Total vegetation cover soil protection Region:NRM Riverina NSW

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 2008

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







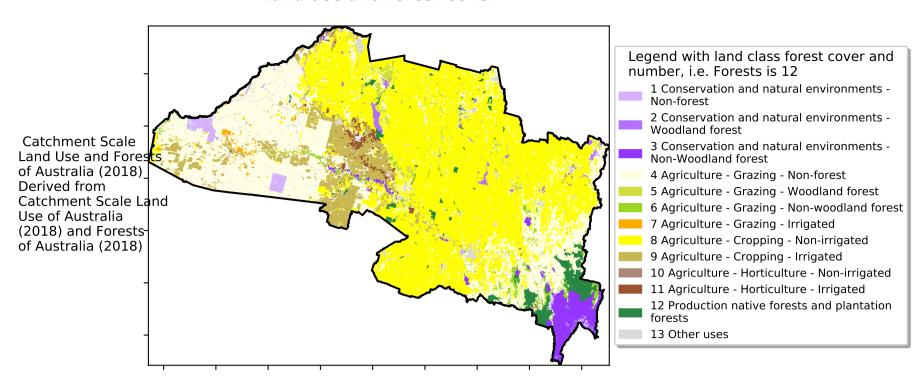




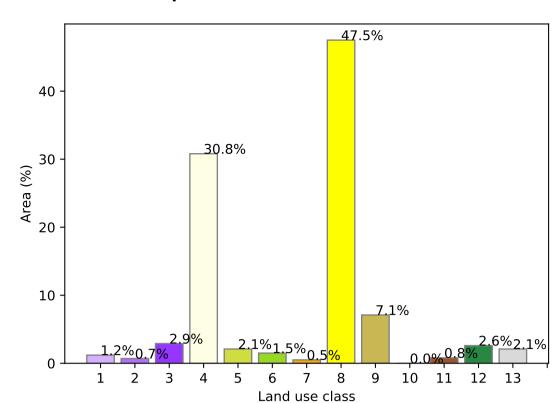


Vegetation Cover May 2008

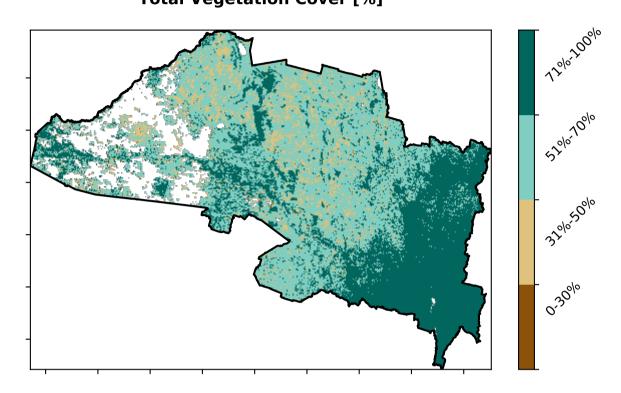
Land use and forest cover



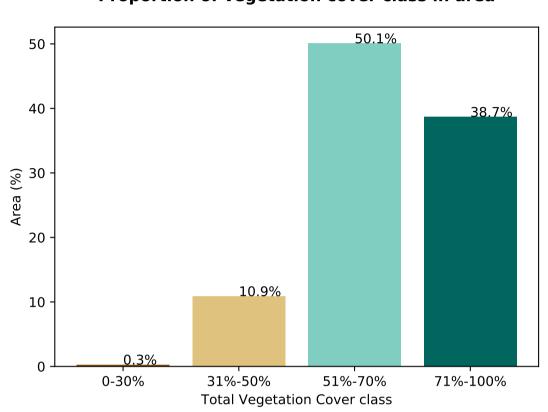
Proportion of each land class in area



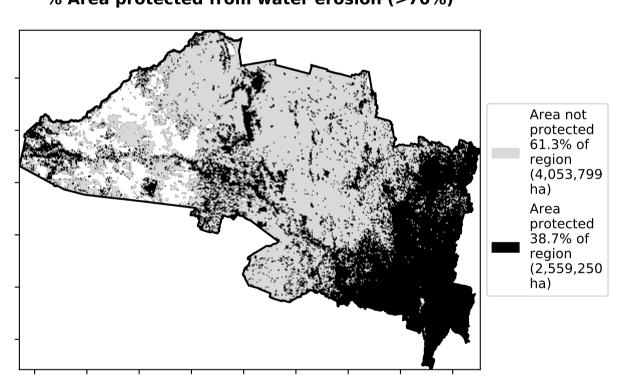
Total Vegetation Cover [%]



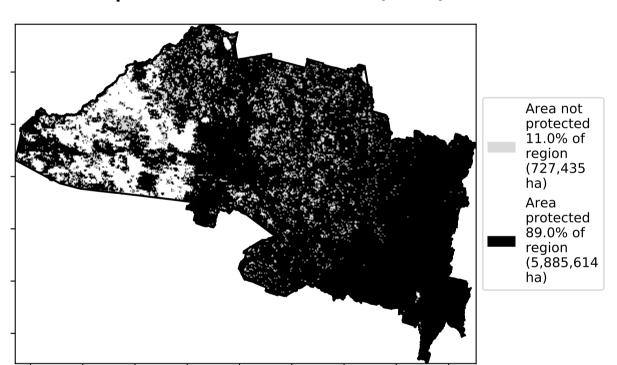
Proportion of vegetation cover class in area



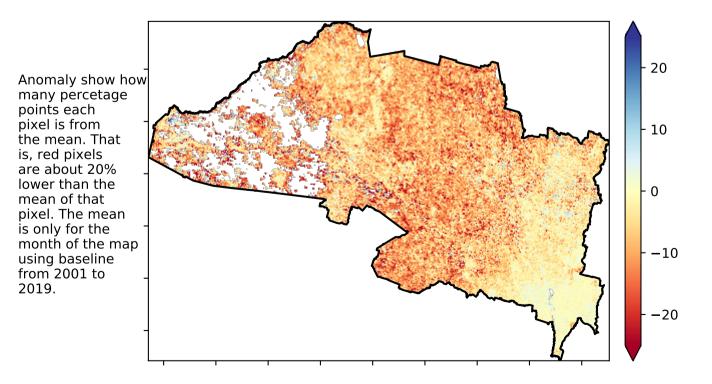
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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.



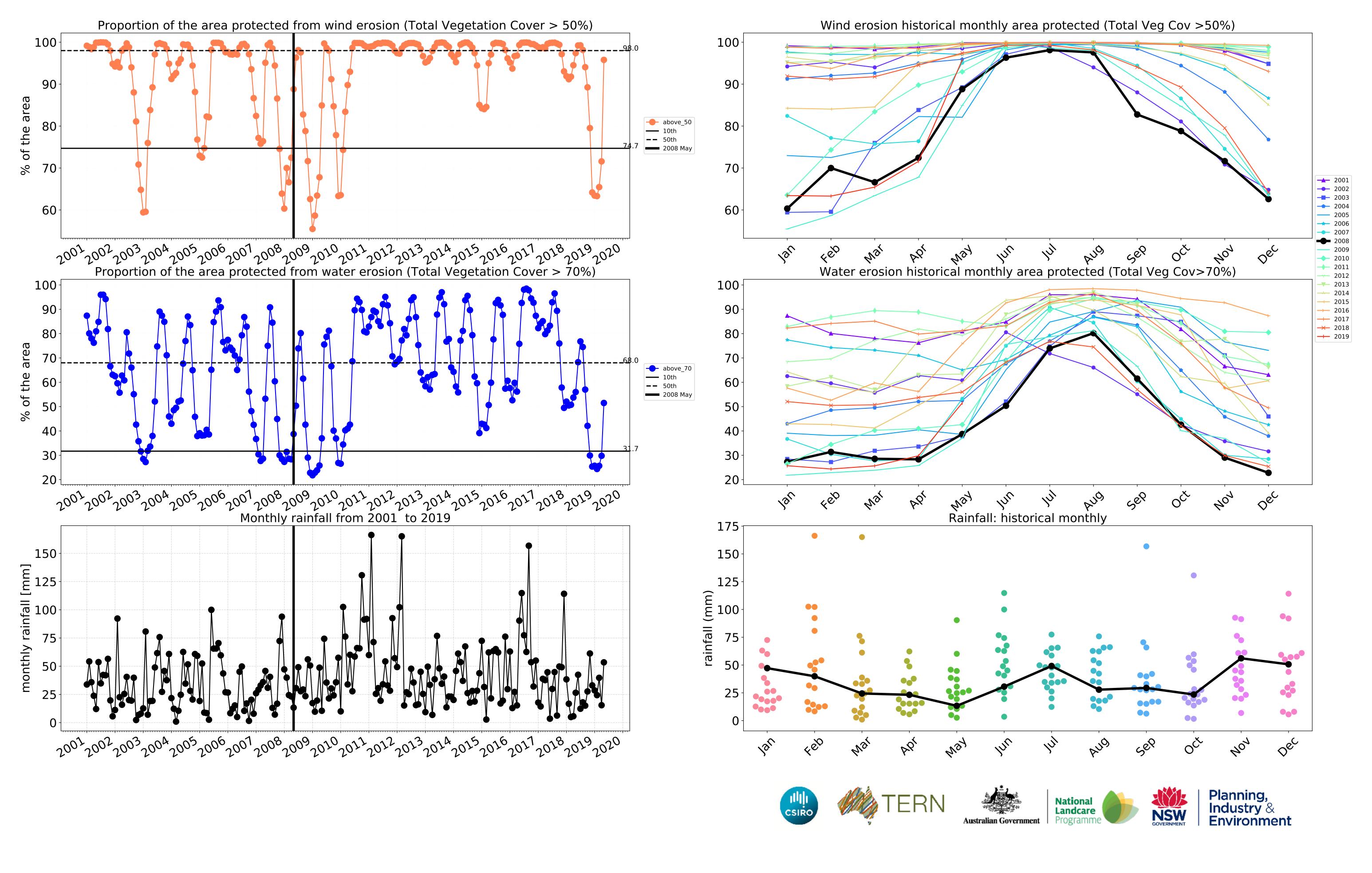




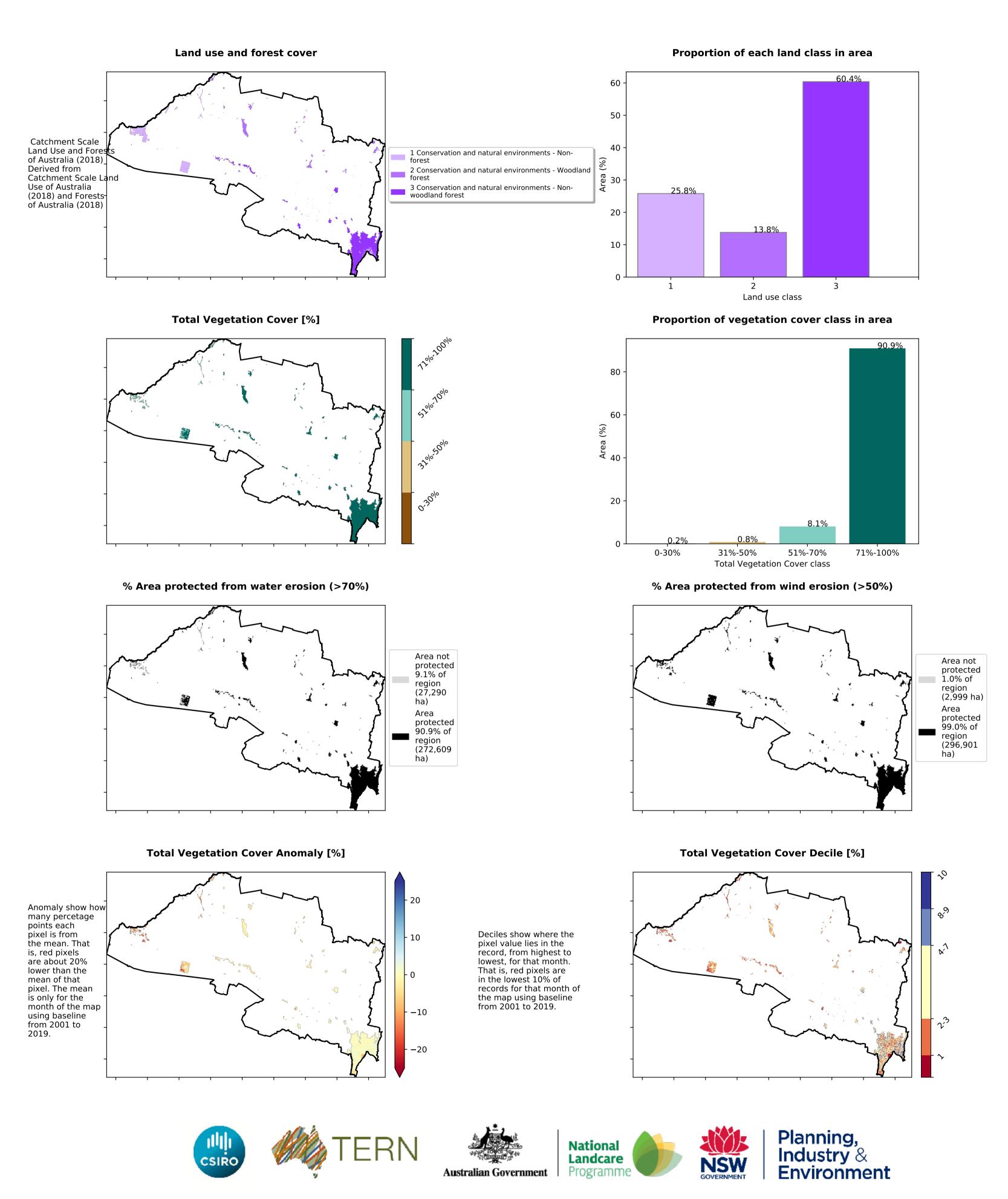




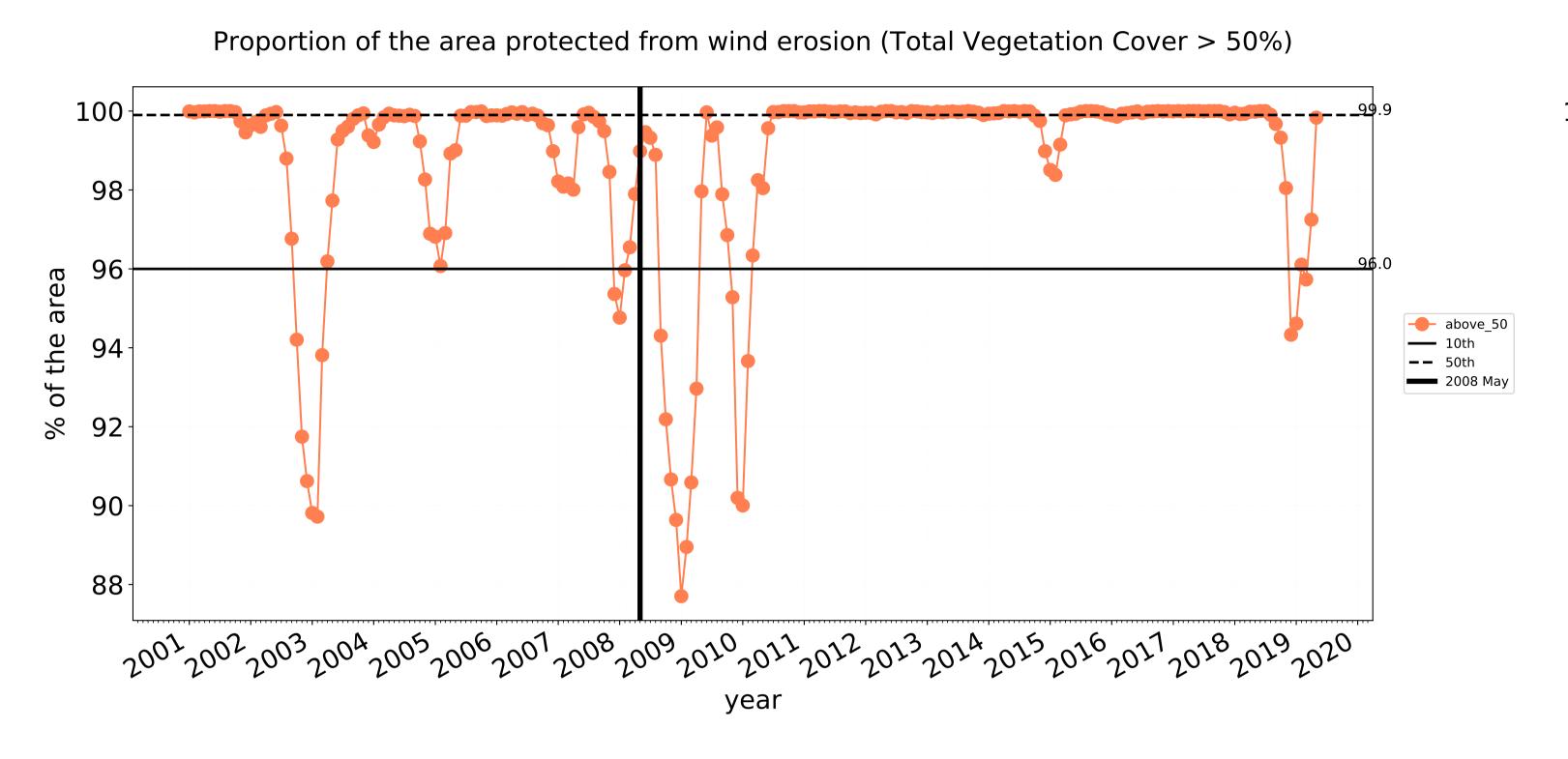


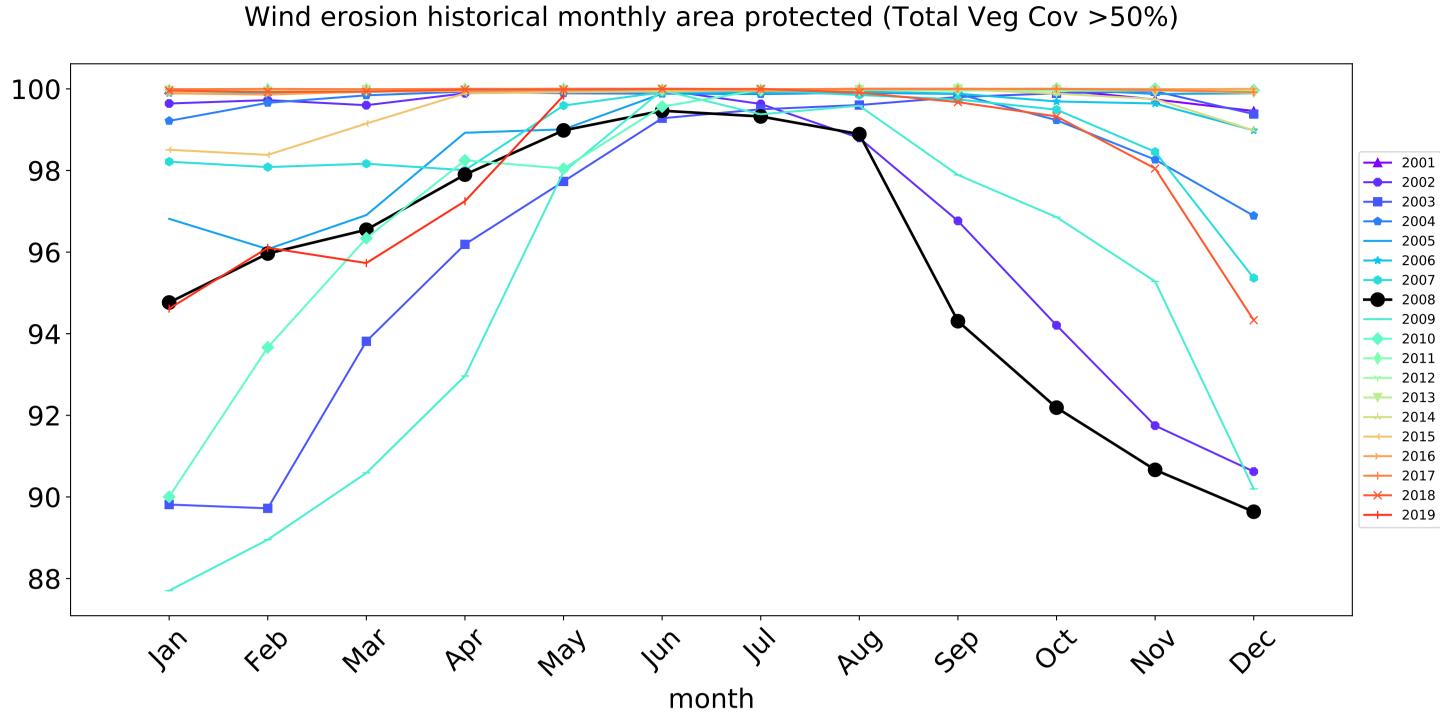


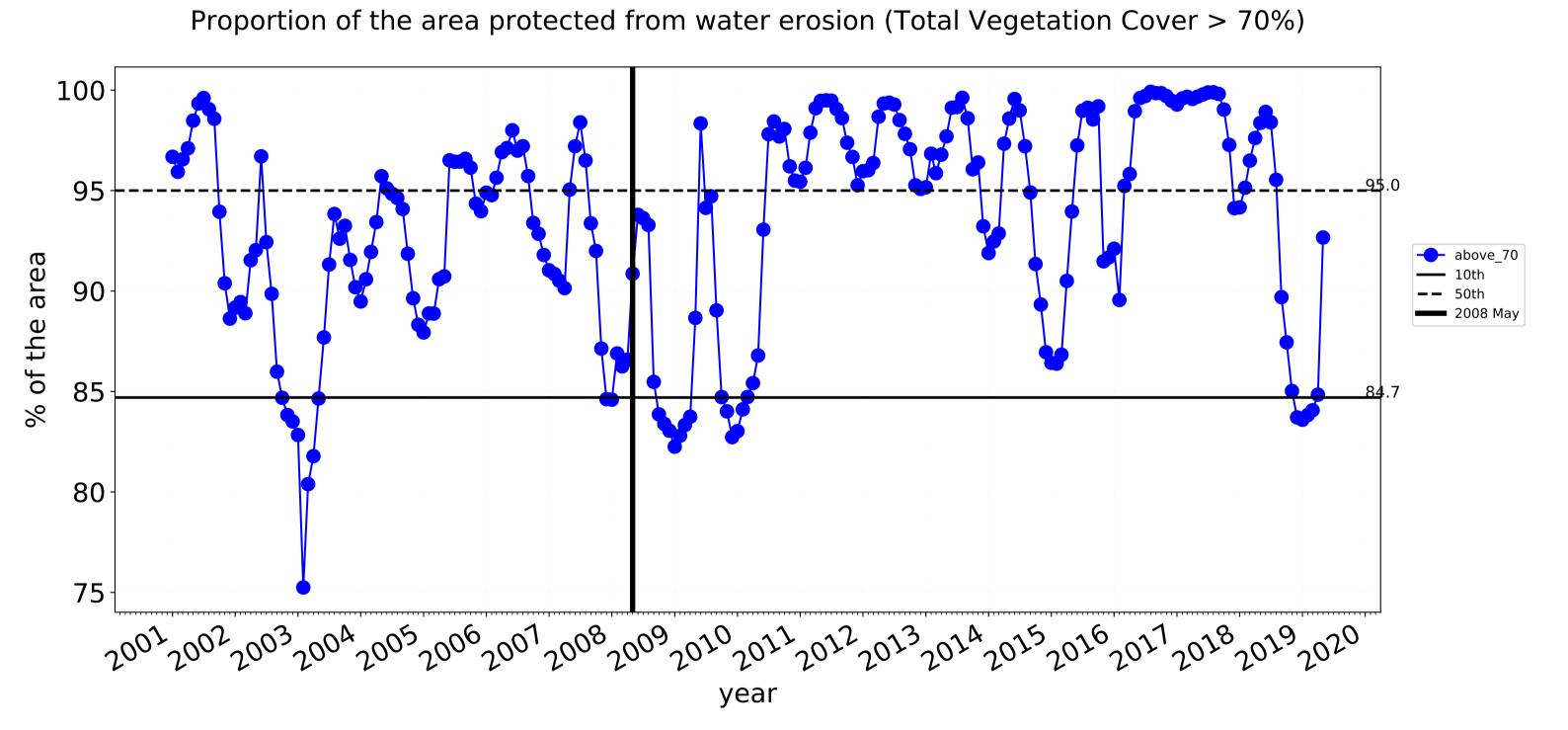
Conservation and natural environments

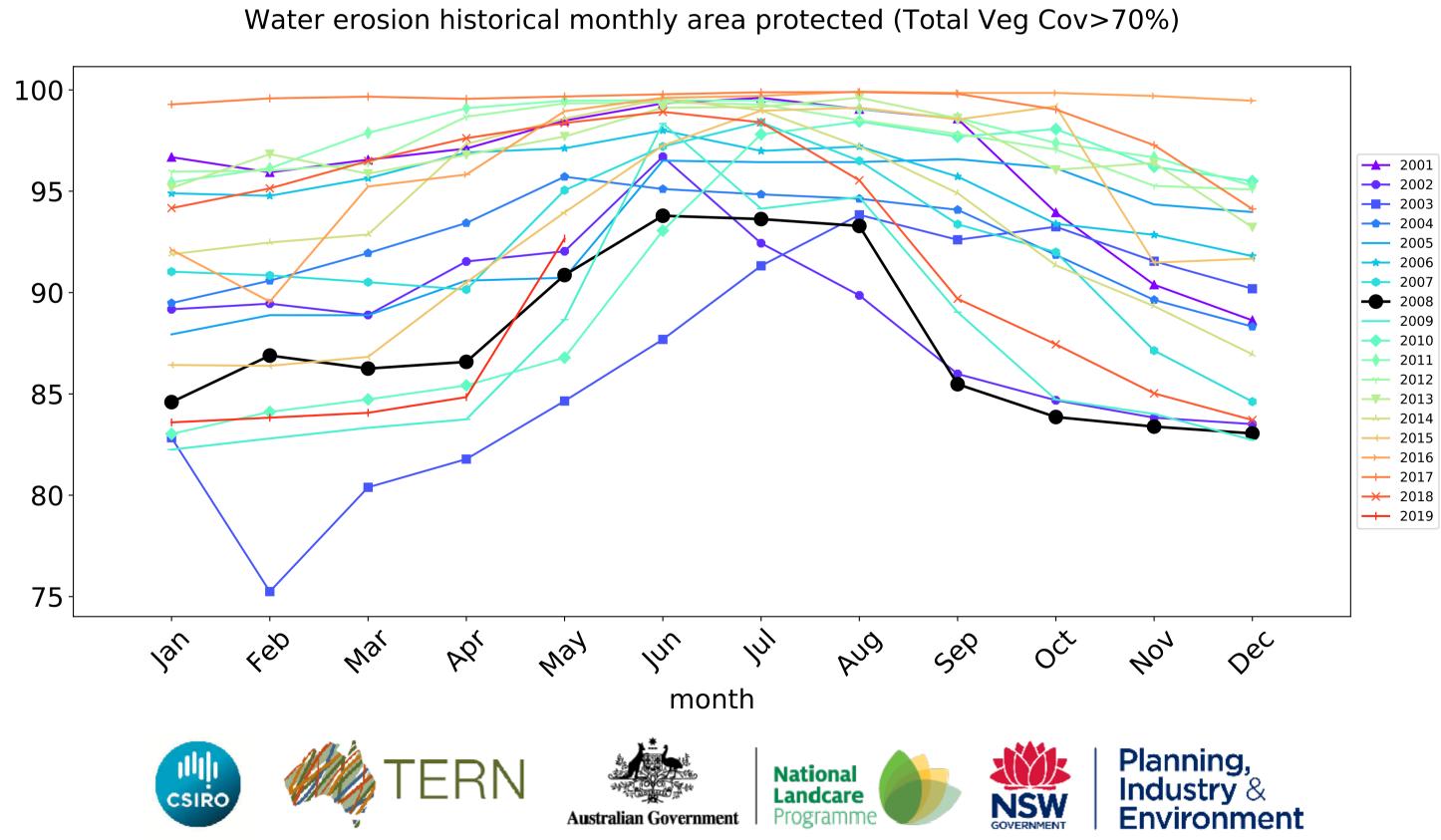


Conservation and natural environments timeseries



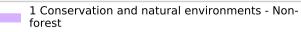






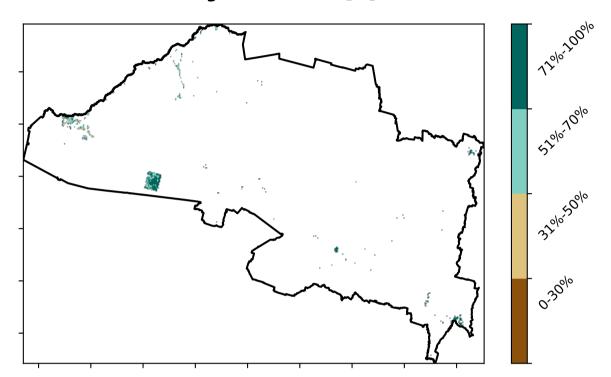
Conservation and natural environments non forest

