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 2021

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 Jun 2021

Land use and forest cover

Catchment Scale

of Australia (2018)

(2018) and Forests

of Australia (2018)

Anomaly show how many percetage points each

pixel is from

mean of that pixel. The mean is only for the

month of the map

using baseline from 2001 to

2019.

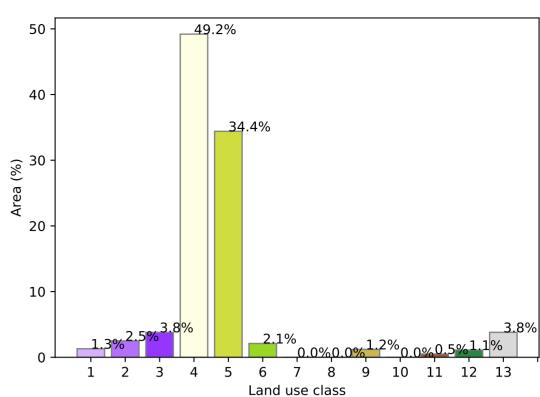
the mean. That is, red pixels are about 20% lower than the

Derived from

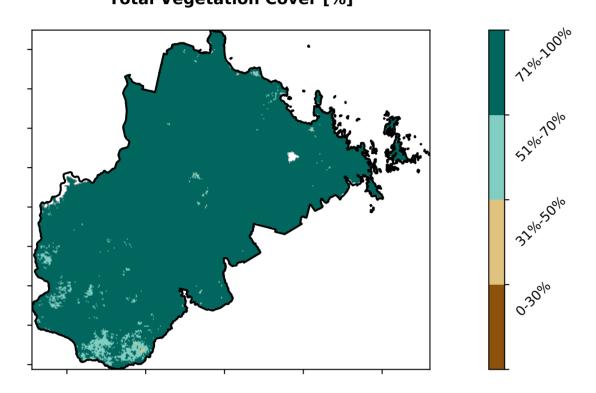
Use of Australia

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

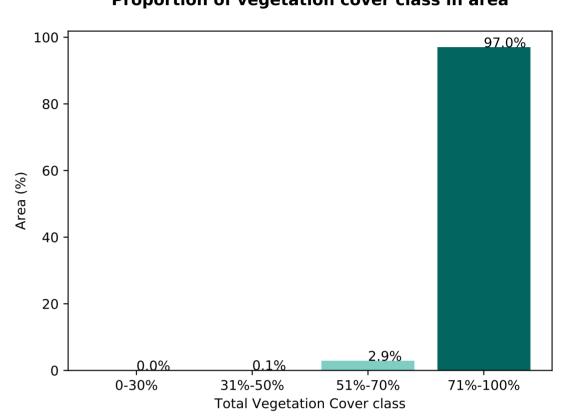
Proportion of each land class in area

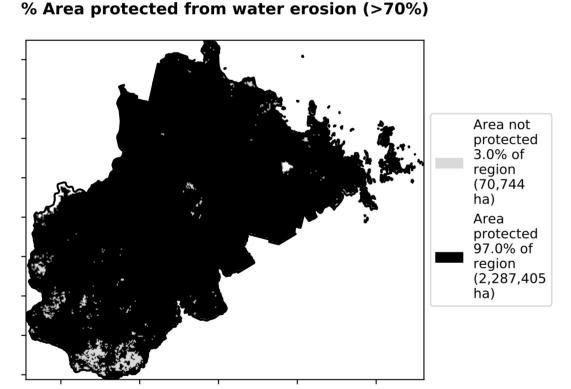


Total Vegetation Cover [%]

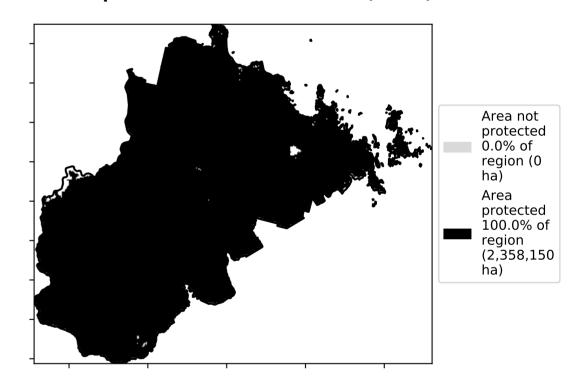


Proportion of vegetation cover class in area

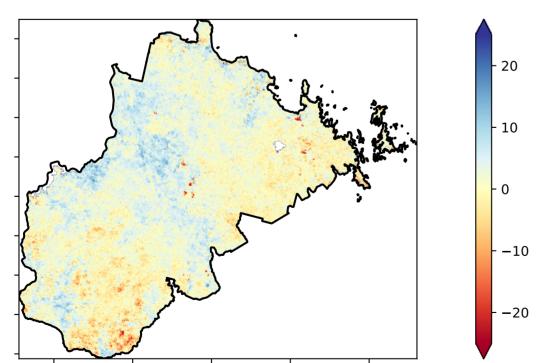




% Area protected from wind erosion (>50%)

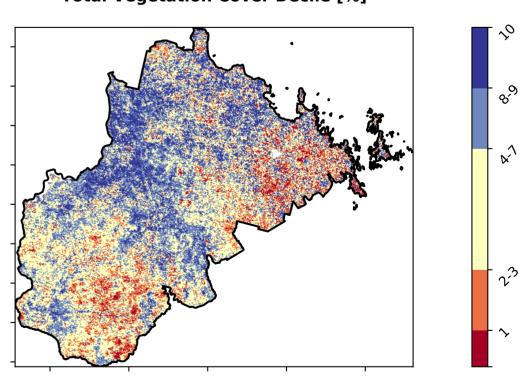


Total Vegetation Cover Anomaly [%]



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.

Total Vegetation Cover Decile [%]

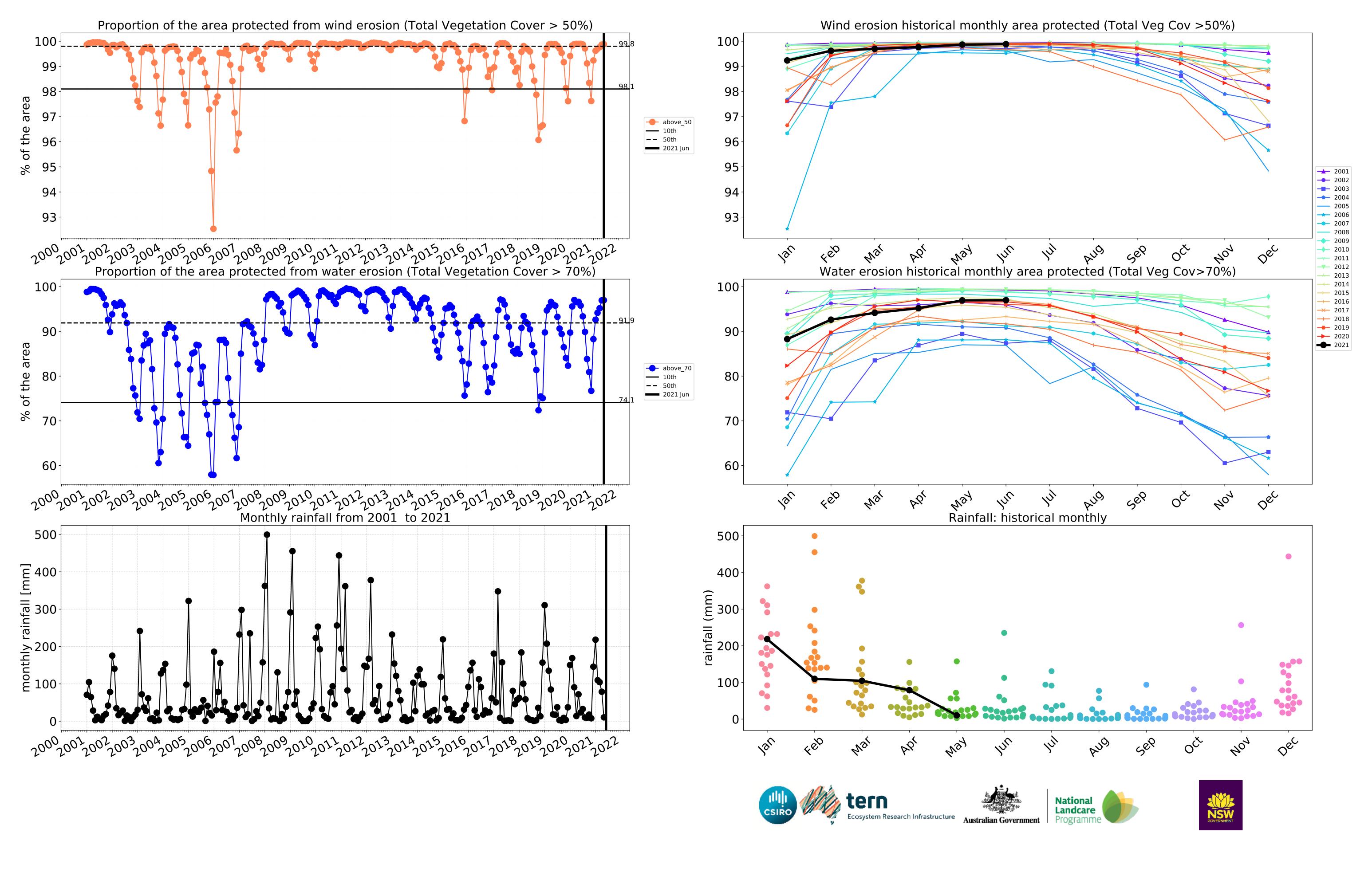












Conservation and natural environments

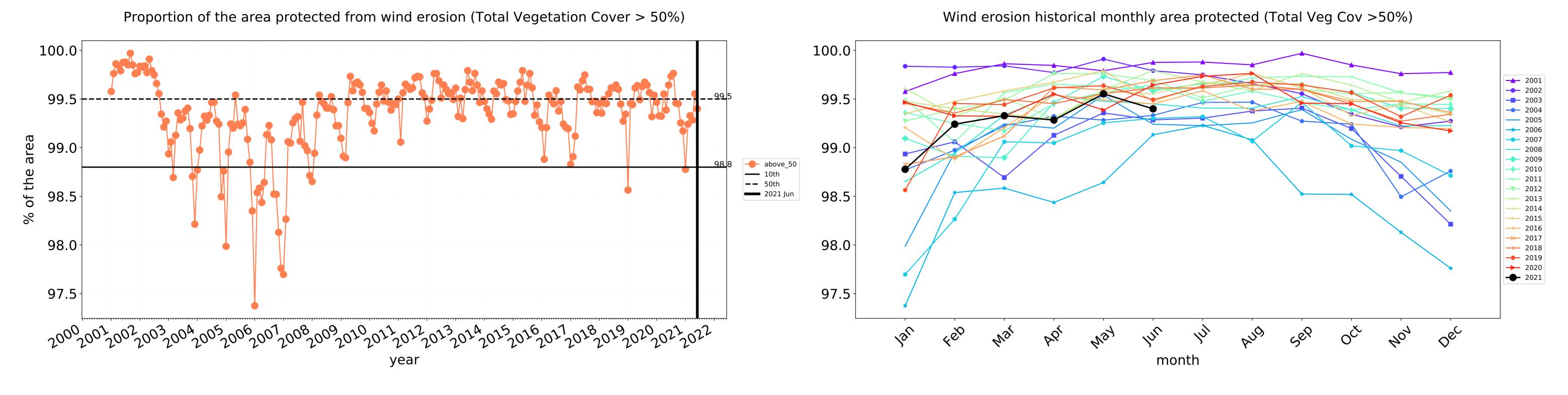
Land use and forest cover Proportion of each land class in area 50.2% 50 40 Catchment Scale 32.8% Land Use and Forests 1 Conservation and natural environments - Nonof Australia (2018) Area (%) 08 Derived from Catchment Scale Land 2 Conservation and natural environments - Woodland Use of Australia (2018) and Forests of Australia (2018) 3 Conservation and natural environments - Non-20 17.0% 10 2 3 Land use class **Total Vegetation Cover [%]** Proportion of vegetation cover class in area 100 97.3% 80 60 20 2.1% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class** % Area protected from water erosion (>70%) % Area protected from wind erosion (>50%) Area not protected 2.7% of Area not protected 1.0% of region (1,706 ha) region (4,607 ha) Area Area protected 99.0% of protected 97.3% of region (166,042 region (168,943 ha) ha) **Total Vegetation Cover Anomaly [%] Total Vegetation Cover Decile [%]** - 20 Anomaly show how many percetage points each pixel is from Deciles show where the - 10 pixel value lies in the the mean. That record, from highest to lowest, for that month. That is, red pixels are is, red pixels are about 20% lower than the mean of that in the lowest 10% of pixel. The mean records for that month of is only for the month of the map the map using baseline from 2001 to 2019. using baseline from 2001 to 2019. -10 **-**20 National Landcare

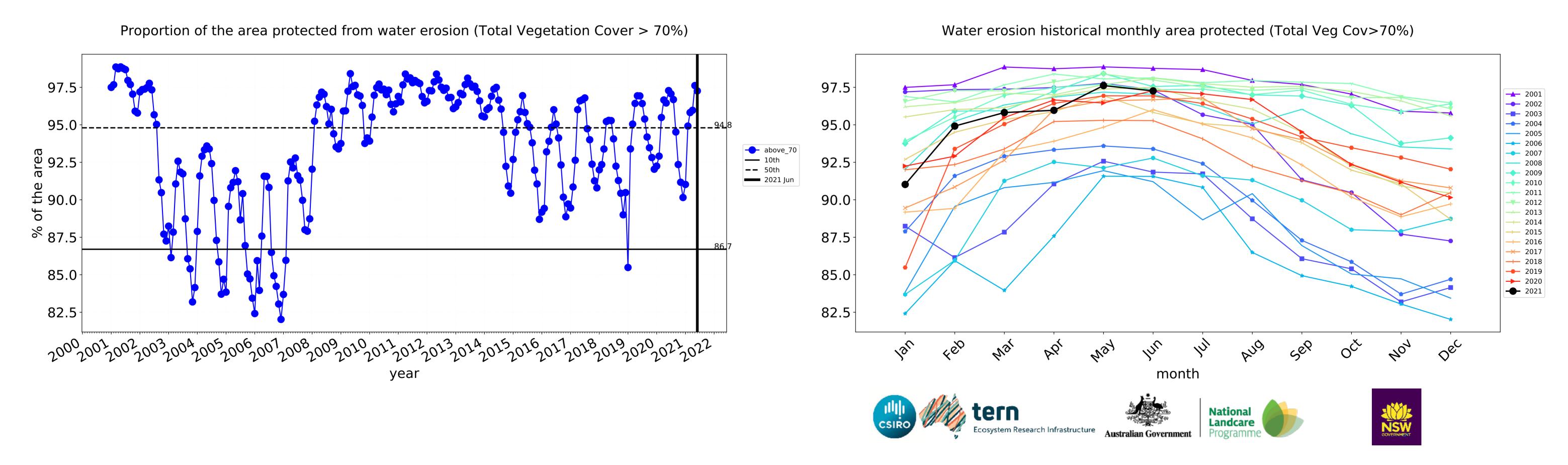
Australian Government

Programme

Ecosystem Research Infrastructure

Conservation and natural environments timeseries



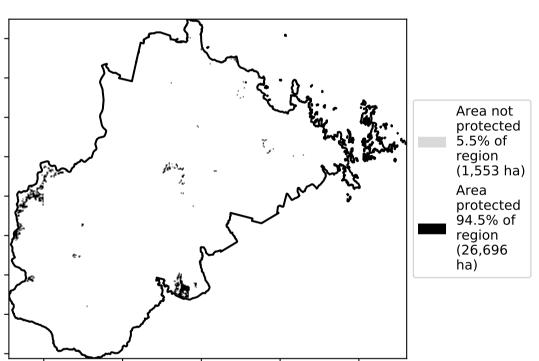


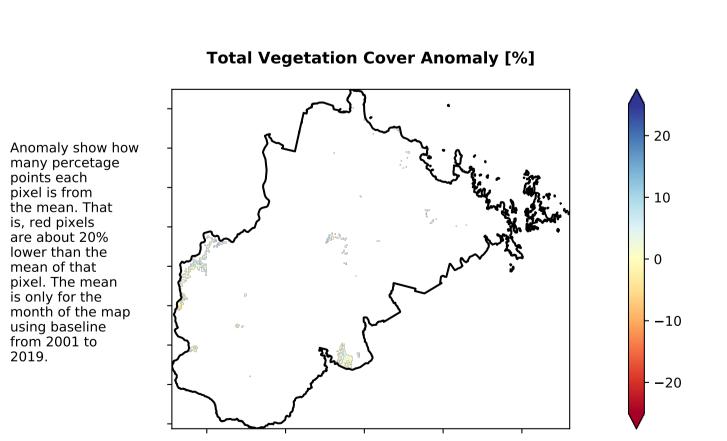
Conservation and natural environments non forest

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) 1 Conservation and natural environments - Non-

Total Vegetation Cover [%]

% Area protected from water erosion (>70%)



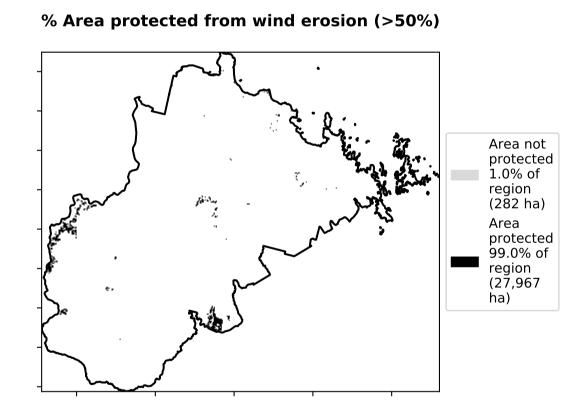


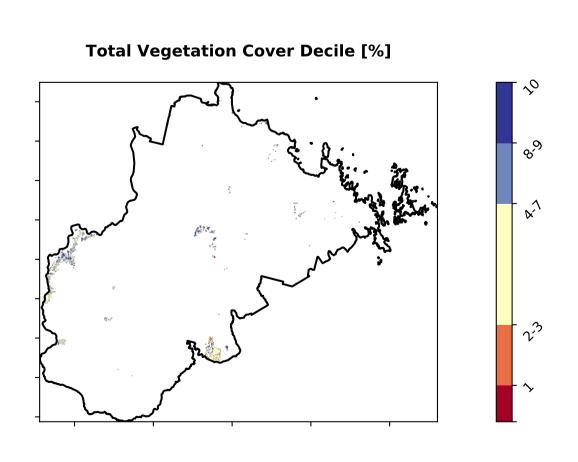
is, red pixels

mean of that

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 94.5% 80 60 20 4.4% 0 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**





