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: March 2015

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





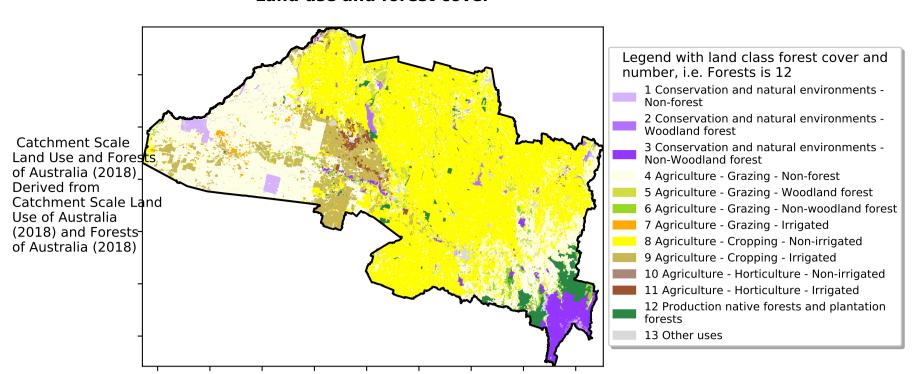




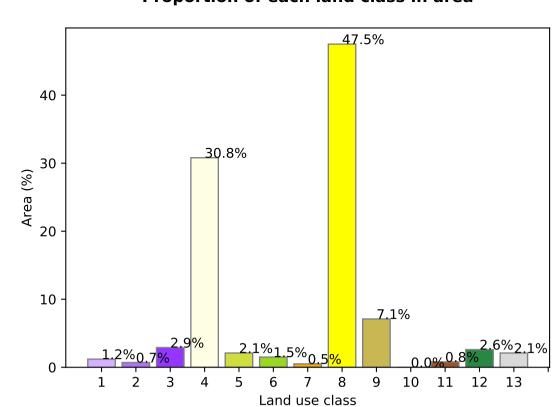


Vegetation Cover Mar 2015

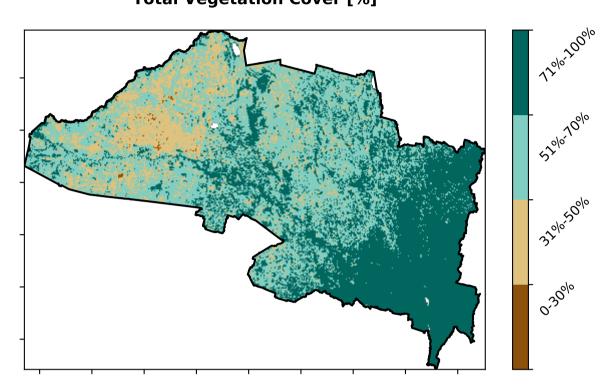
Land use and forest cover



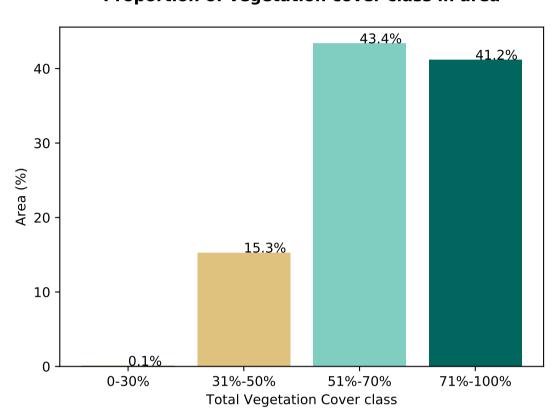
Proportion of each land class in area



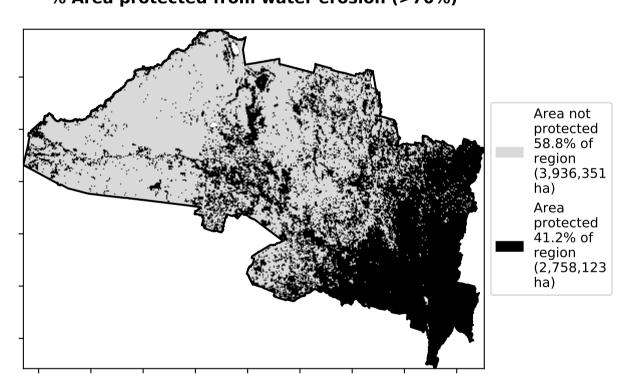
Total Vegetation Cover [%]



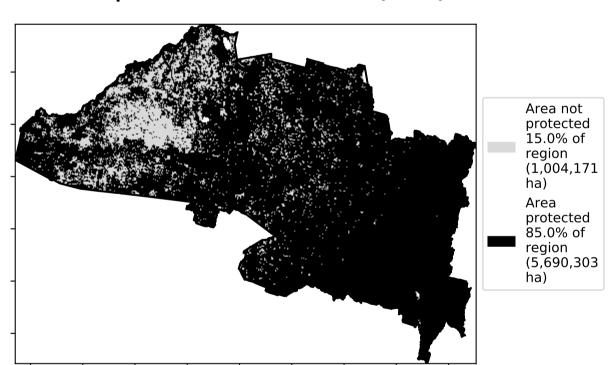
Proportion of vegetation cover class in area



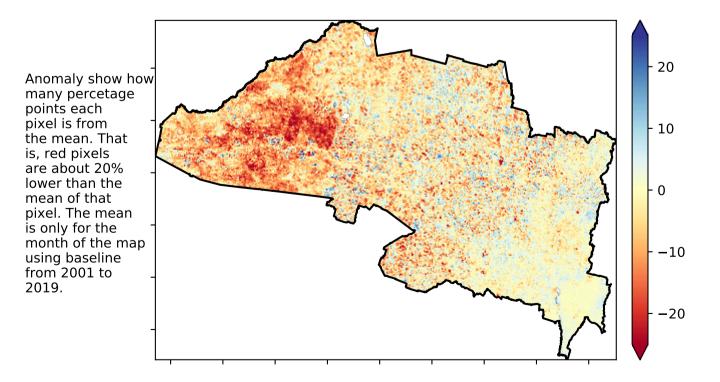
% Area protected from water erosion (>70%)



% 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.



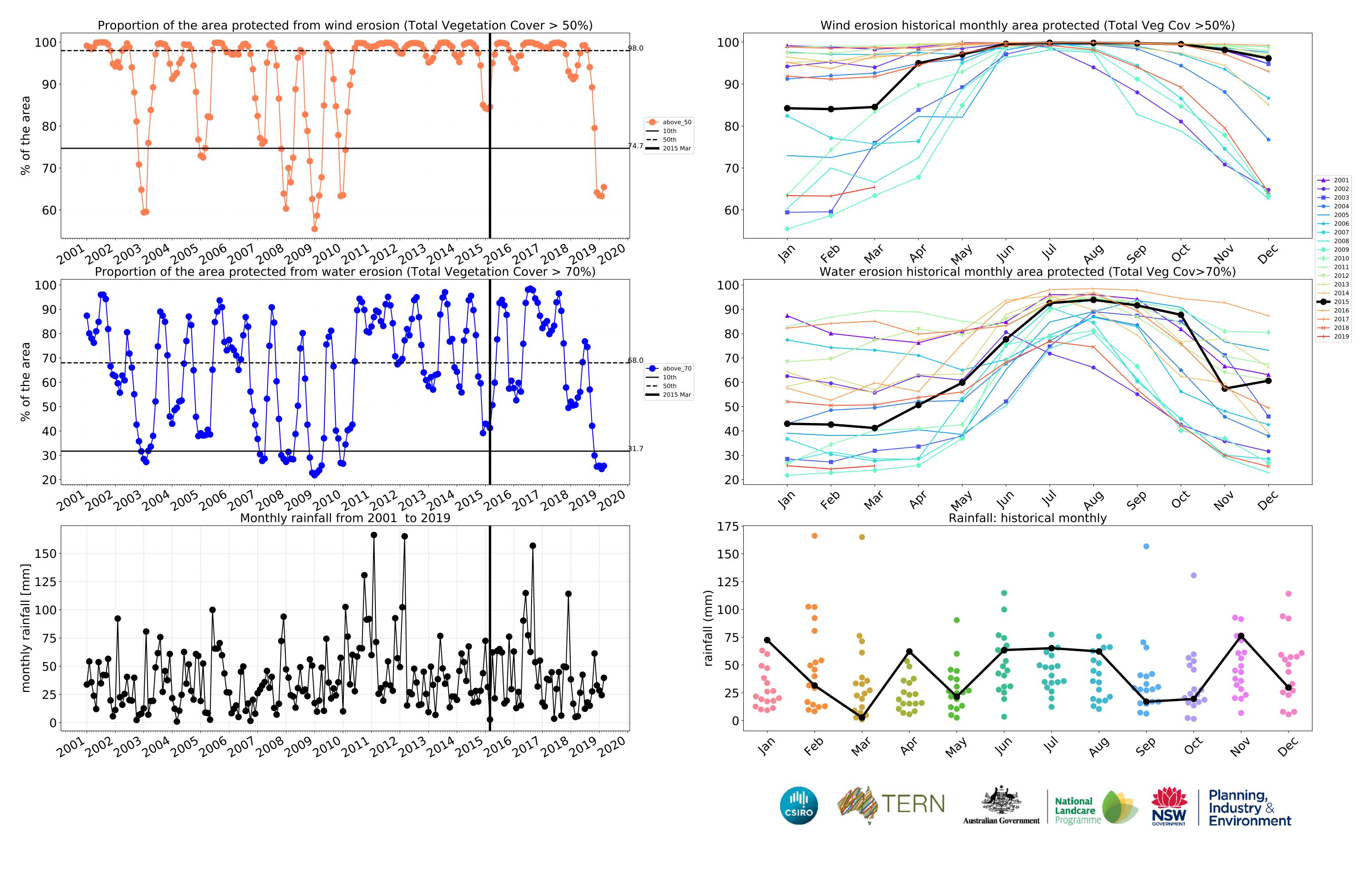




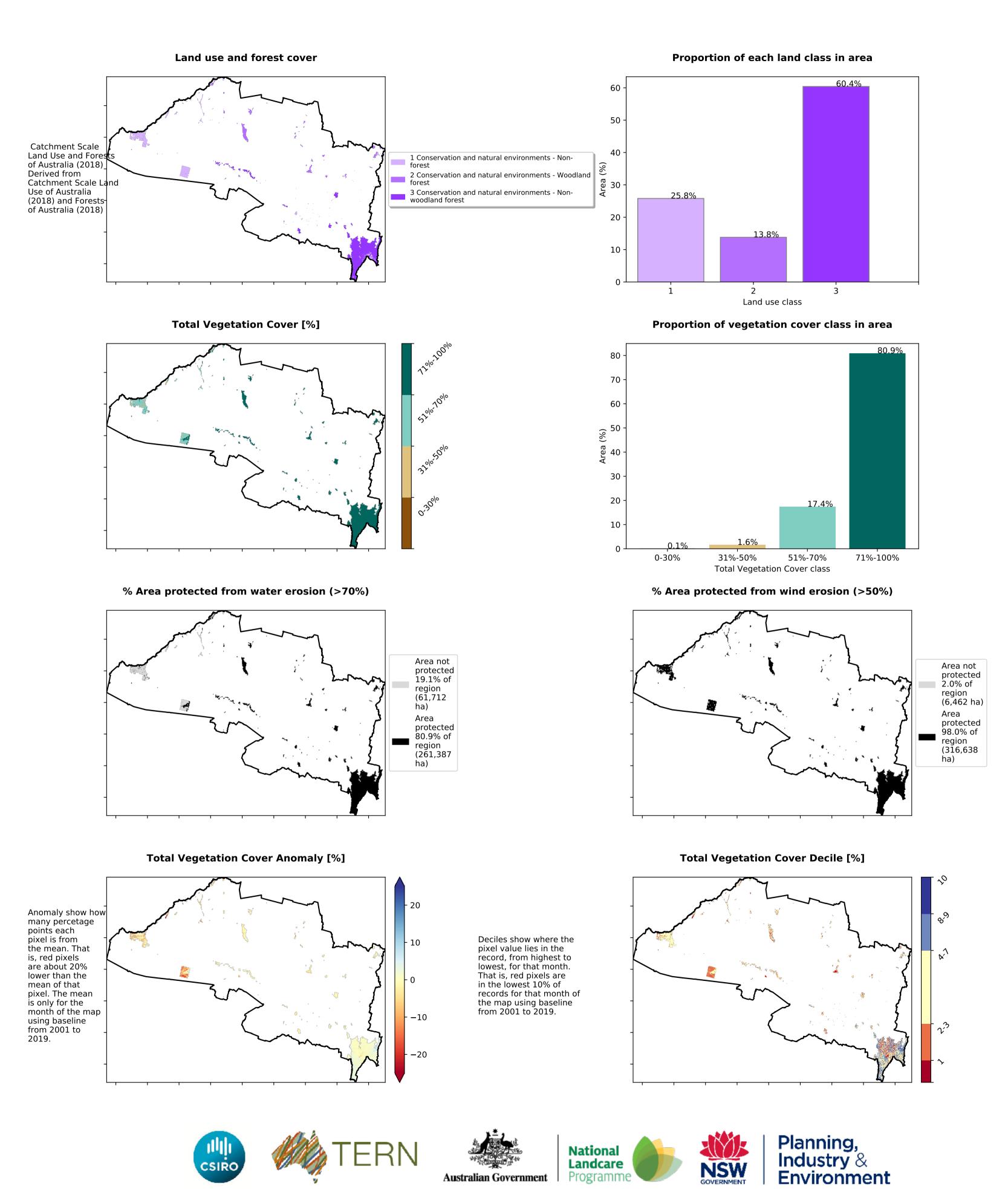




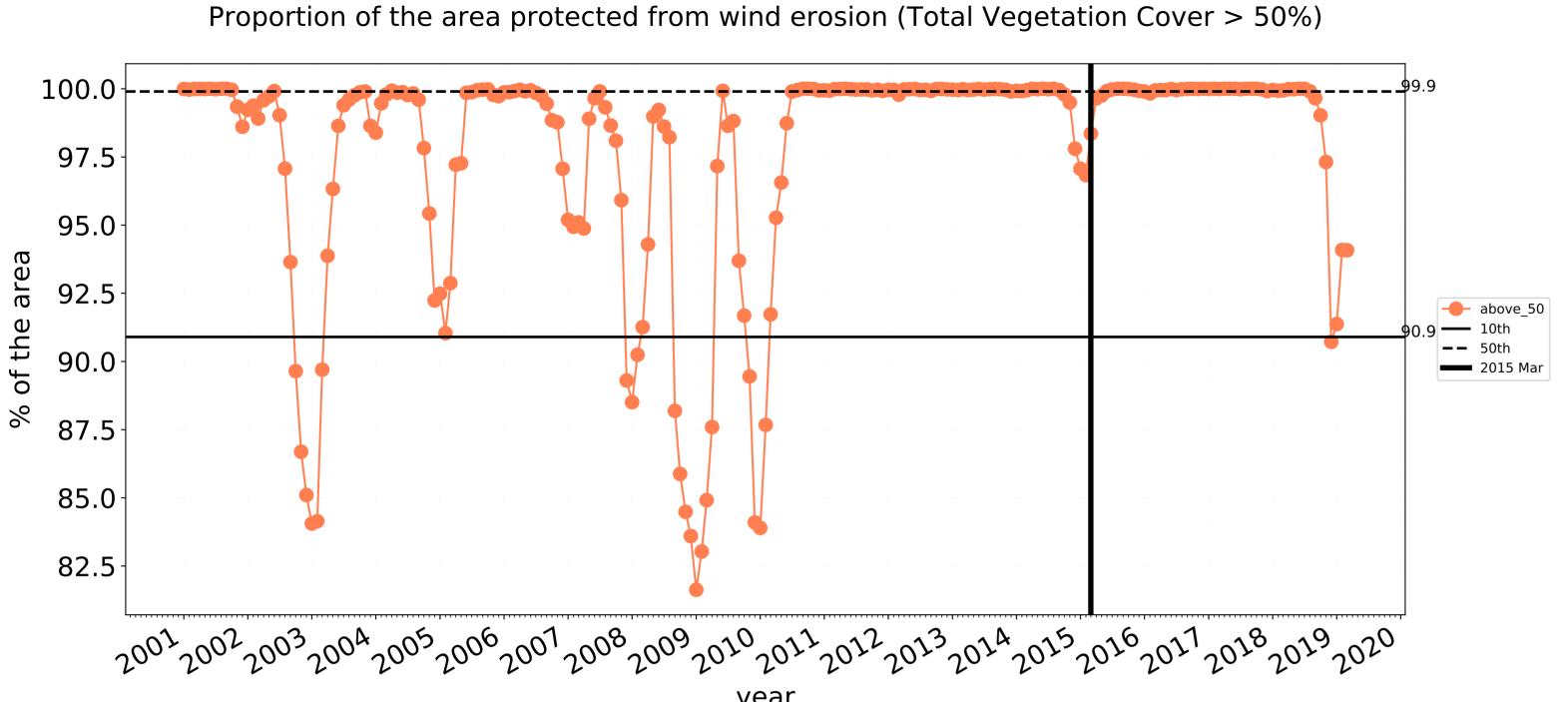


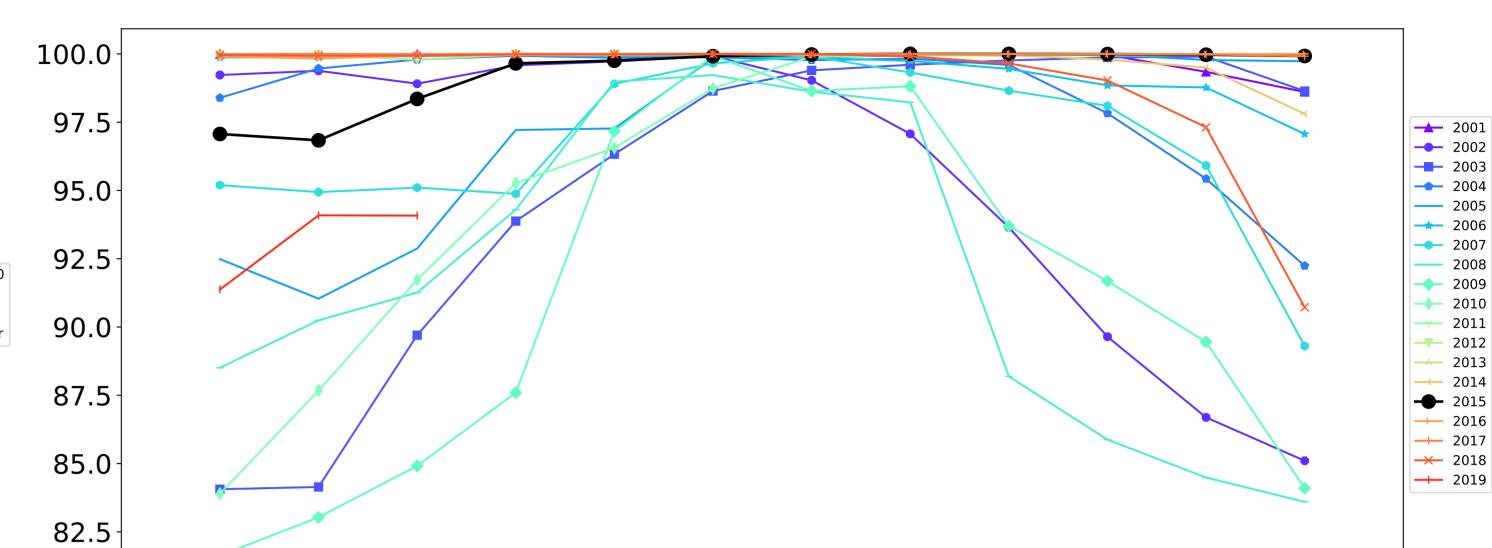


Conservation and natural environments



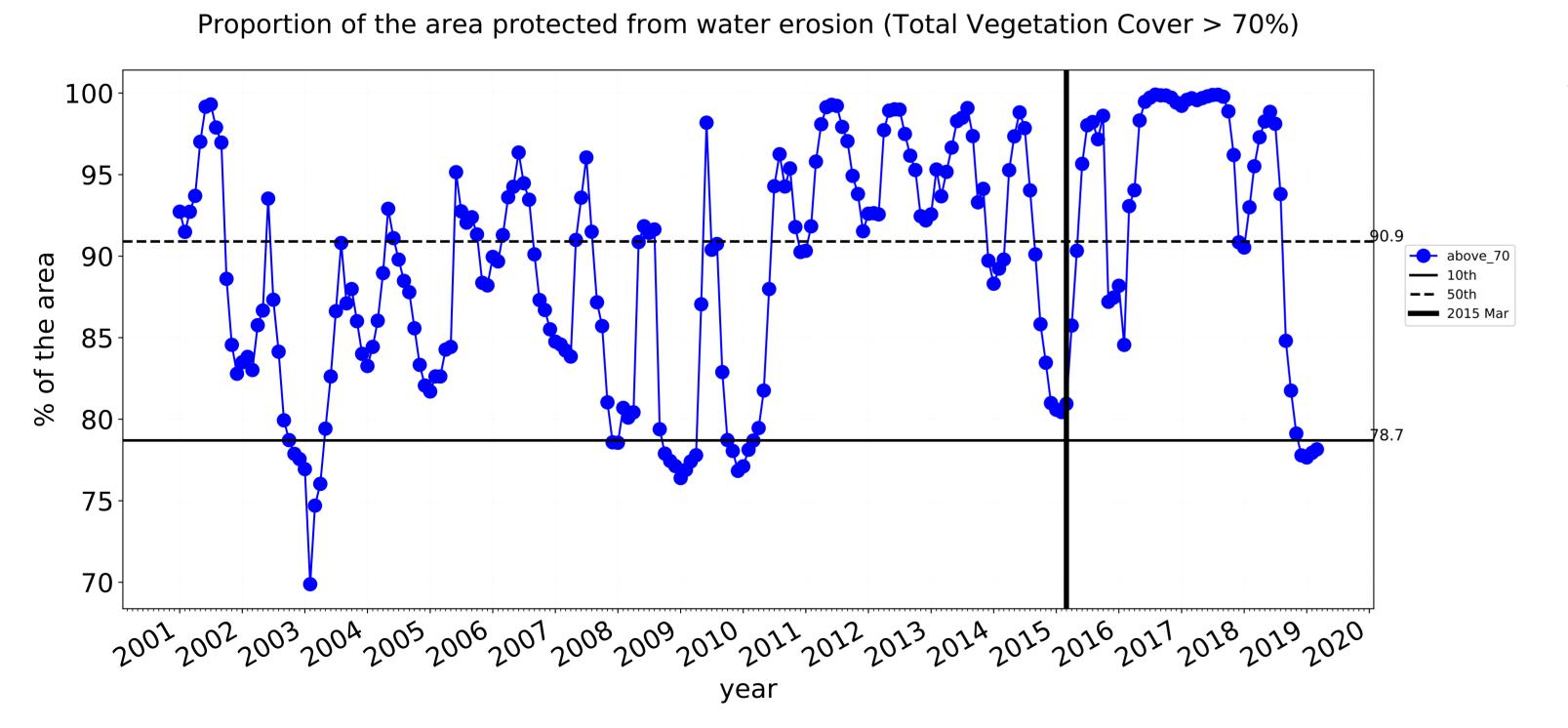
Conservation and natural environments timeseries

