Total vegetation cover soil protection Region:LGA Gladstone (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: March 2023

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 Mar 2023

Land use and forest cover

Derived from

pixel is from

is, red pixels are about 20% lower than the

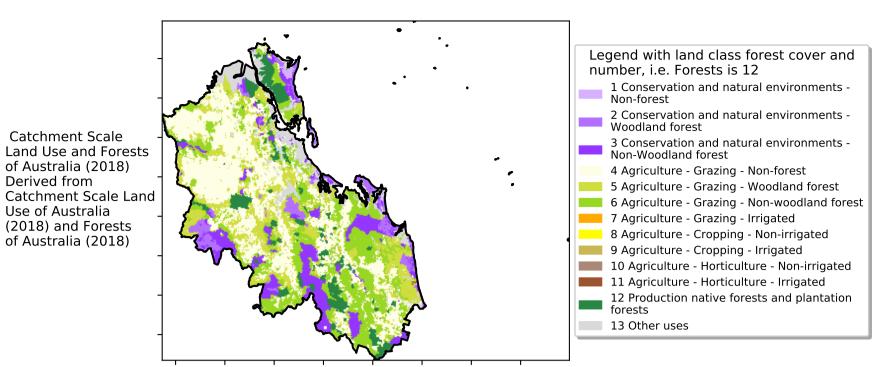
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using baseline from 2001 to

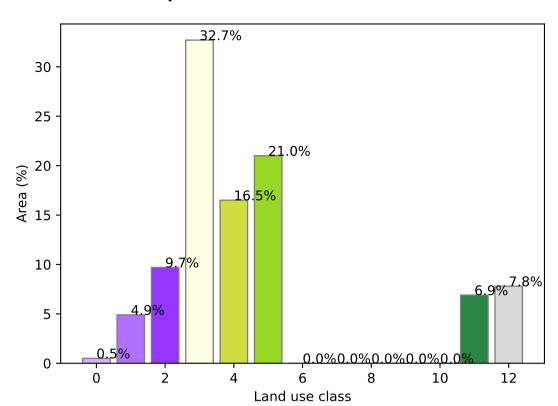
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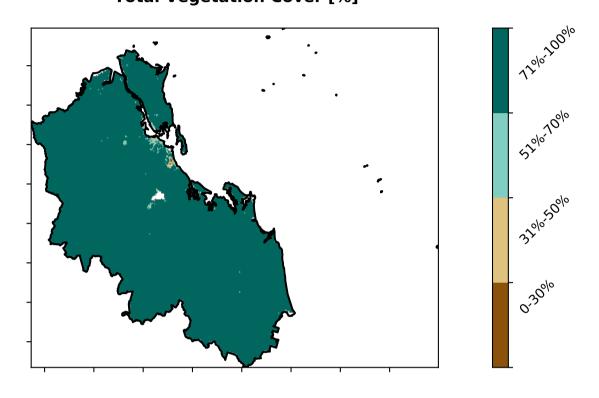
Use of Australia



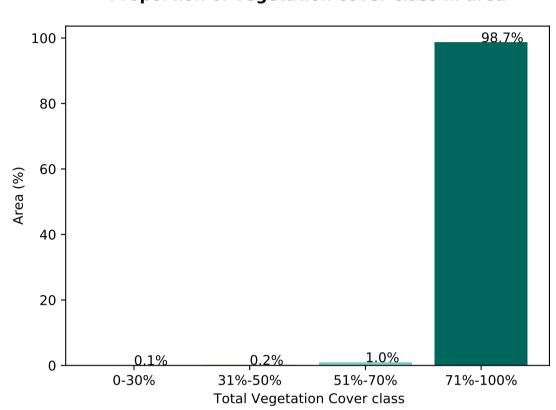
Proportion of each land class in area



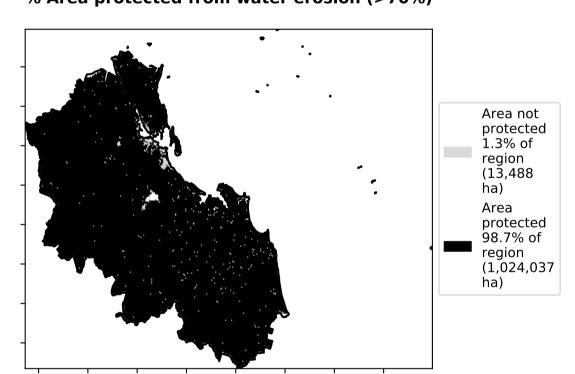
Total Vegetation Cover [%]



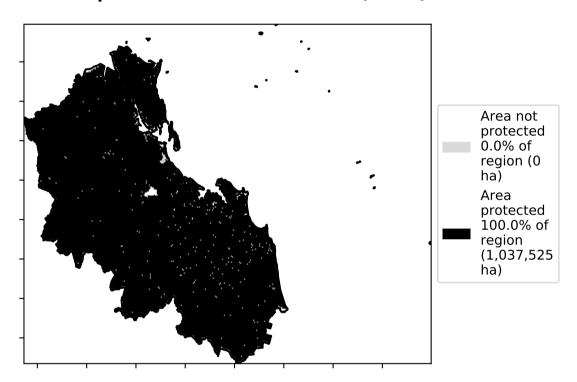
Proportion of vegetation cover class in area



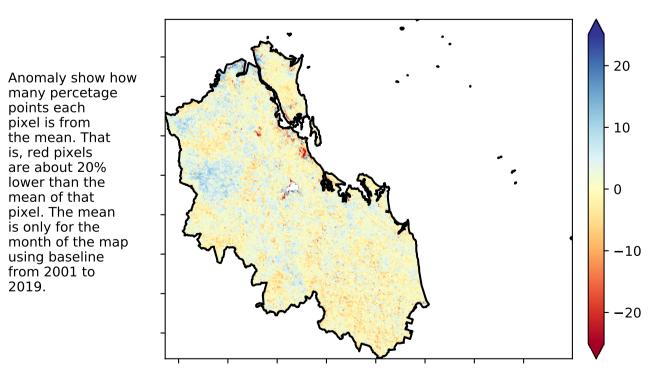
% Area protected from water erosion (>70%)



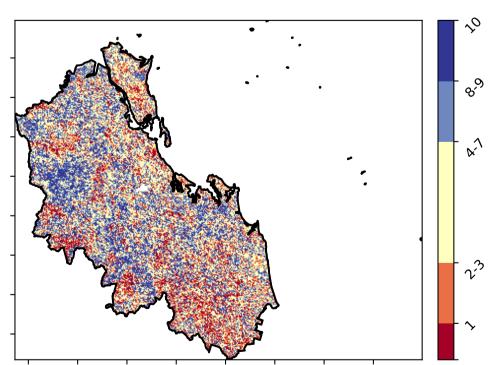
% Area protected from wind erosion (>50%)



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.

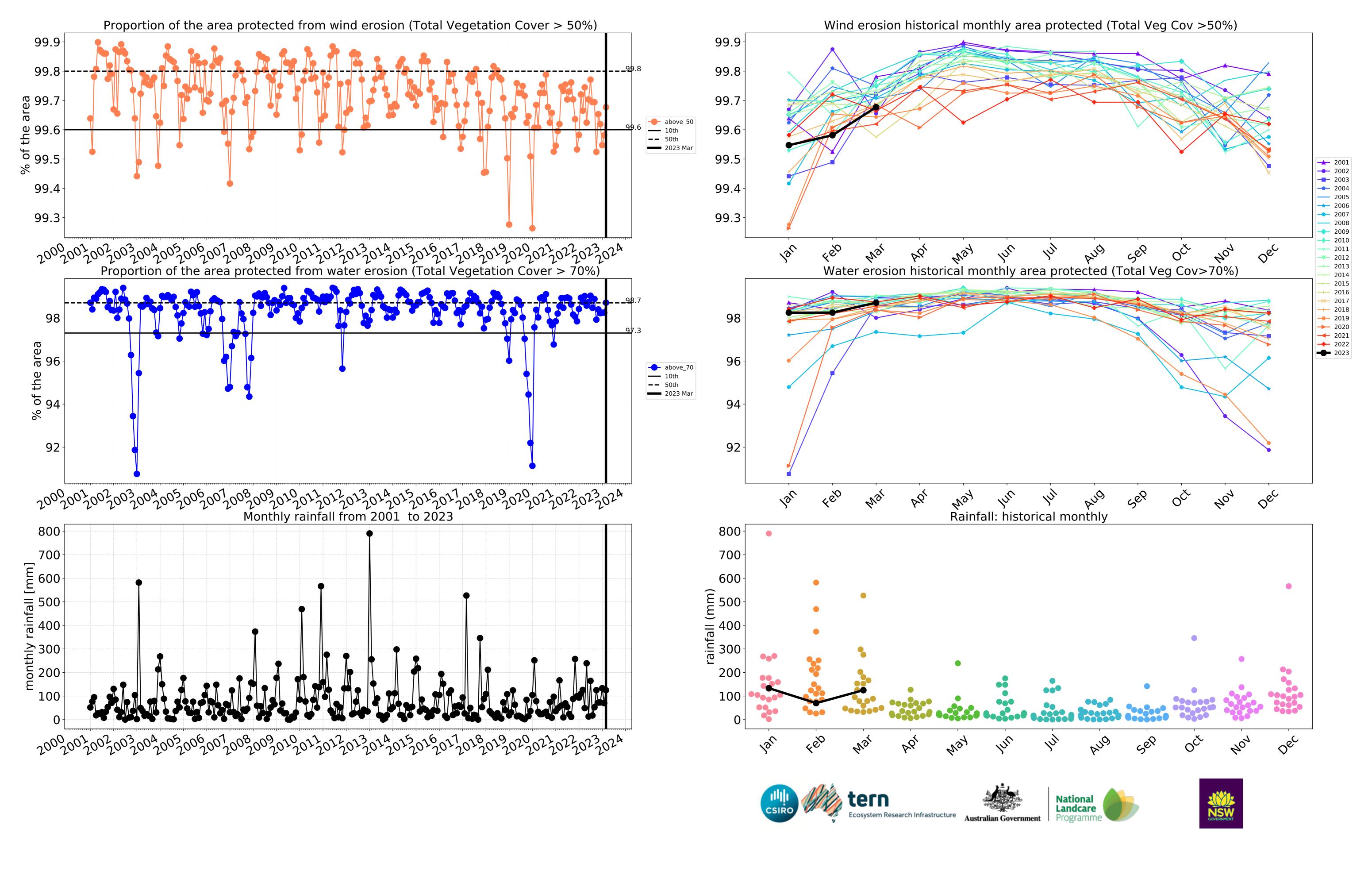




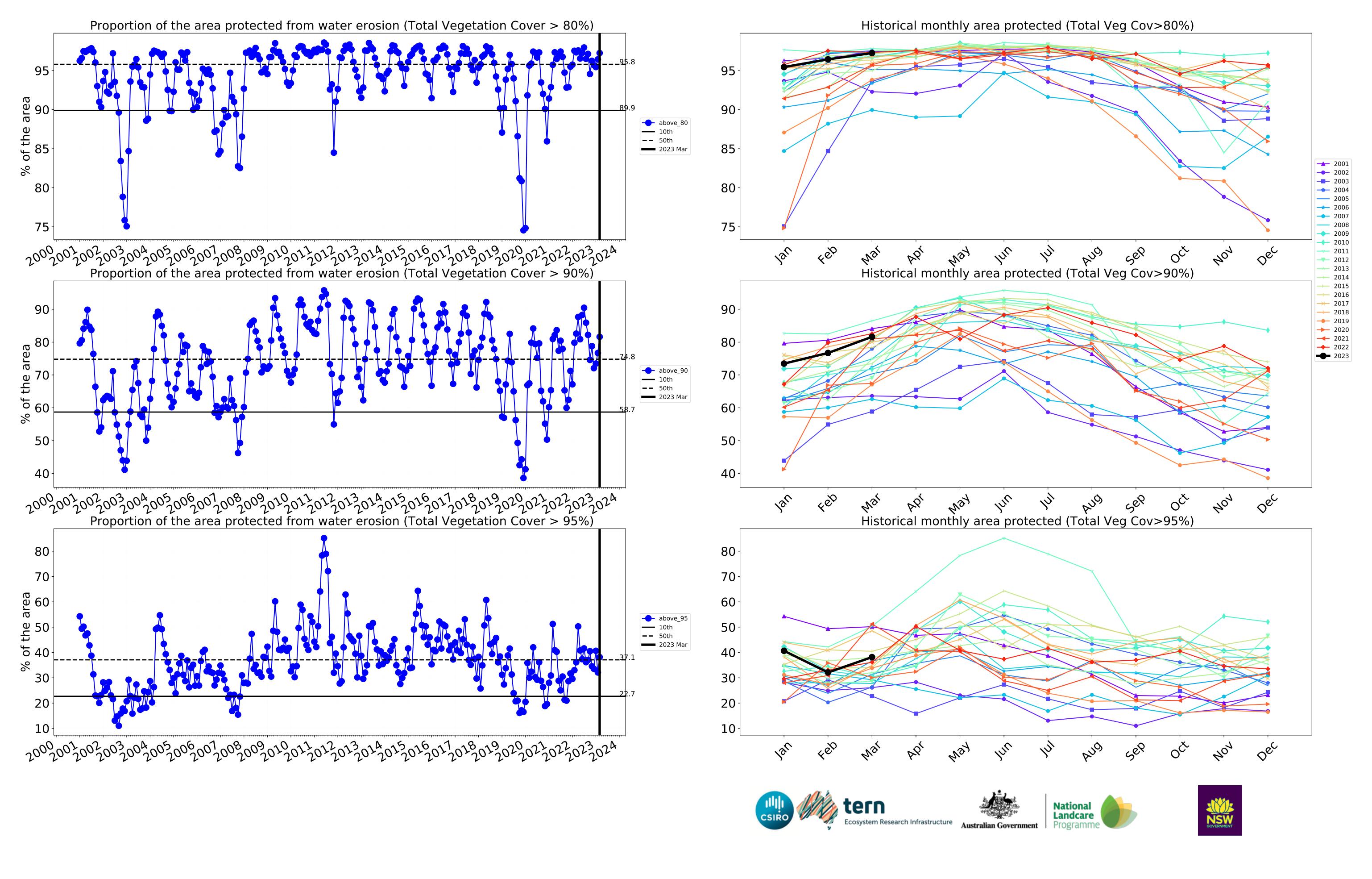








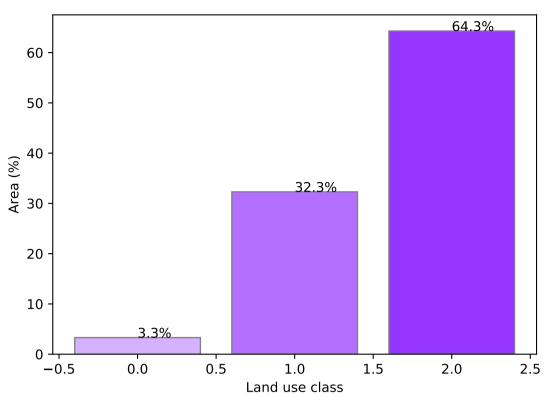
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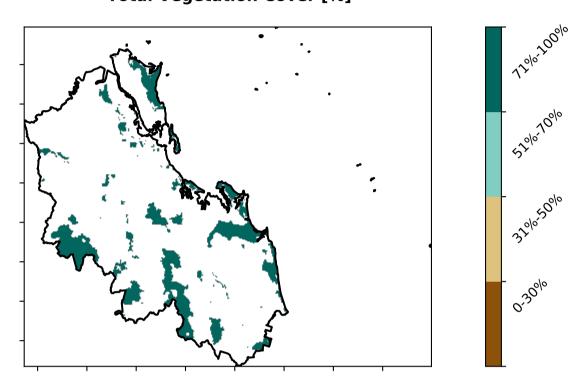
Conservation and natural environments

Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) 1 Conservation and natural environments - Nonforest Derived from 2 Conservation and natural environments - Woodland Catchment Scale Land Use of Australia 3 Conservation and natural environments - Non-woodland forest (2018) and Forests of Australia (2018)

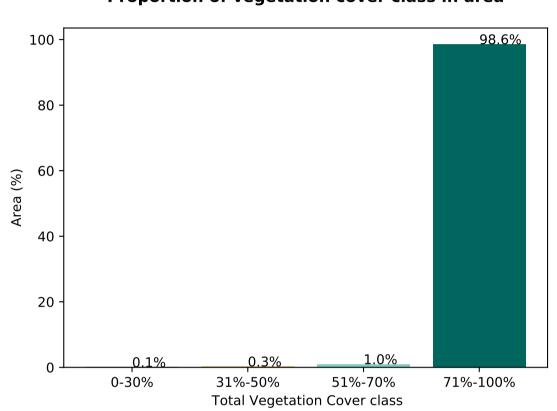
Proportion of each land class in area



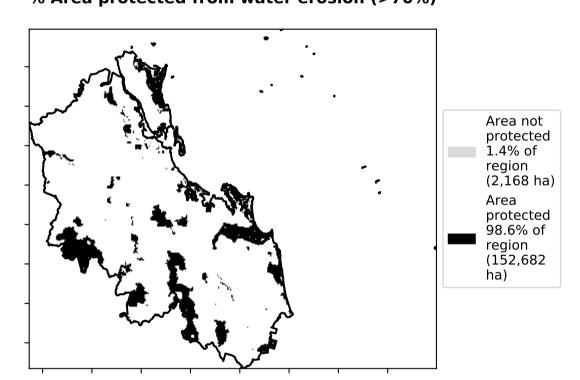
Total Vegetation Cover [%]



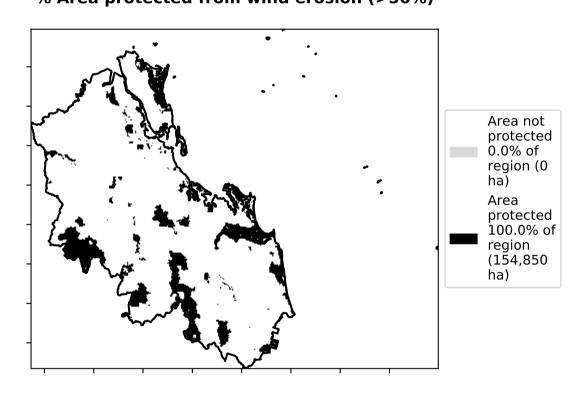
Proportion of vegetation cover class in area



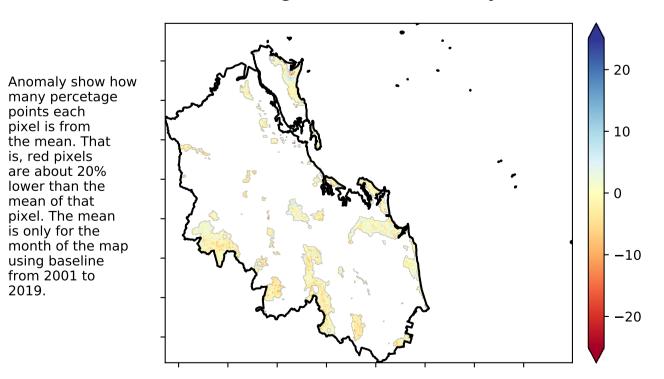
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

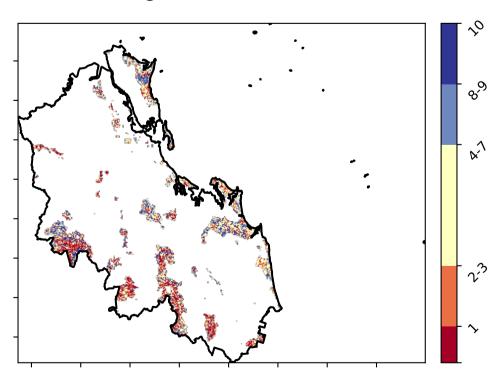


Total Vegetation Cover Anomaly [%]



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

Total Vegetation Cover Decile [%]





the mean. That is, red pixels are about 20% lower than the mean of that

pixel. The mean

using baseline from 2001 to 2019.



