## Total vegetation cover soil protection Region:LGA Gympie (R) 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. 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



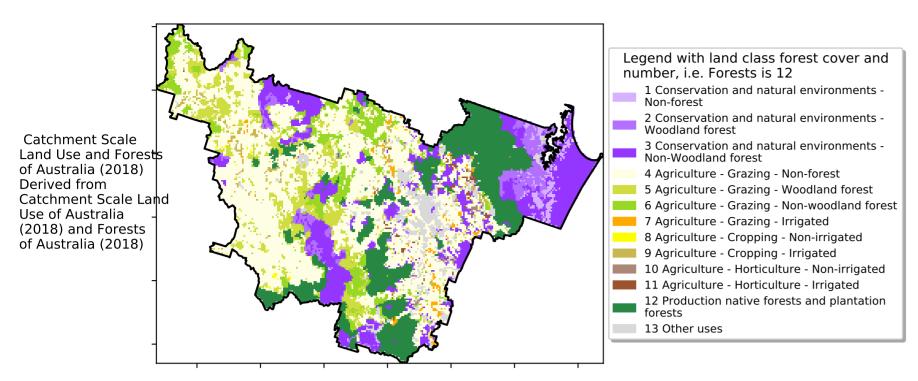


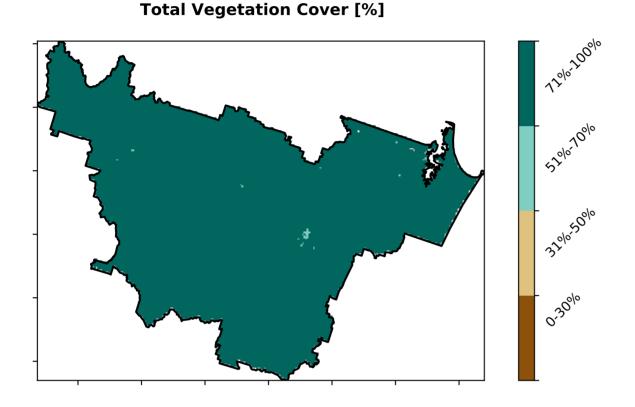




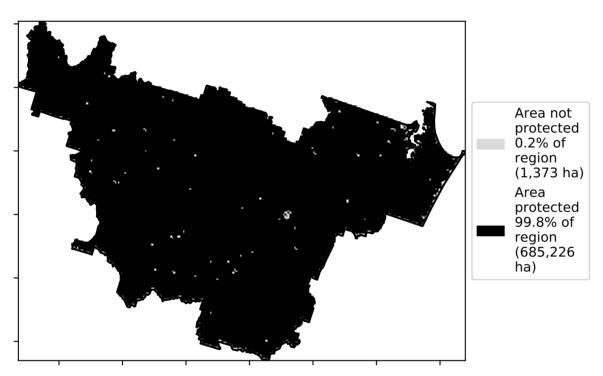
#### **Vegetation Cover Feb 2022**

#### Land use and forest cover

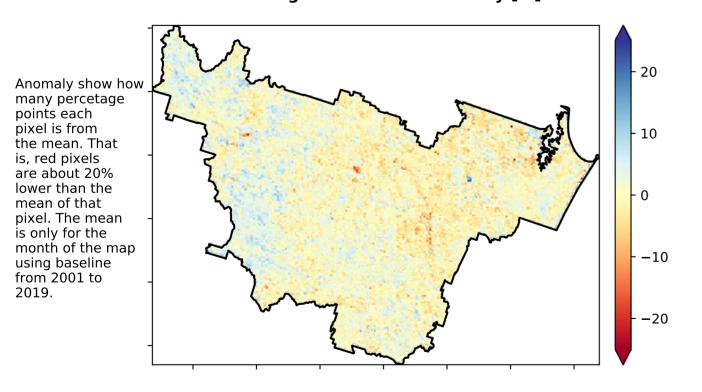




#### % Area protected from water erosion (>70%)

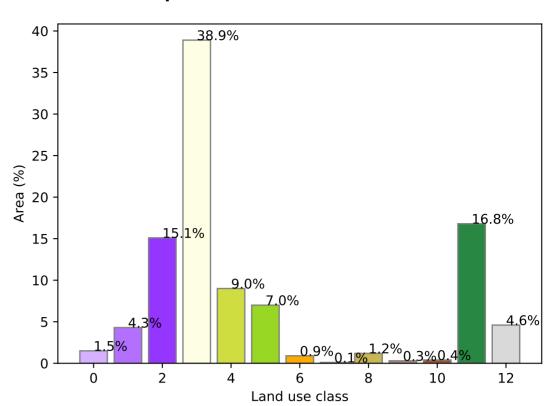


#### Total Vegetation Cover Anomaly [%]

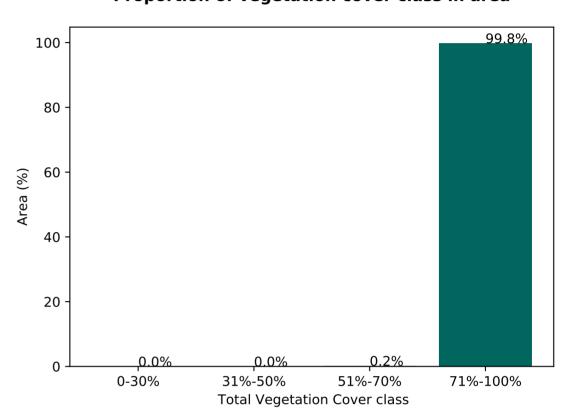


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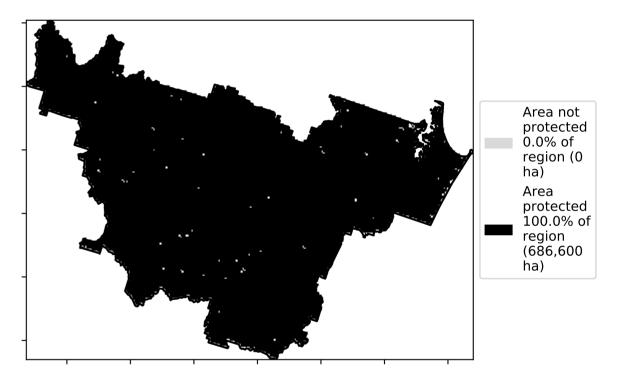
#### Proportion of each land class in area

