## Total vegetation cover soil protection Region:LGA Logan\_(C) QLD

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: September 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



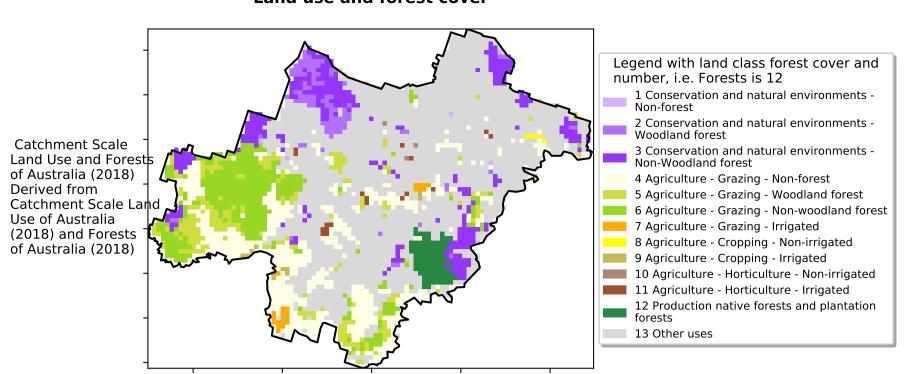




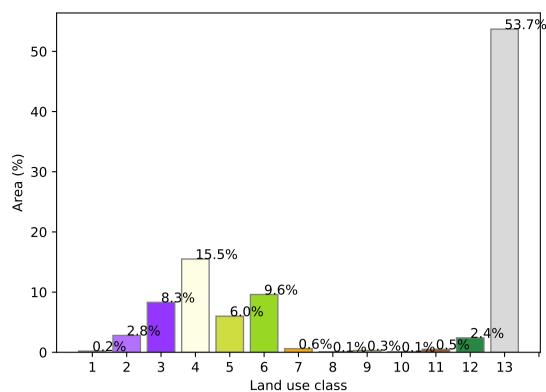


## **Vegetation Cover Sep 2021**

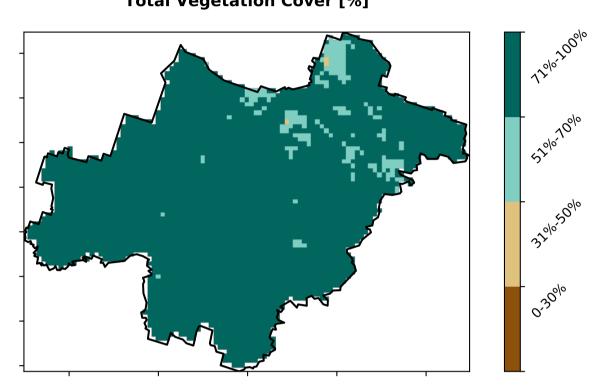
### Land use and forest cover



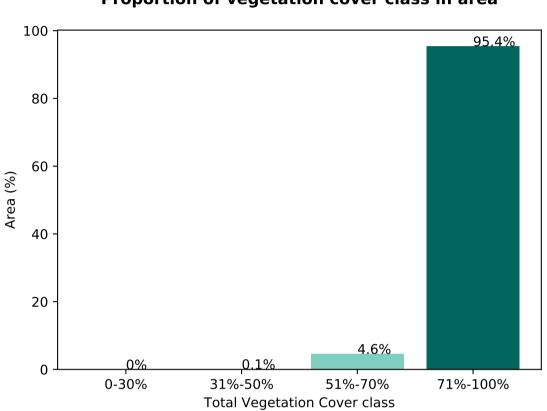
## Proportion of each land class in area



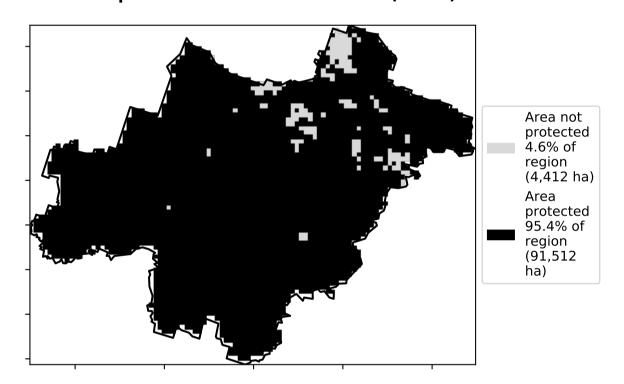
## Total Vegetation Cover [%]



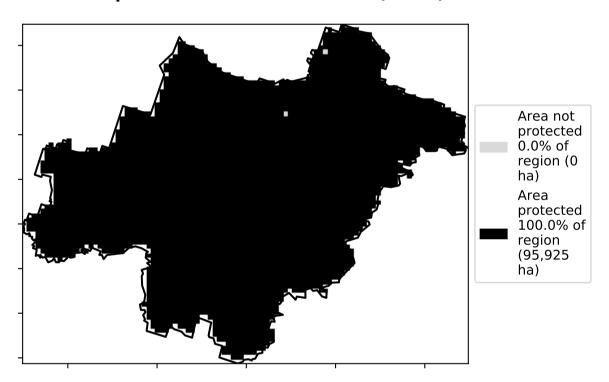
Proportion of vegetation cover class in area



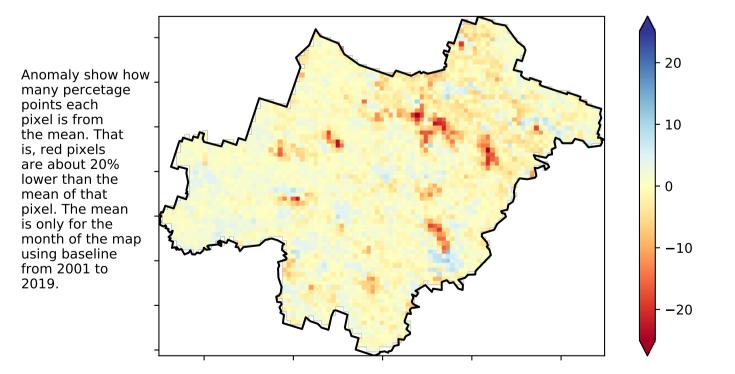
## % Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

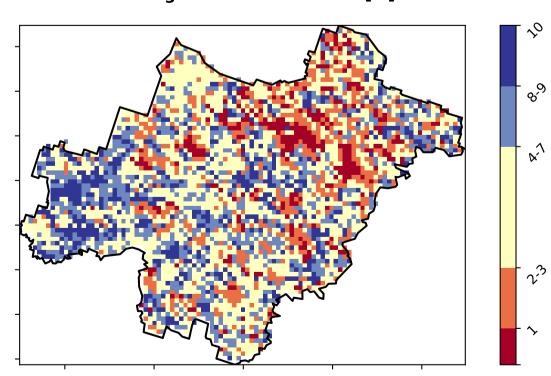


Total Vegetation Cover Anomaly [%]



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 [%]

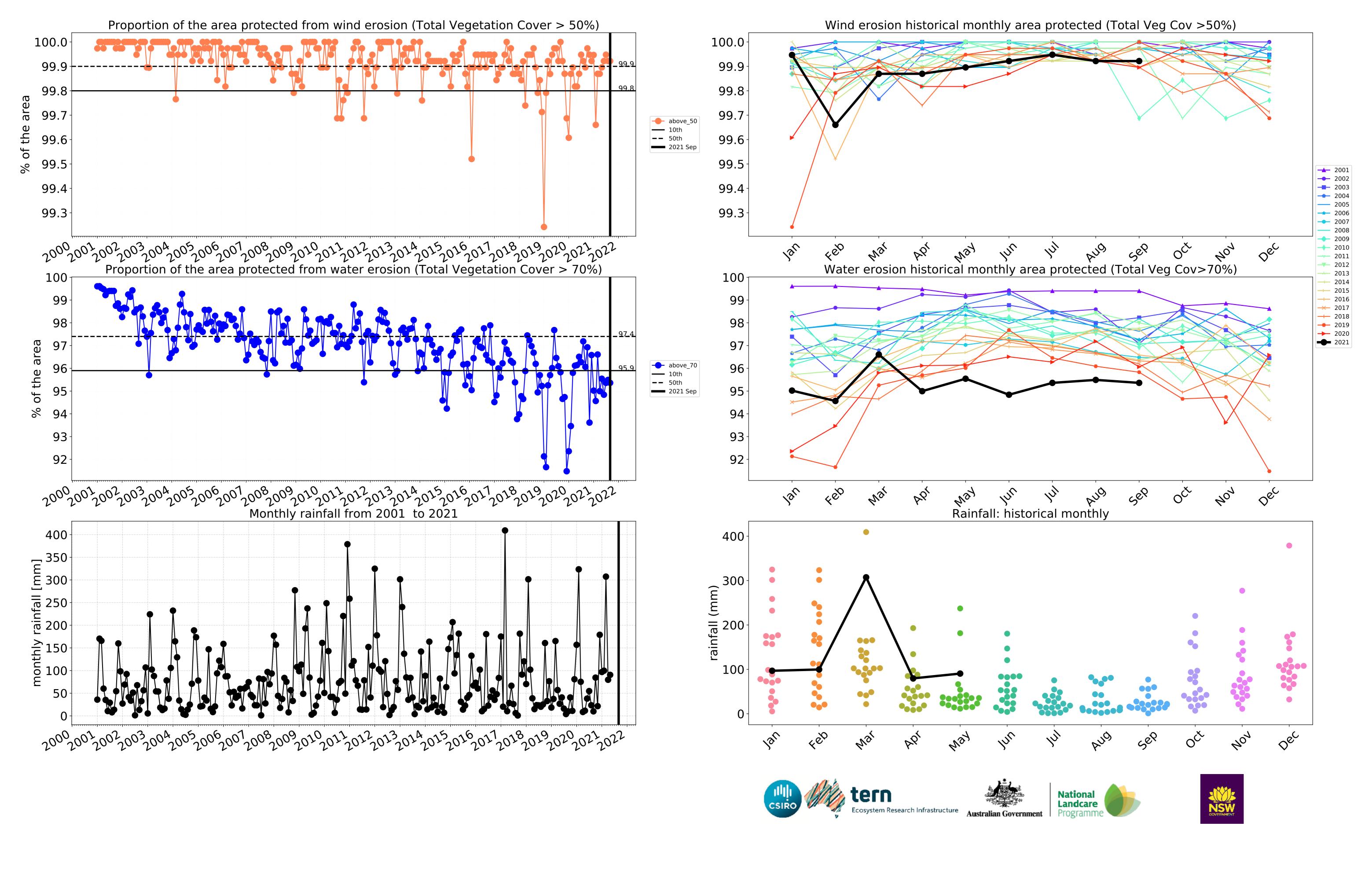


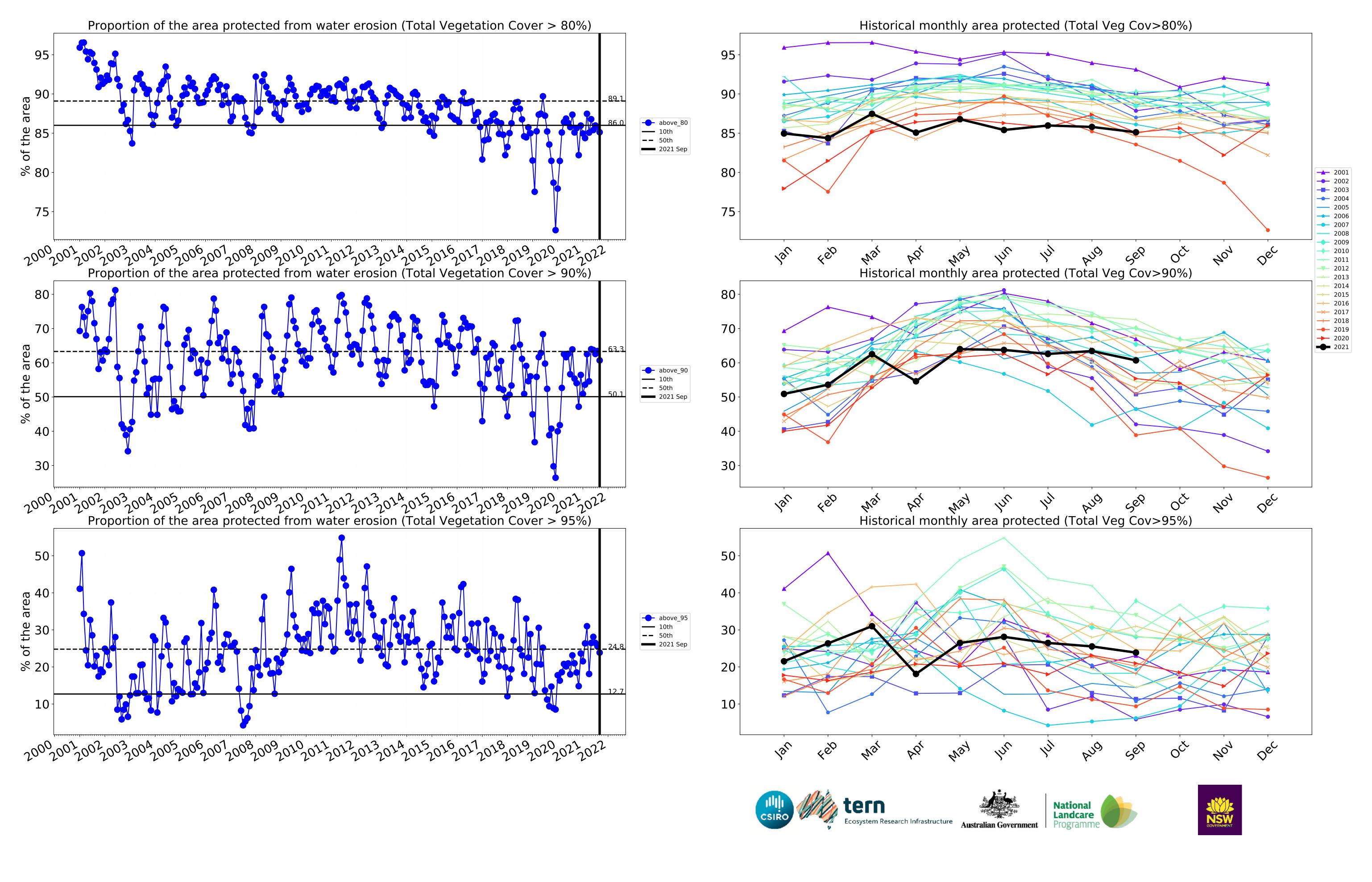




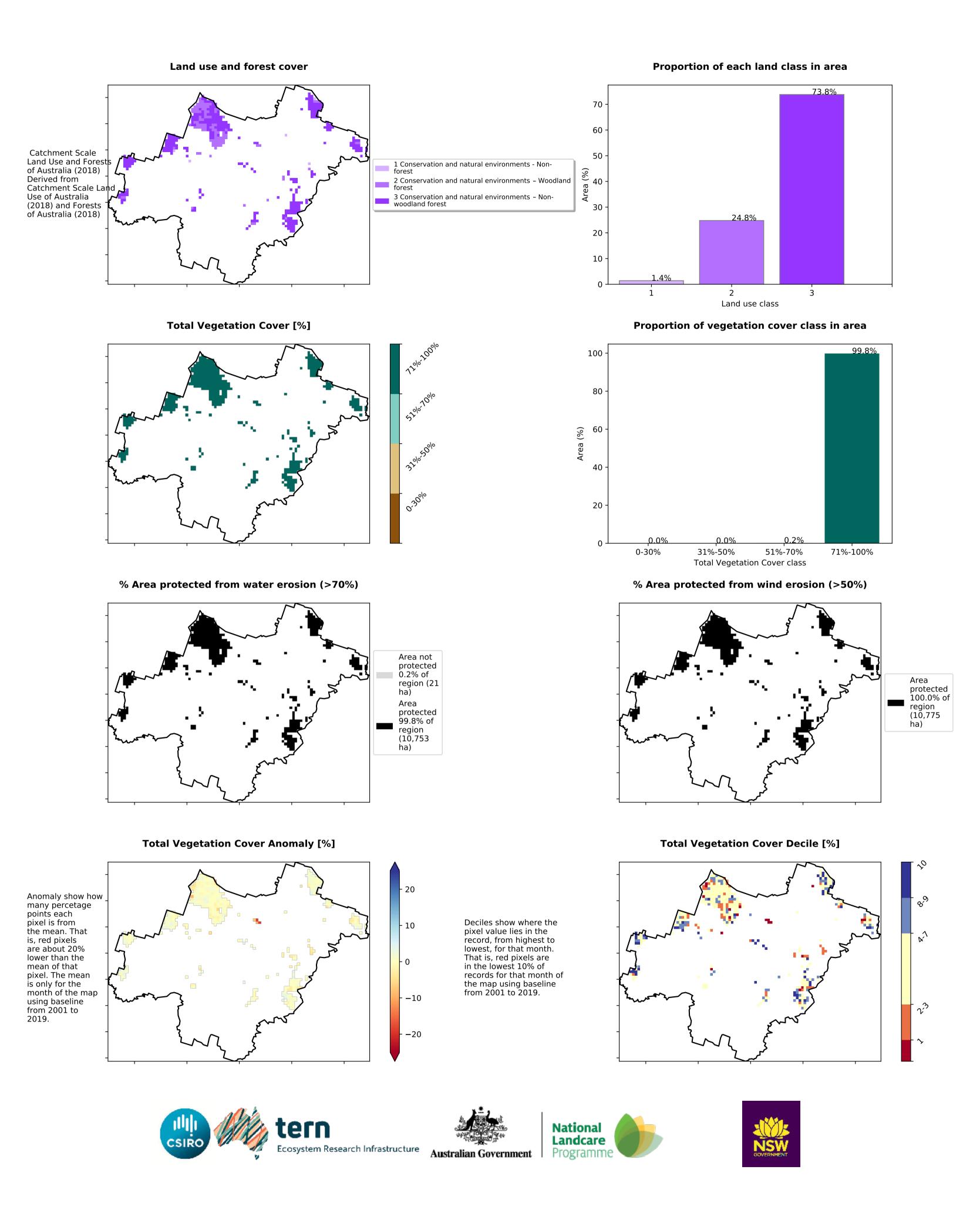




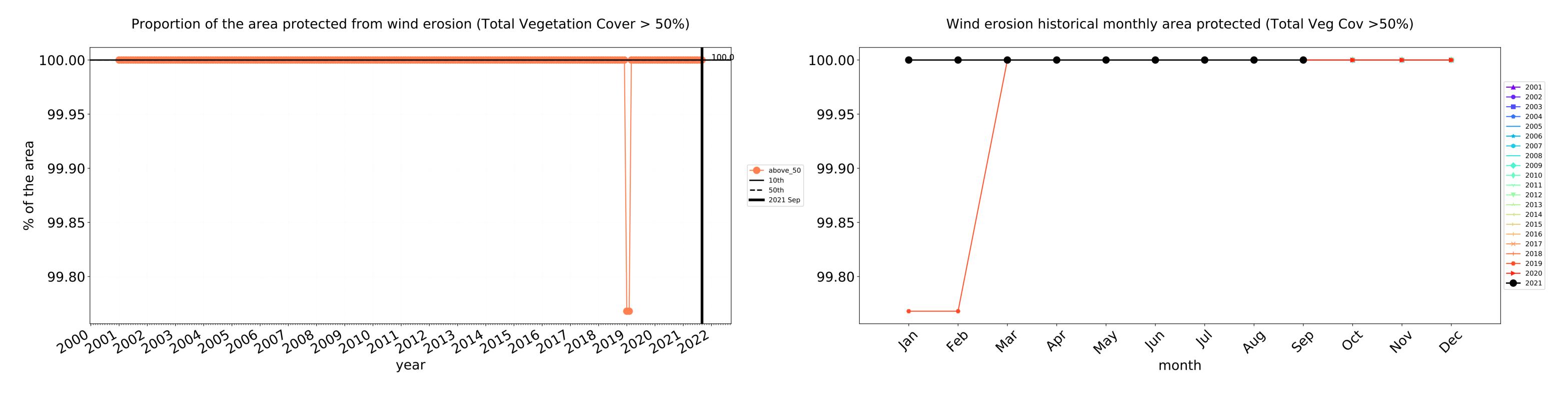


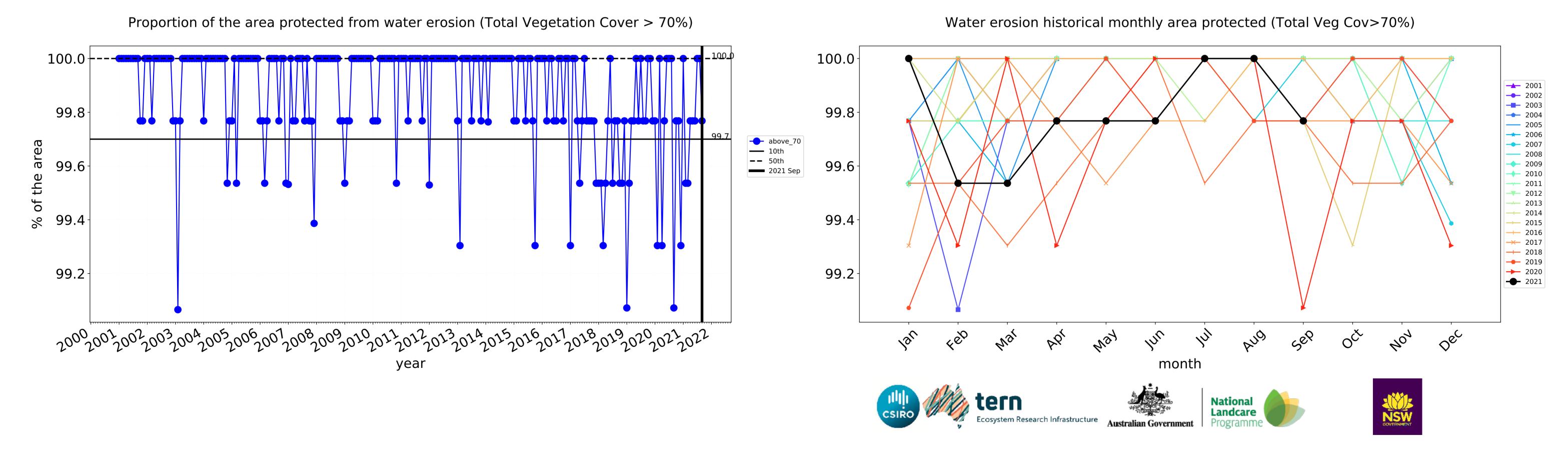


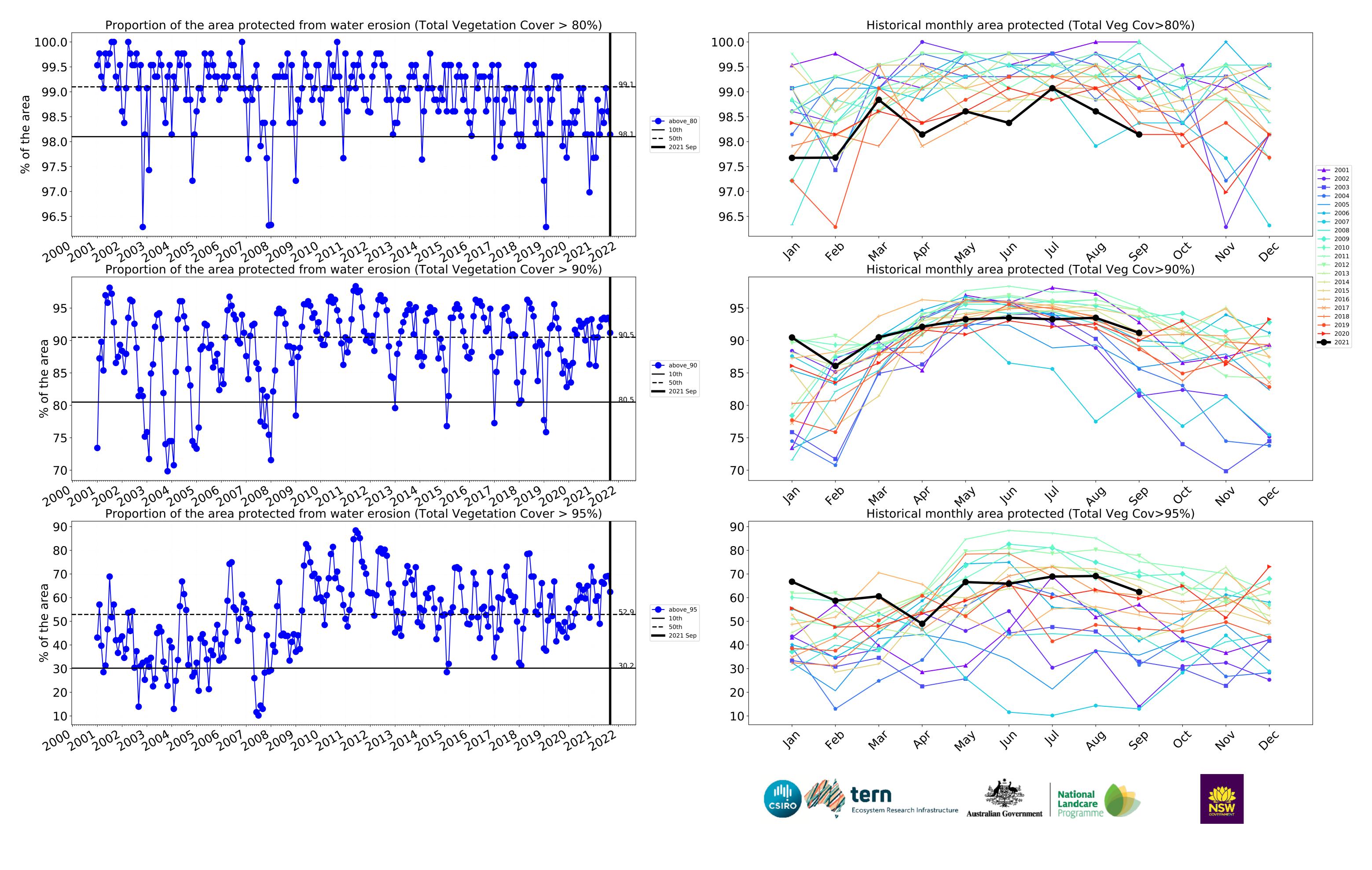
## **Conservation and natural environments**



