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: August 2013

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







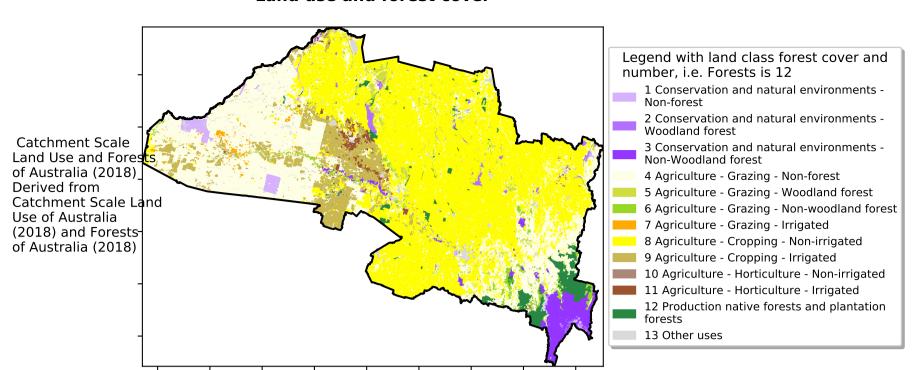




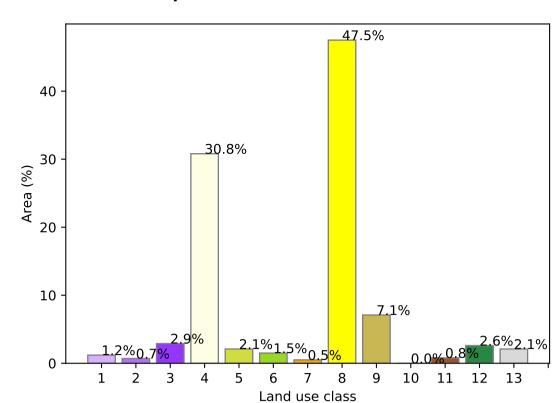


Vegetation Cover Aug 2013

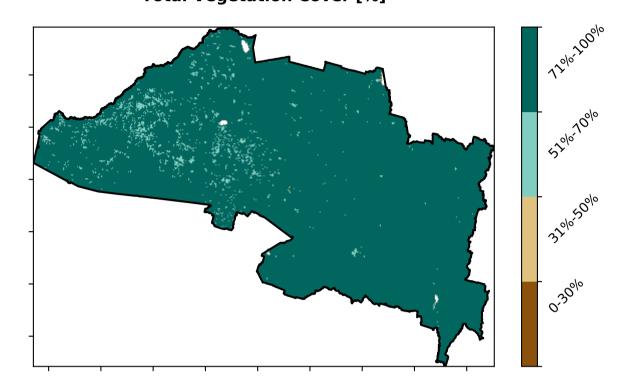
Land use and forest cover



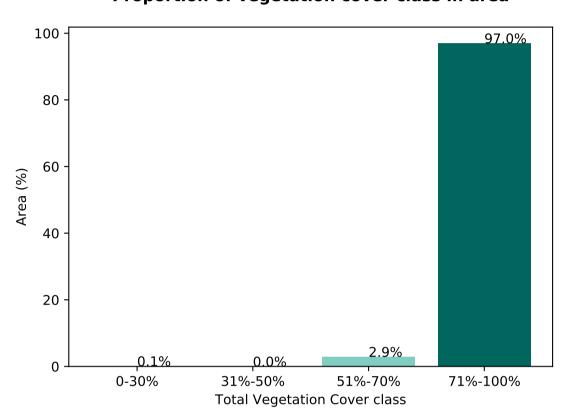
Proportion of each land class in area



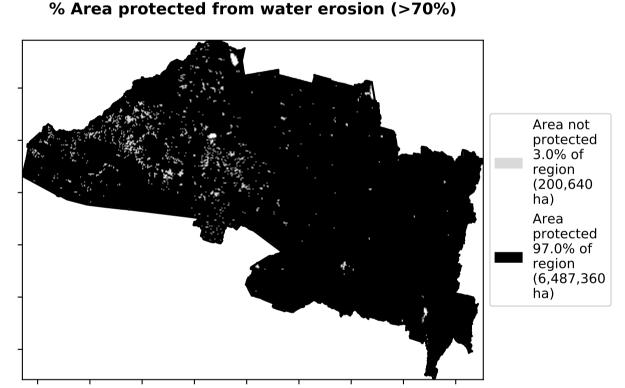
Total Vegetation Cover [%]



Proportion of vegetation cover class in area



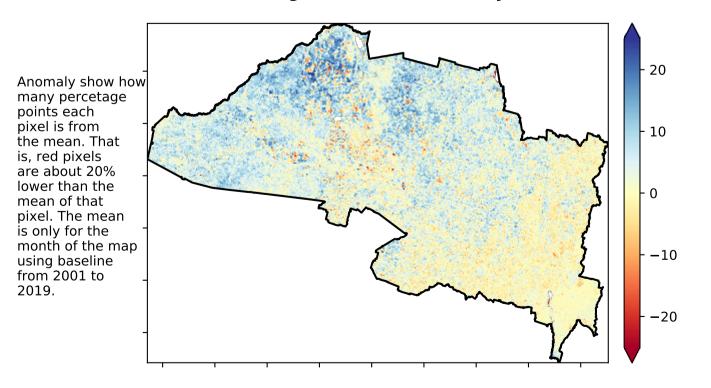
0/ Aver pretected from water everies (> 700/)



% 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 [%]



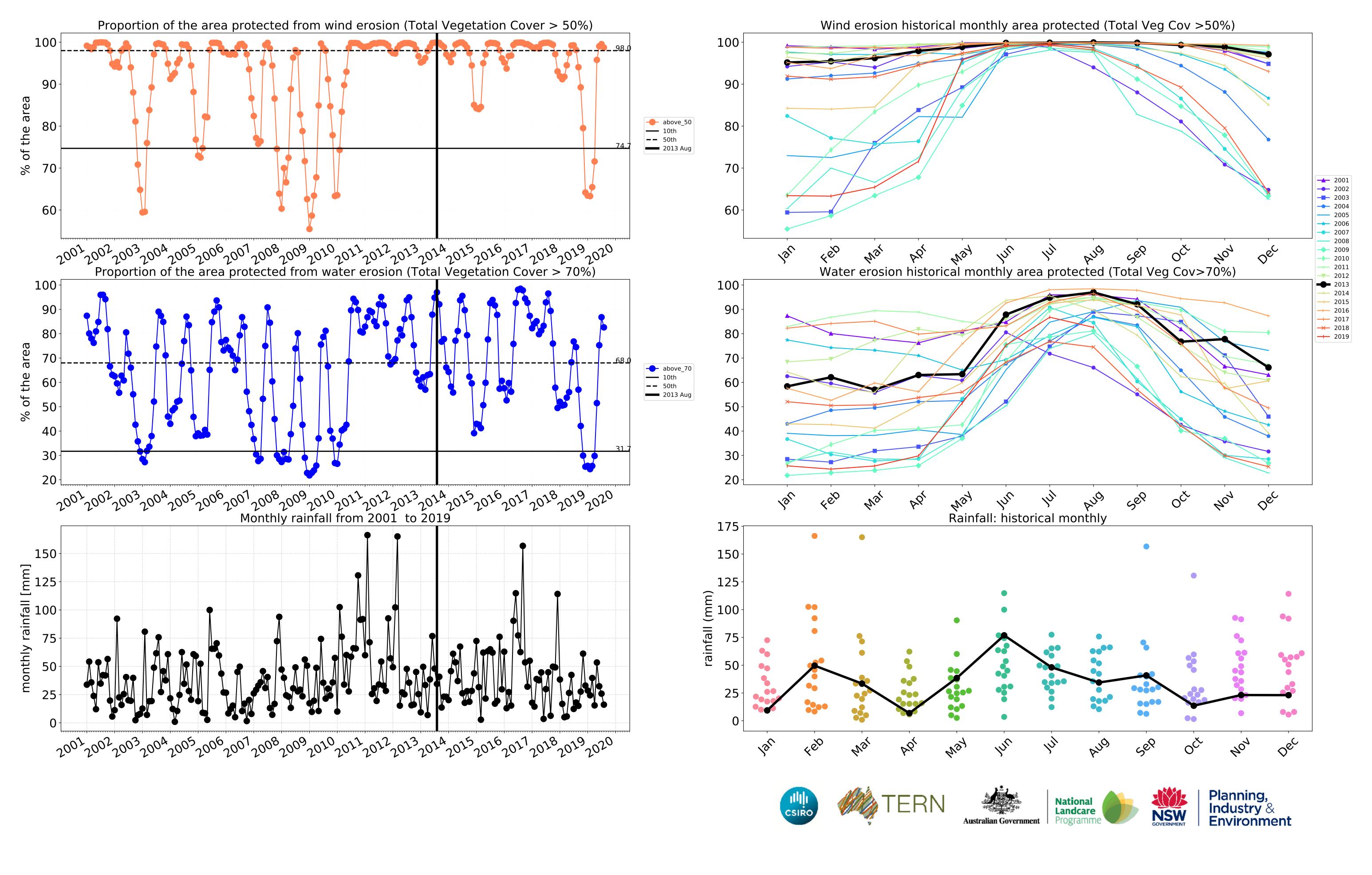




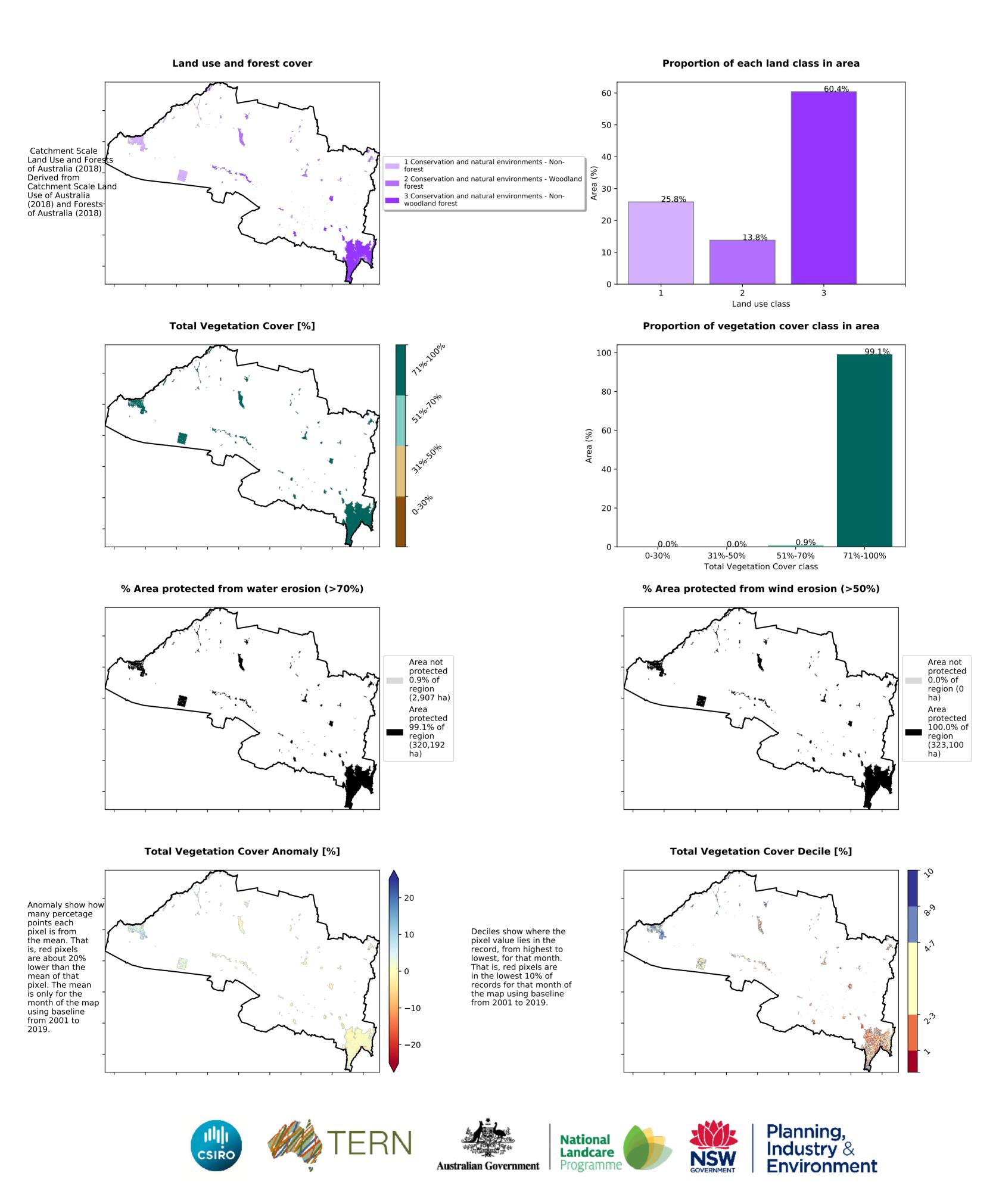




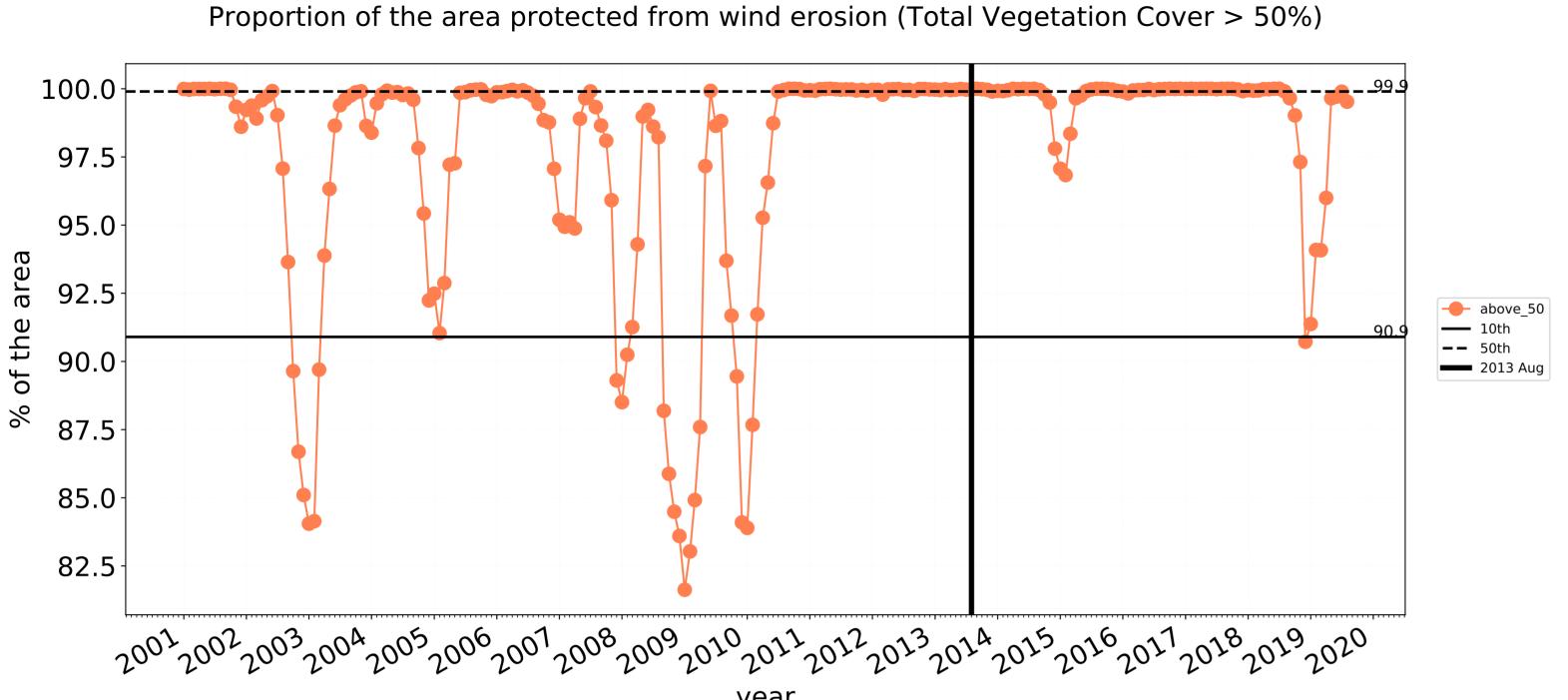


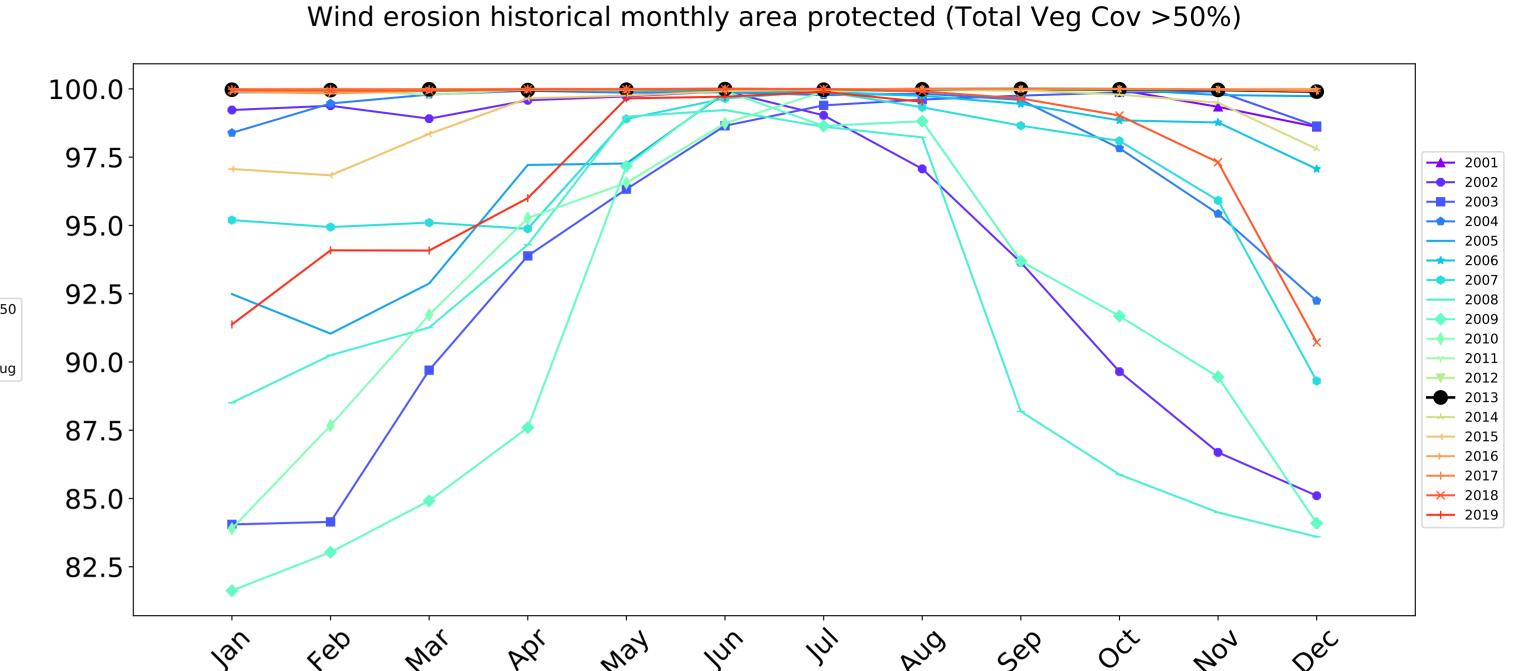


Conservation and natural environments

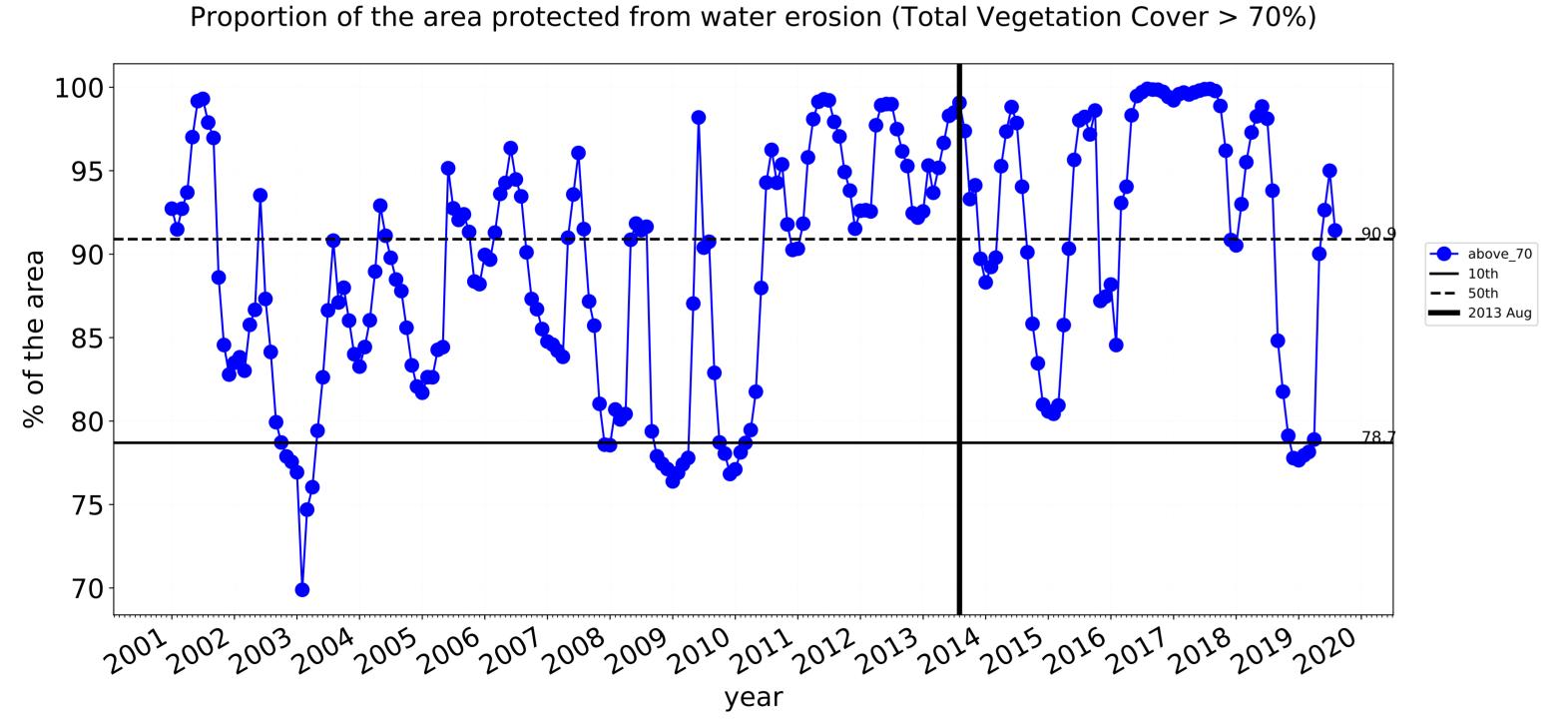


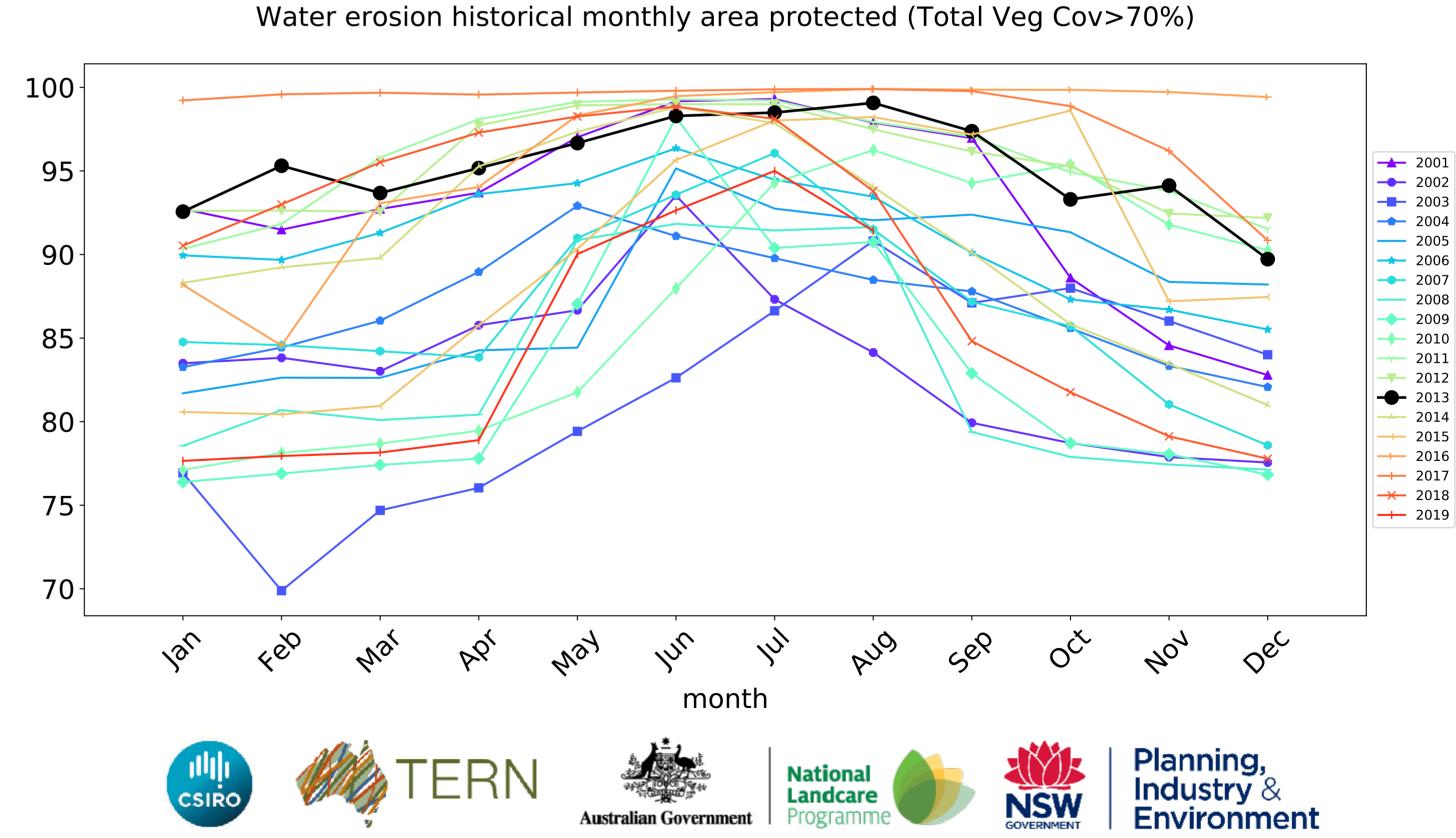
Conservation and natural environments timeseries





month



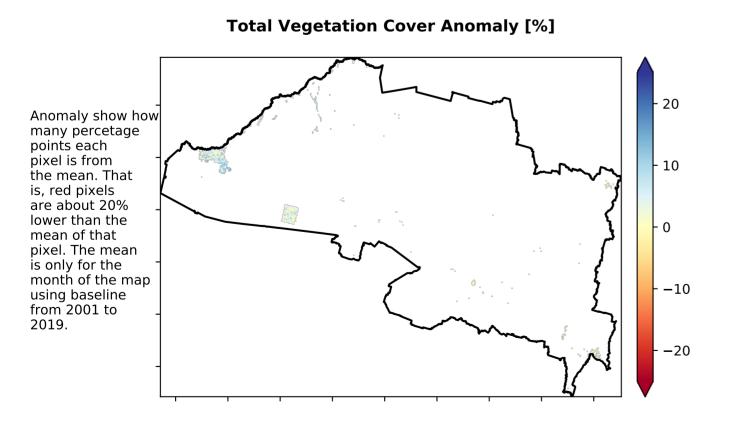


Conservation and natural environments non forest

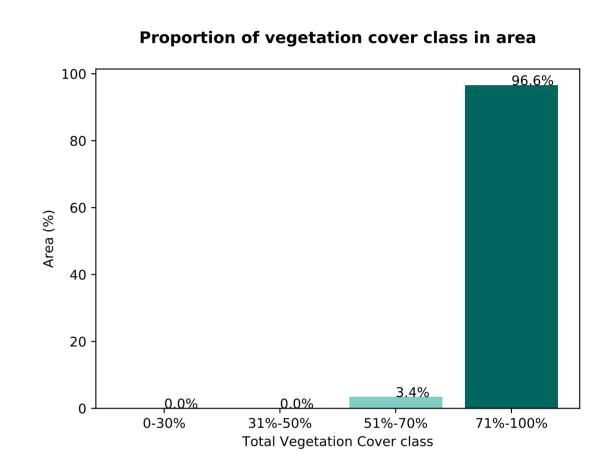
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) 1 Conservation and natural environments - Nonforest 1 Conservation and natural environments - Nonforest