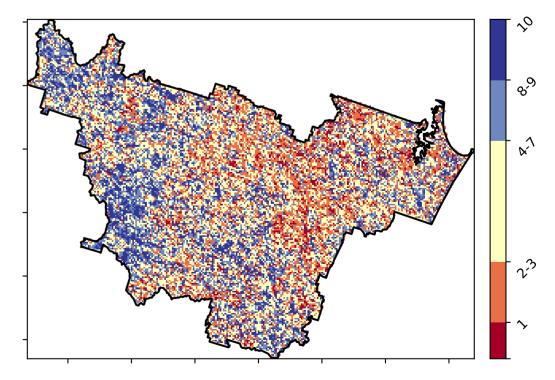


#### Proportion of vegetation cover class in area



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



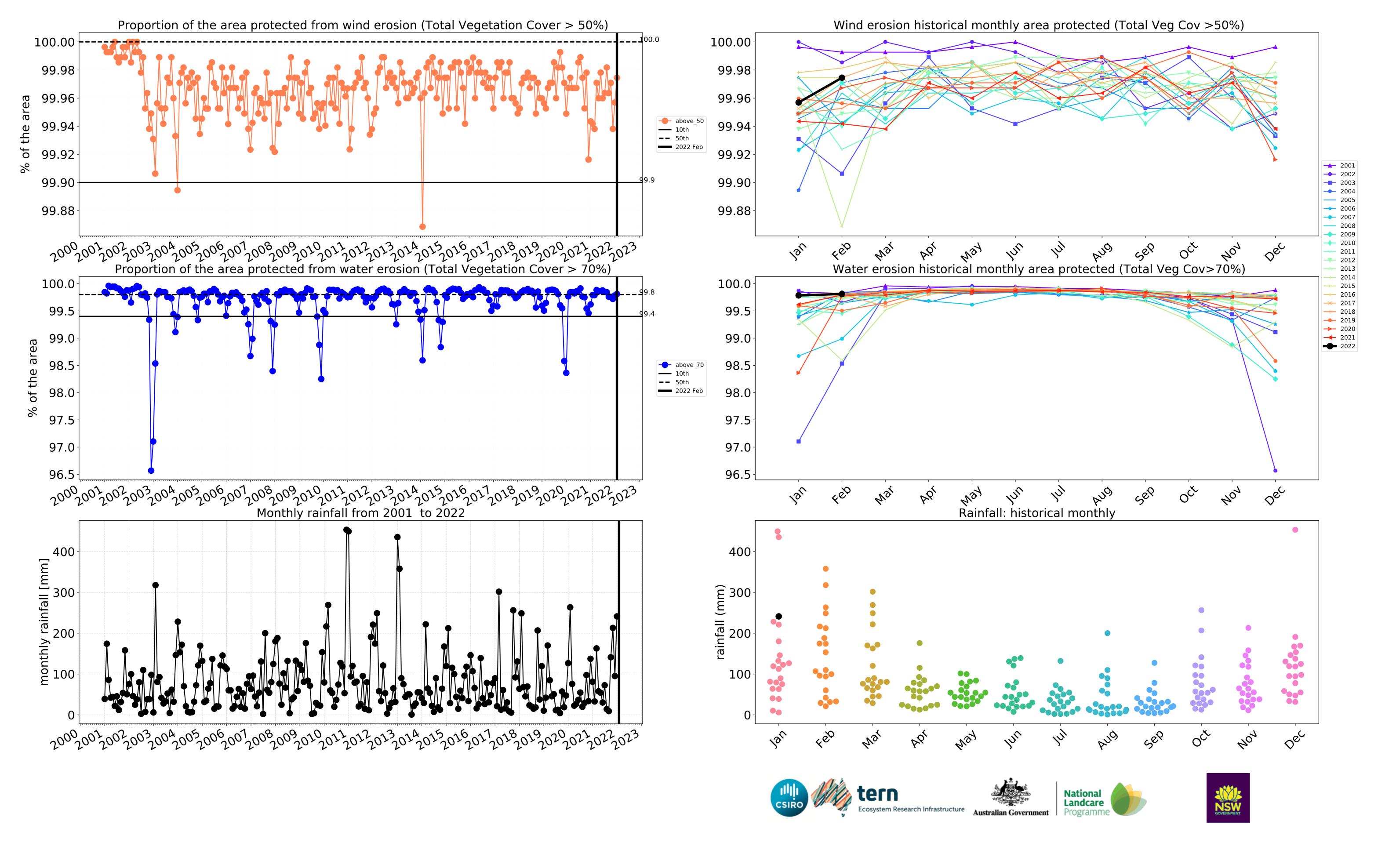


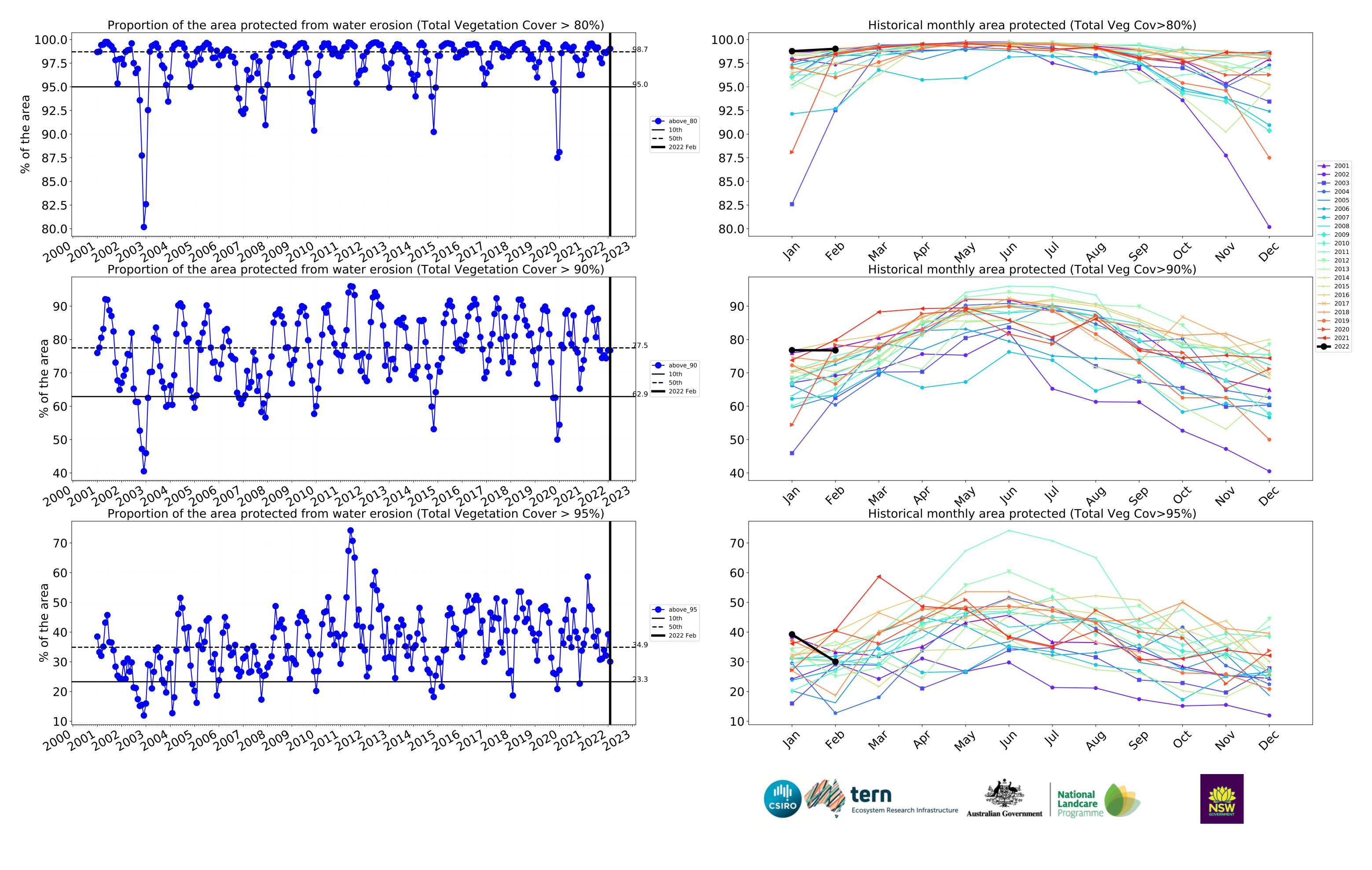




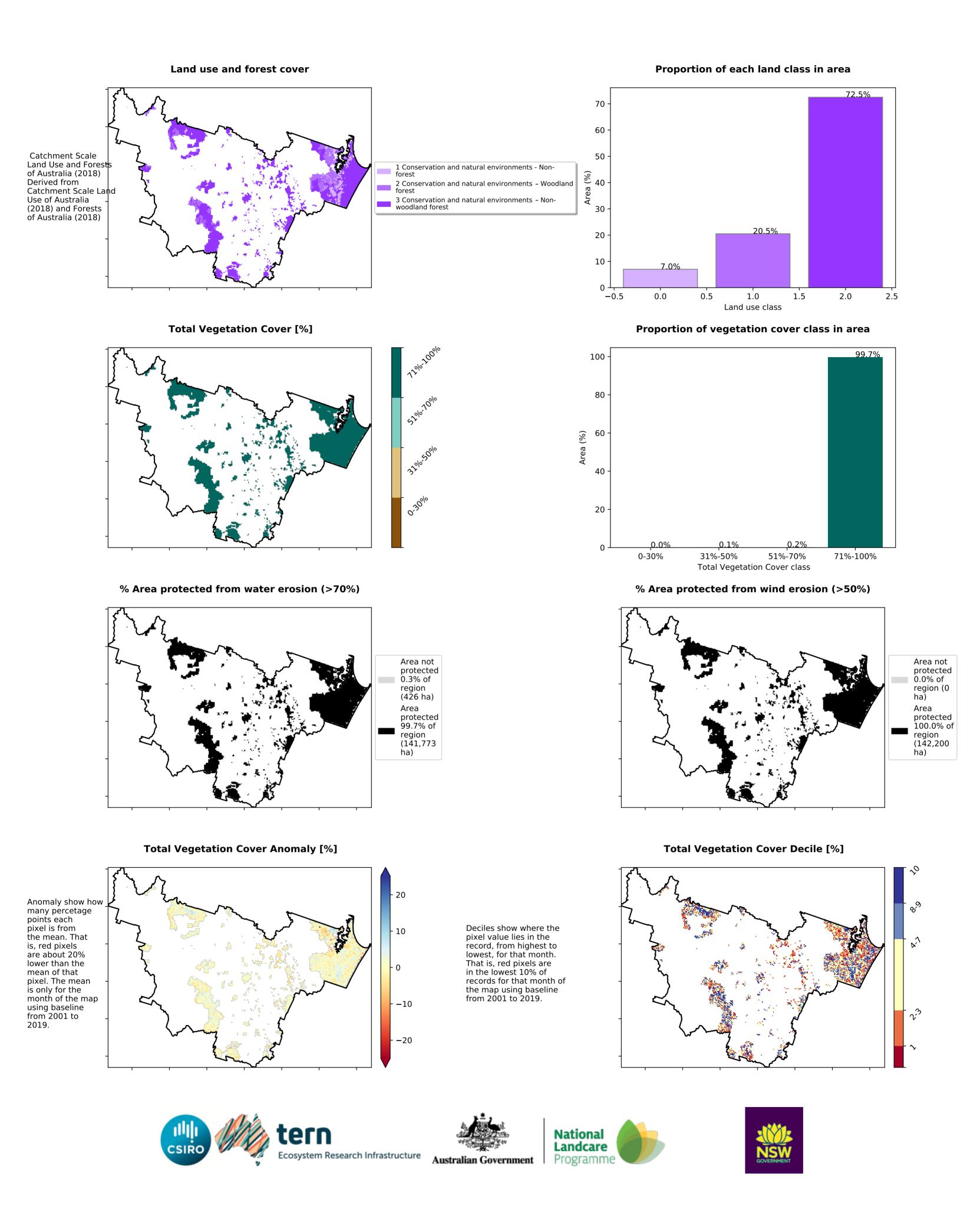




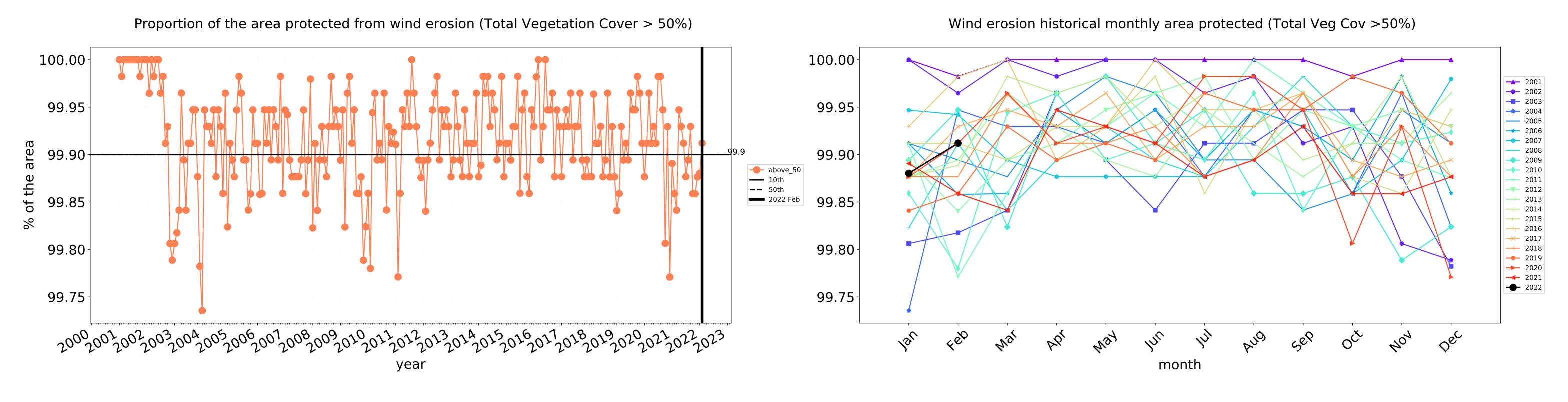


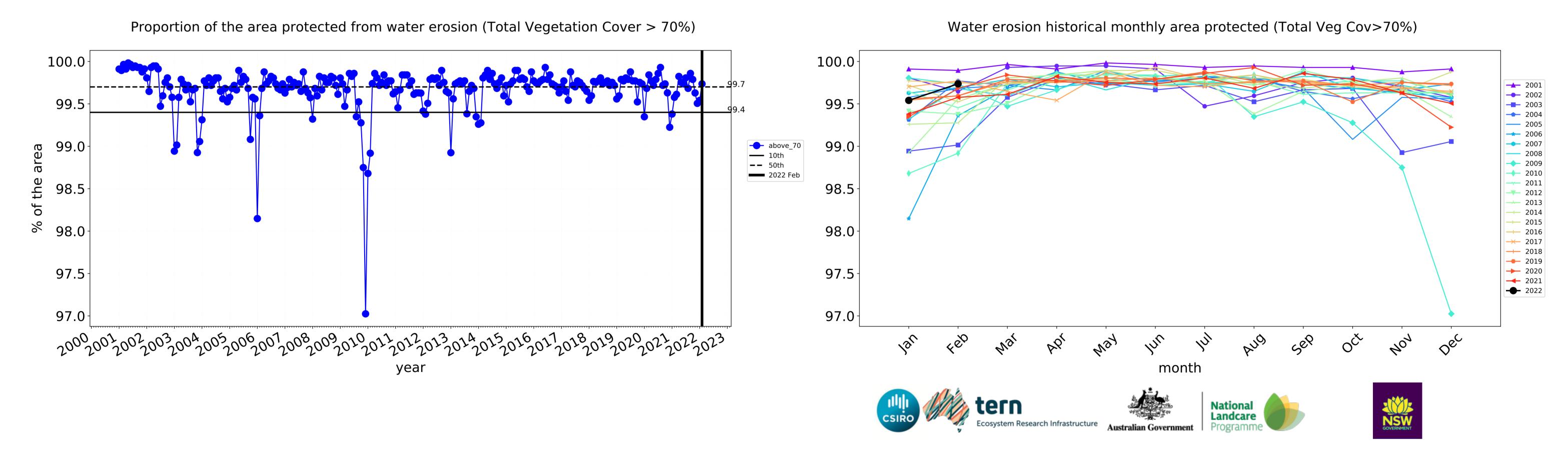


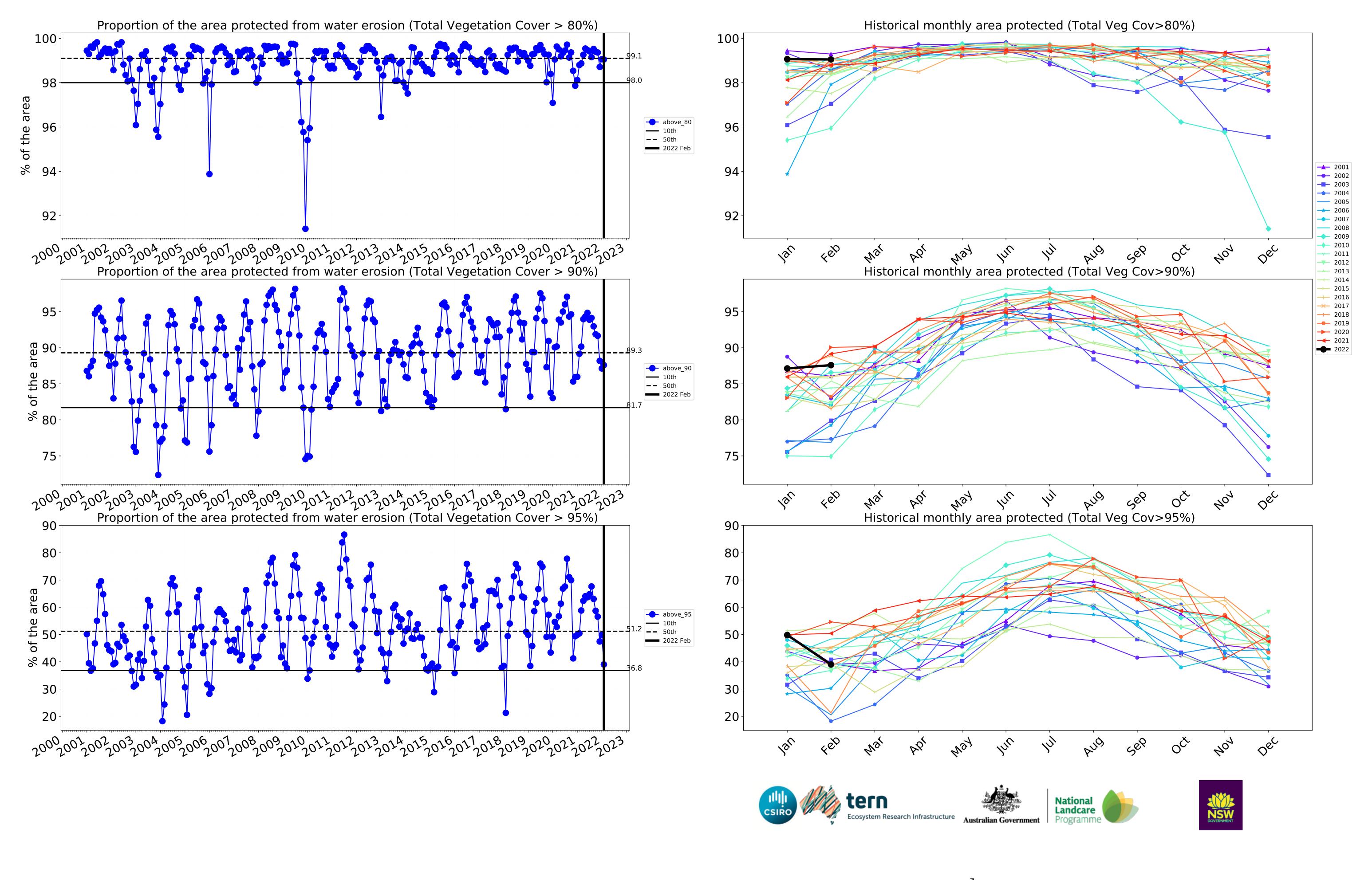
#### **Conservation and natural environments**



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

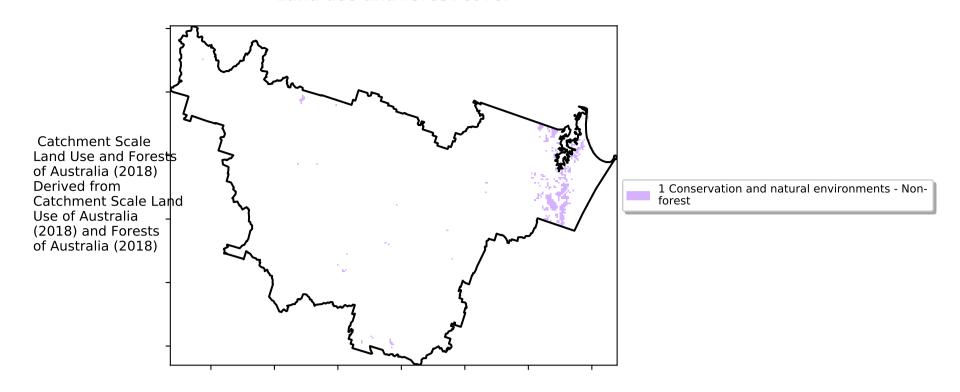




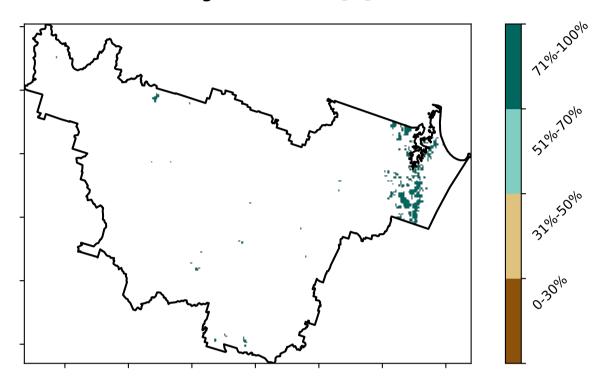


#### **Conservation and natural environments non forest**

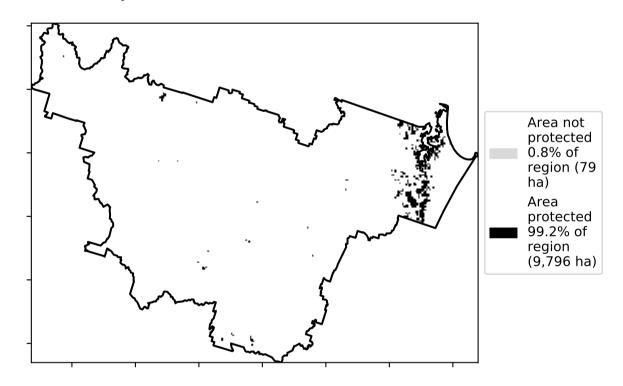
#### Land use and forest cover



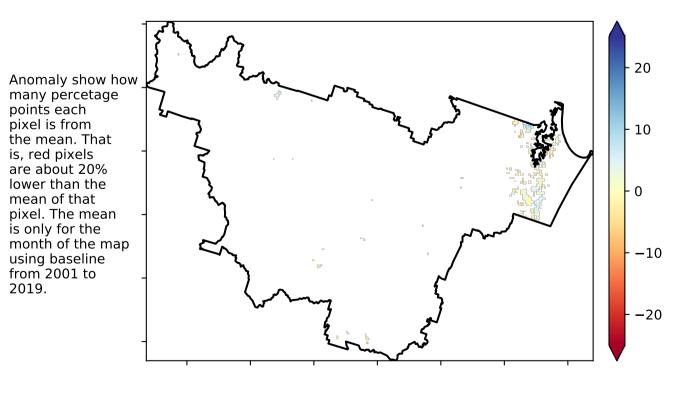
#### Total Vegetation Cover [%]



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

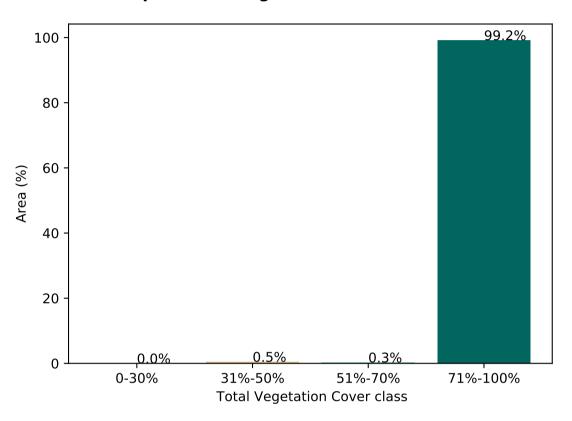


#### **Total Vegetation Cover Anomaly [%]**

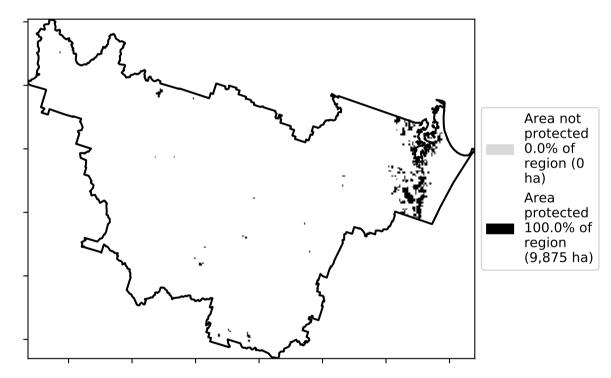


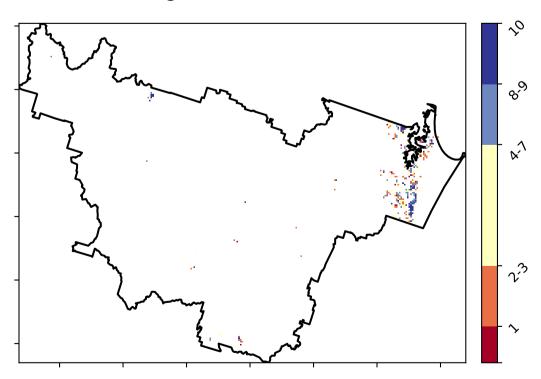
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

#### Proportion of vegetation cover class in area



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





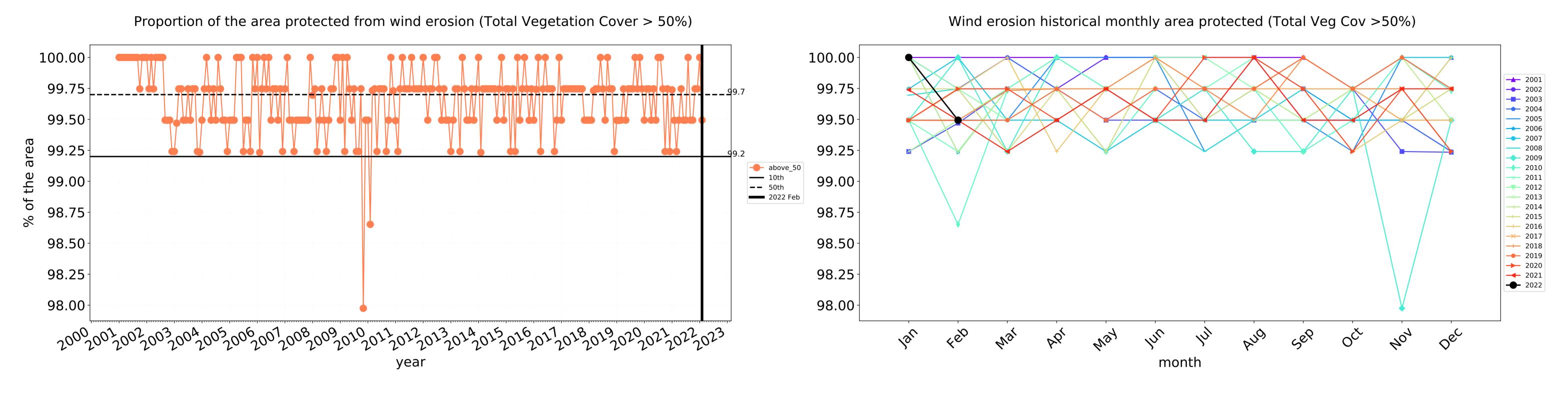


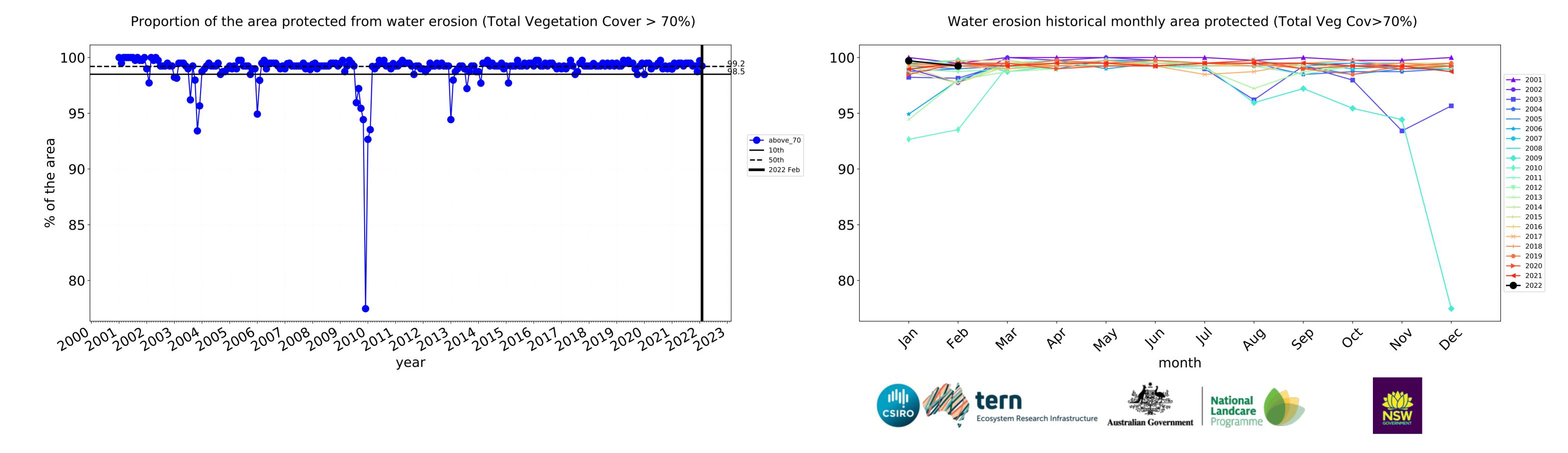


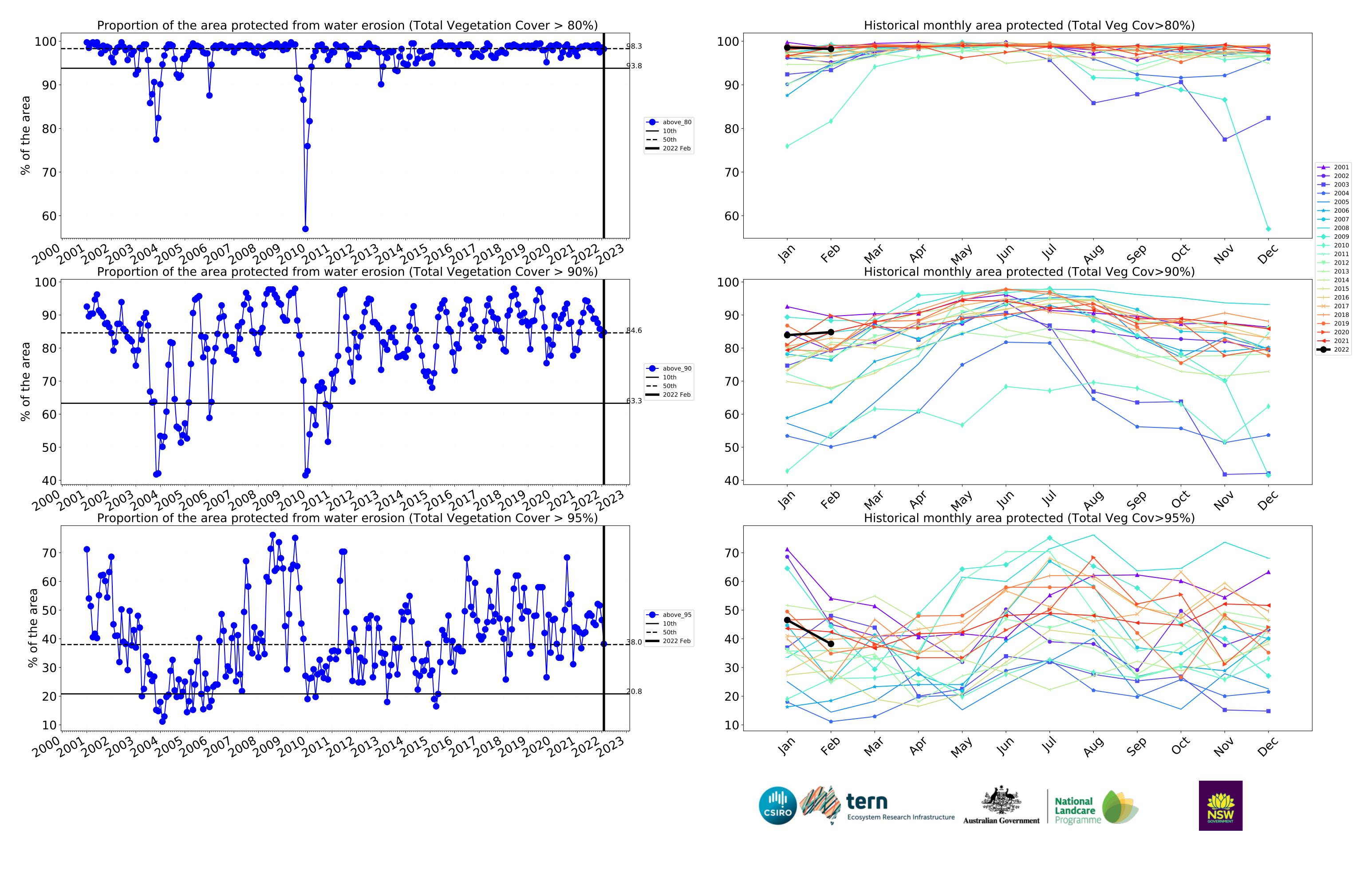




#### **Conservation and natural environments non forest timeseries**





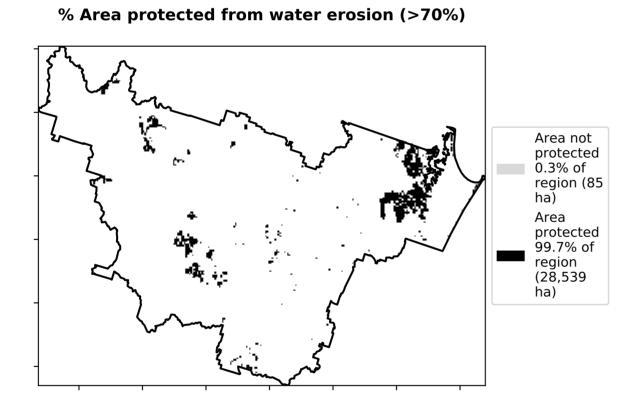


#### **Conservation and natural environments Woodland forest**

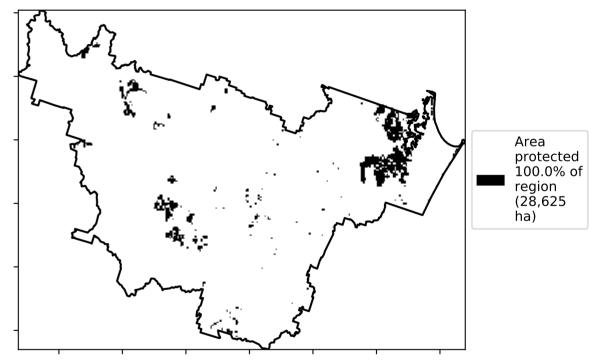
#### Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Conservation and natural environments - Woodland Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