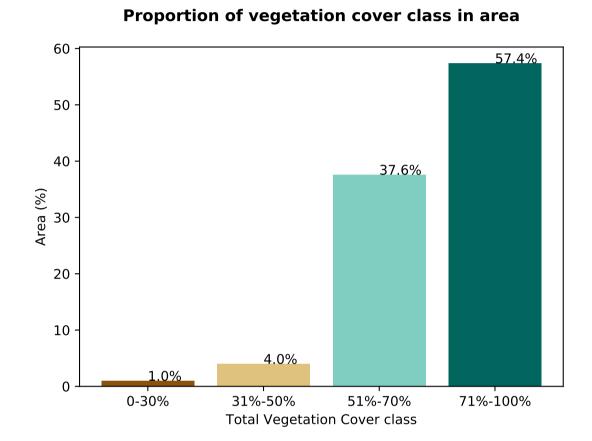
Catchment Scale
Land Use and Forests
of Australia (2018)
Derived from
Catchment Scale Land
Use of Australia
(2018) and Forestsof Australia (2018)



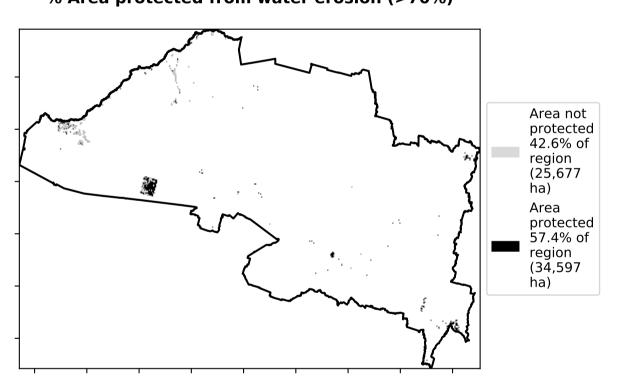
Total Vegetation Cover [%]

Land use and forest cover

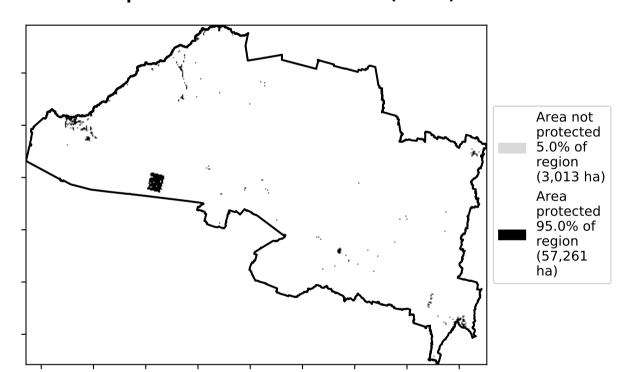




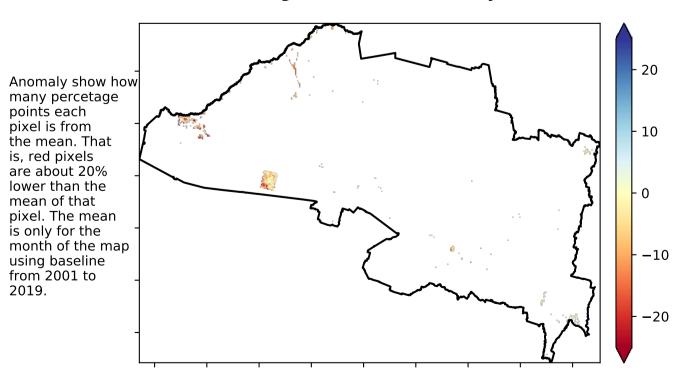
% Area protected from water erosion (>70%)



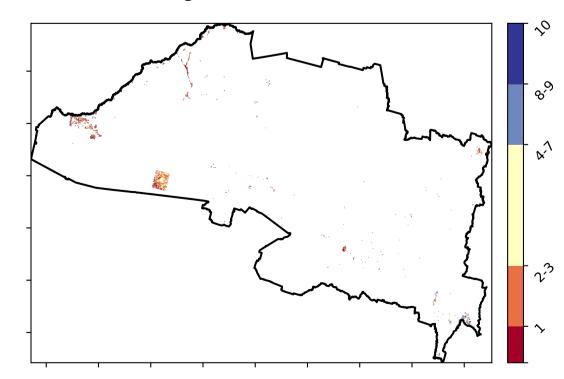
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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







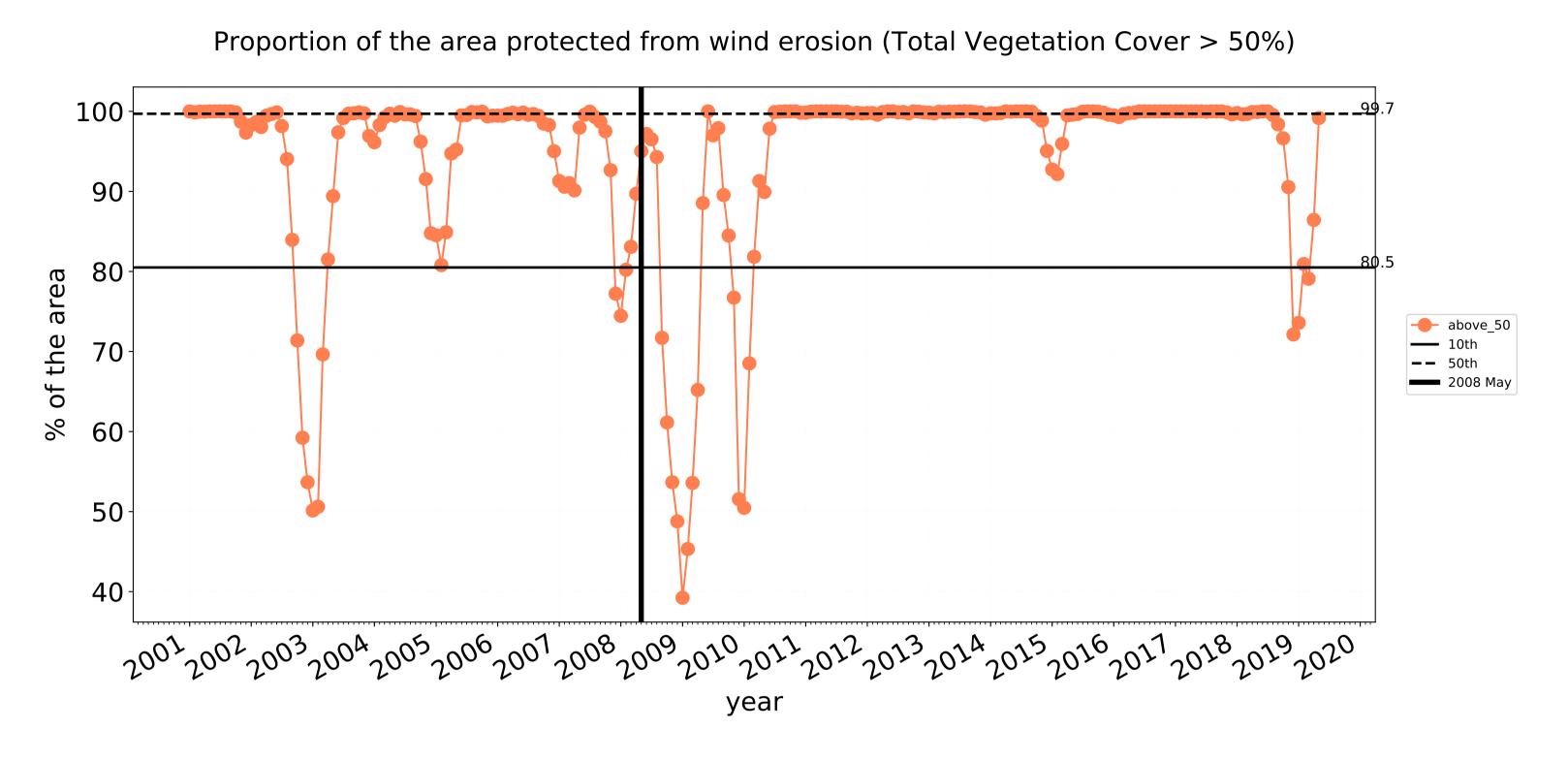


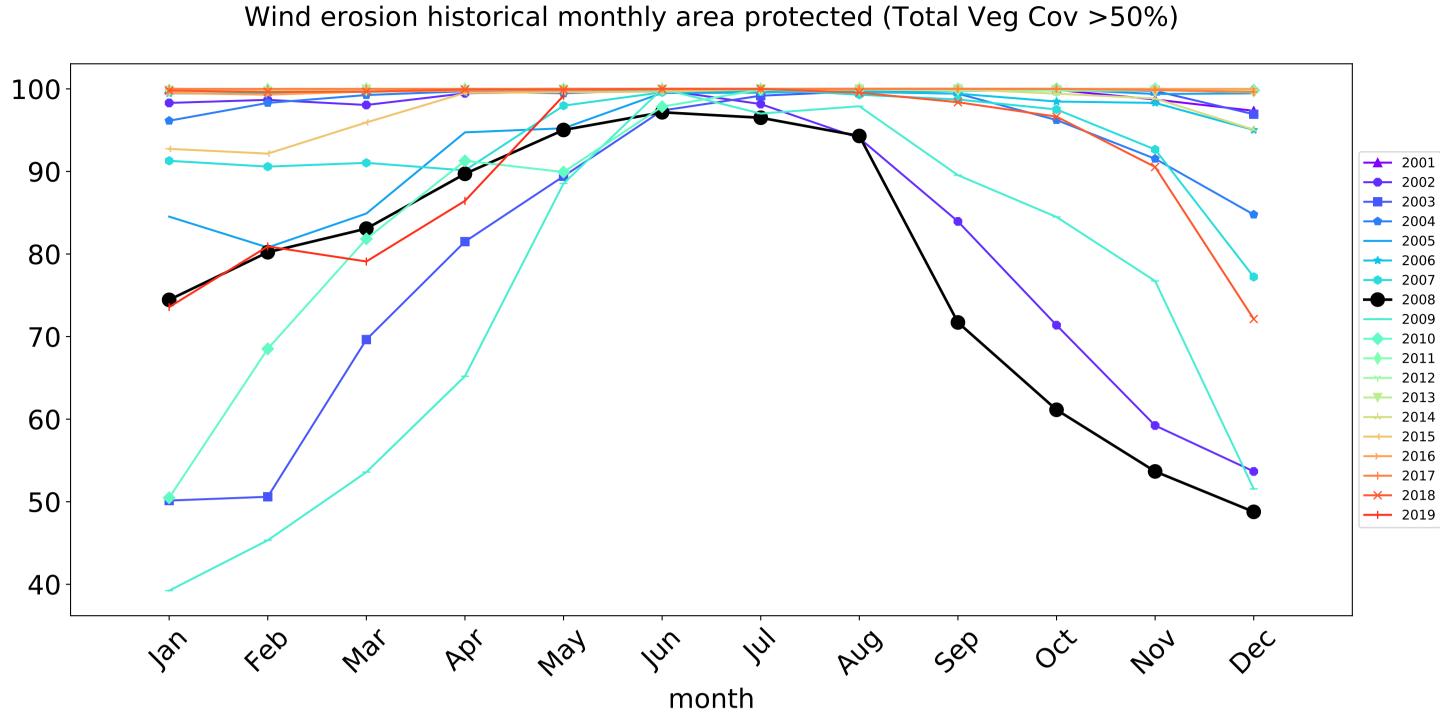


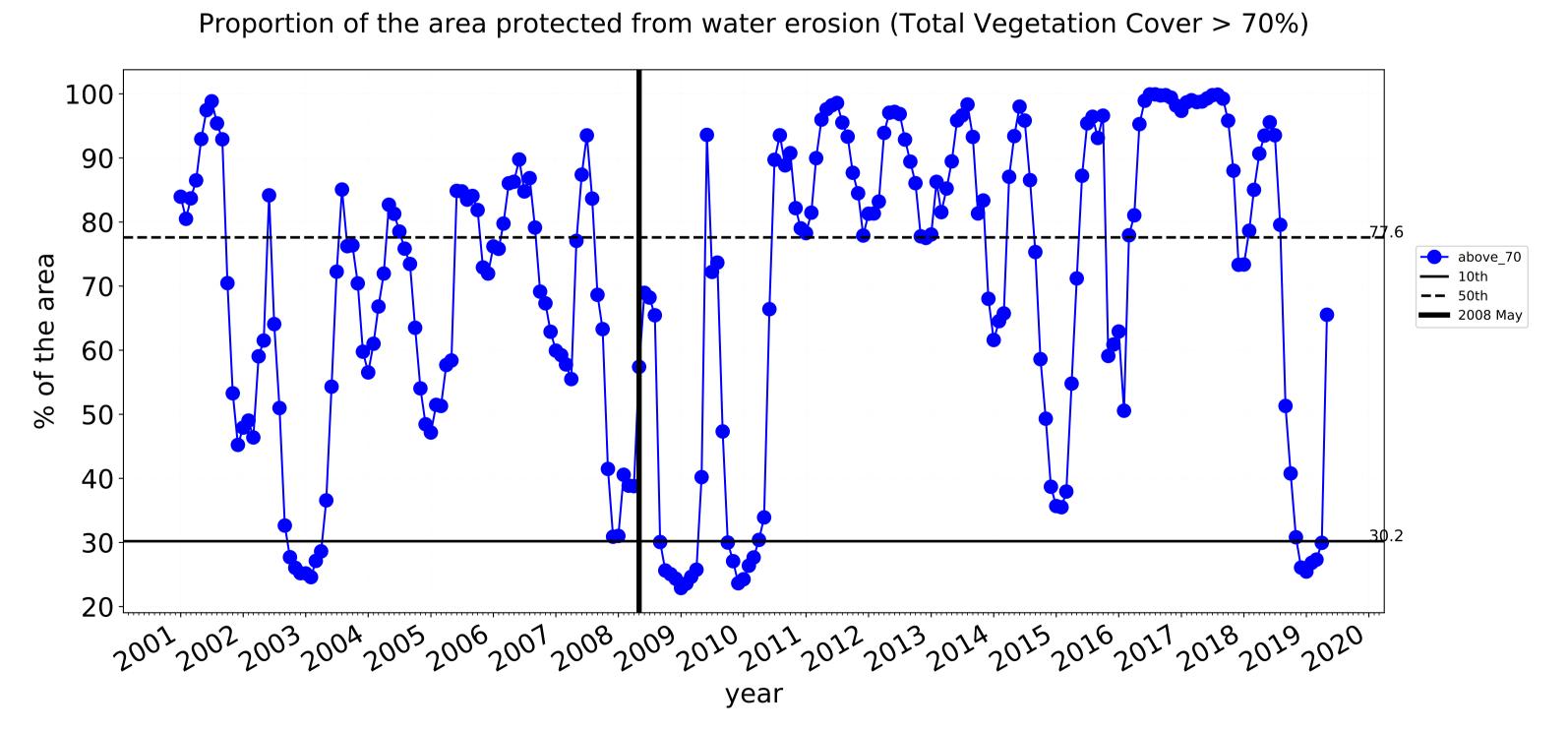


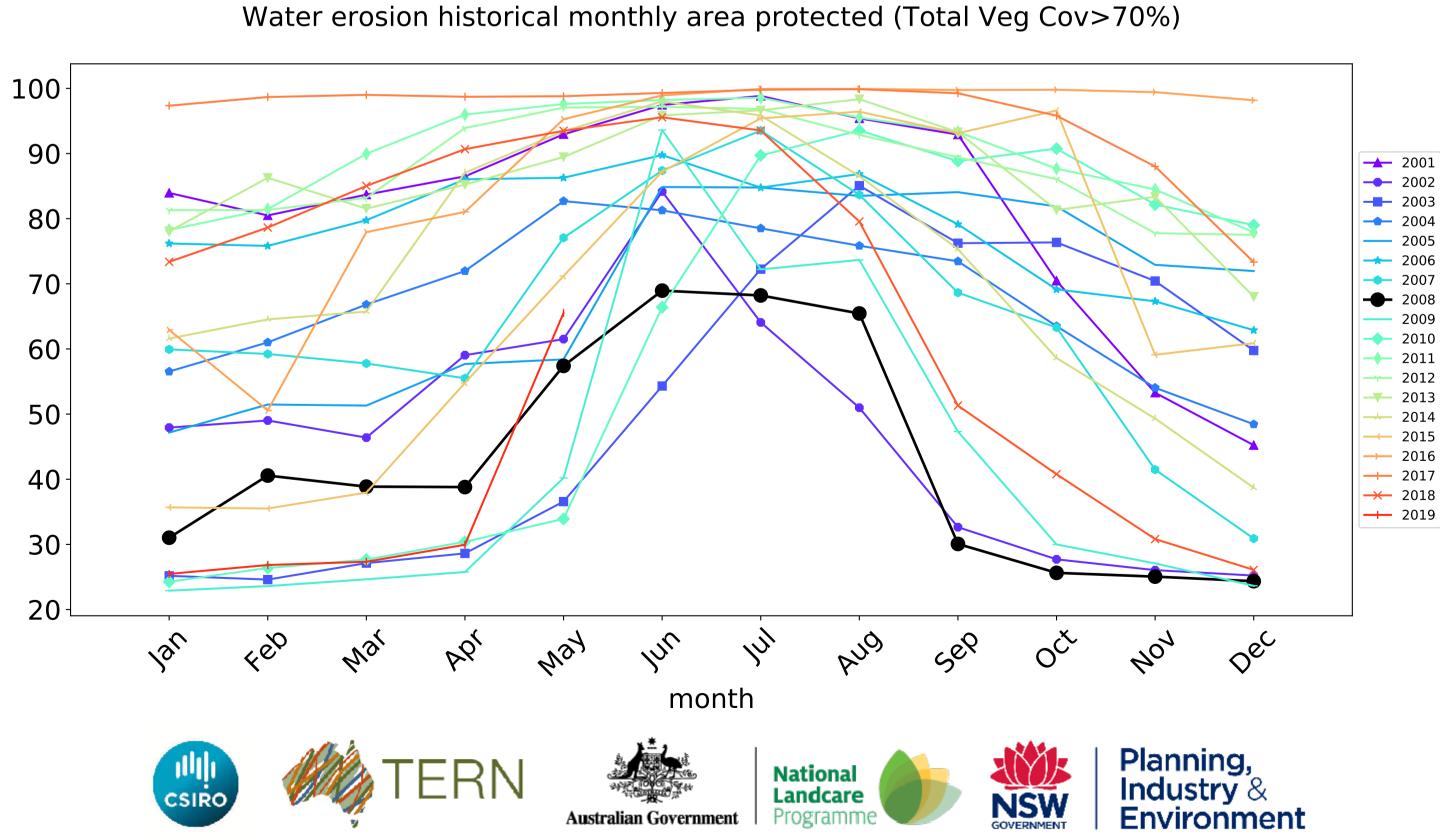


Conservation and natural environments non forest timeseries

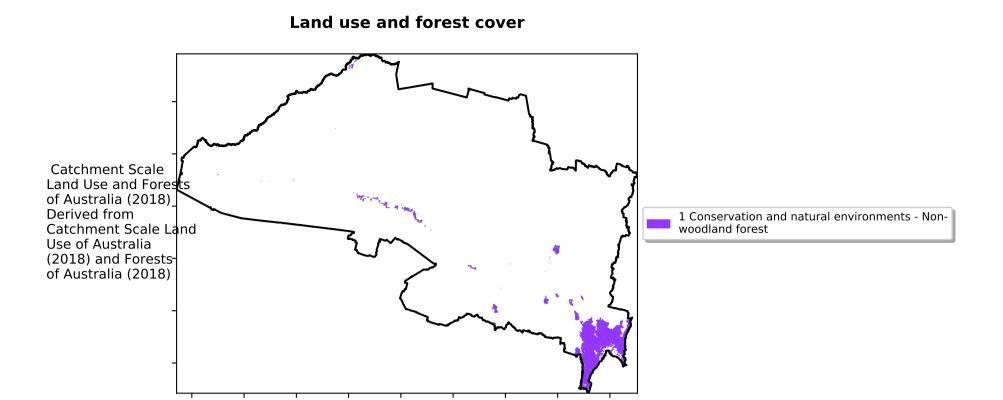




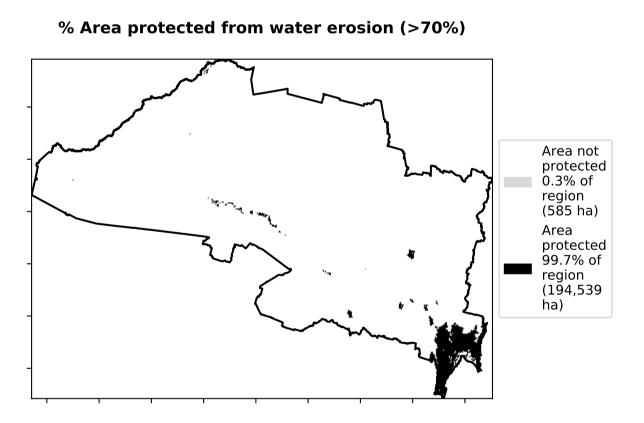


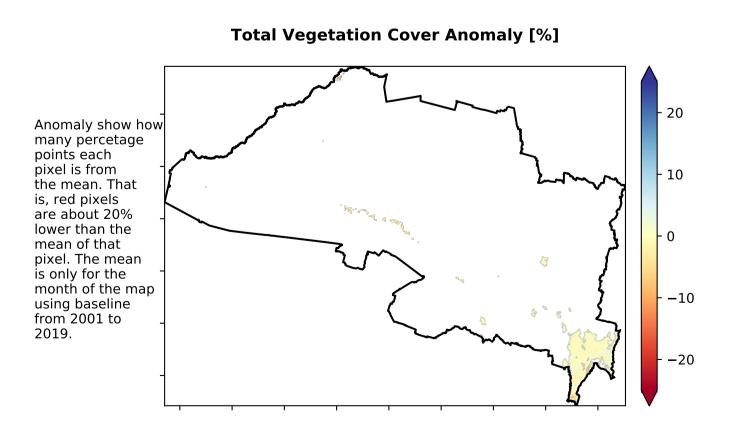


Conservation and natural environments Forest (non woodland)

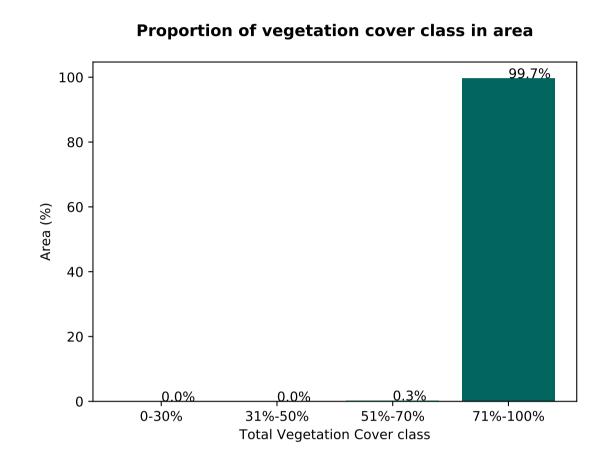


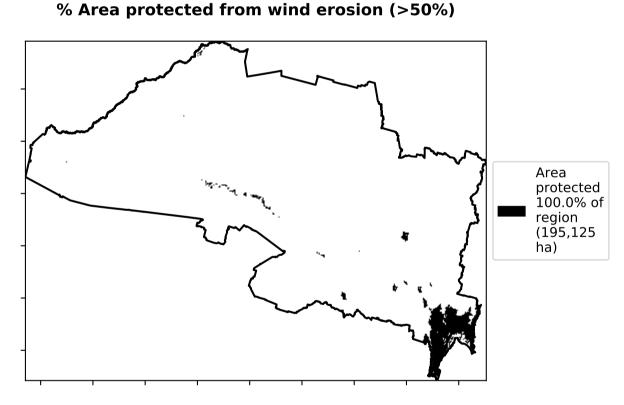
Total Vegetation Cover [%] Train-radio Tra

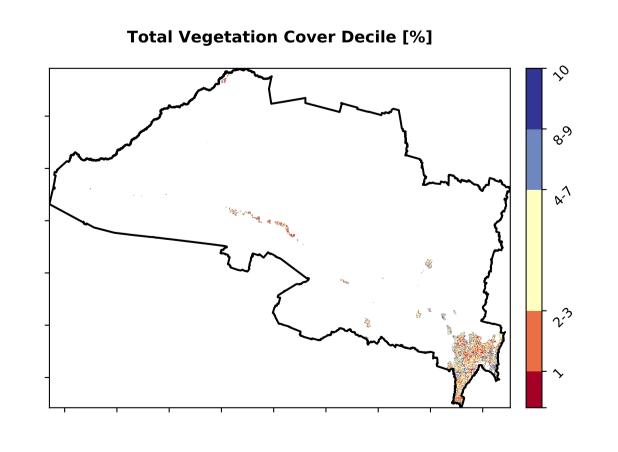




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.