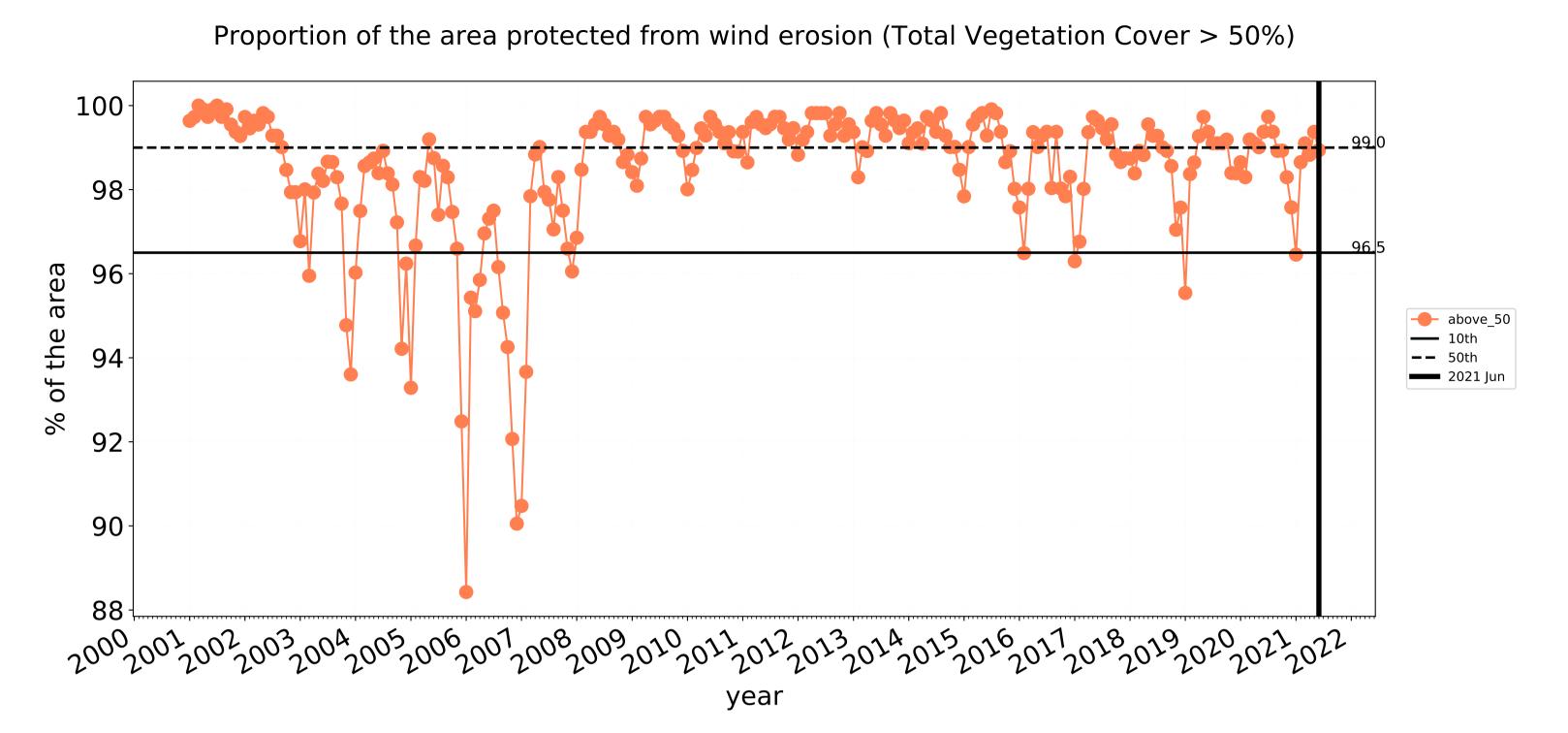


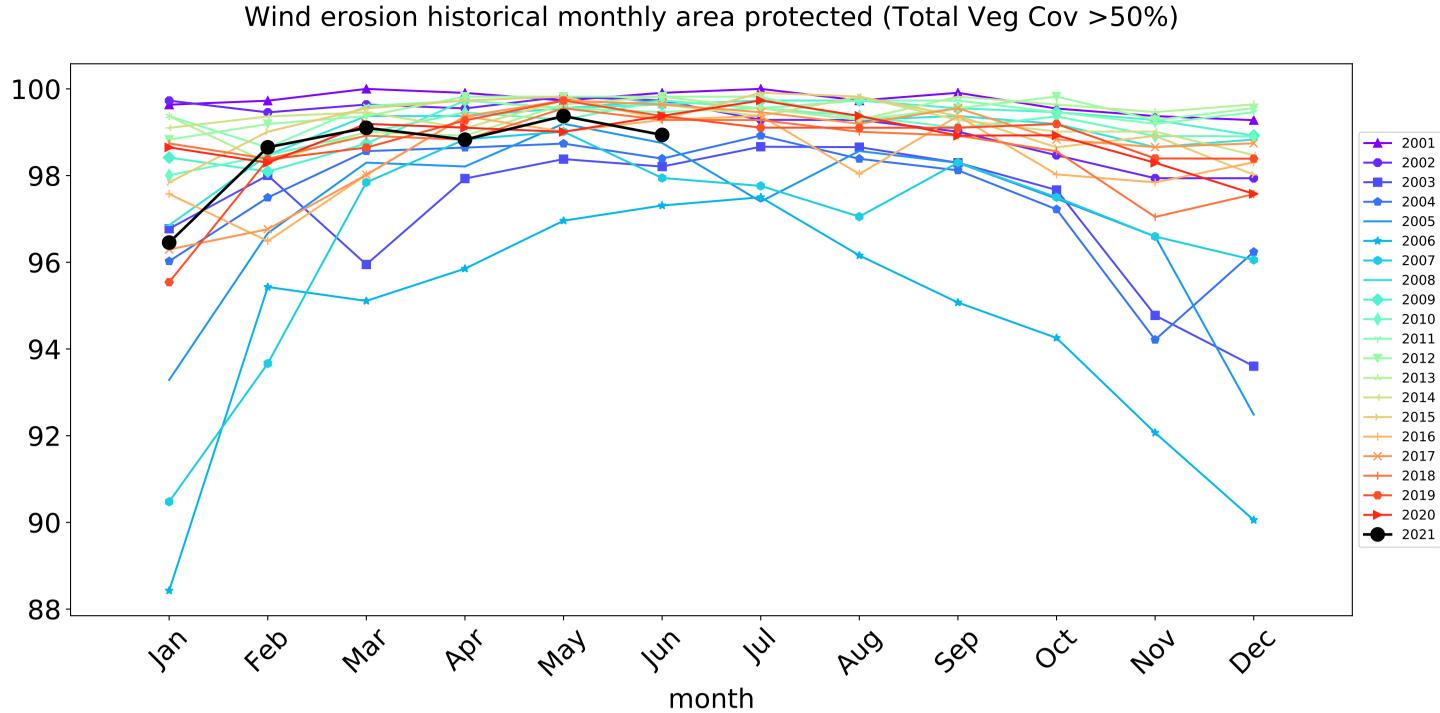


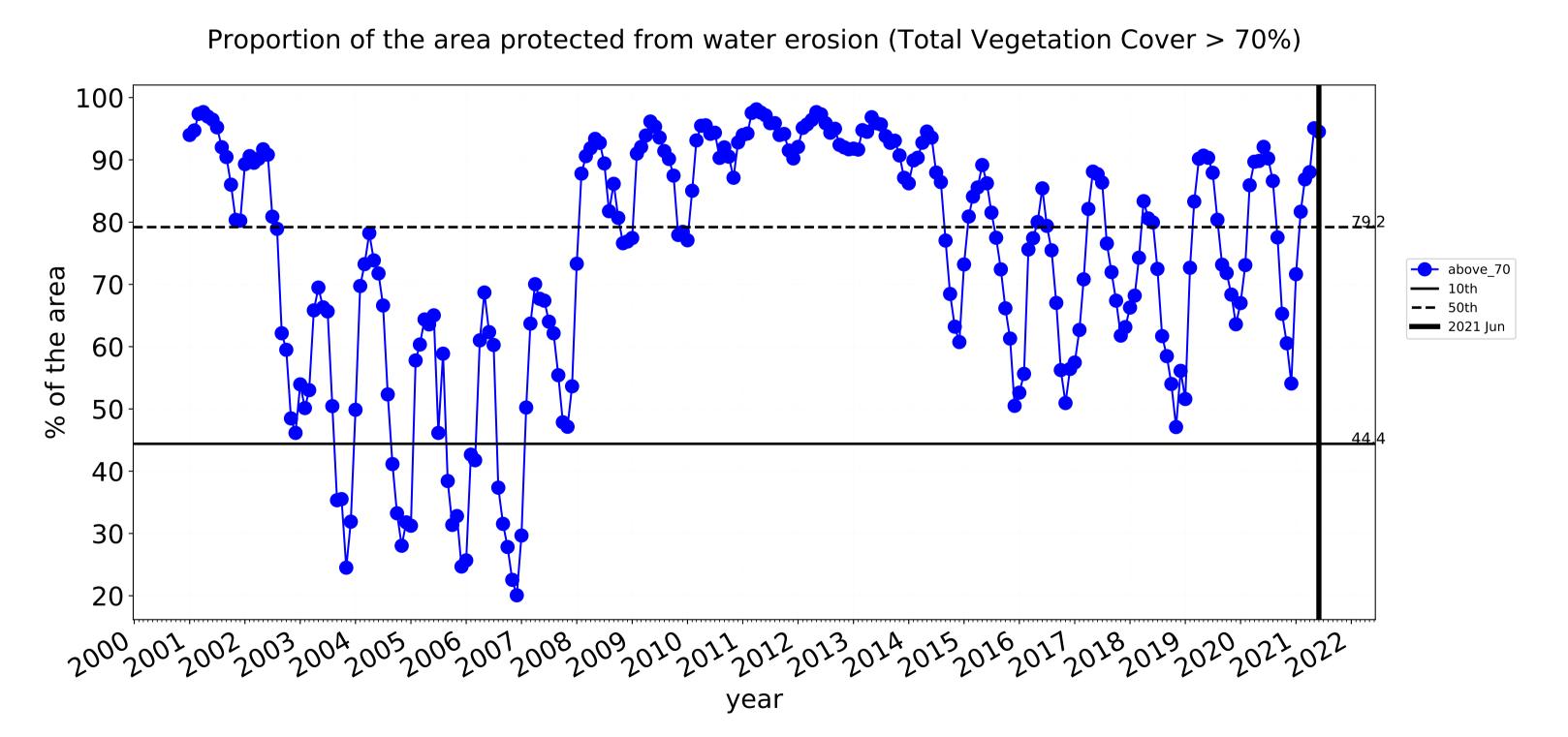


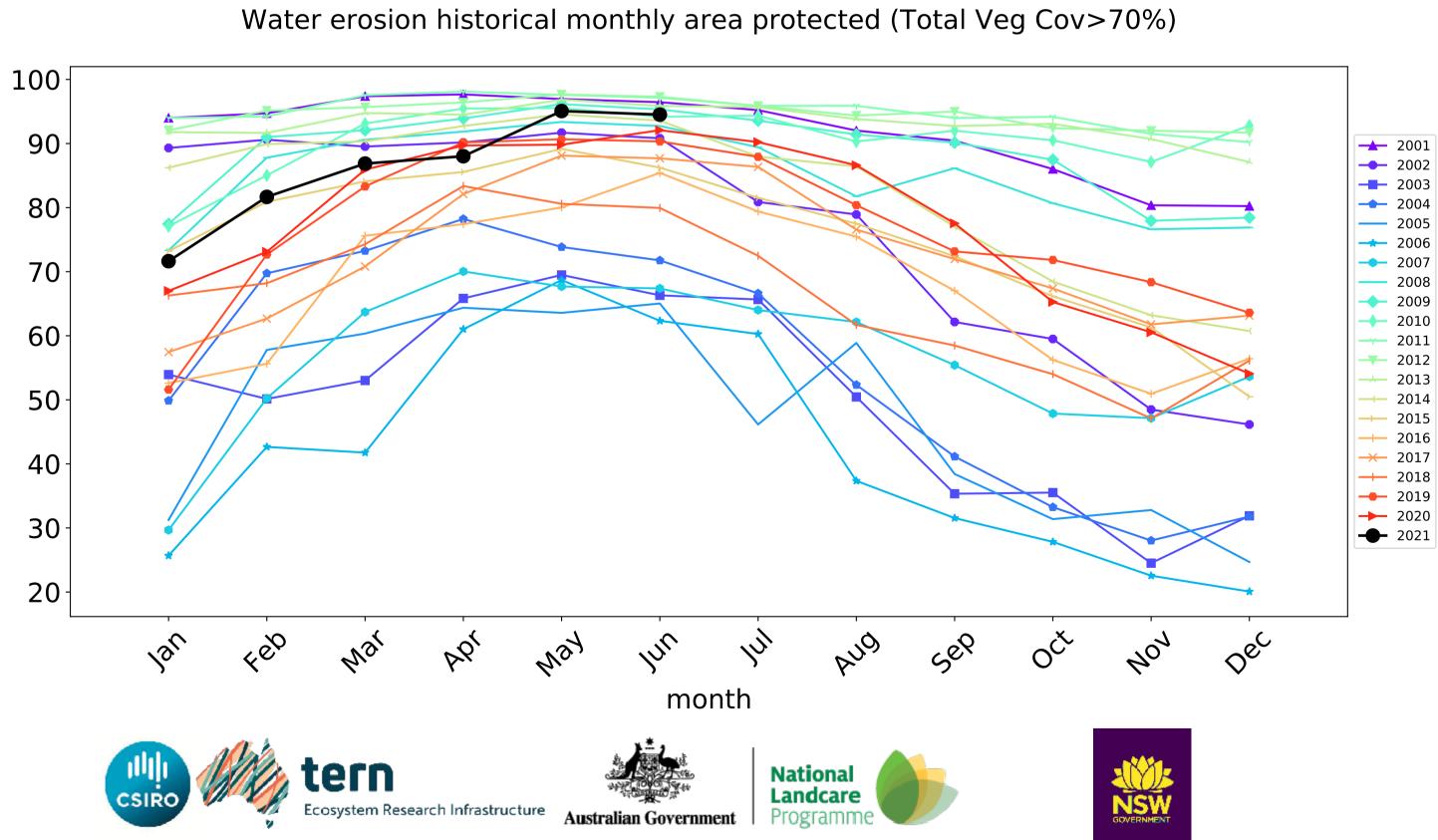


Conservation and natural environments non forest timeseries







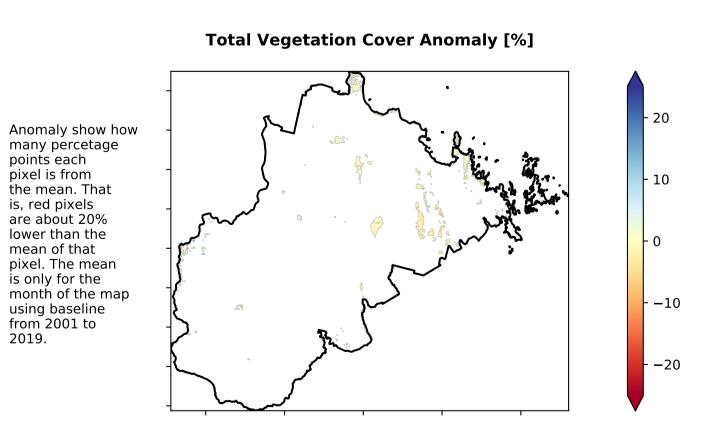


Conservation and natural environments Woodland forest

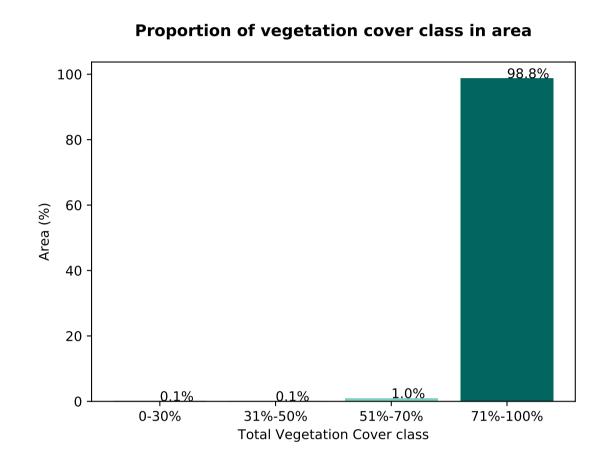
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Australia (2018) 1 Conservation and natural environments - Woodland forest forest

Total Vegetation Cover [%]

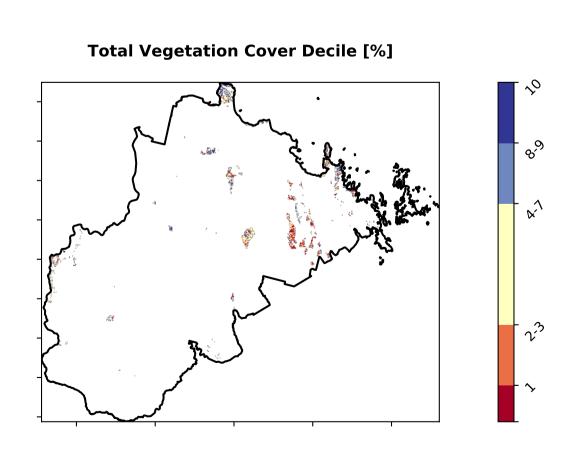
Area not protected 1.2% of region (685 ha) Area protected 98.8% of region (56,464 ha)



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.



Area not protected 0.0% of region (0 ha)
Area protected 100.0% of region (57,150 ha)

