Total vegetation cover soil protection Region:LGA Hinchinbrook (S) 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:

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: December 2022

Vegetation Cover Dec 2022

Land use and forest cover

Catchment Scale

of Australia (2018)

Derived from

Use of Australia

(2018) and Forests

of Australia (2018)

Anomaly show how many percetage points each pixel is from

the mean. That

month of the map

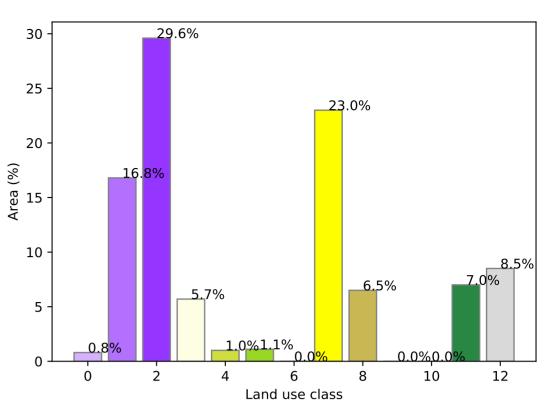
using baseline from 2001 to

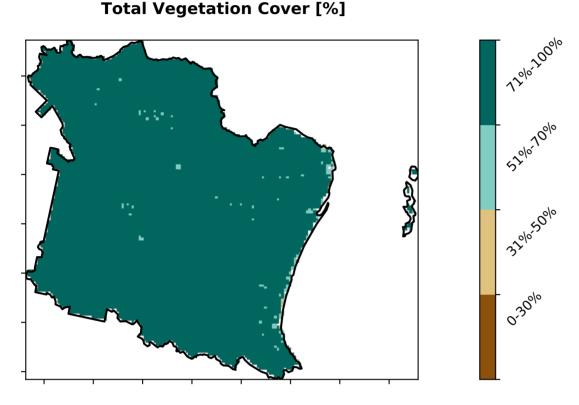
2019.

is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the

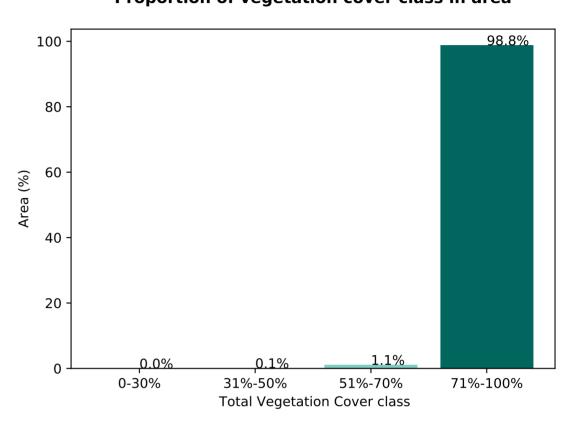
Legend with land class forest cover and number, i.e. Forests is 12 1 Conservation and natural environments - Non-forest 2 Conservation and natural environments - Woodland forest 3 Conservation and natural environments -Land Use and Forests Non-Woodland forest 4 Agriculture - Grazing - Non-forest 5 Agriculture - Grazing - Woodland forest Catchment Scale Land 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

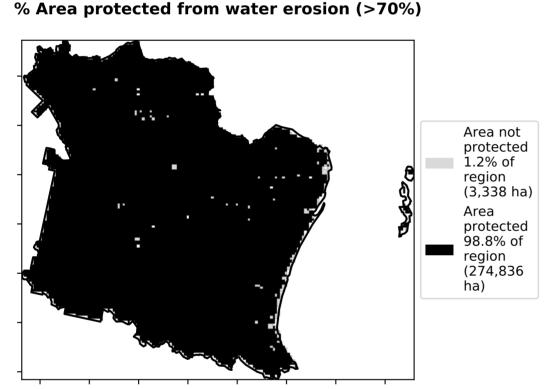
Proportion of each land class in area



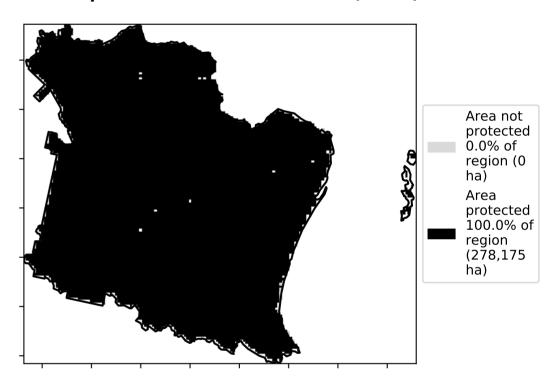


Proportion of vegetation cover class in area

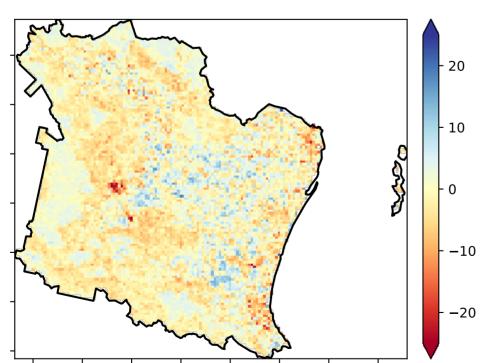




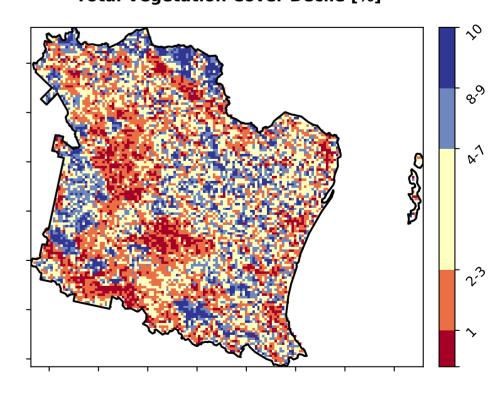
% Area protected from wind erosion (>50%)



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.

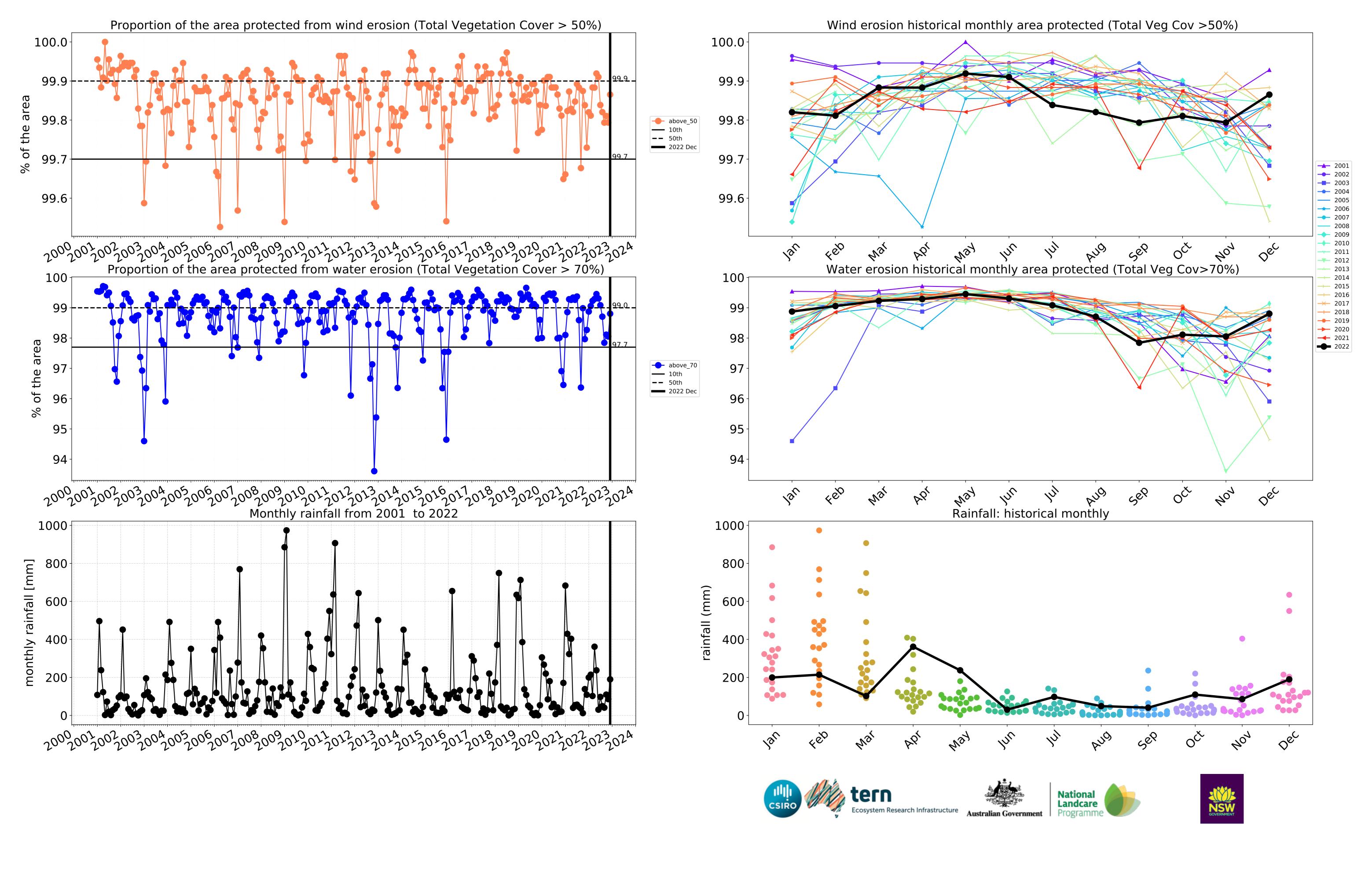


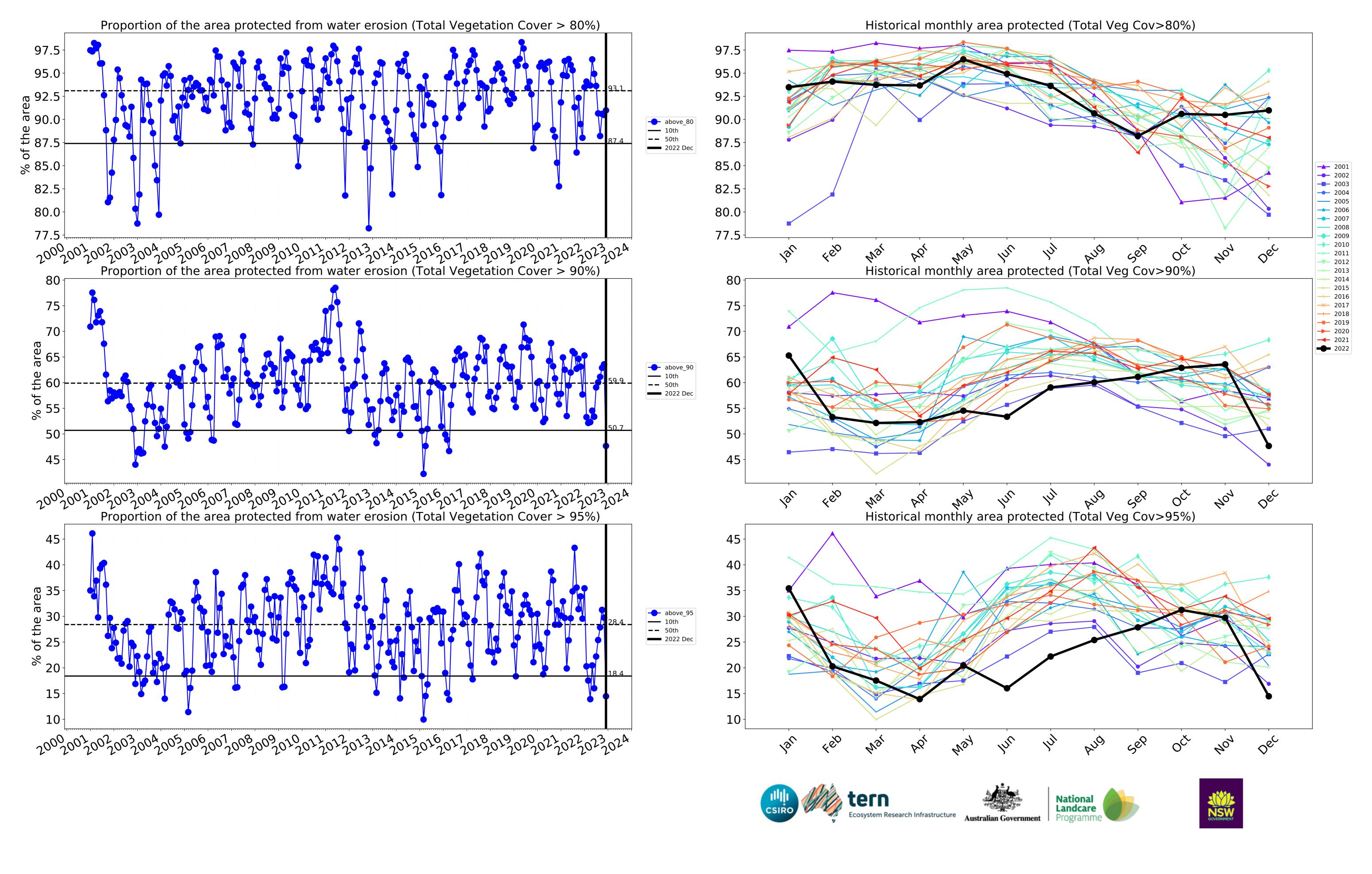








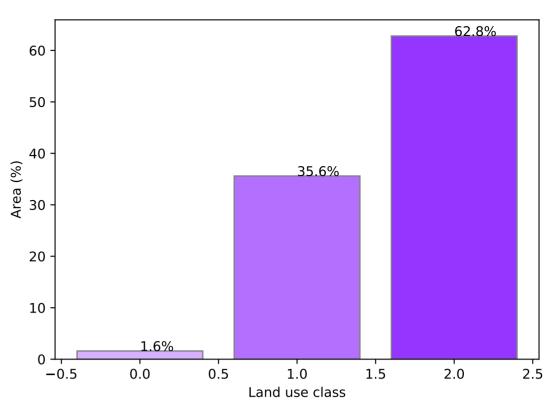




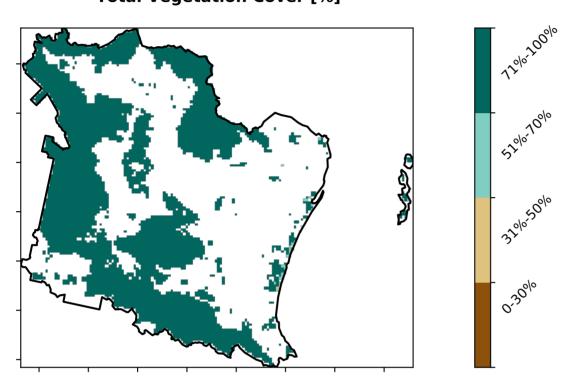
Conservation and natural environments

Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Australia (2018) Tonservation and natural environments - Nonforest 2 Conservation and natural environments - Woodland forest 3 Conservation and natural environments - Nonwoodland forest of Australia (2018)

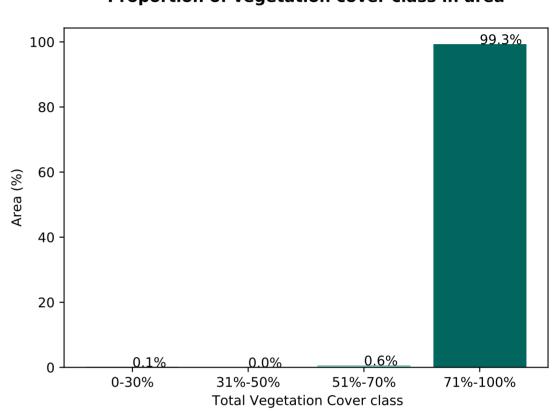
Proportion of each land class in area



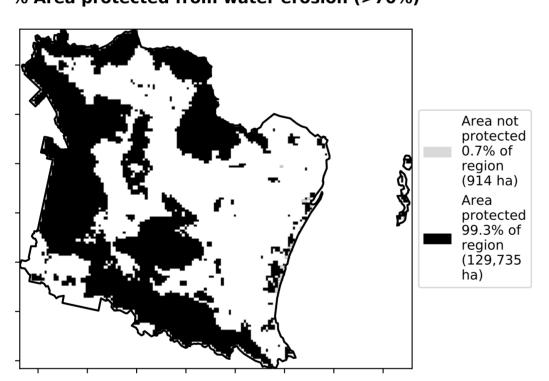
Total Vegetation Cover [%]



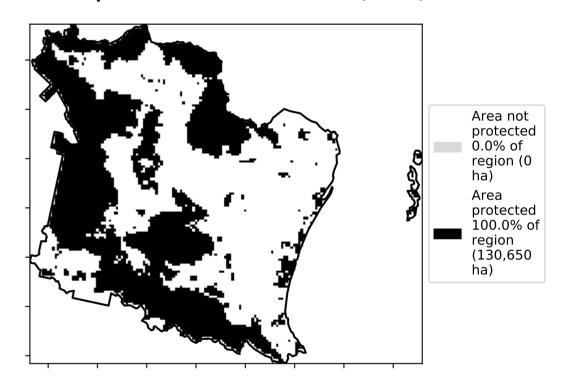
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]

Anomaly show how many percetage points each pixel is from

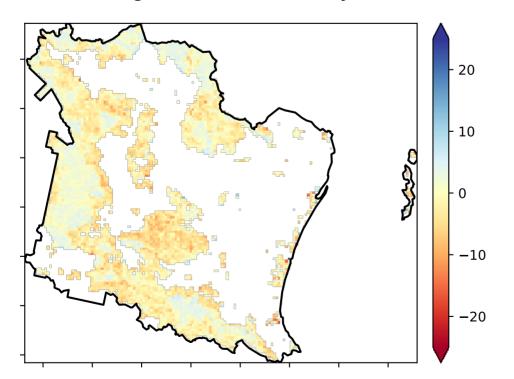
the mean. That is, red pixels

are about 20% lower than the mean of that

pixel. The mean

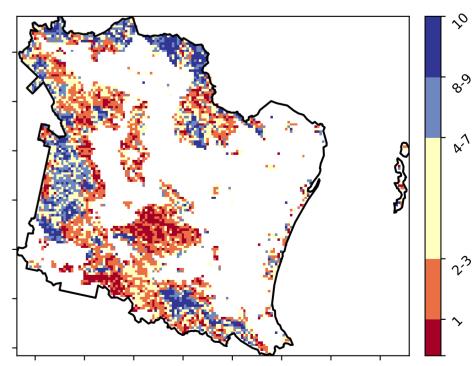
using baseline from 2001 to 2019.

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.

Total Vegetation Cover Decile [%]



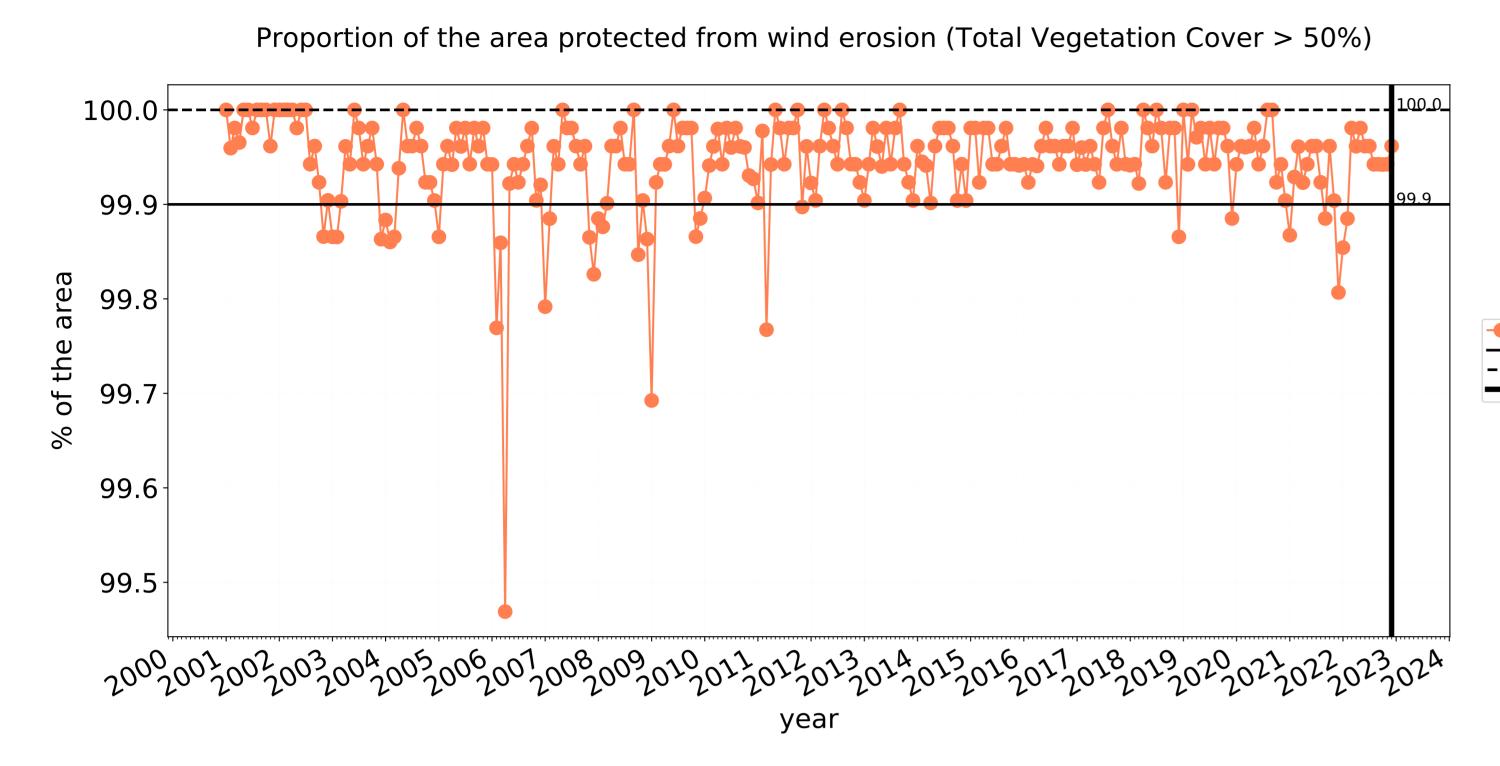


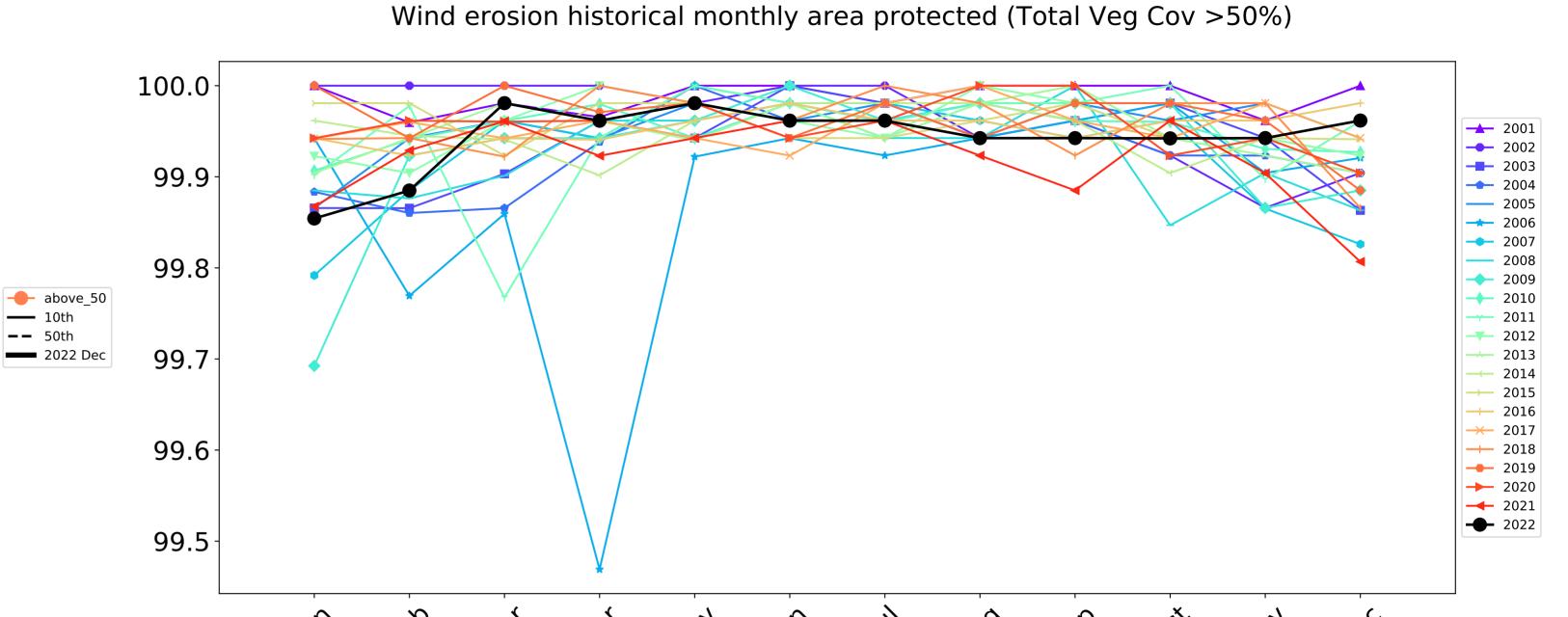




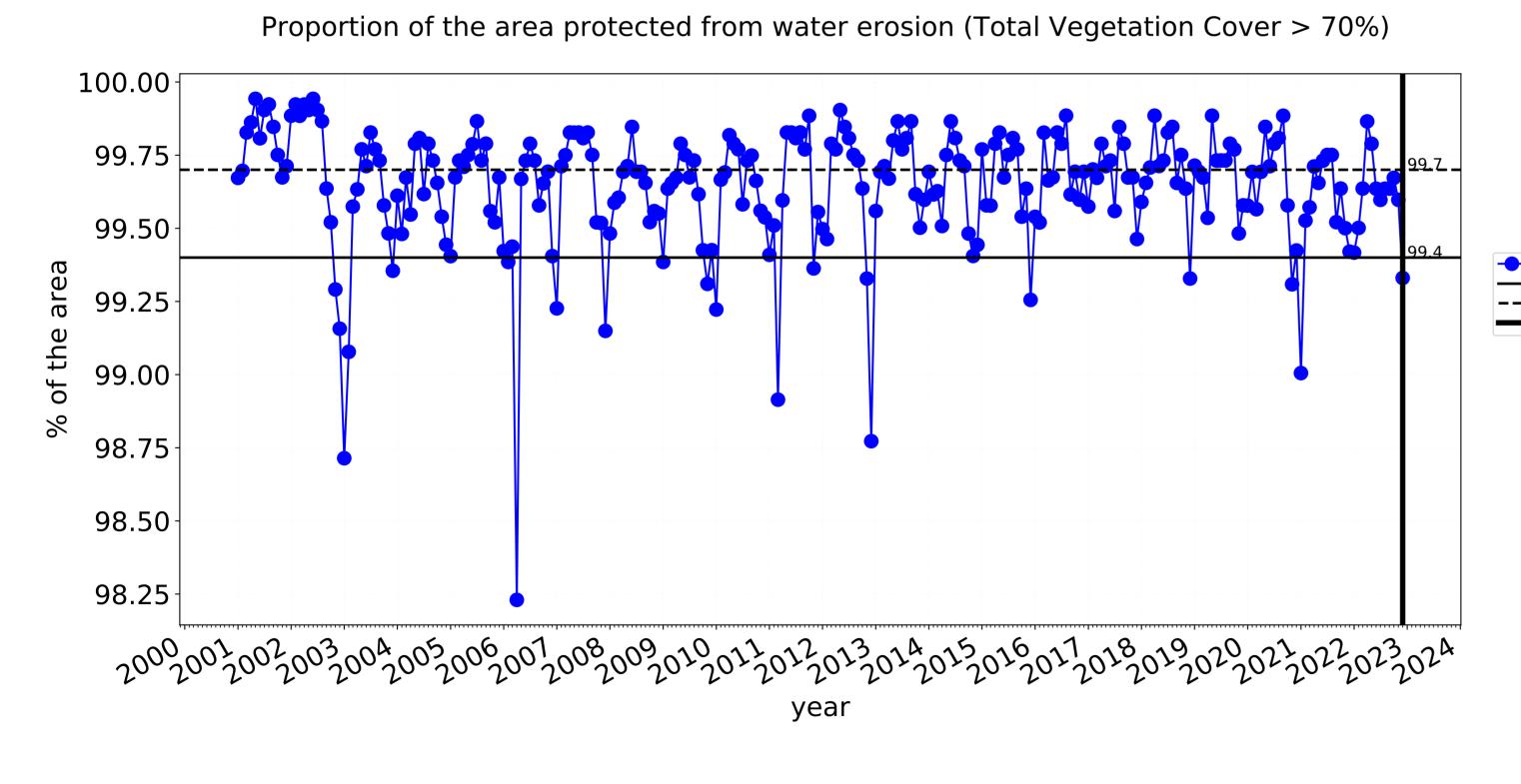


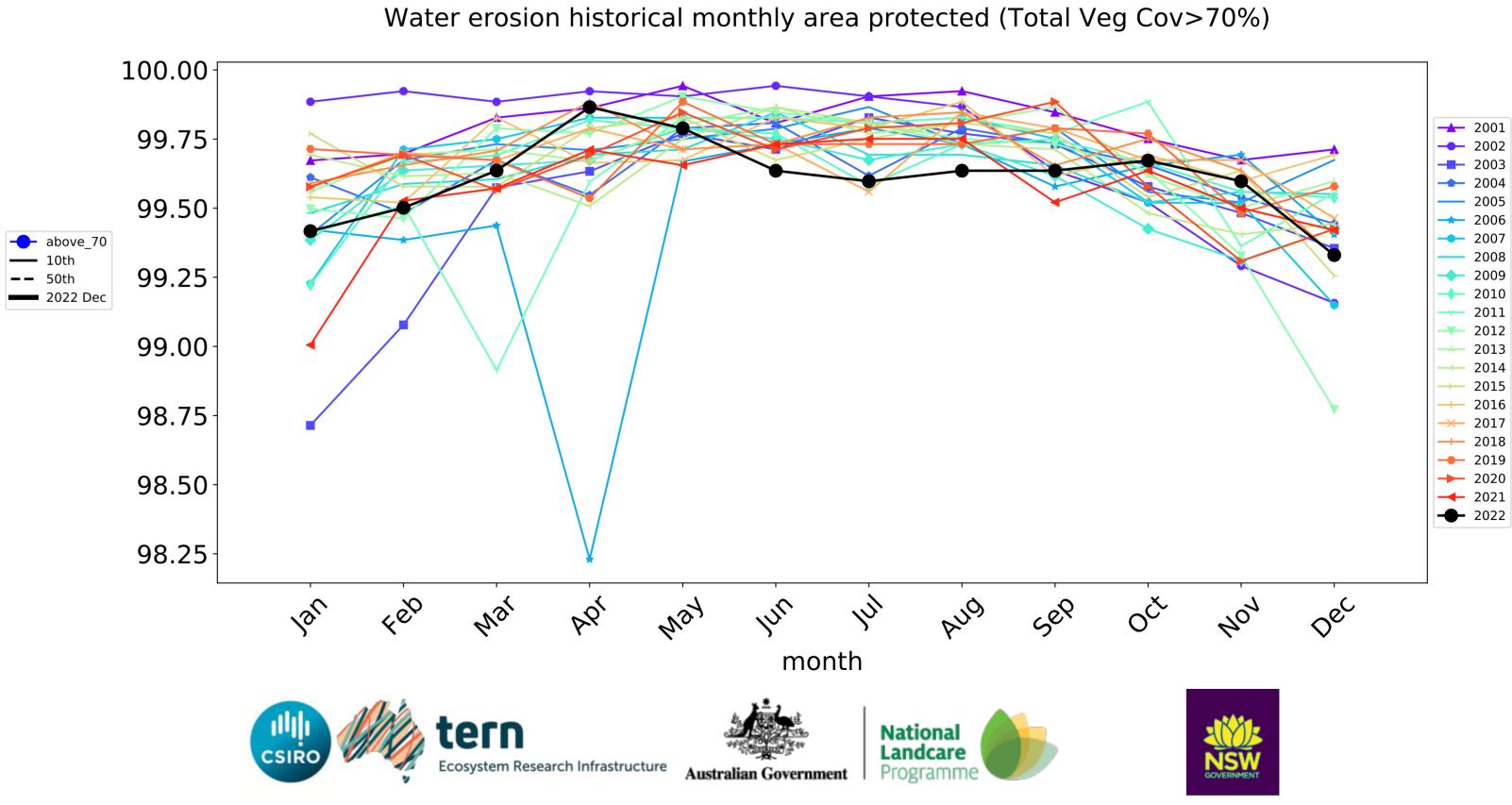
Conservation and natural environments timeseries