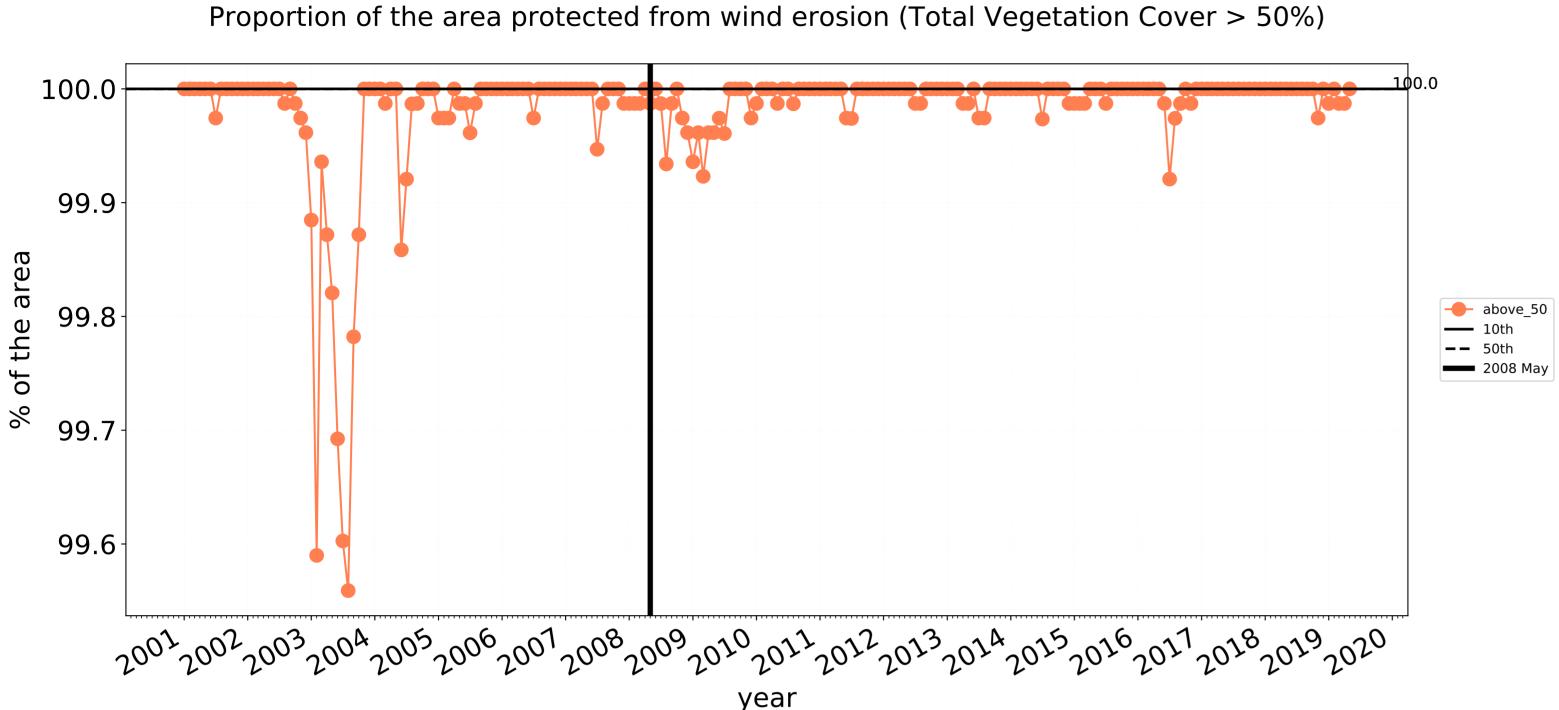


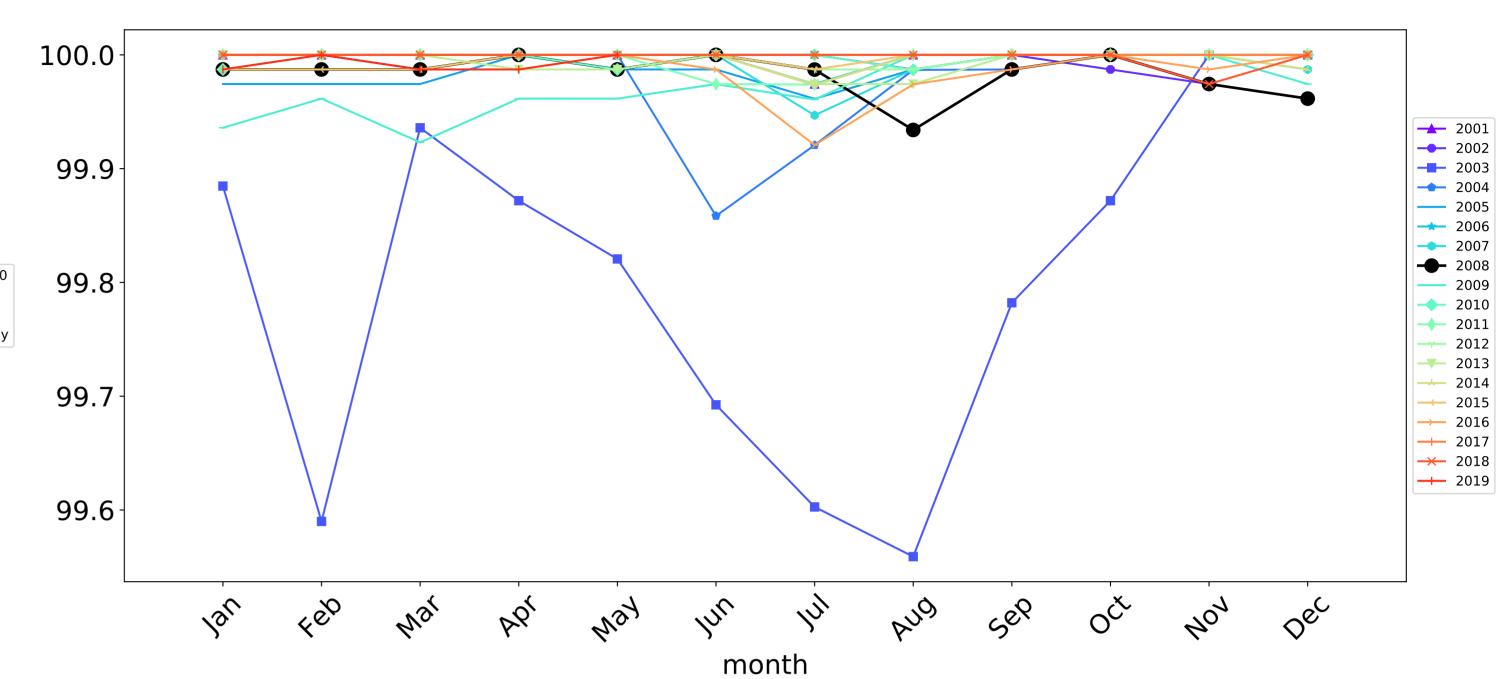




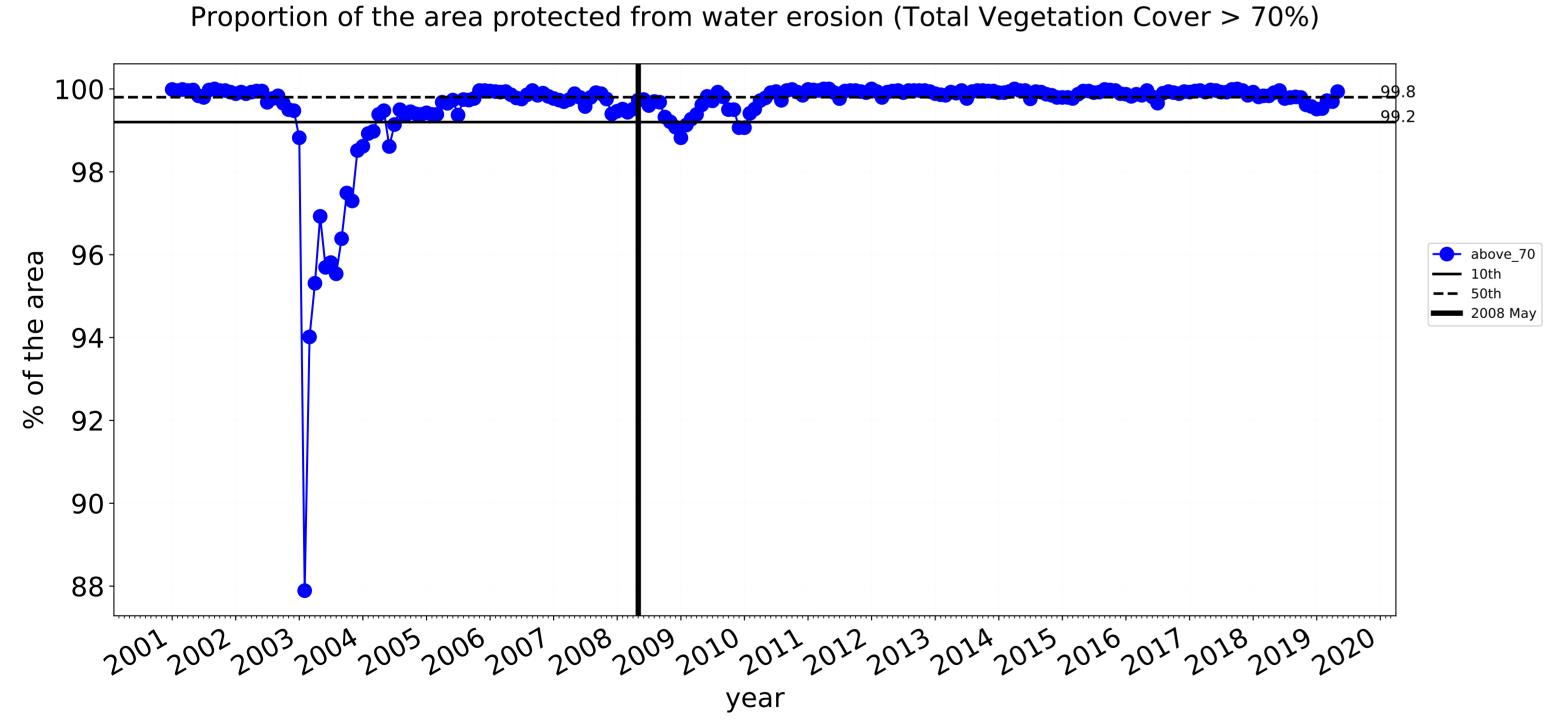


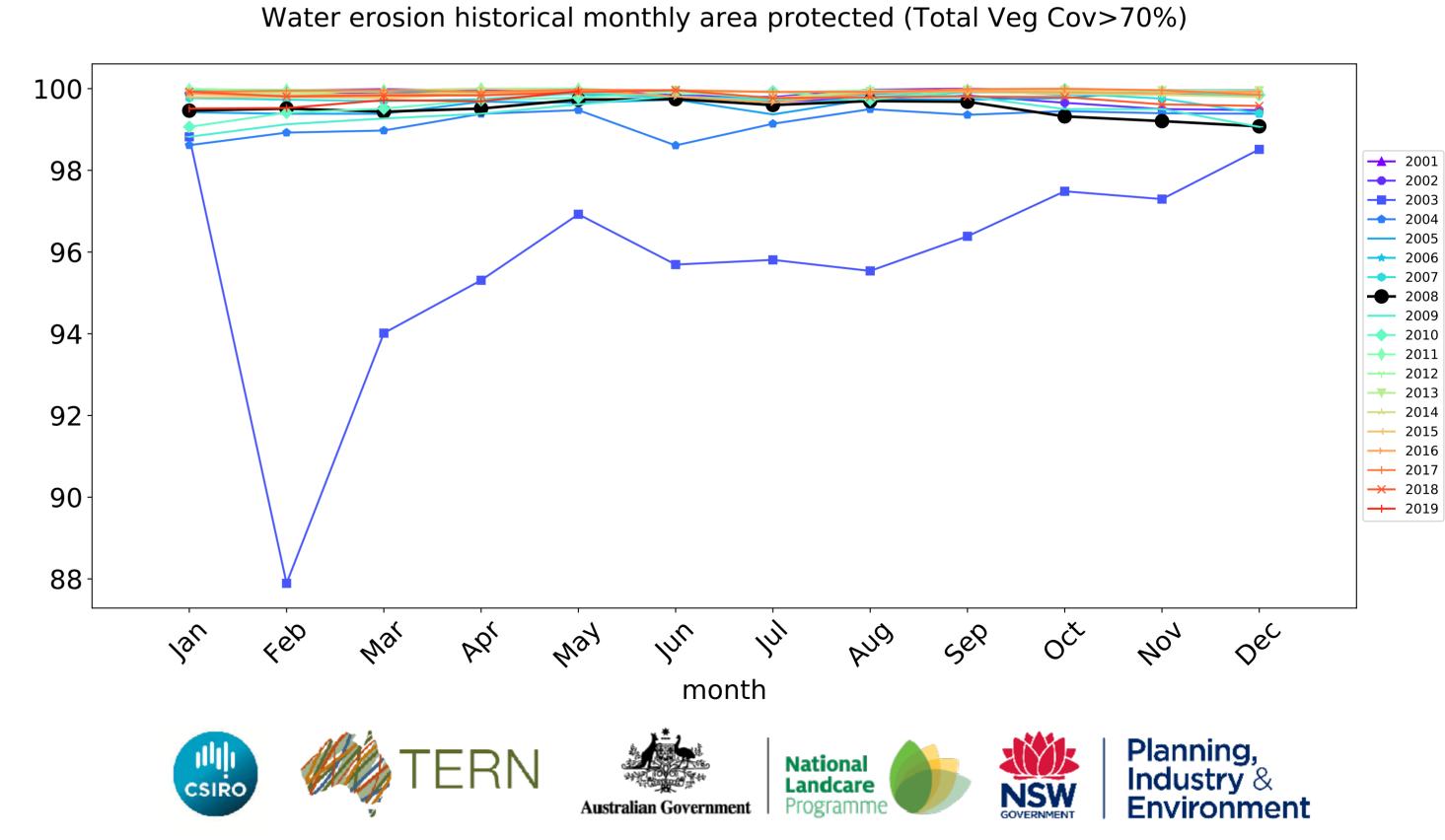






Wind erosion historical monthly area protected (Total Veg Cov >50%)

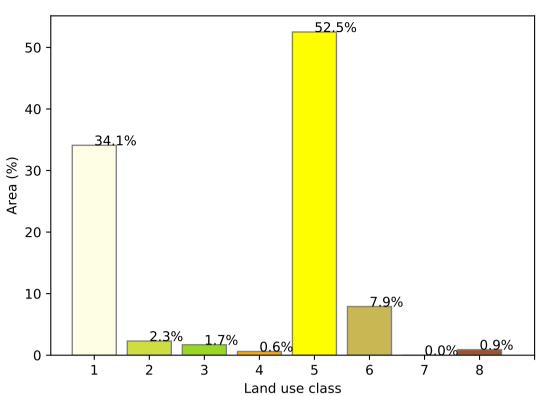




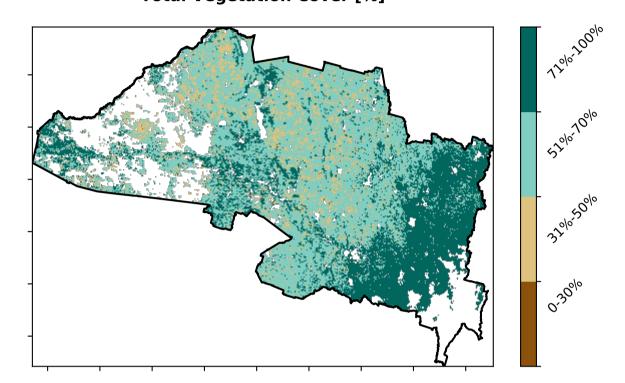
Agriculture

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

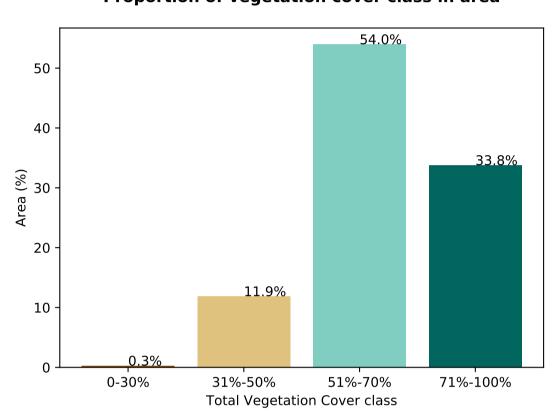
Proportion of each land class in area



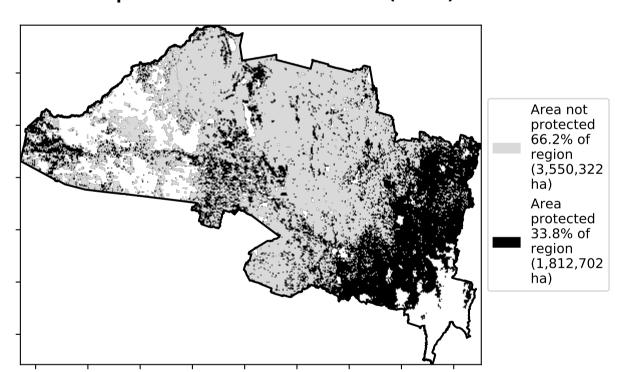
Total Vegetation Cover [%]



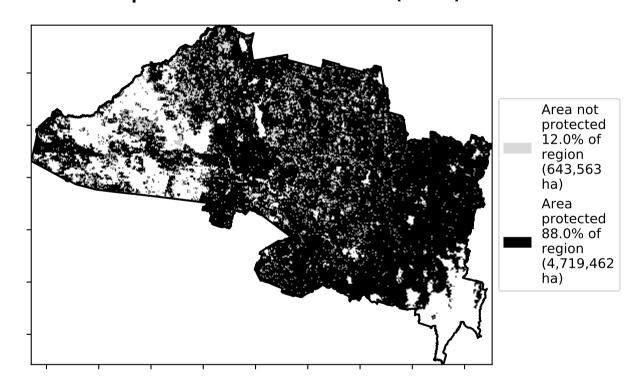
Proportion of vegetation cover class in area



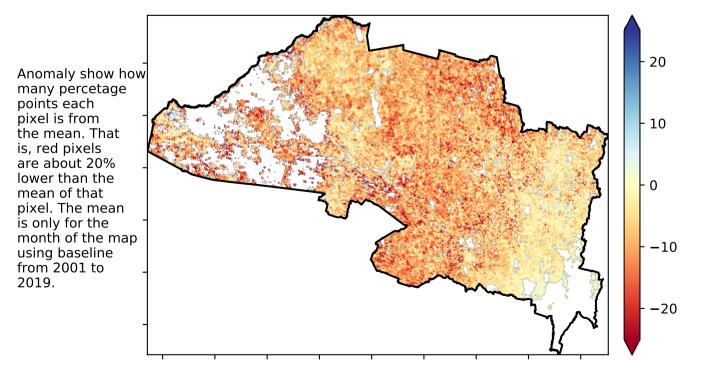
% Area protected from water erosion (>70%)



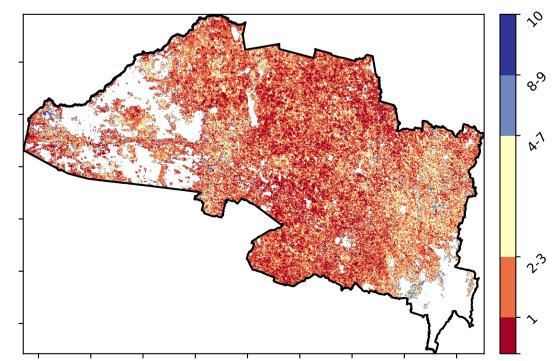
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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.







