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:

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: September 2023

Vegetation Cover Sep 2023

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

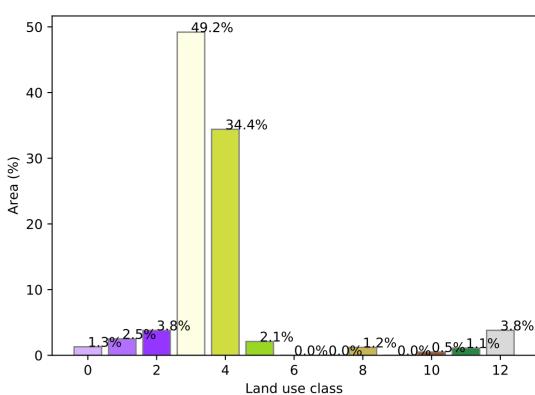
using baseline from 2001 to

2019.

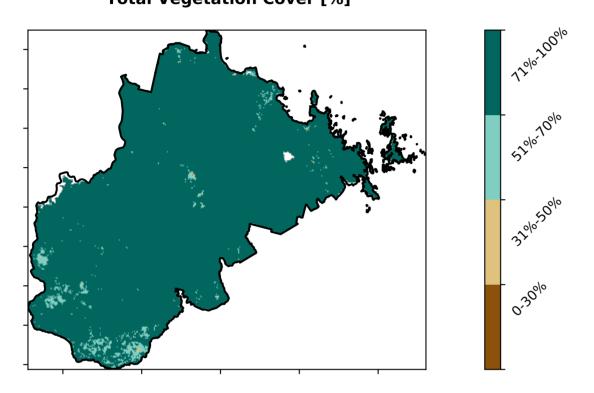
the mean. That is, red pixels are about 20% lower than the

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

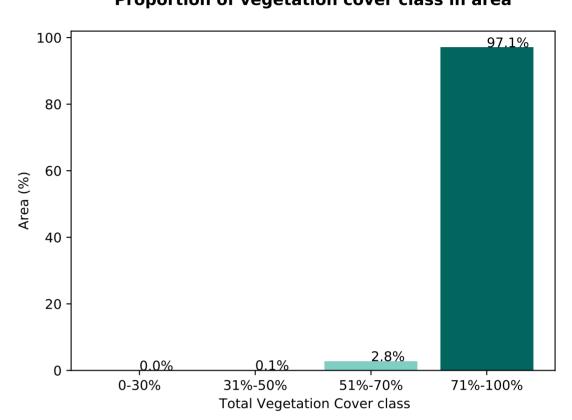
Proportion of each land class in area

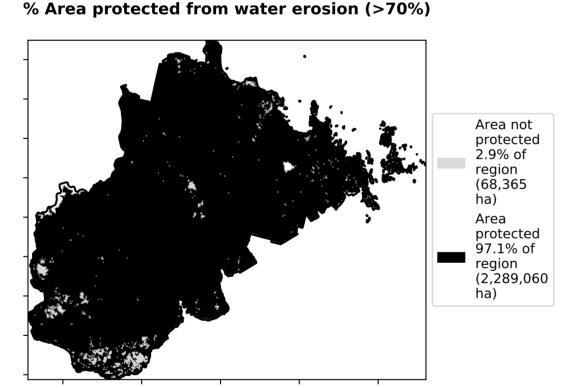


Total Vegetation Cover [%]

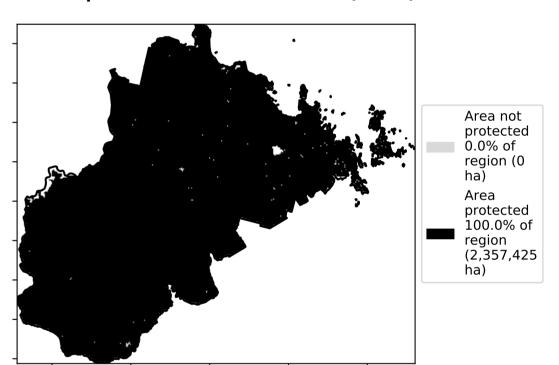


Proportion of vegetation cover class in area

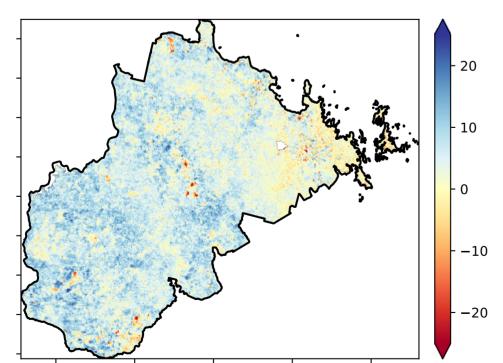




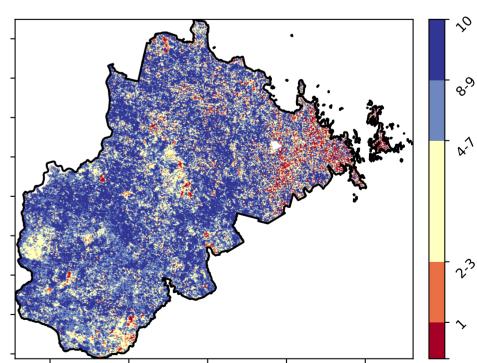
% Area protected from wind erosion (>50%)



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.

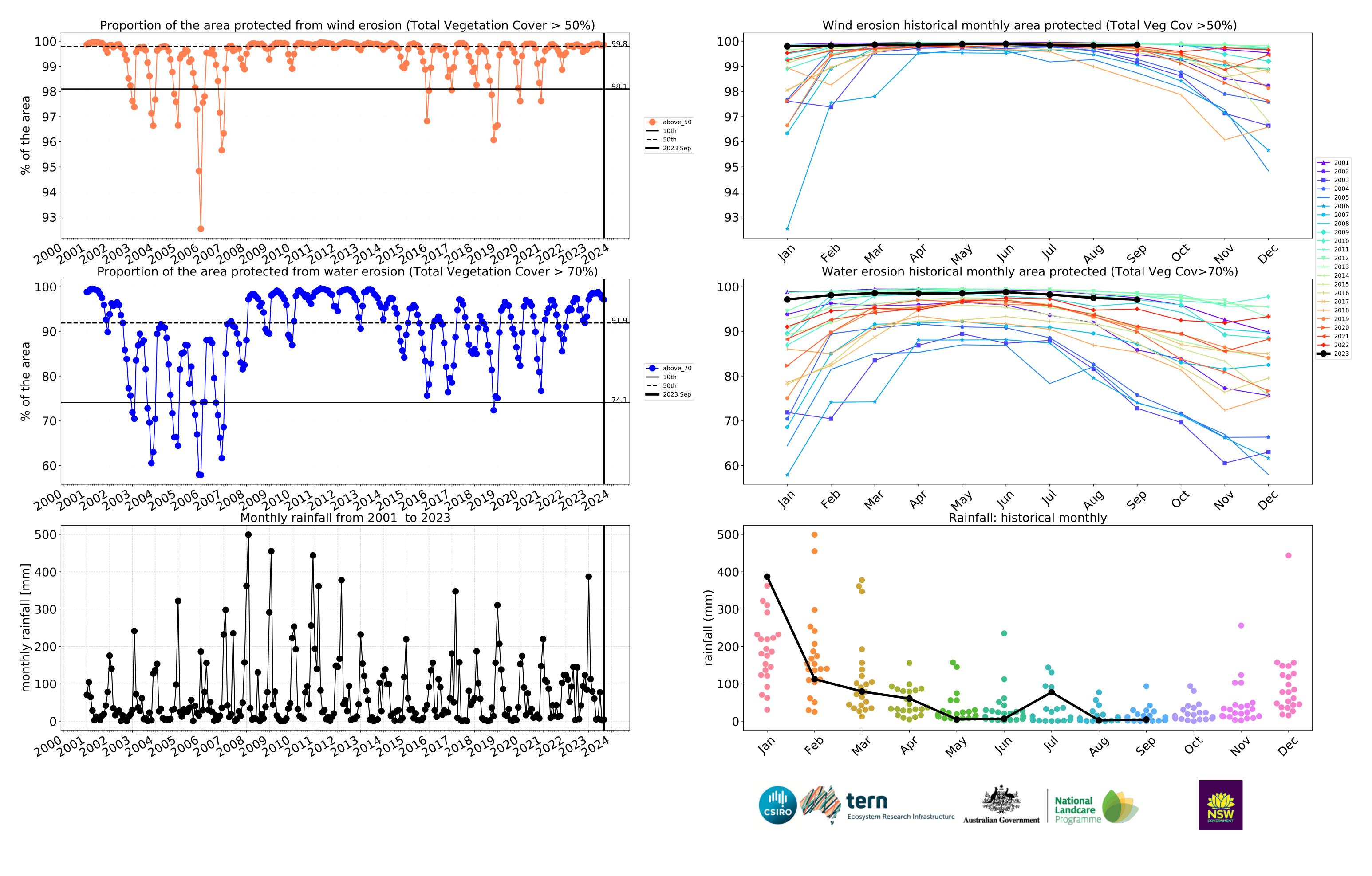








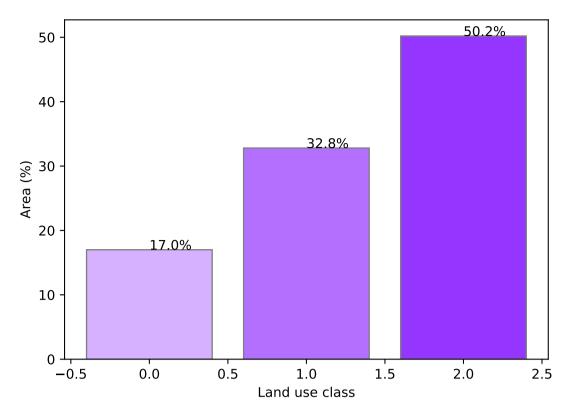




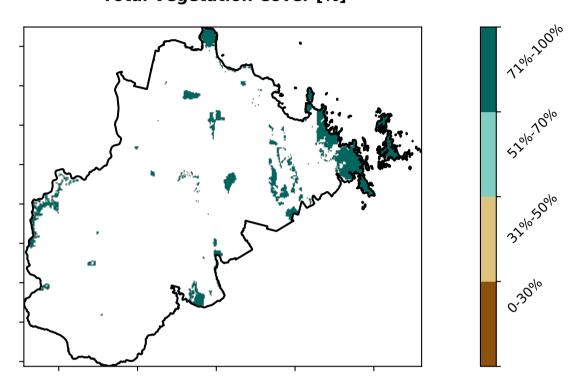
Conservation and natural environments

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

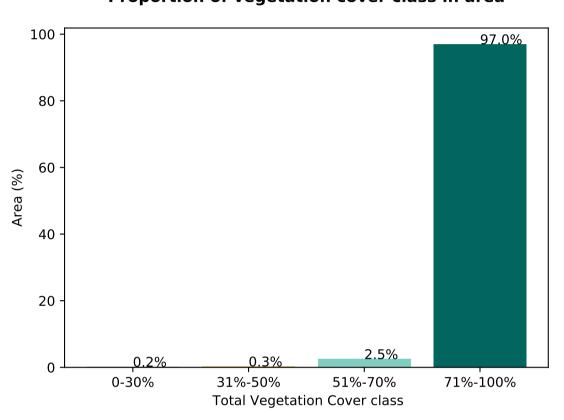
Proportion of each land class in area



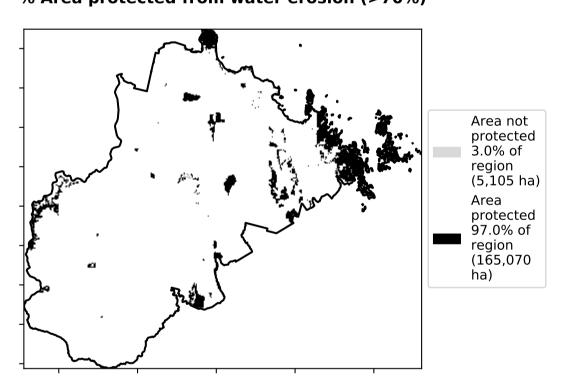
Total Vegetation Cover [%]



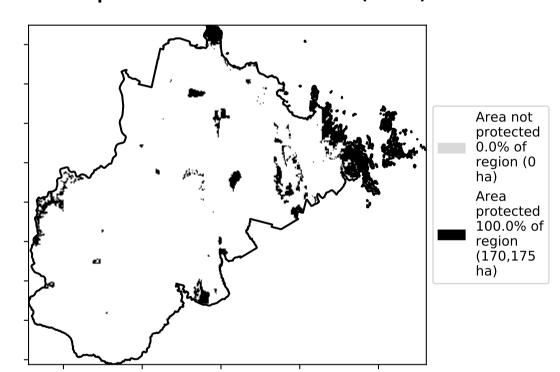
Proportion of vegetation cover class in area



% 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

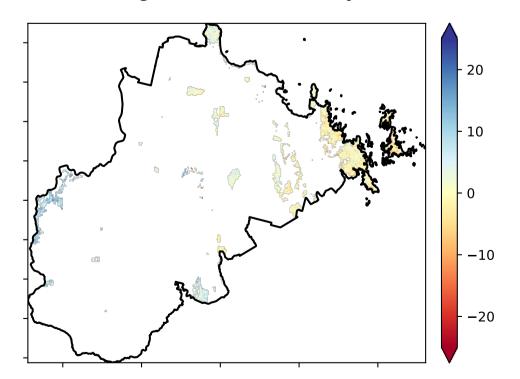
the mean. That is, red pixels

are about 20% lower than the mean of that

pixel. The mean

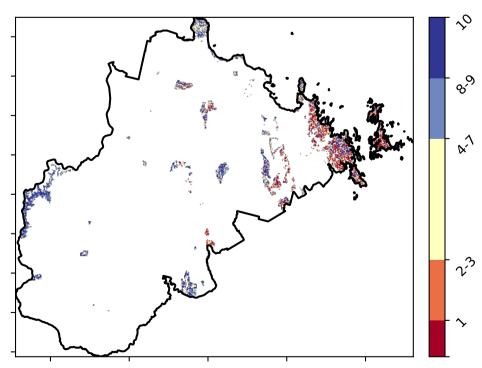
using baseline from 2001 to 2019.

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 [%]



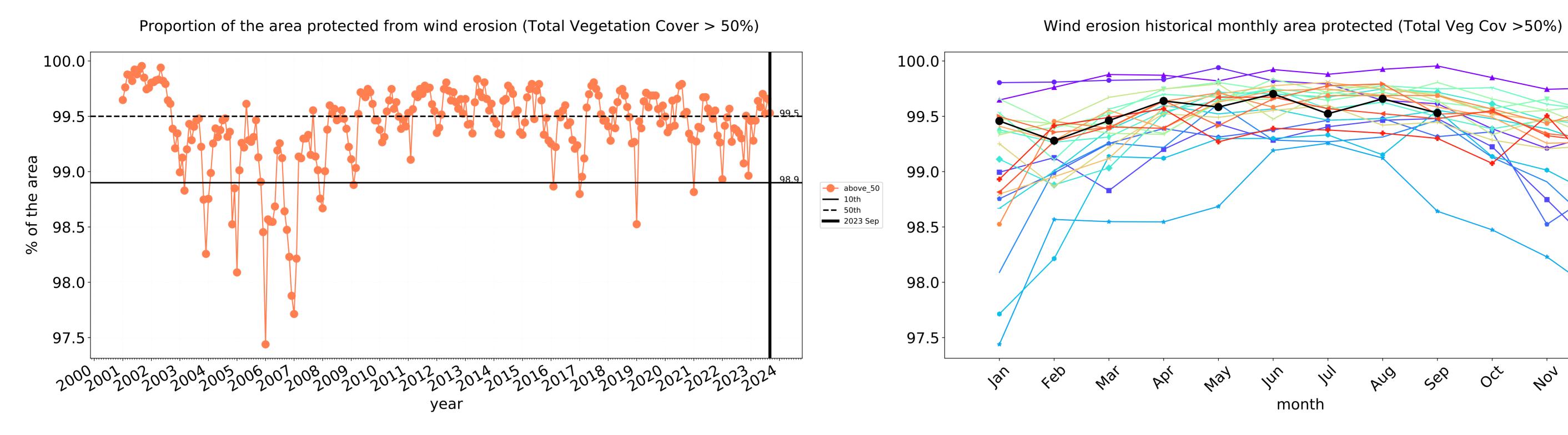


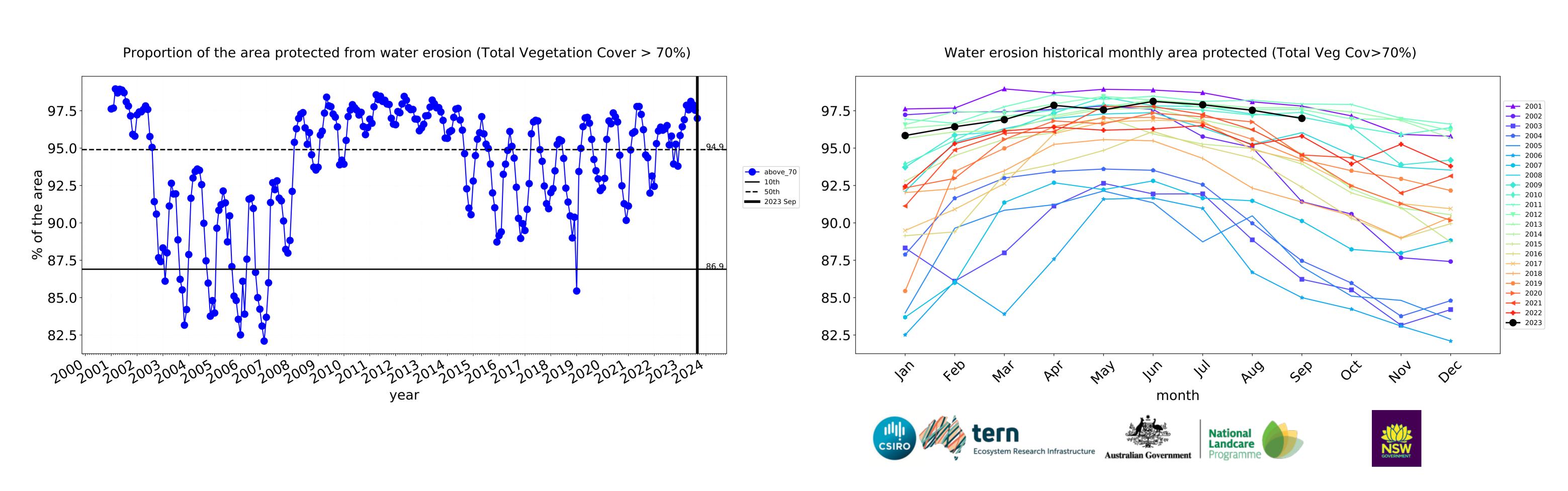






Conservation and natural environments timeseries





Conservation and natural environments non forest

Land use and forest cover 1 Conservation and natural environments - Nonforest

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

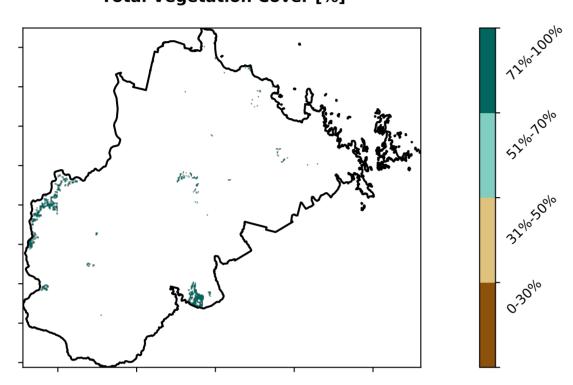
Anomaly show how many percetage points each pixel is from

the mean. That

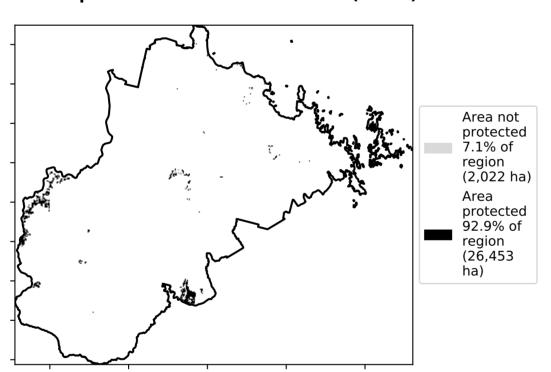
is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map

using baseline from 2001 to 2019.

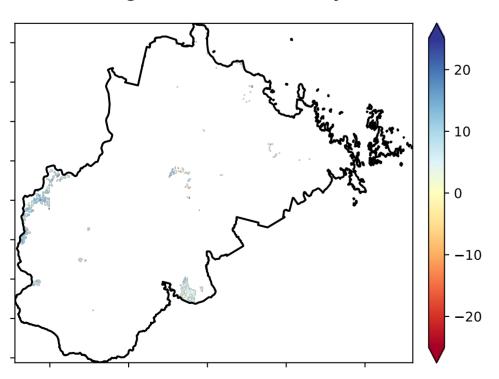
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

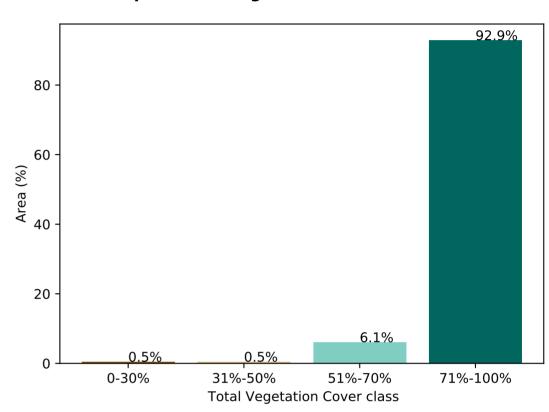


Total Vegetation Cover Anomaly [%]

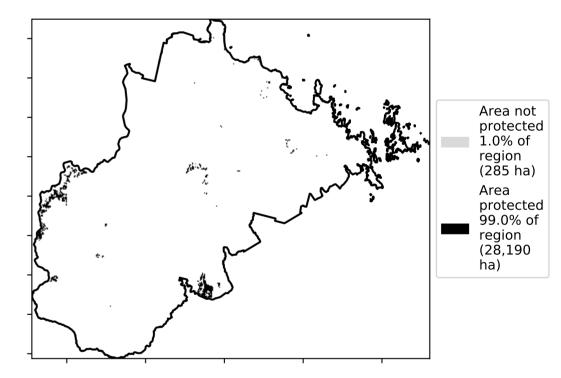


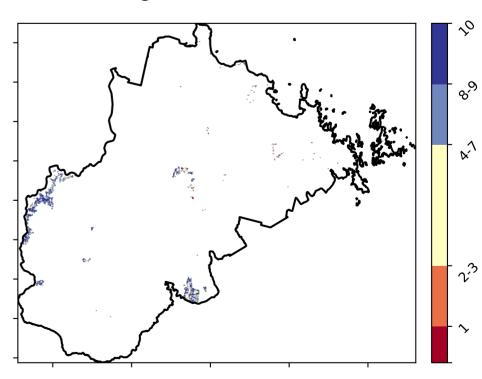
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