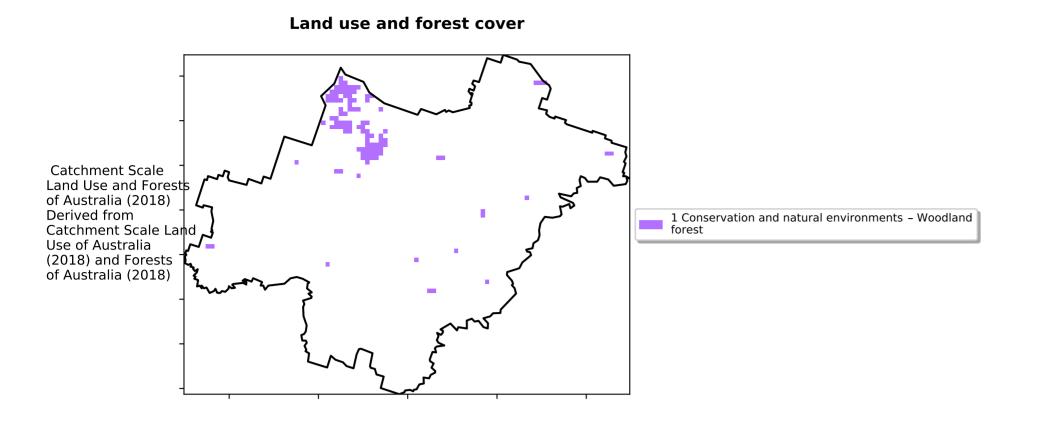
## **Conservation and natural environments timeseries**





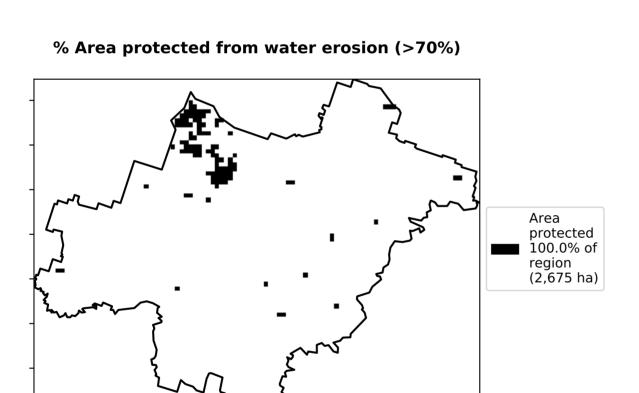


## **Conservation and natural environments Woodland forest**

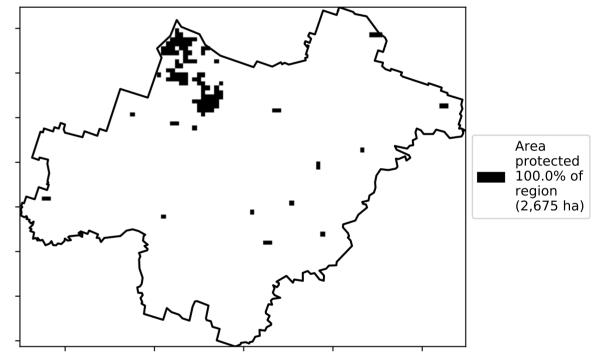


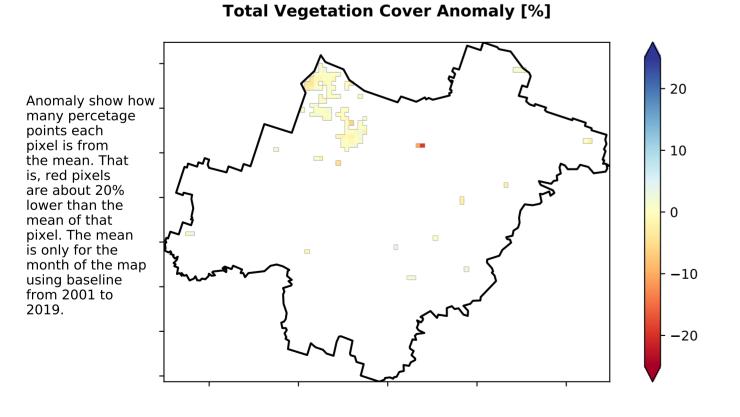
## **Total Vegetation Cover [%]**

## Proportion of vegetation cover class in area 100.0% 100 80 Area (%) 60 40 20 0.0% 0.0% 0.0% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**

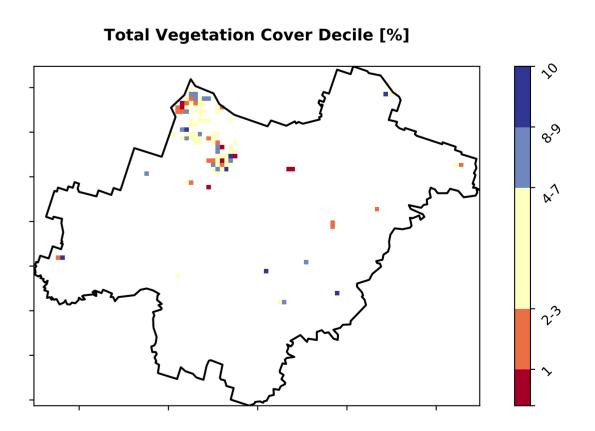








Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseling. the map using baseline from 2001 to 2019.

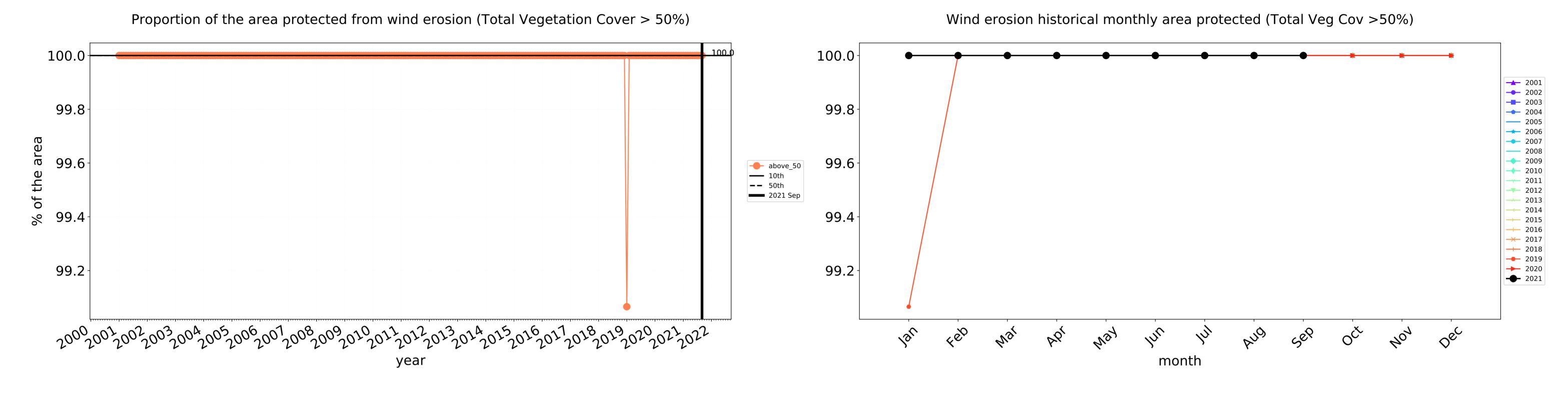


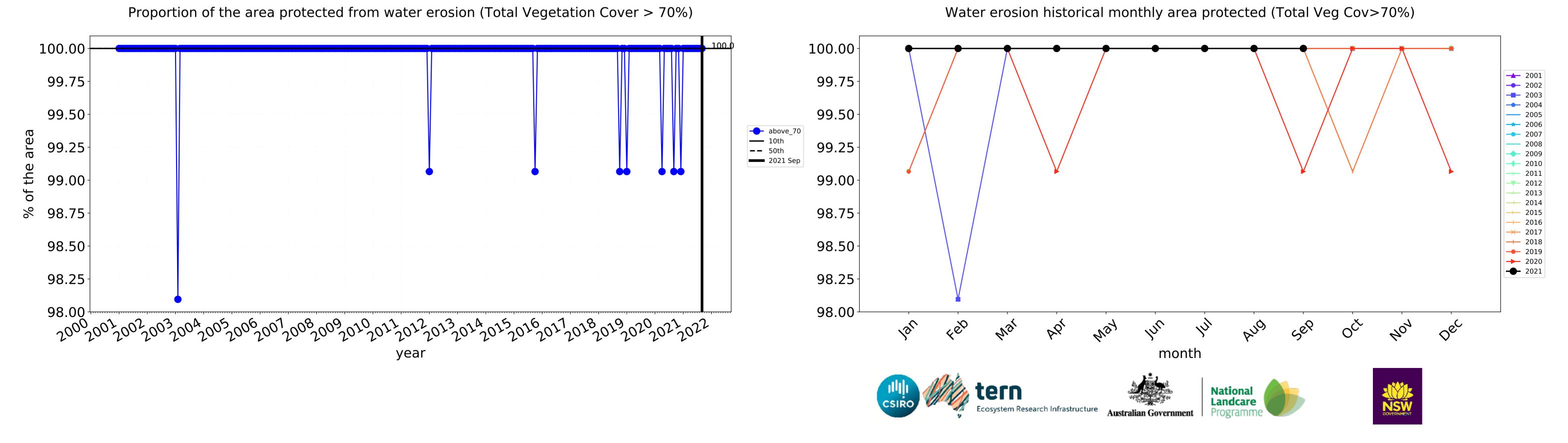


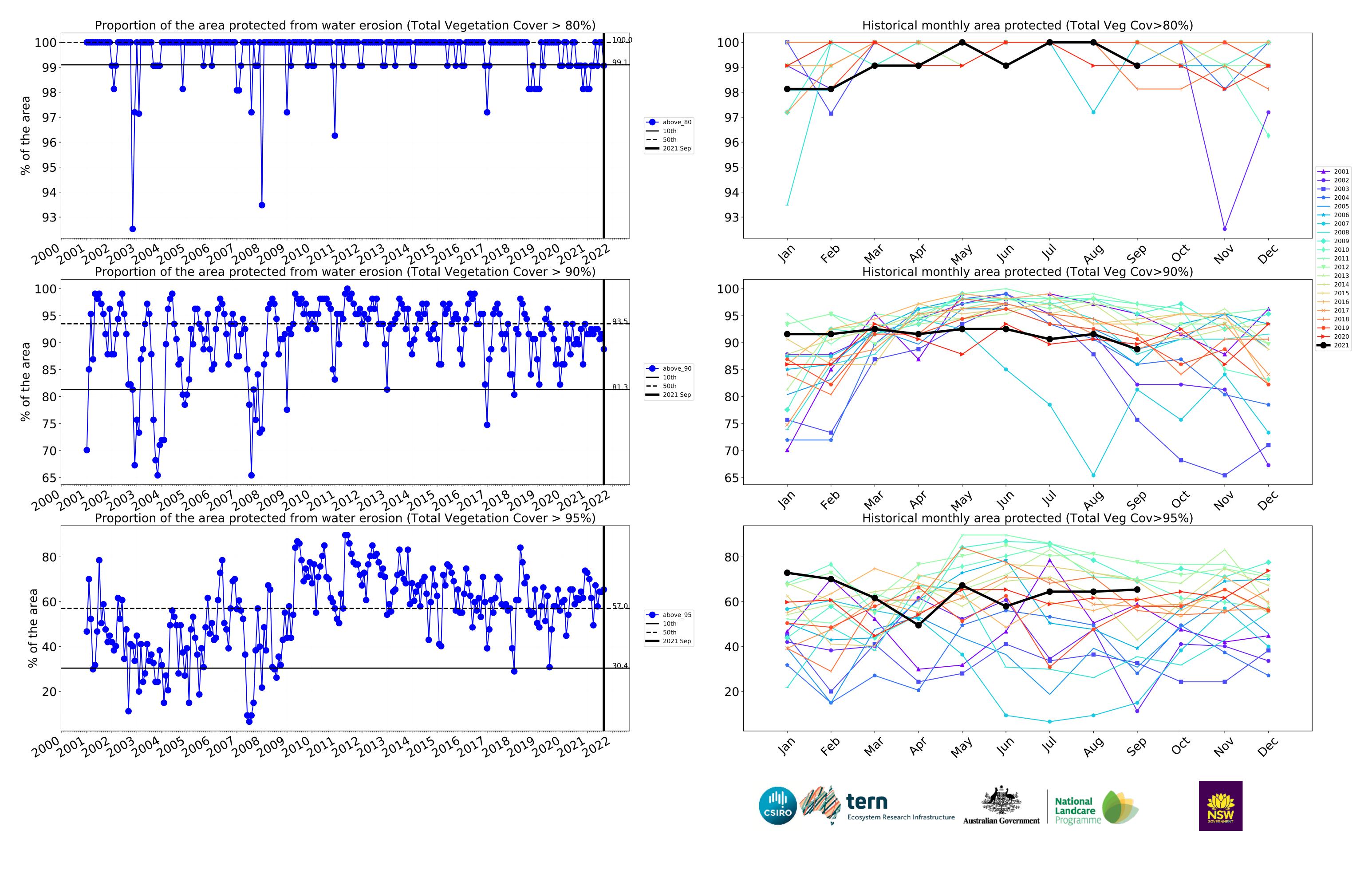




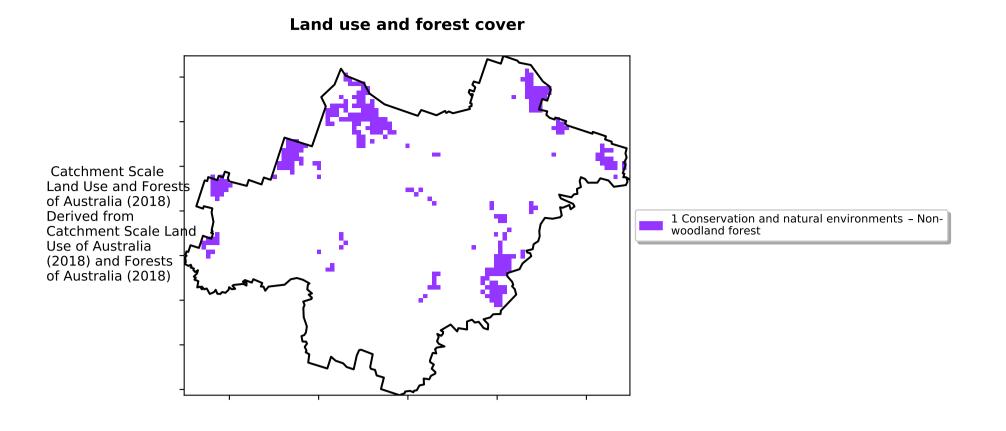
## **Conservation and natural environments Woodland forest timeseries**



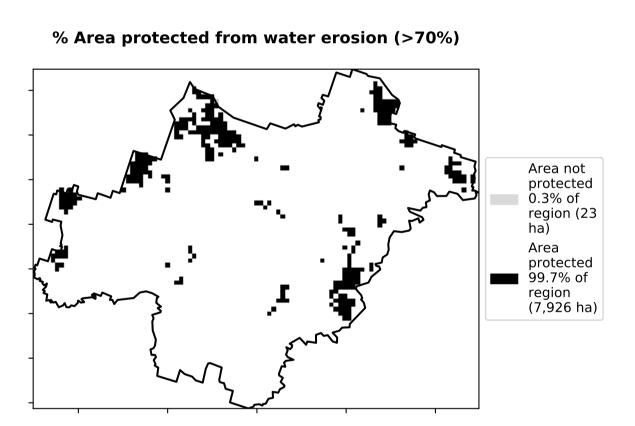


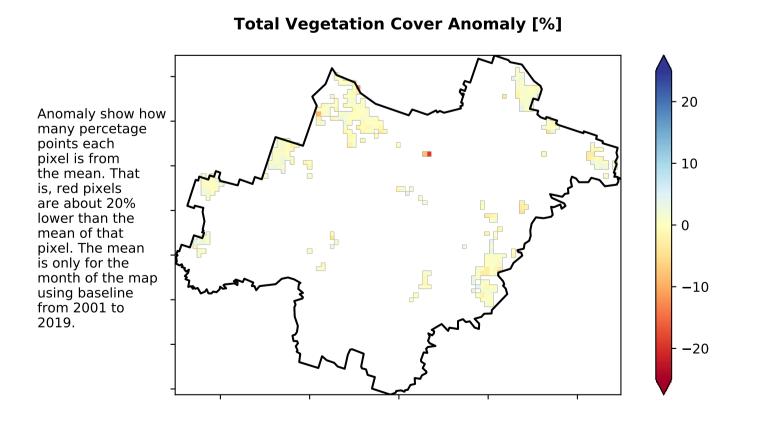


## **Conservation and natural environments Forest (non woodland)**

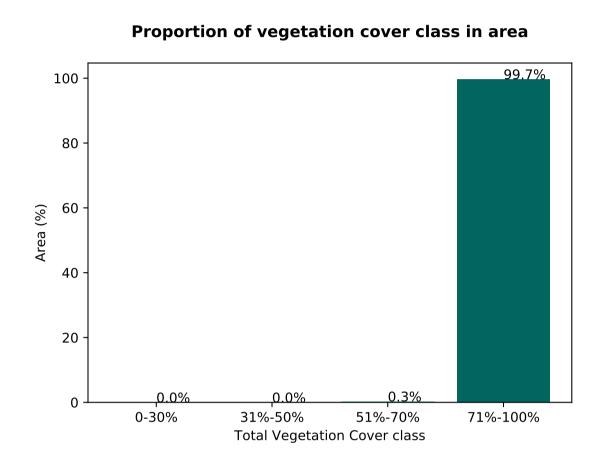


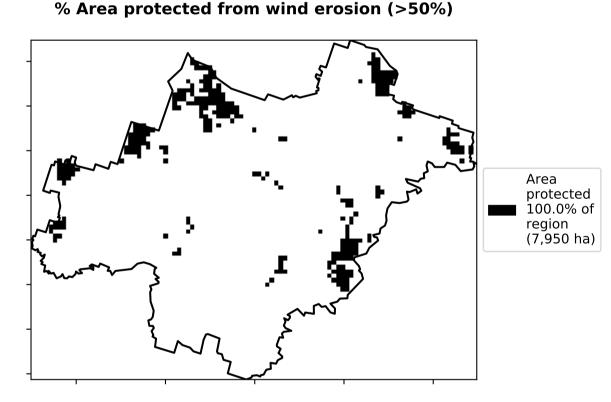
# Total Vegetation Cover [%]

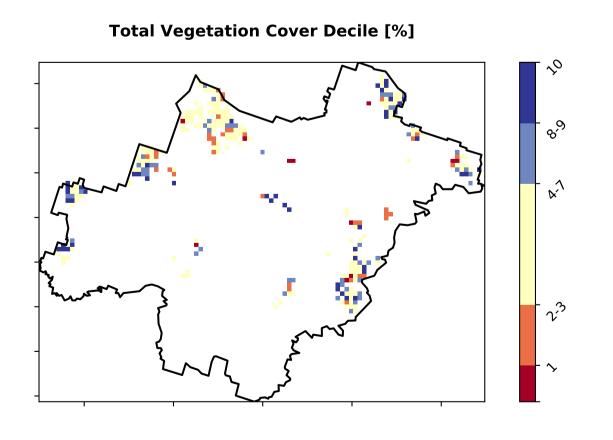




## Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.







