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: June 2009

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





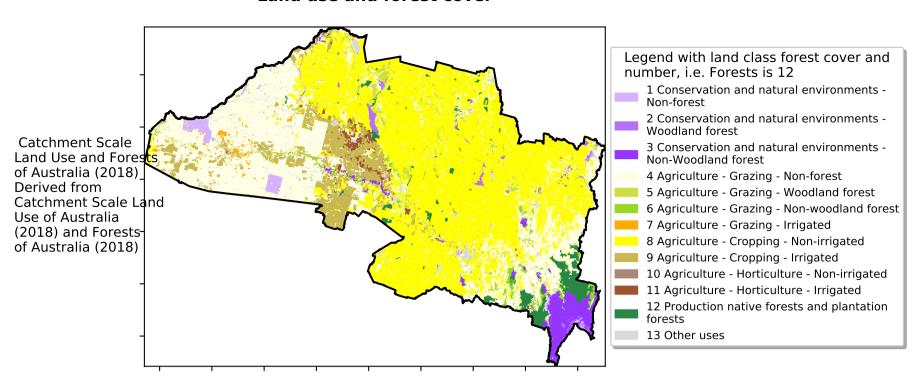




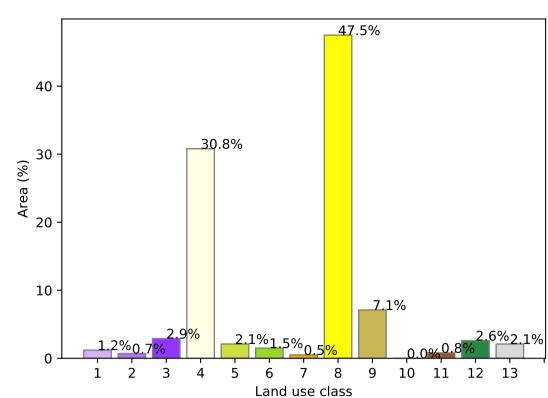


Vegetation Cover Jun 2009

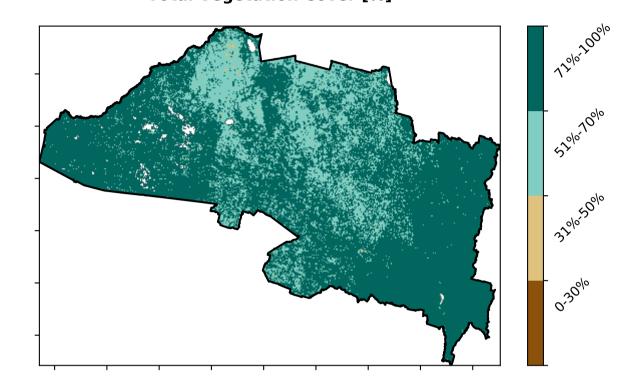
Land use and forest cover



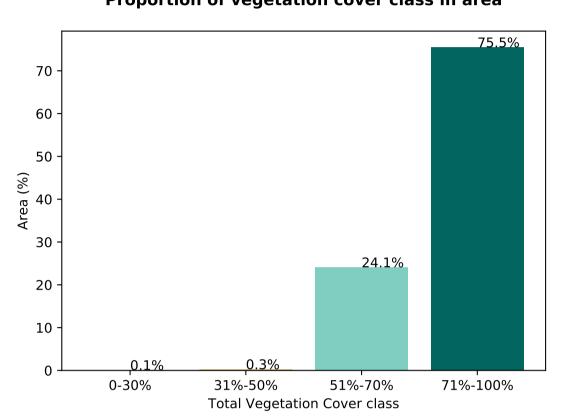
Proportion of each land class in area



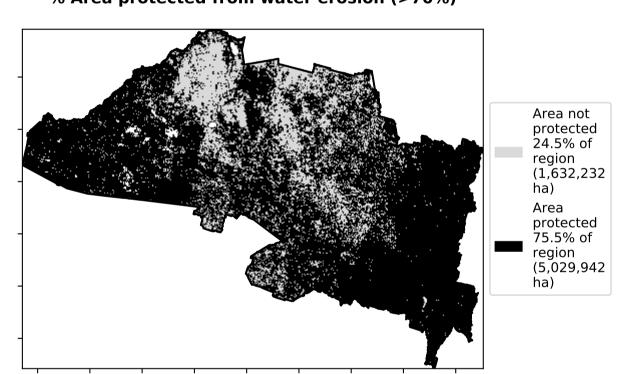
Total Vegetation Cover [%]



