Total vegetation cover soil protection Region:LGA Wingecarribee (A) 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:

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









Date: July 2021

Vegetation Cover Jul 2021

Land use and forest cover

Catchment Scale

of Australia (2018)

(2018) and Forests

of Australia (2018)

Anomaly show how many percetage points each pixel is from

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

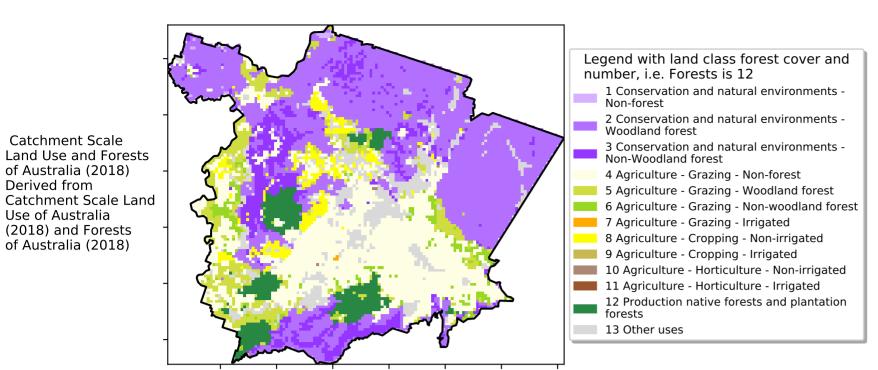
mean of that

using baseline from 2001 to 2019.

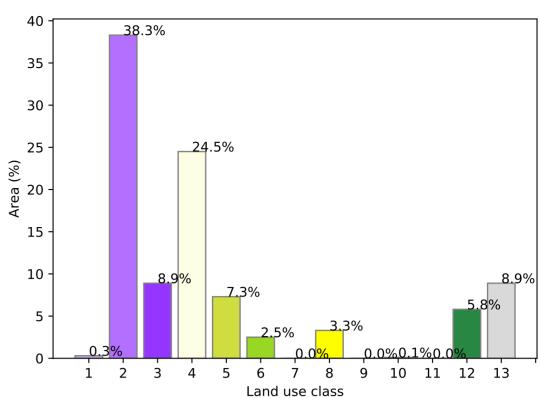
pixel. The mean is only for the month of the map

Derived from

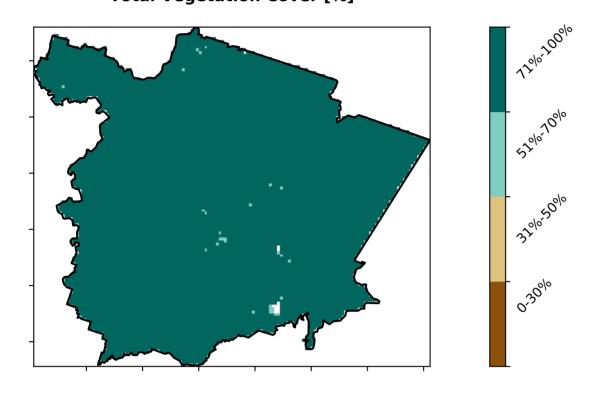
Use of Australia



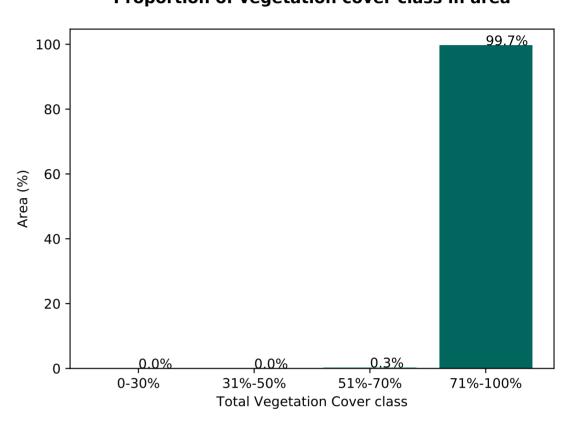
Proportion of each land class in area



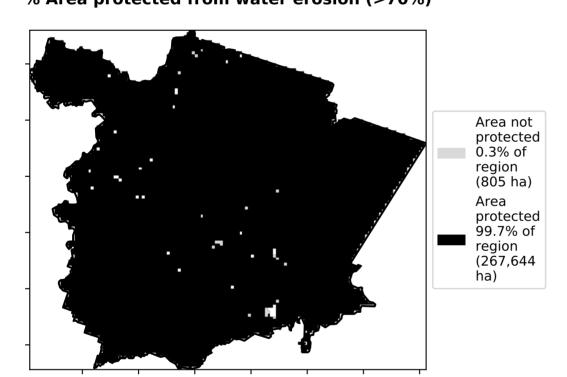
Total Vegetation Cover [%]



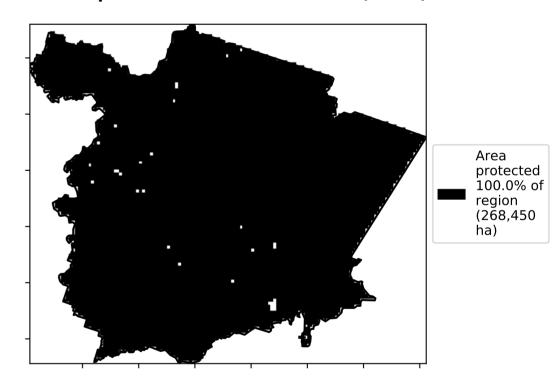
Proportion of vegetation cover class in area



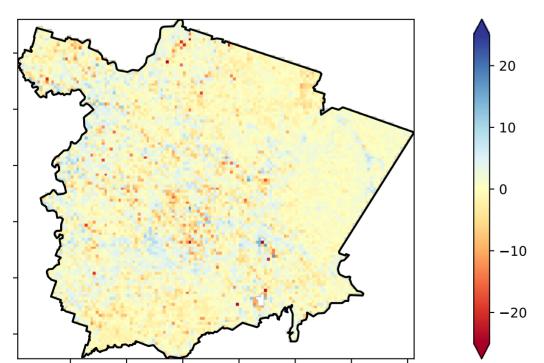
% Area protected from water erosion (>70%)



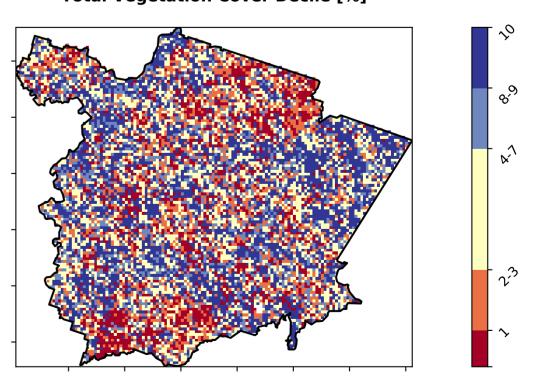
% Area protected from wind erosion (>50%)



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.

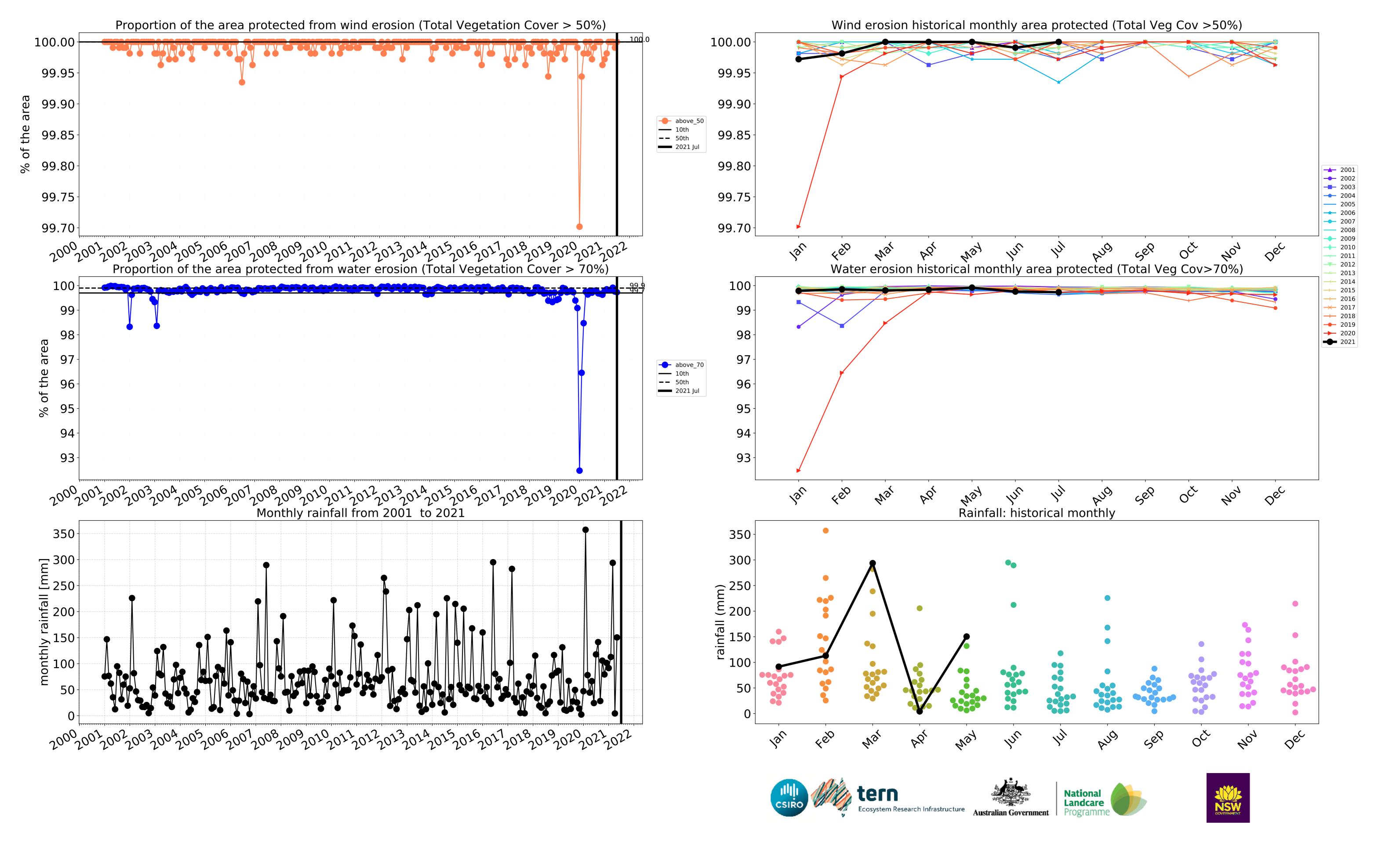


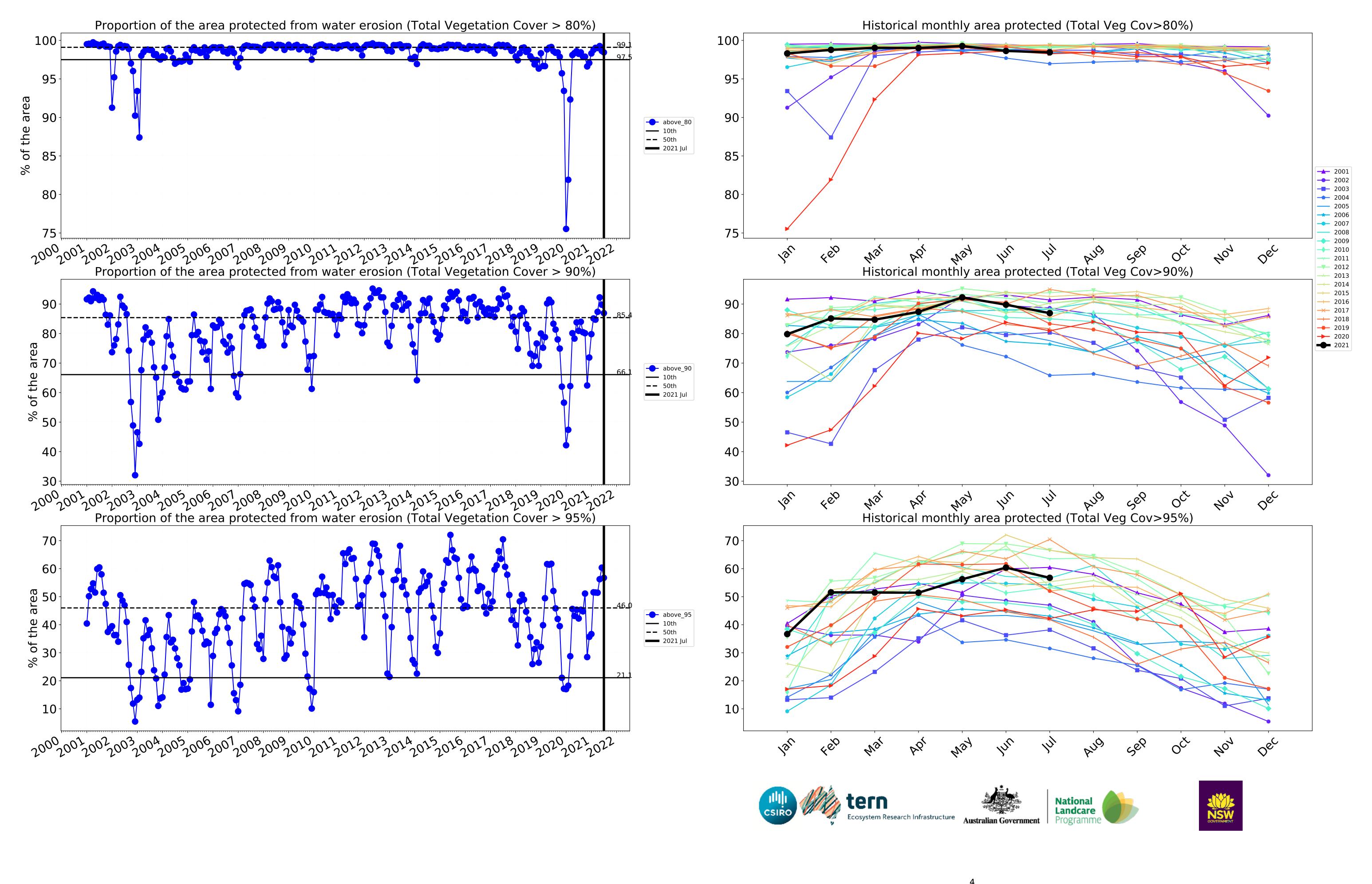












Conservation and natural environments

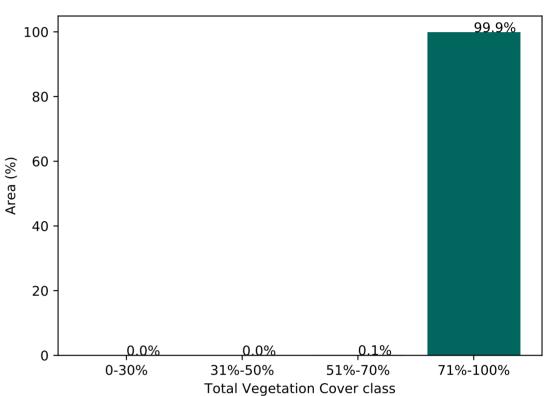
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Australia (2018) Of Australia (2018) Australia (2018) Of Australia (2018)

80 - 80.6% - 8

Total Vegetation Cover [%]

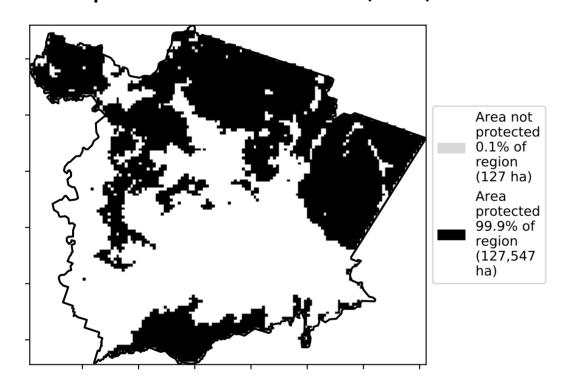
Proportion of vegetation cover class in area

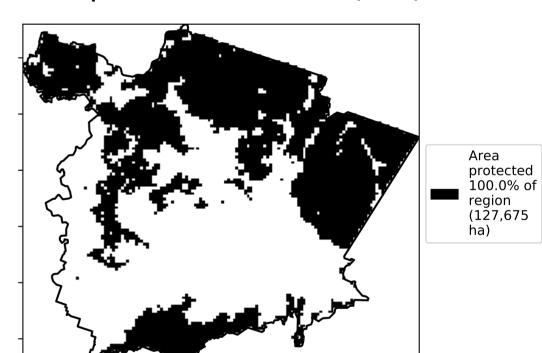
Land use class





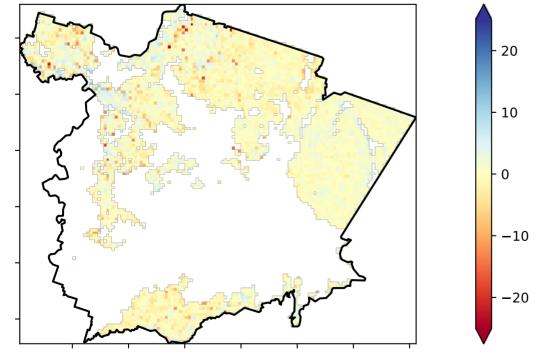
% Area protected from wind erosion (>50%)





Total Vegetation Cover Anomaly [%]

Total Vegetation Cover Anomaly [76]



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 [%]



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 month of the map

using baseline from 2001 to 2019.



