Total vegetation cover soil protection Region:NRM Hunter NSW

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 2021

Results can be shown for the whole region (polygon), and separated by land use and forest cover classes which are likely to show different cover patterns and targets. Land use is divided into four broad classes: Conservation and natural environments, Agriculture, production native forests and plantation forests (no report), and other (no report). Agriculture is divided into grazing, crops and horticulture which are sub-divided into non-irrigated and irrigated. If forest is present land use is further divided into: non-forest, woodland forest and non-woodland forest. The area of each land use and forest class are shown as a map and chart. The report content is repeated for each land use and forest cover class that covers at least 1% of the area of the chosen region. Total vegetation Cover:

The total vegetation cover indicates where soil is likely to be protected from wind and or water hillslope erosion. Total vegetation cover for this month is shown on a map and chart classified into 4 classes.

- 71-100% High cover protected from wind and usually water erosion (high rainfall, steep slopes, and erodible soils may need greater than 80, 90, 95 and up to 100% cover)
 - 51-70% Moderate cover protected from wind erosion
 - 31-50% Low cover not protected
 - 0-30% Very Low cover not protected

Erosion protection: Wind erosion 50% total vegetation cover

The vegetation cover threshold required to prevent soil erosion is usually 50% to reduce wind erosion, 70% or 80% to reduce water (hillslope) erosion depending on the steepness and rainfall. Areas protected from erosion for the month:

- Map: water erosion protection (>70% cover) percentage area and hectares.
- Map: wind erosion protection (>50% cover) percentage area and hectares.

Comparison with previous years:

- Map: anomaly comparing this month to the average cover from the same month in previous years.
- Map: deciles rank of month against the same month in previous years.

Anomalies and deciles until September 2019 are calculated comparing to the same months 2001 to 2019. Extra monthly data will be used to calculate anomalies and deciles post September 2019 as they become available. Time series monthly from January 2001 to current:

Erosion protection

- Wind erosion protection time series: percentage of the area of the region with greater than 50% cover for each month (orange lines). Horizontal lines are 10th (cover target) and 50th percentiles.
- Water erosion protection time series: percentage of the area of the region with greater than 70% cover for each month (blue line). Horizontal lines are 10th (cover target) and 50th percentiles.

Rainfall

• Millimetres rainfall each month (black line).

Each time series is also stacked by year. The black line shows the current year of data.

Water erosion protection for higher rainfall and steeper slopes:

Water erosion protection on higher slopes. As slope increases, more cover is required to control water erosion. The thresholds reported are:

- the percentage area with pixels greater than 80% total cover.
- the percentage area with pixels greater than 90% total cover.
- the percentage area with pixels greater than 95% total cover.

Acknowledgment of data:

- 1. http://www.agriculture.gov.au/abares/aclump/land-use/alum-classification
- 2. http://www.agriculture.gov.au/abares/forestsaustralia/sofr/sofr-2018
- 3. https://www.dpi.nsw.gov.au/agriculture/pastures-and-rangelands/establishment-mgmt/production-management2/groundcover
- 4. MODIS Fractional cover algorithm:

https://doi.org/10.4225/08/5848a3f19a7b3









Vegetation Cover Feb 2021

35

30 -

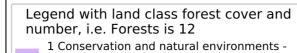
25

20

15

Land use and forest cover number, i.e. Forests is 12 1 Conservation and natural environments - Non-forest





2 Conservation and natural environments - Woodland forest

3 Conservation and natural environments - Non-Woodland forest 4 Agriculture - Grazing - Non-forest

5 Agriculture - Grazing - Woodland forest 6 Agriculture - Grazing - Non-woodland forest 7 Agriculture - Grazing - Irrigated 8 Agriculture - Cropping - Non-irrigated

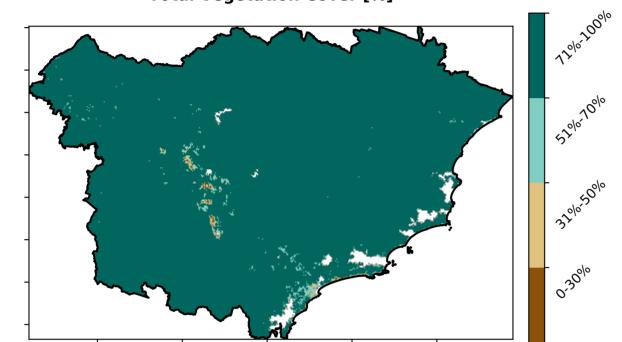
9 Agriculture - Cropping - Irrigated 10 Agriculture - Horticulture - Non-irrigated 11 Agriculture - Horticulture - Irrigated

12 Production native forests and plantation forests

13 Other uses

10

Total Vegetation Cover [%]



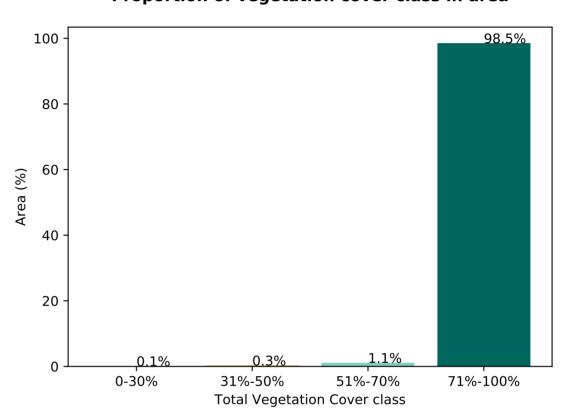
Proportion of vegetation cover class in area

Land use class

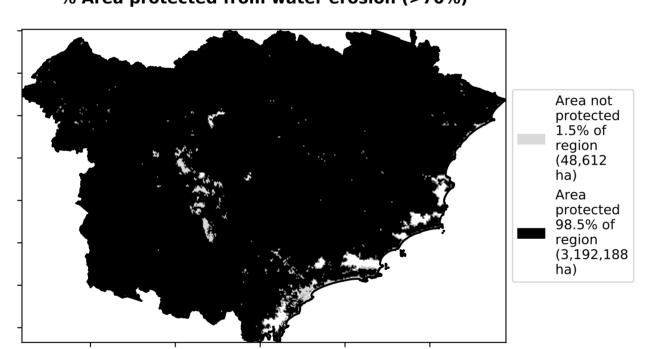
10 11 12 13

Proportion of each land class in area

36.9%



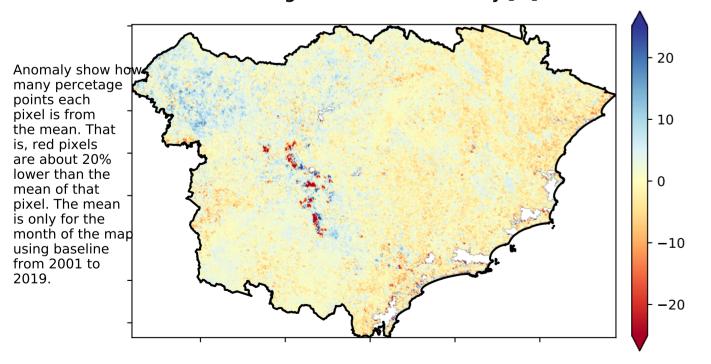
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

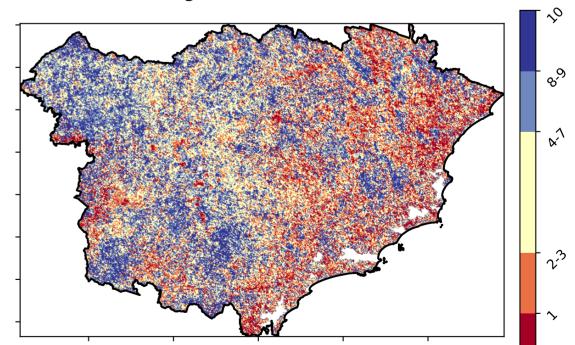


Total Vegetation Cover Anomaly [%]



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 [%]

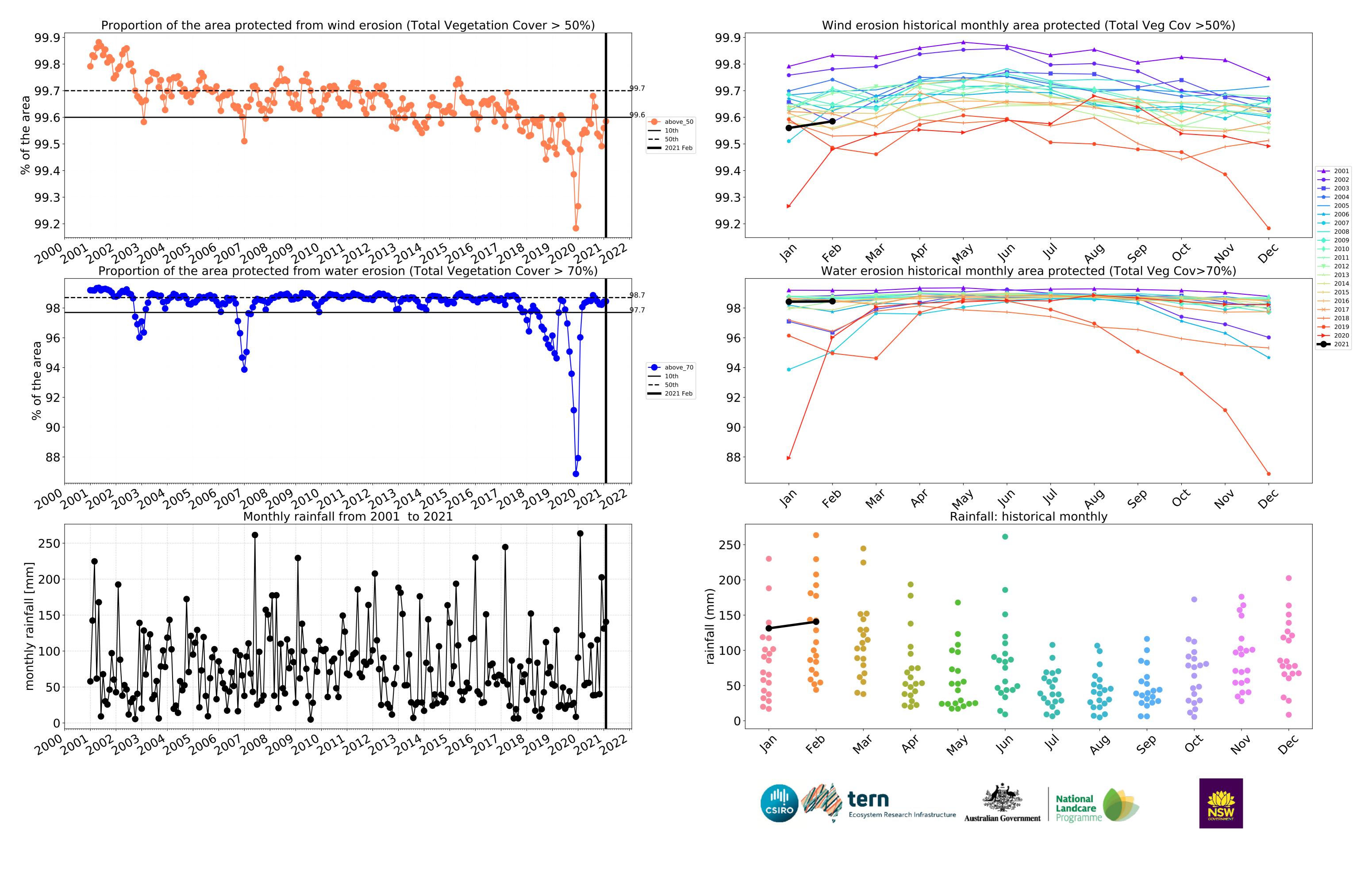




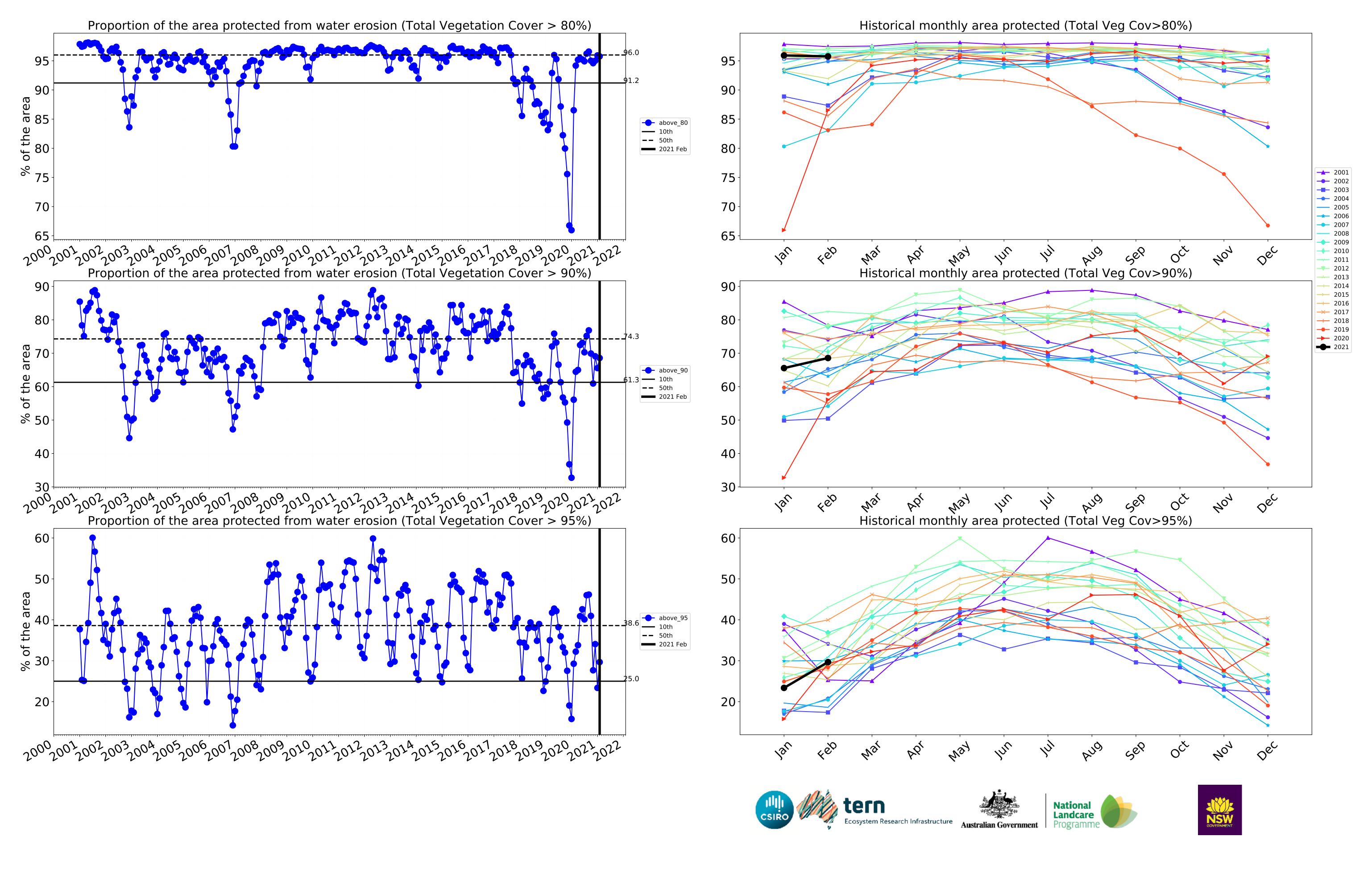




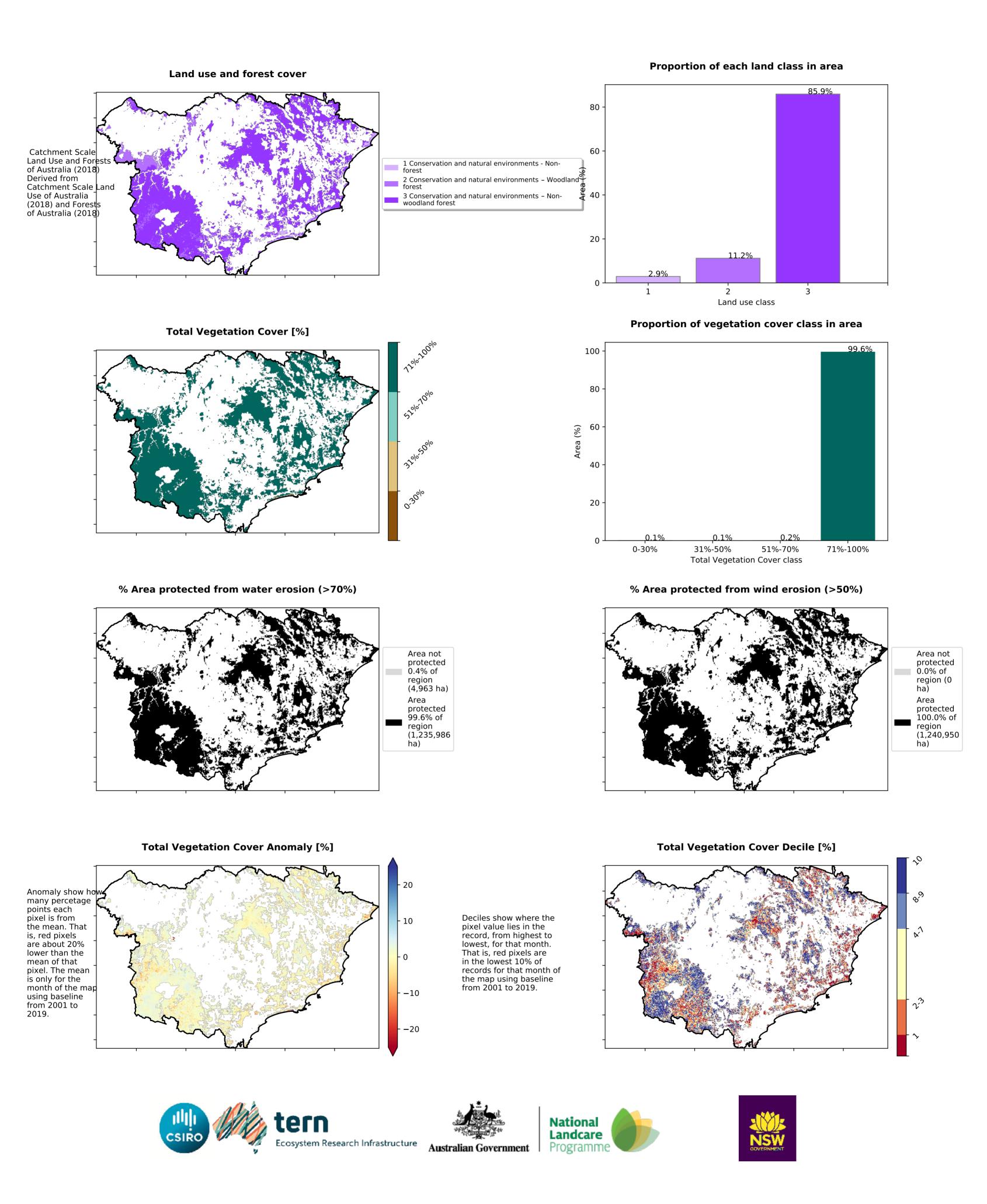




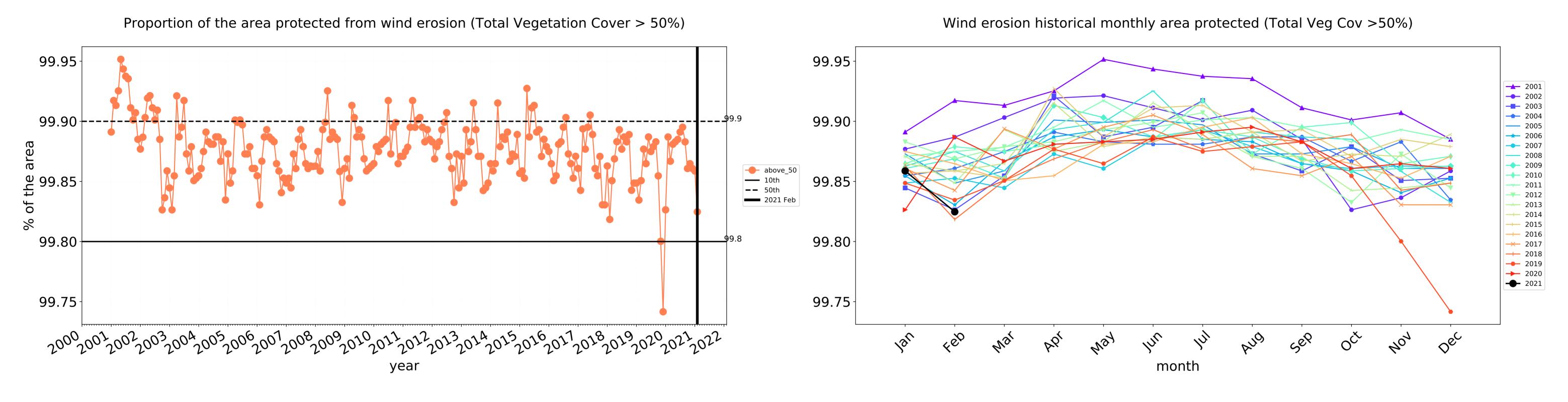
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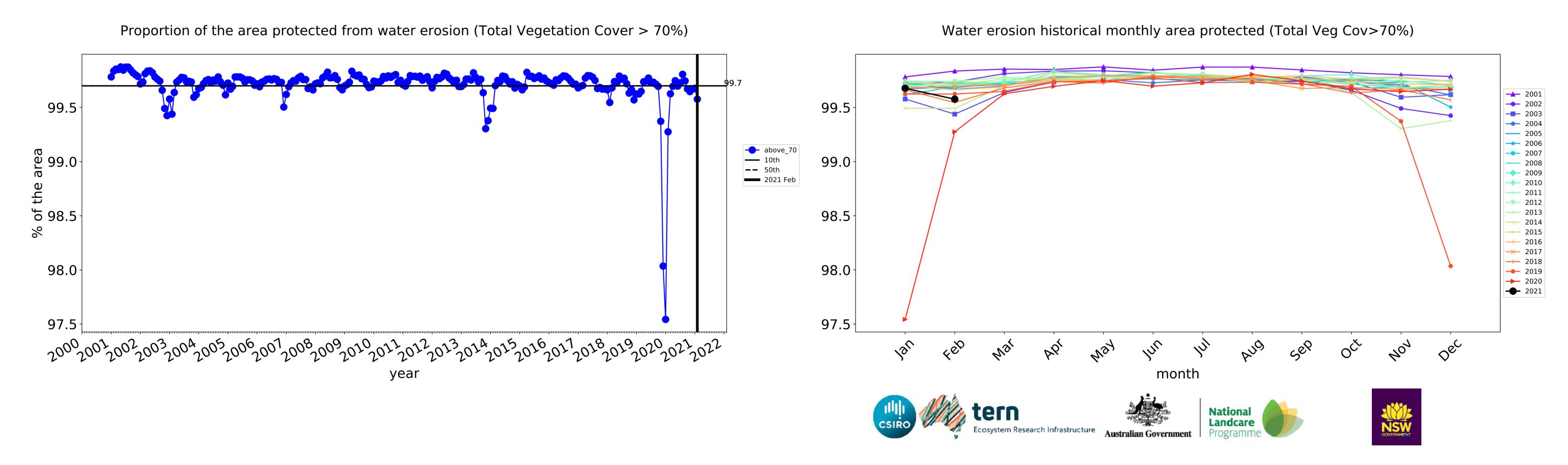