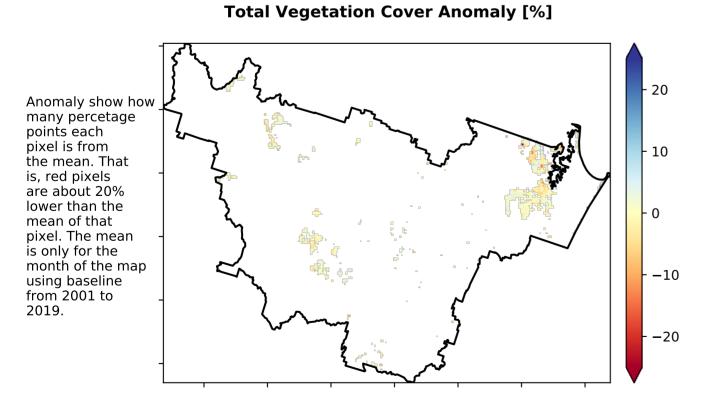
# **Total Vegetation Cover [%]**

#### Proportion of vegetation cover class in area 99.7% 100 80 Area (%) 60 40 20 · 0.0% 0.3% 0.0% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**

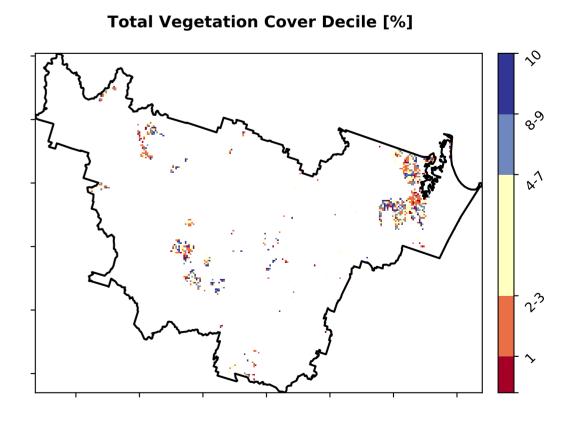








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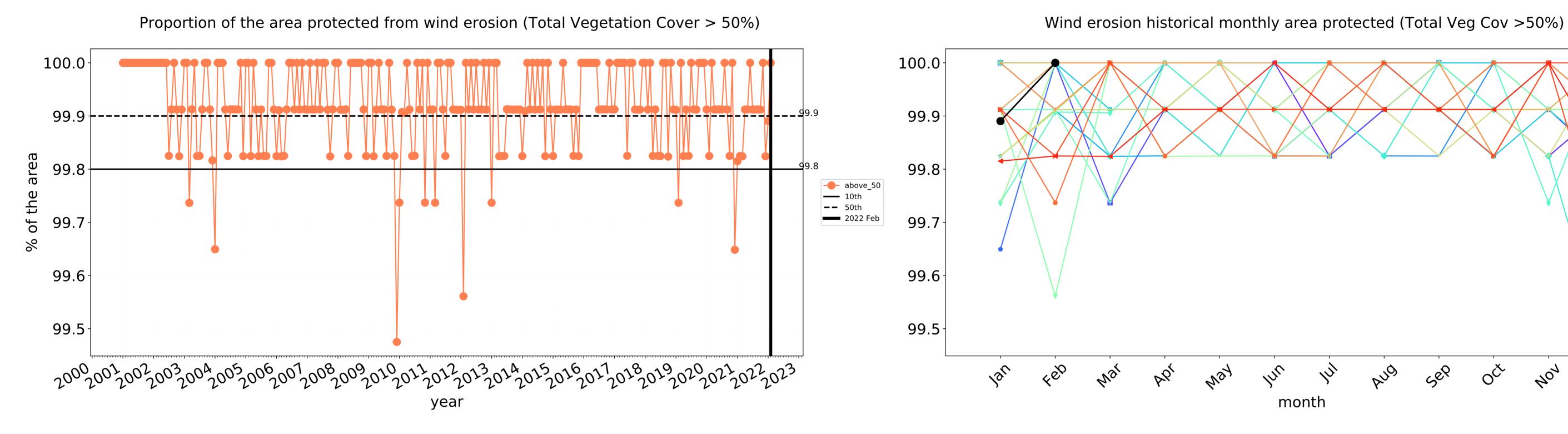


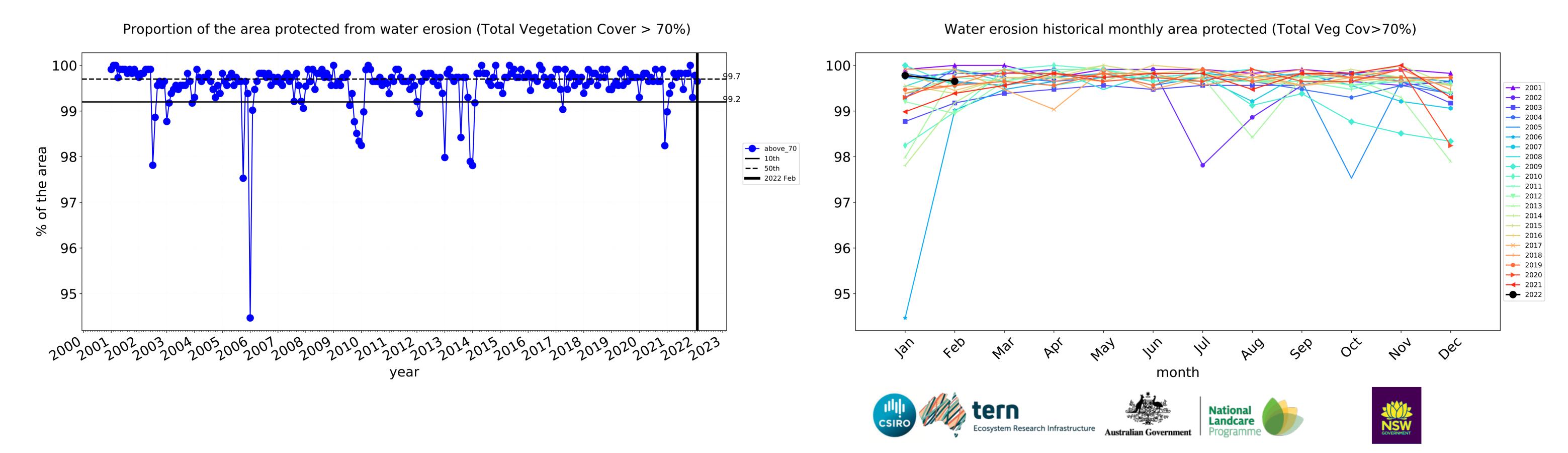


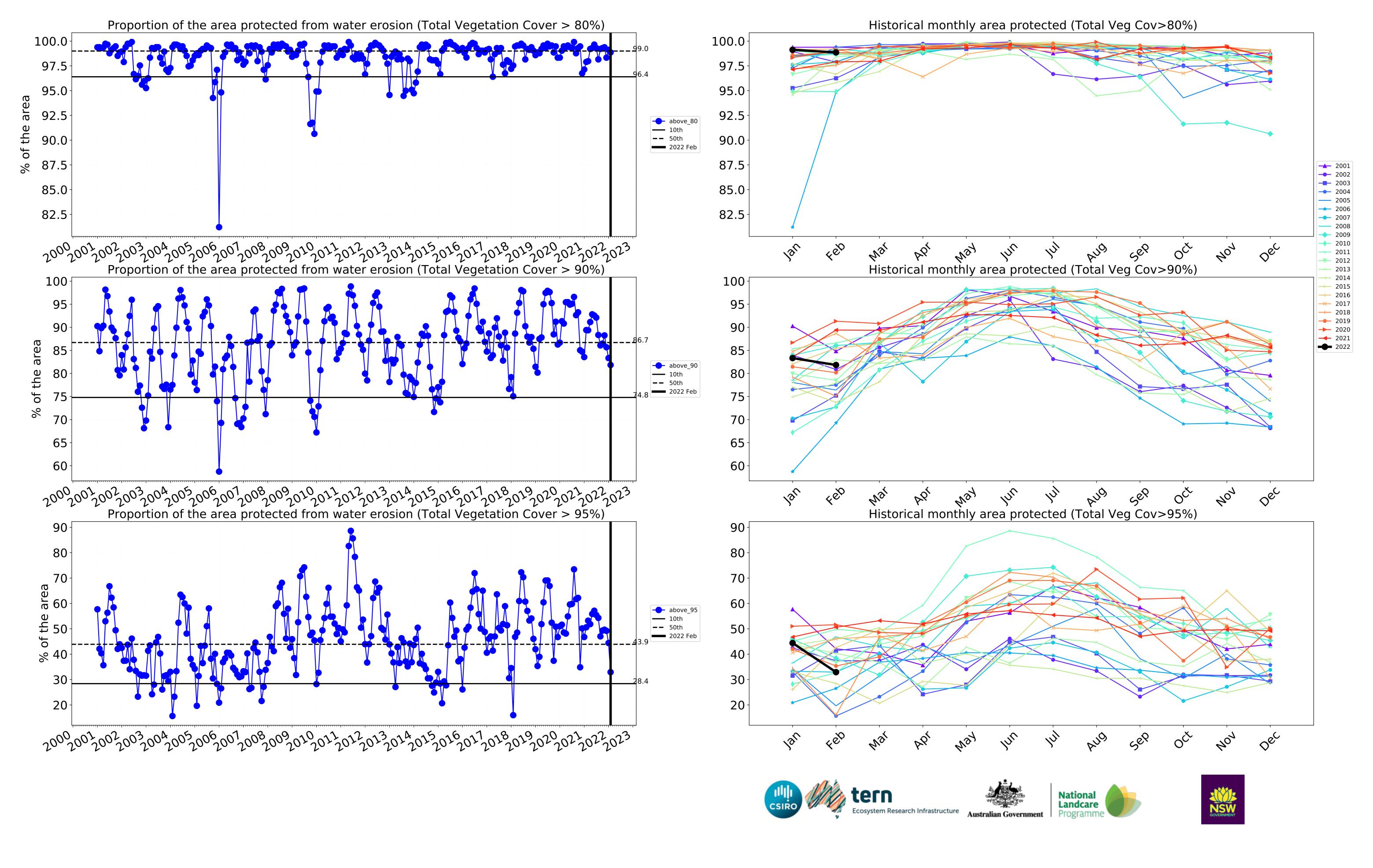




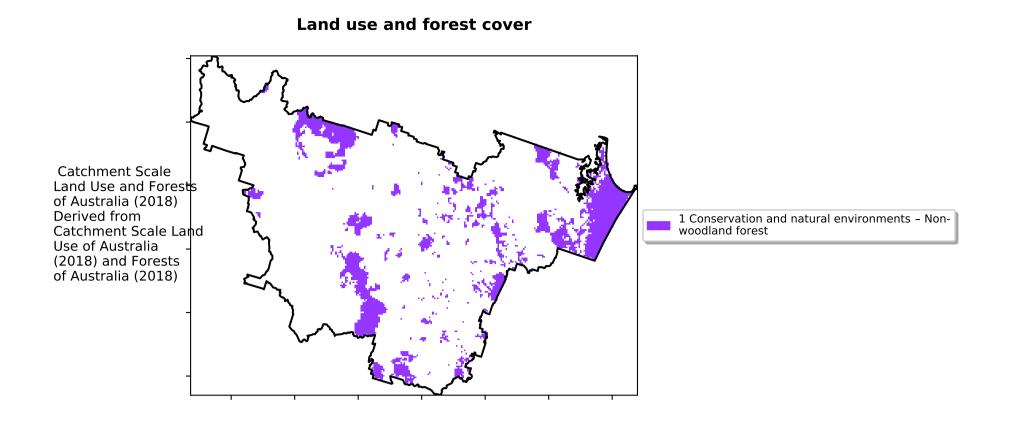
#### **Conservation and natural environments Woodland forest timeseries**

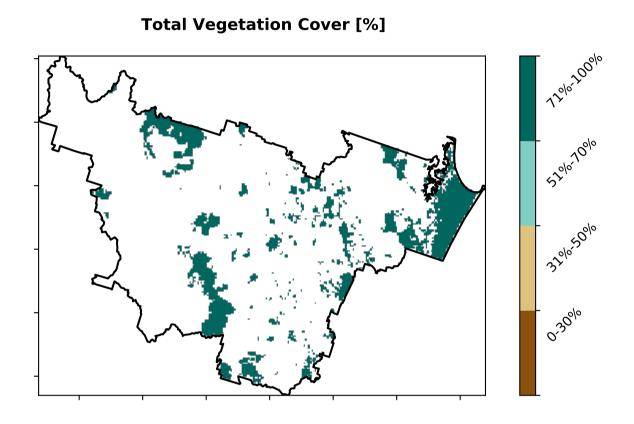


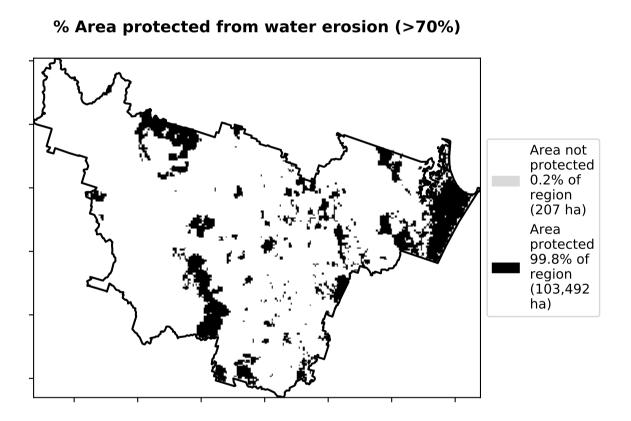


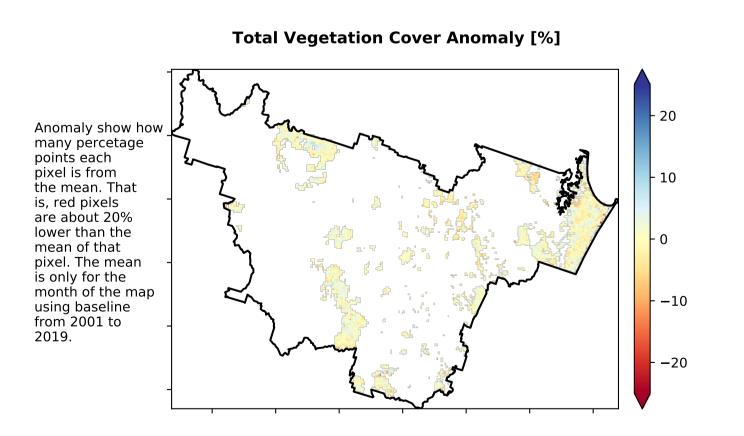


#### **Conservation and natural environments Forest (non woodland)**

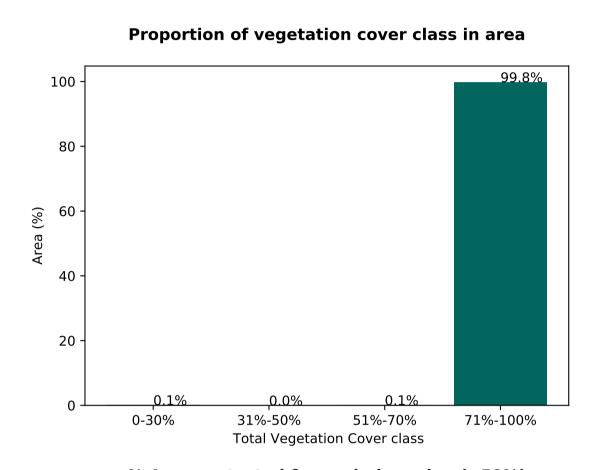


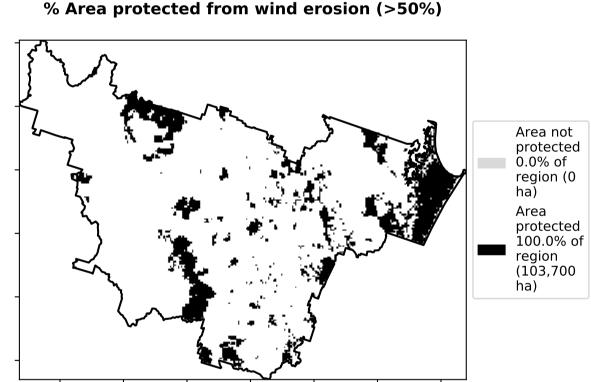


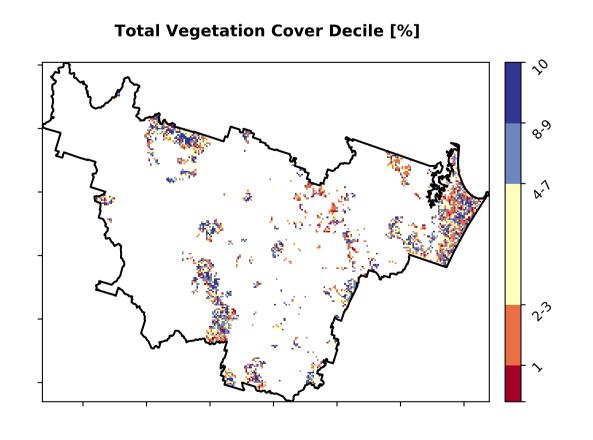




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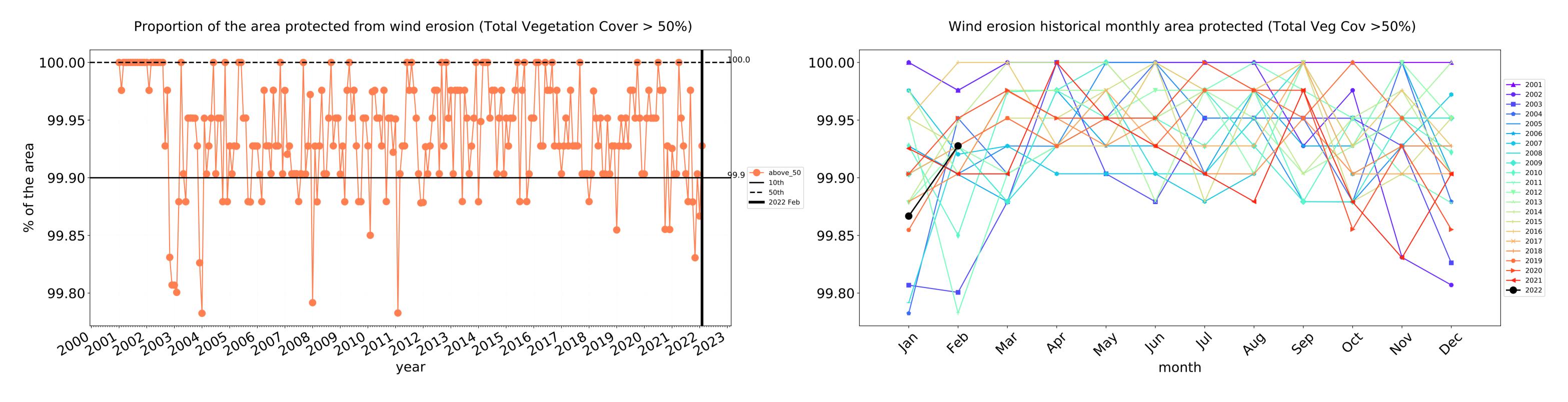


