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: May 2023

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

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

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

Erosion protection: Wind erosion 50% total vegetation cover

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

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

Comparison with previous years:

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

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

Erosion protection

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

Rainfall

• Millimetres rainfall each month (black line).

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

Water erosion protection for higher rainfall and steeper slopes:

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

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

Acknowledgment of data:

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

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









Vegetation Cover May 2023

Land use and forest cover

Catchment Scale

of Australia (2018)

Derived from

pixel is from

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.

the mean. That

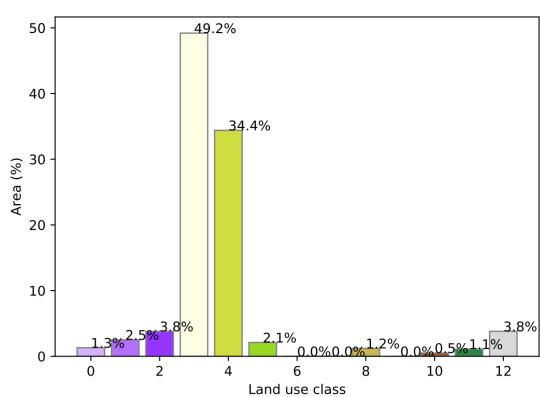
Use of Australia

(2018) and Forests

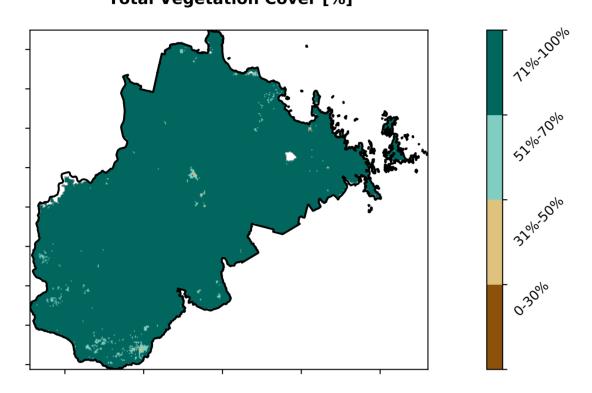
of Australia (2018)

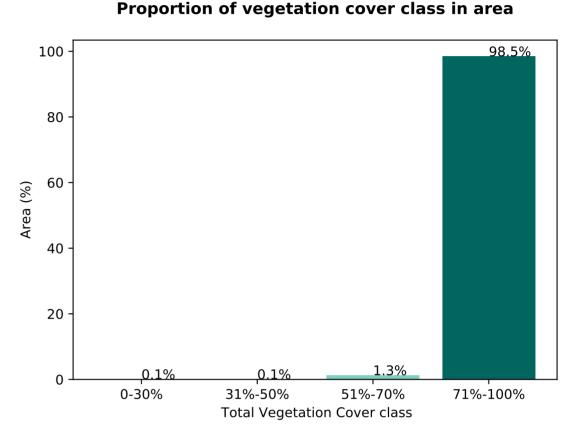
Legend with land class forest cover and number, i.e. Forests is 12 1 Conservation and natural environments - Non-forest 2 Conservation and natural environments - Woodland forest 3 Conservation and natural environments -Land Use and Forests Non-Woodland forest 4 Agriculture - Grazing - Non-forest 5 Agriculture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

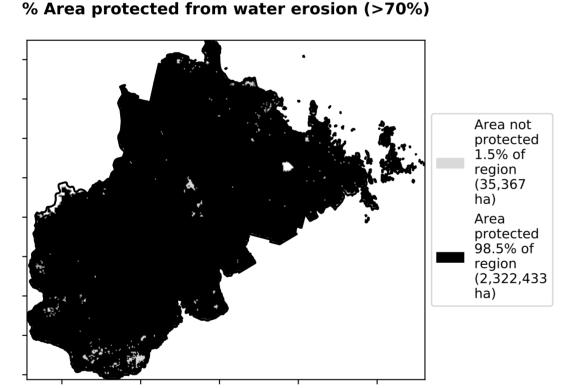
Proportion of each land class in area



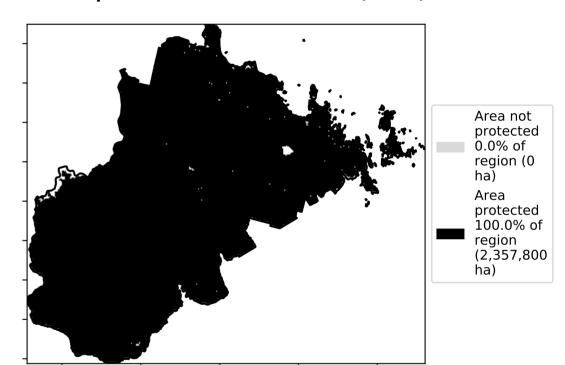
Total Vegetation Cover [%]



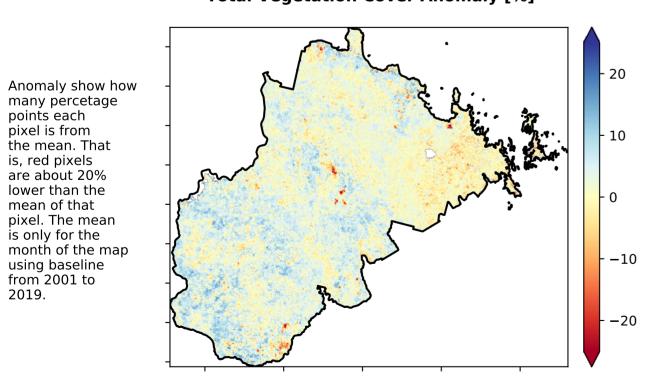




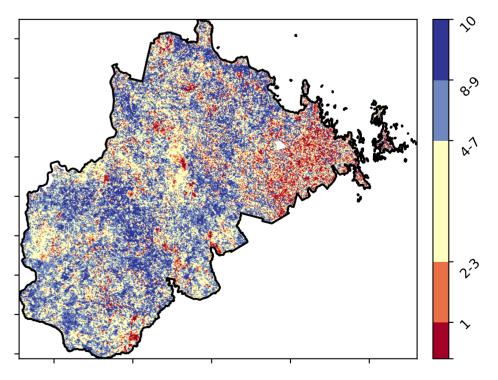
% Area protected from wind erosion (>50%)



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.

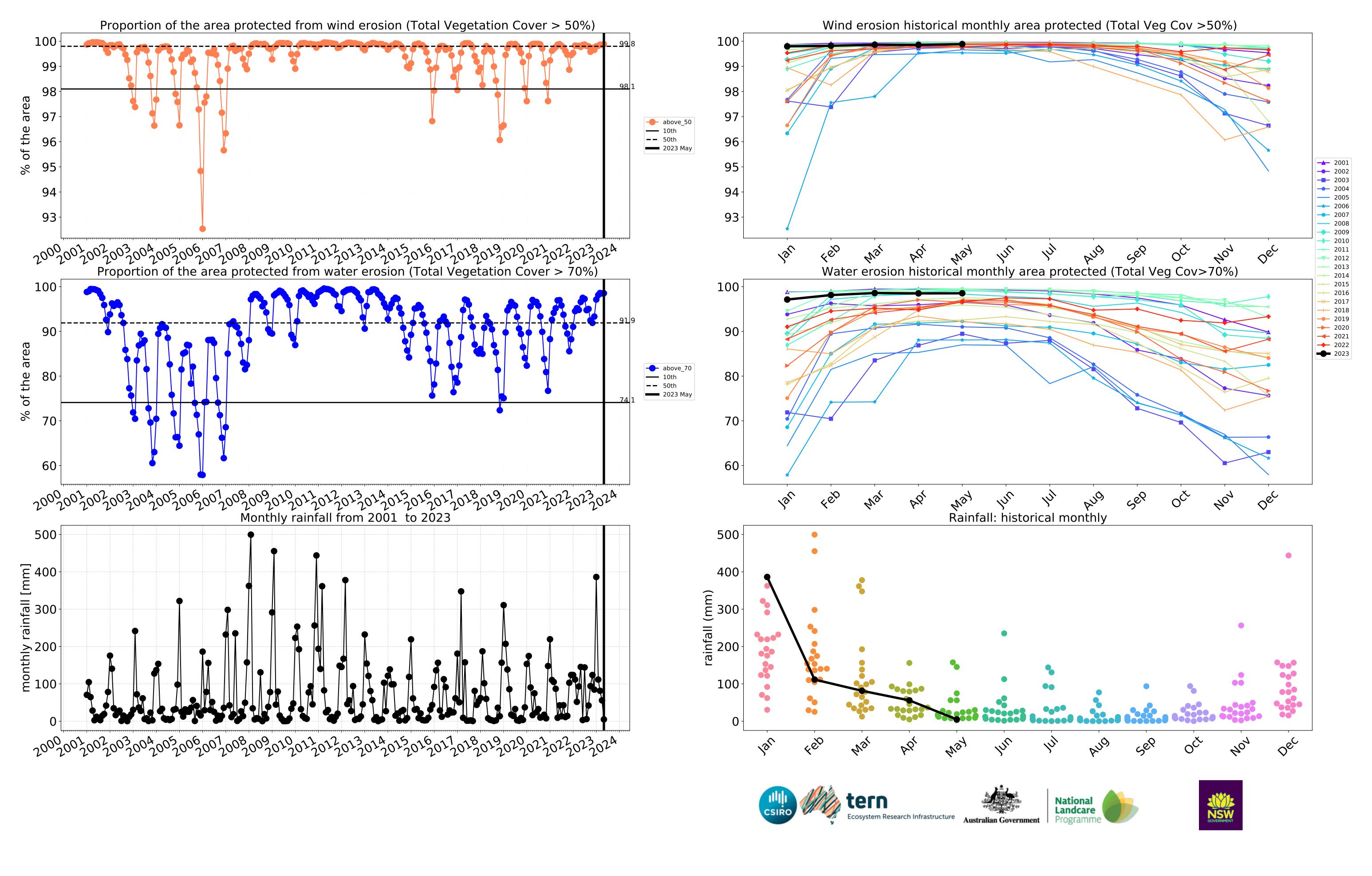








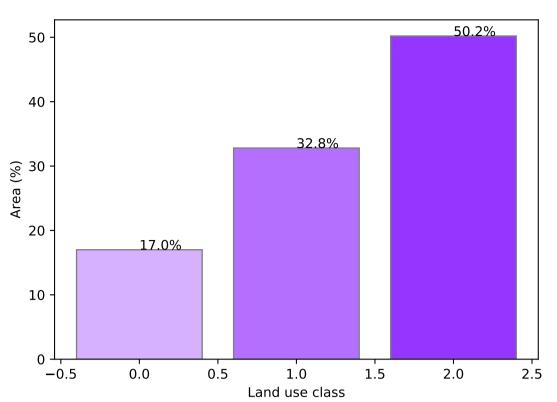




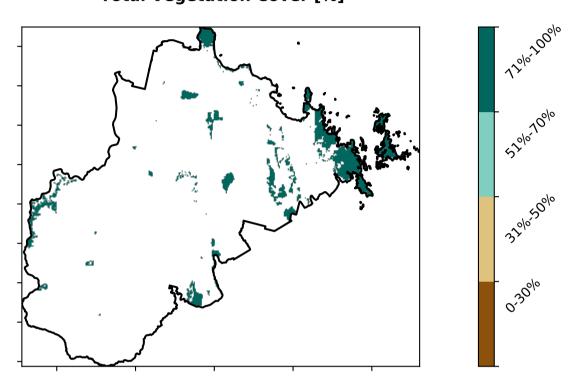
Conservation and natural environments

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

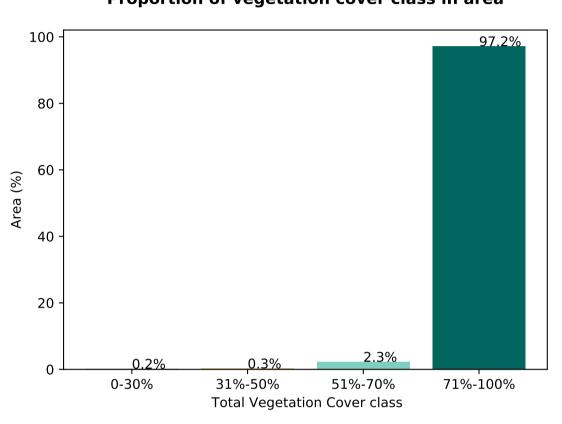
Proportion of each land class in area



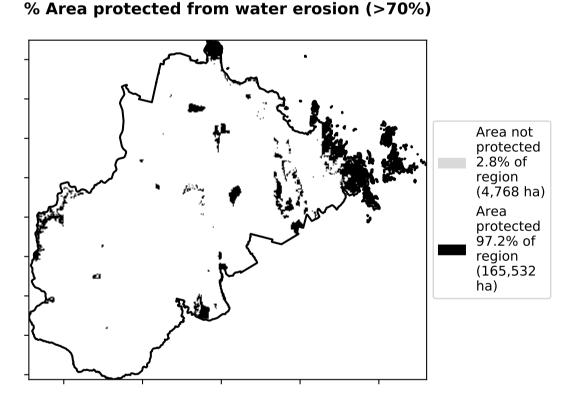
Total Vegetation Cover [%]



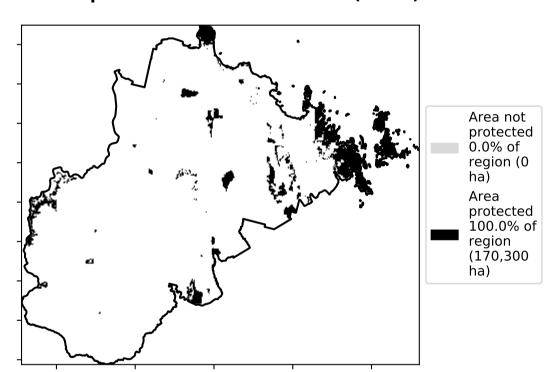
Proportion of vegetation cover class in area



0/ Avec protected from water exercise /> 700/\



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]

Anomaly show how many percetage points each pixel is from

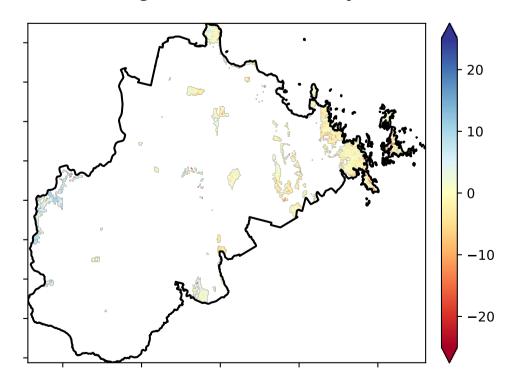
the mean. That is, red pixels

are about 20% lower than the mean of that

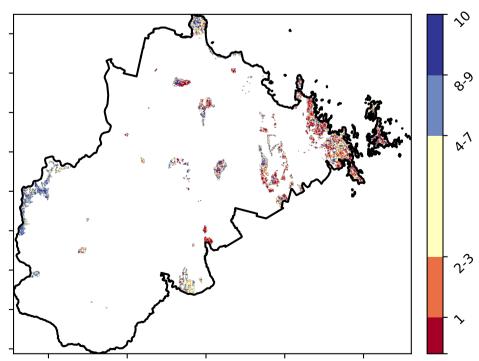
pixel. The mean

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.



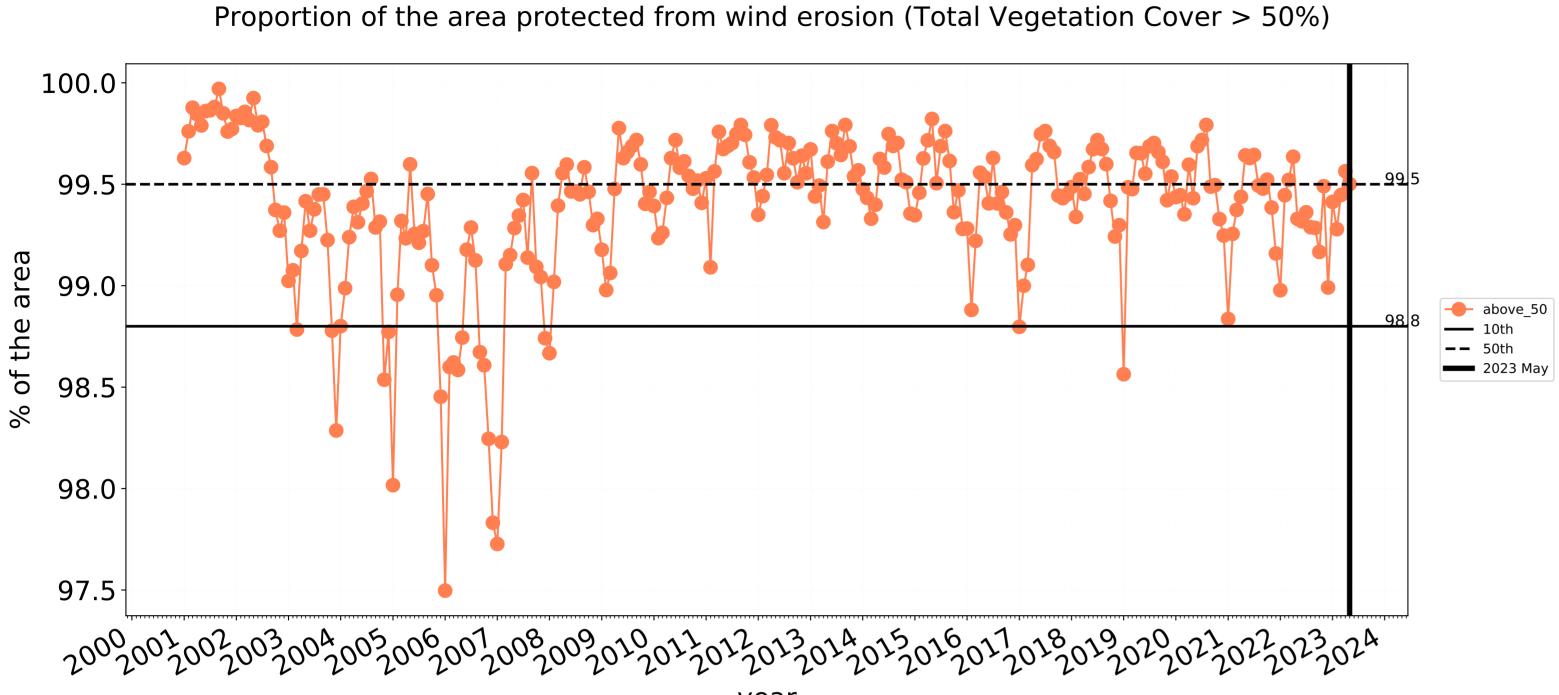


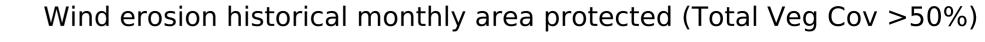


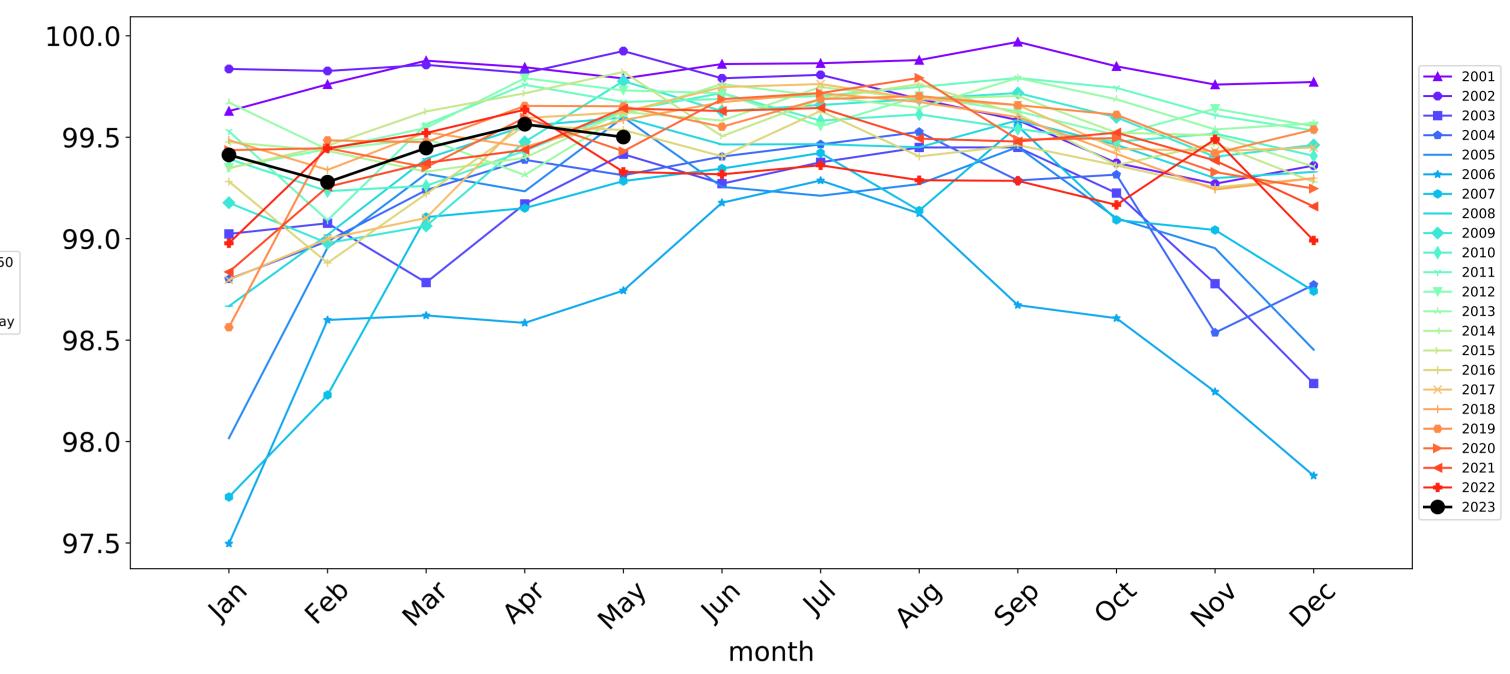


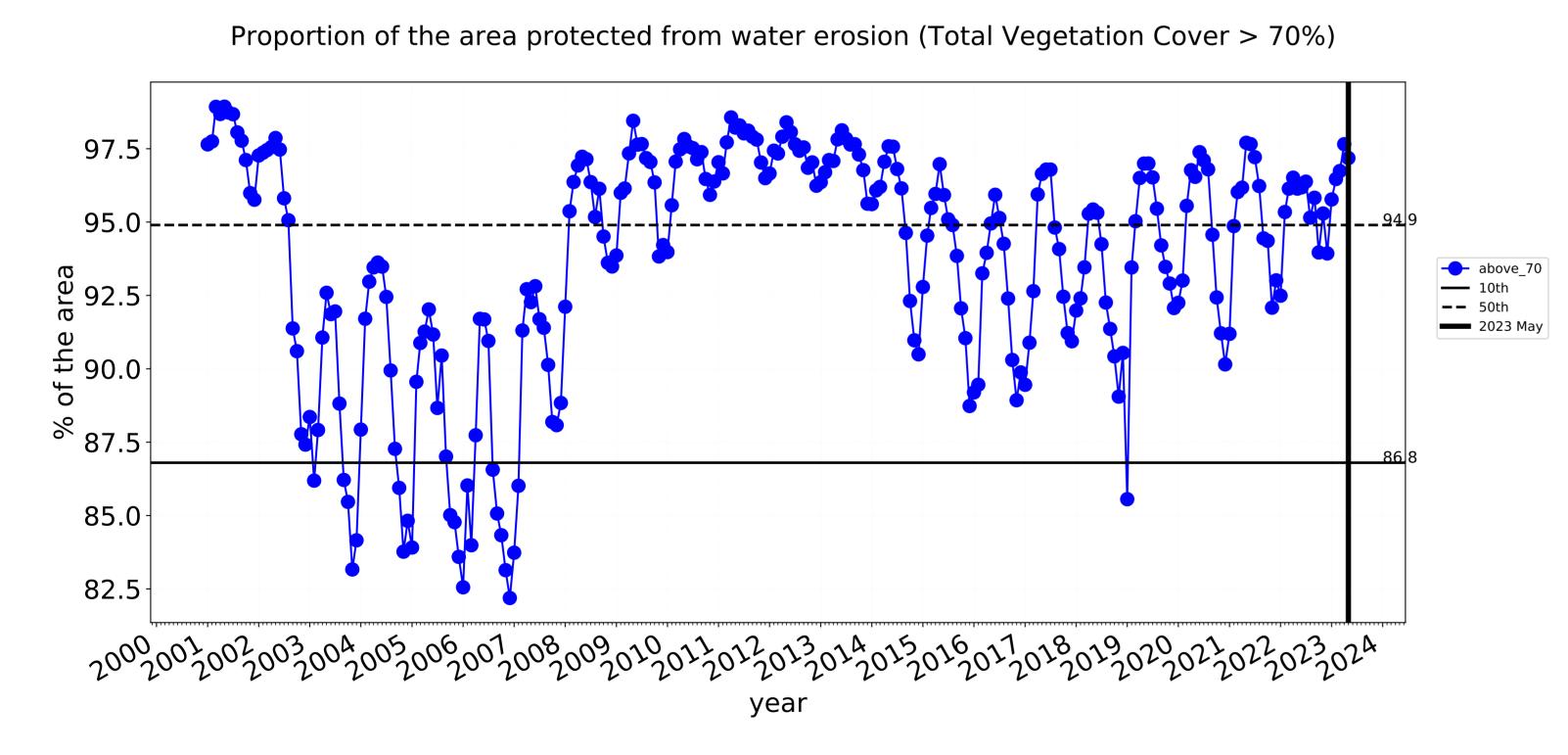


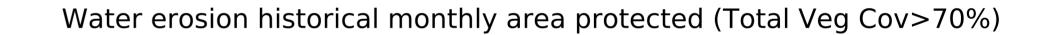
Conservation and natural environments timeseries