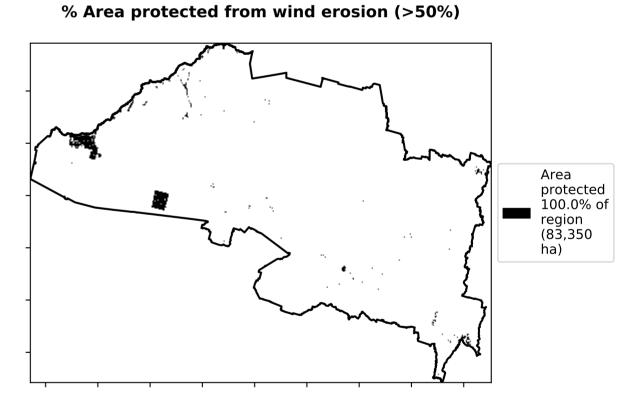
Total Vegetation Cover [%]

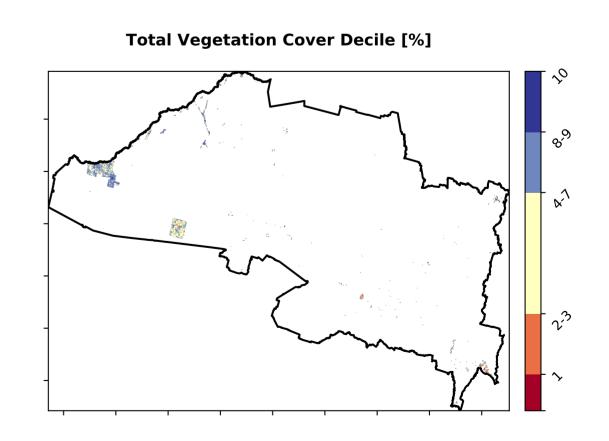
Area not protected 3.4% of region (2,833 ha) Area protected 96.6% of region (80,516 ha)



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.











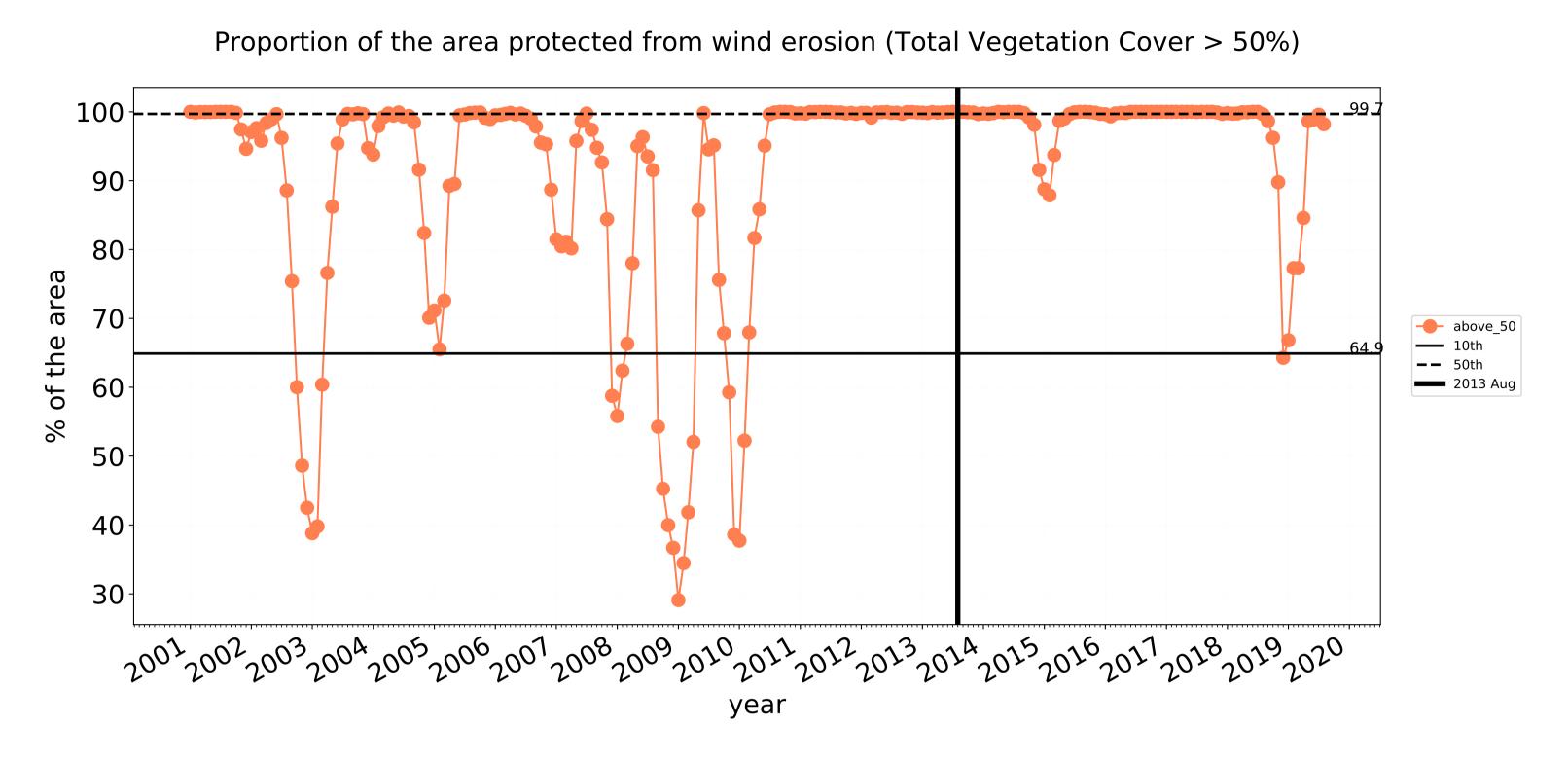


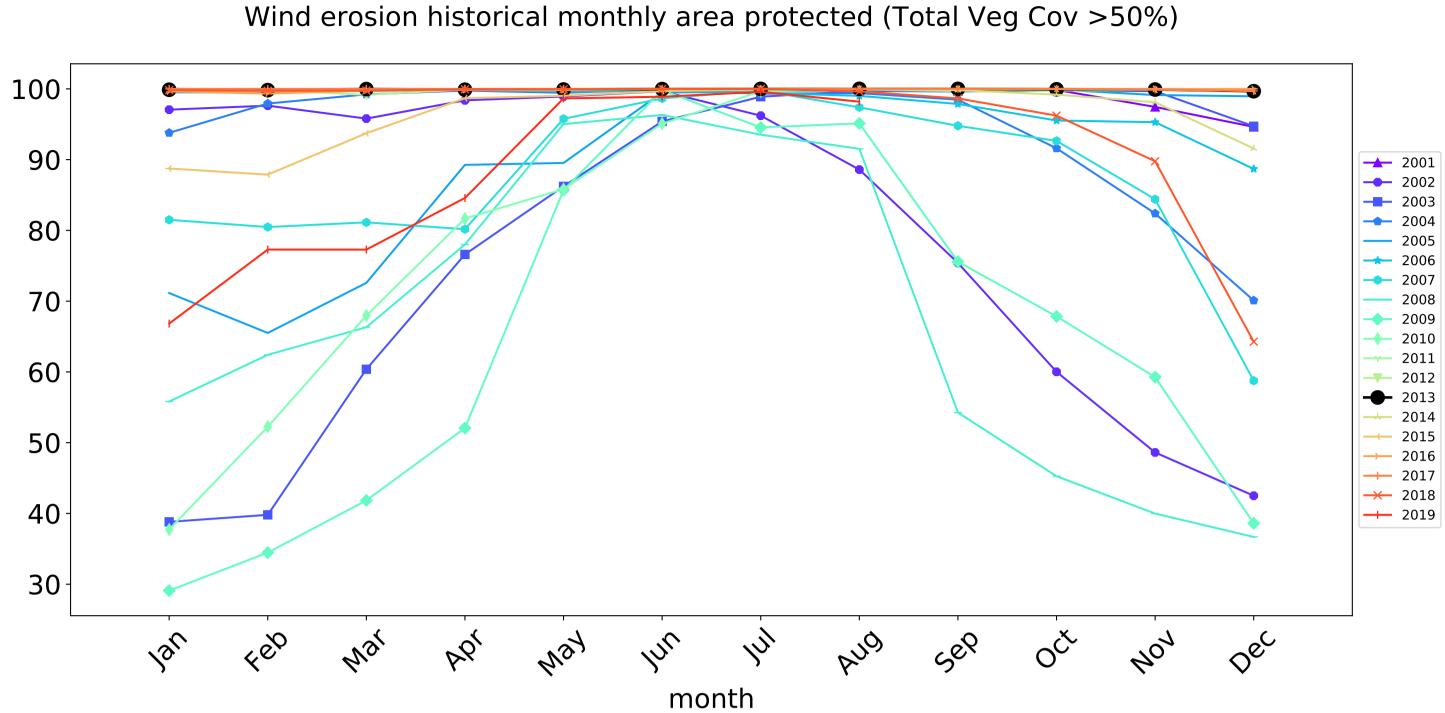


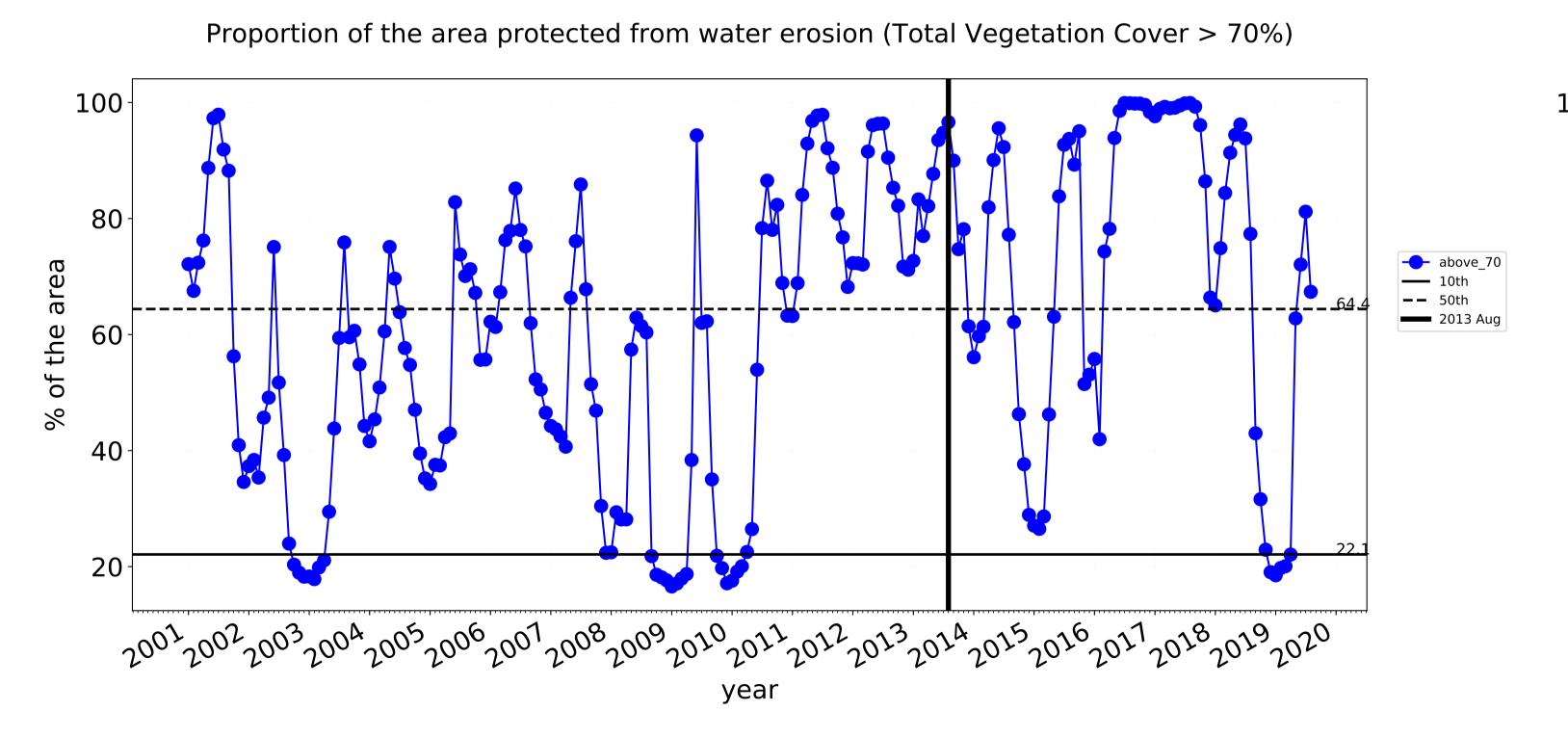


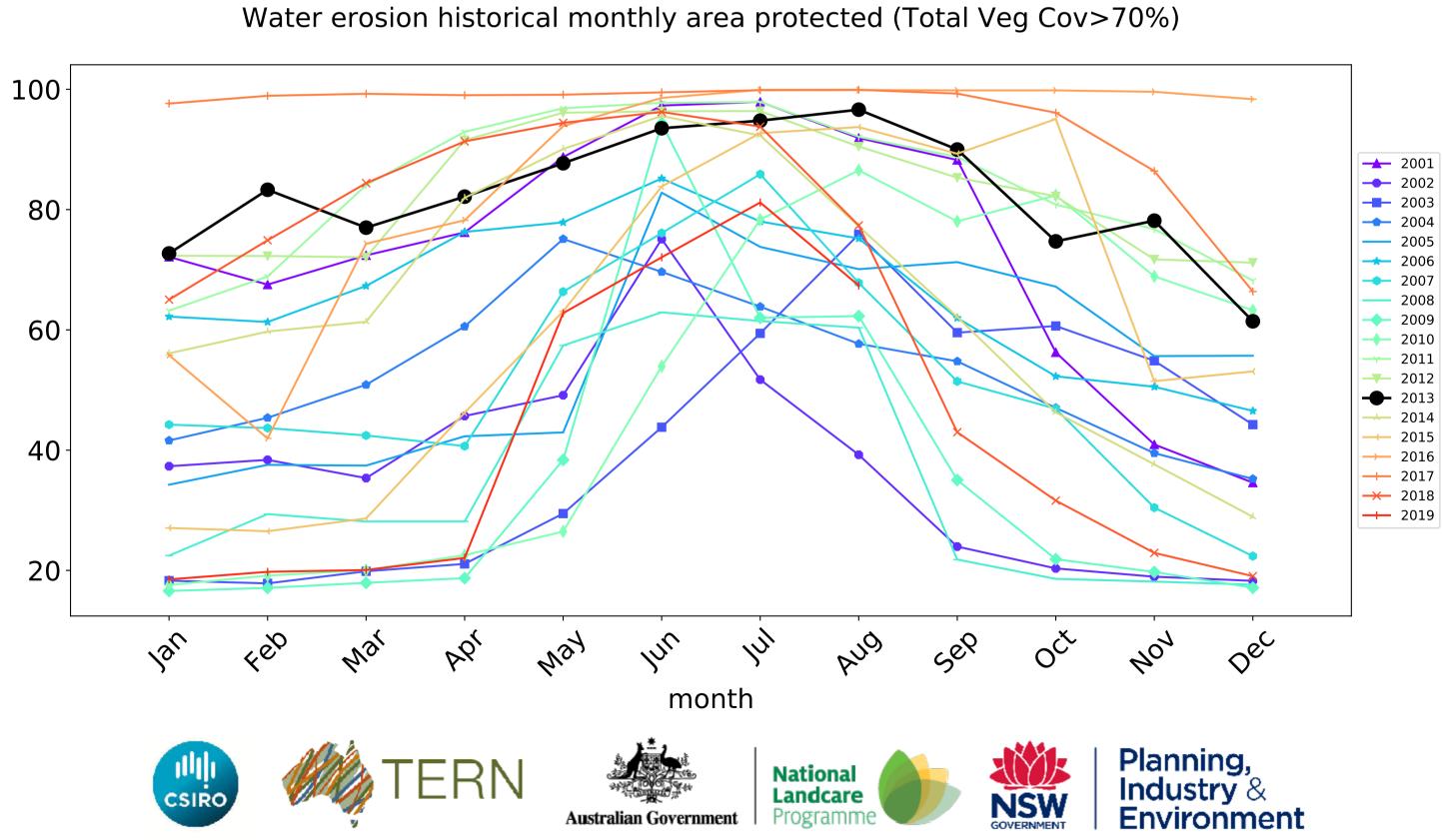


Conservation and natural environments non forest timeseries

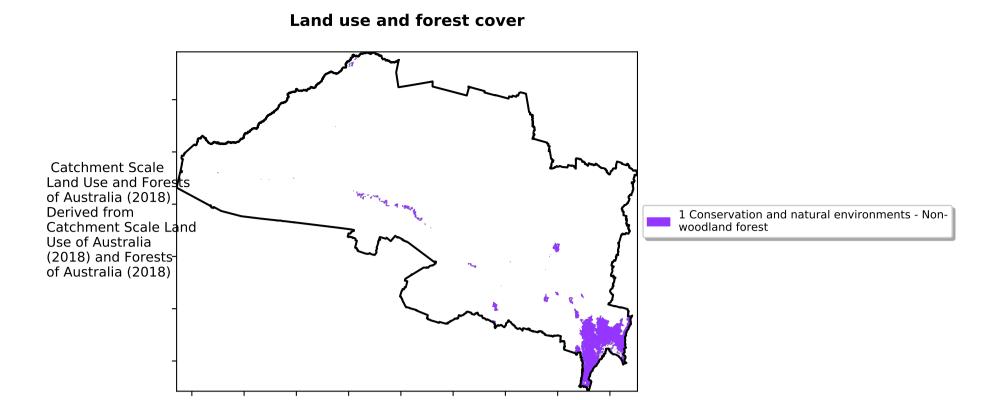




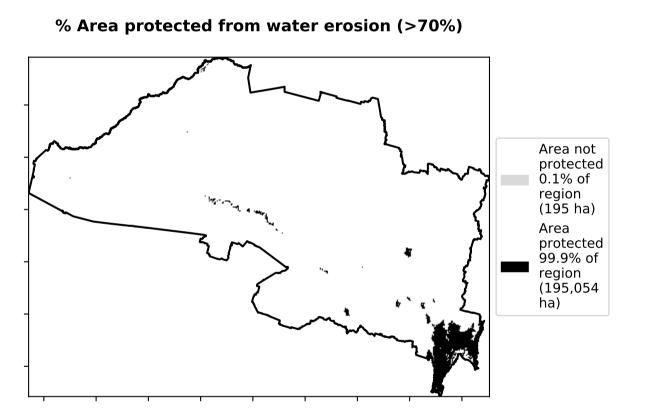


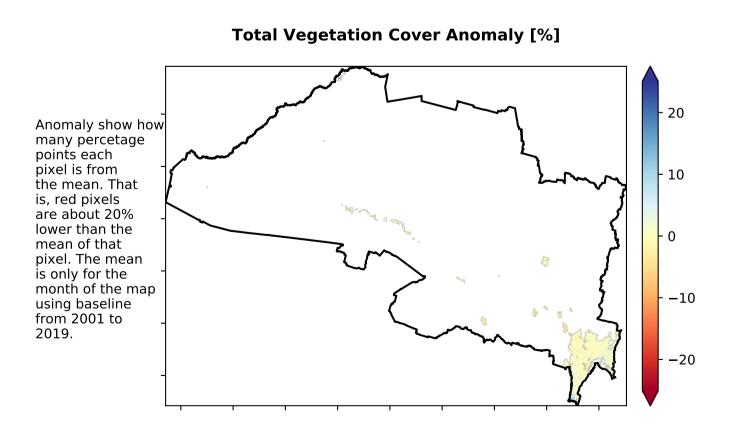


Conservation and natural environments Forest (non woodland)

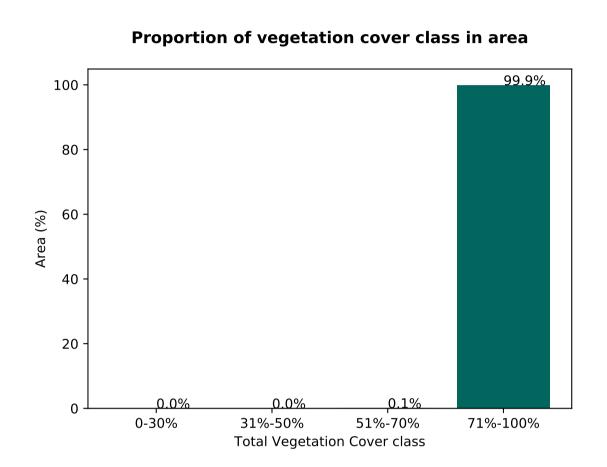


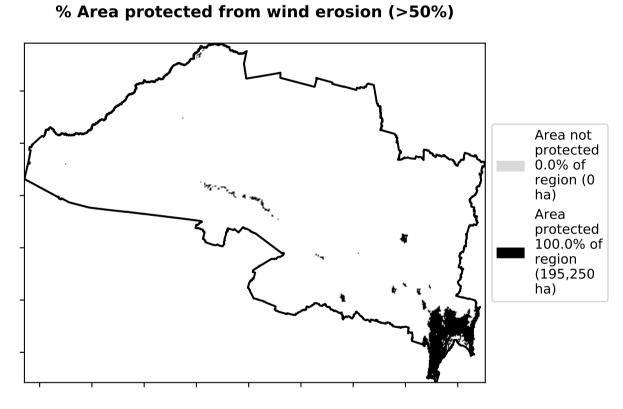
Total Vegetation Cover [%] Trolo Indolo Trol Indolo Trolo Indolo Trol Indolo Trolo Indolo Trolo Indolo Trolo Indolo Trol

