Total vegetation cover soil protection Region:LGA Whitsunday (R) QLD

This report describes vegetation protecting the soil surface from erosion during a chosen month compared to previous years. This report has been generated using MODIS fractional vegetation cover information available in Rangelands and Pasture Productivity (RAPP) map tool https://map.geo-rapp.org/#australia. The report is based on 500 metre pixel data on monthly time steps.

Land use forest cover:

Date: June 2022

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

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)

each land use and forest cover class that covers at least 1% of the area of the chosen region.

- 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:

Total vegetation Cover:

- 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 Jun 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

mean of that pixel. The mean is only for the

month of the map

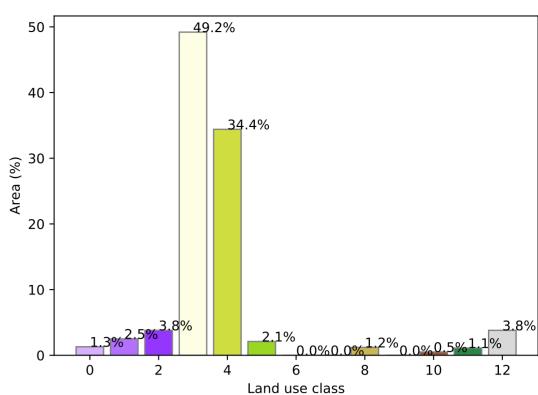
using baseline from 2001 to

2019.

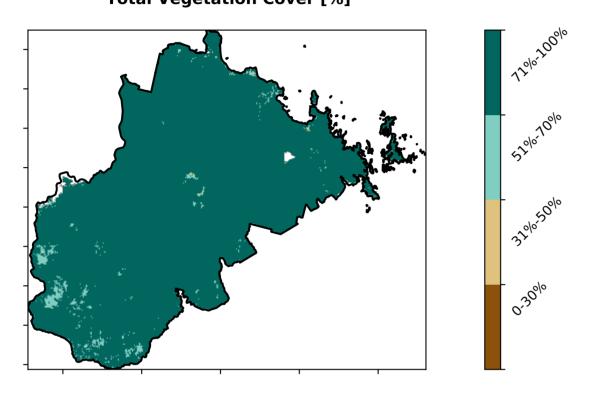
the mean. That is, red pixels are about 20% lower than the

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

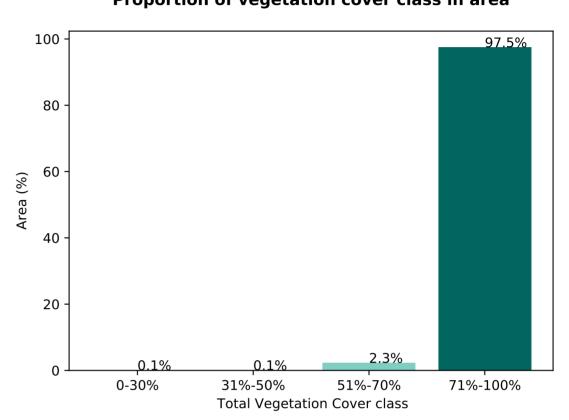
Proportion of each land class in area

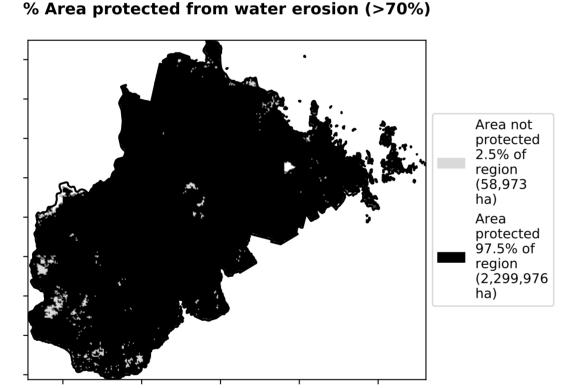


Total Vegetation Cover [%]

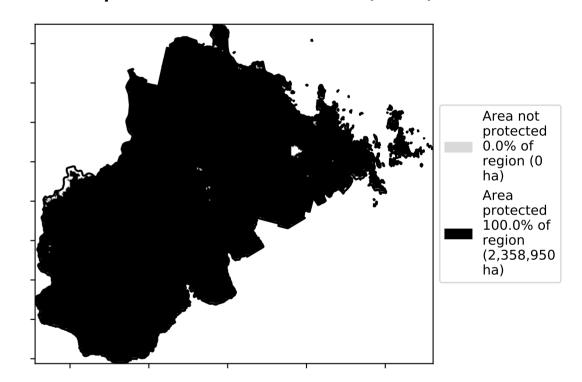


Proportion of vegetation cover class in area

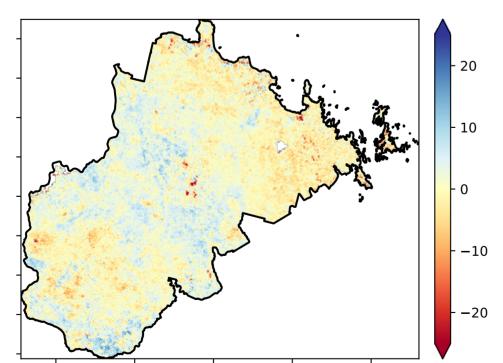




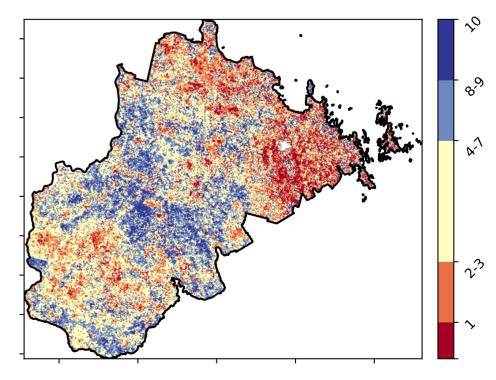
% Area protected from wind erosion (>50%)



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.

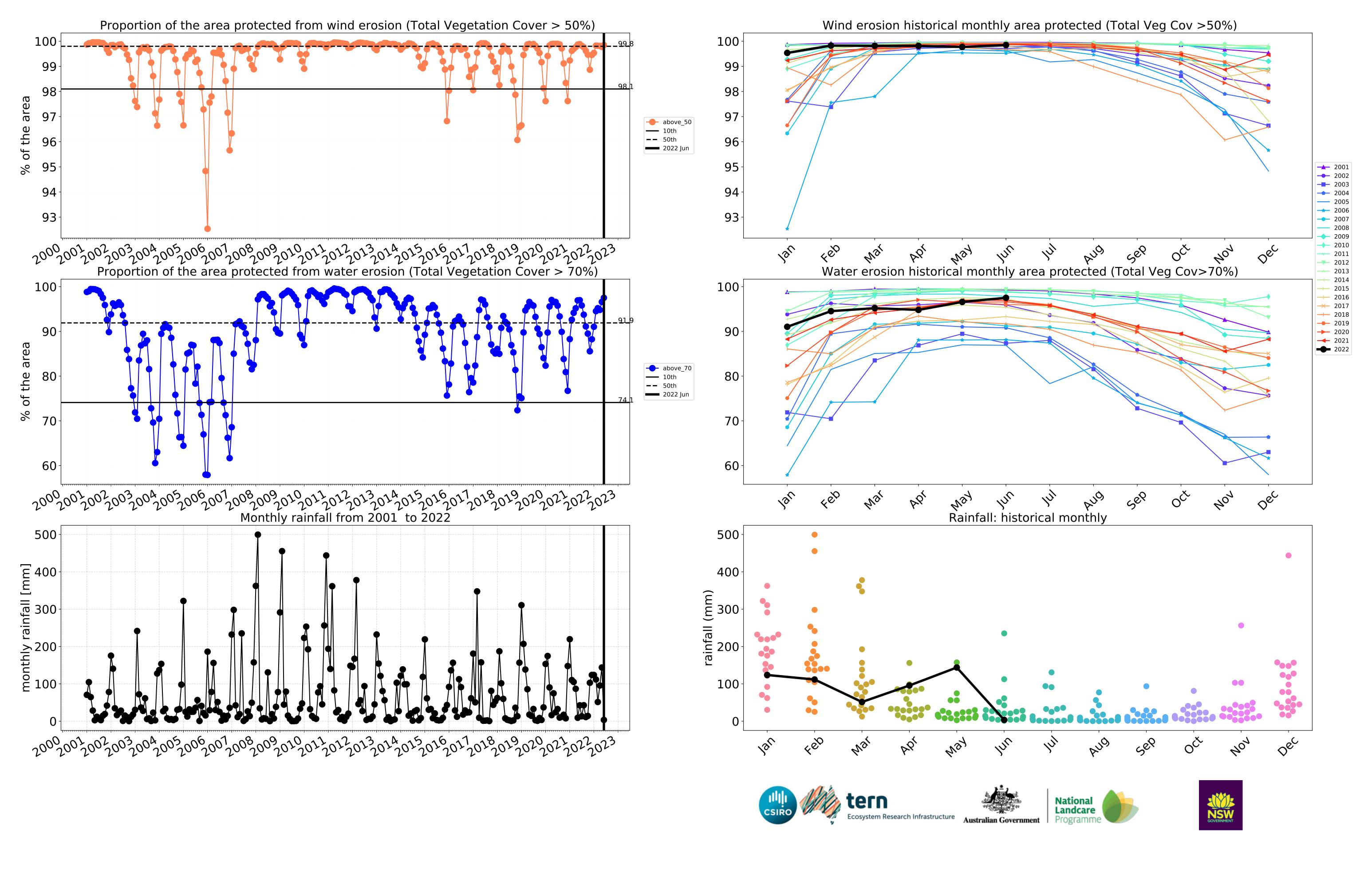








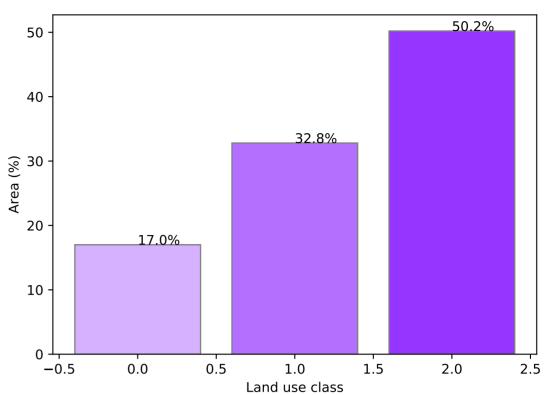




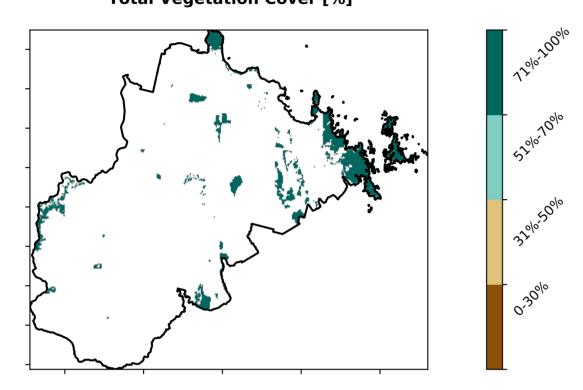
Conservation and natural environments

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

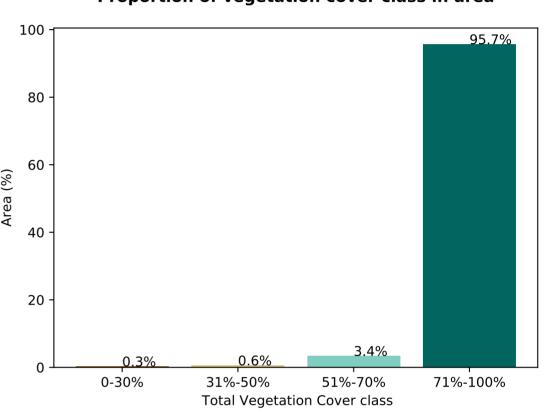
Proportion of each land class in area



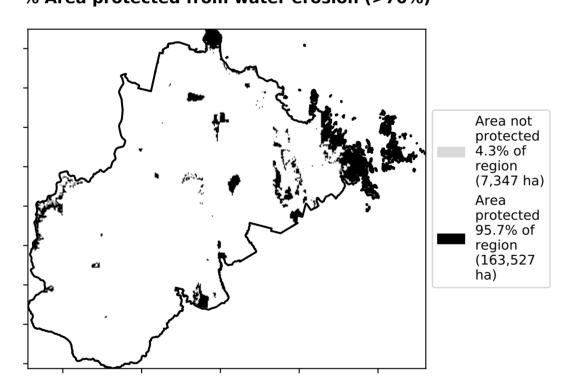




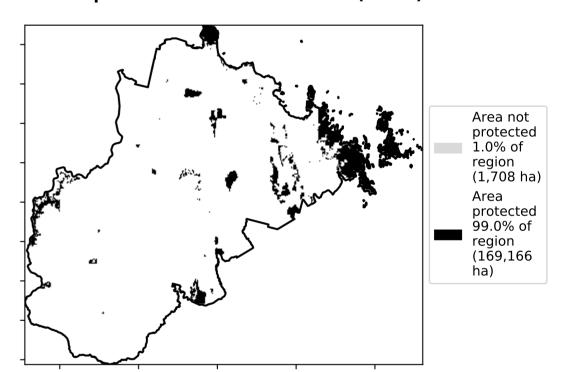
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]

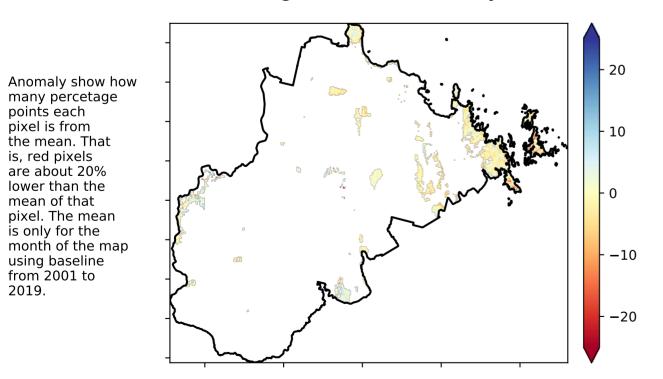
the mean. That

pixel. The mean

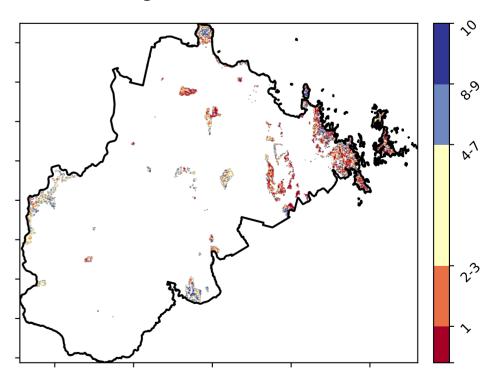
using baseline from 2001 to 2019.

is only for the month of the map

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



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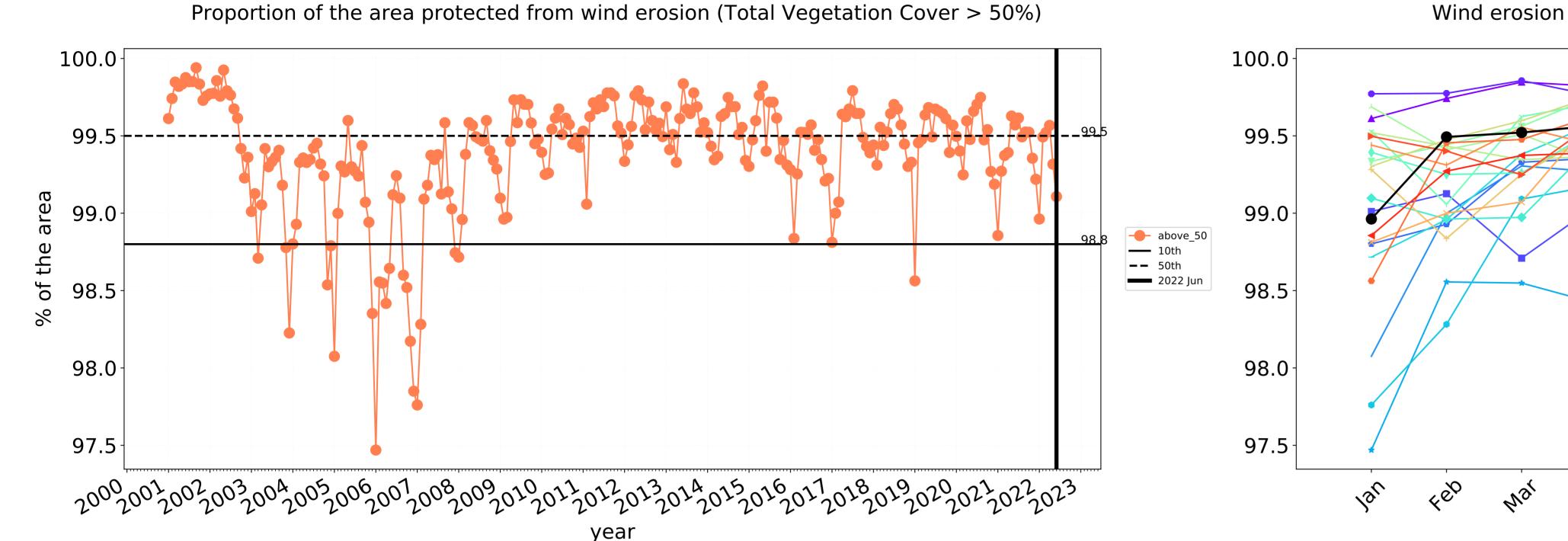


