### 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: June 2022

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



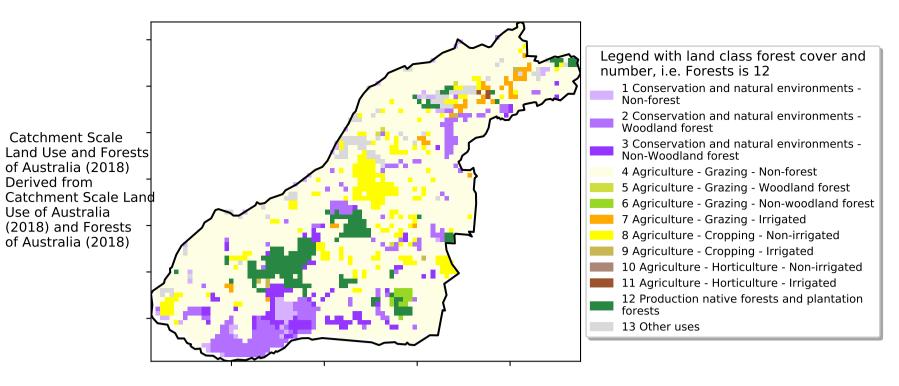




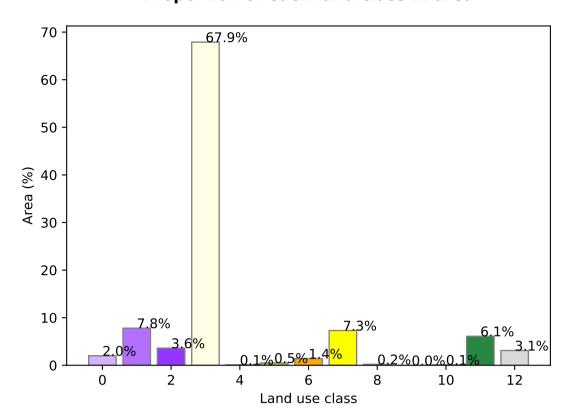


### **Vegetation Cover Jun 2022**

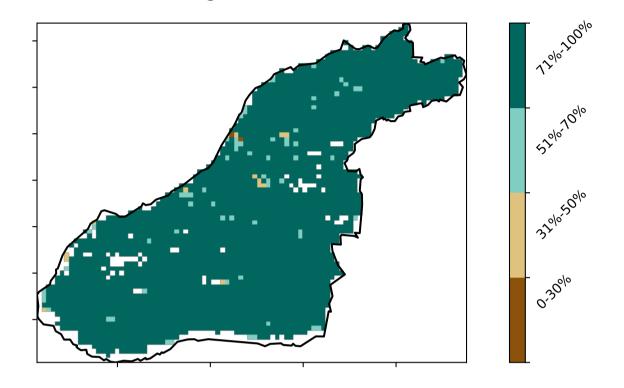
### Land use and forest cover



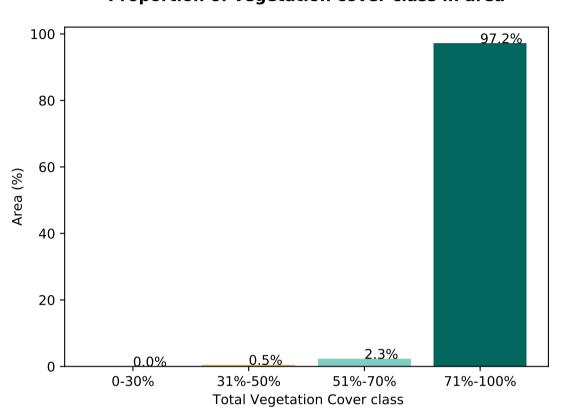
### Proportion of each land class in area

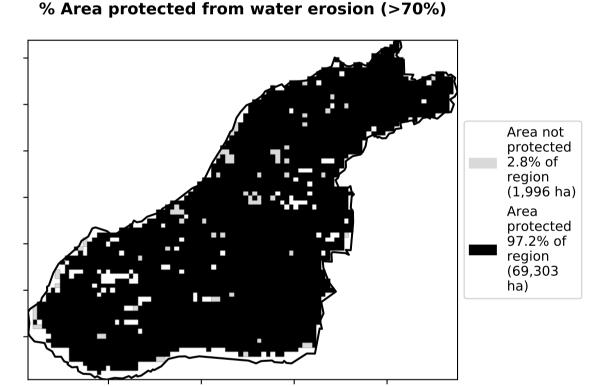


### Total Vegetation Cover [%]

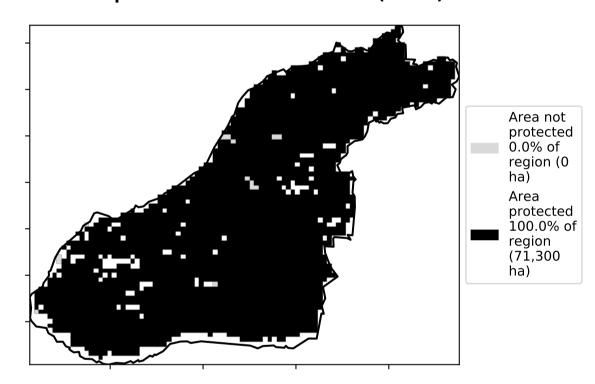


Proportion of vegetation cover class in area

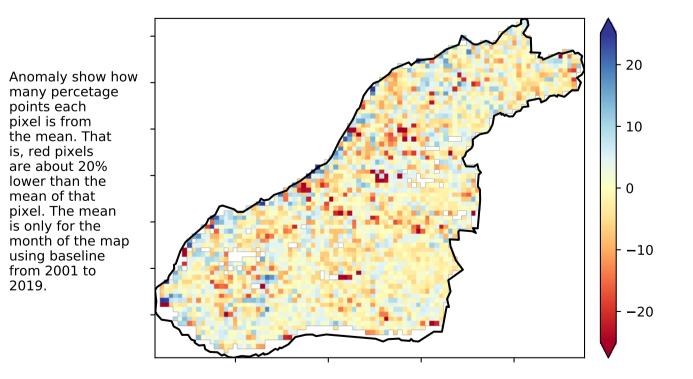




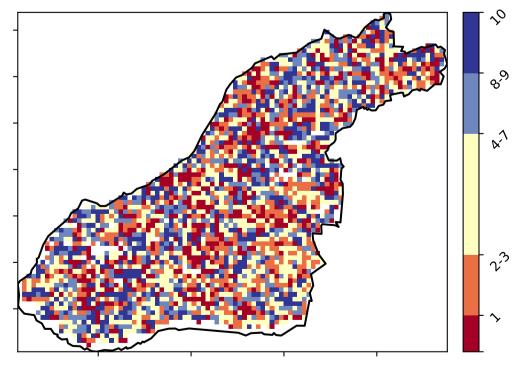
% Area protected from wind erosion (>50%)



### Total Vegetation Cover Anomaly [%]



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.

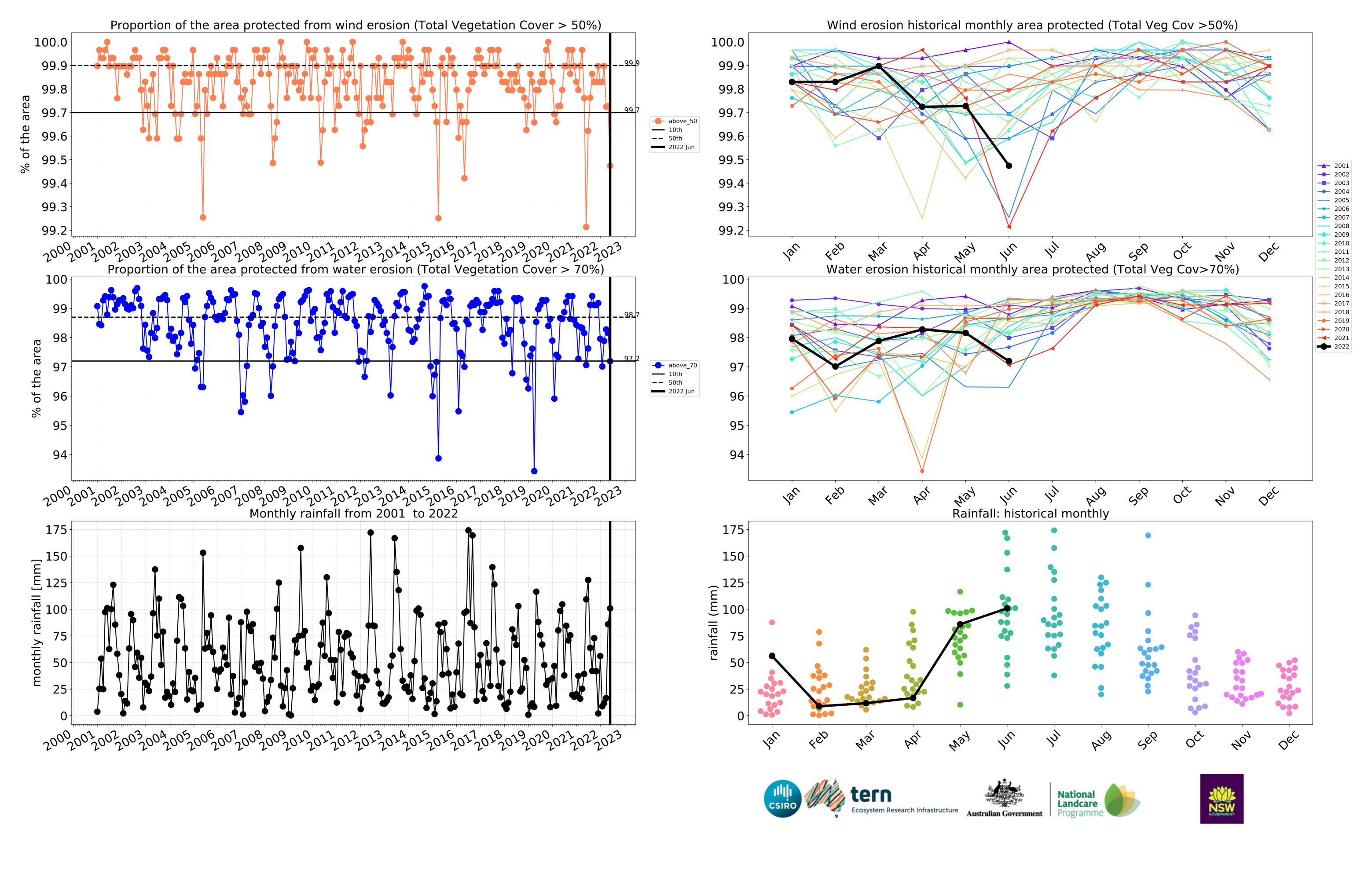


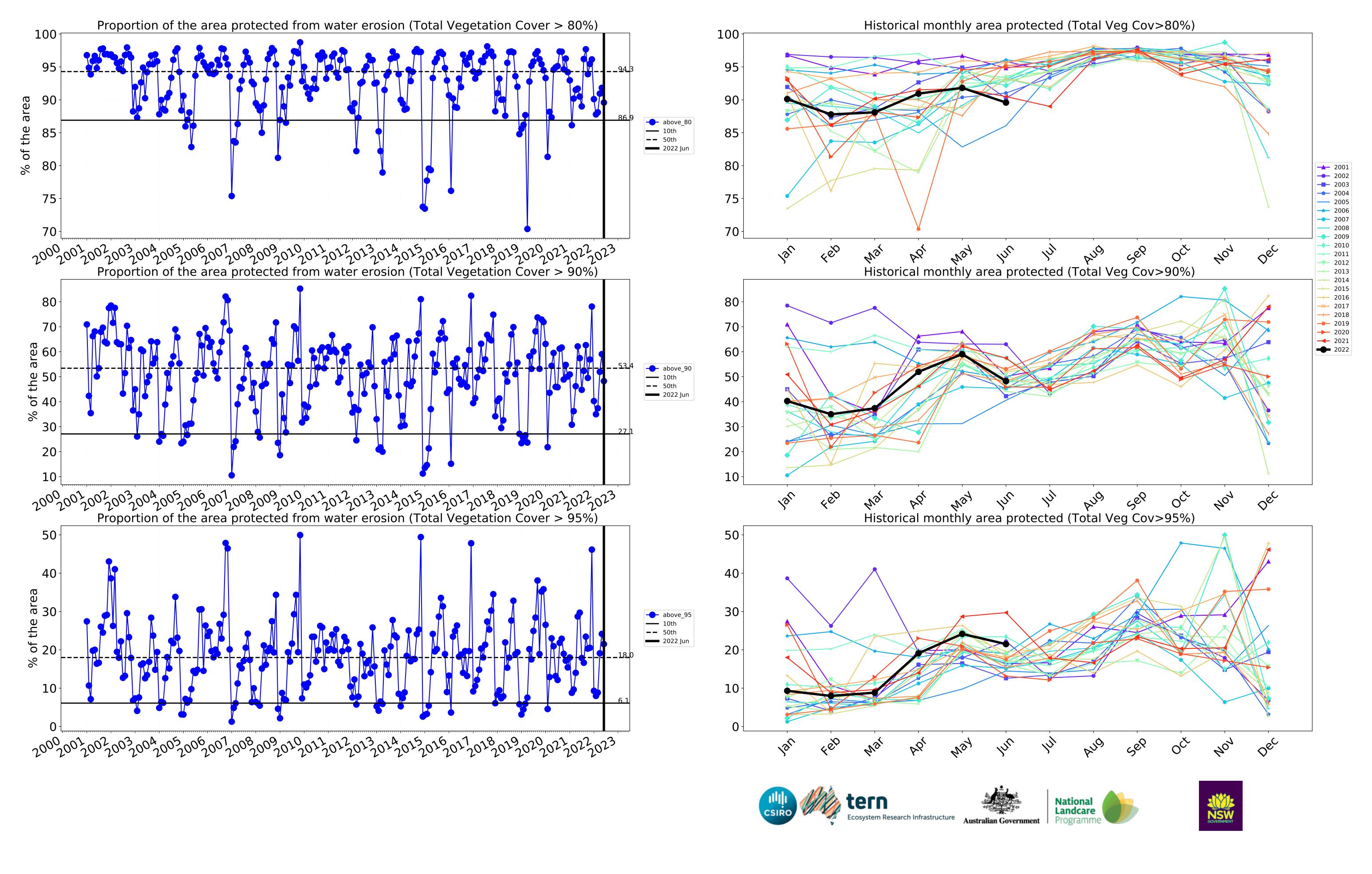












### **Conservation and natural environments**

### Land use and forest cover **Proportion of each land class in area** 60 58.2% 50 Catchment Scale 40 Land Use and Forests of Australia (2018) 1 Conservation and natural environments - Nonforest Area (%) 0 Derived from 2 Conservation and natural environments - Woodland forest Catchment Scale Land 26.8% Use of Australia 3 Conservation and natural environments - Non-woodland forest (2018) and Forests of Australia (2018) 20 15.0% 10 0.5 1.0 1.5 2.0 2.5 -0.50.0 Land use class Proportion of vegetation cover class in area **Total Vegetation Cover [%]** 98.6% 100 80 60 40 20 0.0% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class** % Area protected from wind erosion (>50%) % Area protected from water erosion (>70%) Area not Area not protected 1.4% of protected 0.0% of region (128 ha) region (0 ha) Area Area protected 98.6% of protected 100.0% of region (9,071 ha) region (9,200 ha) **Total Vegetation Cover Anomaly [%] Total Vegetation Cover Decile [%]** - 20 Anomaly show how many percetage points each pixel is from Deciles show where the - 10 pixel value lies in the the mean. That is, red pixels record, from highest to lowest, for that month. That is, red pixels are are about 20% lower than the mean of that in the lowest 10% of pixel. The mean records for that month of is only for the month of the map the map using baseline from 2001 to 2019. using baseline from 2001 to 2019. -10 **-**20 **National**

