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: October 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







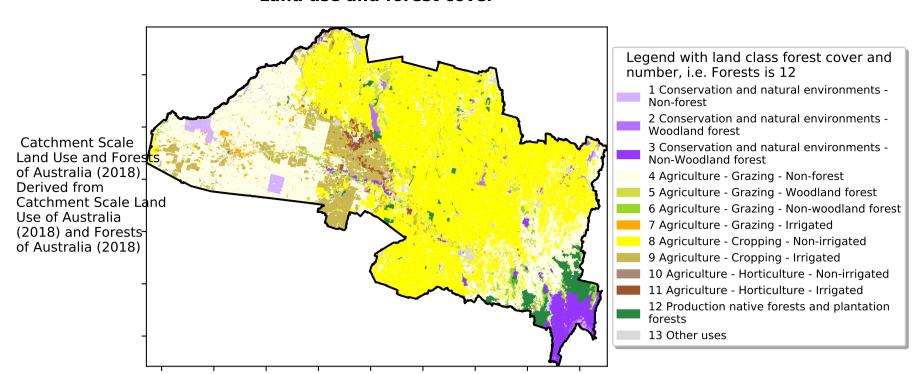




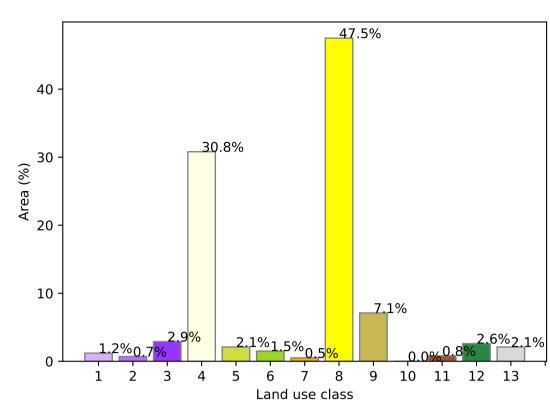


Vegetation Cover Oct 2013

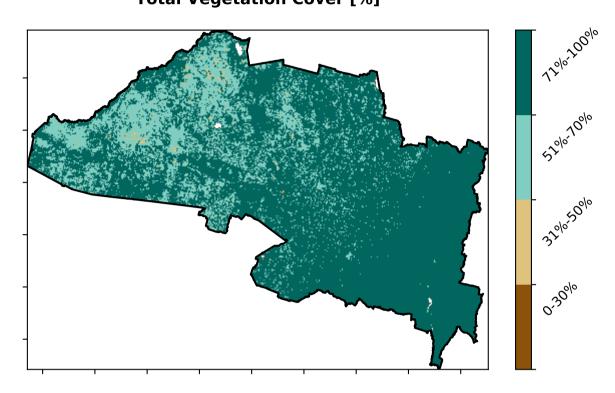
Land use and forest cover



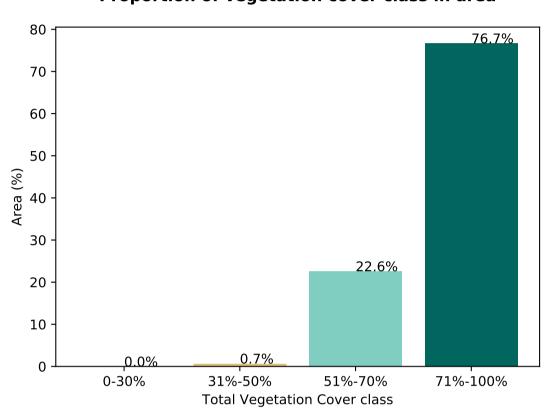
Proportion of each land class in area

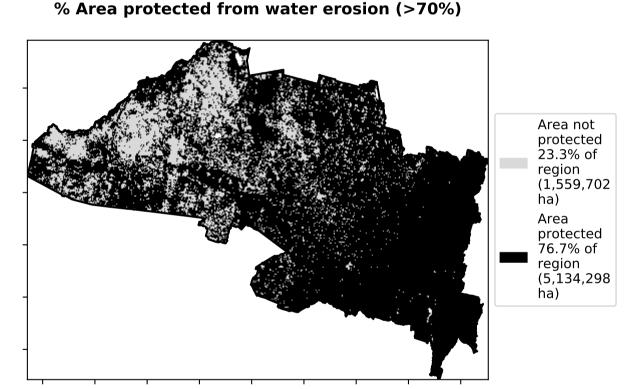


Total Vegetation Cover [%]



Proportion of vegetation cover class in area

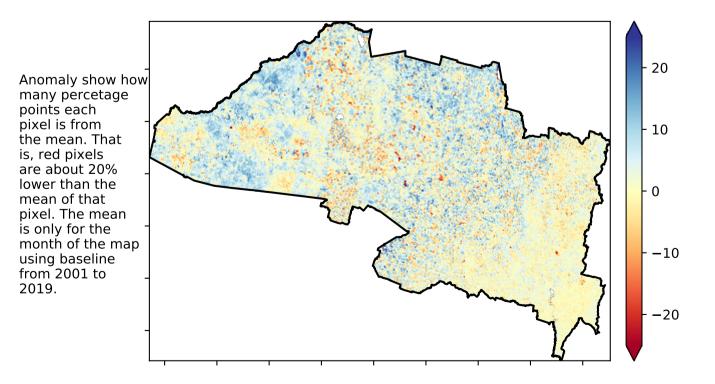




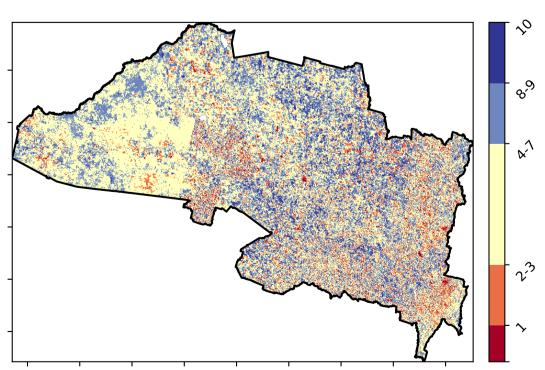
% Area protected from wind erosion (>50%)



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.





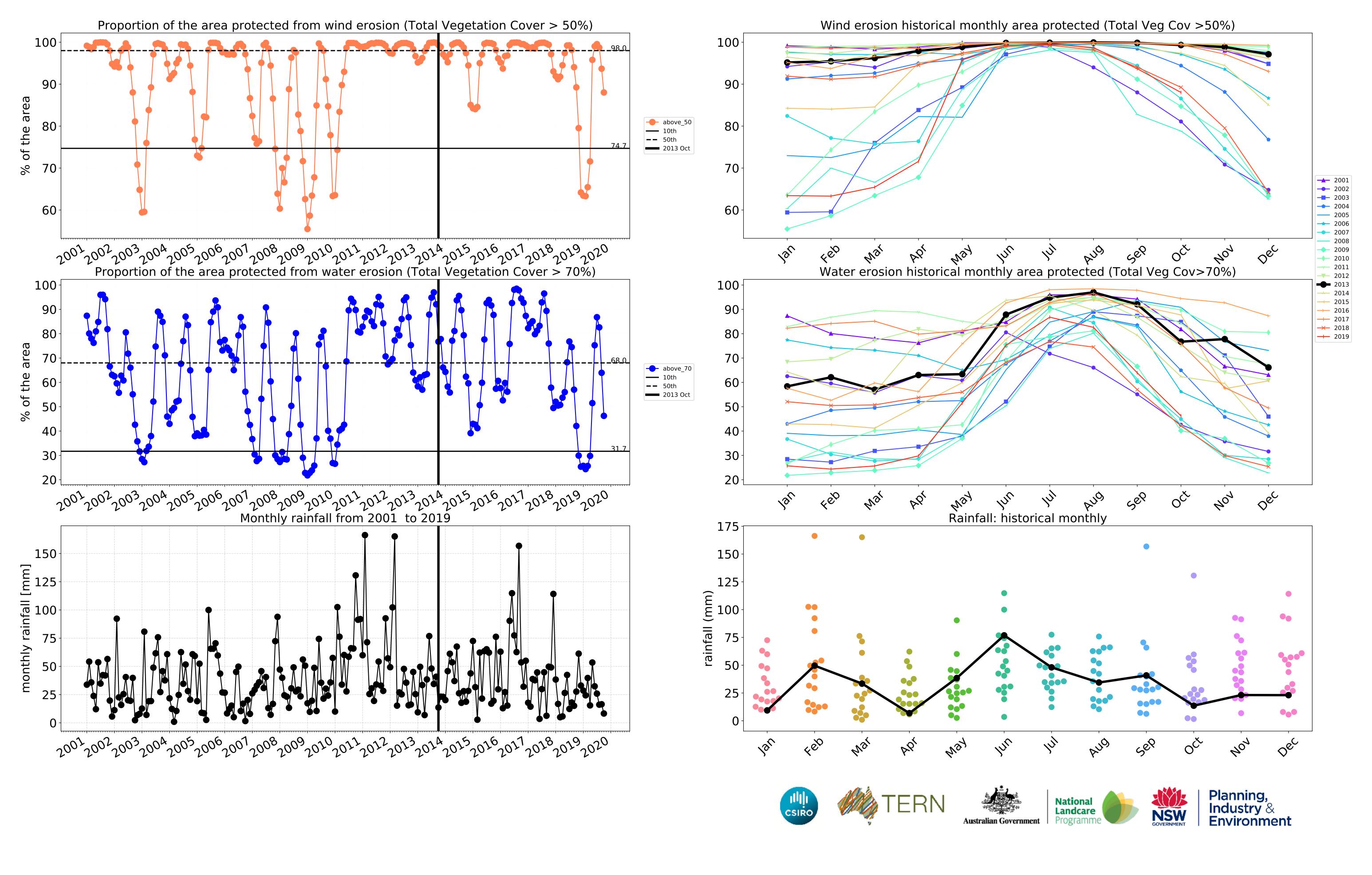




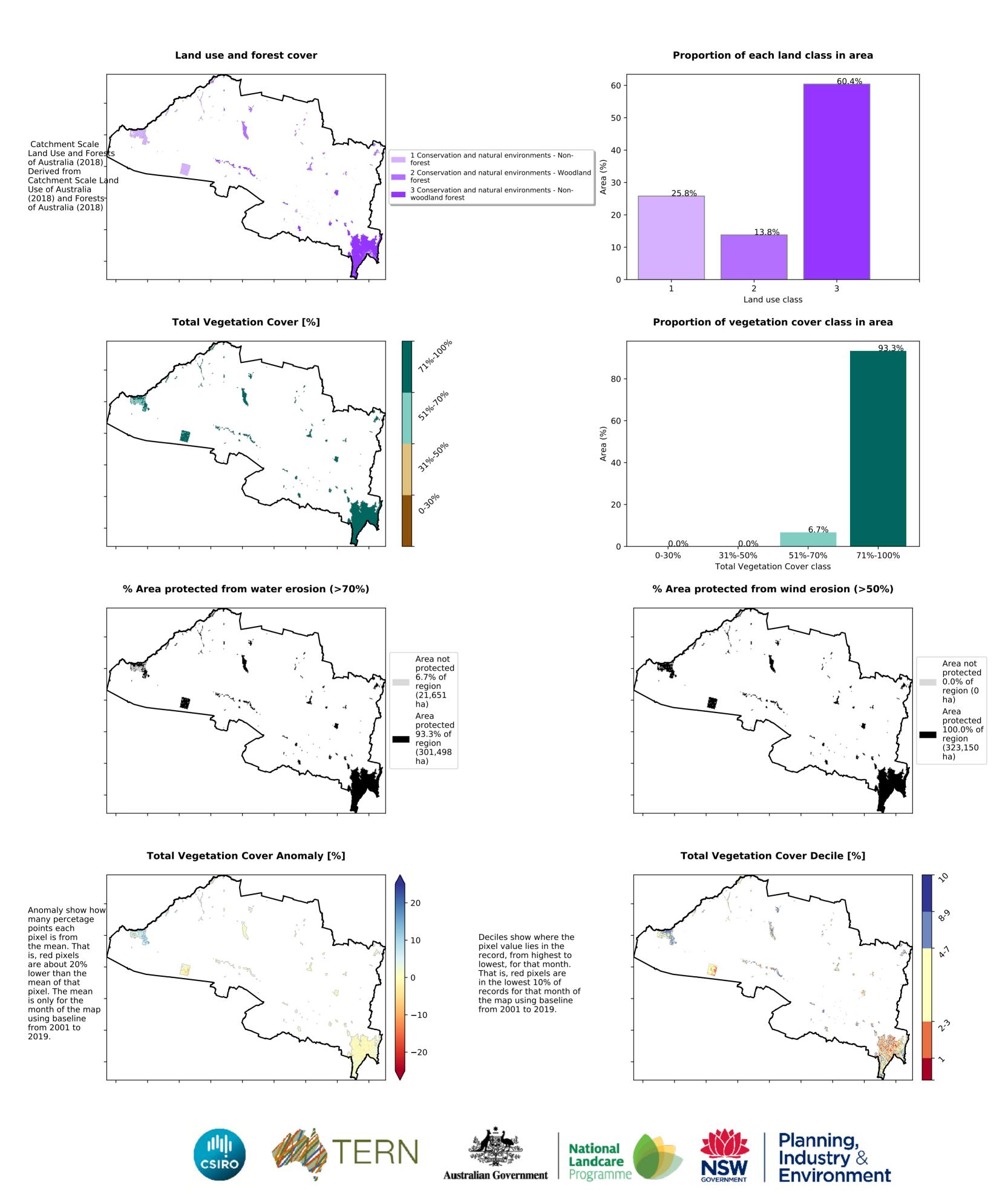




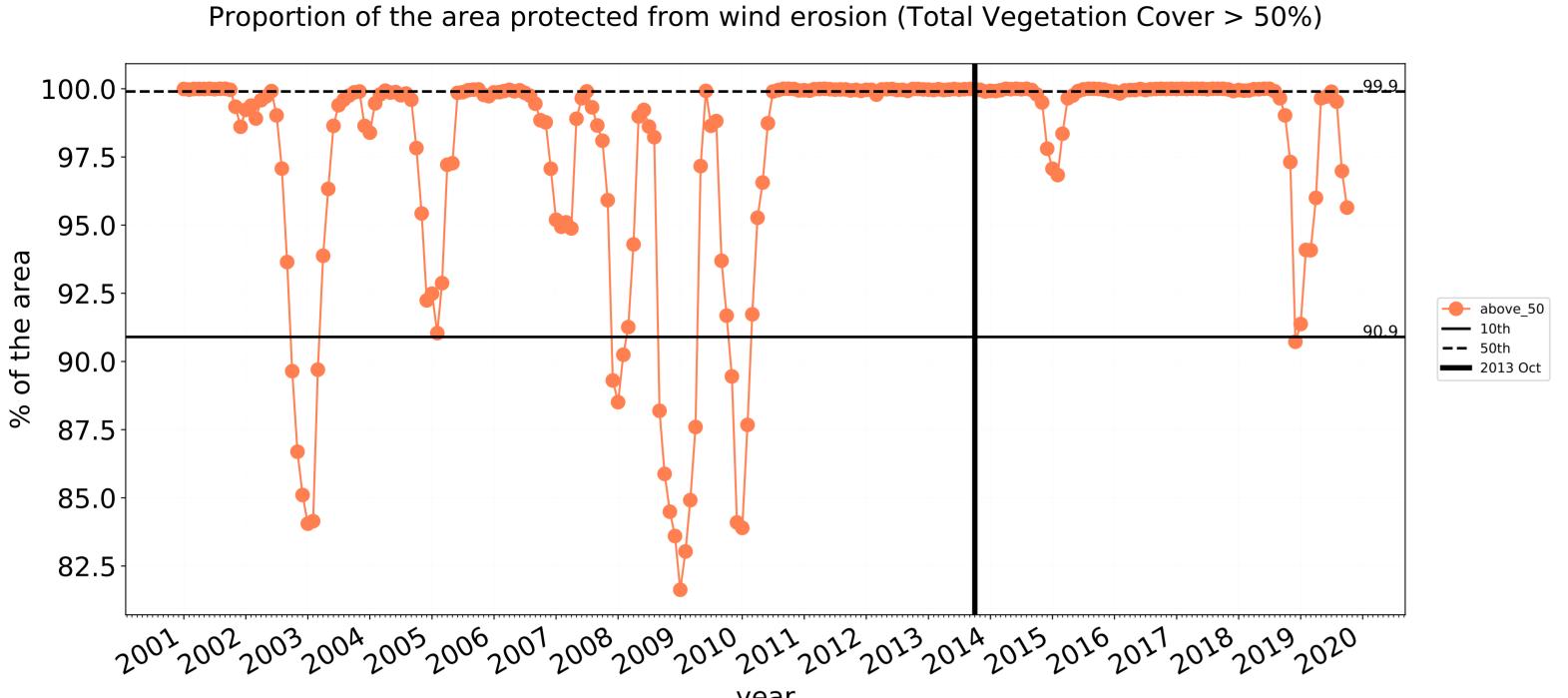


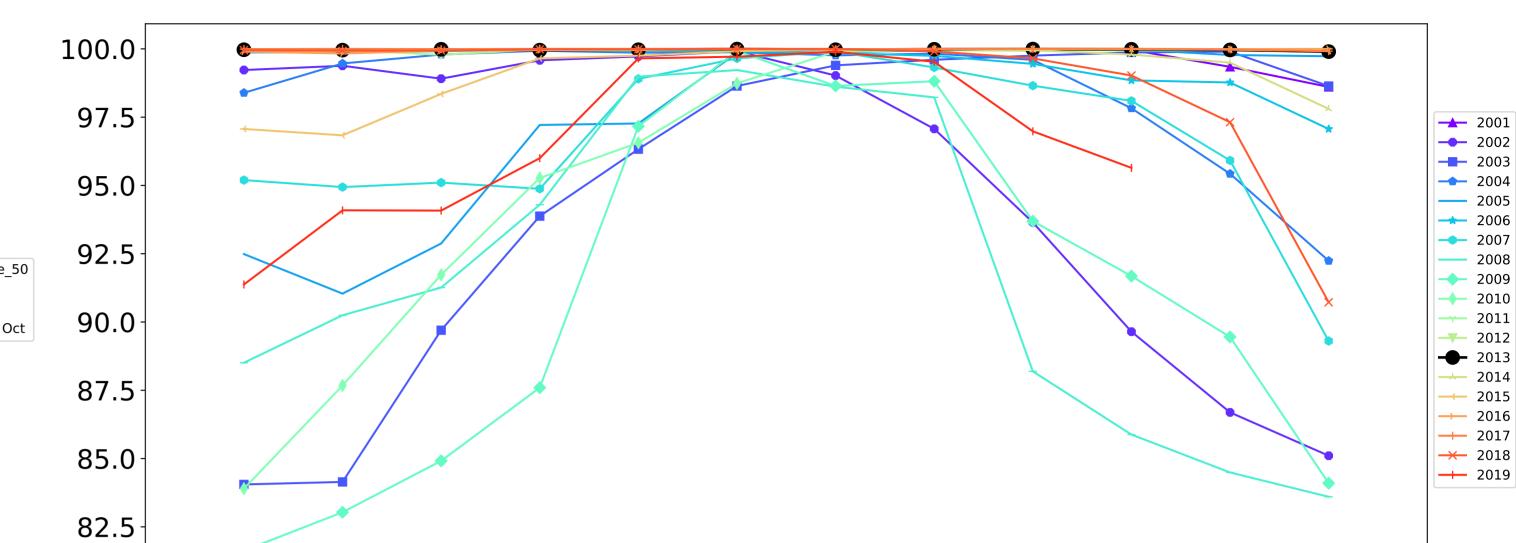


Conservation and natural environments



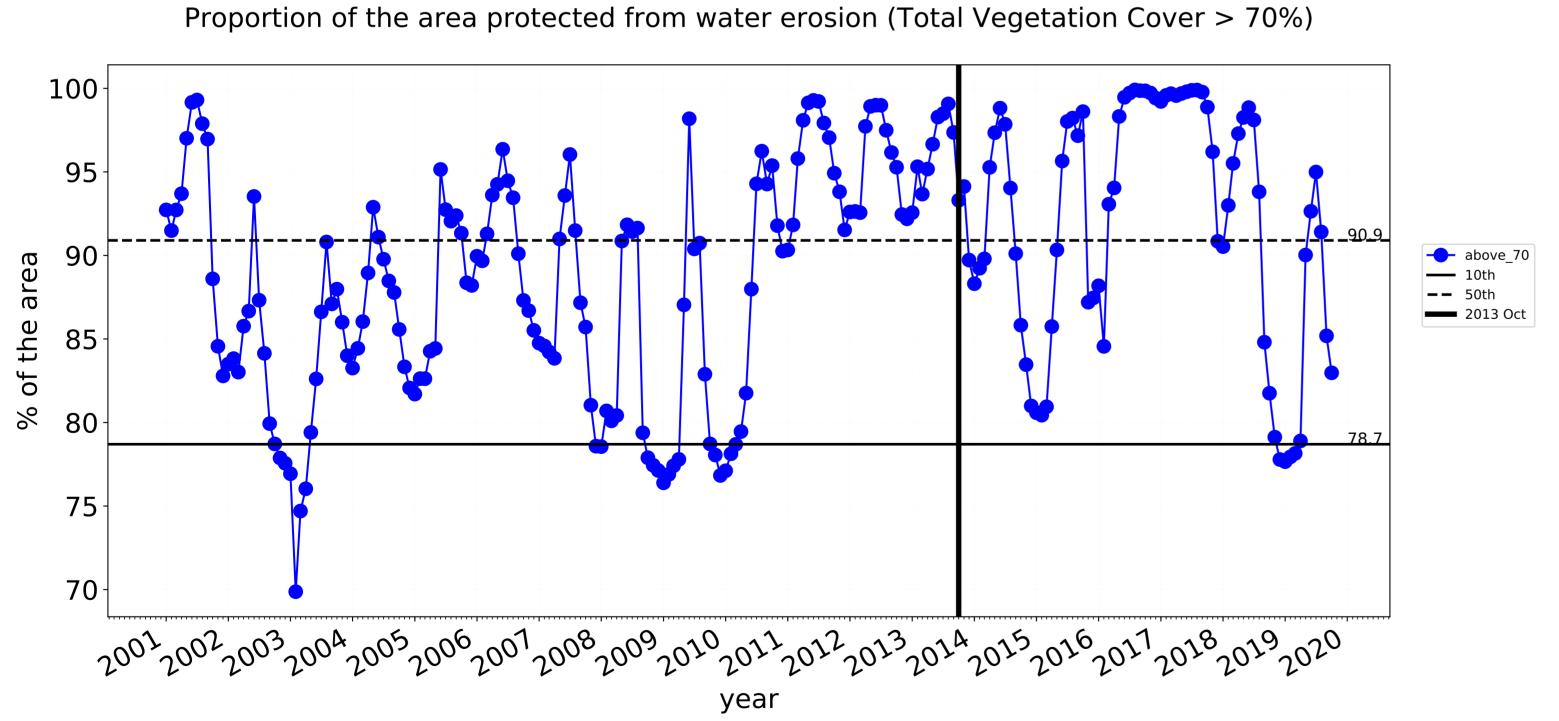
Conservation and natural environments timeseries