Proportion of vegetation cover class in area



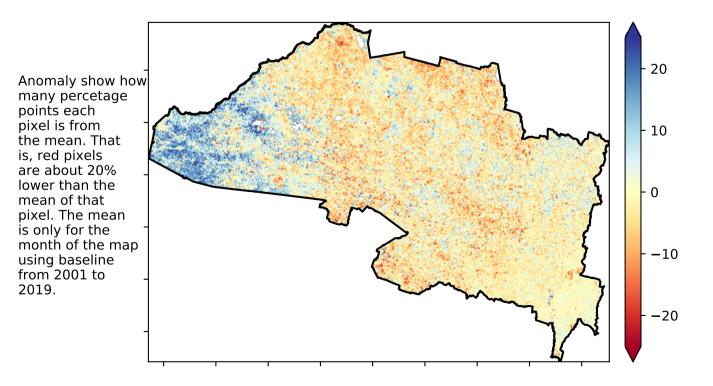
% Area protected from water erosion (>70%)



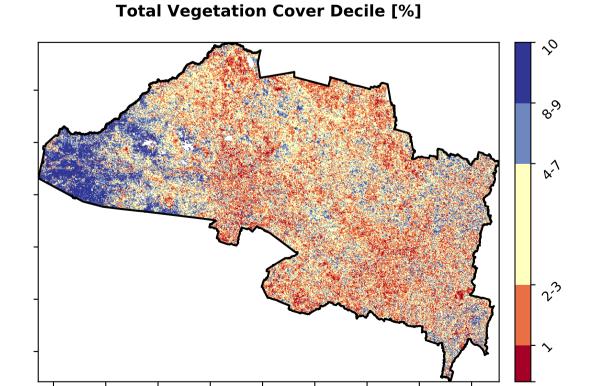
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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