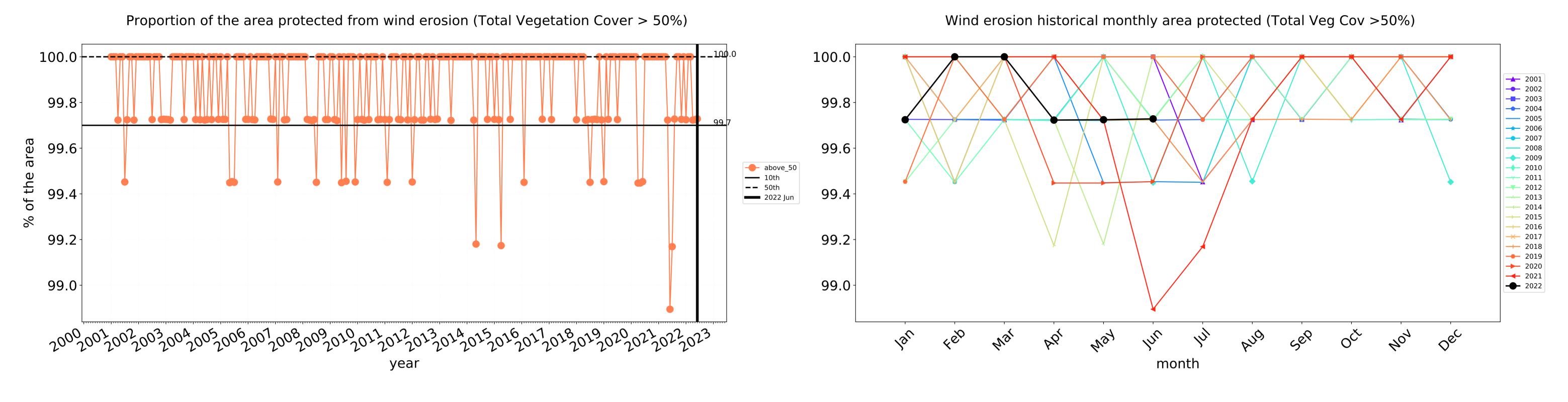
Australian Government

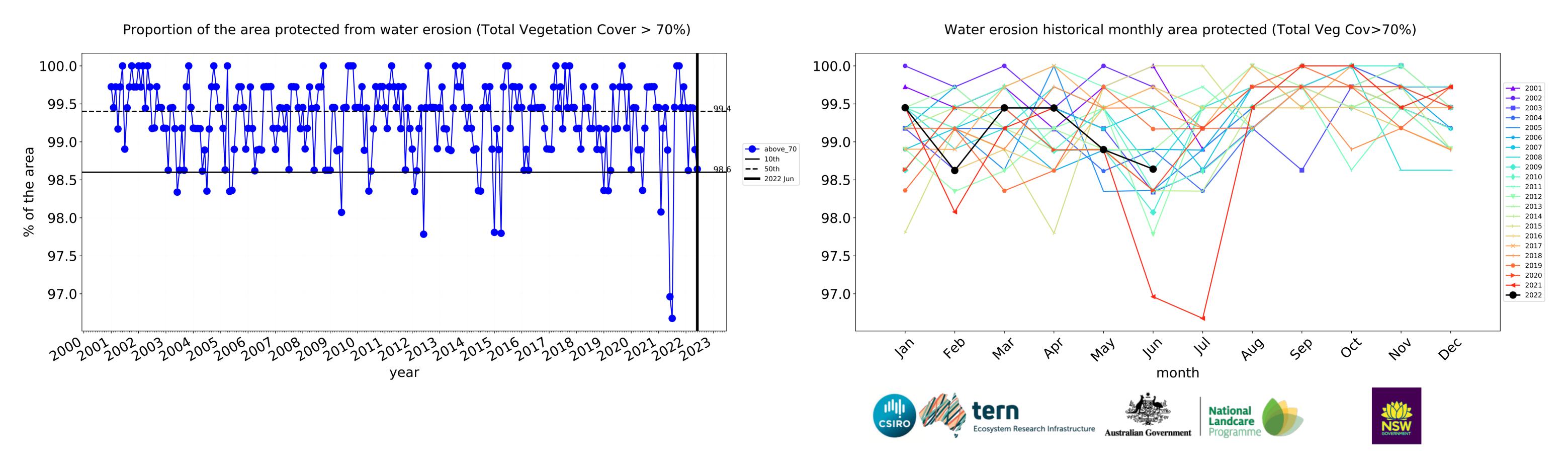
**Ecosystem Research Infrastructure** 

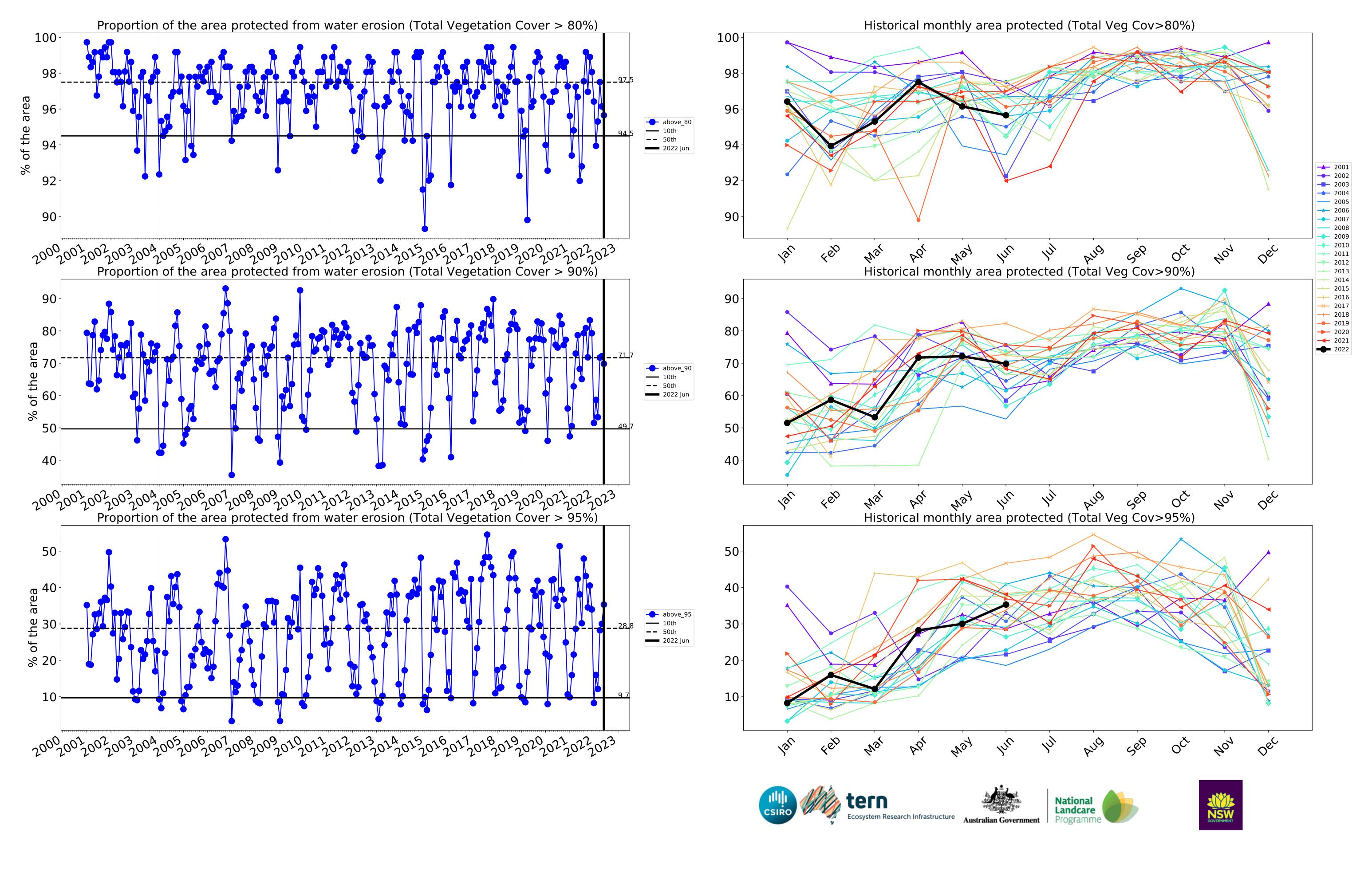
Landcare

Programme

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

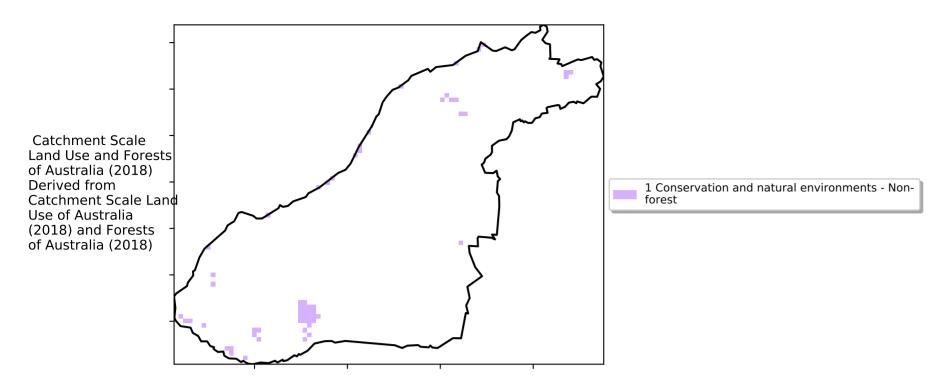




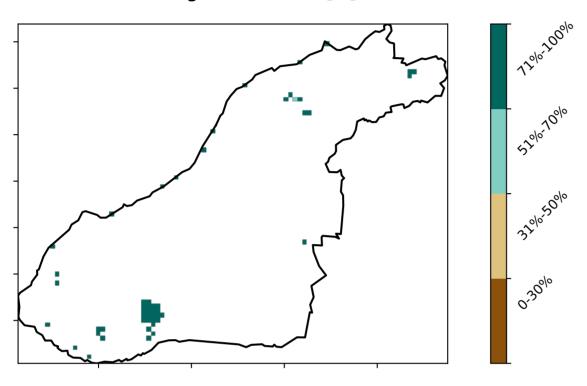


### **Conservation and natural environments non forest**

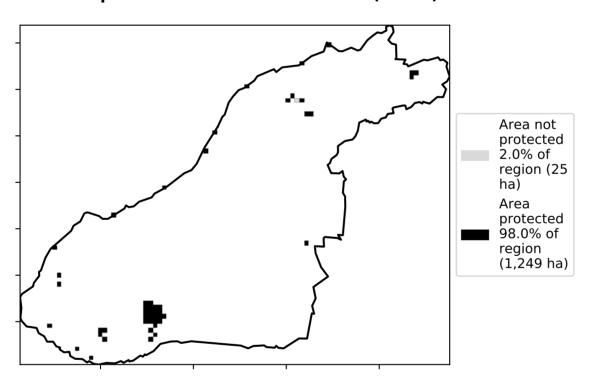
### Land use and forest cover



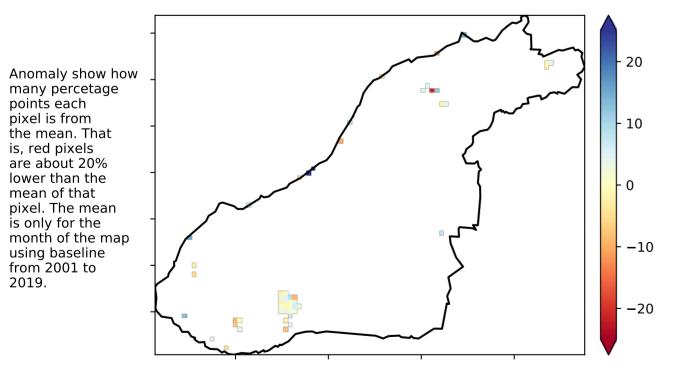
### **Total Vegetation Cover [%]**



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

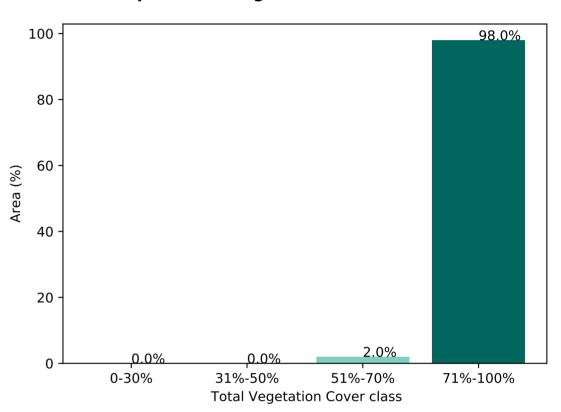


Total Vegetation Cover Anomaly [%]

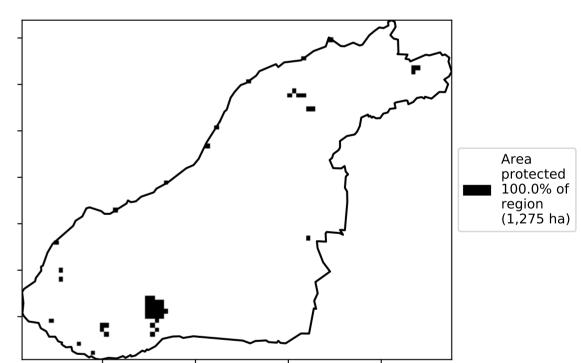


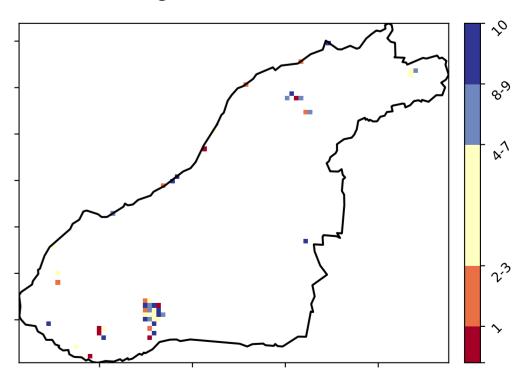
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