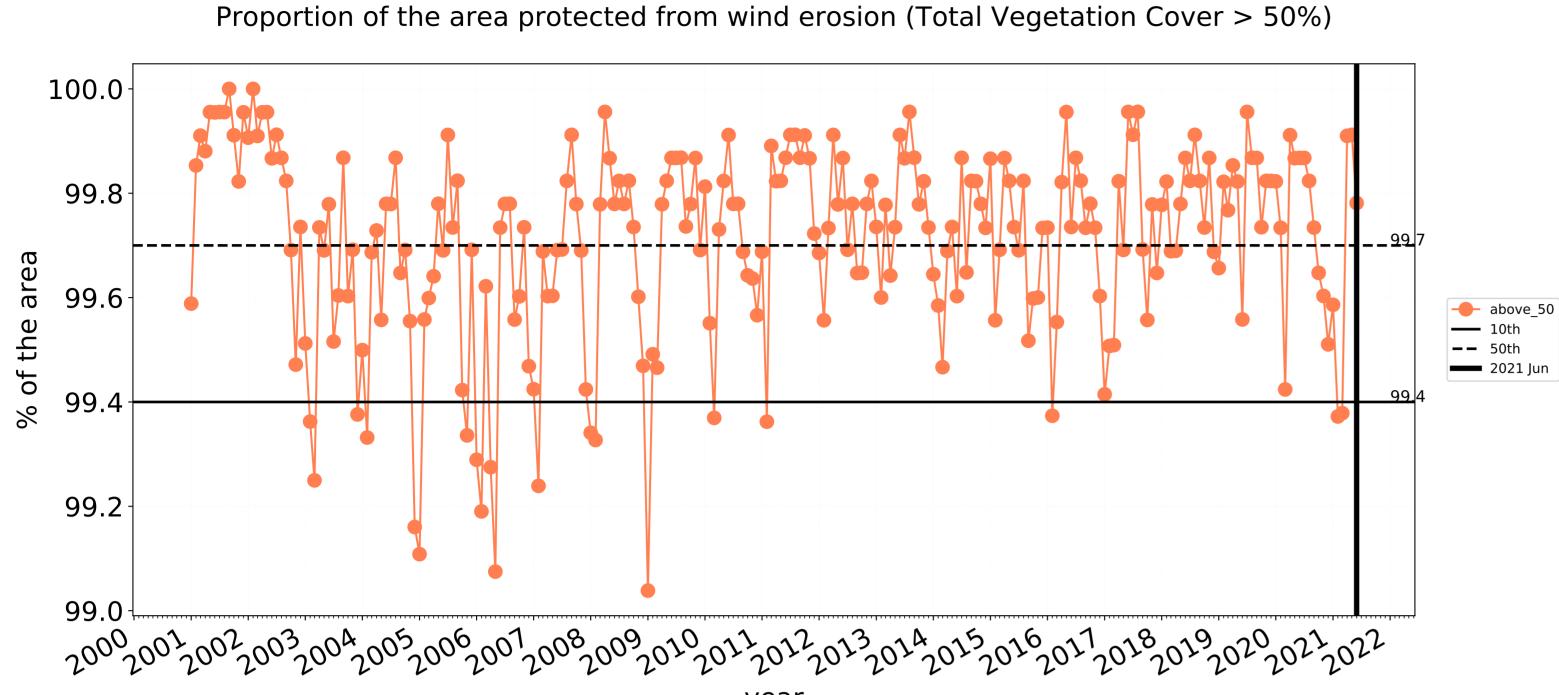


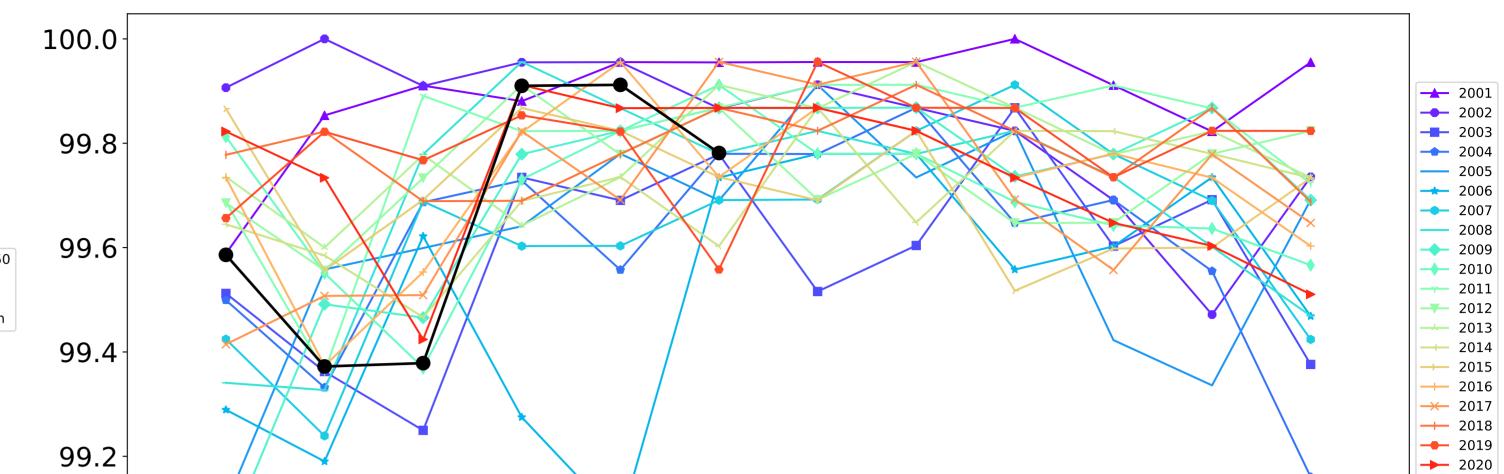










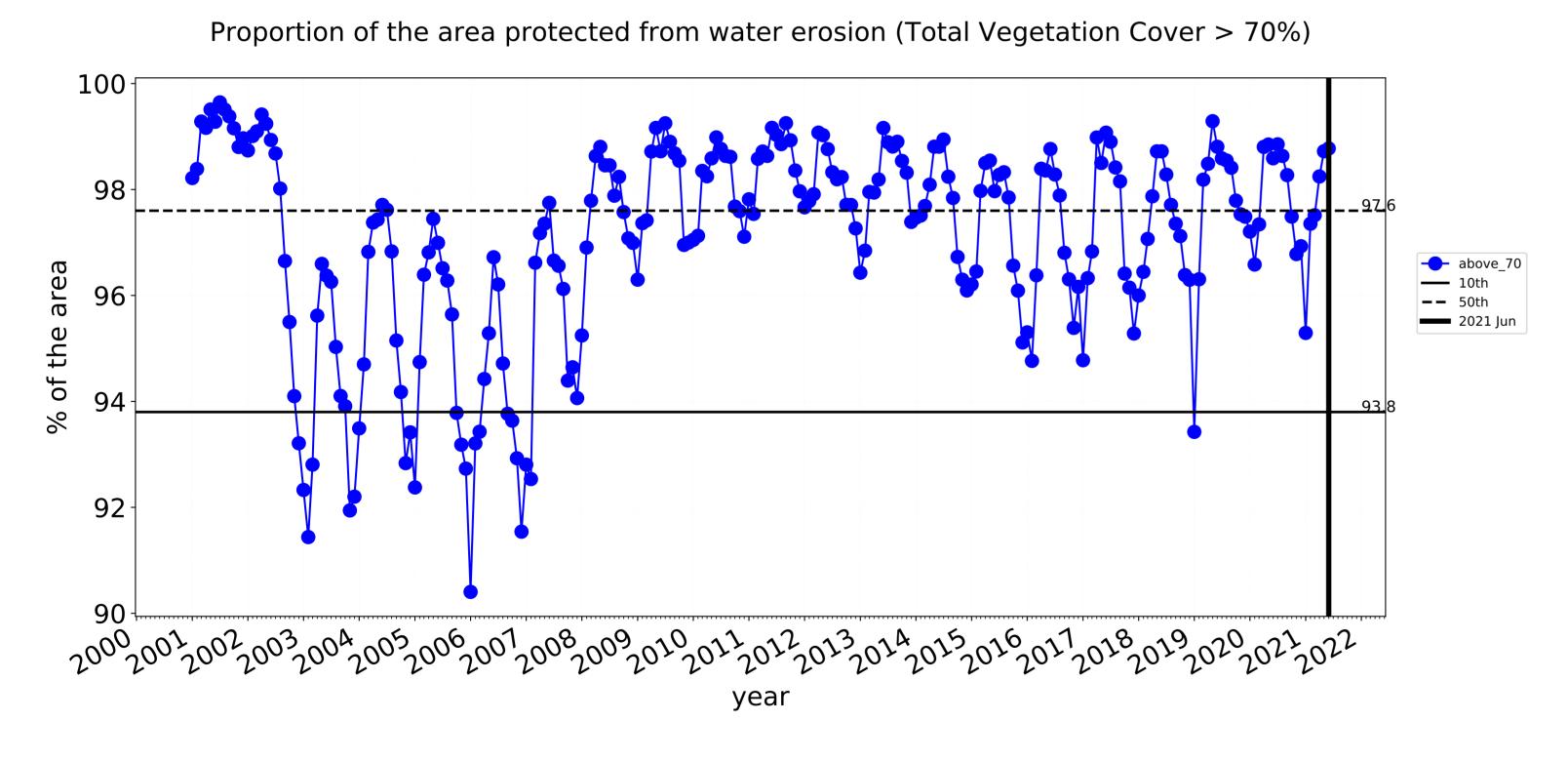


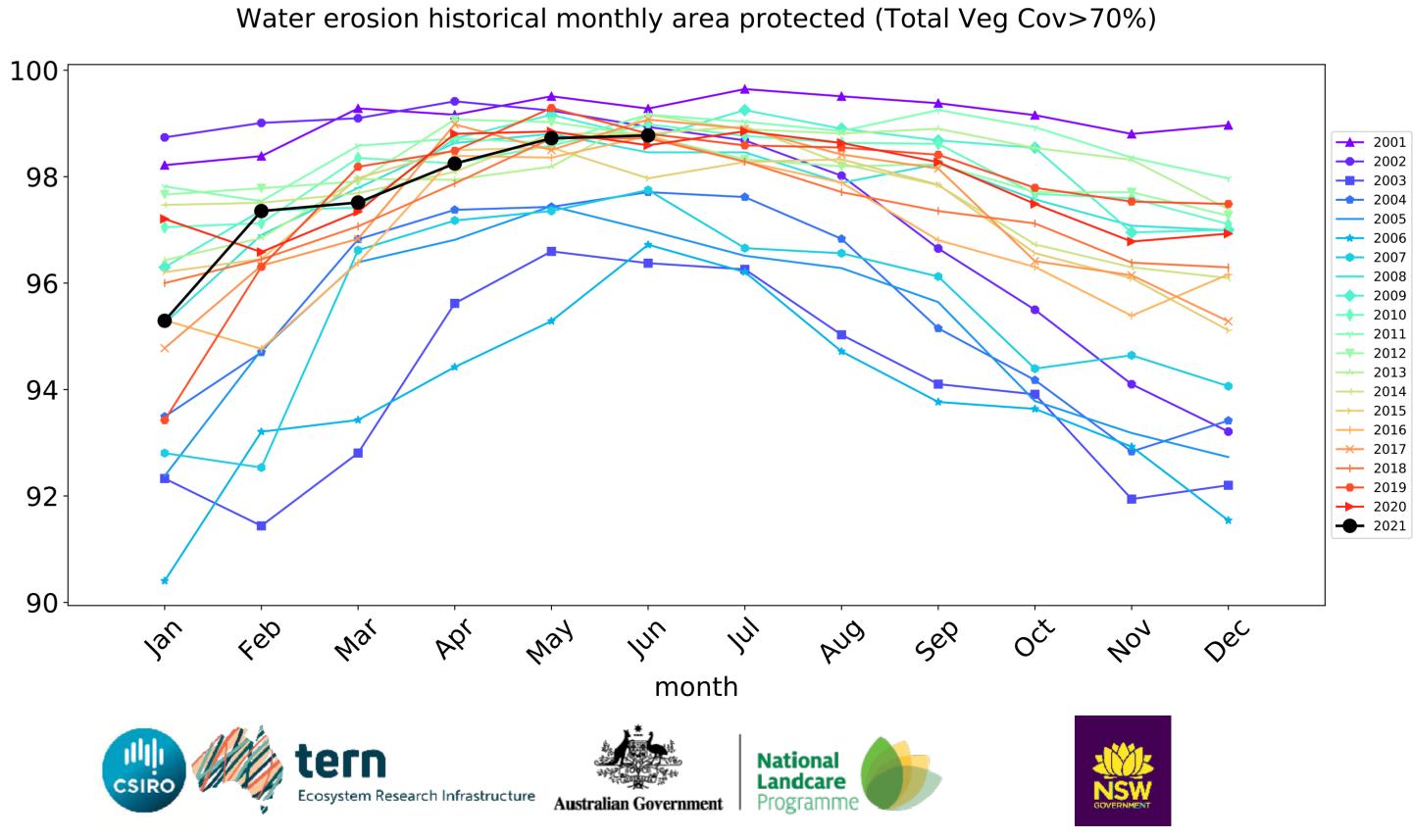
month

99.0

--- 2021

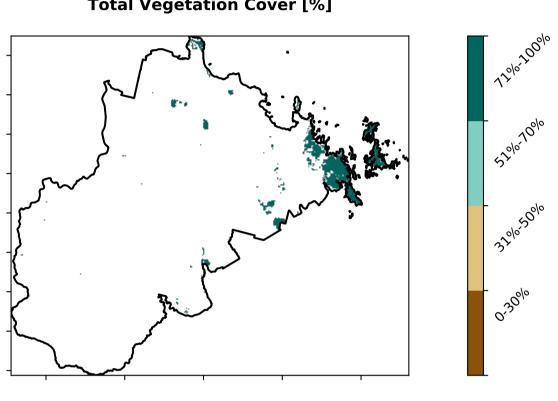
Wind erosion historical monthly area protected (Total Veg Cov >50%)

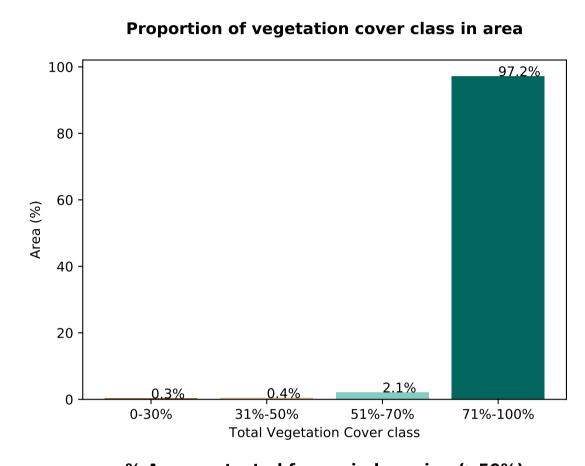


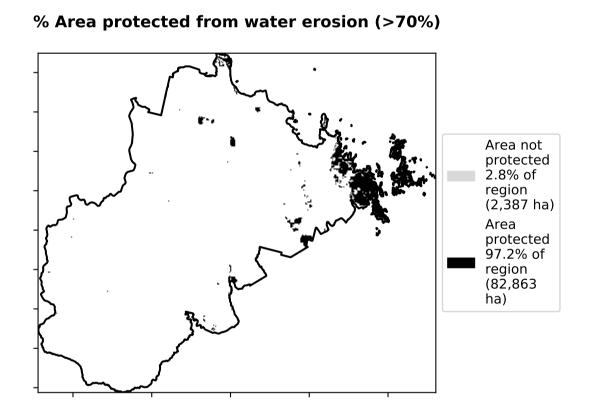


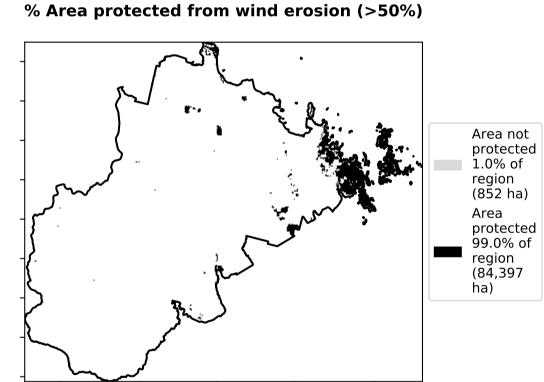
Conservation and natural environments Forest (non woodland)

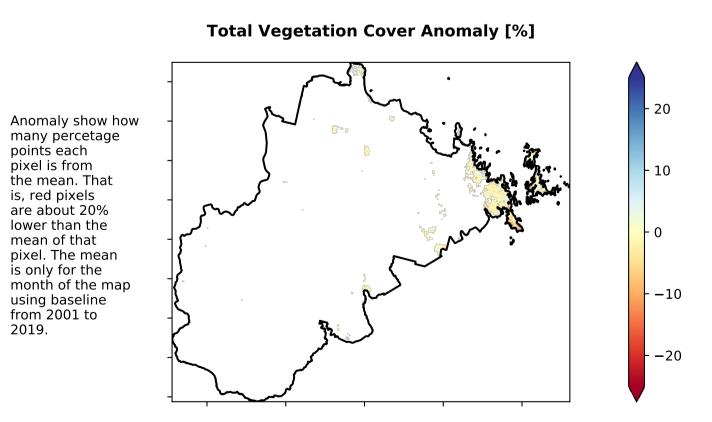
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Total Vegetation Cover [%]

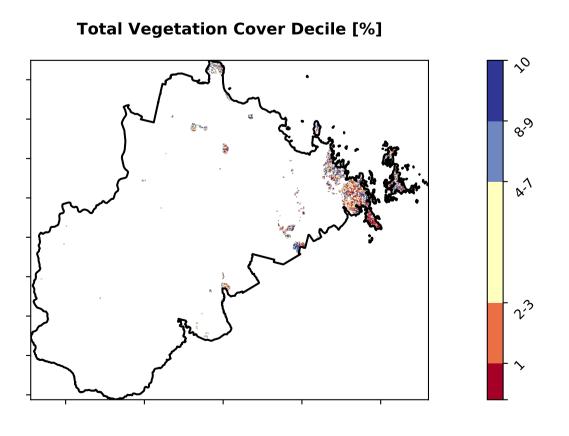












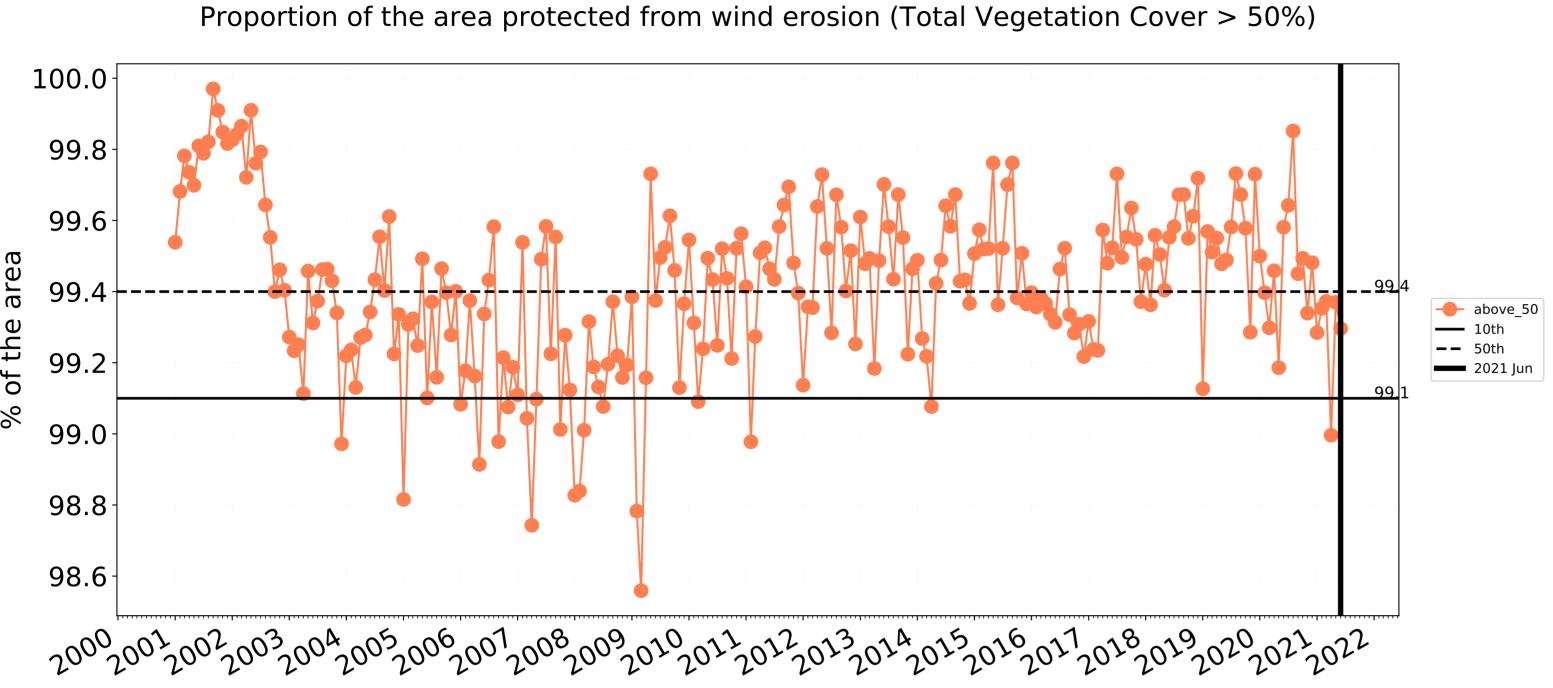


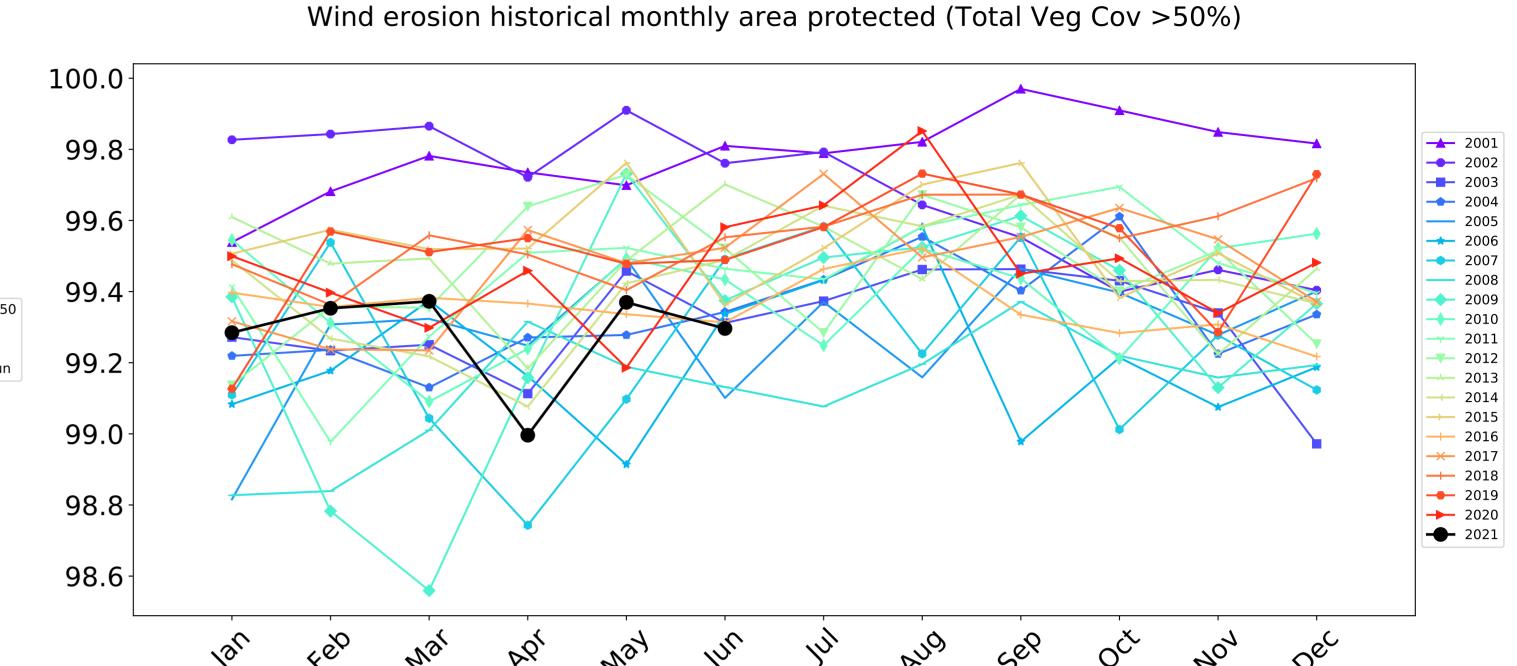
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseling.

the map using baseline from 2001 to 2019.

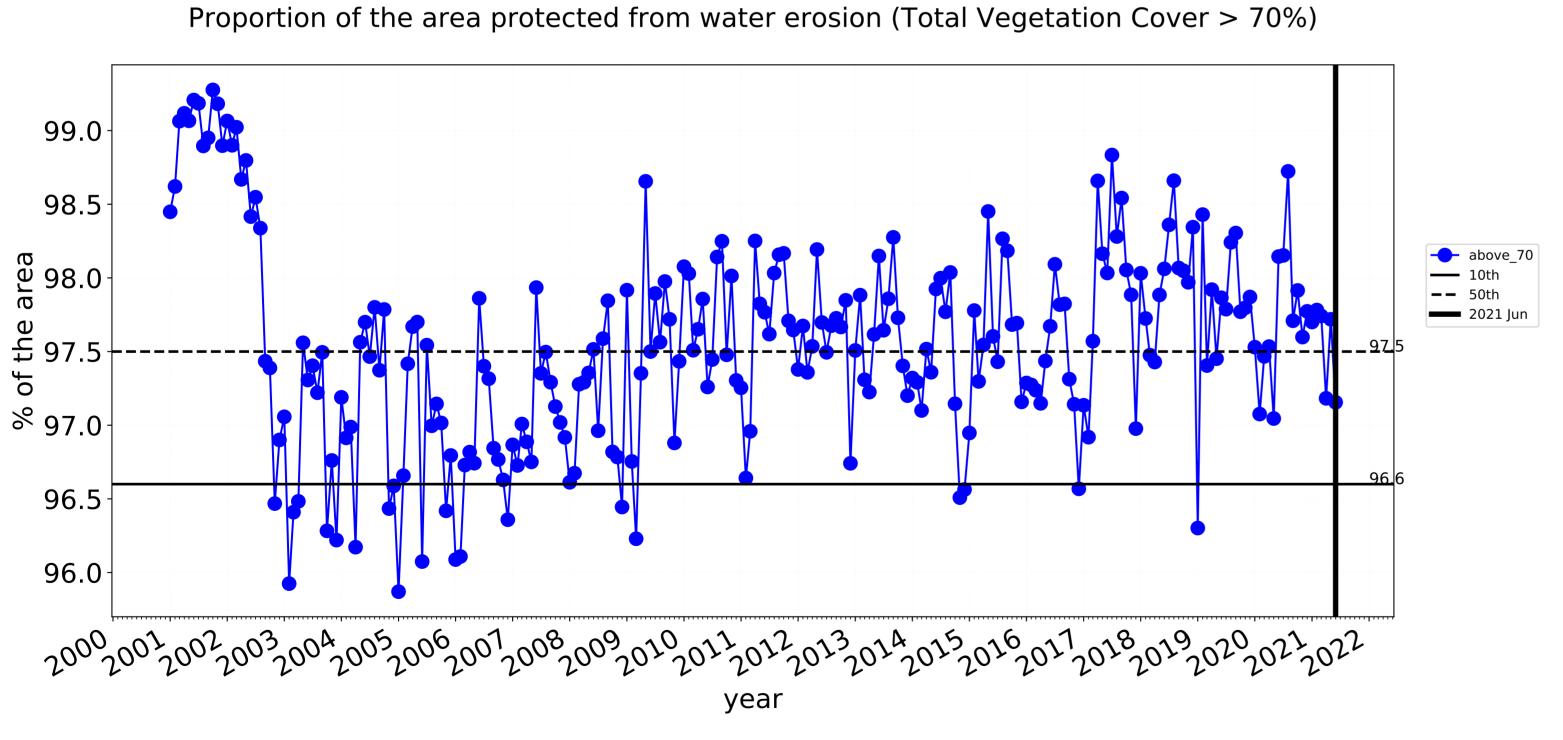


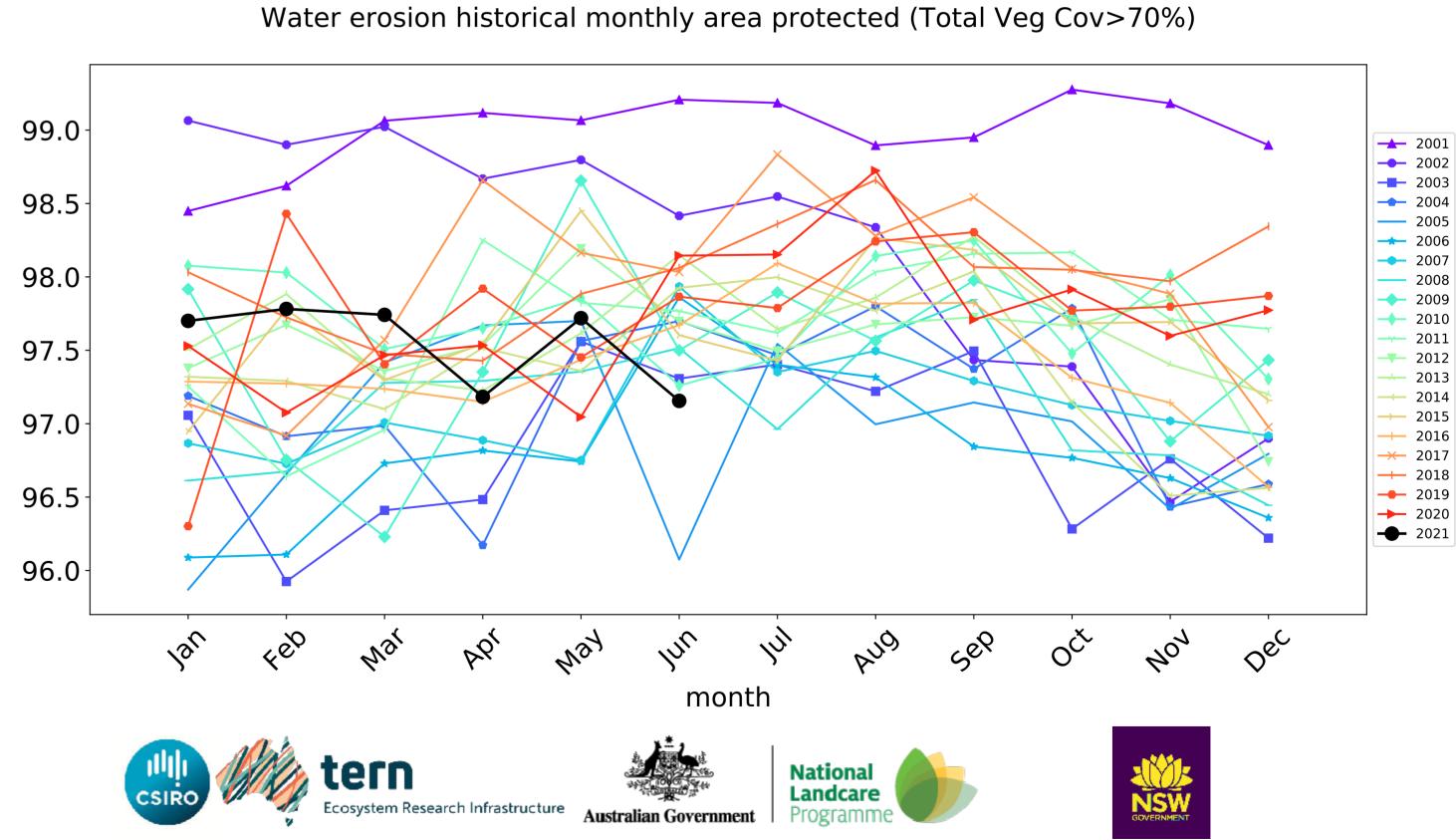






month





Agriculture

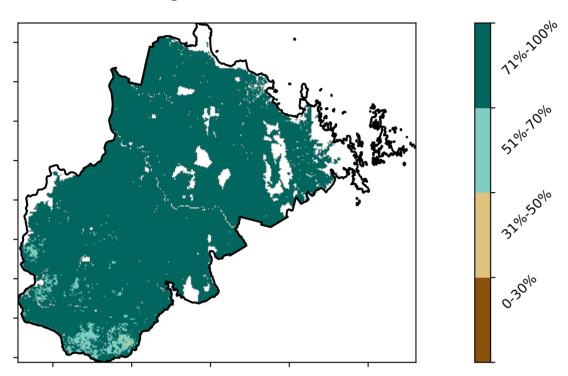
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) 1 Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest Derived from 4 Agriculture - Grazing - Irrigated Catchment Scale Land 5 Agriculture - Cropping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