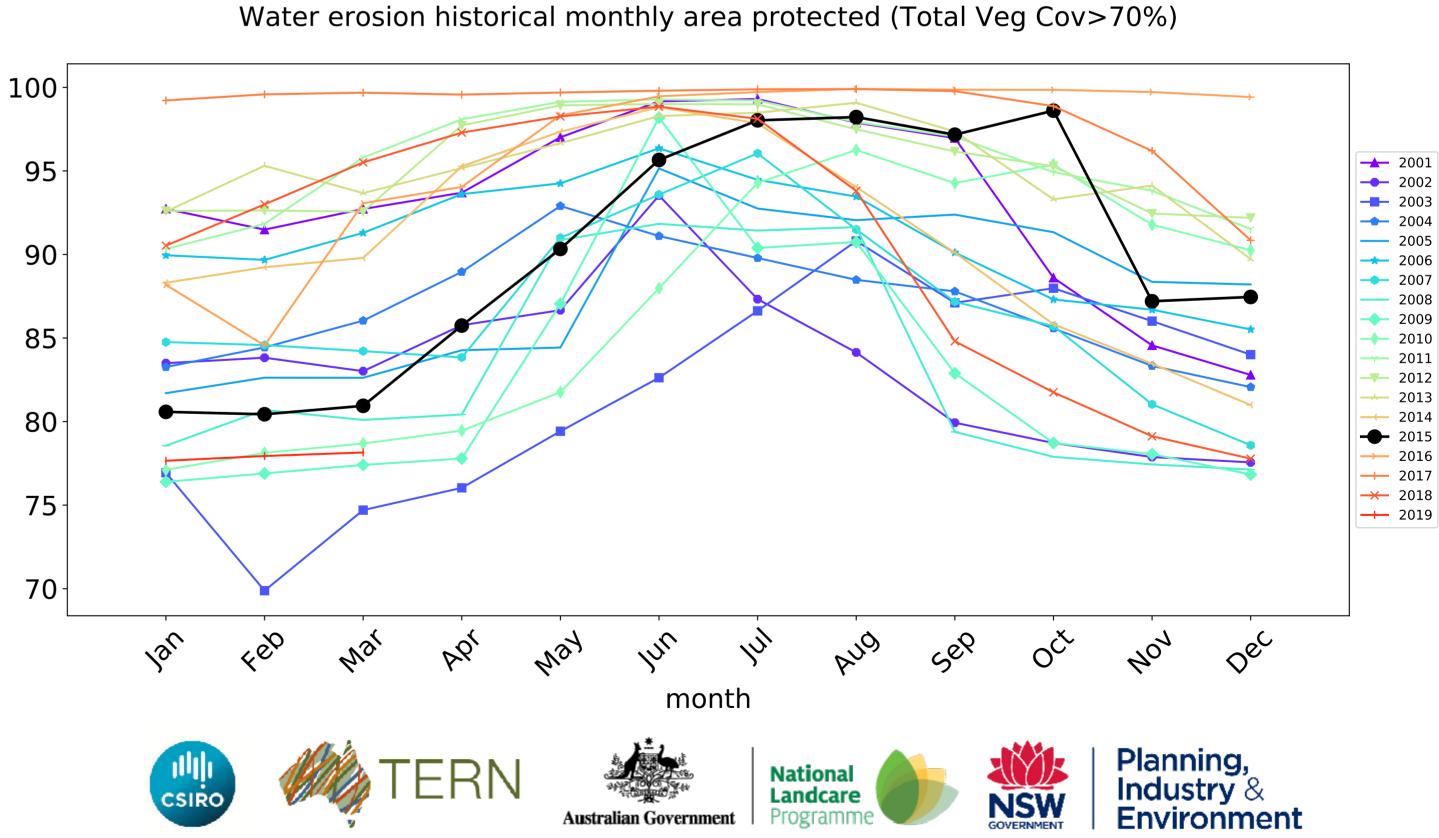




month

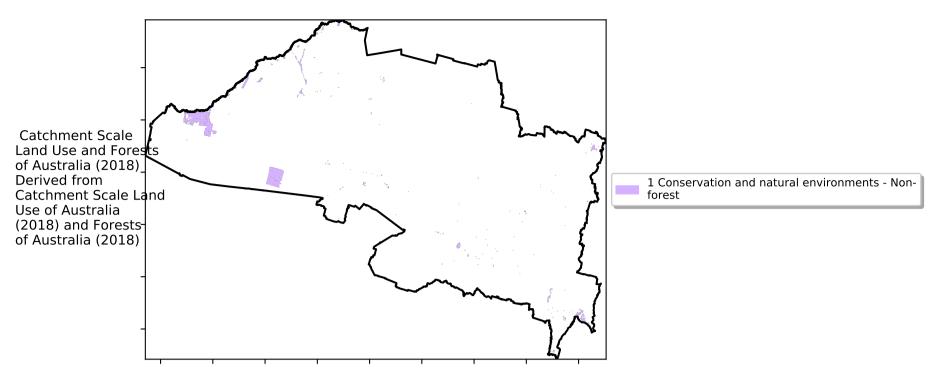
Wind erosion historical monthly area protected (Total Veg Cov >50%)



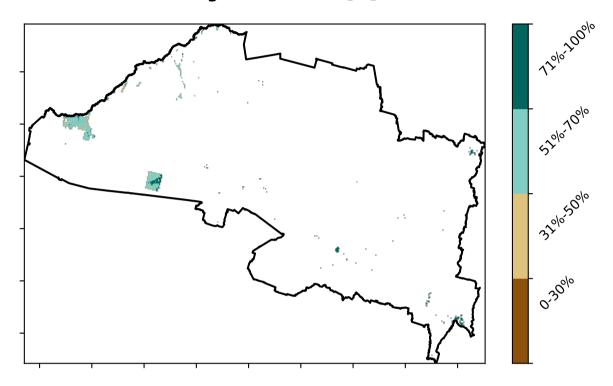


Conservation and natural environments non forest

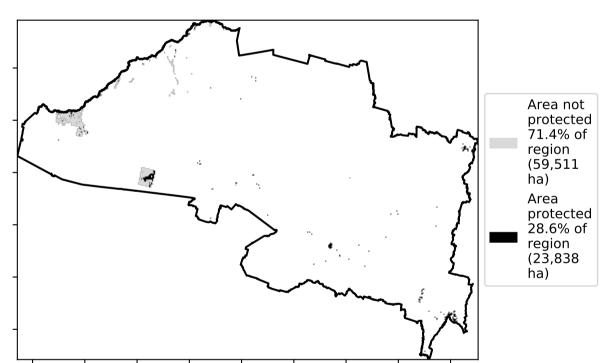
Land use and forest cover



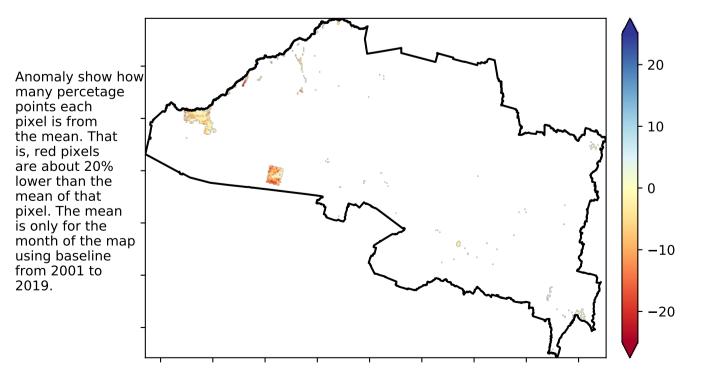
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

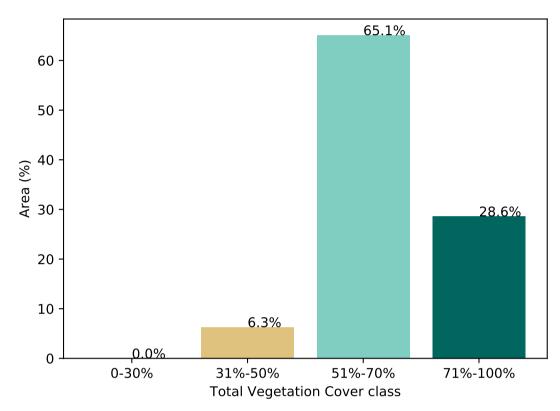


Total Vegetation Cover Anomaly [%]

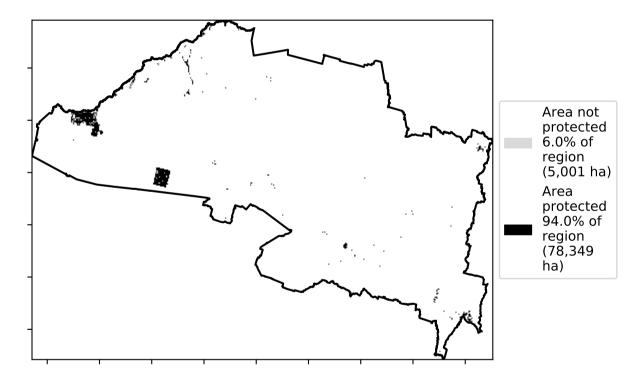


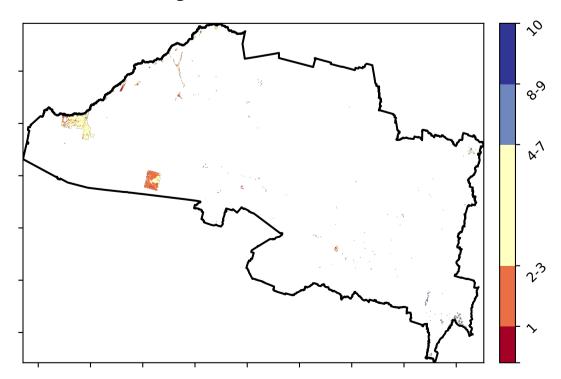
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