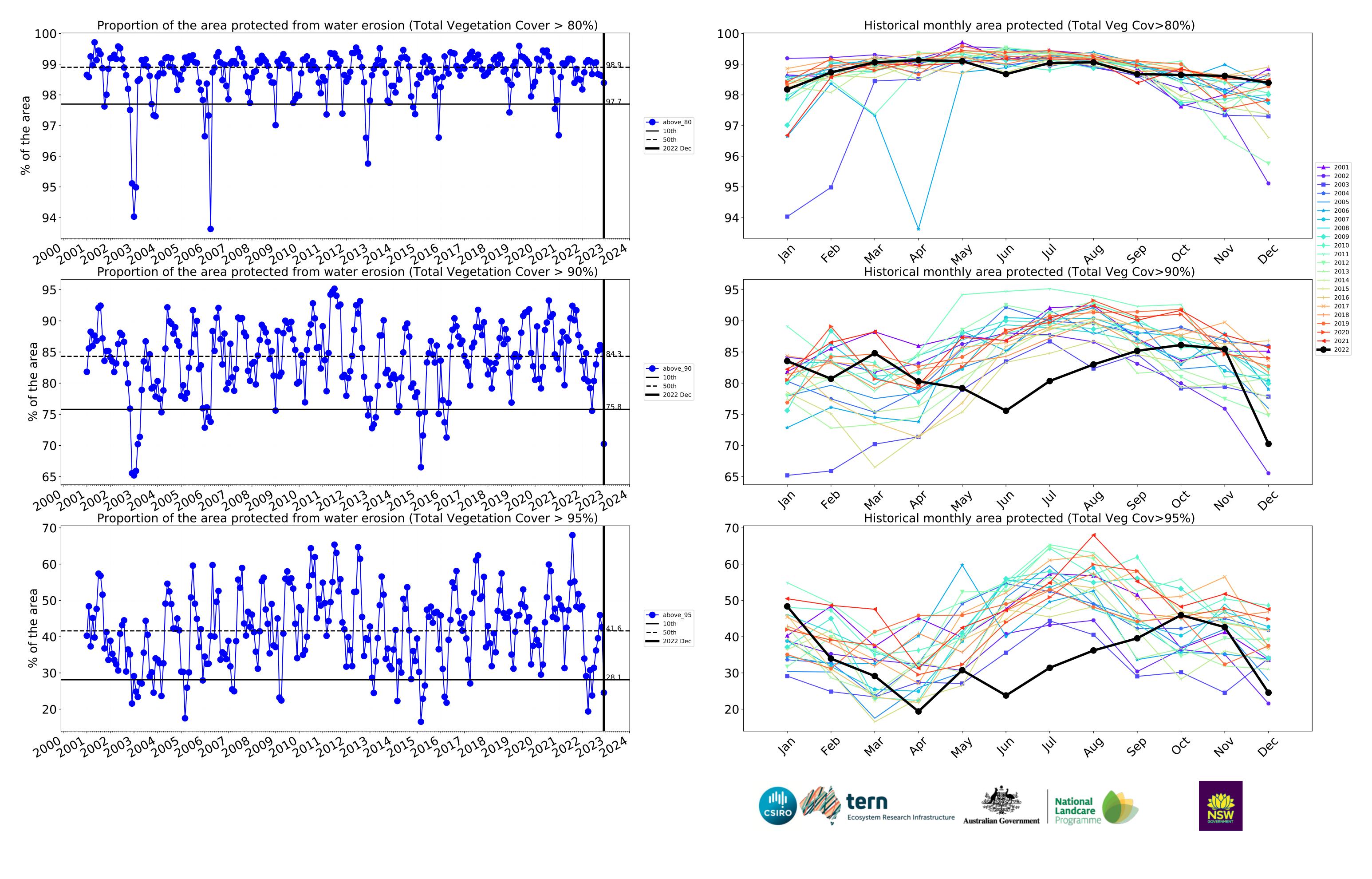




month







Conservation and natural environments Woodland forest

Land use and forest cover



Anomaly show how many percetage points each pixel is from

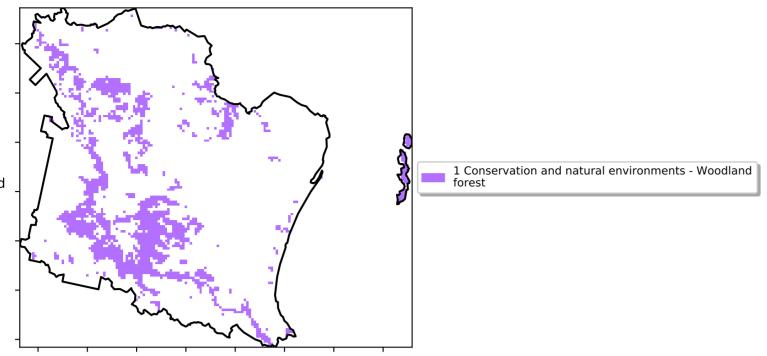
the mean. That

is, red pixels

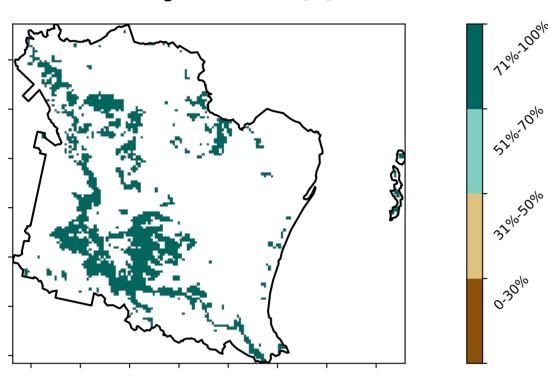
are about 20% lower than the

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

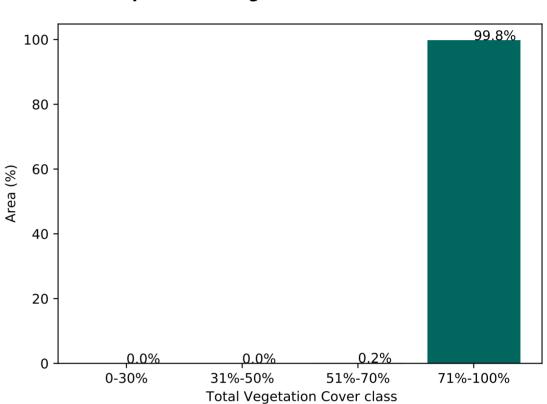
using baseline from 2001 to 2019.



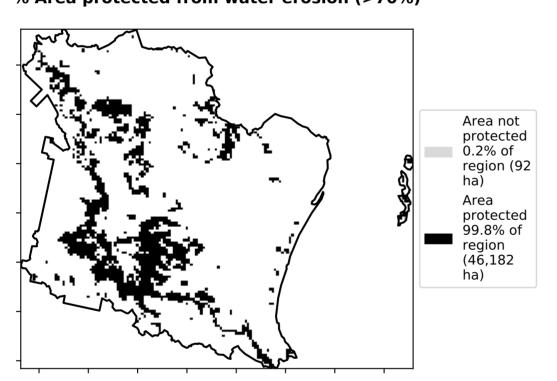
Total Vegetation Cover [%]



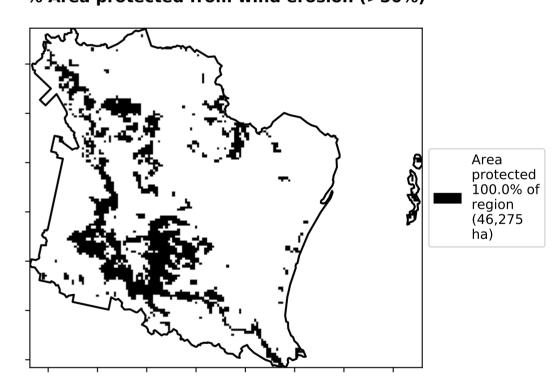
Proportion of vegetation cover class in area



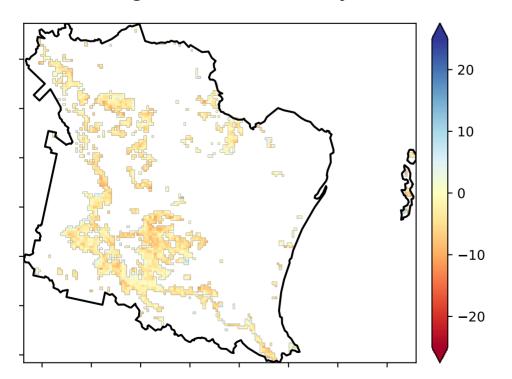
% Area protected from water erosion (>70%)



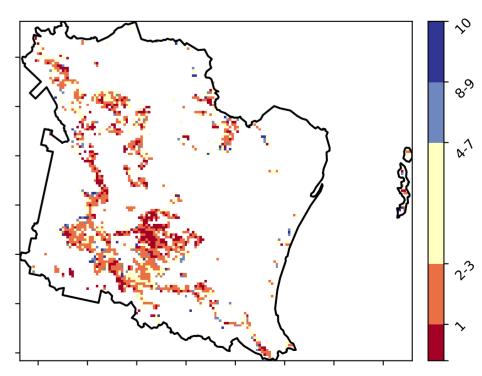
% Area protected from wind erosion (>50%)



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.





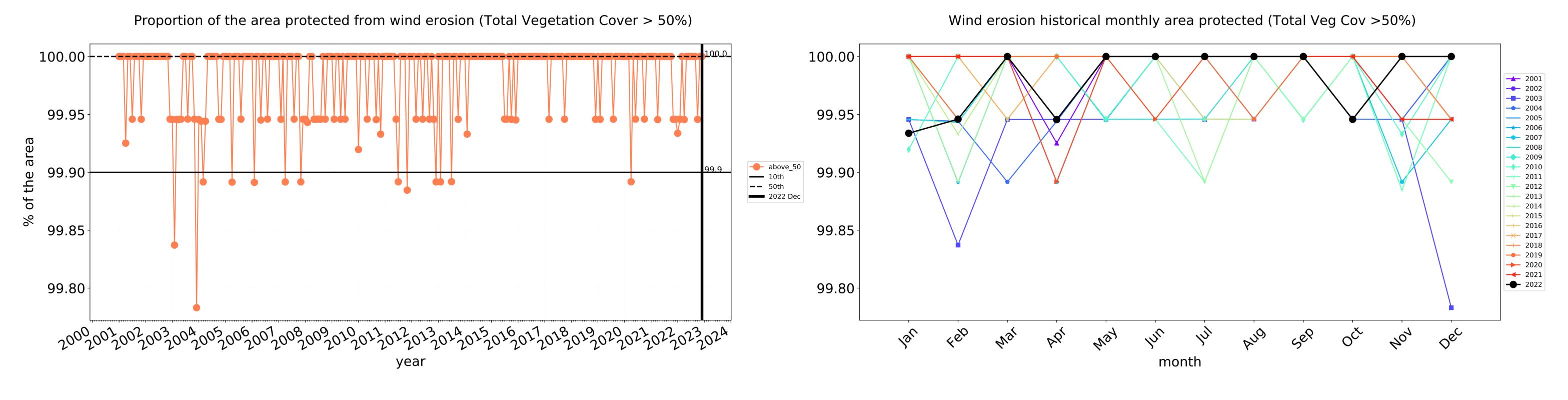


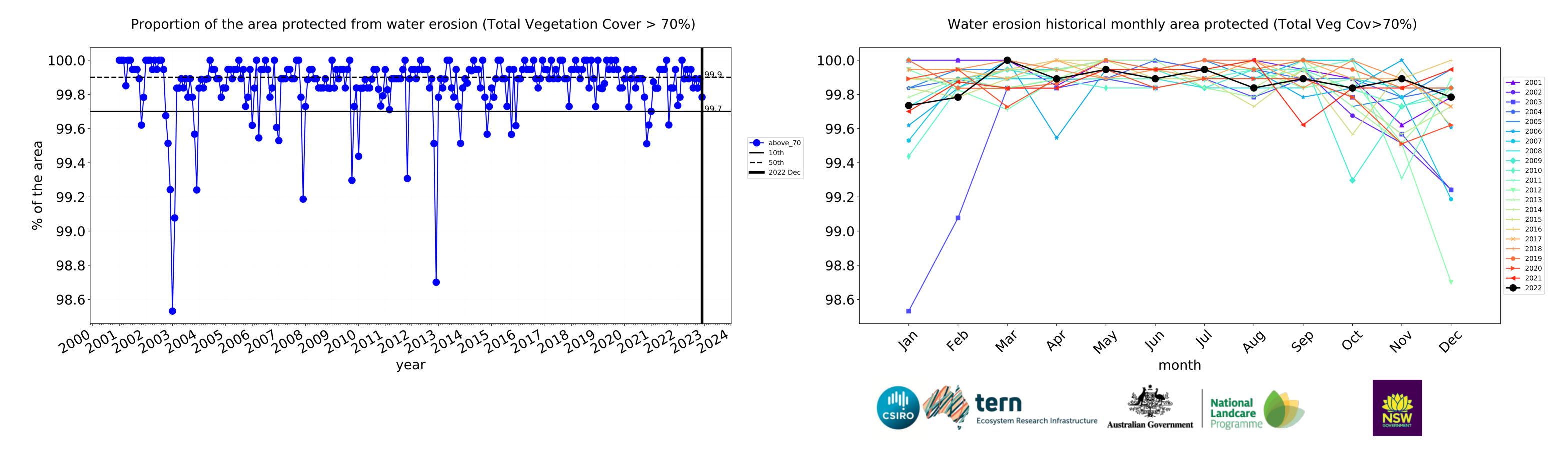


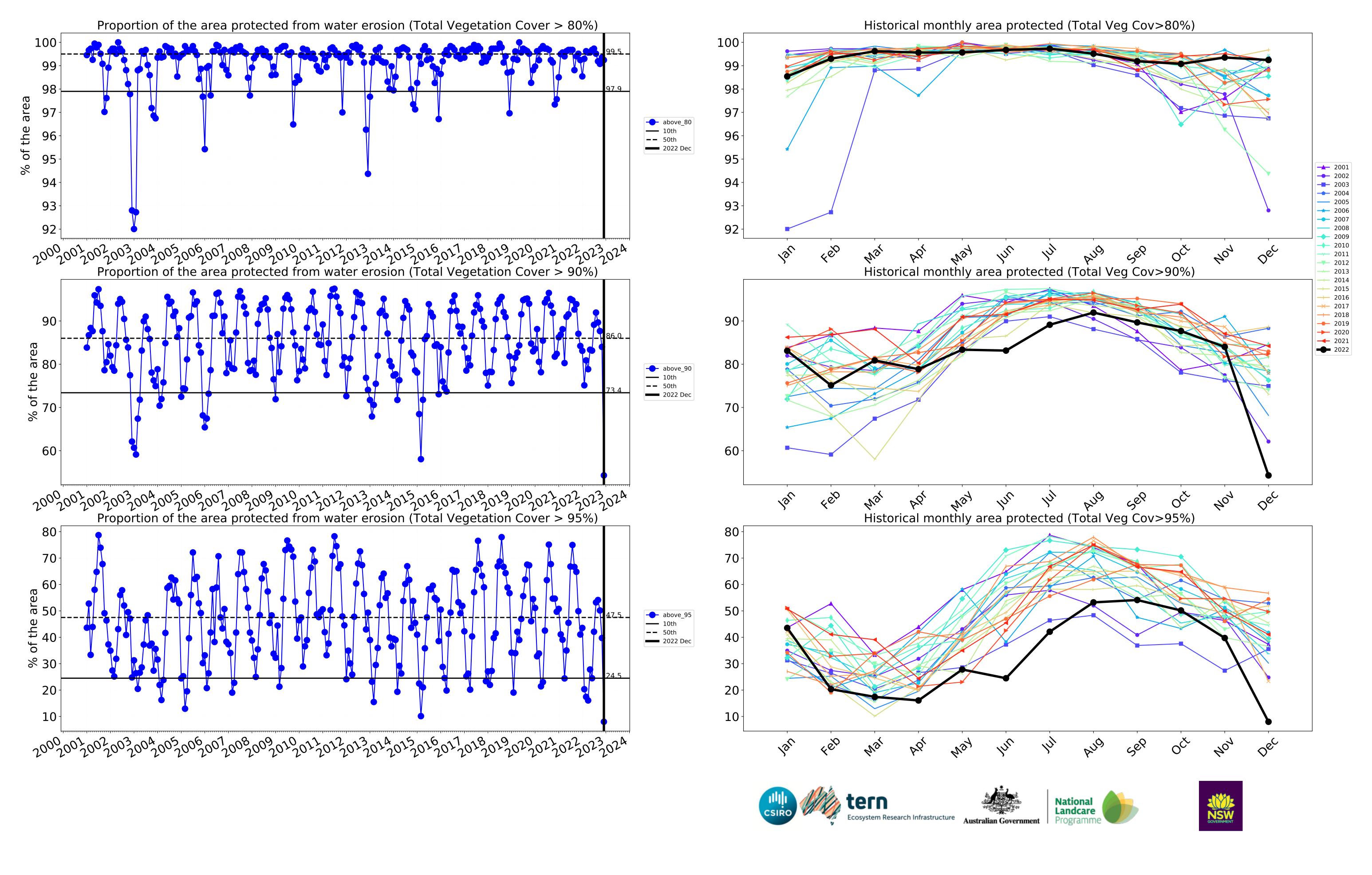




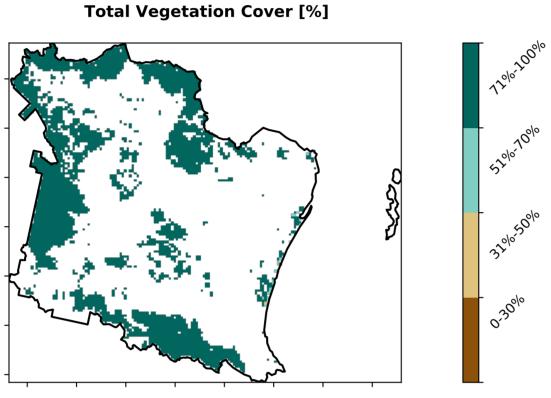
Conservation and natural environments Woodland forest timeseries





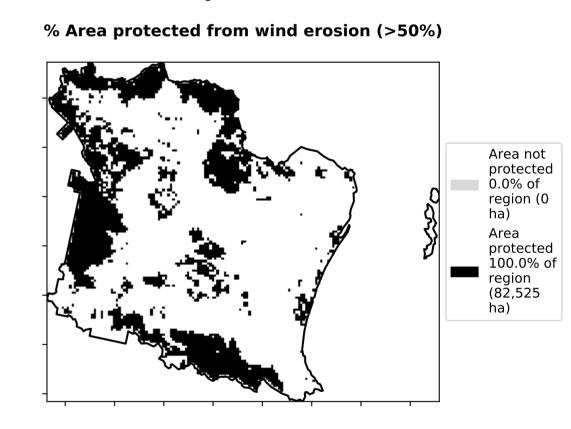


Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Conservation and natural environments - Non-Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



Proportion of vegetation cover class in area 100 80 20 31%-50% 0-30% **Total Vegetation Cover class**

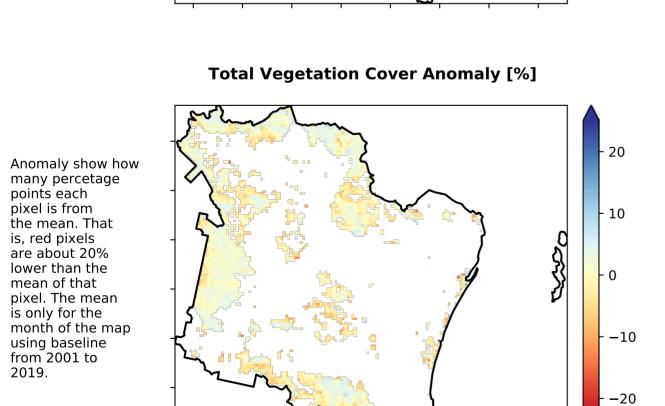
% Area protected from water erosion (>70%) Area not protected 0.7% of region (577 ha) Area protected 99.3% of region (81,947 ha)

