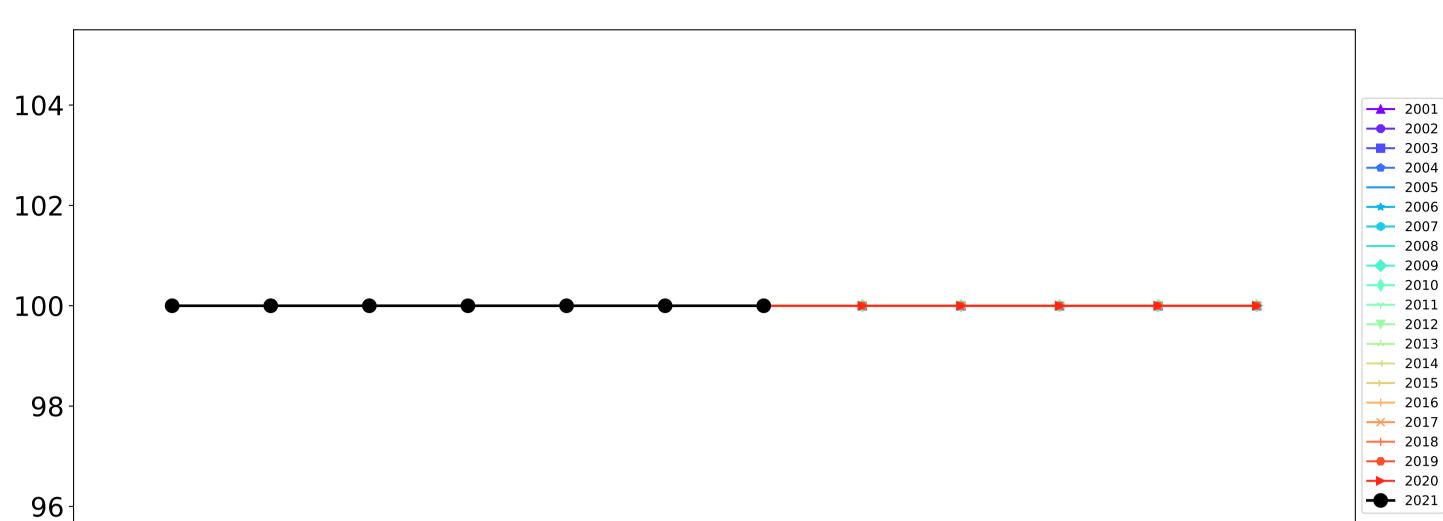










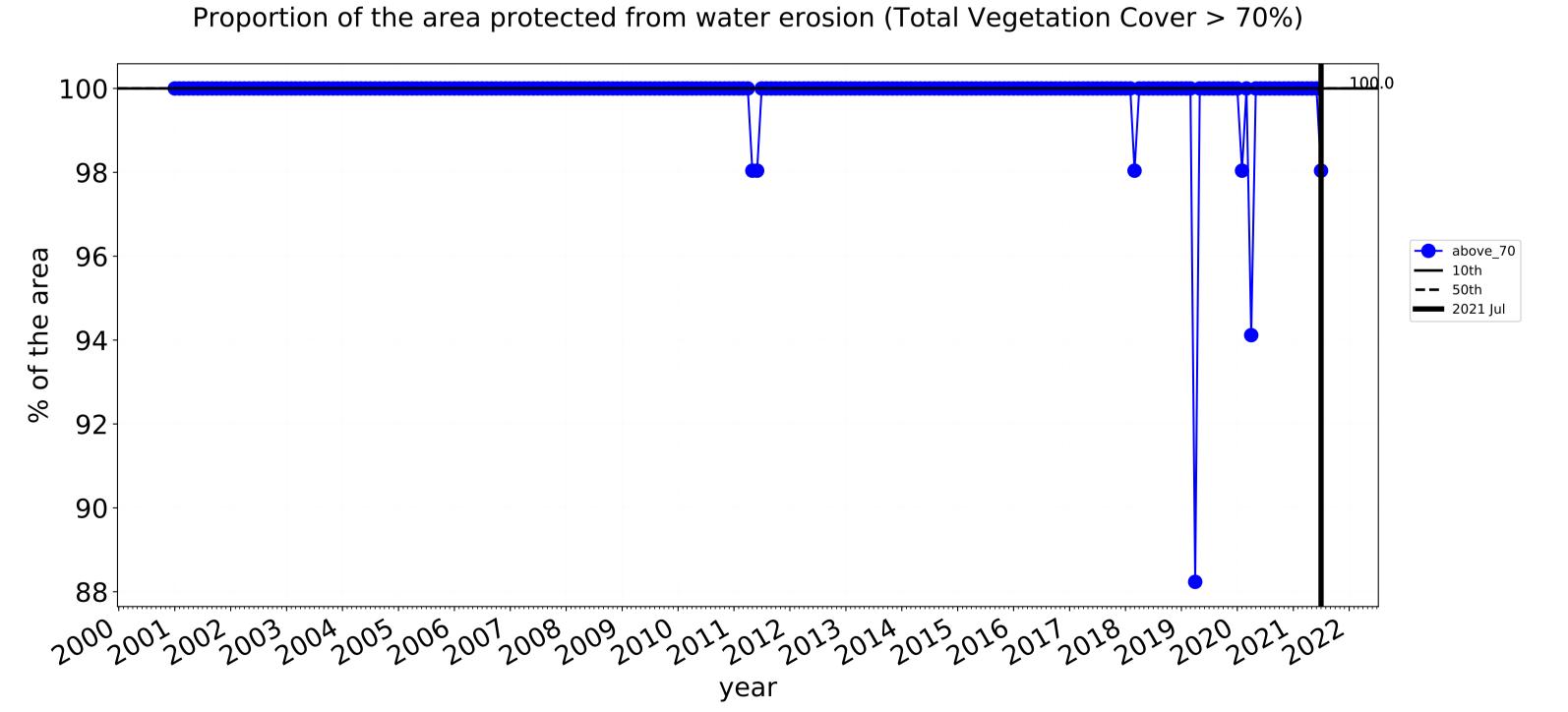