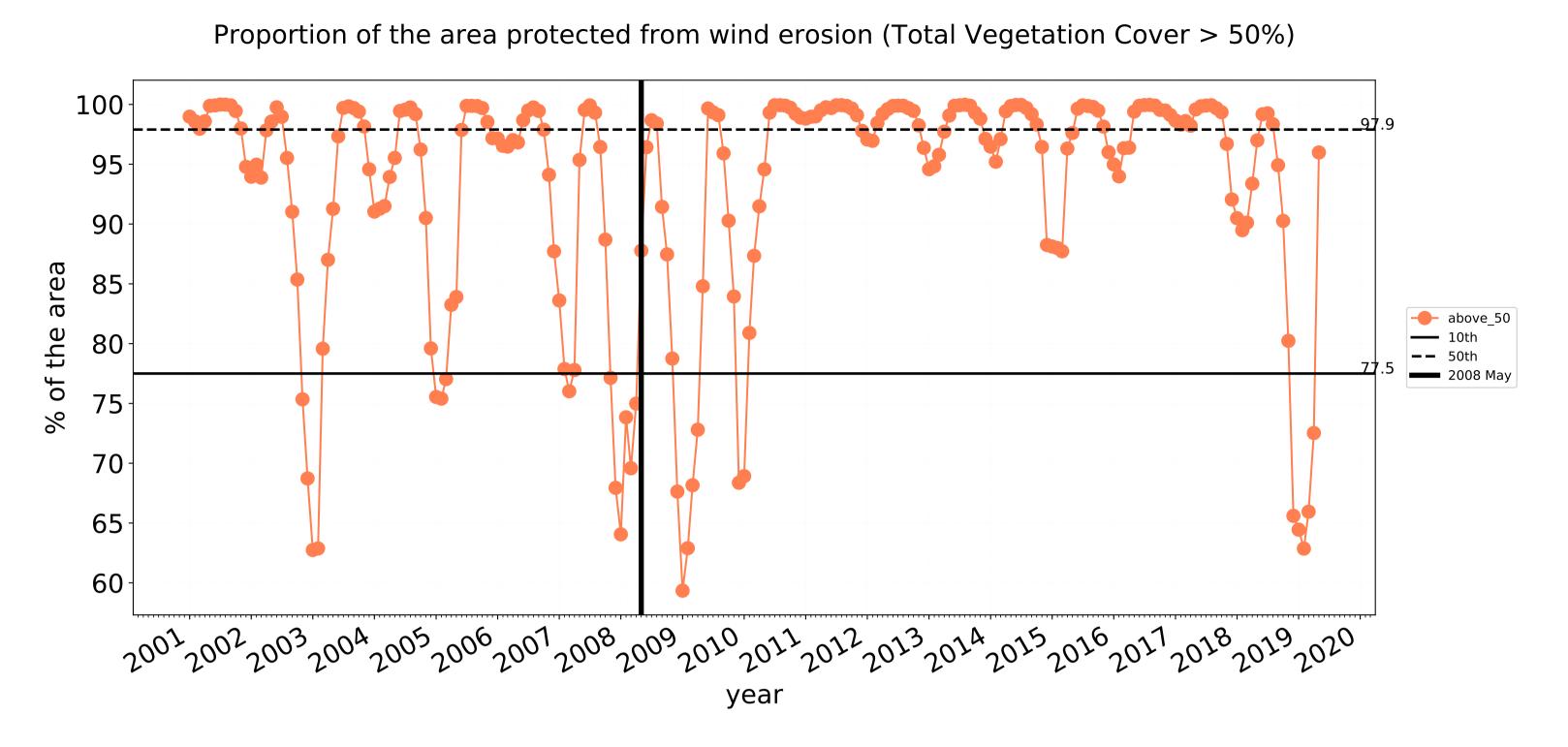


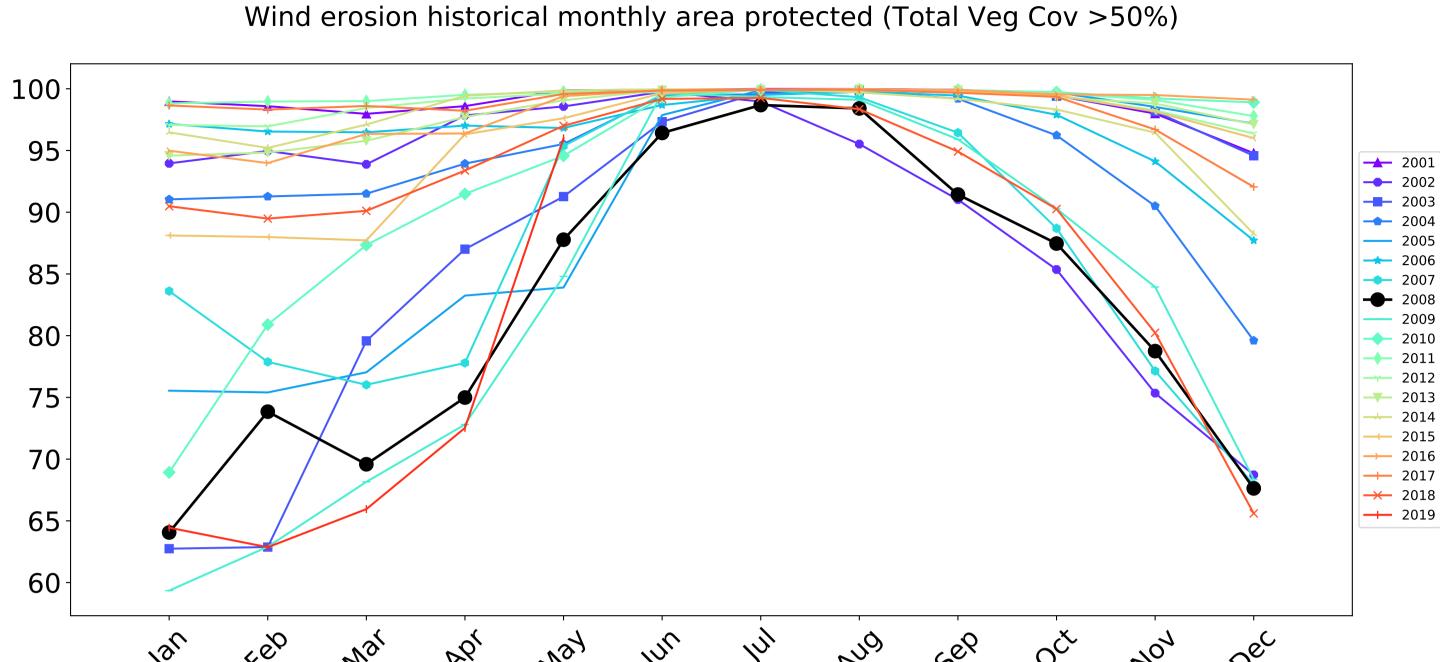




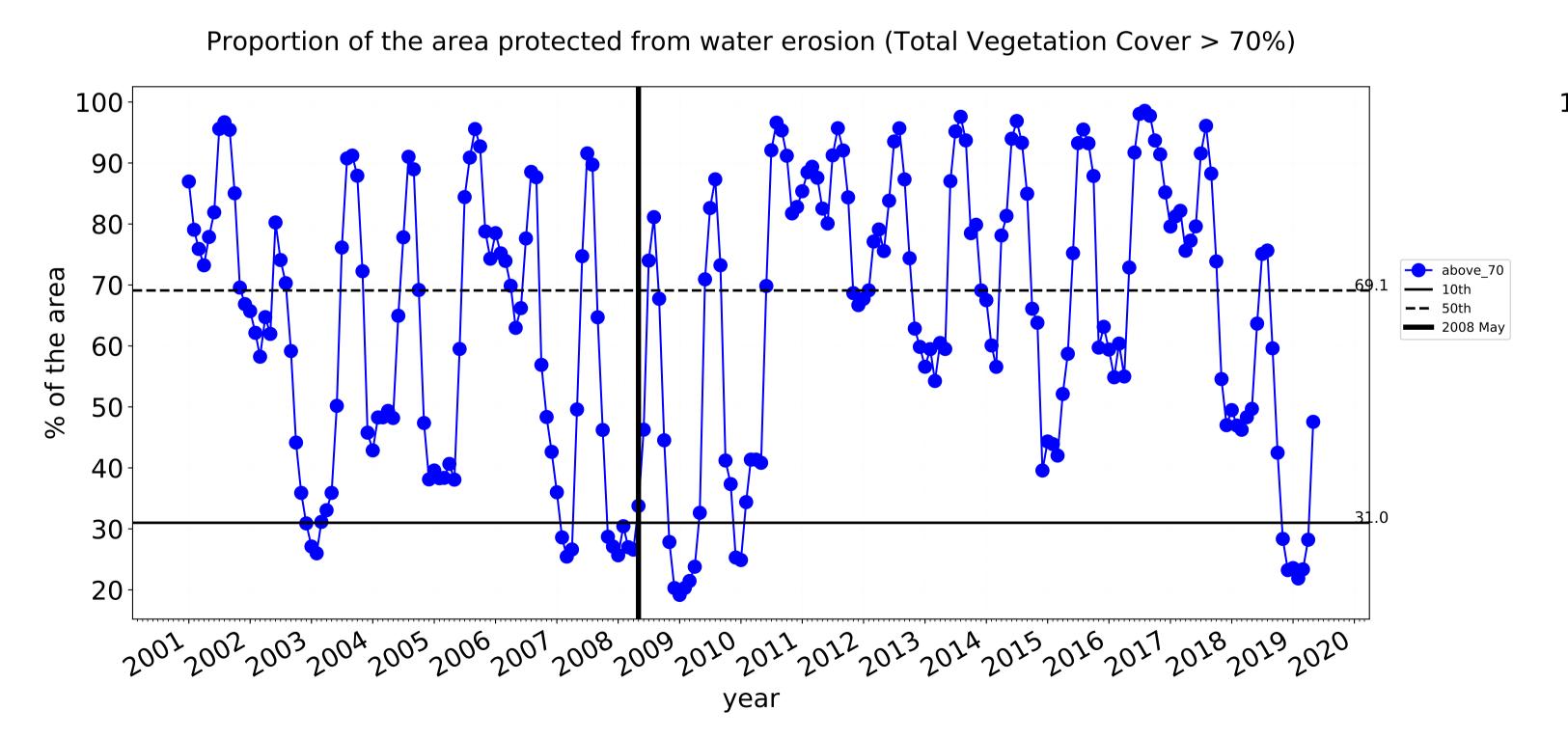


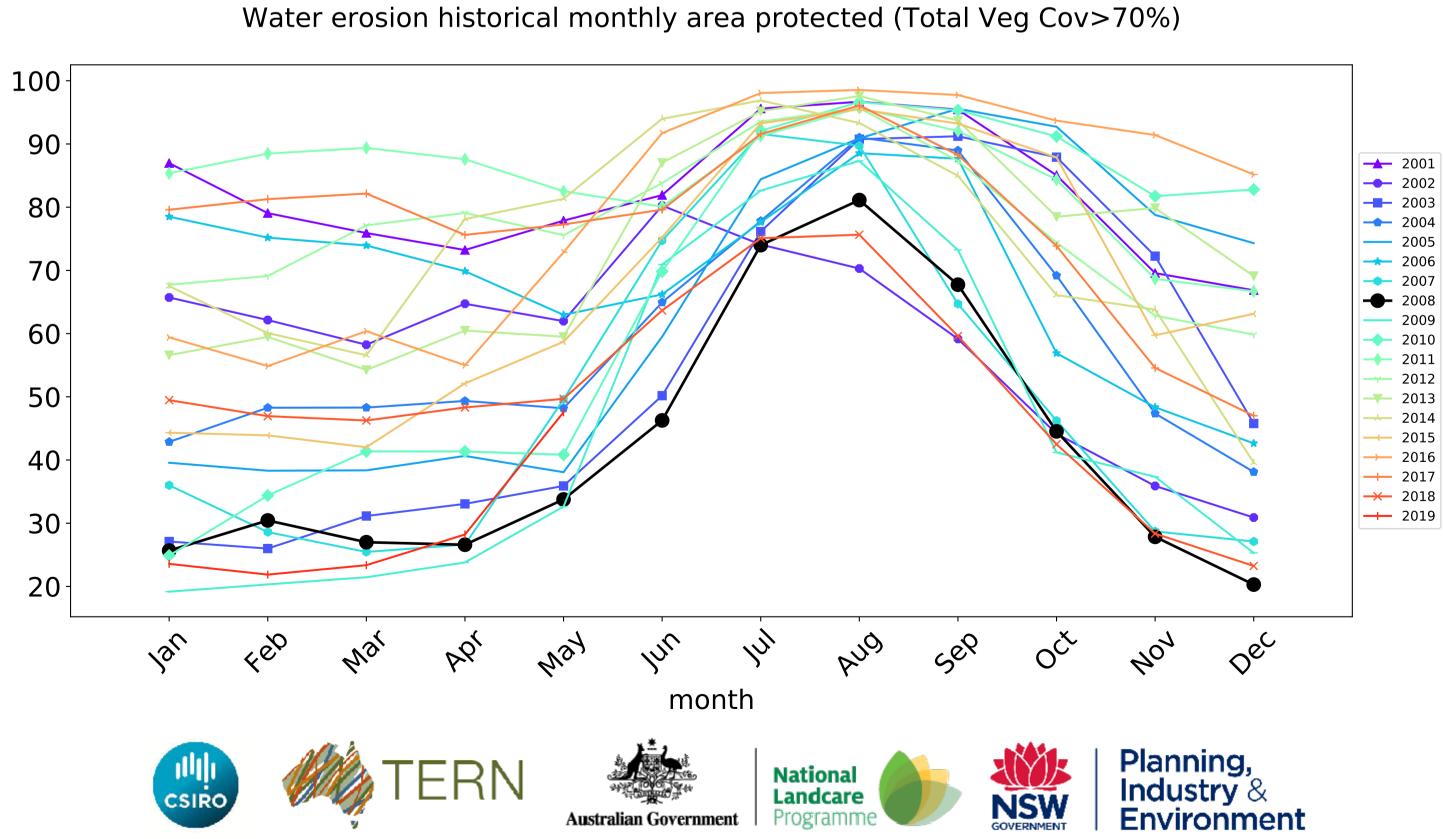
Agriculture timeseries





month

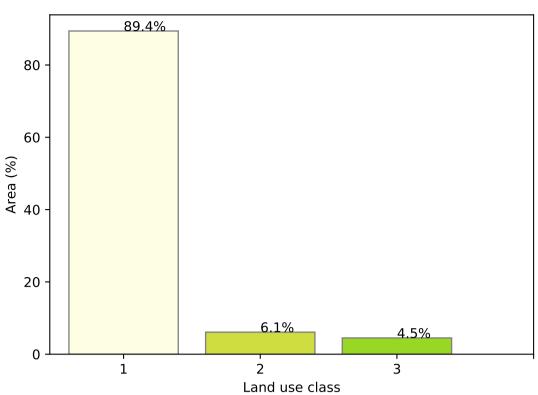




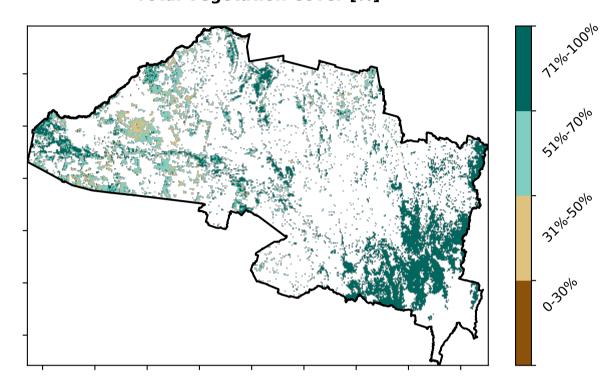
Grazing

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

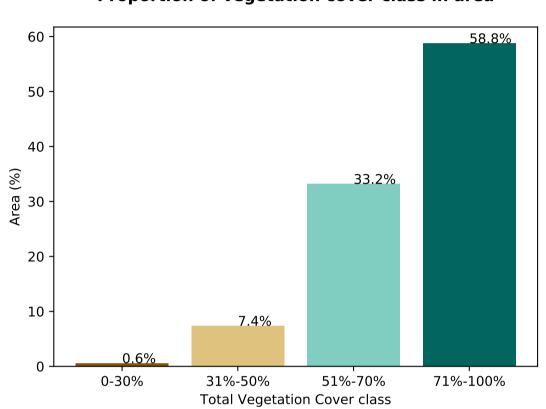
Proportion of each land class in area



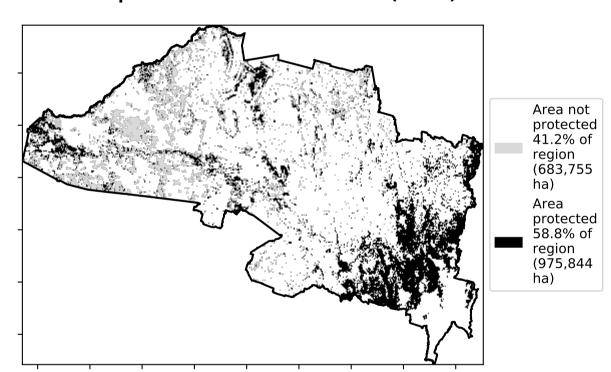




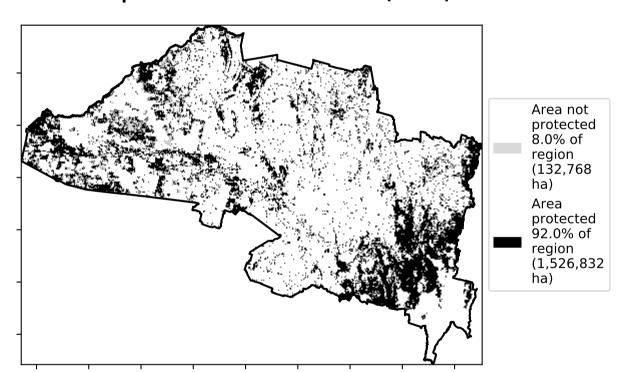
Proportion of vegetation cover class in area



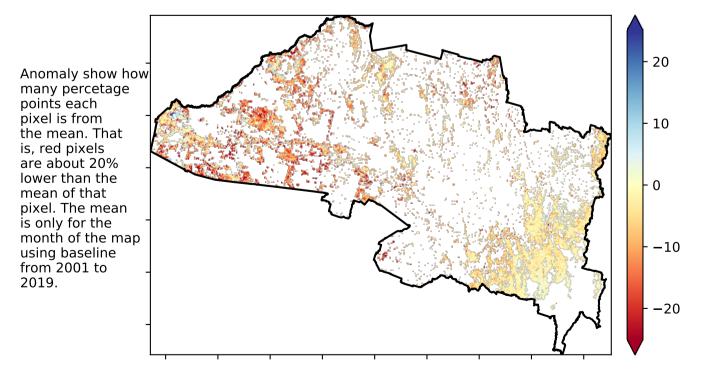
% Area protected from water erosion (>70%)



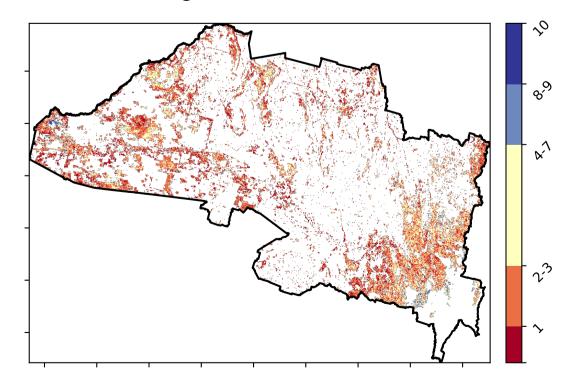
% Area protected from wind erosion (>50%)



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 man using baseline. the map using baseline from 2001 to 2019.







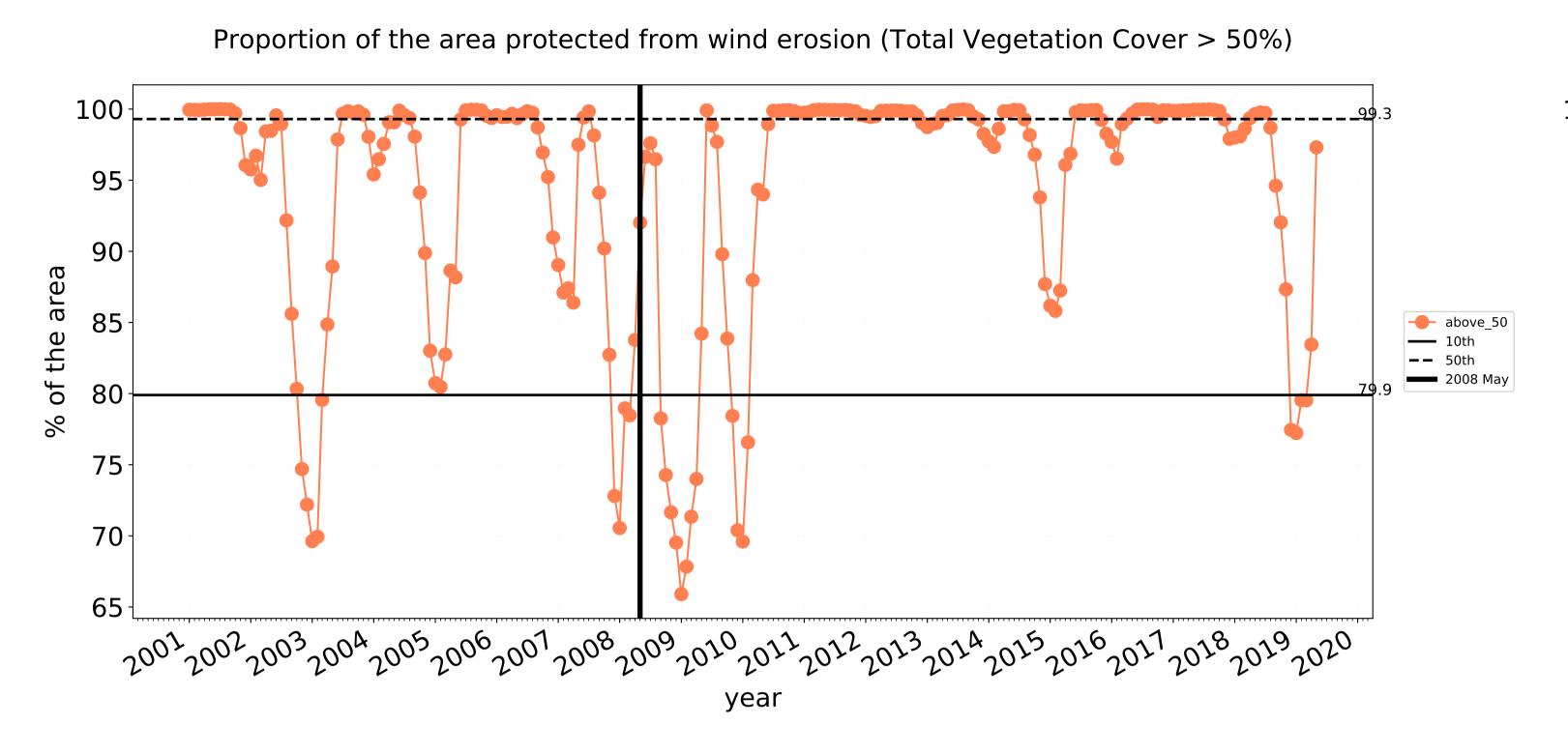


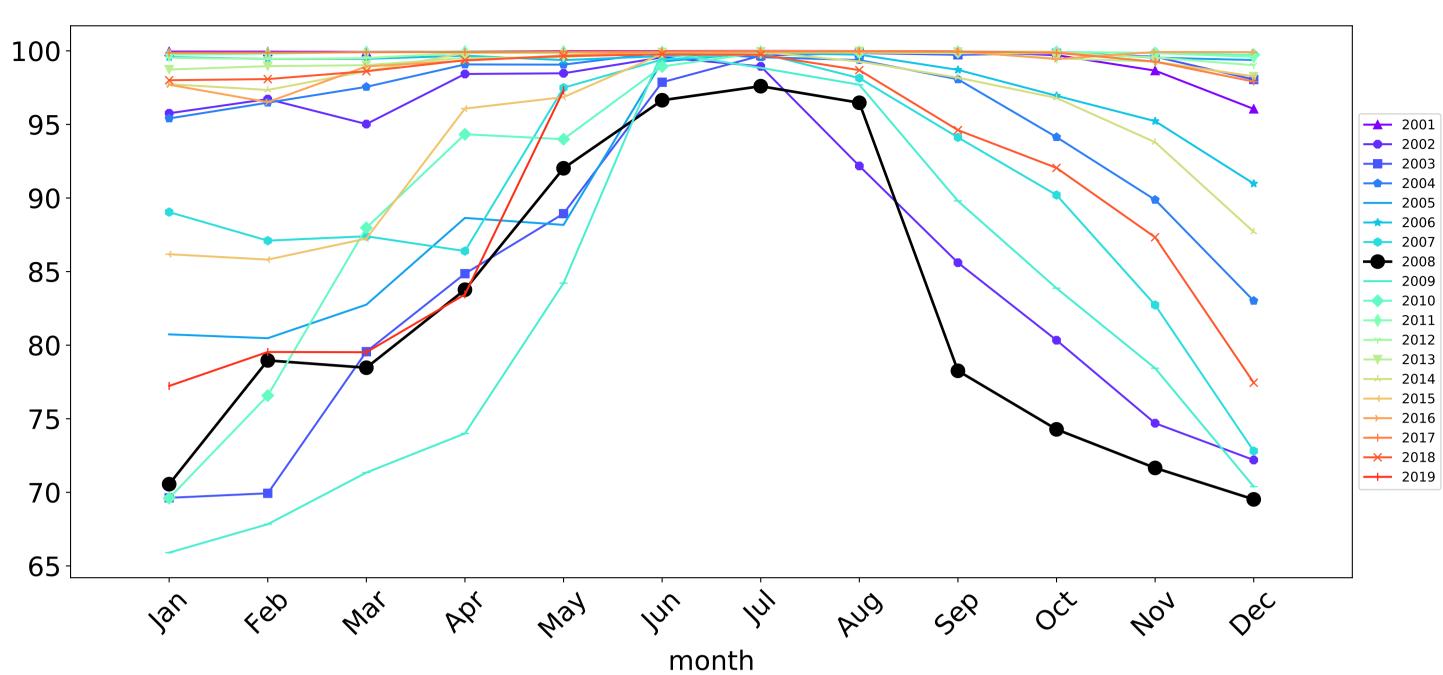




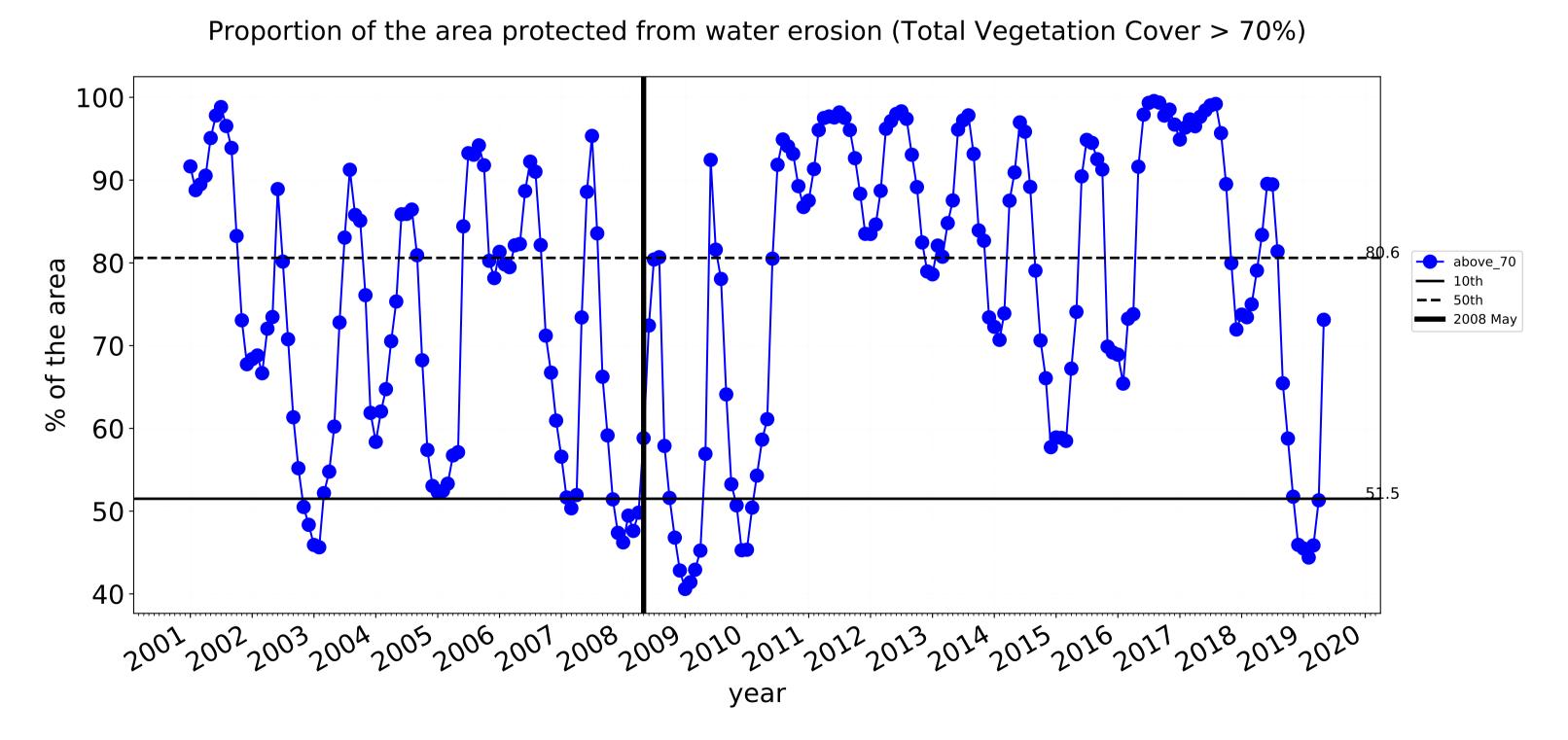


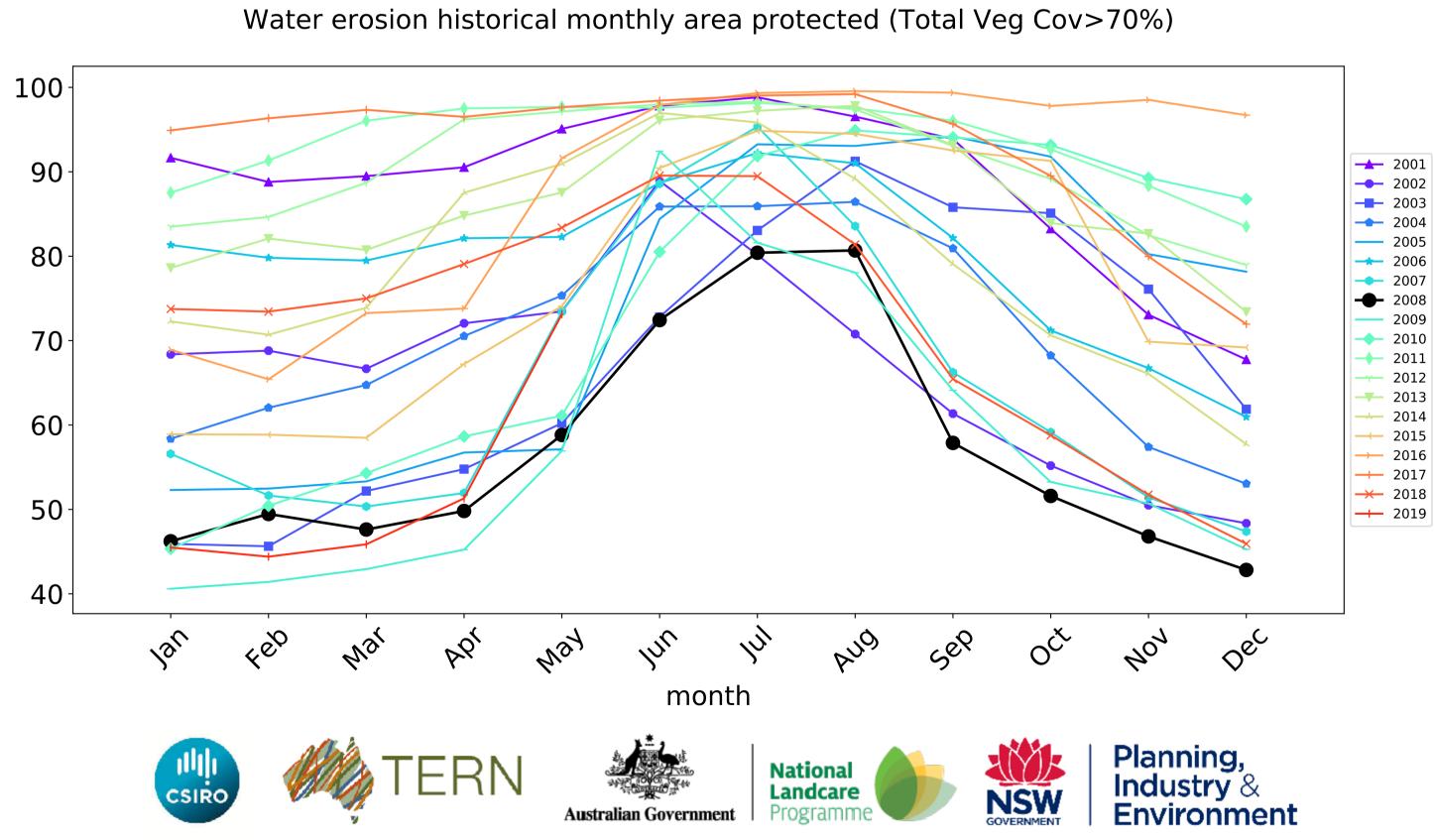
Grazing timeseries





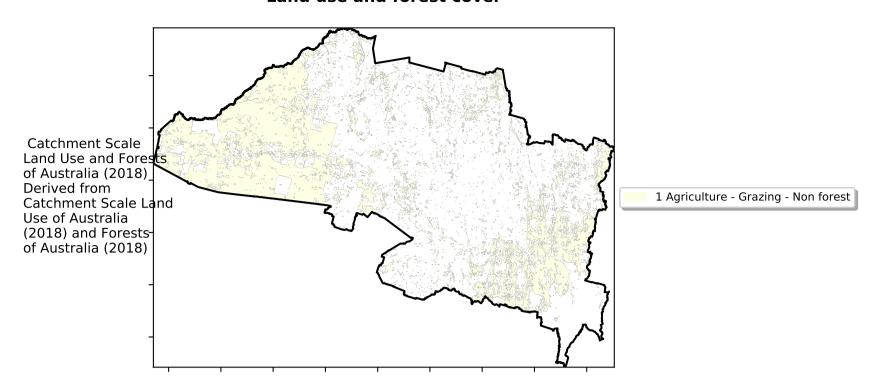
Wind erosion historical monthly area protected (Total Veg Cov >50%)