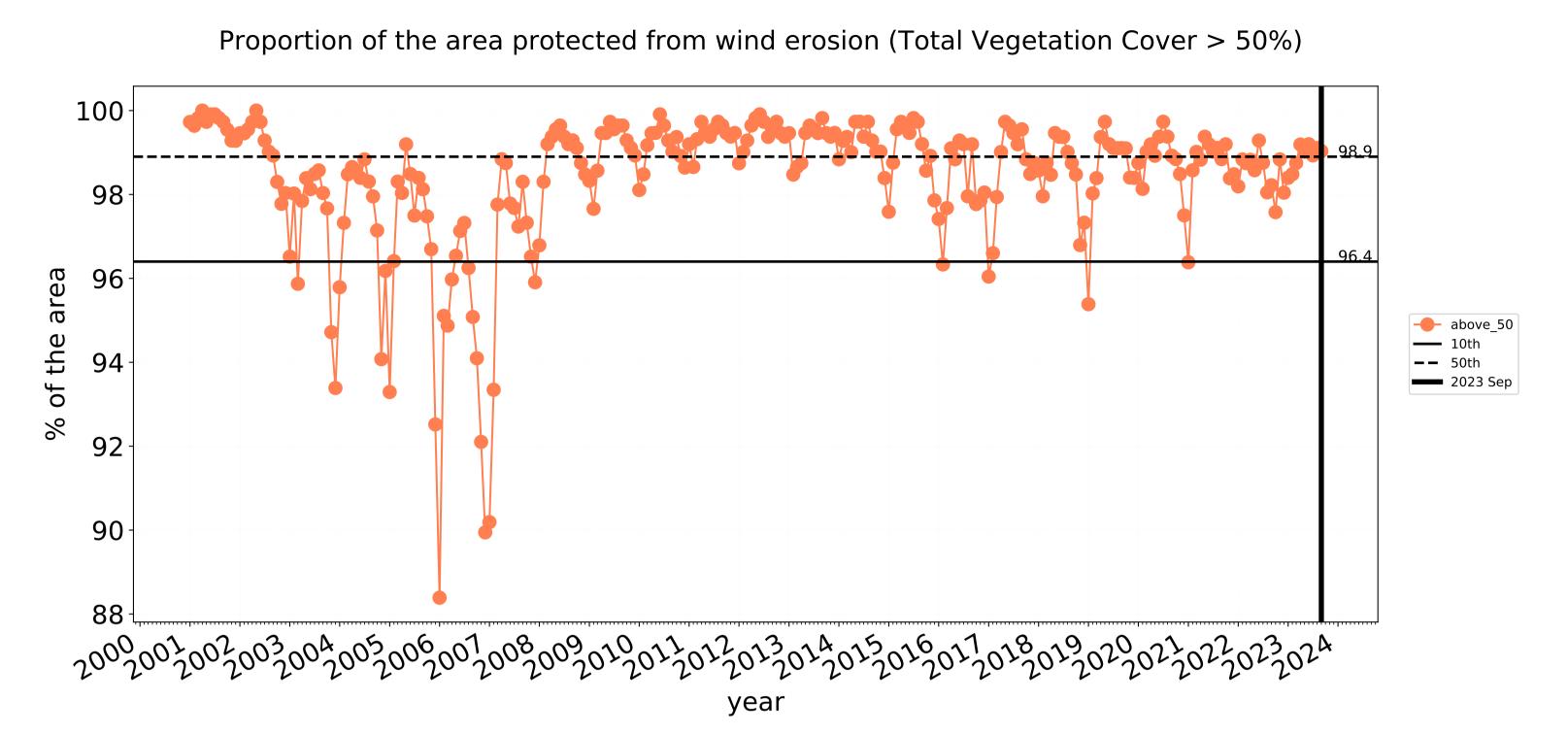


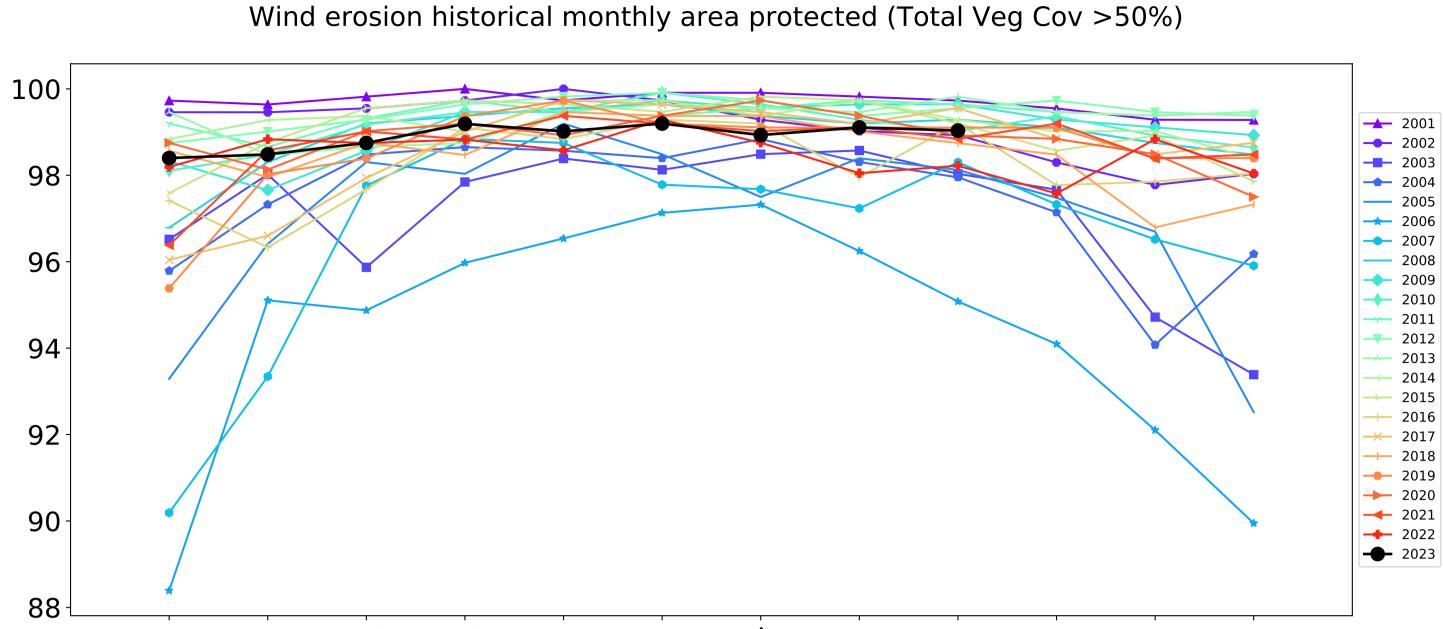






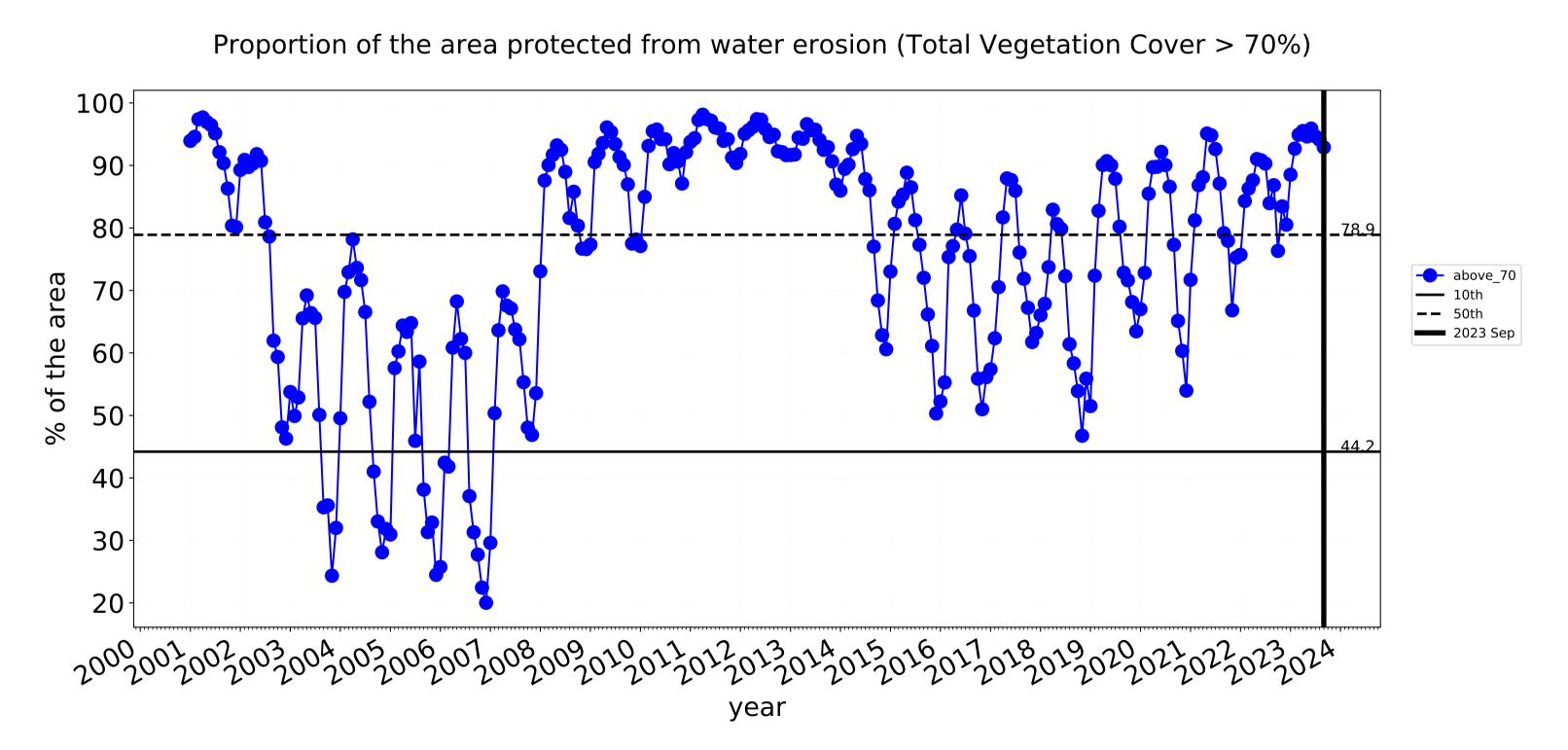
Conservation and natural environments non forest timeseries

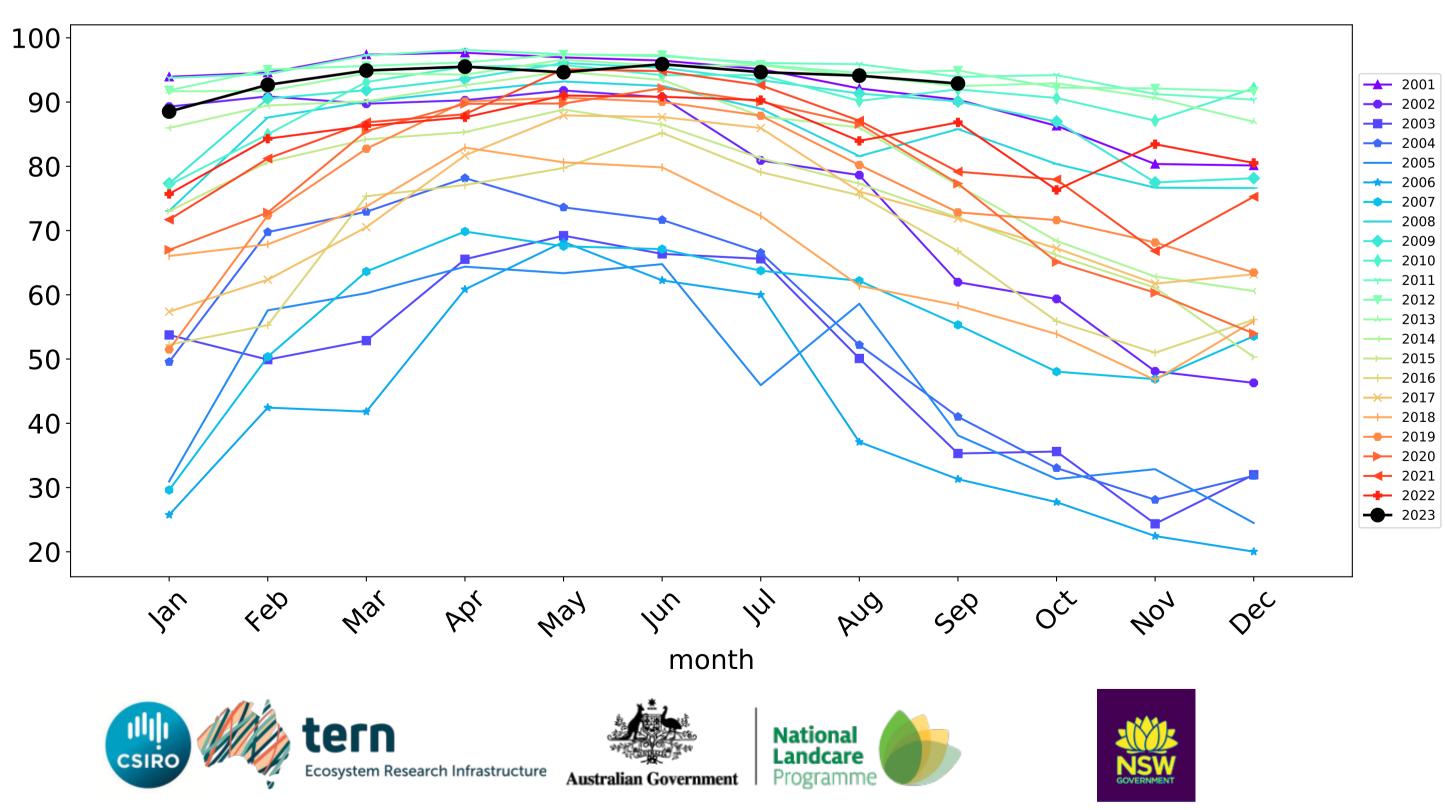




month

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

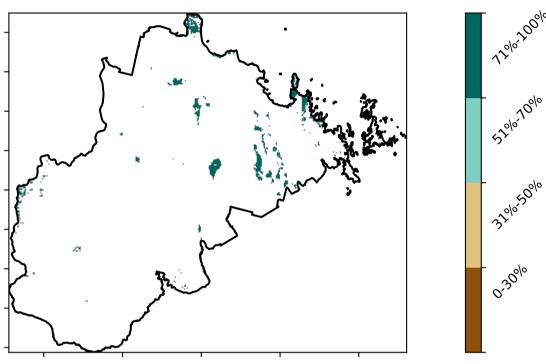




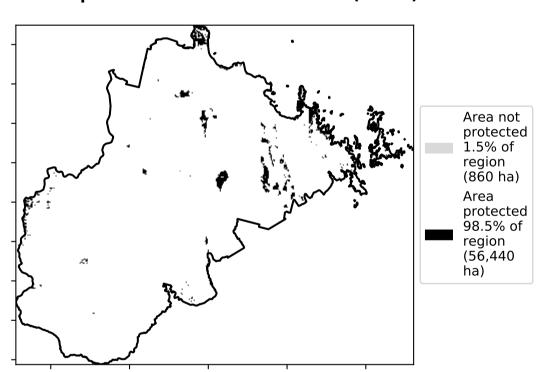
Conservation and natural environments Woodland forest

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)

Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



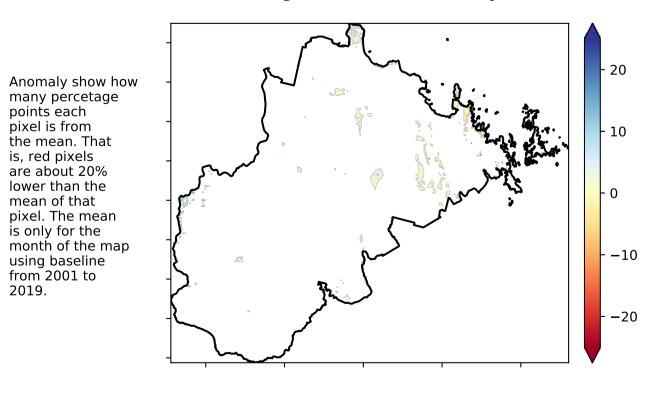
Total Vegetation Cover Anomaly [%]

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pixel. The mean

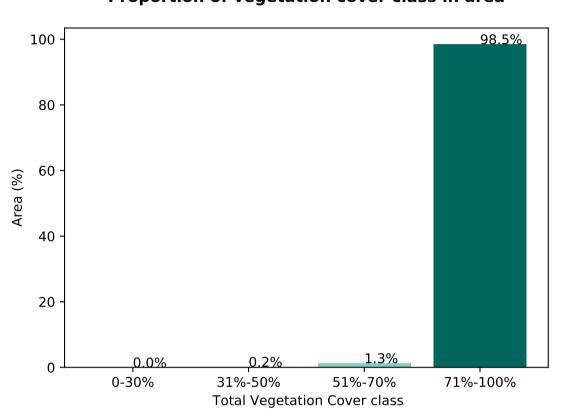
using baseline from 2001 to 2019.

is only for the month of the map

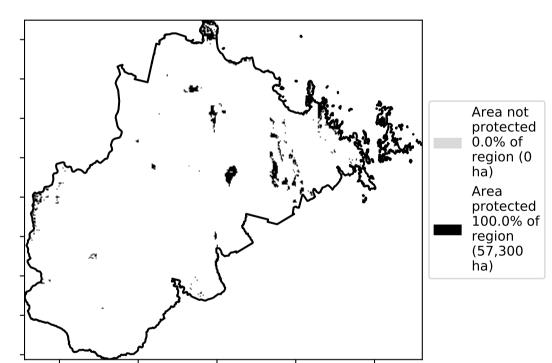


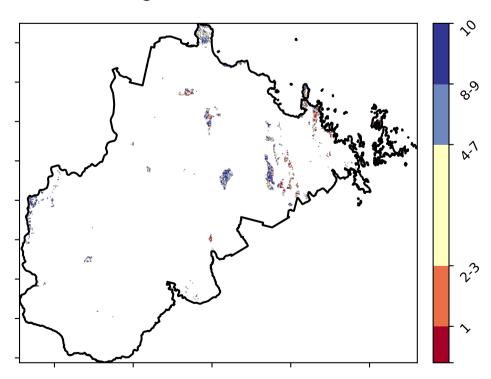
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