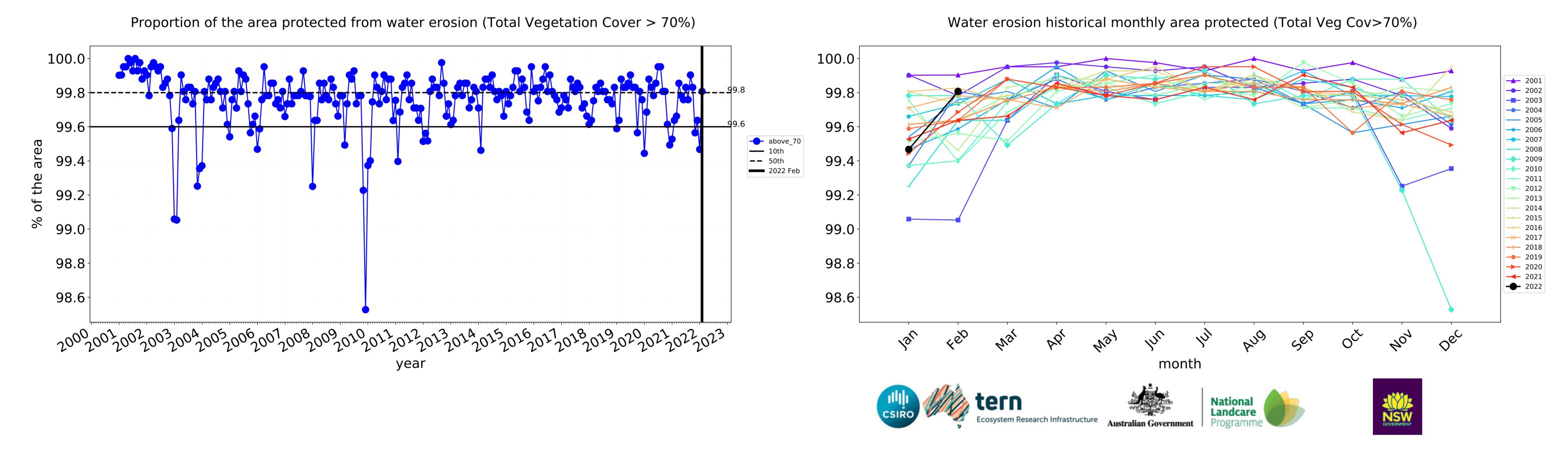


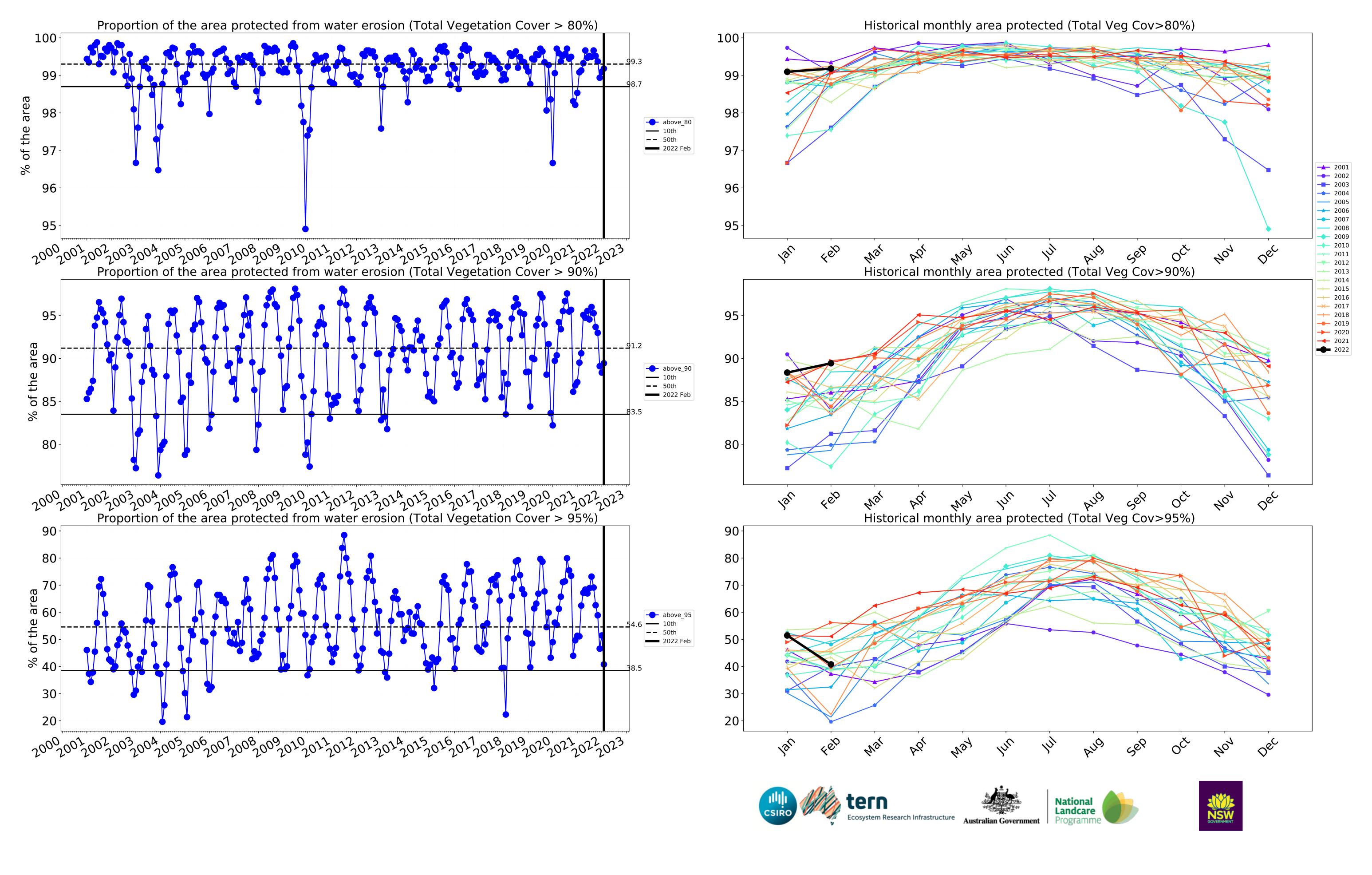




#### Conservation and natural environments Forest (non woodland) timeseries

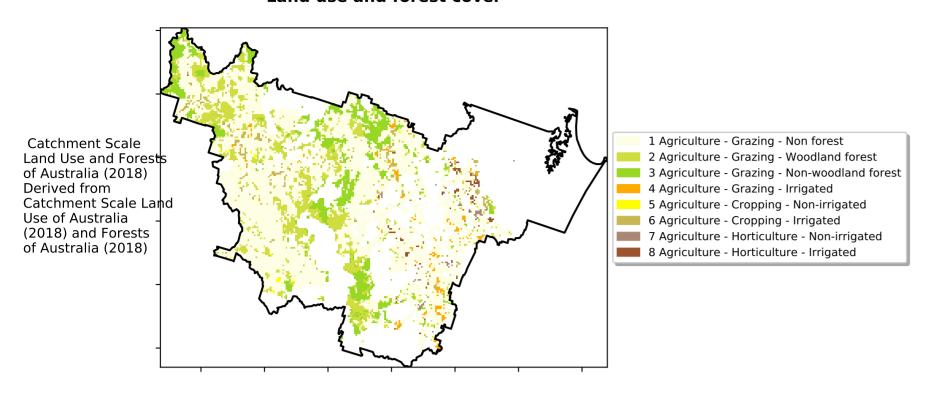


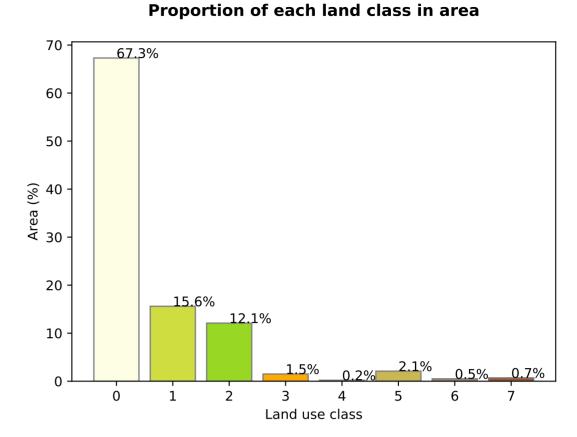




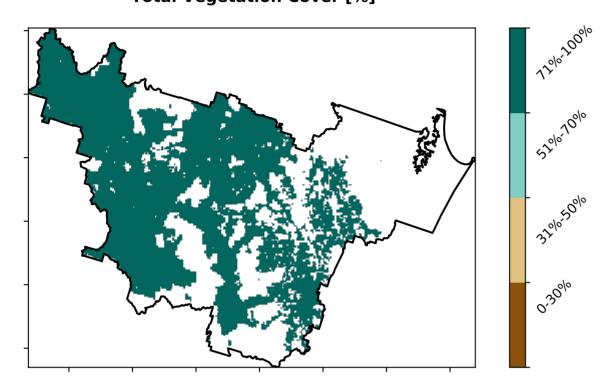
#### **Agriculture**

#### Land use and forest cover

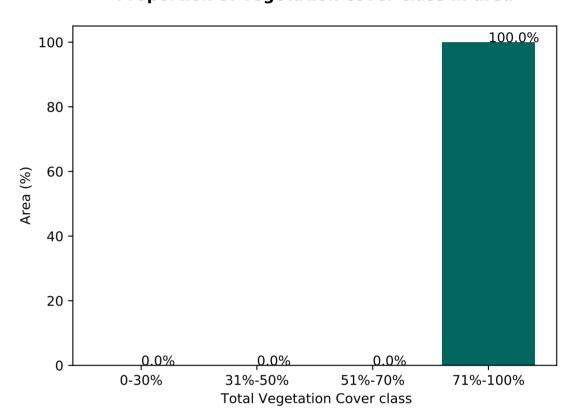




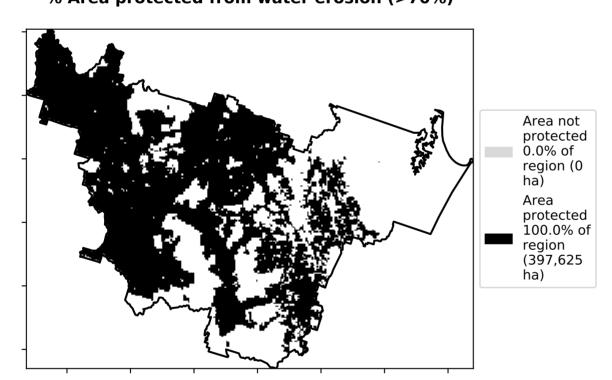
**Total Vegetation Cover [%]** 



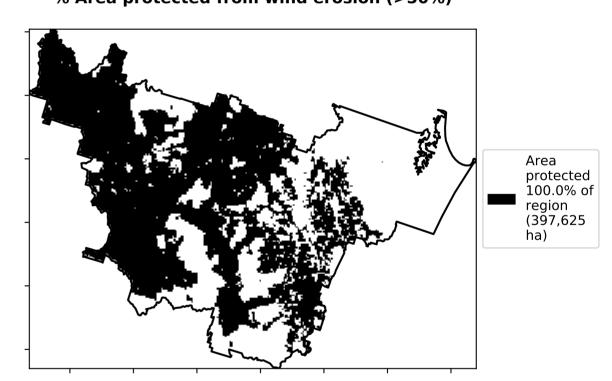
Proportion of vegetation cover class in area



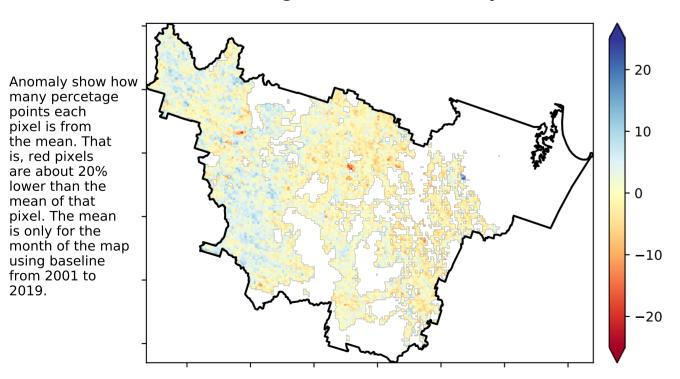
% Area protected from water erosion (>70%)



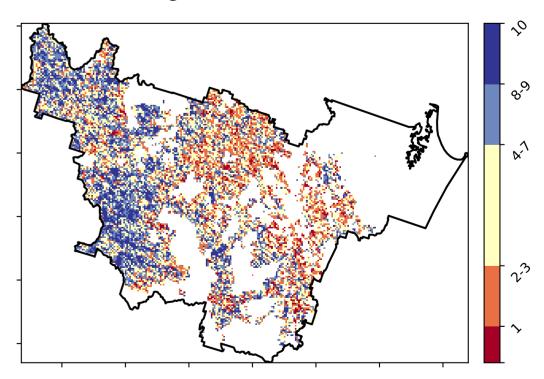
% Area protected from wind erosion (>50%)



**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.



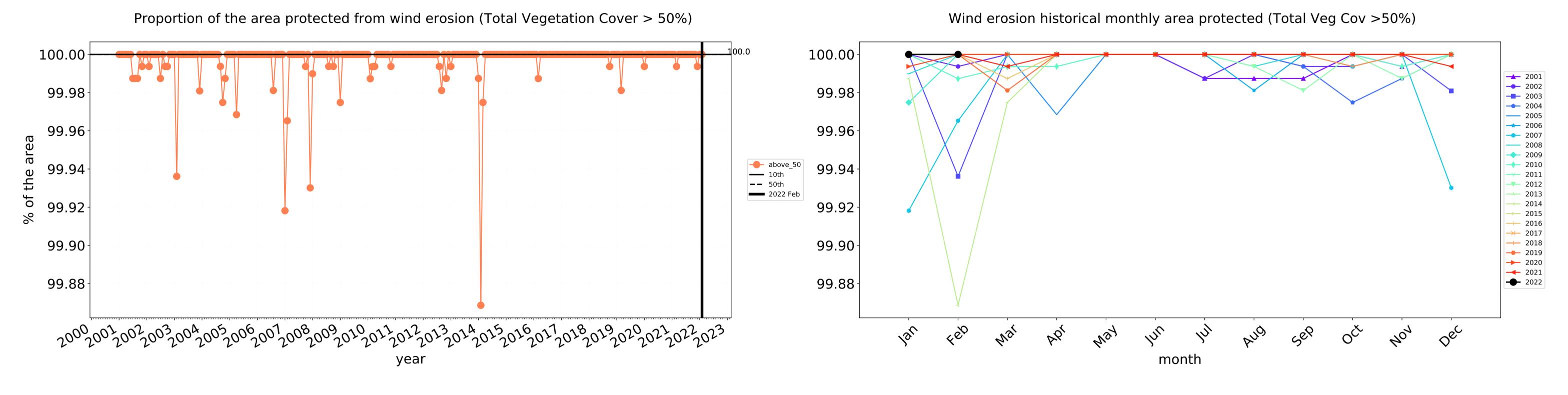


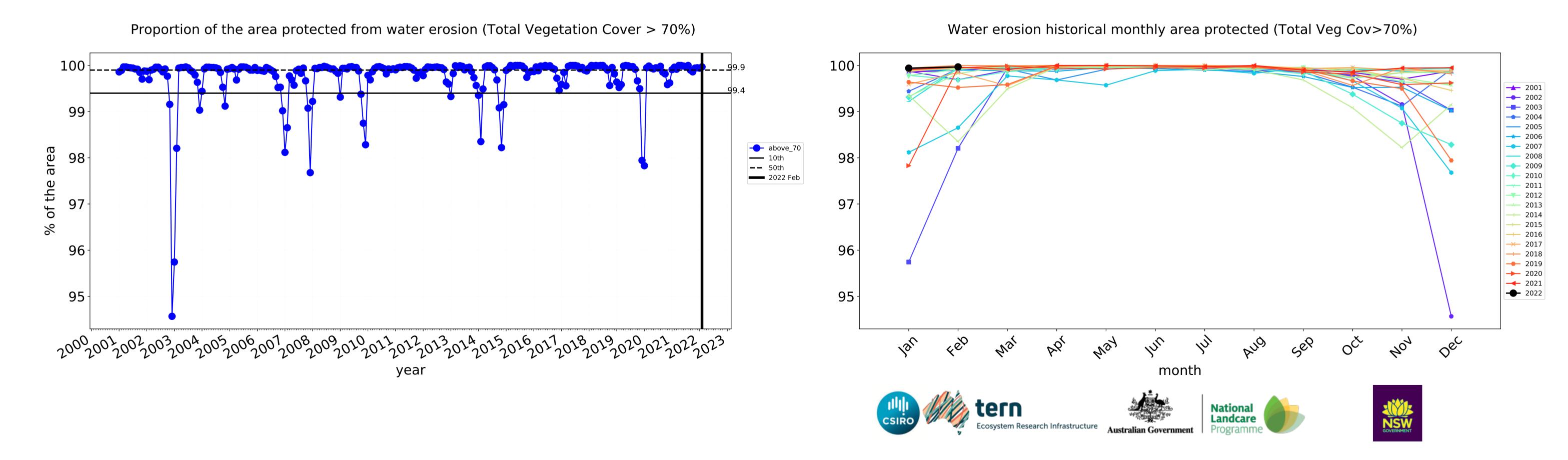


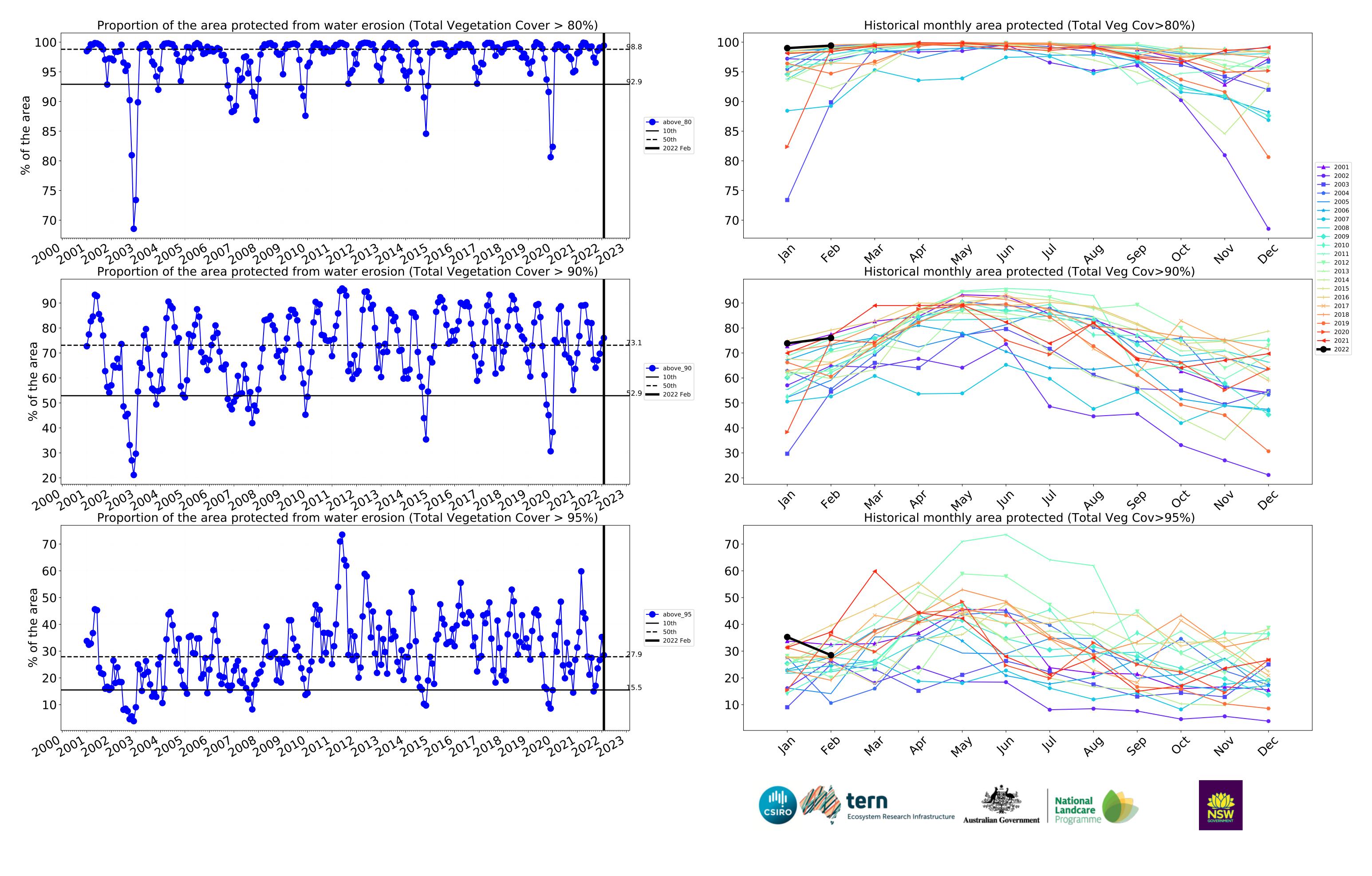




#### **Agriculture timeseries**

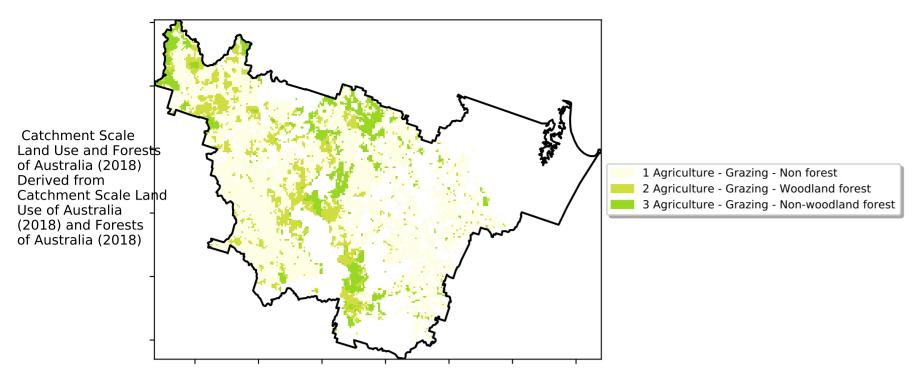




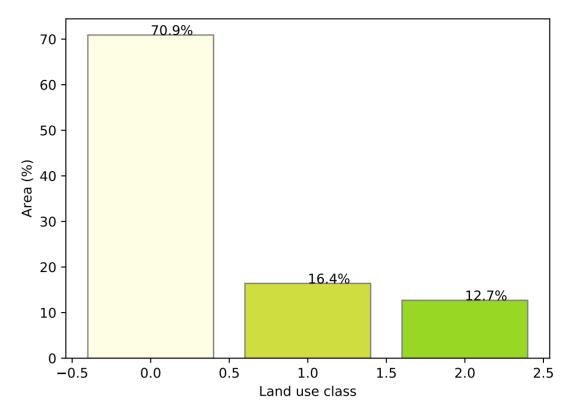


#### **Grazing**

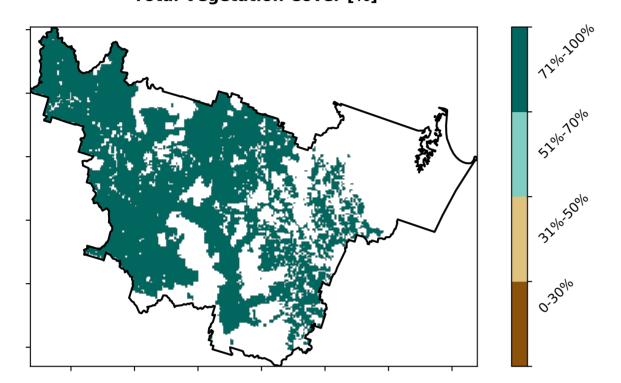
#### Land use and forest cover



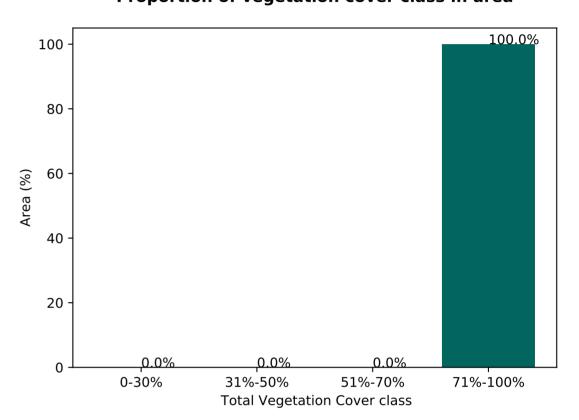
#### Proportion of each land class in area