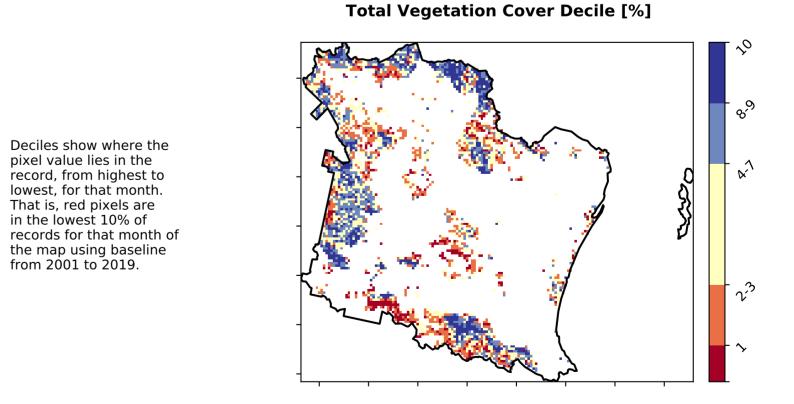


51%-70%

99.3%

71%-100%







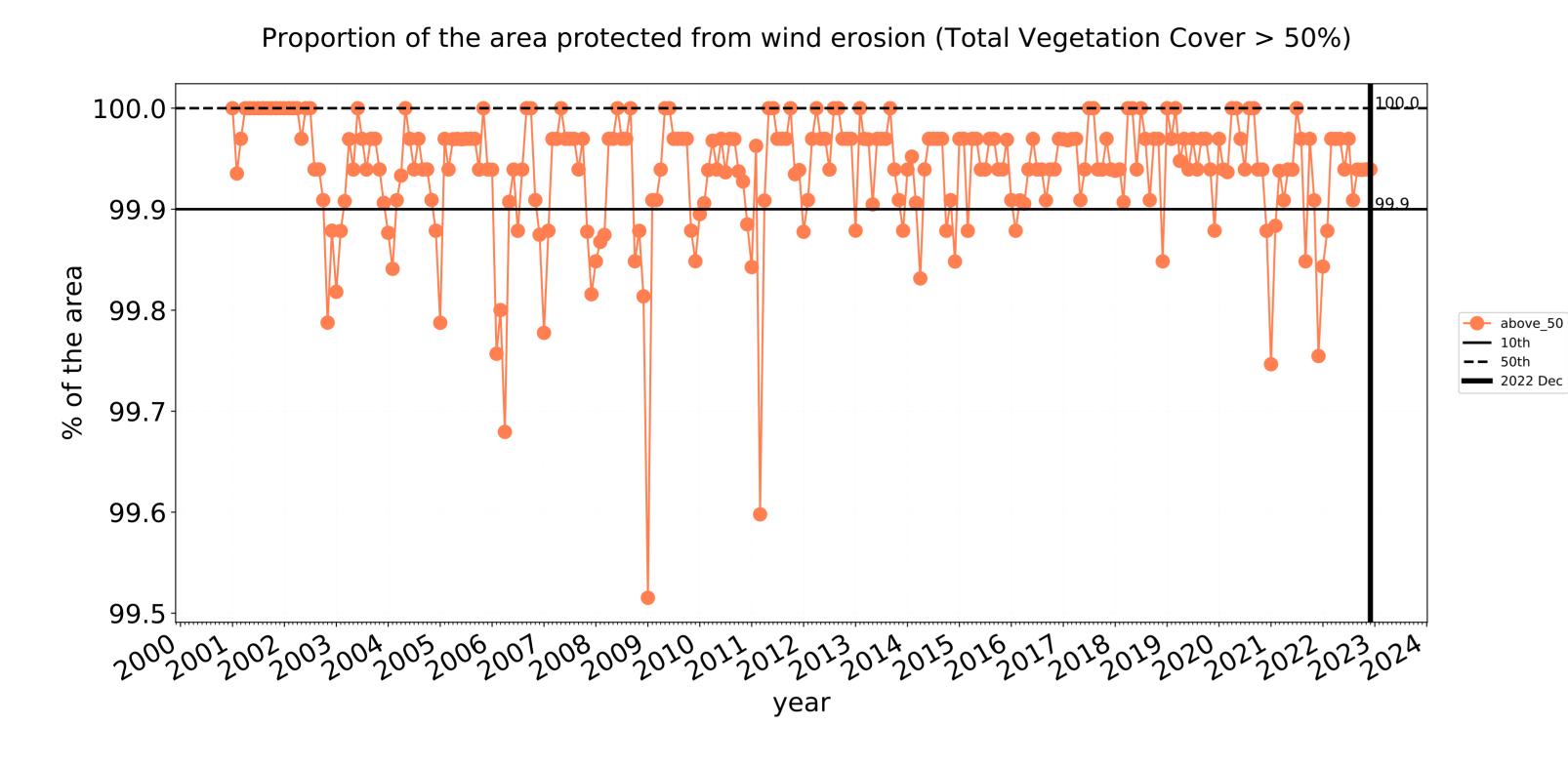


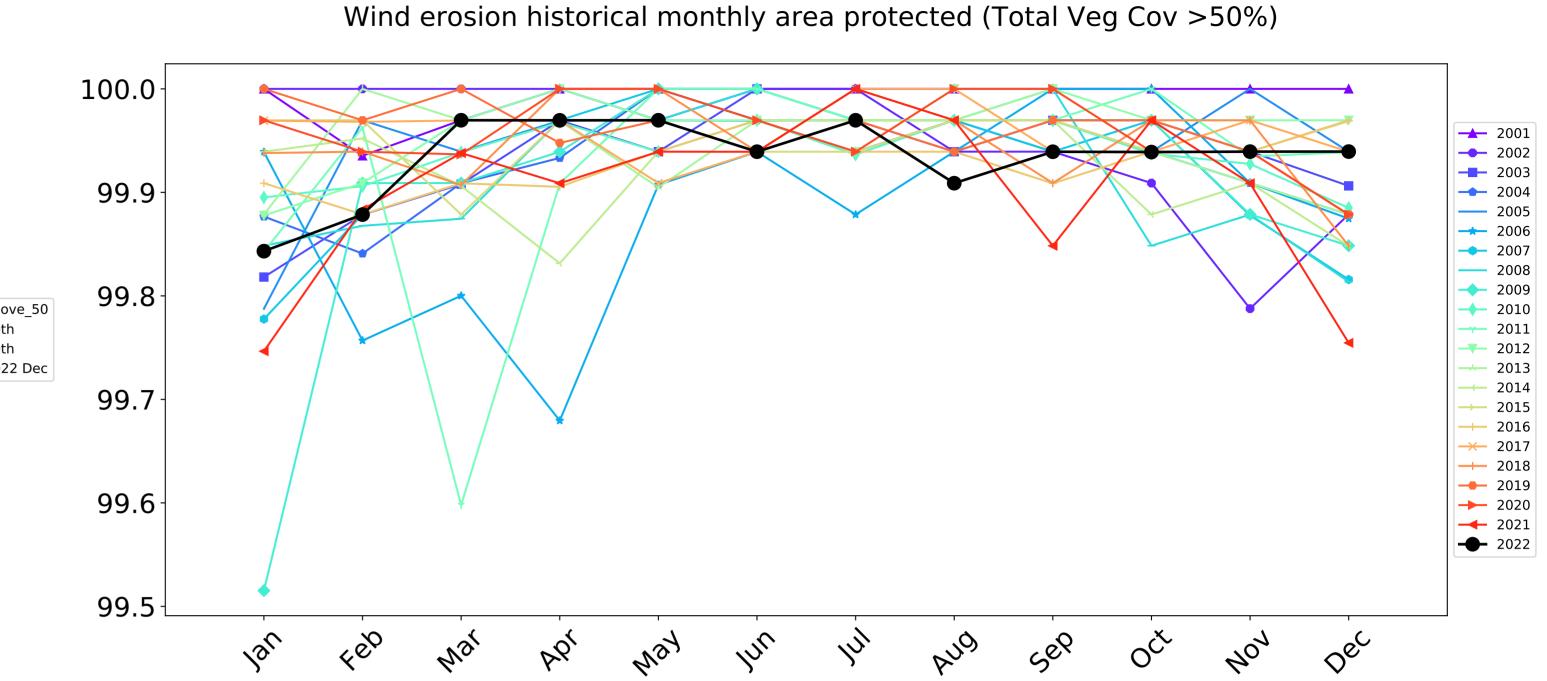




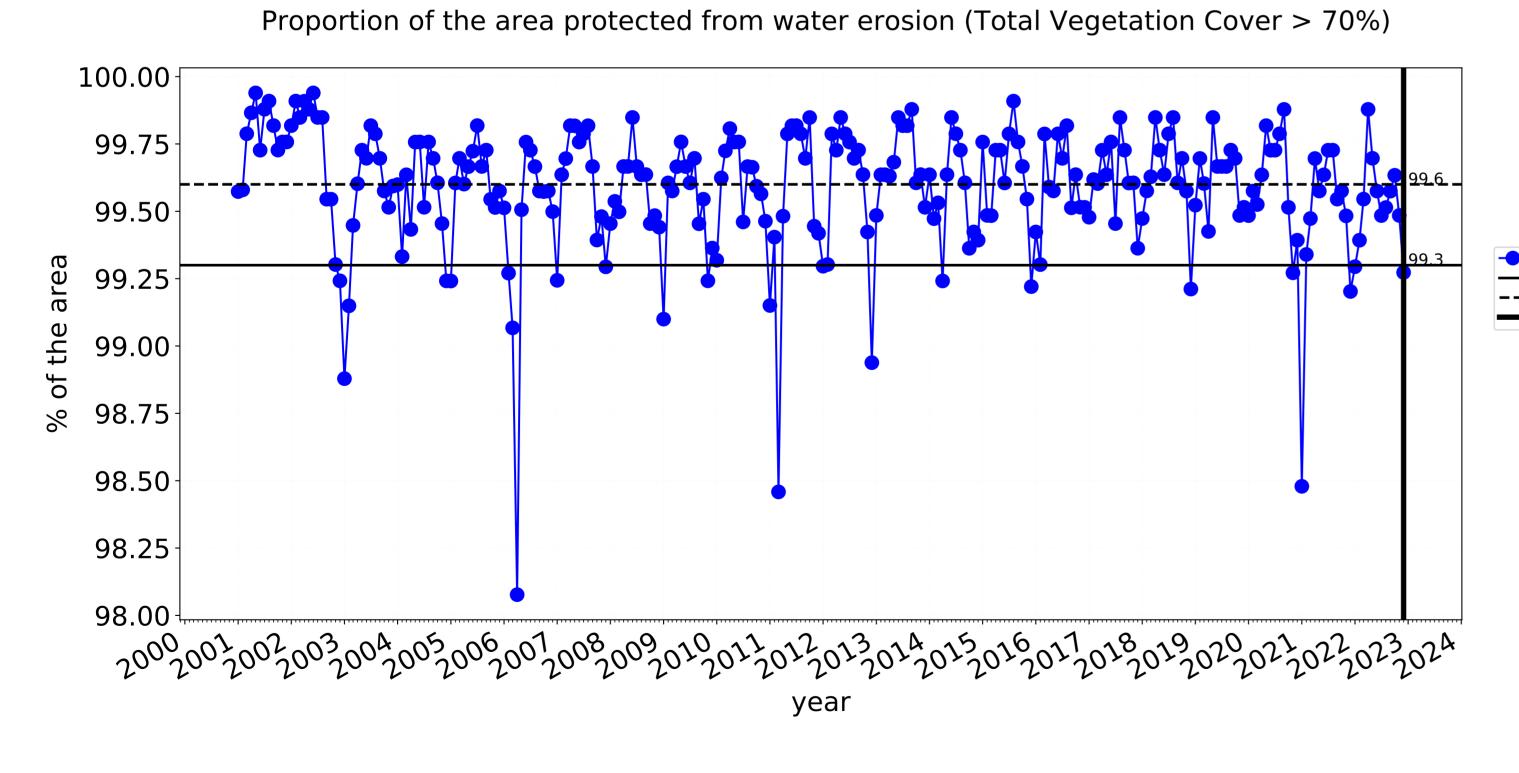
Australian Government

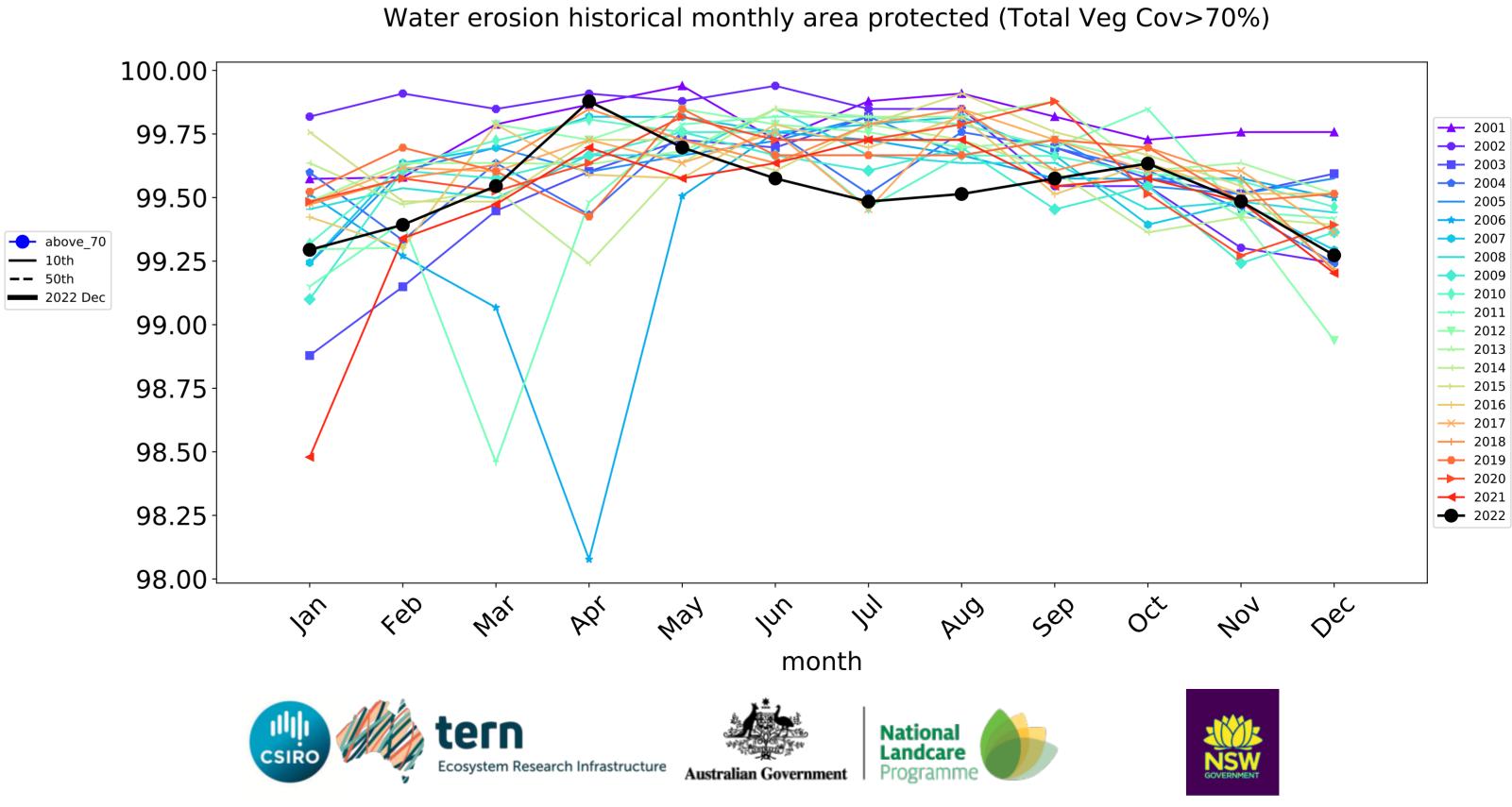
Conservation and natural environments Forest (non woodland) timeseries

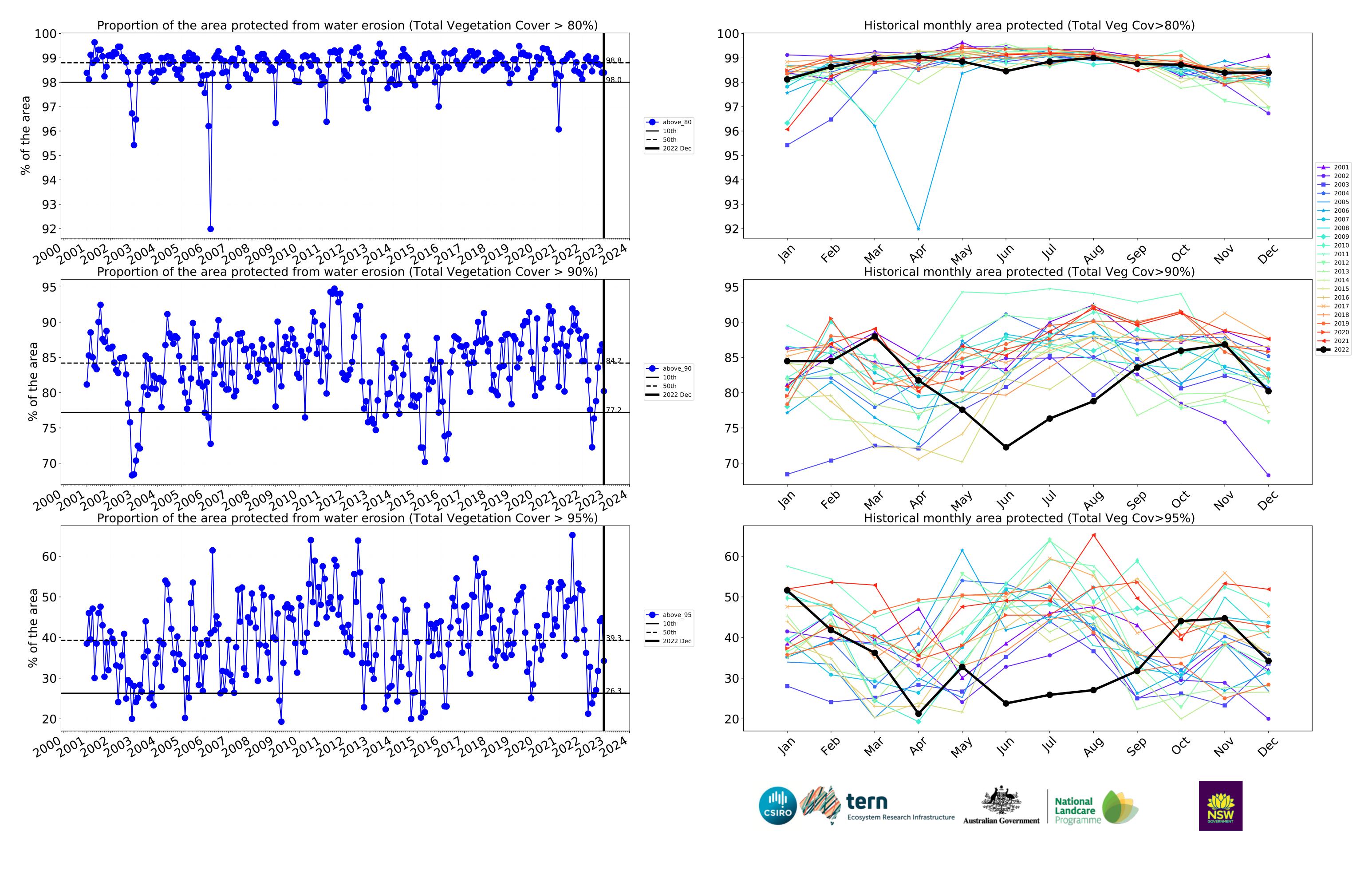




month







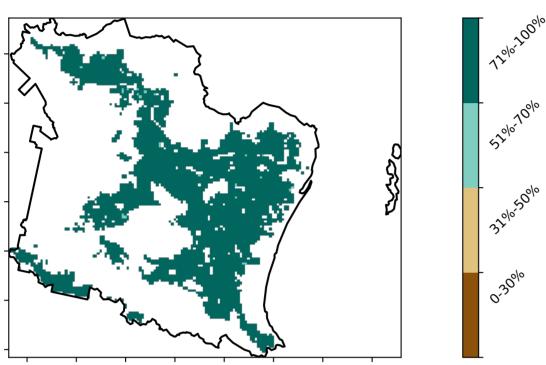
Agriculture

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

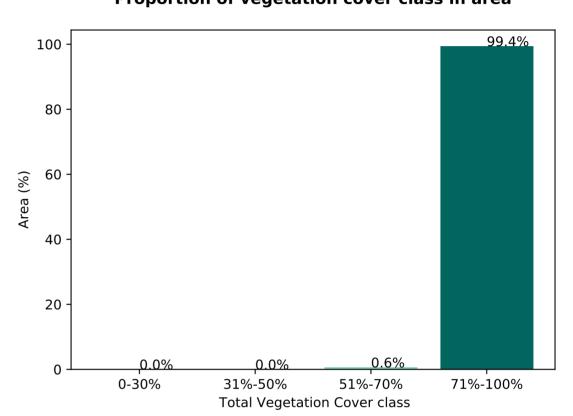
60 - 61.7% 50 - 40 - 40 - 20 - 15.4% 10 - 2.6% 3.0% Land use class

Proportion of each land class in area

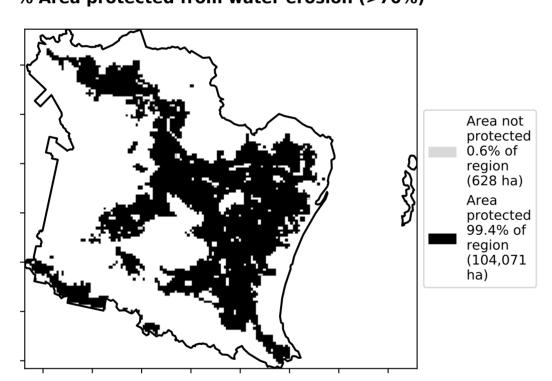
Total Vegetation Cover [%]



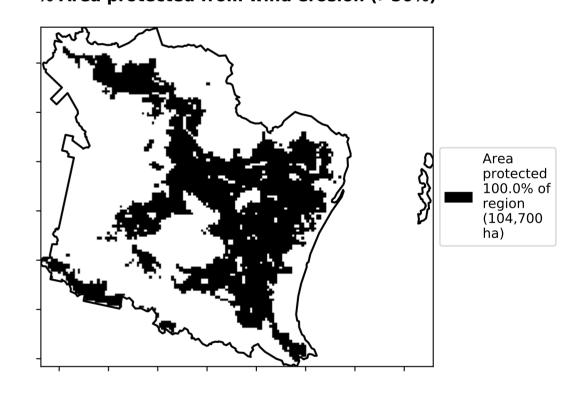
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]

Anomaly show how many percetage points each pixel is from

the mean. That

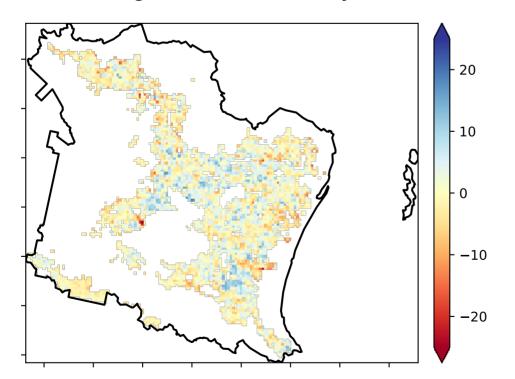
is, red pixels

are about 20% lower than the mean of that

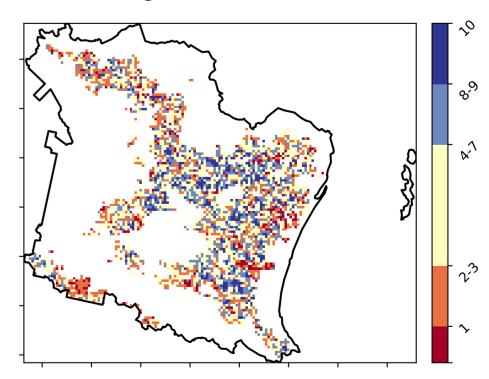
pixel. The mean

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.



