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 2008

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







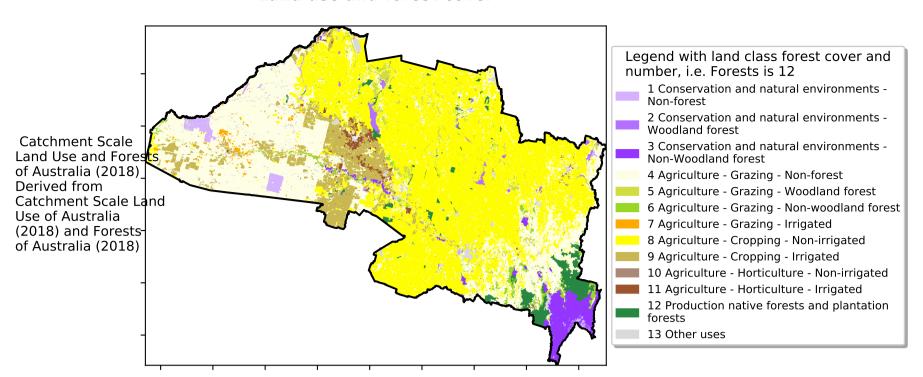




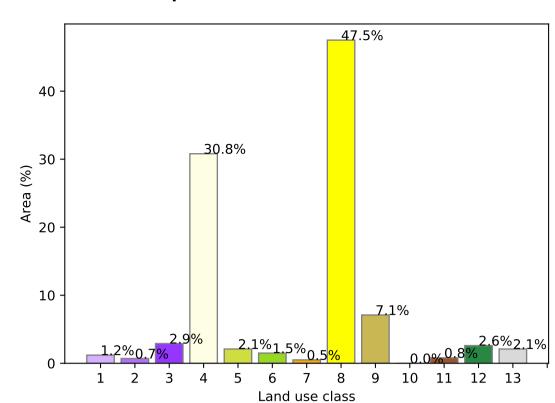


Vegetation Cover Sep 2008

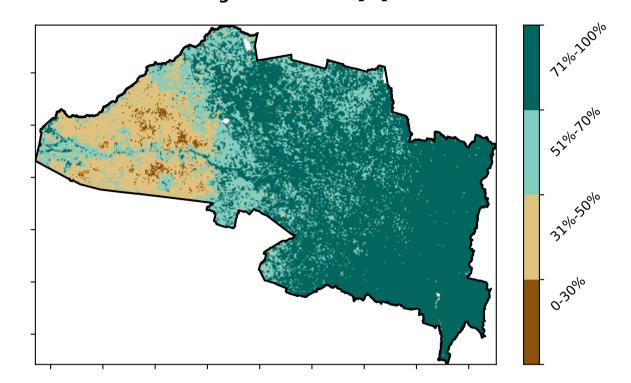
Land use and forest cover



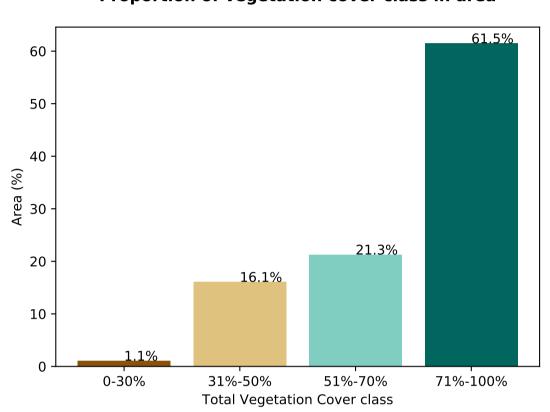
Proportion of each land class in area



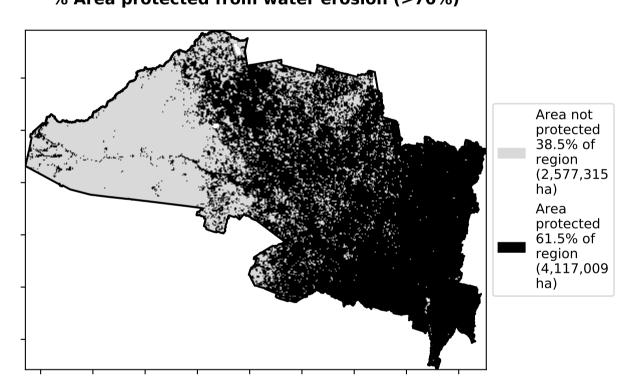
Total Vegetation Cover [%]



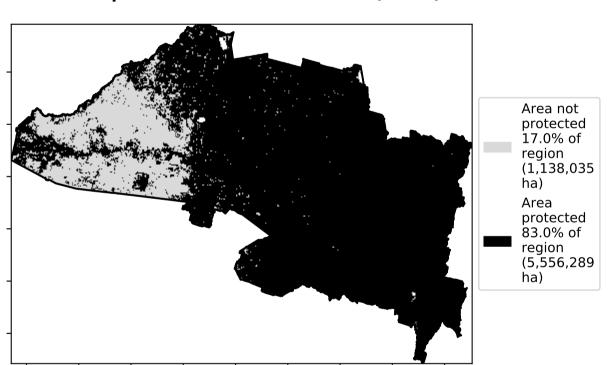
Proportion of vegetation cover class in area



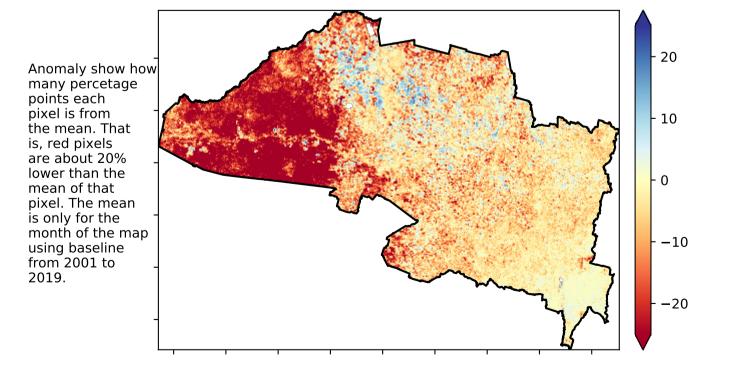
% Area protected from water erosion (>70%)



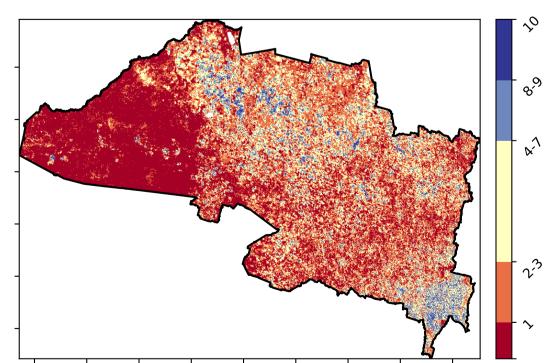
% Area protected from wind erosion (>50%)



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.





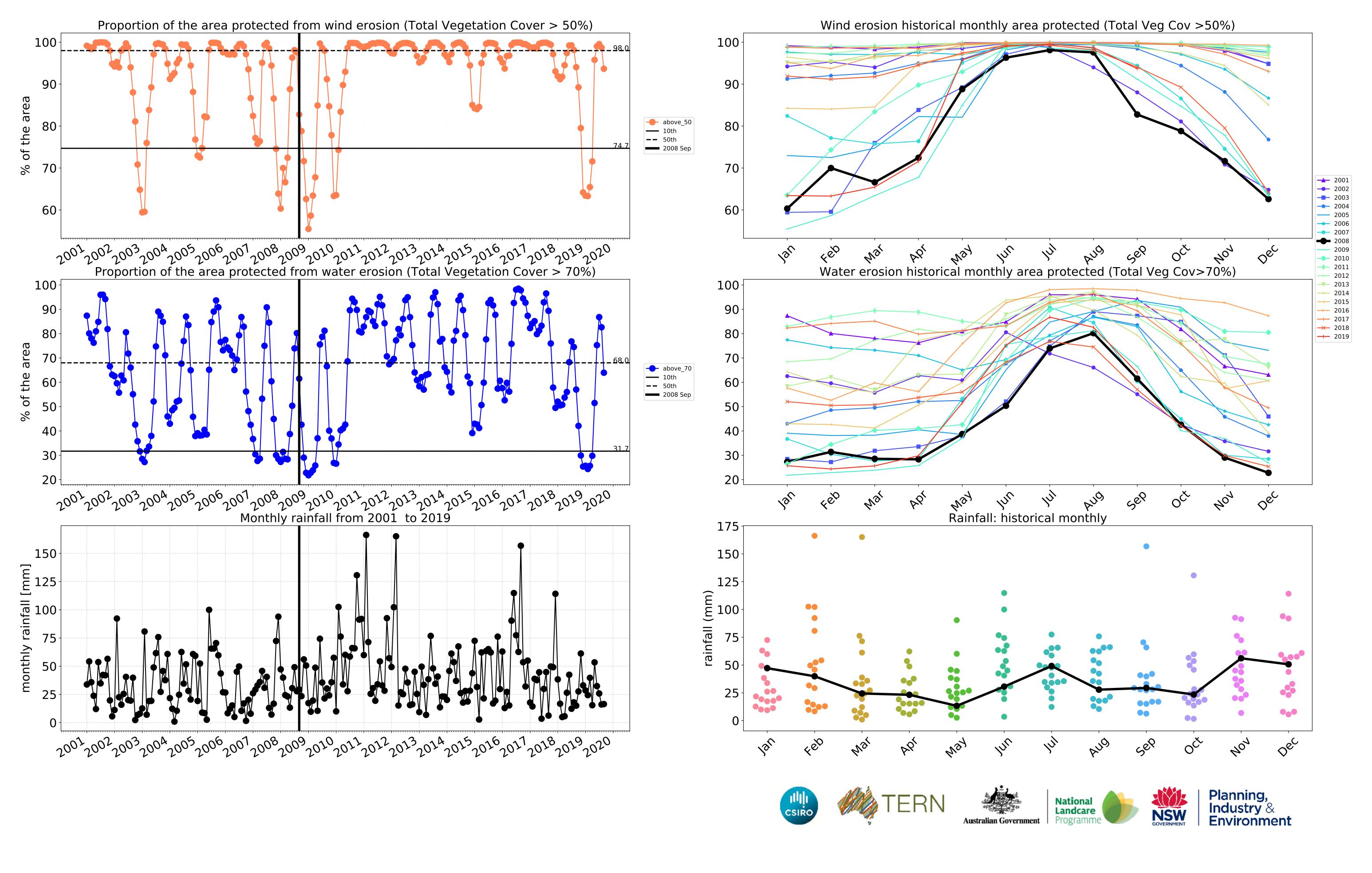




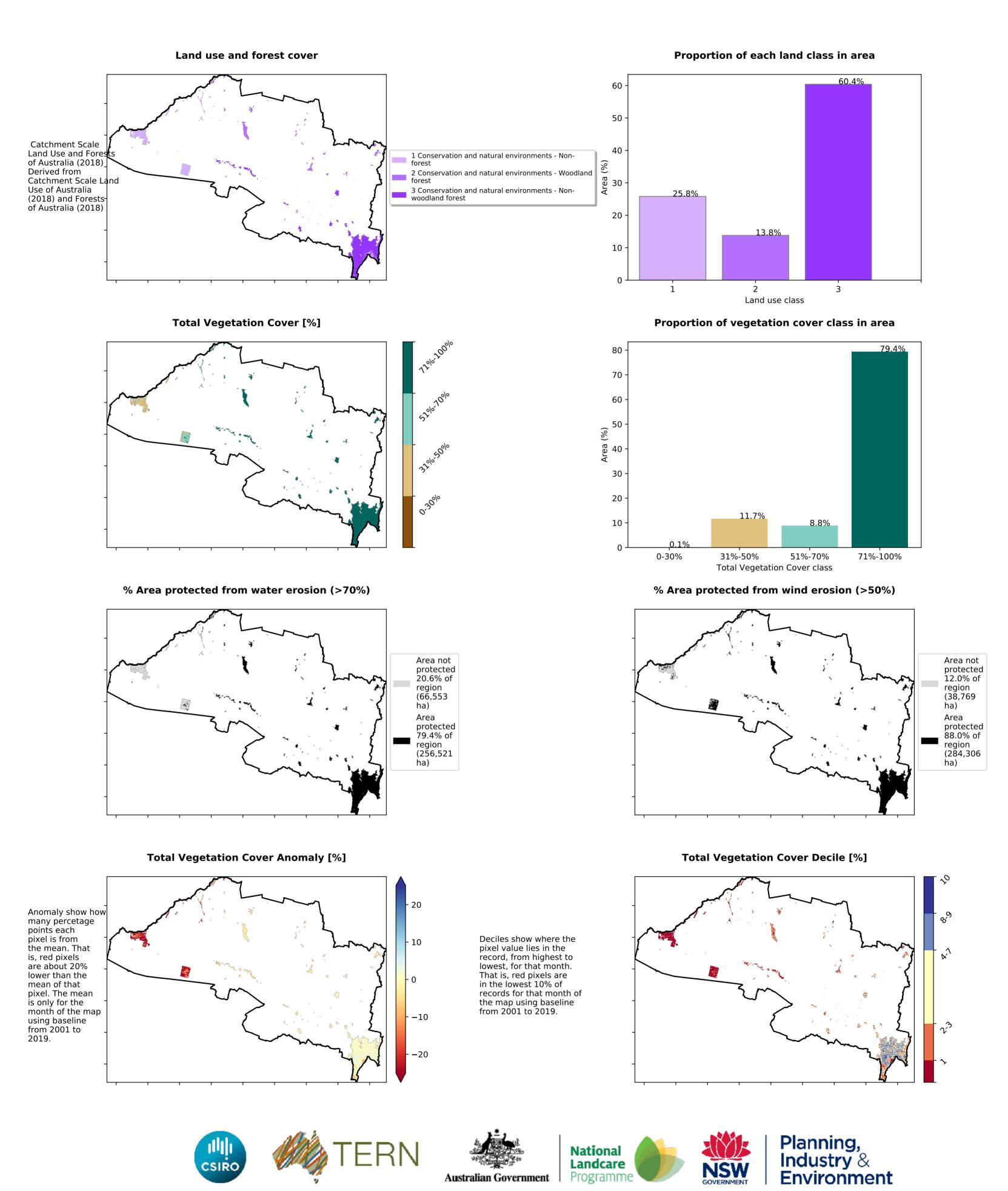




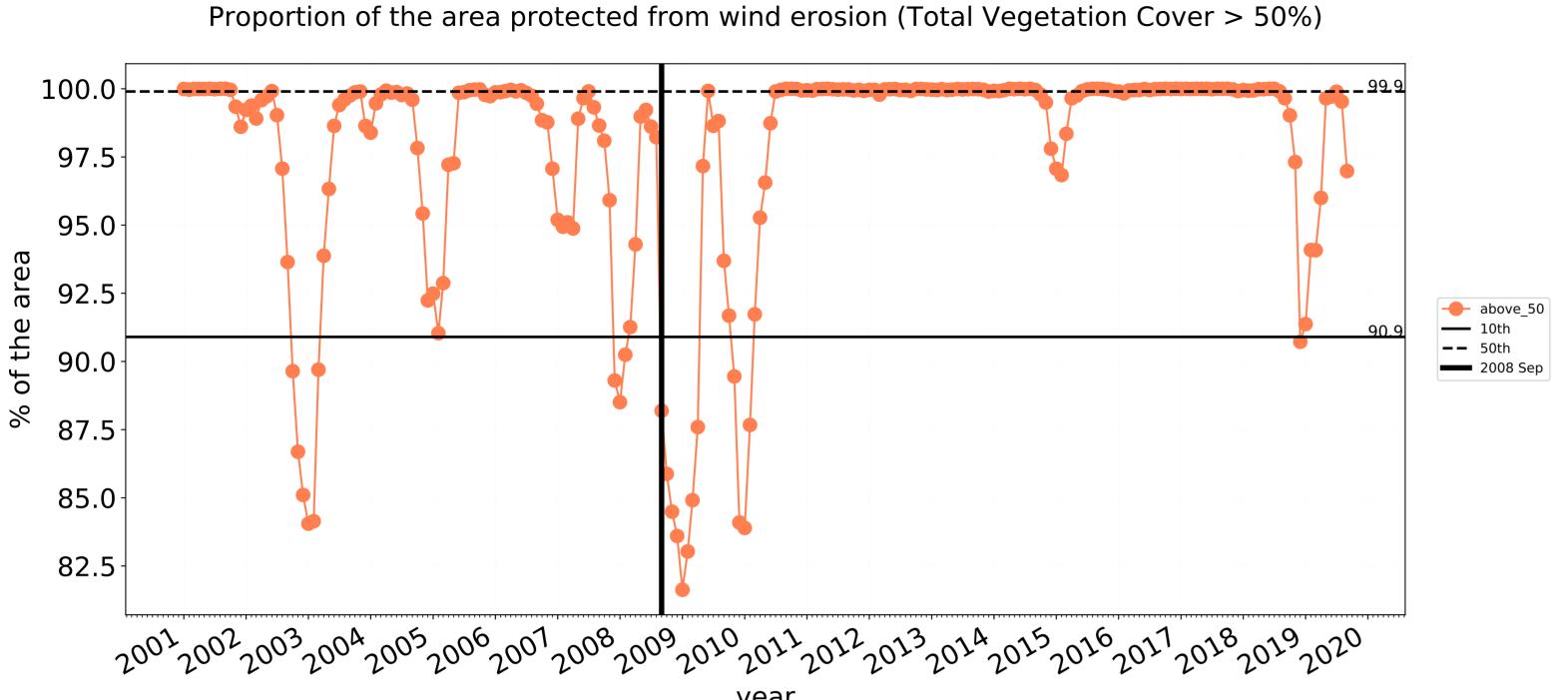


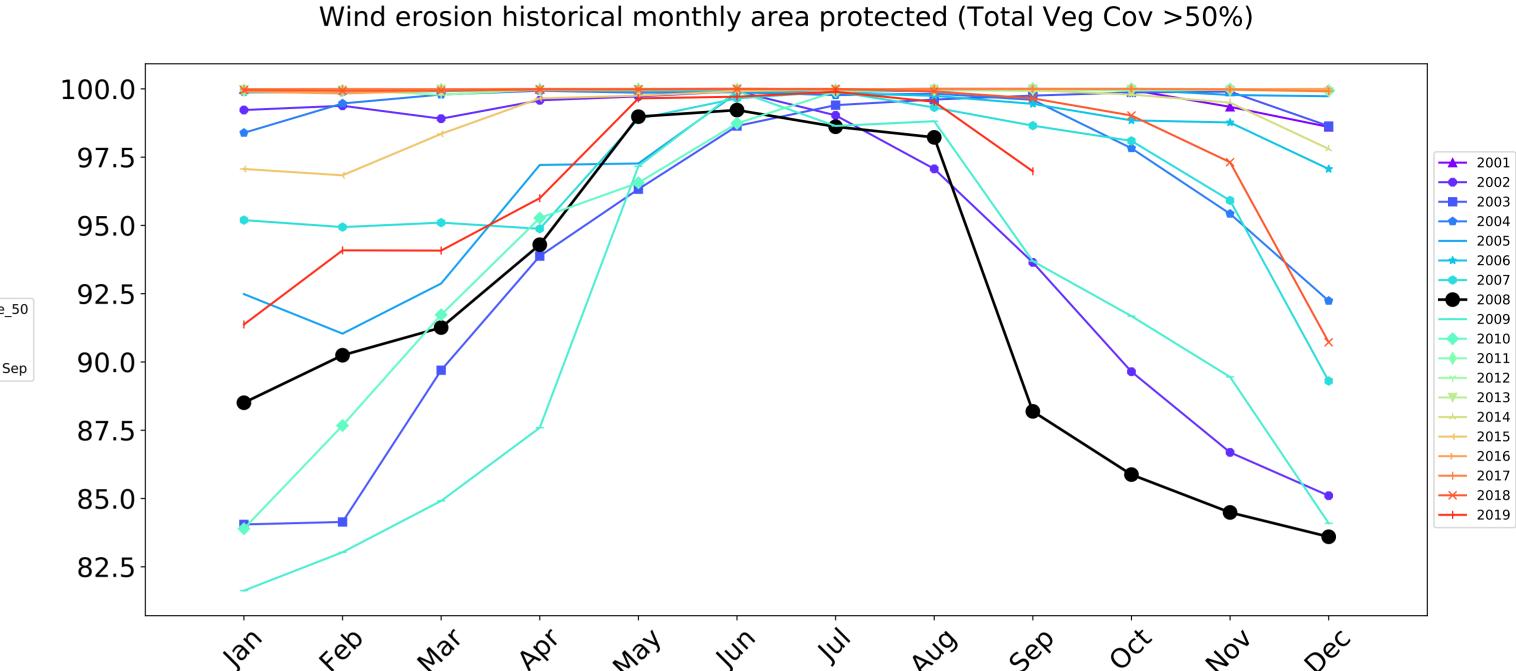


Conservation and natural environments

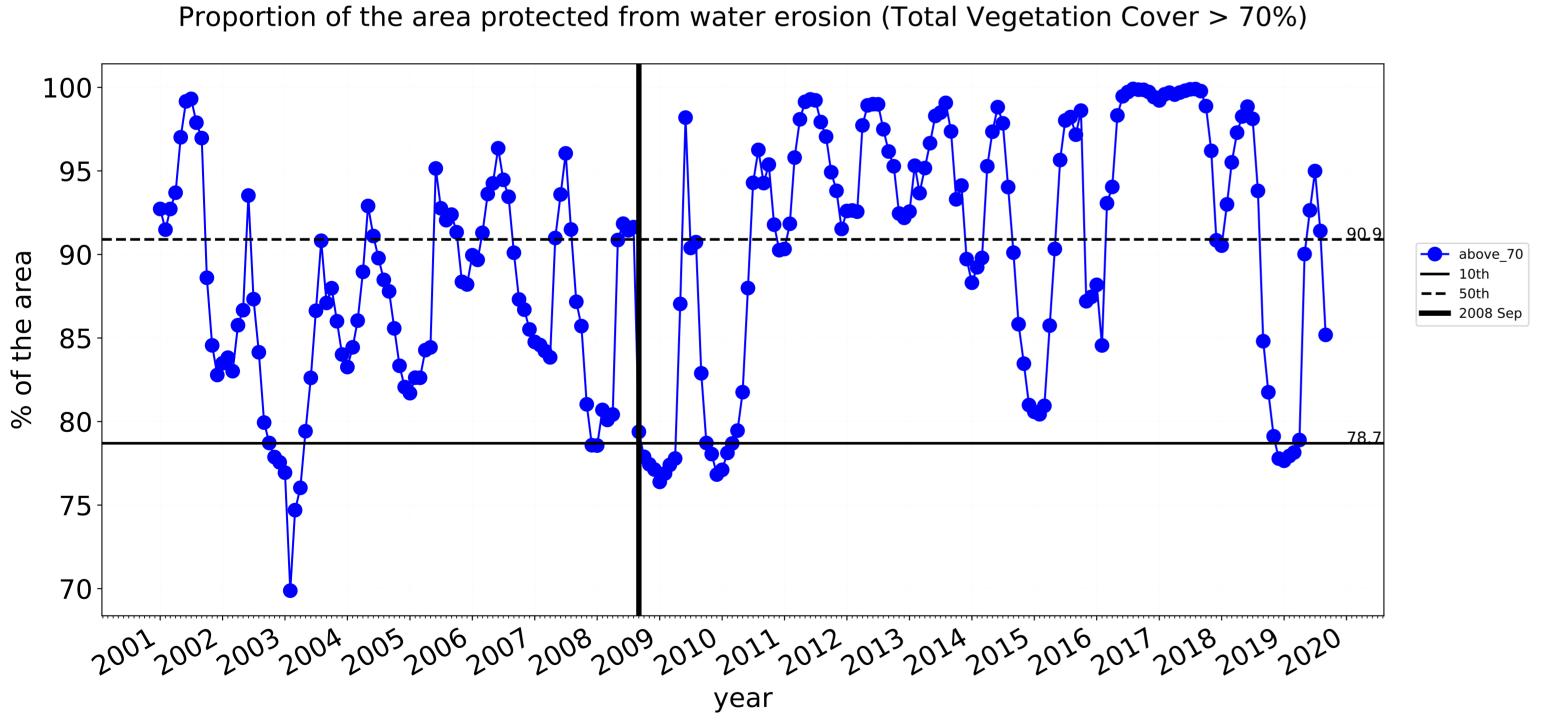


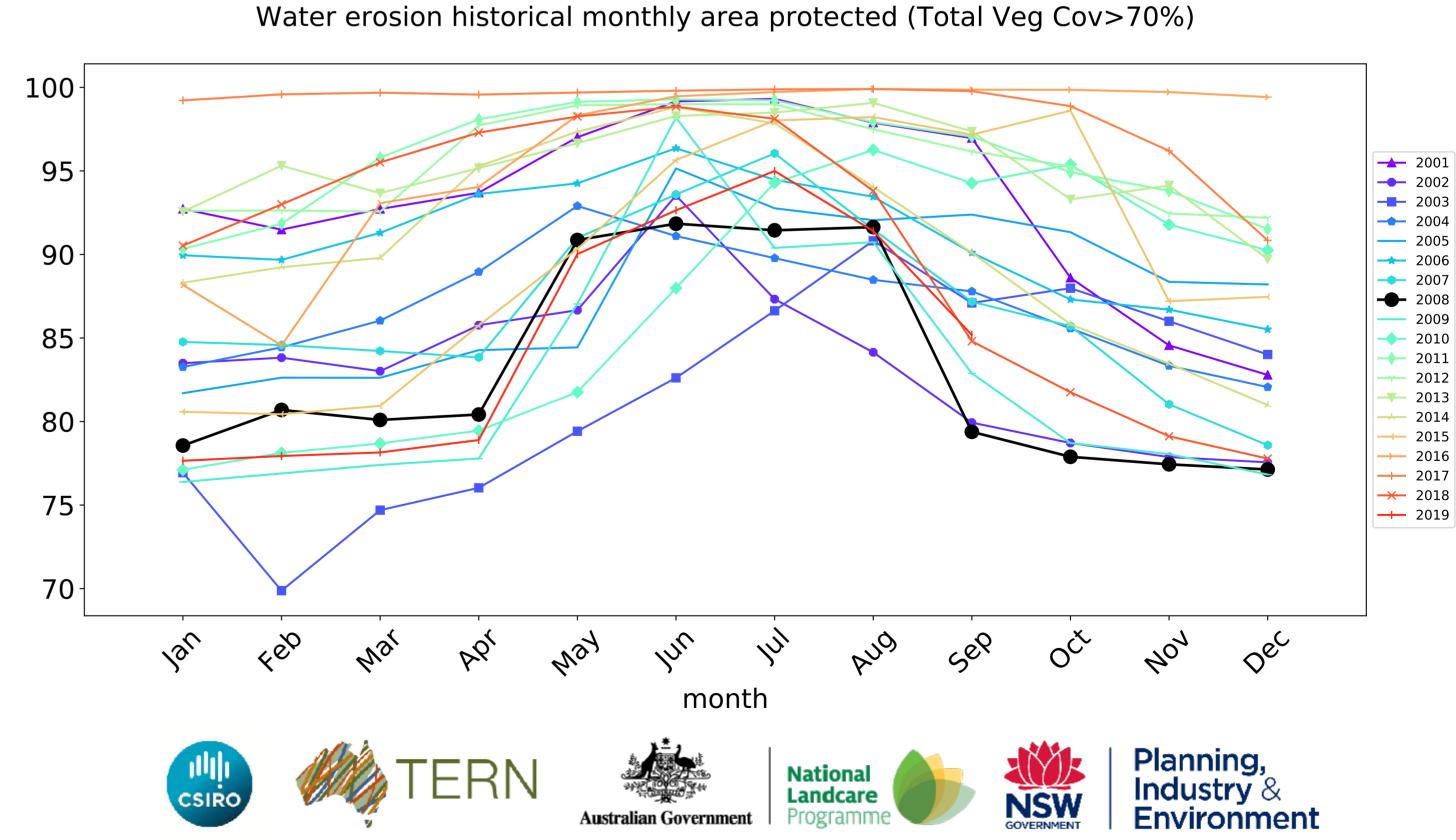
Conservation and natural environments timeseries





month



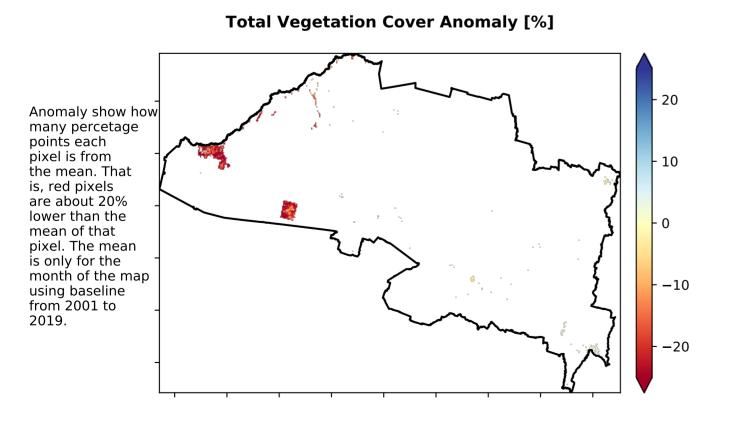


Conservation and natural environments non forest

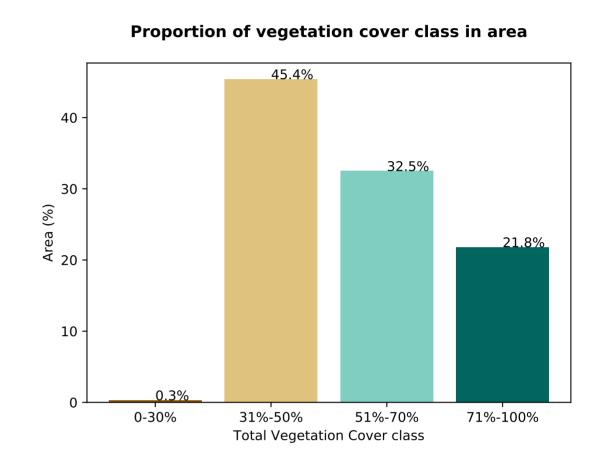
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