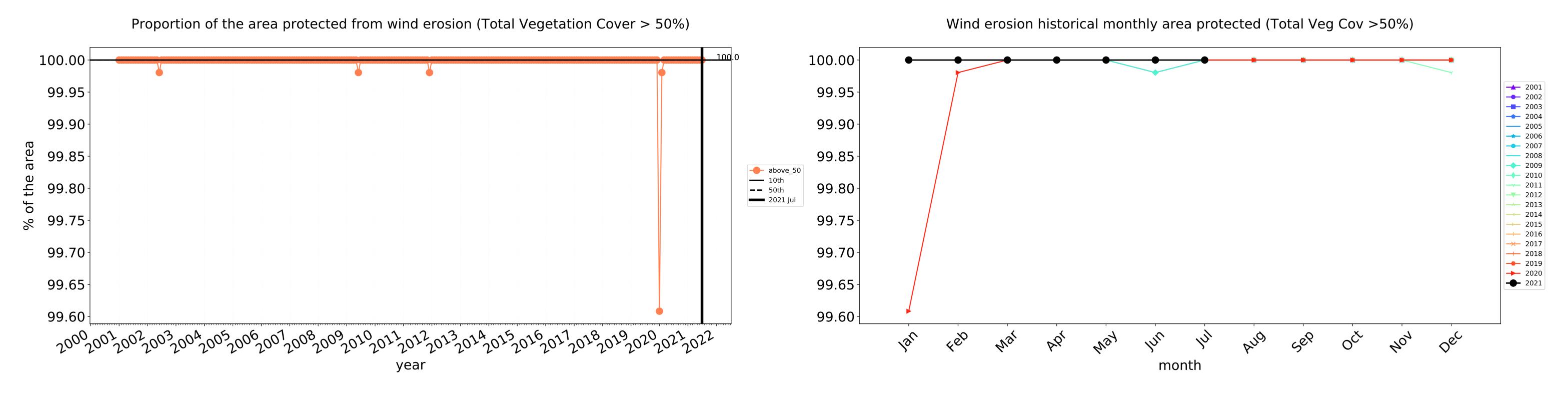


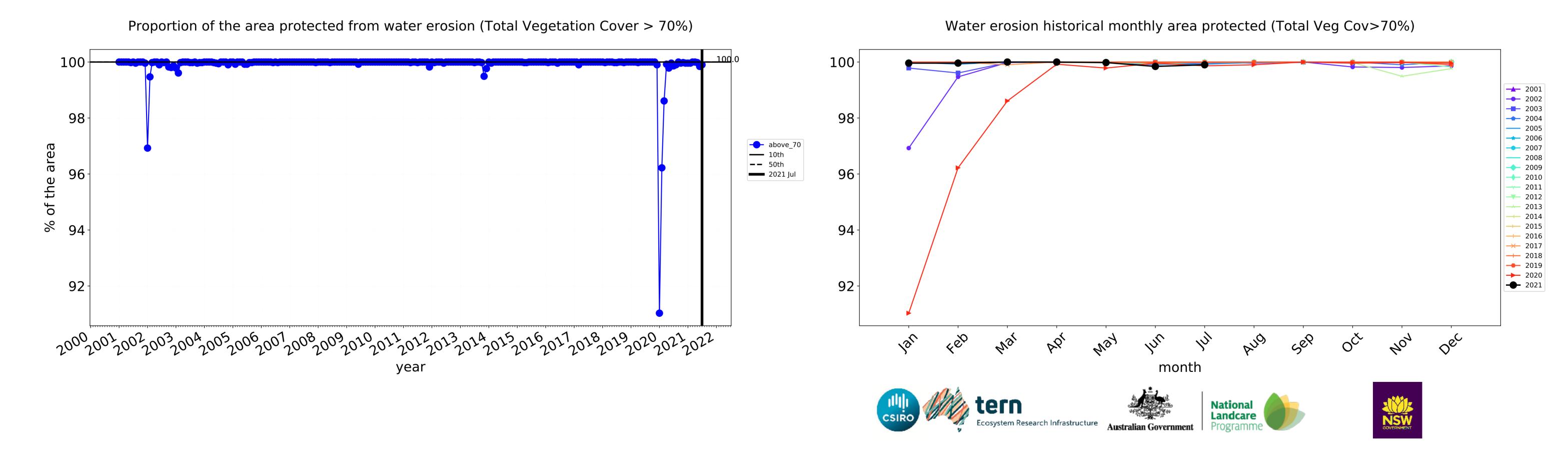


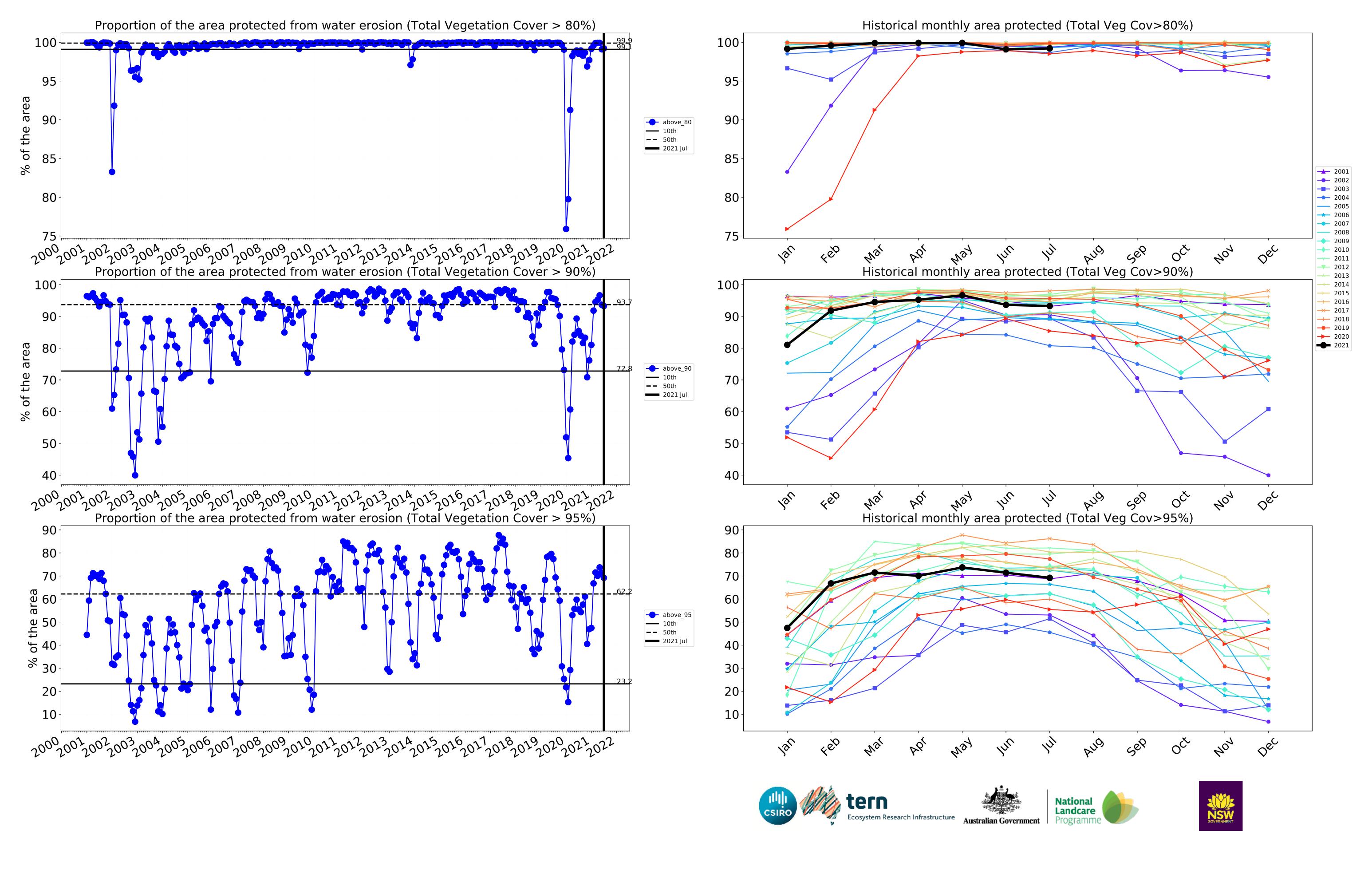




Conservation and natural environments timeseries

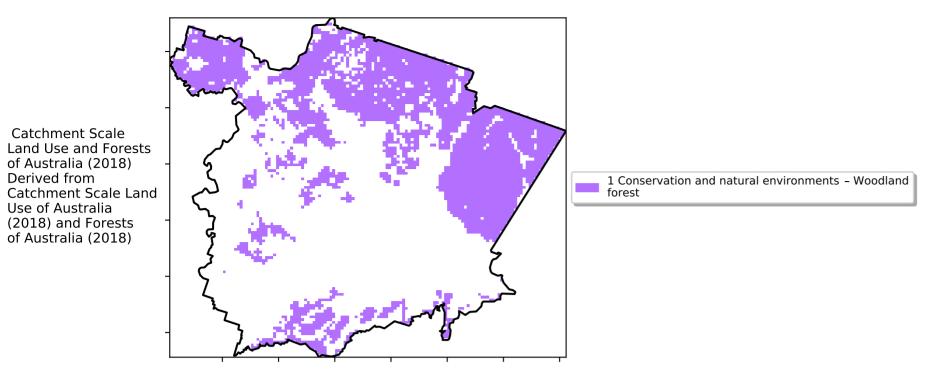




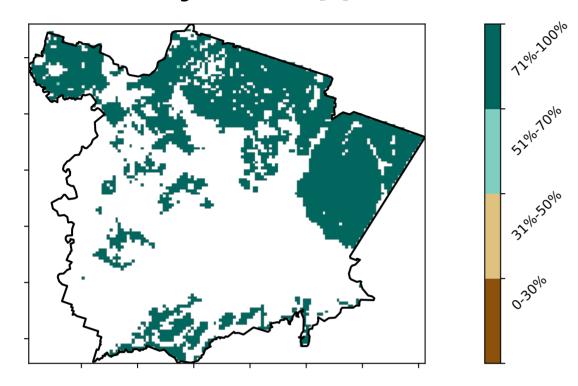


Conservation and natural environments Woodland forest

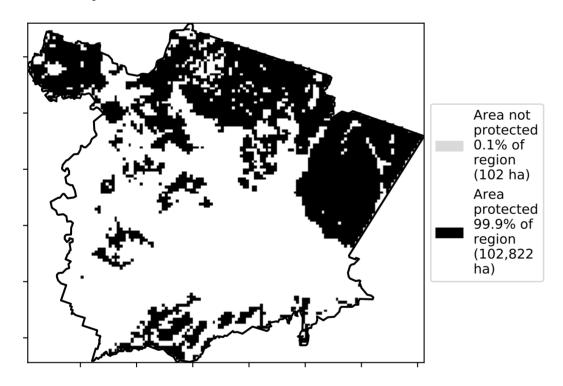
Land use and forest cover



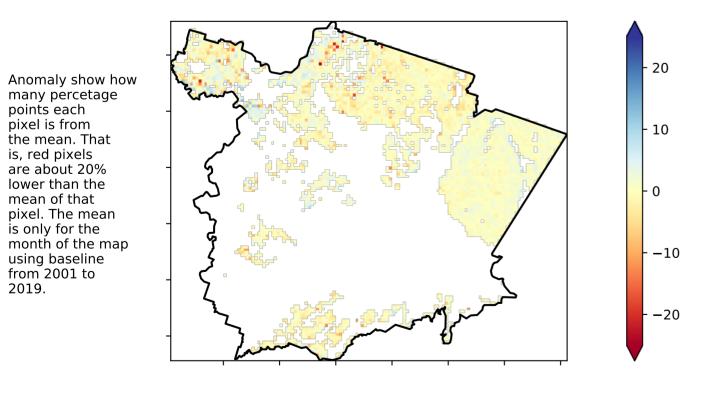
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

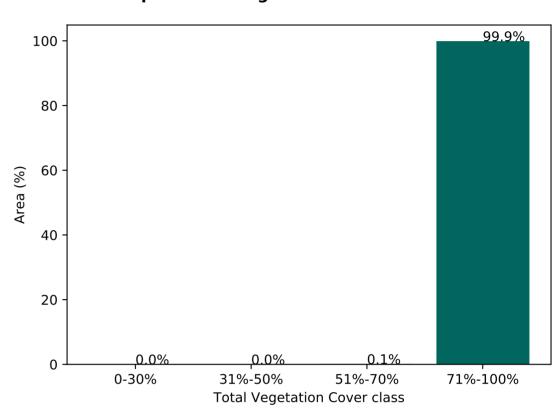


Total Vegetation Cover Anomaly [%]

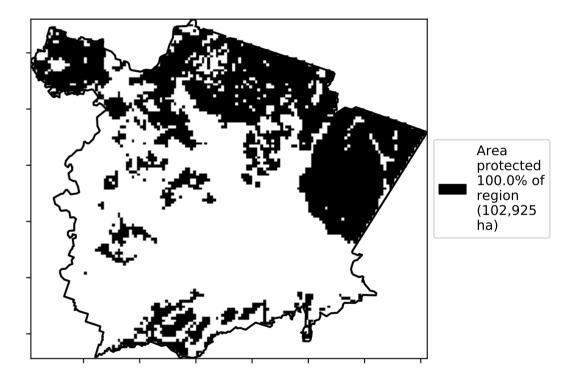


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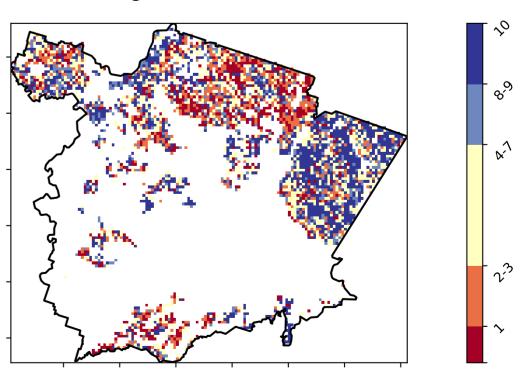
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



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.