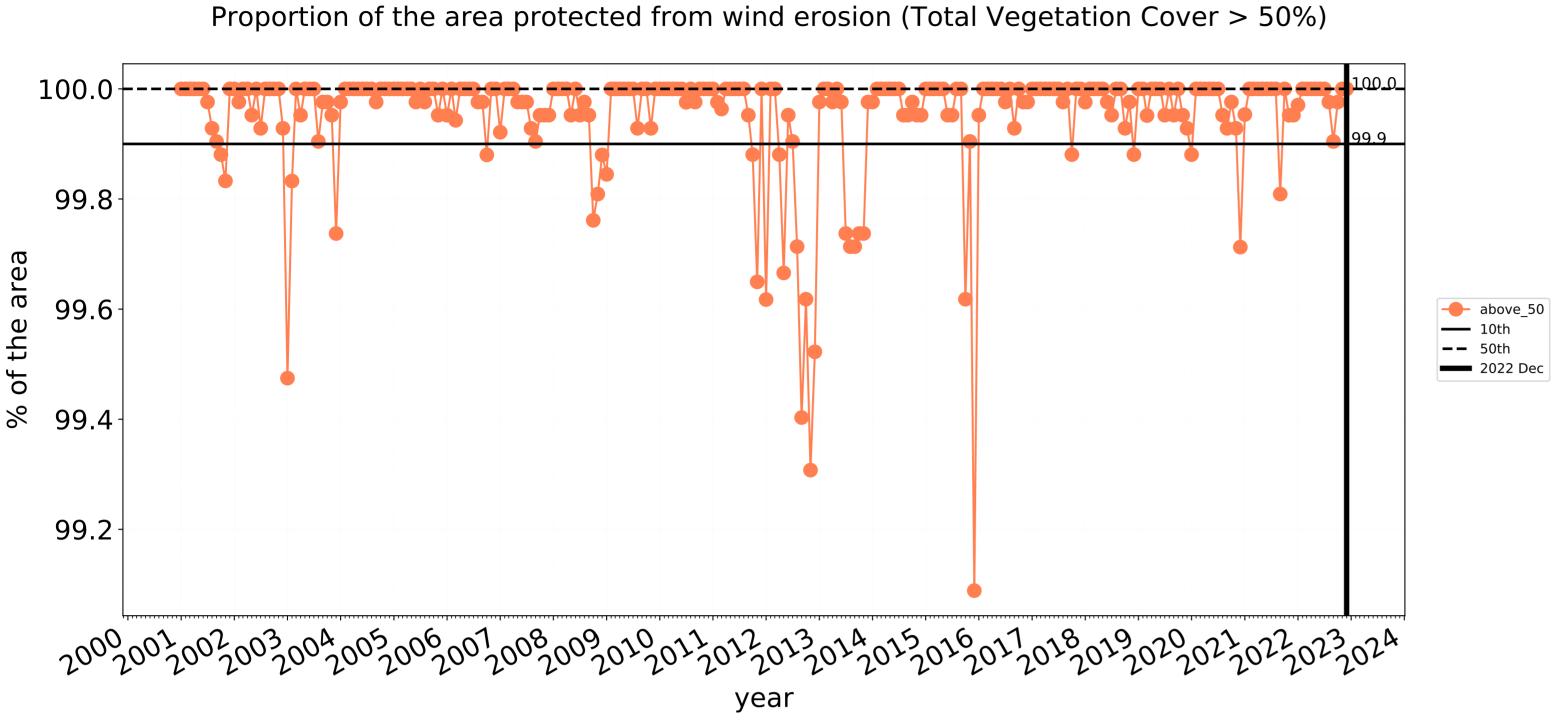


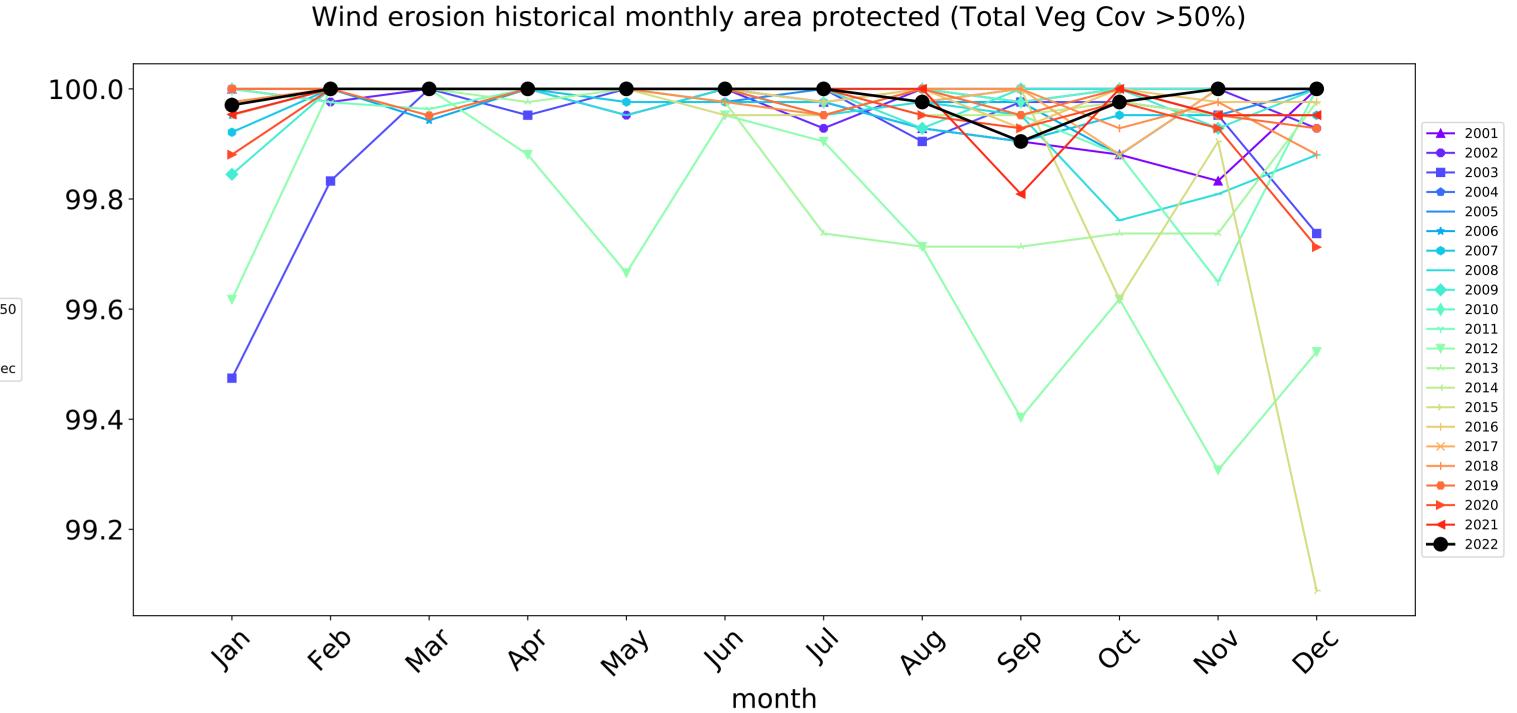


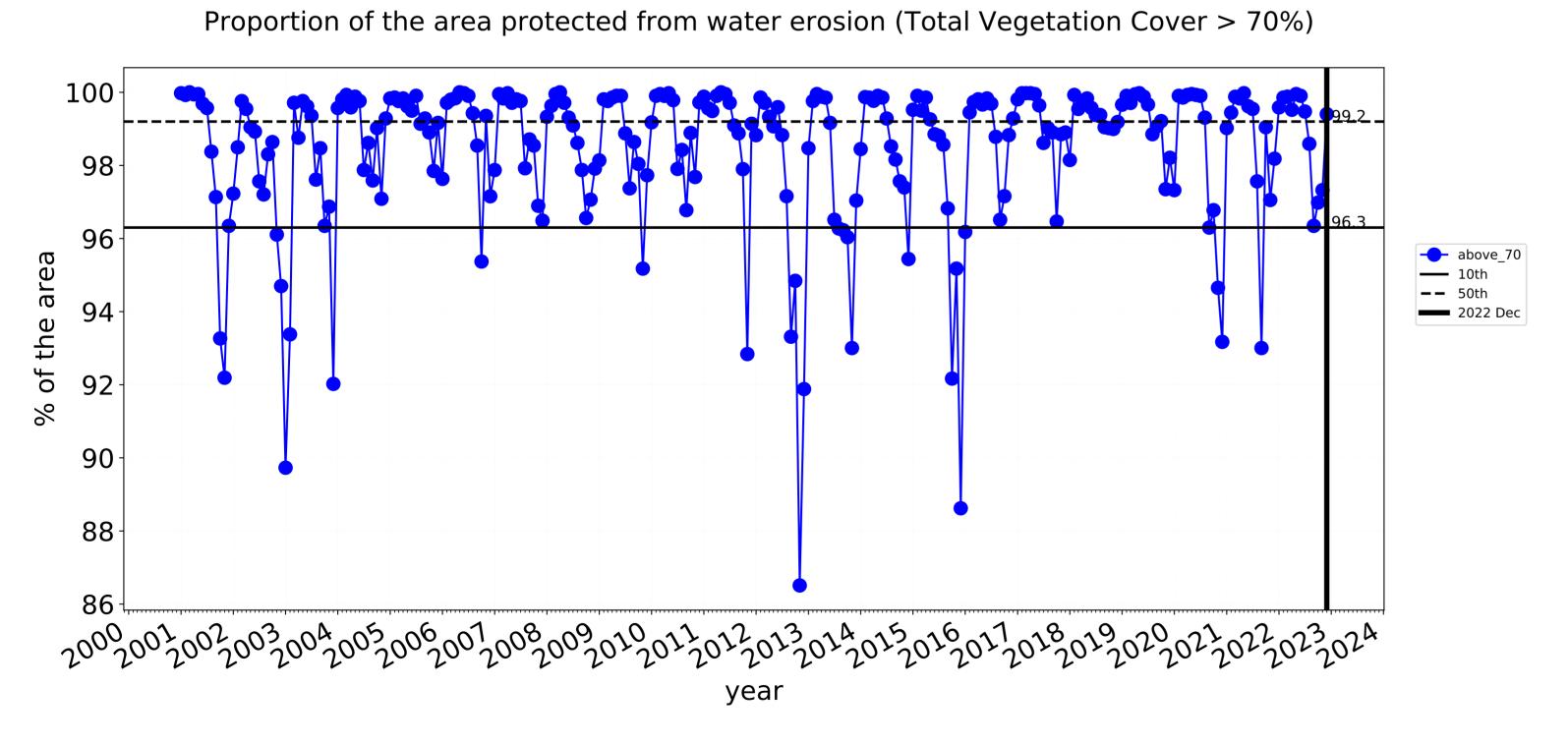


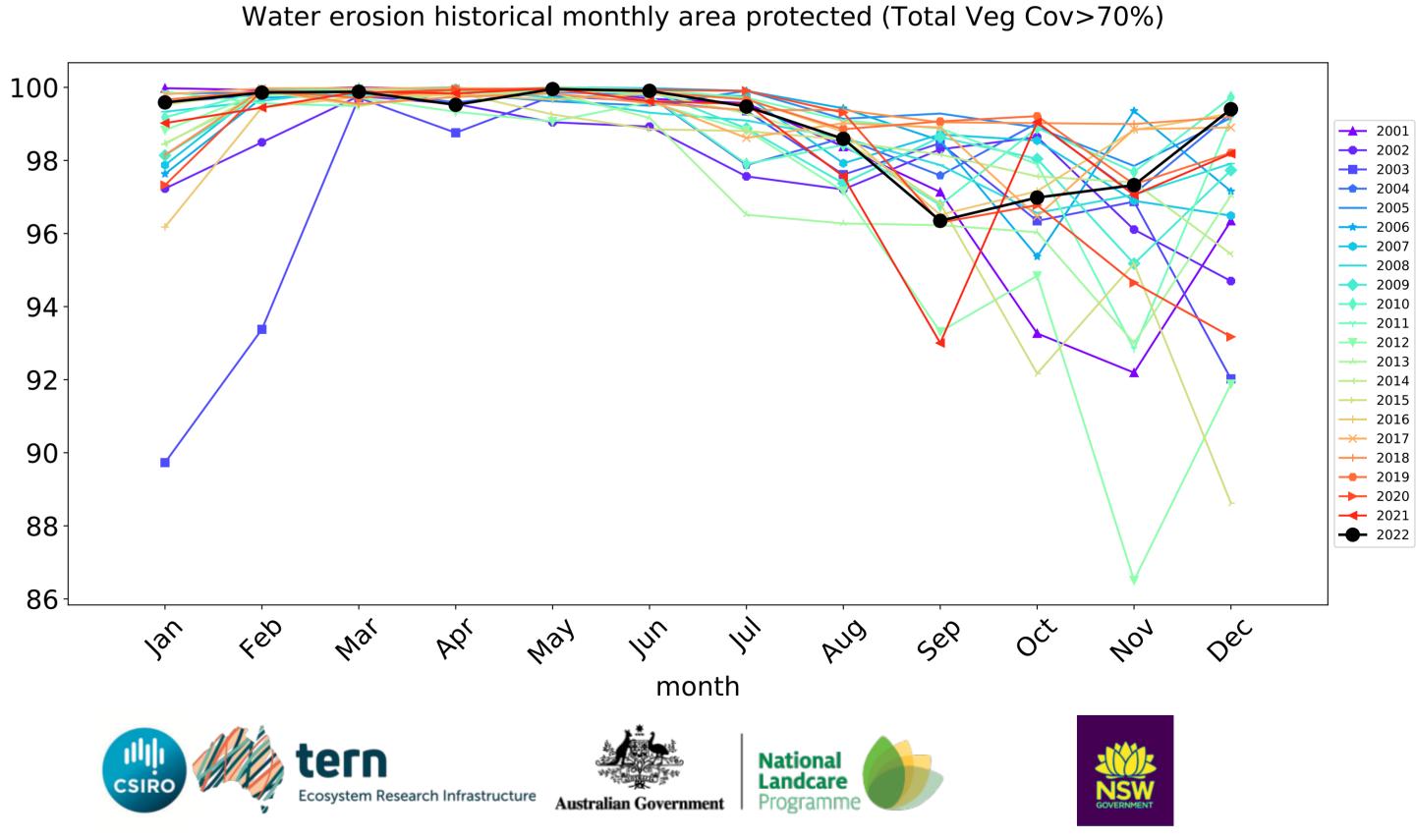


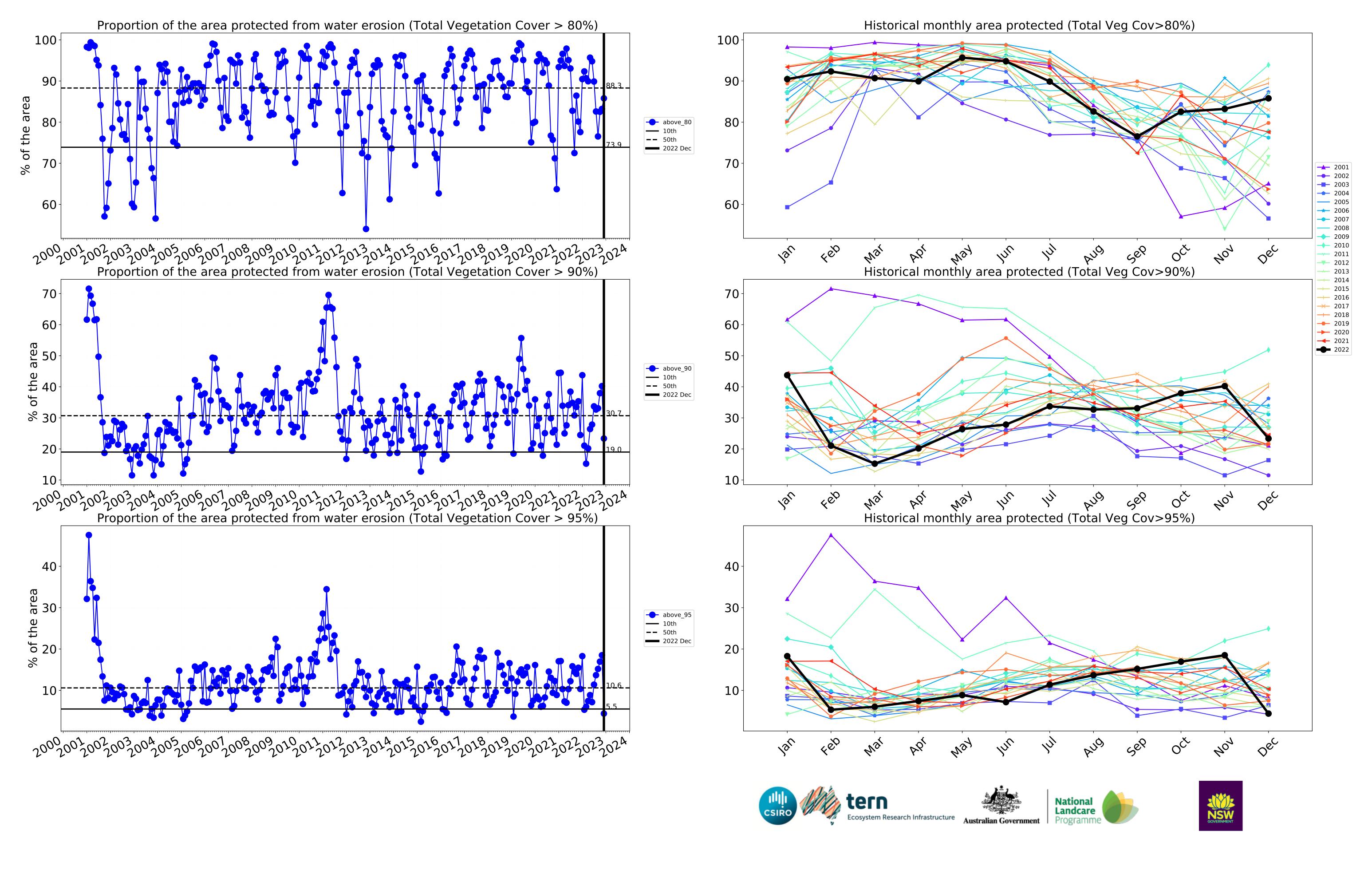
Agriculture timeseries











Grazing

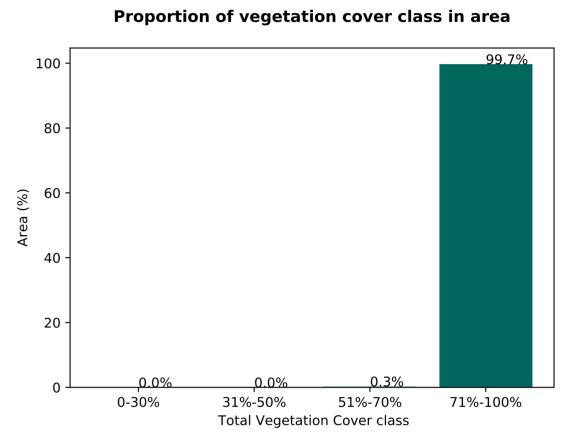
Catchment Scale Land Use and Forests of Australia (2018) 1 Agriculture - Grazing - Non forest Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest

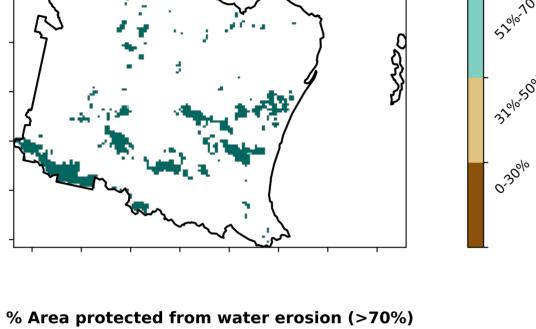
Land use and forest cover

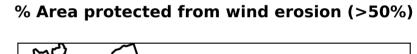
73.4% 70 60 50 Area (%) 30 20 14.4% 12.2% 10 0.5 1.0 1.5 2.0 2.5 -0.5 0.0 Land use class

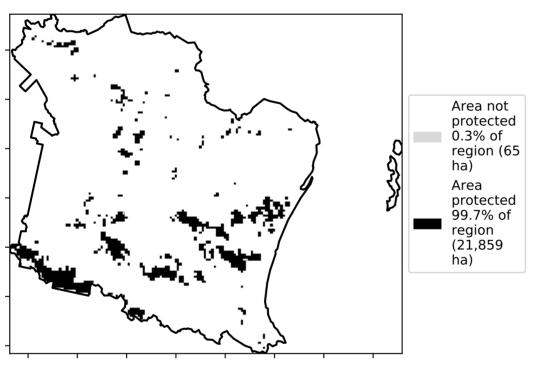
Proportion of each land class in area

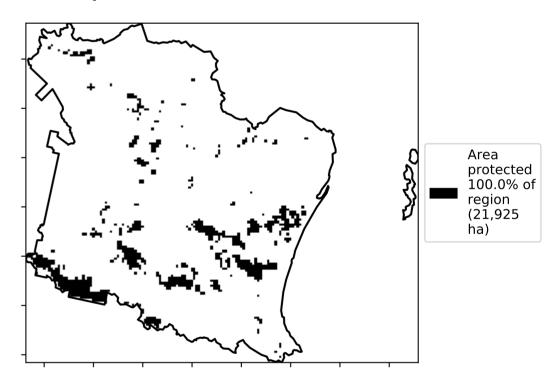
Total Vegetation Cover [%]











Total Vegetation Cover Anomaly [%]

Anomaly show how many percetage points each pixel is from

the mean. That is, red pixels

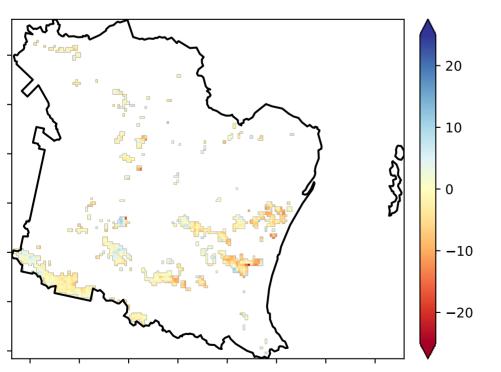
are about 20% lower than the mean of that

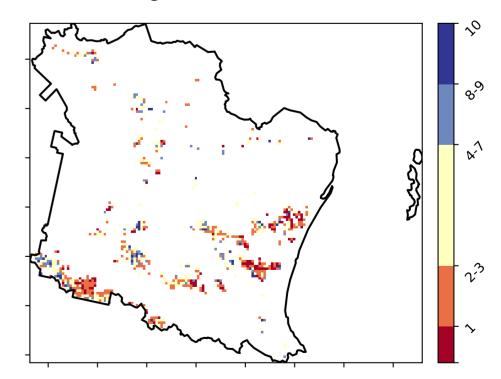
pixel. The mean

using baseline from 2001 to 2019.

is only for the month of the map

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.

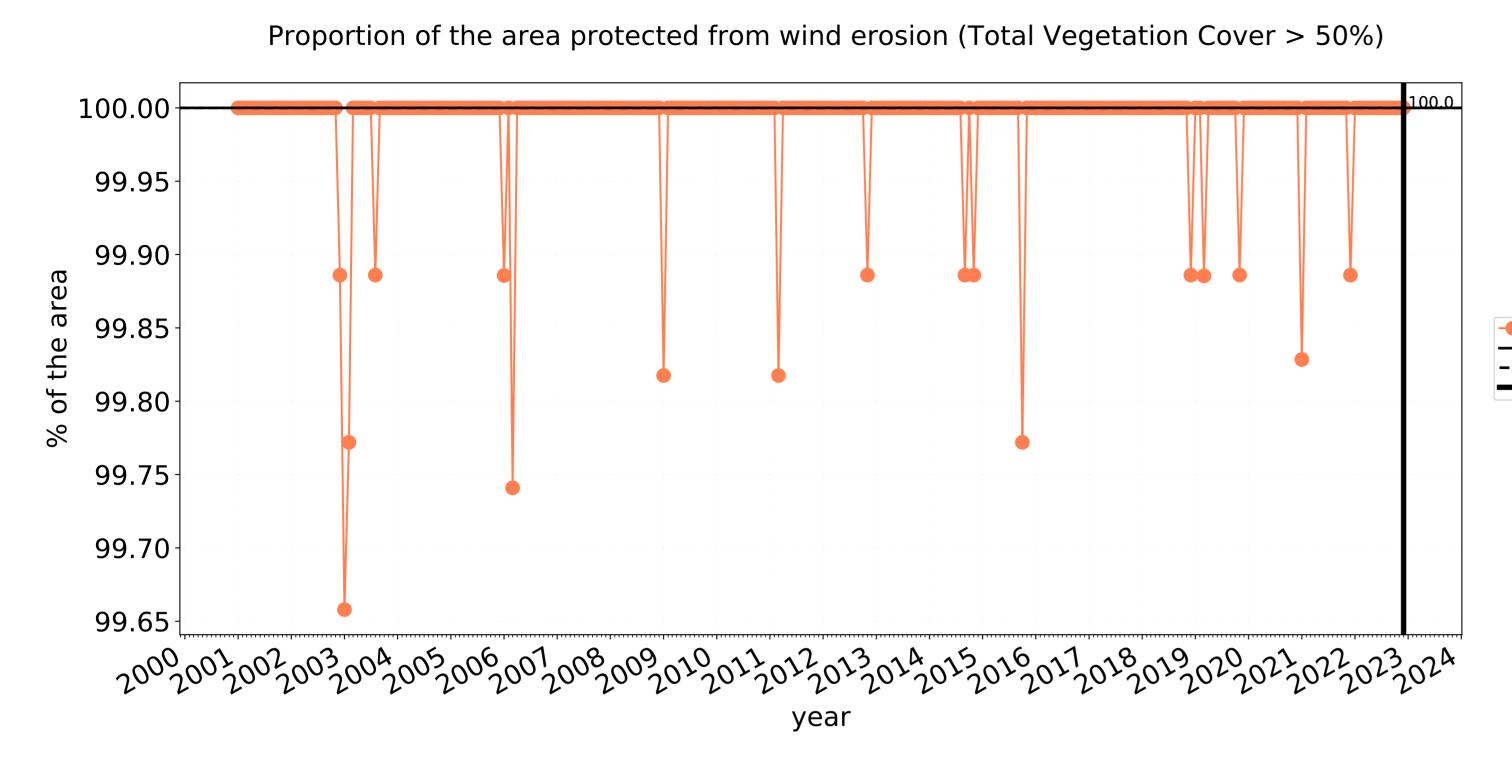


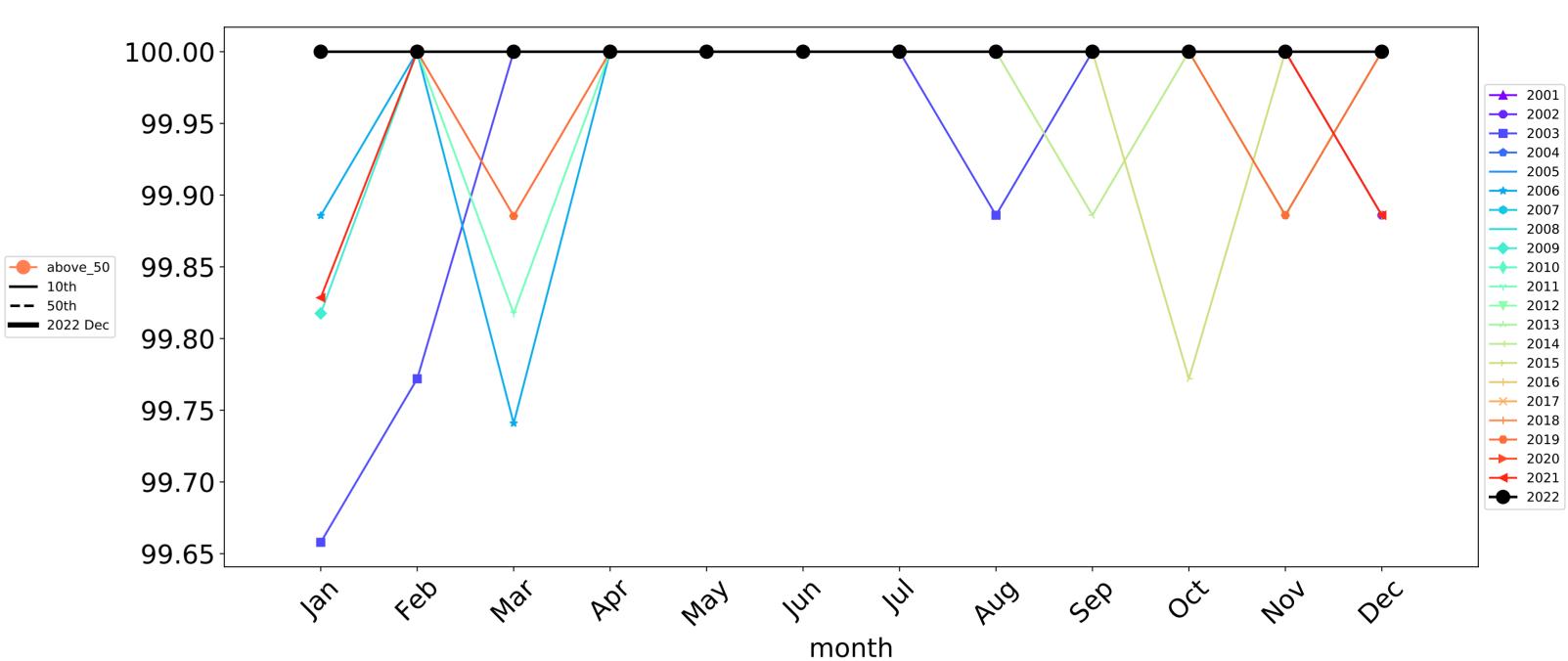




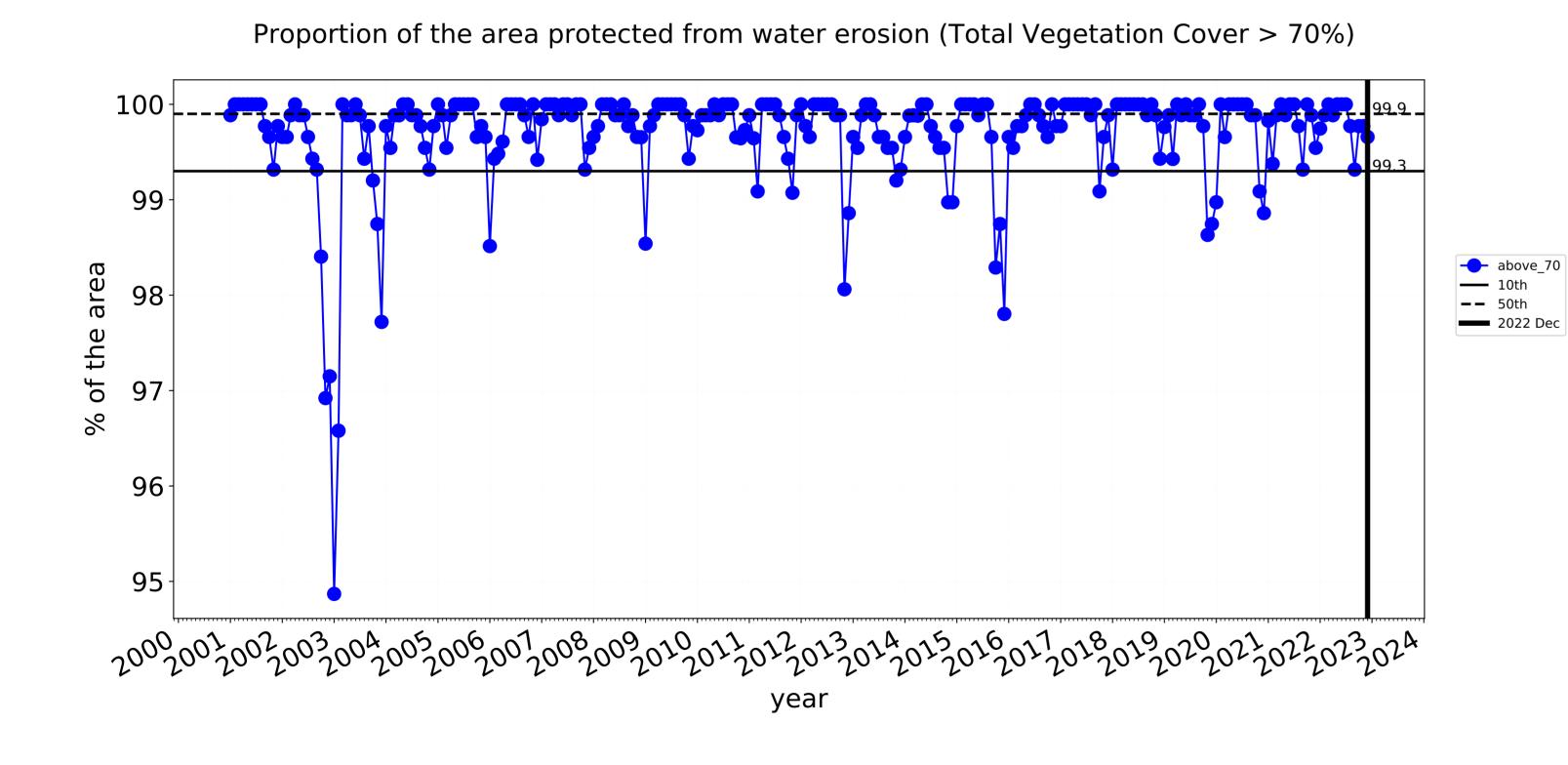


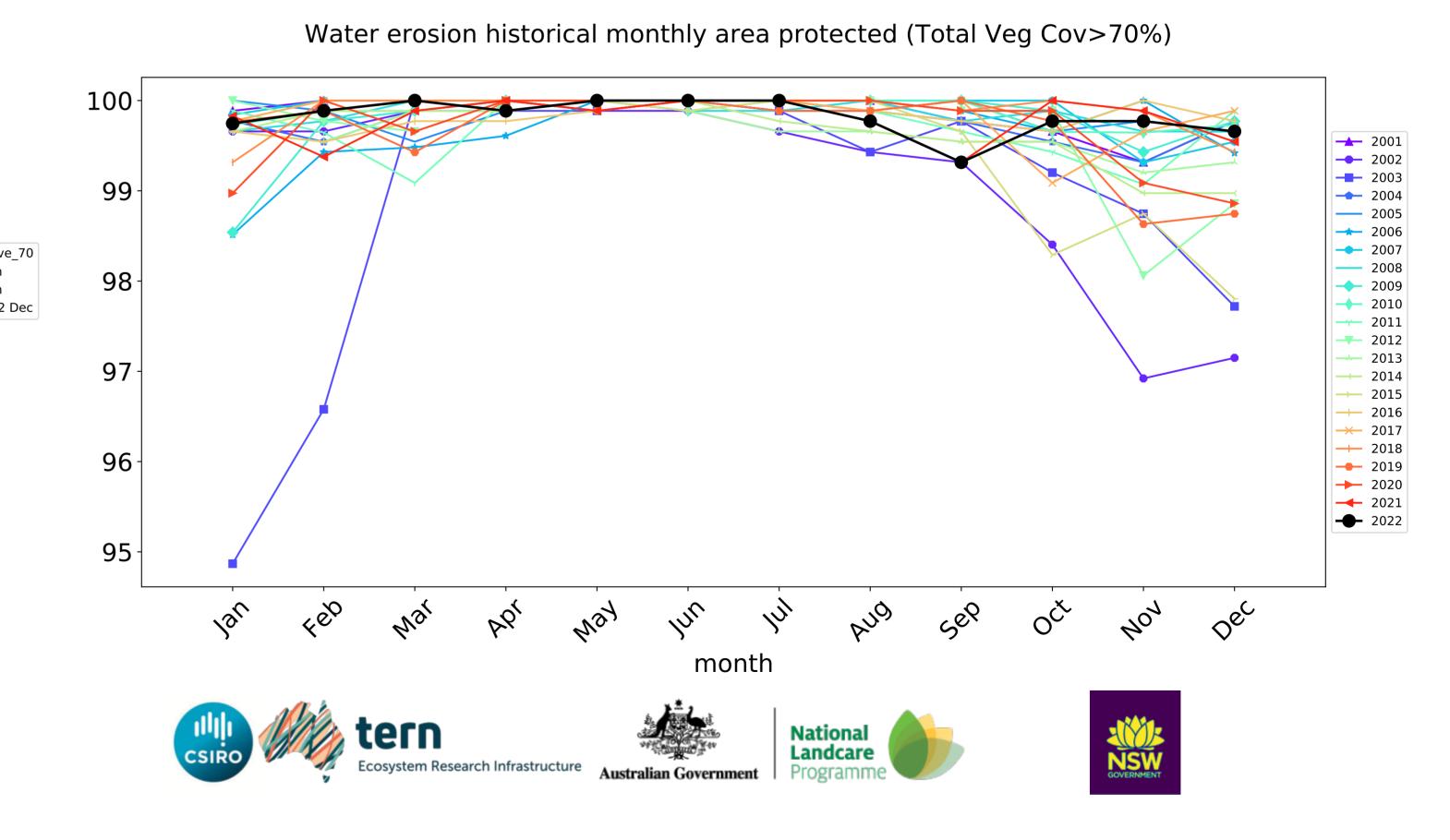
Grazing timeseries

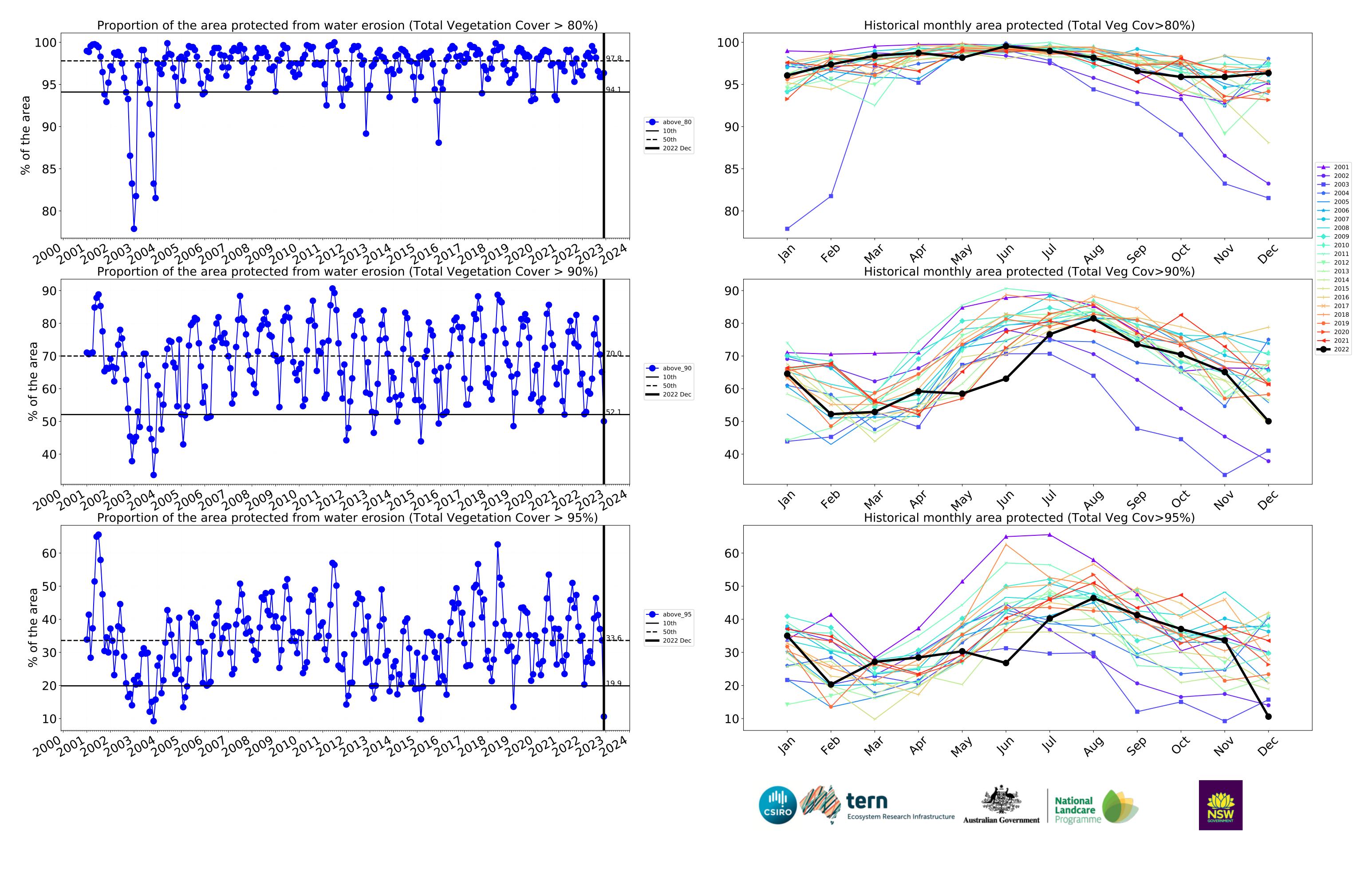




Wind erosion historical monthly area protected (Total Veg Cov >50%)







