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: September 2012

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







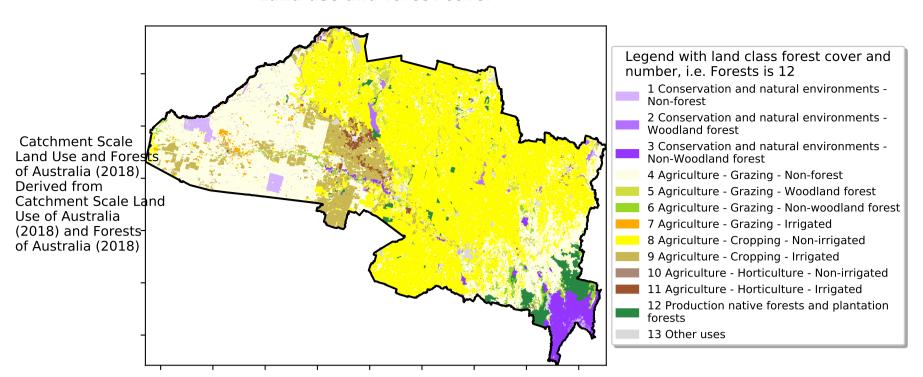




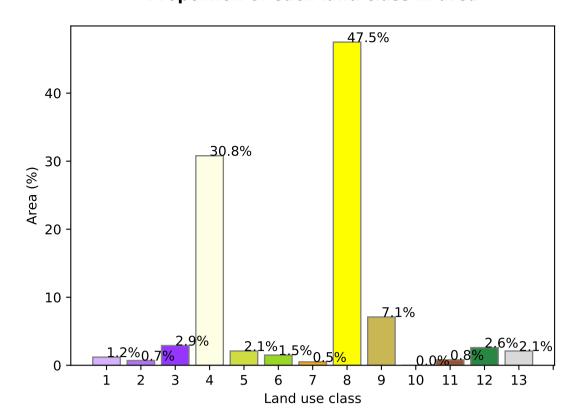


Vegetation Cover Sep 2012

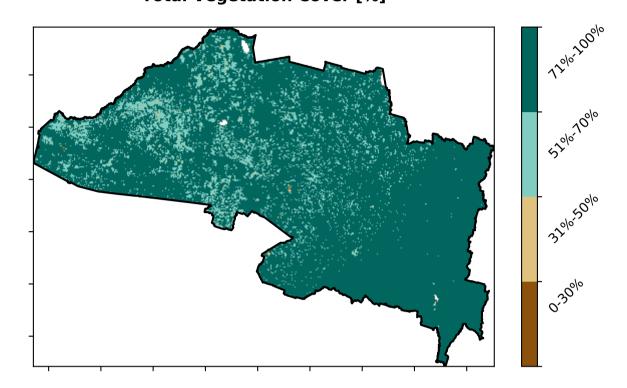
Land use and forest cover



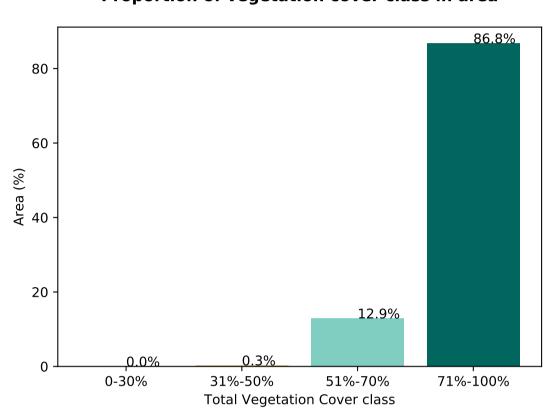
Proportion of each land class in area



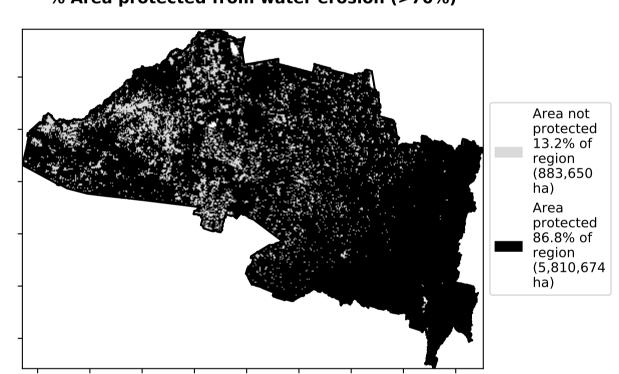
Total Vegetation Cover [%]



Proportion of vegetation cover class in area



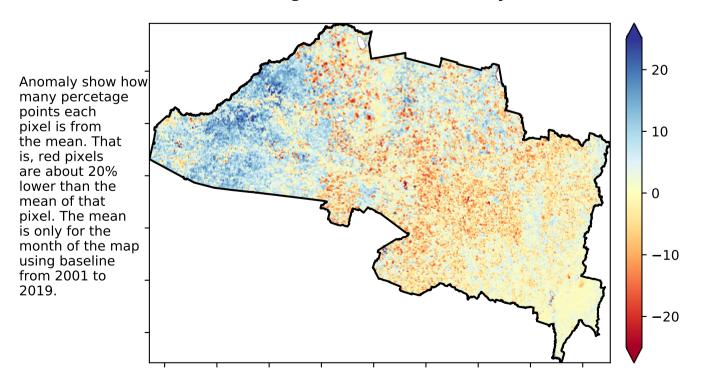
% Area protected from water erosion (>70%)



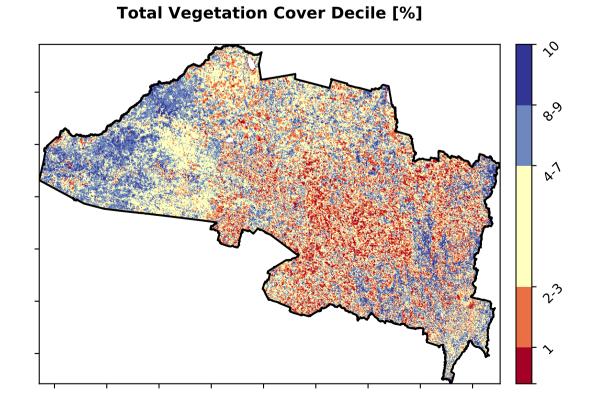
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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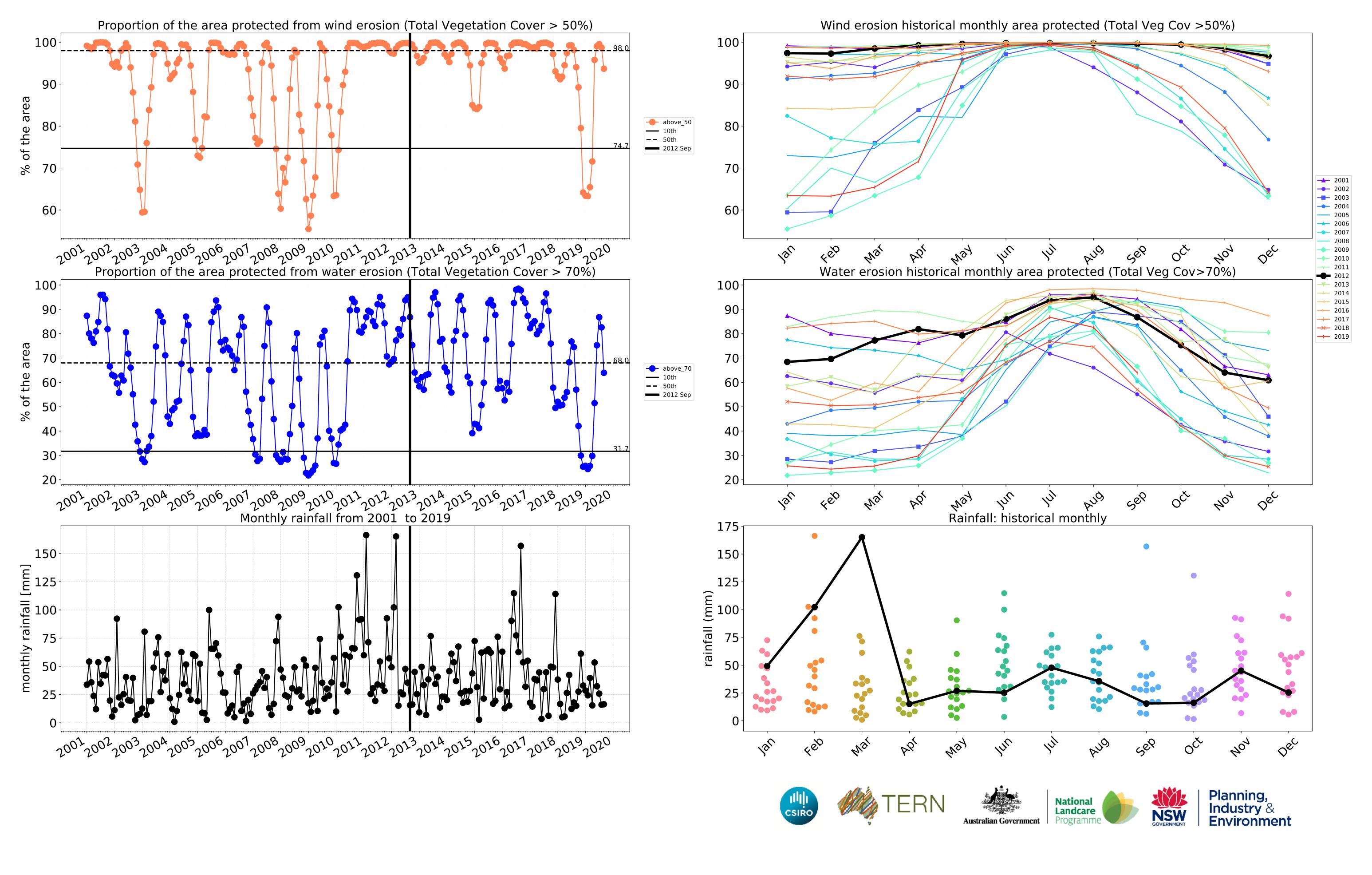




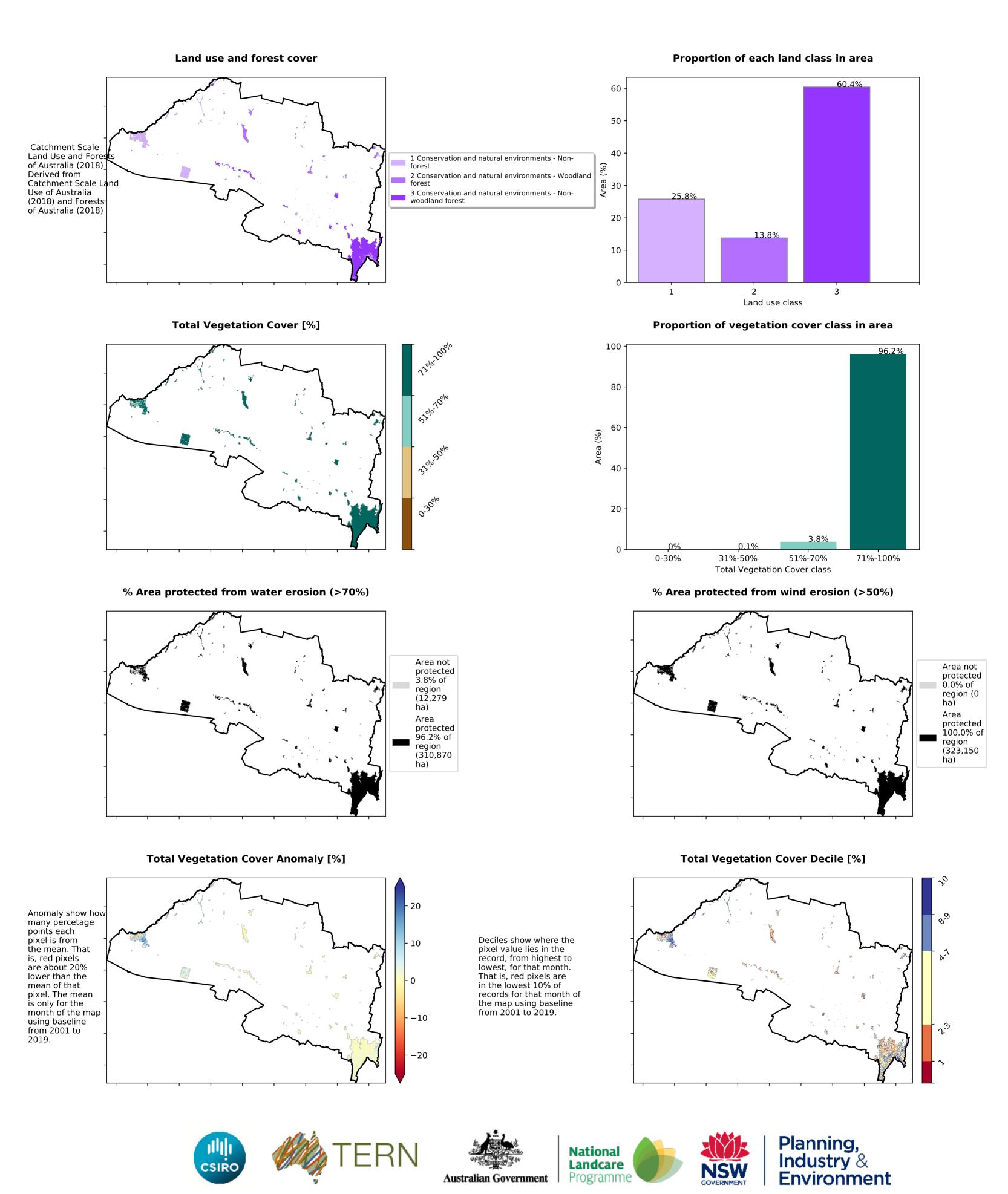






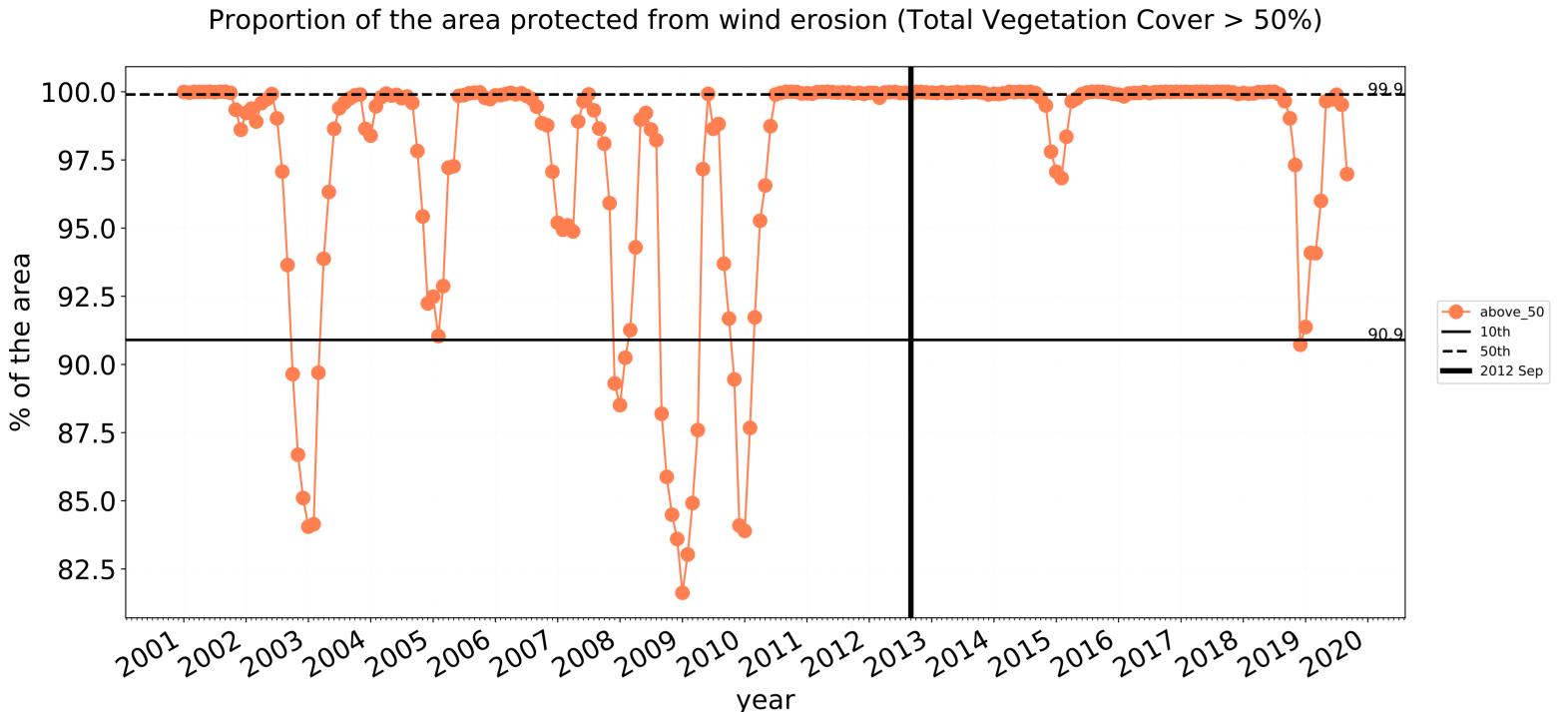


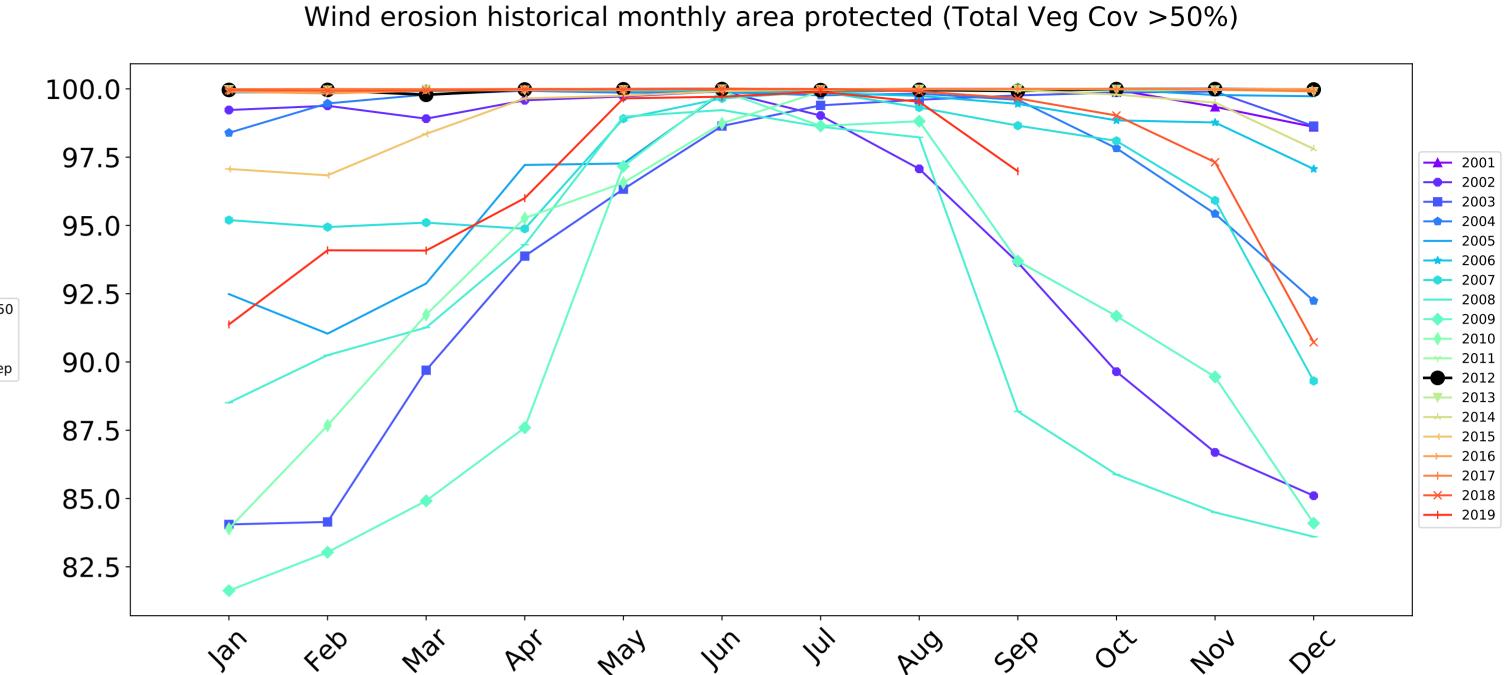
Conservation and natural environments



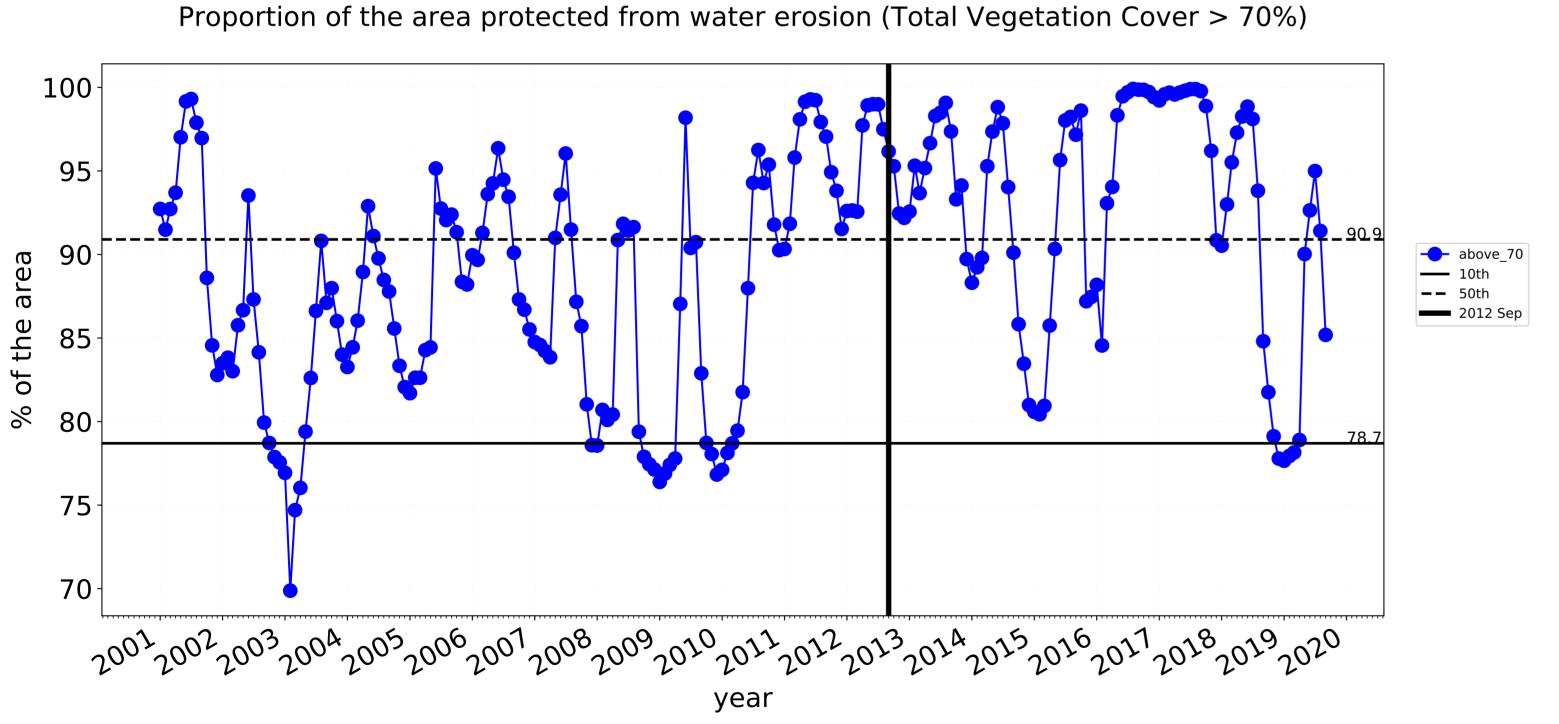


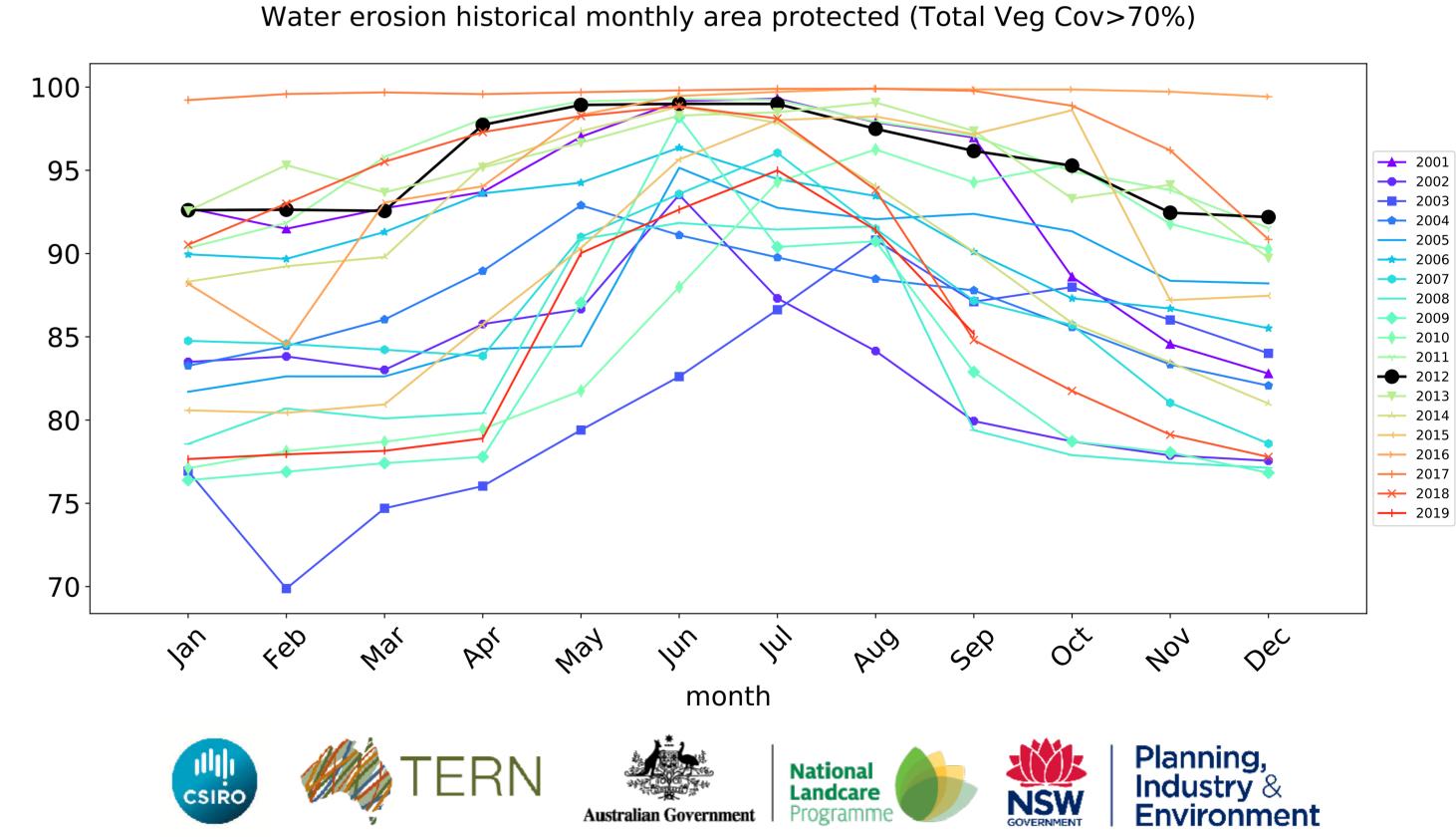
Conservation and natural environments timeseries