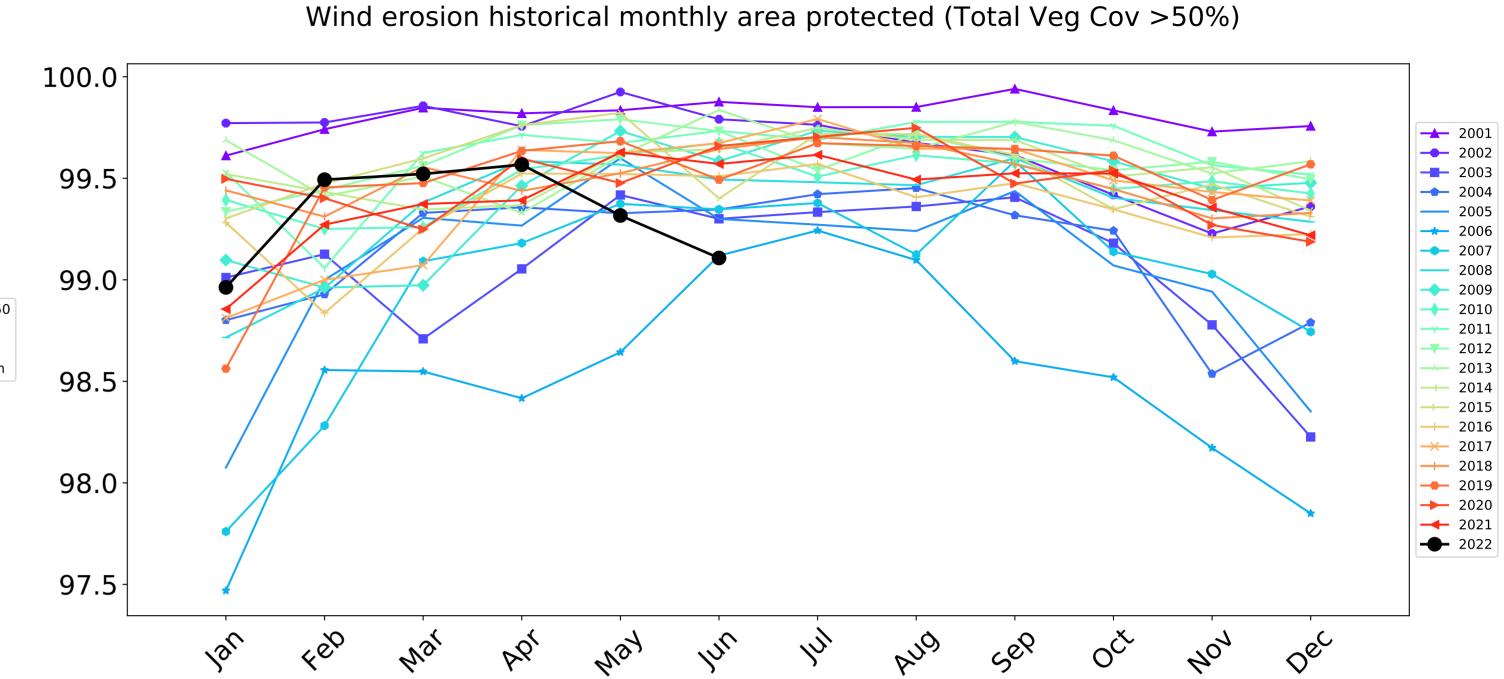




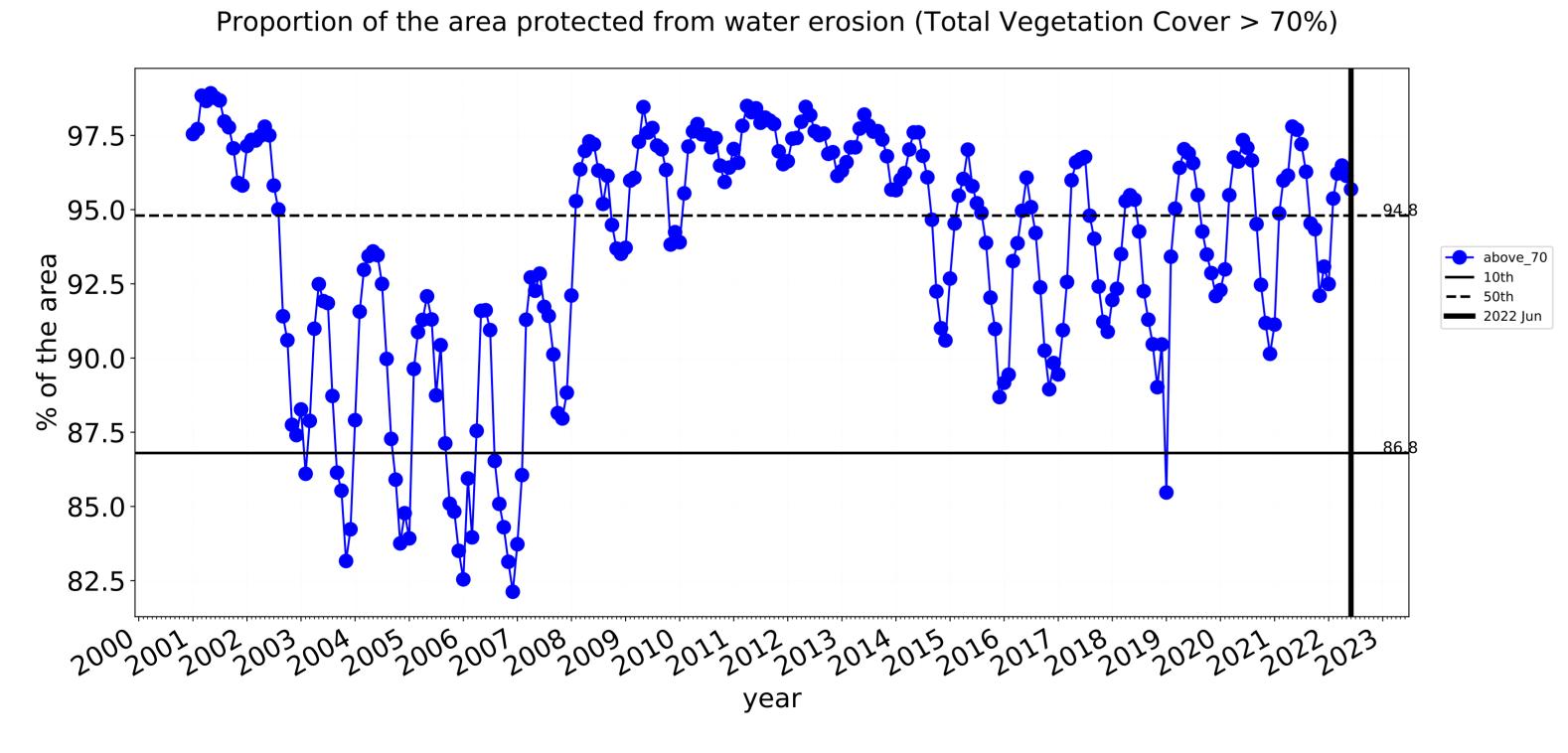


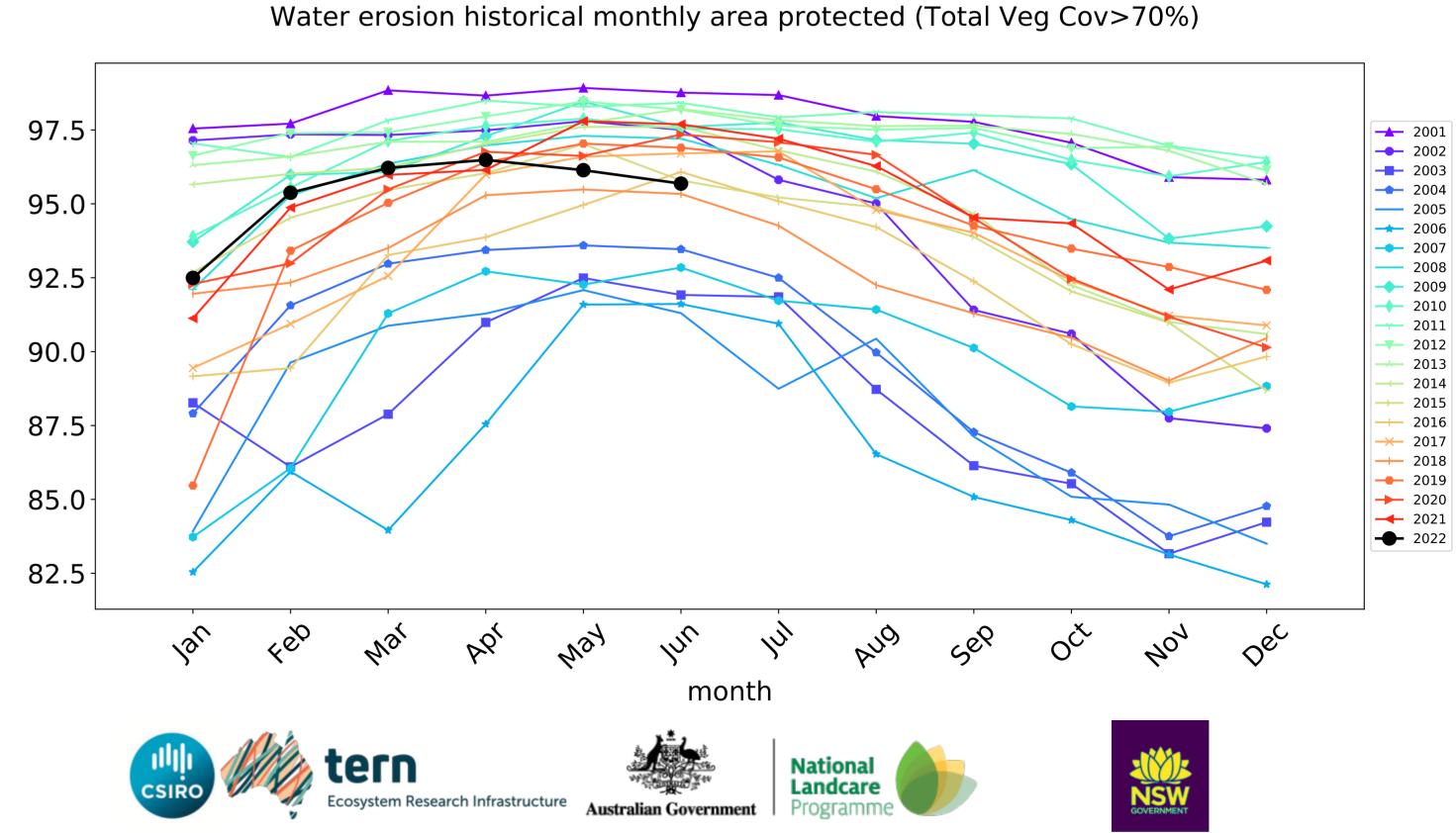
Conservation and natural environments timeseries





month





Conservation and natural environments non forest

Land use and forest cover

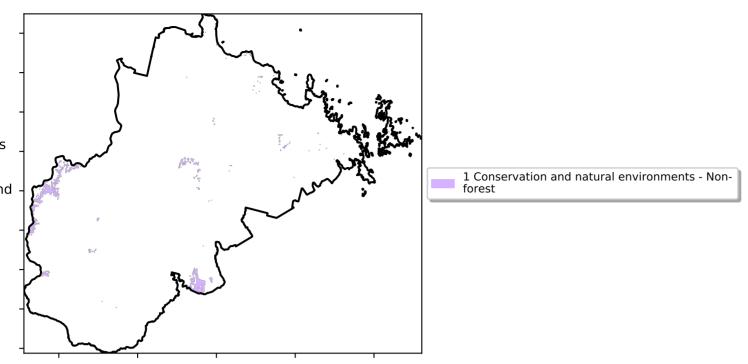


Anomaly show how many percetage points each pixel is from

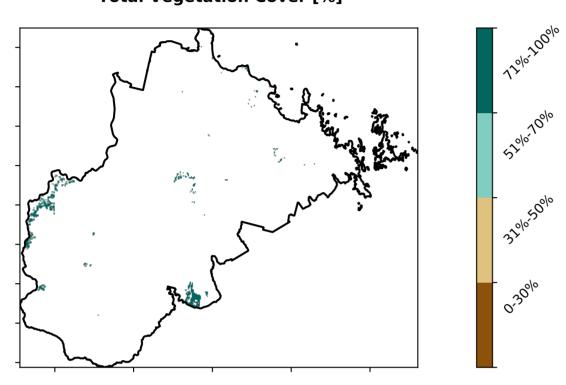
the mean. That

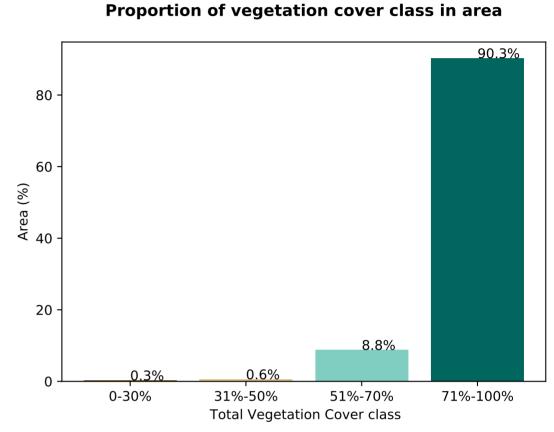
is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map

using baseline from 2001 to 2019.

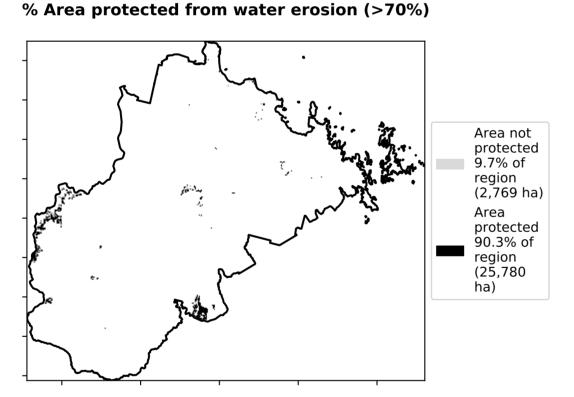


Total Vegetation Cover [%]

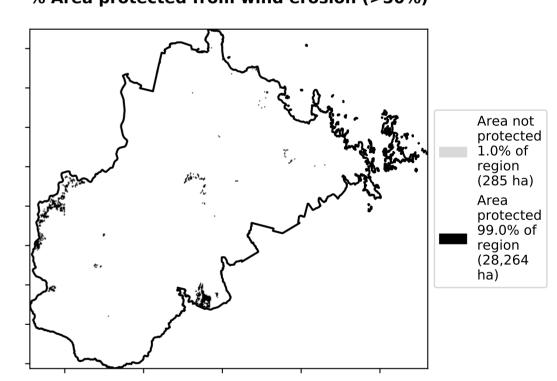




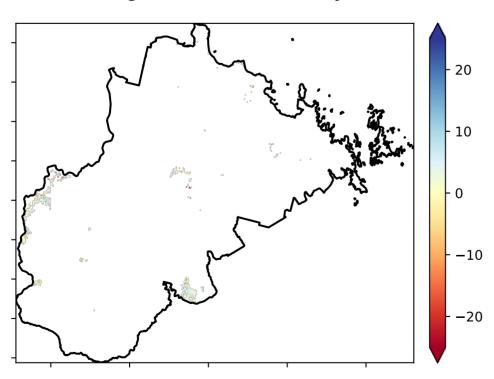
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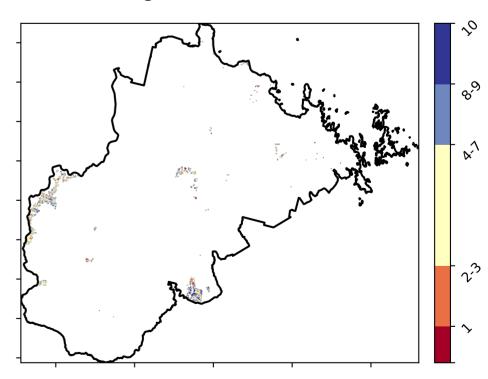
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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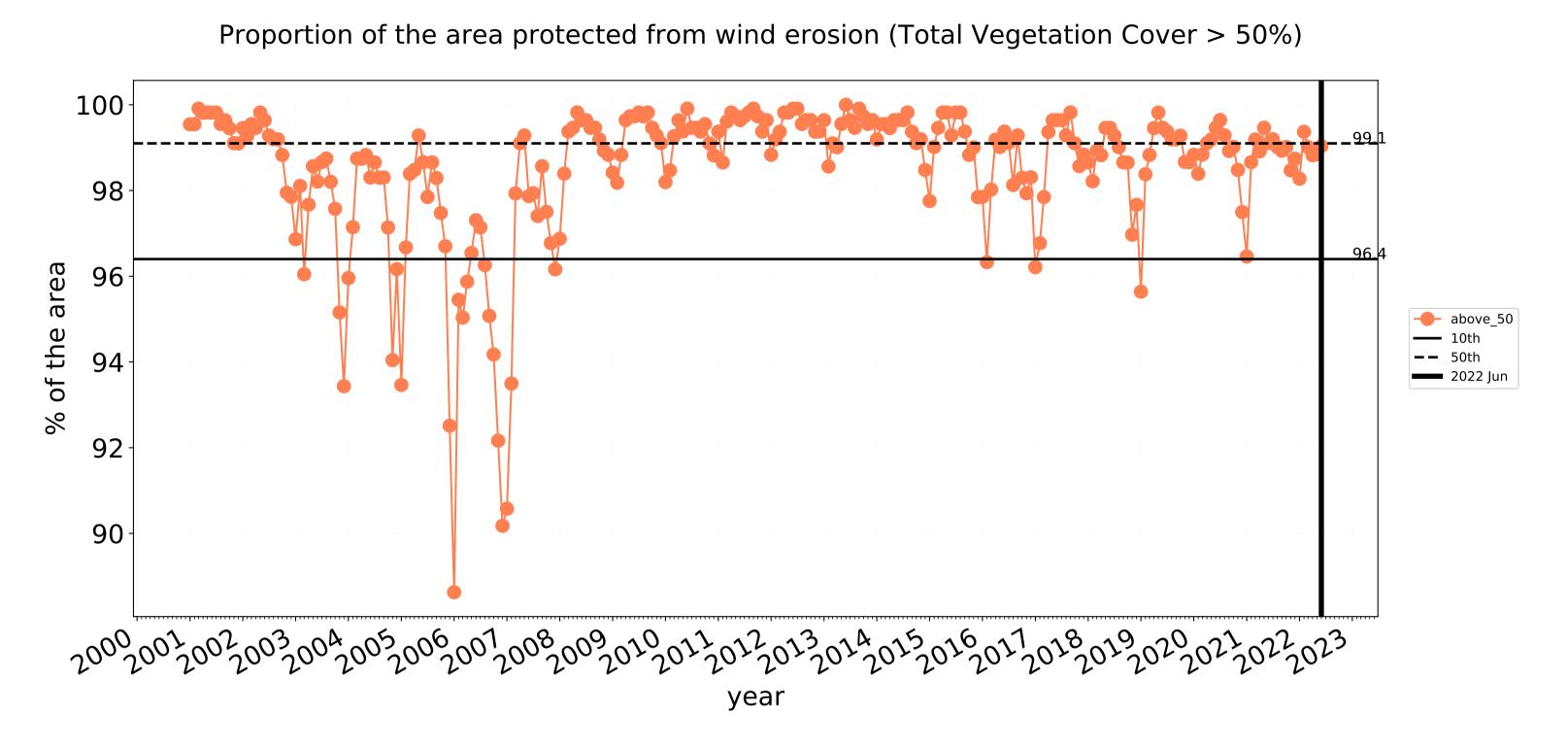


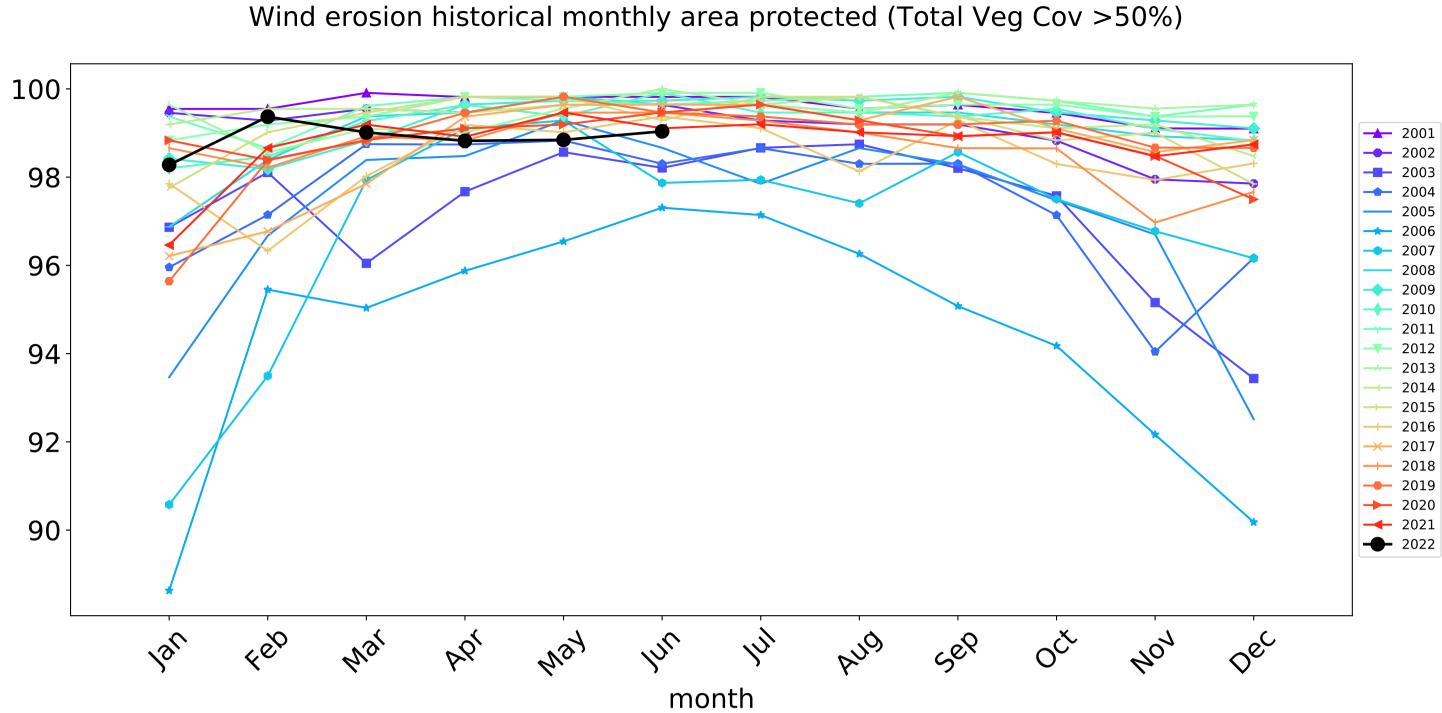


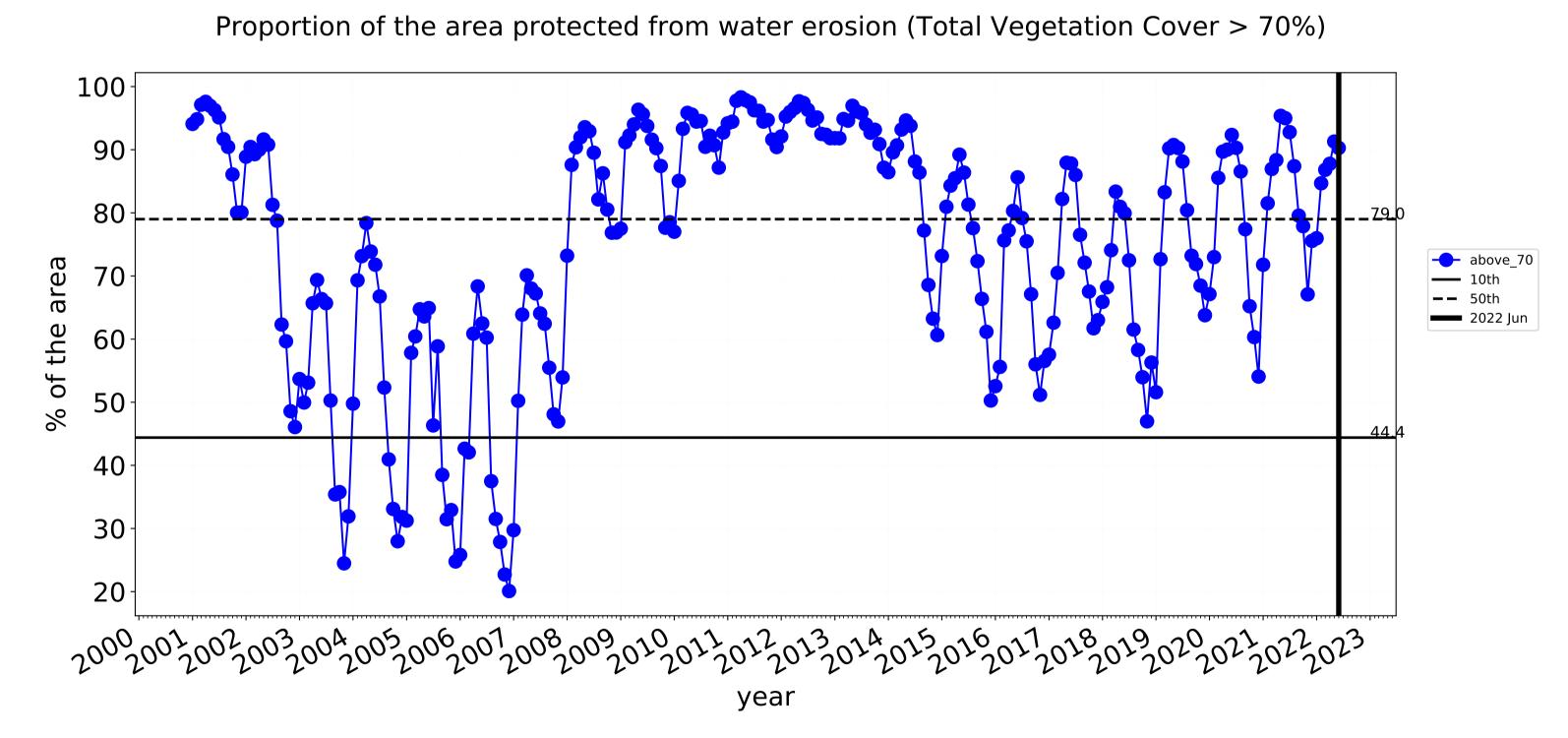


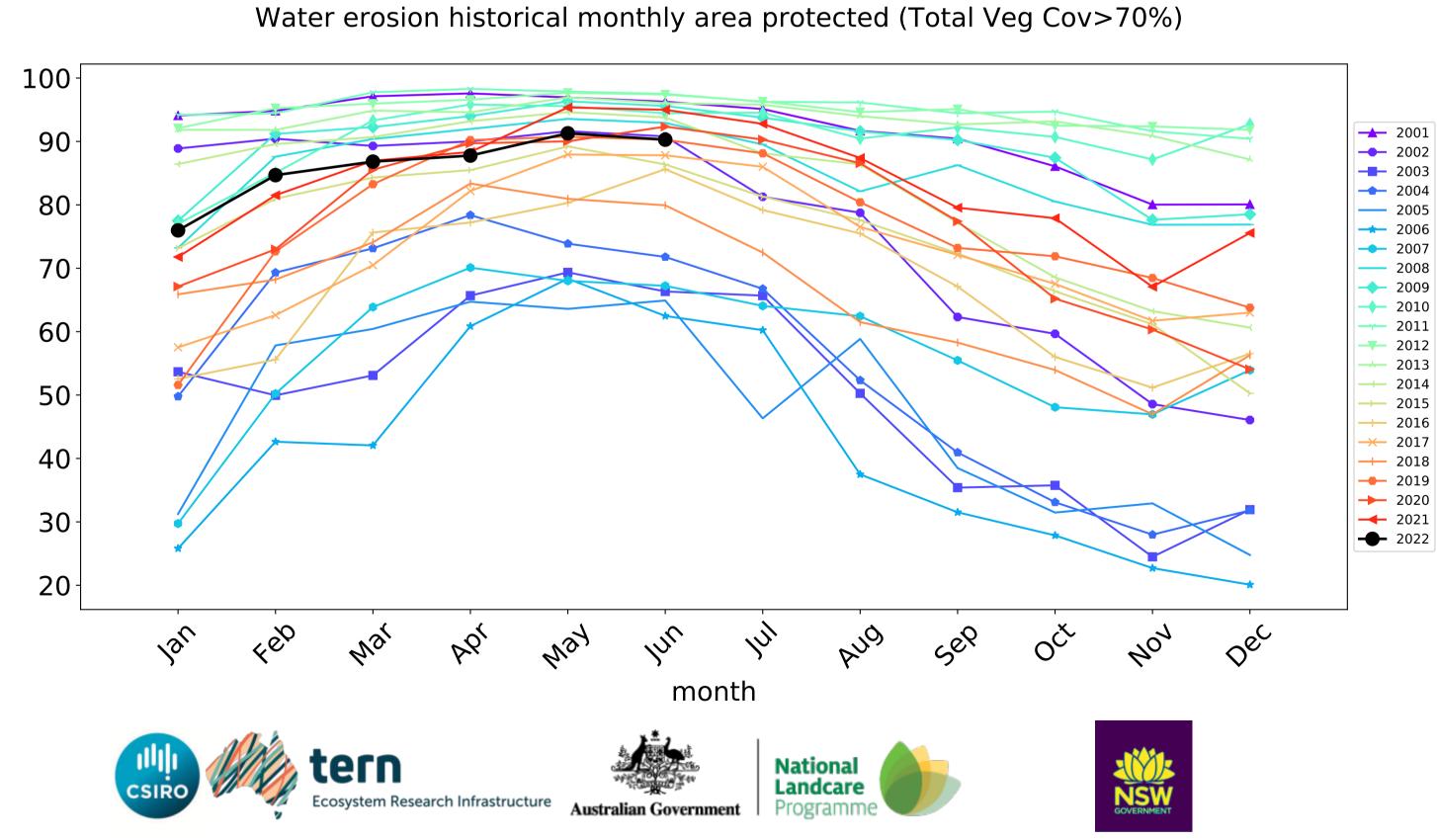


Conservation and natural environments non forest timeseries







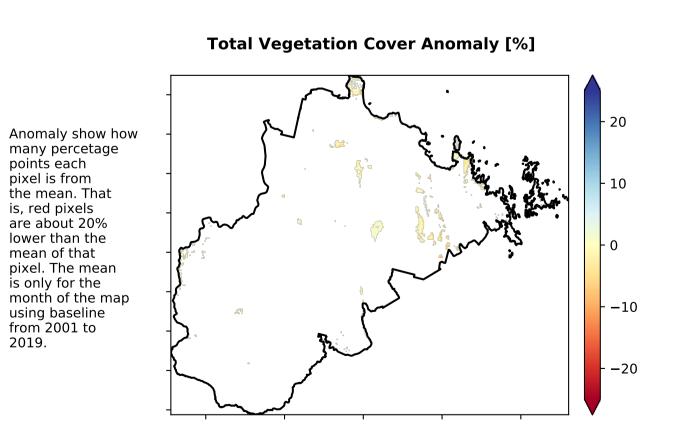


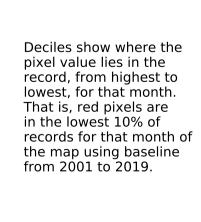
Conservation and natural environments Woodland forest

