## 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: February 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.

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:

Total vegetation Cover:

- 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



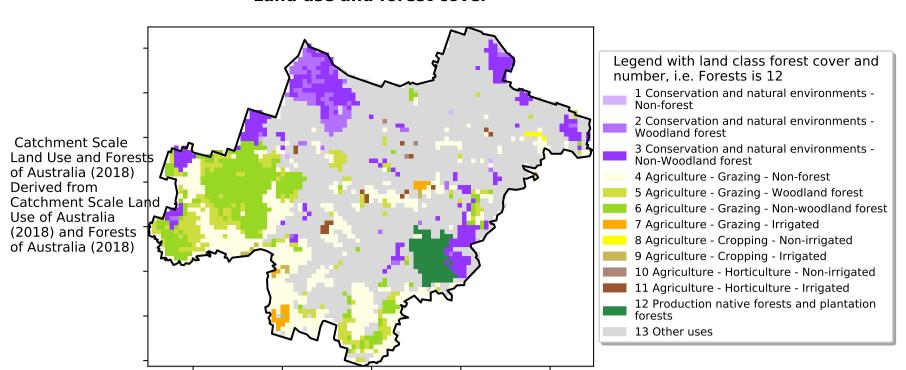




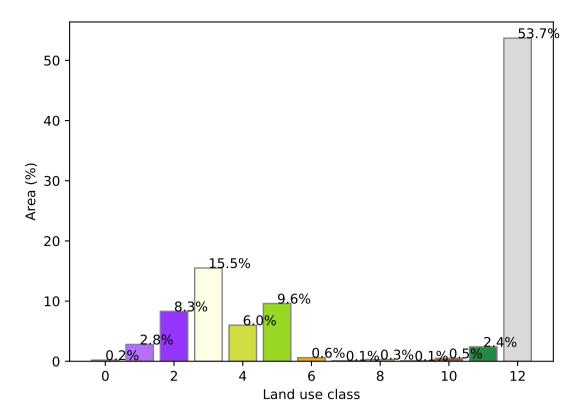


## **Vegetation Cover Feb 2022**

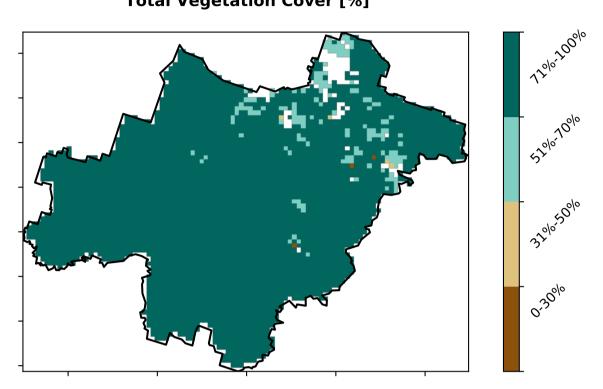
### Land use and forest cover



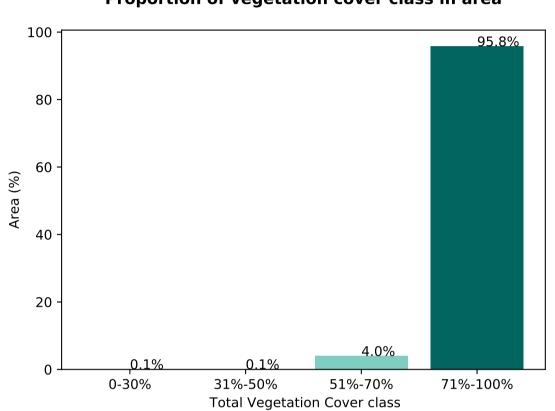
### **Proportion of each land class in area**



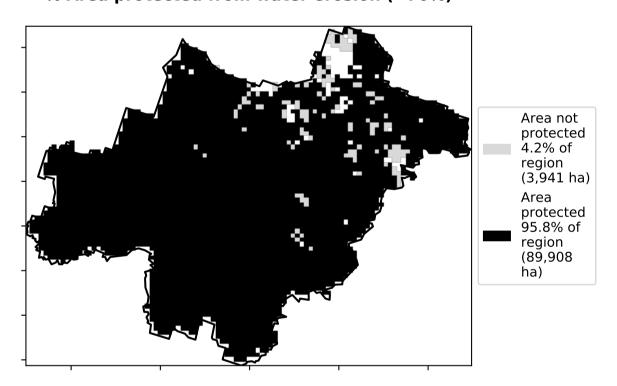
## Total Vegetation Cover [%]



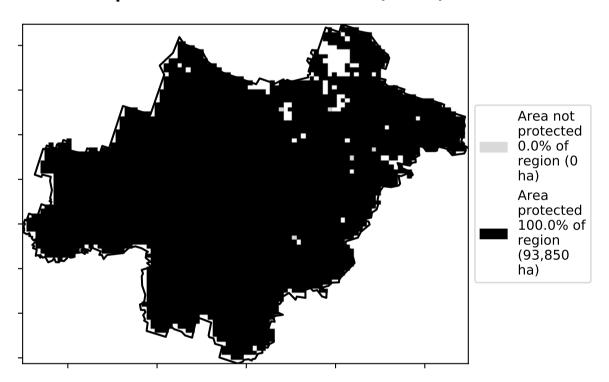
Proportion of vegetation cover class in area



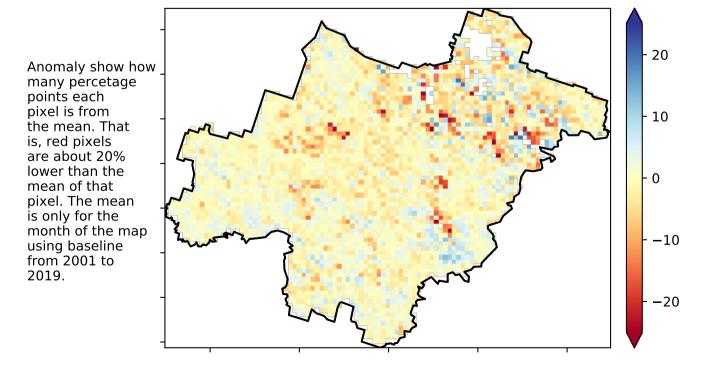
## % Area protected from water erosion (>70%)



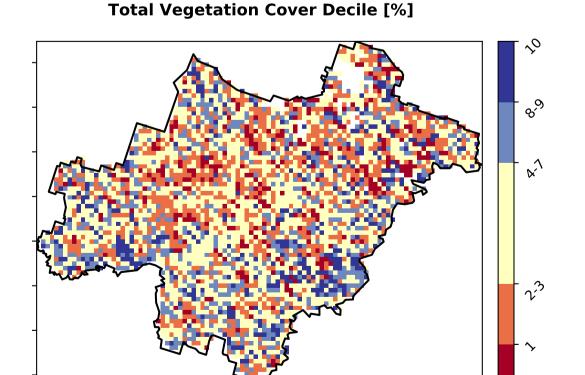
% Area protected from wind erosion (>50%)



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.