is only for the month of the map

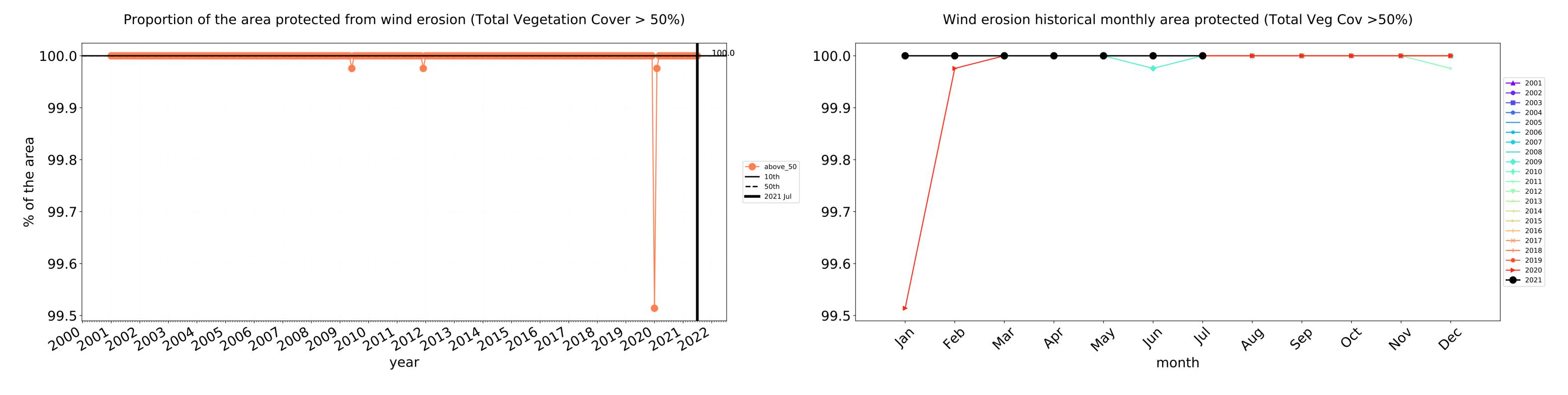


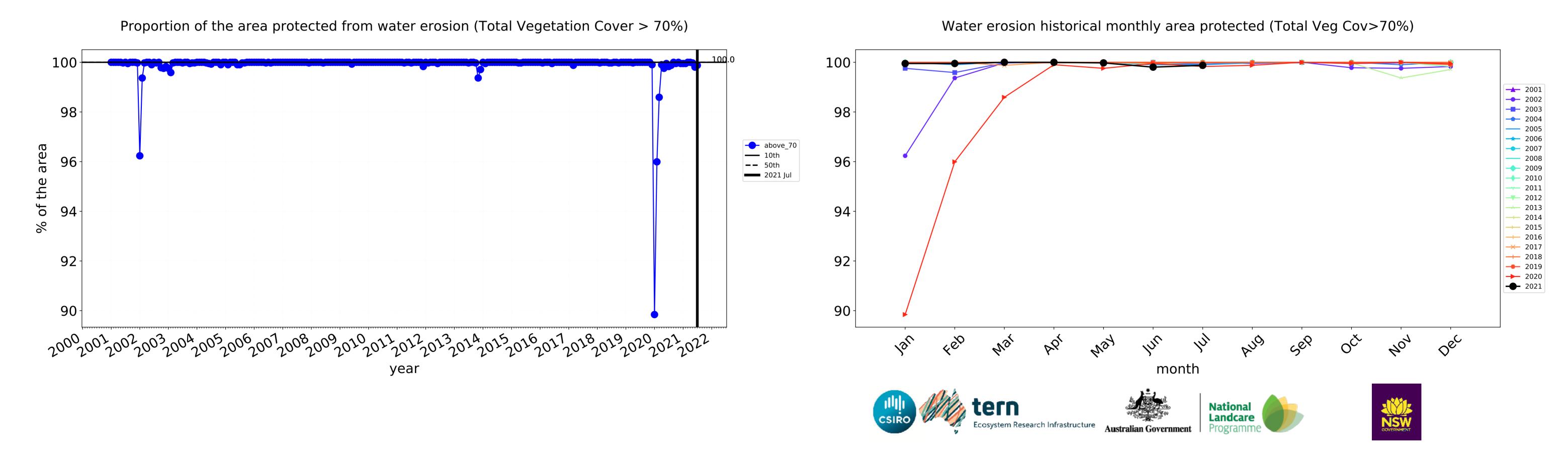


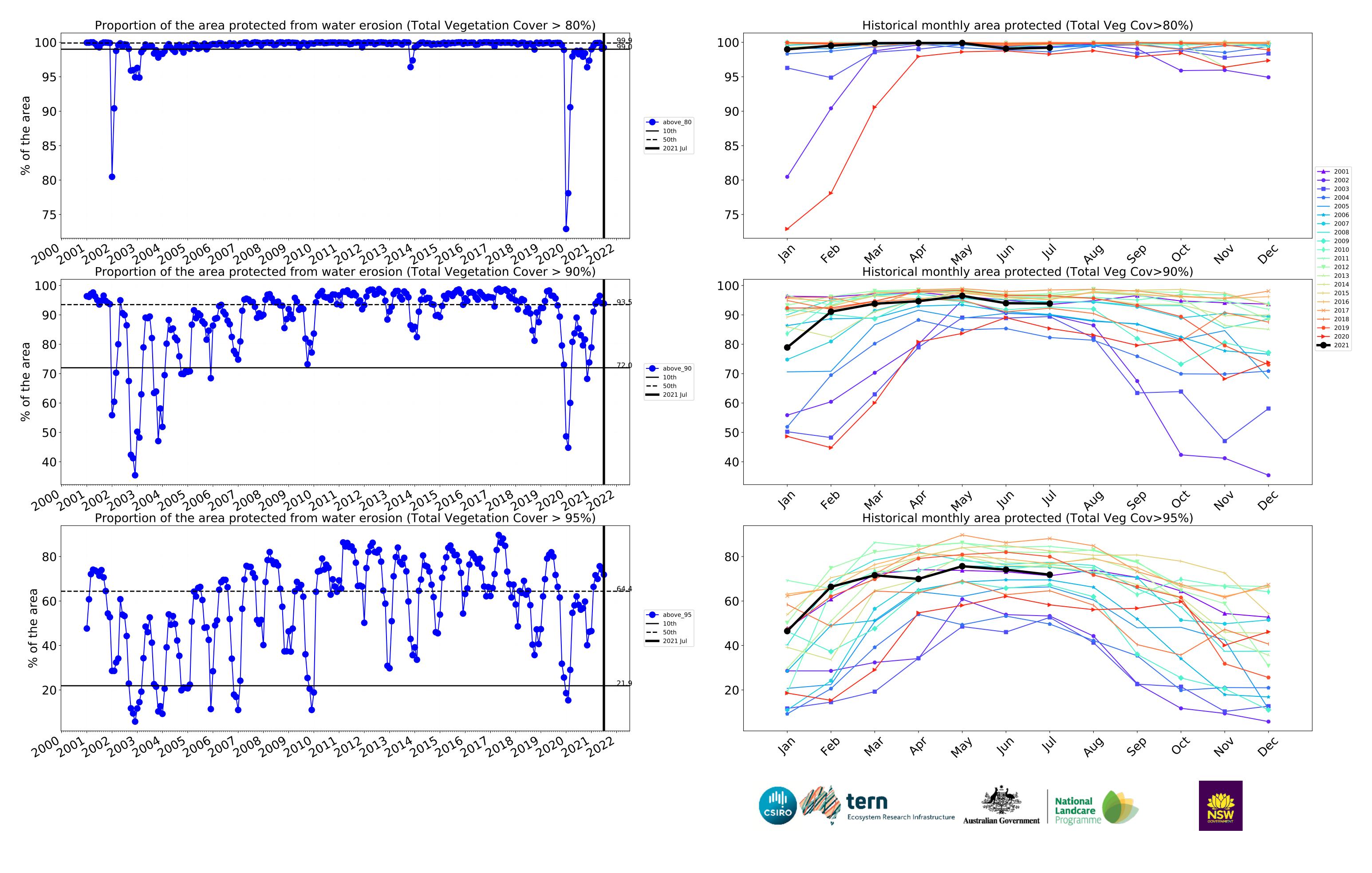








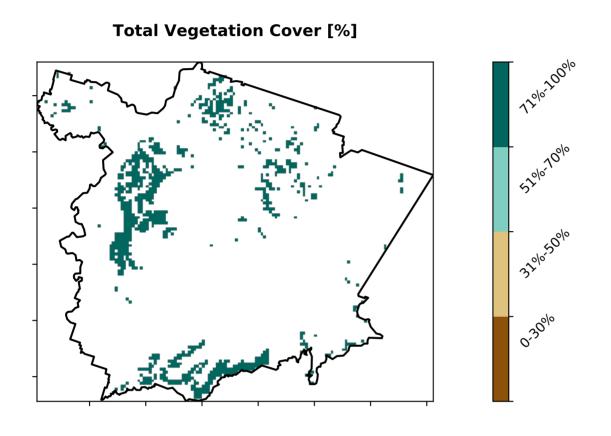


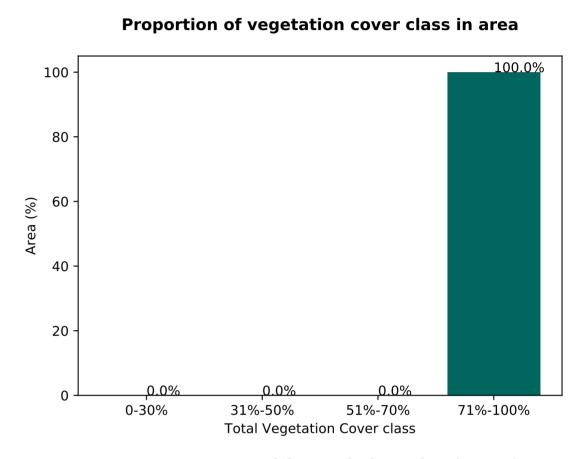


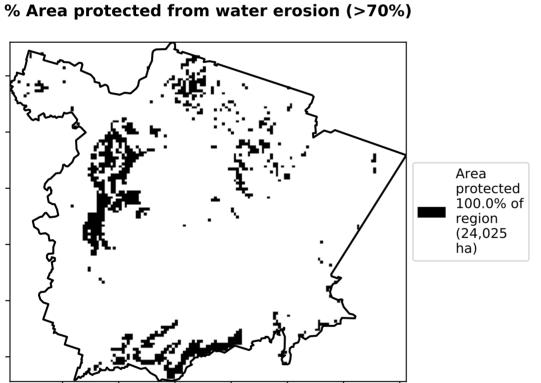
Conservation and natural environments Forest (non woodland)

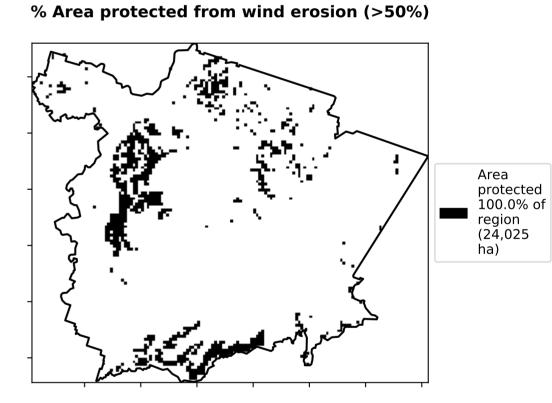
Land use and forest cover 1 Conservation and natural environments – Non-woodland forest

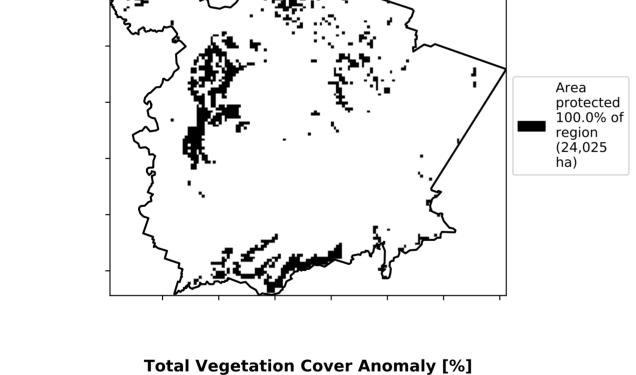
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

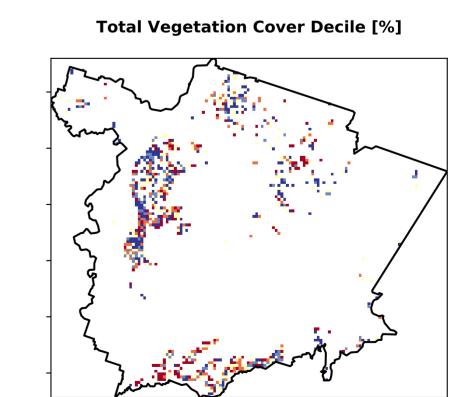


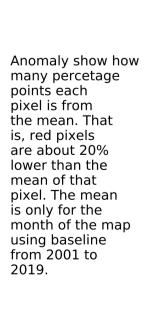


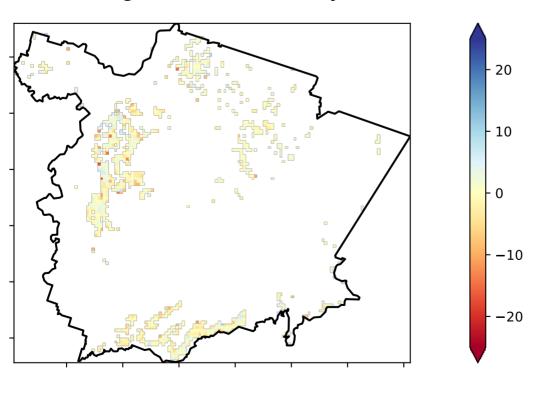












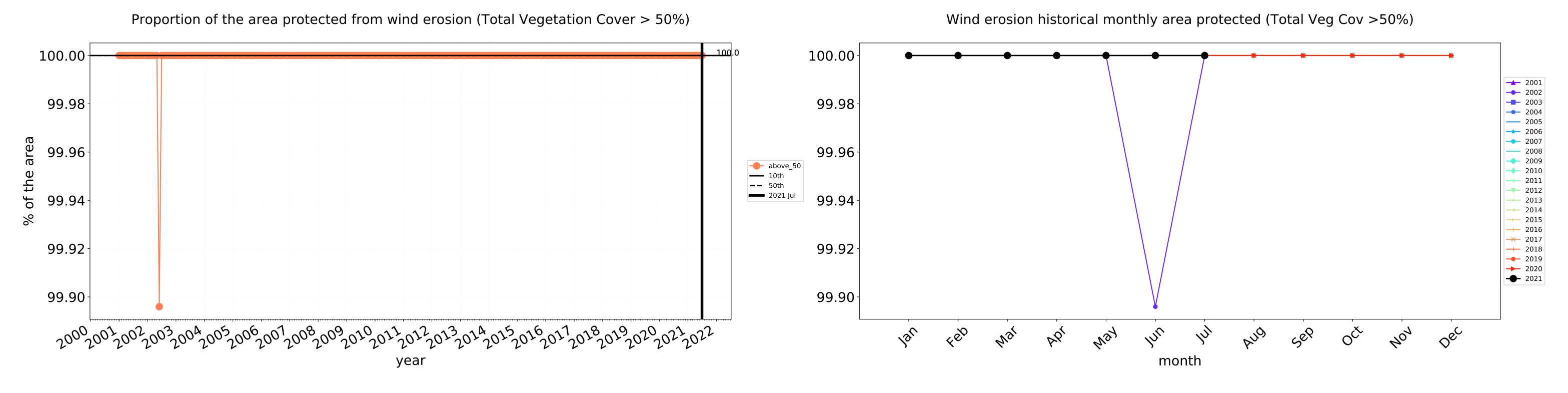
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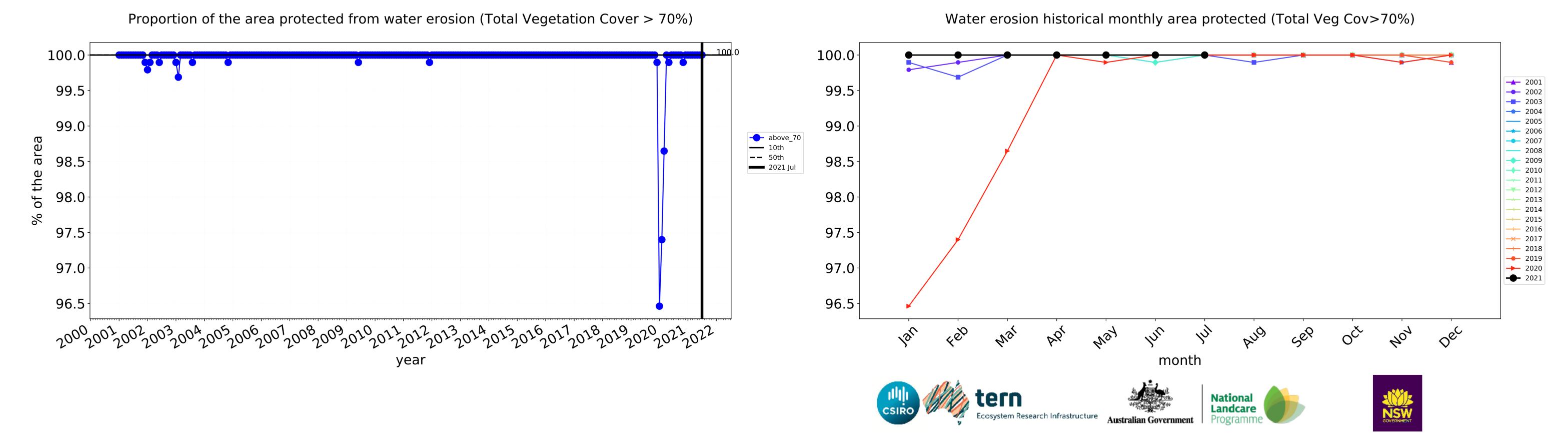


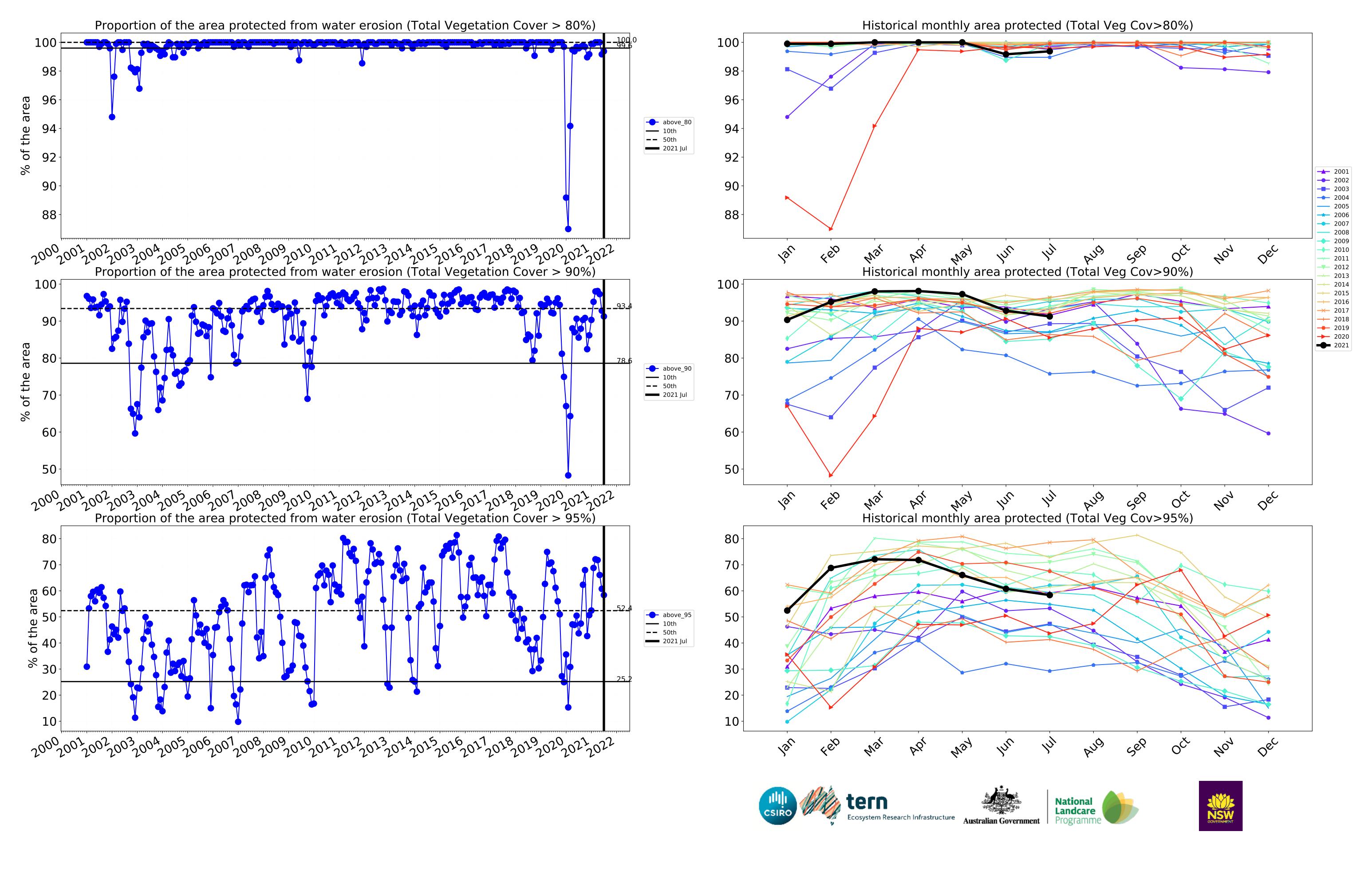










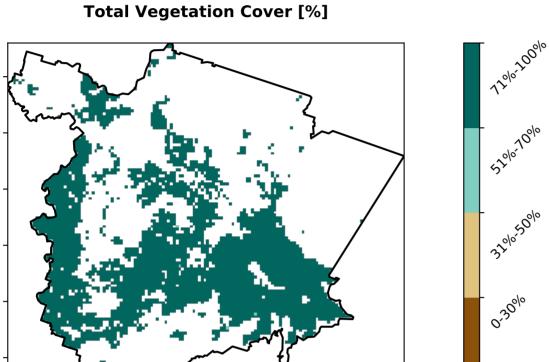


Agriculture

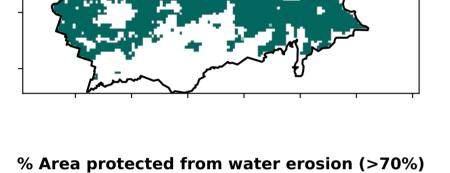
Land use and forest cover 1 Agriculture - Grazing - Non forest Catchment Scale 2 Agriculture - Grazing - Woodland forest Land Use and Forests of Australia (2018) 3 Agriculture - Grazing - Non-woodland forest Derived from 4 Agriculture - Grazing - Irrigated Catchment Scale Land 5 Agriculture - Cropping - Non-irrigated Use of Australia 6 Agriculture - Cropping - Irrigated (2018) and Forests 7 Agriculture - Horticulture - Non-irrigated of Australia (2018) 8 Agriculture - Horticulture - Irrigated

<u>65.</u>0% 60 50 Area (%) 19.4% 20 -10 -Land use class

Proportion of each land class in area



Proportion of vegetation cover class in area 99.9% 100 -80 Area (%) 60 40 20 0.0% 0.1%