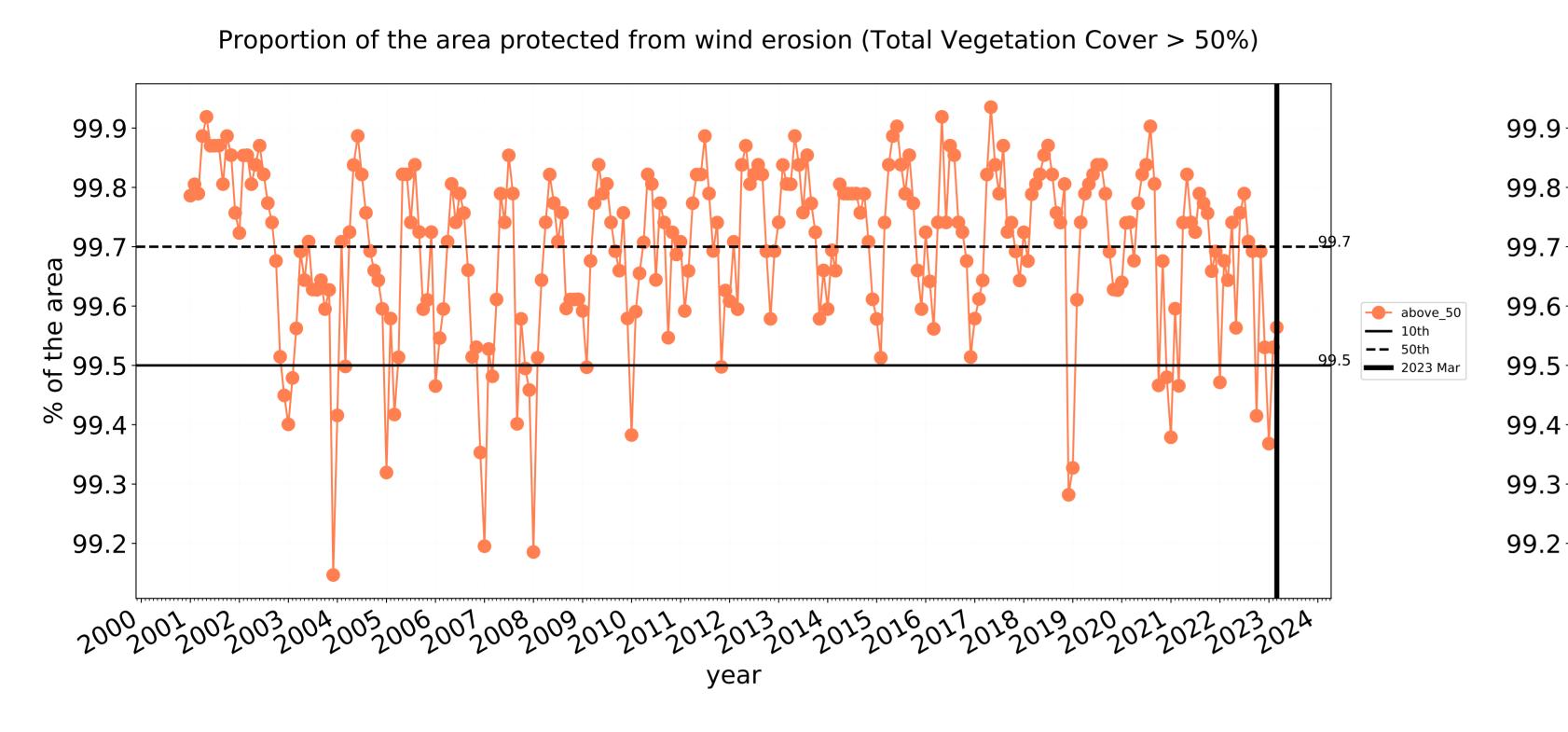


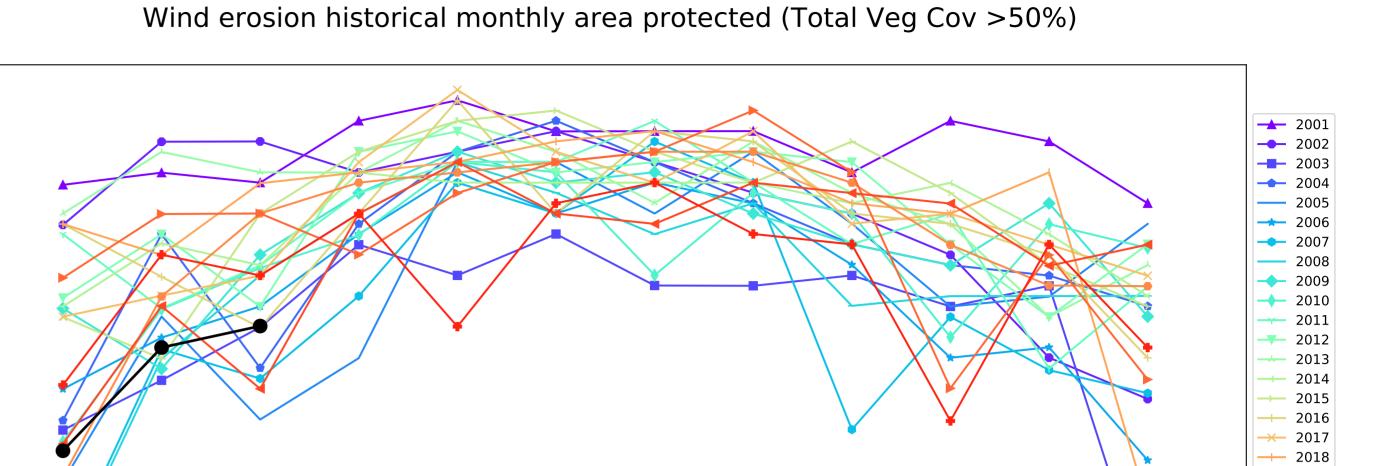






Conservation and natural environments timeseries

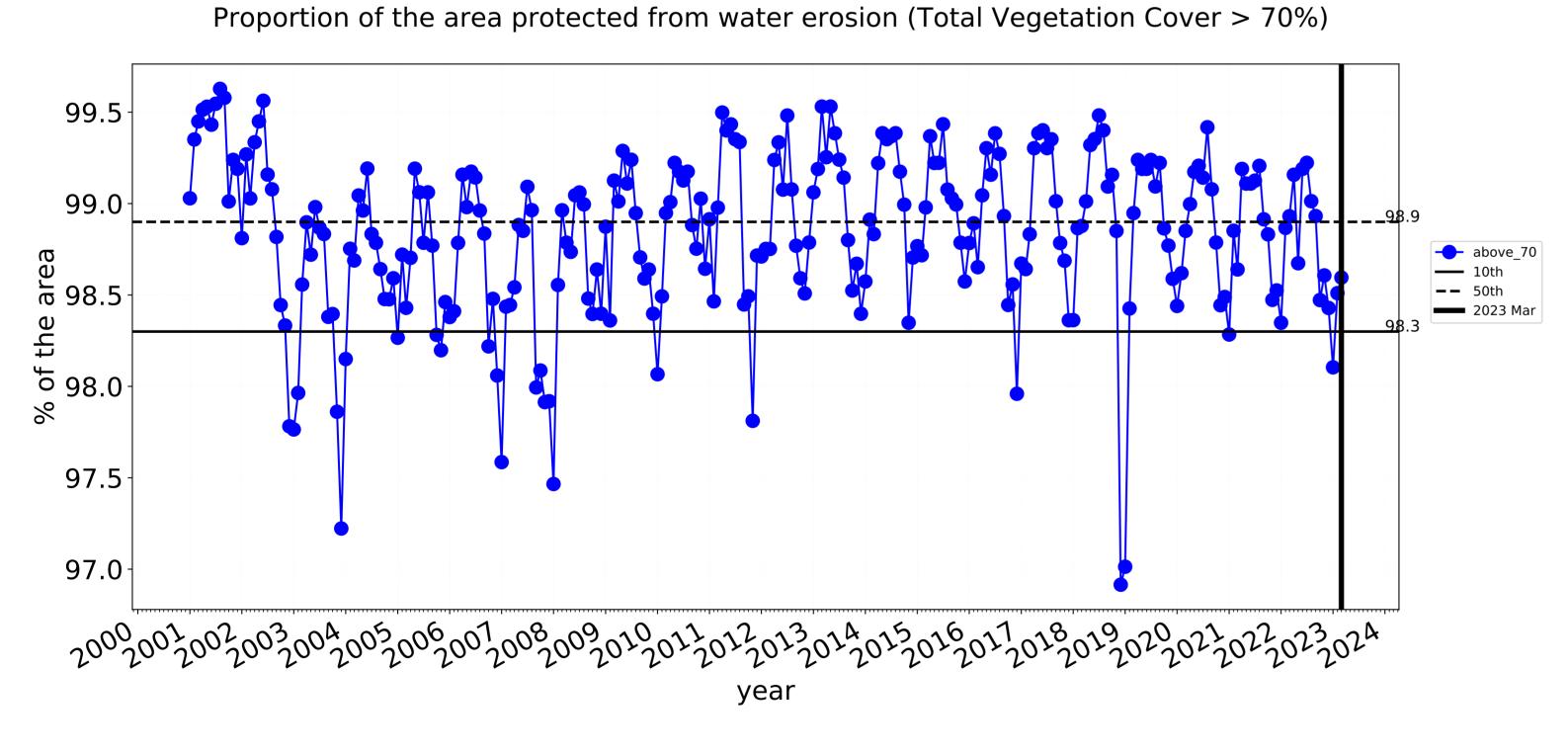


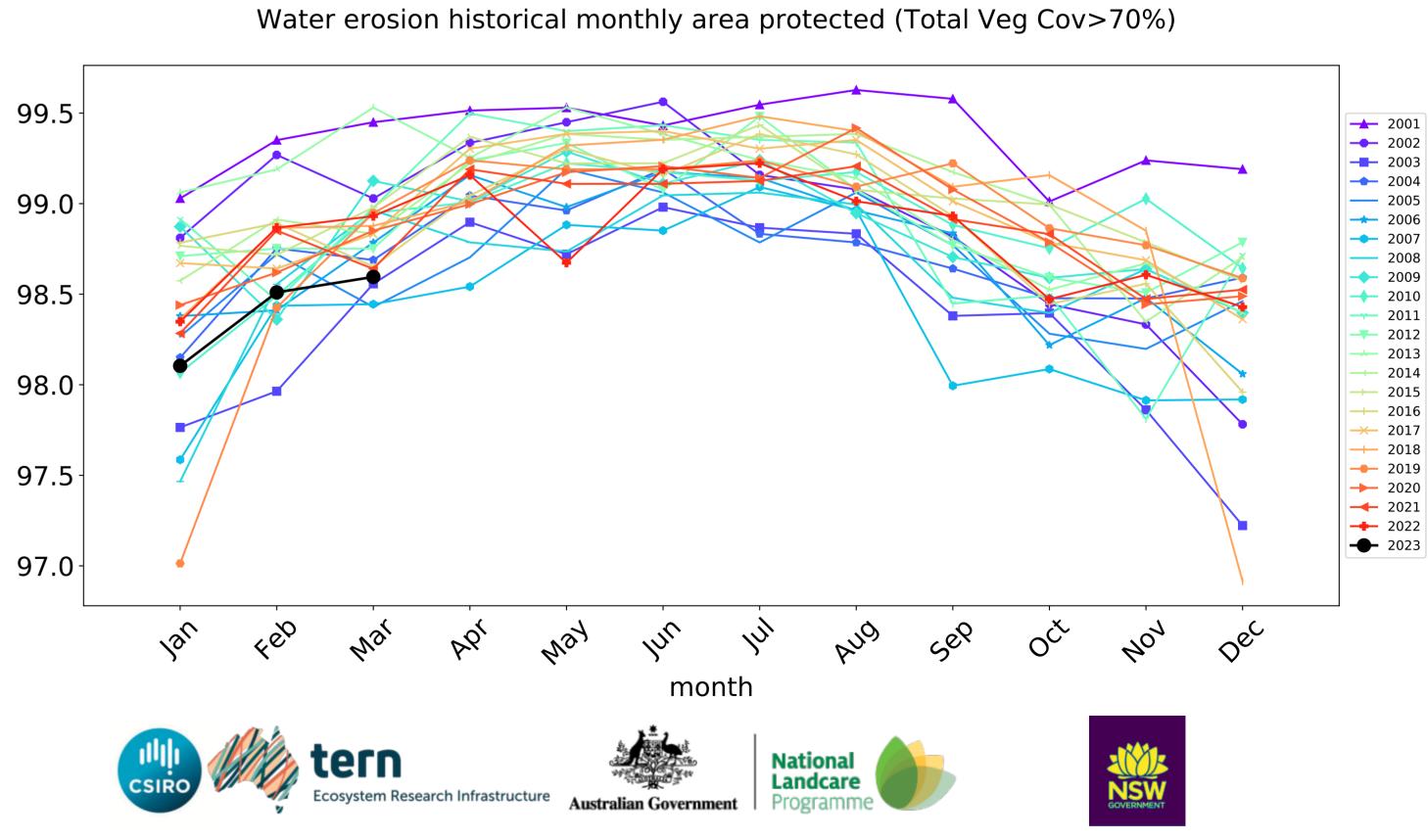


2020 2021

--- 2022

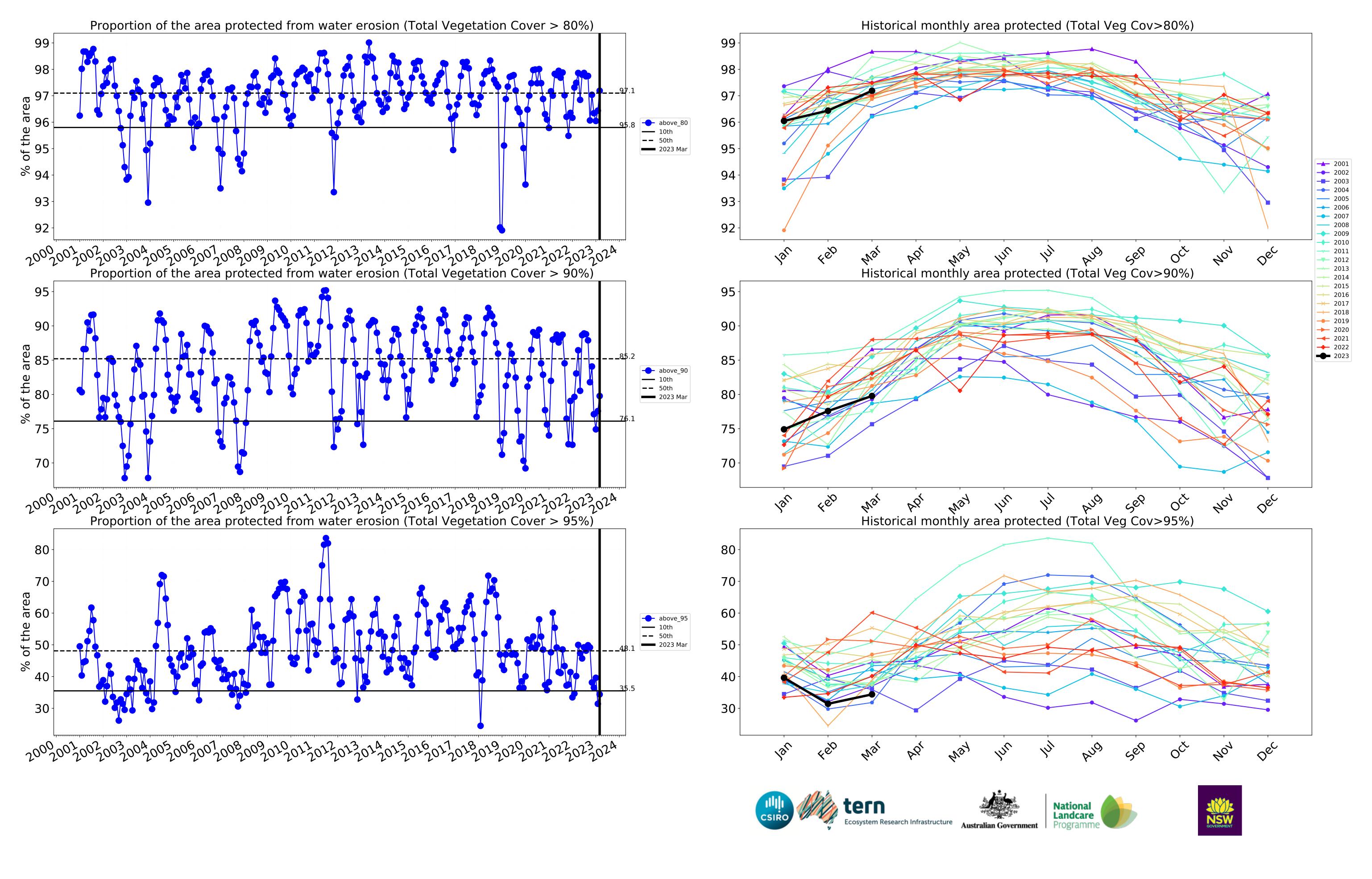
--- 2023





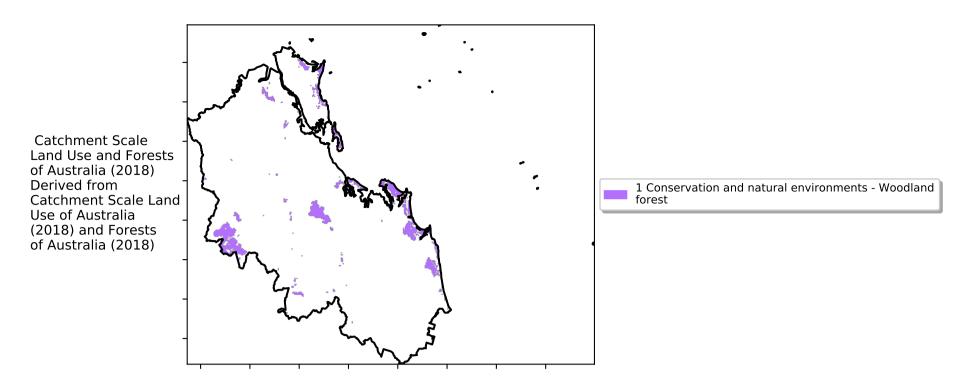
month

May

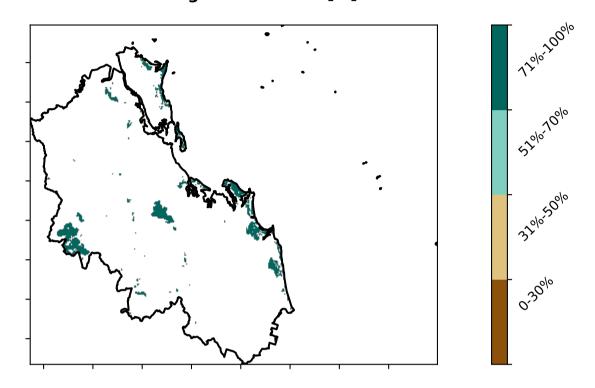


Conservation and natural environments Woodland forest

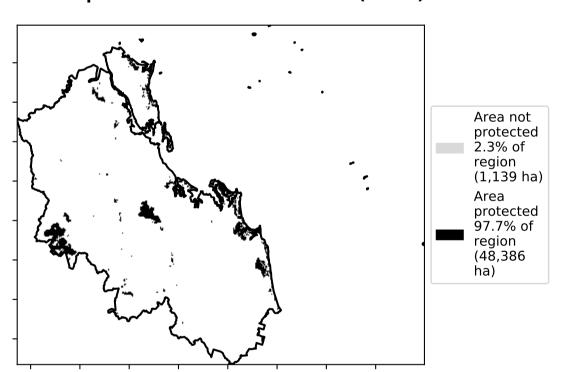
Land use and forest cover



Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

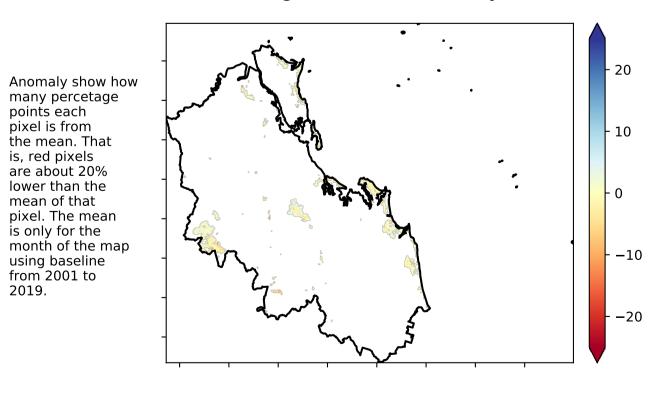


Total Vegetation Cover Anomaly [%]

is, red pixels are about 20% lower than the mean of that

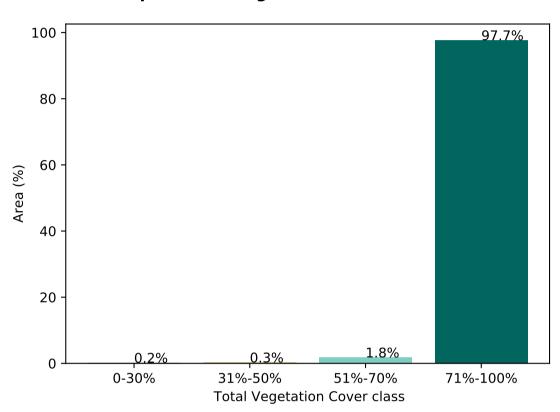
pixel. The mean

using baseline from 2001 to 2019.