month



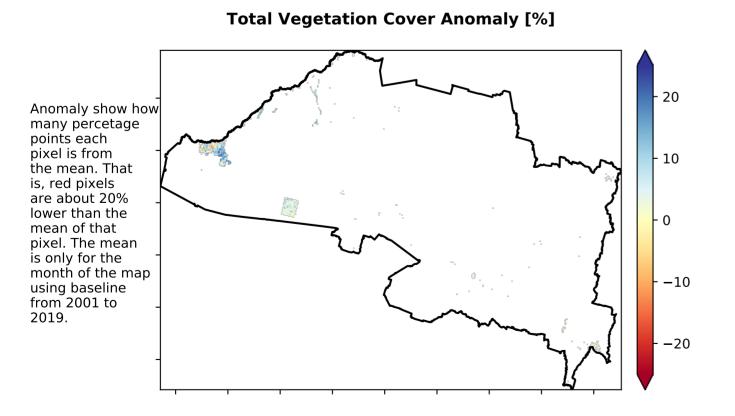


Conservation and natural environments non forest

Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Conservation and natural environments - Non-Catchment Scale Land Use of Australia (2018) and Forestsof Australia (2018)

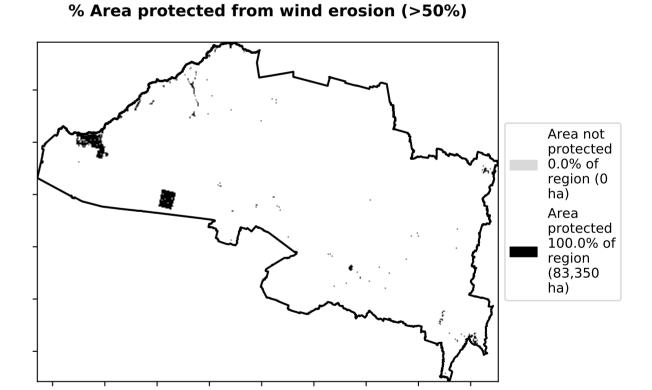
Total Vegetation Cover [%]

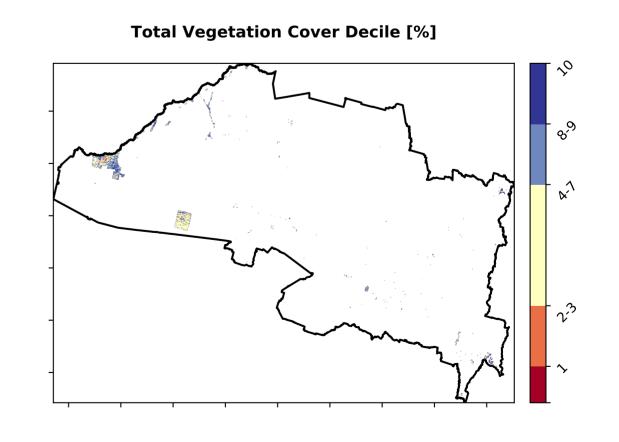
% Area protected from water erosion (>70%) Area not protected 14.7% of region (12,252 ha) Area protected 85.3% of region (71,097 ha)



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 85.3% 80 70 60 Area (%) 30 20 14.4% 10 0.3% 31%-50% 51%-70% 0-30% 71%-100% **Total Vegetation Cover class**









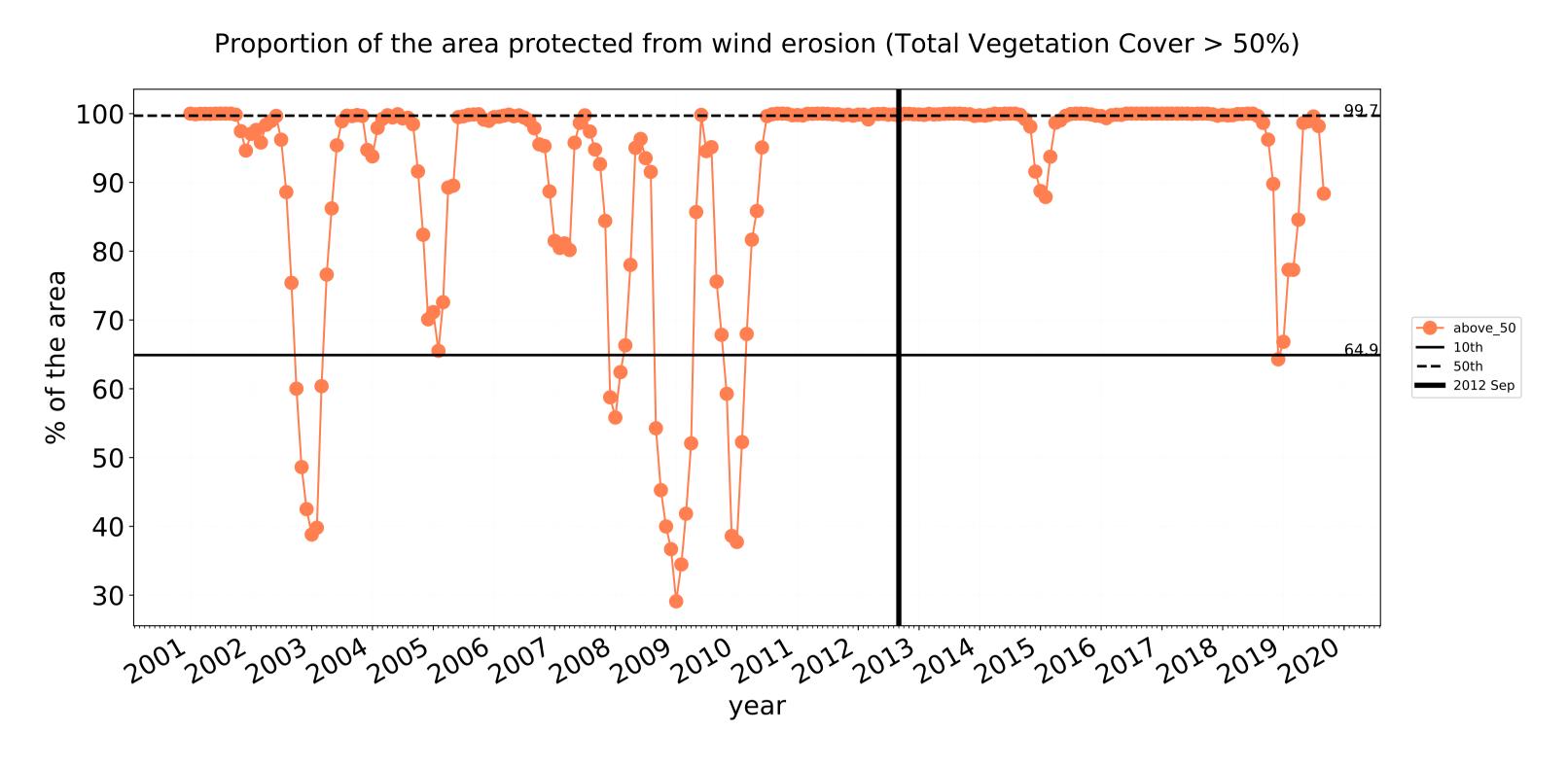


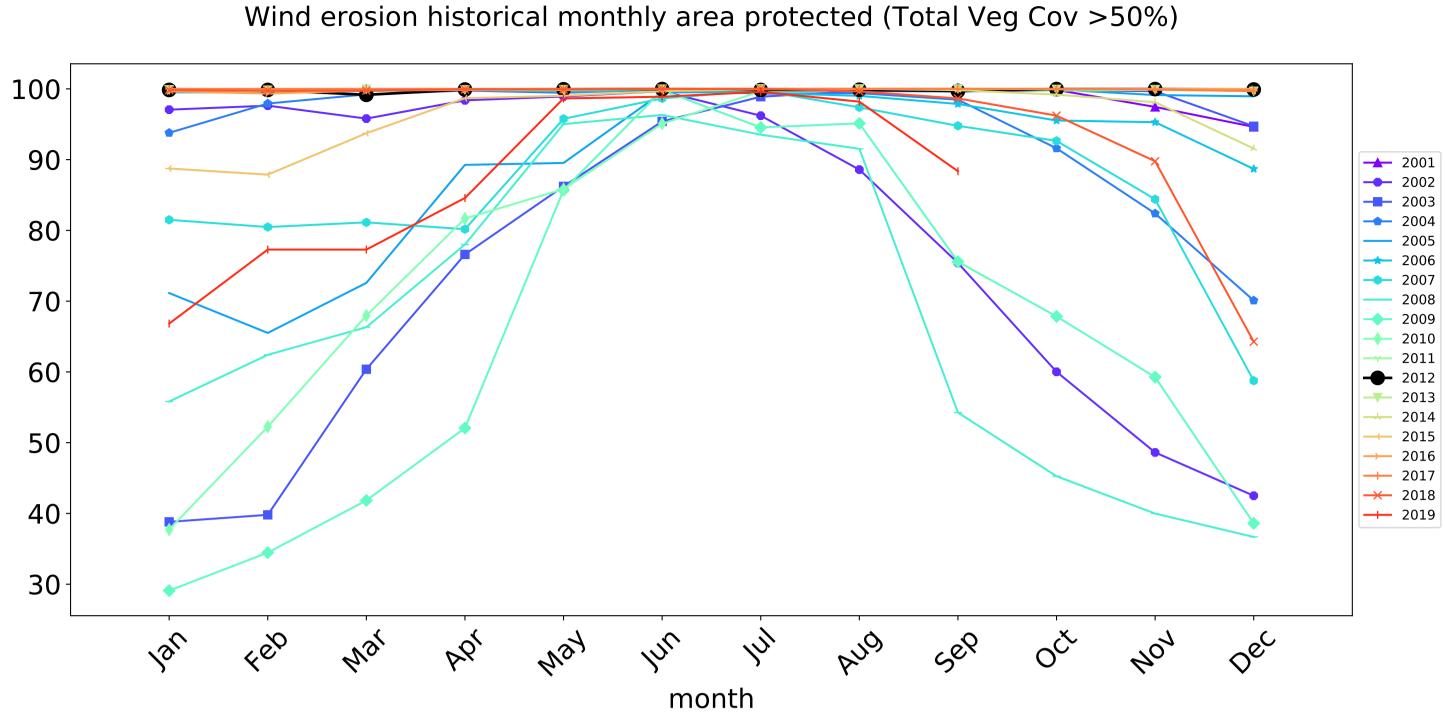


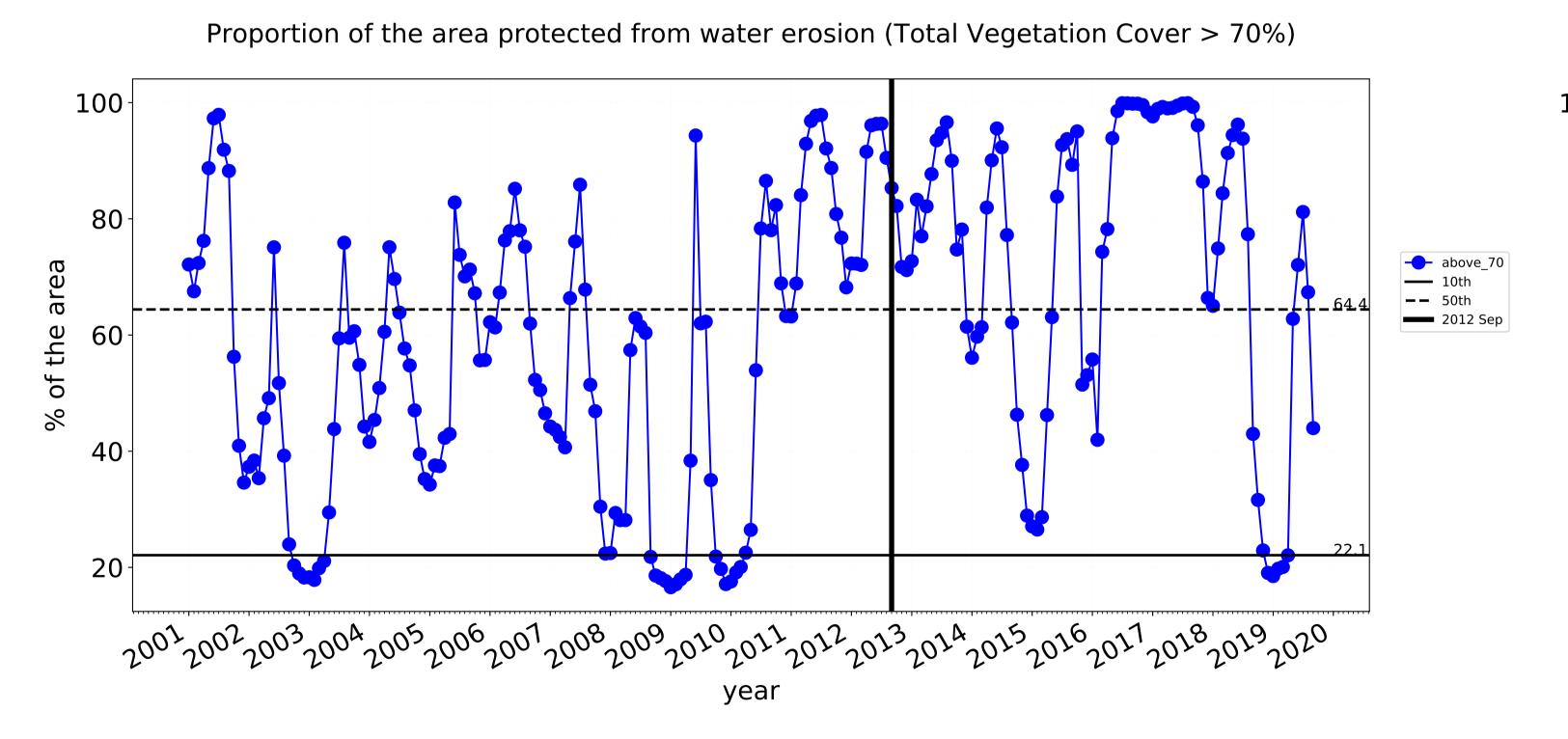


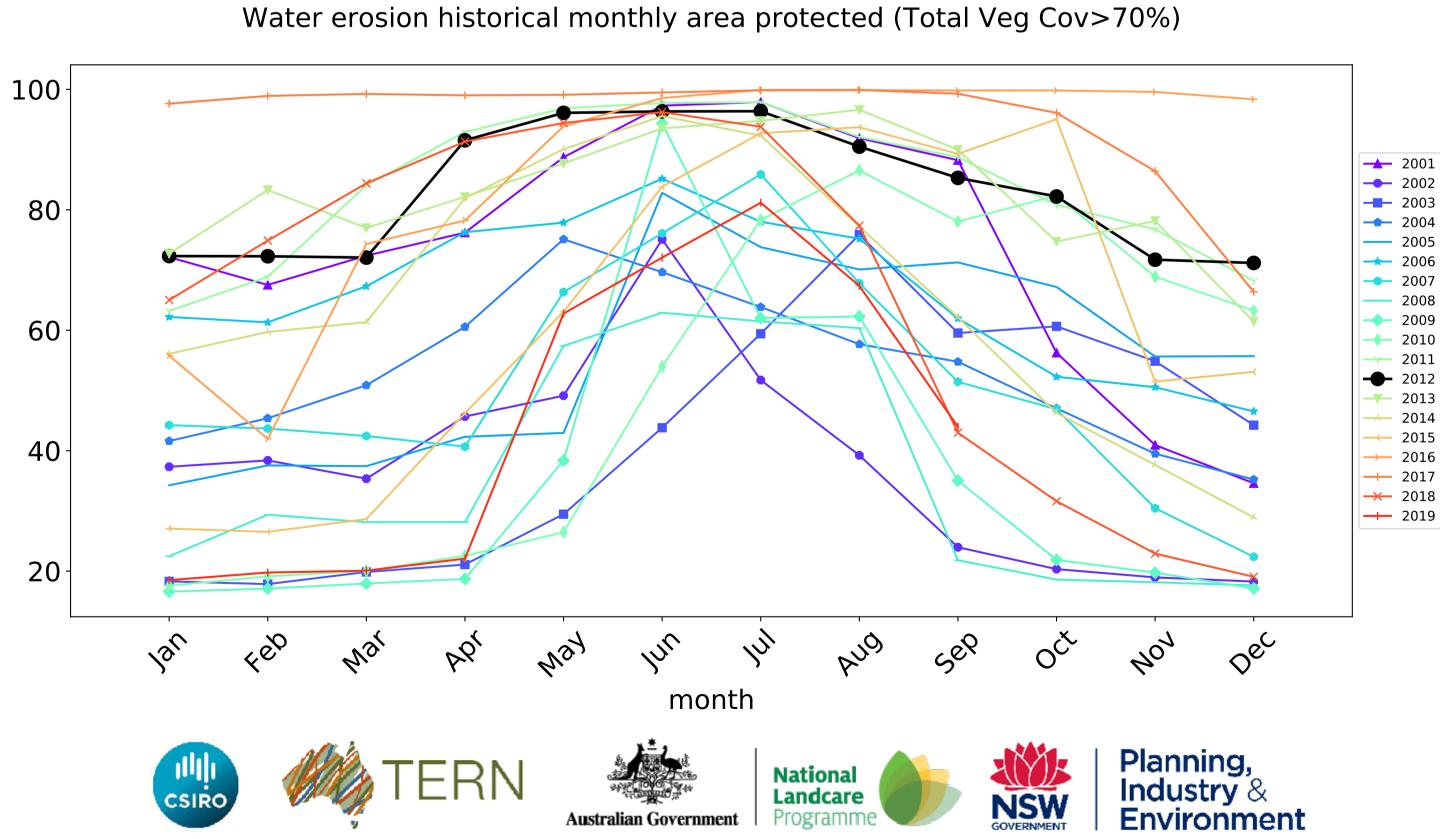


Conservation and natural environments non forest timeseries

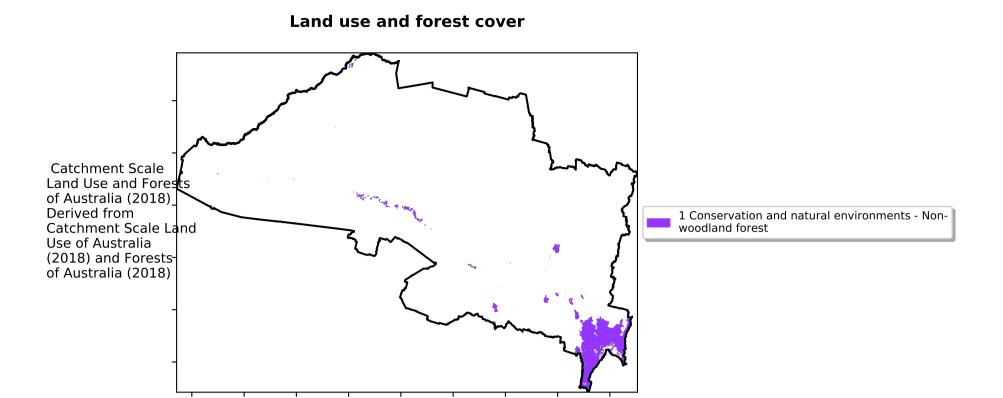




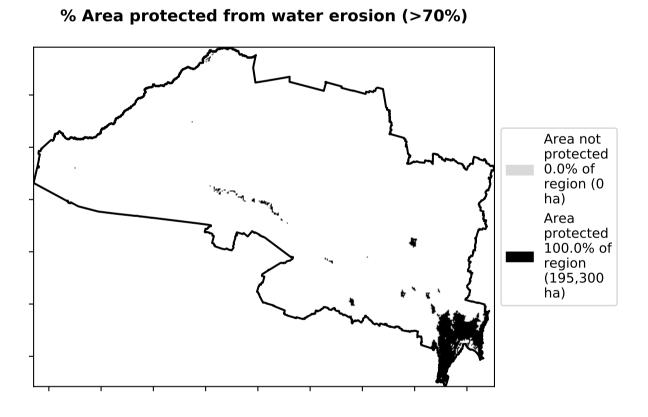


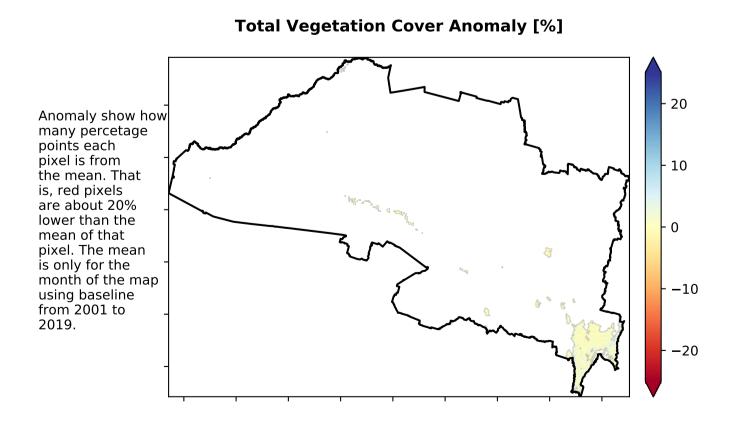


Conservation and natural environments Forest (non woodland)