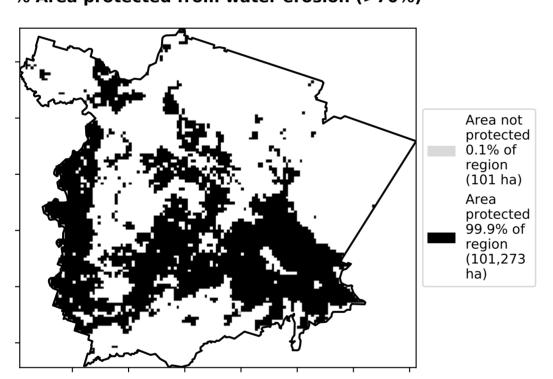


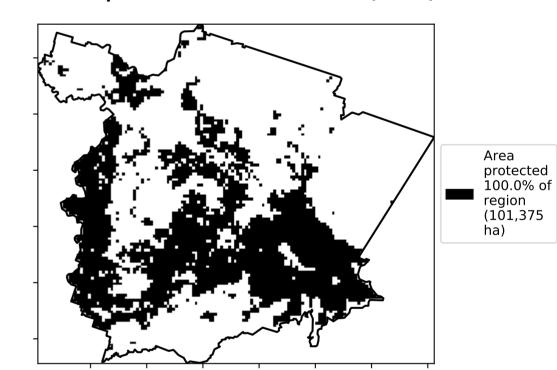
% Area protected from wind erosion (>50%)

Total Vegetation Cover class

31%-50%

0-30%





51%-70%

71%-100%



Anomaly show how many percetage points each pixel is from

the mean. That is, red pixels

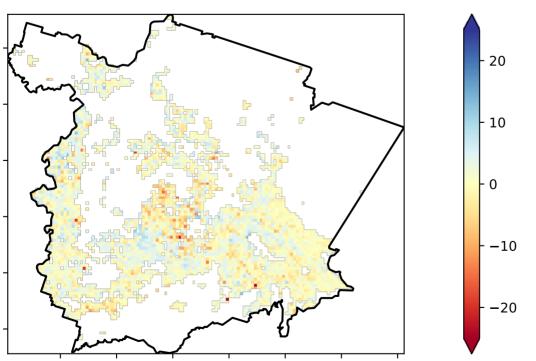
are about 20% lower than the mean of that

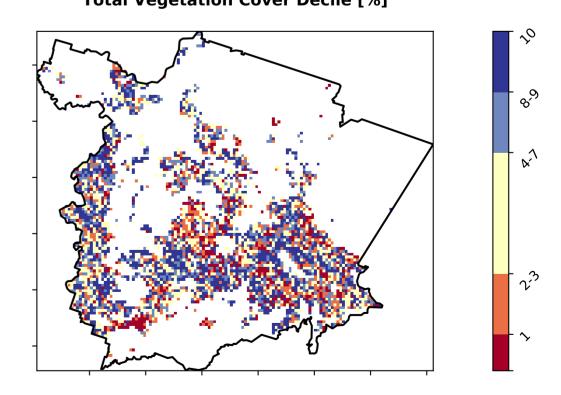
pixel. The mean

using baseline from 2001 to 2019.

is only for the month of the map

Total Vegetation Cover Decile [%]





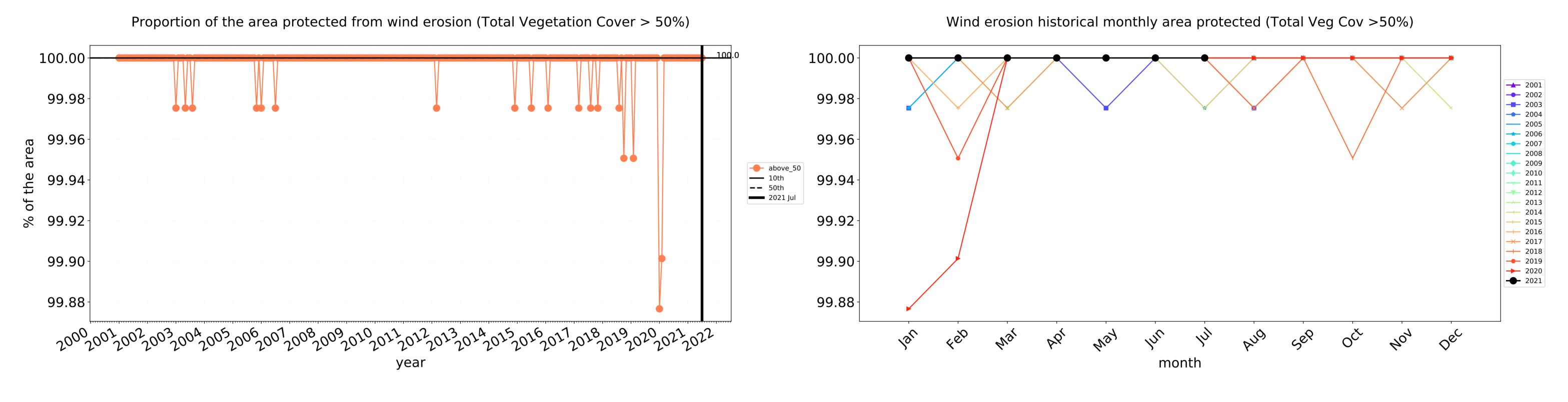
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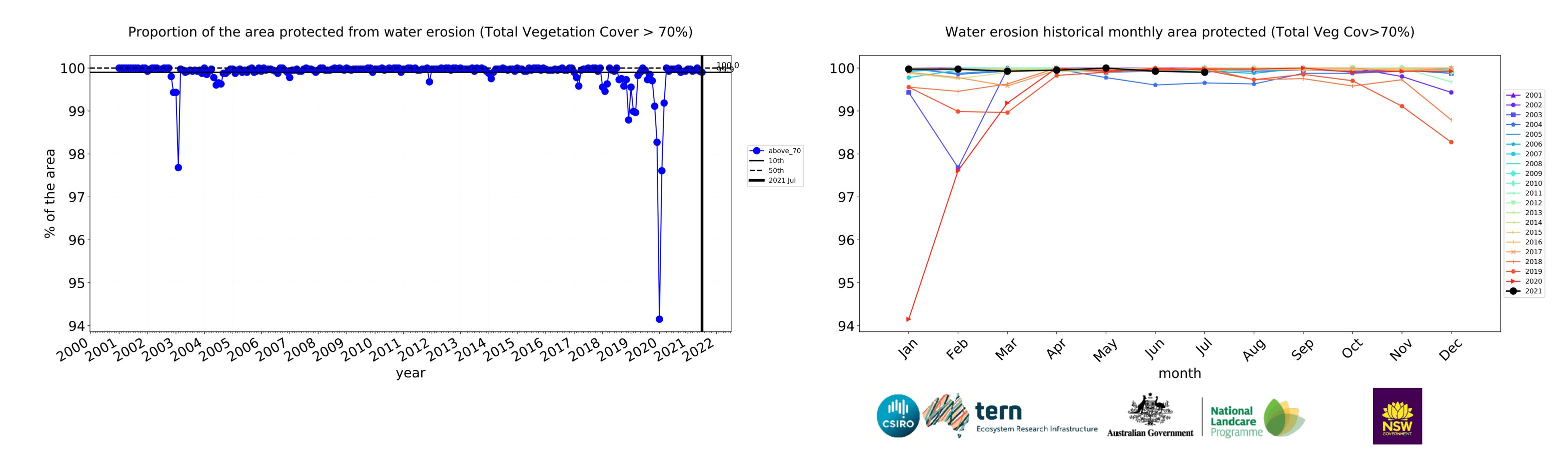


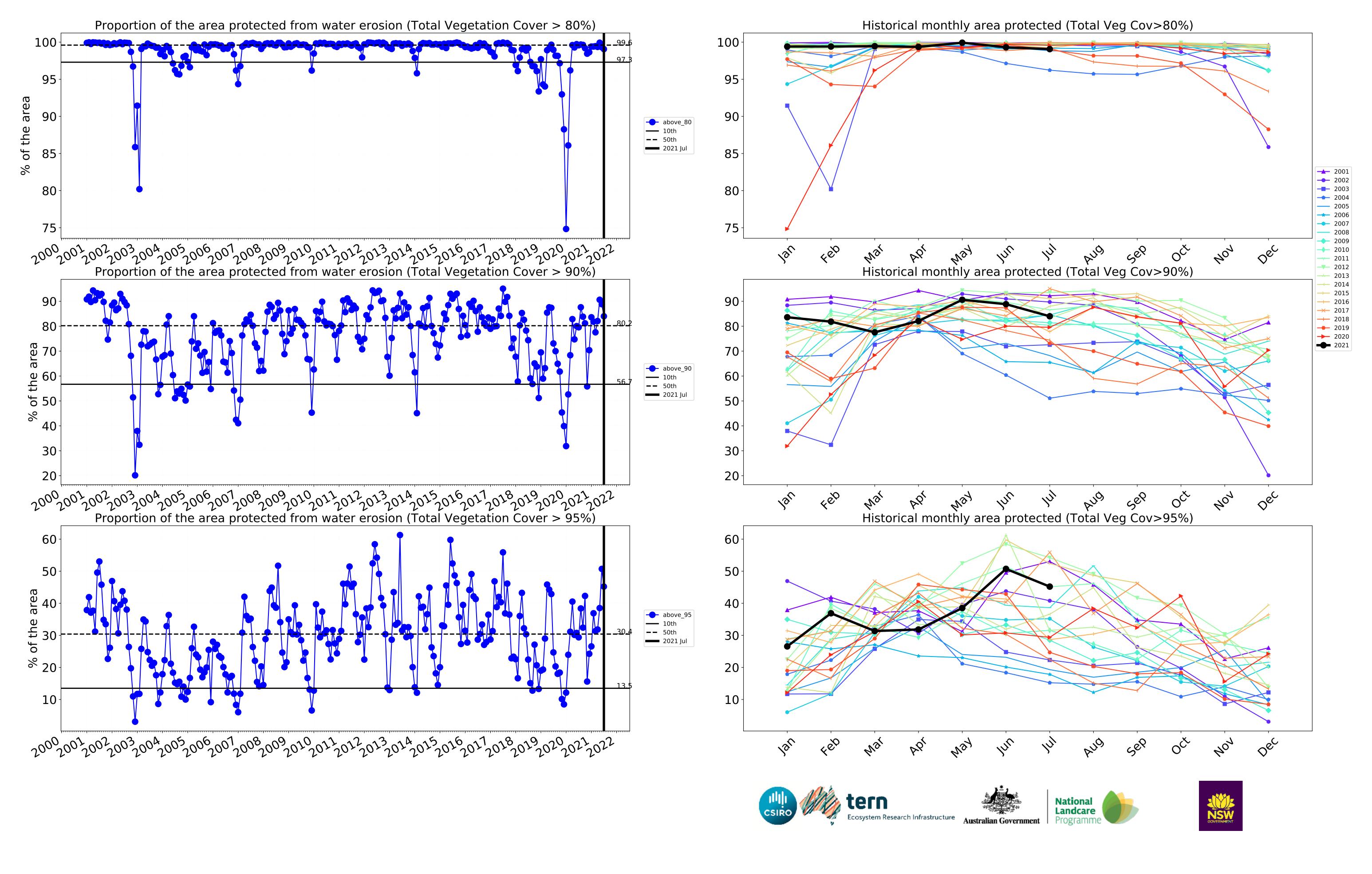




Agriculture timeseries





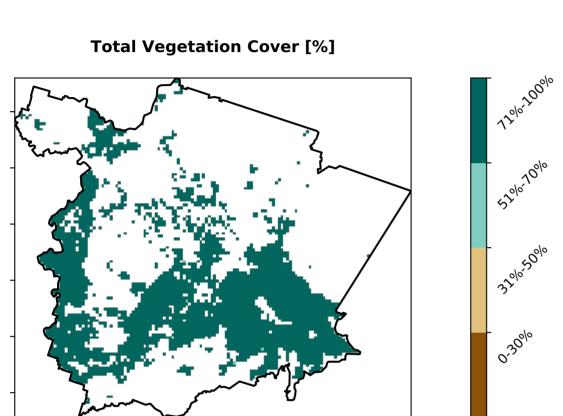


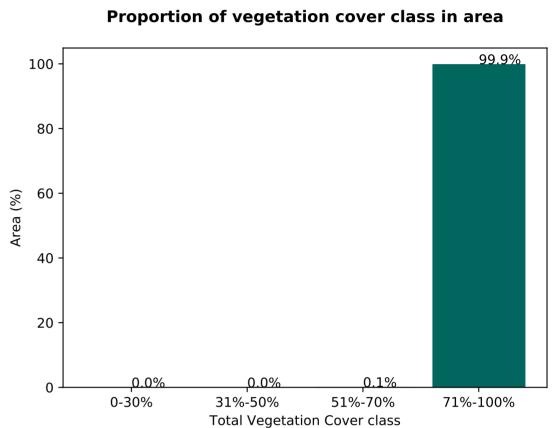
Grazing

Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) 1 Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest

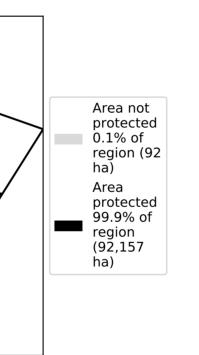
71.4% 70 60 50 Area (%) 21.3% 20 -10 7.3% 2 3 Land use class

Proportion of each land class in area

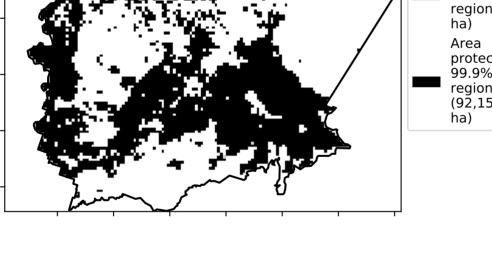




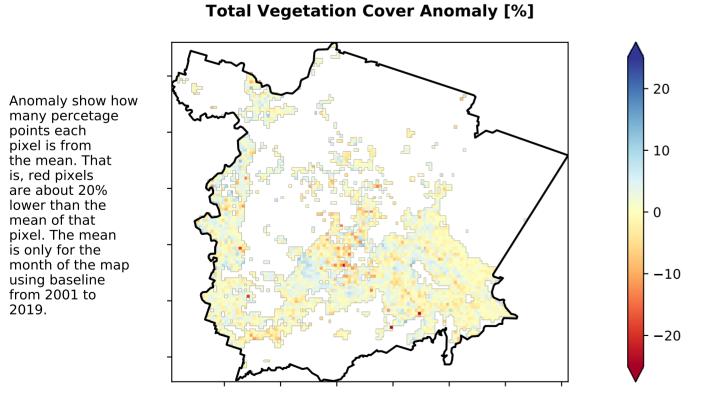


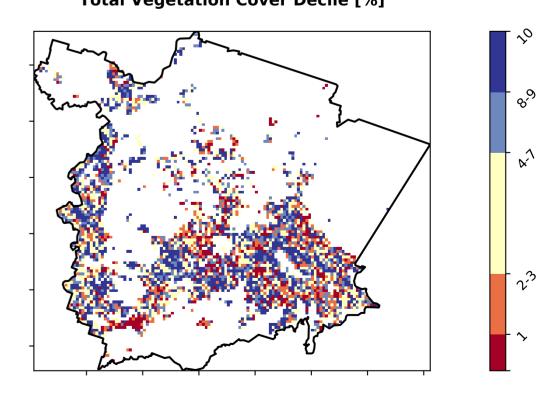


% Area protected from wind erosion (>50%) Area protected 100.0% of region (92,250 ha)



Total Vegetation Cover Decile [%]





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.



