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: April 2010

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







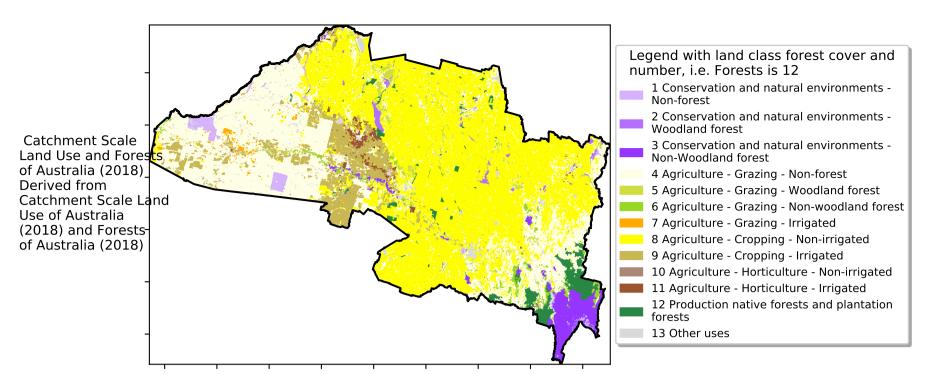




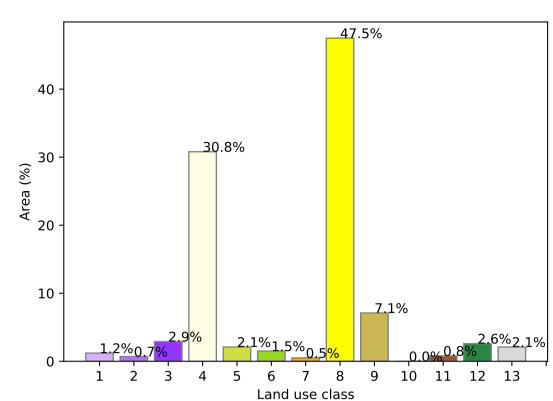


Vegetation Cover Apr 2010

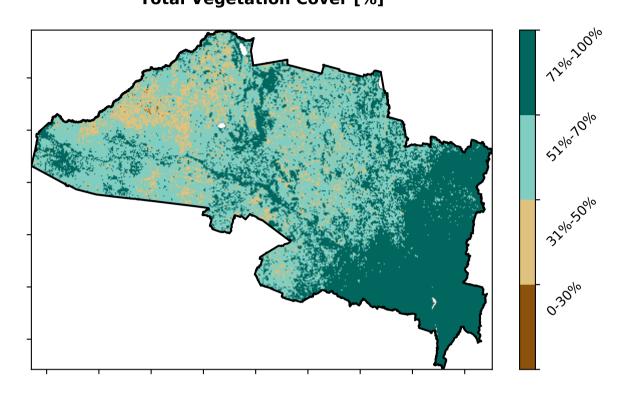
Land use and forest cover



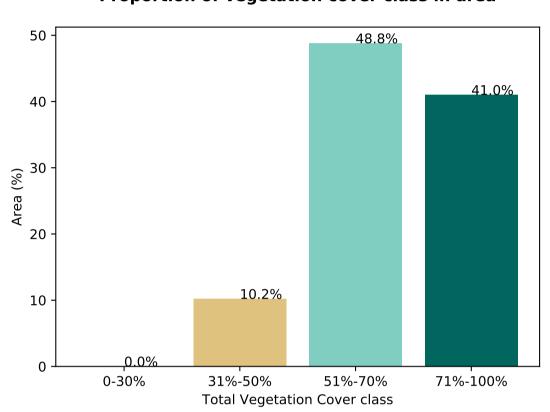
Proportion of each land class in area



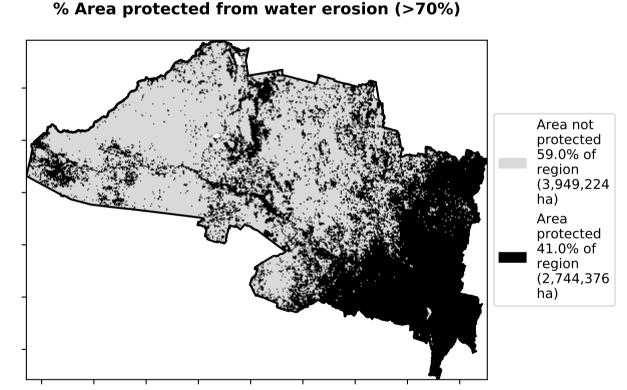
Total Vegetation Cover [%]



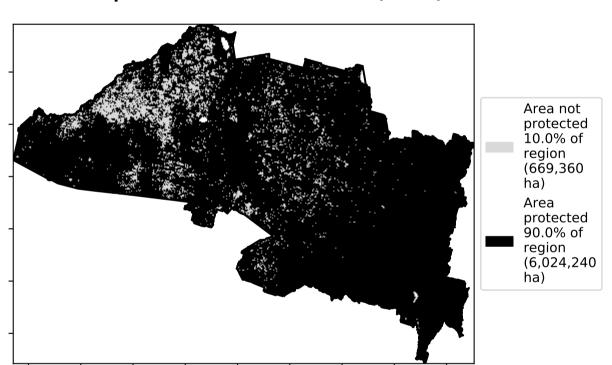
Proportion of vegetation cover class in area



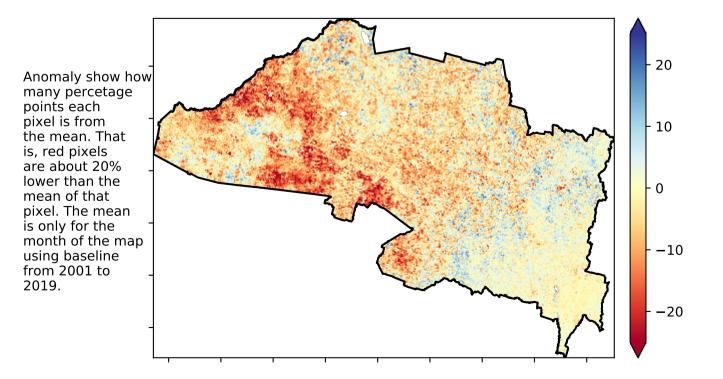
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% Area protected from wind erosion (>50%)



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.



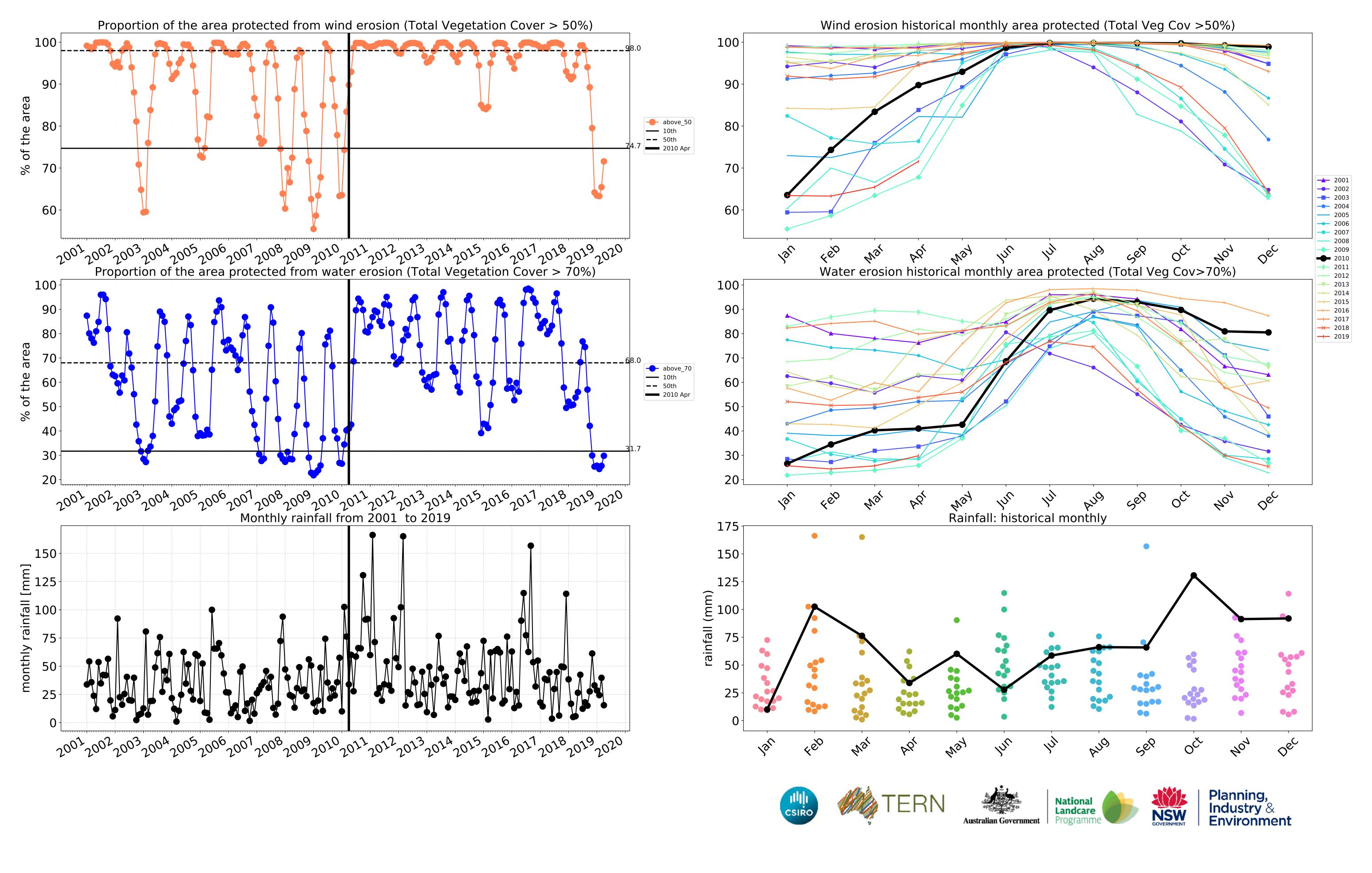




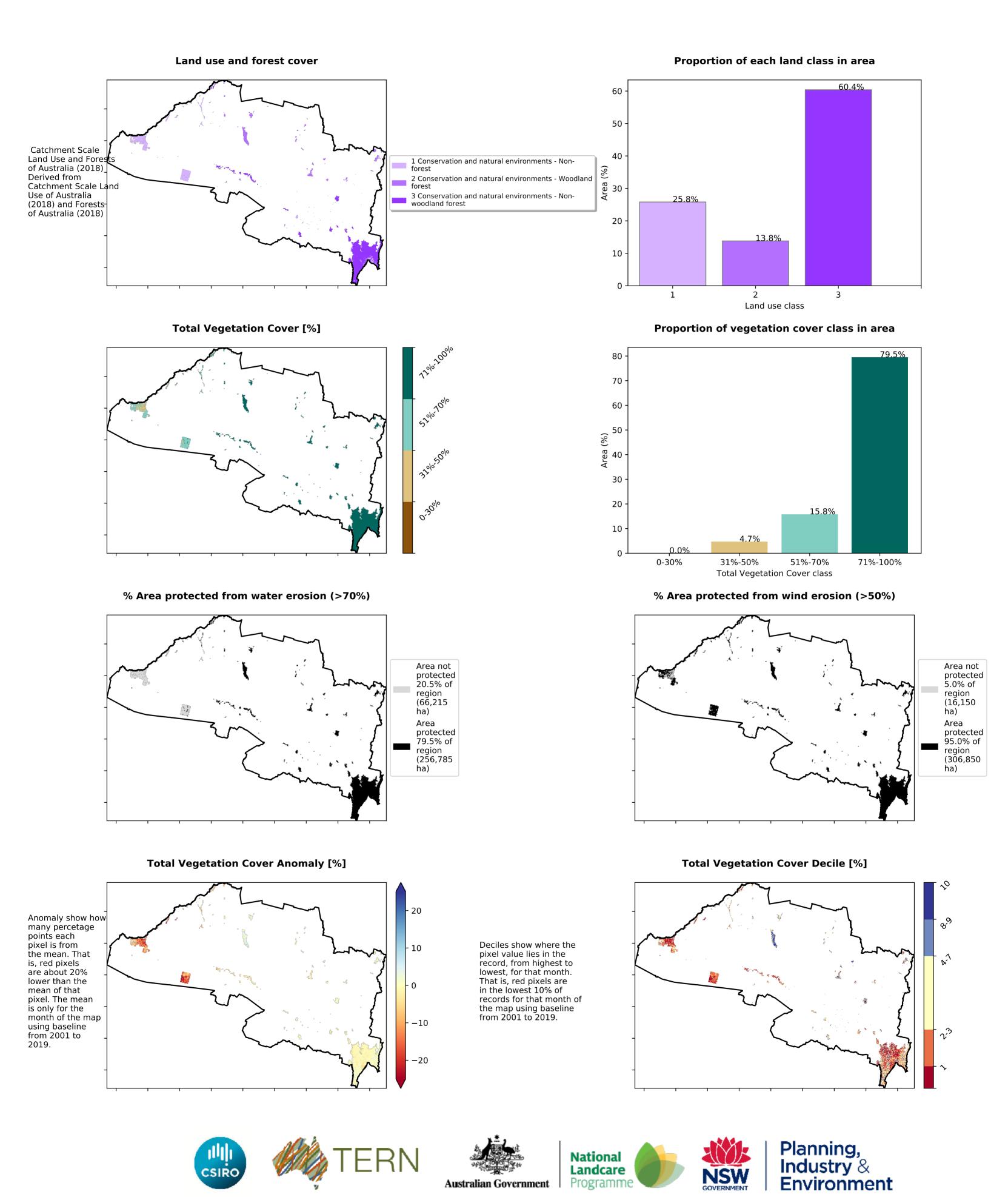




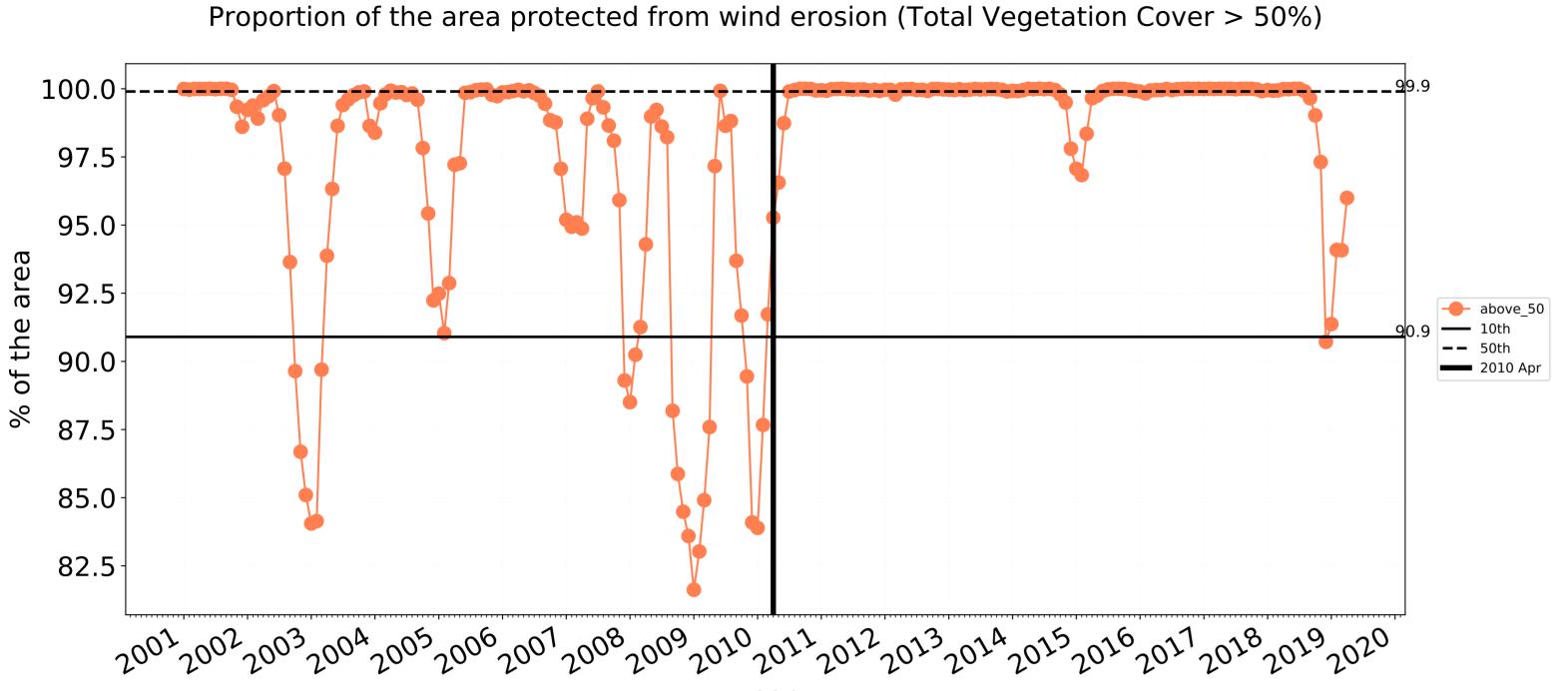


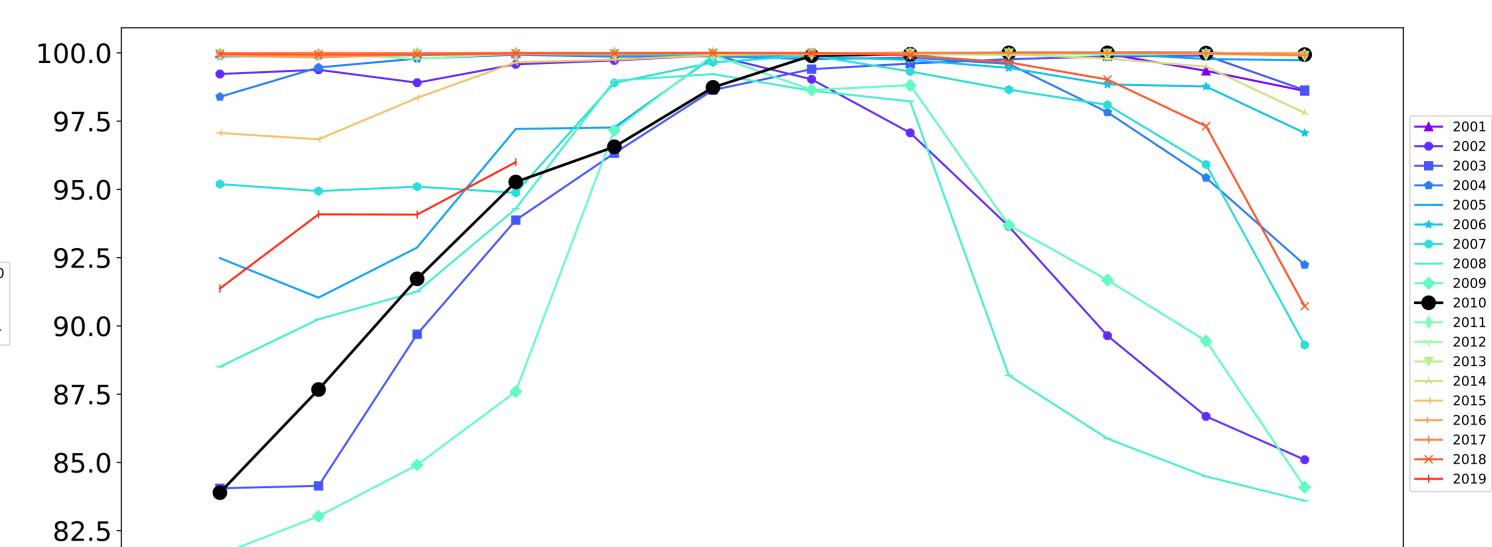


Conservation and natural environments



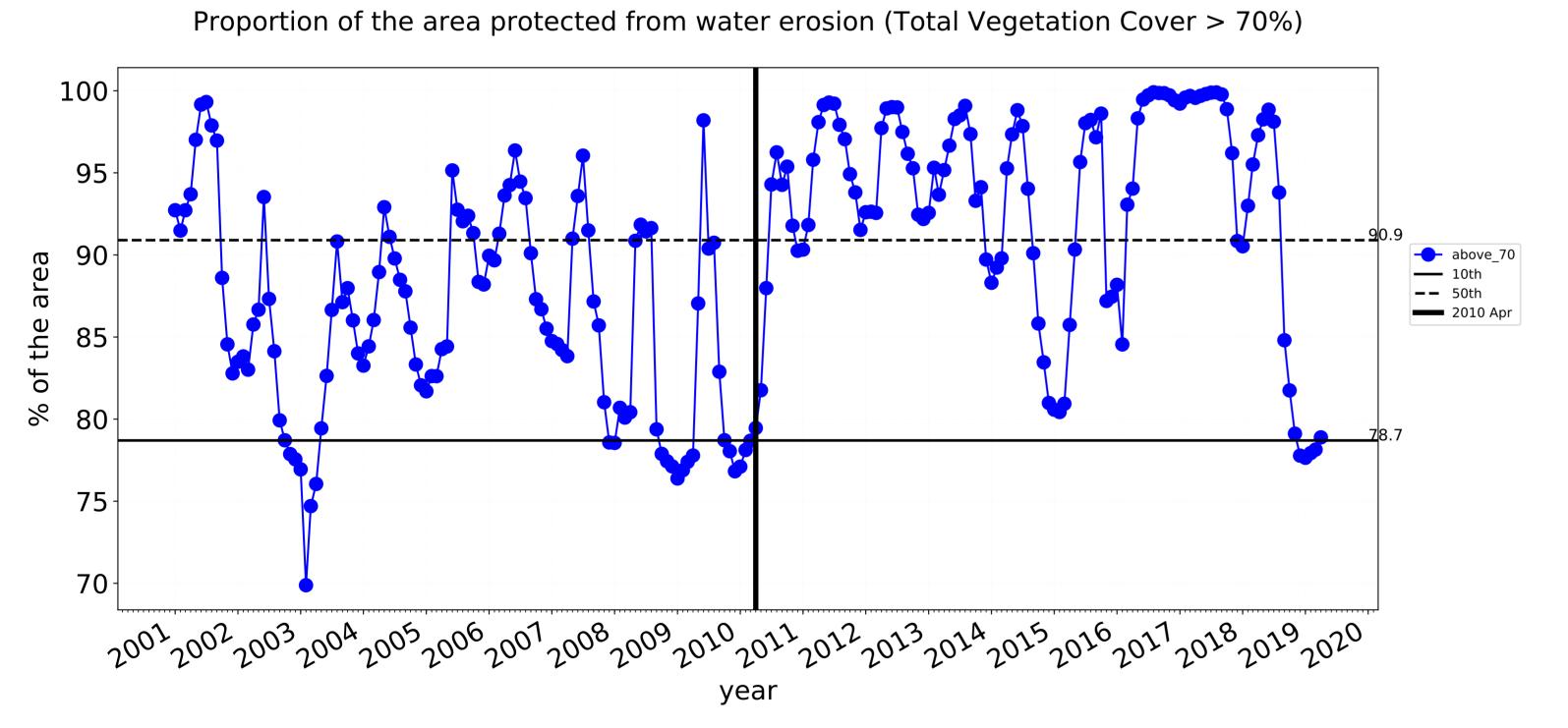
Conservation and natural environments timeseries