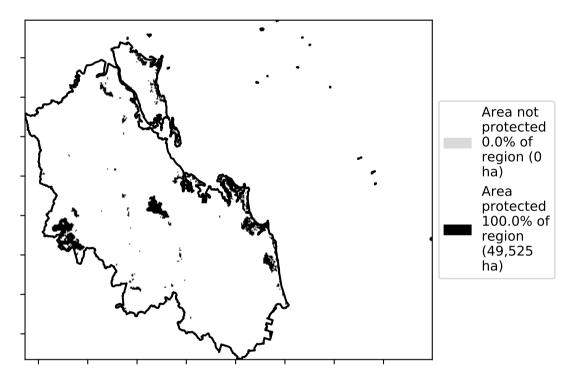


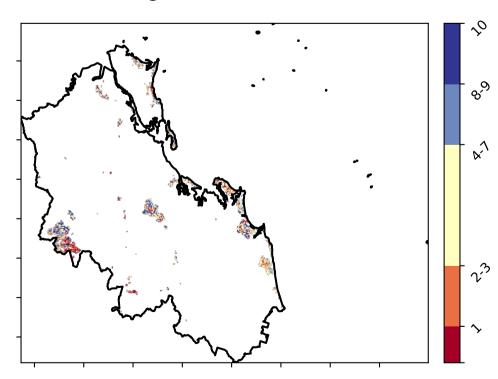
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





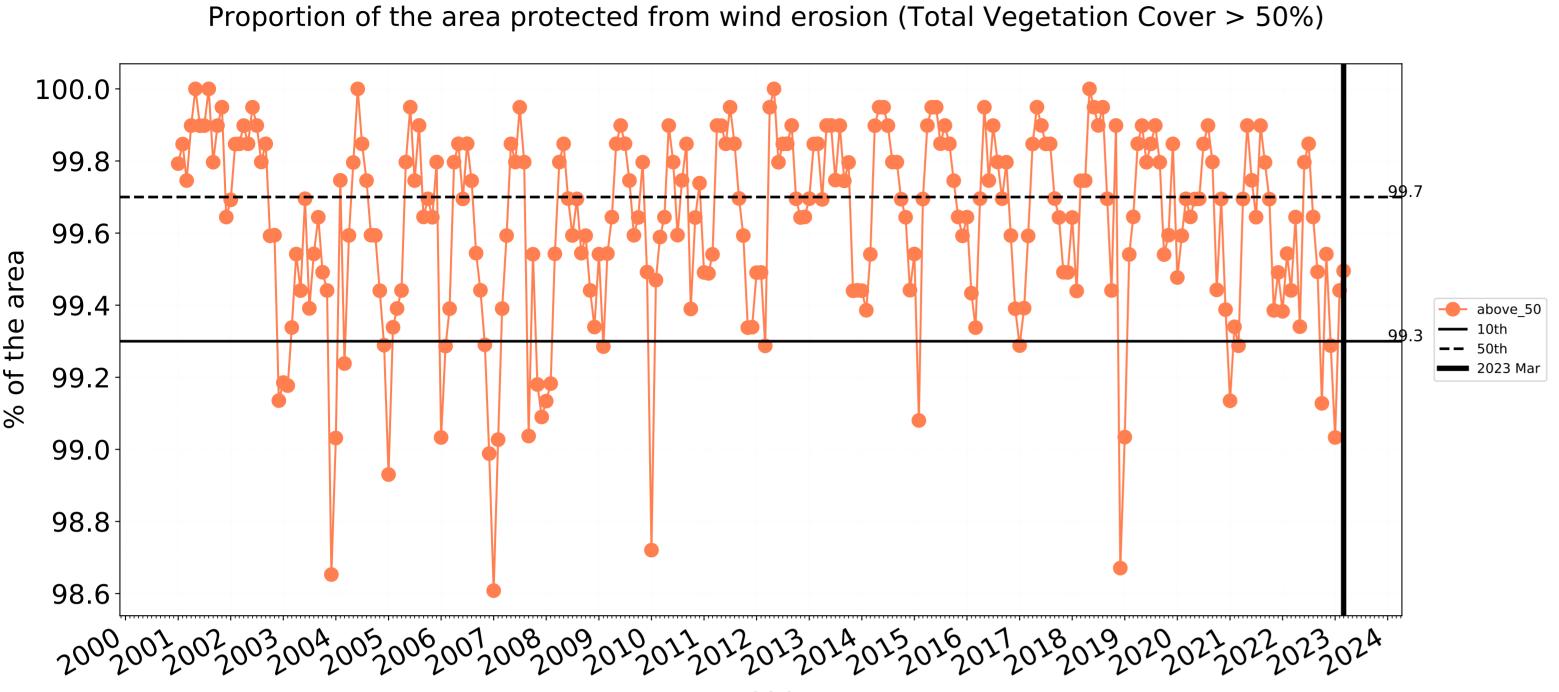




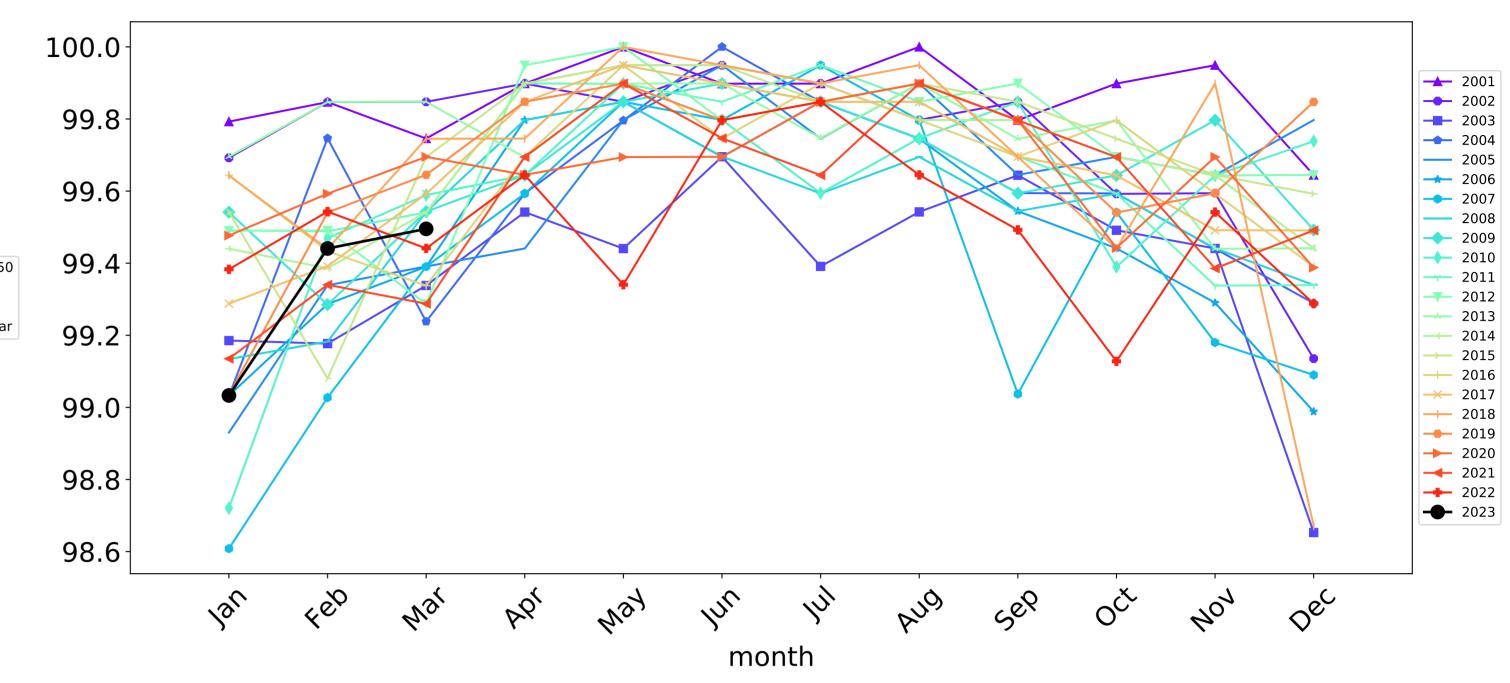


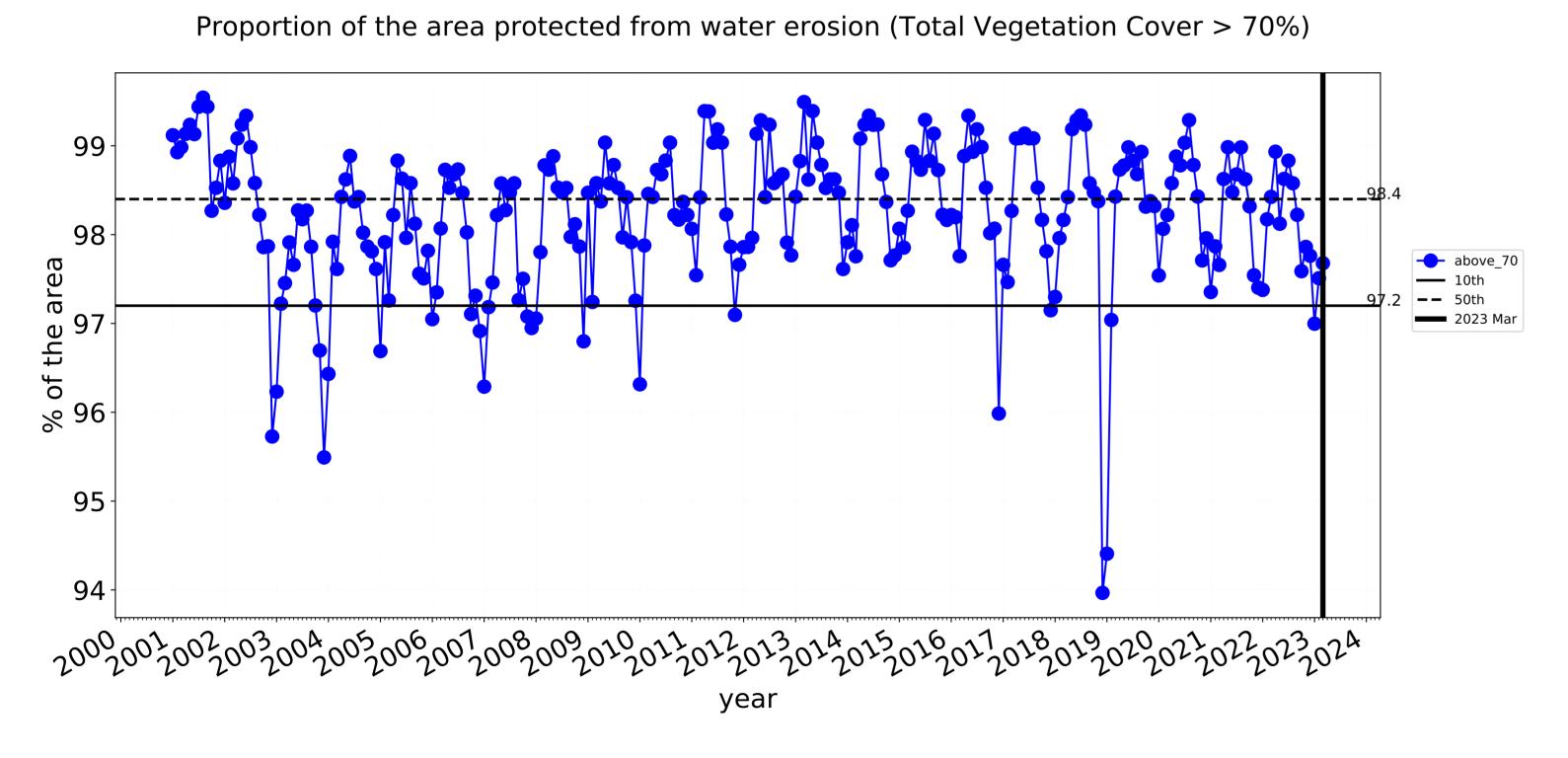


Conservation and natural environments Woodland forest timeseries

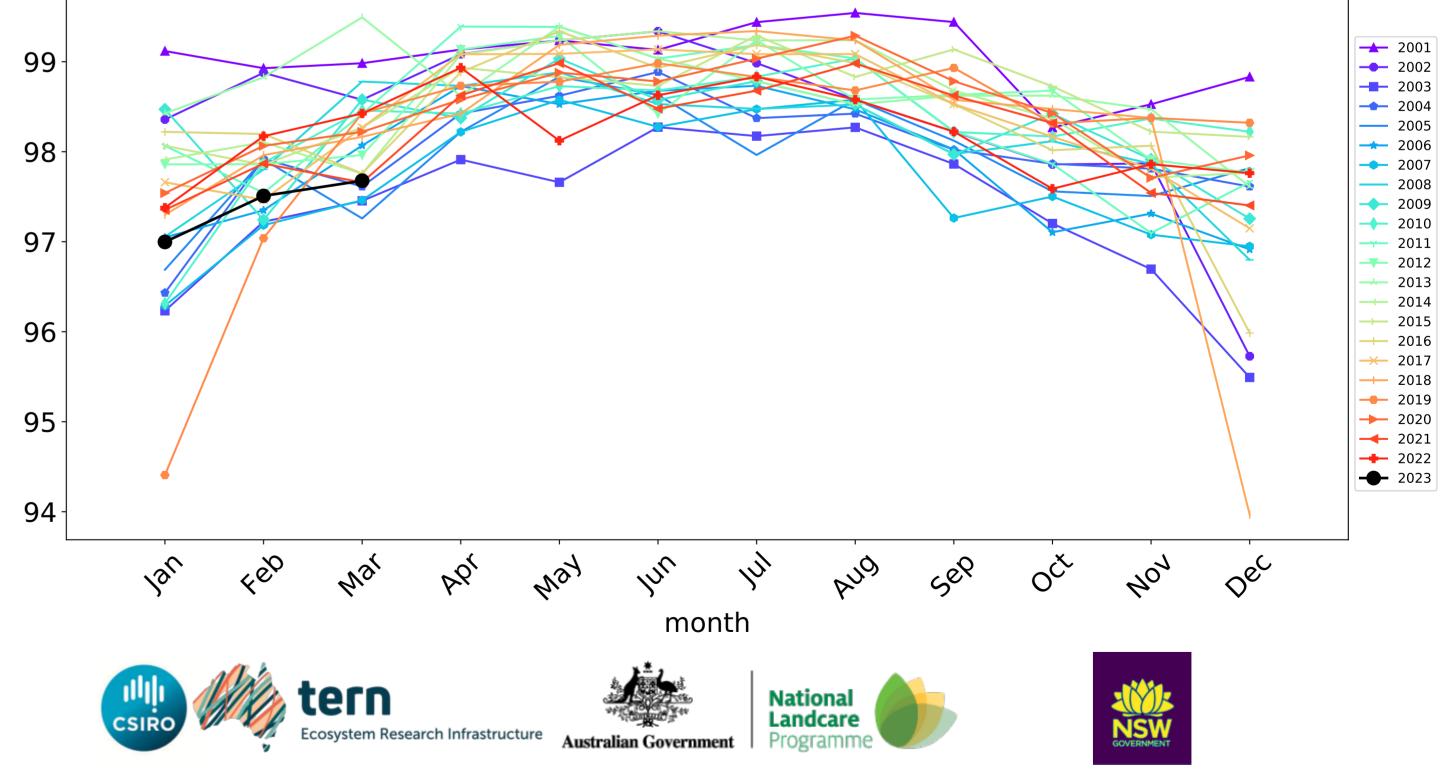


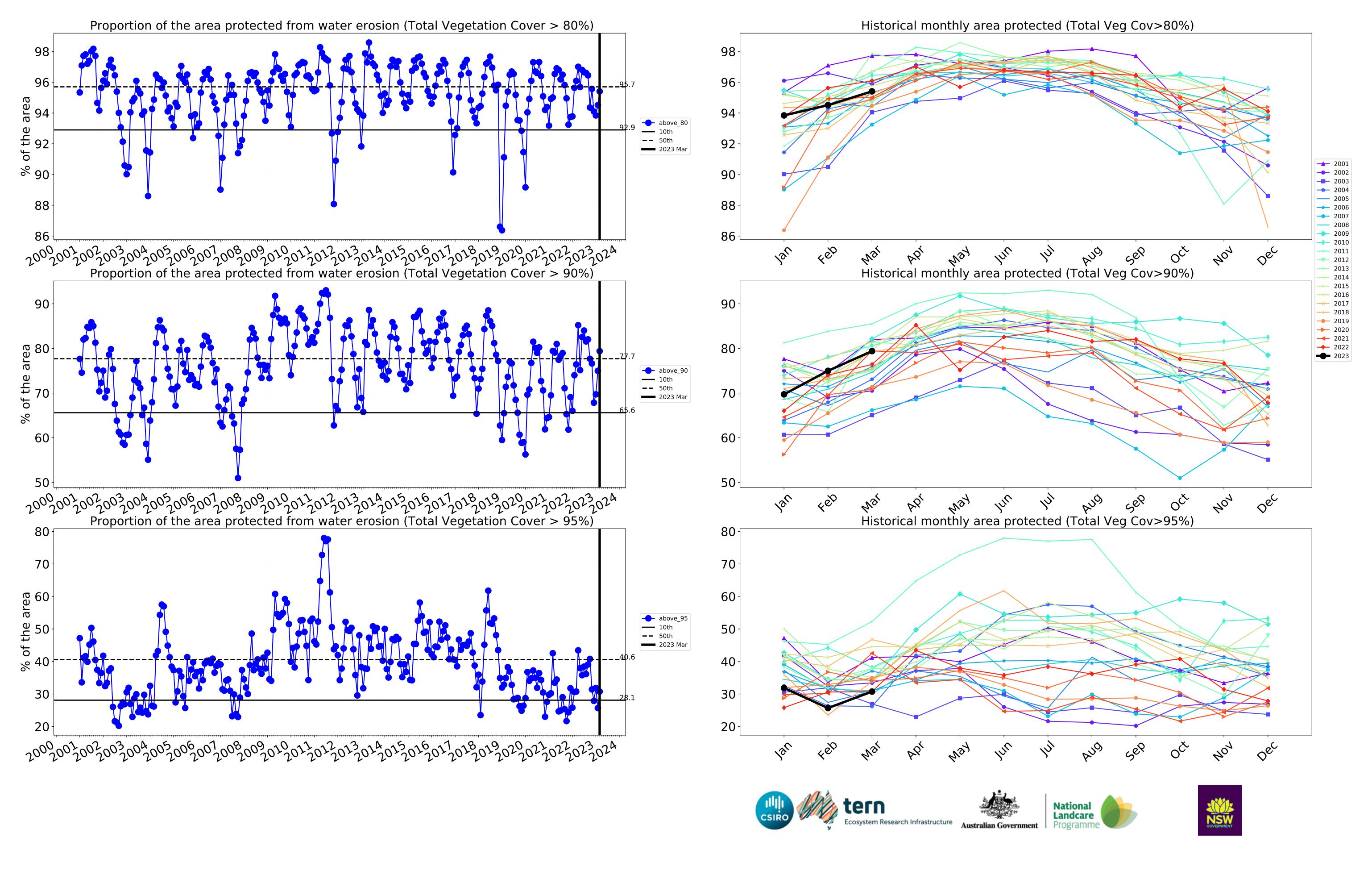
Wind erosion historical monthly area protected (Total Veg Cov >50%)