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

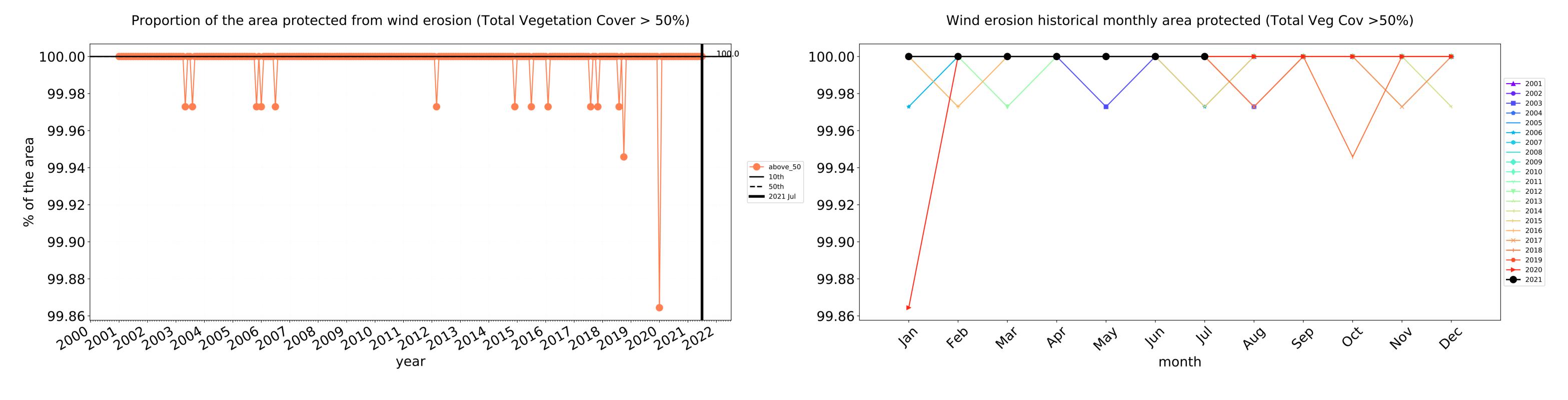


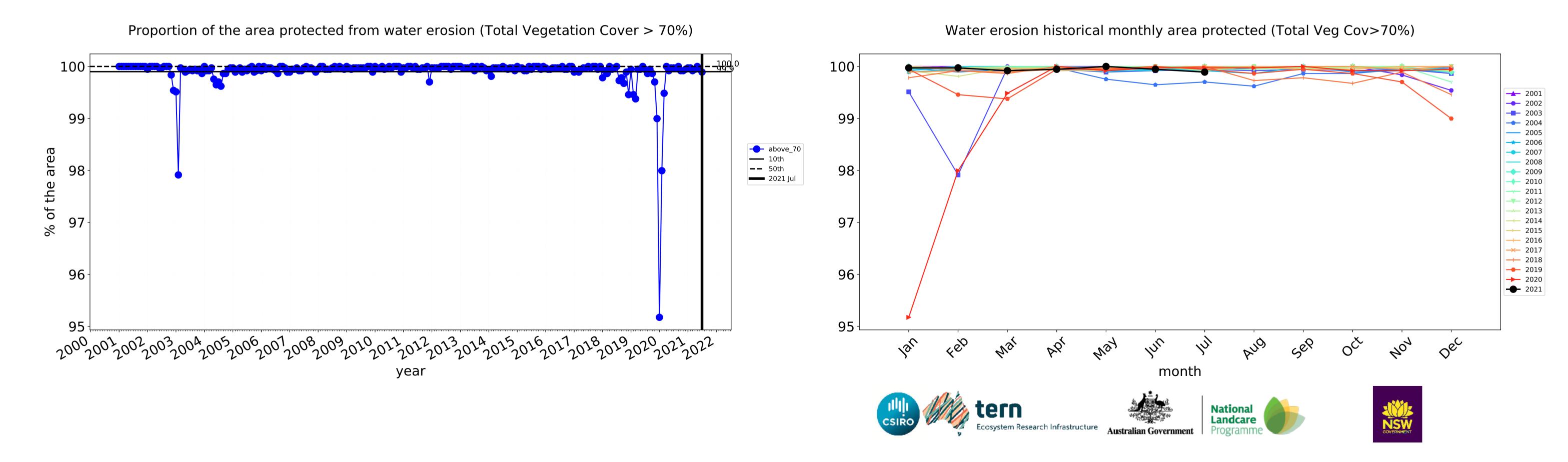


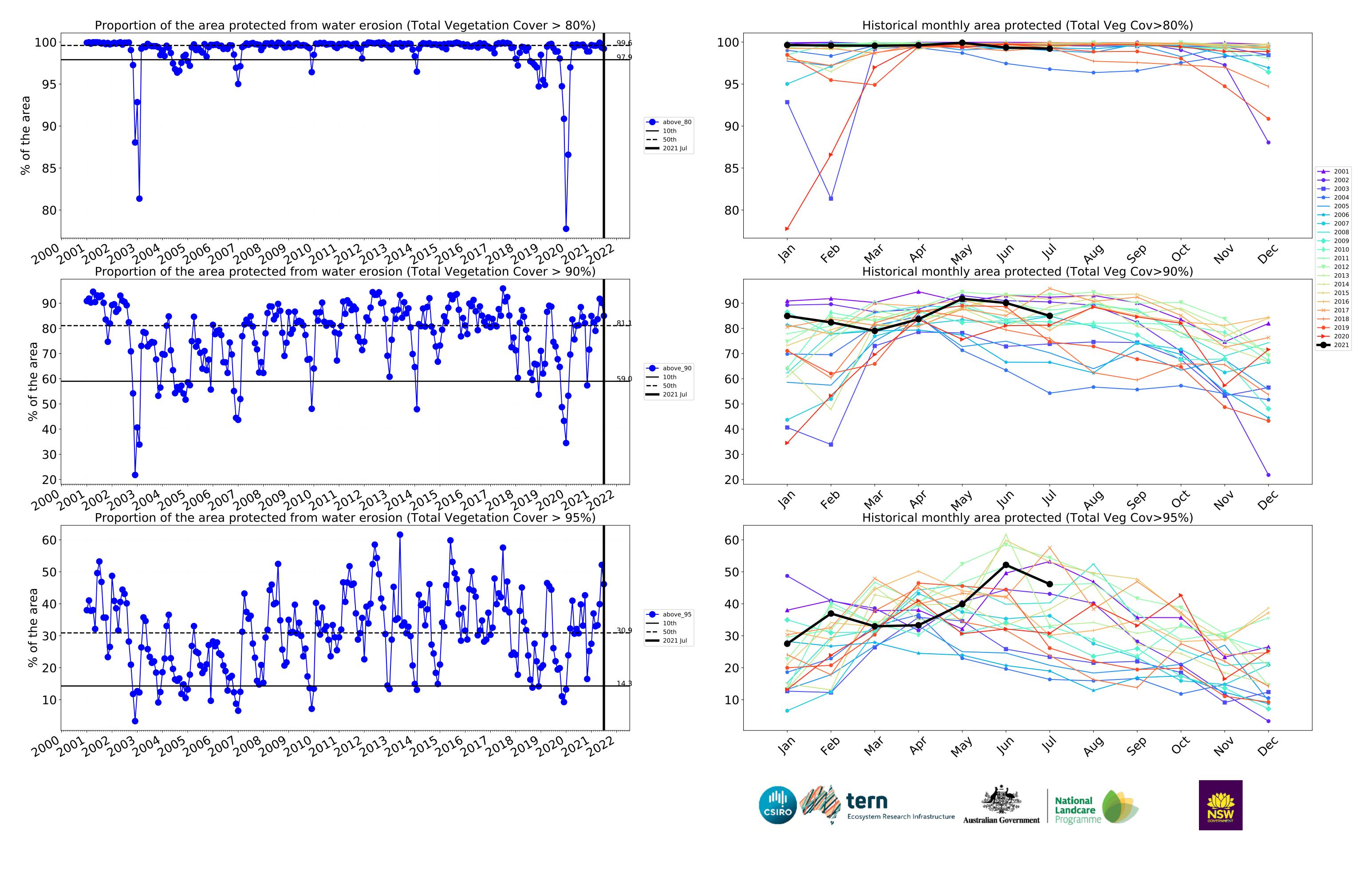




Grazing timeseries







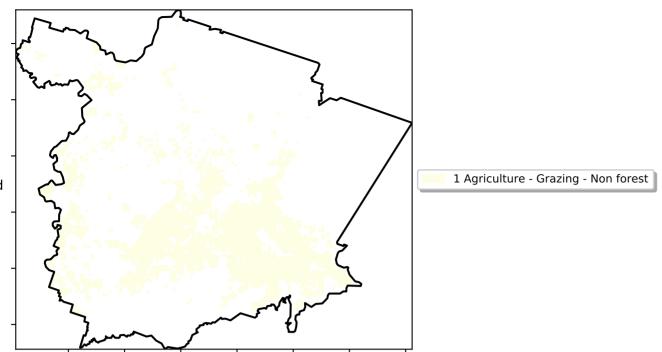
Grazing non forest

Land use and forest cover

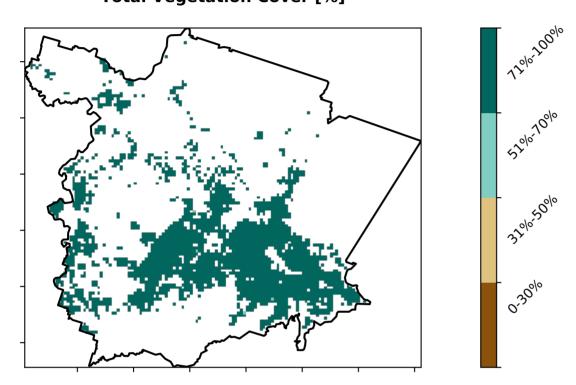
Catchment Scale
Land Use and Forests
of Australia (2018)
Derived from
Catchment Scale Land
Use of Australia
(2018) and Forests
of Australia (2018)

lower than the

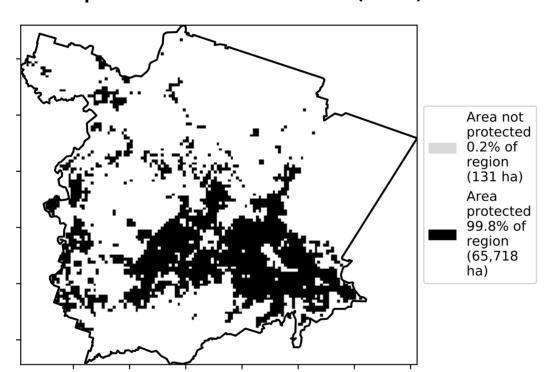
mean of that



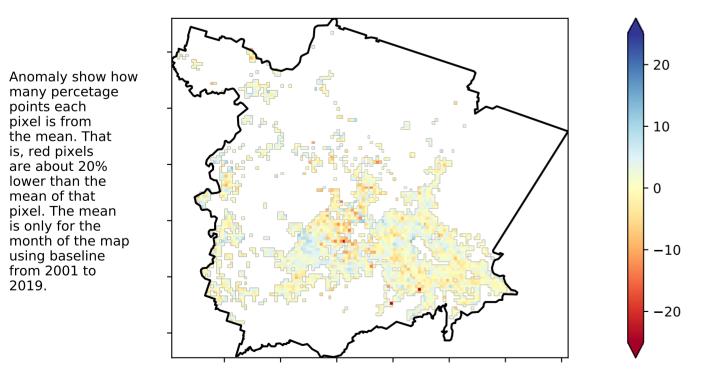
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

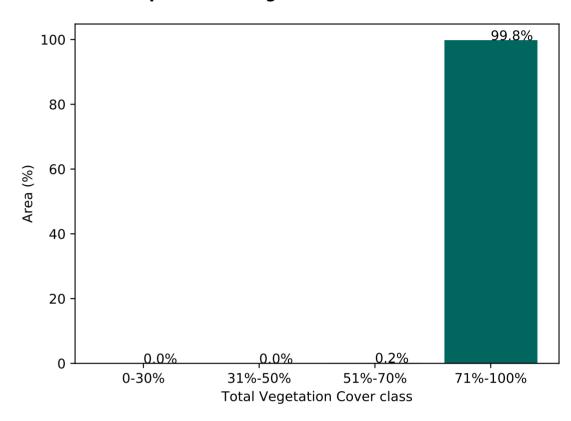


Total Vegetation Cover Anomaly [%]

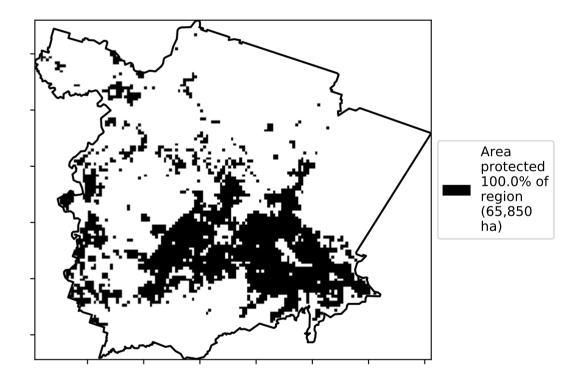


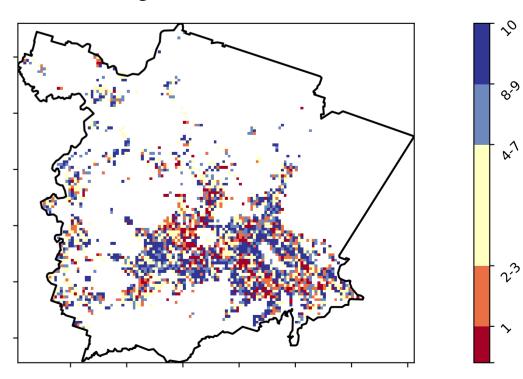
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)