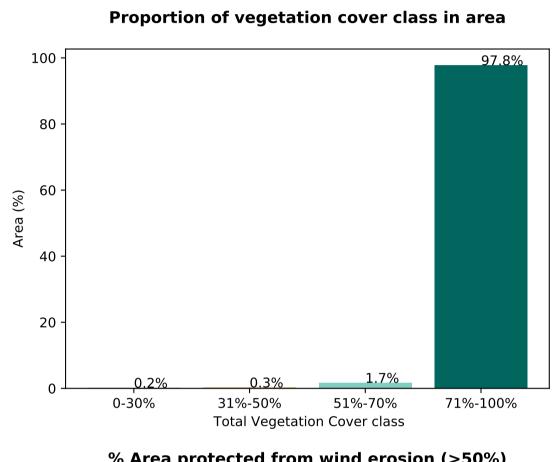
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) 1 Conservation and natural environments - Woodland forest

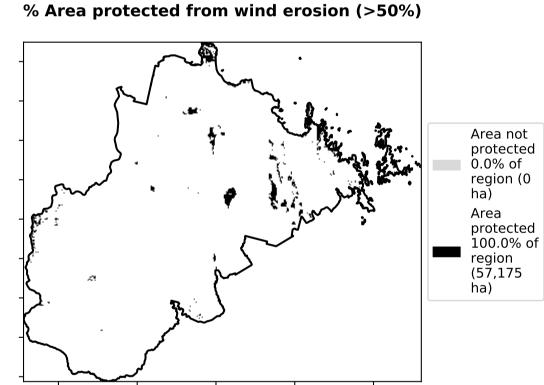
Total Vegetation Cover [%]

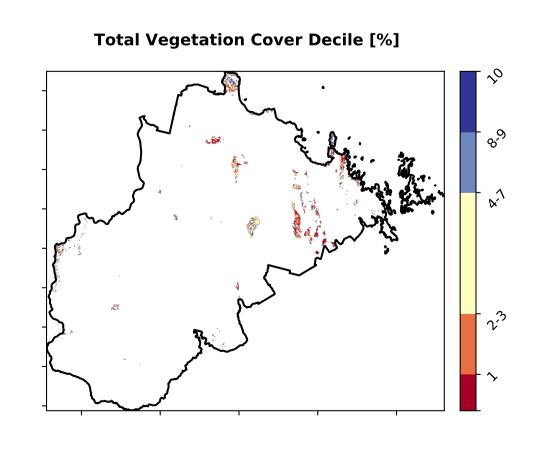
Area not protected 2.2% of region (1,257 ha) Area protected 2.7% of region (1,257 ha) Area protected 97.8% of region (55,917 ha)











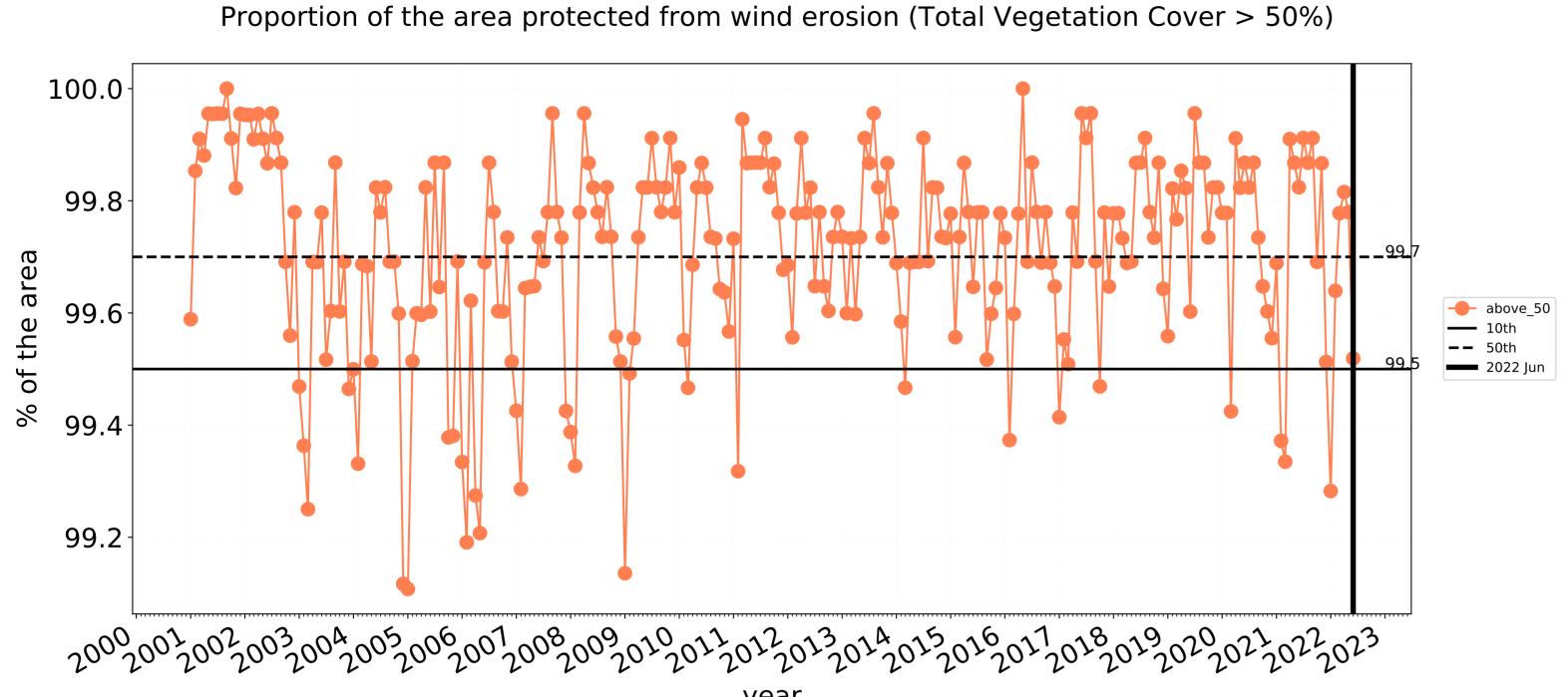


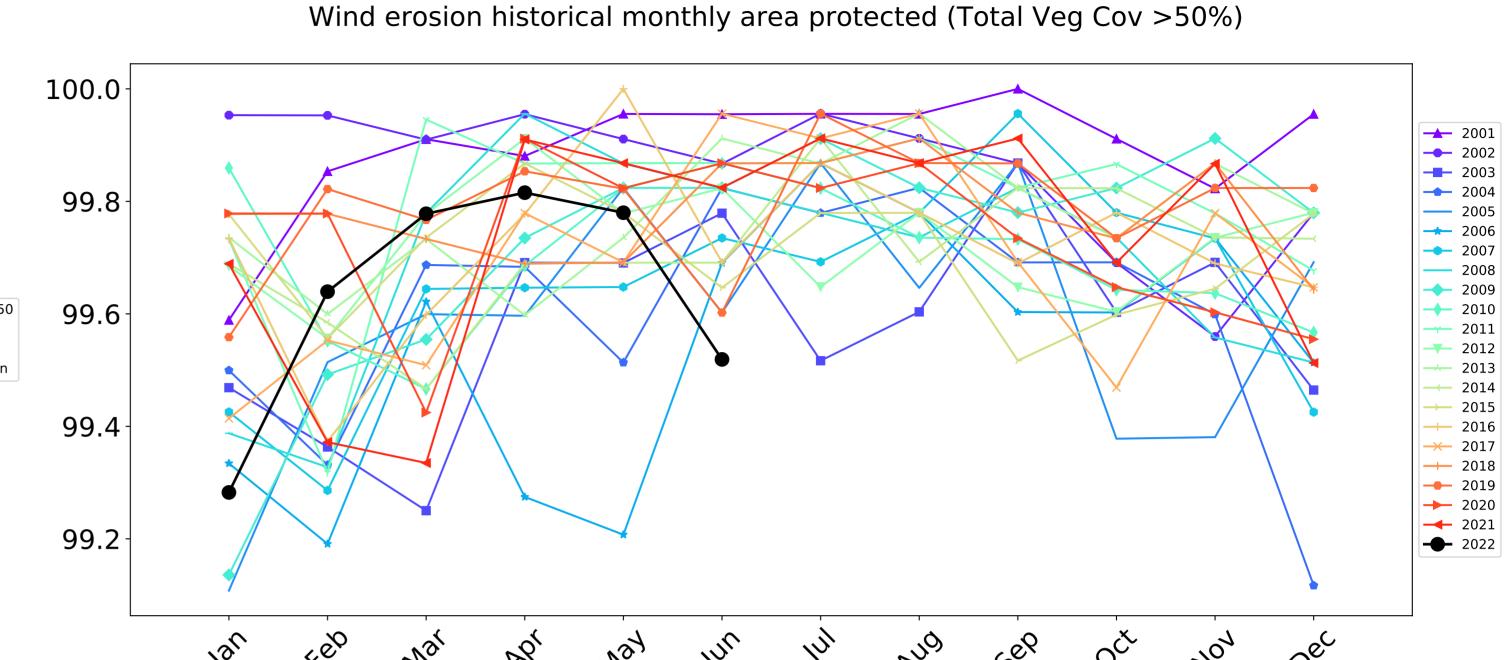




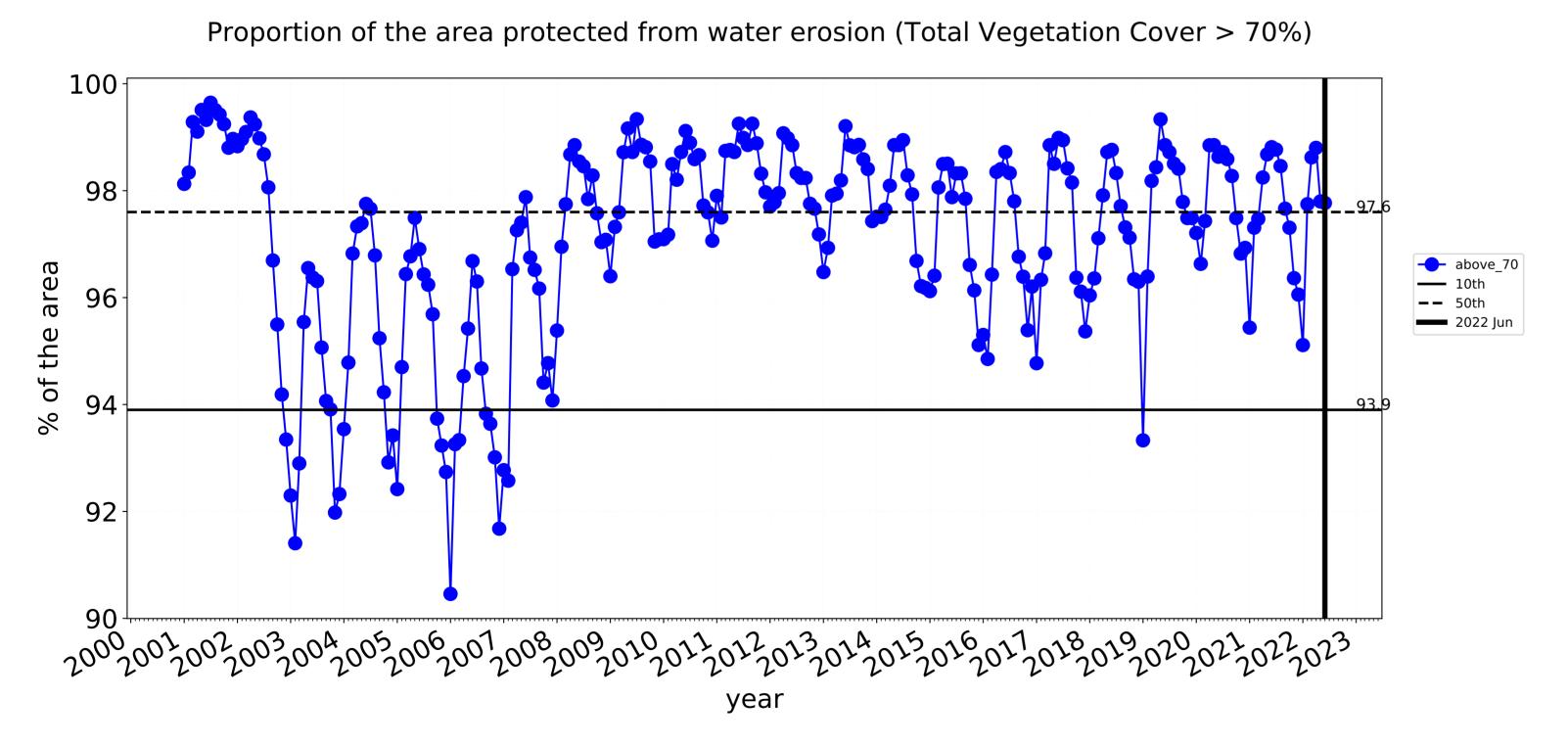


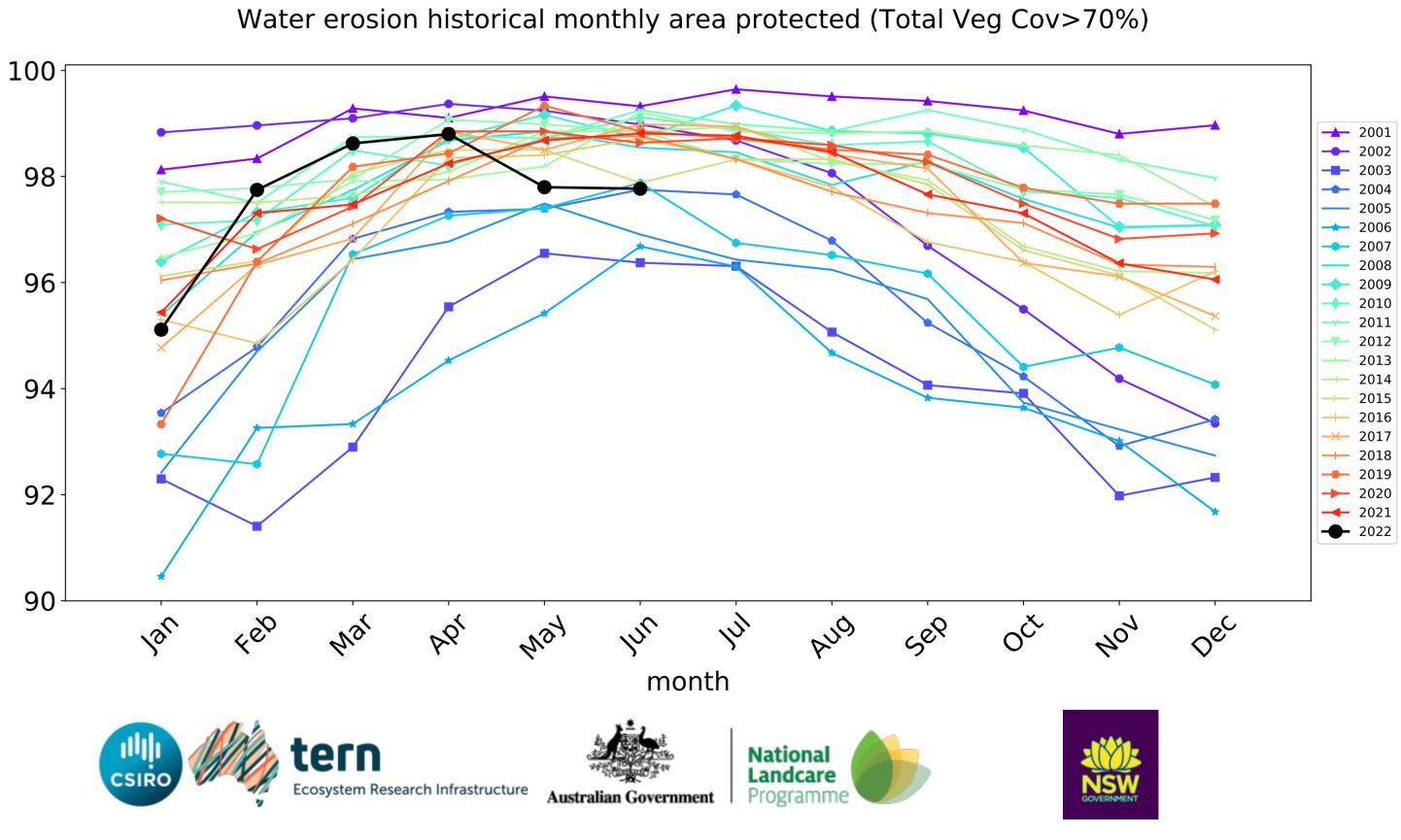
Conservation and natural environments Woodland forest timeseries





month

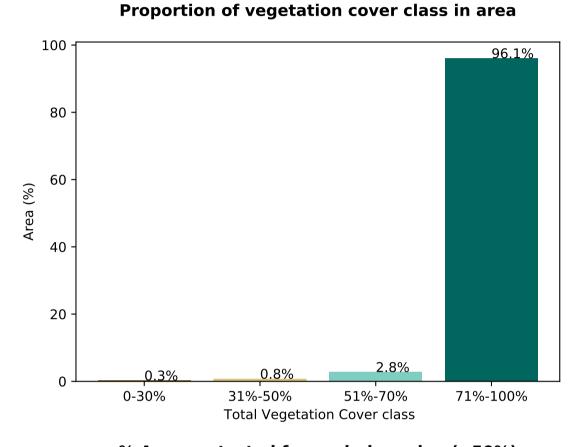


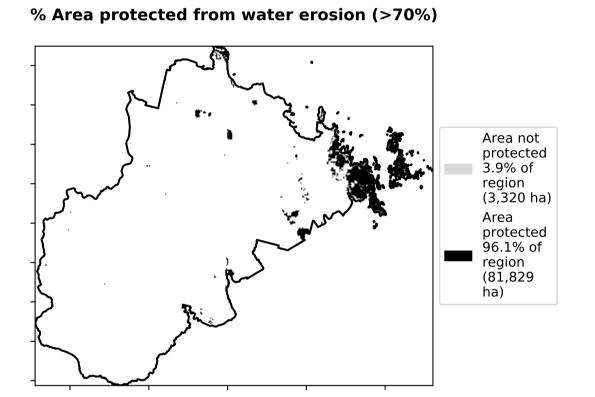


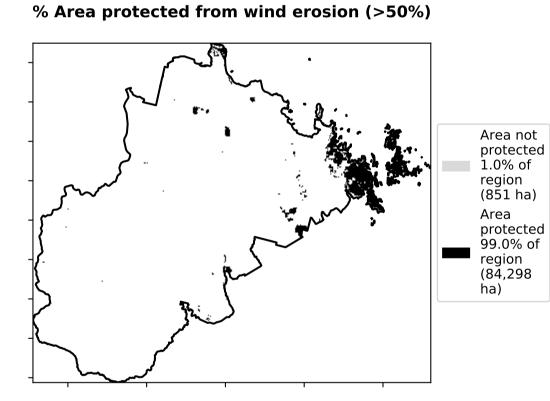
Conservation and natural environments Forest (non woodland)

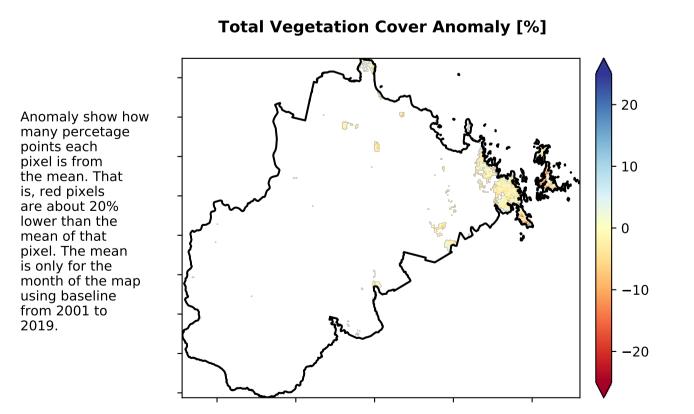
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Conservation and natural environments - Non-Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

Total Vegetation Cover [%]

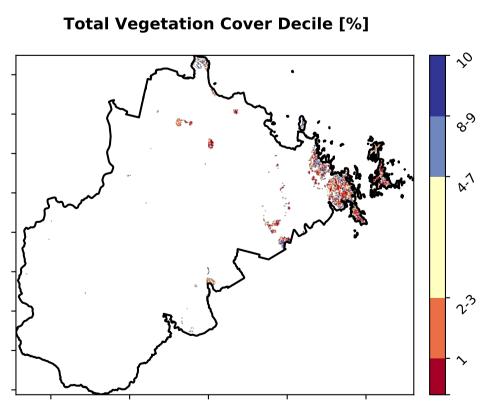








Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline. the map using baseline from 2001 to 2019.