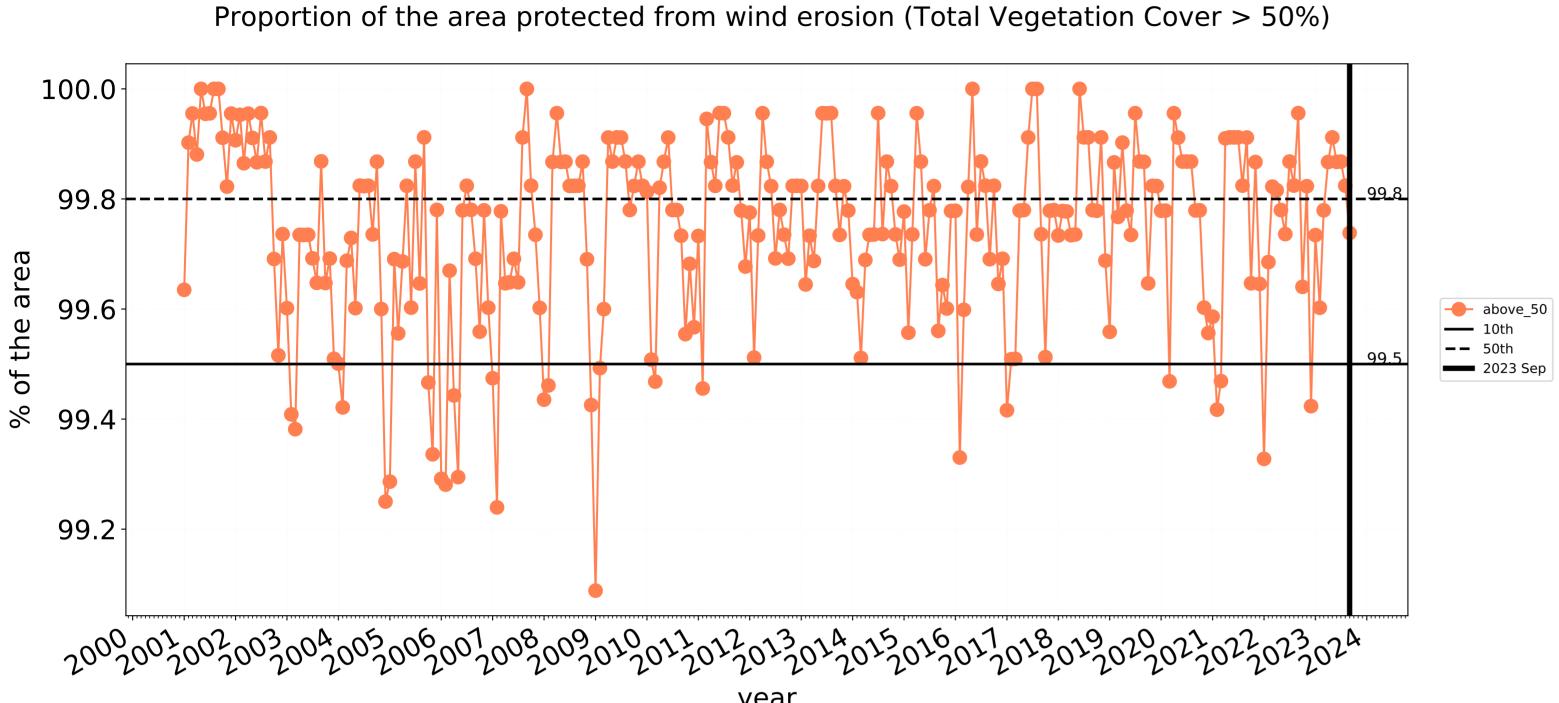


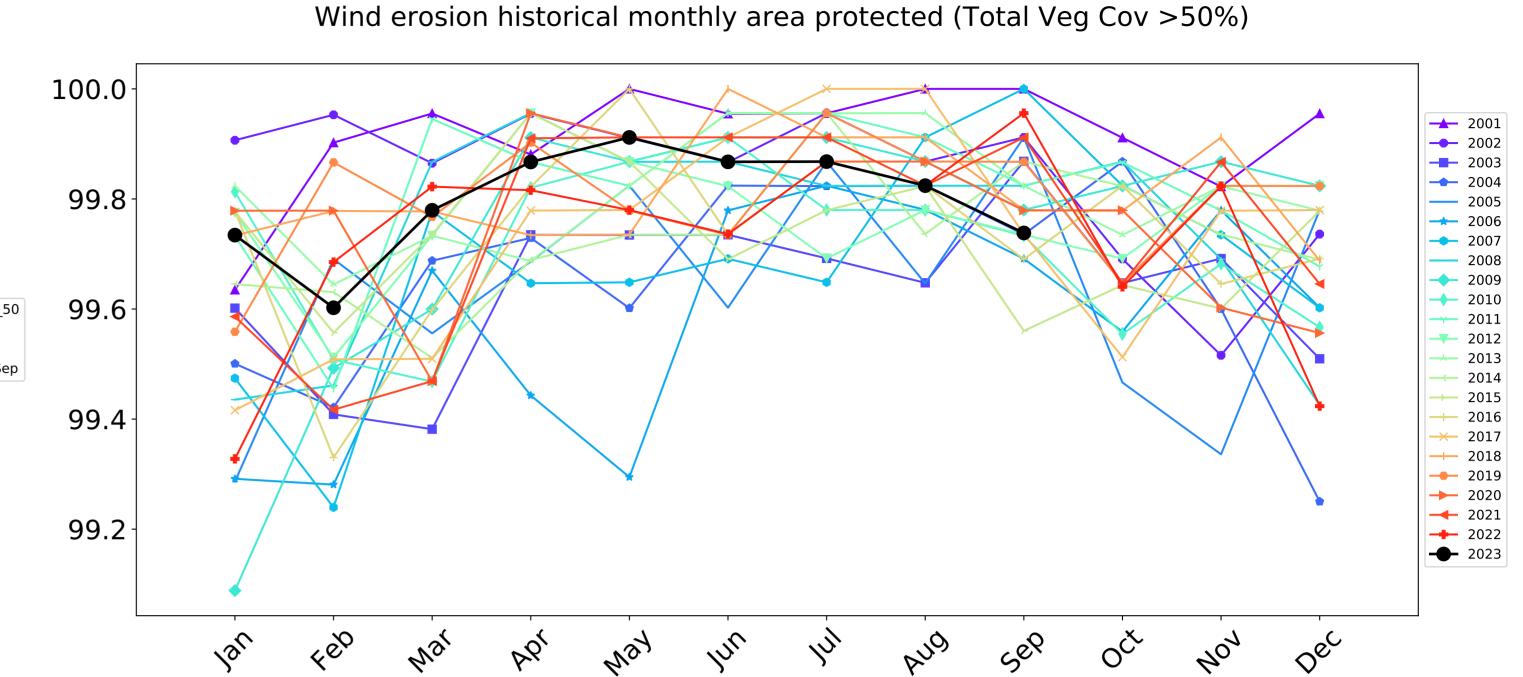




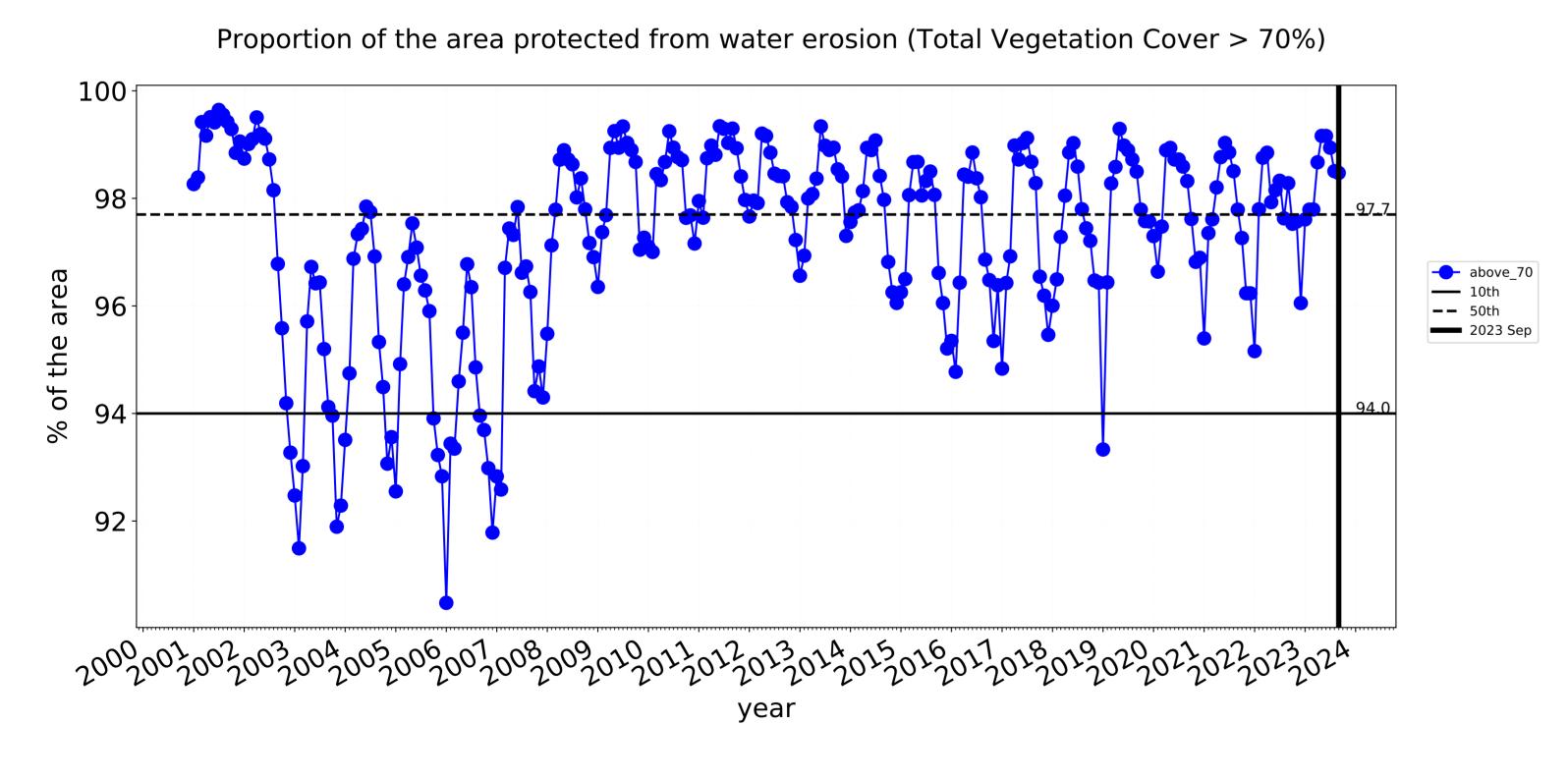


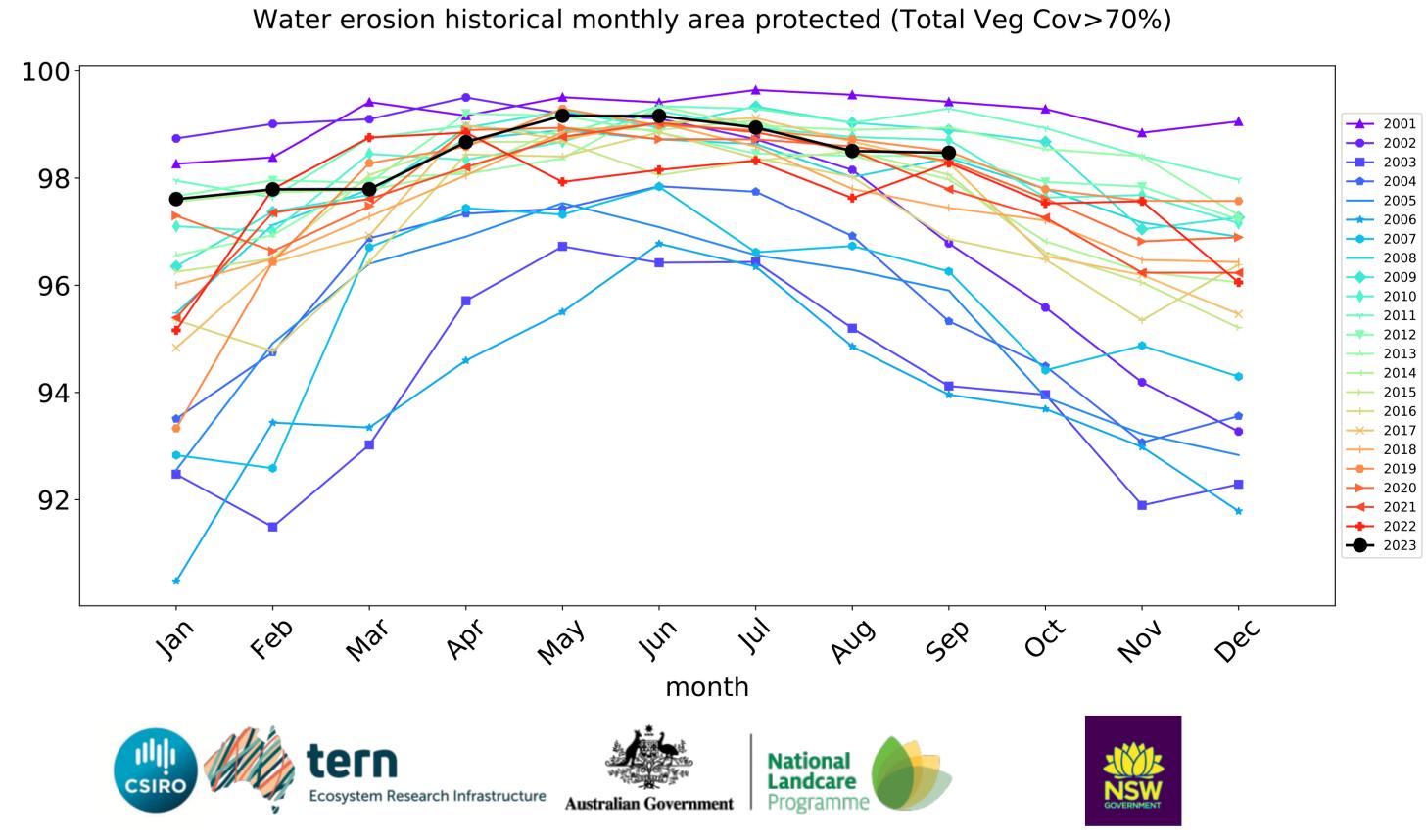
Conservation and natural environments Woodland forest timeseries





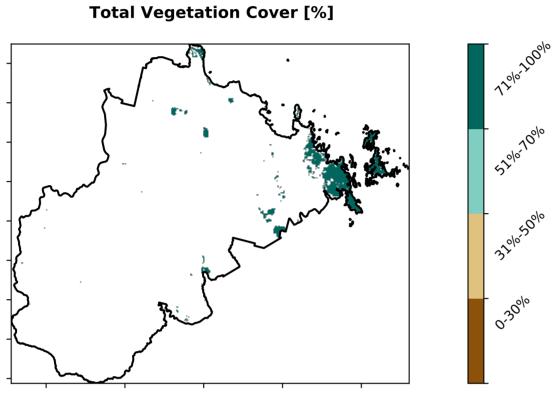
month

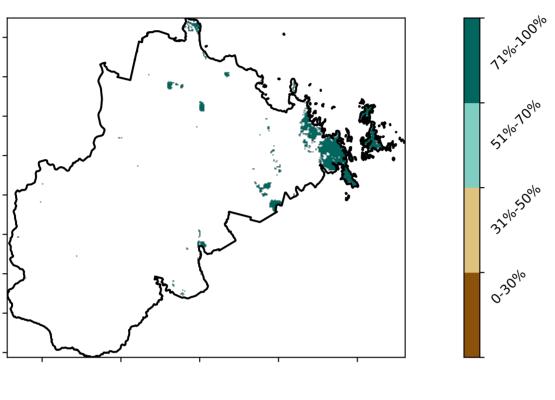


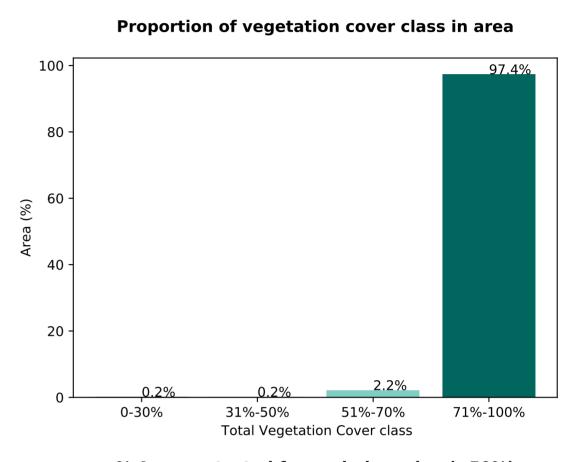


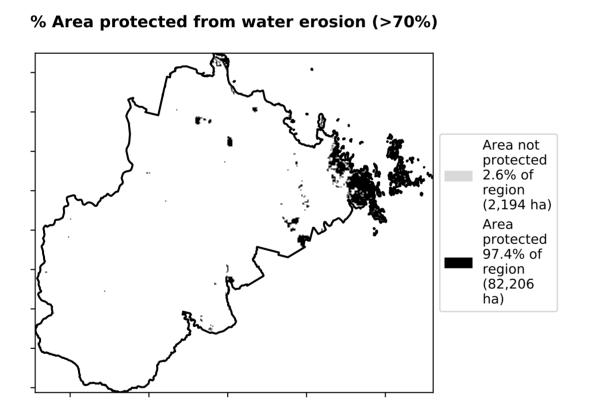
Conservation and natural environments Forest (non woodland)

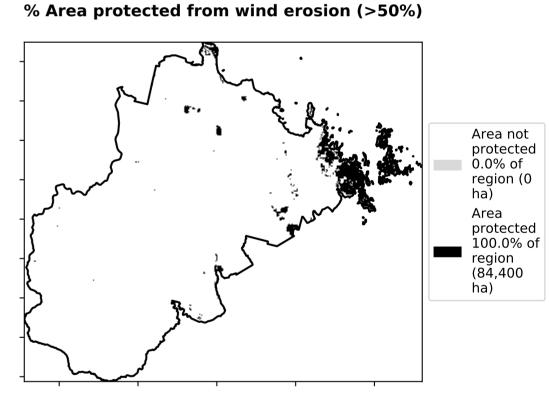
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Conservation and natural environments - Non-Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

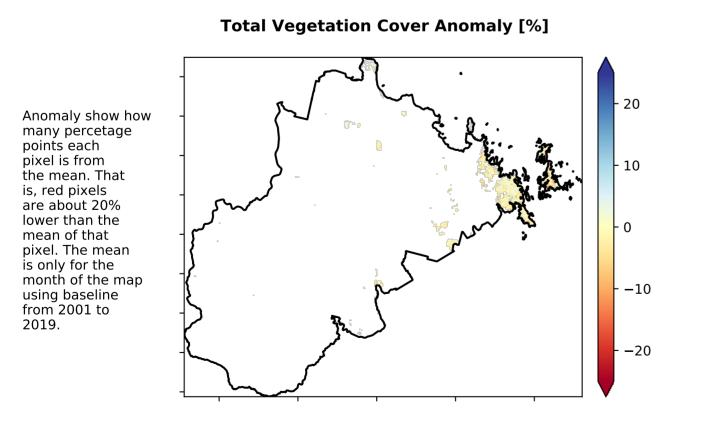




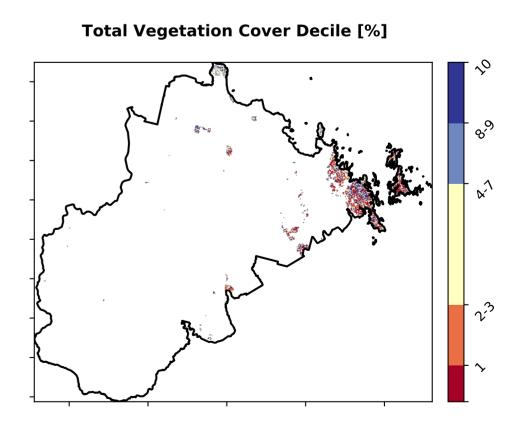








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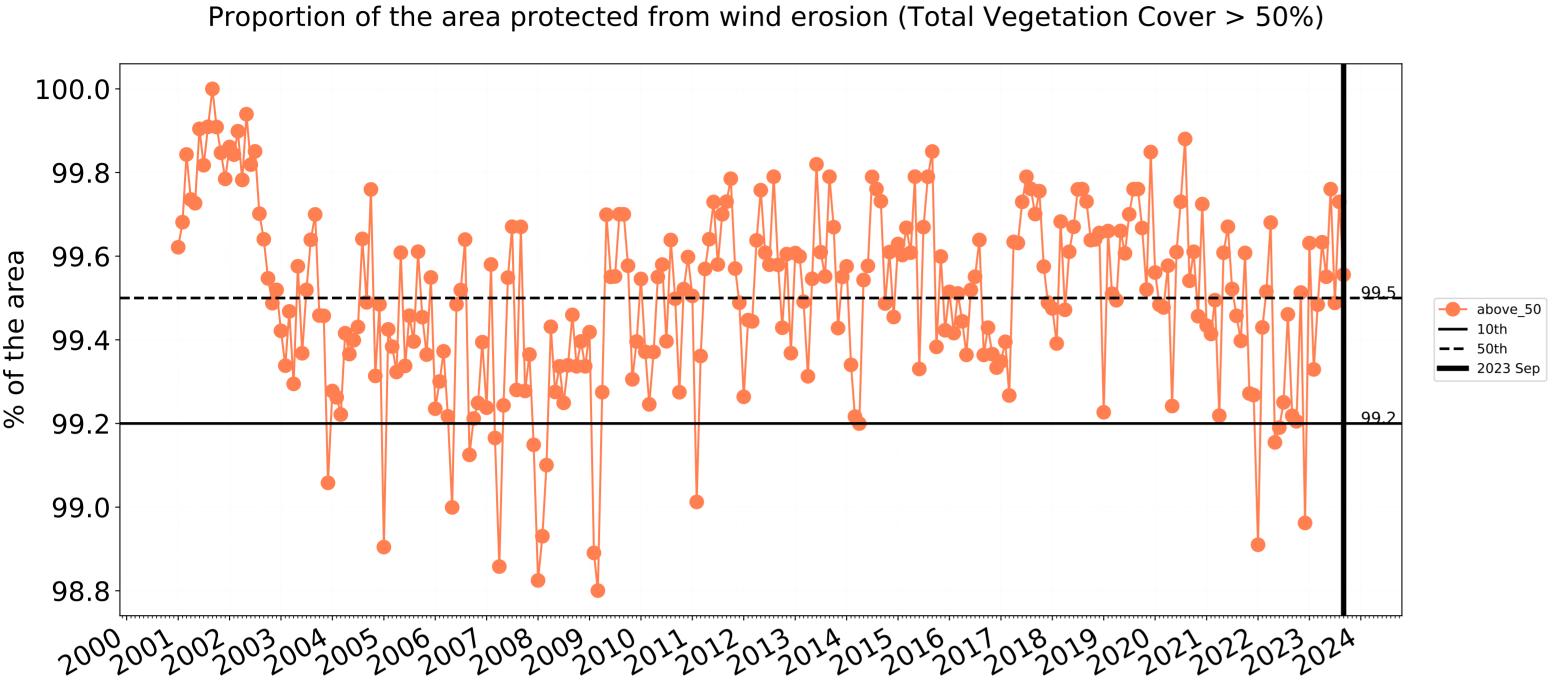