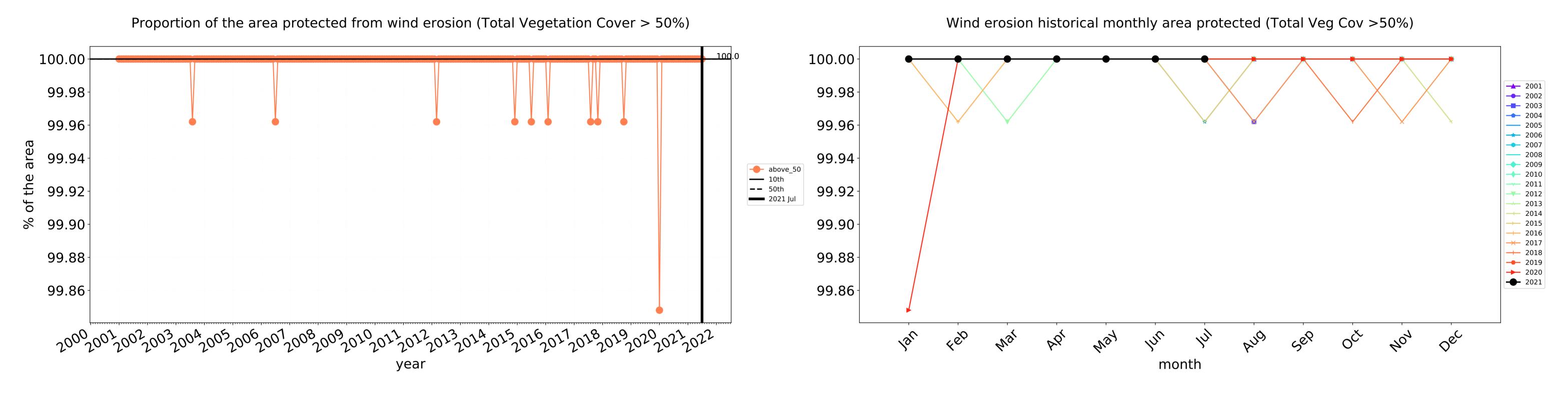


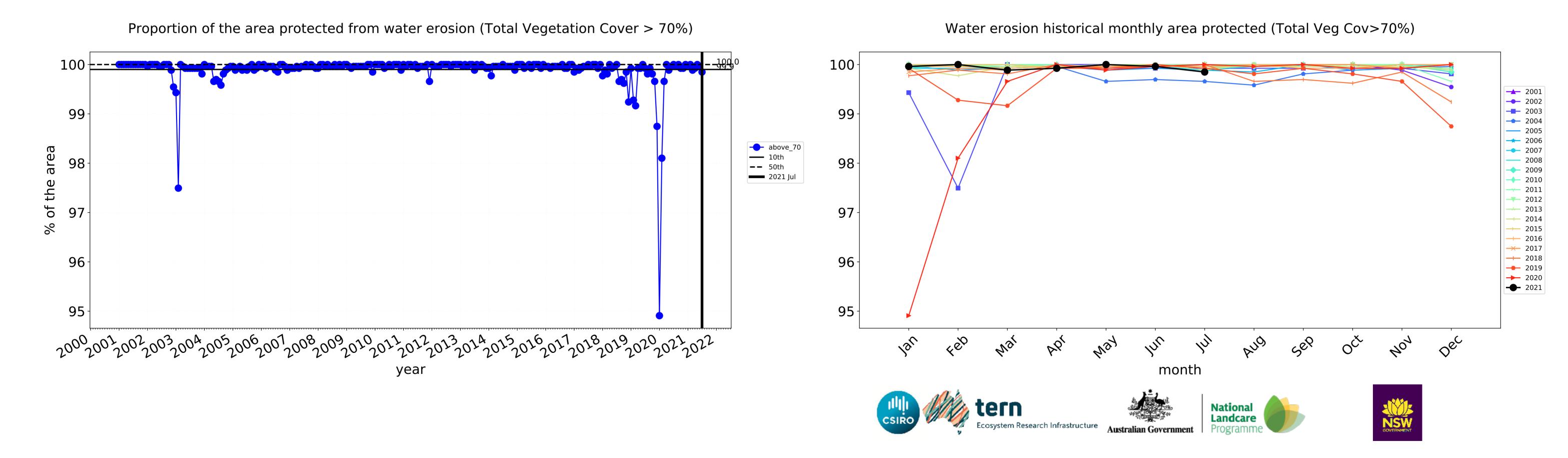


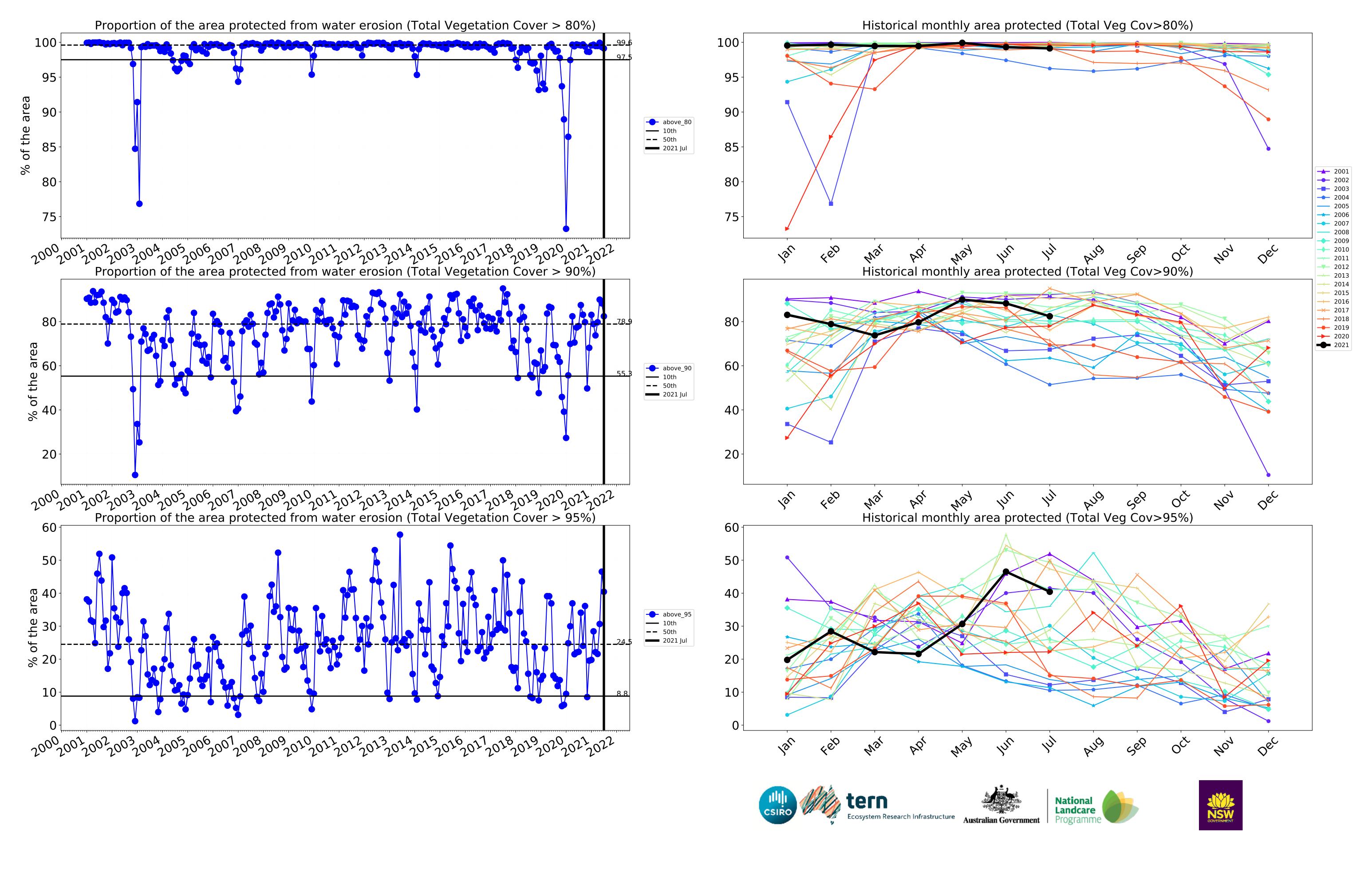




Grazing non forest timeseries

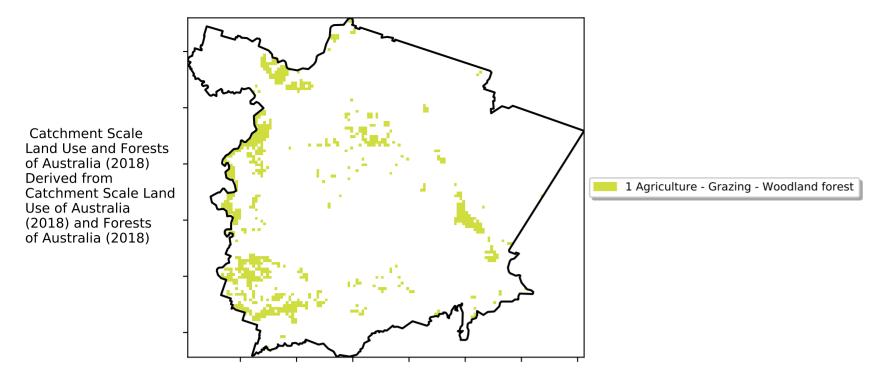




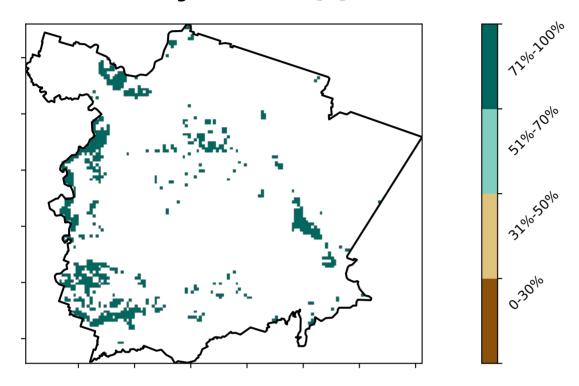


Grazing Woodland forest

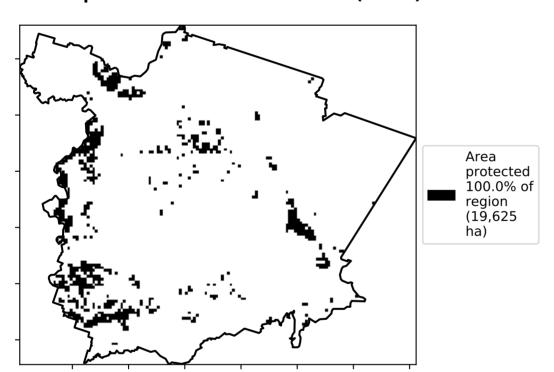
Land use and forest cover



Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



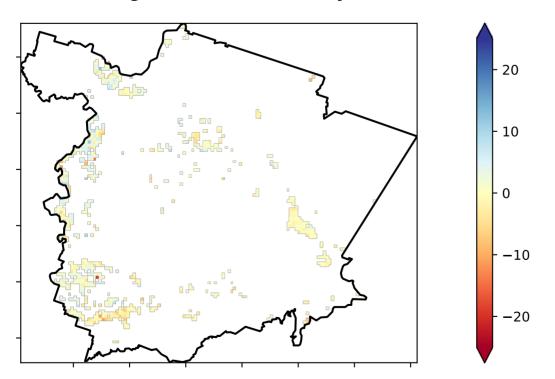
Total Vegetation Cover Anomaly [%]

Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20%

lower than the

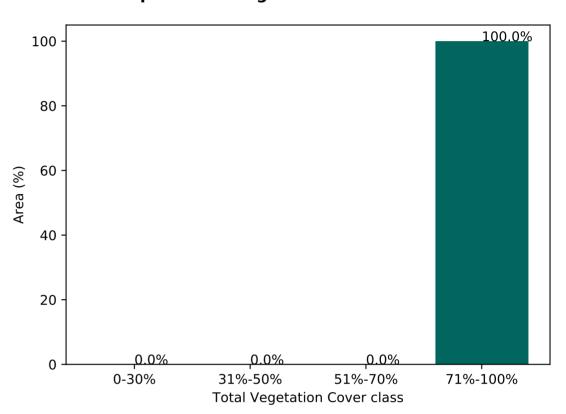
is only for the month of the map using baseline from 2001 to 2019.

mean of that pixel. The mean

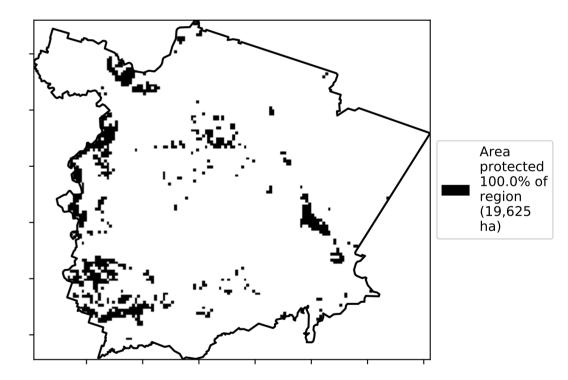


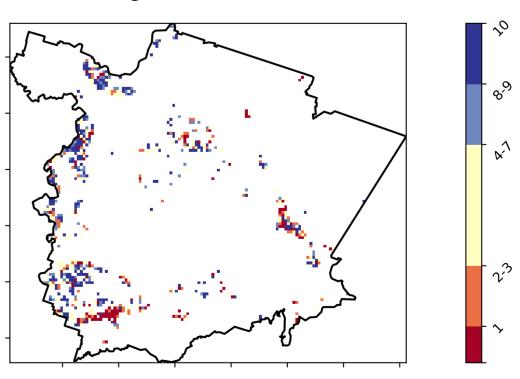
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





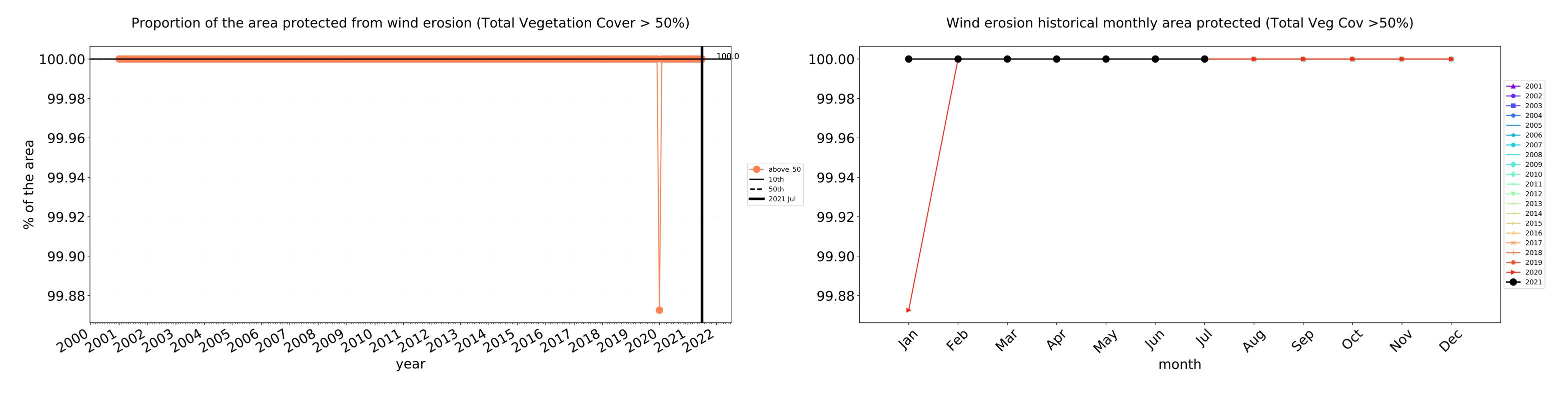


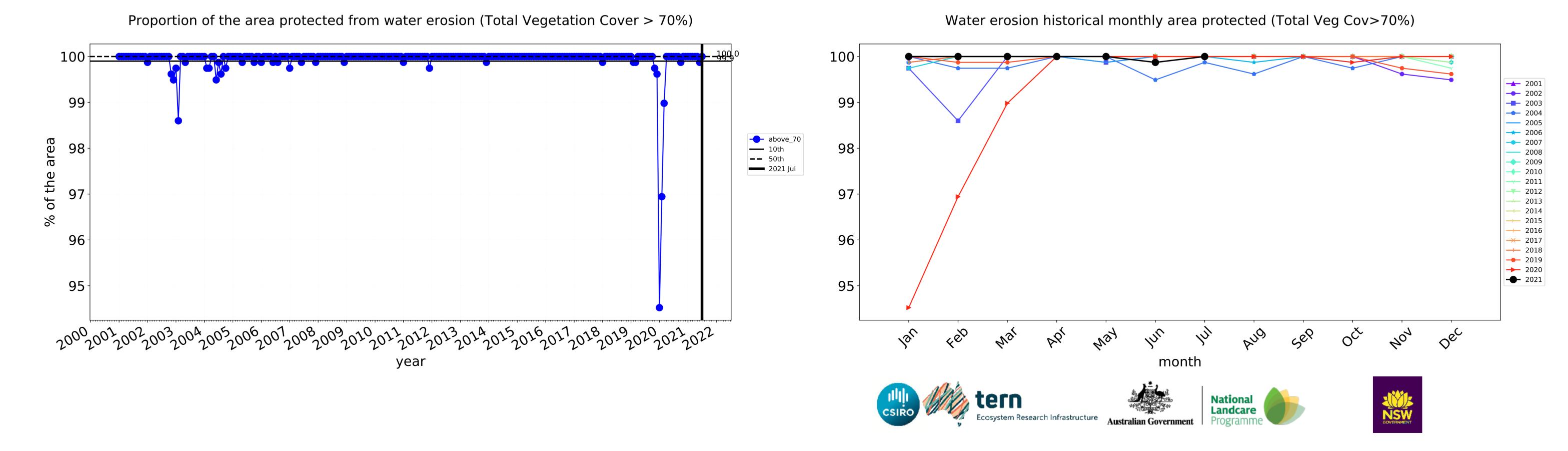


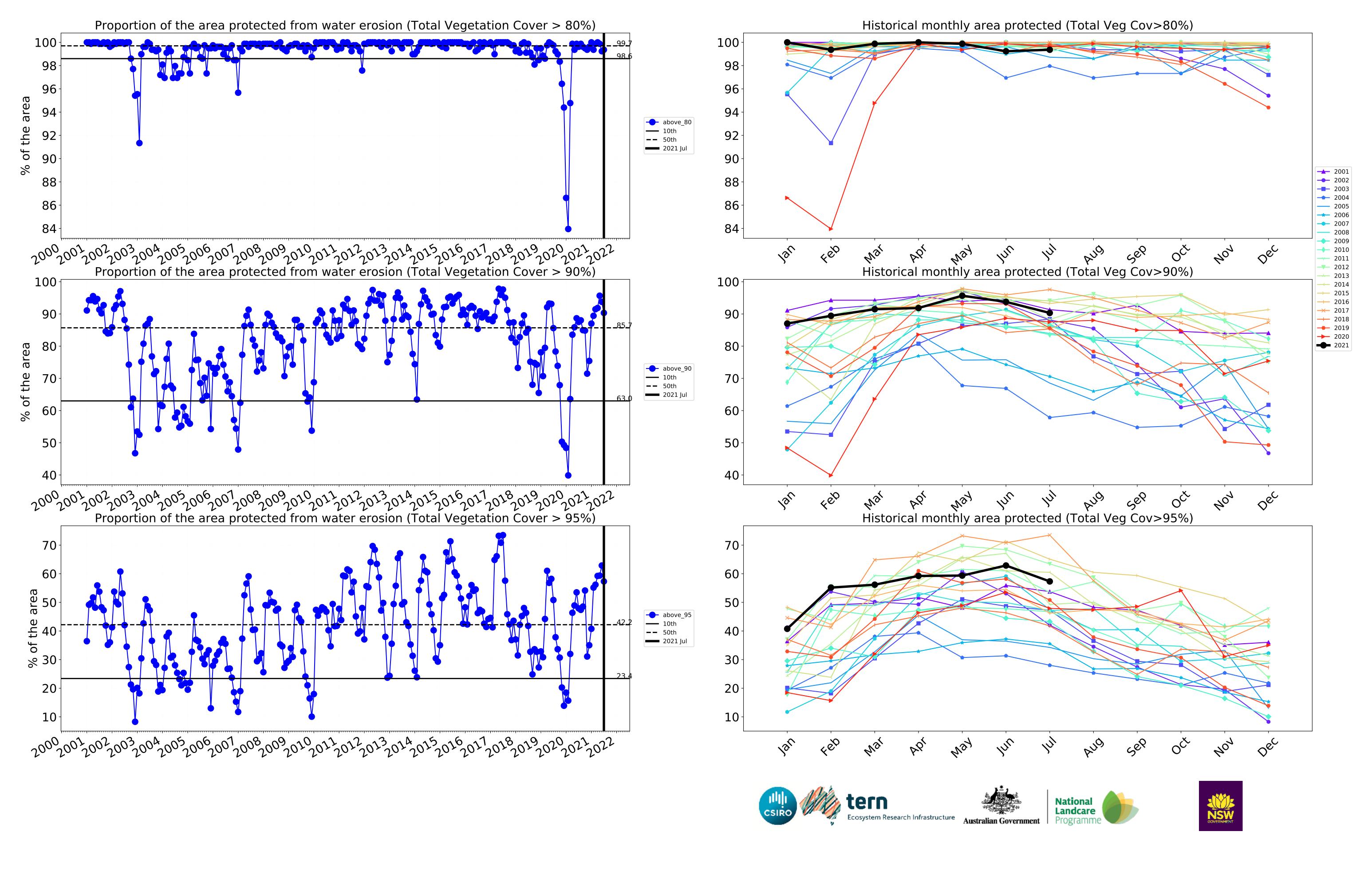




Grazing Woodland forest timeseries



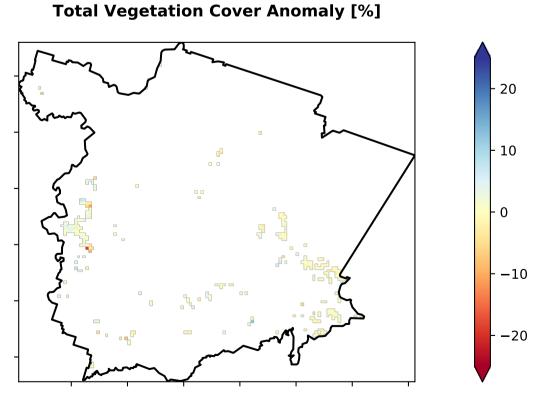


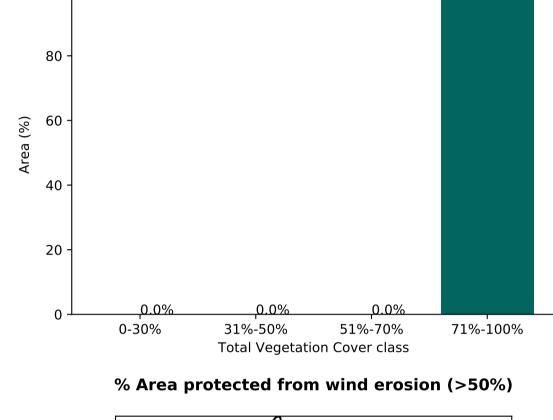


Grazing - Forest (non woodland)

Land use and forest cover 1 Agriculture - Grazing - Non-woodland forest

% Area protected from water erosion (>70%) Area protected 100.0% of region (6,775 ha)

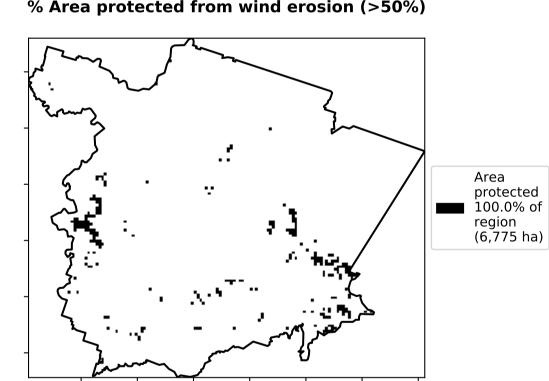


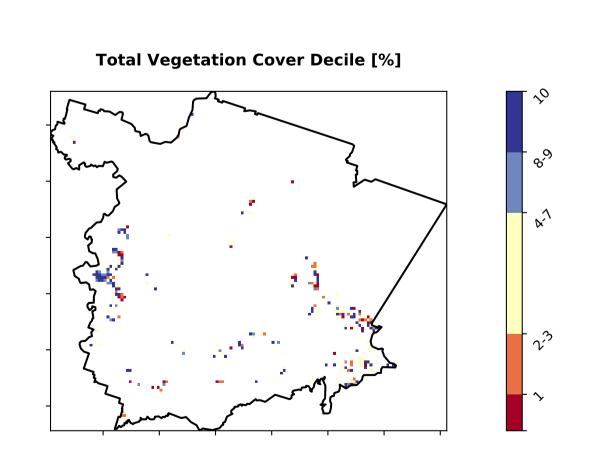


100

Proportion of vegetation cover class in area

100.0%









Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are

records for that month of

the map using baseline from 2001 to 2019.

in the lowest 10% of





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

Anomaly show how many percetage points each pixel is from the mean. That

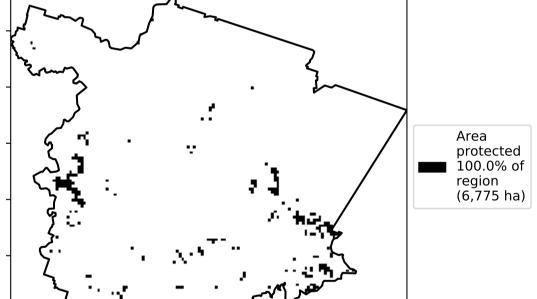
is, red pixels are about 20% lower than the mean of that