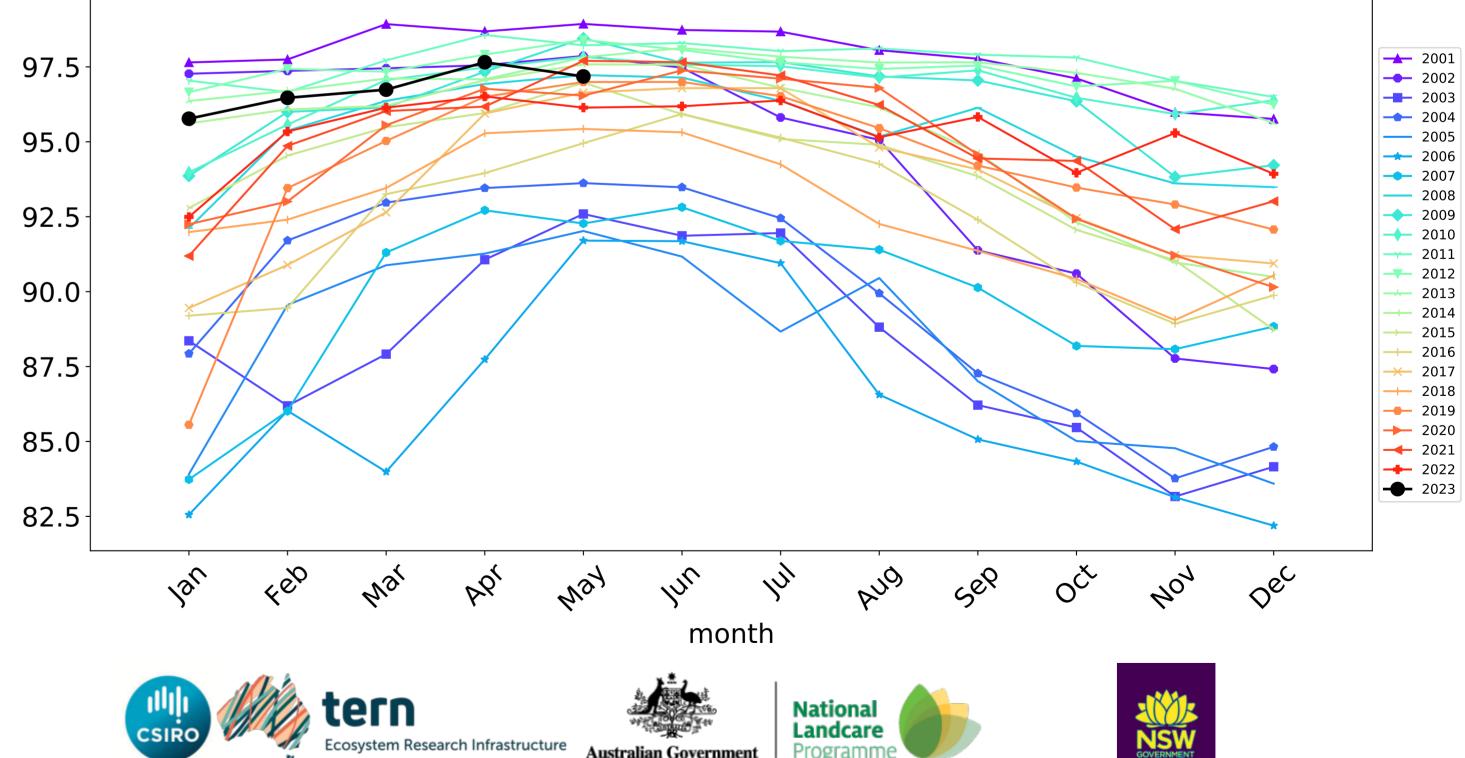












Conservation and natural environments non forest

Land use and forest cover

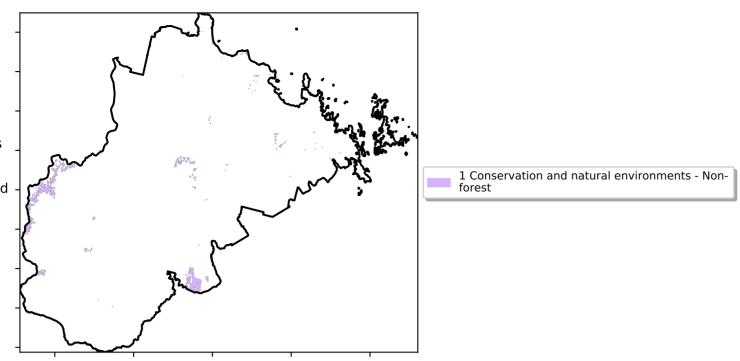


Anomaly show how many percetage points each pixel is from

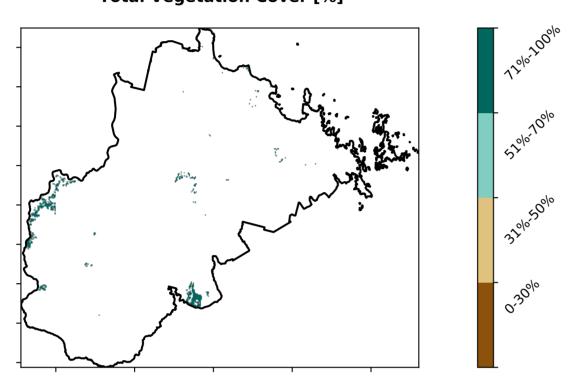
the mean. That

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

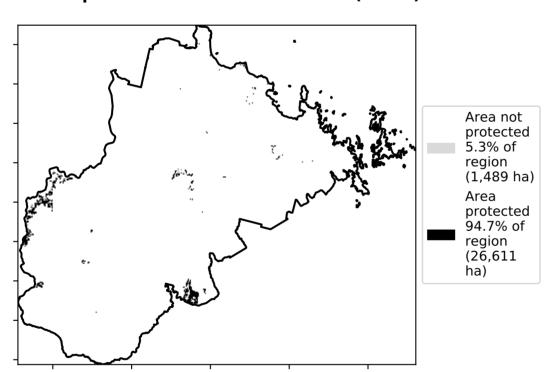
using baseline from 2001 to 2019.



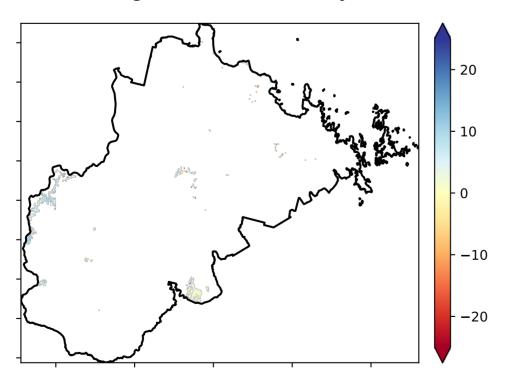
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

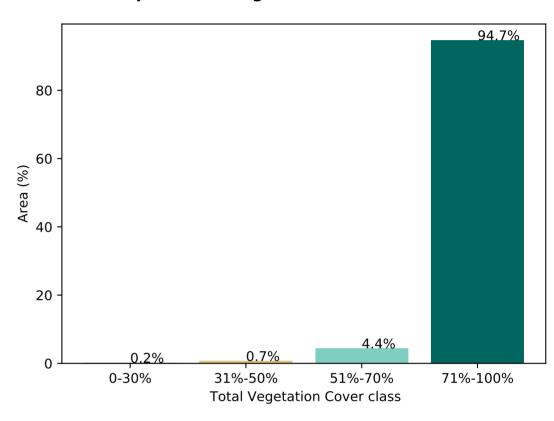


Total Vegetation Cover Anomaly [%]

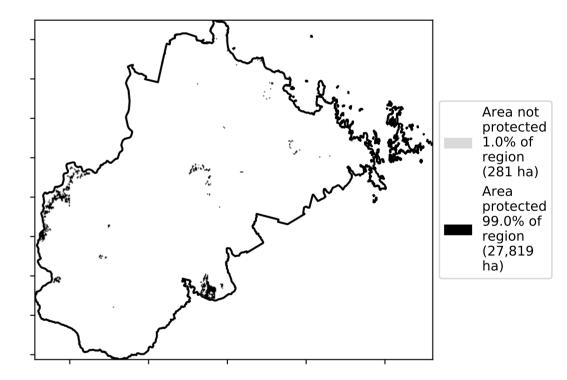


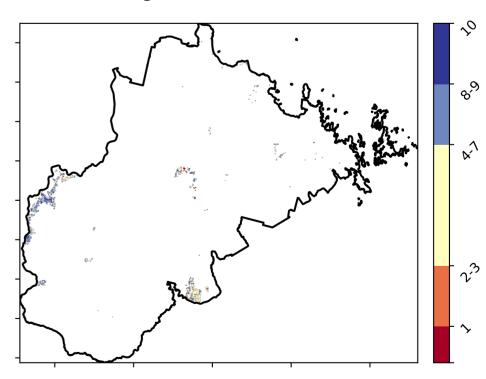
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





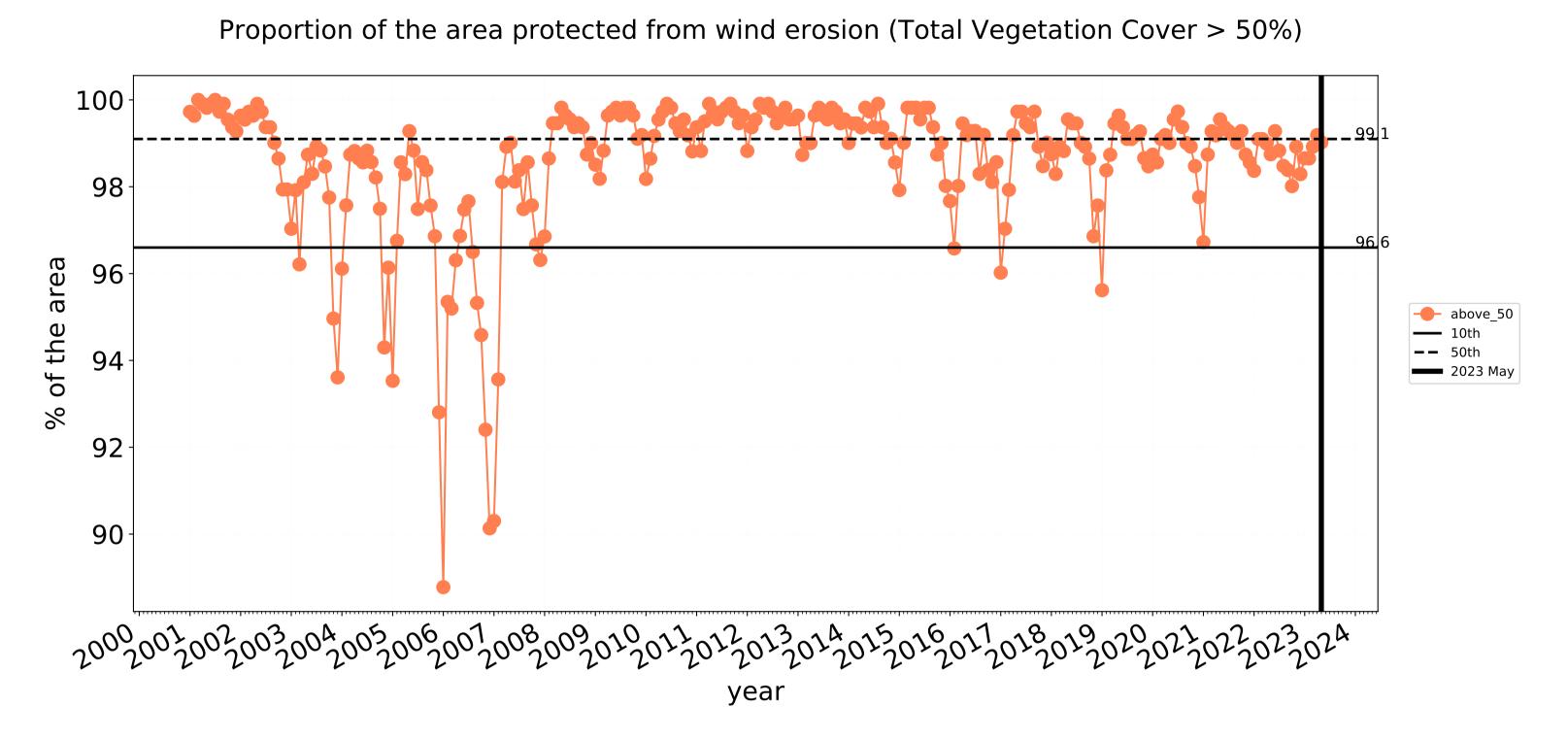


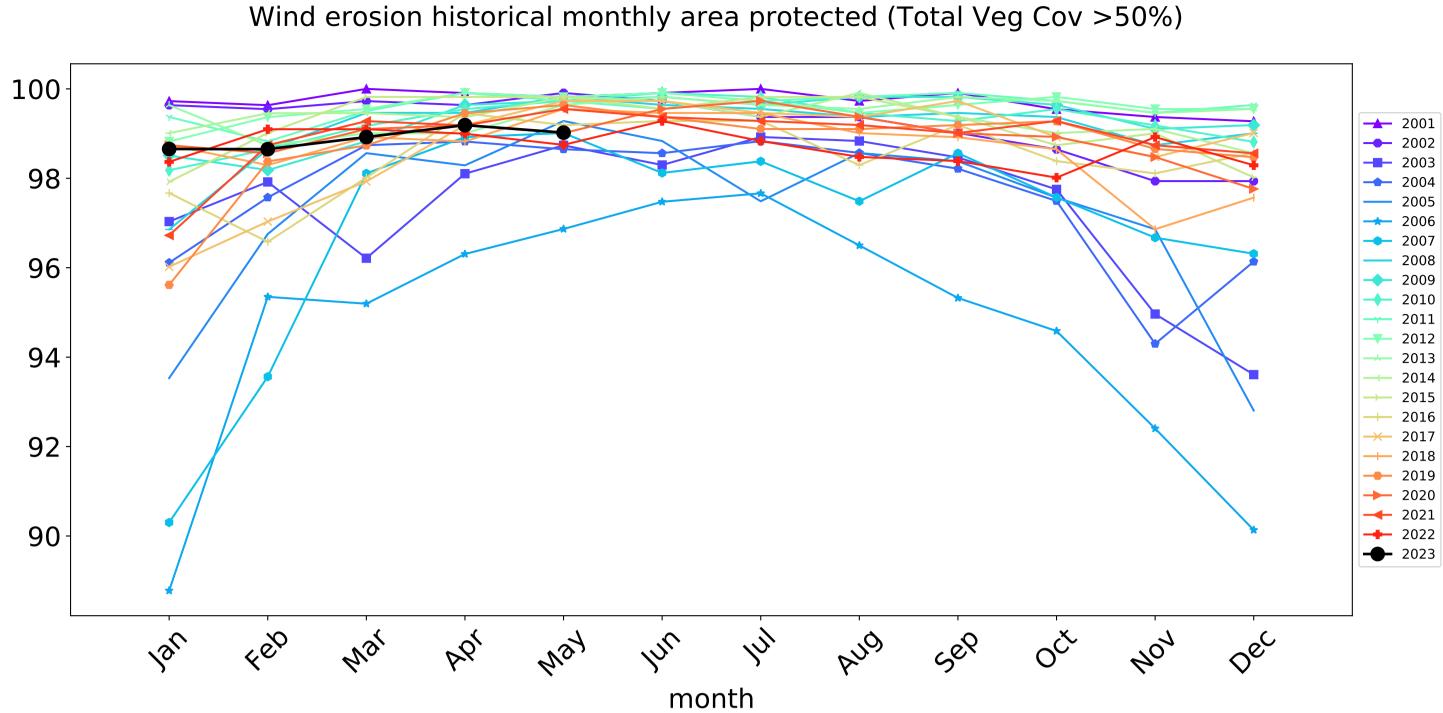


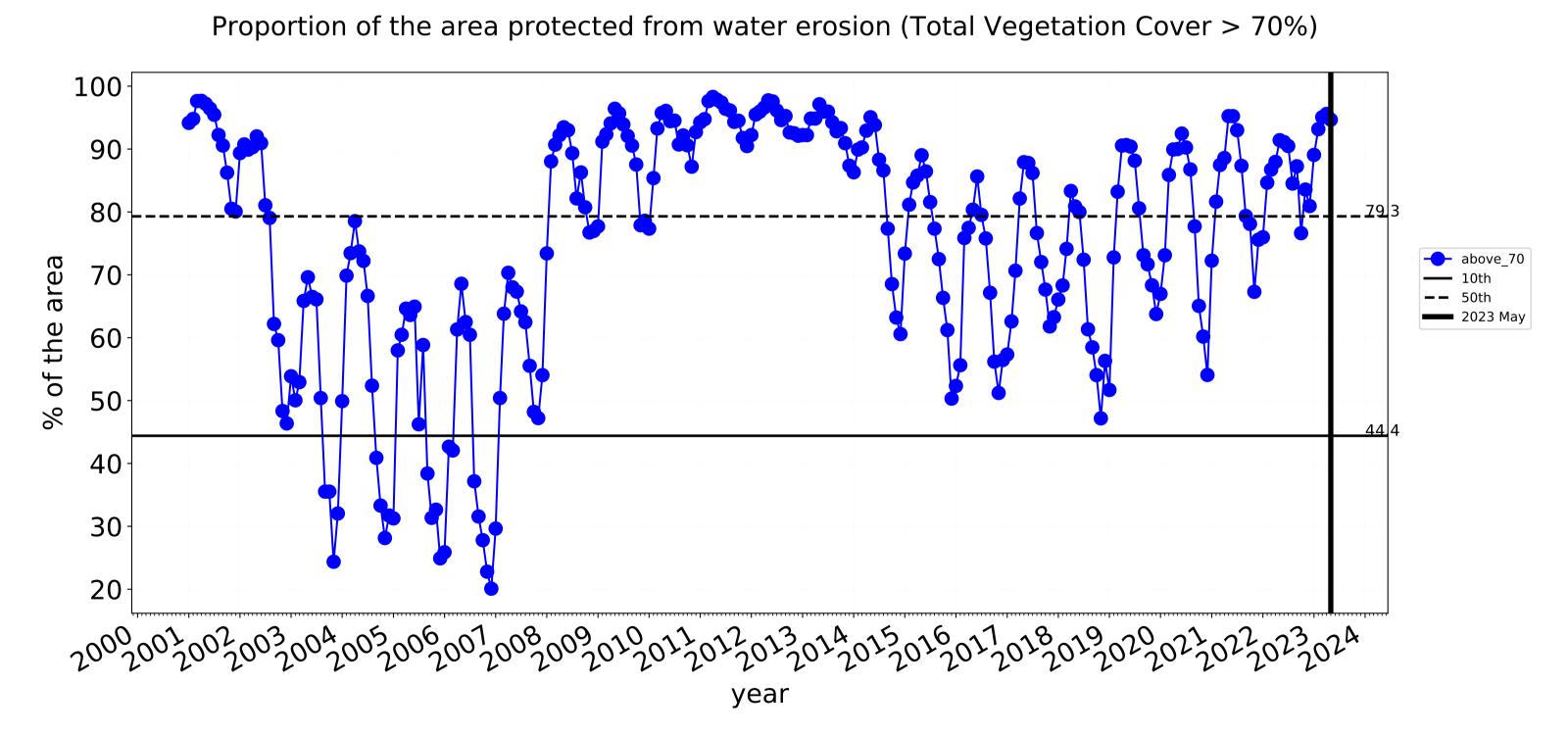


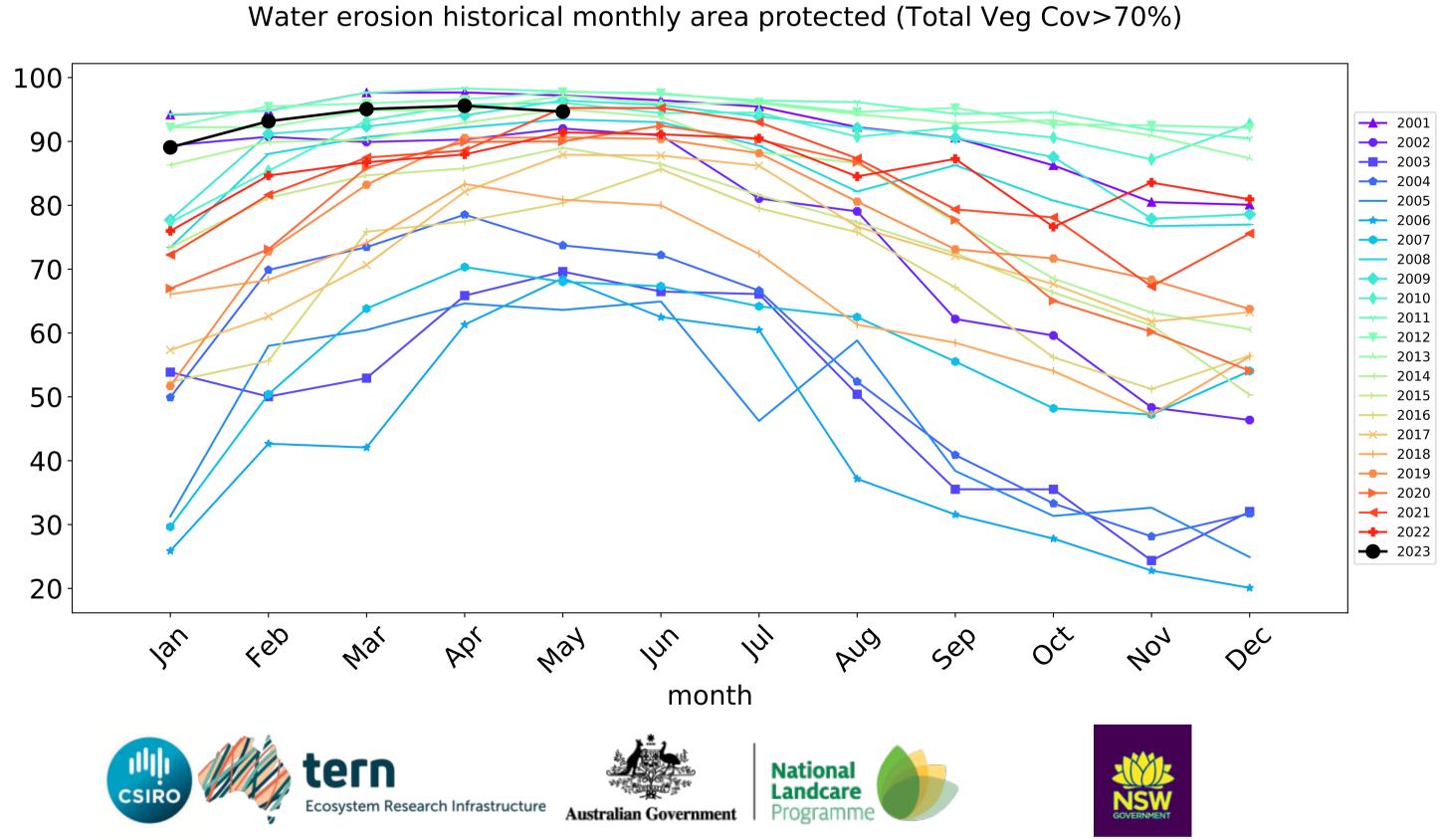


Conservation and natural environments non forest timeseries







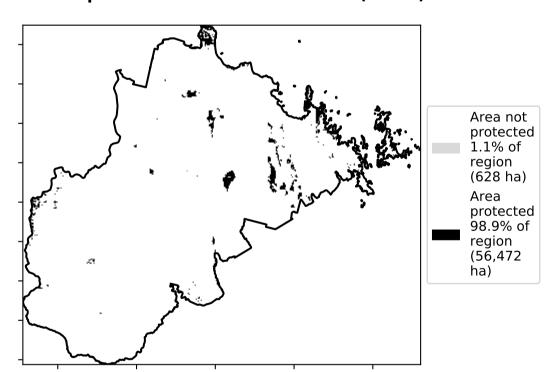


Conservation and natural environments Woodland forest

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

% Area protected from water erosion (>70%)

Total Vegetation Cover [%]



Total Vegetation Cover Anomaly [%]

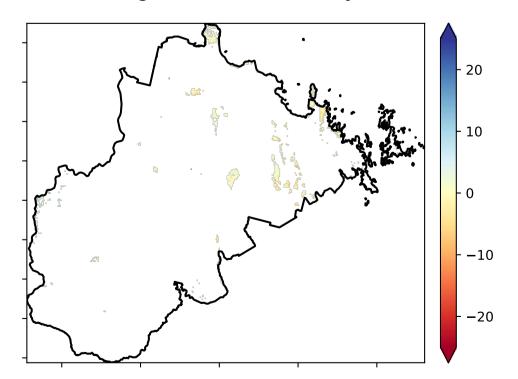
Anomaly show how many percetage points each pixel is from the mean. That

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

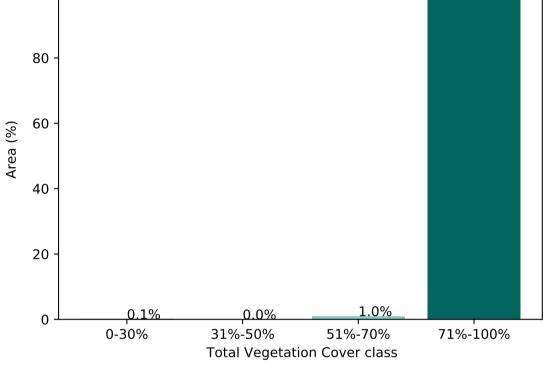


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

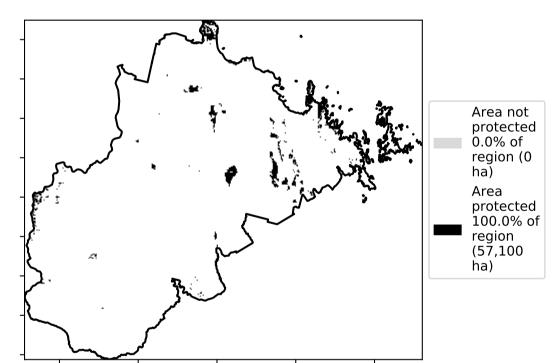
98.9%

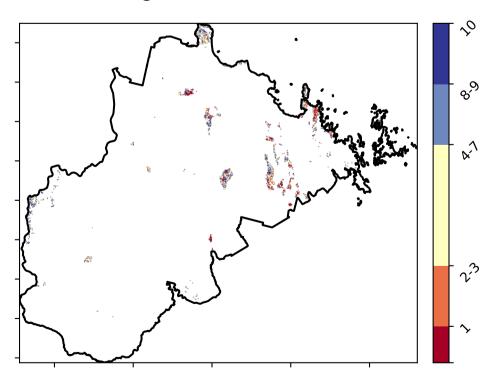
Proportion of vegetation cover class in area