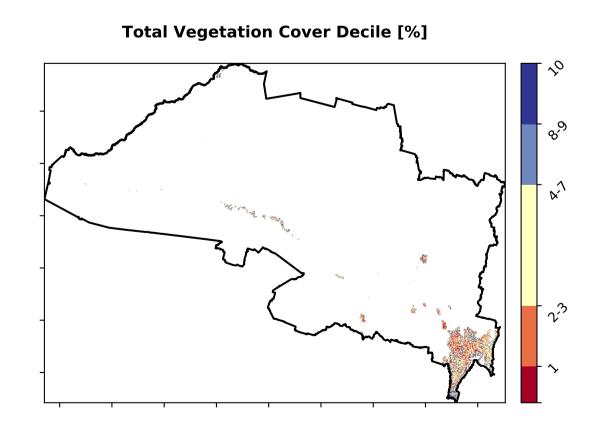




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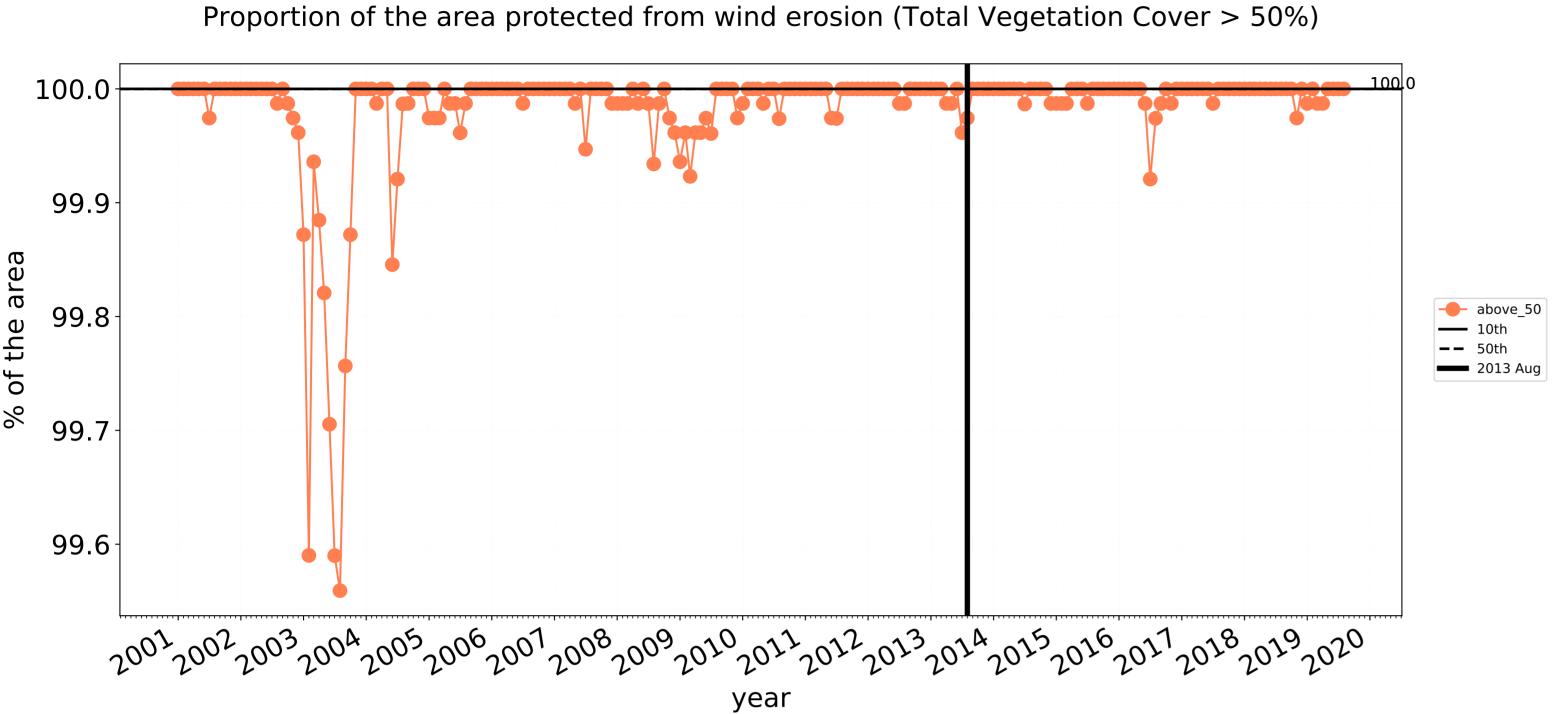


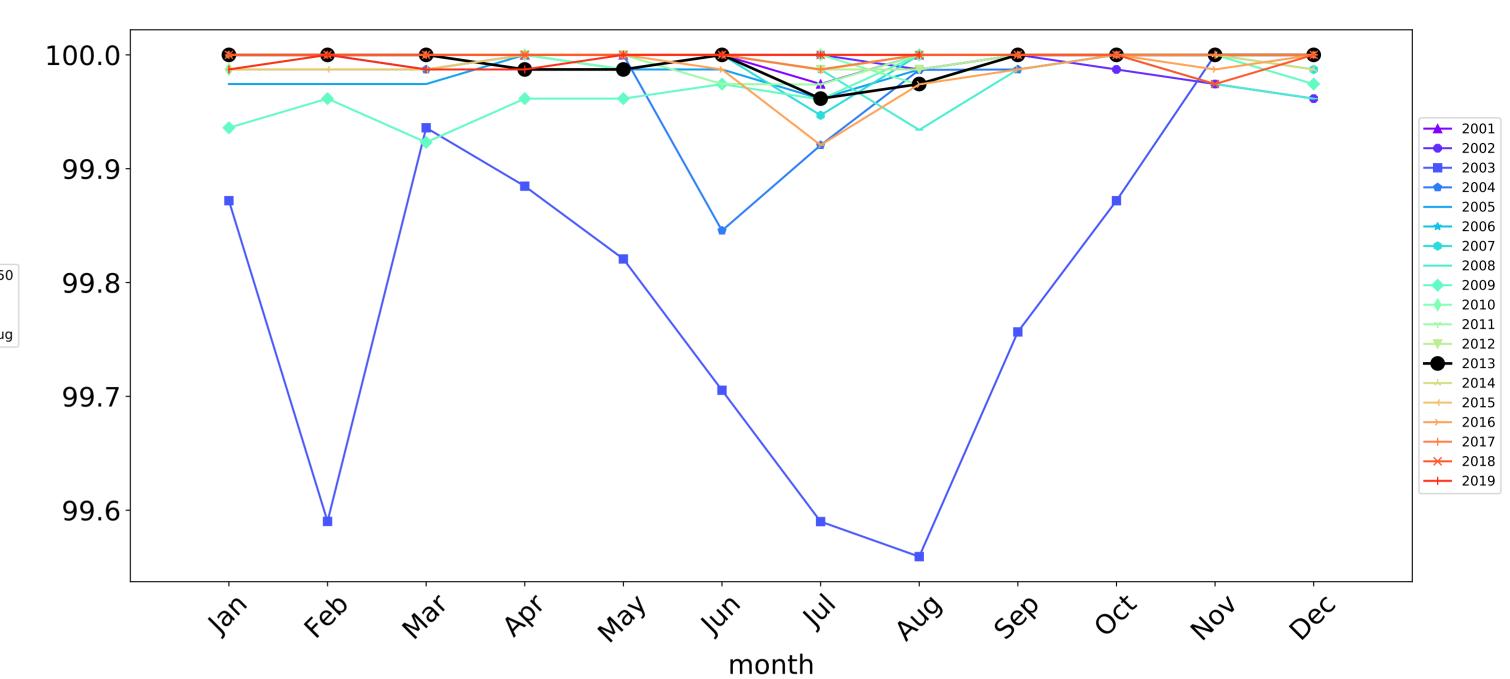




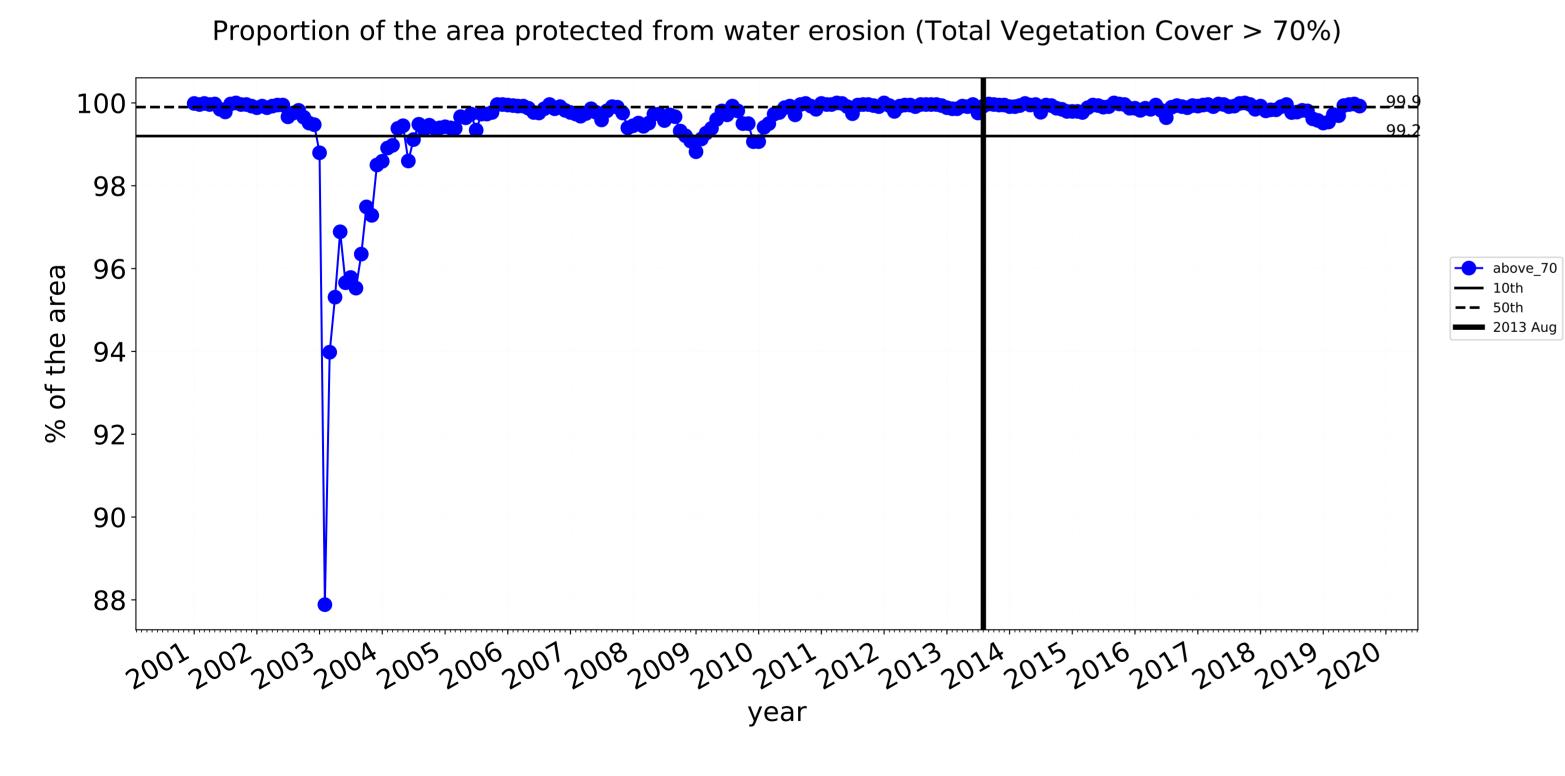


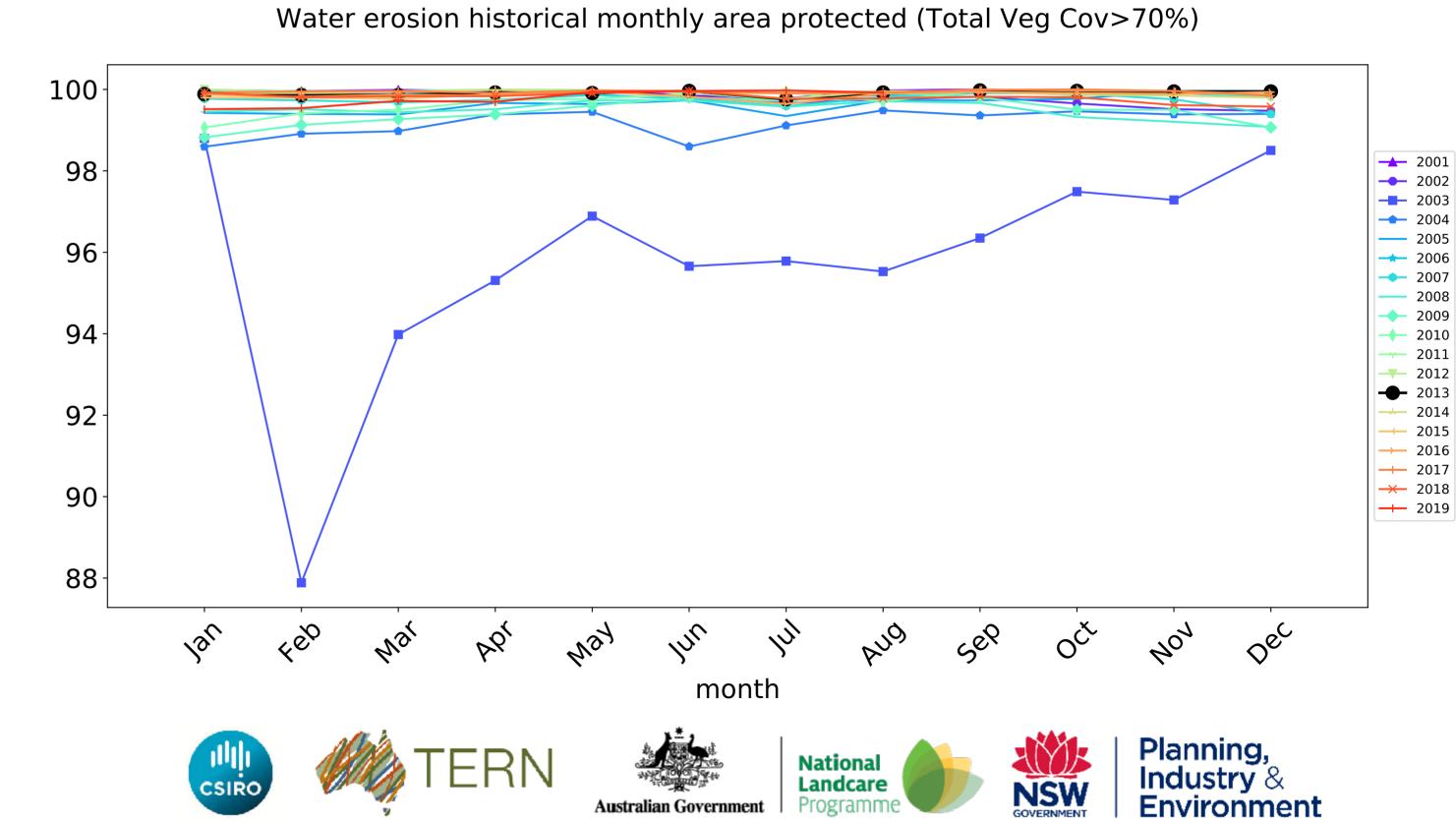






Wind erosion historical monthly area protected (Total Veg Cov >50%)

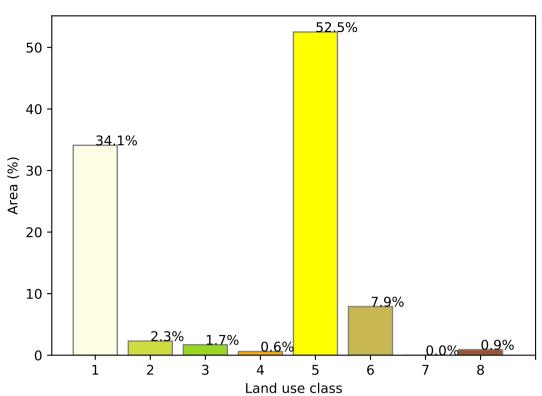




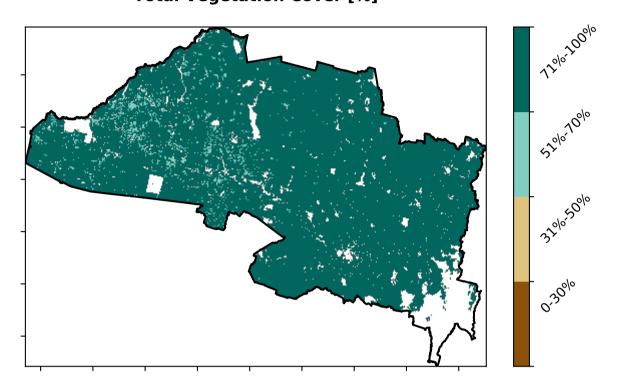
Agriculture

Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) 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 - Grazing - Non-irrigated 6 Agriculture - Grazing - Non-irrigated 7 Agriculture - Grazing - Non-irrigated 8 Agriculture - Horticulture - Non-irrigated 8 Agriculture - Horticulture - Horticulture - Irrigated

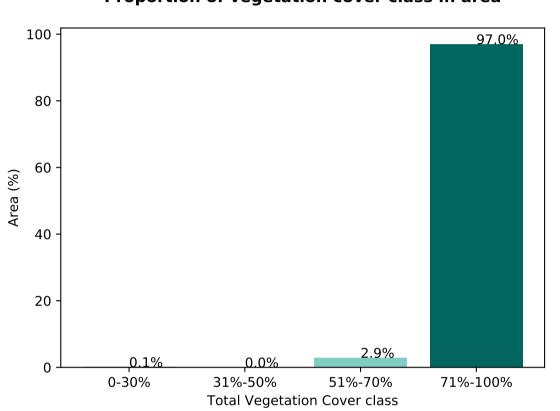
Proportion of each land class in area



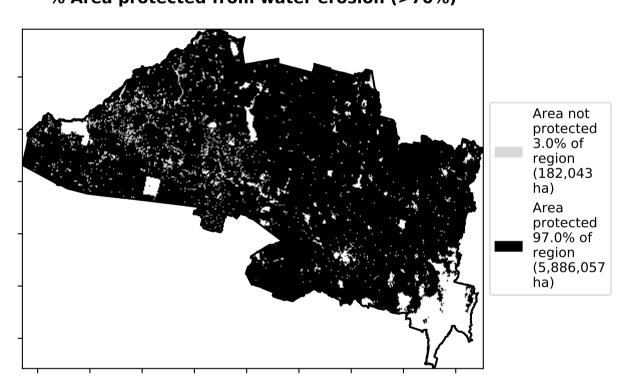
Total Vegetation Cover [%]



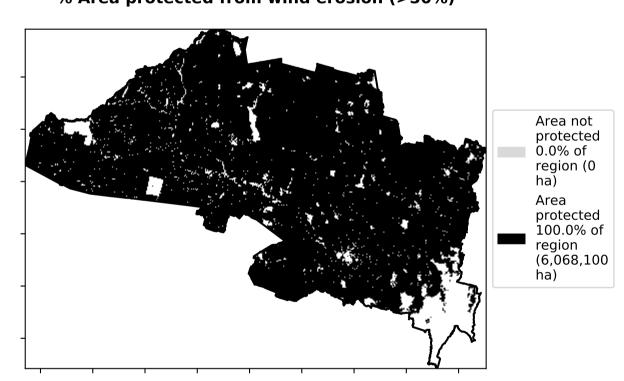
Proportion of vegetation cover class in area



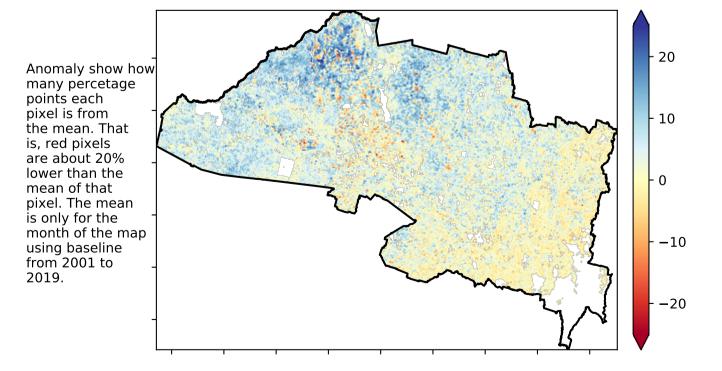
% Area protected from water erosion (>70%)



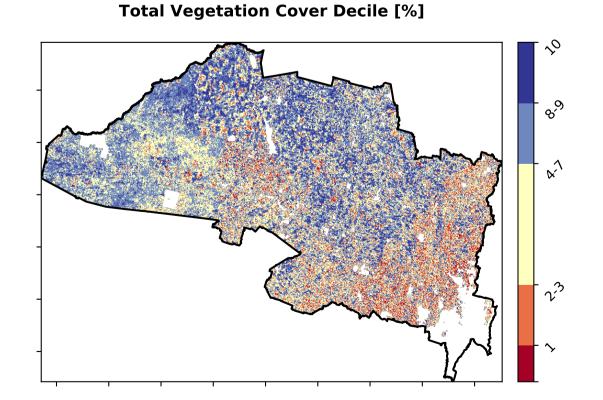
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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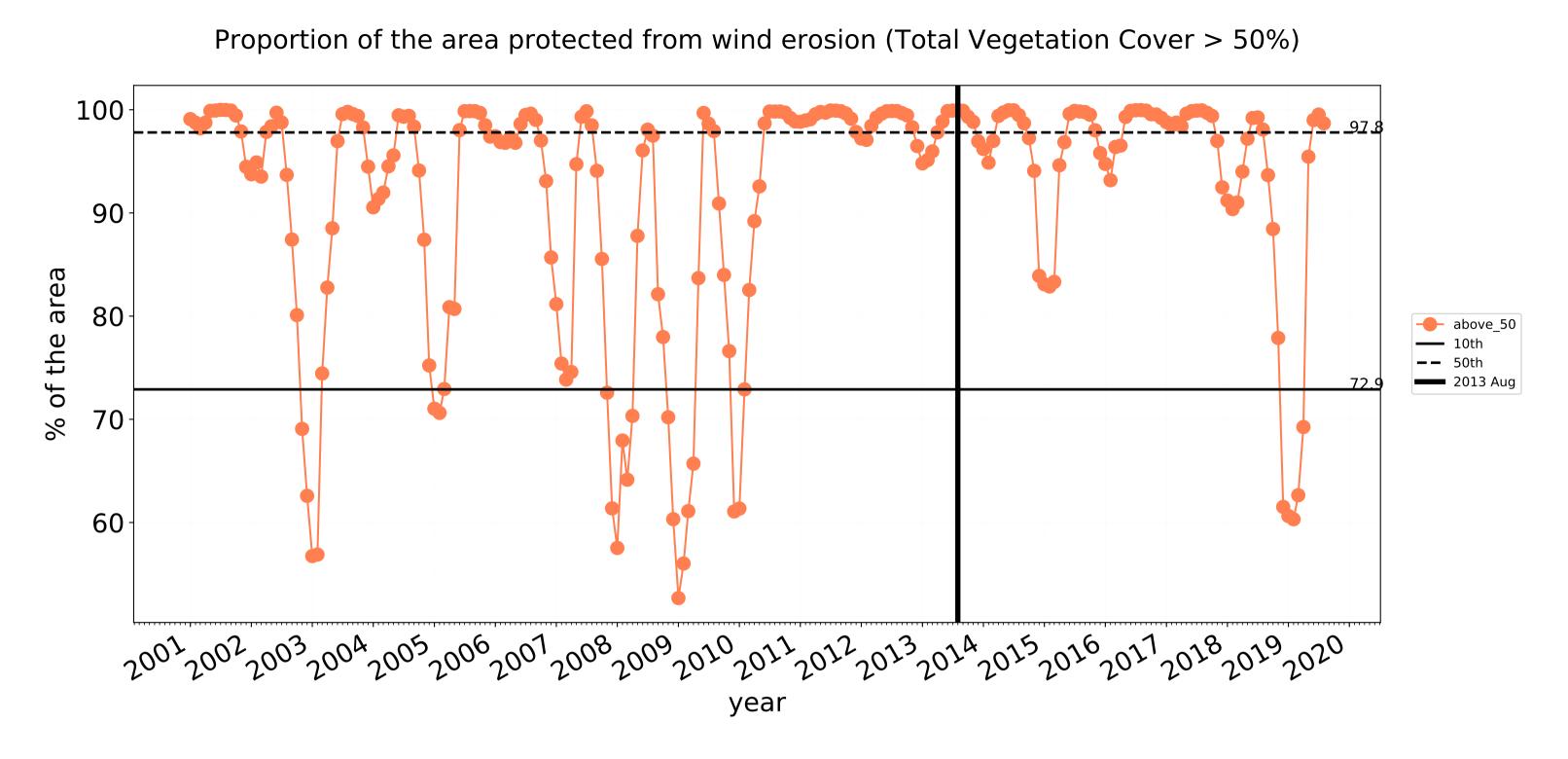