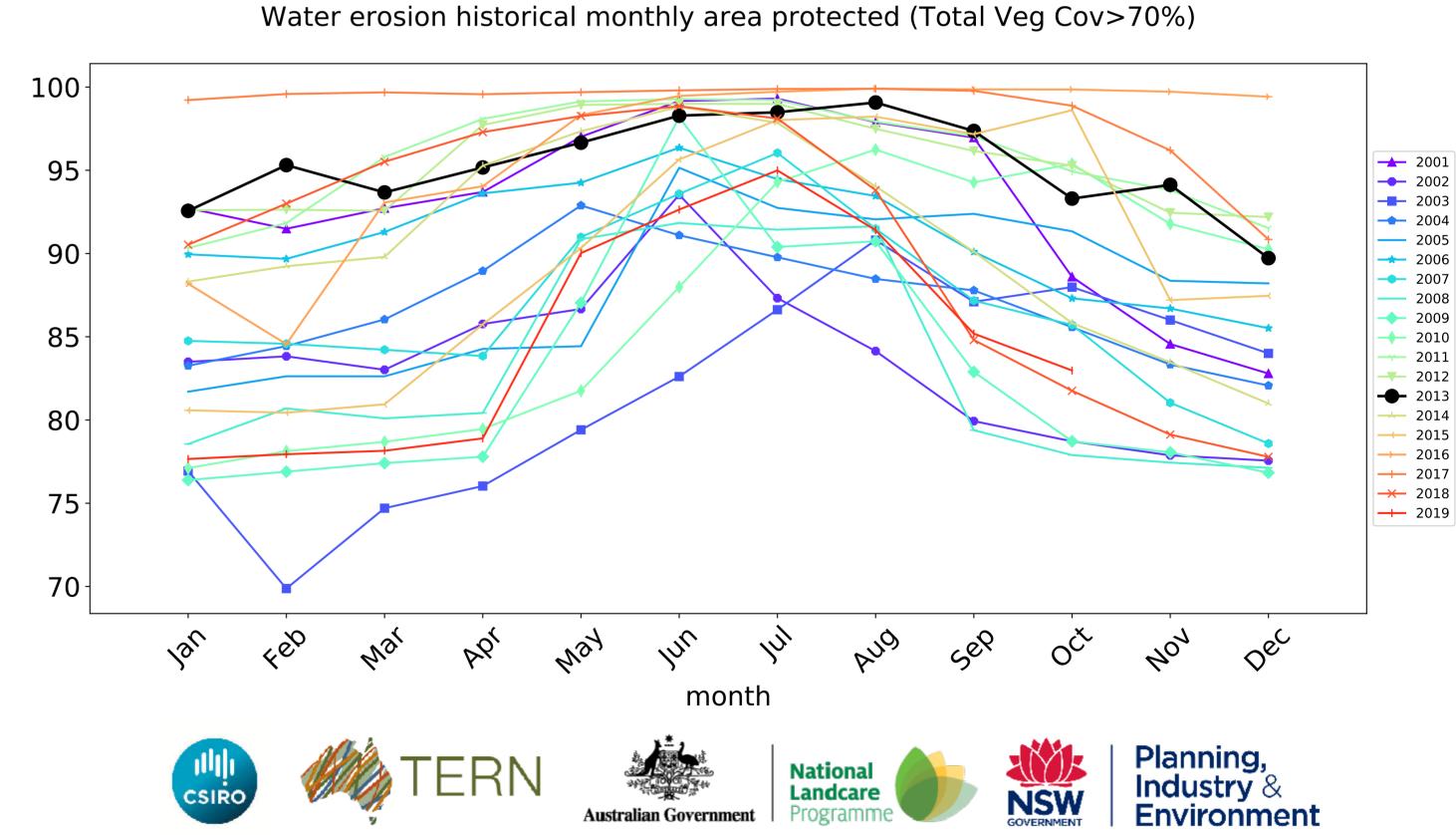




month

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



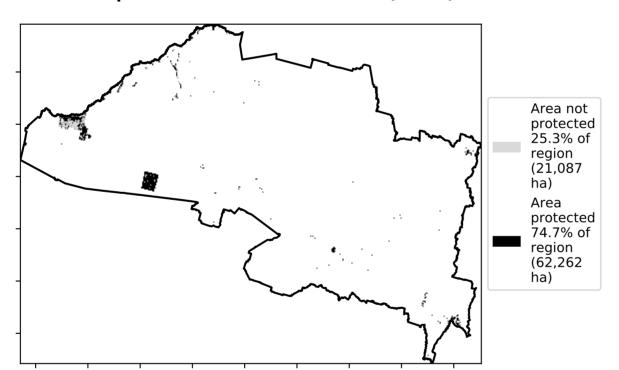


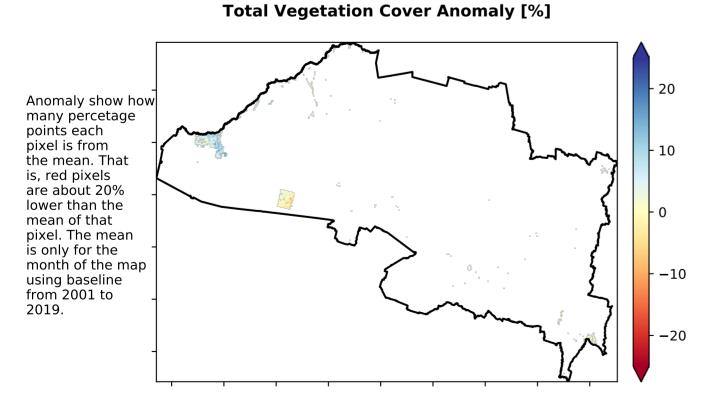
Conservation and natural environments non forest

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

Total Vegetation Cover [%]

% Area protected from water erosion (>70%)





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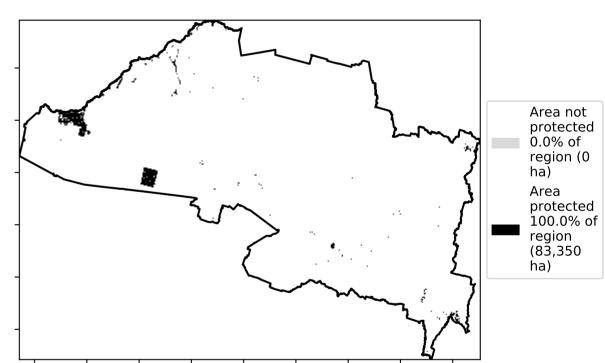
70 - 60 - 50 - (%) 40 - 25.2% 20 - 10 - 0.0% 0.1%

% Area protected from wind erosion (>50%)

Total Vegetation Cover class

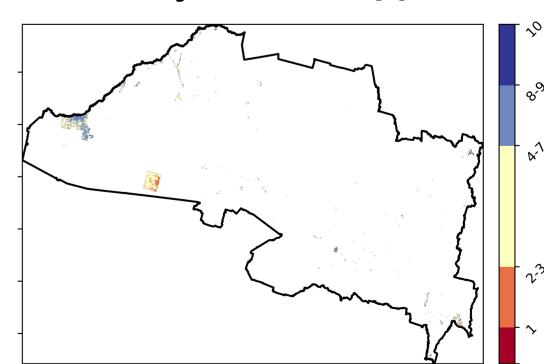
31%-50%

0-30%



51%-70%

71%-100%







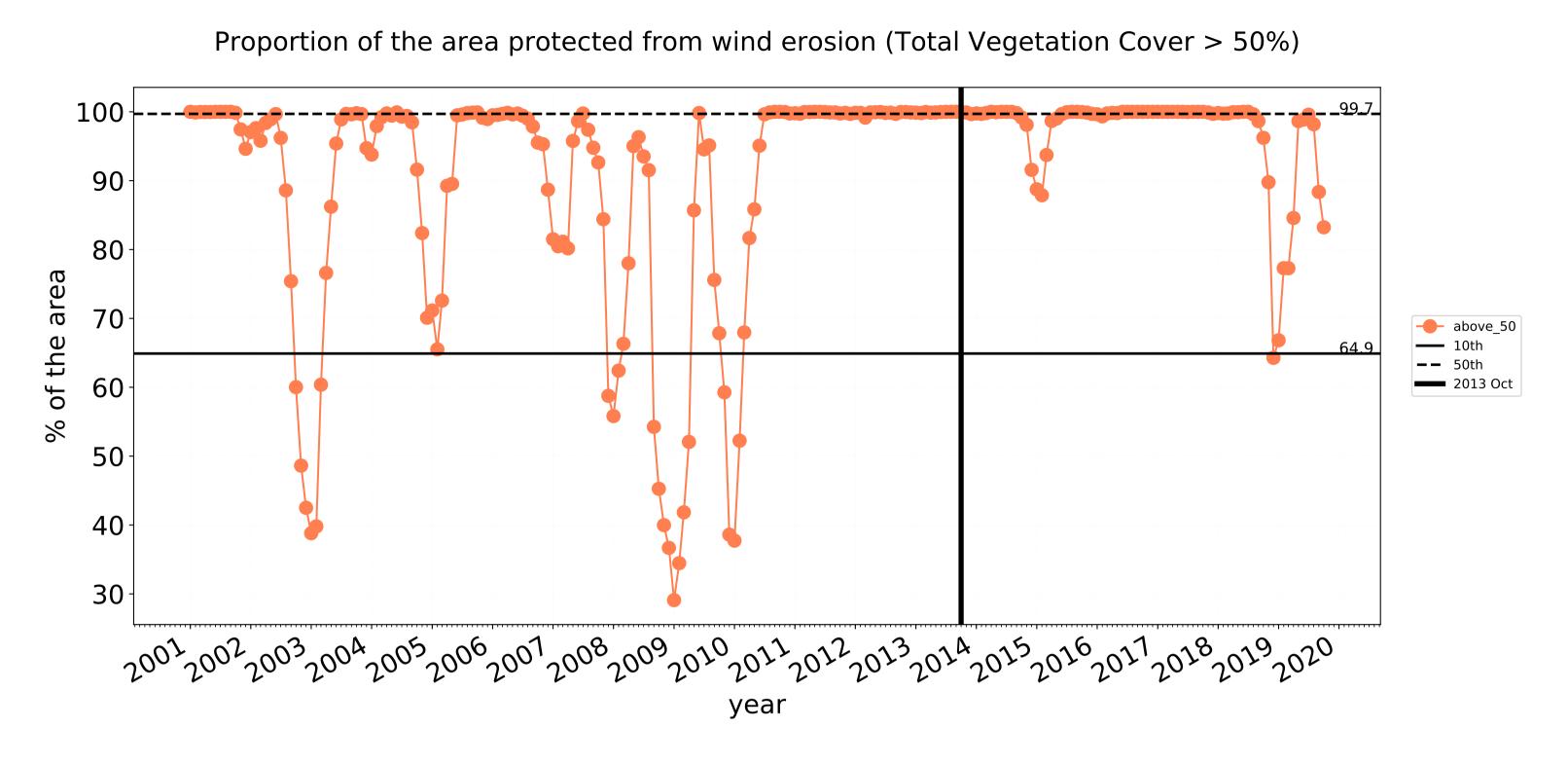


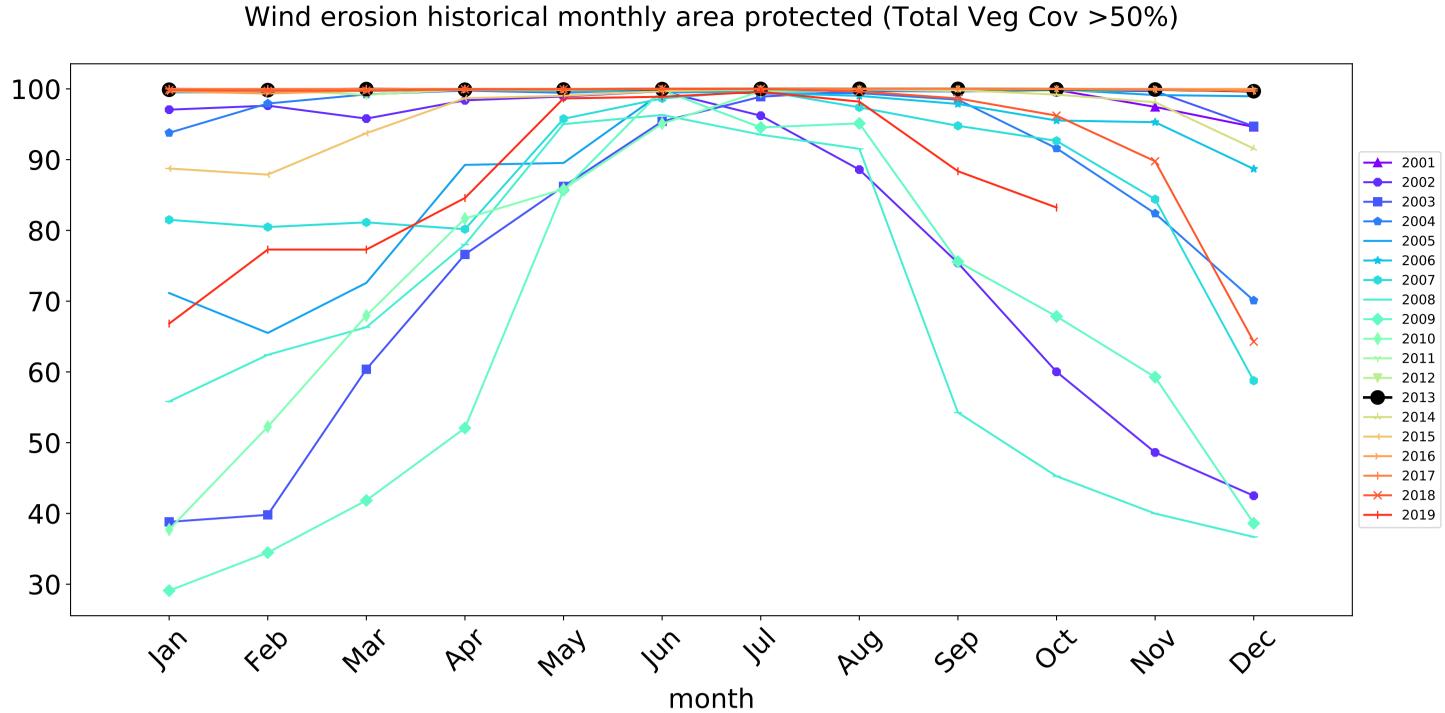


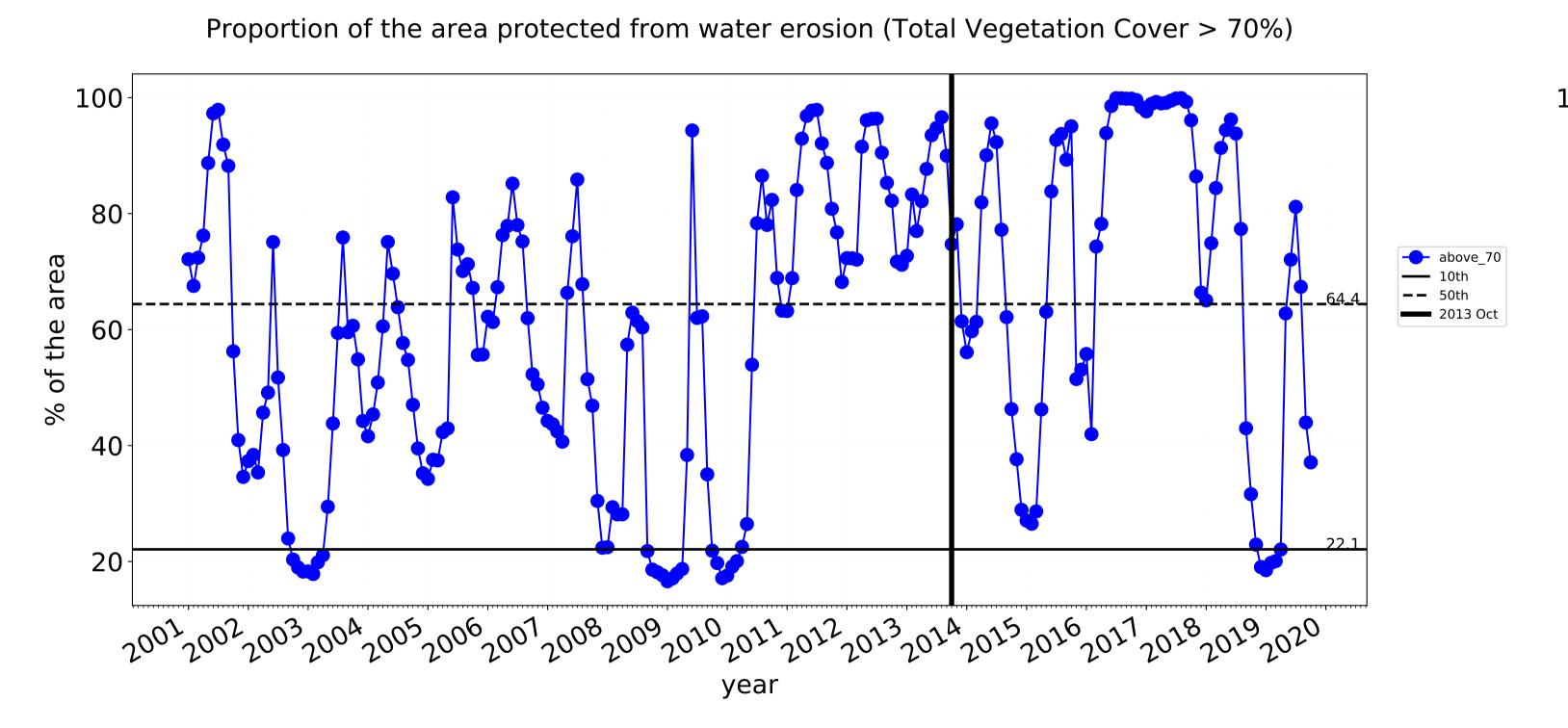


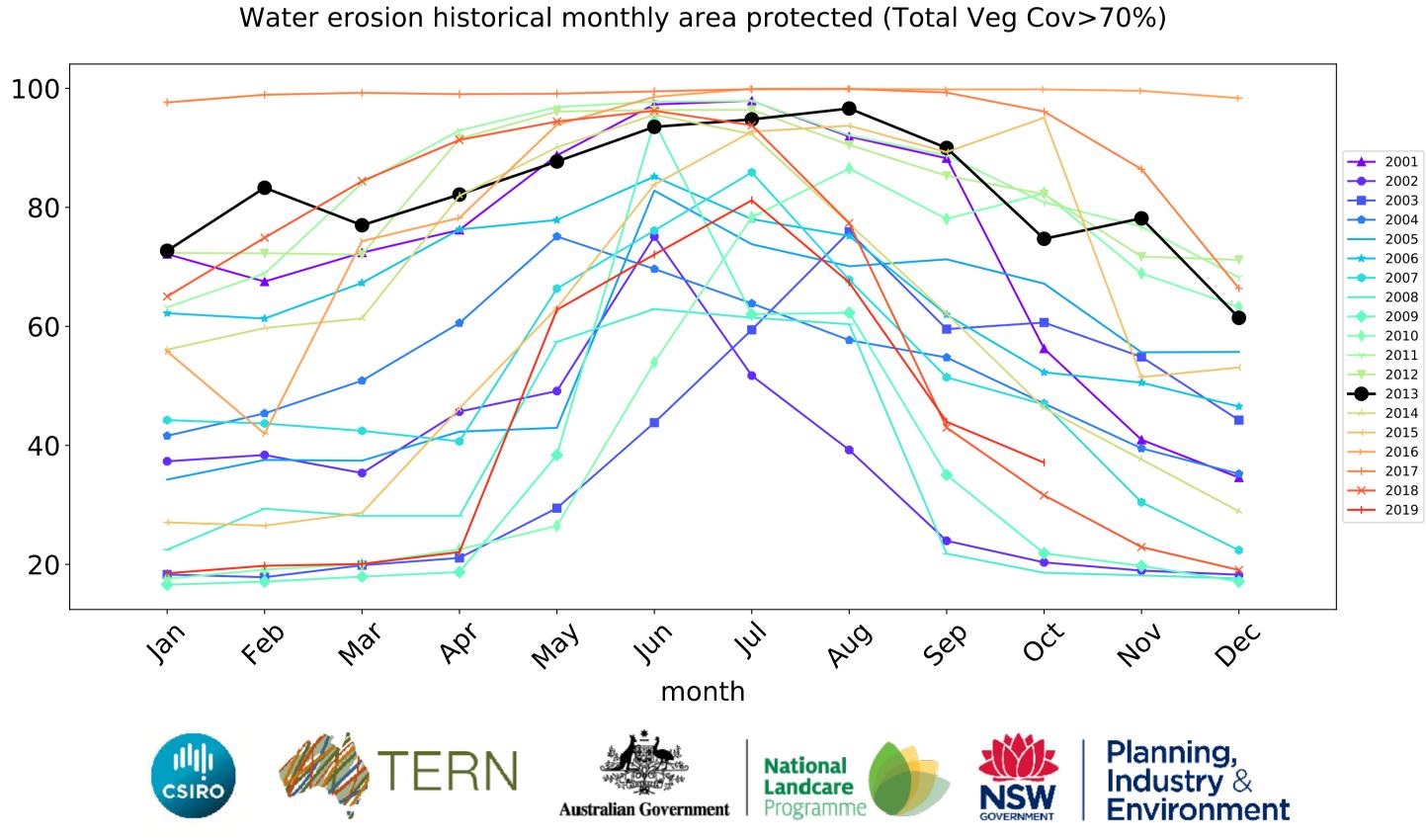


Conservation and natural environments non forest timeseries

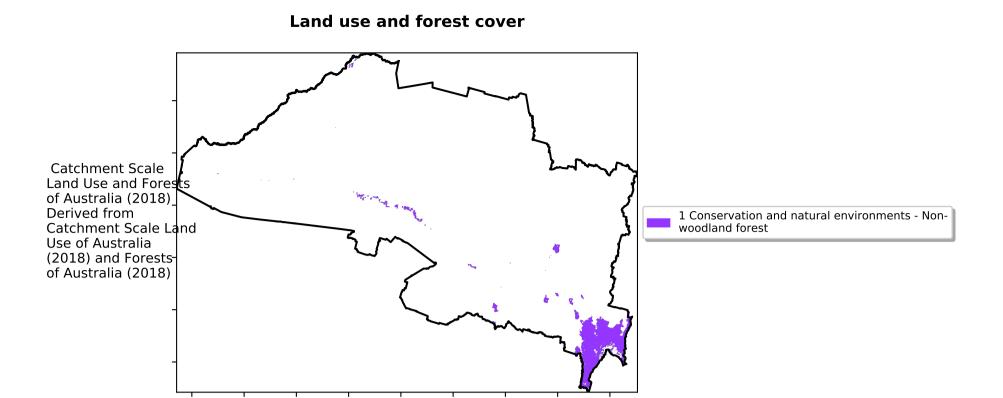




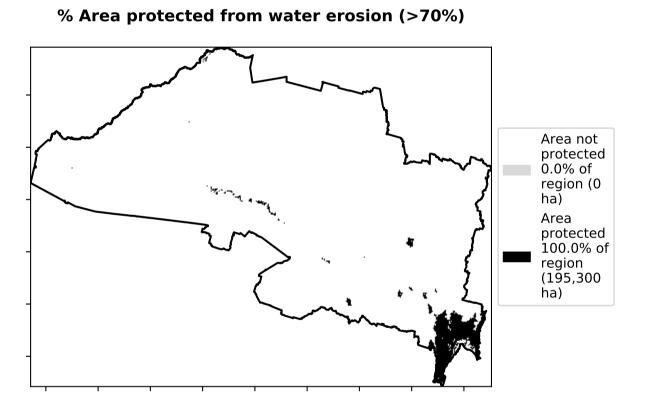


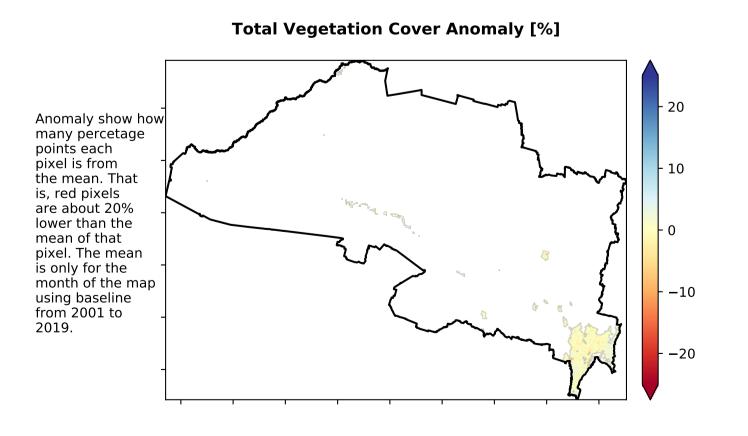


Conservation and natural environments Forest (non woodland)

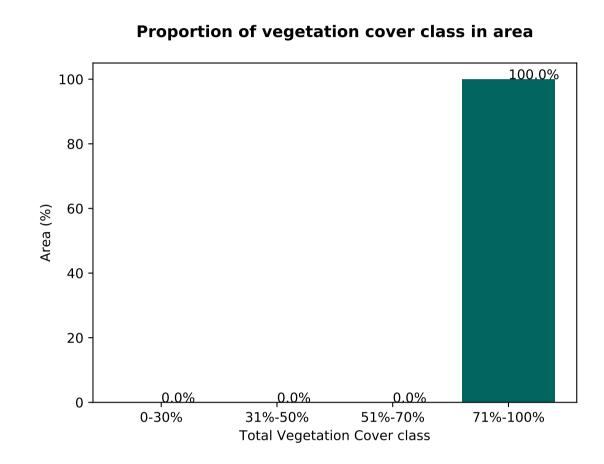


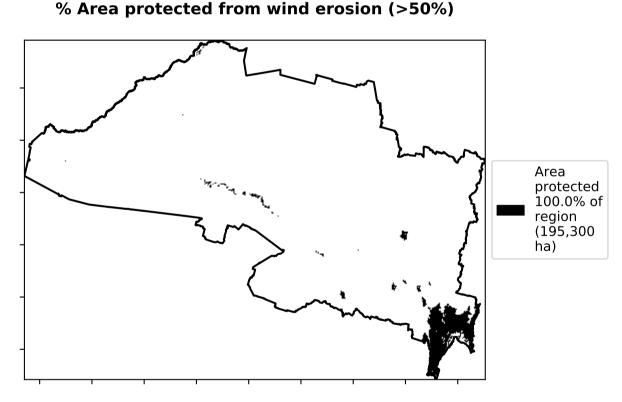
Total Vegetation Cover [%] Trolo Tugolo Trol Tugolo Trol Tugolo Trolo Tugolo Trol Tugolo Trol Tugolo Trol Tugolo Trol Tugolo Trol Tugo