100



% Area protected from wind erosion (>50%)





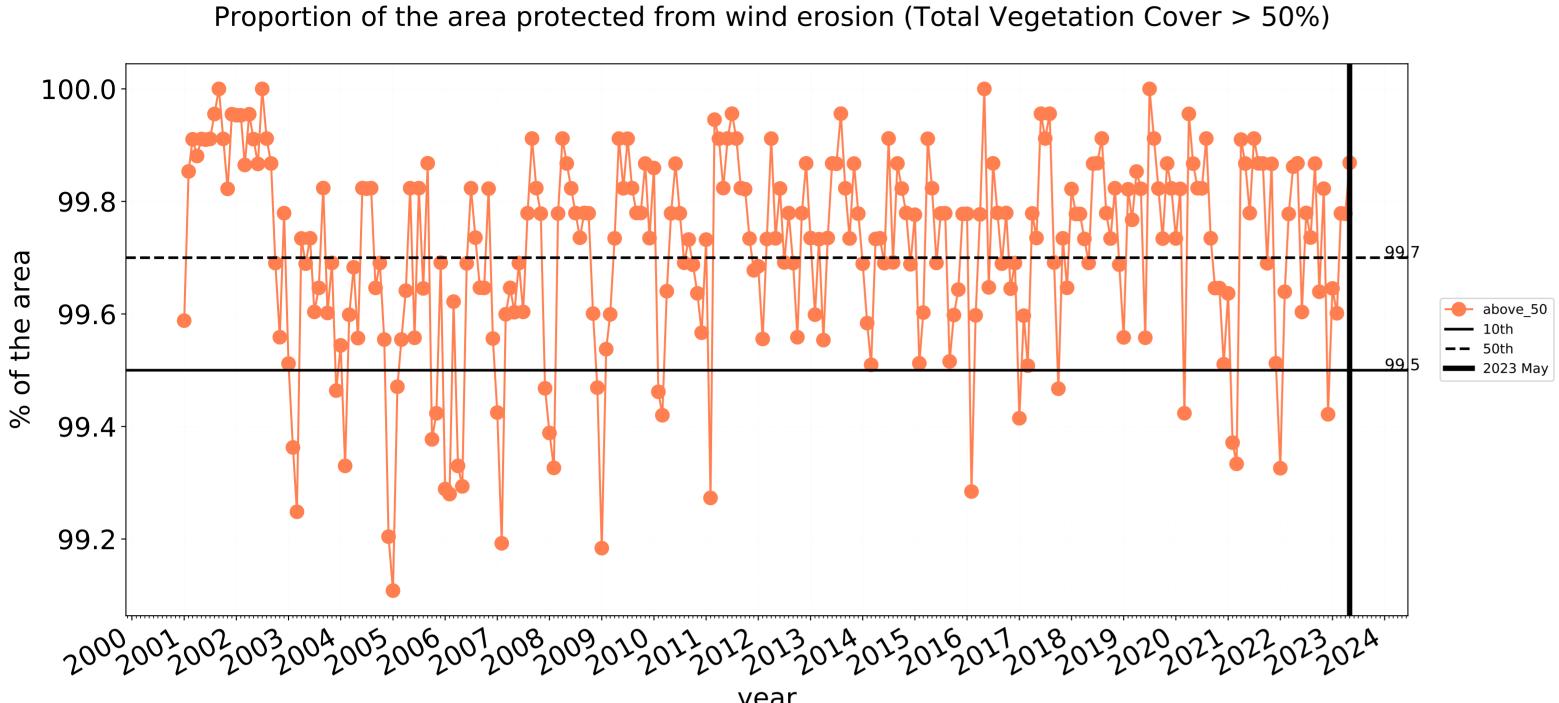


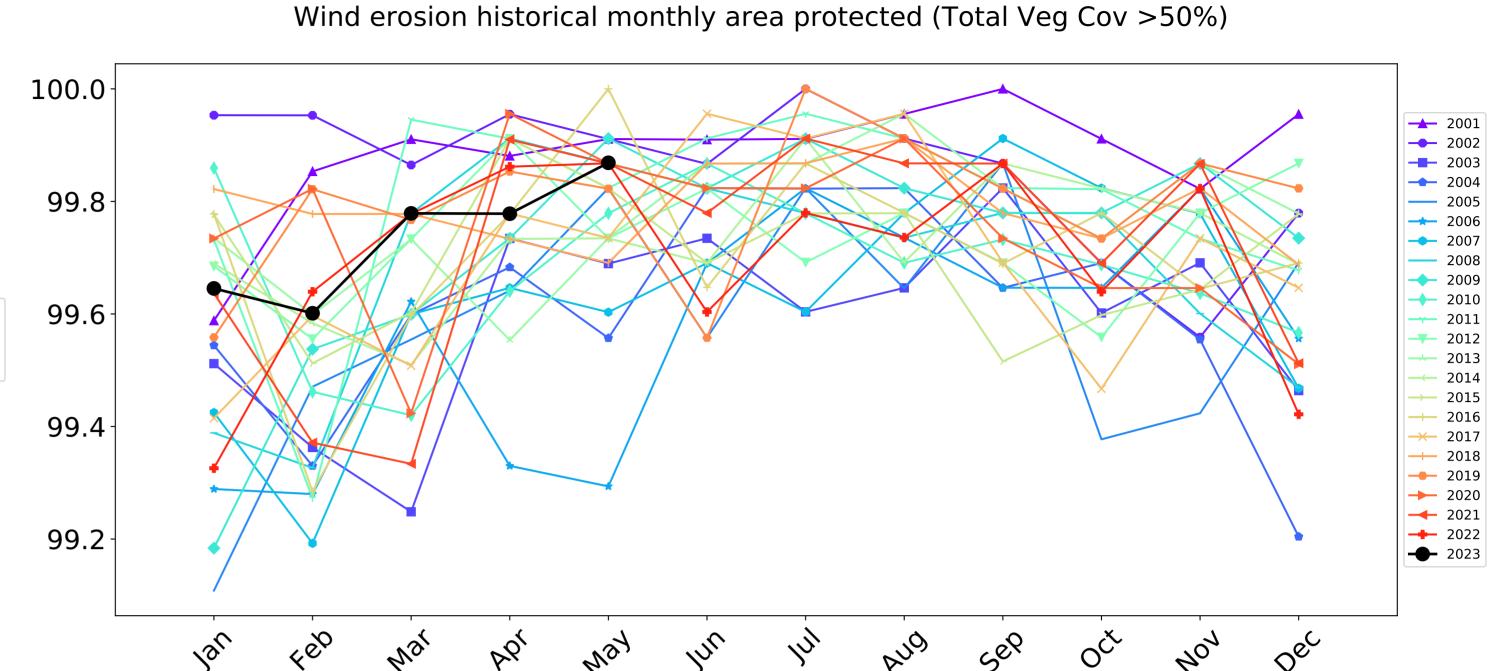


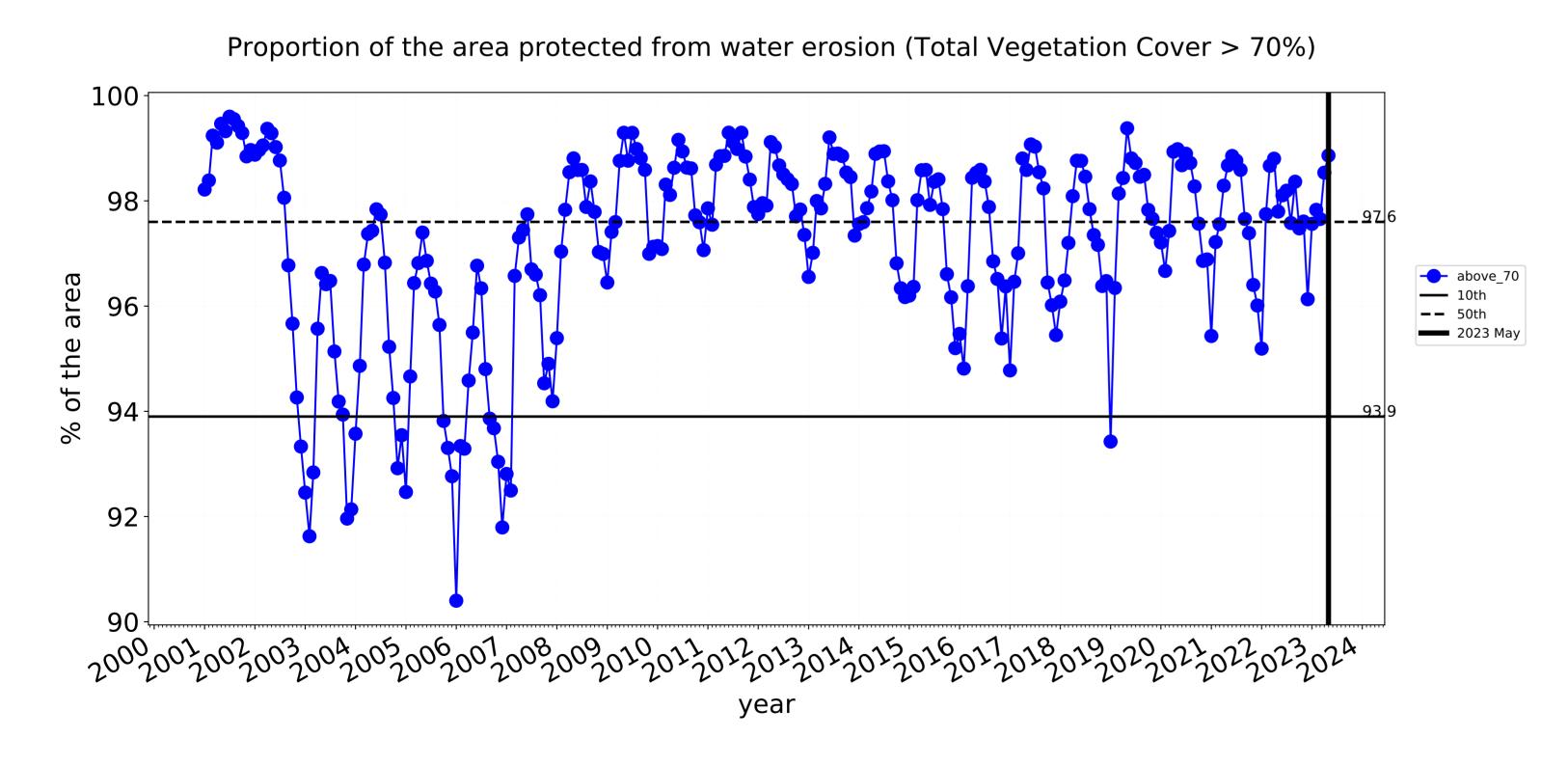


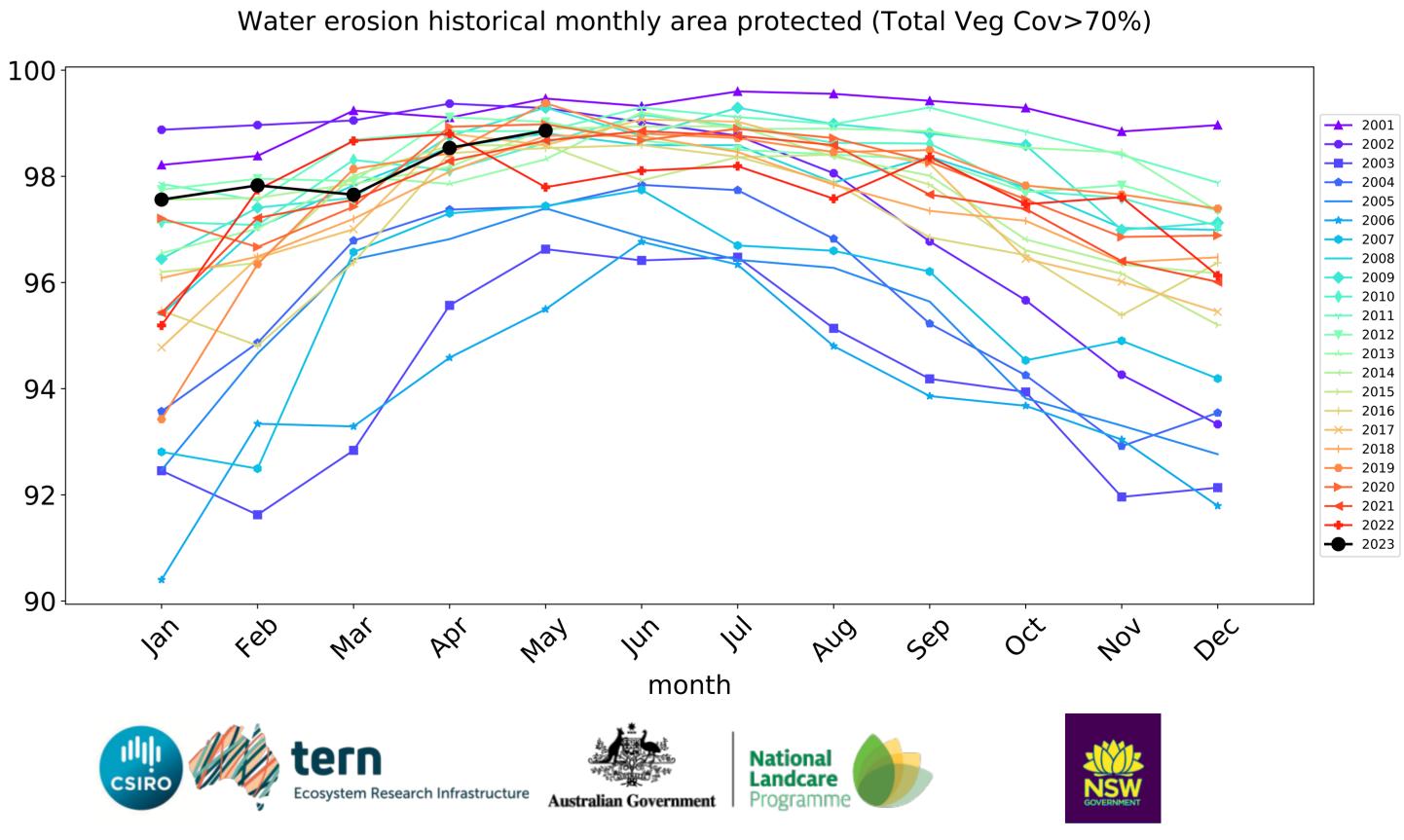


Conservation and natural environments Woodland forest timeseries







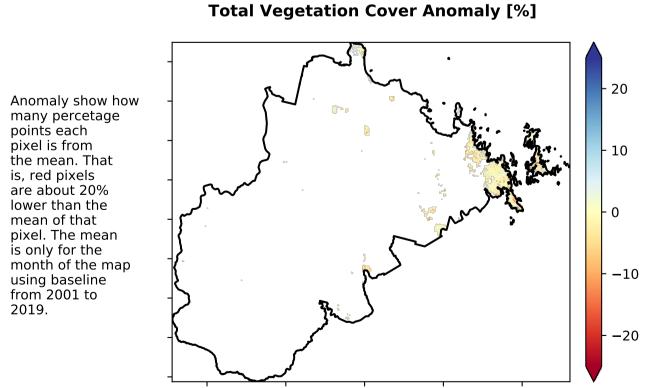


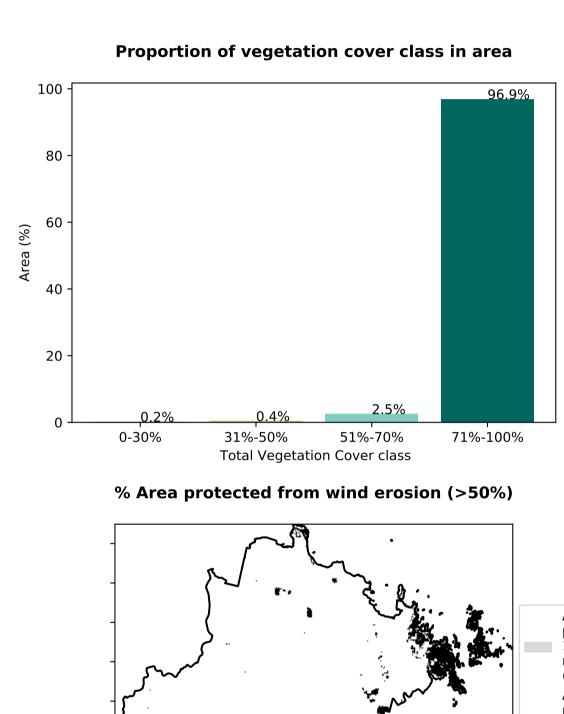
Conservation and natural environments Forest (non woodland)

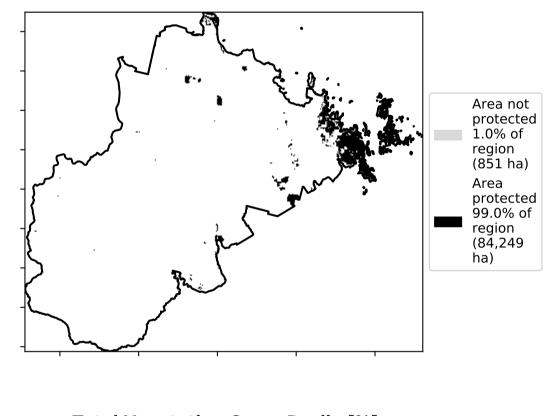
Catchment Scale Land Use and Forests of Australia (2018) Catchment Scale Land Use of Australia (2018) 1 Conservation and natural environments - Non-woodland forest 1 Conservation and natural environments - Non-woodland forest

Total Vegetation Cover [%]

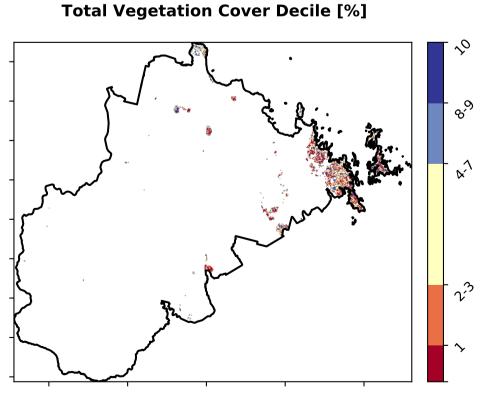
Area not protected 3.1% of region (2,638 ha) Area protected 96.9% of region (82,462 ha)













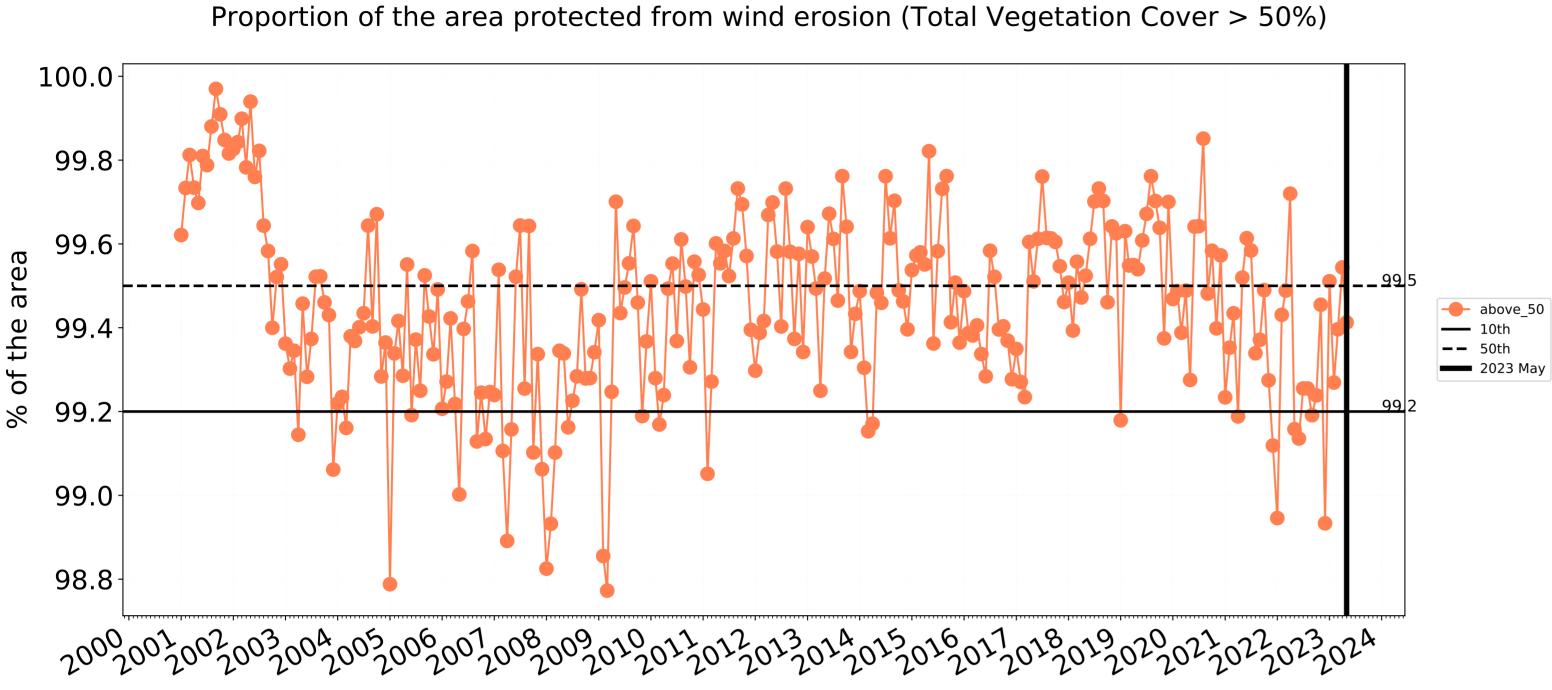


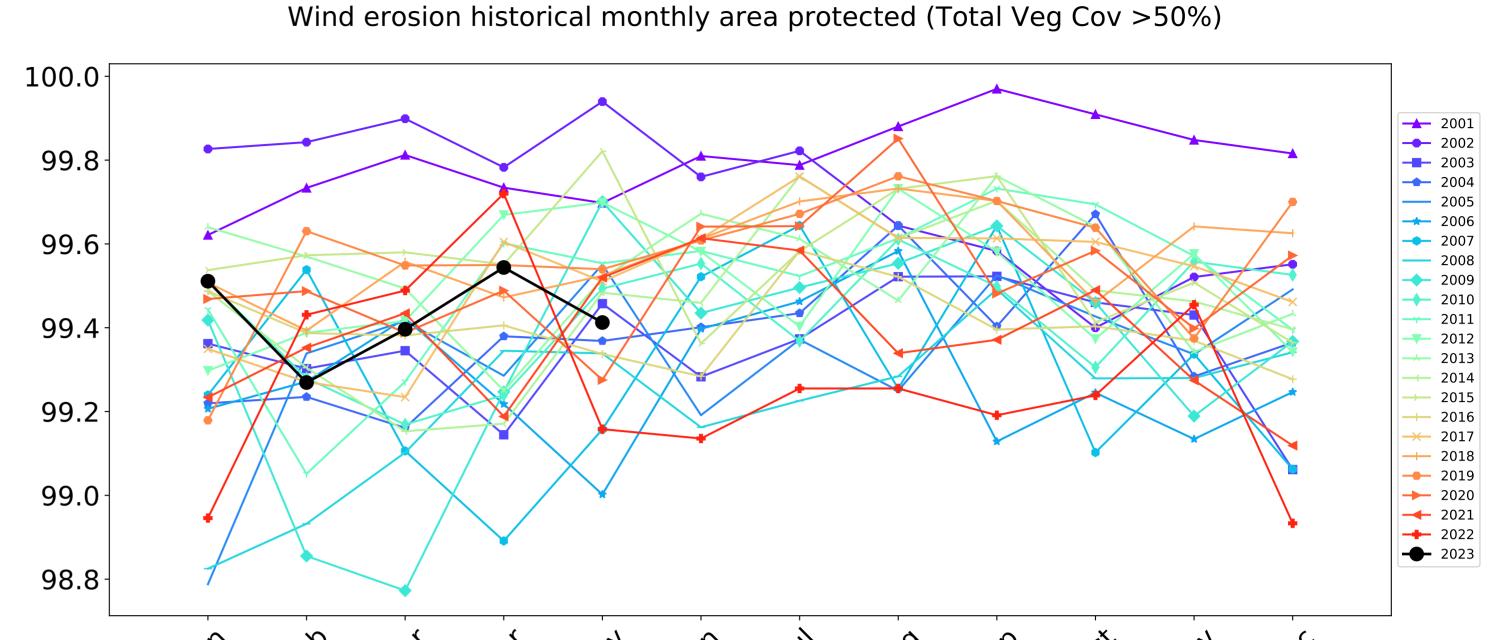
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline.