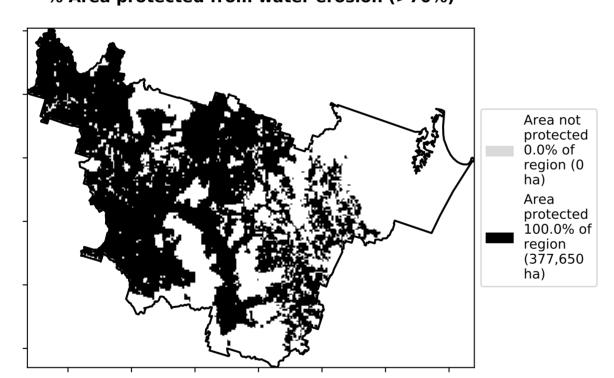
**Total Vegetation Cover [%]** 



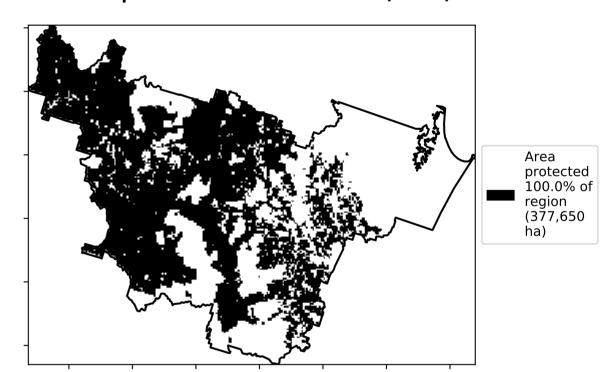
Proportion of vegetation cover class in area



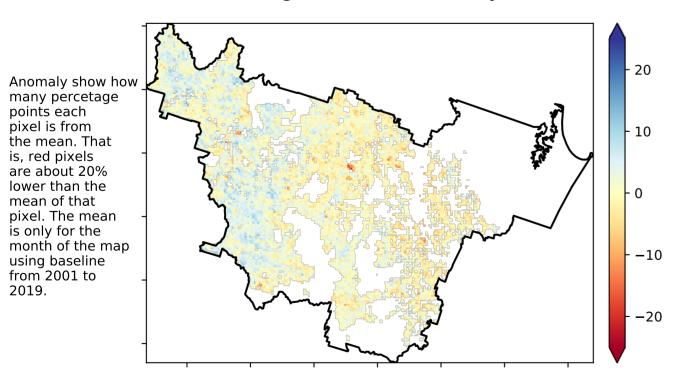
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

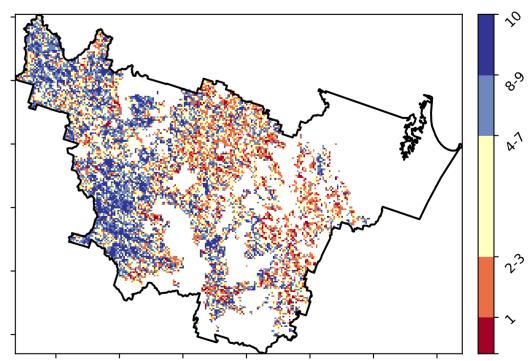


Total Vegetation Cover Anomaly [%]



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Total Vegetation Cover Decile [%]



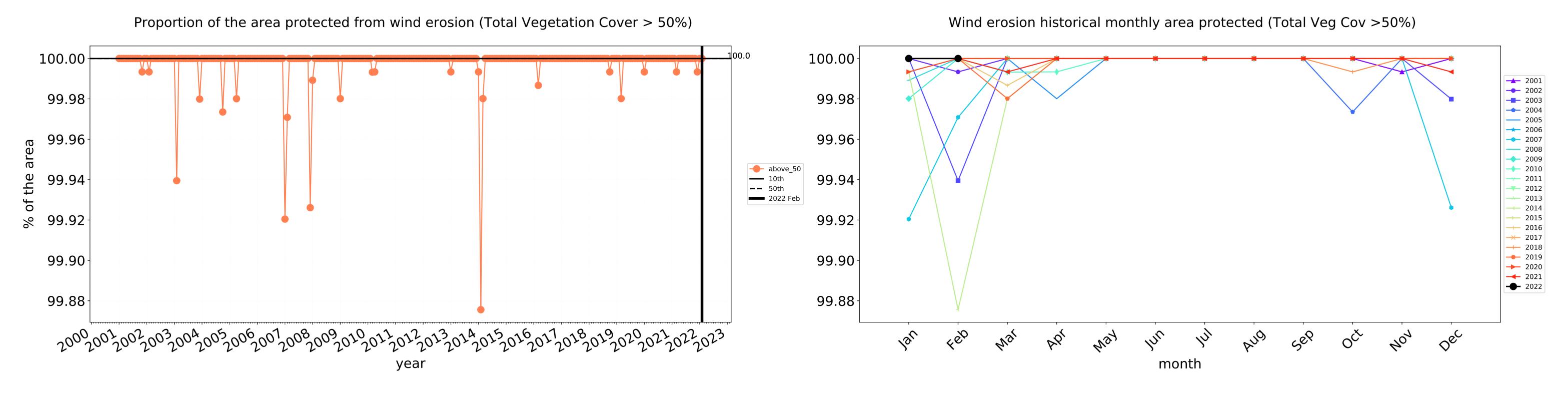


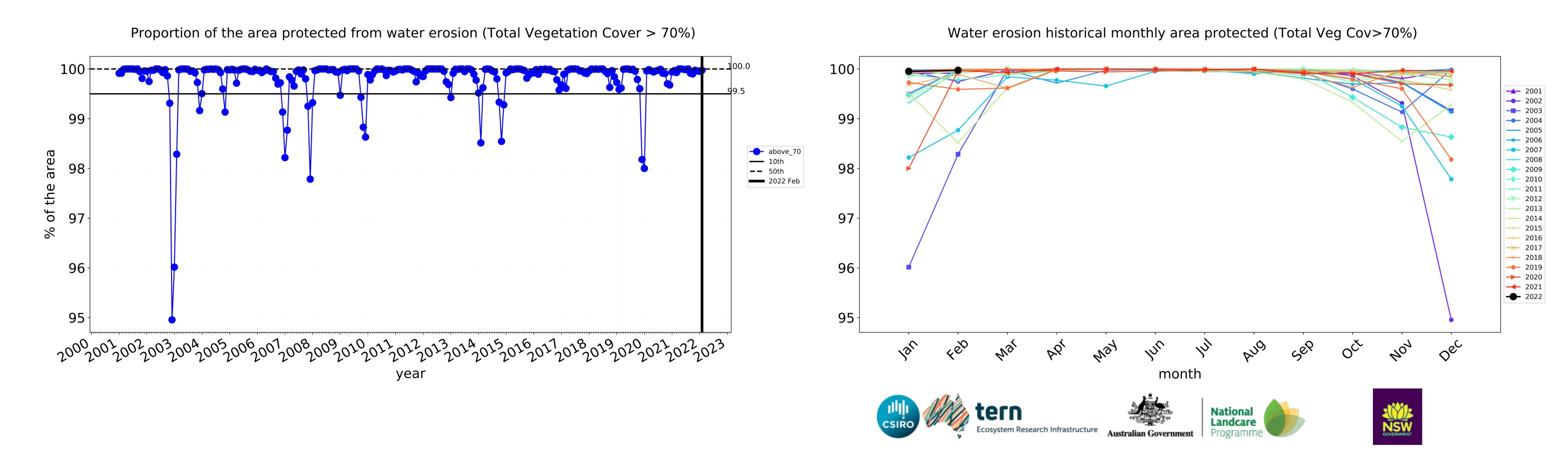


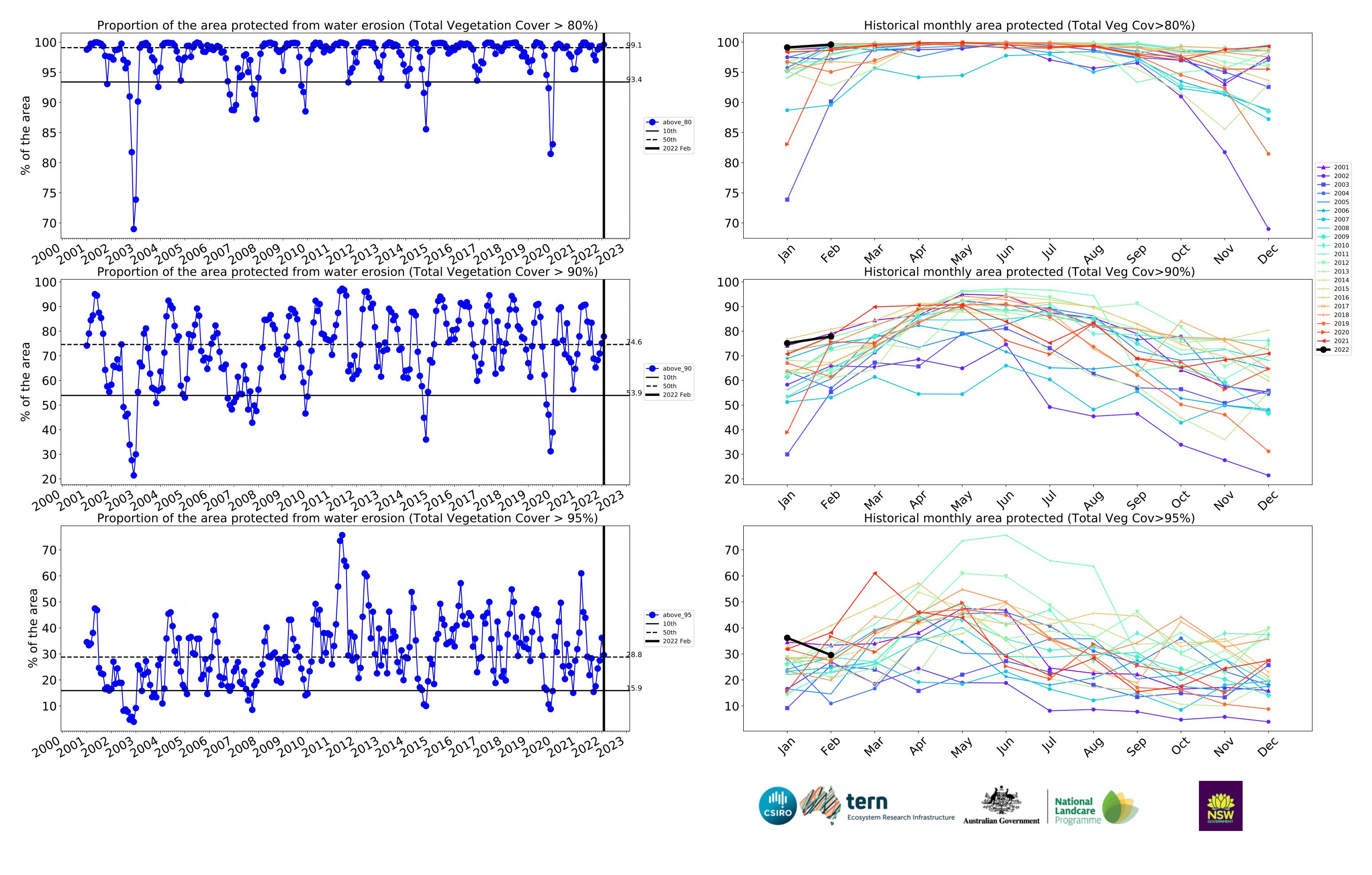




#### **Grazing timeseries**

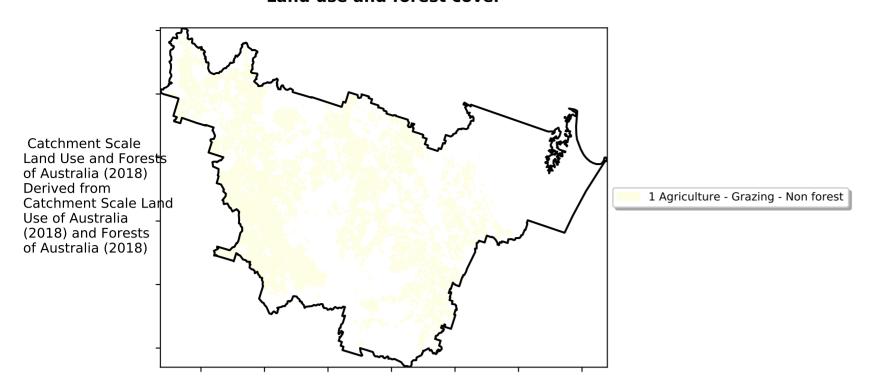




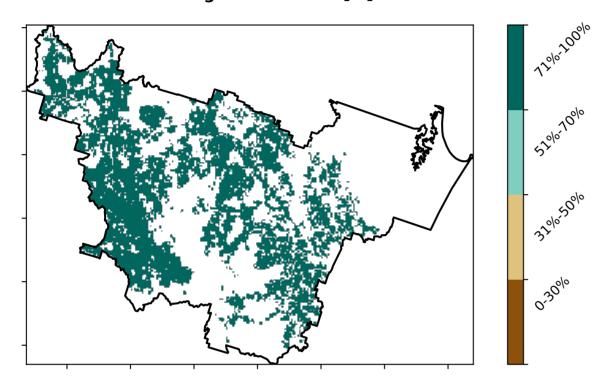


#### **Grazing non forest**

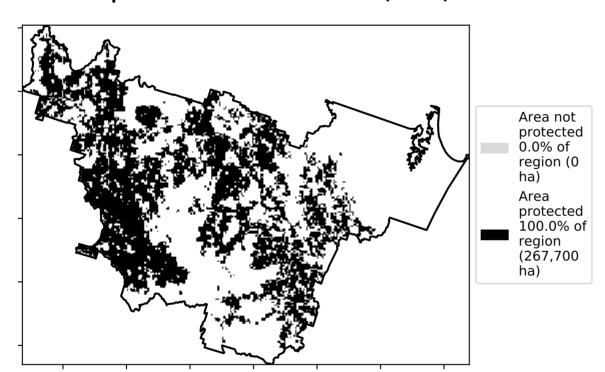
#### Land use and forest cover



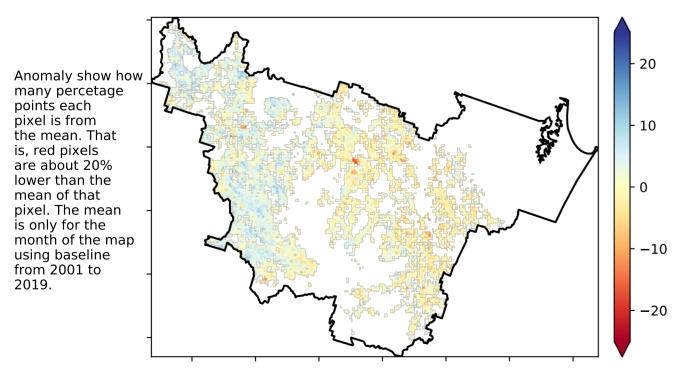
#### **Total Vegetation Cover [%]**



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

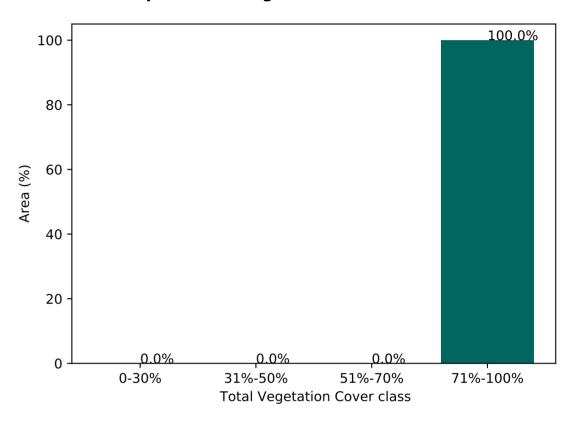


#### Total Vegetation Cover Anomaly [%]

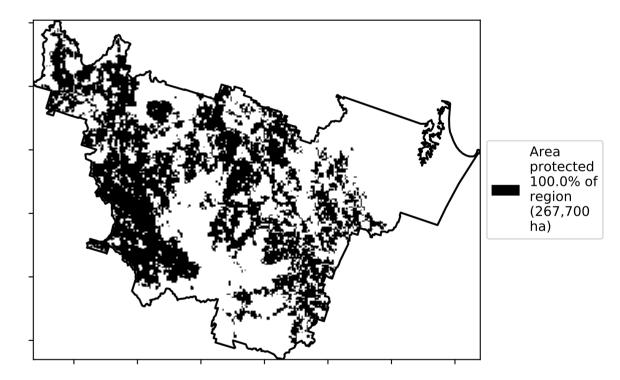


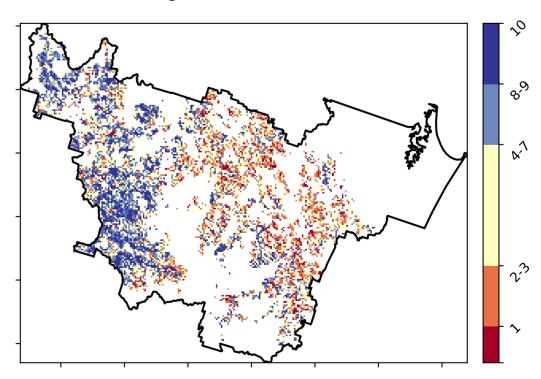
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#### Proportion of vegetation cover class in area