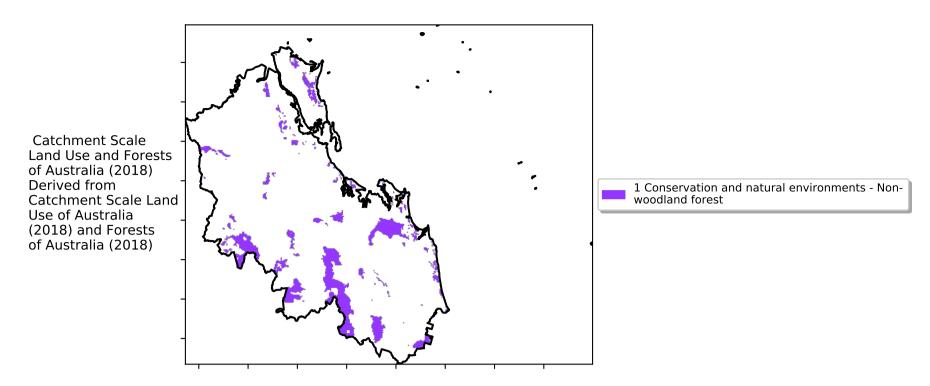




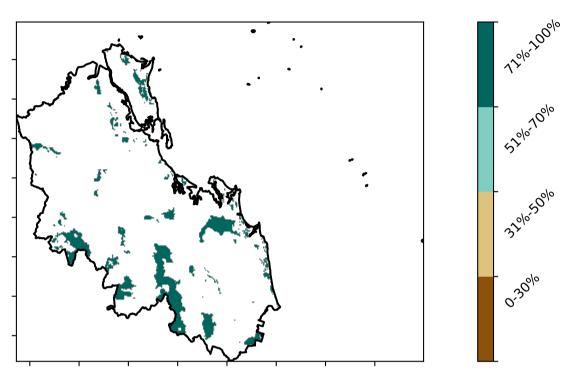


Conservation and natural environments Forest (non woodland)

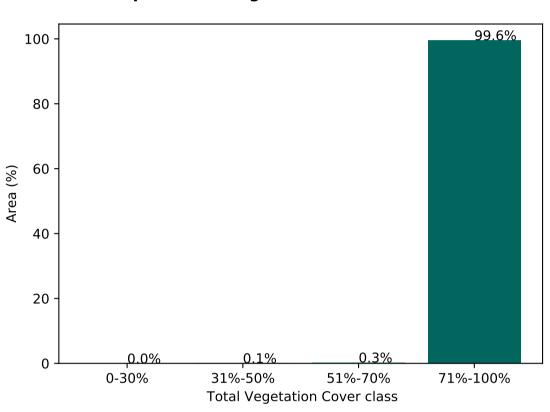
Land use and forest cover



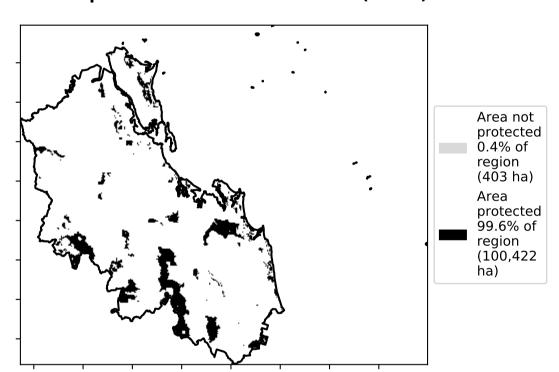
Total Vegetation Cover [%]

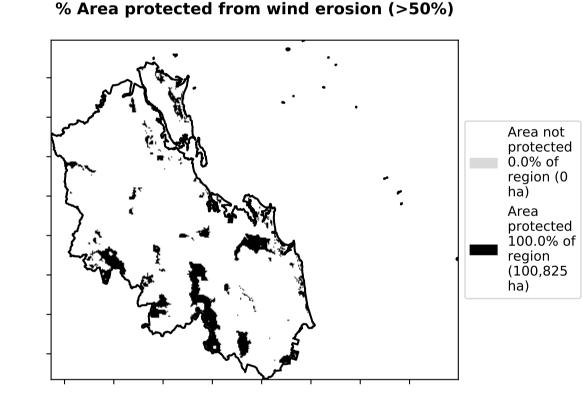


Proportion of vegetation cover class in area

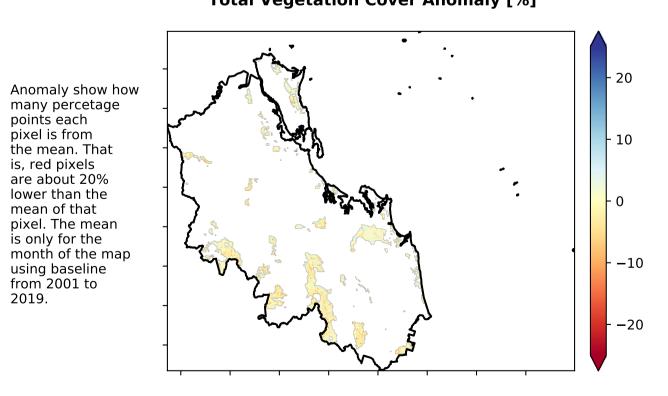


% Area protected from water erosion (>70%)



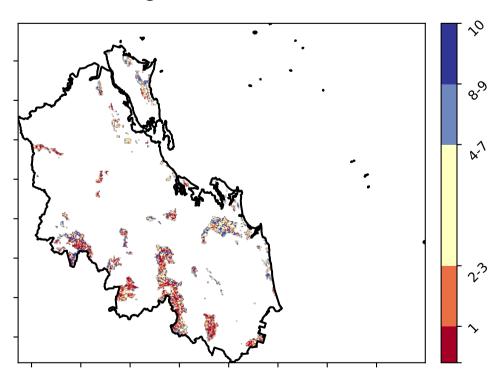


Total Vegetation Cover Anomaly [%]



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Total Vegetation Cover Decile [%]





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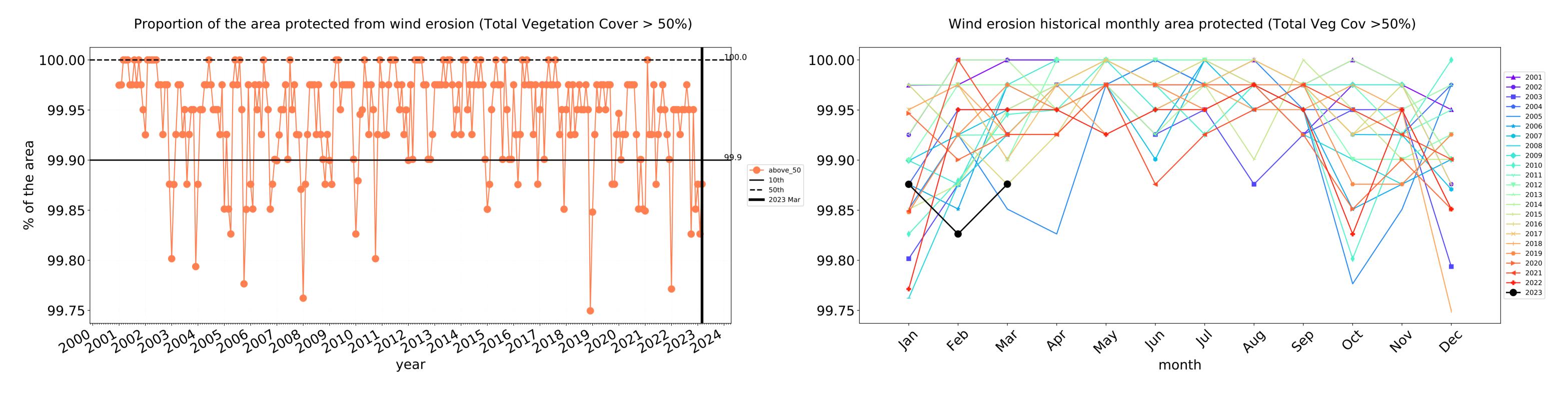


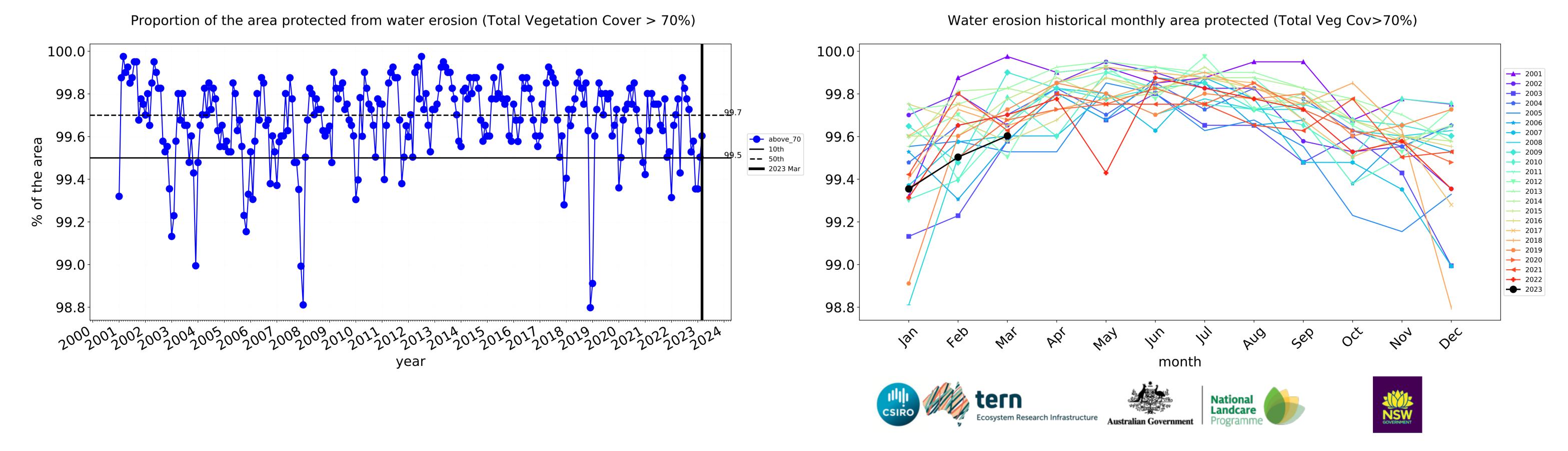


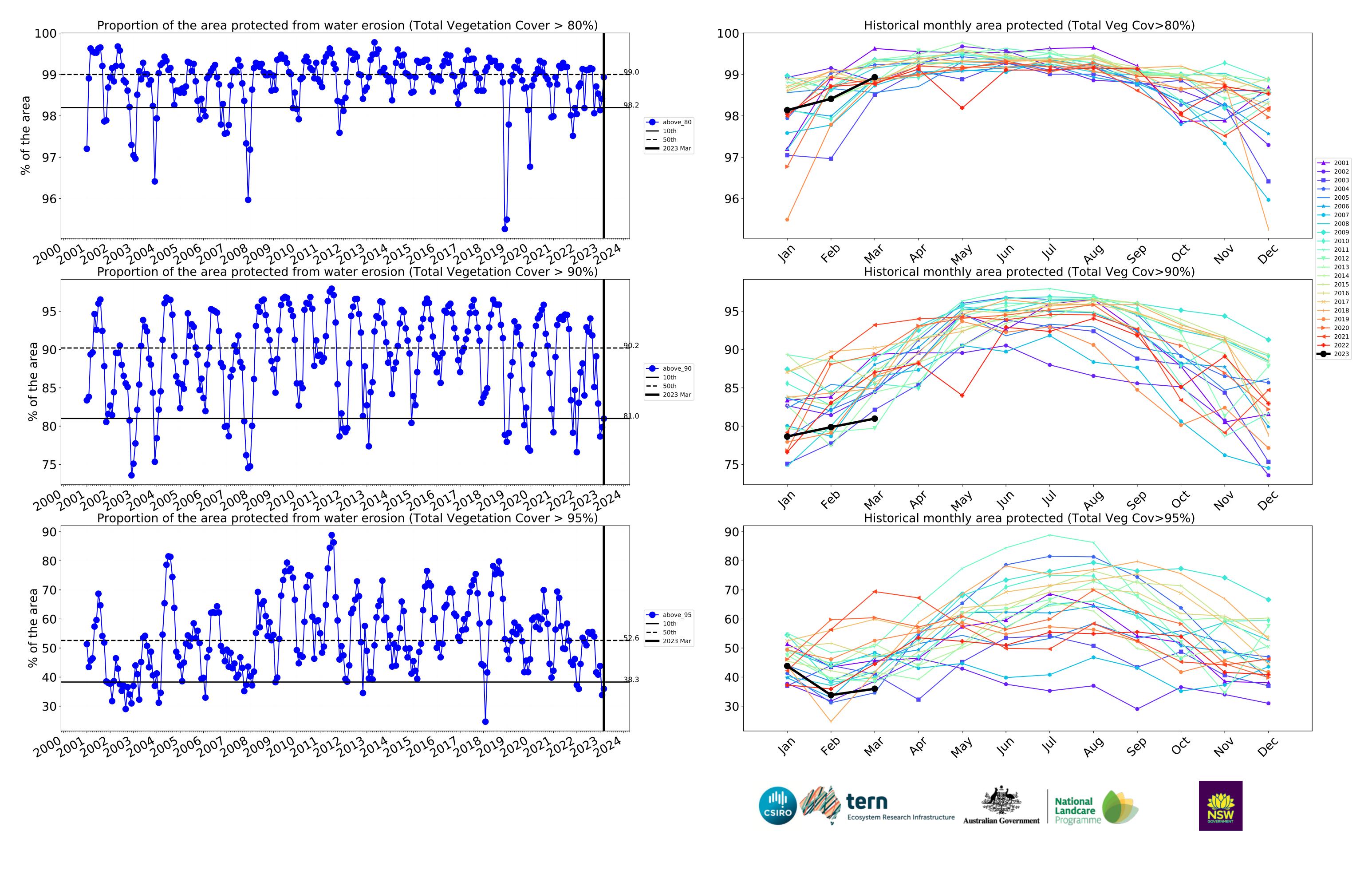




Conservation and natural environments Forest (non woodland) timeseries

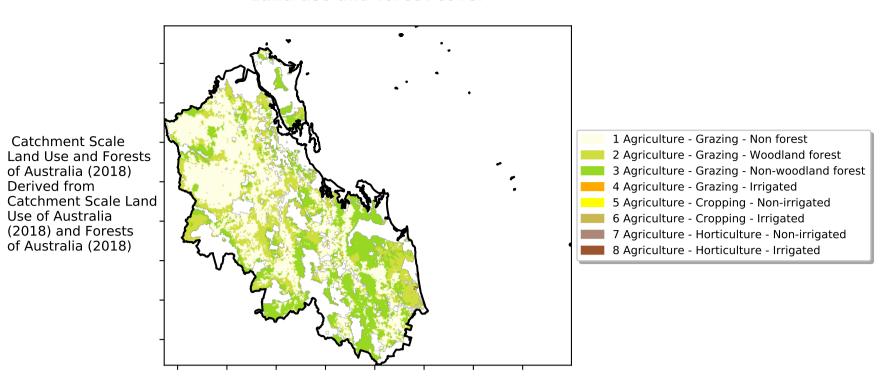




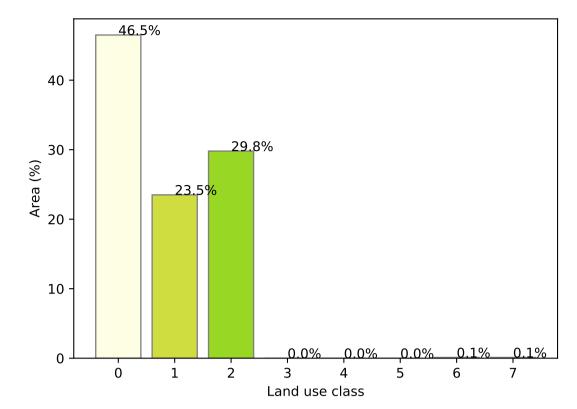


Agriculture

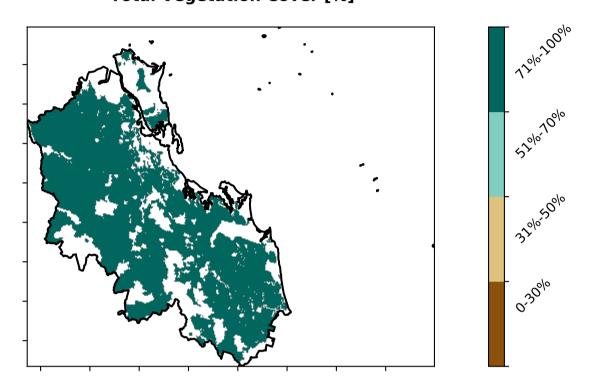
Land use and forest cover



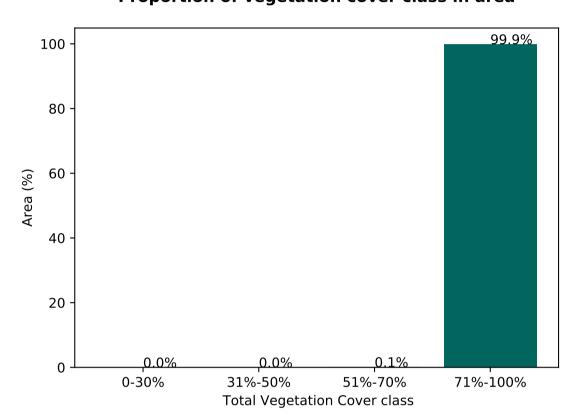
Proportion of each land class in area



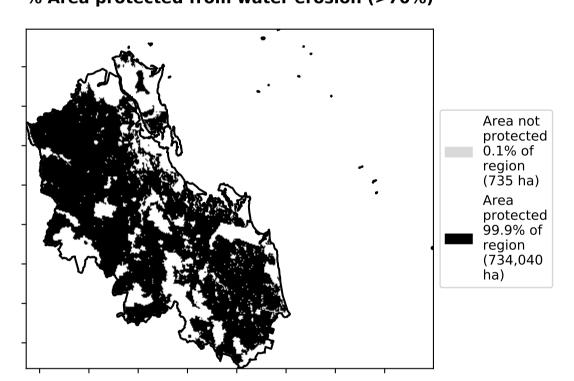
Total Vegetation Cover [%]



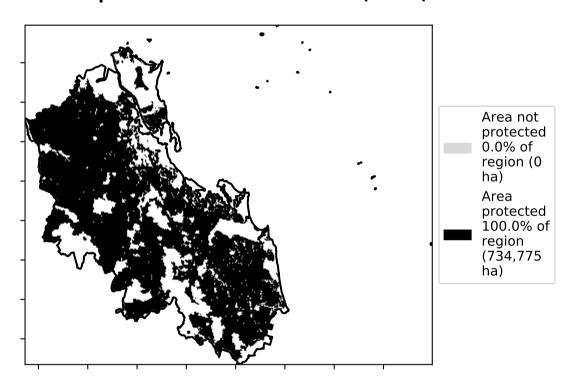
Proportion of vegetation cover class in area



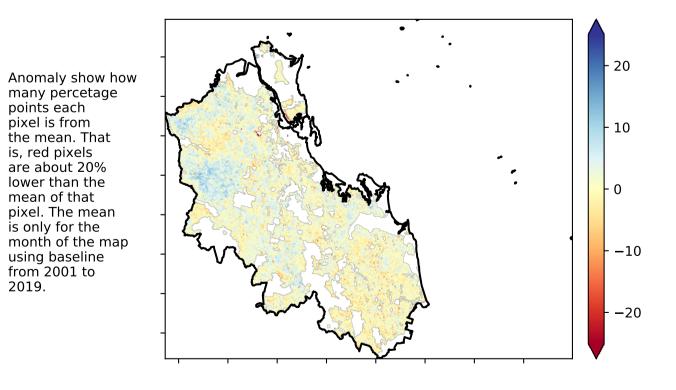
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