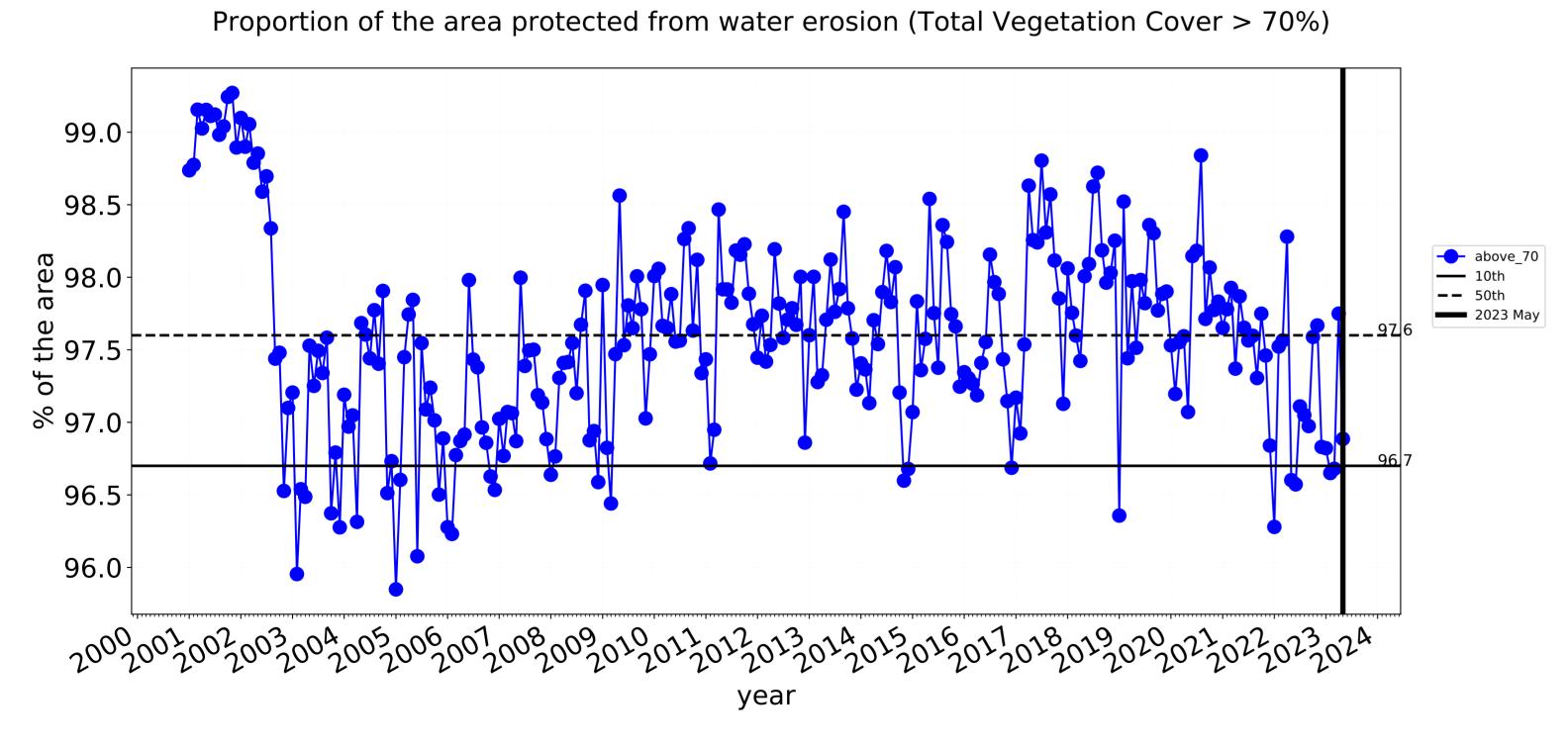
the map using baseline from 2001 to 2019.

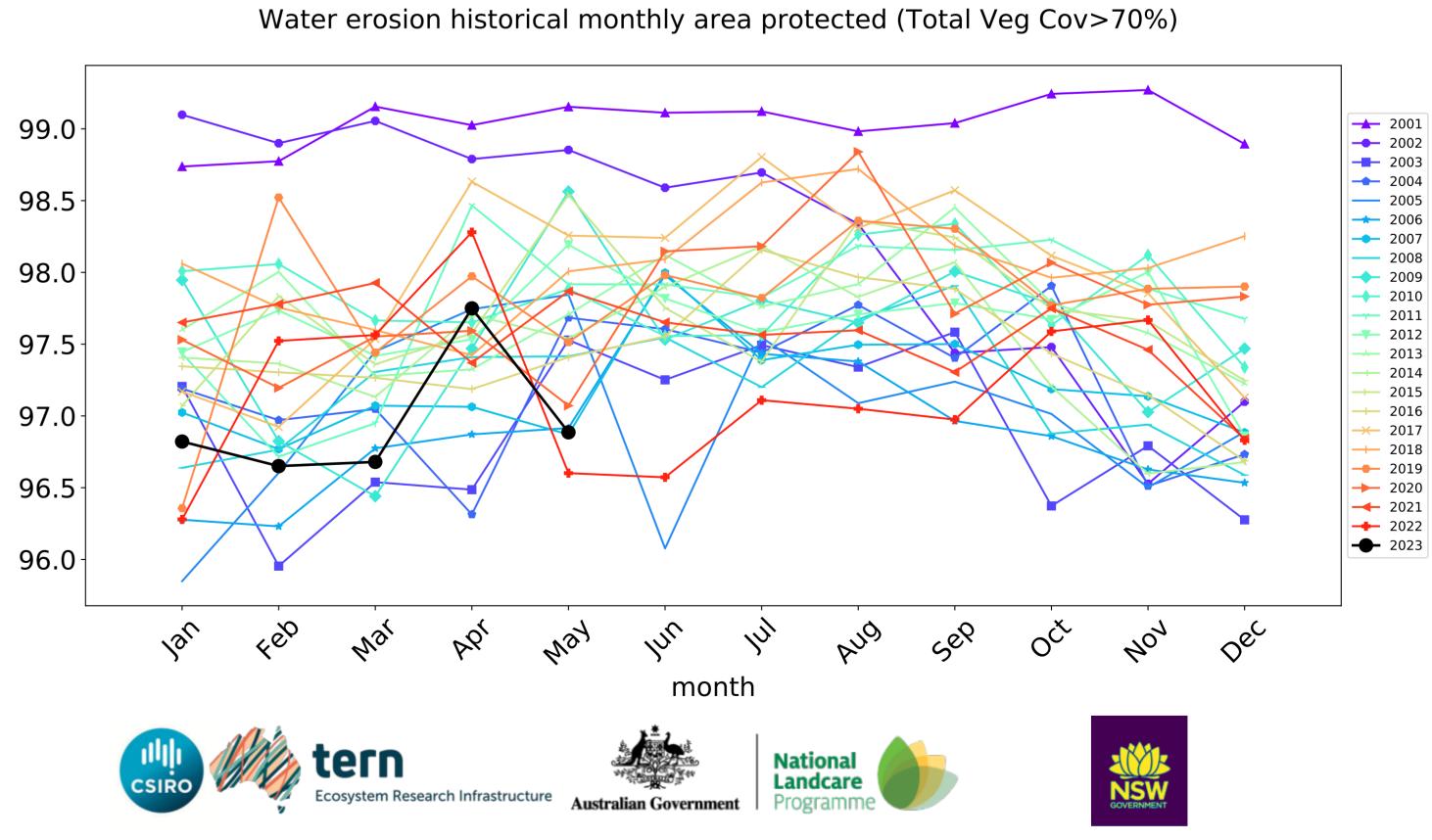












Agriculture

Land use and forest cover 1 Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest 4 Agriculture - Grazing - Irrigated 5 Agriculture - Cropping - Non-irrigated 6 Agriculture - Cropping - Irrigated 7 Agriculture - Horticulture - Non-irrigated 8 Agriculture - Horticulture - Irrigated

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

Derived from

Use of Australia

(2018) and Forests of Australia (2018)

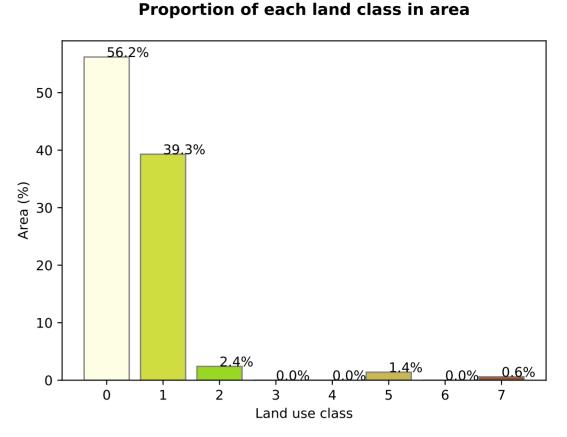
Anomaly show how many percetage points each pixel is from the mean. That

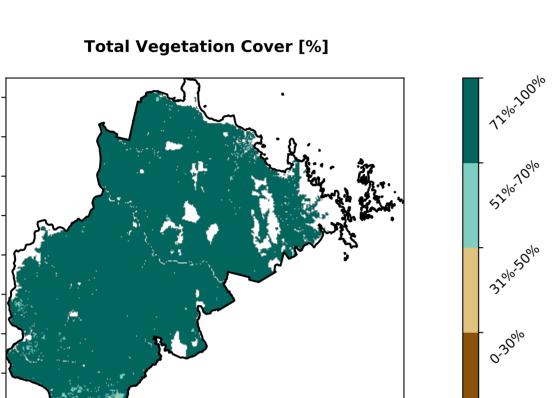
is, red pixels are about 20% lower than the mean of that

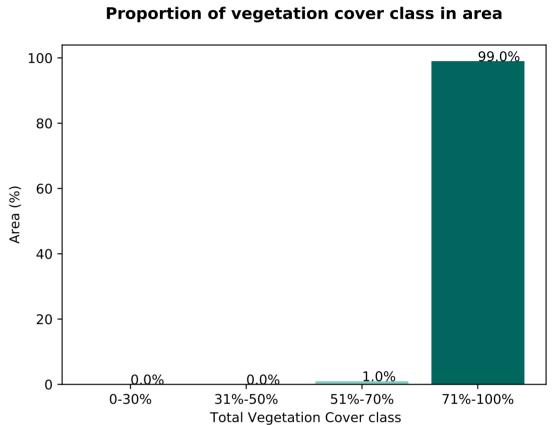
pixel. The mean

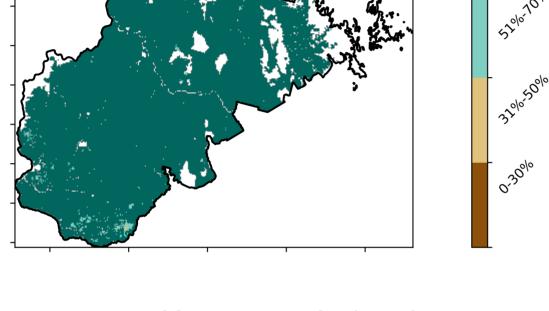
using baseline from 2001 to 2019.

is only for the month of the map

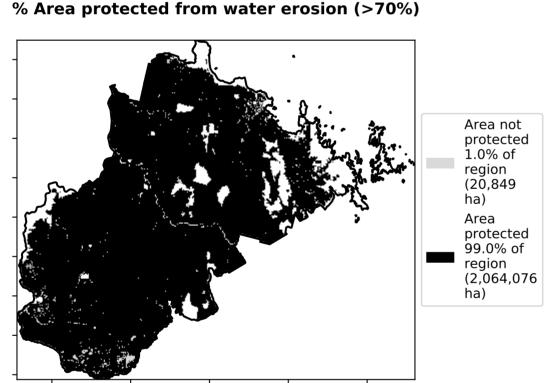


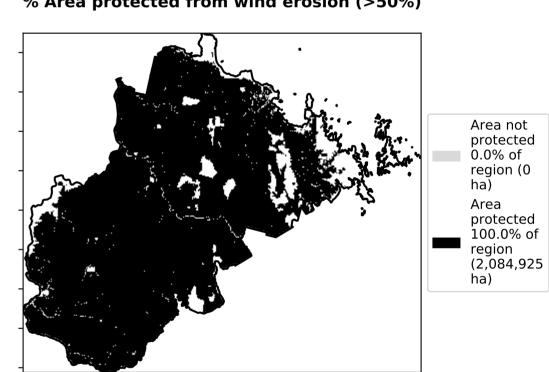






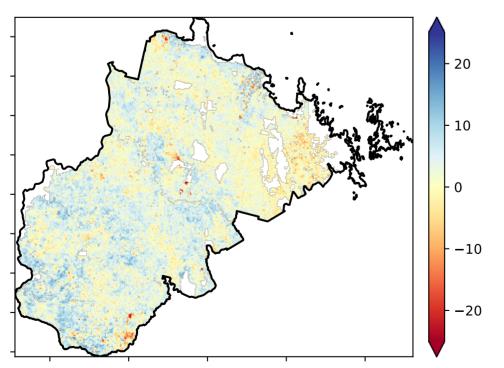
% Area protected from wind erosion (>50%)

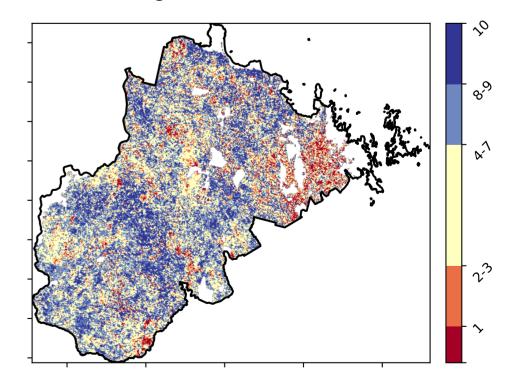




Total Vegetation Cover Anomaly [%]

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.

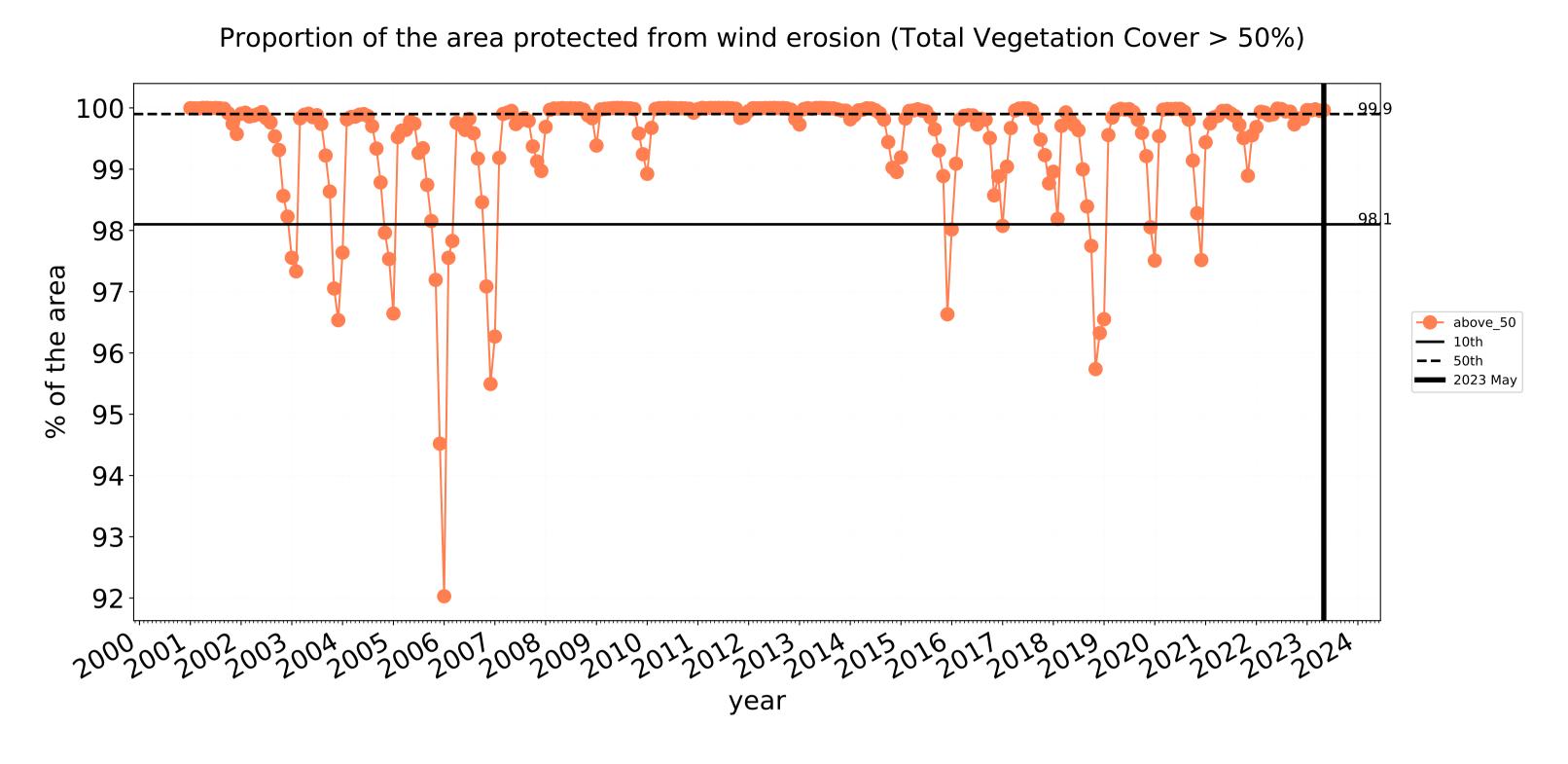


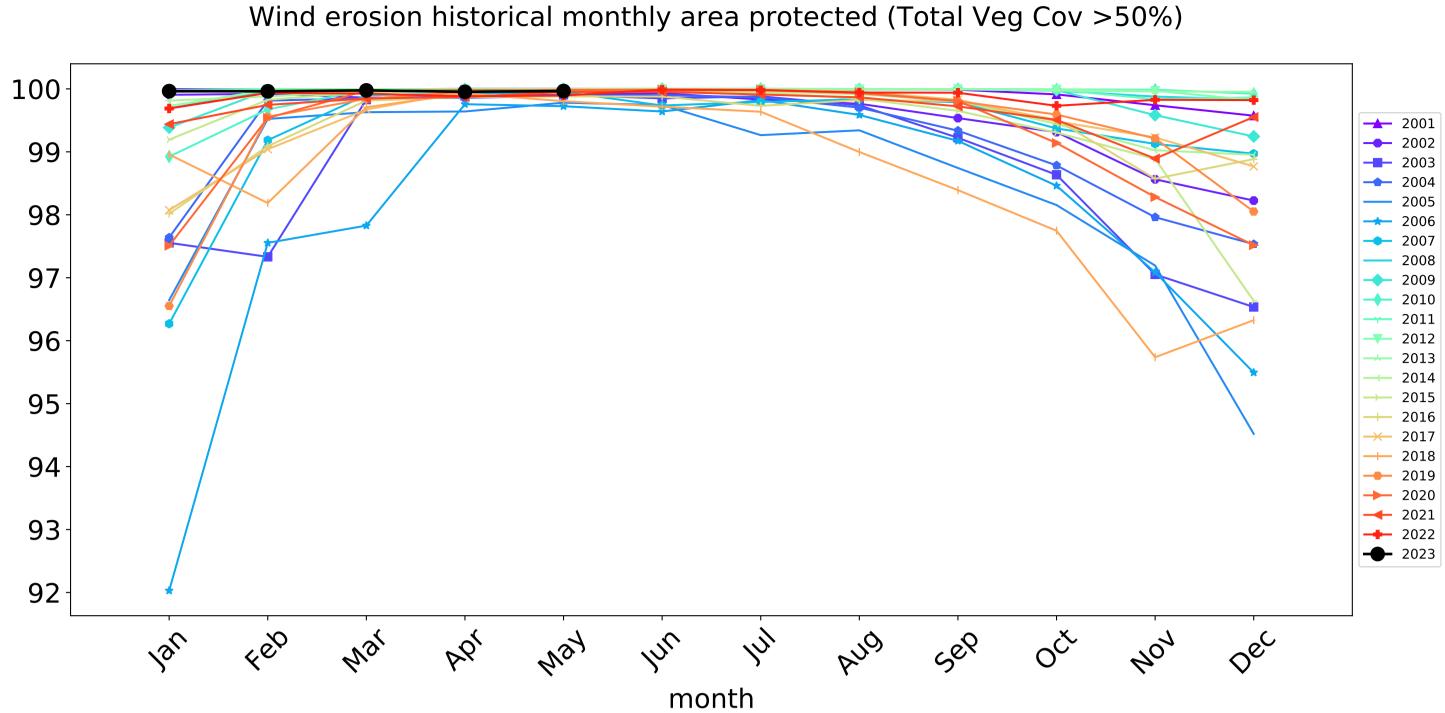


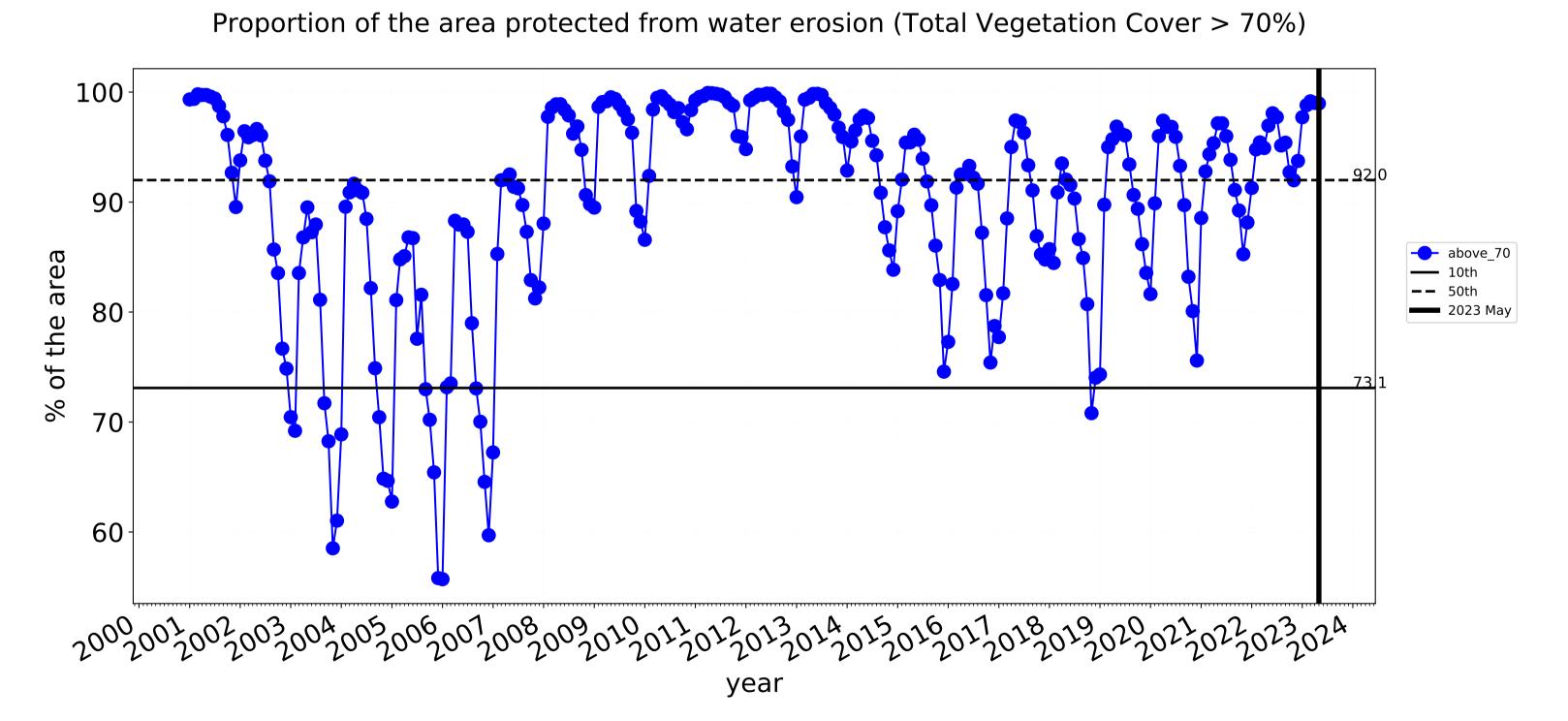


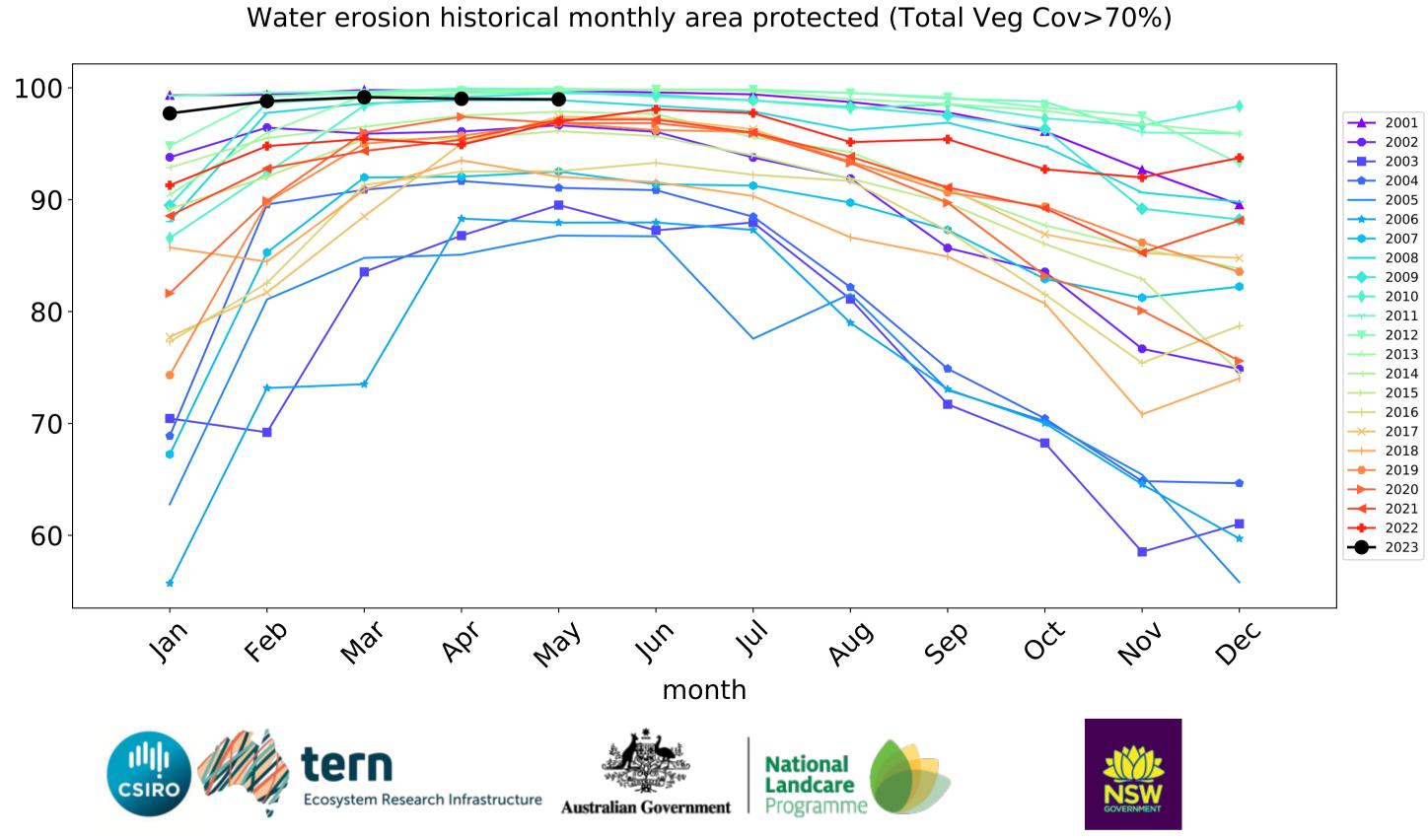


Agriculture timeseries



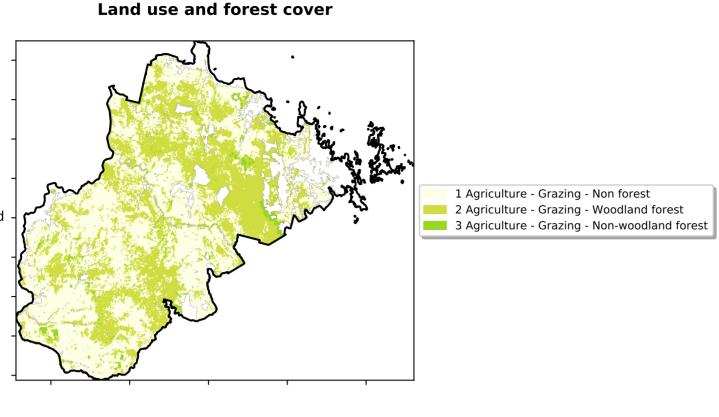




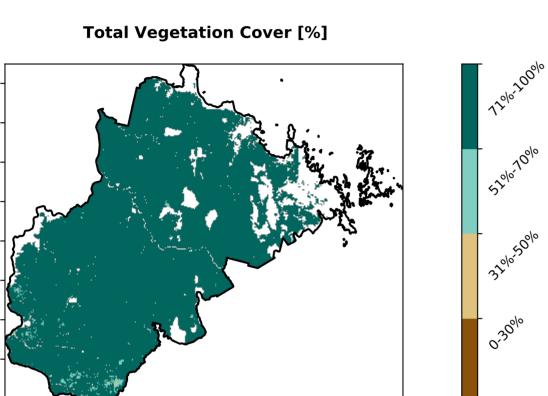


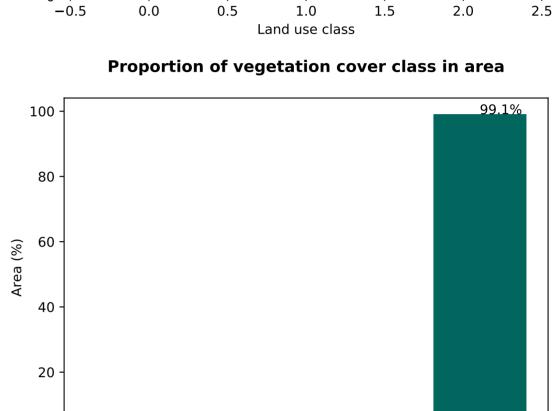
Grazing

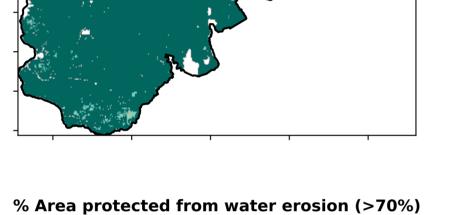
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land 1 Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest Use of Australia (2018) and Forests of Australia (2018)