### Proportion of vegetation cover class in area



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





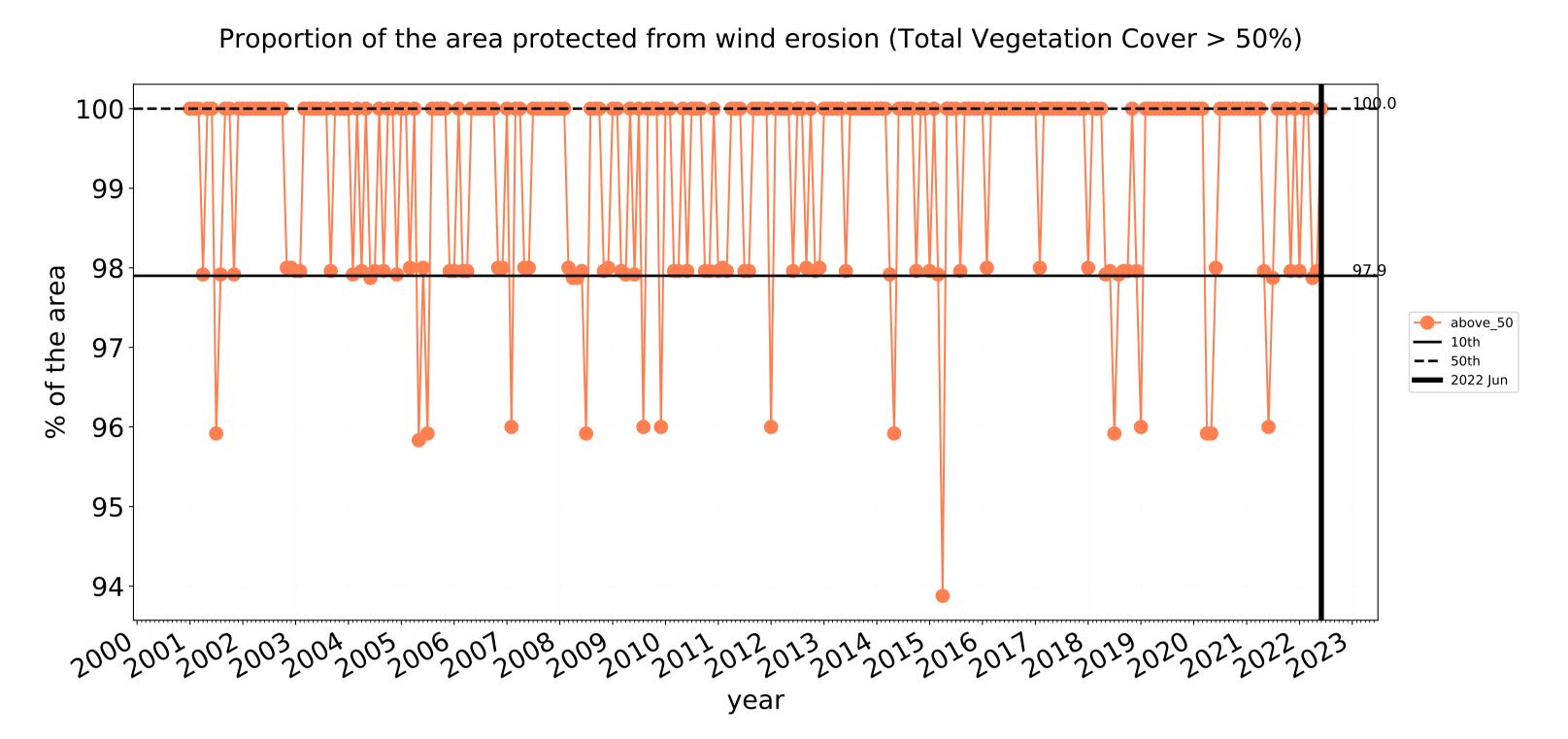


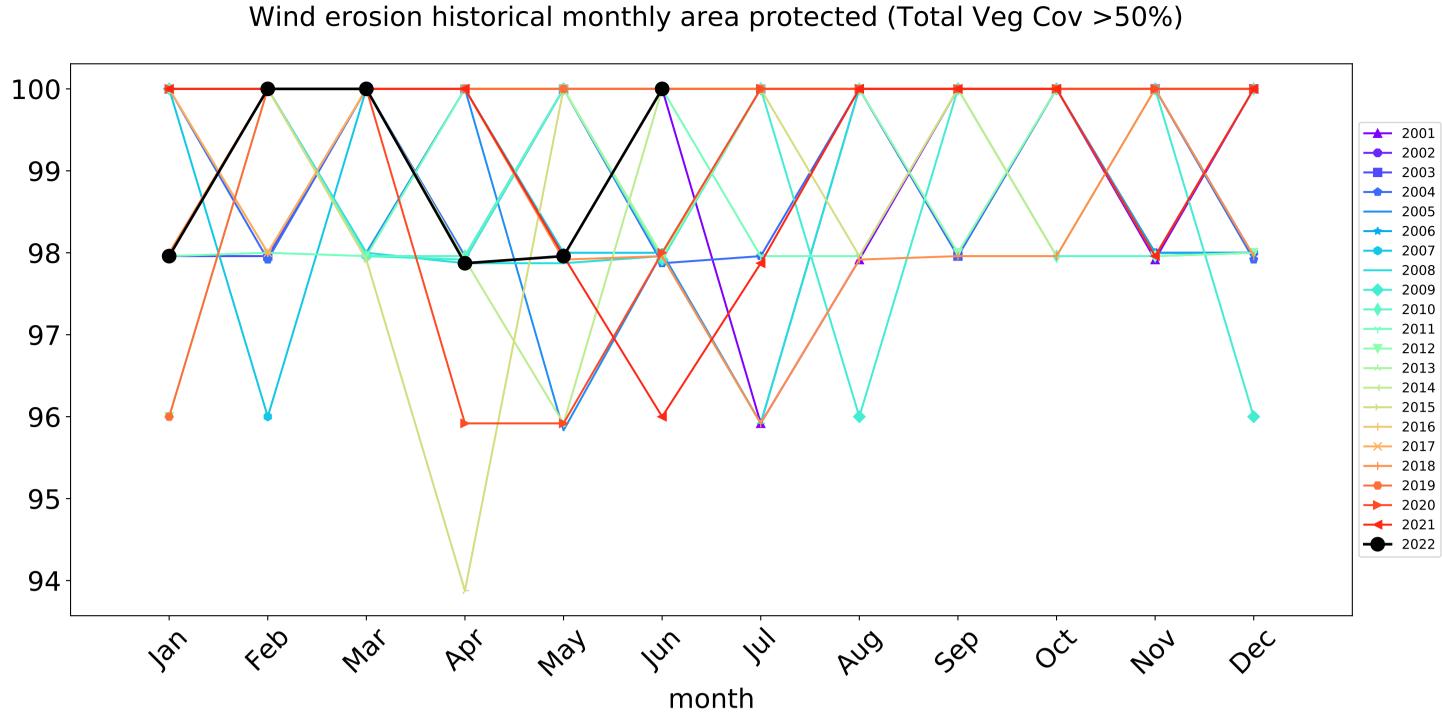


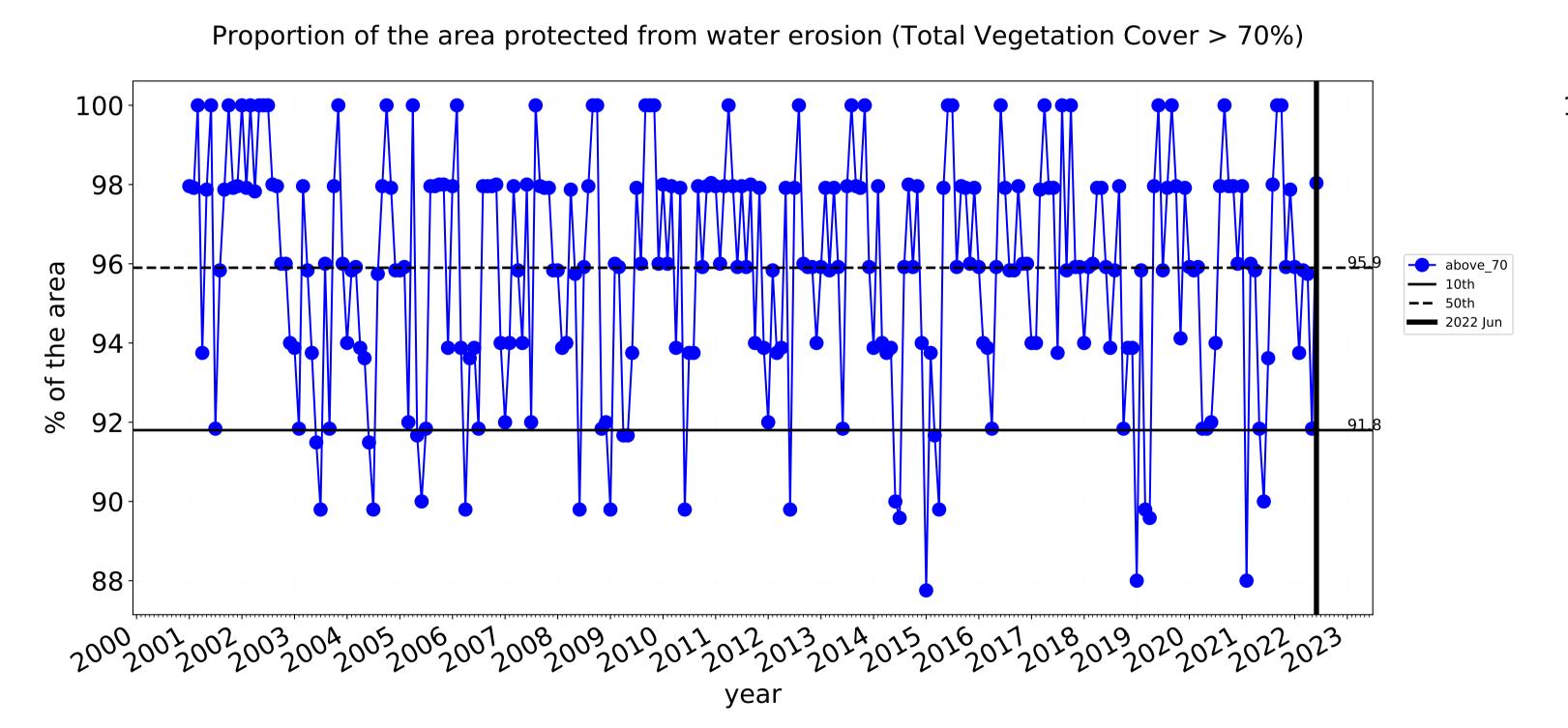


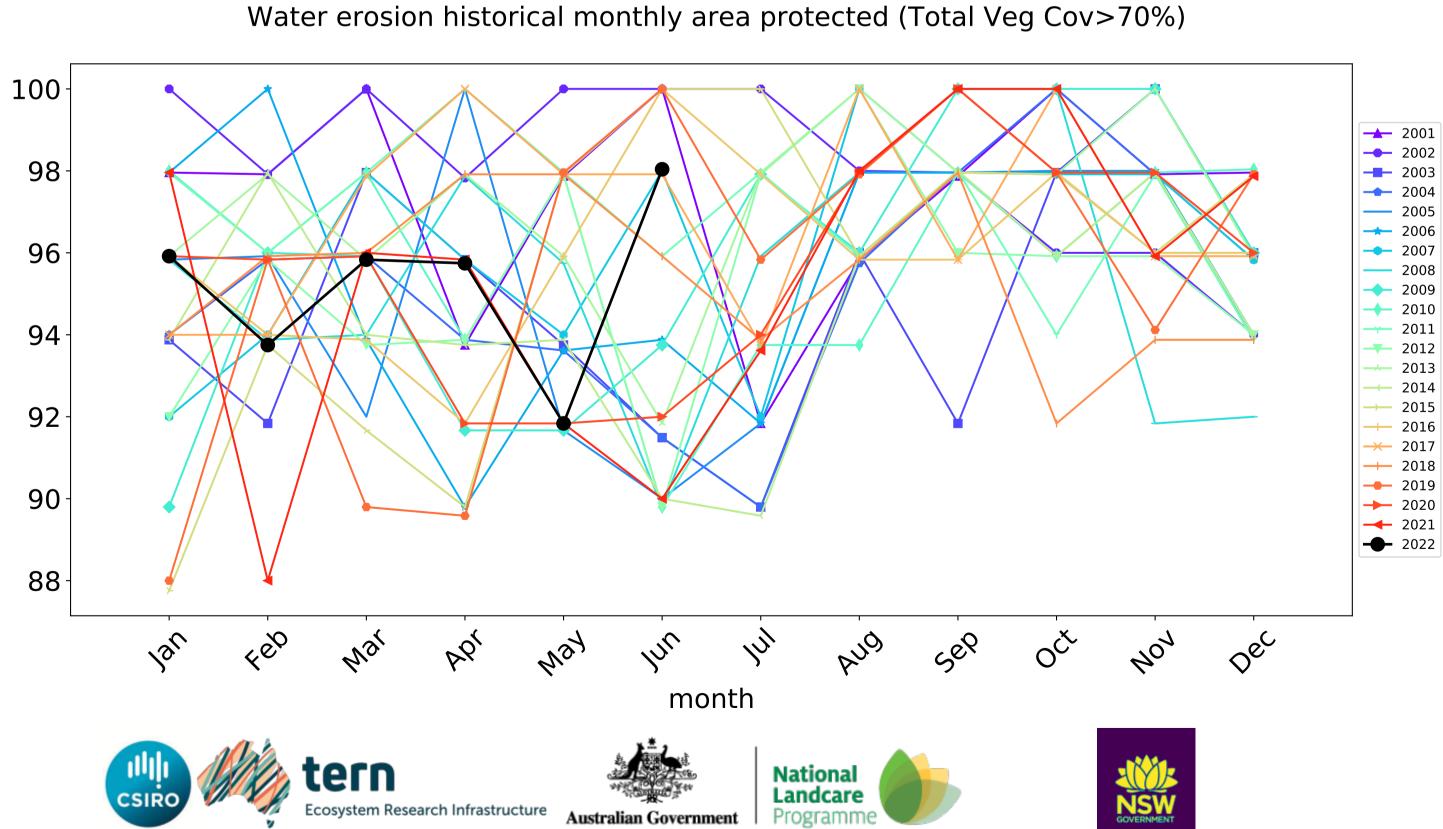


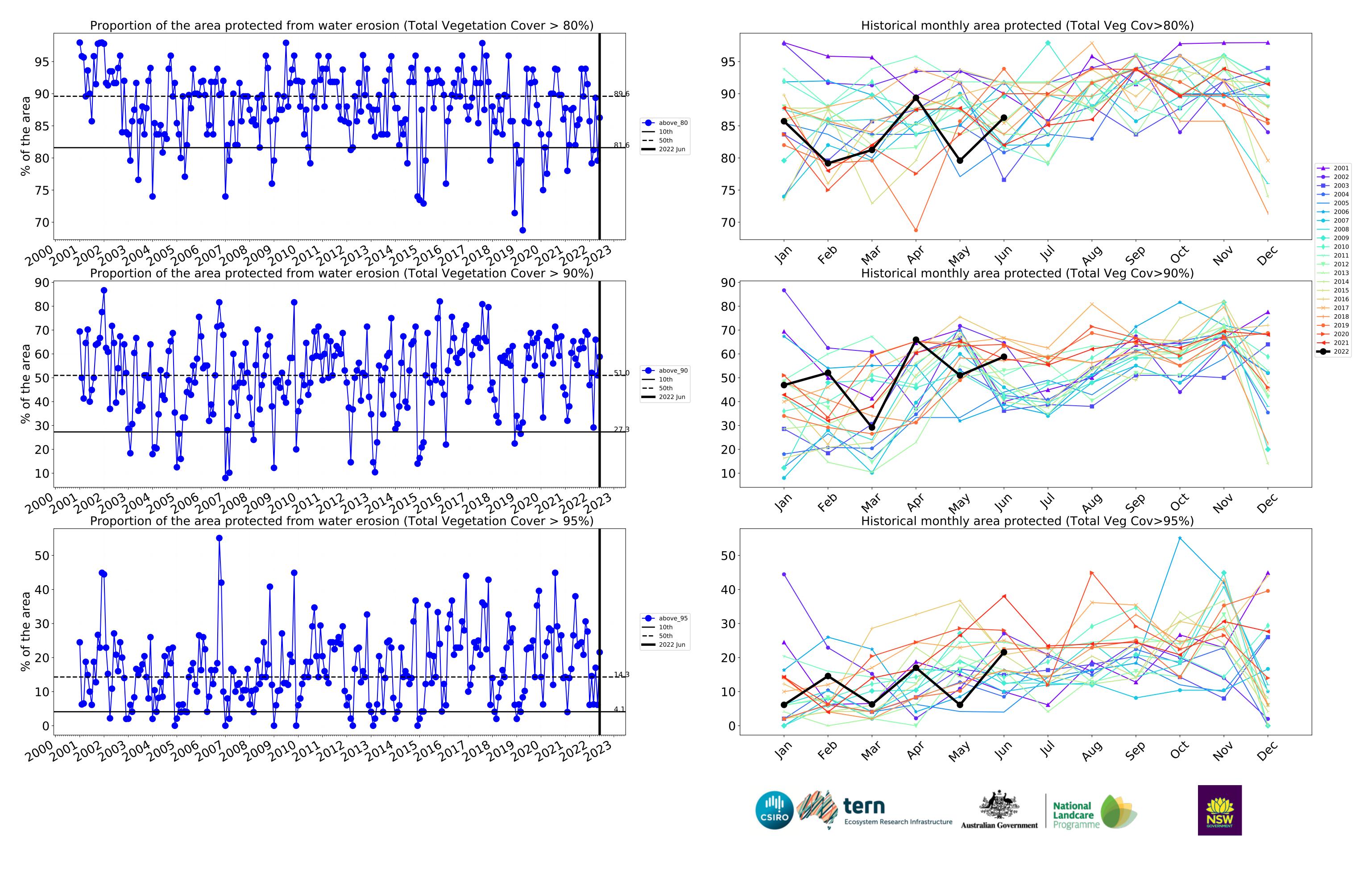
### **Conservation and natural environments non forest timeseries**







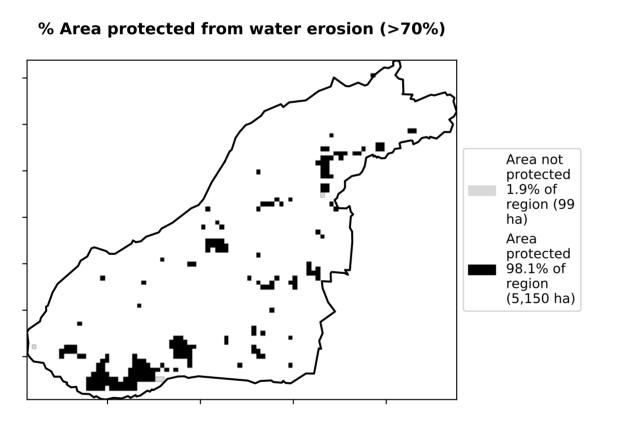


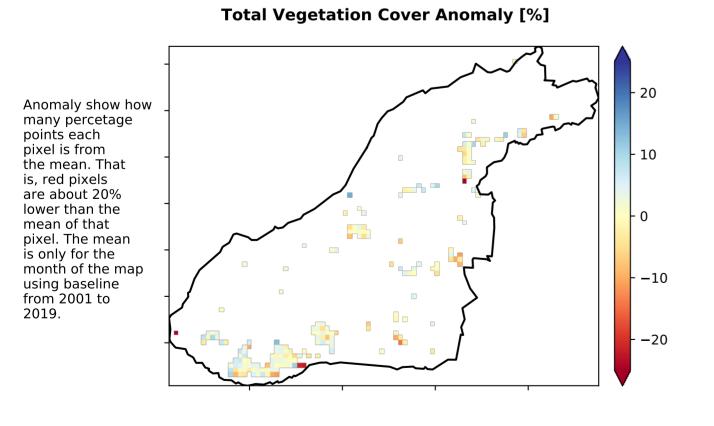


### **Conservation and natural environments Woodland forest**

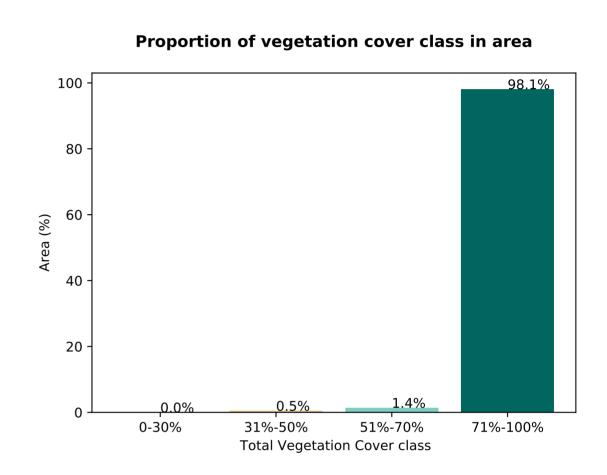
### Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Conservation and natural environments - Woodland forest Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

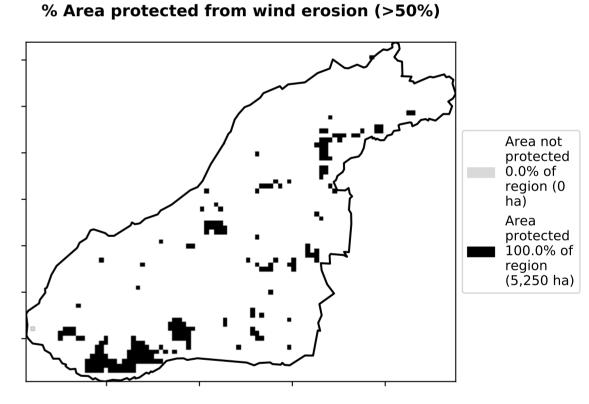
## **Total Vegetation Cover [%]**

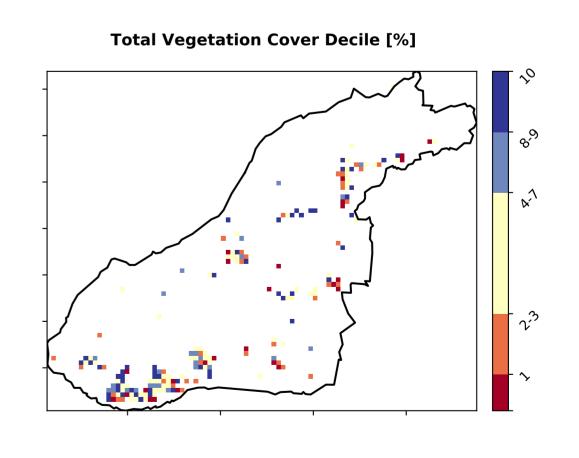




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.