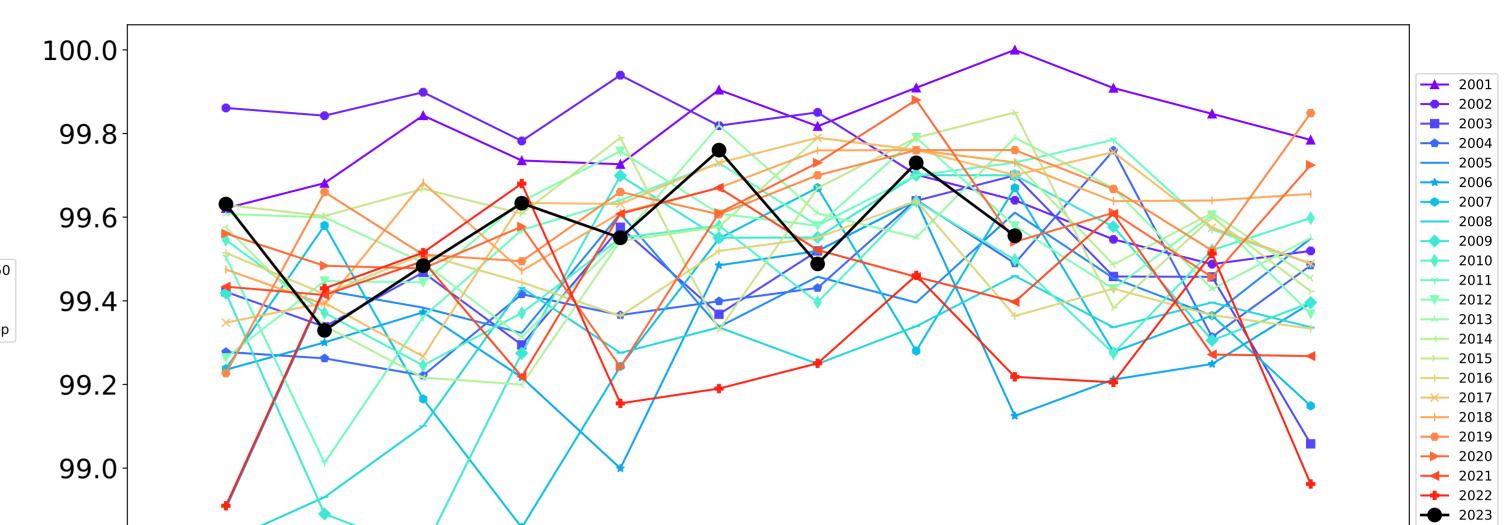








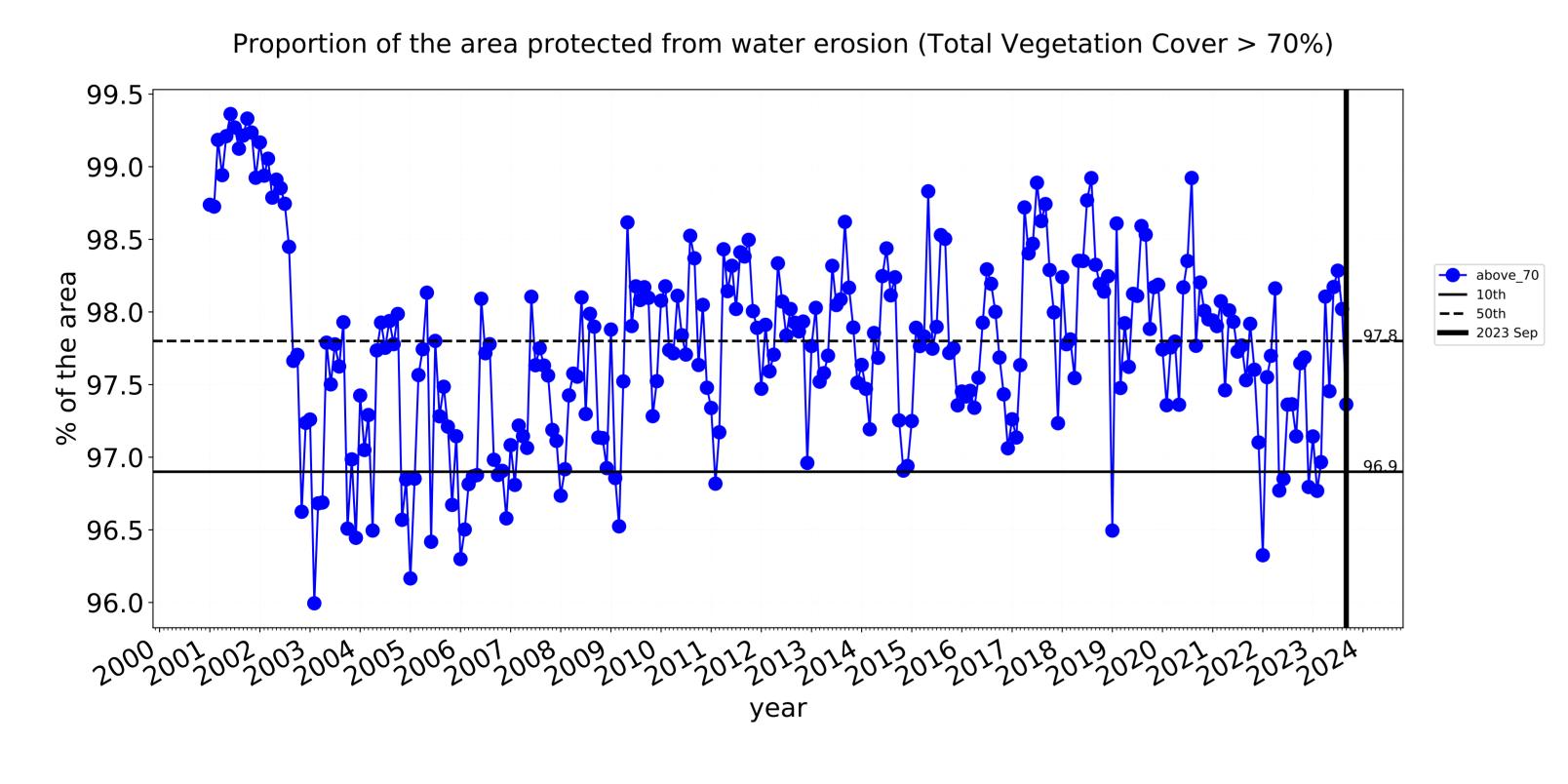


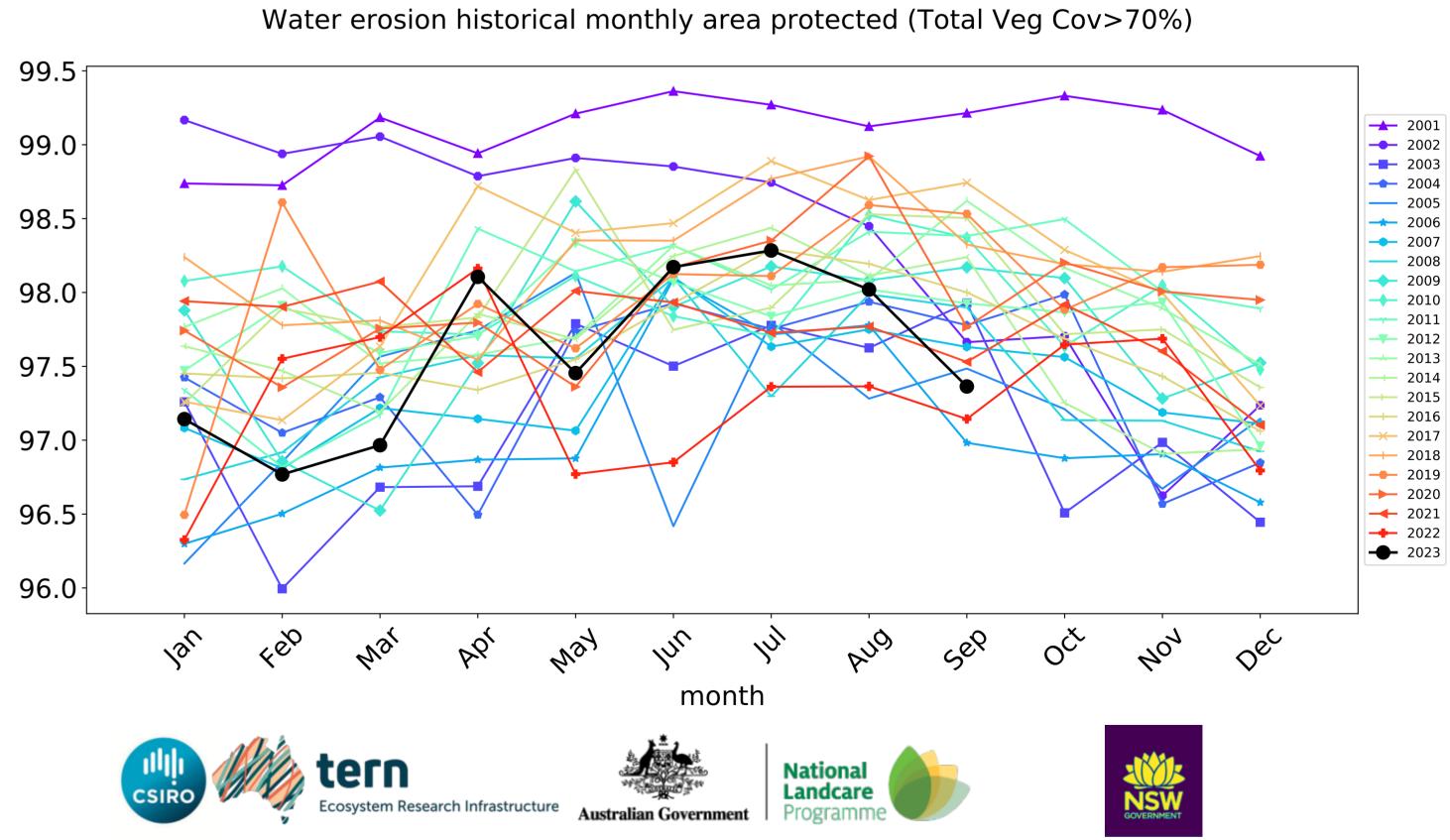


month

98.8

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





Agriculture

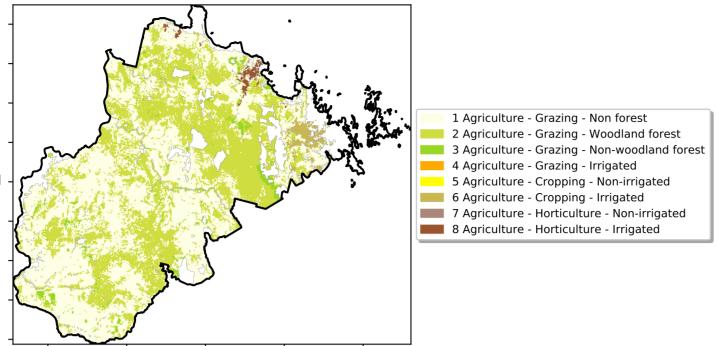
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

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

pixel. The mean

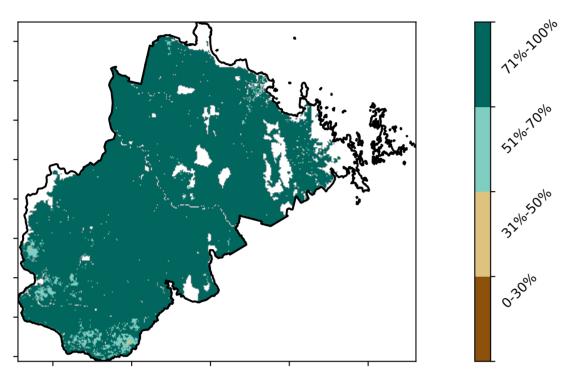
using baseline from 2001 to 2019.

is only for the month of the map

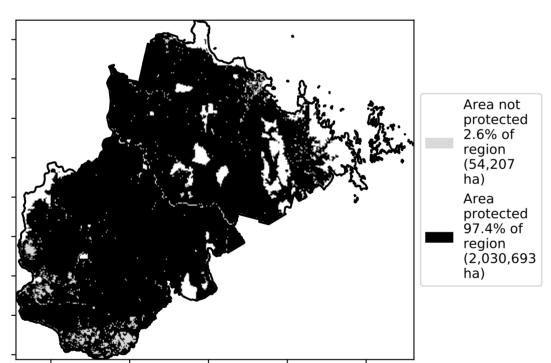


Total Vegetation Cover [%]

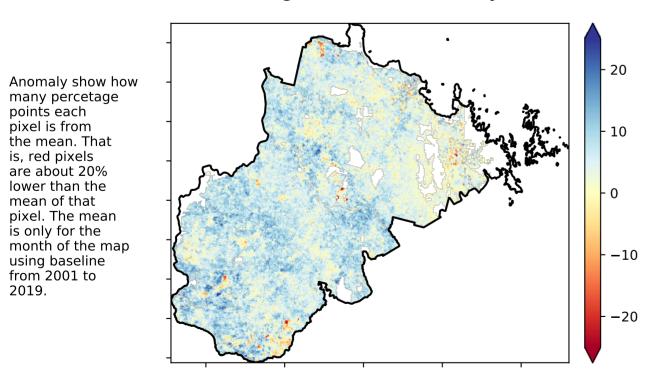
Land use and forest cover



% Area protected from water erosion (>70%)

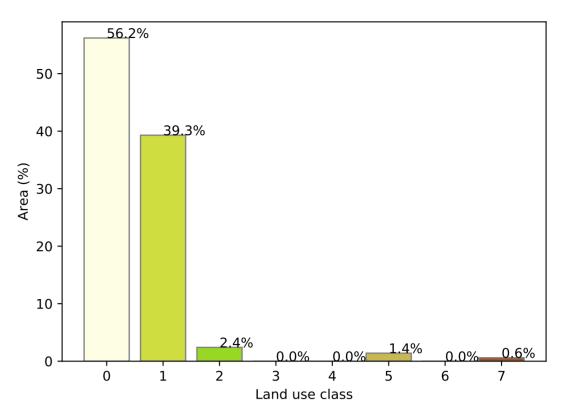


Total Vegetation Cover Anomaly [%]

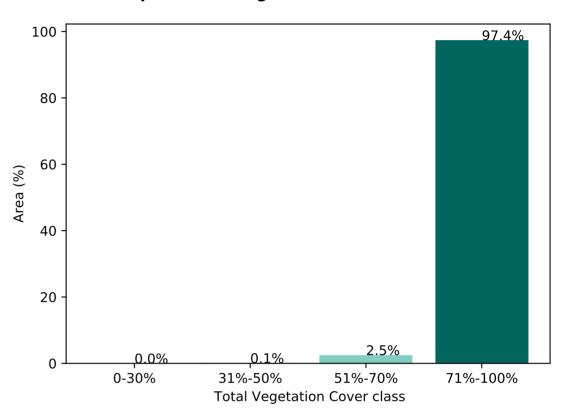


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

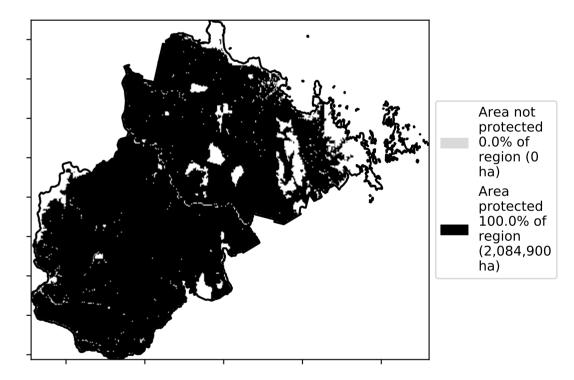
Proportion of each land class in area

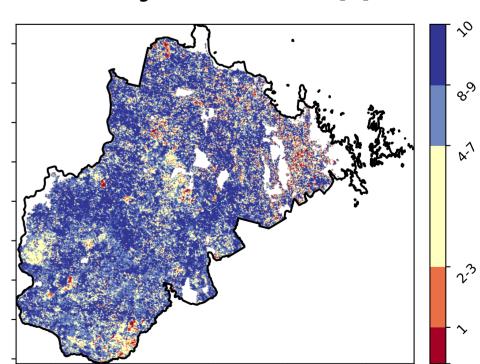


Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





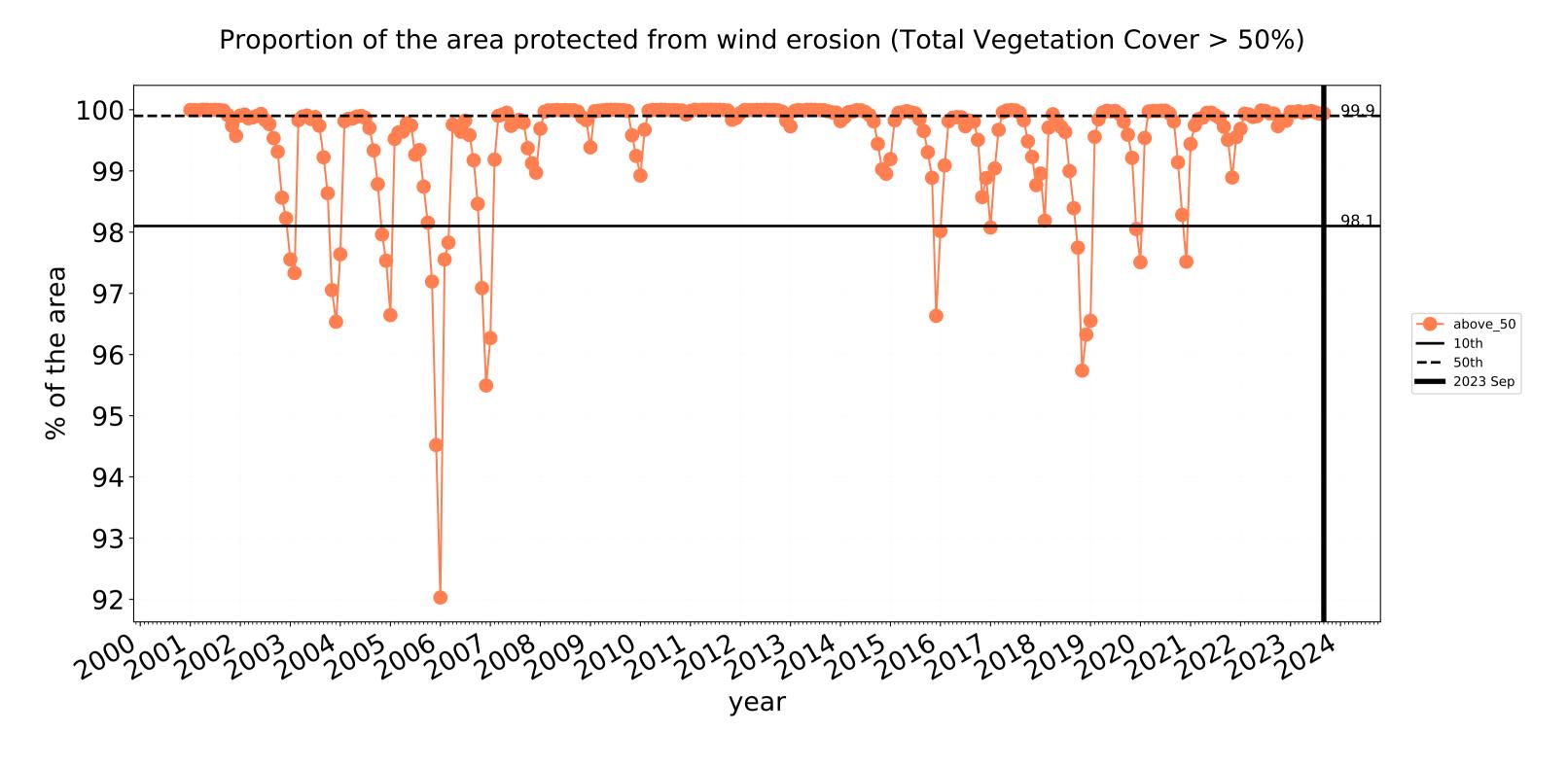


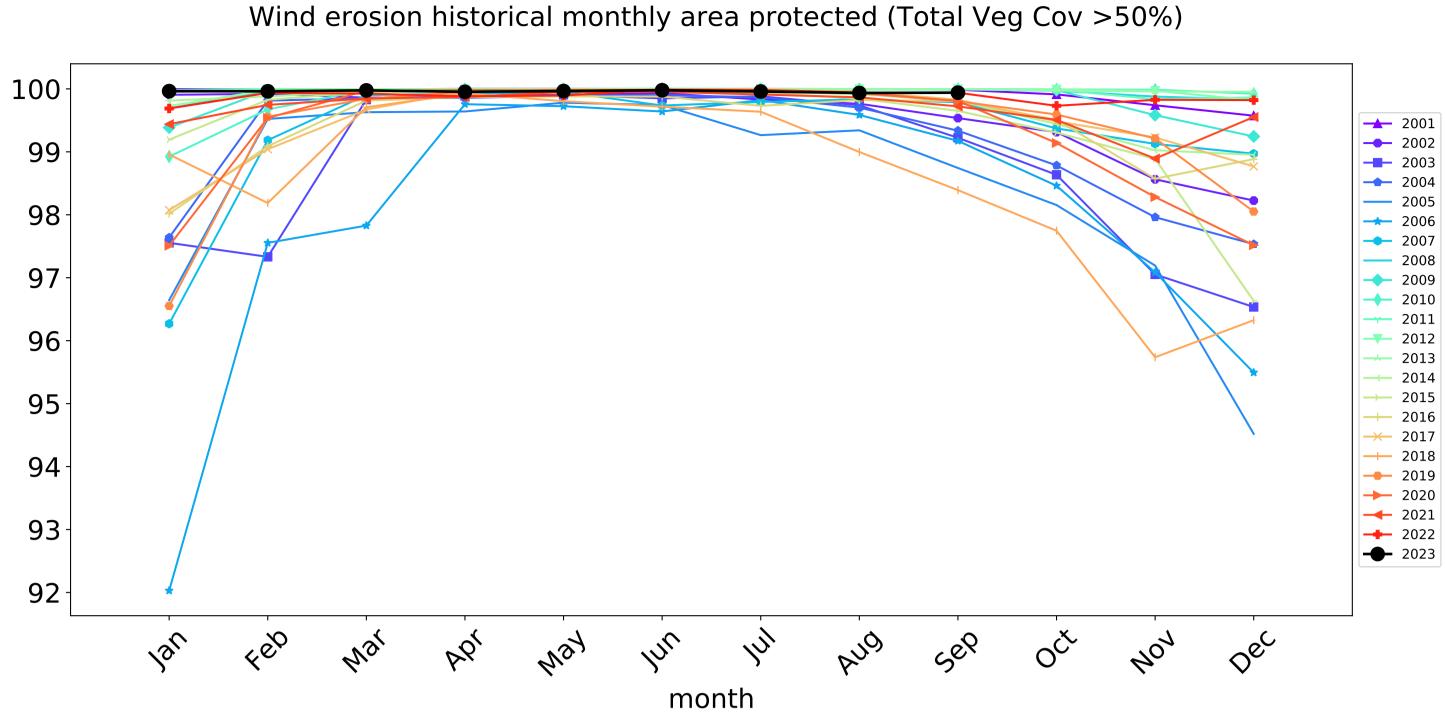


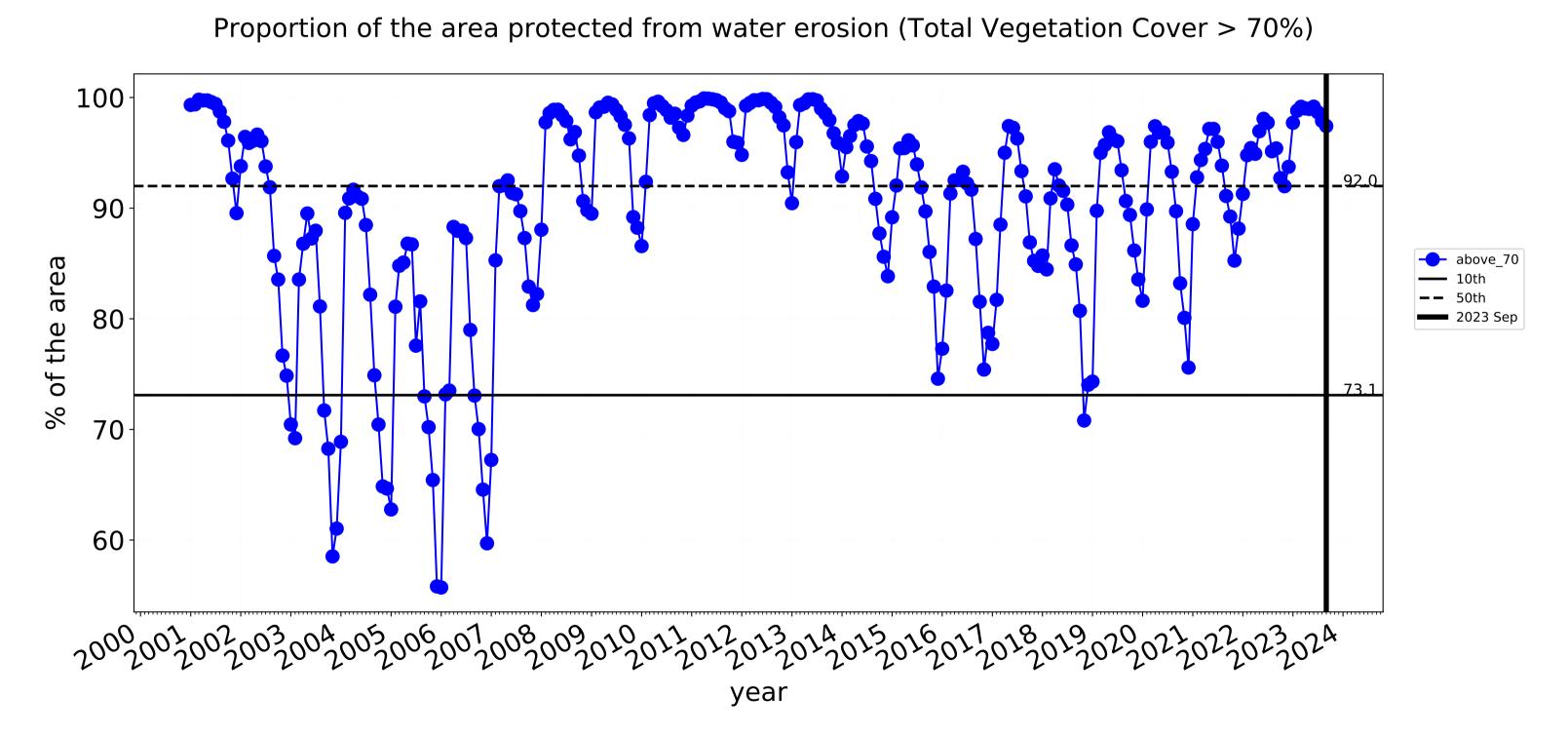


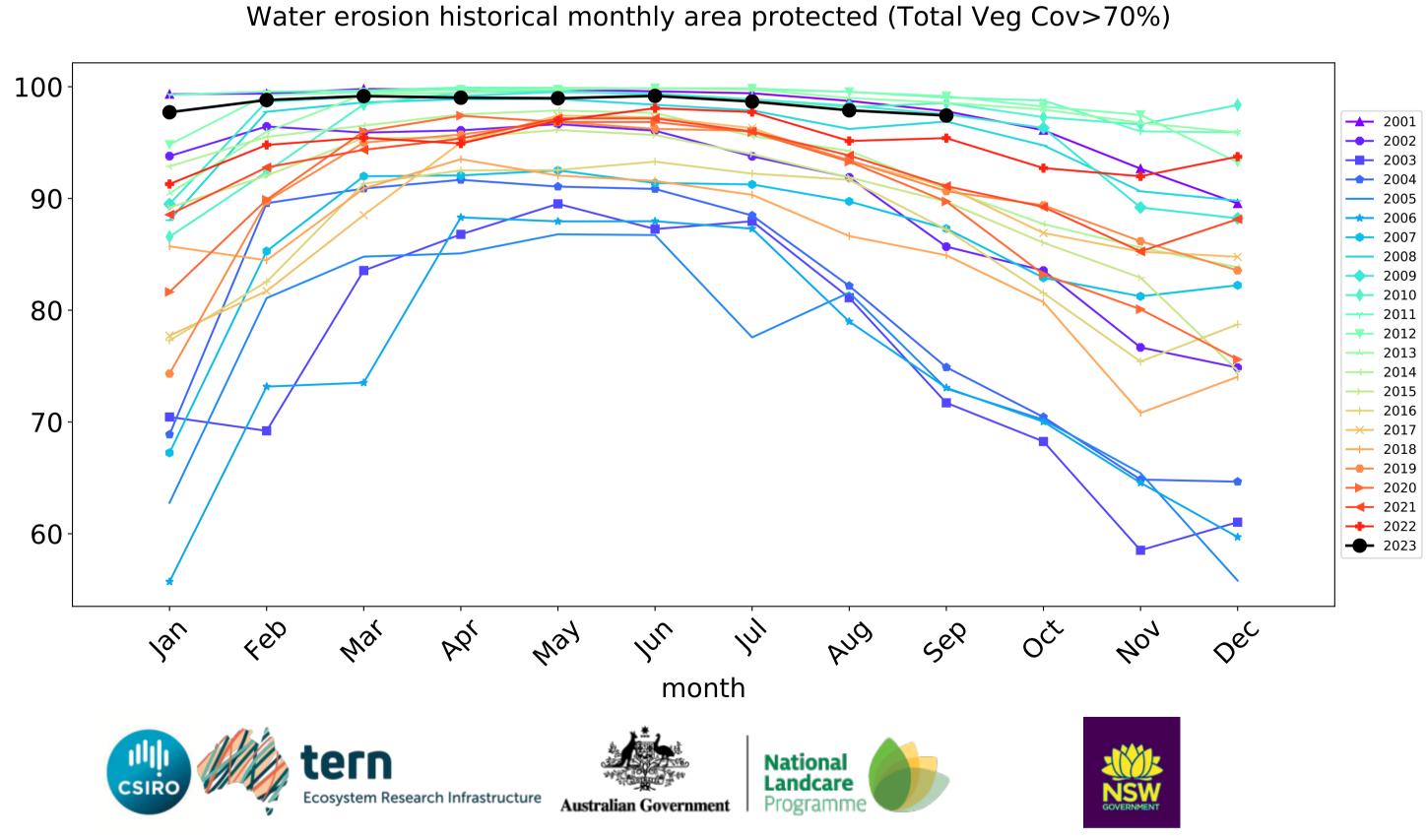


Agriculture timeseries









Grazing

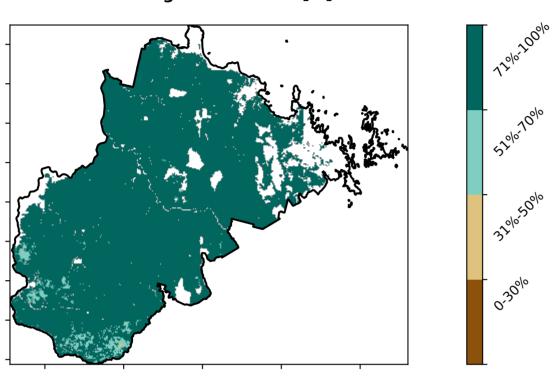
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land 1 Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest Use of Australia (2018) and Forests of Australia (2018)