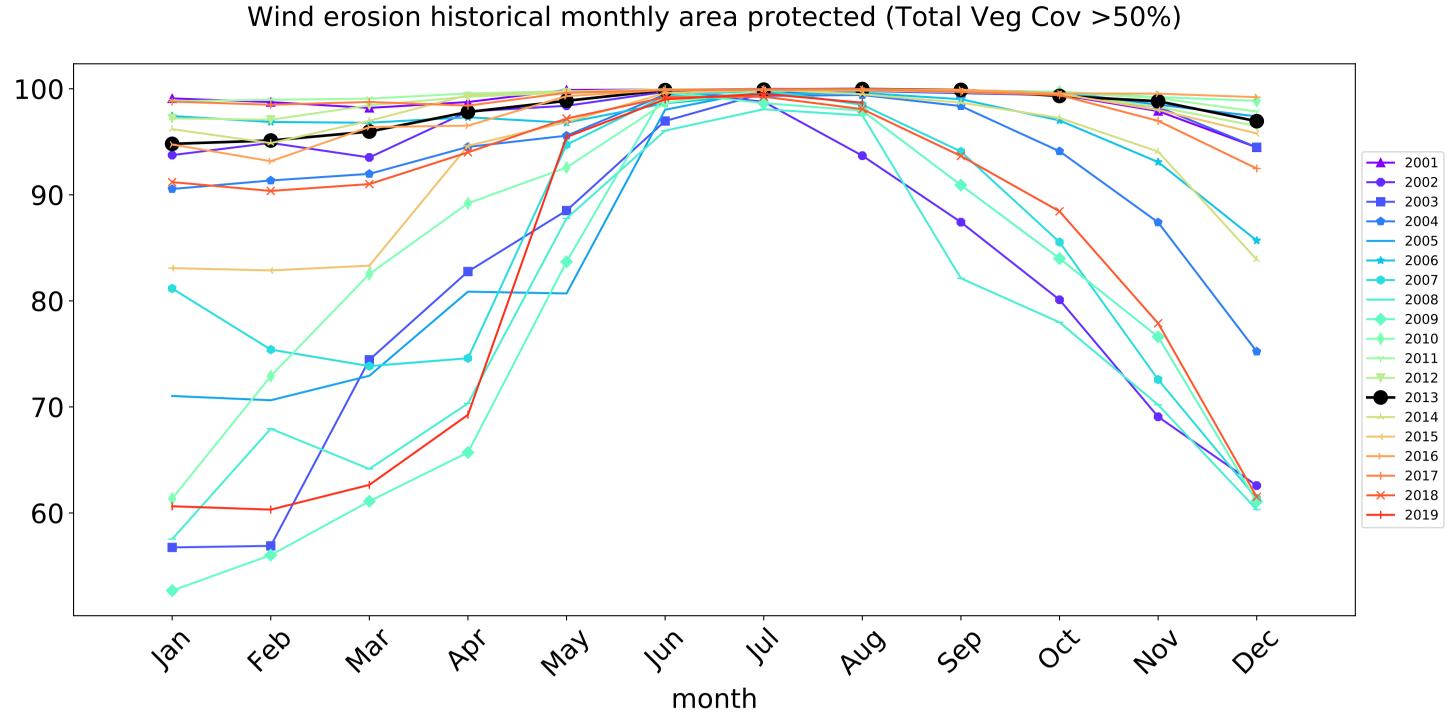


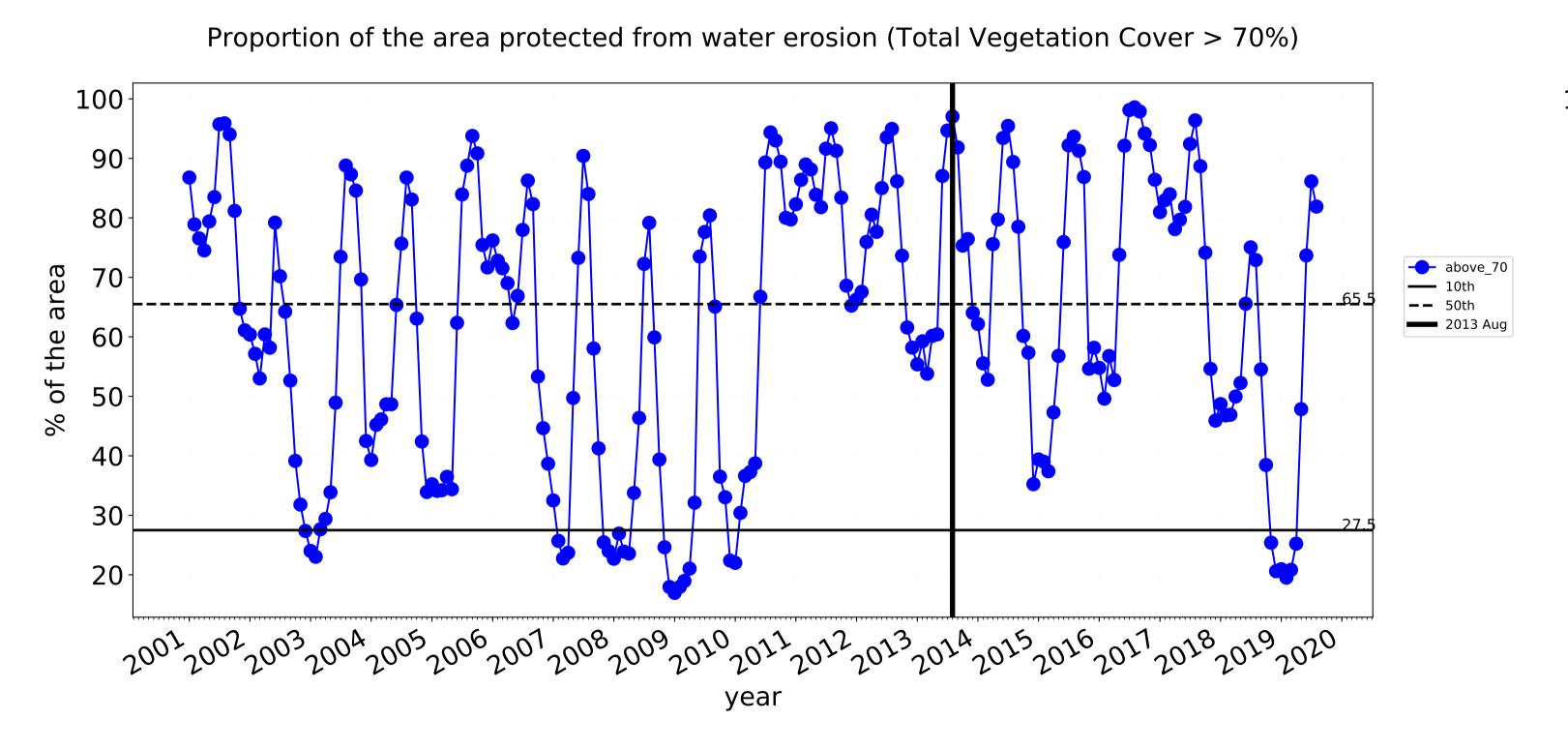


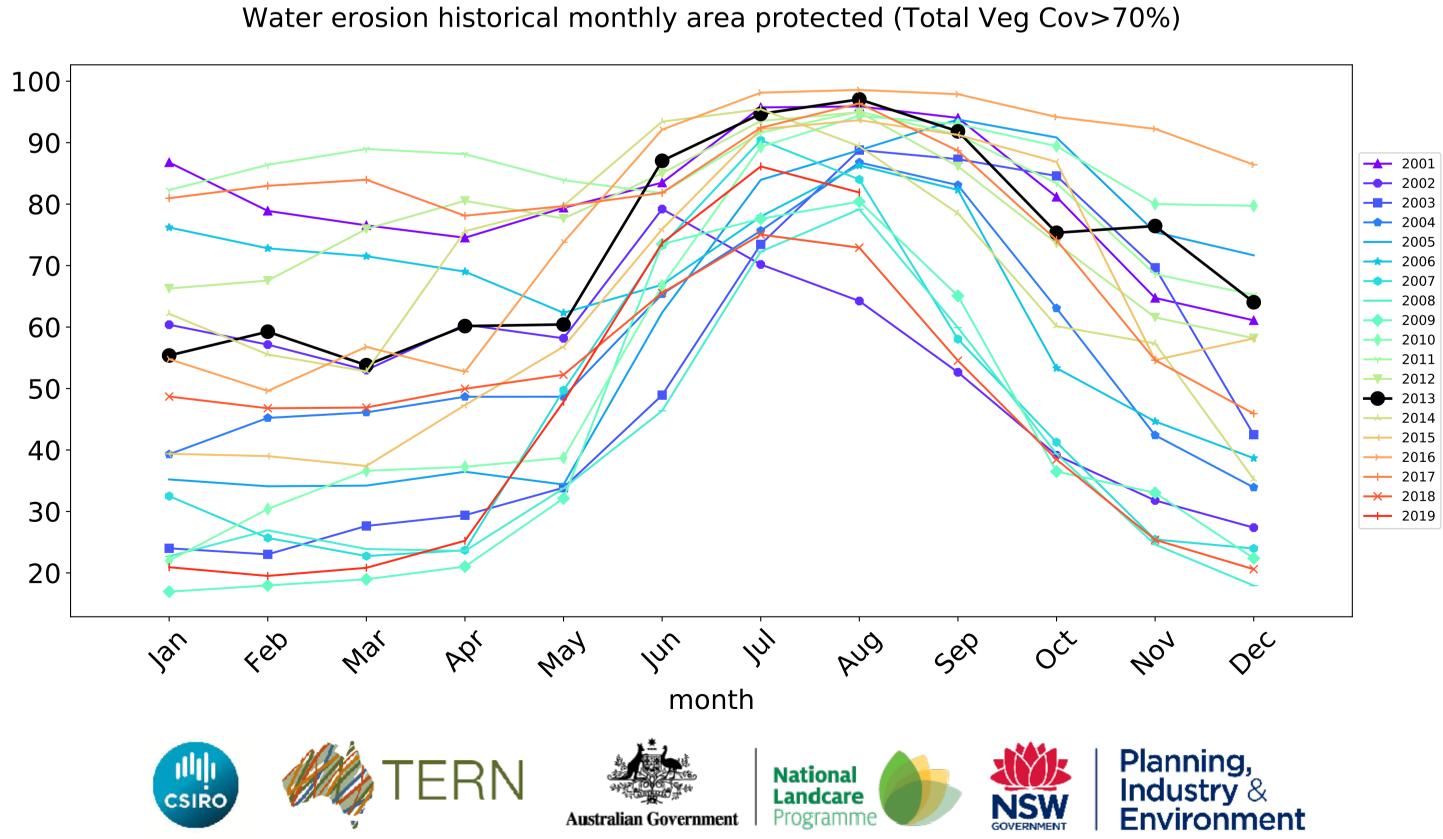


Agriculture timeseries

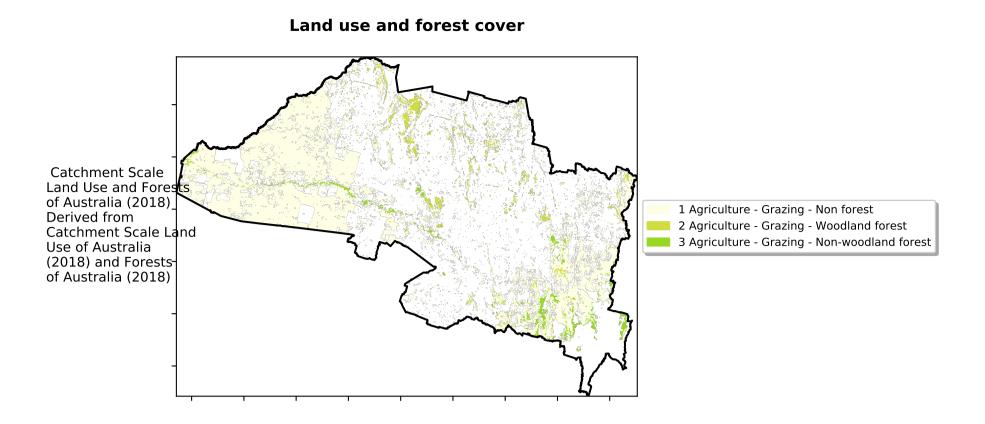




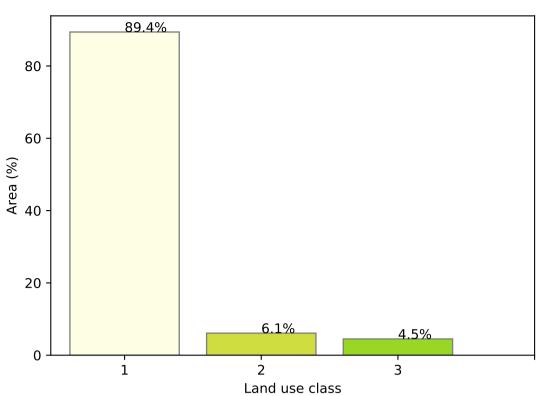




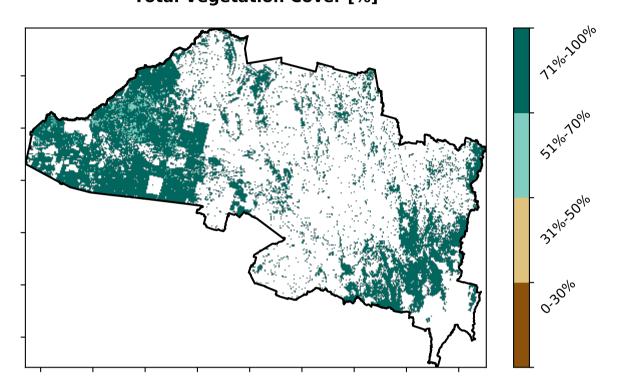
Grazing



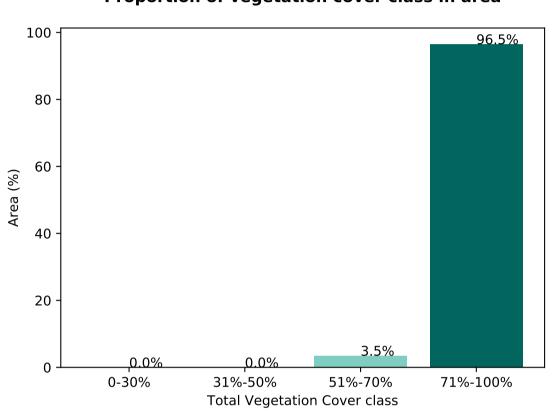
Proportion of each land class in area



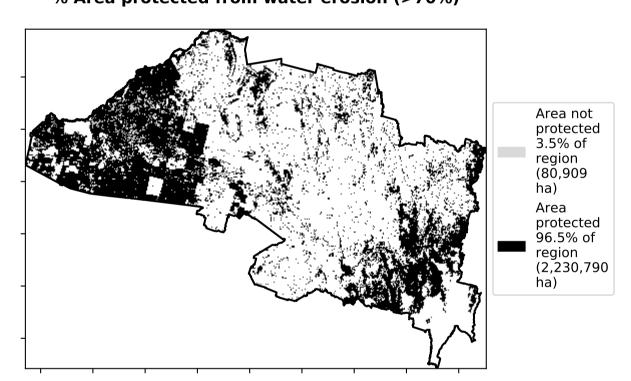
Total Vegetation Cover [%]



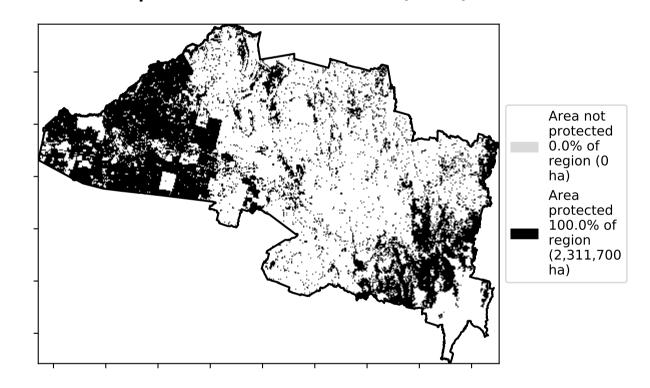
Proportion of vegetation cover class in area



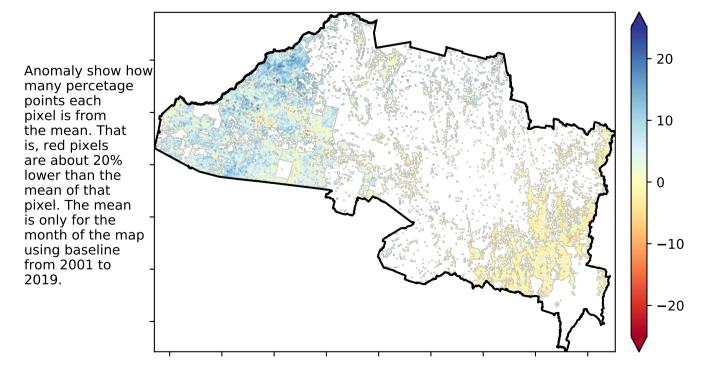
% Area protected from water erosion (>70%)



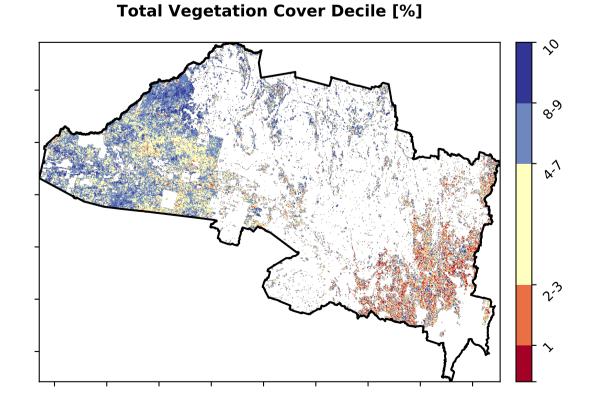
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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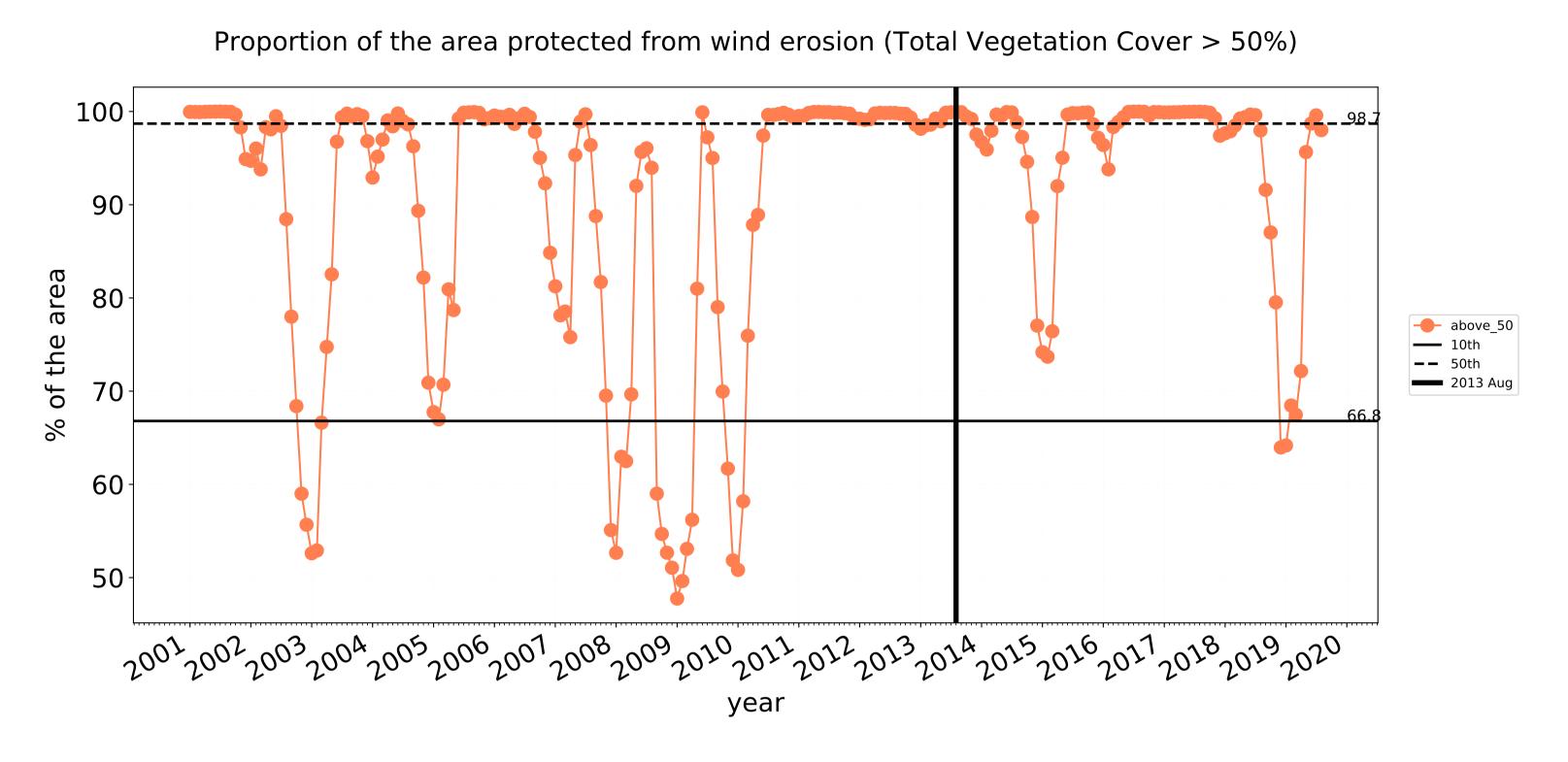