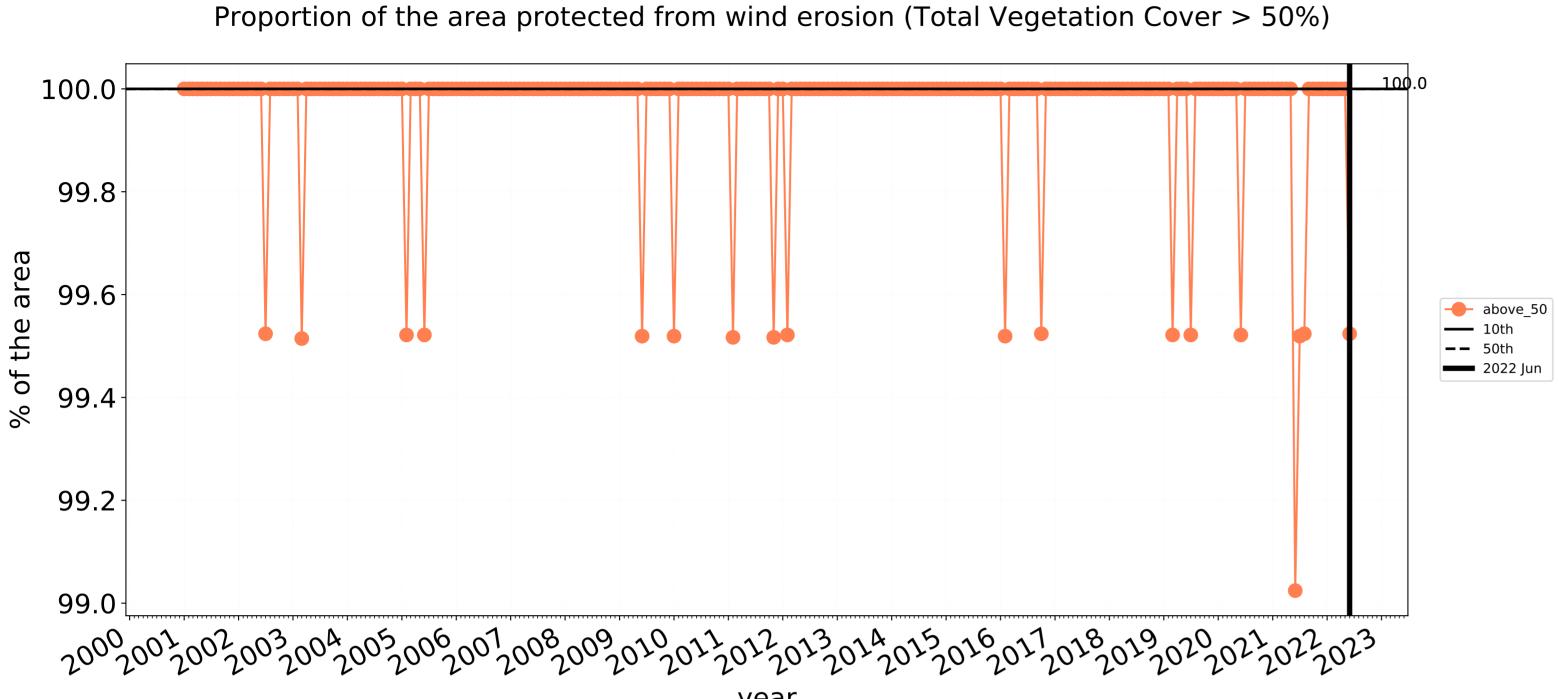


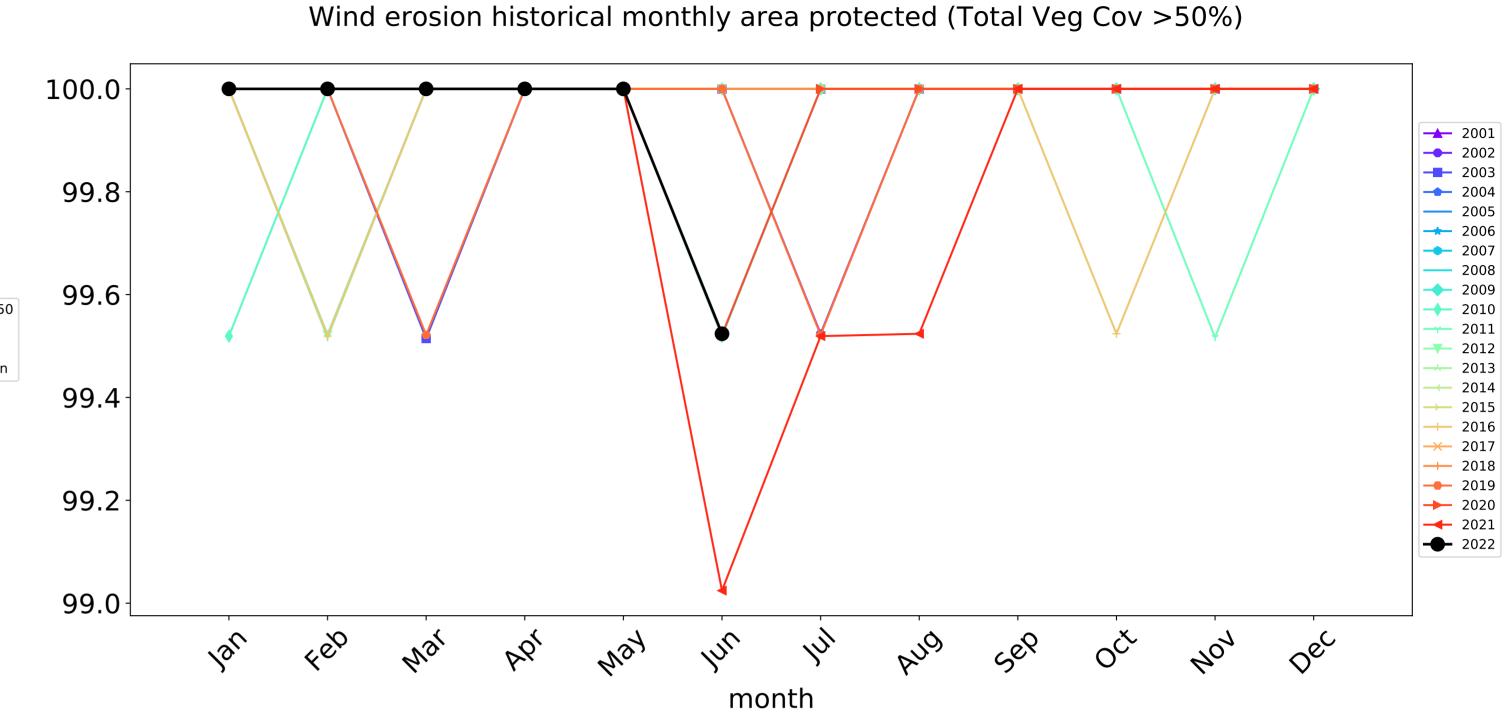


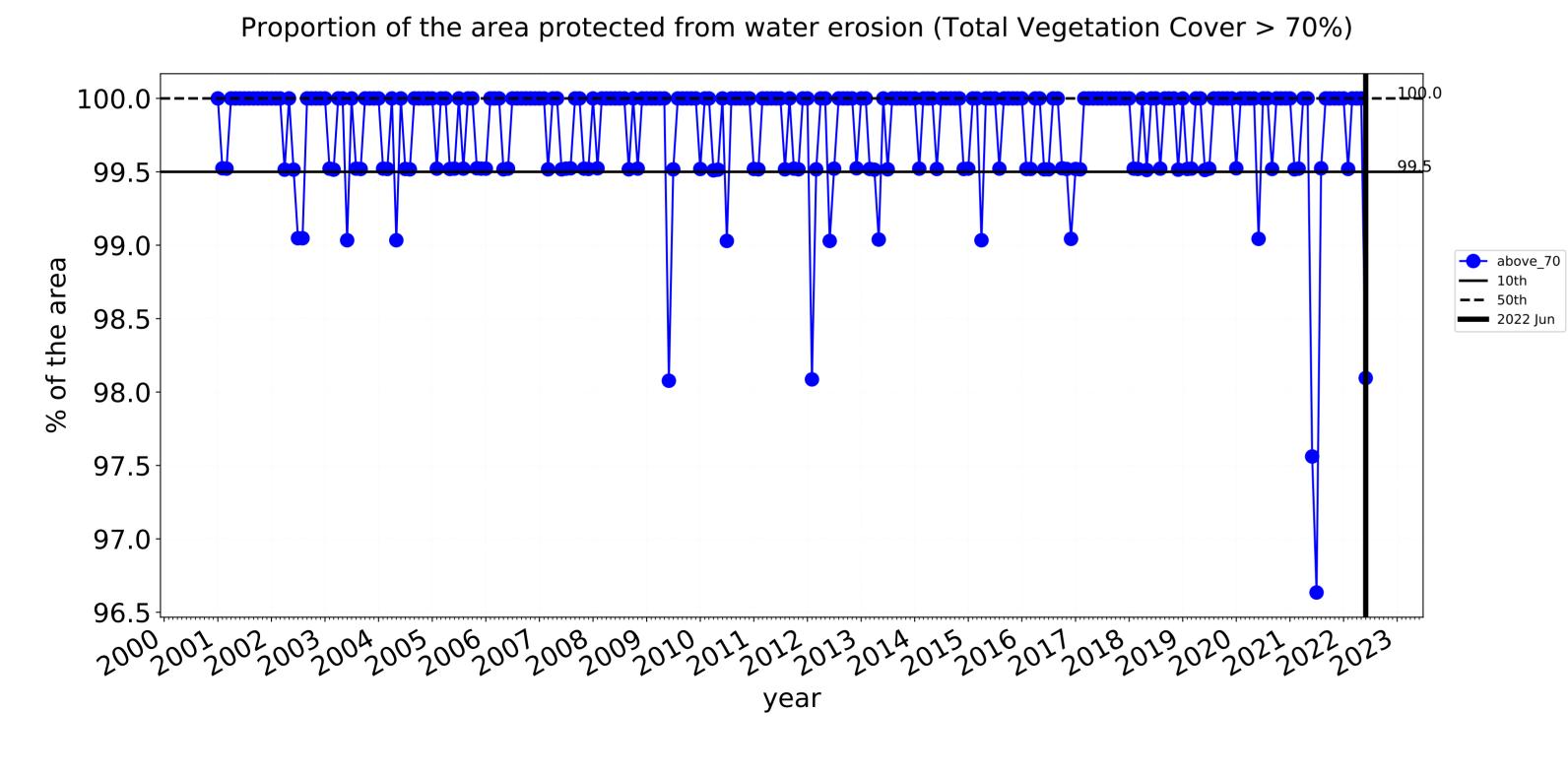


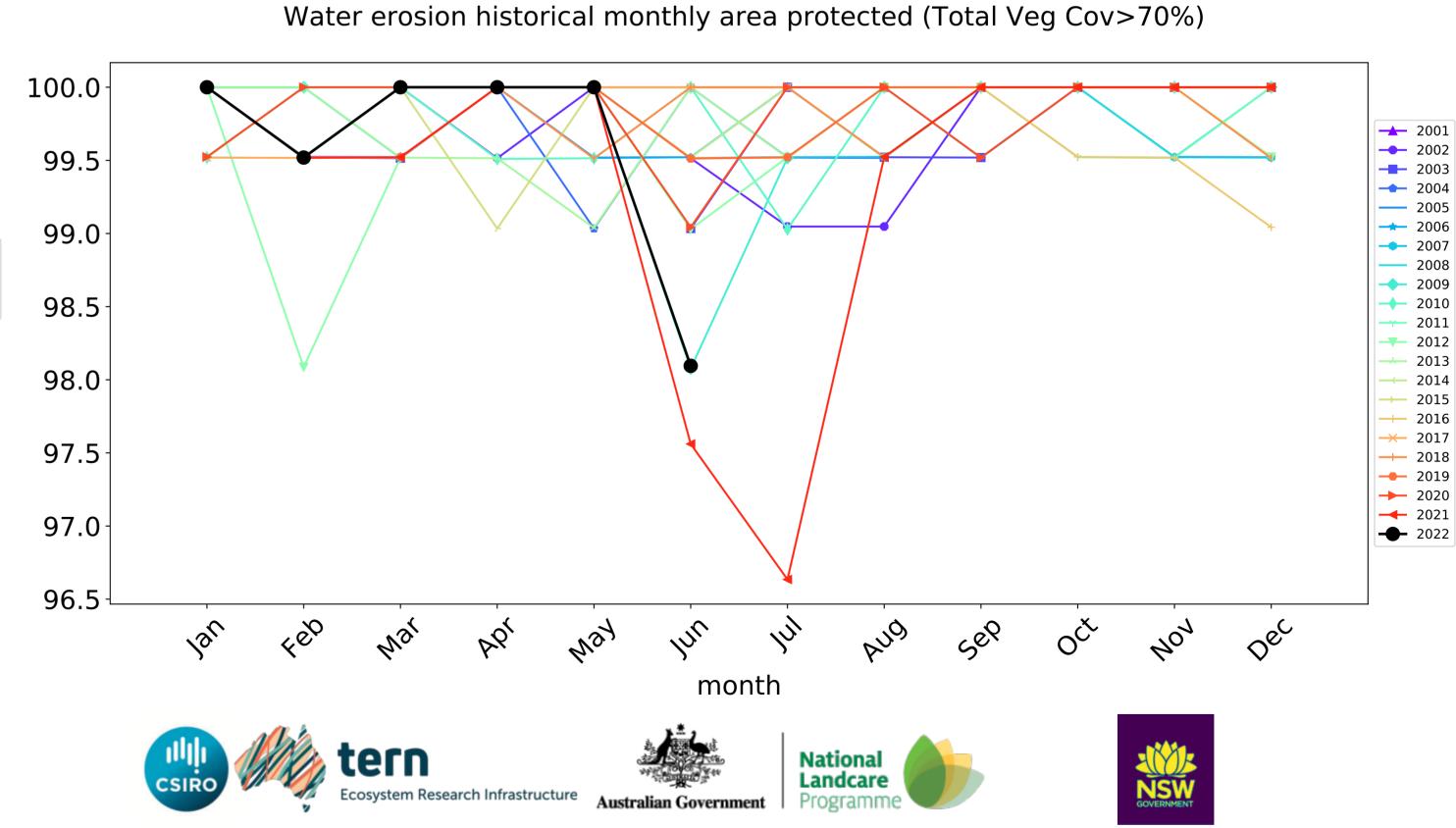


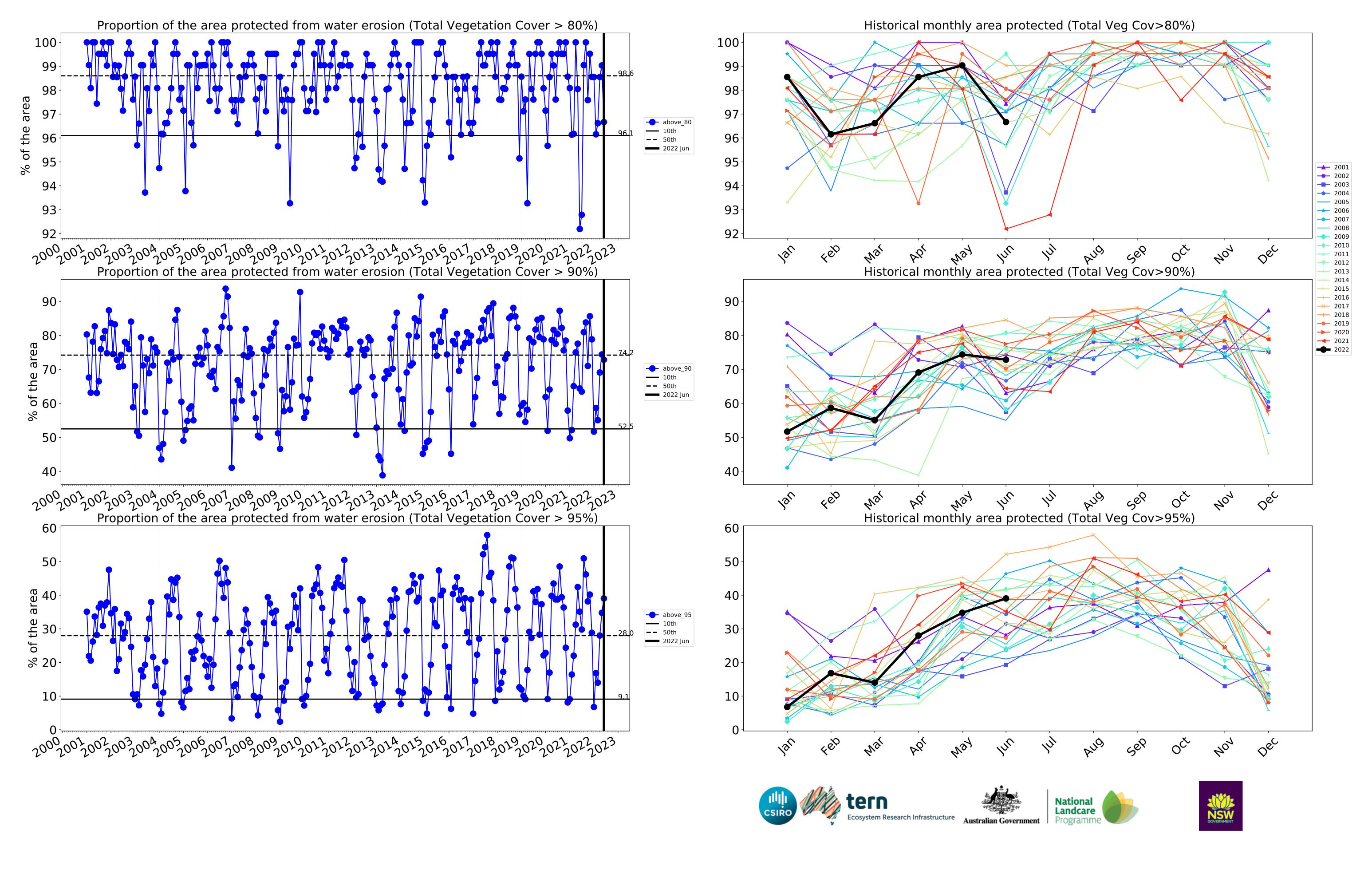
### **Conservation and natural environments Woodland forest timeseries**





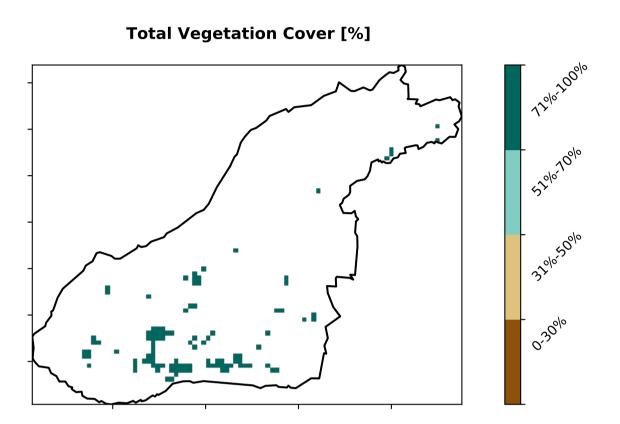


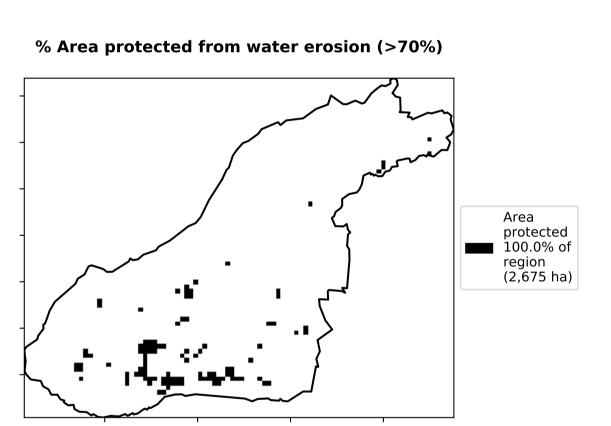


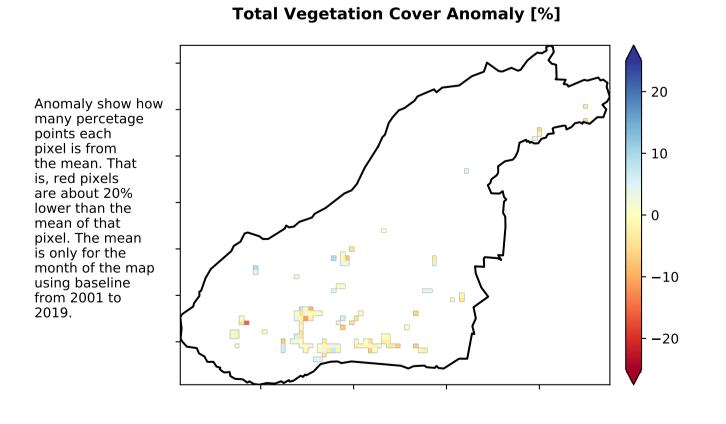


### **Conservation and natural environments Forest (non woodland)**

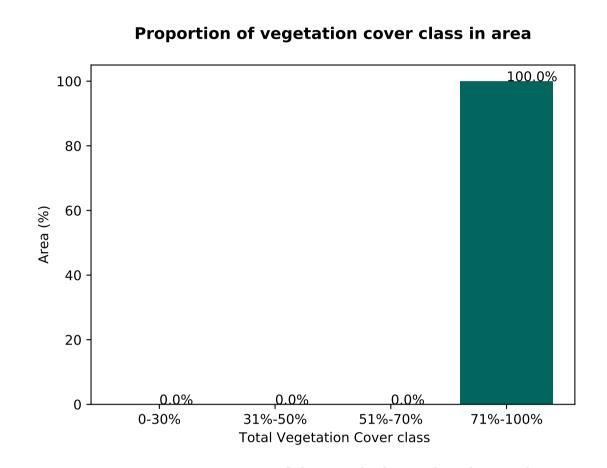
## Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

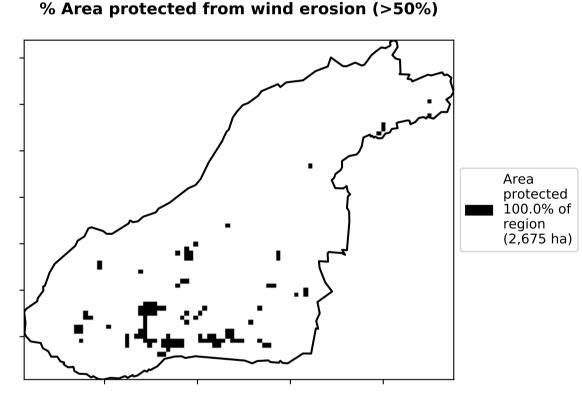


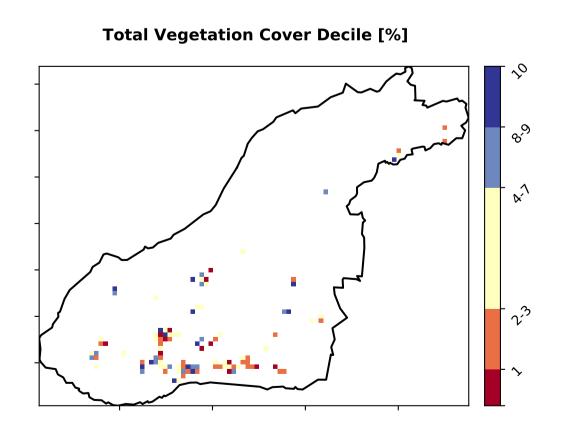




### Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.





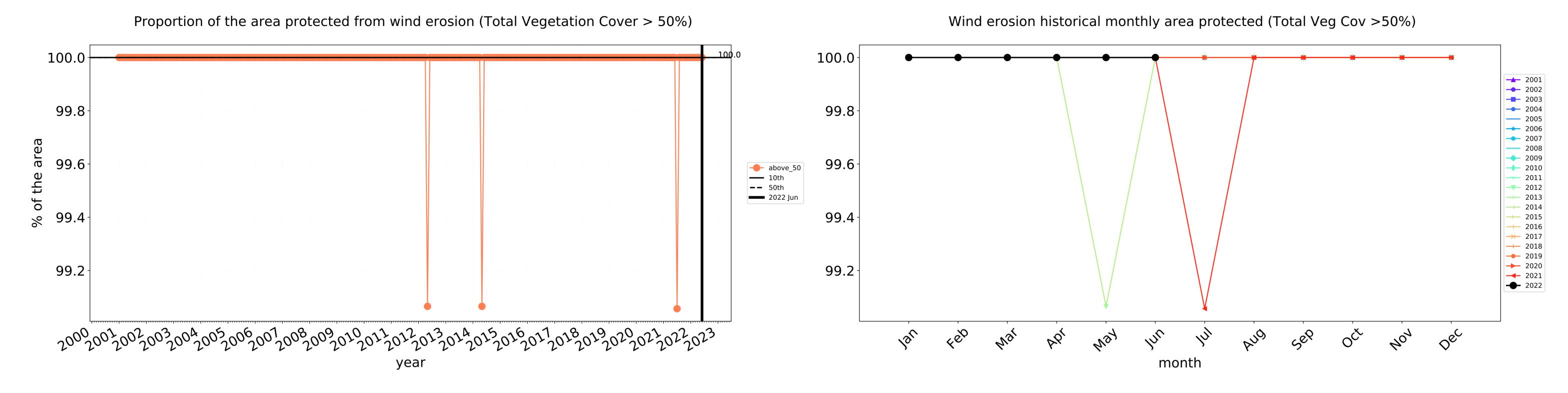


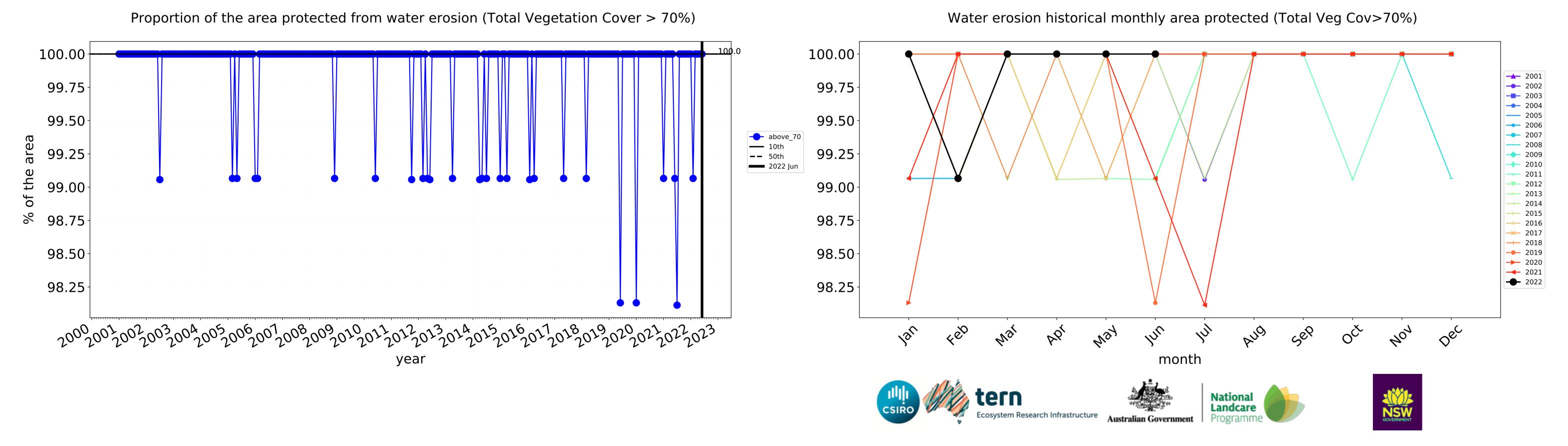


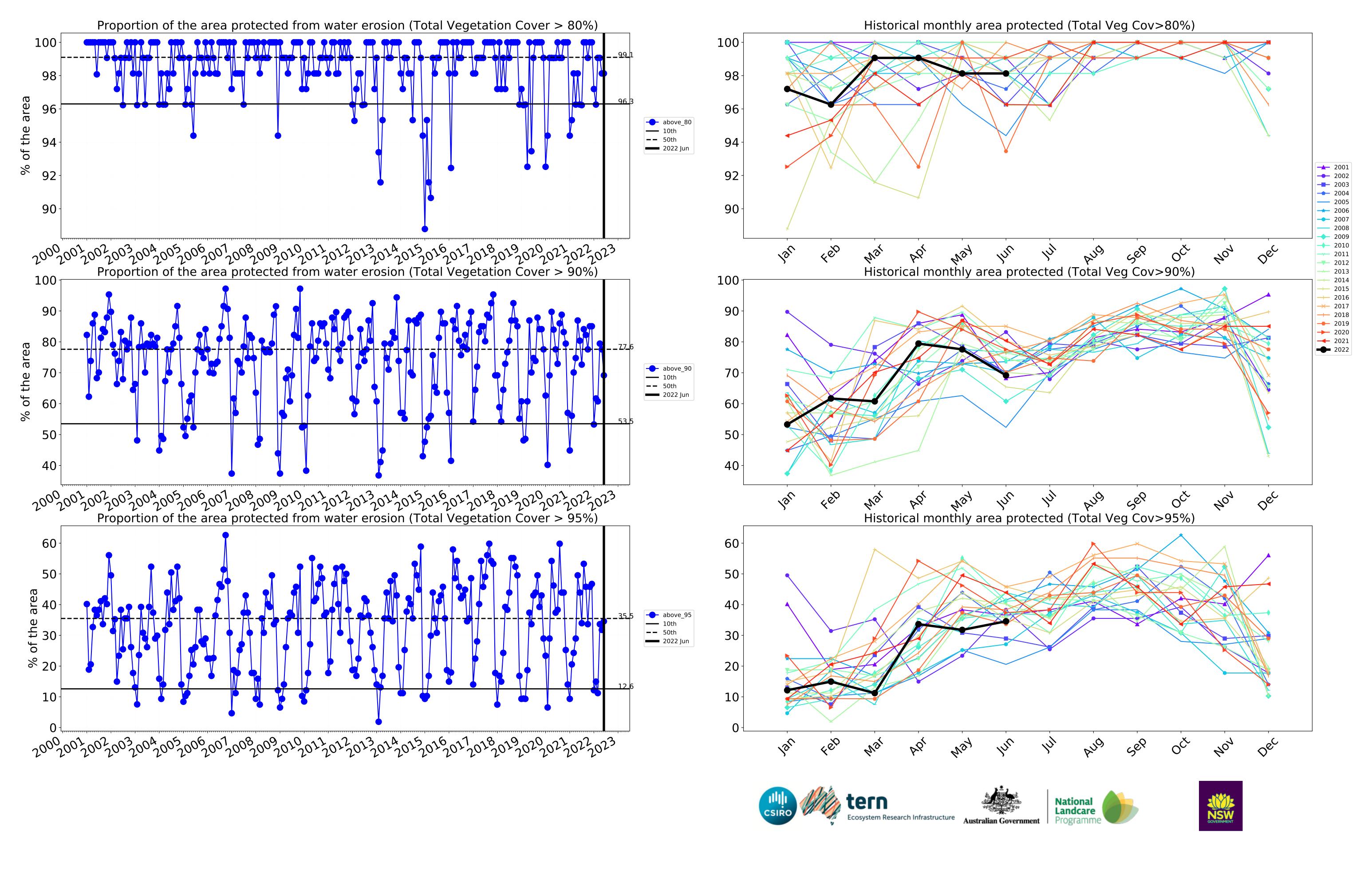








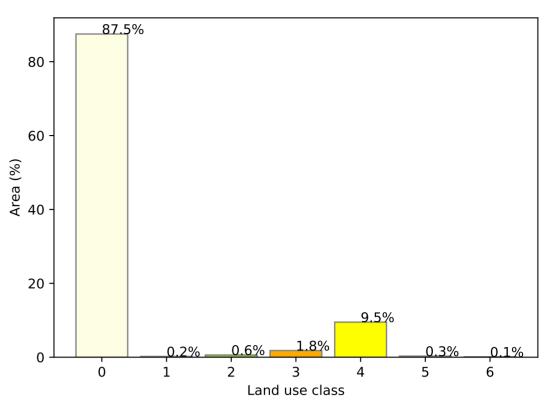




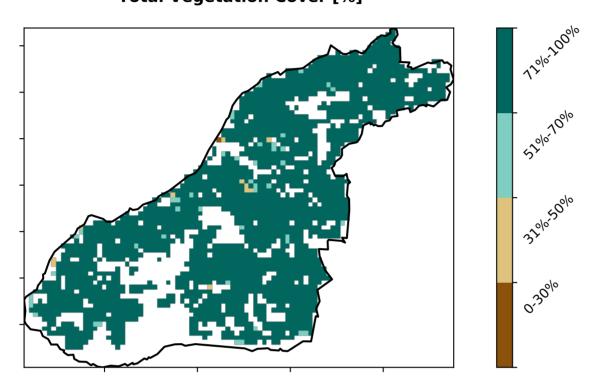
### **Agriculture**

# Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Of Australia (2018) Agriculture - Grazing - Non forest Of Australia (2018) Agriculture - Grazing - Non-woodland forest Of Australia (2018) Agriculture - Cropping - Non-irrigated Of Agriculture - Cropping - Irrigated Of Agriculture - Cropping - Irrigated Of Australia (2018)

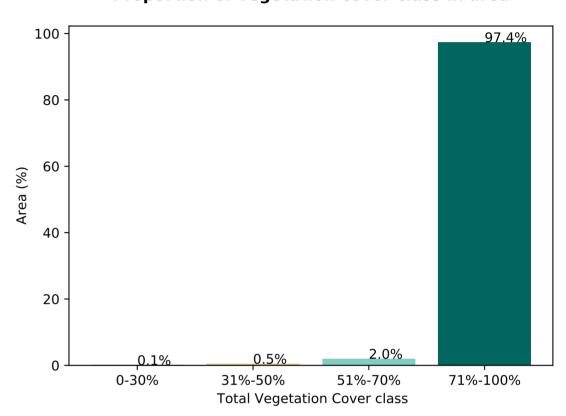
### Proportion of each land class in area



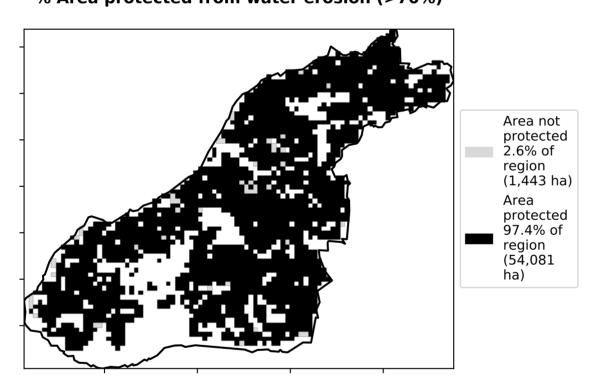
**Total Vegetation Cover [%]** 



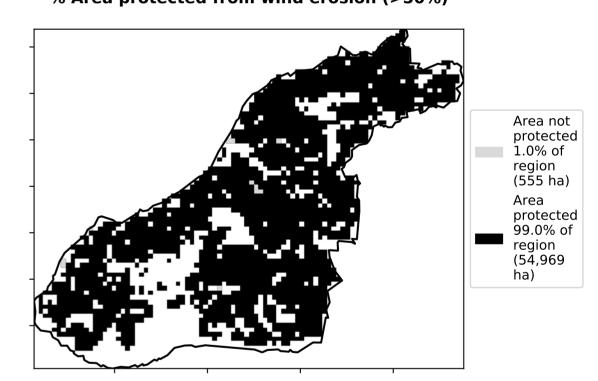
Proportion of vegetation cover class in area



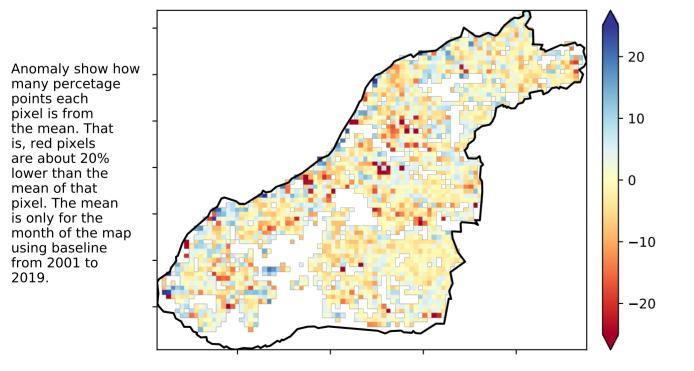
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

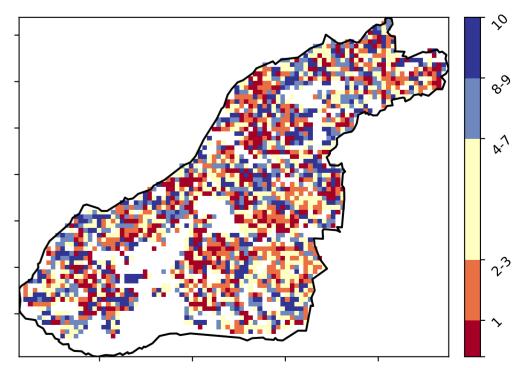


**Total Vegetation Cover Anomaly [%]** 



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.