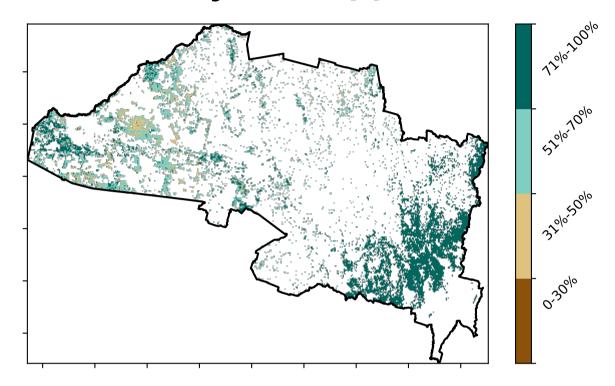


Grazing non forest

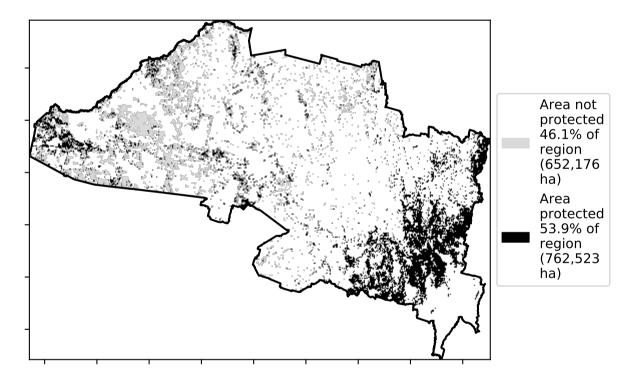
Land use and forest cover



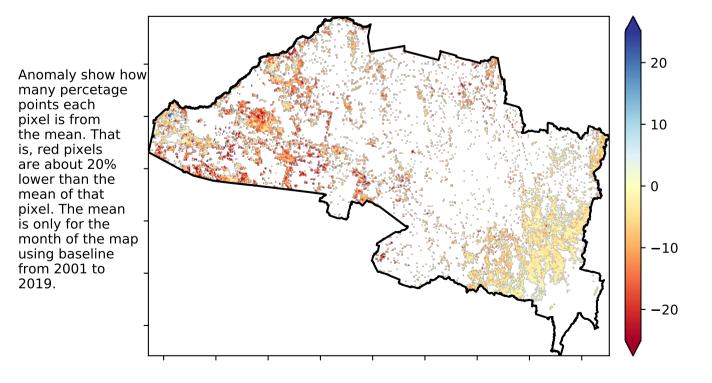
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

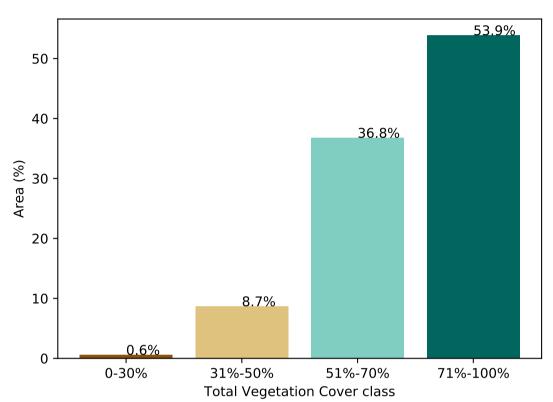


Total Vegetation Cover Anomaly [%]

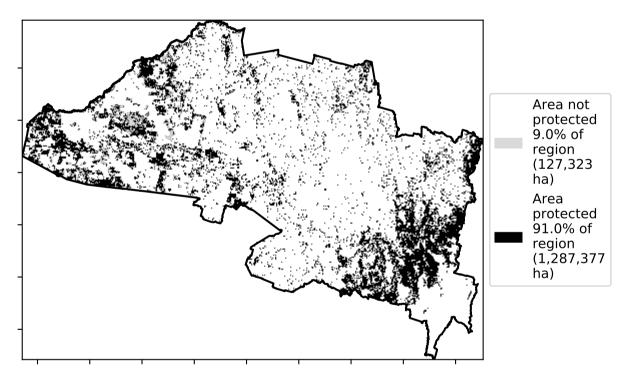


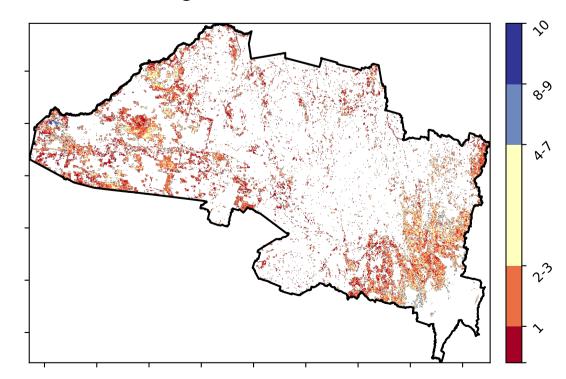
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









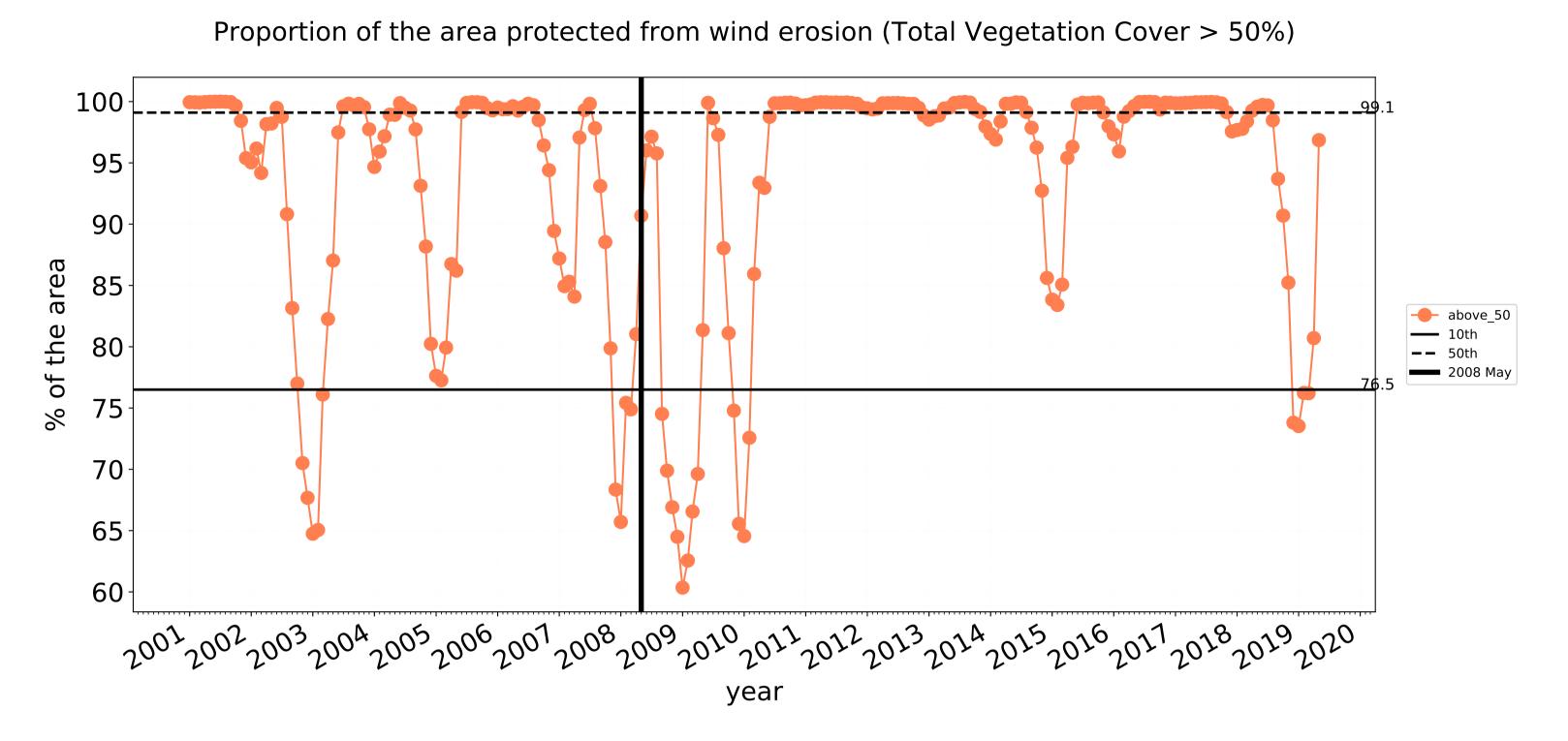


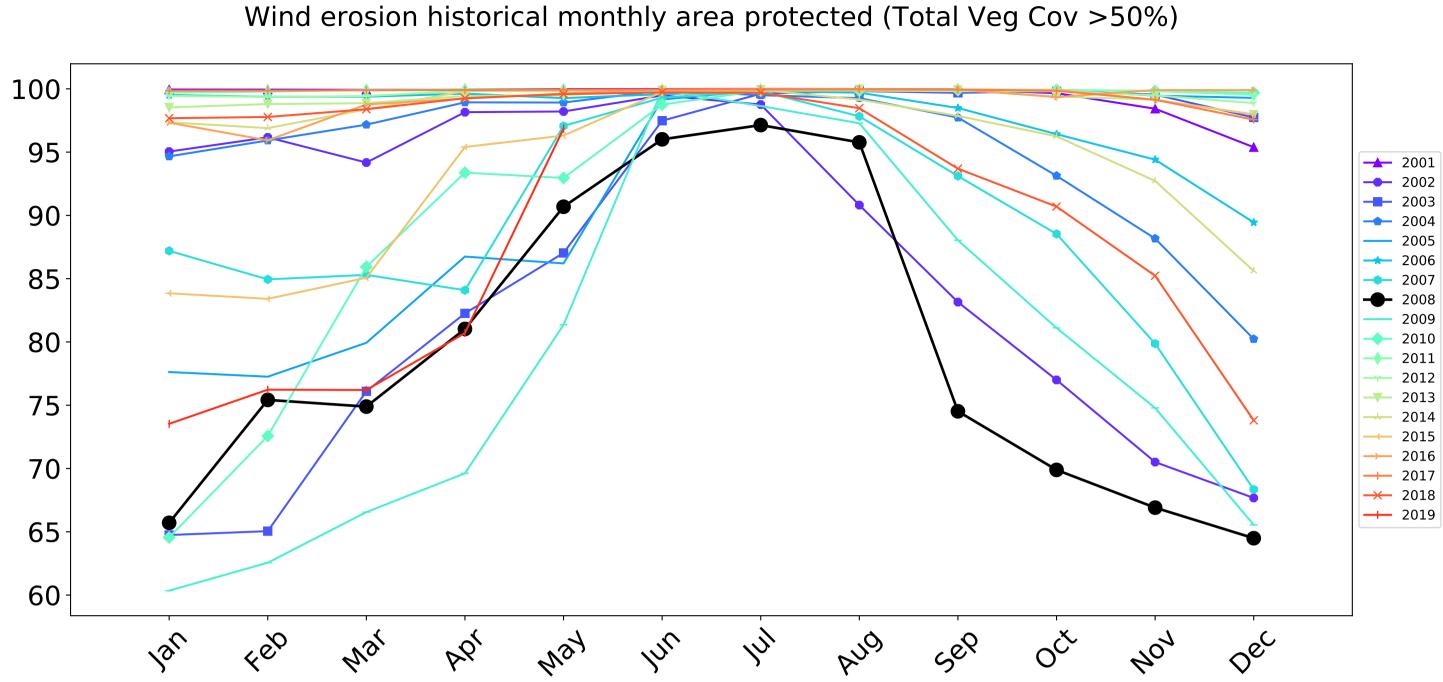




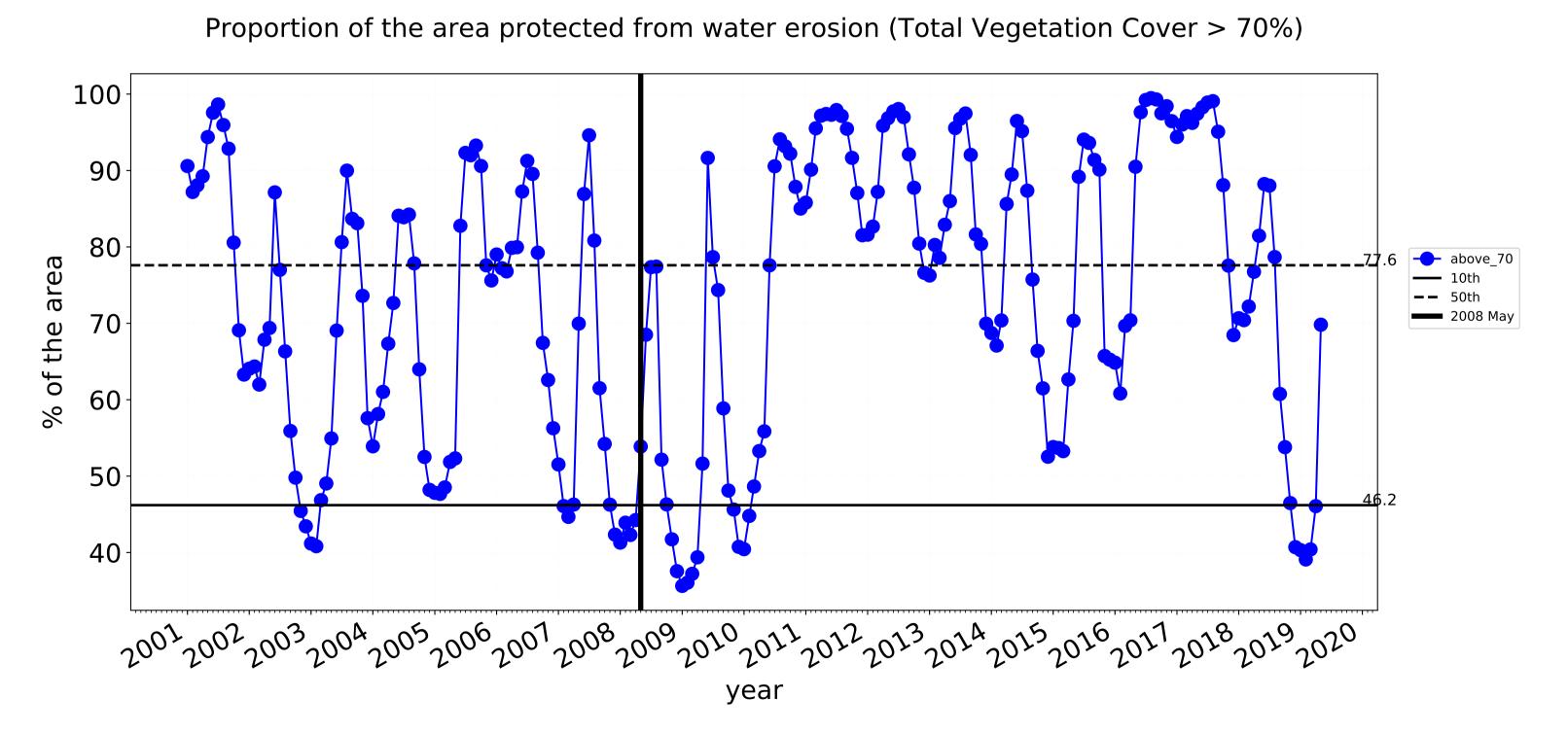


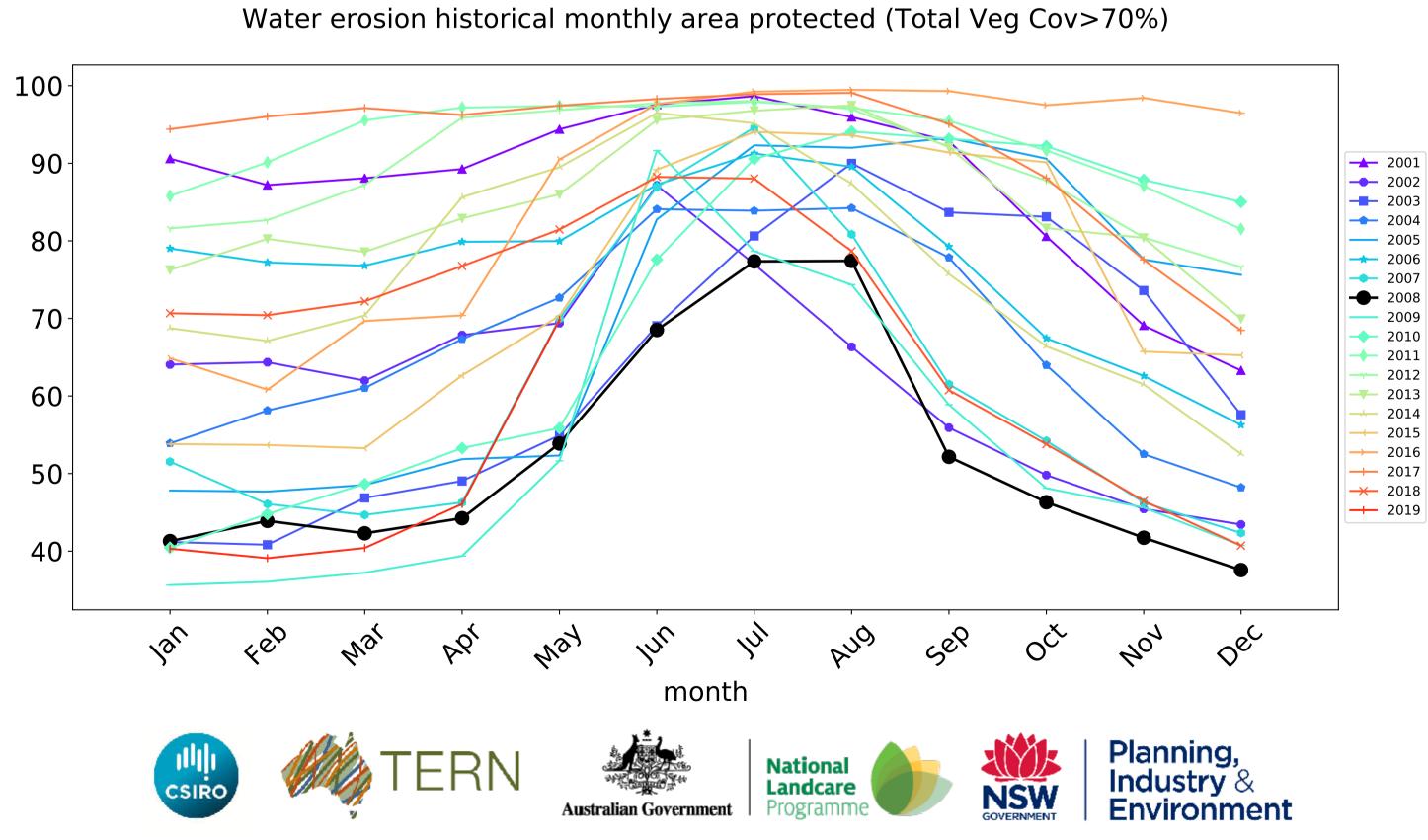
Grazing non forest timeseries





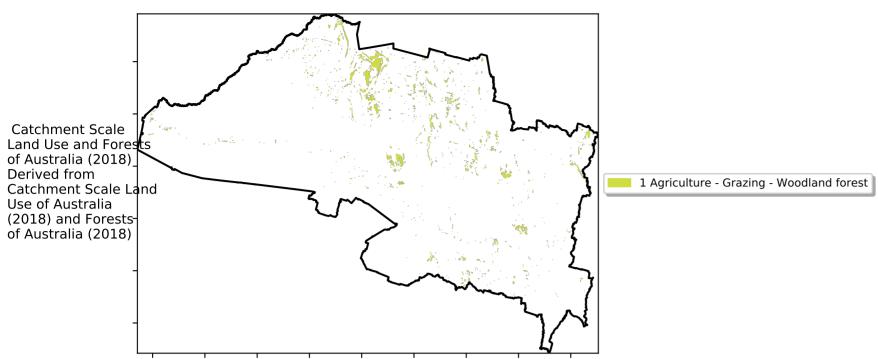
month



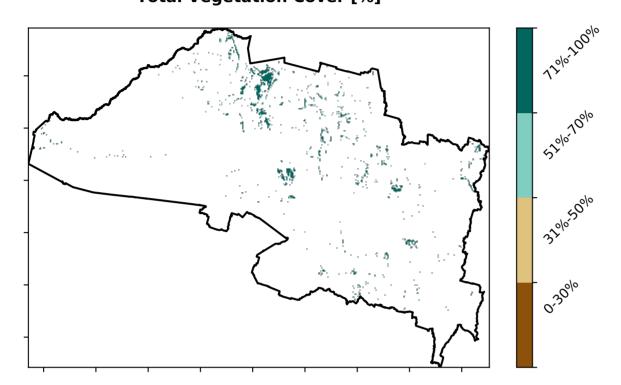


Grazing Woodland forest

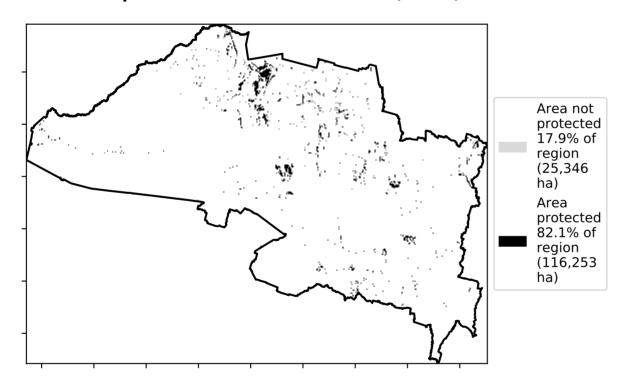
Land use and forest cover



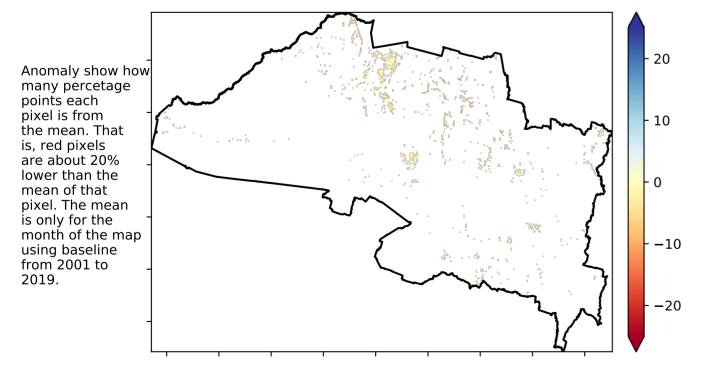
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

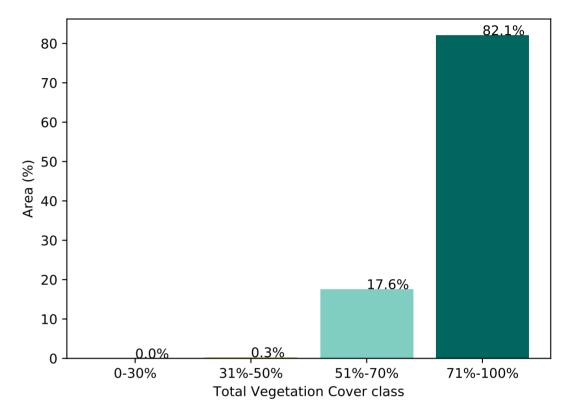


Total Vegetation Cover Anomaly [%]

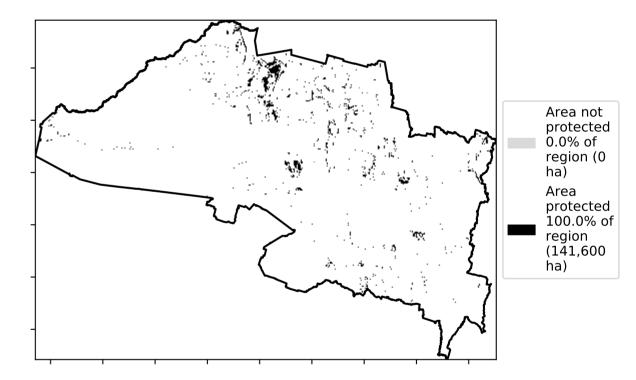


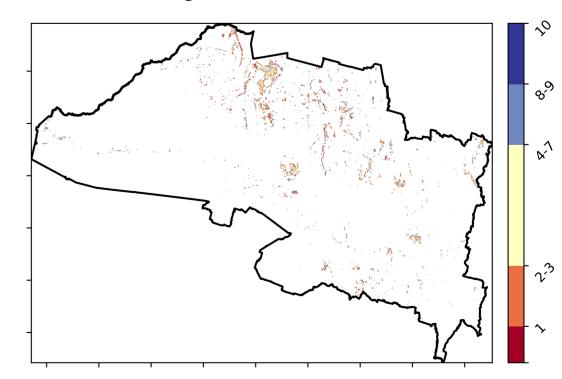
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