Proportion of each land class in area 60 -57.4% 50 40.1% 40 Area (%) 20 10 0.5 1.0 -0.5 1.5 0.0 2.0







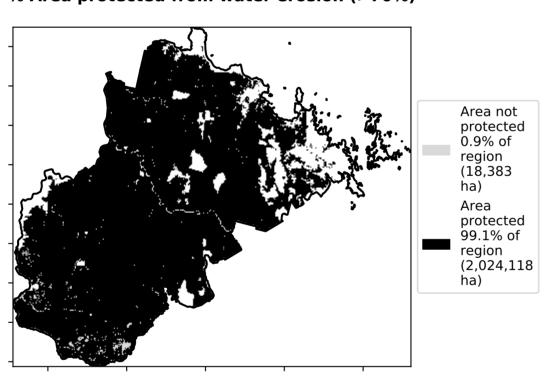
% Area protected from wind erosion (>50%)

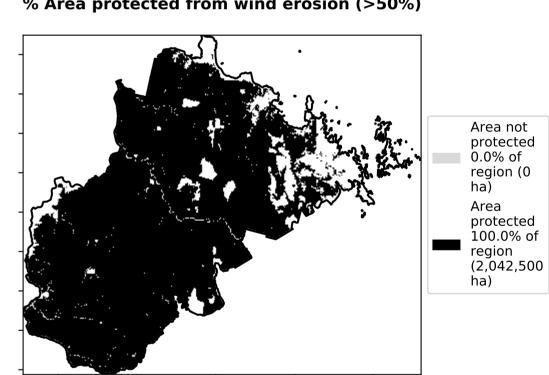
Total Vegetation Cover class

0.0%

31%-50%

0-30%





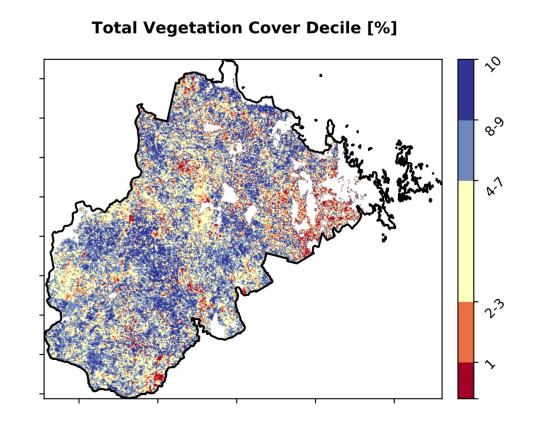
51%-70%

71%-100%



- 20 - 10 -10**-**20

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.



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



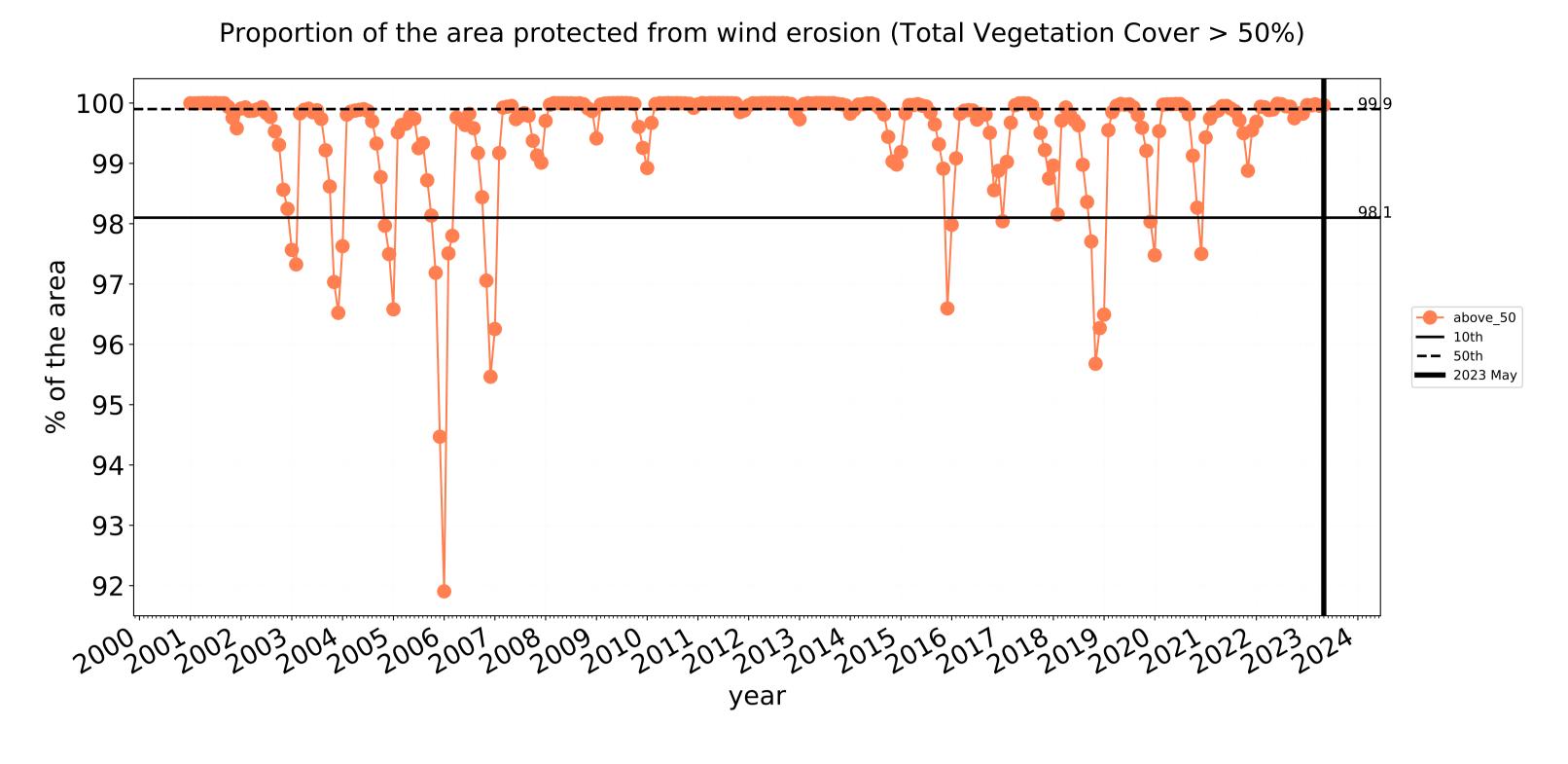


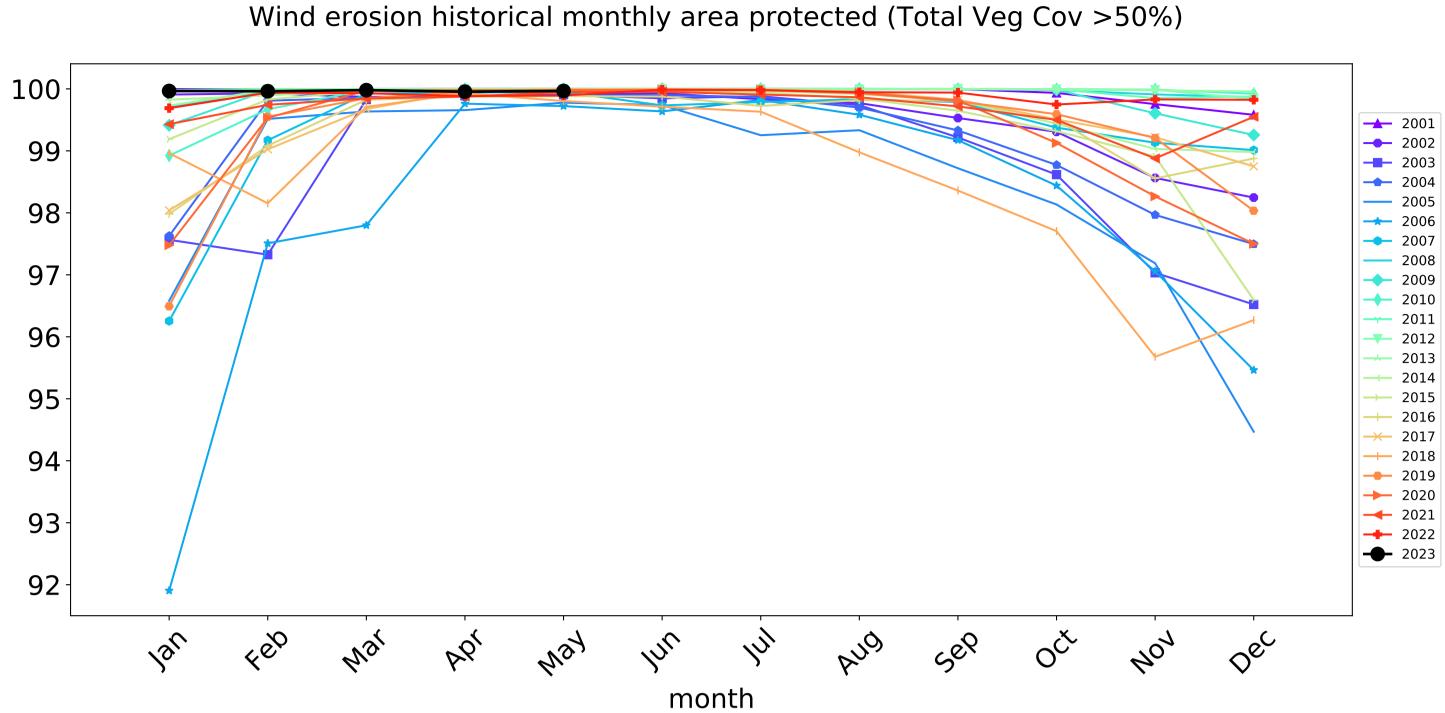


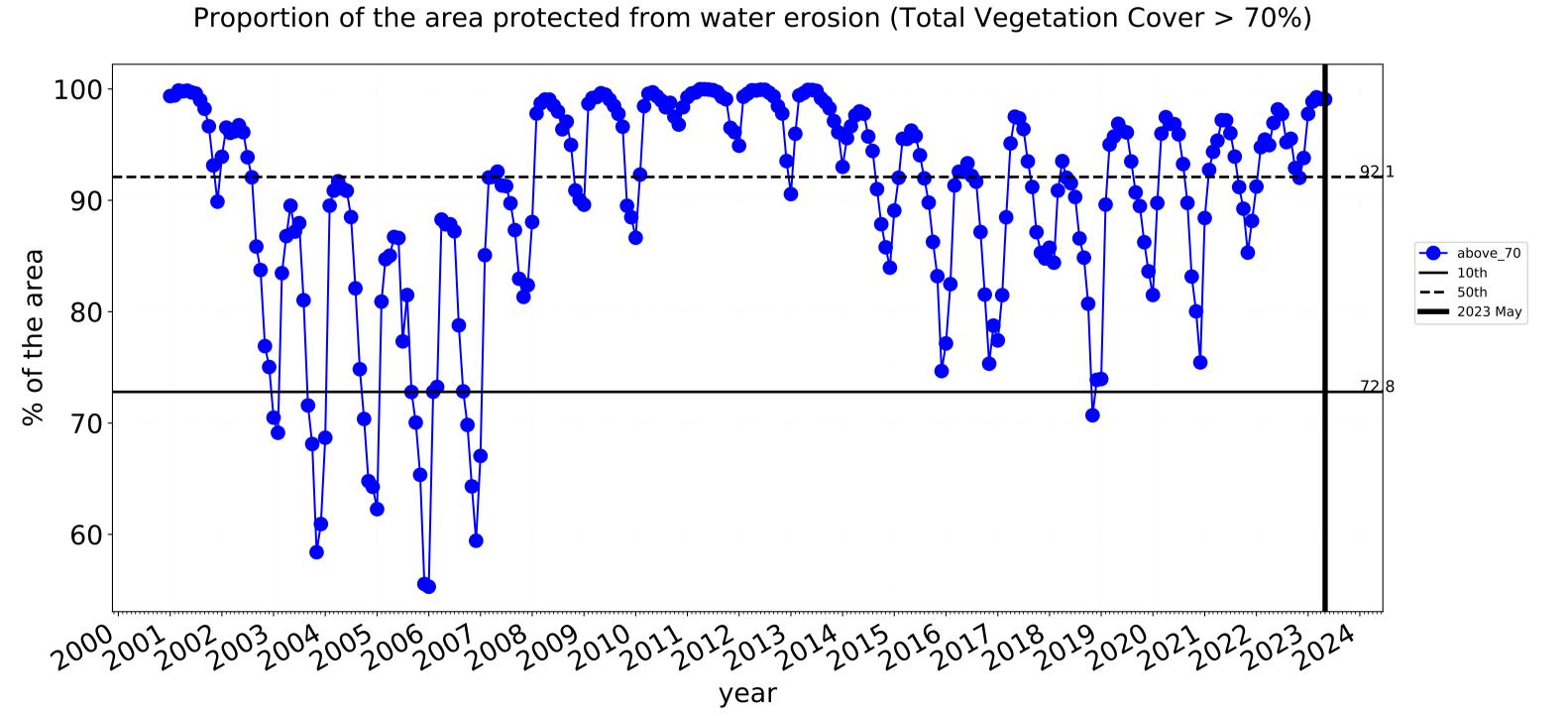


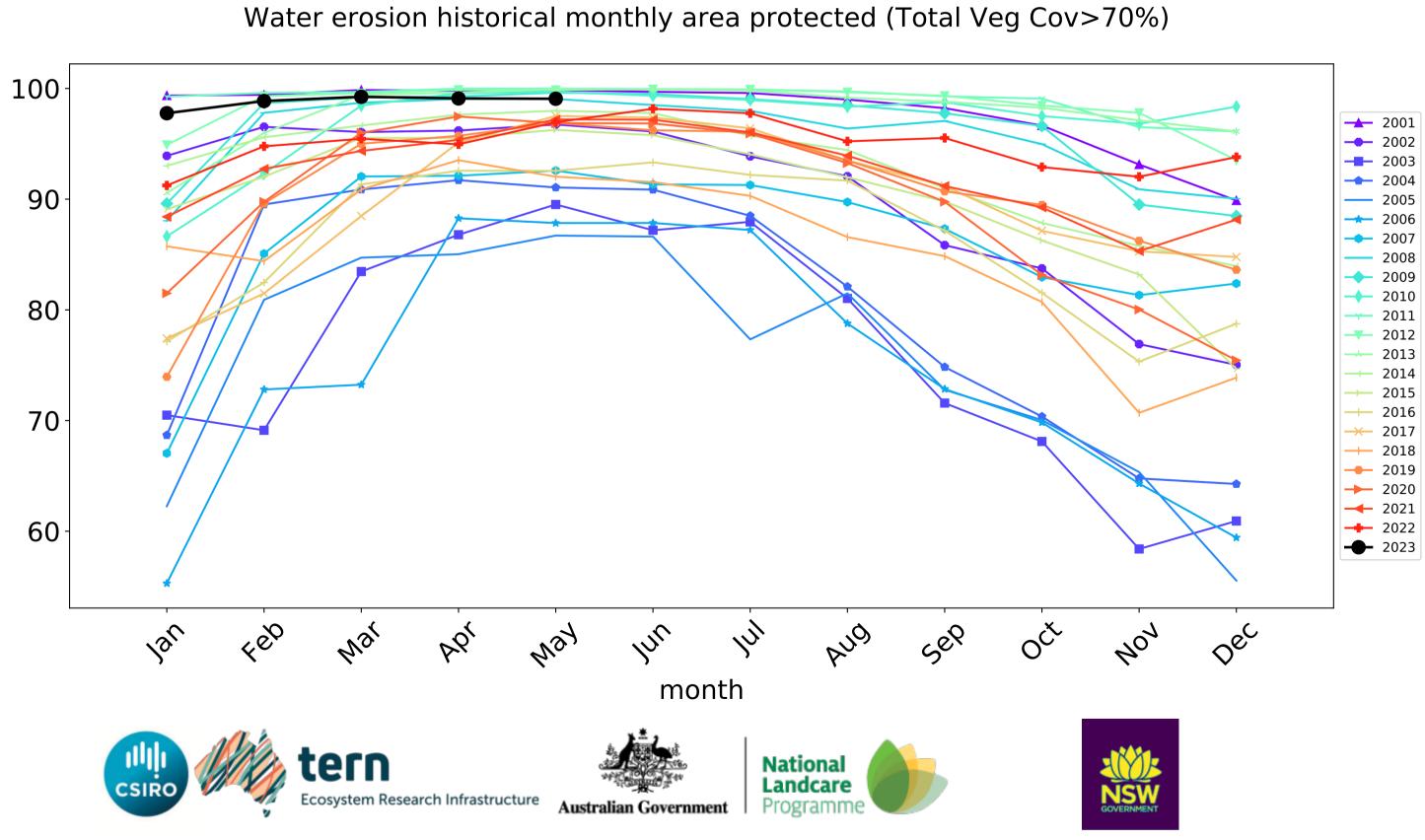


Grazing timeseries







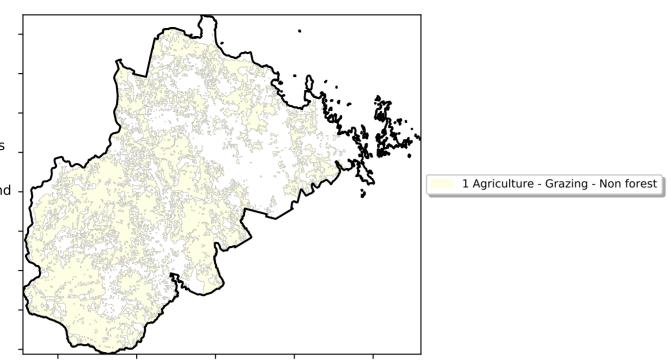


Grazing non forest

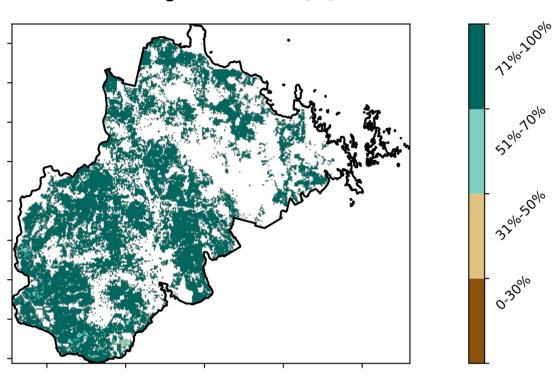
Land use and forest cover

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

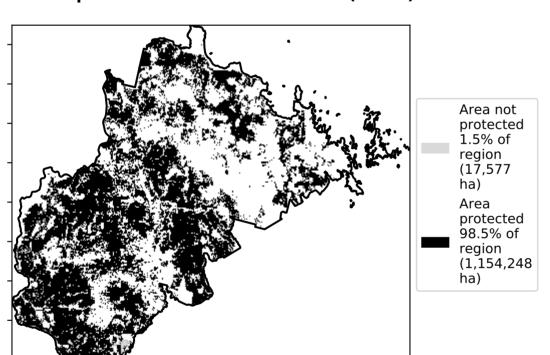
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



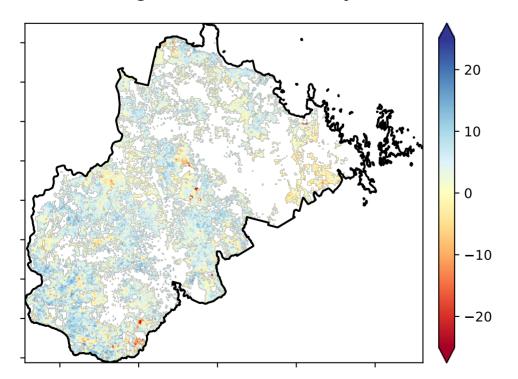
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

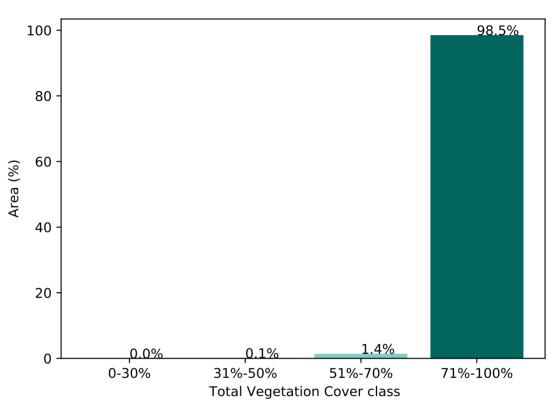


Total Vegetation Cover Anomaly [%]

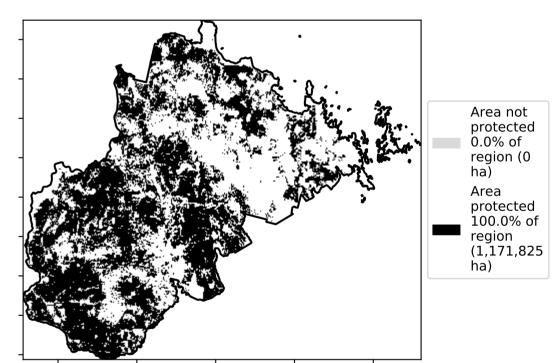


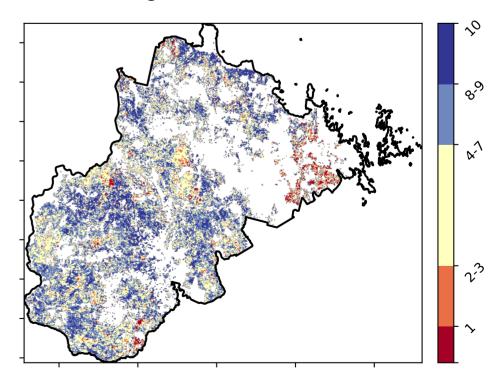
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline. the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