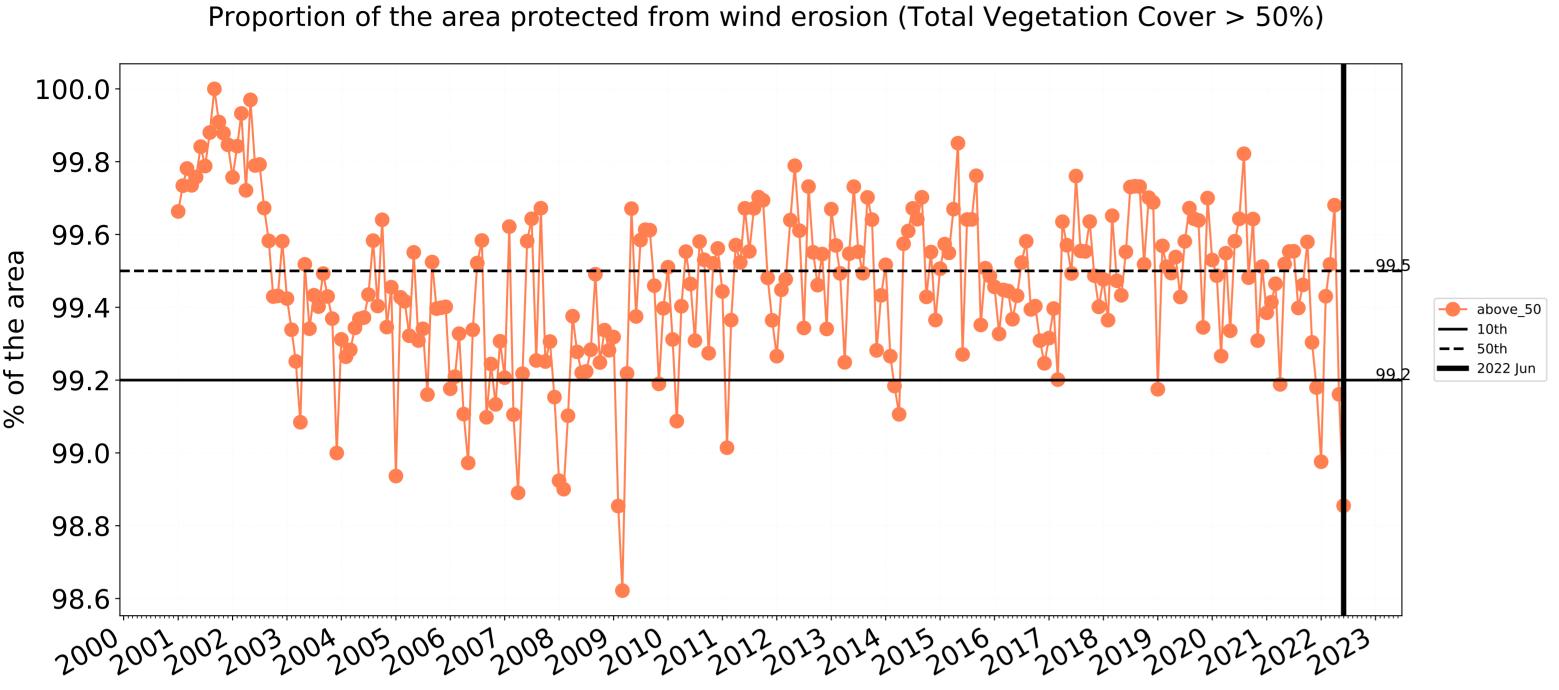


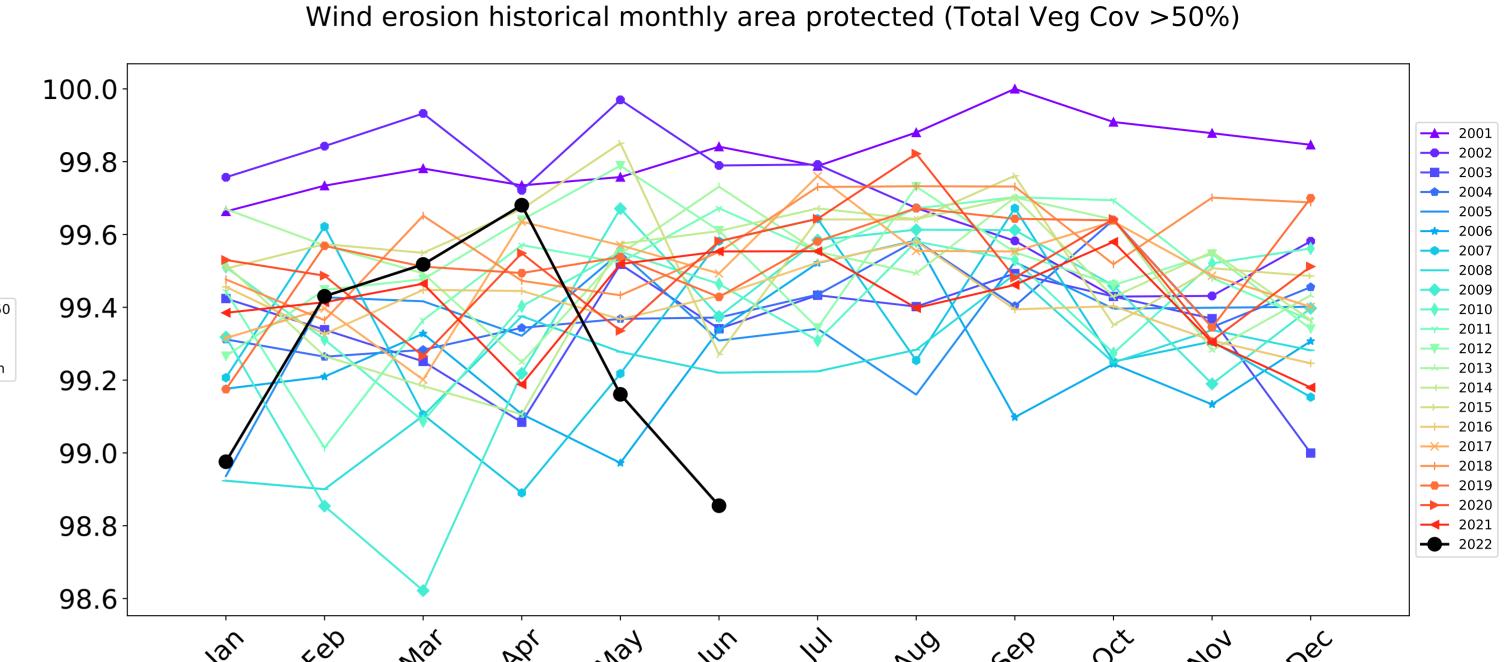




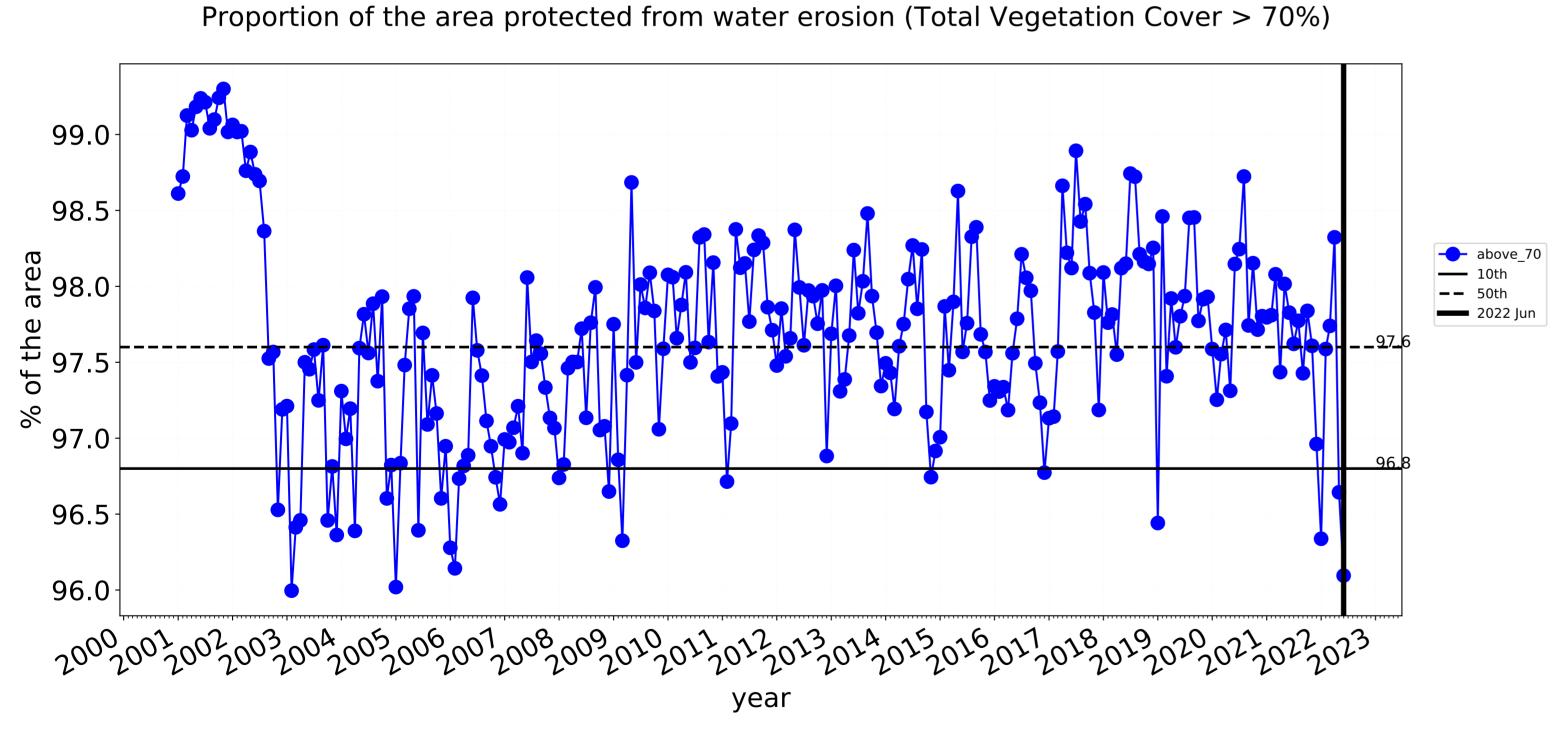


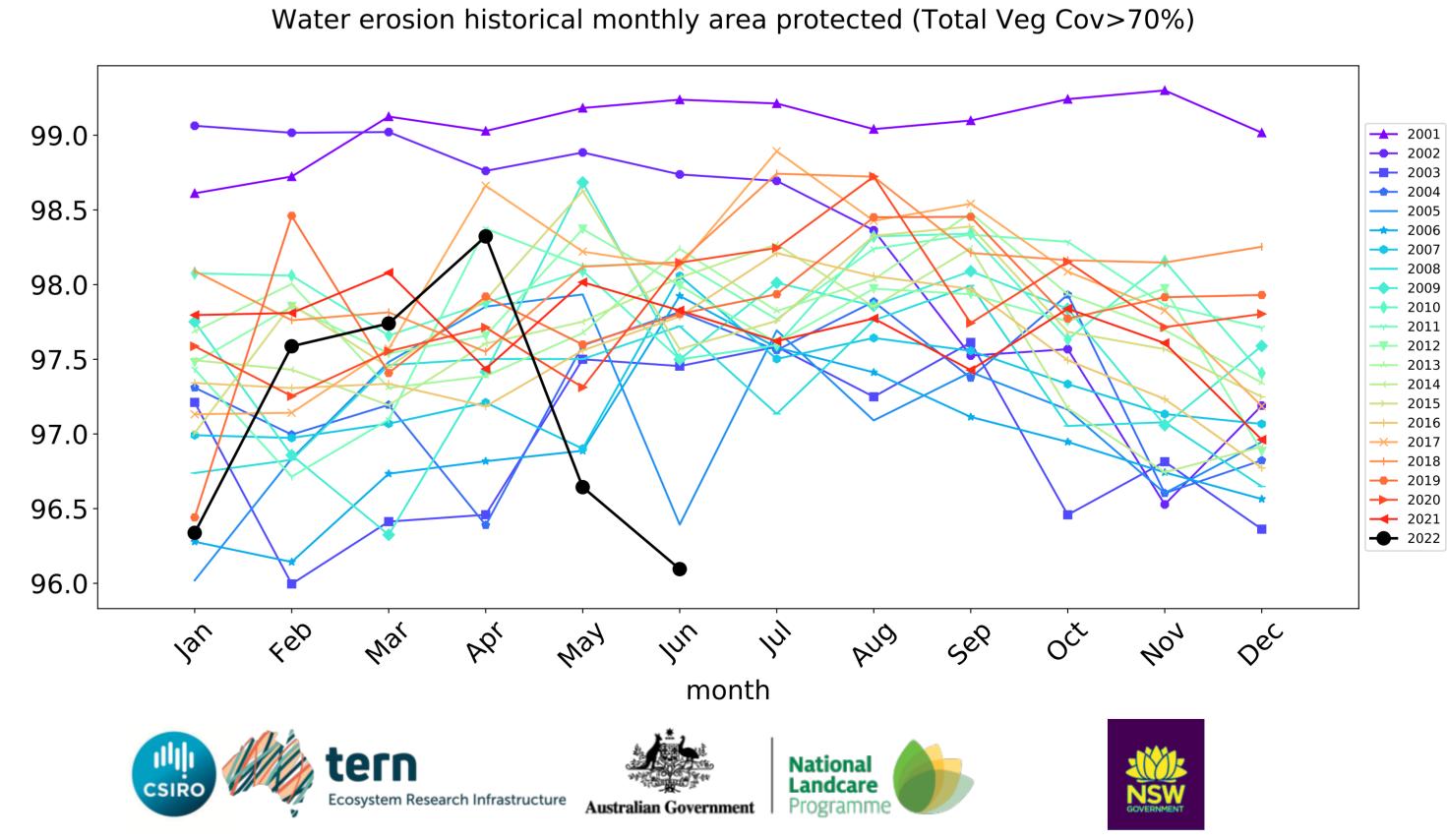






month





Agriculture

Land use and forest cover

Derived from

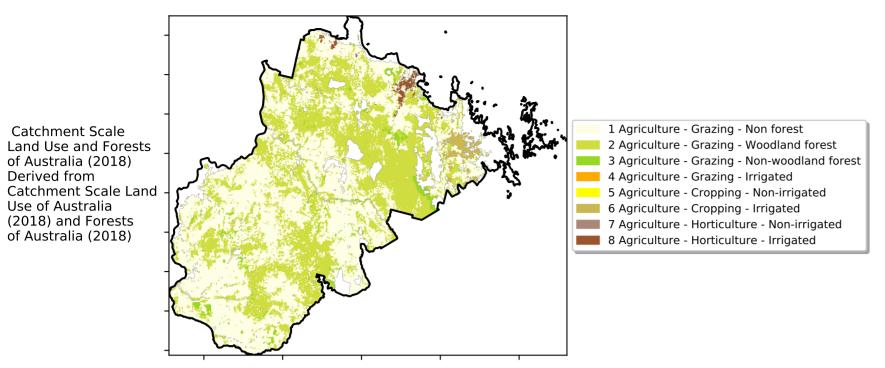
is, red pixels are about 20% lower than the mean of that

pixel. The mean

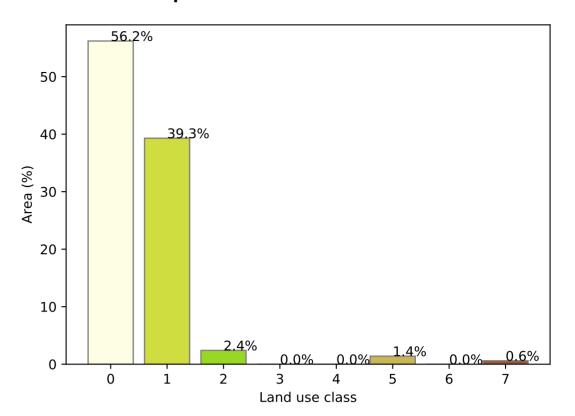
using baseline from 2001 to 2019.

is only for the month of the map

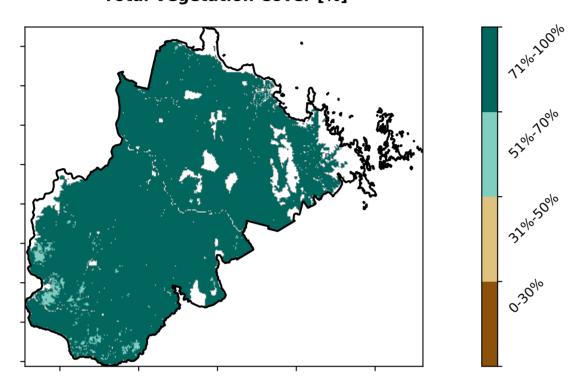
Use of Australia



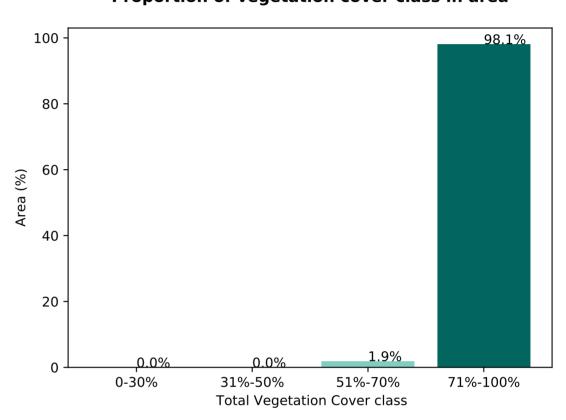
Proportion of each land class in area



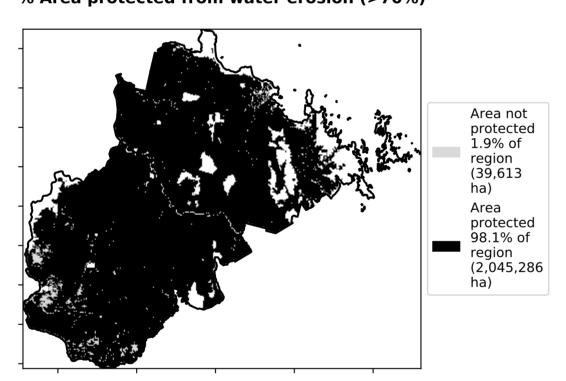
Total Vegetation Cover [%]



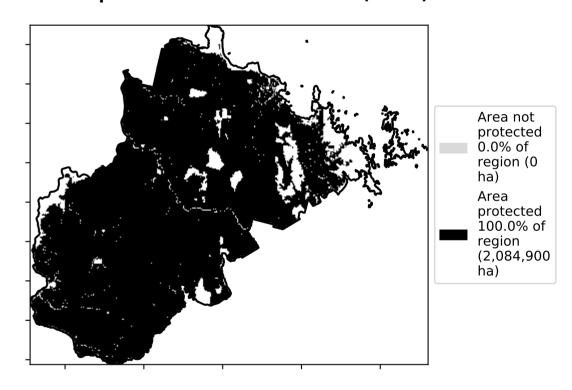
Proportion of vegetation cover class in area



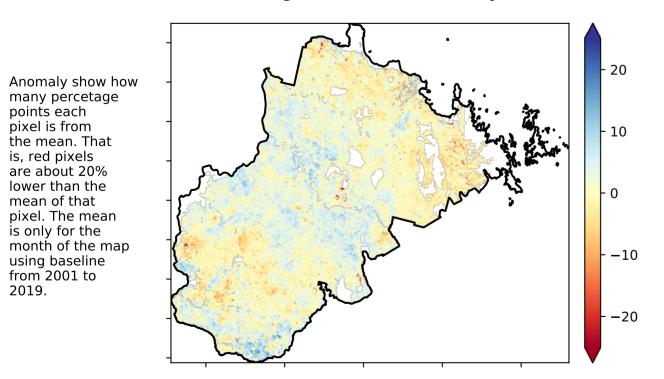
% Area protected from water erosion (>70%)



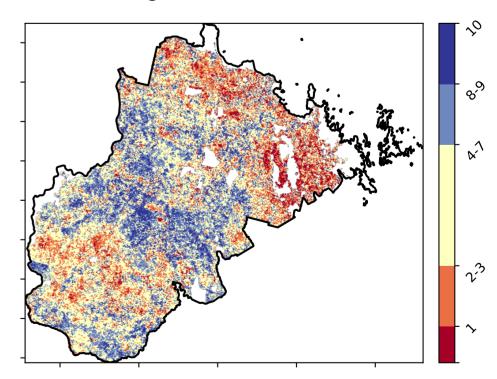
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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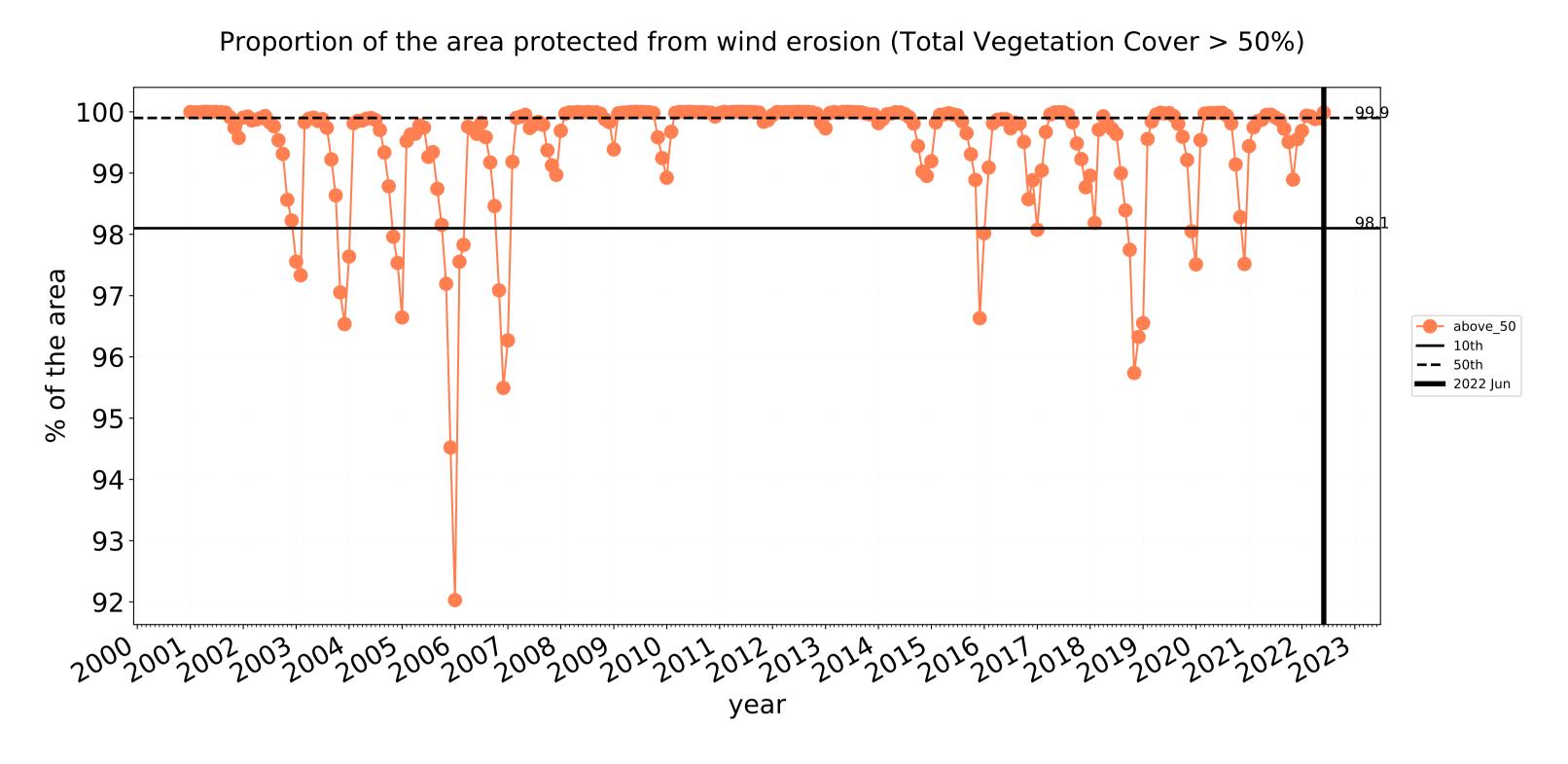