Total Vegetation Cover Decile [%]



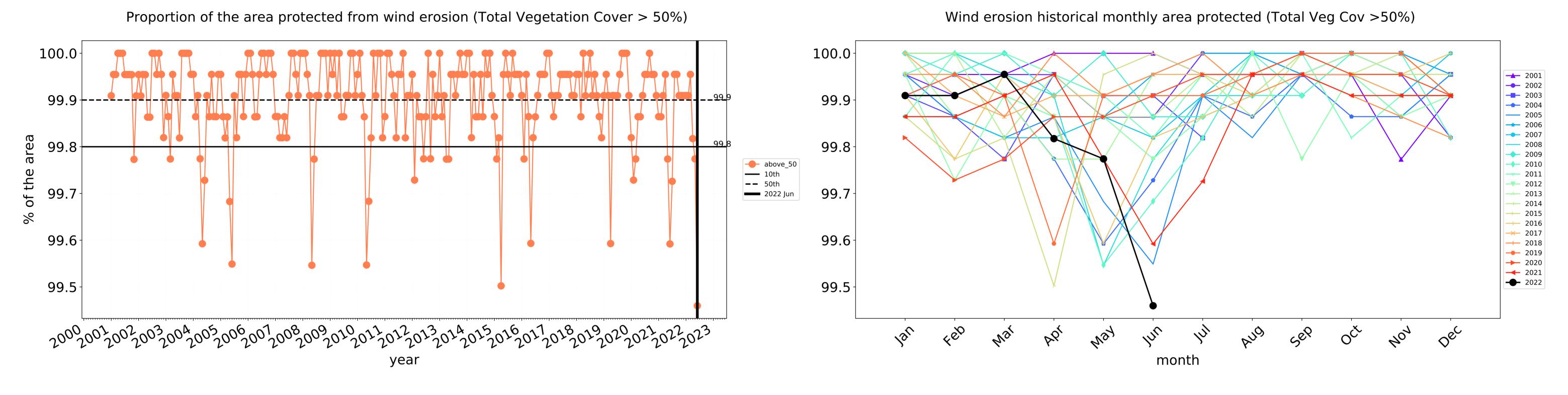


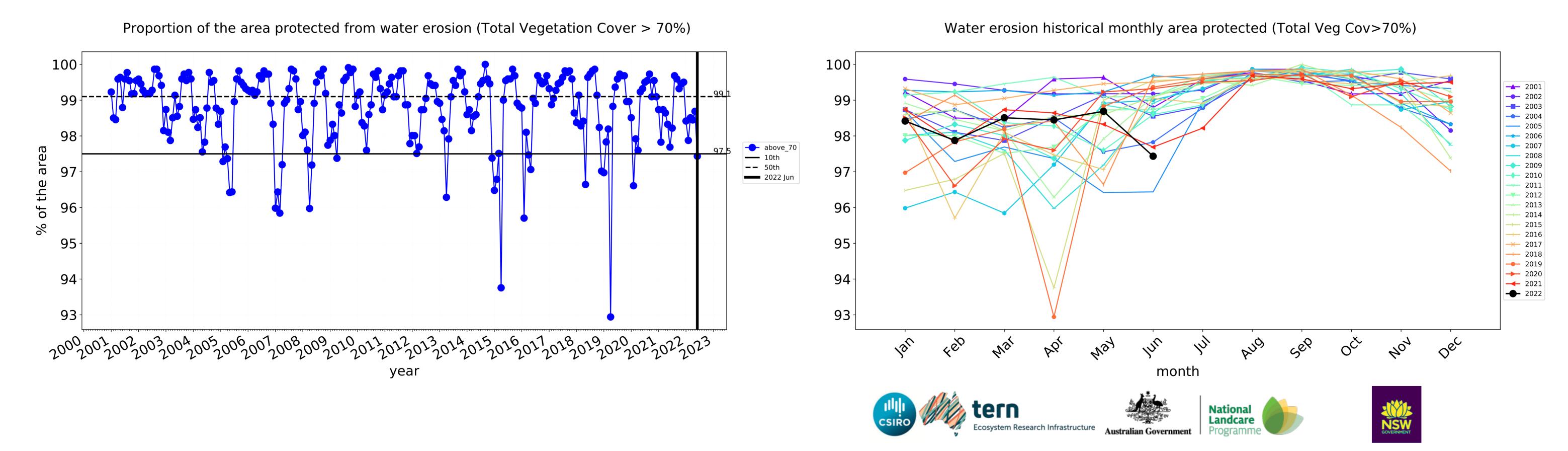


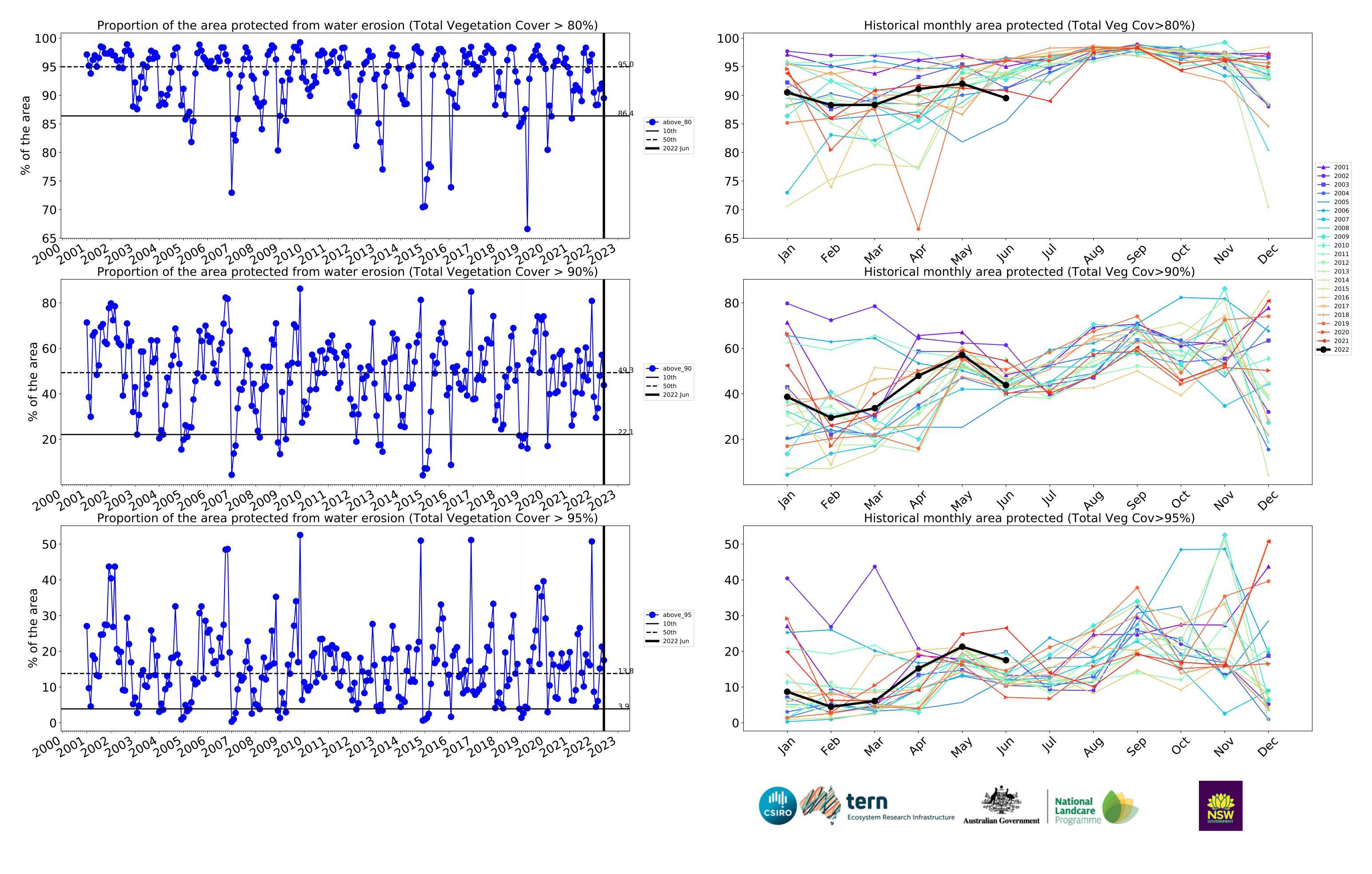




### **Agriculture timeseries**

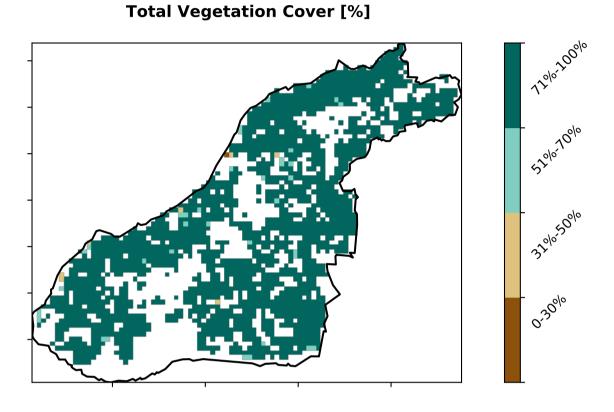




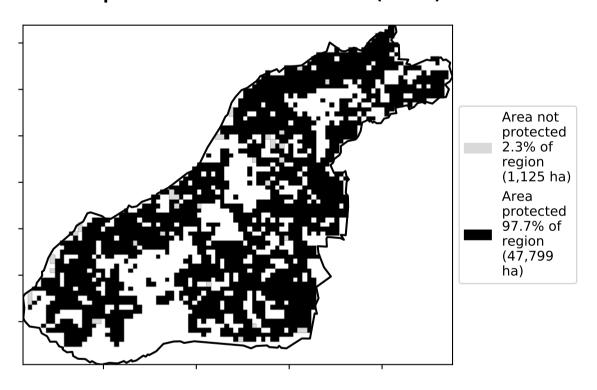


### Grazing

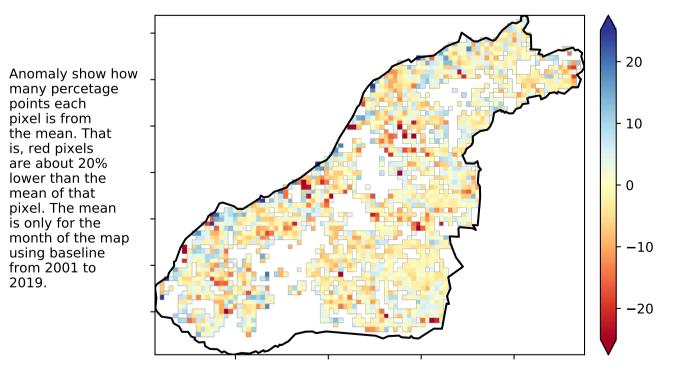
# Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest of Australia (2018)



% 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.

### 100 - 99.1% 80 - (%) 60 - 20 - 20 - 0.2% 0.7%

**Proportion of each land class in area** 

Proportion of vegetation cover class in area

1.0

Land use class

1.5

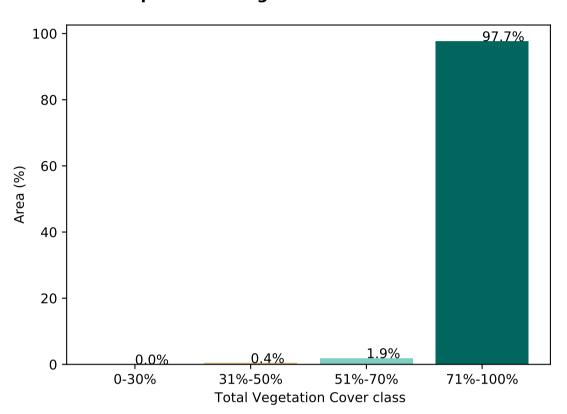
2.0

2.5

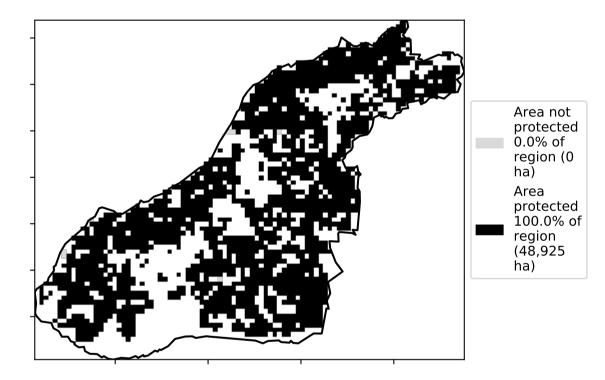
0.5

-0.5

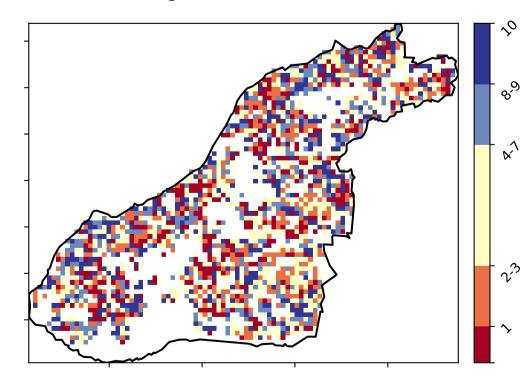
0.0



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]