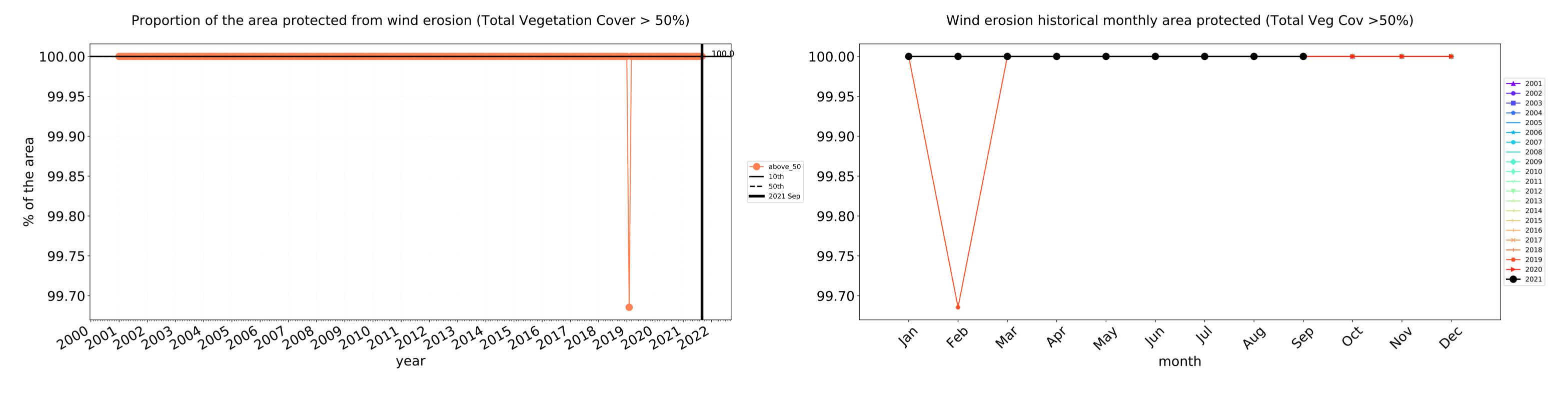


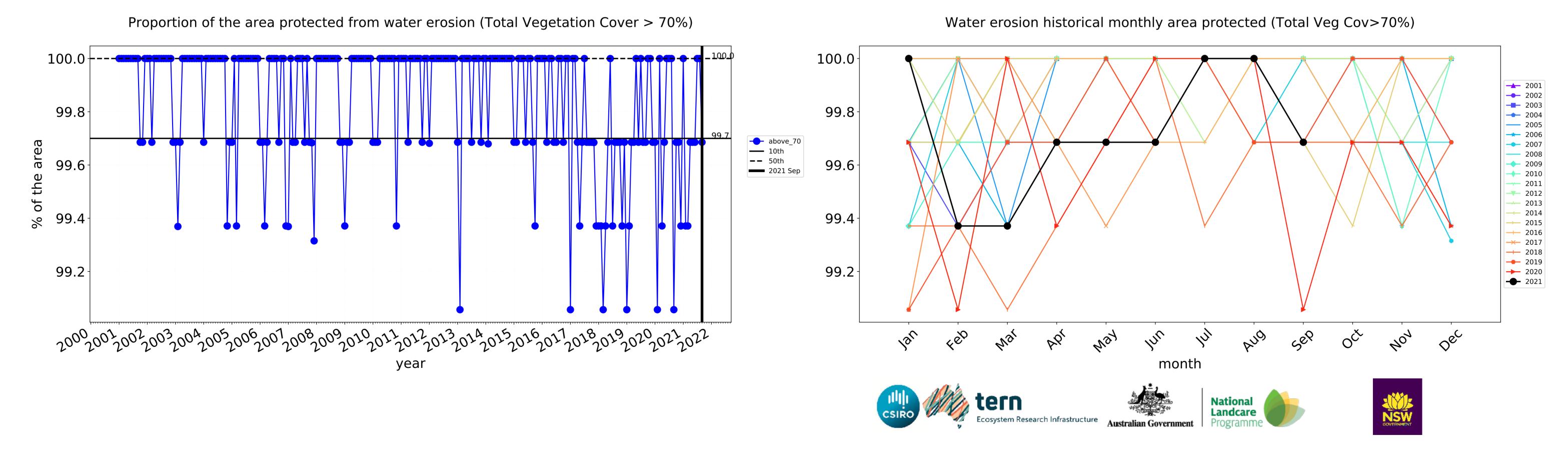


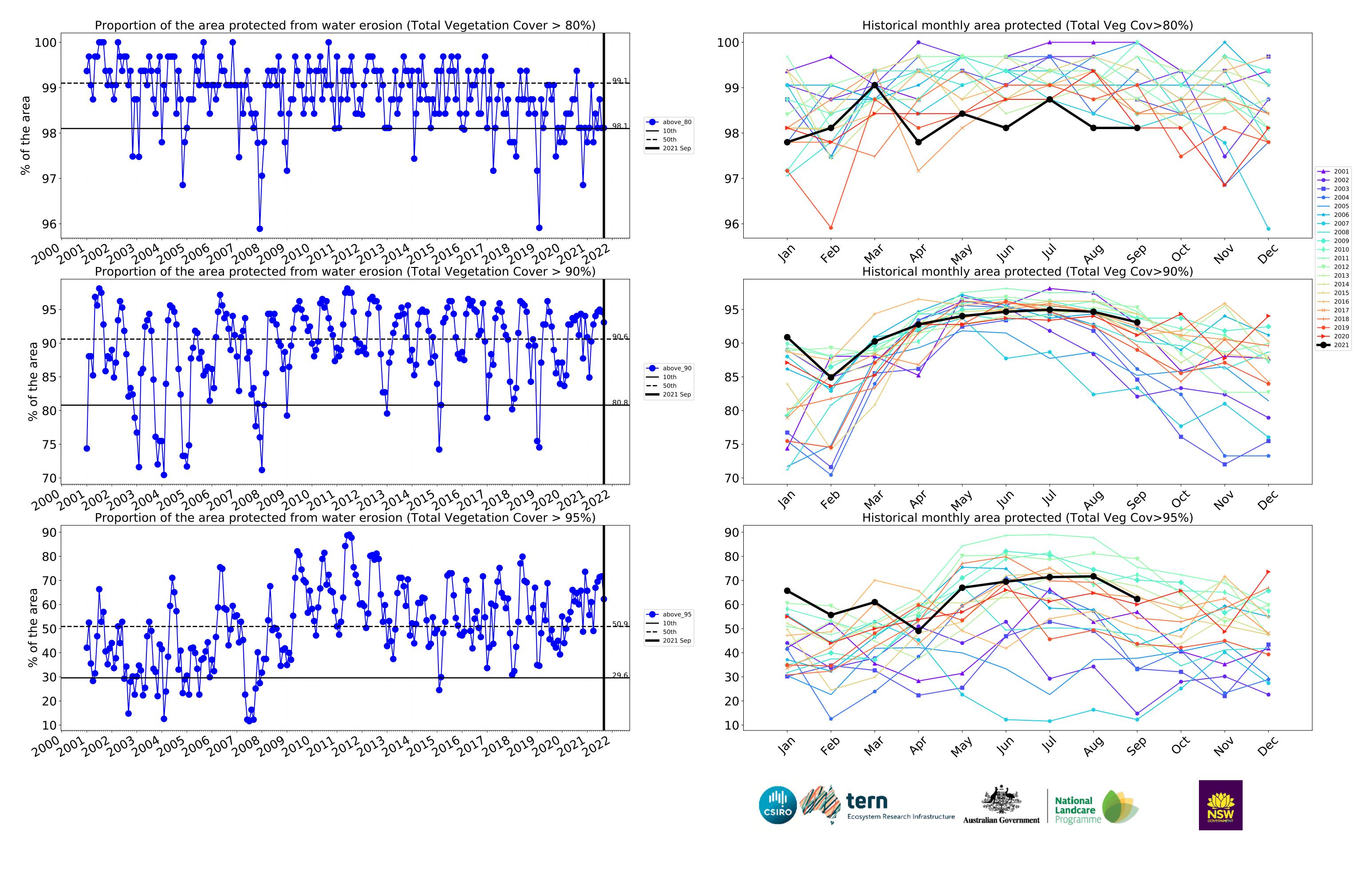




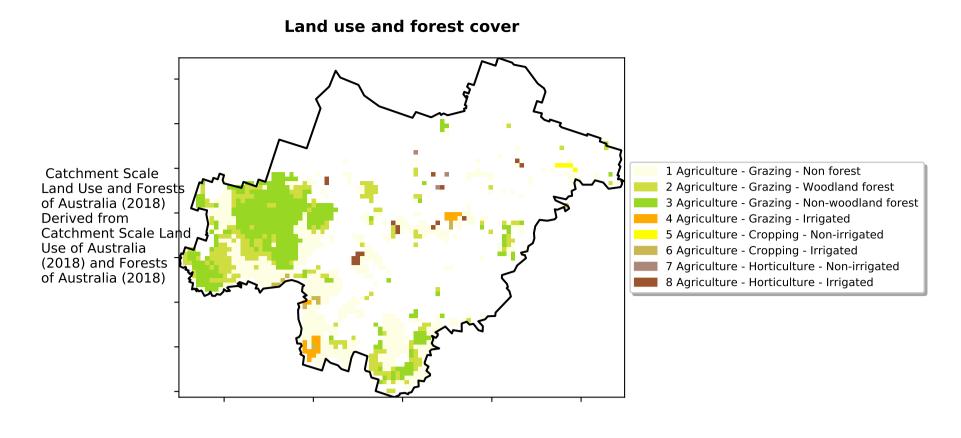
## Conservation and natural environments Forest (non woodland) timeseries



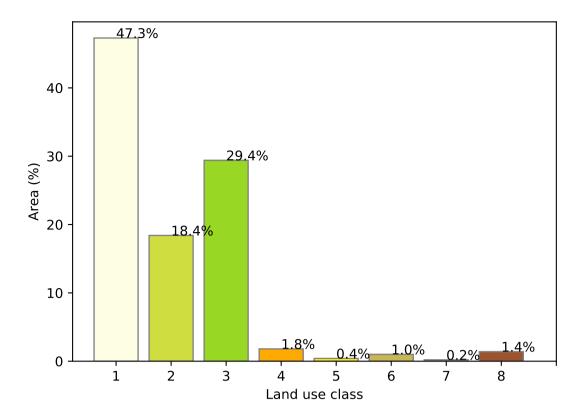




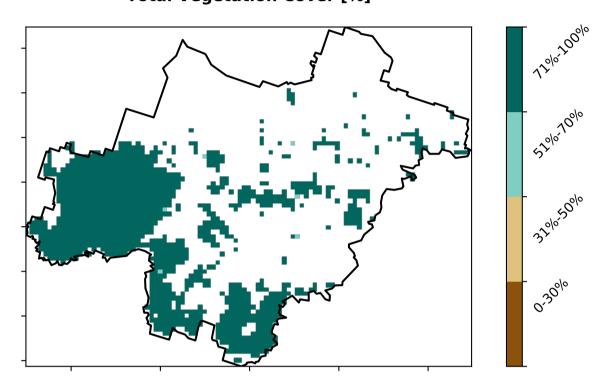
## **Agriculture**



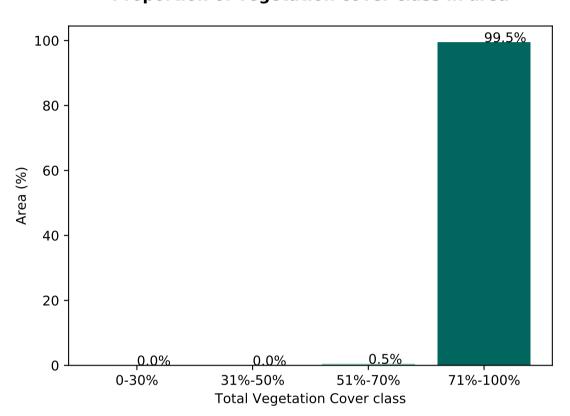
### Proportion of each land class in area



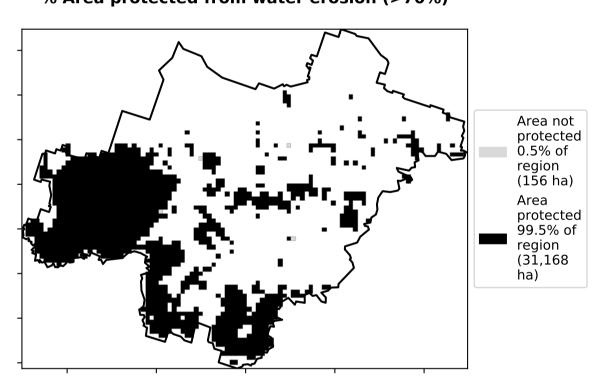
**Total Vegetation Cover [%]** 



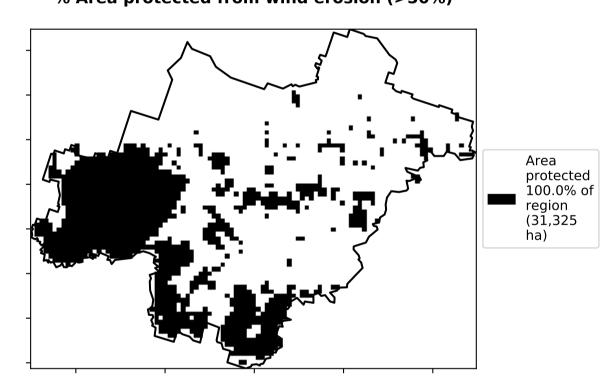
Proportion of vegetation cover class in area



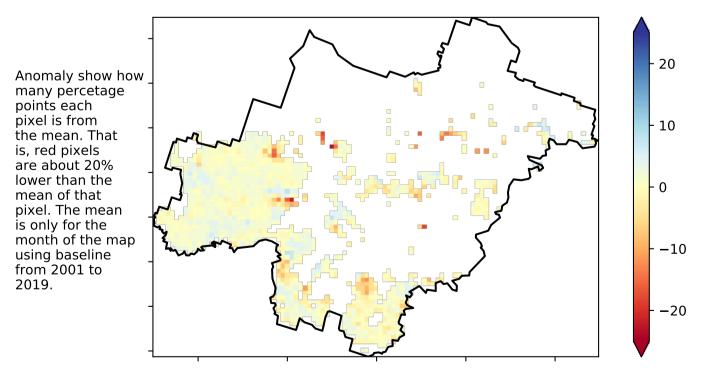
## % Area protected from water erosion (>70%)



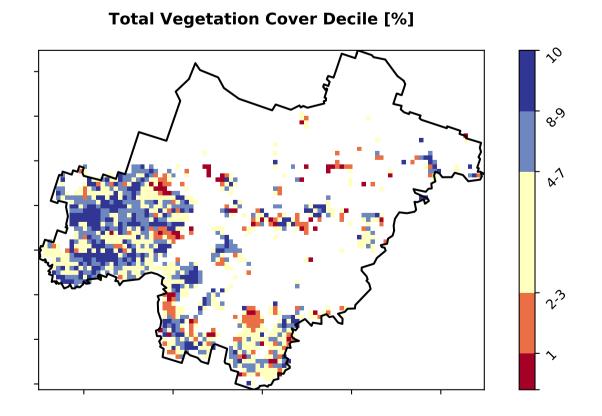
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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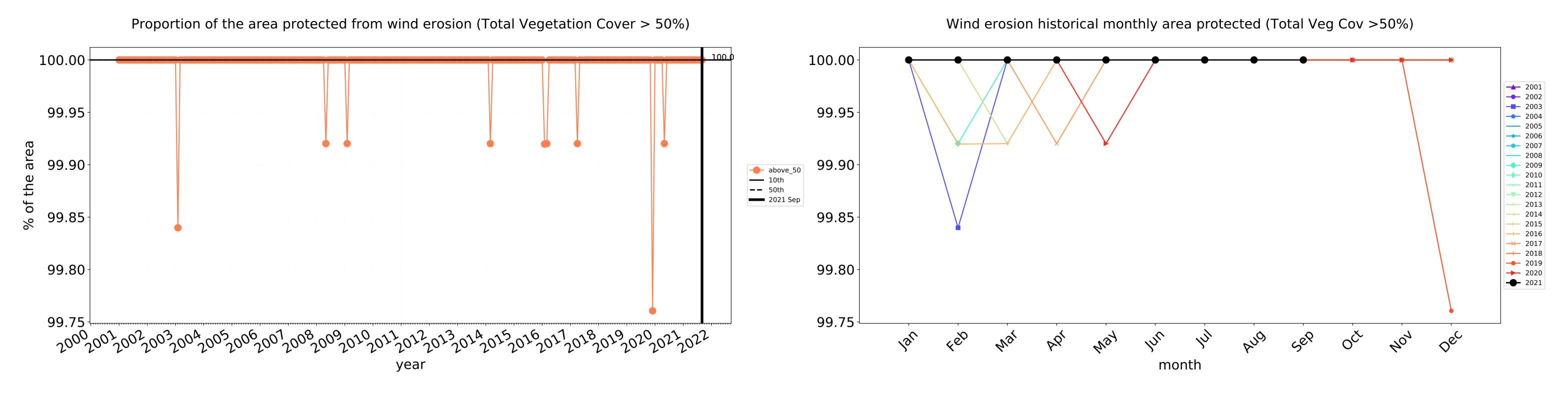
## tern Ecosystem Research Infrastructure

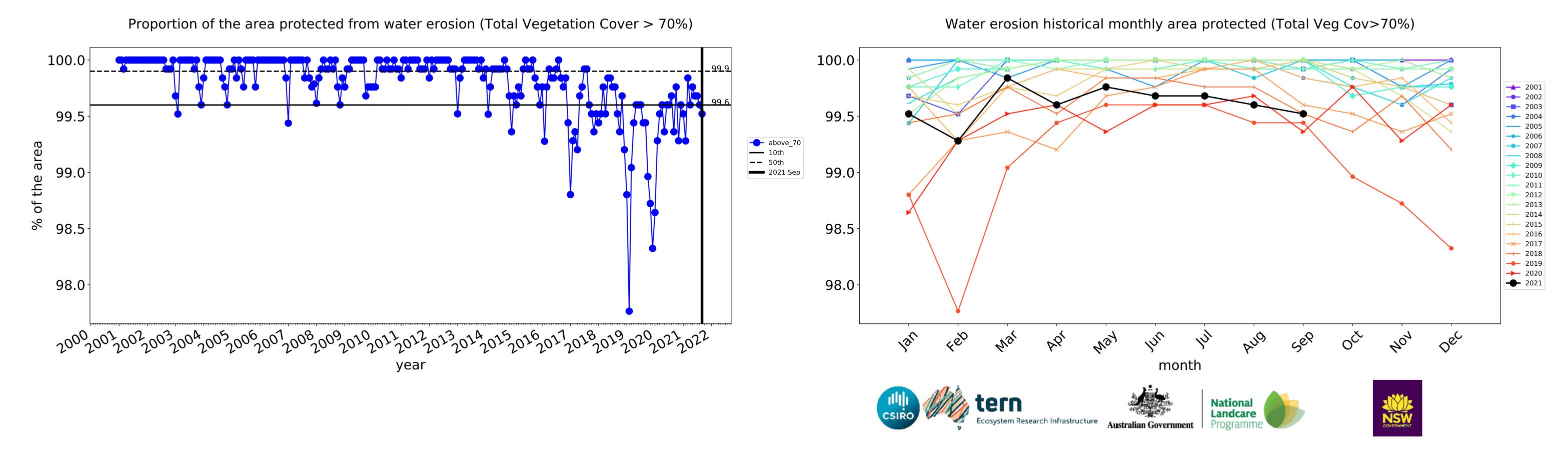


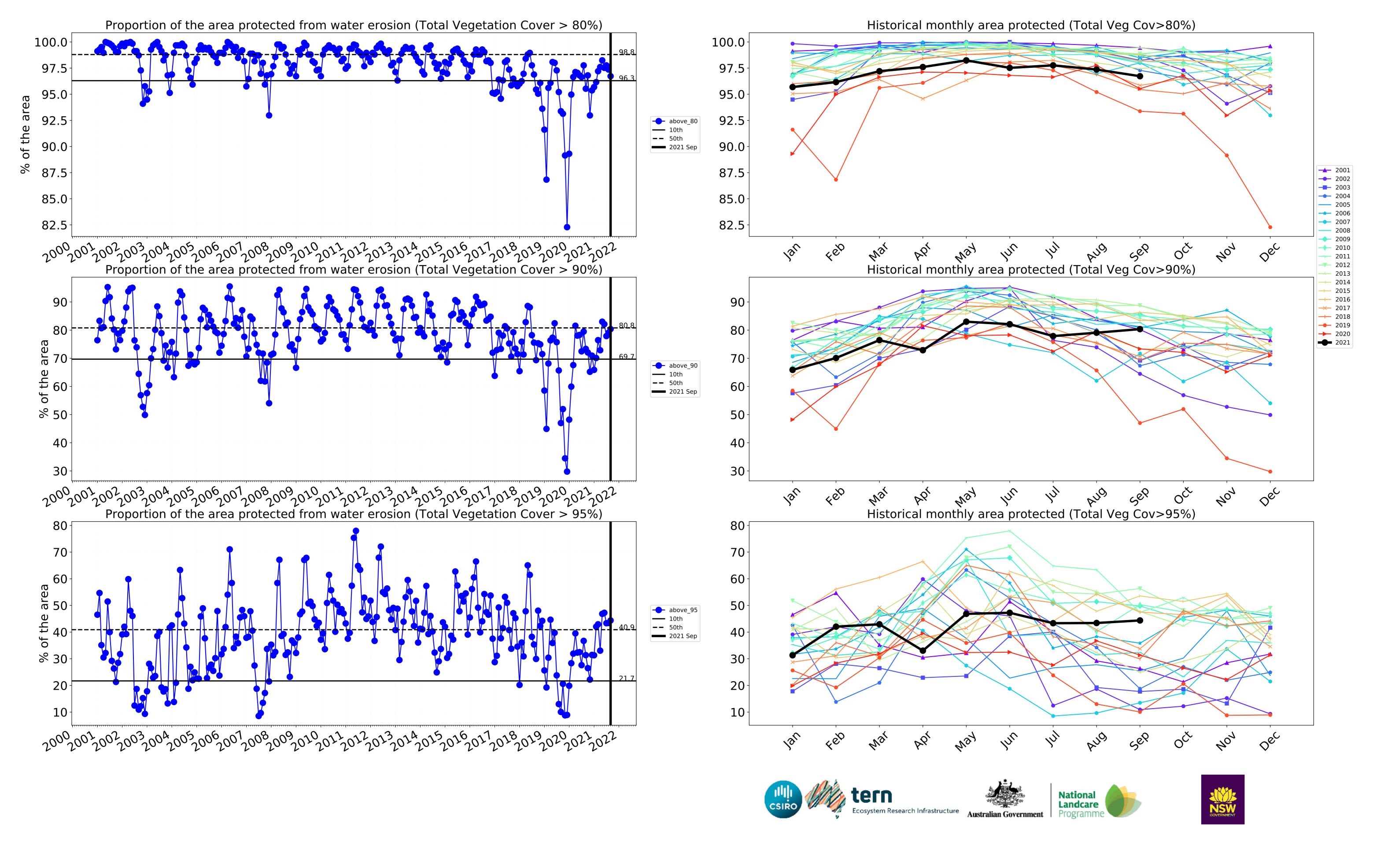




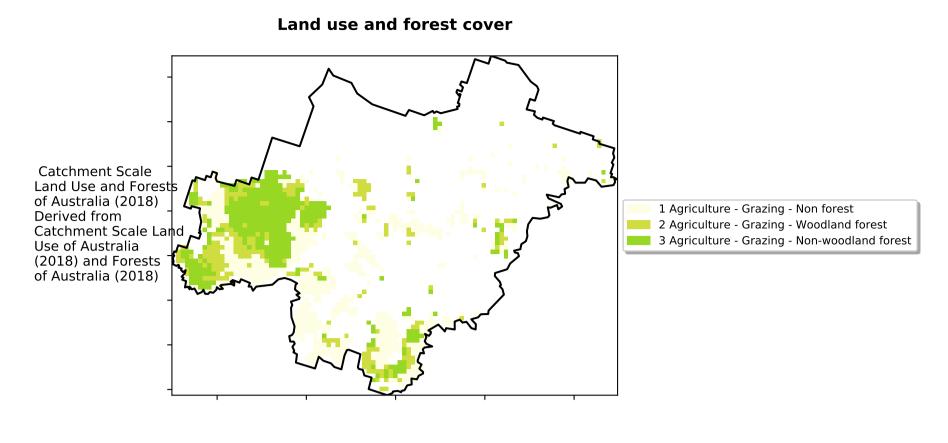
## **Agriculture timeseries**







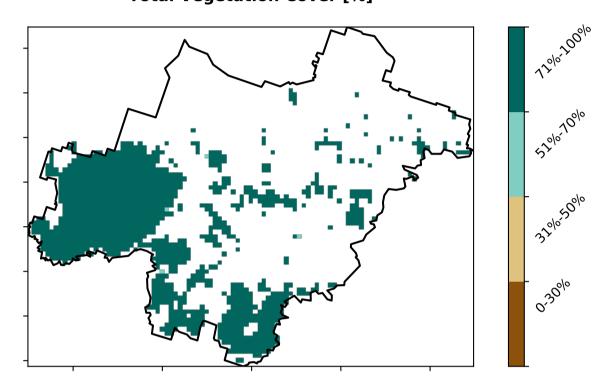
## **Grazing**



## 50 - 49.7% 40 - 30.9% 8 20 - 19.4%

**Proportion of each land class in area** 

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

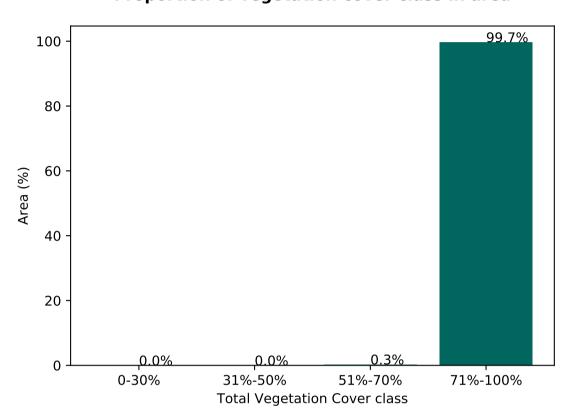


Proportion of vegetation cover class in area

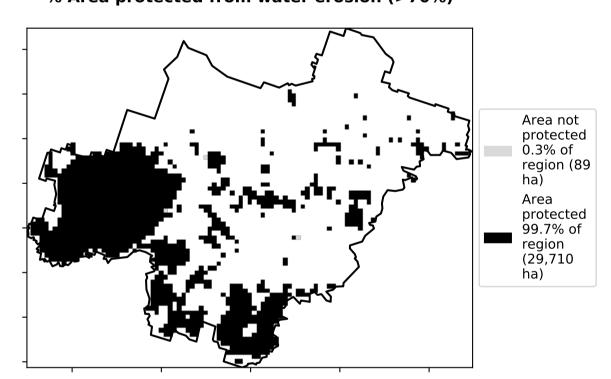
Land use class

2

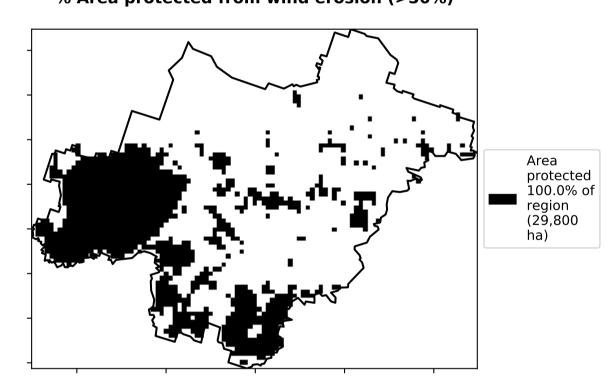
3



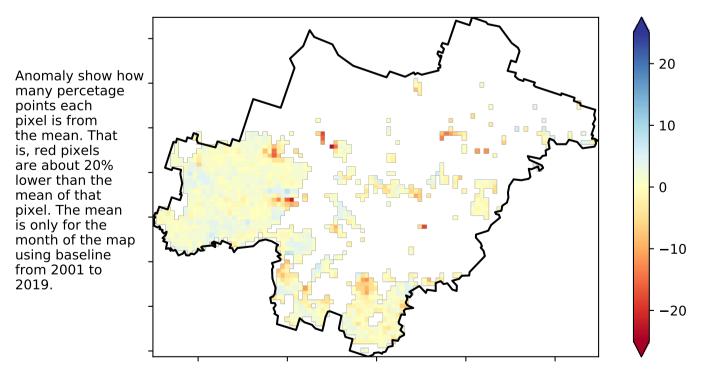
## % Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)