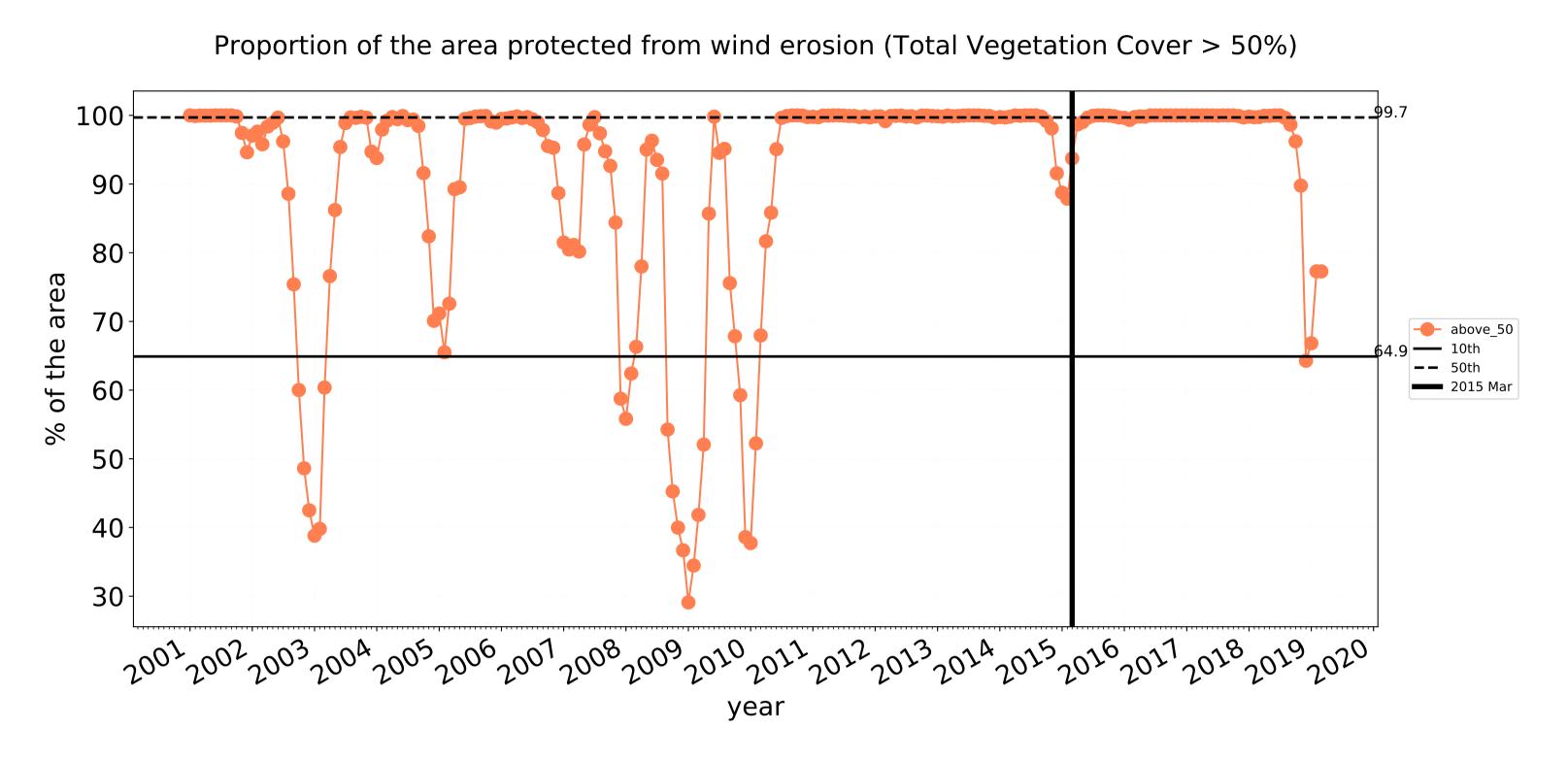


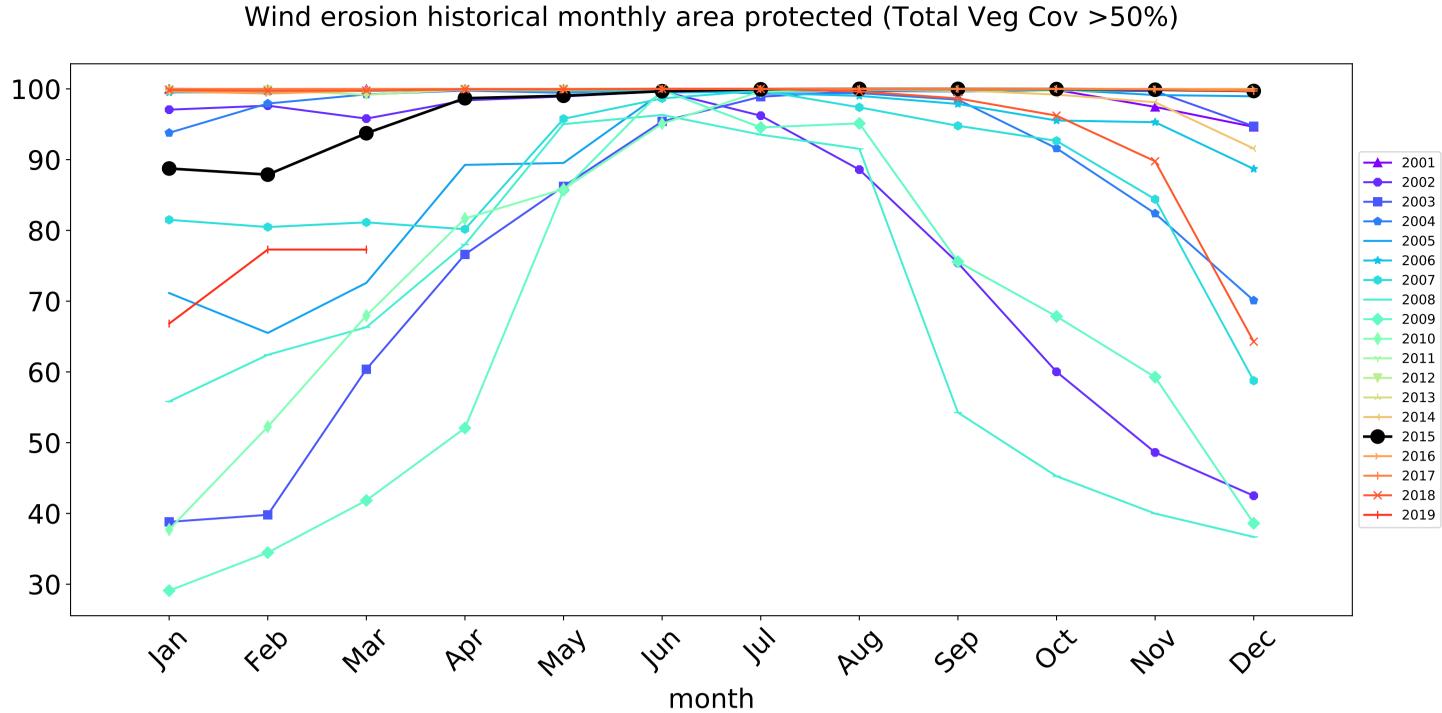


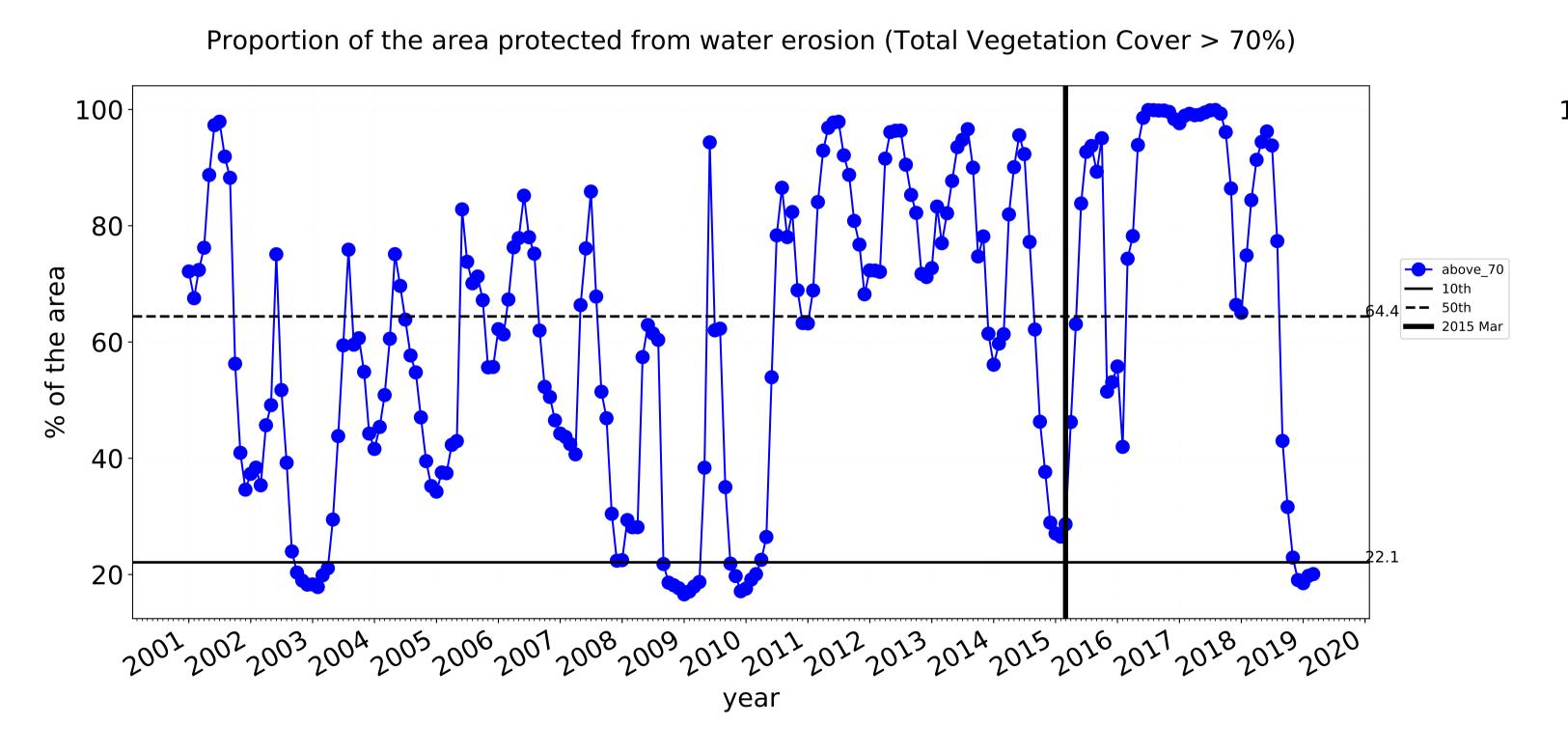


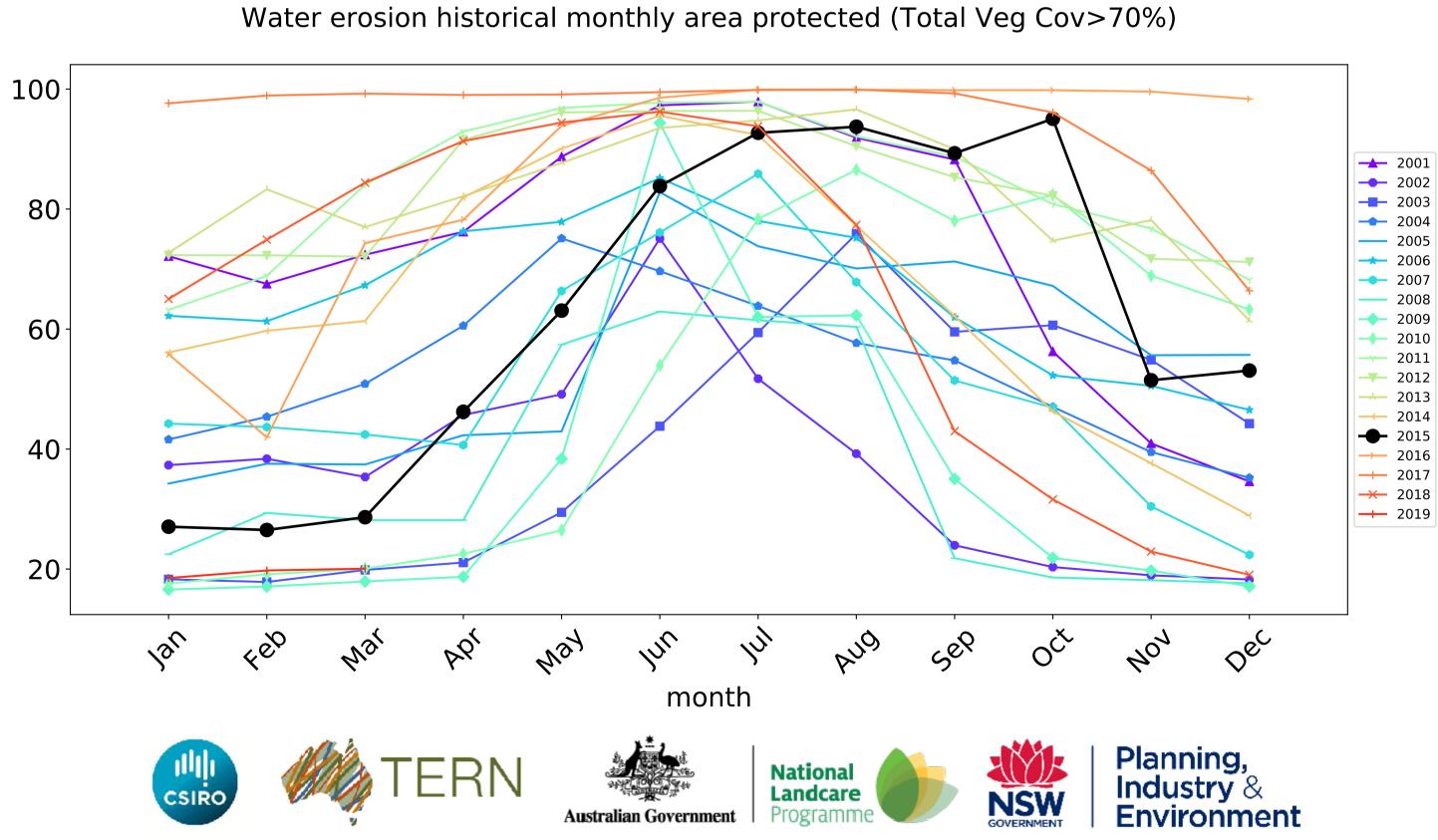


Conservation and natural environments non forest timeseries

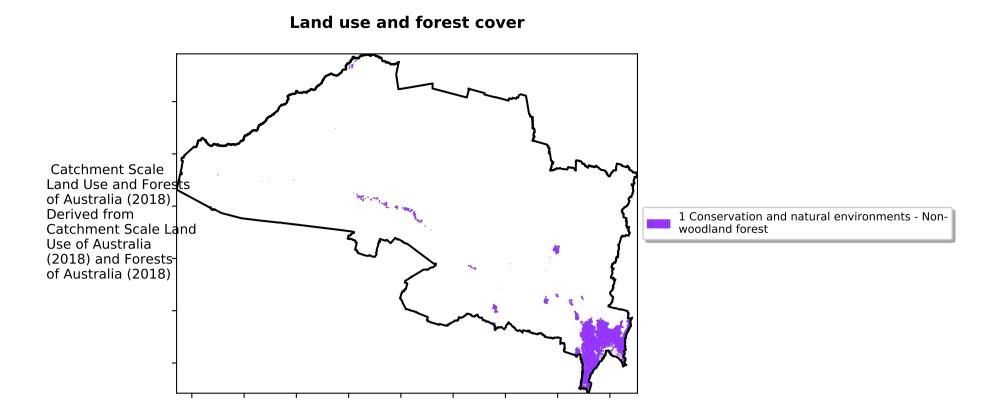




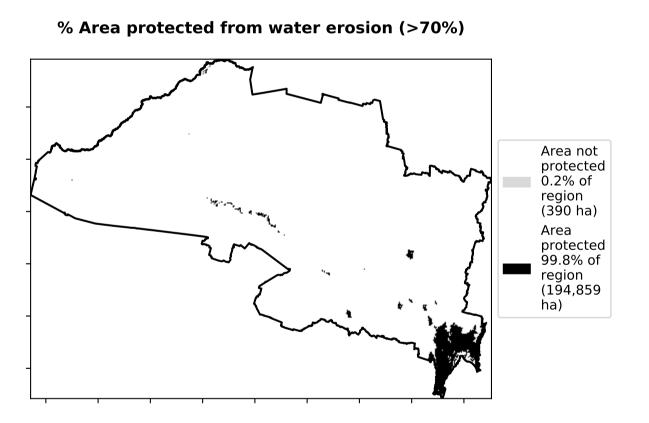


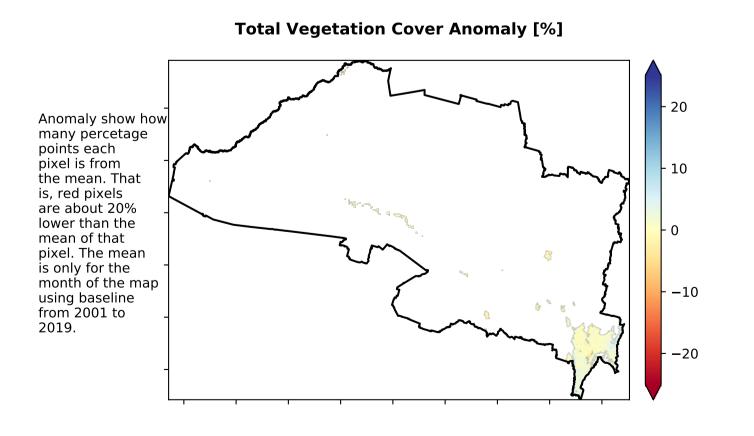


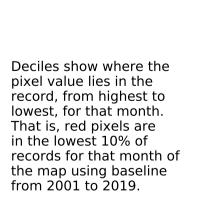
Conservation and natural environments Forest (non woodland)

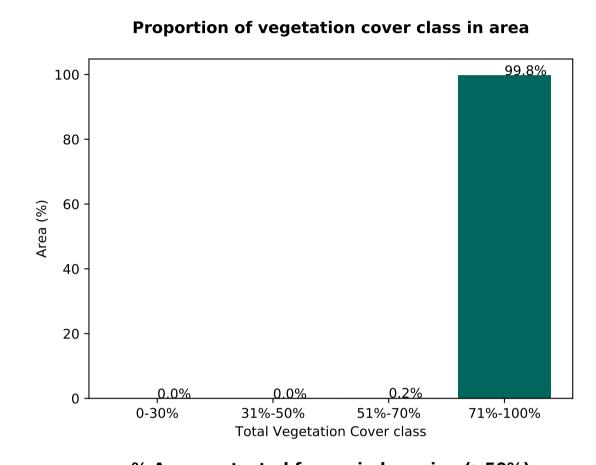


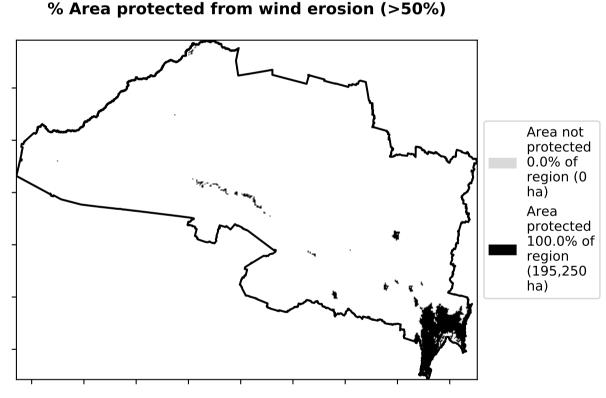
Total Vegetation Cover [%] Train-radio Tra

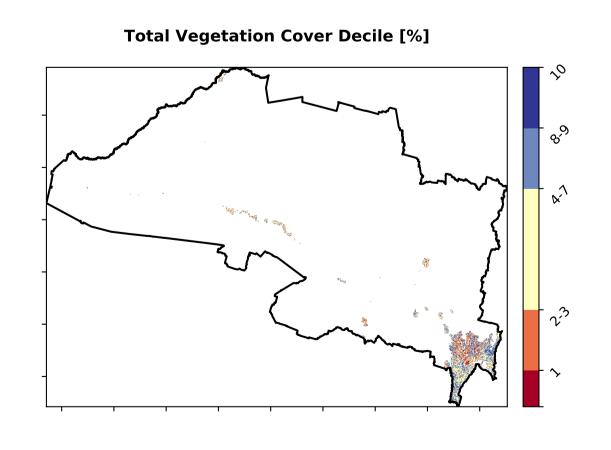














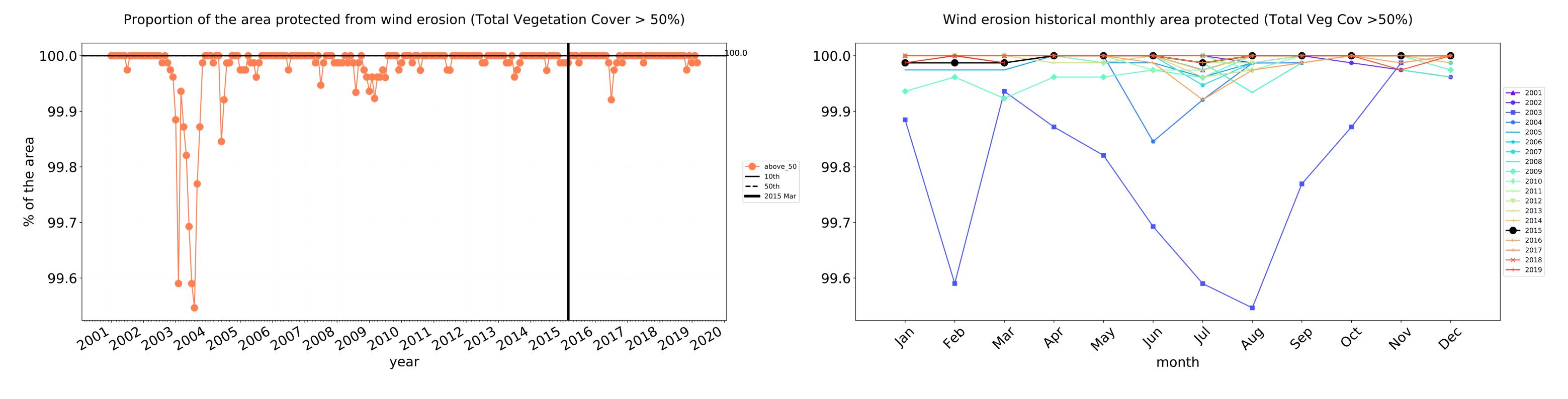


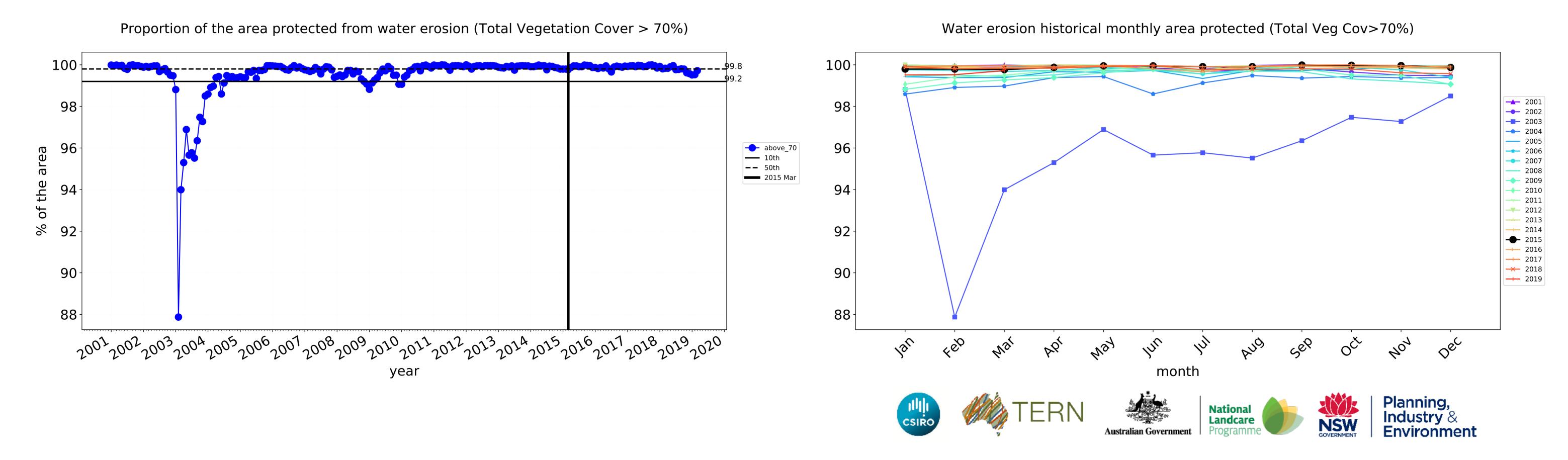












Agriculture

Catchment Scale Land Use and Forest of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Soft 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 - Irrigated 5 Agriculture - Cropping - Non-irrigated 6 Agriculture - Horticulture - Non-irrigated 8 Agriculture - Horticulture - Horticulture - Irrigated

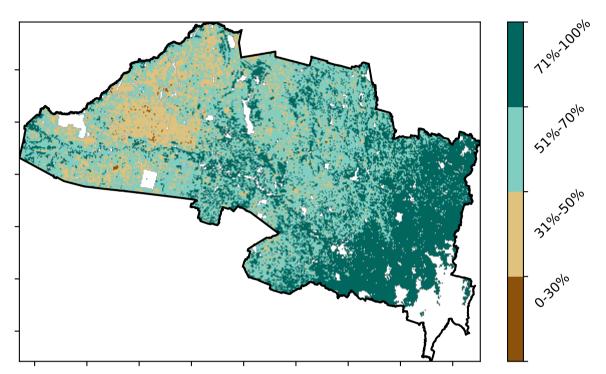
50 -40 -(%) 30 -EDA 20 -

10

Proportion of each land class in area

52.5%

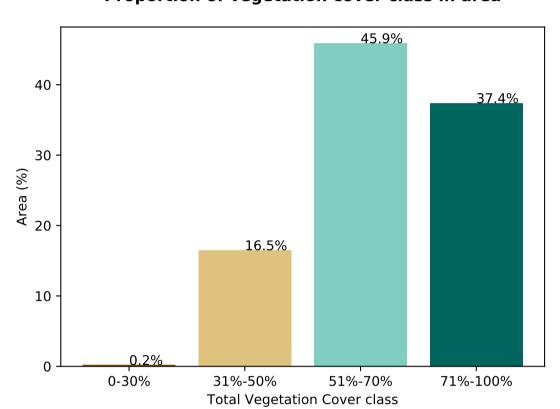
Total Vegetation Cover [%]



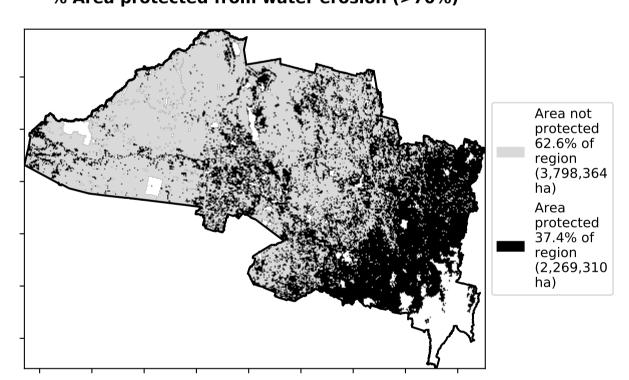
Proportion of vegetation cover class in area

Land use class

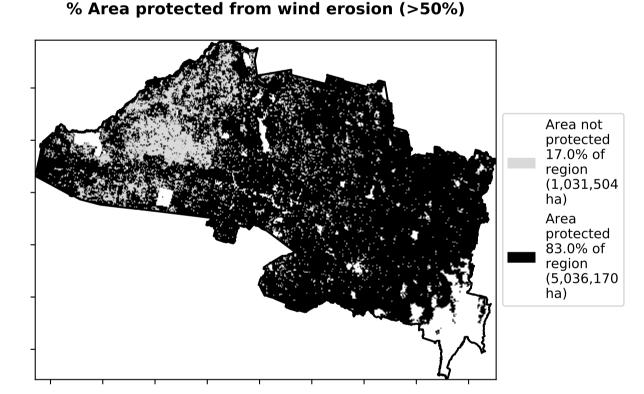
0.9%



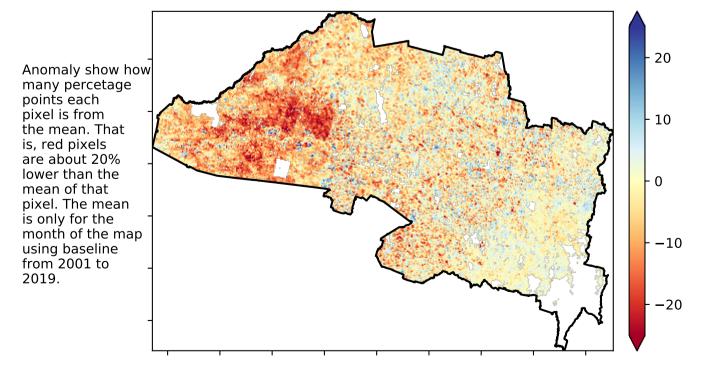
% Area protected from water erosion (>70%)



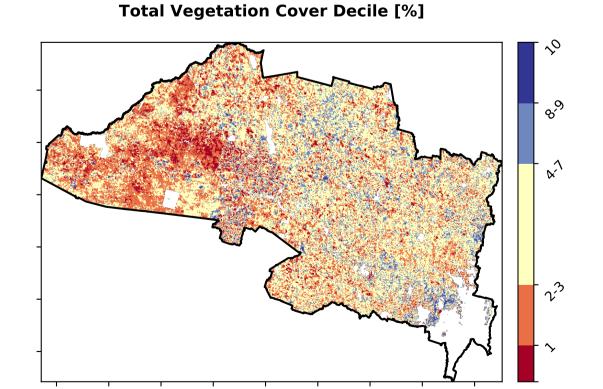
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Total Vegetation Cover Anomaly [%]



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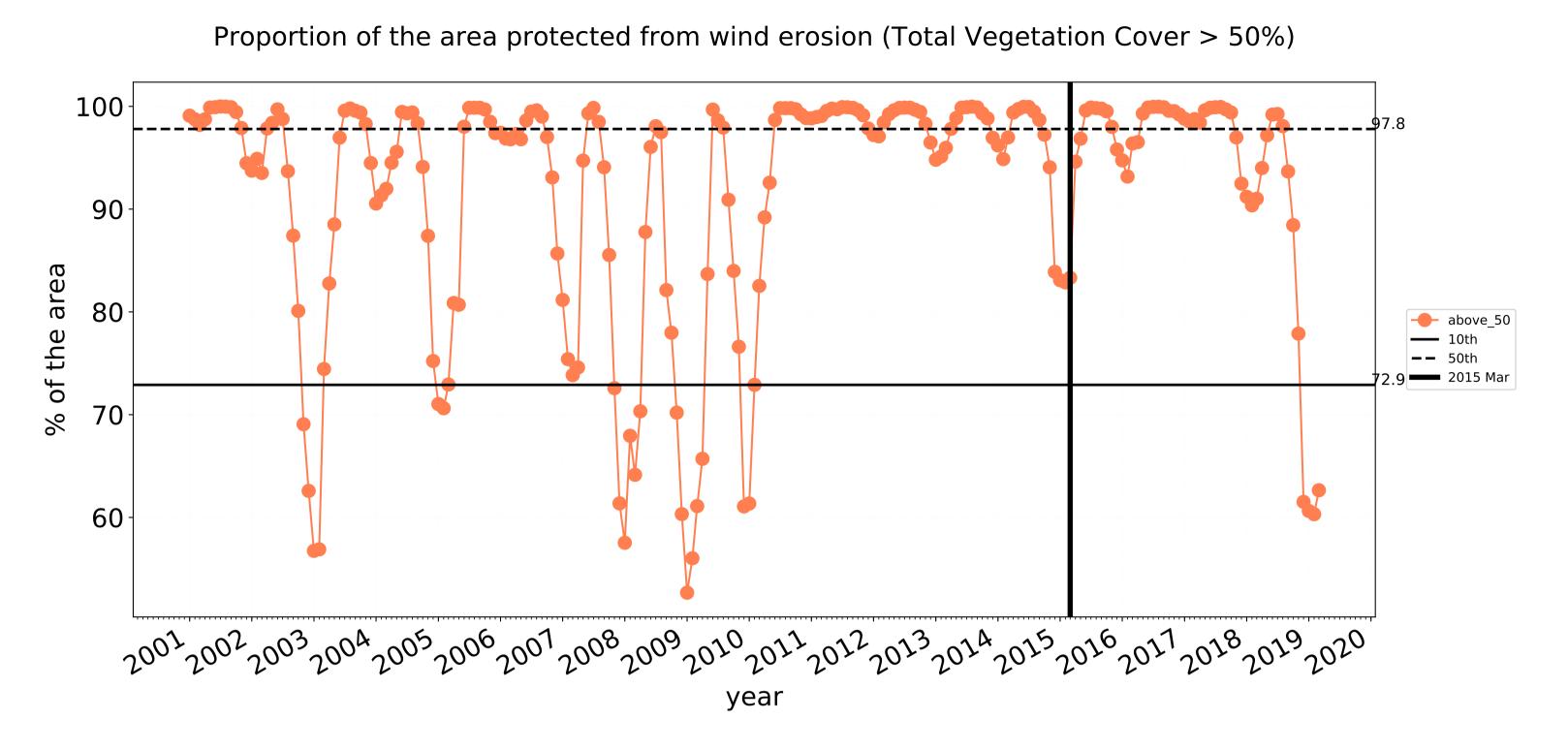