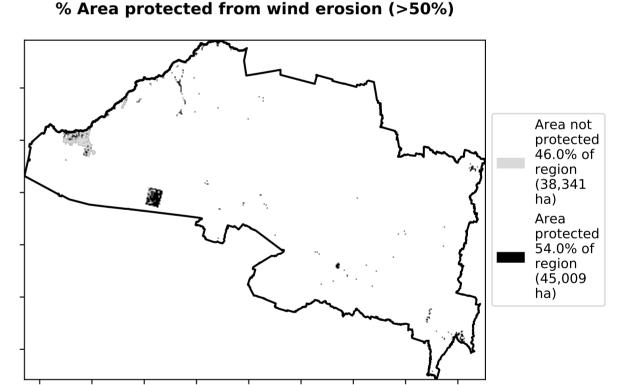
Total Vegetation Cover [%]

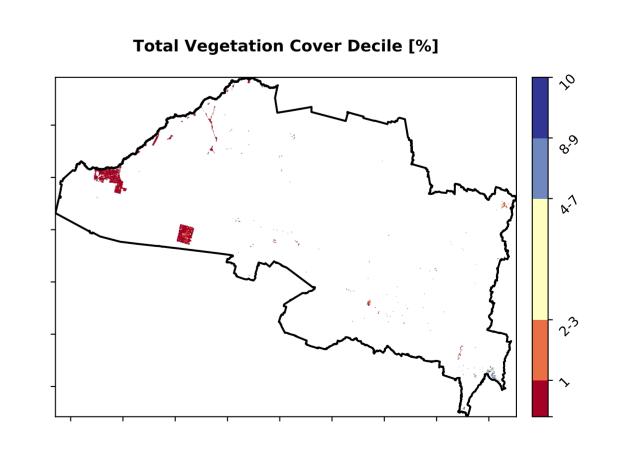
% Area protected from water erosion (>70%) Area not protected 78.2% of region (65,179 ha) Area protected 21.8% of region (18,170 ha)



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









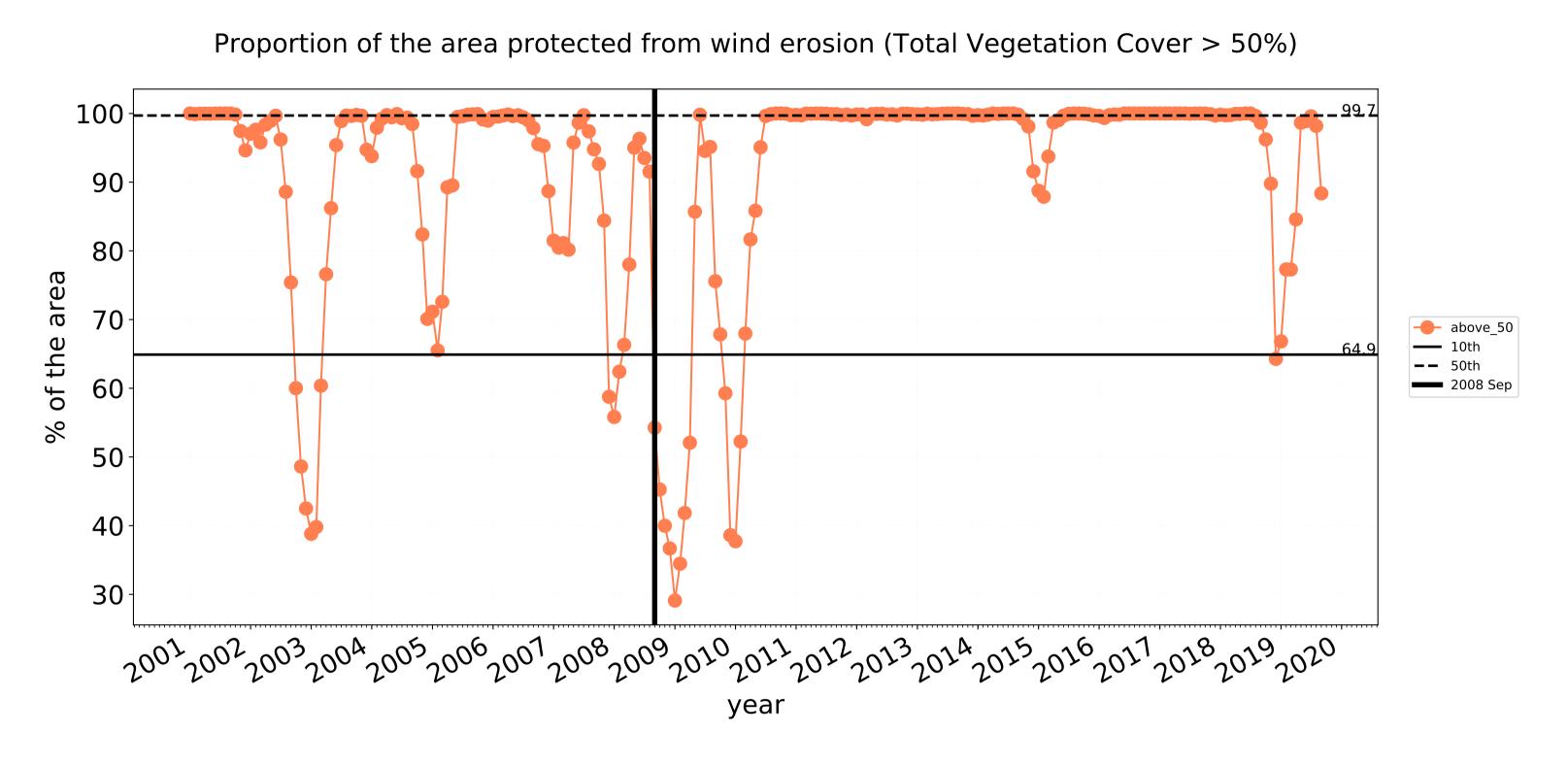


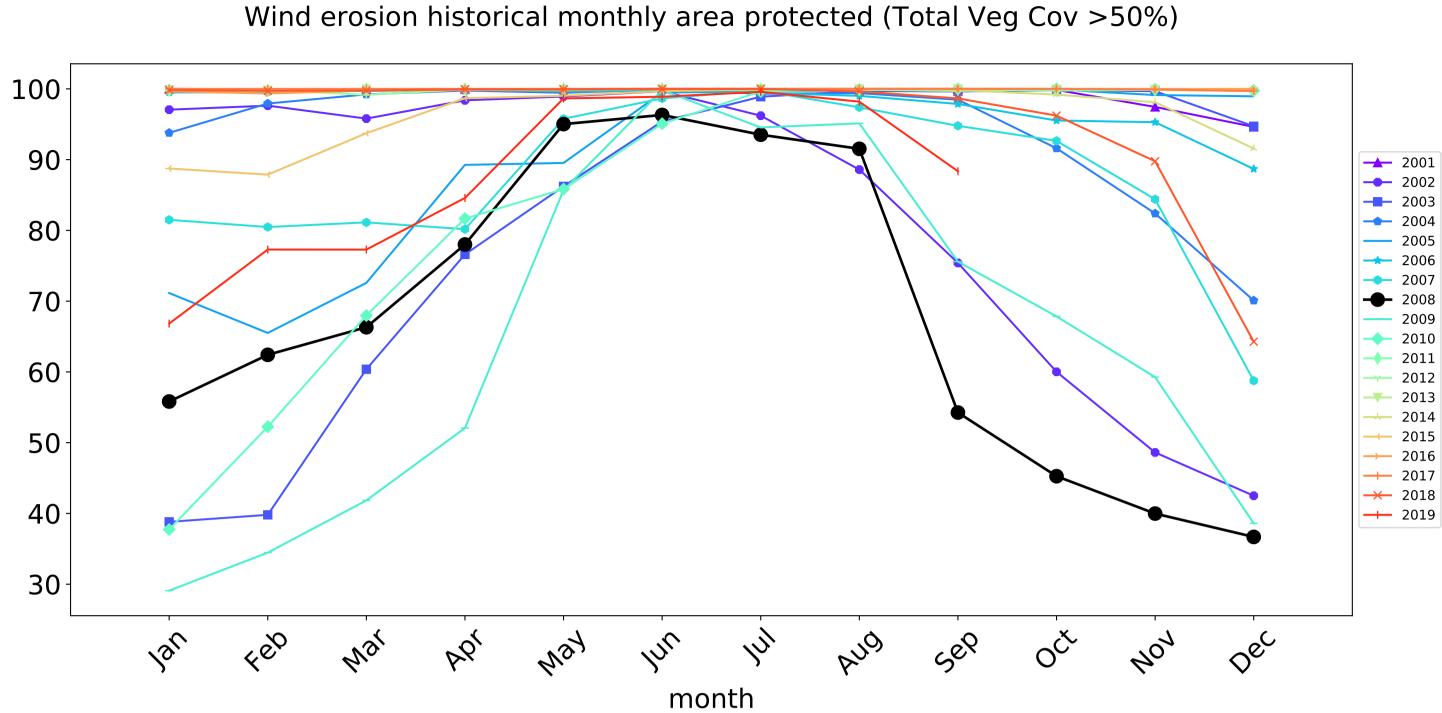


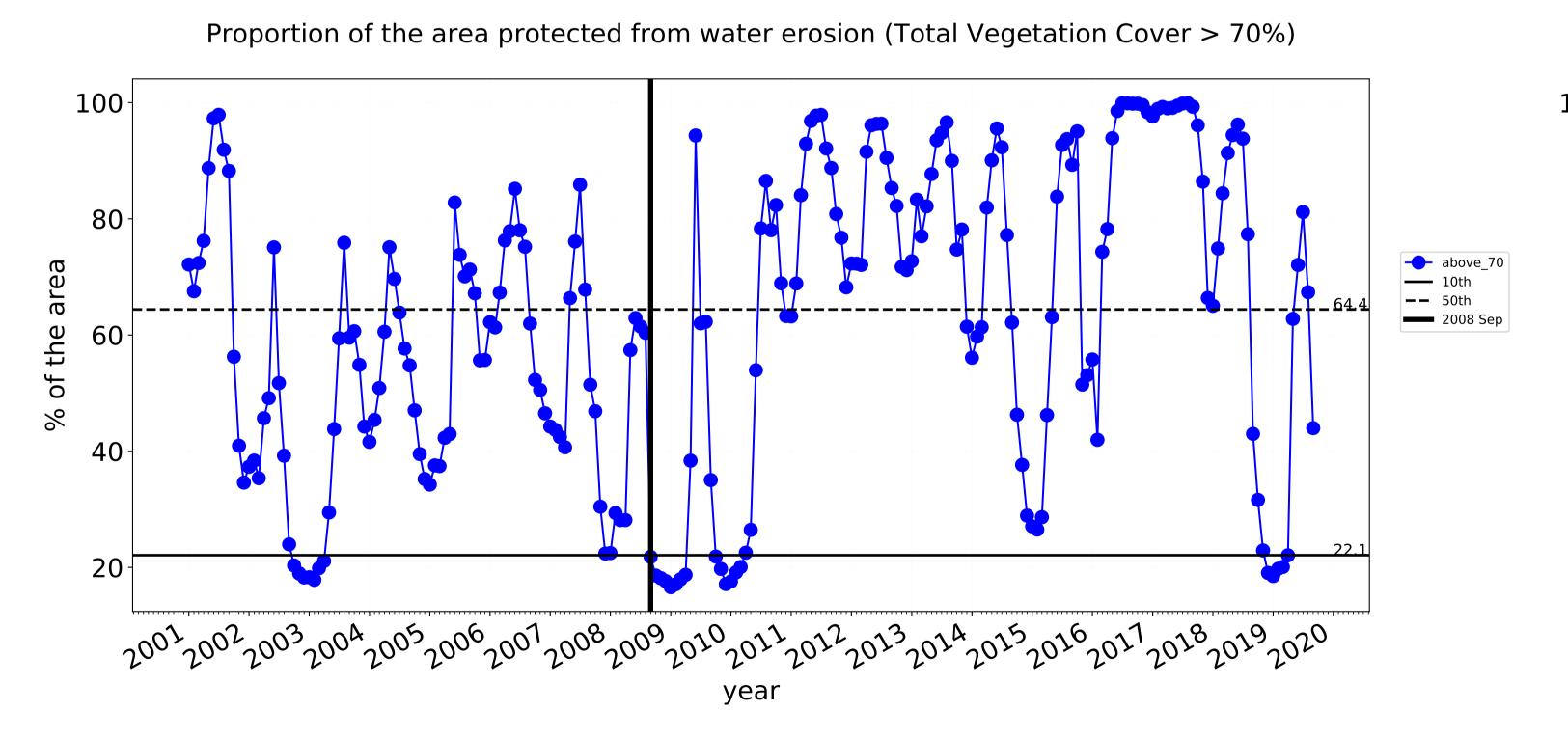


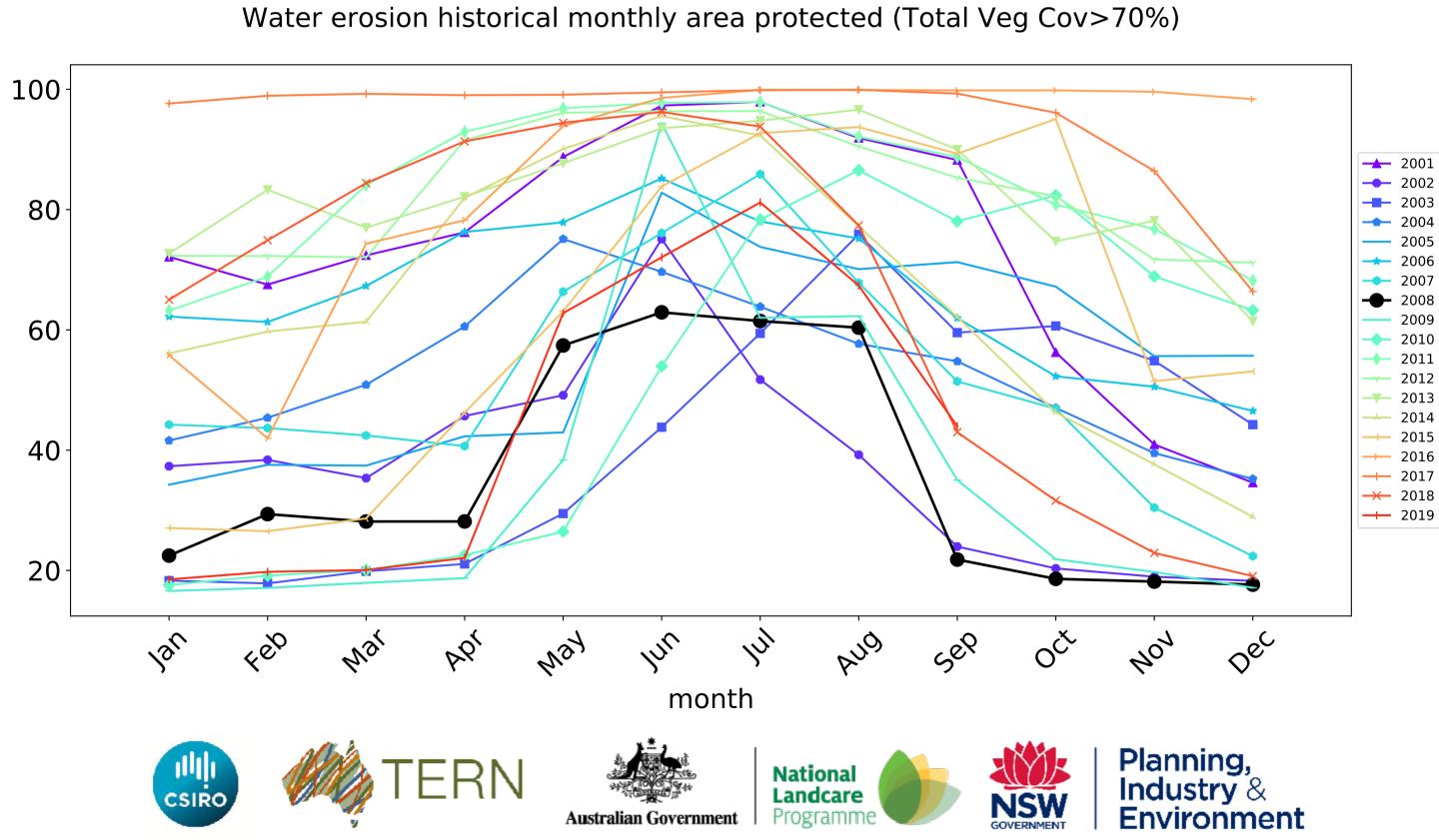


Conservation and natural environments non forest timeseries

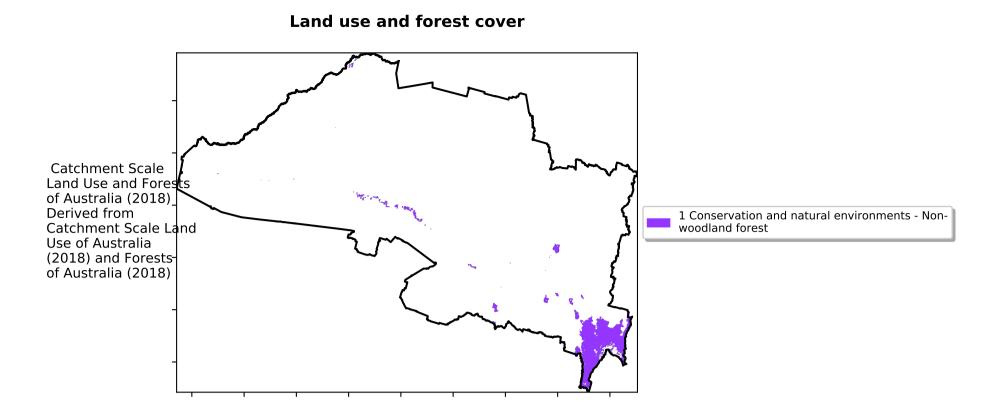


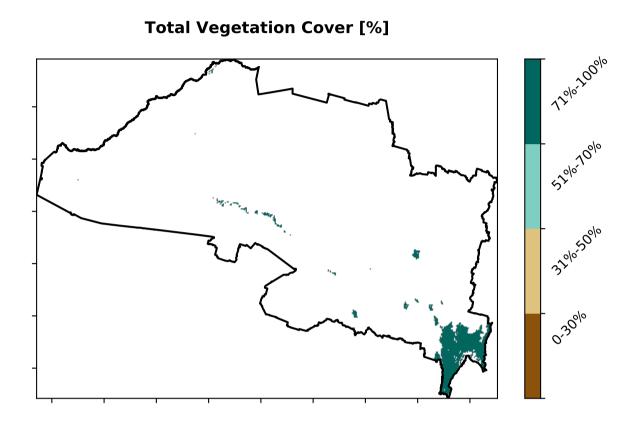


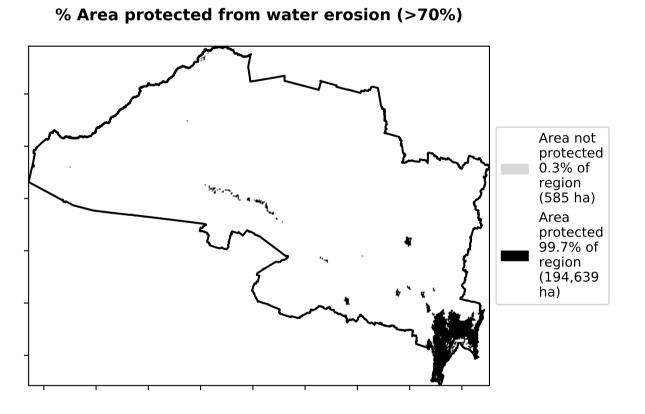


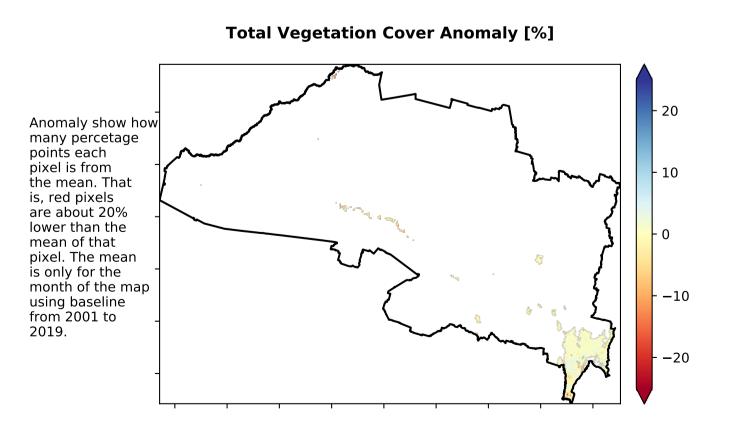


Conservation and natural environments Forest (non woodland)