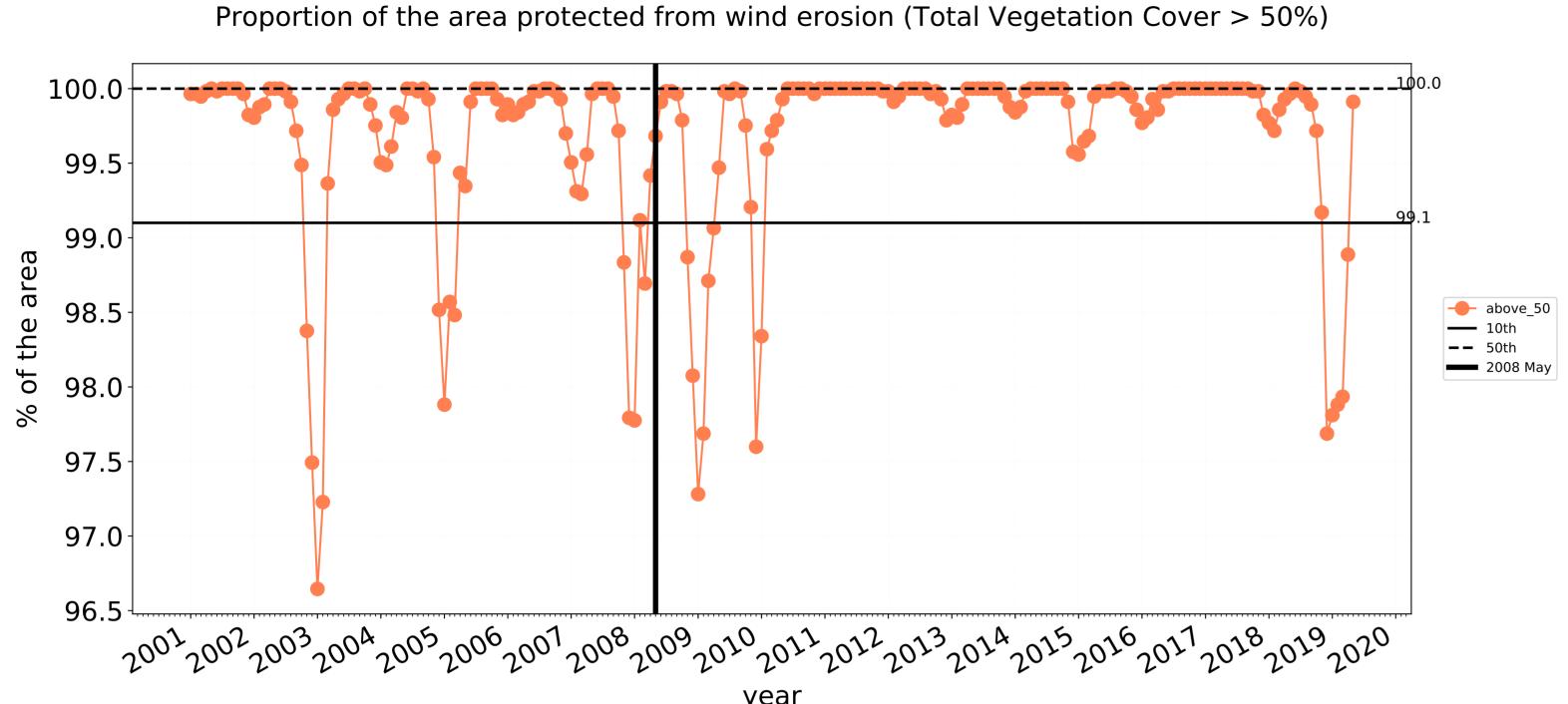


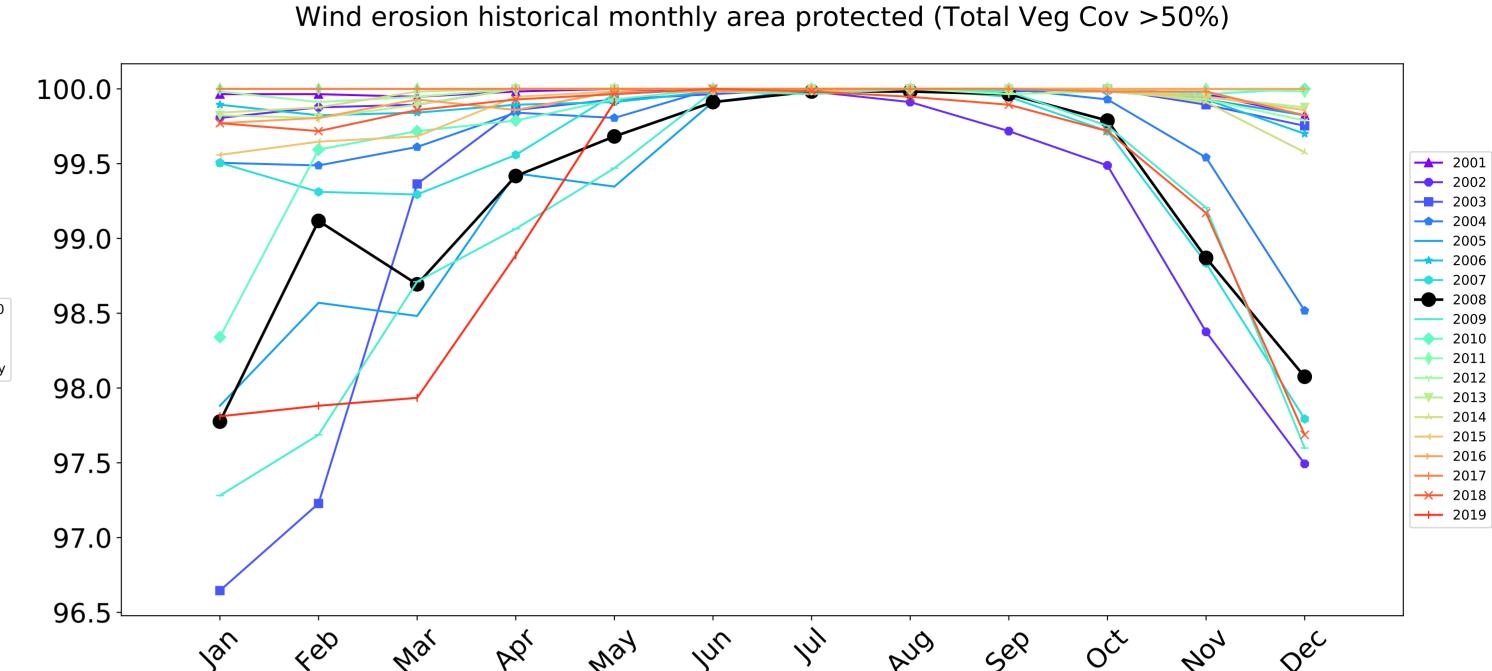




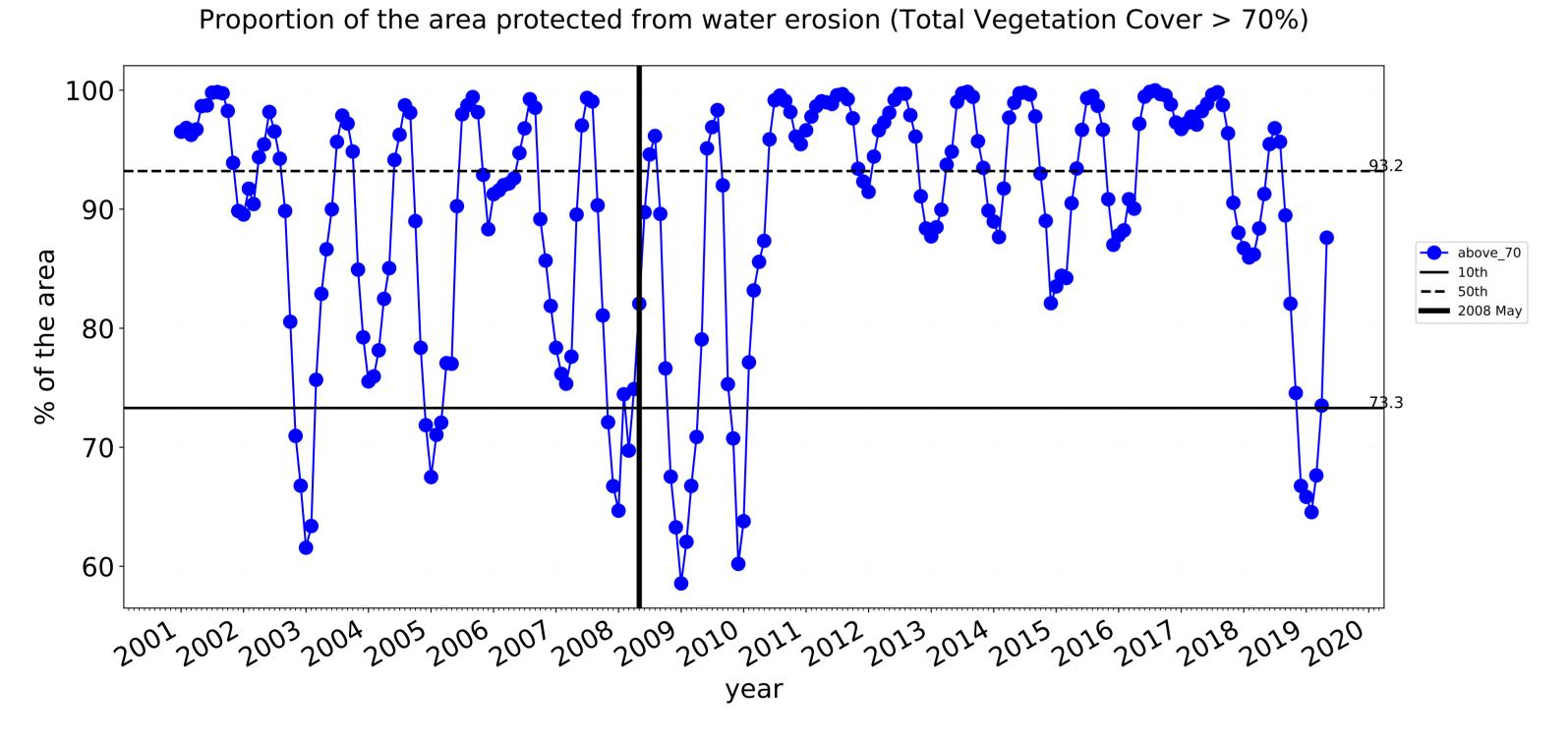


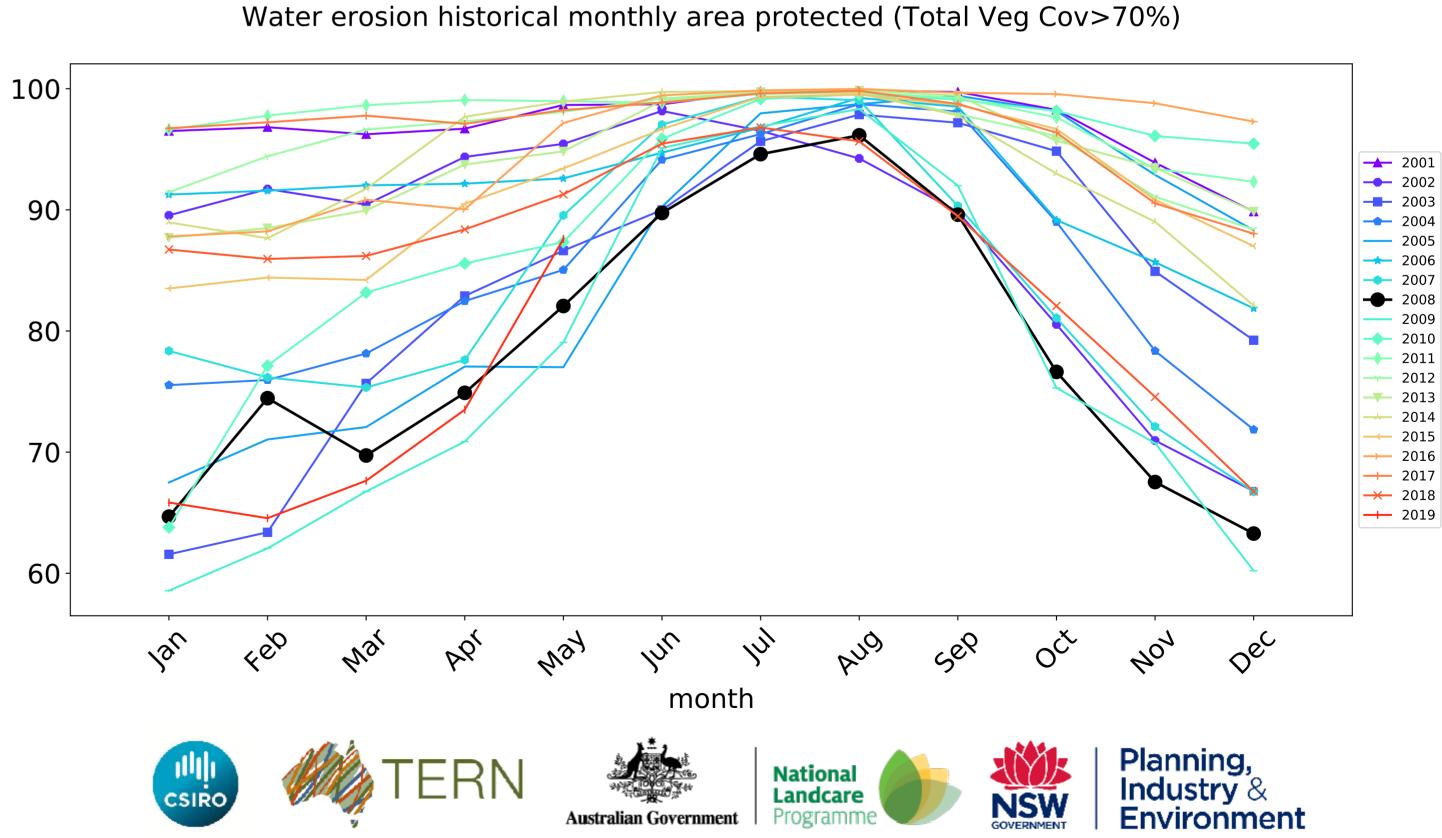
Grazing Woodland forest timeseries





month



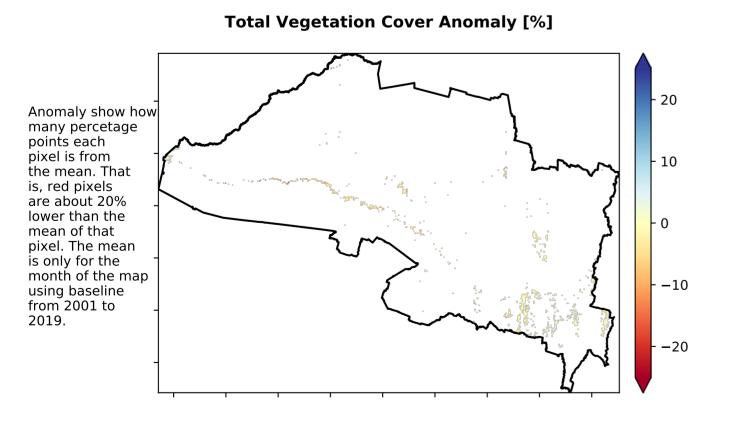


Grazing - Forest (non woodland)

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

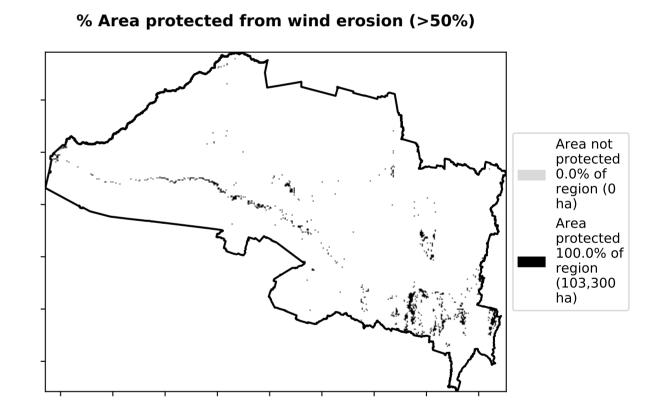
Total Vegetation Cover [%]

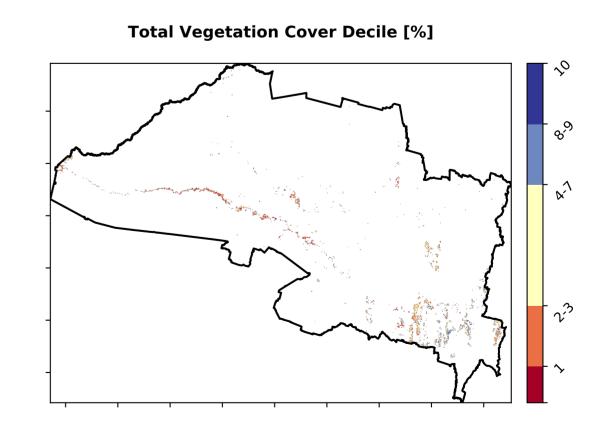
Area not protected 5.3% of region (5,474 ha) Area protected 94.7% of region (97,825 ha)



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

Proportion of vegetation cover class in area 94.7% 80 - 94.7% 40 - 20 - 0.0% 0.2% 51% Total Vegetation Cover class