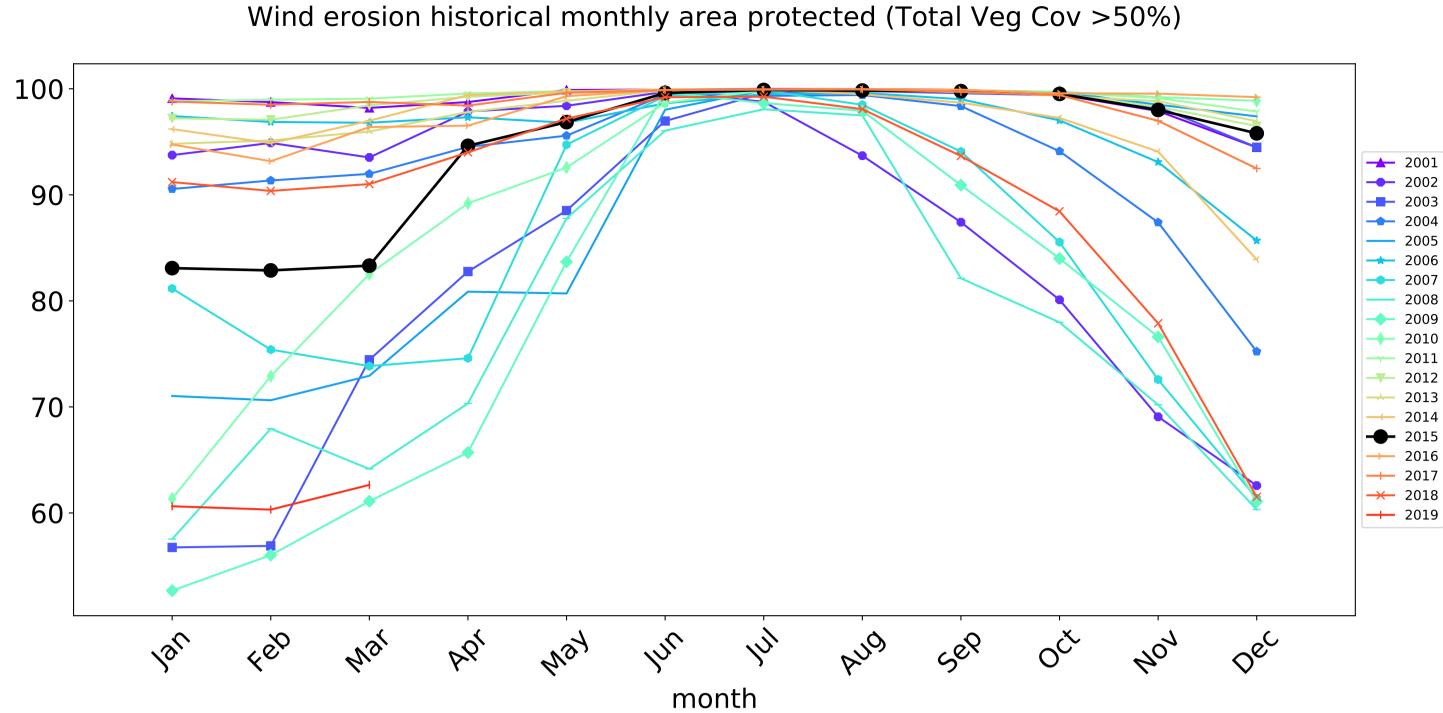


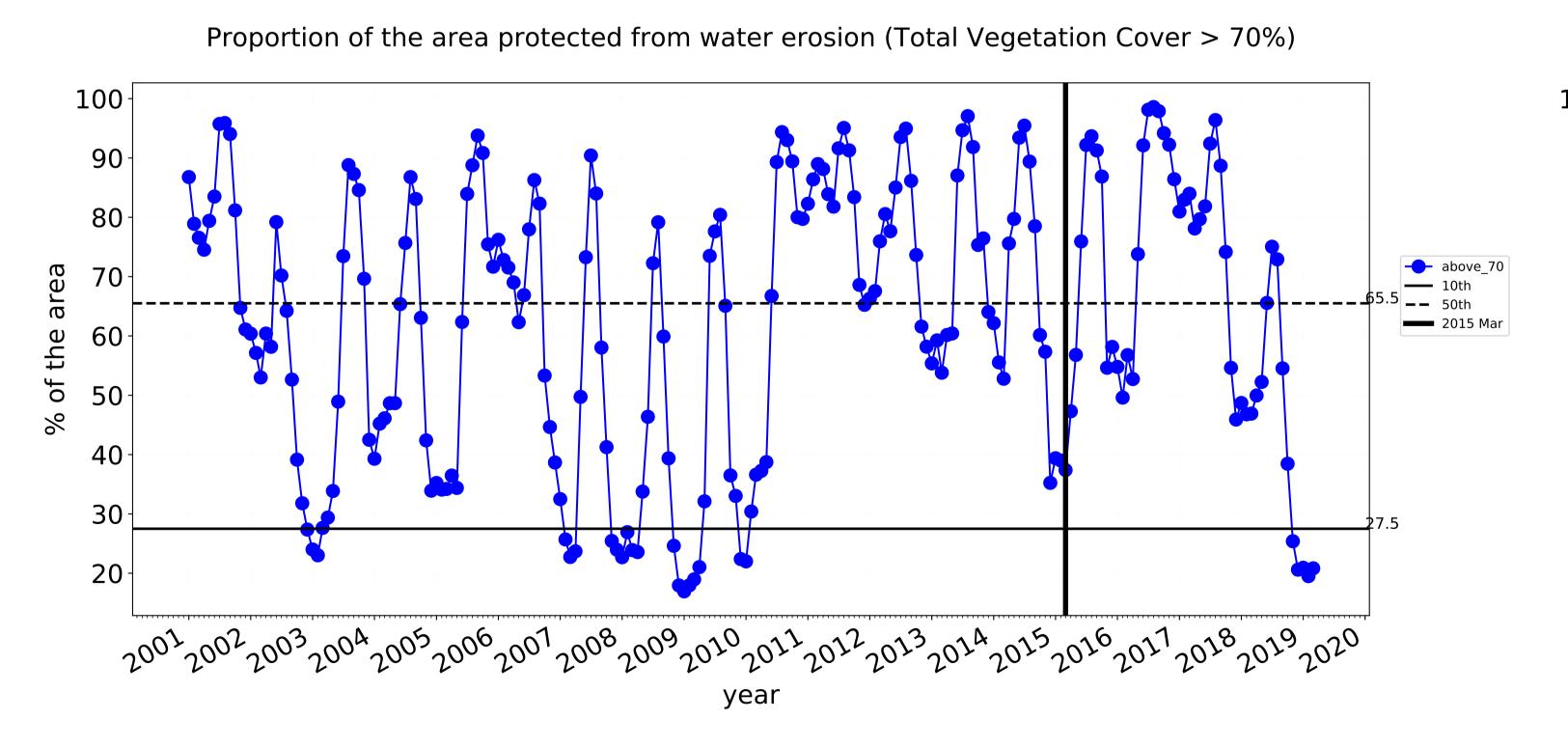


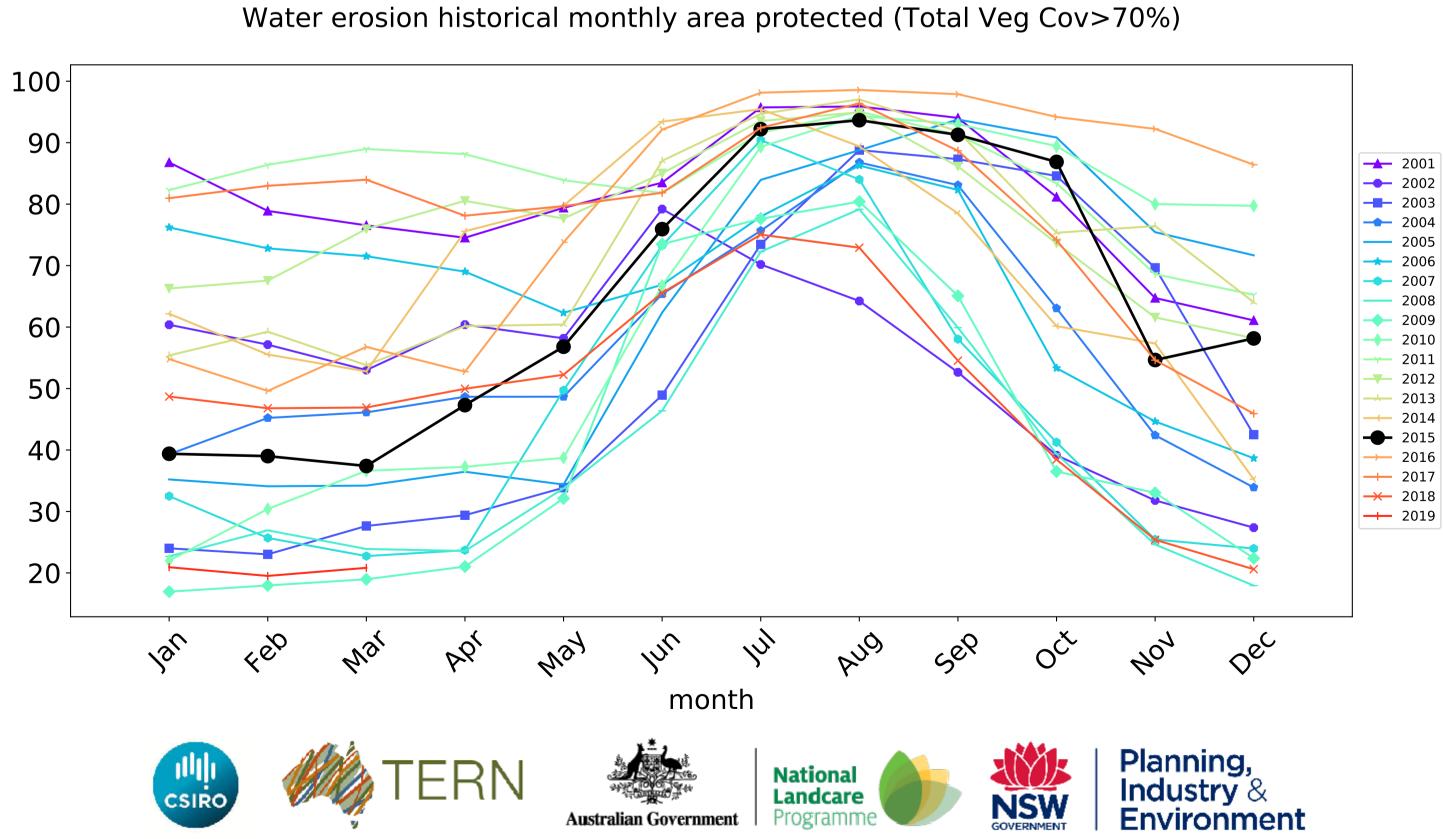


Agriculture timeseries









Grazing

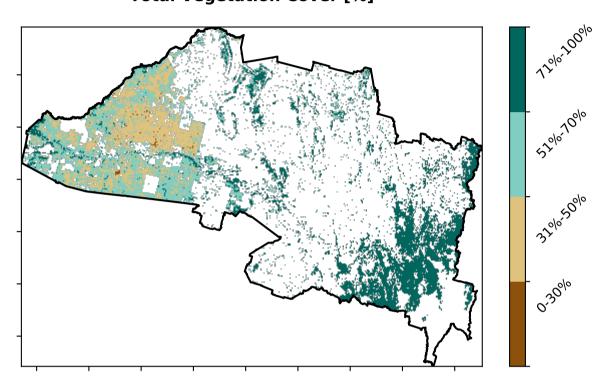
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) (2018) and Forests of Australia (2018)

80 -60 -(%) 20 -

89.4%

Proportion of each land class in area

Total Vegetation Cover [%]



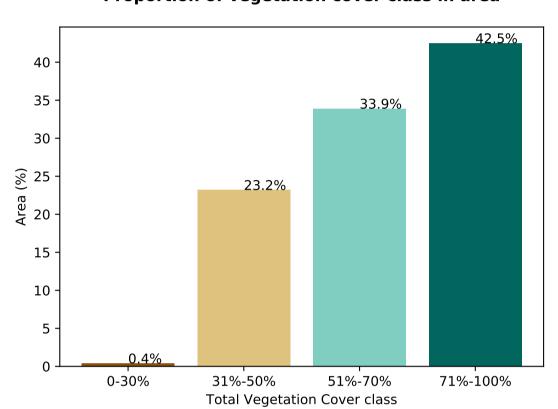
Proportion of vegetation cover class in area

Land use class

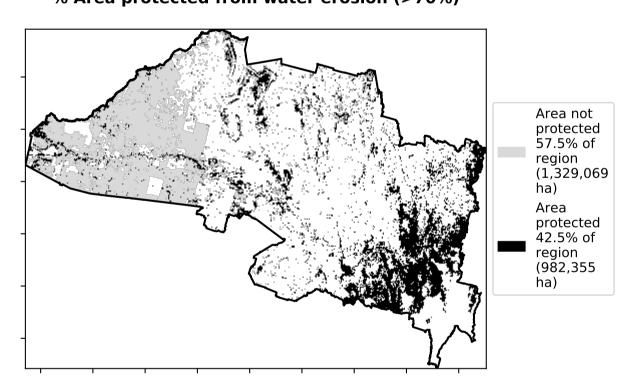
6.1%

4.5%

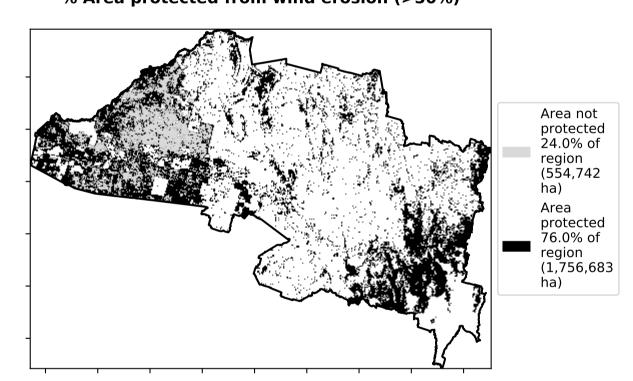
3



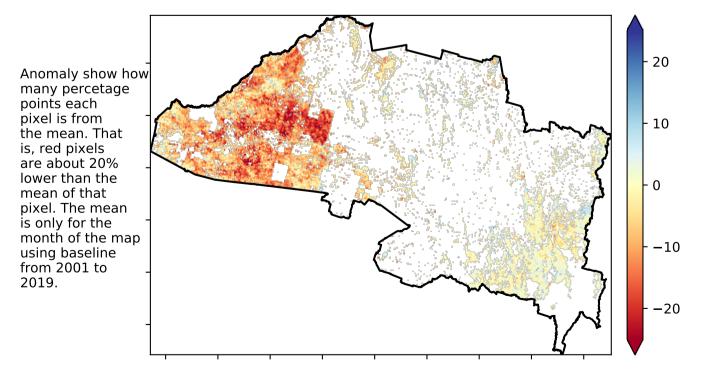
% Area protected from water erosion (>70%)



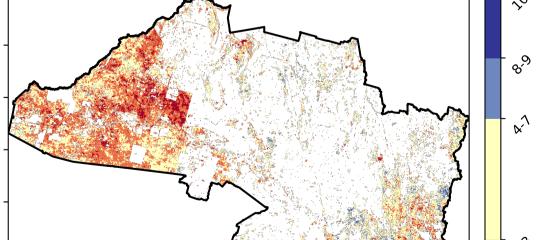
% Area protected from wind erosion (>50%)



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.