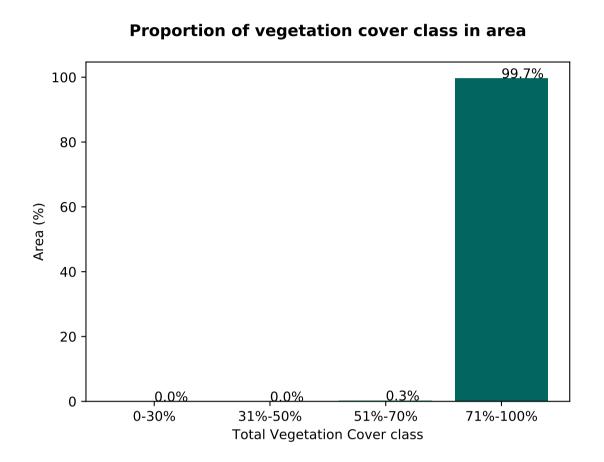


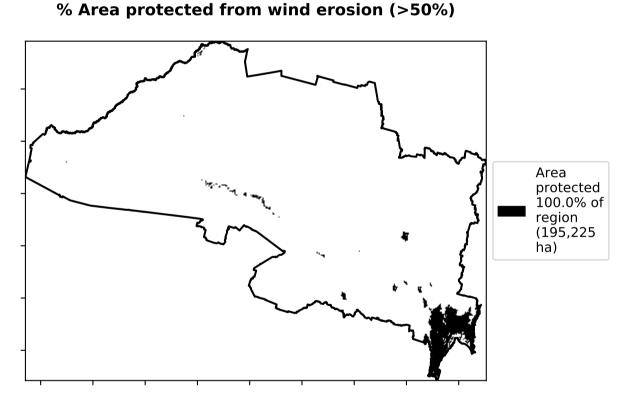


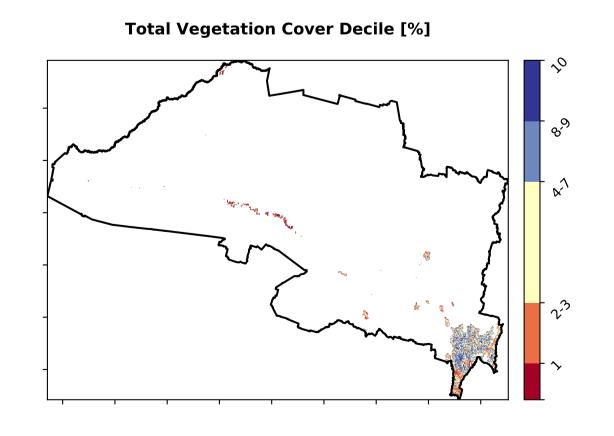




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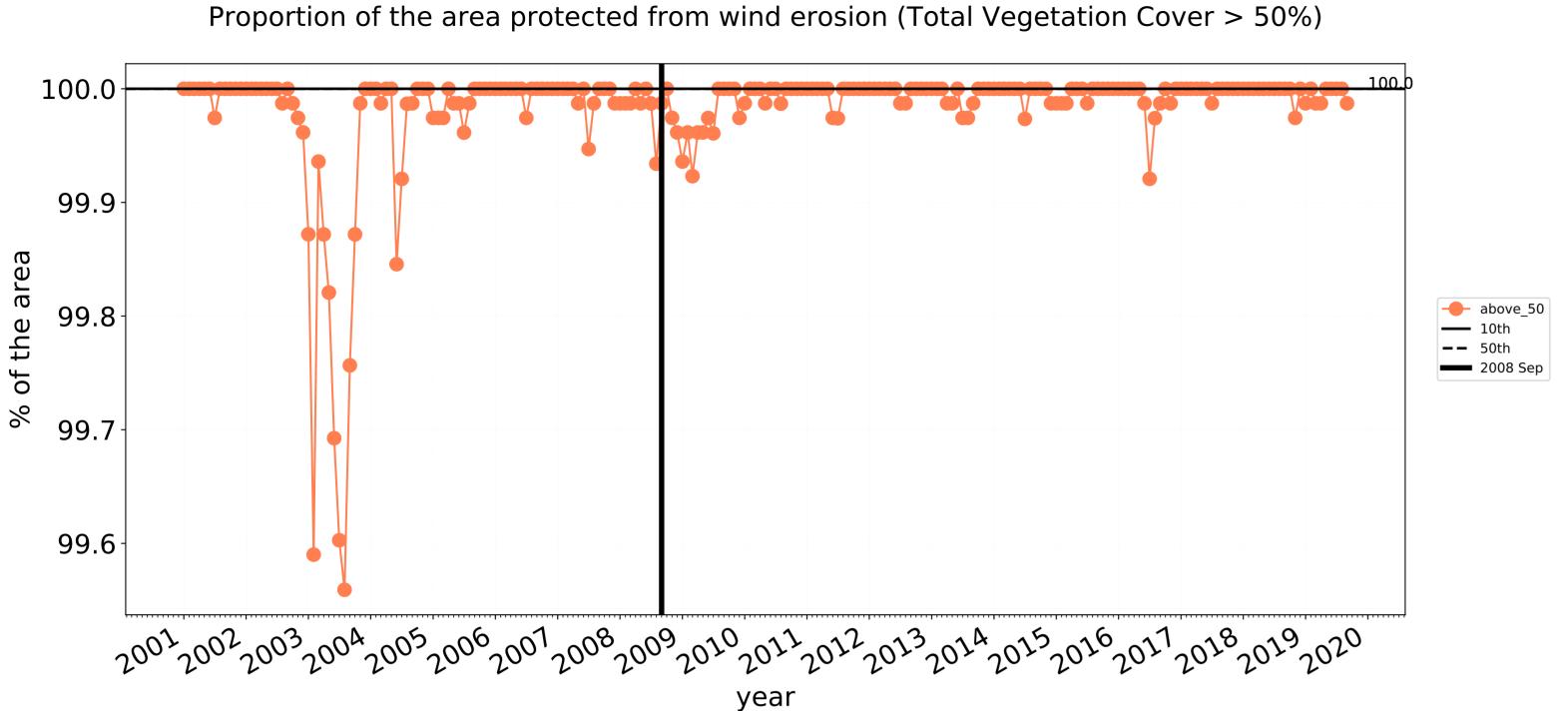


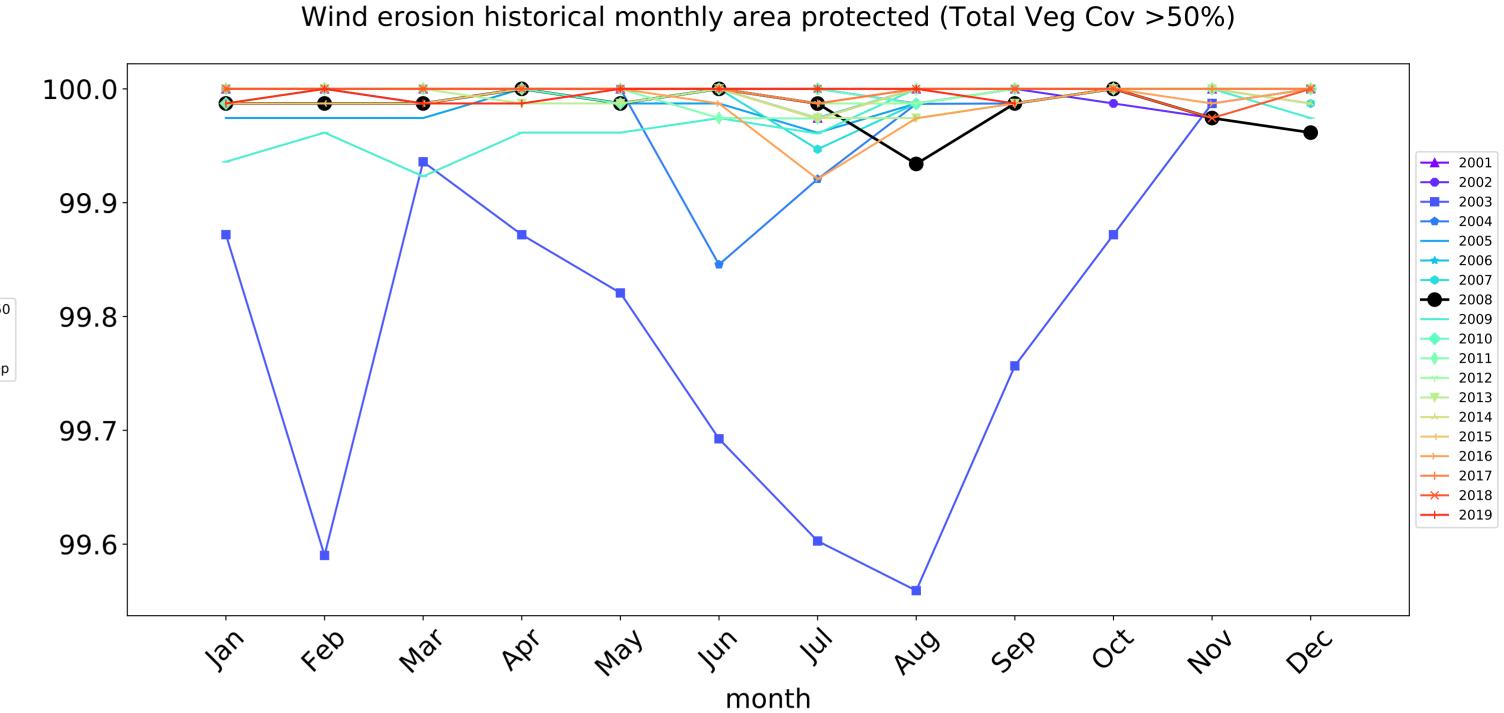


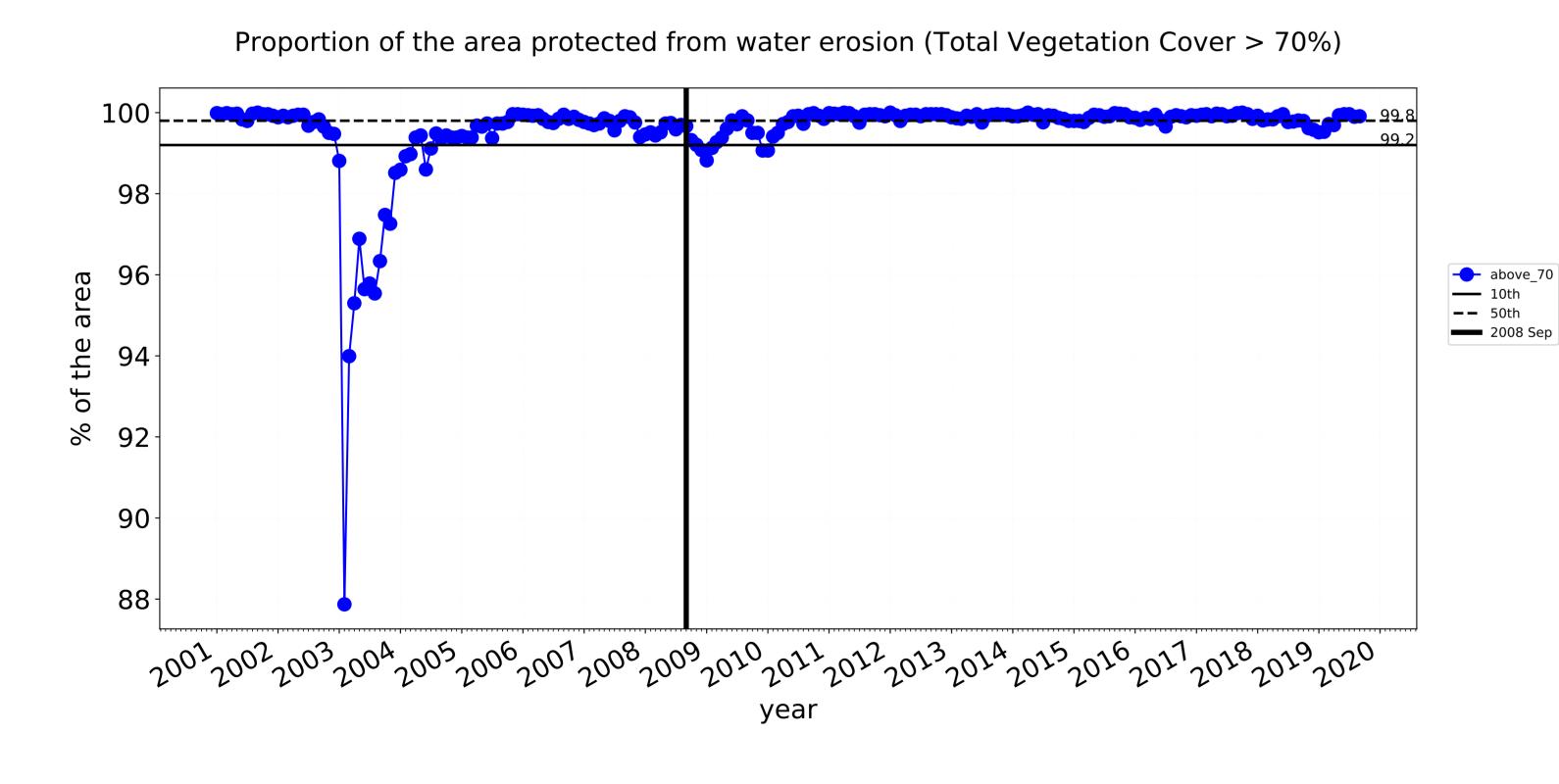


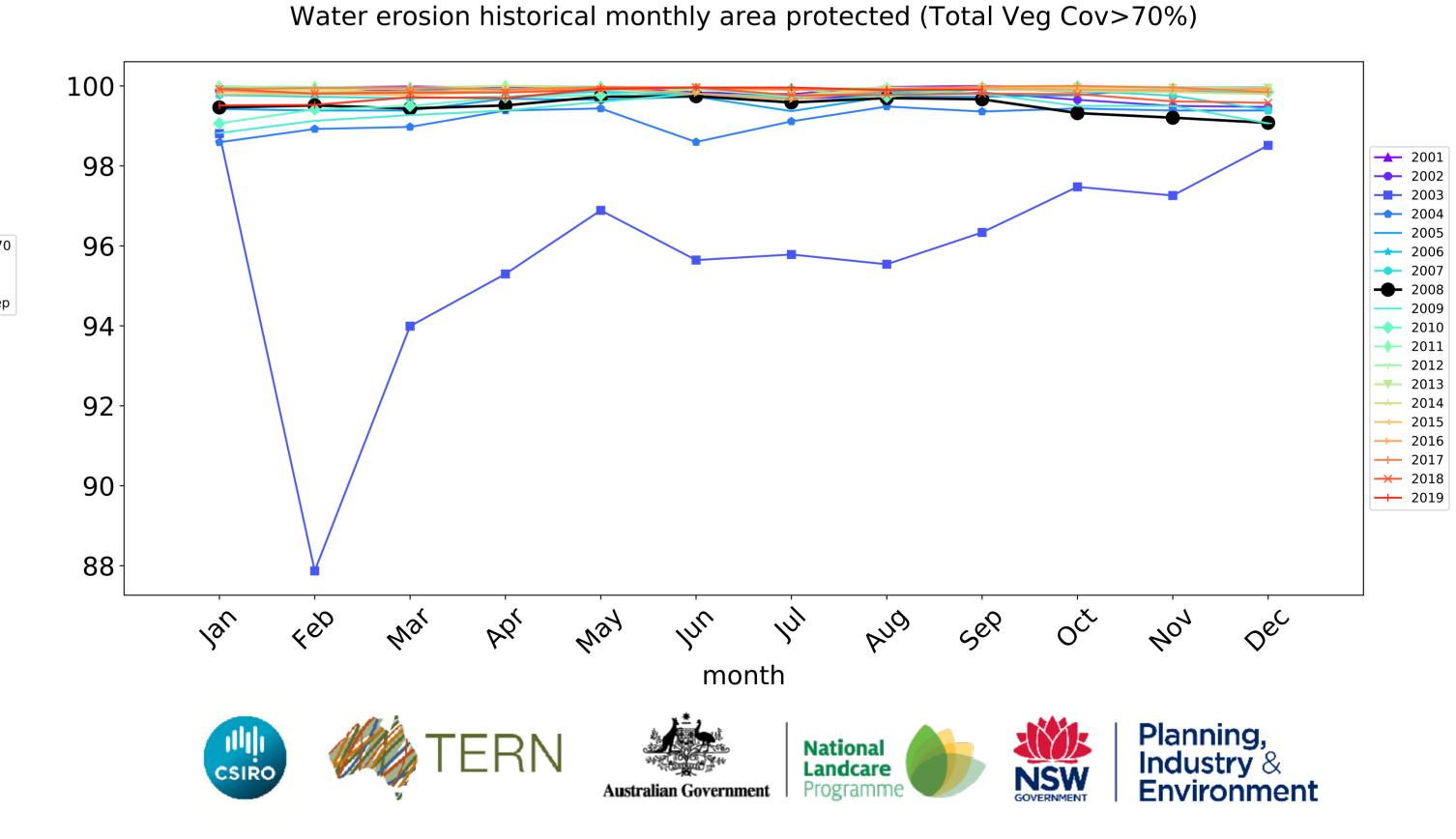








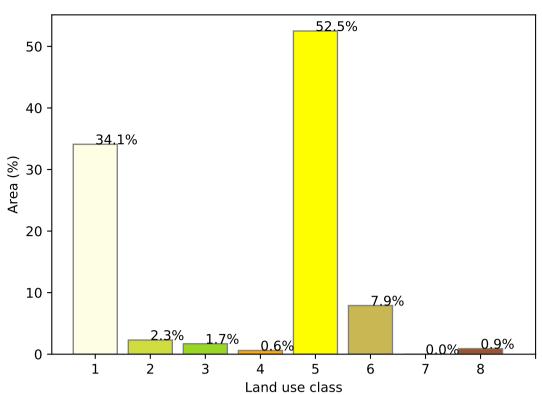




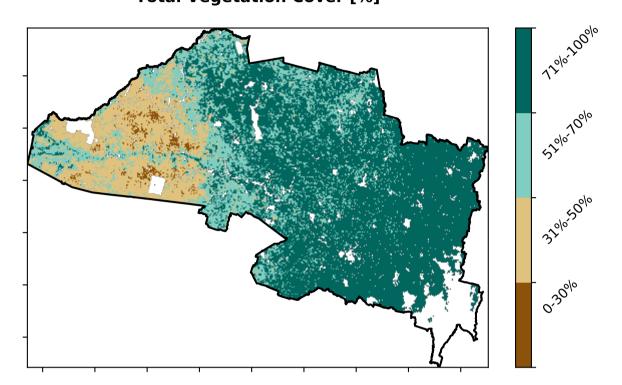
Agriculture

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) 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 - Non-irrigated 6 Agriculture - Cropping - Irrigated 7 Agriculture - Horticulture - Non-irrigated 8 Agriculture - Horticulture - Irrigated

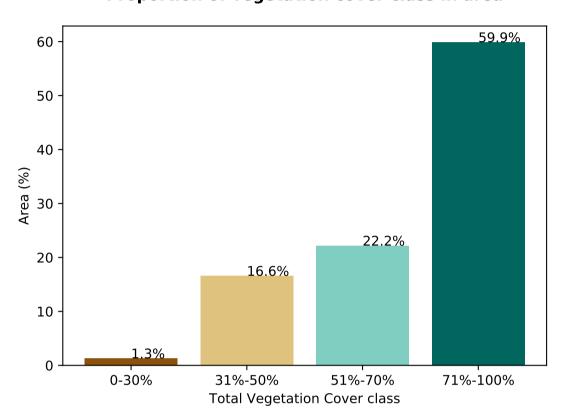
Proportion of each land class in area



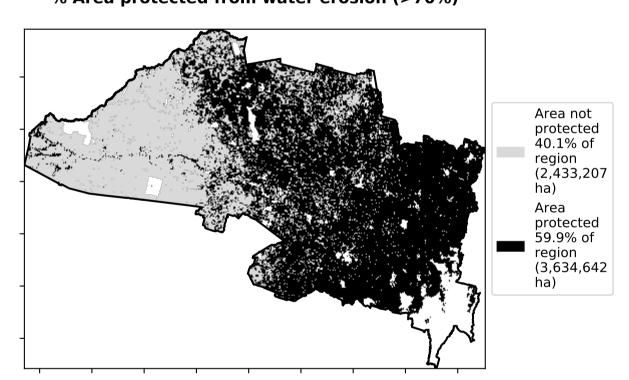
Total Vegetation Cover [%]



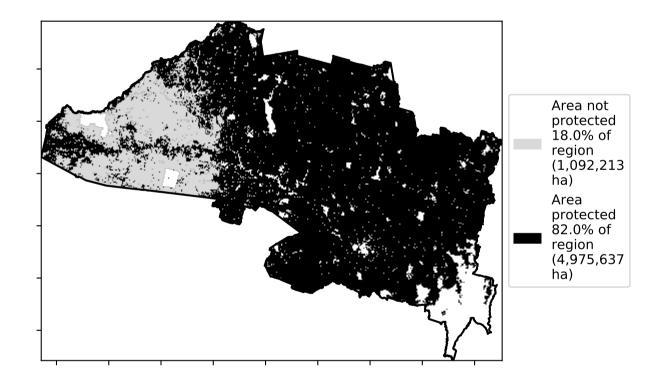
Proportion of vegetation cover class in area



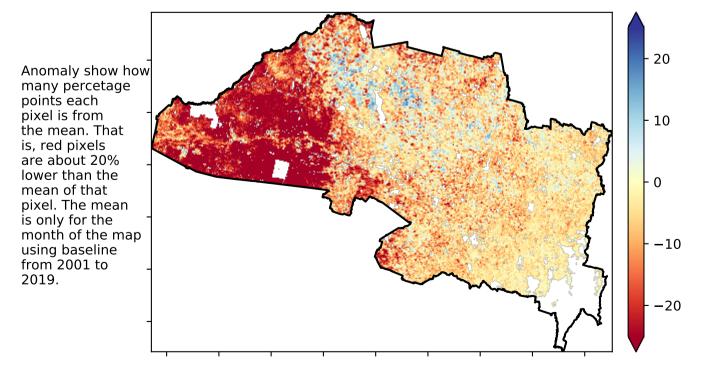
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

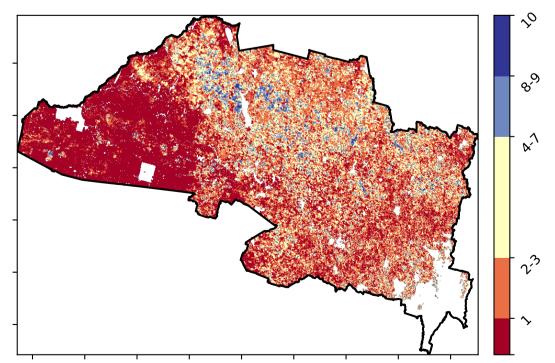


Total Vegetation Cover Anomaly [%]



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Total Vegetation Cover Decile [%]