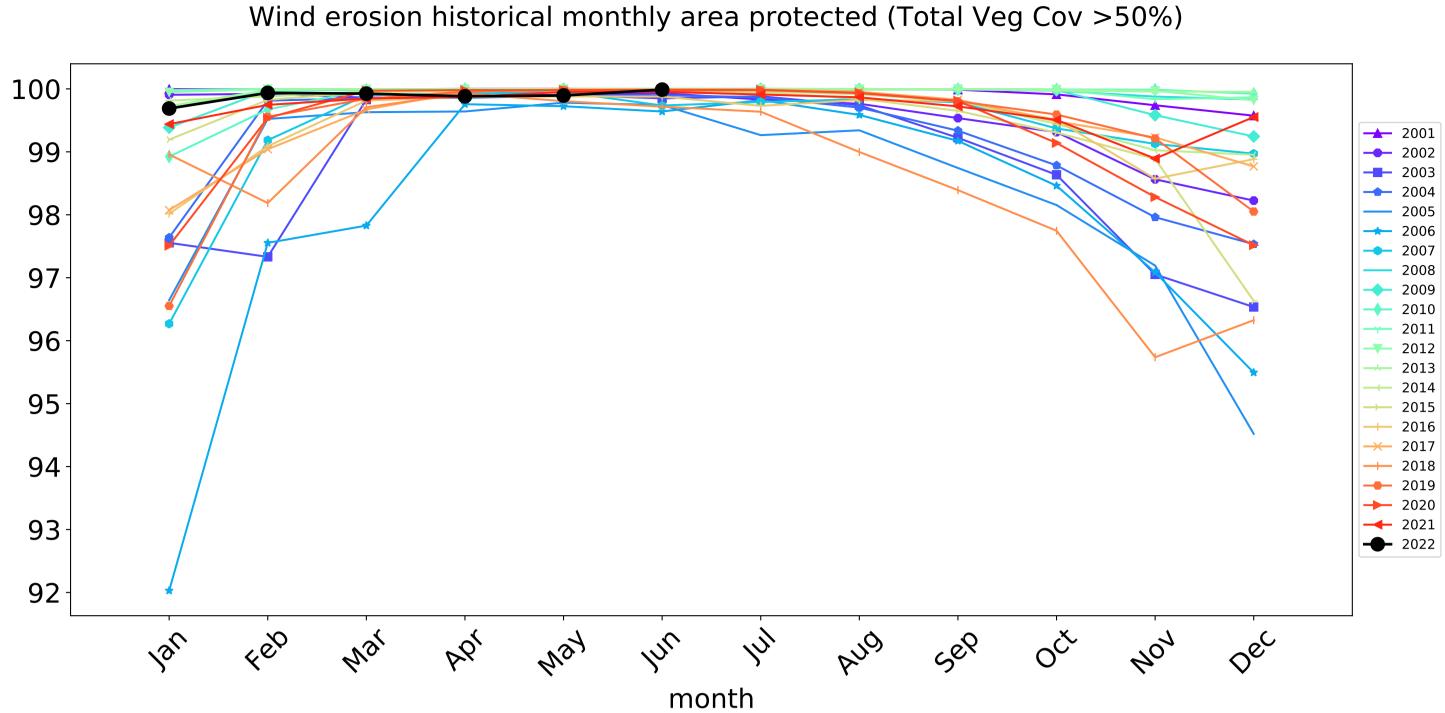


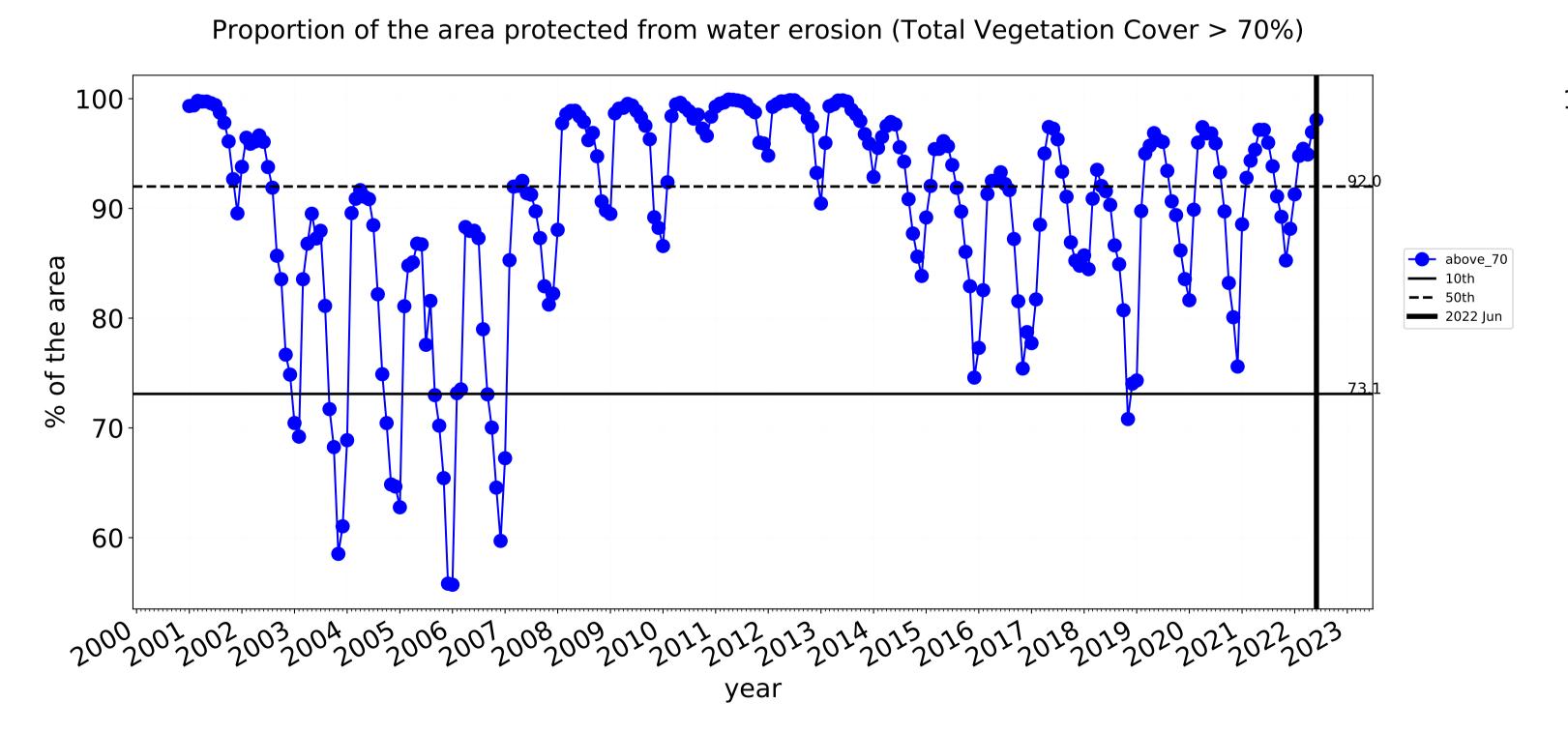


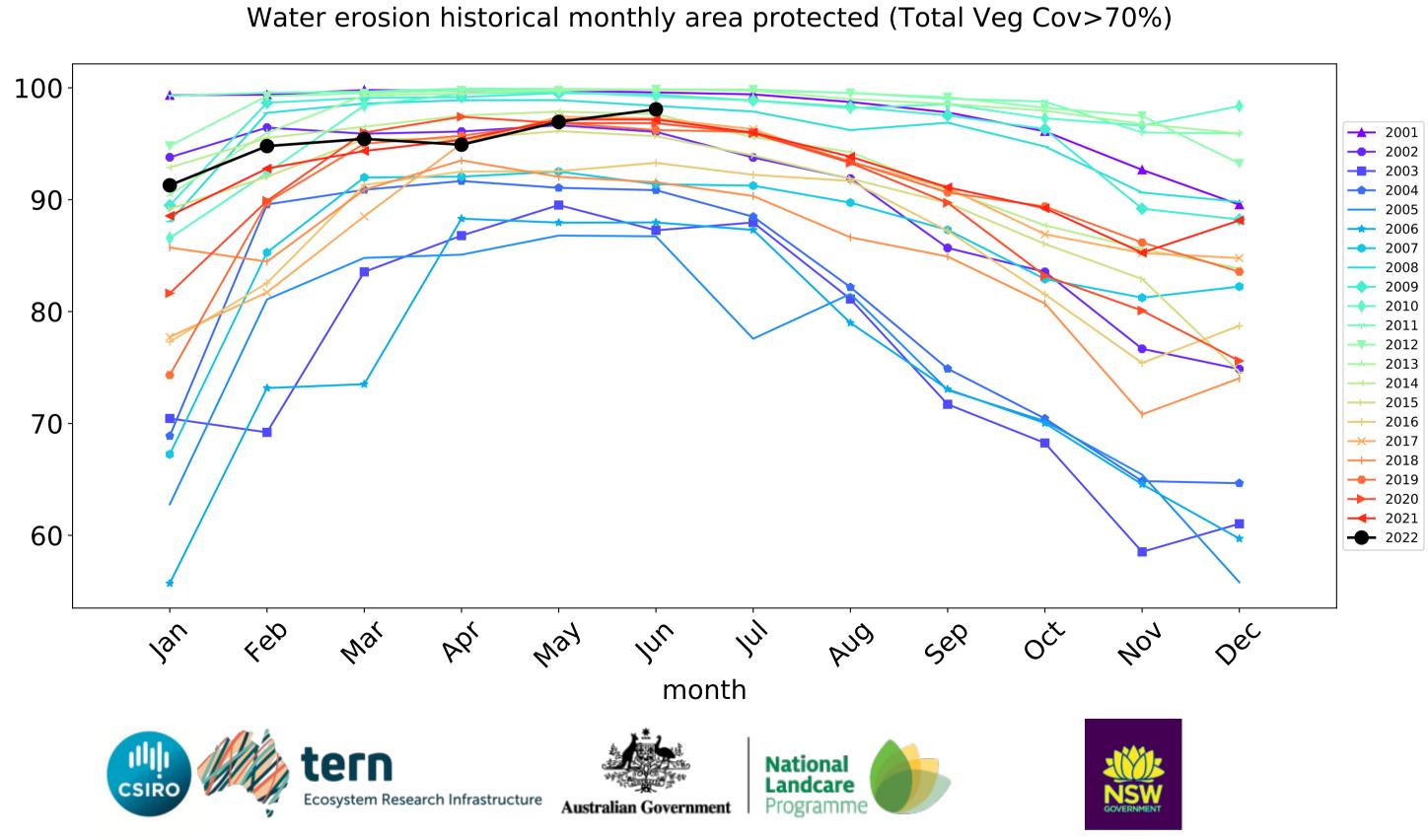


Agriculture timeseries



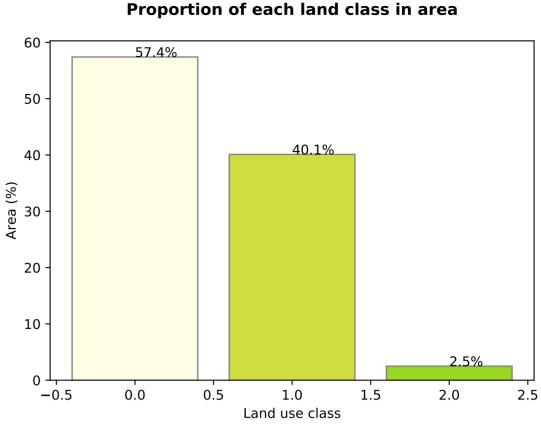




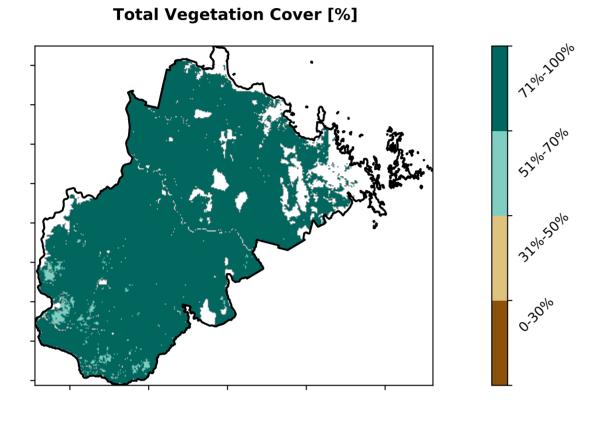


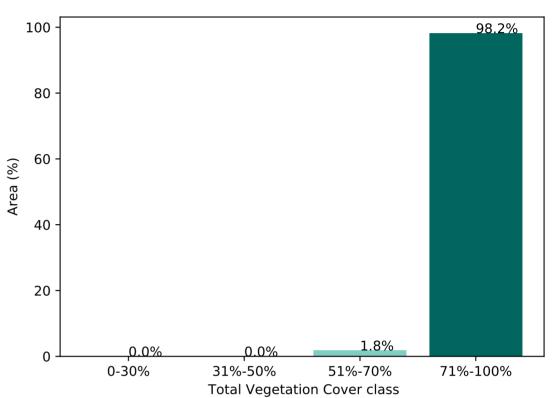
Grazing

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



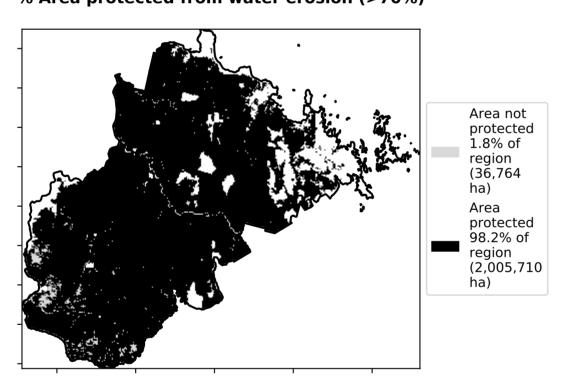
Proportion of vegetation cover class in area

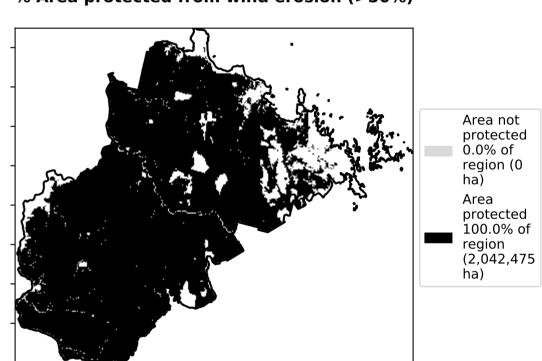




% Area protected from water erosion (>70%)

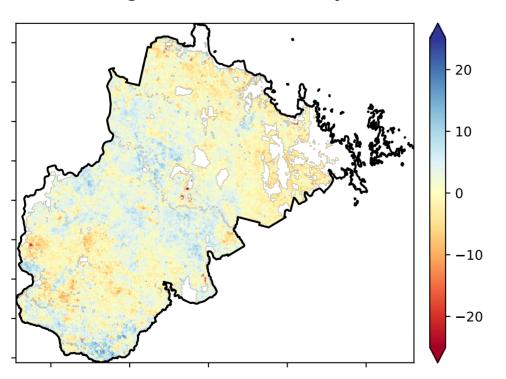
% Area protected from wind erosion (>50%)

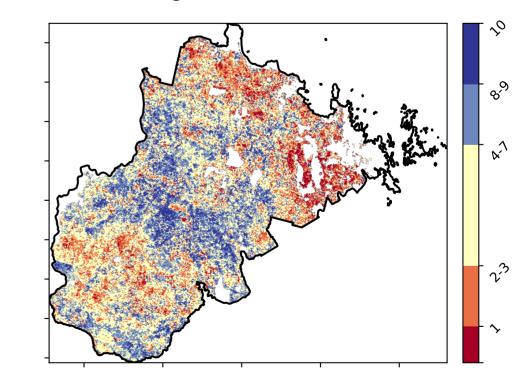




Total Vegetation Cover Anomaly [%]

Total Vegetation Cover Decile [%]