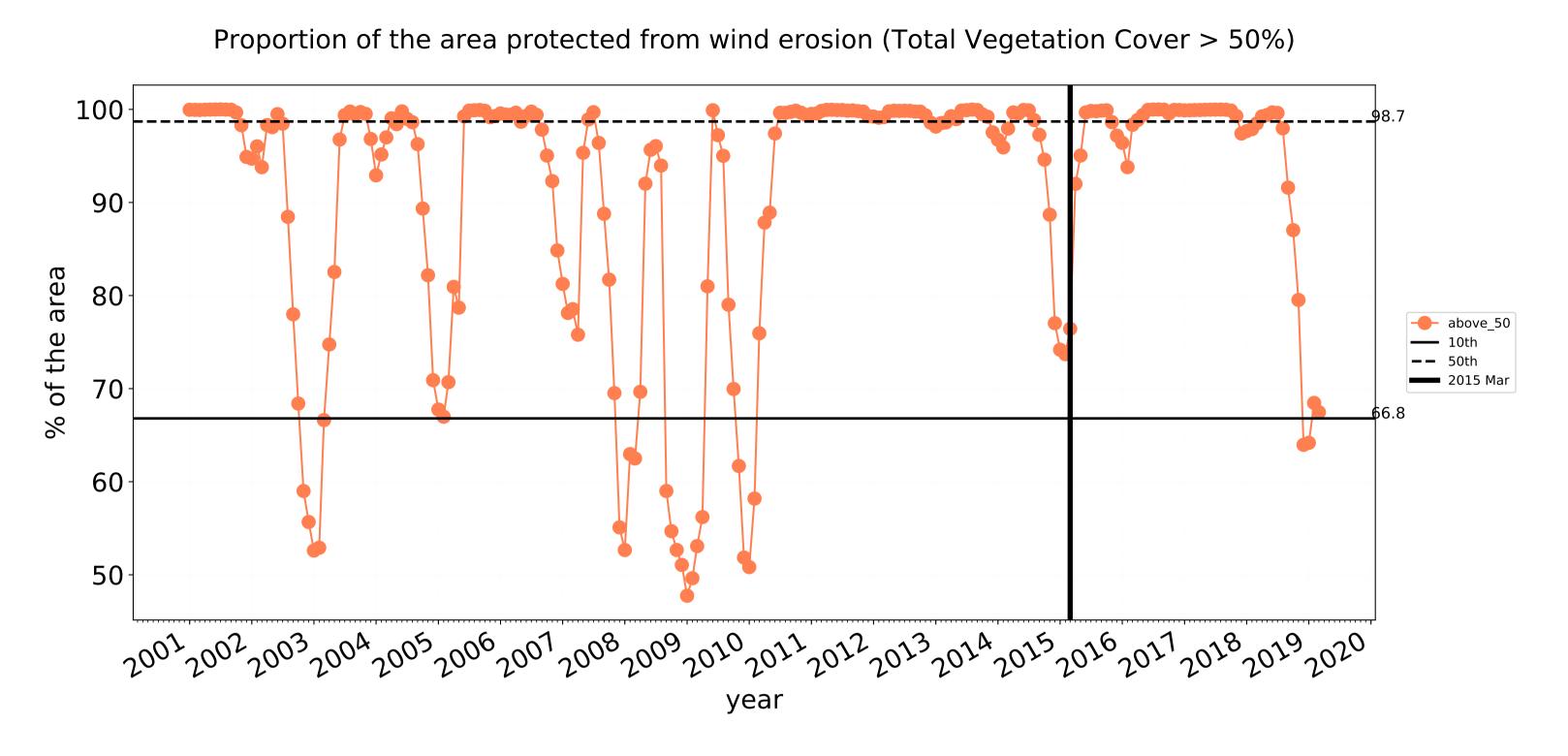


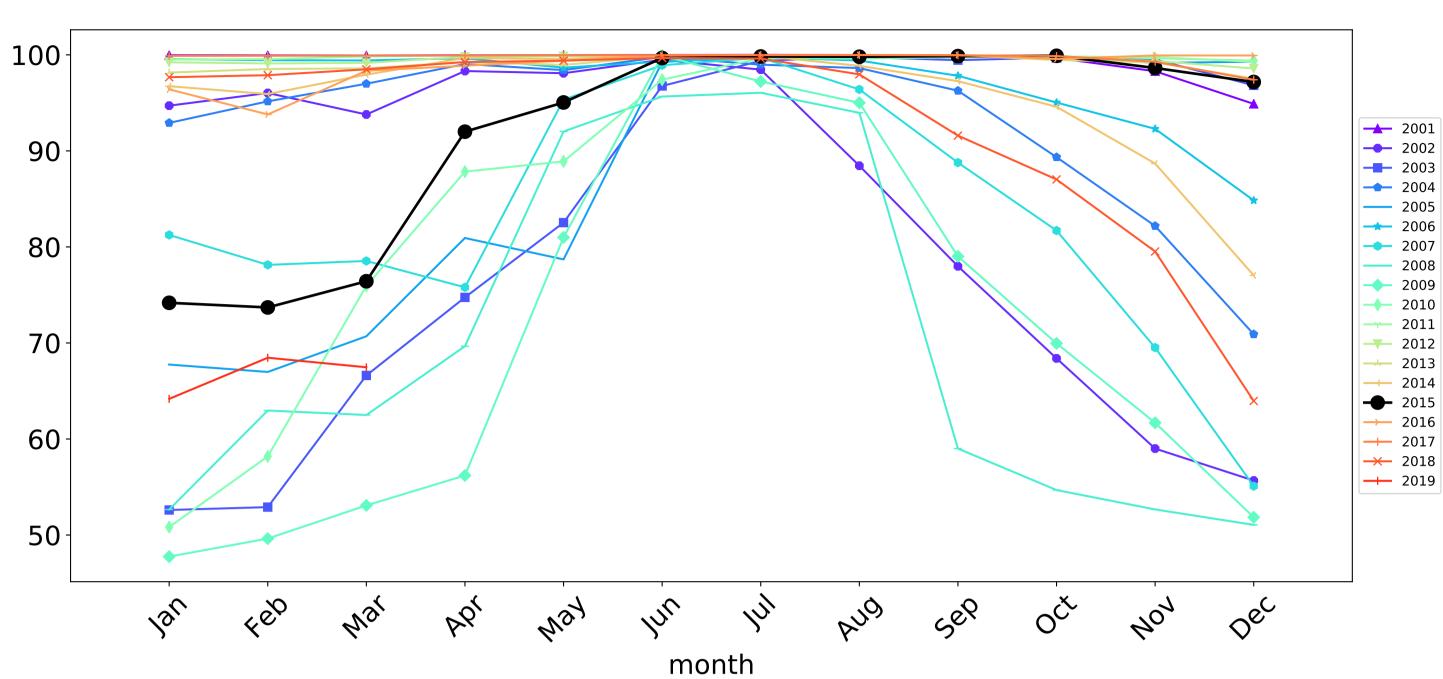




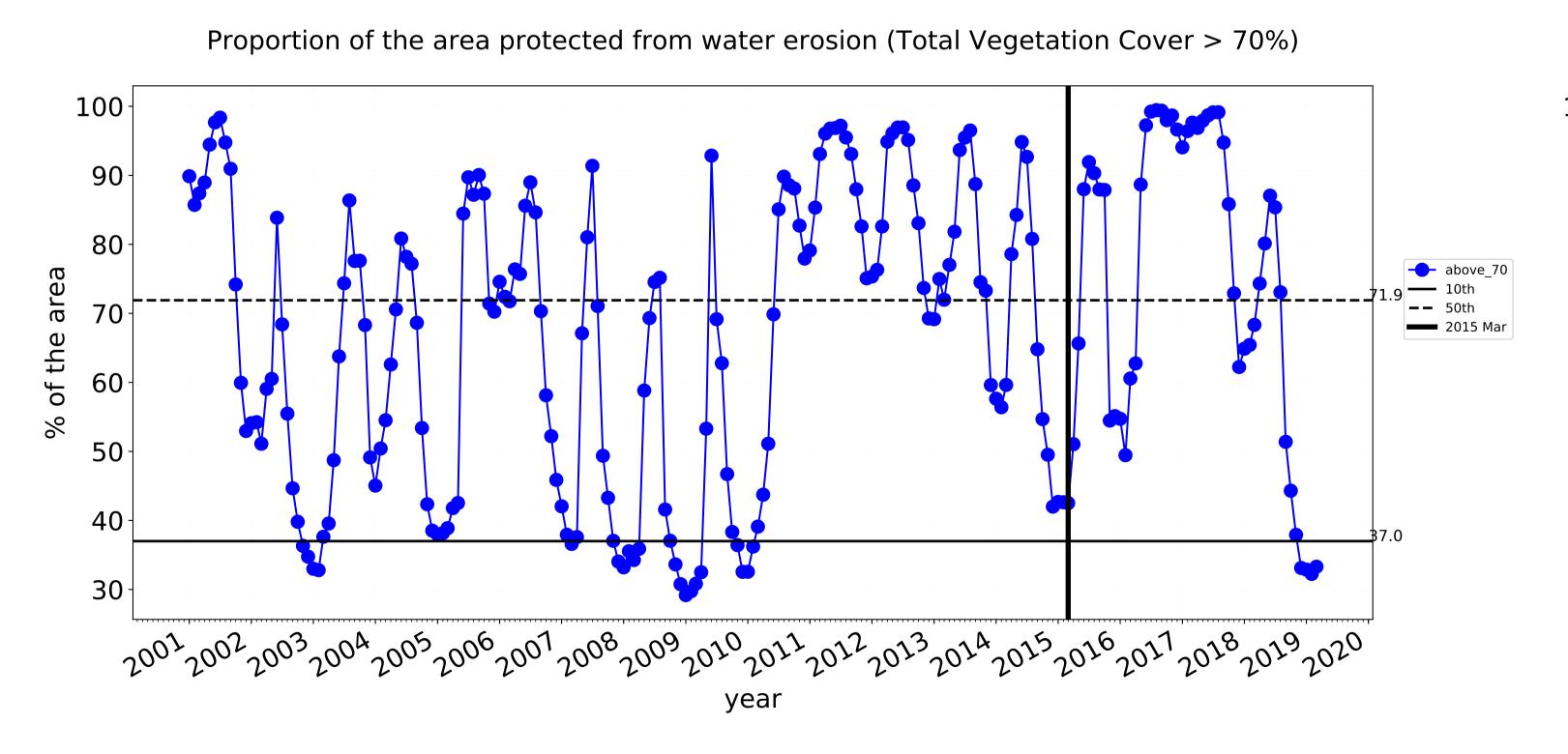


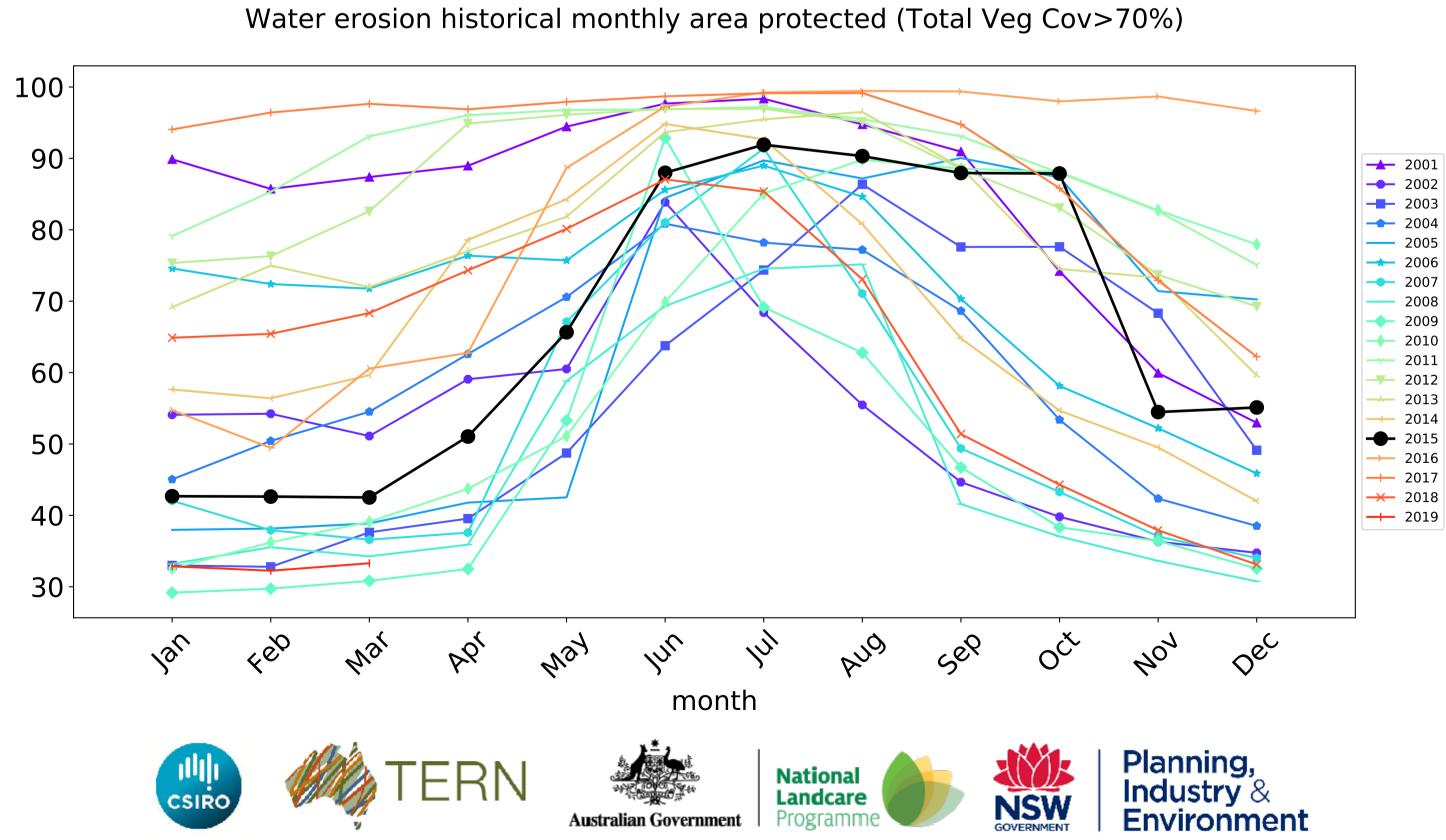
Grazing timeseries





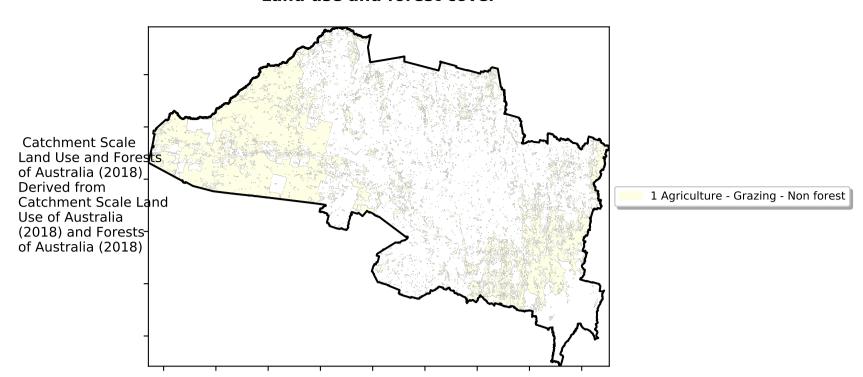
Wind erosion historical monthly area protected (Total Veg Cov >50%)



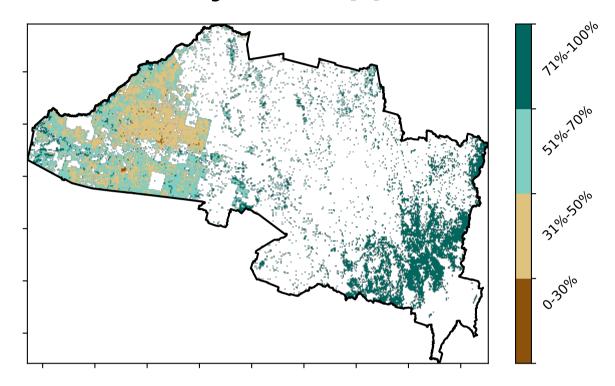


Grazing non forest

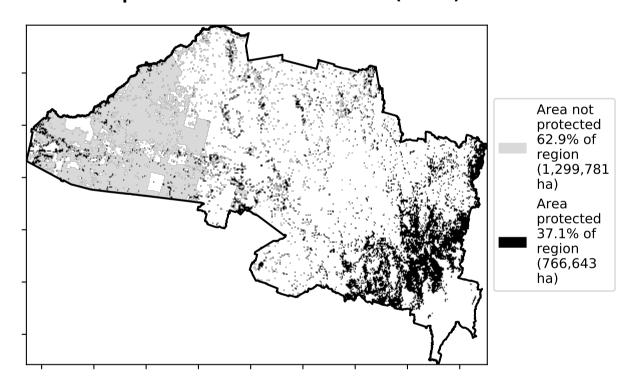
Land use and forest cover



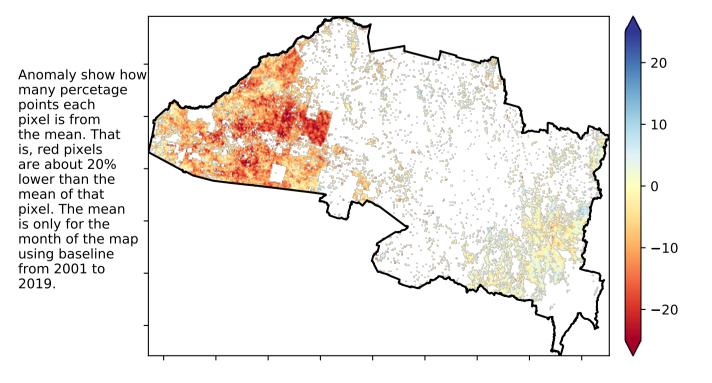
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

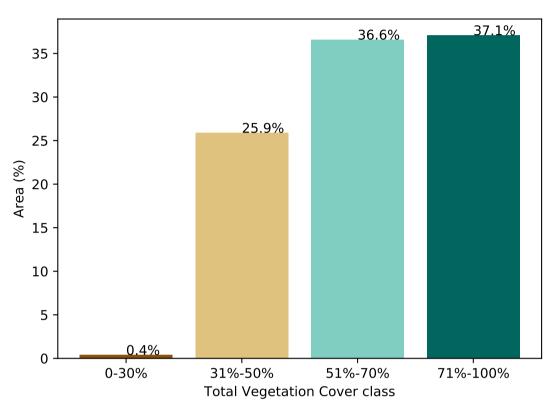


Total Vegetation Cover Anomaly [%]

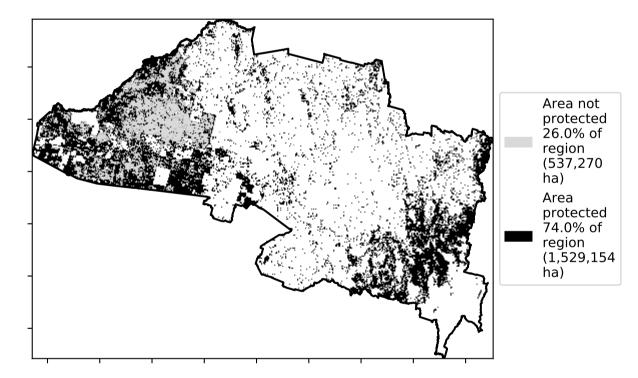


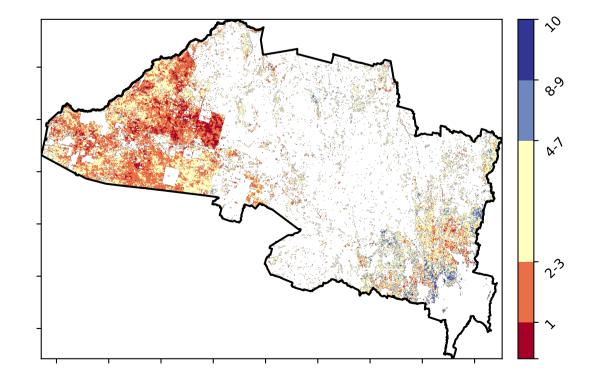
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Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