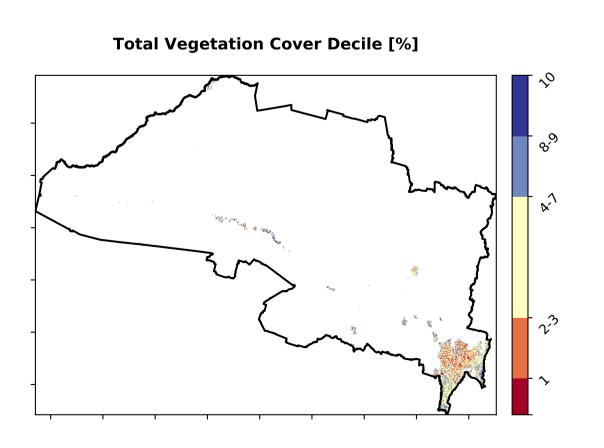




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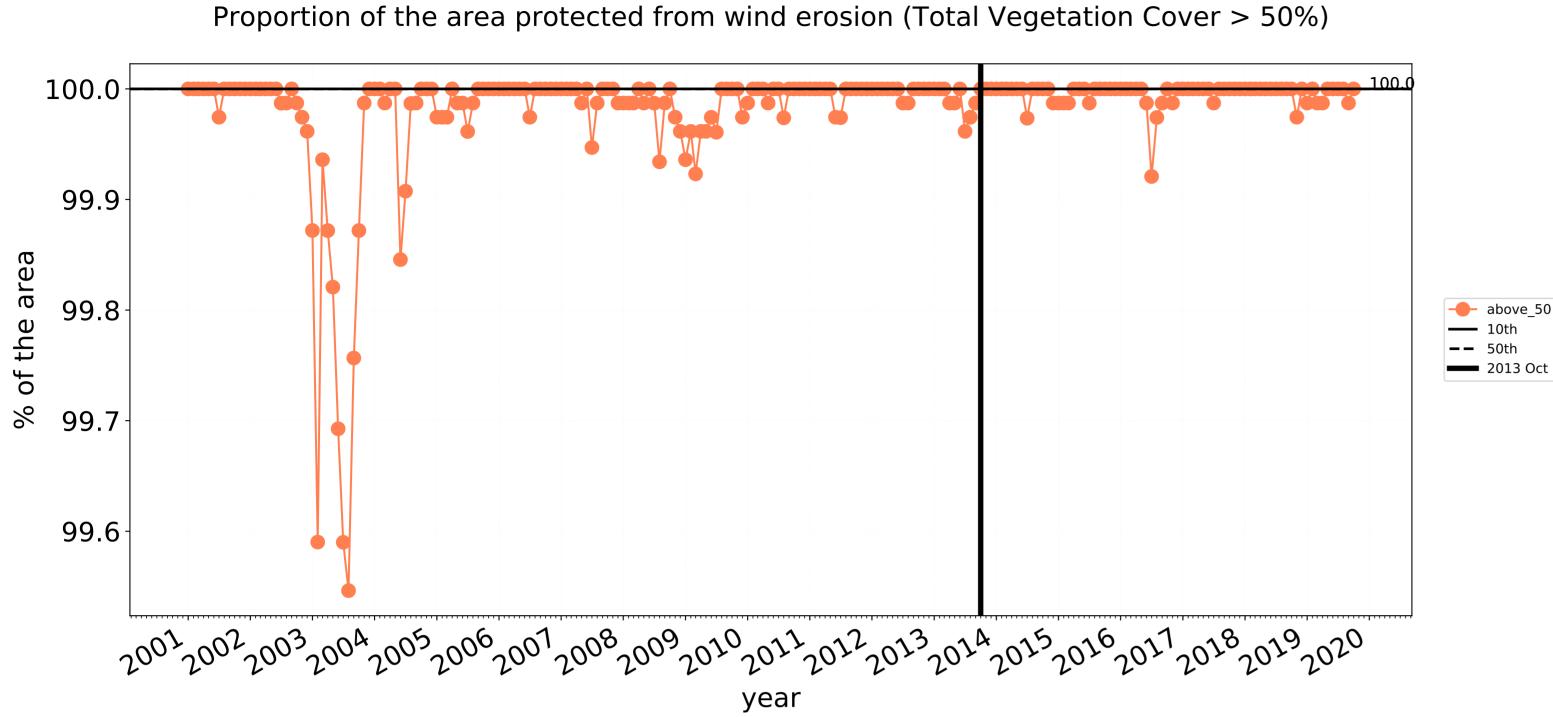


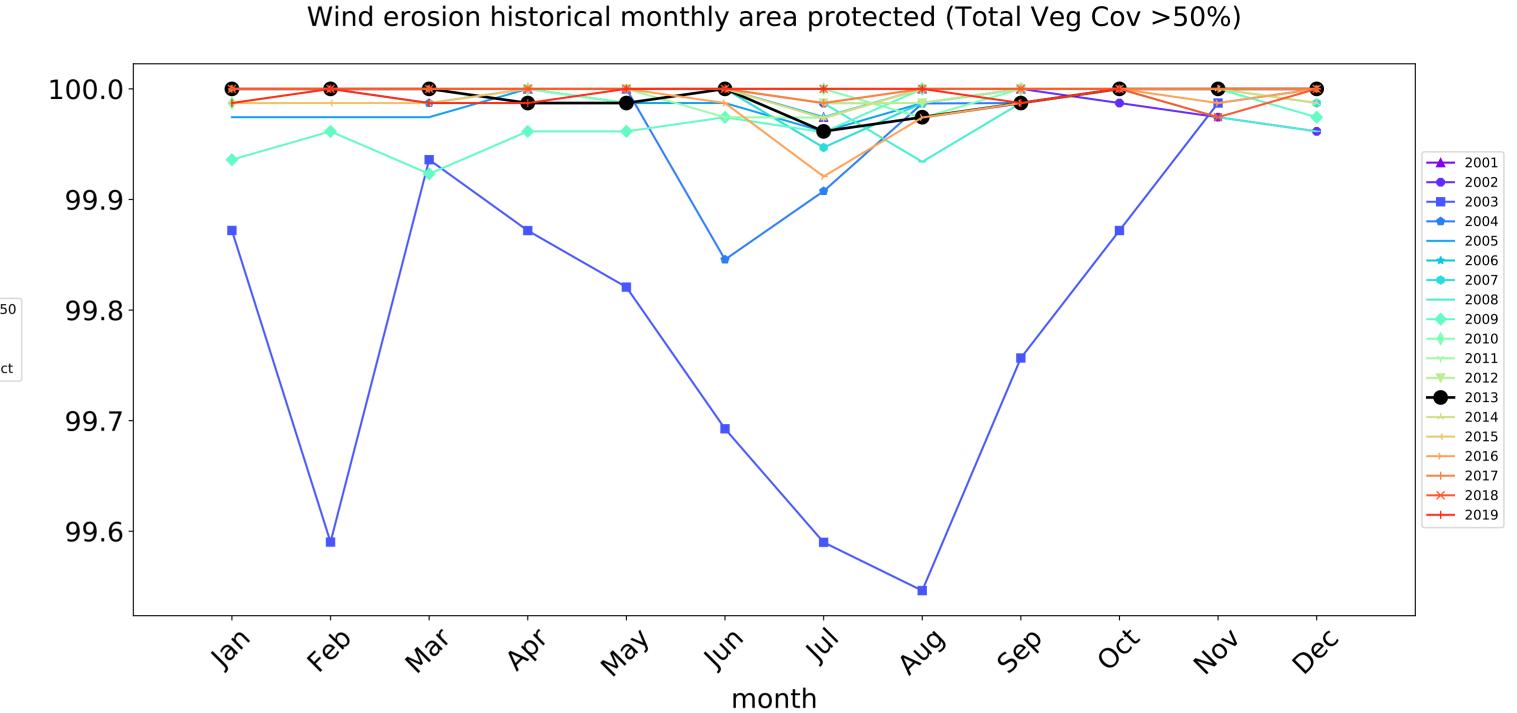


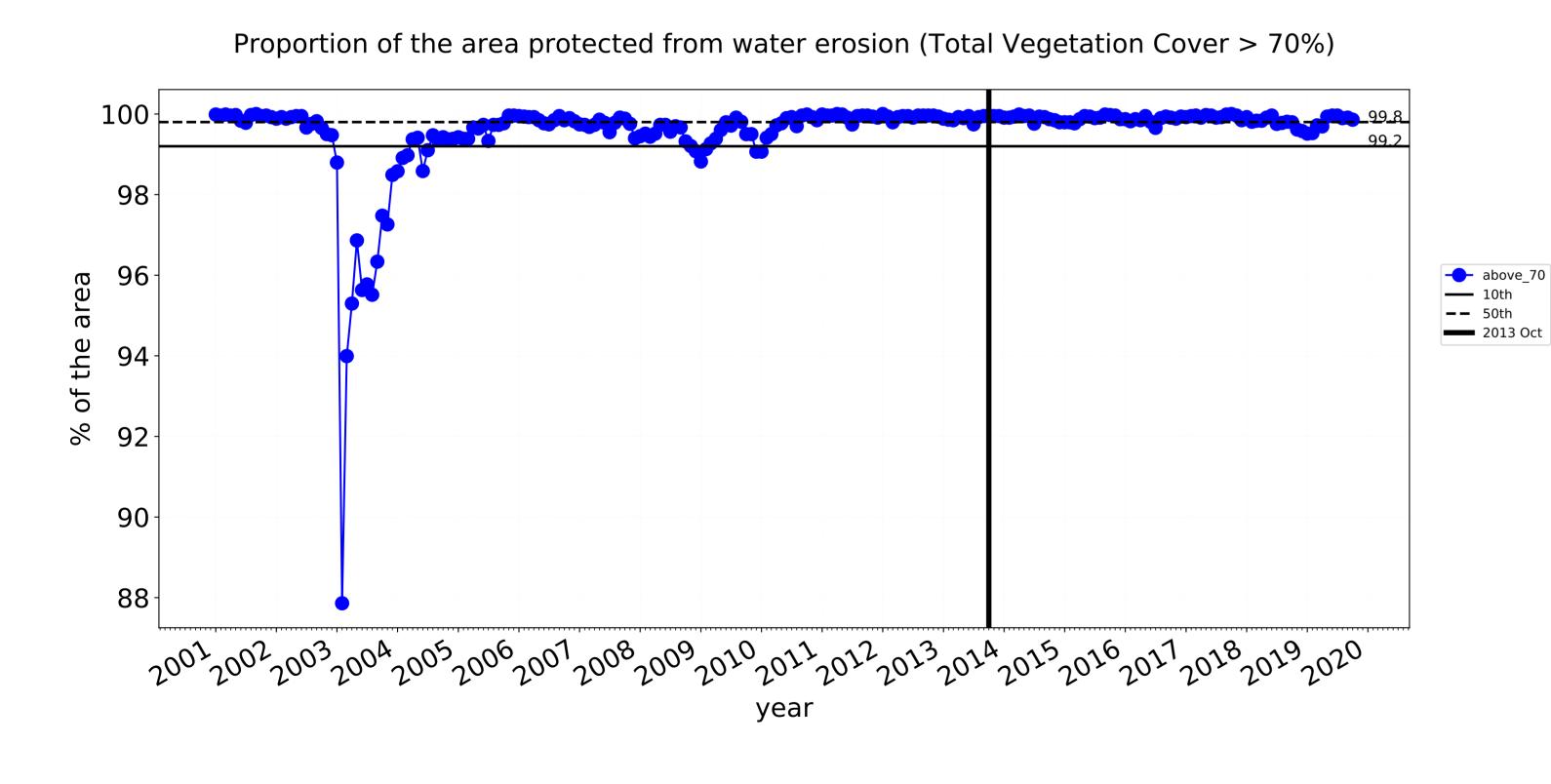


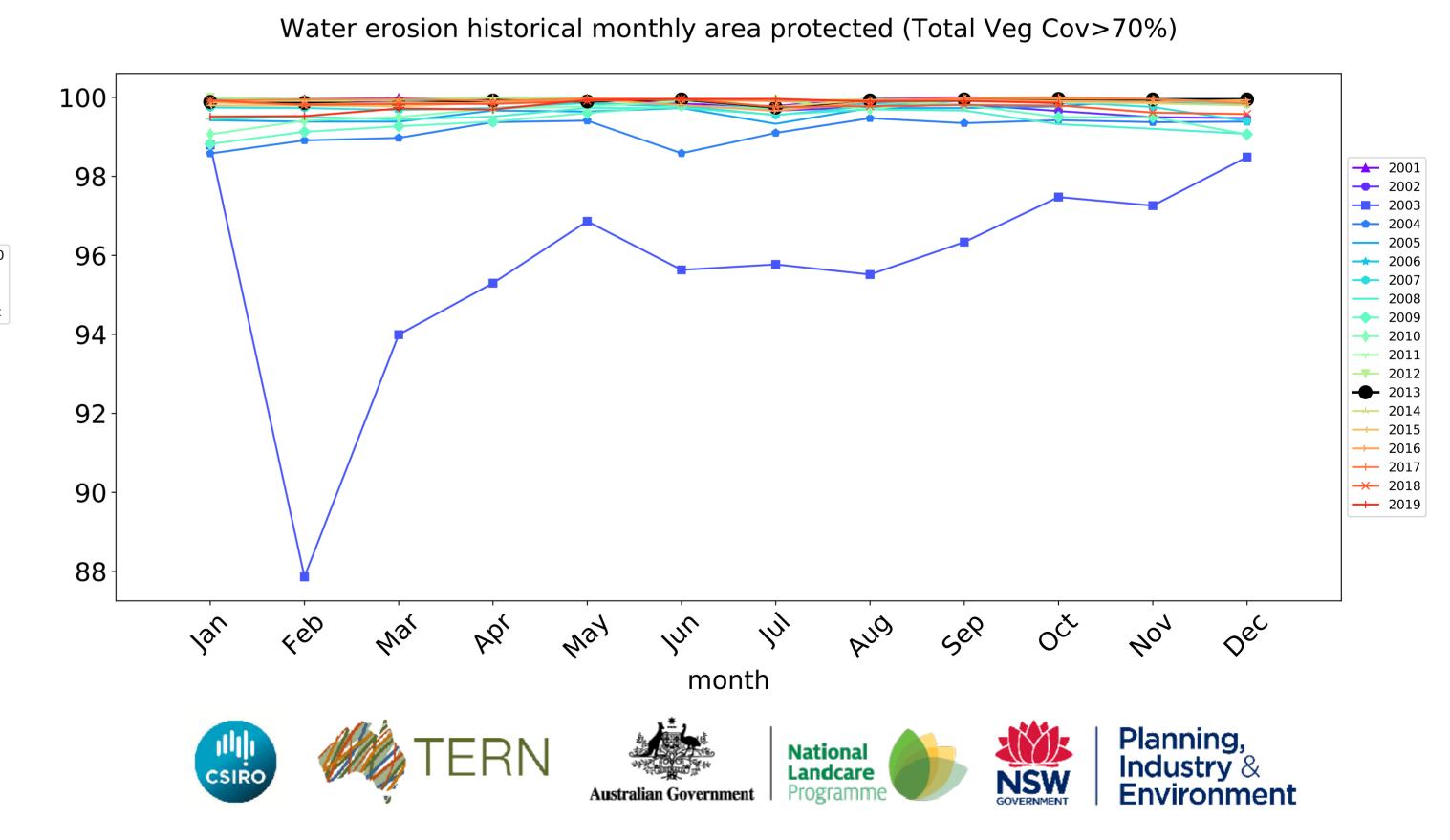








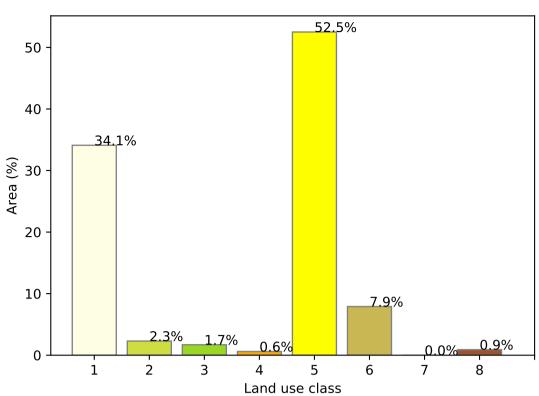




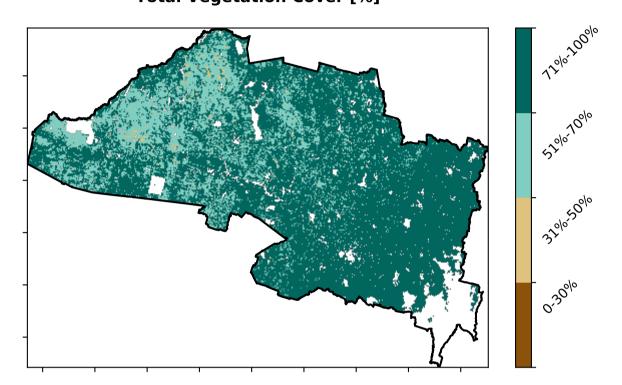
Agriculture

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

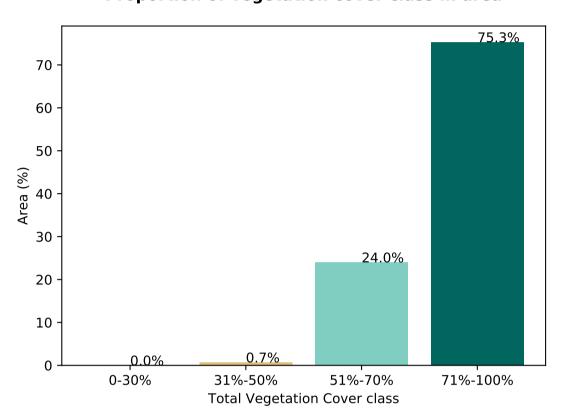
Proportion of each land class in area



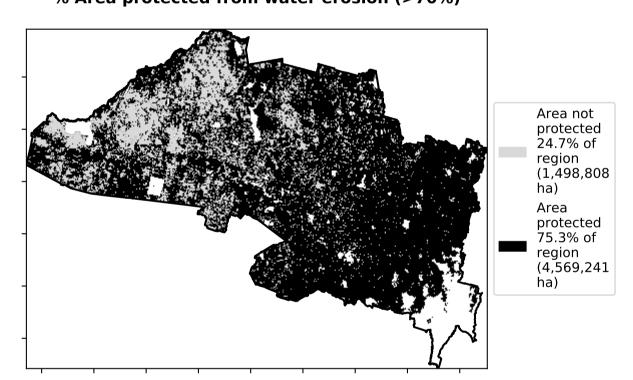
Total Vegetation Cover [%]



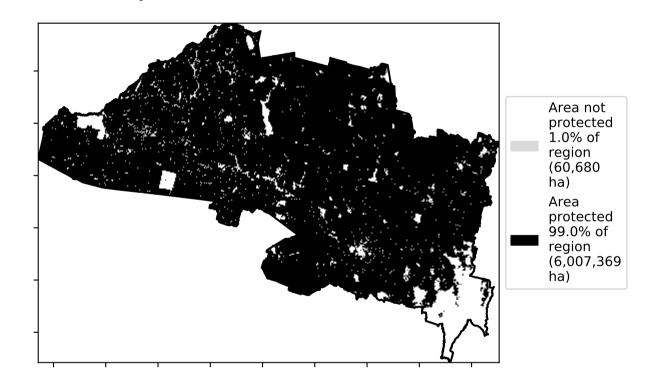
Proportion of vegetation cover class in area



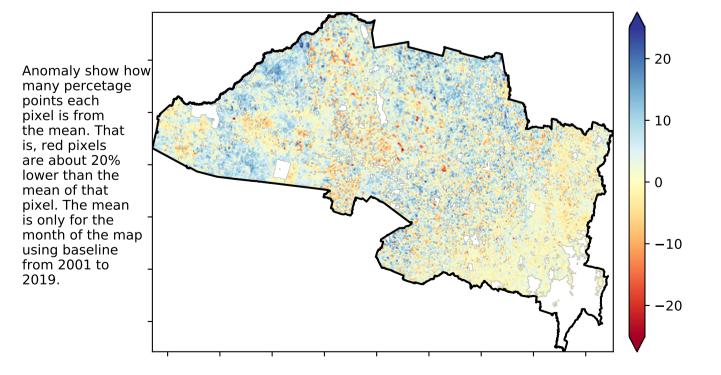
% Area protected from water erosion (>70%)



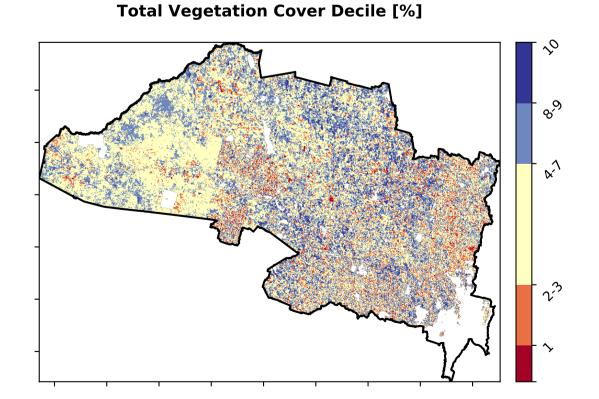
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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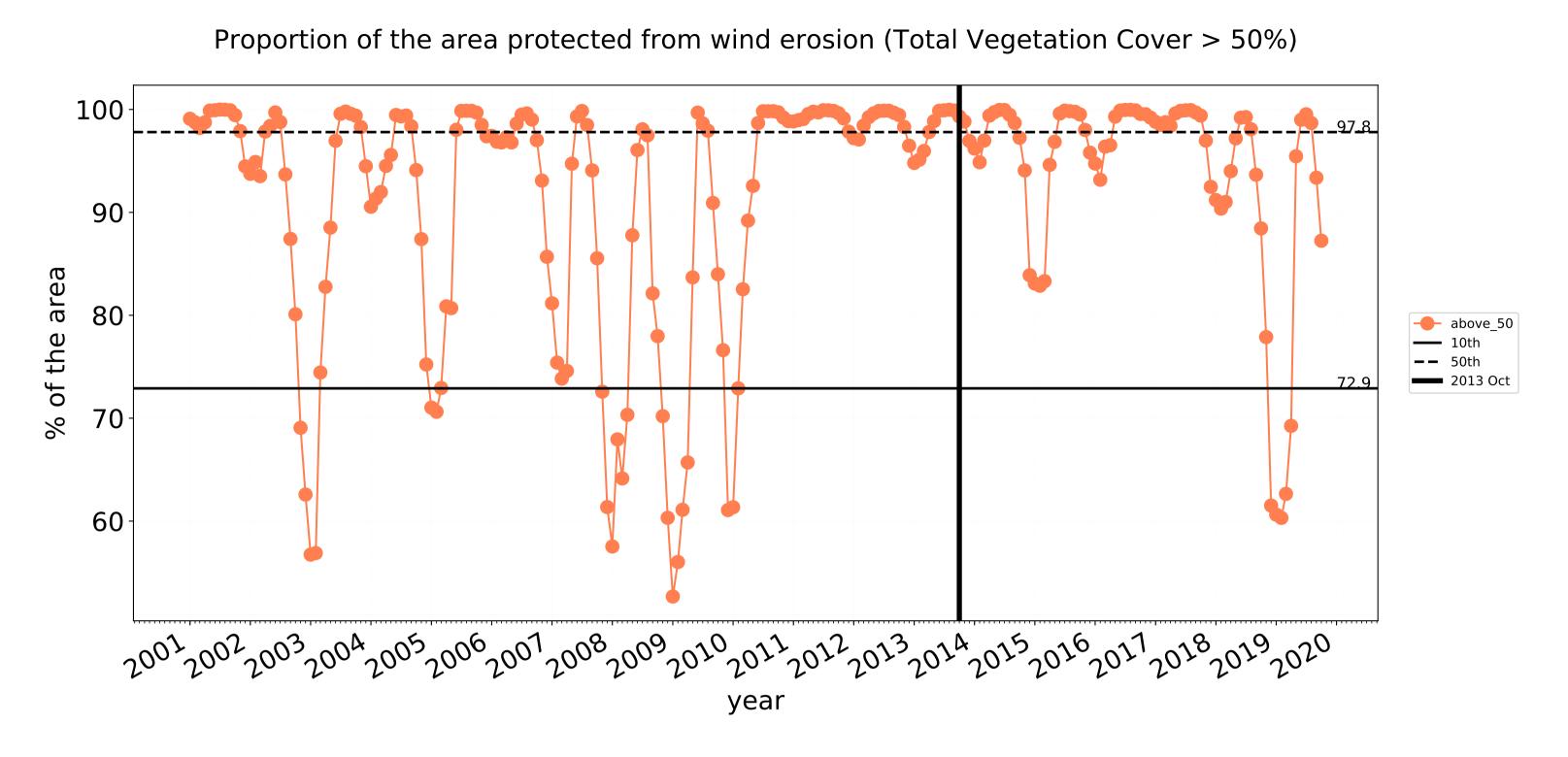