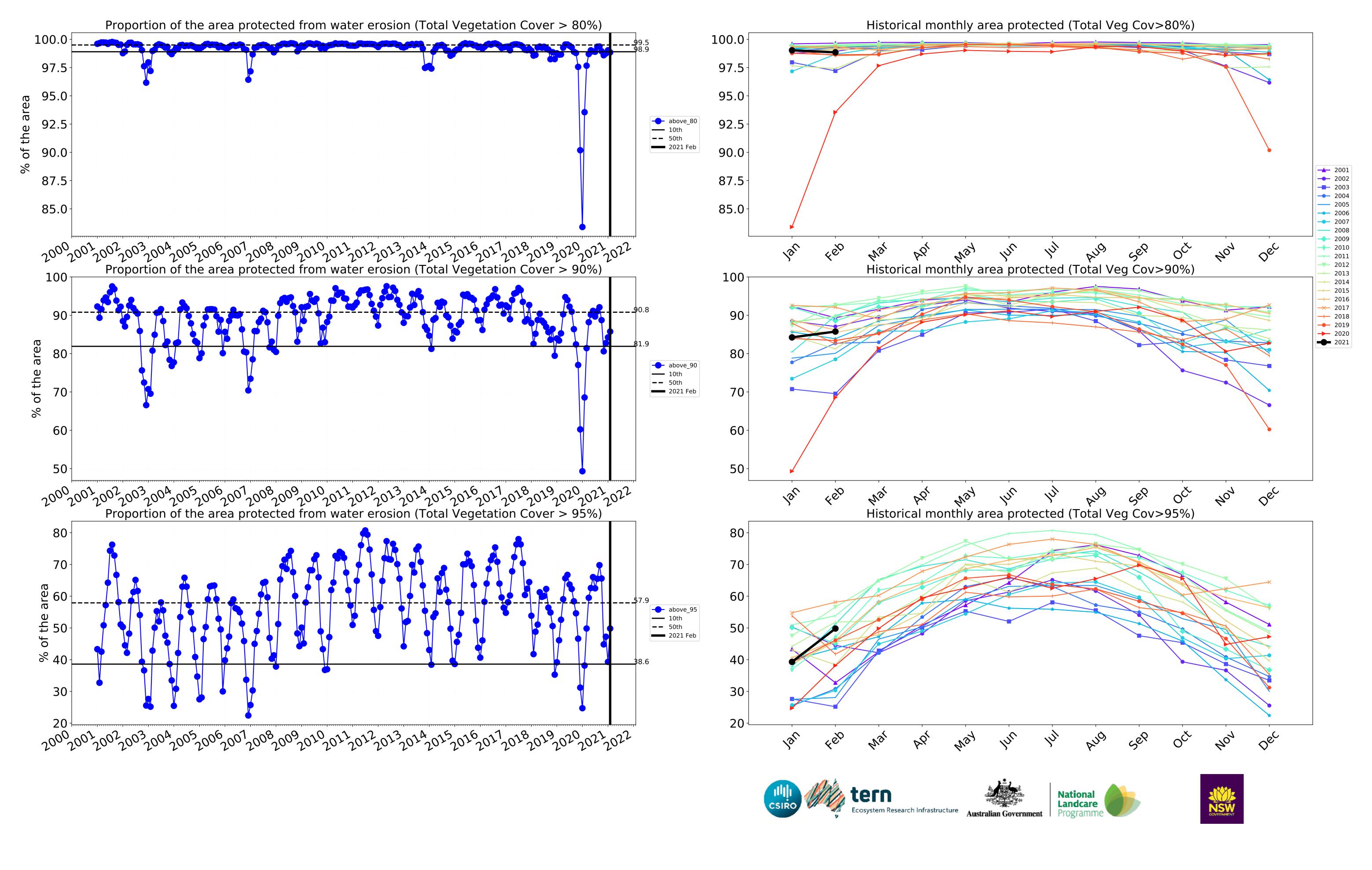
Conservation and natural environments



Conservation and natural environments timeseries



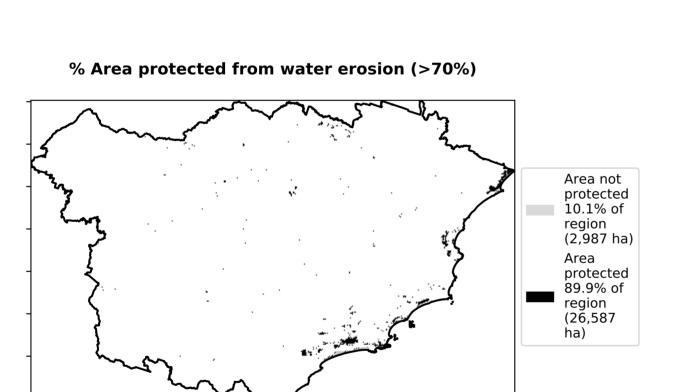


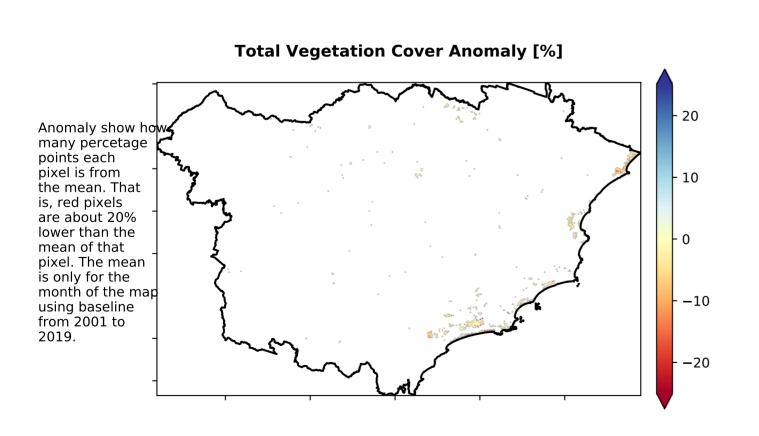


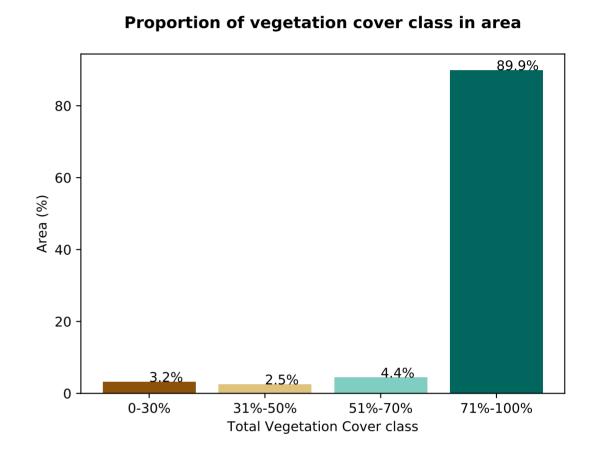
Conservation and natural environments non forest

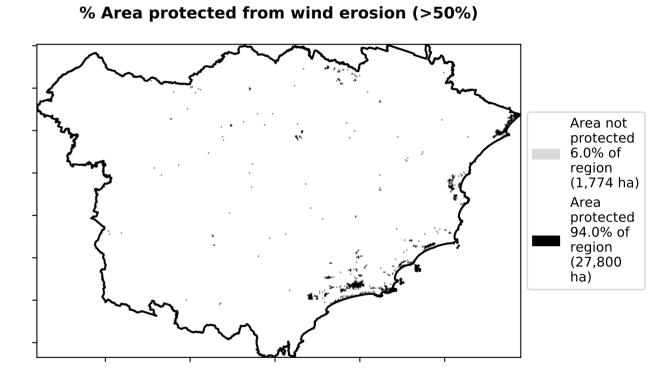
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale J Conservation and natural environments - Nonforest 1 Conservation and natural environments - Nonforest

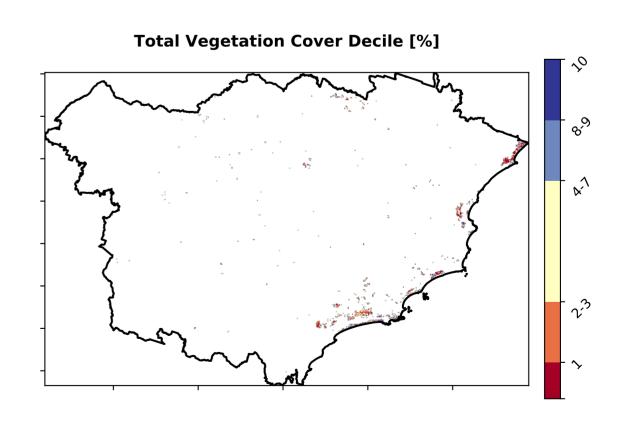
Total Vegetation Cover [%] Tuelendolo Stolendolo Stolendolo Stolendolo Stolendolo Stolendolo Stolendolo Stolendolo











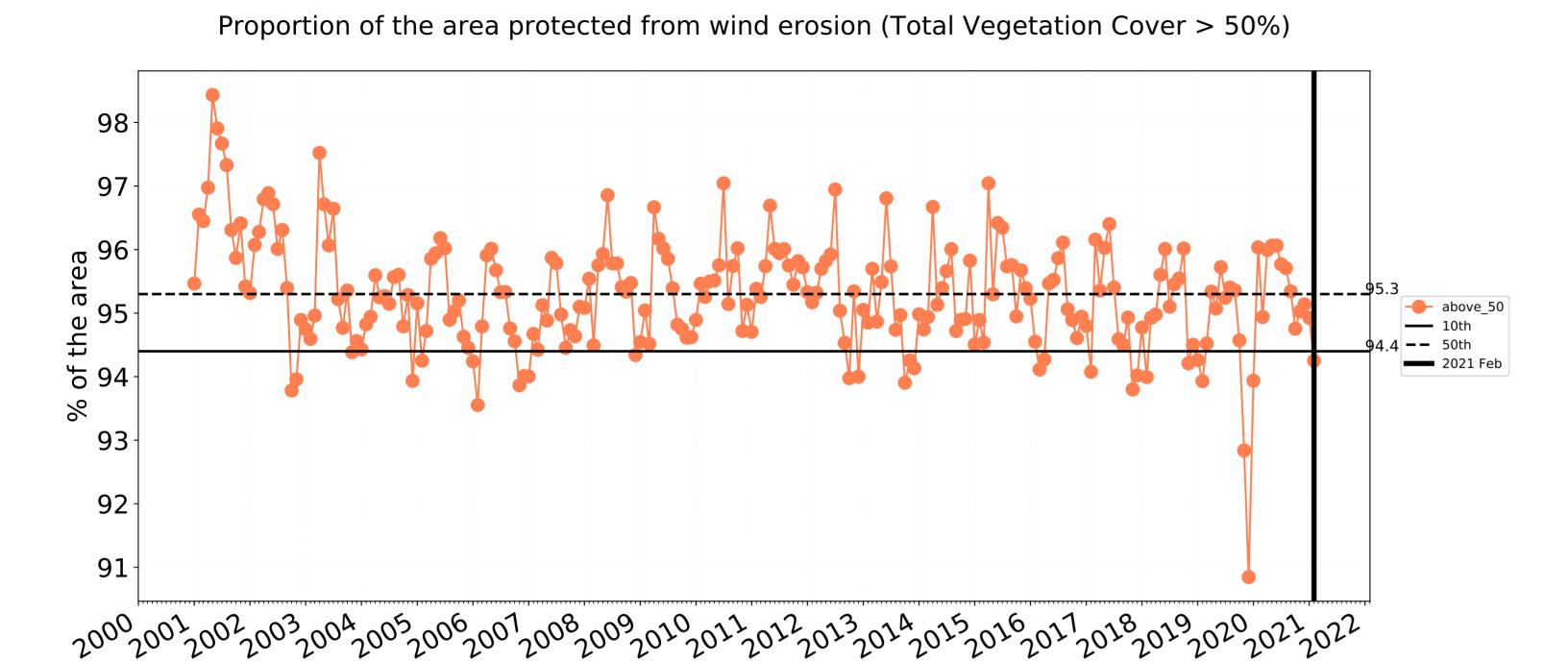




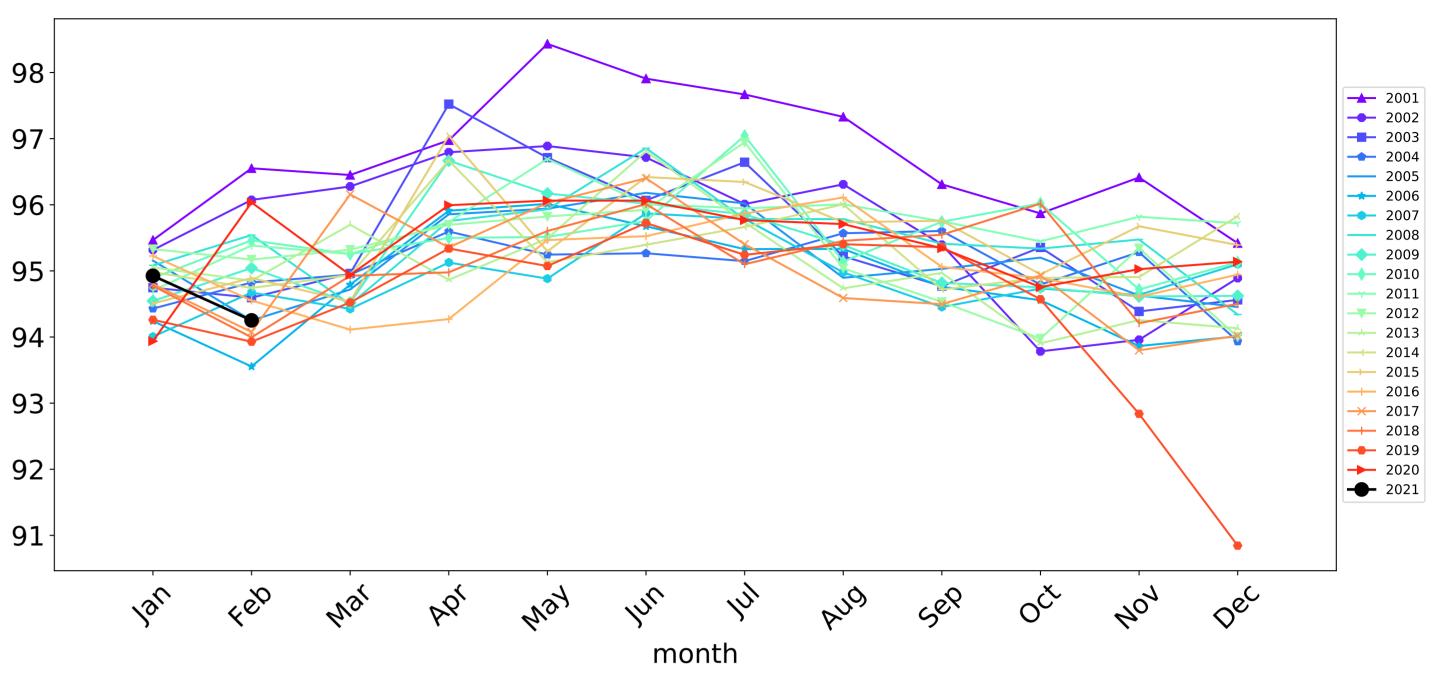




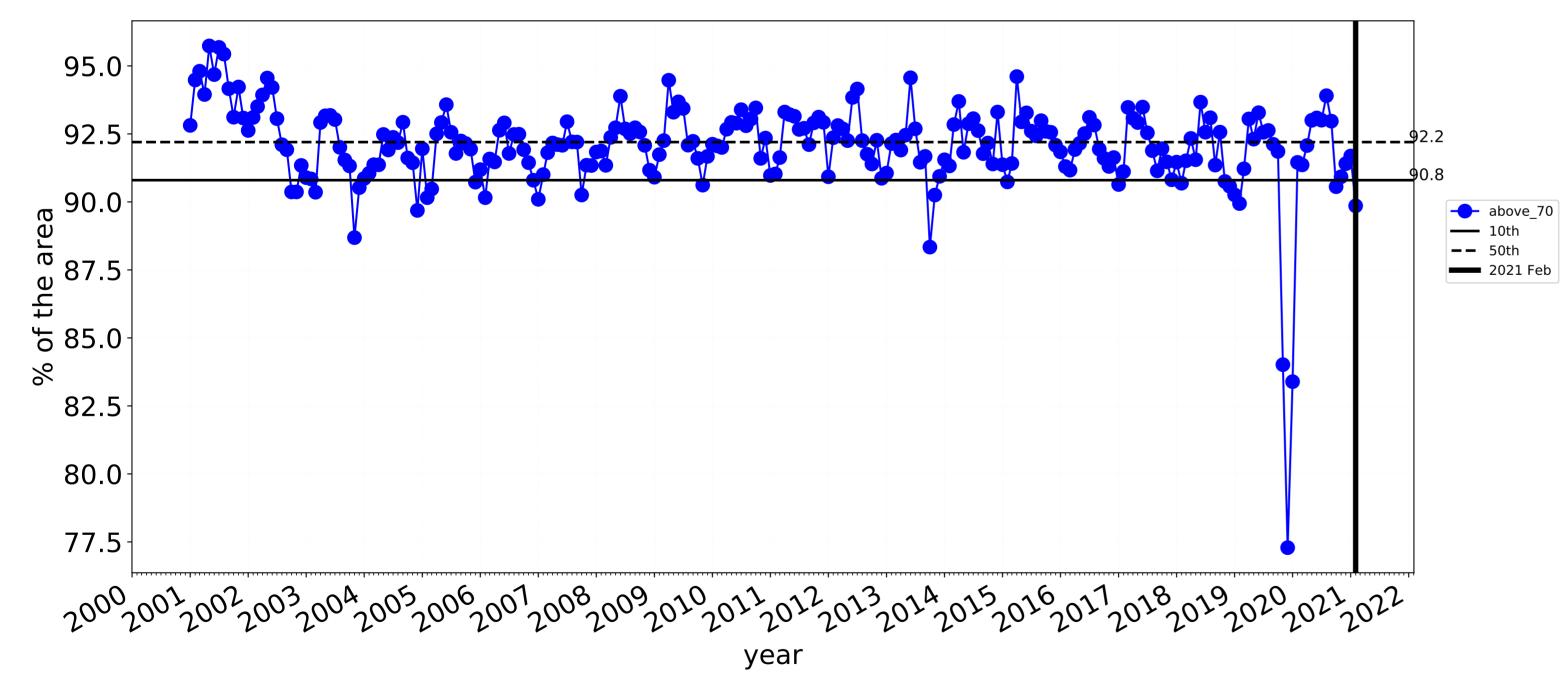
Conservation and natural environments non forest timeseries



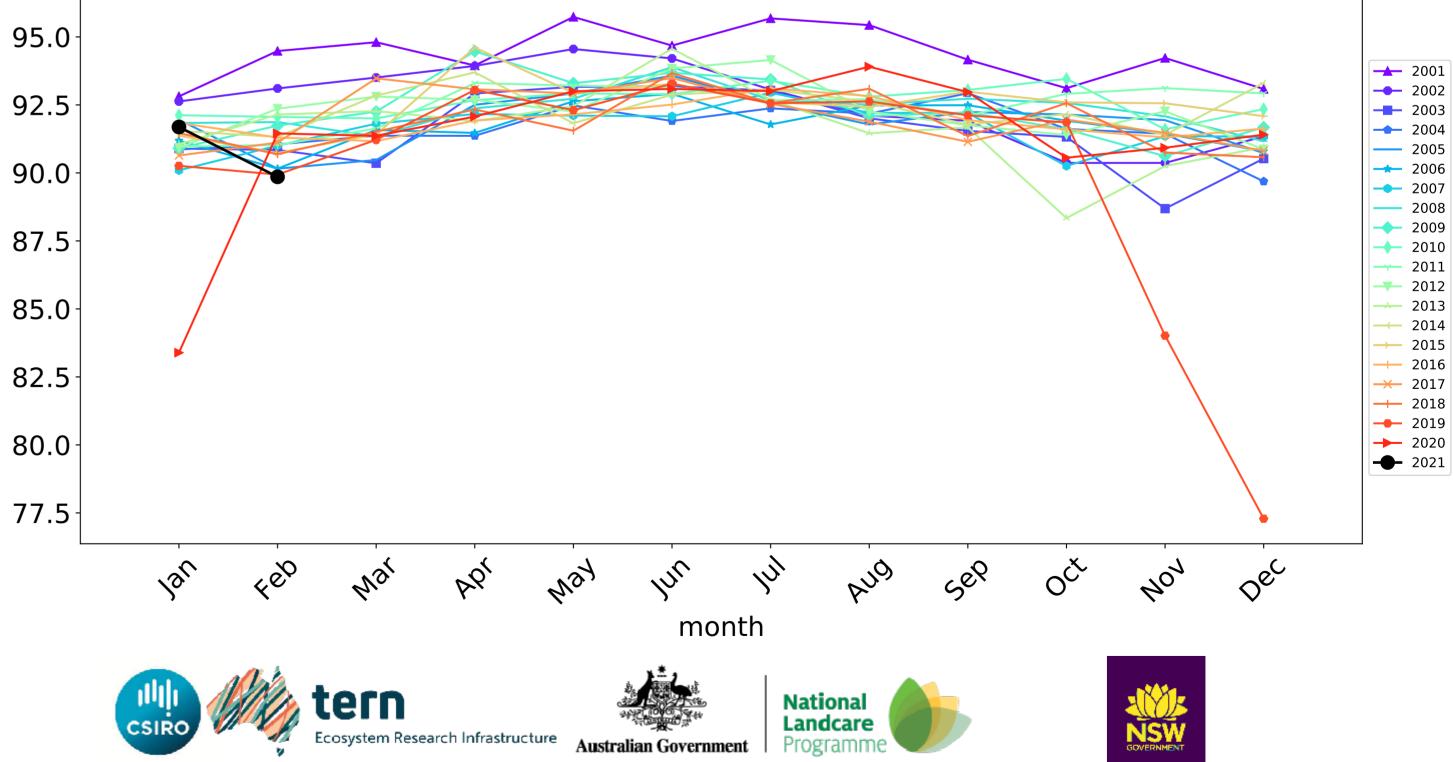
Wind erosion historical monthly area protected (Total Veg Cov >50%)