Land use and forest cover

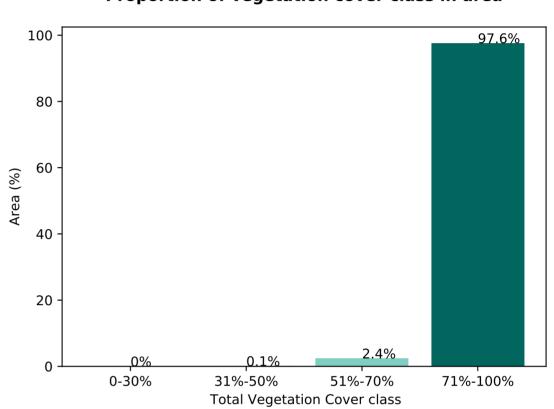
60 -57.4% 50 40.1% 40 Area (%) 20 10 0.5 1.0 -0.5 1.5 0.0 2.0 2.5 Land use class

Proportion of each land class in area

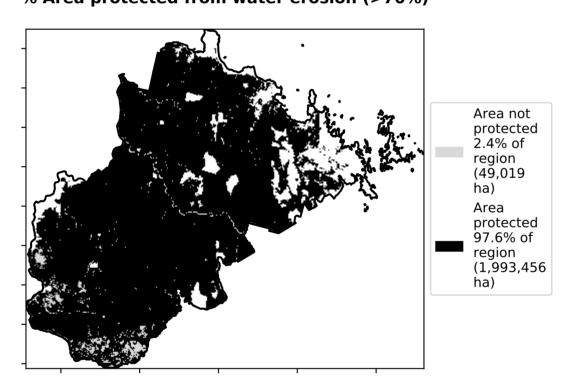




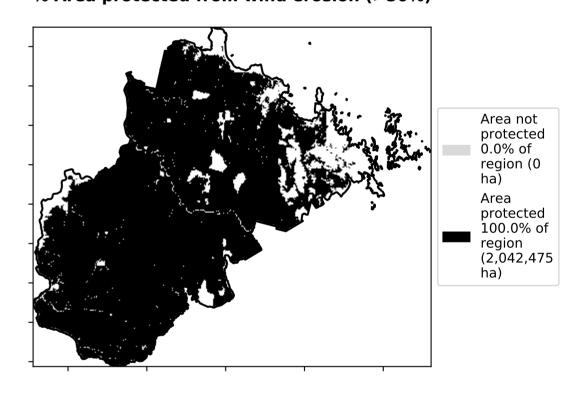
Proportion of vegetation cover class in area



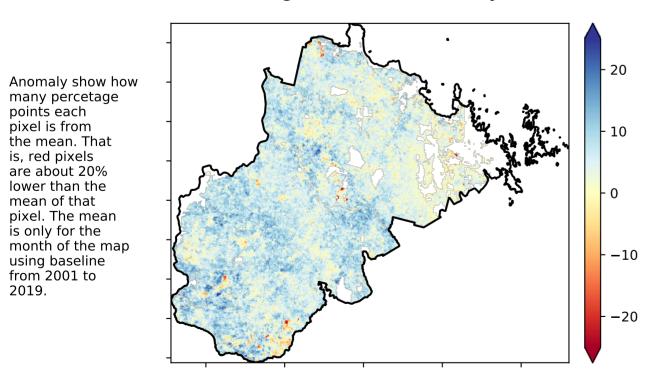
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

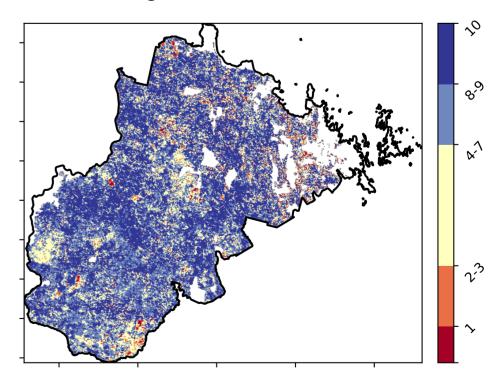


Total Vegetation Cover Anomaly [%]



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 [%]





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.



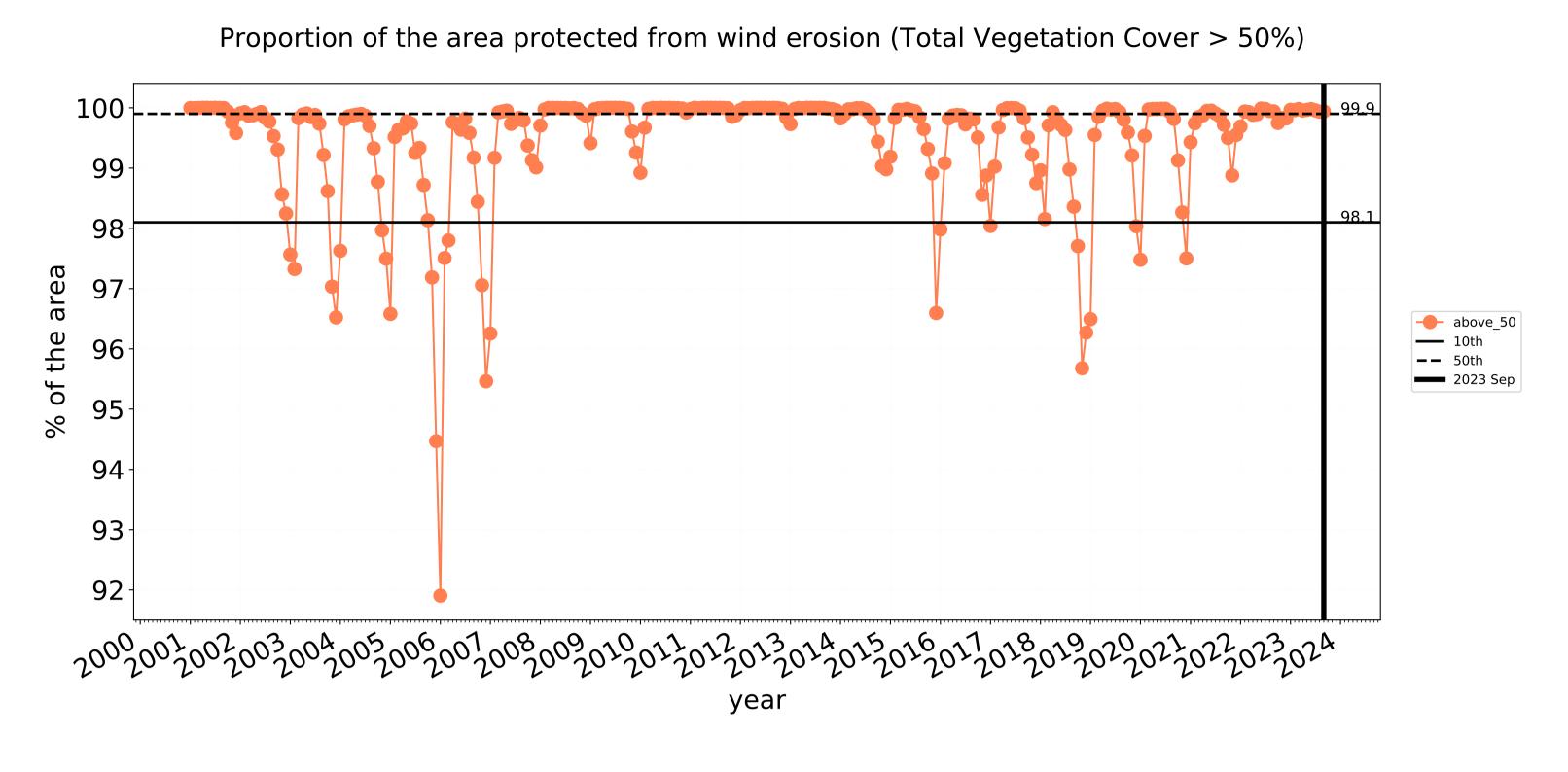


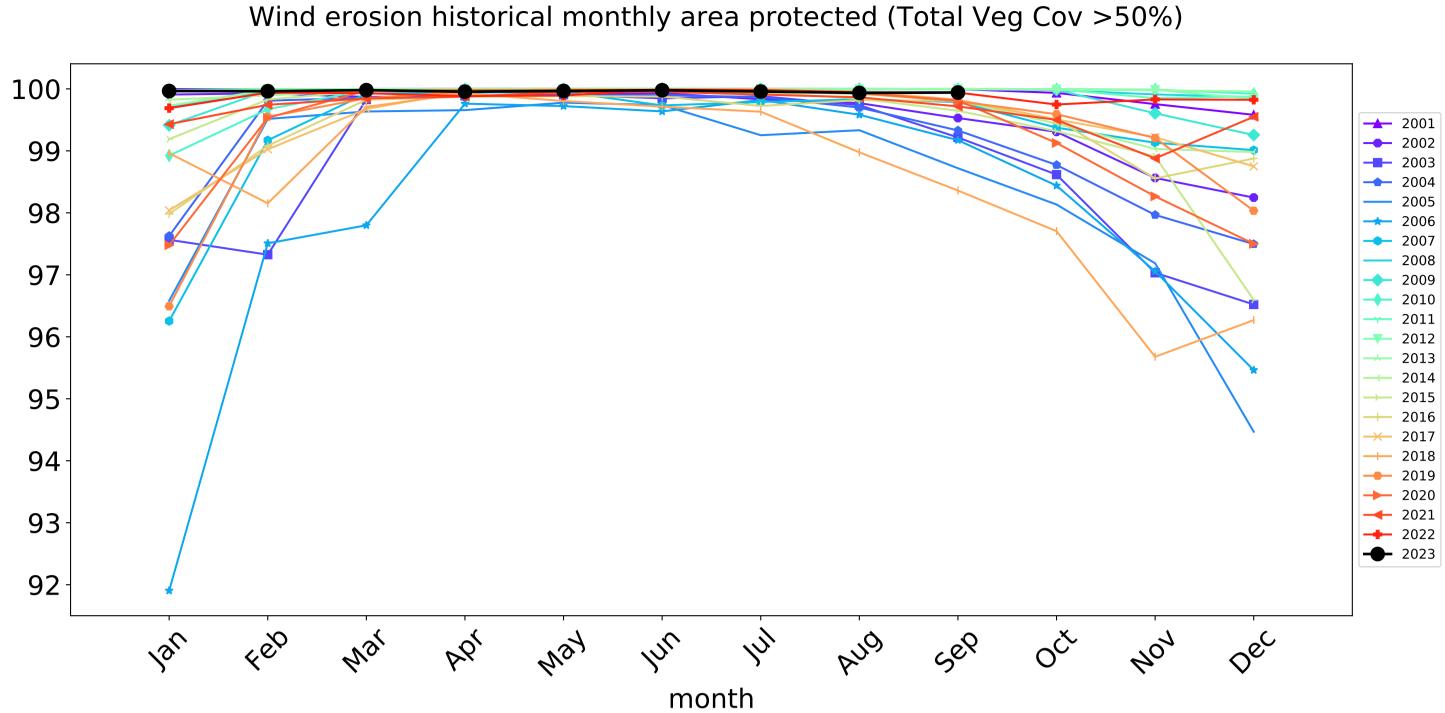


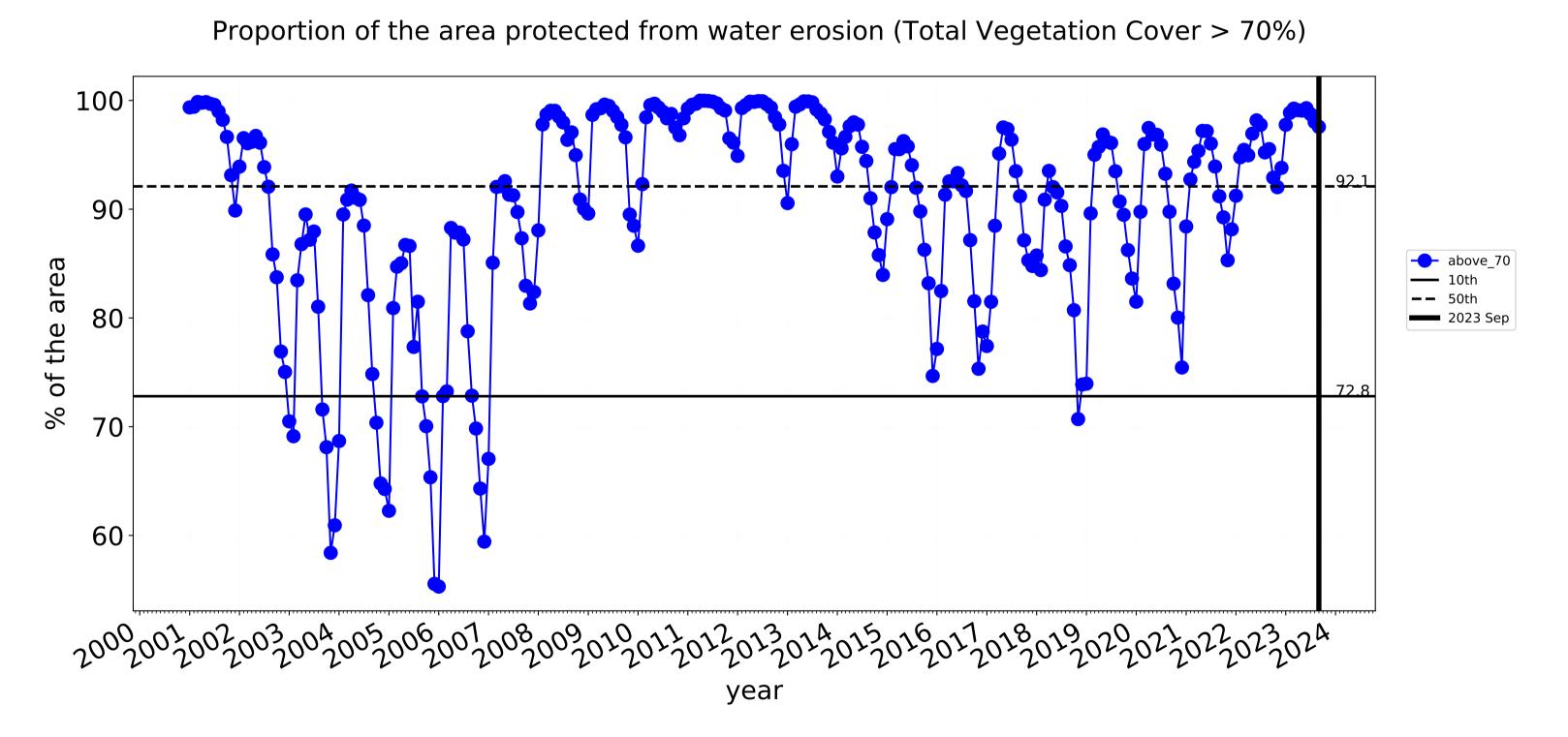


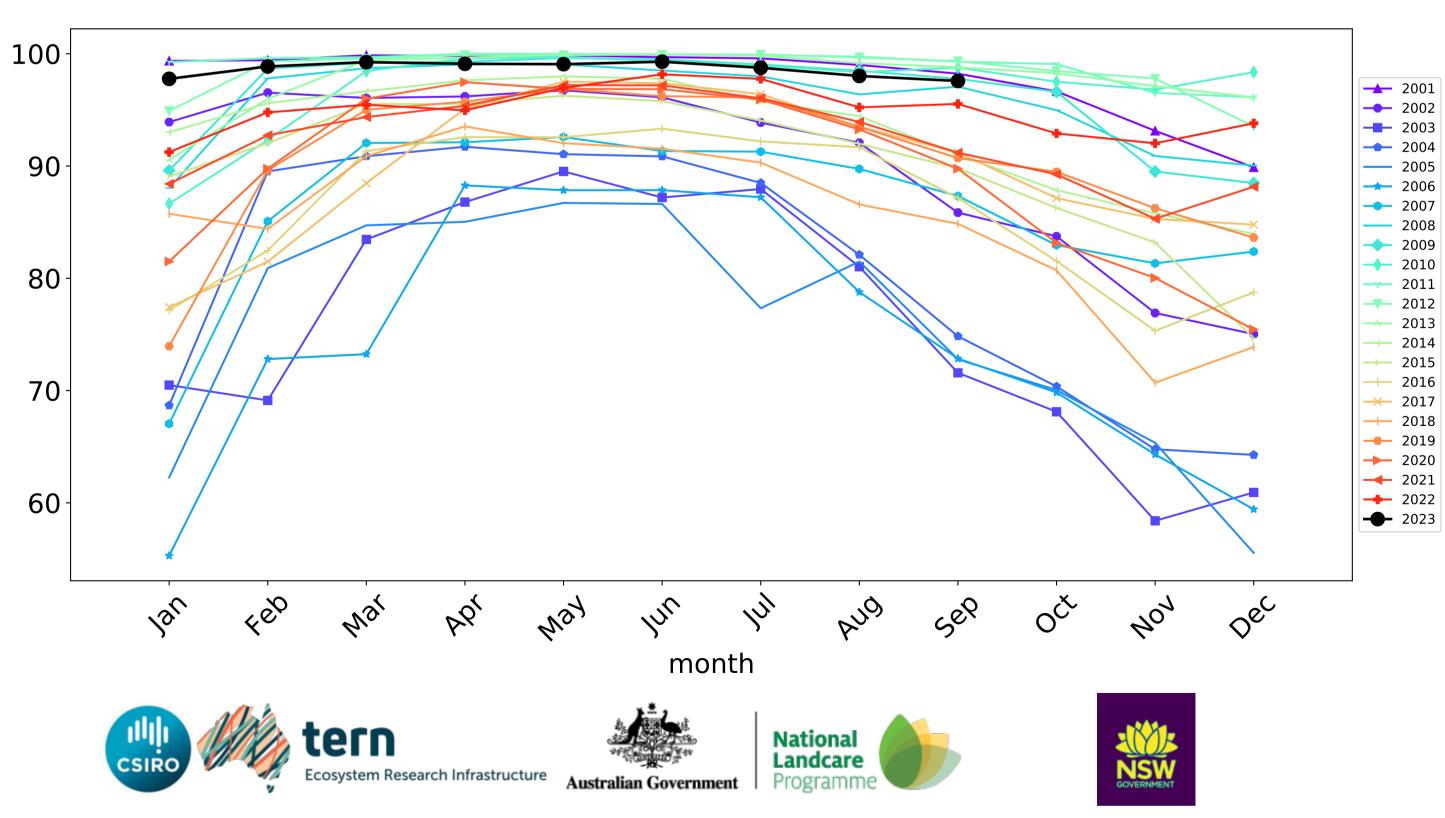


Grazing timeseries







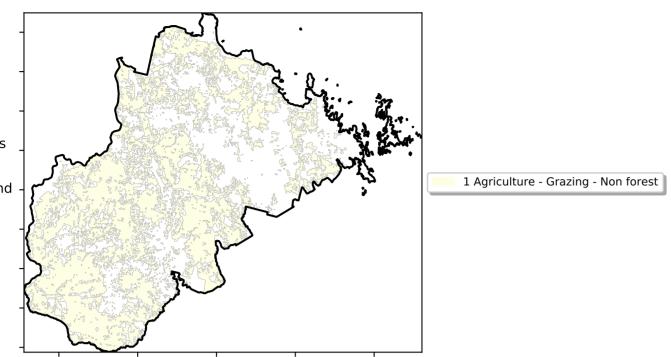


Water erosion historical monthly area protected (Total Veg Cov>70%)

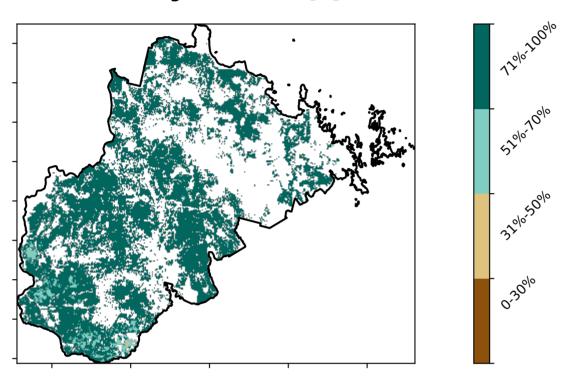
Grazing non forest

Land use and forest cover

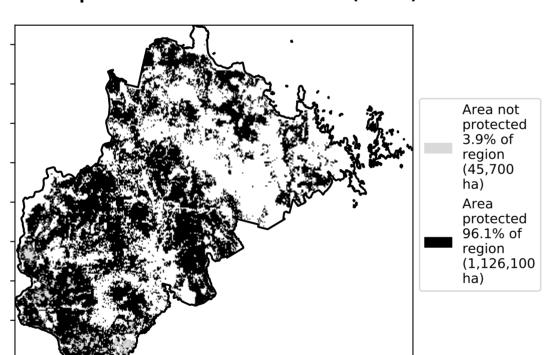
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



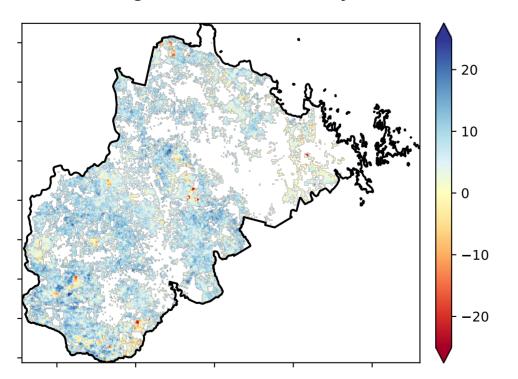
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

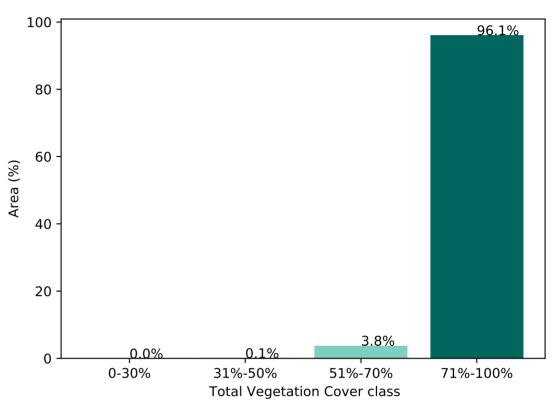


Total Vegetation Cover Anomaly [%]

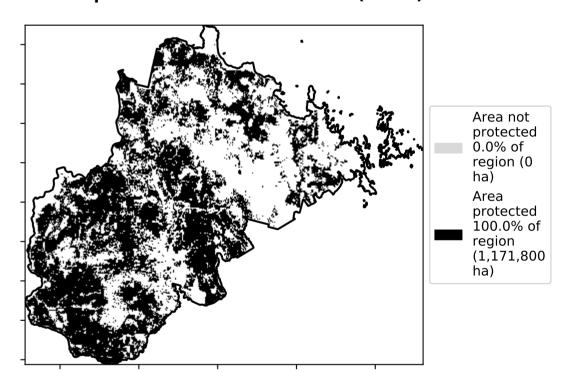


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

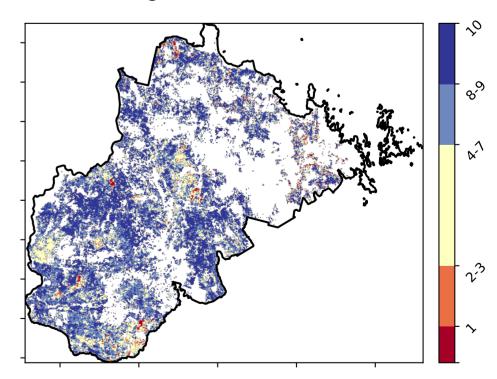
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]