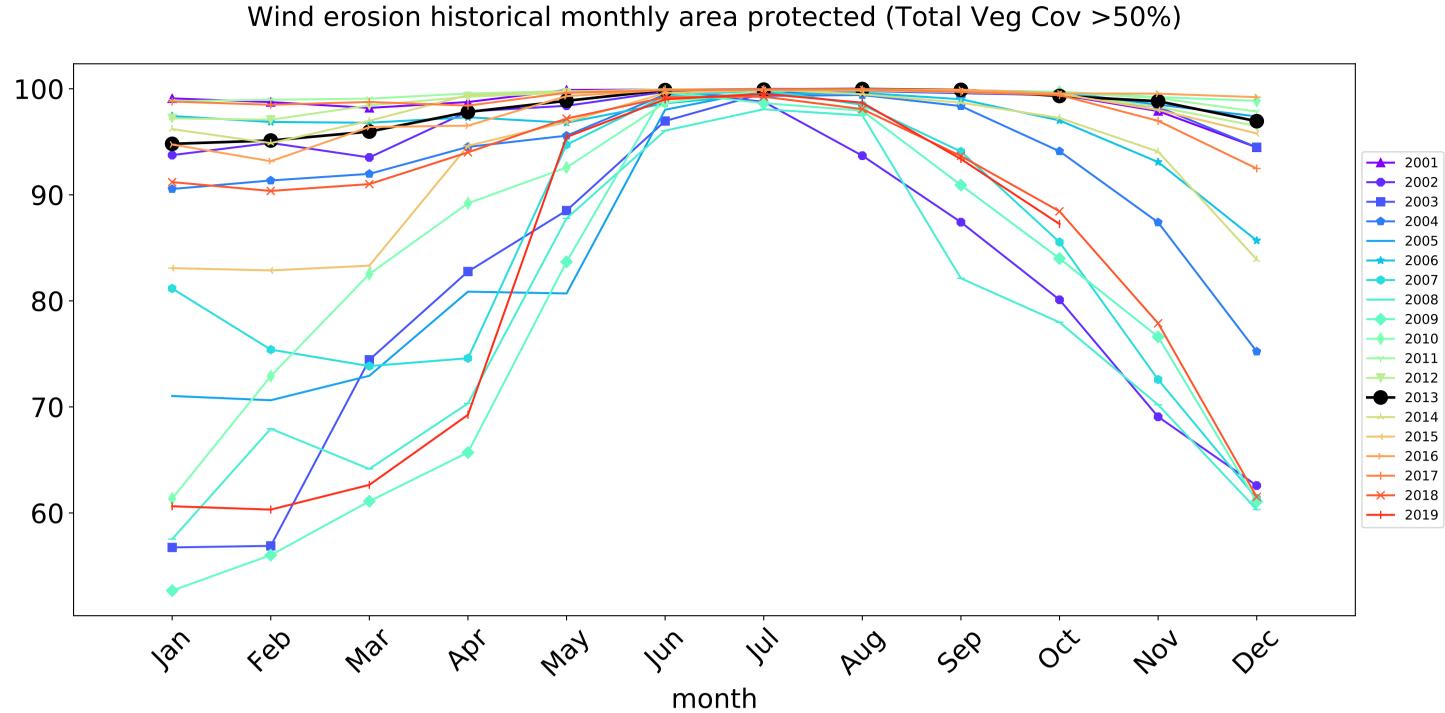


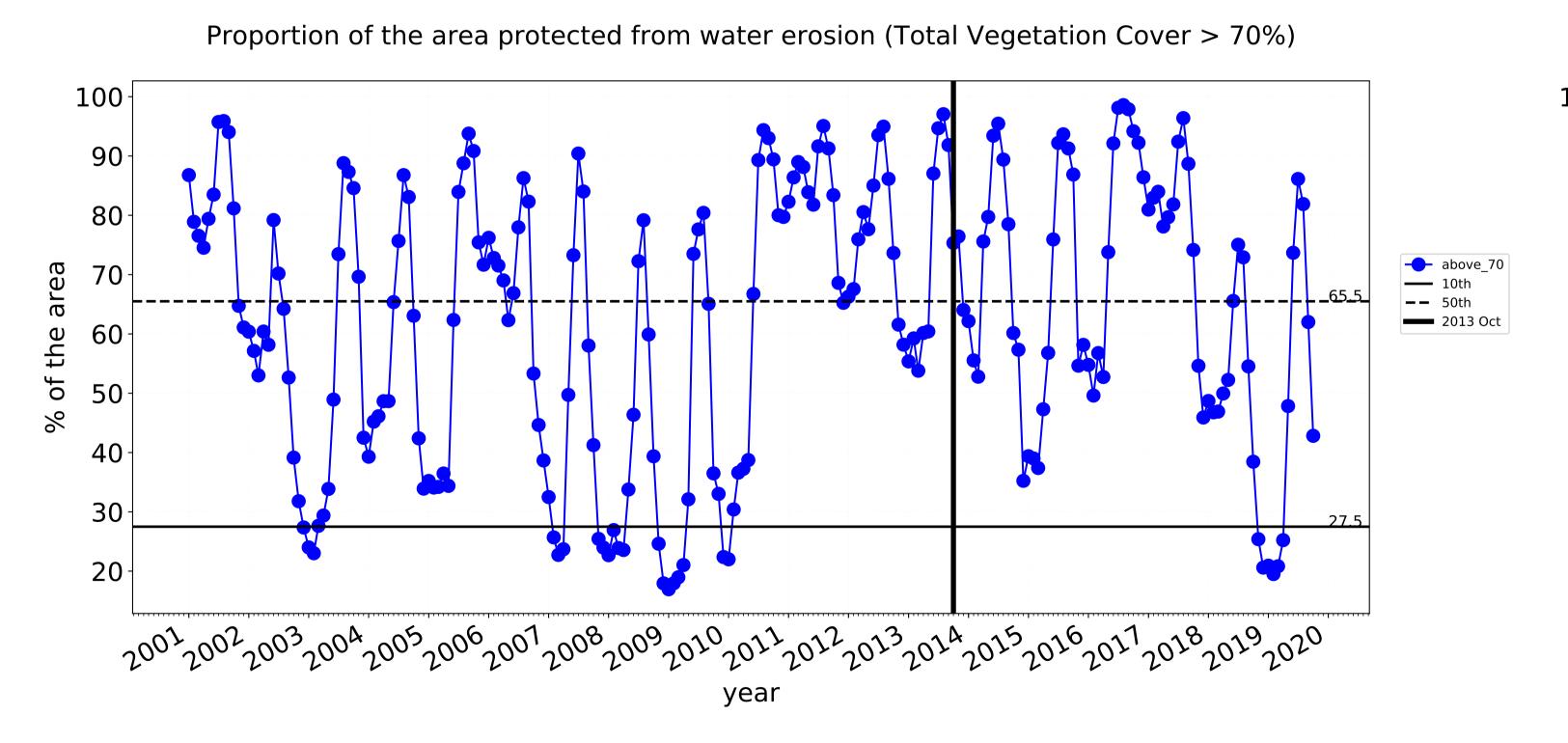


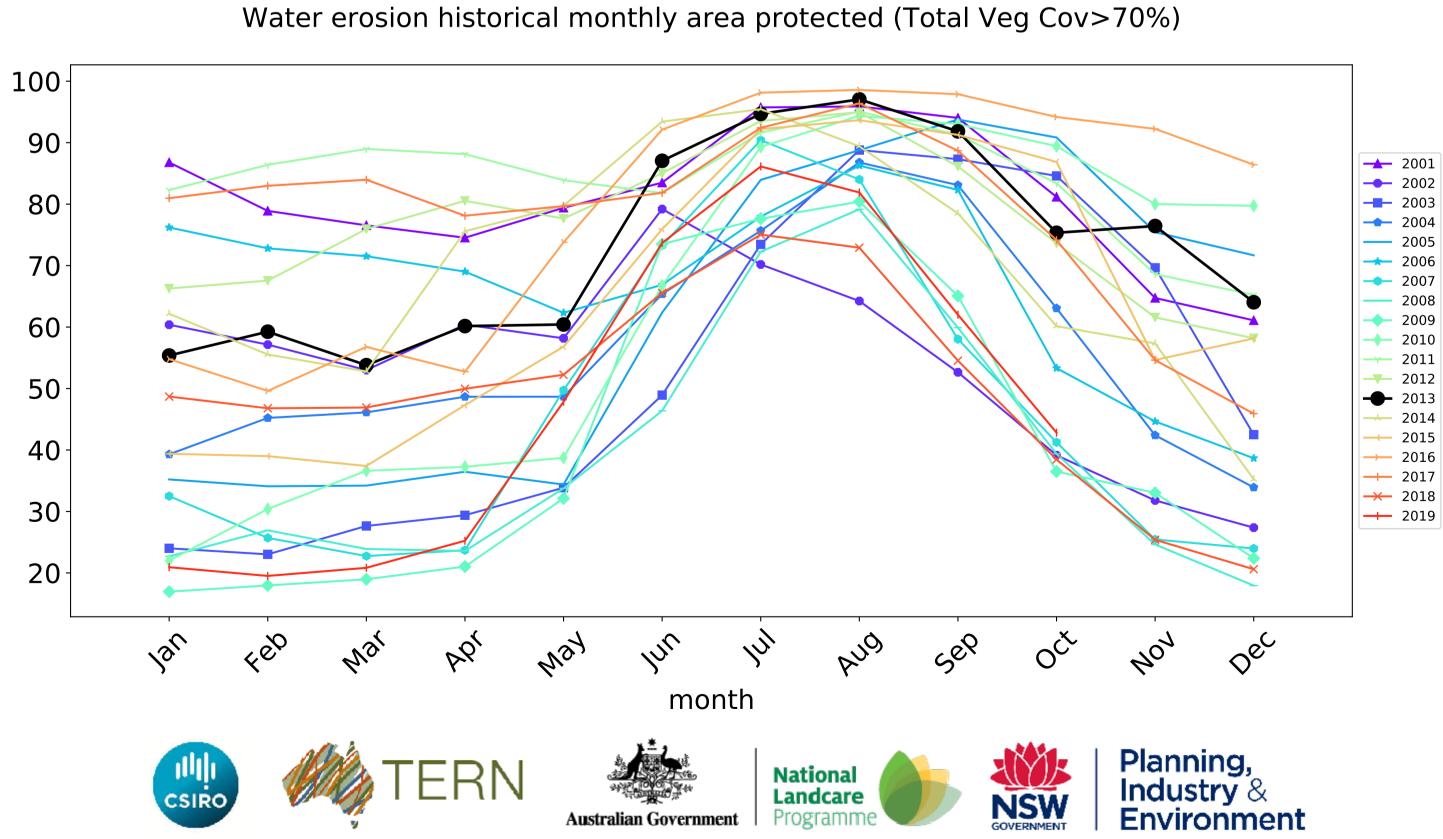


Agriculture timeseries

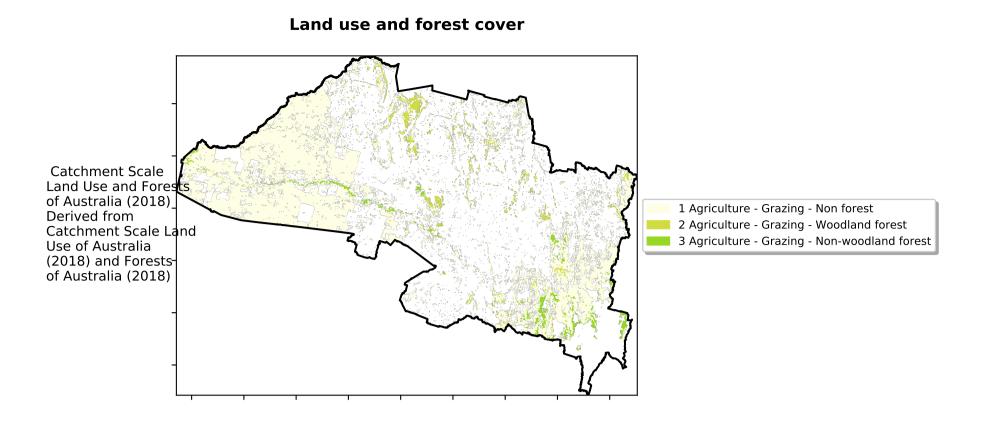




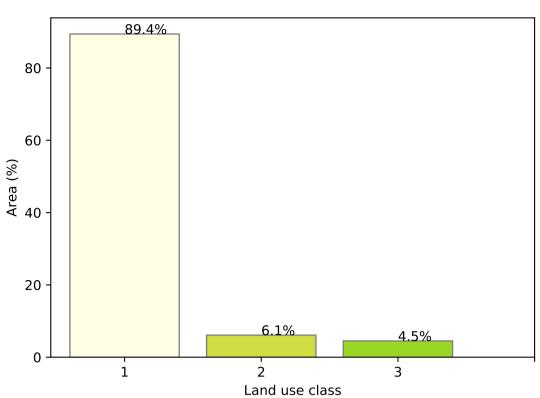




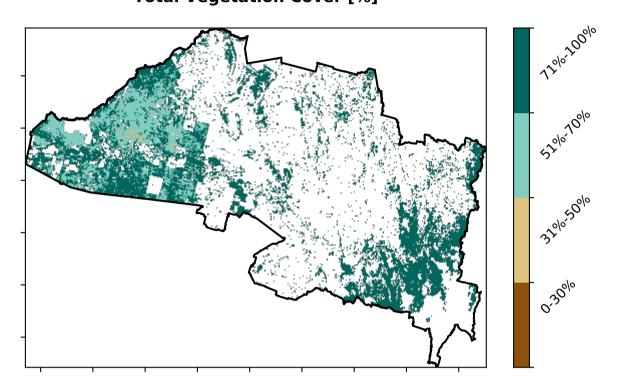
Grazing



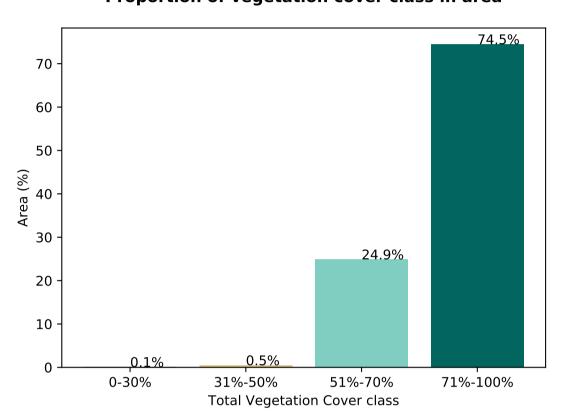
Proportion of each land class in area



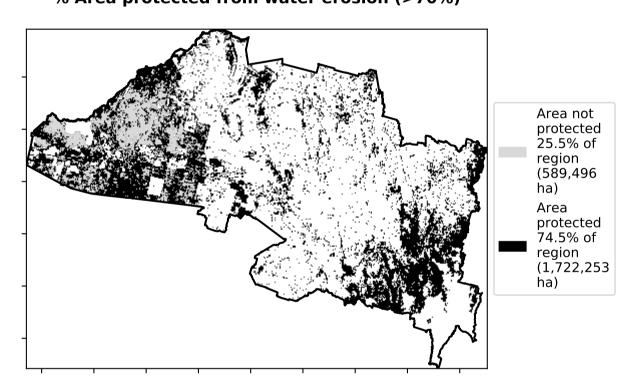
Total Vegetation Cover [%]



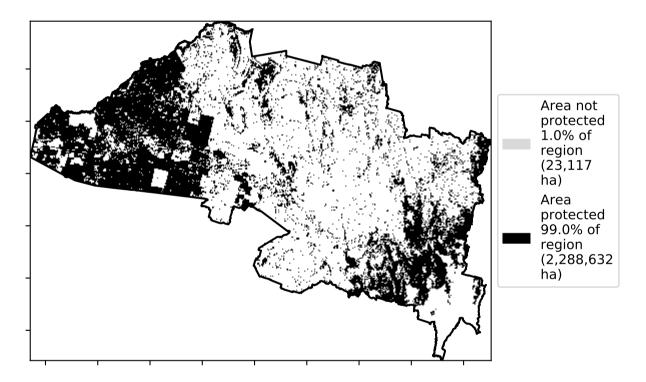
Proportion of vegetation cover class in area



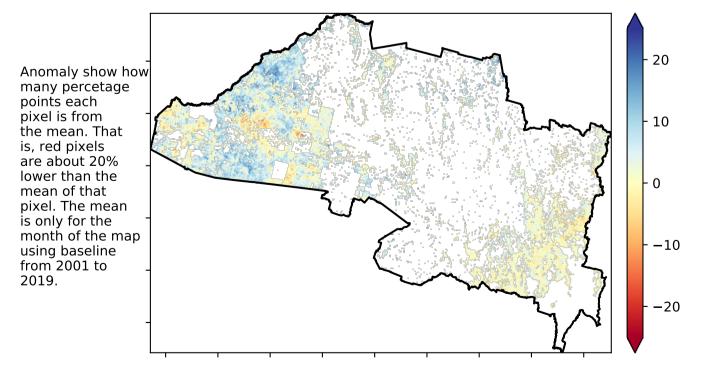
% Area protected from water erosion (>70%)



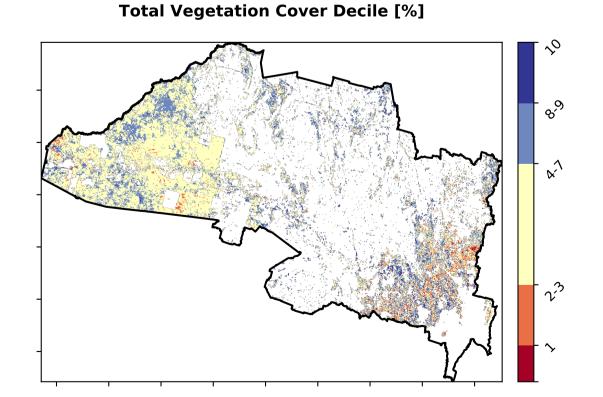
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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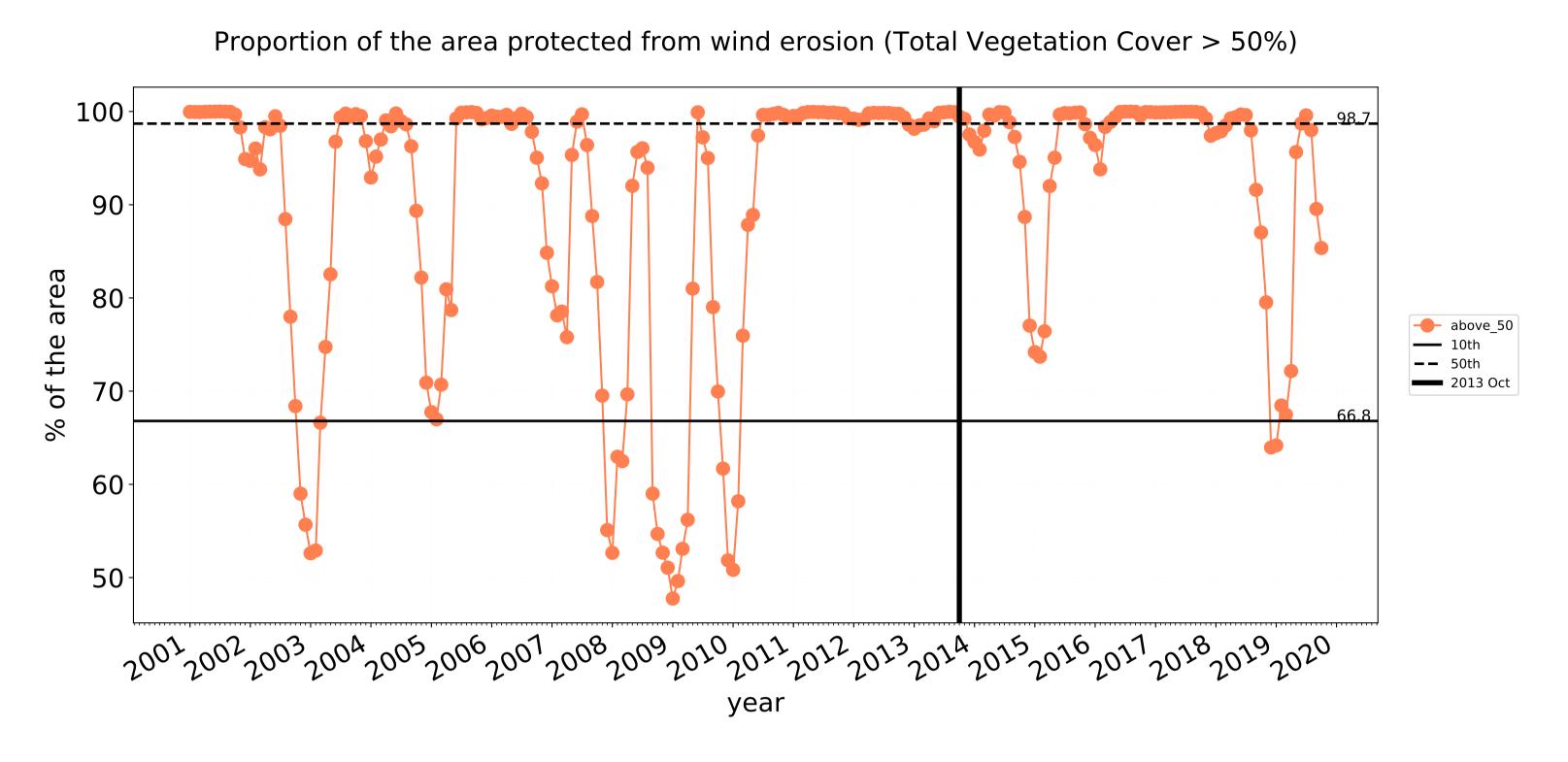