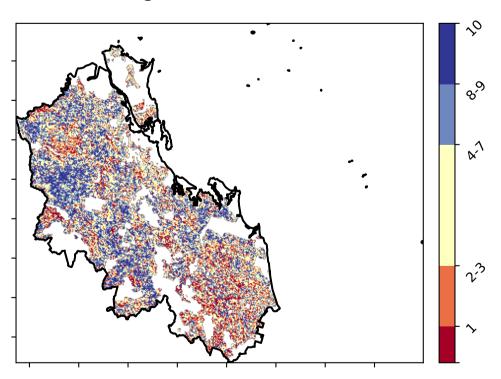


Total Vegetation Cover Anomaly [%]



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Total Vegetation Cover Decile [%]





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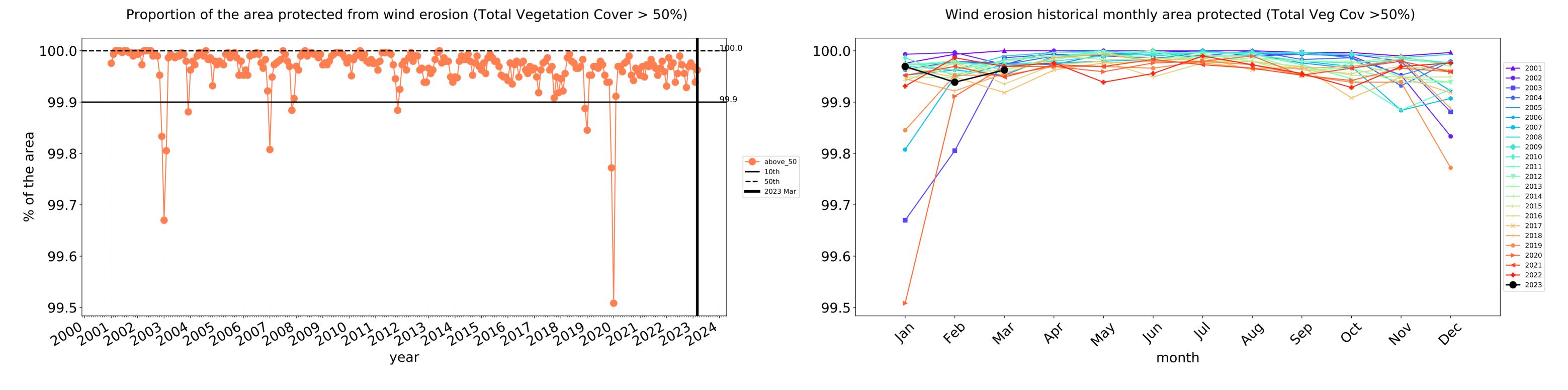


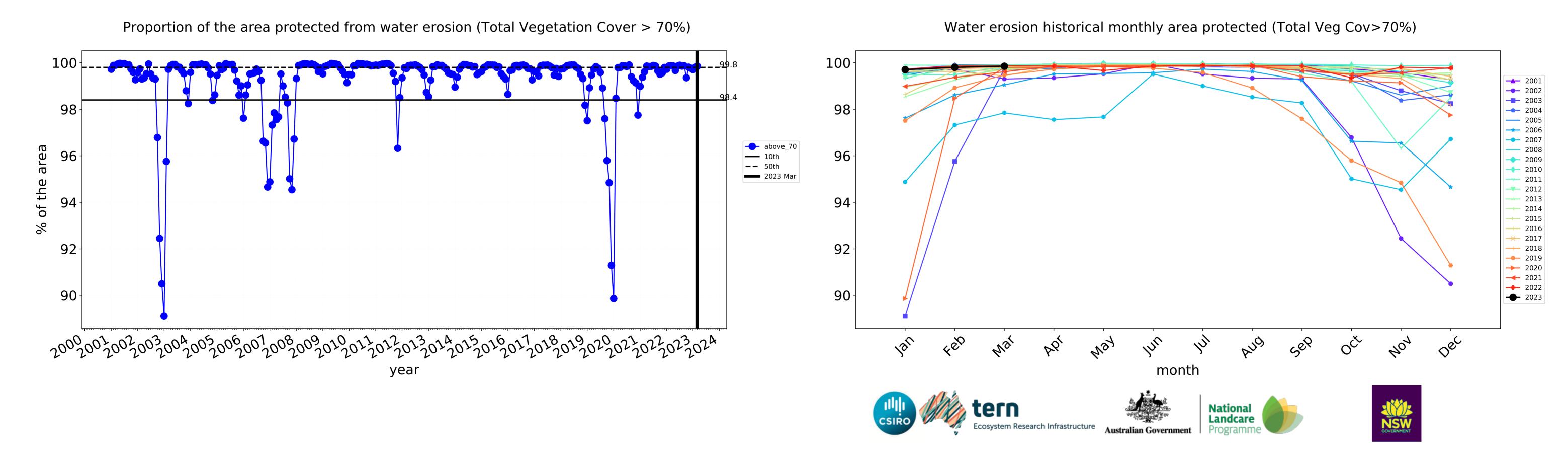


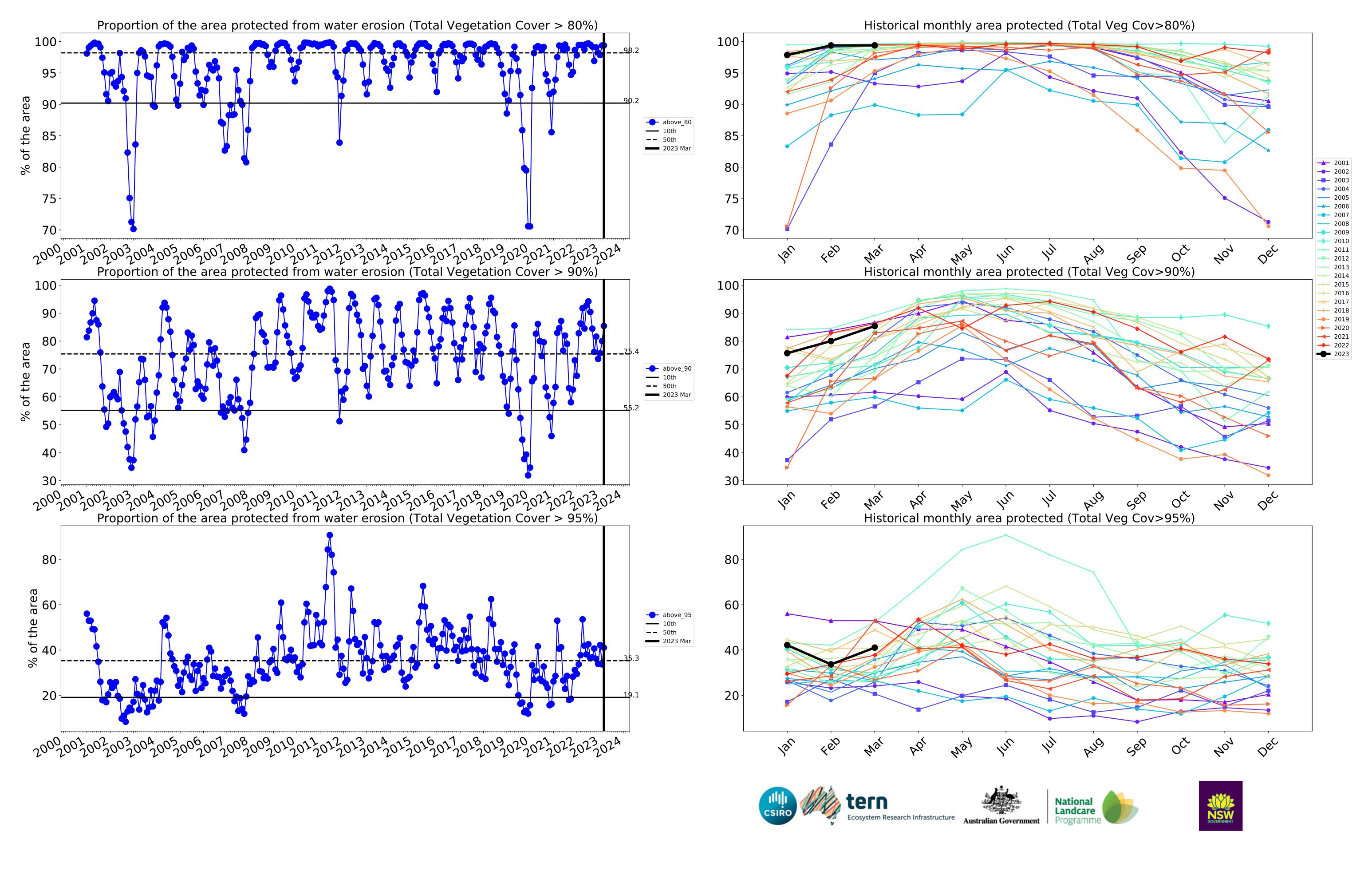




Agriculture timeseries

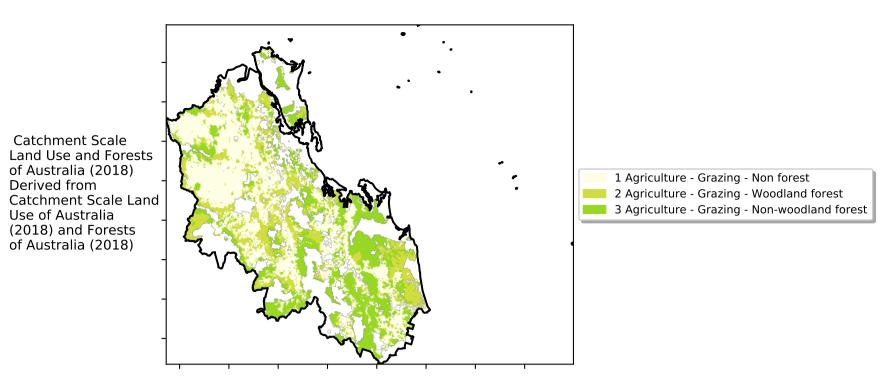




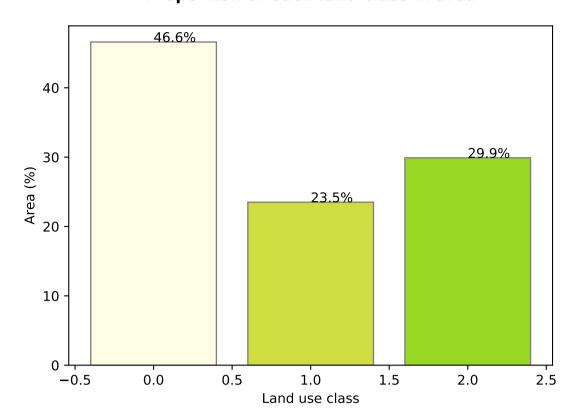


Grazing

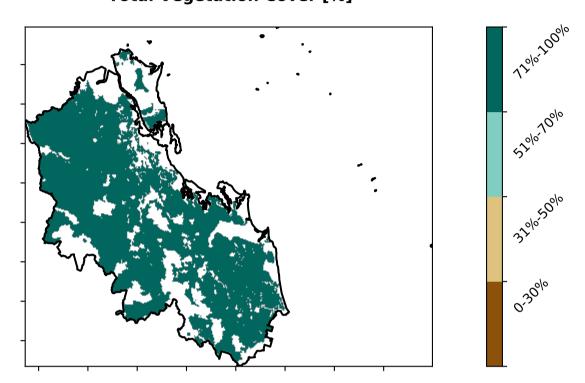
Land use and forest cover



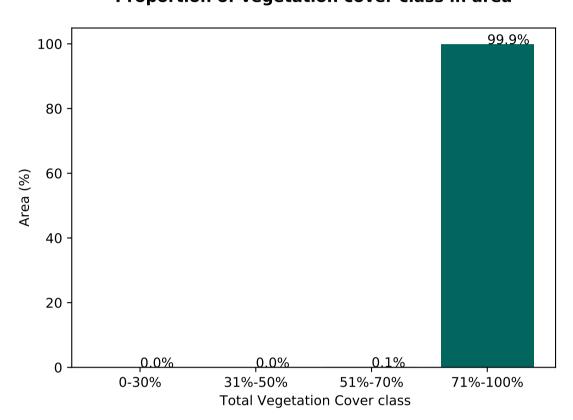
Proportion of each land class in area



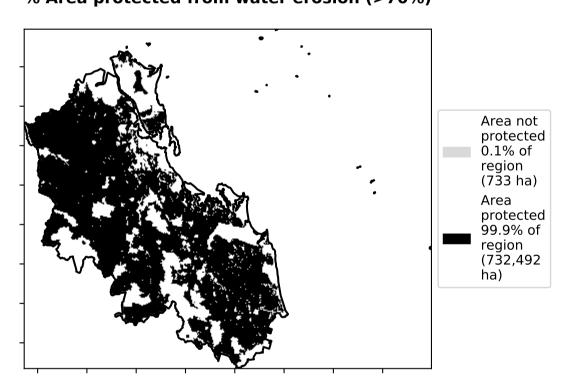
Total Vegetation Cover [%]



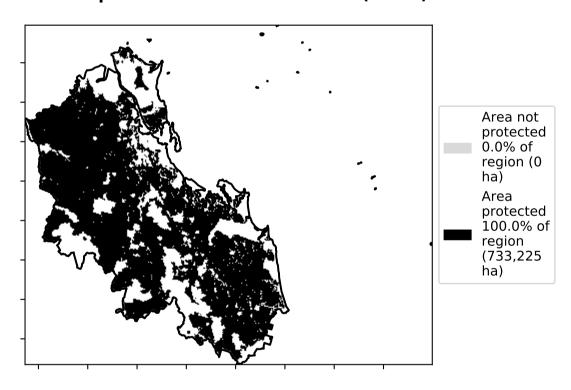
Proportion of vegetation cover class in area



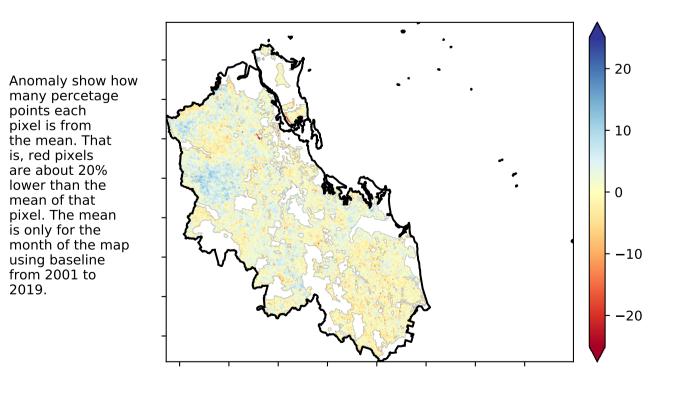
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

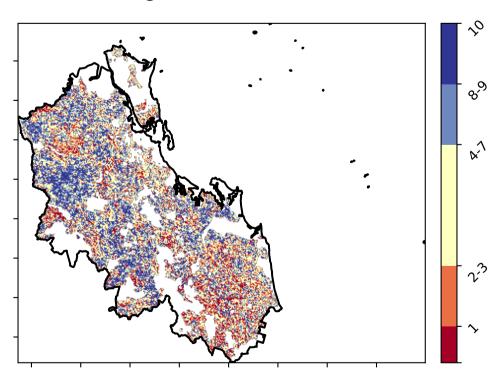


Total Vegetation Cover Anomaly [%]



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Total Vegetation Cover Decile [%]