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



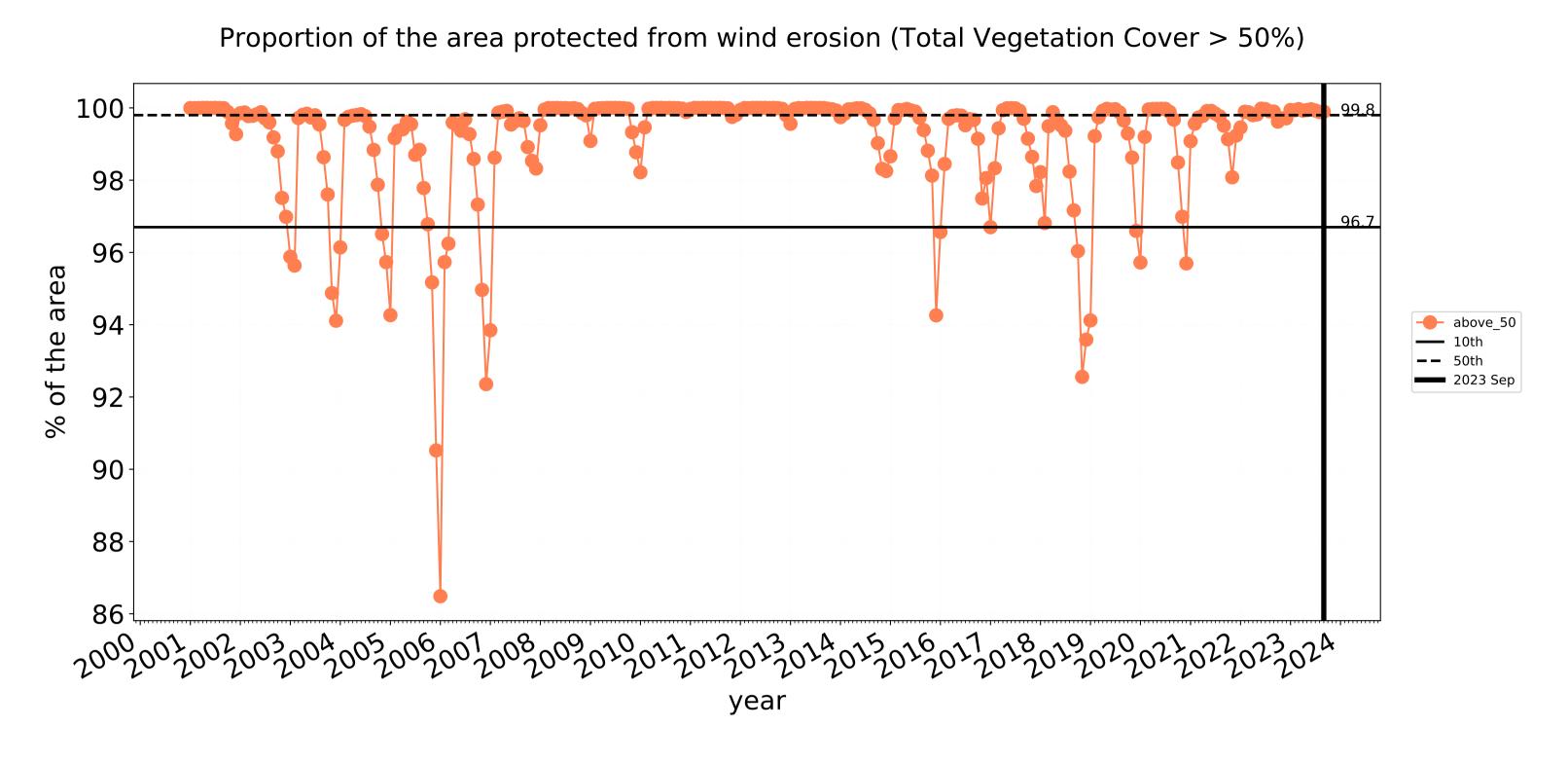


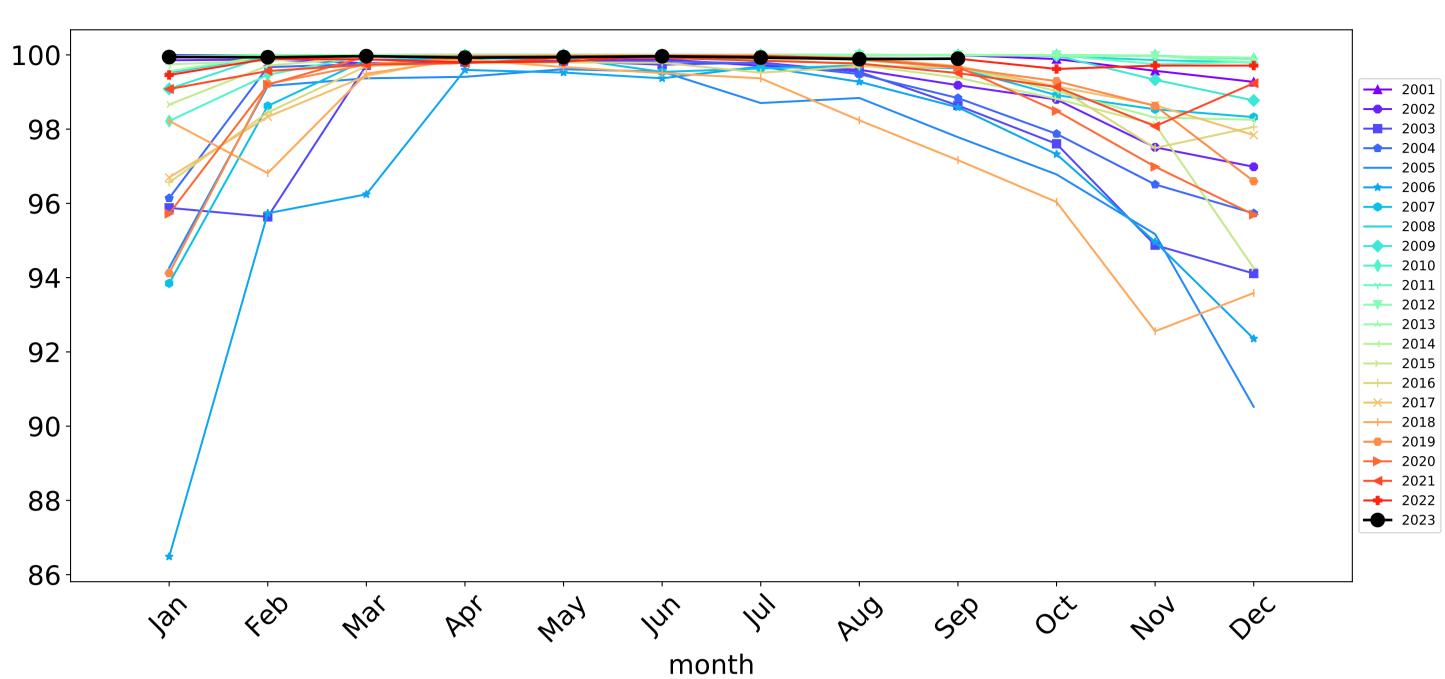




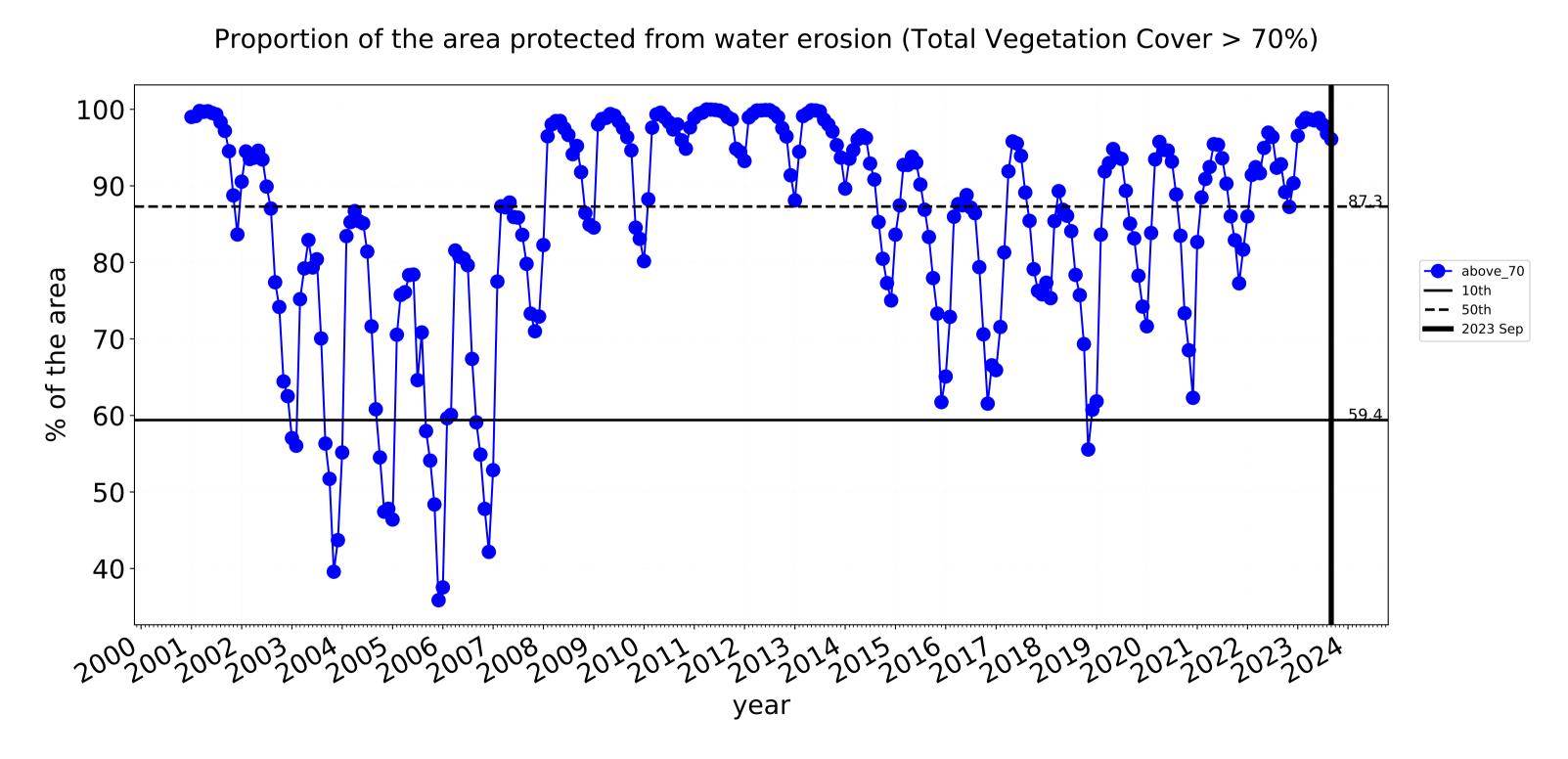


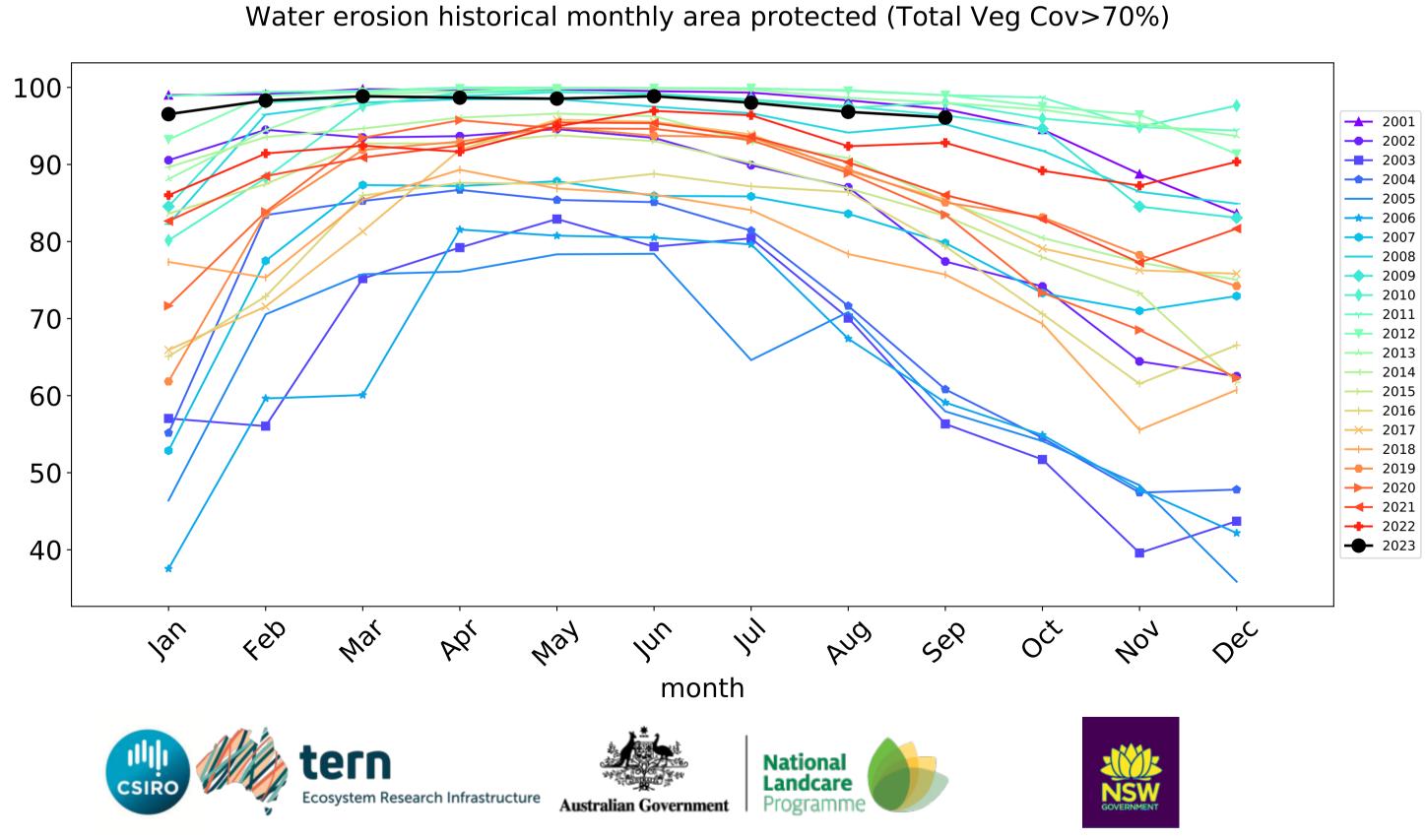
Grazing non forest timeseries





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

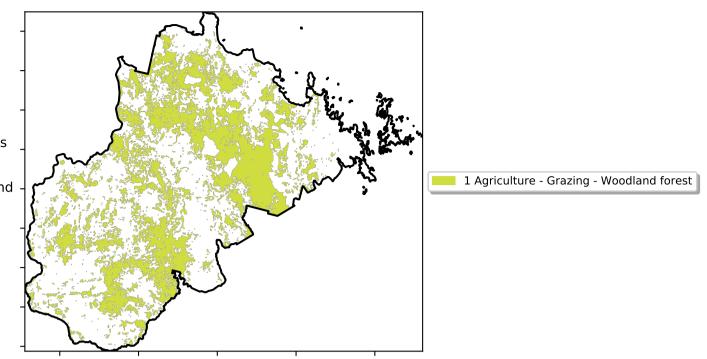




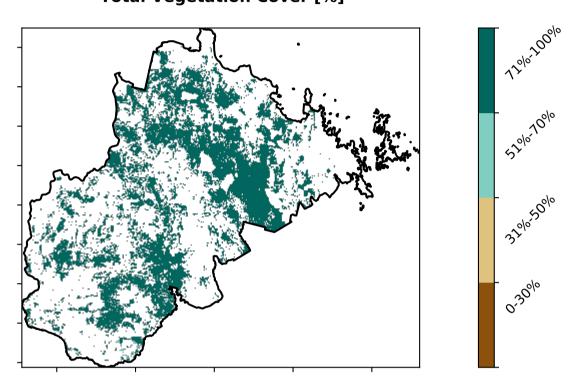
Grazing Woodland forest

Land use and forest cover

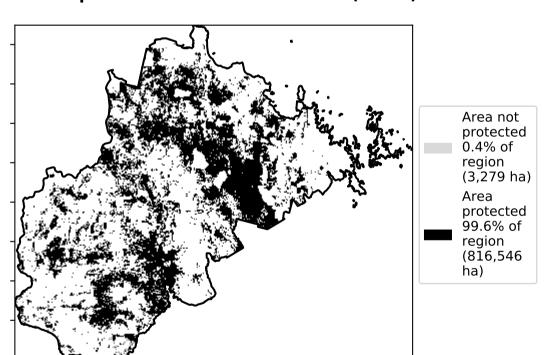




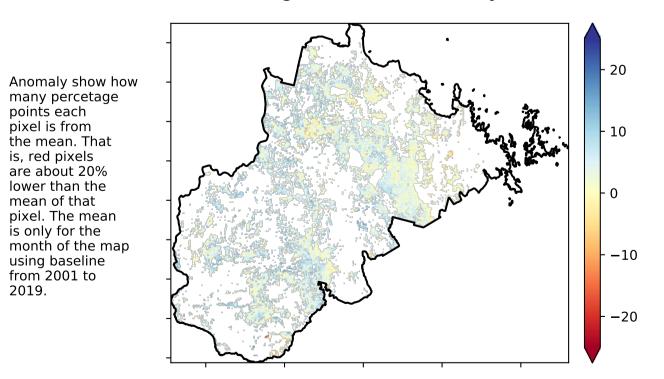
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

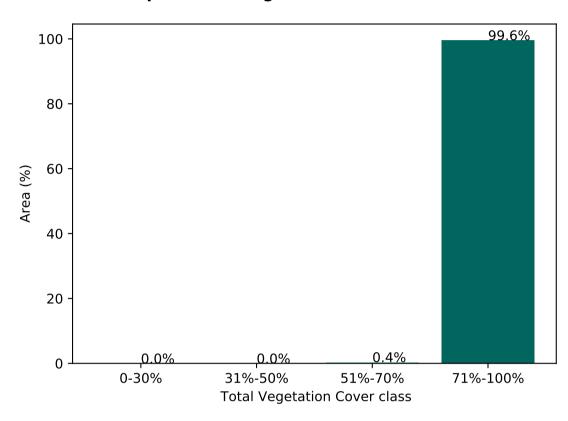


Total Vegetation Cover Anomaly [%]

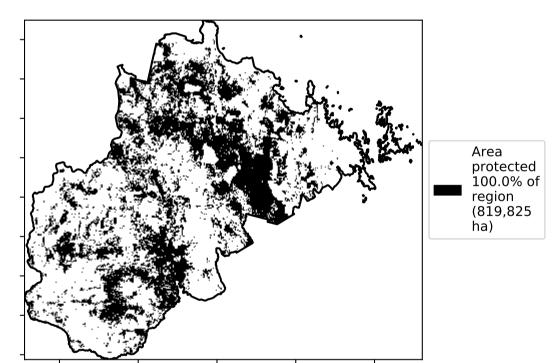


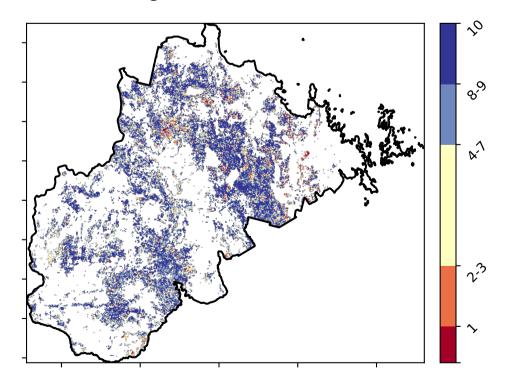
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