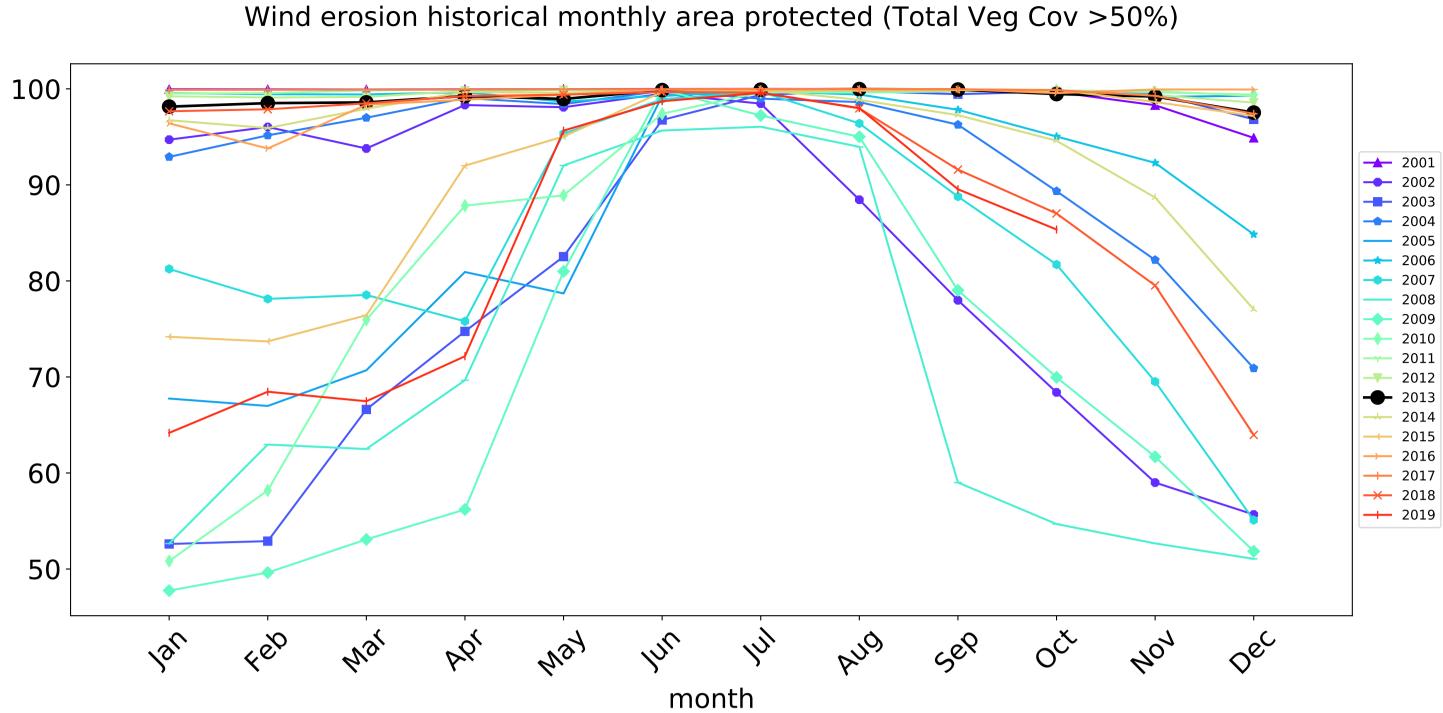


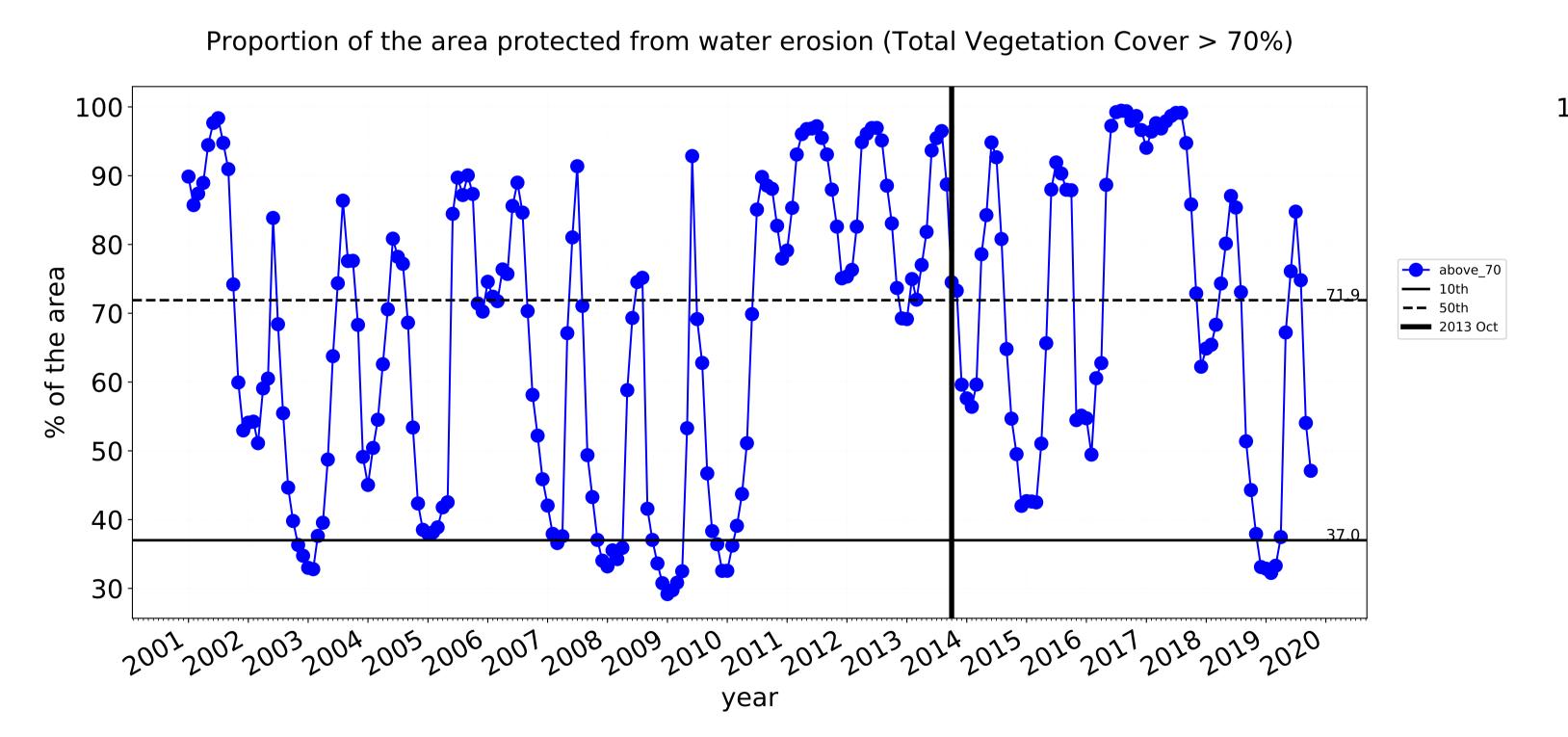


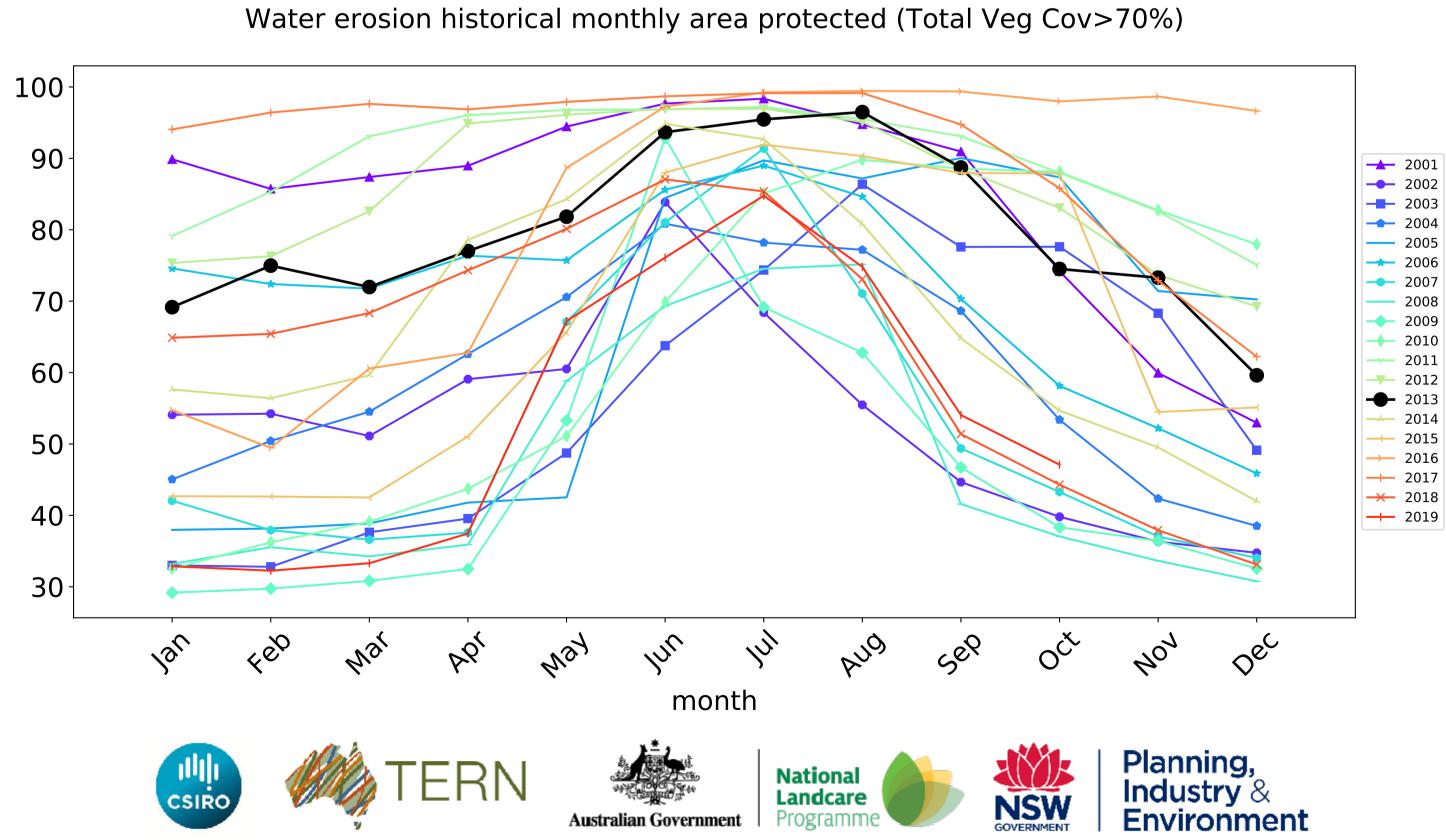


Grazing timeseries



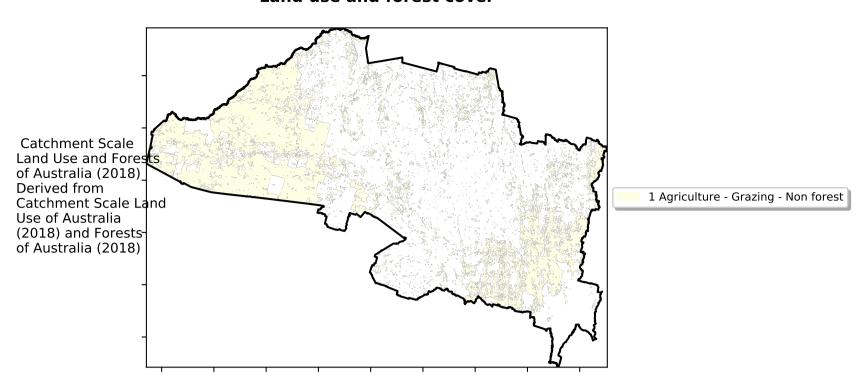




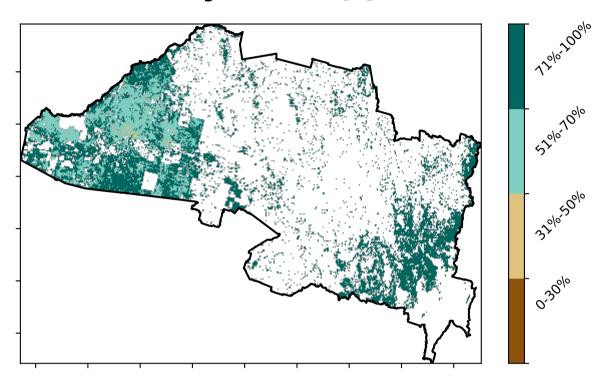


Grazing non forest

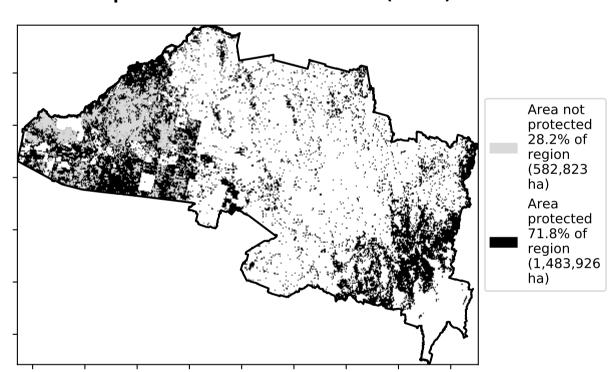
Land use and forest cover



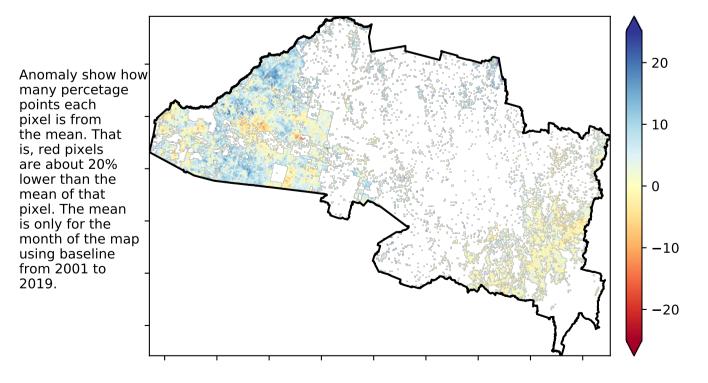
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

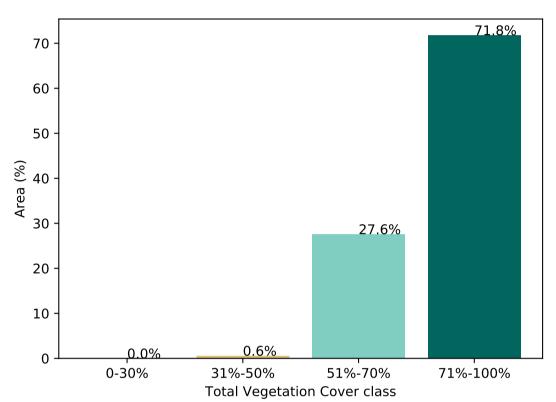


Total Vegetation Cover Anomaly [%]

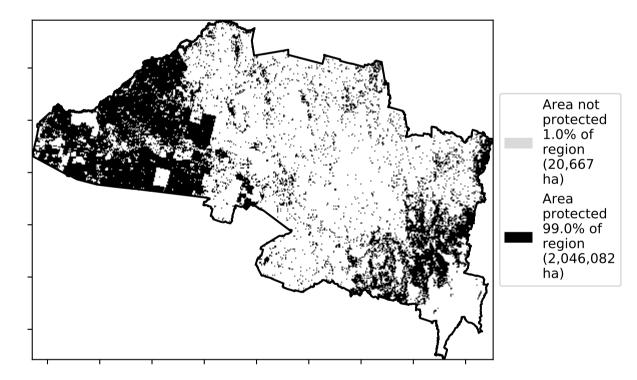


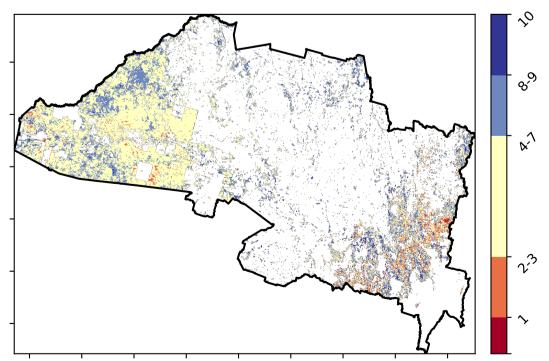
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Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