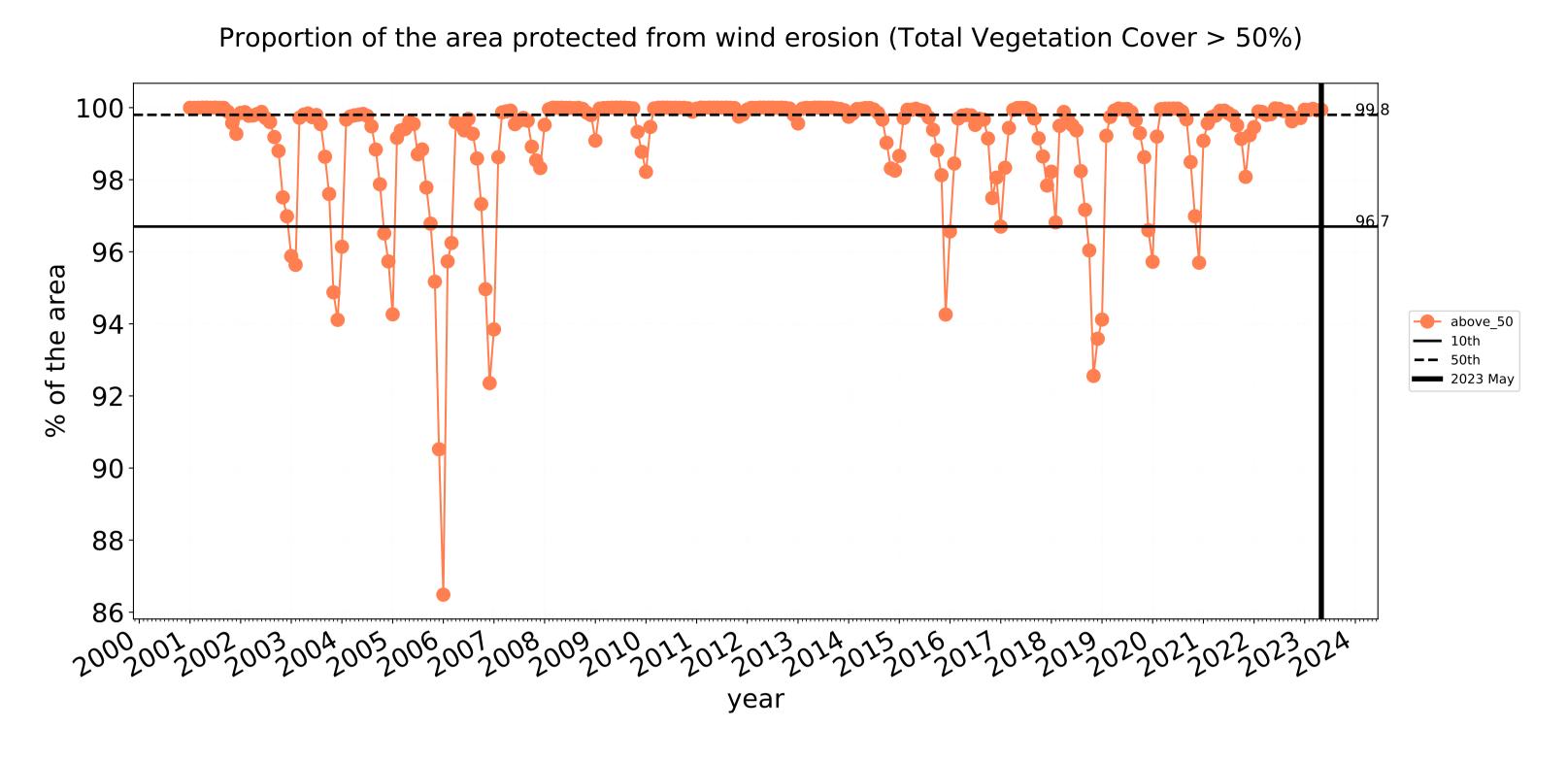


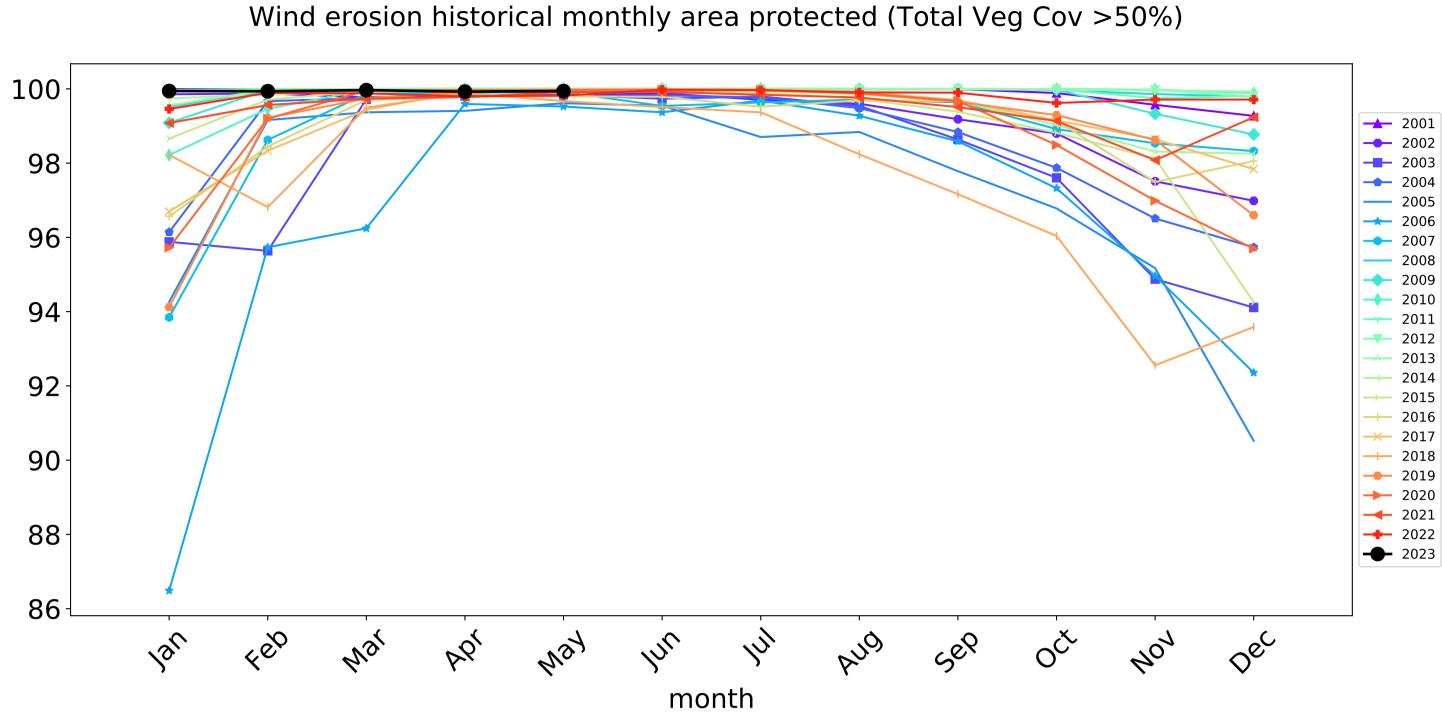


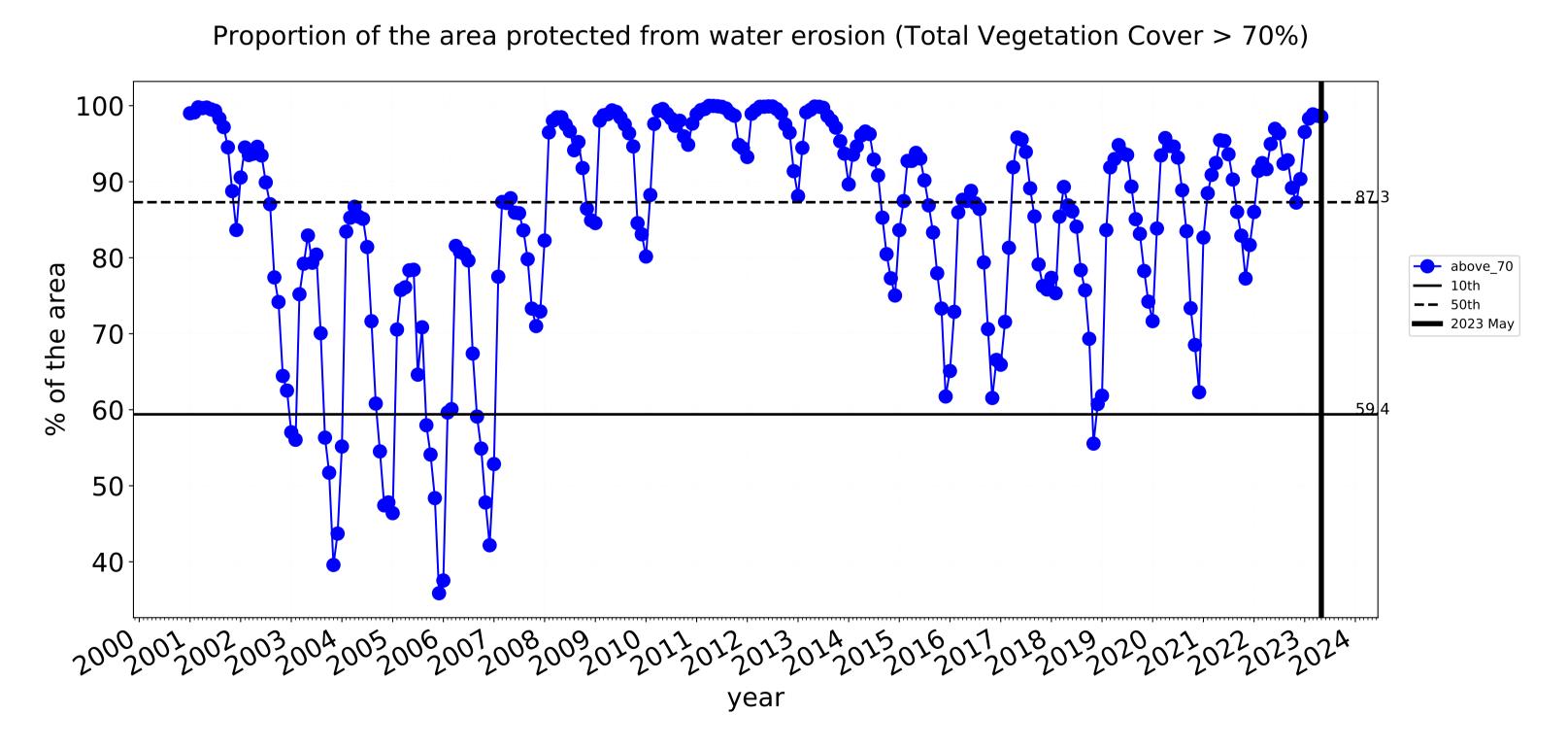


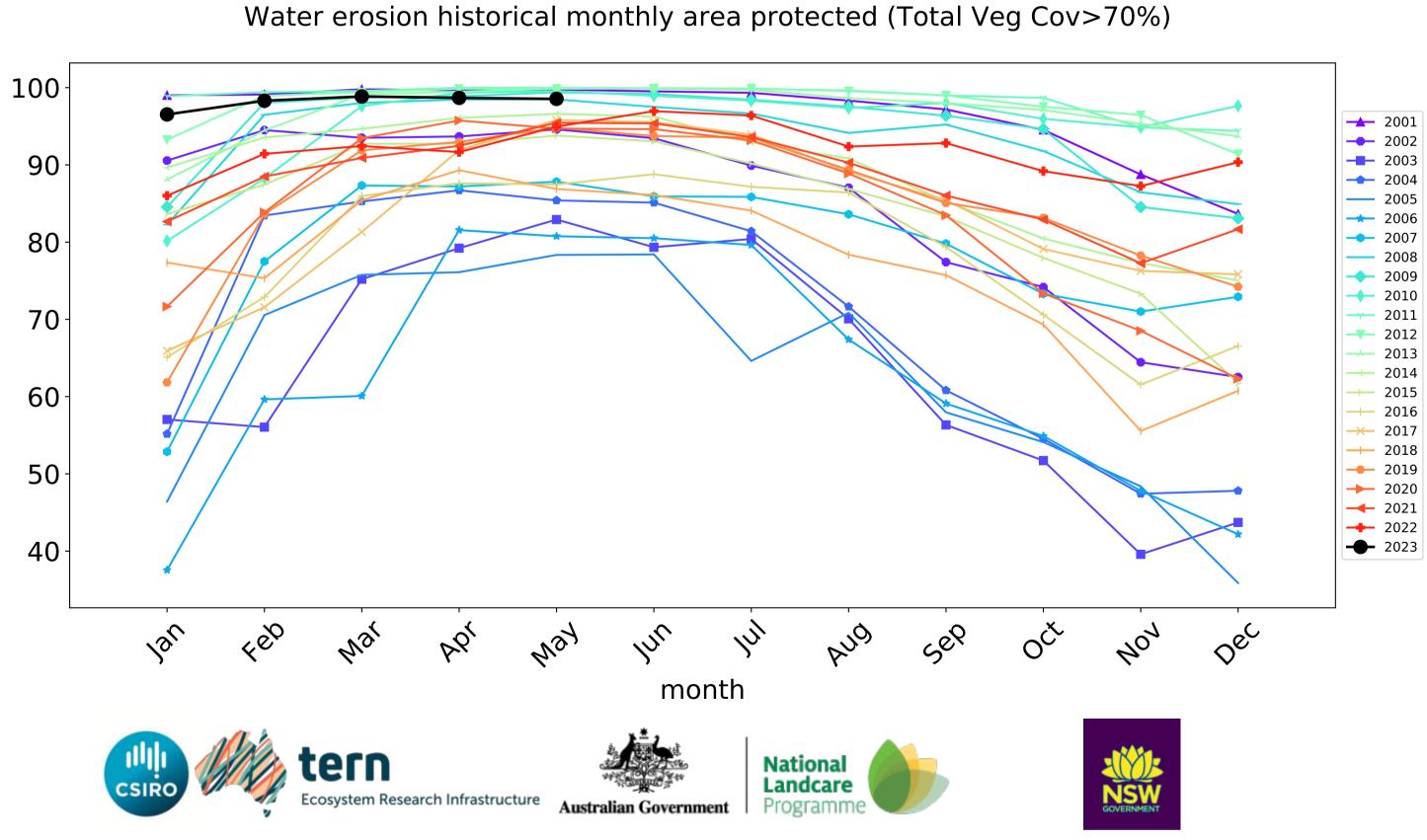


Grazing non forest timeseries





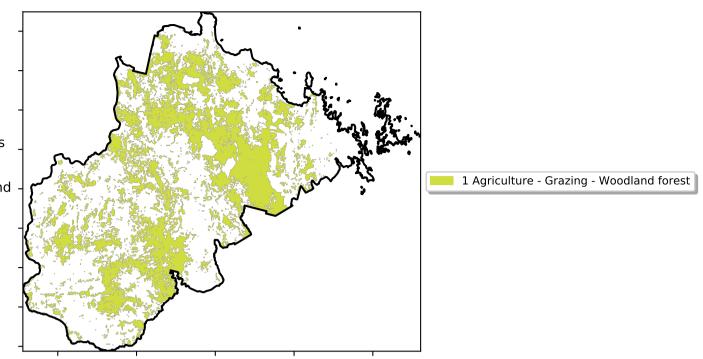




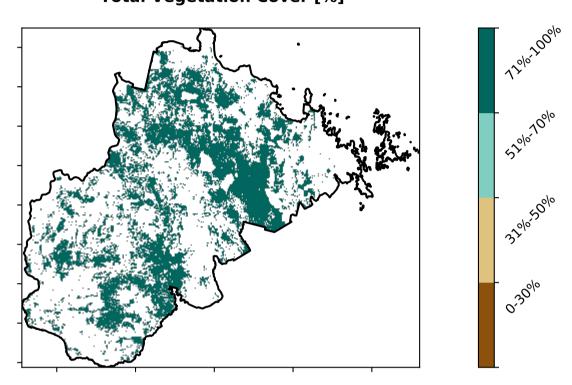
Grazing Woodland forest

Land use and forest cover

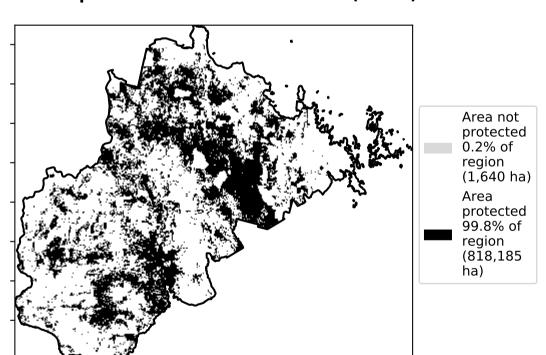




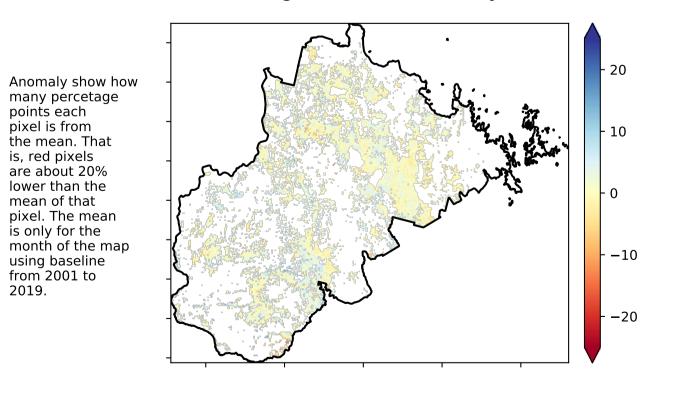
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

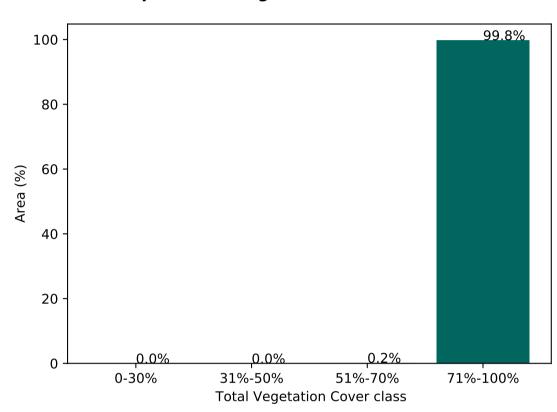


Total Vegetation Cover Anomaly [%]

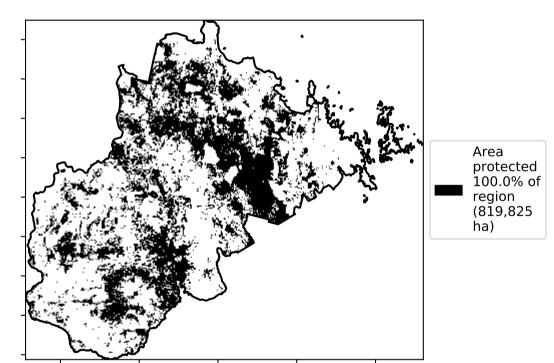


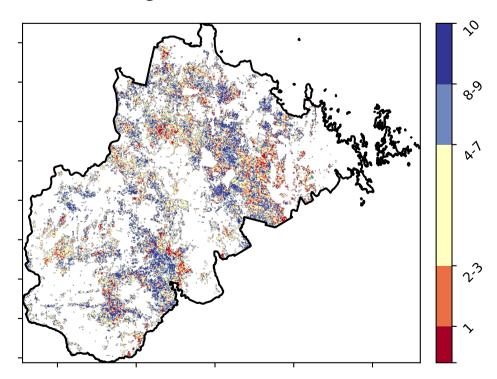
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