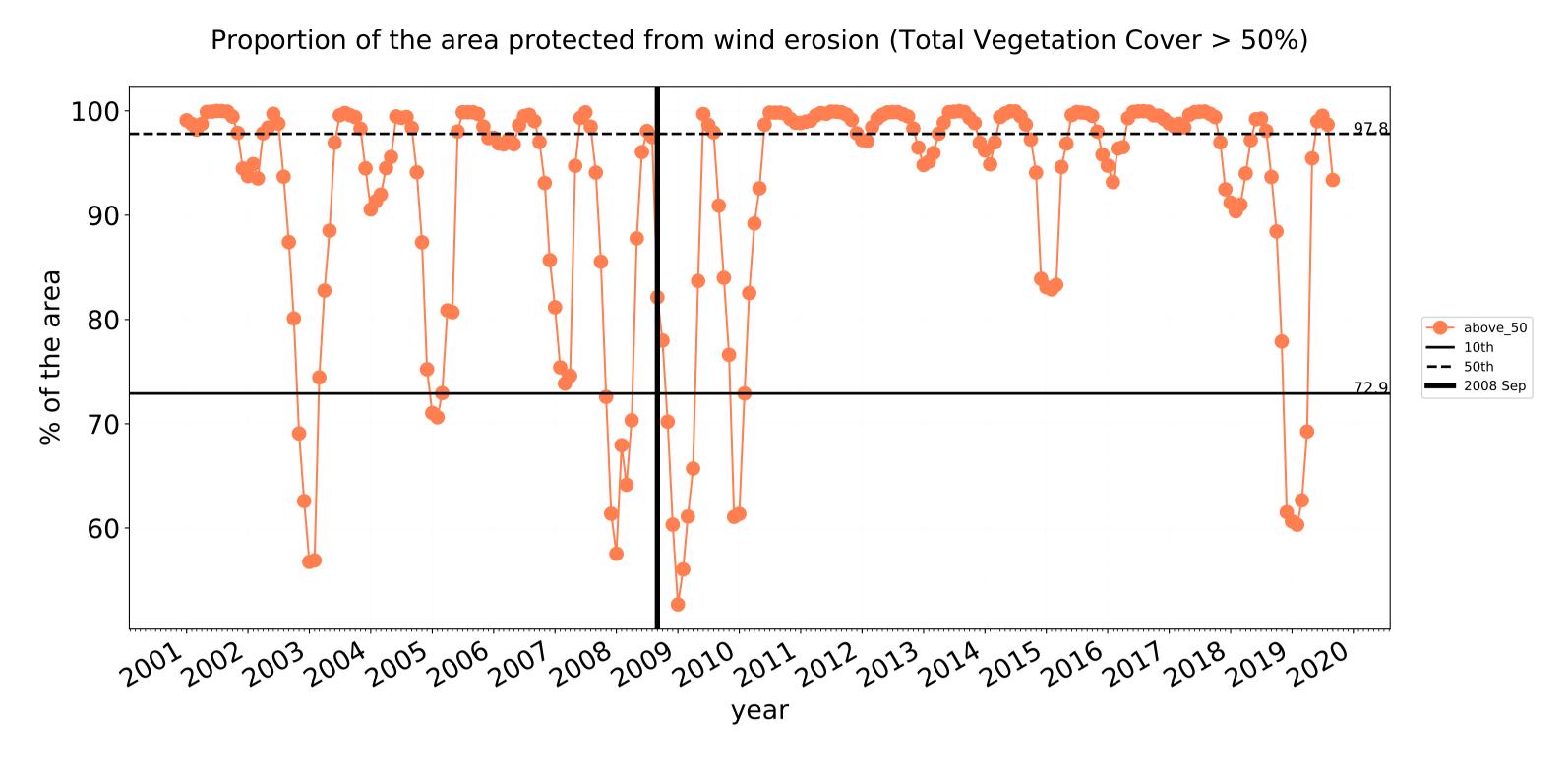


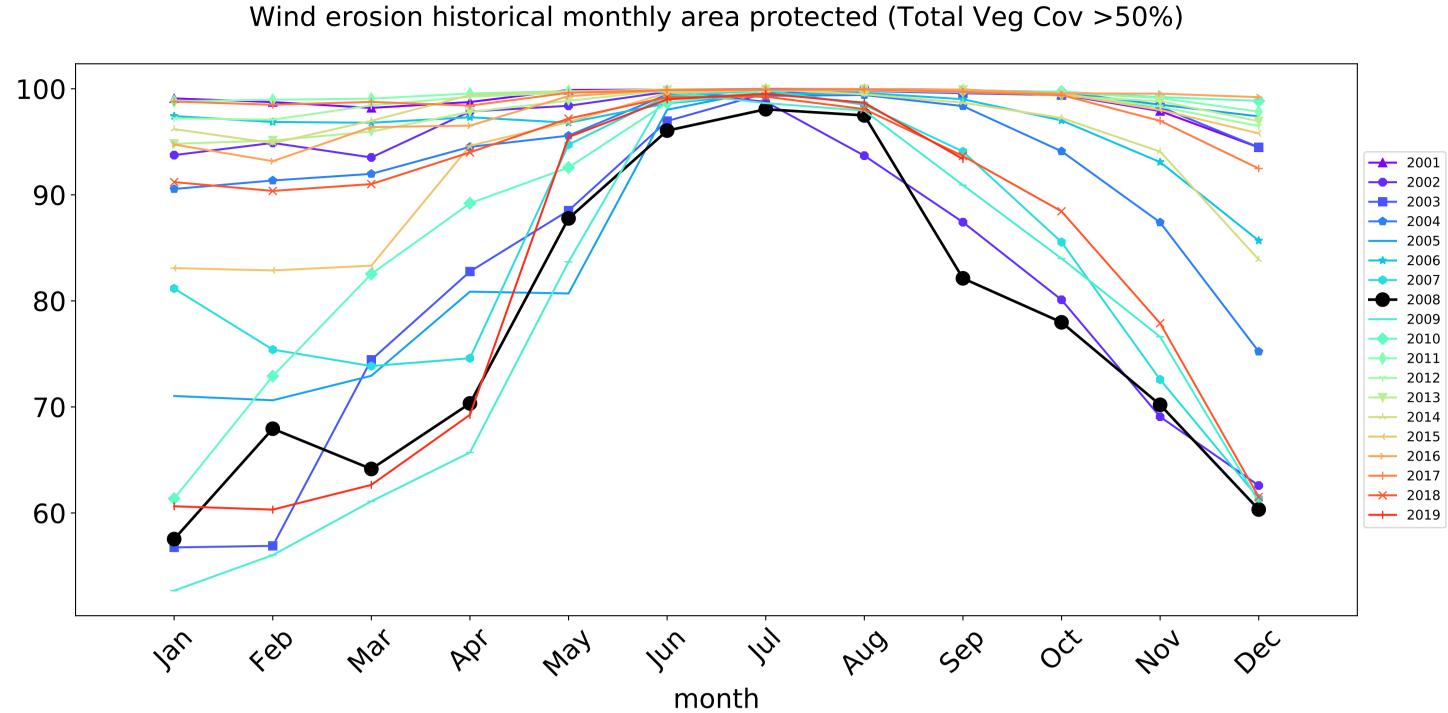


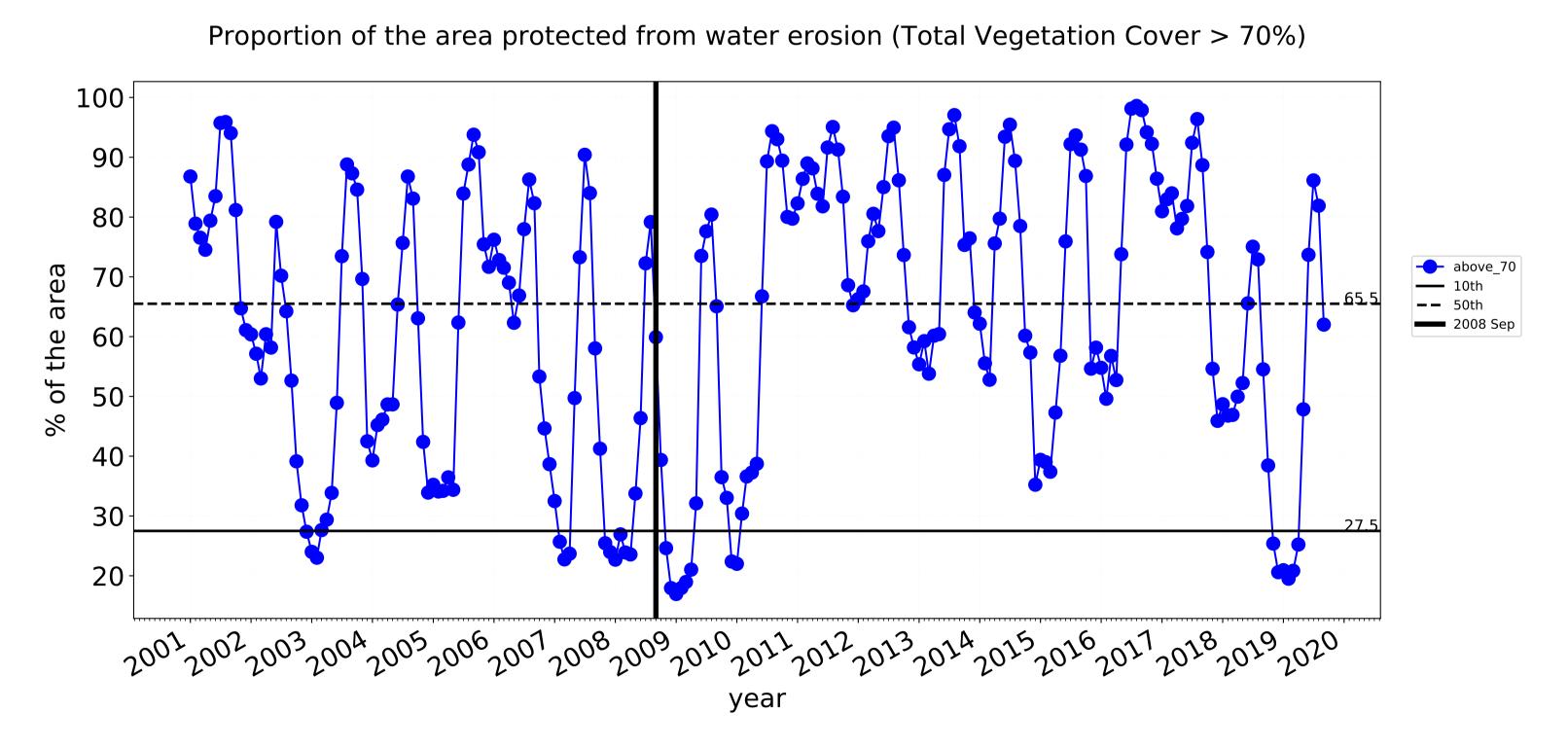


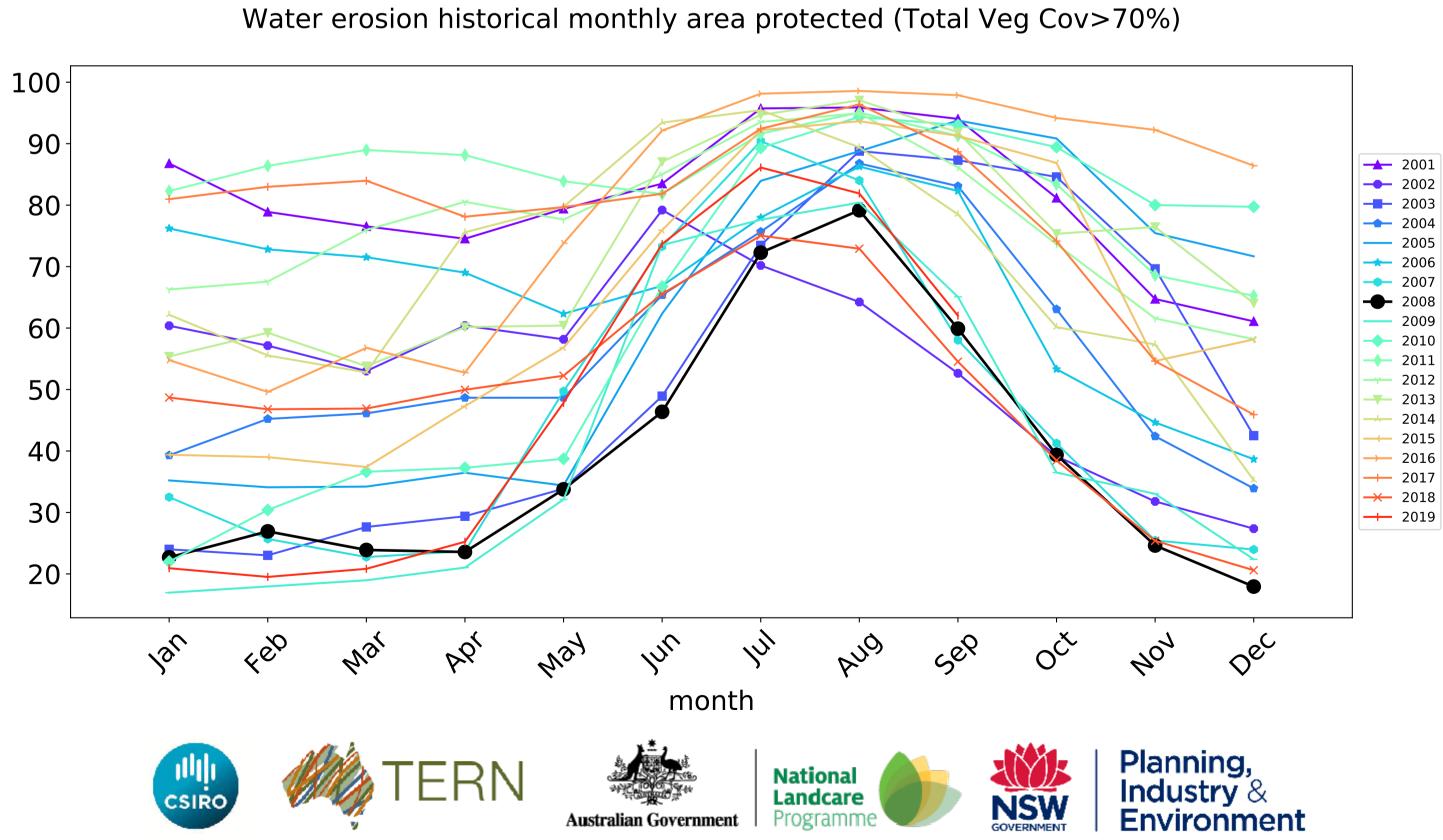


Agriculture timeseries

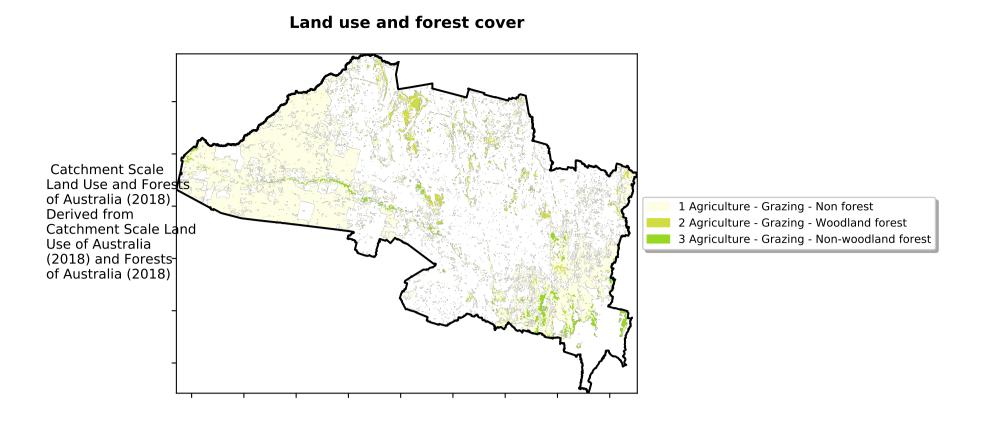




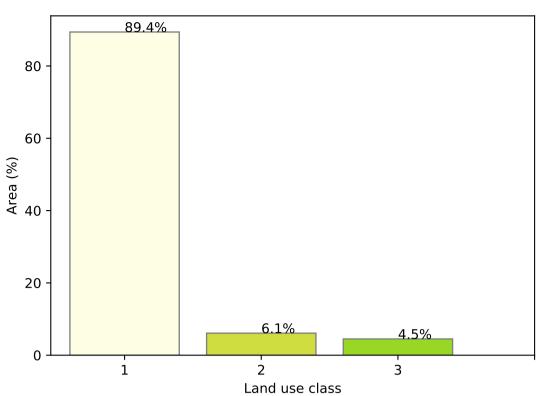




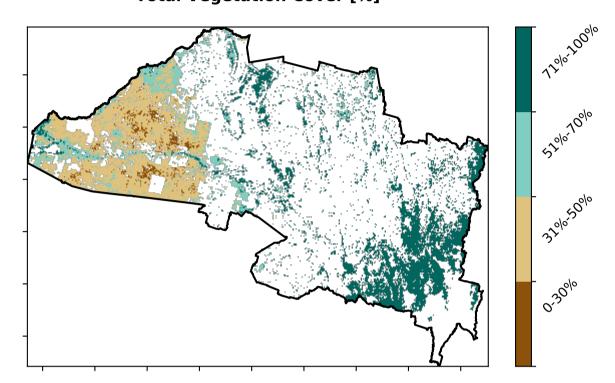
Grazing



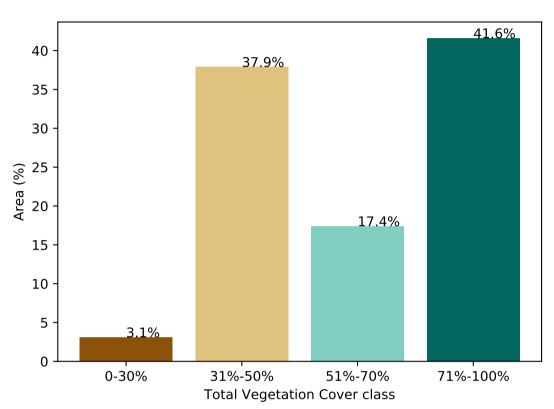
Proportion of each land class in area



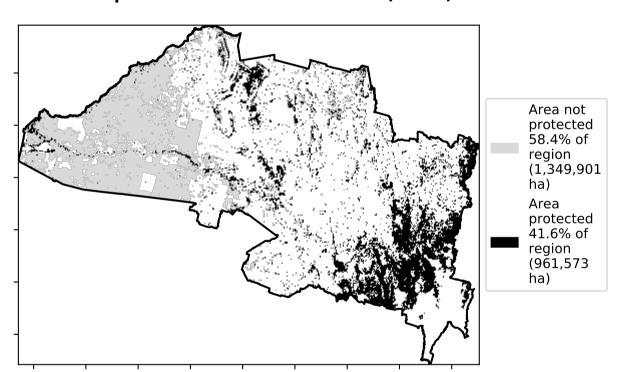
Total Vegetation Cover [%]



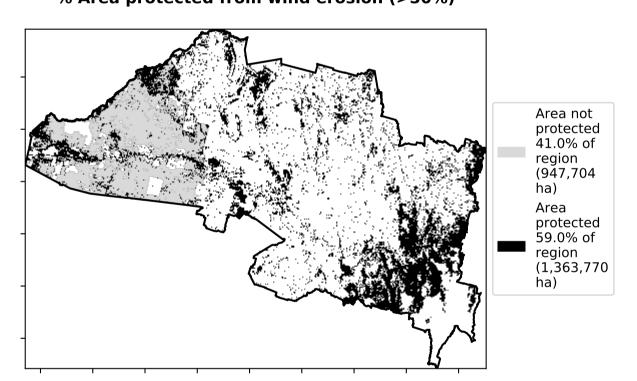
Proportion of vegetation cover class in area



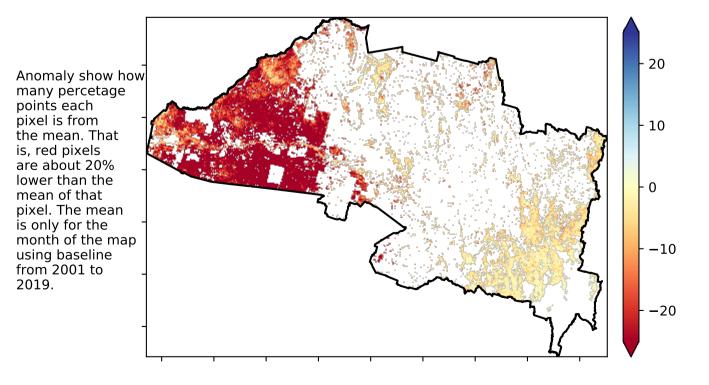
% Area protected from water erosion (>70%)



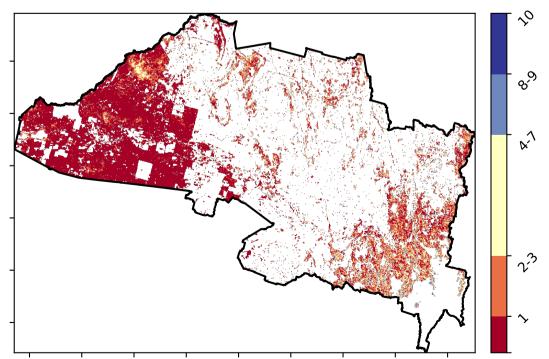
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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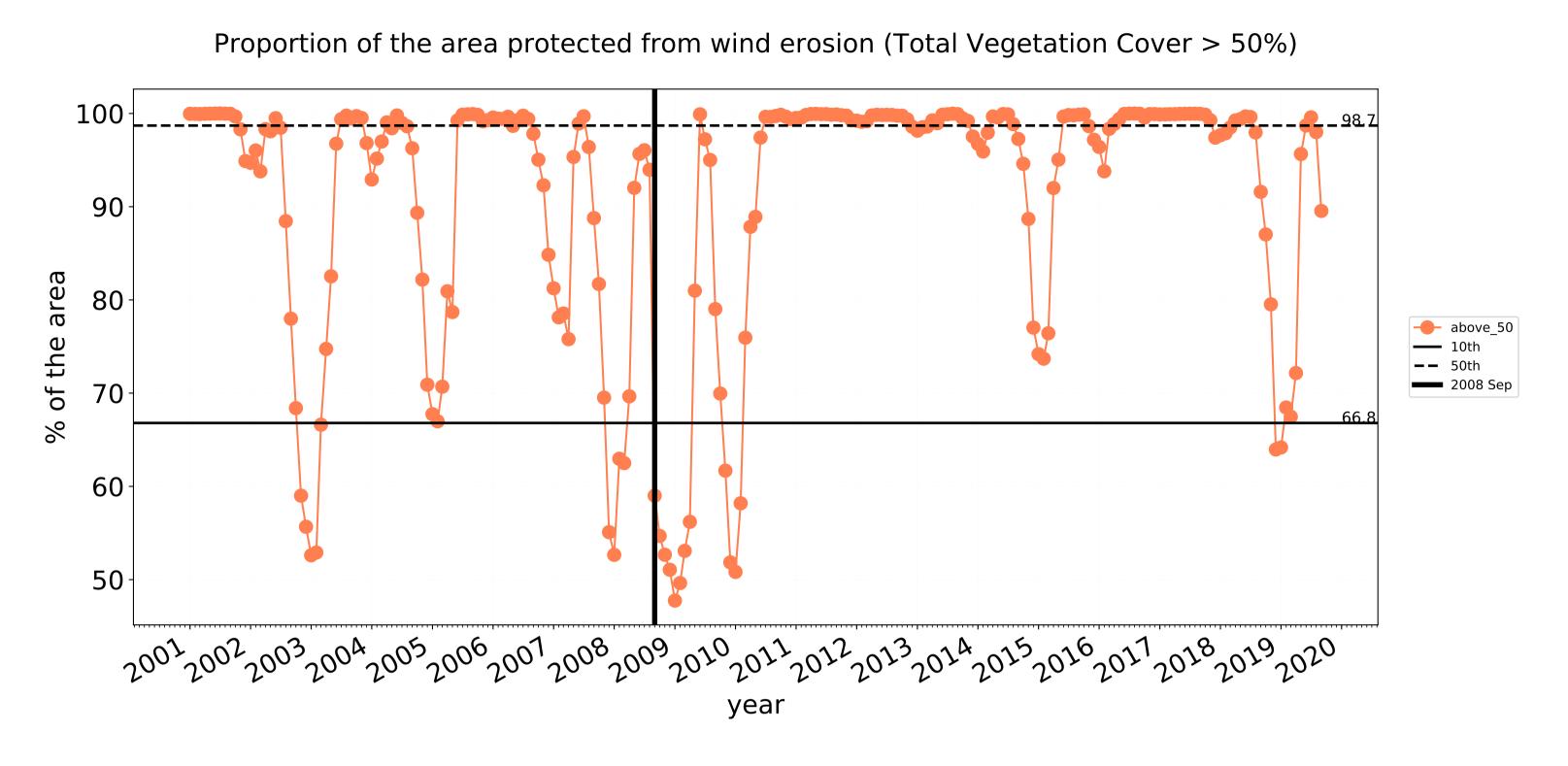