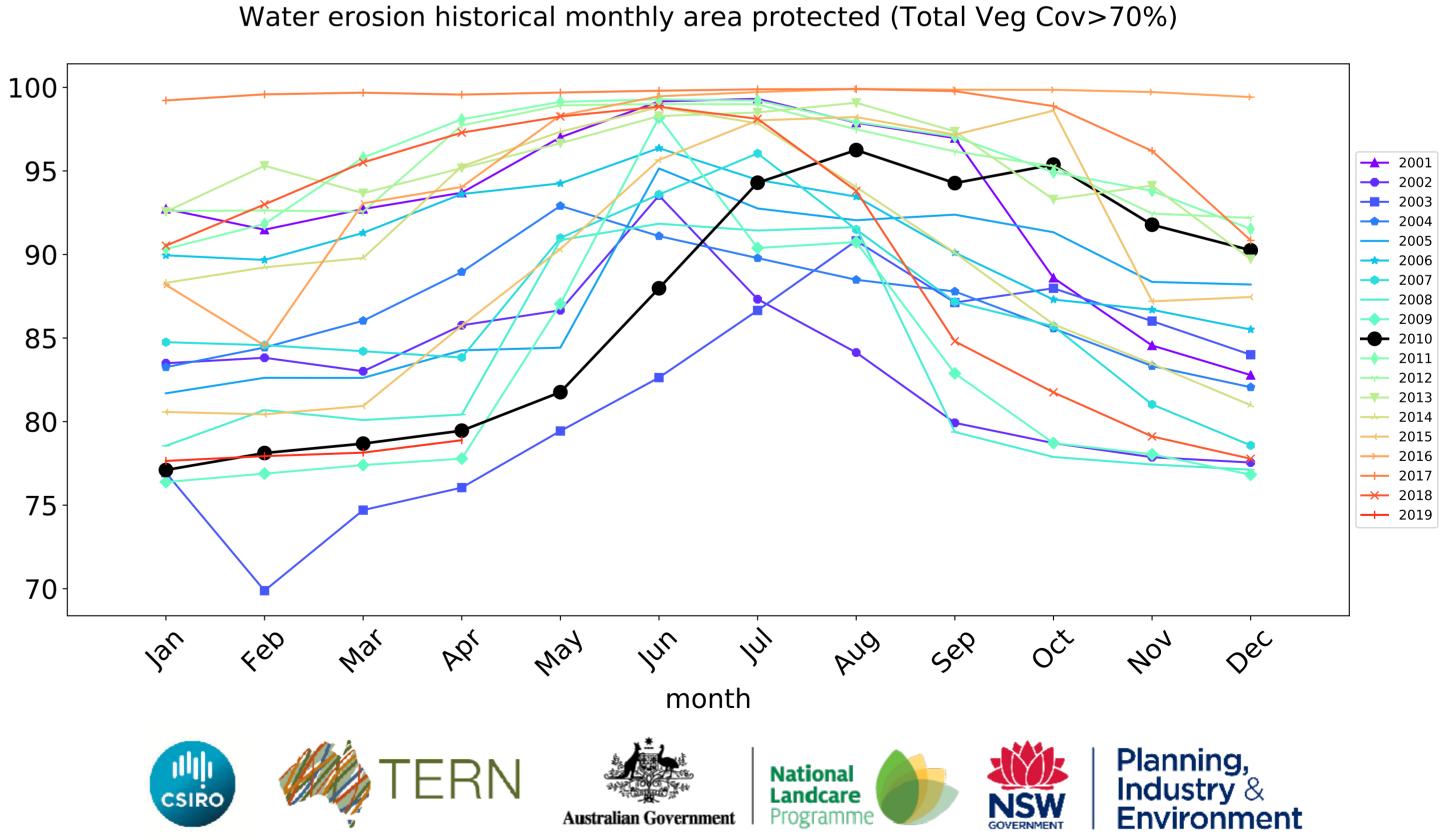




month

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



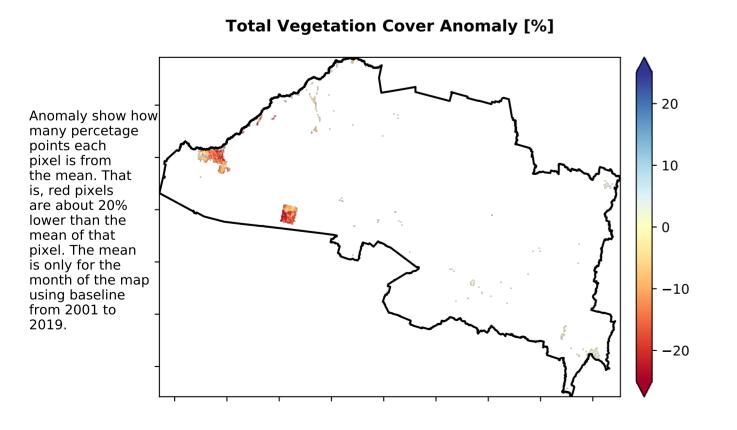


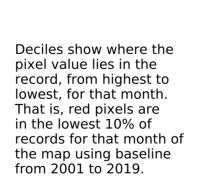
Conservation and natural environments non forest

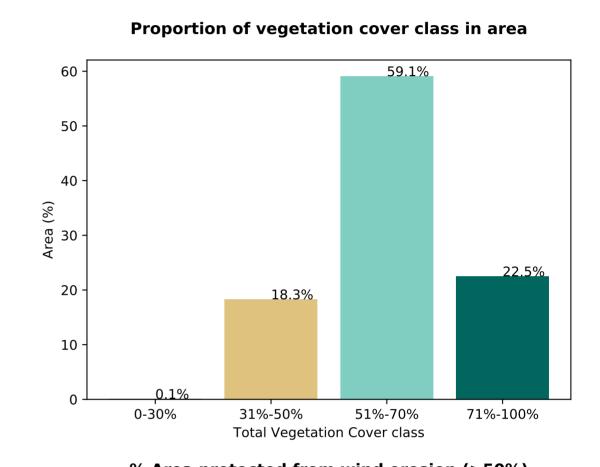
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Conservation and natural environments - Non-Catchment Scale Land Use of Australia (2018) and Forestsof Australia (2018)

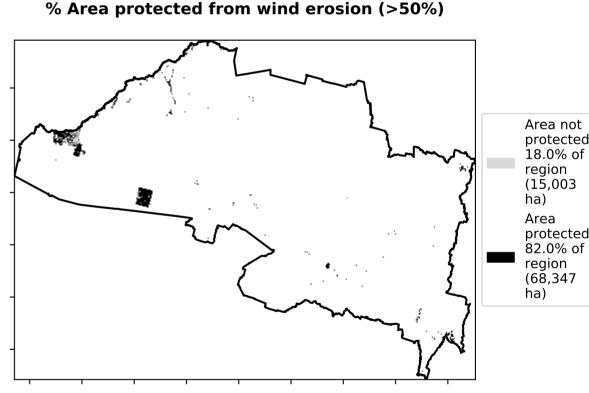
Total Vegetation Cover [%]

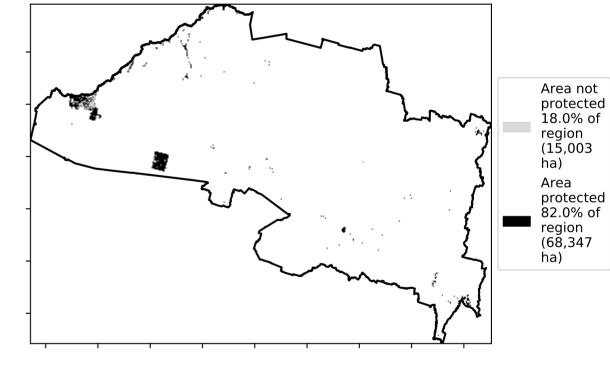
% Area protected from water erosion (>70%) Area not protected 77.5% of region (64,596 ha) Area protected 22.5% of region (18,753 ha)

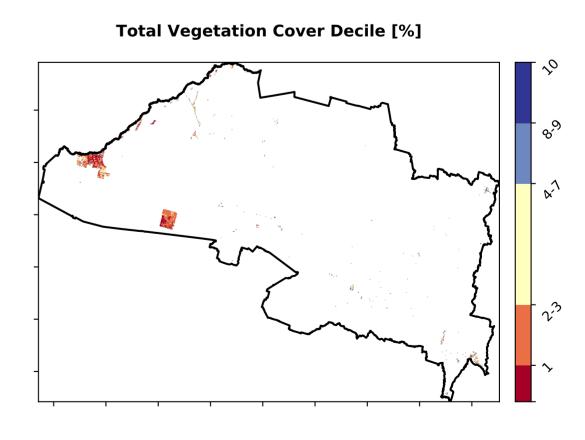
















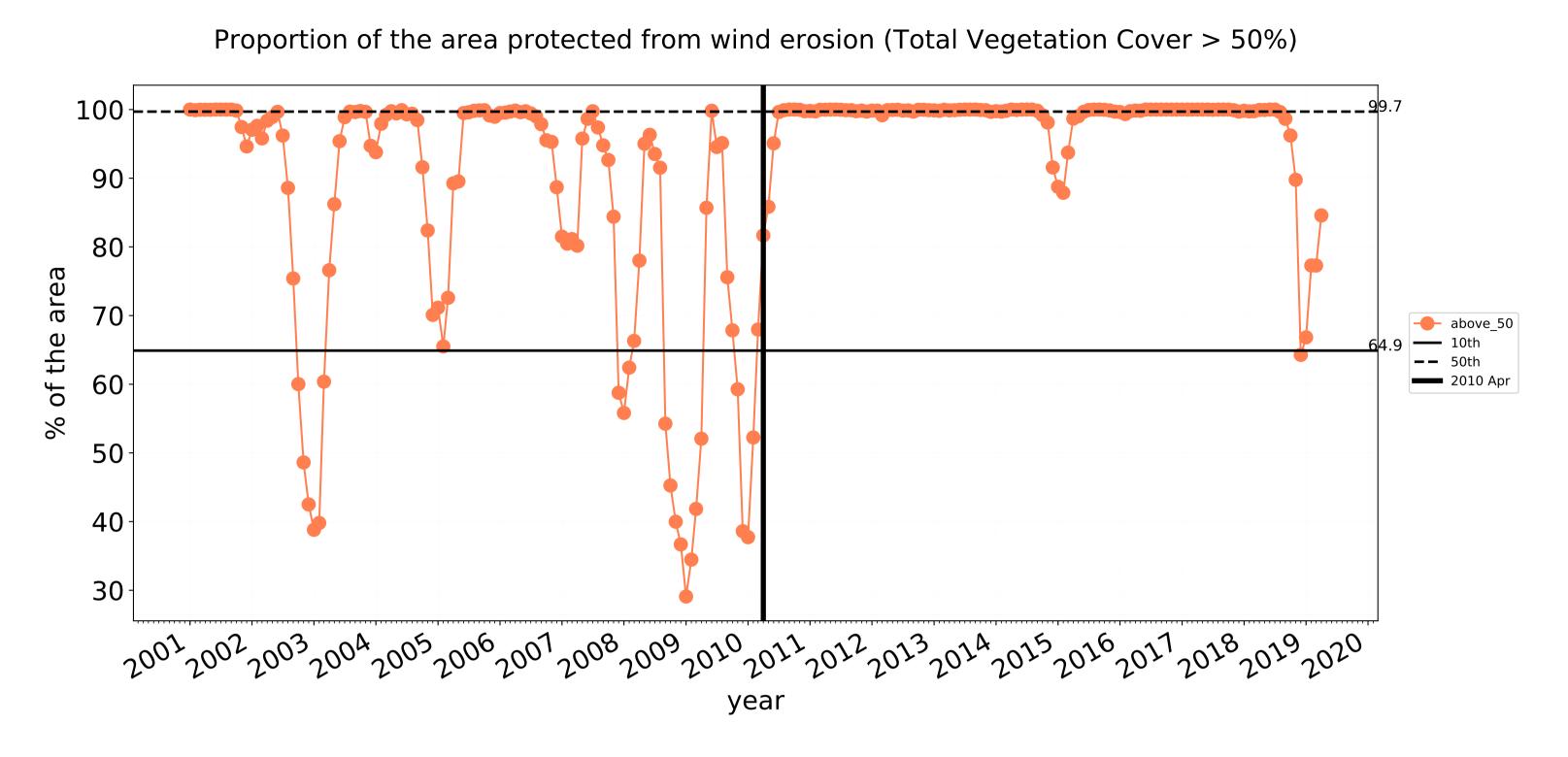


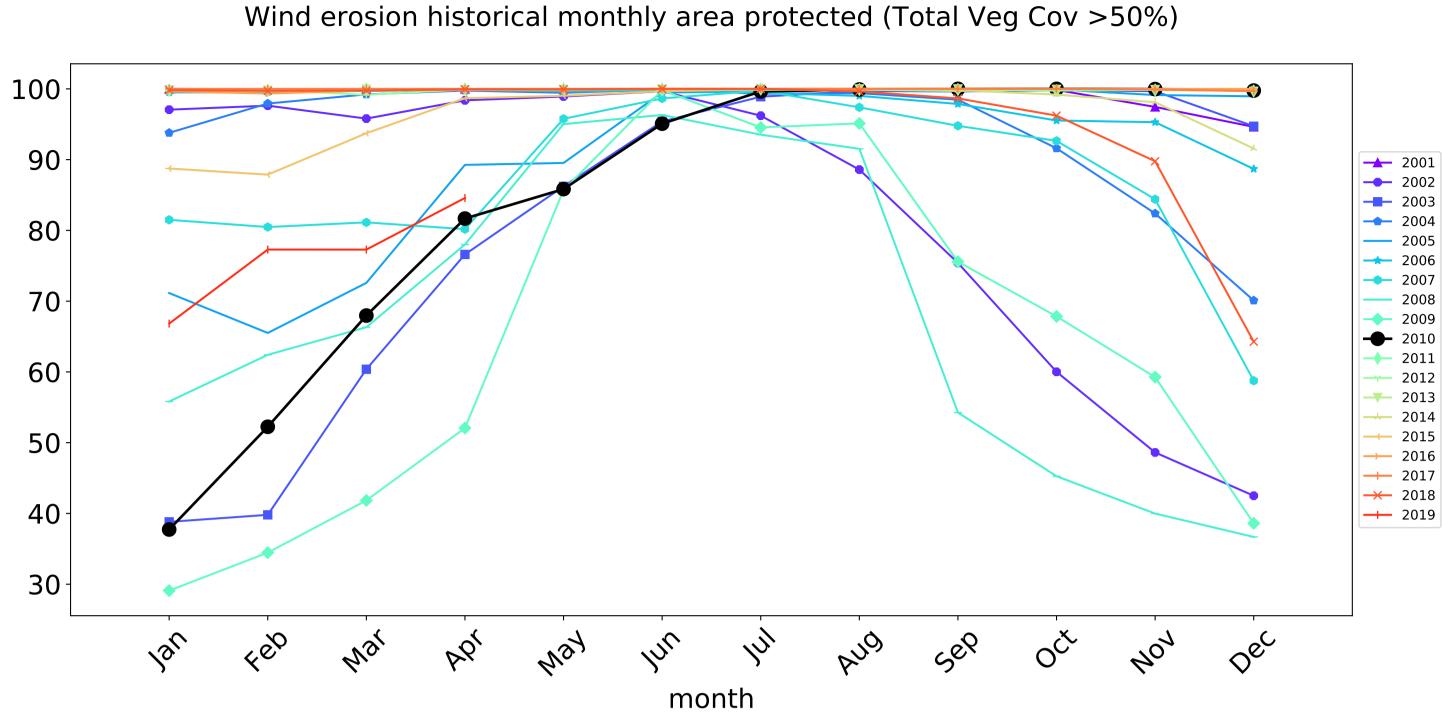


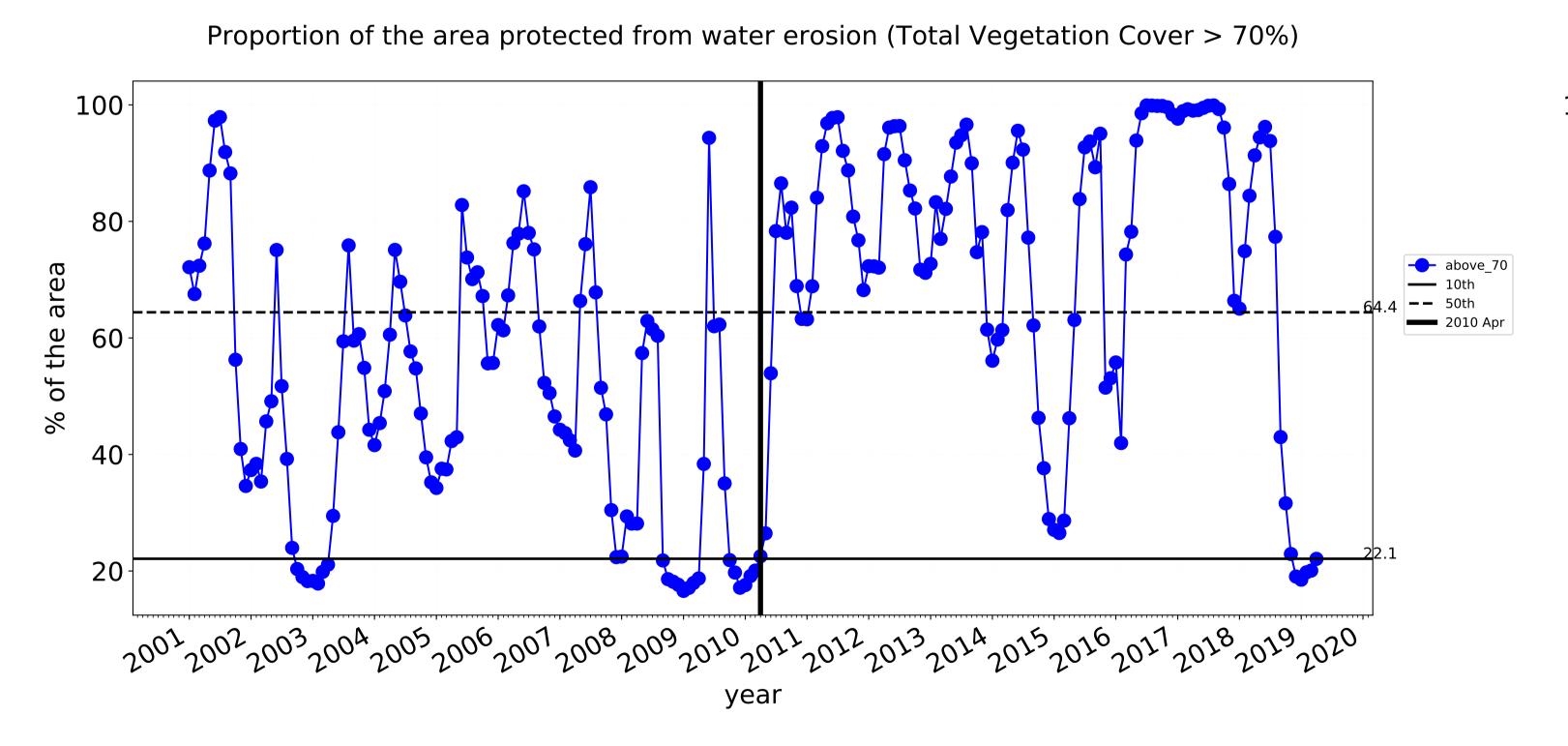


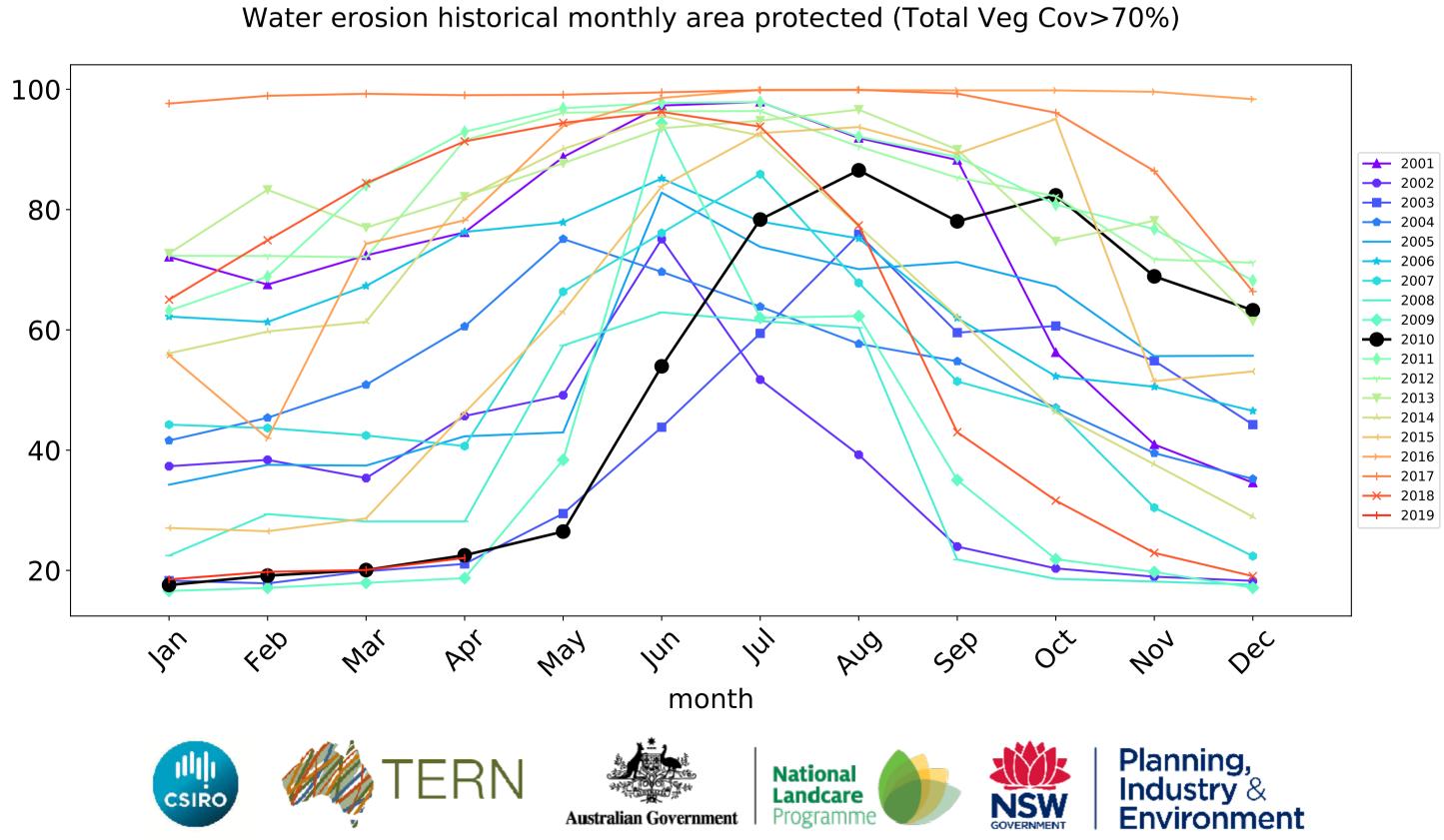


Conservation and natural environments non forest timeseries

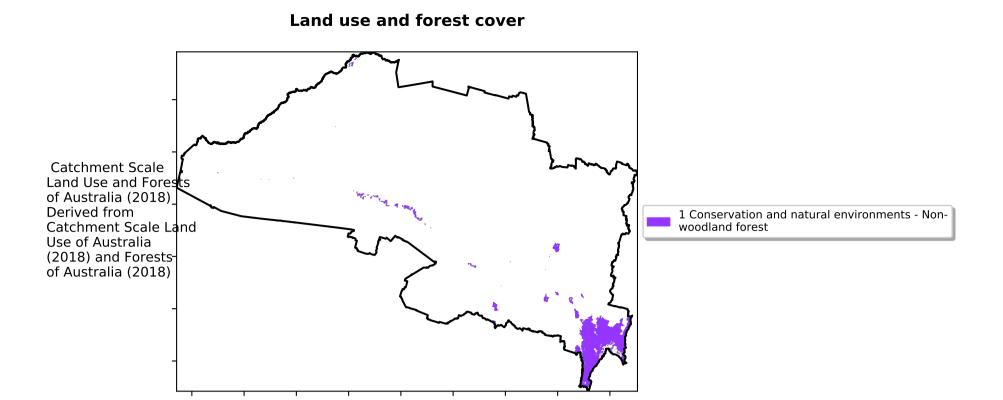




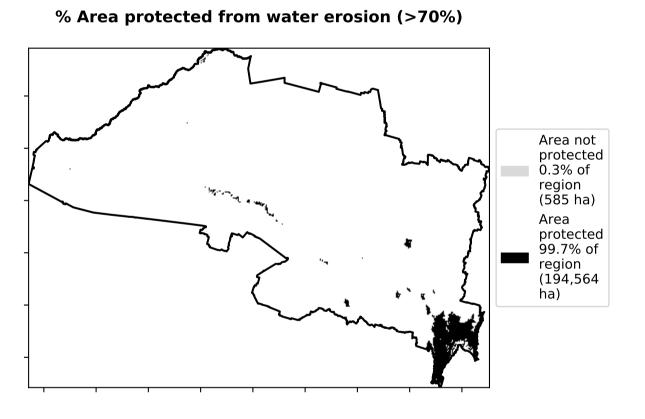


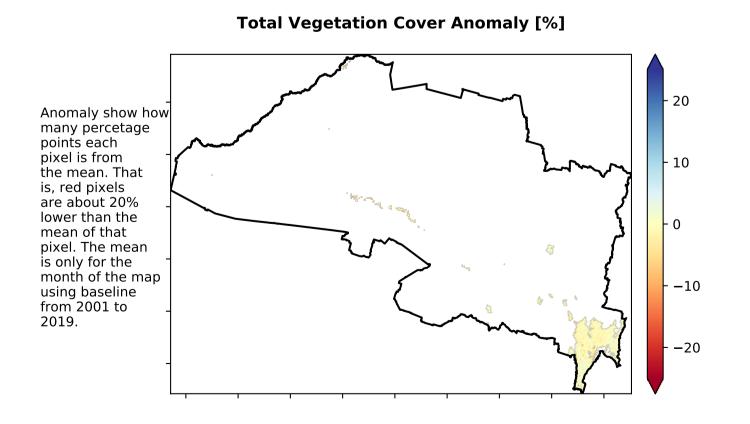


Conservation and natural environments Forest (non woodland)