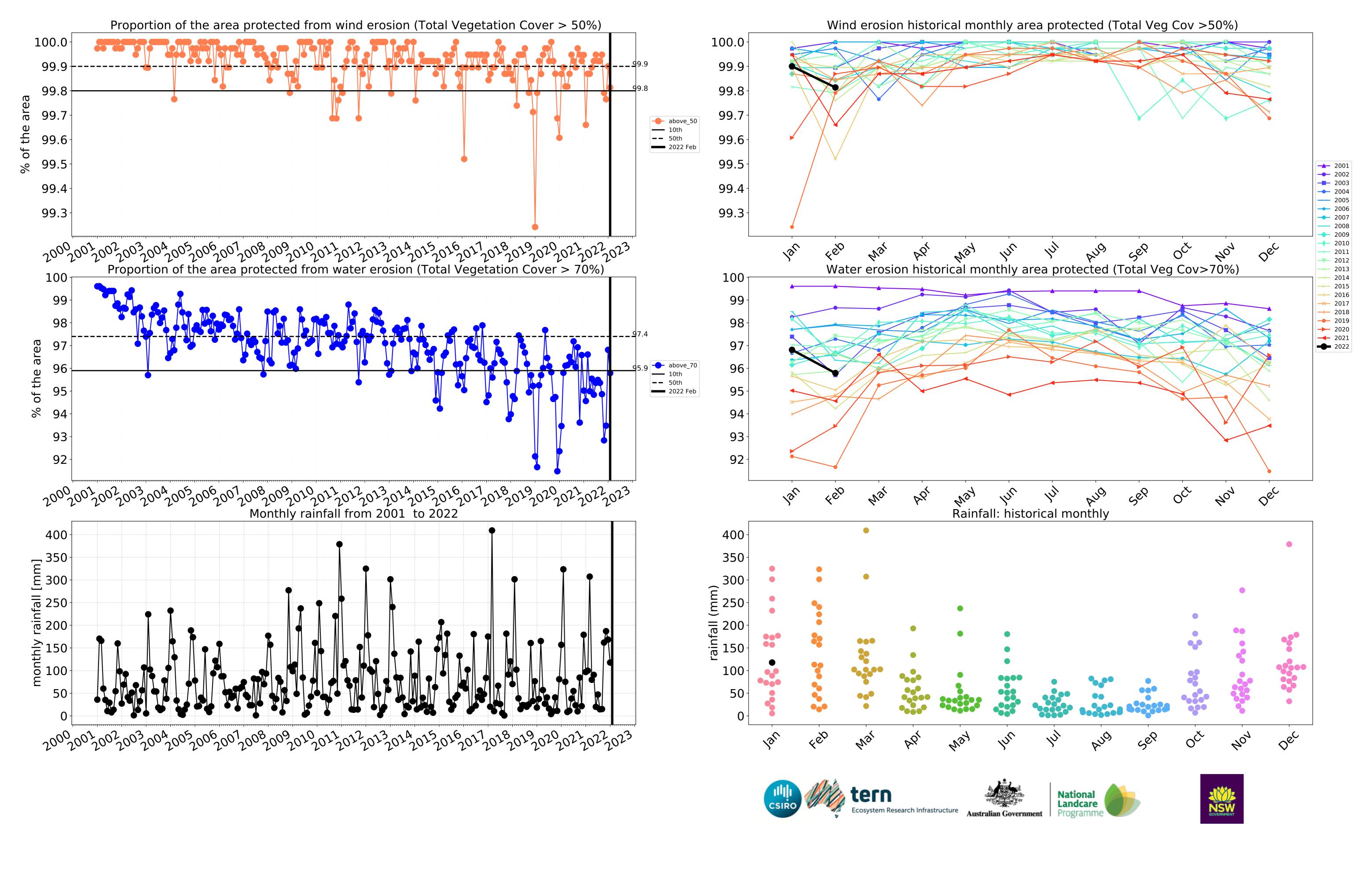


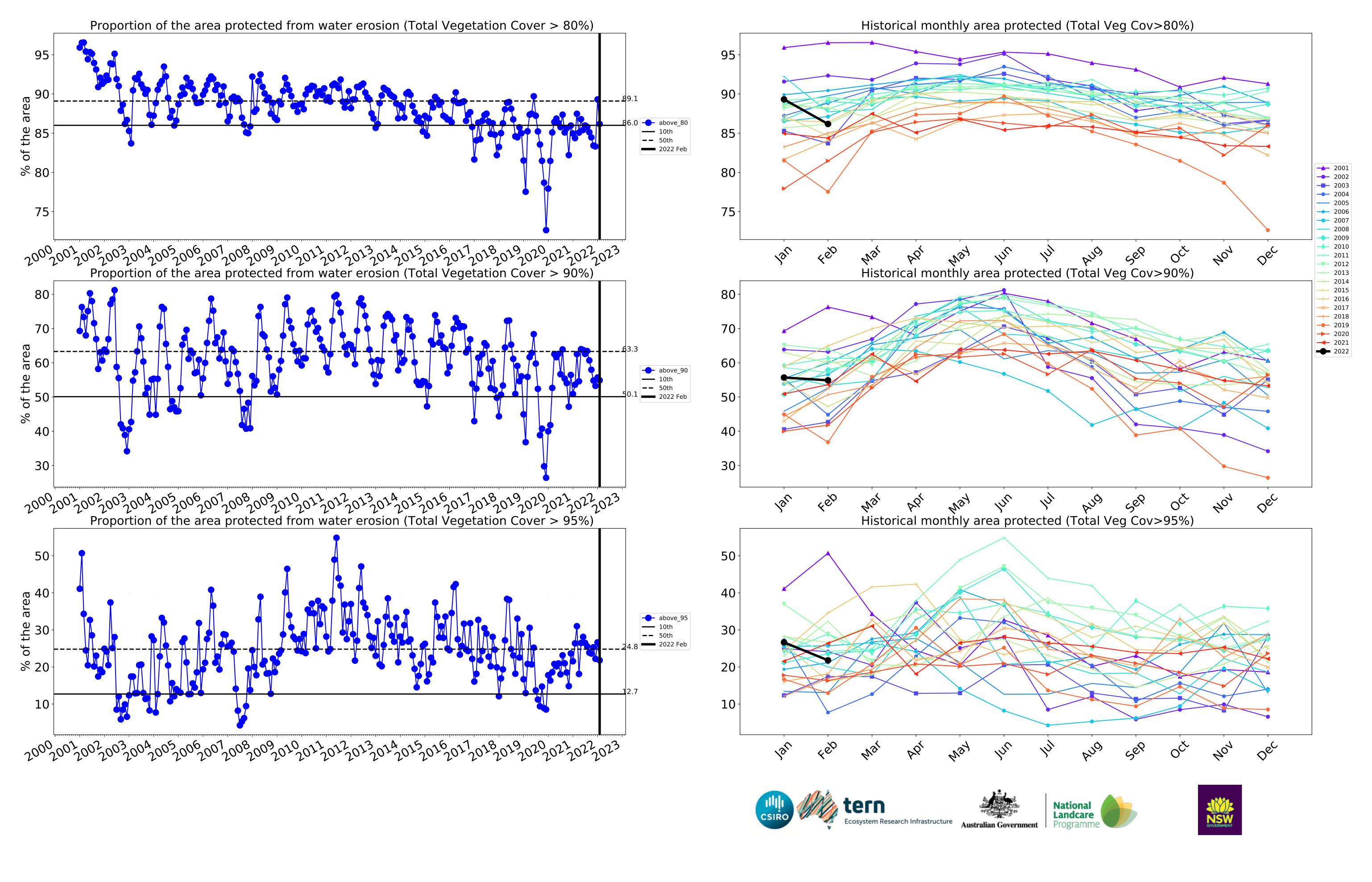




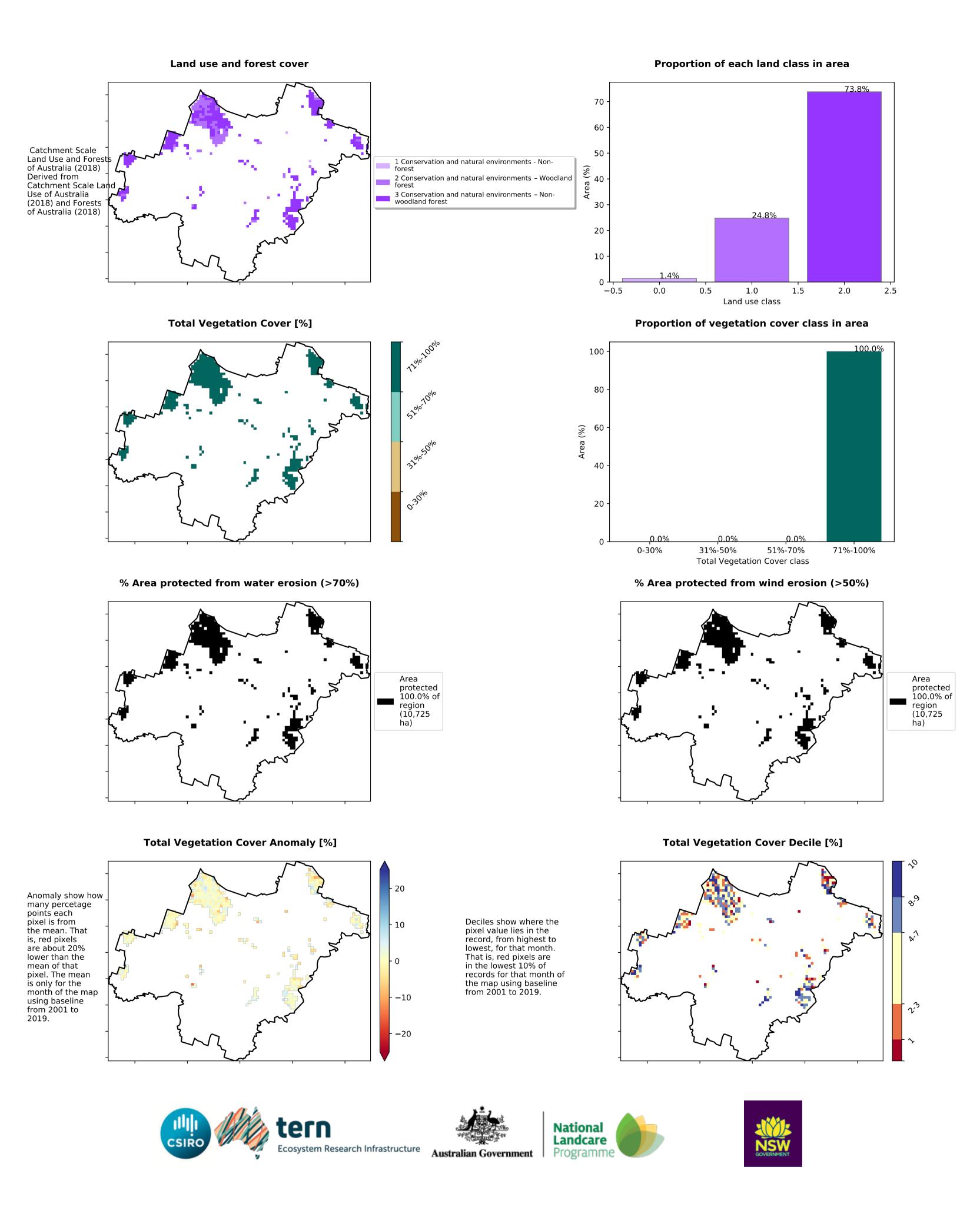




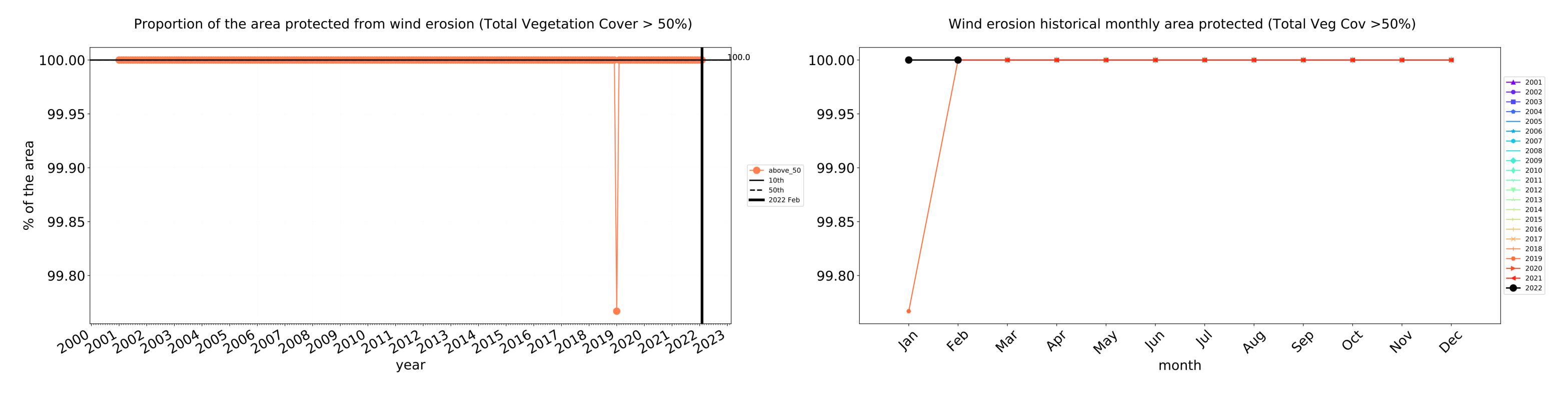


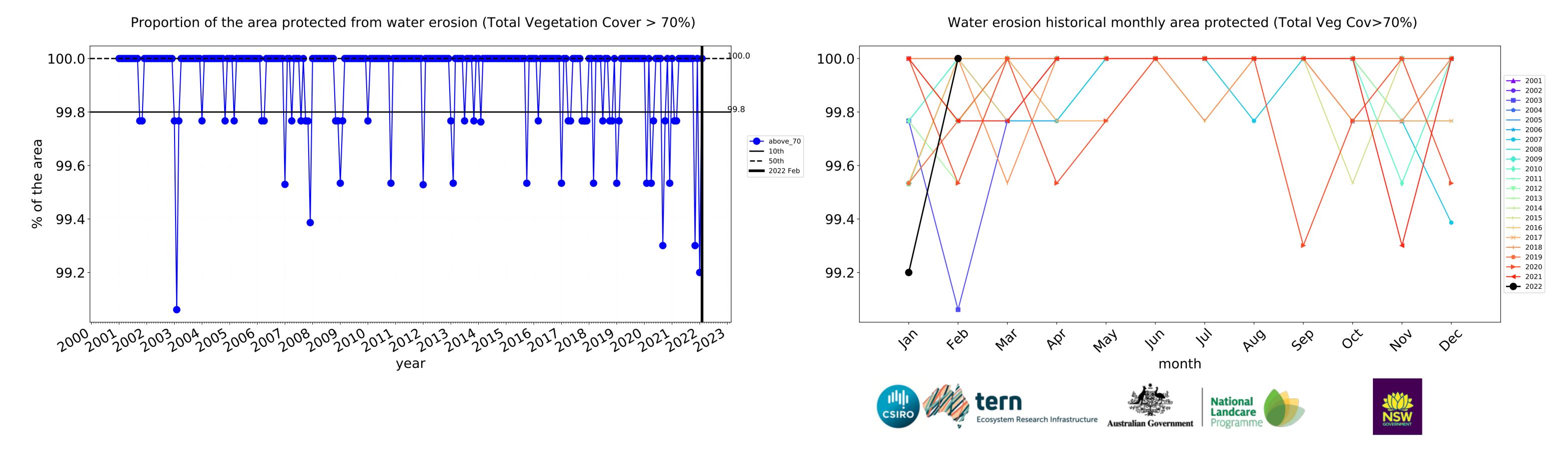


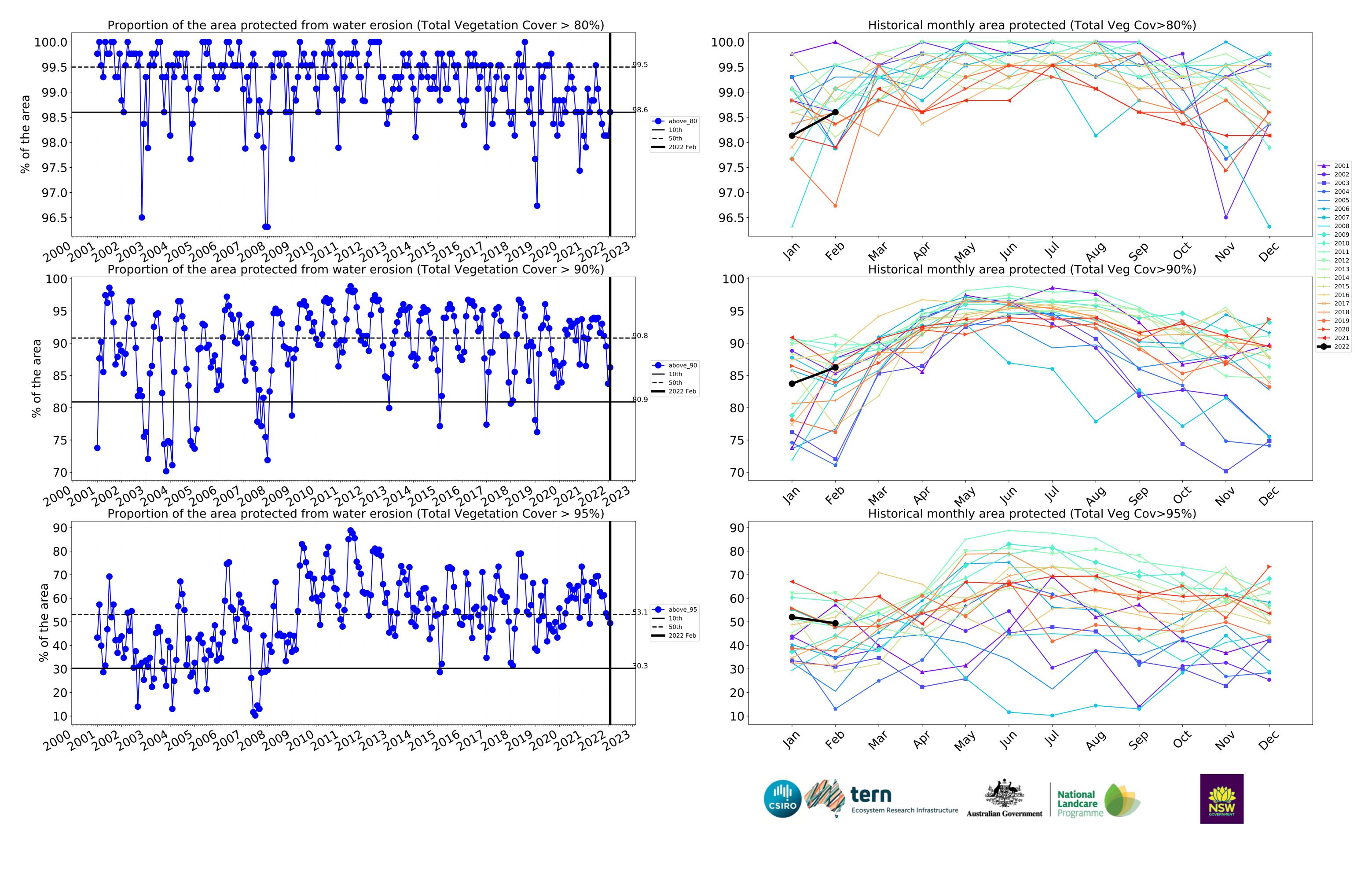
## **Conservation and natural environments**



## **Conservation and natural environments timeseries**



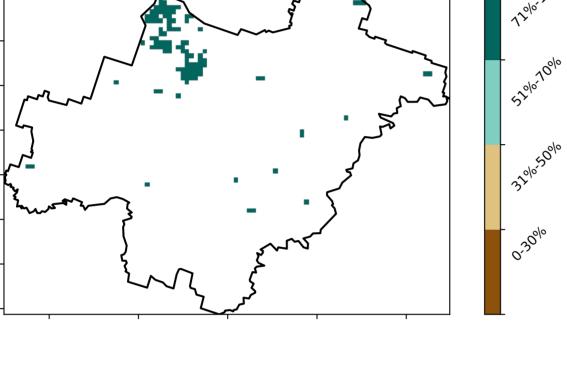


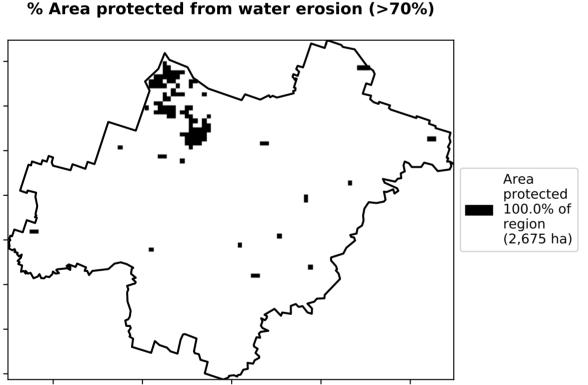


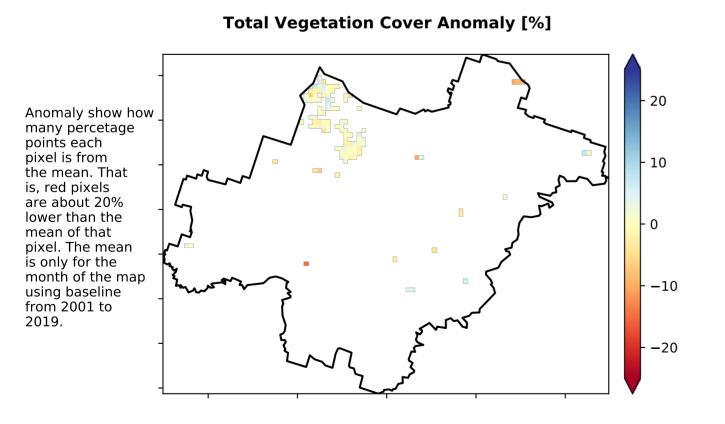
## **Conservation and natural environments Woodland forest**

## 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)

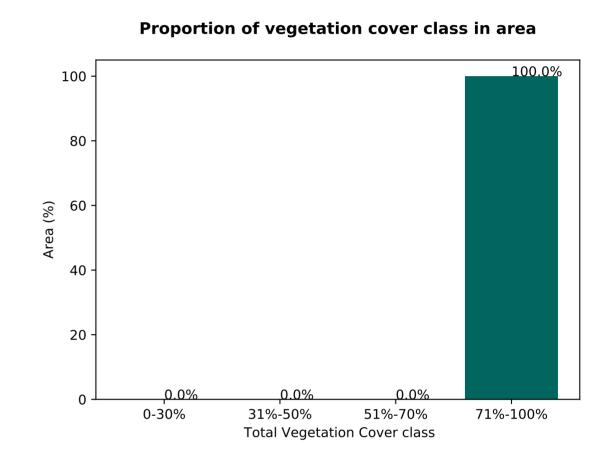
## **Total Vegetation Cover [%]**

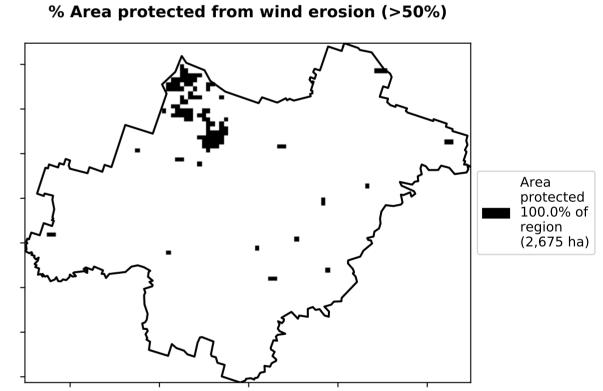


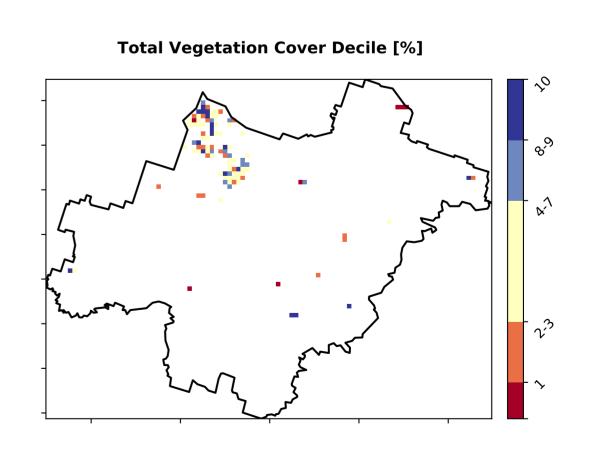




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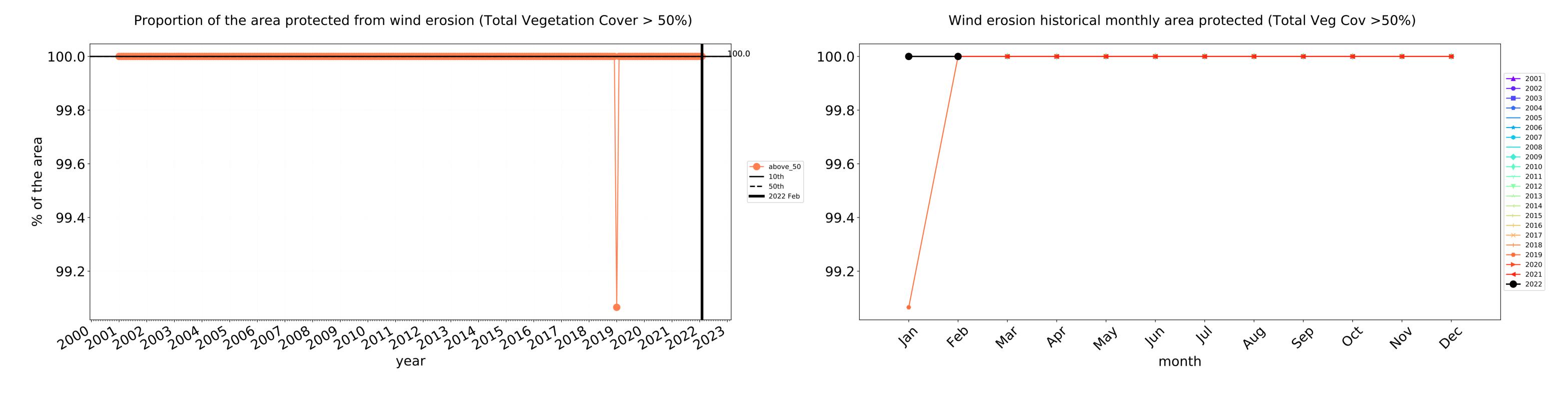


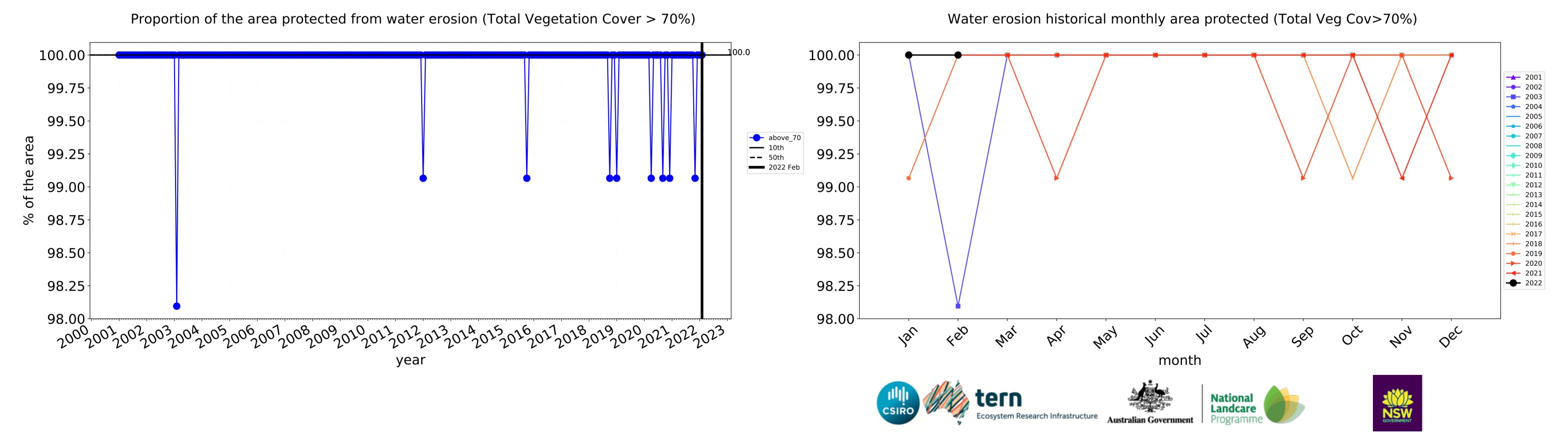


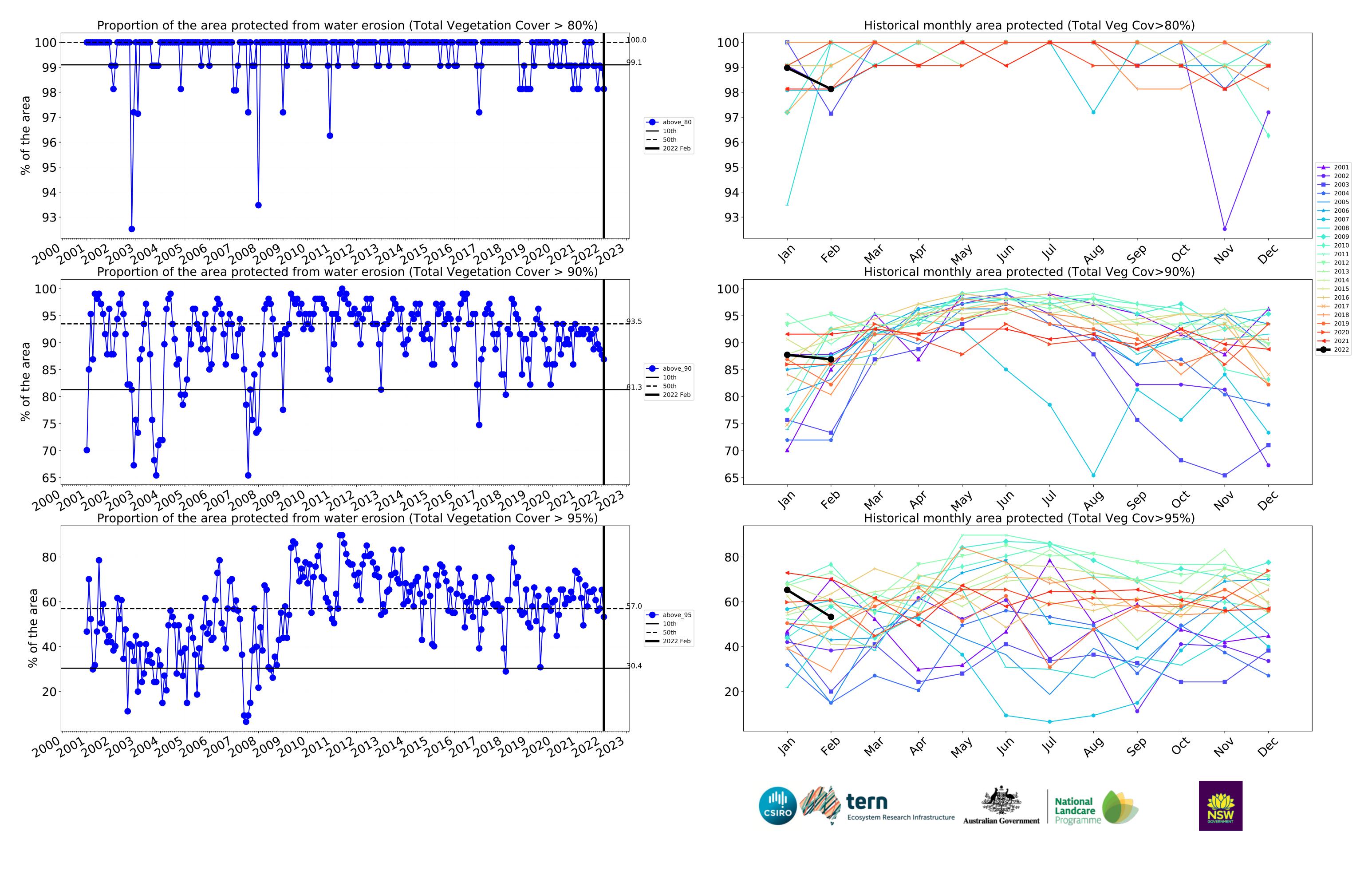




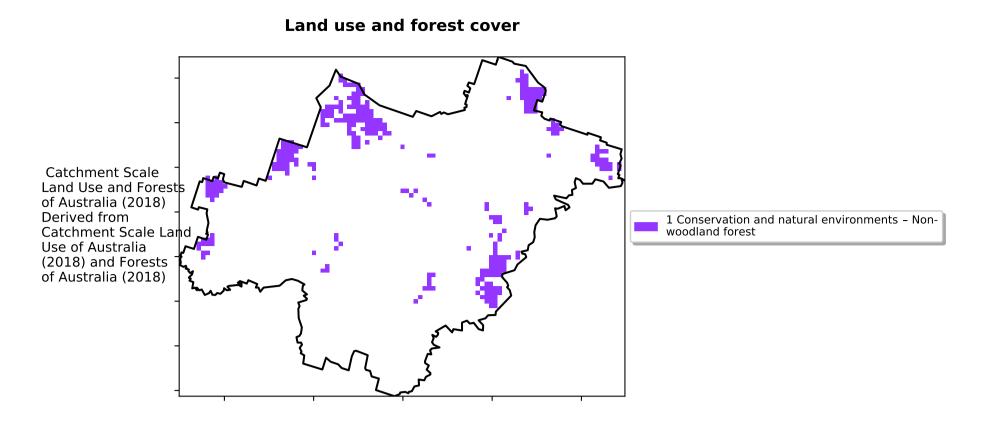
## **Conservation and natural environments Woodland forest timeseries**