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

is only for the month of the map

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



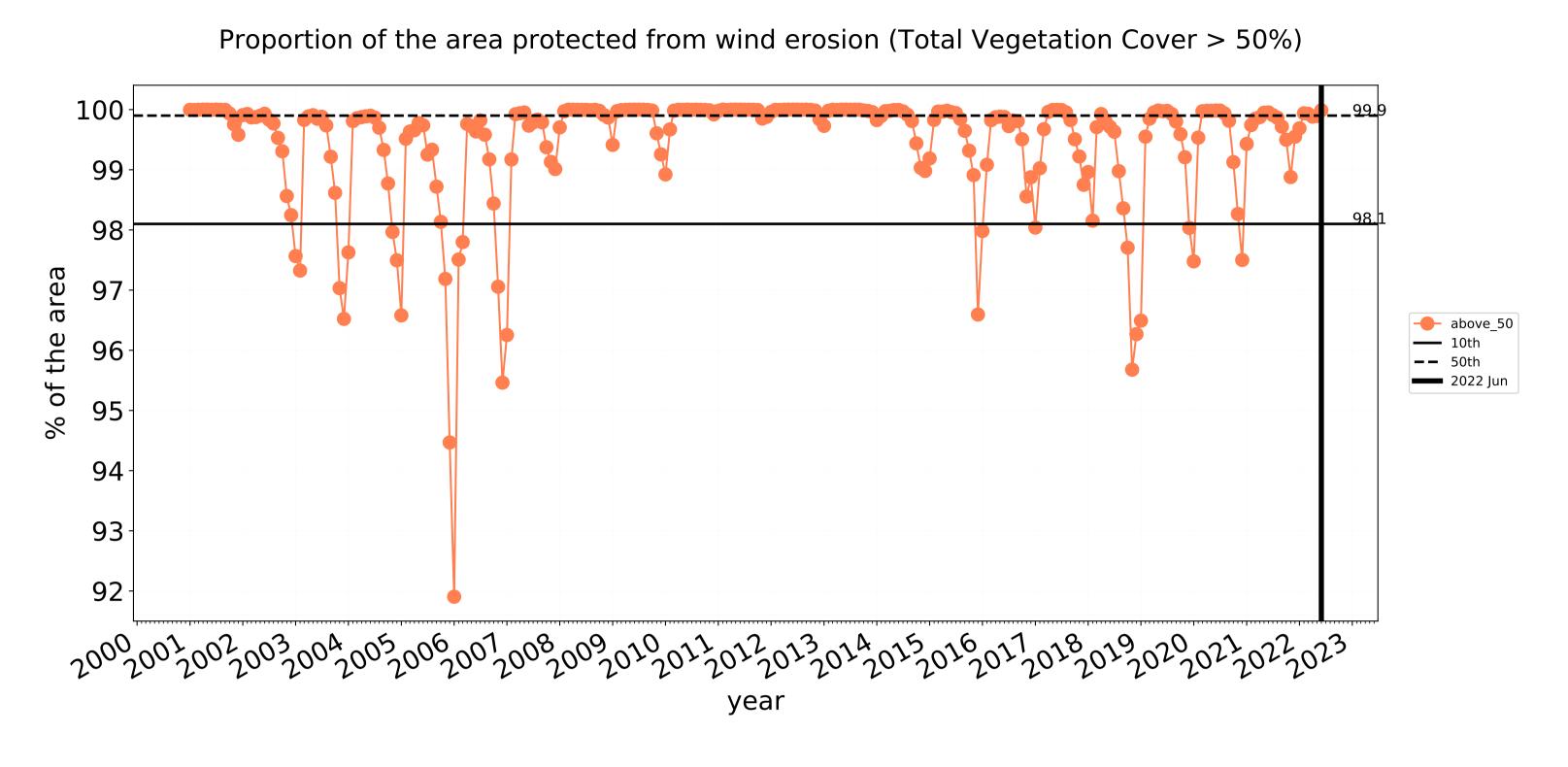


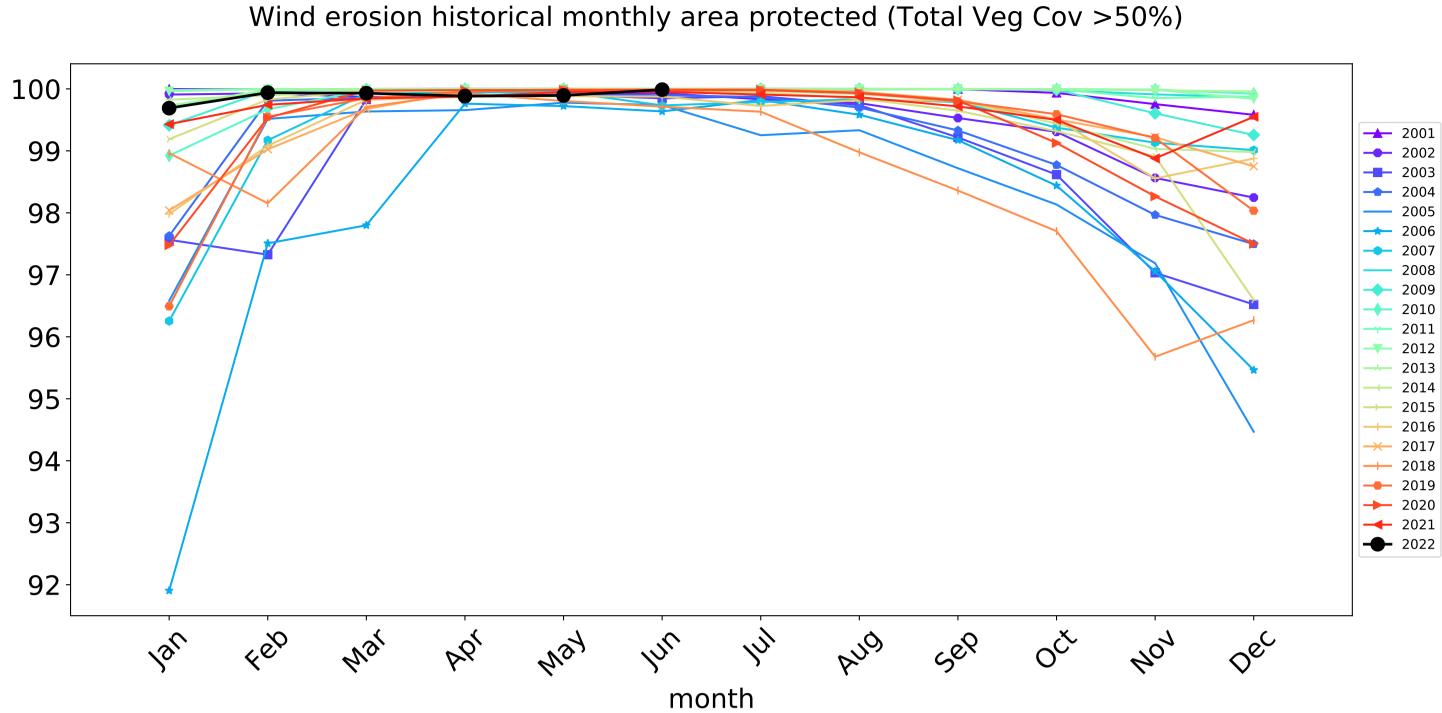


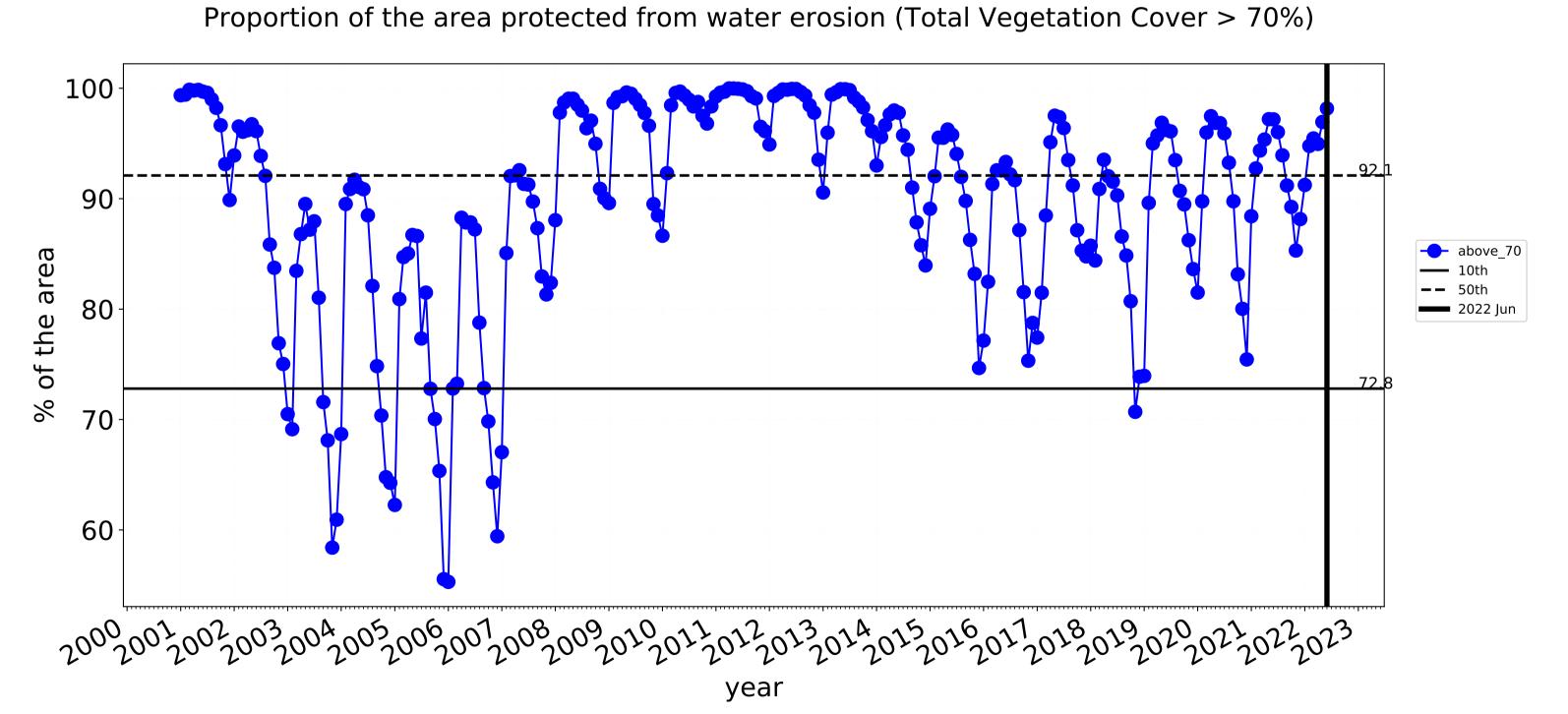


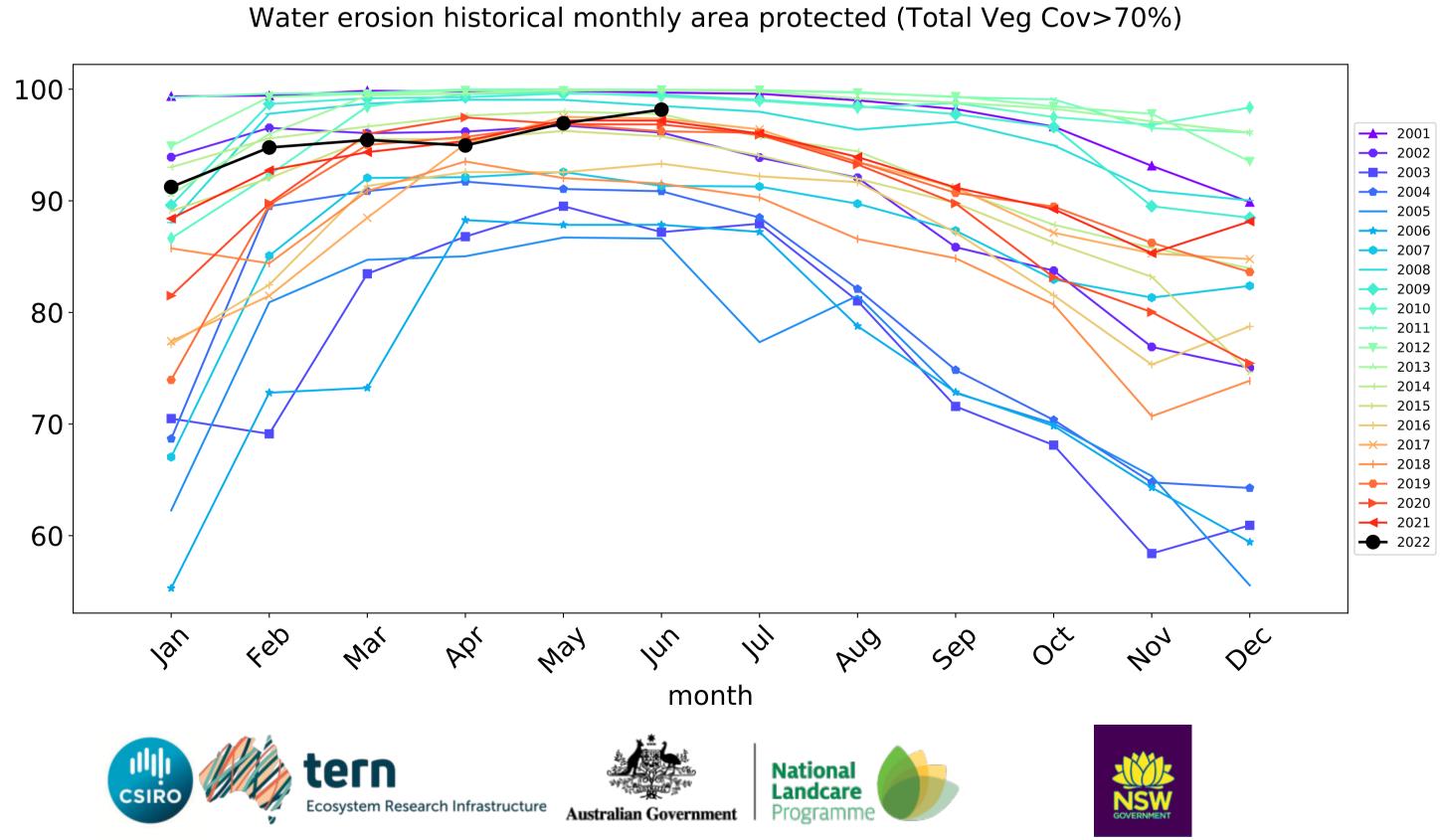


Grazing timeseries





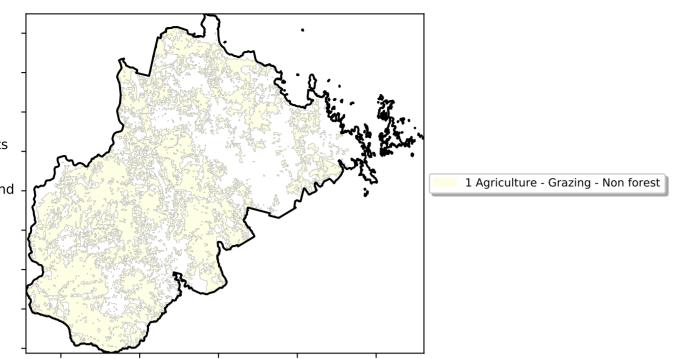




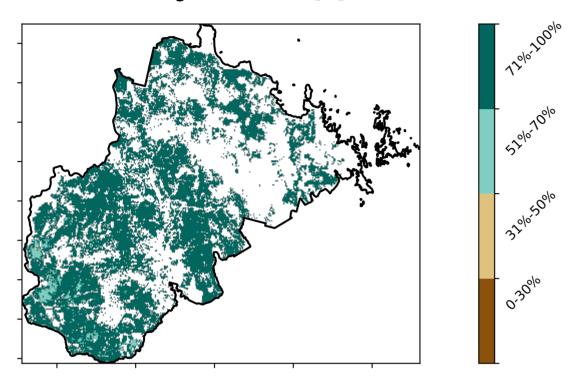
Grazing non forest

Land use and forest cover

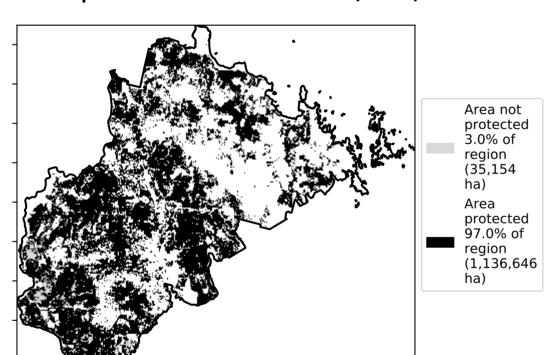
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



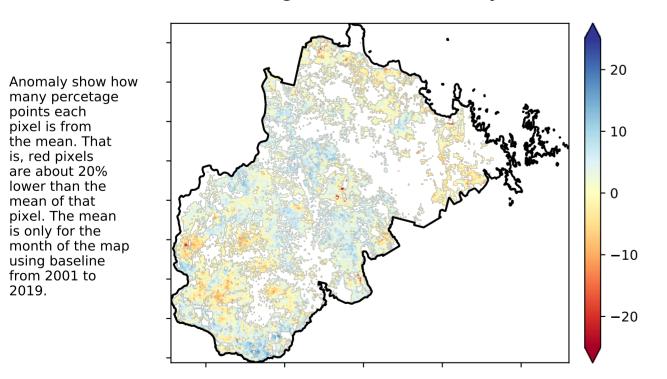
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

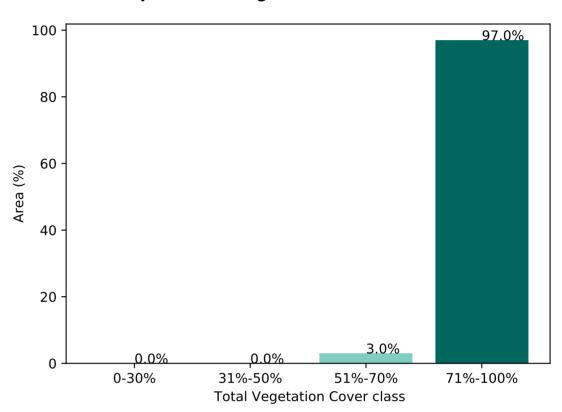


Total Vegetation Cover Anomaly [%]

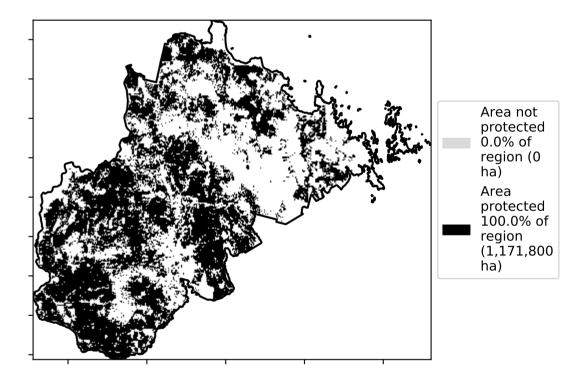


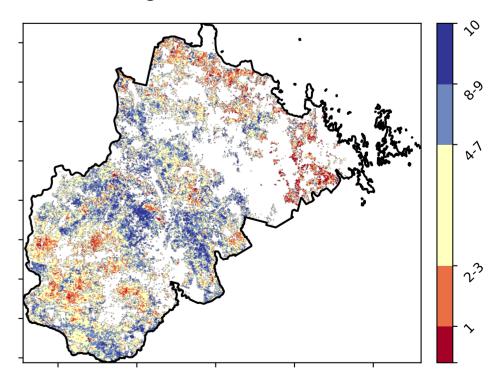
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