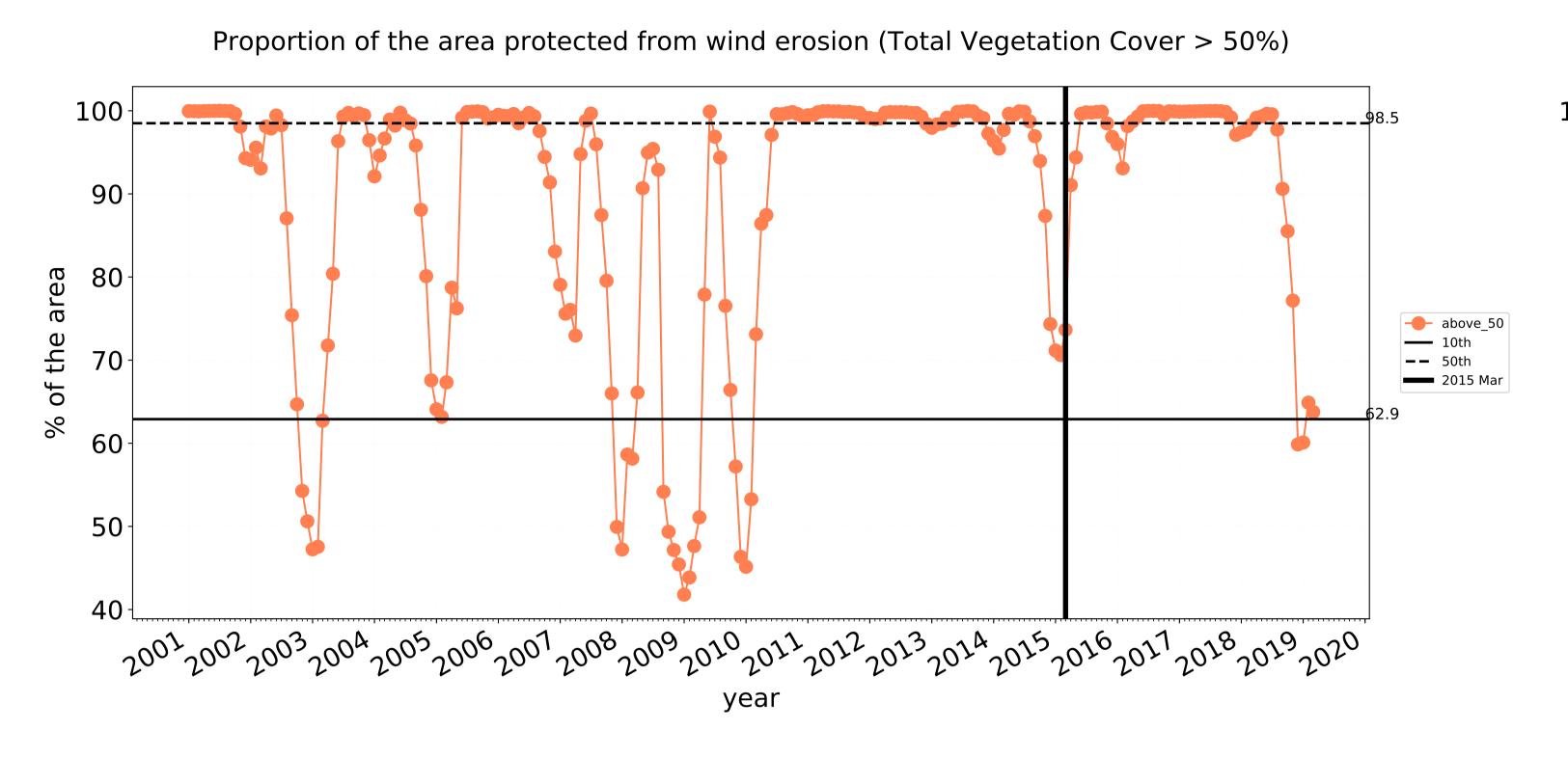


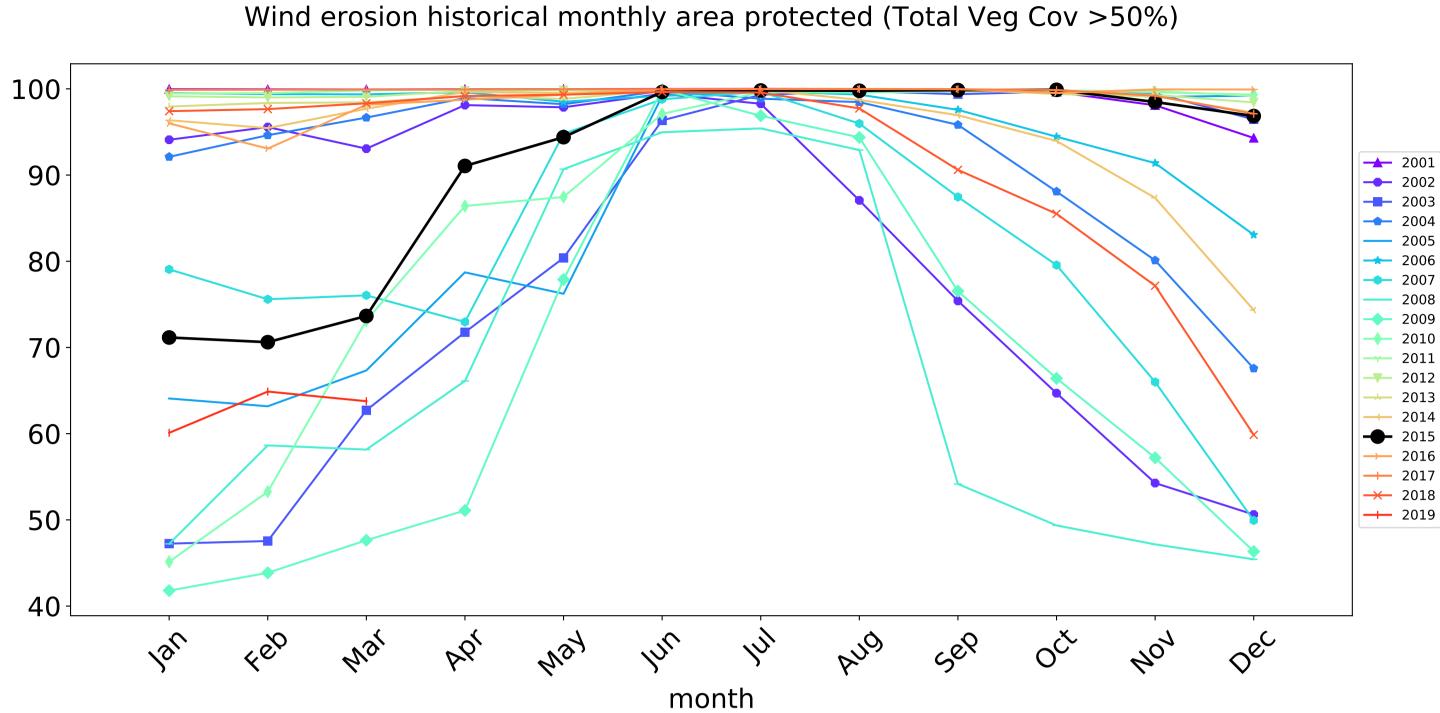


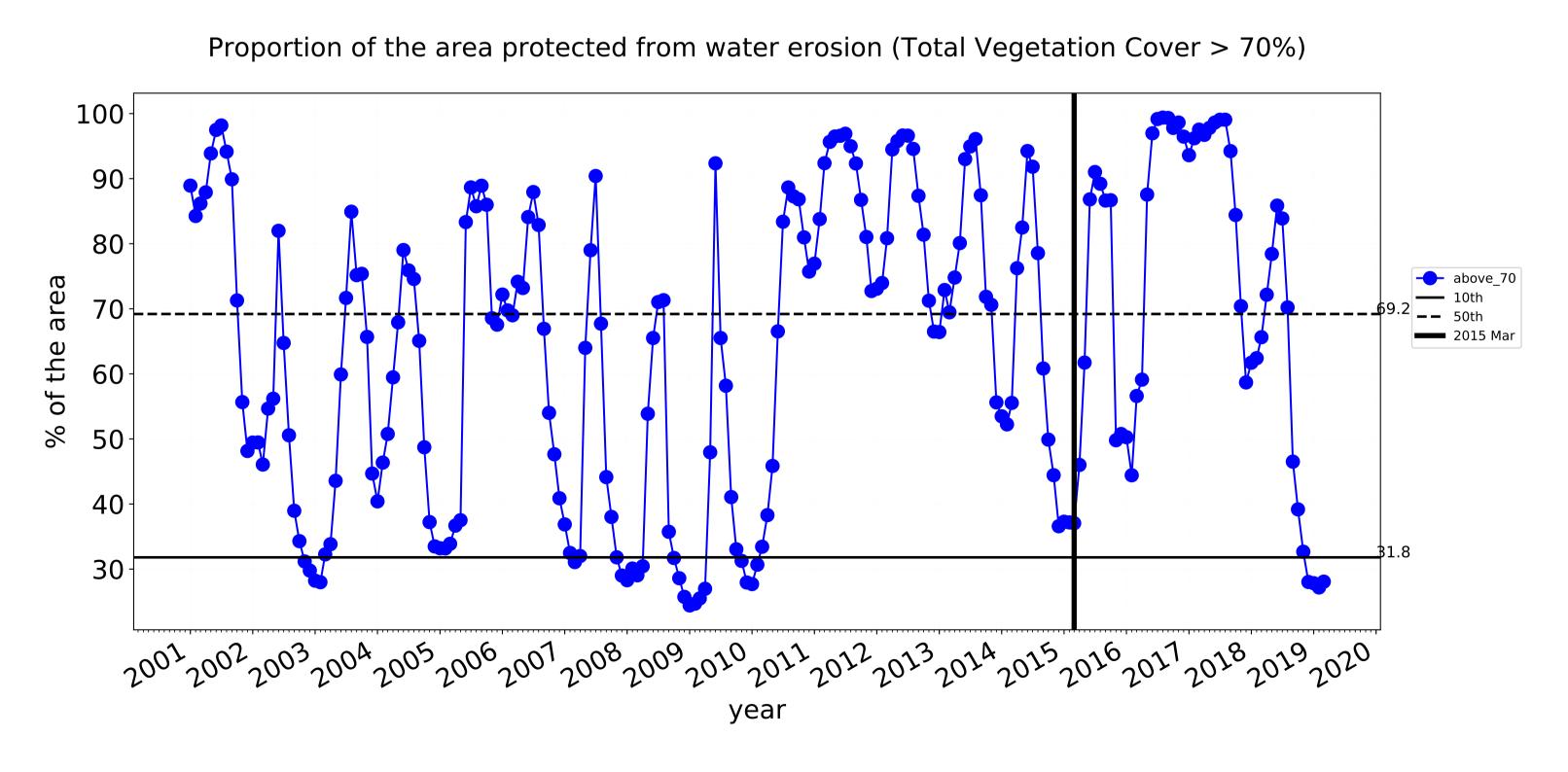


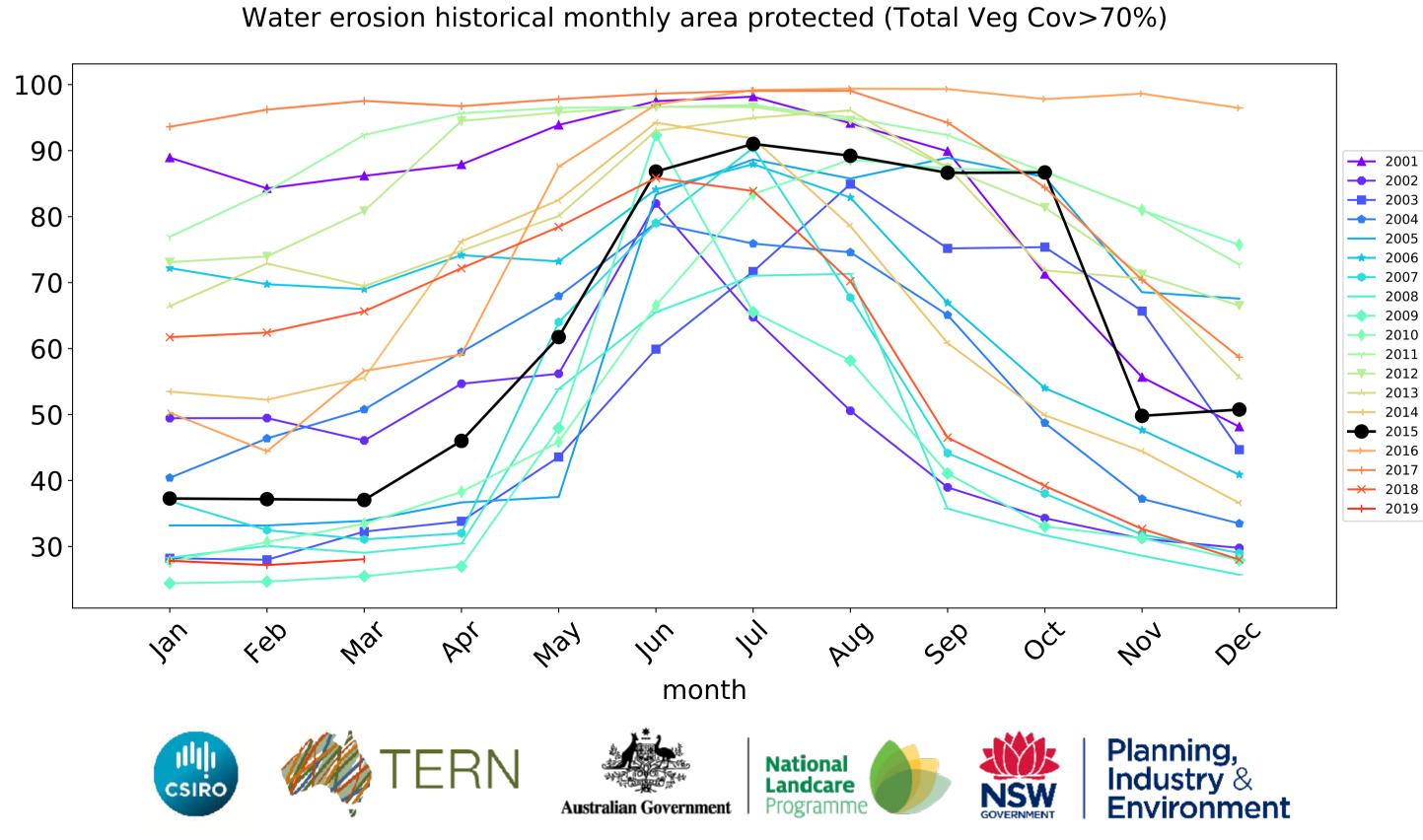


Grazing non forest timeseries



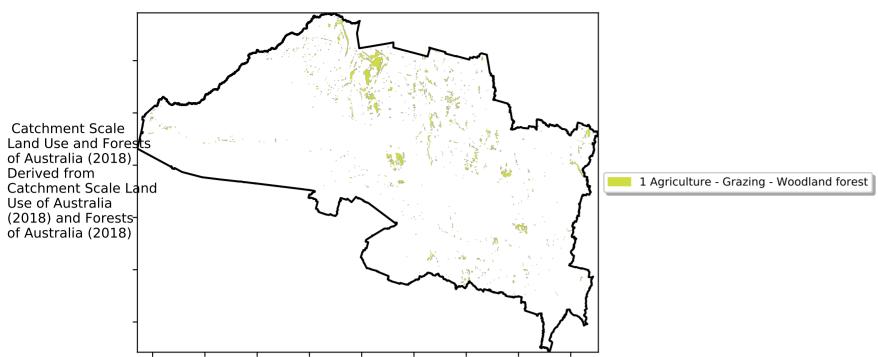




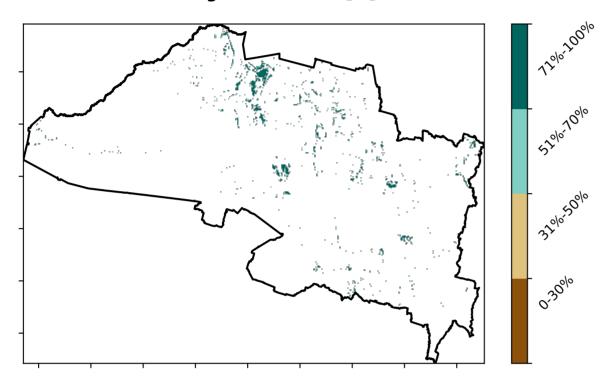


Grazing Woodland forest

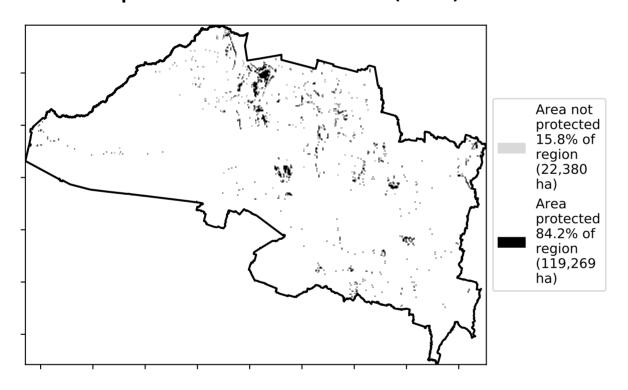
Land use and forest cover



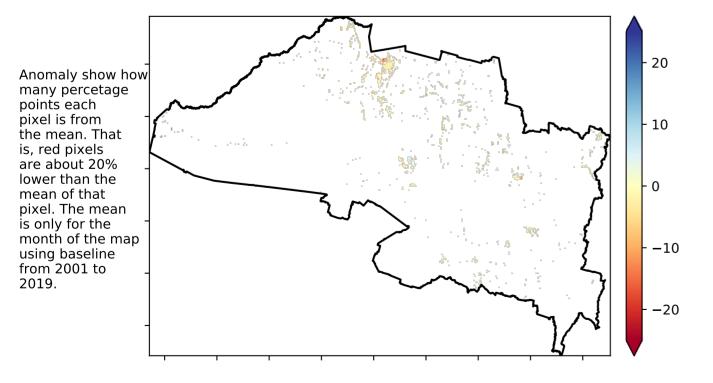
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

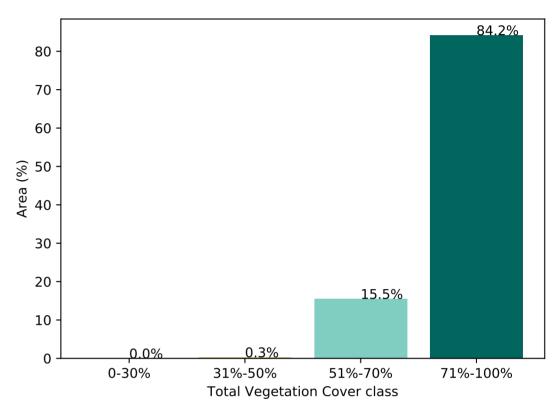


Total Vegetation Cover Anomaly [%]

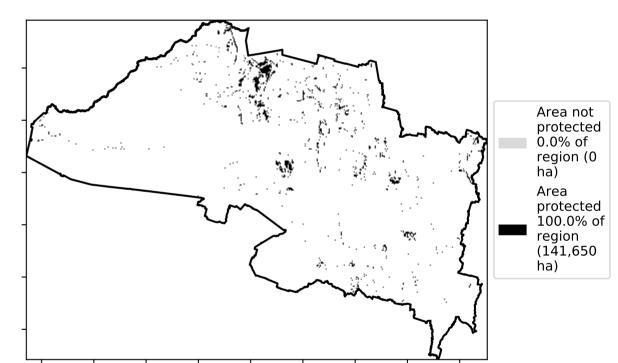


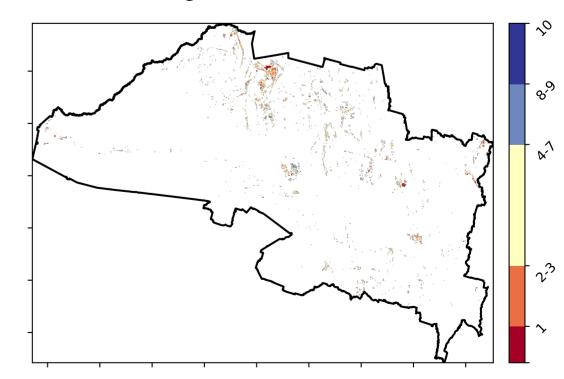
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Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









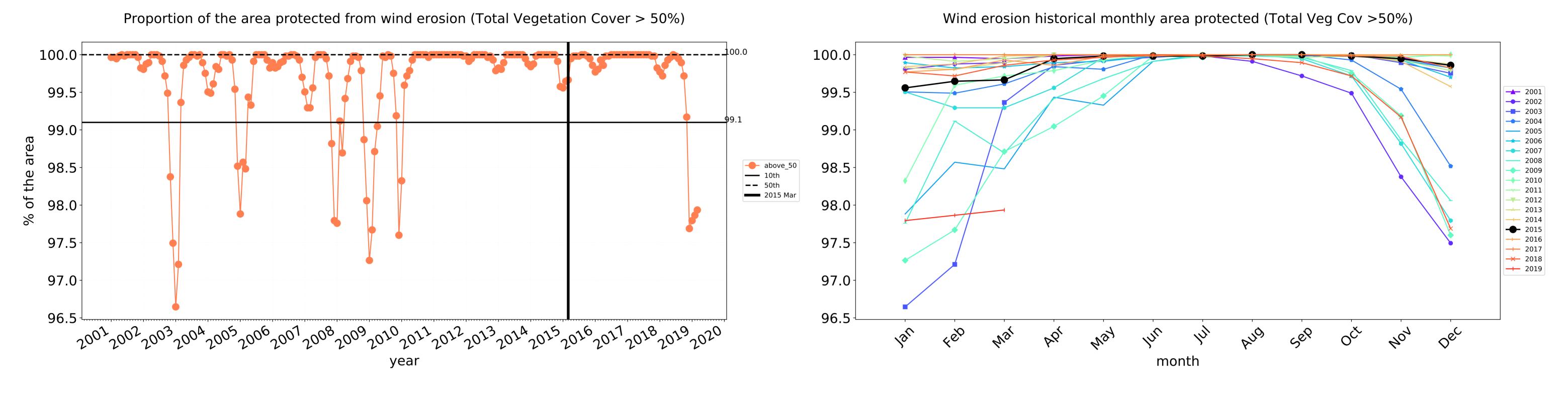


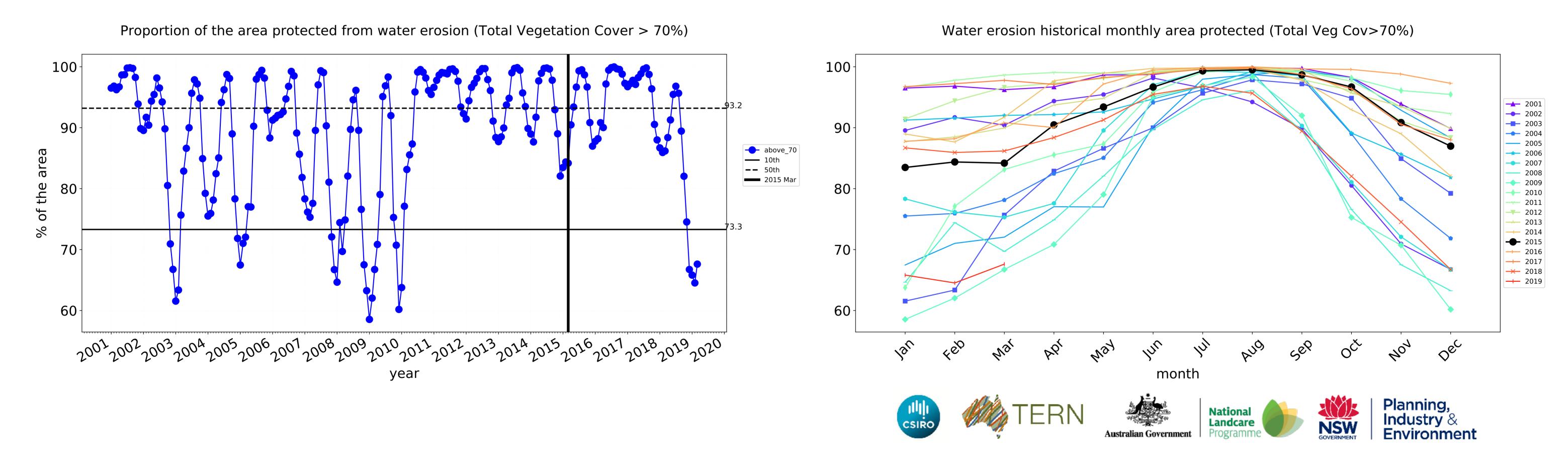






Grazing Woodland forest timeseries



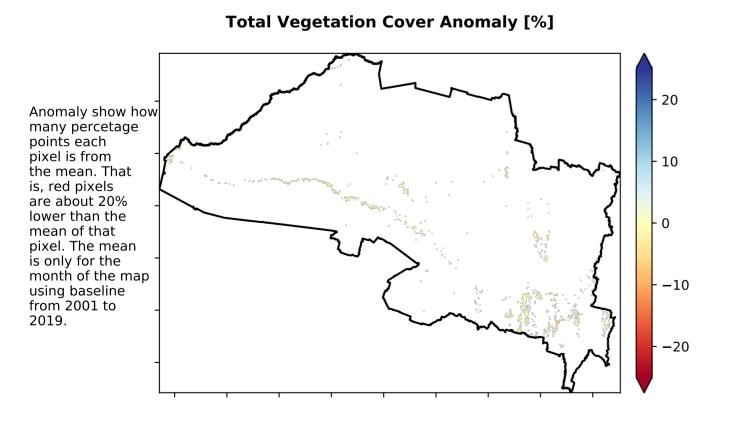


Grazing - Forest (non woodland)

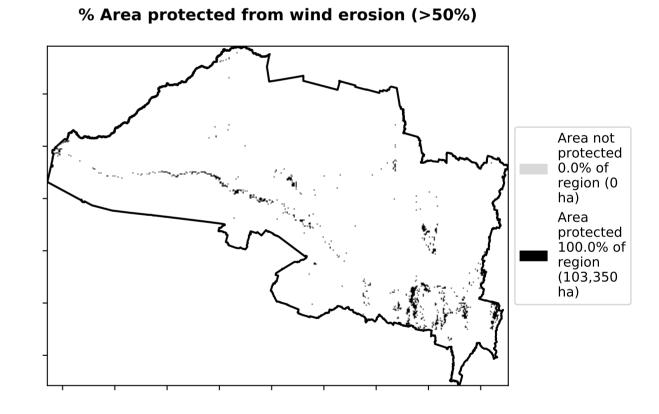
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

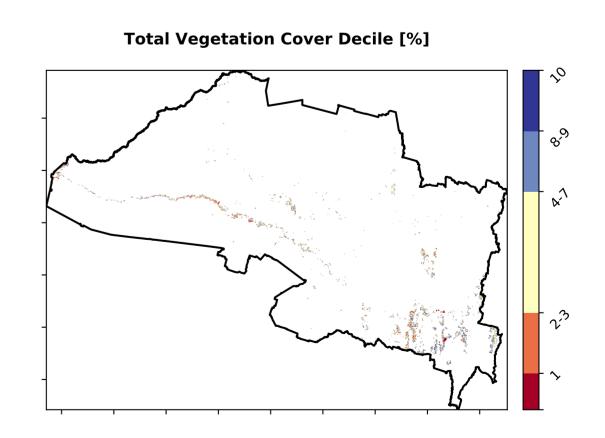
Total Vegetation Cover [%]

Area not protected 5.4% of region (5,580 ha) Area protected 94.6% of region (97,769 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.







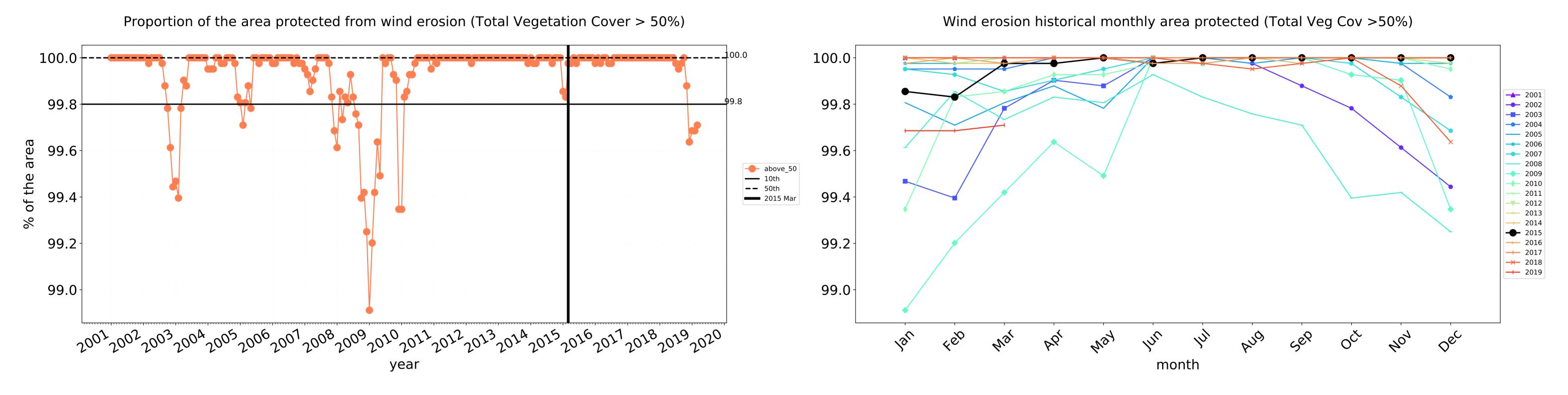


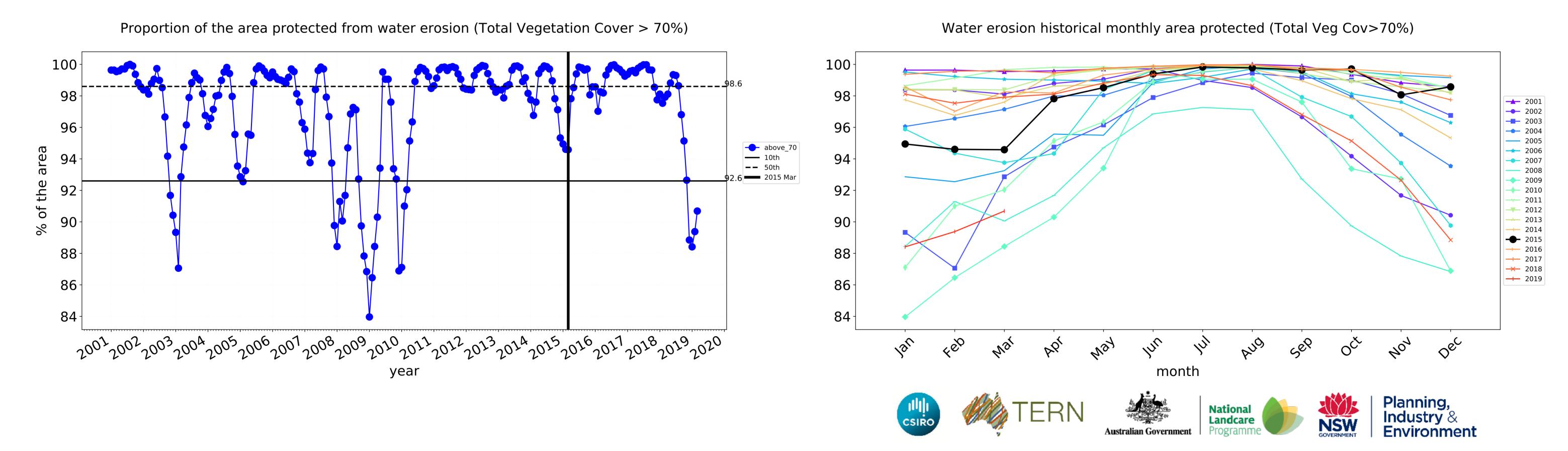






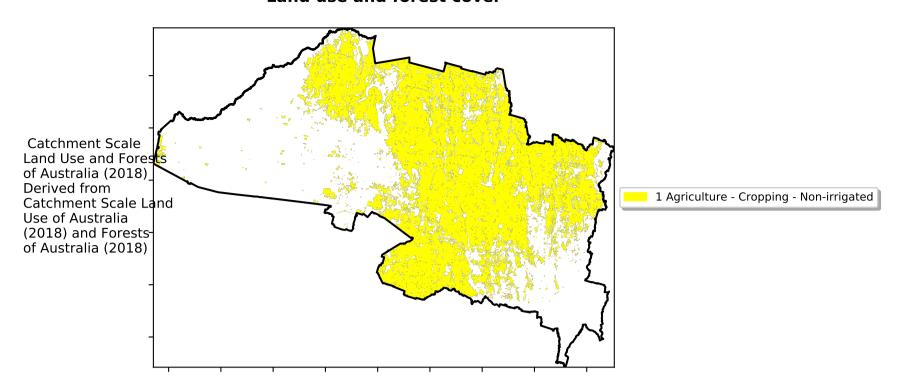




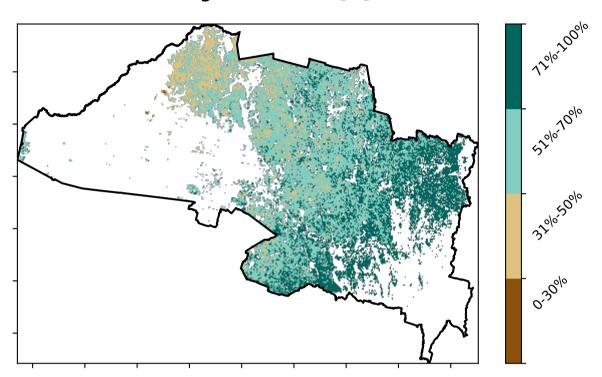


Cropping

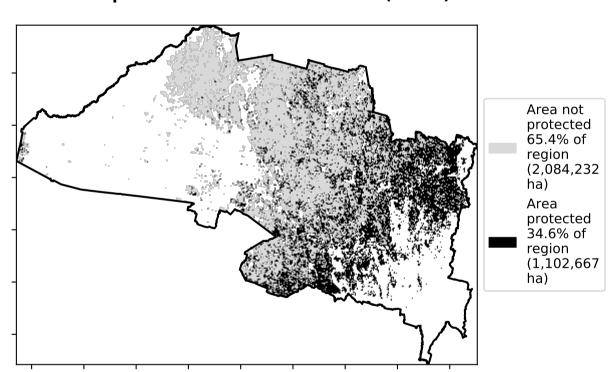
Land use and forest cover



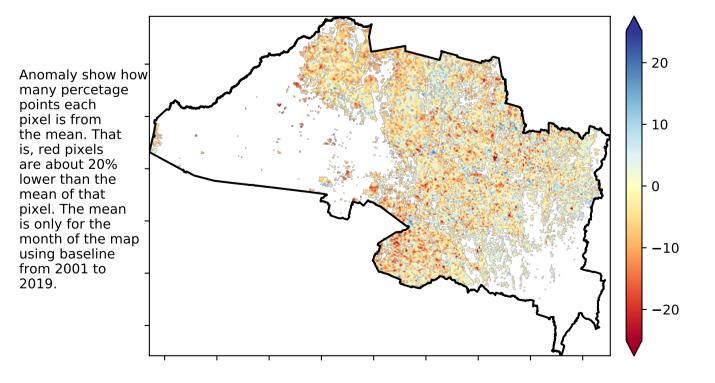
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

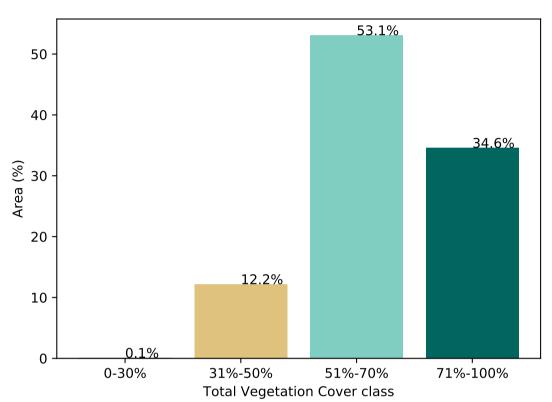


Total Vegetation Cover Anomaly [%]

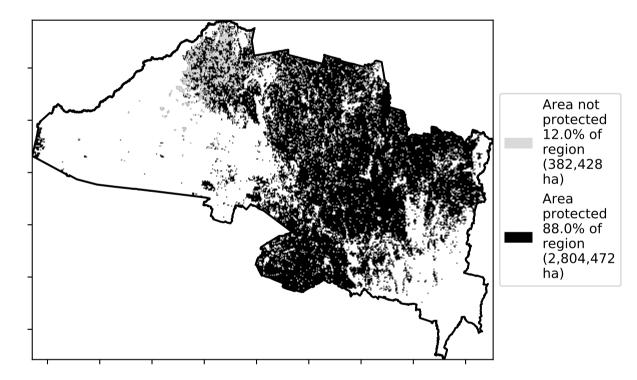


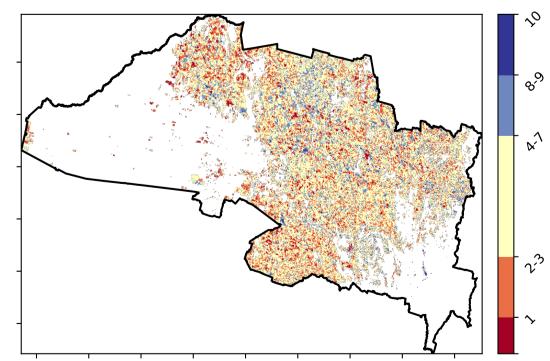
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