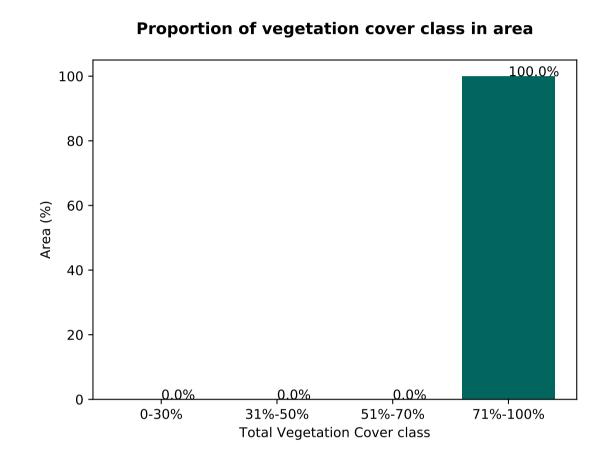


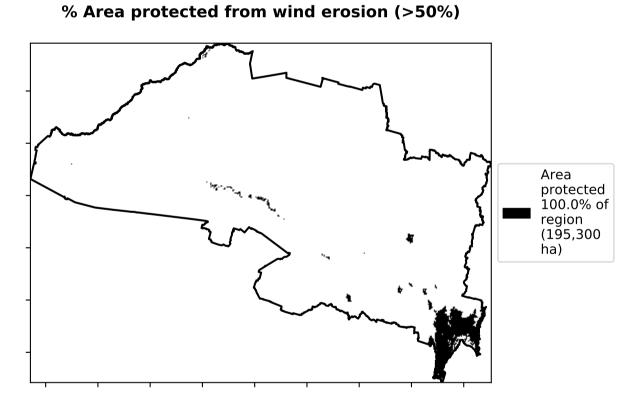
Total Vegetation Cover [%] Trolo Tugolo Trol Tugolo Trolo Tugolo Trolo Tugolo Trol Tugolo Trol Tugolo Trol Tugolo Trol Tugolo Trol Tug

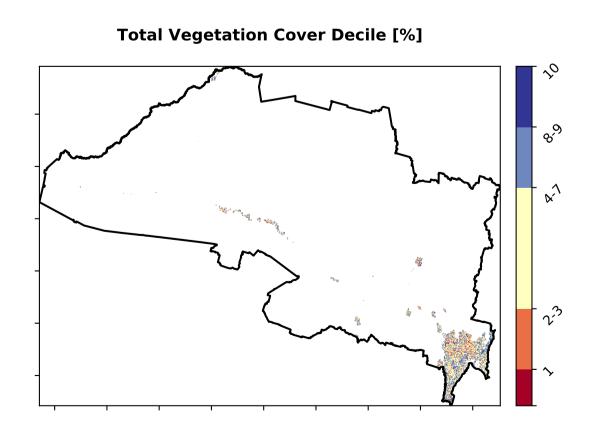




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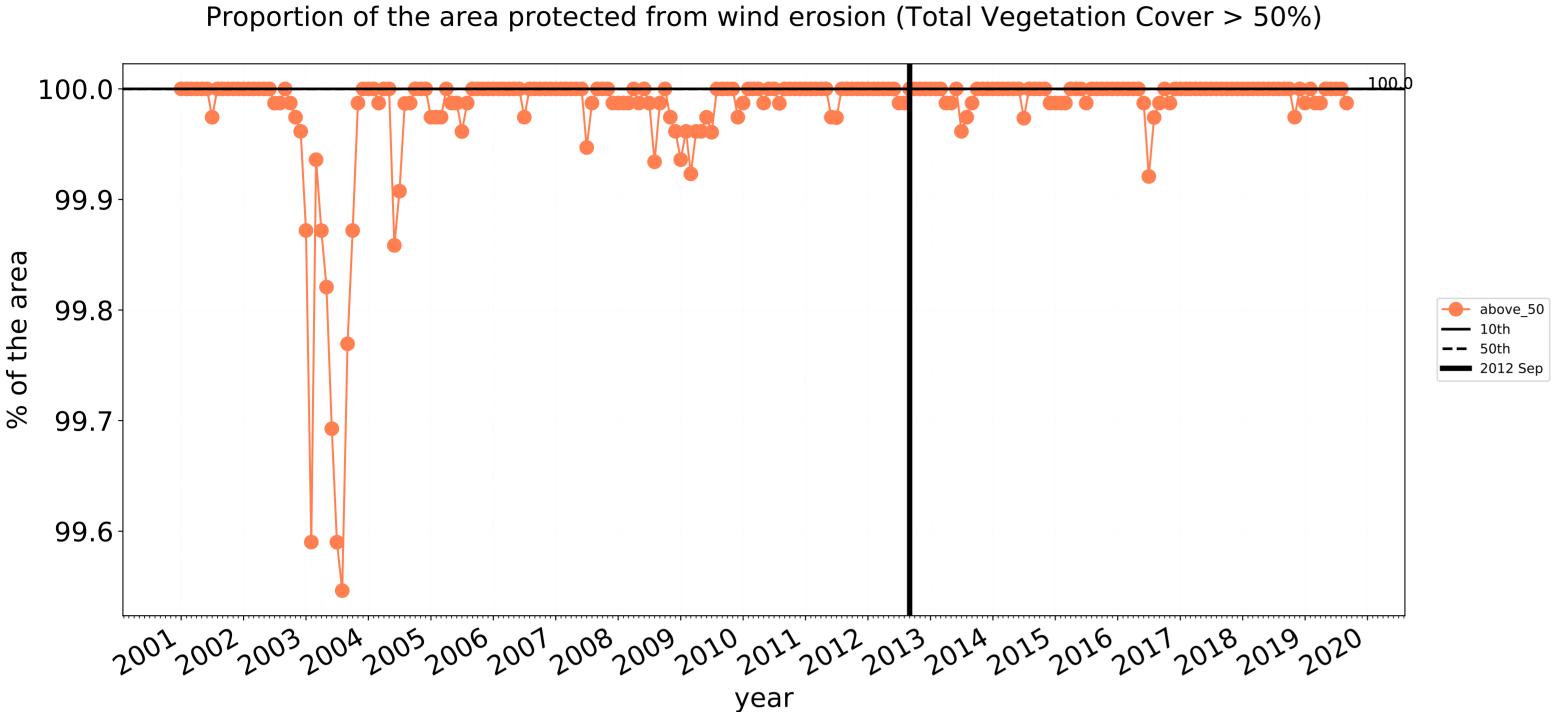


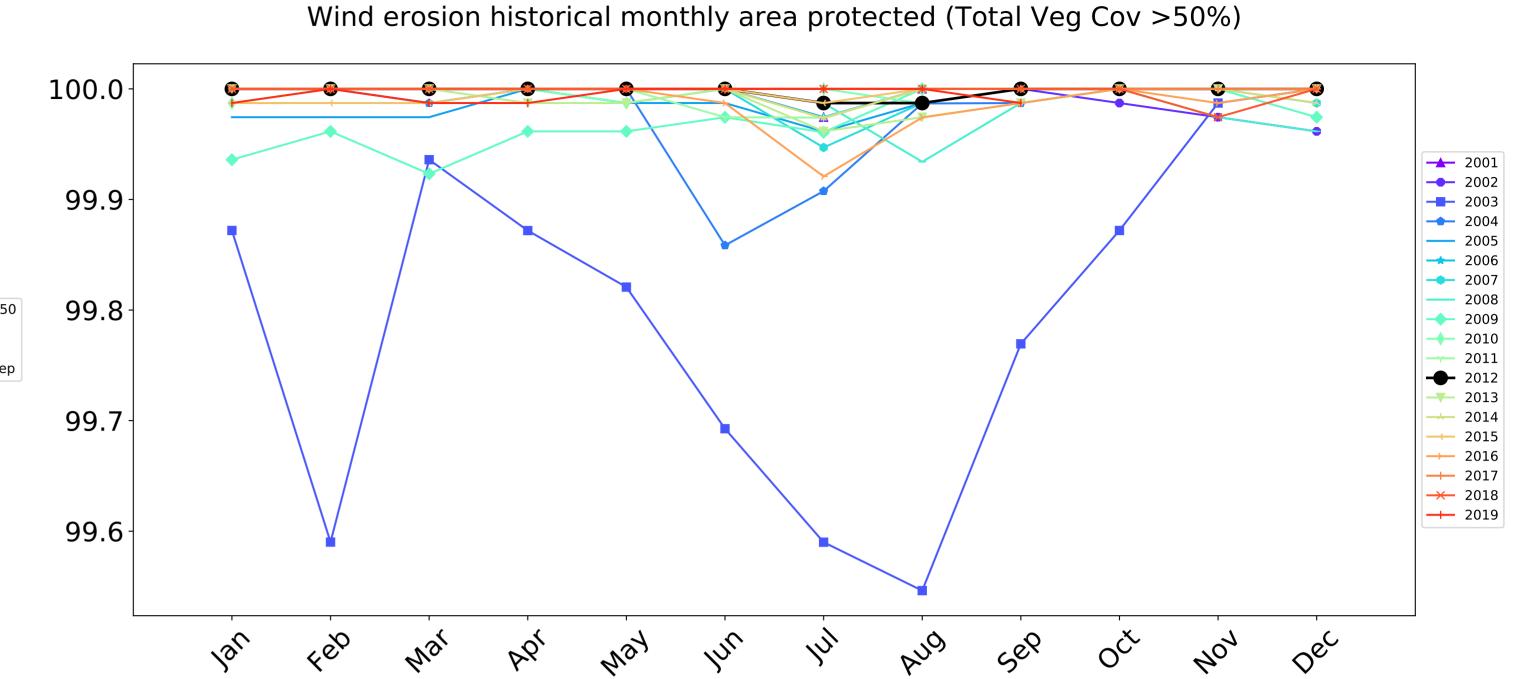




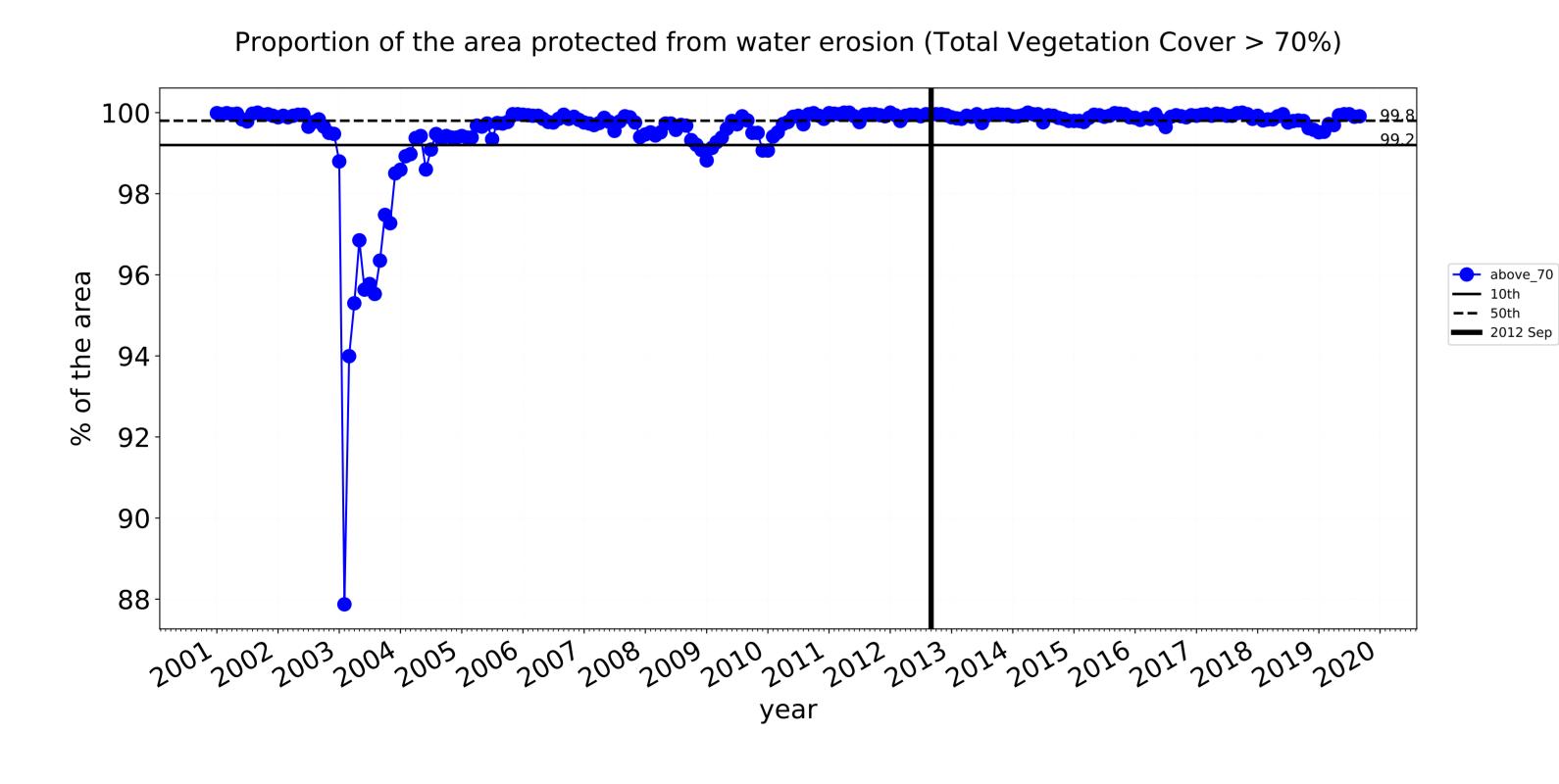


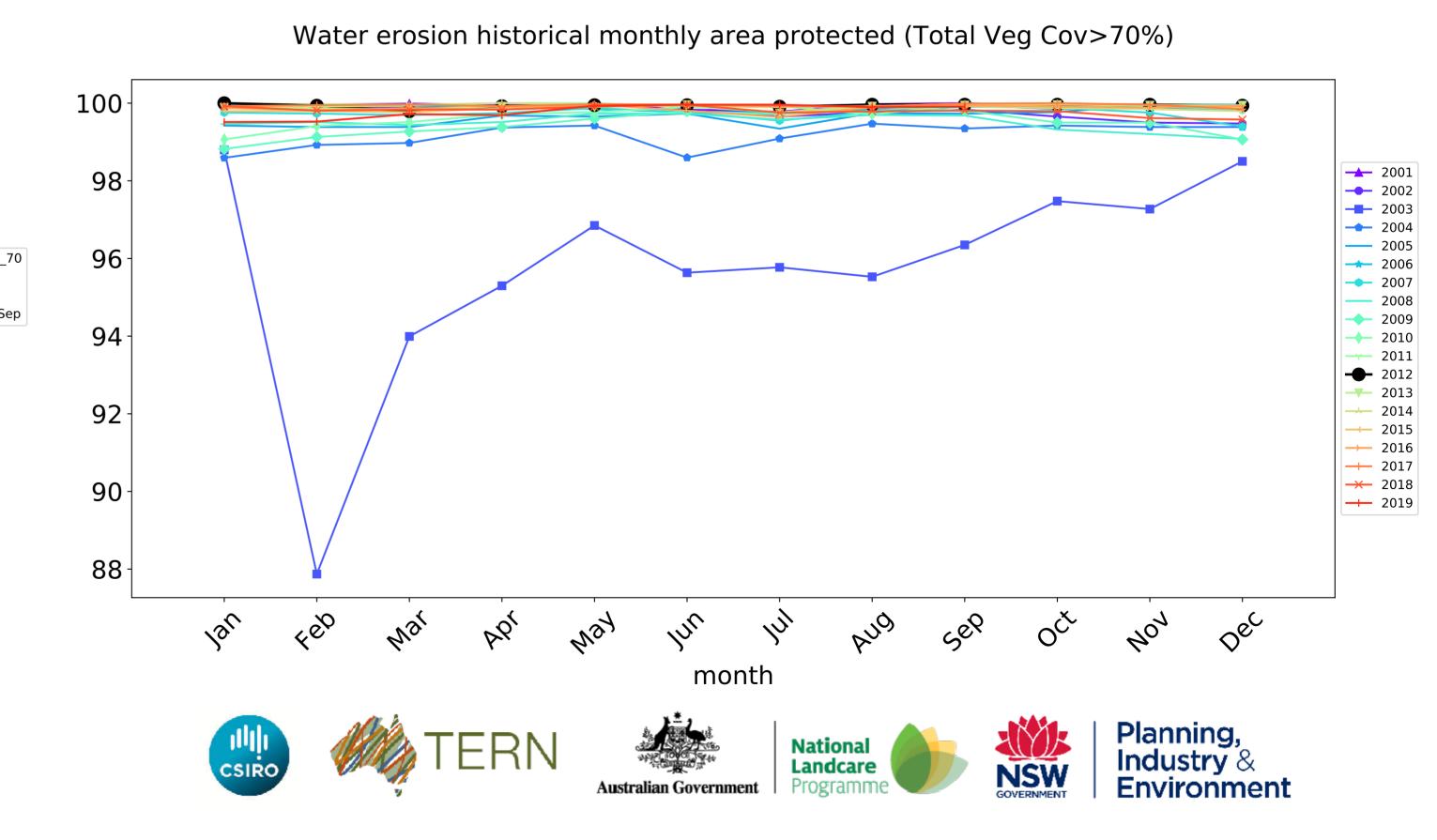






month

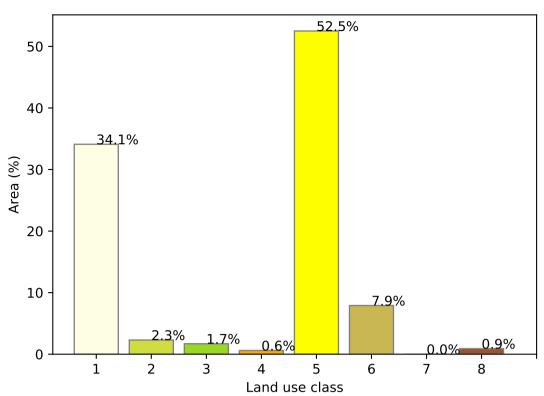




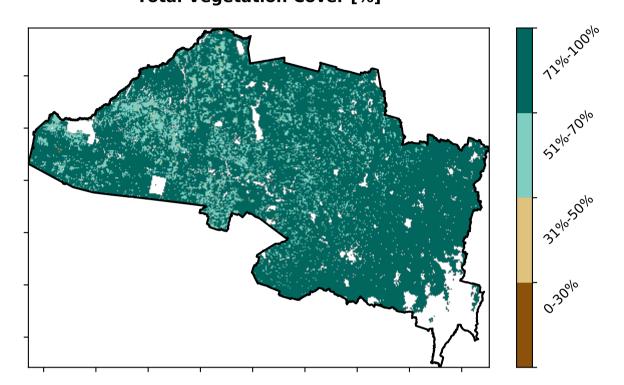
Agriculture

Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) The Agriculture - Grazing - Non forest Agriculture - Grazing - Woodland forest Agriculture - Grazing - Non-woodland forest Agriculture - Cropping - Non-irrigated So Agriculture - Cropping - Irrigated The Agriculture - Horticulture - Non-irrigated Agriculture - Horticulture - Non-irrigated Agriculture - Horticulture - Horticulture

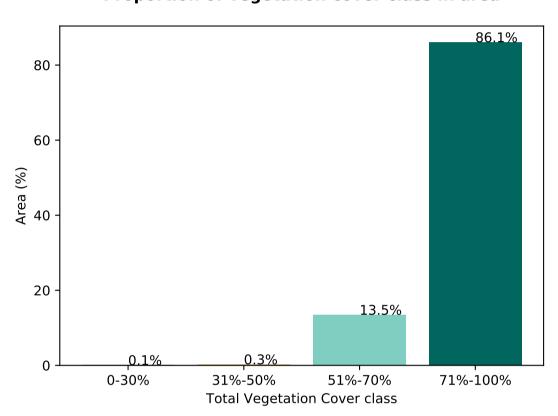
Proportion of each land class in area



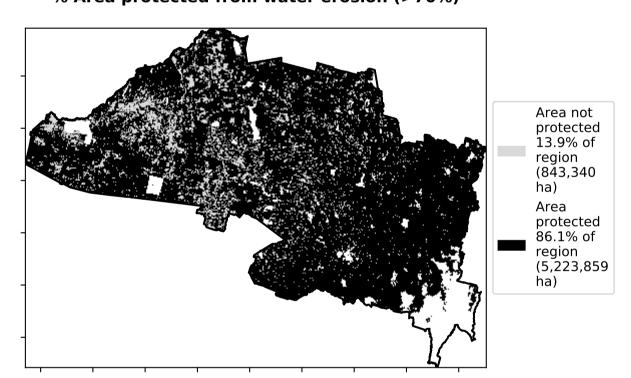
Total Vegetation Cover [%]



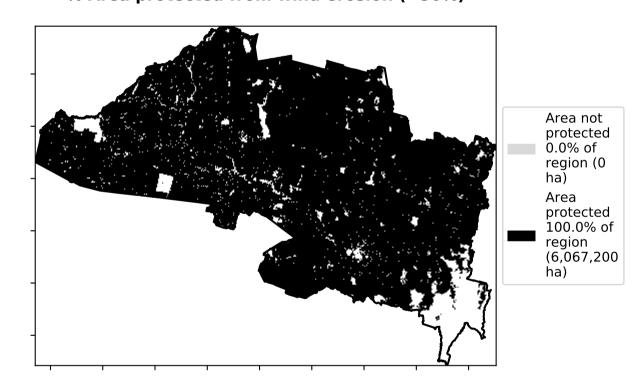
Proportion of vegetation cover class in area



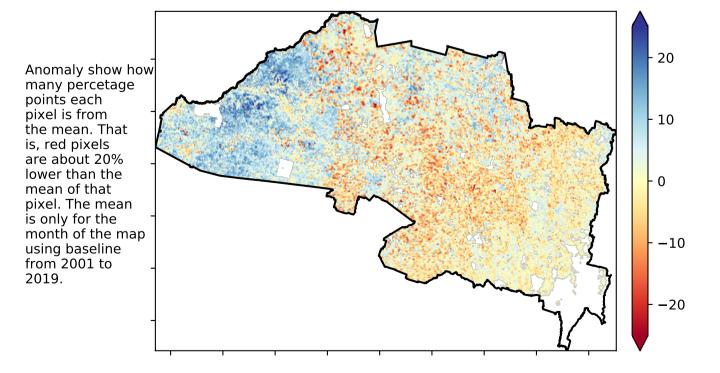
% Area protected from water erosion (>70%)



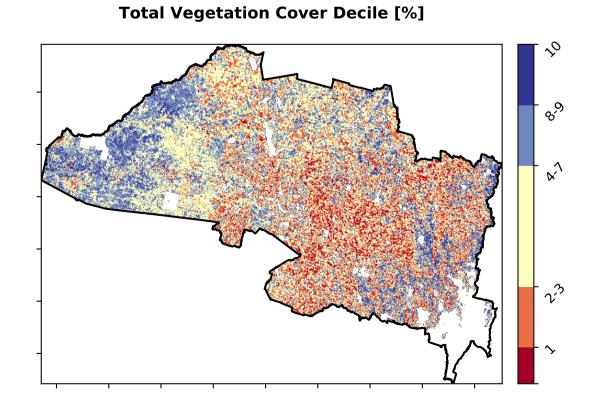
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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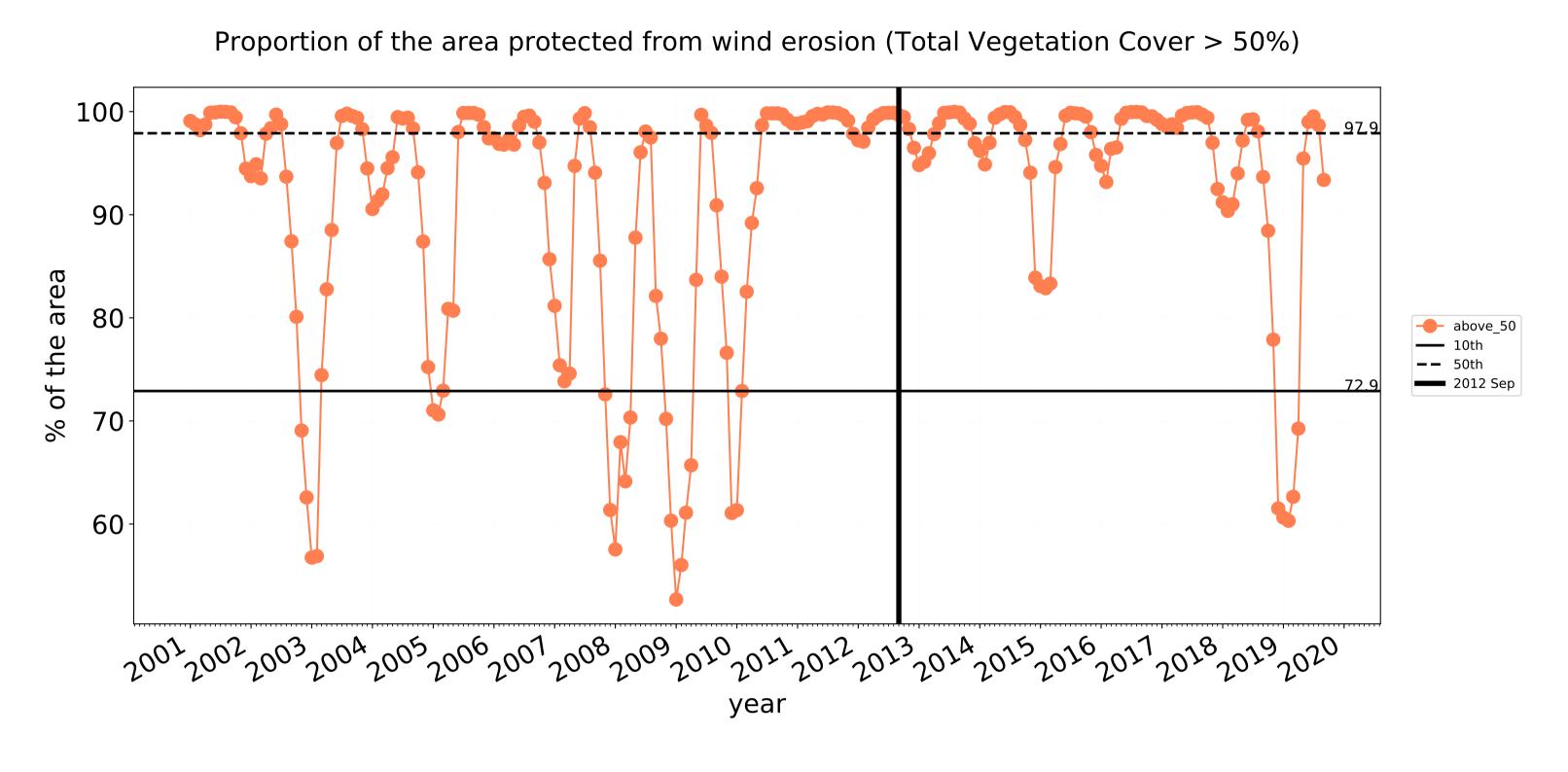