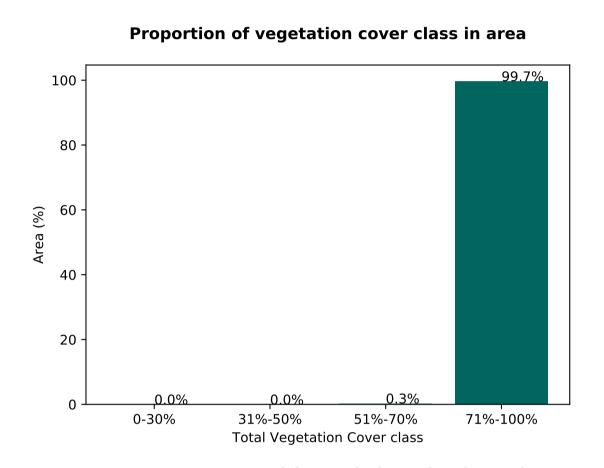


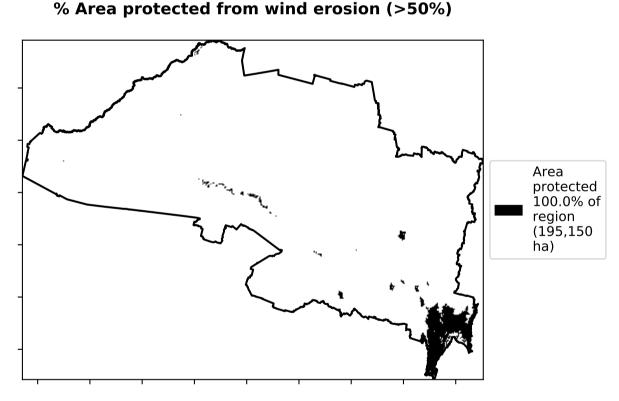
Total Vegetation Cover [%]

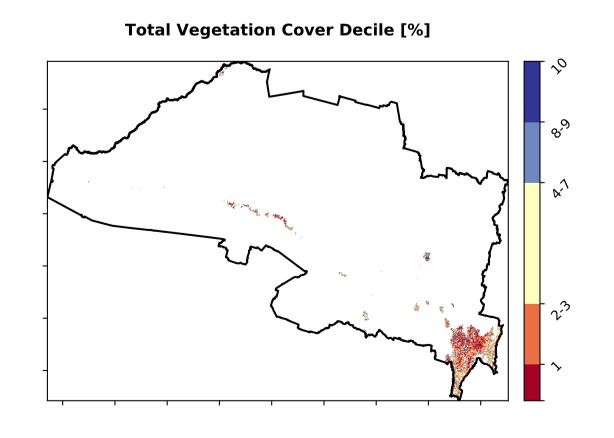




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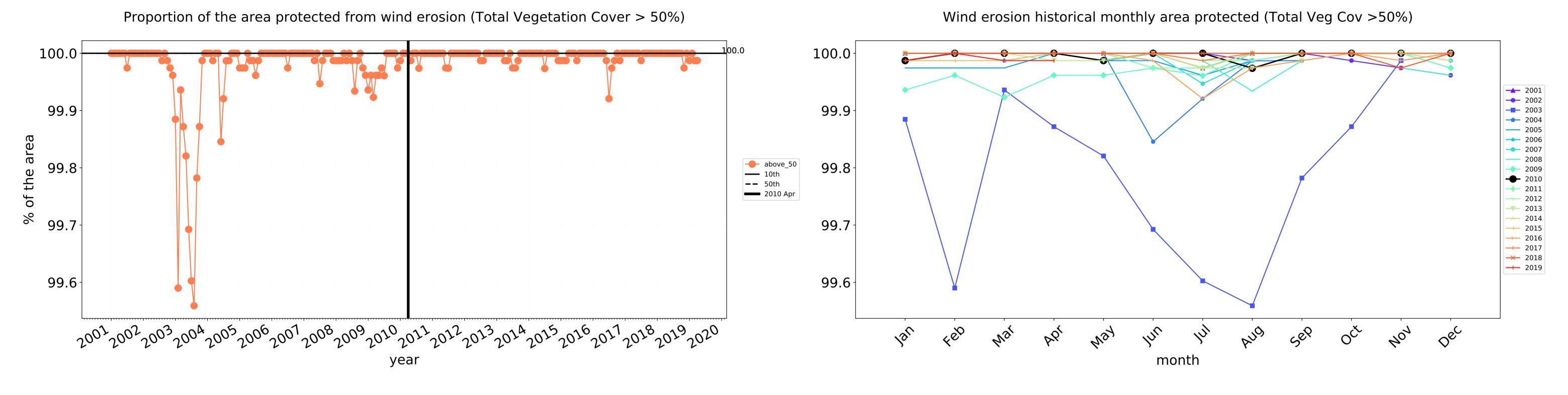


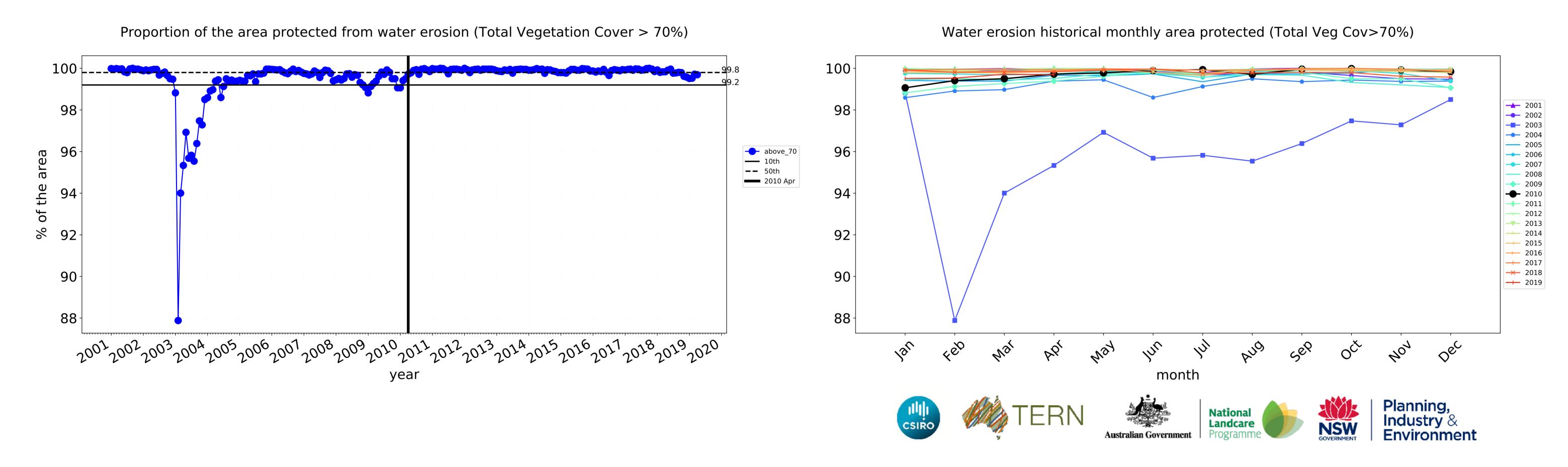








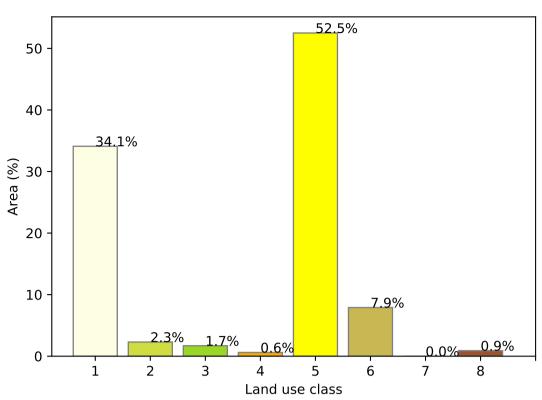




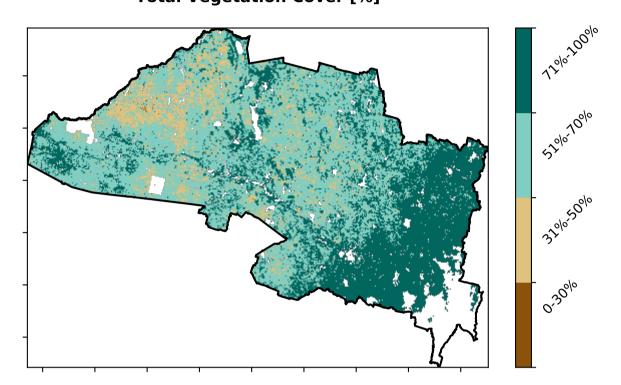
Agriculture

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

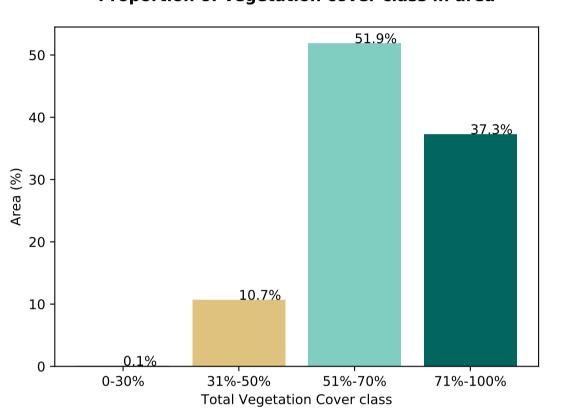
Proportion of each land class in area



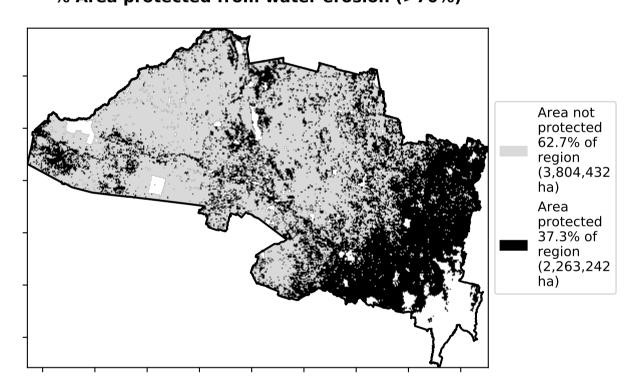
Total Vegetation Cover [%]



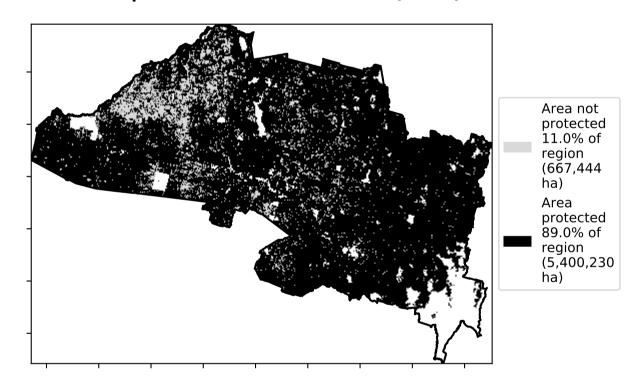
Proportion of vegetation cover class in area



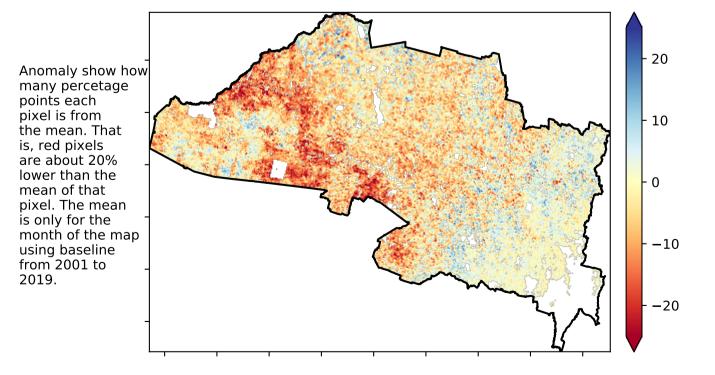
% Area protected from water erosion (>70%)



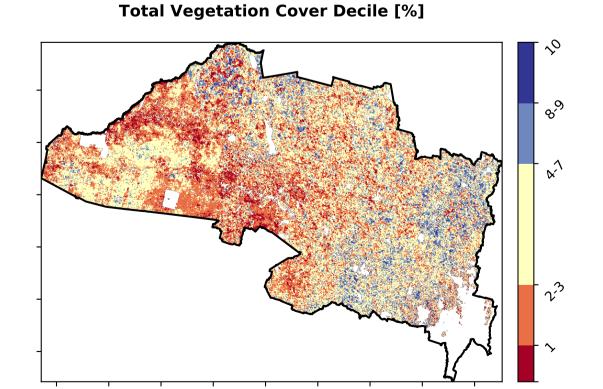
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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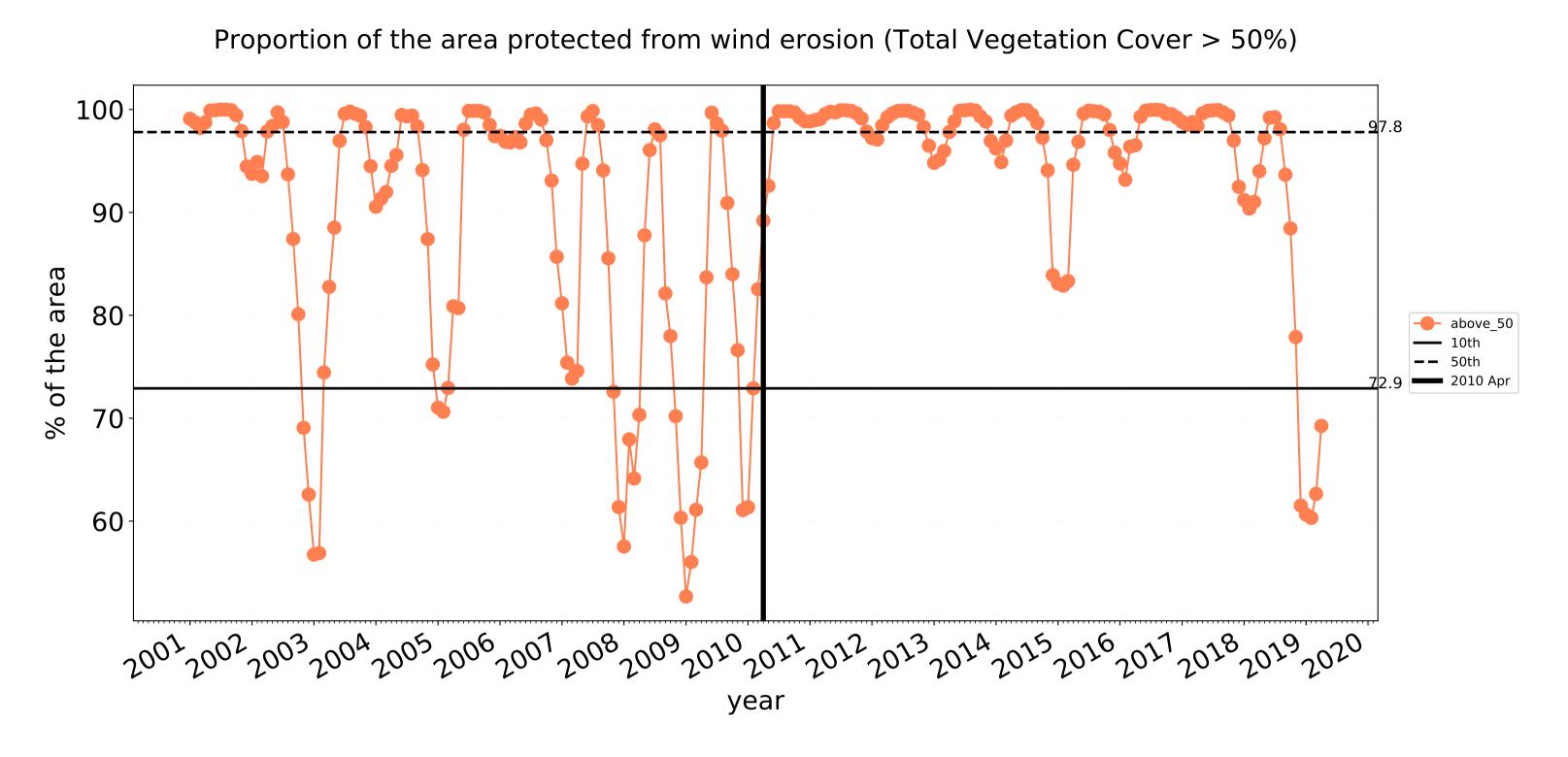