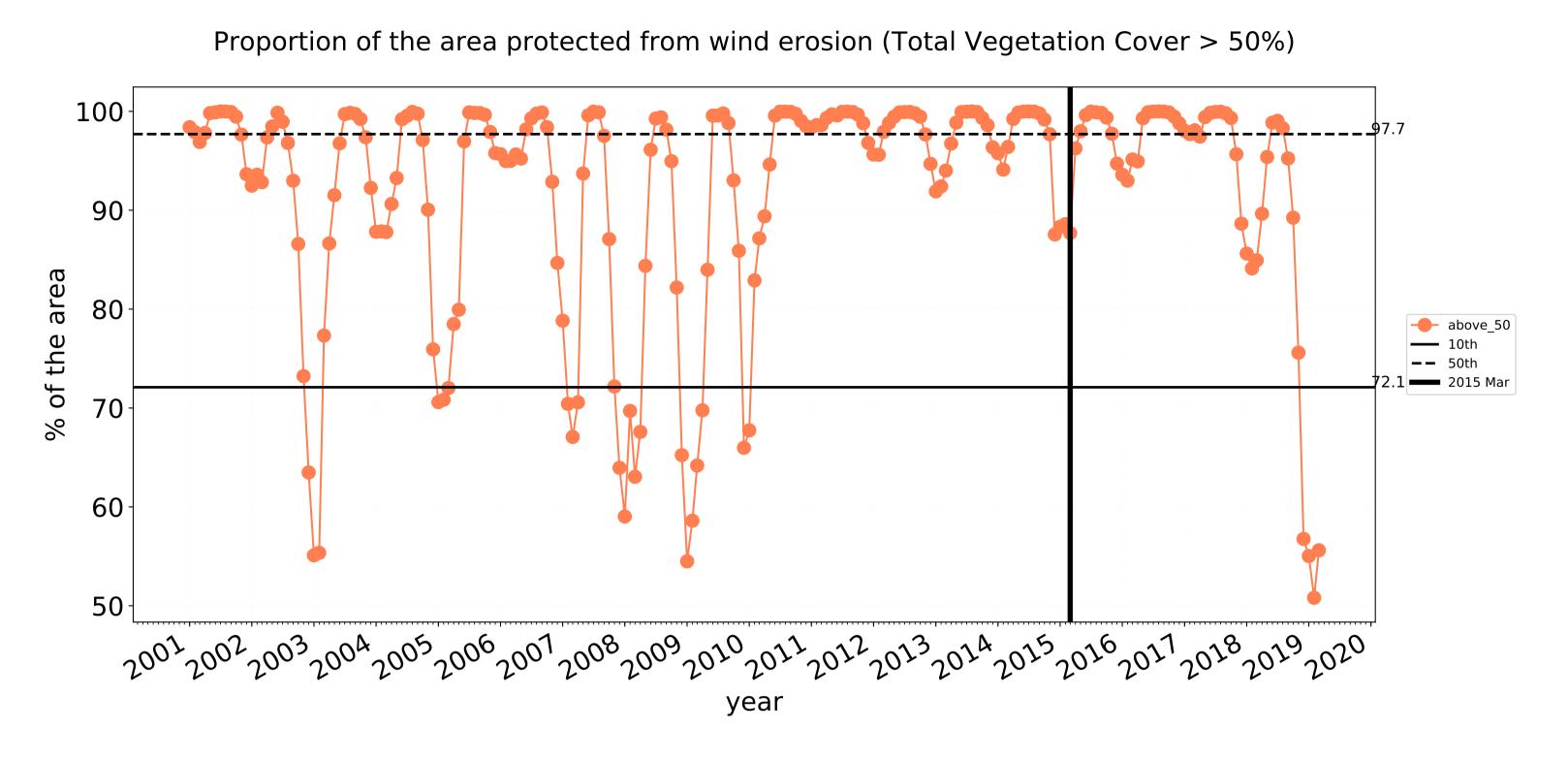


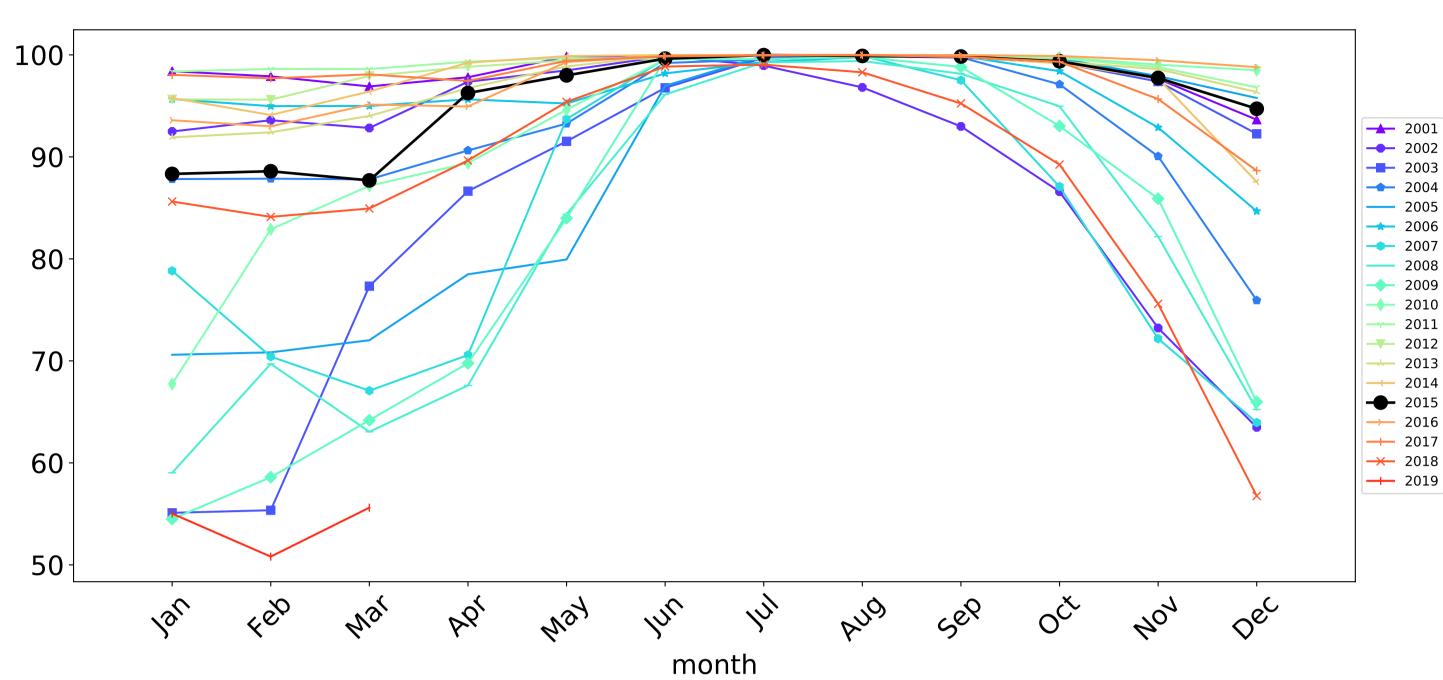




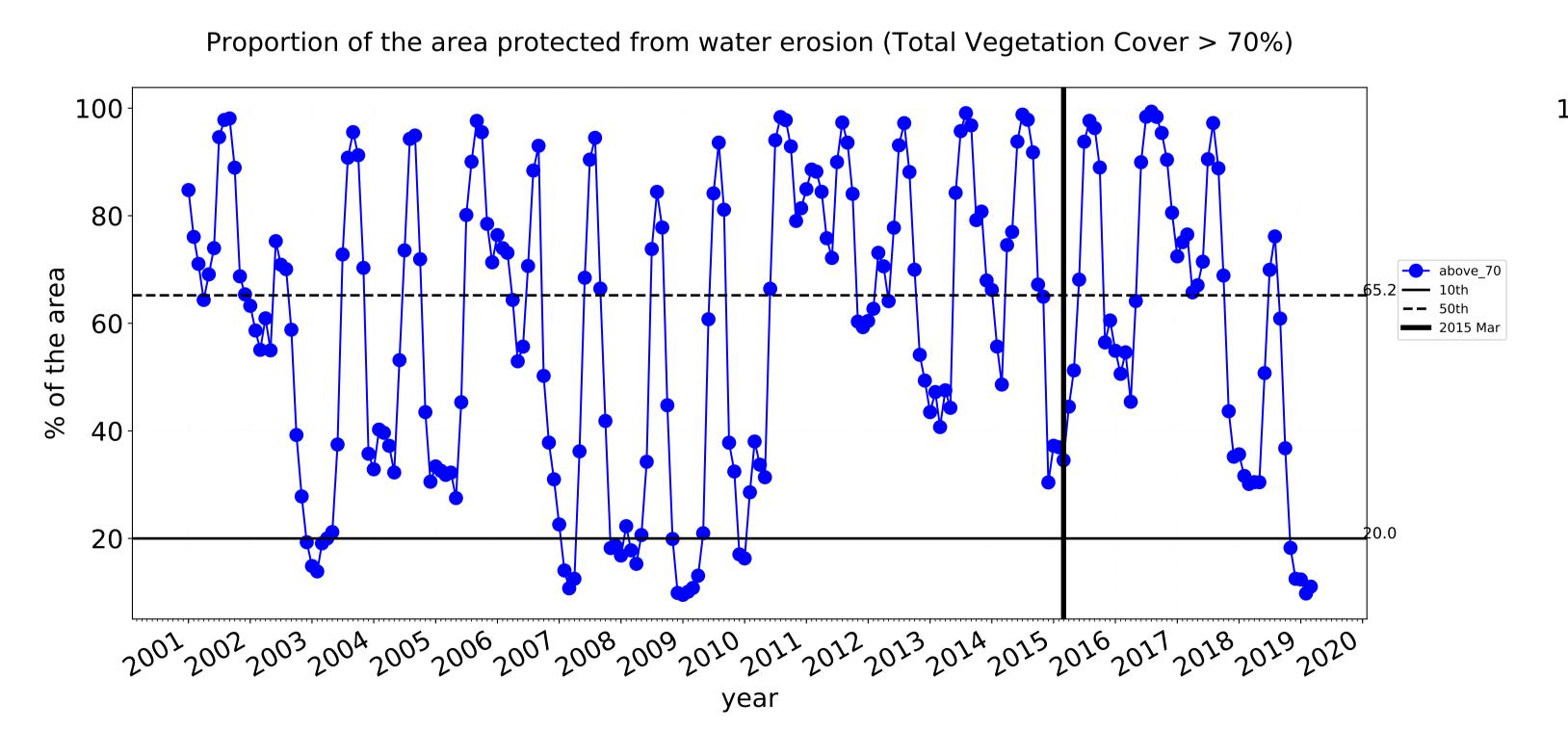


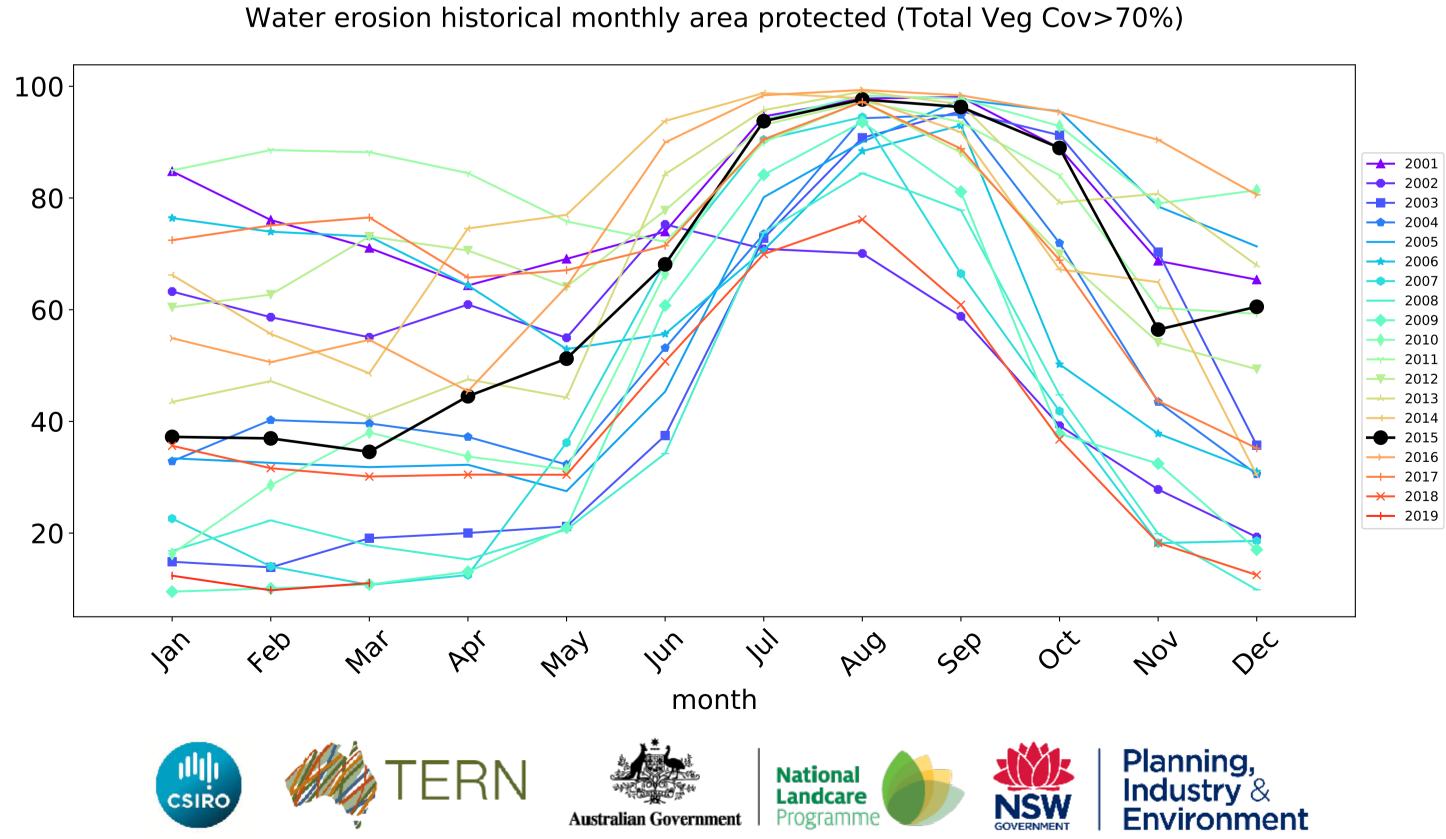
Cropping timeseries



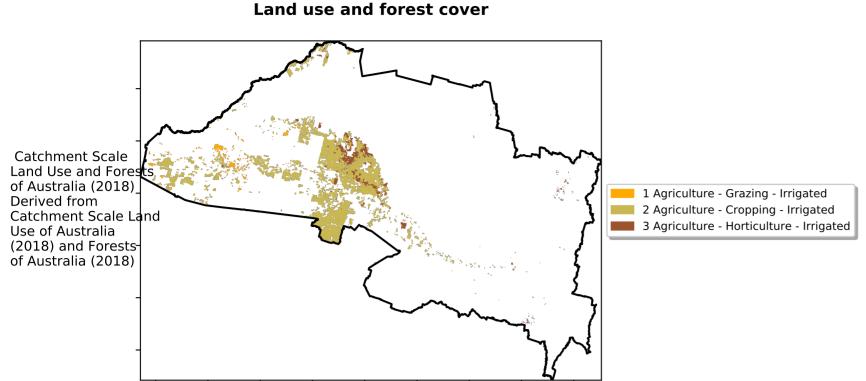


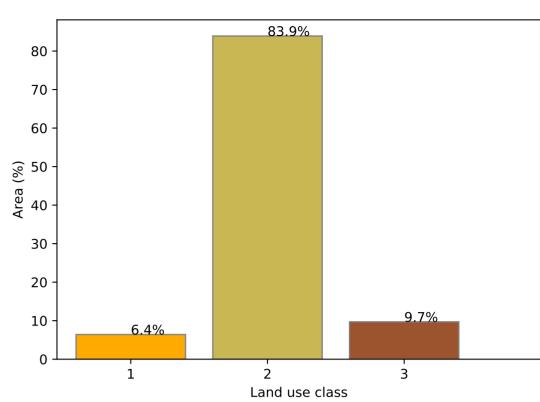
Wind erosion historical monthly area protected (Total Veg Cov >50%)

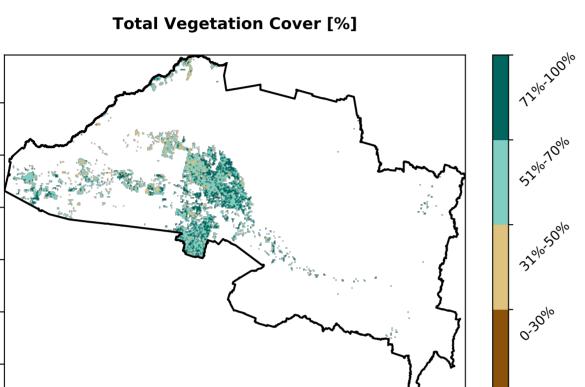


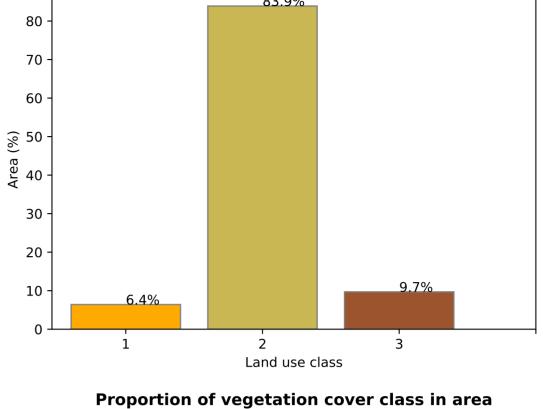


Irrigation



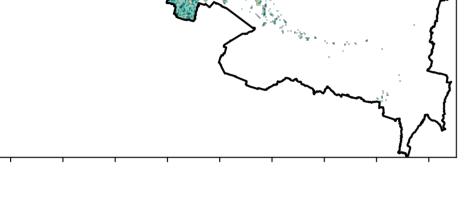






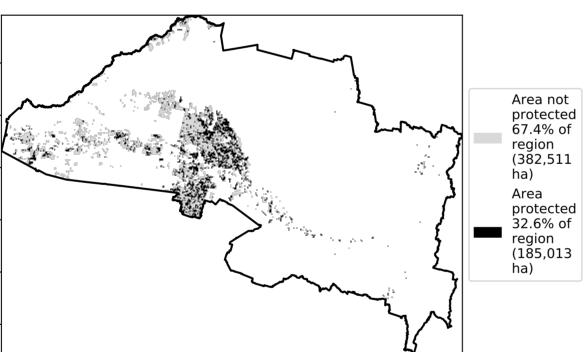
Proportion of each land class in area

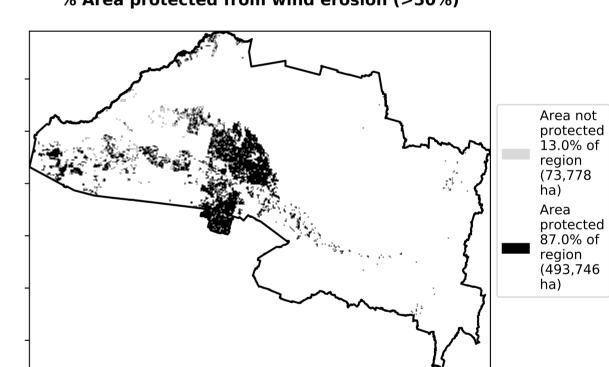
54.3% 50 40 32.6% Area (%) 0 20 13.0% 10 51%-70% 71%-100% 0-30% 31%-50% **Total Vegetation Cover class**

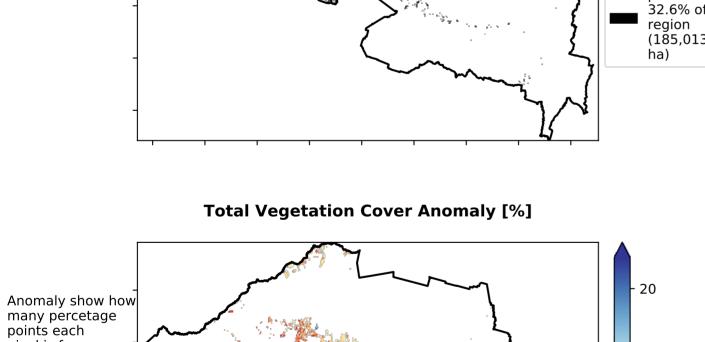


% Area protected from water erosion (>70%)

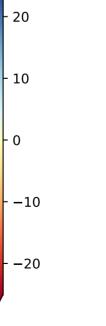
% Area protected from wind erosion (>50%)

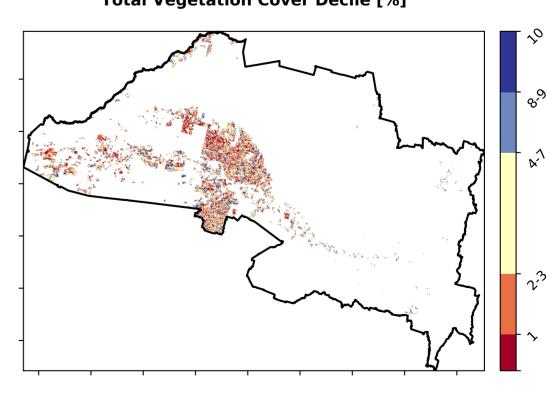






Total Vegetation Cover Decile [%]







pixel is from

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

the mean. That

is only for the month of the map

using baseline from 2001 to 2019.