Grazing non forest

Land use and forest cover



Use of Australia (2018) and Forests

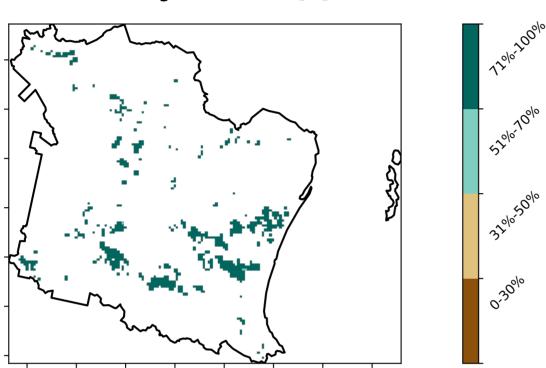
the mean. That

is, red pixels are about 20% lower than the

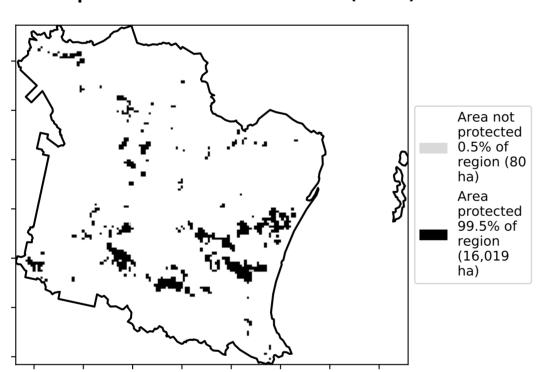
mean of that pixel. The mean is only for the month of the map

using baseline from 2001 to 2019.

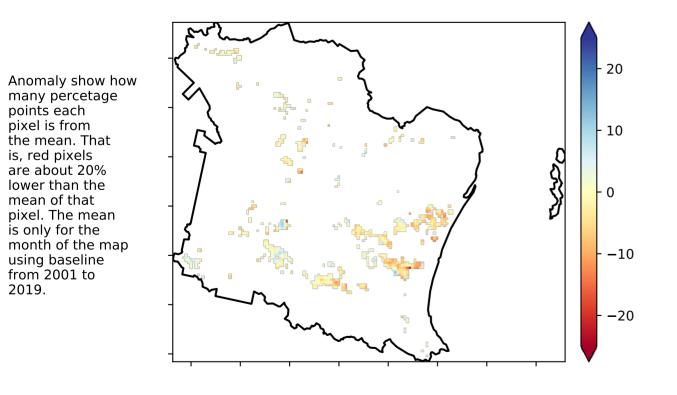
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

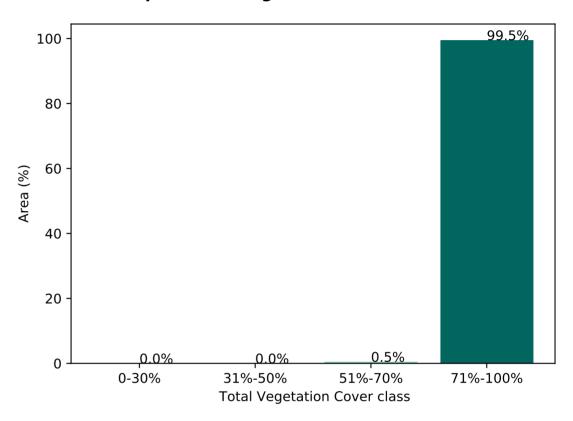


Total Vegetation Cover Anomaly [%]

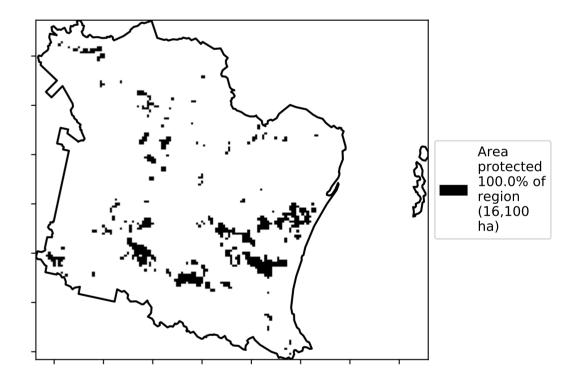


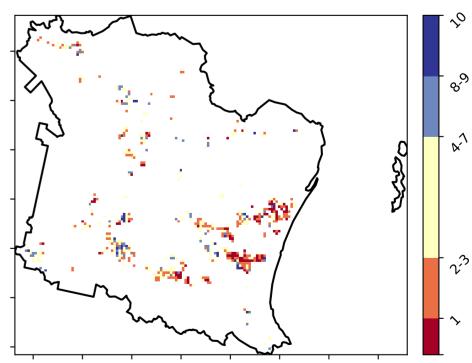
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





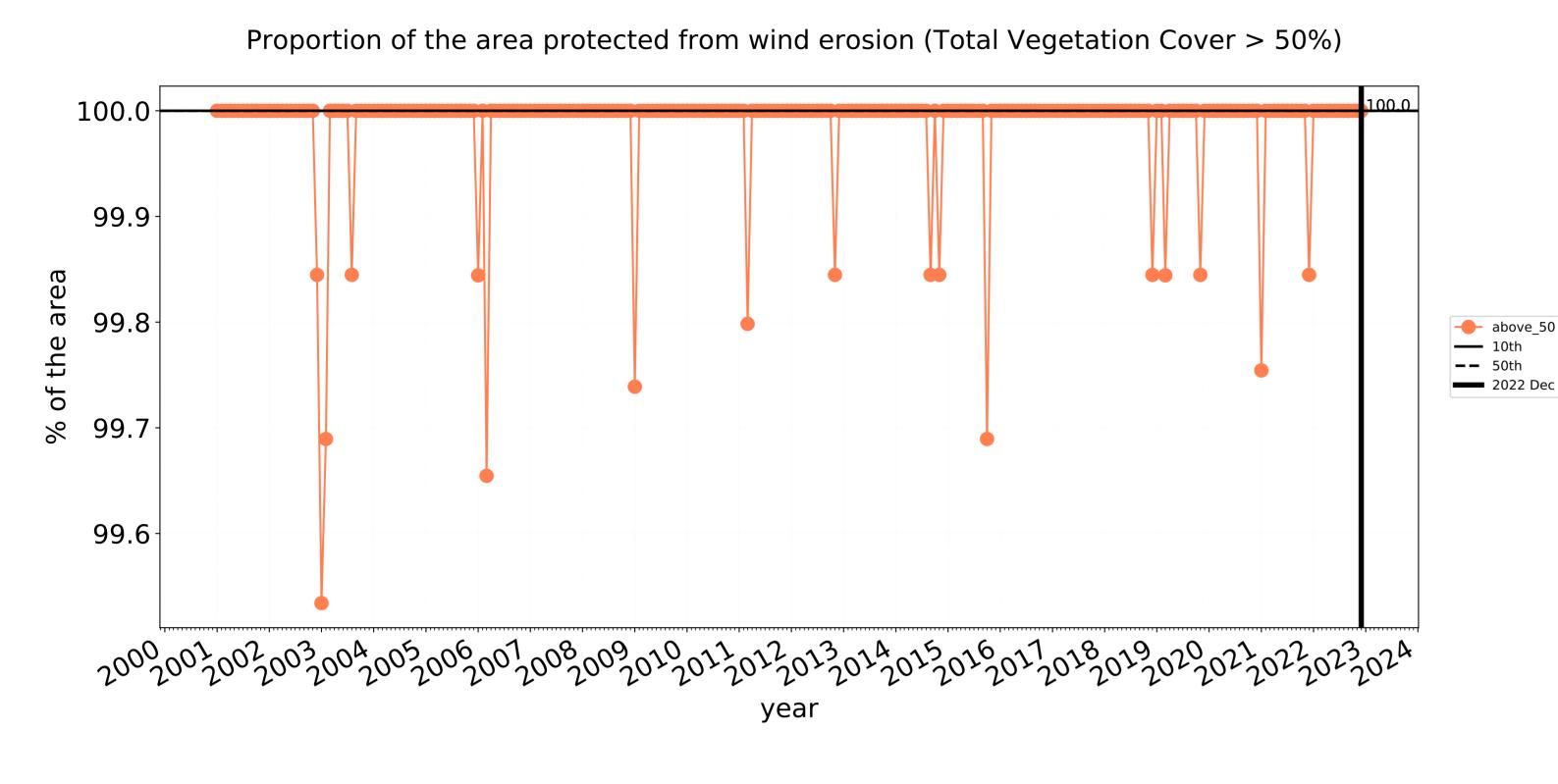


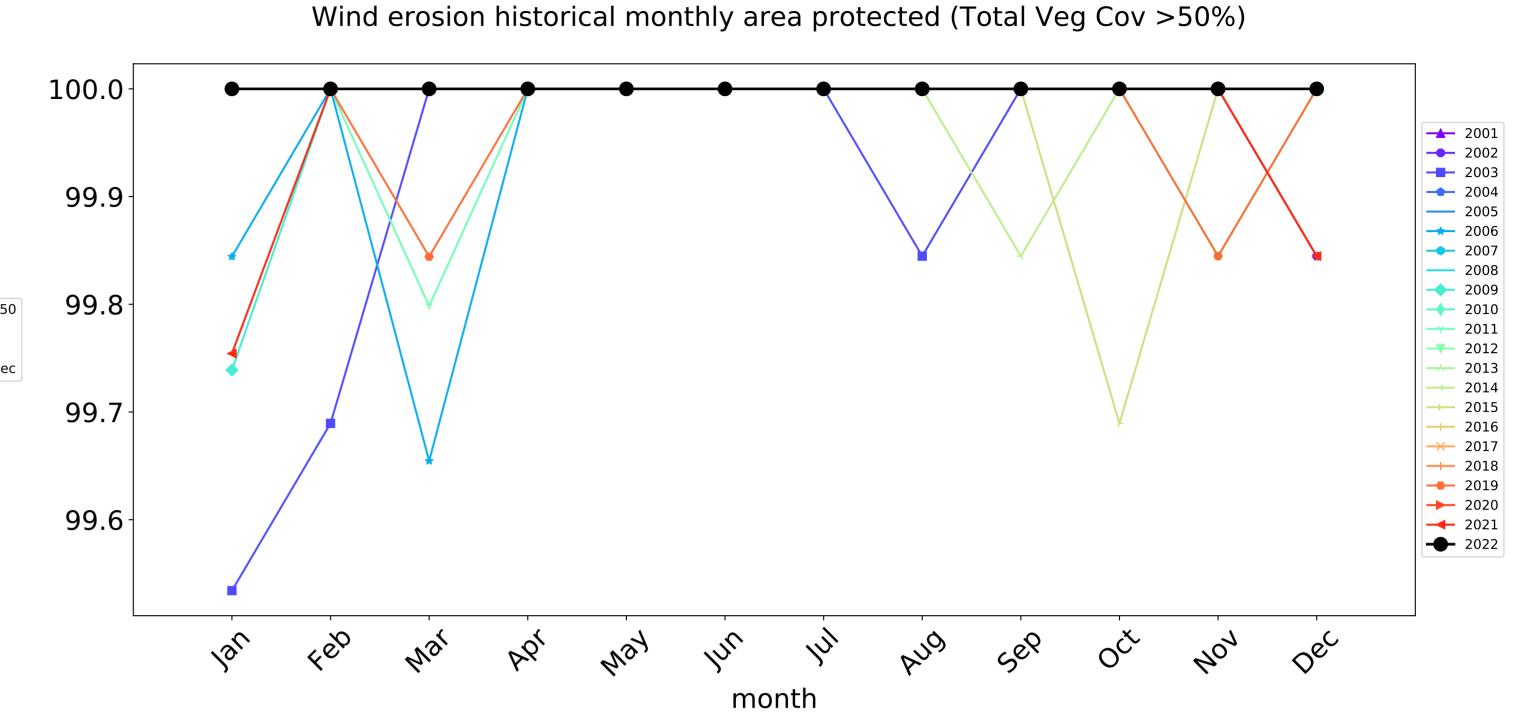


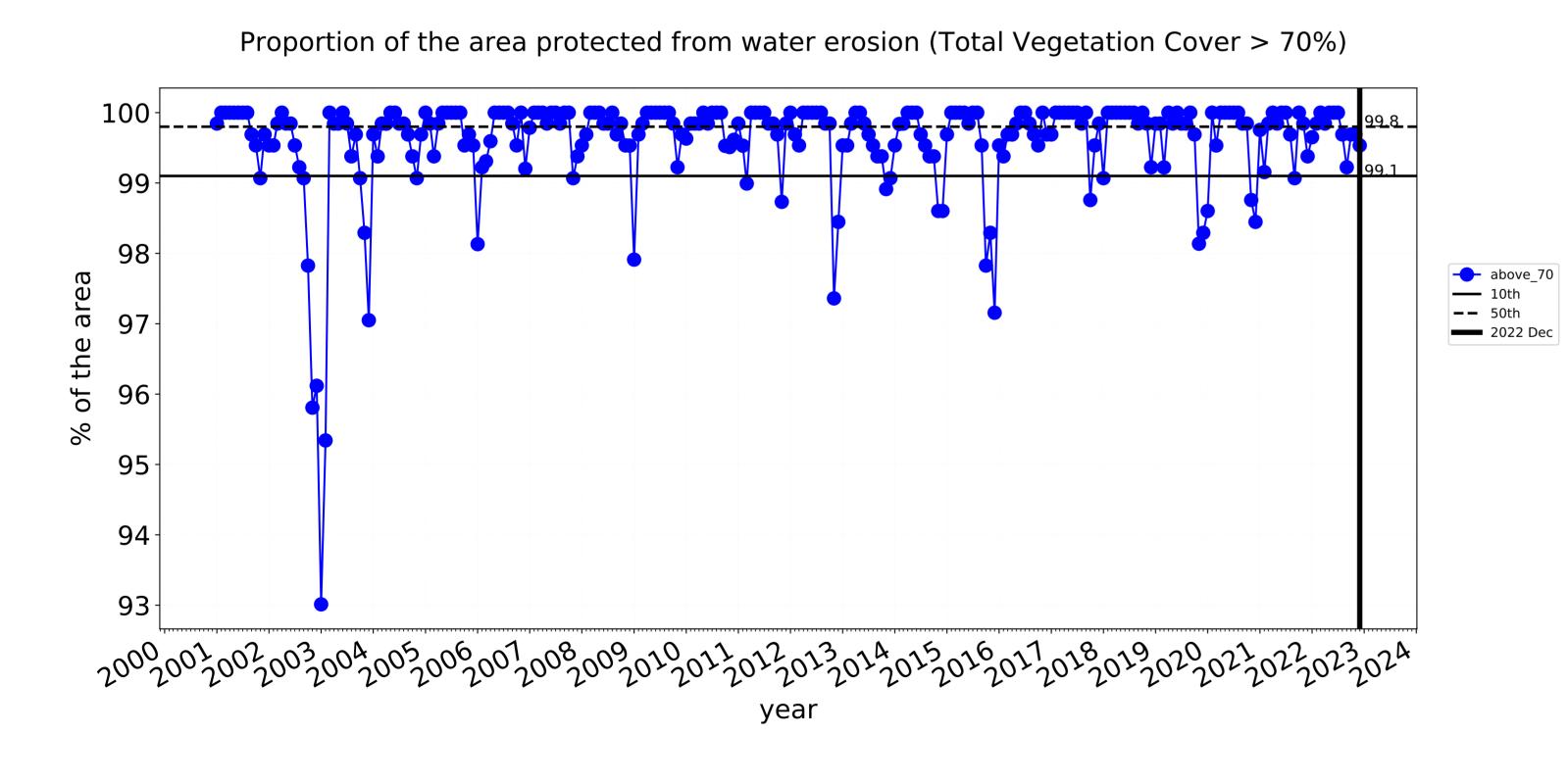


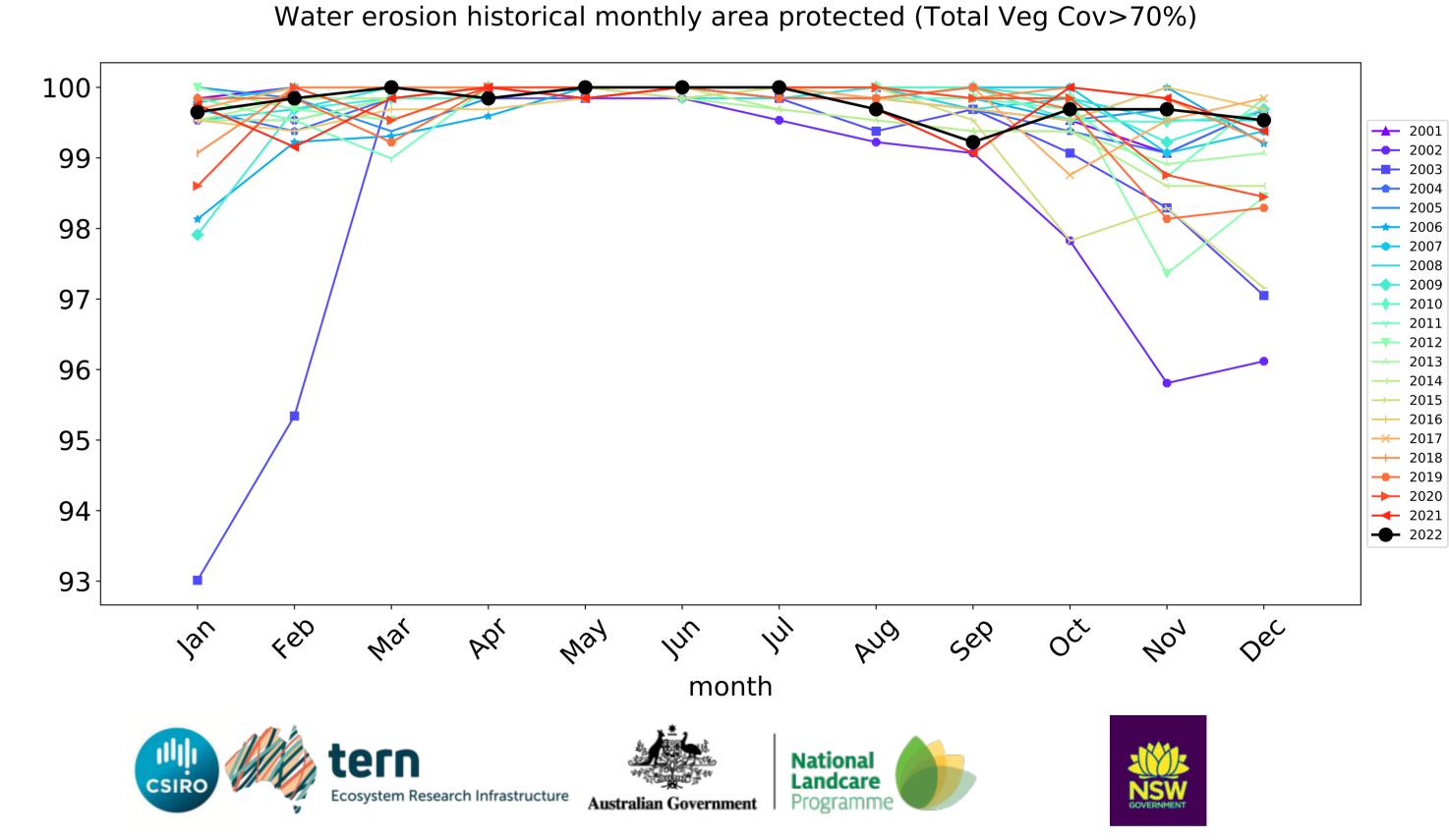


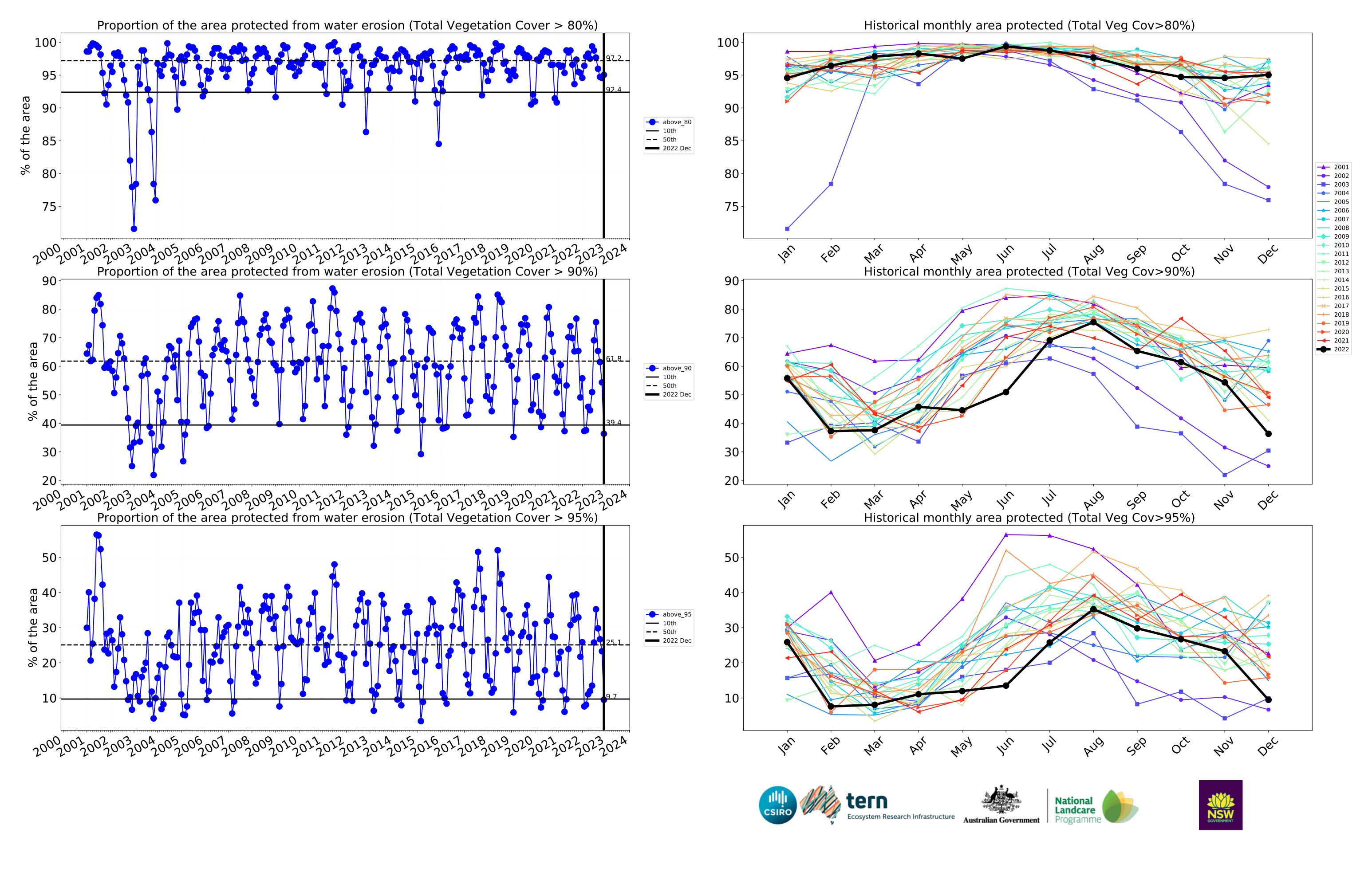
Grazing non forest timeseries











Grazing Woodland forest

Land use and forest cover

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

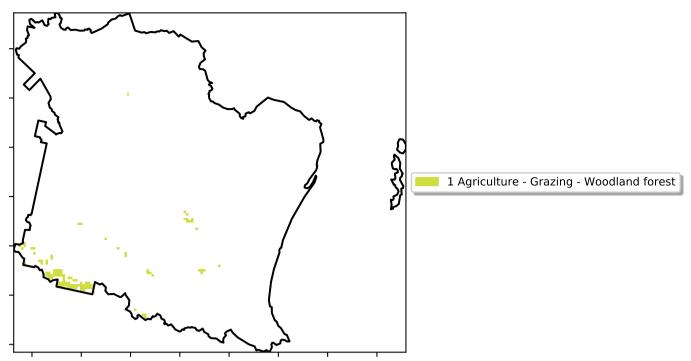
the mean. That is, red pixels

are about 20% lower than the mean of that

pixel. The mean

using baseline from 2001 to 2019.