## Total Vegetation Cover Anomaly [%]



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**Total Vegetation Cover Decile [%]** 

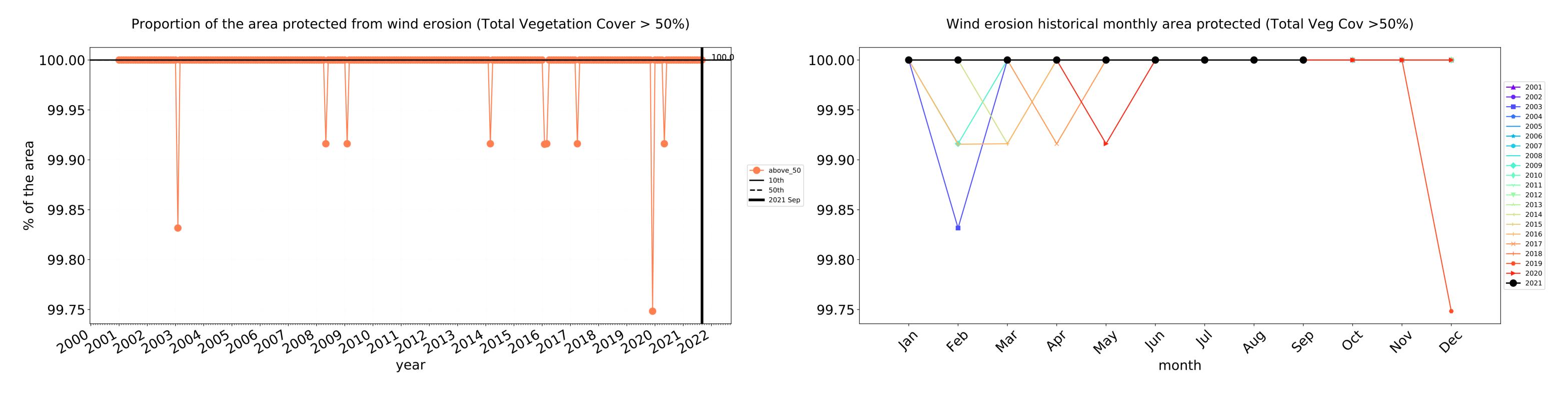
## tern Ecosystem Research Infrastructure

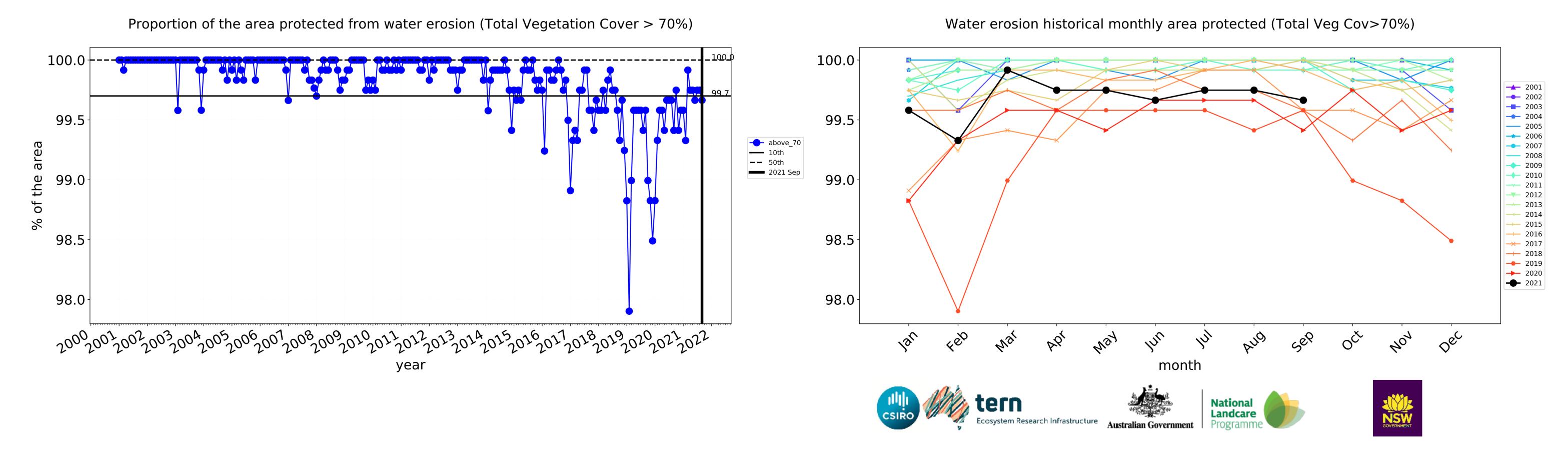


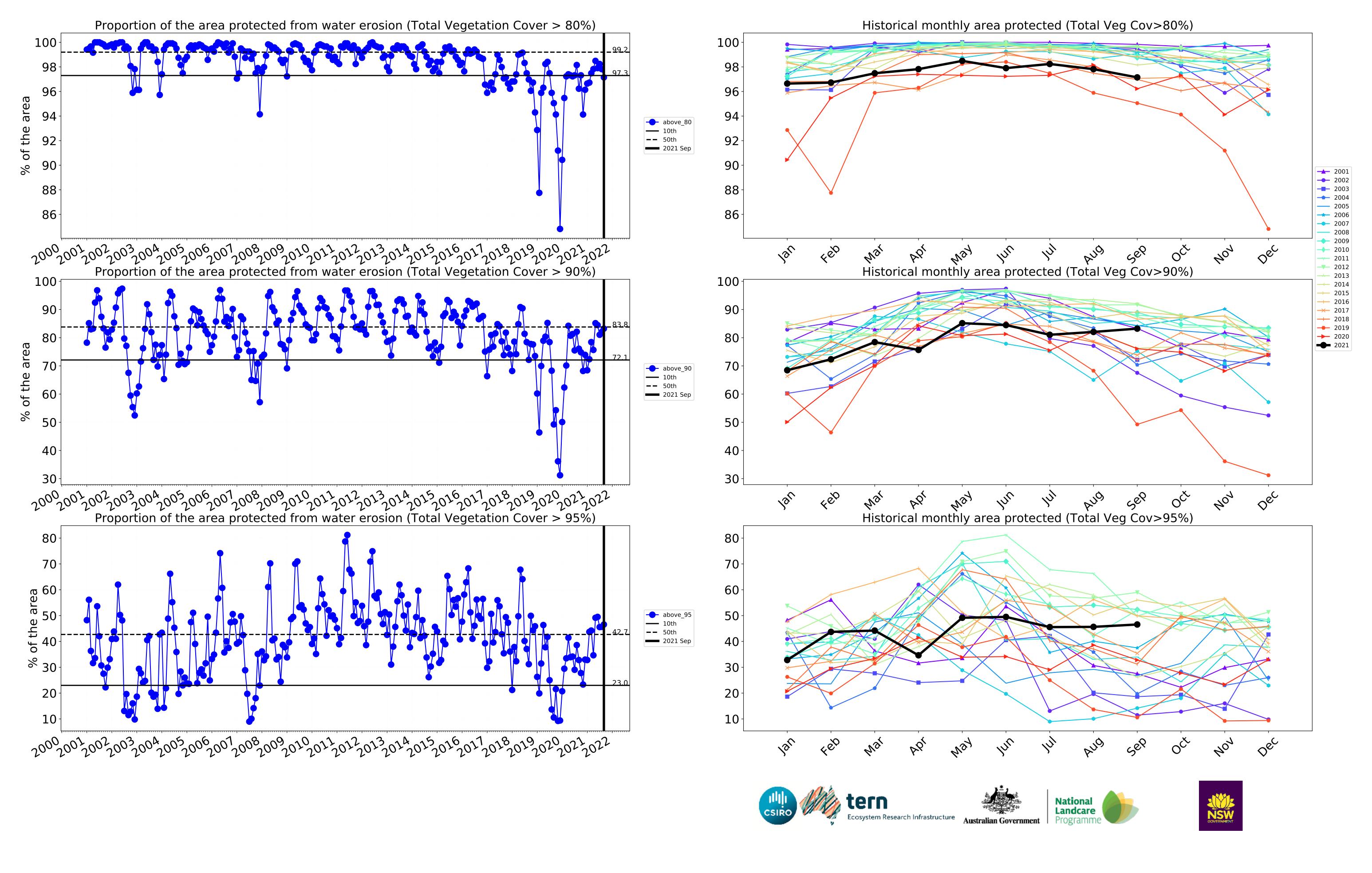




## **Grazing timeseries**





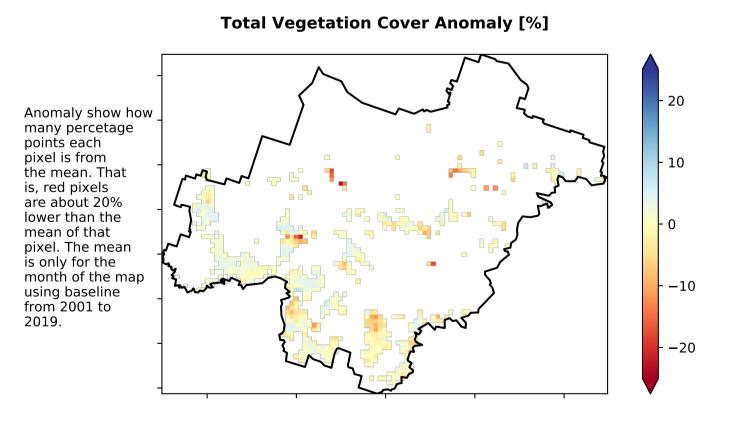


## **Grazing non forest**

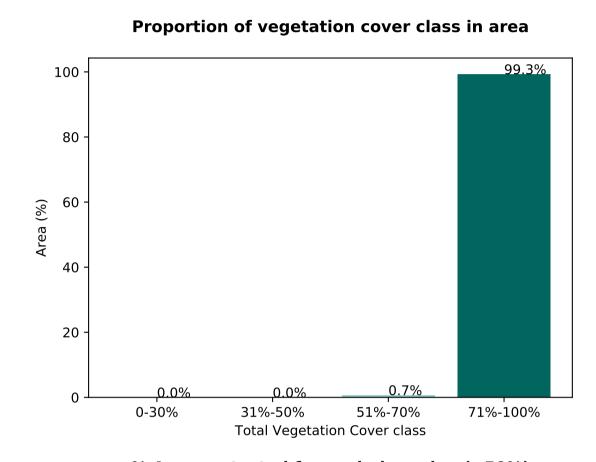
## Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) (2018) and Forests of Australia (2018)

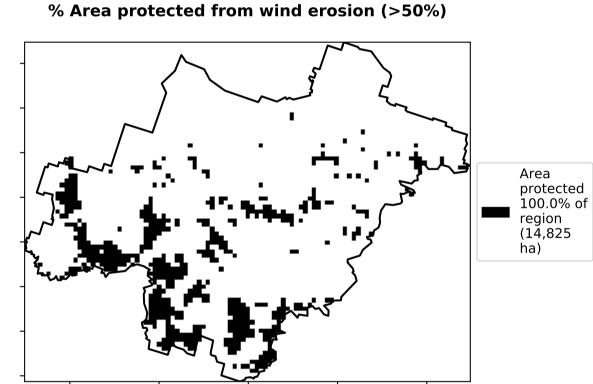
# Total Vegetation Cover [%] Type of the last of the state of the state

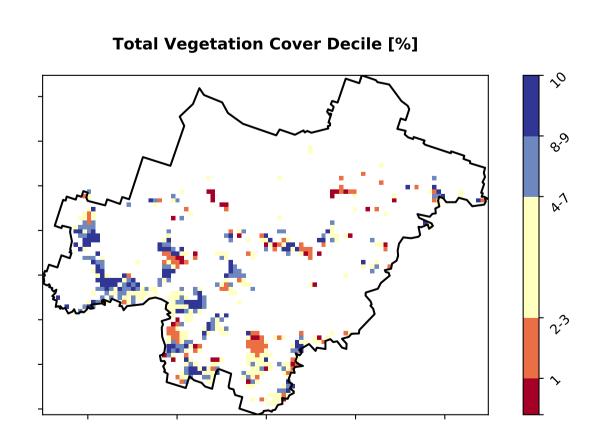
## Area not protected 0.7% of region (103 ha) Area protected 99.3% of region (14,721 ha)