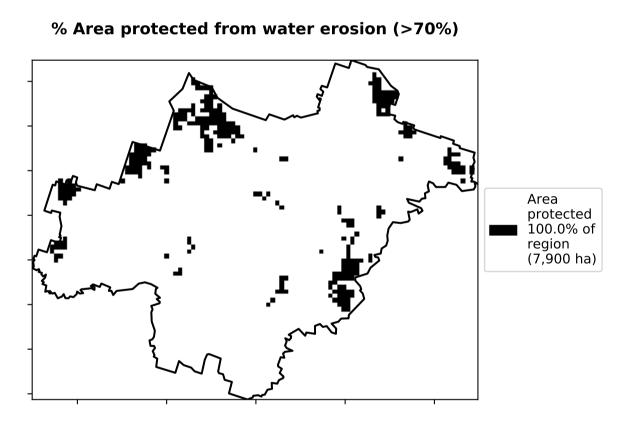


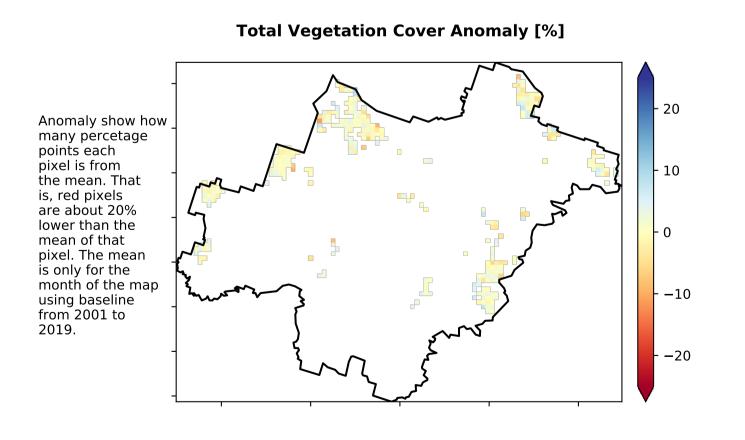


## **Conservation and natural environments Forest (non woodland)**

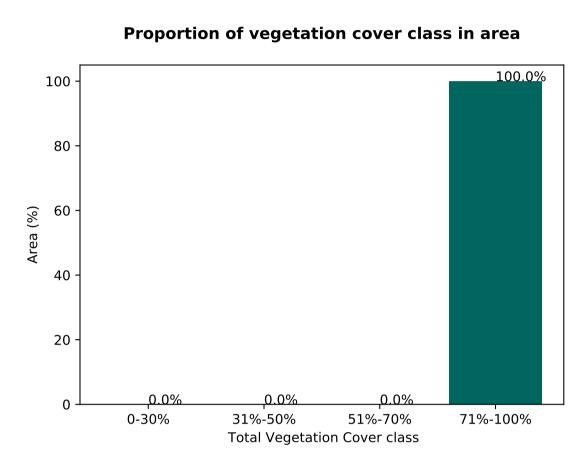


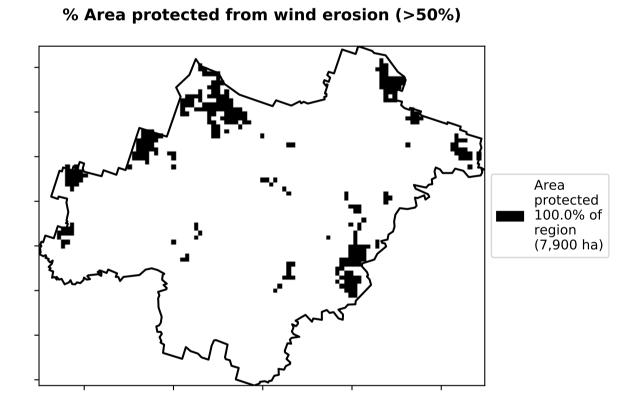
# Total Vegetation Cover [%]

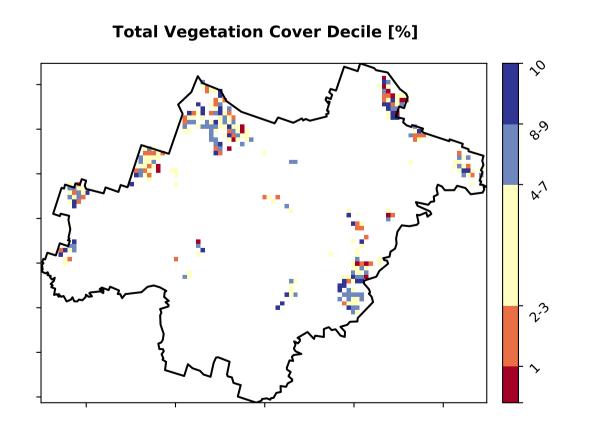




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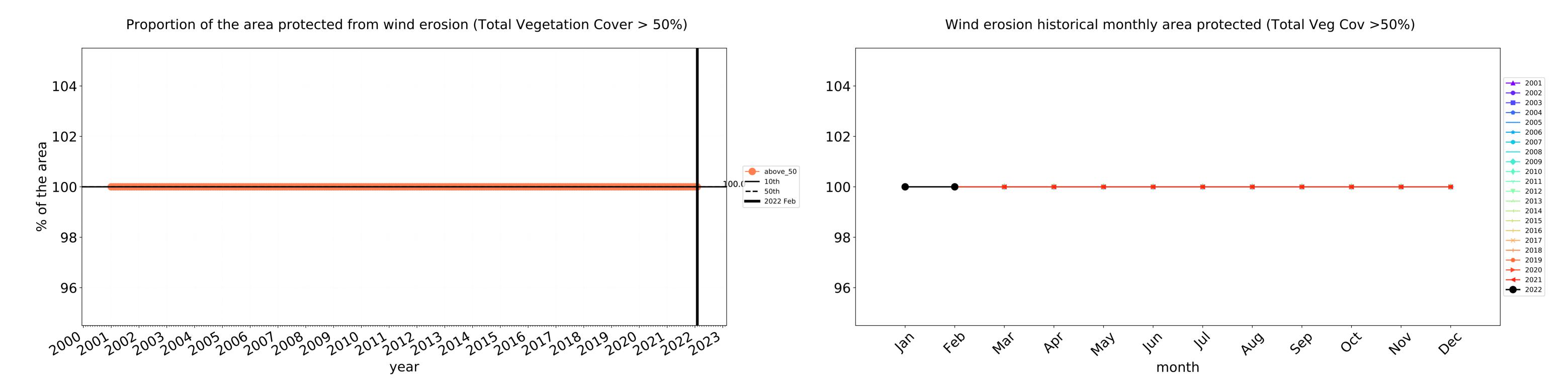


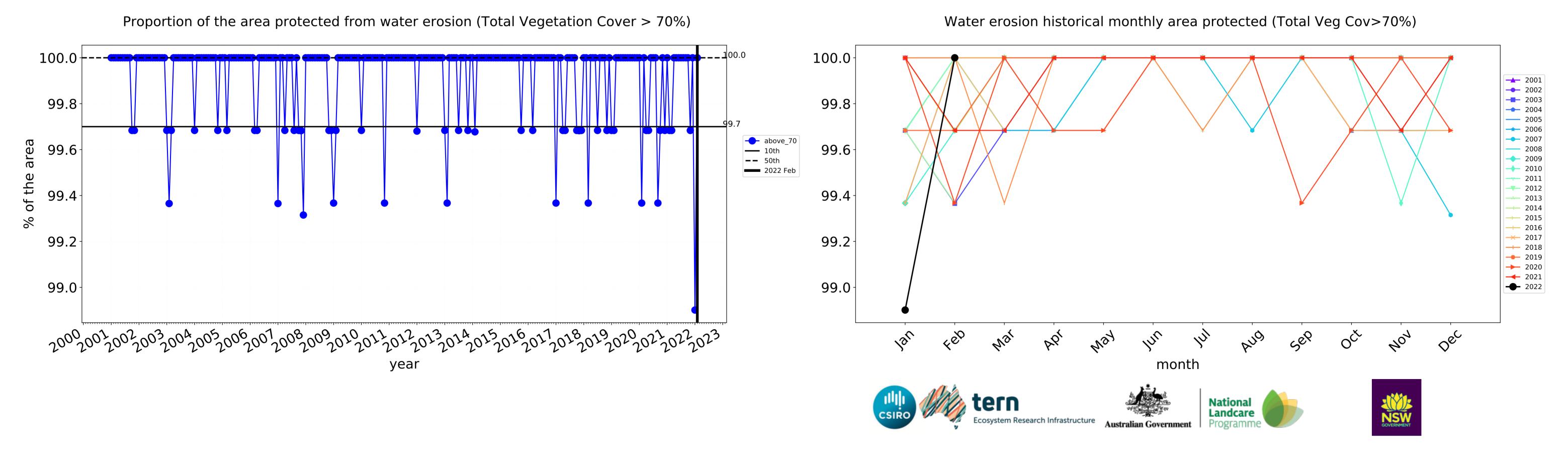


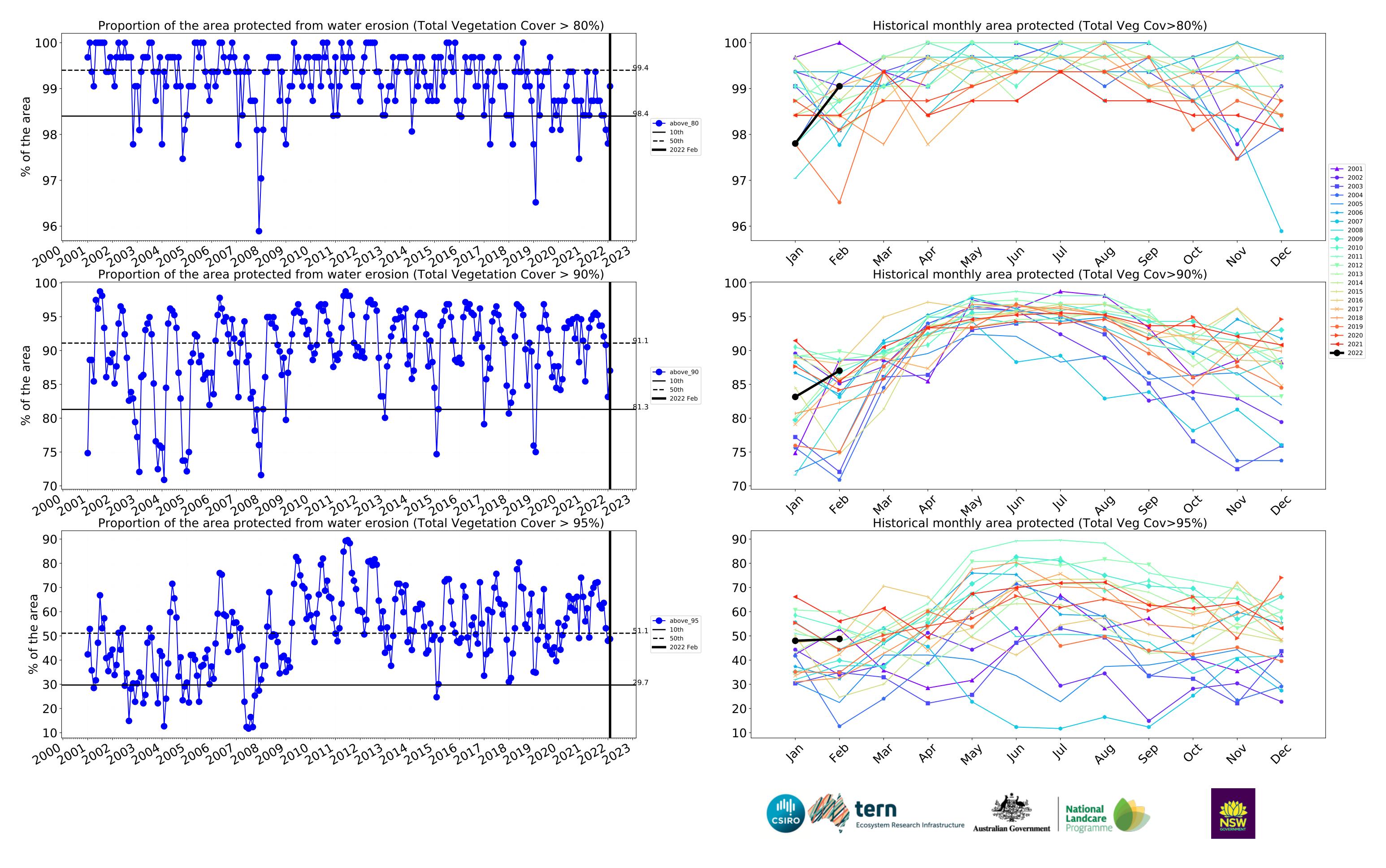




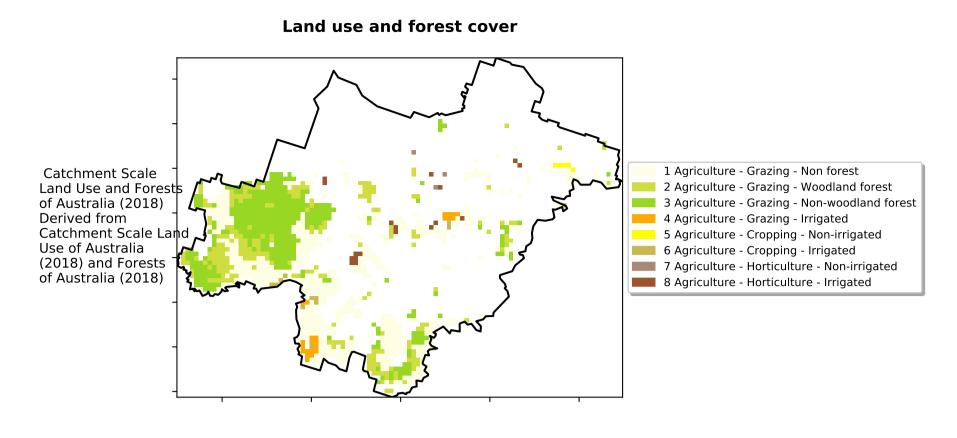




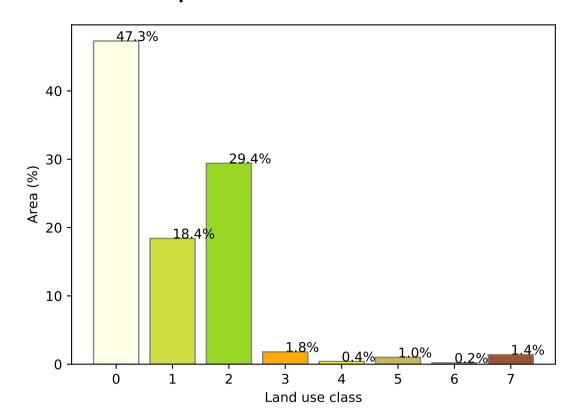




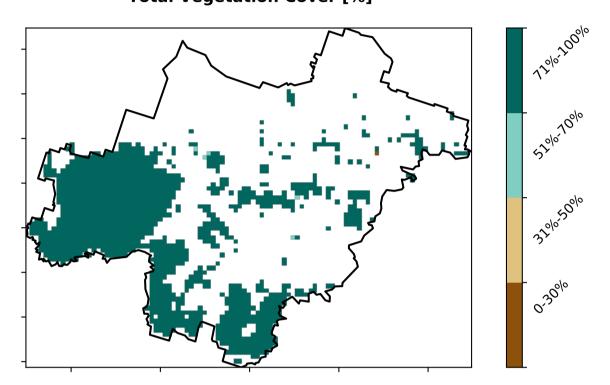
## **Agriculture**



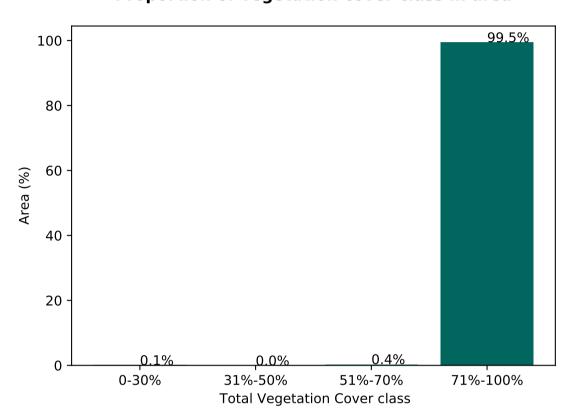
### Proportion of each land class in area



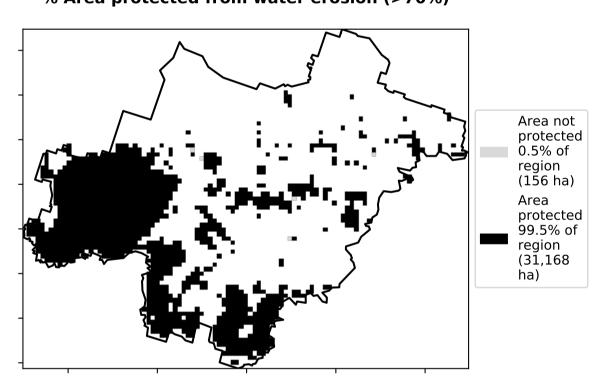
**Total Vegetation Cover [%]** 



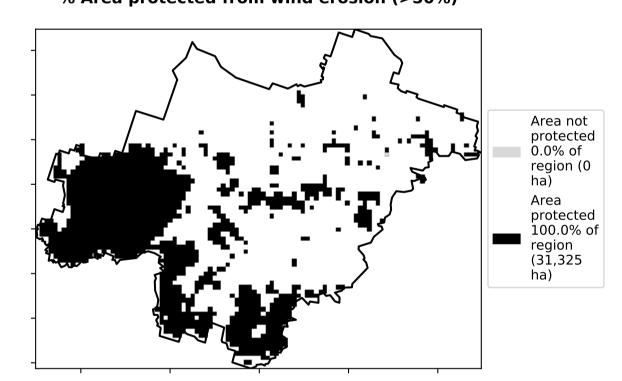
Proportion of vegetation cover class in area



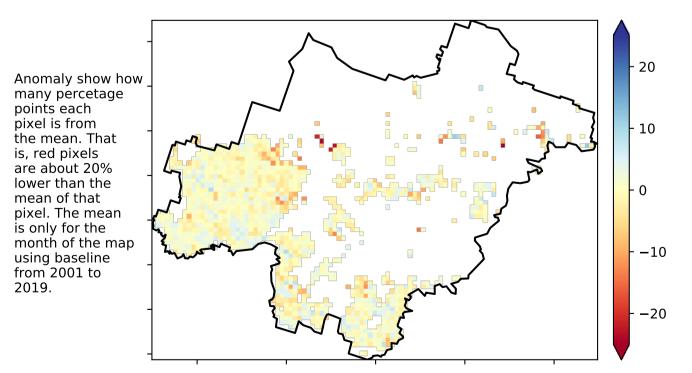
% Area protected from water erosion (>70%)



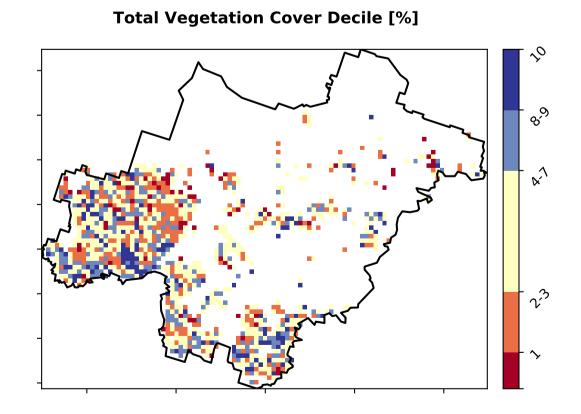
% Area protected from wind erosion (>50%)



**Total Vegetation Cover Anomaly [%]** 



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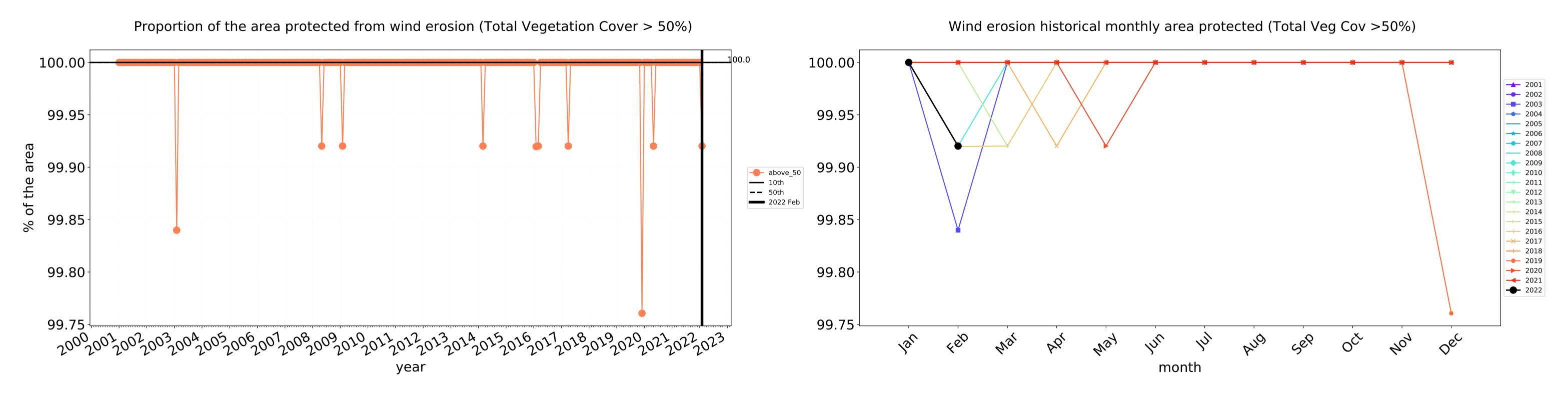