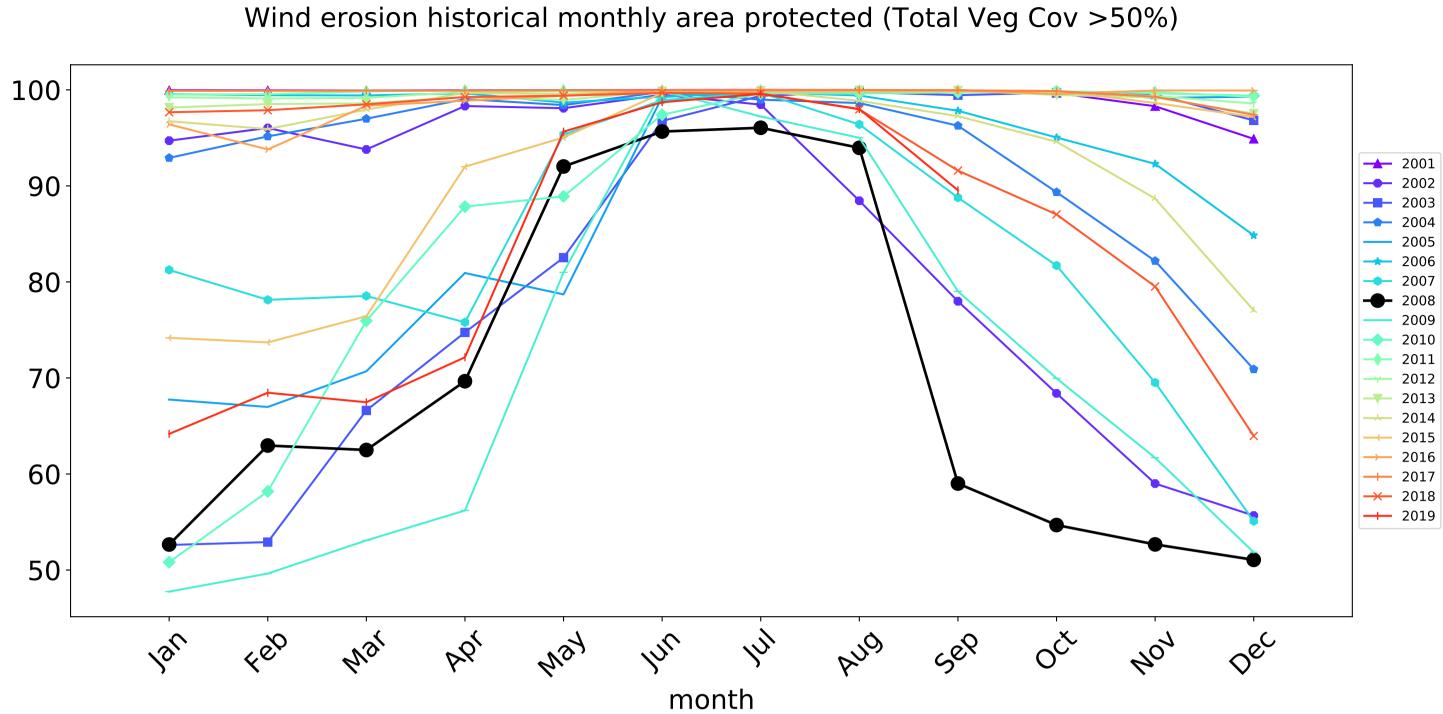


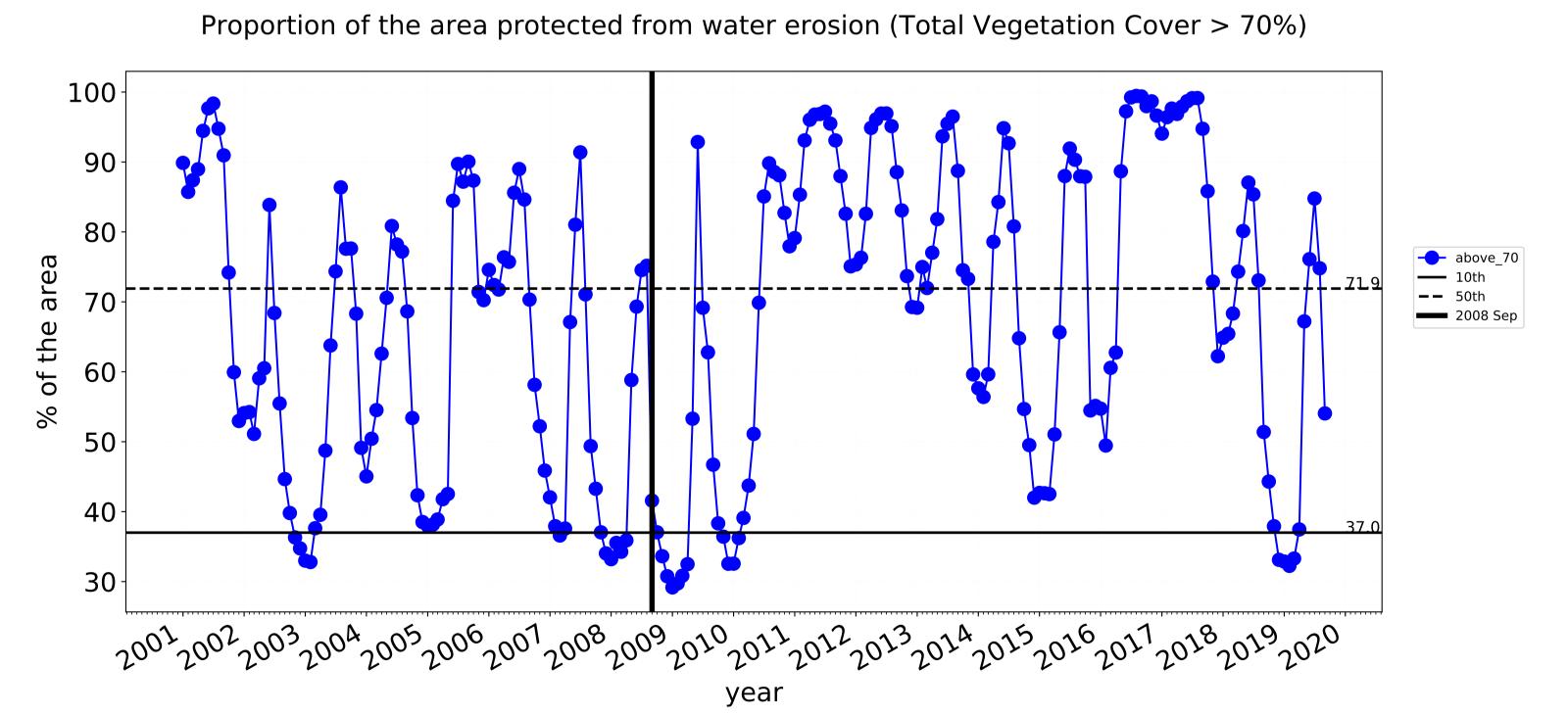


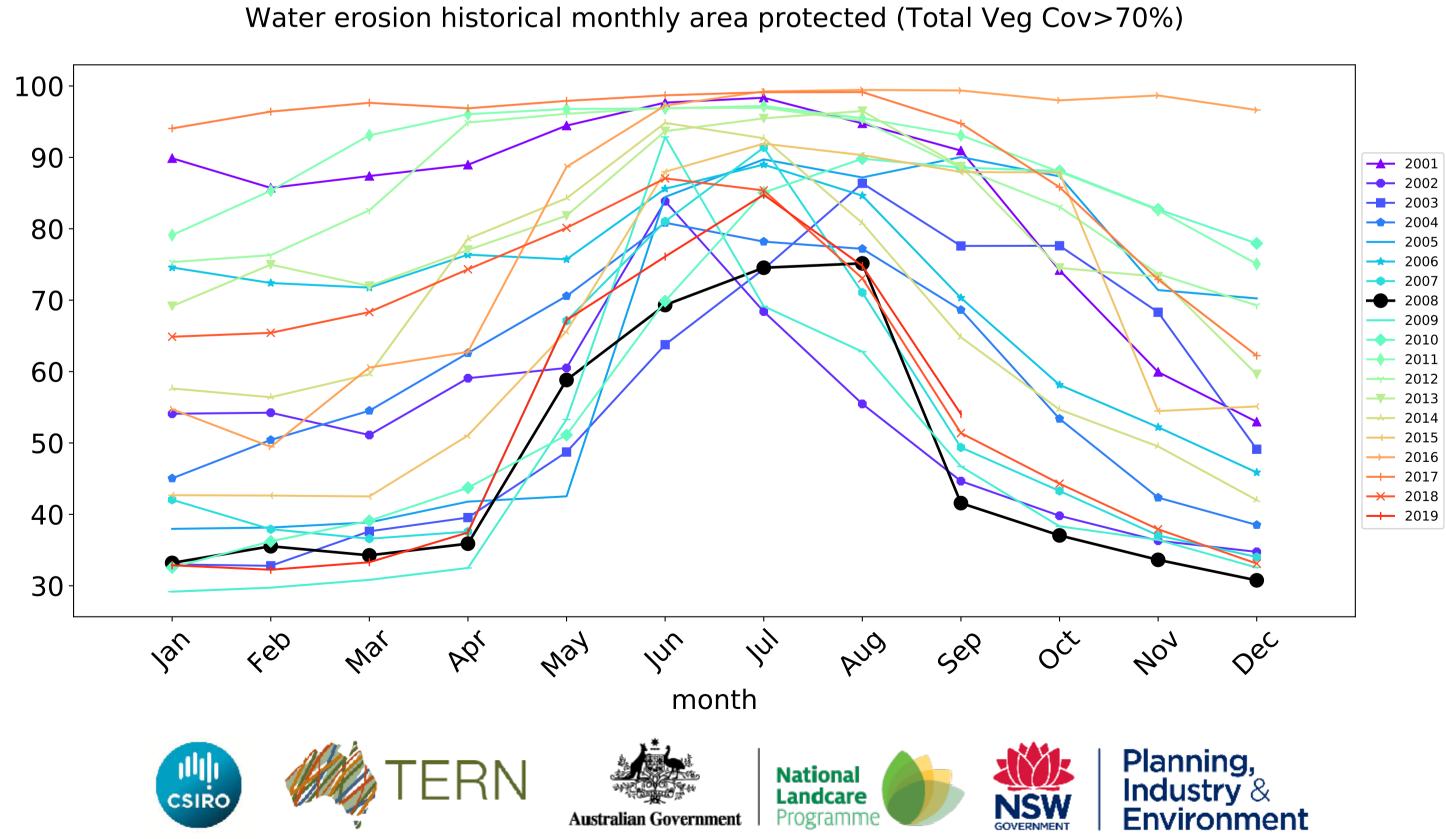


Grazing timeseries



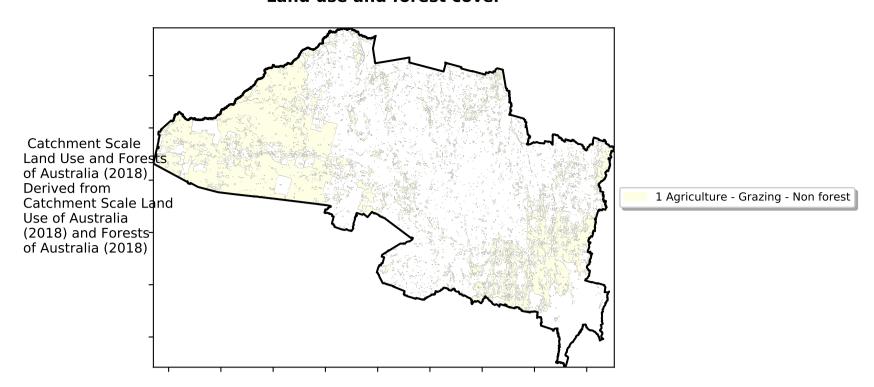




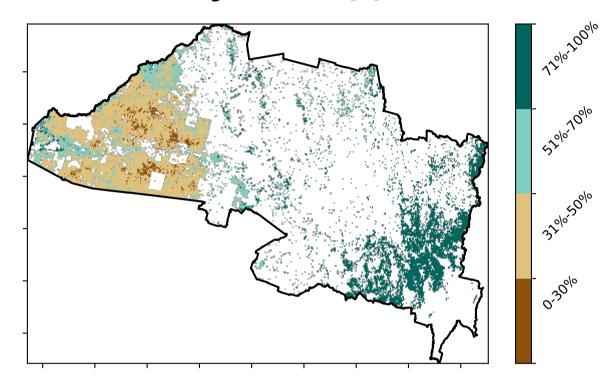


Grazing non forest

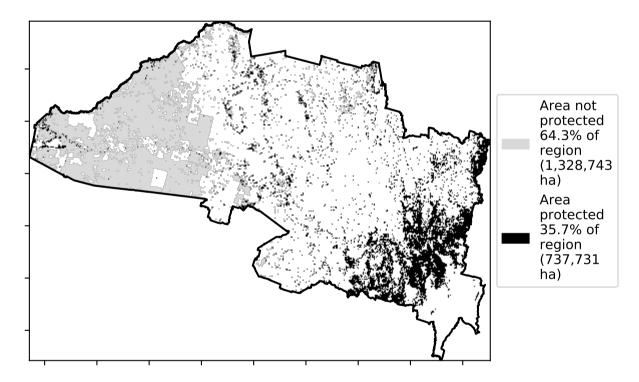
Land use and forest cover



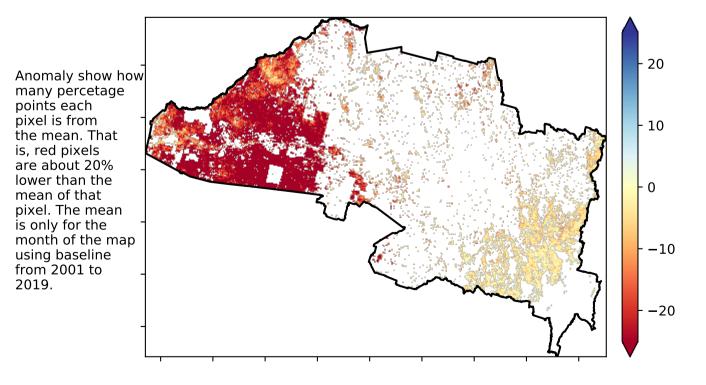
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

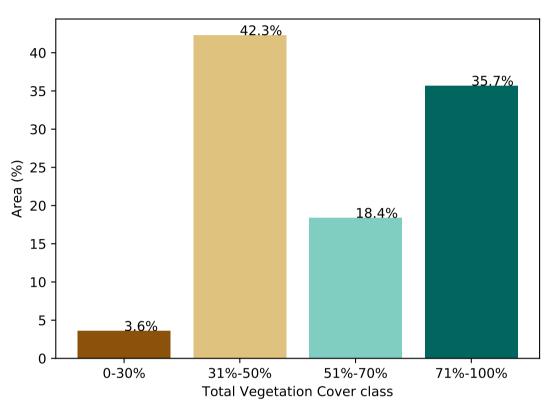


Total Vegetation Cover Anomaly [%]

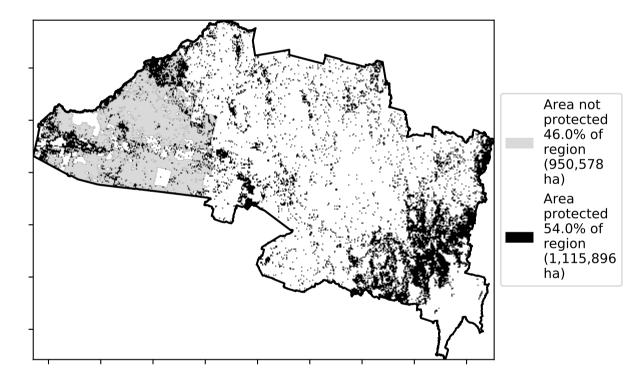


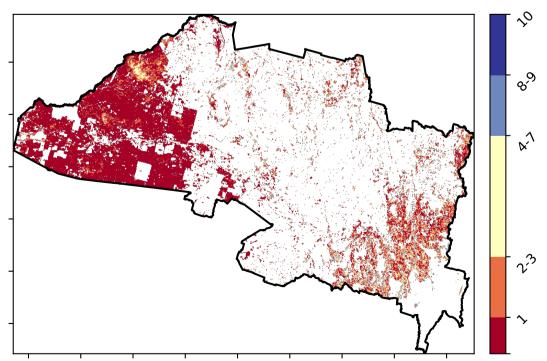
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Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









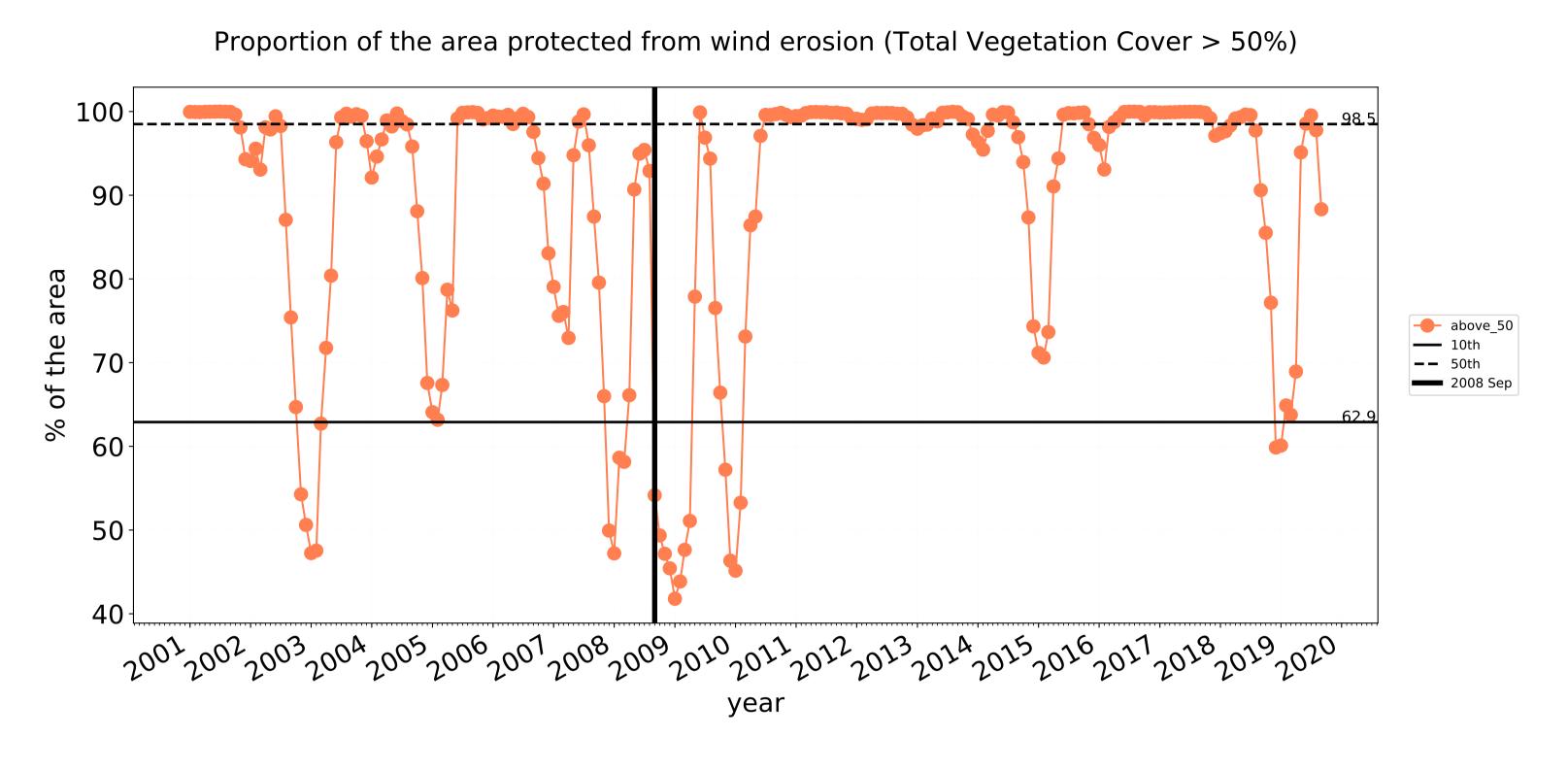


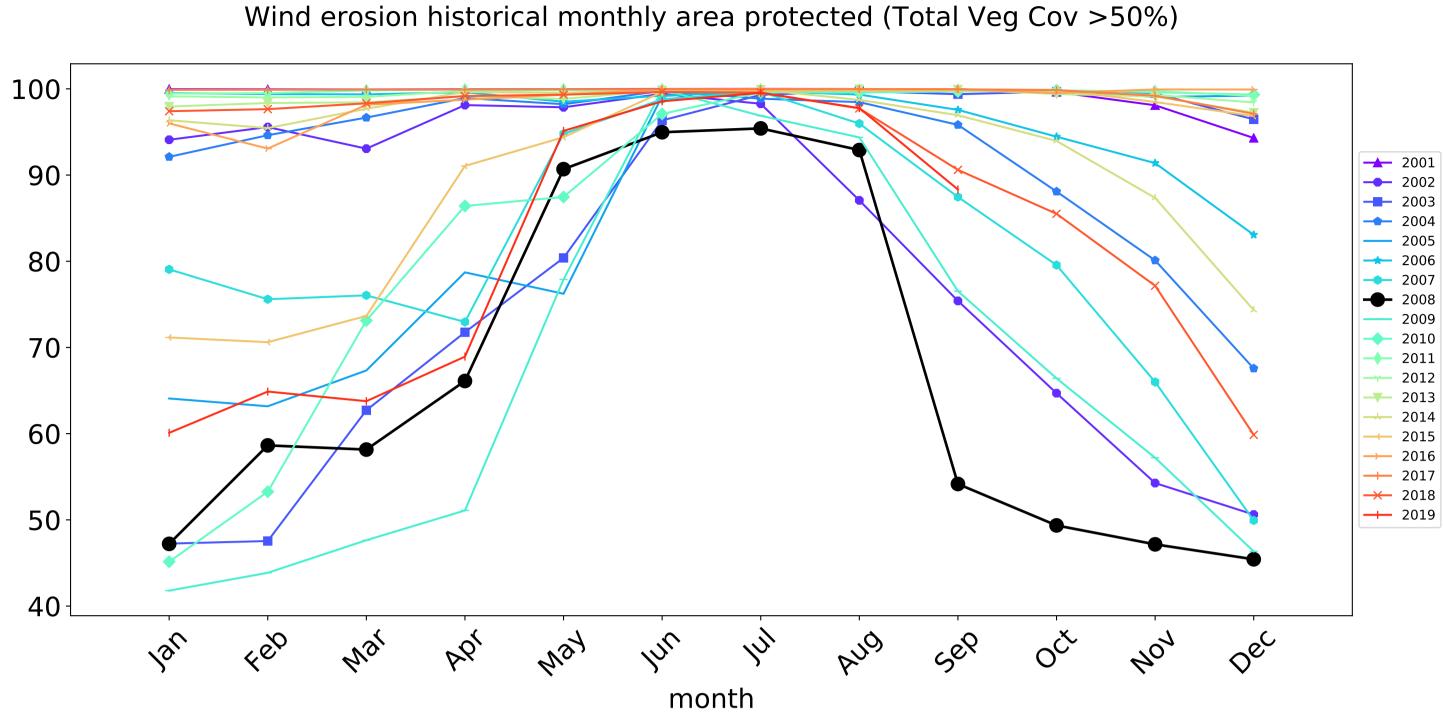


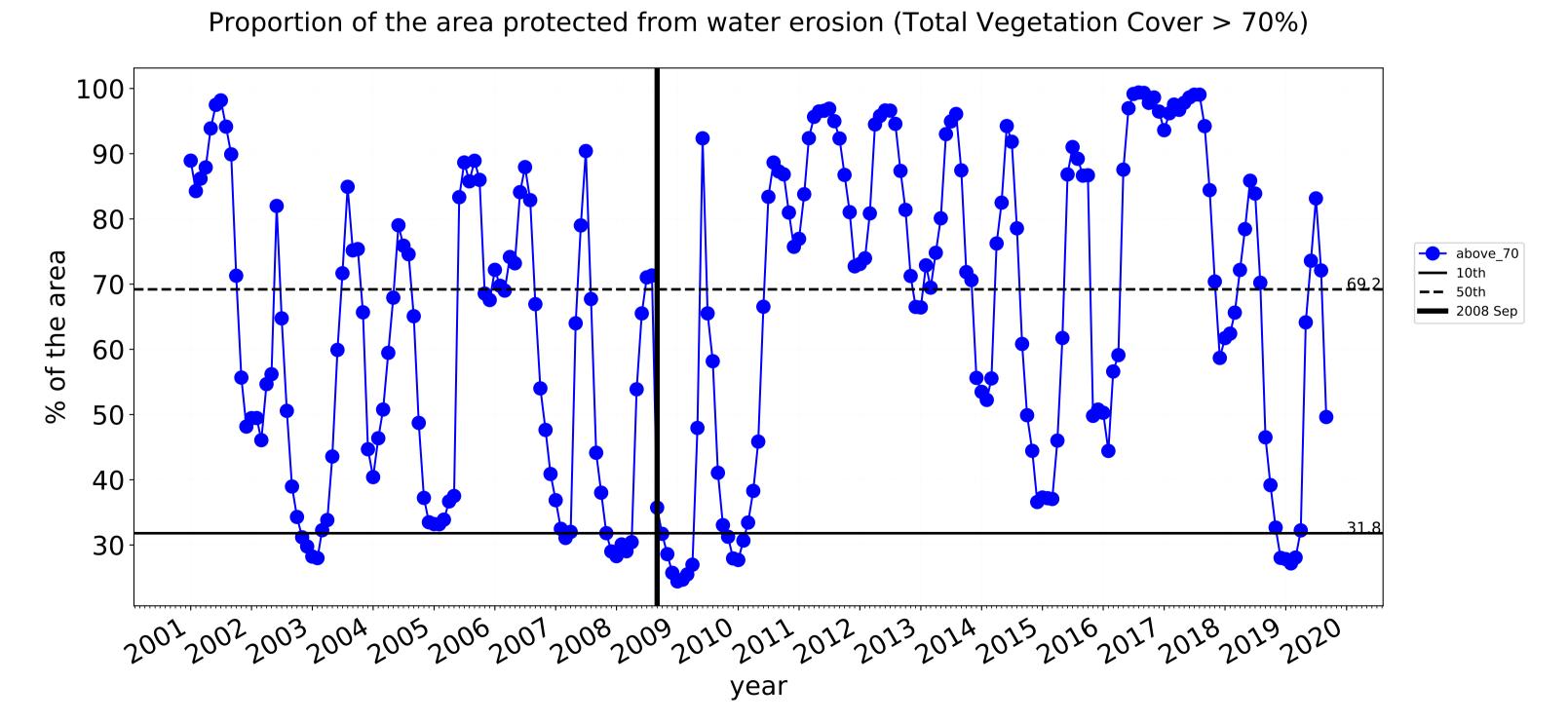


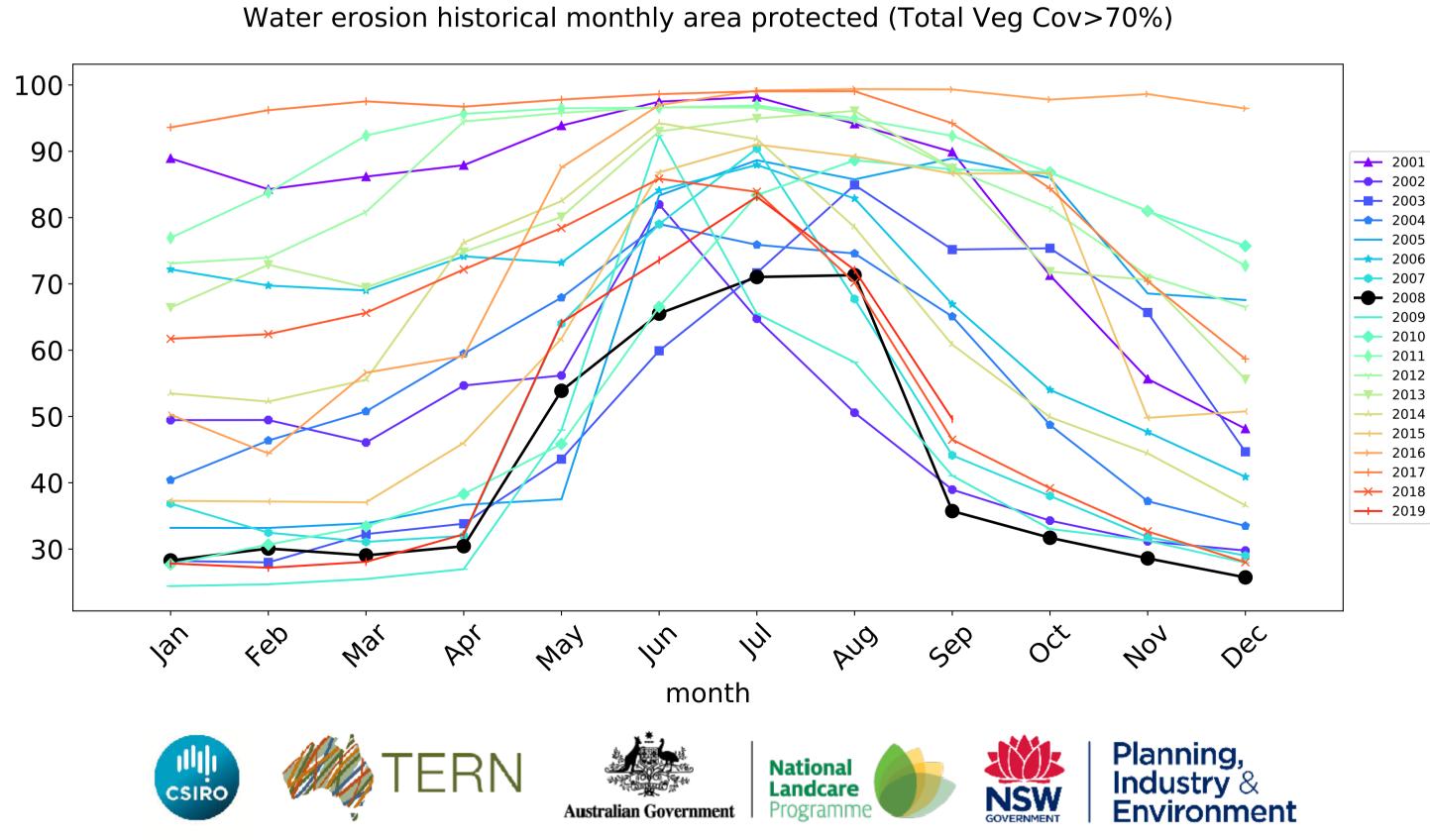


Grazing non forest timeseries









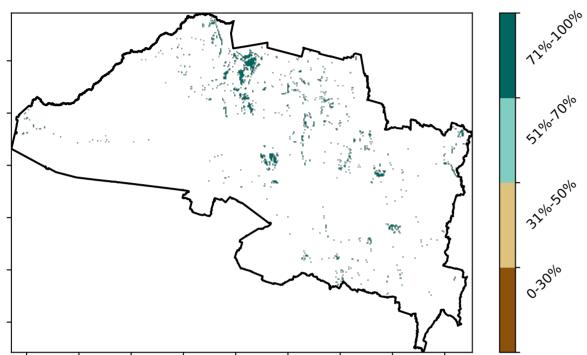
Grazing Woodland forest

Land use and forest cover 1 Agriculture - Grazing - Woodland forest

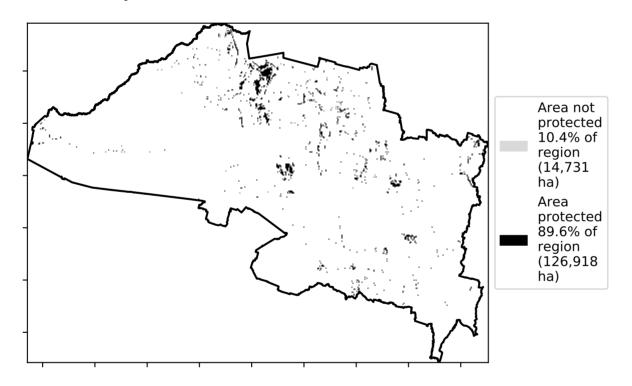
Total Vegetation Cover [%]

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

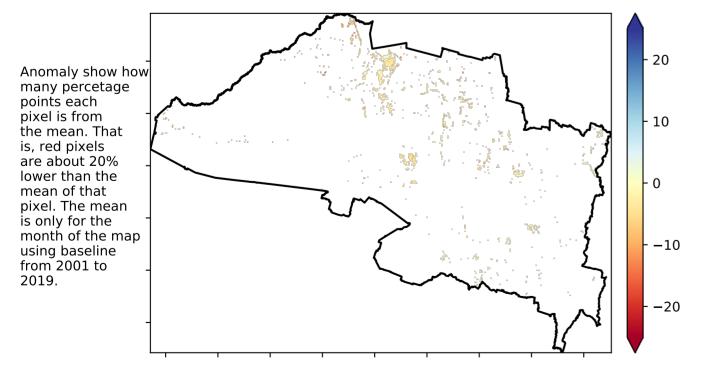
Catchment Scale Land Use of Australia (2018) and Forestsof Australia (2018)



% Area protected from water erosion (>70%)

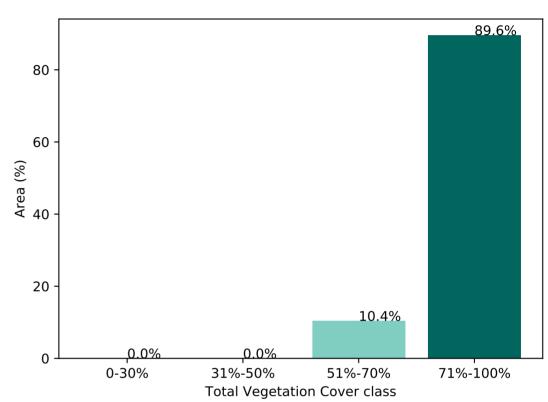


Total Vegetation Cover Anomaly [%]

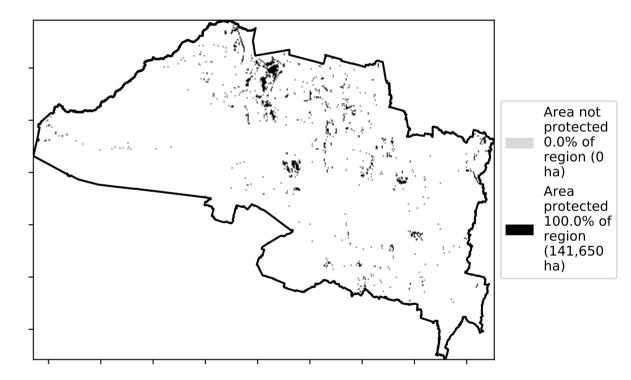


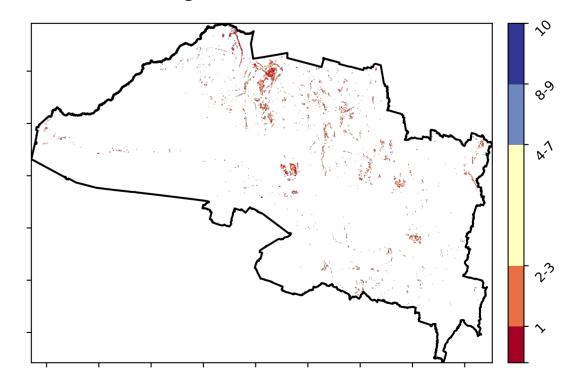
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Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