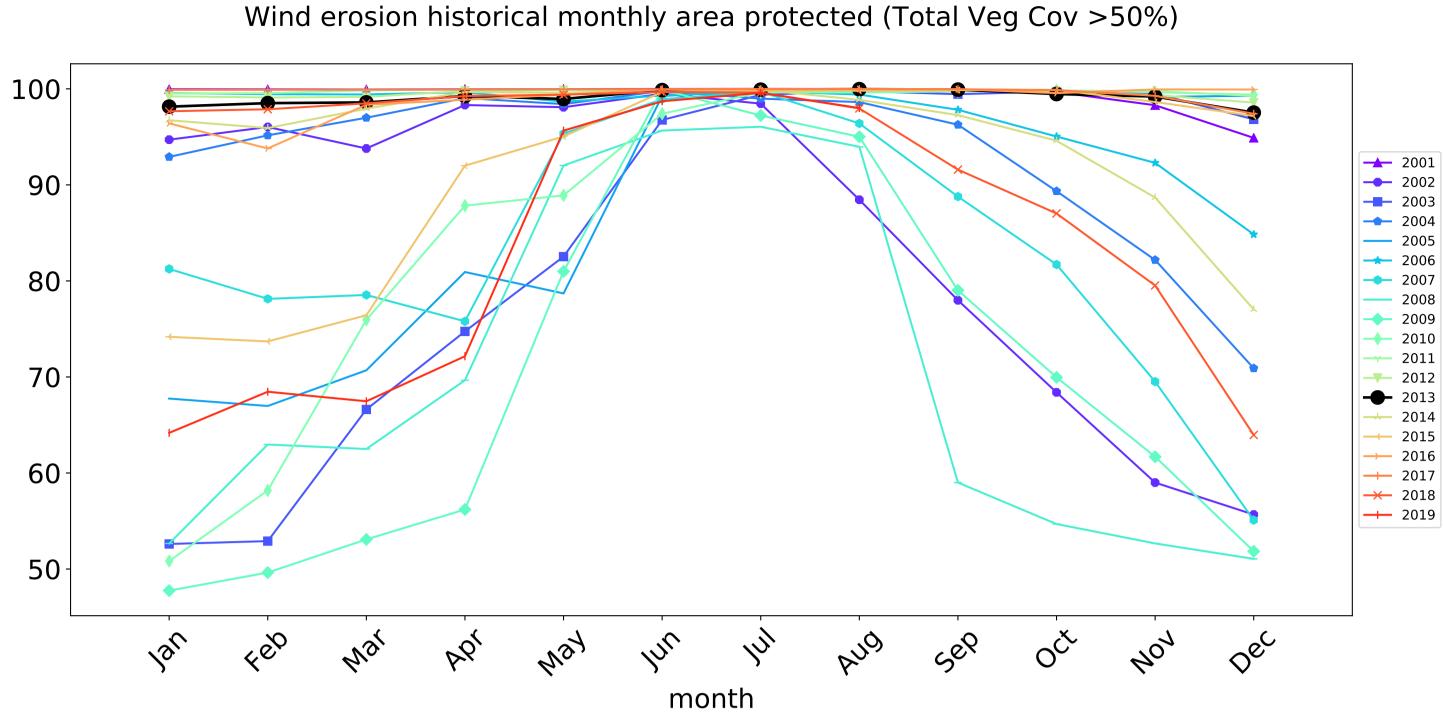


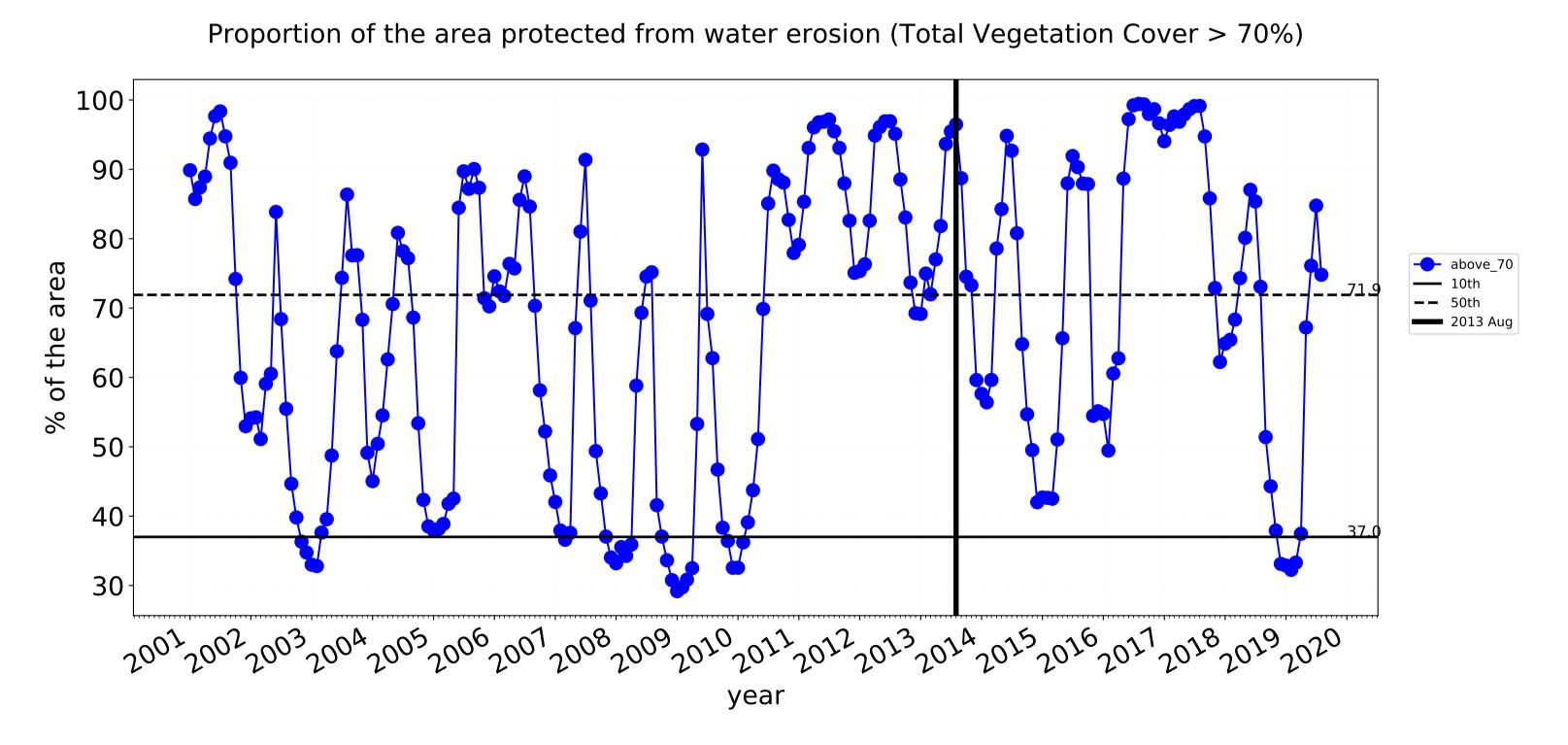


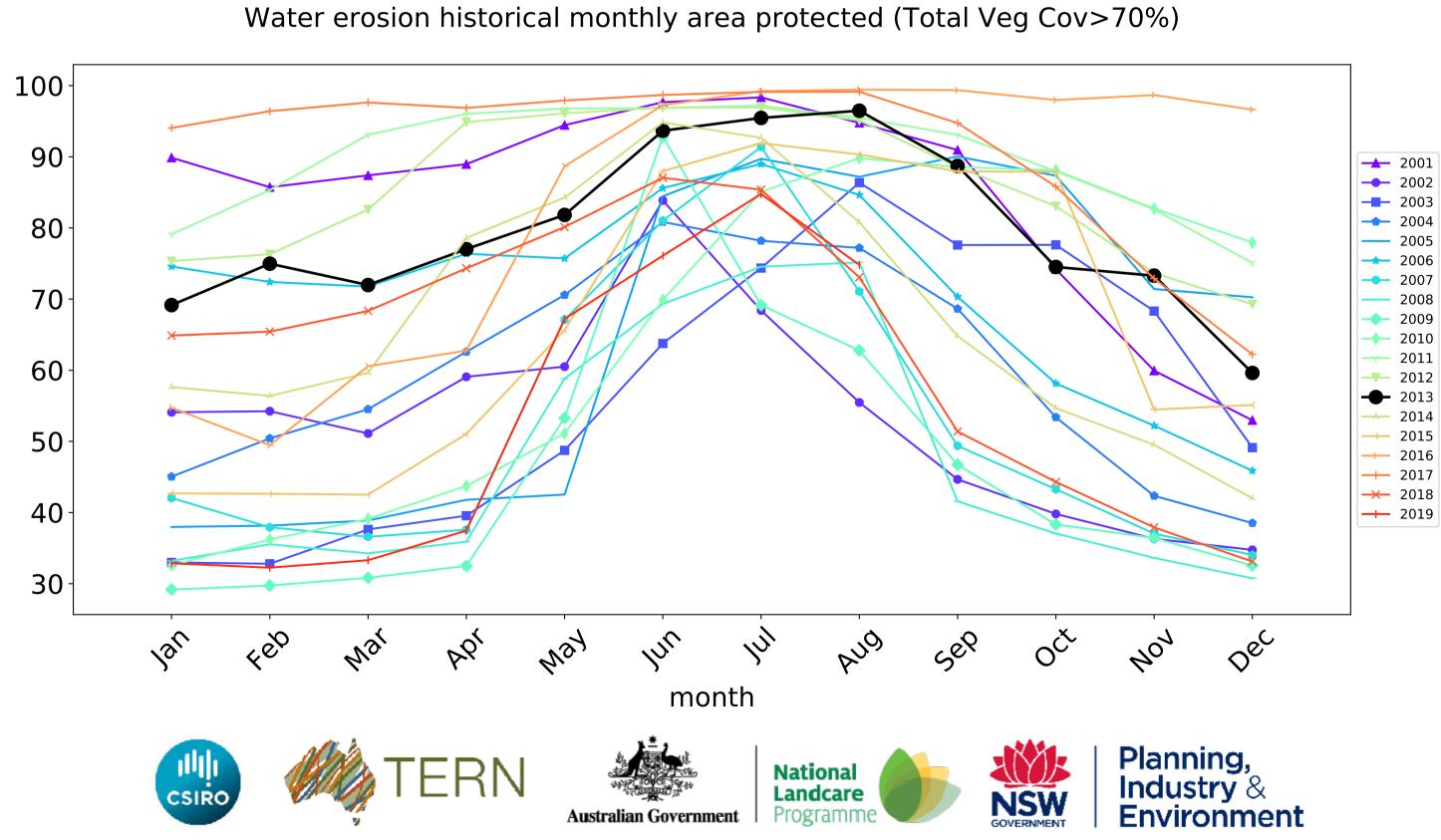


Grazing timeseries



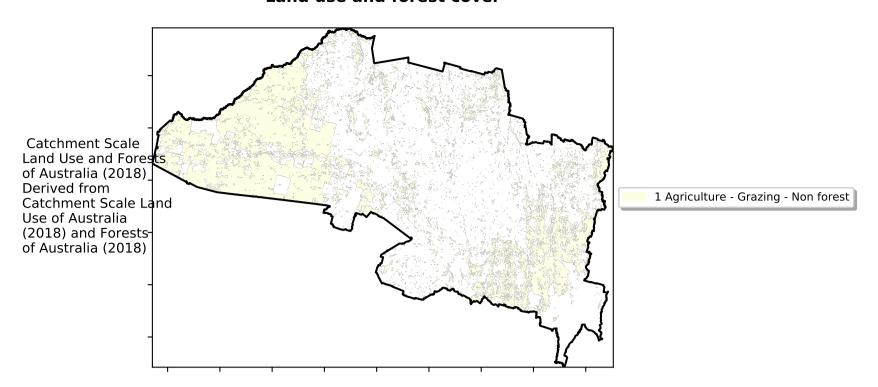




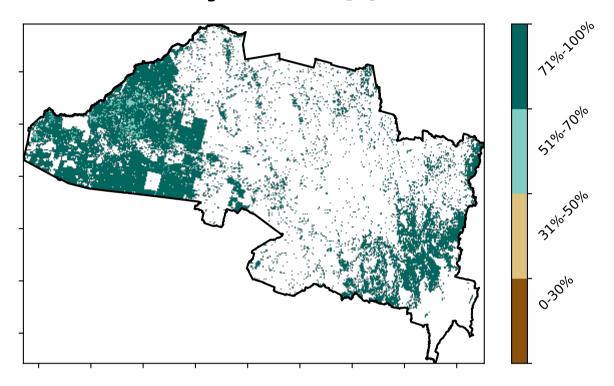


Grazing non forest

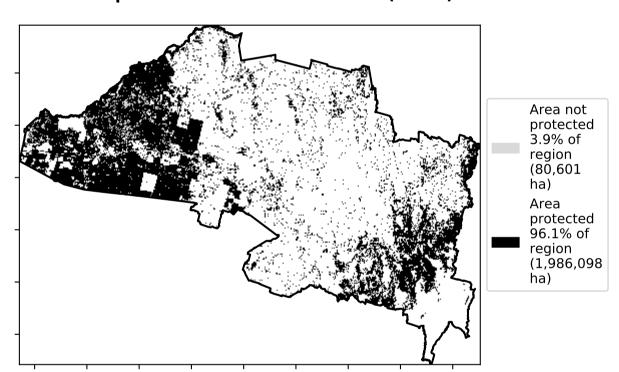
Land use and forest cover



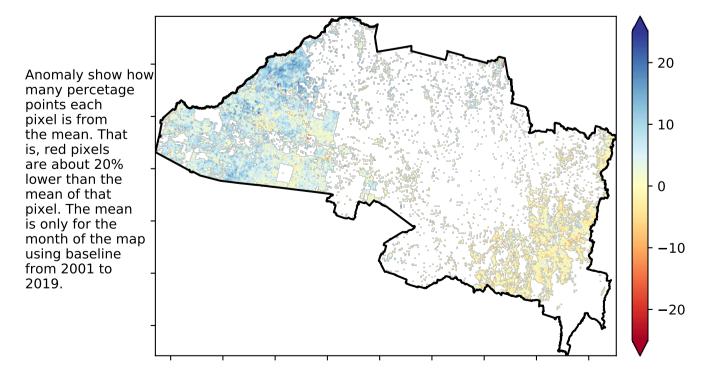
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

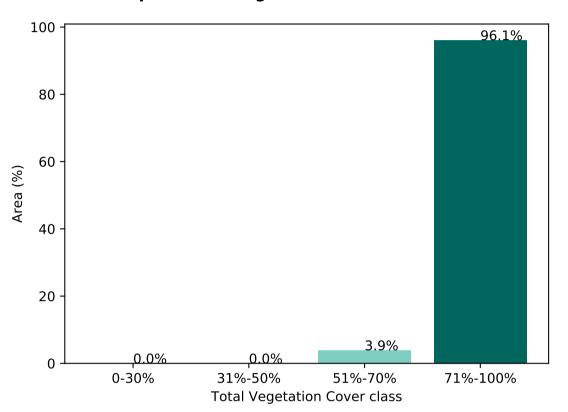


Total Vegetation Cover Anomaly [%]

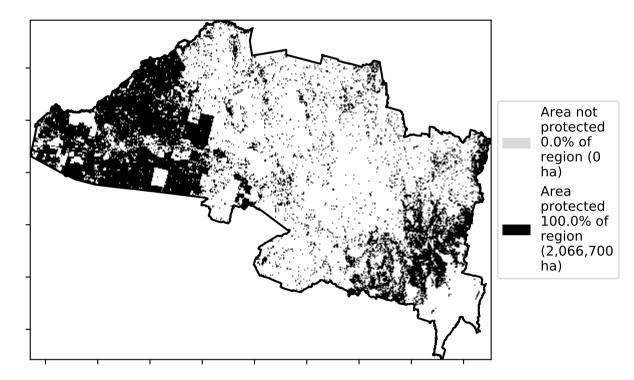


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

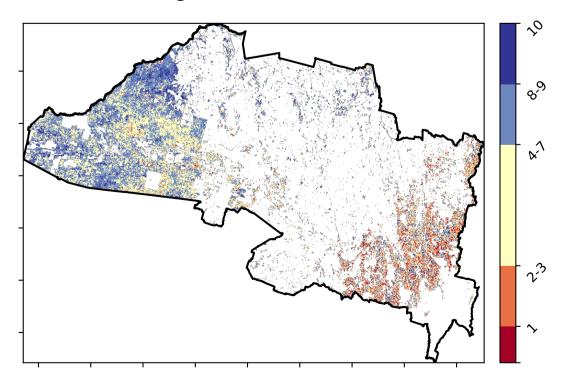
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







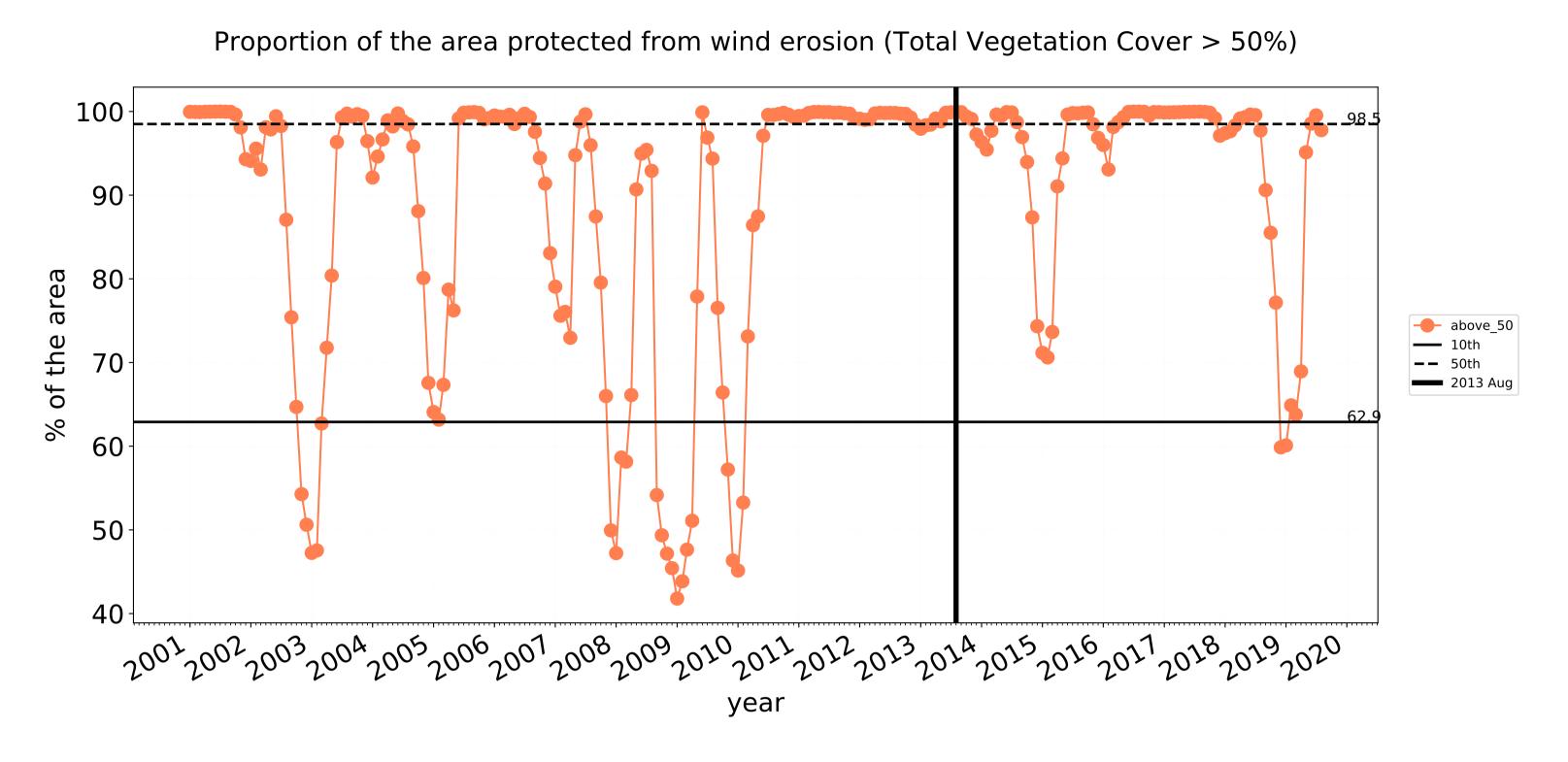


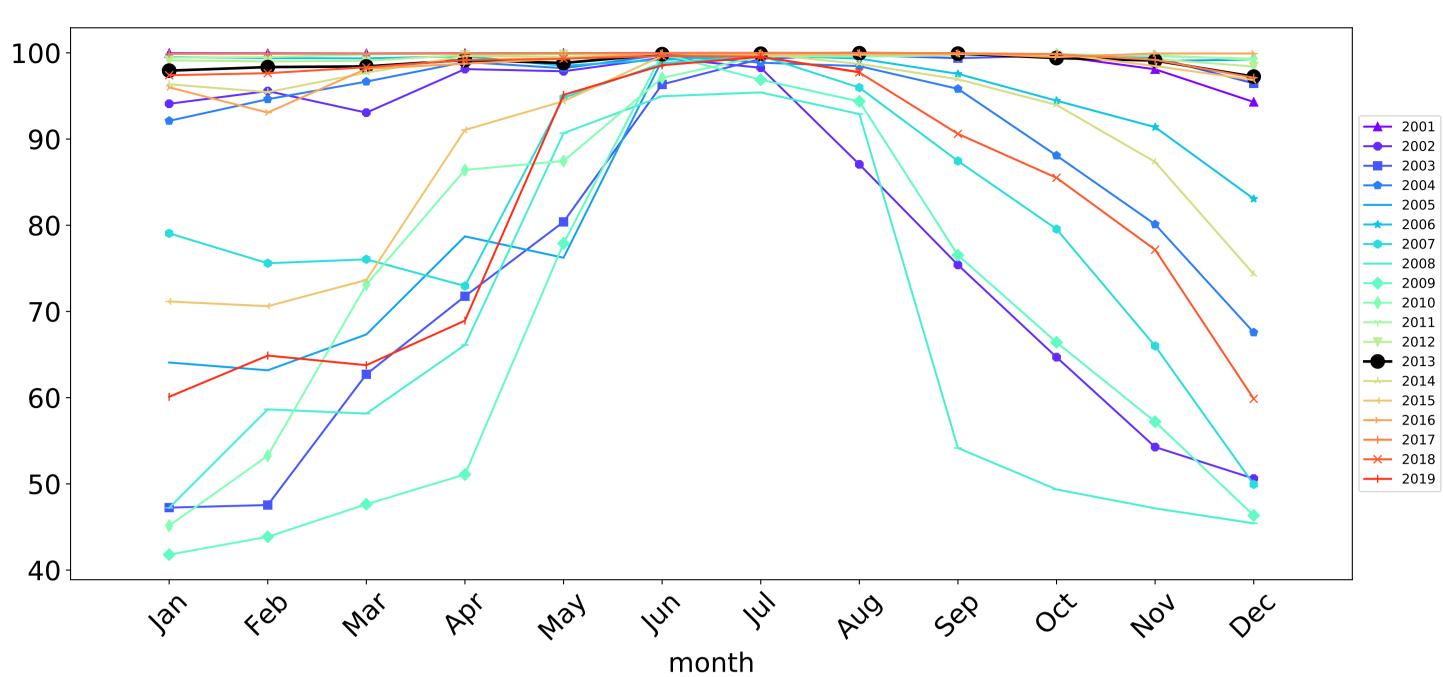




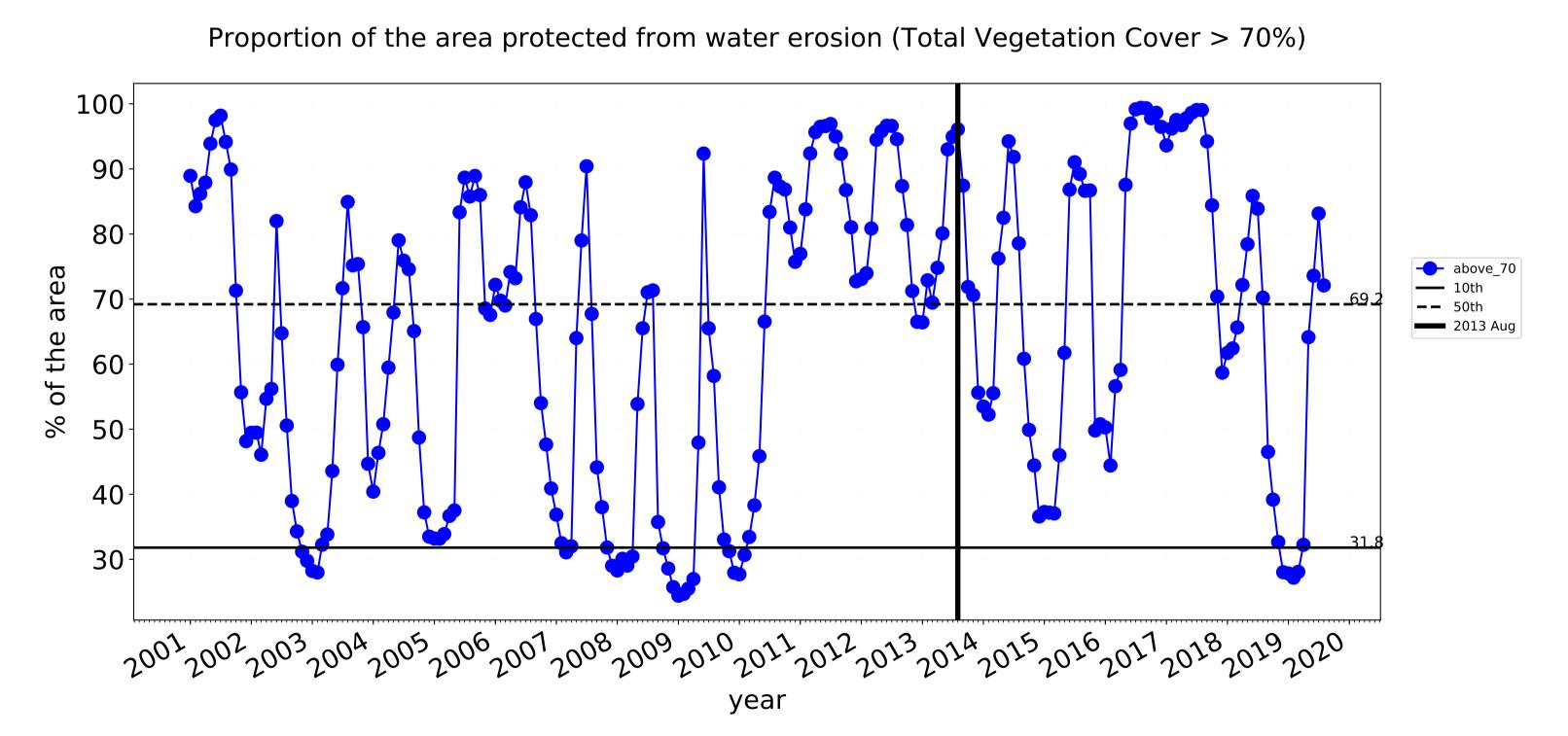


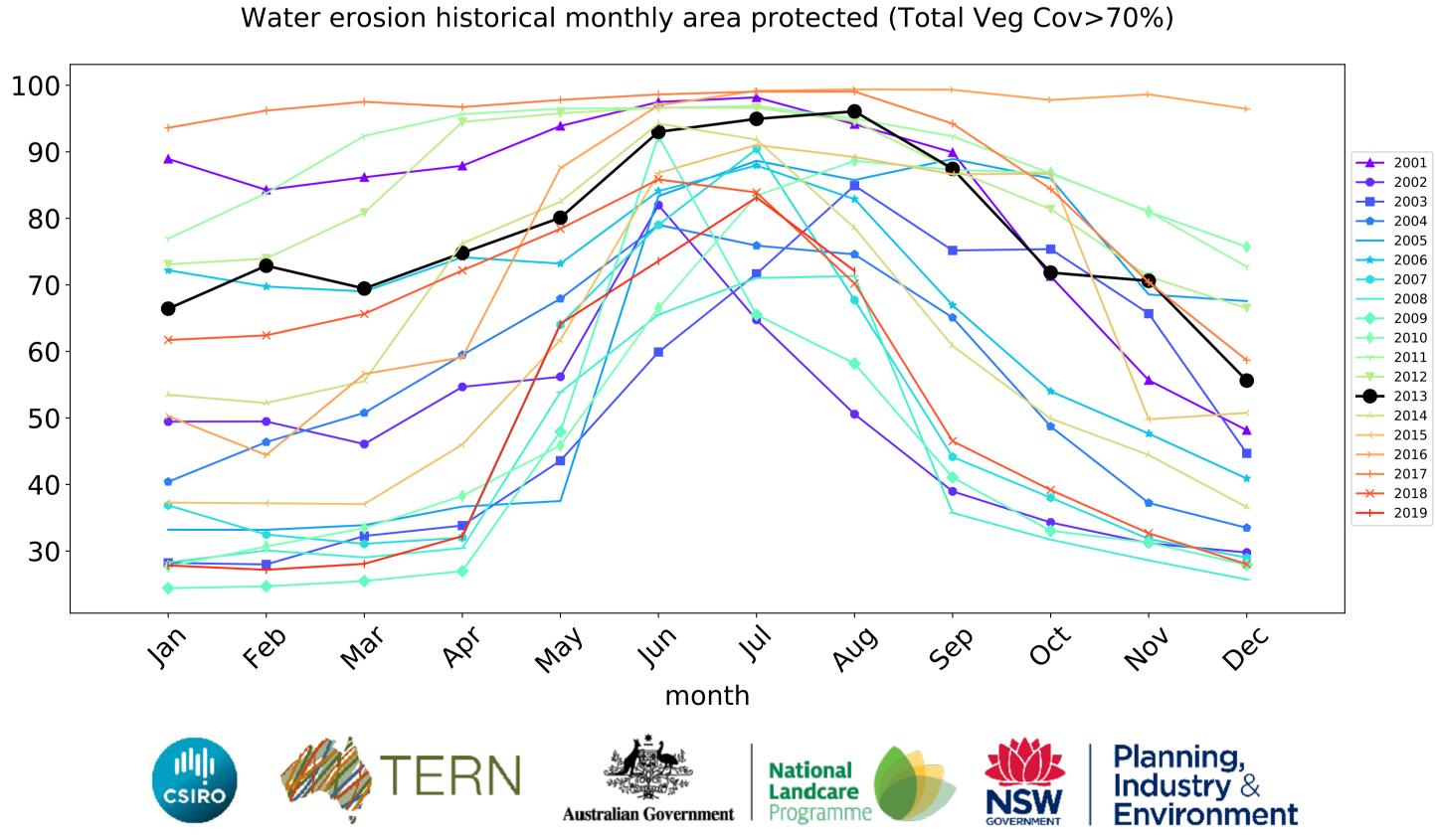
Grazing non forest timeseries





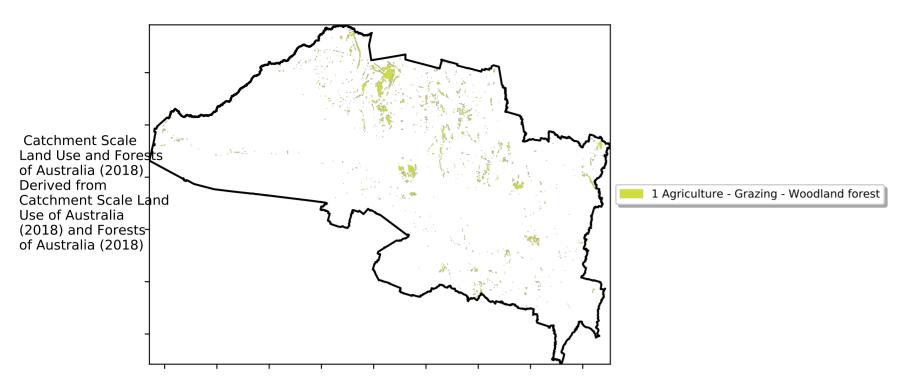
Wind erosion historical monthly area protected (Total Veg Cov >50%)