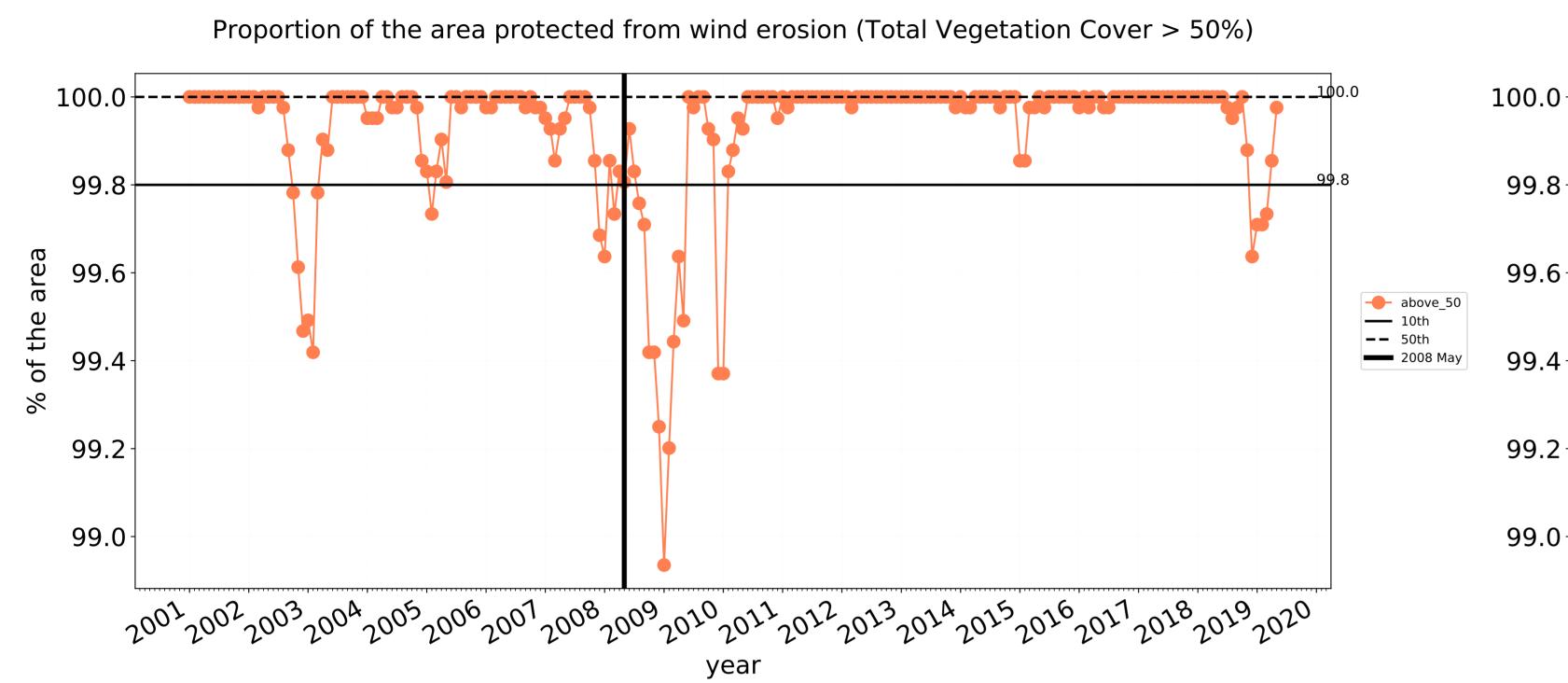


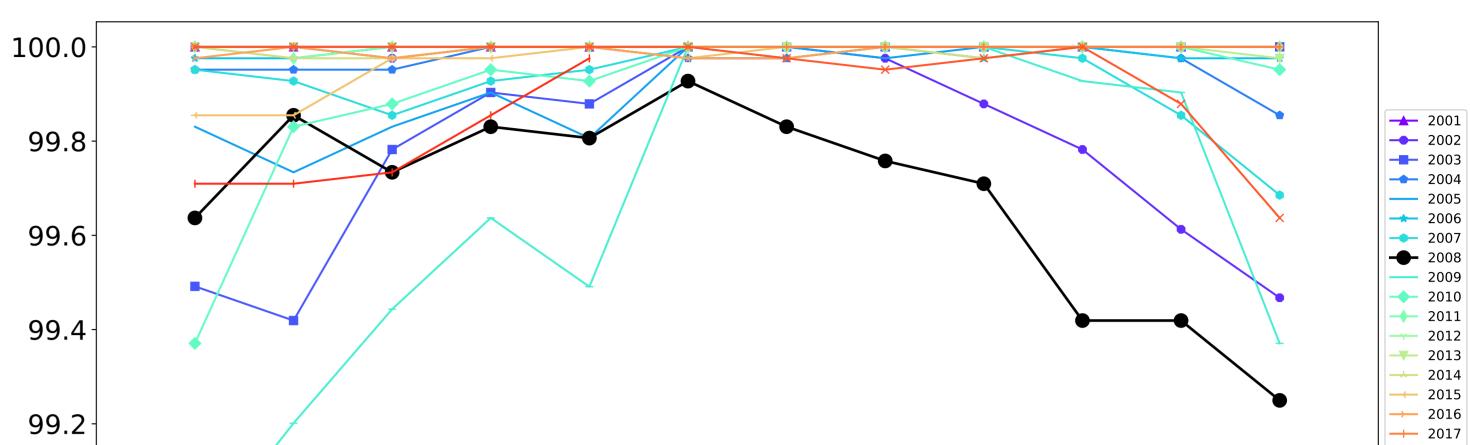








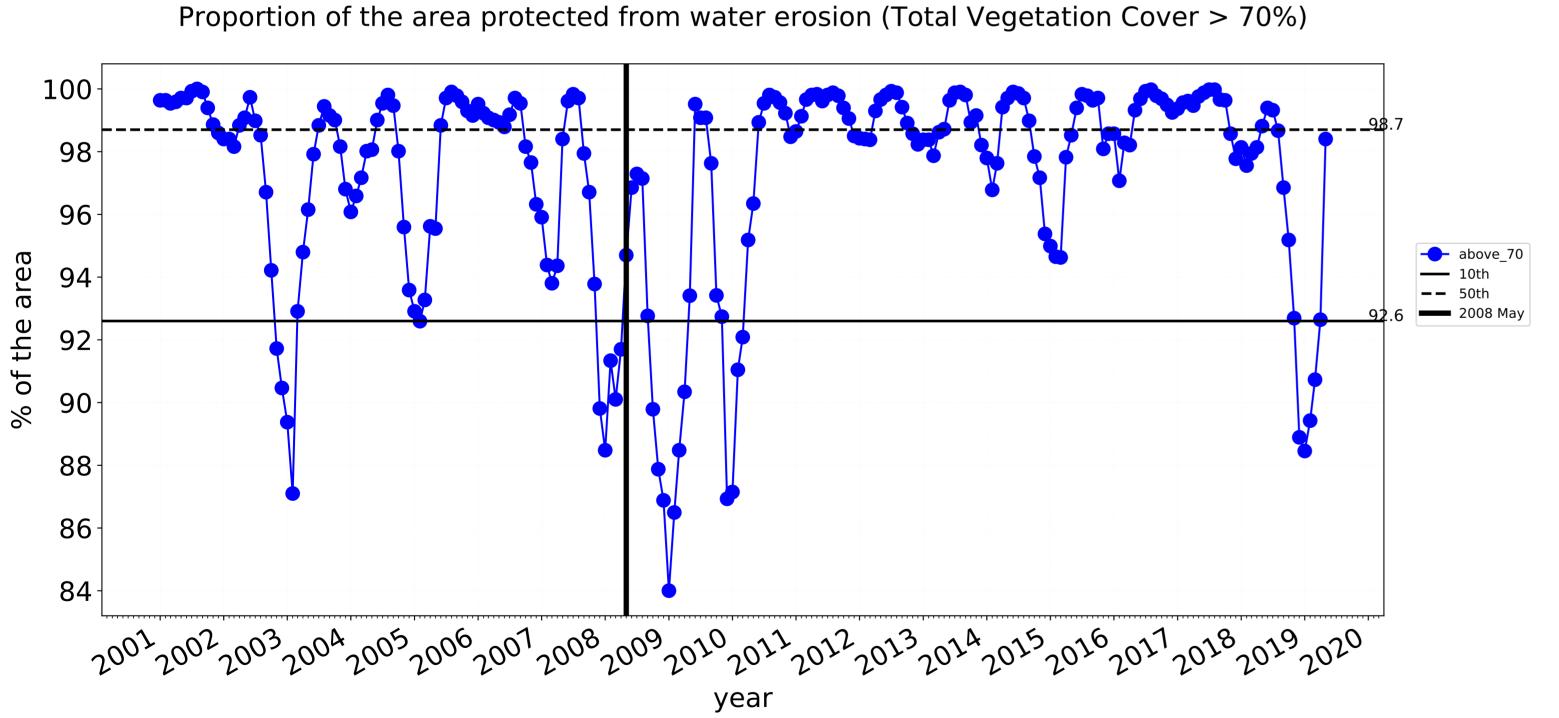


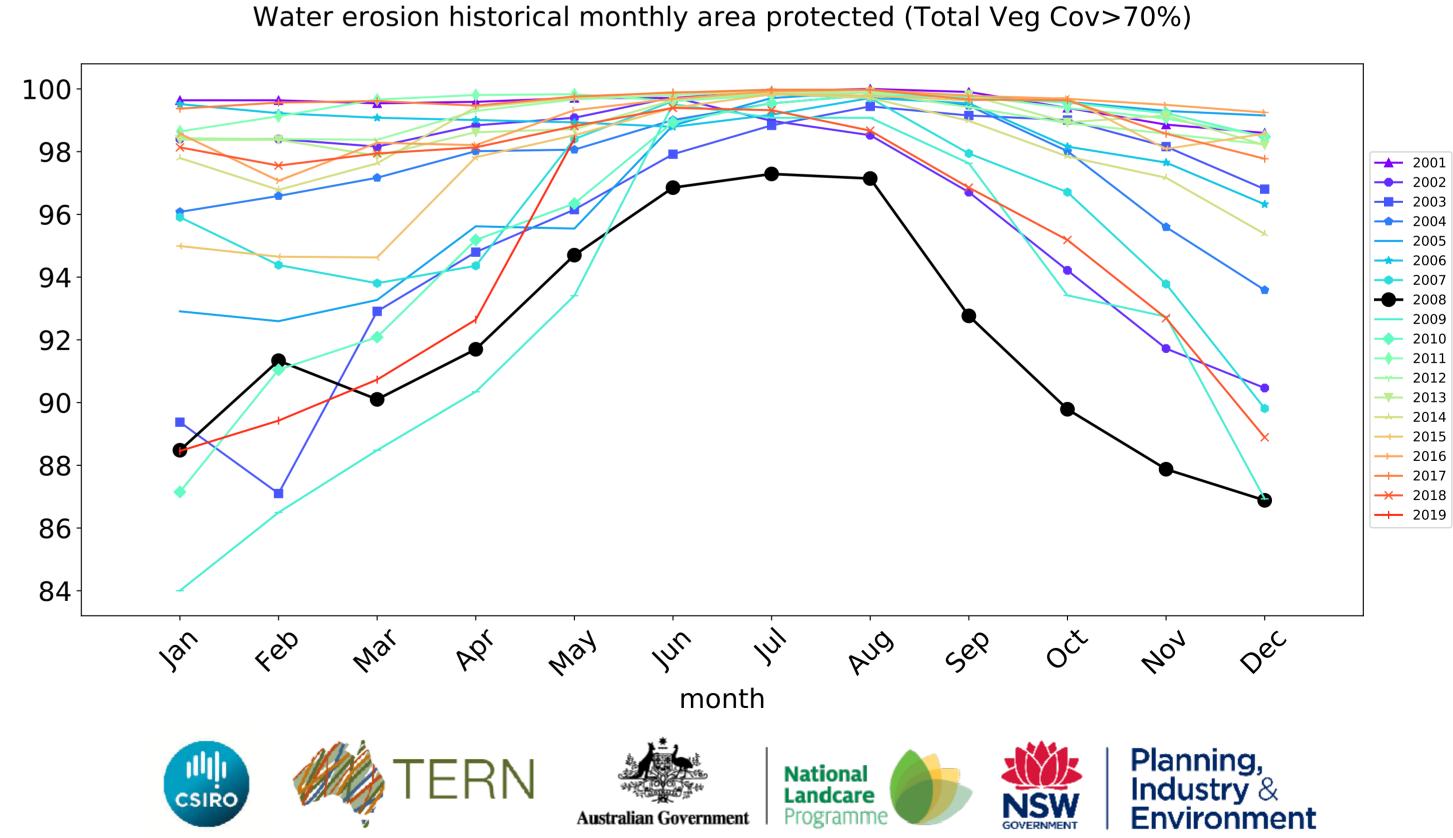


month

→ 2018
→ 2019

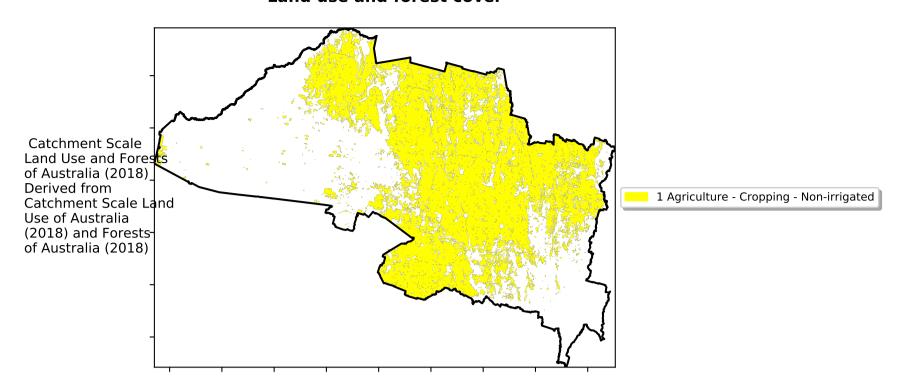
Wind erosion historical monthly area protected (Total Veg Cov >50%)



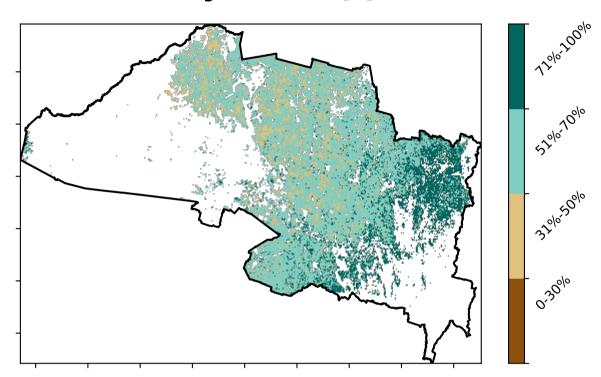


Cropping

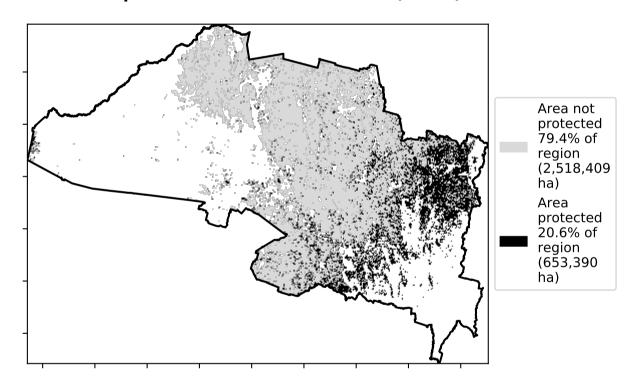
Land use and forest cover



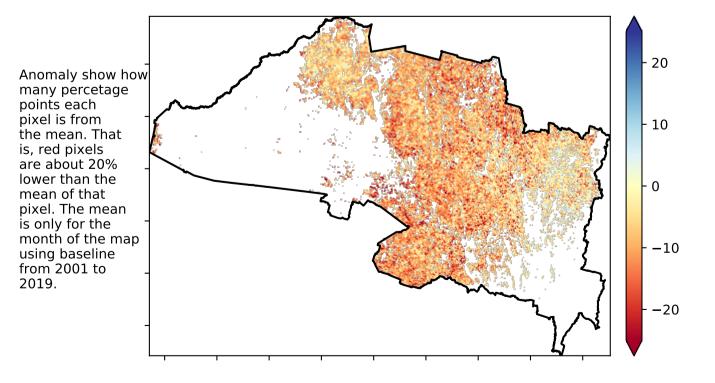
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

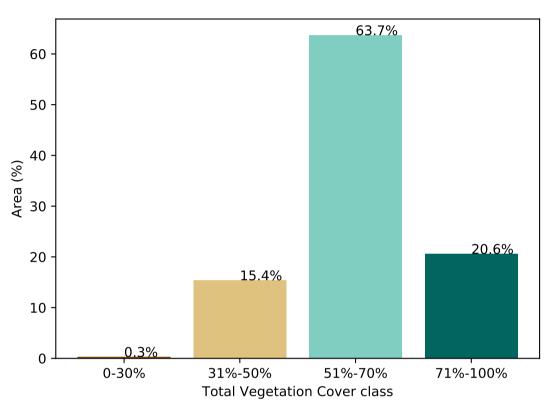


Total Vegetation Cover Anomaly [%]

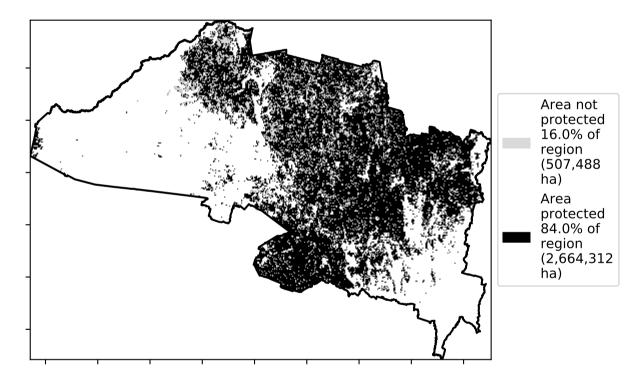


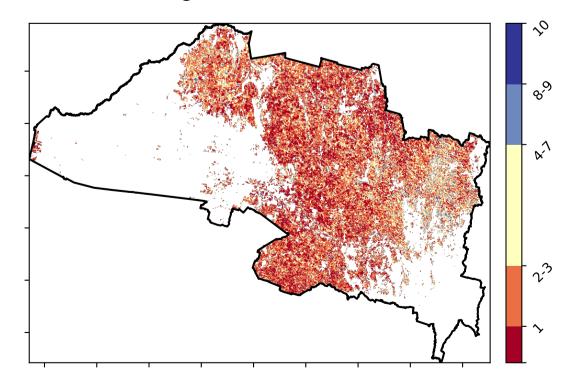
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









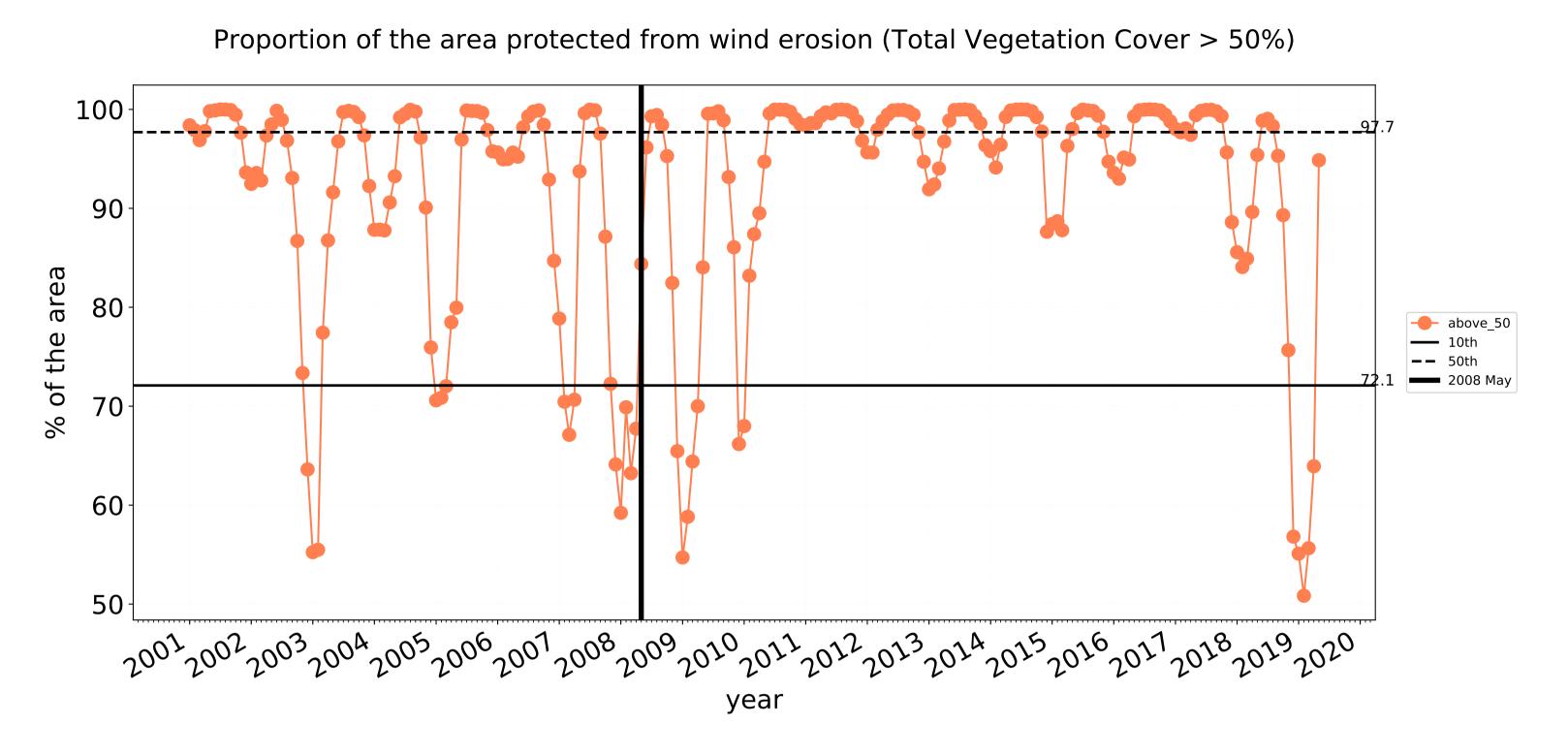


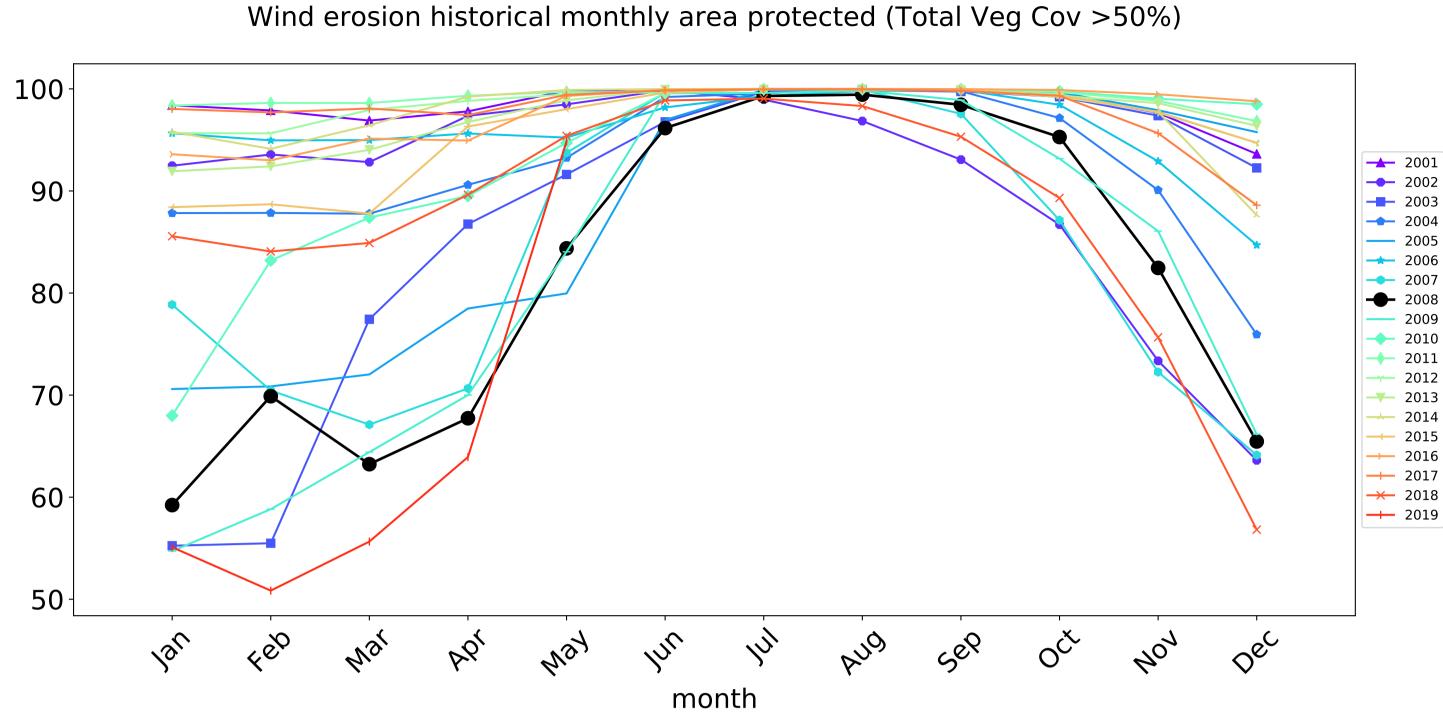


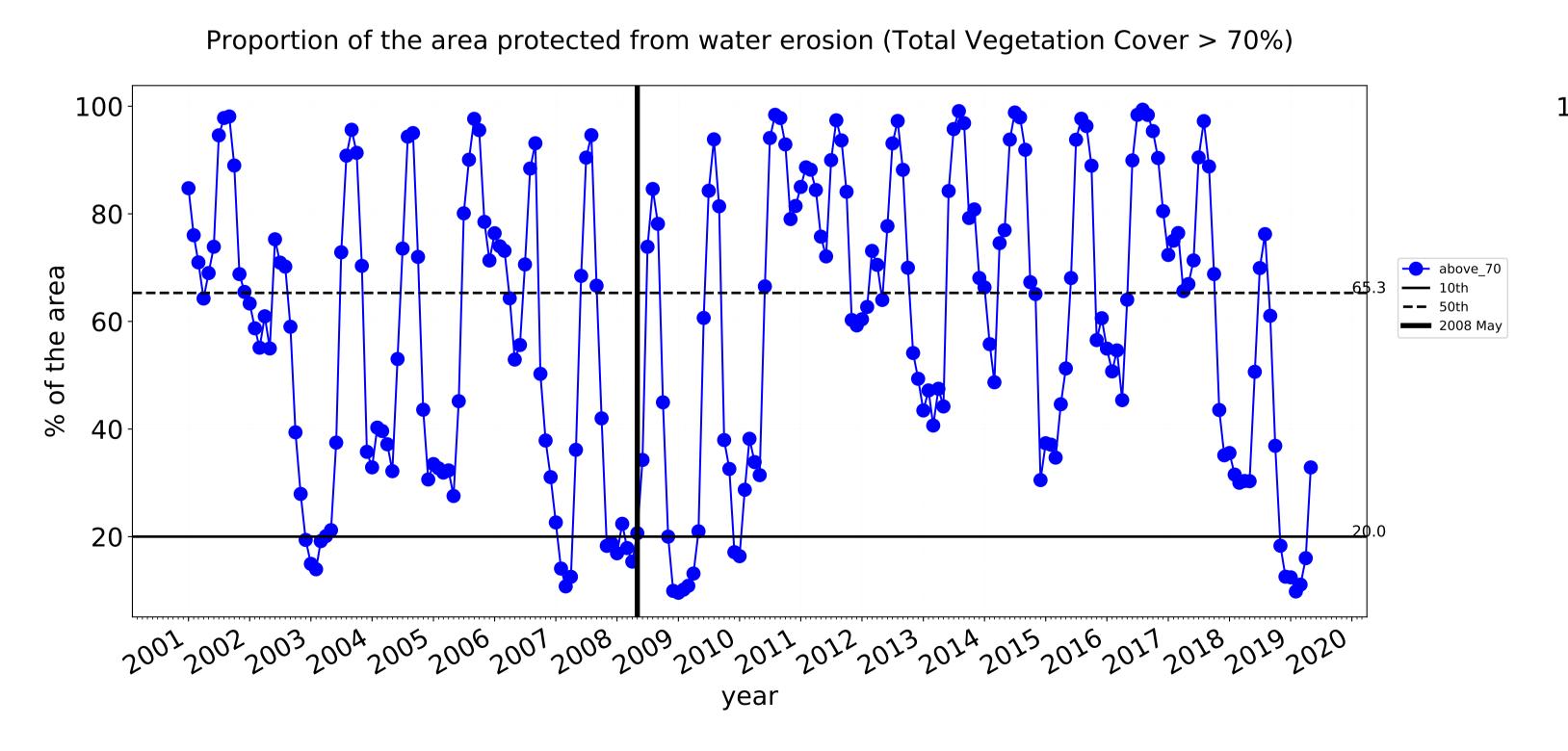


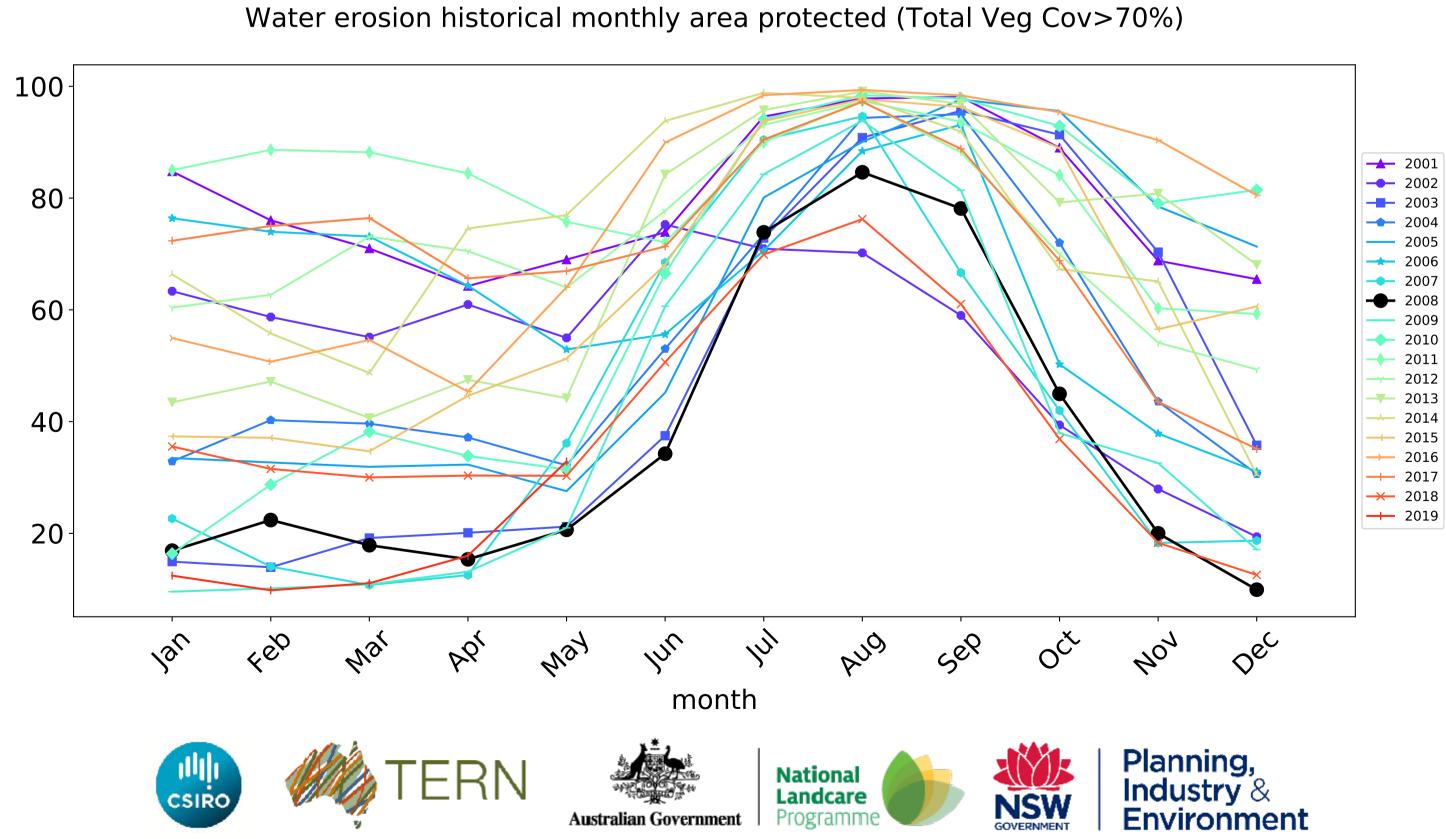


Cropping timeseries



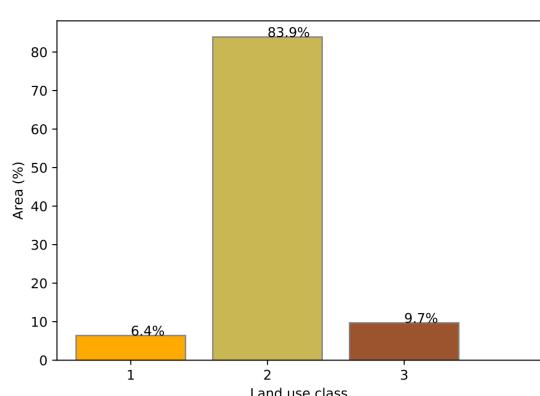


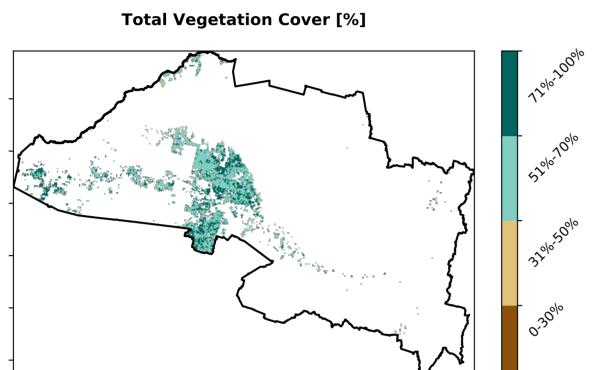


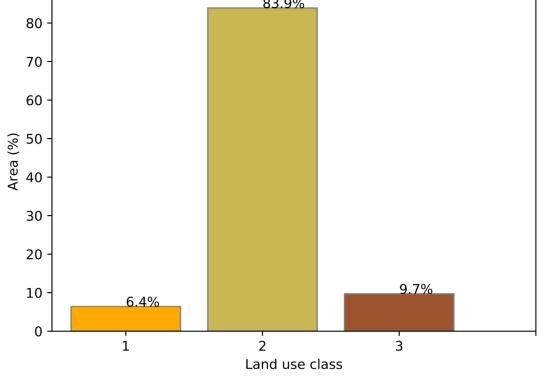


Irrigation

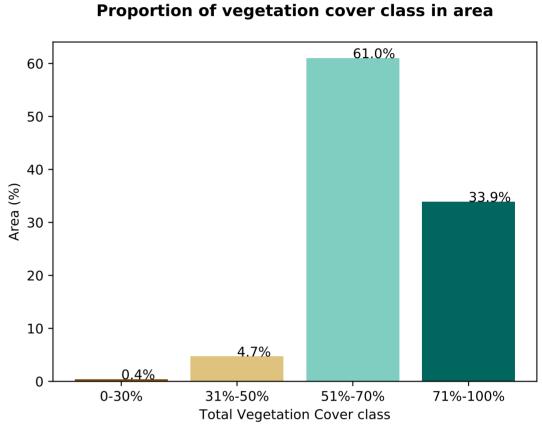
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) 1 Agriculture - Grazing - Irrigated 2 Agriculture - Cropping - Irrigated 3 Agriculture - Horticulture - Irrigated