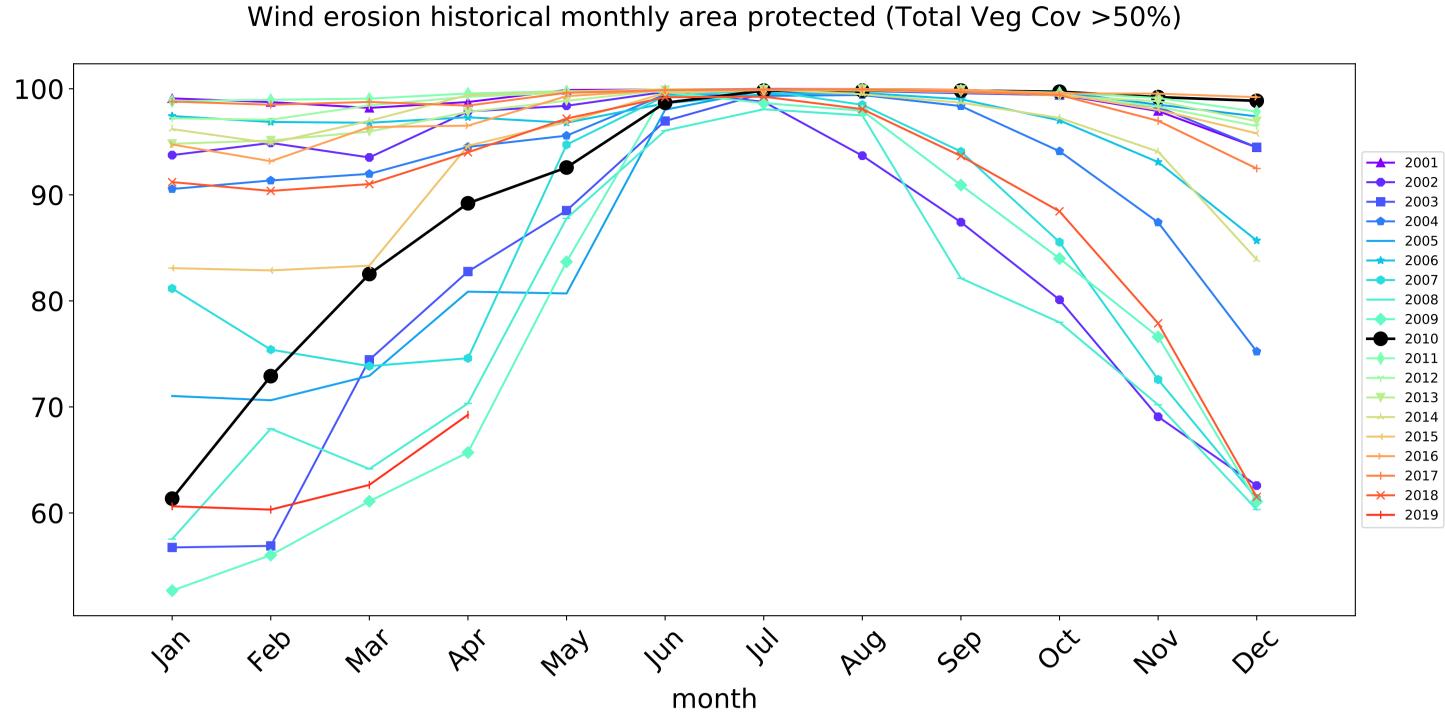


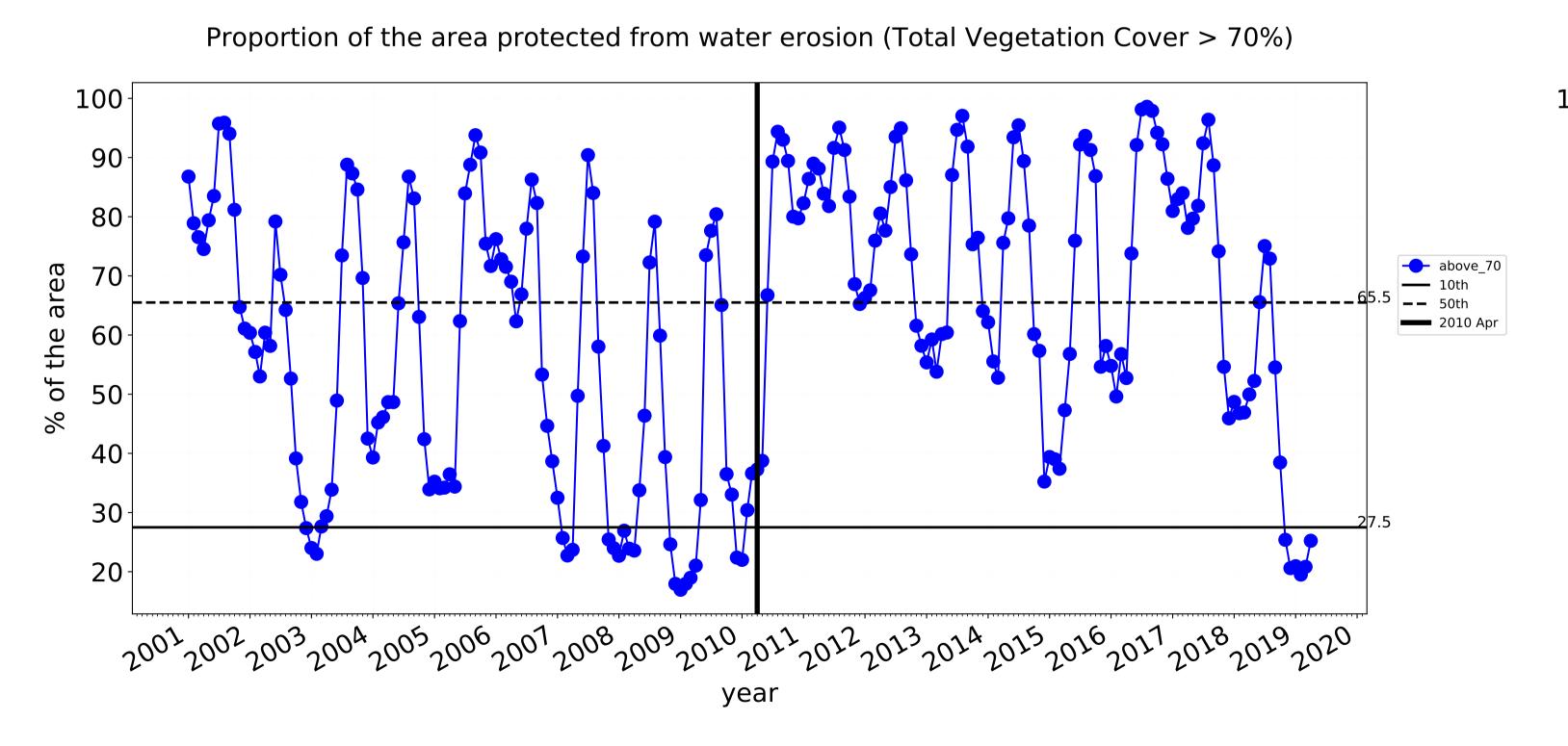


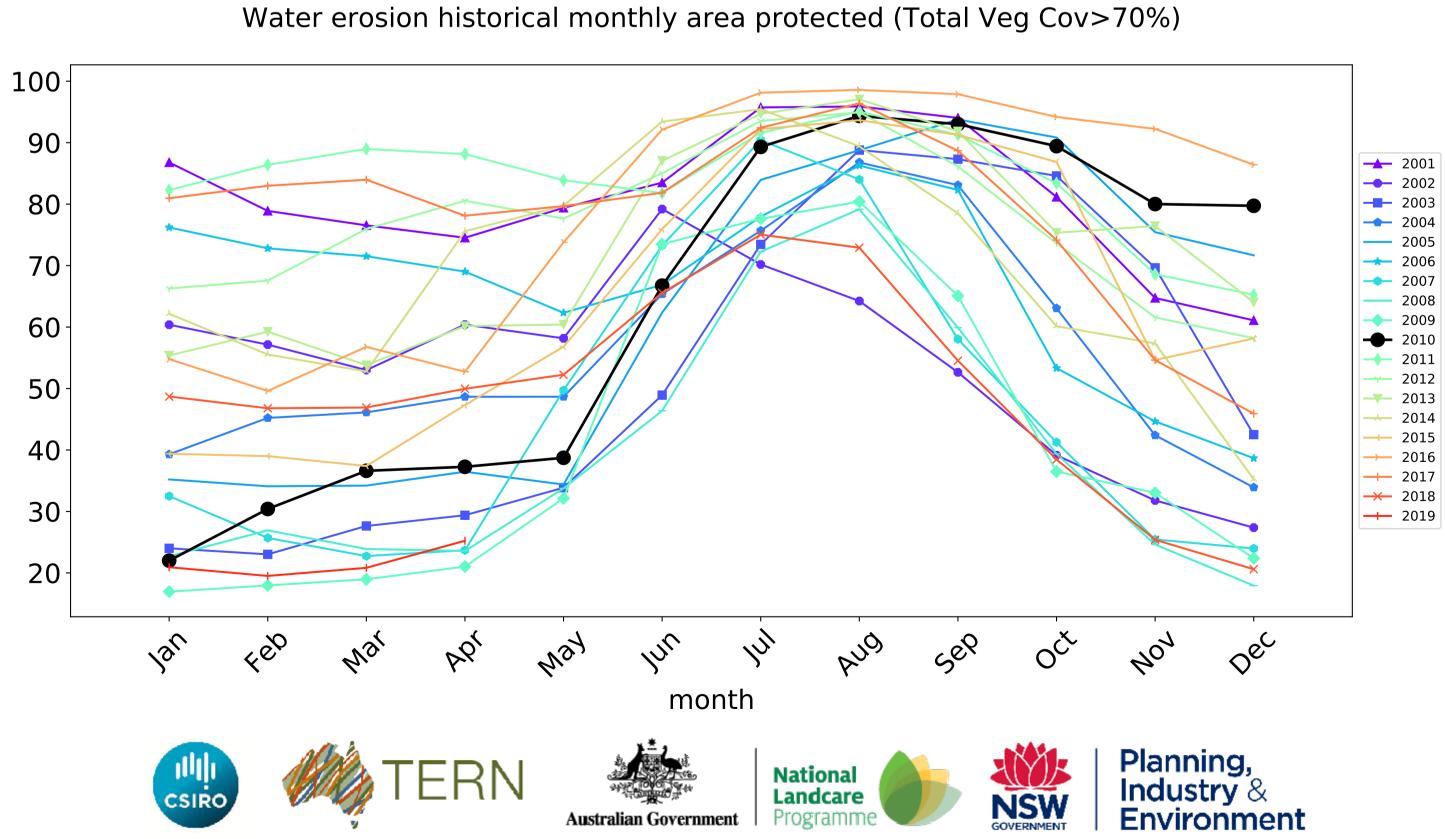


Agriculture timeseries





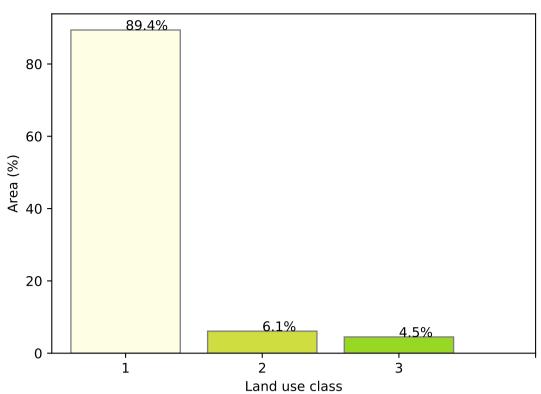




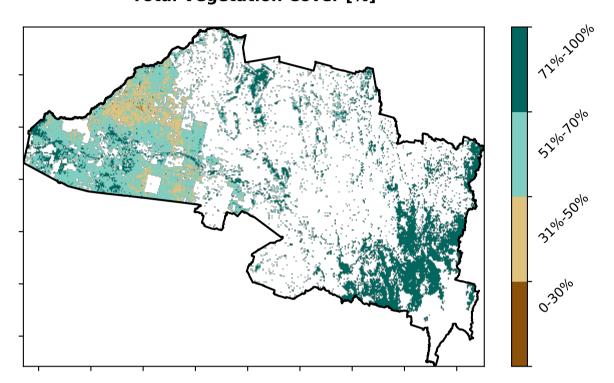
Grazing

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 Use of Australia (2018) 3 Agriculture - Grazing - Non-woodland forest 4 Agriculture - Grazing - Non-woodland forest 5 Agriculture - Grazing - Non-woodland forest 6 Australia (2018)

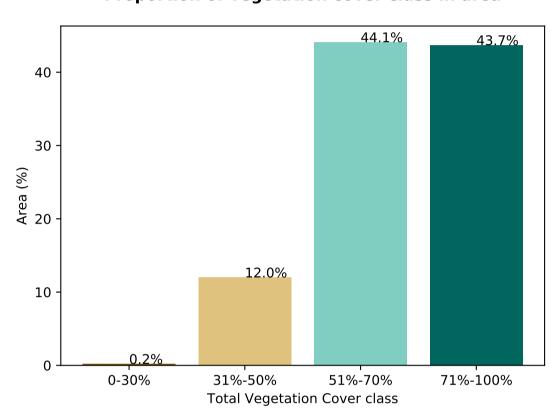
Proportion of each land class in area



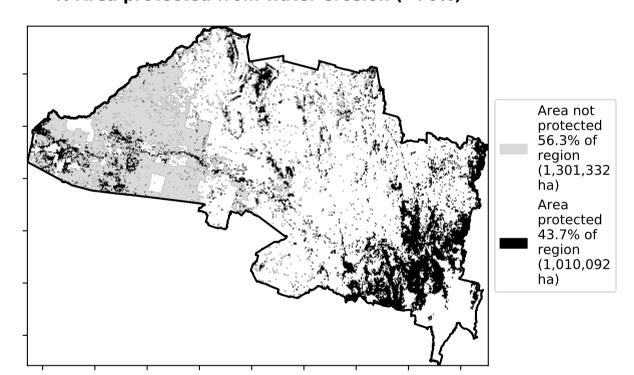
Total Vegetation Cover [%]



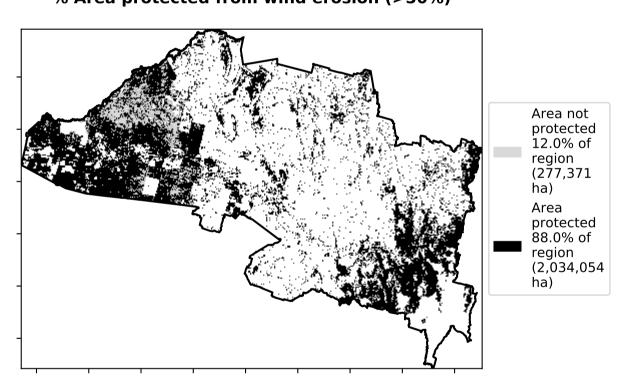
Proportion of vegetation cover class in area



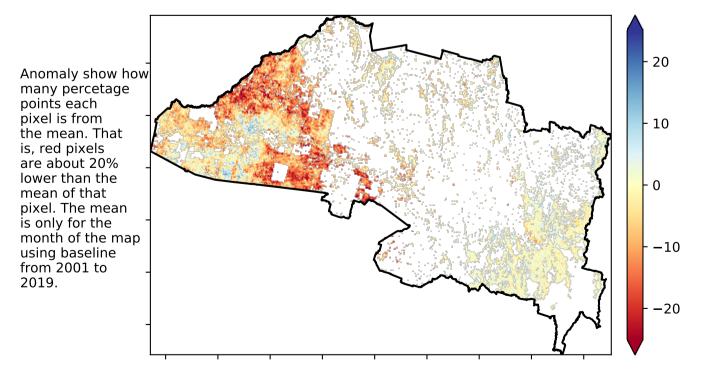
% Area protected from water erosion (>70%)



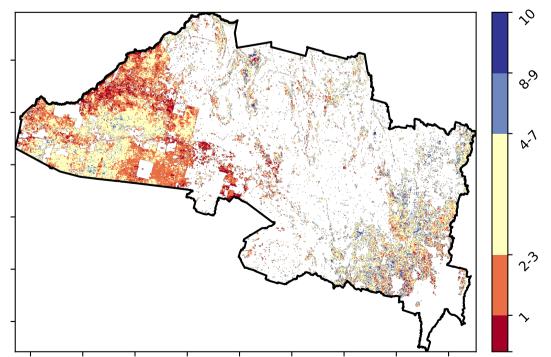
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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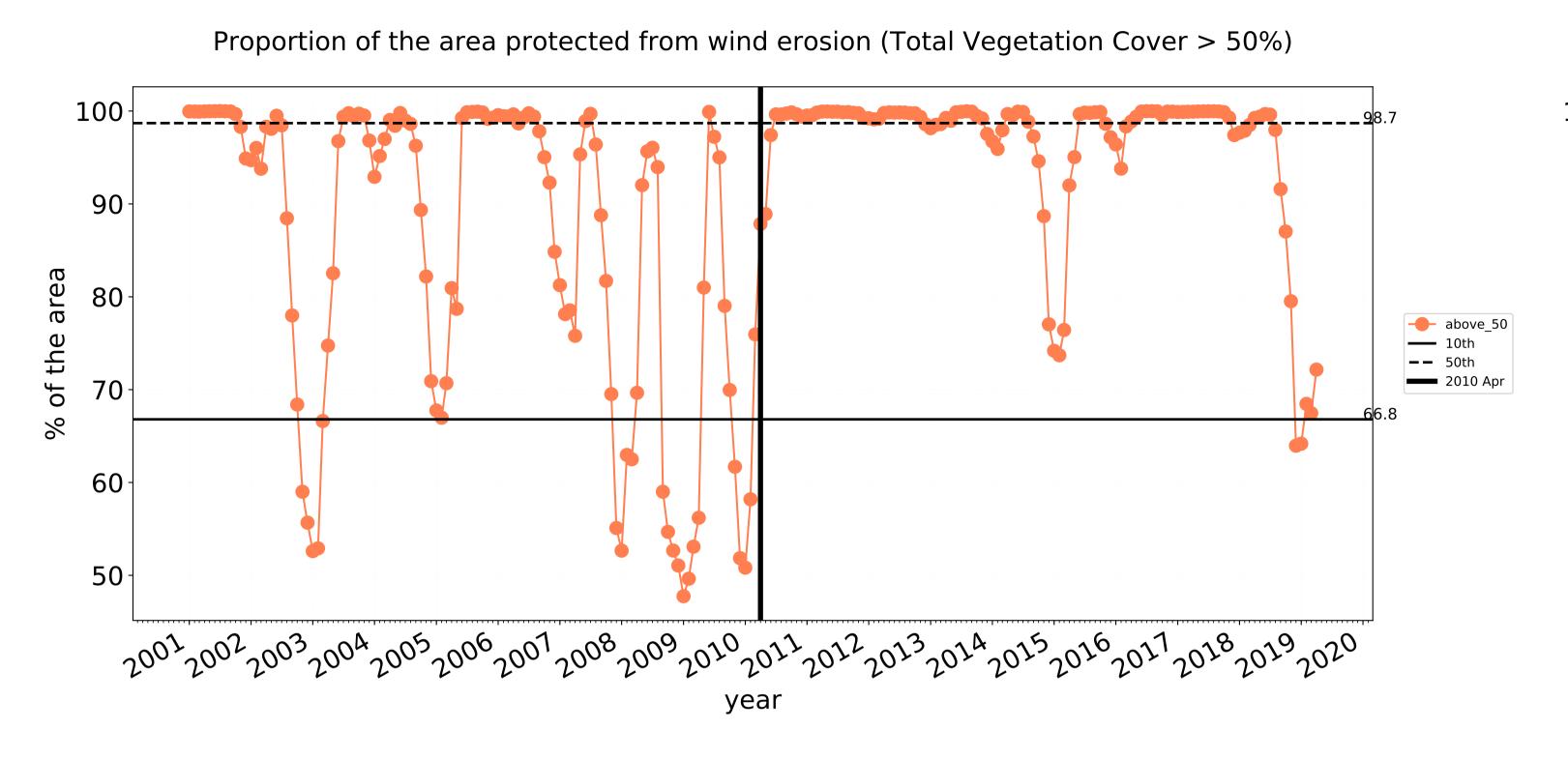