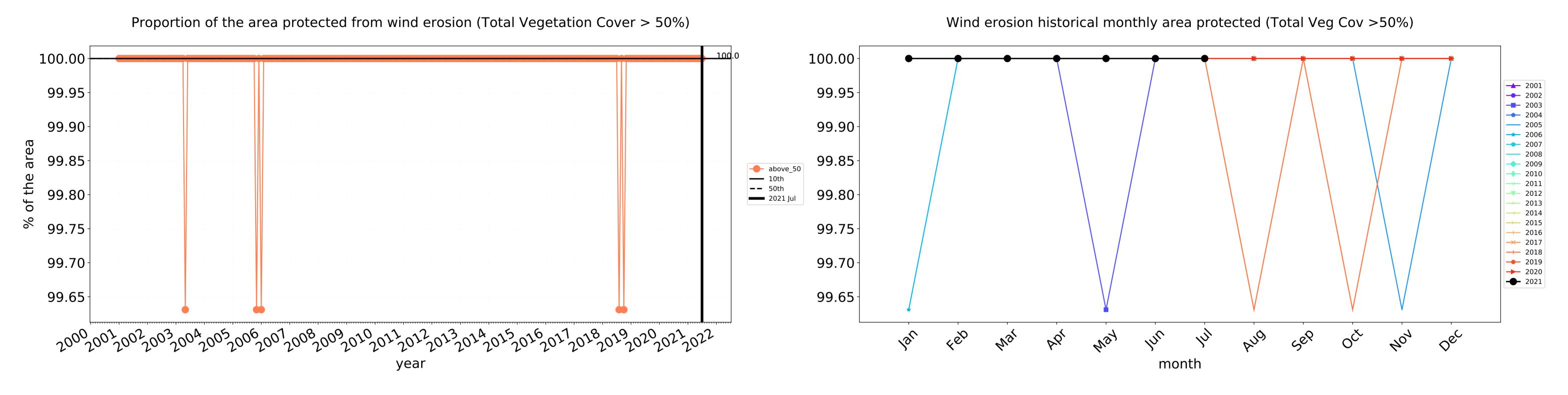
pixel. The mean

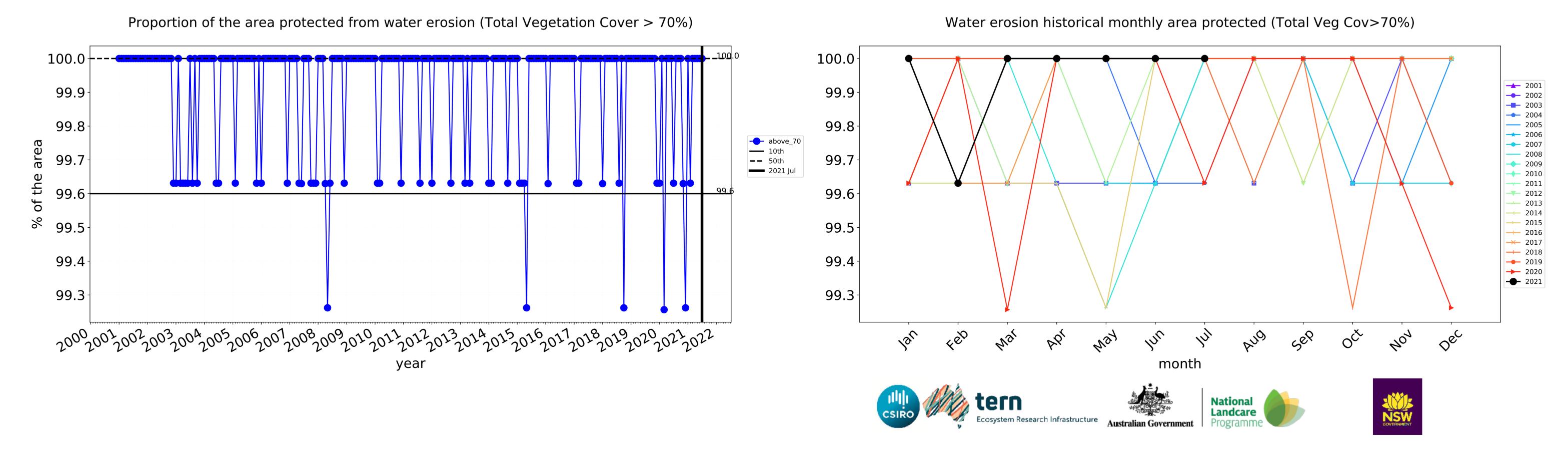
using baseline from 2001 to 2019.

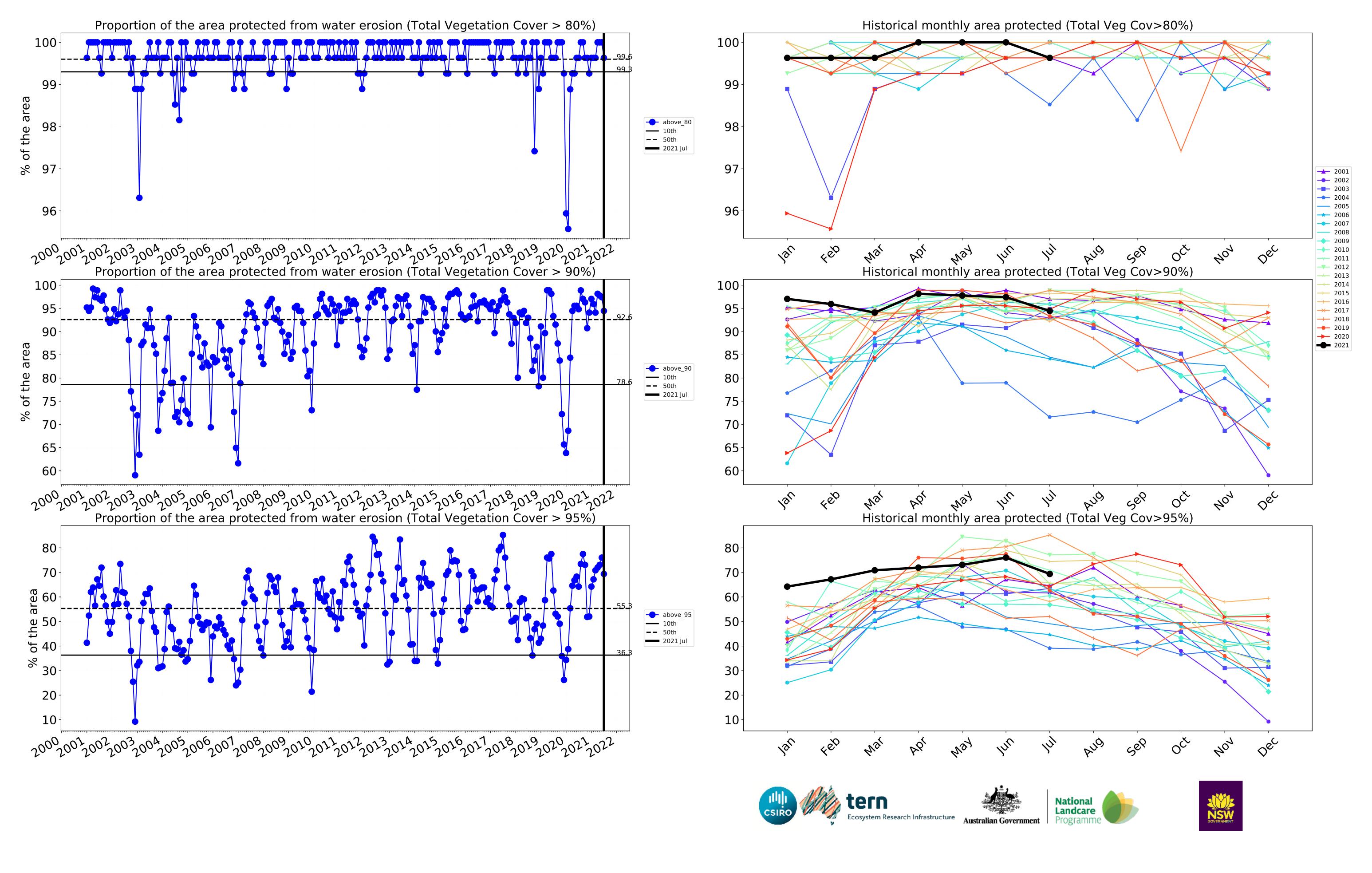
is only for the month of the map

Total Vegetation Cover [%]



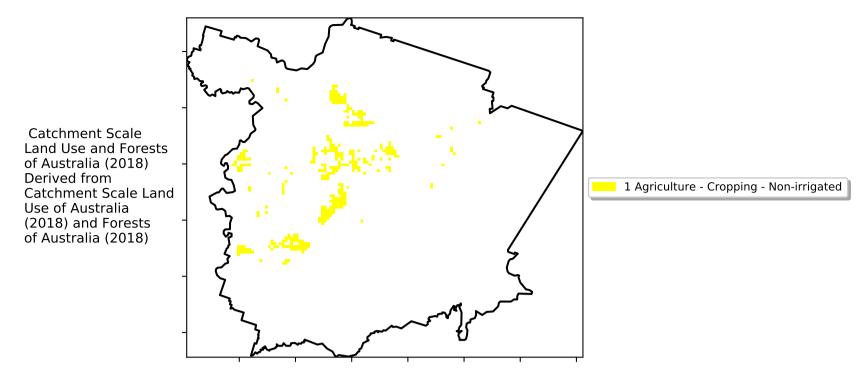




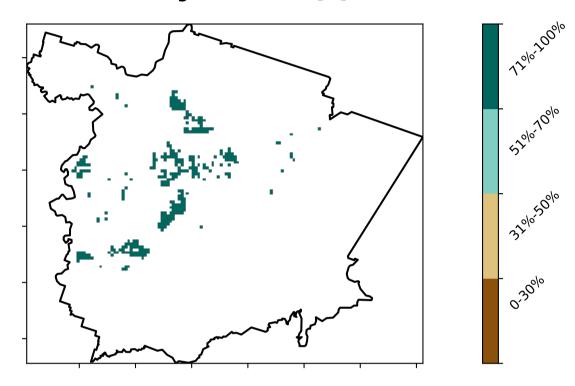


Cropping

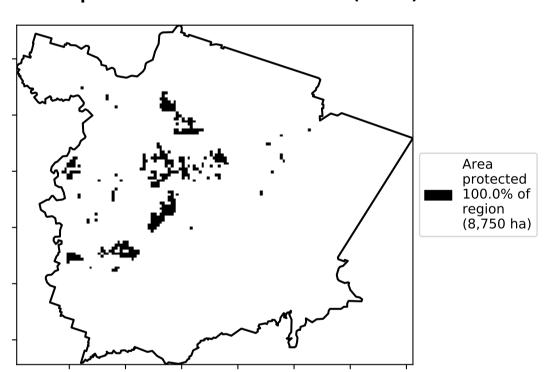
Land use and forest cover



Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



Total Vegetation Cover Anomaly [%]

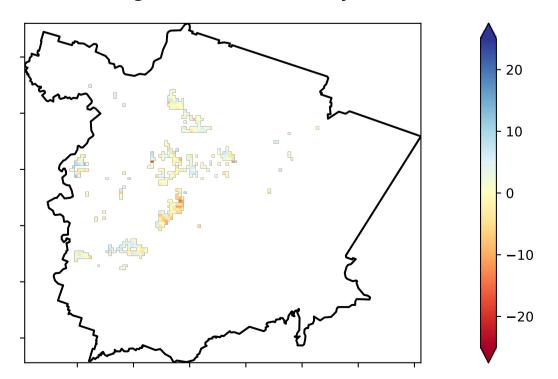
Anomaly show how many percetage points each pixel is from the mean. That

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

pixel. The mean

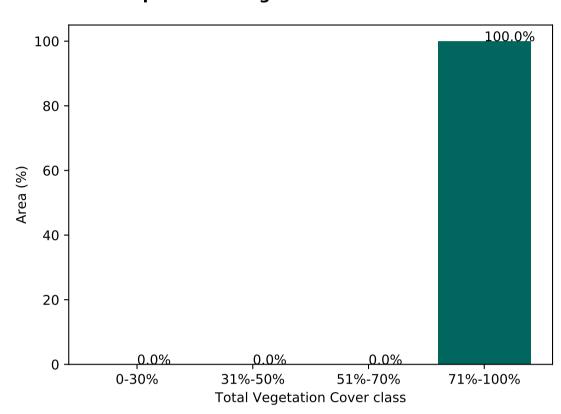
using baseline from 2001 to 2019.

is only for the month of the map

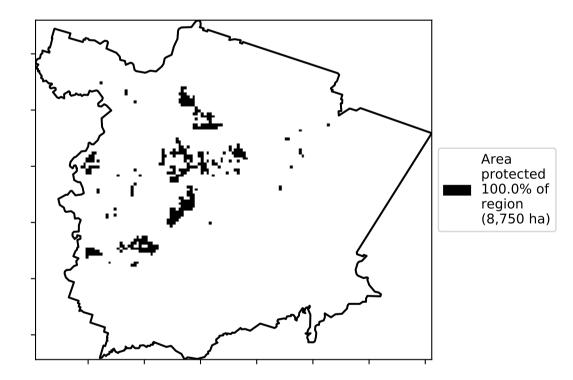


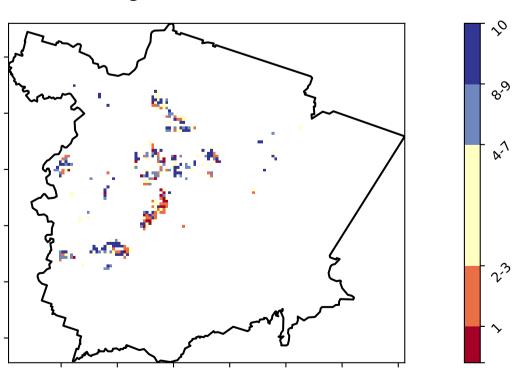
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