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

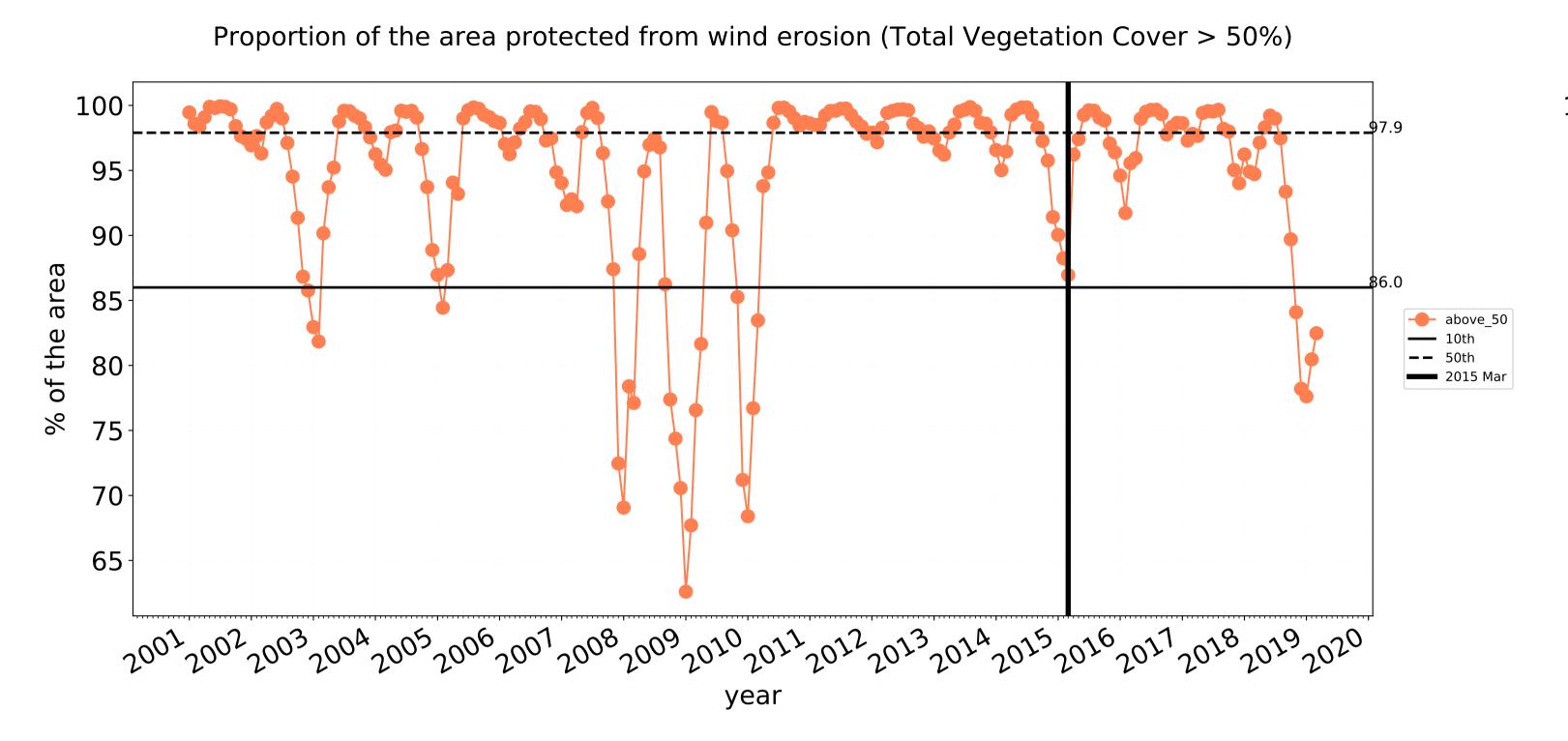
records for that month of

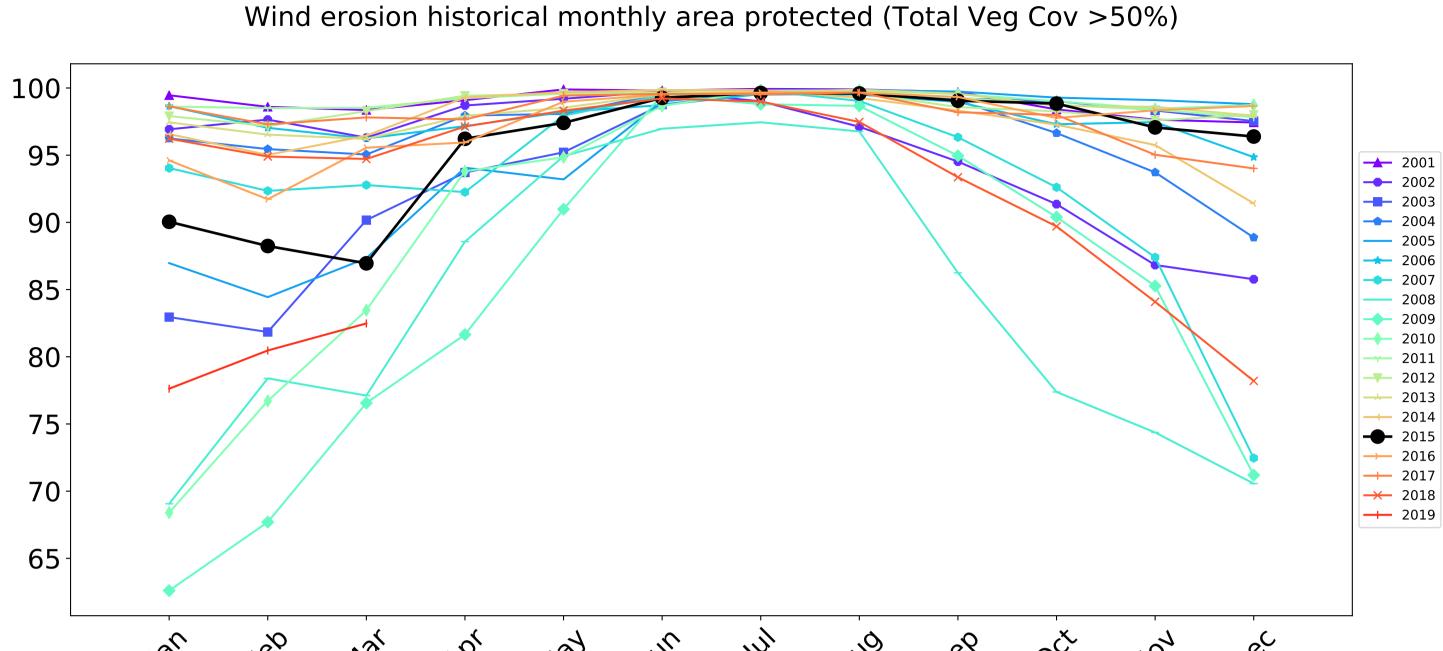
the map using baseline from 2001 to 2019.



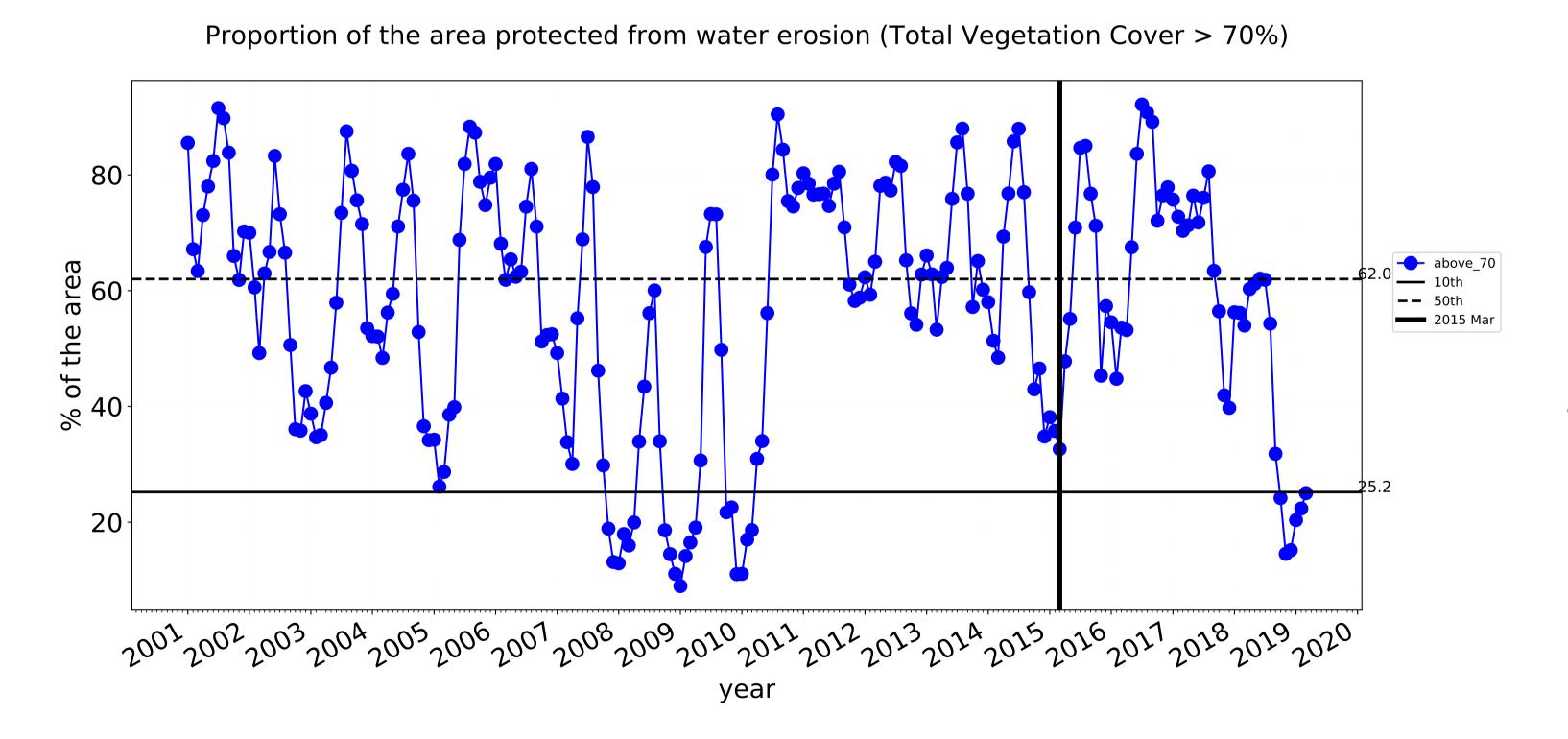


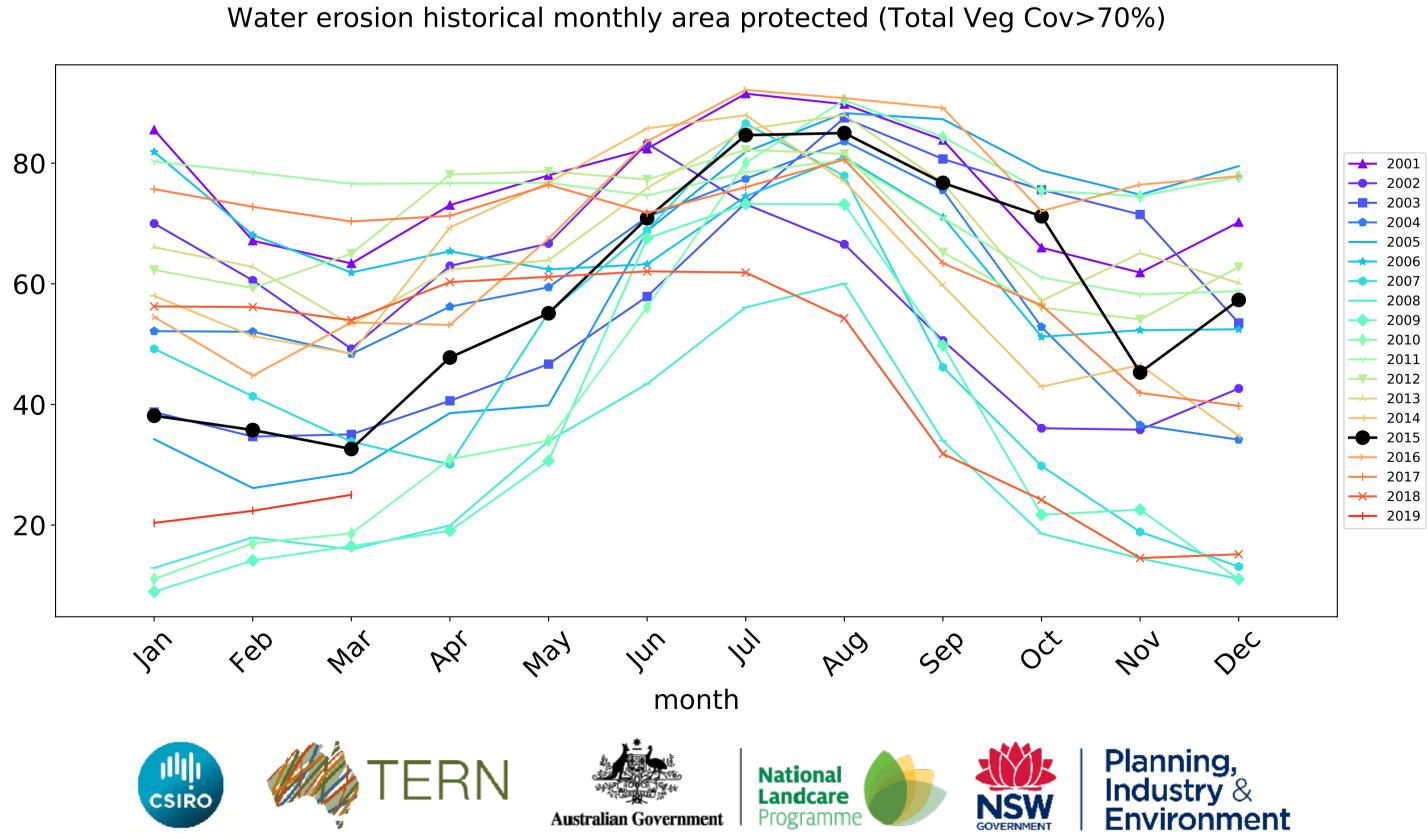






month



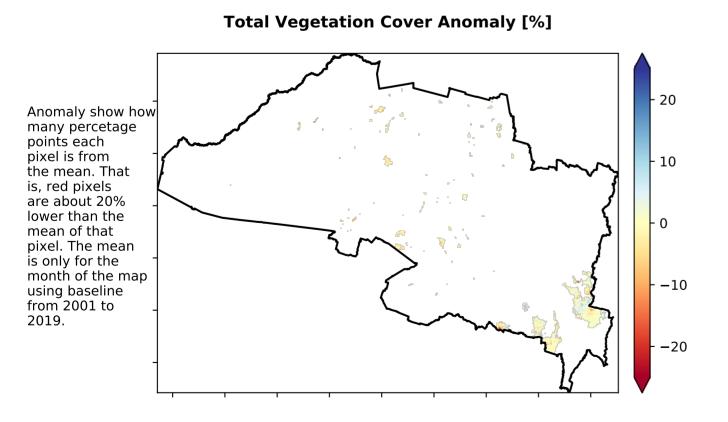


Production native forests and plantation forests

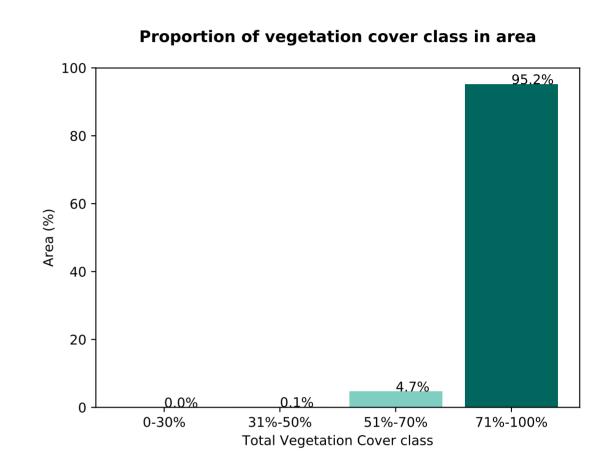
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Australia (2018) Of Australia (2018)

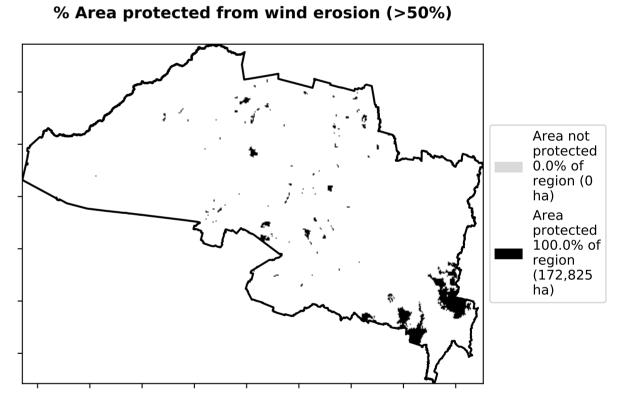
Total Vegetation Cover [%] Telor dolo Selor dolo Se

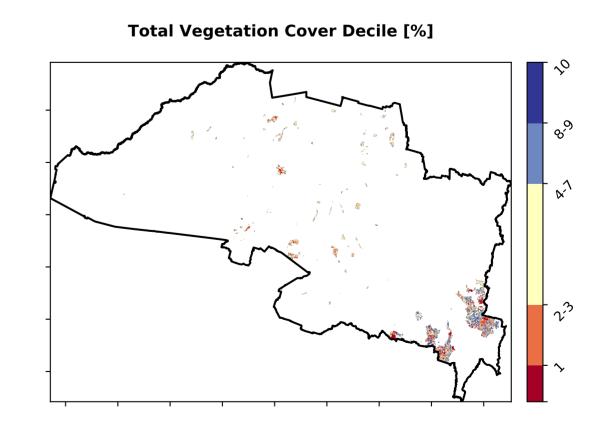
Area not protected 4.8% of region (8,295 ha) Area not protected 4.8% of region (164,529 ha)



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.











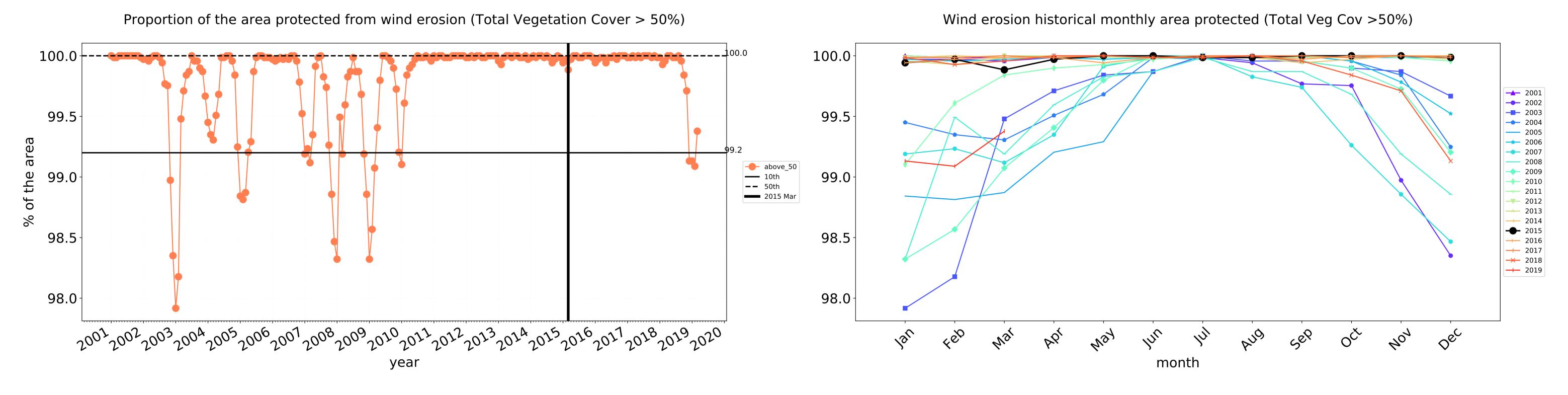


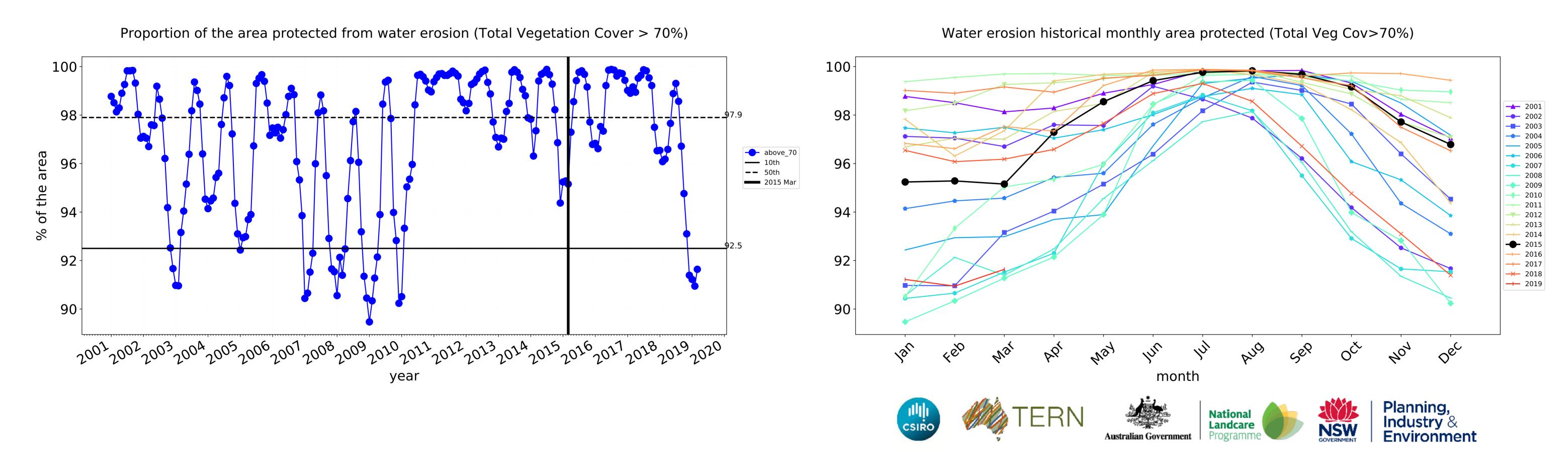






Production native forests and plantation forests timeseries





Riverina (6,694,475 ha and no data 13,860 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	6,694,475	99.8% 6,682,749	84.6% 5,660,788	41.2% 2,758,389	24.5% 1,640,648	9.1% 605,861	4.1% 272,116
Conservation and natural environments	323,100	100.0% 323,100	98.4% 317,775	80.9% 261,525	75.5% 243,950	61.0% 196,950	43.6% 140,725
Conservation and natural environments non forest	83,350	100.0% 83,350	93.7% 78,125	28.6% 23,875	17.6% 14,675	11.6% 9,675	7.4% 6,200
Conservation and natural environments Forest (non woodland)	195,250	100.0% 195,250	100.0% 195,225	99.8% 194,800	98.5% 192,400	89.4% 174,600	66.5% 129,925
Agriculture	6,067,675	99.8% 6,056,250	83.3% 5,055,525	37.4% 2,269,125	20.0% 1,216,075	4.8% 291,350	0.9% 52,475
Grazing	2,311,425	99.6% 2,303,000	76.4% 1,766,525	42.5% 982,625	30.9% 715,150	10.2% 236,350	1.9% 44,450
Grazing non forest	2,066,425	99.6% 2,058,000	73.7% 1,522,025	37.1% 765,625	27.1% 560,550	9.0% 185,450	1.5% 30,525
Grazing Woodland forest	141,650	100.0% 141,650	99.7% 141,175	84.2% 119,250	50.4% 71,425	7.5% 10,625	0.9% 1,225
Grazing - Forest (non woodland)	103,350	100.0% 103,350	100.0% 103,325	94.6% 97,750	80.5% 83,175	39.0% 40,275	12.3% 12,700
Cropping	3,186,900	99.9% 3,184,275	87.7% 2,794,725	34.6% 1,101,125	13.8% 440,225	1.3% 41,000	0.1% 2,950
Irrigation	567,525	100.0% 567,250	87.0% 493,475	32.6% 185,125	10.7% 60,550	2.5% 13,975	0.9% 5,075
Production native forests and plantation forests	172,825	100.0% 172,825	99.9% 172,625	95.2% 164,450	87.1% 150,550	64.9% 112,225	45.1% 77,925