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pixel. The mean



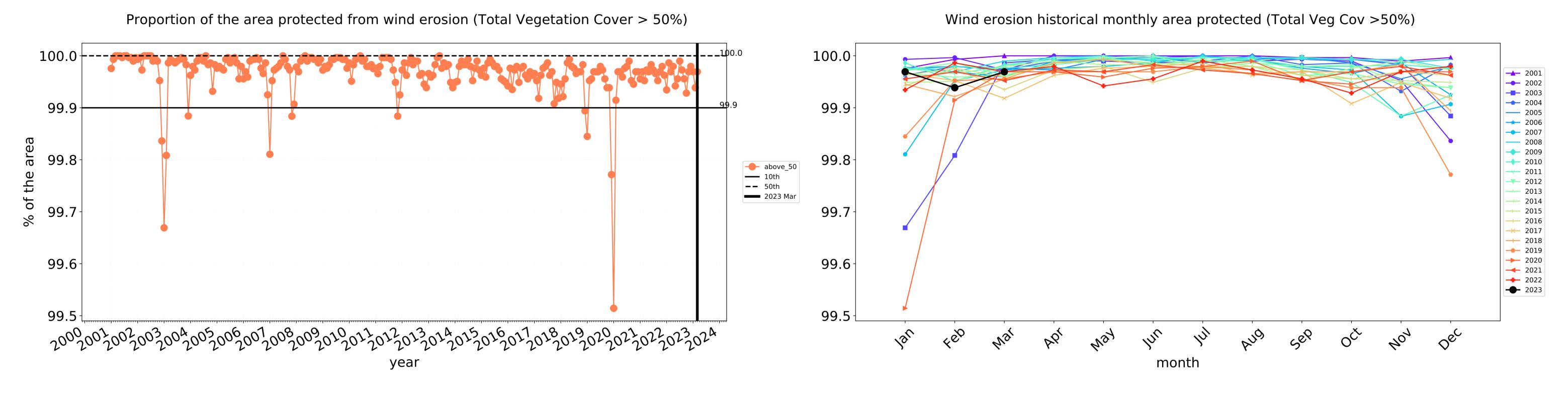


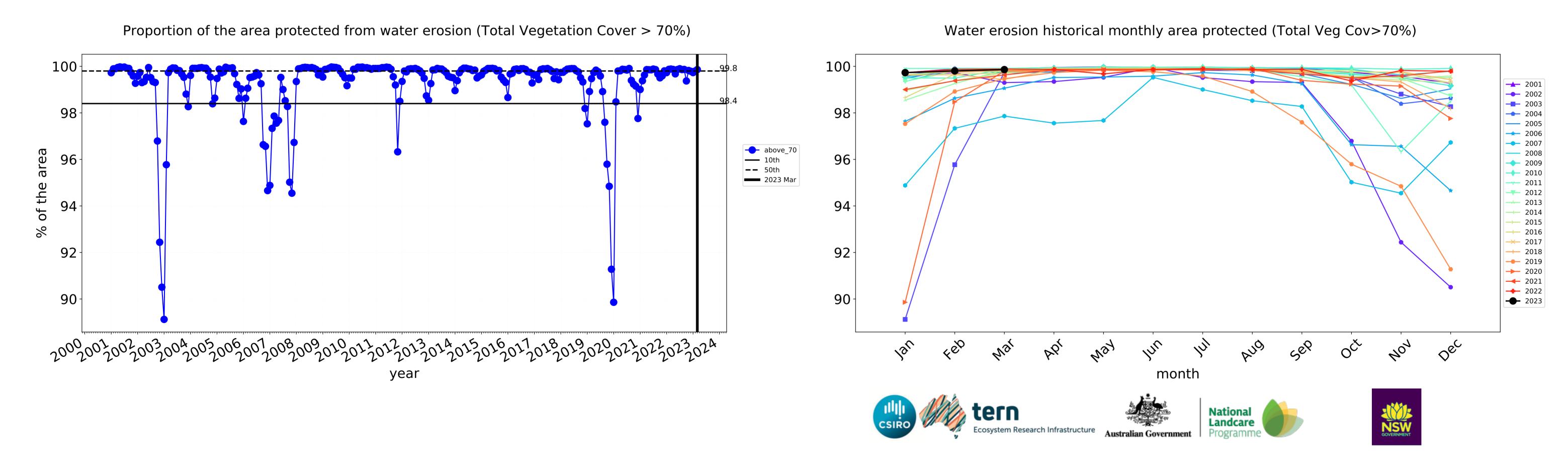


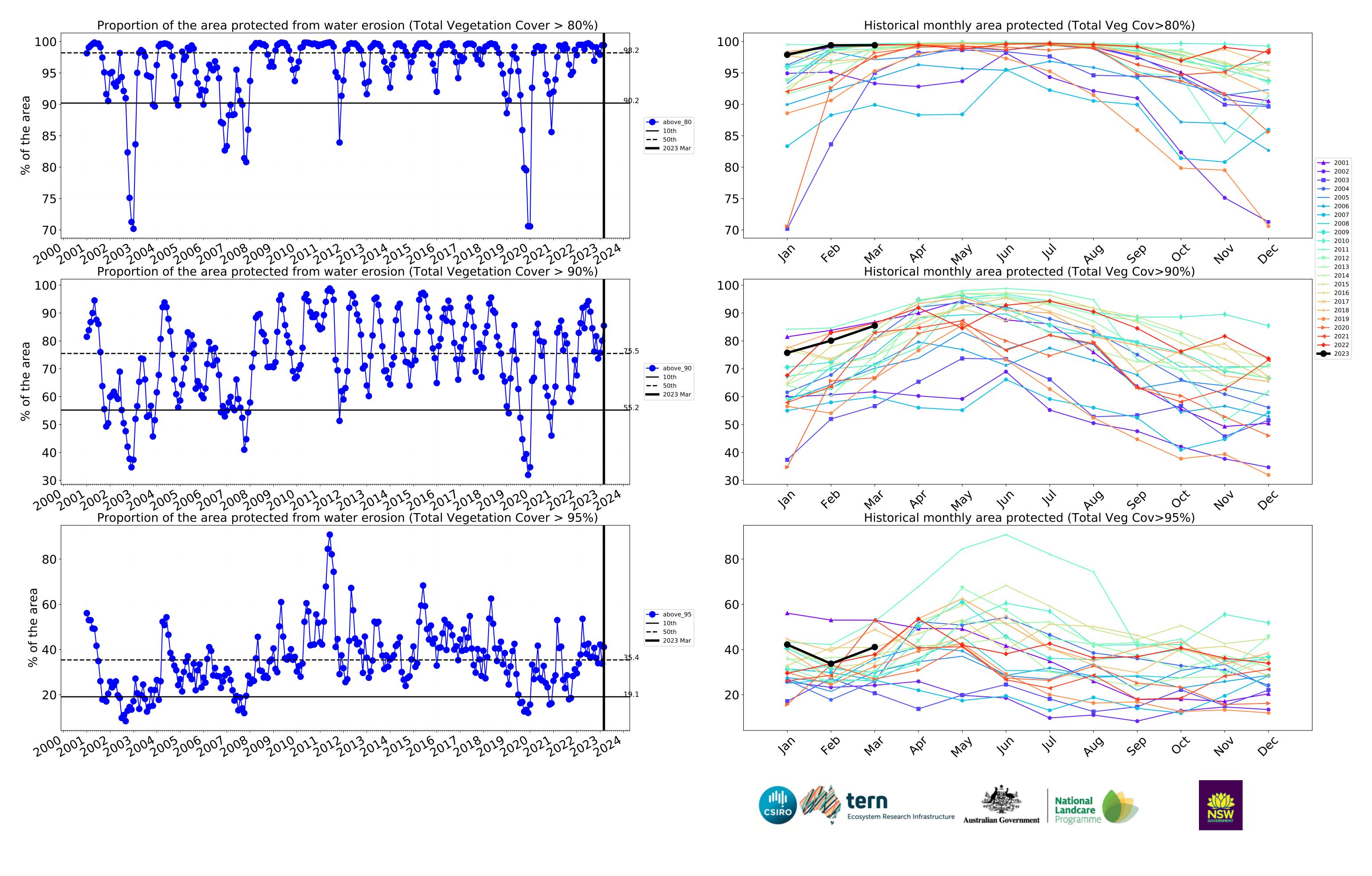




Grazing timeseries

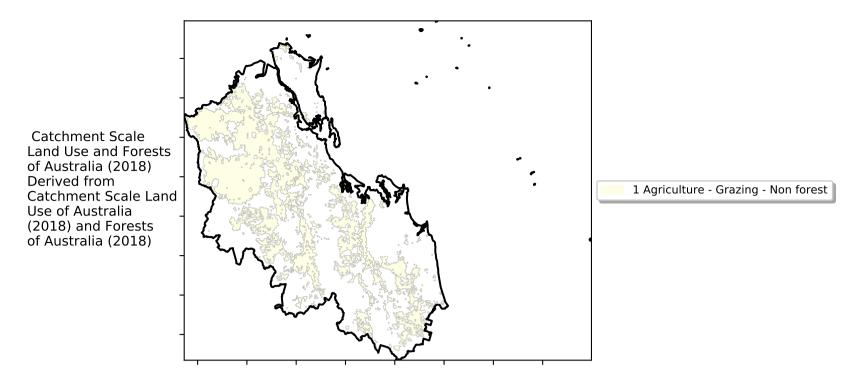




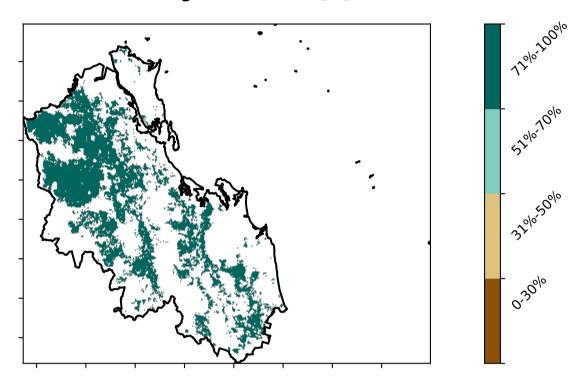


Grazing non forest

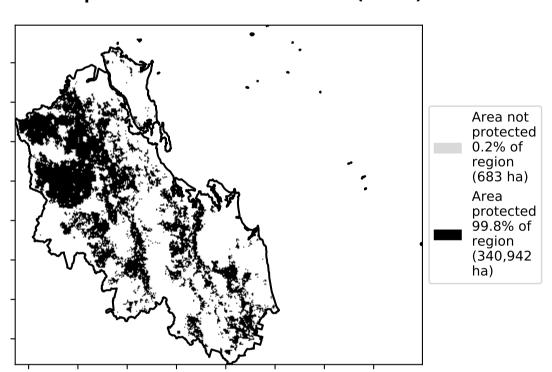
Land use and forest cover



Total Vegetation Cover [%]

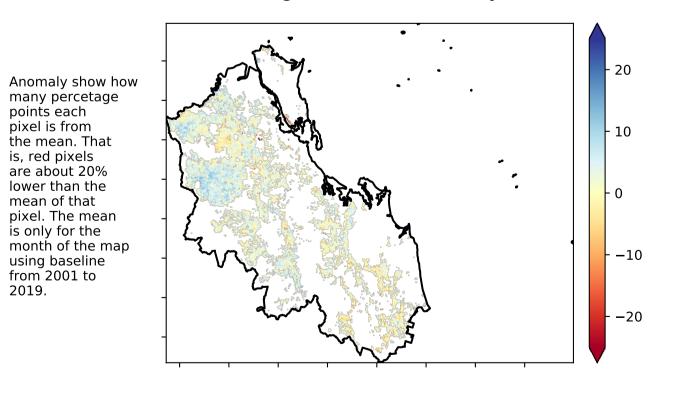


% Area protected from water erosion (>70%)



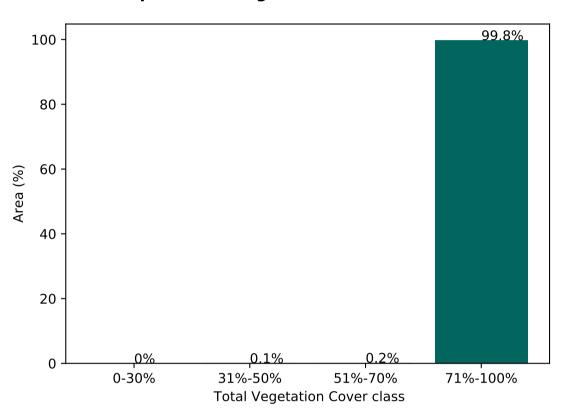
Total Vegetation Cover Anomaly [%]

lower than the

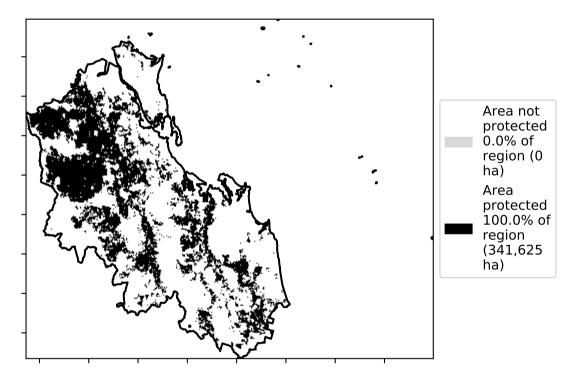


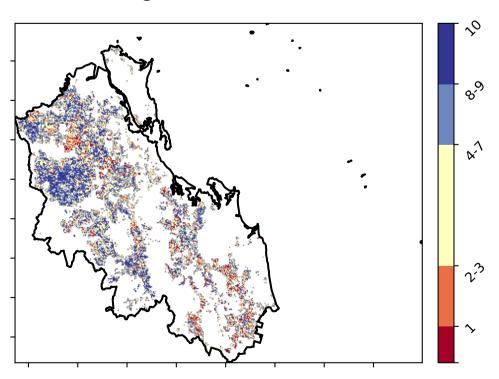
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Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





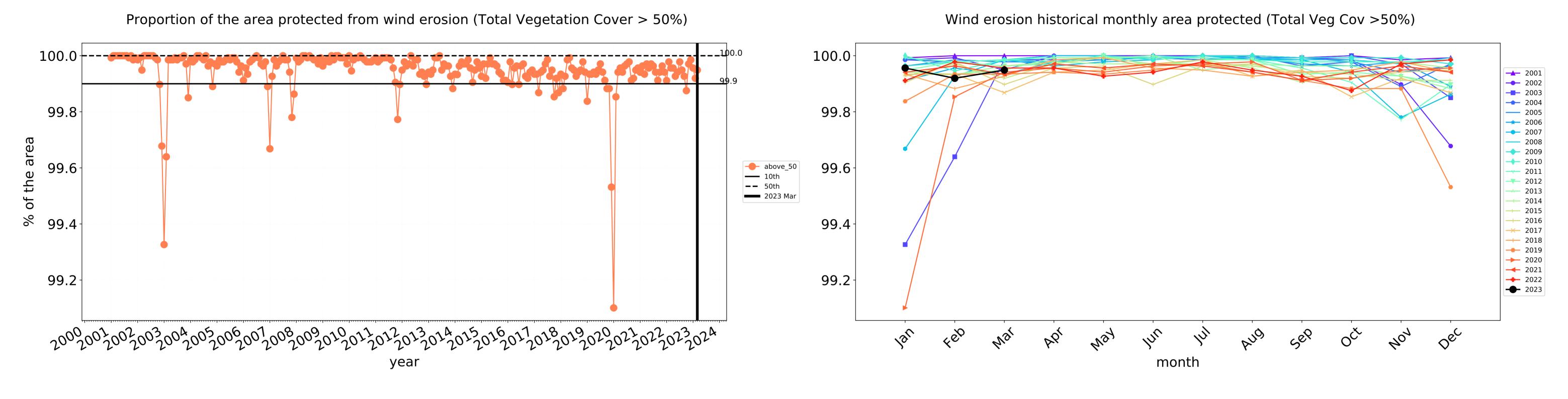


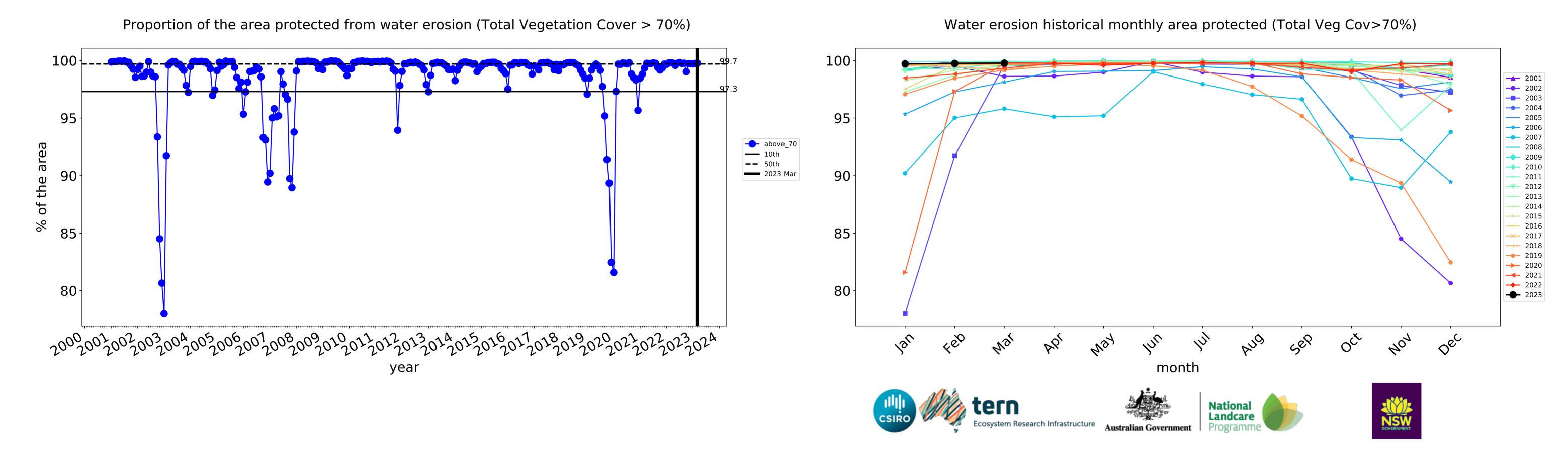


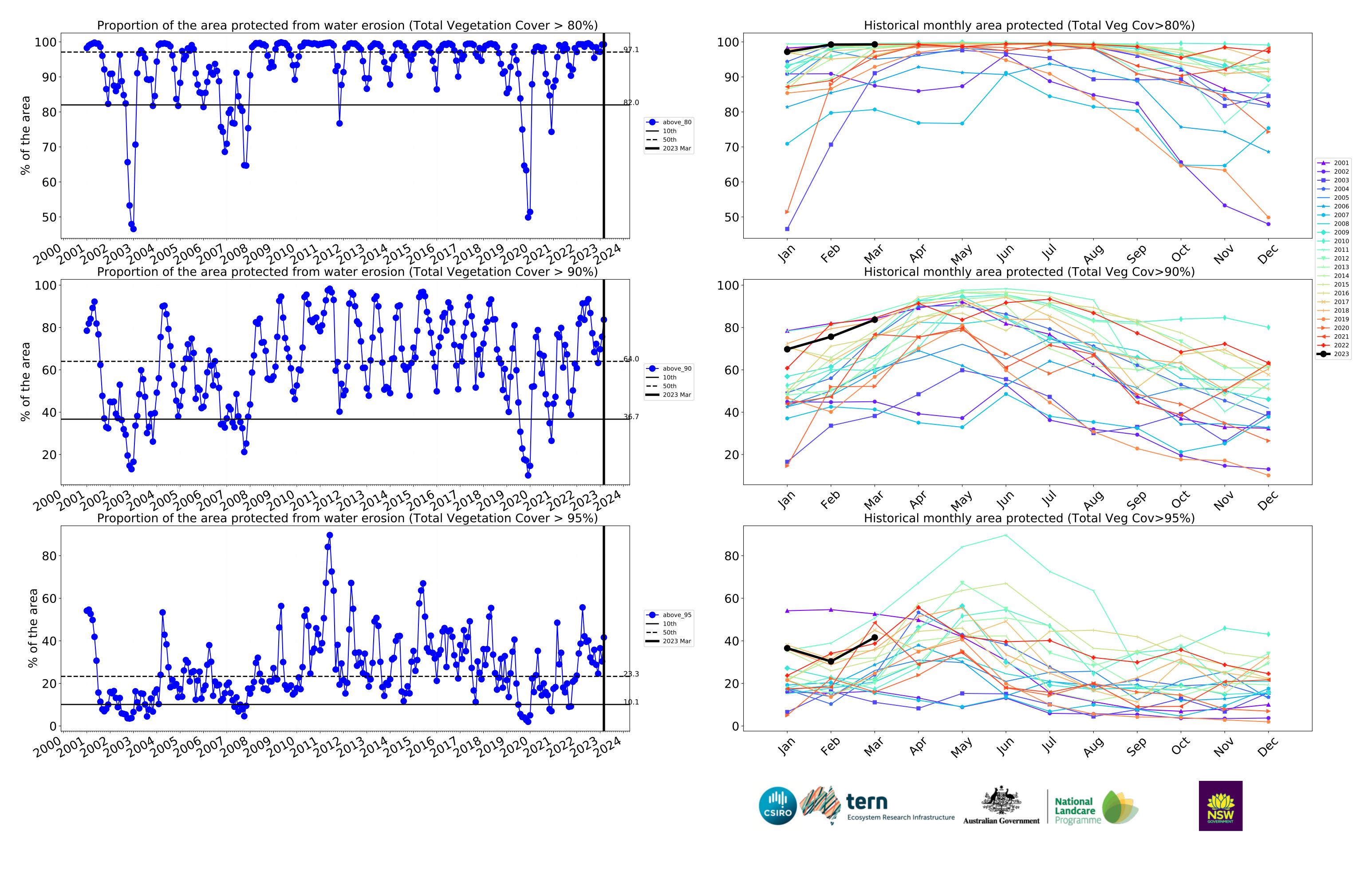




Grazing non forest timeseries

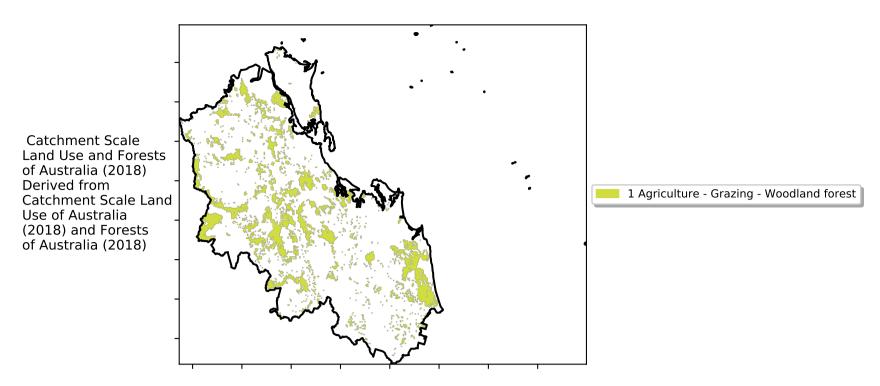




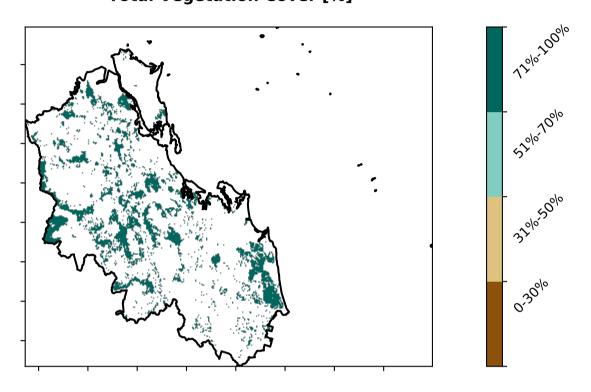


Grazing Woodland forest

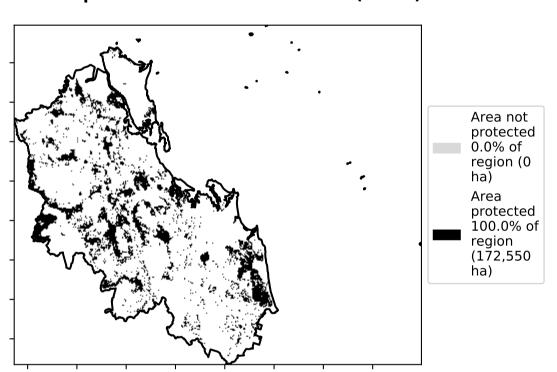
Land use and forest cover



Total Vegetation Cover [%]