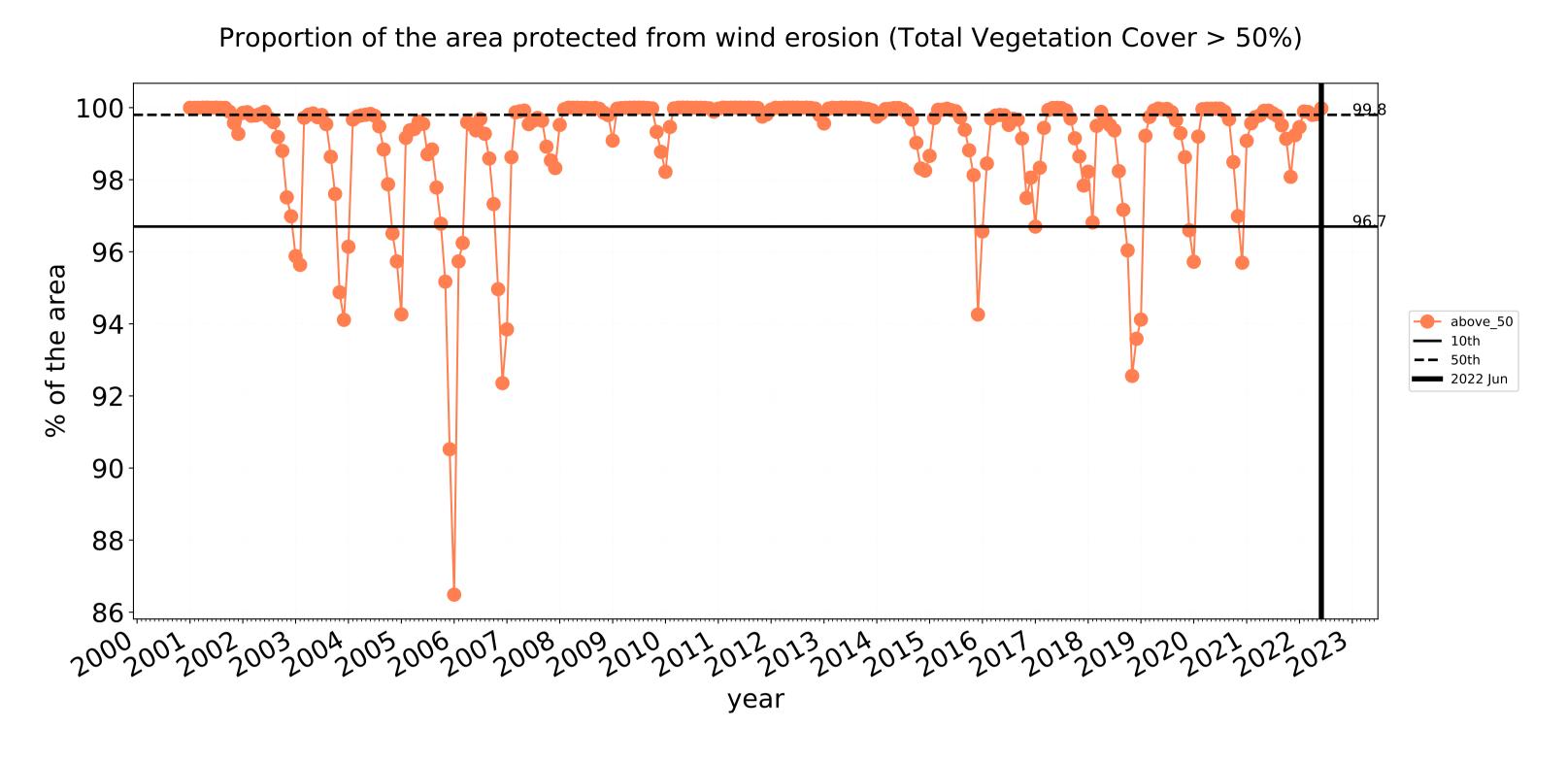


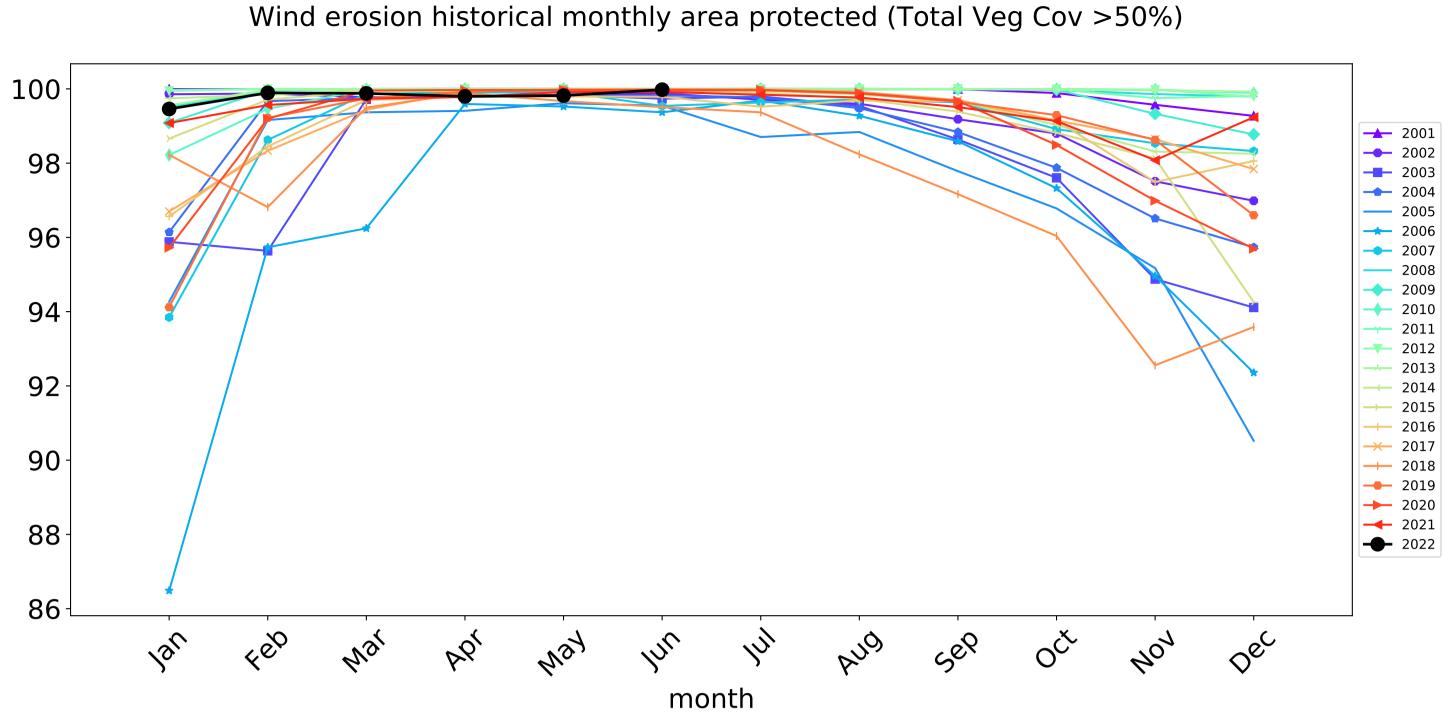


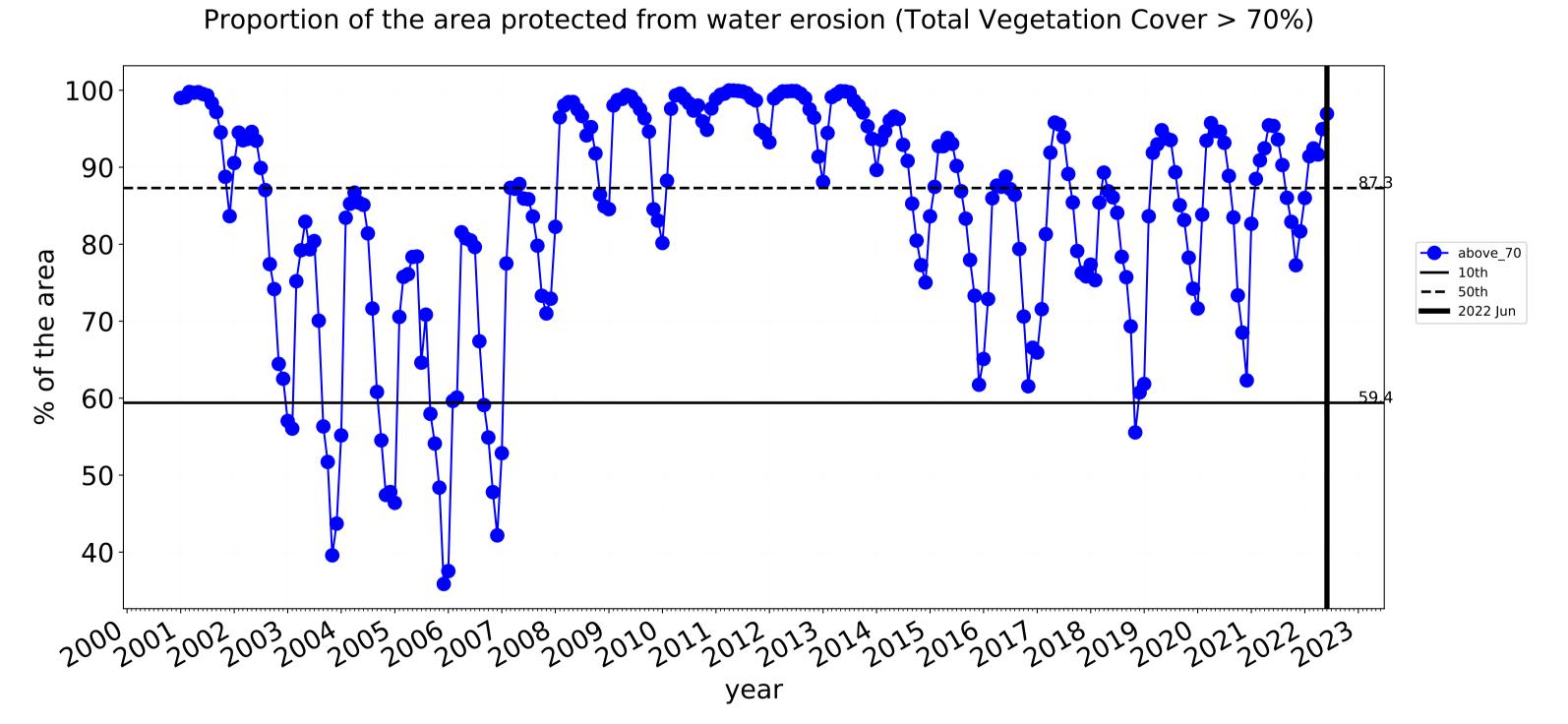


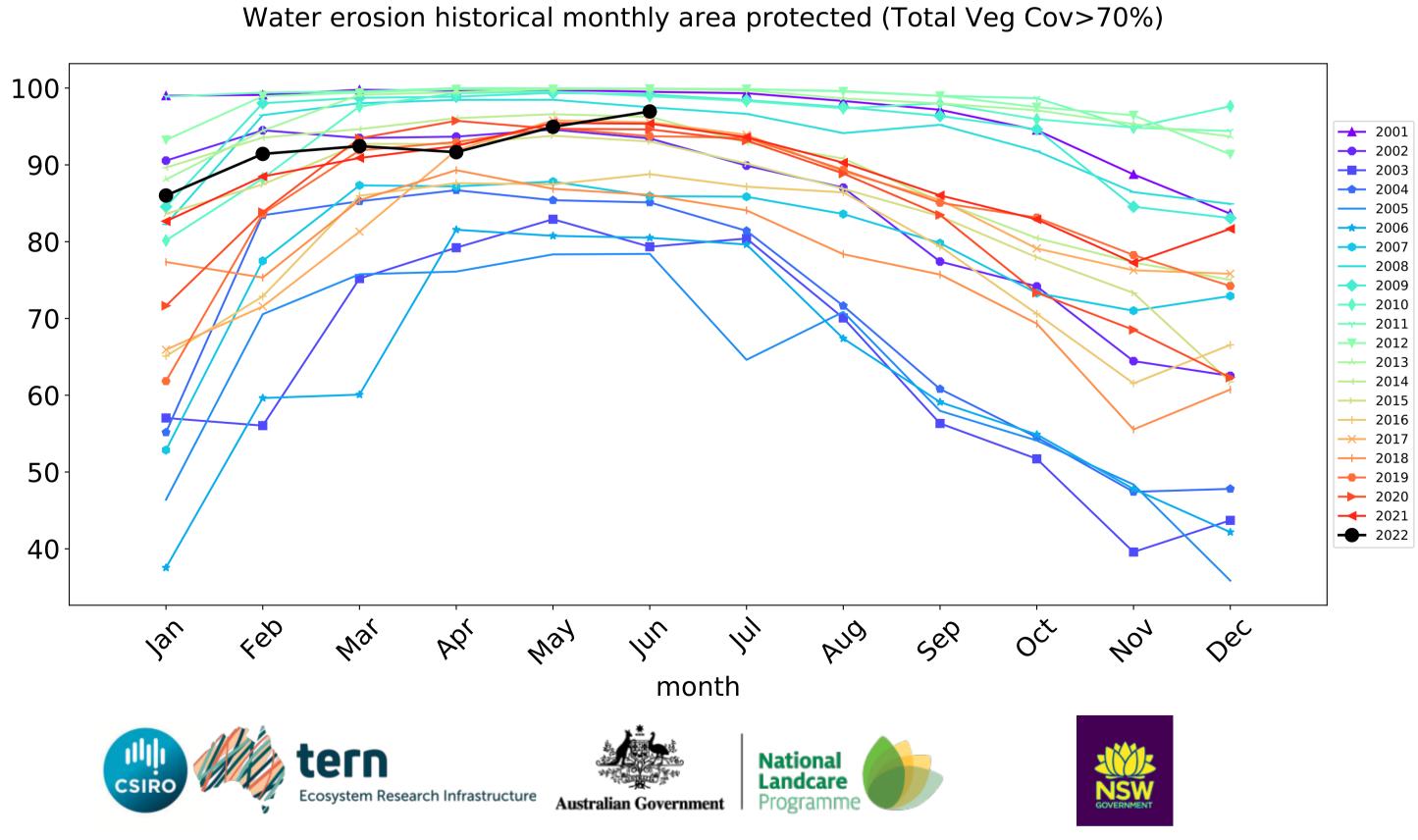


Grazing non forest timeseries







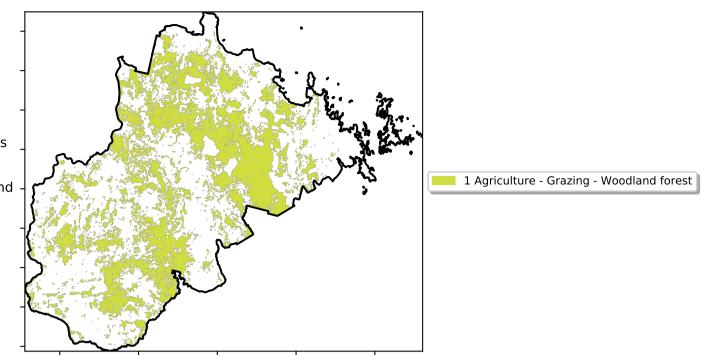


Grazing Woodland forest

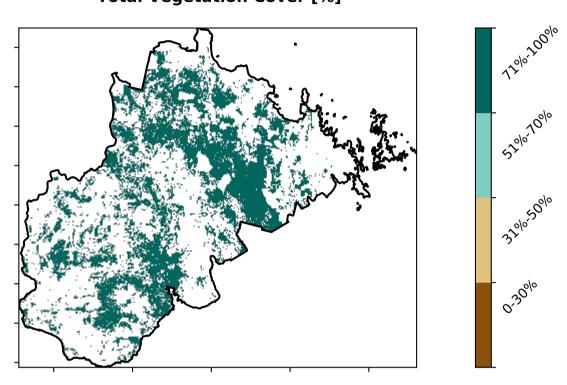
Land use and forest cover



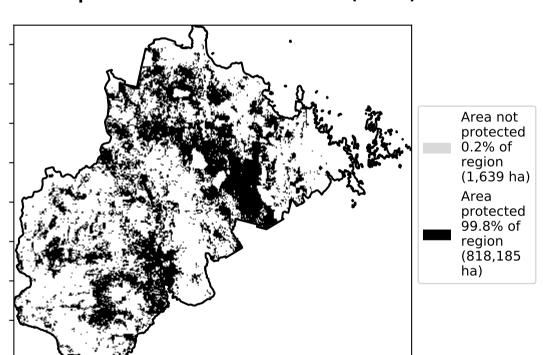
pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



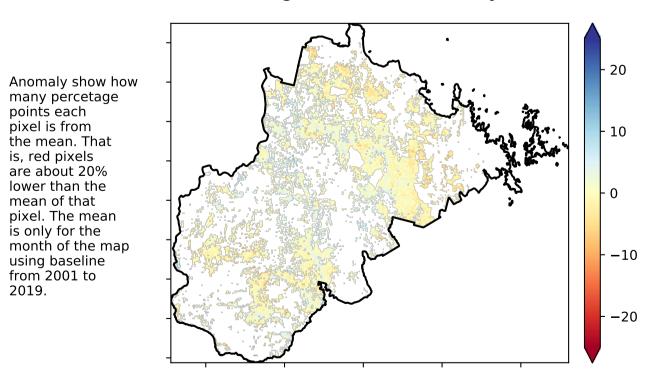
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

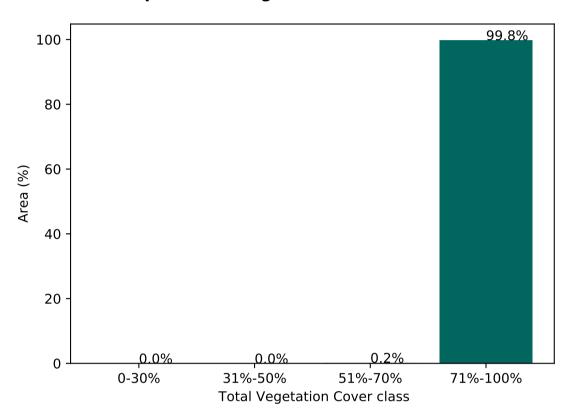


Total Vegetation Cover Anomaly [%]

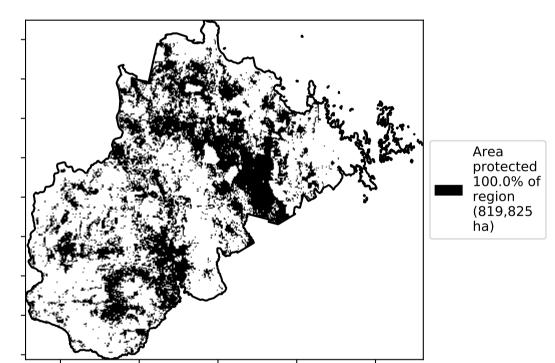


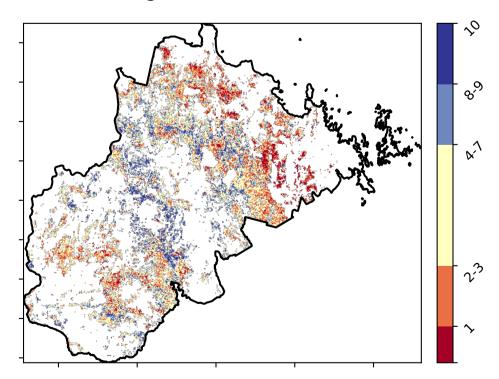
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline. the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





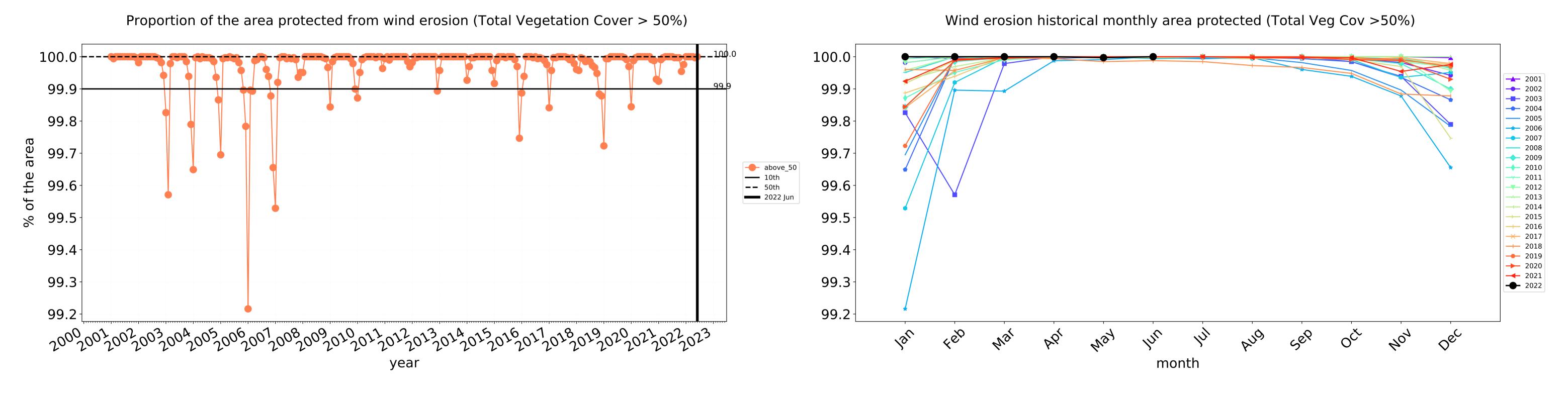


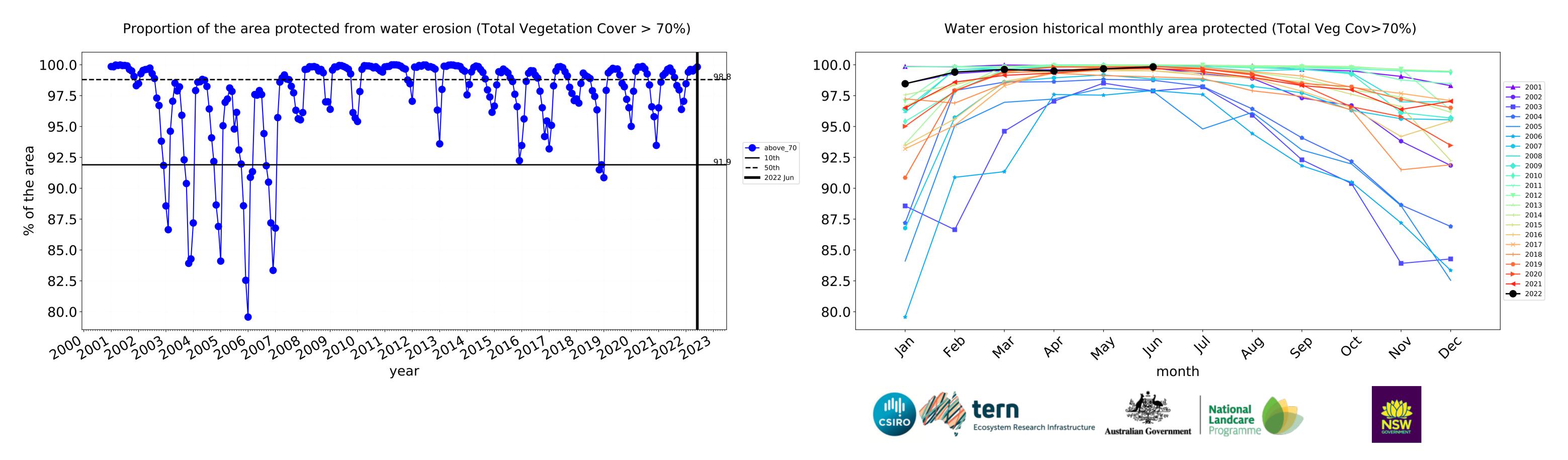






Grazing Woodland forest timeseries





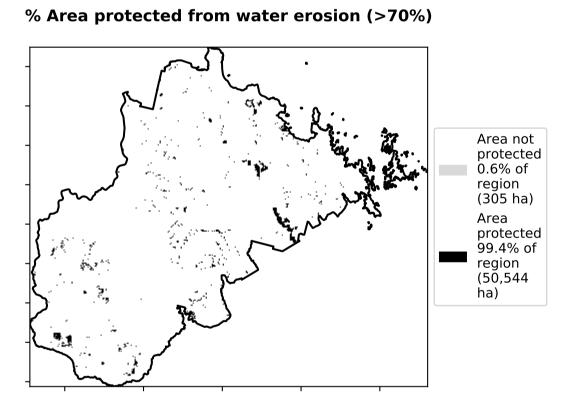
Grazing - Forest (non woodland)

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) 1 Agriculture - Grazing - Non-woodland forest

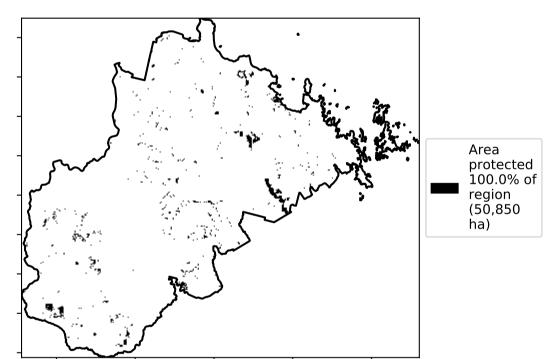
Total Vegetation Cover [%]

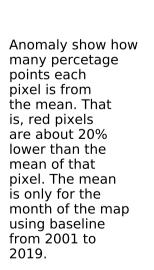
99.4% 100 80 Area (%) 40 20 0.0% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**

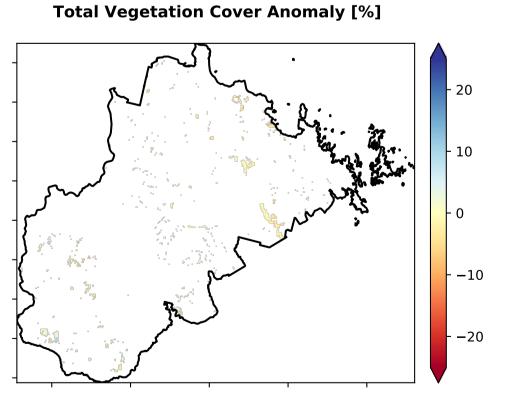
Proportion of vegetation cover class in area



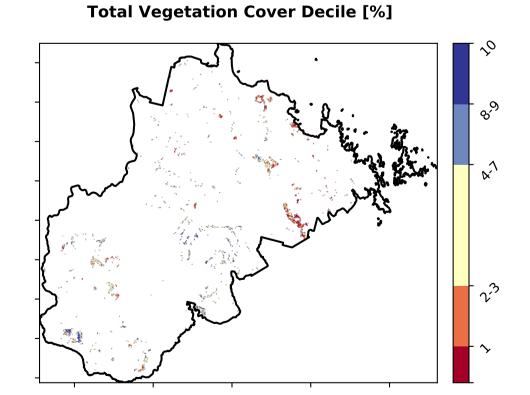
% Area protected from wind erosion (>50%)







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 records for that month of the map using baseline from 2001 to 2019.

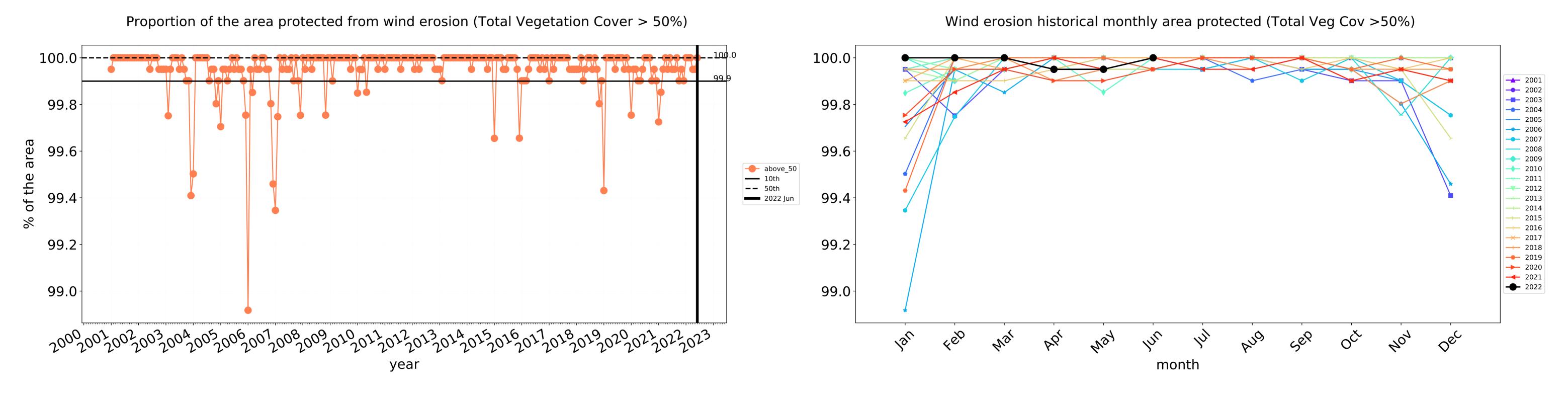


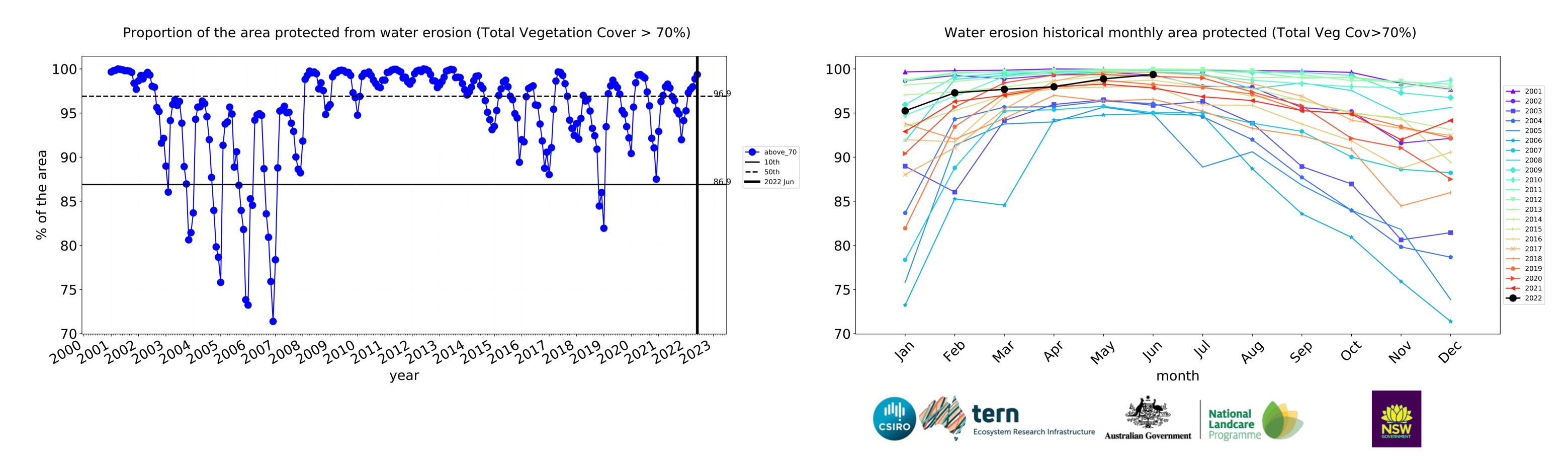






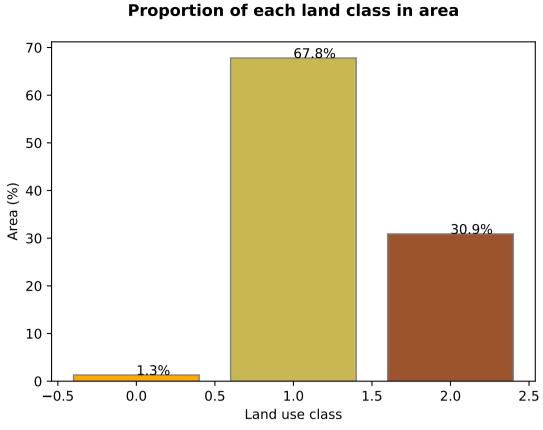


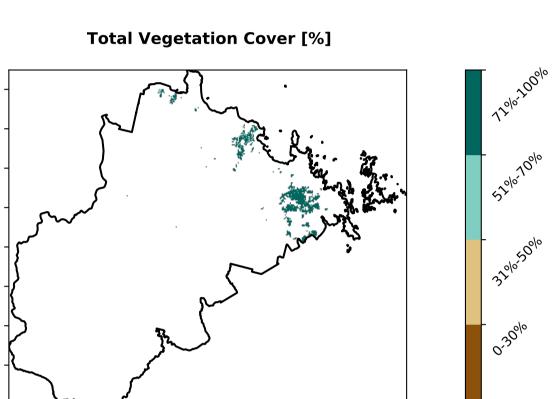


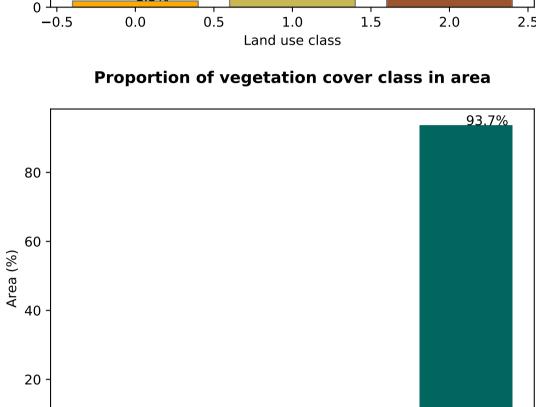


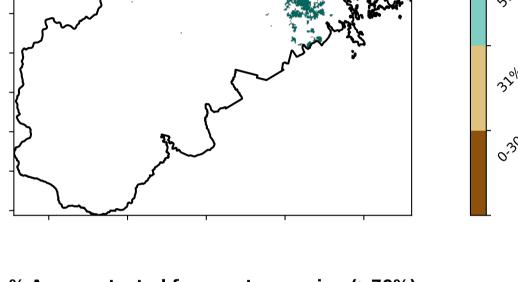
Irrigation

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) 1 Agriculture - Grazing - Irrigated 2 Agriculture - Cropping - Irrigated 3 Agriculture - Horticulture - Irrigated









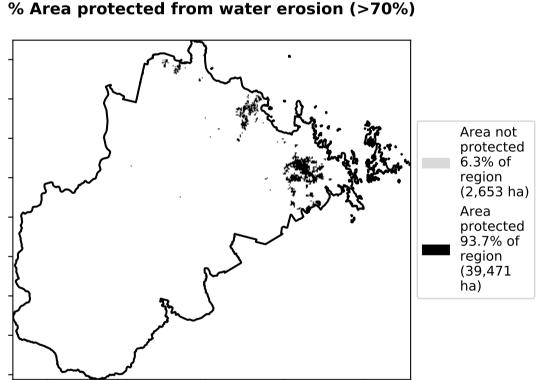
% Area protected from wind erosion (>50%)

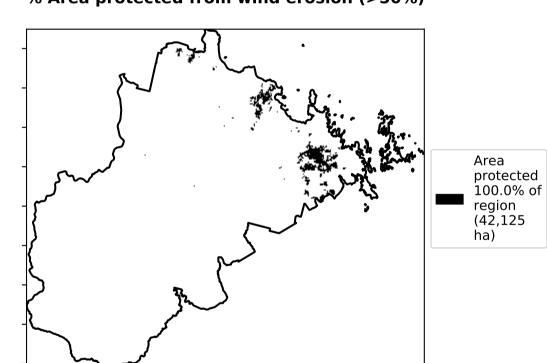
Total Vegetation Cover class

0.0%

31%-50%

0-30%





6.3%

71%-100%

51%-70%



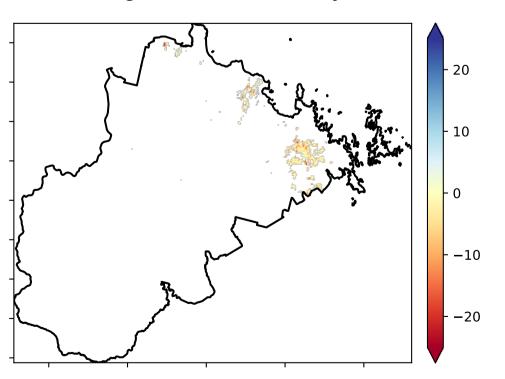
Anomaly show how many percetage points each pixel is from the mean. That

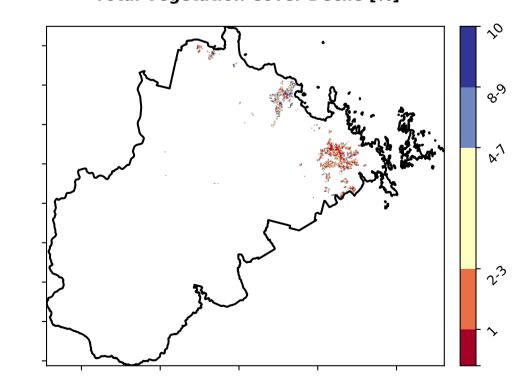
is only for the month of the map

using baseline from 2001 to 2019.