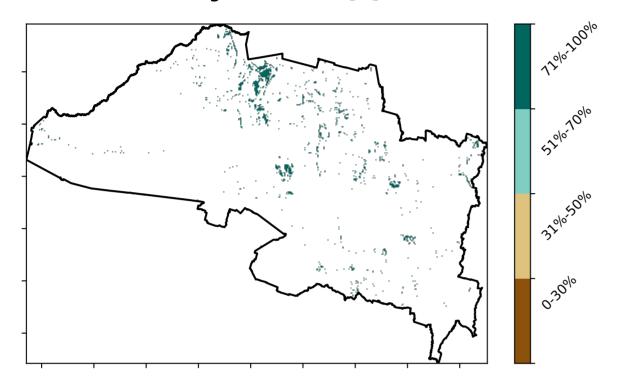


Grazing Woodland forest

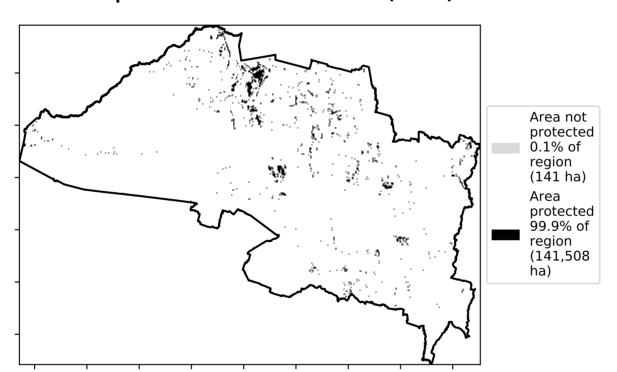
Land use and forest cover



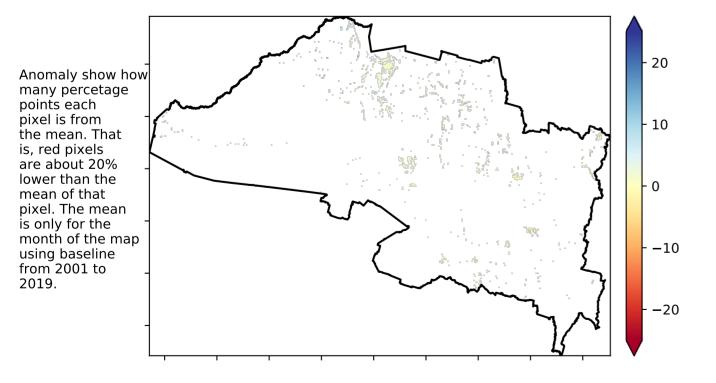
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

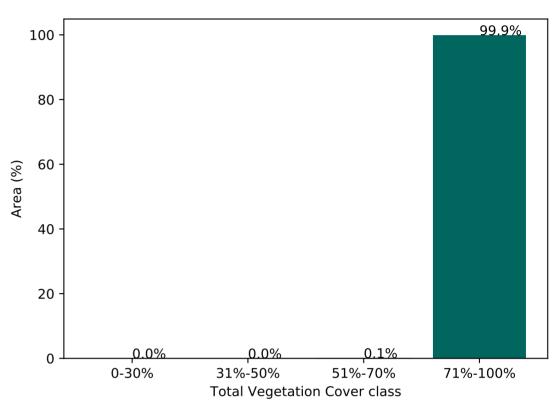


Total Vegetation Cover Anomaly [%]

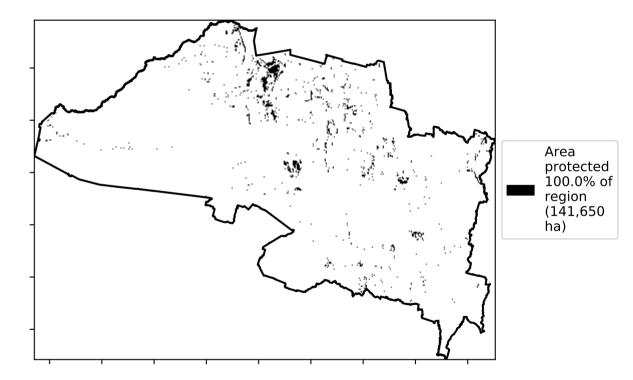


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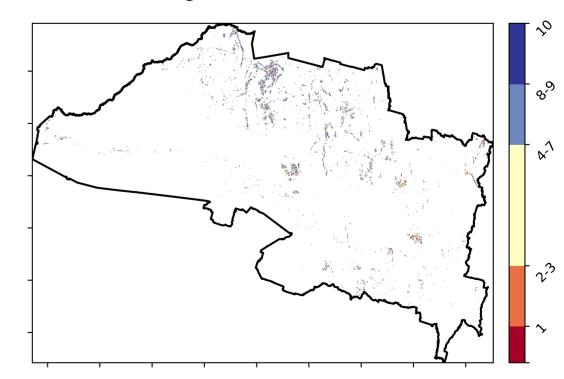
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







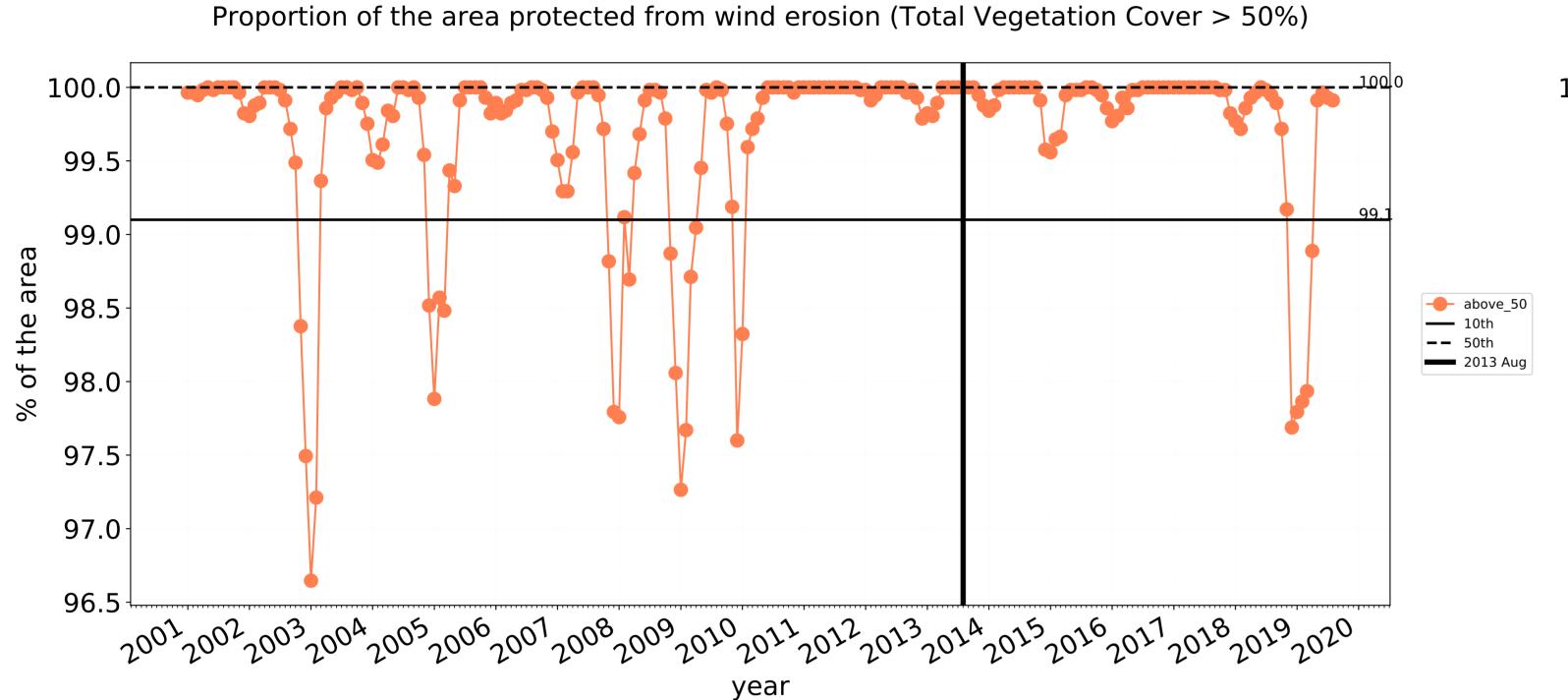


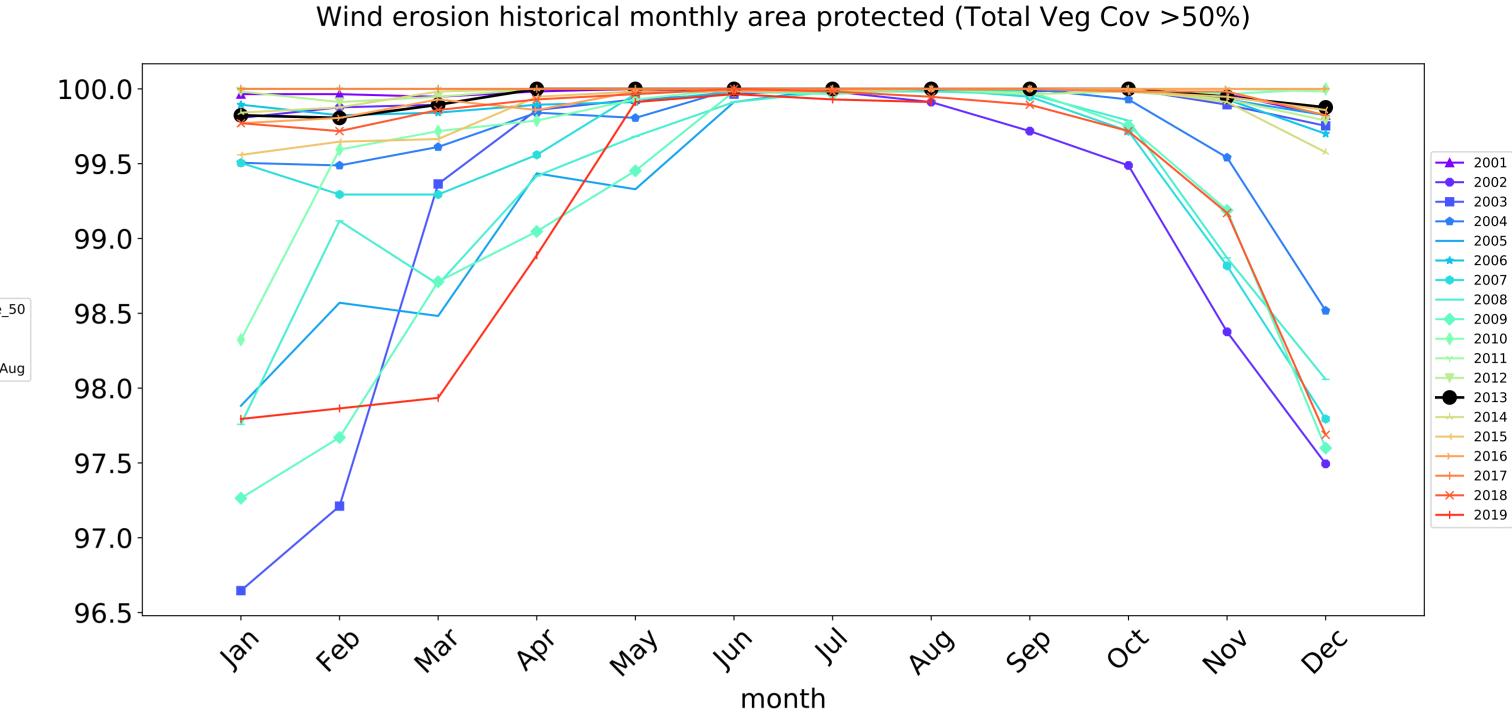


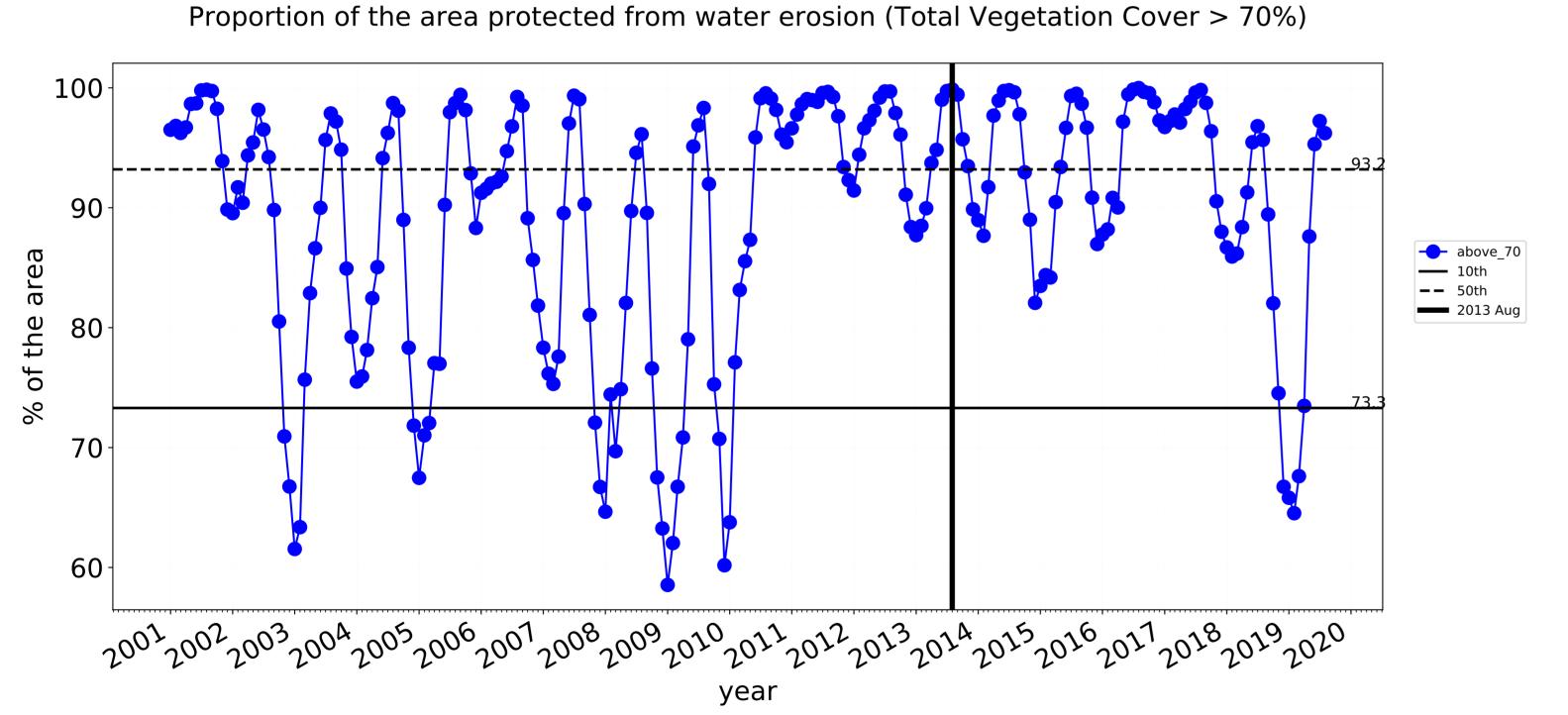


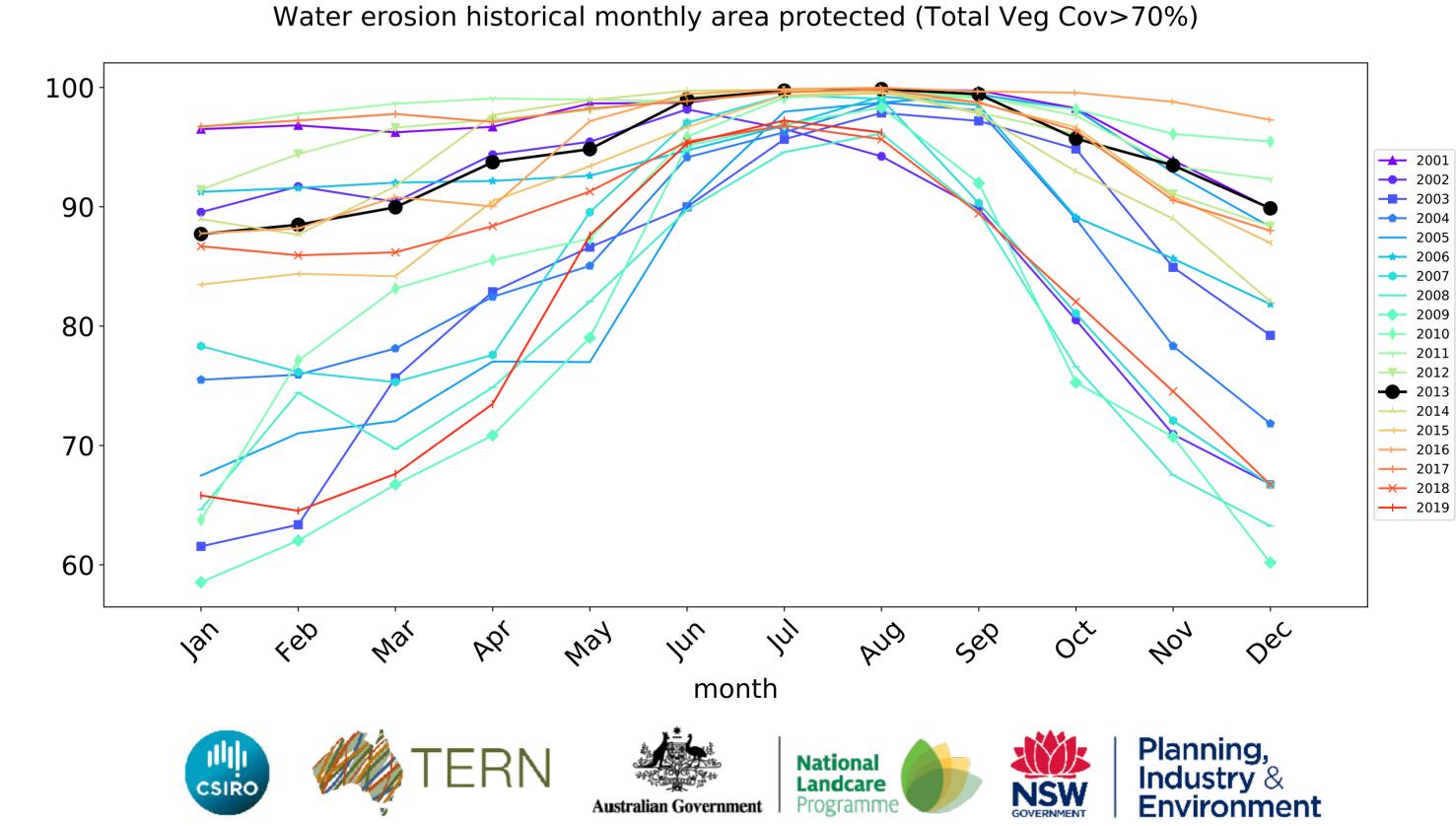


Grazing Woodland forest timeseries







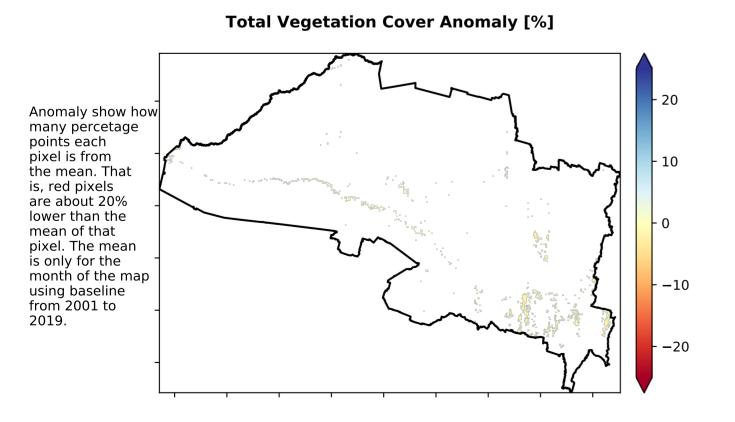


Grazing - Forest (non woodland)

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

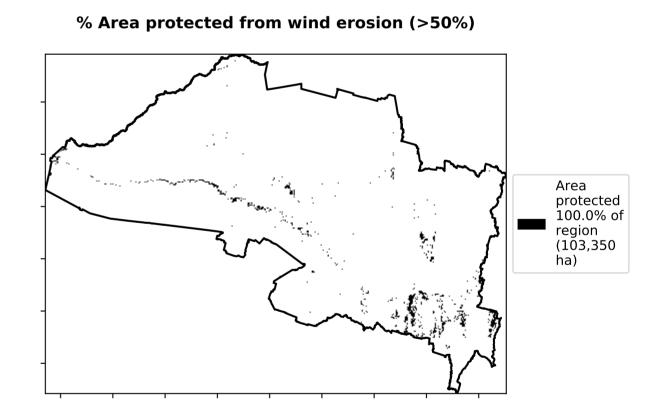
Total Vegetation Cover [%] Tipological and the state of the state of

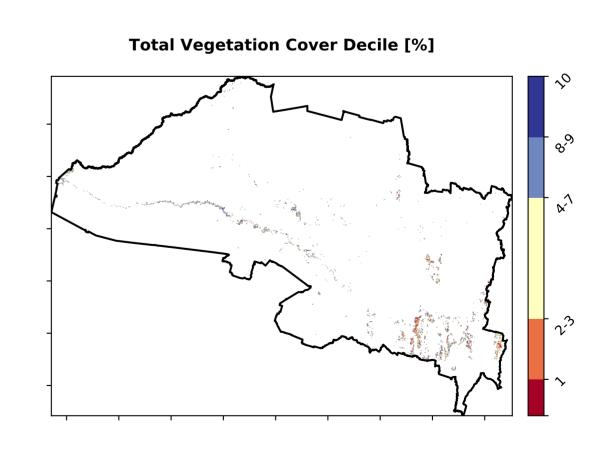
% Area protected from water erosion (>70%) Area not protected 0.1% of region (103 ha) Area protected 99.9% of region (103,246 ha)



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

Proportion of vegetation cover class in area 100 - 99.9% 80 - 99.9% 40 - 20 - 0.0% 0.0% 0.1% O-30% 31%-50% 51%-70% 71%-100% Total Vegetation Cover class