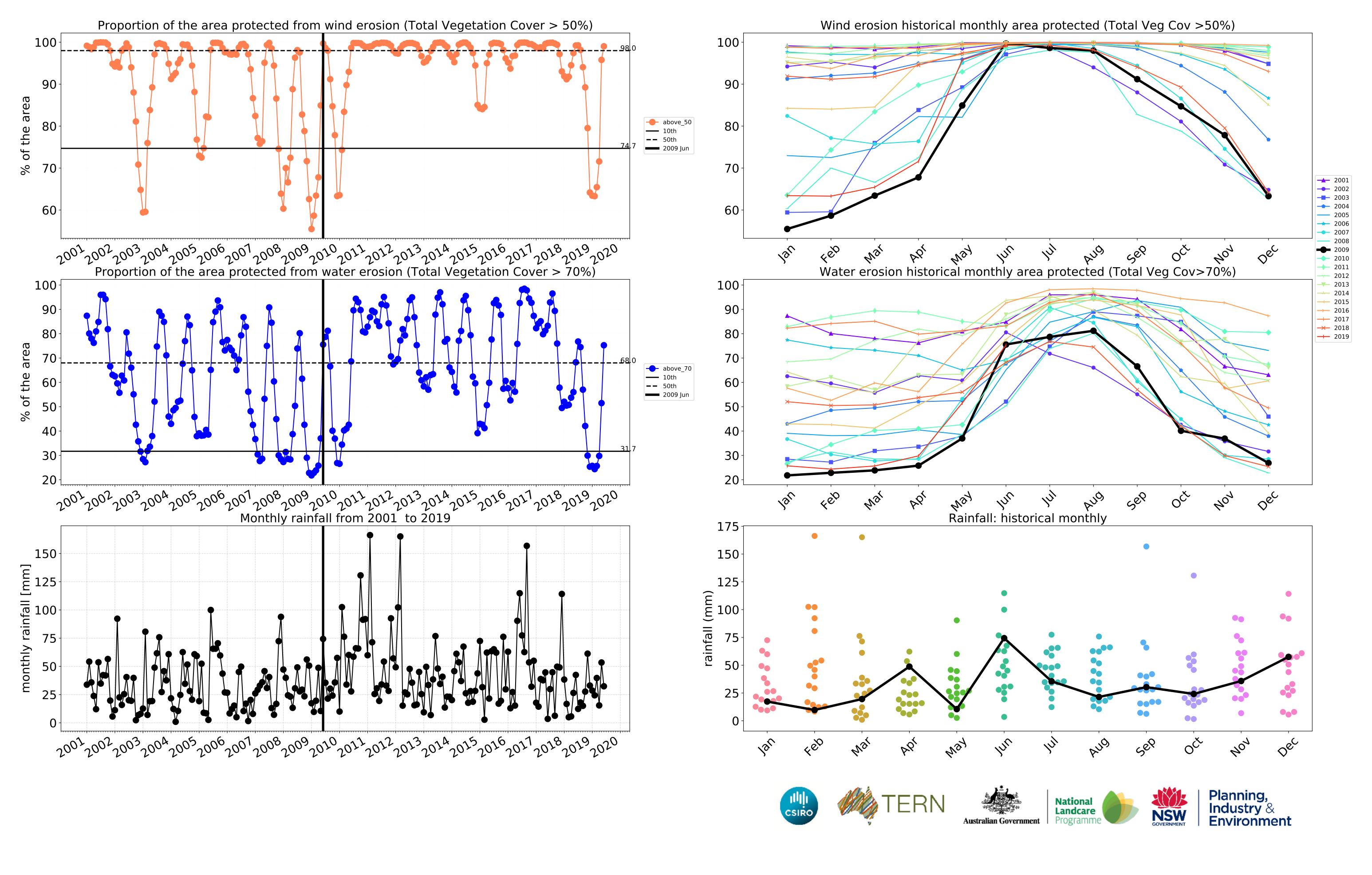




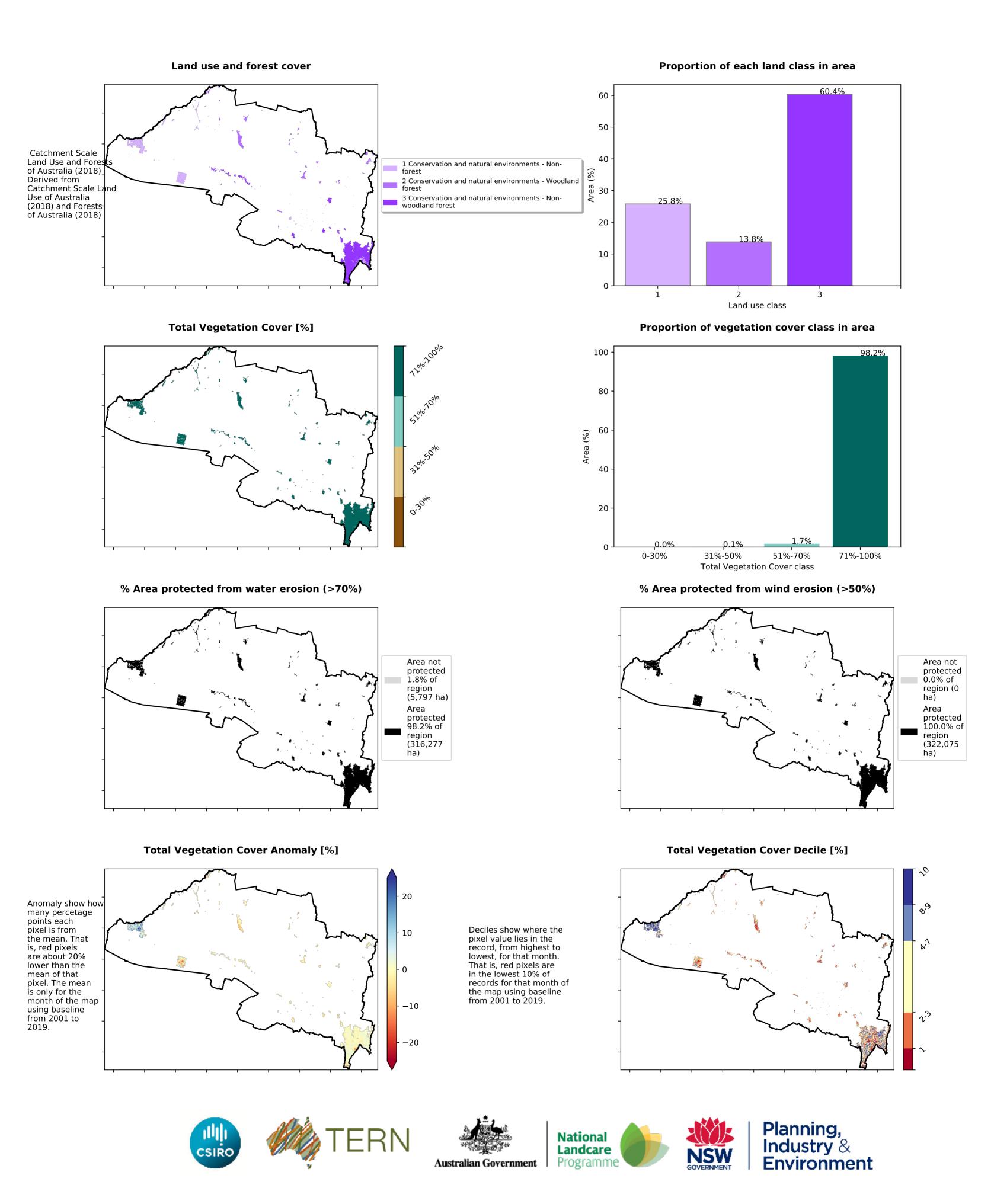