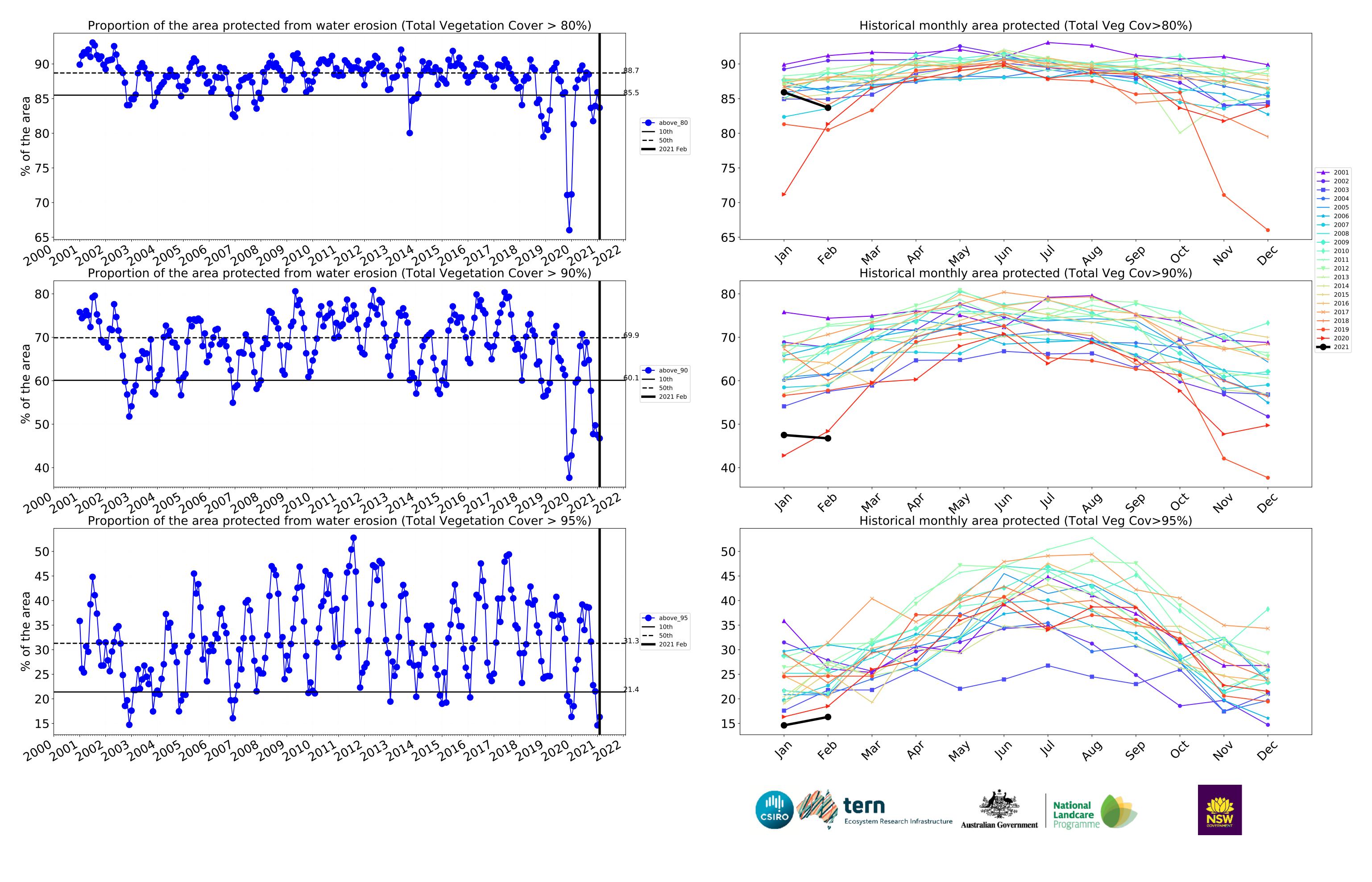




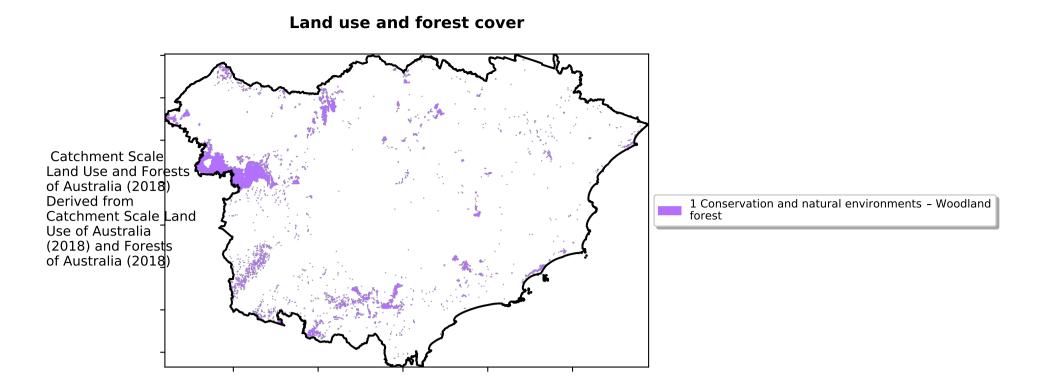
Water erosion historical monthly area protected (Total Veg Cov>70%)

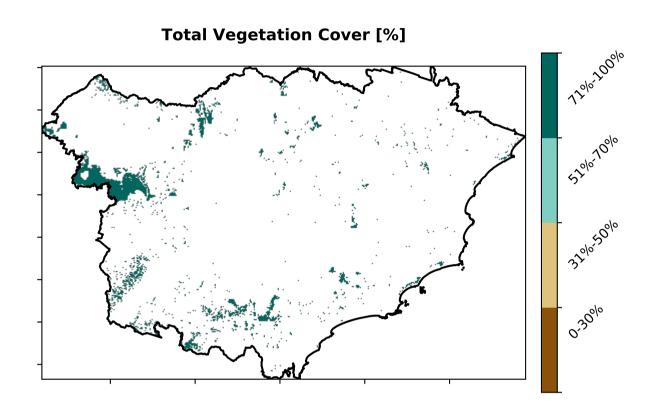


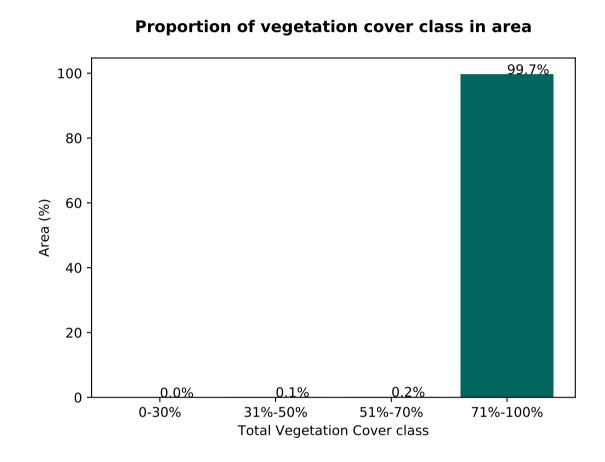


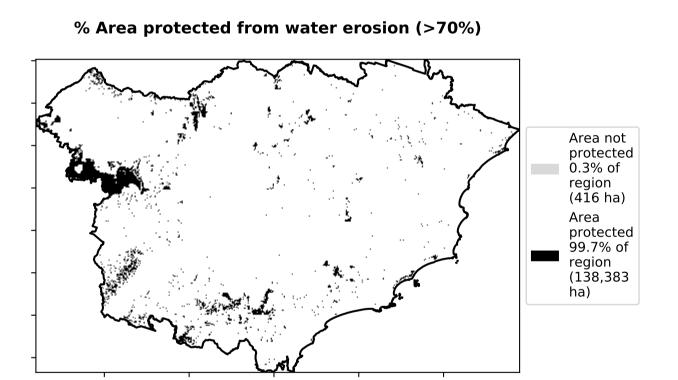


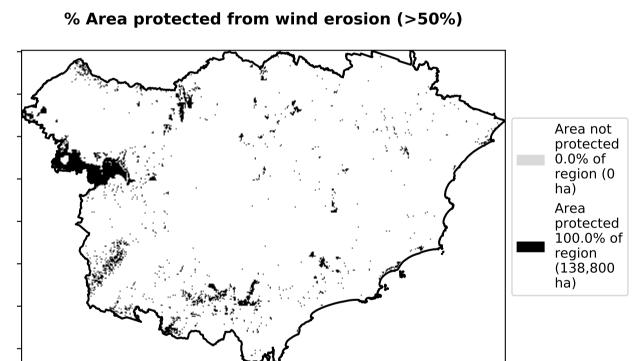
Conservation and natural environments Woodland forest

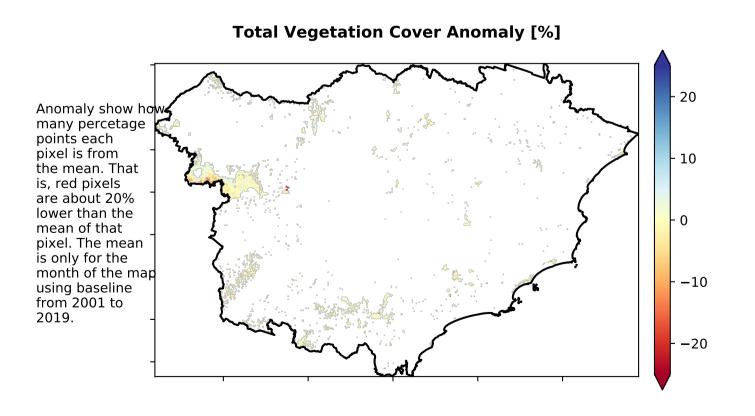


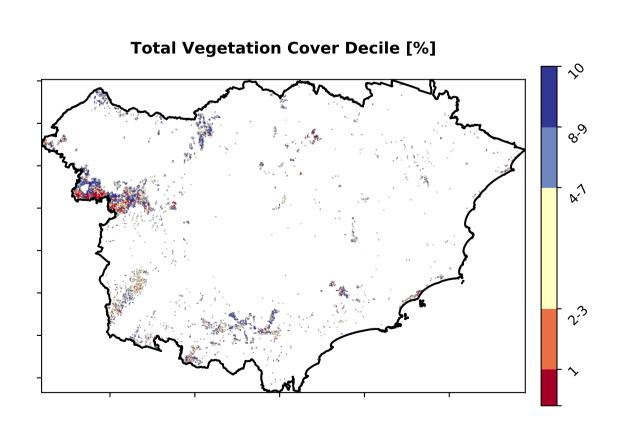












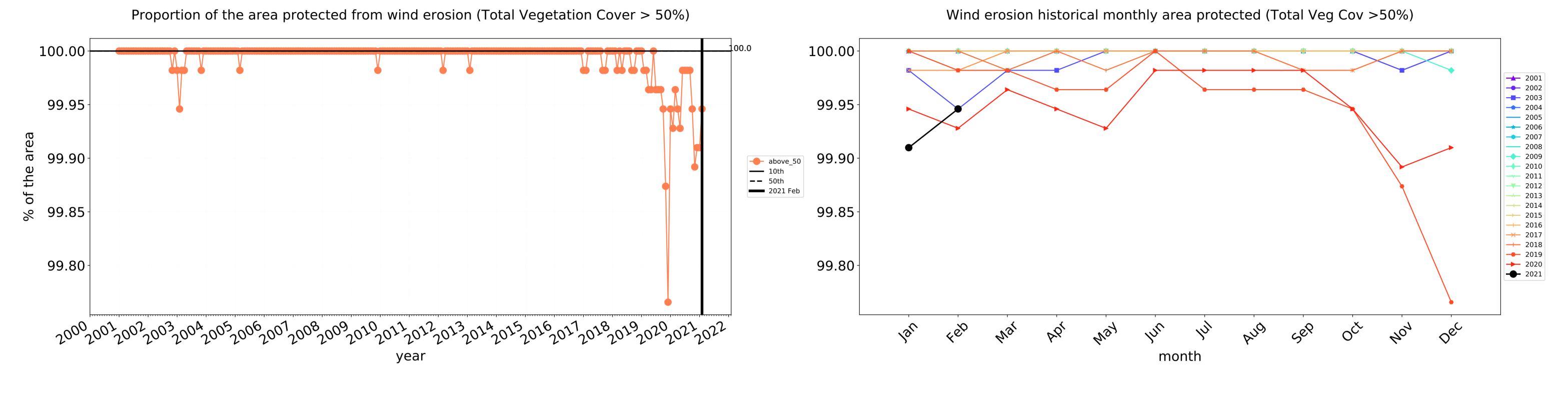


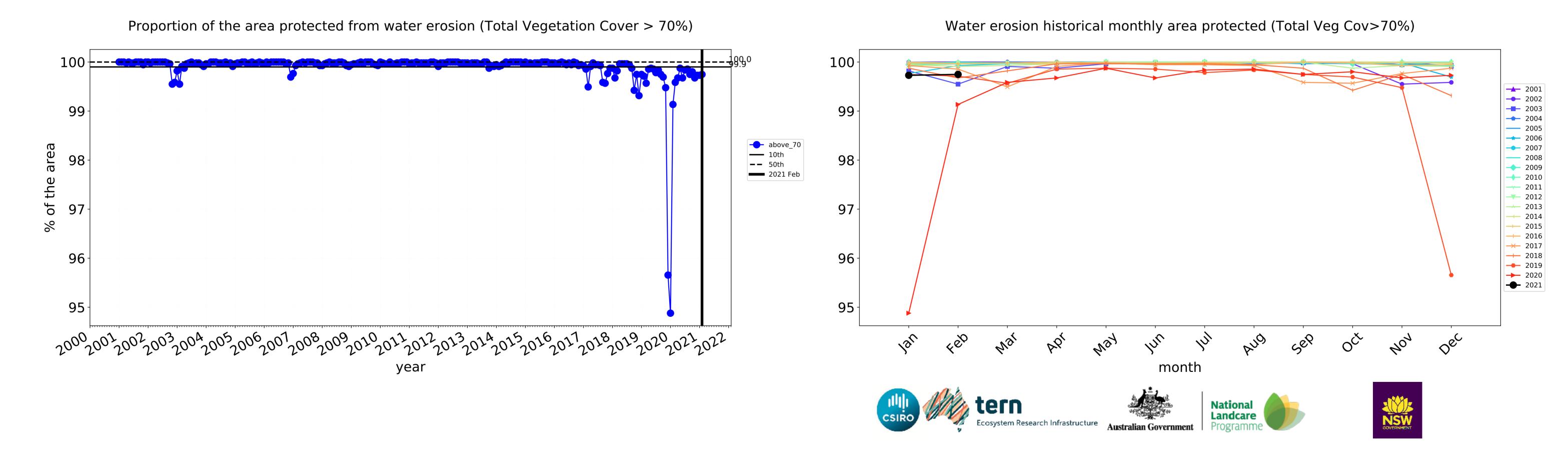


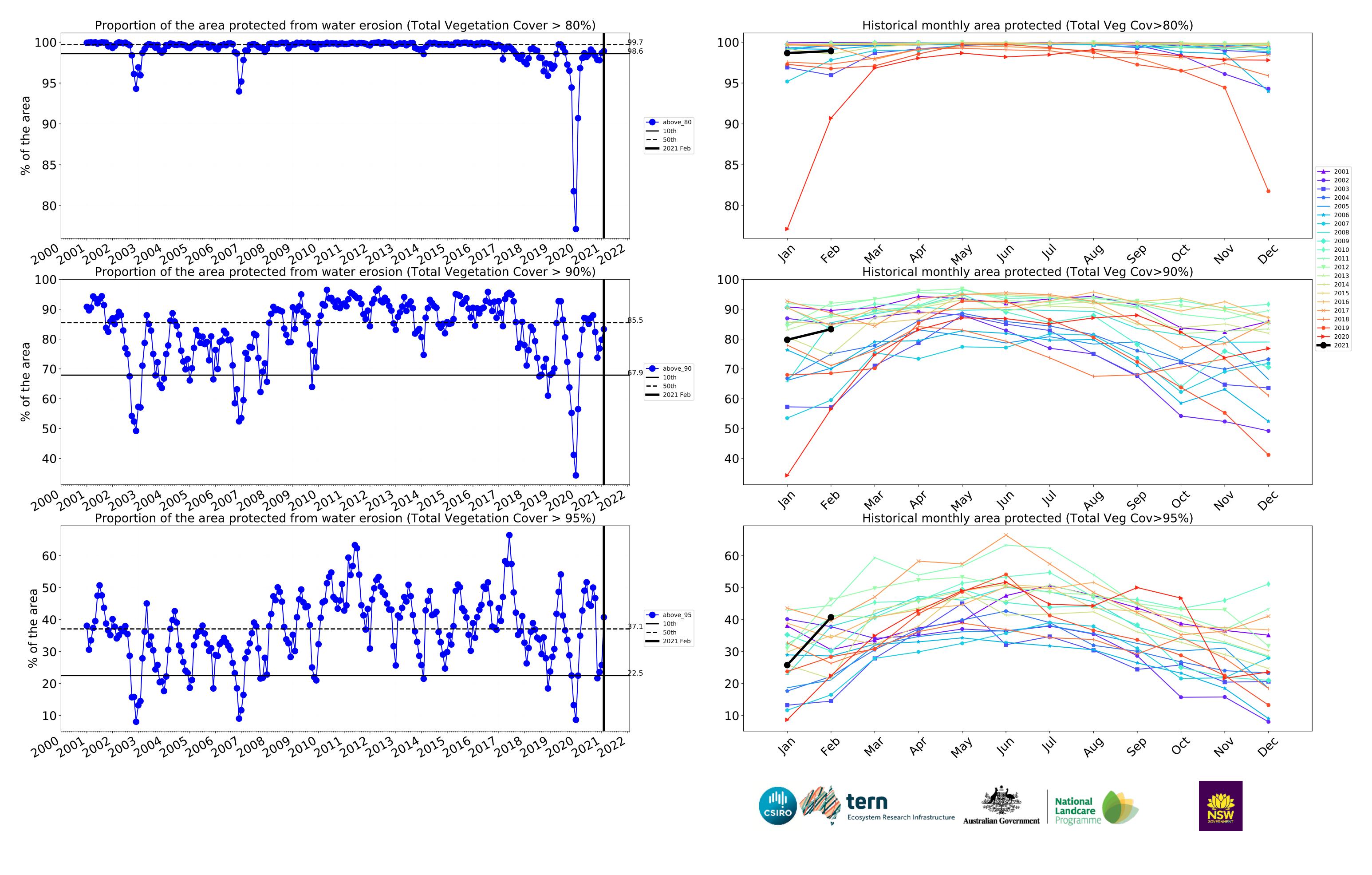




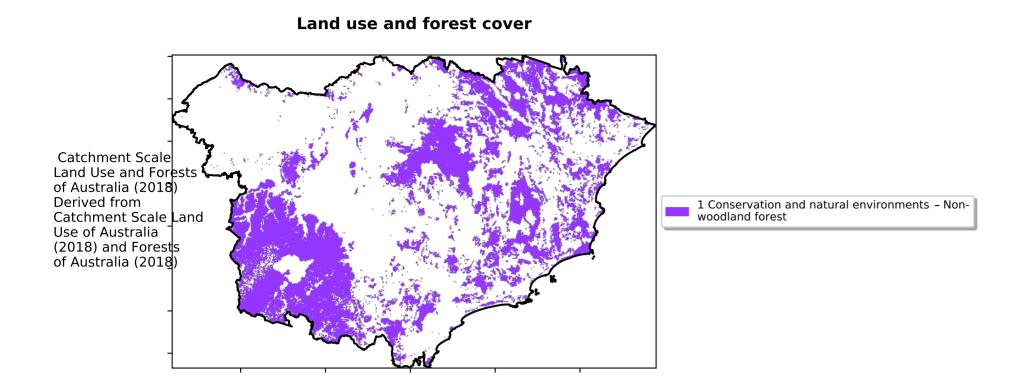
Conservation and natural environments Woodland forest timeseries



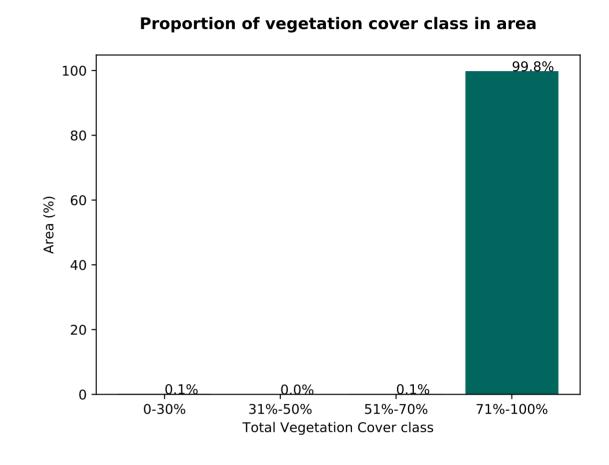


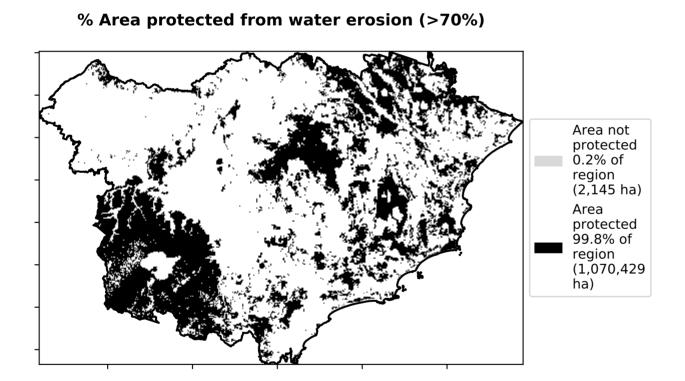


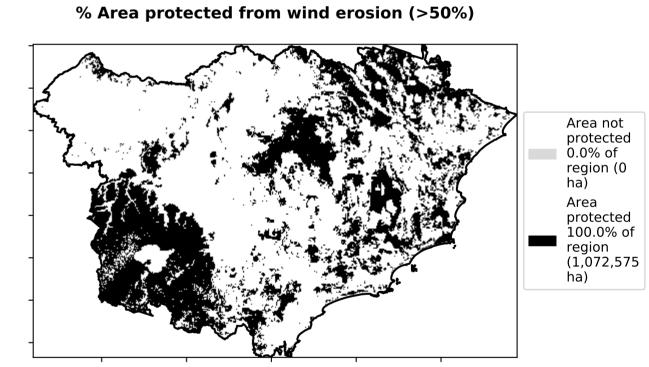
Conservation and natural environments Forest (non woodland)

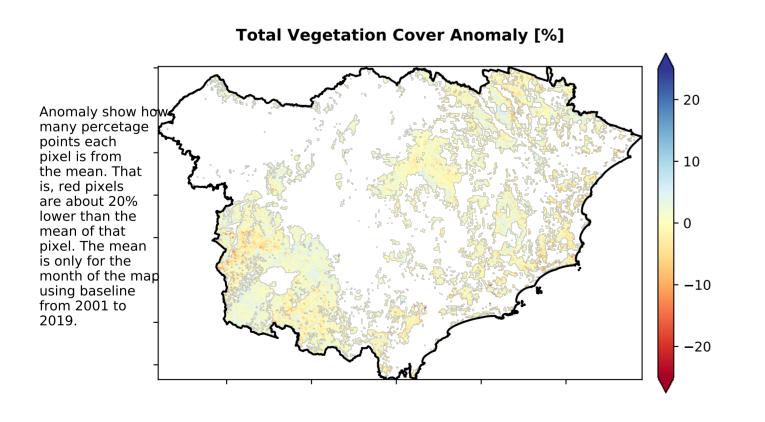


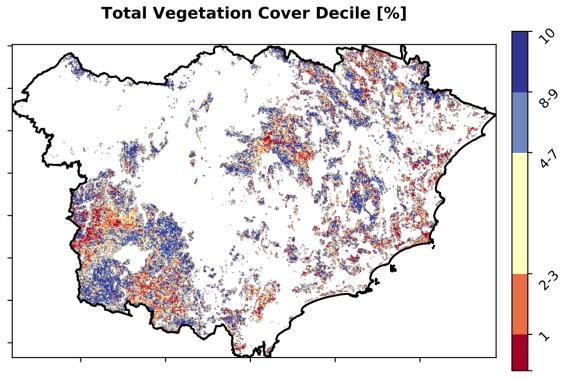
Total Vegetation Cover [%] Total Vegetation Cover [%] Total Vegetation Cover [%]