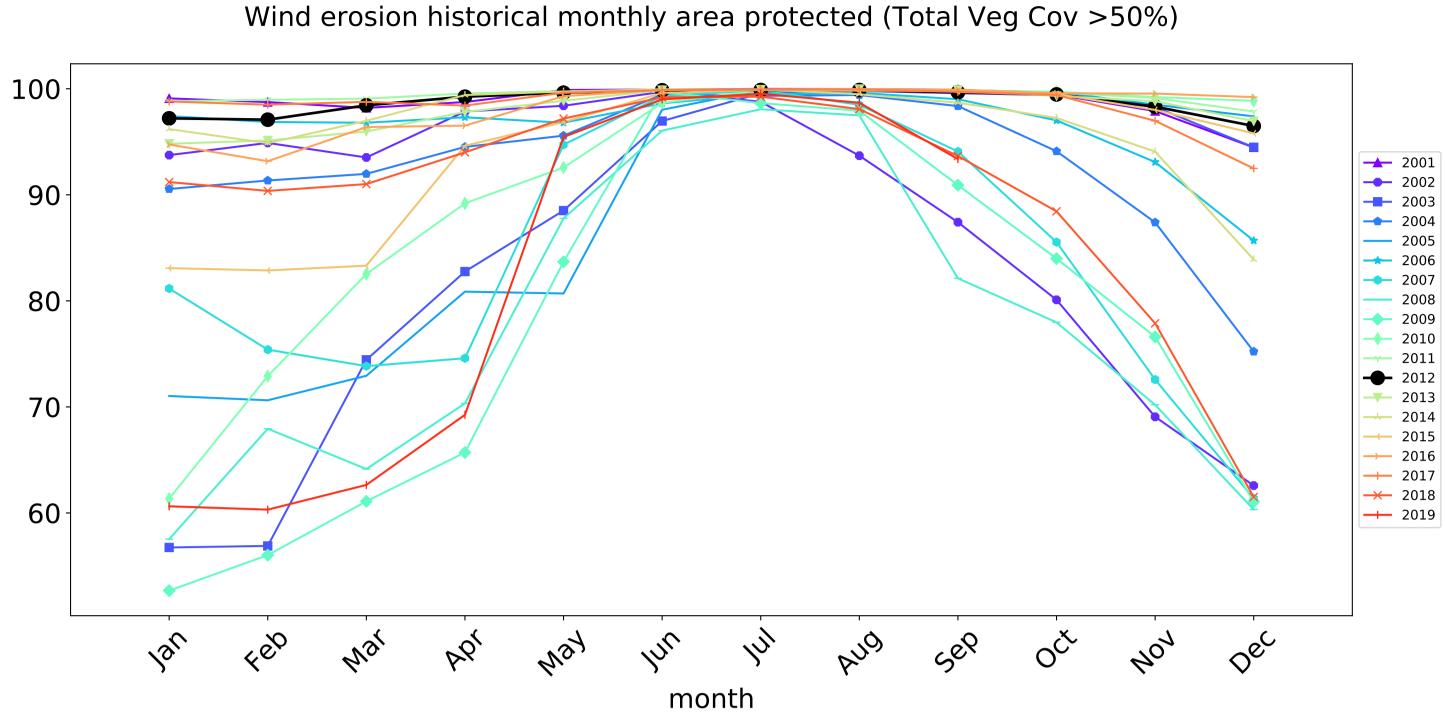


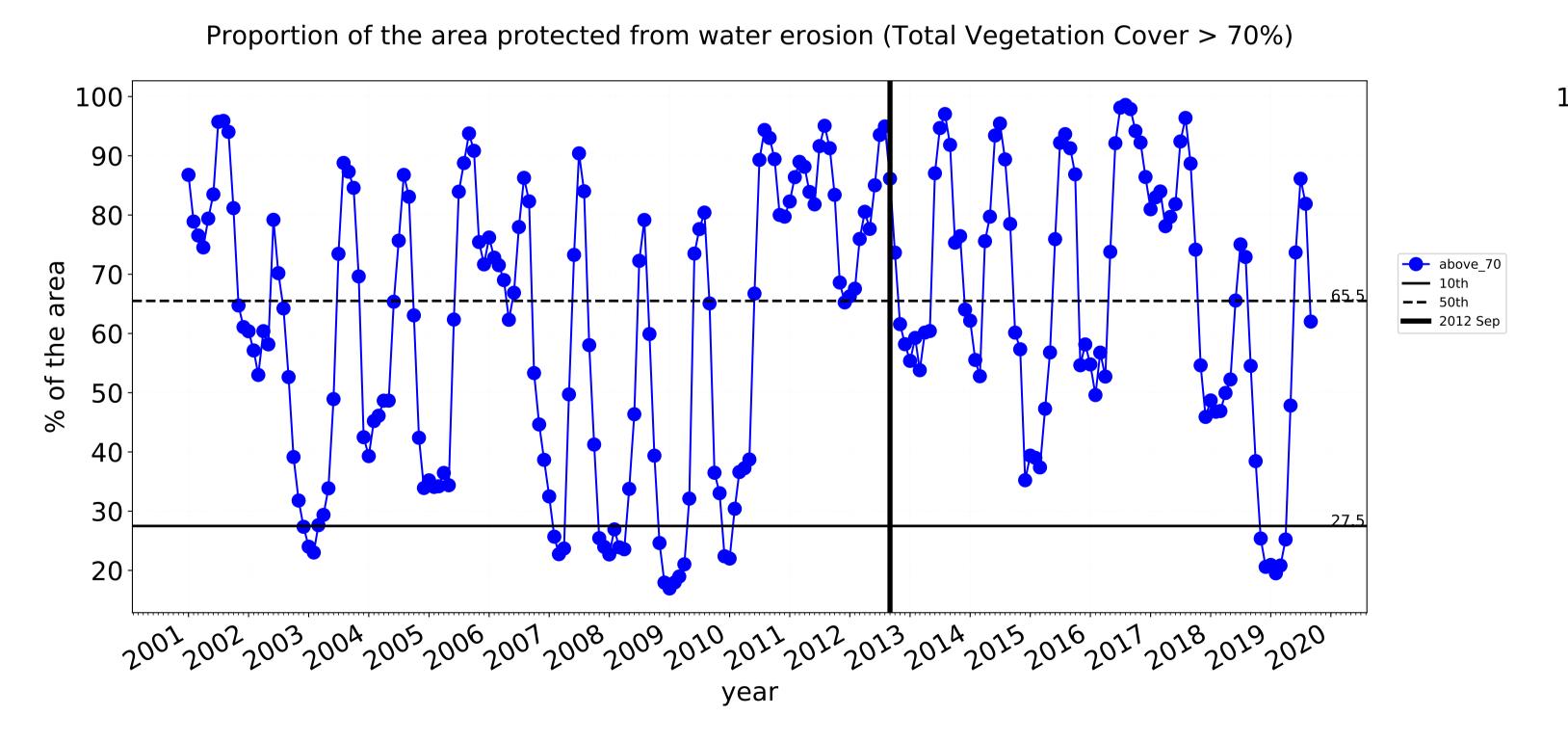


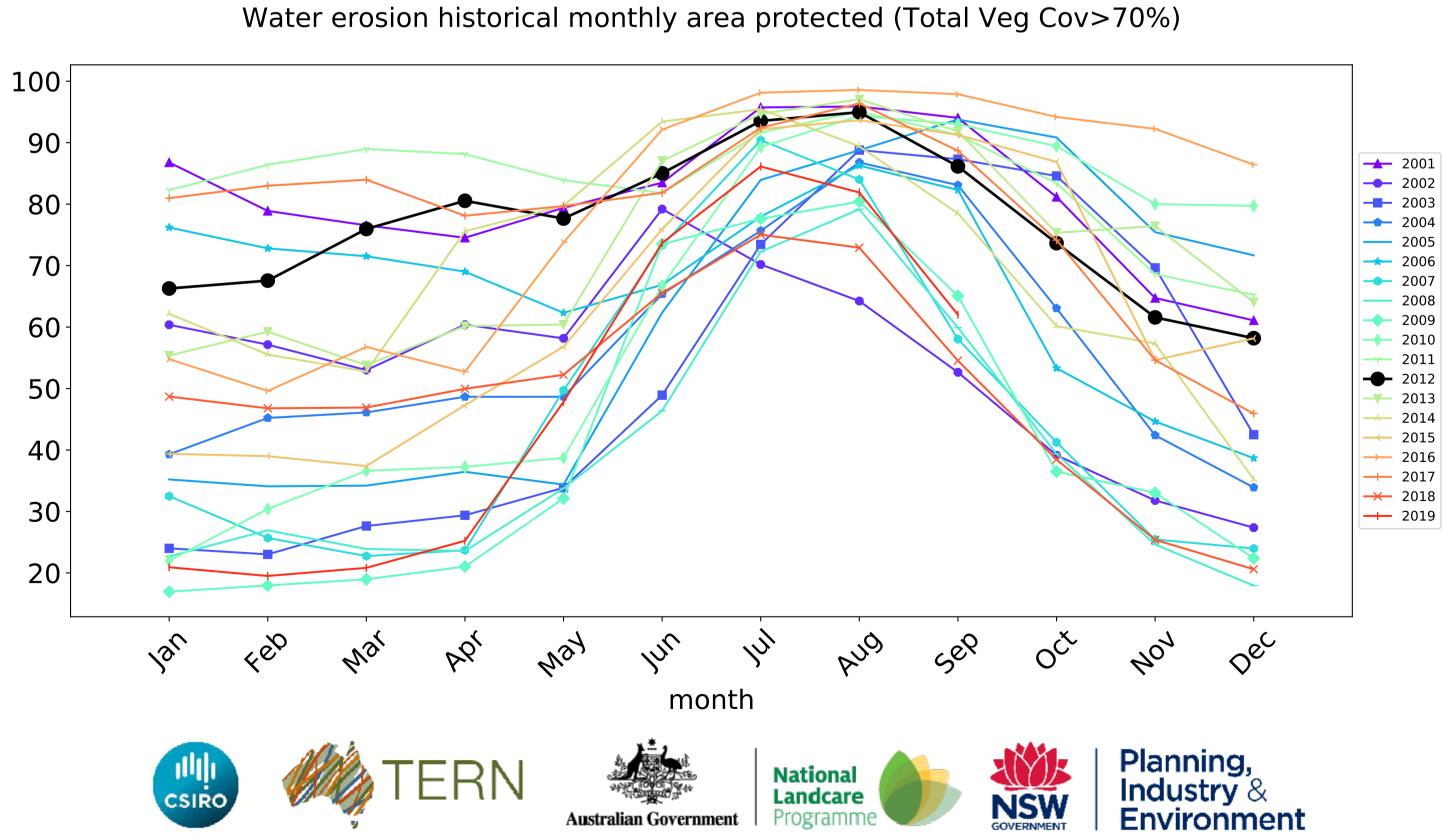


Agriculture timeseries





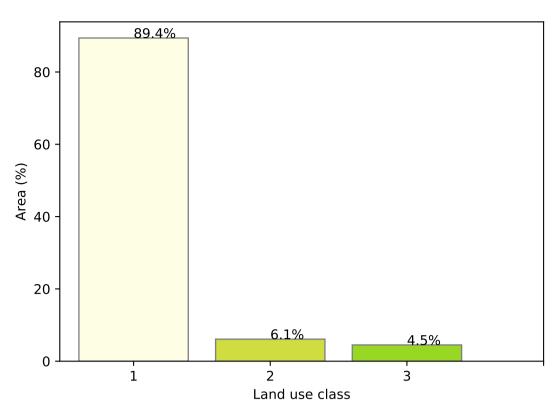




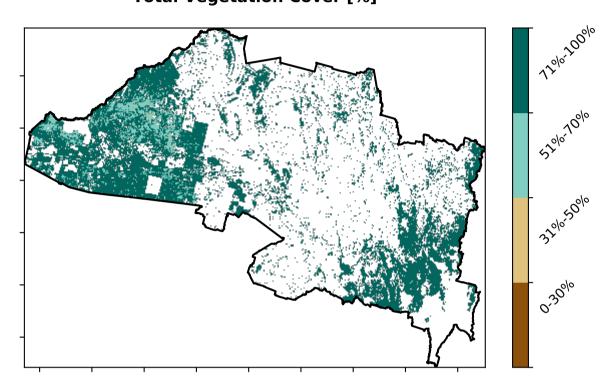
Grazing

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

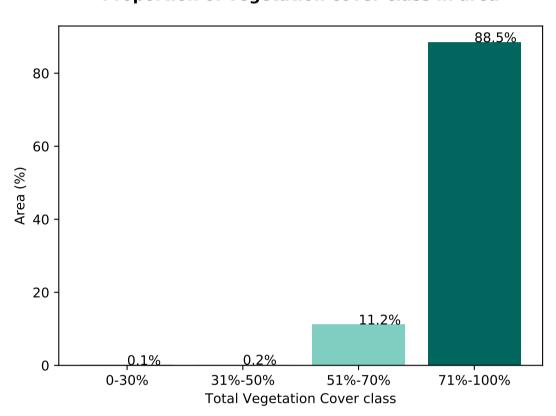
Proportion of each land class in area



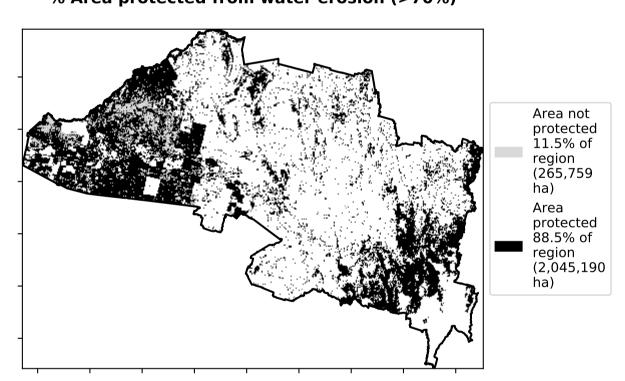
Total Vegetation Cover [%]



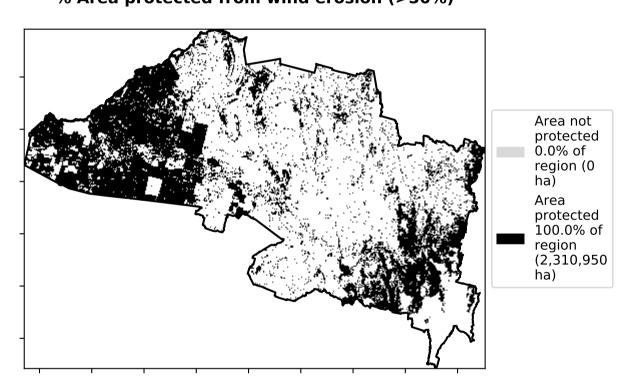
Proportion of vegetation cover class in area



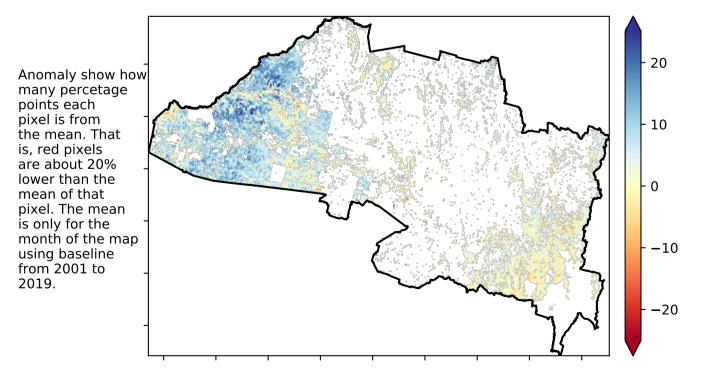
% Area protected from water erosion (>70%)



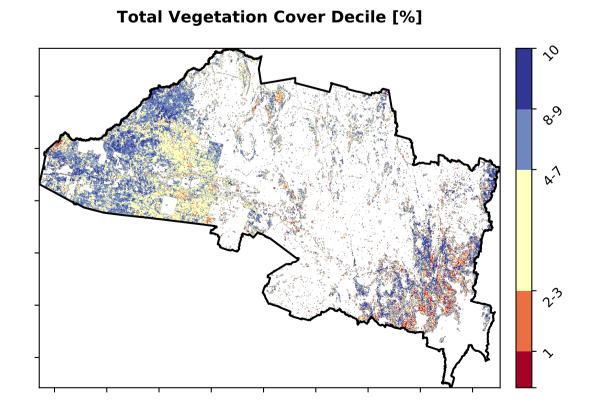
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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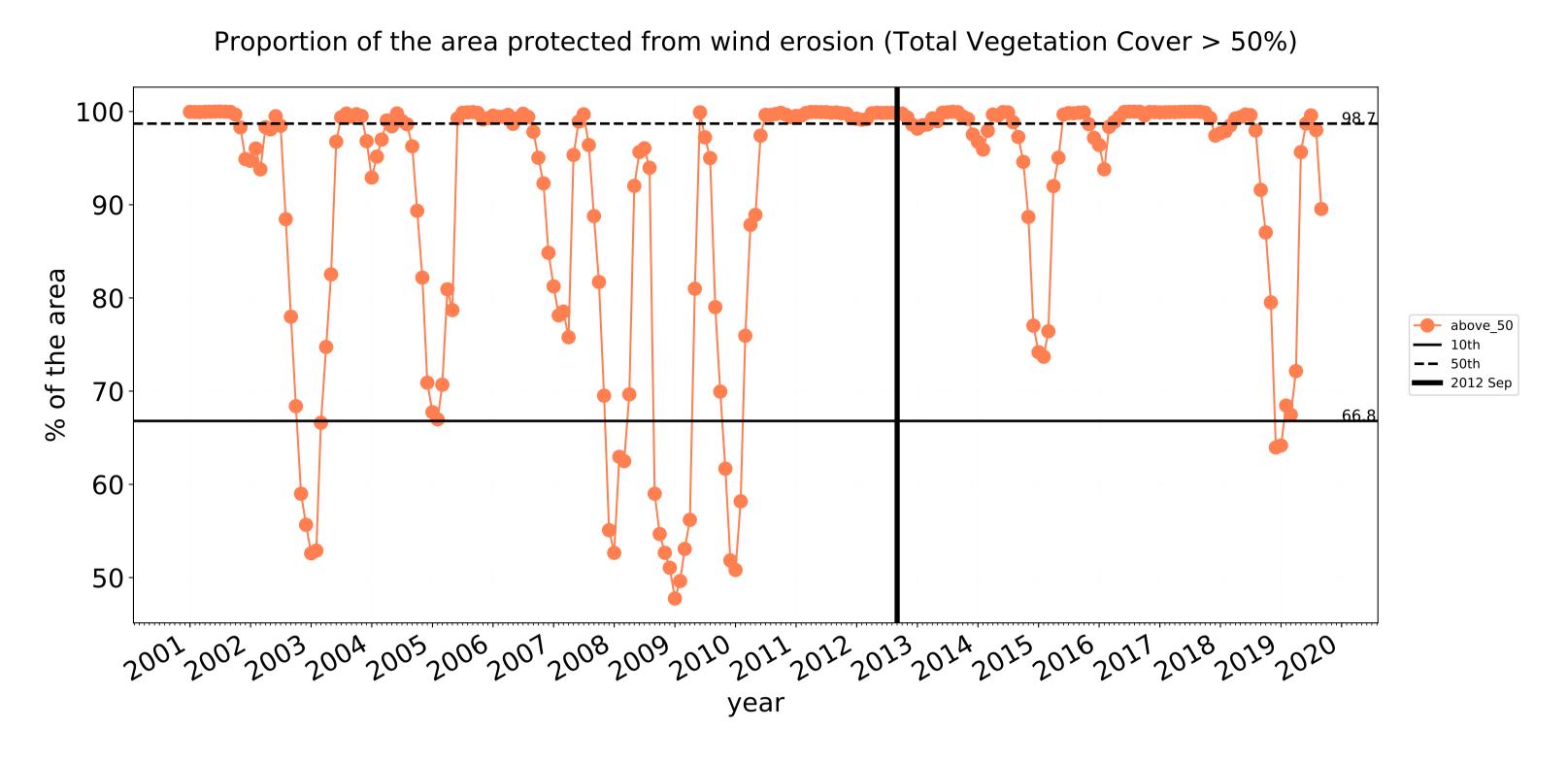