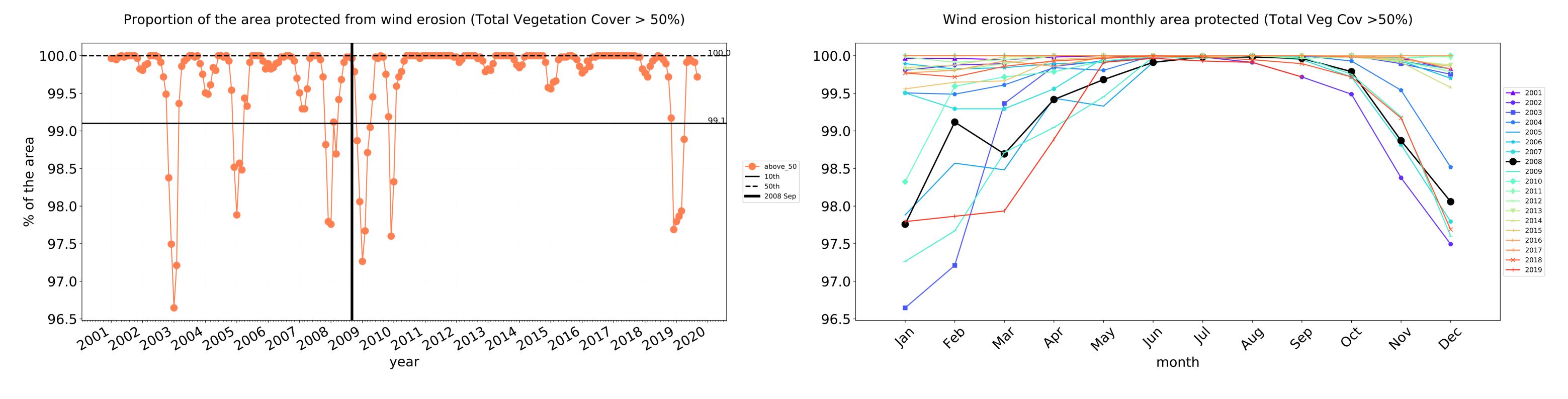


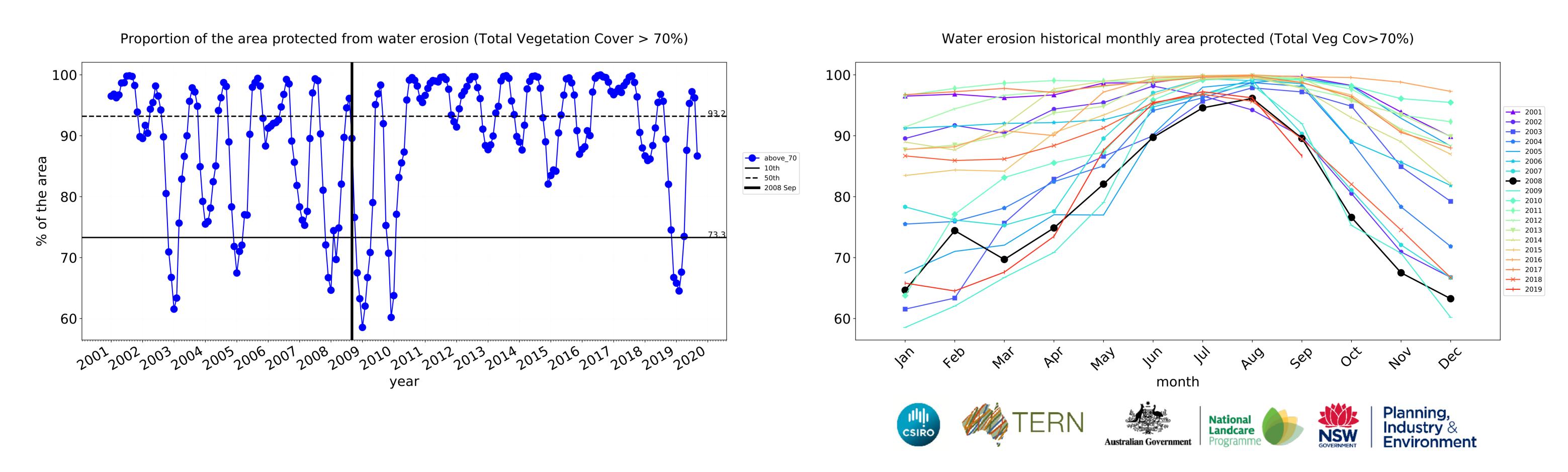






Grazing Woodland forest timeseries



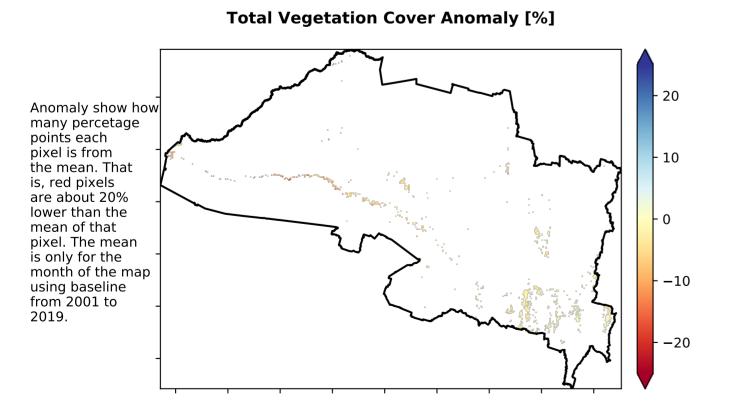


Grazing - Forest (non woodland)

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

Total Vegetation Cover [%]

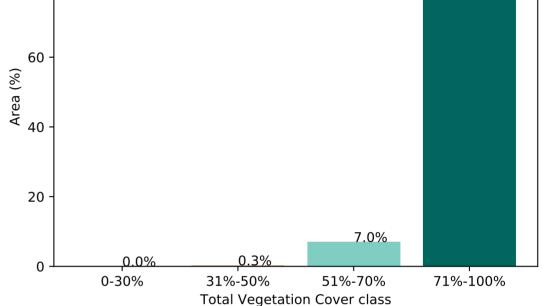
% Area protected from water erosion (>70%) Area not protected 7.3% of region (7,544 ha) Area protected 92.7% of region (95,805 ha)



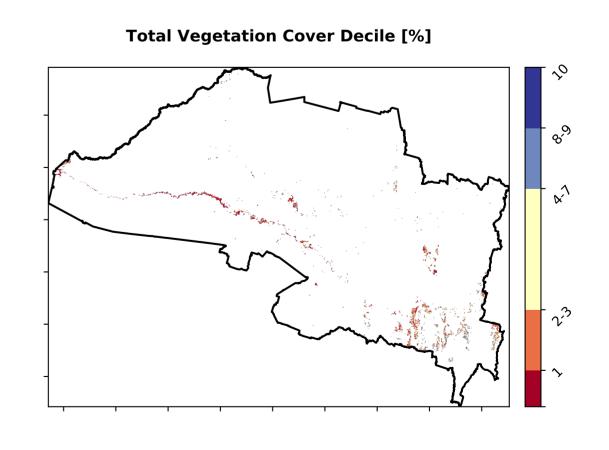
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline. the map using baseline from 2001 to 2019.

92.7%

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%) Area not protected 0.0% of region (0 Area protected 100.0% of region (103,350 ha)







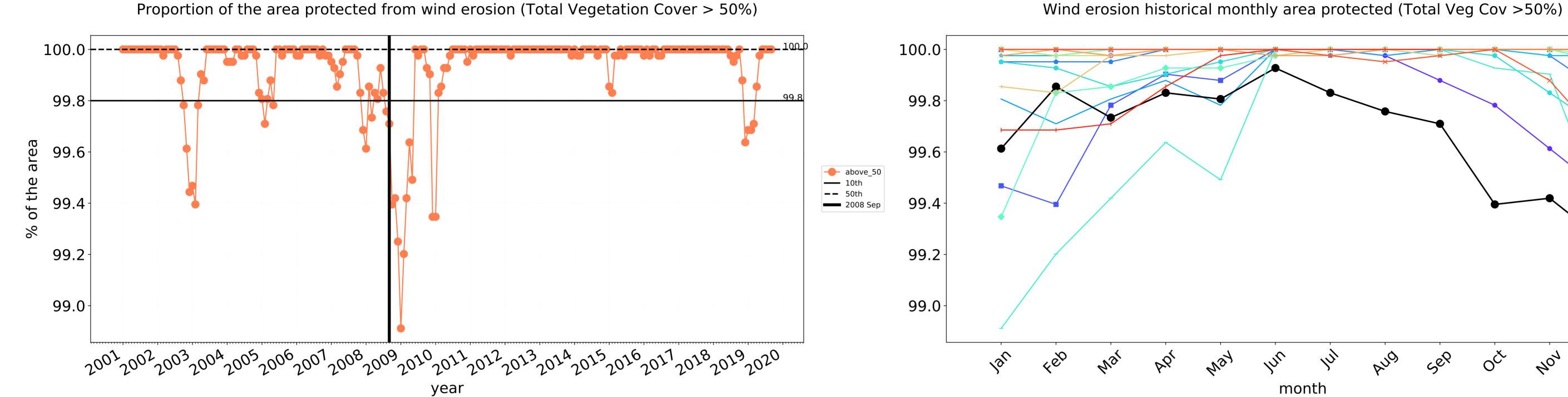


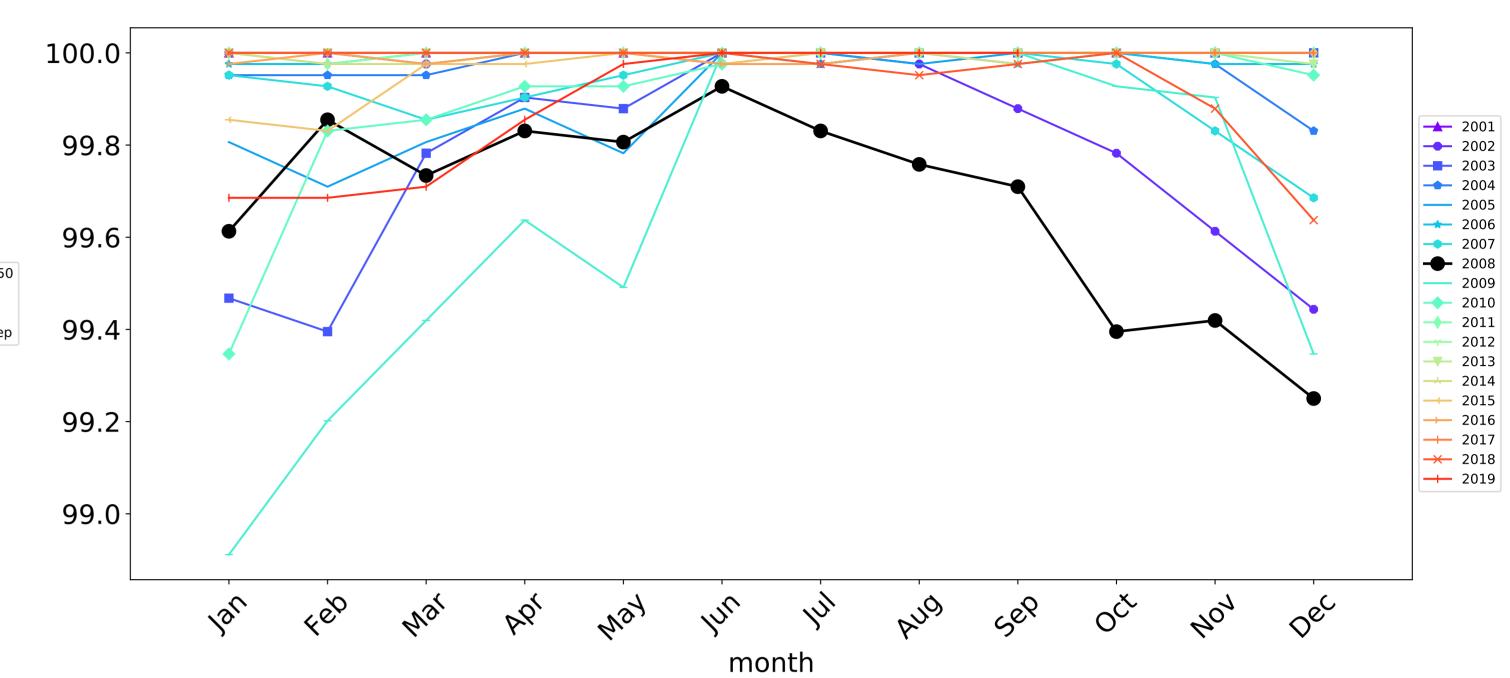


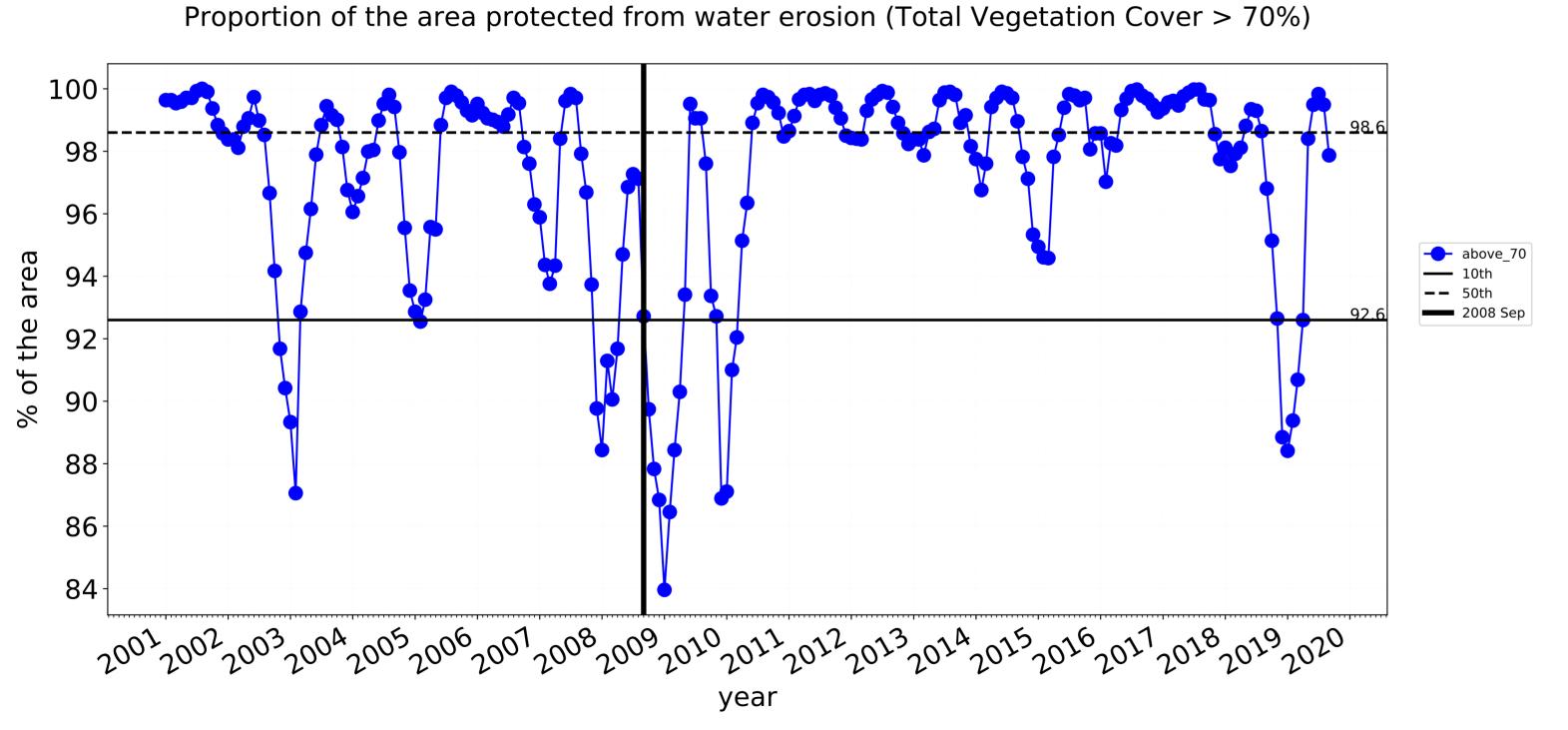
80

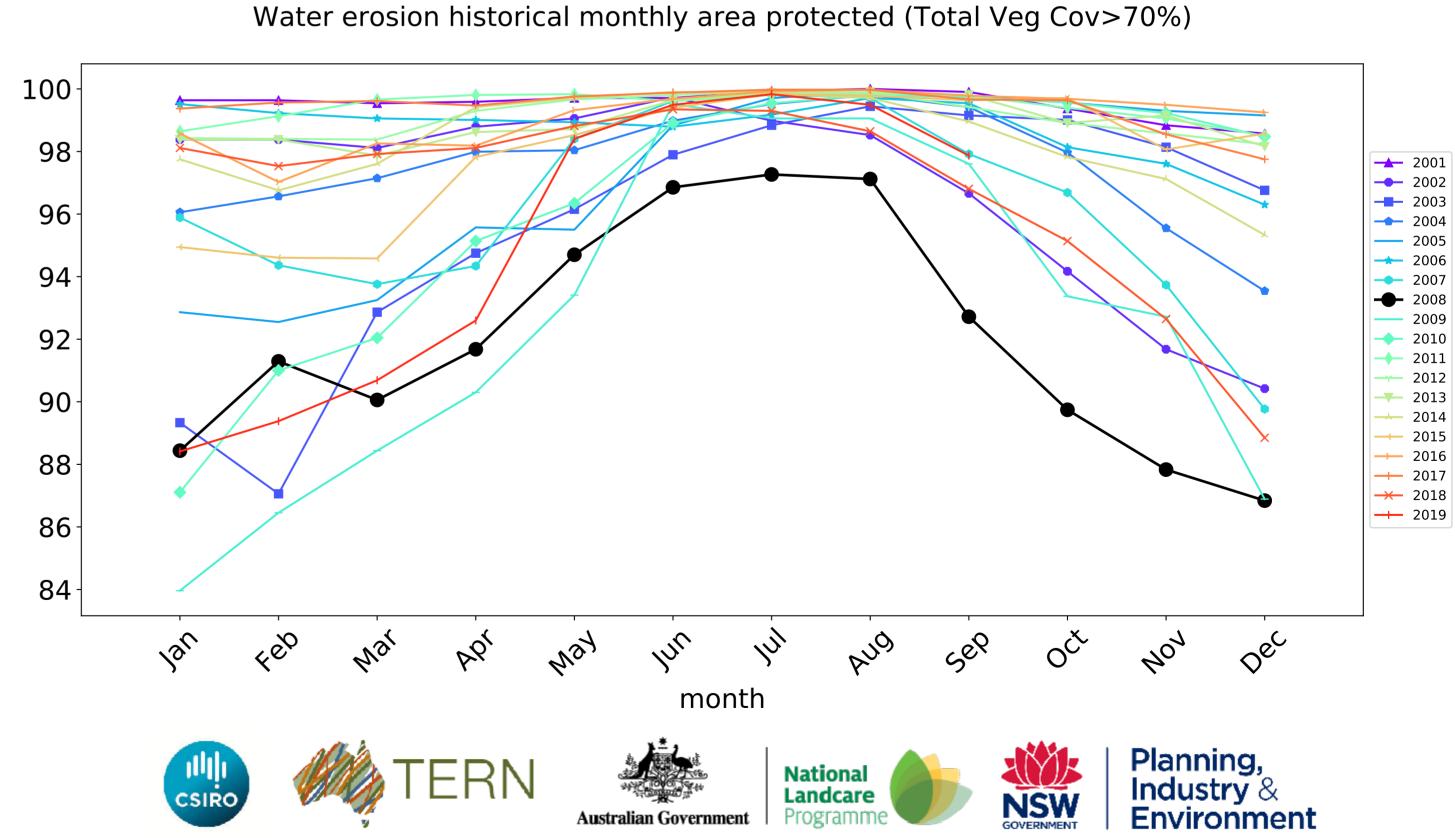






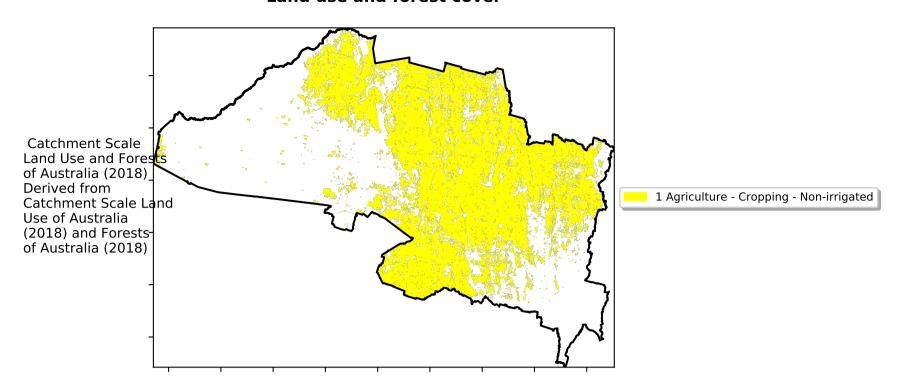




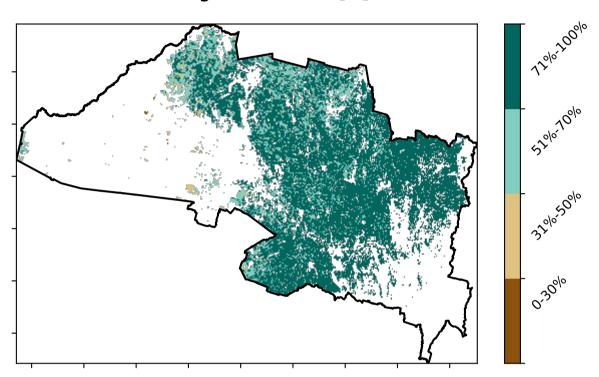


Cropping

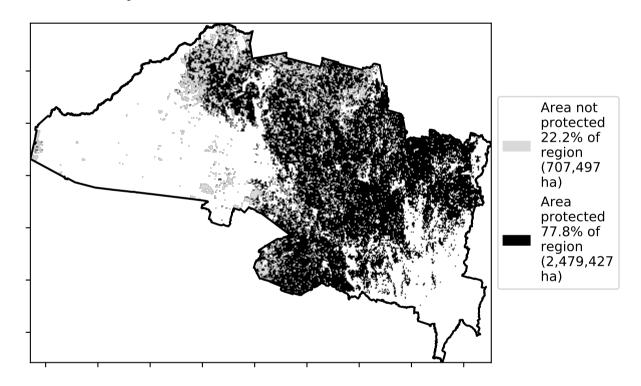
Land use and forest cover



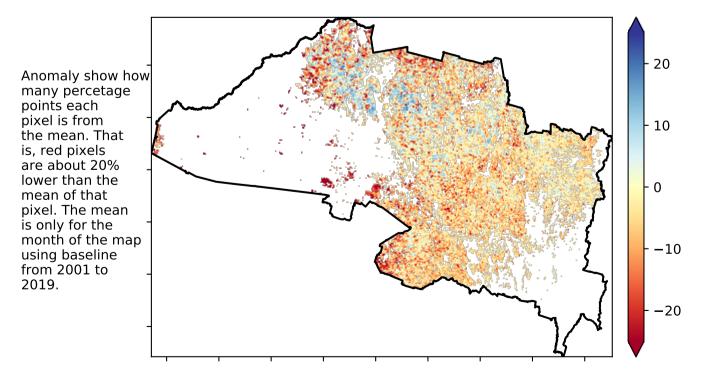
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

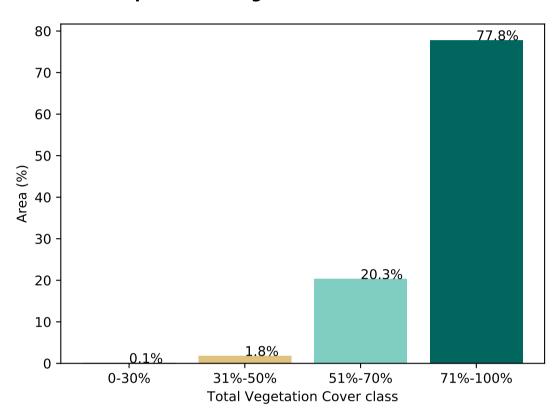


Total Vegetation Cover Anomaly [%]

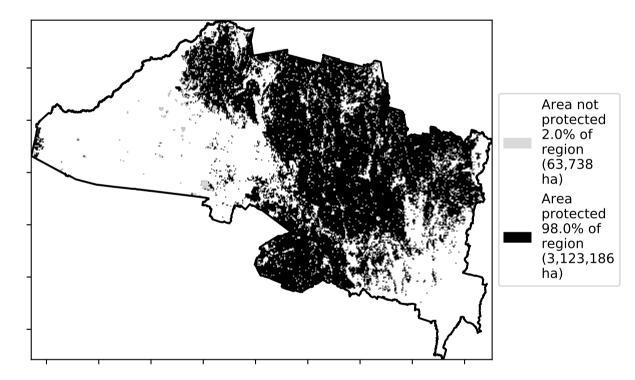


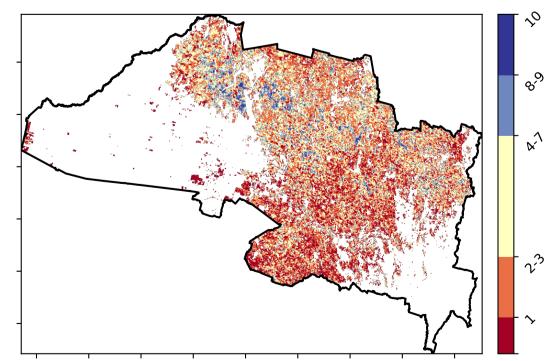
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