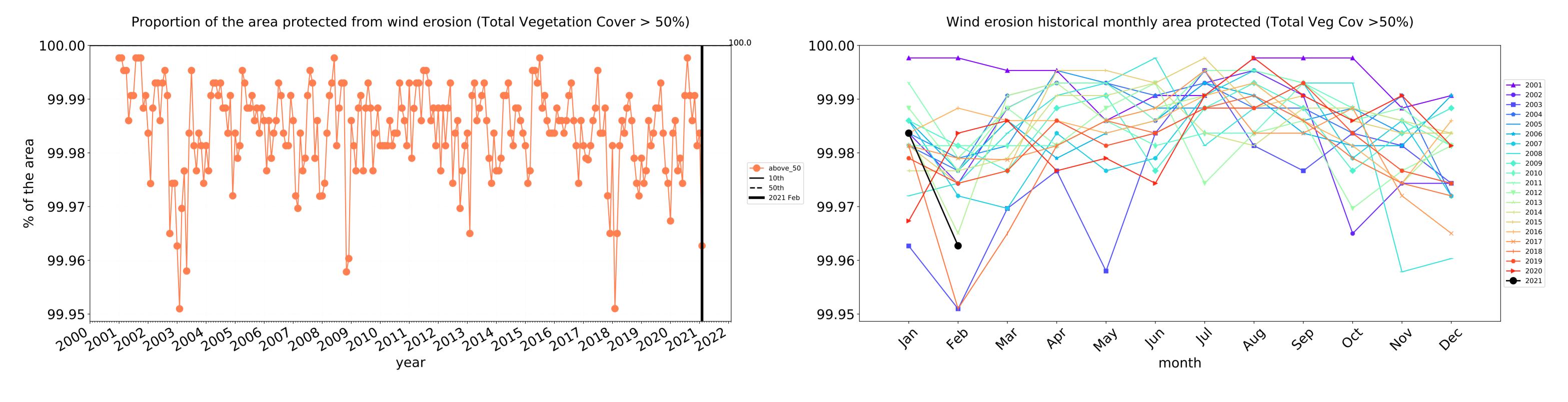


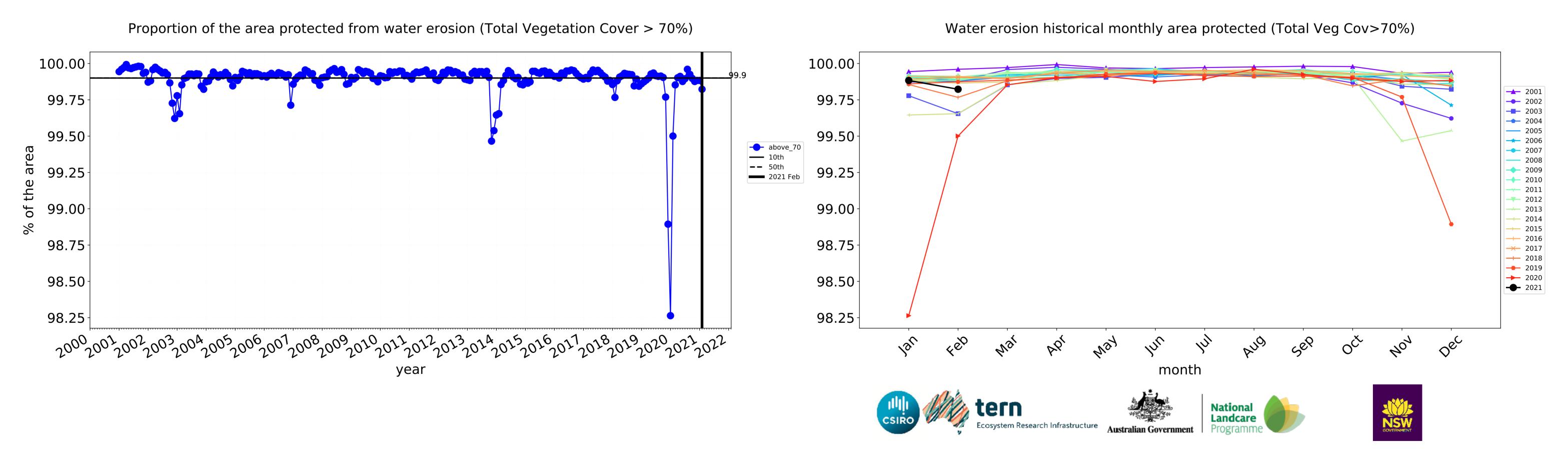


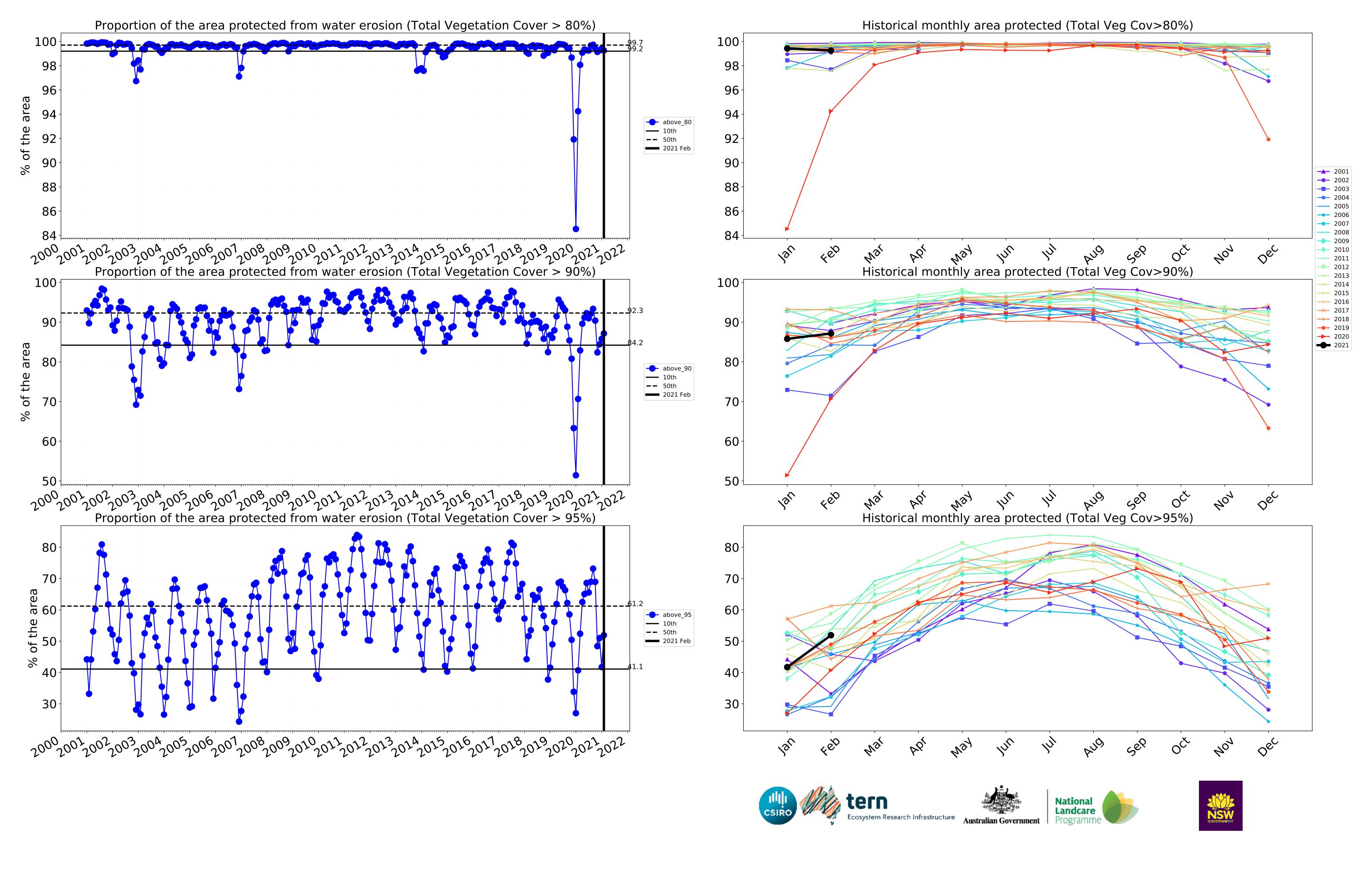




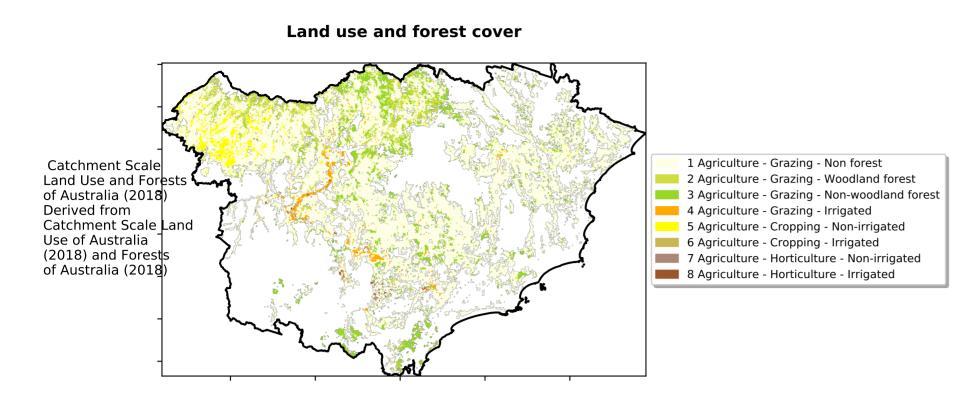
Conservation and natural environments Forest (non woodland) timeseries