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





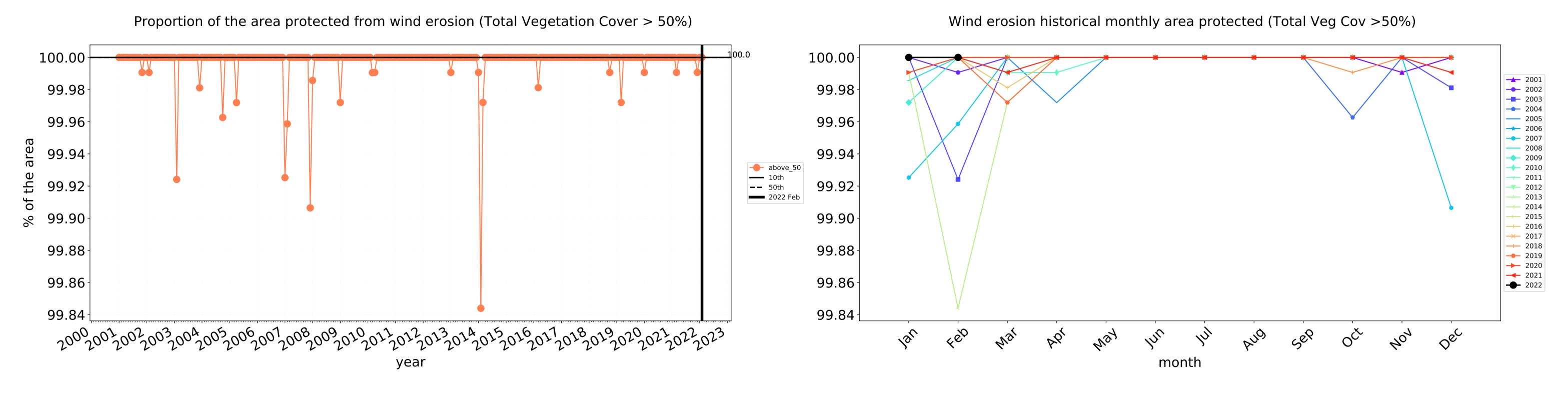


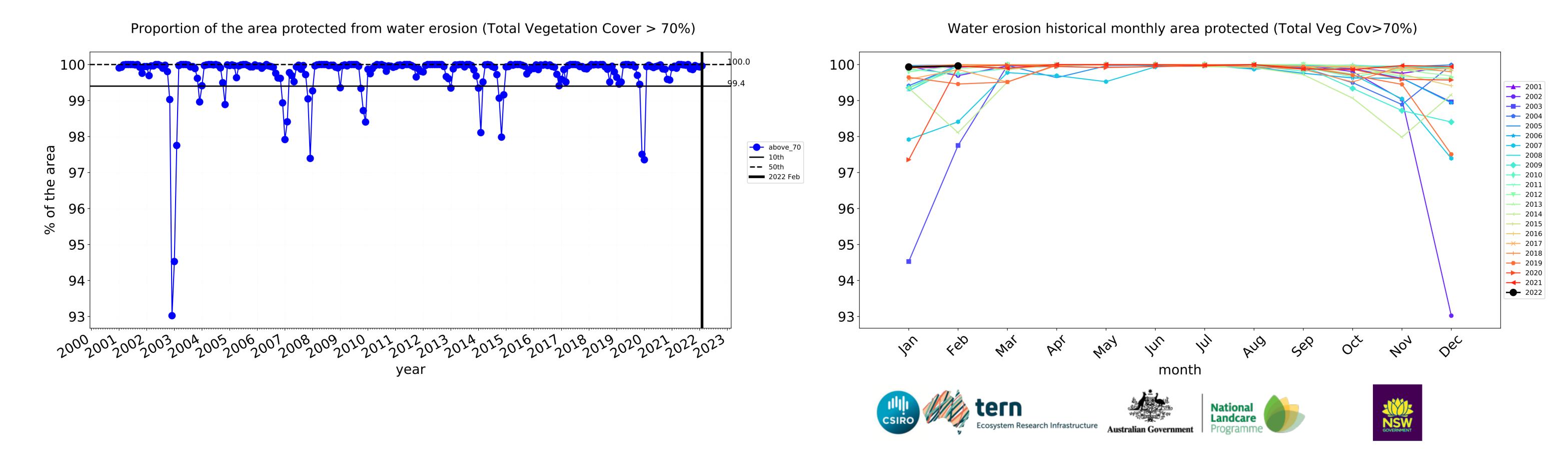


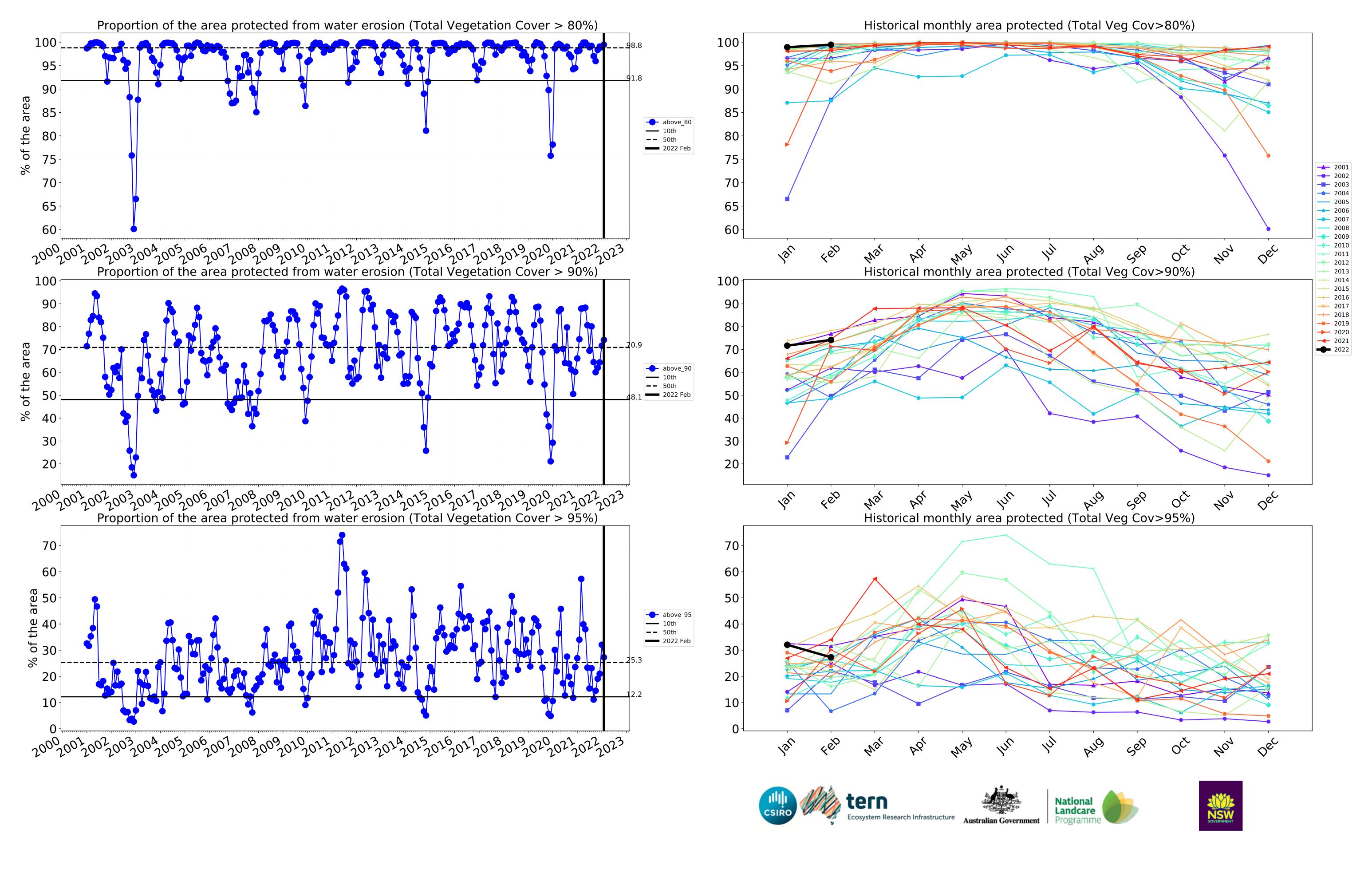




#### **Grazing non forest timeseries**

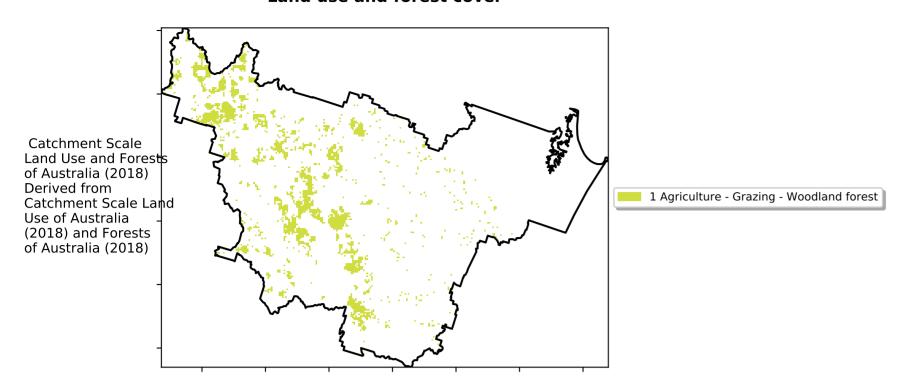




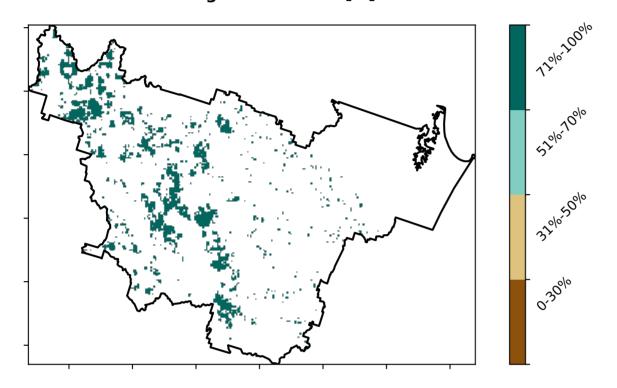


#### **Grazing Woodland forest**

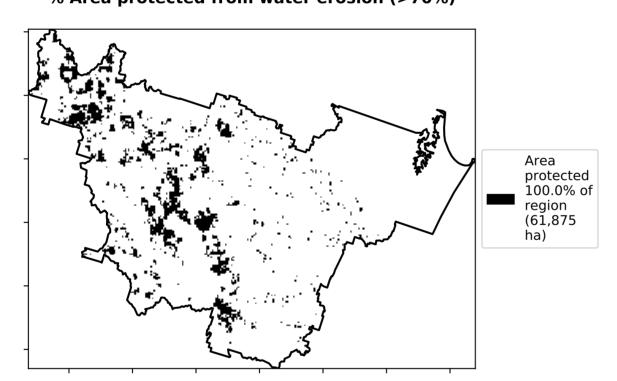
#### Land use and forest cover



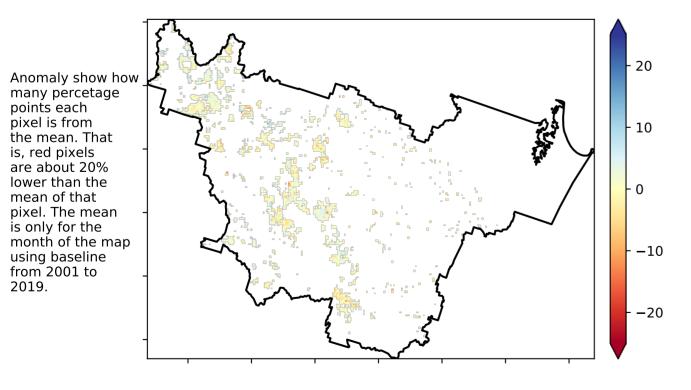
#### Total Vegetation Cover [%]



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

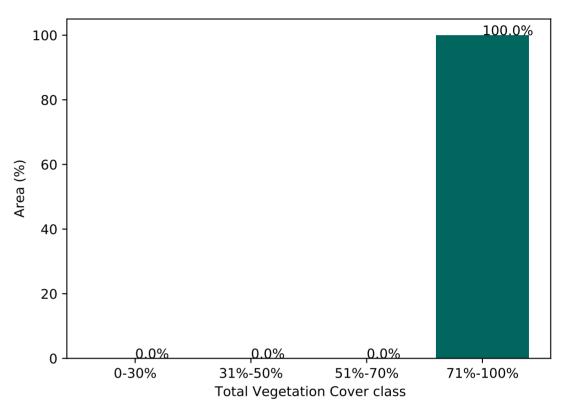


#### Total Vegetation Cover Anomaly [%]

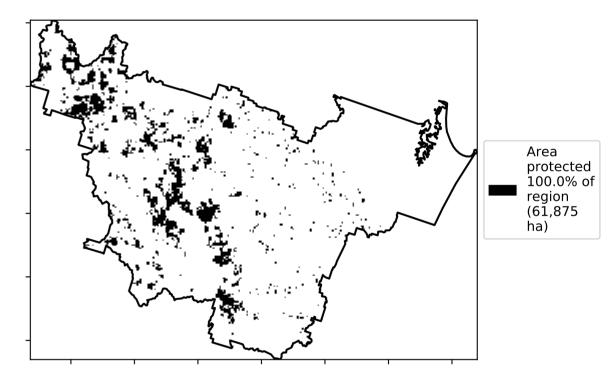


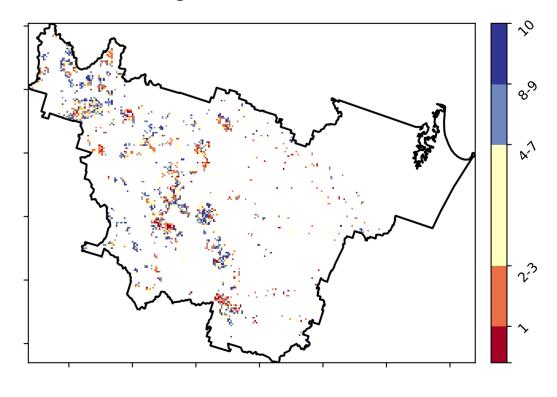
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