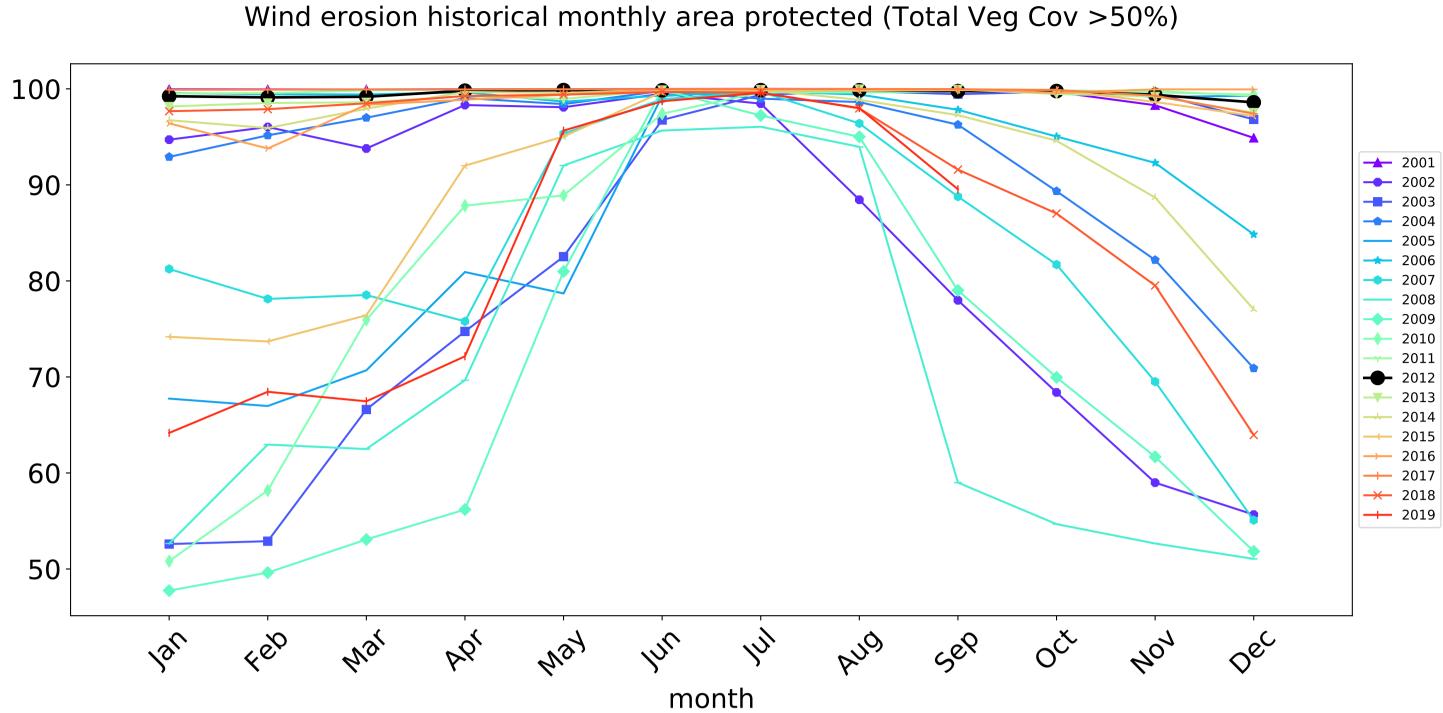


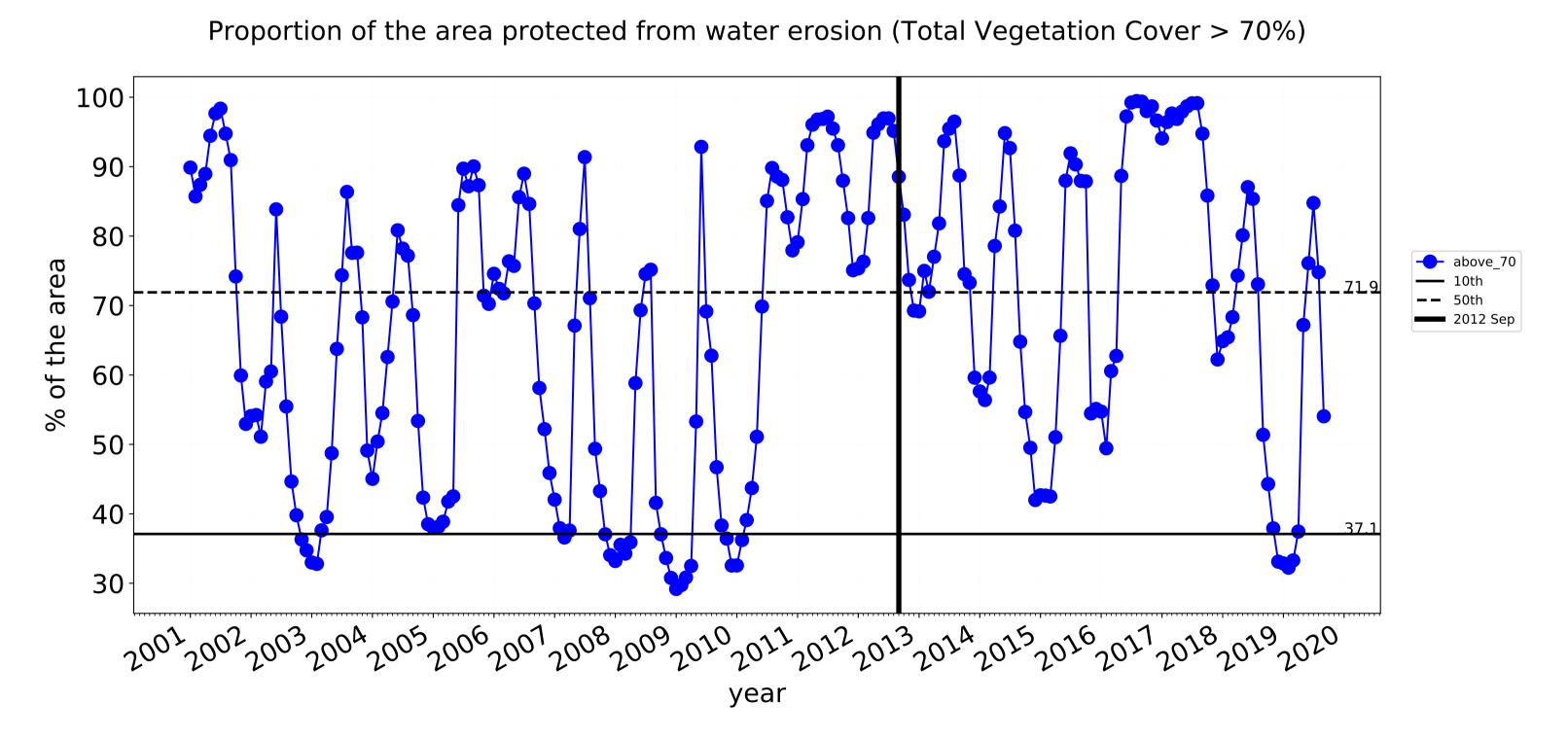


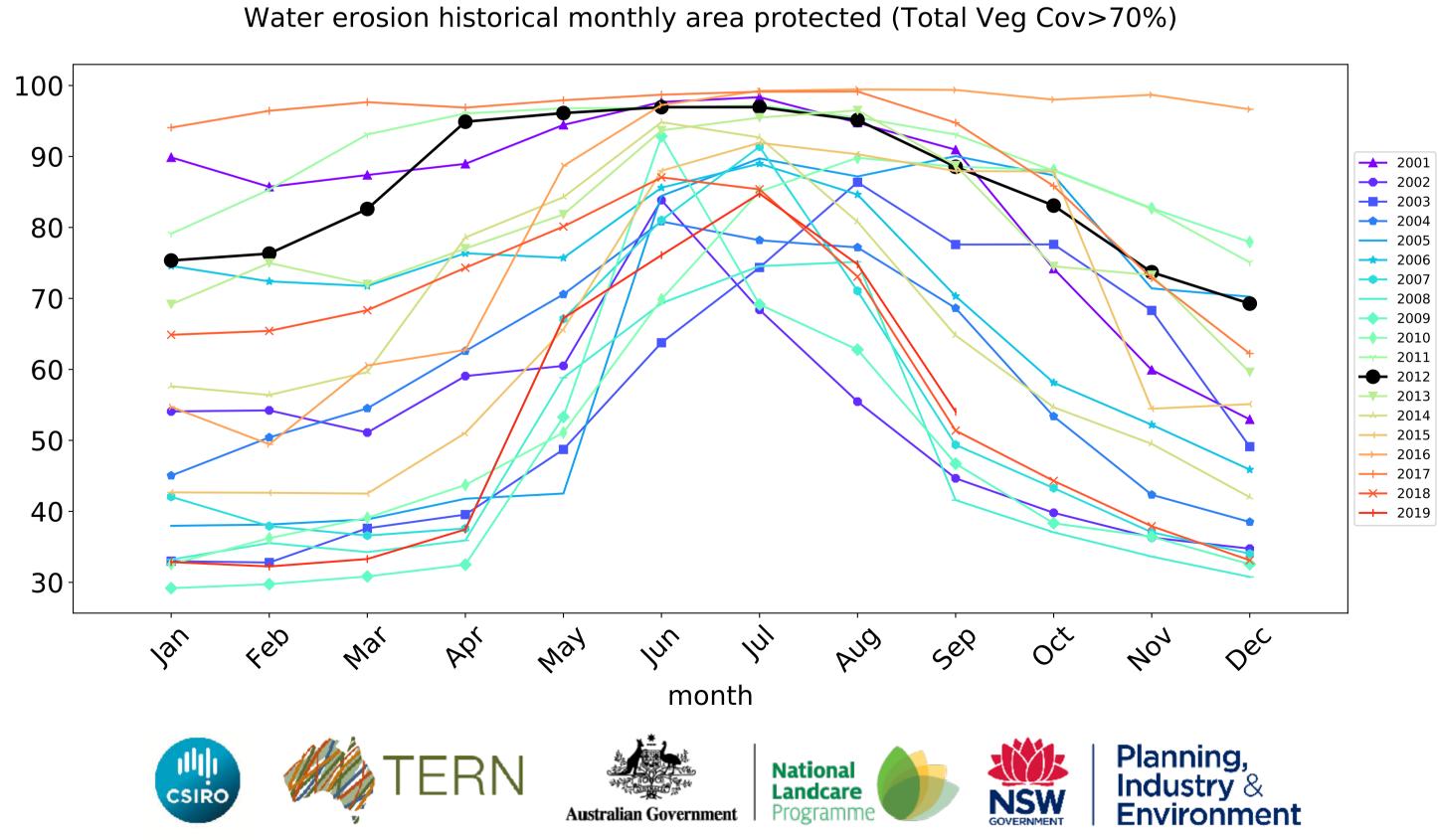


Grazing timeseries



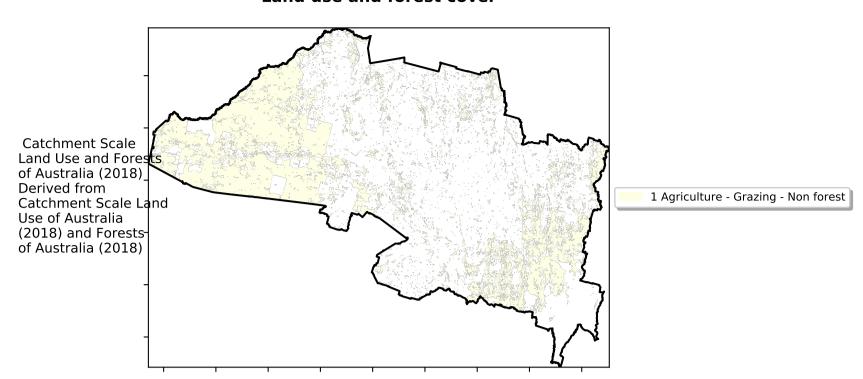




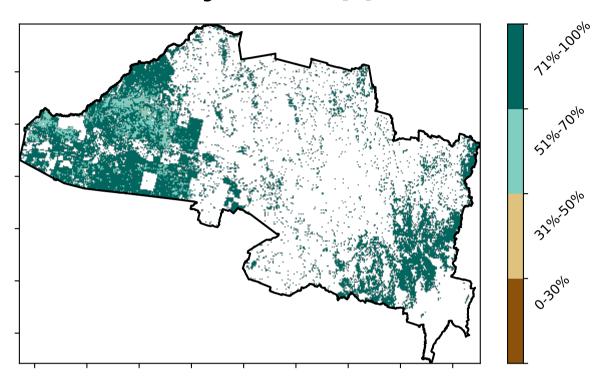


Grazing non forest

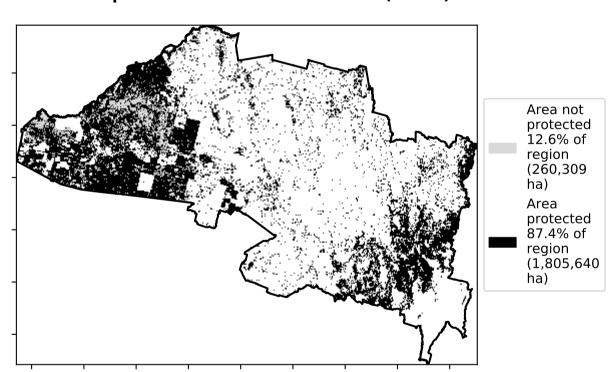
Land use and forest cover



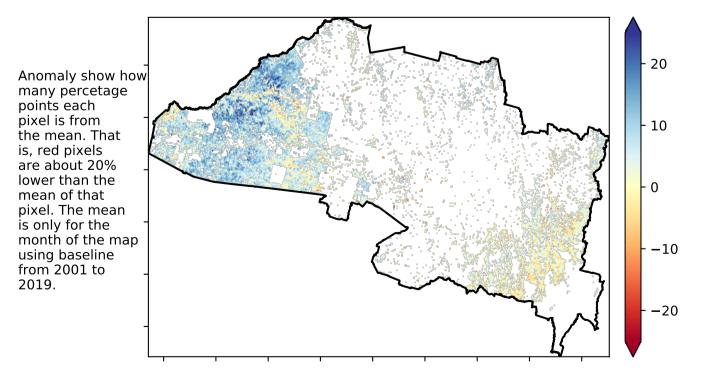
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

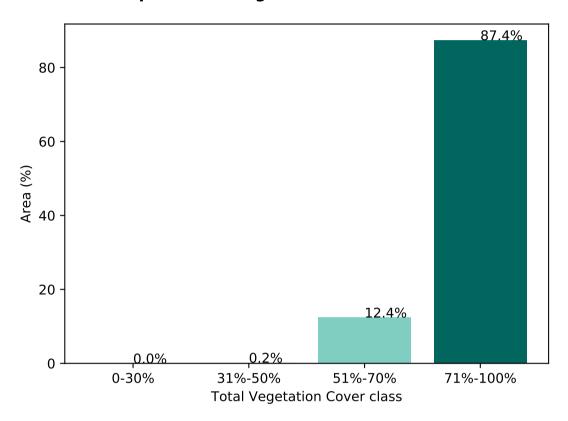


Total Vegetation Cover Anomaly [%]

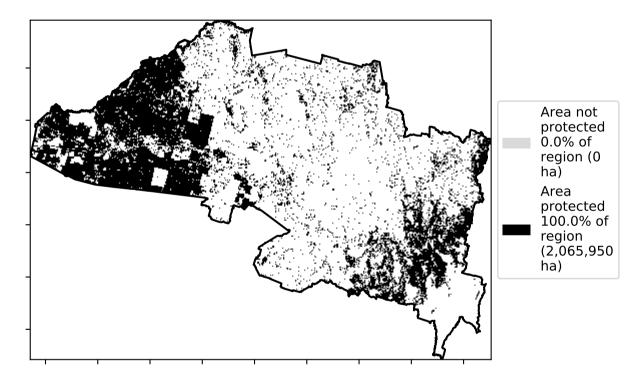


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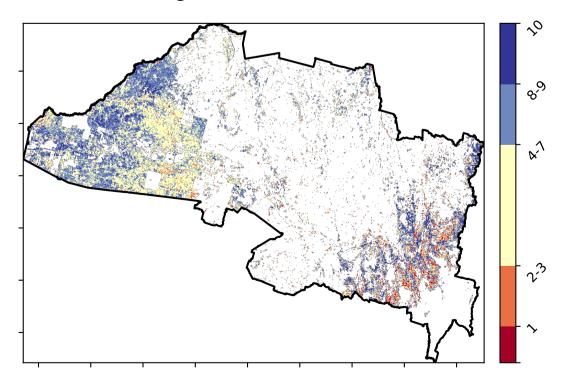
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