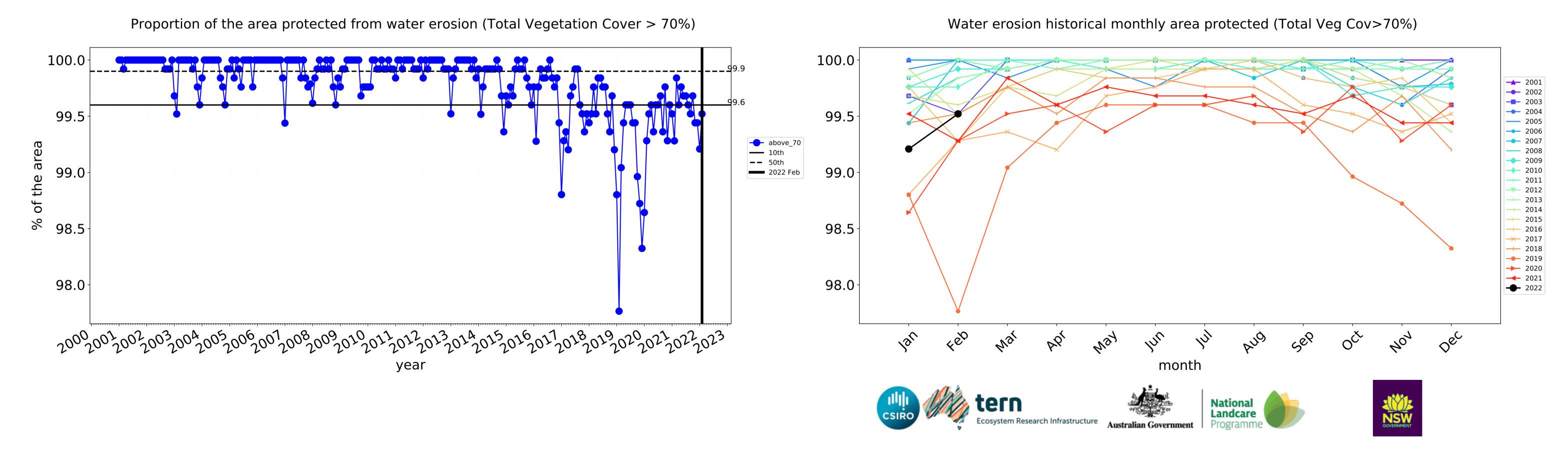


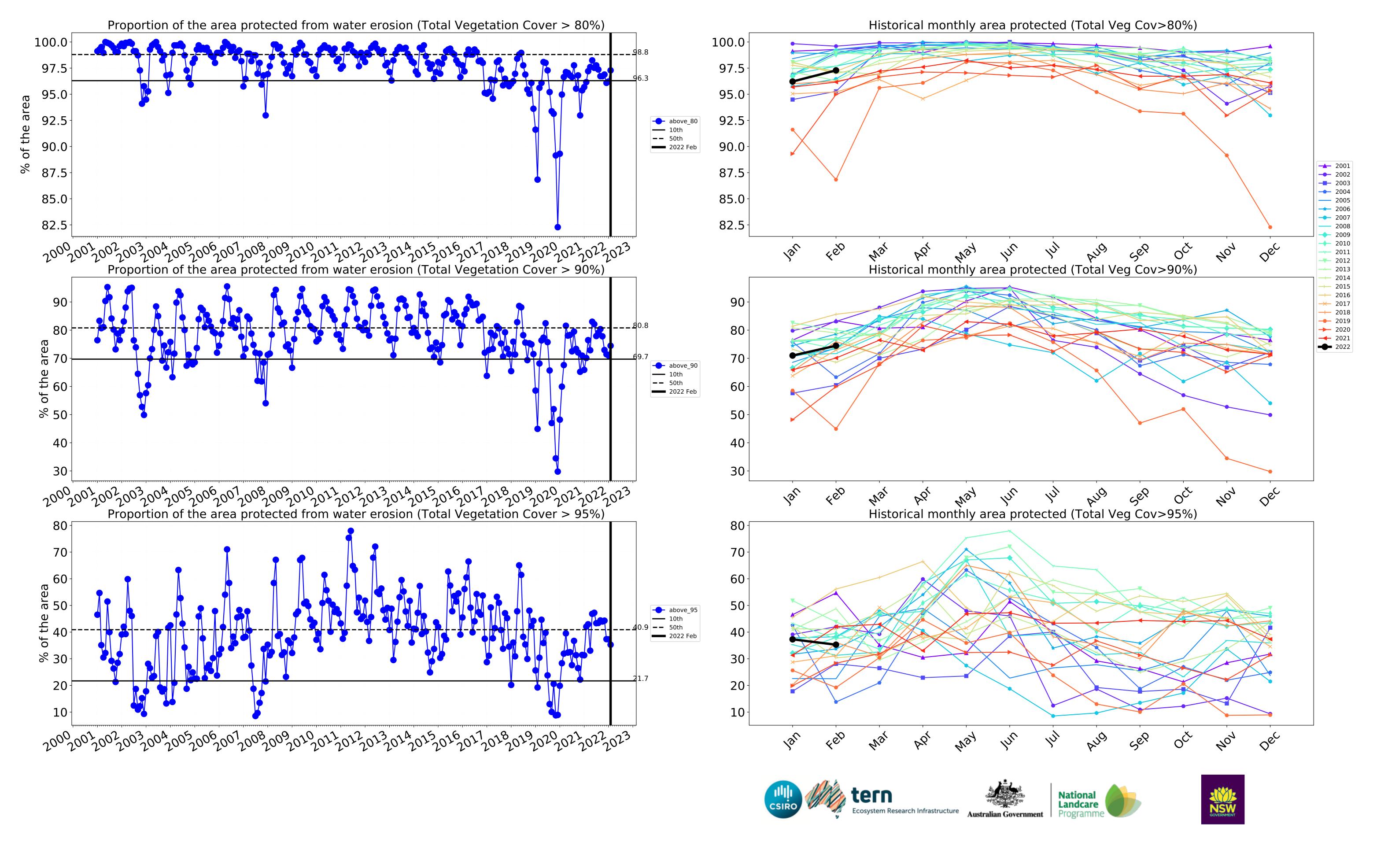




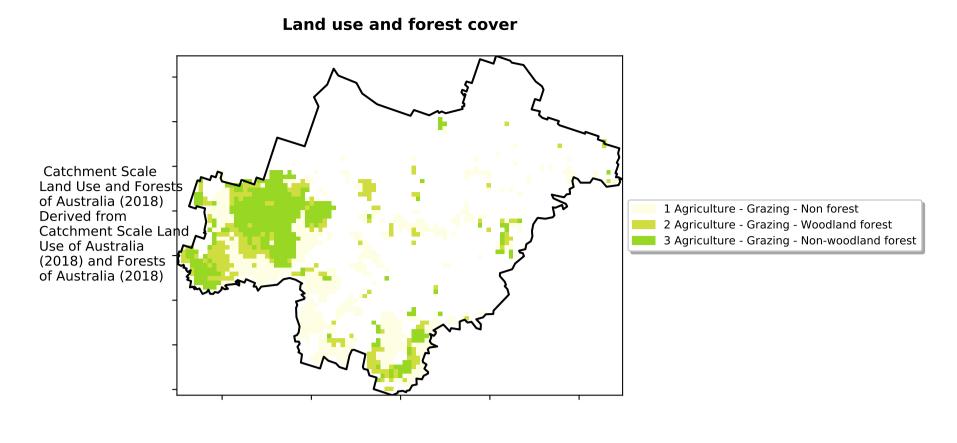
## **Agriculture timeseries**







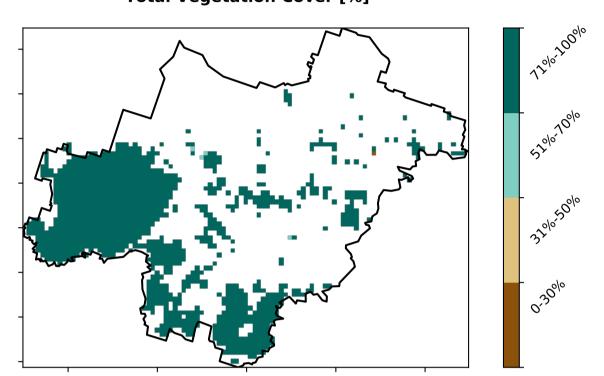
## **Grazing**



## 50 - 49.7% 40 - 30 - 30.9% 20 - 10 - 19.4%

Proportion of each land class in area

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



Proportion of vegetation cover class in area

1.0

Land use class

1.5

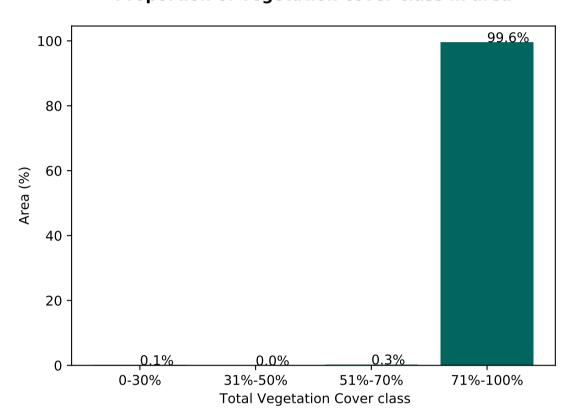
0.5

-0.5

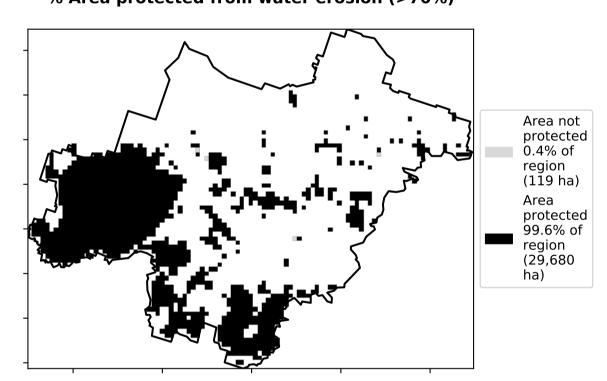
0.0

2.0

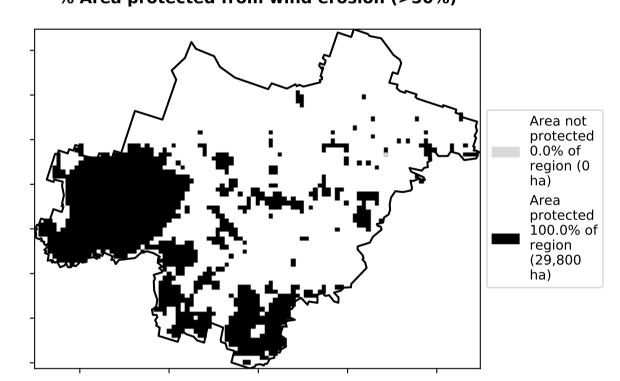
2.5



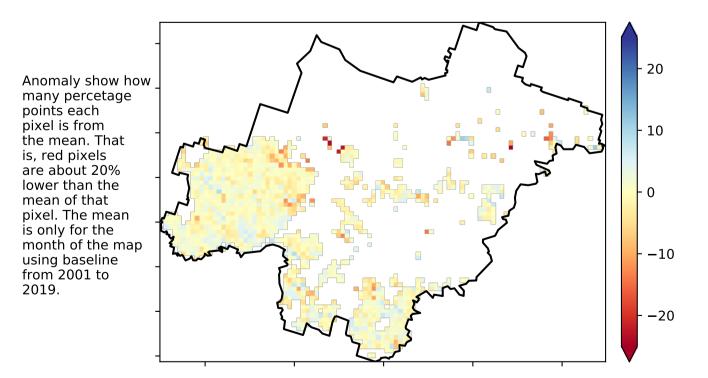
## % Area protected from water erosion (>70%)



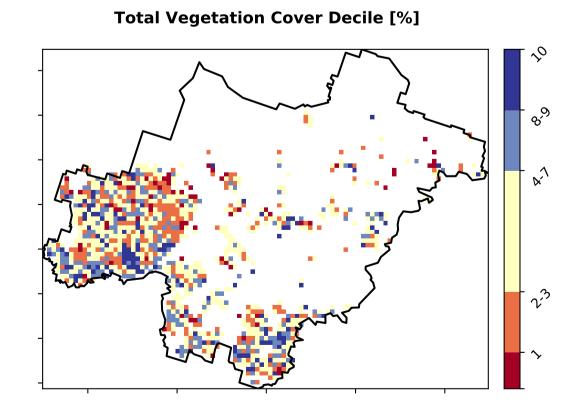
% Area protected from wind erosion (>50%)



## Total Vegetation Cover Anomaly [%]



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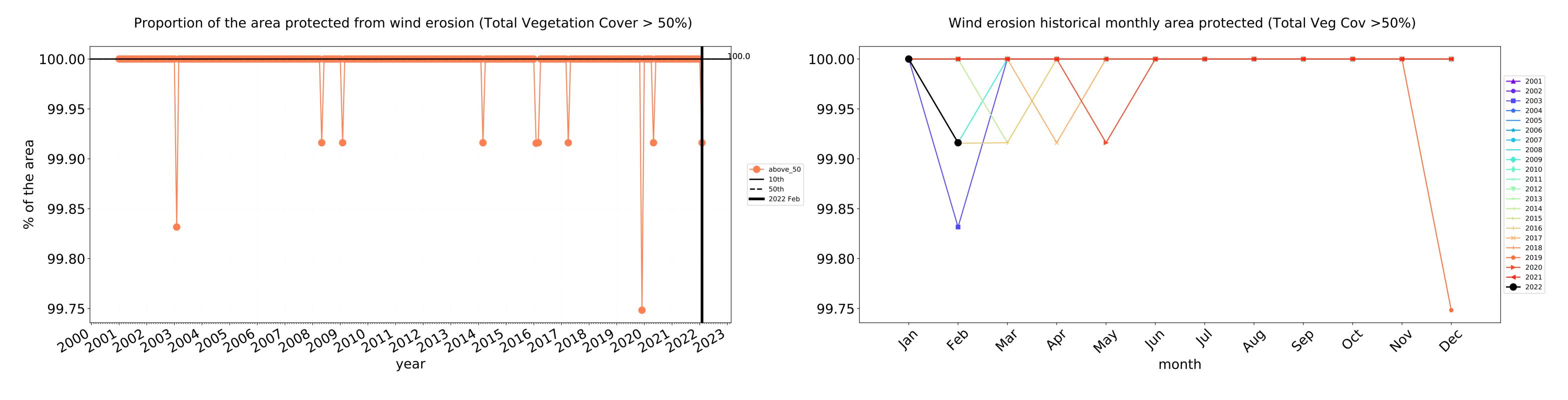


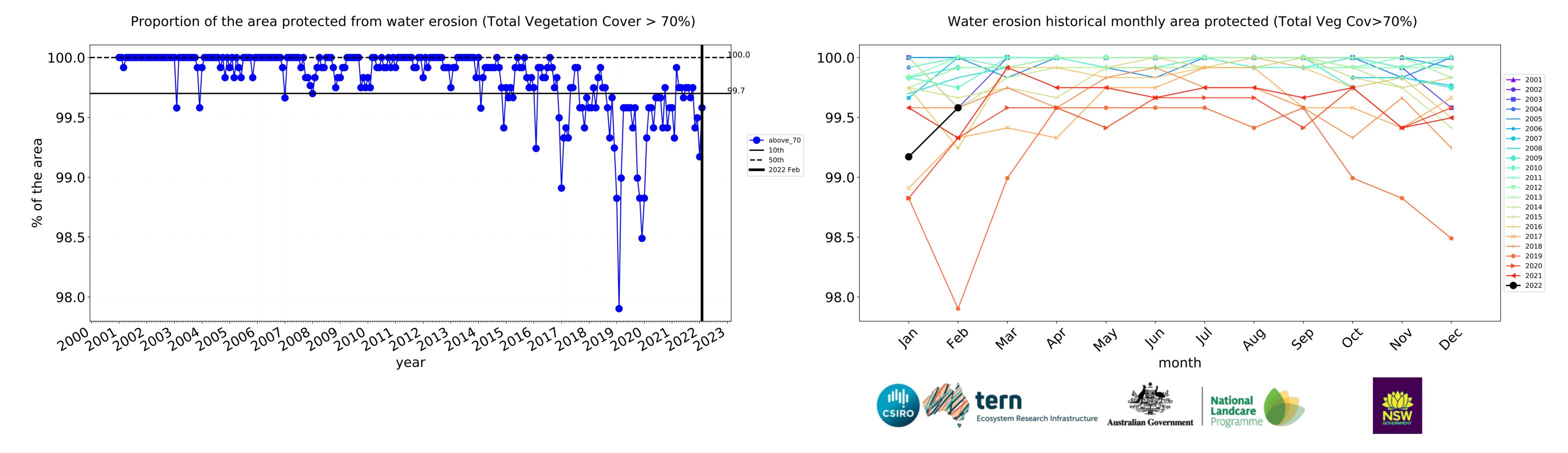


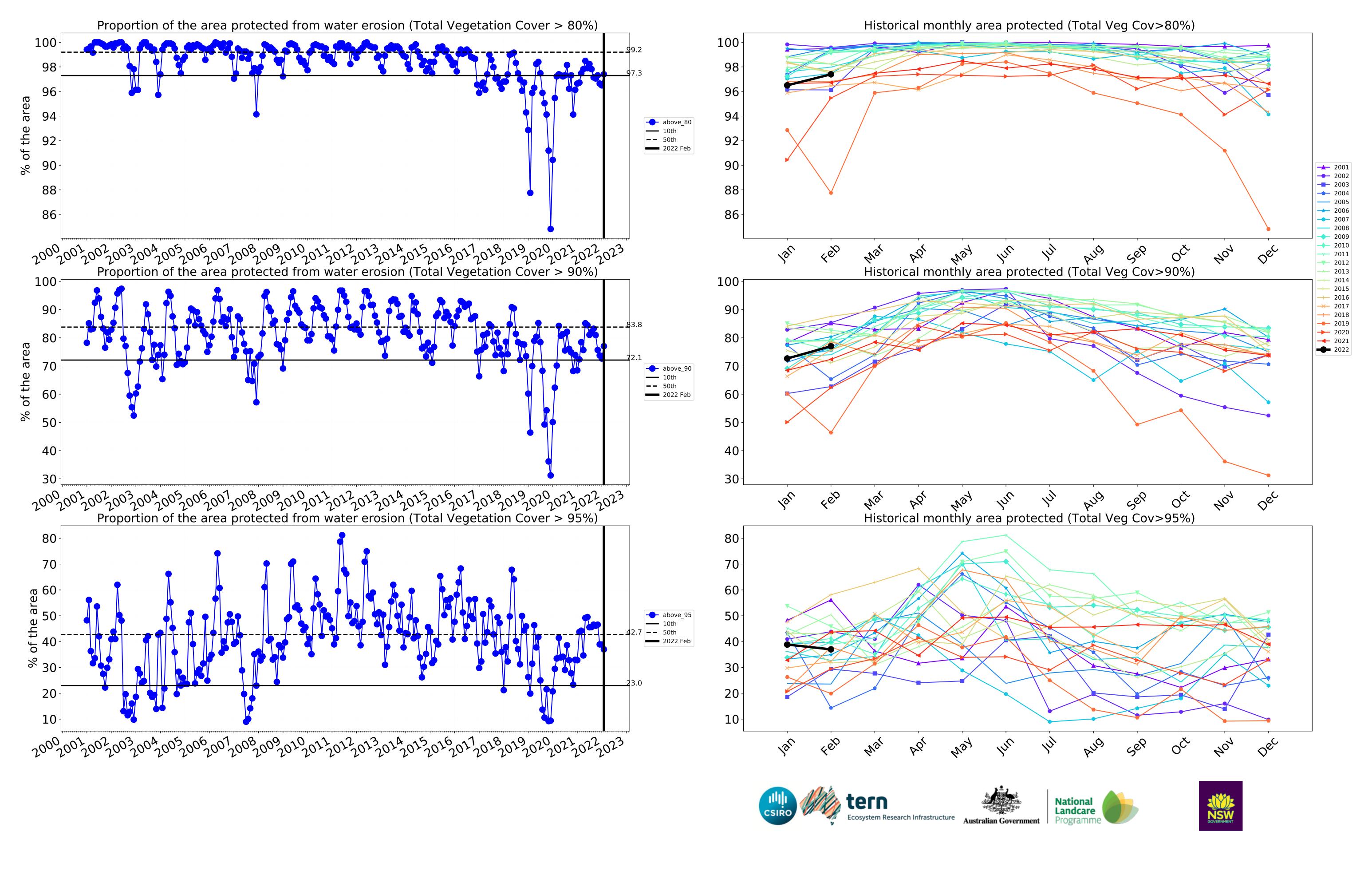




## **Grazing timeseries**





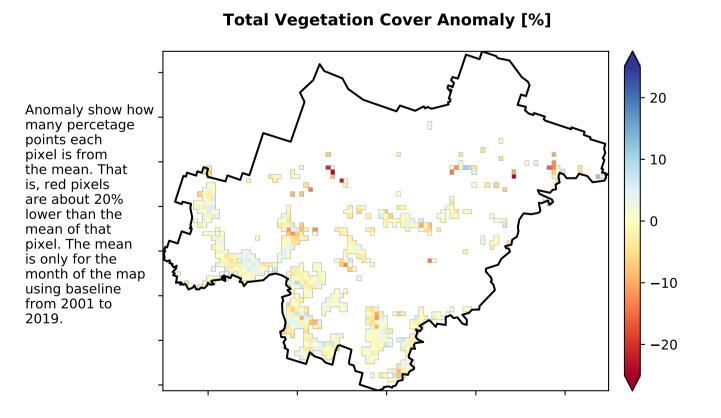


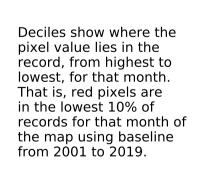
## **Grazing non forest**

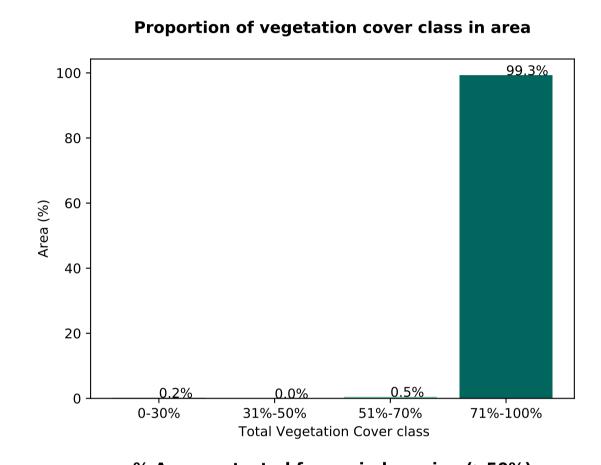
## Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) 1 Agriculture - Grazing - Non forest