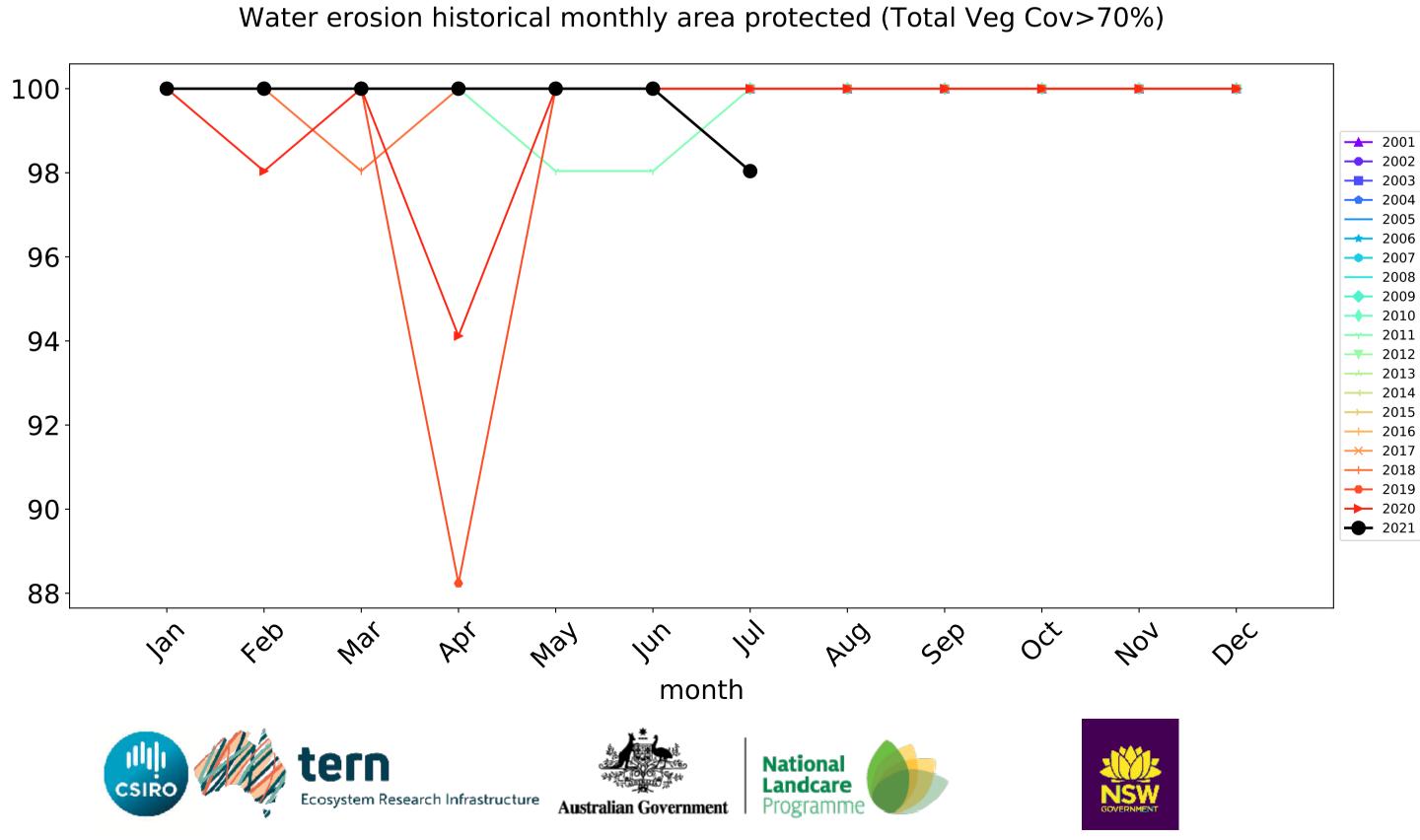
month

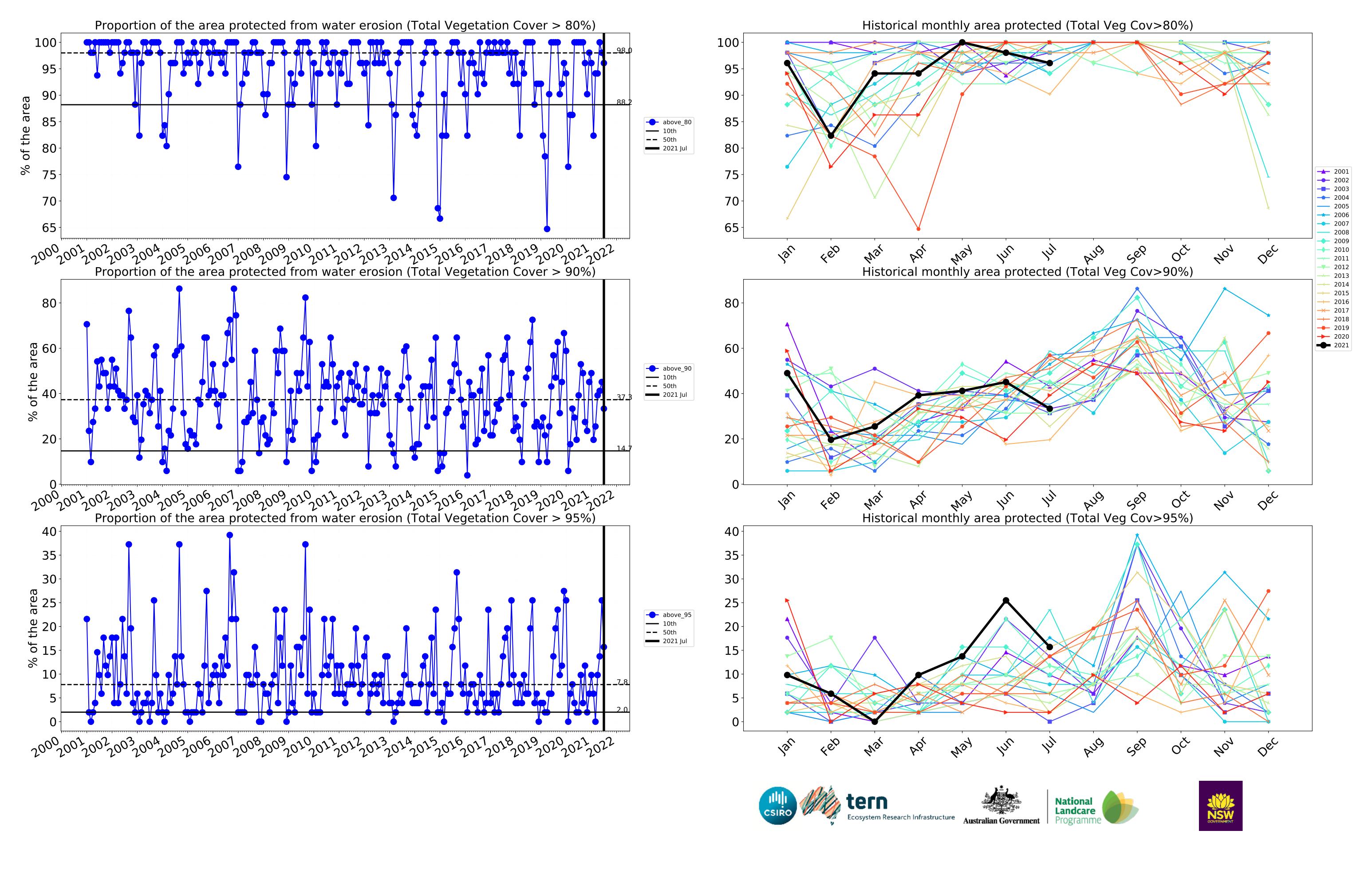
May

404

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







### **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)

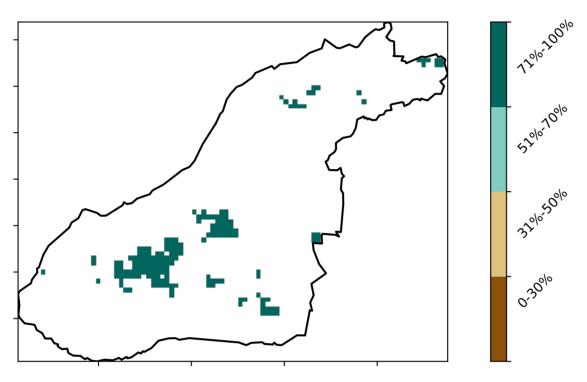
Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