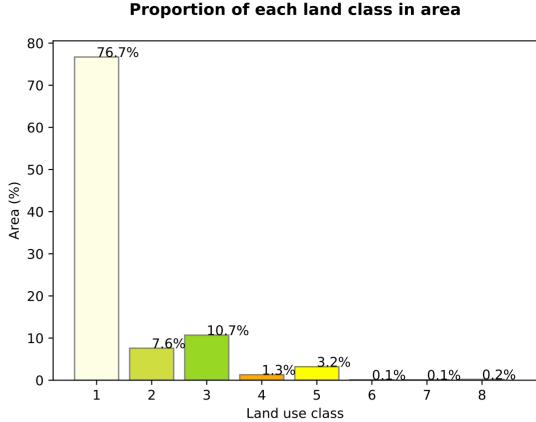


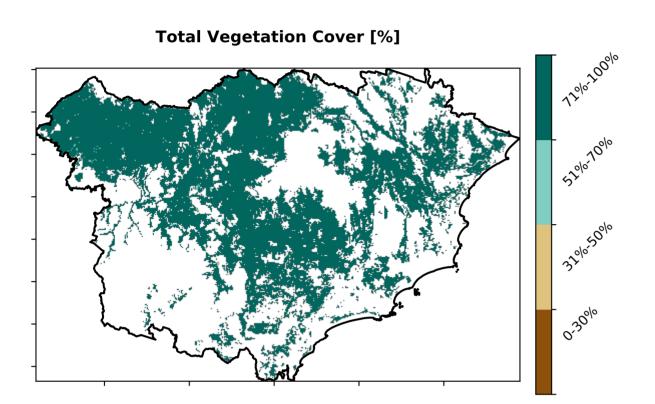


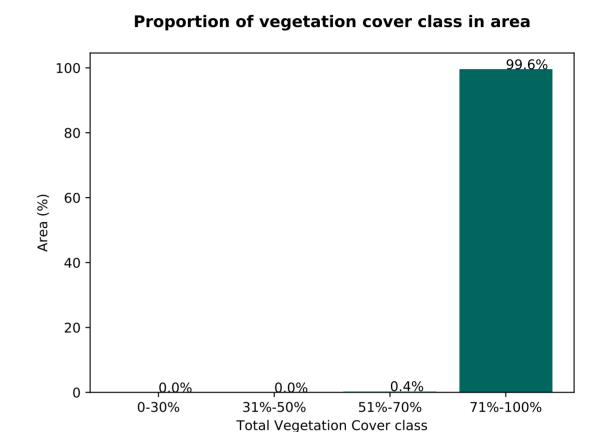


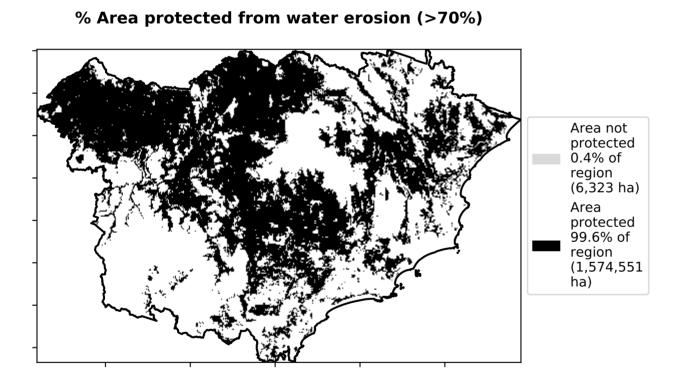
Agriculture

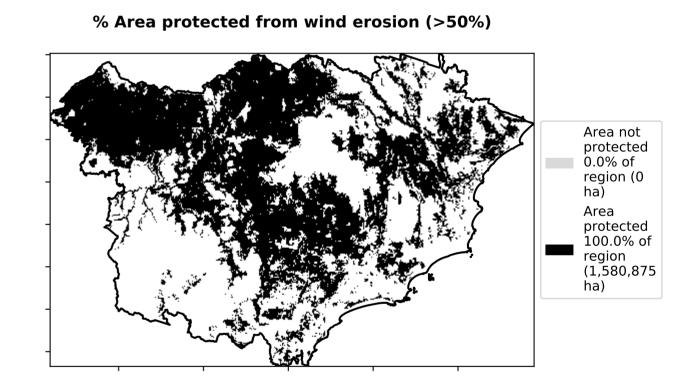


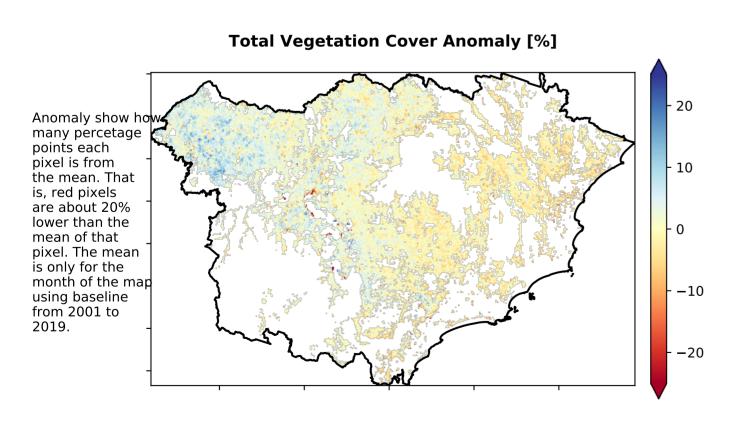


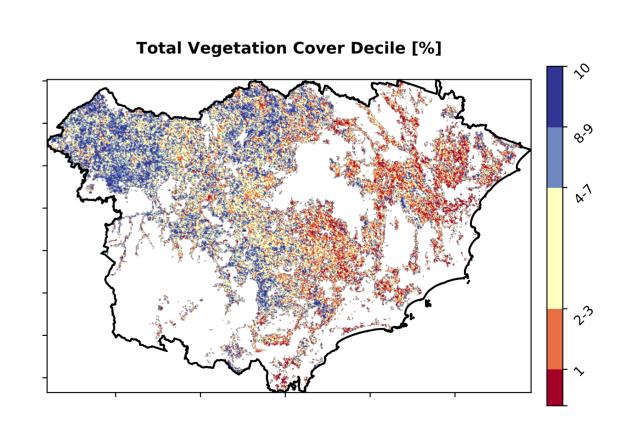












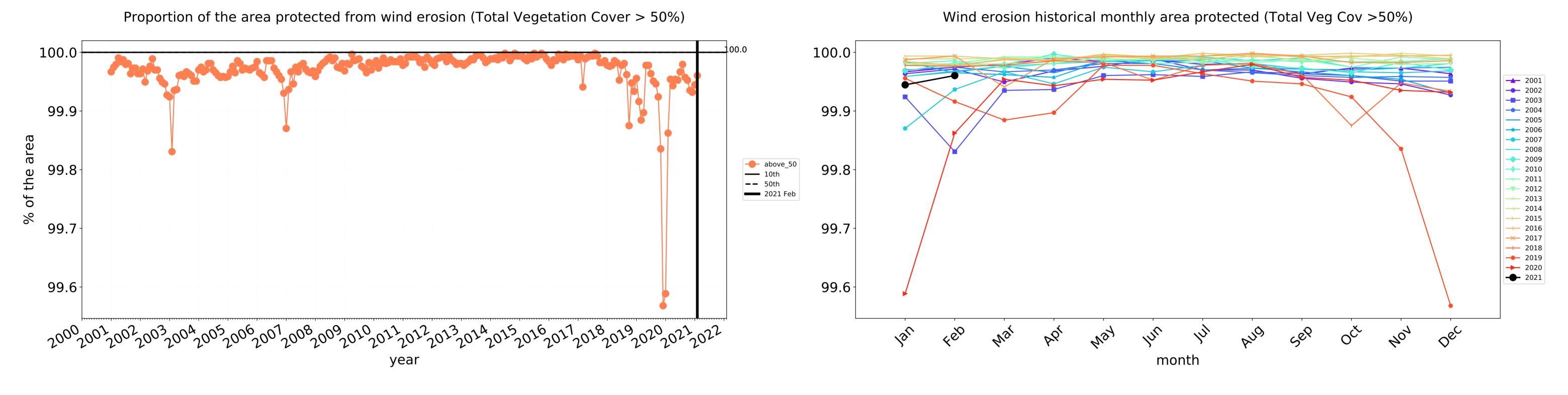


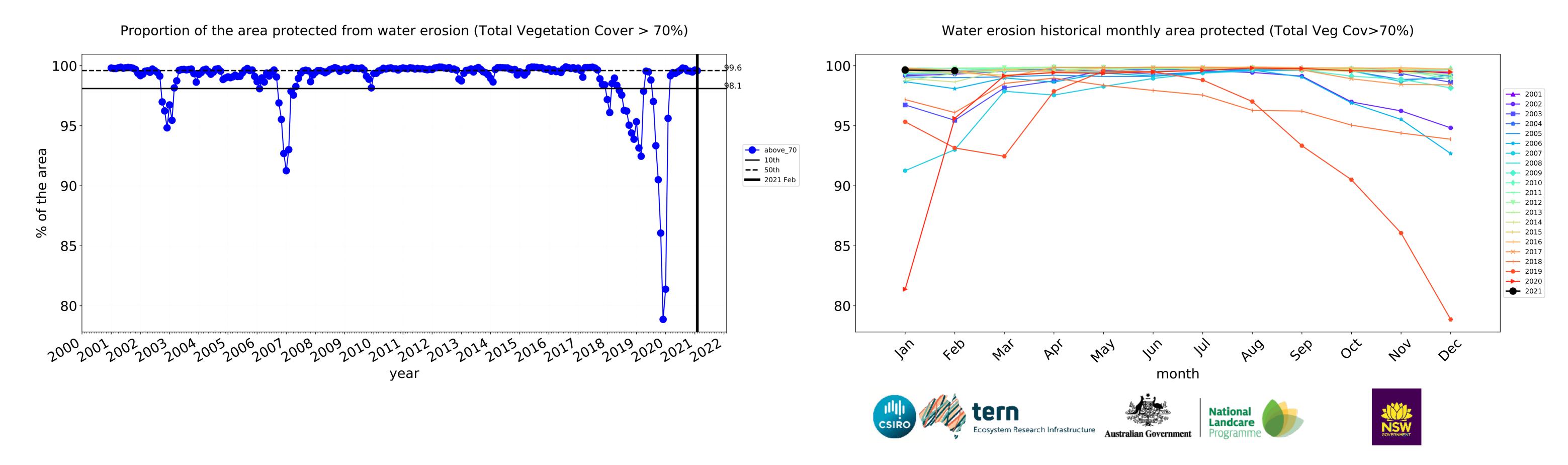


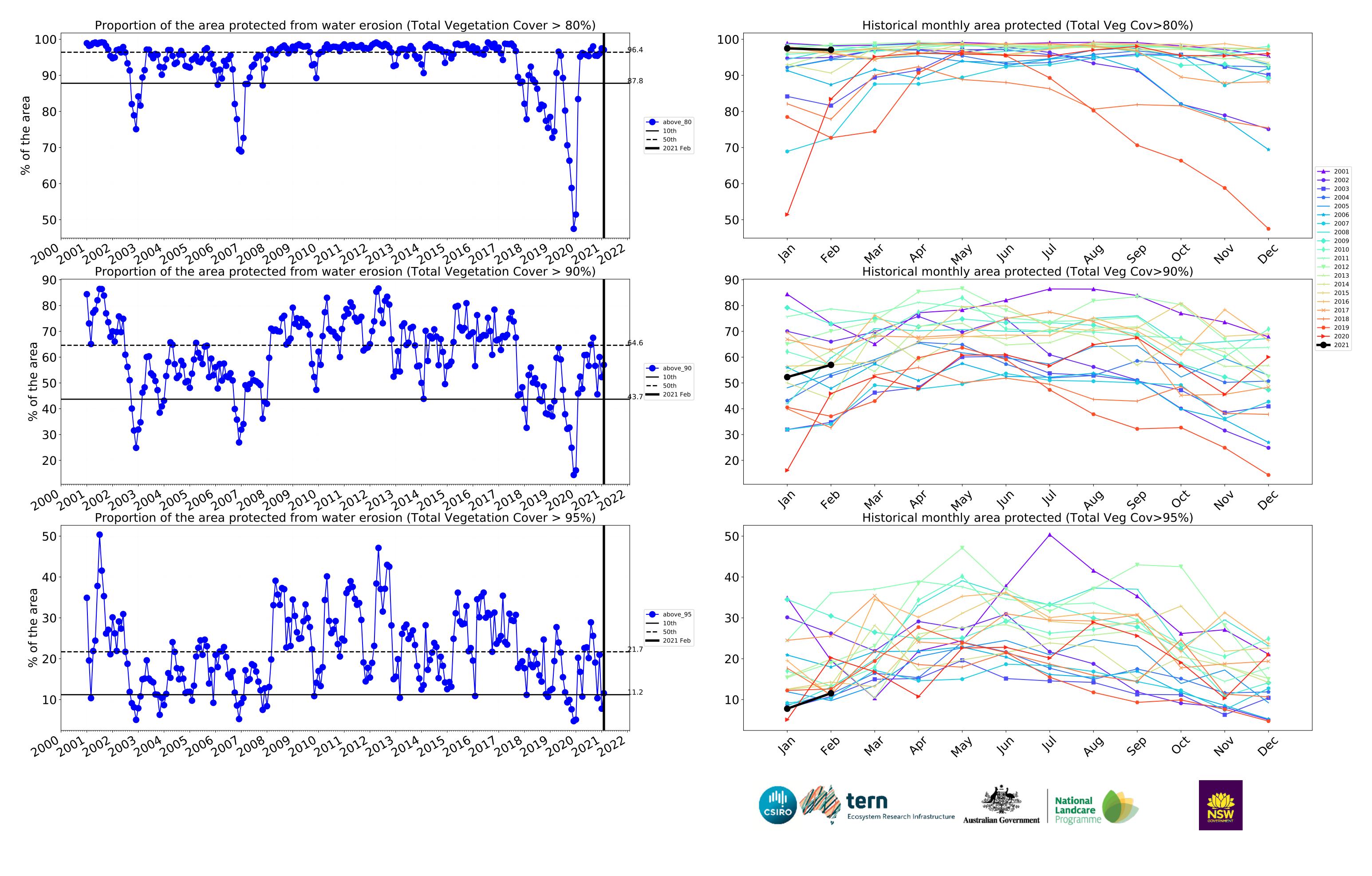




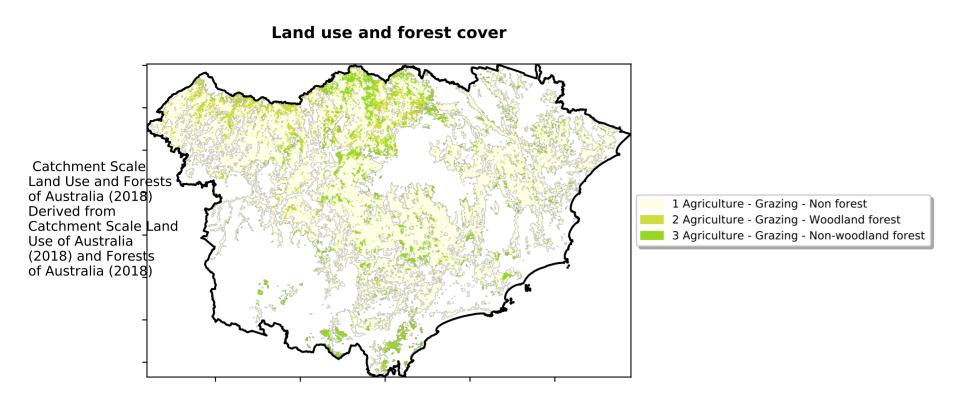
Agriculture timeseries



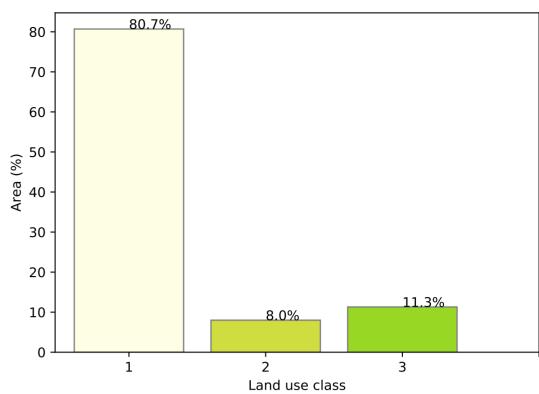




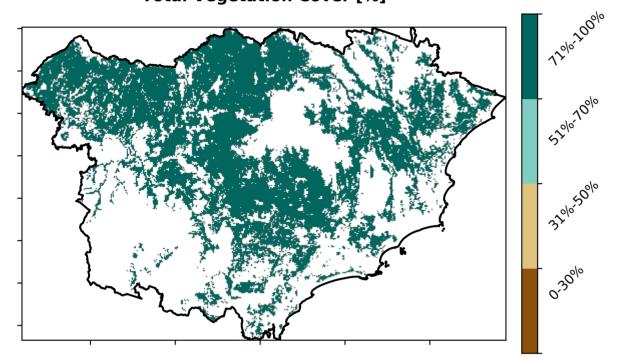
Grazing



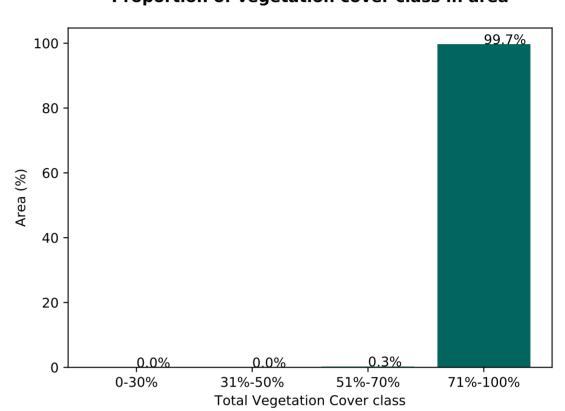
Proportion of each land class in area



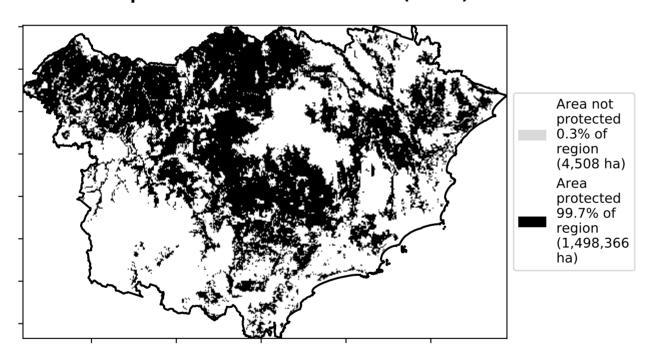
Total Vegetation Cover [%]



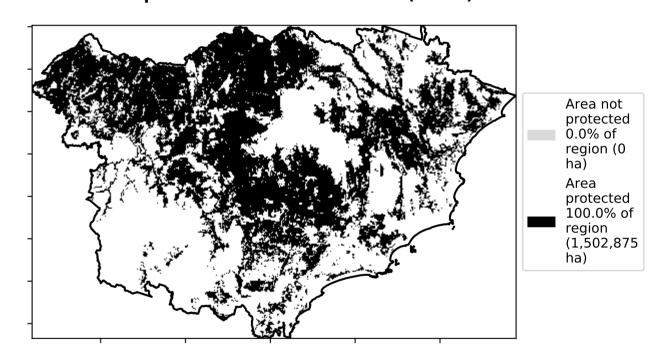
Proportion of vegetation cover class in area



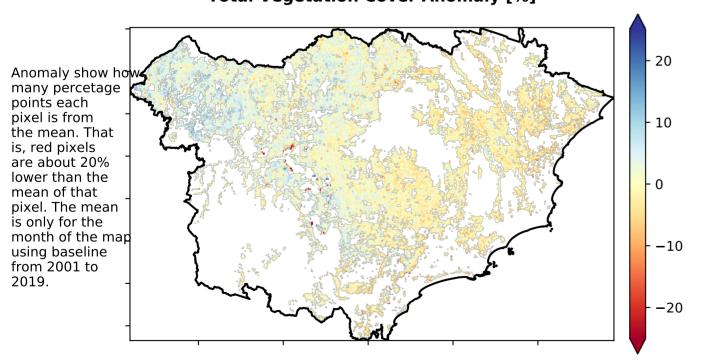
% Area protected from water erosion (>70%)

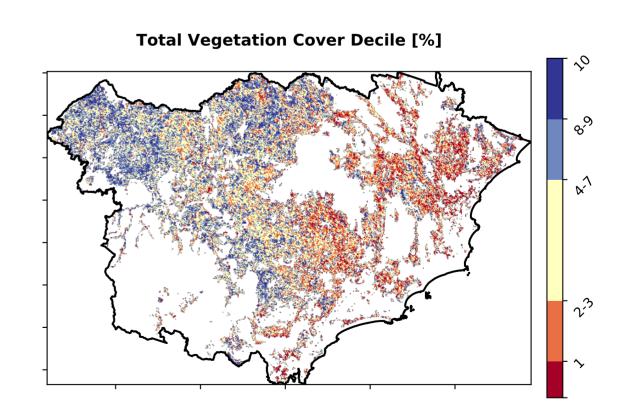


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]







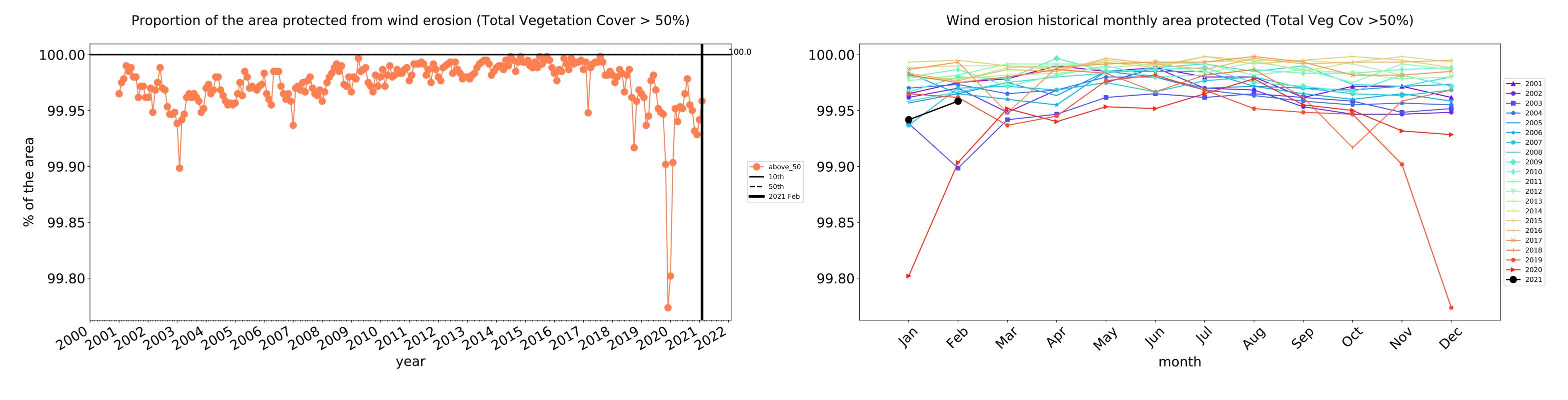


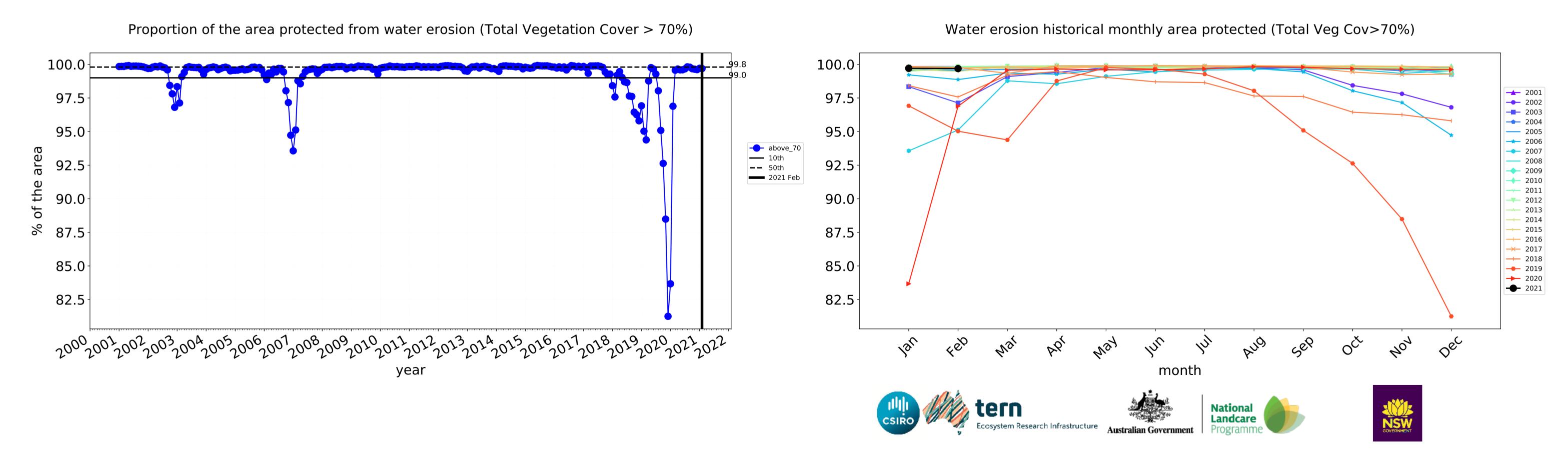


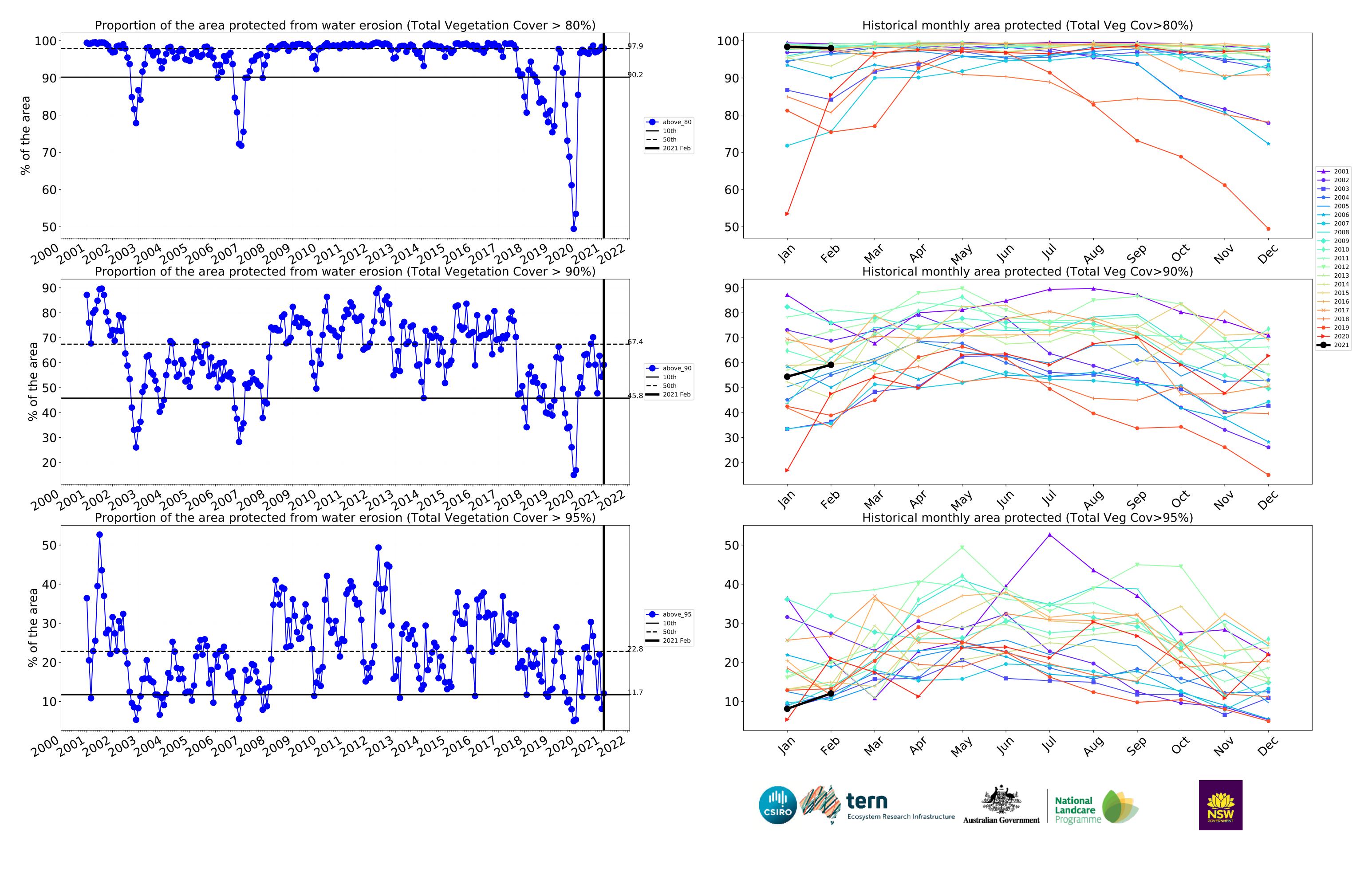




Grazing timeseries

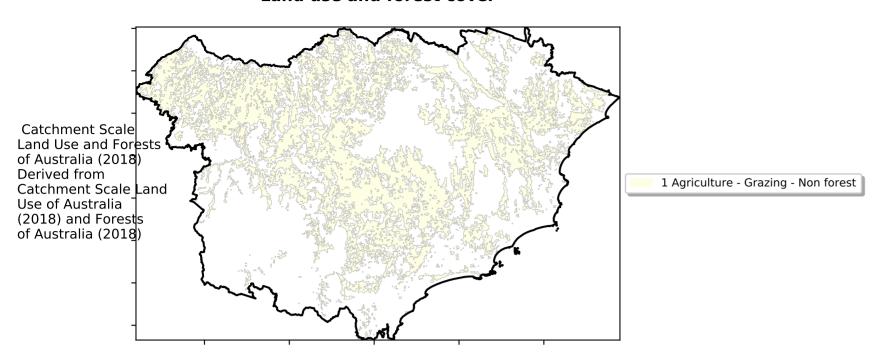




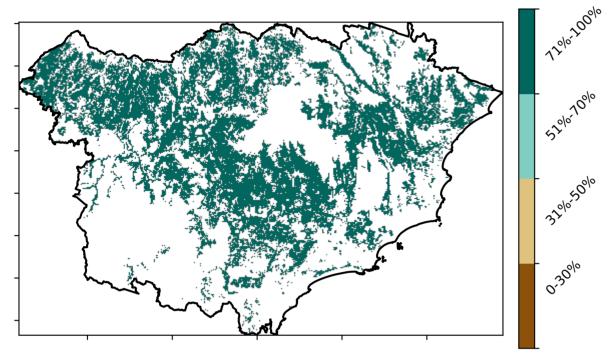


Grazing non forest

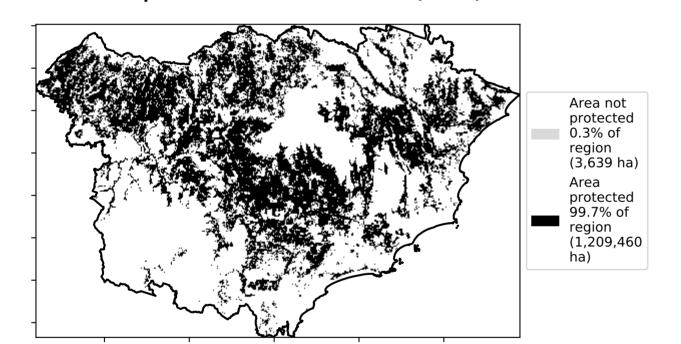
Land use and forest cover



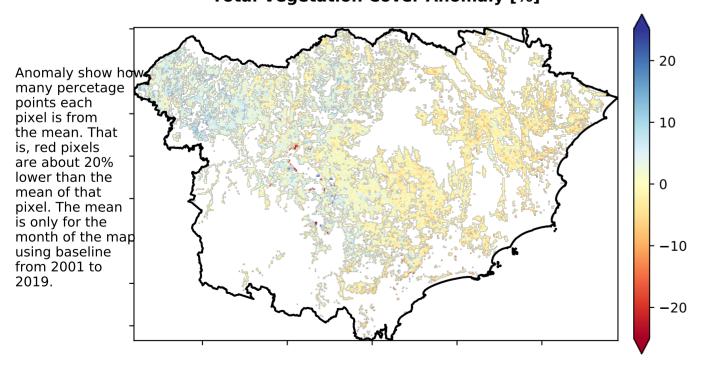
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

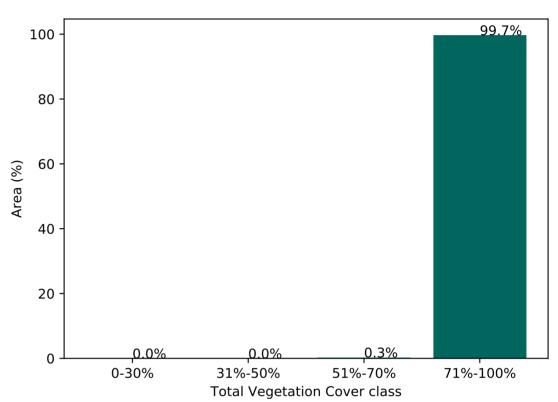


Total Vegetation Cover Anomaly [%]

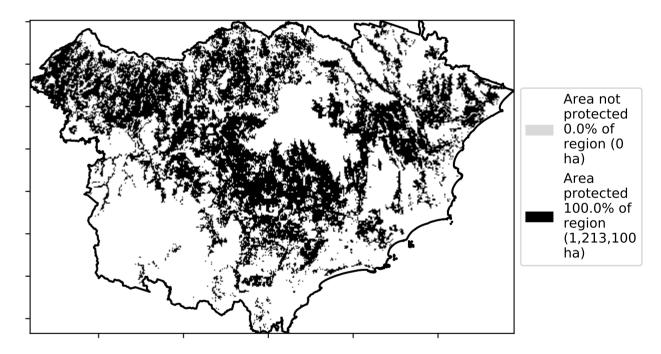


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

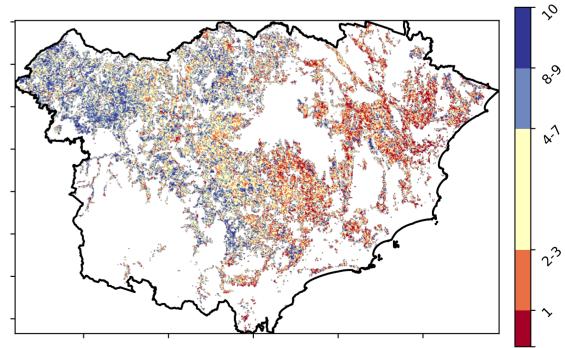
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]