#### Proportion of vegetation cover class in area



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





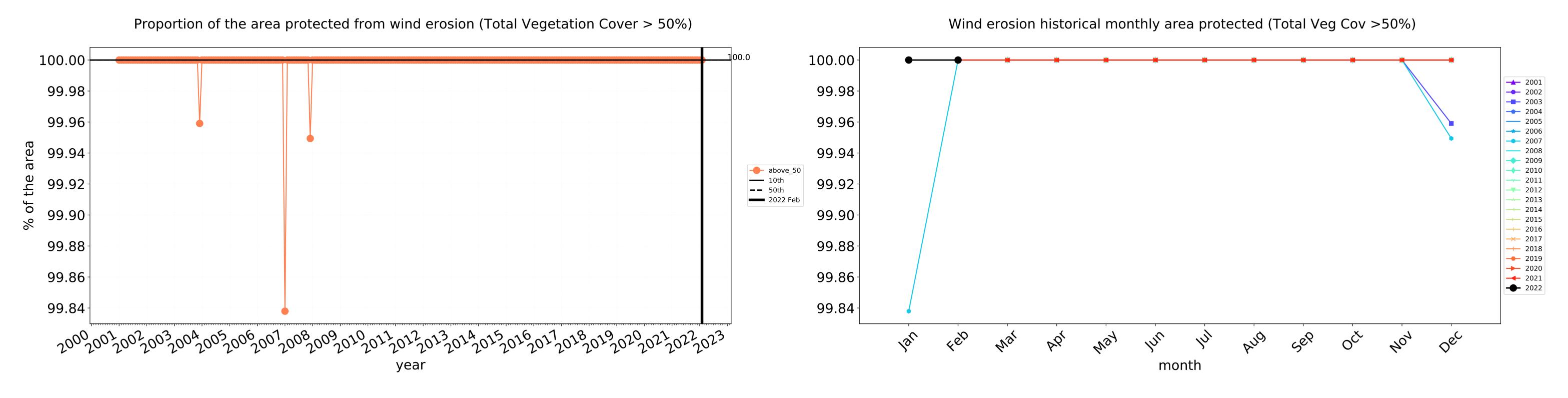


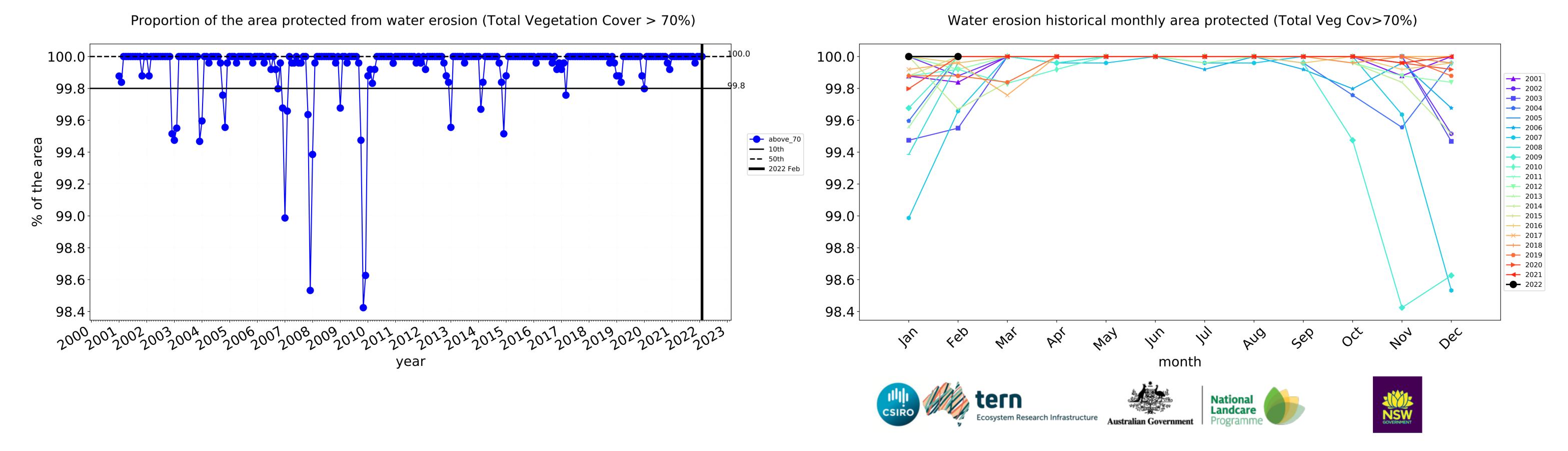


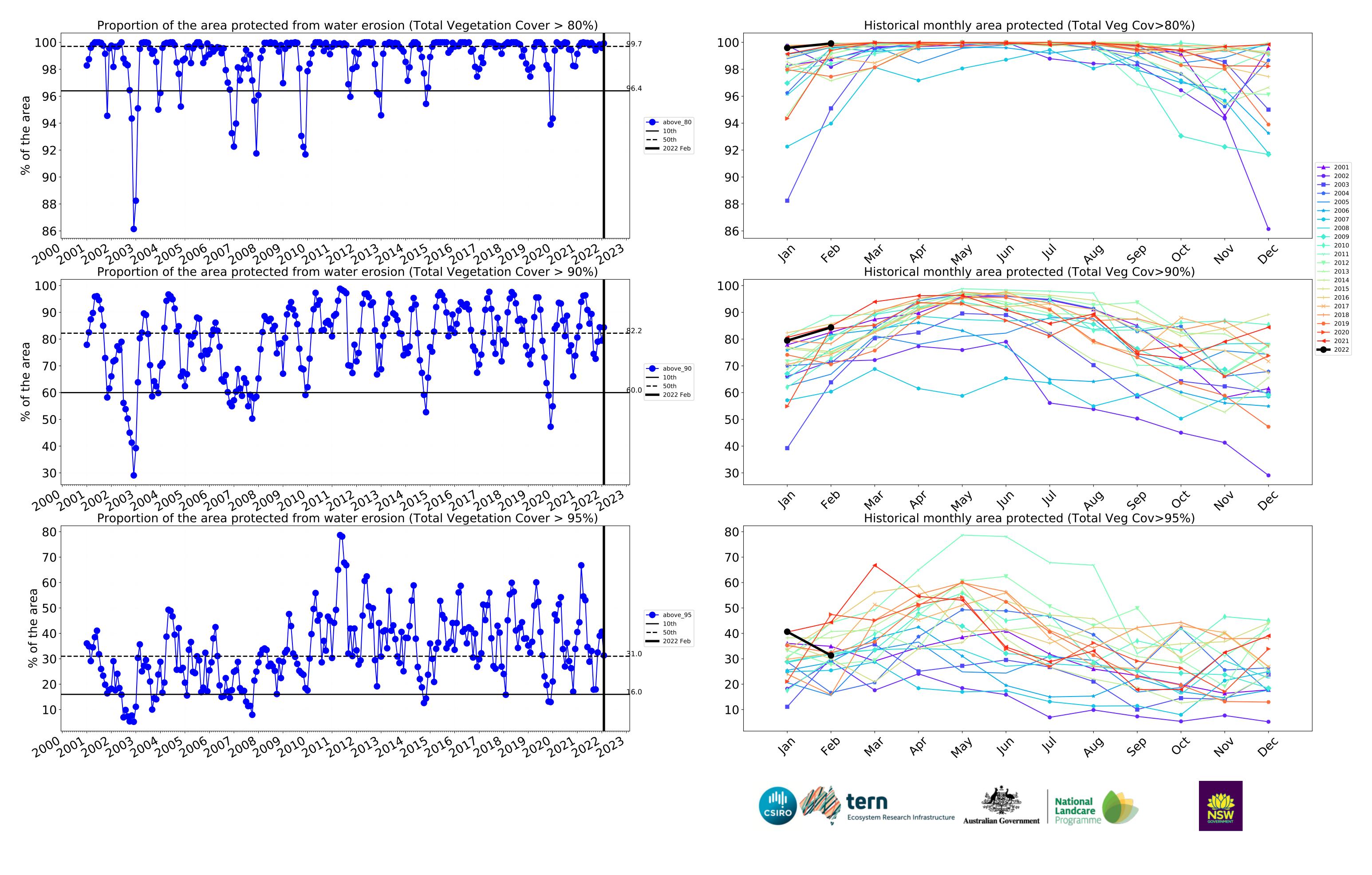




#### **Grazing Woodland forest timeseries**

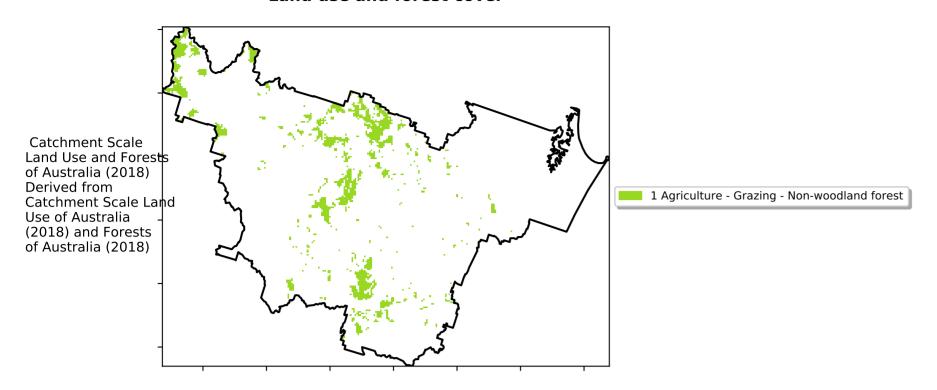




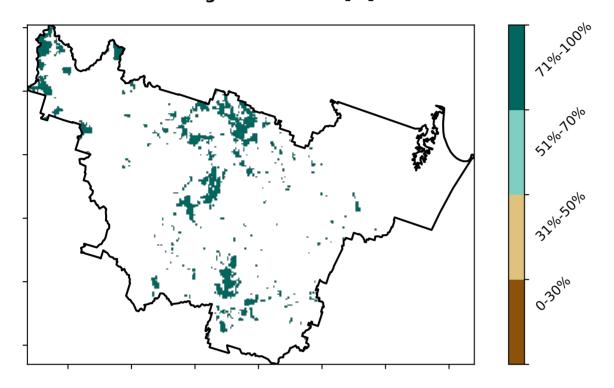


#### **Grazing - Forest (non woodland)**

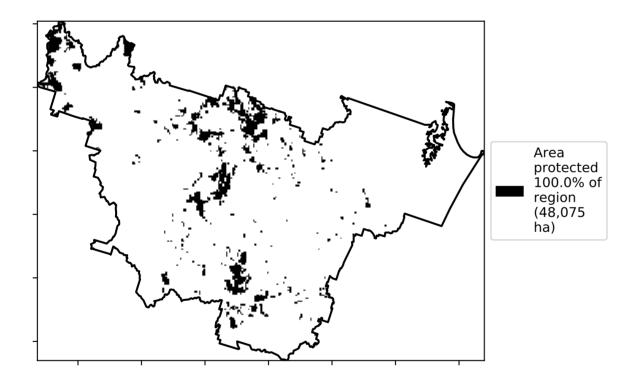
#### Land use and forest cover



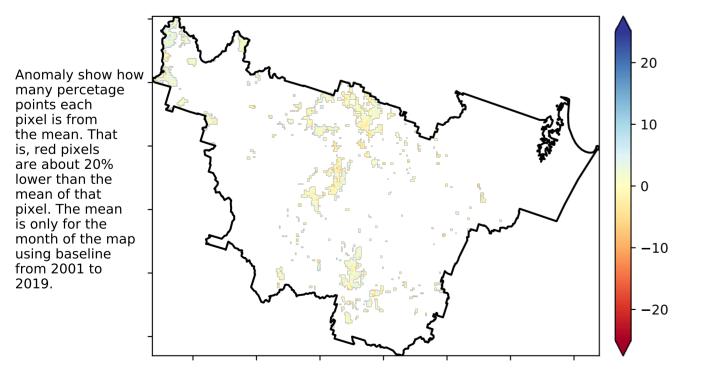
#### **Total Vegetation Cover [%]**



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

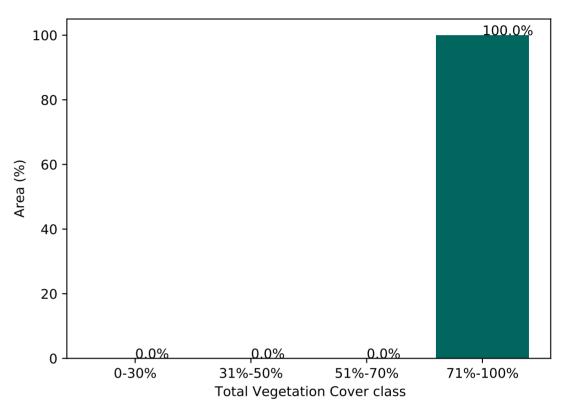


#### **Total Vegetation Cover Anomaly [%]**

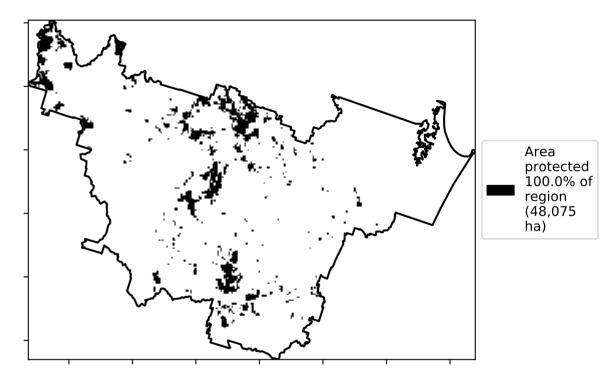


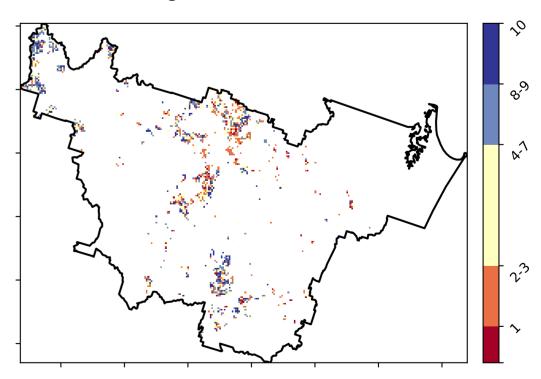
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

#### Proportion of vegetation cover class in area



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



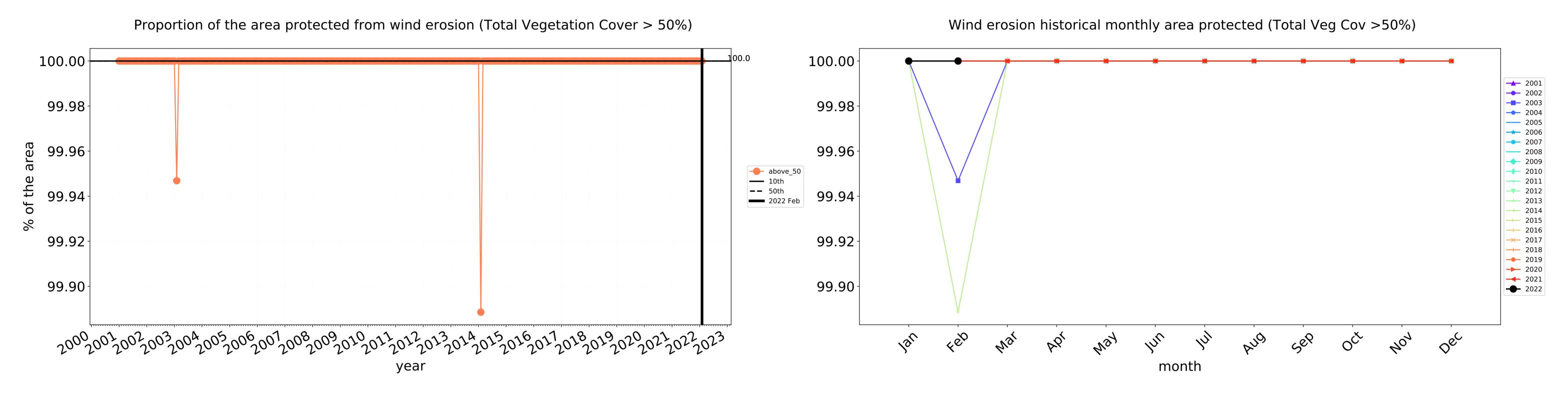


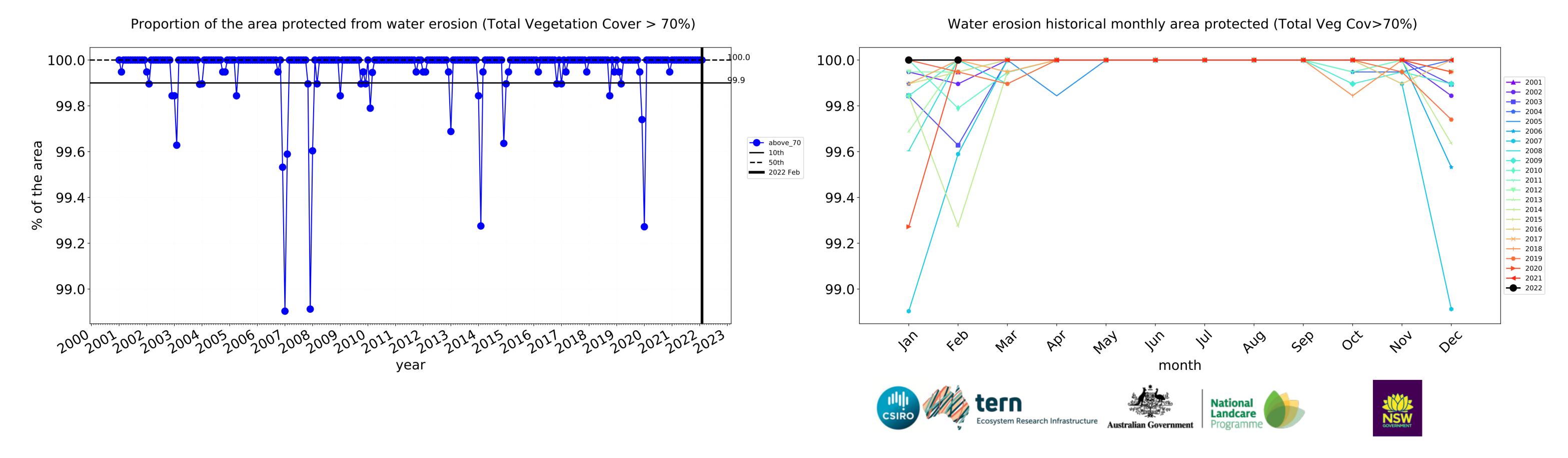


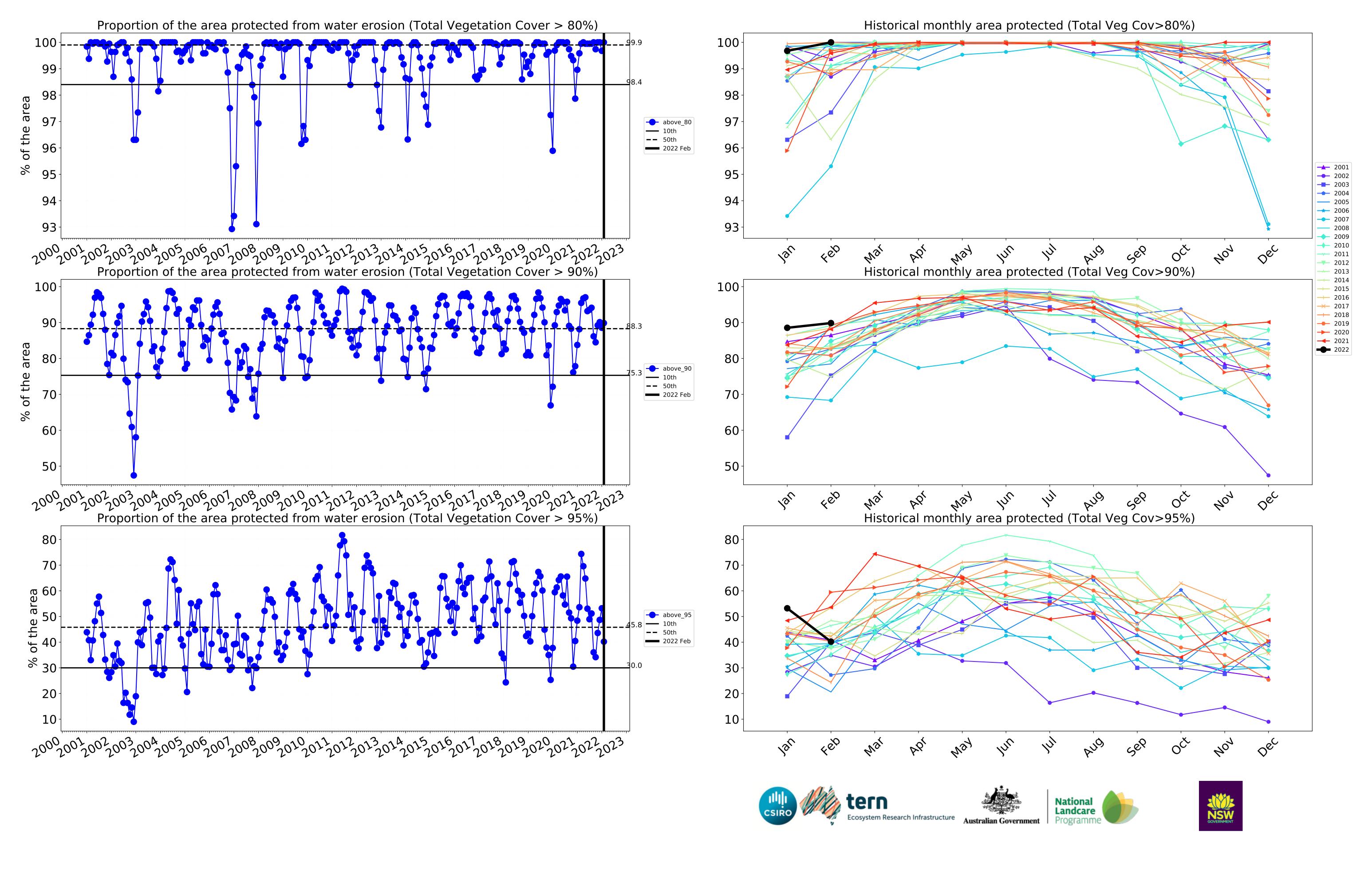






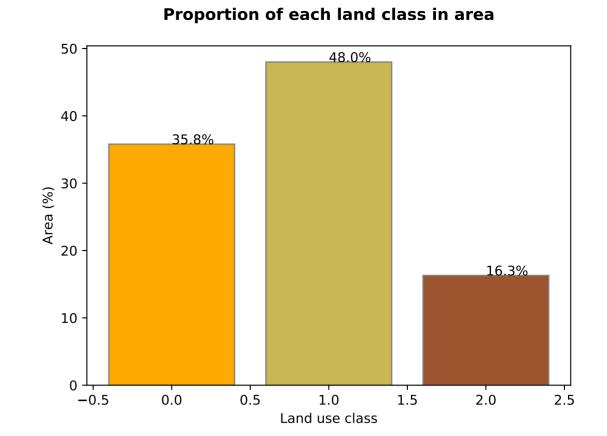


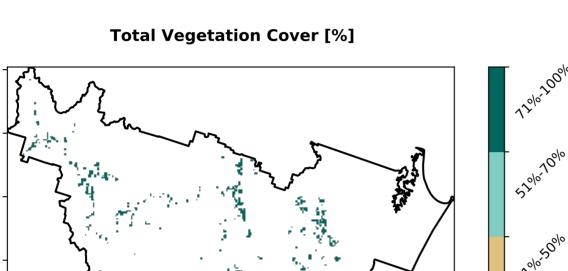


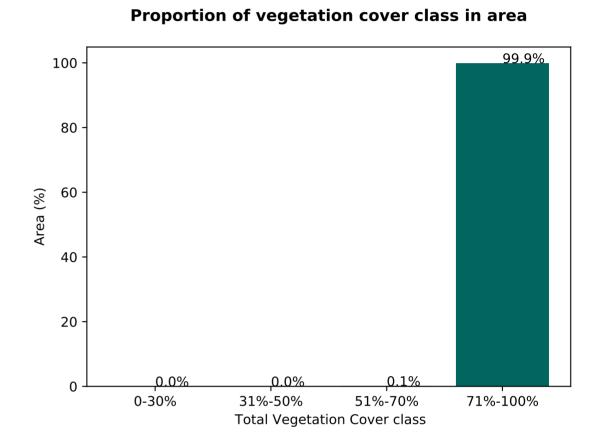


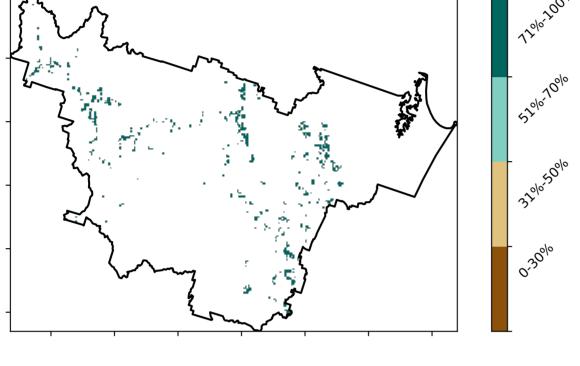
#### **Irrigation**

### 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 1 Agriculture - Grazing - Irrigated 2 Agriculture - Cropping - Irrigated 3 Agriculture - Horticulture - Irrigated of Australia (2018)

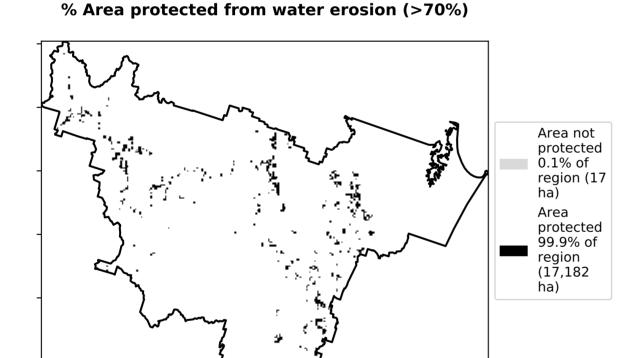


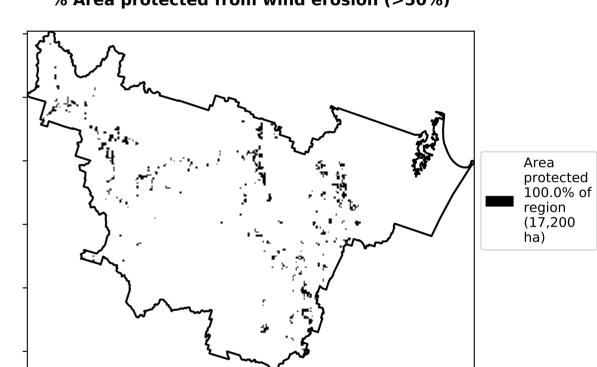






% Area protected from wind erosion (>50%)





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

Anomaly show how many percetage points each pixel is from

the mean. That

is, red pixels are about 20% lower than the

mean of that pixel. The mean

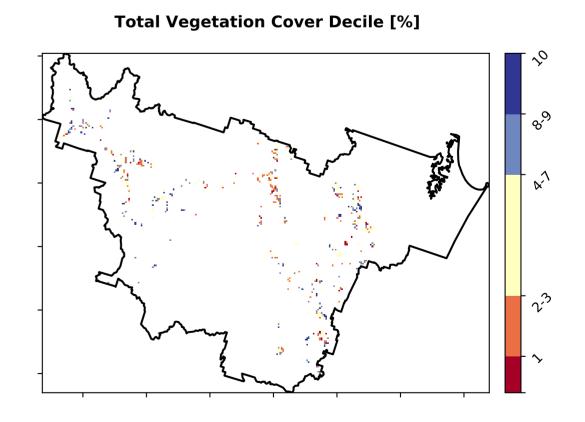
is only for the

using baseline from 2001 to 2019.

month of the map

- 20 - 10 0 -10

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.