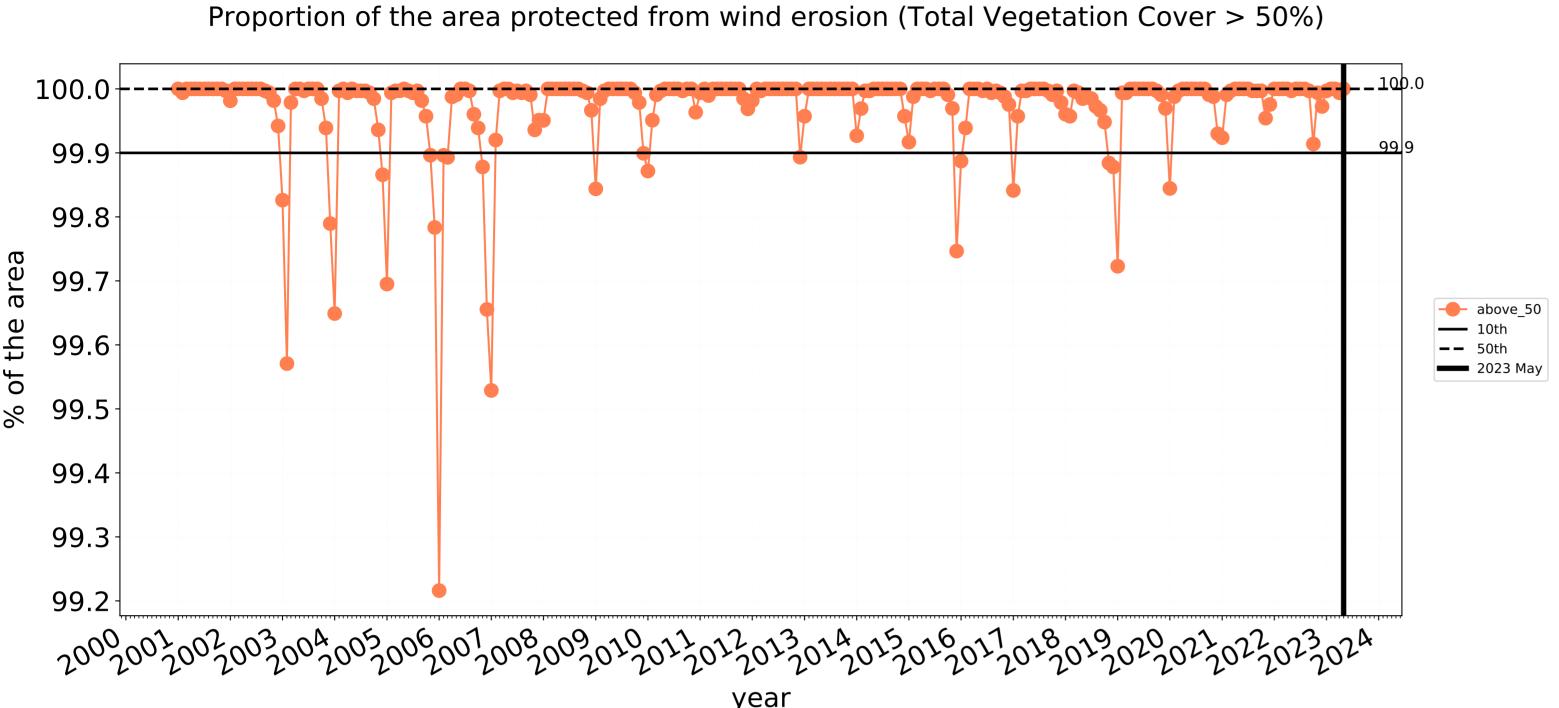


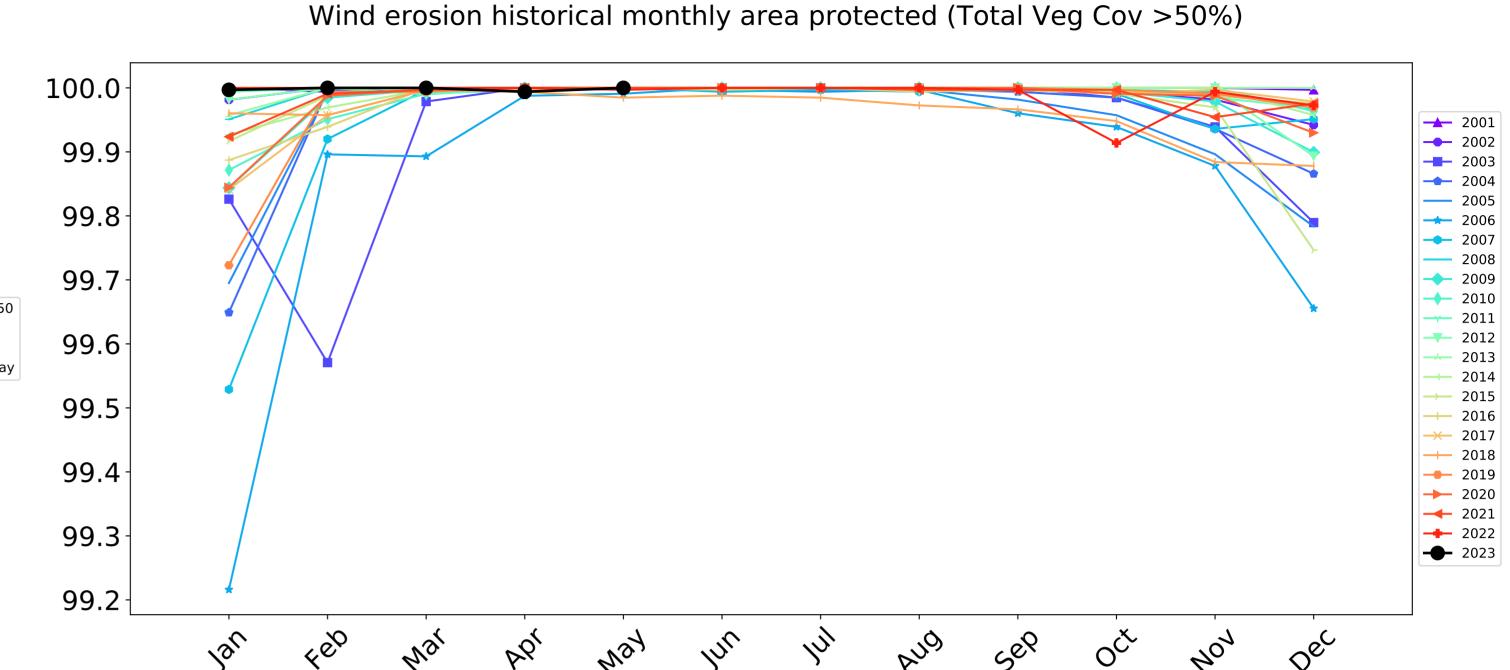


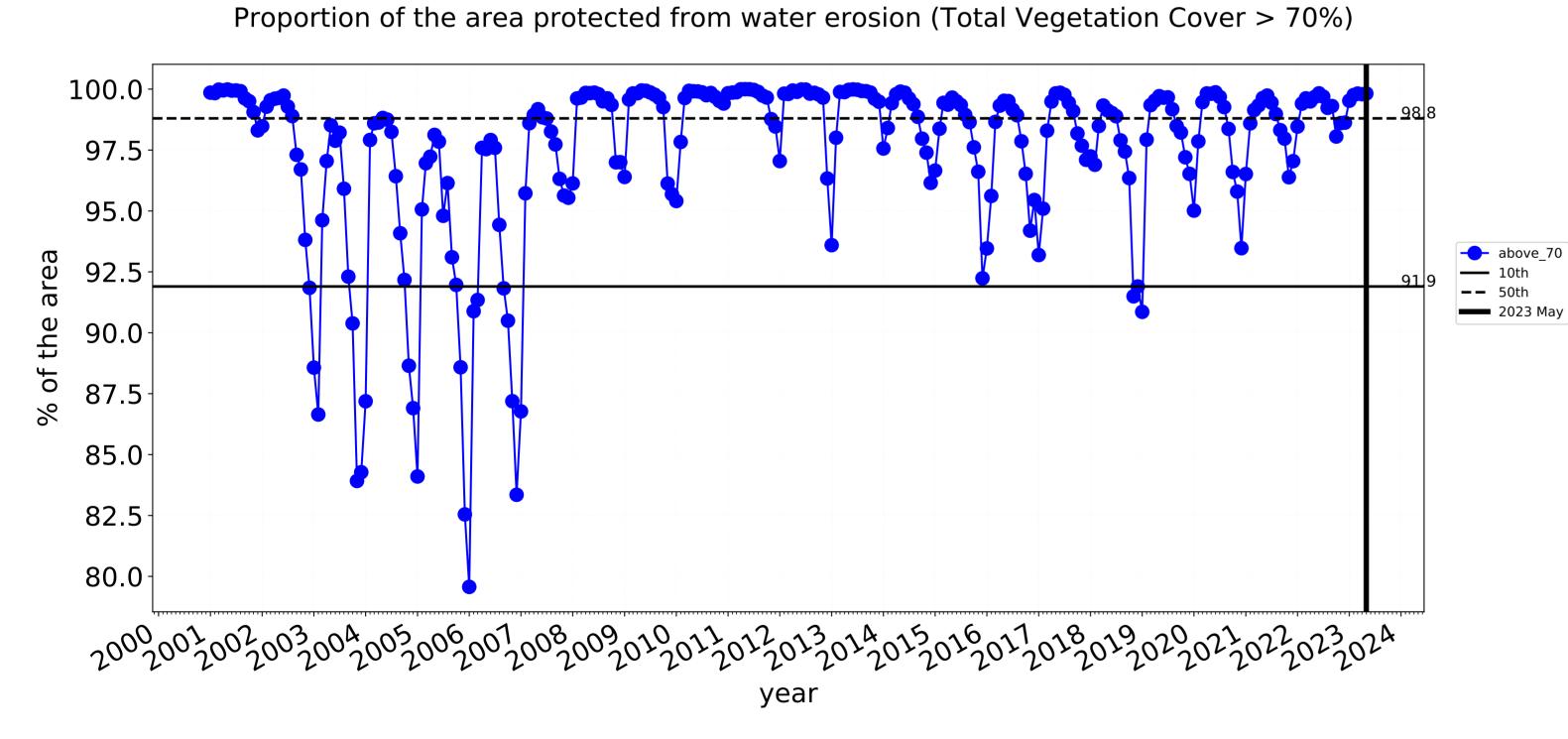


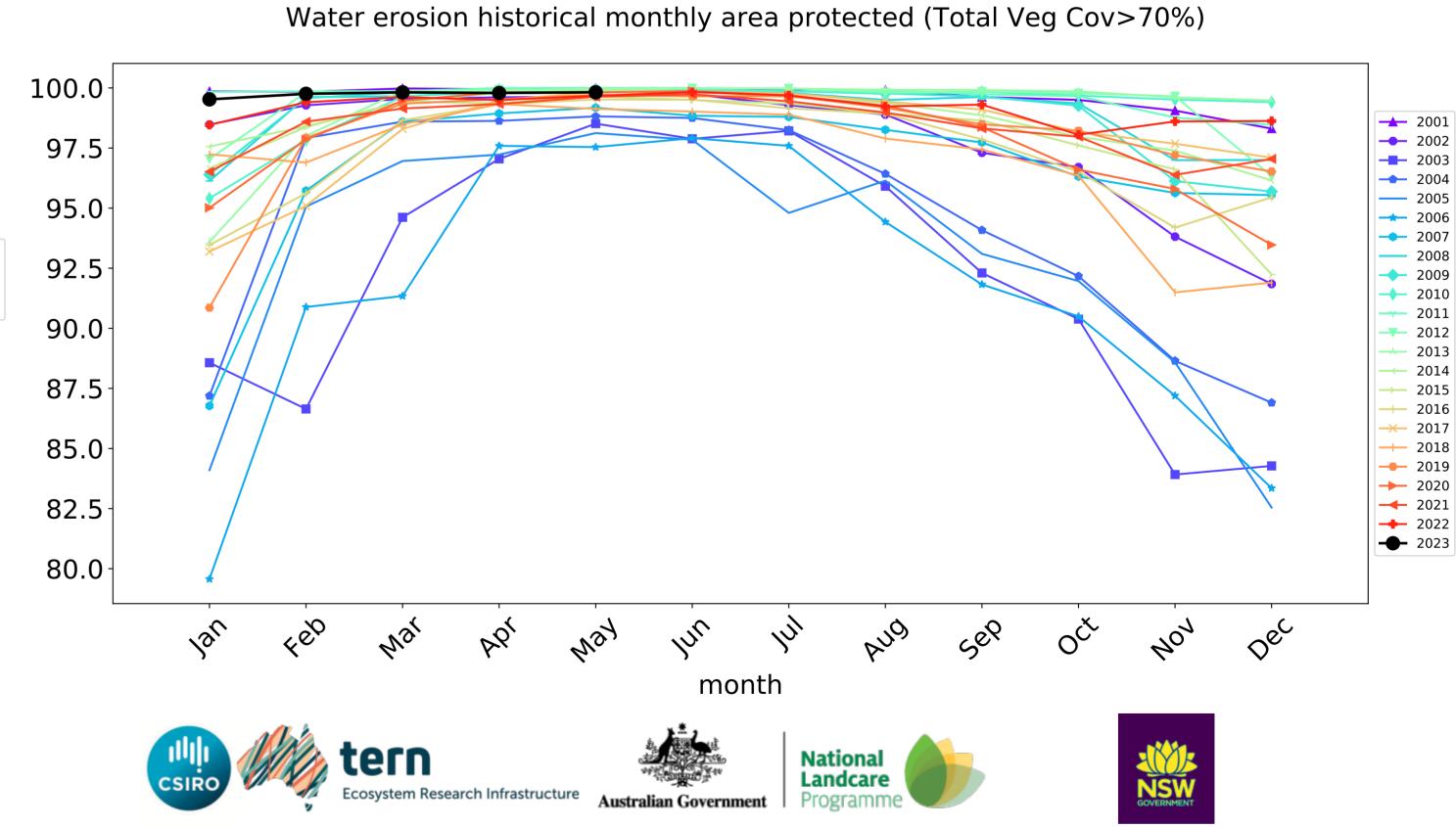


Grazing Woodland forest timeseries







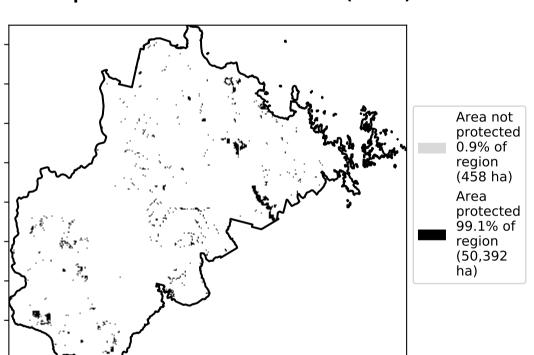


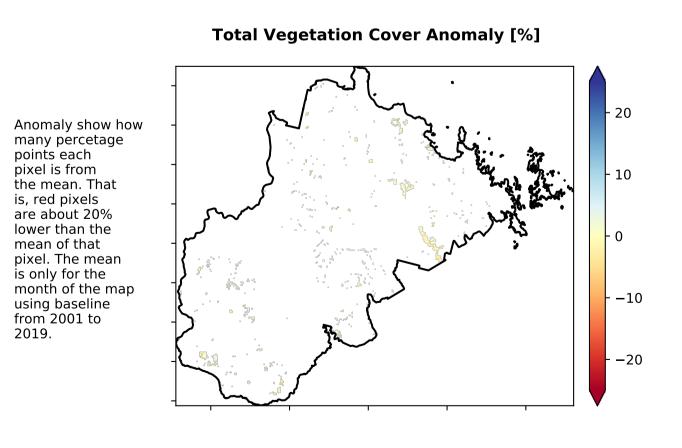
Grazing - Forest (non woodland)

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

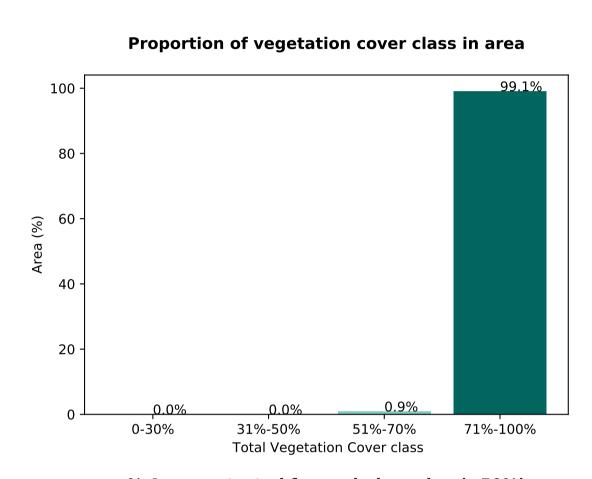
Total Vegetation Cover [%]

% Area protected from water erosion (>70%)

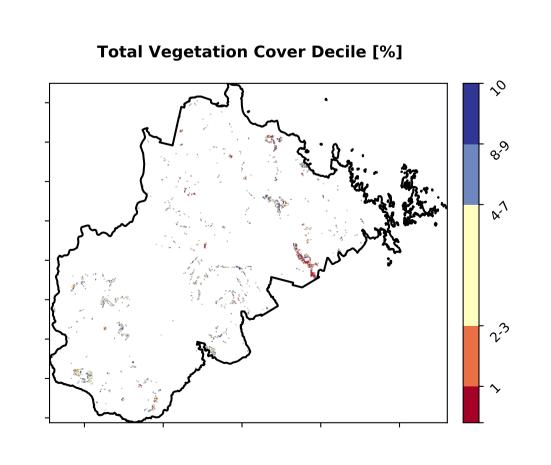




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of records for that month of the map using baseline from 2001 to 2019.



% Area protected from wind erosion (>50%) Area protected 100.0% of region (50,850 ha)

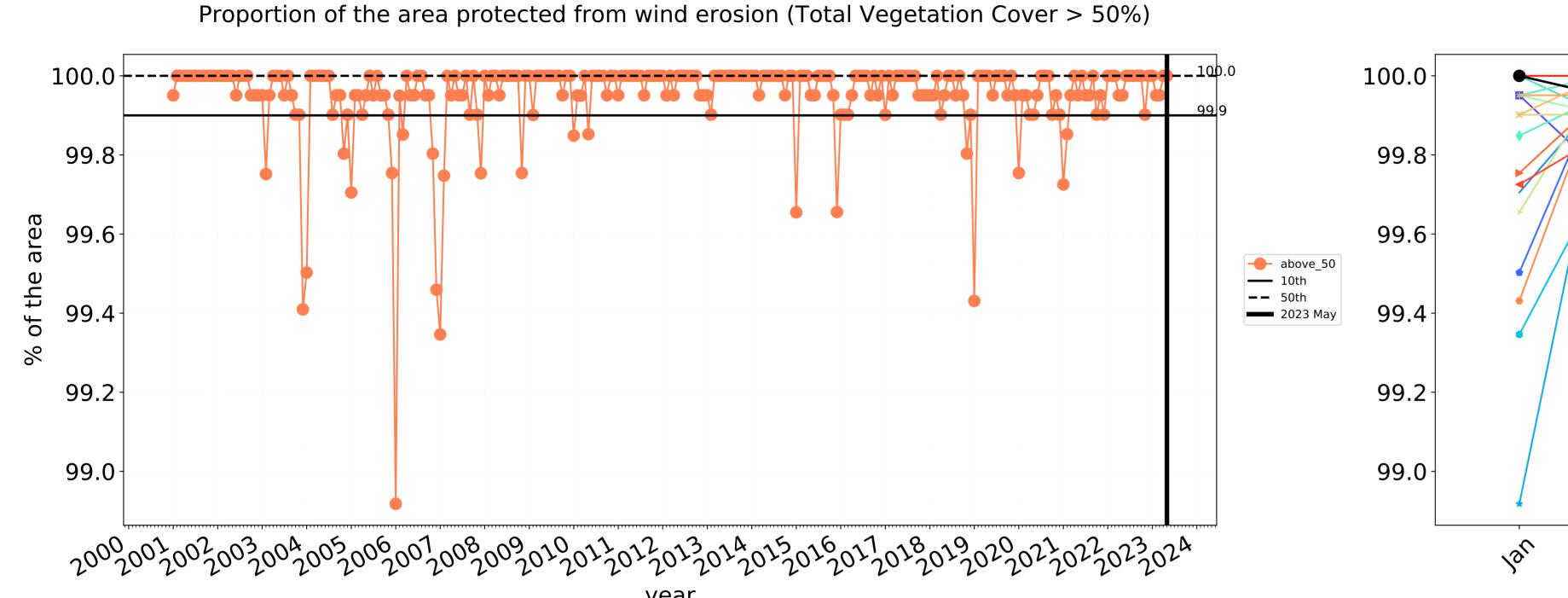


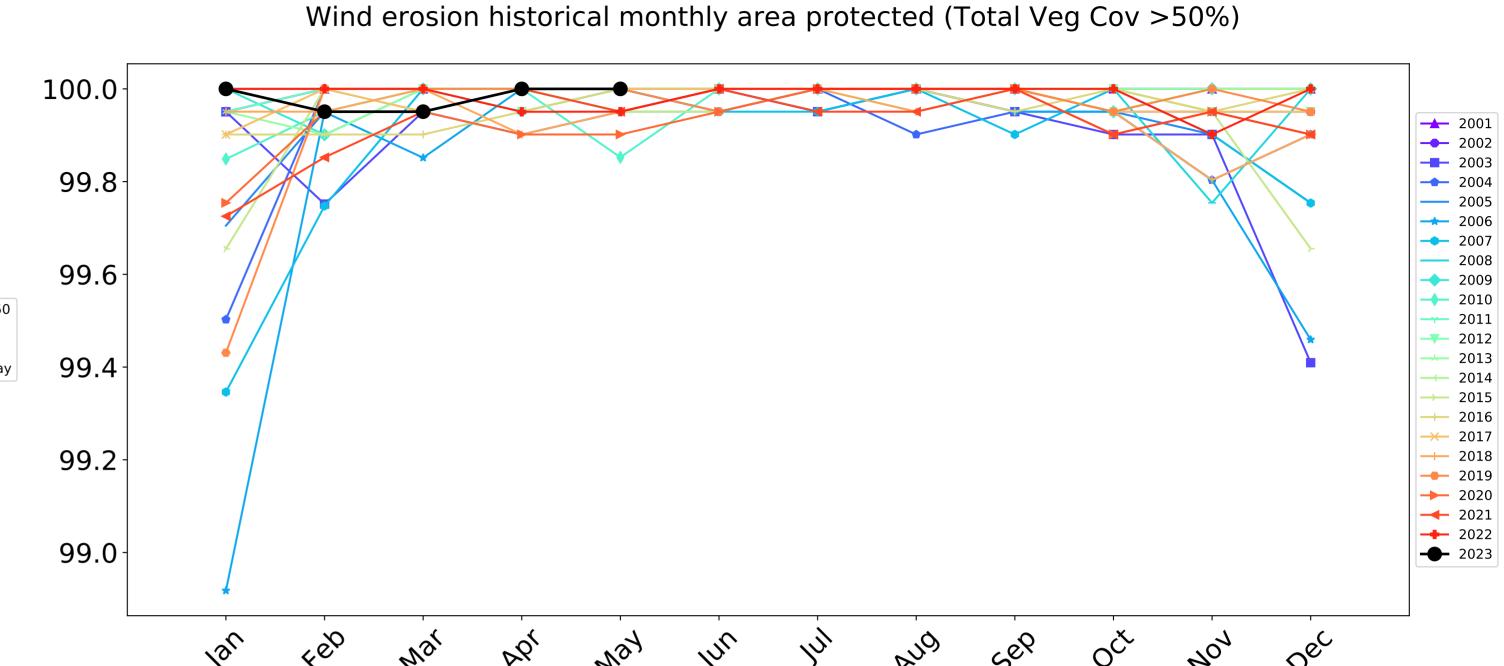


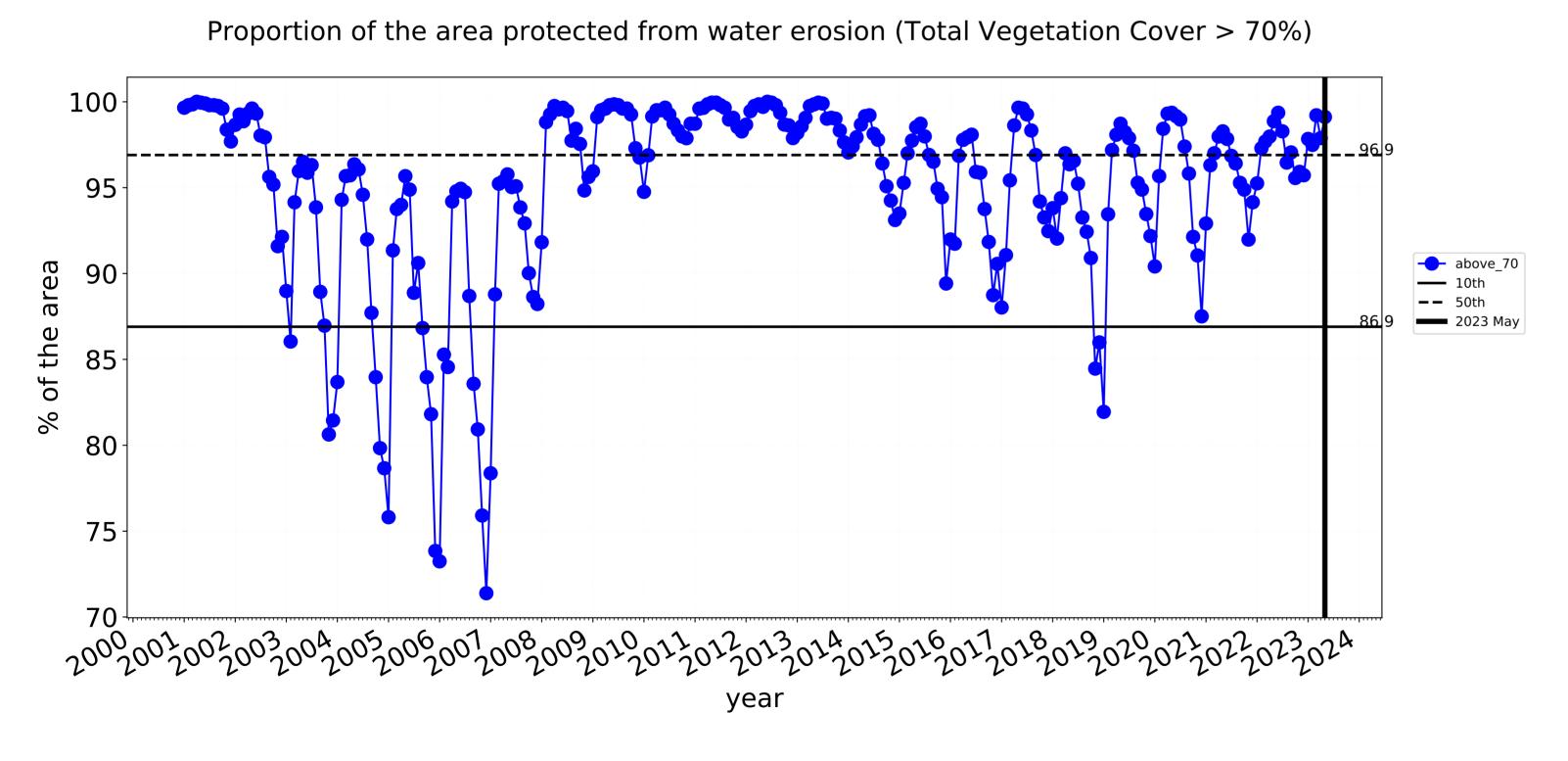


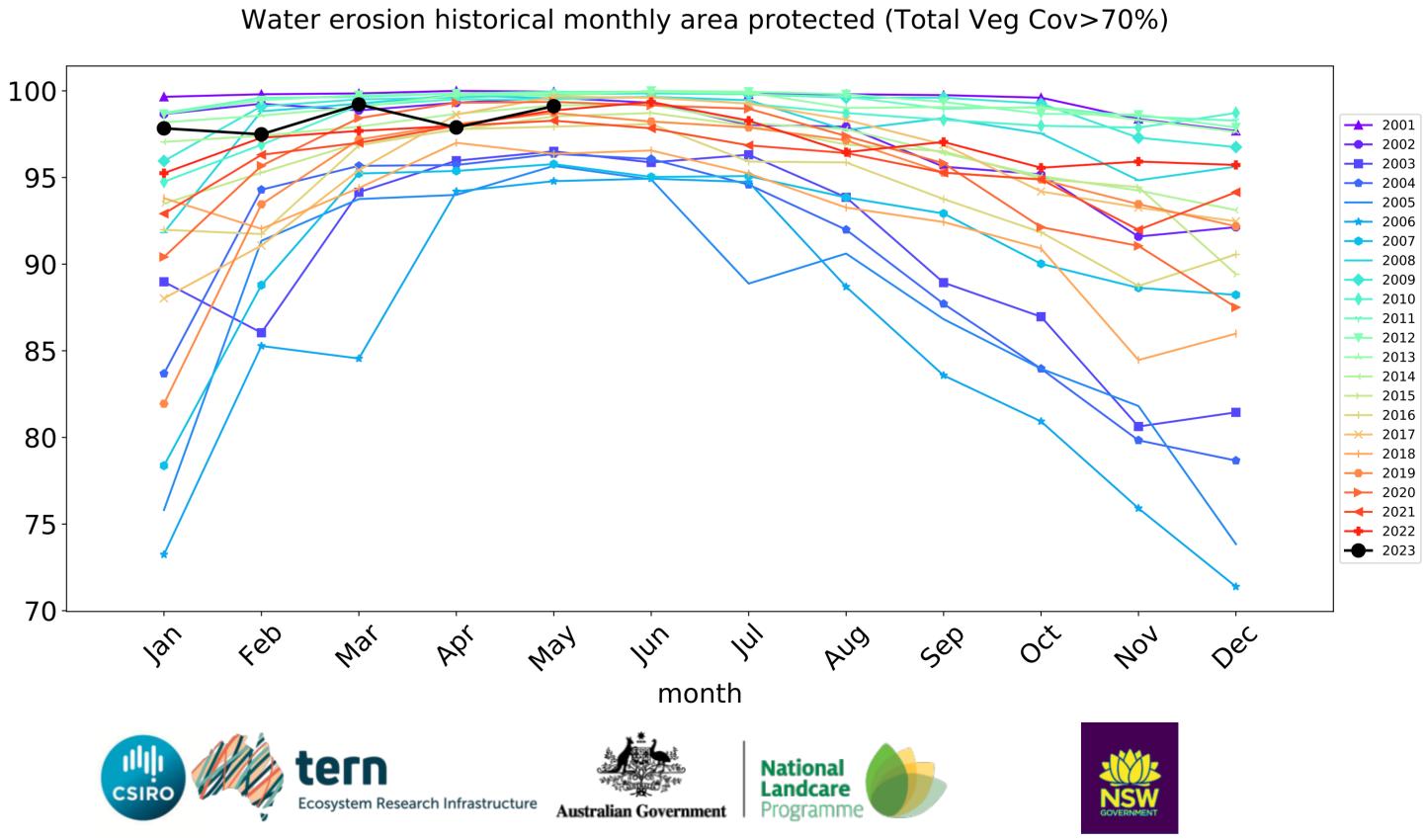






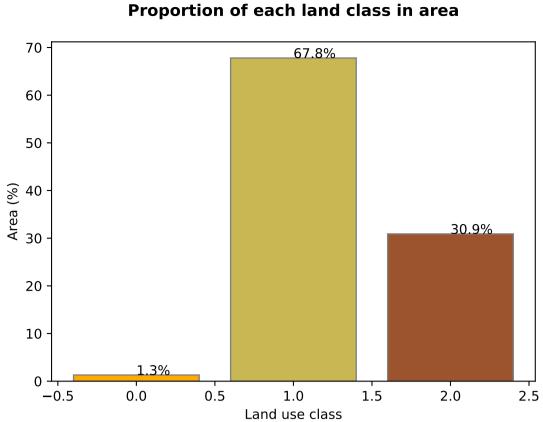




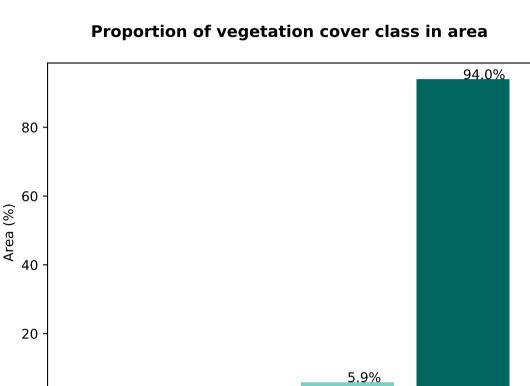


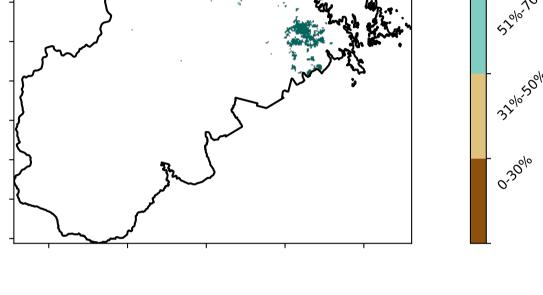
Irrigation

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



Total Vegetation Cover [%]

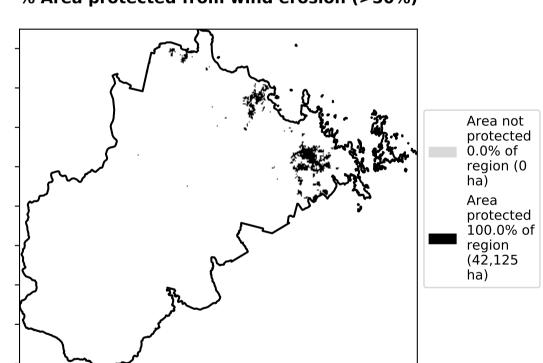




0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class** % Area protected from wind erosion (>50%)

0.1%

Area not protected 6.0% of region (2,528 ha) Area protected 94.0% of region (39,598 ha)





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

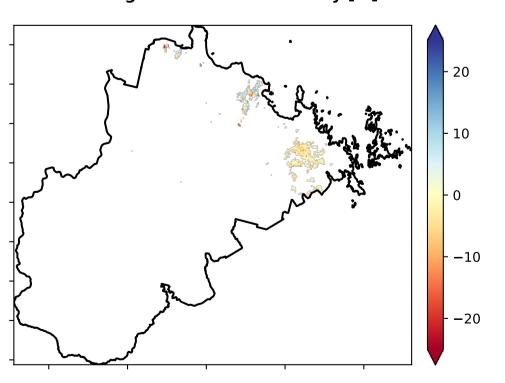
pixel. The mean

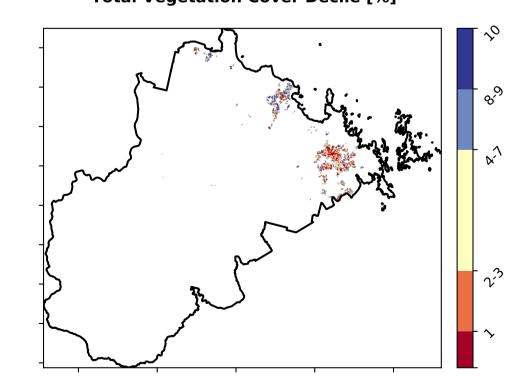
using baseline from 2001 to 2019.

is only for the month of the map

% Area protected from water erosion (>70%)

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.