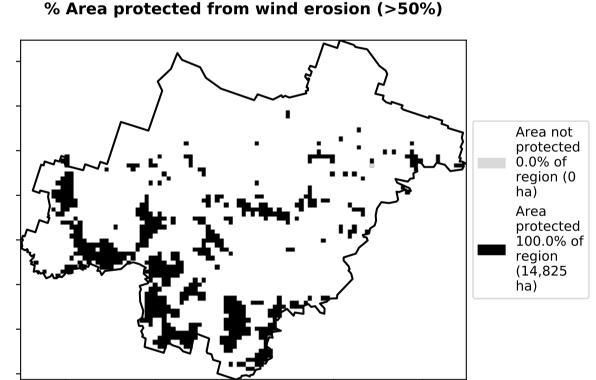
# Total Vegetation Cover [%]

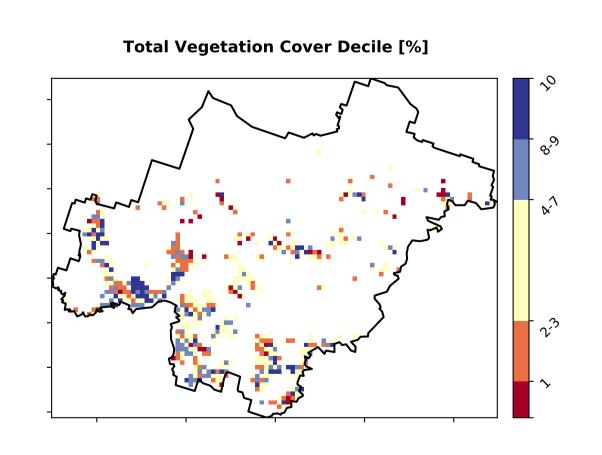
## % Area protected from water erosion (>70%) Area not protected 0.7% of region (103 ha) Area protected 99.3% of region (14,721 ha)











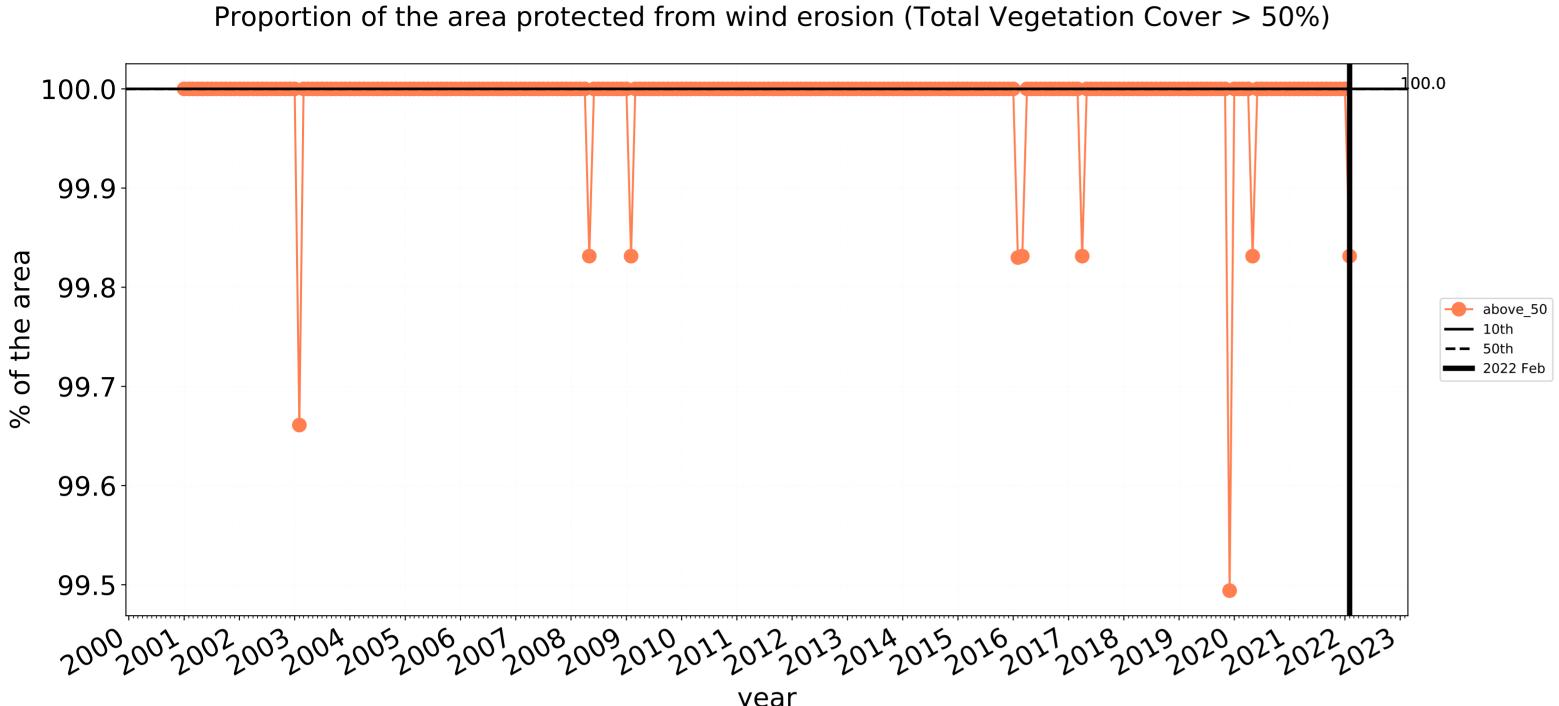


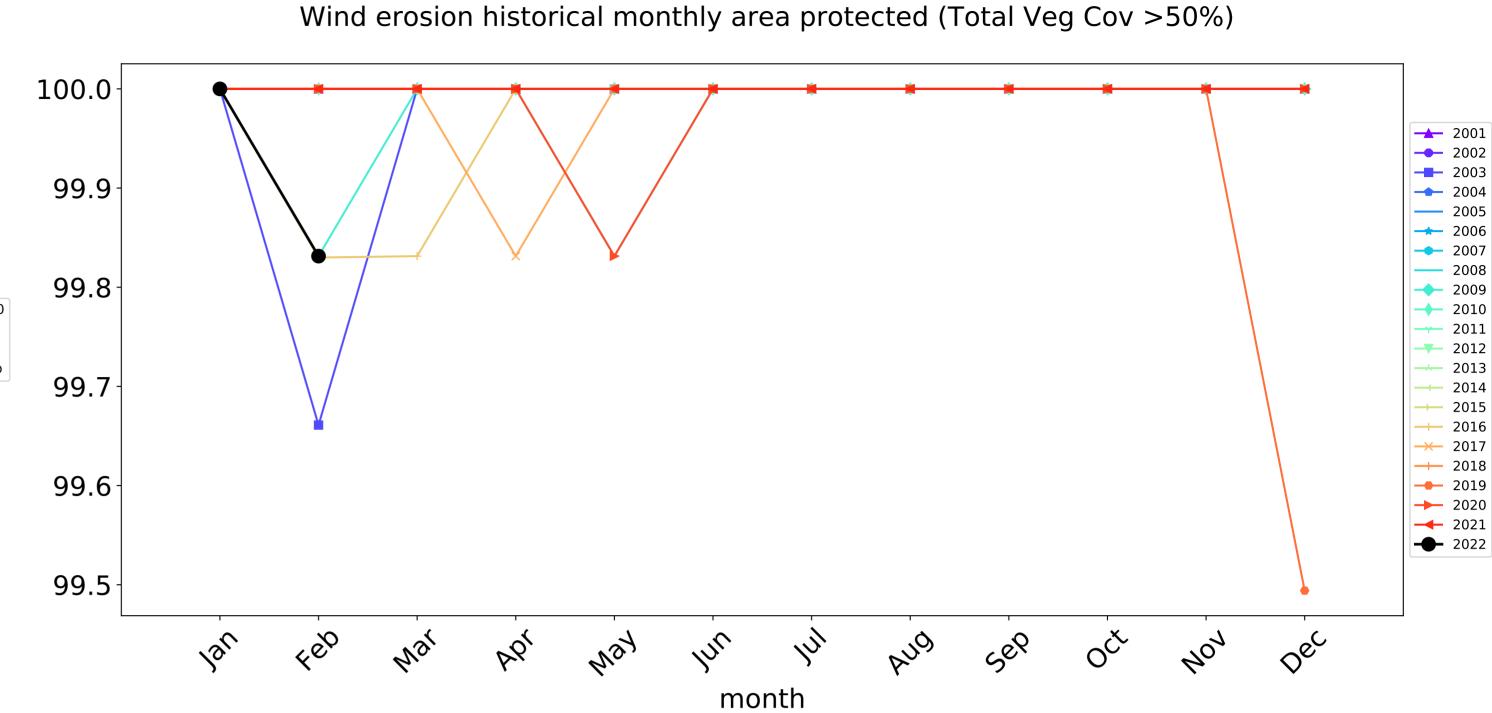


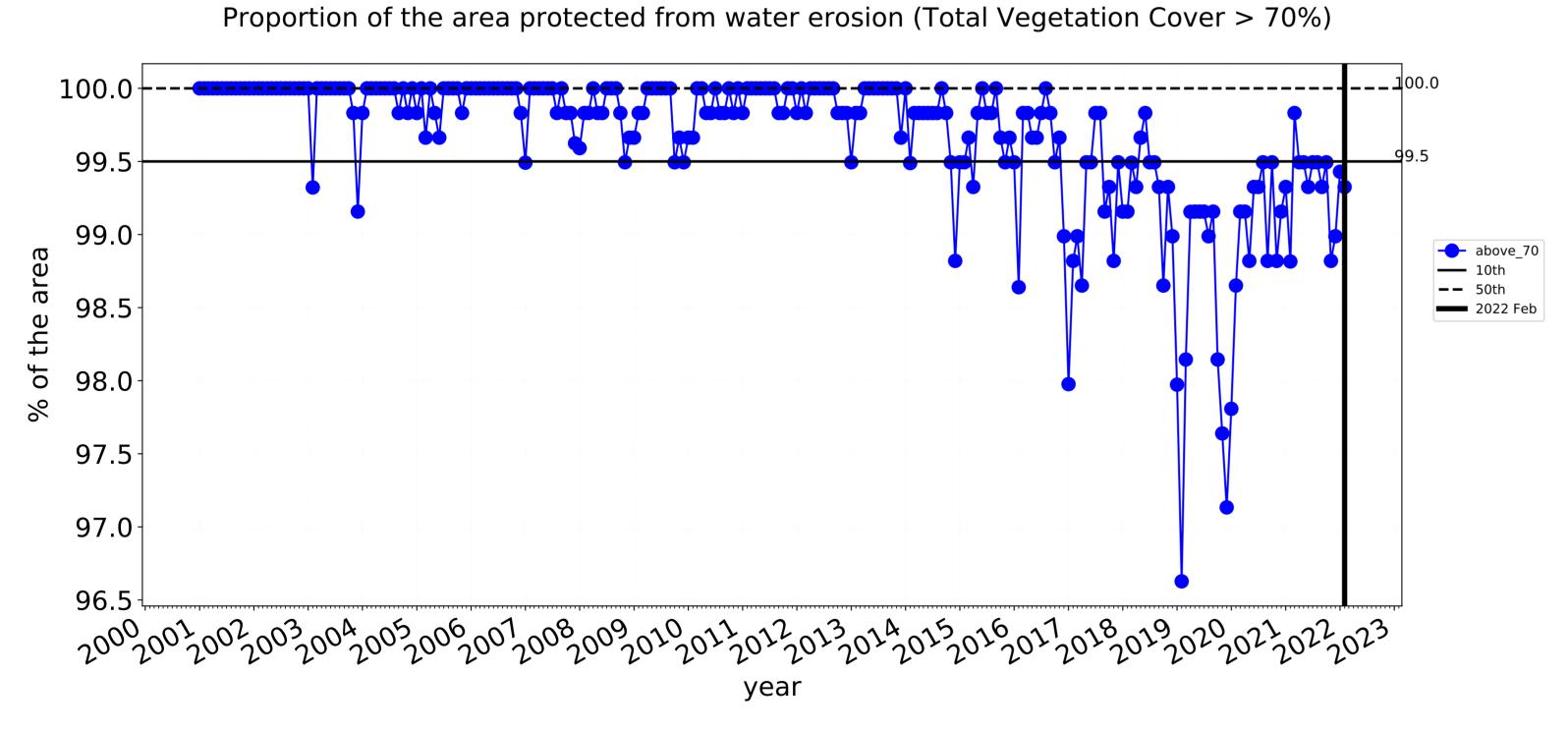


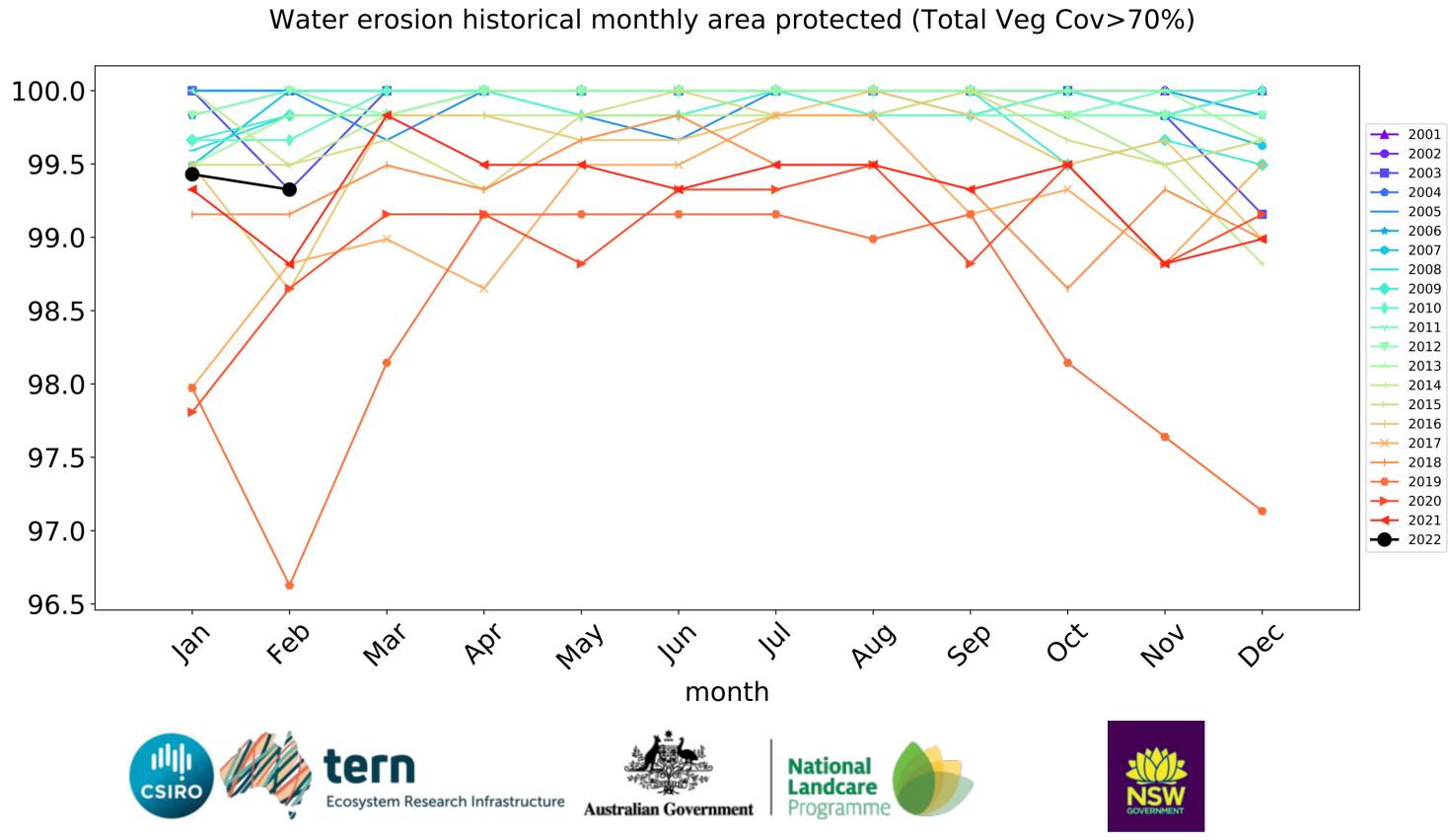


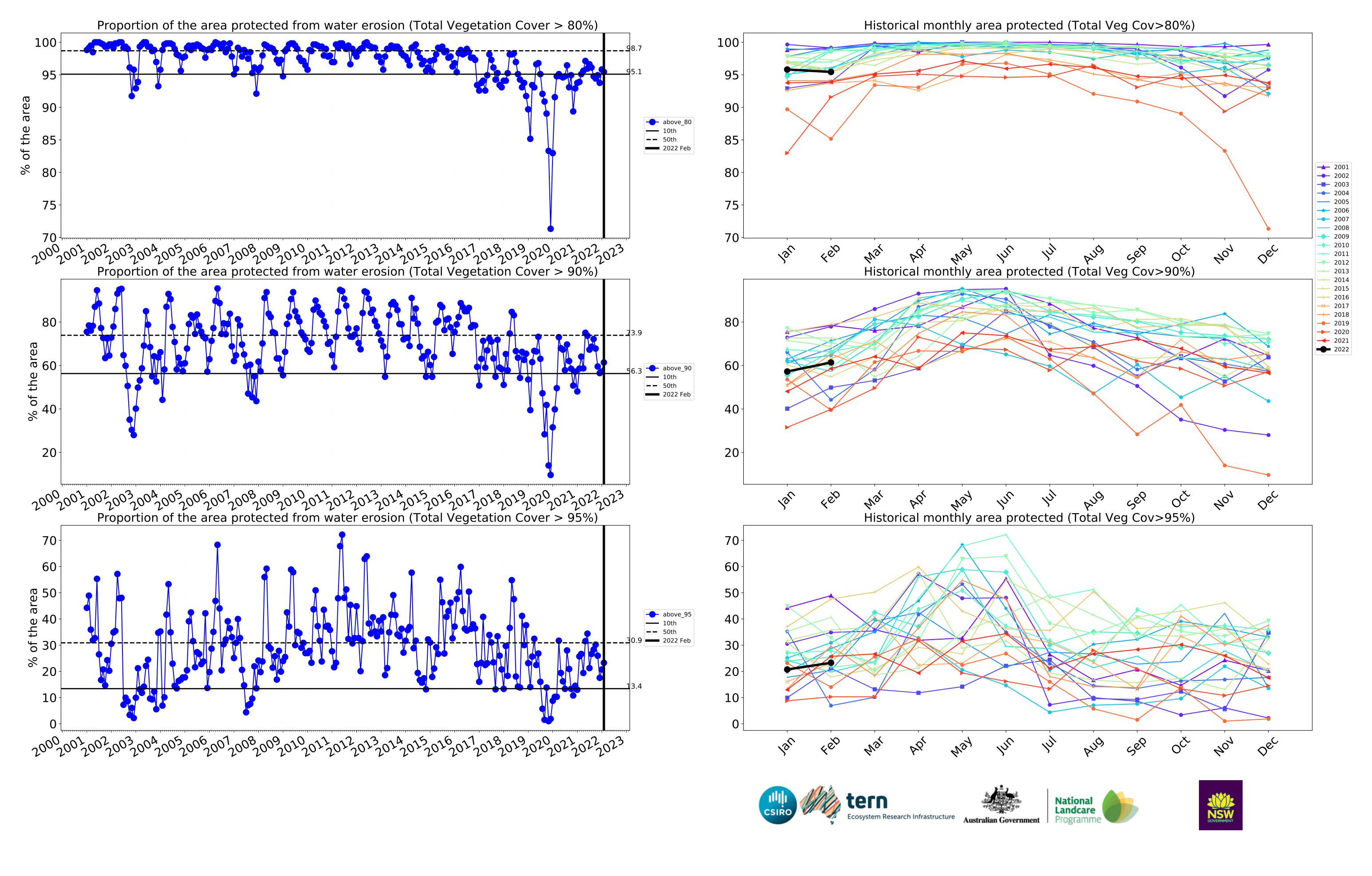
## **Grazing non forest timeseries**







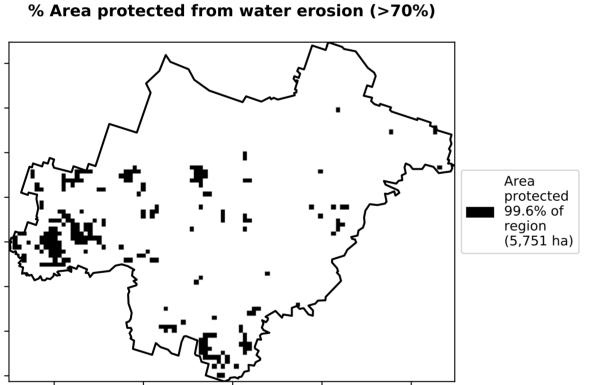


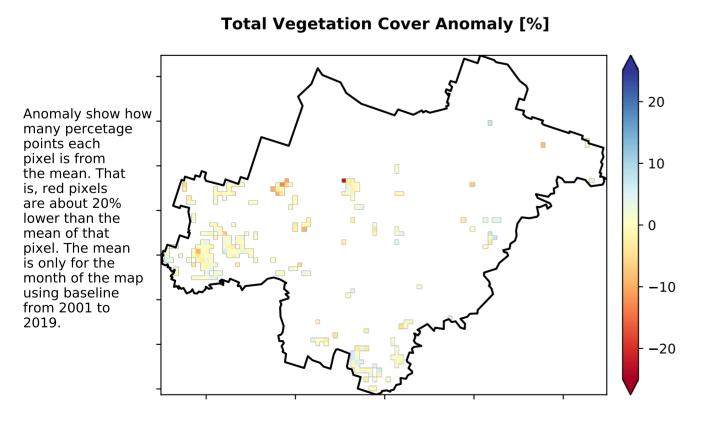


## **Grazing Woodland forest**

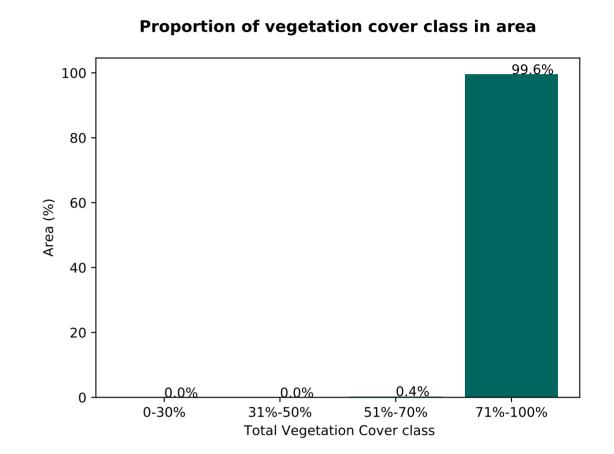
## Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) 1 Agriculture - Grazing - Woodland forest of Australia (2018)