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







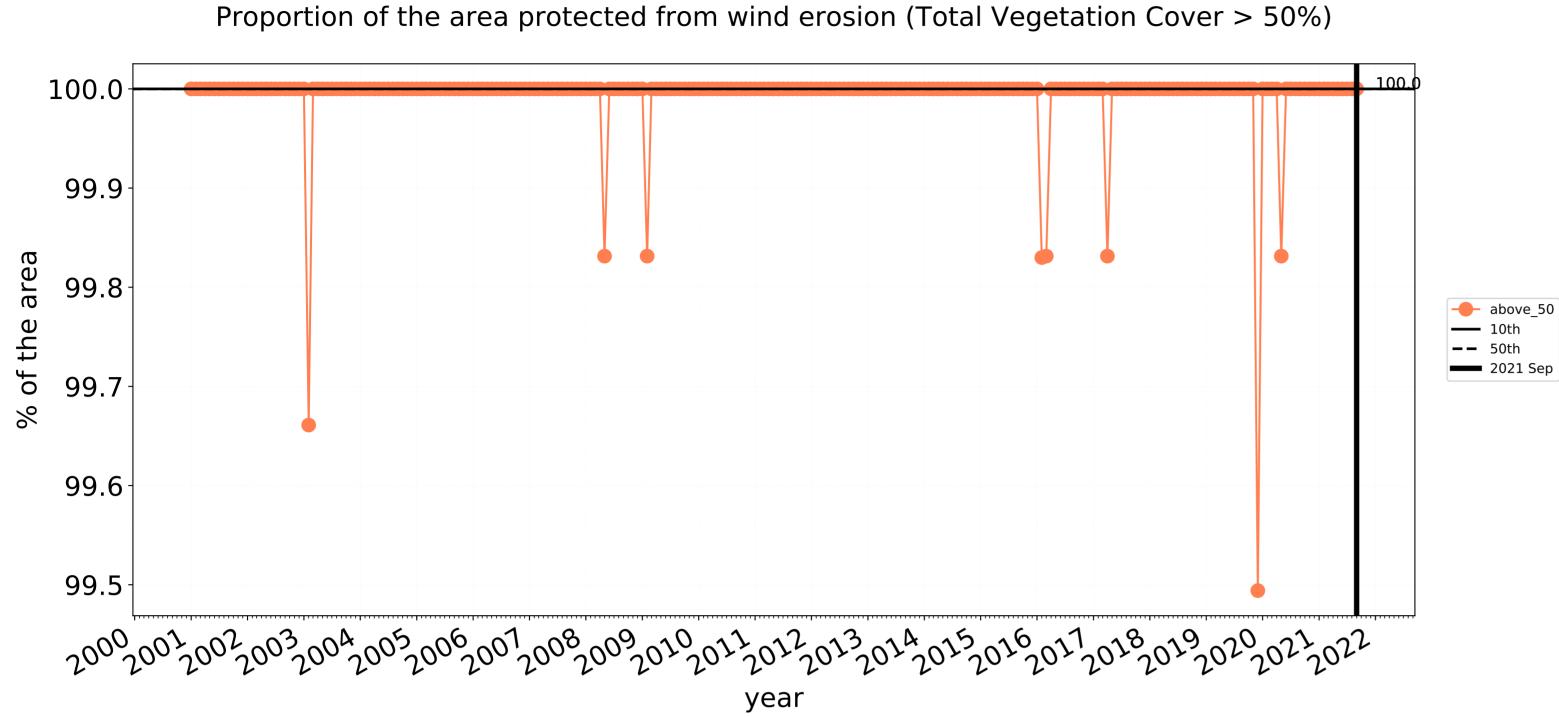


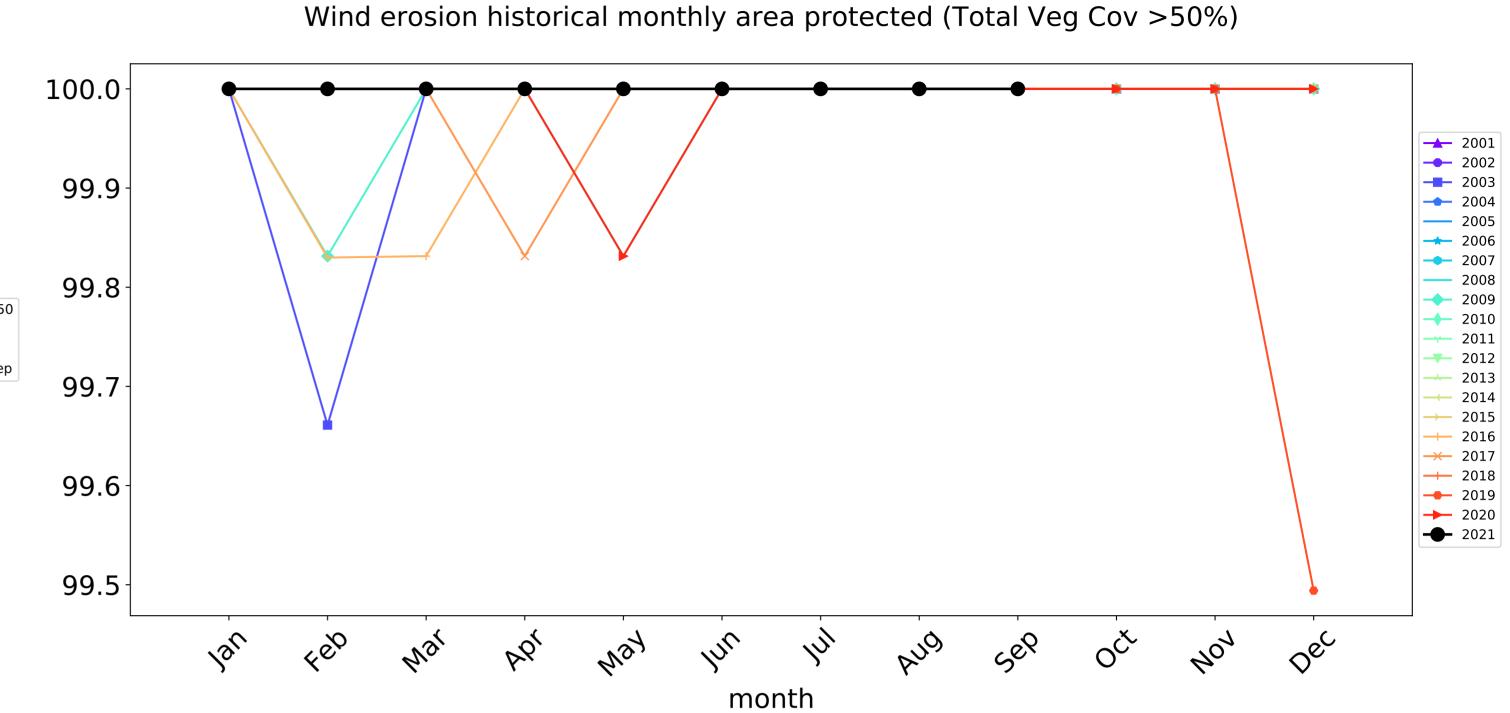


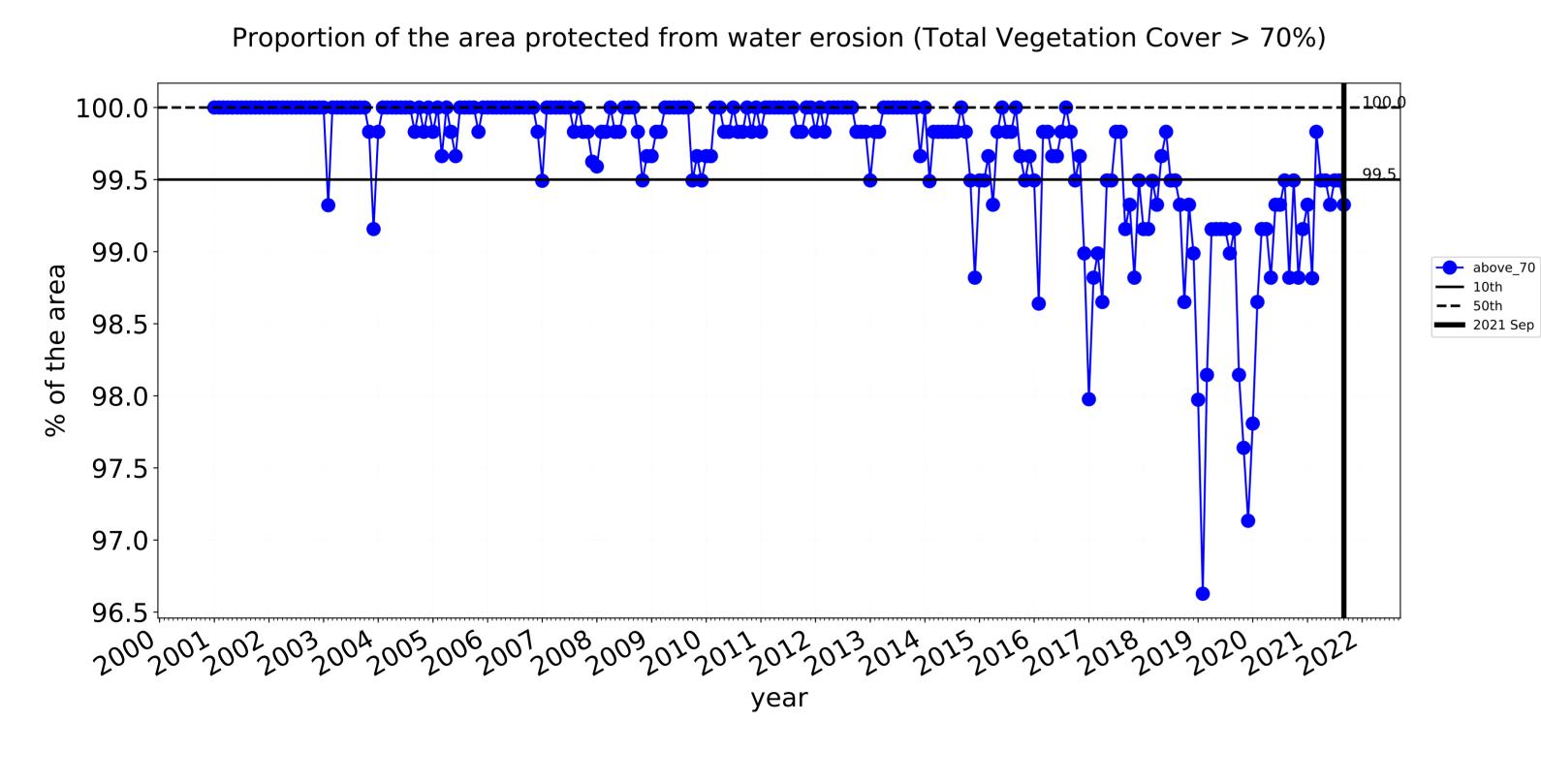


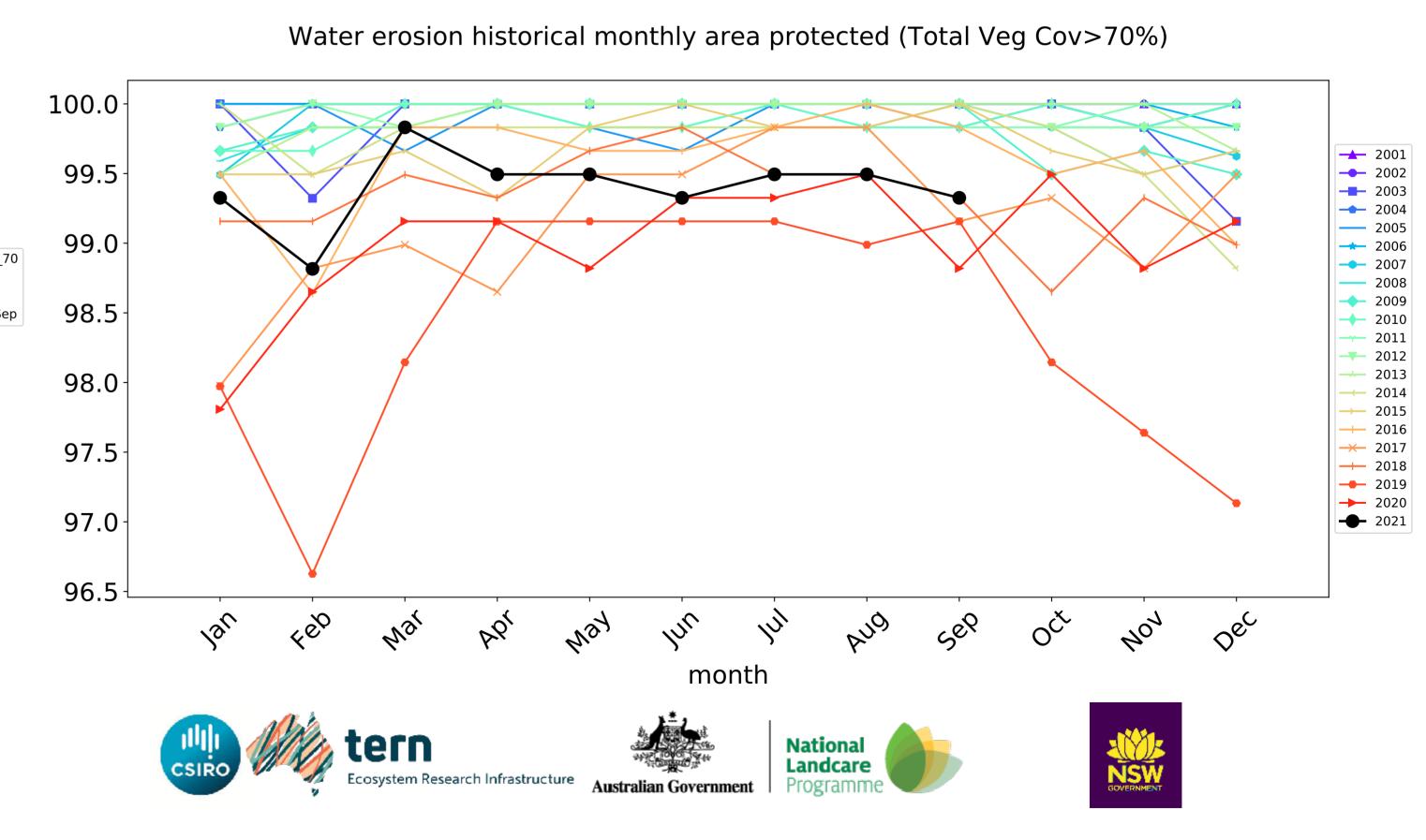


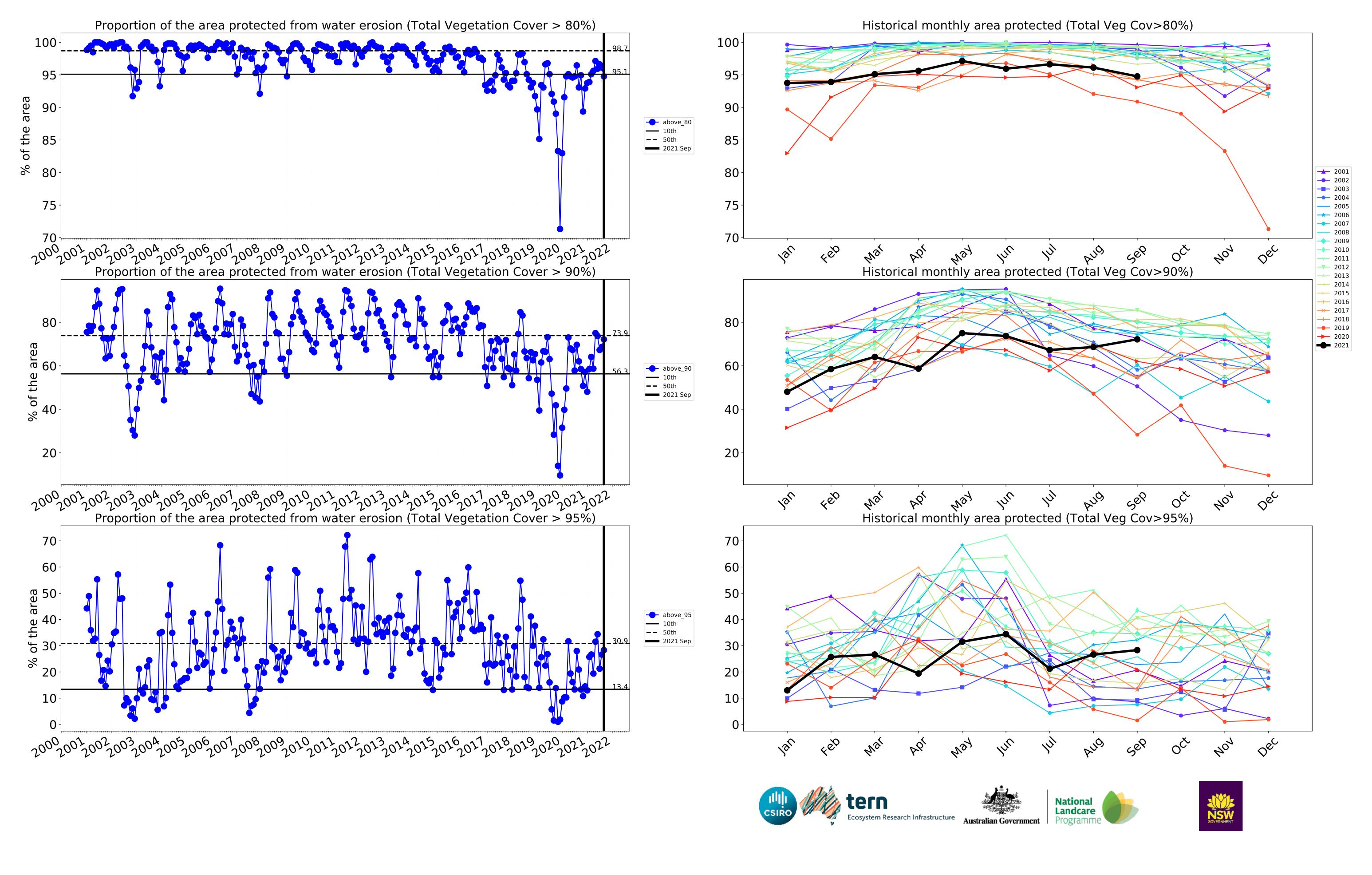
## **Grazing non forest timeseries**









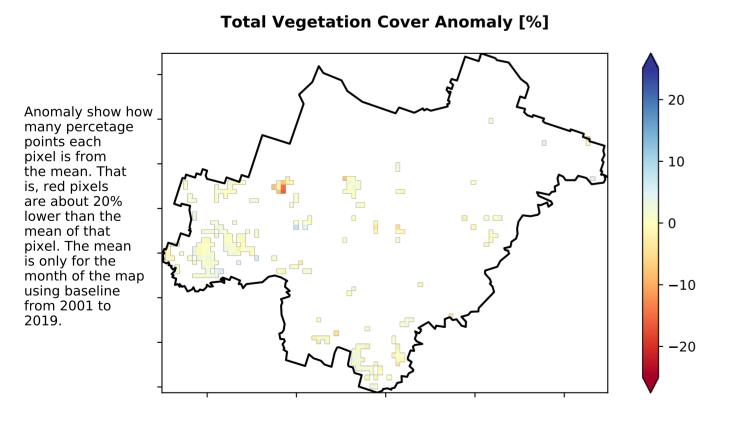


## **Grazing Woodland forest**

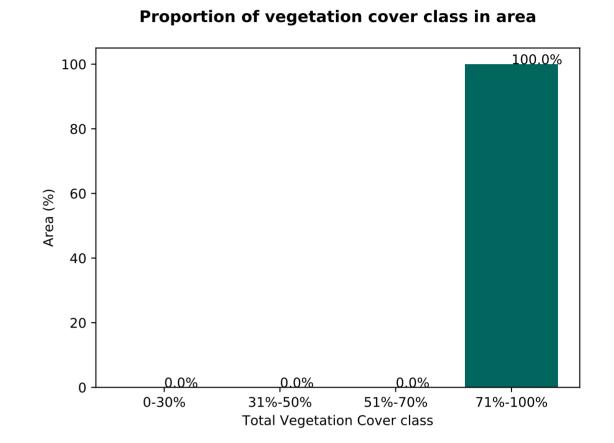
## Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

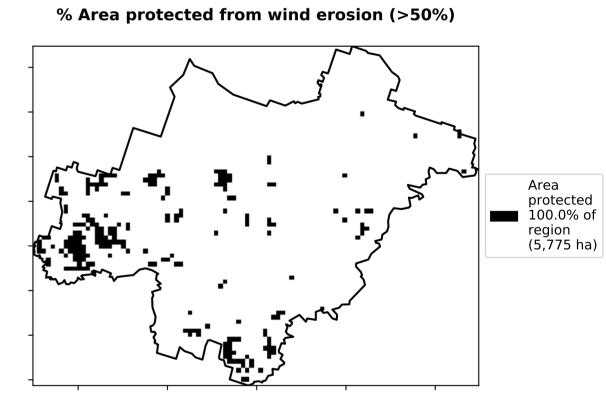
## Total Vegetation Cover [%]

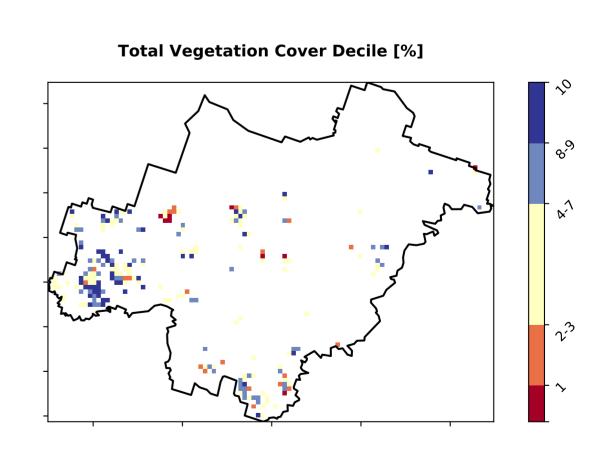
# % Area protected from water erosion (>70%) Area protected 100.0% of region (5,775 ha)