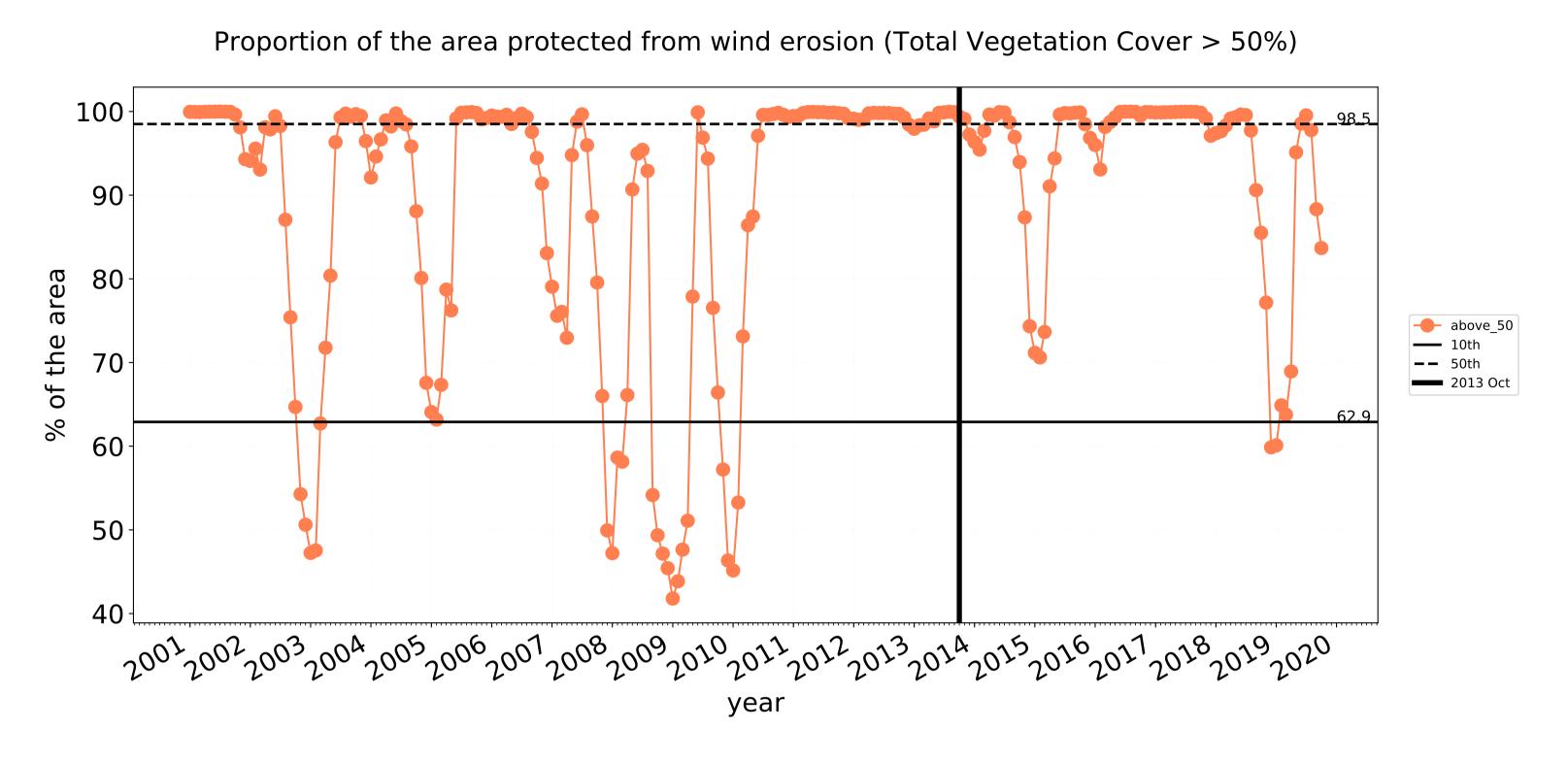


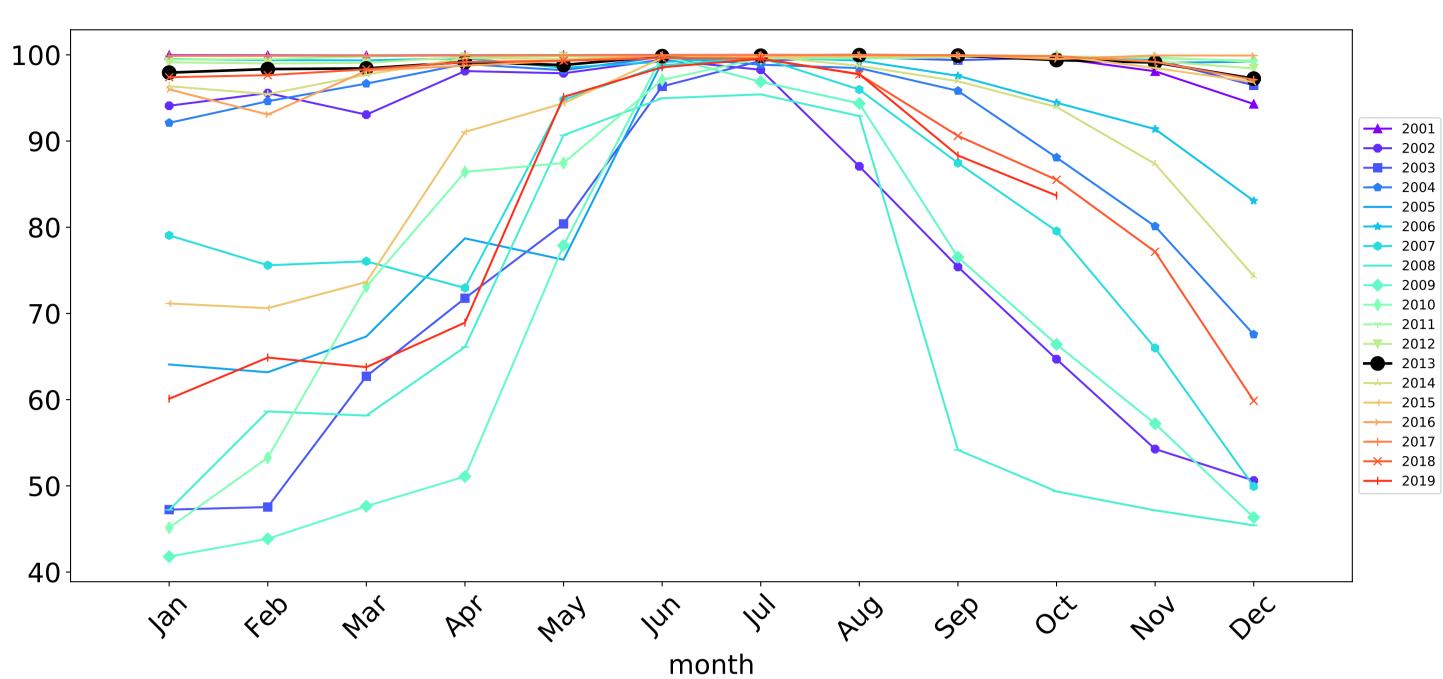




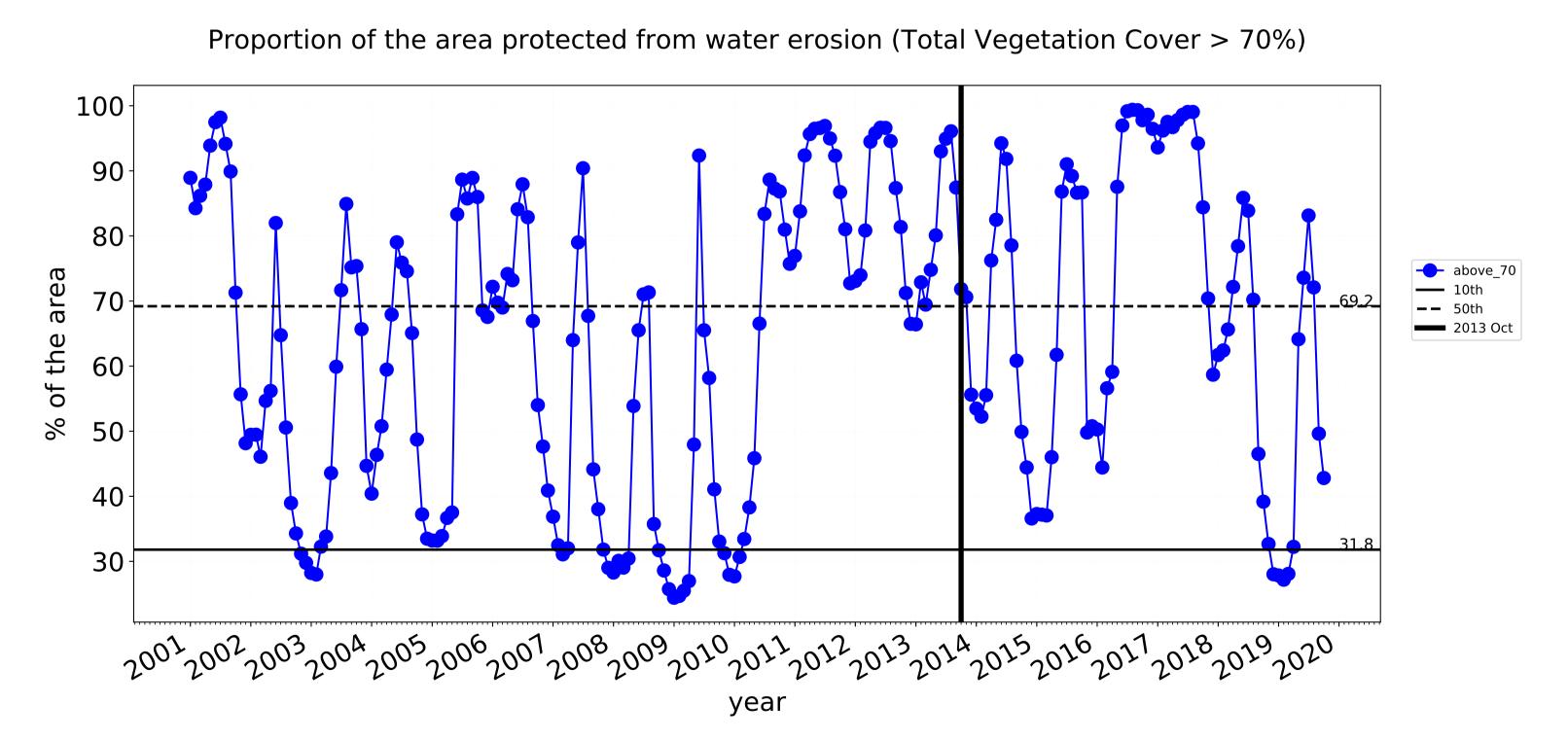


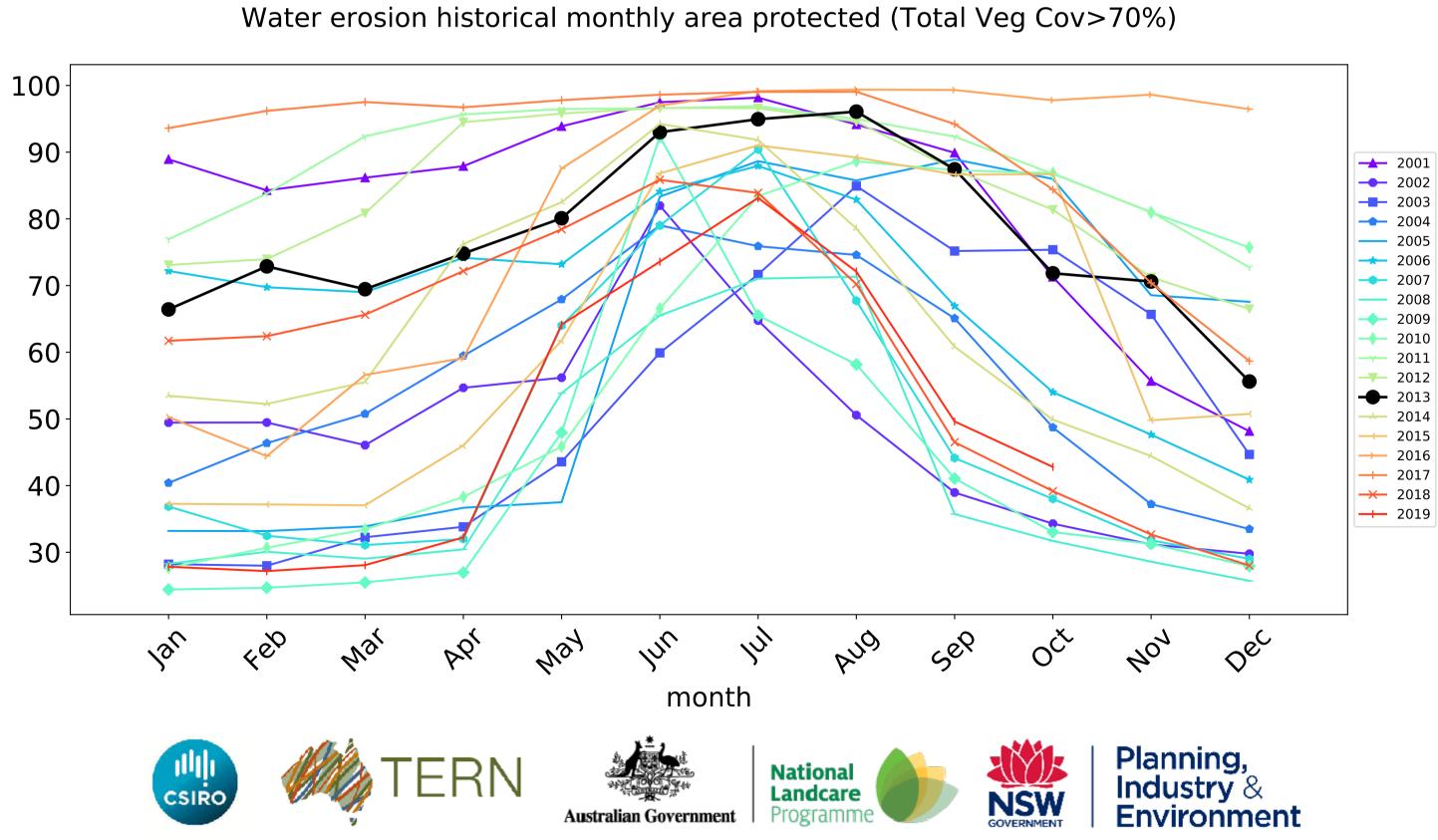
Grazing non forest timeseries





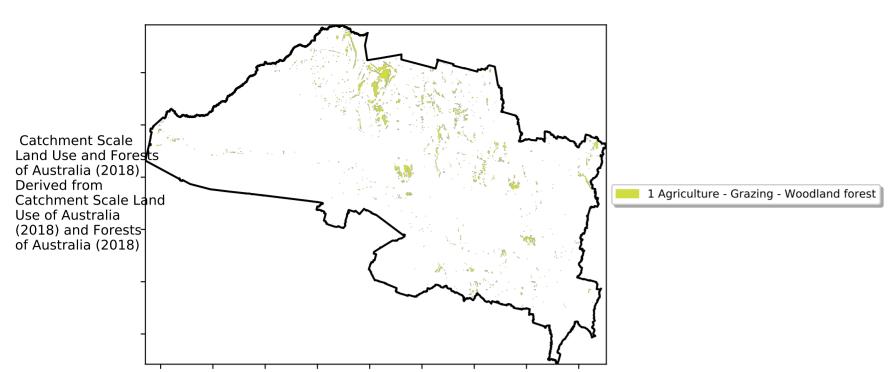
Wind erosion historical monthly area protected (Total Veg Cov >50%)



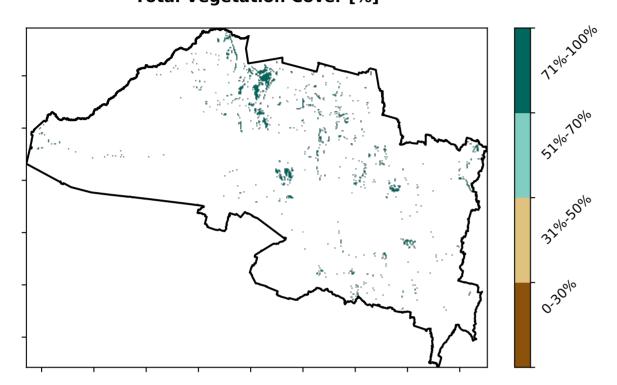


Grazing Woodland forest

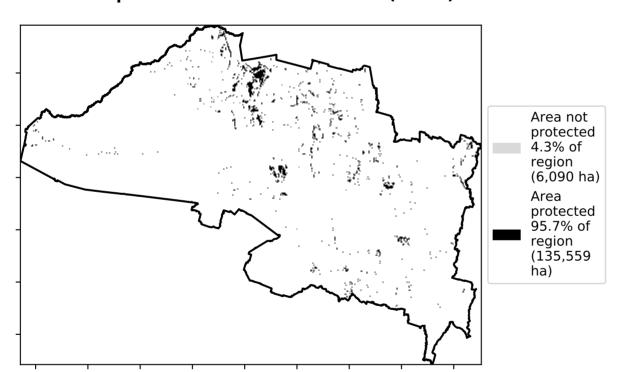
Land use and forest cover



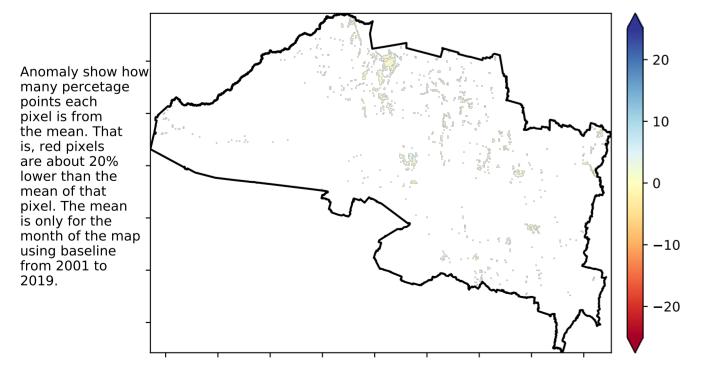
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

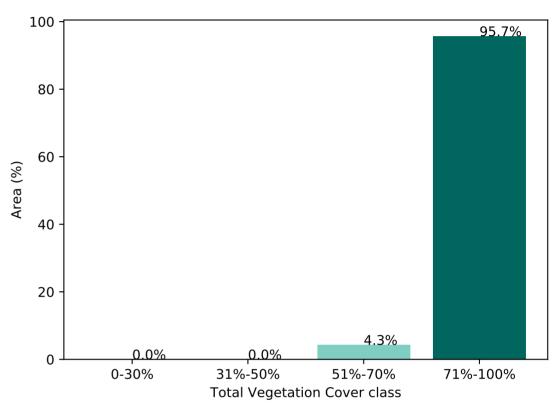


Total Vegetation Cover Anomaly [%]

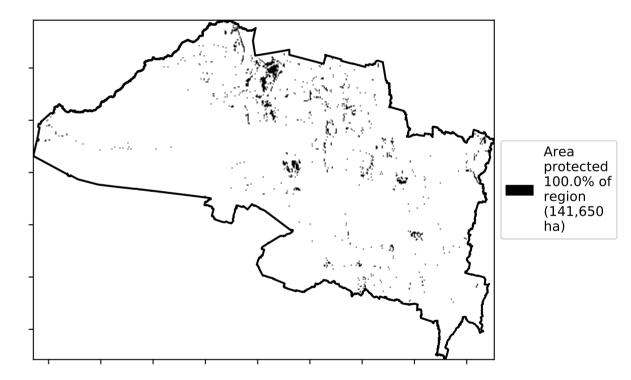


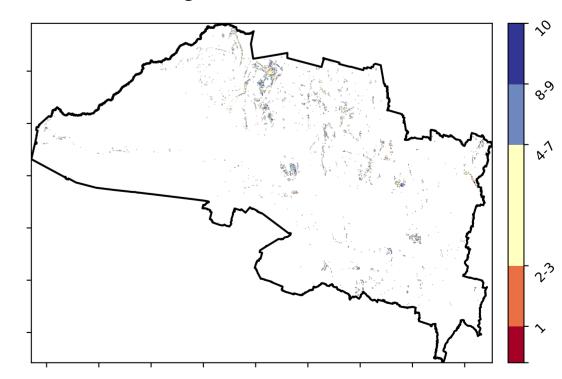
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Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









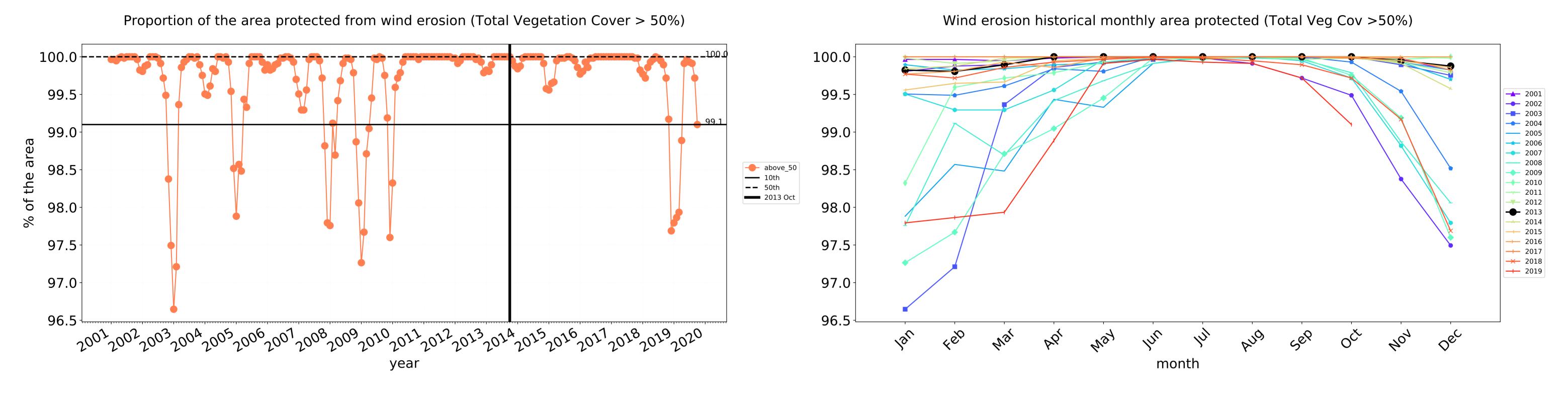


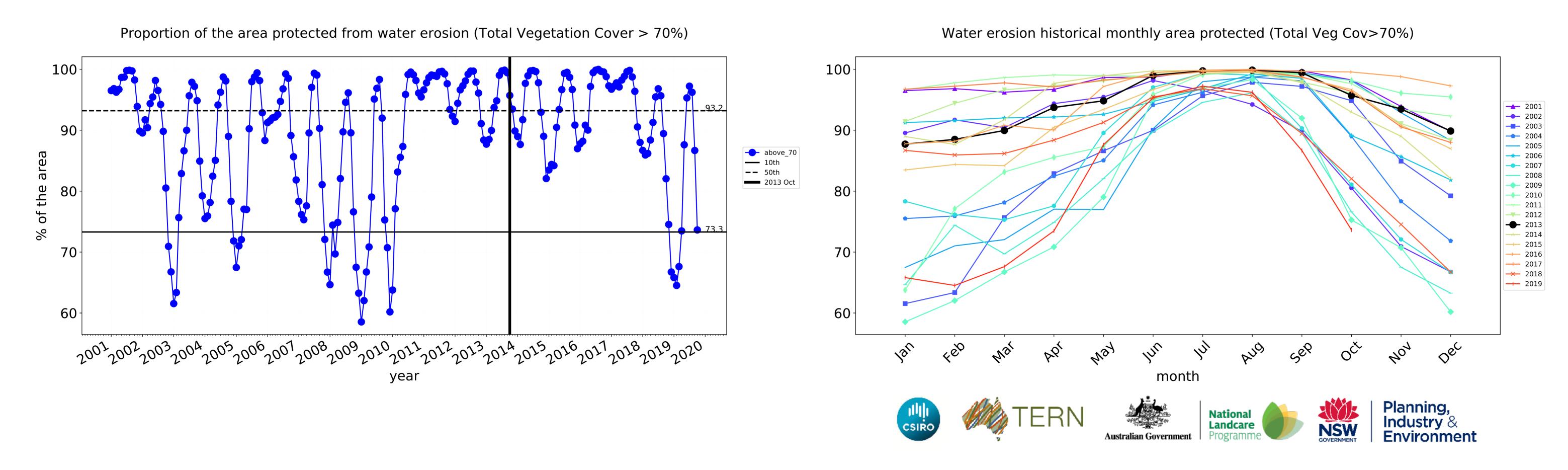






Grazing Woodland forest timeseries

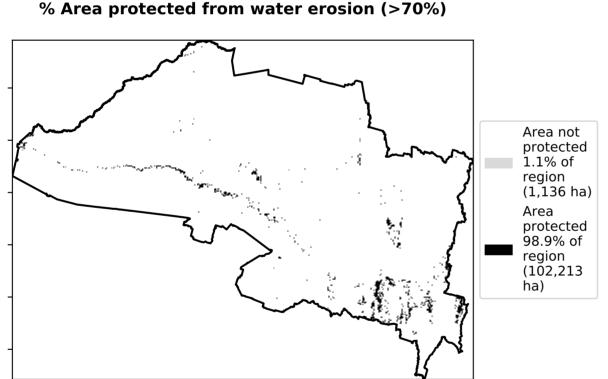


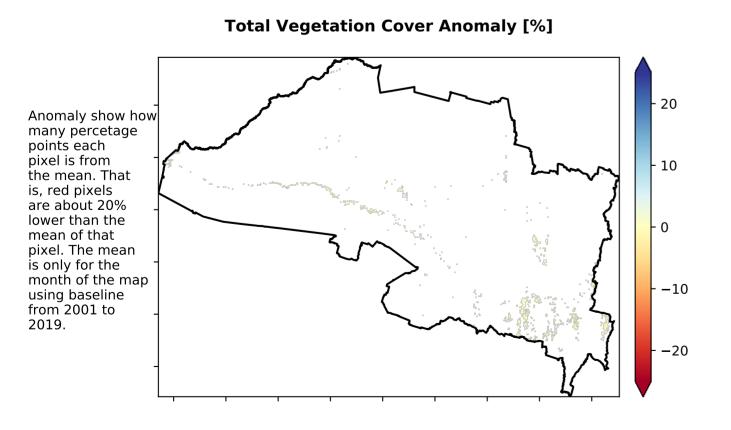


Grazing - Forest (non woodland)

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

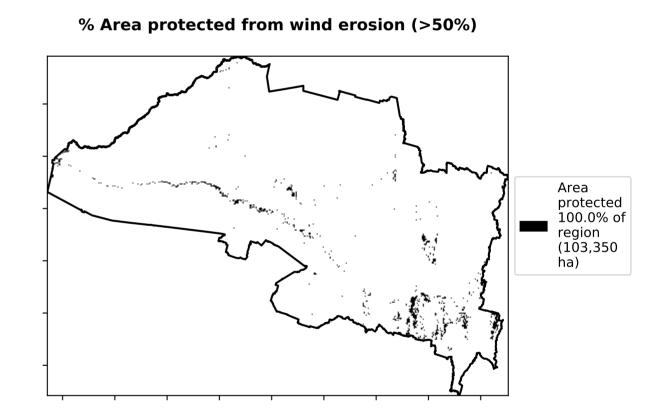
Total Vegetation Cover [%]

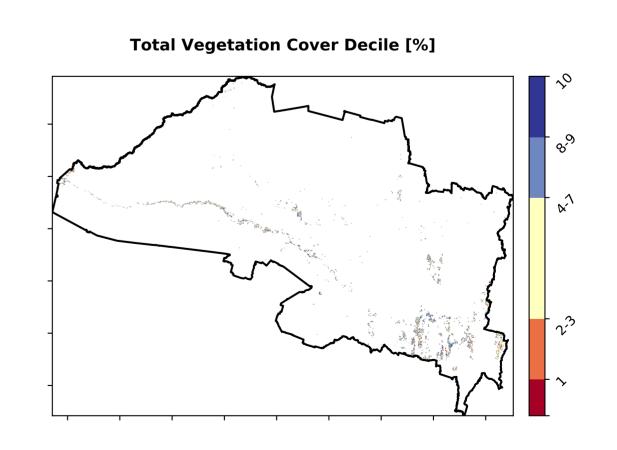




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline. the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area 98.9% 100 80 60 20 0.0% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**







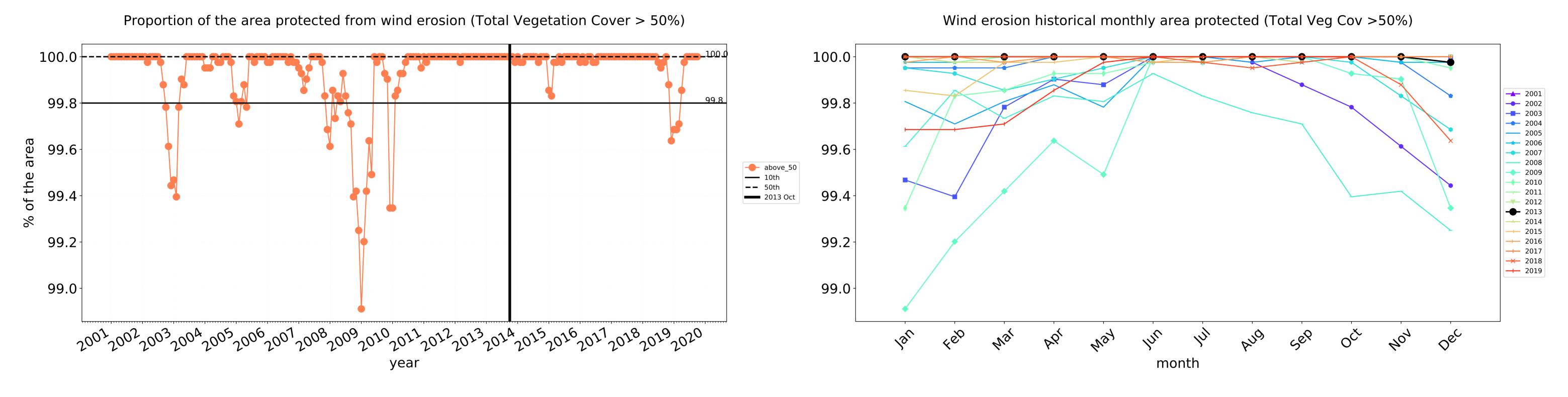


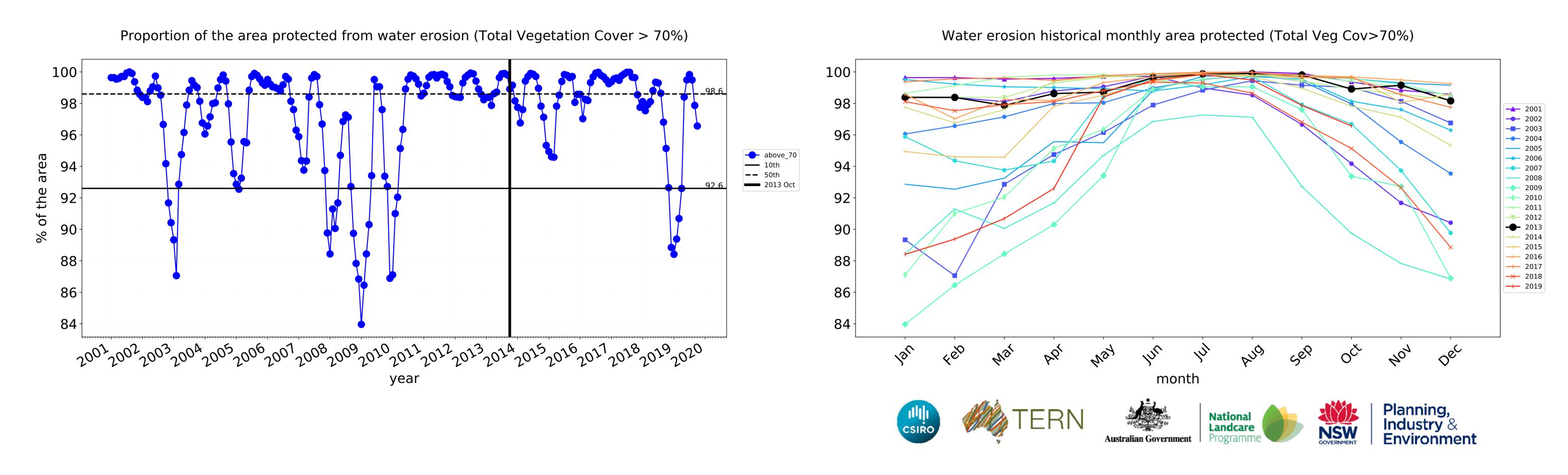






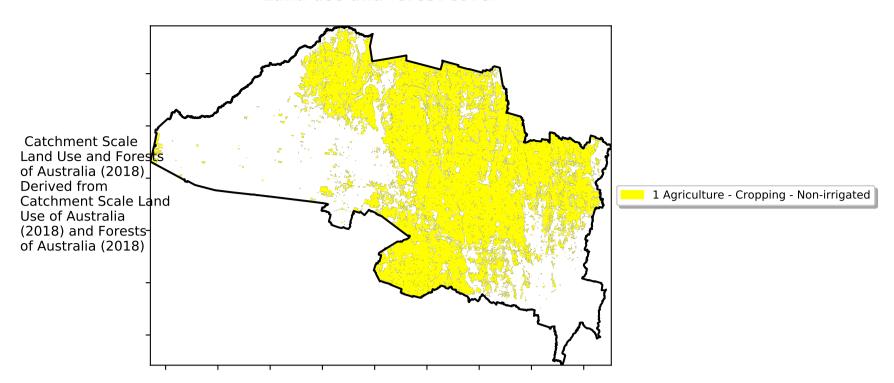




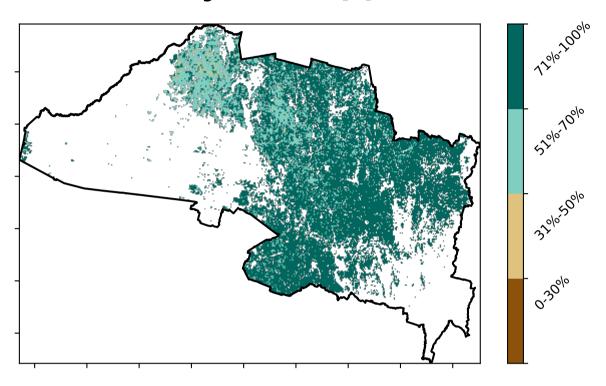


Cropping

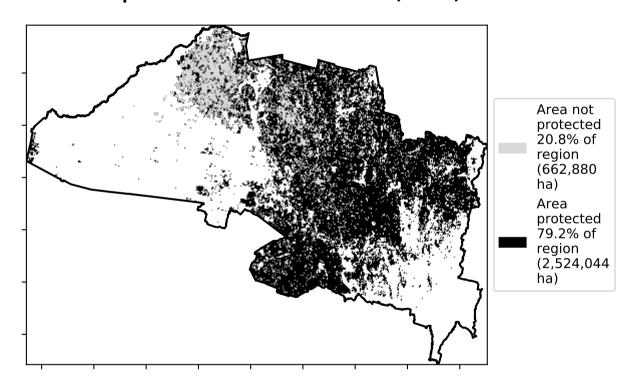
Land use and forest cover



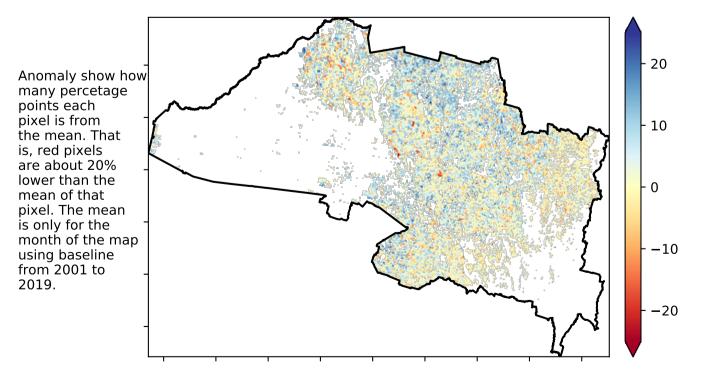
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