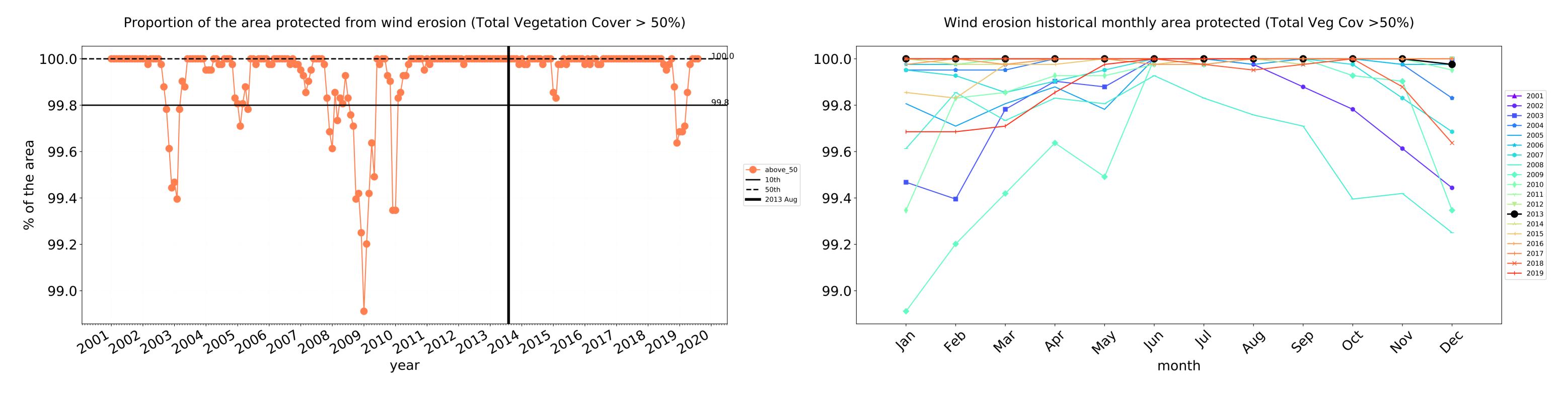


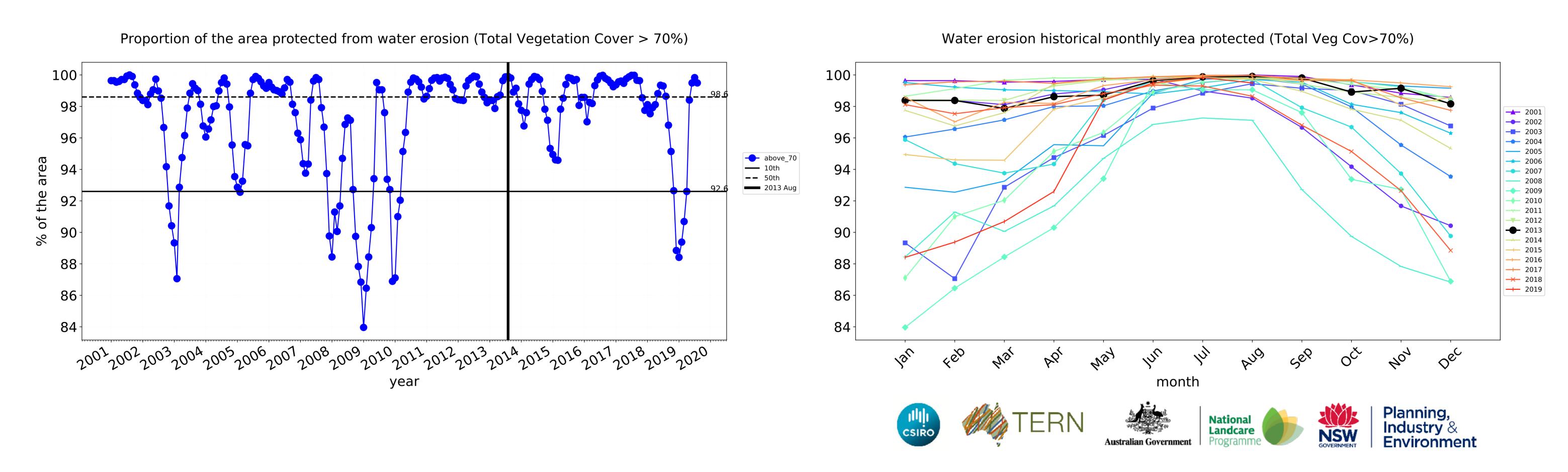






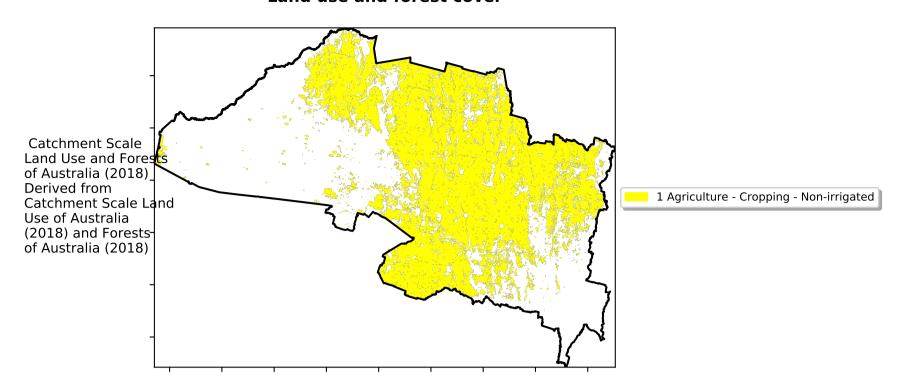




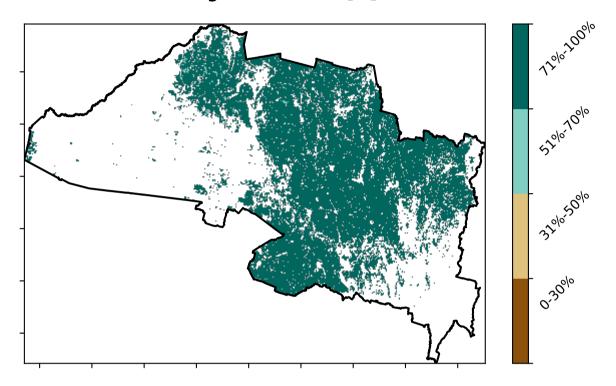


Cropping

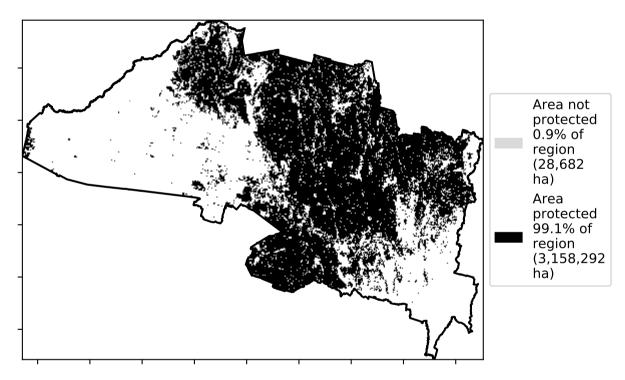
Land use and forest cover



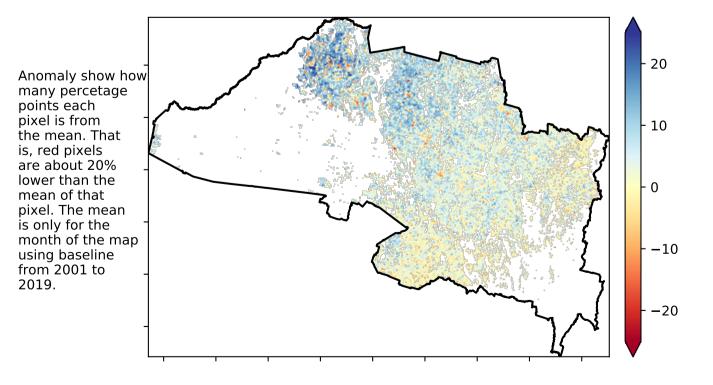
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

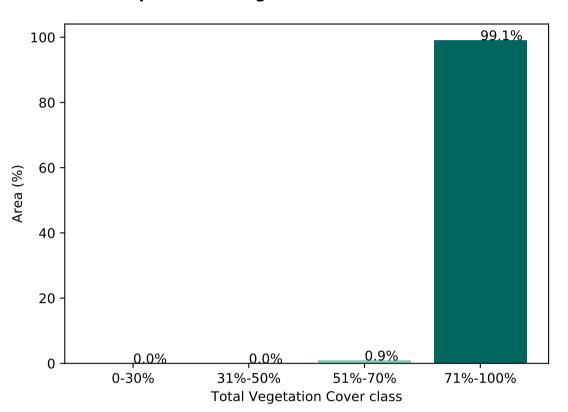


Total Vegetation Cover Anomaly [%]

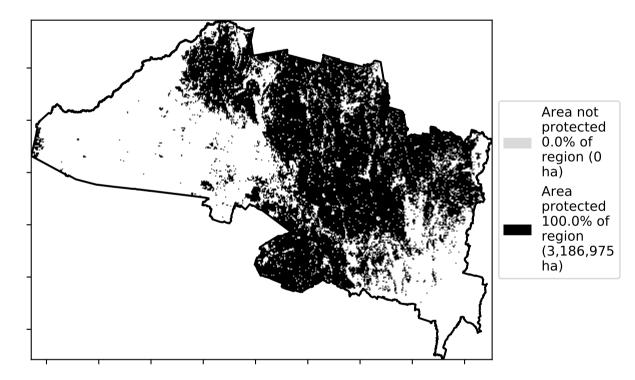


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

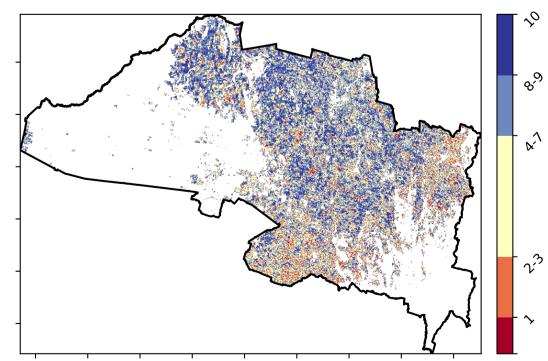
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







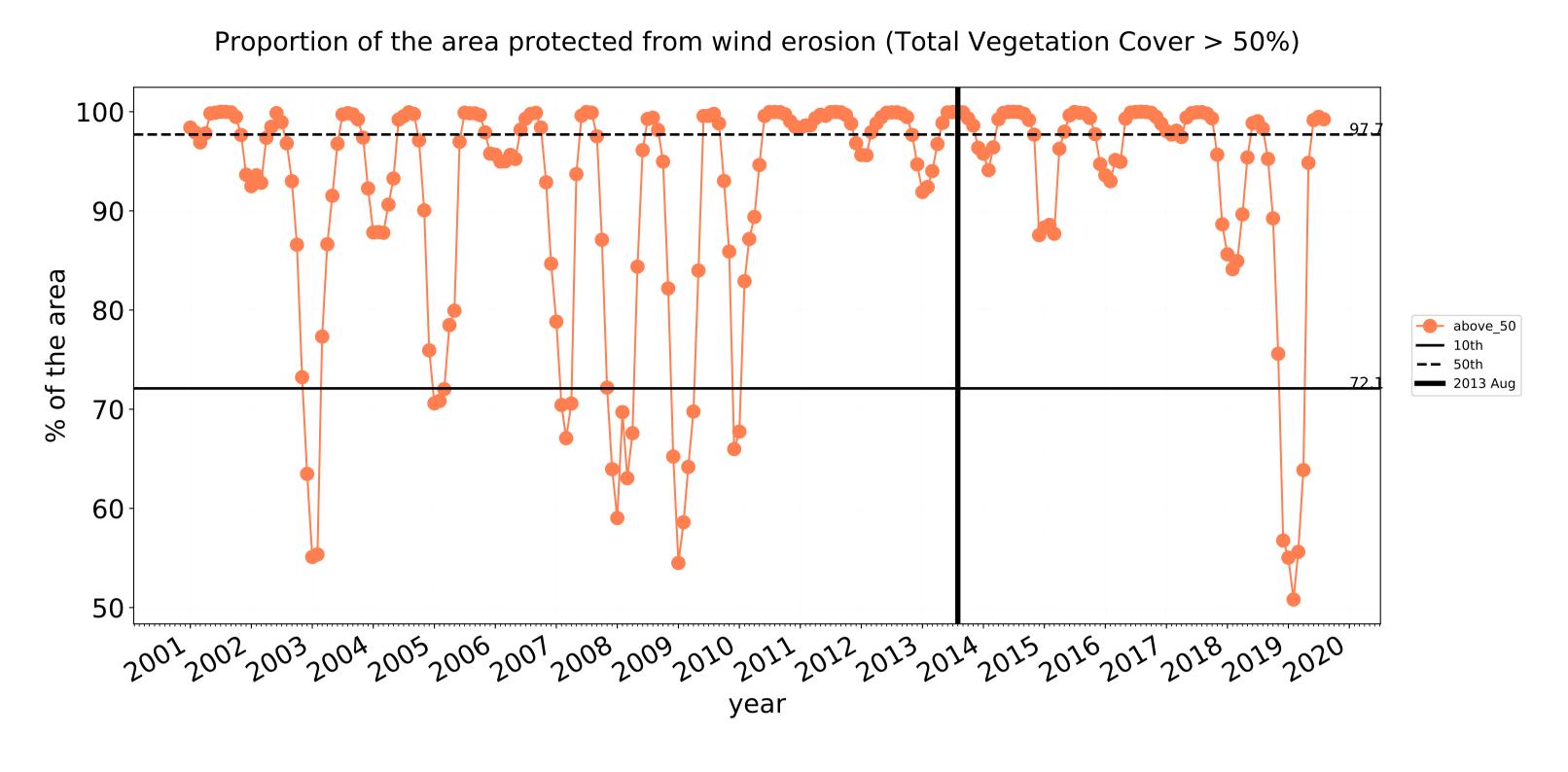


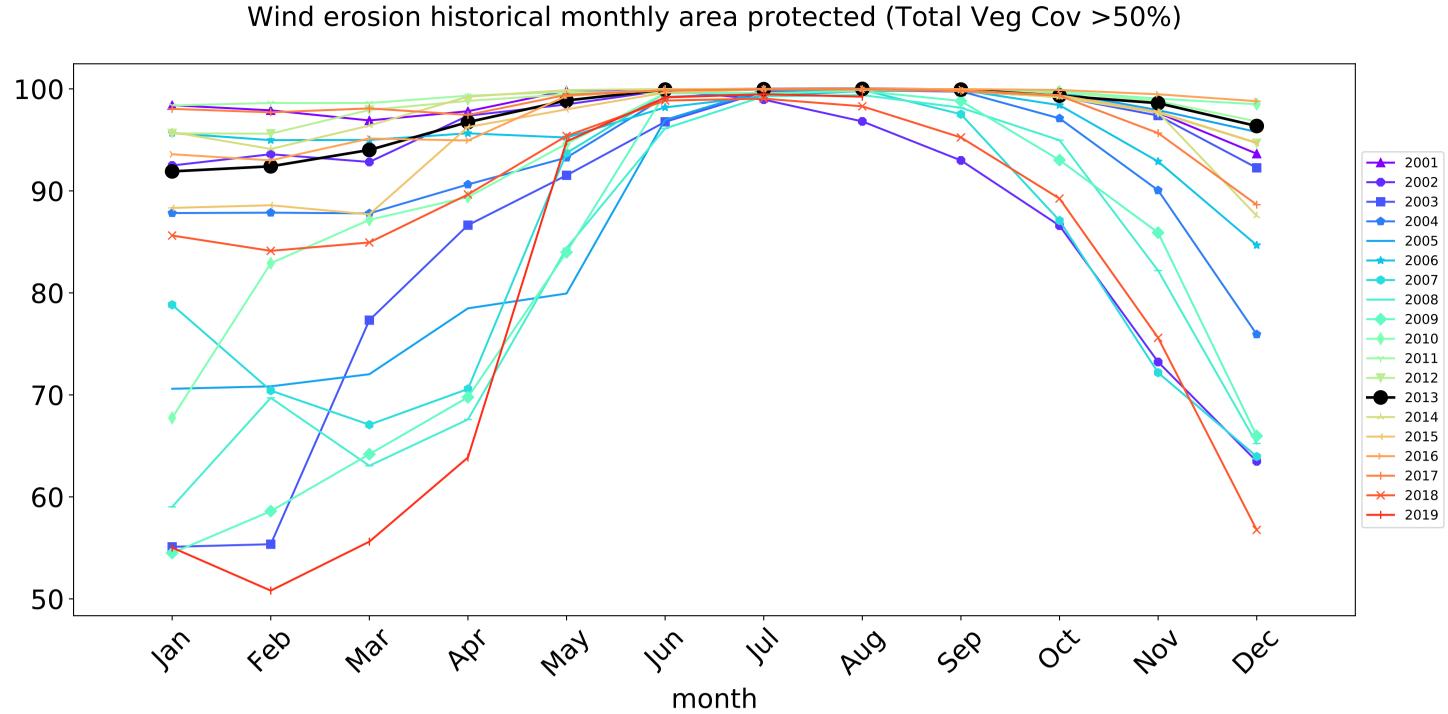


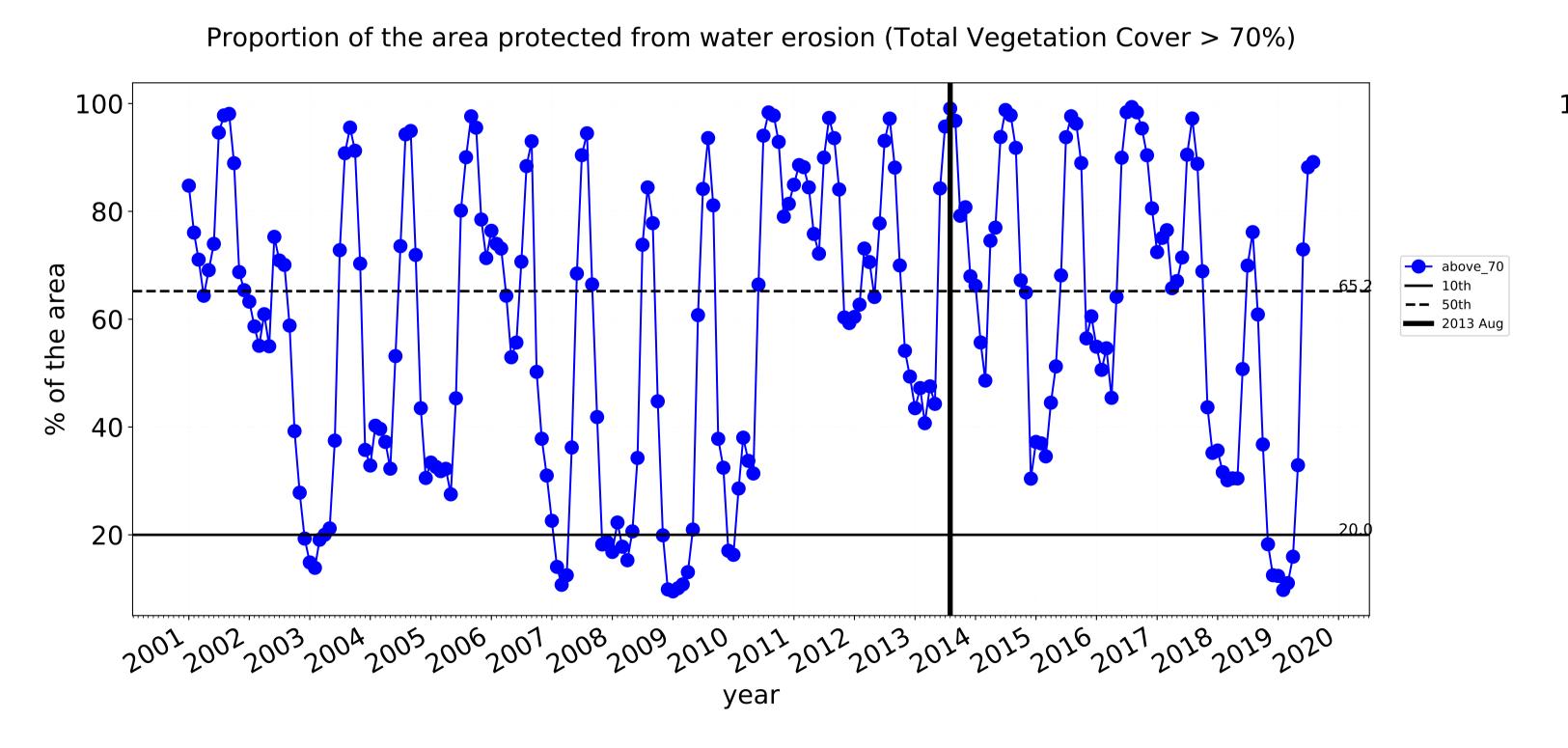


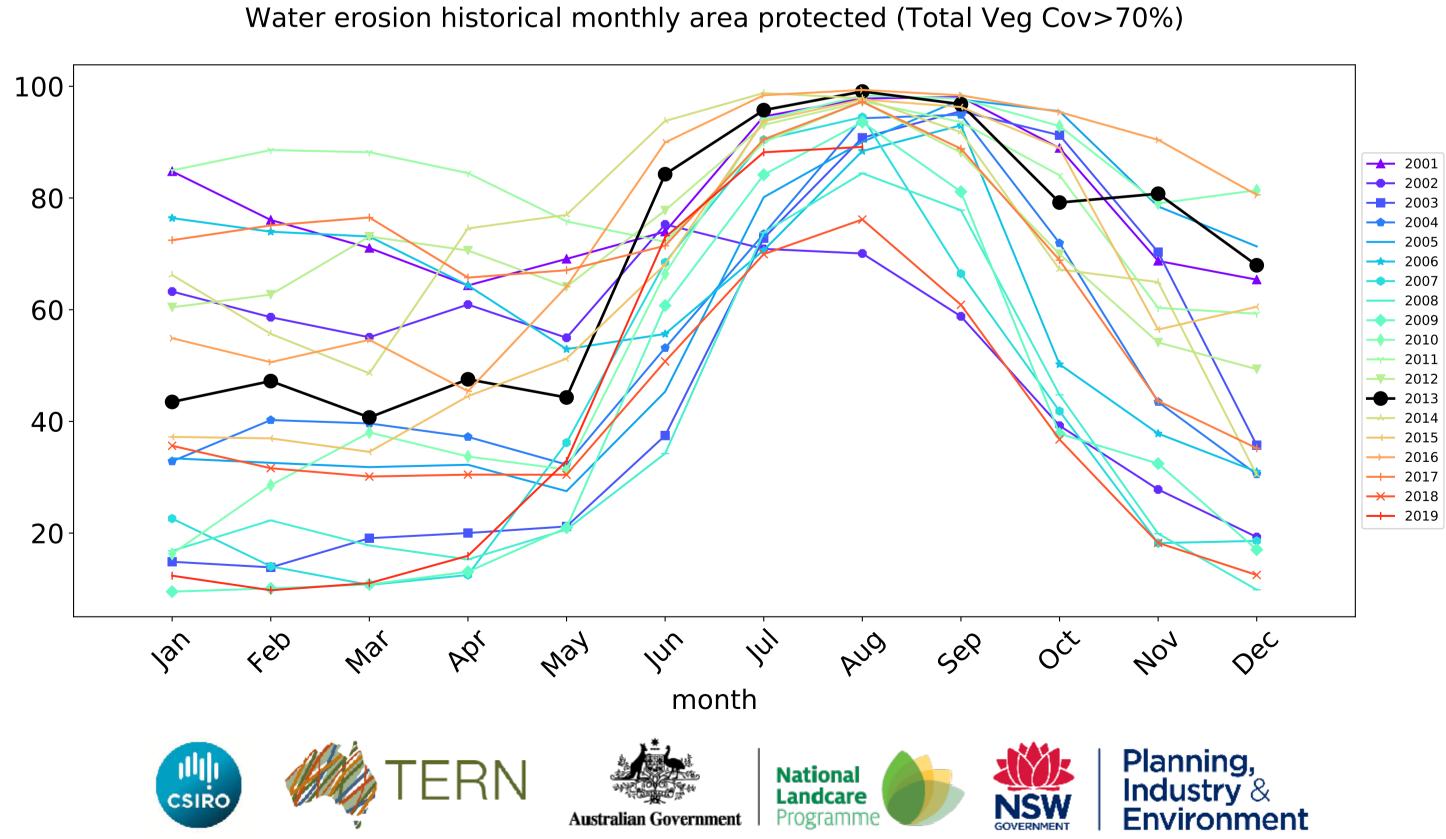


Cropping timeseries

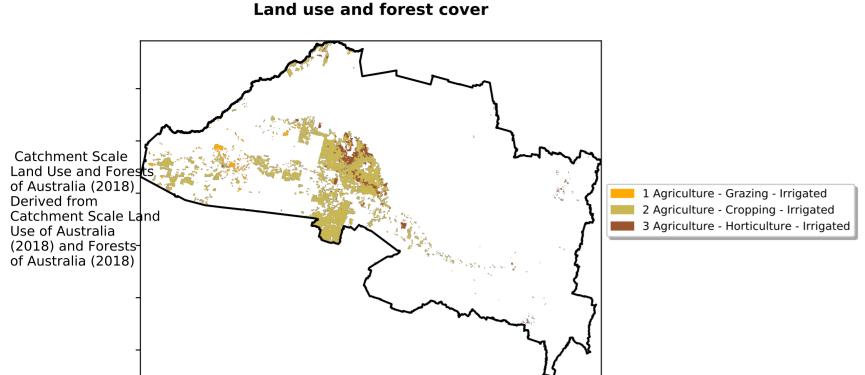






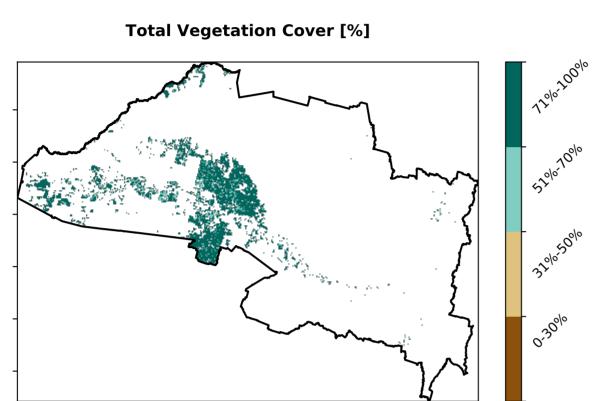


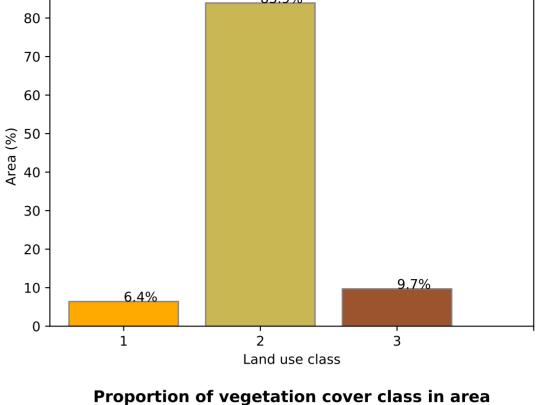
Irrigation



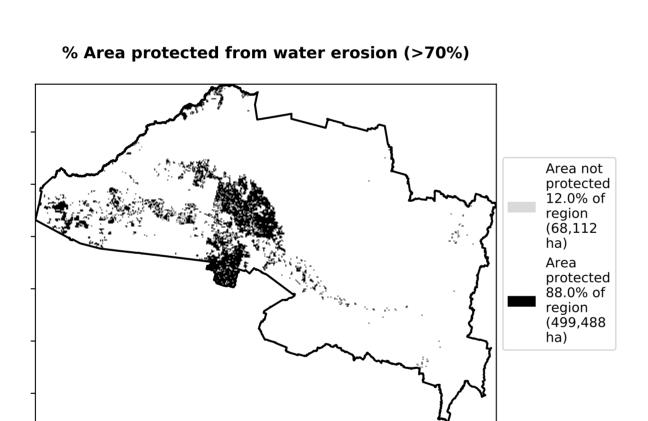
83.9% 80 70 60 Area (%) 30 20 9.7% 10 6.4% 3 2

Proportion of each land class in area

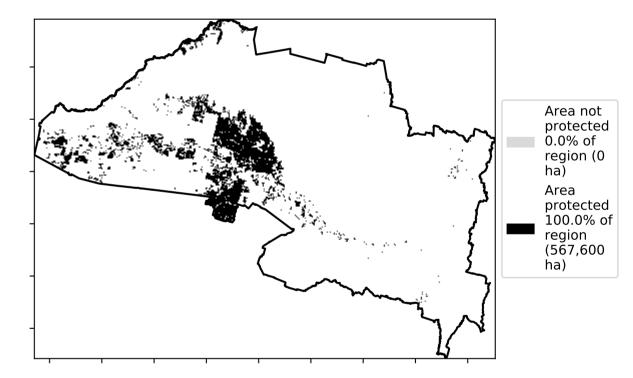


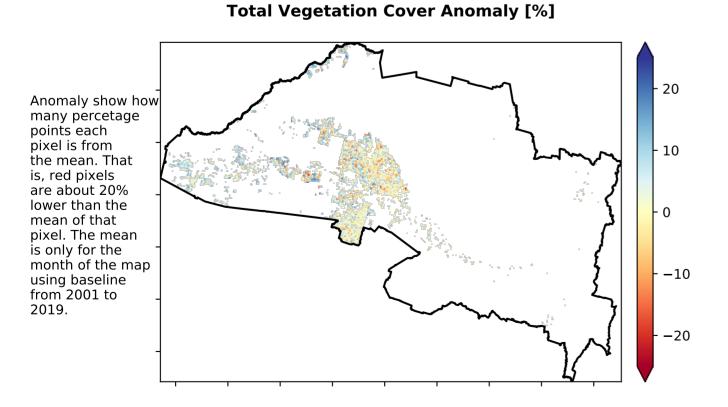


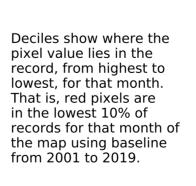
88.0% 80 60 Area (%) 20 11.9% 0.1% 0-30% 51%-70% 31%-50% 71%-100% **Total Vegetation Cover class**