50 40 Area (%) 20 -10

<u>56.</u>2% 39.3%

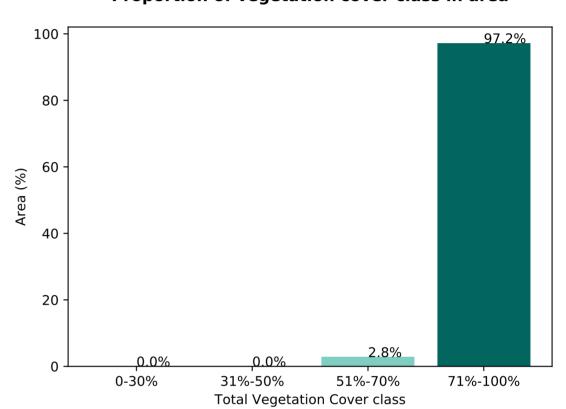
Proportion of each land class in area



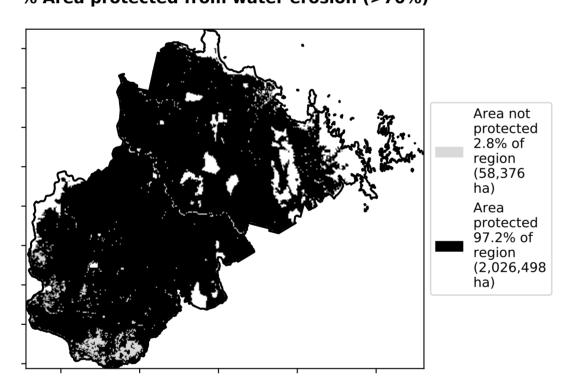


Proportion of vegetation cover class in area

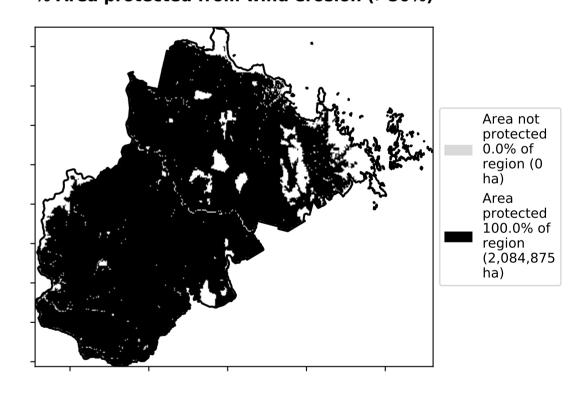
Land use class



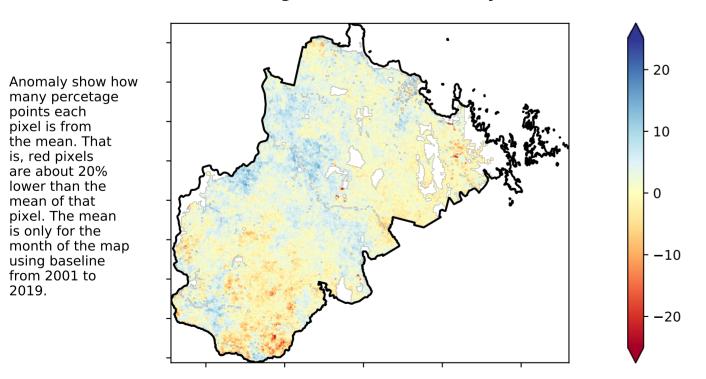
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

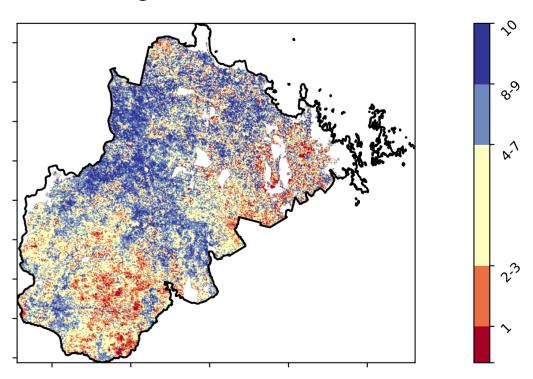


Total Vegetation Cover Anomaly [%]



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

using baseline from 2001 to 2019.

is only for the month of the map



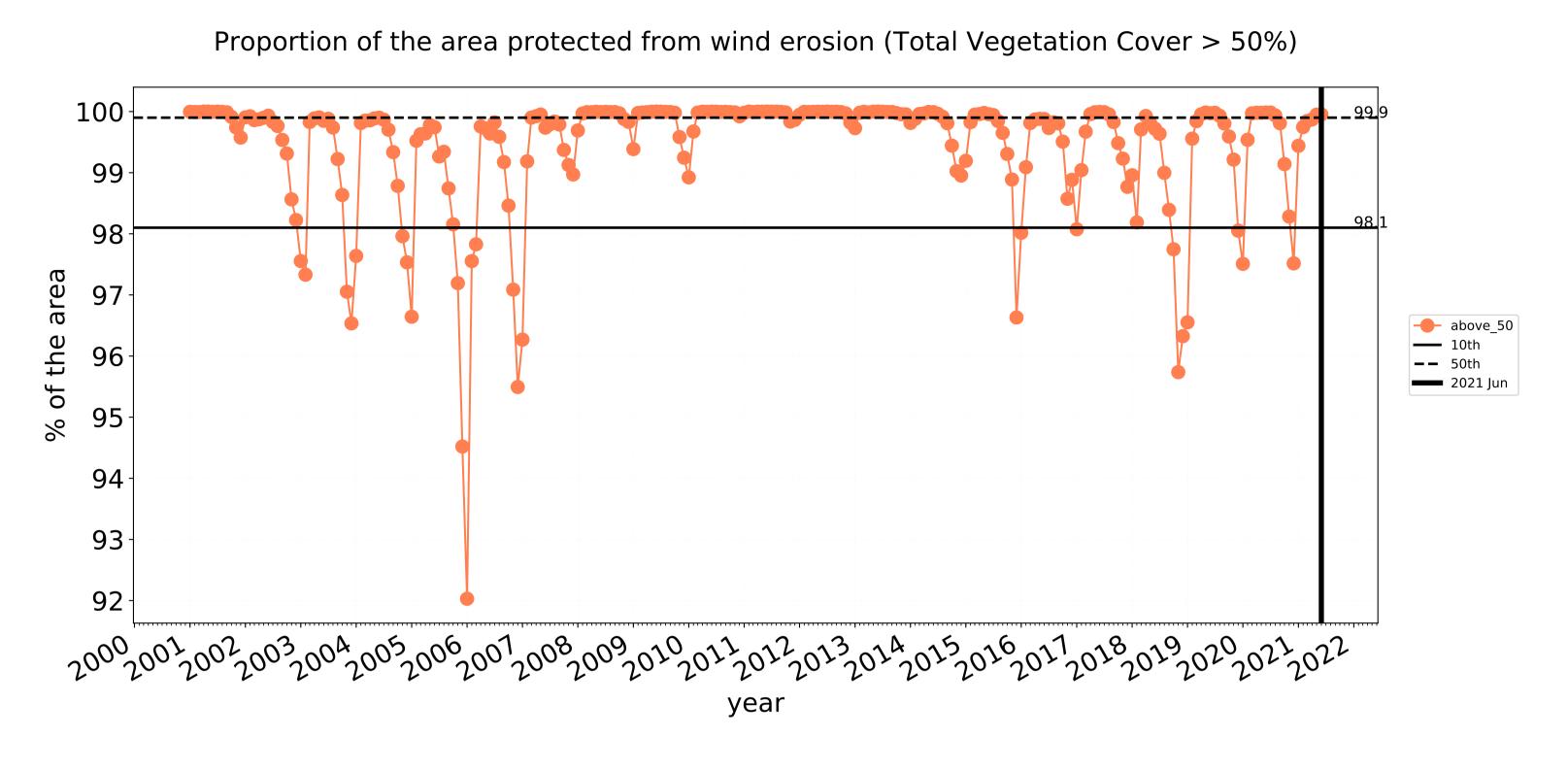


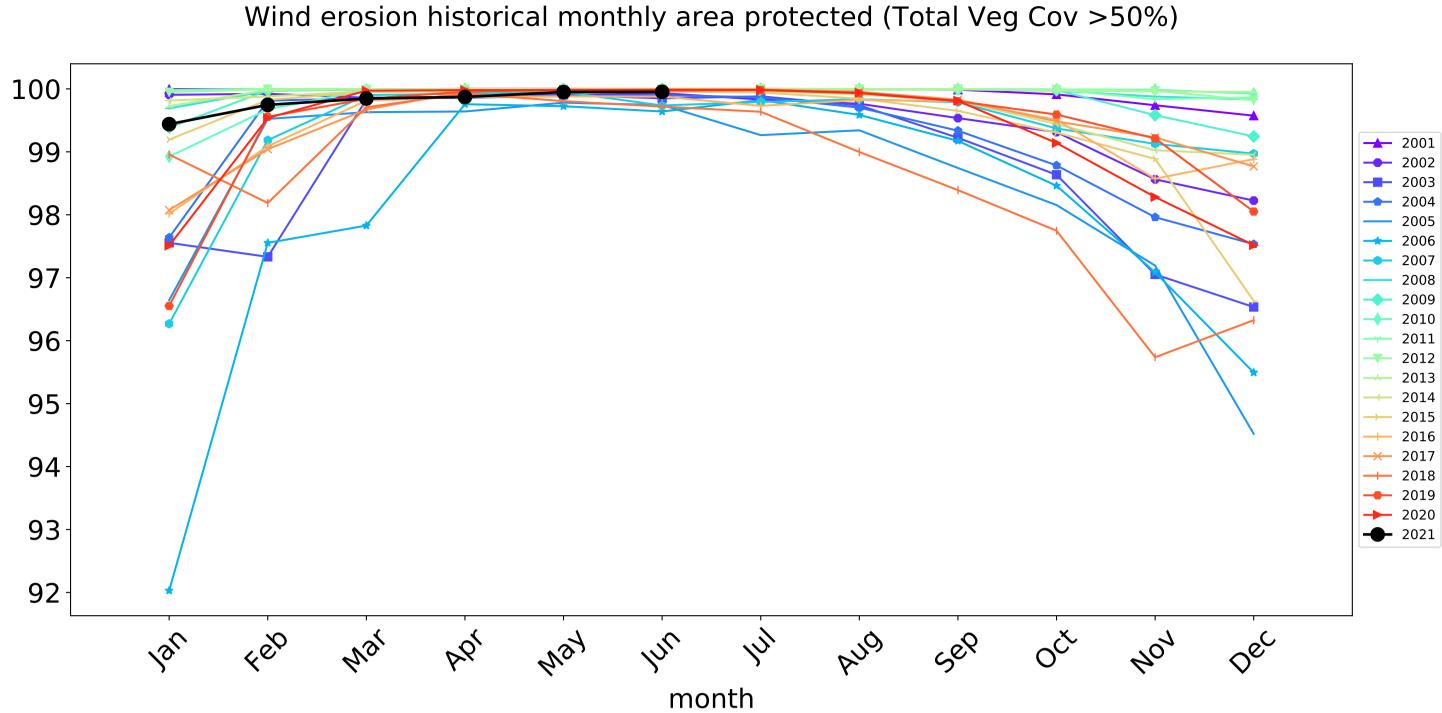


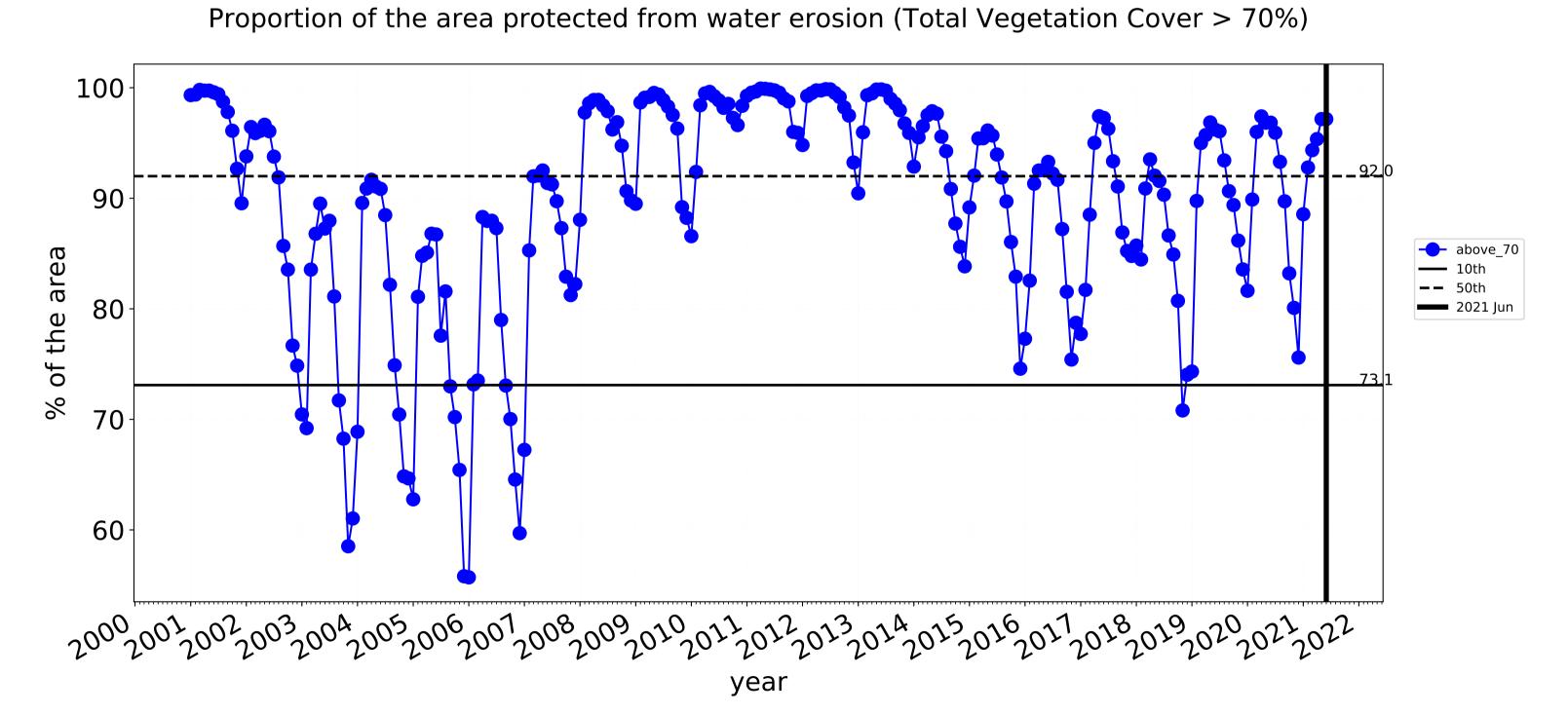


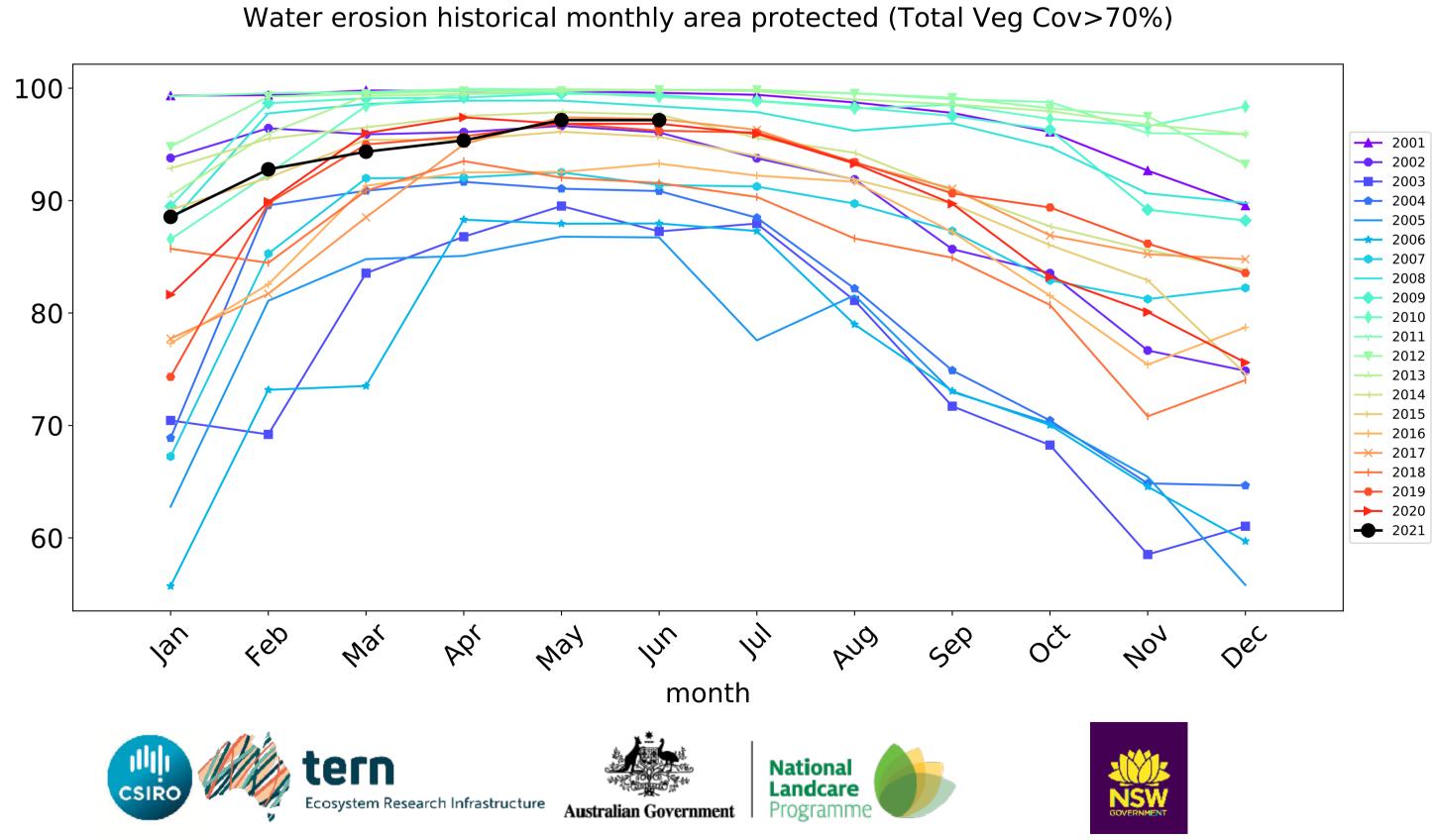


Agriculture timeseries



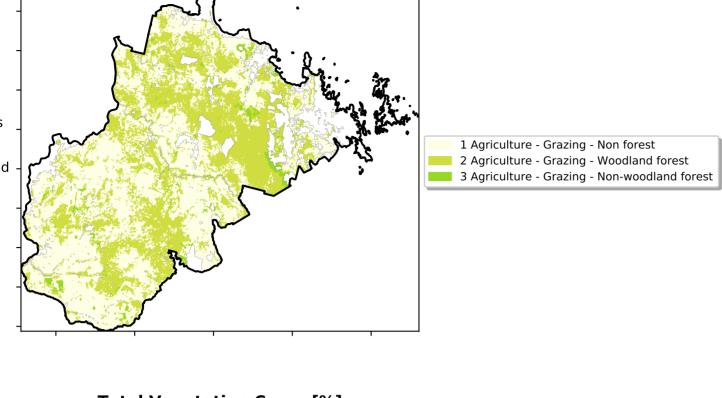




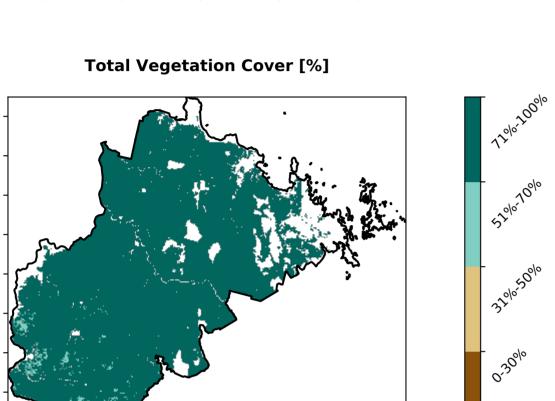


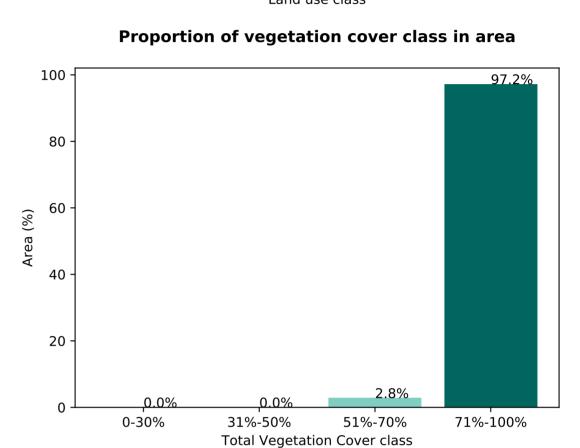
Grazing

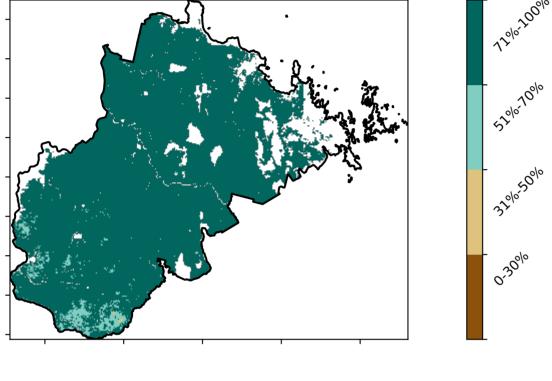
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land 1 Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest Use of Australia (2018) and Forests of Australia (2018)



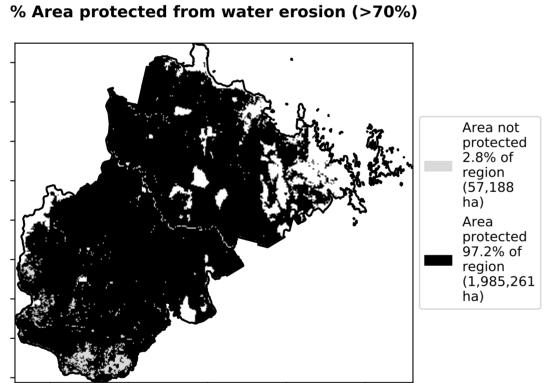
Proportion of each land class in area 60 -57.4% 50 40.1% 40 Area (%) 20 10 2.5% 2 Land use class

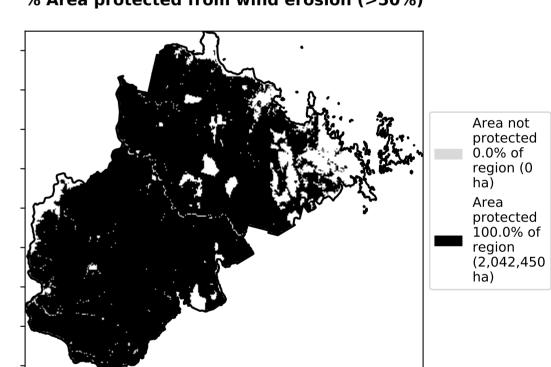






% Area protected from wind erosion (>50%)