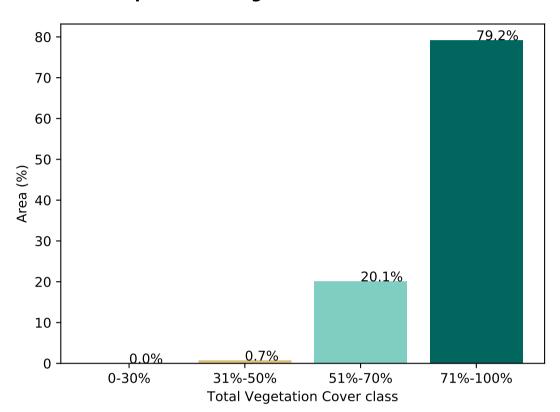


Total Vegetation Cover Anomaly [%]

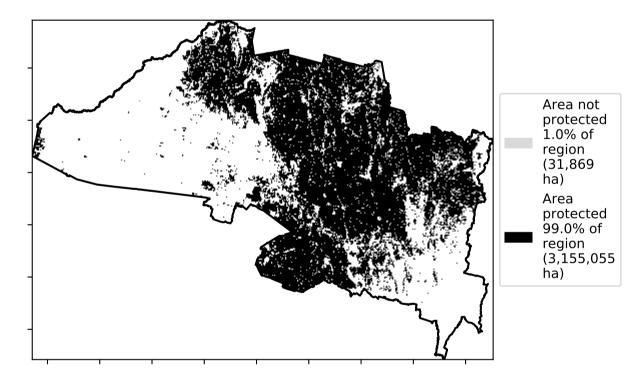


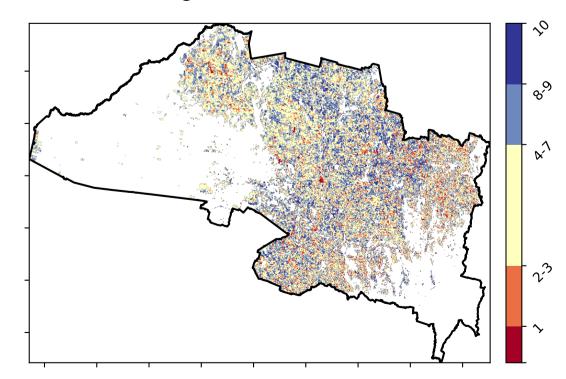
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









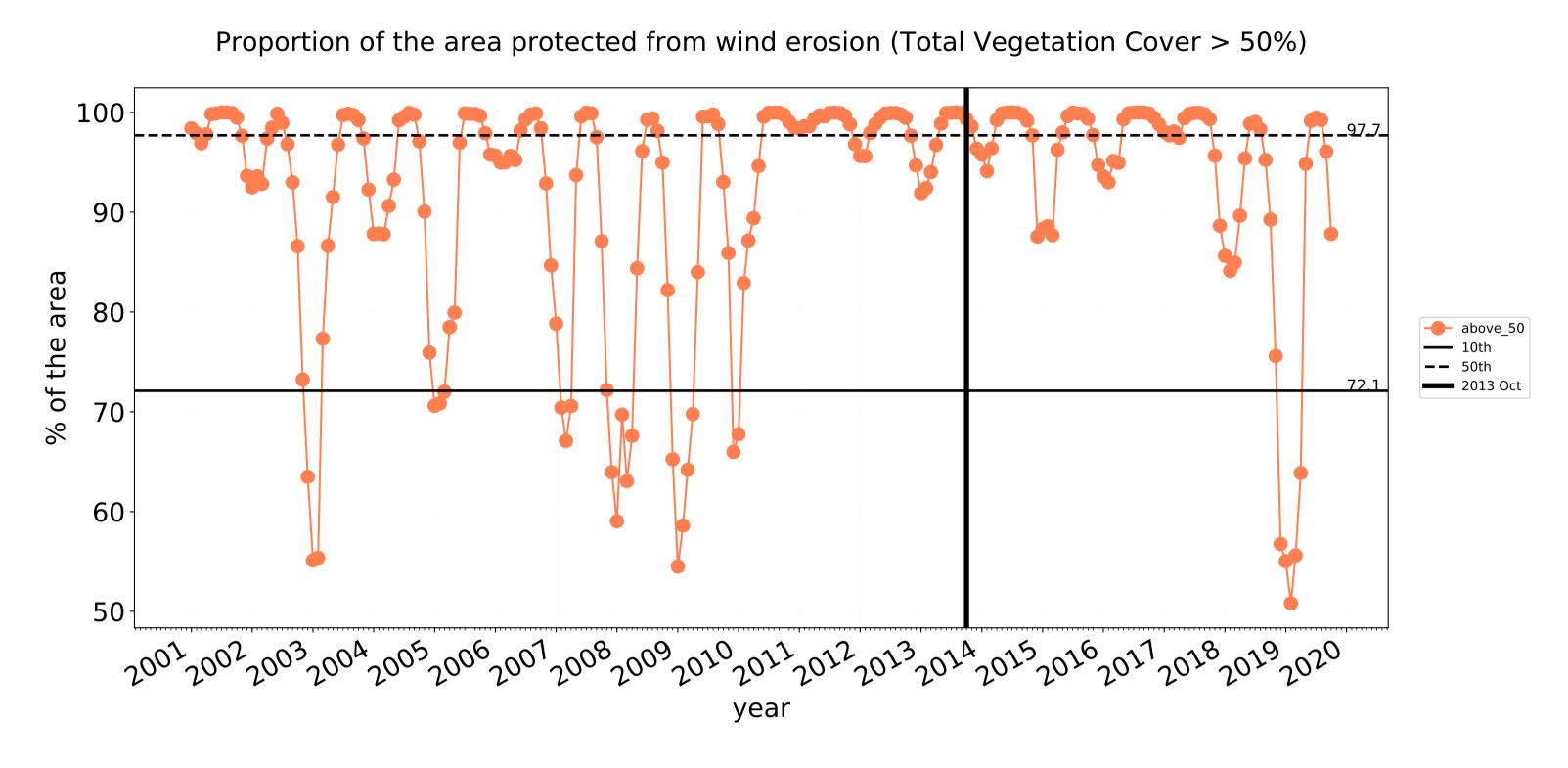


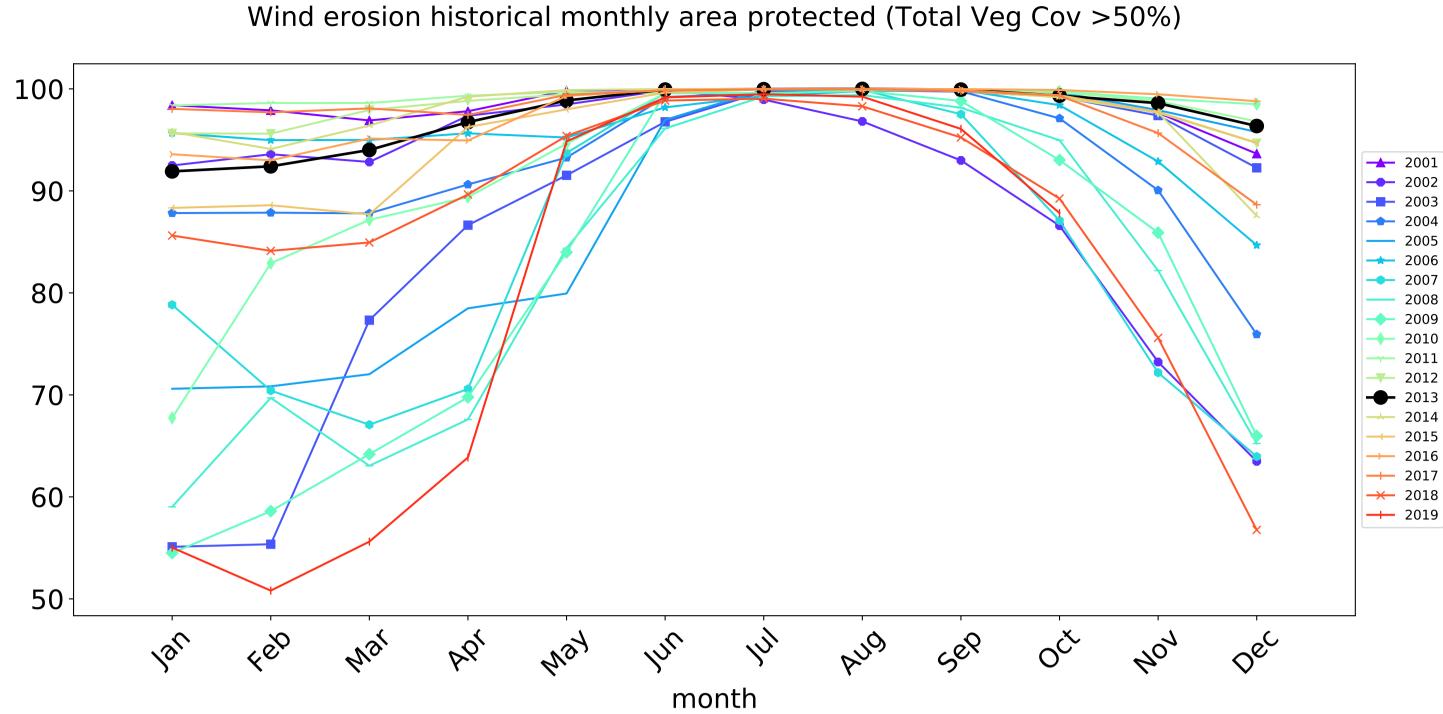


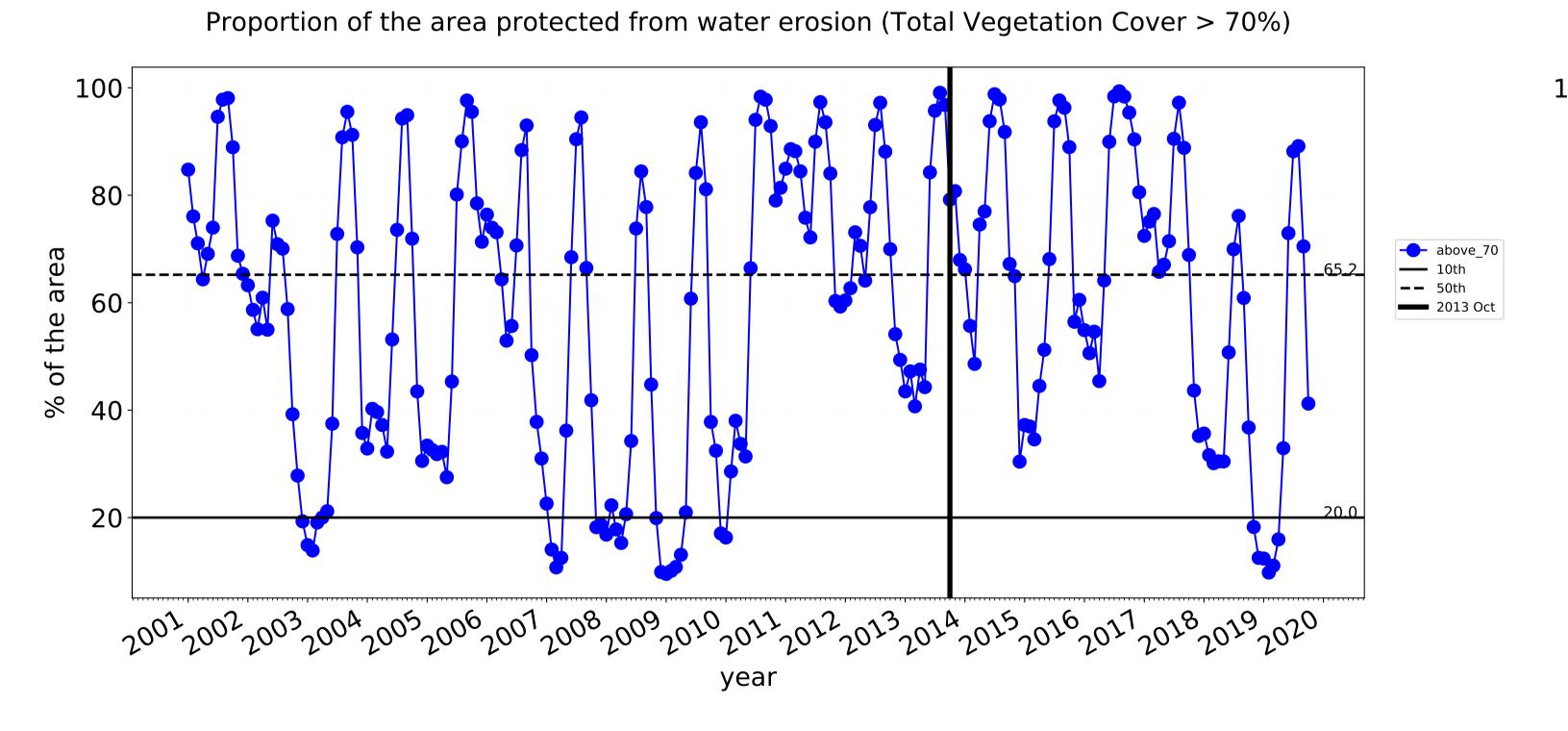


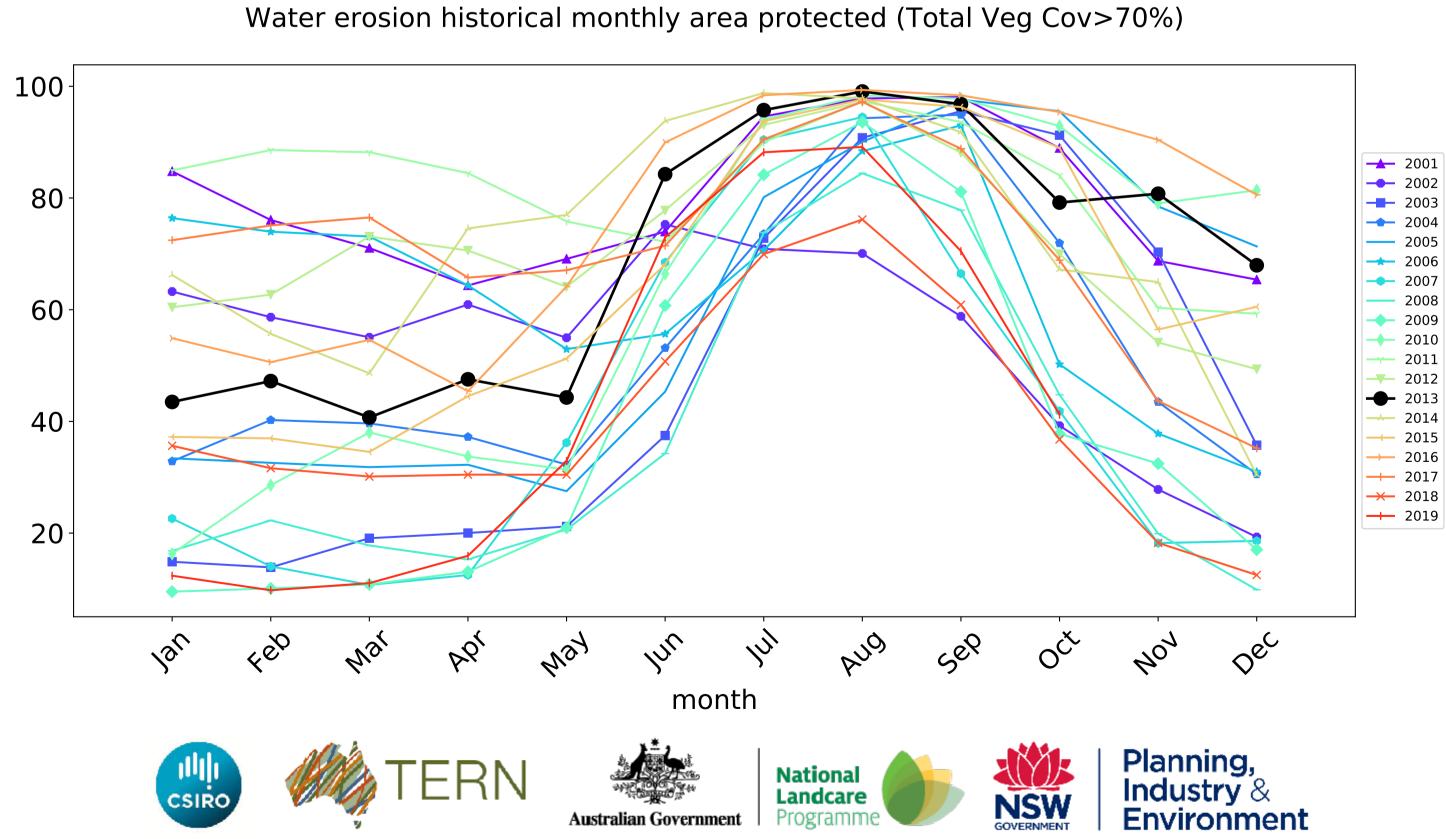


Cropping timeseries

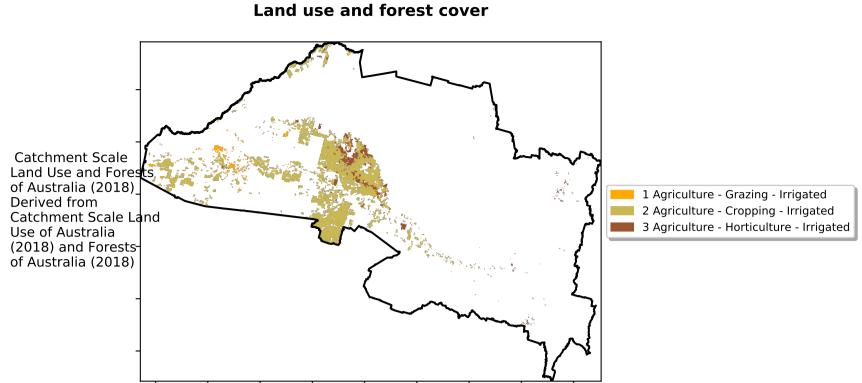


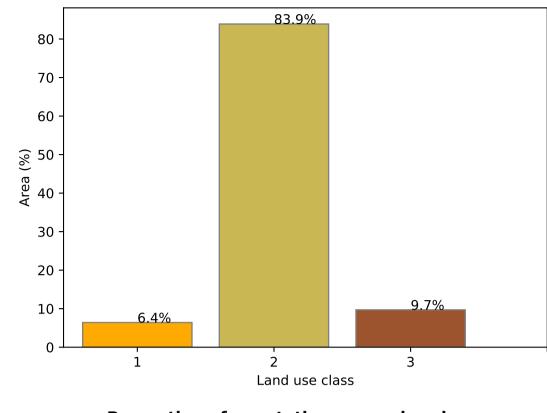




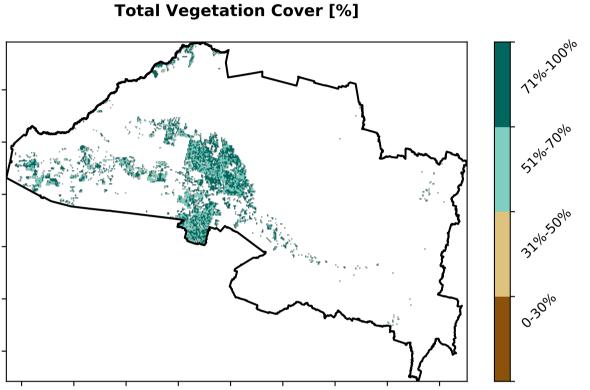


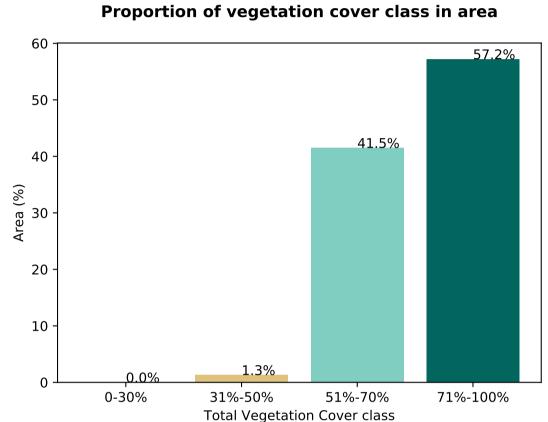
Irrigation

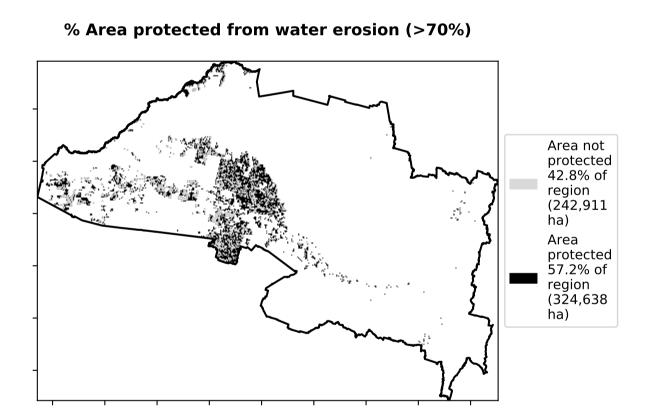




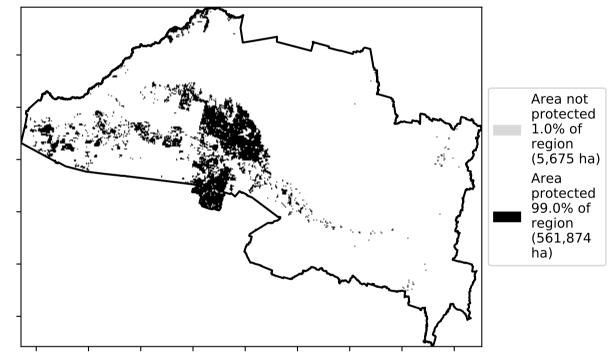
Proportion of each land class in area

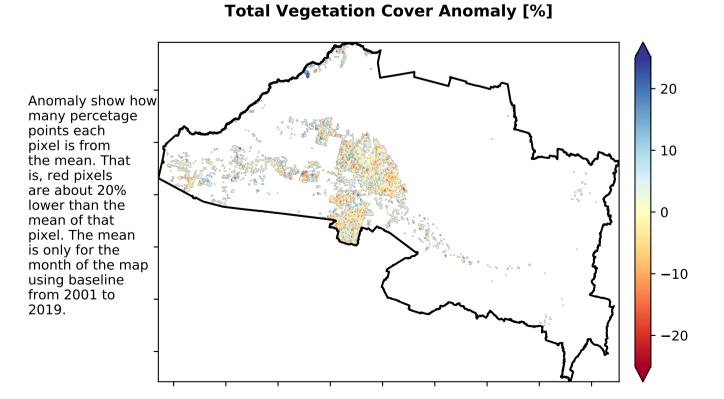




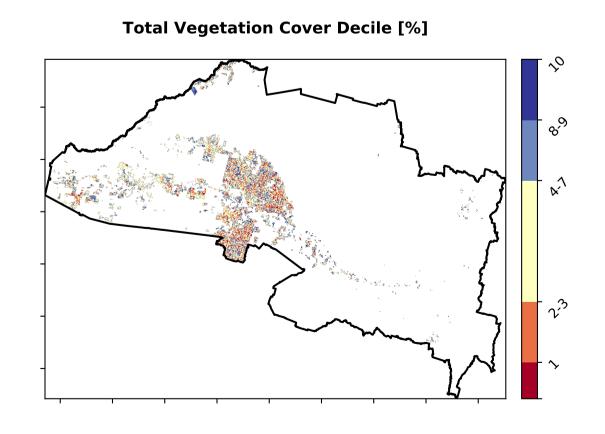


% Area protected from wind erosion (>50%)