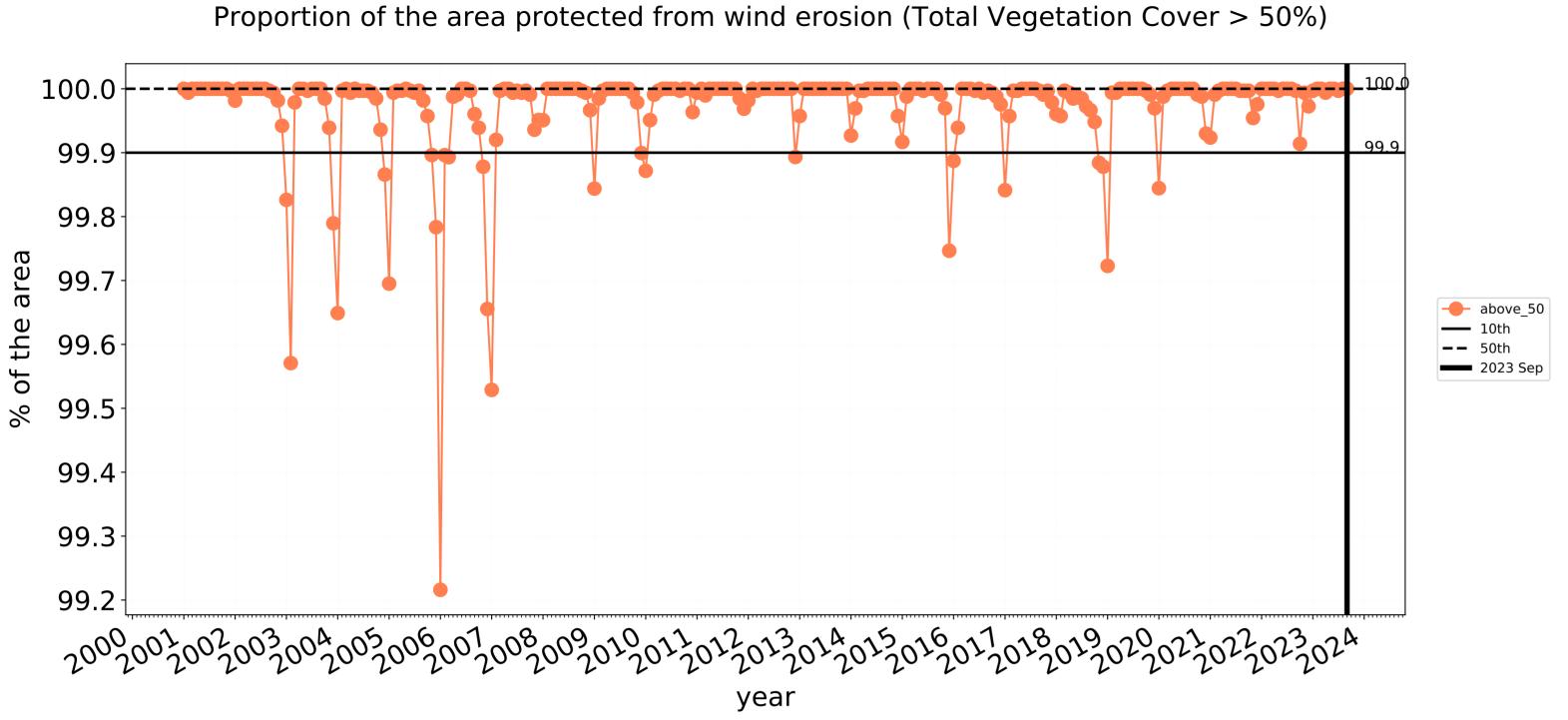


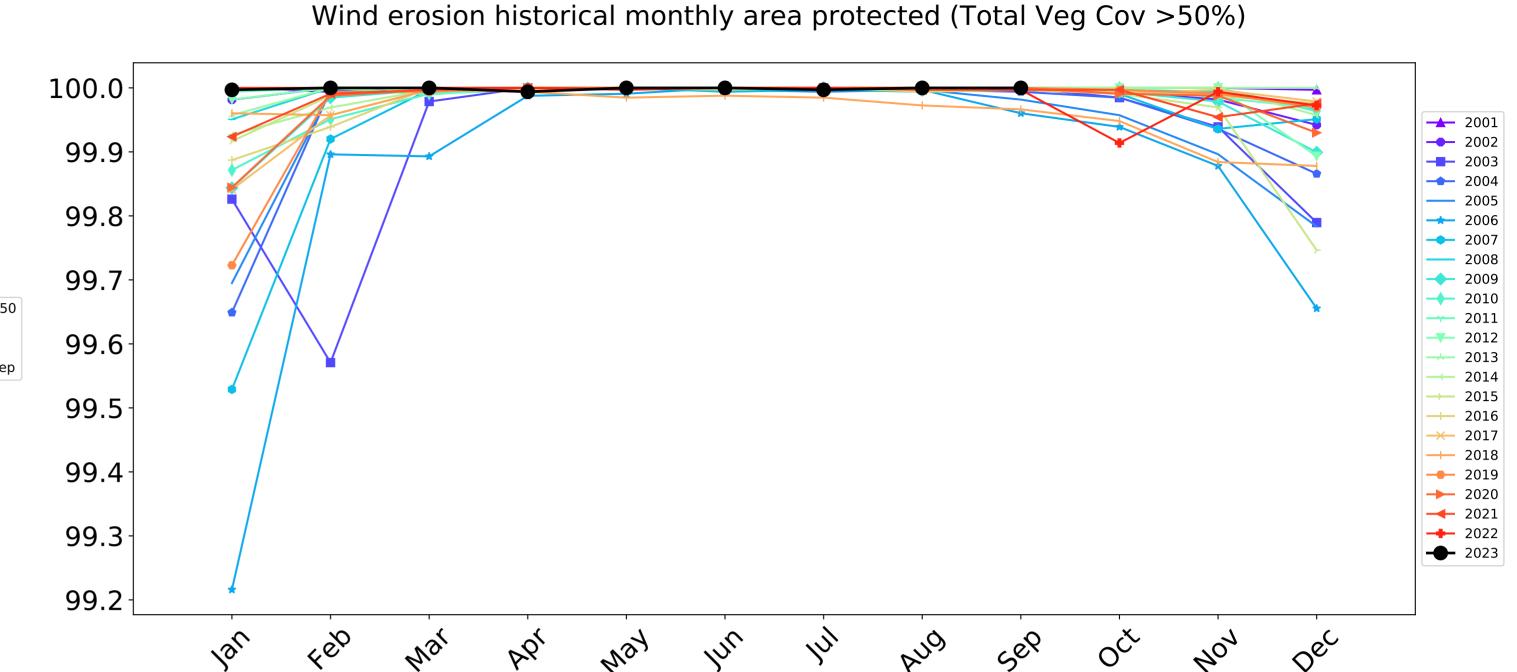




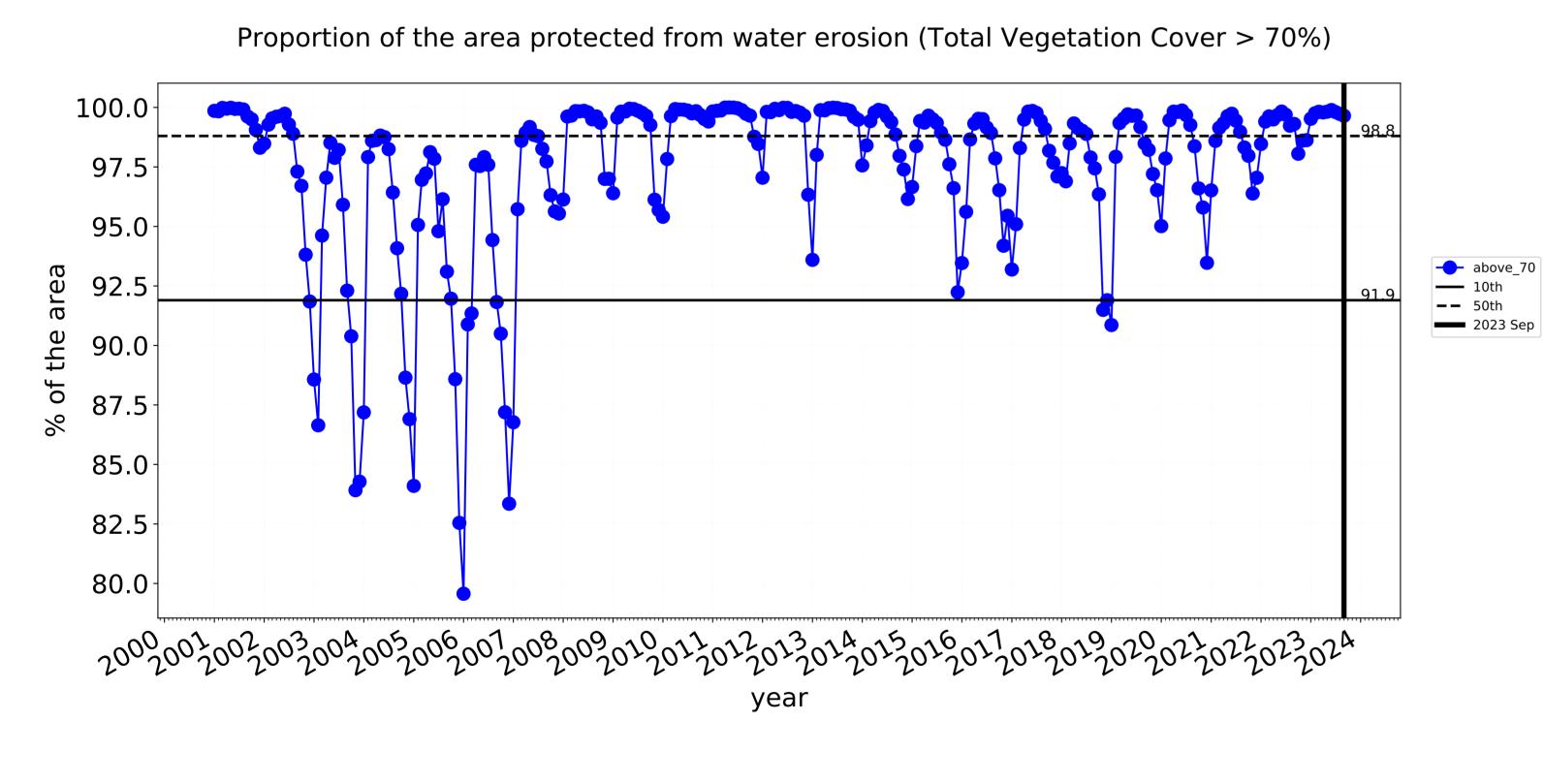


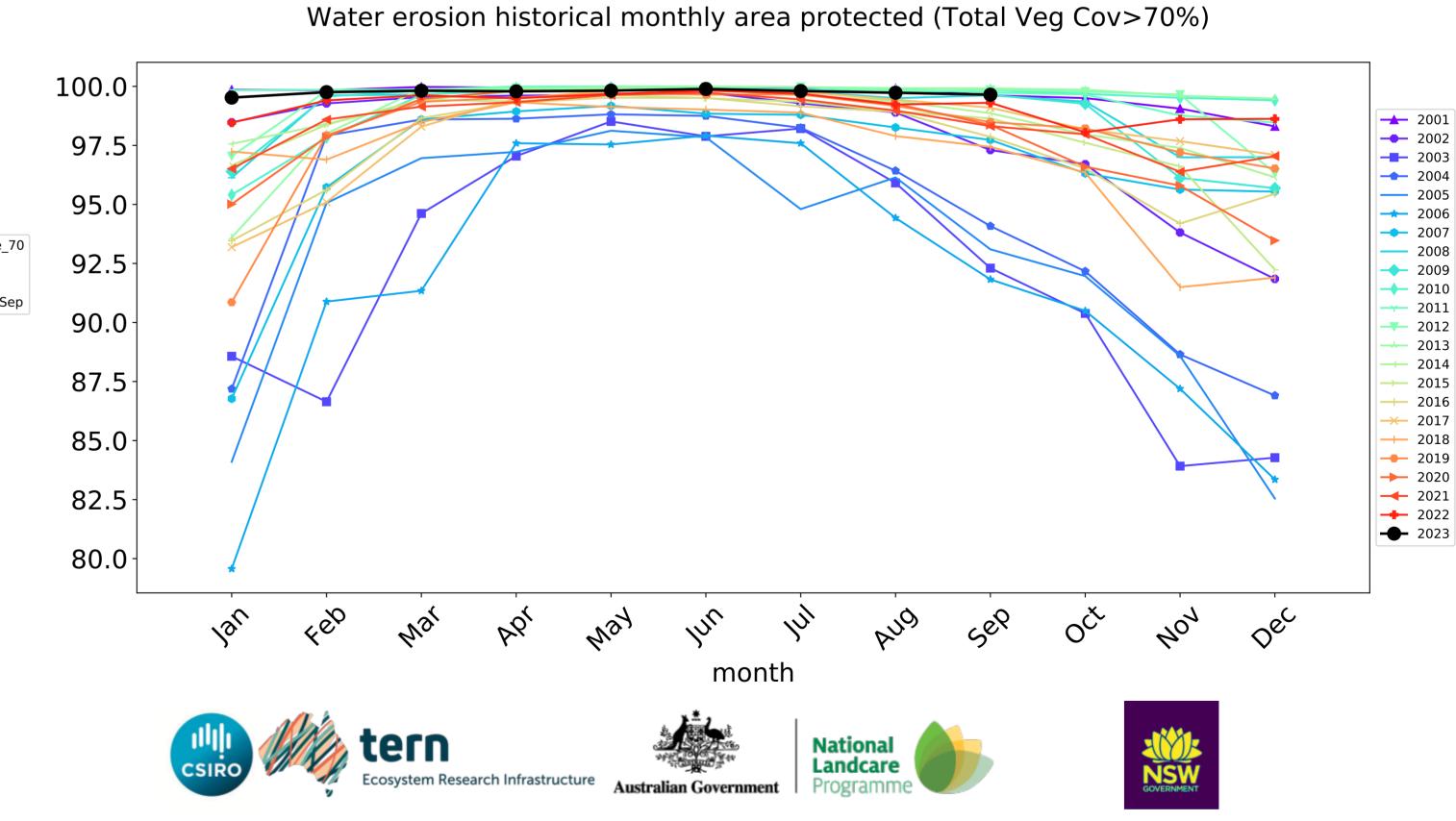
Grazing Woodland forest timeseries





month



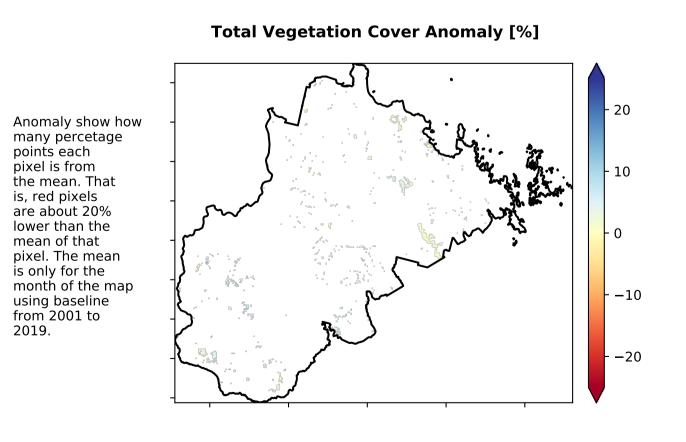


Grazing - Forest (non woodland)

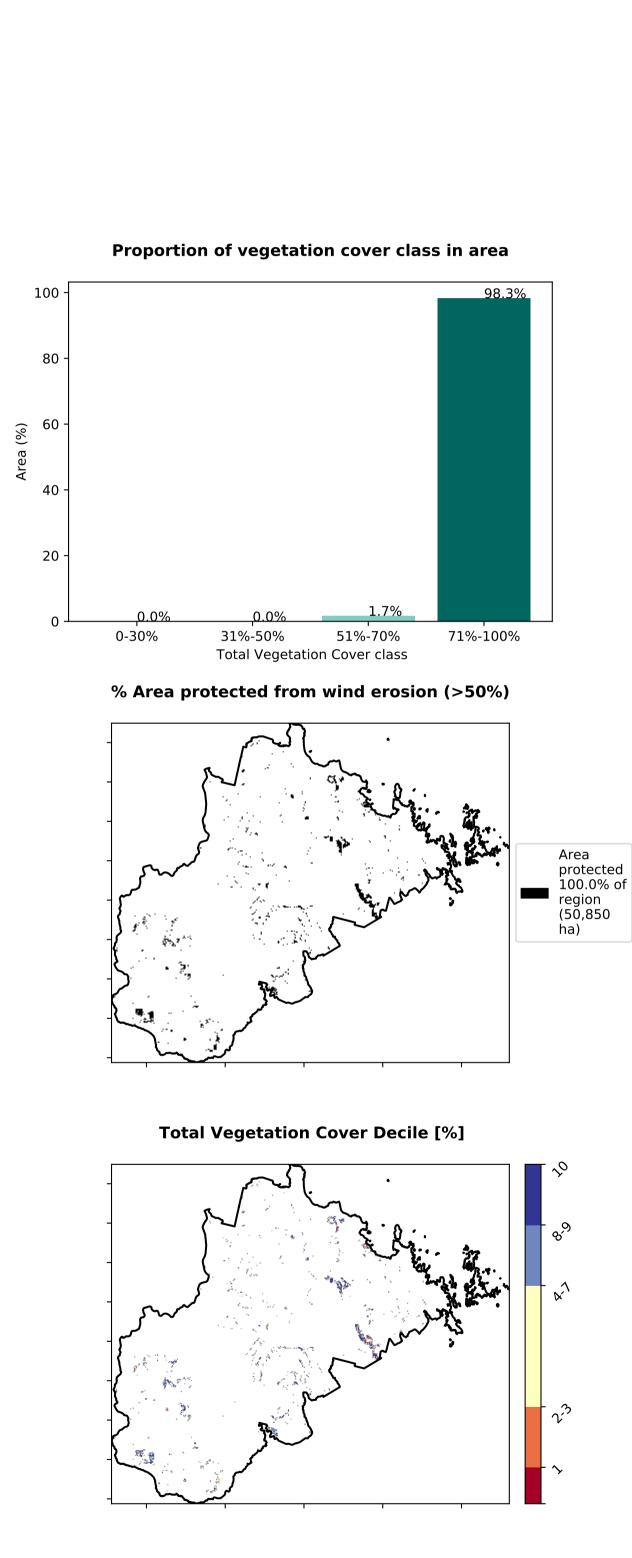
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) 1 Agriculture - Grazing - Non-woodland forest

Total Vegetation Cover [%]

% Area protected from water erosion (>70%) Area not protected 1.7% of region (864 ha) Area protected 98.3% of region (49,986 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 records for that month of the map using baseline from 2001 to 2019.

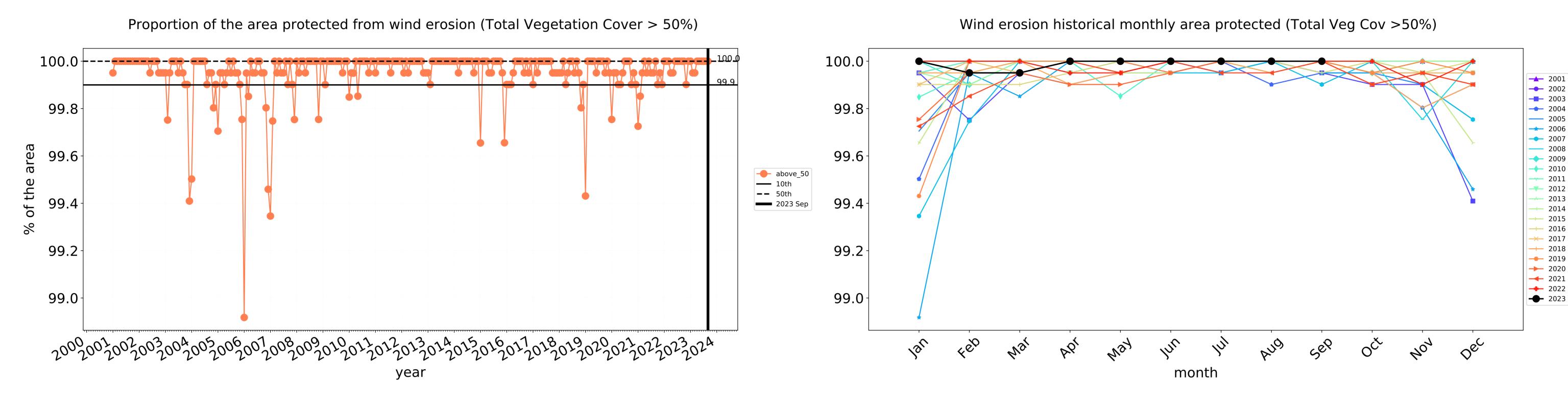


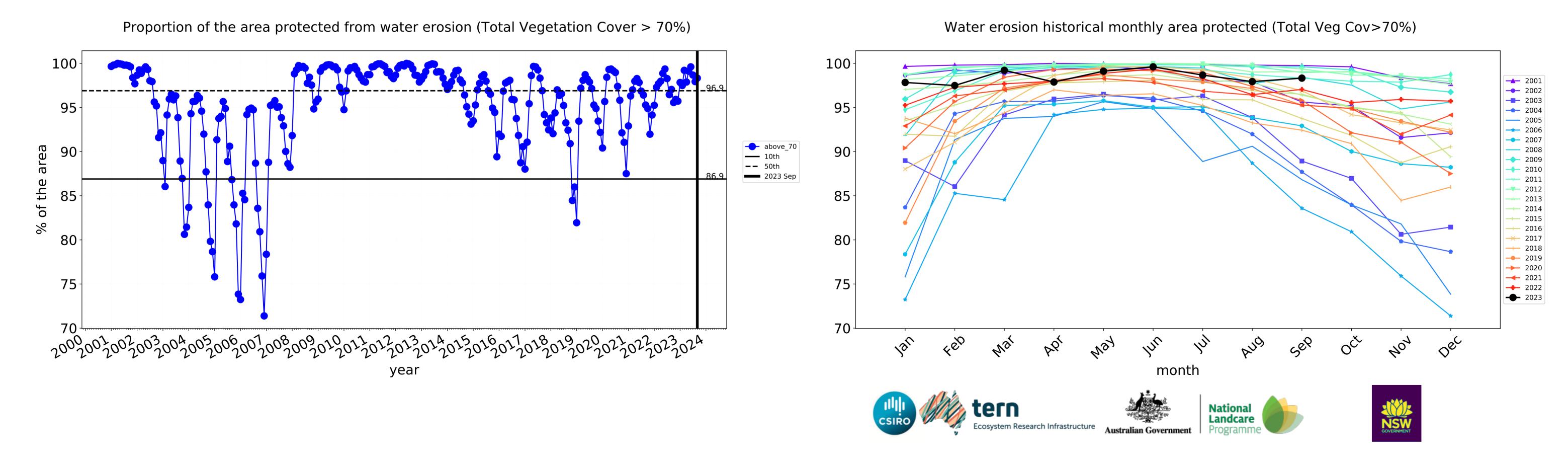












Irrigation

70 ·

60

50

Area (%) 00 00

20

10

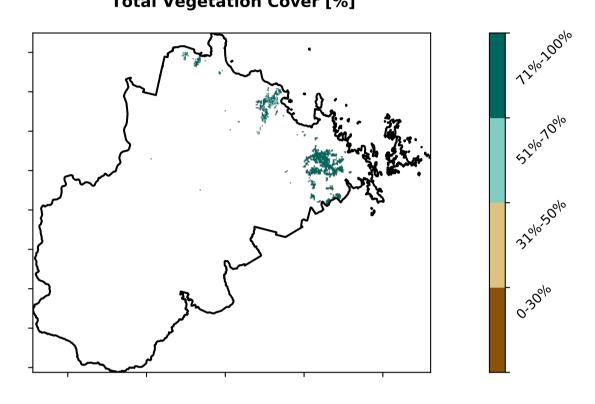
-0.5

0.0

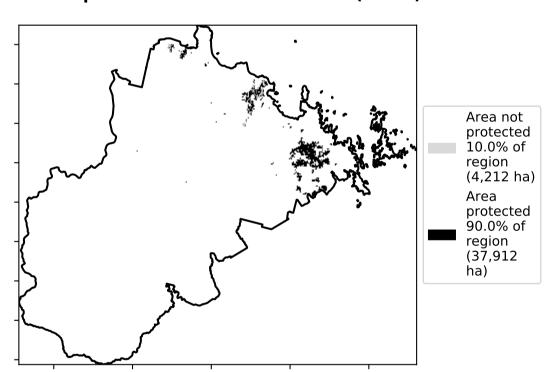
0.5

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 [%]



% Area protected from water erosion (>70%)



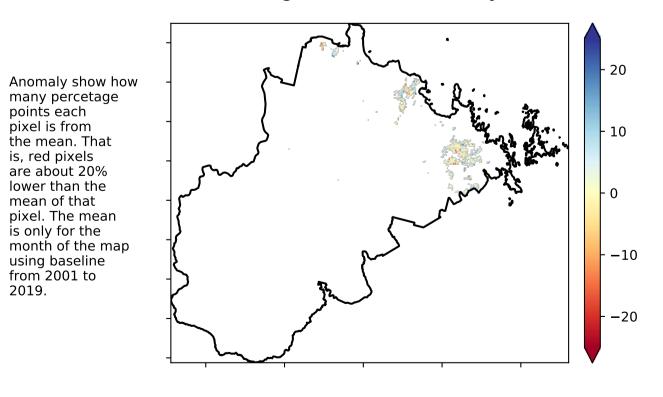
Total Vegetation Cover Anomaly [%]

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.