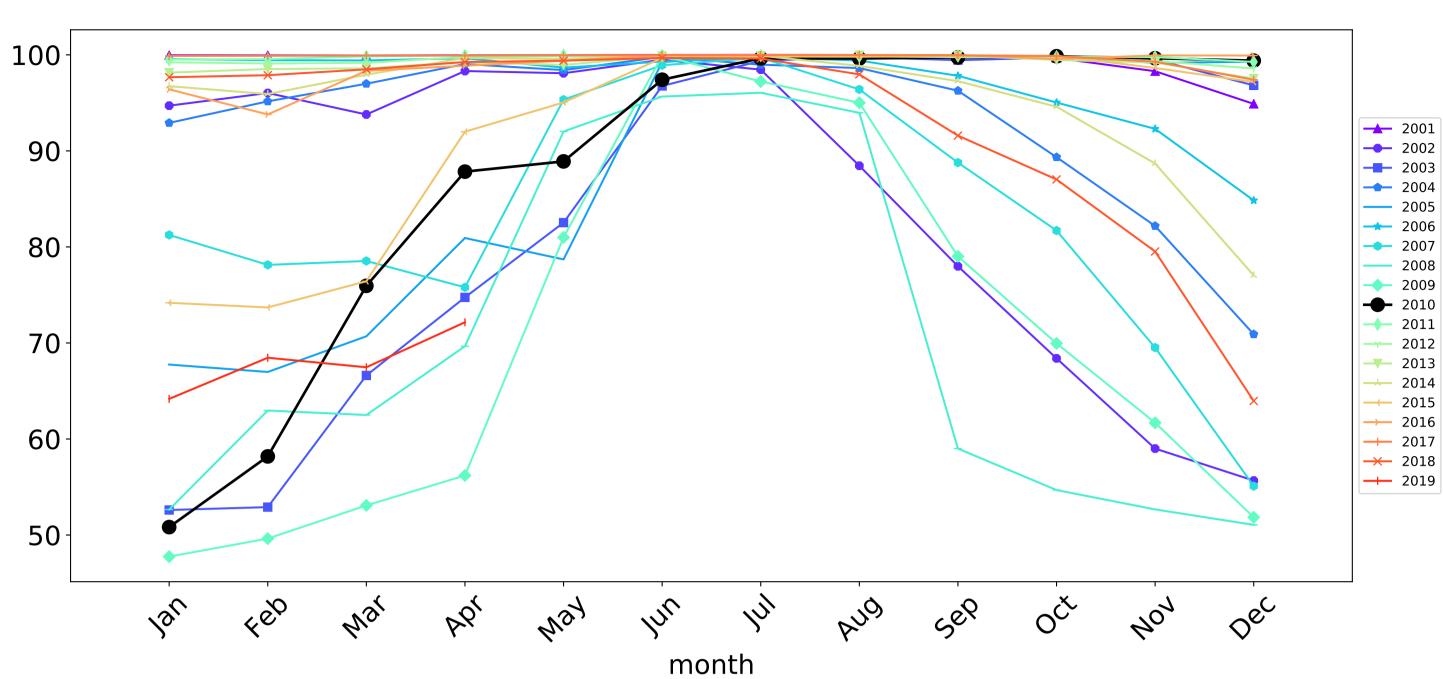




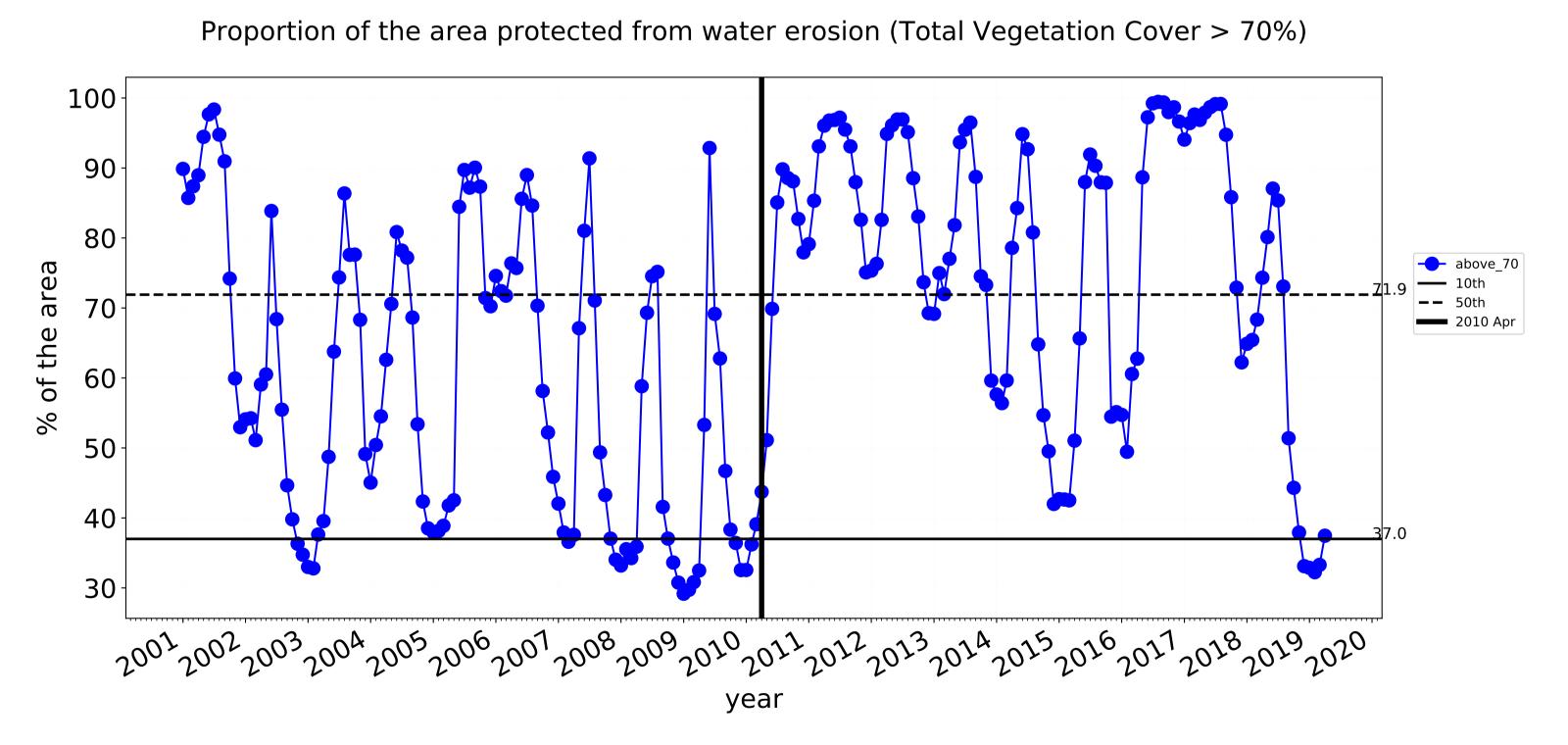


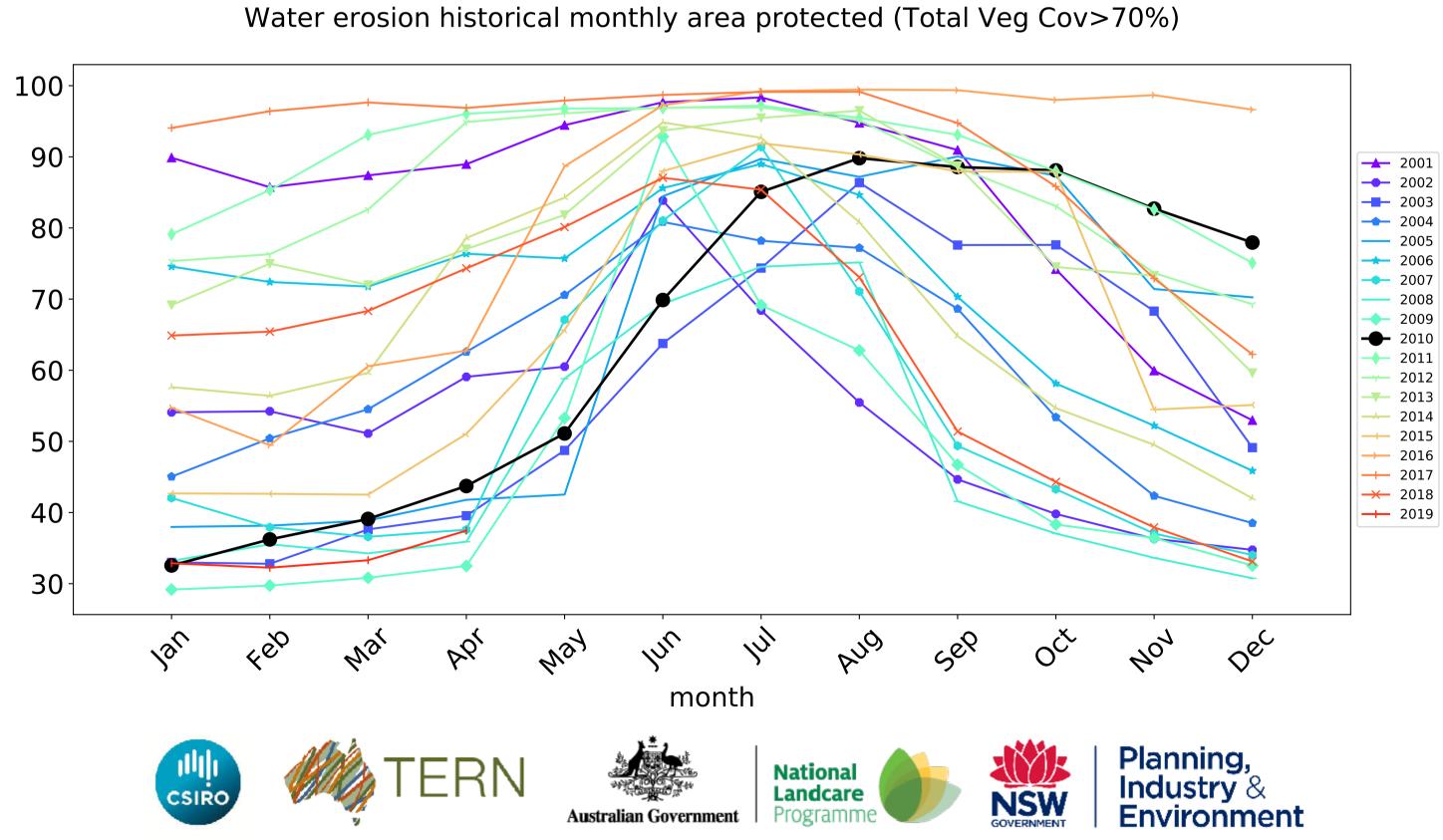
Grazing timeseries





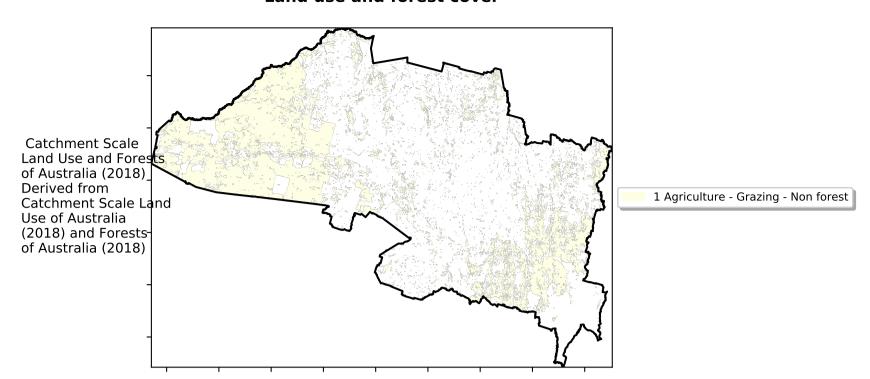
Wind erosion historical monthly area protected (Total Veg Cov >50%)



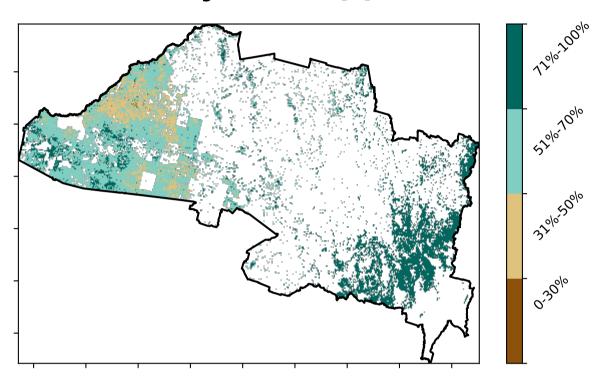


Grazing non forest

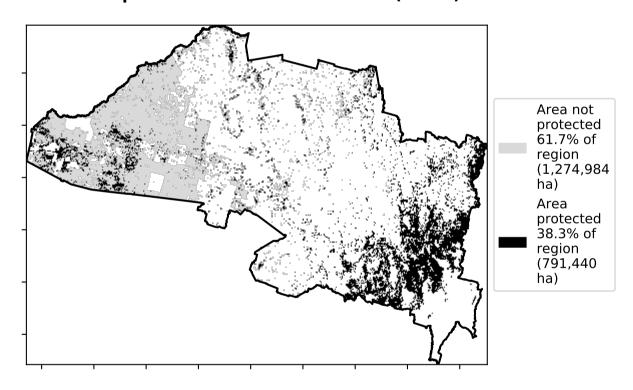
Land use and forest cover



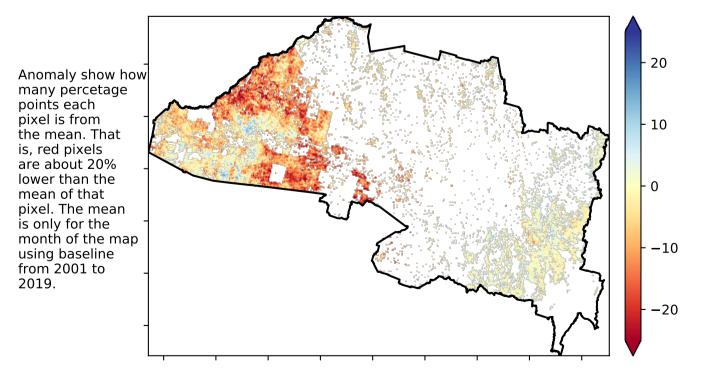
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

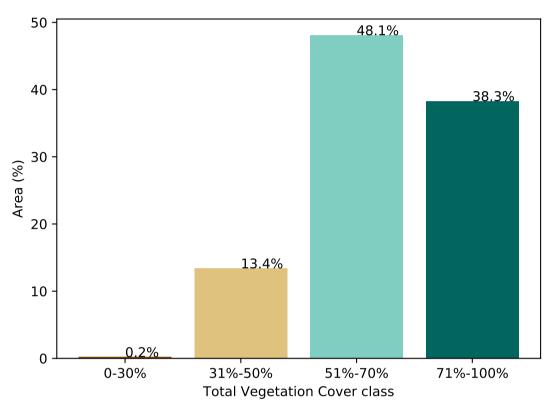


Total Vegetation Cover Anomaly [%]

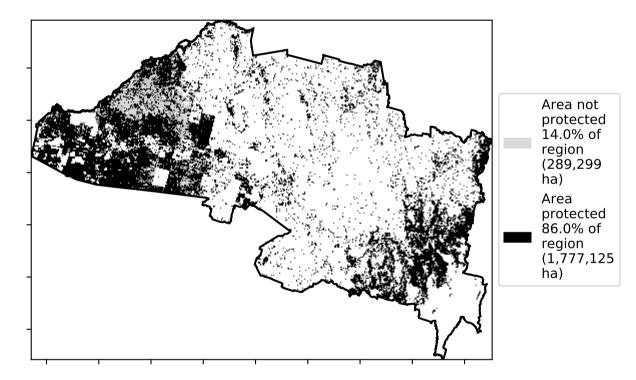


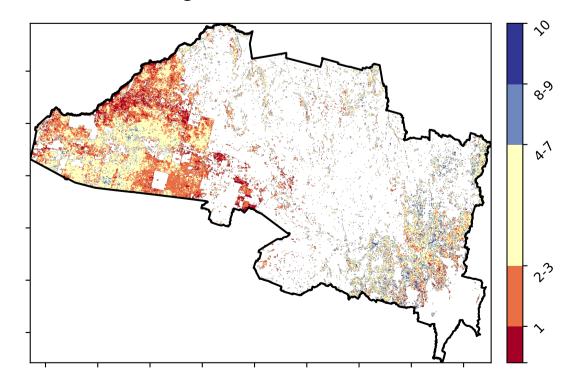
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









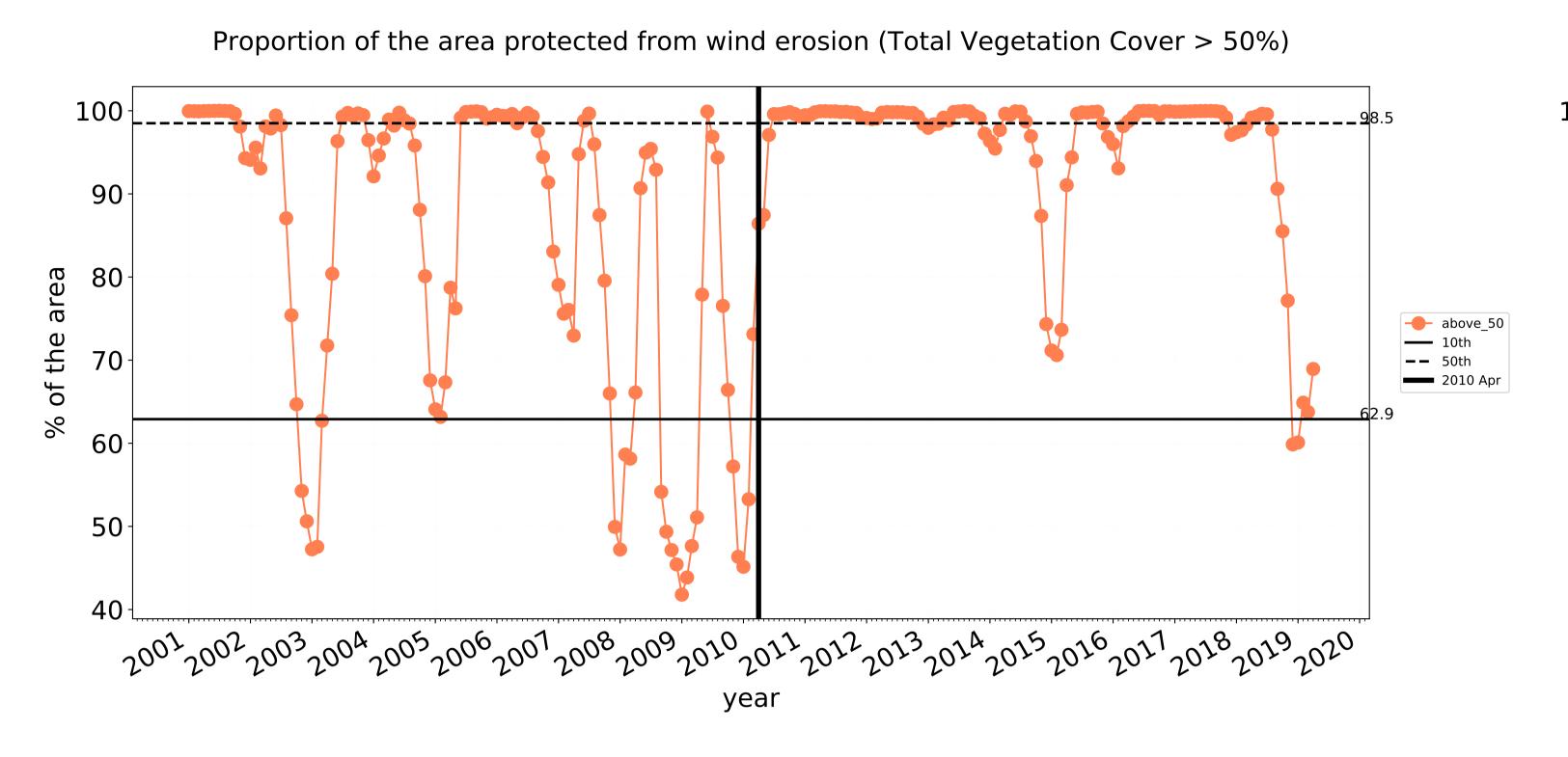


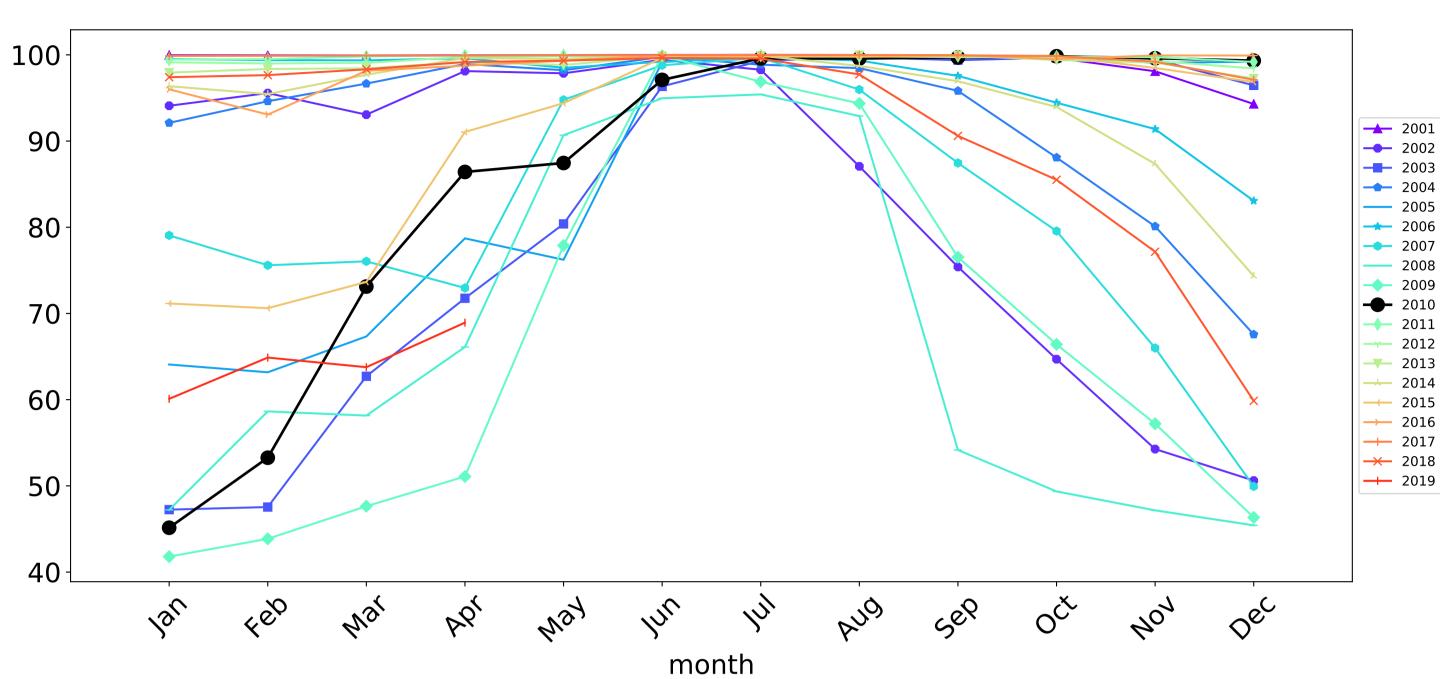




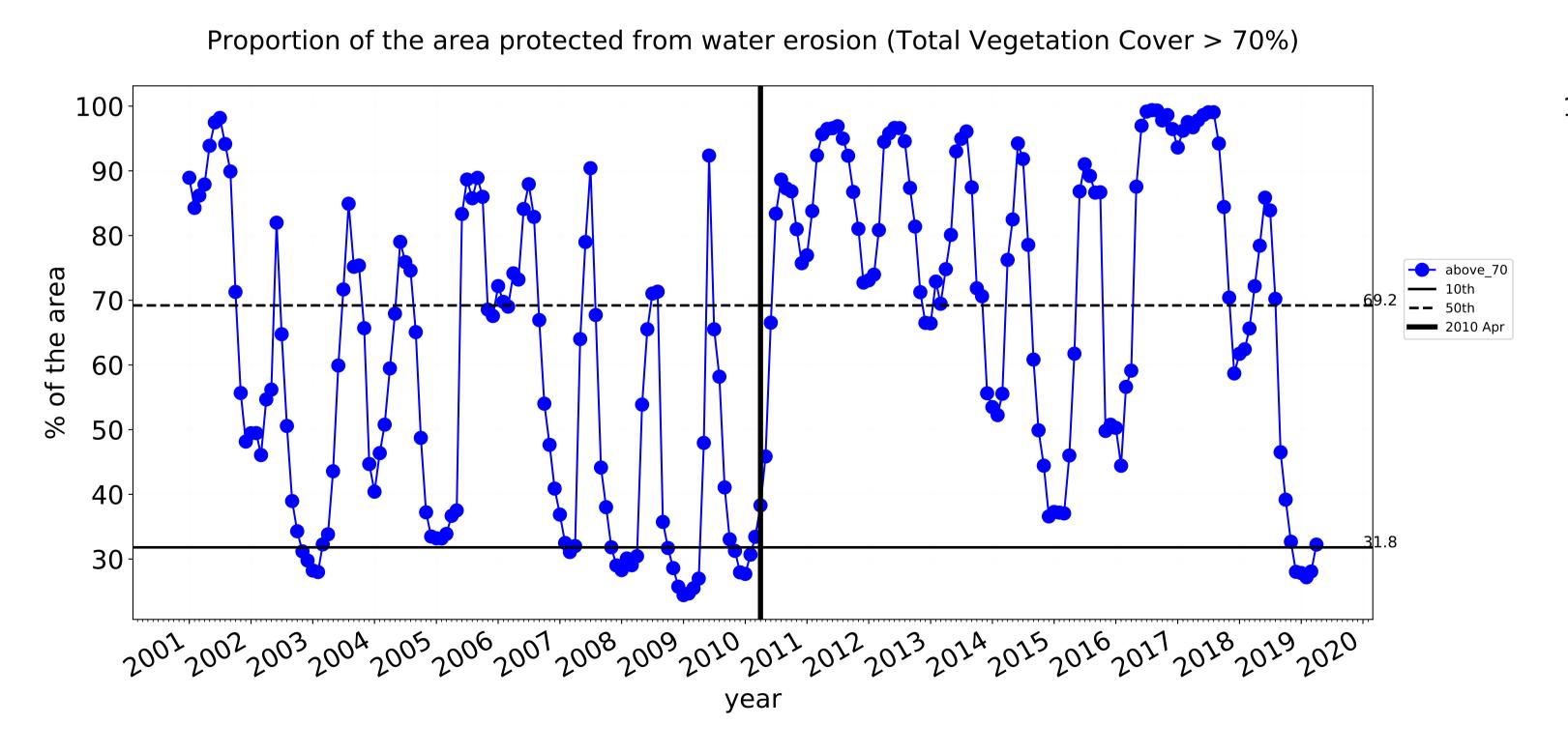


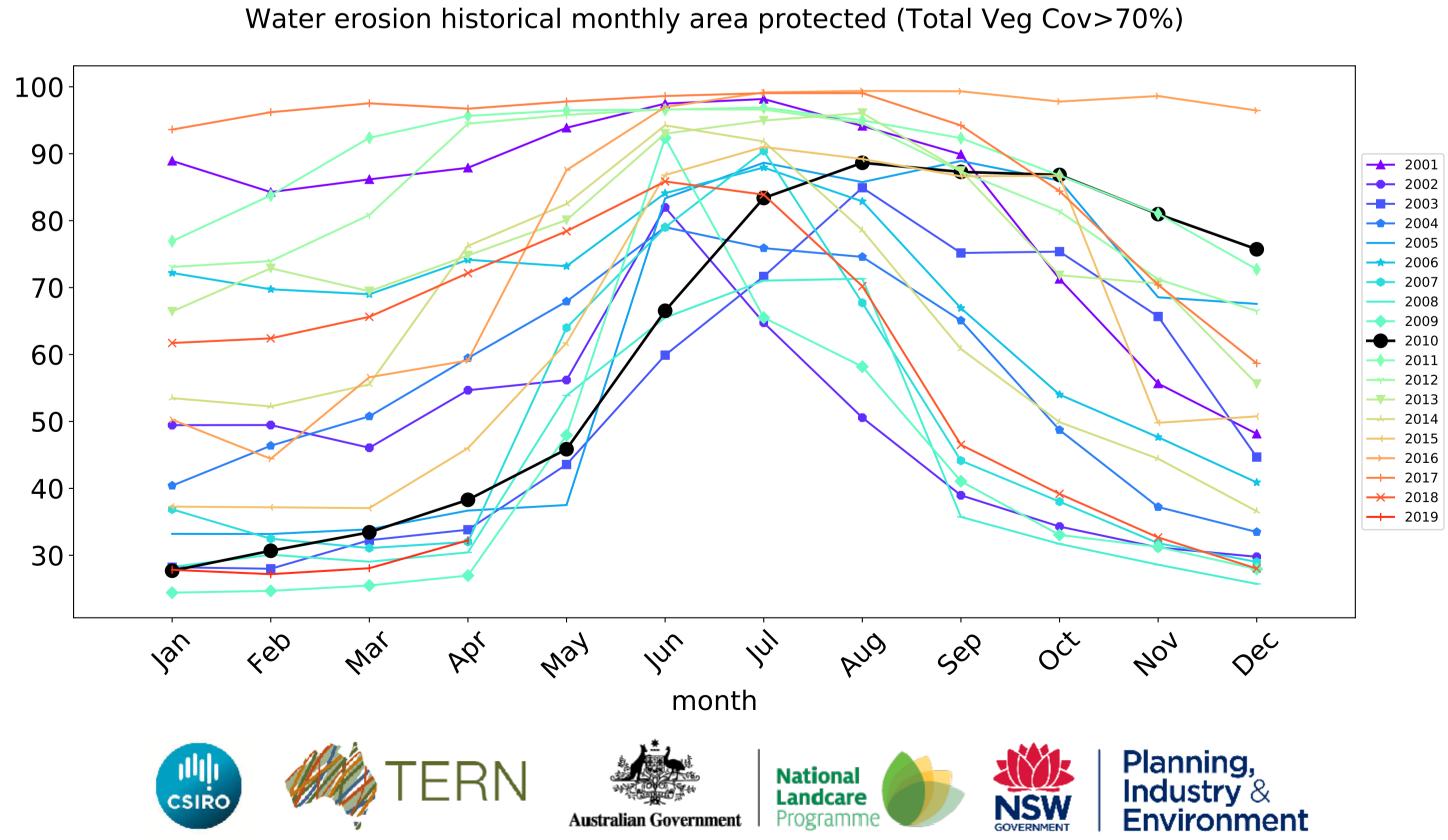
Grazing non forest timeseries





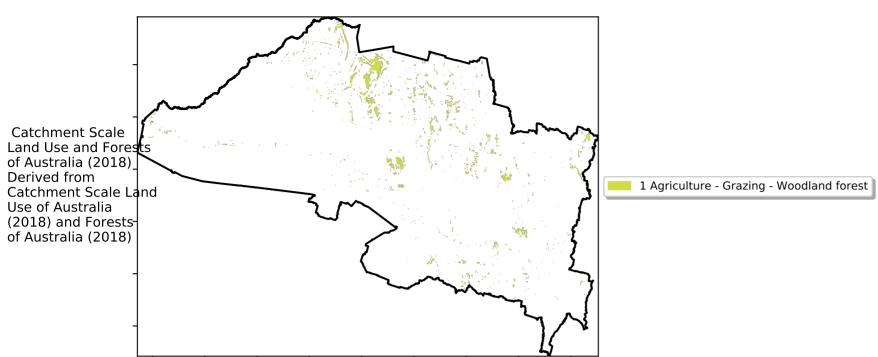
Wind erosion historical monthly area protected (Total Veg Cov >50%)