Derived from

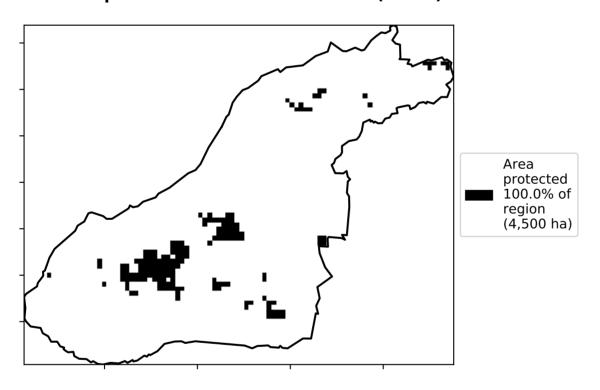
pixel is from

is, red pixels

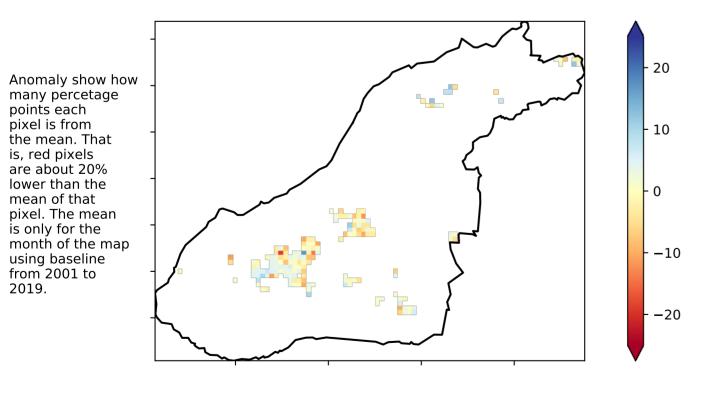
mean of that



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

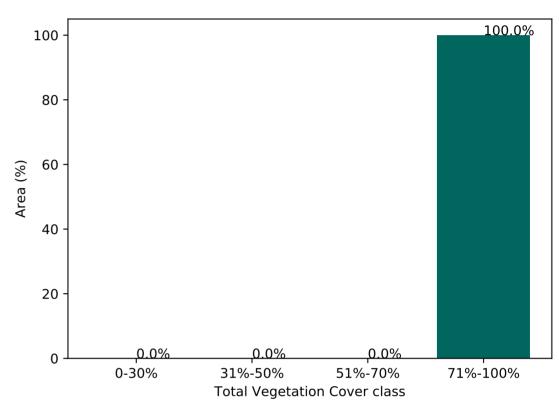


### **Total Vegetation Cover Anomaly [%]**

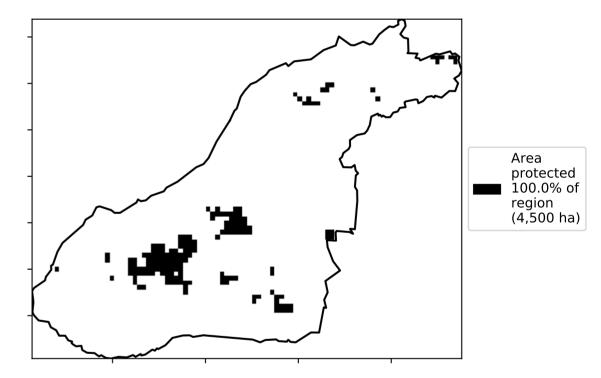


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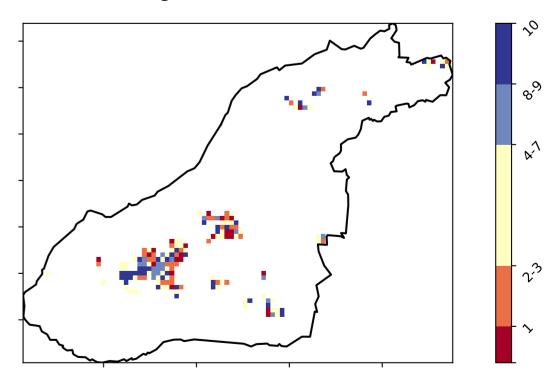
### Proportion of vegetation cover class in area