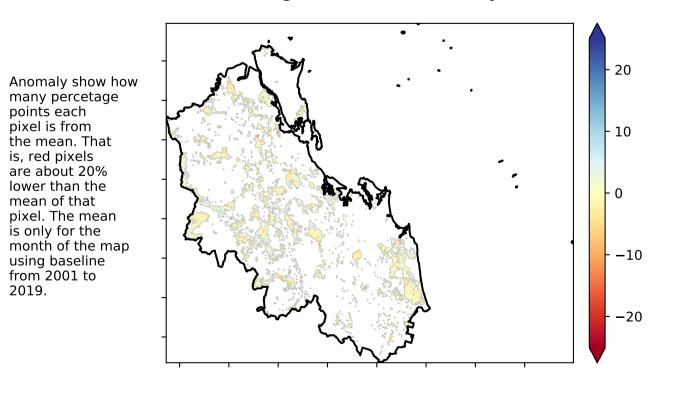


% Area protected from water erosion (>70%)



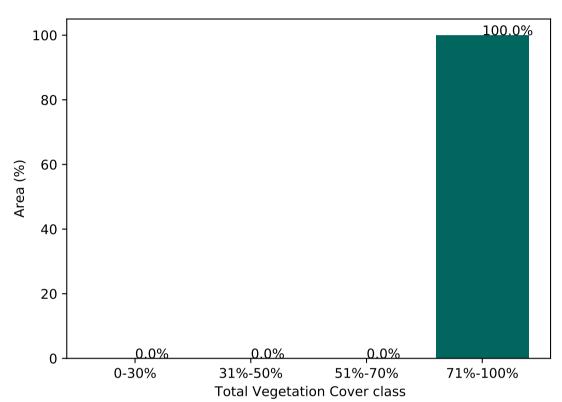
Total Vegetation Cover Anomaly [%]

lower than the

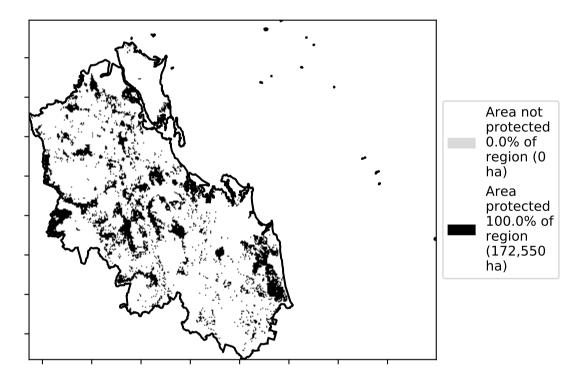


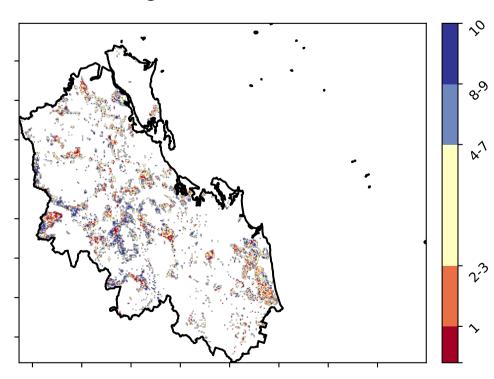
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





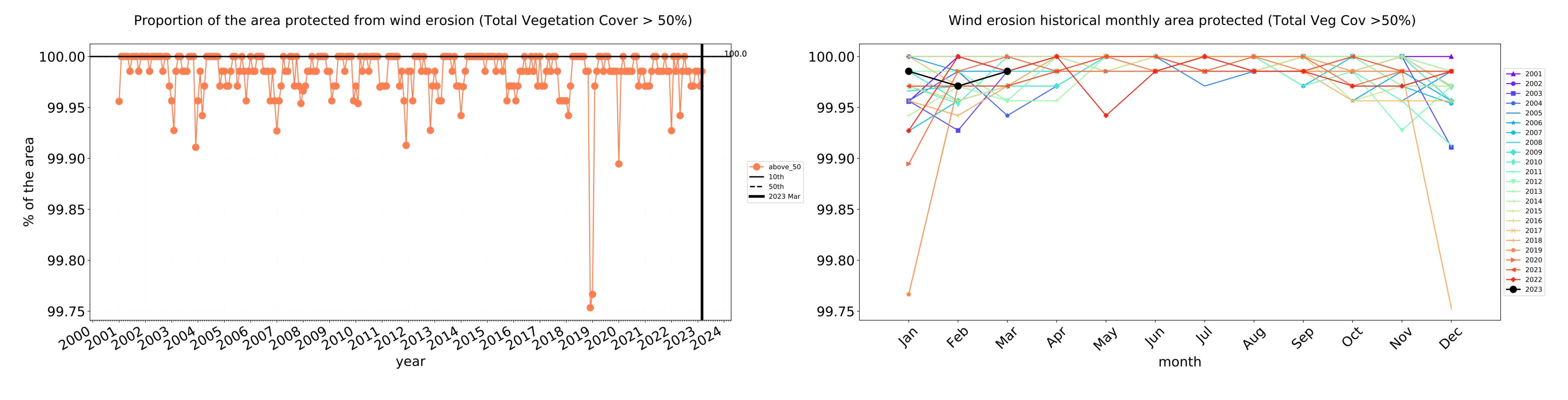


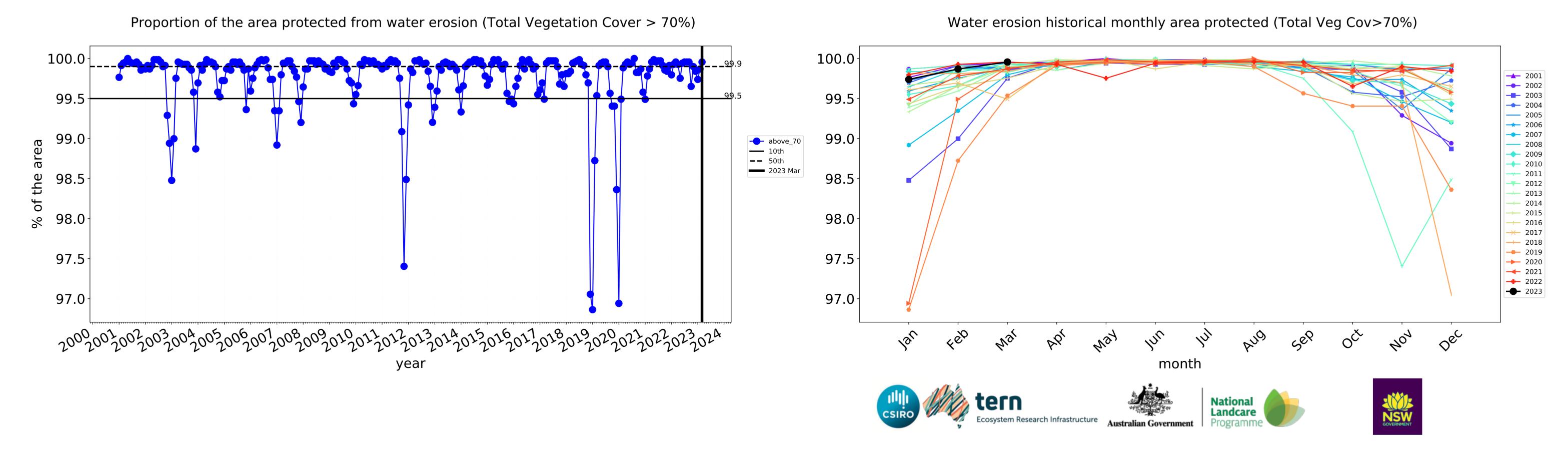


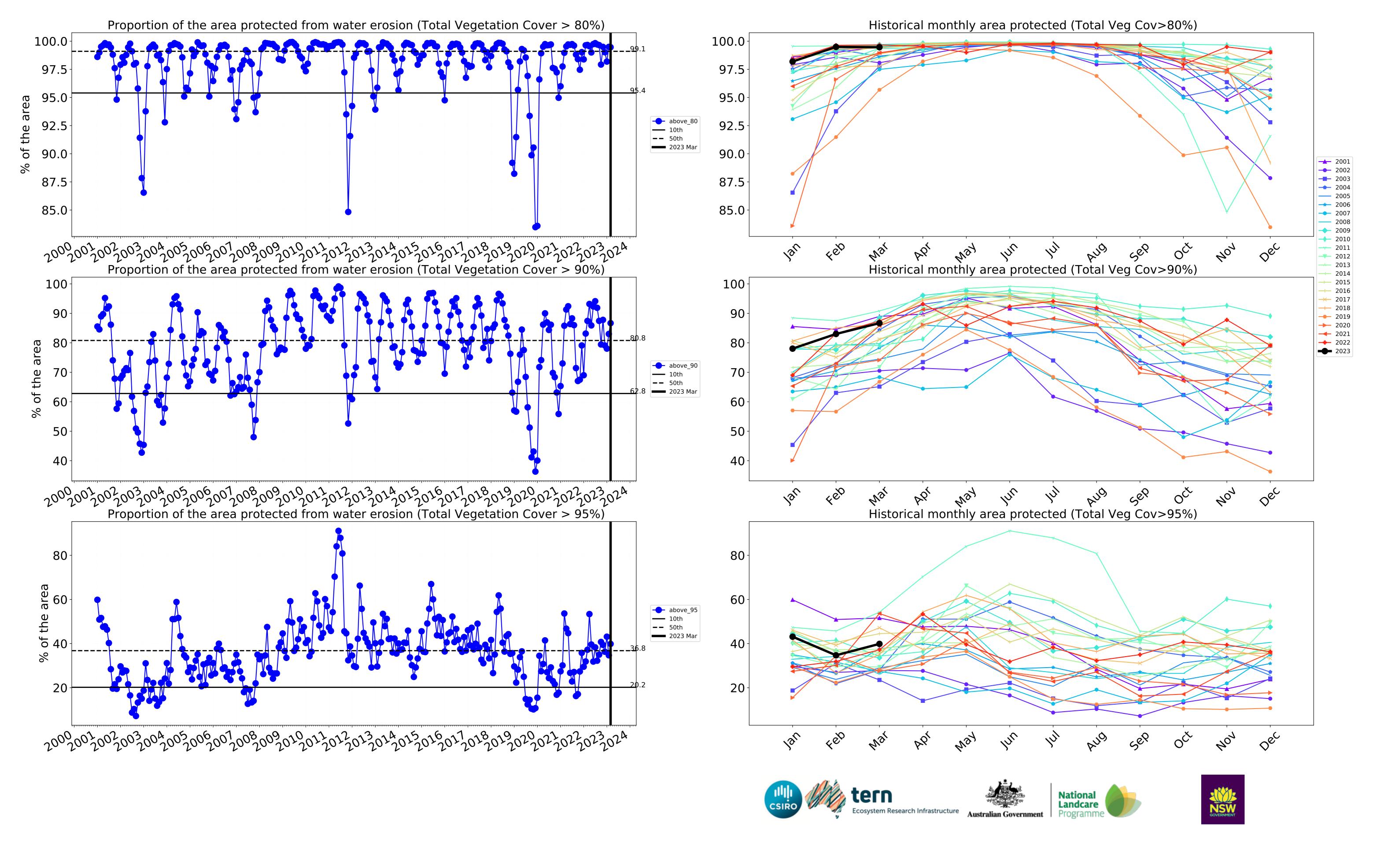




Grazing Woodland forest timeseries

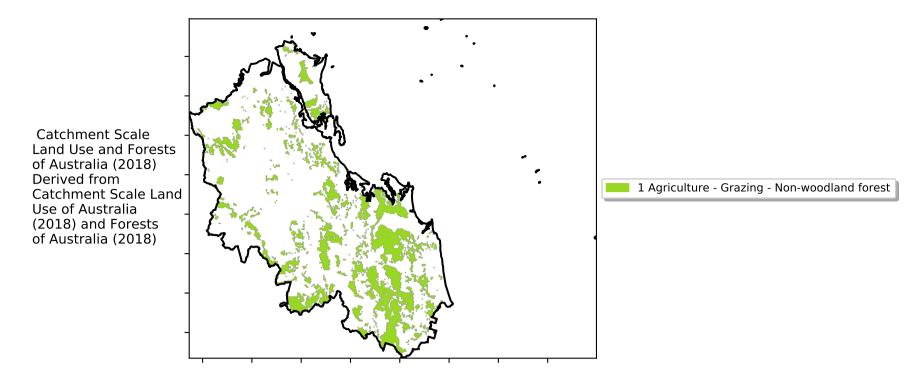




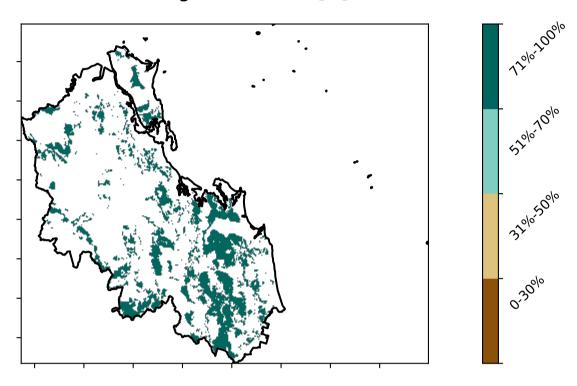


Grazing - Forest (non woodland)

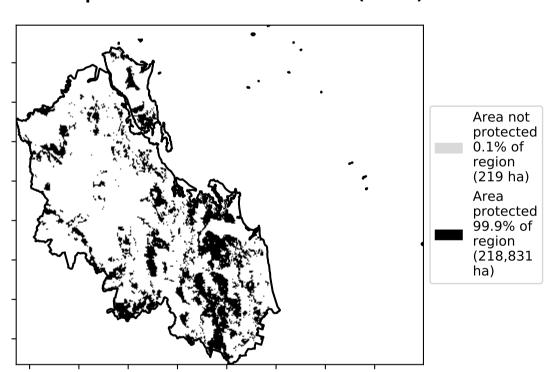
Land use and forest cover



Total Vegetation Cover [%]

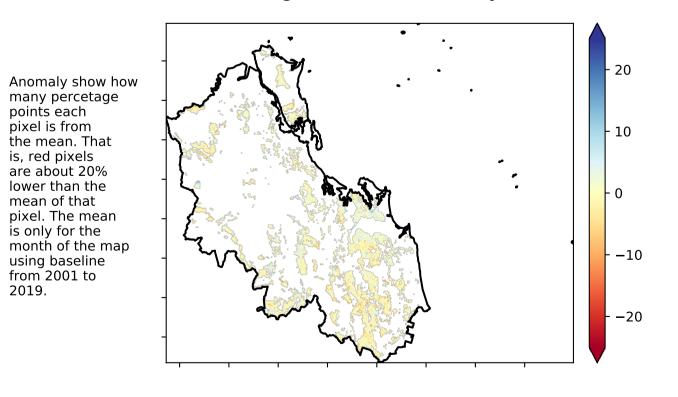


% Area protected from water erosion (>70%)



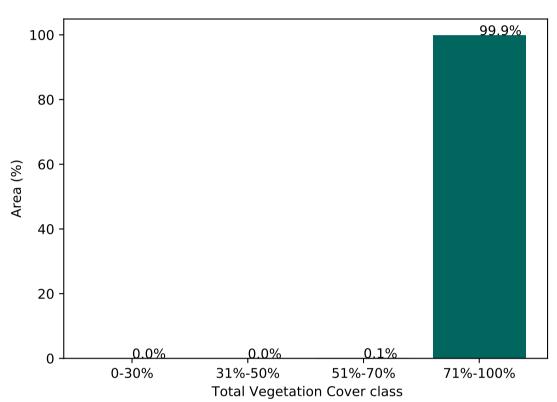
Total Vegetation Cover Anomaly [%]

lower than the

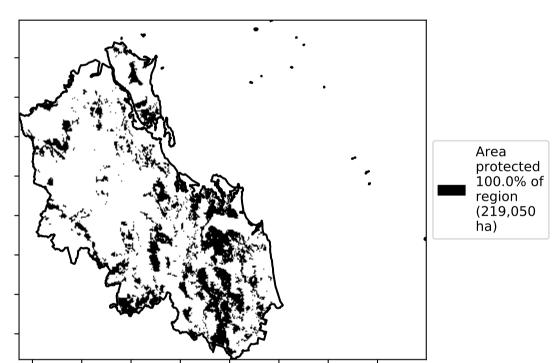


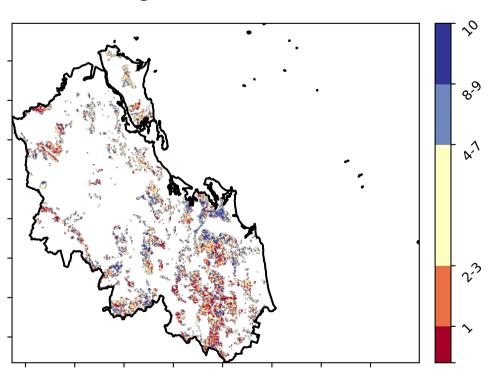
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