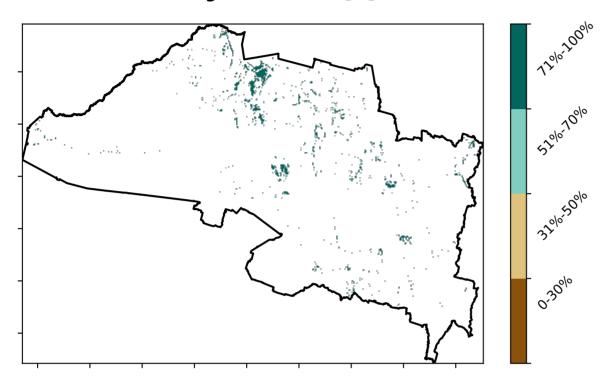


Grazing Woodland forest

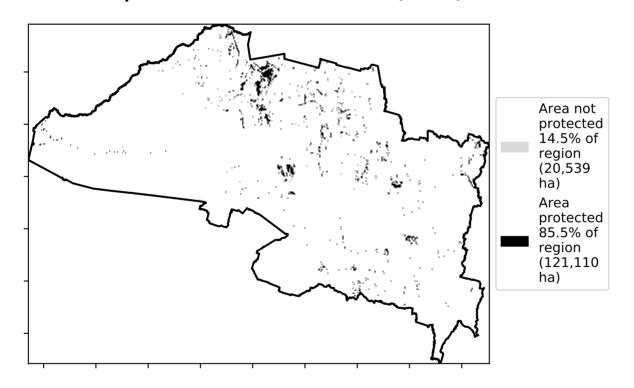
Land use and forest cover



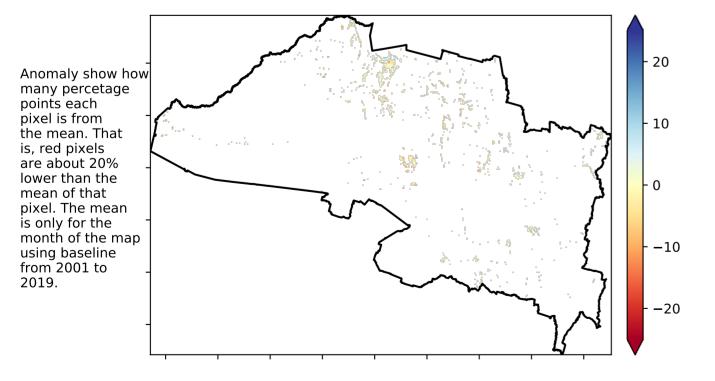
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

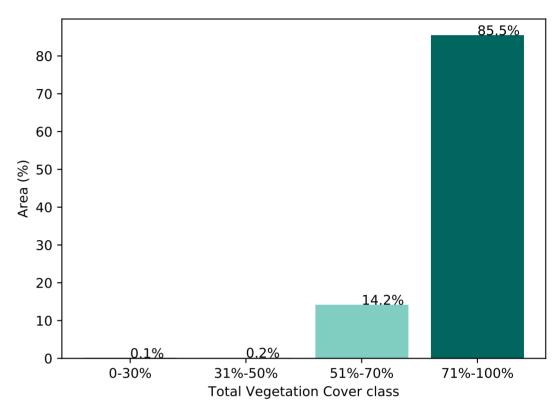


Total Vegetation Cover Anomaly [%]

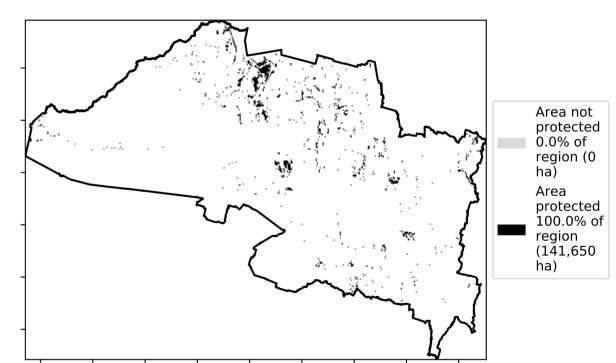


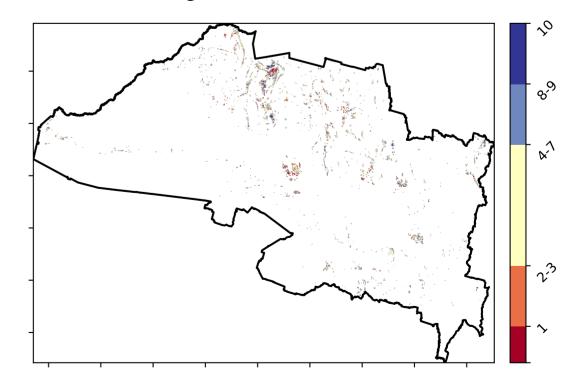
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Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









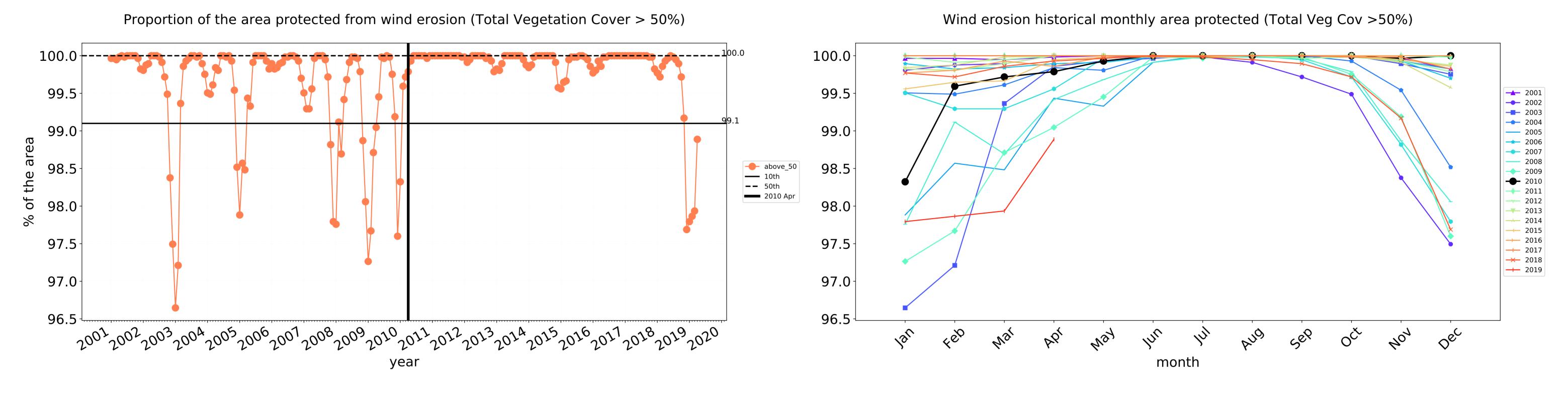


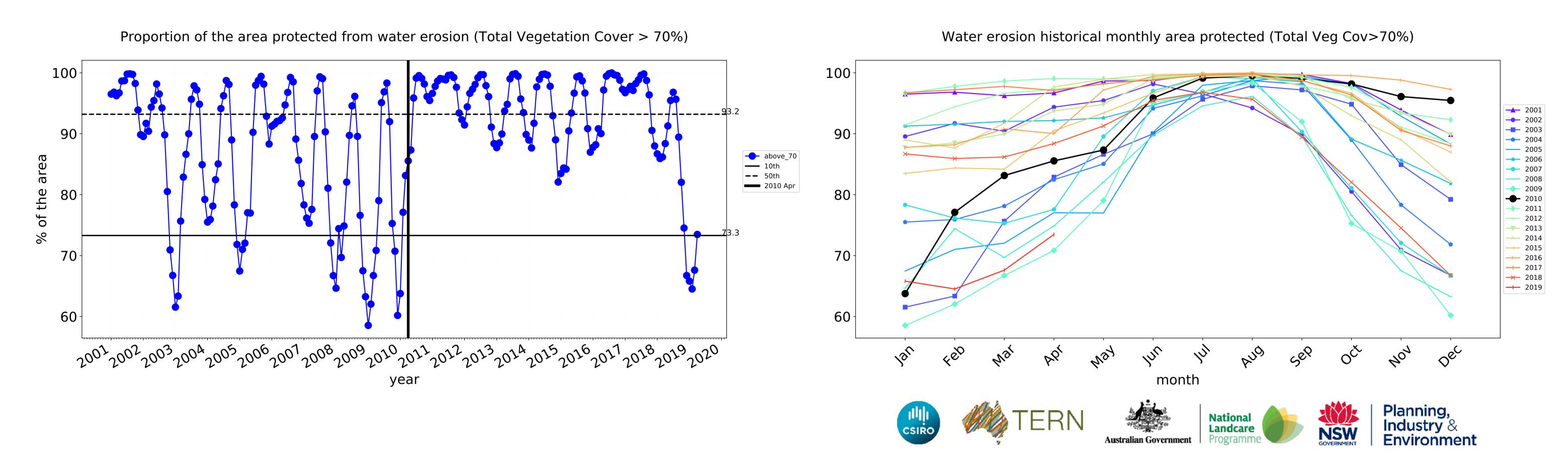






Grazing Woodland forest timeseries



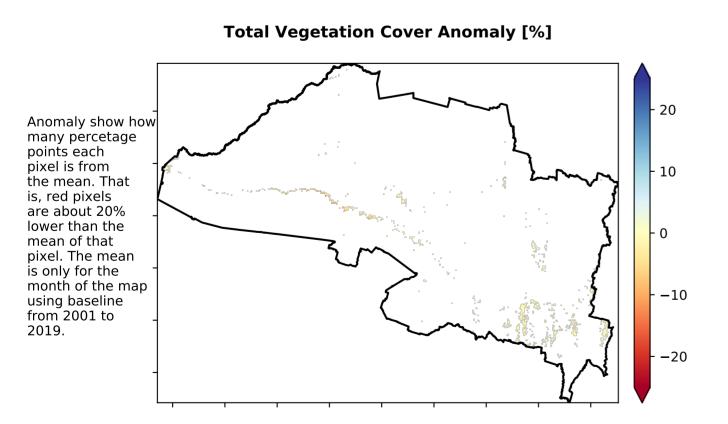


Grazing - Forest (non woodland)

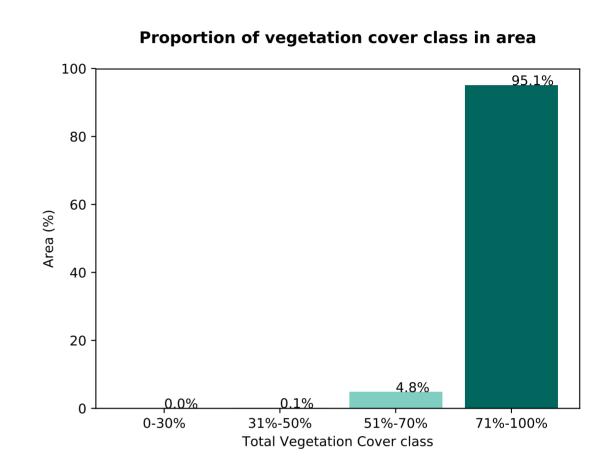
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

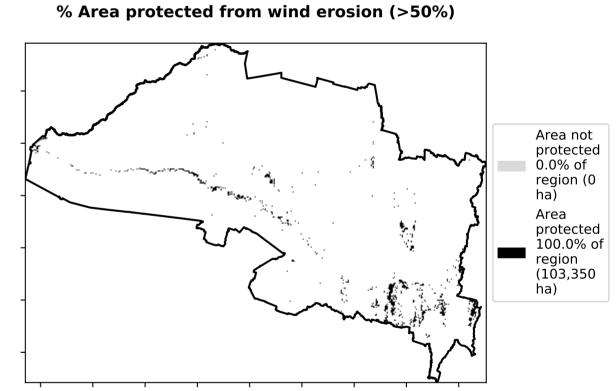
Total Vegetation Cover [%]

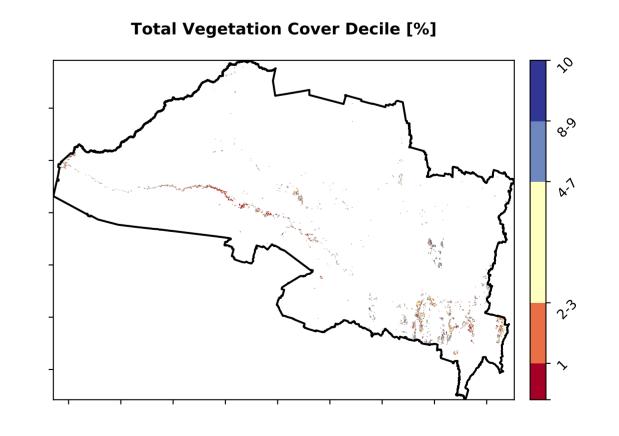
% Area protected from water erosion (>70%) Area not protected 4.9% of region (5,064 ha) Area protected 95.1% of region (98,285 ha)



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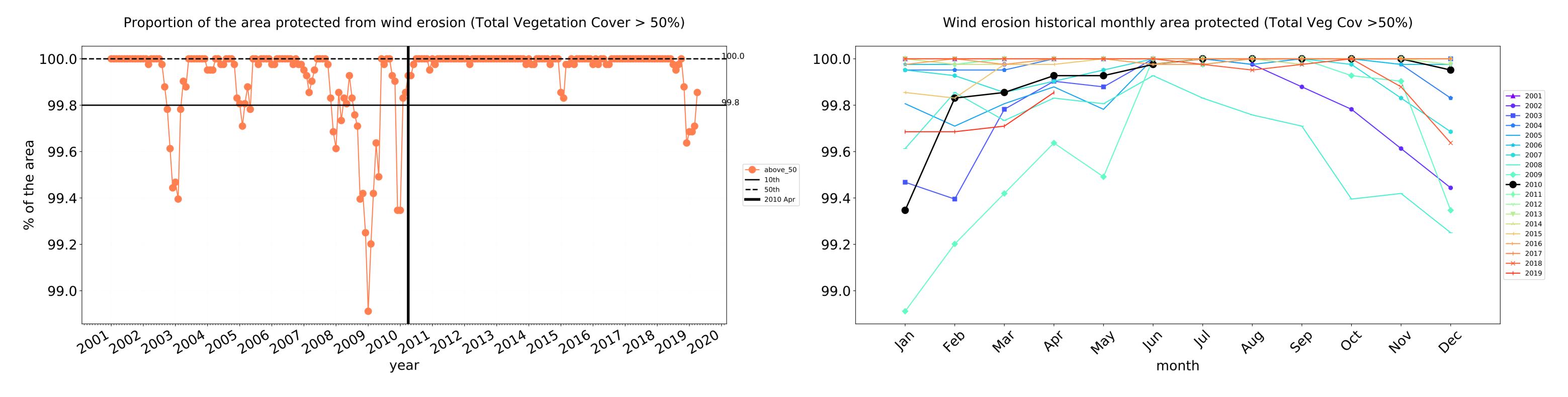


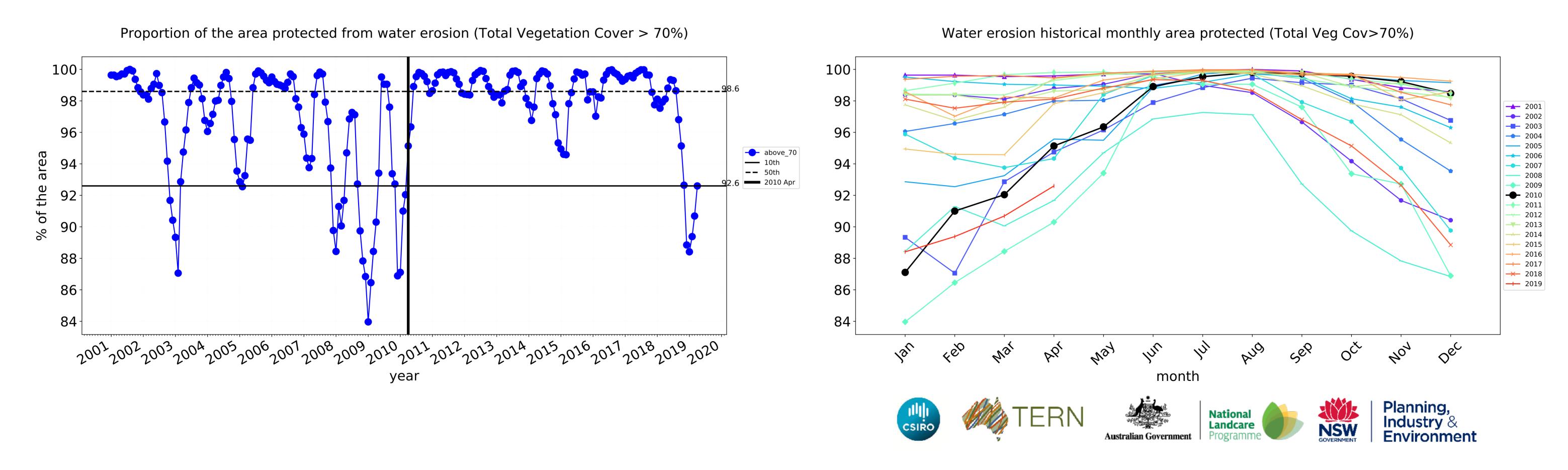






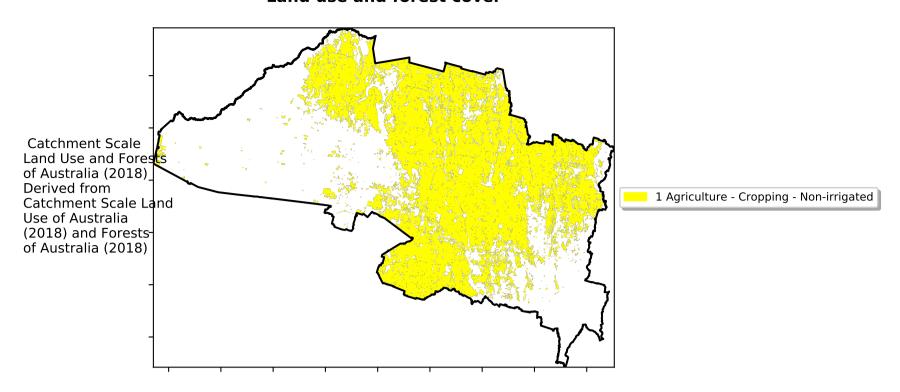




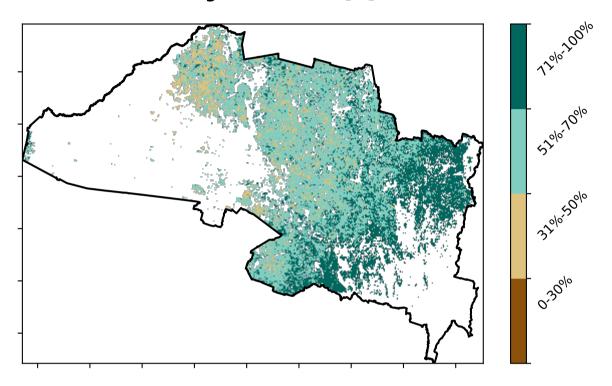


Cropping

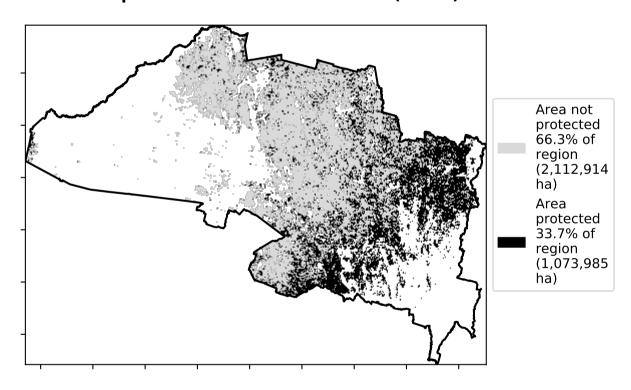
Land use and forest cover



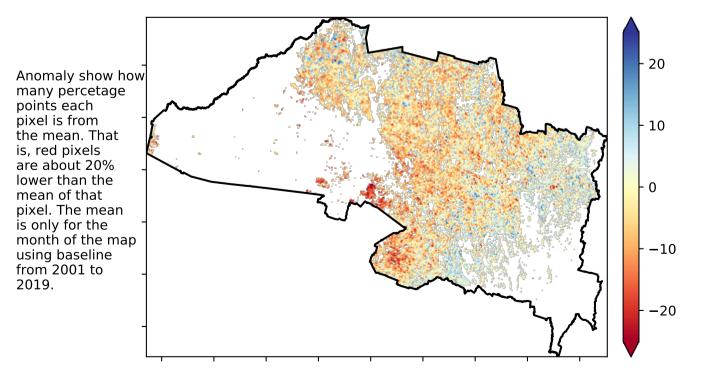
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