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



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



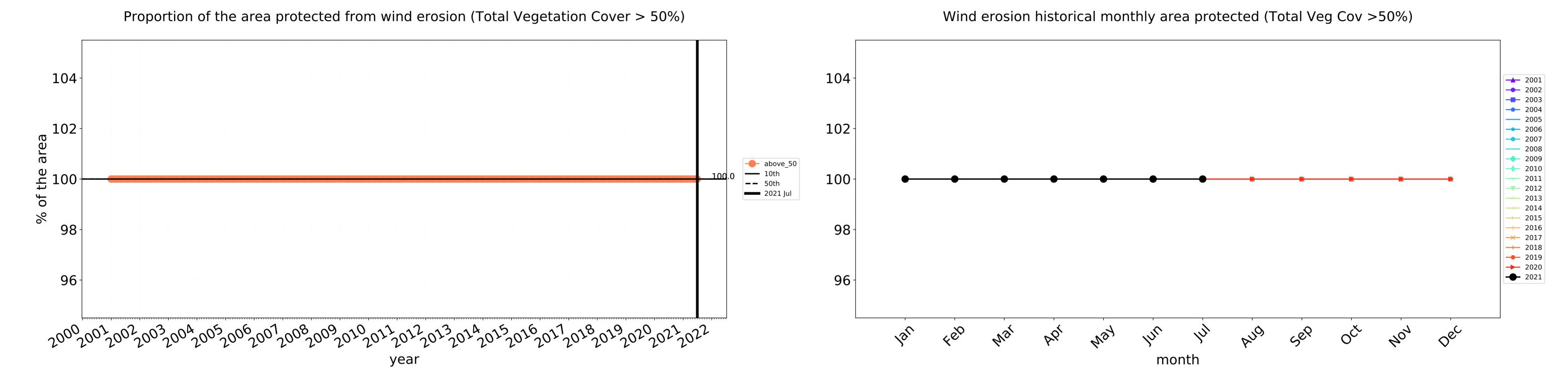


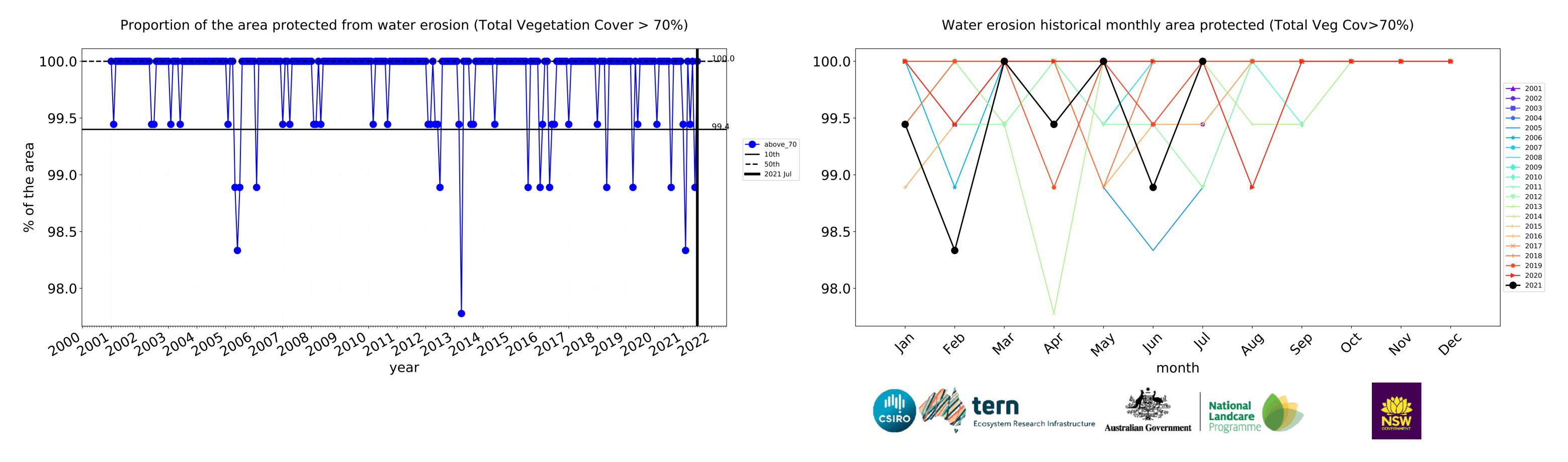


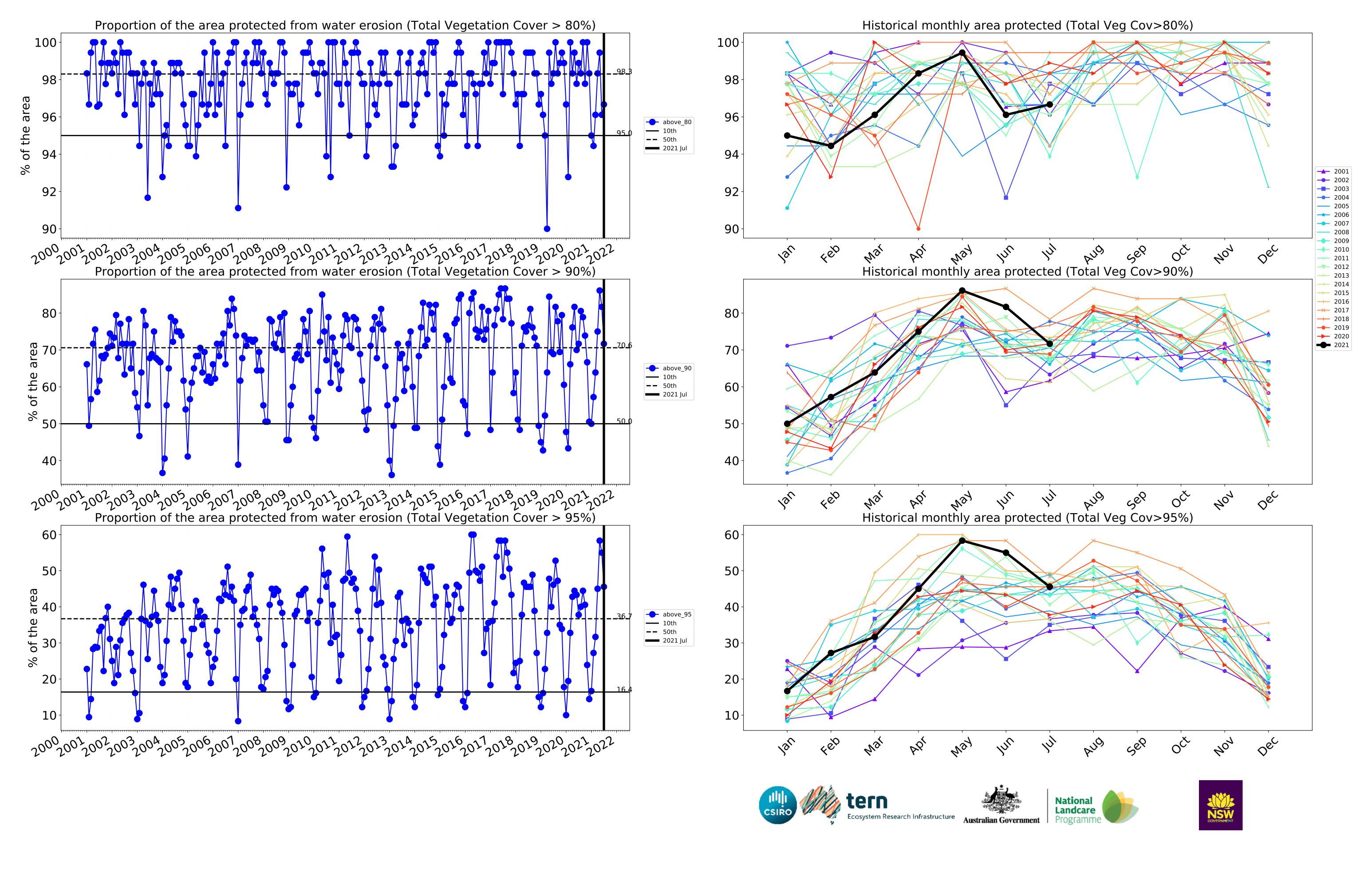




### **Production native forests and plantation forests timeseries**







### Yankalilla\_(DC) (72,775 ha and no data 2,362 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	72,775	99.9% 72,700	99.6% 72,500	97.6% 71,050	89.0% 64,775	44.8% 32,575	17.9% 13,000
Conservation and natural environments	9,400	99.7% 9,375	99.2% 9,325	95.5% 8,975	91.2% 8,575	63.6% 5,975	29.0% 2,725
Conservation and natural environments non forest	1,275	100.0% 1,275	98.0% 1,250	90.2% 1,150	82.4% 1,050	52.9% 675	21.6% 275