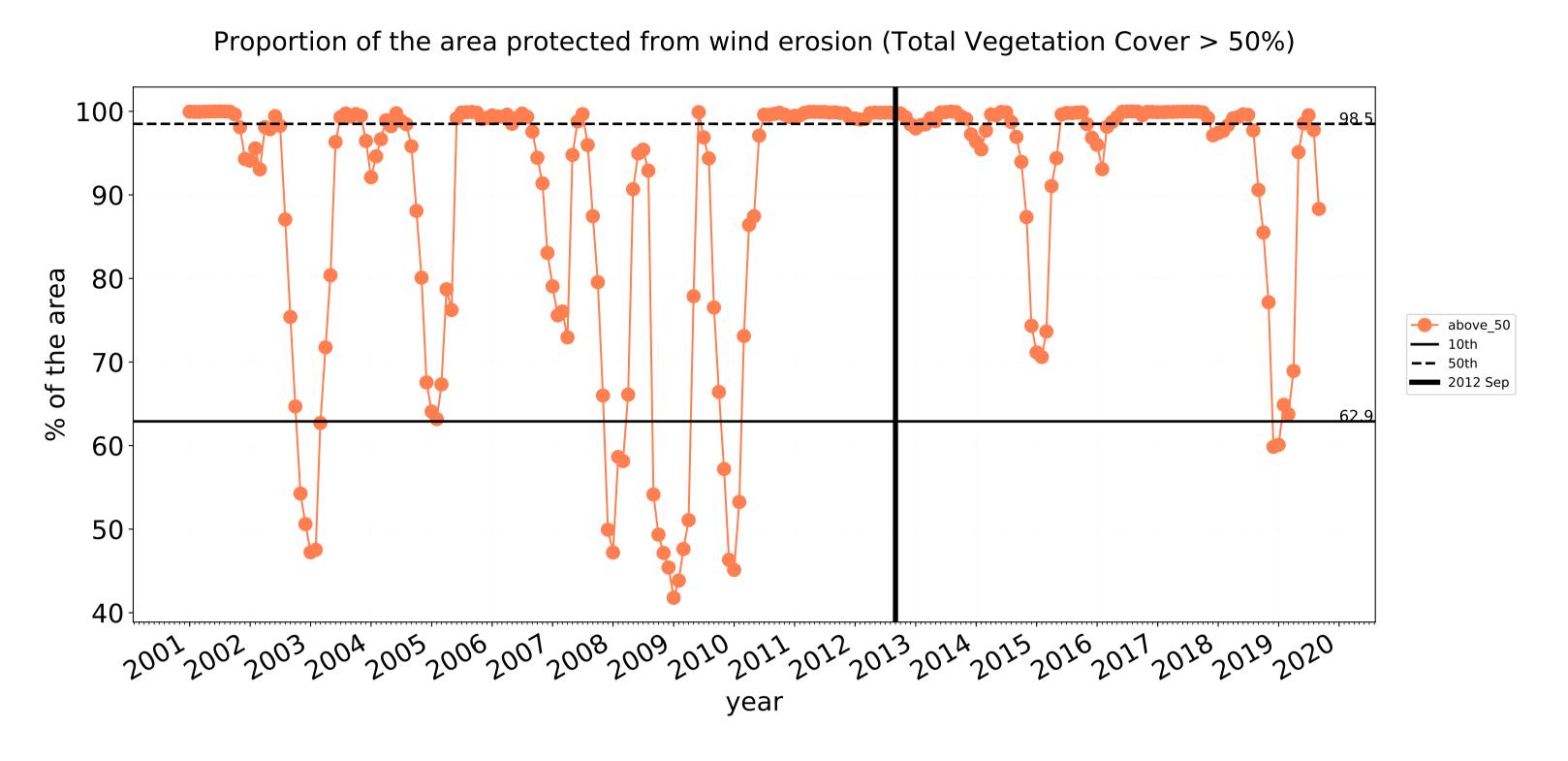


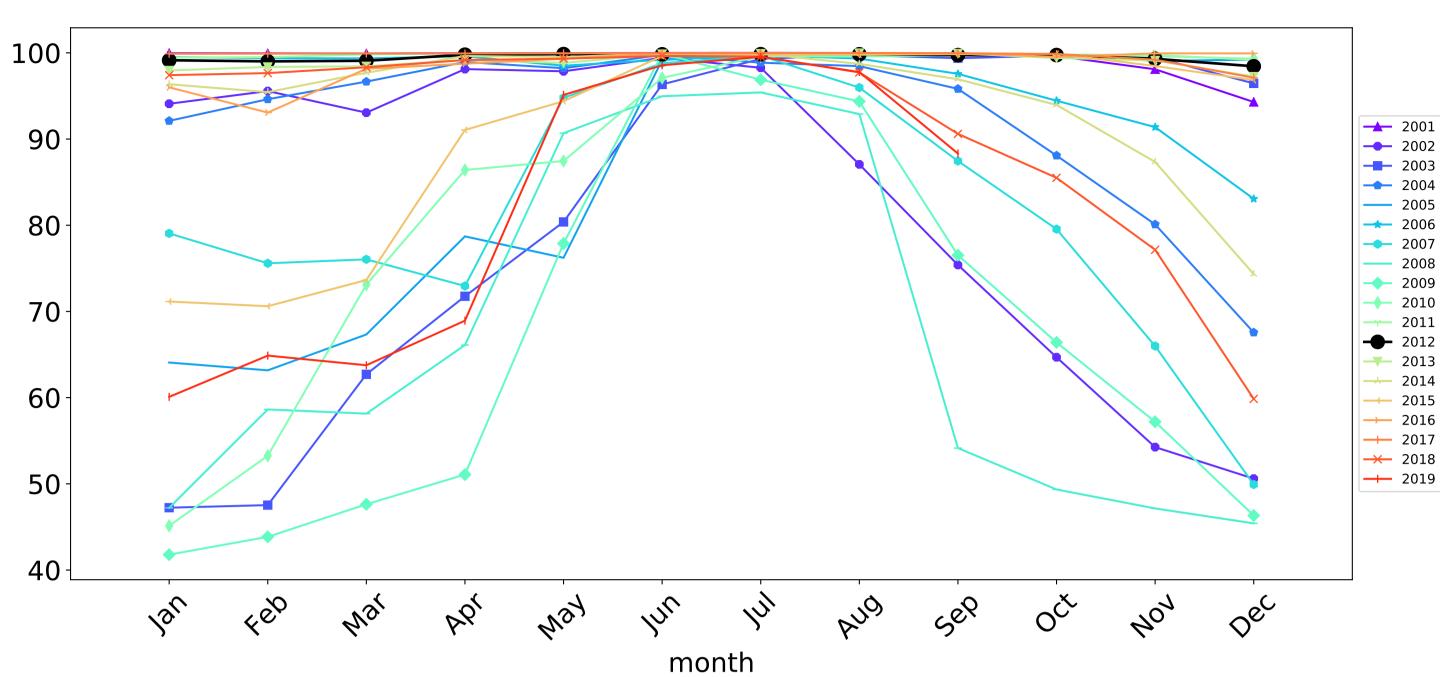




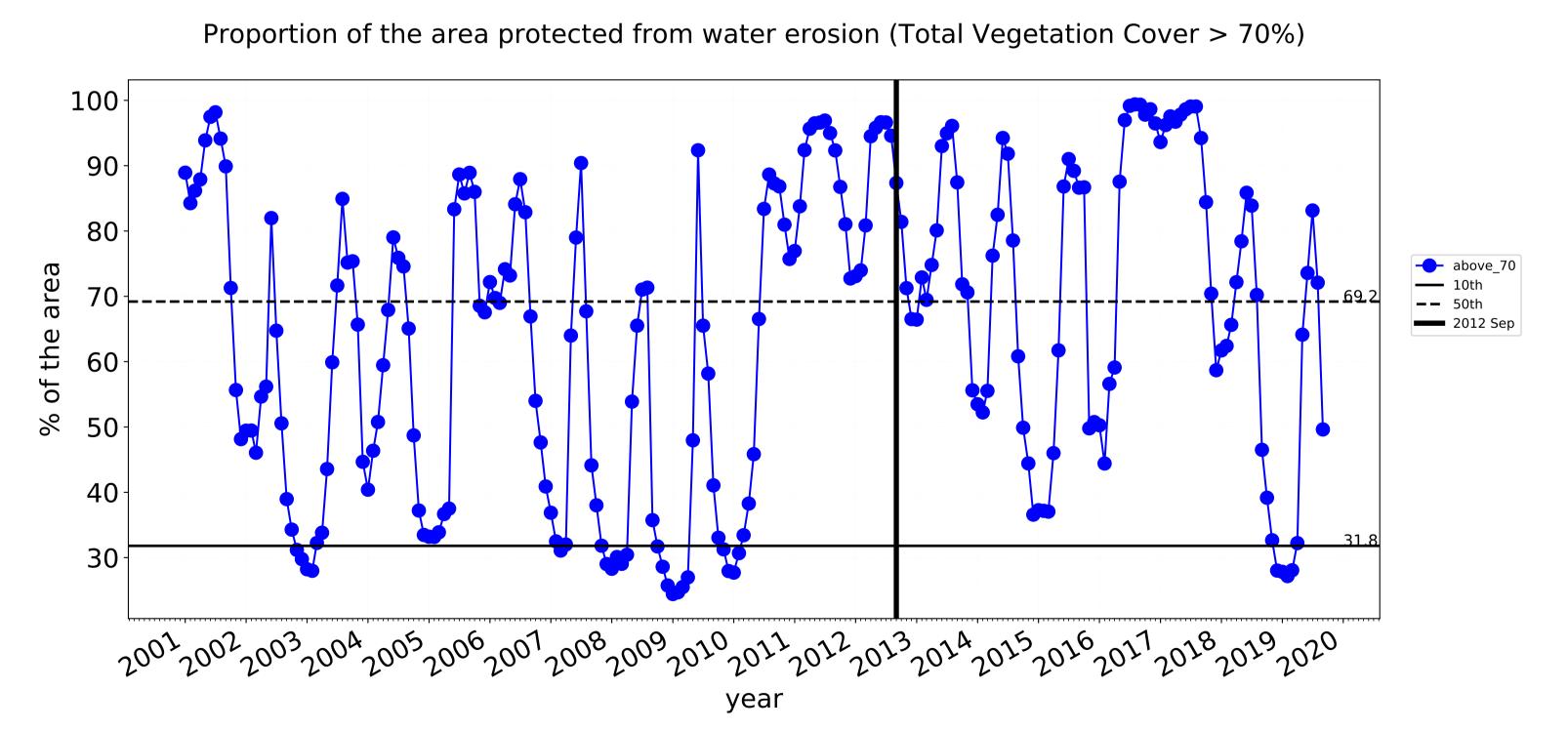


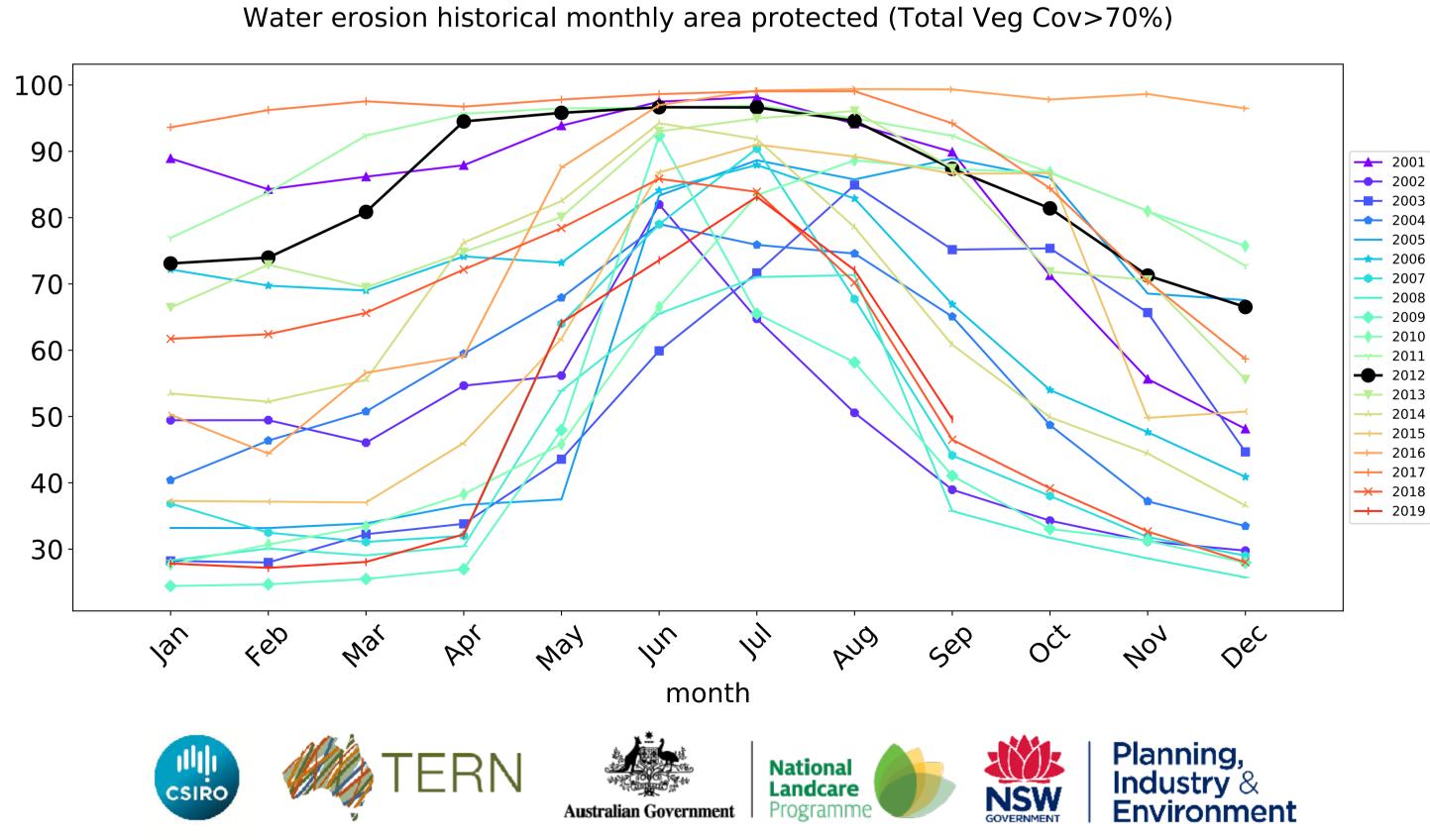
Grazing non forest timeseries





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





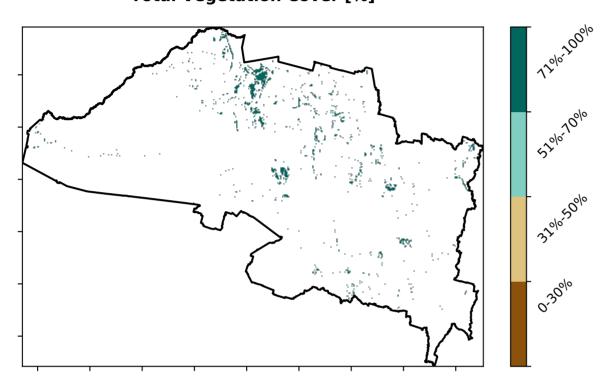
Grazing Woodland forest

1 Agriculture - Grazing - Woodland forest

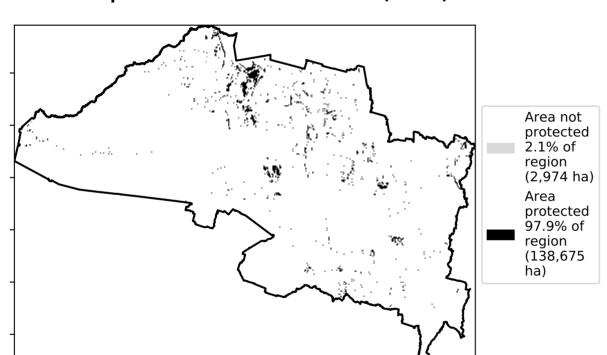
Catchment Scale
Land Use and Forests
of Australia (2018)
Derived from
Catchment Scale Land
Use of Australia
(2018) and Forestsof Australia (2018)

Total Vegetation Cover [%]

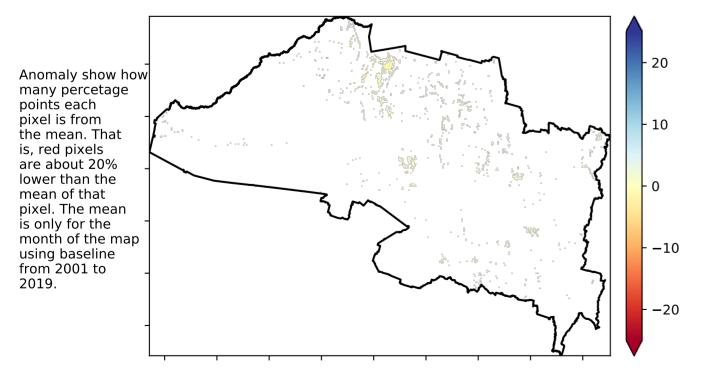
Land use and forest cover



% Area protected from water erosion (>70%)

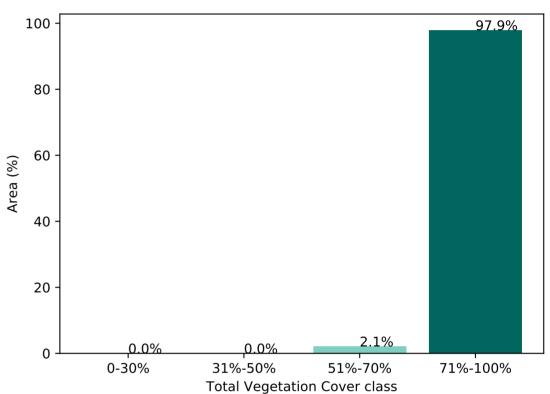


Total Vegetation Cover Anomaly [%]

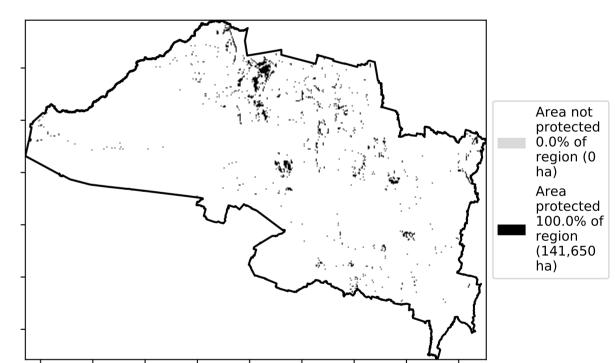


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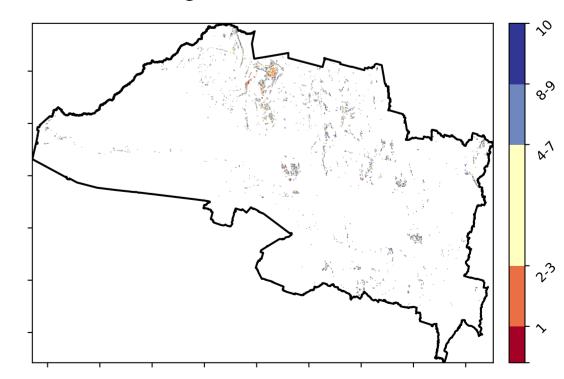
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







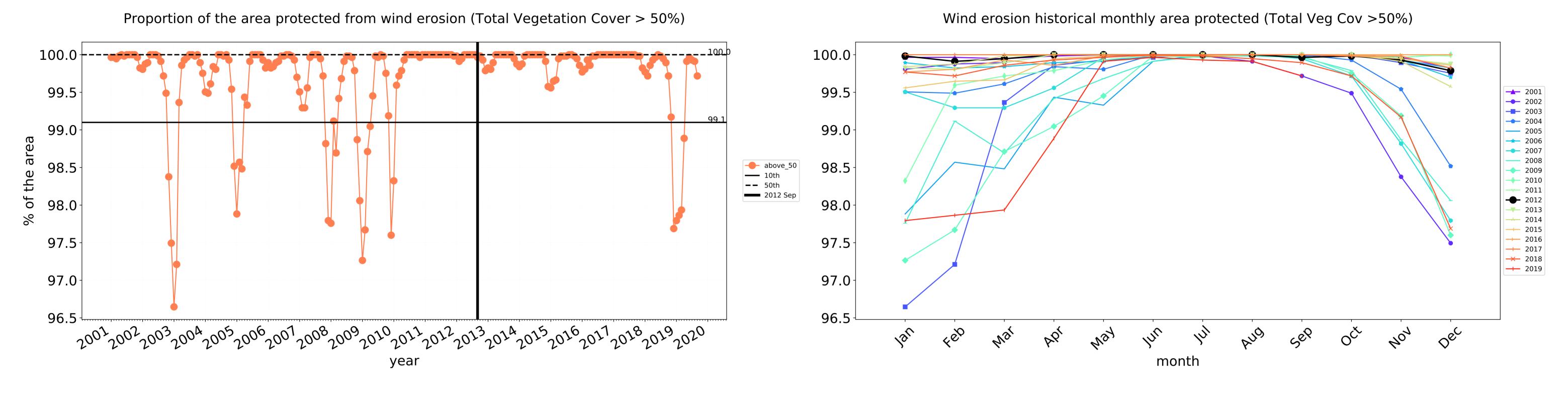


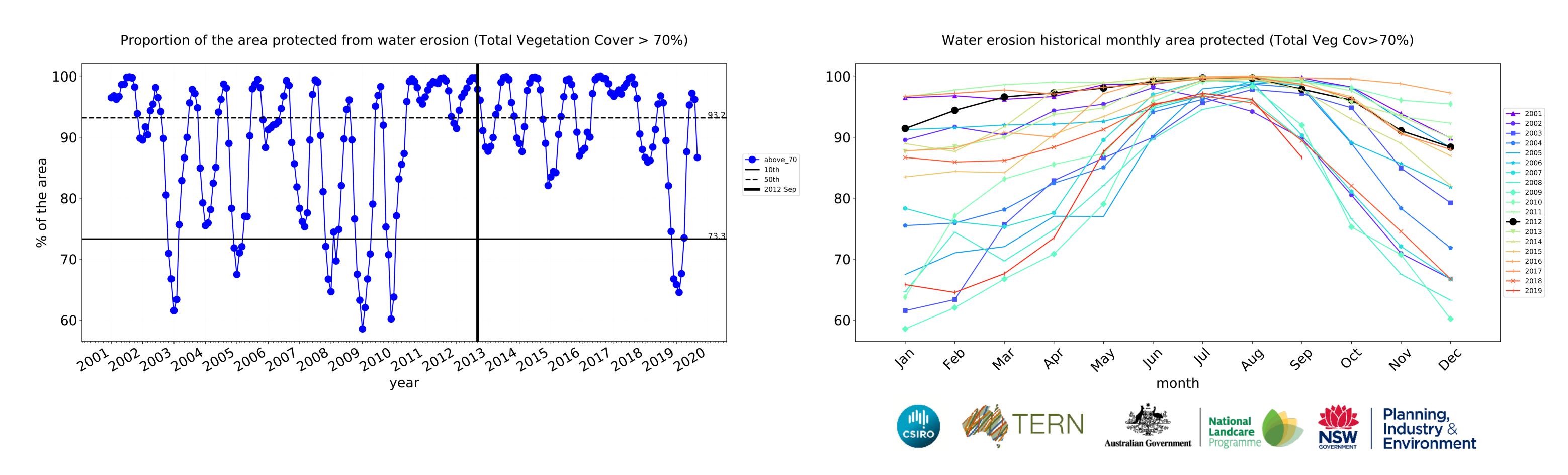






Grazing Woodland forest timeseries



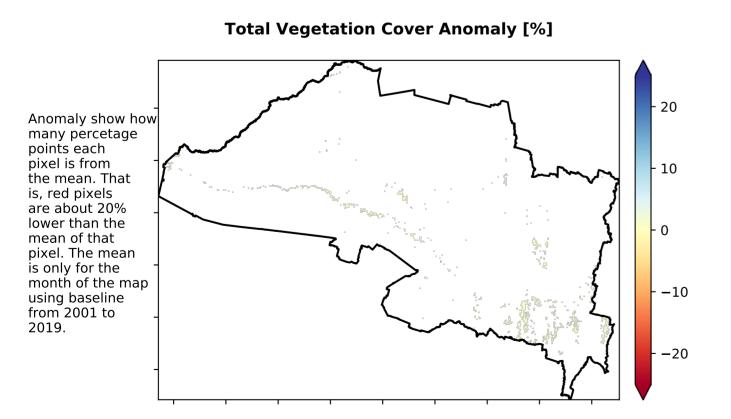


Grazing - Forest (non woodland)

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

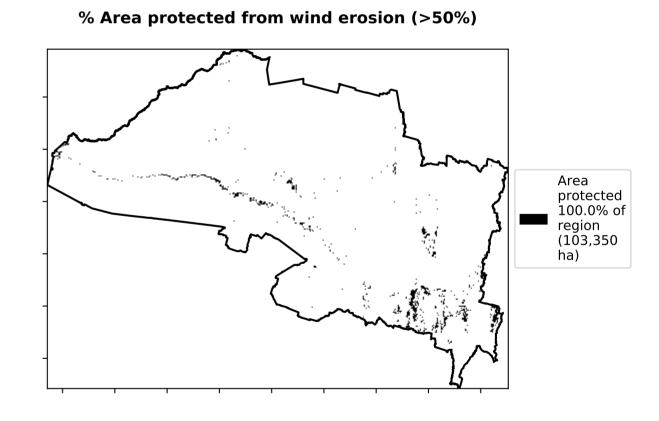
Total Vegetation Cover [%]

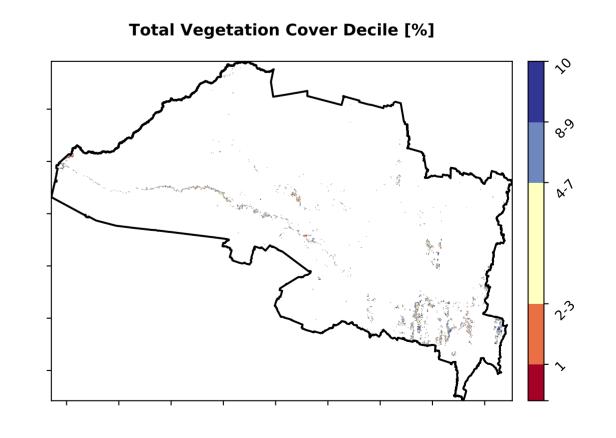
% Area protected from water erosion (>70%) Area not protected 0.6% of region (620 ha) Area protected 99.4% of region (102,729 ha)



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 - 99.4% 80 - 99.4% 40 - 20 - 0.0% 0.0% 0.6% O-30% 31%-50% 51%-70% 71%-100% Total Vegetation Cover class







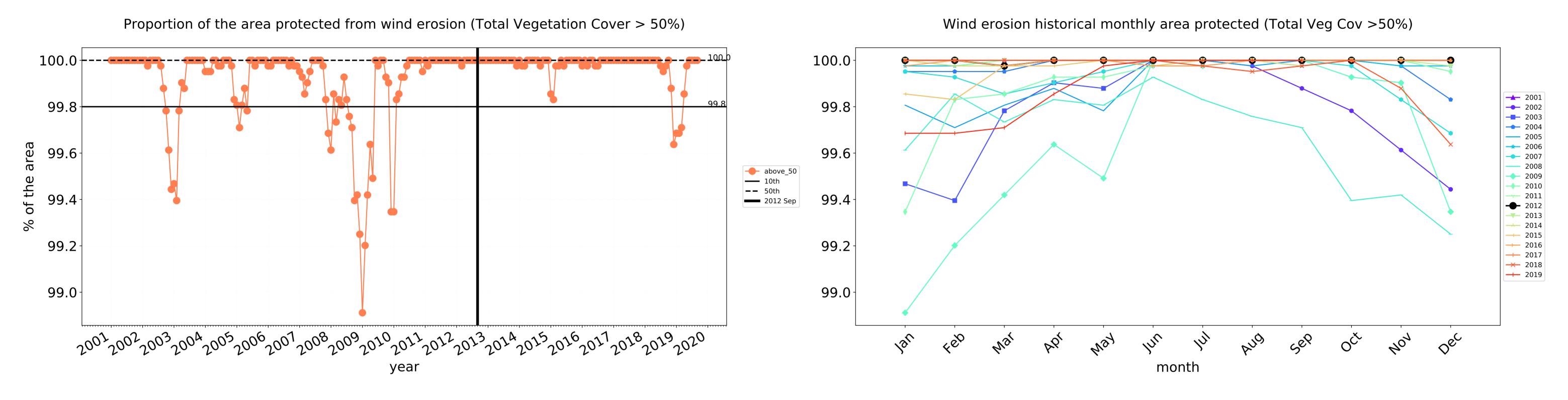


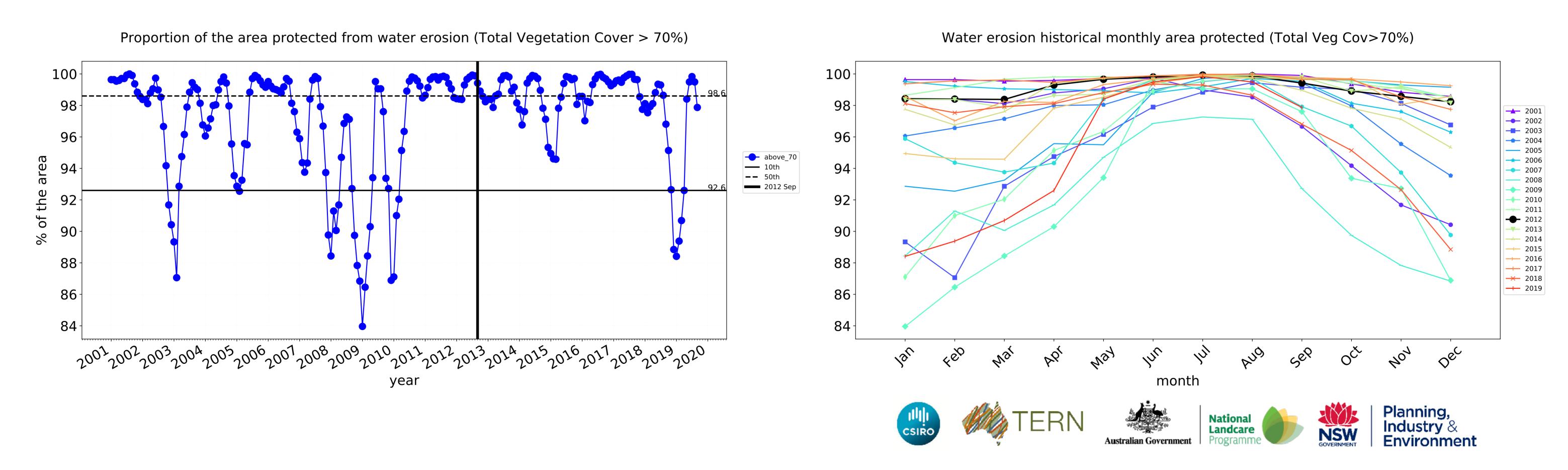






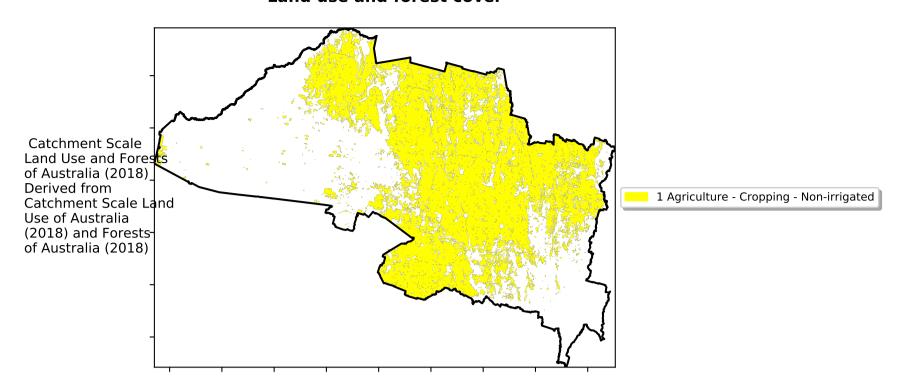




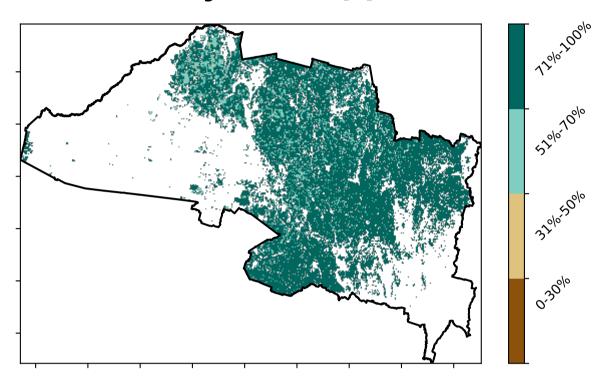


Cropping

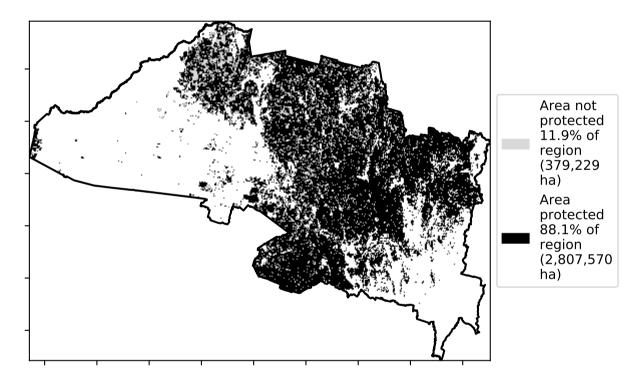
Land use and forest cover



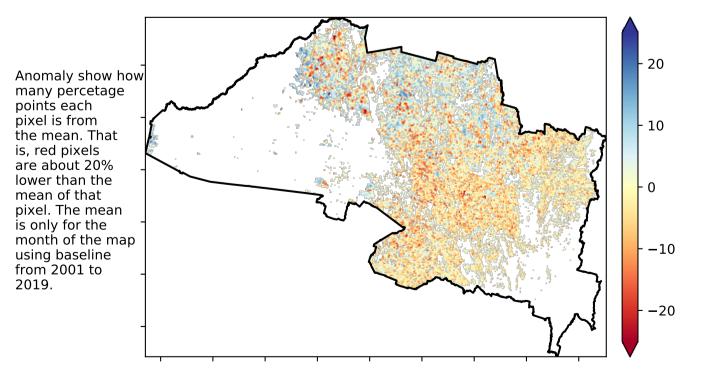
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