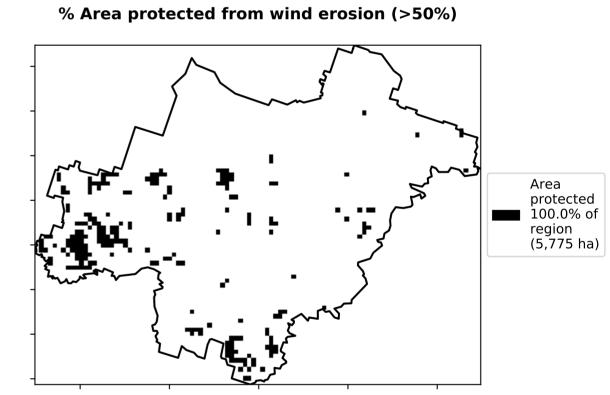
# **Total Vegetation Cover [%]**

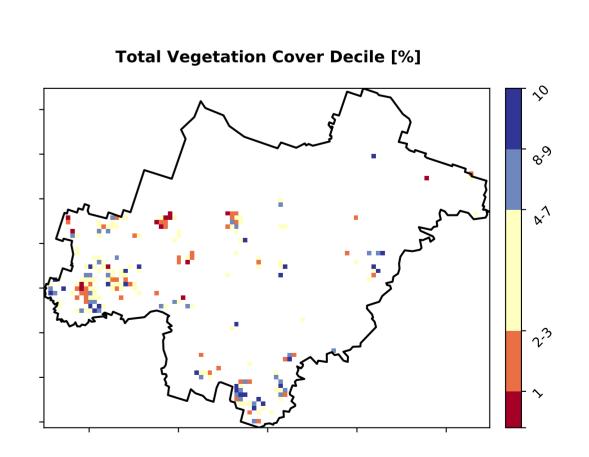




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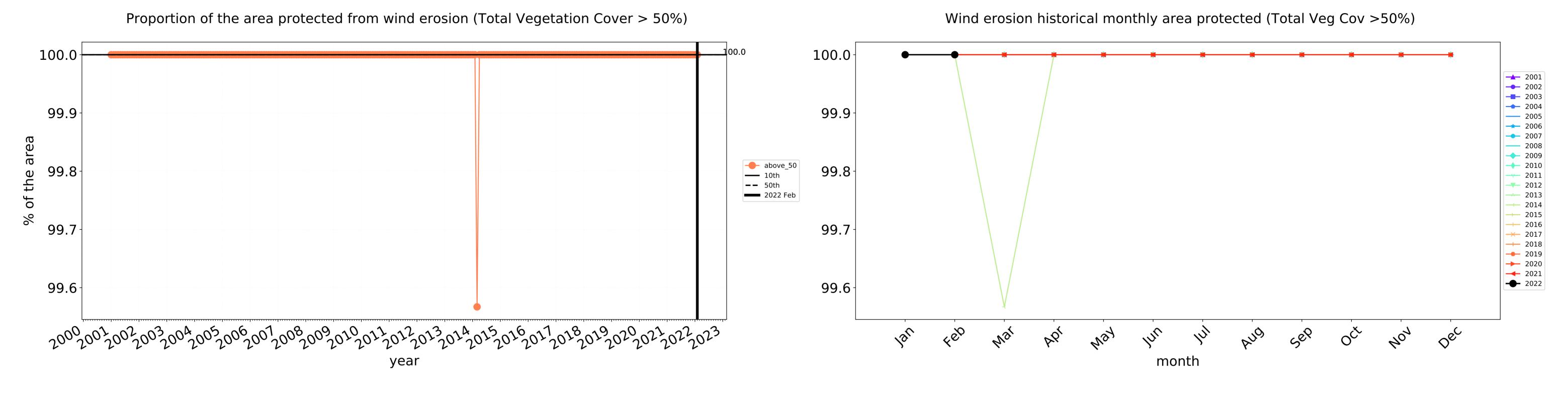


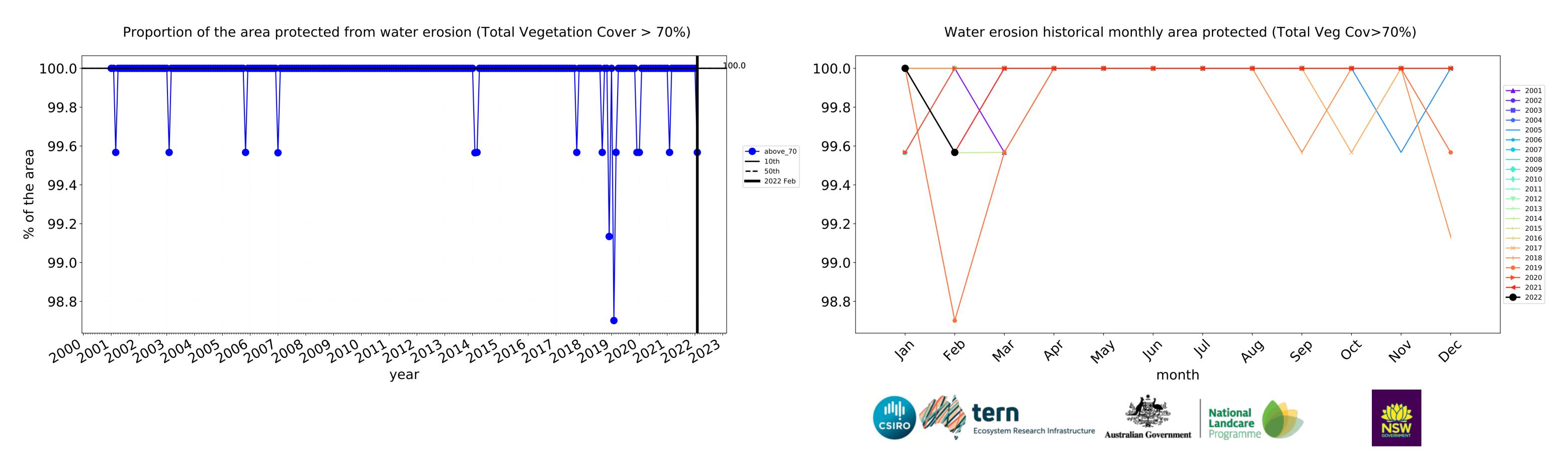


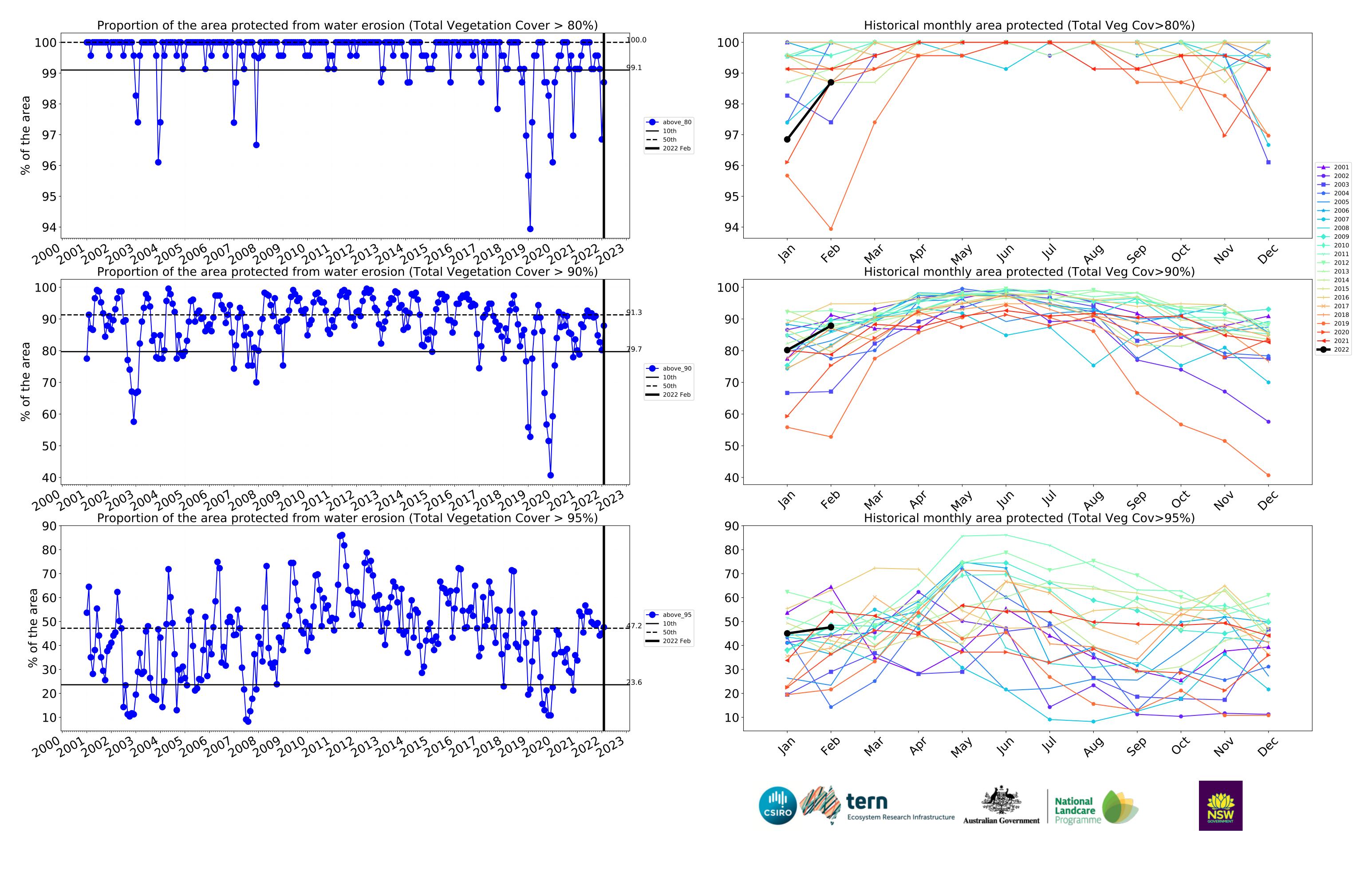




## **Grazing Woodland forest timeseries**



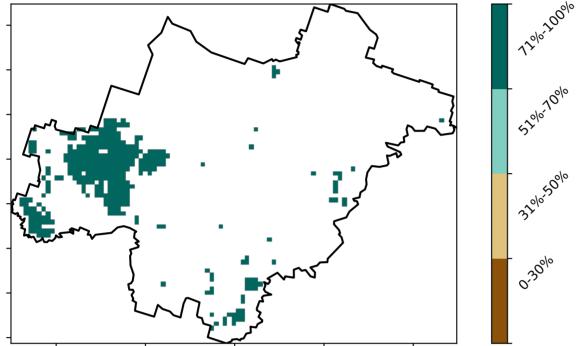




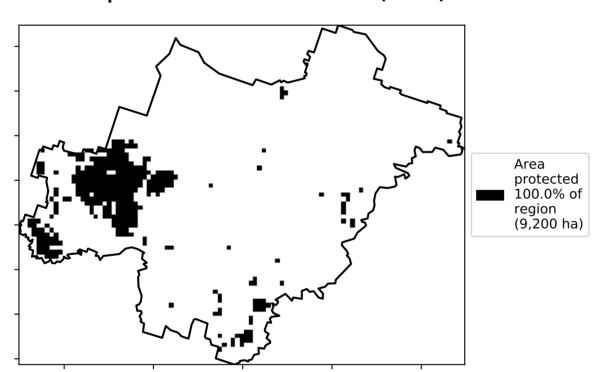
## **Grazing - Forest (non woodland)**

## 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)

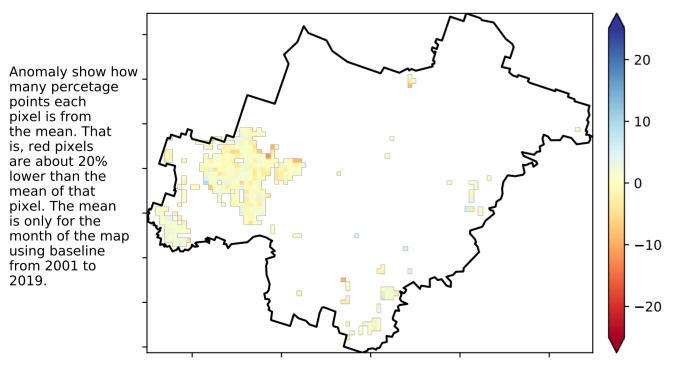
**Total Vegetation Cover [%]** 



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

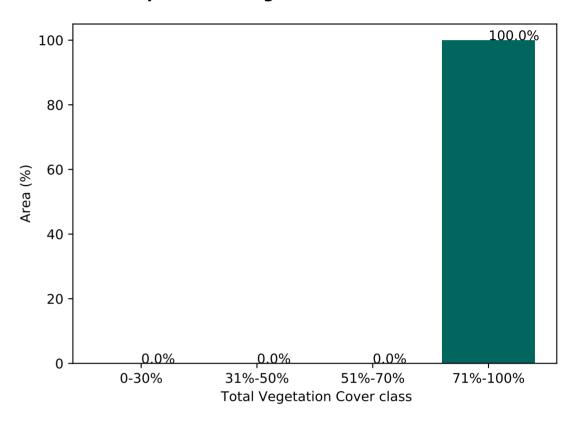


**Total Vegetation Cover Anomaly [%]** 

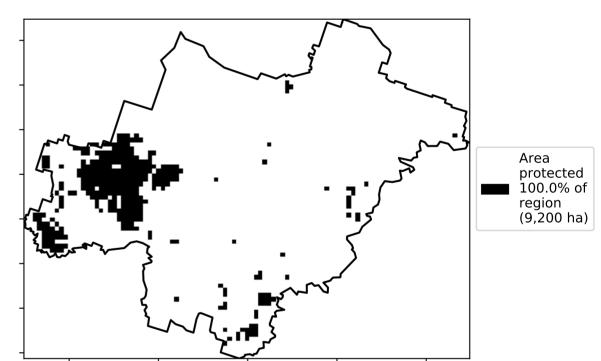


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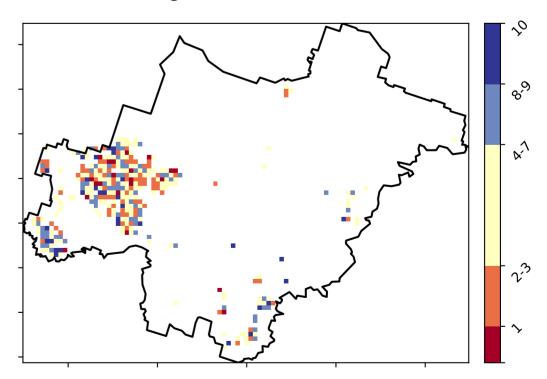
### Proportion of vegetation cover class in area