Conservation and natural environments Woodland forest	5,475	99.5% 5,450	99.5% 5,450	95.4% 5,225	90.9% 4,975	61.6% 3,375	28.3% 1,550
Conservation and natural environments Forest (non woodland)	2,650	100.0% 2,650	99.1% 2,625	98.1% 2,600	96.2% 2,550	72.6% 1,925	34.0% 900
Agriculture	56,725	99.9% 56,675	99.7% 56,550	98.1% 55,625	88.9% 50,425	40.2% 22,800	14.1% 7,975
Grazing	50,050	99.9% 50,000	99.7% 49,875	98.0% 49,050	89.1% 44,600	40.9% 20,475	14.4% 7,225
Grazing non forest	49,575	99.9% 49,525	99.6% 49,400	98.0% 48,575	89.0% 44,125	40.9% 20,275	14.5% 7,175
Cropping	5,400	100.0% 5,400	100.0% 5,400	98.6% 5,325	85.2% 4,600	35.2% 1,900	10.2% 550
Irrigation	1,275	100.0% 1,275	100.0% 1,275	98.0% 1,250	96.1% 1,225	33.3% 425	15.7% 200
Production native forests and plantation forests	4,500	100.0% 4,500	100.0% 4,500	100.0% 4,500	96.7% 4,350	71.7% 3,225	45.6% 2,050