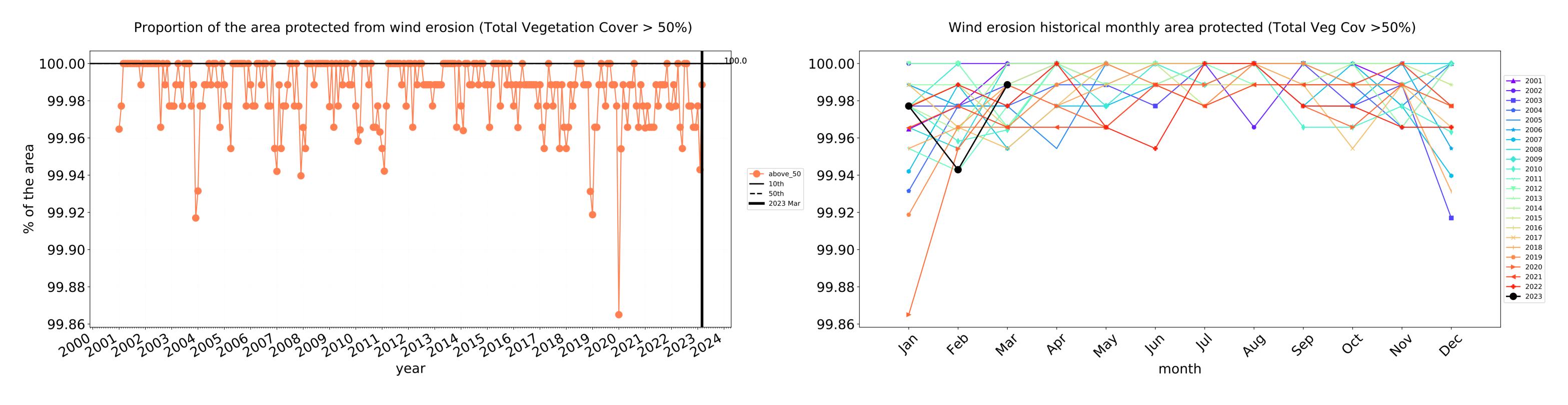


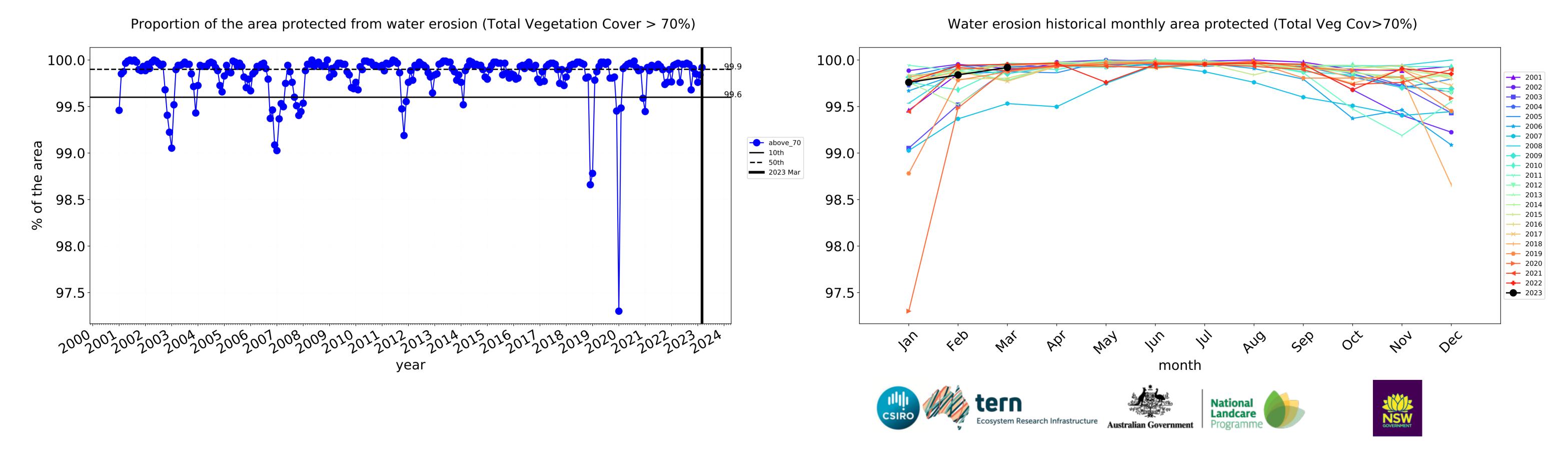


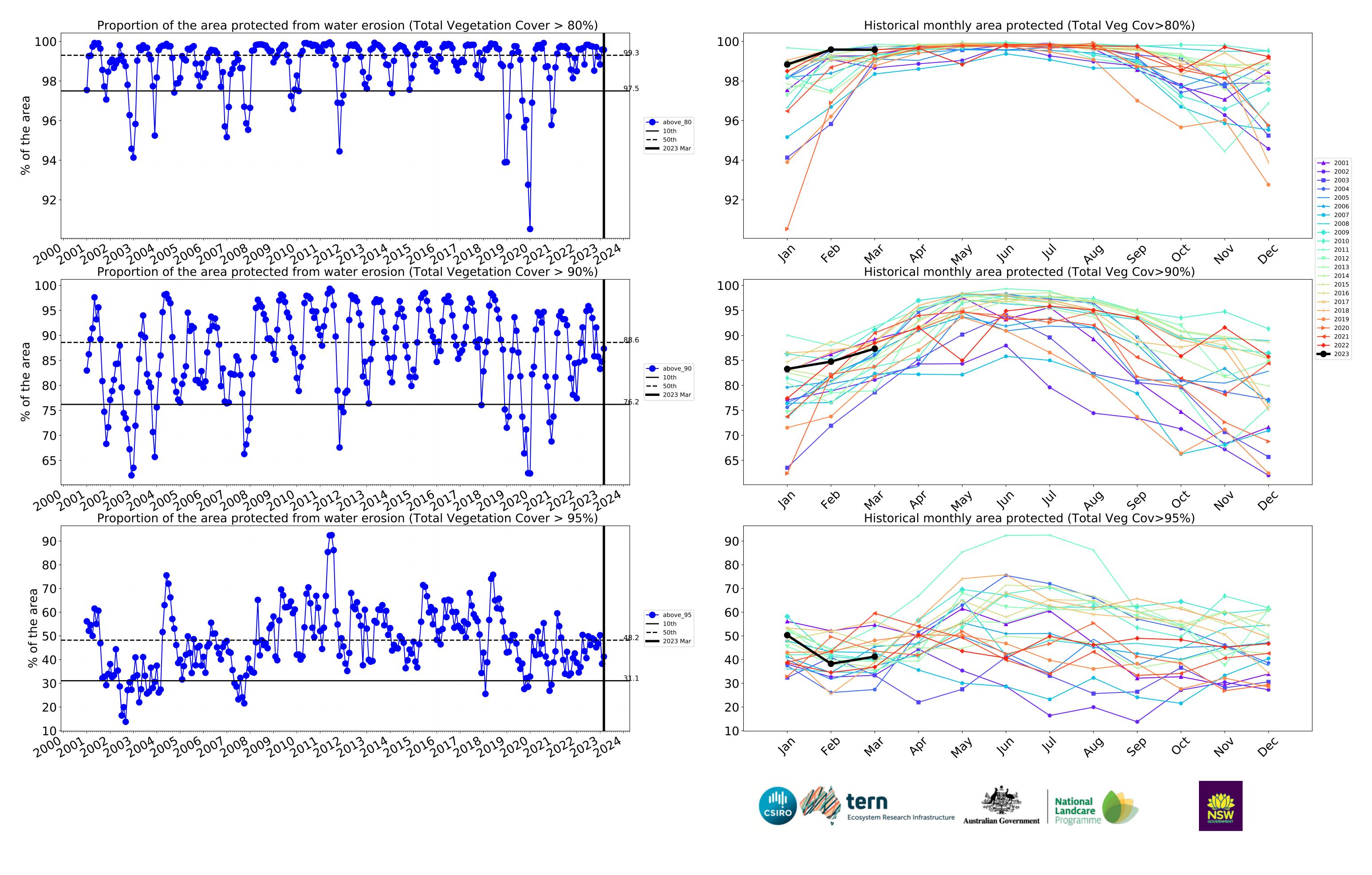






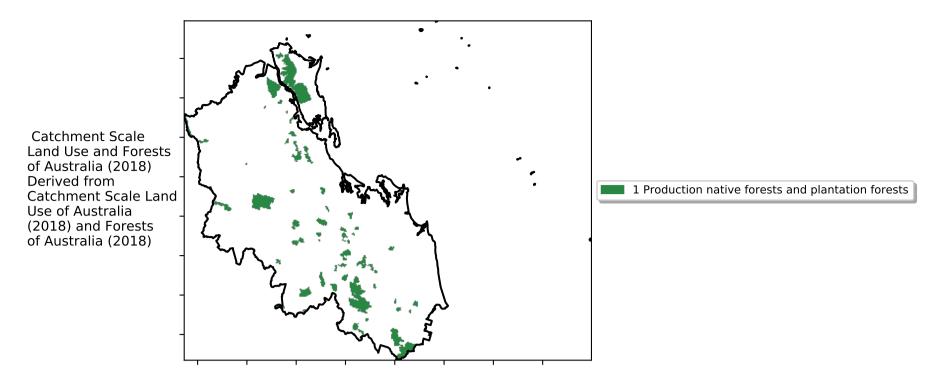




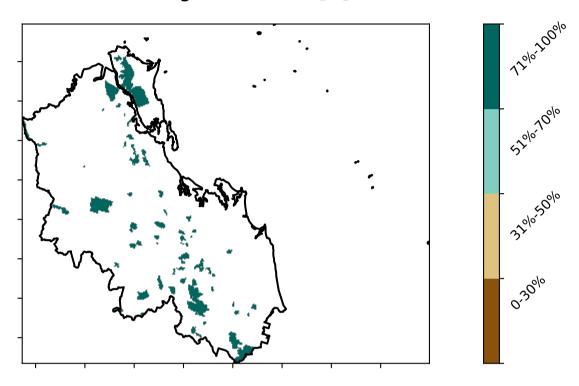


Production native forests and plantation forests

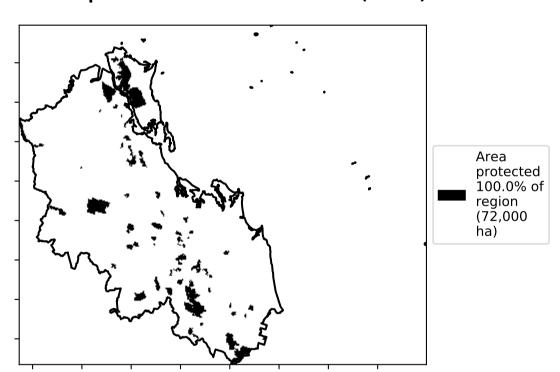
Land use and forest cover



Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

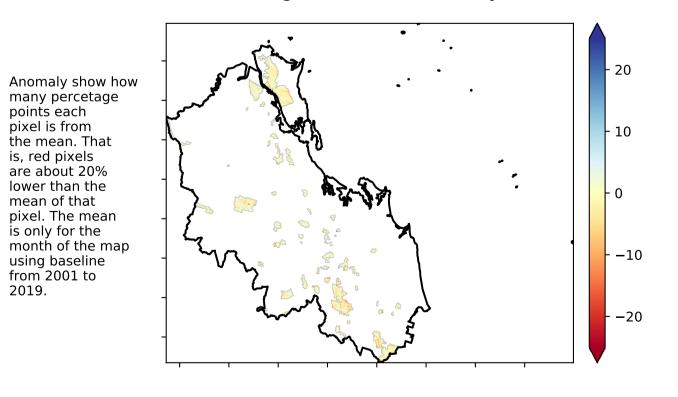


Total Vegetation Cover Anomaly [%]

are about 20% lower than the mean of that

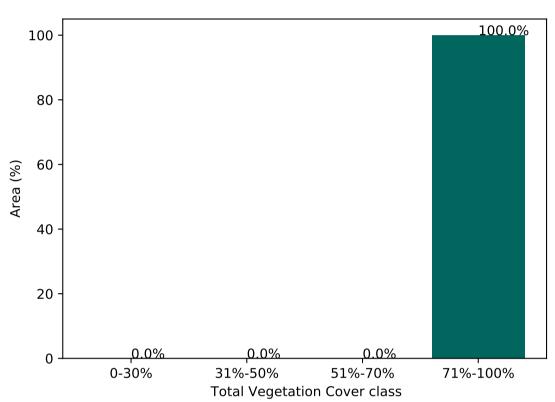
pixel. The mean

is only for the month of the map using baseline from 2001 to 2019.

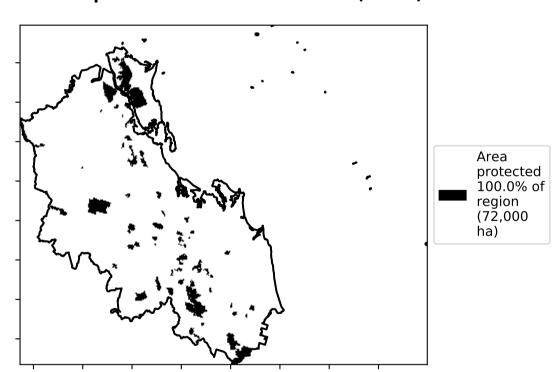


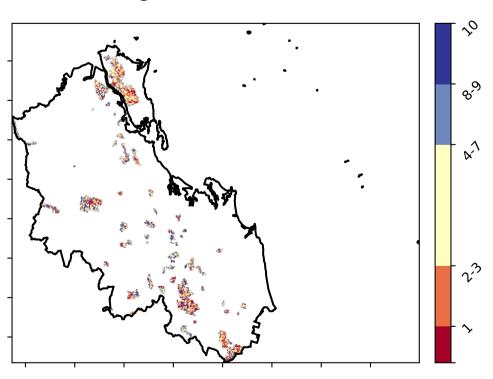
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





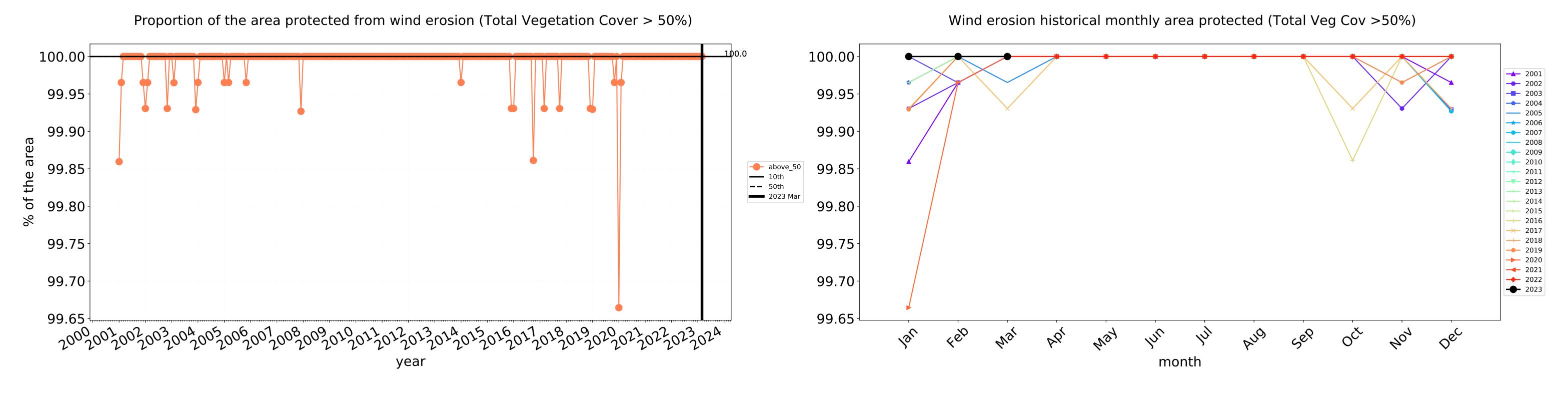


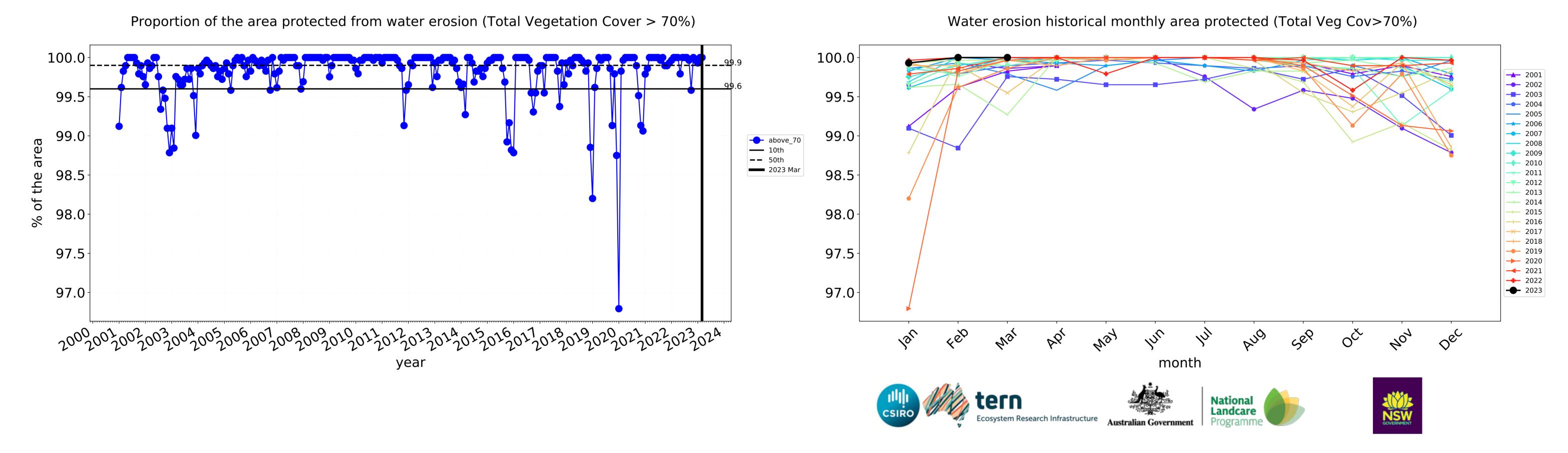


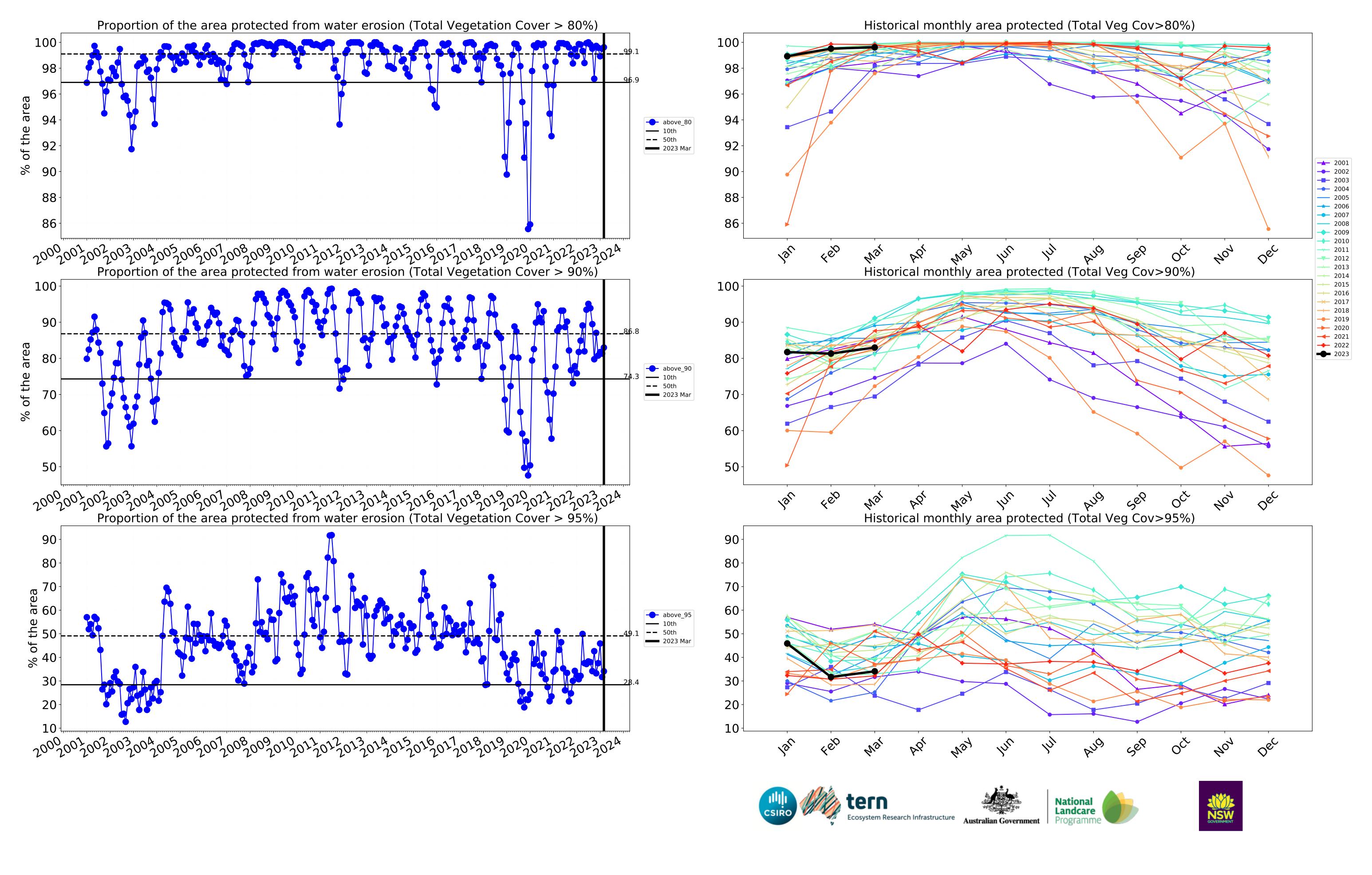




Production native forests and plantation forests timeseries







Gladstone_(R) (1,037,525 ha and no data 10,729 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	1,037,525	99.9% 1,036,625	99.7% 1,034,175	98.7% 1,024,125	97.2% 1,008,950	81.6% 846,725	38.2% 395,975
Conservation and natural environments	154,850	99.9% 154,650	99.6% 154,175	98.6% 152,675	97.2% 150,500	79.8% 123,525	34.4% 53,250
Conservation and natural environments Woodland forest	49,525	99.8% 49,425	99.5% 49,275	97.7% 48,375	95.4% 47,250	79.4% 39,325	30.7% 15,225
Conservation and natural environments Forest (non woodland)	100,825	100.0% 100,775	99.9% 100,700	99.6% 100,425	98.9% 99,750	81.0% 81,650	36.0% 36,275
Agriculture	734,775	100.0% 734,750	100.0% 734,500	99.9% 733,675	99.4% 730,300	85.4% 627,575	41.0% 301,625
Grazing	733,225	100.0% 733,200	100.0% 733,000	99.9% 732,200	99.4% 728,950	85.5% 626,750	41.1% 301,325
Grazing non forest	341,625	100.0% 341,625	99.9% 341,450	99.8% 340,850	99.3% 339,200	83.7% 285,825	41.6% 142,150
Grazing Woodland forest	172,550	100.0% 172,525	100.0% 172,525	100.0% 172,475	99.5% 171,625	86.7% 149,575	39.9% 68,800
Grazing - Forest (non woodland)	219,050	100.0% 219,050	100.0% 219,025	99.9% 218,875	99.6% 218,125	87.4% 191,350	41.3% 90,375
Production native forests and plantation forests	72,000	100.0% 72,000	100.0% 72,000	100.0% 72,000	99.6% 71,725	83.0% 59,750	34.1% 24,550