67.8% 30.9%

Proportion of each land class in area

Proportion of vegetation cover class in area

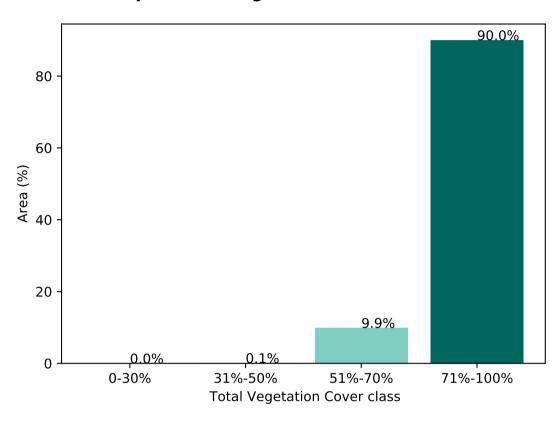
1.0

Land use class

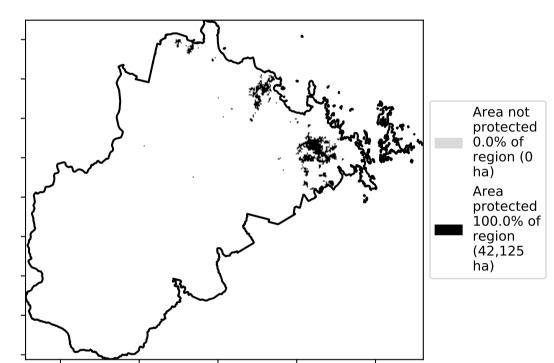
1.5

2.0

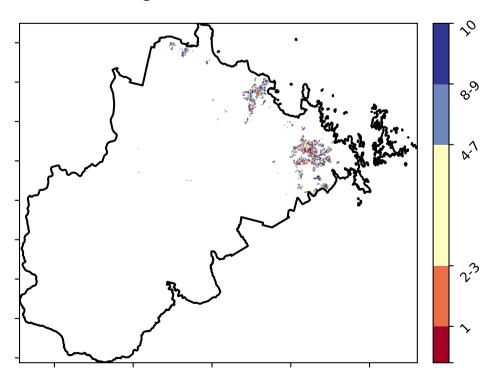
2.5



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]



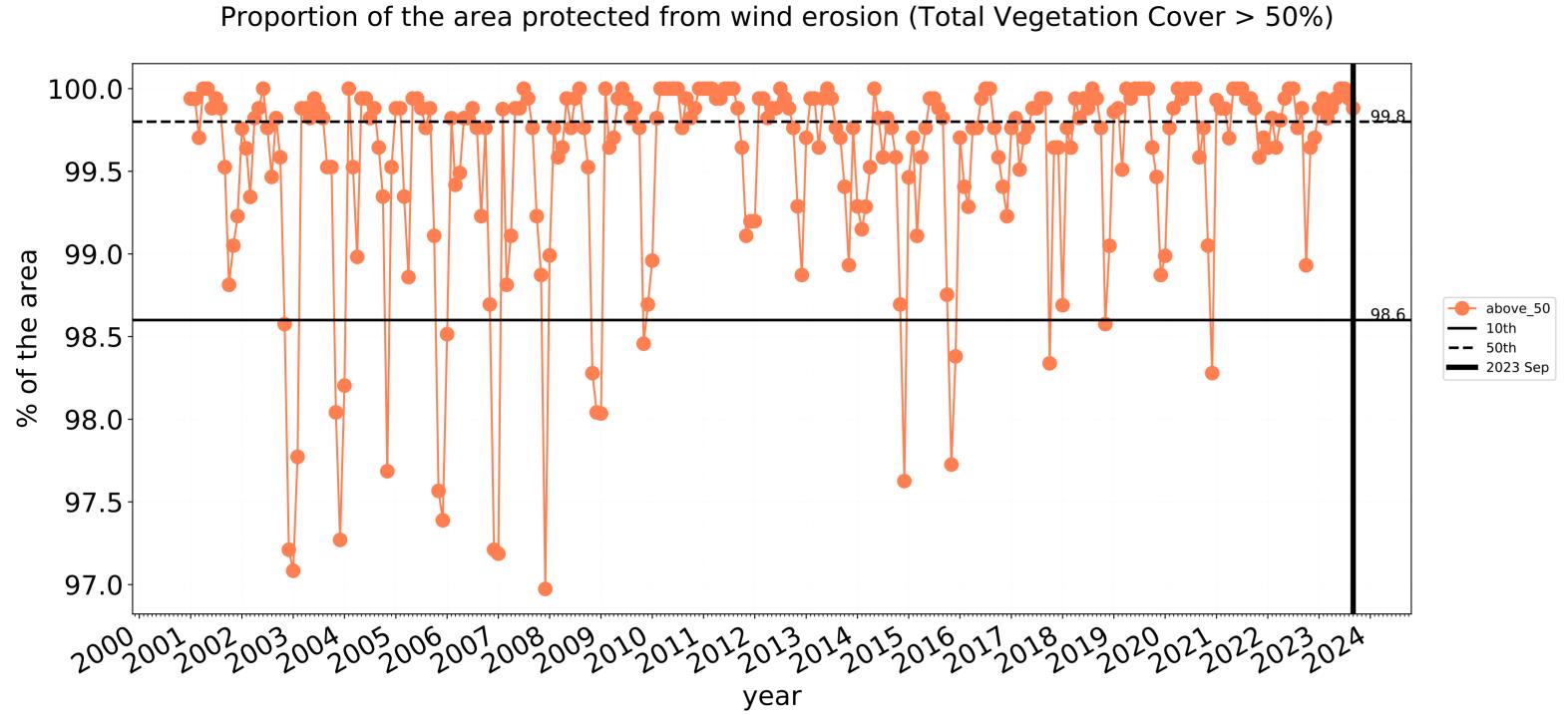


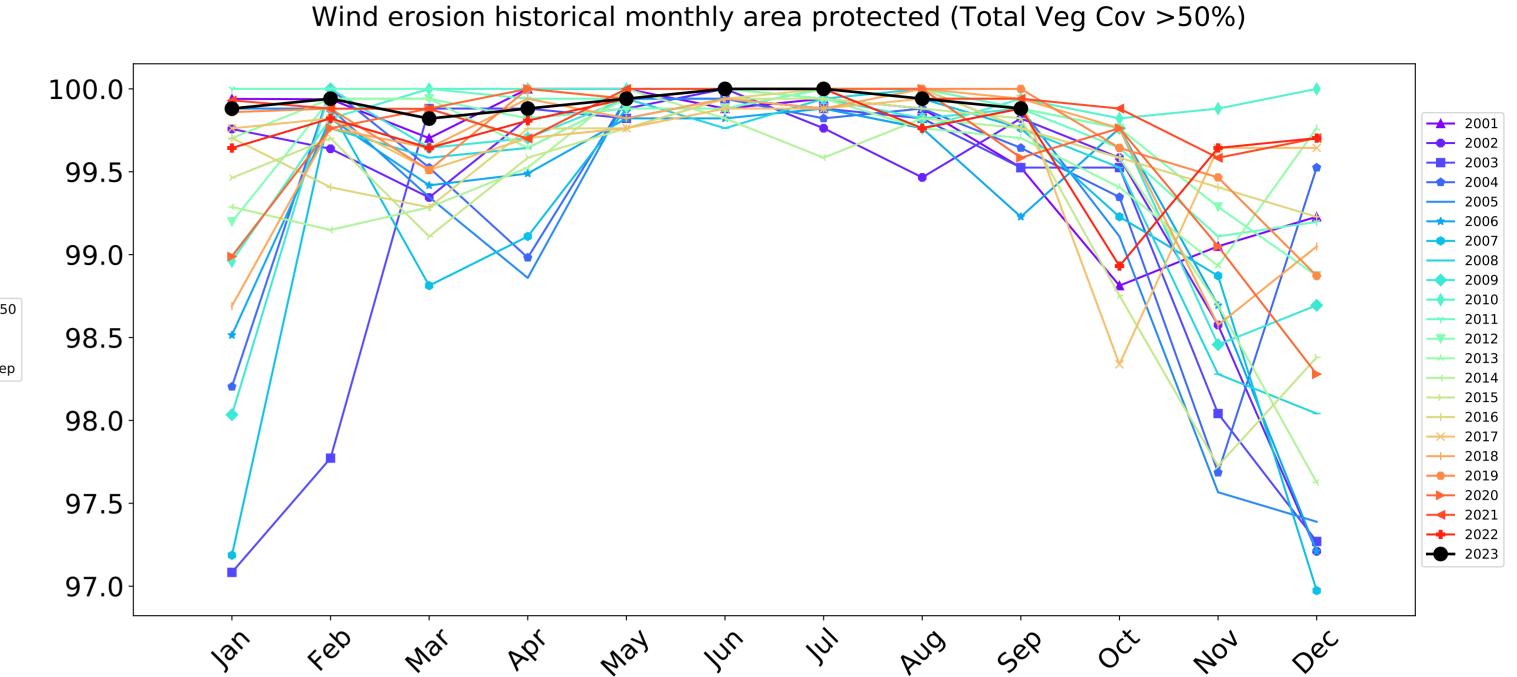




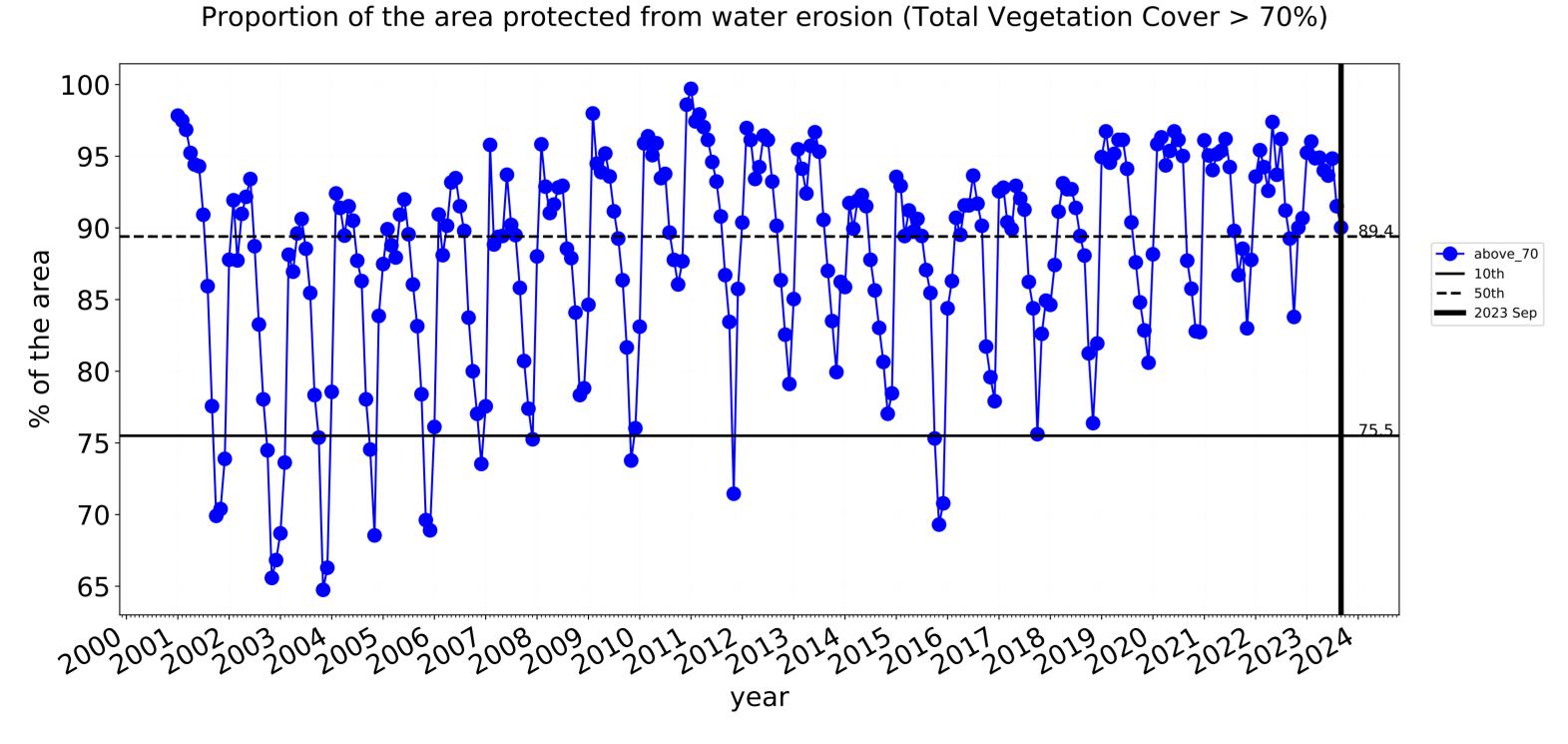


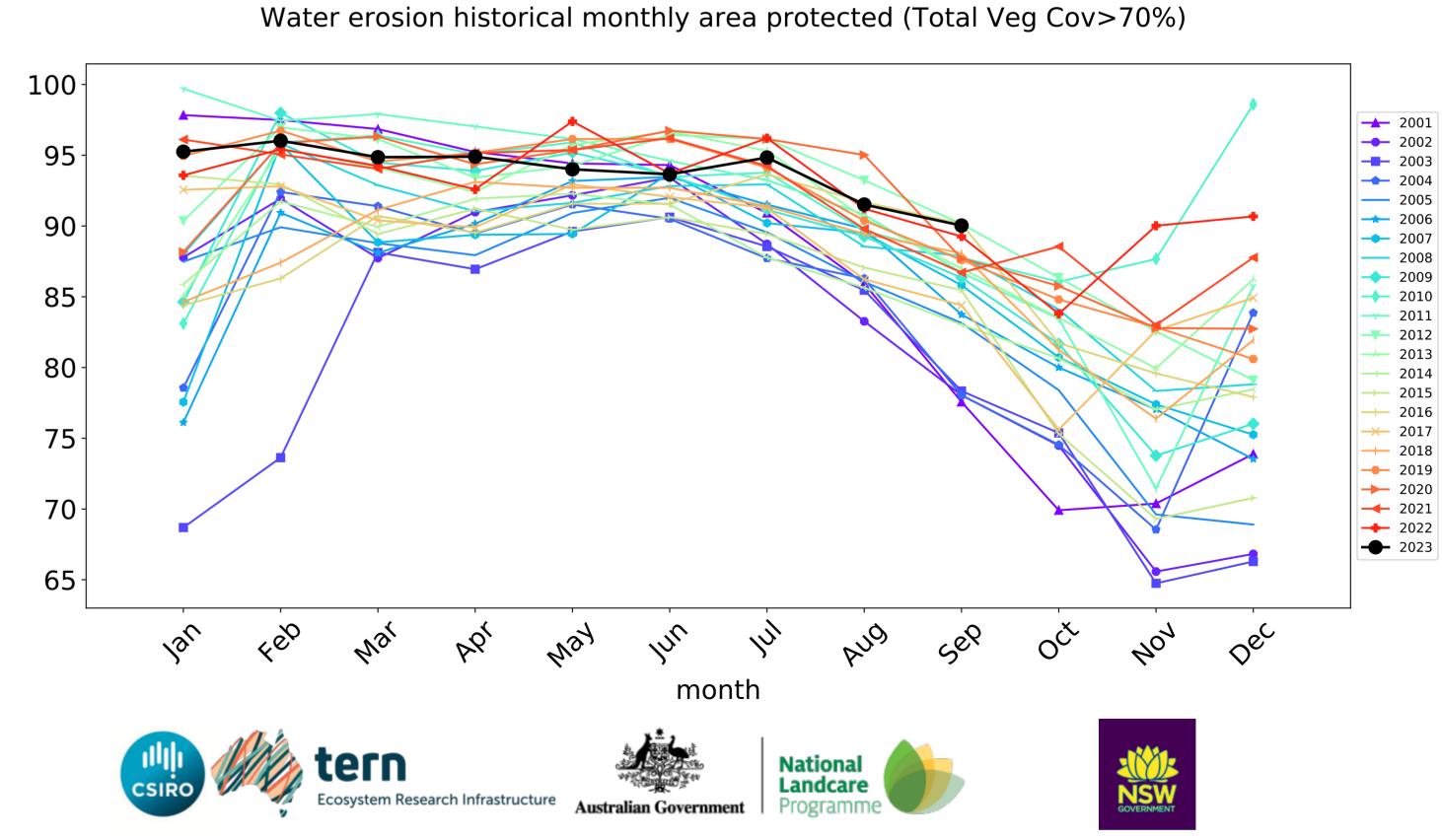
Irrigation timeseries





month

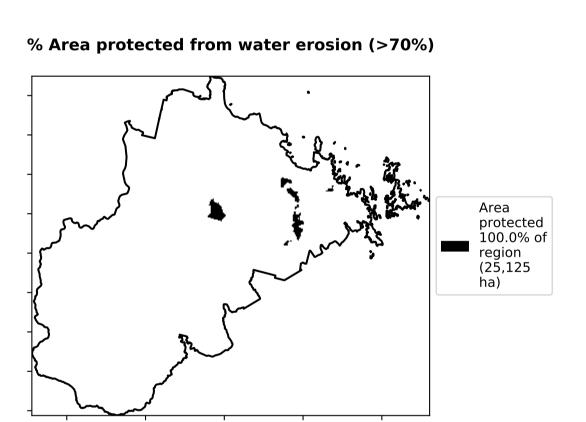


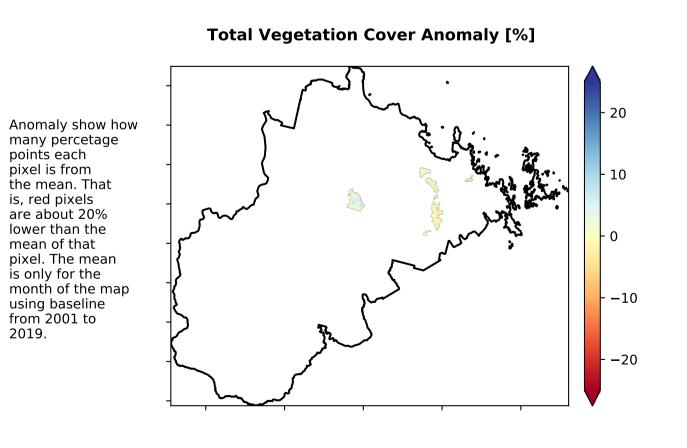


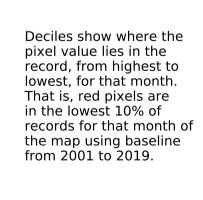
Production native forests and plantation forests

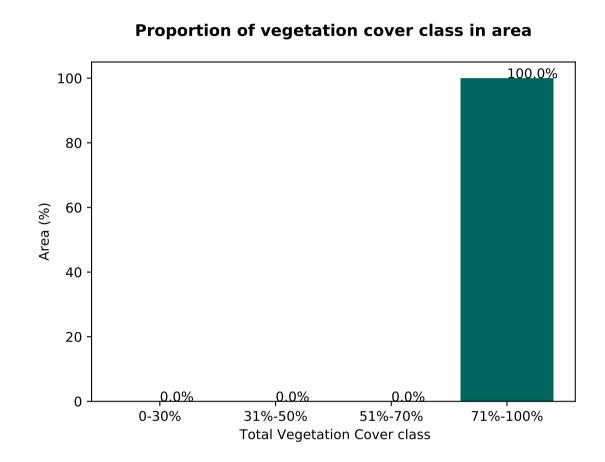
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) (2018) and Forests of Australia (2018)

Total Vegetation Cover [%] Trologidadio Trologidadio



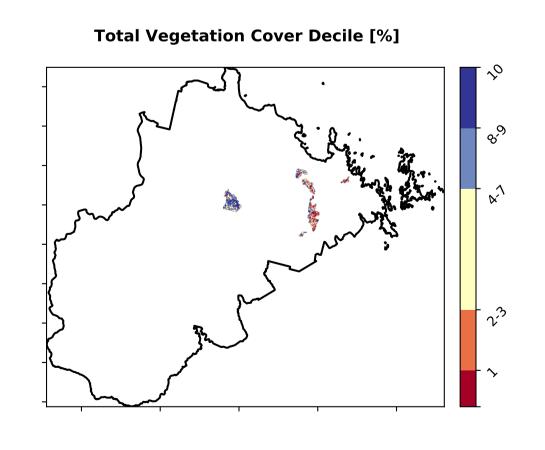






Area protected from wind erosion (>50%)

Area protected 100.0% of region (25,125 ha)



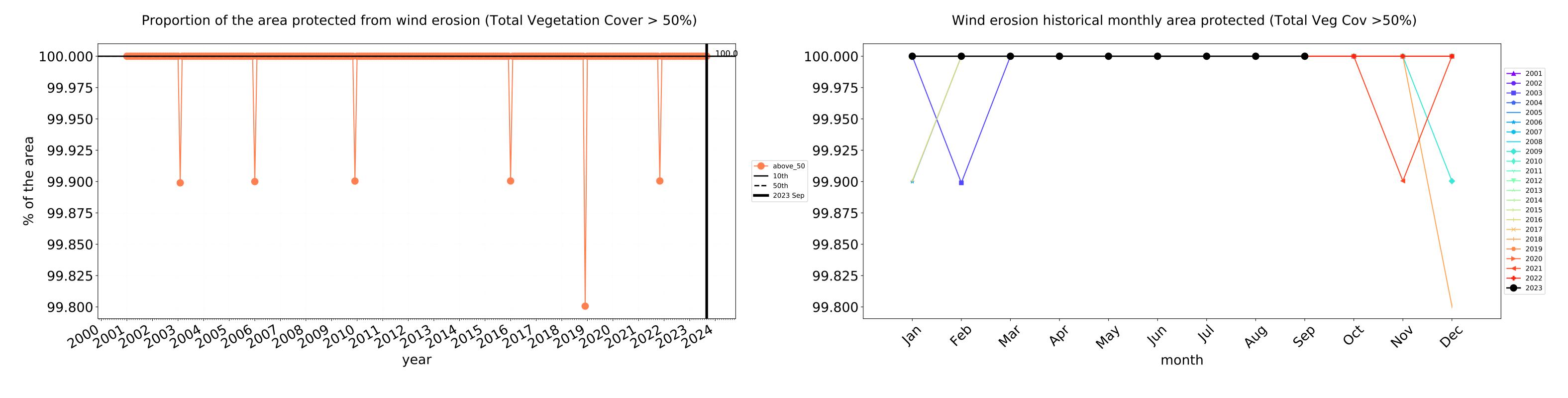


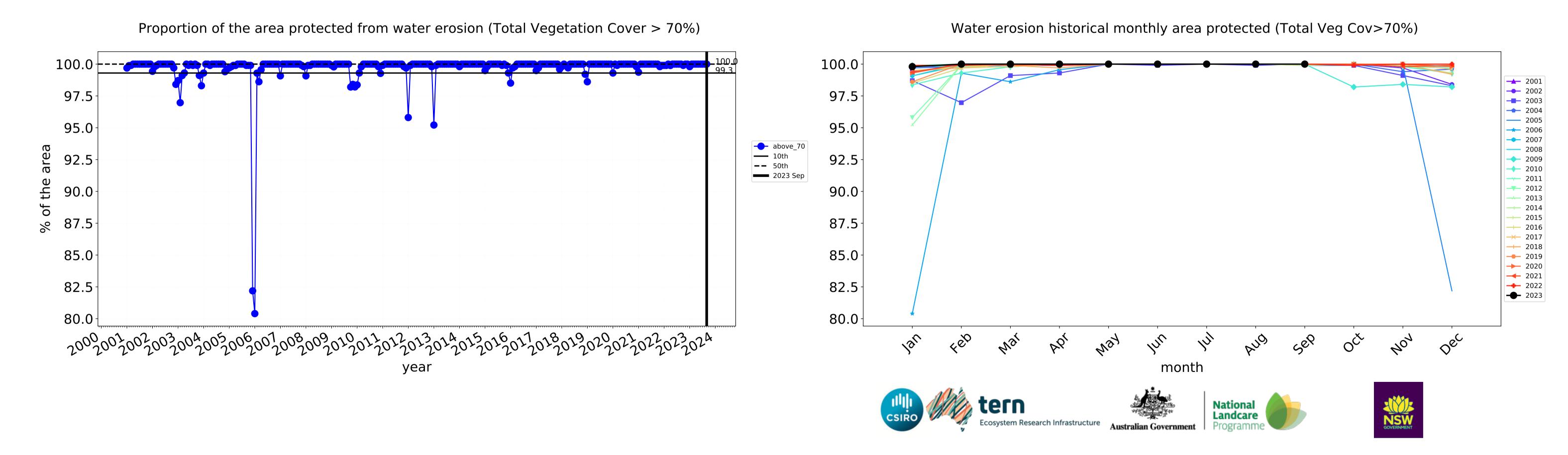






Production native forests and plantation forests timeseries





Whitsunday_(R) (2,357,425 ha and no data 24,451 ha) Percentage area and hectares protected with TVC threshold 30,50,70,80,90 and 95%

Land use and forest cover Class	area(ha)	above_30	above_50	above_70	above_80	above_90	above_95
Entire region	2,357,425	100.0% 2,356,800	99.9% 2,354,000	97.1% 2,288,975	88.9% 2,096,275	56.4% 1,329,175	22.4% 528,725
Conservation and natural environments	170,175	99.8% 169,825	99.5% 169,375	97.0% 165,050	90.0% 153,125	59.1% 100,575	25.9% 44,050
Conservation and natural environments non forest	28,475	99.6% 28,350	99.0% 28,200	92.9% 26,450	70.6% 20,100	15.5% 4,425	3.4% 975
Conservation and natural environments Woodland forest	57,300	99.9% 57,250	99.7% 57,150	98.5% 56,425	94.5% 54,125	71.6% 41,050	35.6% 20,400
natural environments Forest (non woodland)	84,400	99.8% 84,225	99.6% 84,025	97.4% 82,175	93.5% 78,900	65.3% 55,100	26.9% 22,675
Agriculture	2,084,900	100.0% 2,084,900	99.9% 2,083,650	97.4% 2,031,150	89.6% 1,867,175	56.9% 1,186,275	22.4% 466,850
Grazing	2,042,475	100.0% 2,042,475	99.9% 2,041,275	97.6% 1,992,925	90.0% 1,839,050	57.6% 1,176,300	22.7% 462,950
Grazing non forest	1,171,800	100.0% 1,171,800	99.9% 1,170,600	96.1% 1,125,975	84.7% 992,600	47.7% 558,475	16.7% 195,275
Grazing Woodland forest	819,825	100.0% 819,825	100.0% 819,825	99.6% 816,950	97.5% 799,325	72.1% 590,725	31.1% 254,950
Grazing - Forest (non woodland)	50,850	100.0% 50,850	100.0% 50,850	98.3% 50,000	92.7% 47,125	53.3% 27,100	25.0% 12,725
Irrigation	42,125	100.0% 42,125	99.9% 42,075	90.0% 37,925	66.1% 27,850	23.5% 9,900	9.2% 3,875
Production native forests and plantation forests	25,125	100.0% 25,125	100.0% 25,125	100.0% 25,125	99.8% 25,075	86.4% 21,700	38.7% 9,725