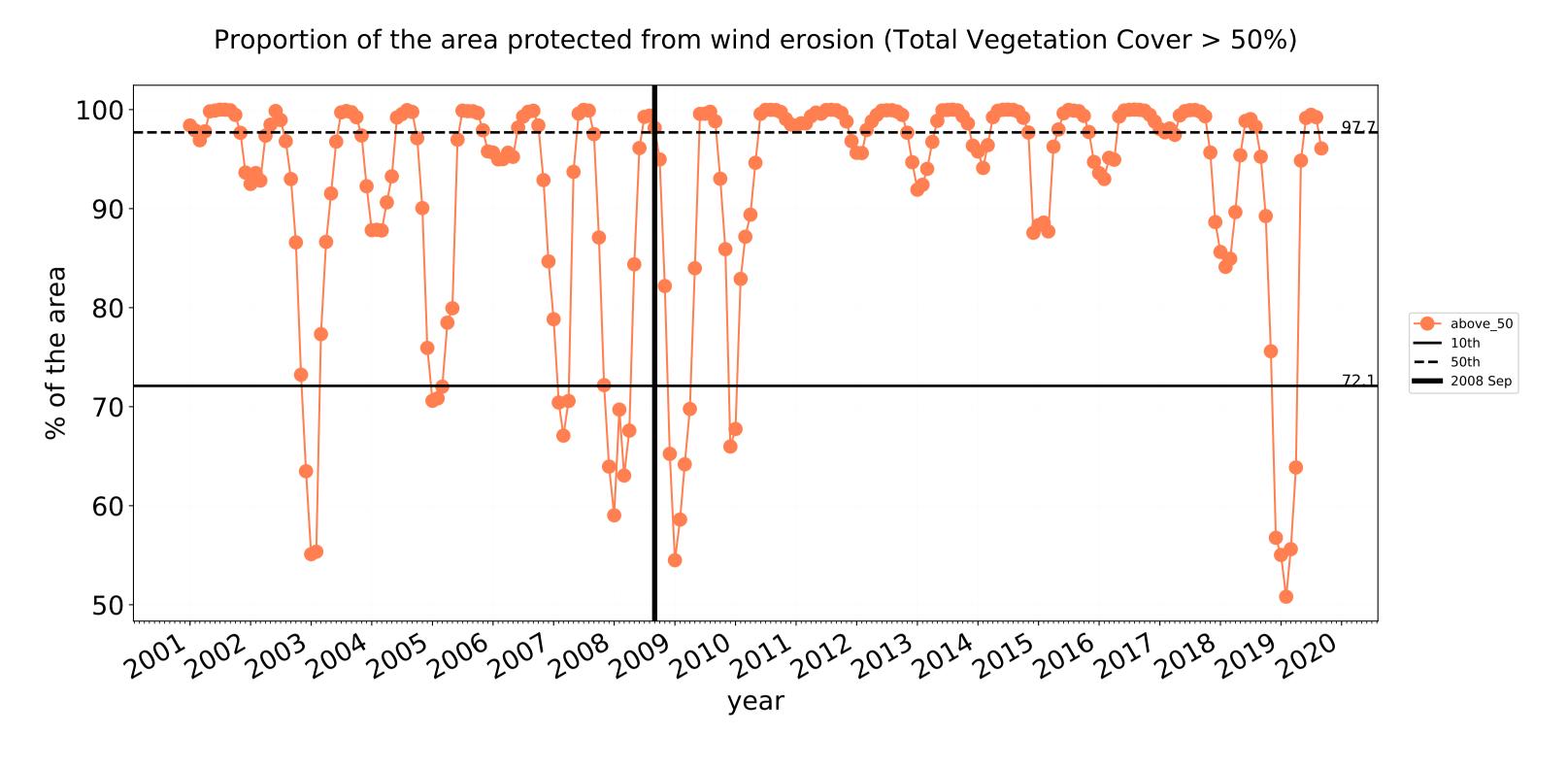


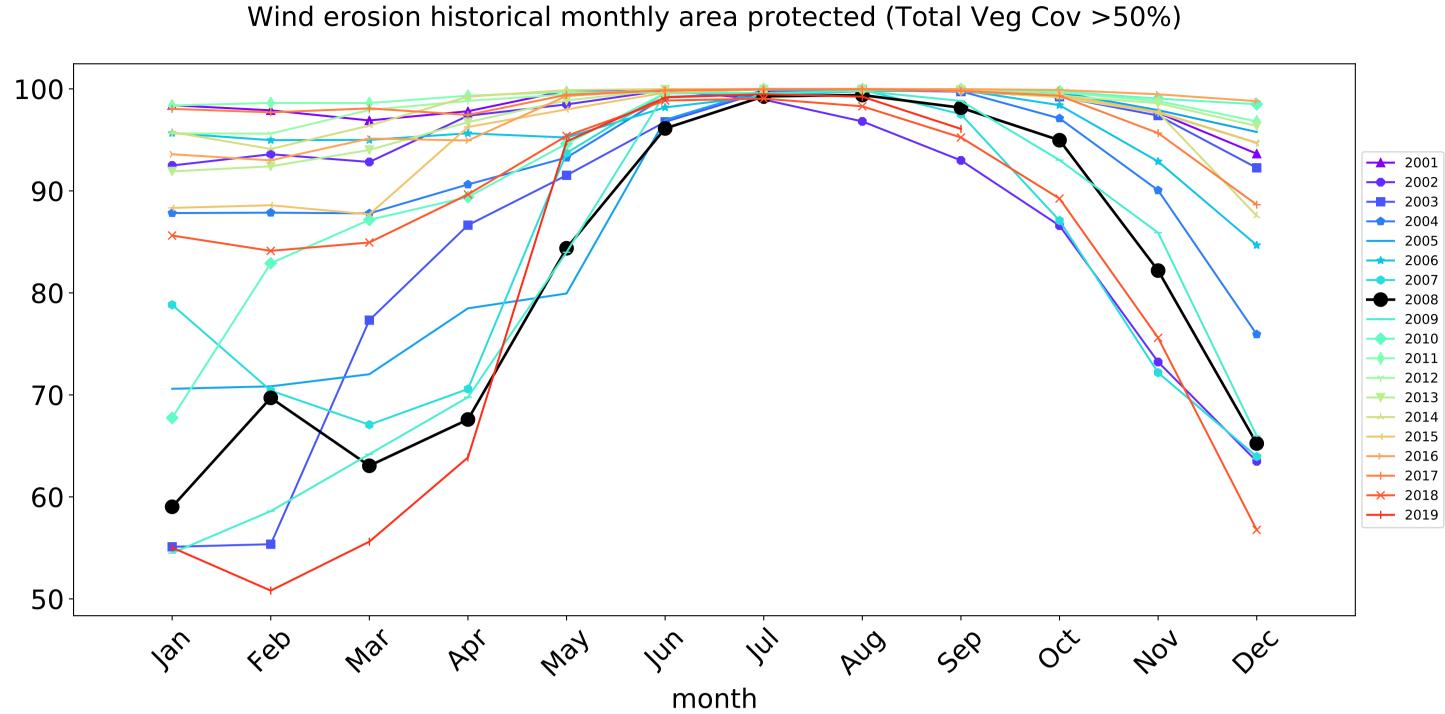


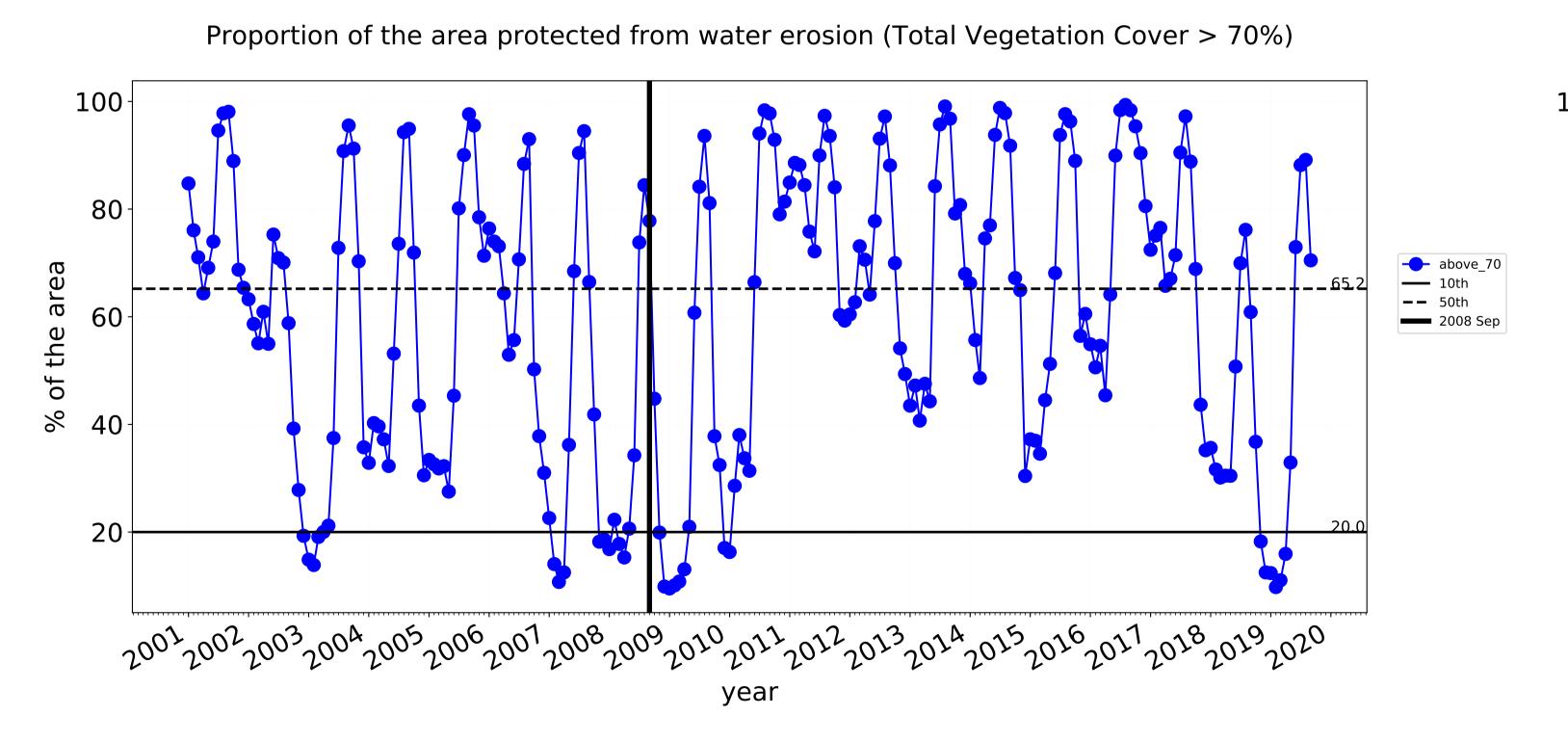


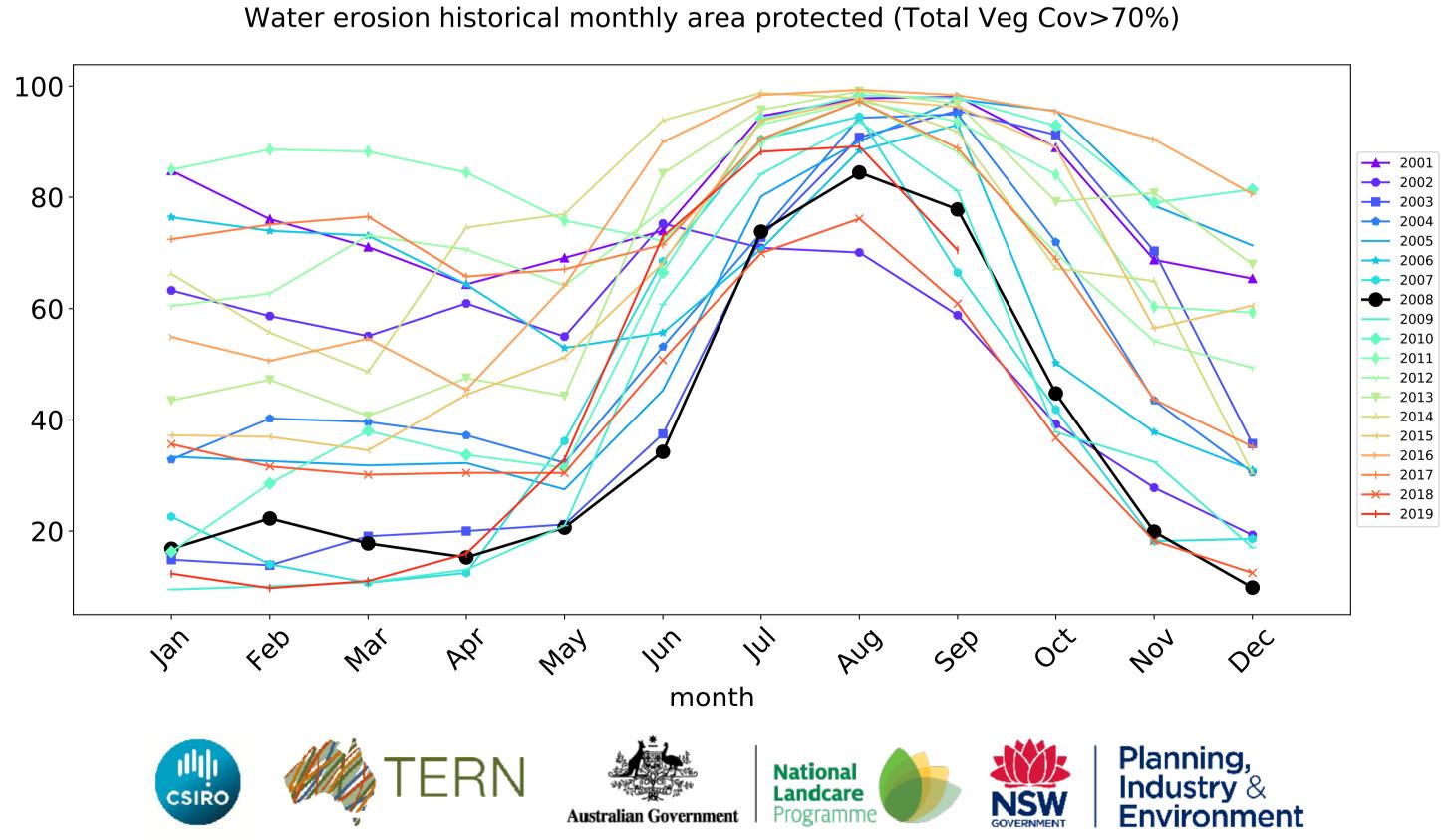


Cropping timeseries





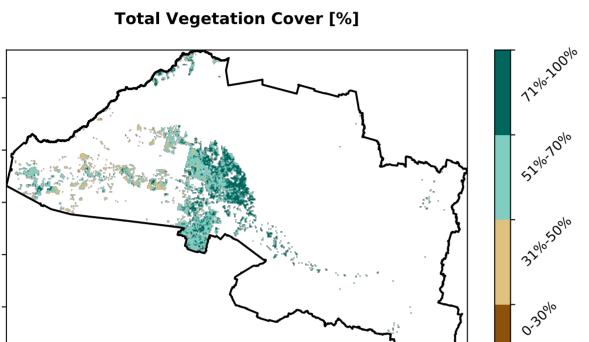


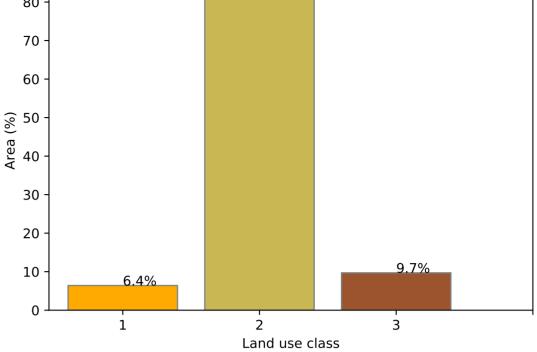


Irrigation

Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) 1 Agriculture - Grazing - Irrigated 2 Agriculture - Cropping - Irrigated 3 Agriculture - Horticulture - Irrigated

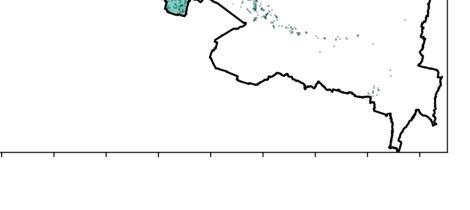
Proportion of each land class in area 83.9% 80 70 60 Area (%) 30 20 9.7% 10 6.4% 2 3





Proportion of vegetation cover class in area

52.3% 50 40 34.0% Area (%) 20 13.6% 10

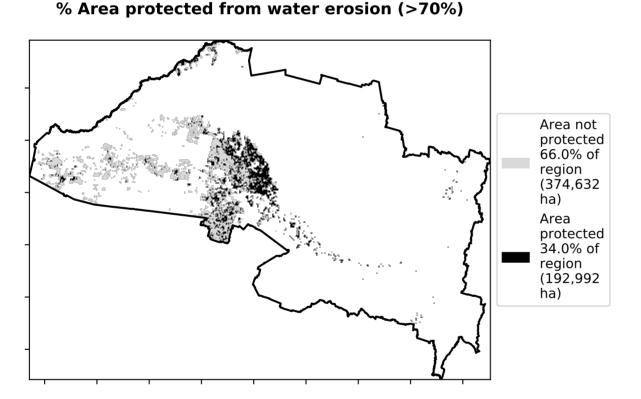


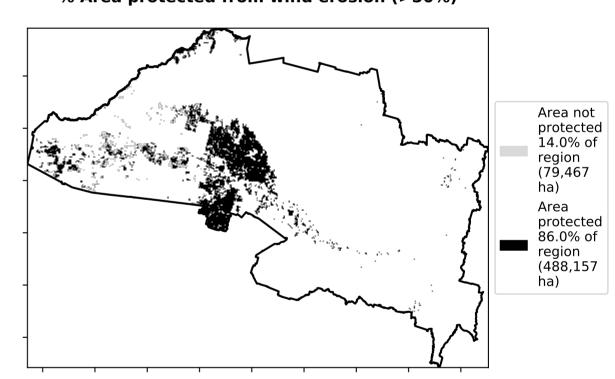
% Area protected from wind erosion (>50%)

Total Vegetation Cover class

31%-50%

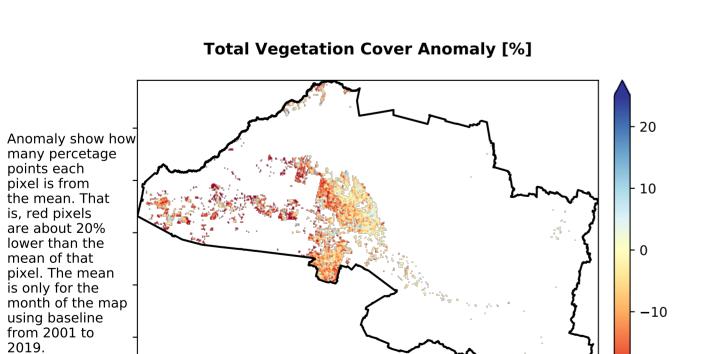
0-30%



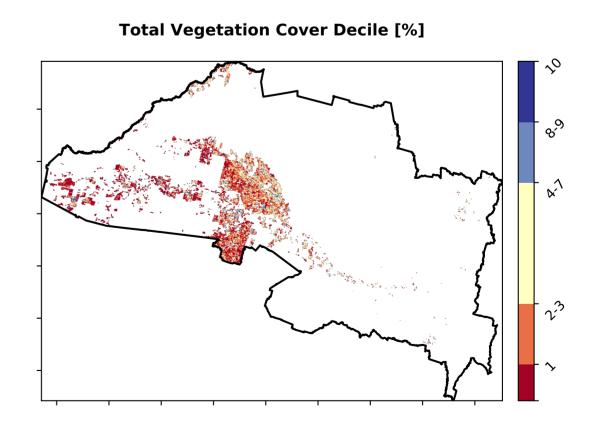


51%-70%

71%-100%



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.





pixel is from

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

using baseline from 2001 to 2019.