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



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

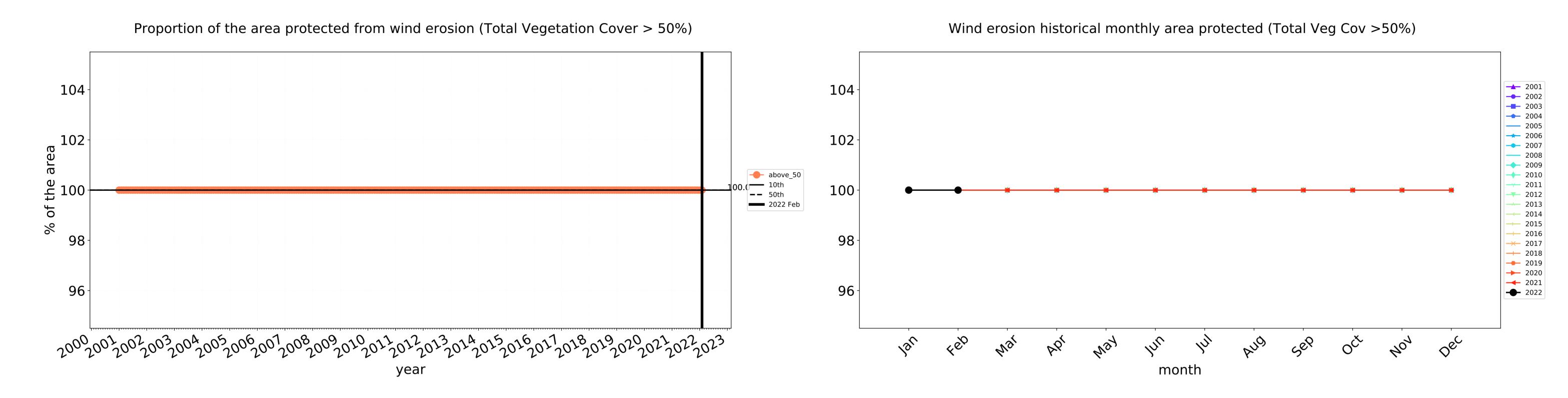


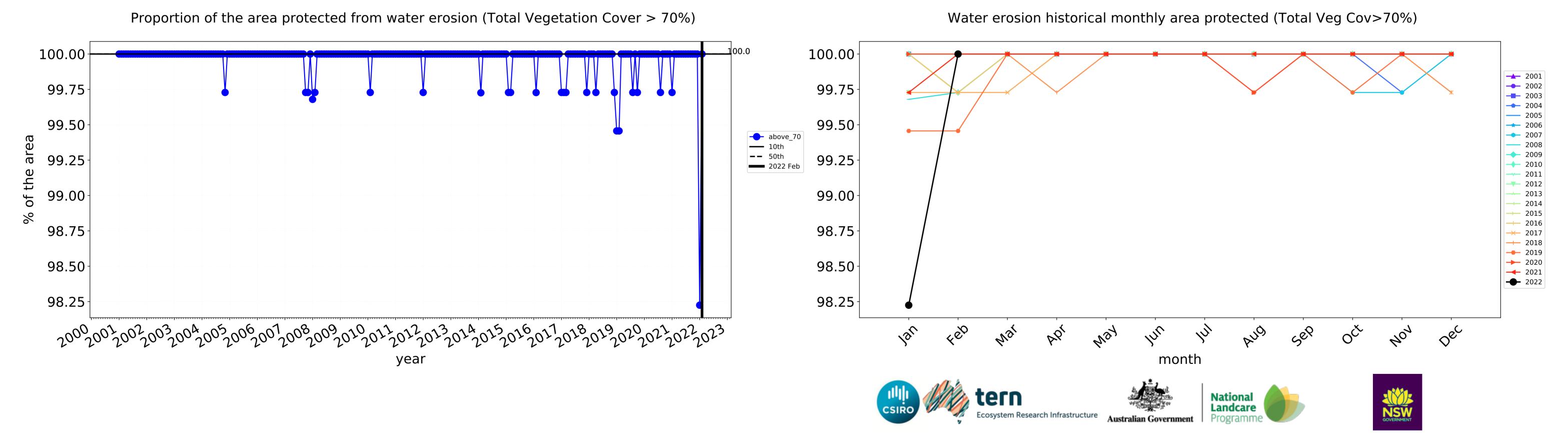


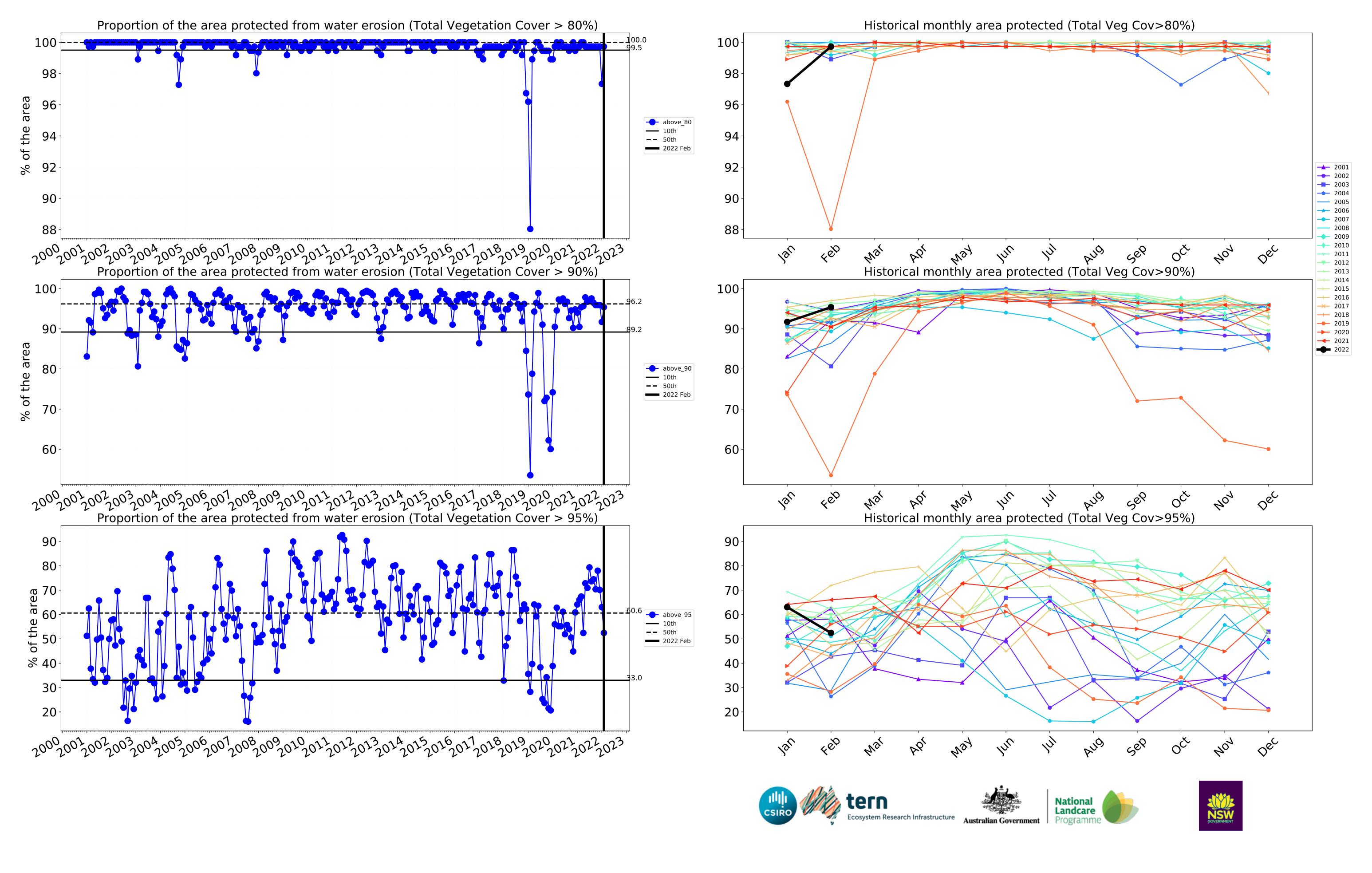




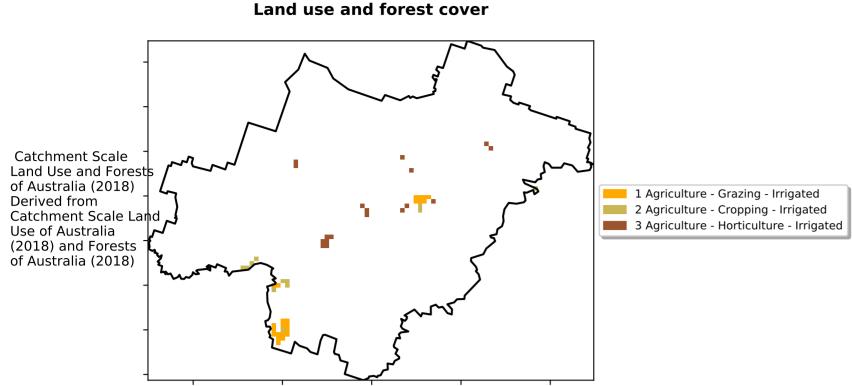


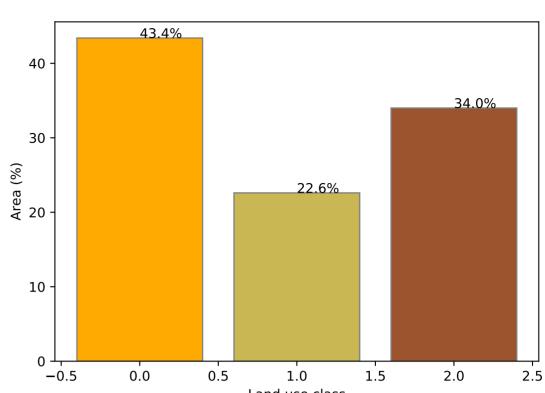




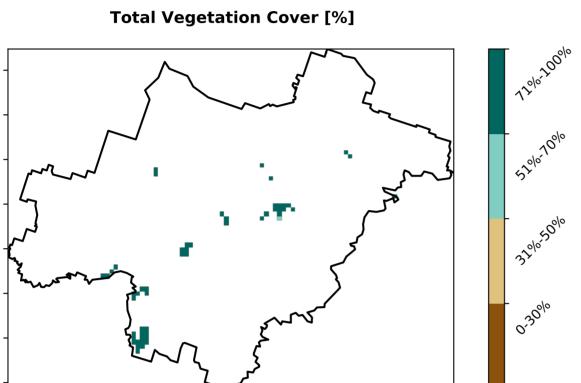


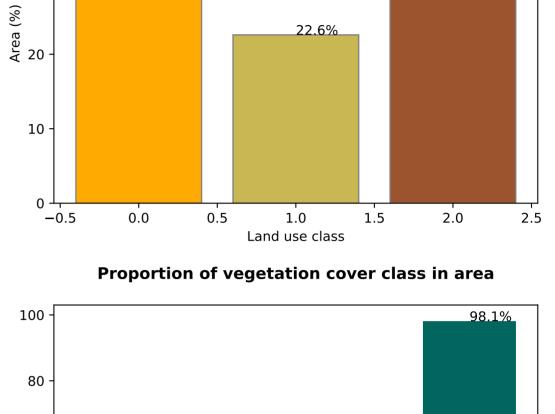
## Irrigation

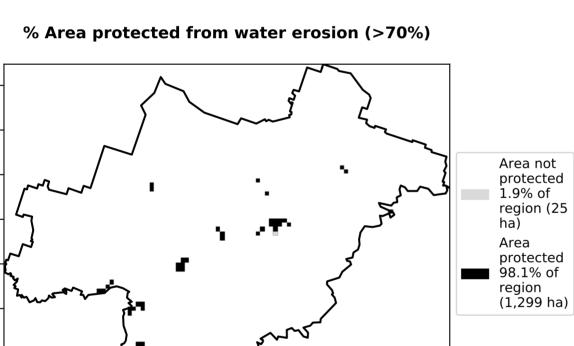


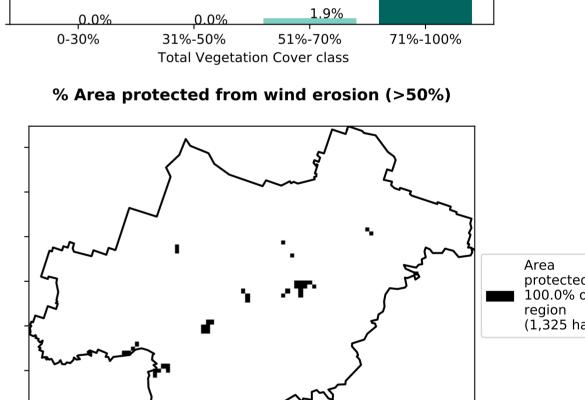


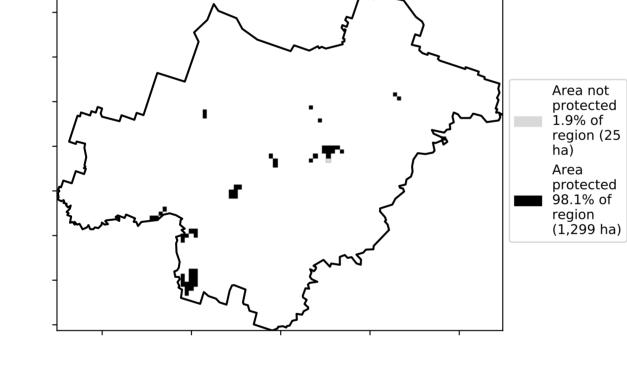
Proportion of each land class in area

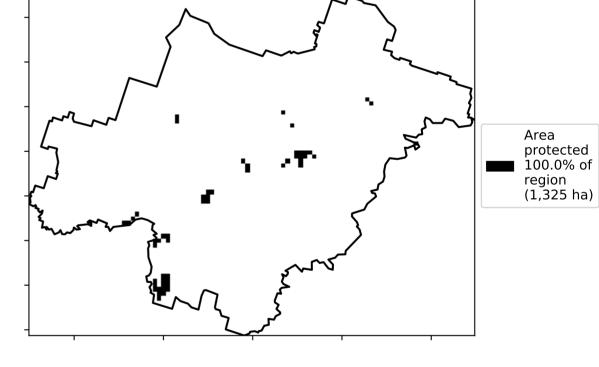


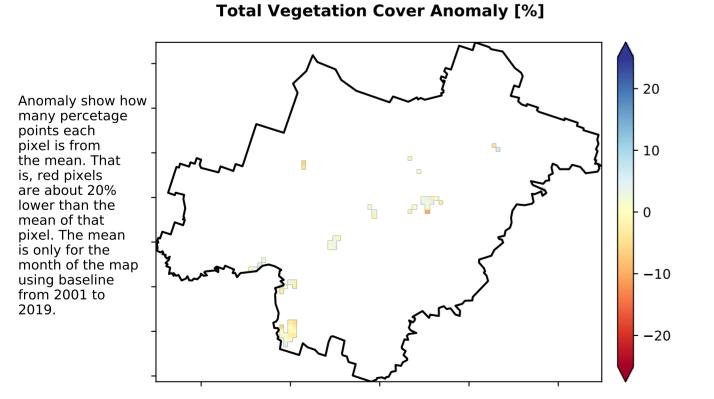


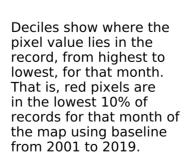


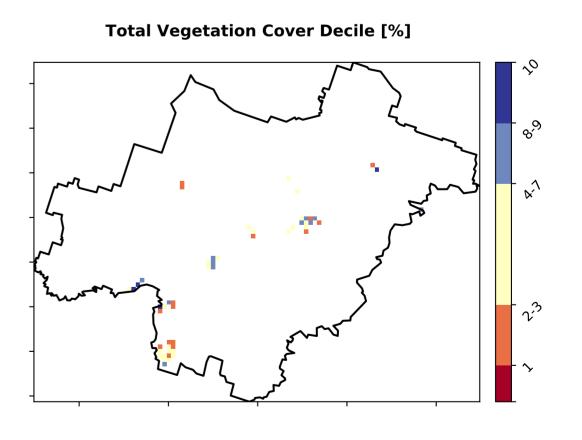
















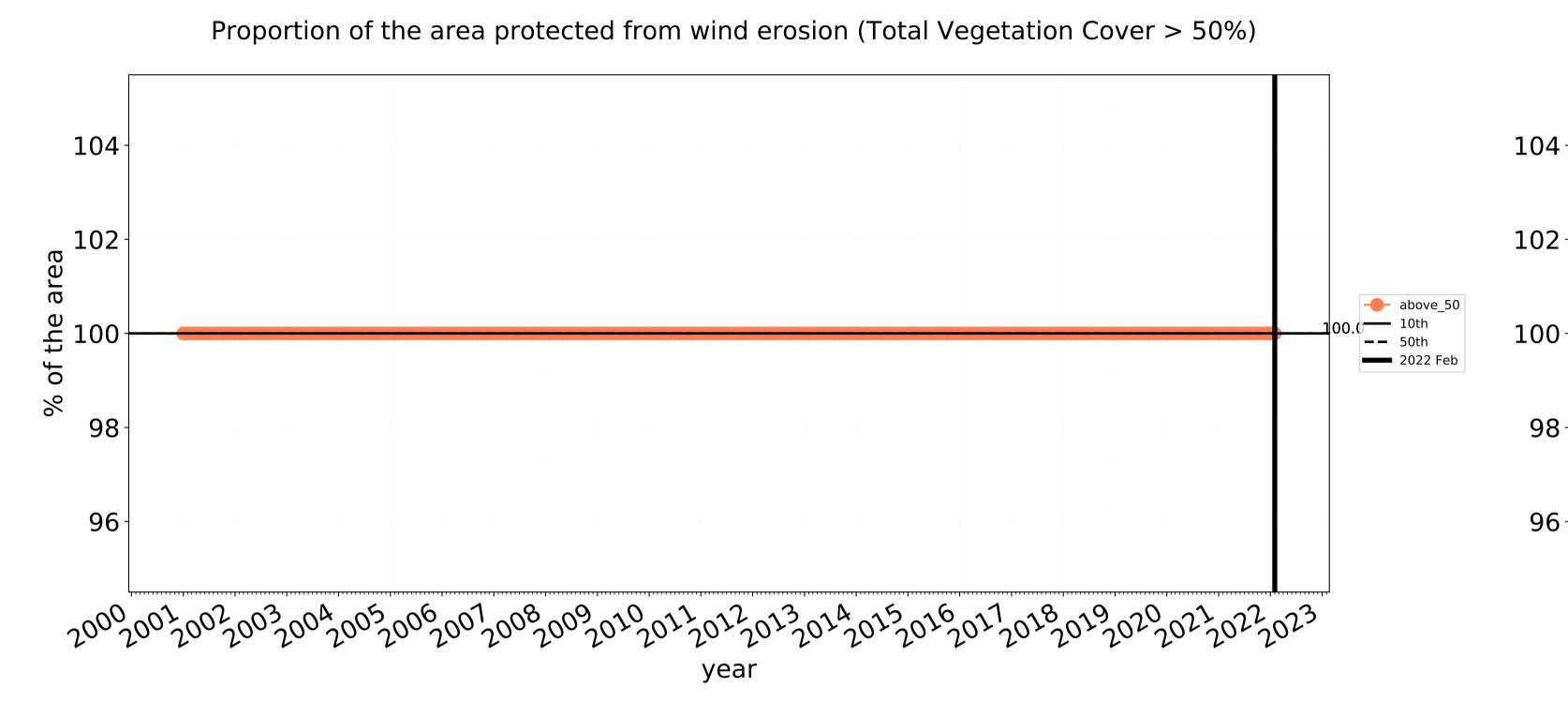


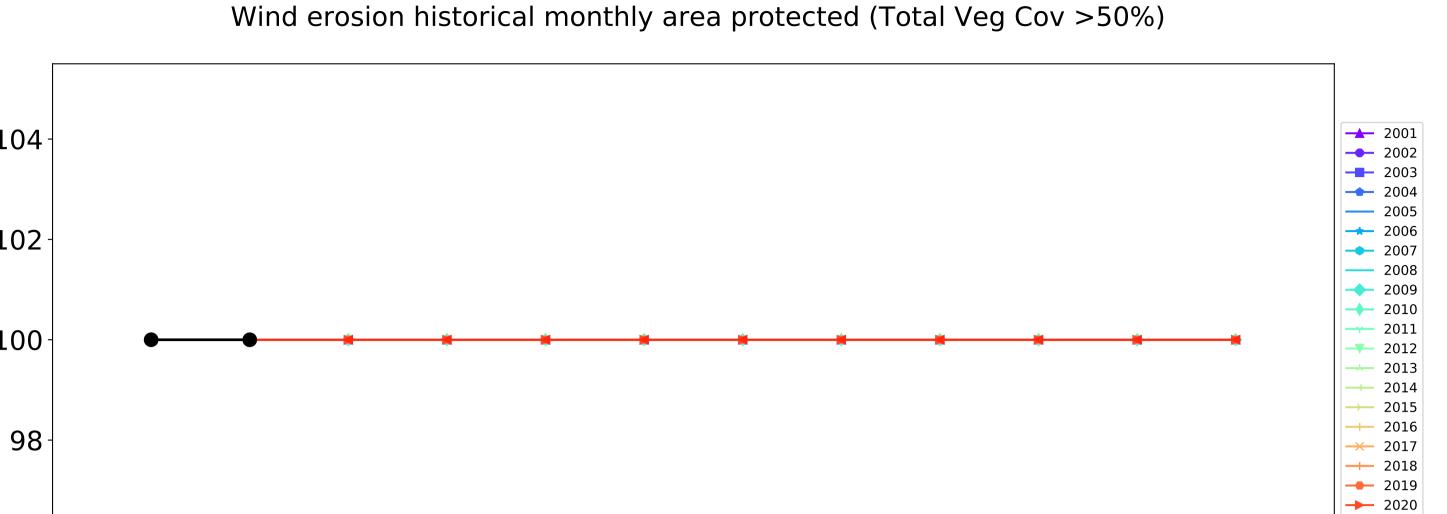
60

20

Area (%)