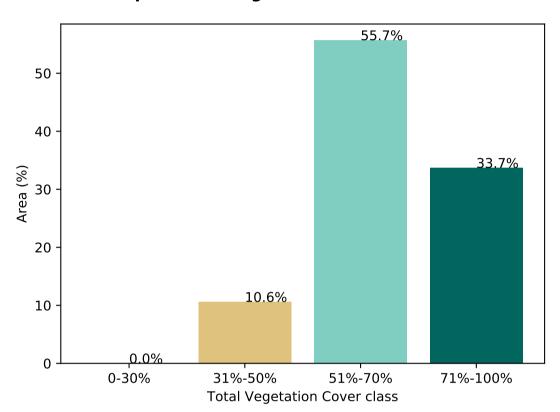


Total Vegetation Cover Anomaly [%]

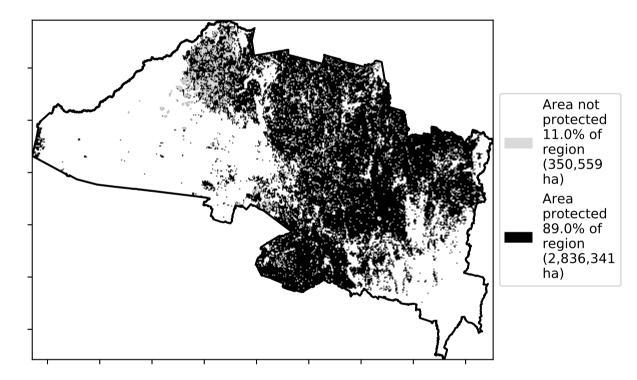


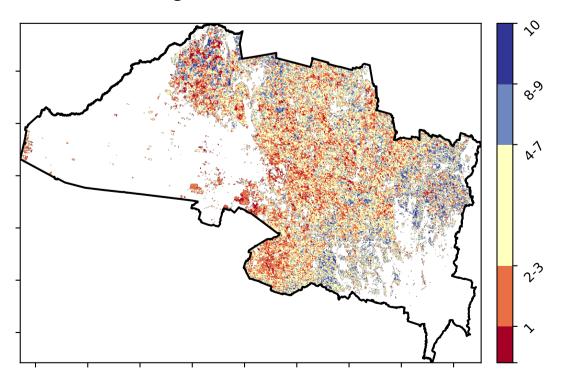
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









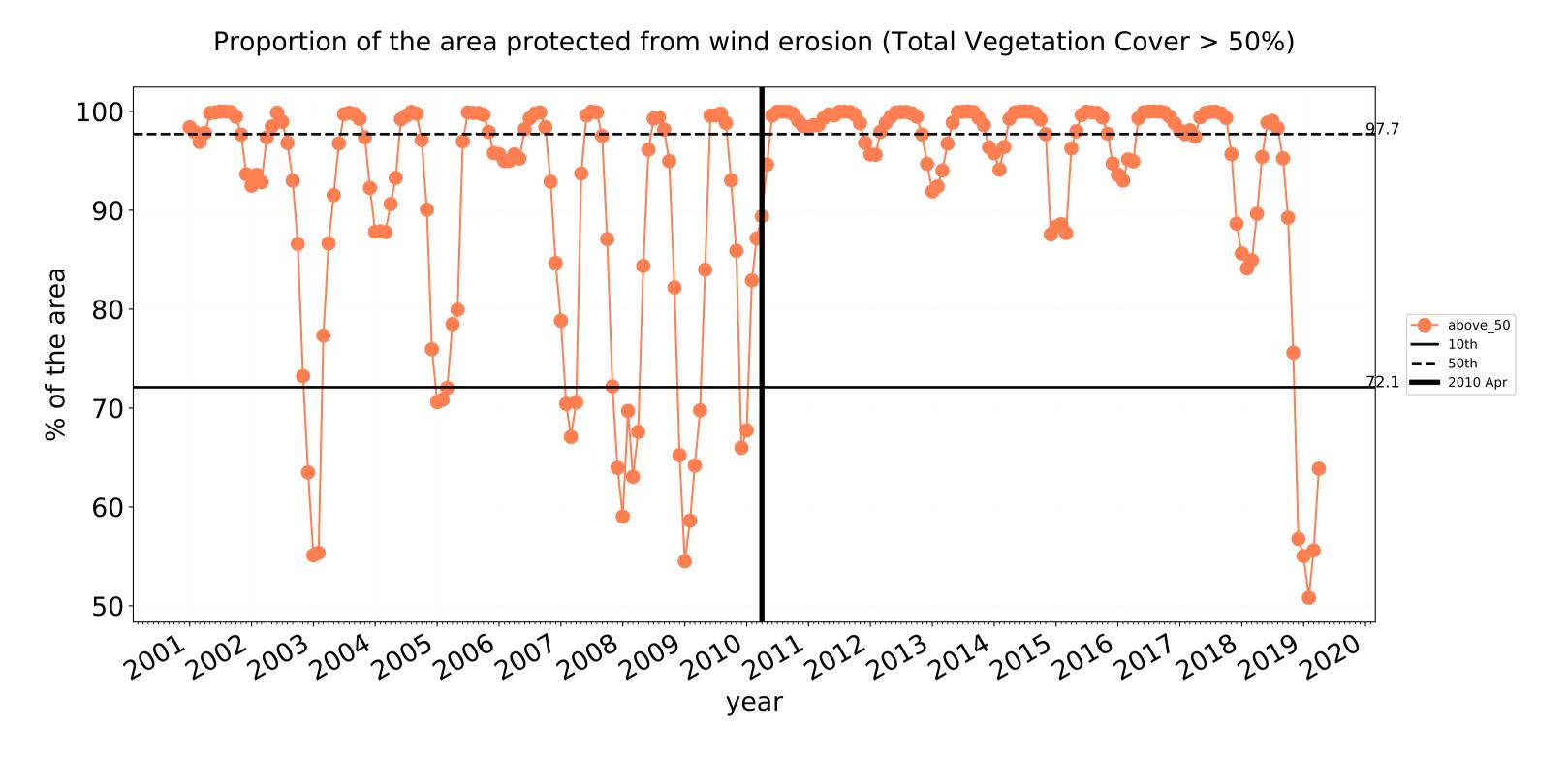


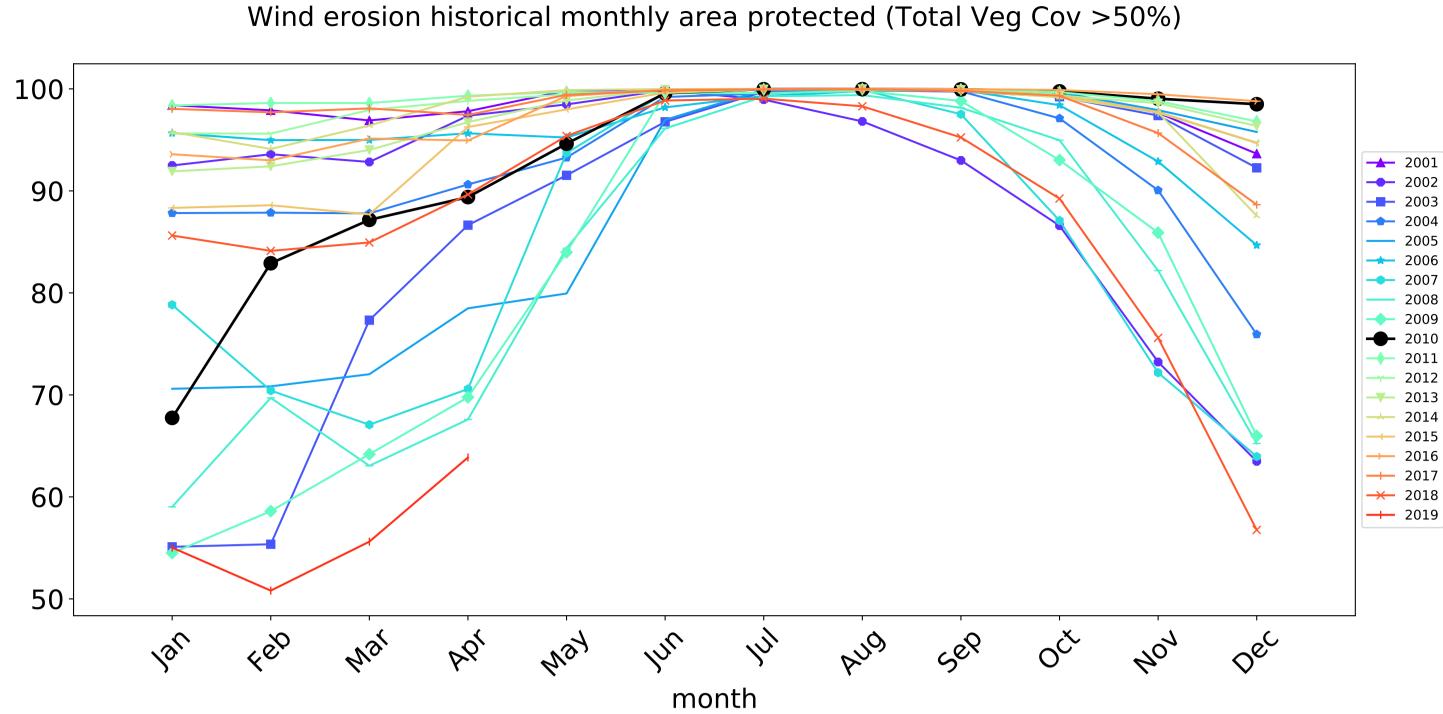


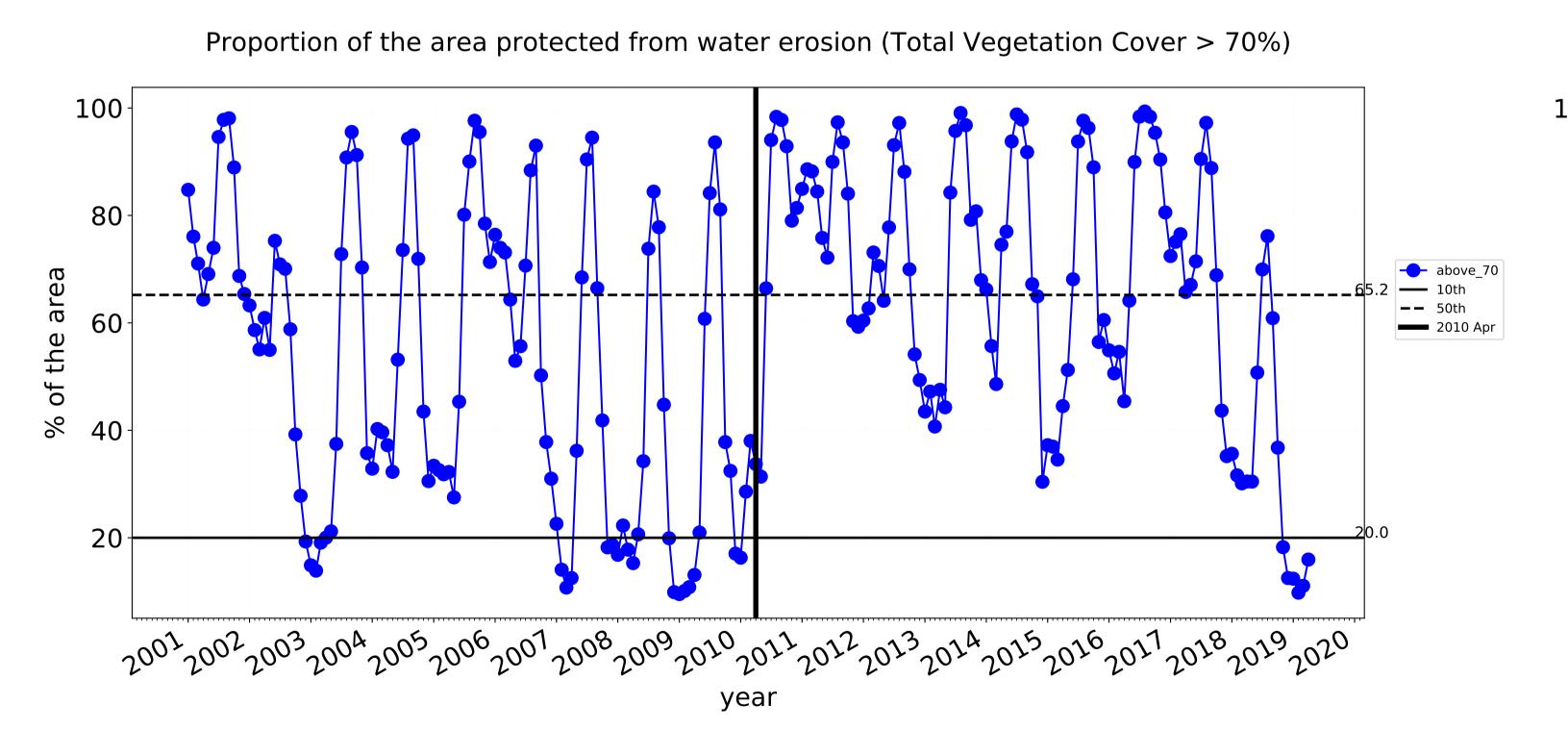


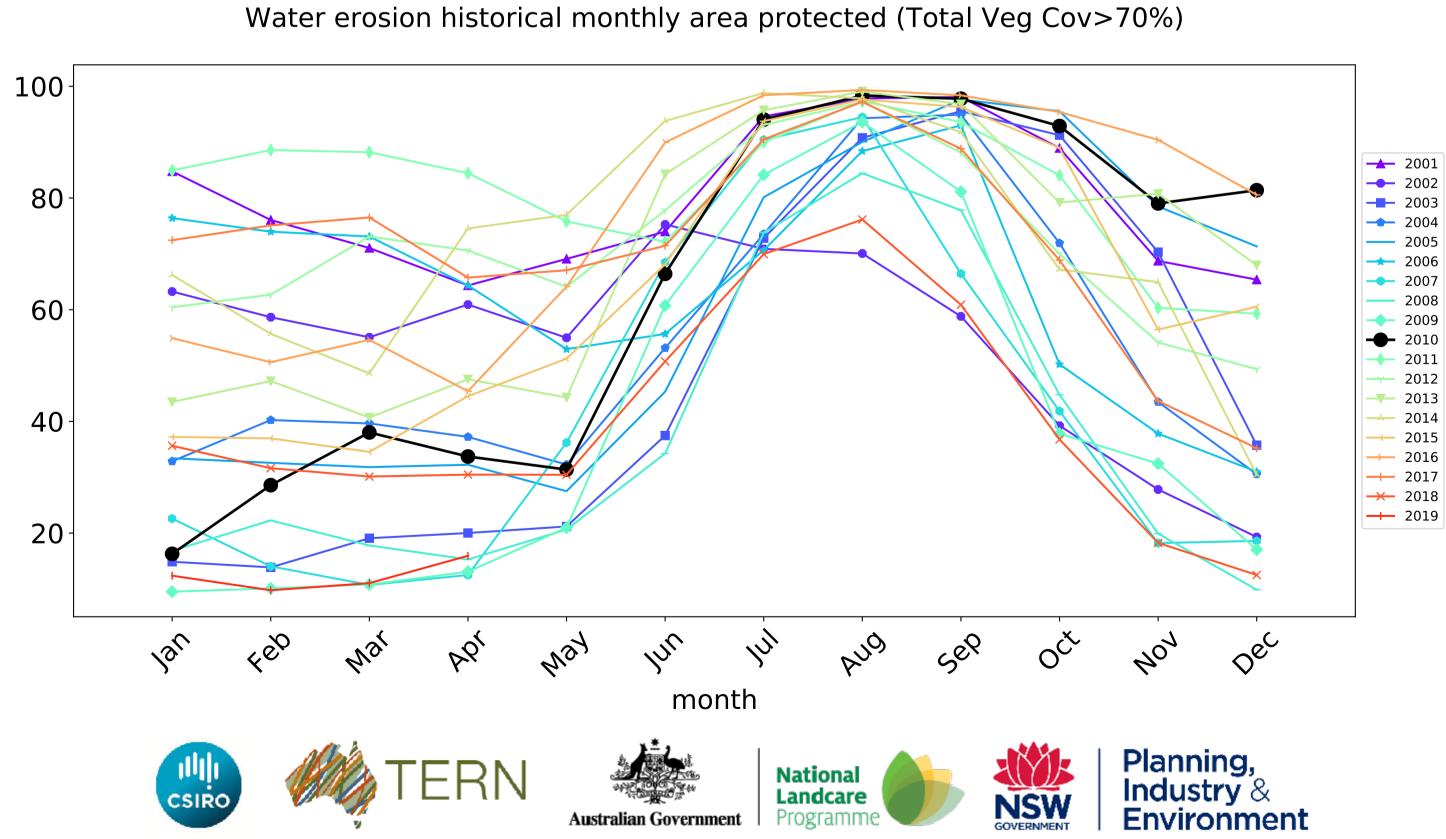


Cropping timeseries

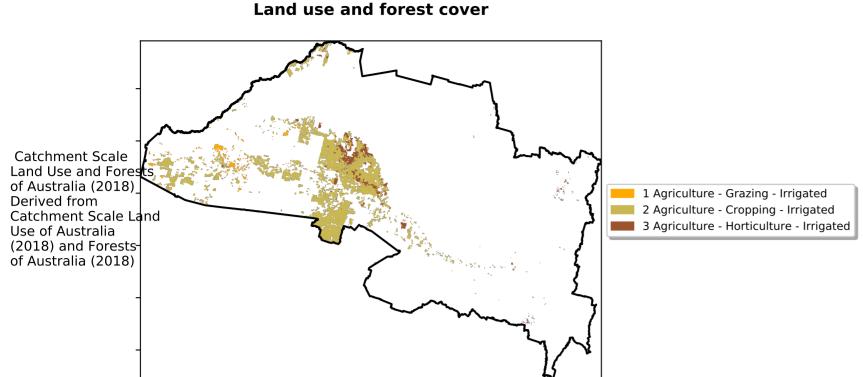




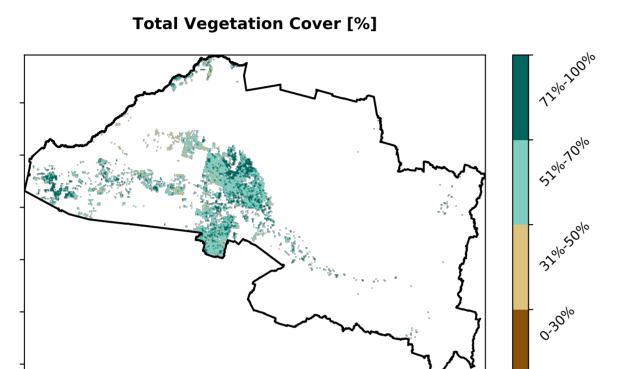




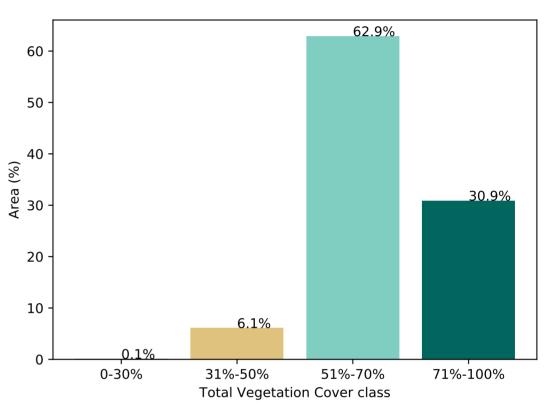
Irrigation



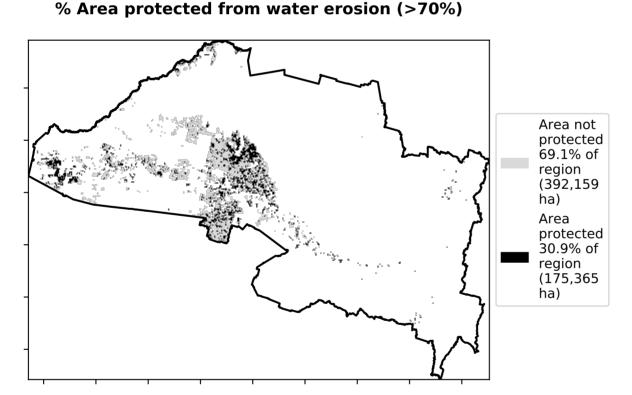
Proportion of each land class in area 83.9% 80 70 60 Area (%) 30 20 9.7% 10 6.4% 2 3



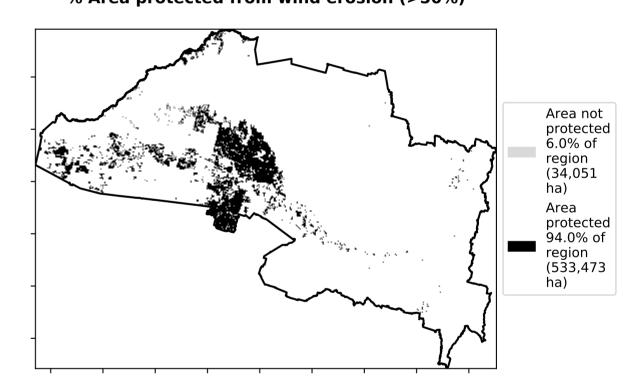
Land use class **Proportion of vegetation cover class in area**



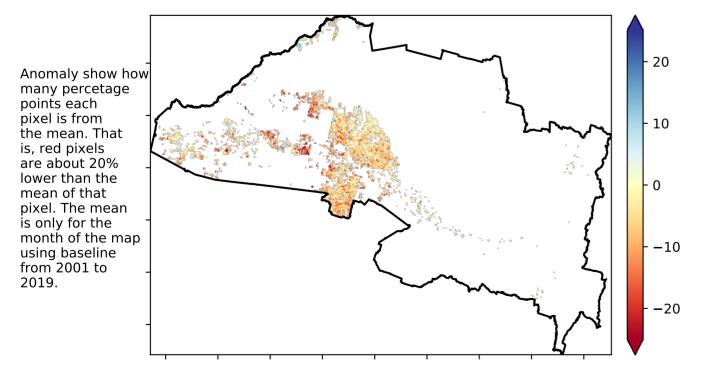




% Area protected from wind erosion (>50%)







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 map using baseline from 2001 to 2019.