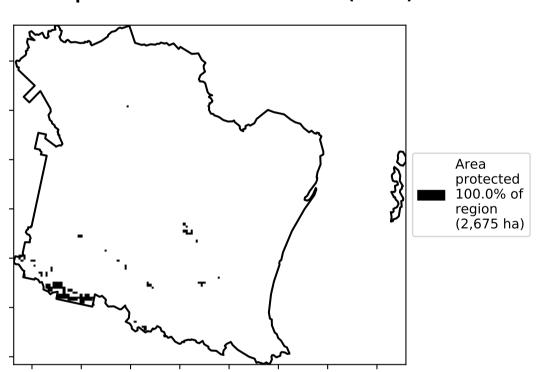
is only for the month of the map



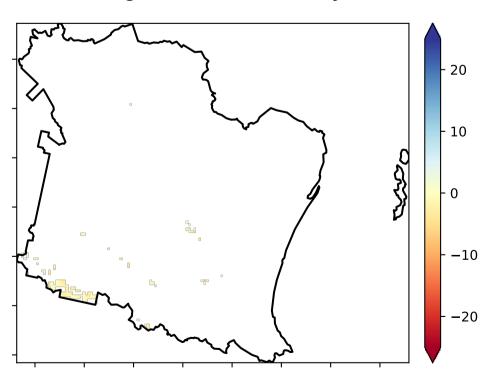
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

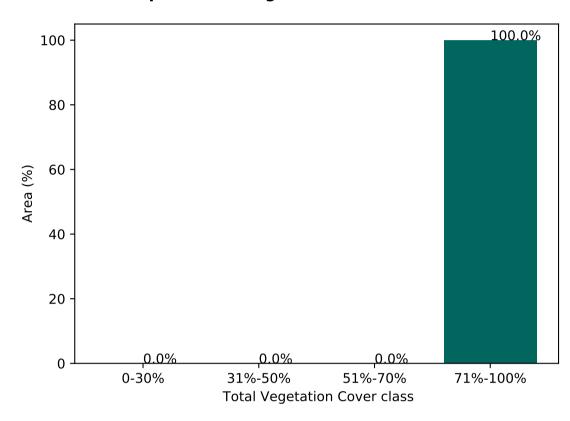


Total Vegetation Cover Anomaly [%]

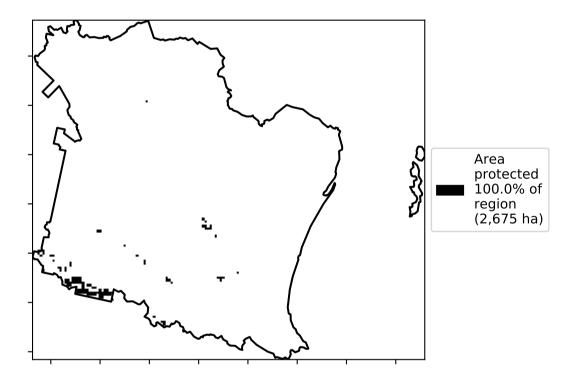


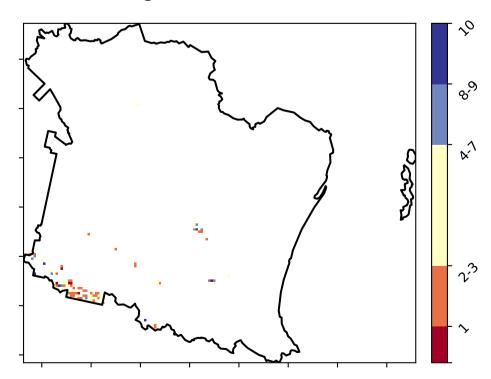
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





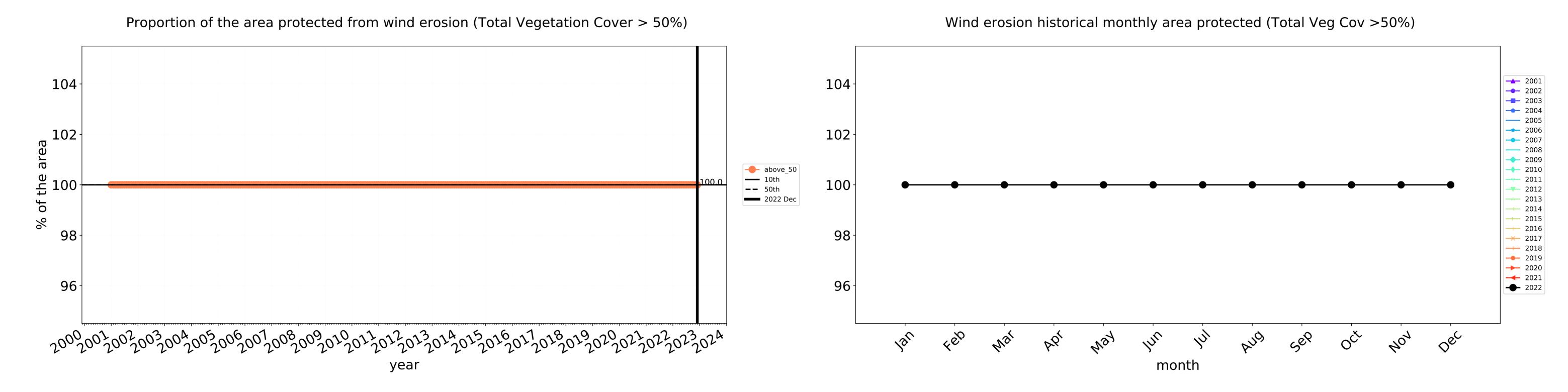


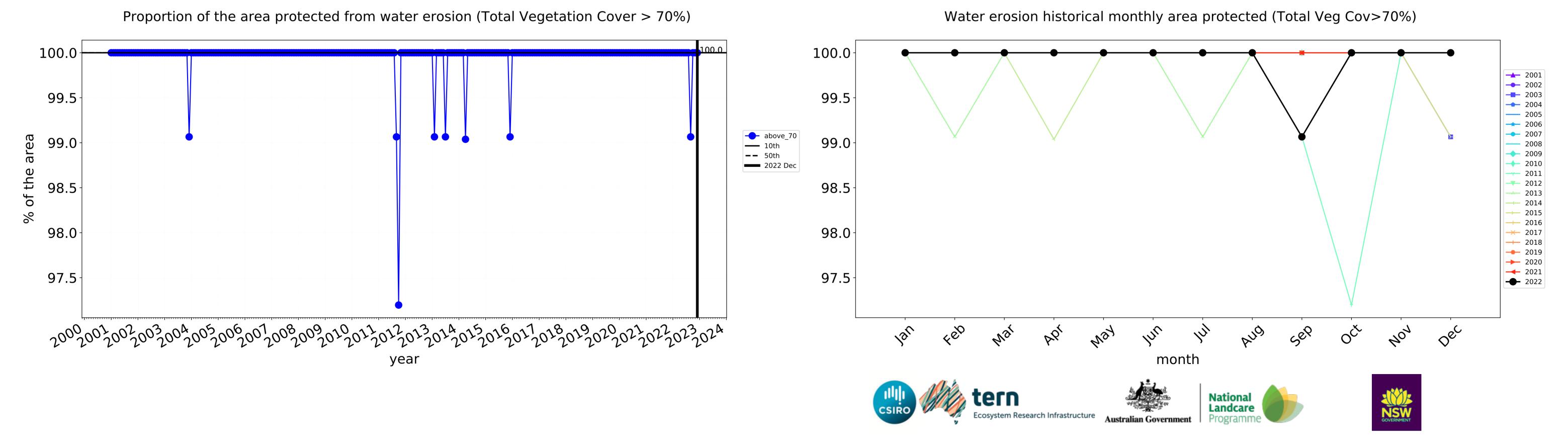


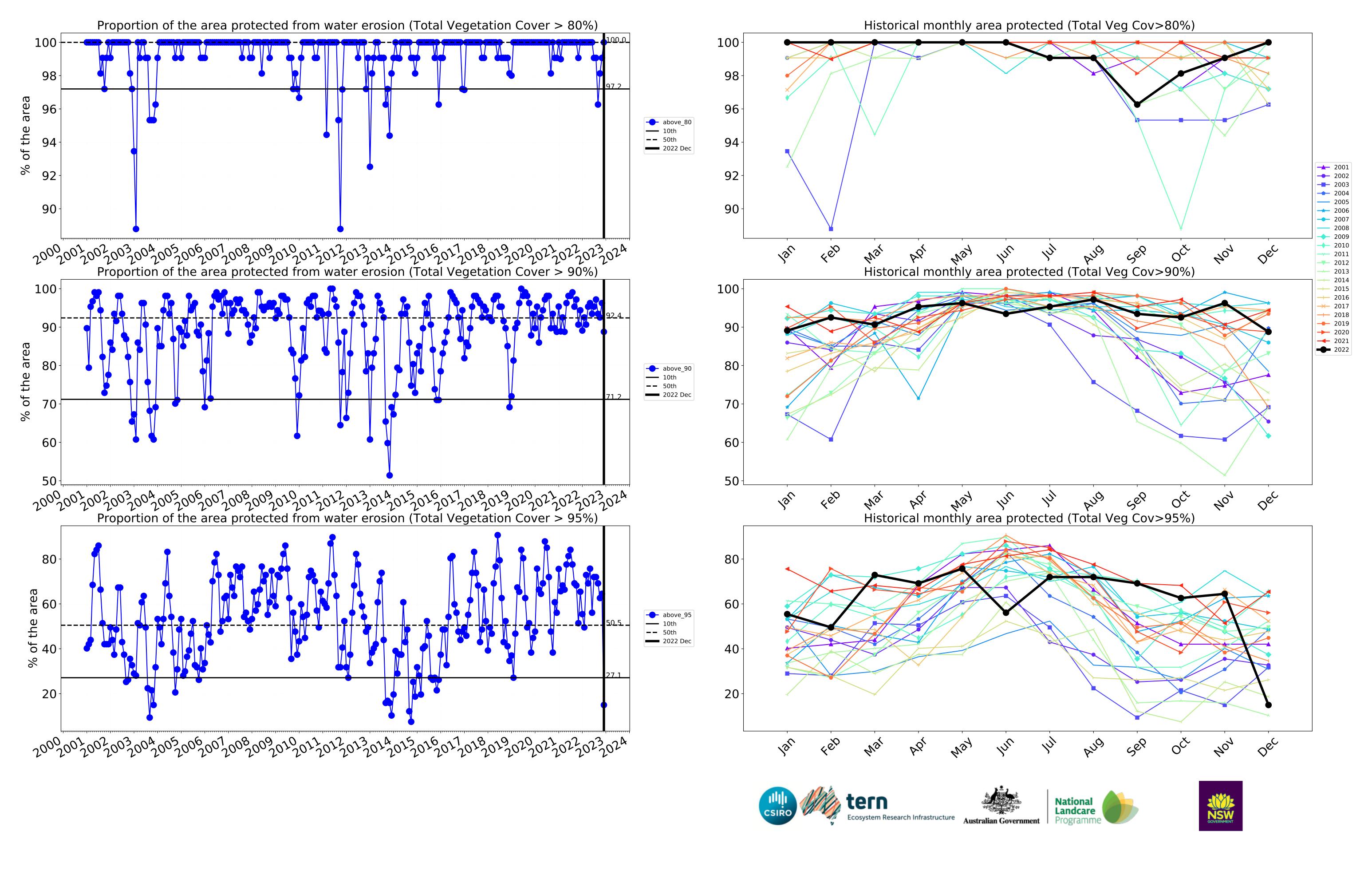




Grazing Woodland forest timeseries







Grazing - Forest (non woodland)

Land use and forest cover

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

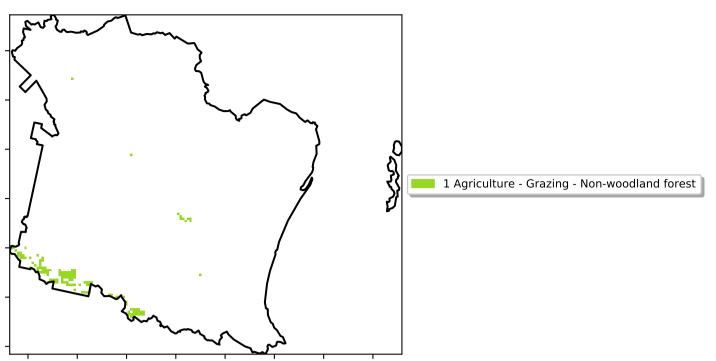
the mean. That is, red pixels

are about 20% lower than the mean of that

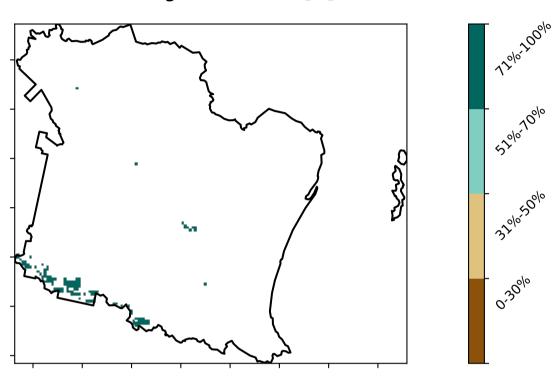
pixel. The mean

using baseline from 2001 to 2019.

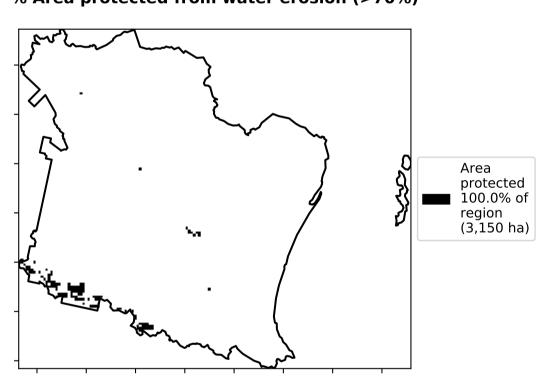
is only for the month of the map



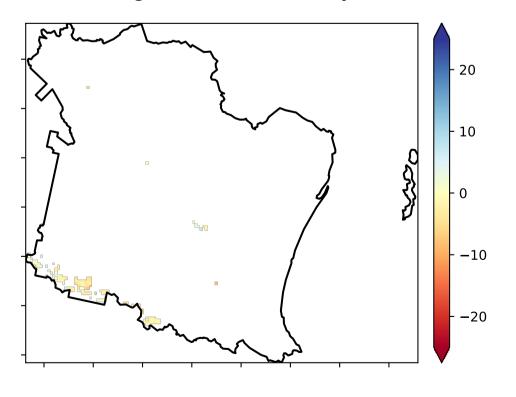
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

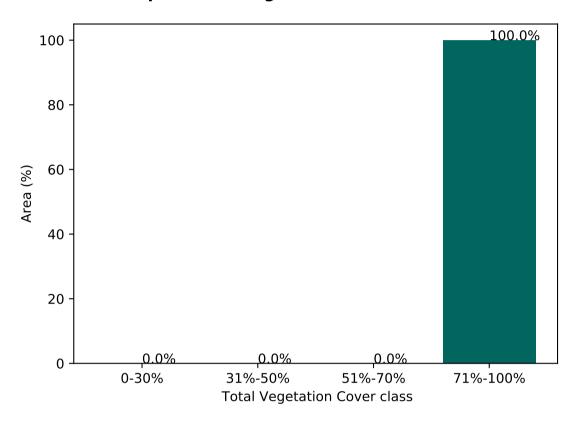


Total Vegetation Cover Anomaly [%]

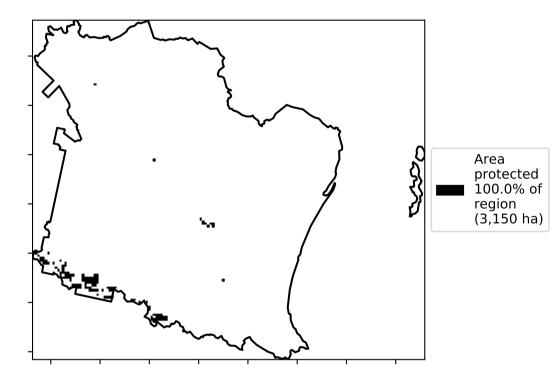


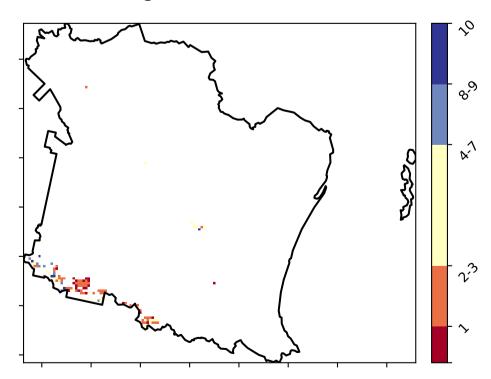
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



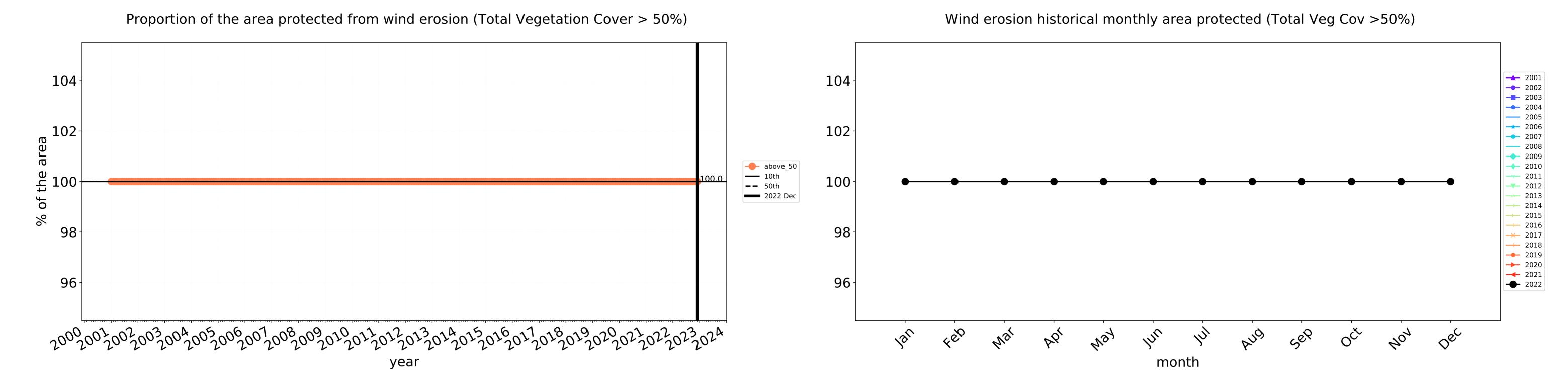


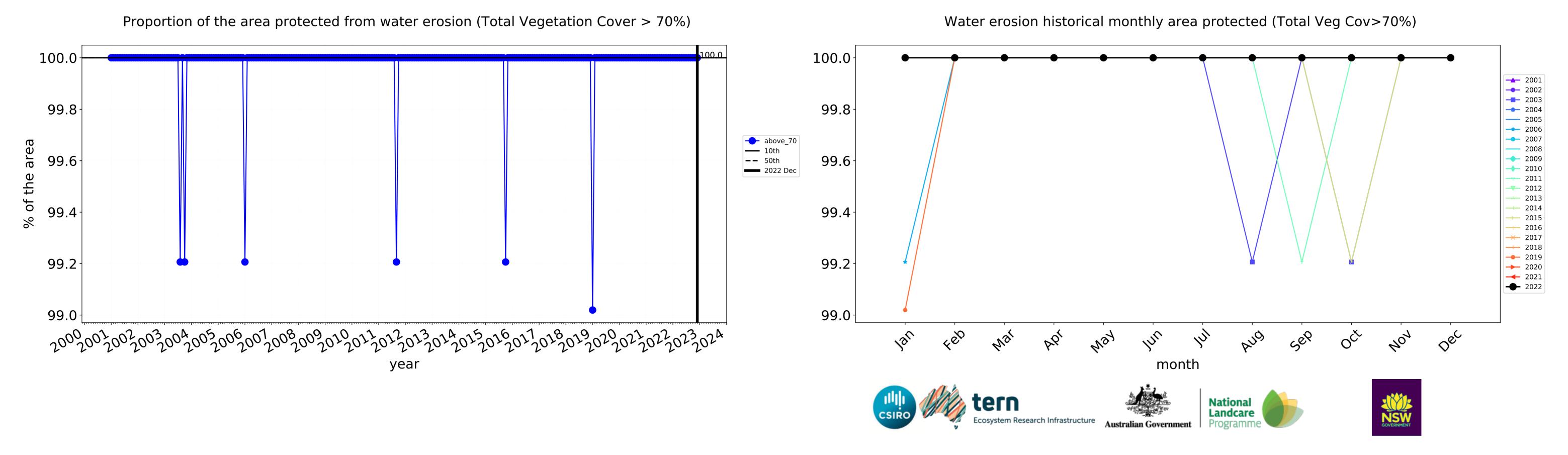


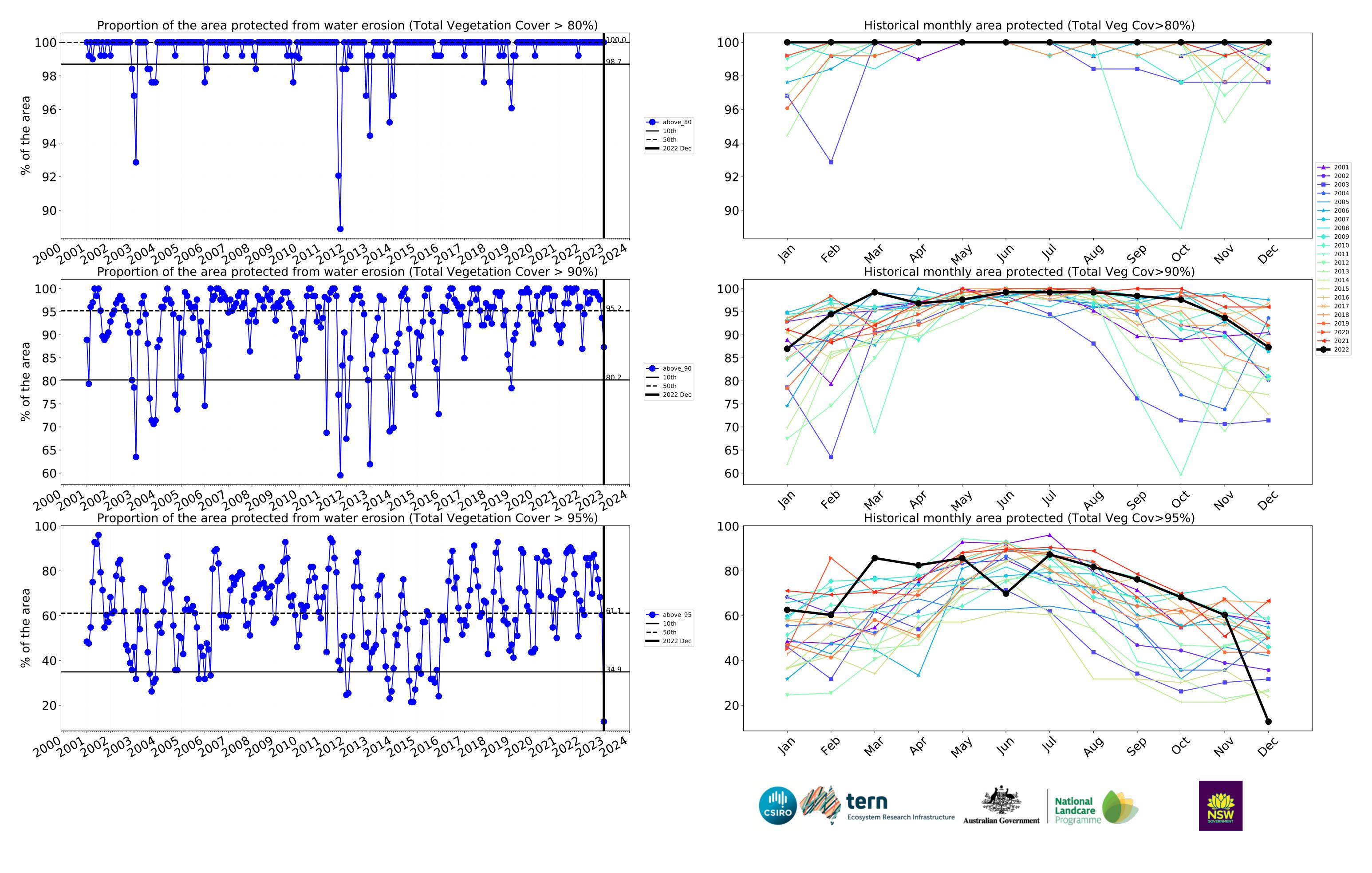






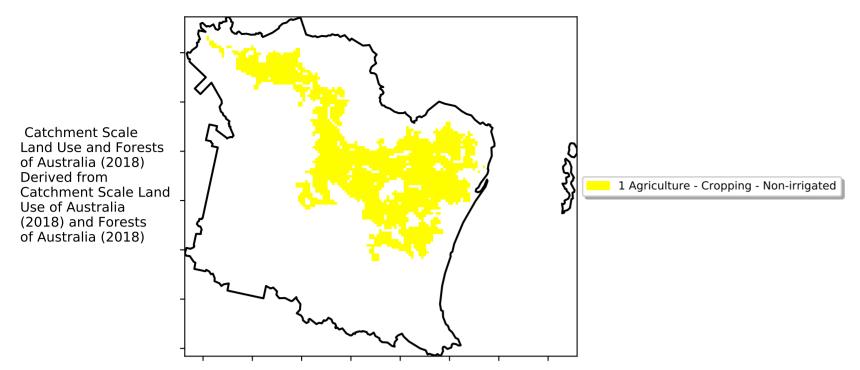




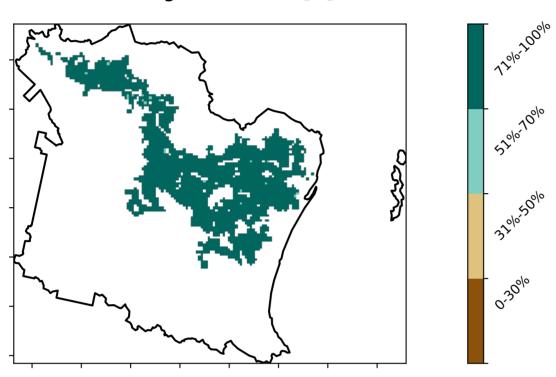


Cropping

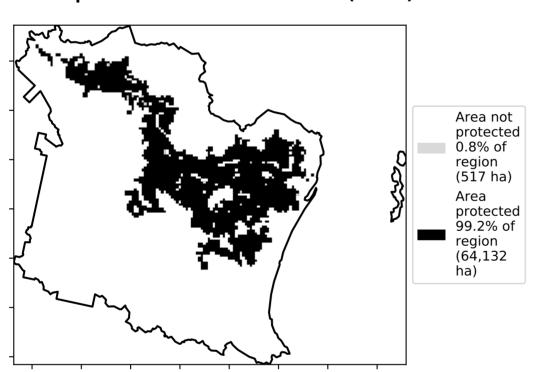
Land use and forest cover



Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



Total Vegetation Cover Anomaly [%]

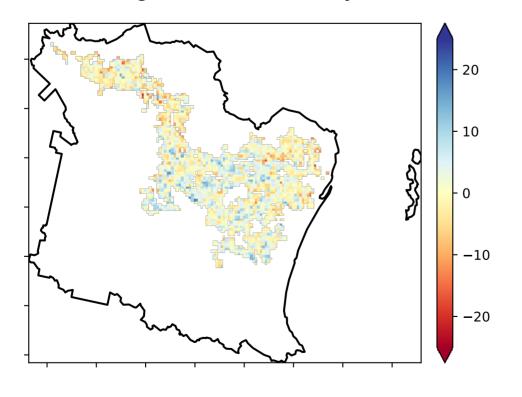
Anomaly show how many percetage points each pixel is from

the mean. That

are about 20% lower than the mean of that pixel. The mean

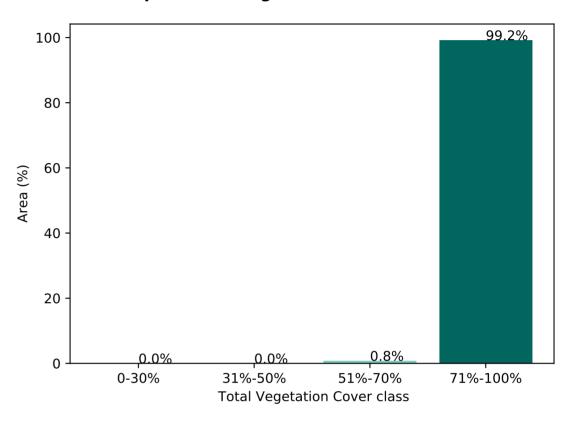
is only for the month of the map using baseline from 2001 to 2019.

is, red pixels

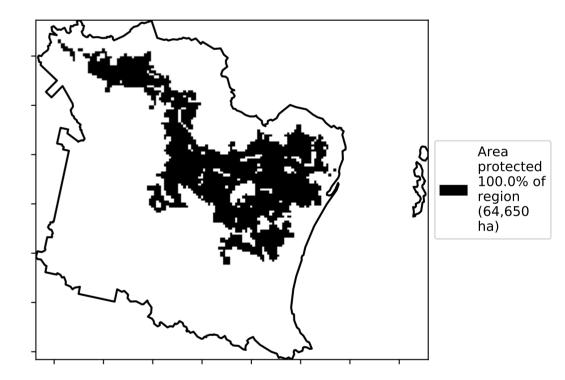


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

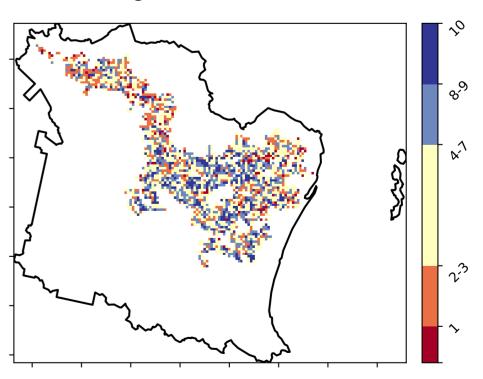
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]