the mean. That



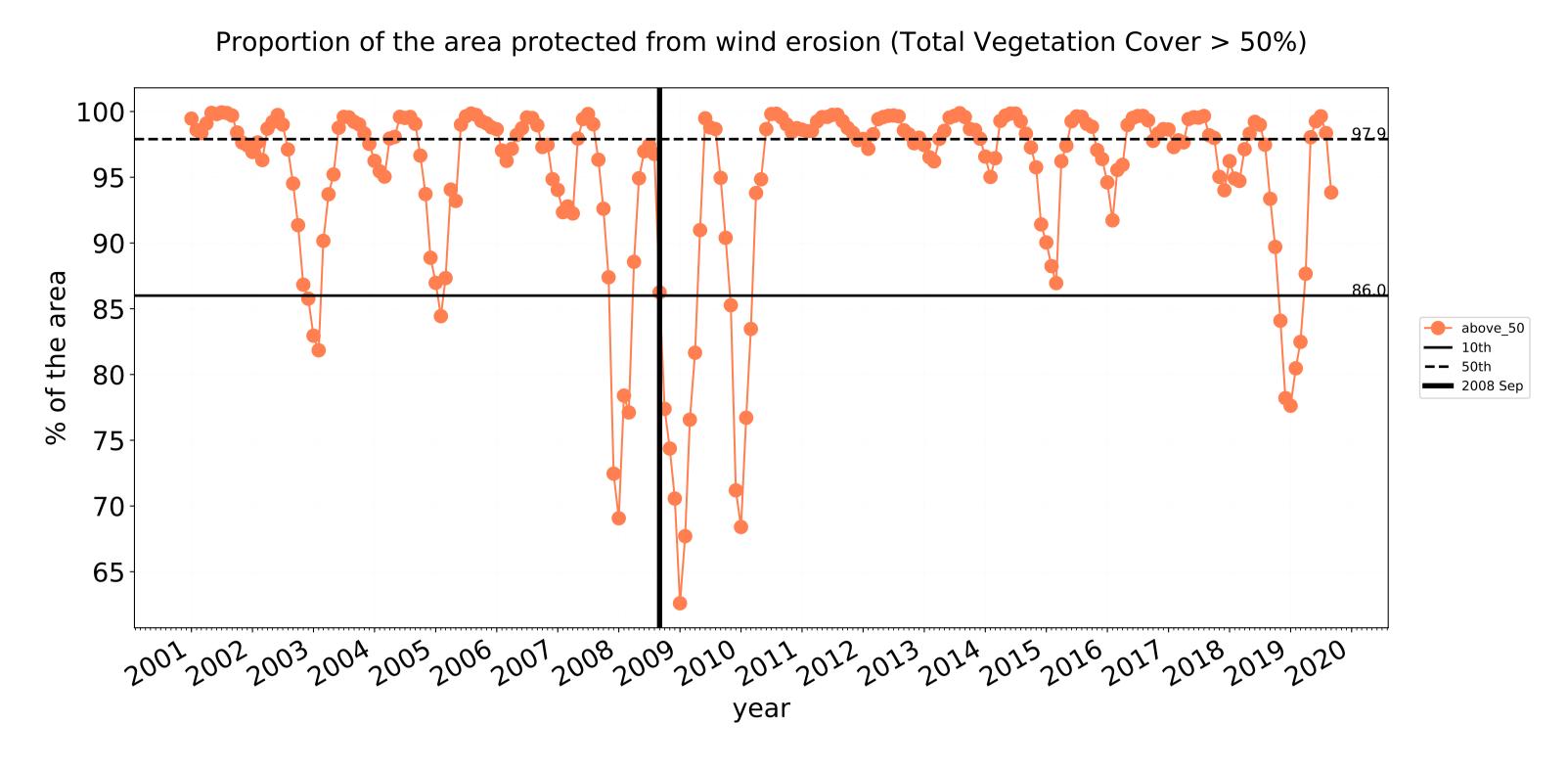


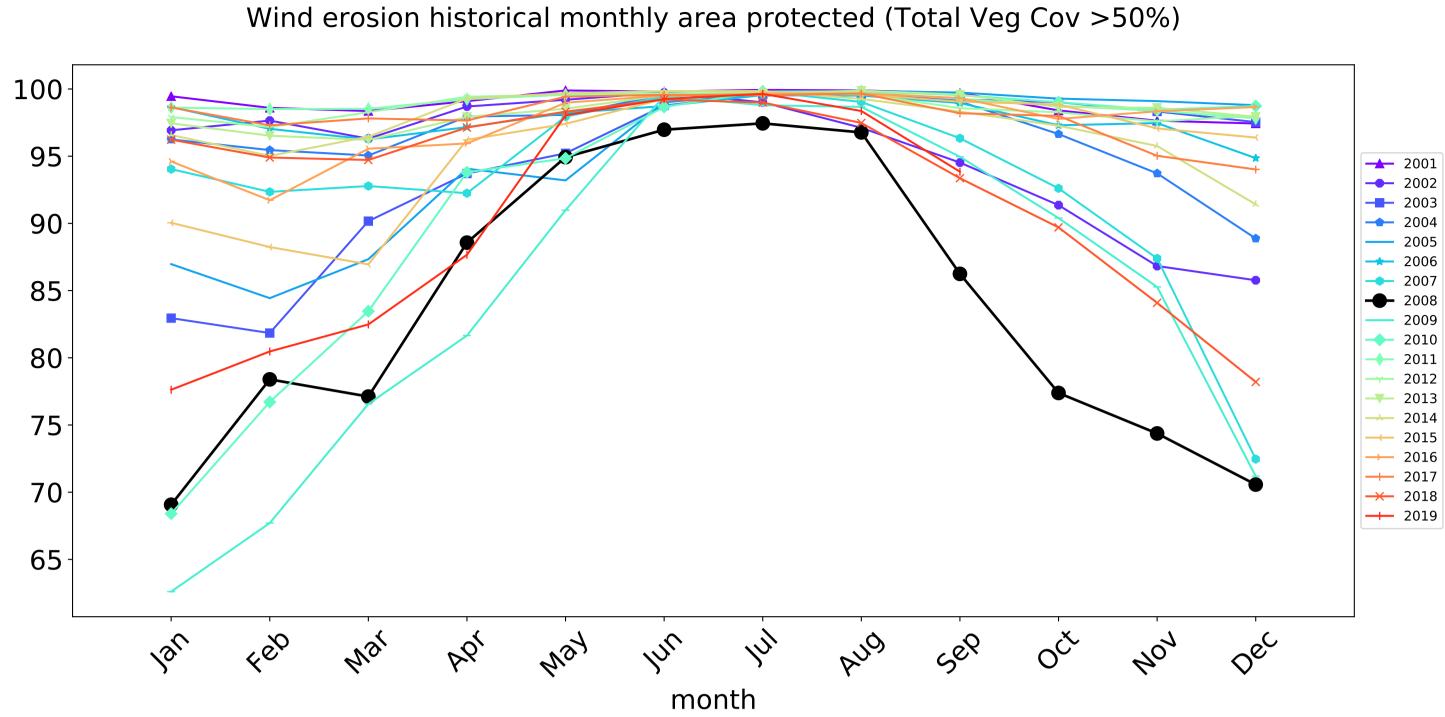


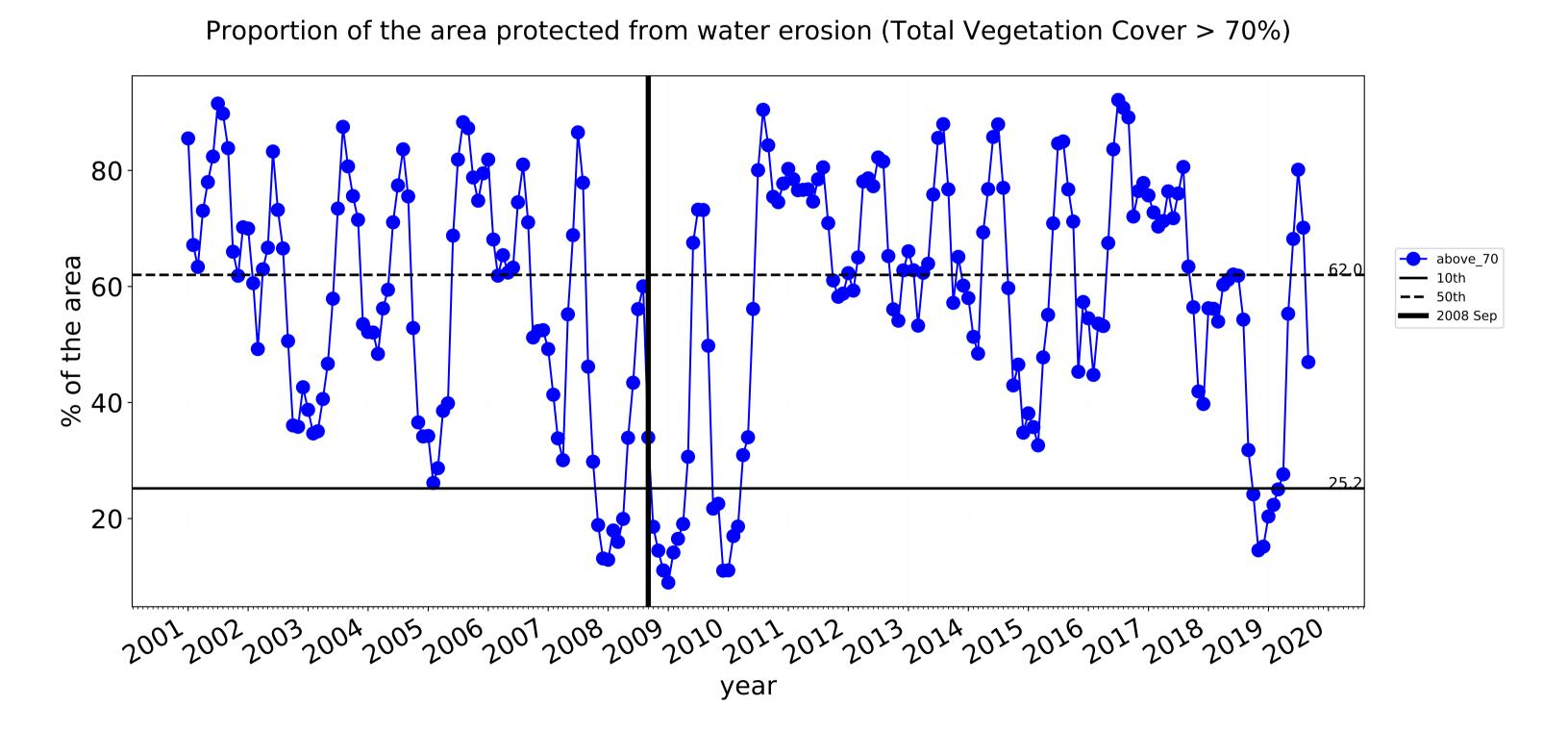


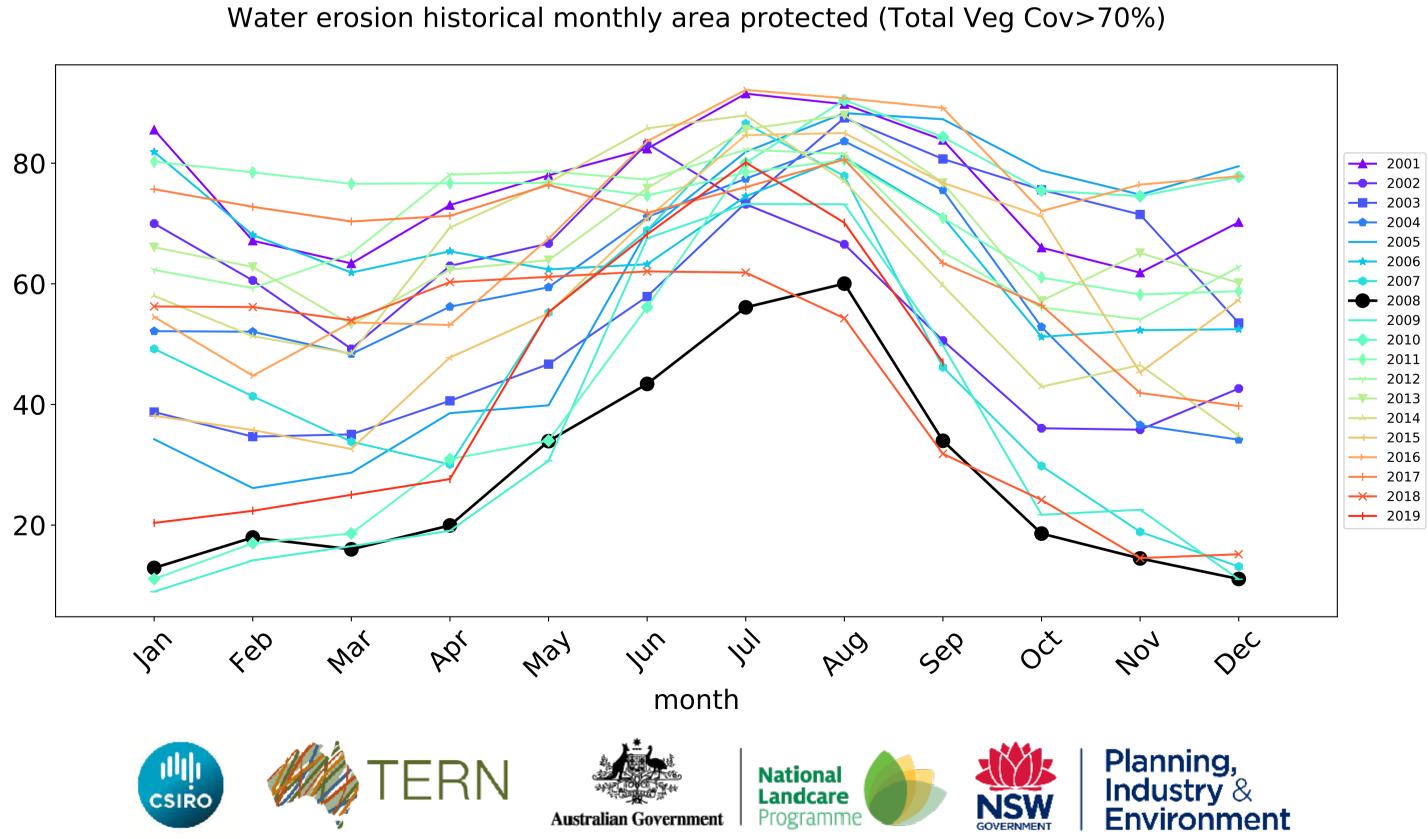


-20







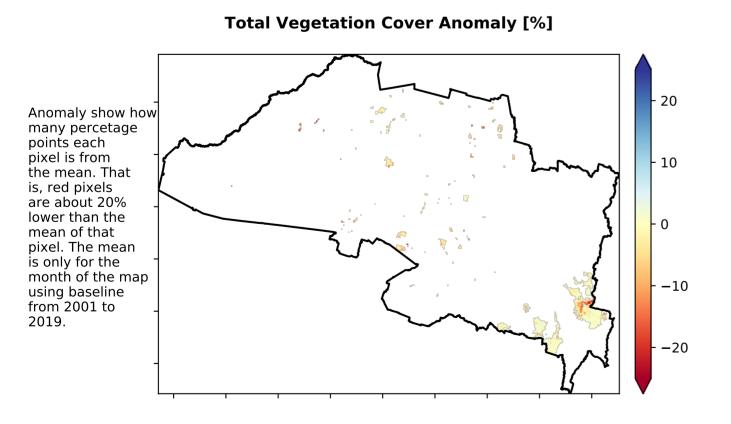


Production native forests and plantation forests

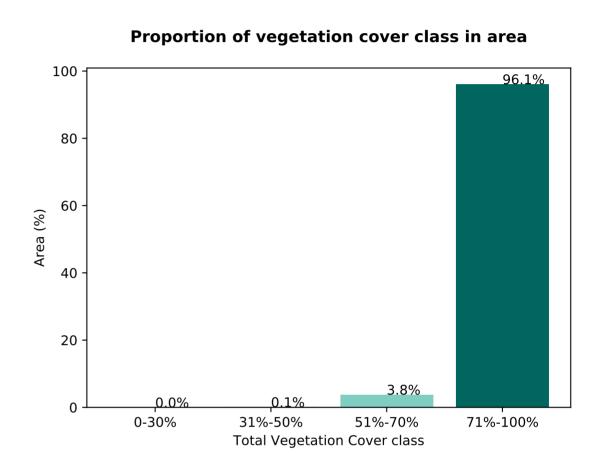
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

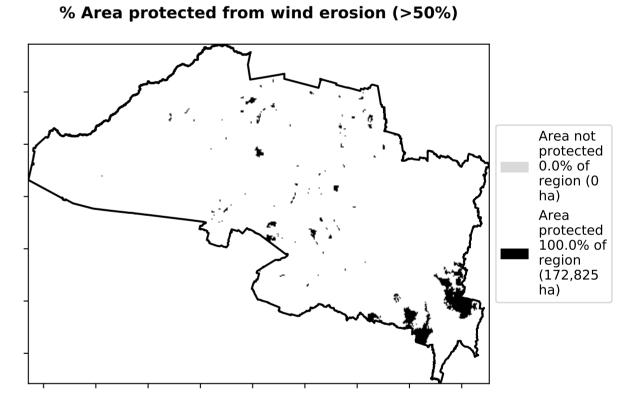
Total Vegetation Cover [%]

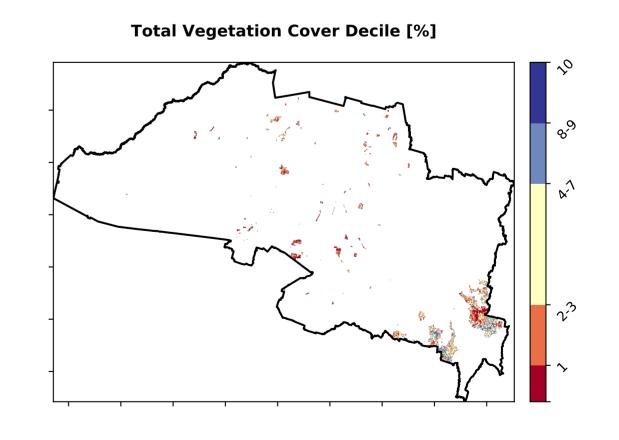
Area not protected 3.9% of region (6,740 ha) Area protected 3.9% of region (6,740 ha) Area protected 96.1% of region (166,084 ha)



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.











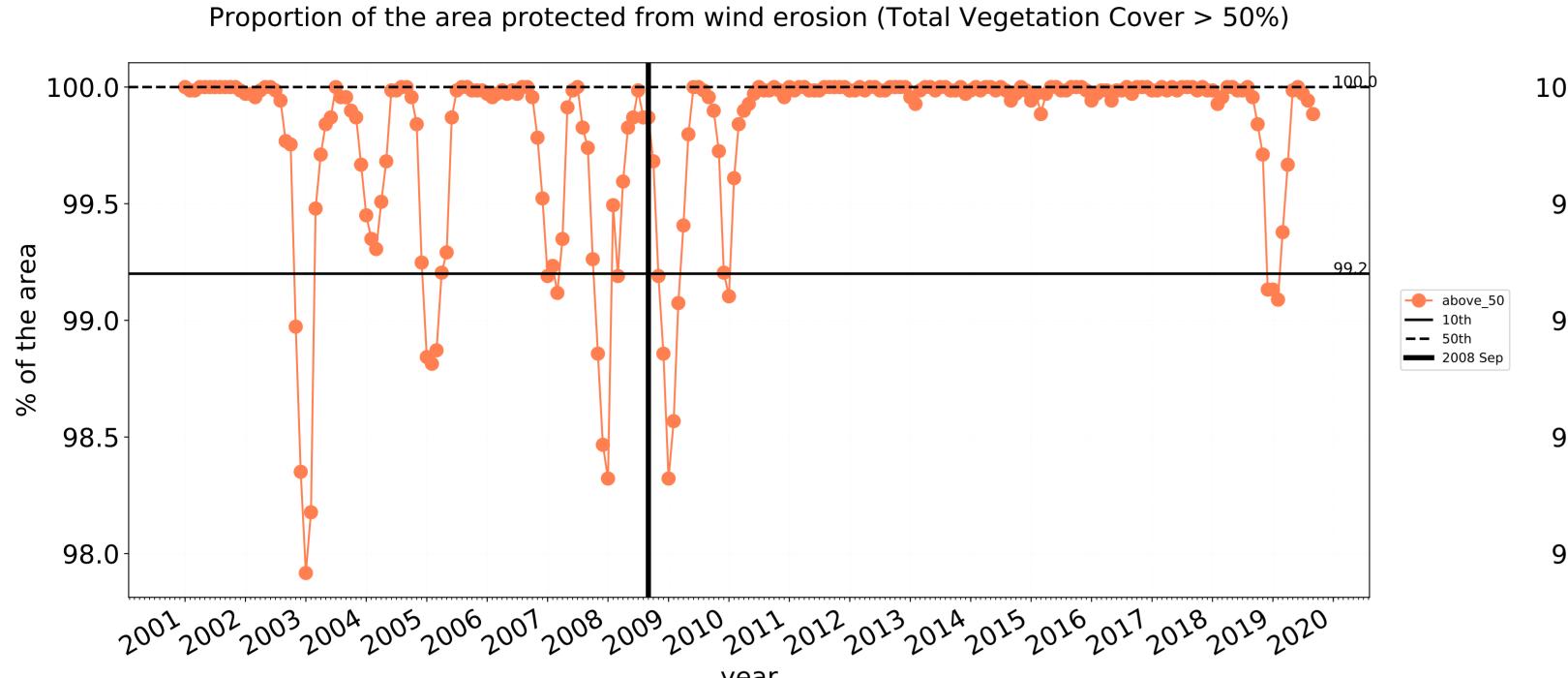


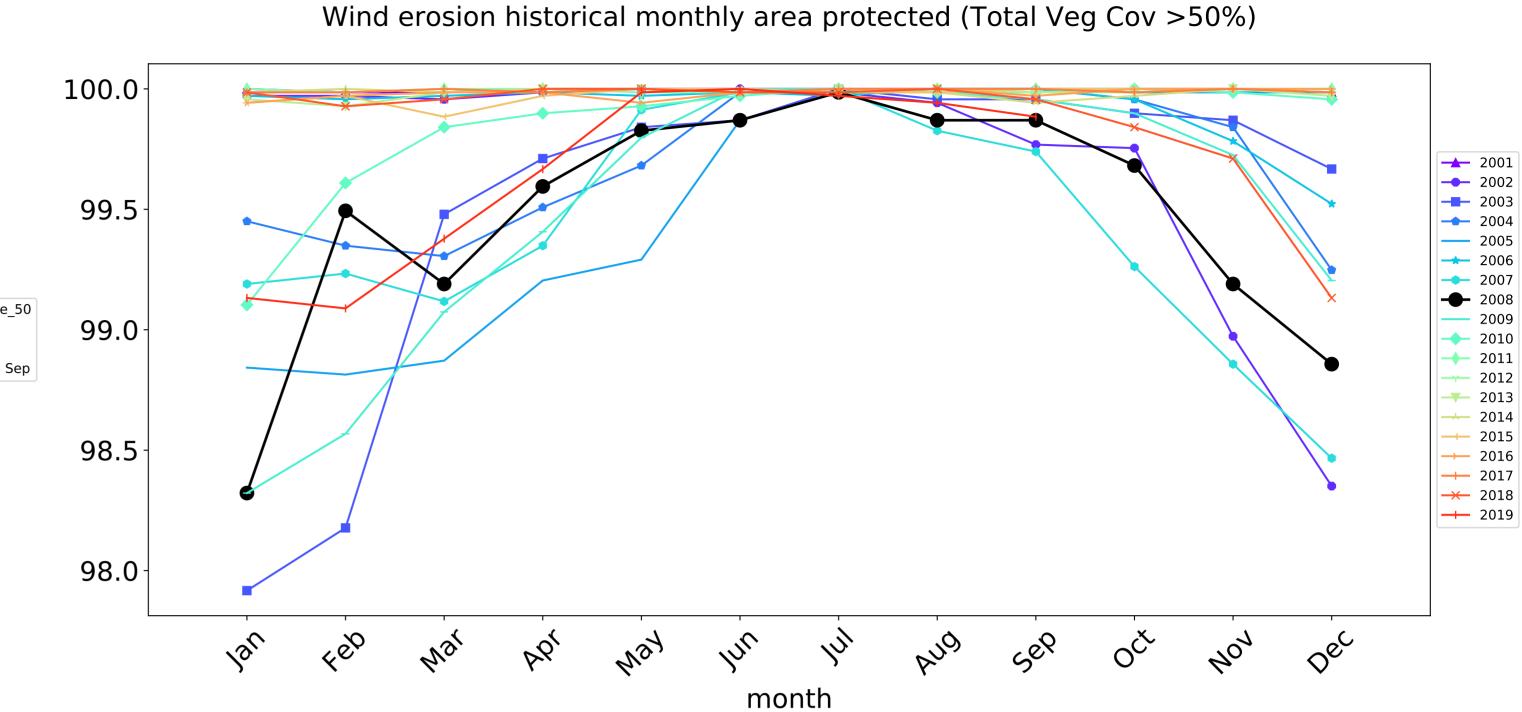


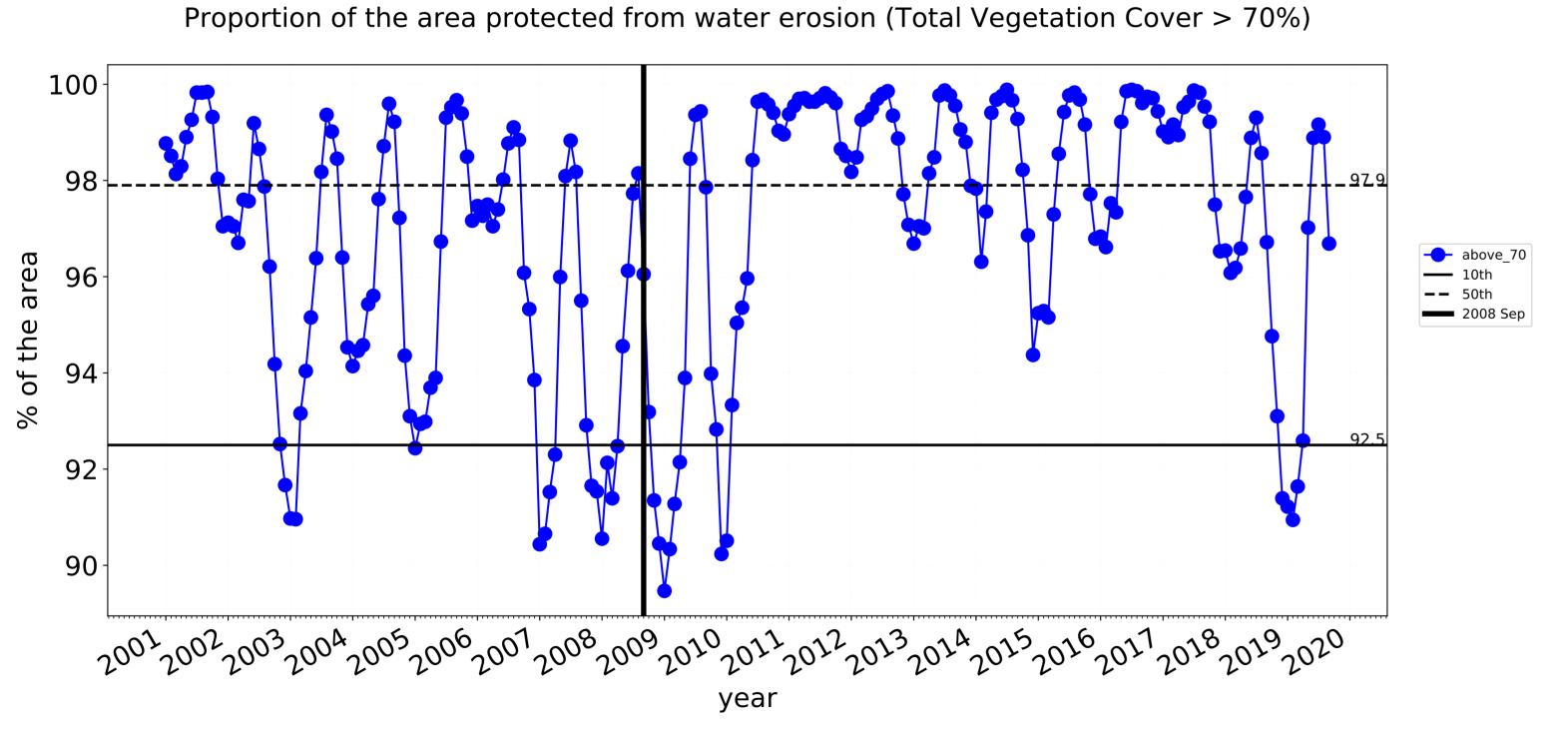


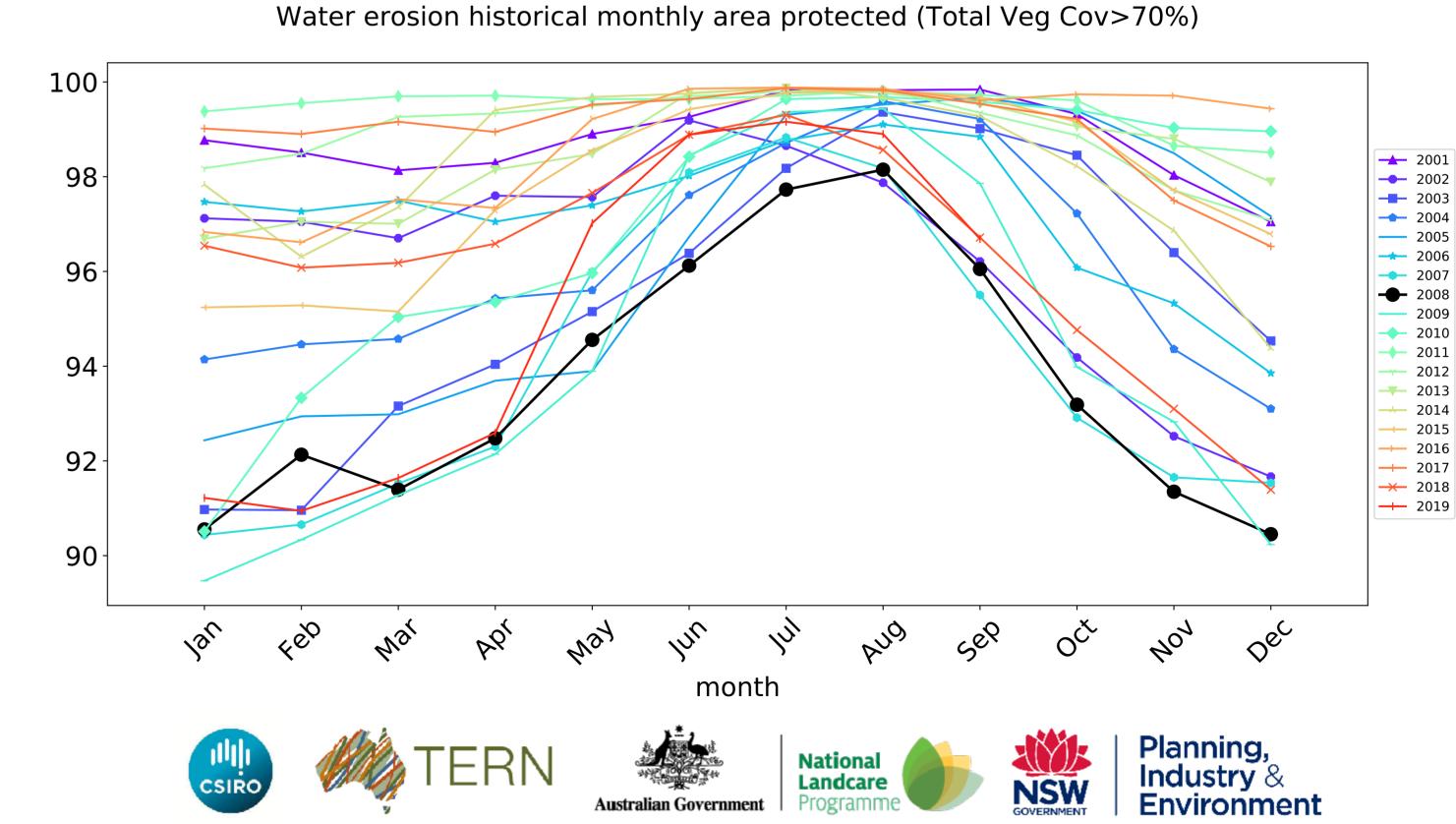


Production native forests and plantation forests timeseries









Riverina (6,694,325 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	98.8% 6,617,075	82.8% 5,540,579	61.5% 4,117,309	37.0% 2,479,415	8.8% 591,747	3.1% 205,699
Conservation and natural environments	323,075	99.9% 322,775	88.2% 284,925	79.4% 256,475	75.0% 242,200	52.5% 169,600	32.9% 106,200
Conservation and natural environments non forest	83,350	99.6% 83,050	54.3% 45,225	21.8% 18,175	15.8% 13,150	9.2% 7,675	5.7% 4,725
Conservation and natural environments Forest (non woodland)	195,225	100.0% 195,225	100.0% 195,200	99.7% 194,575	97.6% 190,475	77.3% 150,825	50.5% 98,500
Agriculture	6,067,850	98.8% 5,993,200	82.1% 4,983,250	59.9% 3,634,875	34.0% 2,060,350	5.3% 319,825	0.8% 46,475
Grazing	2,311,475	96.9% 2,239,325	59.0% 1,363,875	41.6% 961,050	31.0% 717,450	7.7% 179,050	1.1% 24,900
Grazing non forest	2,066,475	96.5% 1,994,325	54.2% 1,119,225	35.7% 738,350	26.9% 555,725	6.5% 133,325	0.8% 17,000
Grazing Woodland forest	141,650	100.0% 141,650	100.0% 141,600	89.6% 126,875	57.0% 80,800	8.4% 11,950	0.6% 825
Grazing - Forest (non woodland)	103,350	100.0% 103,350	99.7% 103,050	92.7% 95,825	78.3% 80,925	32.7% 33,775	6.8% 7,075
Cropping	3,186,925	100.0% 3,185,550	98.2% 3,128,000	77.8% 2,479,600	40.6% 1,294,000	4.3% 138,050	0.7% 21,225
Irrigation	567,625	99.8% 566,500	86.2% 489,550	34.0% 192,875	8.5% 47,975	0.5% 2,700	0.1% 350
Production native forests and plantation forests	172,825	100.0% 172,825	99.9% 172,600	96.1% 166,000	87.6% 151,375	58.2% 100,500	30.6% 52,925