Total Vegetation Cover Anomaly [%]

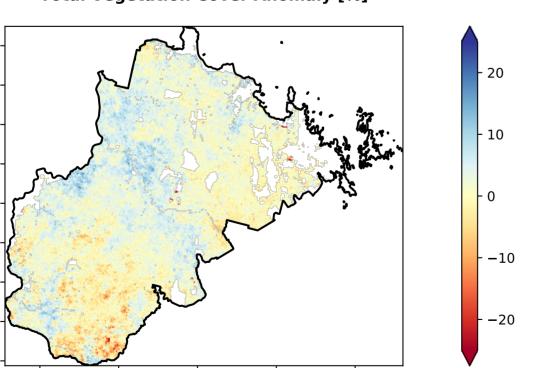
Anomaly show how many percetage points each pixel is from the mean. That

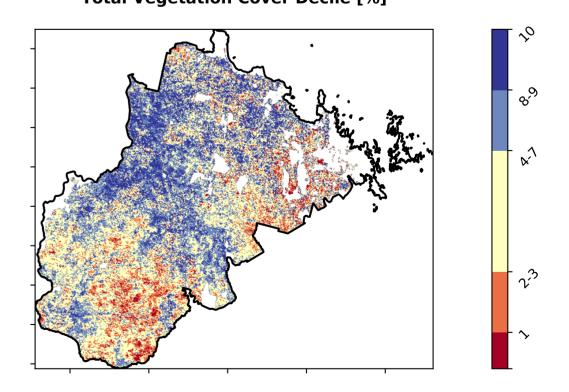
is only for the month of the map

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 [%]





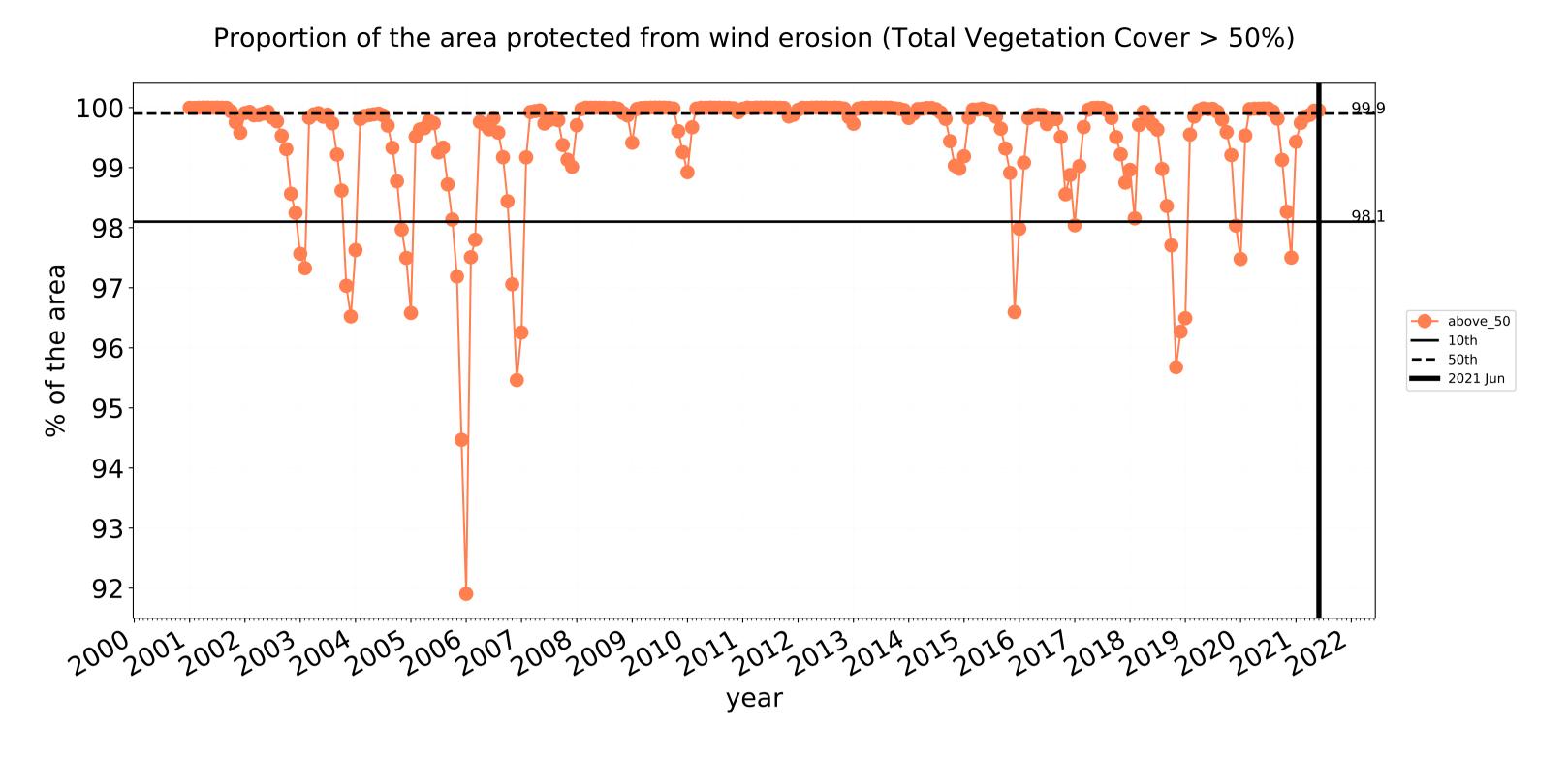
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

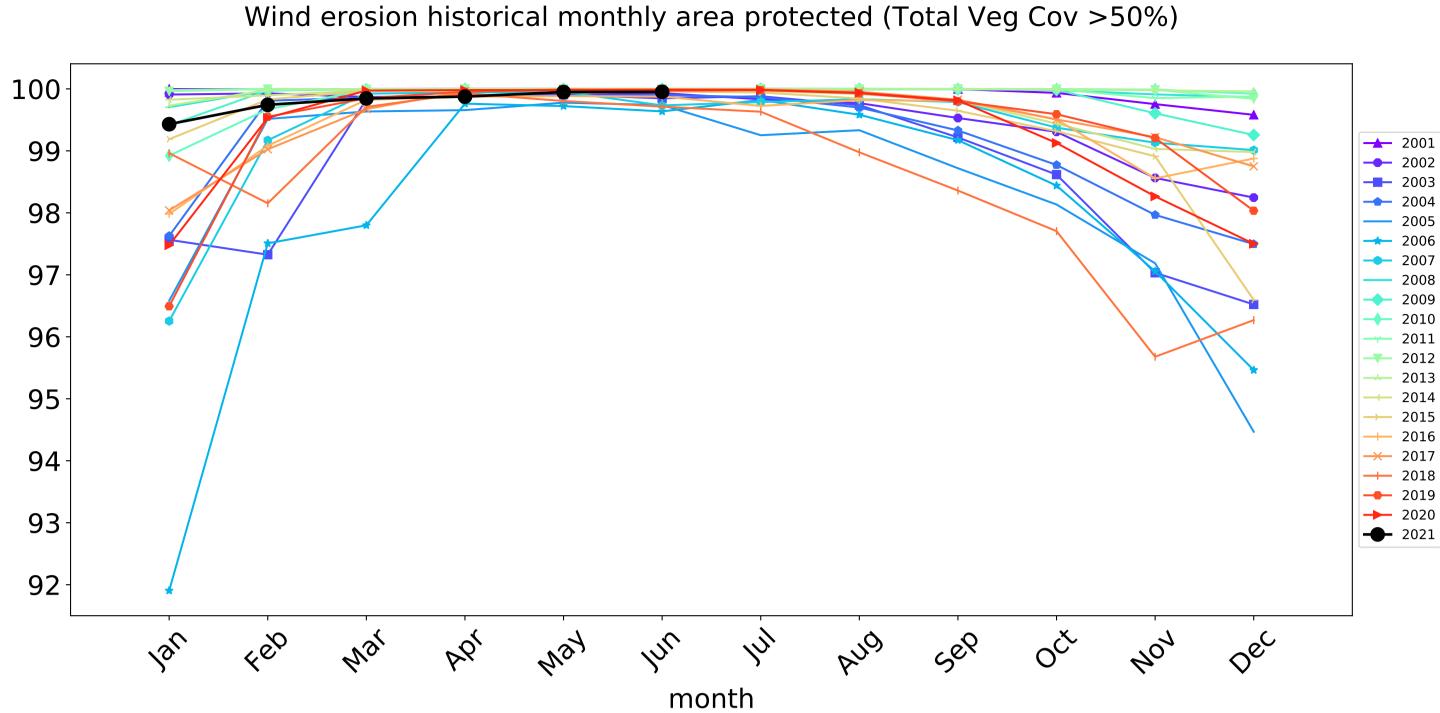


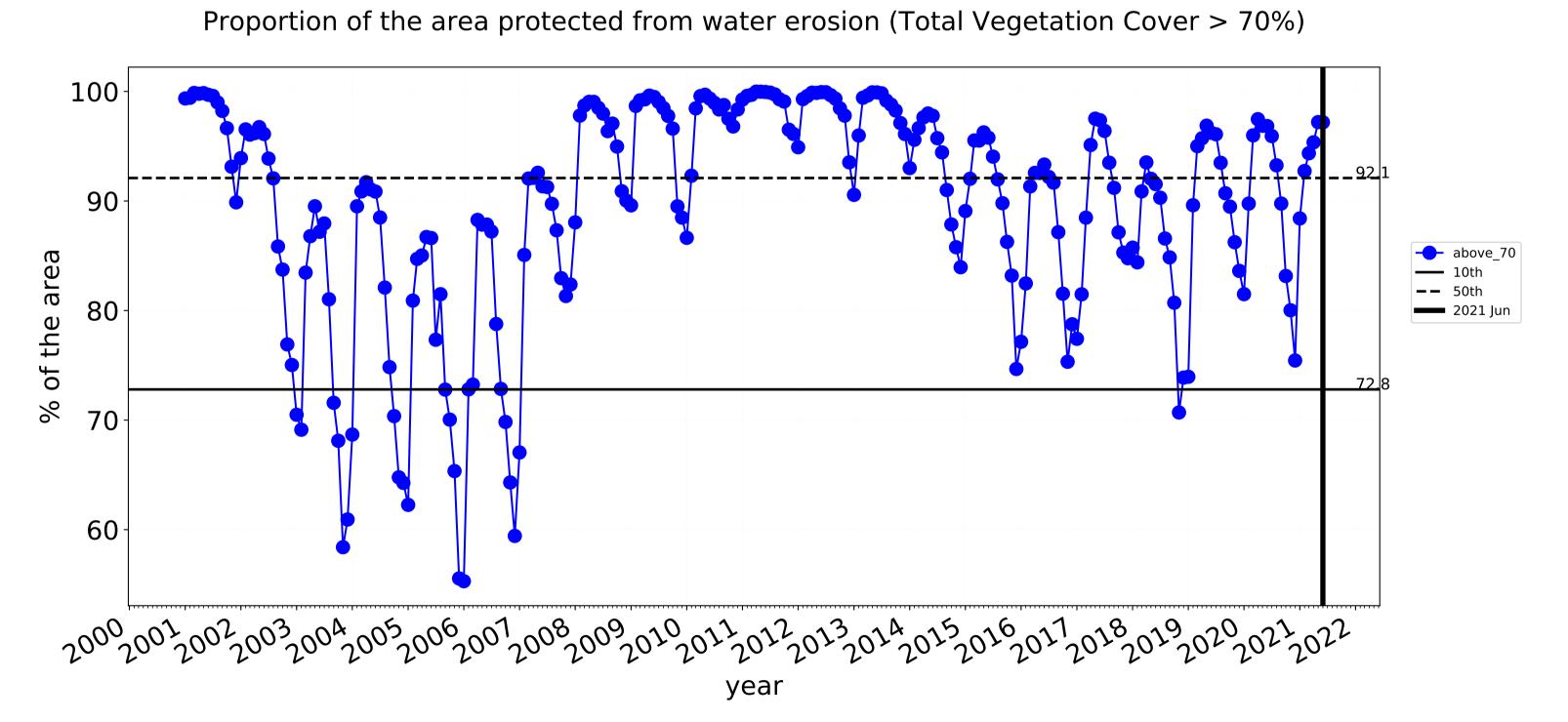


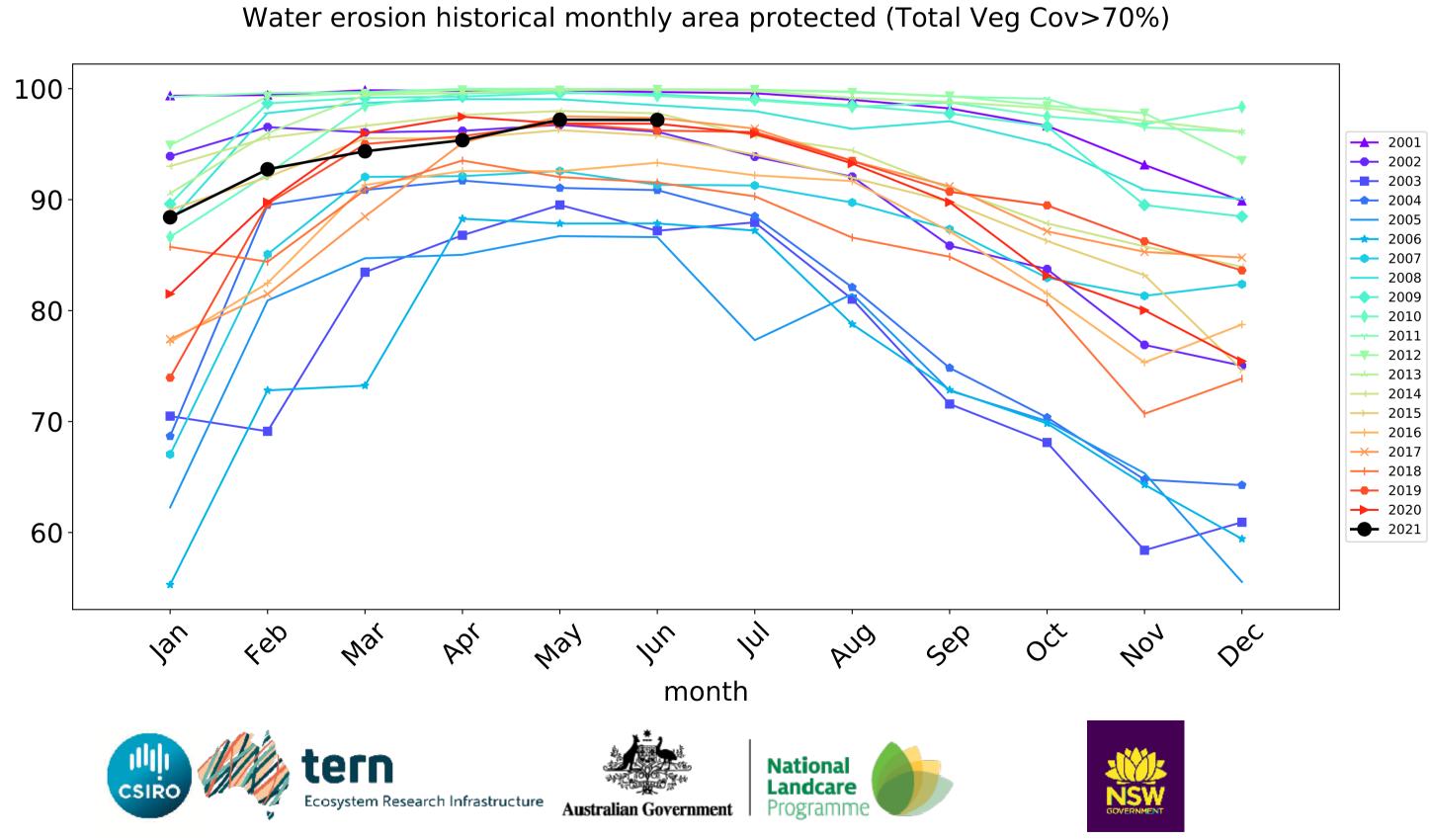


Grazing timeseries





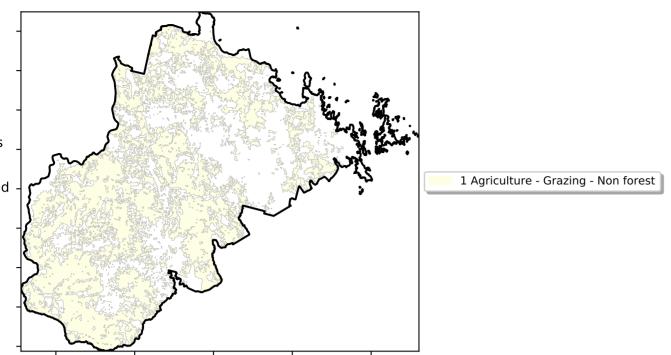




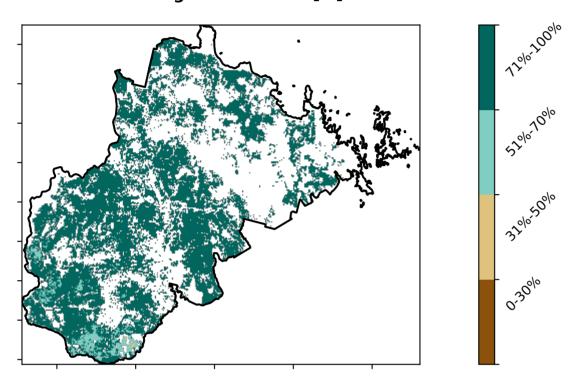
Grazing non forest

Land use and forest cover

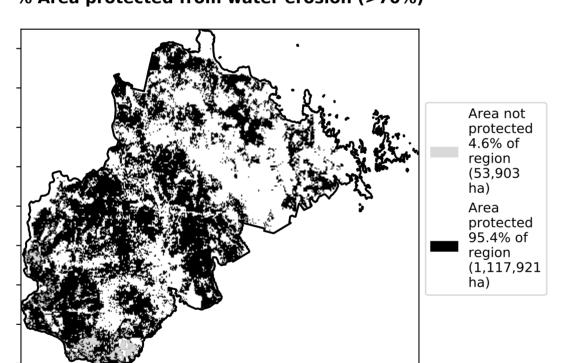
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



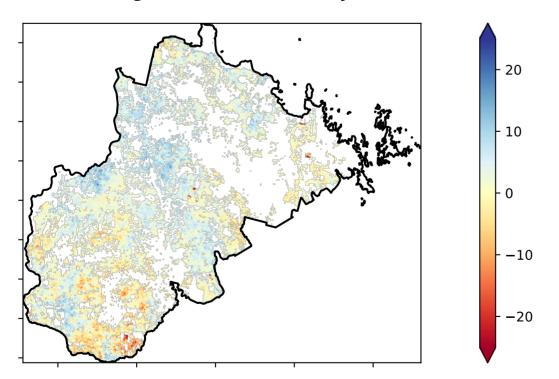
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

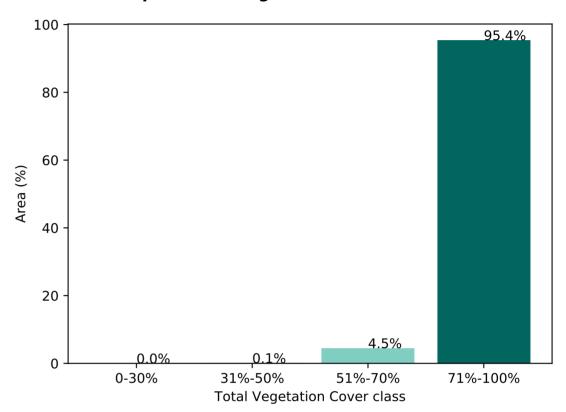


Total Vegetation Cover Anomaly [%]

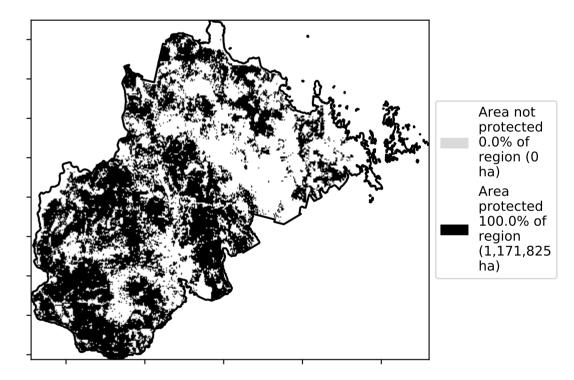


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

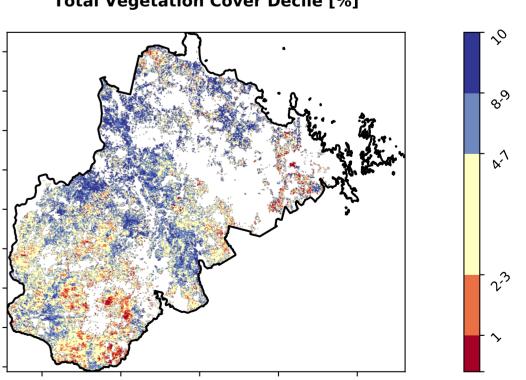
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



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

using baseline from 2001 to 2019.