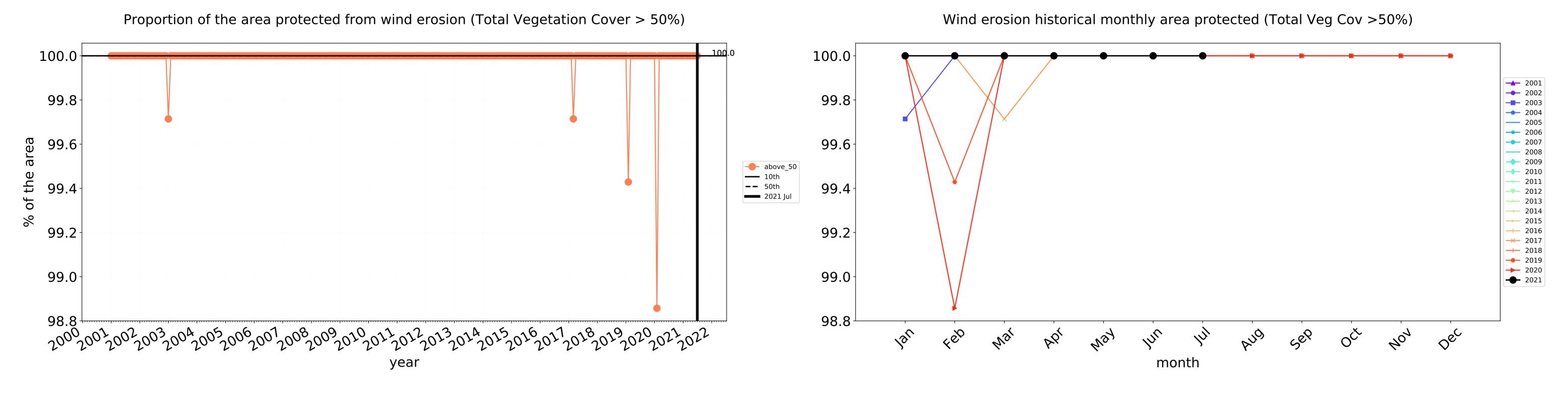


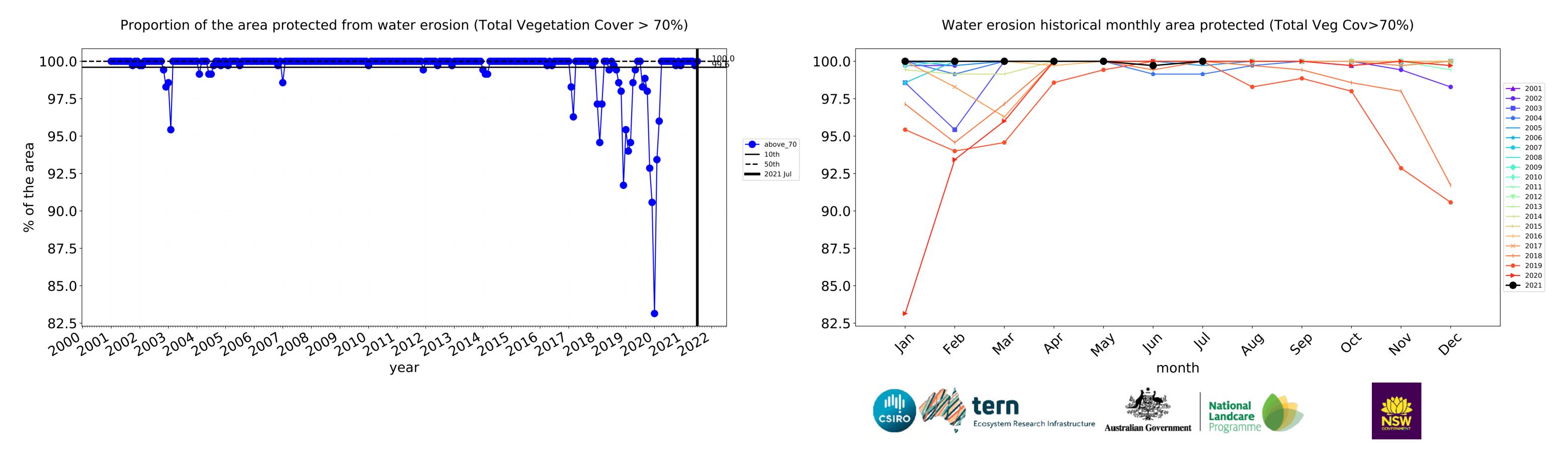


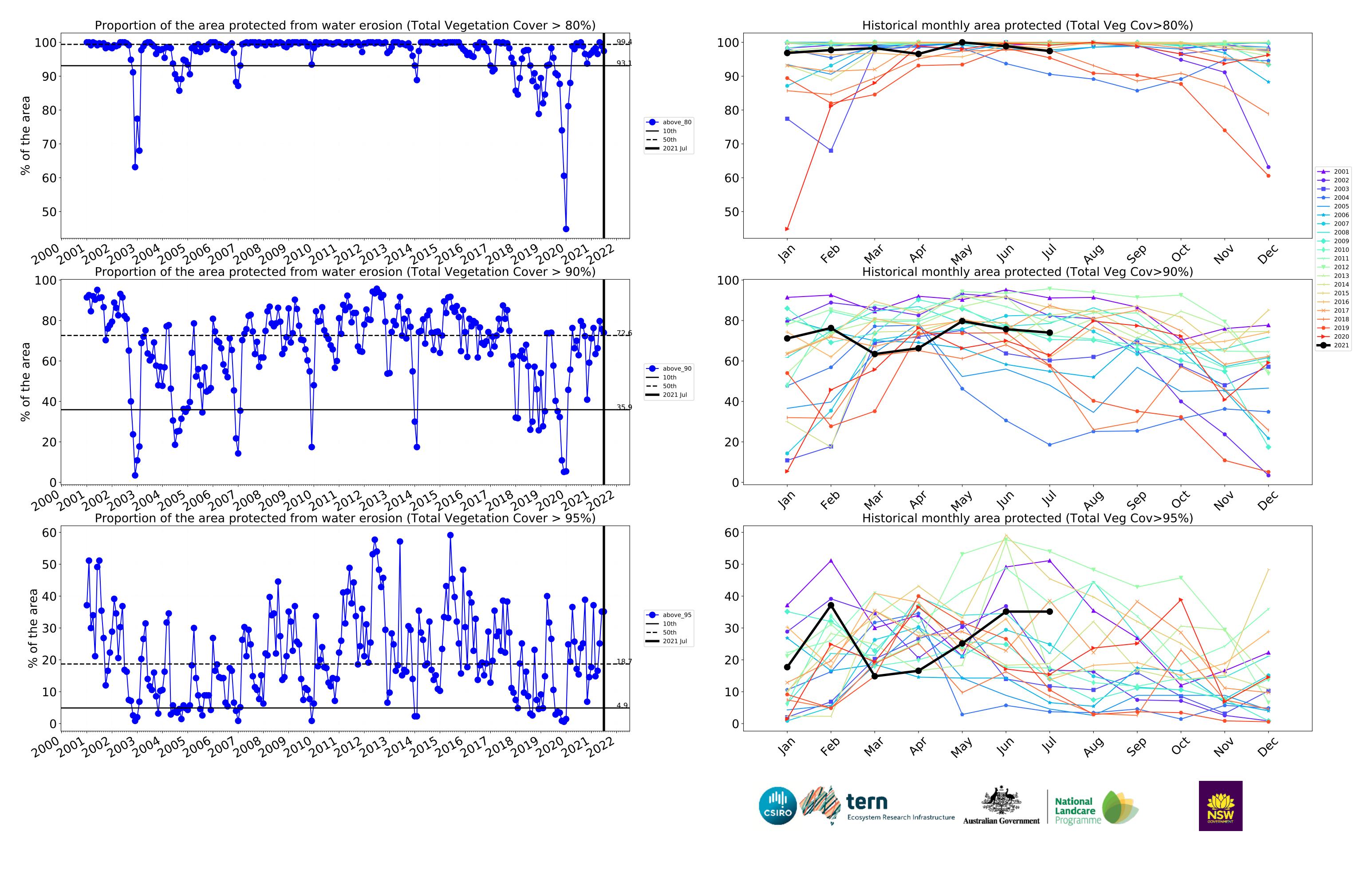




Cropping timeseries

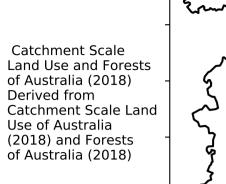


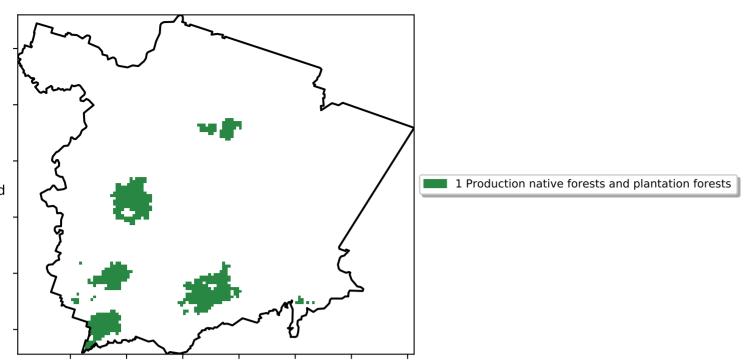




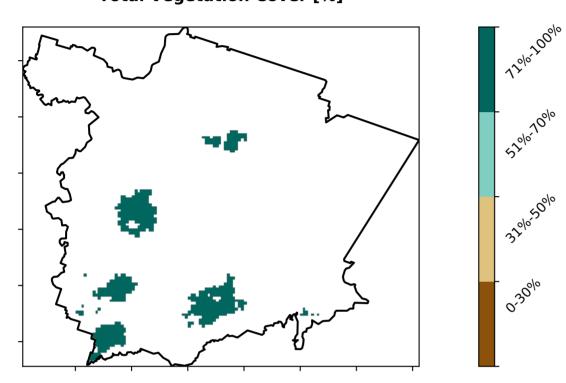
Production native forests and plantation forests

Land use and forest cover

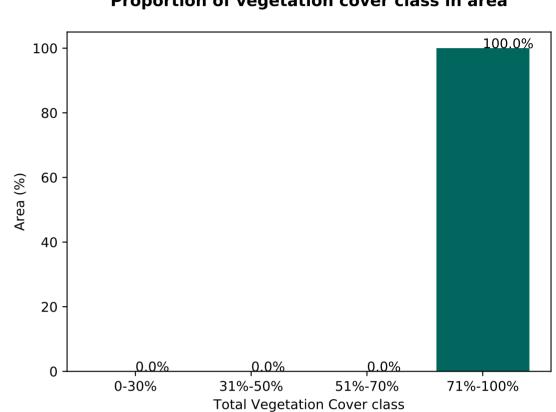




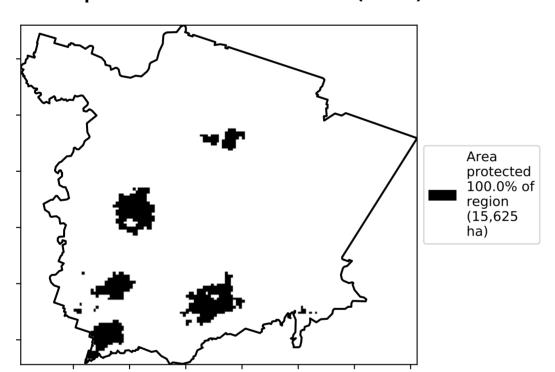
Total Vegetation Cover [%]



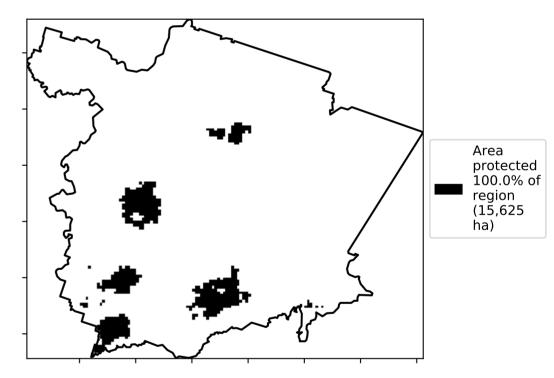
Proportion of vegetation cover class in area



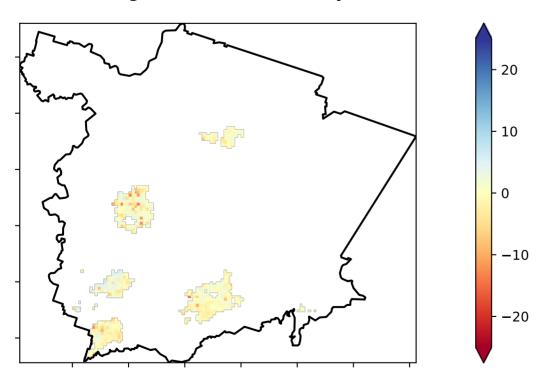
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

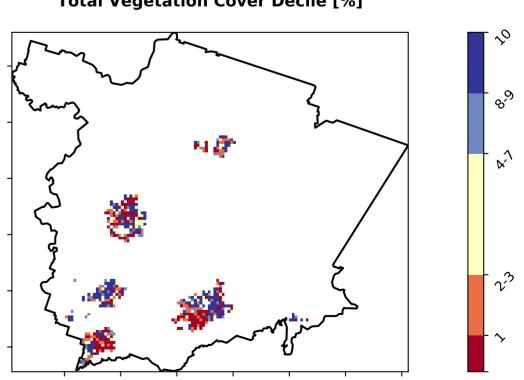


Total Vegetation Cover Anomaly [%]



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.

Total Vegetation Cover Decile [%]





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

using baseline from 2001 to 2019.

is only for the month of the map



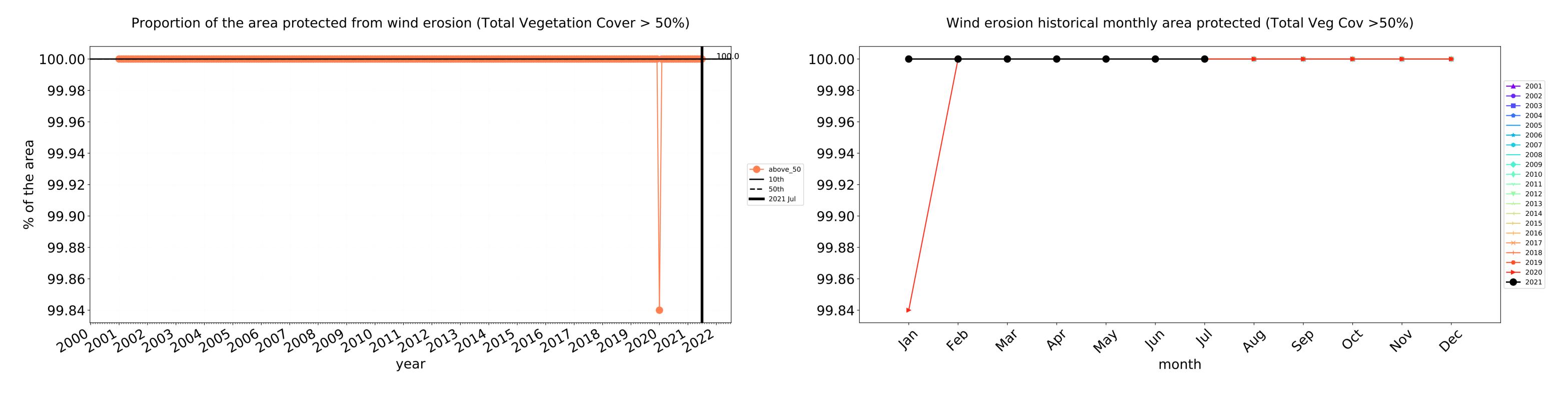


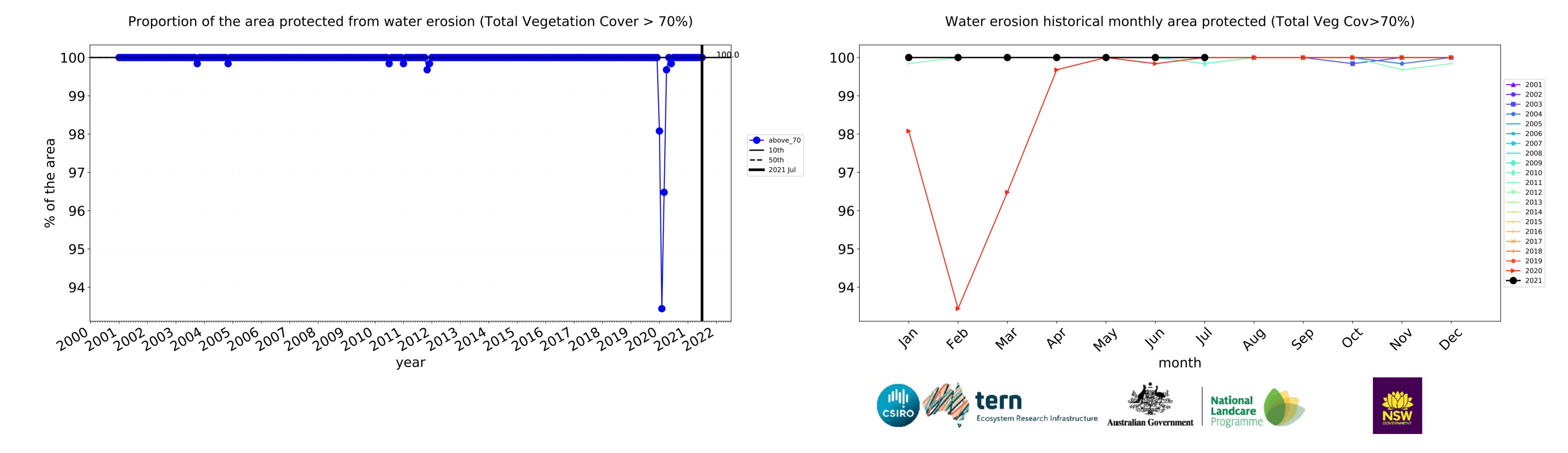


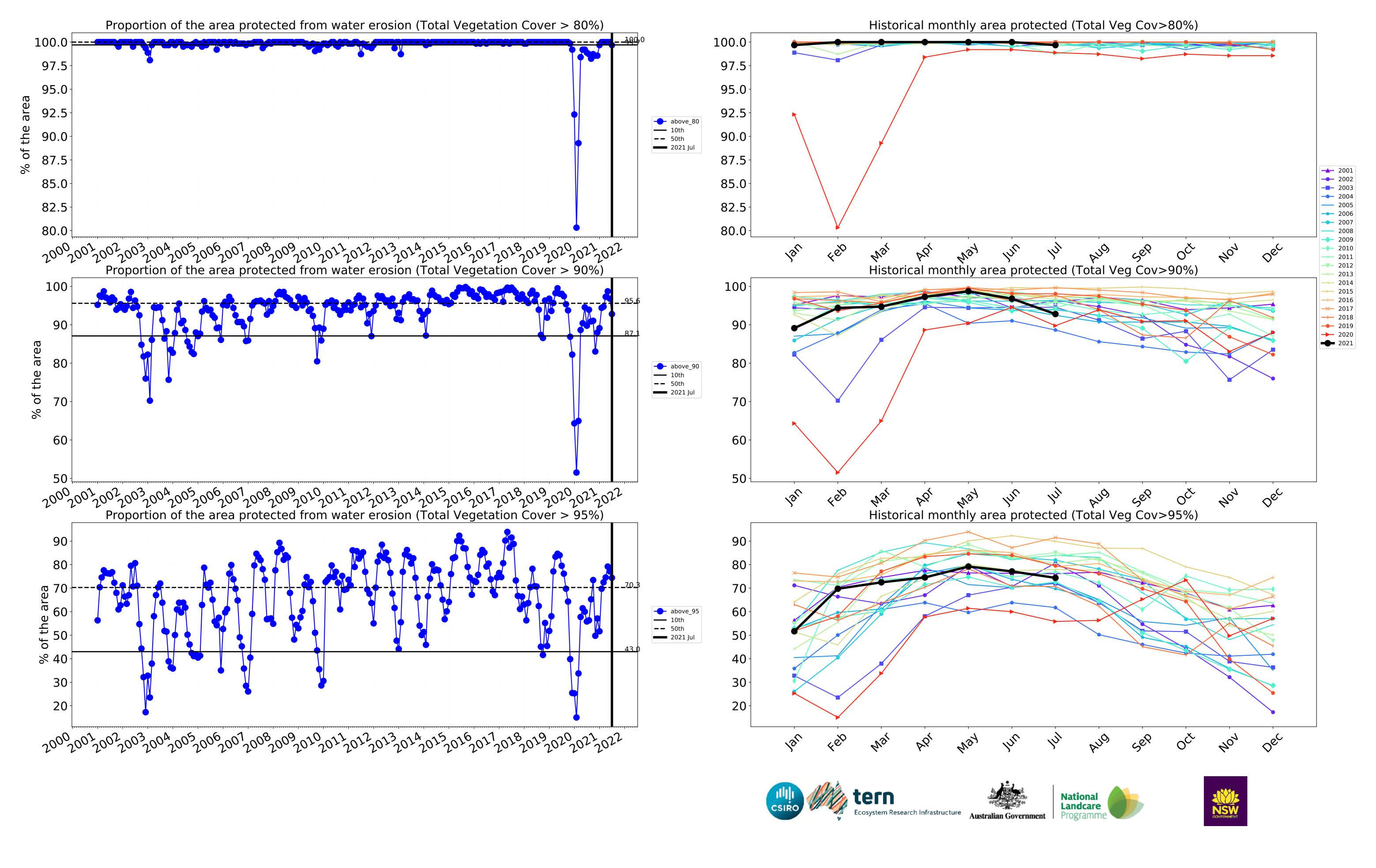




Production native forests and plantation forests timeseries







Wingecarribee_(A) (268,450 ha and no data 451 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	268,450	100.0% 268,450	100.0% 268,450	99.7% 267,725	98.4% 264,275	86.9% 233,350	56.7% 152,325
Conservation and natural environments	127,675	100.0% 127,675	100.0% 127,675	99.9% 127,550	99.2% 126,675	93.3% 119,100	69.2% 88,350
Conservation and natural environments Woodland forest	102,925	100.0% 102,925	100.0% 102,925	99.9% 102,800	99.2% 102,125	93.9% 96,600	71.8% 73,950
Conservation and natural environments Forest (non woodland)	24,025	100.0% 24,025	100.0% 24,025	100.0% 24,025	99.4% 23,875	91.3% 21,925	58.4% 14,025
Agriculture	101,375	100.0% 101,375	100.0% 101,375	99.9% 101,275	99.1% 100,425	84.0% 85,150	45.2% 45,825
Grazing	92,250	100.0% 92,250	100.0% 92,250	99.9% 92,150	99.2% 91,525	85.0% 78,400	46.2% 42,575
Grazing non forest	65,850	100.0% 65,850	100.0% 65,850	99.8% 65,750	99.1% 65,275	82.4% 54,275	40.4% 26,625
Grazing Woodland forest	19,625	100.0% 19,625	100.0% 19,625	100.0% 19,625	99.4% 19,500	90.3% 17,725	57.3% 11,250
Grazing - Forest (non woodland)	6,775	100.0% 6,775	100.0% 6,775	100.0% 6,775	99.6% 6,750	94.5% 6,400	69.4% 4,700
Cropping	8,750	100.0% 8,750	100.0% 8,750	100.0% 8,750	97.4% 8,525	74.0% 6,475	35.1% 3,075
Production native forests and plantation forests	15,625	100.0% 15,625	100.0% 15,625	100.0% 15,625	99.7% 15,575	92.8% 14,500	74.4% 11,625