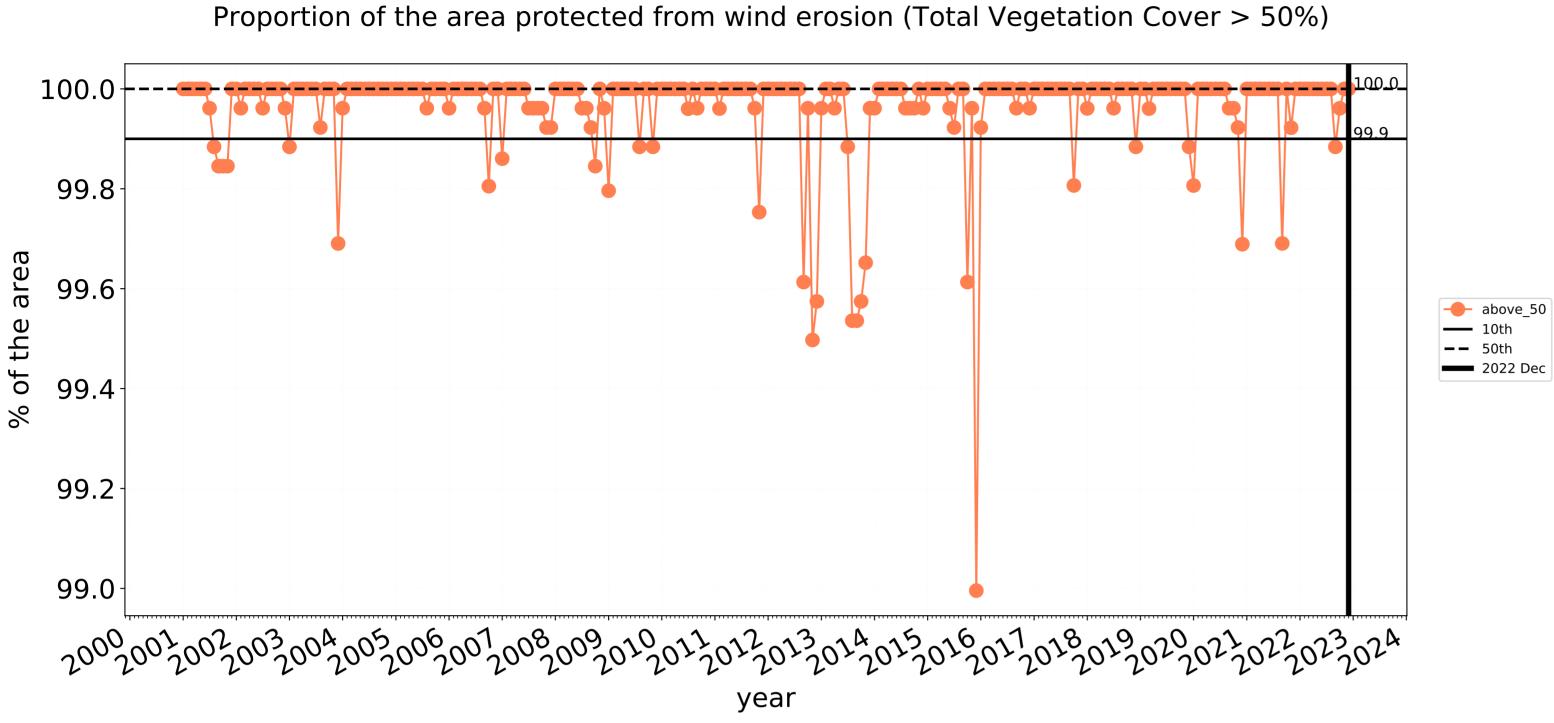


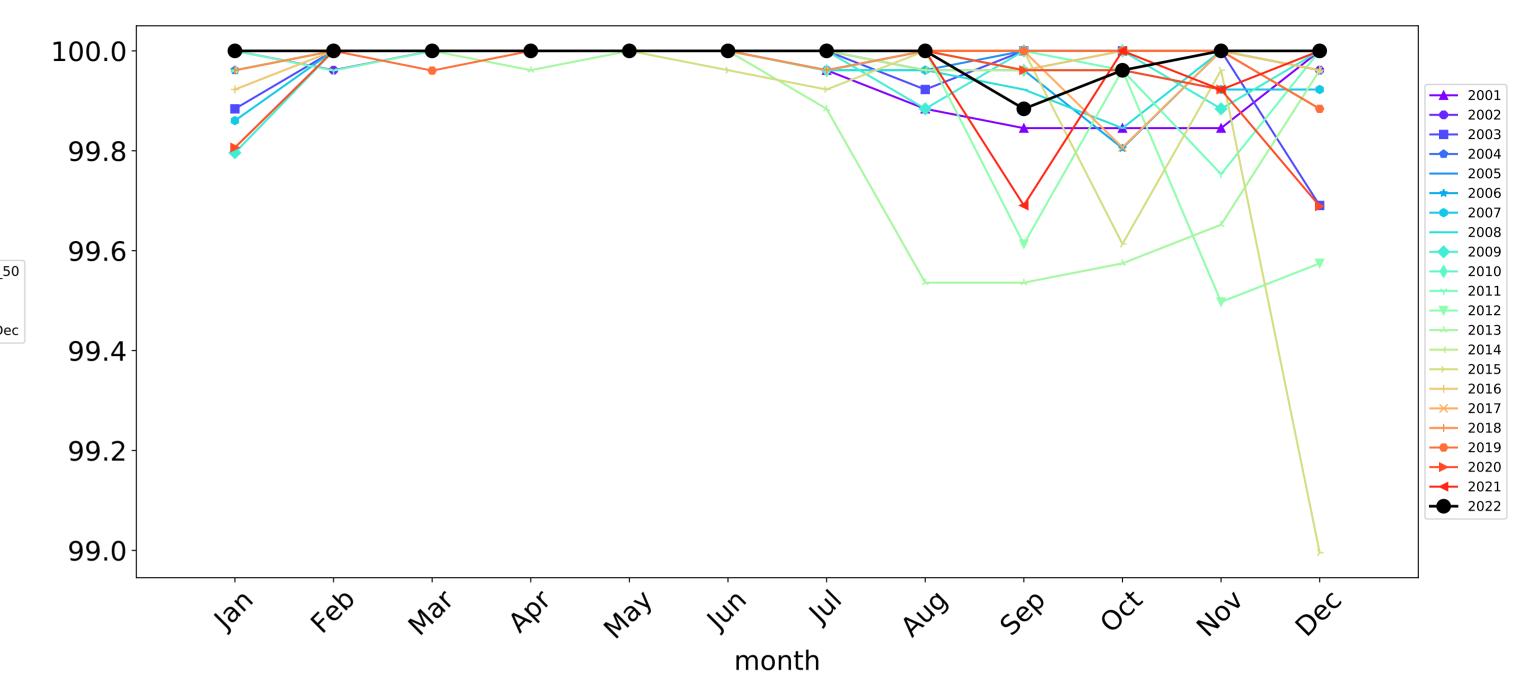




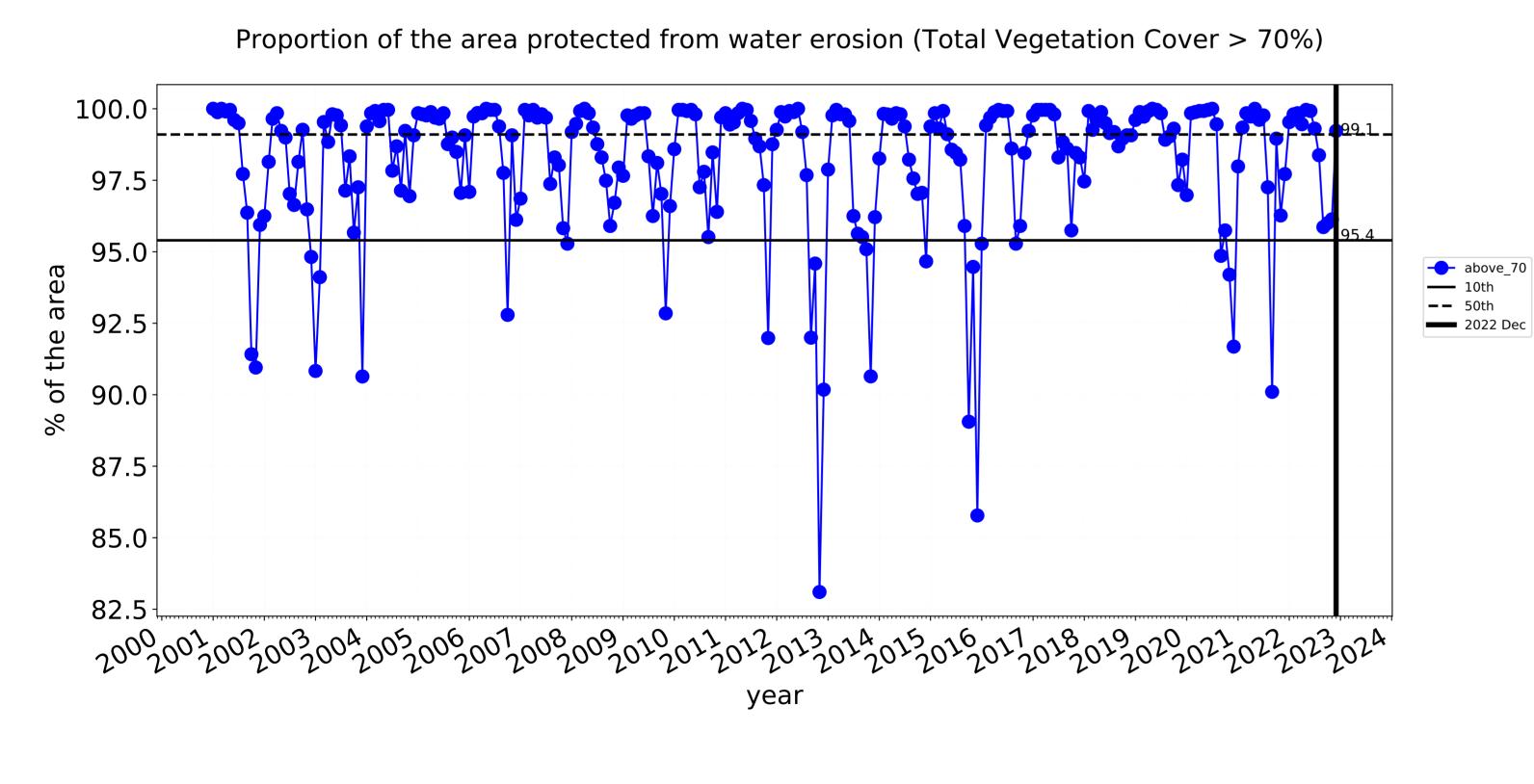


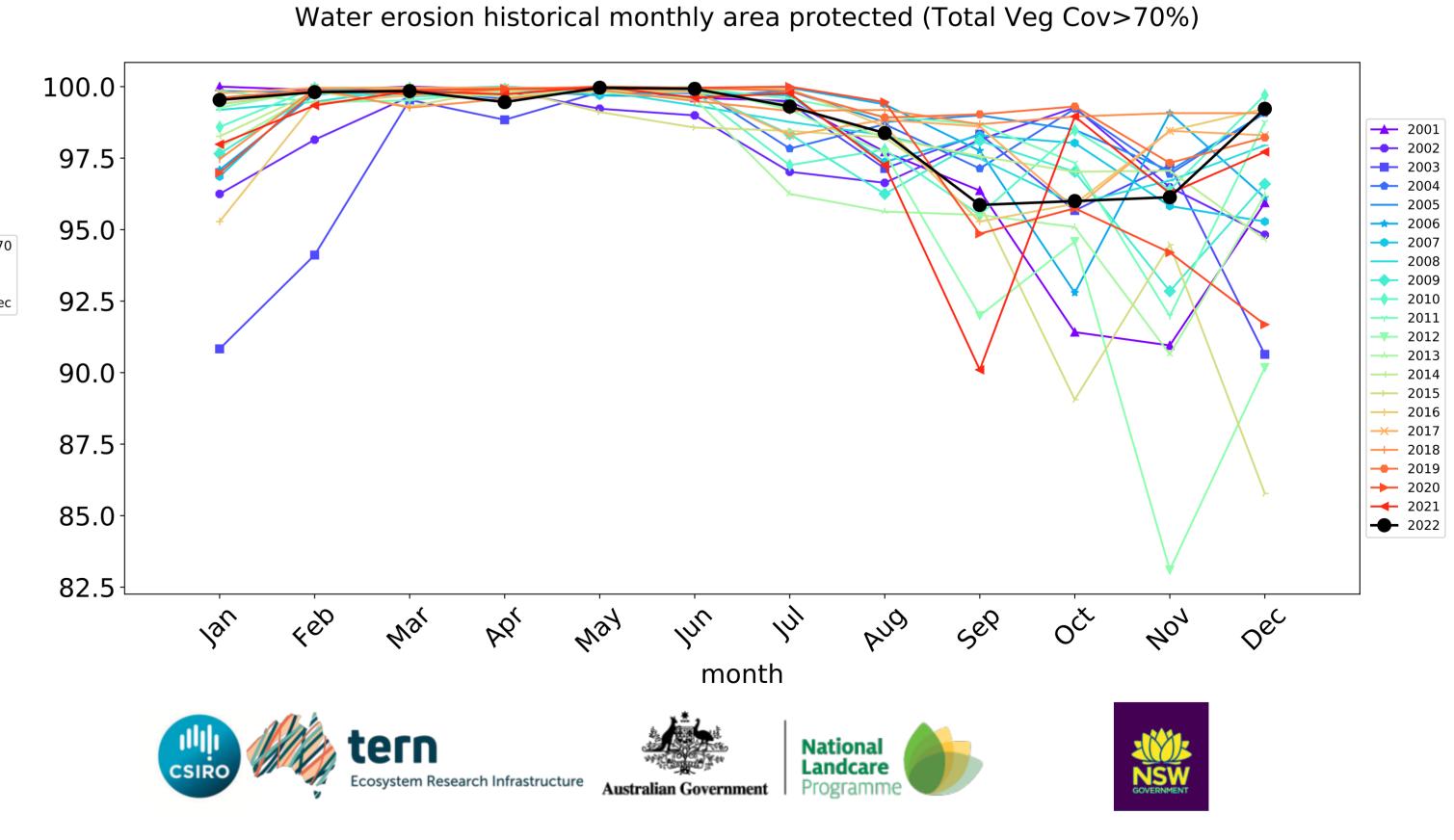
Cropping timeseries

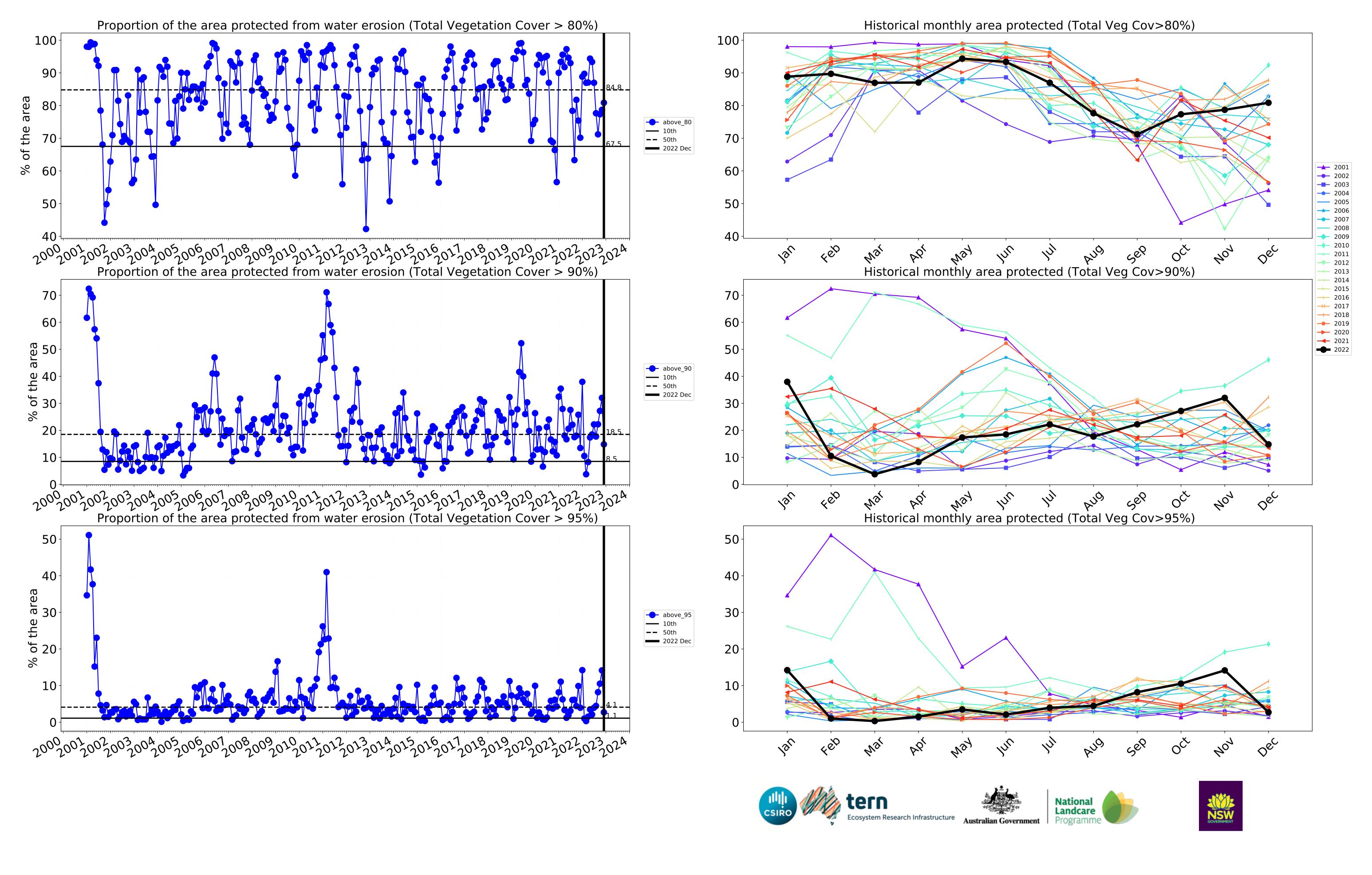




Wind erosion historical monthly area protected (Total Veg Cov >50%)





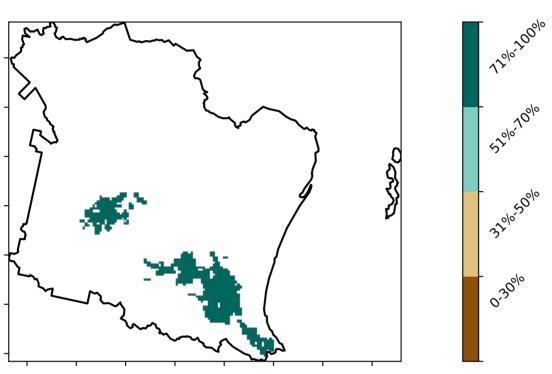


Irrigation

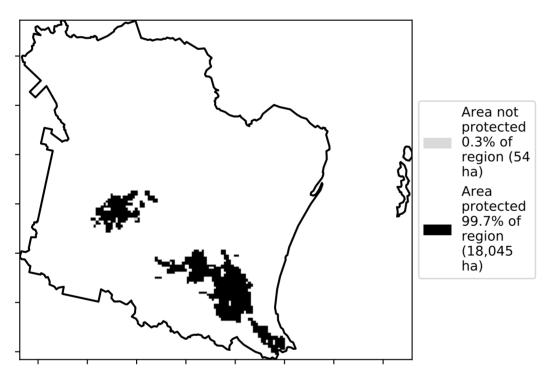
Land use and forest cover

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

Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



Total Vegetation Cover Anomaly [%]

Anomaly show how many percetage points each pixel is from

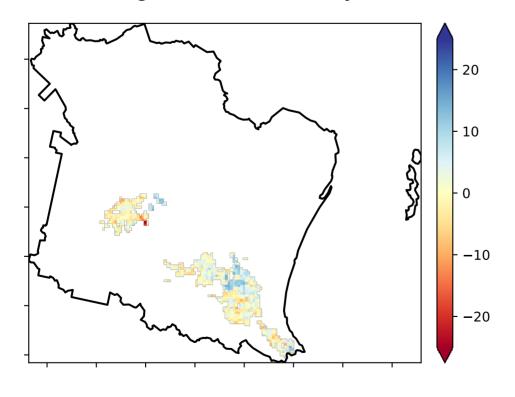
the mean. That

are about 20% lower than the

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

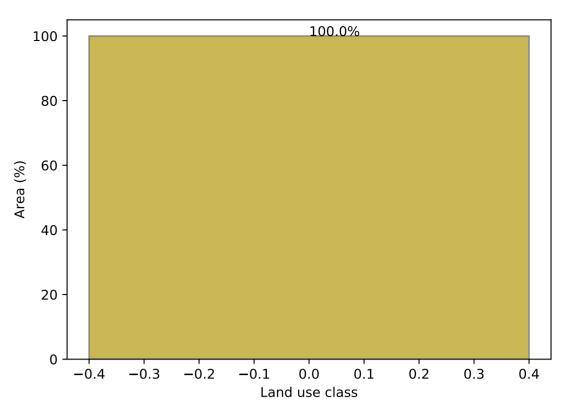
using baseline from 2001 to 2019.