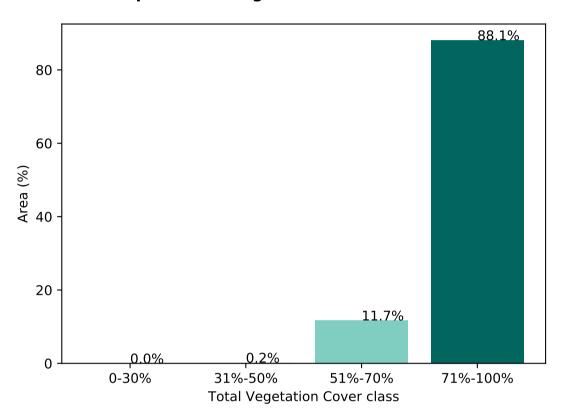


Total Vegetation Cover Anomaly [%]

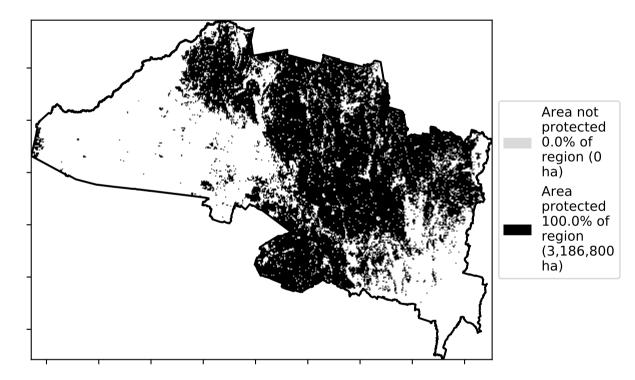


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

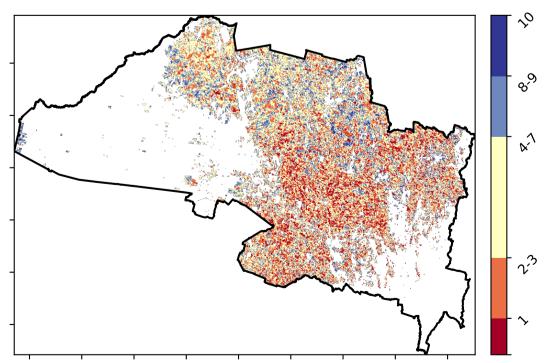
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







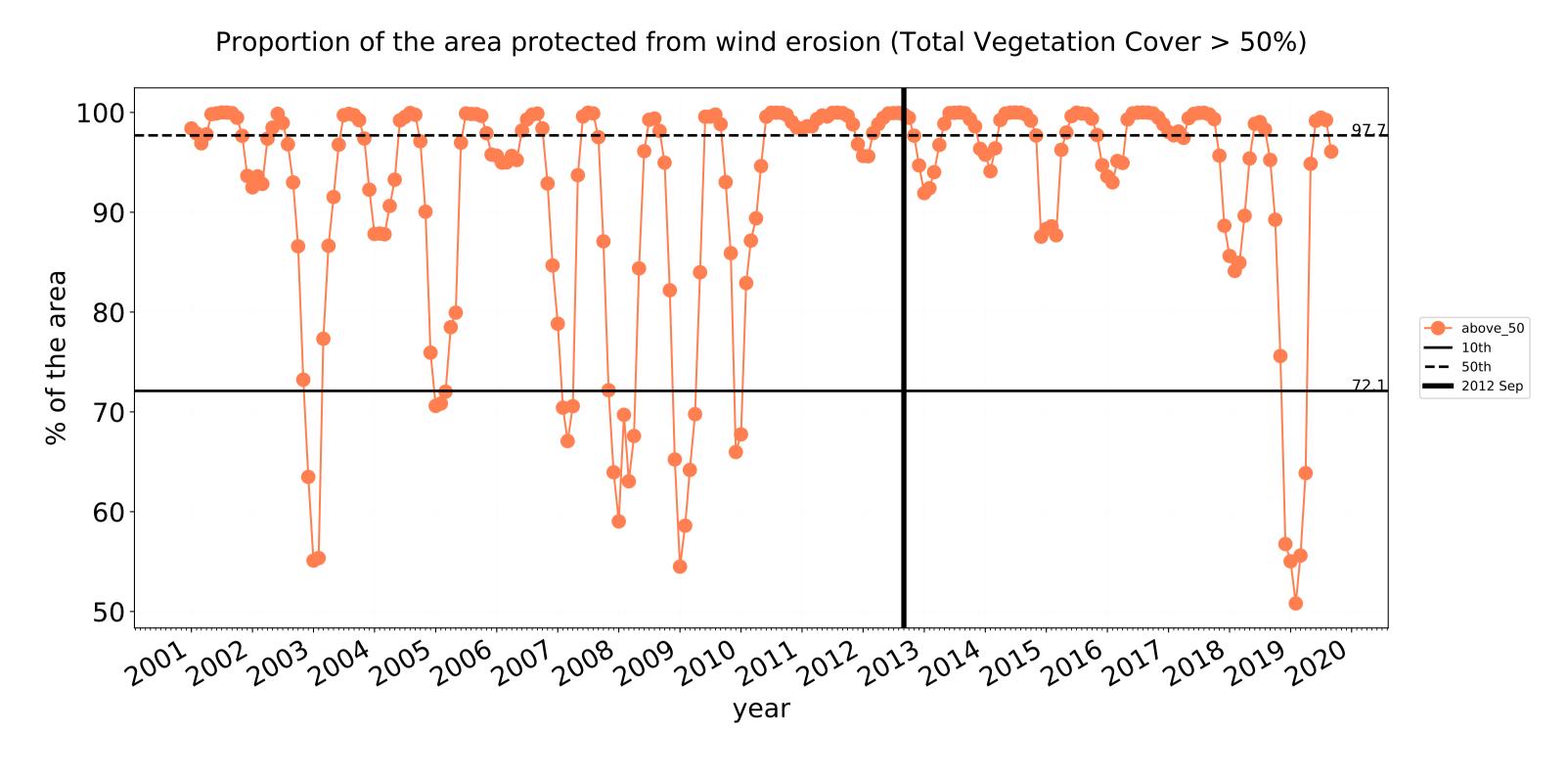


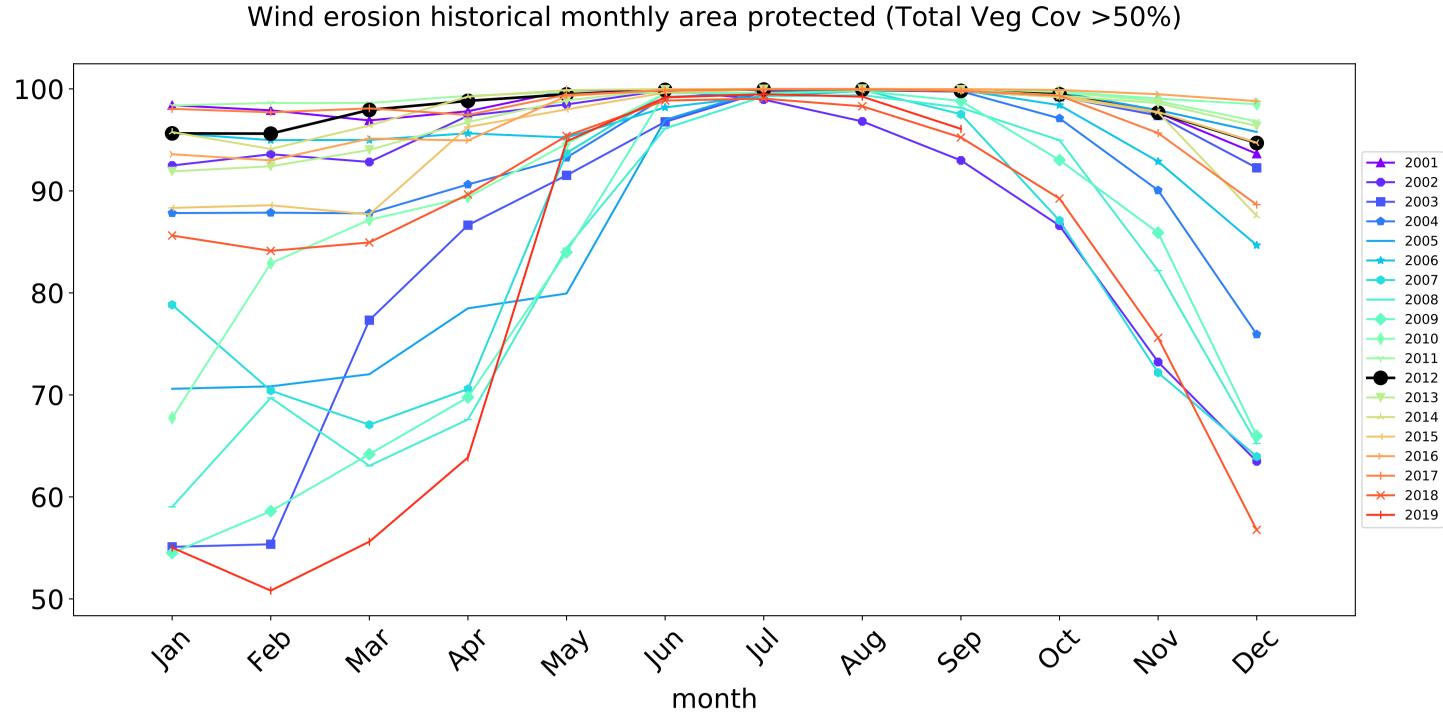


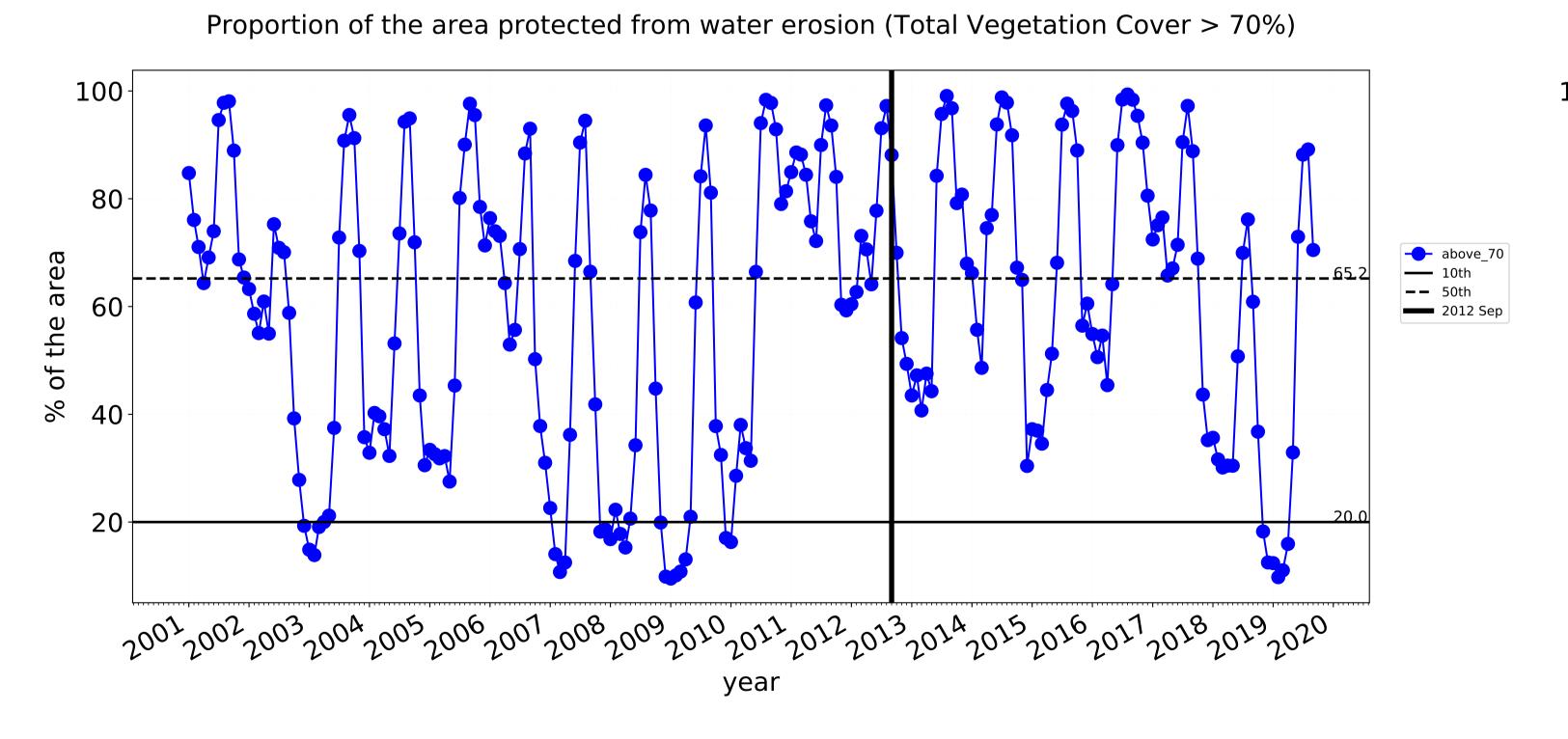


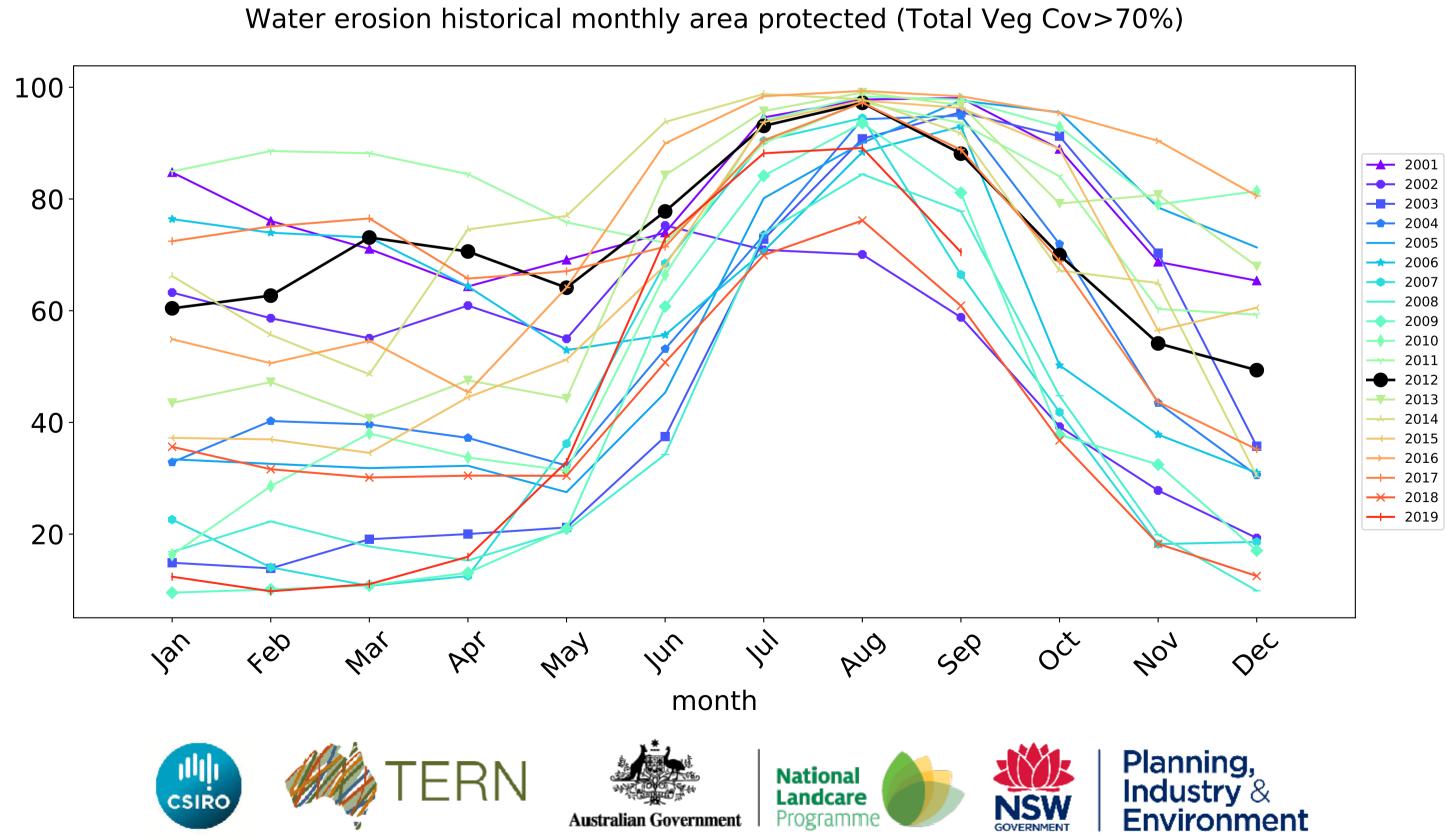


Cropping timeseries

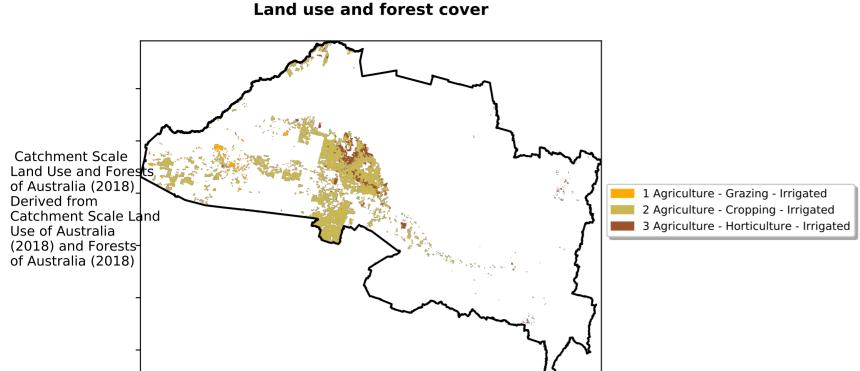


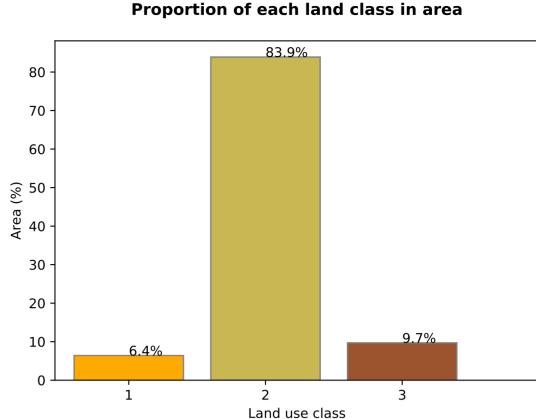


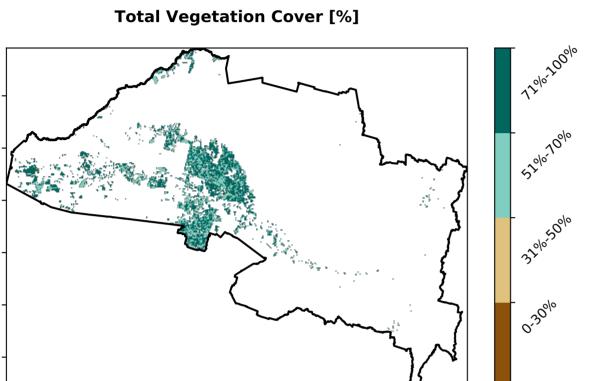


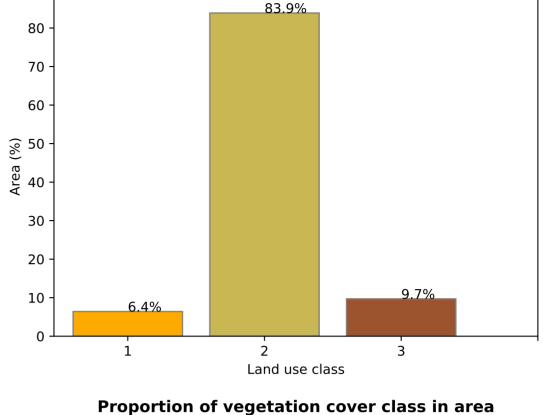


Irrigation

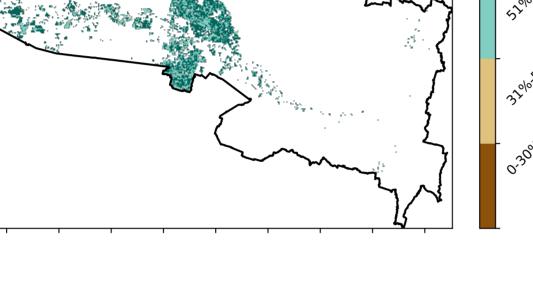




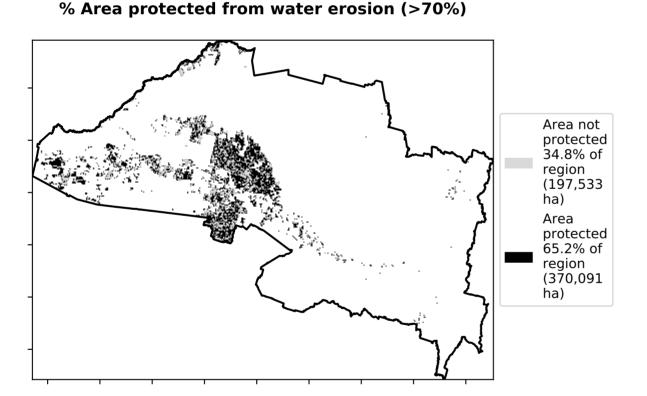


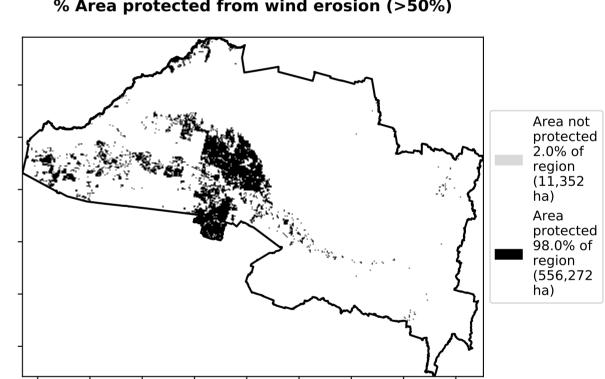


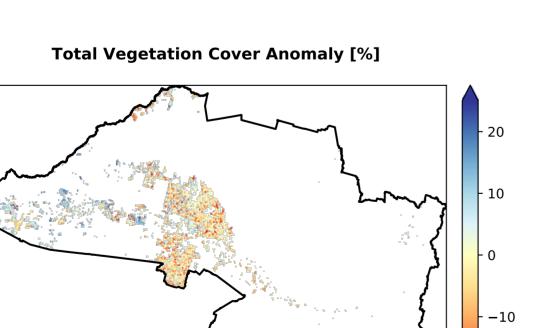
65.2% 60 50 Area (%) 33.3% 20 10 -1.3% 31%-50% 51%-70% 71%-100% 0-30% **Total Vegetation Cover class**



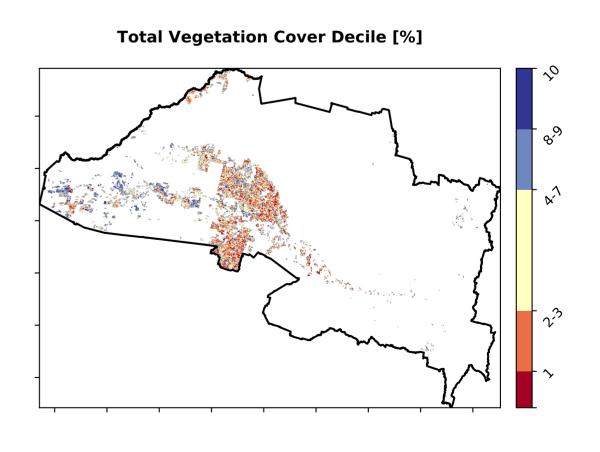
% Area protected from wind erosion (>50%)







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





Anomaly show how many percetage points each

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.