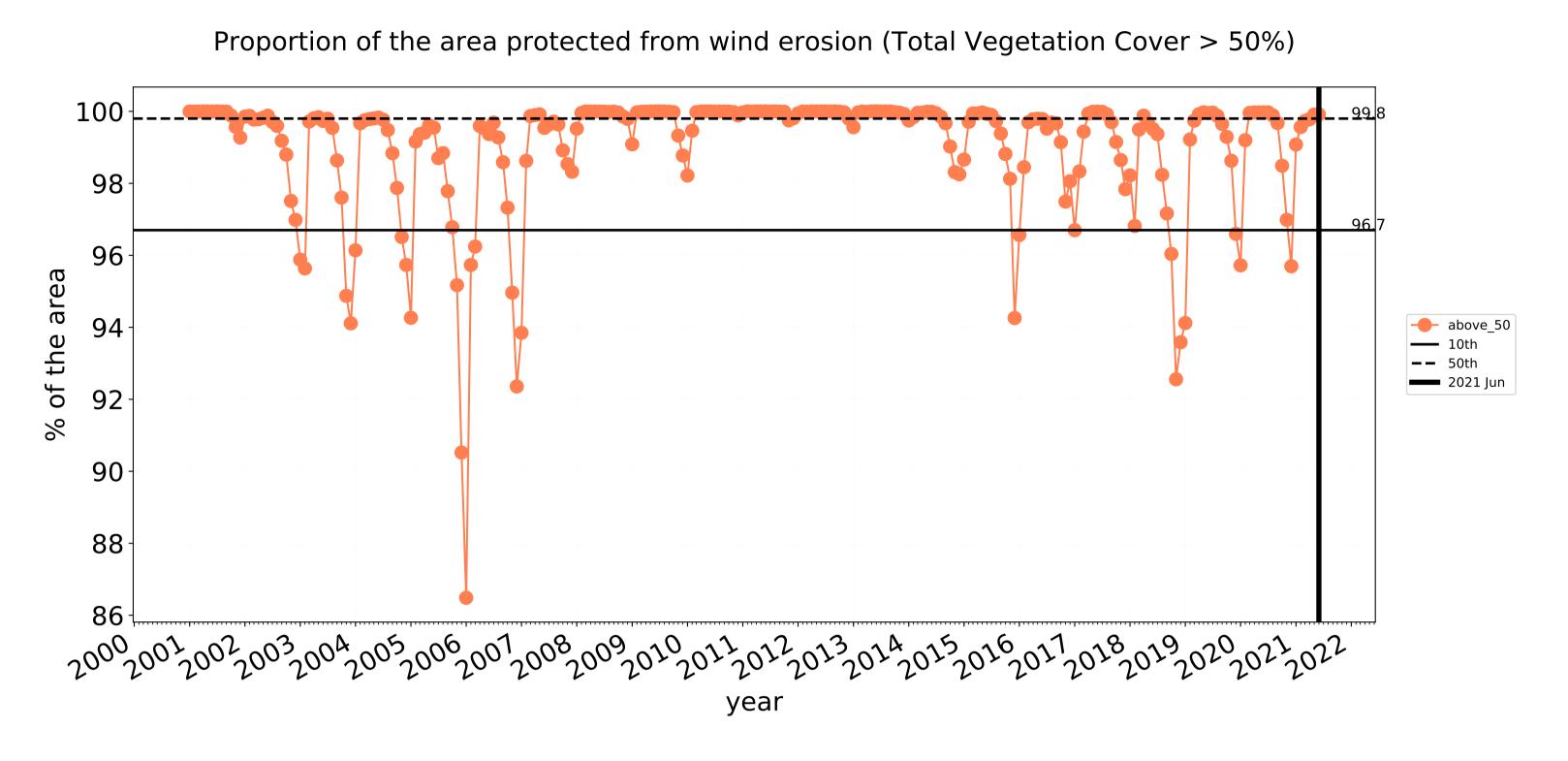


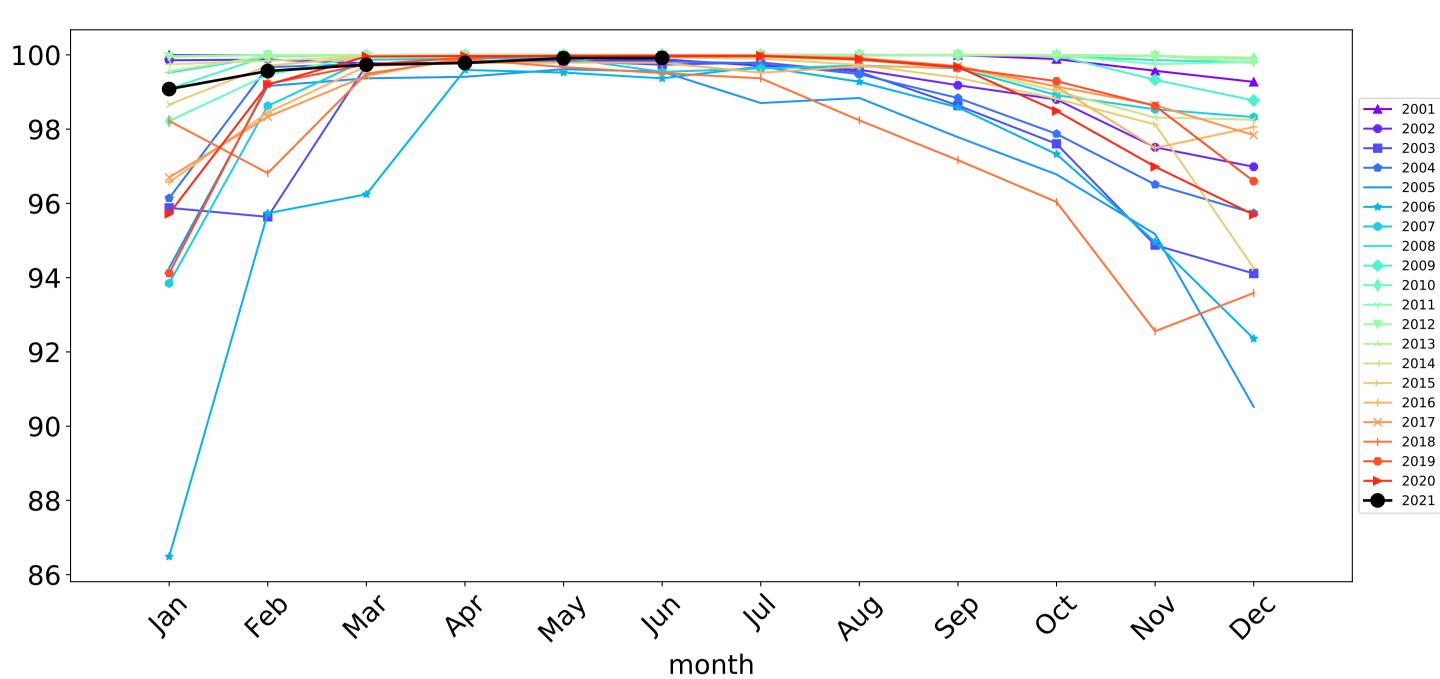




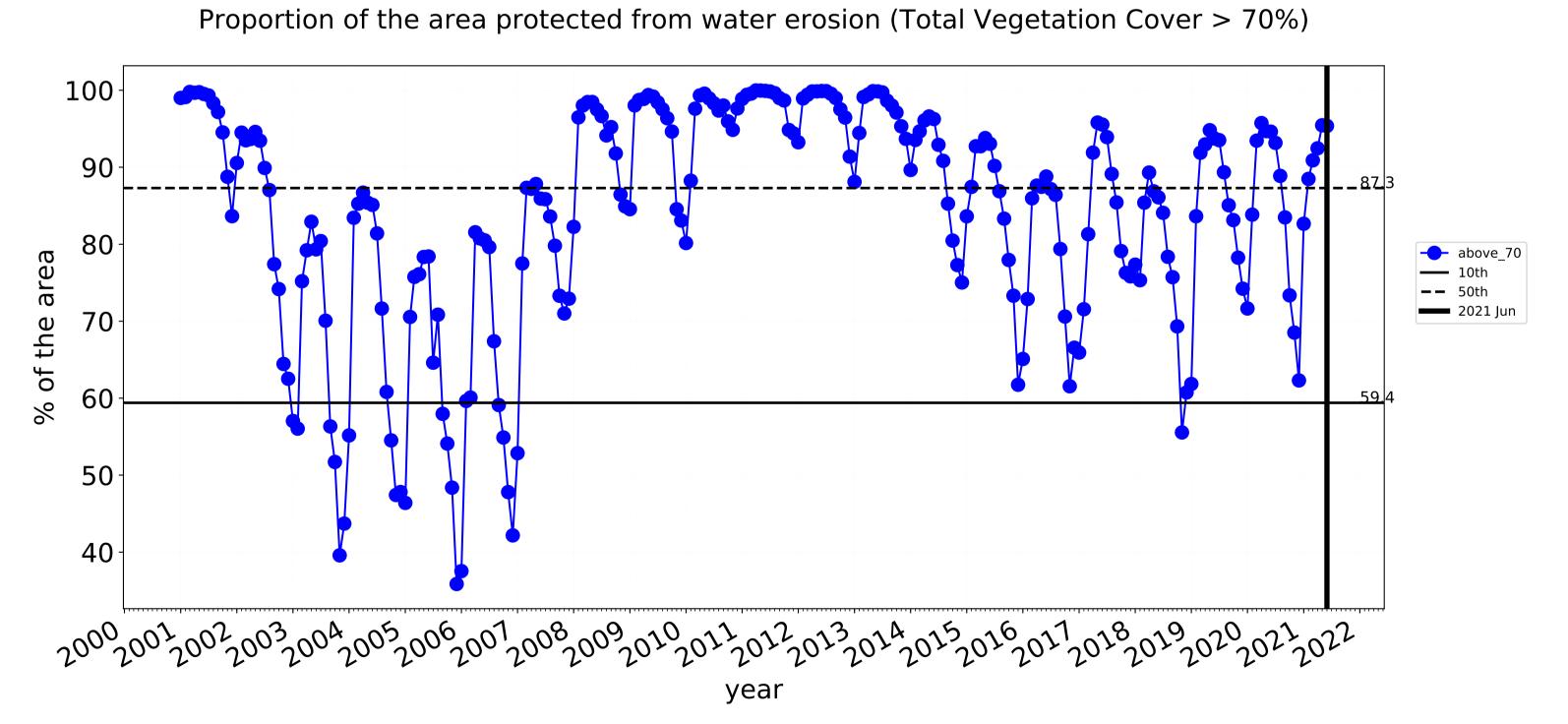


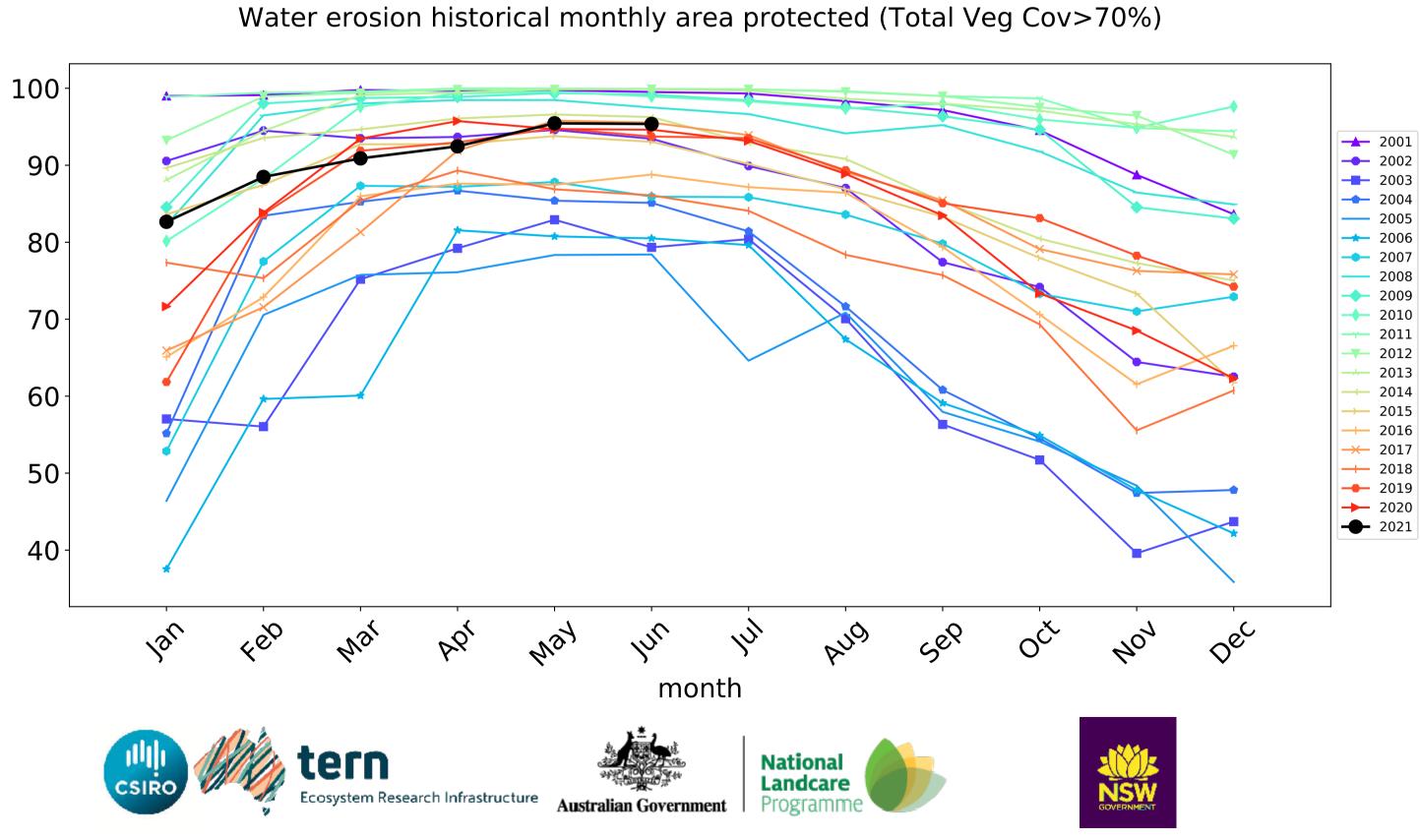
Grazing non forest timeseries





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

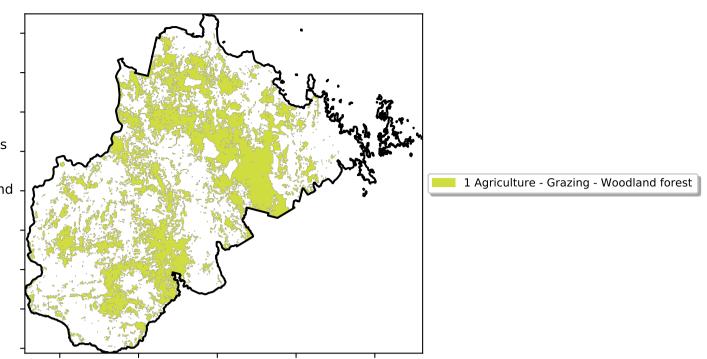




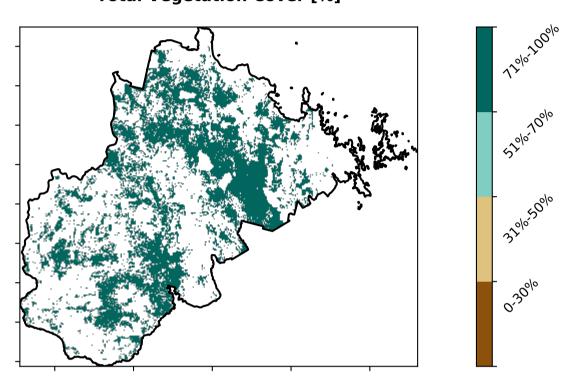
Grazing Woodland forest

Land use and forest cover

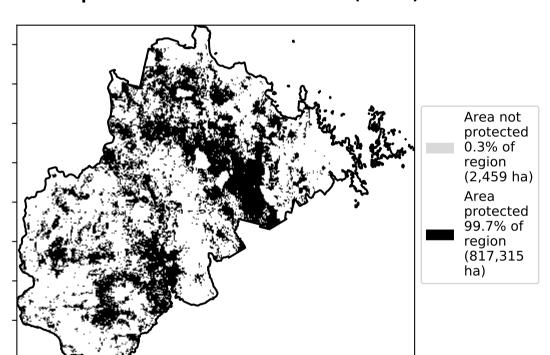




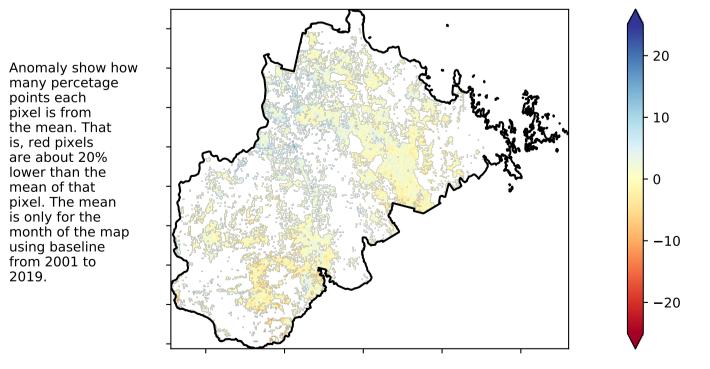
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

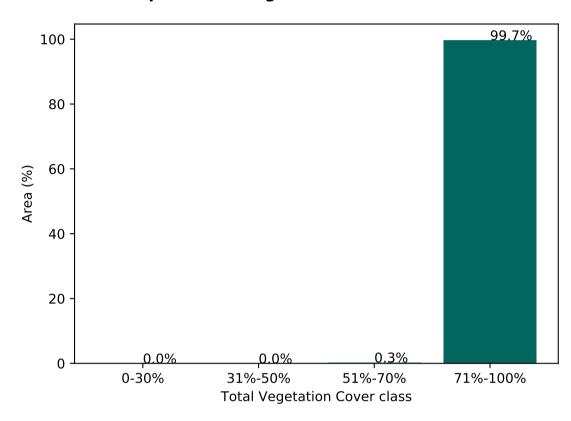


Total Vegetation Cover Anomaly [%]

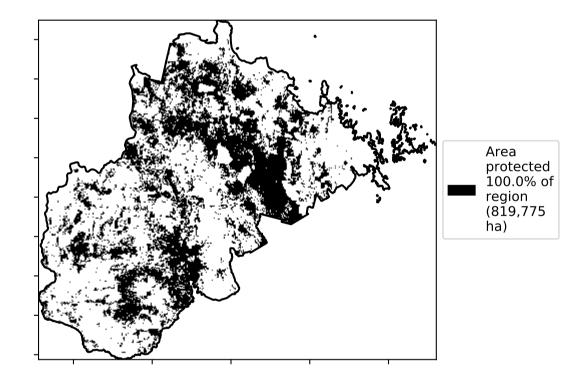


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

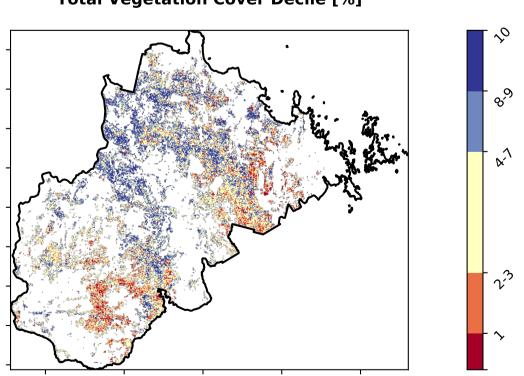
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]