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



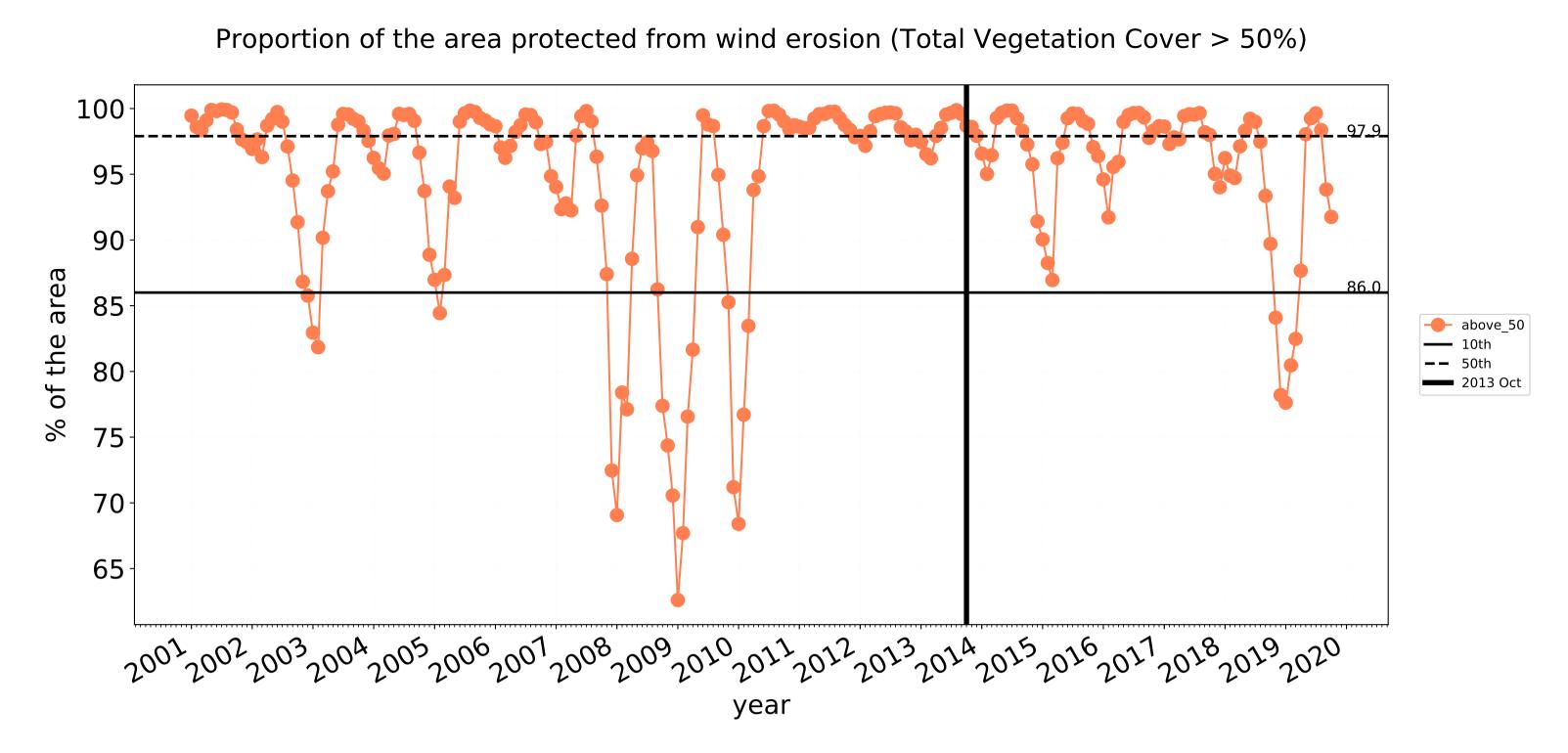


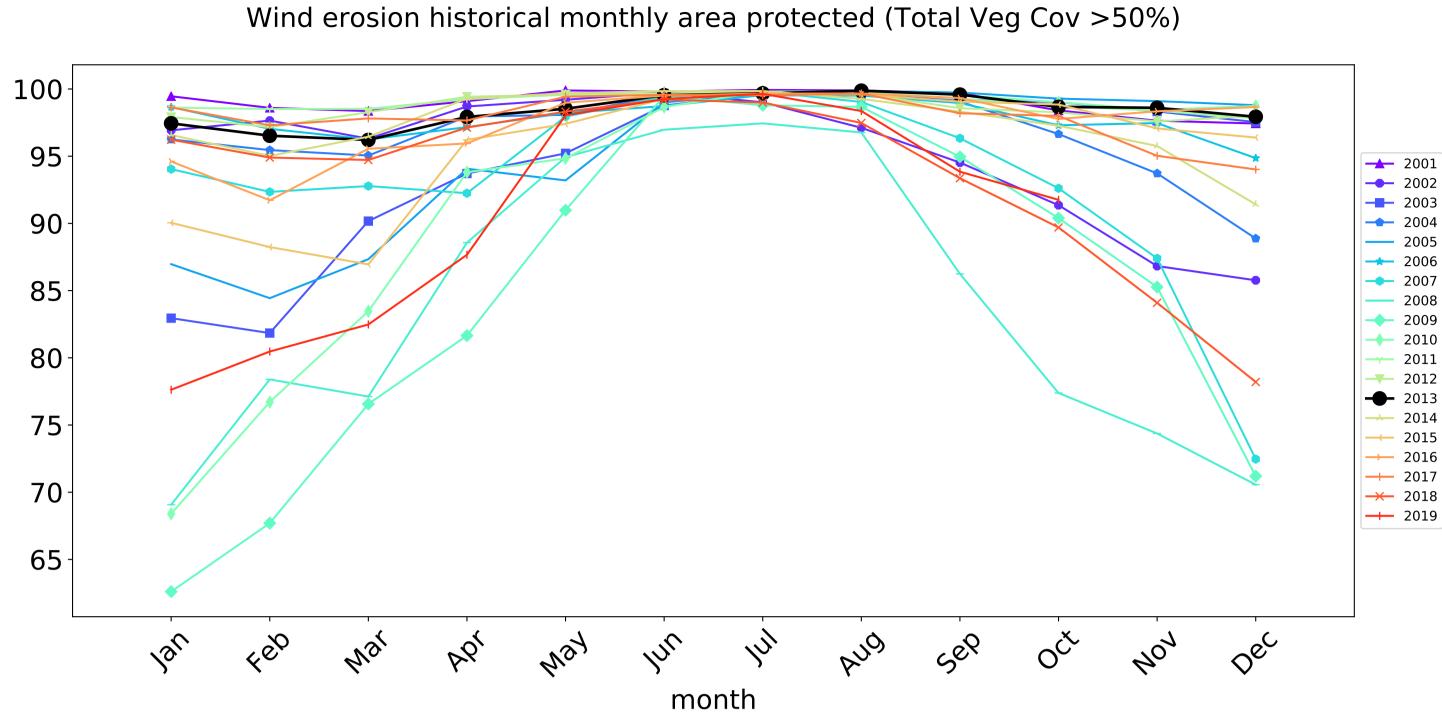


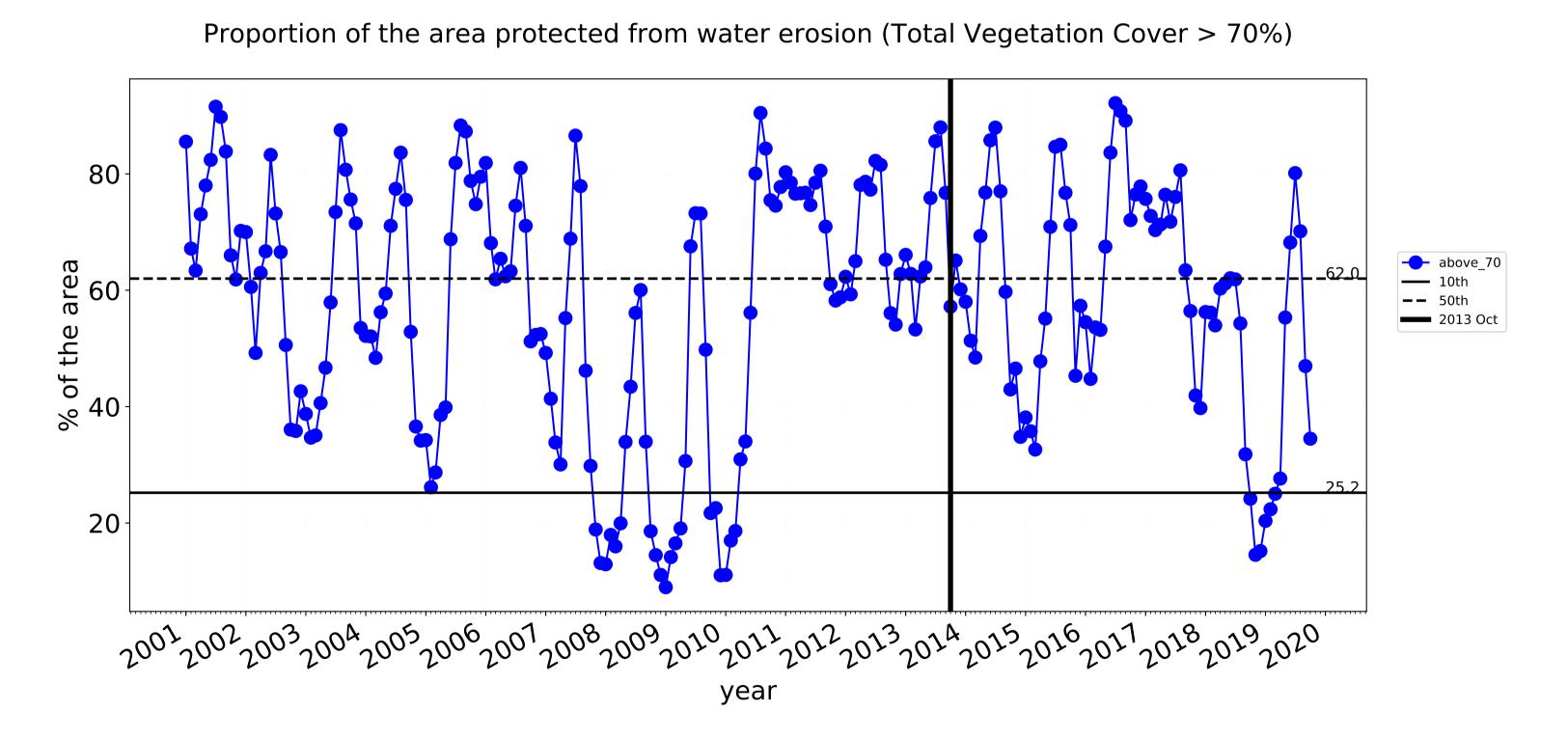


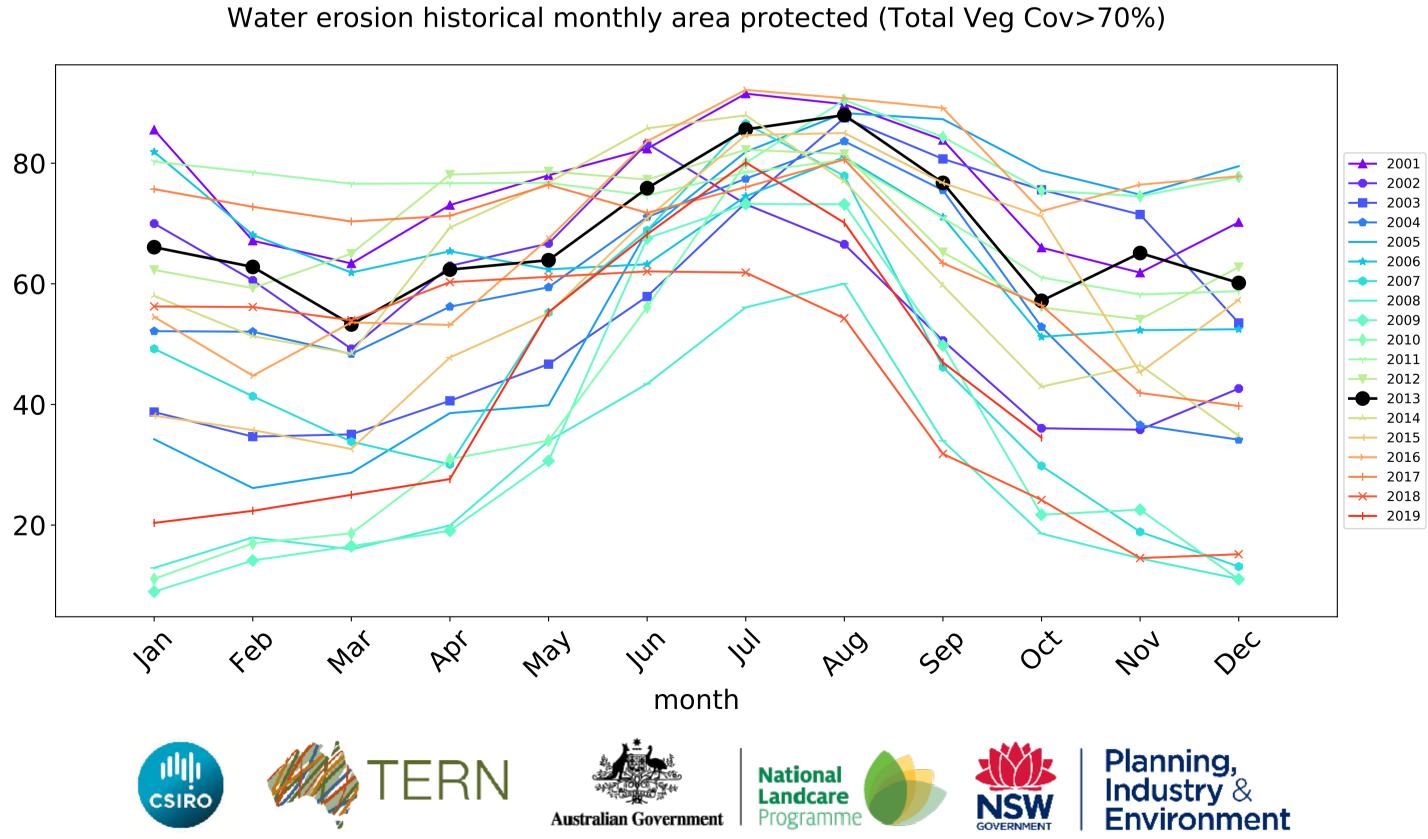










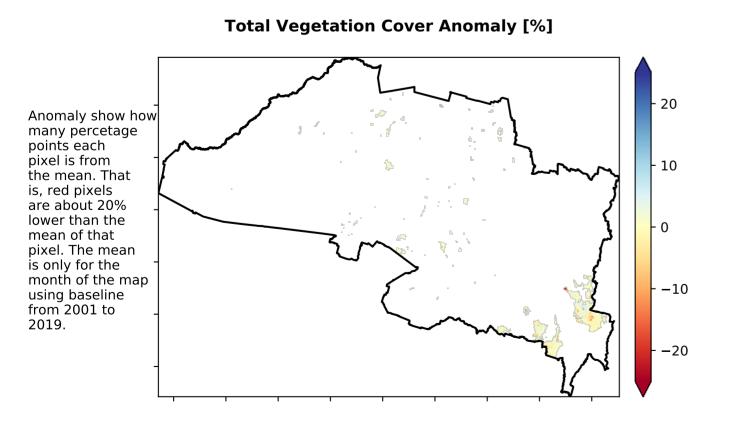


Production native forests and plantation forests

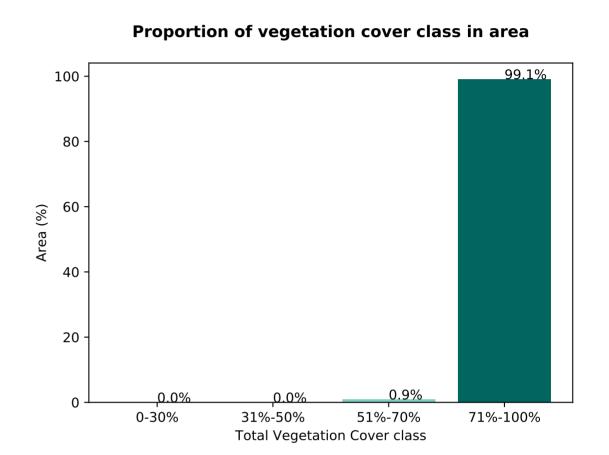
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) (2018) and Forests of Australia (2018)

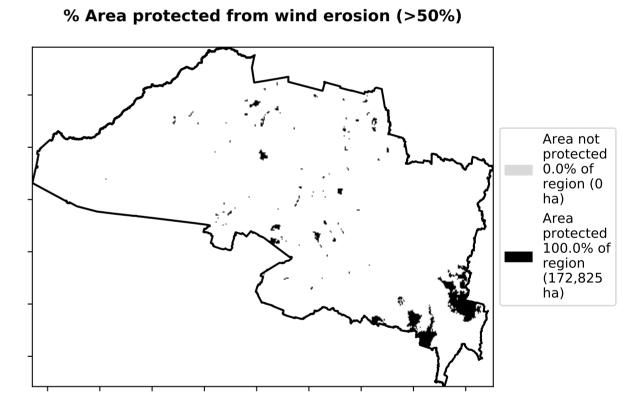
Total Vegetation Cover [%] Total Vegetation Cover [%] Total Vegetation Cover [%]

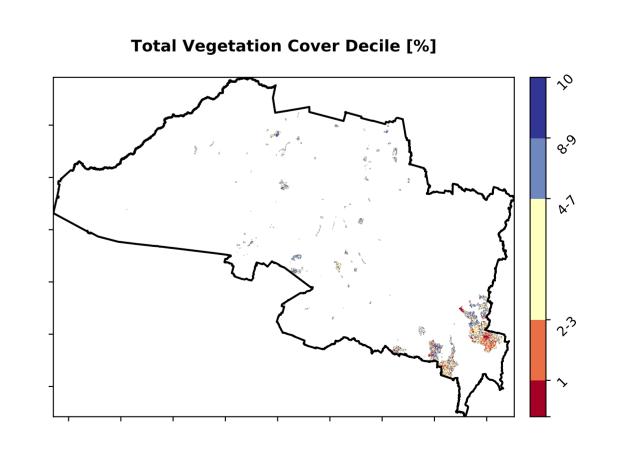
Area not protected 0.9% of region (1,555 ha) Area protected 99.1% of region (171,269 ha)



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.











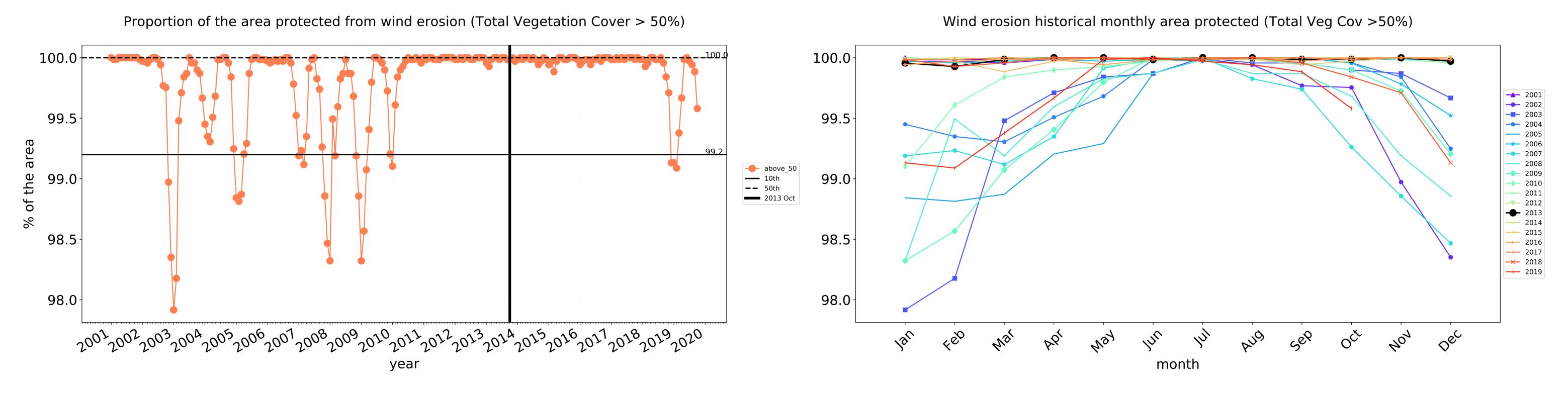


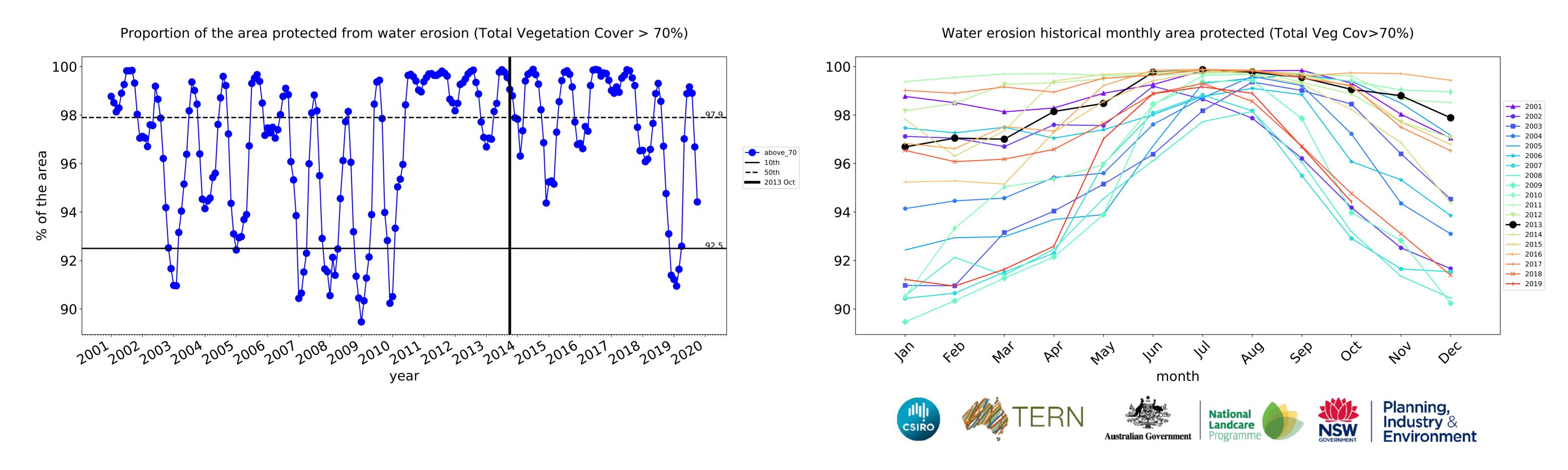






Production native forests and plantation forests timeseries





Riverina (6,694,000 ha and no data 14,335 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	6,694,000	100.0% 6,691,950	99.3% 6,648,354	76.7% 5,136,801	44.3% 2,967,911	16.1% 1,074,770	4.6% 306,520
Conservation and natural environments	323,150	100.0% 323,150	100.0% 323,100	93.3% 301,500	79.2% 255,950	59.9% 193,675	22.4% 72,425
Conservation and natural environments non forest	83,350	100.0% 83,350	99.9% 83,300	74.7% 62,275	24.7% 20,575	12.3% 10,250	5.9% 4,950
Conservation and natural environments Forest (non woodland)	195,300	100.0% 195,300	100.0% 195,300	100.0% 195,225	99.4% 194,175	85.4% 166,850	33.7% 65,800
Agriculture	6,068,050	100.0% 6,067,500	99.3% 6,026,775	75.3% 4,571,475	41.2% 2,500,025	12.4% 755,400	2.9% 175,850
Grazing	2,311,750	100.0% 2,311,425	99.5% 2,299,250	74.5% 1,722,525	44.1% 1,019,275	18.5% 426,825	3.8% 88,725
Grazing non forest	2,066,750	100.0% 2,066,425	99.4% 2,054,250	71.8% 1,484,725	39.8% 823,375	16.8% 347,225	3.7% 76,775
Grazing Woodland forest	141,650	100.0% 141,650	100.0% 141,650	95.7% 135,575	72.1% 102,100	18.1% 25,600	1.5% 2,125
Grazing - Forest (non woodland)	103,350	100.0% 103,350	100.0% 103,350	98.9% 102,225	90.8% 93,800	52.2% 54,000	9.5% 9,825
Cropping	3,186,925	100.0% 3,186,925	99.3% 3,165,725	79.2% 2,523,600	43.5% 1,387,350	10.1% 320,675	2.7% 85,450
Irrigation	567,550	100.0% 567,325	98.7% 560,000	57.2% 324,550	16.4% 93,100	1.4% 7,850	0.3% 1,675
Production native forests and plantation forests	172,825	100.0% 172,825	100.0% 172,800	99.1% 171,200	93.6% 161,850	67.2% 116,100	32.6% 56,275