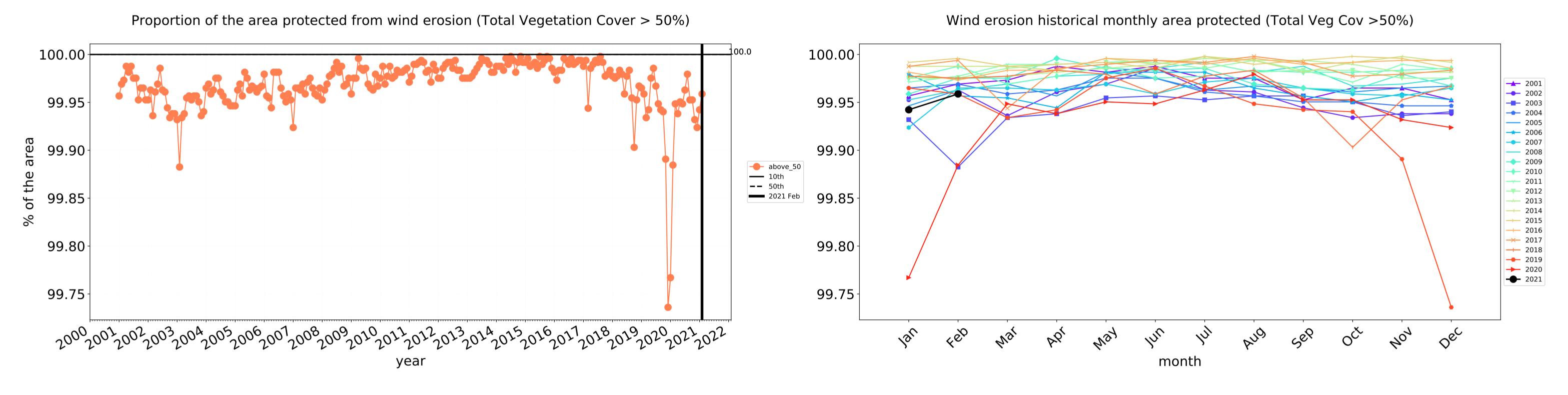


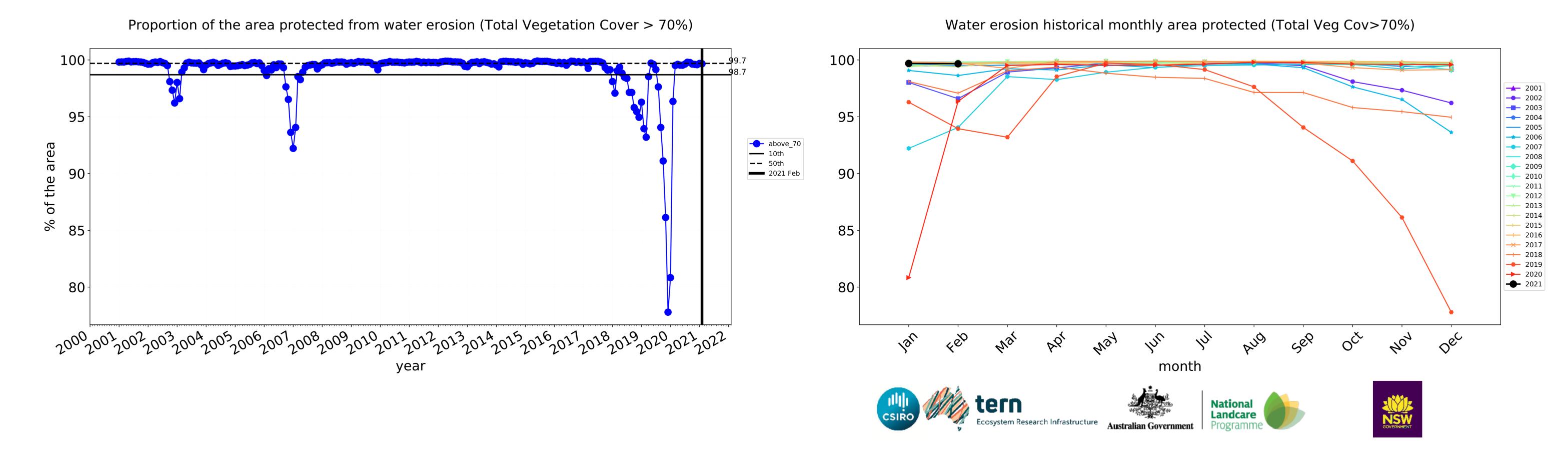


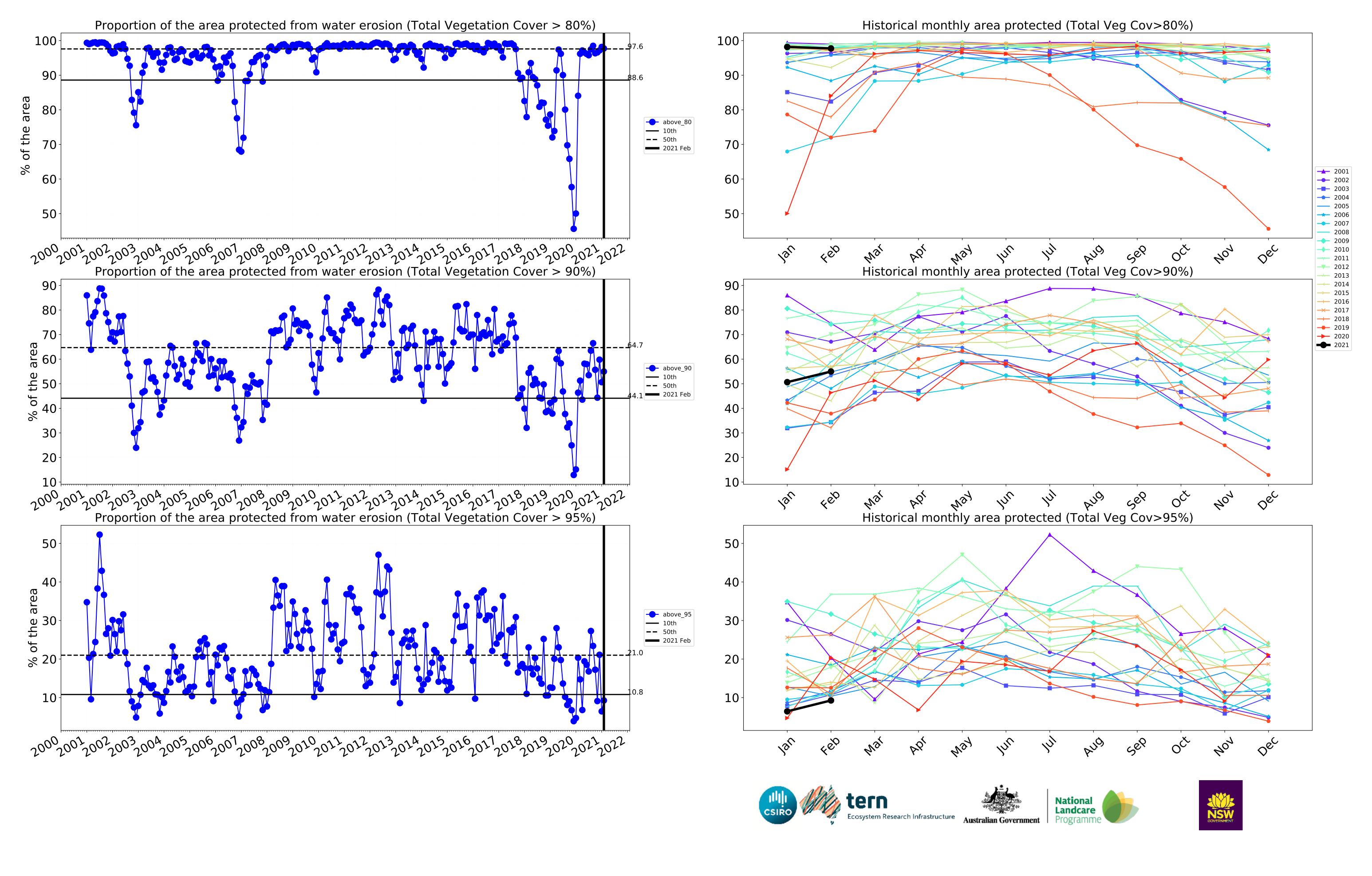




Grazing non forest timeseries





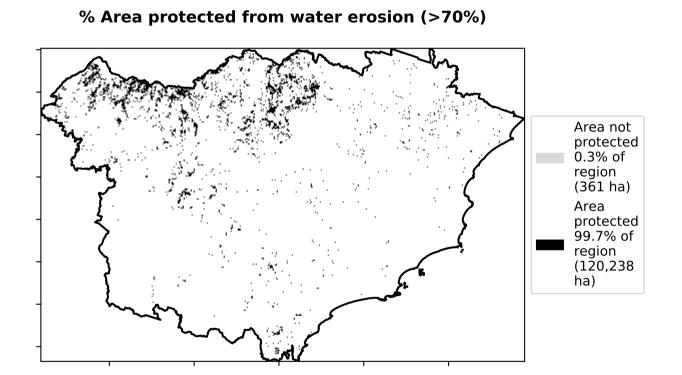


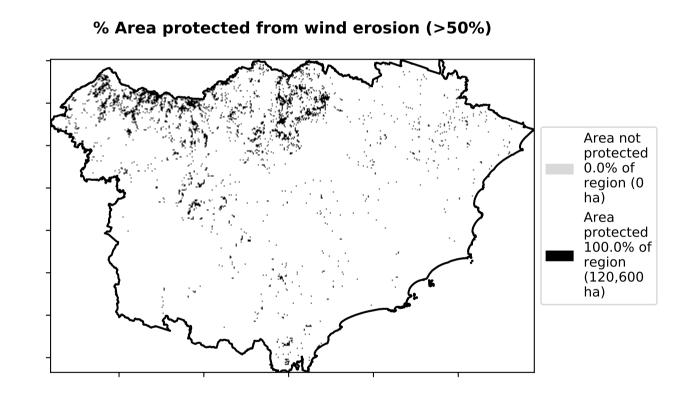
Grazing Woodland forest

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

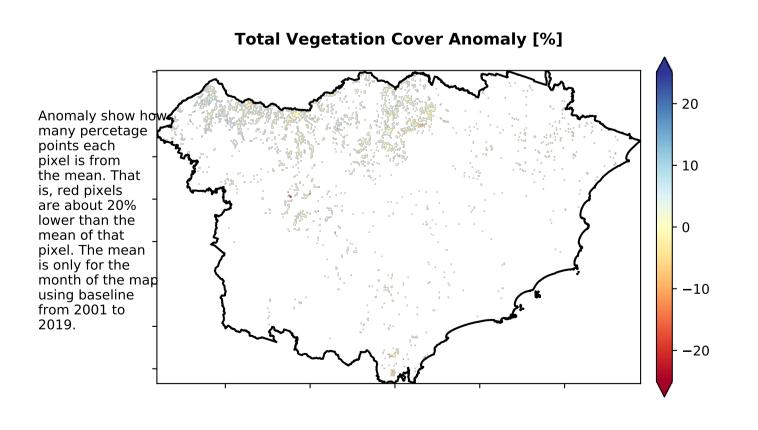
Total Vegetation Cover [%]

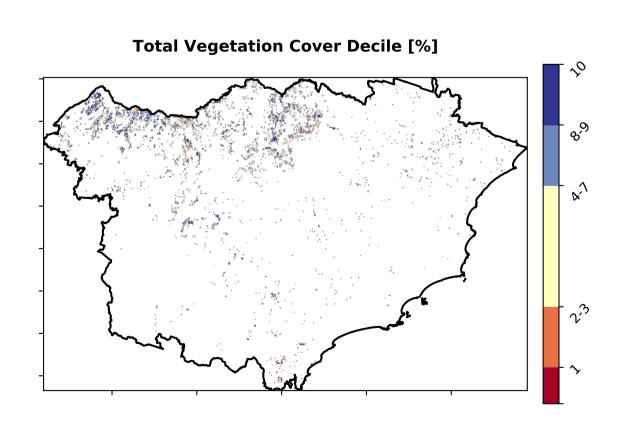
99.7% 100 80 Area (%) 40 20 · 0.2% 51%-70% 0-30% 31%-50% 71%-100% **Total Vegetation Cover class**





Proportion of vegetation cover class in area





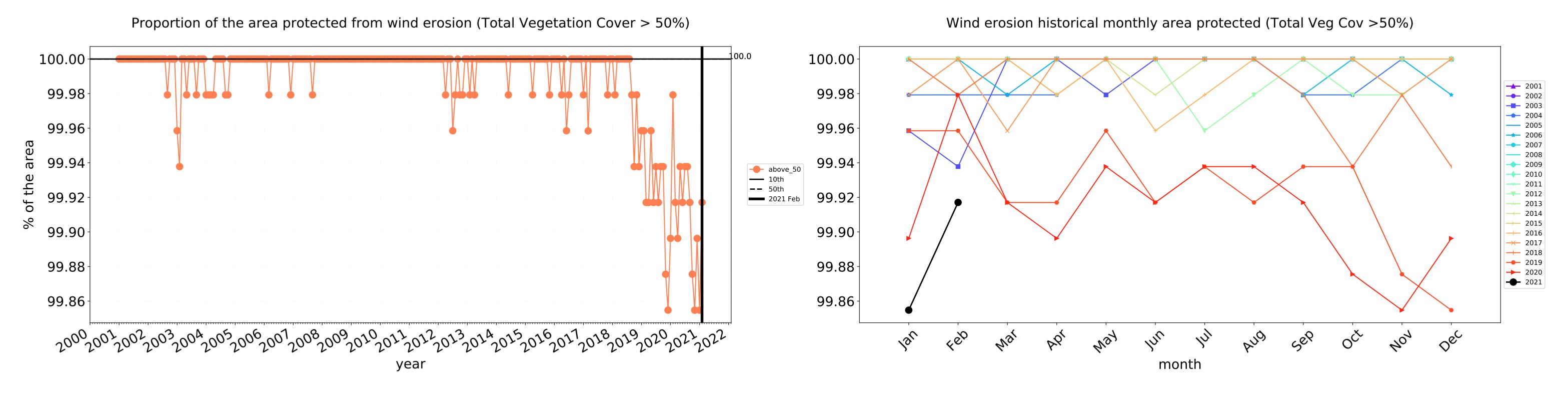


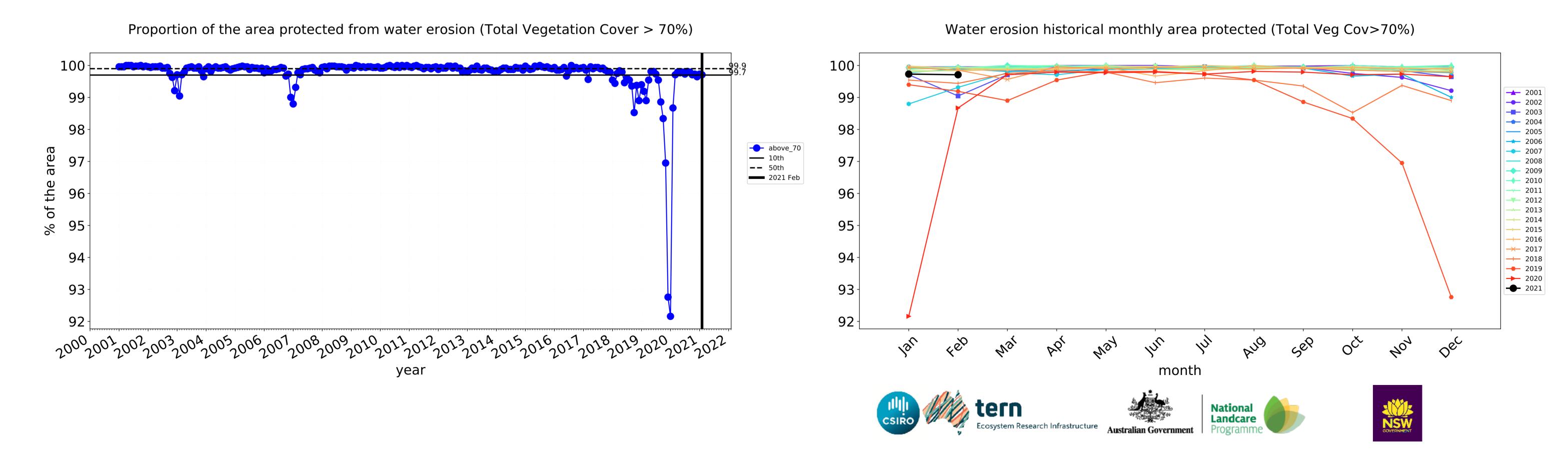


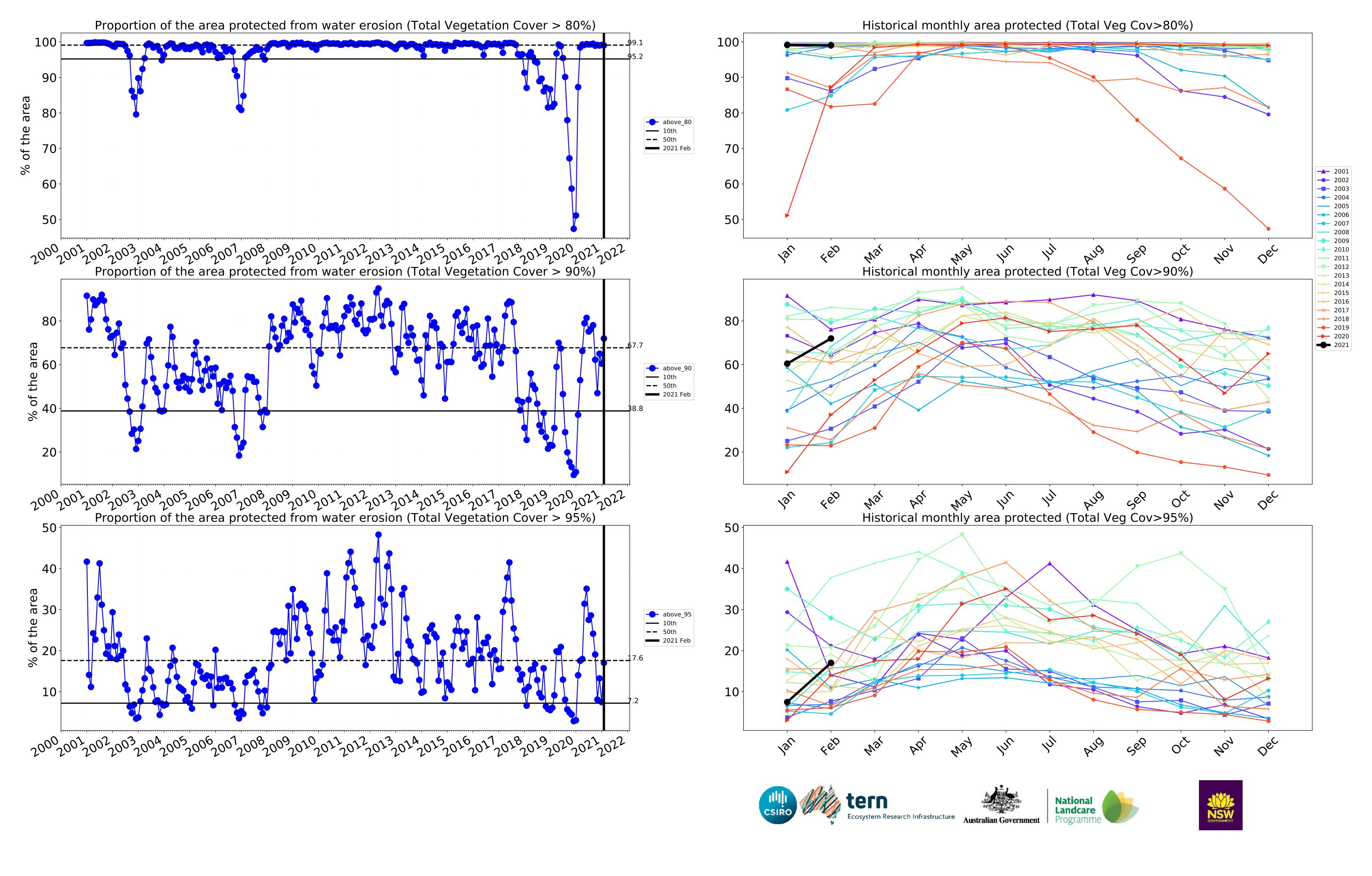




Grazing Woodland forest timeseries



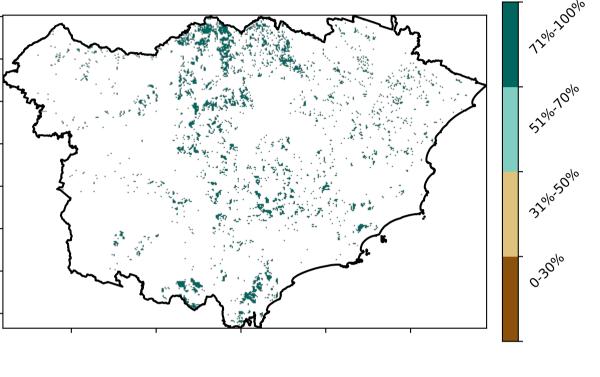


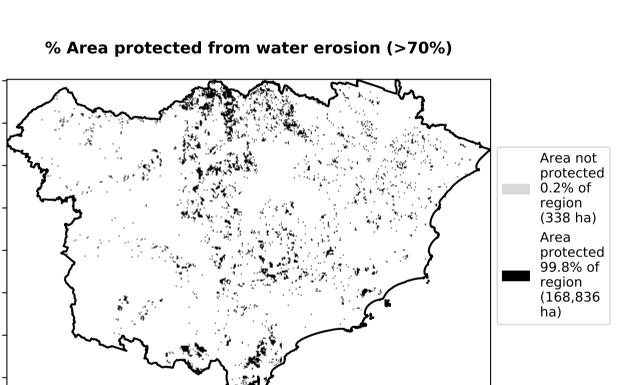


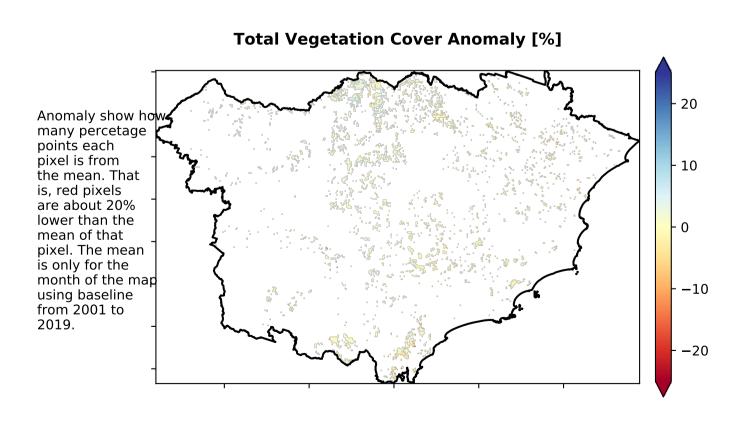
Grazing - Forest (non woodland)

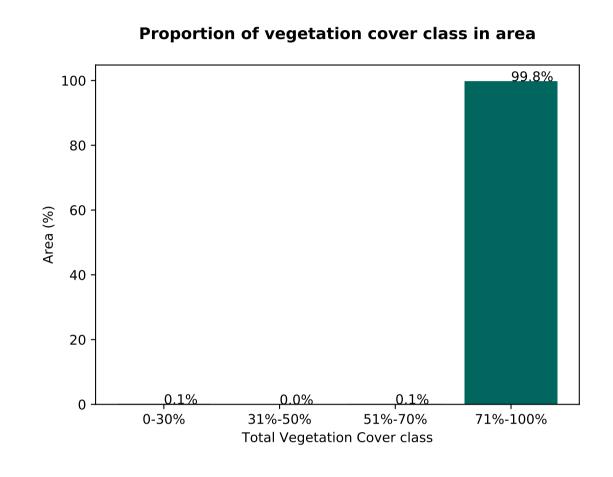
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Agriculture - Grazing - Non-woodland forest Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

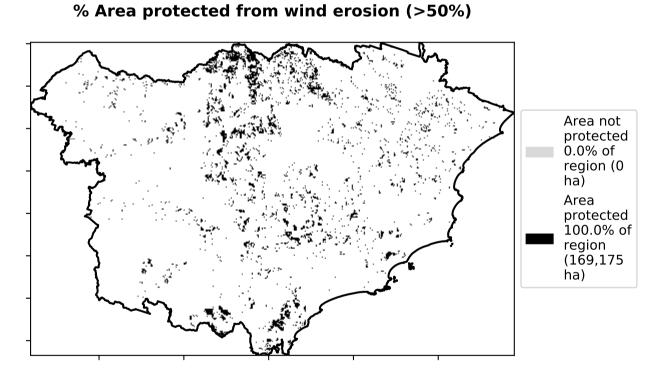
Total Vegetation Cover [%]