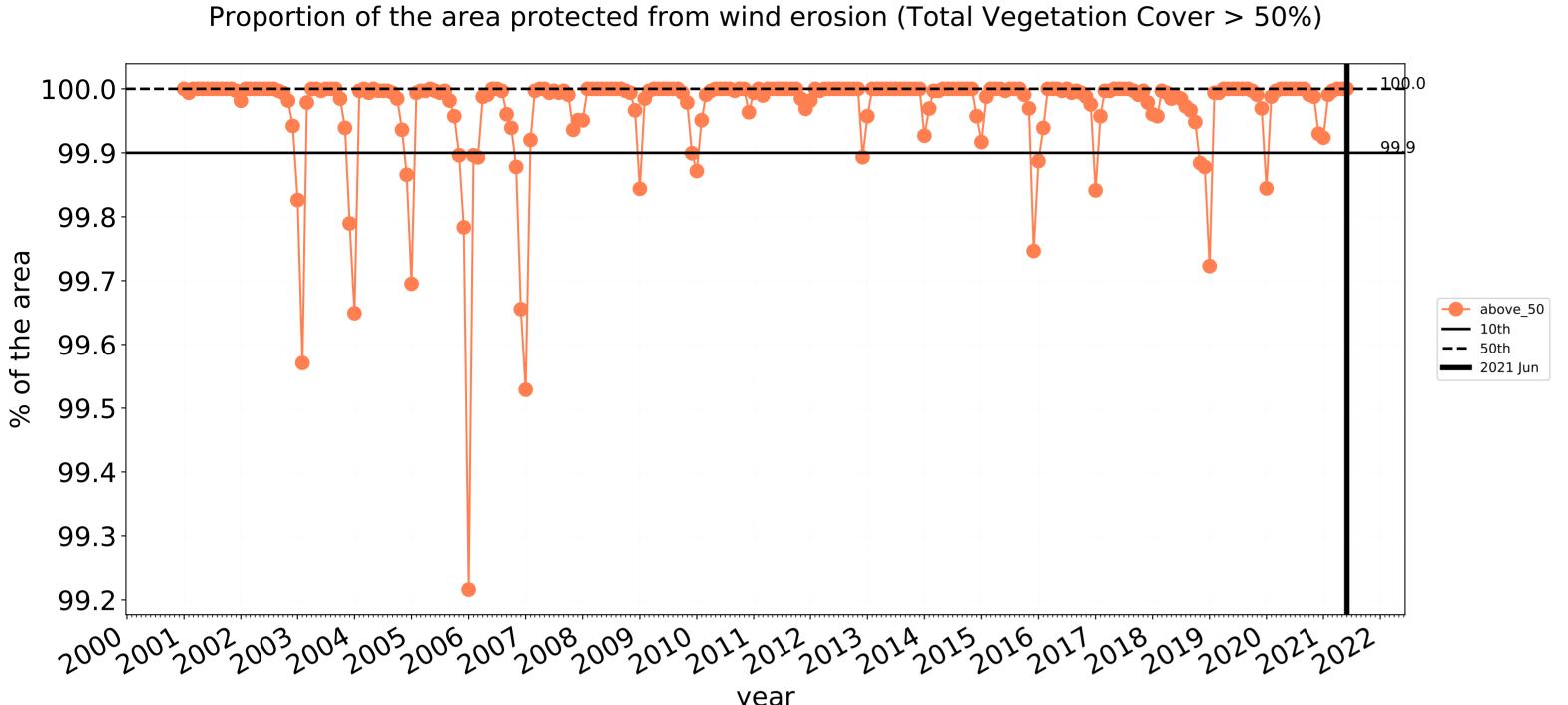


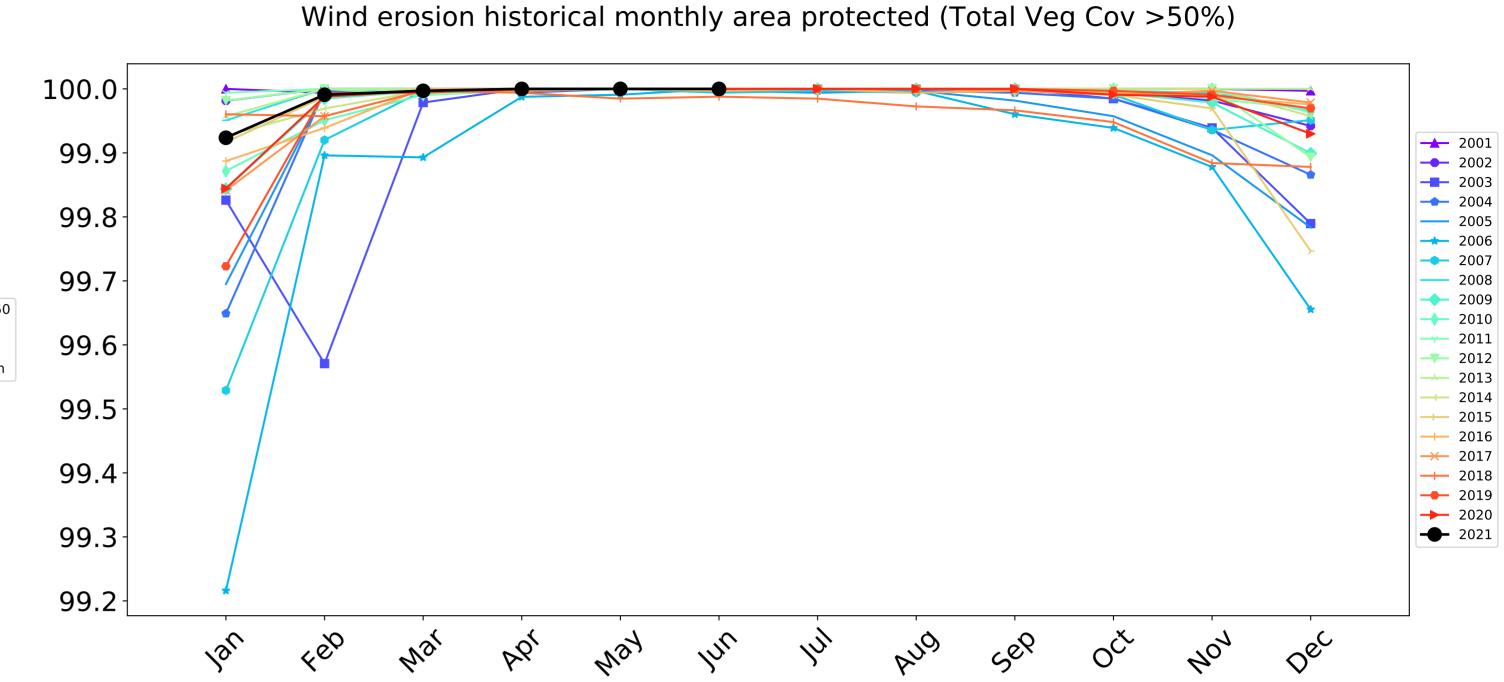




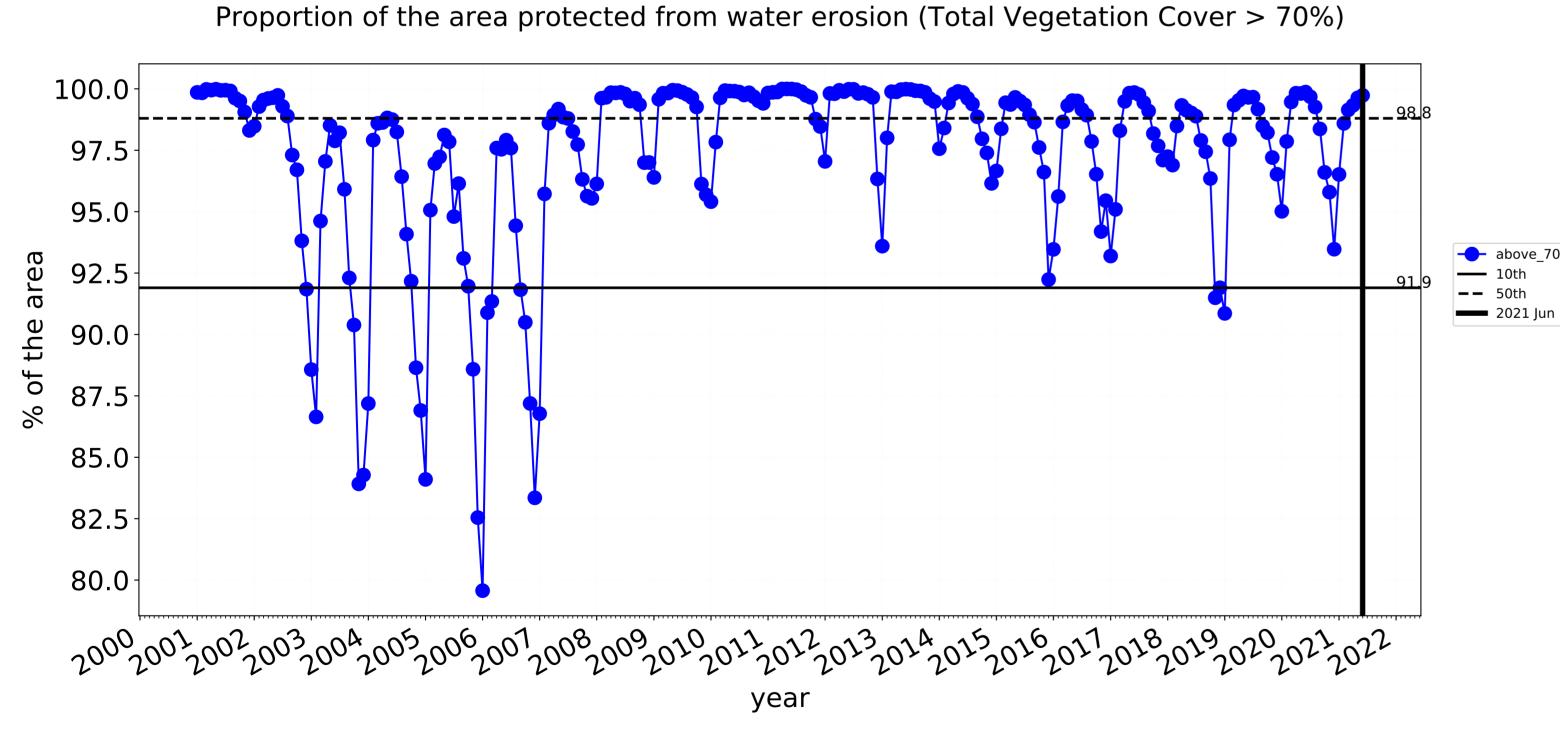


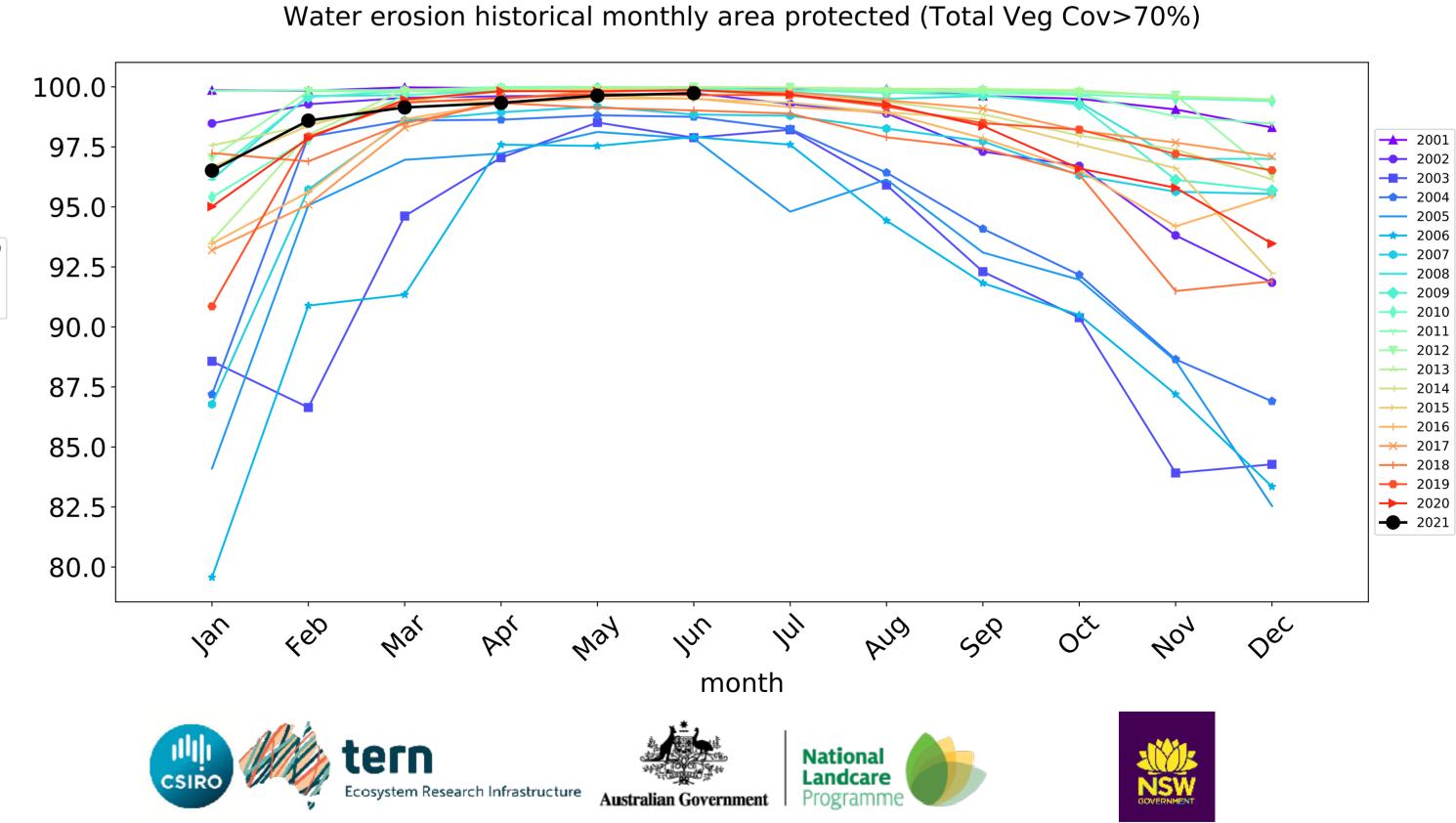
Grazing Woodland forest timeseries





month



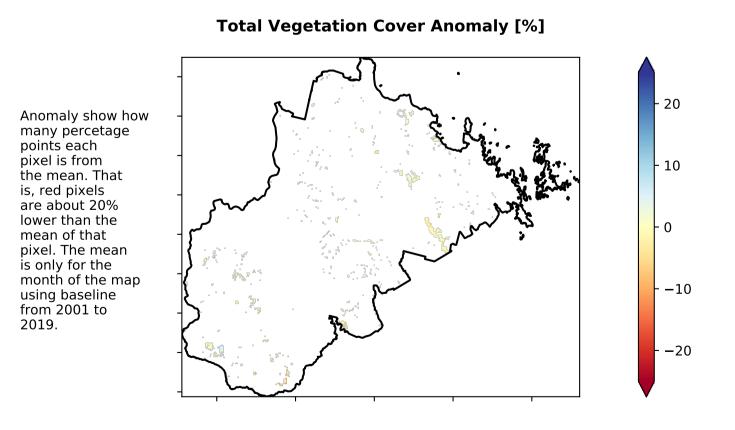


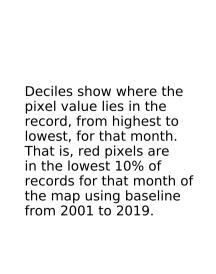
Grazing - Forest (non woodland)

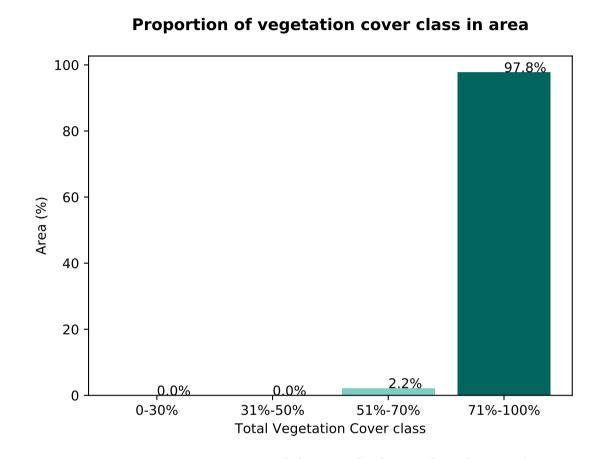
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

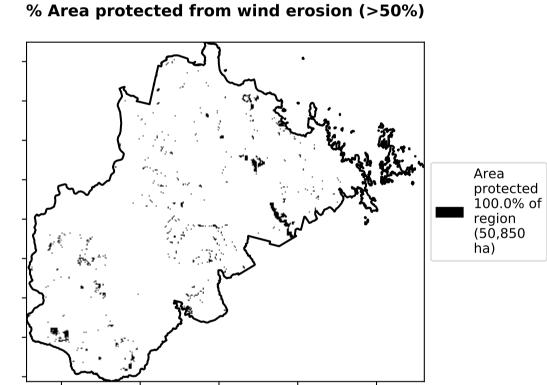
Total Vegetation Cover [%]

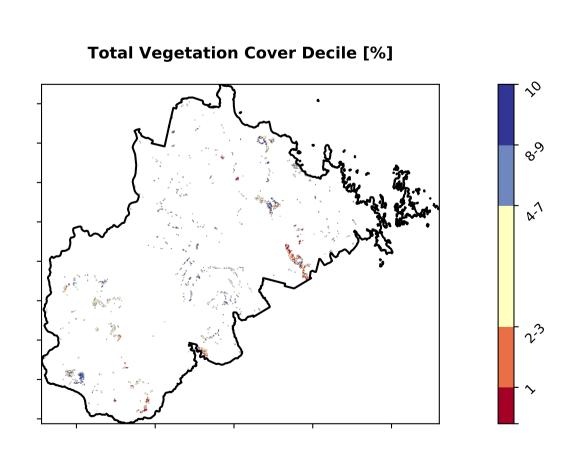
Area not protected 2.2% of region (1,118 ha) Area protected 97.8% of region (49,731 ha)









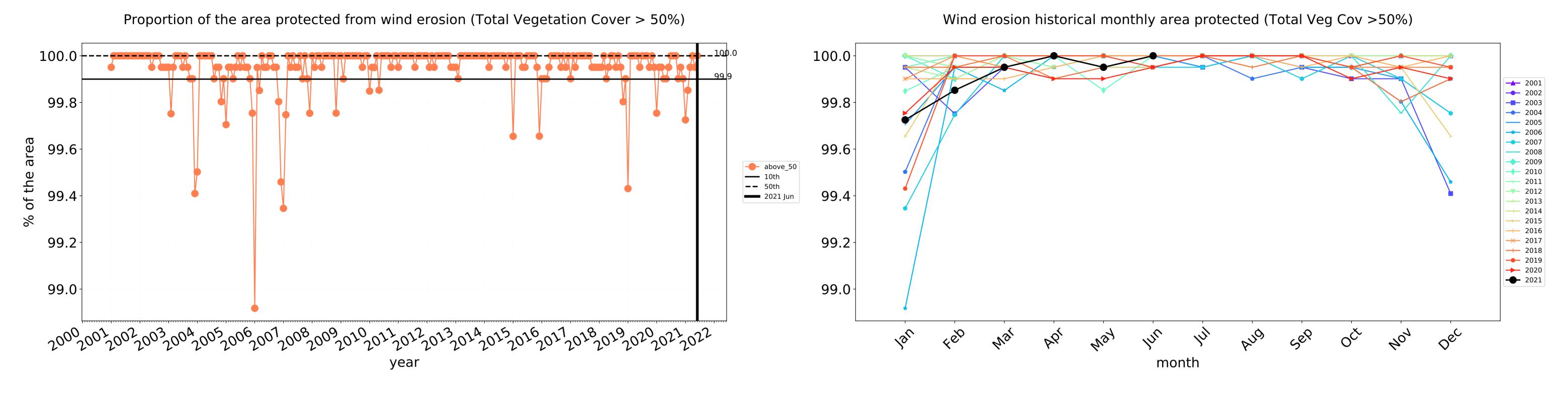


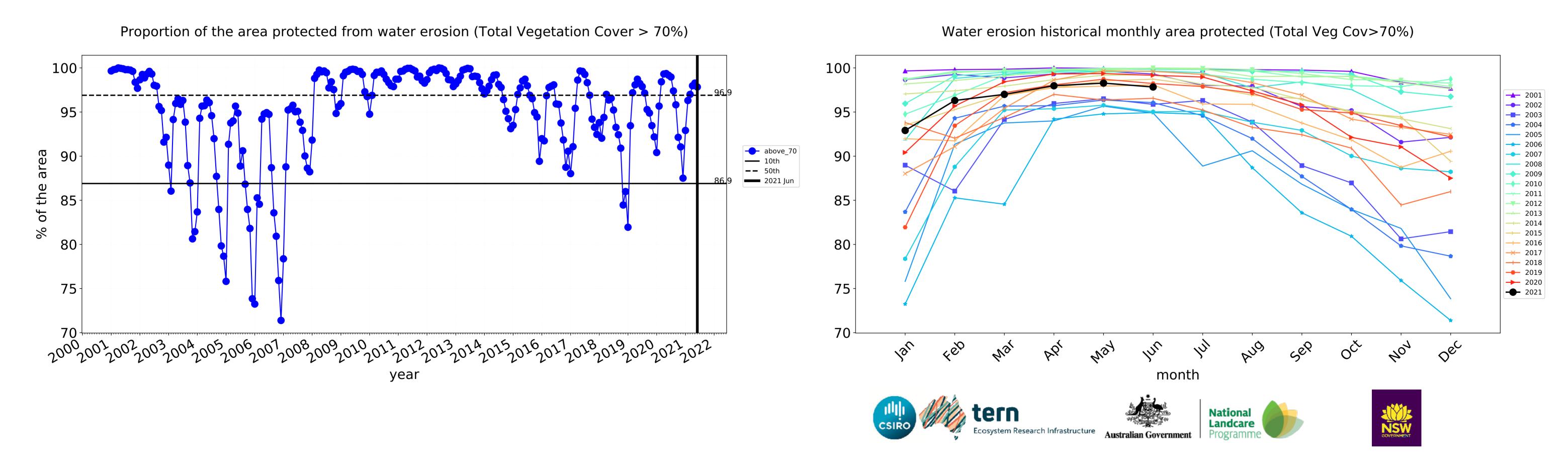










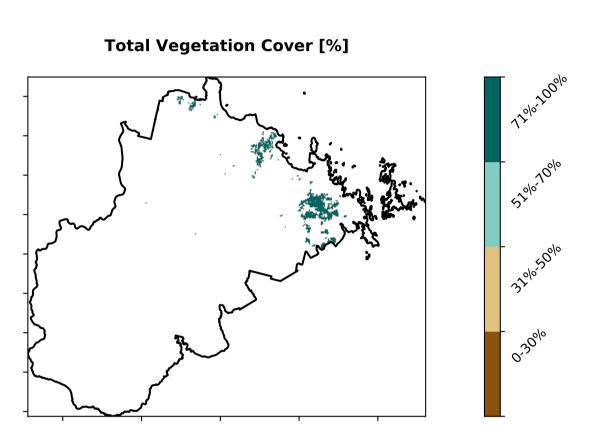


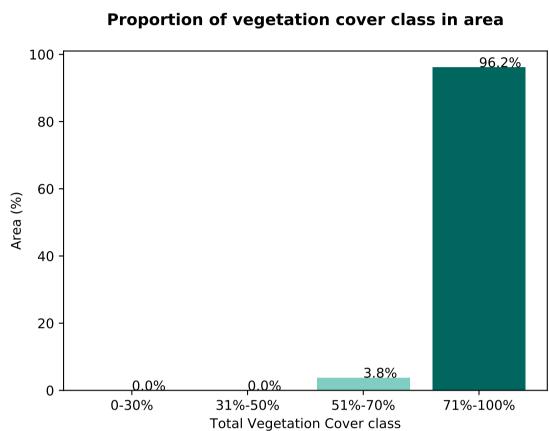
Irrigation

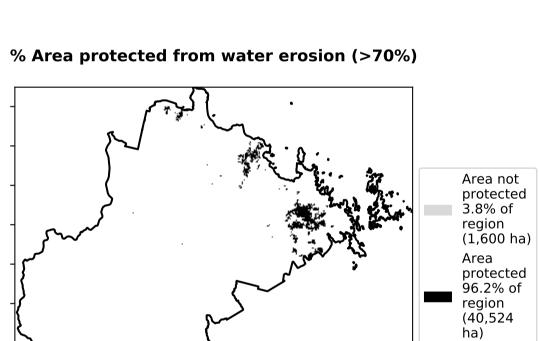
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) Australia (2018) Agriculture - Grazing - Irrigated 2 Agriculture - Cropping - Irrigated 3 Agriculture - Horticulture - Irrigated

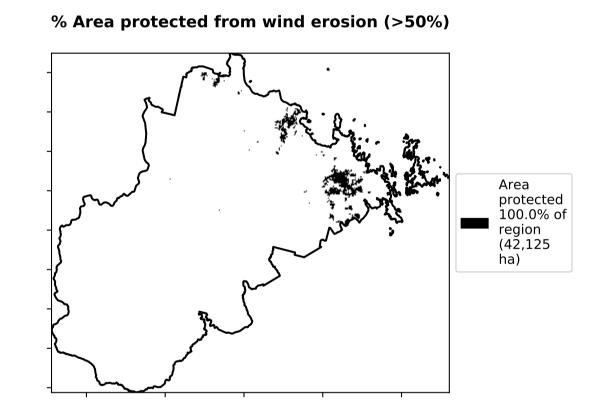
70 - 67.8% 60 - 50 - 50 - 30.9% 20 - 10 - 0 1.3% 1 2 Land use class

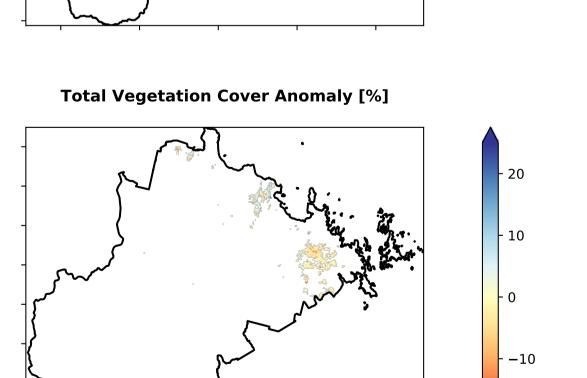
Proportion of each land class in area









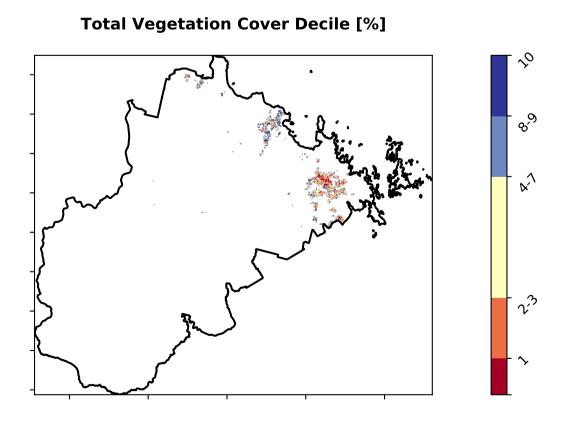


Anomaly show how many percetage points each pixel is from the mean. That

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



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.