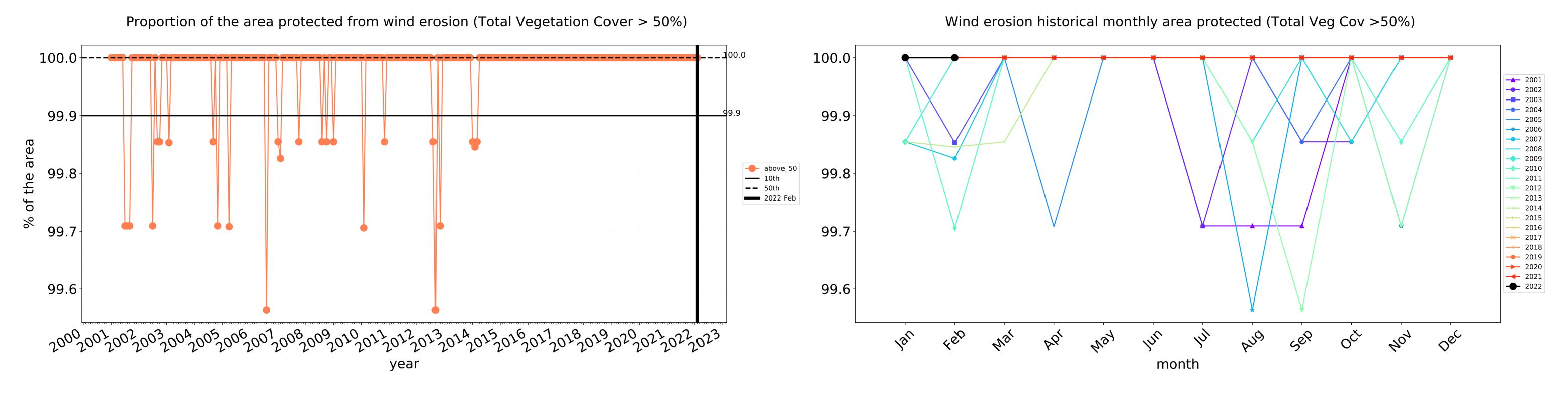


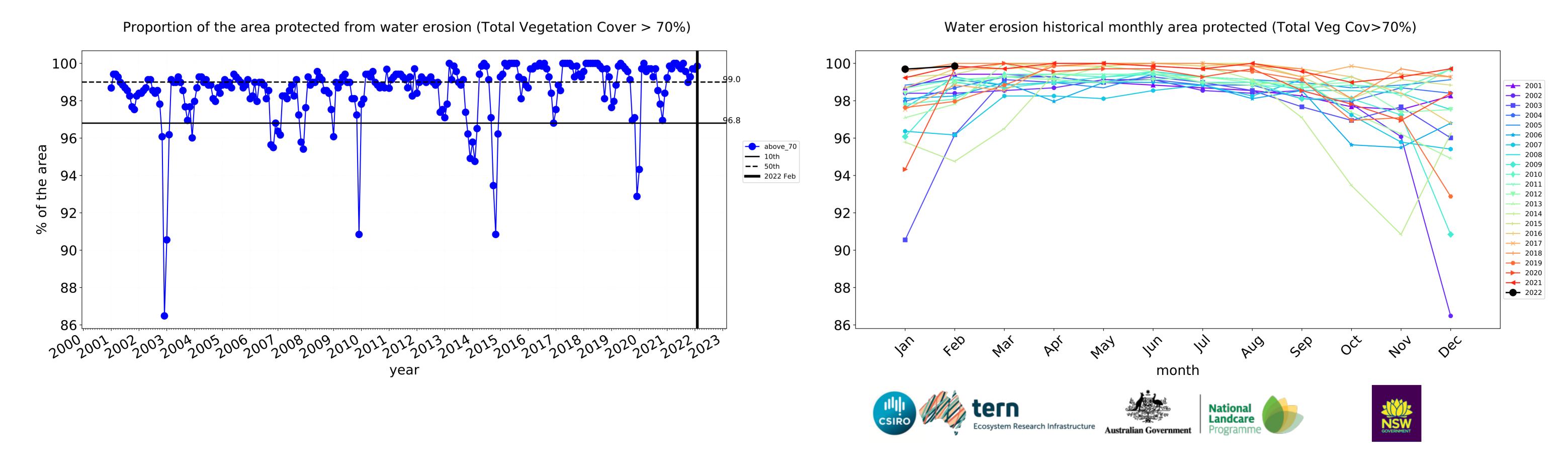


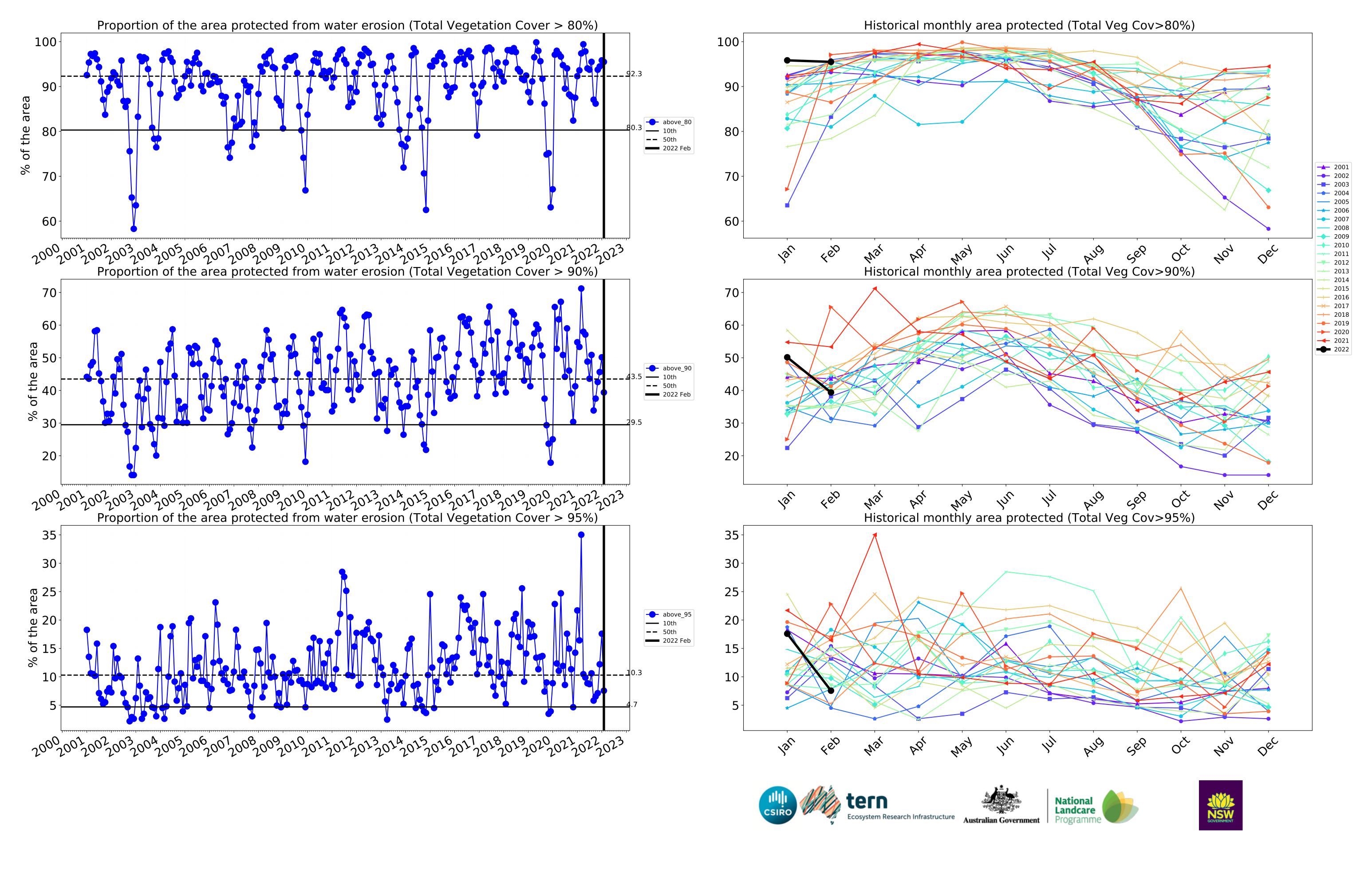


**-**20

#### Irrigation timeseries

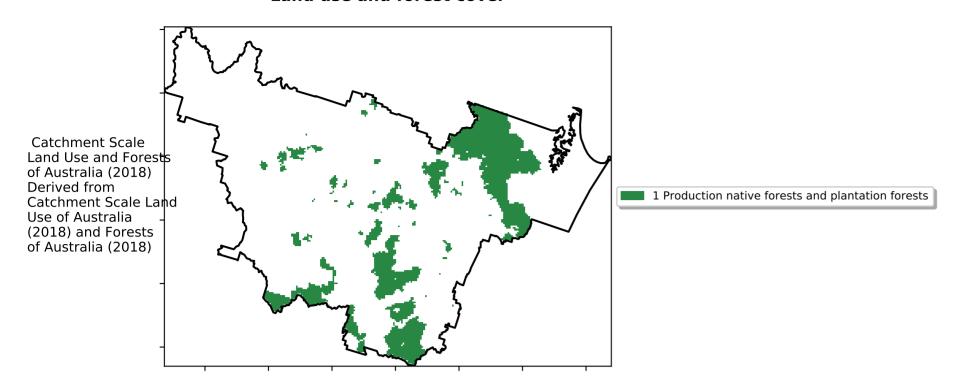




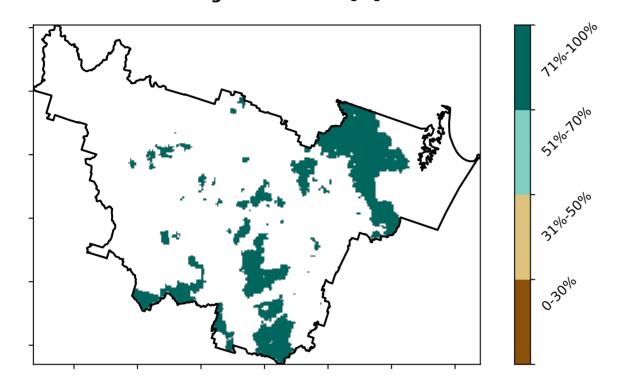


#### **Production native forests and plantation forests**

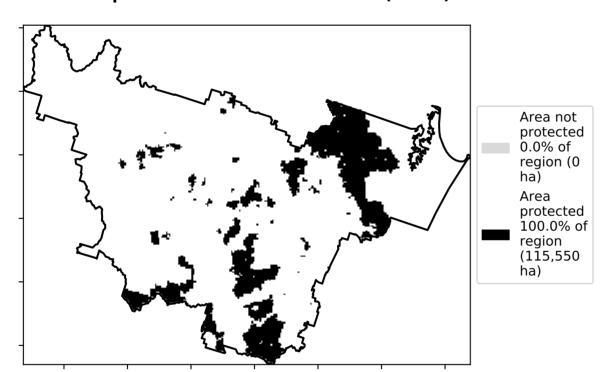
#### Land use and forest cover



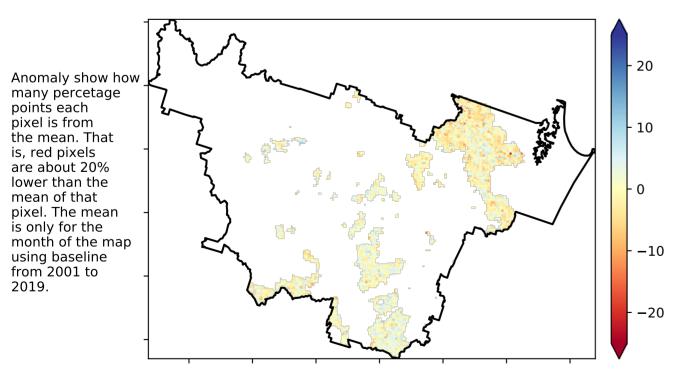
#### **Total Vegetation Cover [%]**



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

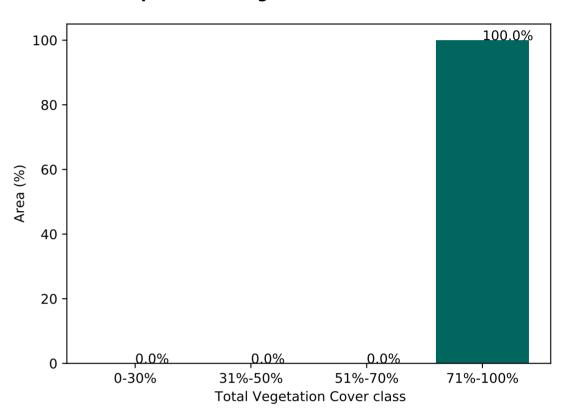


#### Total Vegetation Cover Anomaly [%]

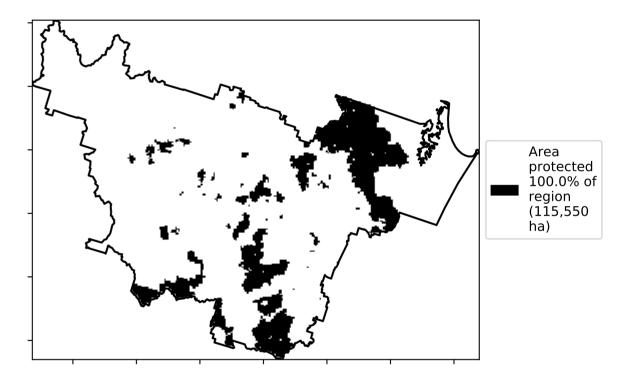


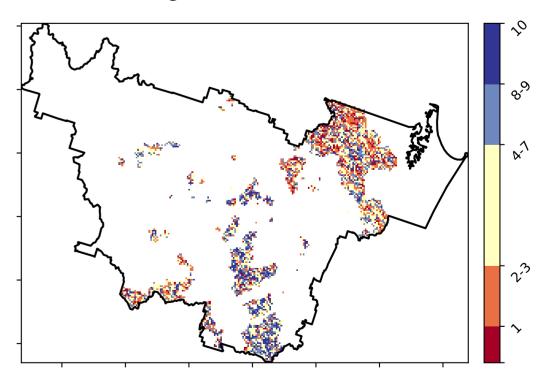
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

#### Proportion of vegetation cover class in area



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





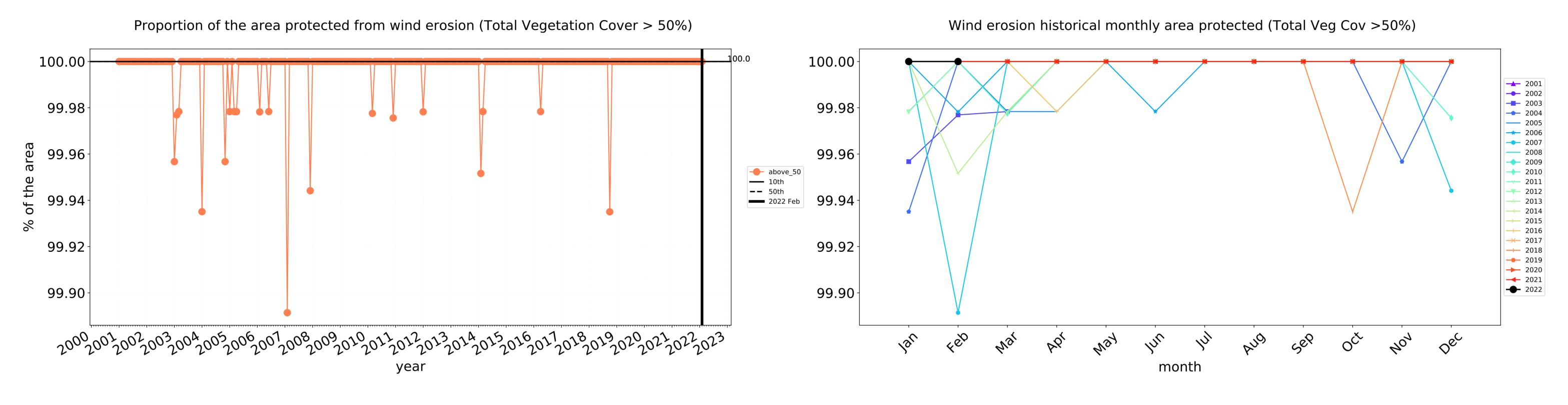


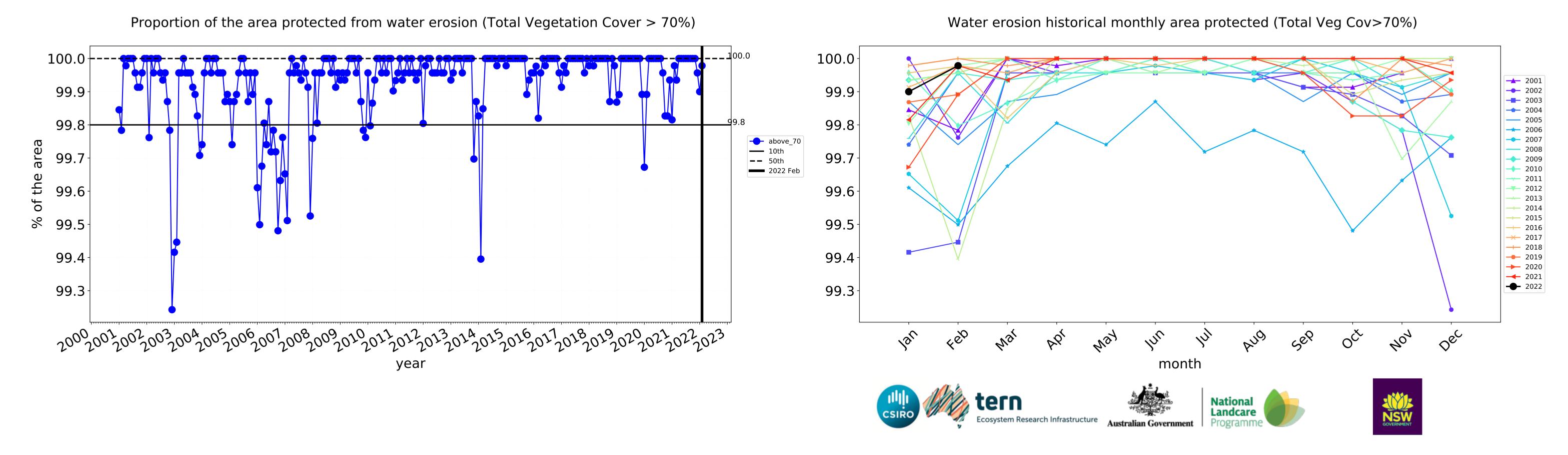


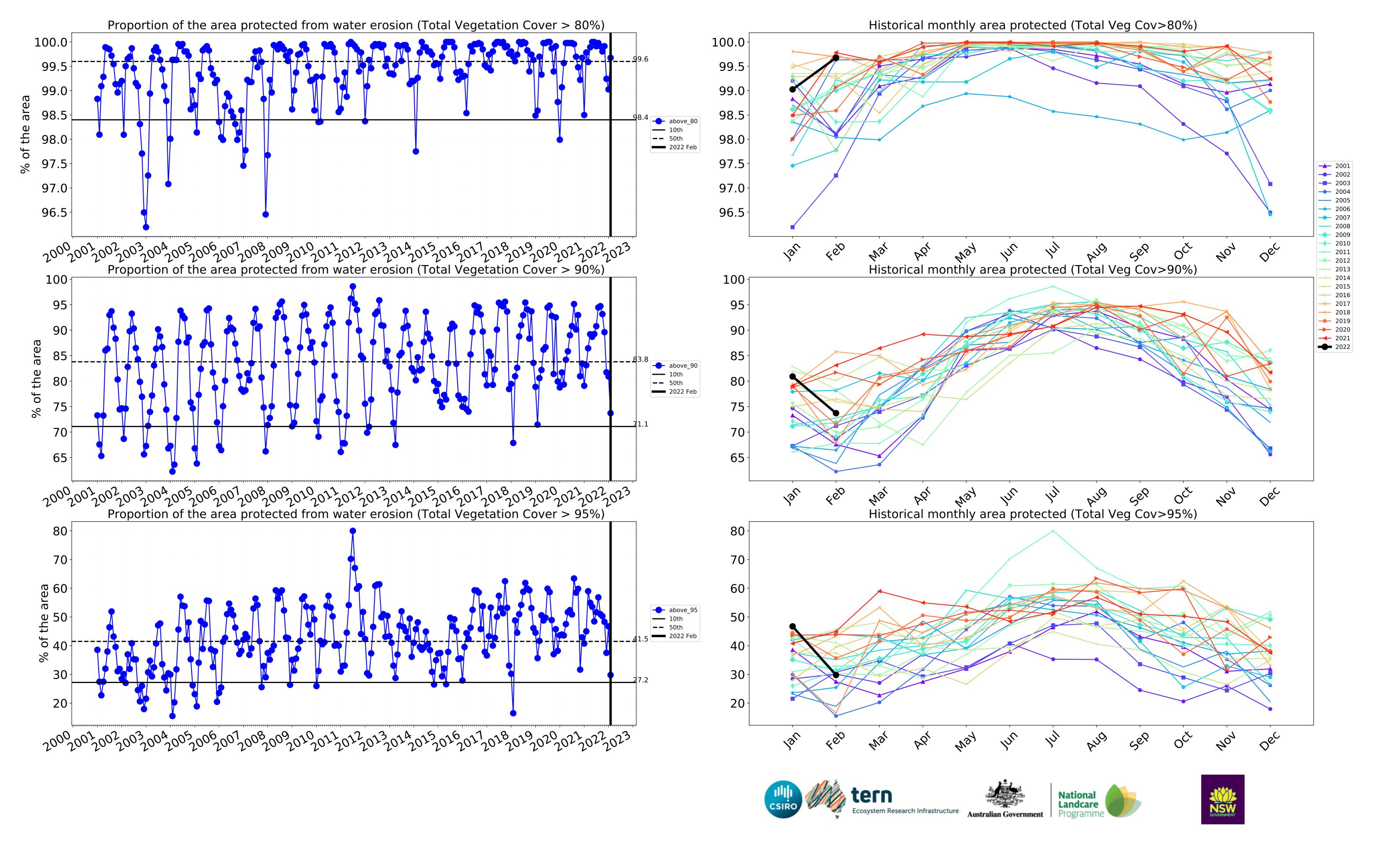




#### **Production native forests and plantation forests timeseries**







# Gympie\_(R) (686,600 ha and no data 1,775 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	686,600	100.0% 686,550	100.0% 686,425	99.8% 685,300	99.0% 679,875	76.8% 527,025	30.1% 206,400
Conservation and natural environments	142,200	100.0% 142,175	99.9% 142,075	99.7% 141,825	99.1% 140,850	87.6% 124,550	39.0% 55,500
Conservation and natural environments non forest	9,875	100.0% 9,875	99.5% 9,825	99.2% 9,800	98.2% 9,700	84.8% 8,375	38.2% 3,775
Conservation and natural environments Woodland forest	28,625	100.0% 28,625	100.0% 28,625	99.7% 28,525	98.9% 28,300	81.8% 23,425	32.9% 9,425
Conservation and natural environments Forest (non woodland)	103,700	100.0% 103,675	99.9% 103,625	99.8% 103,500	99.2% 102,850	89.4% 92,750	40.8% 42,300
Agriculture	397,625	100.0% 397,625	100.0% 397,625	100.0% 397,500	99.4% 395,325	76.0% 302,300	28.5% 113,300
Grazing	377,650	100.0% 377,650	100.0% 377,650	100.0% 377,550	99.6% 376,150	77.8% 293,975	29.6% 111,725
Grazing non forest	267,700	100.0% 267,700	100.0% 267,700	100.0% 267,600	99.5% 266,250	74.2% 198,575	27.3% 73,025
Grazing Woodland forest	61,875	100.0% 61,875	100.0% 61,875	100.0% 61,875	99.9% 61,825	84.4% 52,200	31.3% 19,375
Grazing - Forest (non woodland)	48,075	100.0% 48,075	100.0% 48,075	100.0% 48,075	100.0% 48,075	89.9% 43,200	40.2% 19,325
Irrigation	17,200	100.0% 17,200	100.0% 17,200	99.9% 17,175	95.5% 16,425	39.4% 6,775	7.6% 1,300
Production native forests and plantation forests	115,550	100.0% 115,550	100.0% 115,550	100.0% 115,525	99.7% 115,175	73.7% 85,175	29.8% 34,425