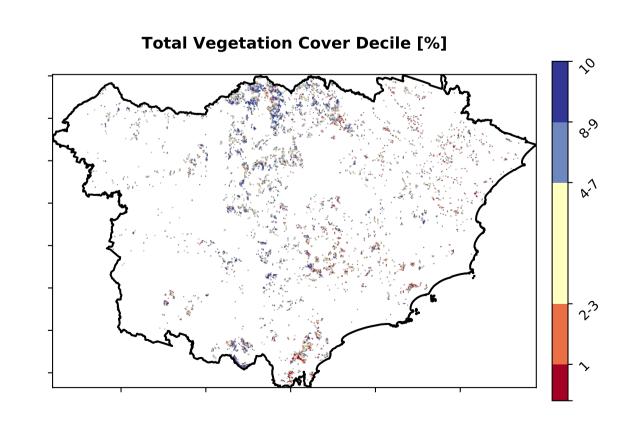










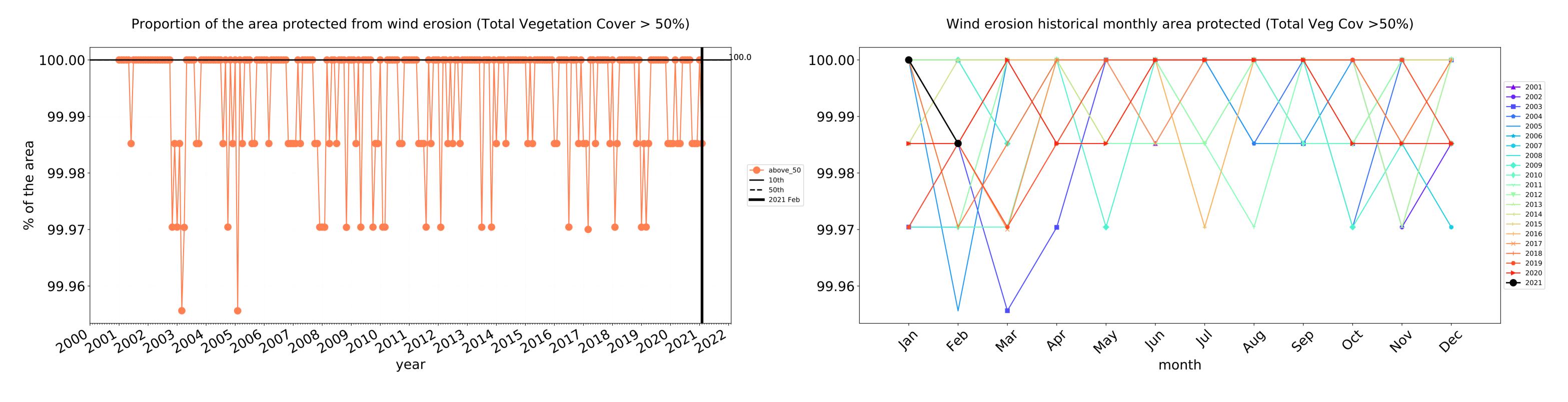


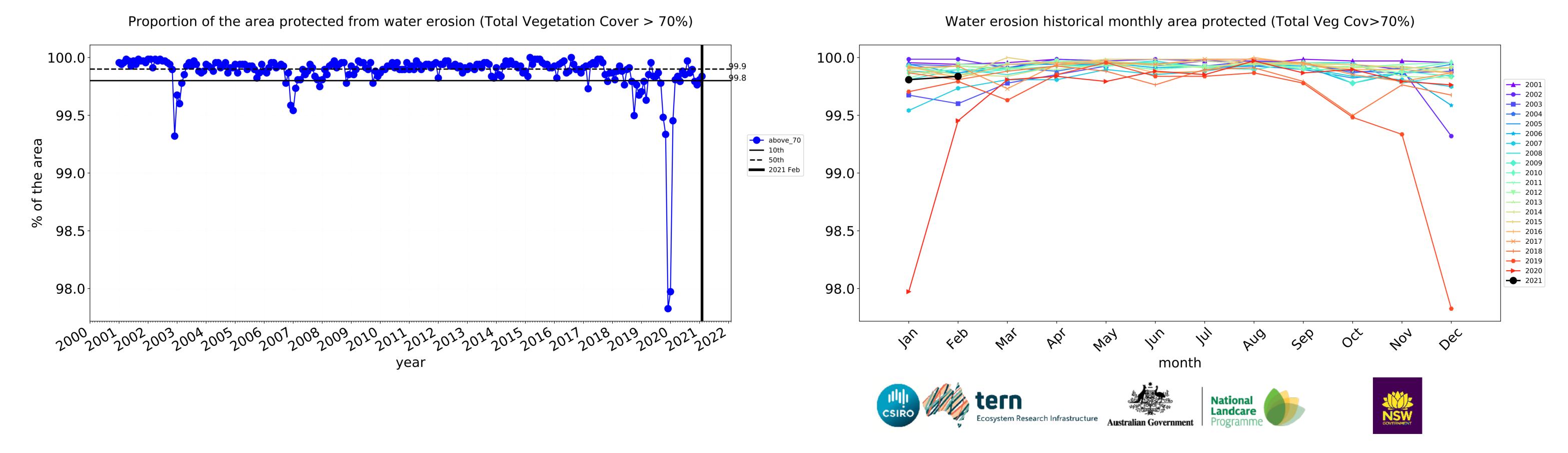


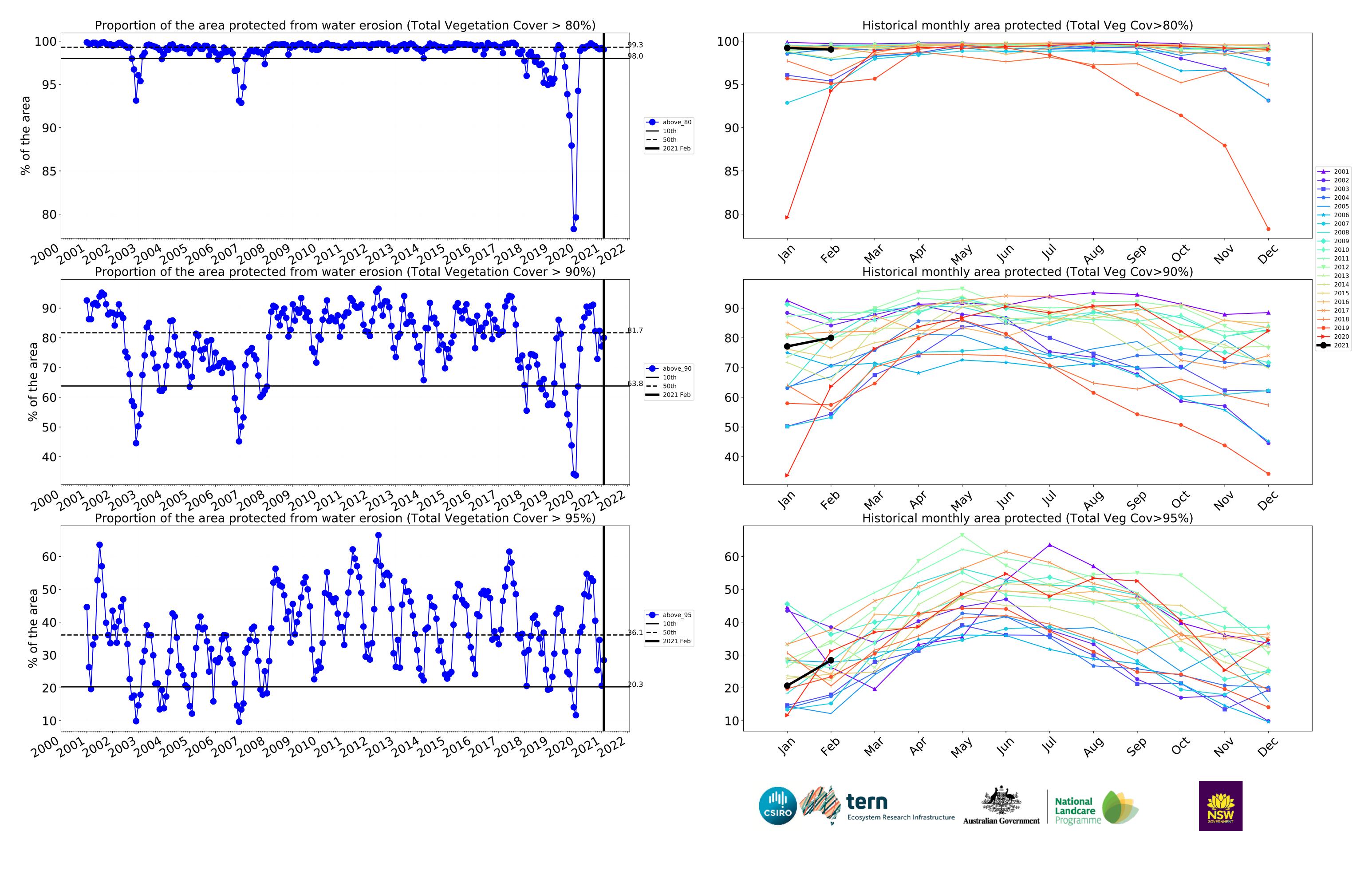






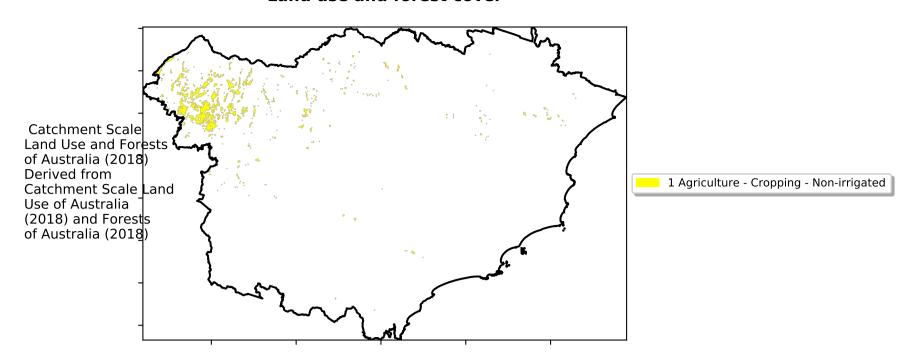




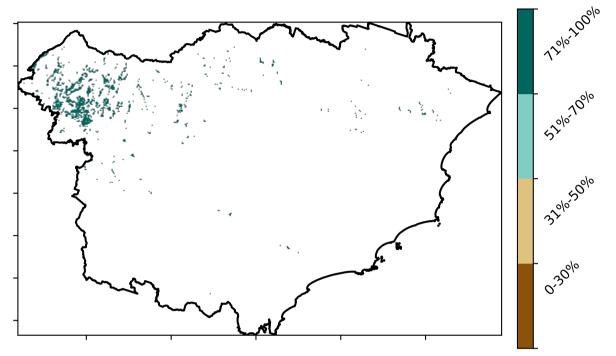


Cropping

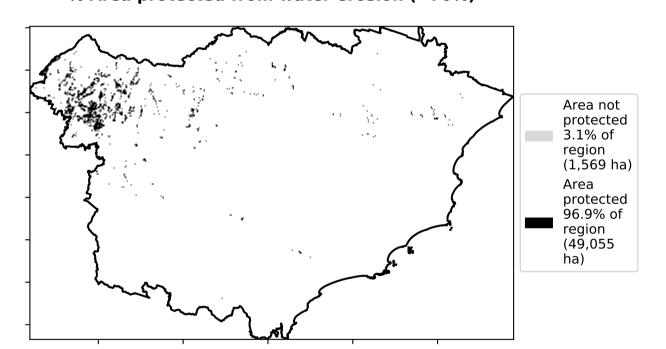
Land use and forest cover



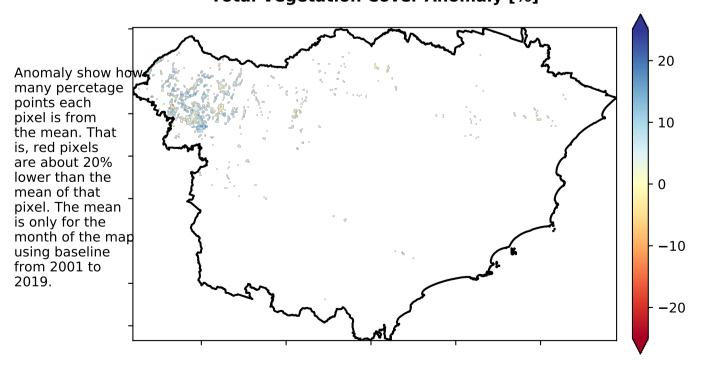
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

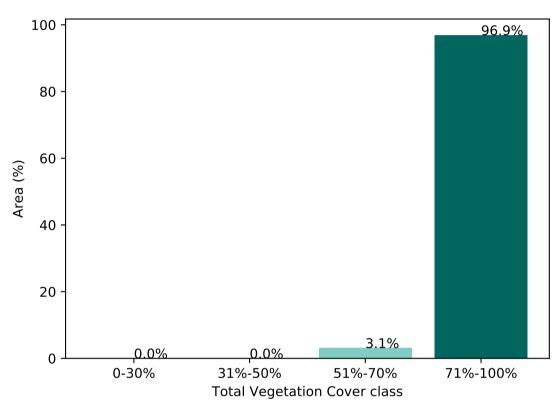


Total Vegetation Cover Anomaly [%]

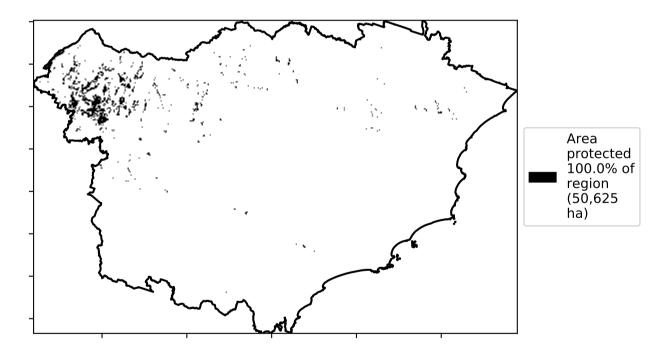


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

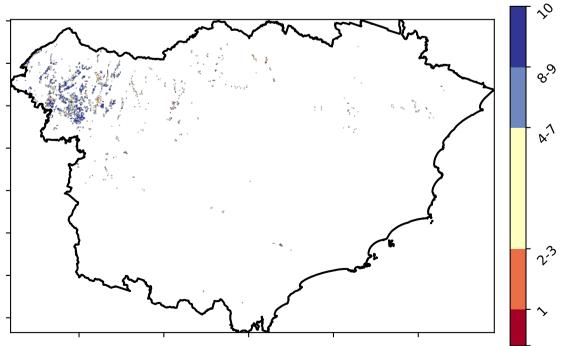
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]