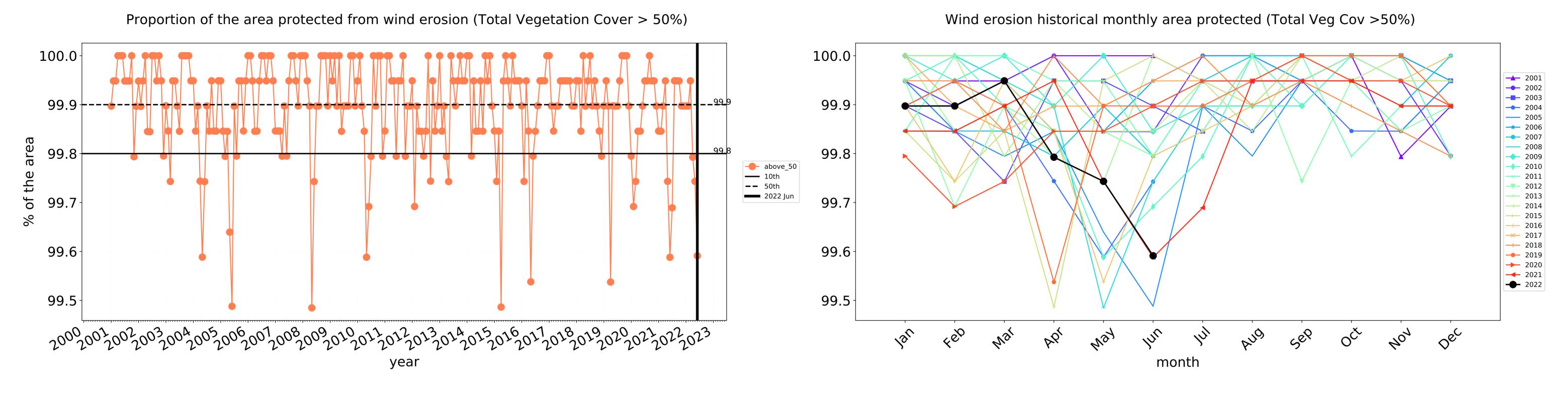


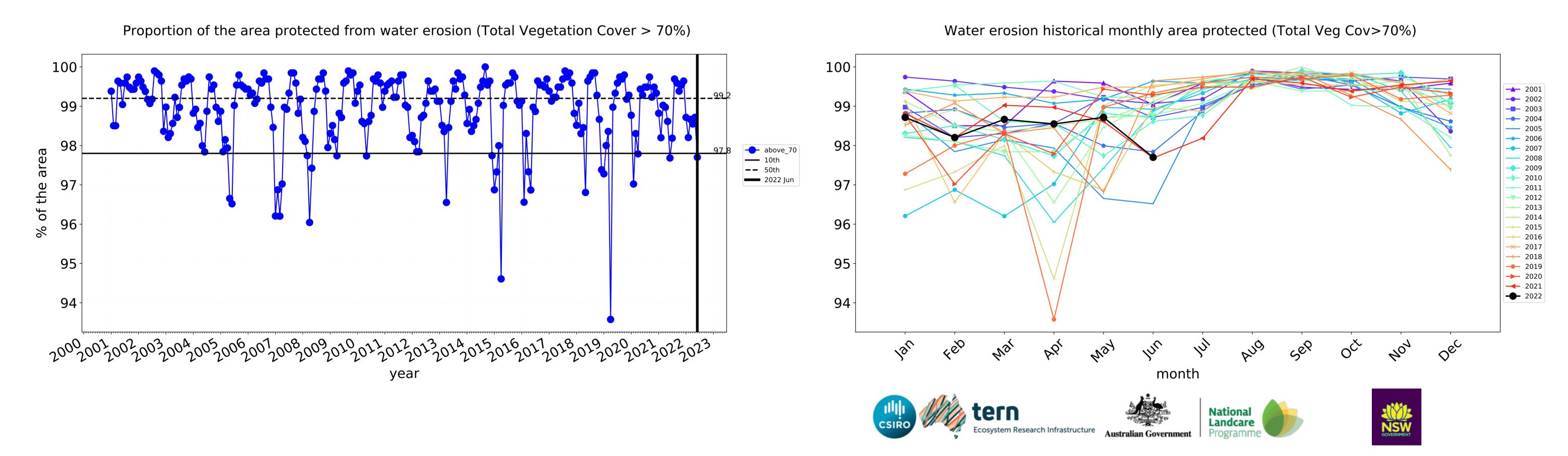


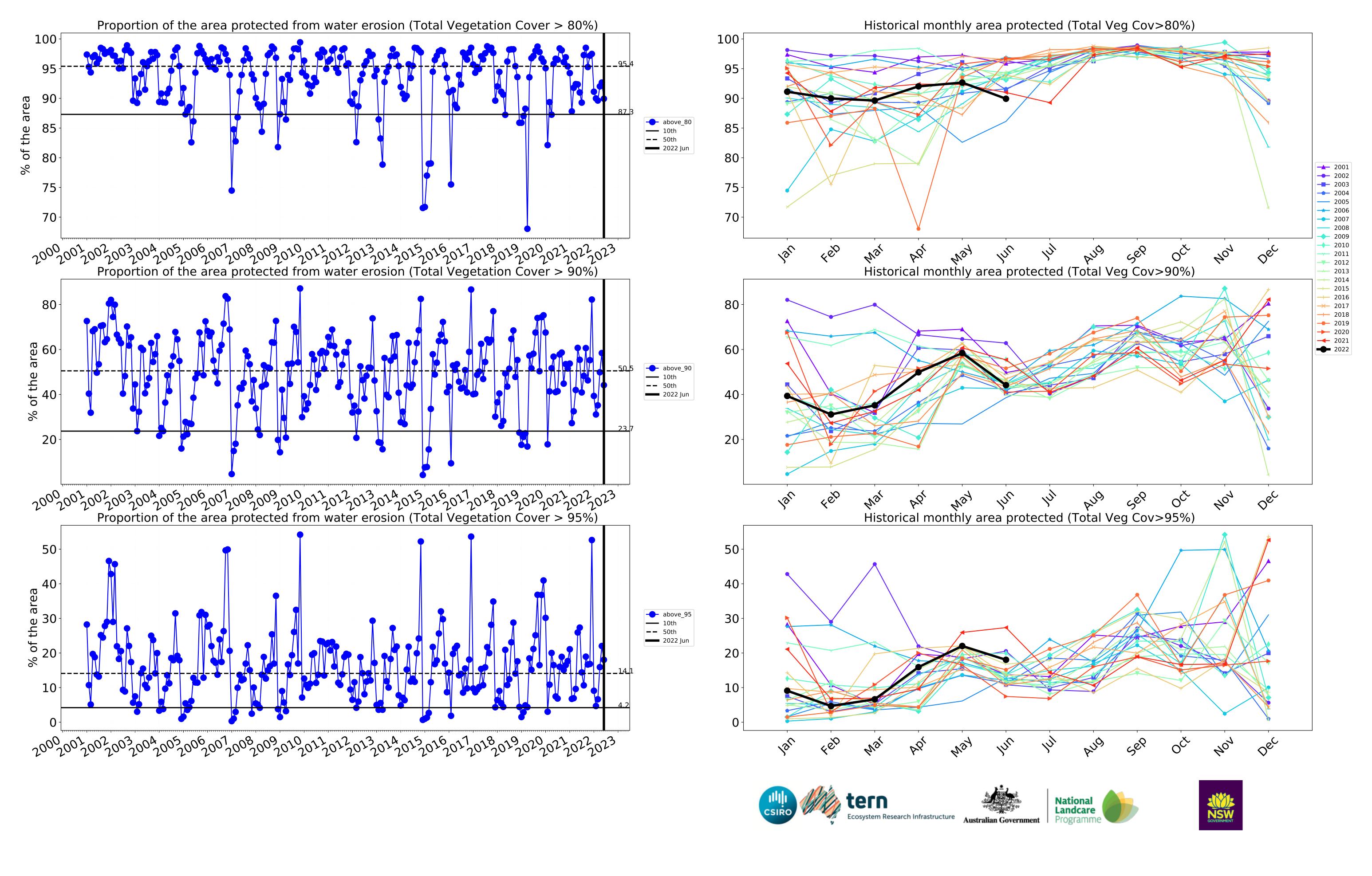




### **Grazing timeseries**

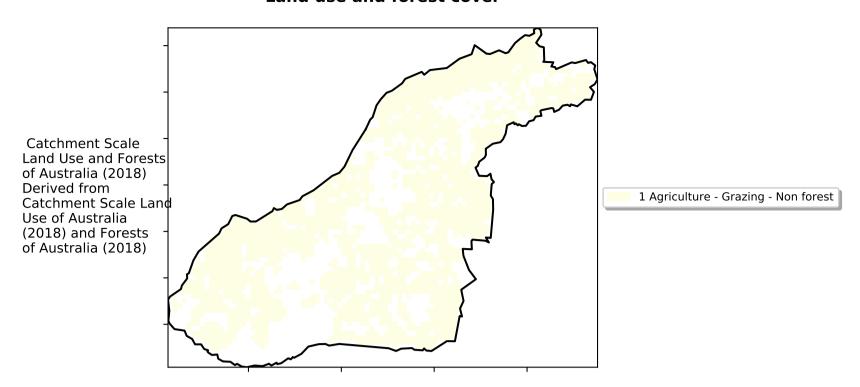




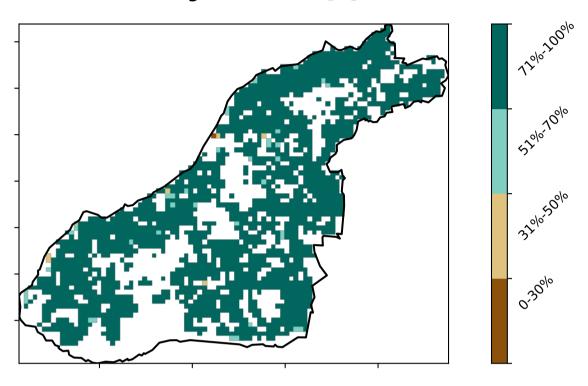


### **Grazing non forest**

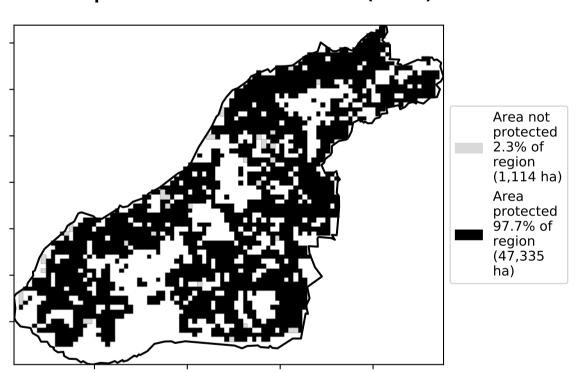
### Land use and forest cover



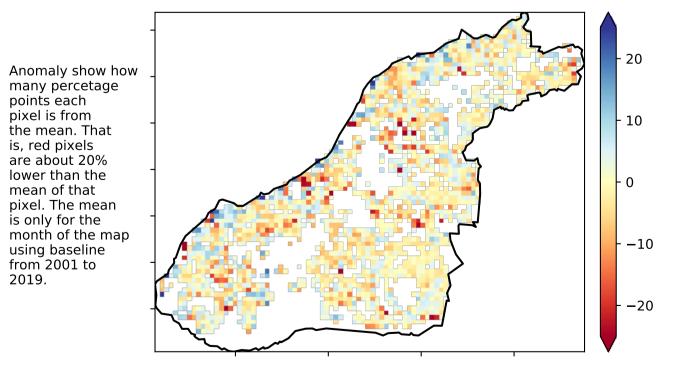
### **Total Vegetation Cover [%]**



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

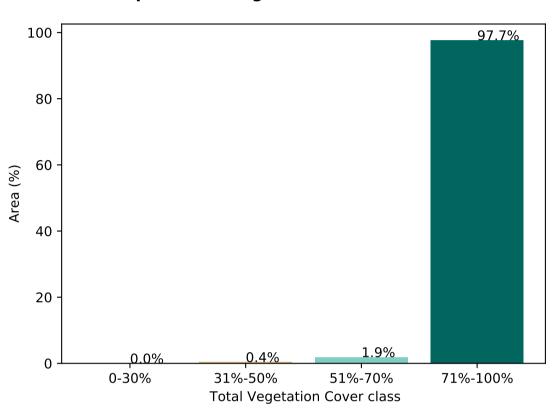


### Total Vegetation Cover Anomaly [%]

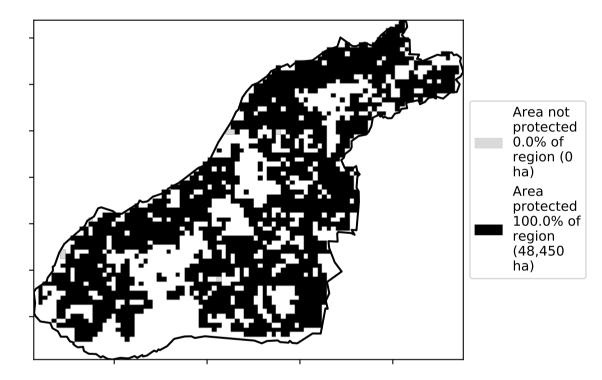


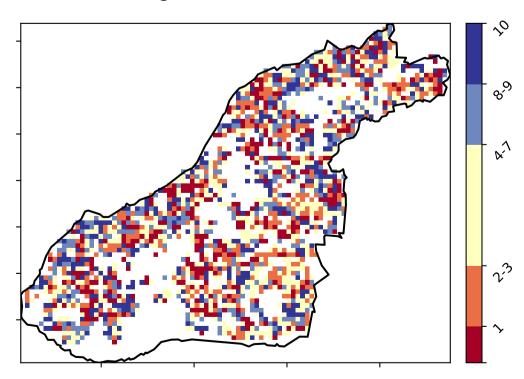
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

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



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





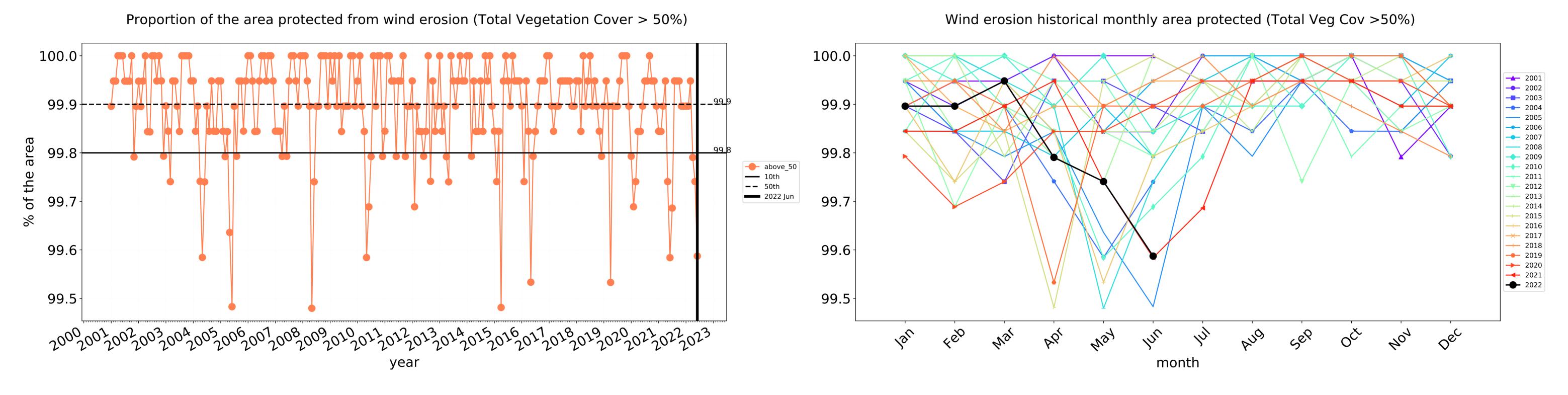


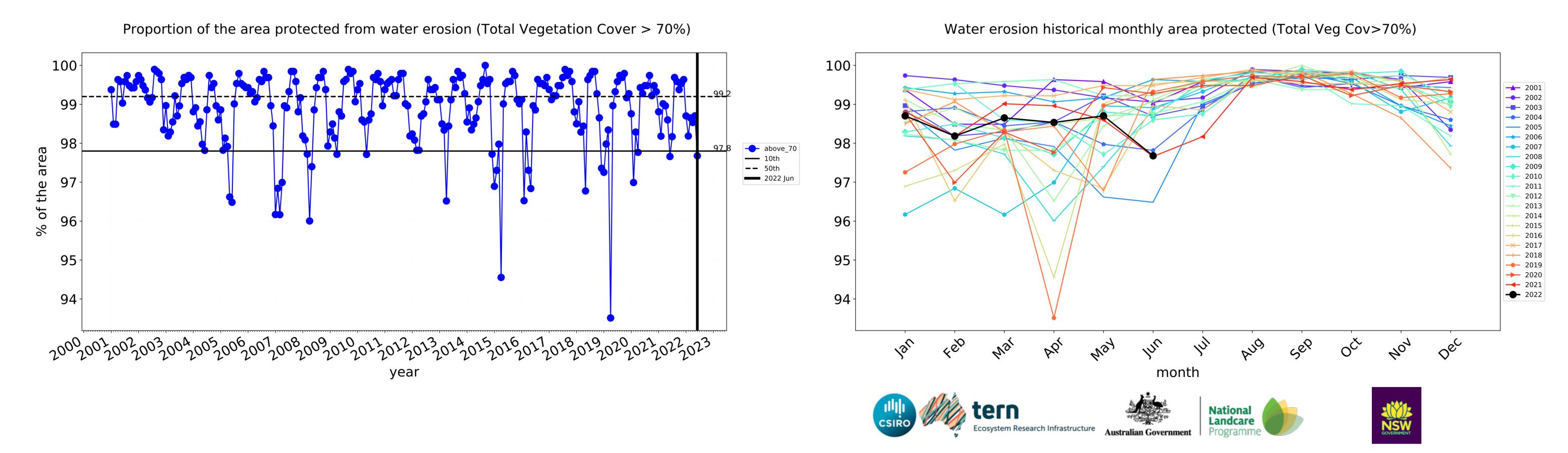


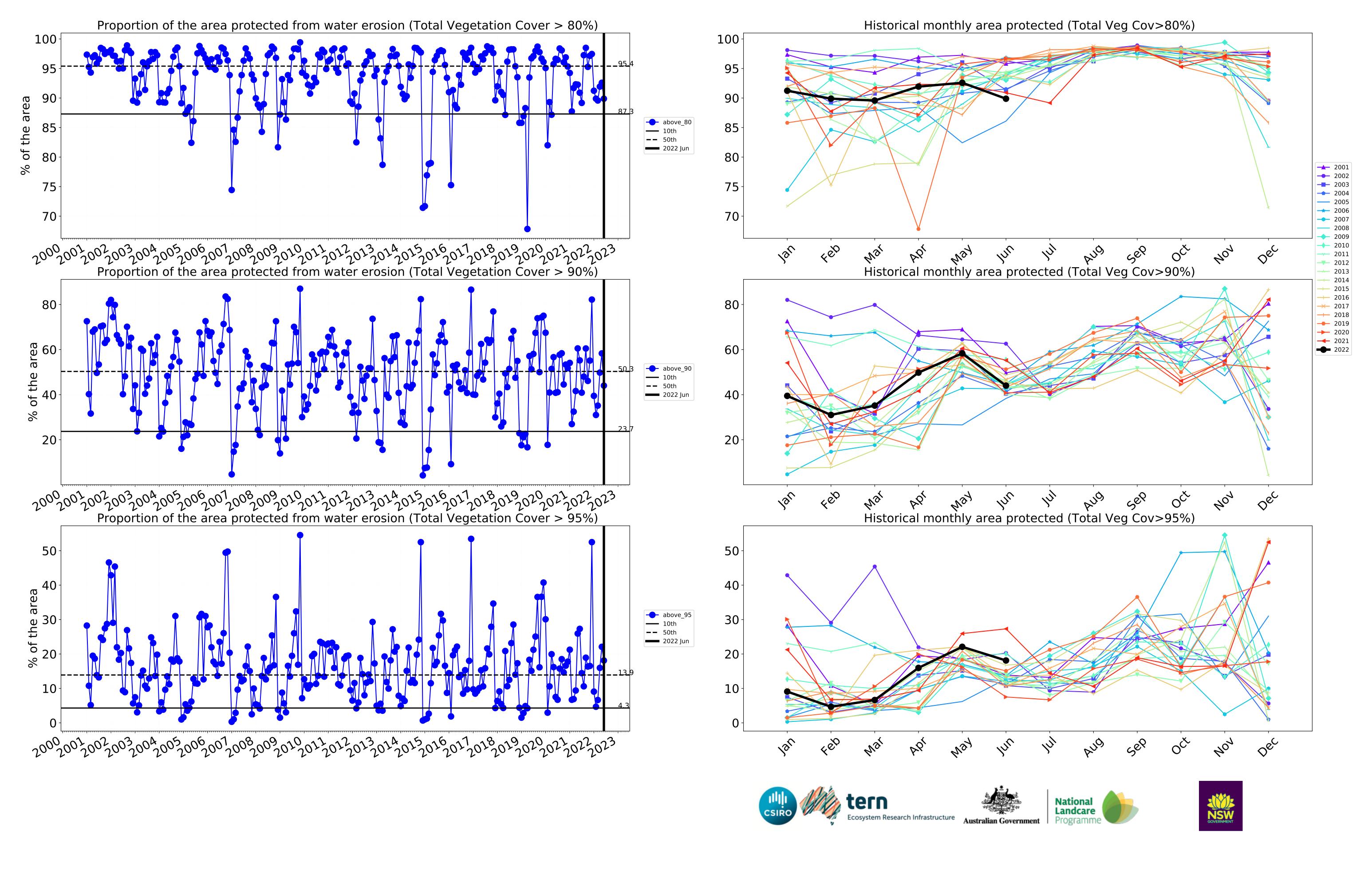




### **Grazing non forest timeseries**

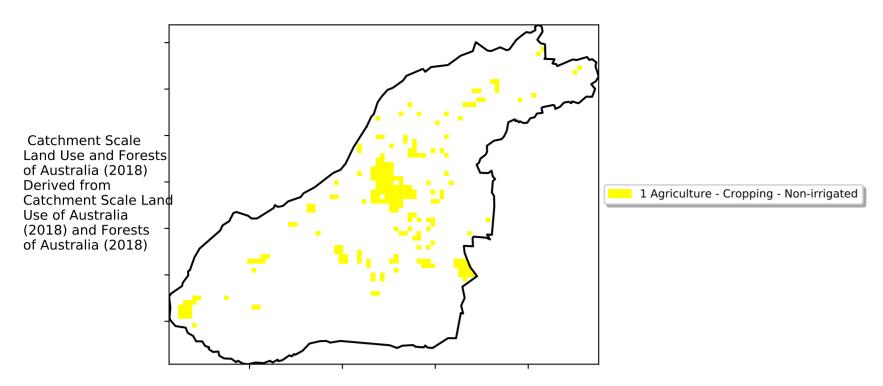




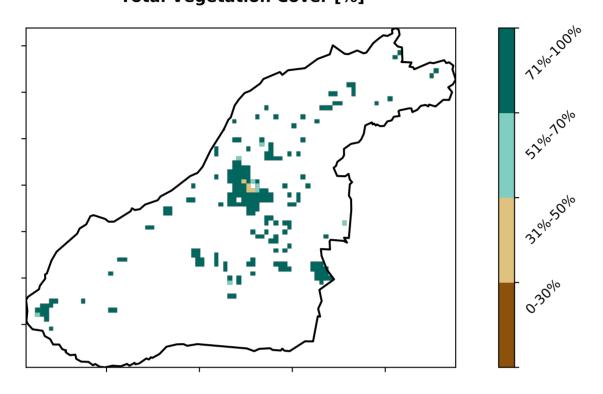


### **Cropping**

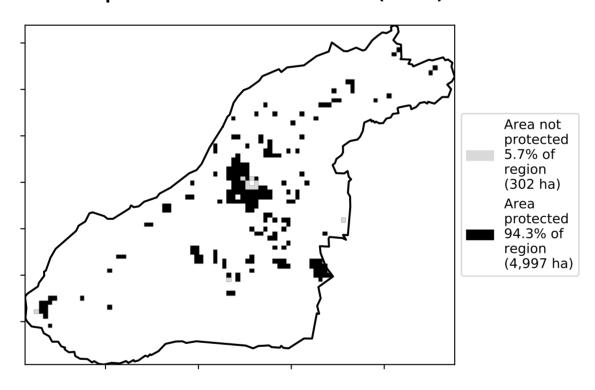
### Land use and forest cover



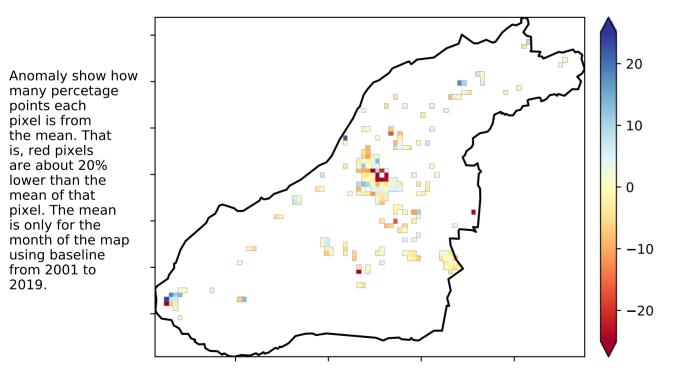
### **Total Vegetation Cover [%]**



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

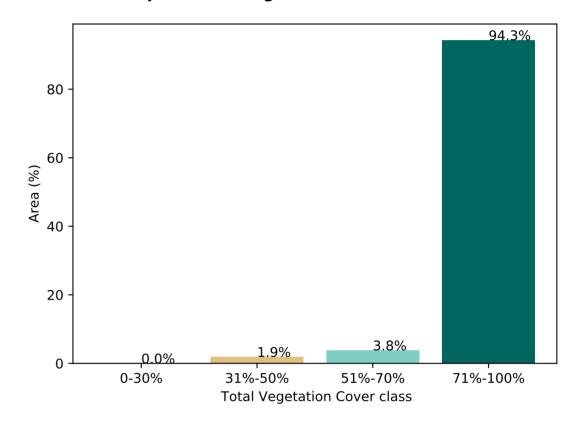


### Total Vegetation Cover Anomaly [%]

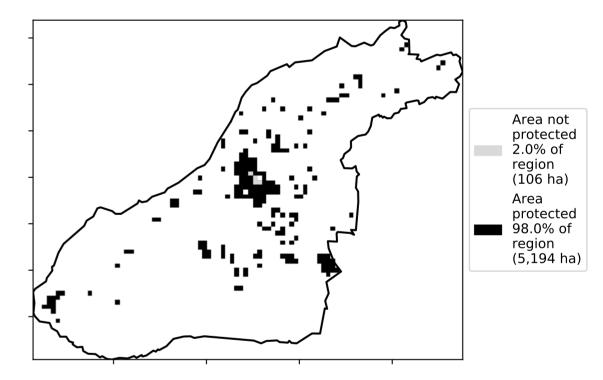


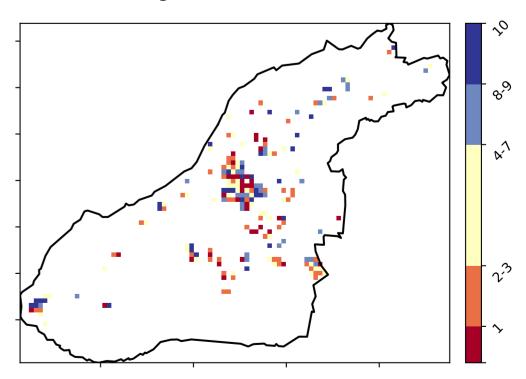
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