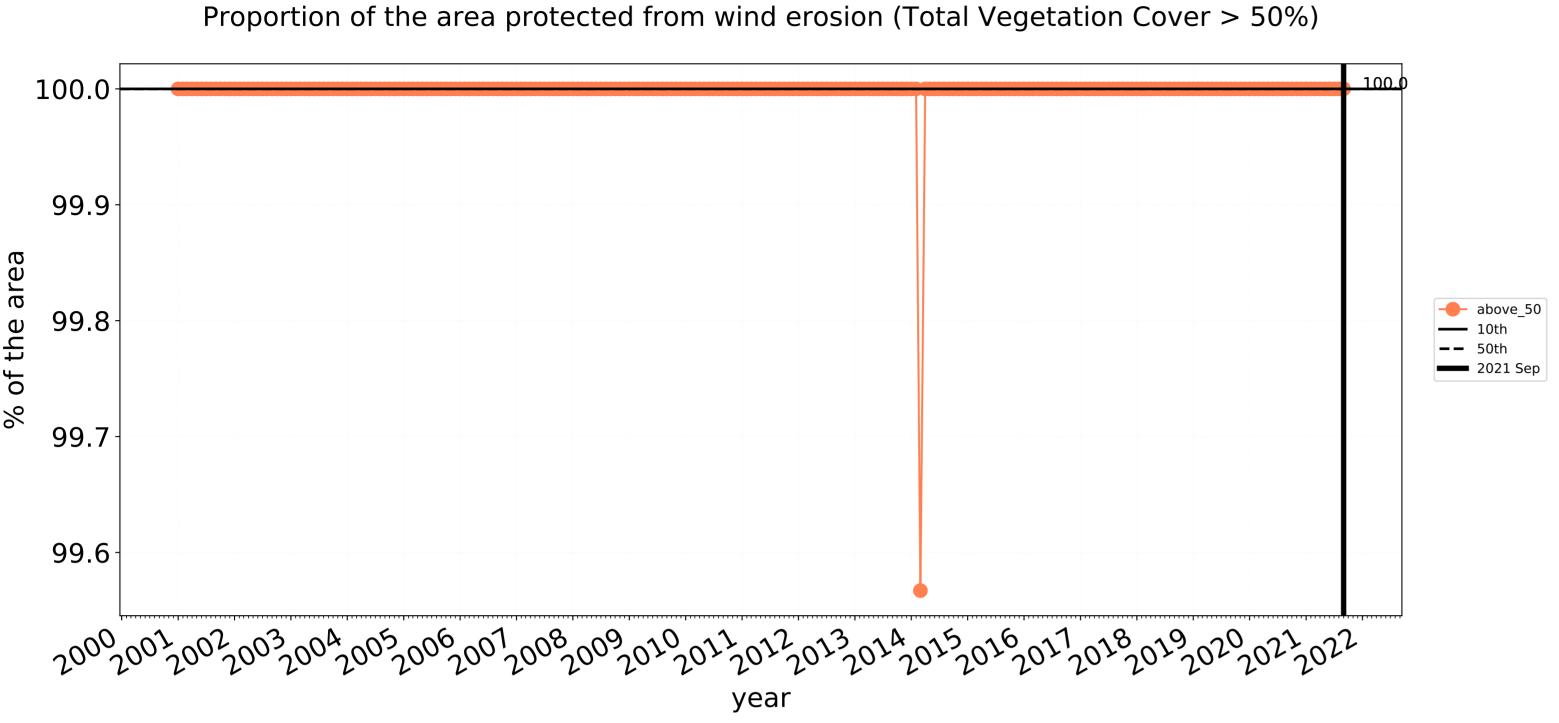


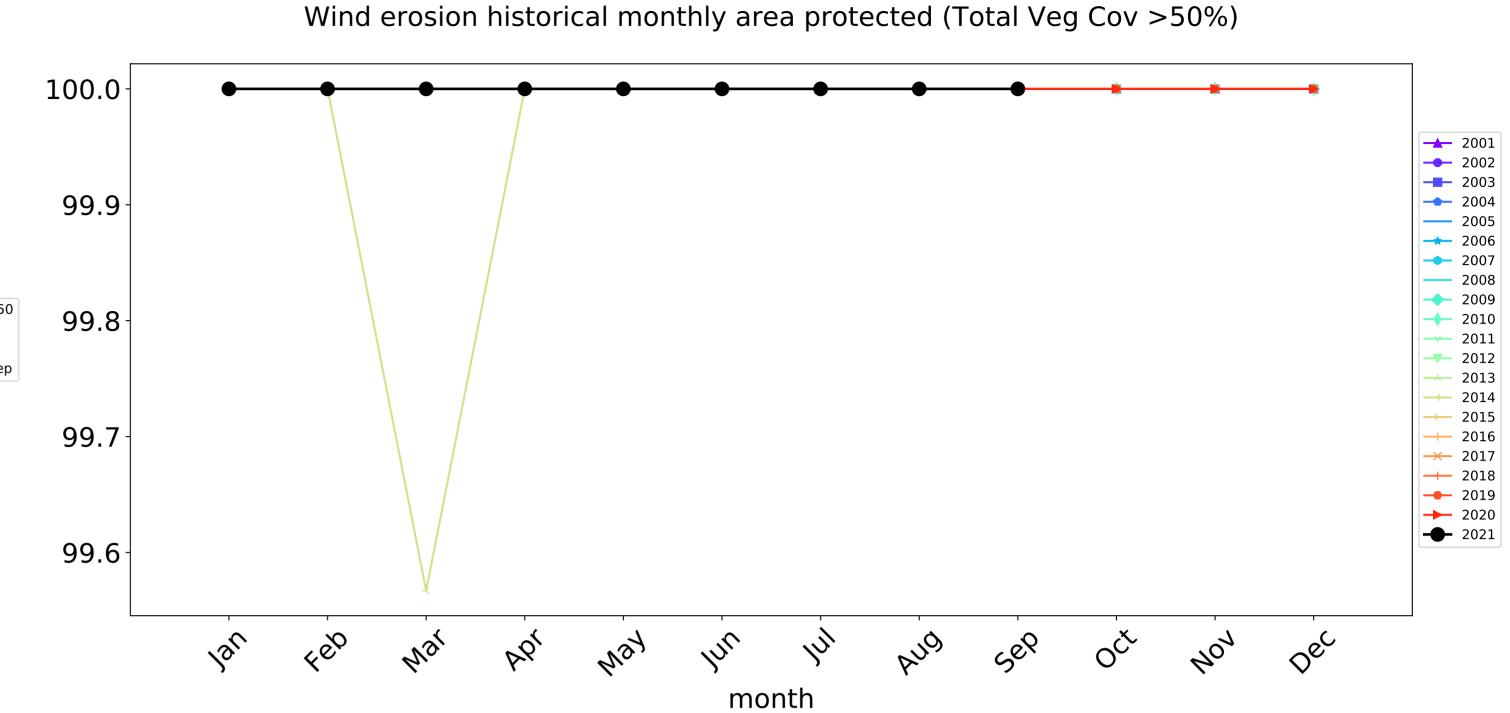


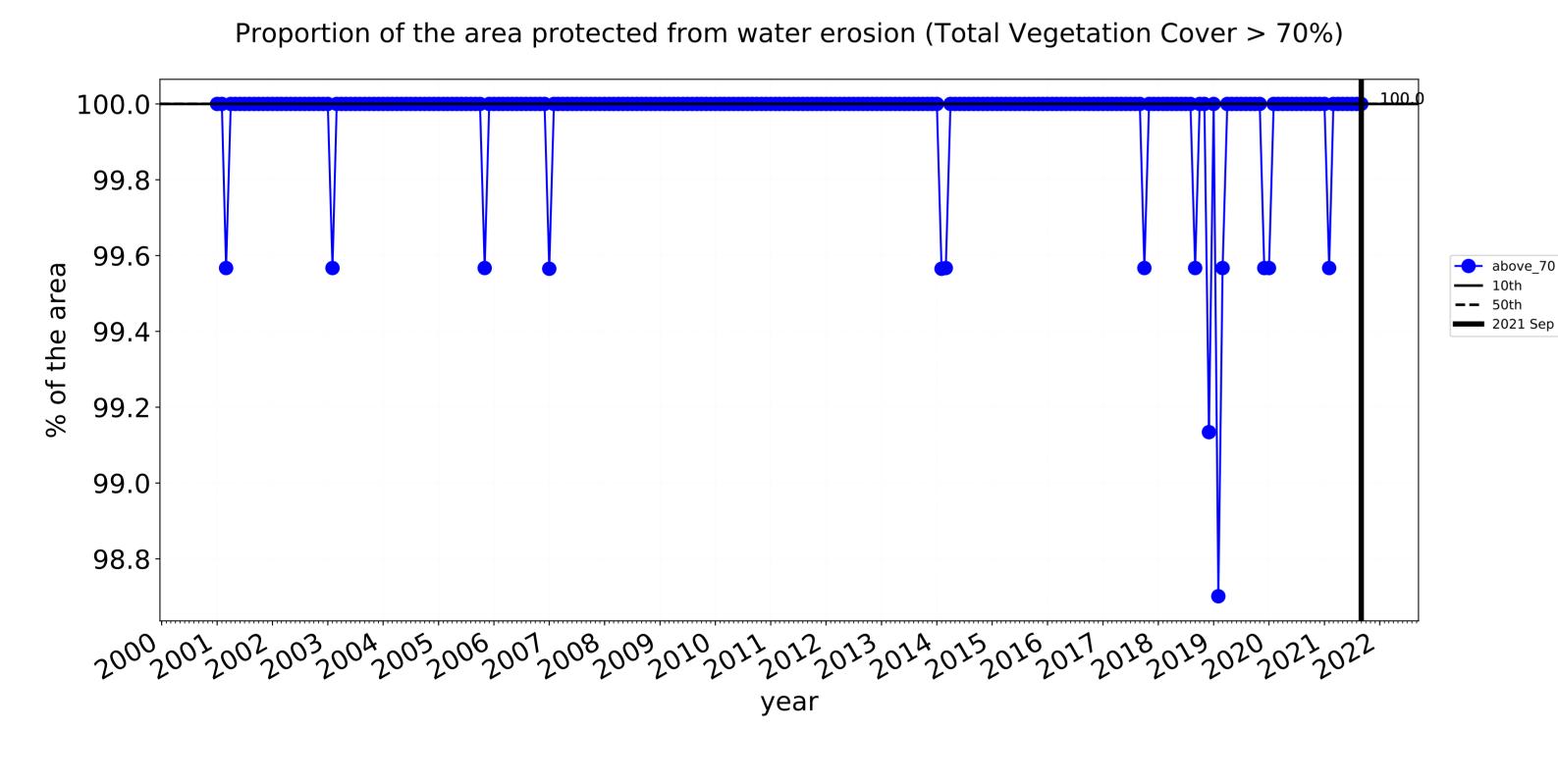


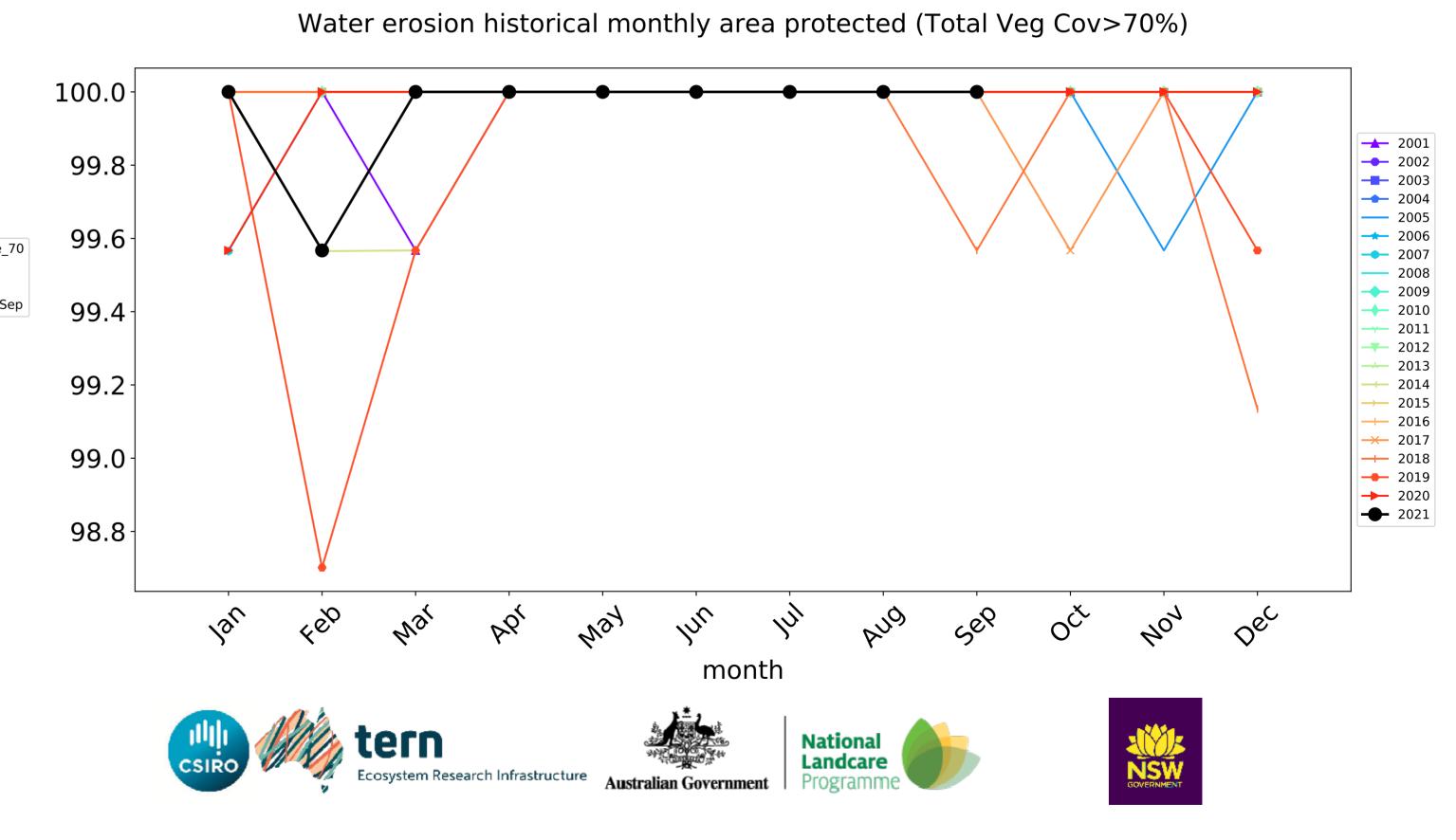


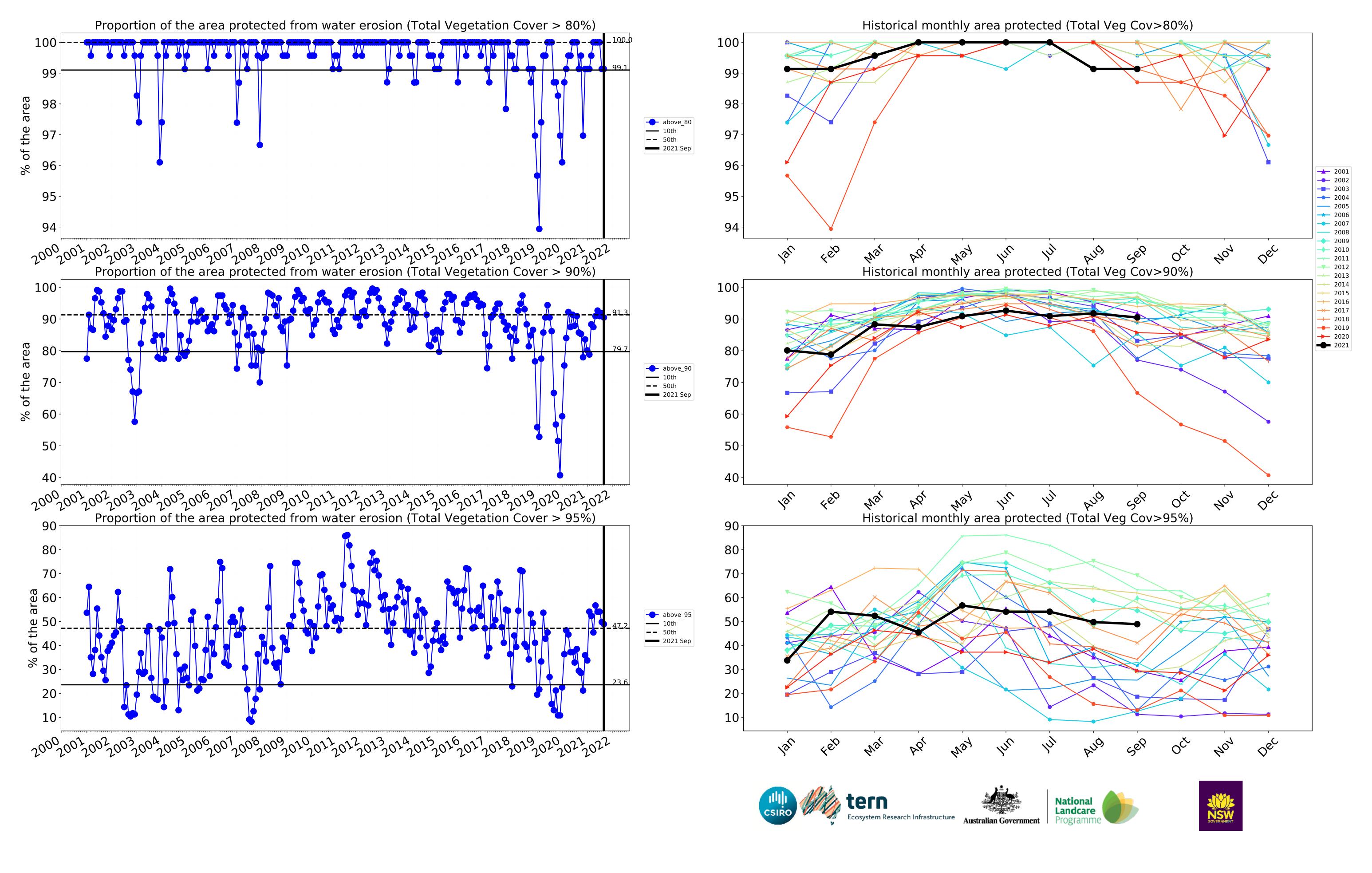
## **Grazing Woodland forest timeseries**









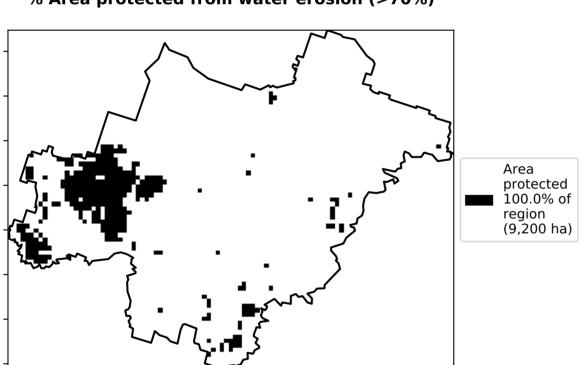


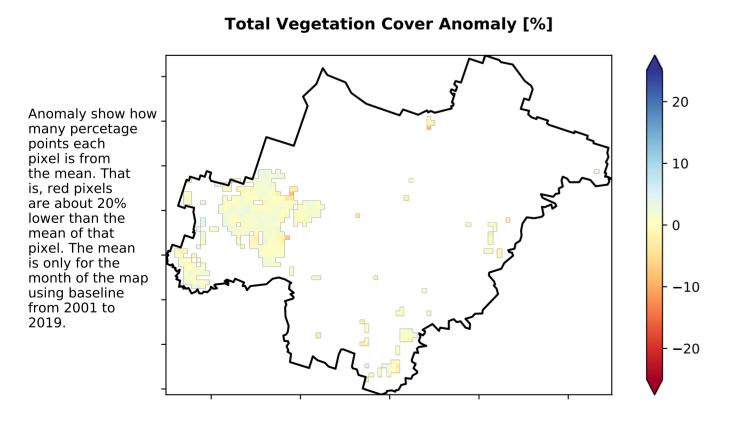
## **Grazing - Forest (non woodland)**

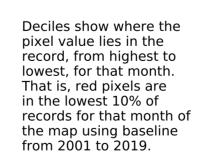
## Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) 1 Agriculture - Grazing - Non-woodland forest of Australia (2018)

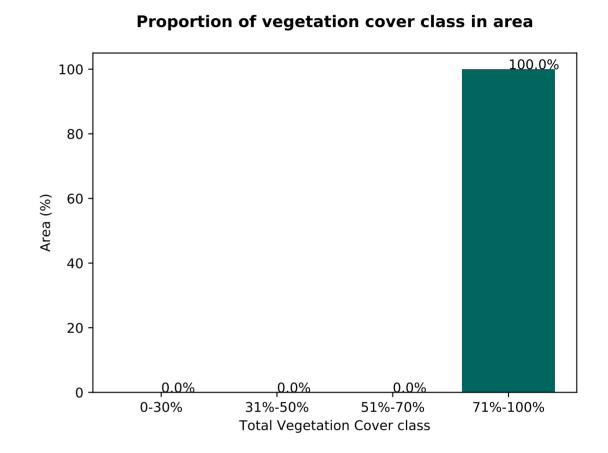
## **Total Vegetation Cover [%]**

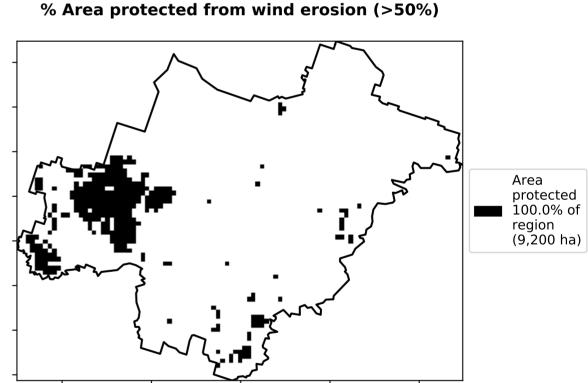
## % Area protected from water erosion (>70%)

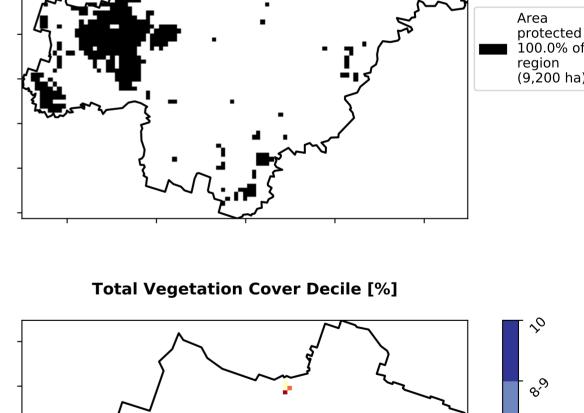


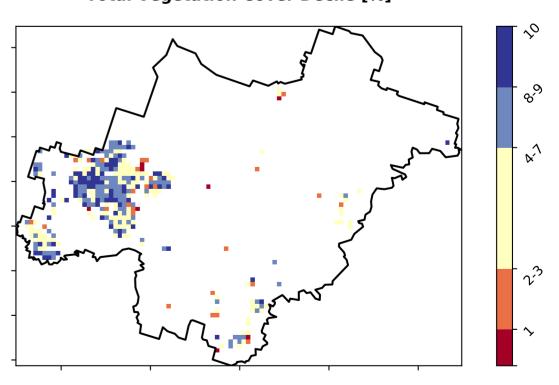










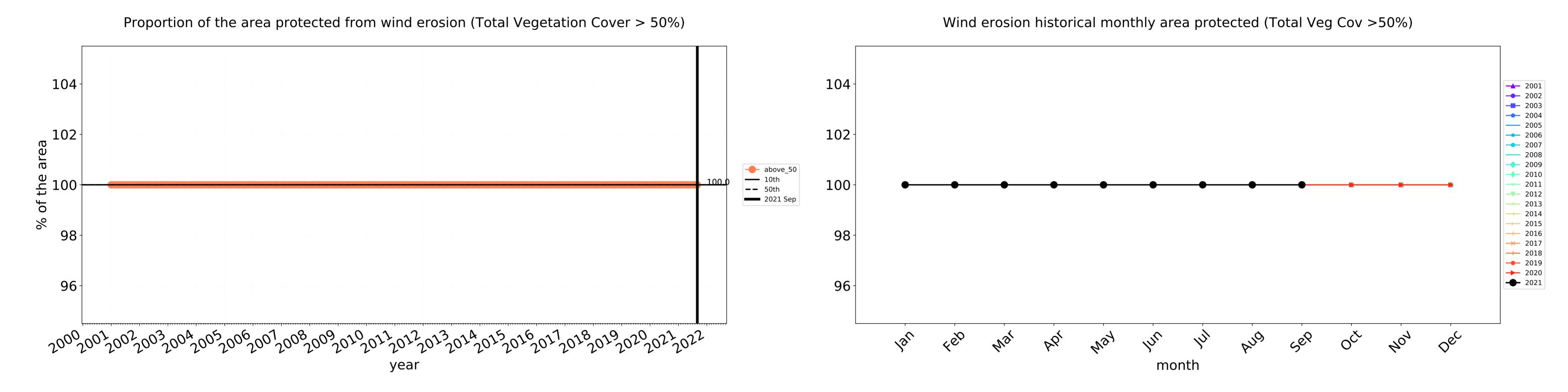


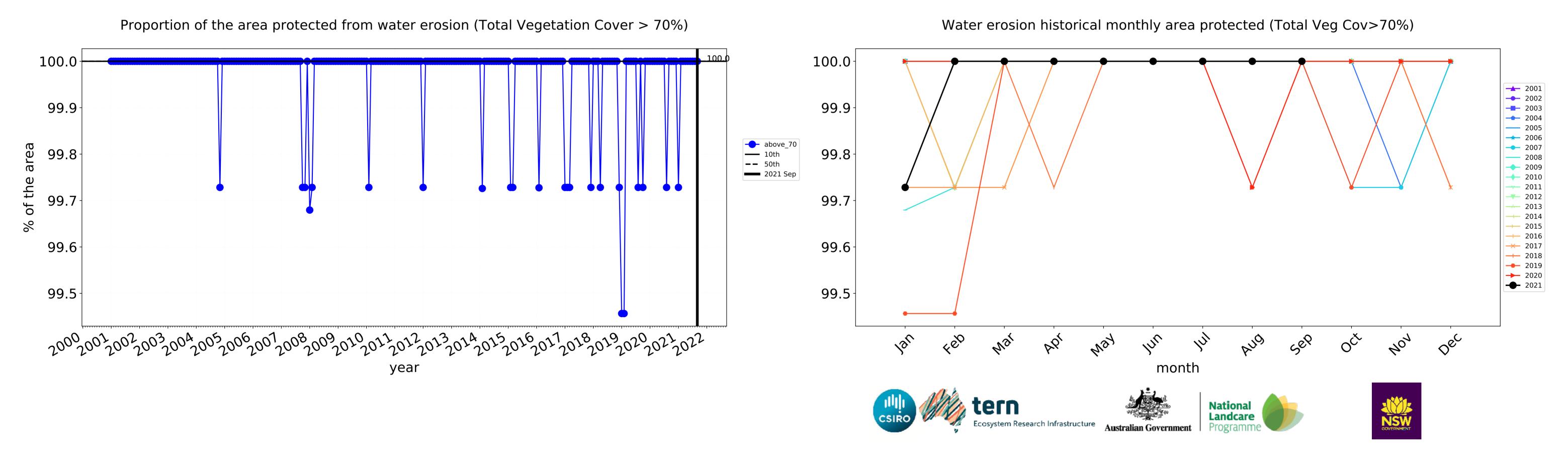


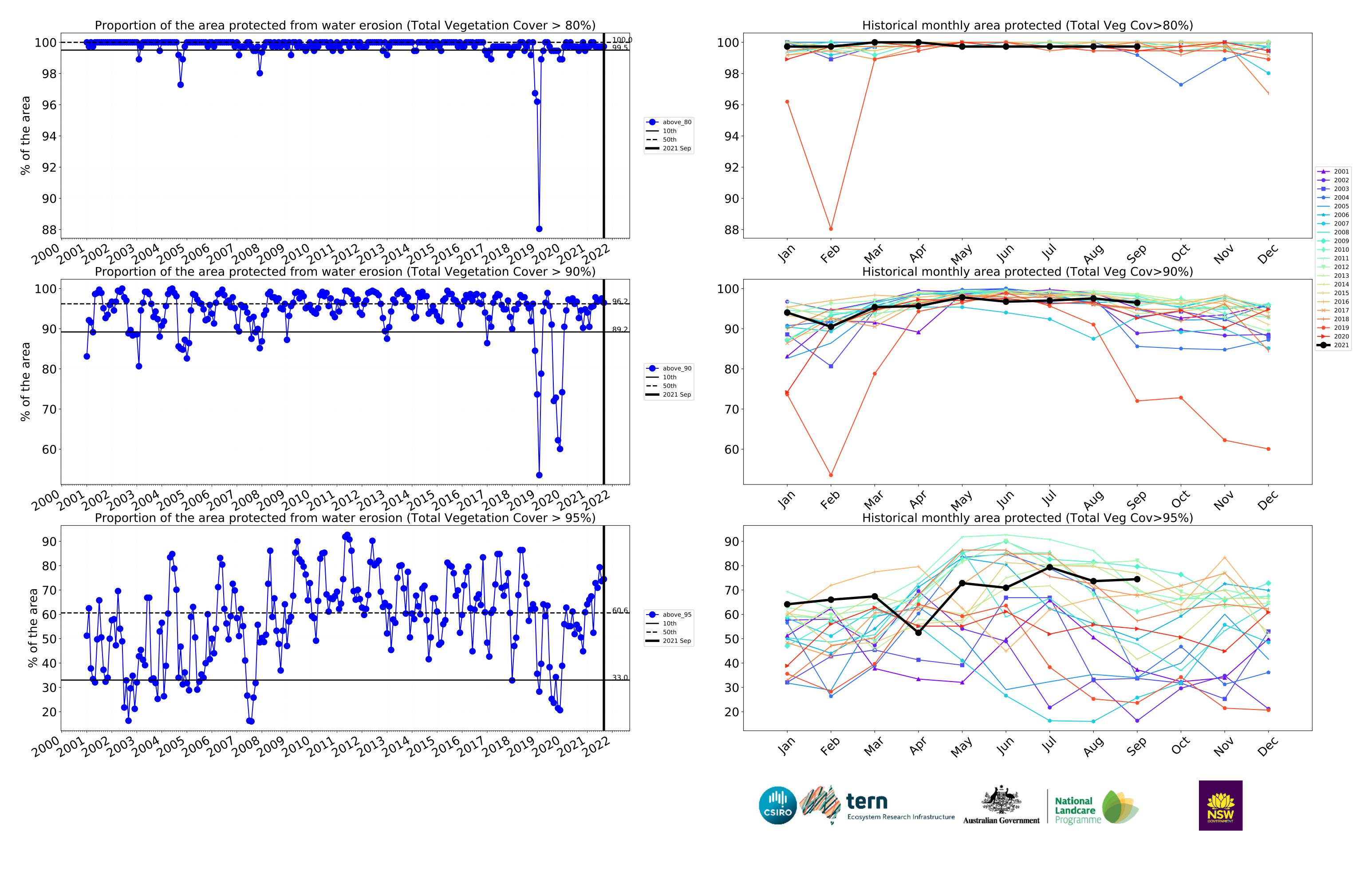




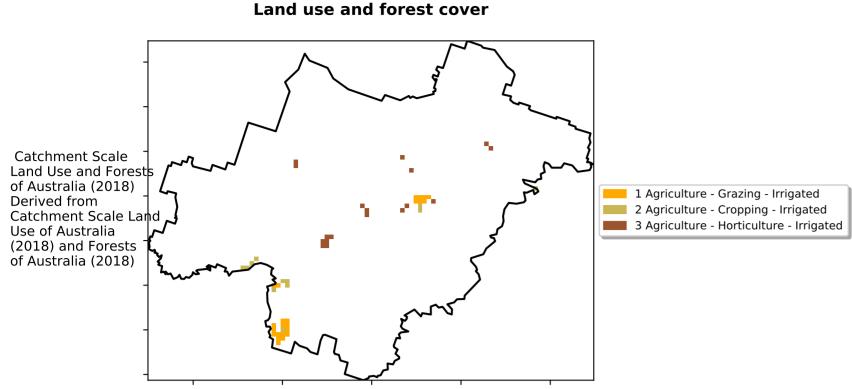




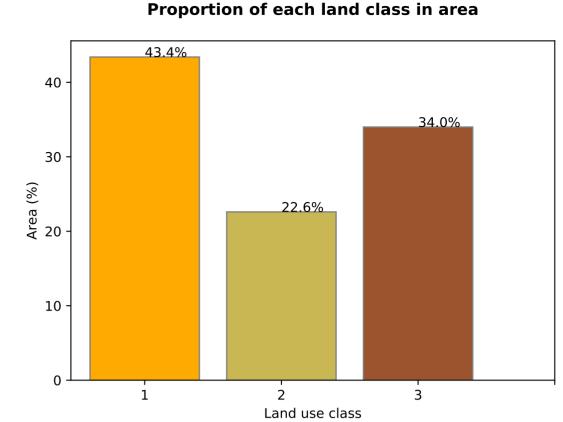


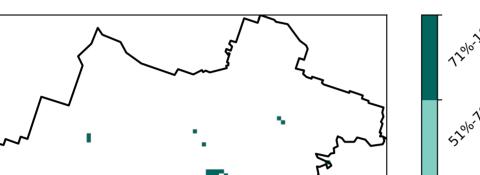


## Irrigation

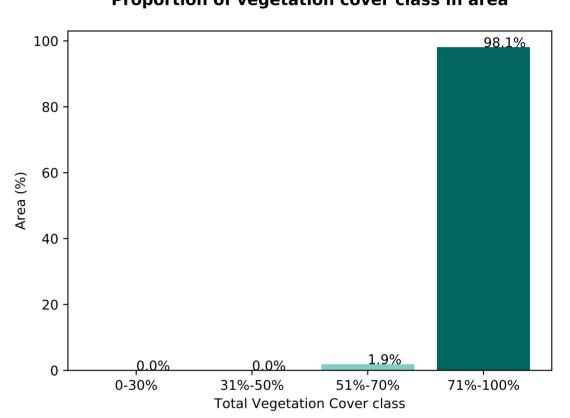


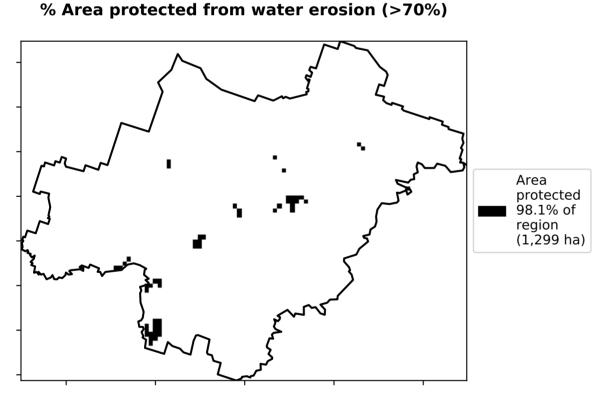
# **Total Vegetation Cover [%]**



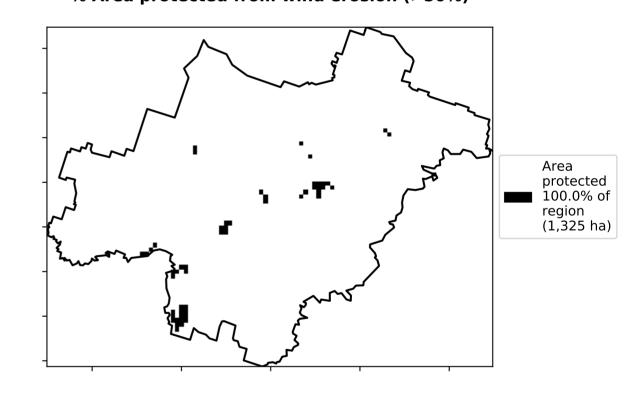


Proportion of vegetation cover class in area

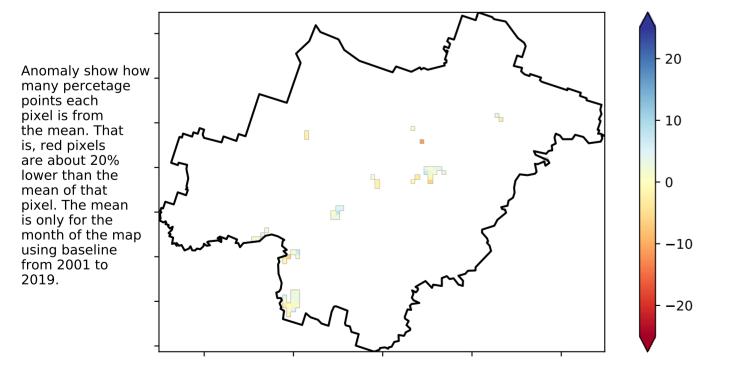




% Area protected from wind erosion (>50%)