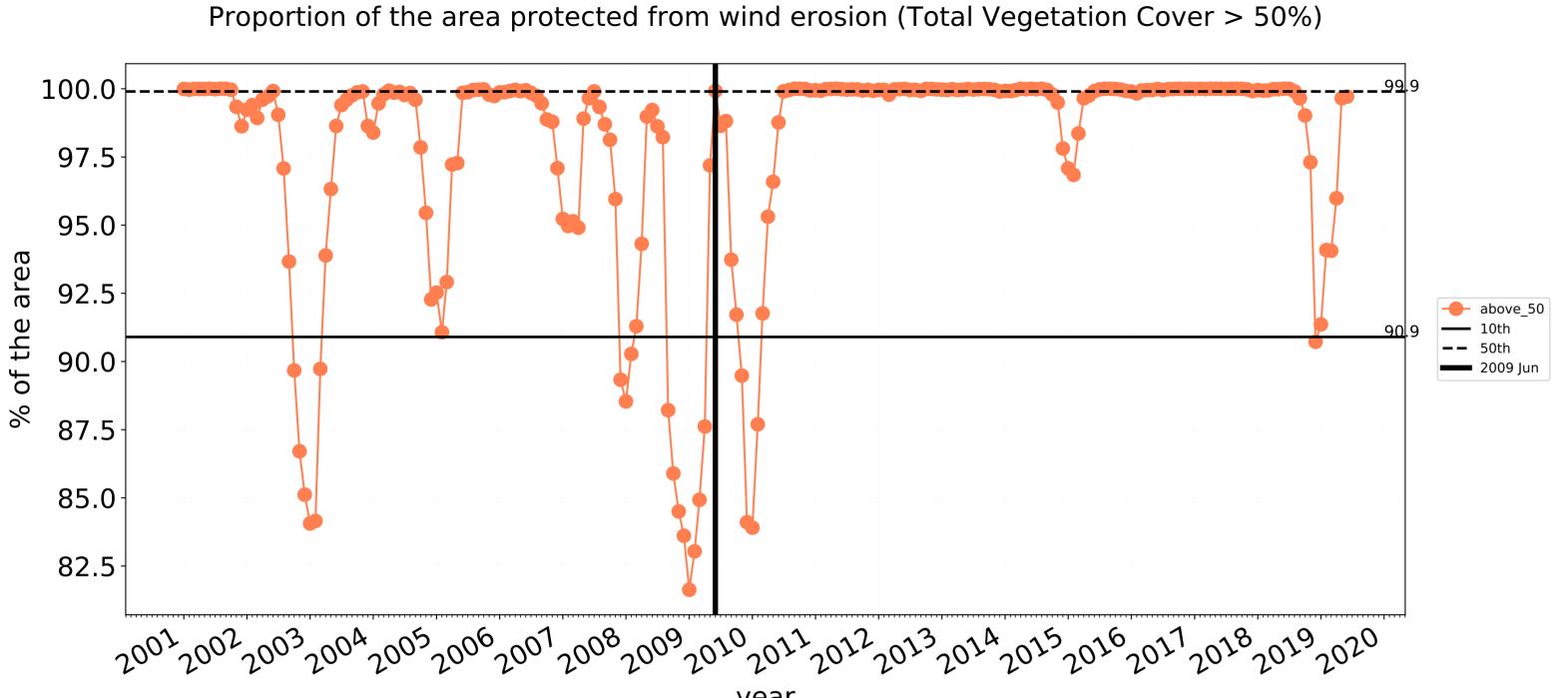


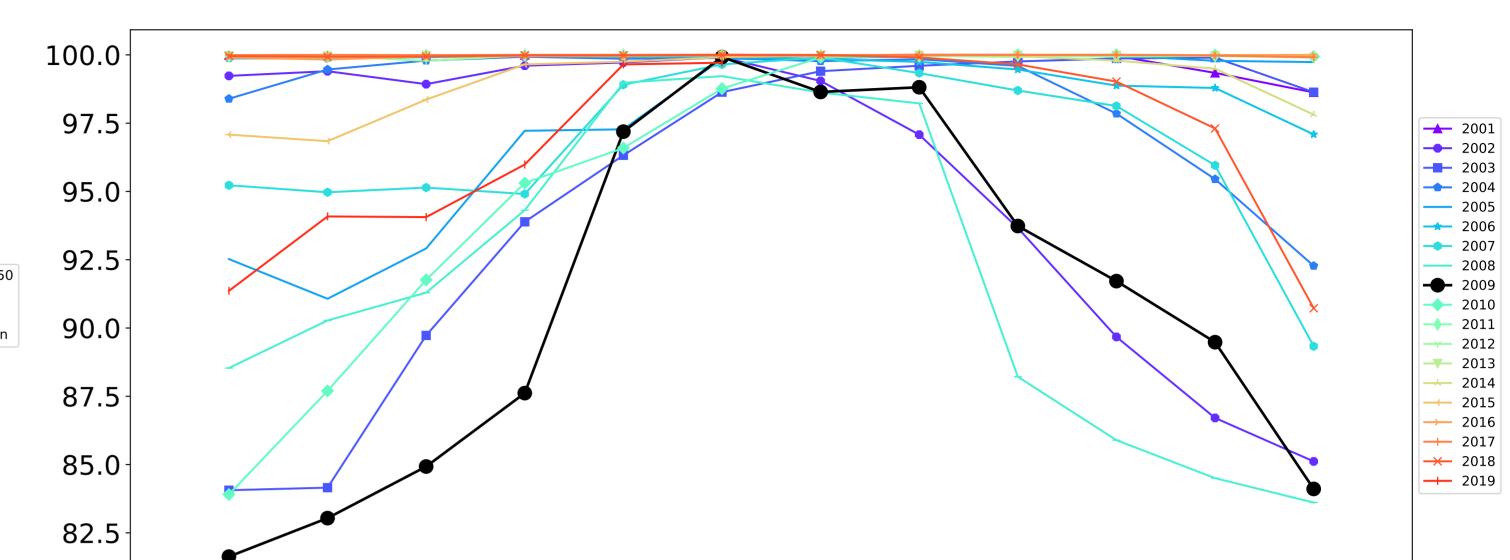