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



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





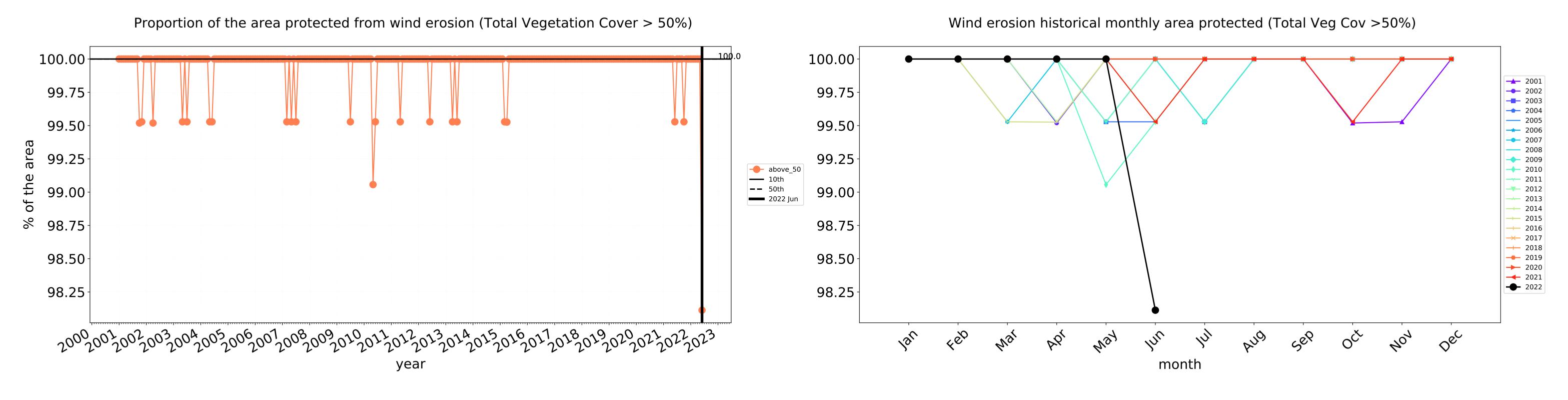


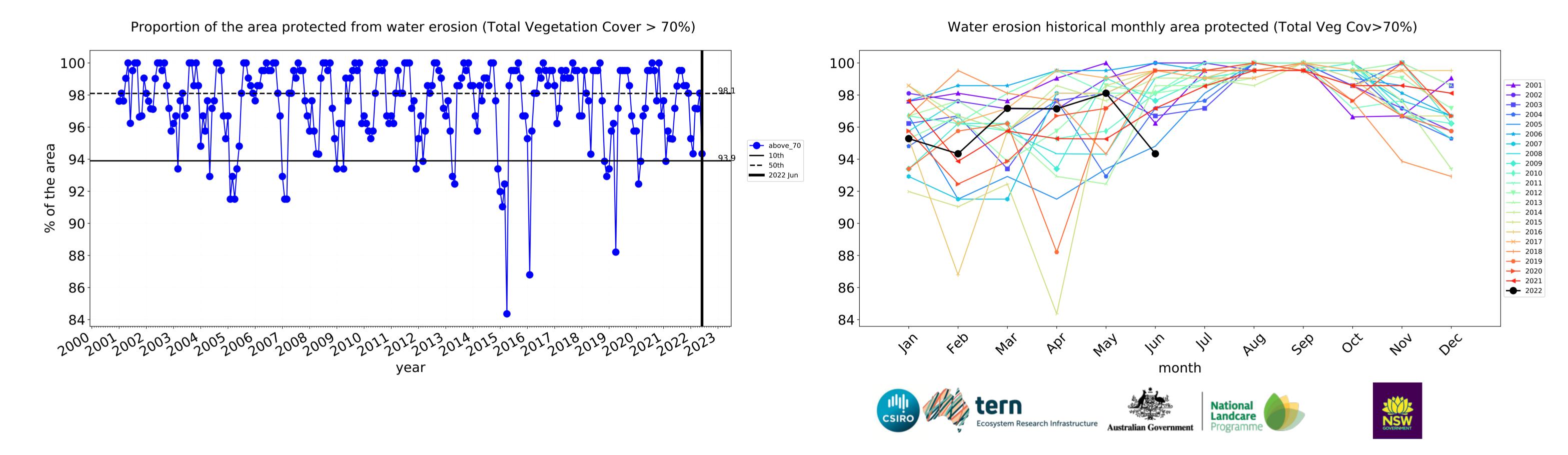


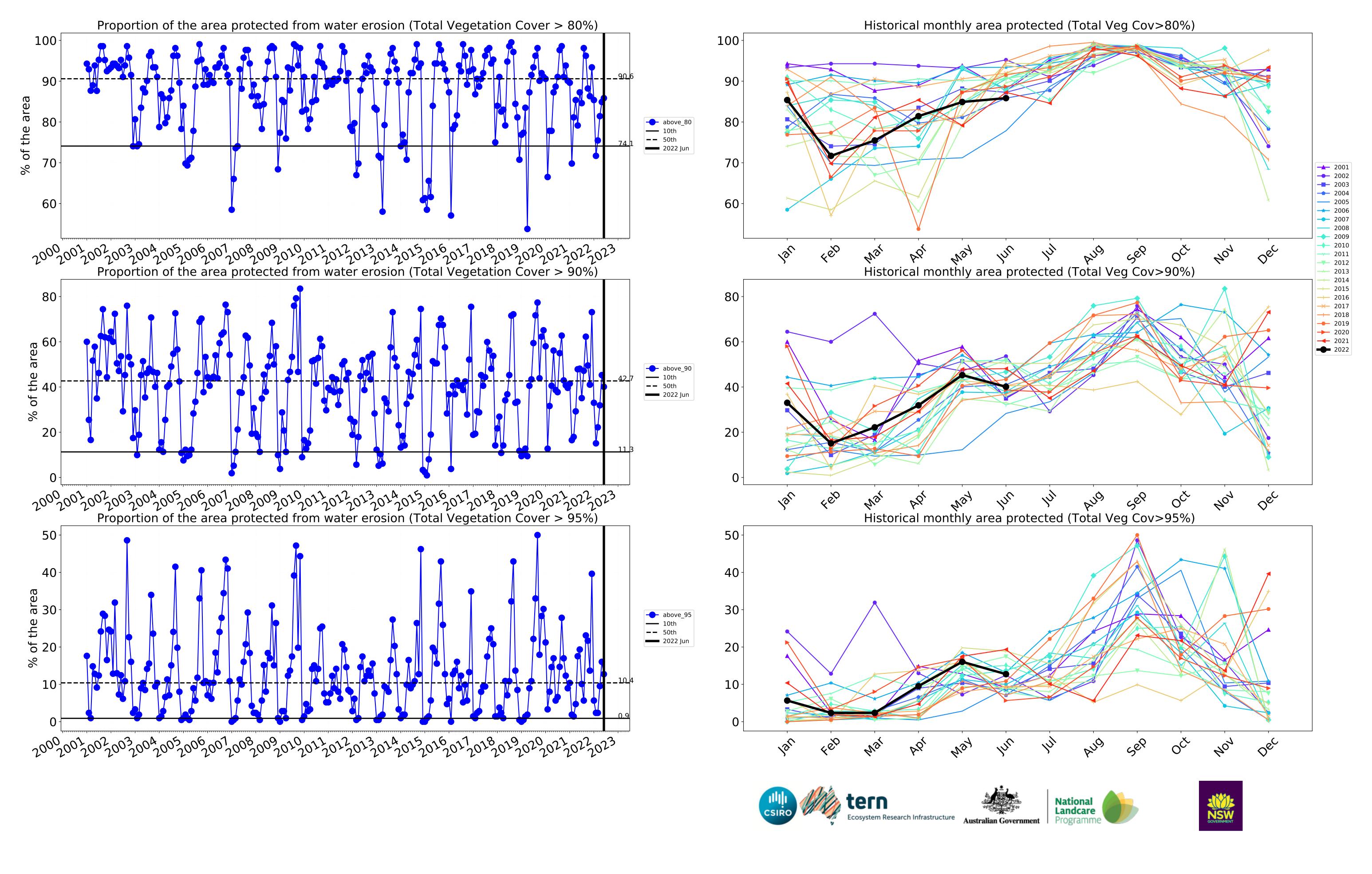




### **Cropping timeseries**







### Irrigation

80

70

60

Area (%)

30

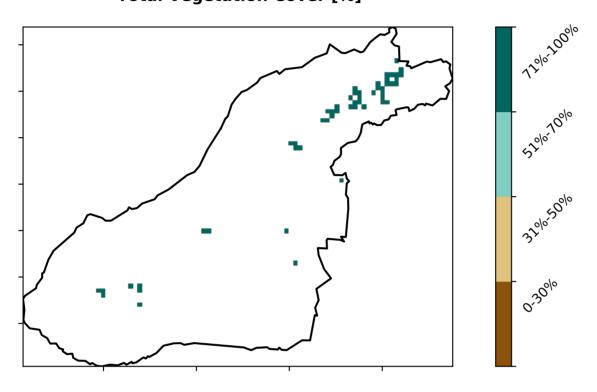
20

10

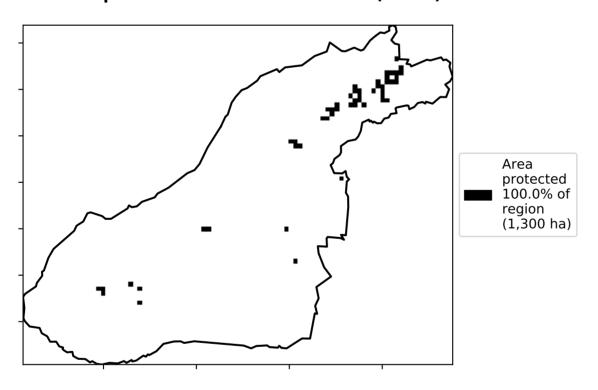
-0.5

## 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 3 Agriculture - Horticulture - Irrigated

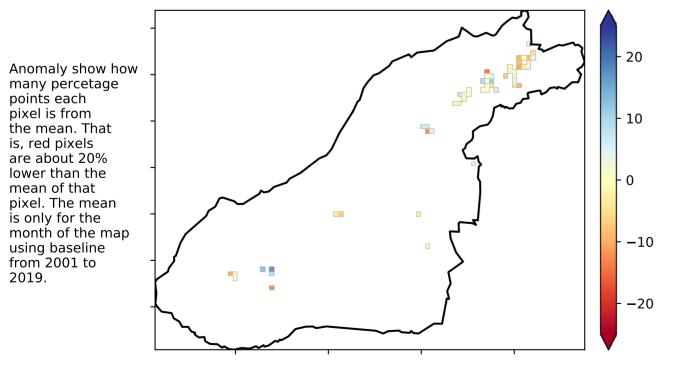
### **Total Vegetation Cover [%]**



% 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.

### 82.7%

11.5%

1.5

2.0

2.5

Proportion of each land class in area

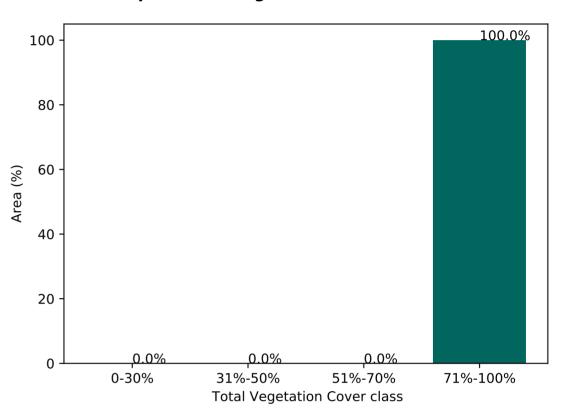
Proportion of vegetation cover class in area

1.0

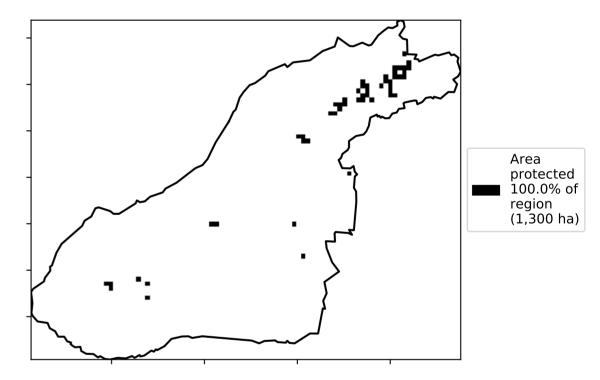
Land use class

0.5

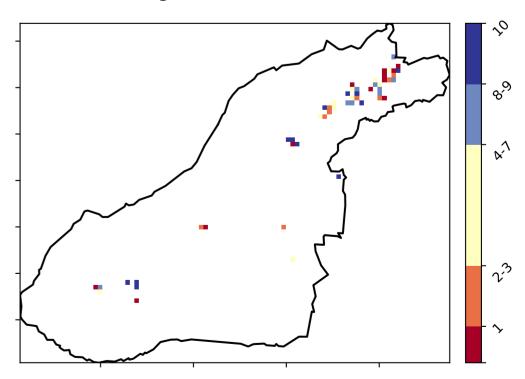
0.0



% Area protected from wind erosion (>50%)