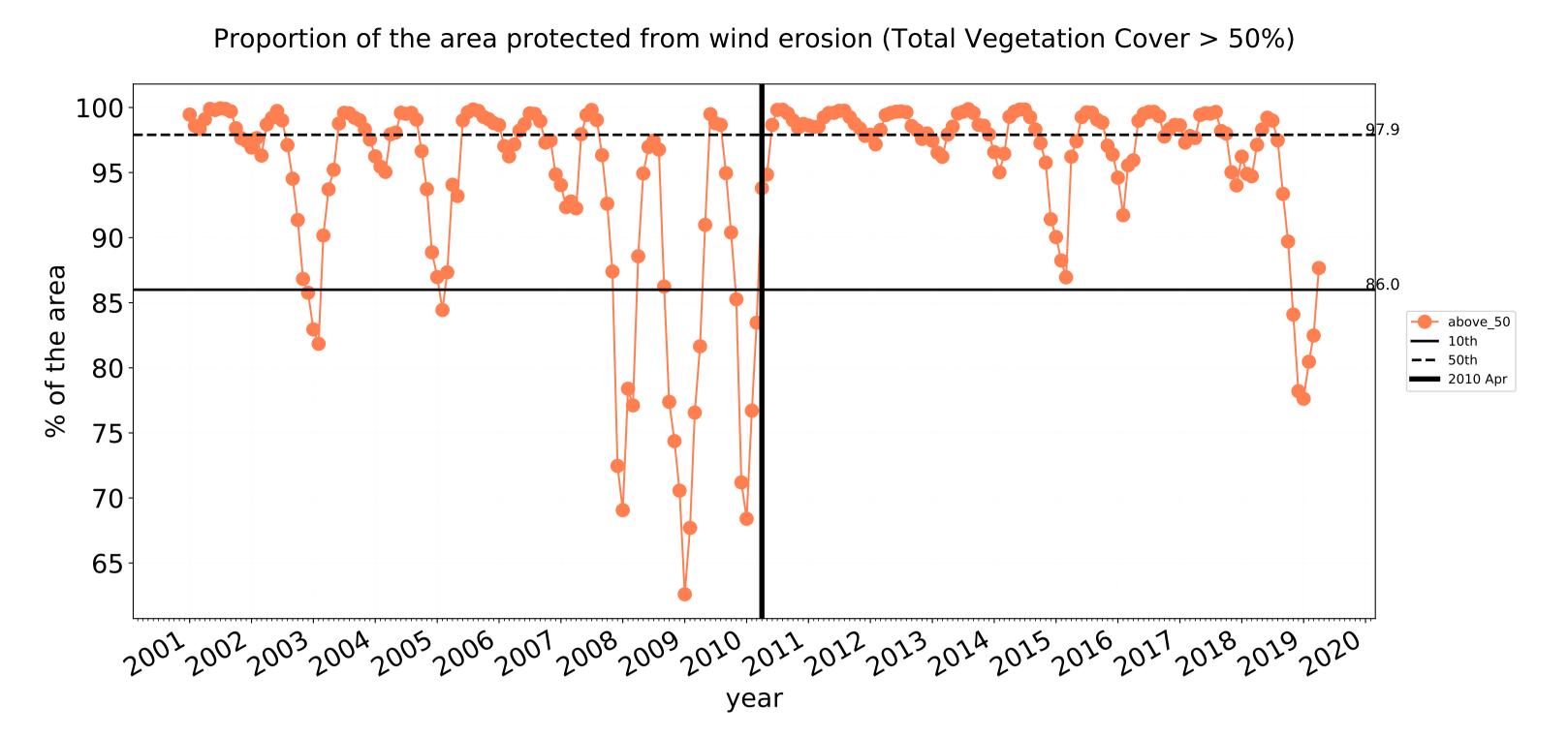


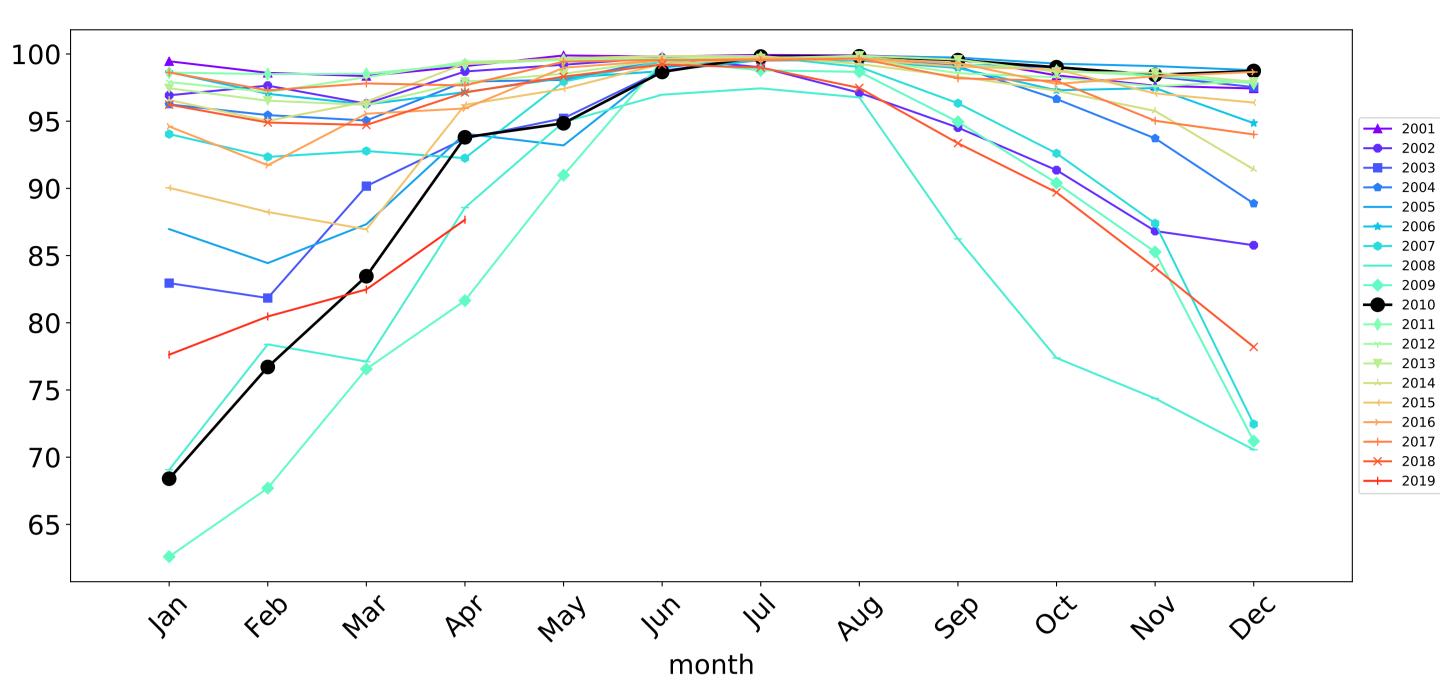




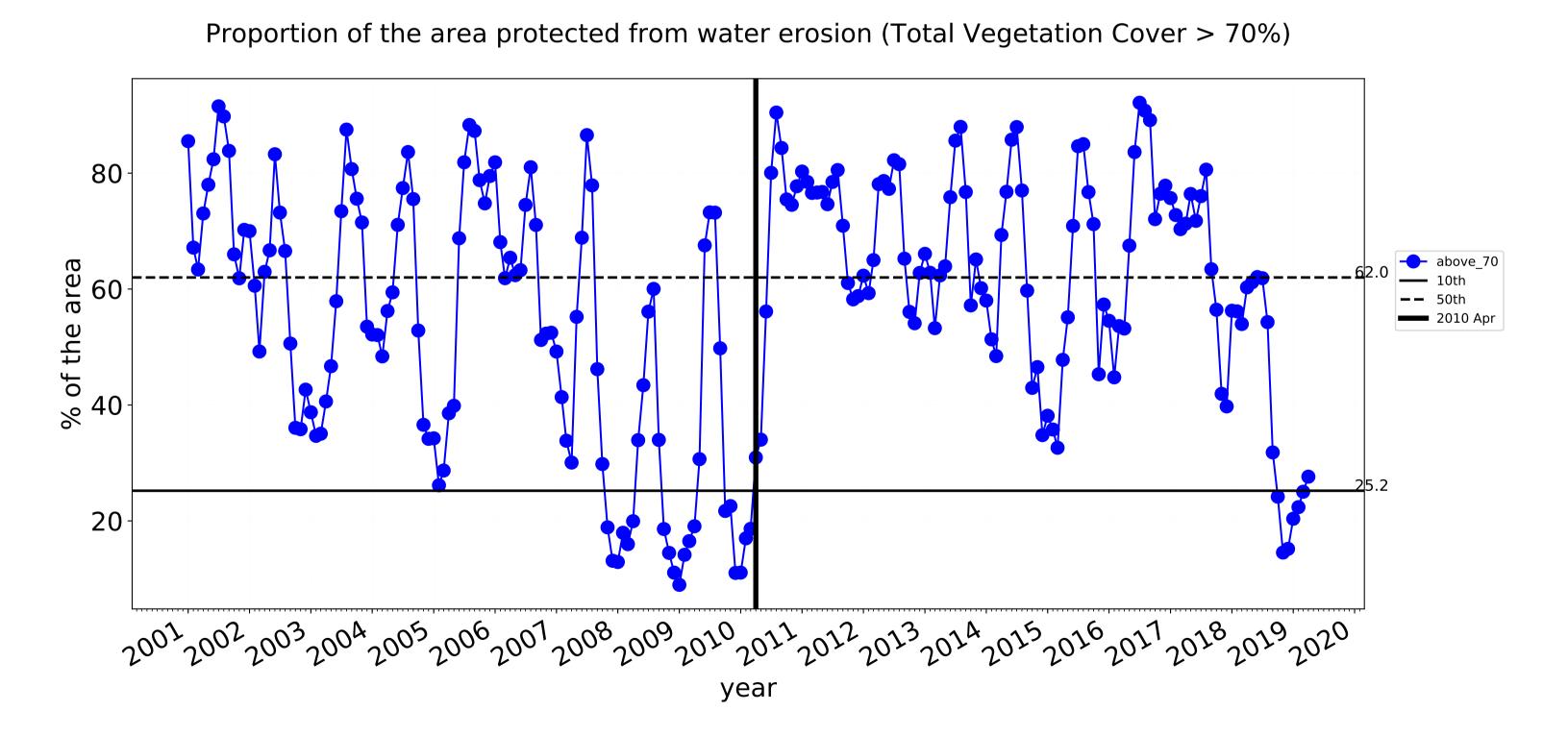


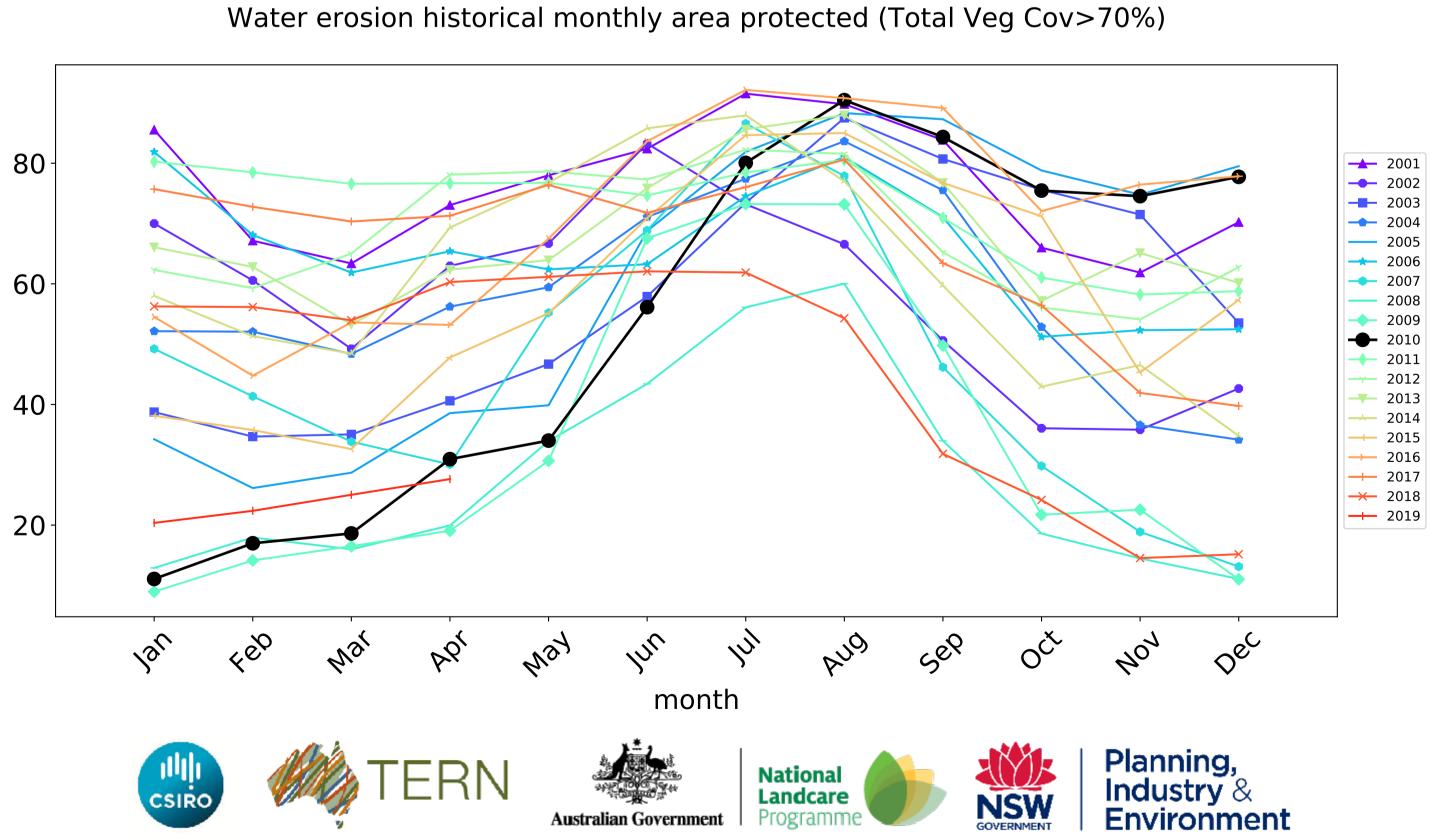






Wind erosion historical monthly area protected (Total Veg Cov >50%)



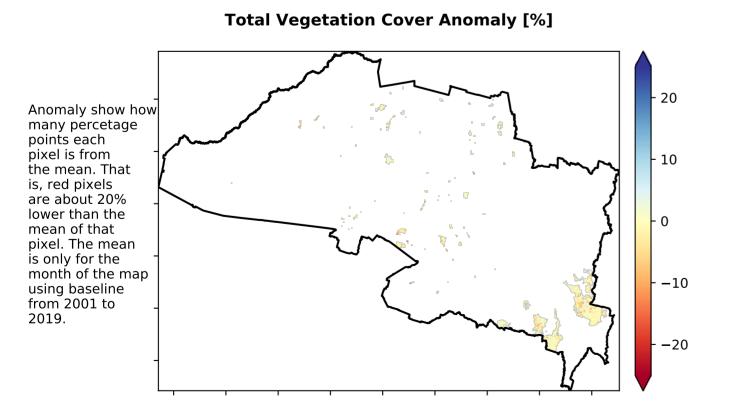


Production native forests and plantation forests

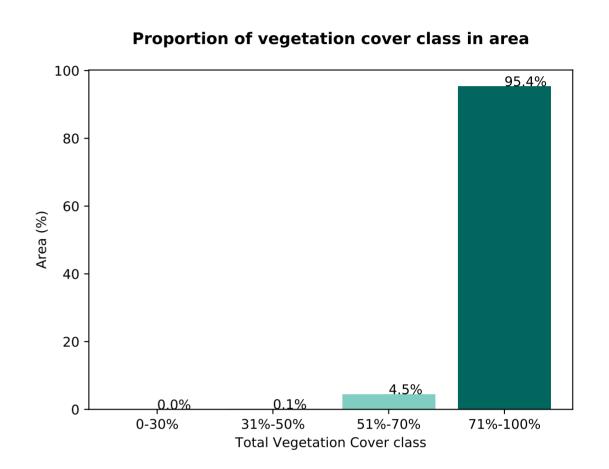
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) (2018) and Forests of Australia (2018)

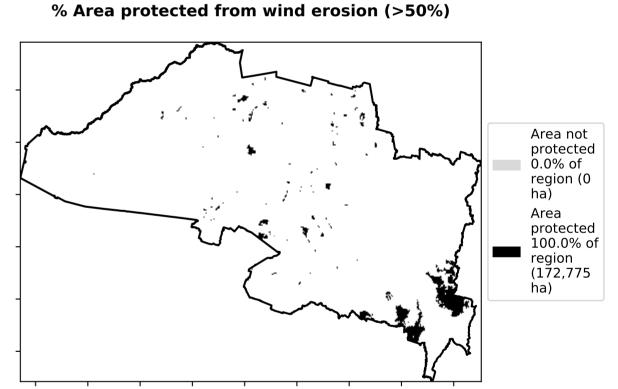
Total Vegetation Cover [%]

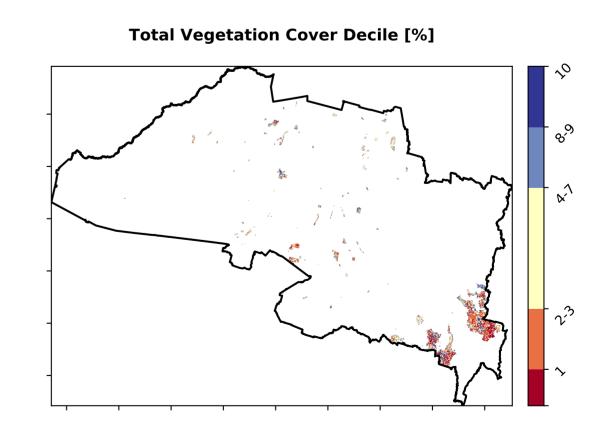
Area not protected 4.6% of region (7,947 ha) Area protected 95.4% of region (164,827 ha)



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.











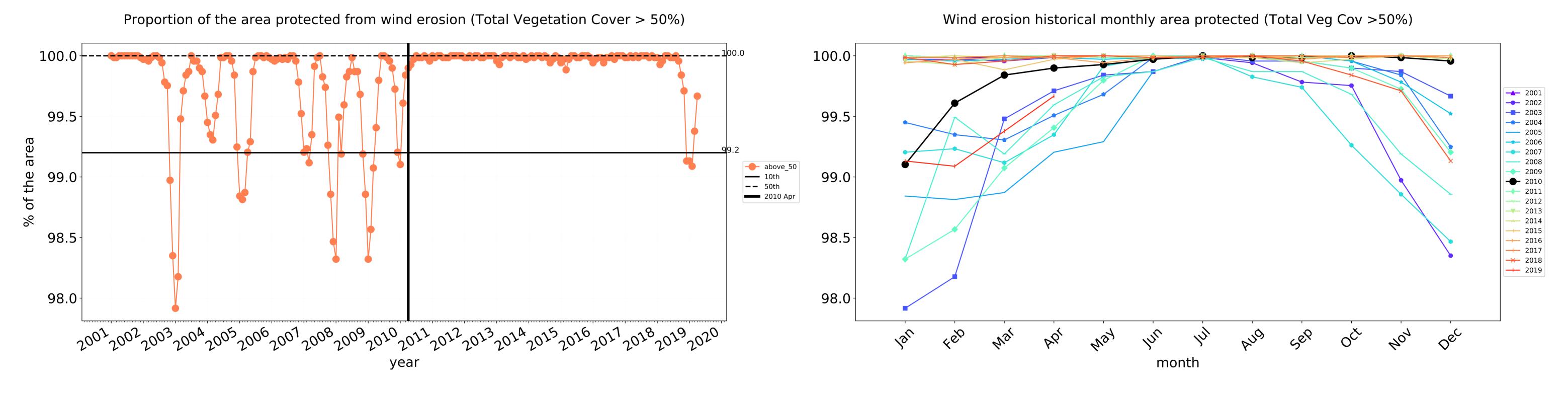


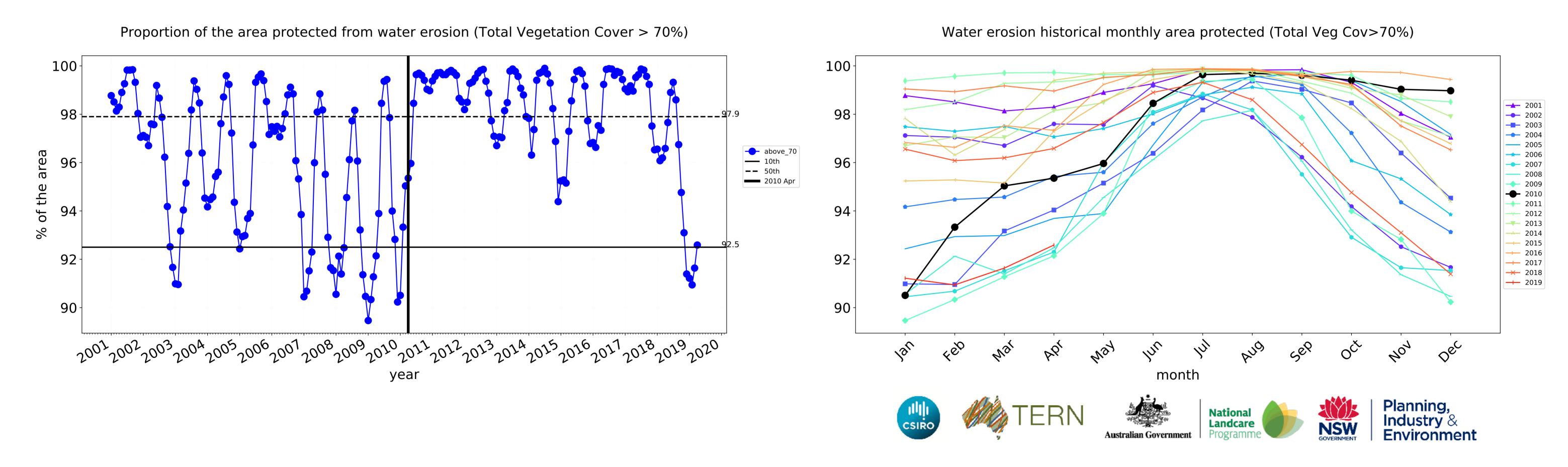






Production native forests and plantation forests timeseries





Riverina (6,693,600 ha and no data 14,735 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	6,693,600	99.9% 6,689,199	89.8% 6,009,606	41.0% 2,743,299	25.4% 1,701,633	10.9% 730,896	3.3% 223,314
Conservation and natural environments	323,000	100.0% 322,950	95.3% 307,725	79.5% 256,650	76.0% 245,500	61.5% 198,500	29.9% 96,475
Conservation and natural environments non forest	83,350	99.9% 83,300	81.7% 68,075	22.5% 18,775	16.8% 14,025	11.5% 9,625	4.9% 4,100
Conservation and natural environments Forest (non woodland)	195,150	100.0% 195,150	100.0% 195,150	99.7% 194,600	98.3% 191,875	85.9% 167,675	44.5% 86,775
Agriculture	6,067,675	99.9% 6,063,925	89.2% 5,412,425	37.3% 2,261,125	21.0% 1,272,025	6.8% 412,375	1.0% 59,925
Grazing	2,311,425	99.9% 2,308,275	87.8% 2,030,375	43.7% 1,010,725	31.2% 721,875	13.1% 302,425	2.0% 47,150
Grazing non forest	2,066,425	99.8% 2,063,275	86.4% 1,785,750	38.3% 791,225	27.0% 558,550	11.1% 229,950	1.6% 32,150
Grazing Woodland forest	141,650	100.0% 141,650	99.8% 141,350	85.5% 121,175	56.1% 79,450	17.0% 24,025	2.4% 3,350
Grazing - Forest (non woodland)	103,350	100.0% 103,350	99.9% 103,275	95.1% 98,325	81.2% 83,875	46.9% 48,450	11.3% 11,650
Cropping	3,186,900	100.0% 3,186,575	89.4% 2,848,800	33.7% 1,074,450	16.2% 516,525	3.4% 106,925	0.4% 12,200
Irrigation	567,525	100.0% 567,250	93.8% 532,350	30.9% 175,575	5.9% 33,425	0.5% 2,975	0.1% 575
Production native forests and plantation forests	172,775	100.0% 172,775	99.9% 172,600	95.4% 164,750	88.9% 153,675	66.4% 114,650	38.5% 66,475