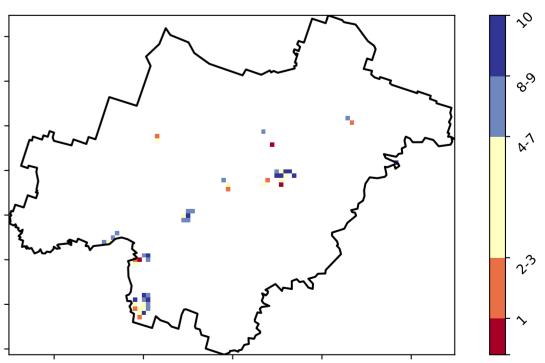


## **Total Vegetation Cover Anomaly [%]**



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 man using baseling. the map using baseline from 2001 to 2019.

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

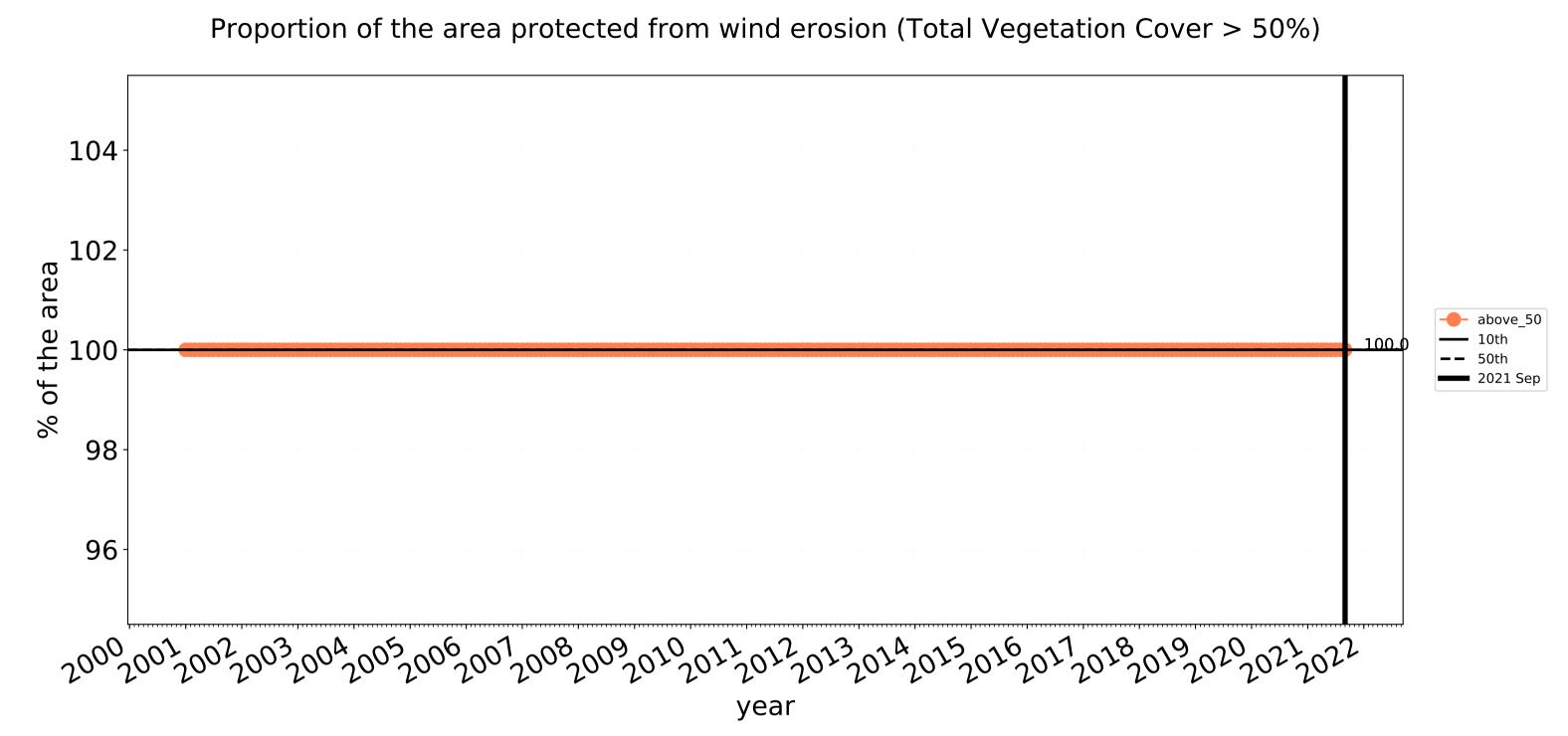


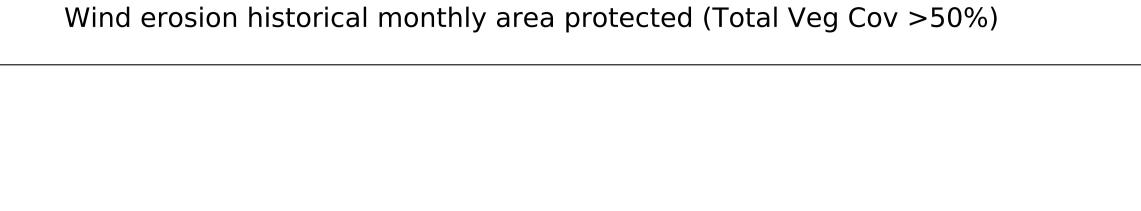


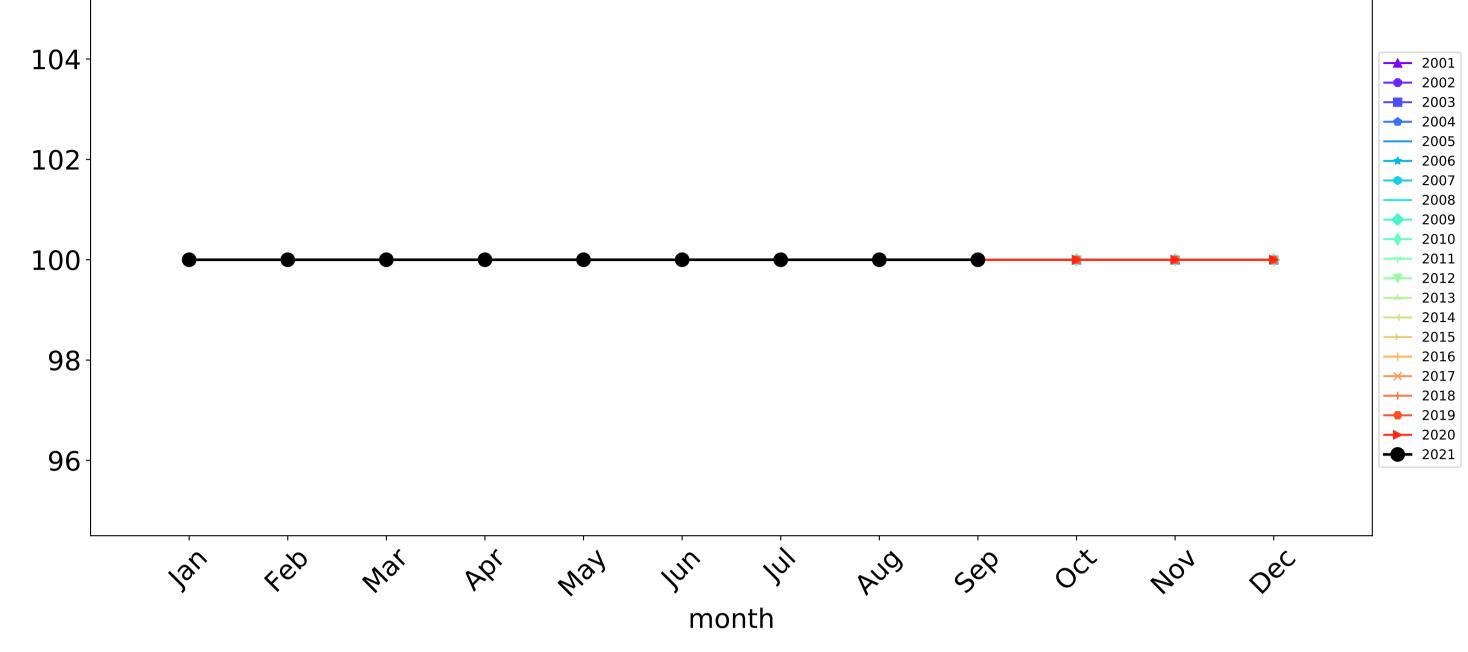


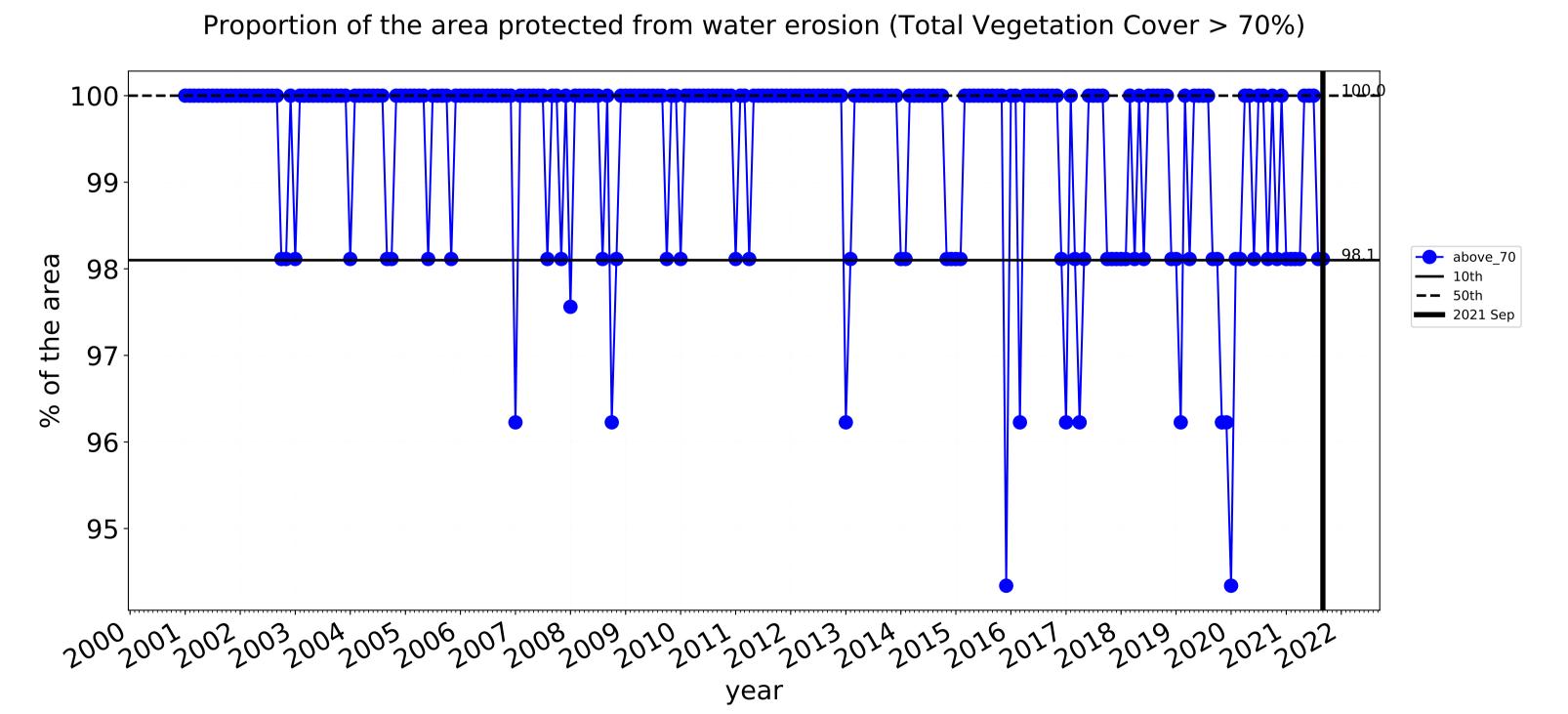


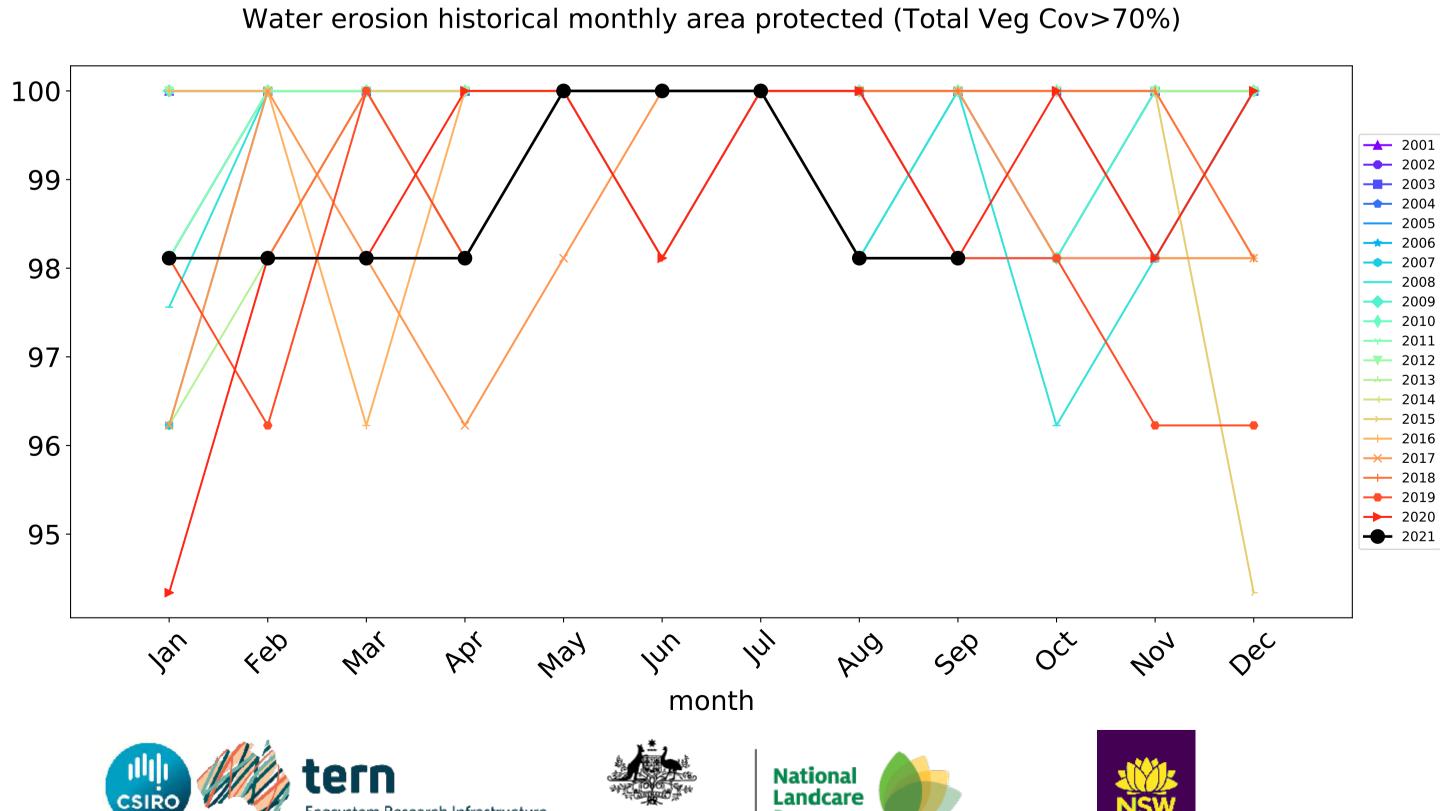


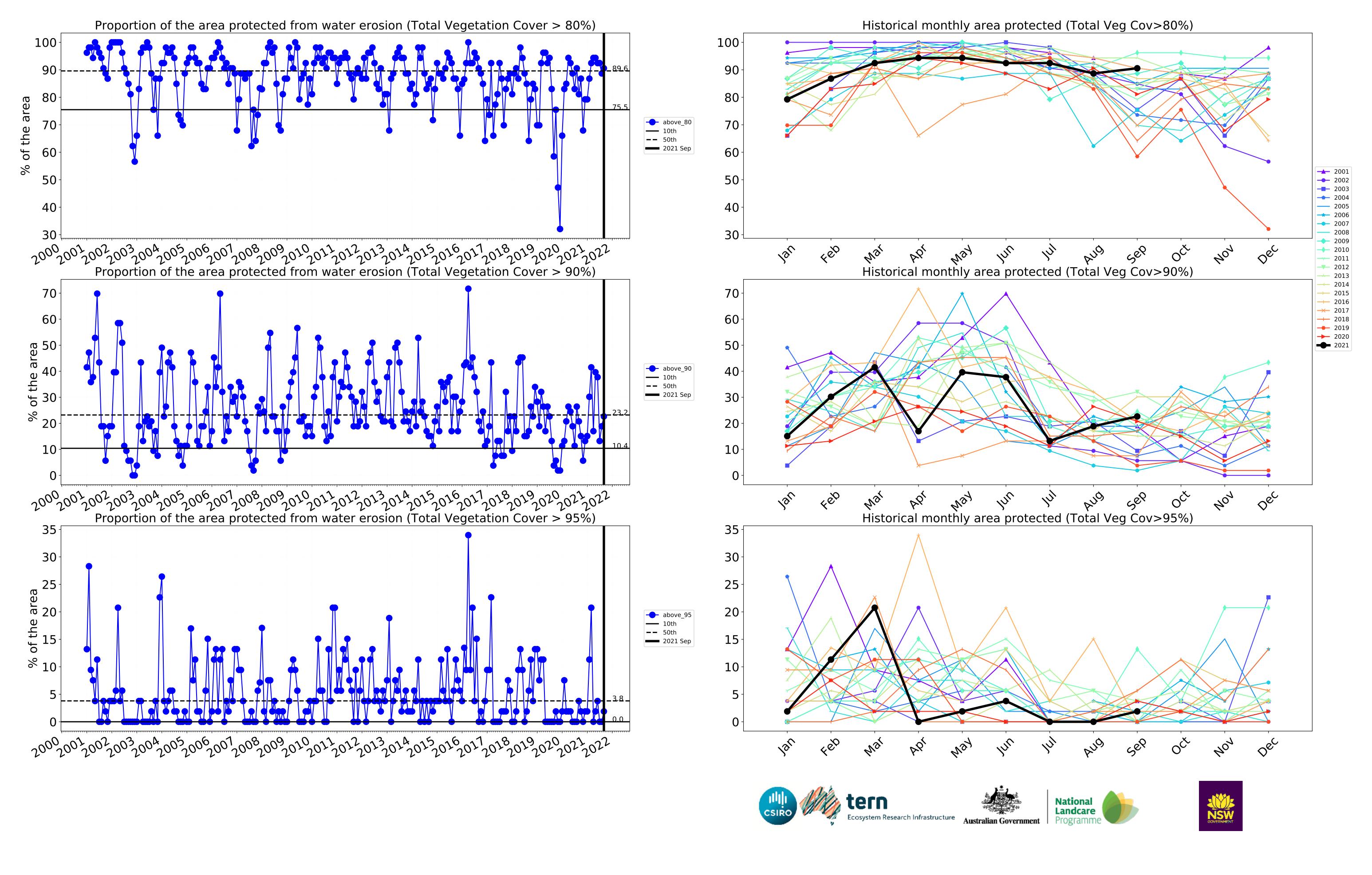








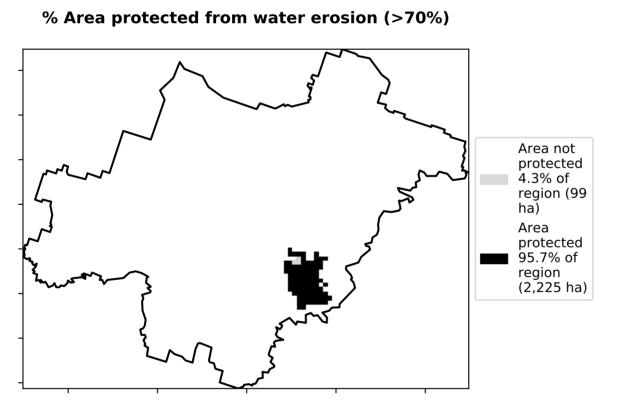


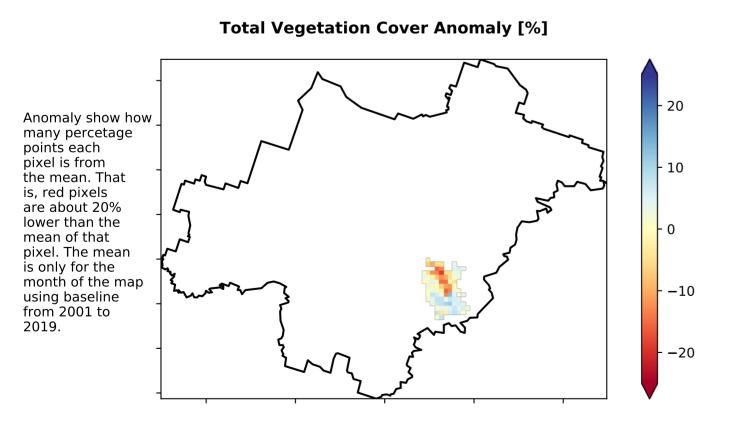


## **Production native forests and plantation forests**

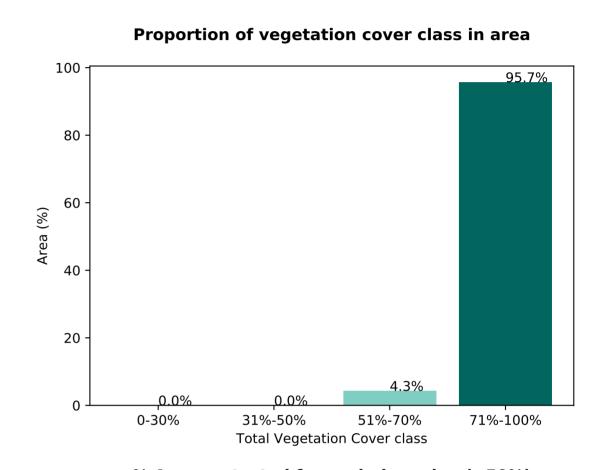
## Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Production native forests and plantation forests Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

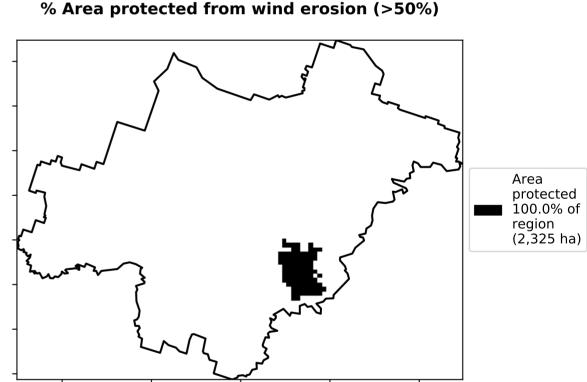
# **Total Vegetation Cover [%]**

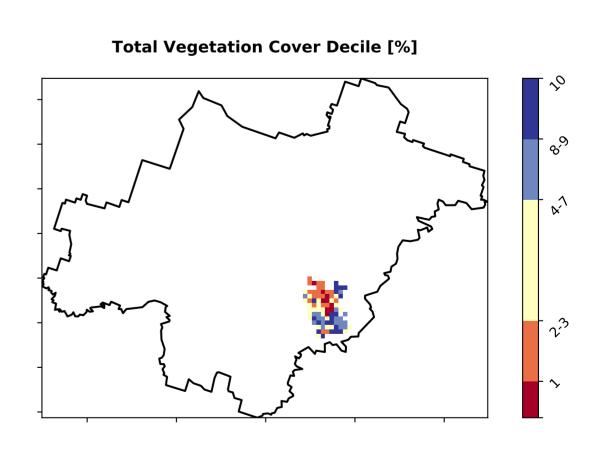




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseling. the map using baseline from 2001 to 2019.