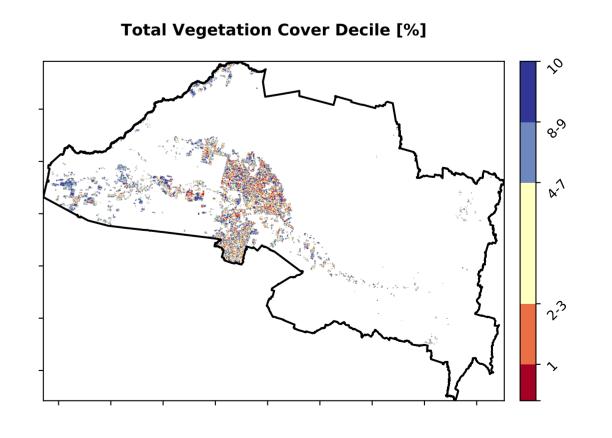


% Area protected from wind erosion (>50%)







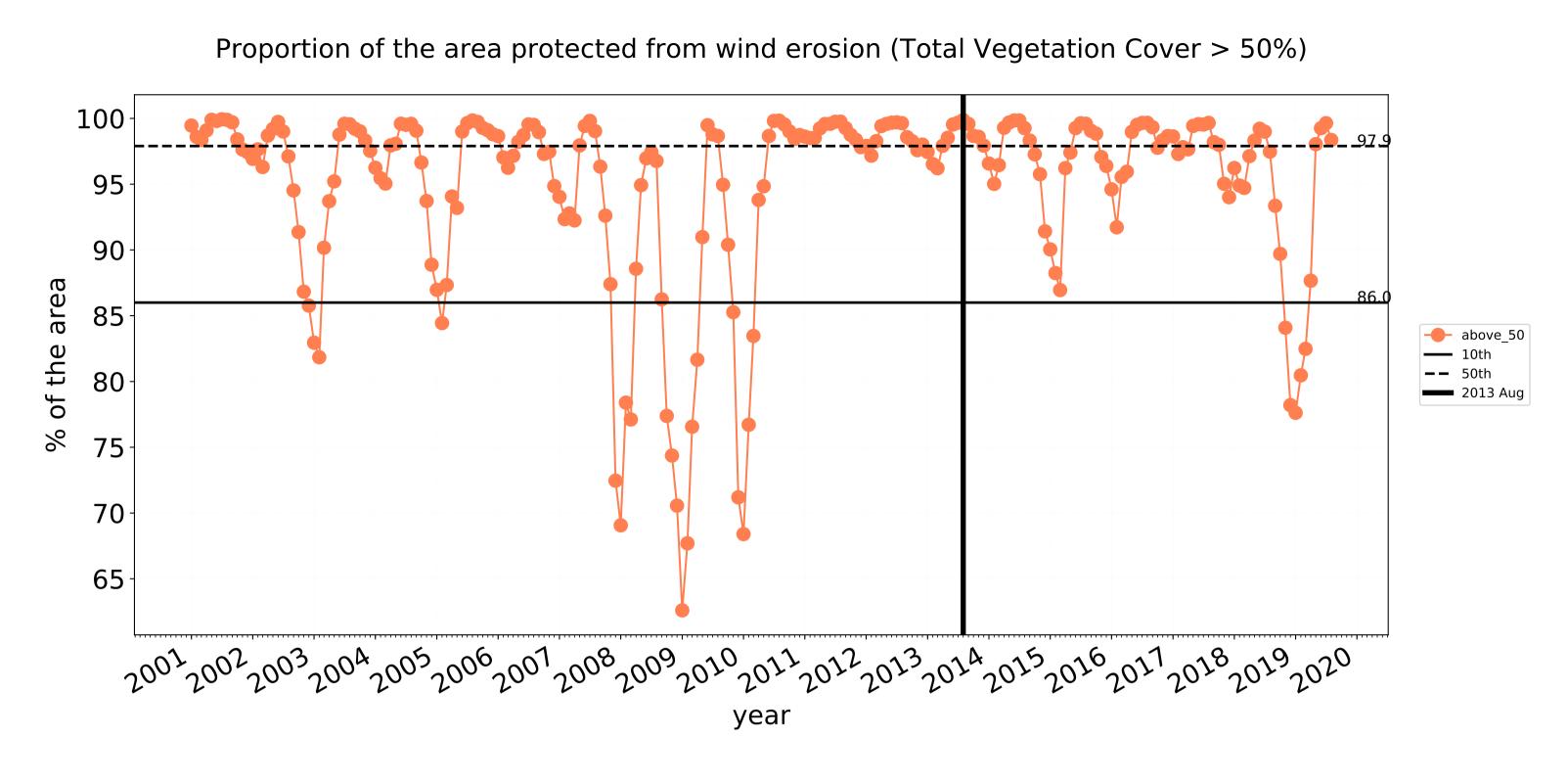


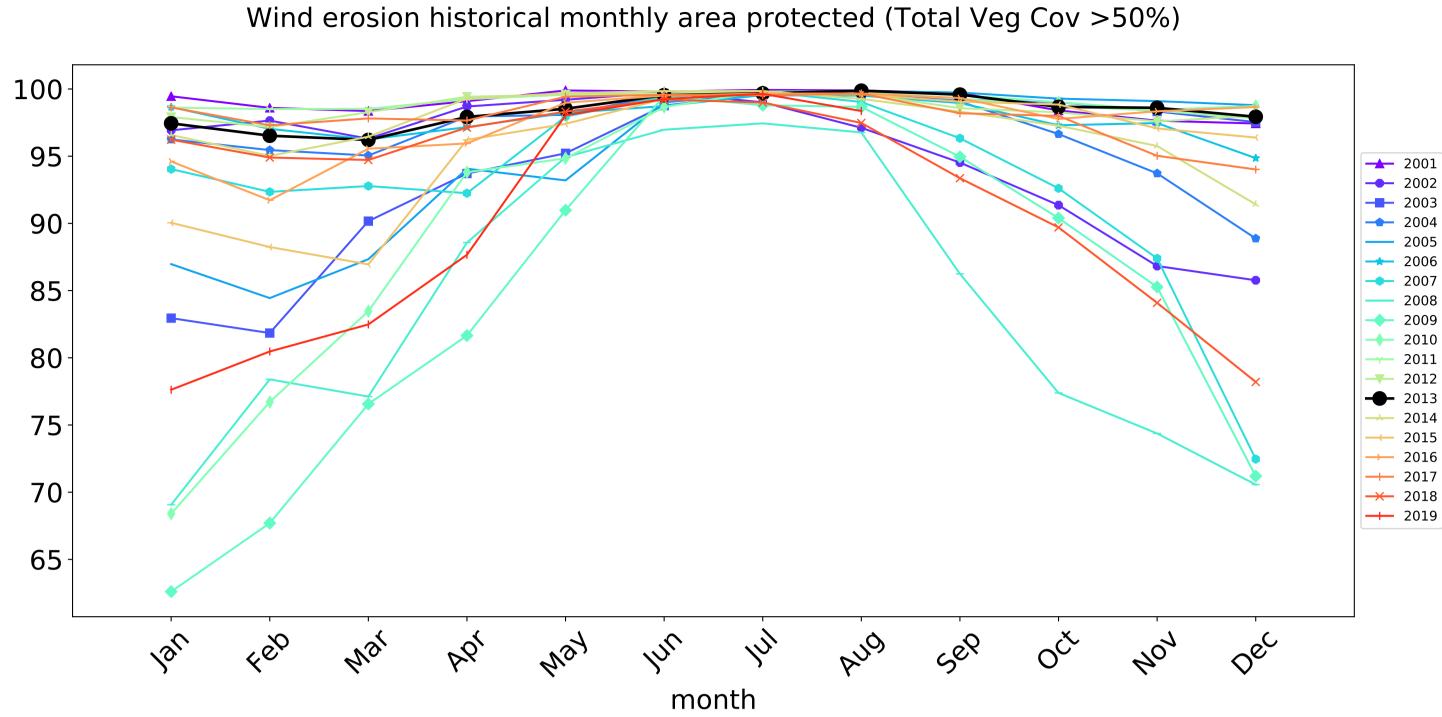


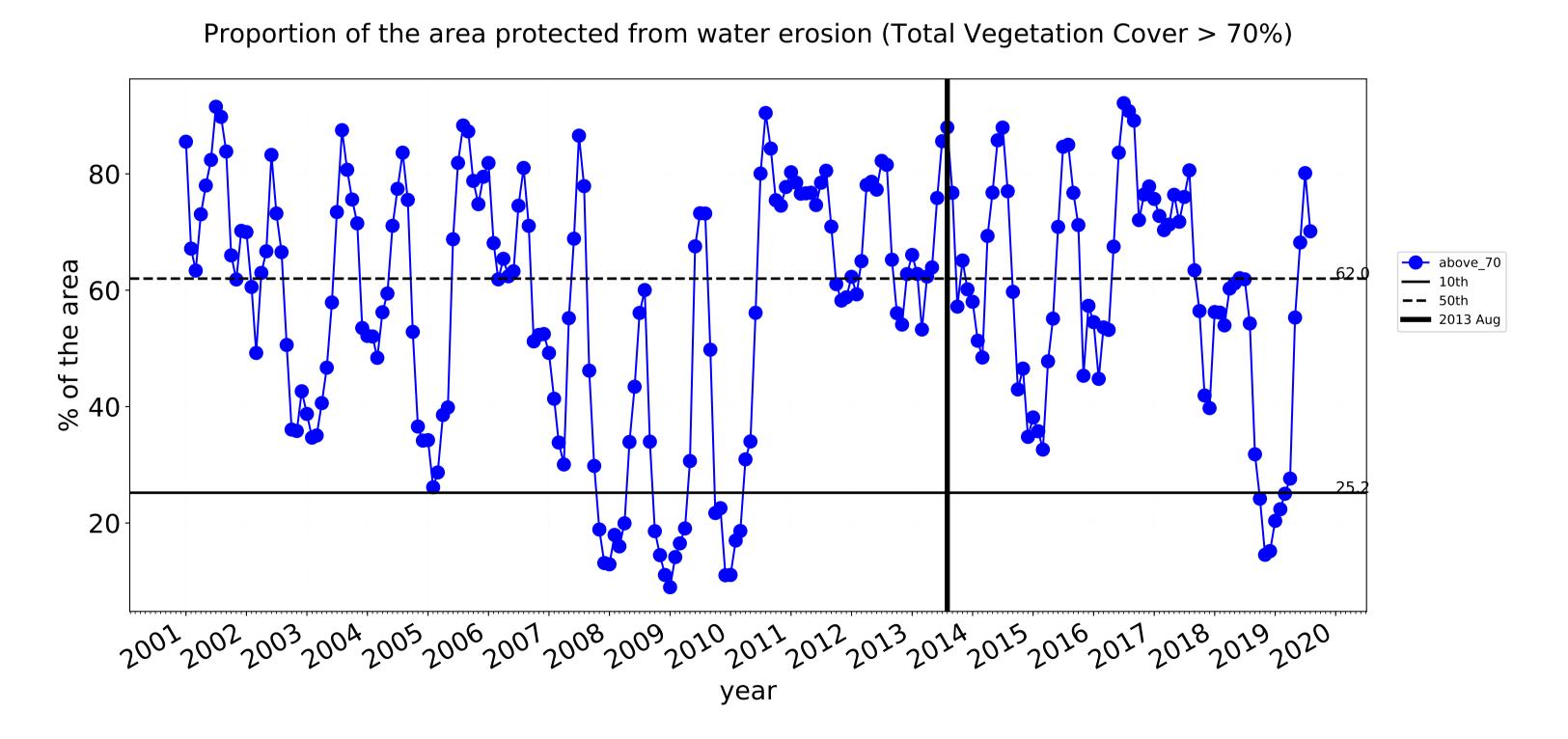


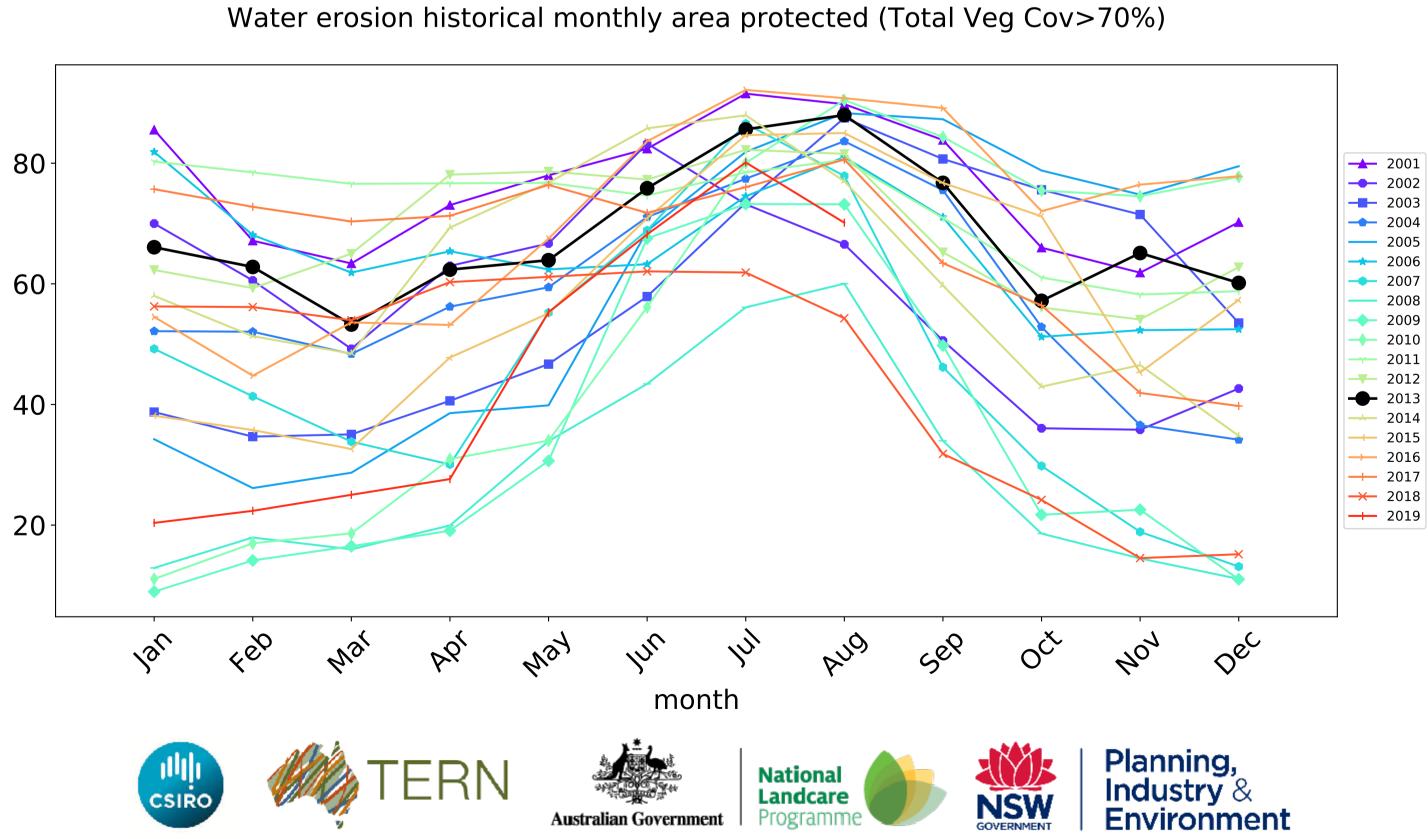










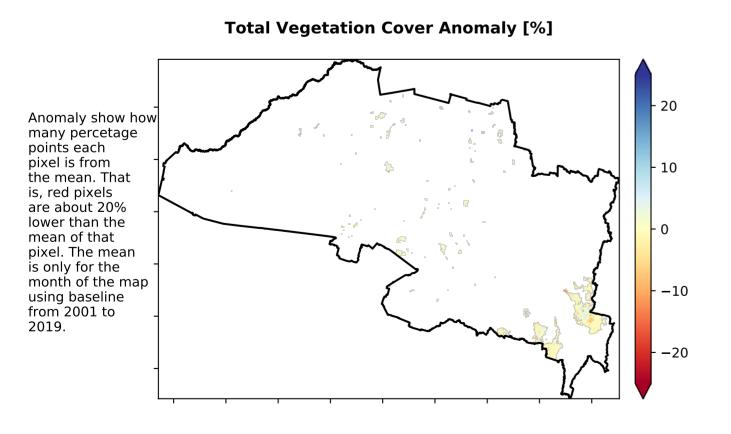


Production native forests and plantation forests

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

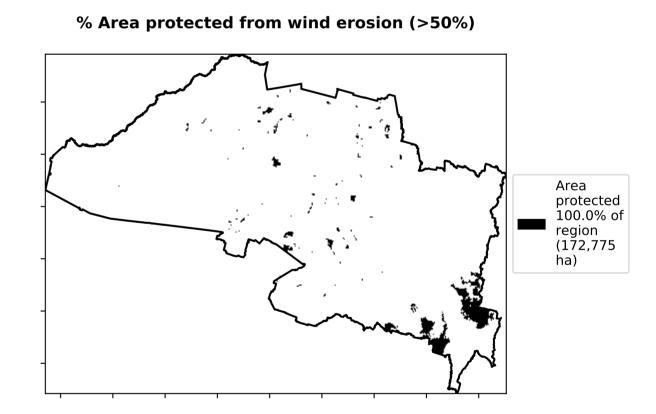
Total Vegetation Cover [%] Teloradolo Seloradolo Seloradolo Seloradolo Seloradolo Seloradolo Seloradolo

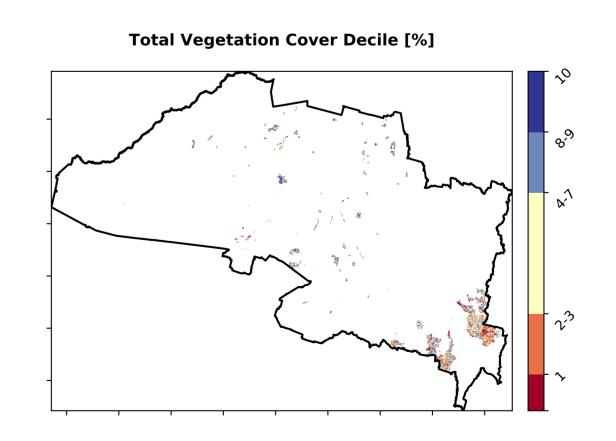
Area not protected 0.2% of region (345 ha) Area protected 99.8% of region (172,429 ha)



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 99.8% 80 - 99.8% 40 - 20 - 0.0% 0.0% 0.2% 0-30% 31%-50% 51%-70% 71%-100% Total Vegetation Cover class









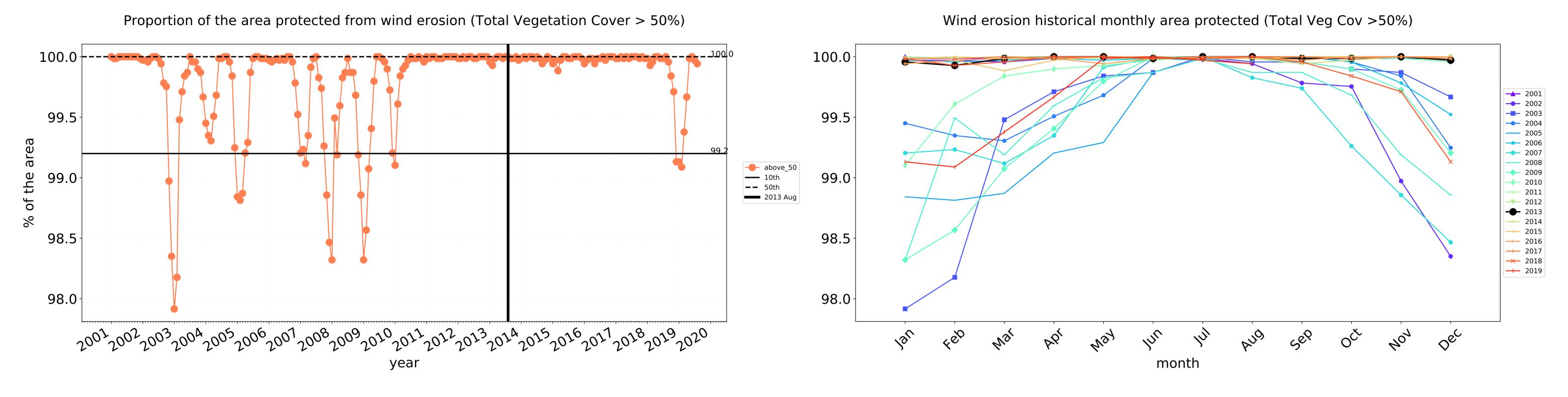


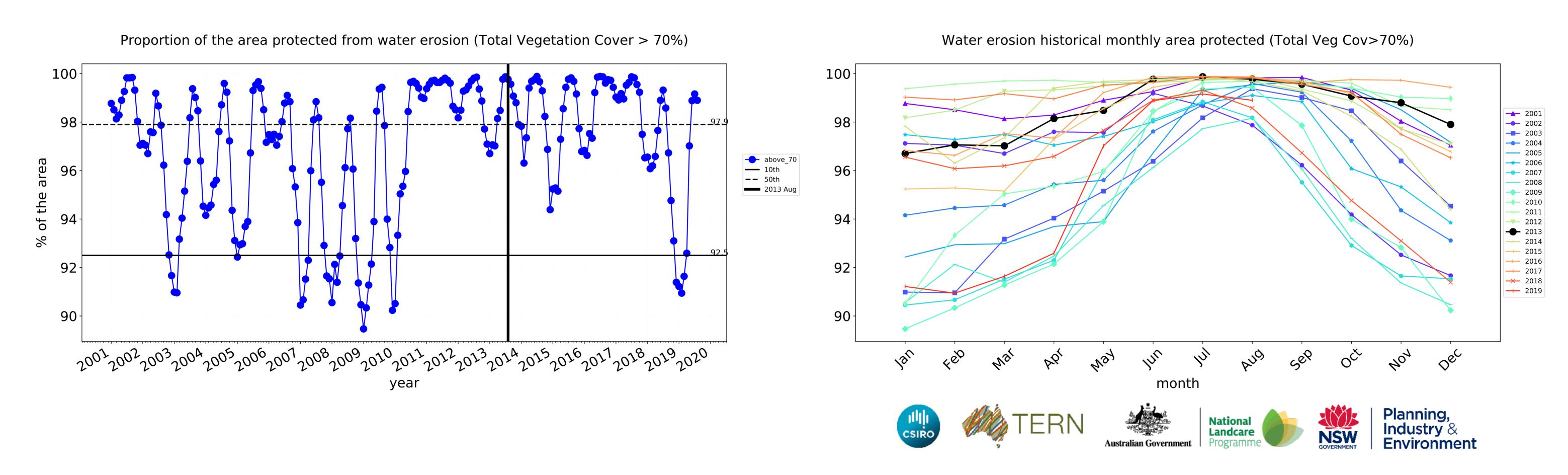






Production native forests and plantation forests timeseries





Riverina (6,688,000 ha and no data 20,335 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	6,688,000	100.0% 6,686,576	99.9% 6,683,904	97.0% 6,487,236	82.5% 5,519,506	29.3% 1,959,509	9.0% 600,042
Conservation and natural environments	323,100	100.0% 323,050	100.0% 323,050	99.1% 320,100	90.0% 290,900	66.7% 215,600	29.7% 95,825
Conservation and natural environments non forest	83,350	100.0% 83,350	100.0% 83,350	96.6% 80,525	63.4% 52,875	20.8% 17,325	4.6% 3,875
Conservation and natural environments Forest (non woodland)	195,250	100.0% 195,200	100.0% 195,200	99.9% 195,100	99.5% 194,200	87.7% 171,300	43.3% 84,550
Agriculture	6,068,100	100.0% 6,067,750	100.0% 6,066,450	97.0% 5,888,800	82.2% 4,988,050	26.3% 1,596,125	7.0% 422,450
Grazing	2,311,700	100.0% 2,311,375	100.0% 2,310,950	96.5% 2,230,325	76.5% 1,769,450	23.0% 531,175	4.6% 106,050
Grazing non forest	2,066,700	100.0% 2,066,375	100.0% 2,065,950	96.1% 1,985,625	74.2% 1,532,600	19.0% 393,700	3.5% 72,925
Grazing Woodland forest	141,650	100.0% 141,650	100.0% 141,650	99.9% 141,450	95.9% 135,900	52.1% 73,825	11.6% 16,475
Grazing - Forest (non woodland)	103,350	100.0% 103,350	100.0% 103,350	99.9% 103,250	97.7% 100,950	61.6% 63,650	16.1% 16,650
Cropping	3,186,975	100.0% 3,186,950	100.0% 3,186,800	99.1% 3,157,325	91.4% 2,913,250	32.0% 1,020,950	9.6% 307,150
Irrigation	567,600	100.0% 567,600	99.9% 566,875	88.0% 499,400	53.6% 304,050	7.7% 43,675	1.6% 9,200
Production native forests and plantation forests	172,775	100.0% 172,775	100.0% 172,775	99.8% 172,375	98.3% 169,800	79.2% 136,875	46.2% 79,900