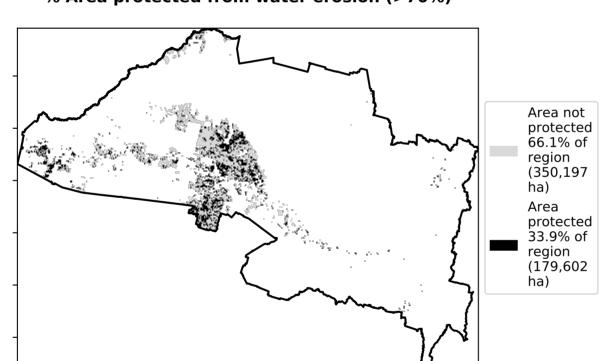




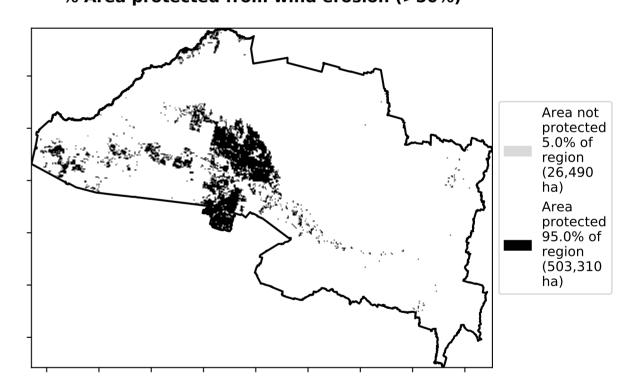
Proportion of each land class in area



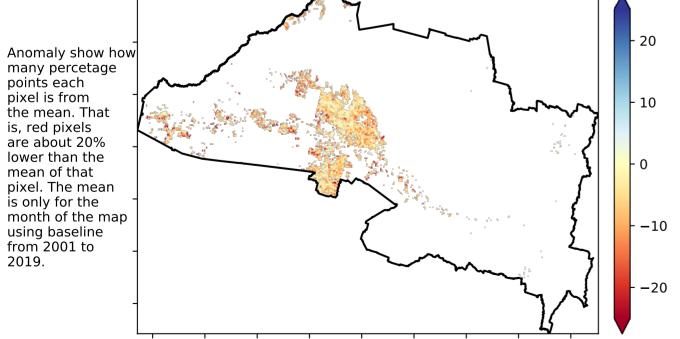
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)







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



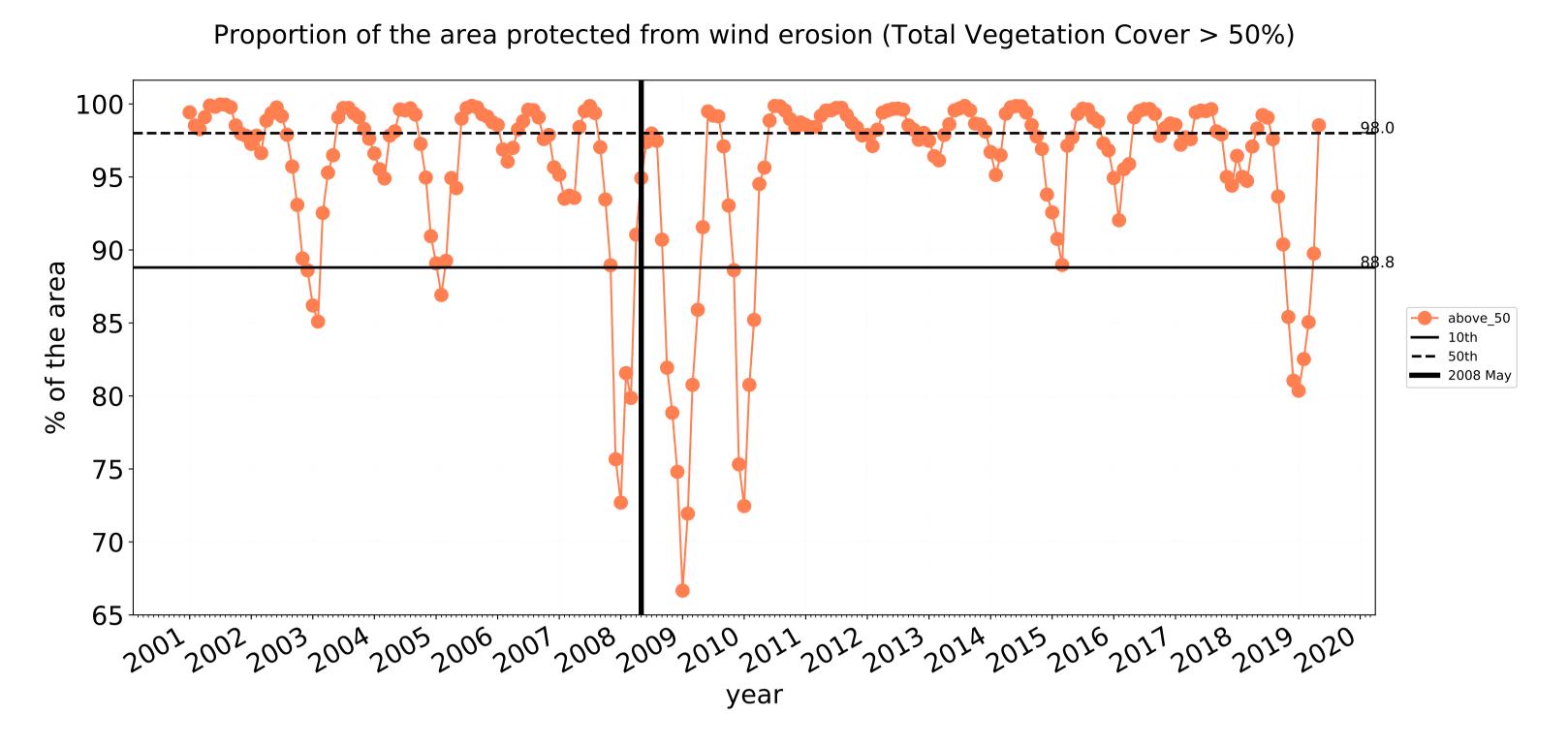


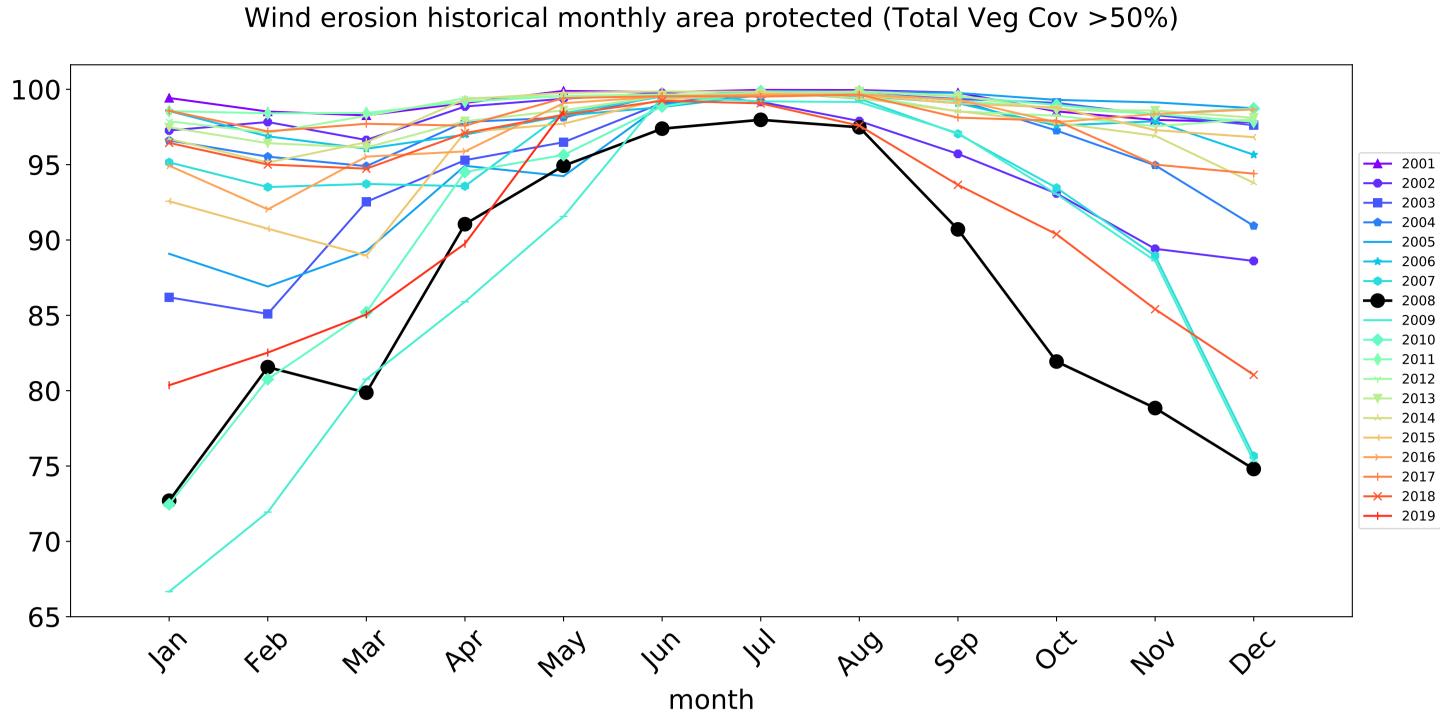


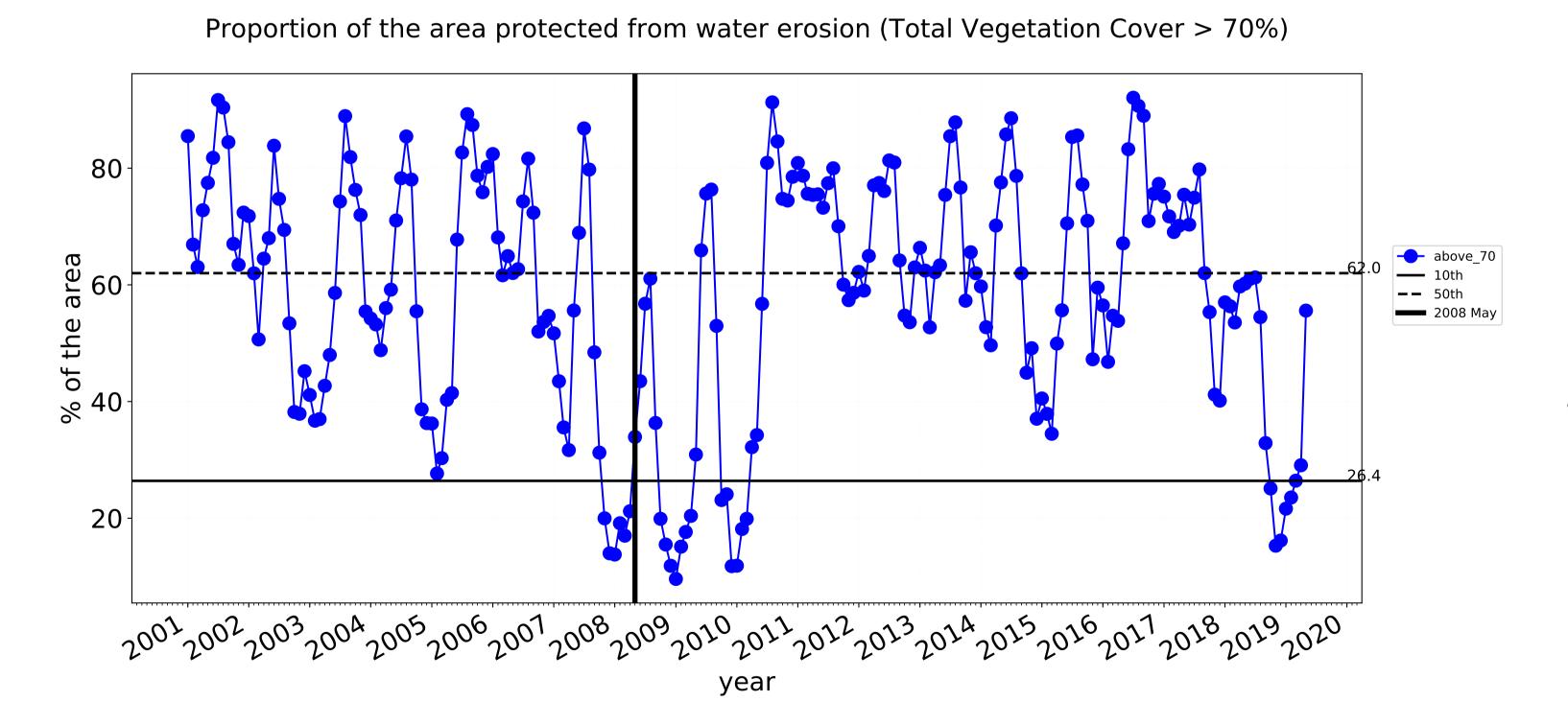


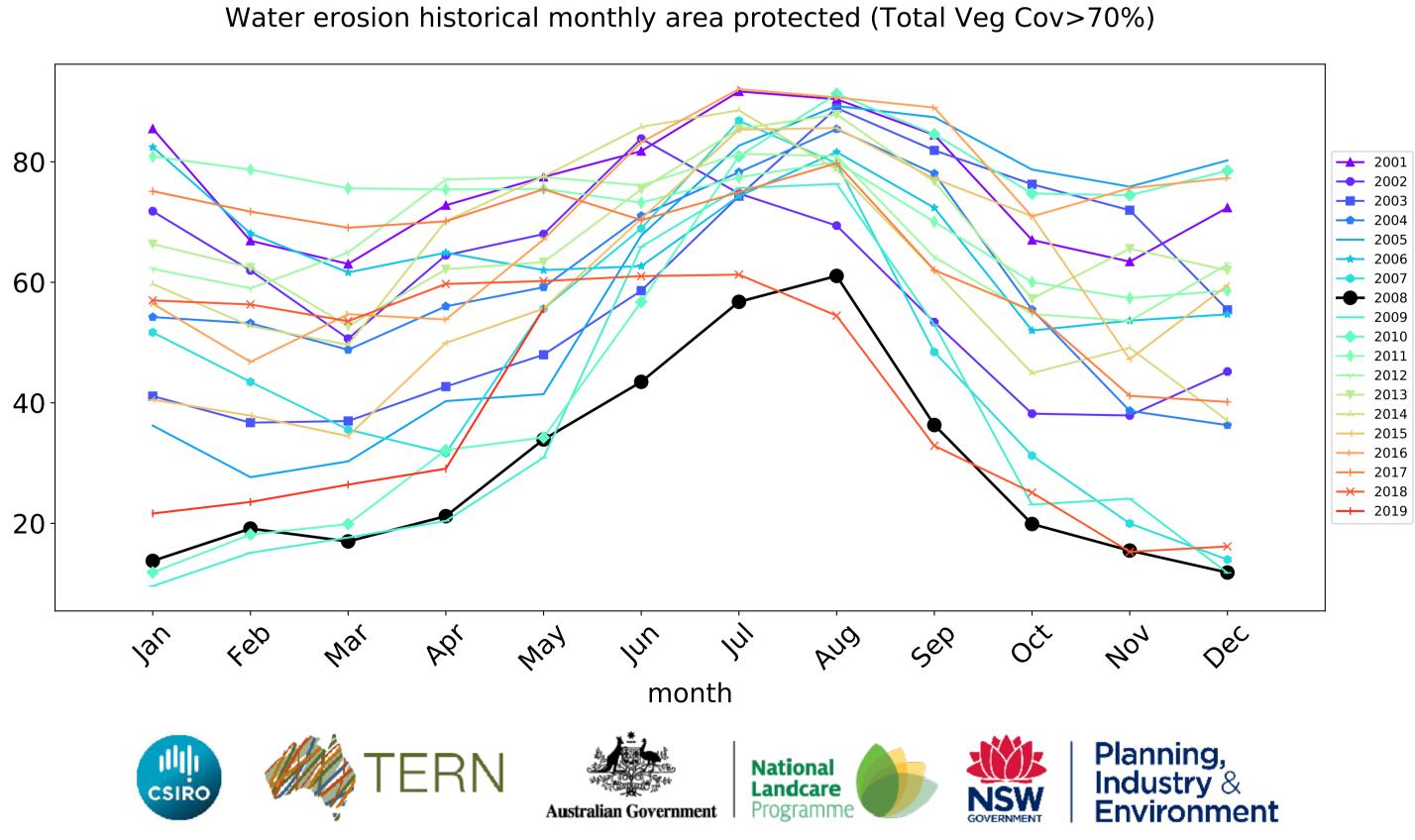










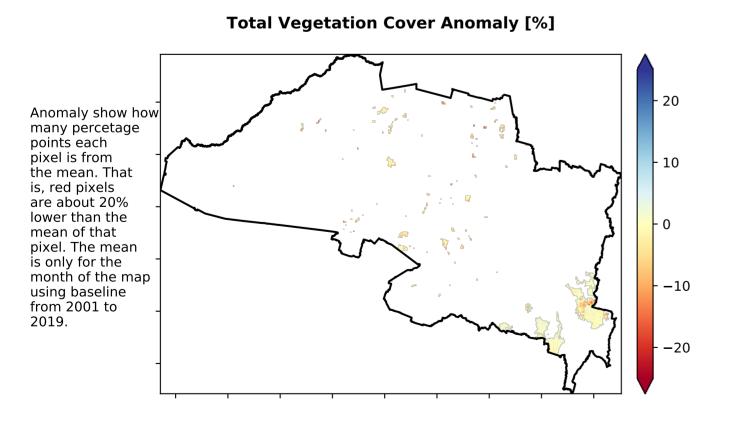


Production native forests and plantation forests

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

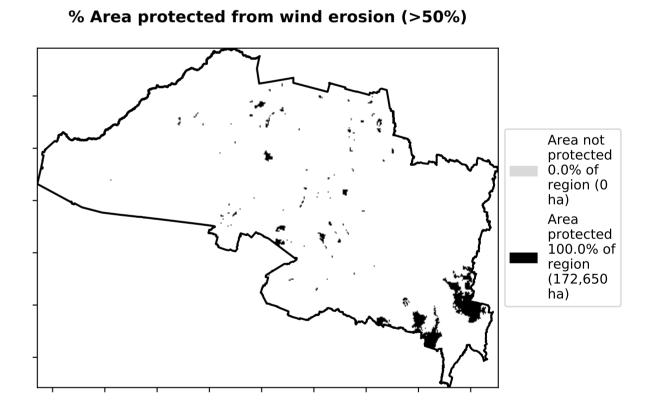
Total Vegetation Cover [%] Total Vegetation Cover [%] Ticologolo Ticologolo

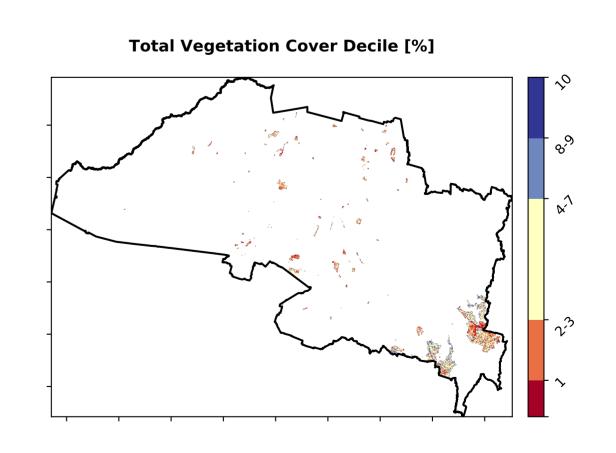
Area not protected 5.4% of region (9,323 ha) Area protected 94.6% of region (163,326 ha)



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

Proportion of vegetation cover class in area 94.6% 80 - 94.6% 60 - 94.6% 20 - 94.6% 71%-100% Total Vegetation Cover class









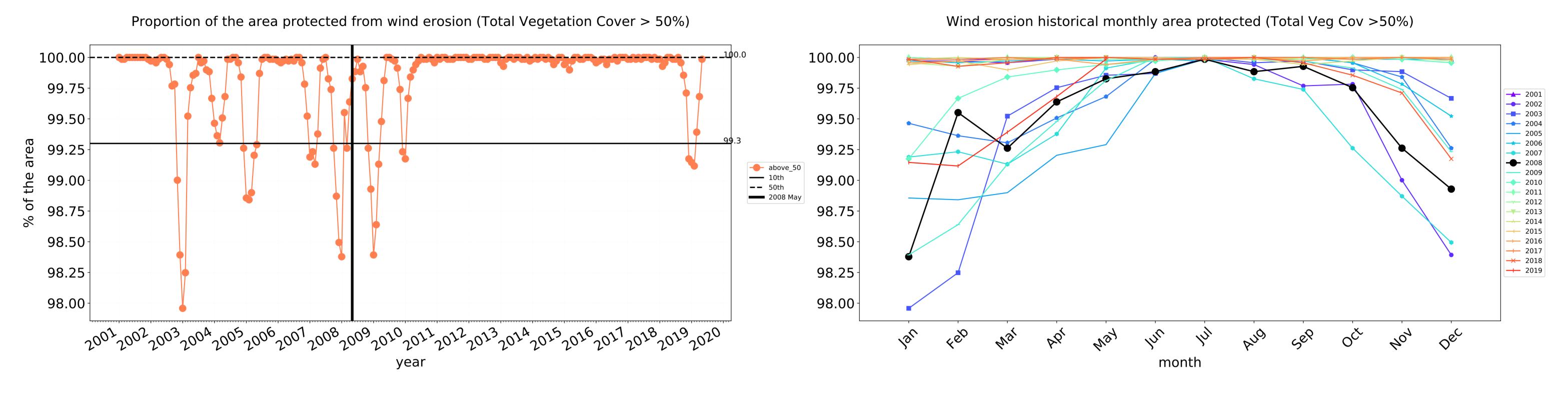


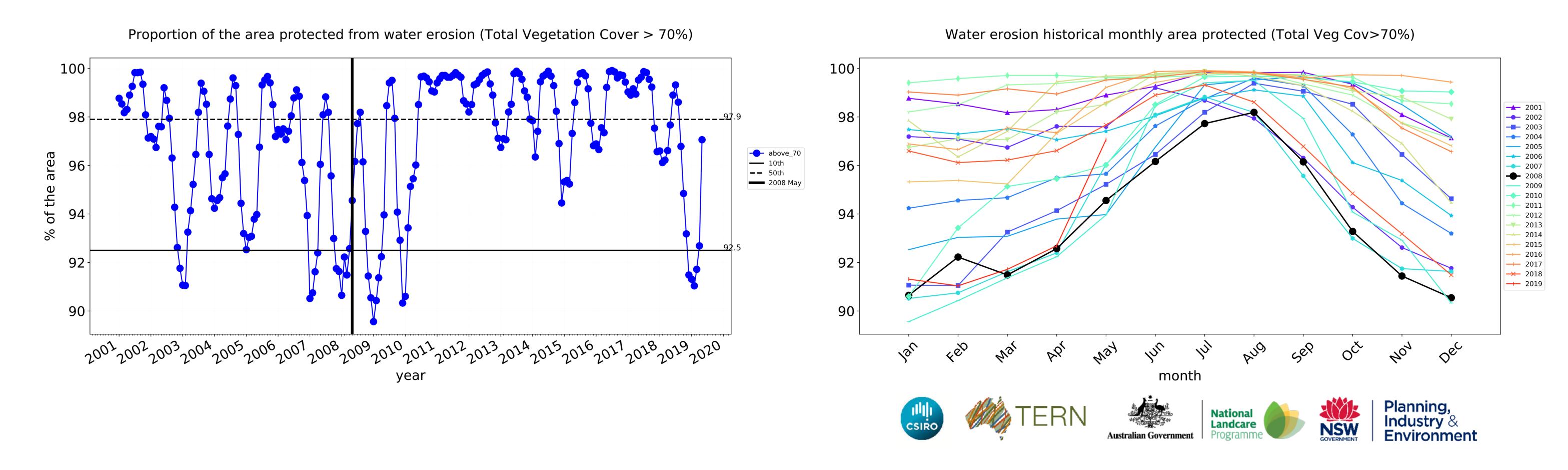






Production native forests and plantation forests timeseries





Riverina (6,613,050 ha and no data 95,285 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	6,613,050	99.7% 6,593,493	88.8% 5,873,095	38.7% 2,561,590	22.6% 1,491,509	8.2% 539,213	3.9% 260,134
Conservation and natural environments	299,900	99.8% 299,300	99.0% 296,850	90.9% 272,500	82.9% 248,525	63.8% 191,425	38.5% 115,450
Conservation and natural environments non forest	60,275	99.0% 59,675	95.0% 57,275	57.4% 34,600	29.9% 18,000	13.3% 8,025	7.1% 4,250
Conservation and natural environments Forest (non woodland)	195,125	100.0% 195,125	100.0% 195,100	99.7% 194,600	98.3% 191,850	86.8% 169,300	54.7% 106,775
Agriculture	5,363,025	99.7% 5,346,425	87.8% 4,707,400	33.8% 1,810,750	17.1% 919,000	3.3% 175,625	0.6% 33,925
Grazing	1,659,600	99.5% 1,650,600	92.0% 1,527,175	58.8% 976,150	40.0% 664,375	9.7% 160,225	1.9% 31,125
Grazing non forest	1,414,700	99.4% 1,405,725	90.7% 1,282,925	53.9% 762,125	35.8% 505,975	7.0% 98,950	1.0% 14,000
Grazing Woodland forest	141,600	100.0% 141,600	99.7% 141,150	82.1% 116,200	52.1% 73,775	10.0% 14,100	0.9% 1,250
Grazing - Forest (non woodland)	103,300	100.0% 103,275	99.8% 103,100	94.7% 97,825	81.9% 84,625	45.7% 47,175	15.4% 15,875
Cropping	3,171,800	99.8% 3,166,250	84.4% 2,676,225	20.6% 654,500	7.0% 220,600	0.4% 11,225	0.0% 1,050
Irrigation	529,800	99.6% 527,750	94.9% 502,925	33.9% 179,725	6.4% 33,900	0.8% 4,175	0.3% 1,750
Production native forests and plantation forests	172,650	100.0% 172,650	99.8% 172,350	94.6% 163,250	87.6% 151,275	66.4% 114,650	48.5% 83,750