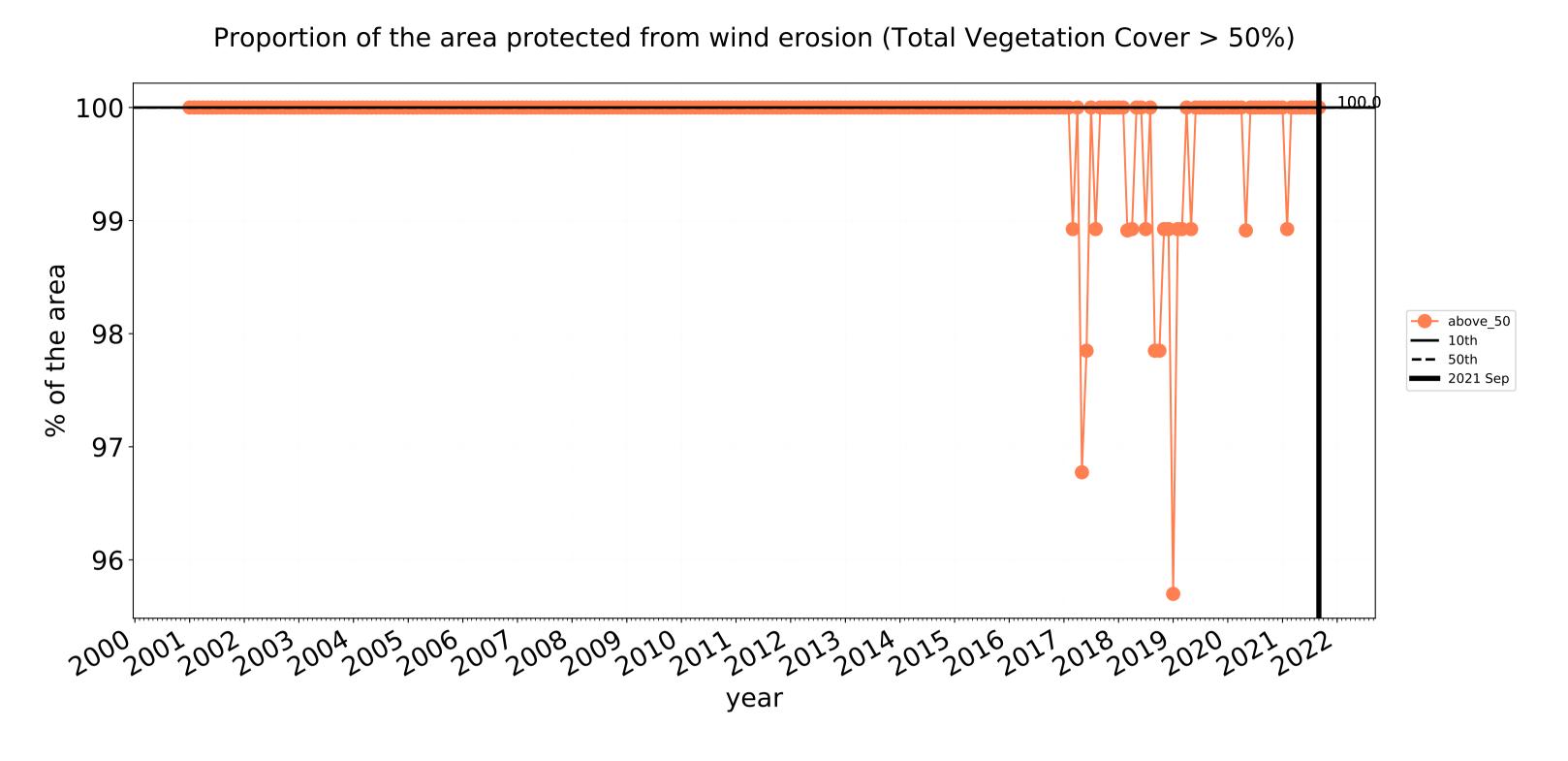


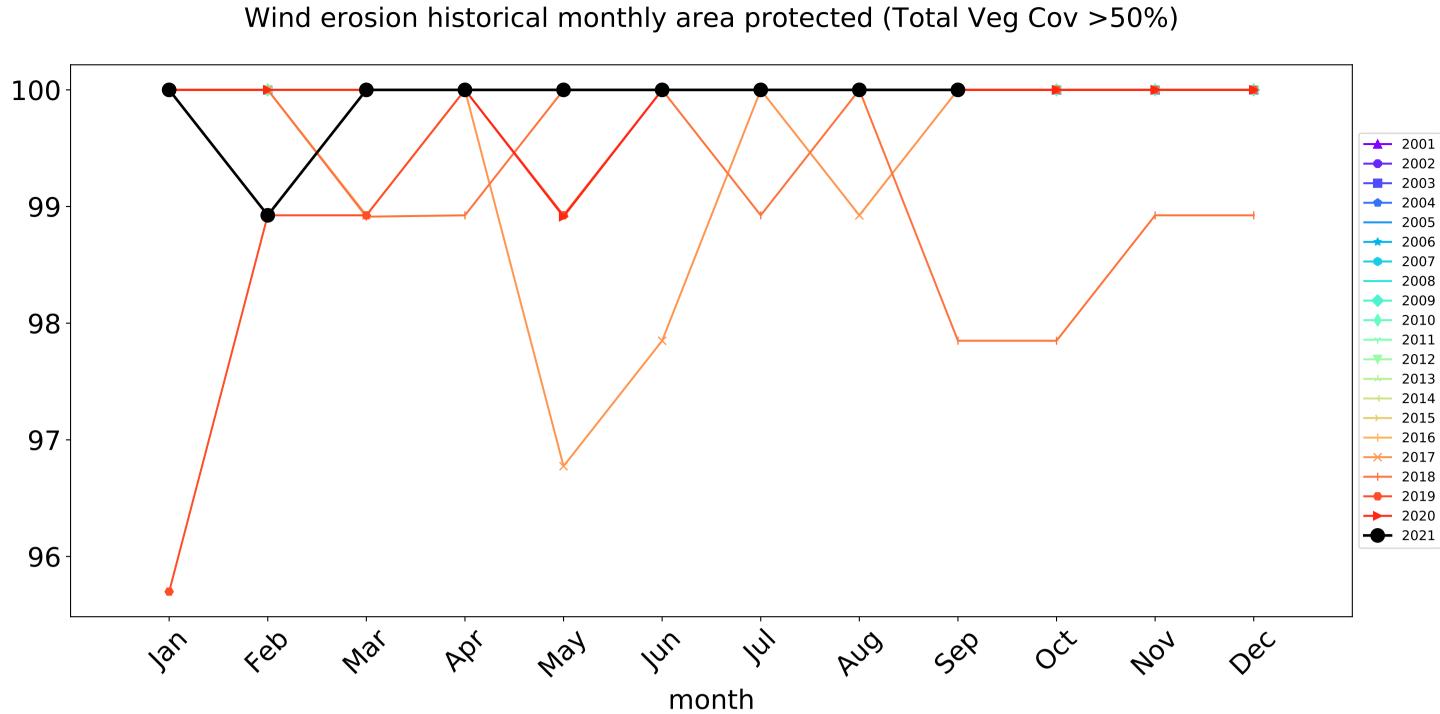


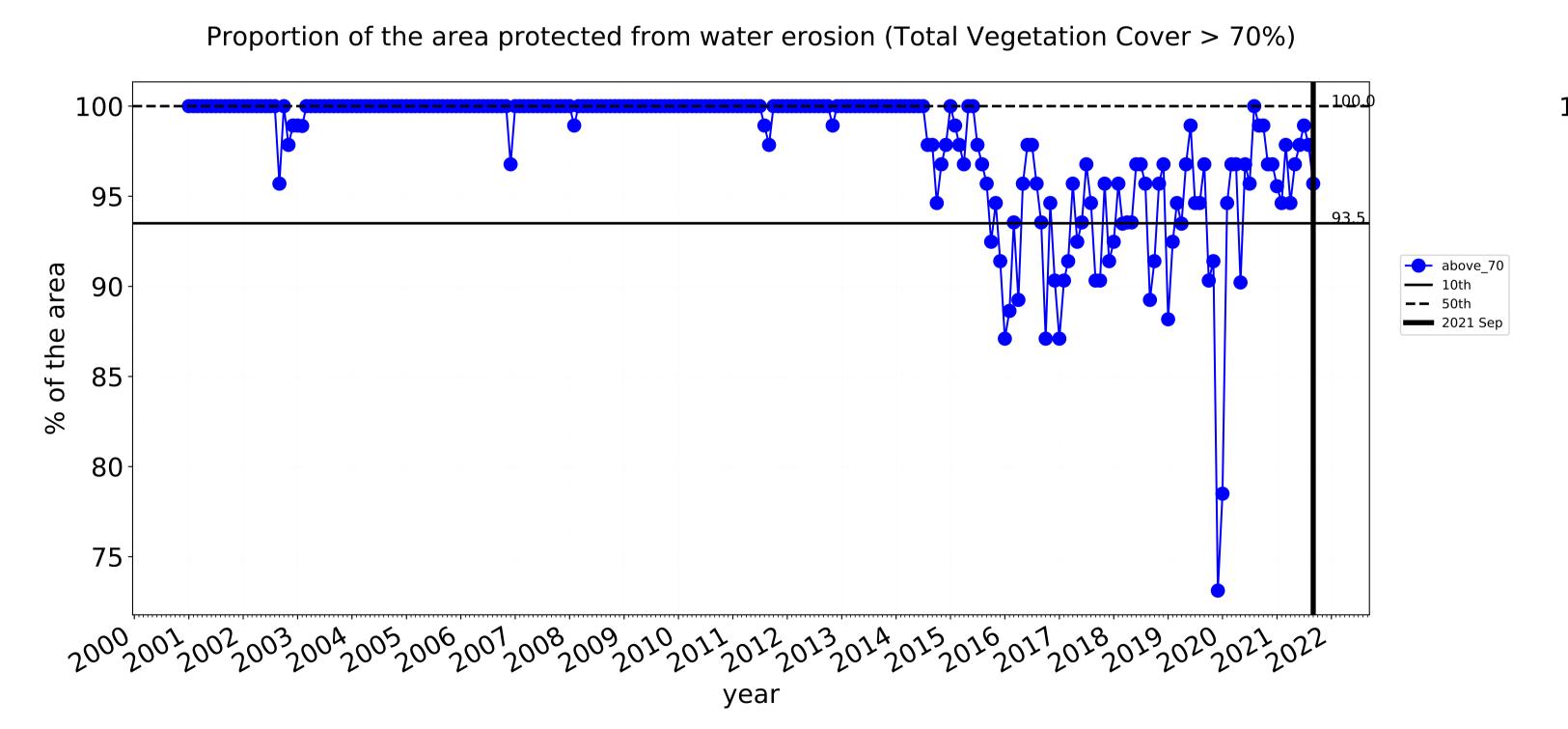


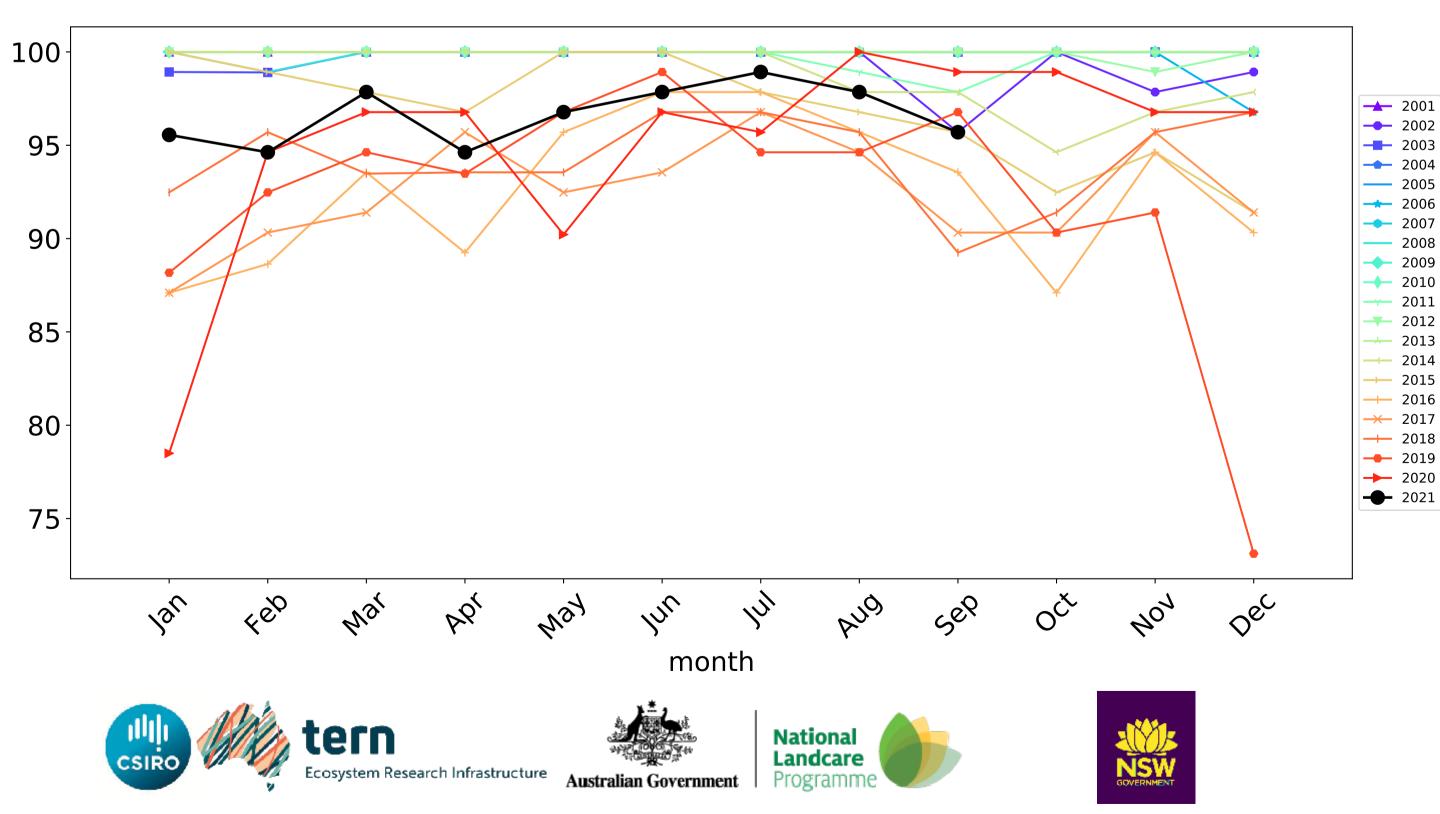


## **Production native forests and plantation forests timeseries**

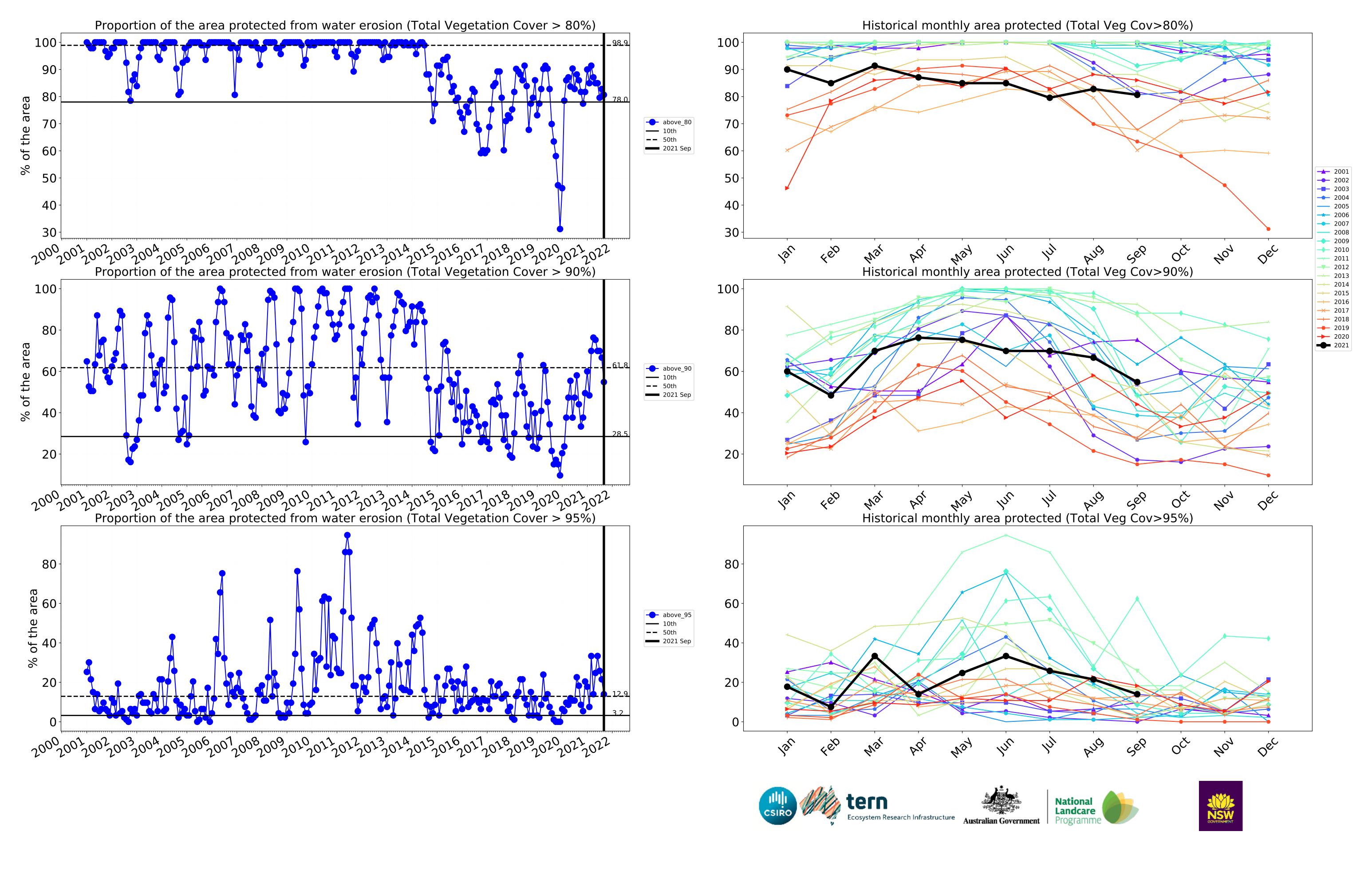








Water erosion historical monthly area protected (Total Veg Cov>70%)



## Logan\_(C) (total 95,925 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	95,925	100.0% 95,925	99.9% 95,850	95.4% 91,475	85.1% 81,650	60.7% 58,225	23.9% 22,900
Conservation and natural environments	10,775	100.0% 10,775	100.0% 10,775	99.8% 10,750	98.1% 10,575	91.2% 9,825	62.4% 6,725
Conservation and natural environments Woodland forest	2,675	100.0% 2,675	100.0% 2,675	100.0% 2,675	99.1% 2,650	88.8% 2,375	65.4% 1,750
Conservation and natural environments Forest (non woodland)	7,950	100.0% 7,950	100.0% 7,950	99.7% 7,925	98.1% 7,800	93.1% 7,400	62.3% 4,950
Agriculture	31,325	100.0% 31,325	100.0% 31,325	99.5% 31,175	96.7% 30,300	80.4% 25,175	44.4% 13,900
Grazing	29,800	100.0% 29,800	100.0% 29,800	99.7% 29,700	97.1% 28,950	83.2% 24,800	46.6% 13,875
Grazing non forest	14,825	100.0% 14,825	100.0% 14,825	99.3% 14,725	94.8% 14,050	72.2% 10,700	28.3% 4,200
Grazing Woodland forest	5,775	100.0% 5,775	100.0% 5,775	100.0% 5,775	99.1% 5,725	90.5% 5,225	48.9% 2,825
Grazing - Forest (non woodland)	9,200	100.0% 9,200	100.0% 9,200	100.0% 9,200	99.7% 9,175	96.5% 8,875	74.5% 6,850
Irrigation	1,325	100.0% 1,325	100.0% 1,325	98.1% 1,300	90.6% 1,200	22.6% 300	1.9% 25
Production native forests and plantation forests	2,325	100.0% 2,325	100.0% 2,325	95.7% 2,225	80.6% 1,875	54.8% 1,275	14.0% 325