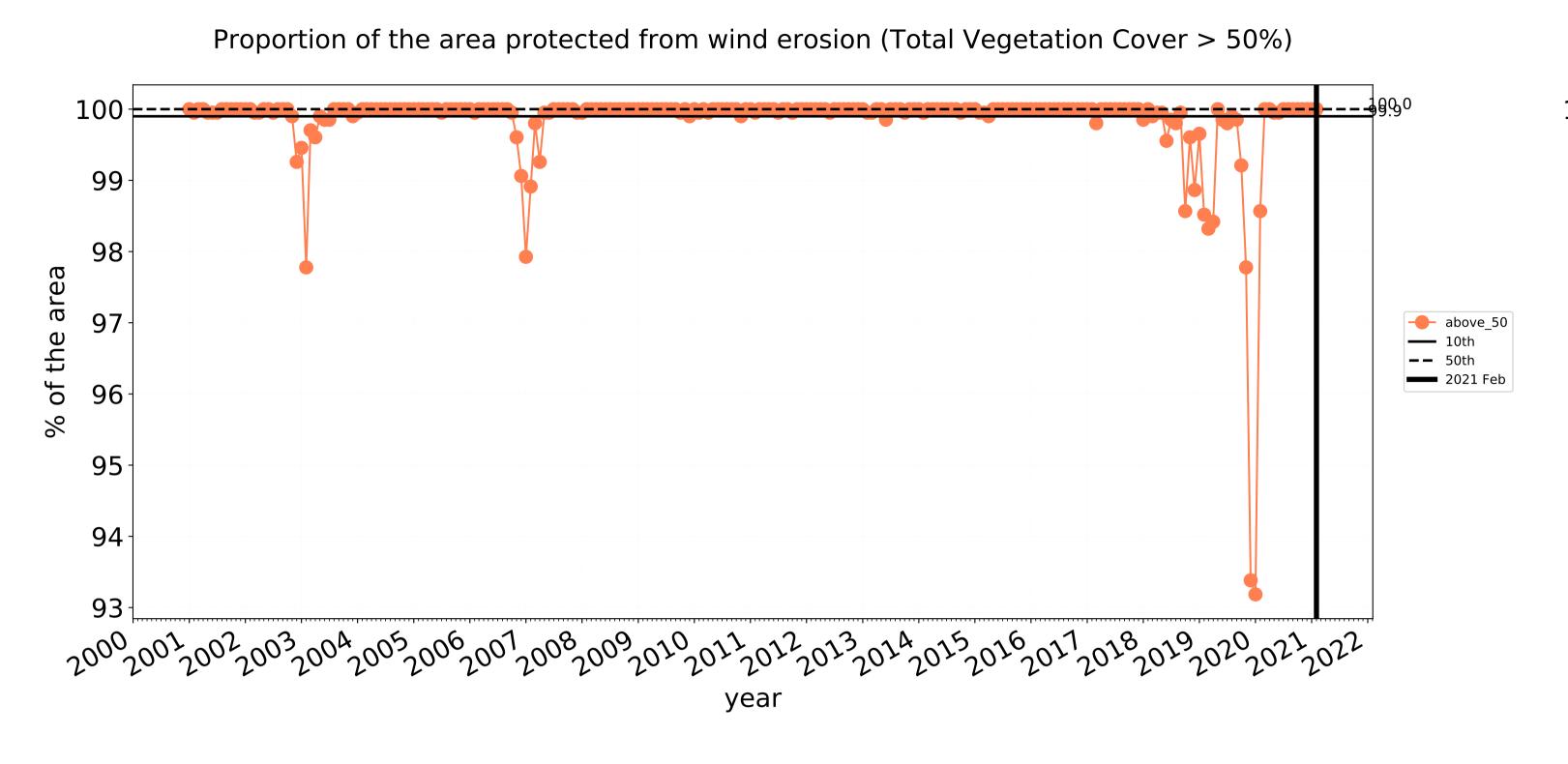


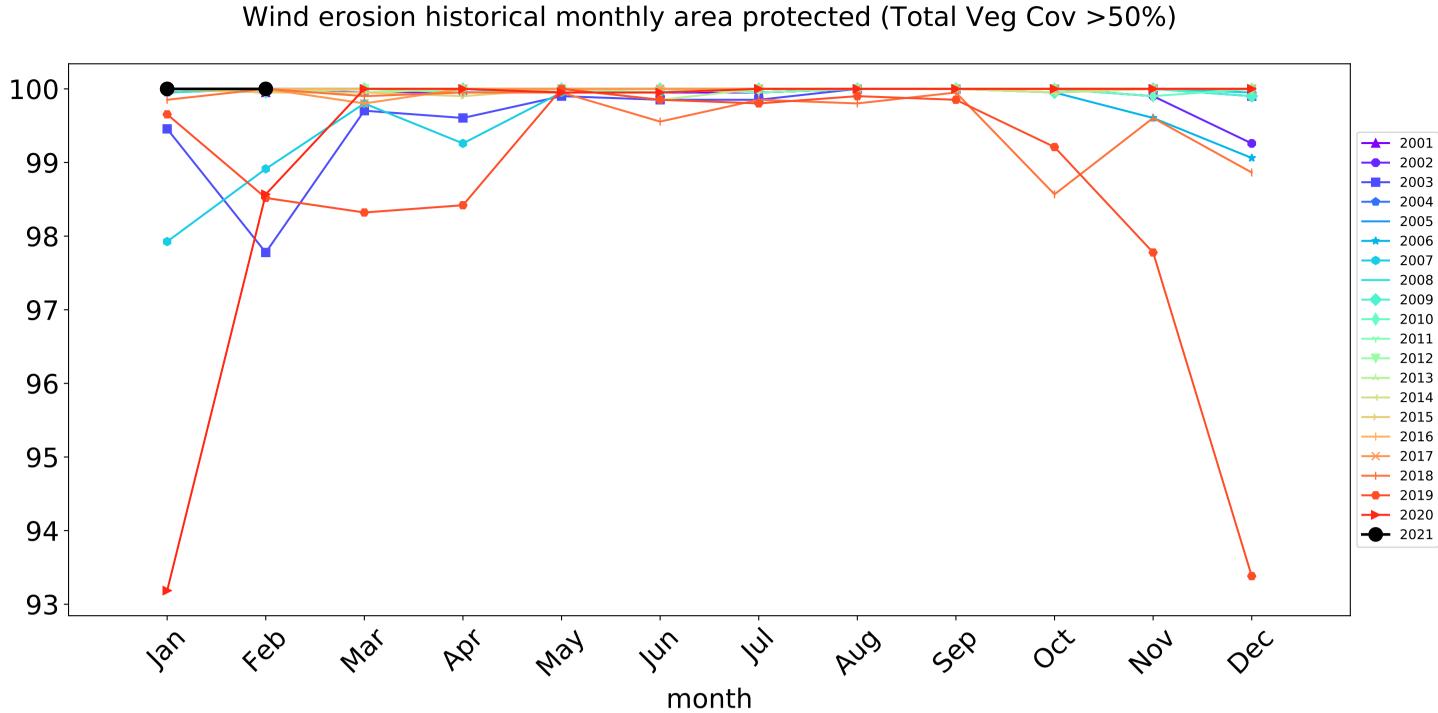


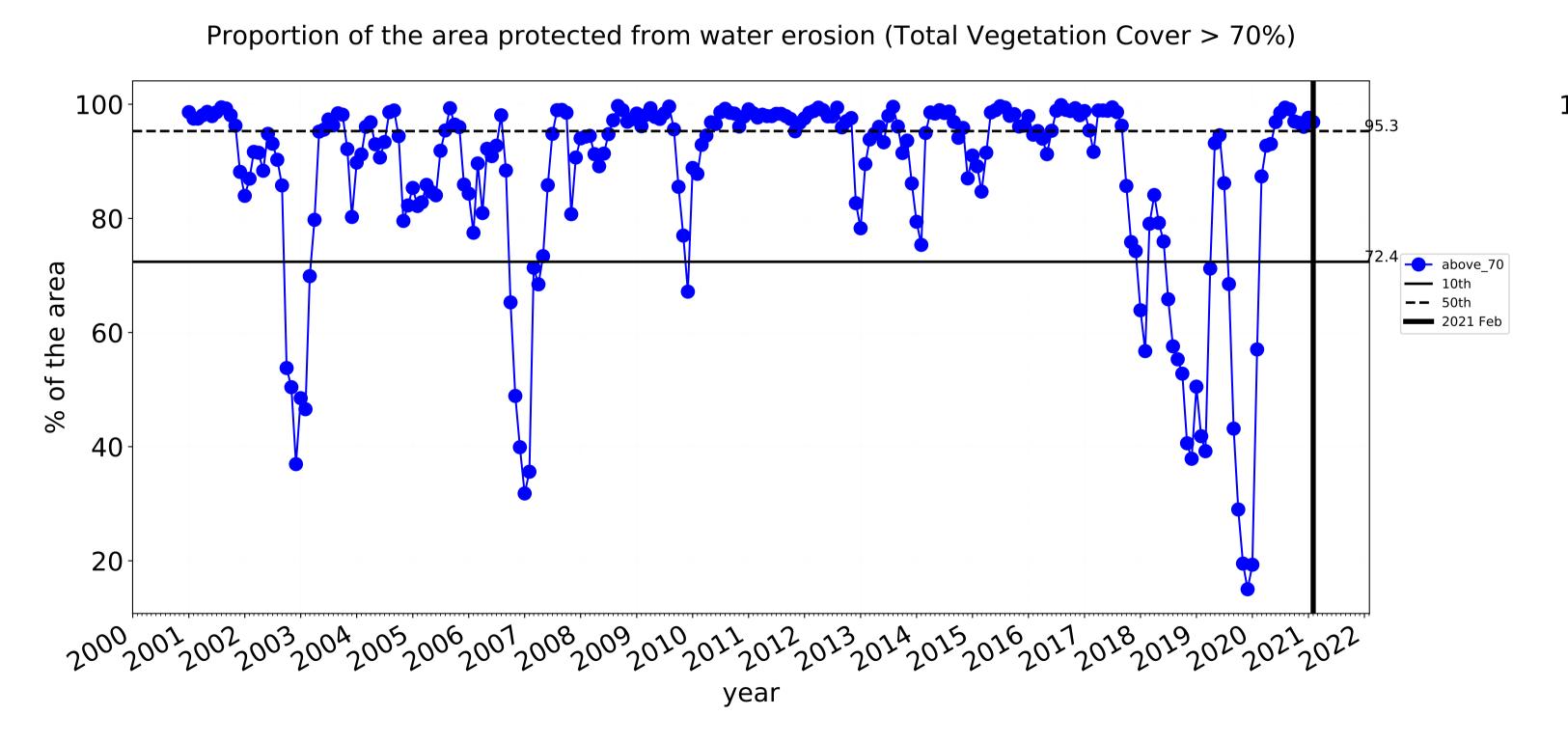


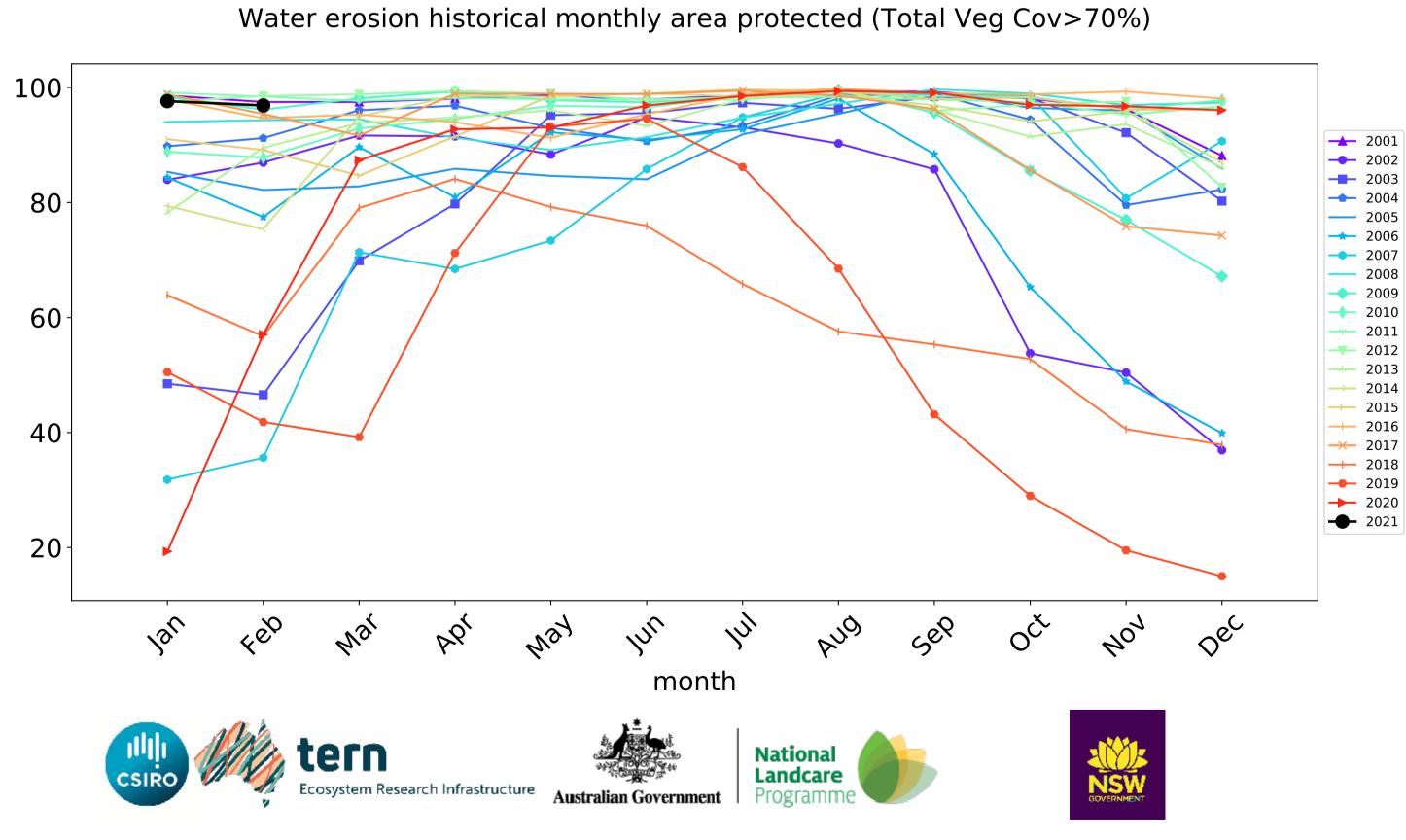


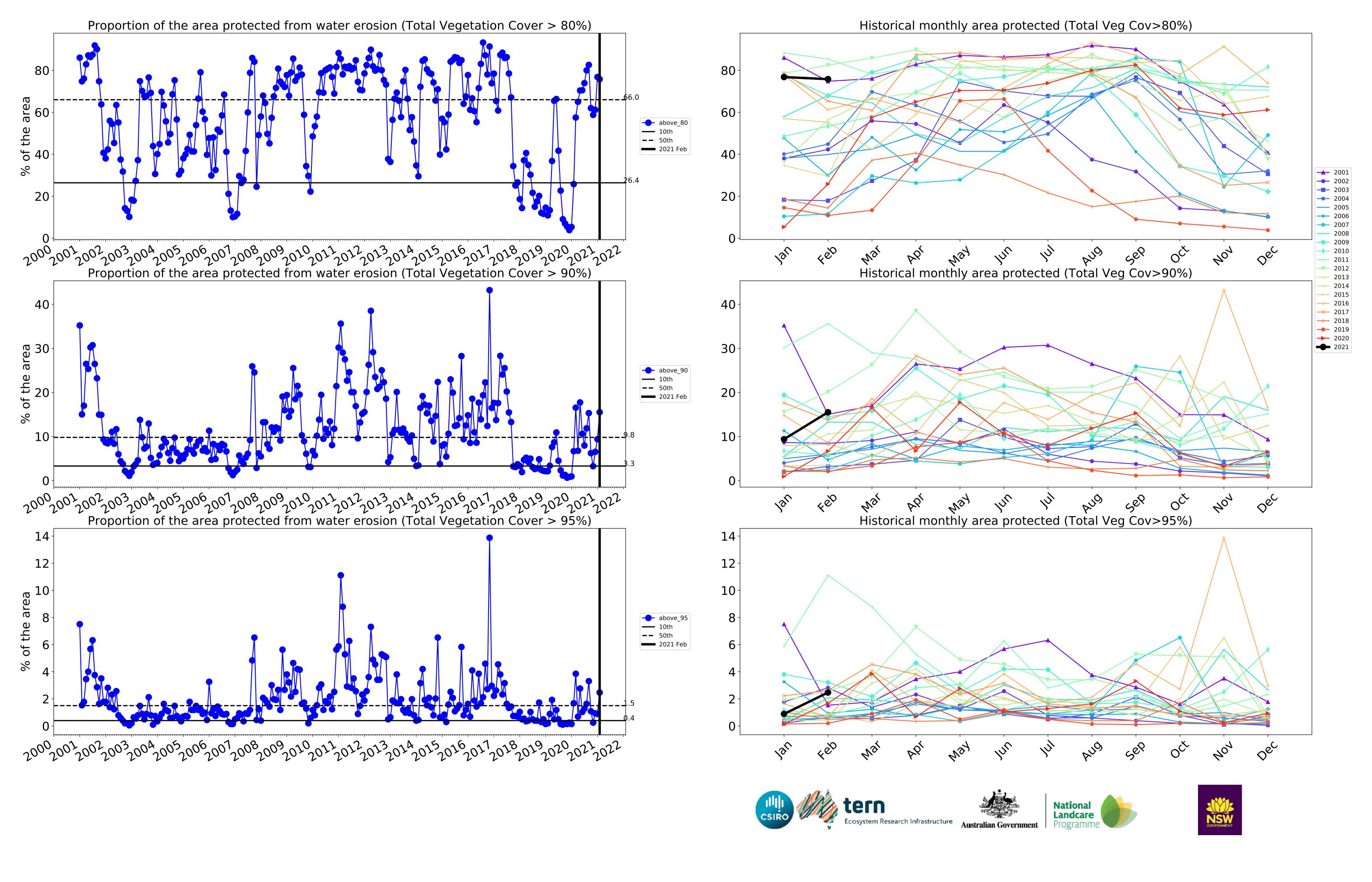
Cropping timeseries











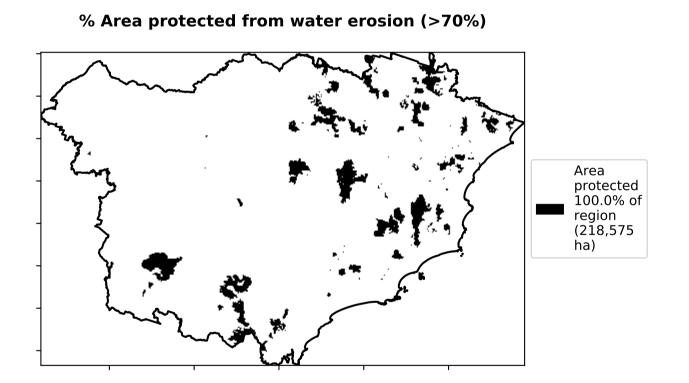
Production native forests and plantation forests

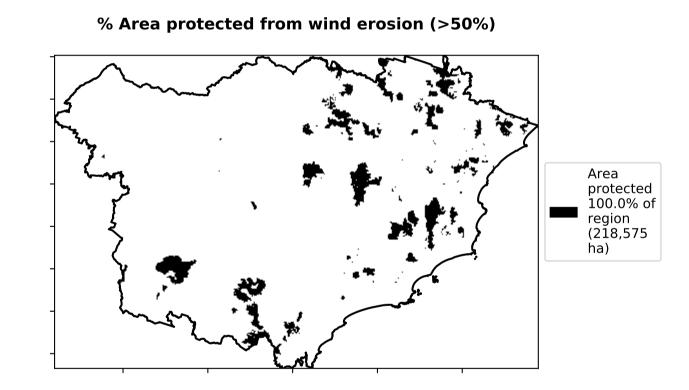
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) 1 Production native forests and plantation forests of Australia (2018)

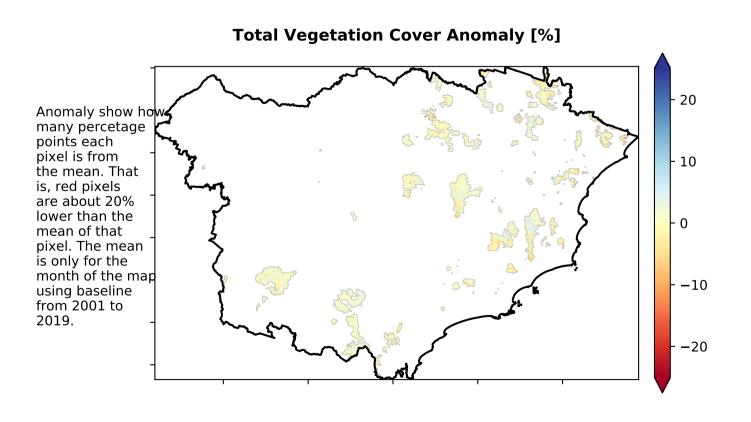
Total Vegetation Cover [%] Tuelor Idello Tuelor I

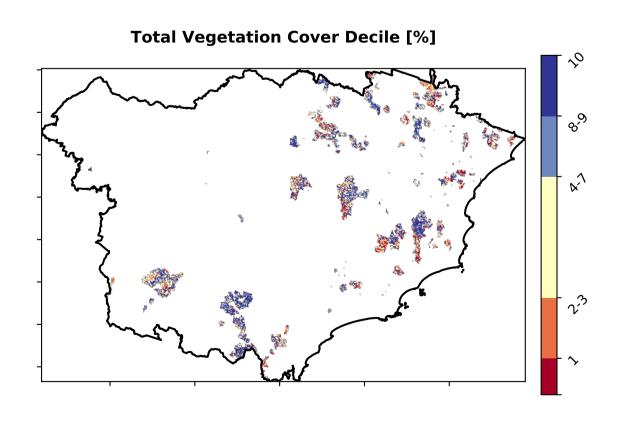
100 - 100.0% 80 - 60 - 20 - 0.0% 0.0% 0-30% 31%-50% 51%-70% 71%-100% Total Vegetation Cover class

Proportion of vegetation cover class in area









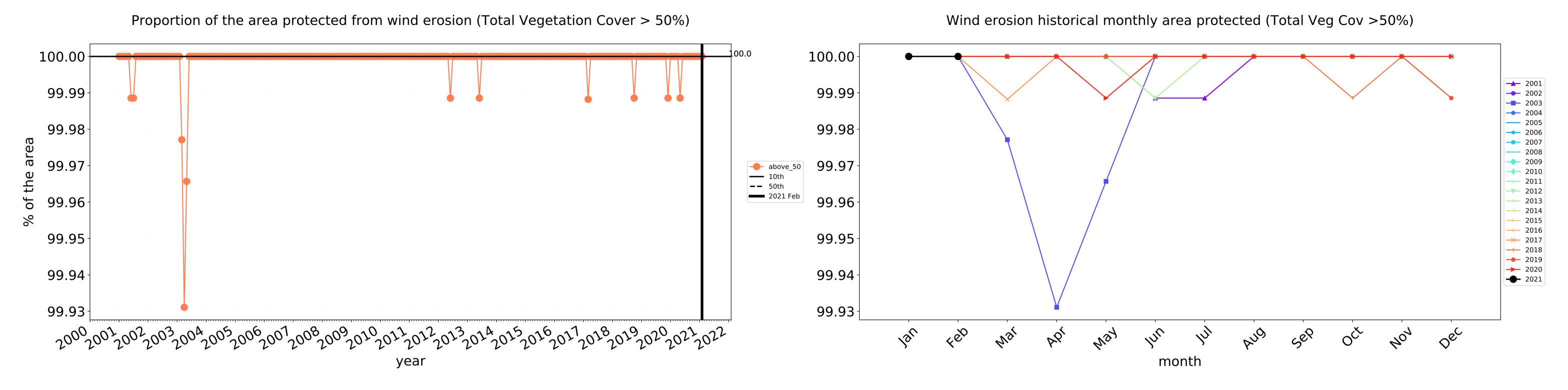


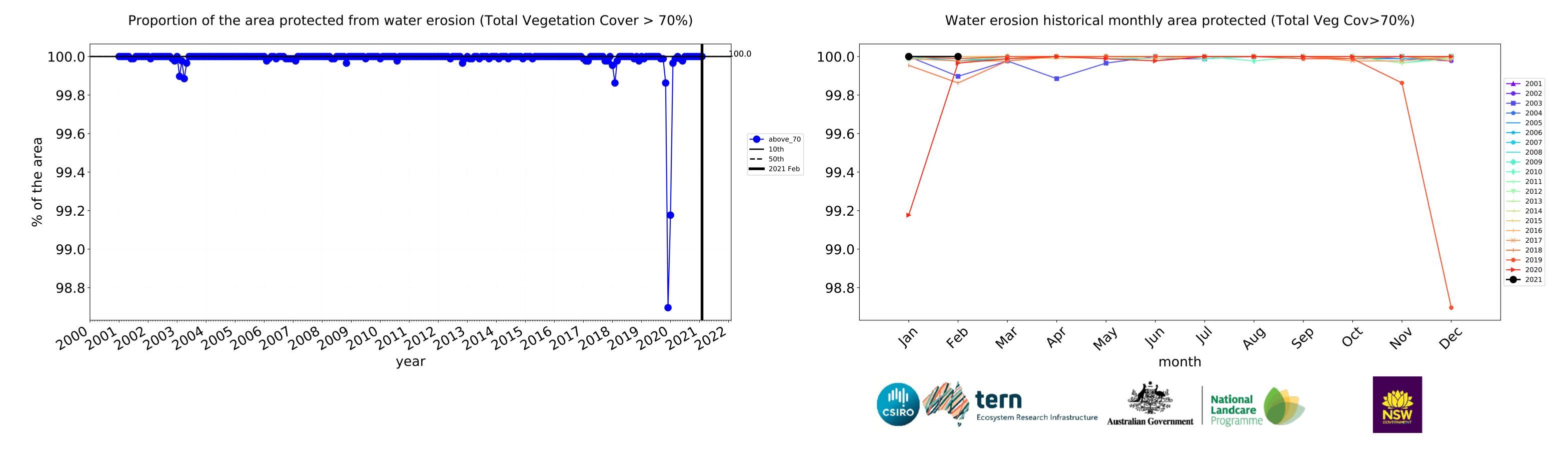


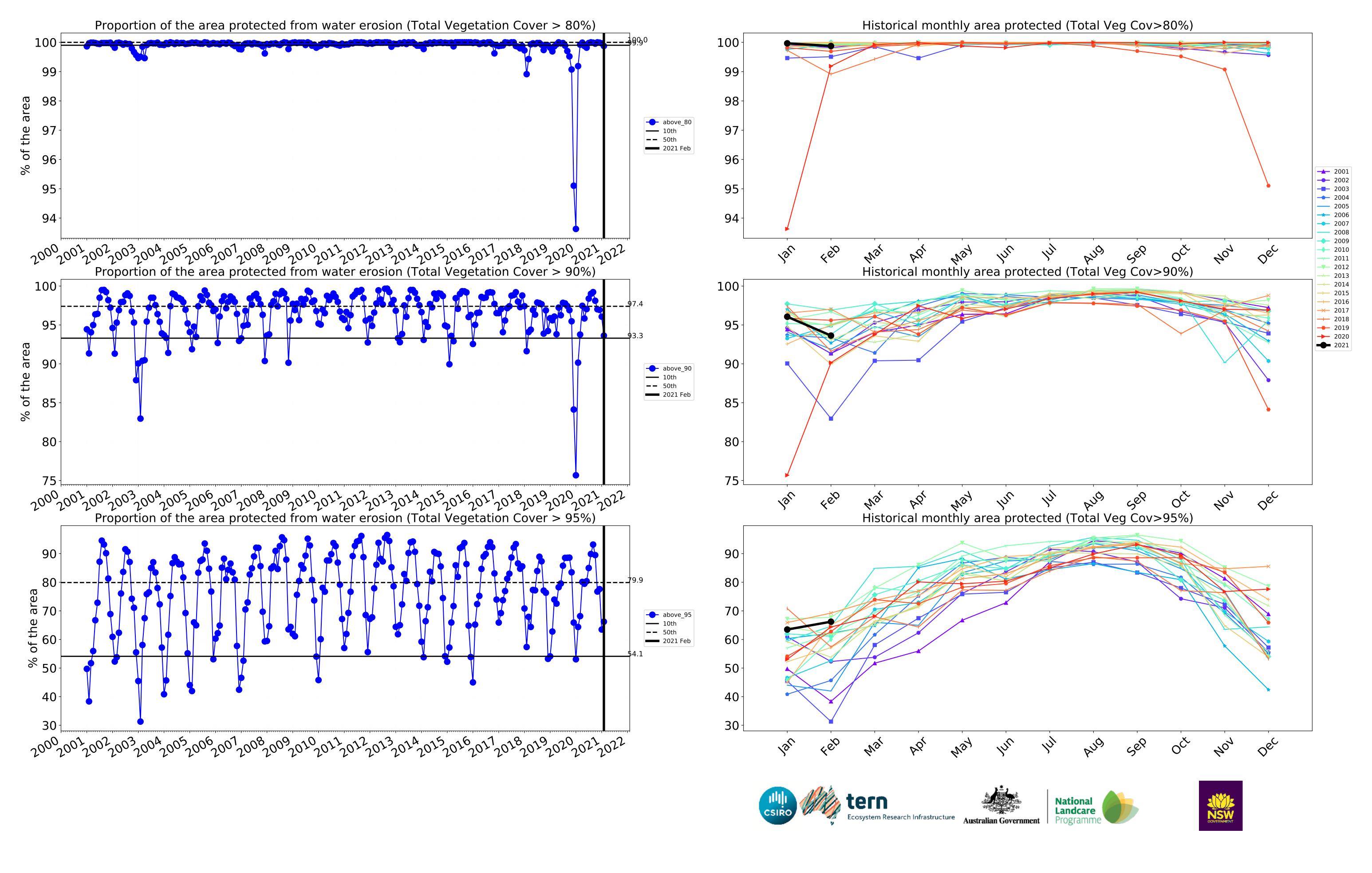




Production native forests and plantation forests timeseries







Hunter (3,240,800 ha and no data 59,625 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	3,240,800	99.9% 3,236,125	99.6% 3,227,350	98.5% 3,190,625	95.8% 3,103,450	68.6% 2,222,425	29.7% 961,550
Conservation and natural environments	1,240,950	99.9% 1,239,925	99.8% 1,238,775	99.6% 1,235,700	98.8% 1,226,650	85.8% 1,064,175	49.8% 618,125
Conservation and natural environments non forest	29,575	96.7% 28,600	94.3% 27,875	89.9% 26,575	83.7% 24,750	46.7% 13,825	16.3% 4,825
Conservation and natural environments Woodland forest	138,800	100.0% 138,800	99.9% 138,725	99.7% 138,450	98.9% 137,300	83.3% 115,625	40.7% 56,550
natural environments Forest (non woodland)	1,072,575	100.0% 1,072,525	100.0% 1,072,175	99.8% 1,070,675	99.3% 1,064,600	87.1% 934,725	51.9% 556,750
Agriculture	1,580,875	100.0% 1,580,725	100.0% 1,580,250	99.6% 1,574,275	97.1% 1,534,600	57.0% 901,275	11.6% 182,775
Grazing	1,502,875	100.0% 1,502,725	100.0% 1,502,250	99.7% 1,498,200	98.0% 1,472,775	59.2% 889,050	12.0% 180,975
Grazing non forest	1,213,100	100.0% 1,212,975	100.0% 1,212,600	99.7% 1,209,050	97.7% 1,185,775	55.0% 666,900	9.3% 112,375
Grazing Woodland forest	120,600	100.0% 120,575	99.9% 120,500	99.7% 120,250	99.0% 119,450	72.0% 86,775	17.0% 20,525
Grazing - Forest (non woodland)	169,175	100.0% 169,175	100.0% 169,150	99.8% 168,900	99.0% 167,550	80.0% 135,375	28.4% 48,075
Cropping	50,625	100.0% 50,625	100.0% 50,625	96.9% 49,050	75.8% 38,375	15.5% 7,850	2.5% 1,250
Production native forests and plantation forests	218,575	100.0% 218,575	100.0% 218,575	100.0% 218,575	99.9% 218,300	93.6% 204,650	66.2% 144,725