**Total Vegetation Cover Decile [%]** 

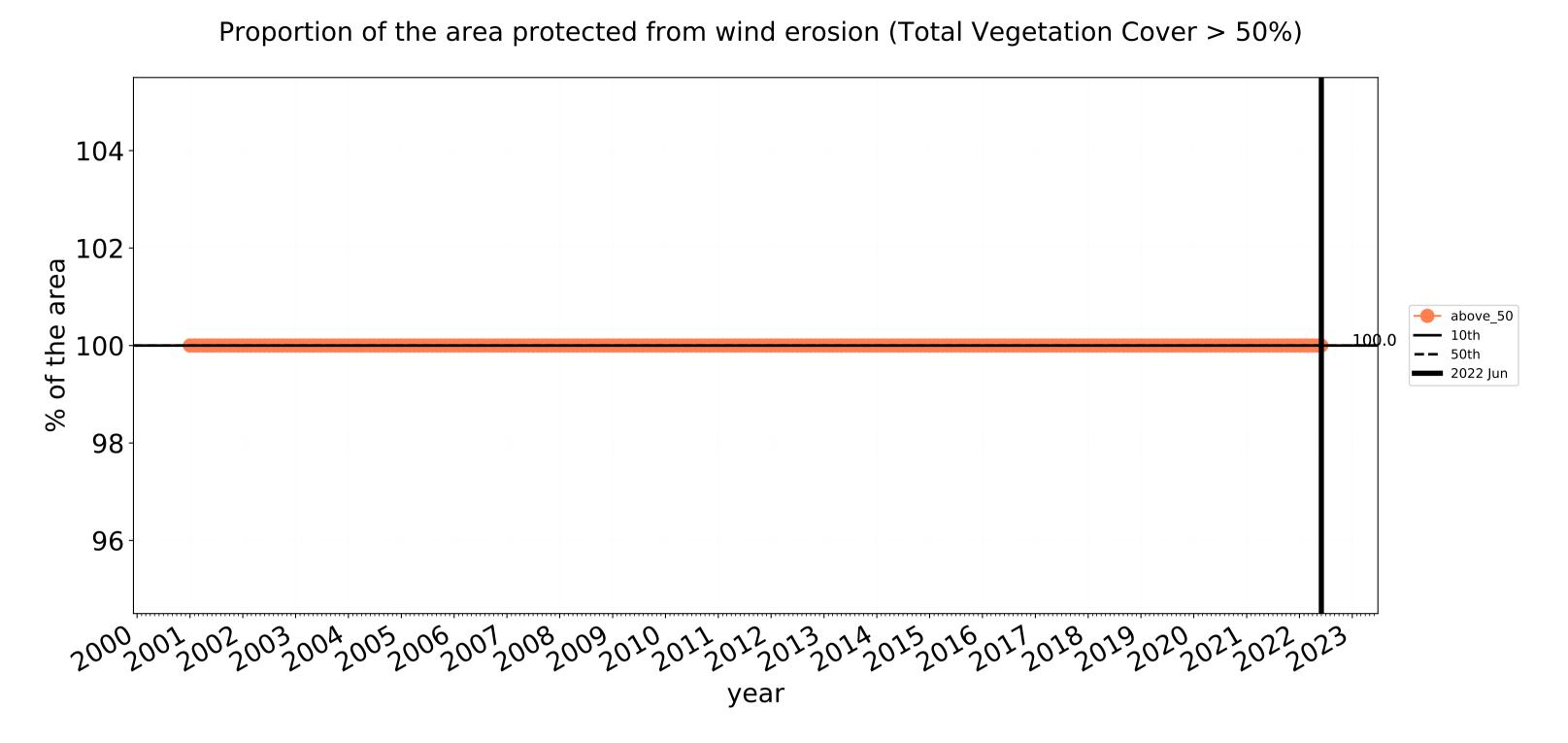


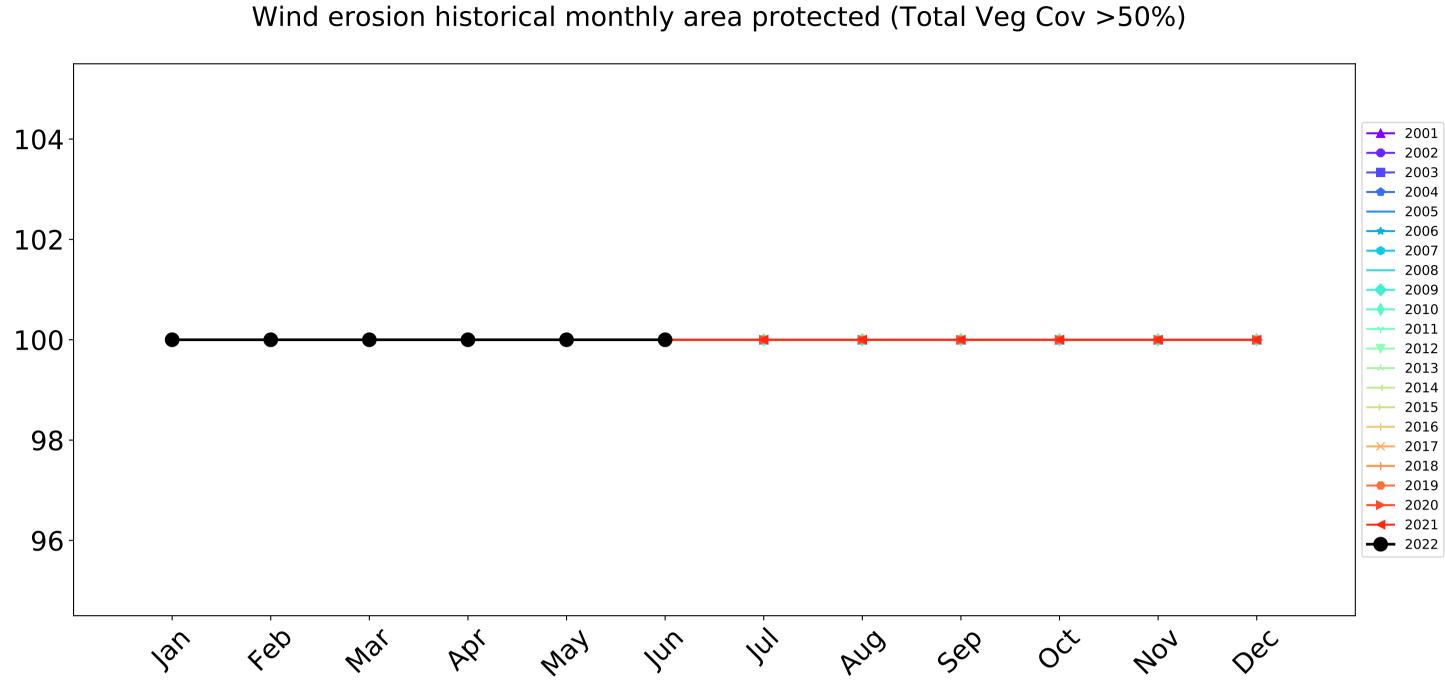




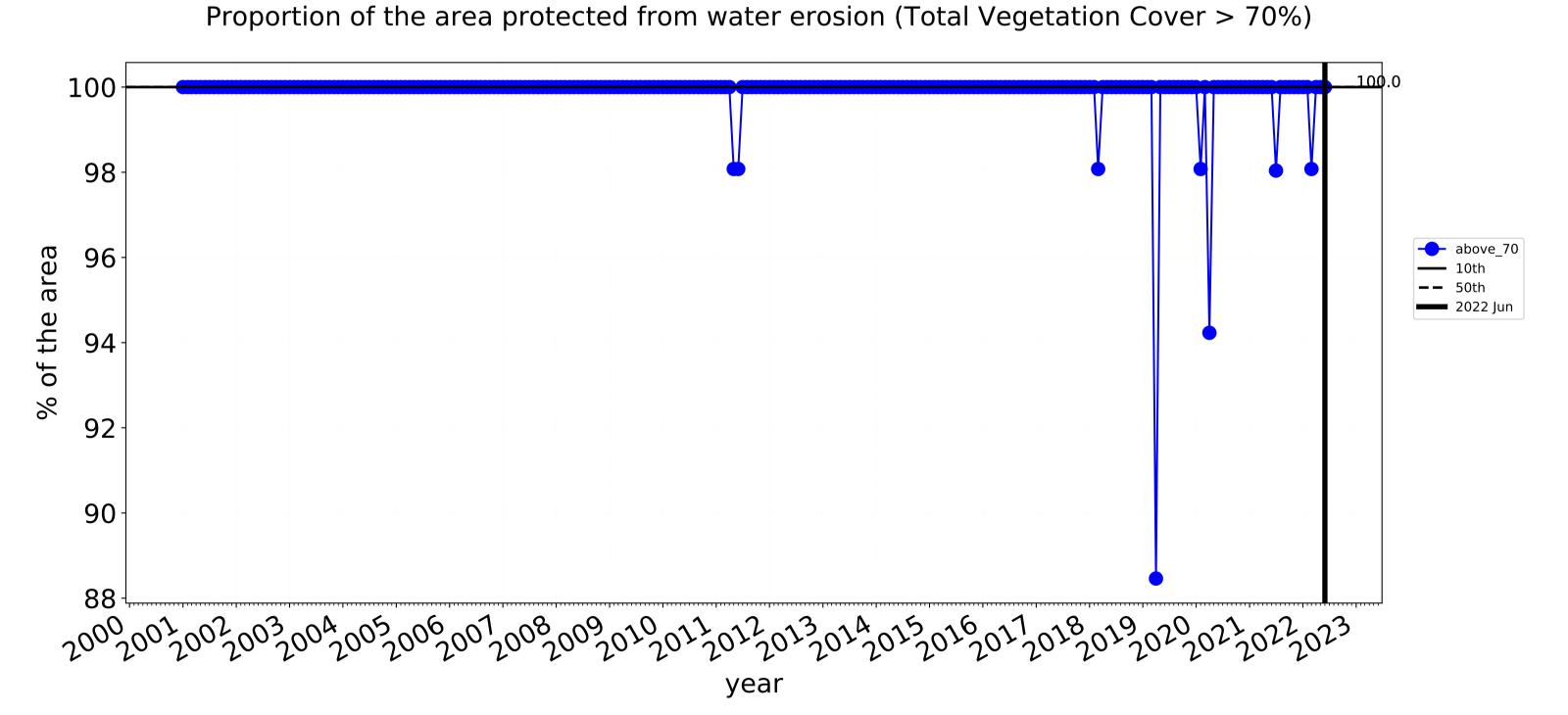


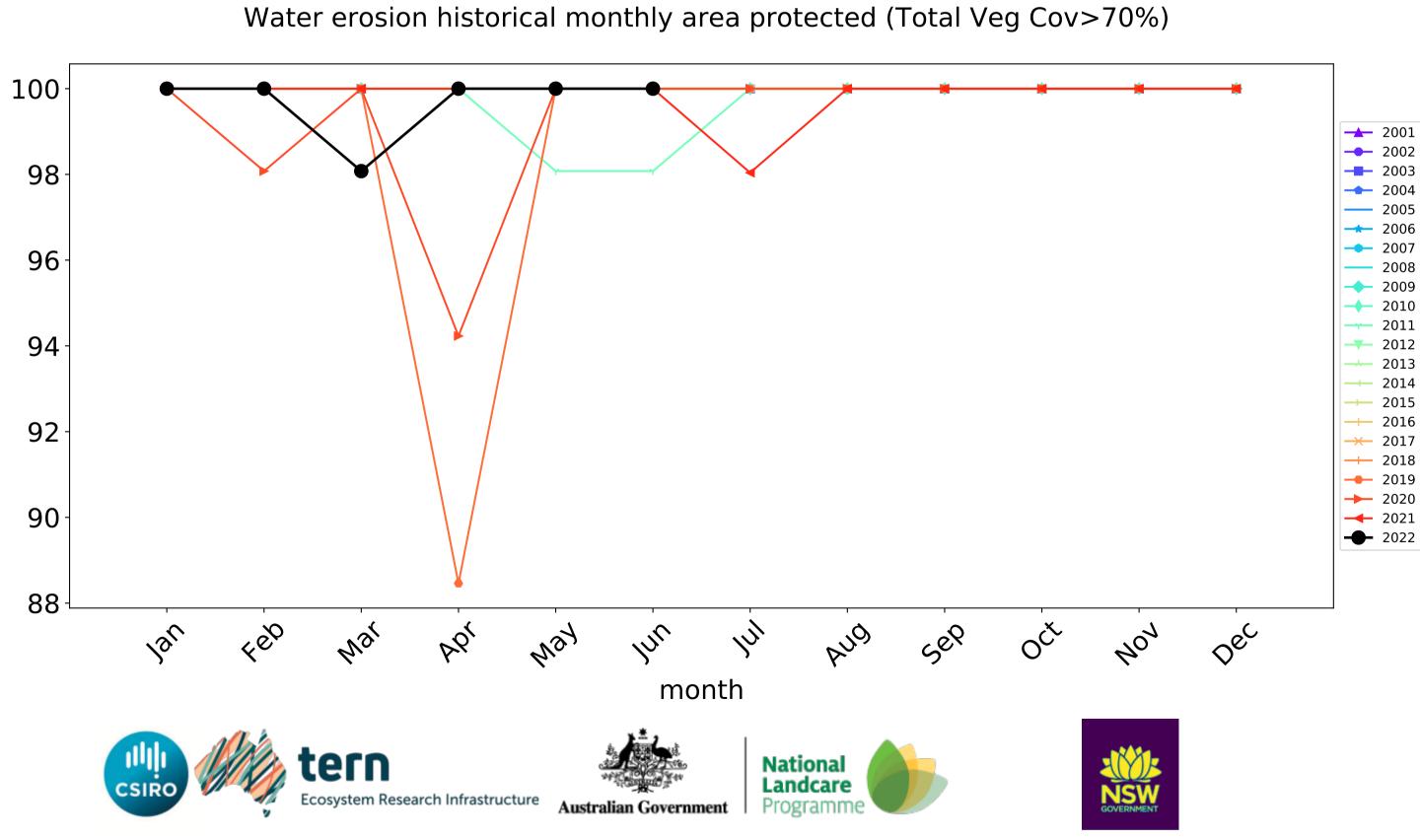


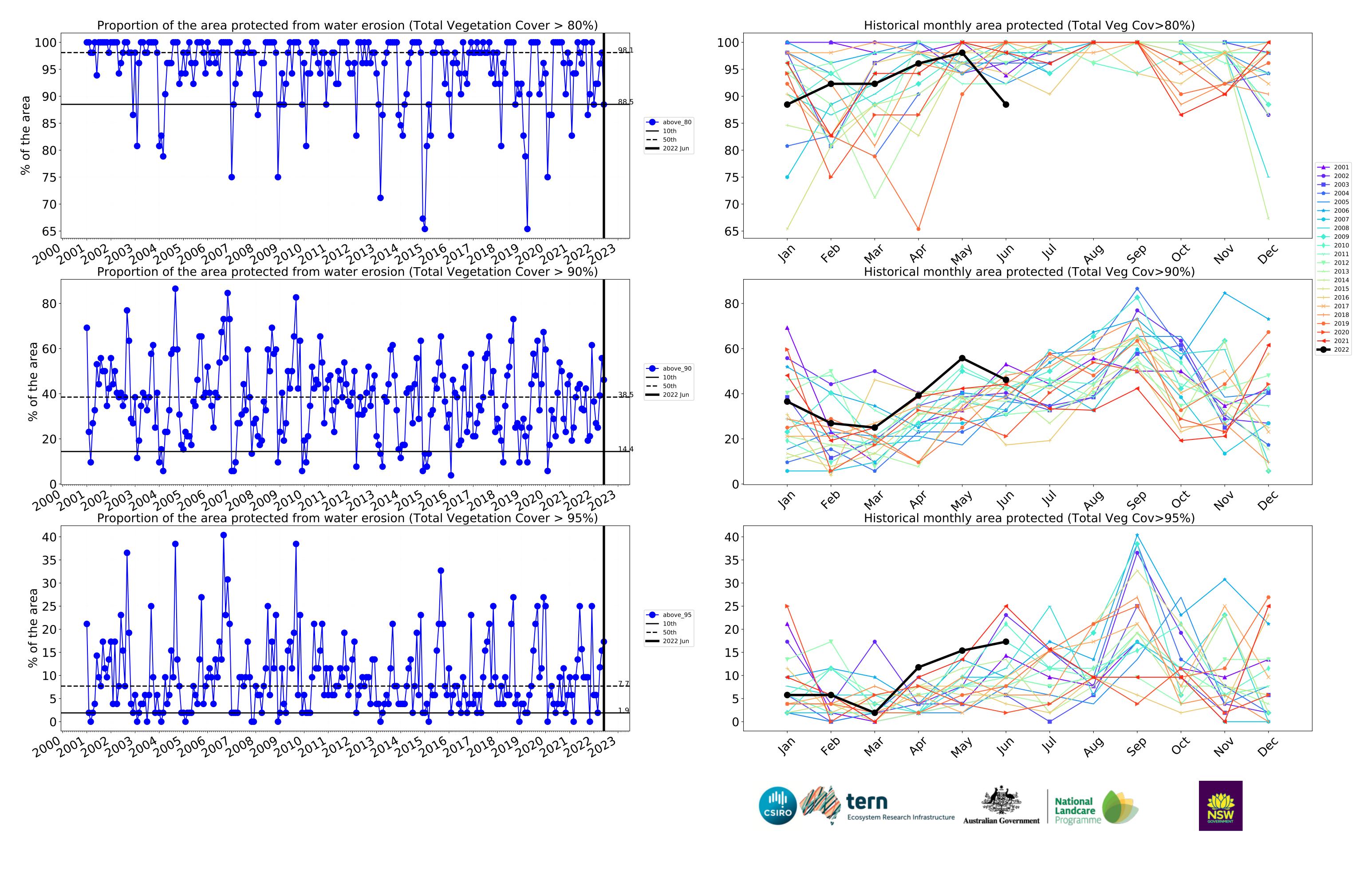




month

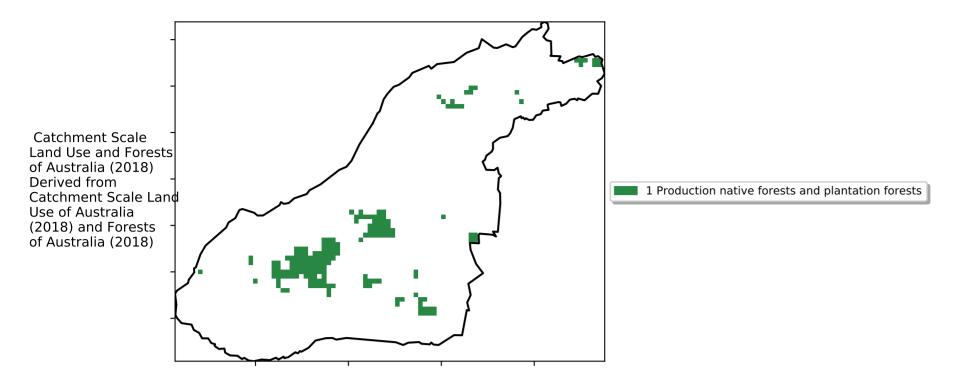




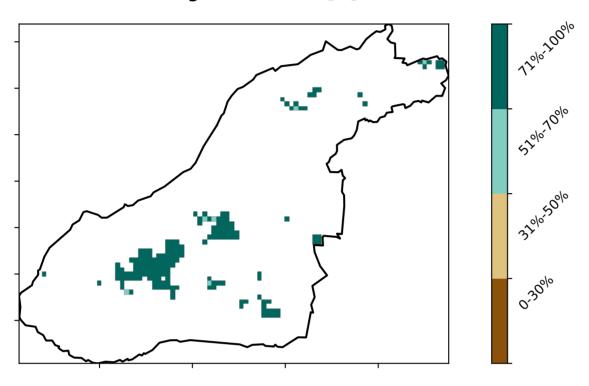


### **Production native forests and plantation forests**

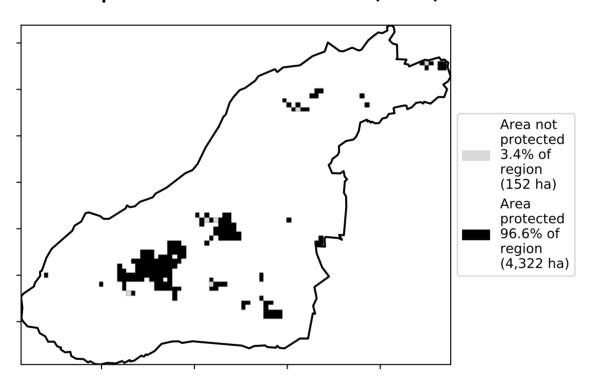
### **Land use and forest cover**



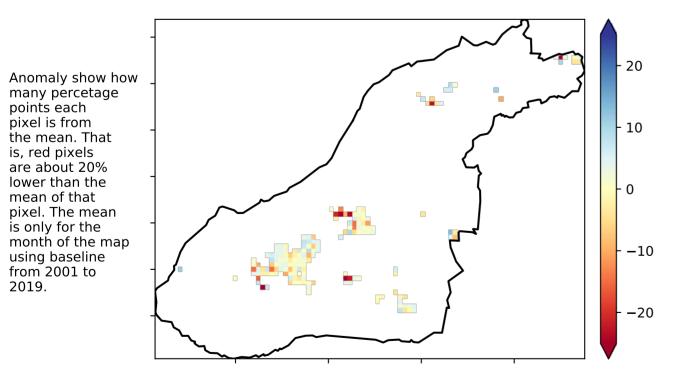
### **Total Vegetation Cover [%]**



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

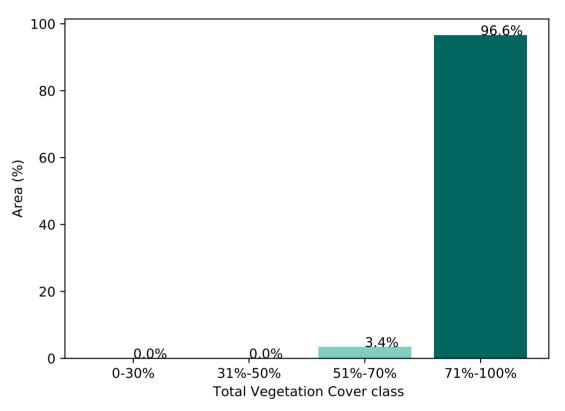


### **Total Vegetation Cover Anomaly [%]**

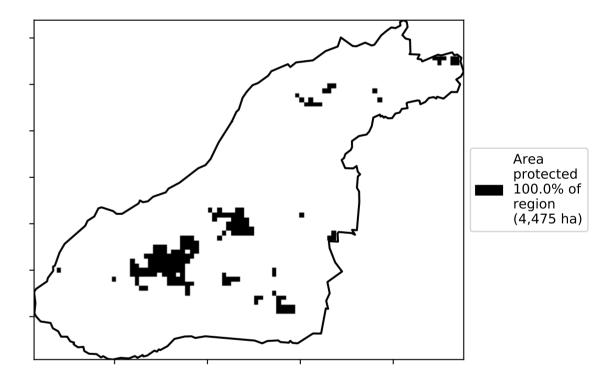


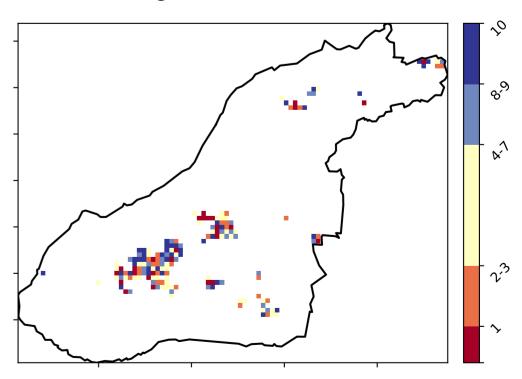
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

### Proportion of vegetation cover class in area



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









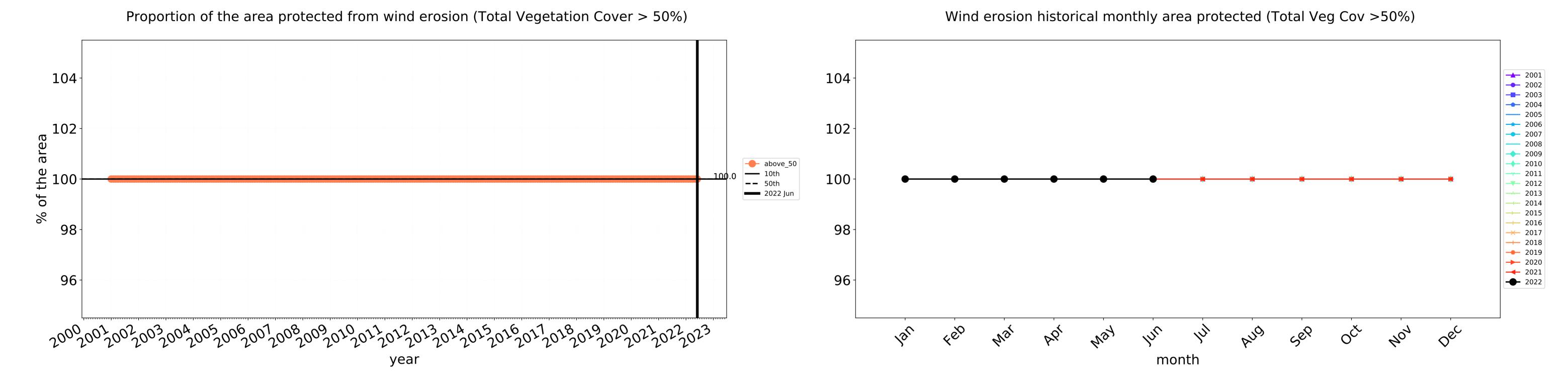


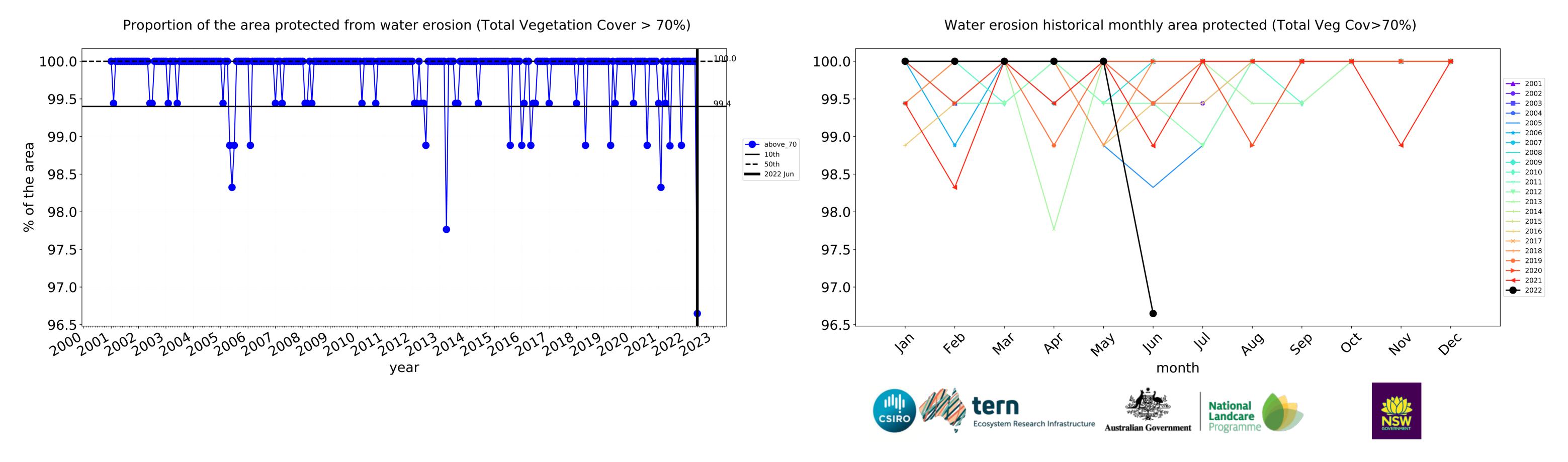


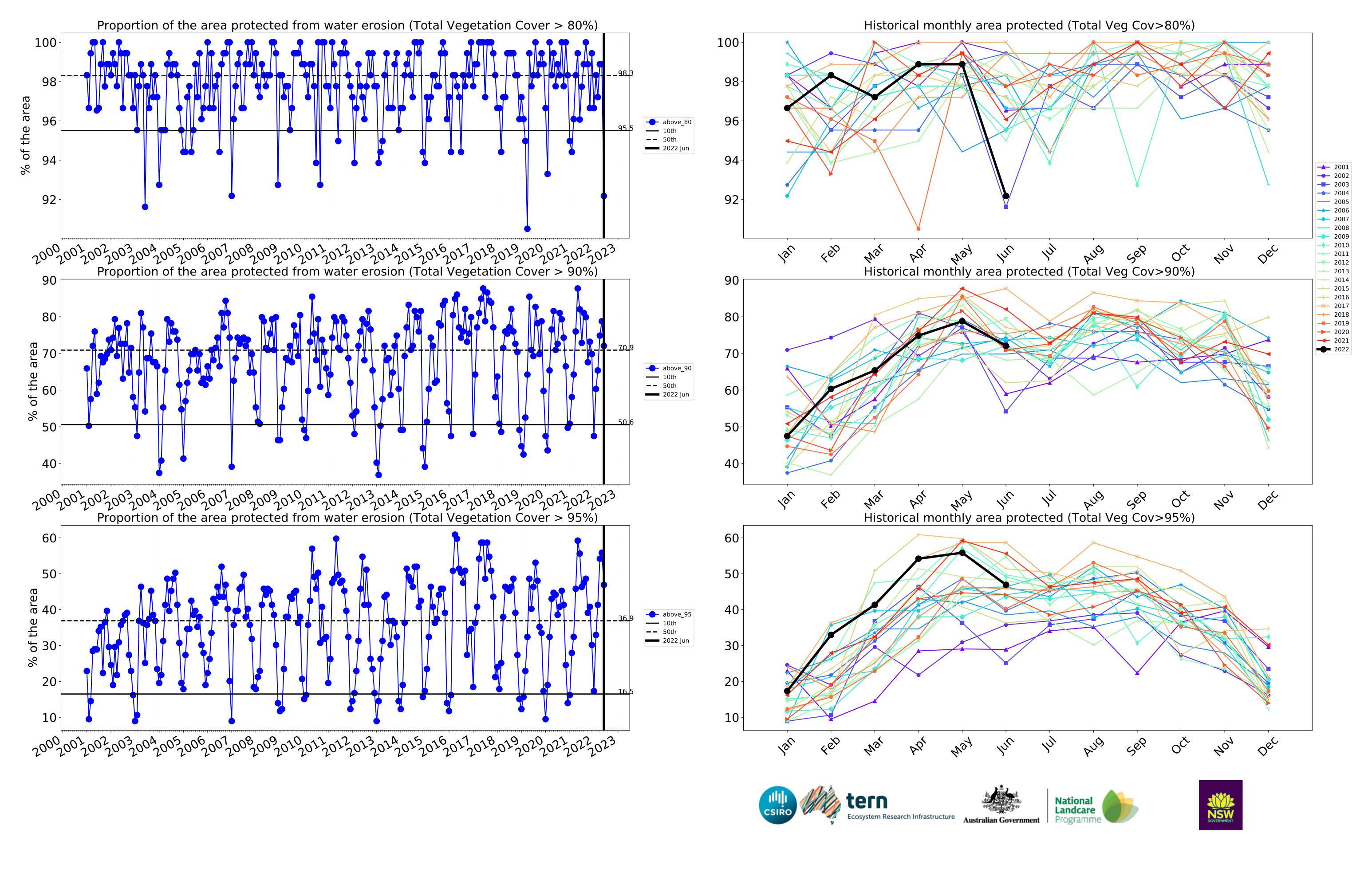




### **Production native forests and plantation forests timeseries**







### Yankalilla\_(DC) (71,300 ha and no data 3,837 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	71,300	99.9% 71,250	99.5% 70,925	97.2% 69,300	89.6% 63,875	48.2% 34,400	21.5% 15,325
Conservation and natural environments	9,200	100.0% 9,200	99.7% 9,175	98.6% 9,075	95.7% 8,800	69.8% 6,425	35.3% 3,250
Conservation and natural environments non forest	1,275	100.0% 1,275	100.0% 1,275	98.0% 1,250	86.3% 1,100	58.8% 750	21.6% 275
Conservation and natural environments Woodland forest	5,250	100.0% 5,250	99.5% 5,225	98.1% 5,150	96.7% 5,075	72.9% 3,825	39.0% 2,050
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	69.2% 1,850	34.6% 925
Agriculture	55,525	100.0% 55,500	99.5% 55,225	97.4% 54,100	89.5% 49,700	43.8% 24,325	17.5% 9,725
Grazing	48,925	99.9% 48,900	99.6% 48,725	97.7% 47,800	89.9% 44,000	44.1% 21,600	18.0% 8,825
Grazing non forest	48,450	99.9% 48,425	99.6% 48,250	97.7% 47,325	89.9% 43,550	44.0% 21,325	18.1% 8,775
Cropping	5,300	100.0% 5,300	98.1% 5,200	94.3% 5,000	85.8% 4,550	40.1% 2,125	12.7% 675
Irrigation	1,300	100.0% 1,300	100.0% 1,300	100.0% 1,300	88.5% 1,150	46.2% 600	17.3% 225
Production native forests and plantation forests	4,475	100.0% 4,475	100.0% 4,475	96.6% 4,325	92.2% 4,125	72.1% 3,225	46.9% 2,100