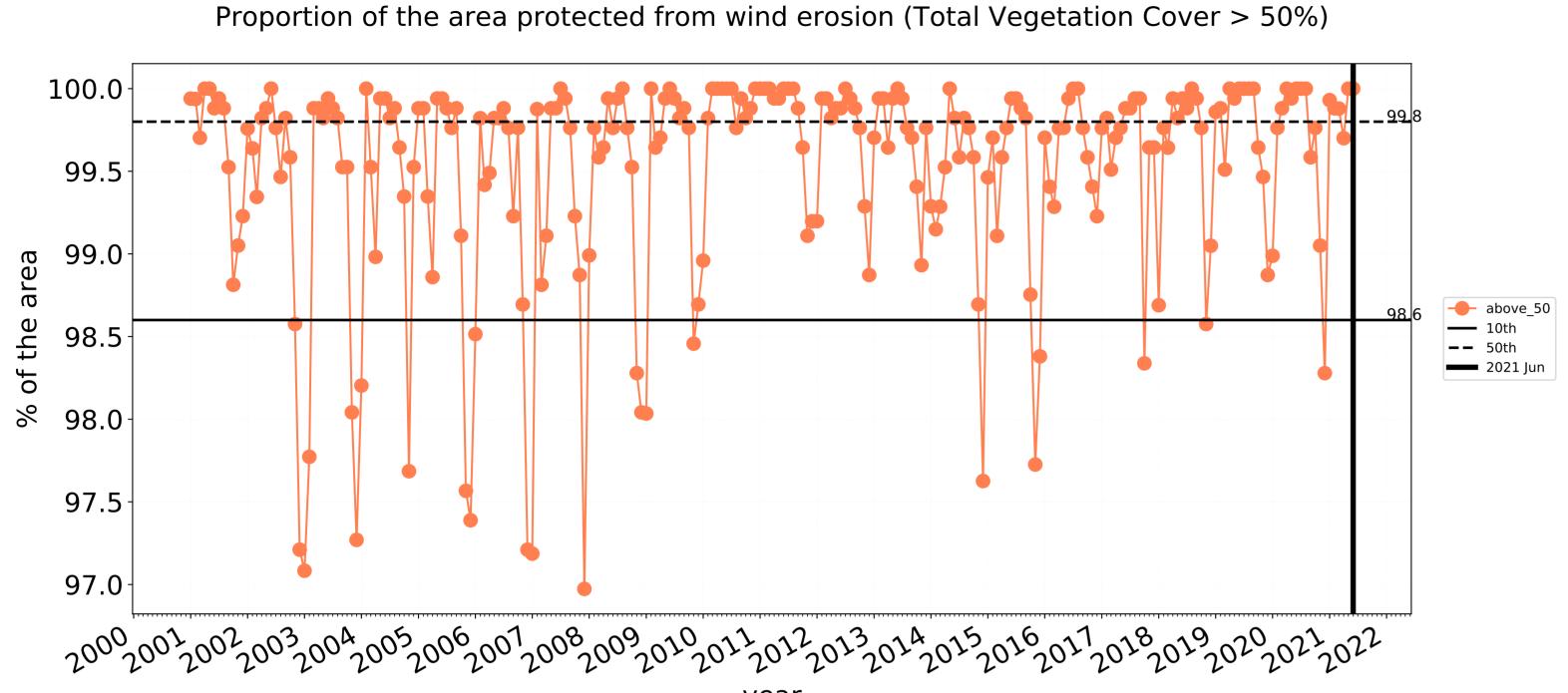


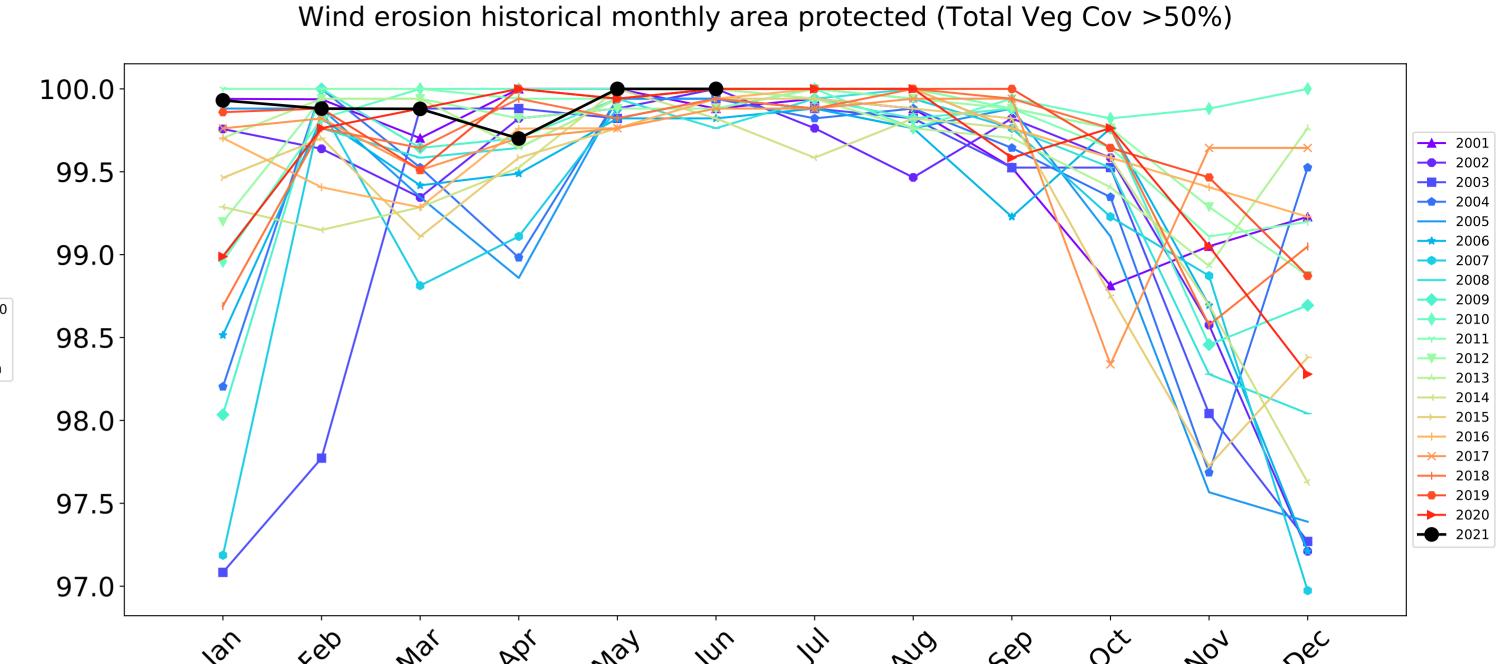




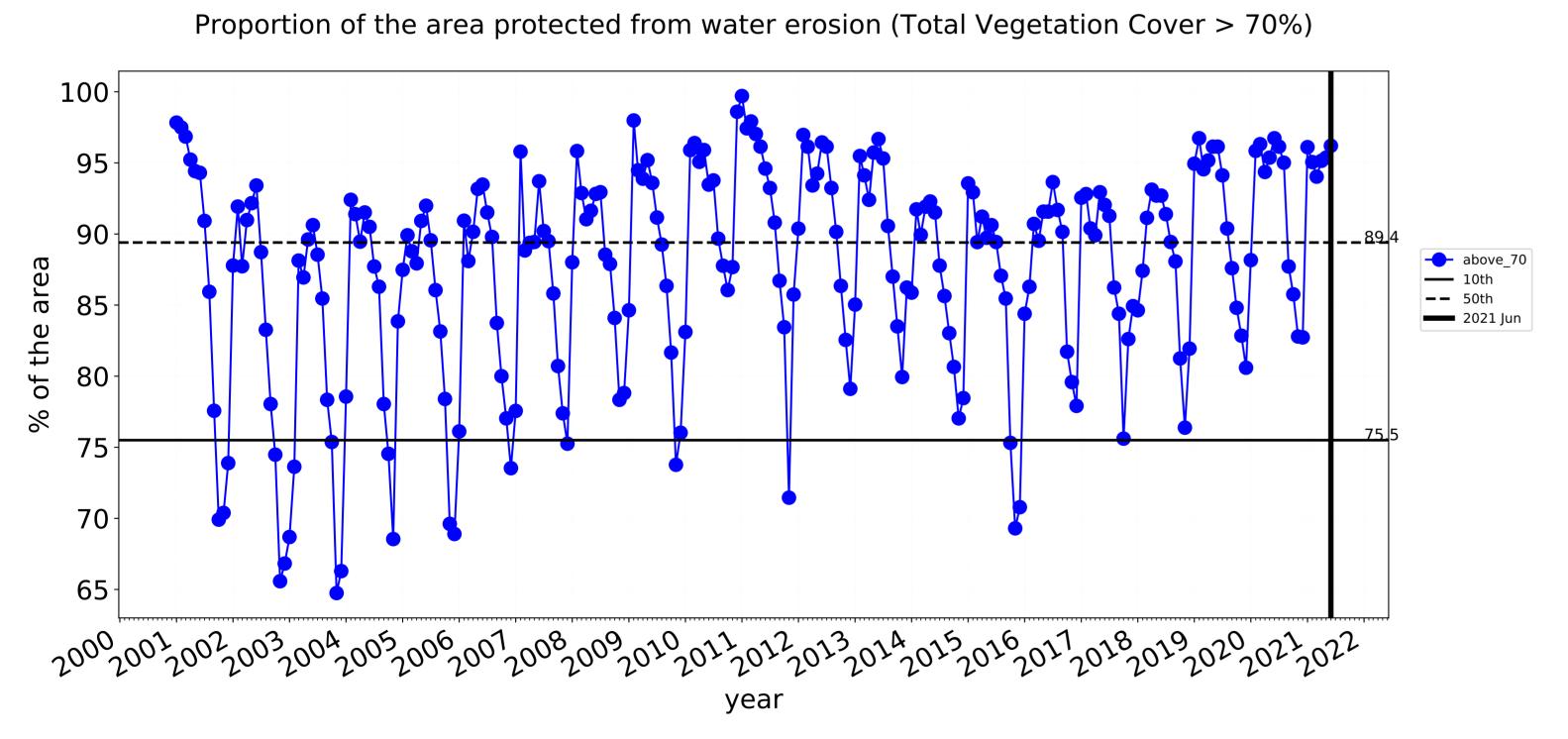
-20

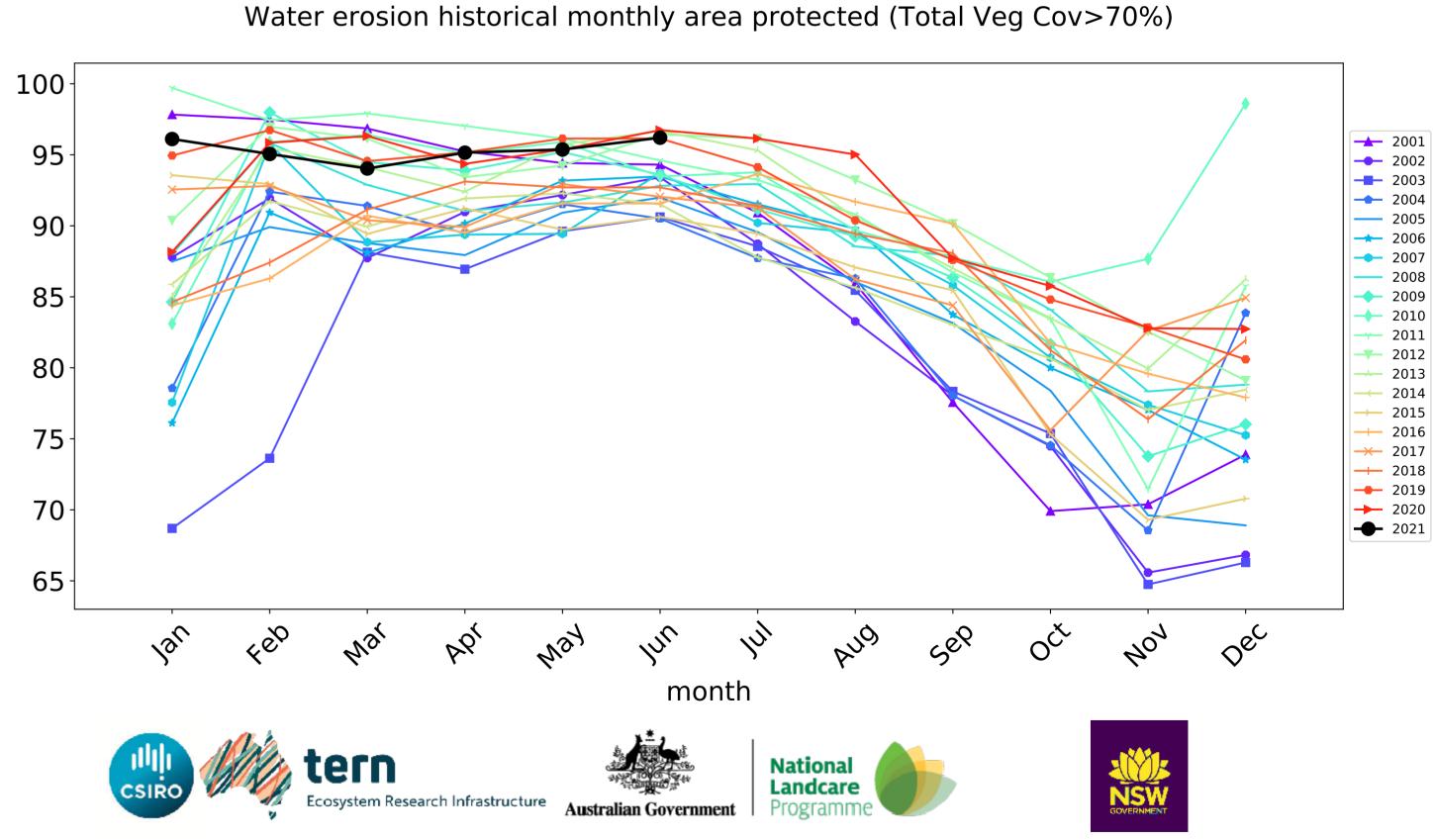
Irrigation timeseries





month



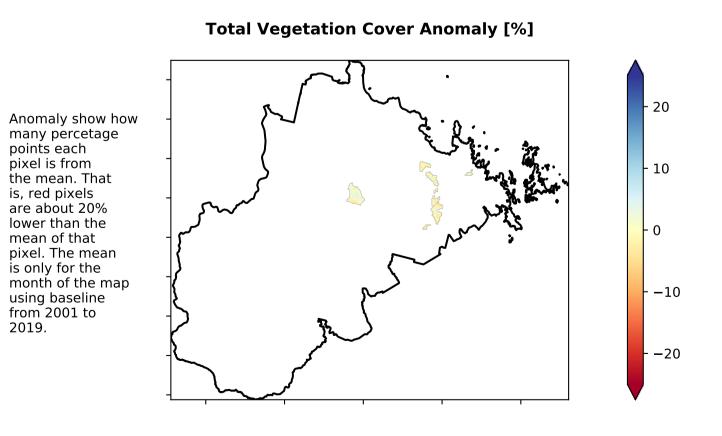


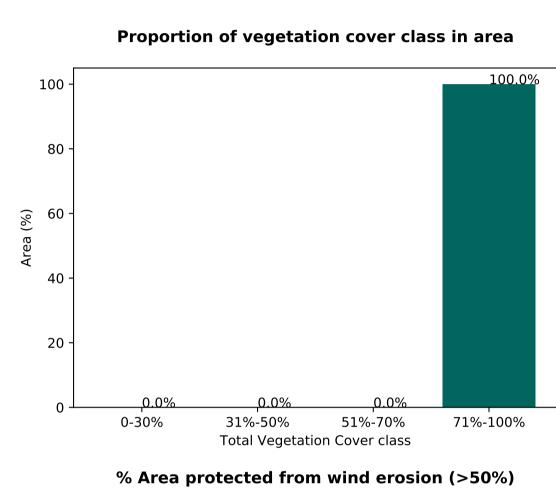
Production native forests and plantation forests

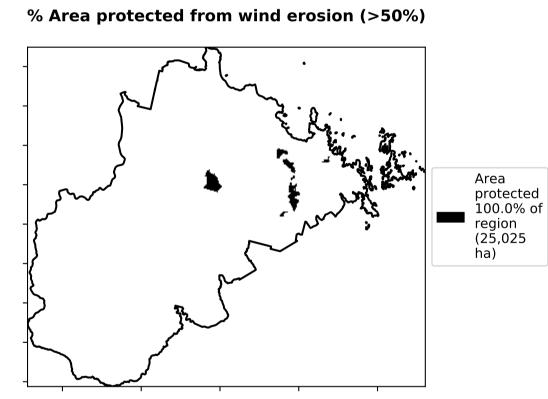
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

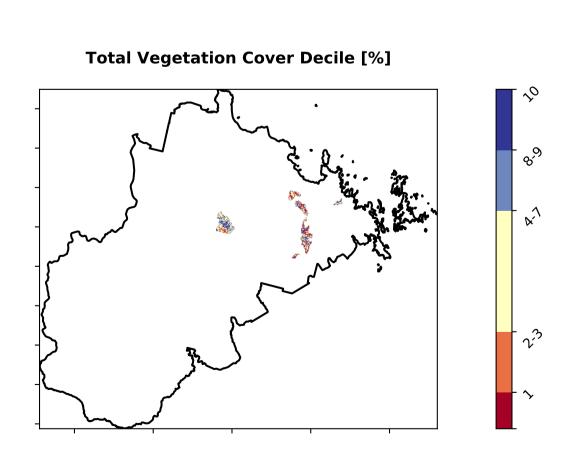
Total Vegetation Cover [%]

Area protected from water erosion (>70%) Area protected 100.0% of region (25,025 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

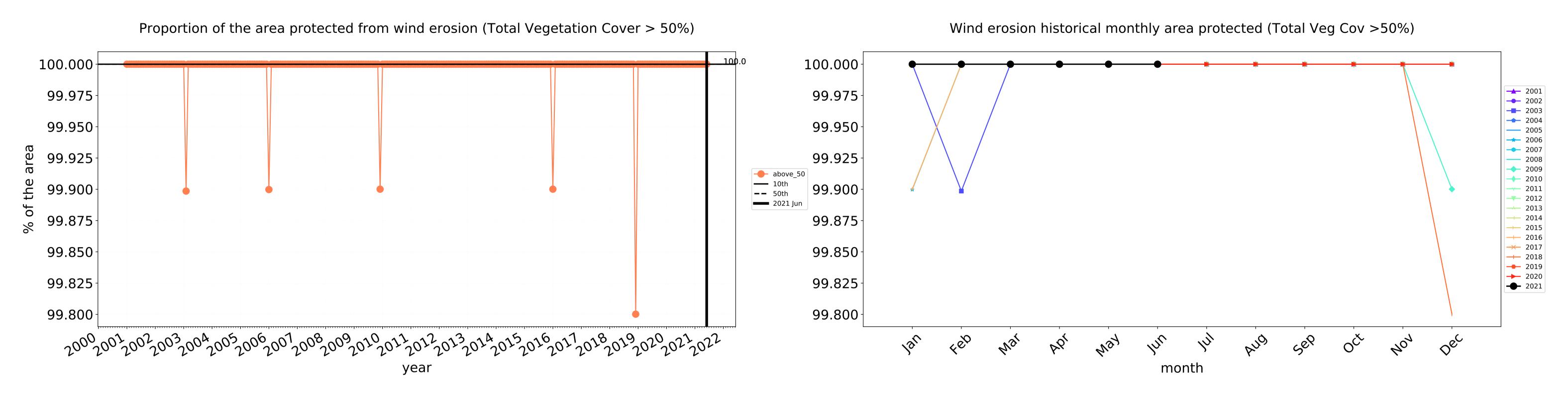
records for that month of

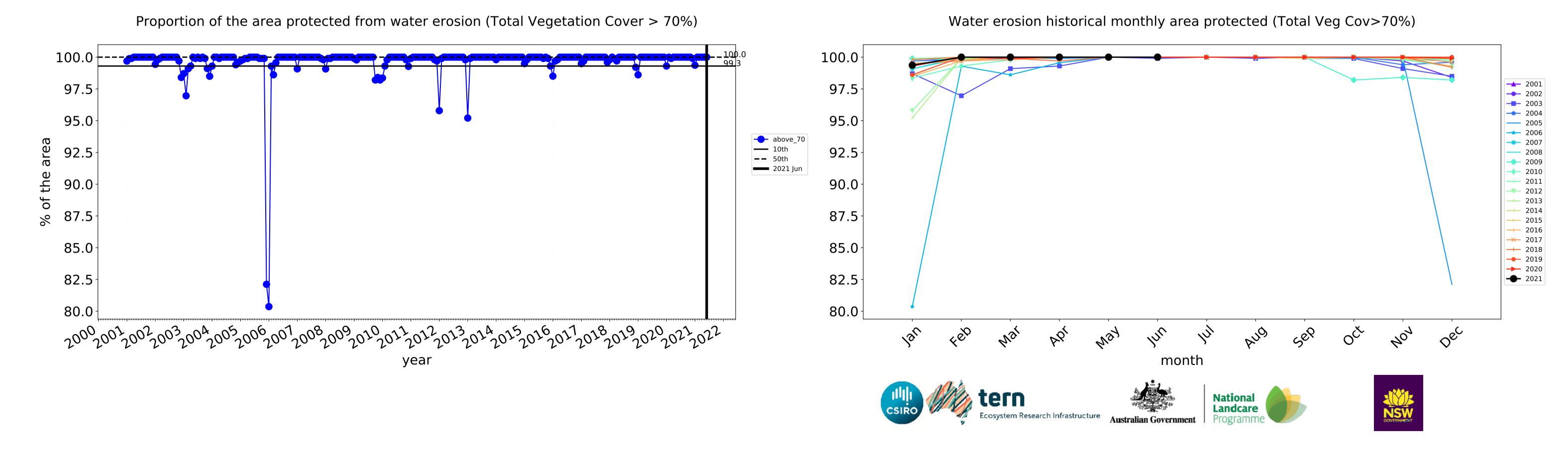
the map using baseline from 2001 to 2019.





Production native forests and plantation forests timeseries





Whitsunday_(R) (2,358,150 ha and no data 23,726 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	2,358,150	100.0% 2,357,675	99.9% 2,355,425	97.0% 2,287,000	88.1% 2,076,450	52.2% 1,231,200	16.6% 390,575
Conservation and natural environments	170,650	99.8% 170,325	99.4% 169,625	97.3% 165,975	89.5% 152,700	56.7% 96,675	23.0% 39,325
Conservation and natural environments non forest	28,250	99.9% 28,225	98.9% 27,950	94.5% 26,700	67.3% 19,000	8.8% 2,500	2.7% 775
Conservation and natural environments Woodland forest	57,150	99.9% 57,075	99.8% 57,025	98.8% 56,450	94.1% 53,800	68.9% 39,400	19.9% 11,350
natural environments Forest (non woodland)	85,250	99.7% 85,025	99.3% 84,650	97.2% 82,825	93.7% 79,900	64.3% 54,775	31.9% 27,200
Agriculture	2,084,875	100.0% 2,084,875	100.0% 2,083,900	97.2% 2,025,725	88.5% 1,844,350	52.5% 1,093,750	16.2% 338,600
Grazing	2,042,450	100.0% 2,042,450	100.0% 2,041,475	97.2% 1,984,900	88.7% 1,812,175	53.2% 1,087,050	16.5% 337,475
Grazing non forest	1,171,825	100.0% 1,171,825	99.9% 1,170,850	95.4% 1,117,550	82.8% 970,075	43.2% 505,825	13.4% 156,550
Grazing Woodland forest	819,775	100.0% 819,775	100.0% 819,775	99.7% 817,600	97.0% 794,900	67.4% 552,625	20.9% 171,650
Grazing - Forest (non woodland)	50,850	100.0% 50,850	100.0% 50,850	97.8% 49,750	92.8% 47,200	56.2% 28,600	18.2% 9,275
Irrigation	42,125	100.0% 42,125	100.0% 42,125	96.2% 40,525	75.7% 31,875	15.5% 6,550	2.7% 1,125
Production native forests and plantation forests	25,025	100.0% 25,025	100.0% 25,025	100.0% 25,025	100.0% 25,025	83.2% 20,825	28.4% 7,100