Conservation and natural environments



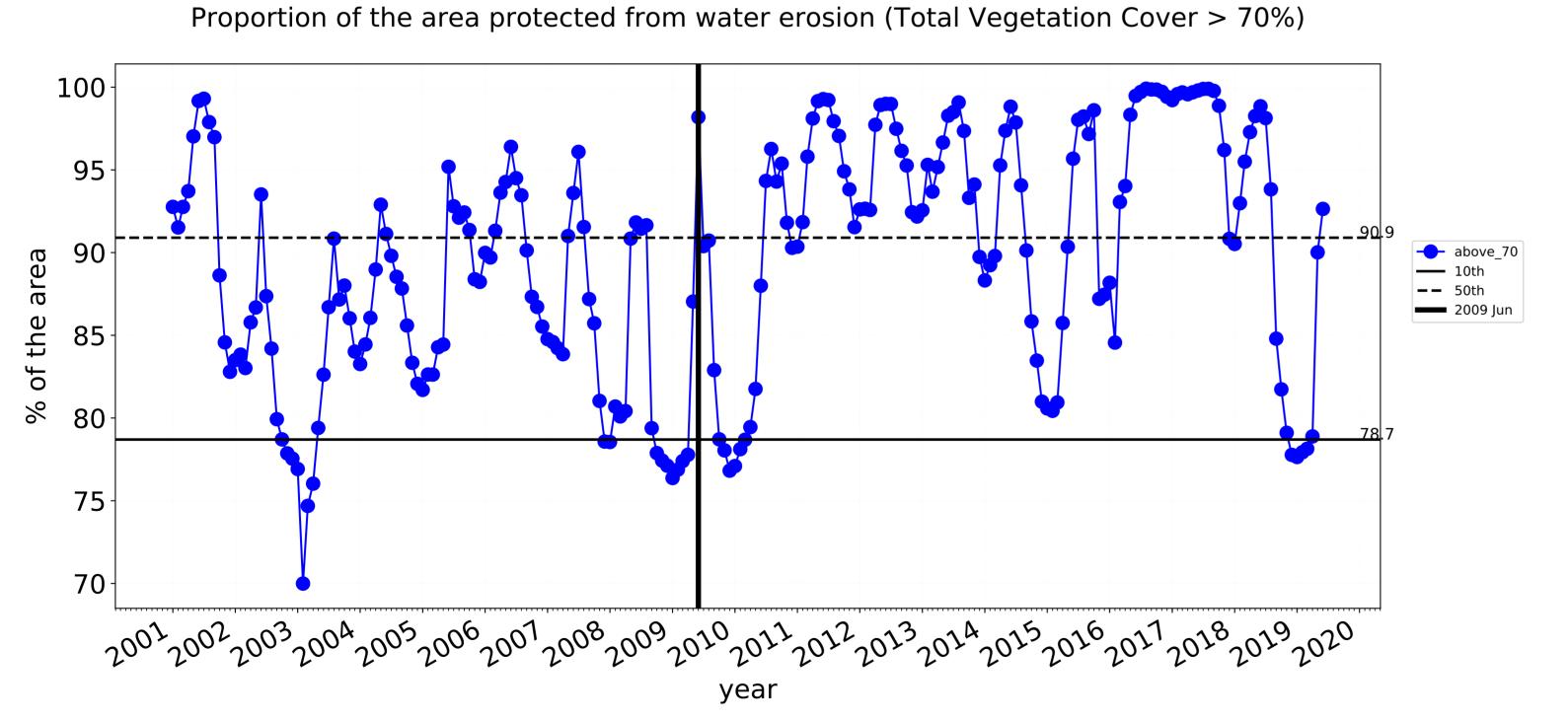
Conservation and natural environments timeseries