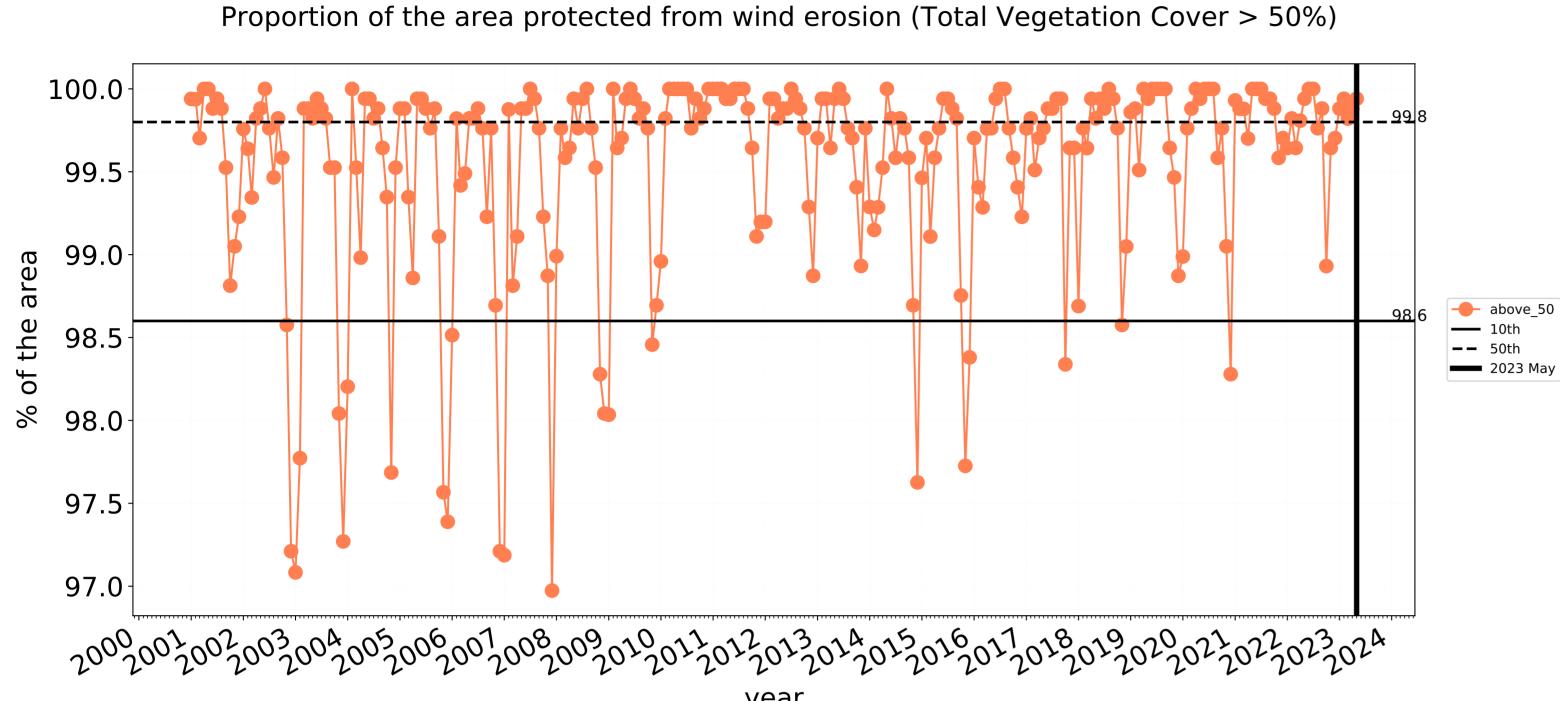


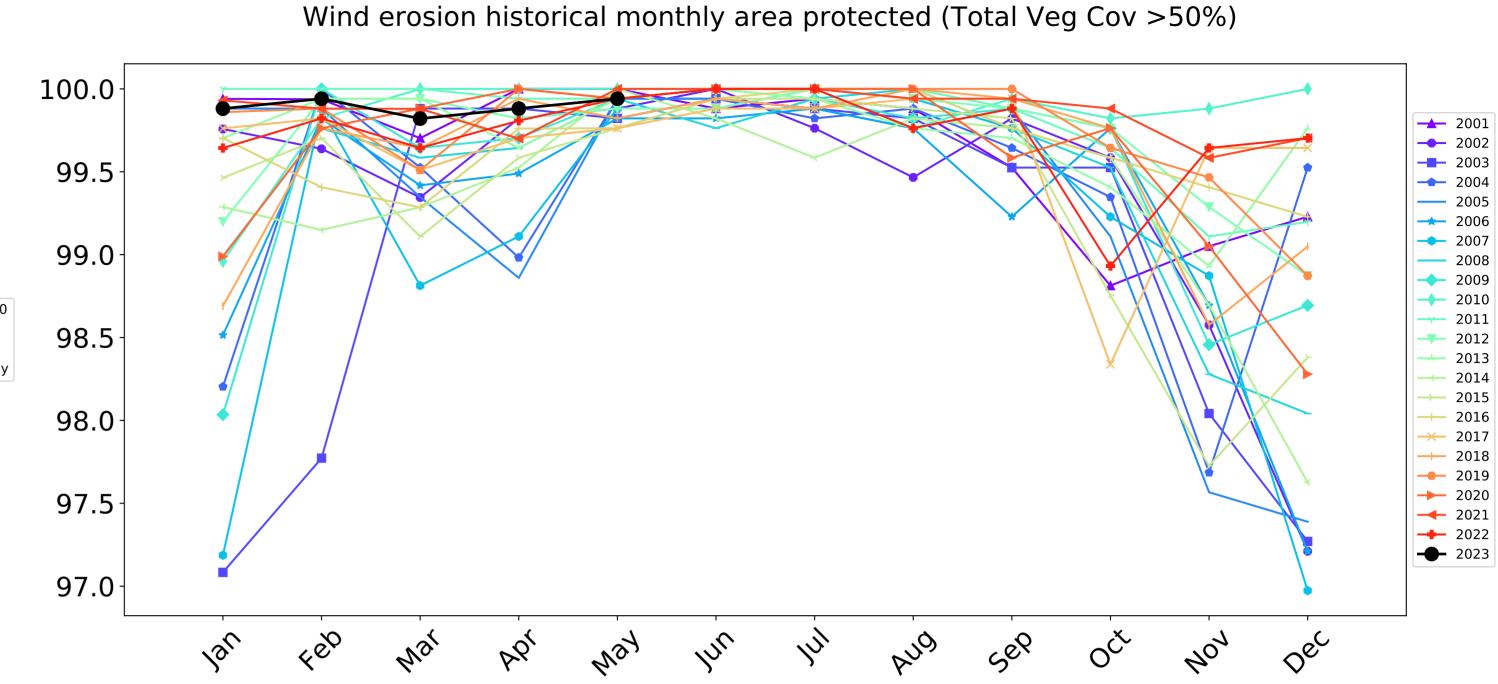


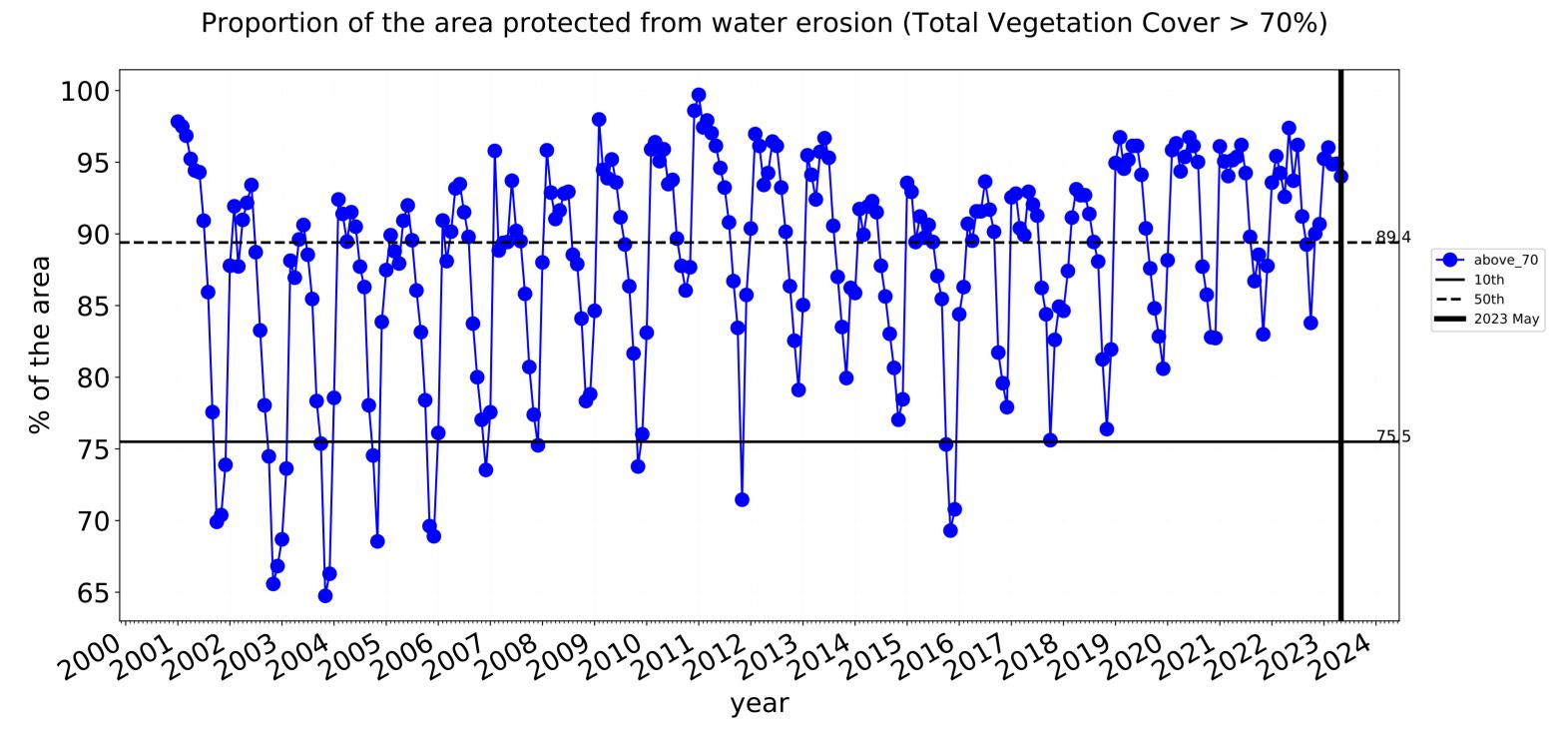


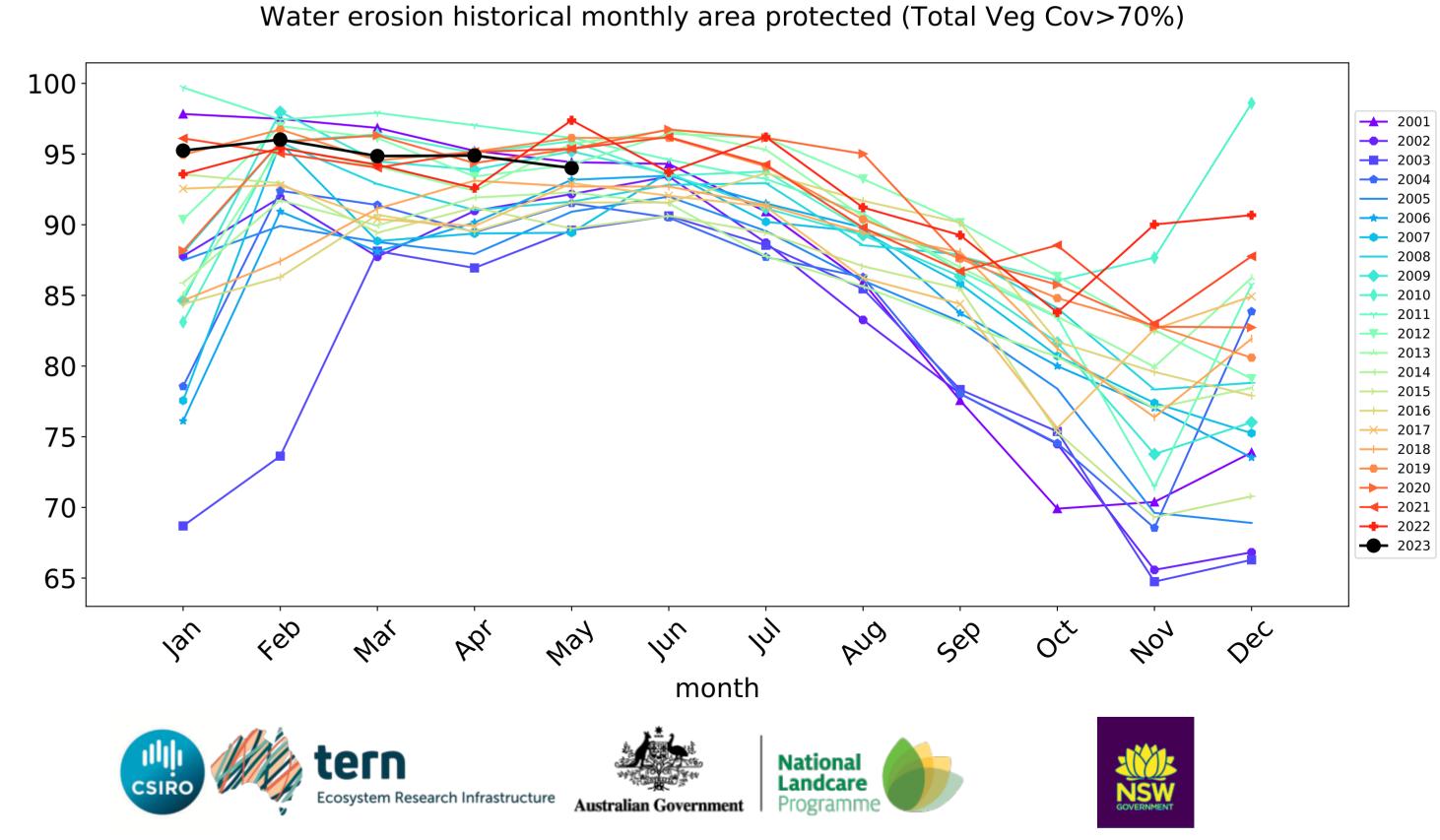


Irrigation timeseries







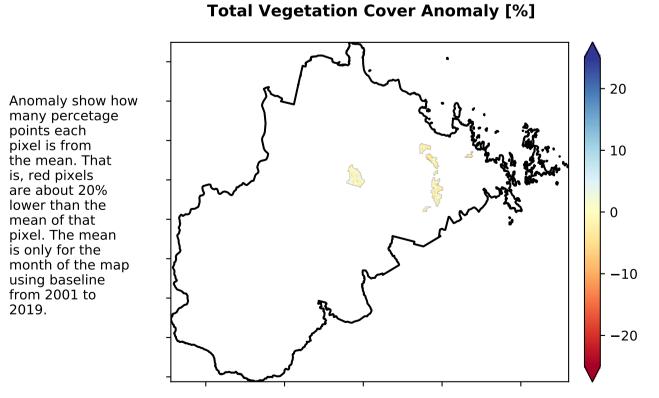


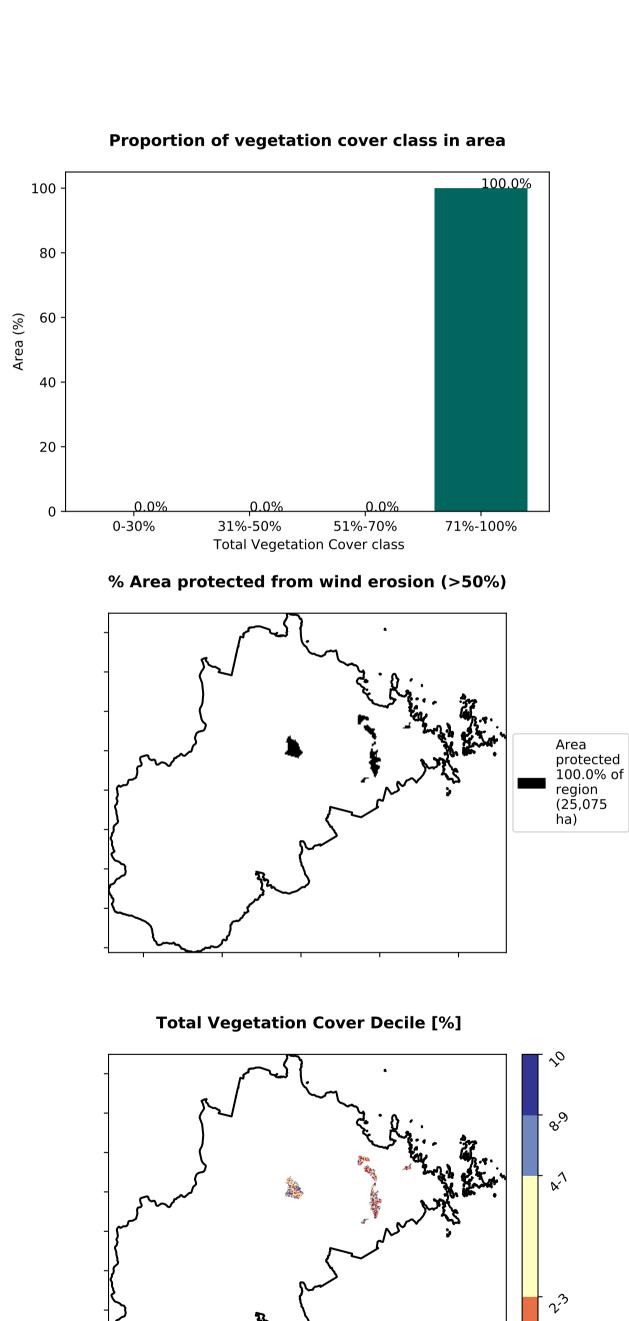
Production native forests and plantation forests

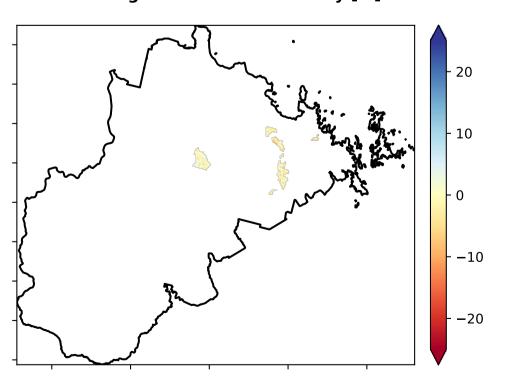
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Production native forests and plantation forests Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

Total Vegetation Cover [%]

% Area protected from water erosion (>70%) Area protected 100.0% of region (25,075 ha)







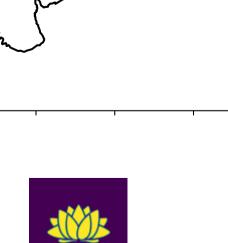


Deciles show where the pixel value lies in the

record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of

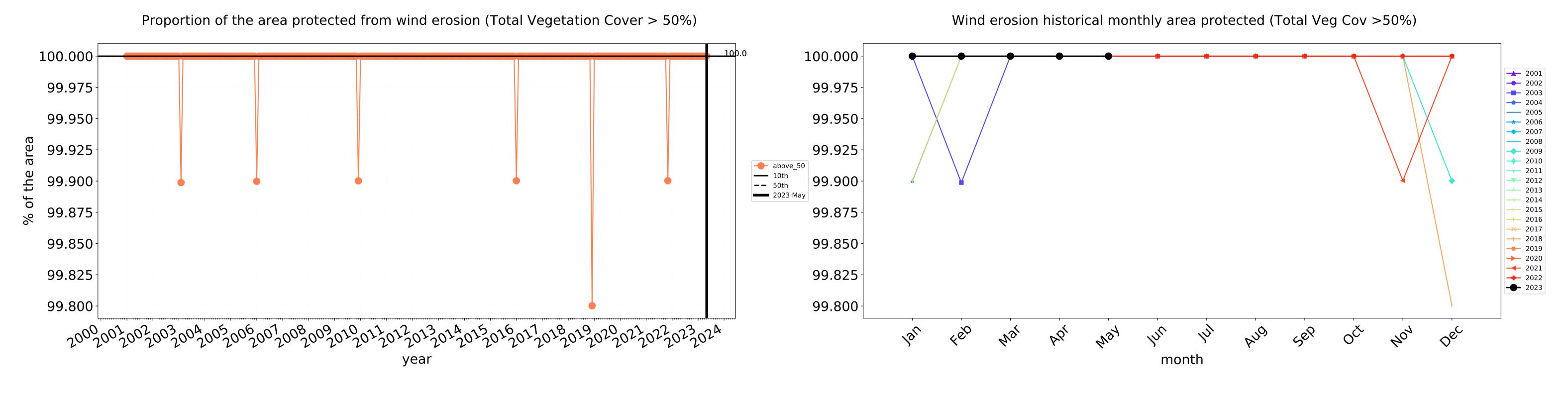
records for that month of

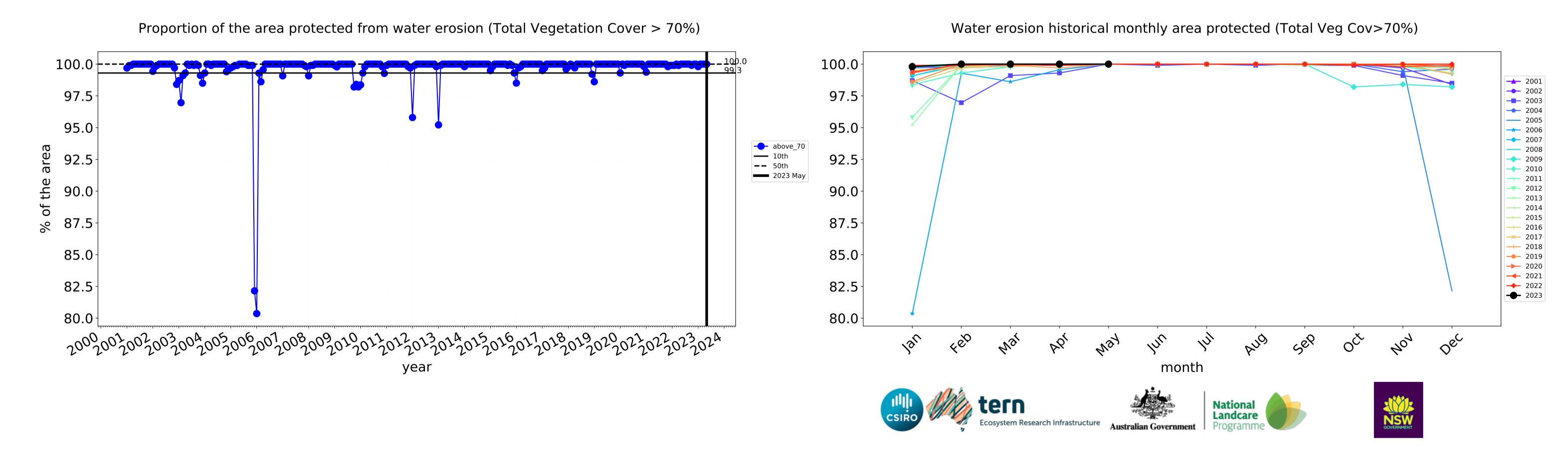
the map using baseline from 2001 to 2019.





Production native forests and plantation forests timeseries





Whitsunday_(R) (2,357,800 ha and no data 24,076 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	2,357,800	100.0% 2,357,375	99.9% 2,355,075	98.5% 2,323,275	92.8% 2,187,350	60.6% 1,428,075	22.2% 524,600
Conservation and natural environments	170,300	99.8% 170,000	99.5% 169,450	97.2% 165,500	91.0% 155,000	54.4% 92,625	20.1% 34,275
Conservation and natural environments non forest	28,100	99.7% 28,025	99.0% 27,825	94.7% 26,600	80.7% 22,675	19.8% 5,550	2.9% 825
Conservation and natural environments Woodland forest	57,100	99.9% 57,050	99.9% 57,025	98.9% 56,450	94.8% 54,150	64.4% 36,800	23.1% 13,200
Conservation and natural environments Forest (non woodland)	85,100	99.8% 84,925	99.4% 84,600	96.9% 82,450	91.9% 78,175	59.1% 50,275	23.8% 20,250
Agriculture	2,084,925	100.0% 2,084,900	100.0% 2,084,200	99.0% 2,063,425	93.6% 1,952,475	62.3% 1,297,875	22.9% 478,200
Grazing	2,042,500	100.0% 2,042,475	100.0% 2,041,800	99.1% 2,023,525	94.1% 1,921,600	63.2% 1,291,725	23.3% 476,725
Grazing non forest	1,171,825	100.0% 1,171,800	99.9% 1,171,125	98.5% 1,154,775	91.0% 1,066,475	56.1% 657,575	21.0% 246,625
Grazing Woodland forest	819,825	100.0% 819,825	100.0% 819,825	99.8% 818,350	98.4% 807,075	74.0% 606,425	27.1% 222,000
Grazing - Forest (non woodland)	50,850	100.0% 50,850	100.0% 50,850	99.1% 50,400	94.5% 48,050	54.5% 27,725	15.9% 8,100
Irrigation	42,125	100.0% 42,125	99.9% 42,100	94.0% 39,600	72.6% 30,600	14.2% 6,000	3.4% 1,450
Production native forests and plantation forests	25,075	100.0% 25,075	100.0% 25,075	100.0% 25,075	99.7% 25,000	73.0% 18,300	24.5% 6,150