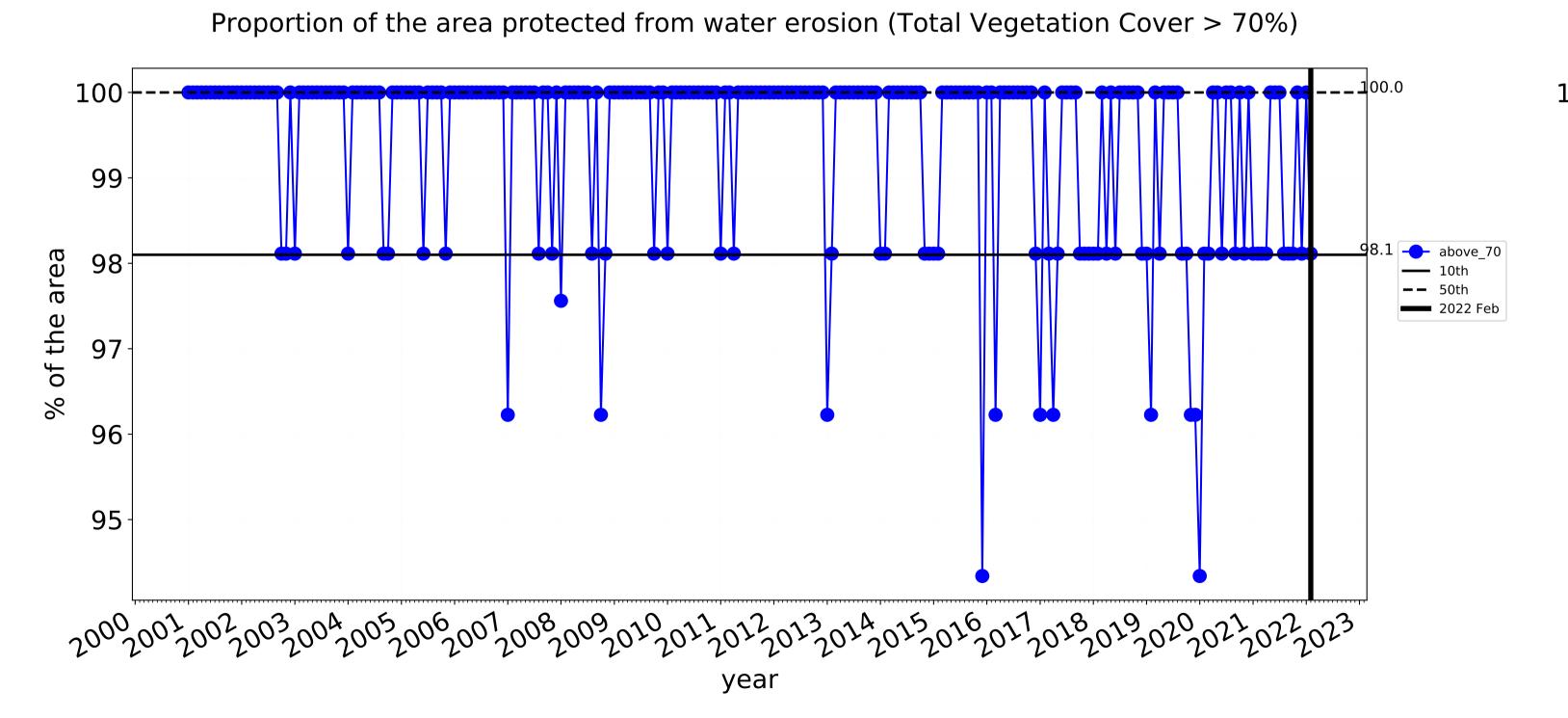
month

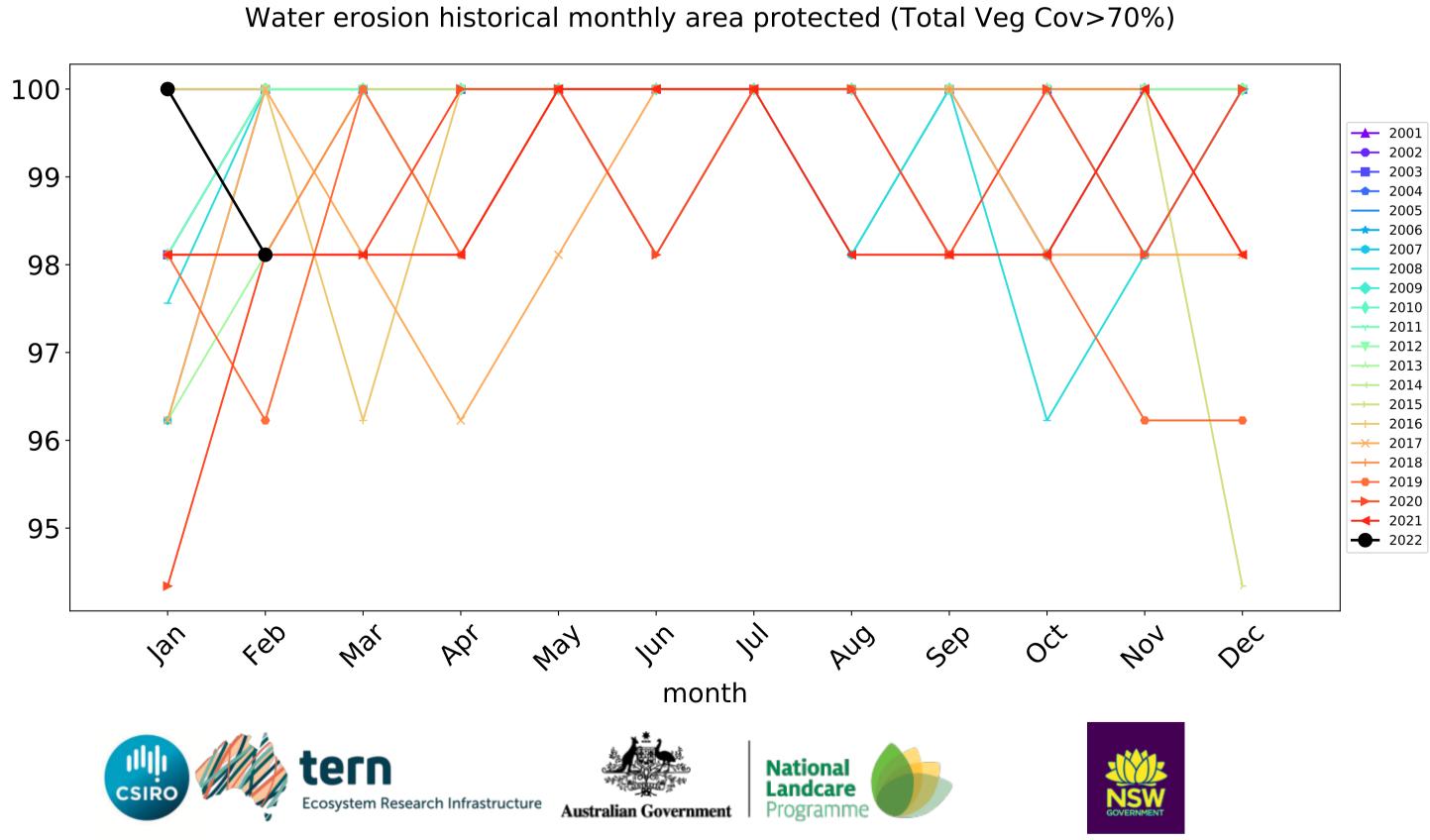
Nay

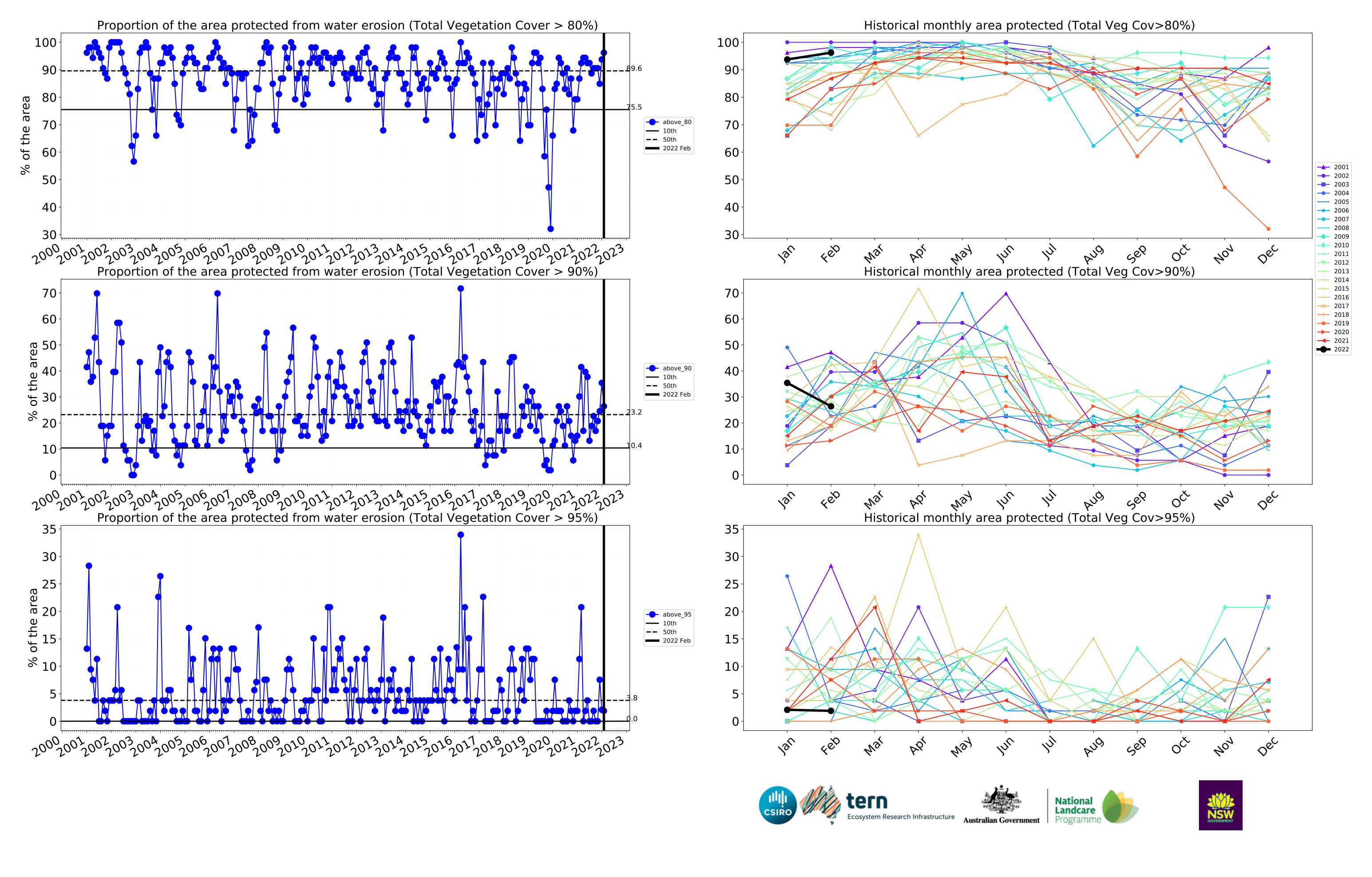
**→** 2021

**---** 2022

404





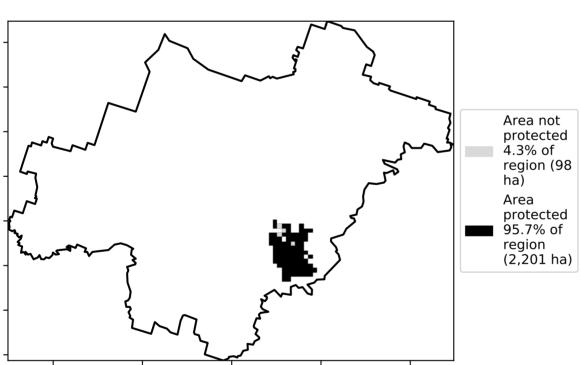


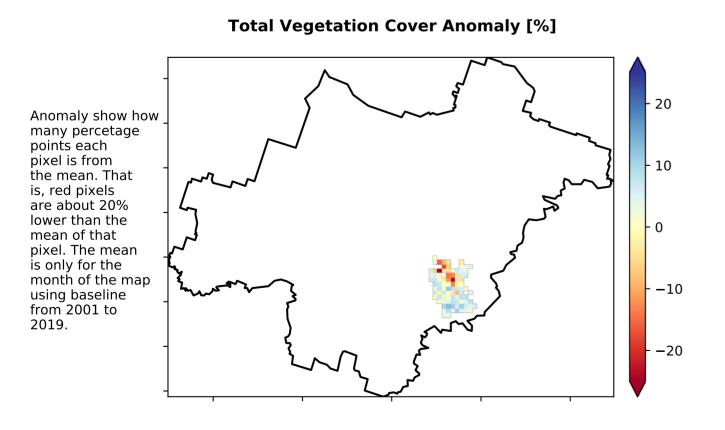
## **Production native forests and plantation forests**

## 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)

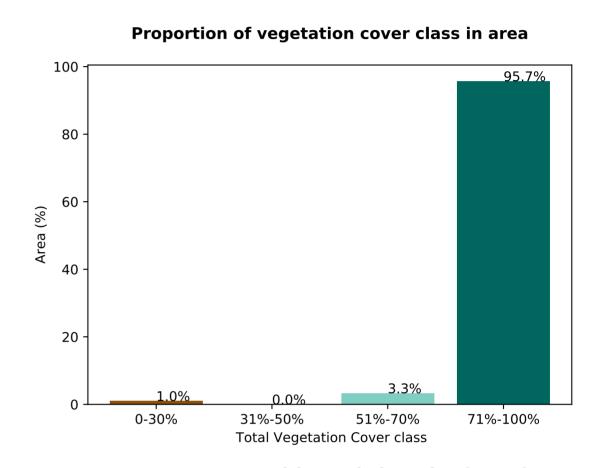
# **Total Vegetation Cover [%]**

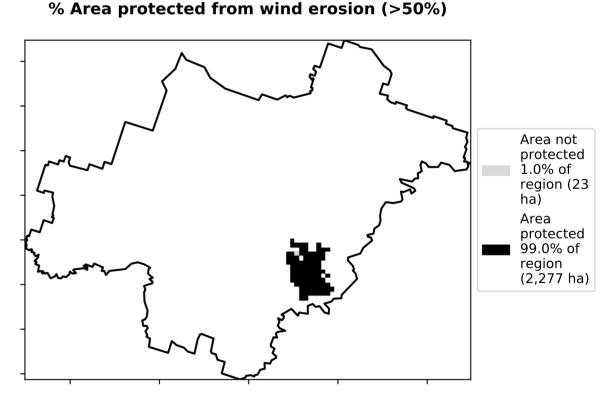
## % Area protected from water erosion (>70%)

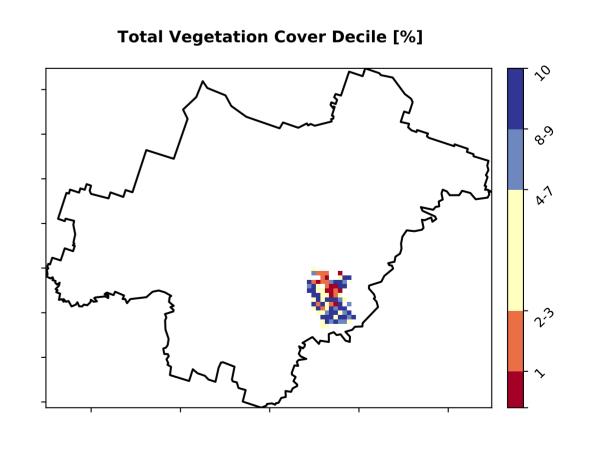




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseling. the map using baseline from 2001 to 2019.







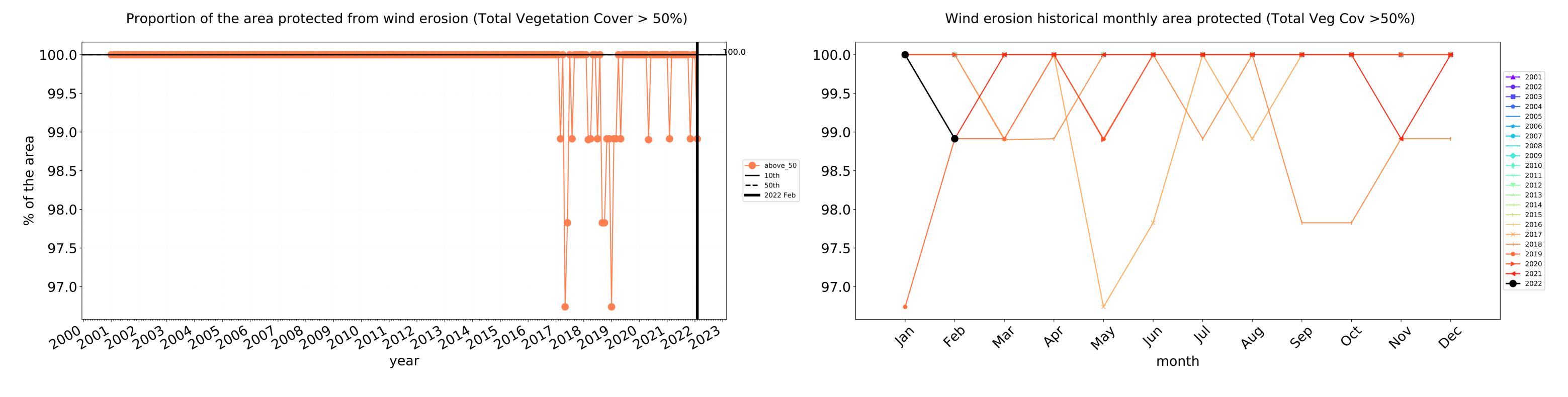


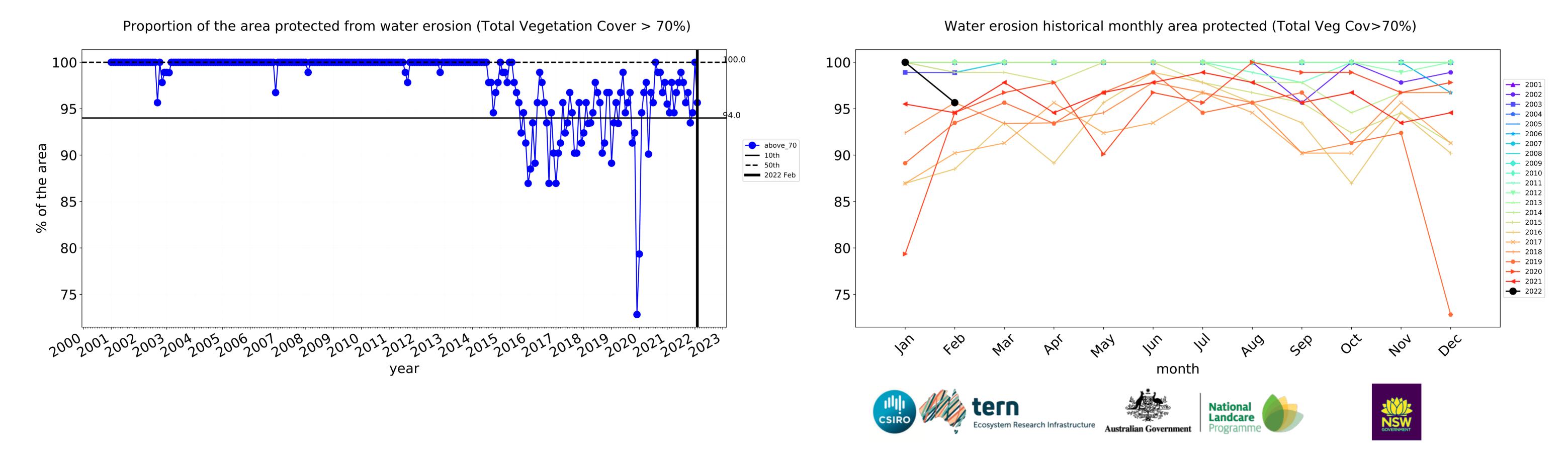


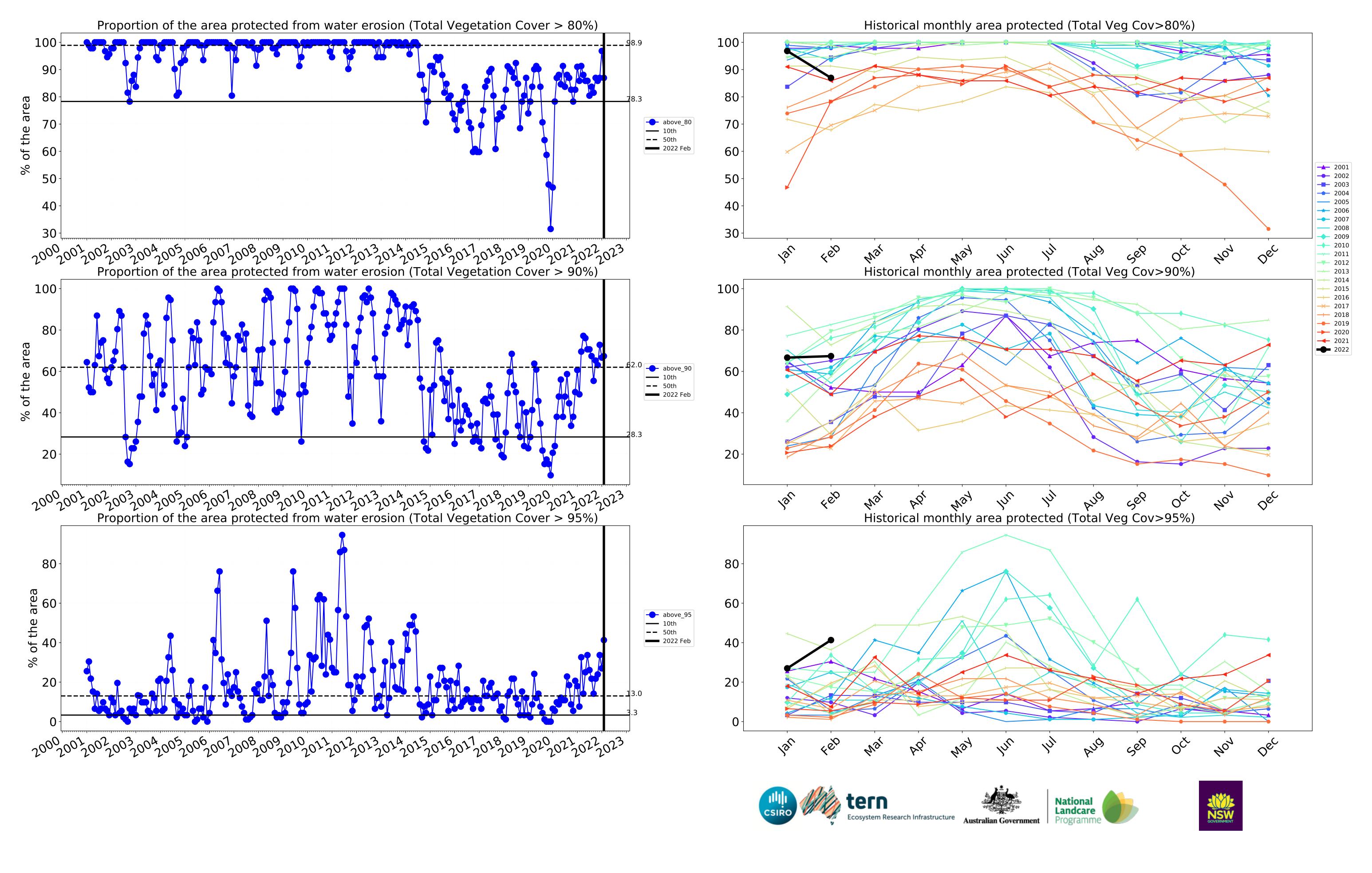




## **Production native forests and plantation forests timeseries**







## Logan\_(C) (93,850 ha and no data 1,934 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	93,850	99.9% 93,775	99.8% 93,675	95.8% 89,900	86.2% 80,875	54.9% 51,500	21.8% 20,450
Conservation and natural environments	10,725	100.0% 10,725	100.0% 10,725	100.0% 10,725	98.6% 10,575	86.2% 9,250	49.4% 5,300
Conservation and natural environments Woodland forest	2,675	100.0% 2,675	100.0% 2,675	100.0% 2,675	98.1% 2,625	86.9% 2,325	53.3% 1,425
Conservation and natural environments Forest (non woodland)	7,900	100.0% 7,900	100.0% 7,900	100.0% 7,900	99.1% 7,825	87.0% 6,875	48.7% 3,850
Agriculture	31,325	99.9% 31,300	99.9% 31,300	99.5% 31,175	97.3% 30,475	74.5% 23,325	35.3% 11,050
Grazing	29,800	99.9% 29,775	99.9% 29,775	99.6% 29,675	97.4% 29,025	77.0% 22,950	37.0% 11,025
Grazing non forest	14,825	99.8% 14,800	99.8% 14,800	99.3% 14,725	95.4% 14,150	61.4% 9,100	23.3% 3,450
Grazing Woodland forest	5,775	100.0% 5,775	100.0% 5,775	99.6% 5,750	98.7% 5,700	87.9% 5,075	47.6% 2,750
Grazing - Forest (non woodland)	9,200	100.0% 9,200	100.0% 9,200	100.0% 9,200	99.7% 9,175	95.4% 8,775	52.4% 4,825
Irrigation	1,325	100.0% 1,325	100.0% 1,325	98.1% 1,300	96.2% 1,275	26.4% 350	1.9% 25
Production native forests and plantation forests	2,300	98.9% 2,275	98.9% 2,275	95.7% 2,200	87.0% 2,000	67.4% 1,550	41.3% 950