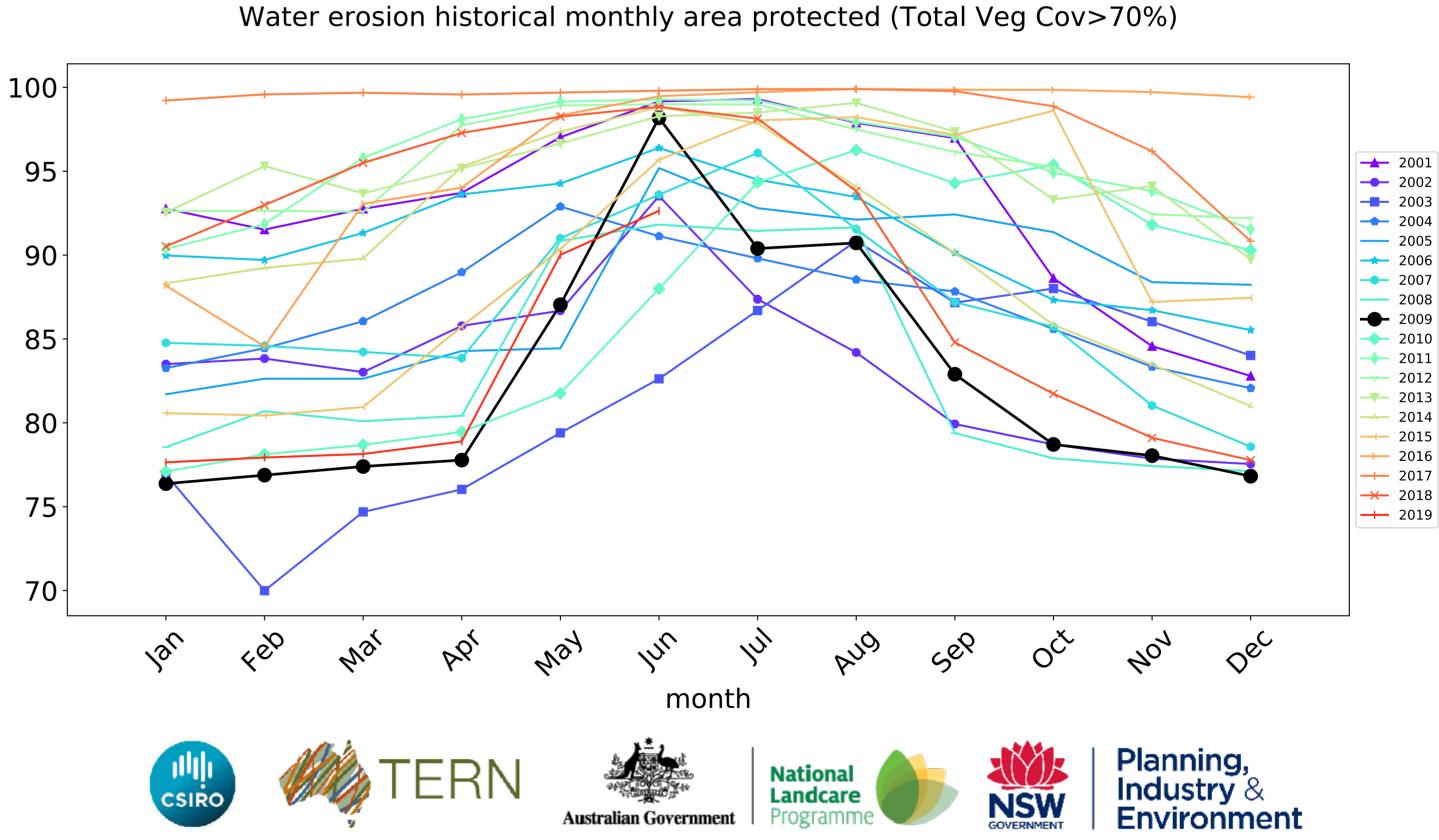




month

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



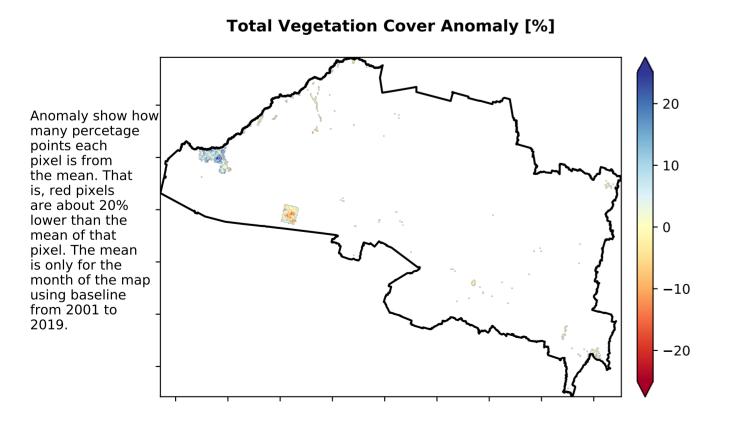


Conservation and natural environments non forest

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

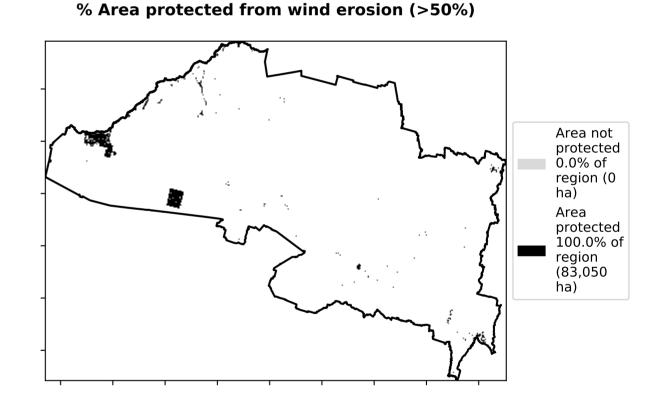
Total Vegetation Cover [%]

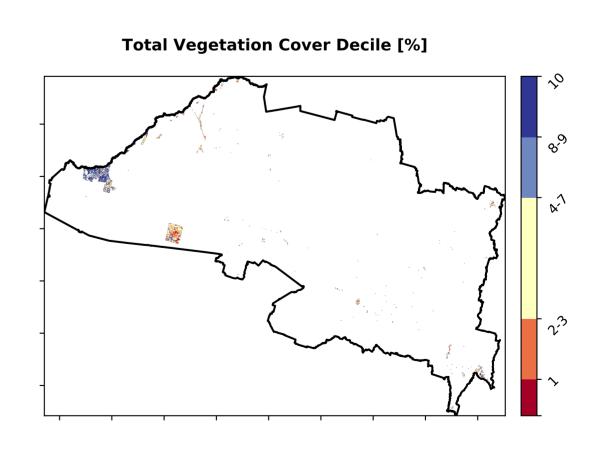
Area not protected 5.7% of region (4,733 ha) Area protected 94.3% of region (78,316 ha)