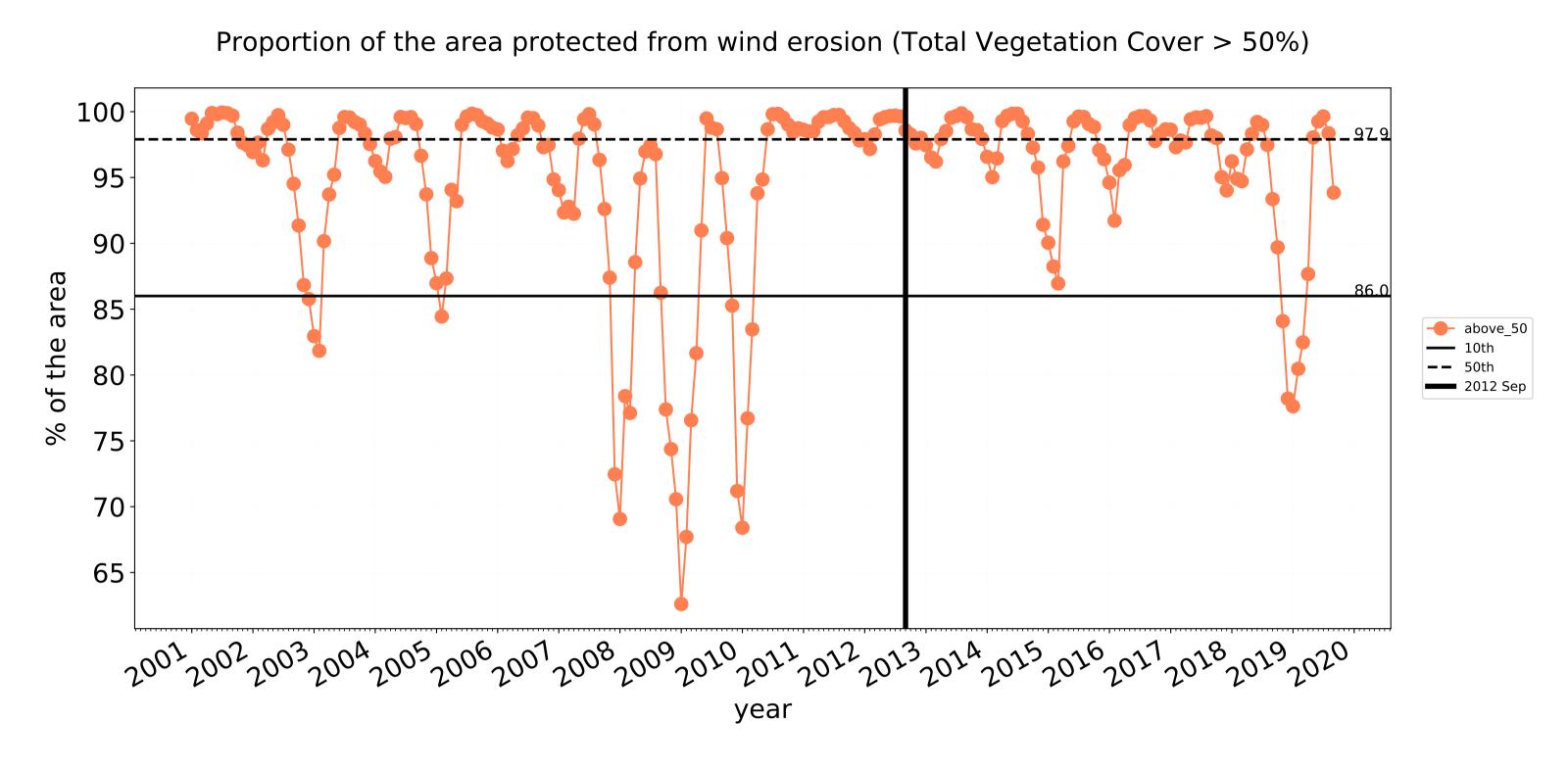


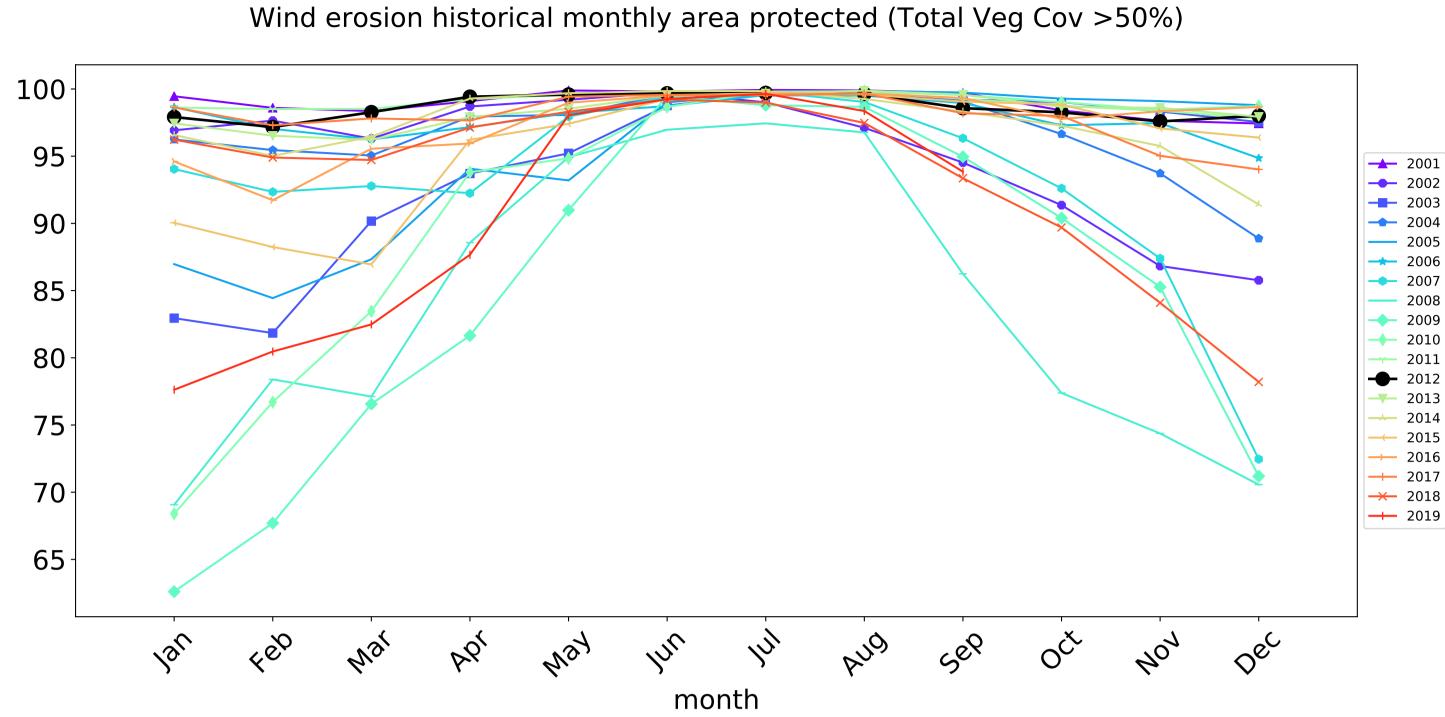


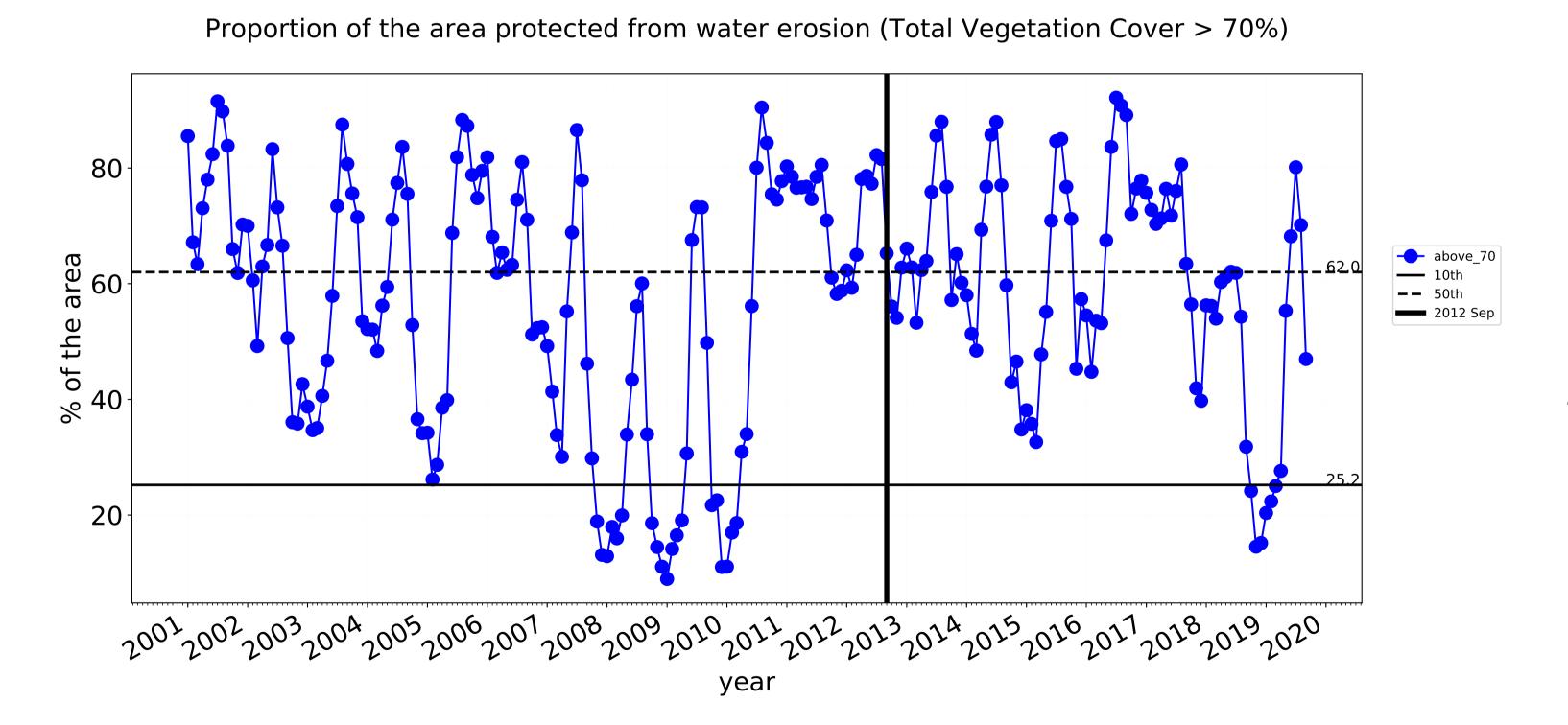


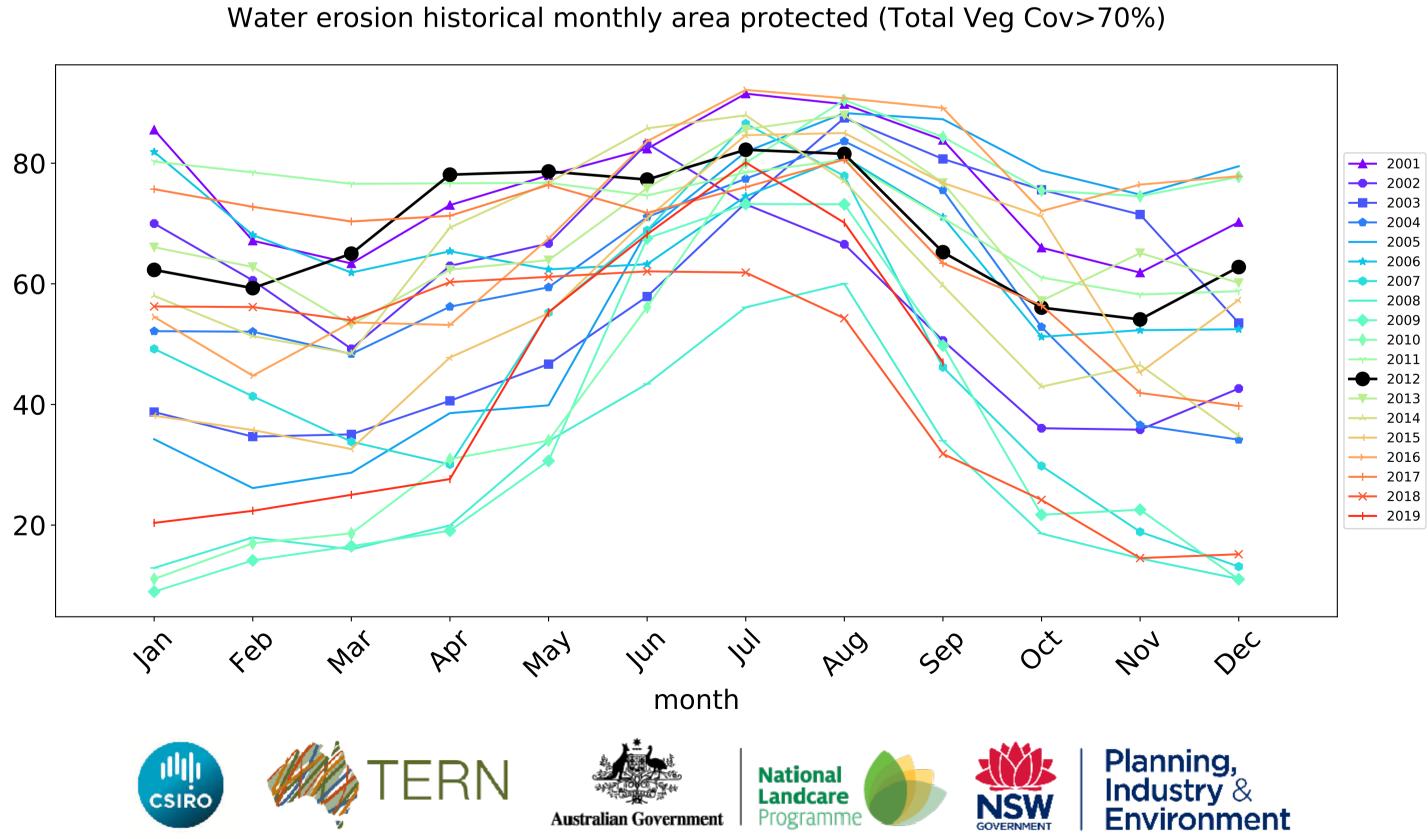


-20





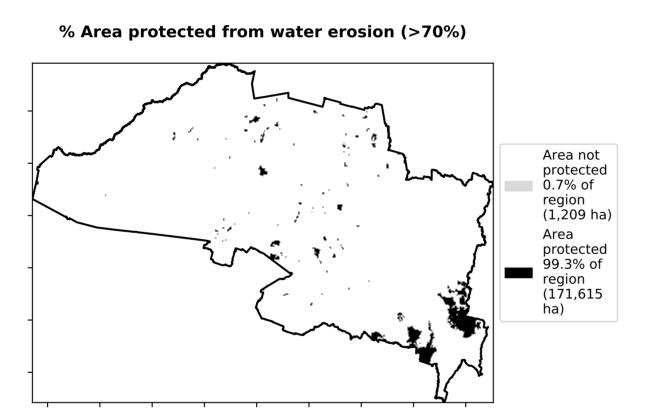


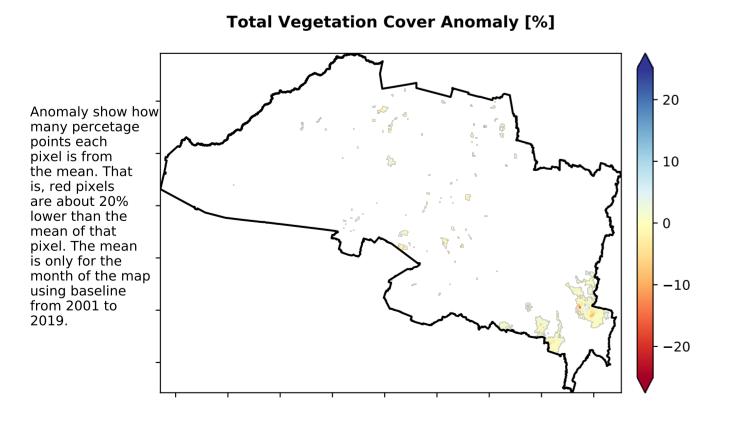


Production native forests and plantation forests

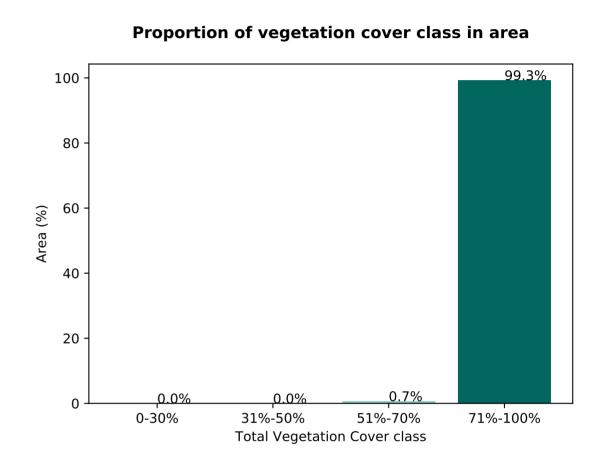
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) 1 Production native forests and plantation forests of Australia (2018)

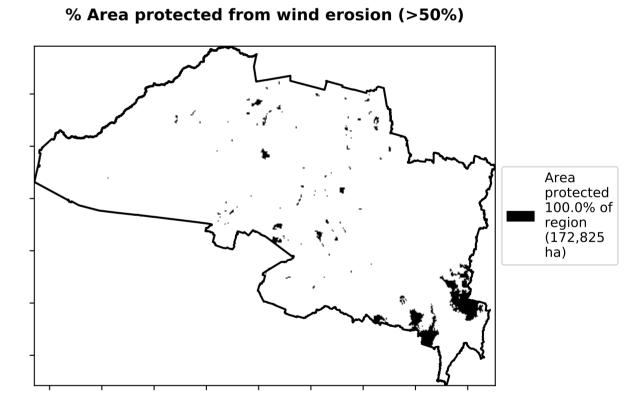
Total Vegetation Cover [%]

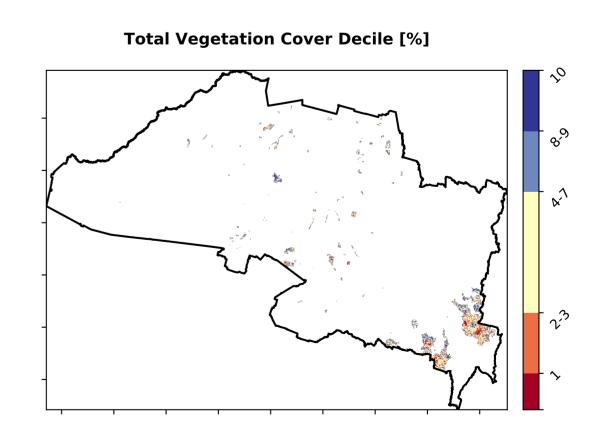




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.











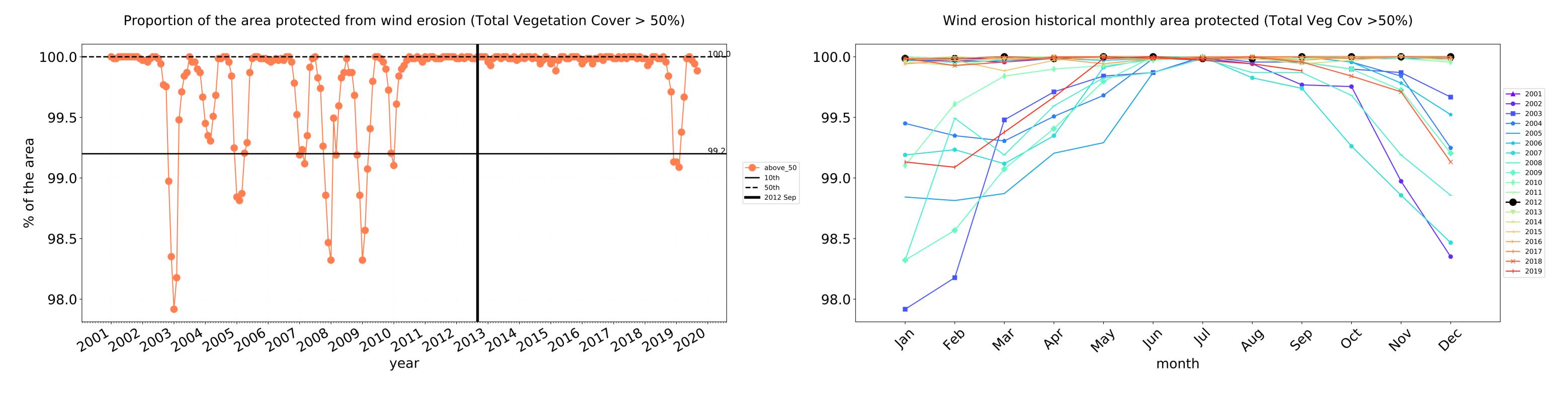


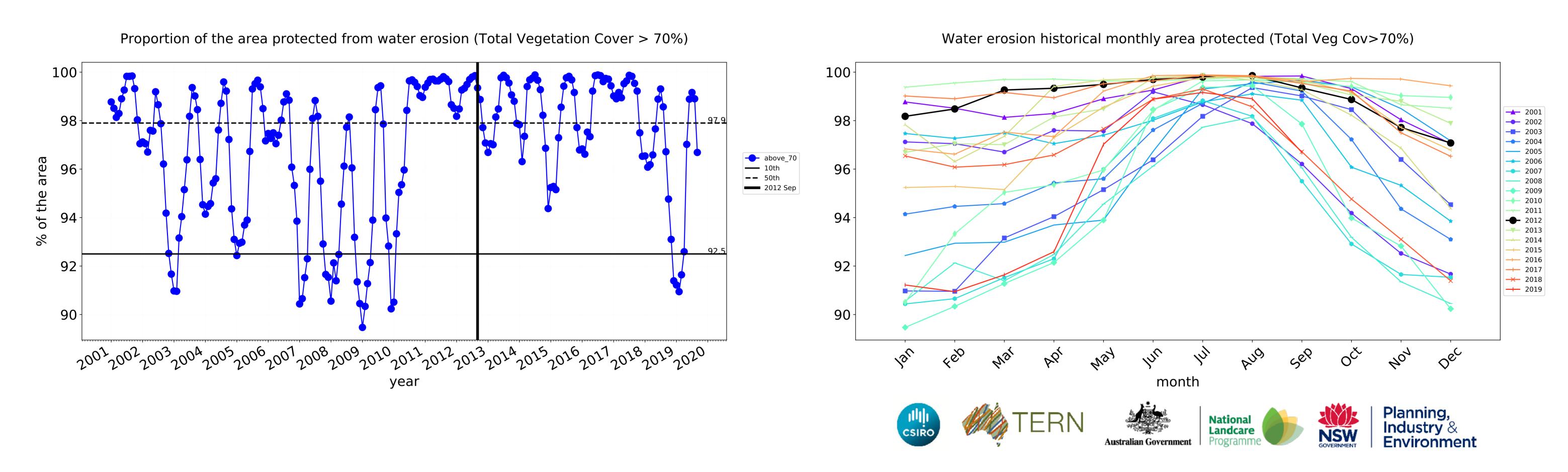






Production native forests and plantation forests timeseries





Riverina (6,694,325 ha and no data 14,010 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	6,694,325	99.9% 6,690,374	99.6% 6,669,220	86.8% 5,808,978	57.4% 3,840,170	16.9% 1,132,344	5.5% 365,370
Conservation and natural environments	323,150	100.0% 323,125	99.9% 322,900	96.2% 310,750	87.4% 282,475	63.6% 205,475	36.1% 116,675
Conservation and natural environments non forest	83,350	100.0% 83,325	99.7% 83,100	85.3% 71,100	54.6% 45,500	14.2% 11,800	8.4% 7,000
Conservation and natural environments Forest (non woodland)	195,300	100.0% 195,300	100.0% 195,300	100.0% 195,225	99.5% 194,375	89.0% 173,800	53.3% 104,125
Agriculture	6,067,200	100.0% 6,065,525	99.7% 6,047,325	86.1% 5,226,375	54.9% 3,333,575	13.1% 792,250	3.0% 180,775
Grazing	2,310,950	100.0% 2,310,075	99.8% 2,305,500	88.5% 2,046,225	61.1% 1,412,475	22.4% 517,100	6.1% 141,550
Grazing non forest	2,065,950	100.0% 2,065,075	99.7% 2,060,550	87.4% 1,804,800	57.8% 1,194,225	20.2% 417,800	5.8% 119,900
Grazing Woodland forest	141,650	100.0% 141,650	100.0% 141,600	97.9% 138,675	86.0% 121,825	26.7% 37,775	4.0% 5,600
Grazing - Forest (non woodland)	103,350	100.0% 103,350	100.0% 103,350	99.4% 102,750	93.3% 96,425	59.5% 61,525	15.5% 16,050
Cropping	3,186,800	100.0% 3,186,475	99.8% 3,180,475	88.1% 2,808,175	55.4% 1,766,600	8.3% 263,900	1.2% 37,550
Irrigation	567,625	99.9% 567,150	98.6% 559,525	65.2% 370,350	27.1% 153,600	2.0% 11,250	0.3% 1,675
Production native forests and plantation forests	172,825	100.0% 172,825	100.0% 172,825	99.3% 171,700	96.0% 165,925	71.1% 122,900	38.0% 65,675