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

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.

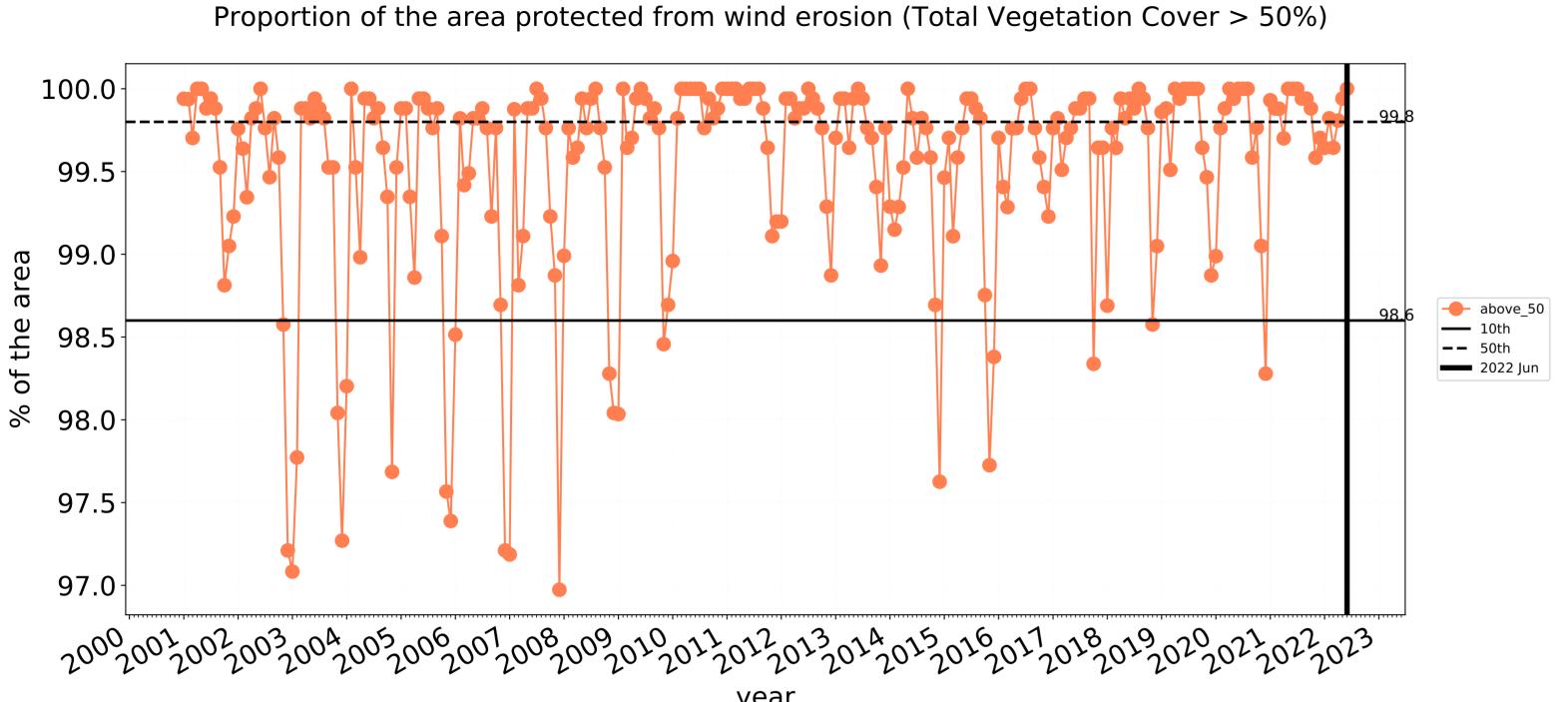


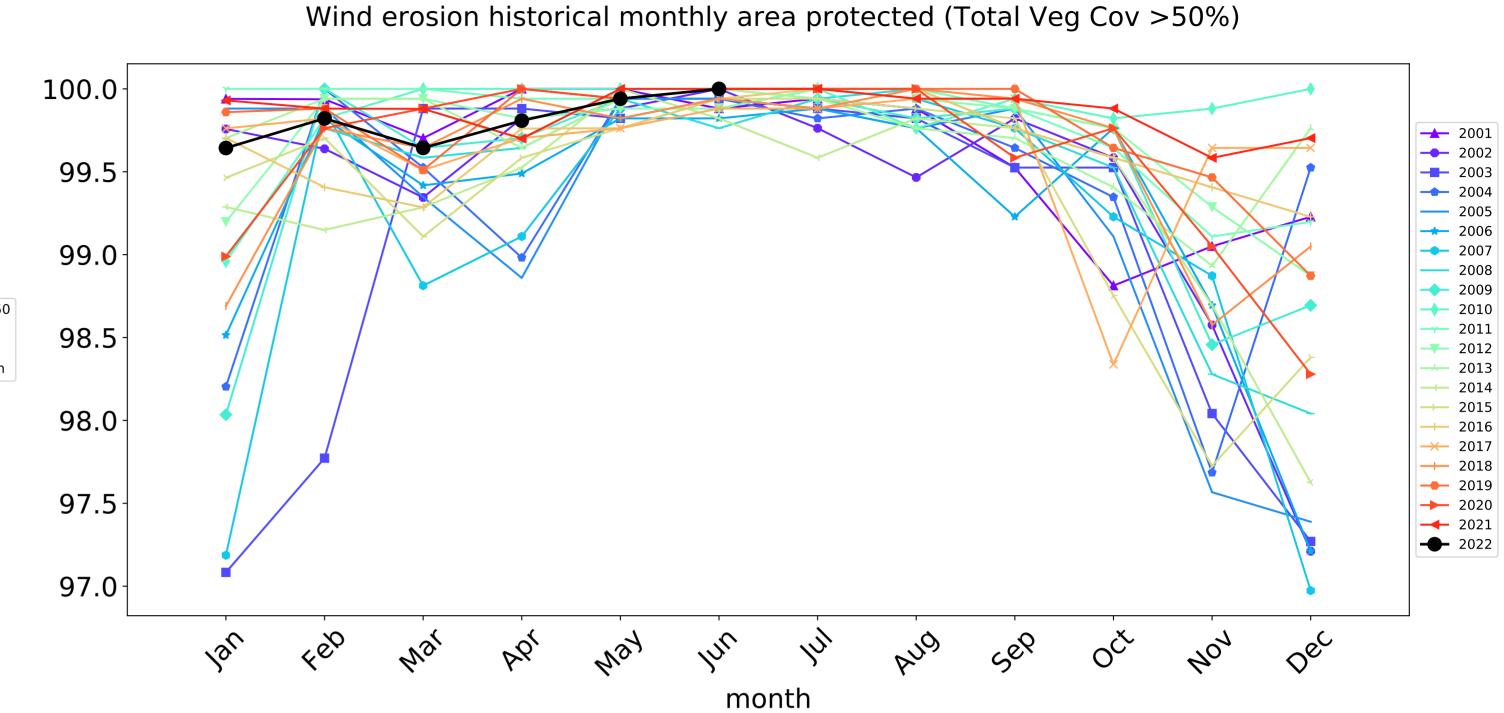


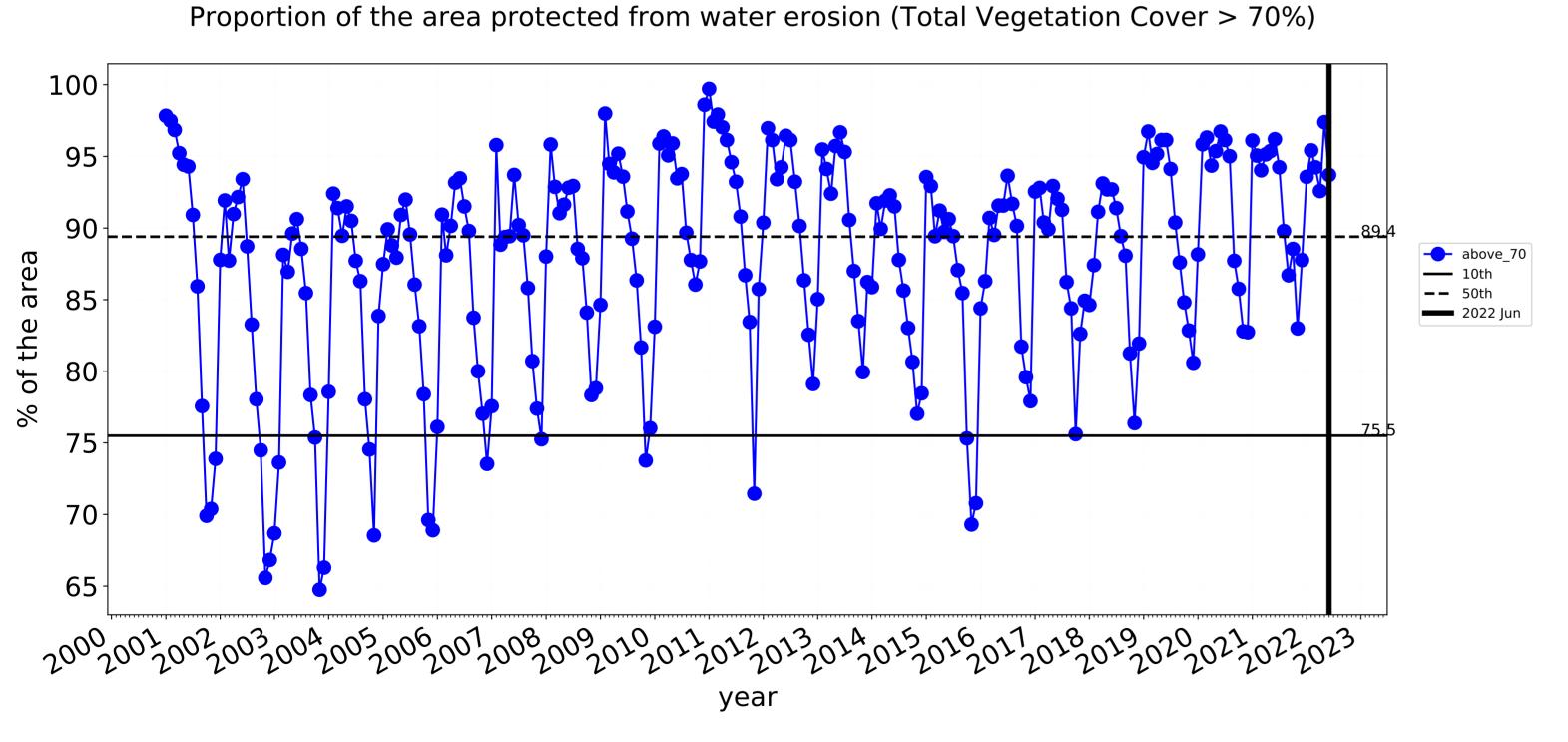


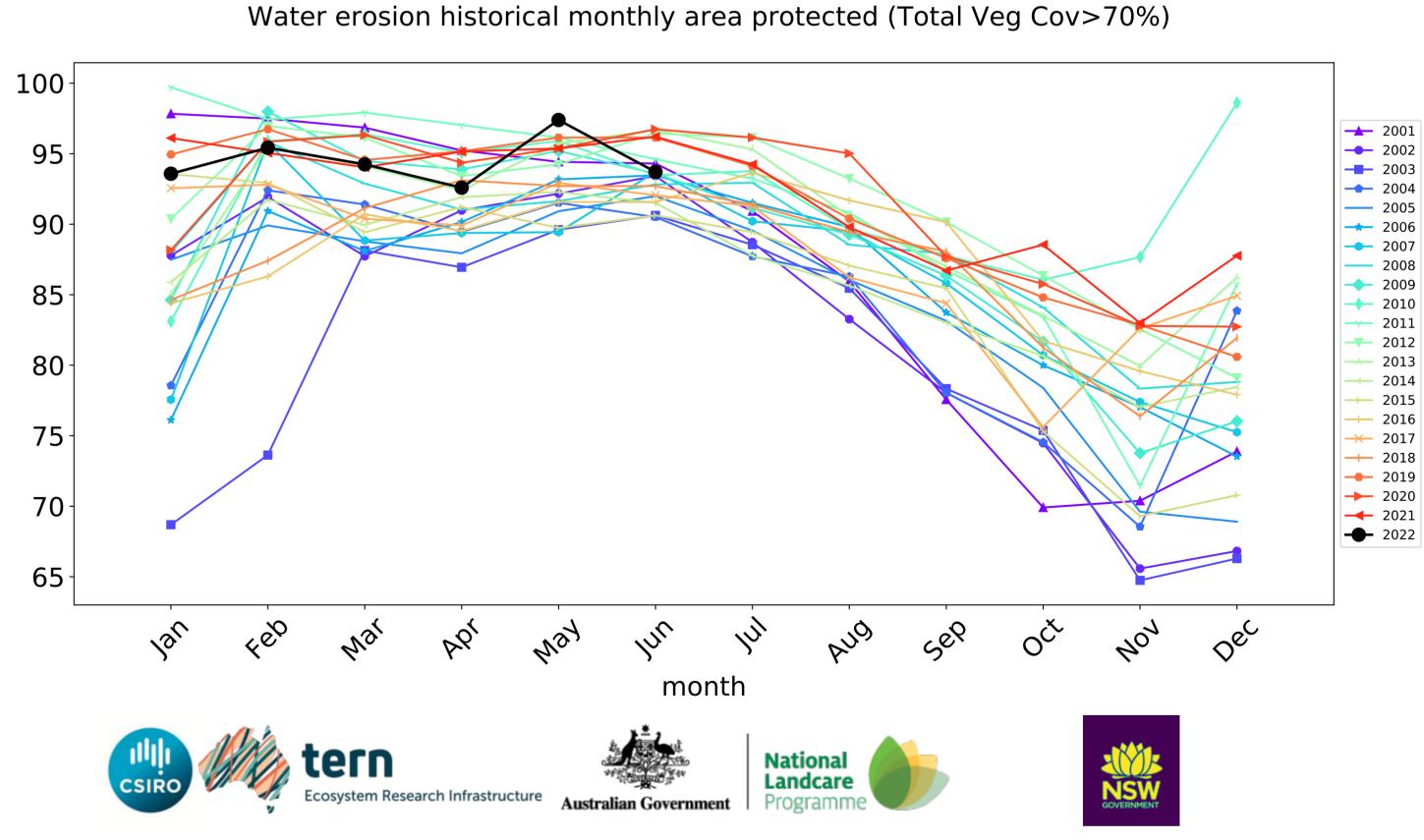


Irrigation timeseries







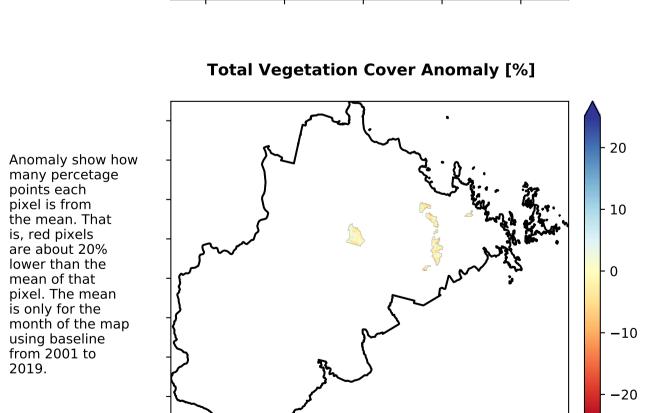


Production native forests and plantation forests

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

Total Vegetation Cover [%]

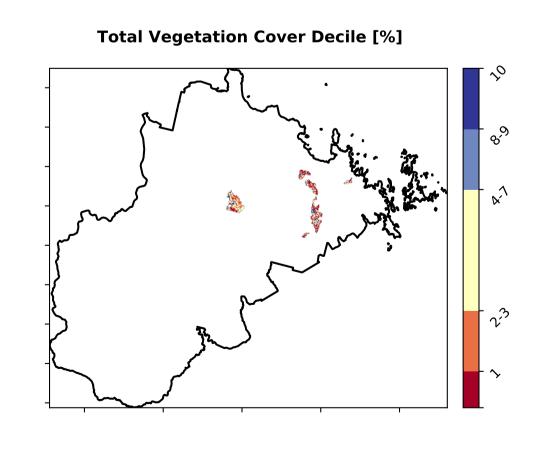
% Area protected from water erosion (>70%) Area protected 100.0% of region (25,125 ha)



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 100.0% 100 80 60 40 20 0.0% 0.0% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**

% Area protected from wind erosion (>50%) Area protected 100.0% of region (25,125 ha)



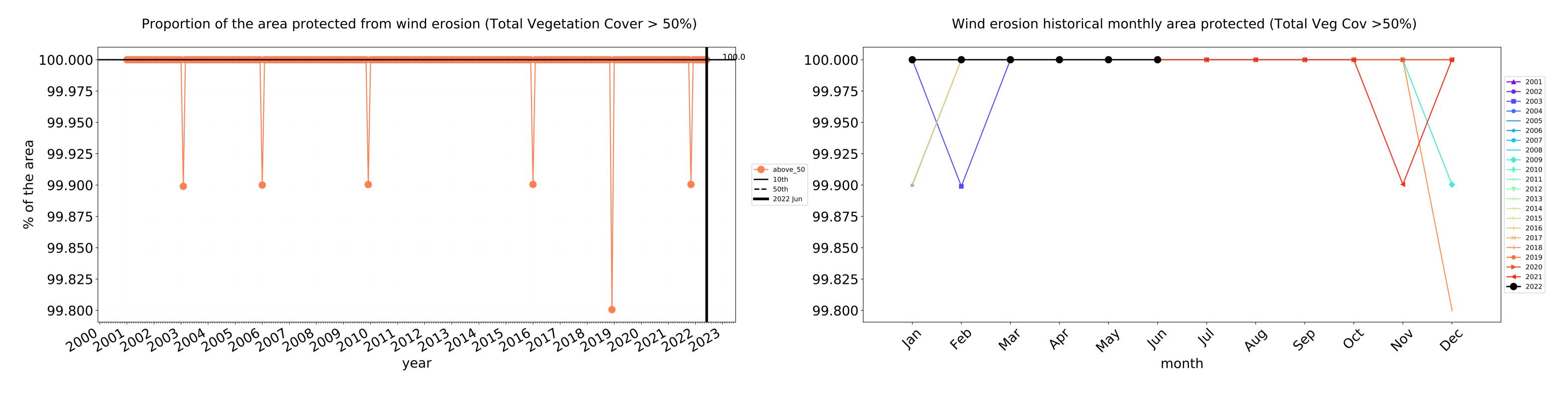


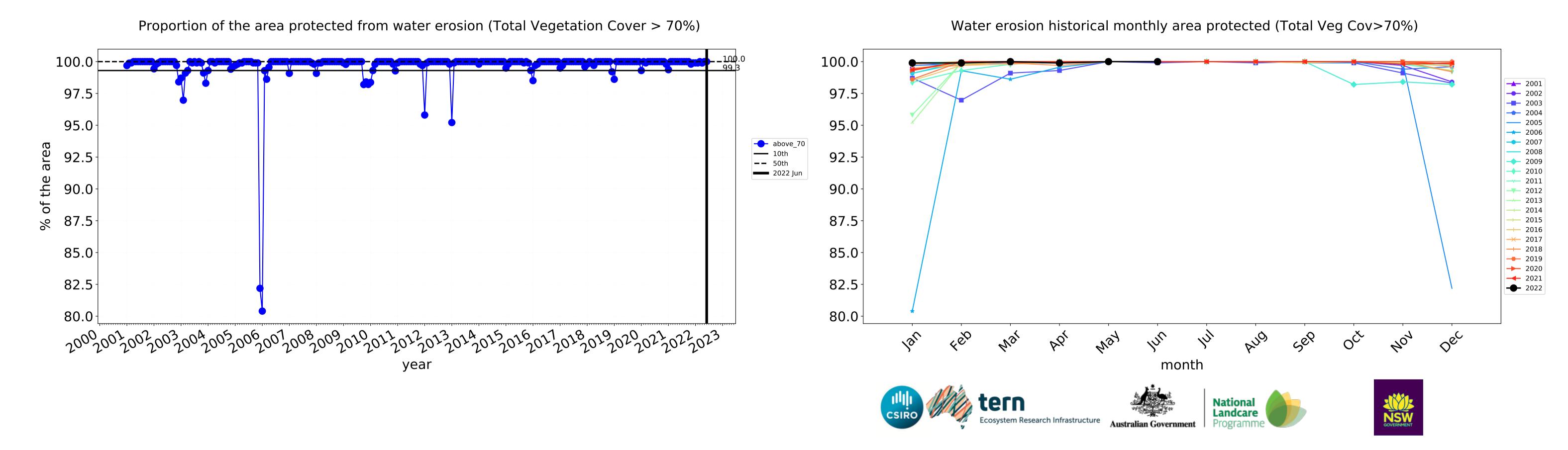






Production native forests and plantation forests timeseries





Whitsunday_(R) (2,358,950 ha and no data 22,926 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	2,358,950	100.0% 2,358,225	99.8% 2,355,400	97.5% 2,300,350	88.0% 2,075,200	47.9% 1,129,150	9.6% 226,325
Conservation and natural environments	170,875	99.7% 170,400	99.1% 169,350	95.7% 163,500	87.2% 148,925	48.7% 83,275	18.1% 30,900
Conservation and natural environments non forest	28,550	99.6% 28,450	99.0% 28,275	90.3% 25,775	63.7% 18,200	10.3% 2,950	1.9% 550
Conservation and natural environments Woodland forest	57,175	99.9% 57,100	99.5% 56,900	97.8% 55,900	92.2% 52,725	56.6% 32,375	14.5% 8,275
Conservation and natural environments Forest (non woodland)	85,150	99.6% 84,850	98.9% 84,175	96.1% 81,825	91.6% 78,000	56.3% 47,950	25.9% 22,075
Agriculture	2,084,900	100.0% 2,084,900	100.0% 2,084,650	98.1% 2,044,825	88.9% 1,854,100	48.8% 1,017,325	9.0% 187,950
Grazing	2,042,475	100.0% 2,042,475	100.0% 2,042,225	98.2% 2,005,050	89.4% 1,825,875	49.6% 1,013,400	9.2% 187,700
Grazing non forest	1,171,800	100.0% 1,171,800	100.0% 1,171,550	97.0% 1,136,125	83.7% 980,300	41.0% 480,125	7.7% 90,600
Grazing Woodland forest	819,825	100.0% 819,825	100.0% 819,825	99.8% 818,400	97.4% 798,475	62.2% 509,950	11.2% 91,500
Grazing - Forest (non woodland)	50,850	100.0% 50,850	100.0% 50,850	99.4% 50,525	92.6% 47,100	45.9% 23,325	11.0% 5,600
Irrigation	42,125	100.0% 42,125	100.0% 42,125	93.7% 39,475	66.3% 27,925	9.0% 3,800	0.6% 250
Production native forests and plantation forests	25,125	100.0% 25,125	100.0% 25,125	100.0% 25,125	99.9% 25,100	68.8% 17,275	20.4% 5,125