is, red pixels

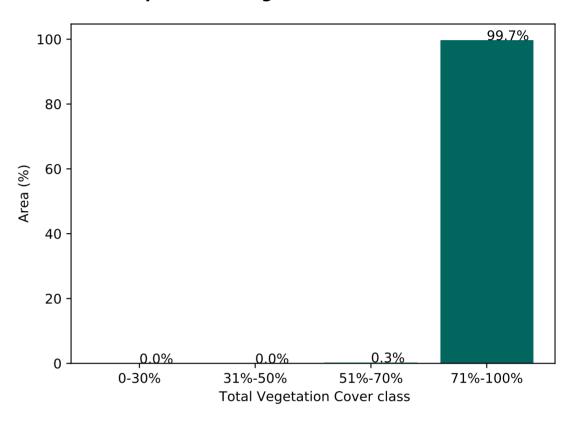


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

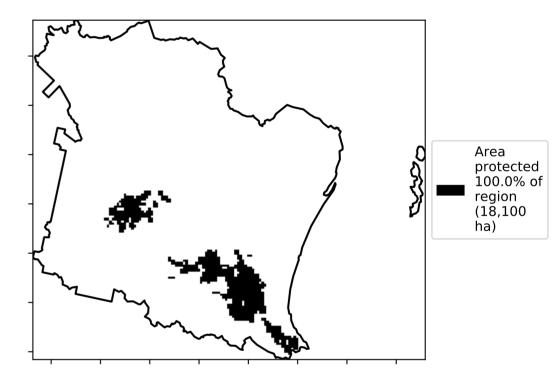
Proportion of each land class in area

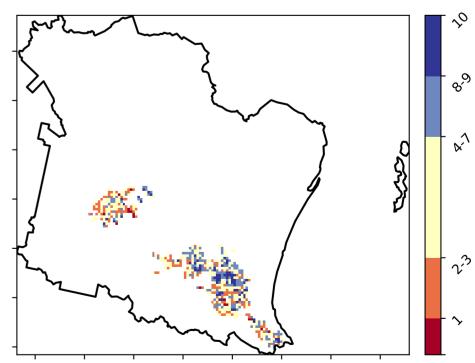


Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





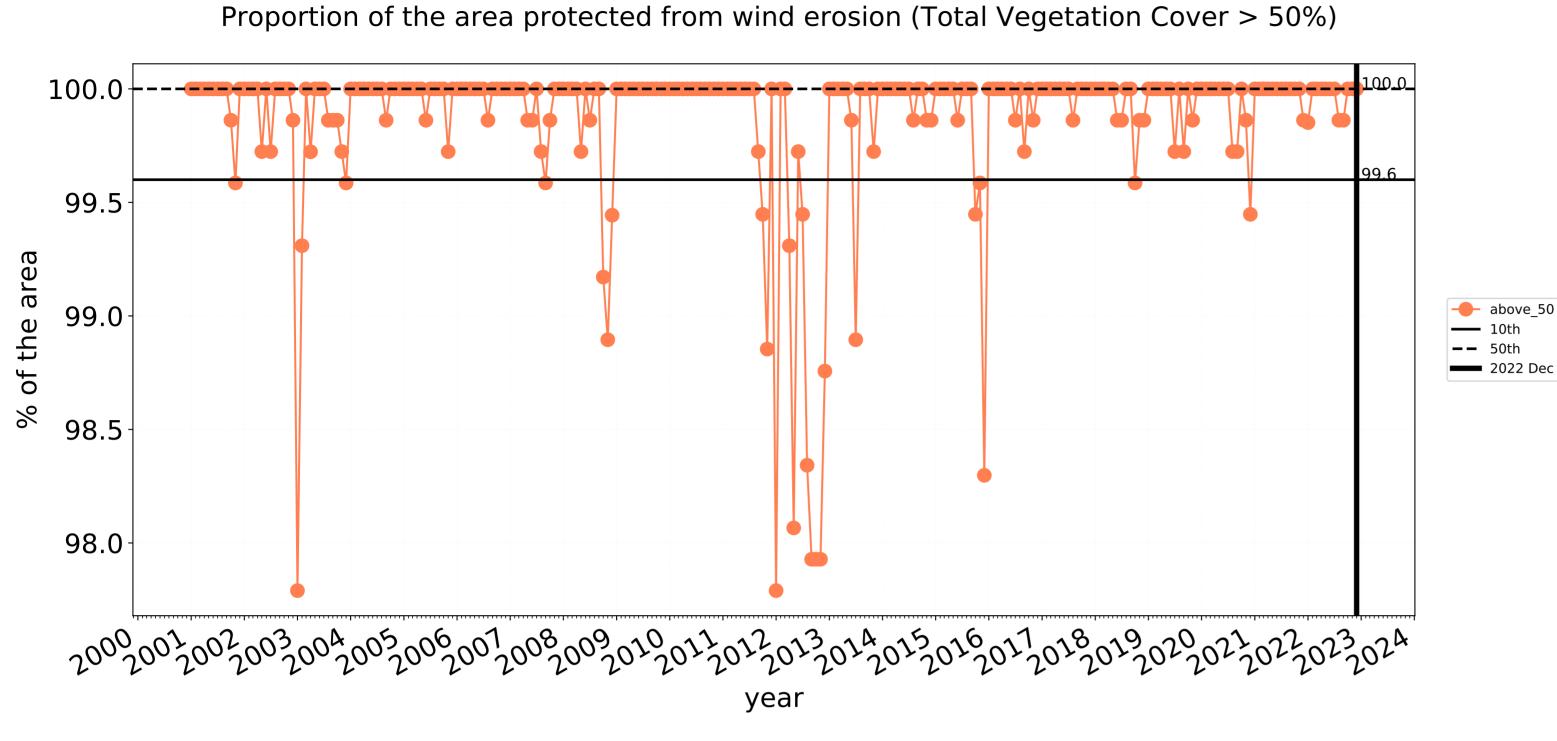


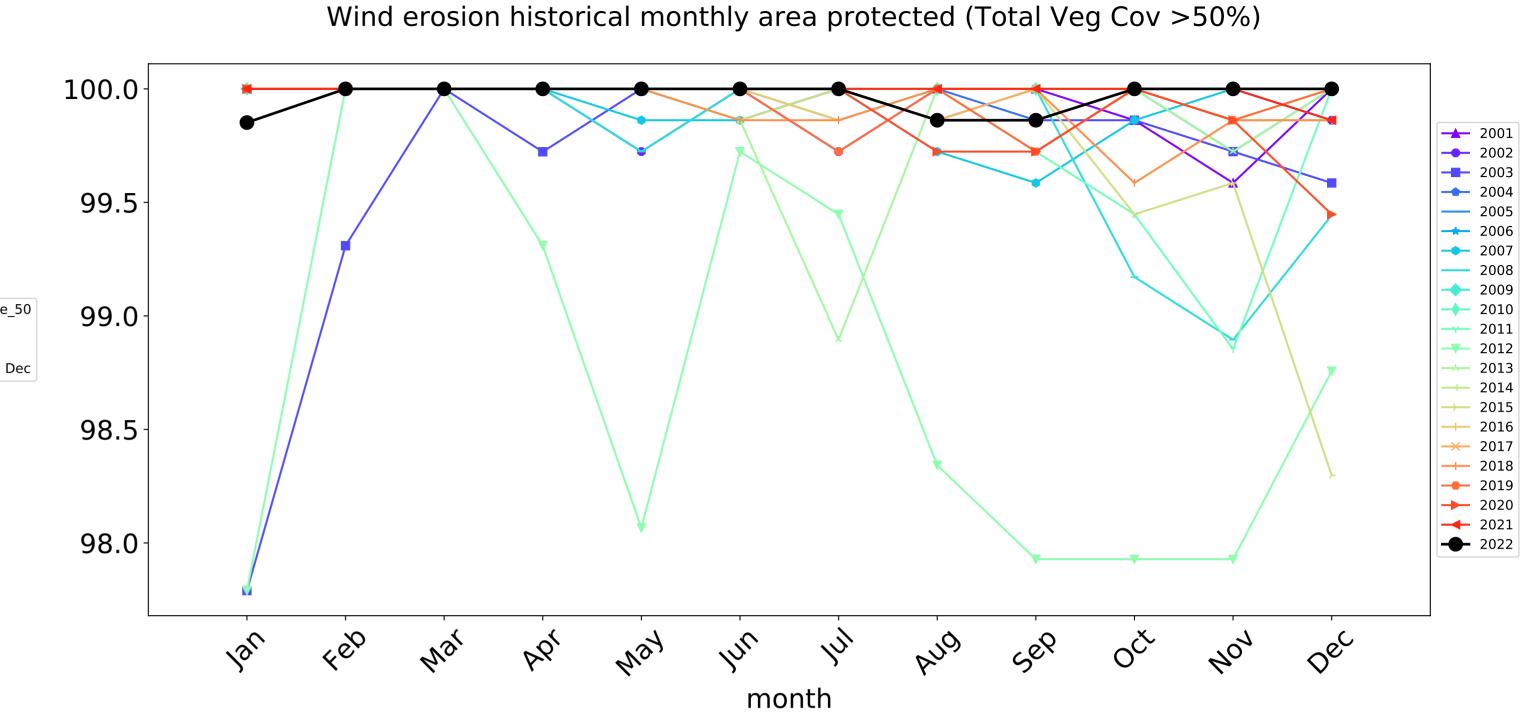


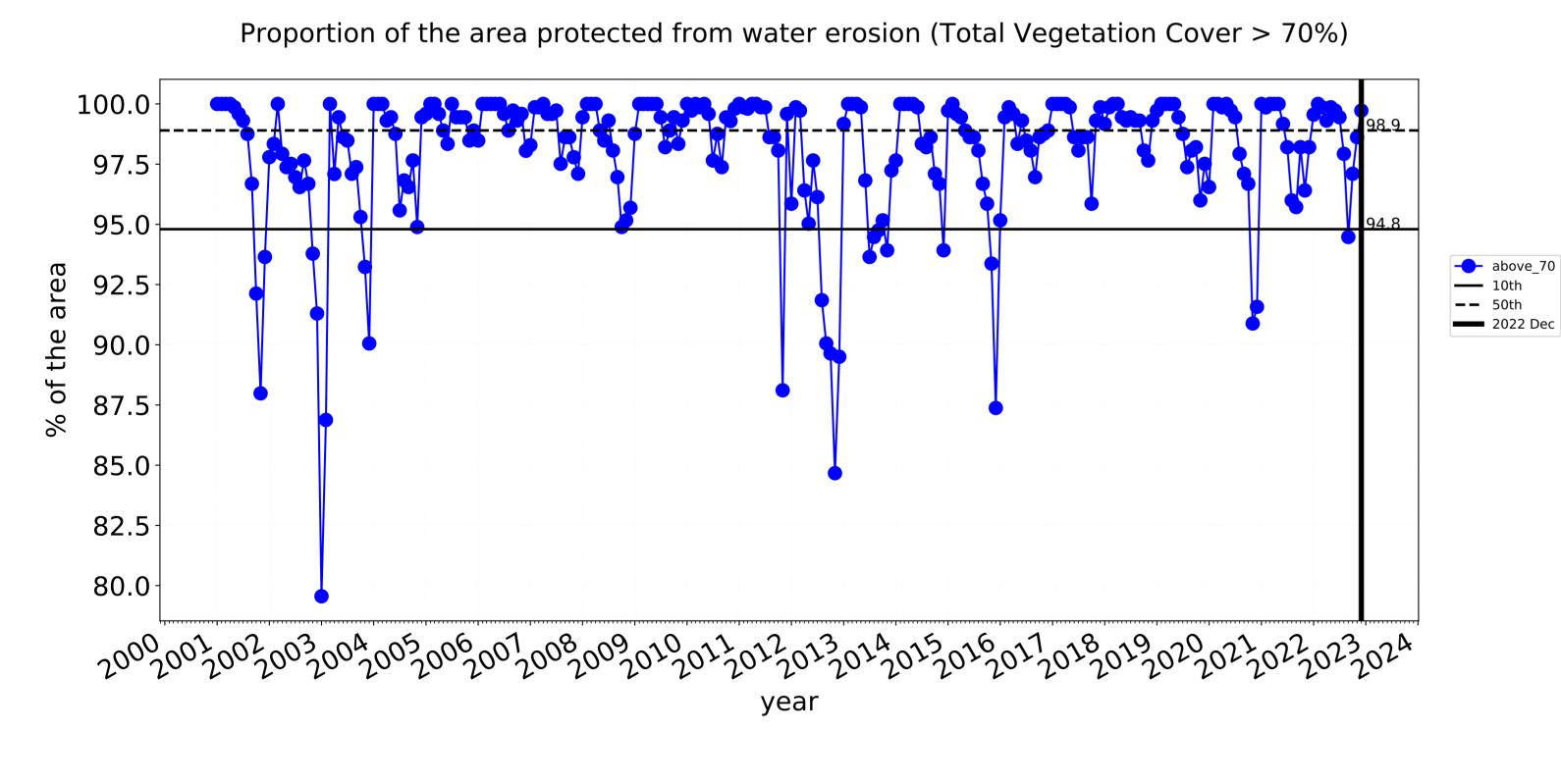


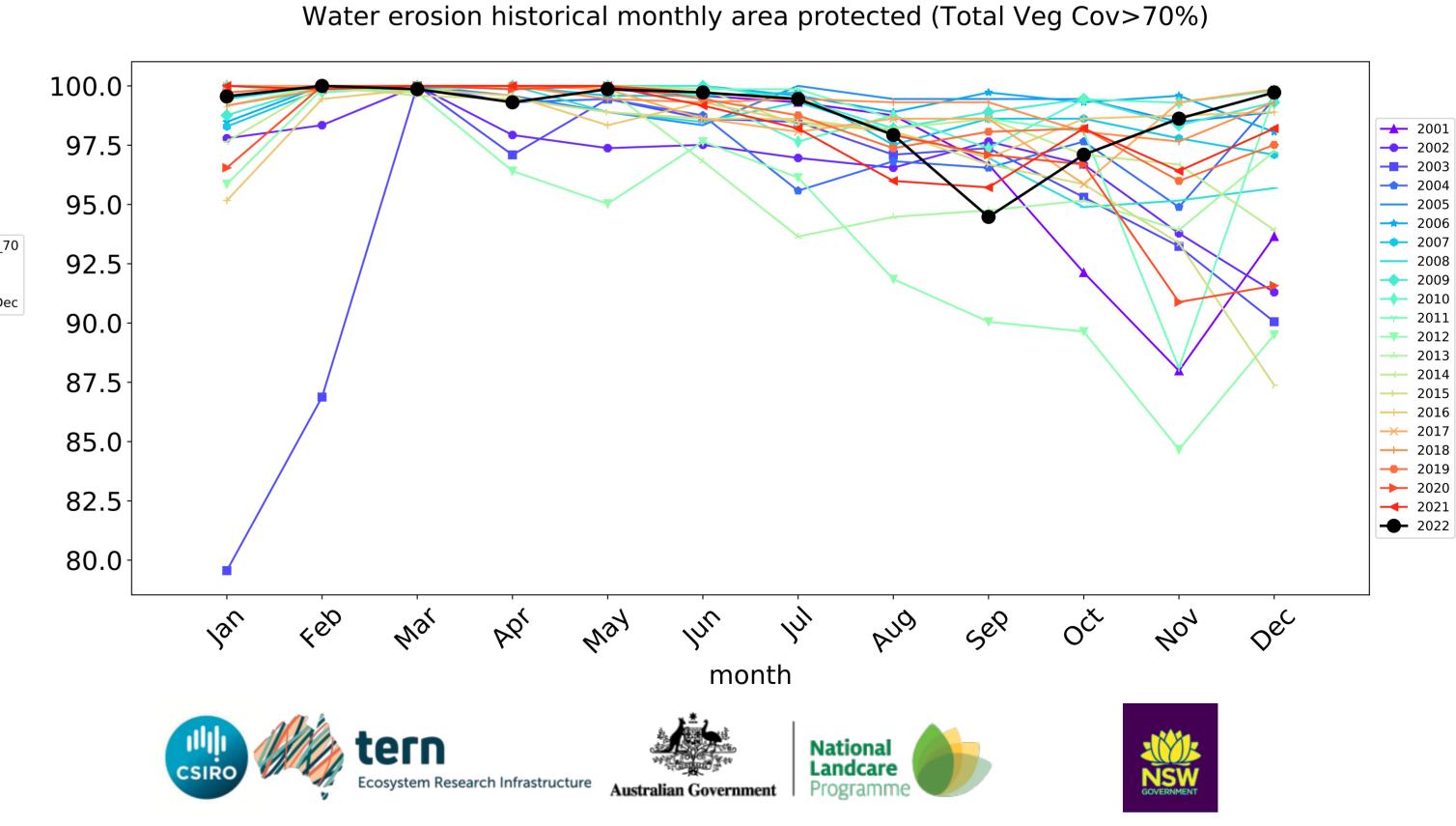


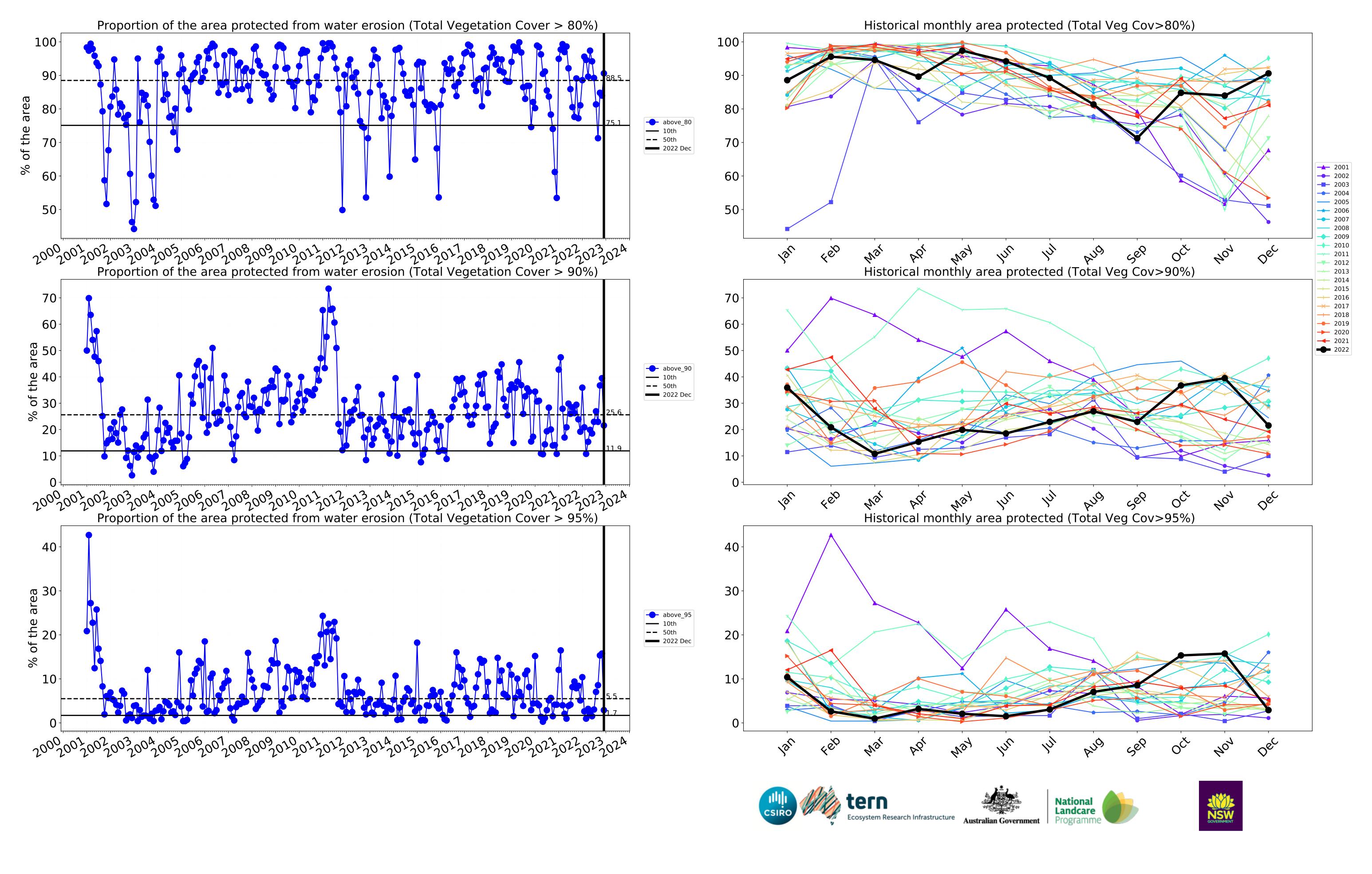
Irrigation timeseries





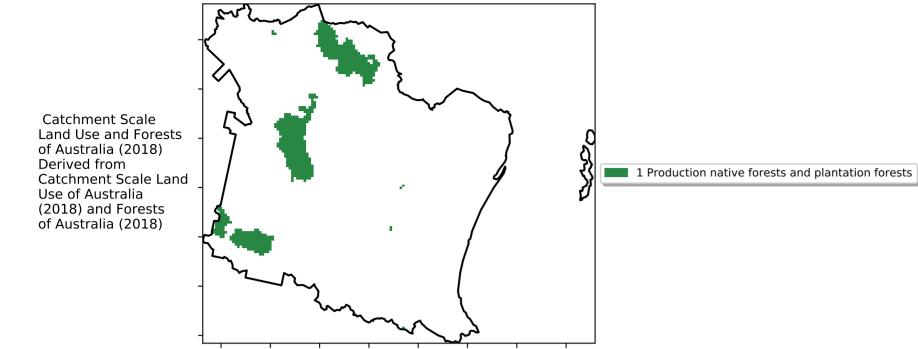




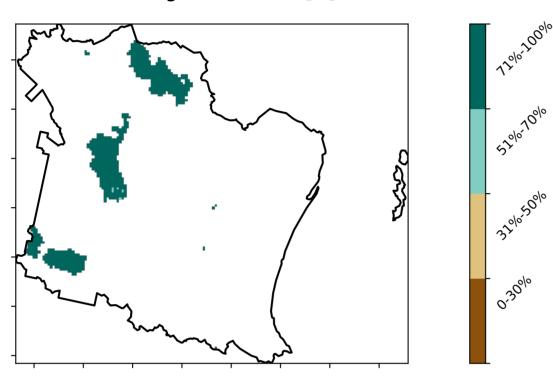


Production native forests and plantation forests

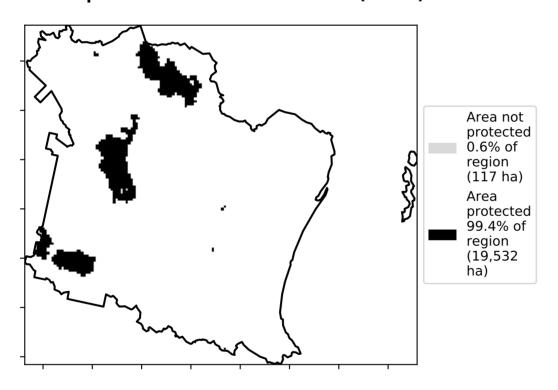
Land use and forest cover



Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



Total Vegetation Cover Anomaly [%]

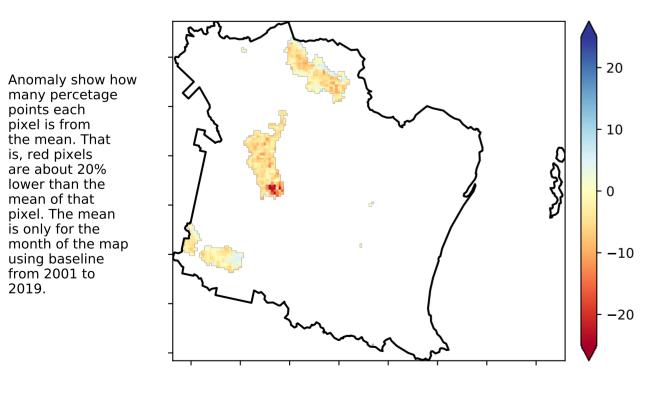
the mean. That is, red pixels

are about 20% lower than the mean of that

pixel. The mean

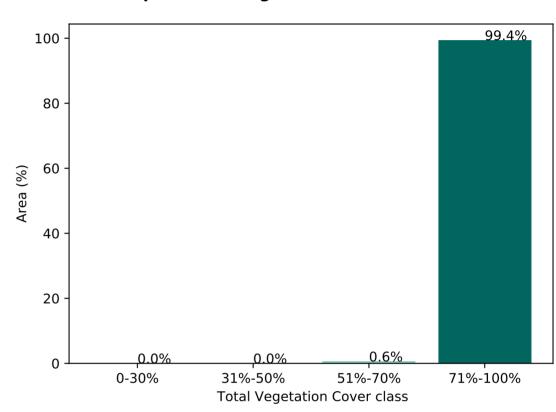
using baseline from 2001 to 2019.

is only for the month of the map

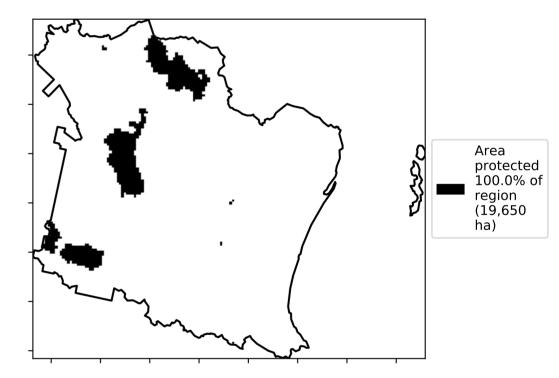


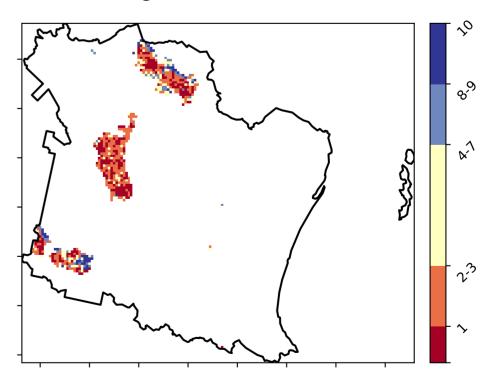
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





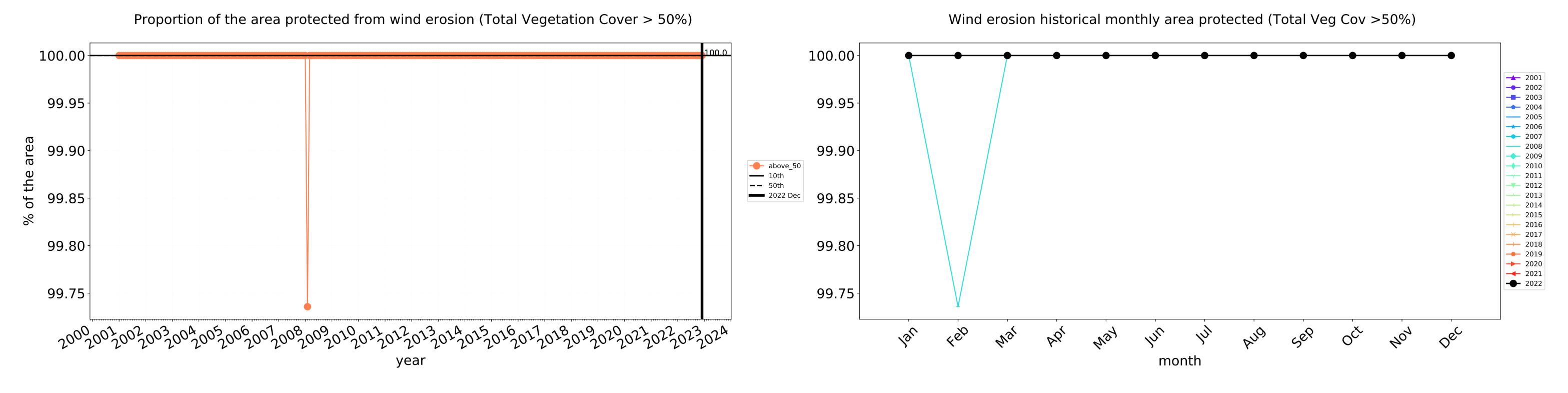


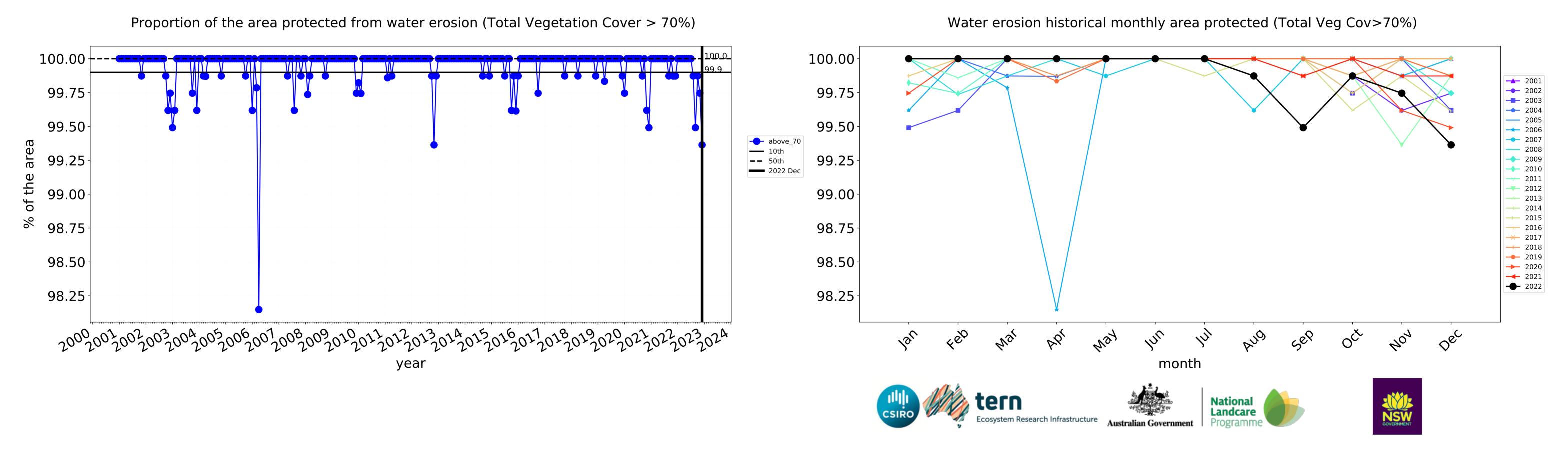


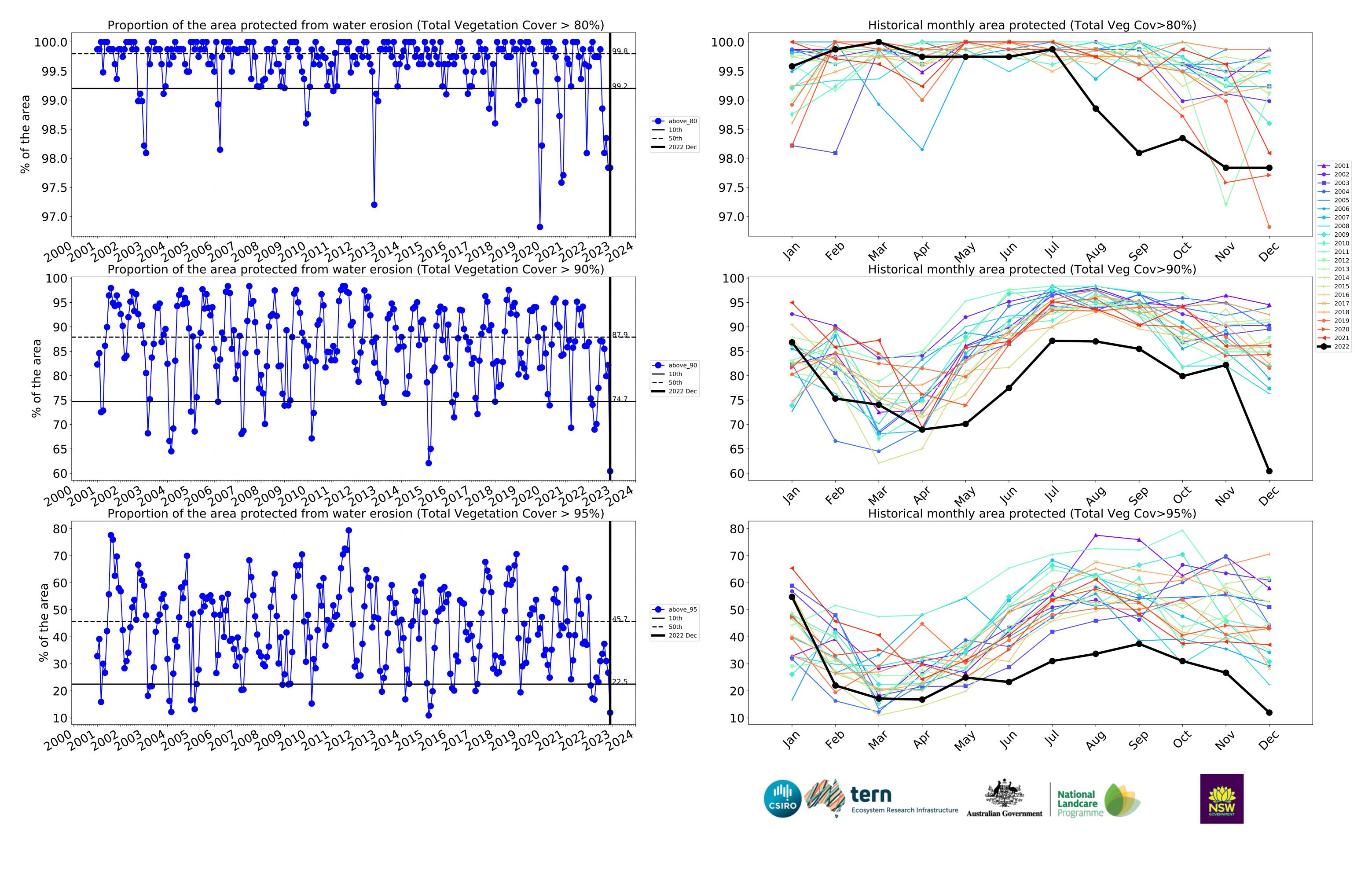




Production native forests and plantation forests timeseries







Hinchinbrook_(S) (278,175 ha and no data 2,487 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	278,175	100.0% 278,050	99.9% 277,800	98.8% 274,850	91.0% 253,075	47.7% 132,575	14.5% 40,250
Conservation and natural environments	130,650	100.0% 130,625	100.0% 130,600	99.3% 129,775	98.4% 128,550	70.3% 91,800	24.6% 32,075
Conservation and natural environments Woodland forest	46,275	100.0% 46,275	100.0% 46,275	99.8% 46,175	99.2% 45,925	54.3% 25,125	8.0% 3,700
Conservation and natural environments Forest (non woodland)	82,525	100.0% 82,500	99.9% 82,475	99.3% 81,925	98.4% 81,200	80.2% 66,200	34.3% 28,275
Agriculture	104,700	100.0% 104,700	100.0% 104,700	99.4% 104,075	85.8% 89,825	23.4% 24,450	4.4% 4,600
Grazing	21,925	100.0% 21,925	100.0% 21,925	99.7% 21,850	96.4% 21,125	50.1% 10,975	10.6% 2,325
Grazing non forest	16,100	100.0% 16,100	100.0% 16,100	99.5% 16,025	95.0% 15,300	36.3% 5,850	9.5% 1,525
Grazing Woodland forest	2,675	100.0% 2,675	100.0% 2,675	100.0% 2,675	100.0% 2,675	88.8% 2,375	15.0% 400
Grazing - Forest (non woodland)	3,150	100.0% 3,150	100.0% 3,150	100.0% 3,150	100.0% 3,150	87.3% 2,750	12.7% 400
Cropping	64,650	100.0% 64,650	100.0% 64,650	99.2% 64,150	80.9% 52,275	14.8% 9,575	2.7% 1,750
Irrigation	18,100	100.0% 18,100	100.0% 18,100	99.7% 18,050	90.6% 16,400	21.5% 3,900	2.9% 525
Production native forests and plantation forests	19,650	100.0% 19,650	100.0% 19,650	99.4% 19,525	97.8% 19,225	60.4% 11,875	12.0% 2,350