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Proportion of vegetation cover class in area 94.3% 94.3% 94.3% 94.3% 94.3% 94.3% 94.3% 94.3% 94.3% 71%-100% Total Vegetation Cover class









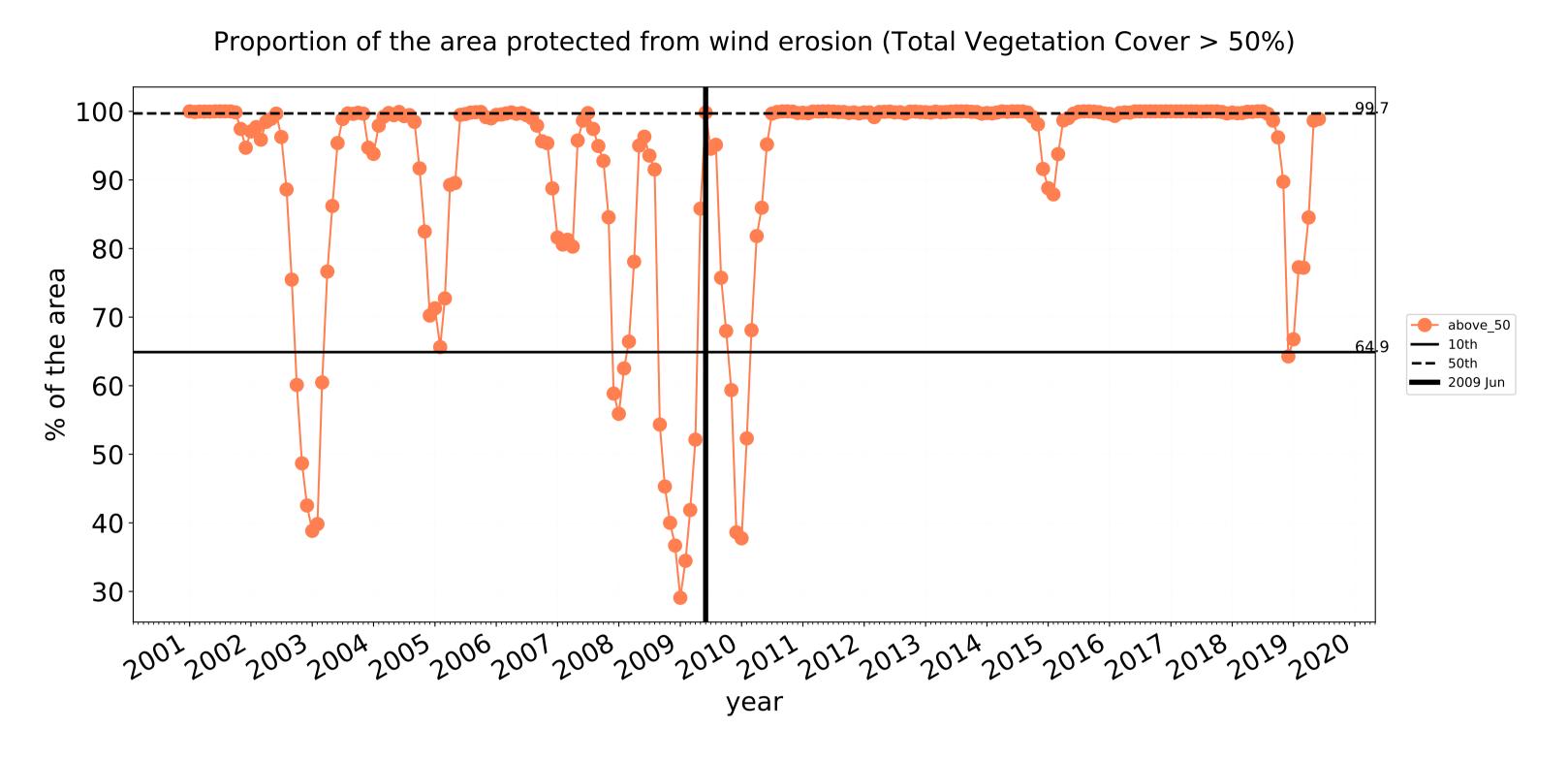


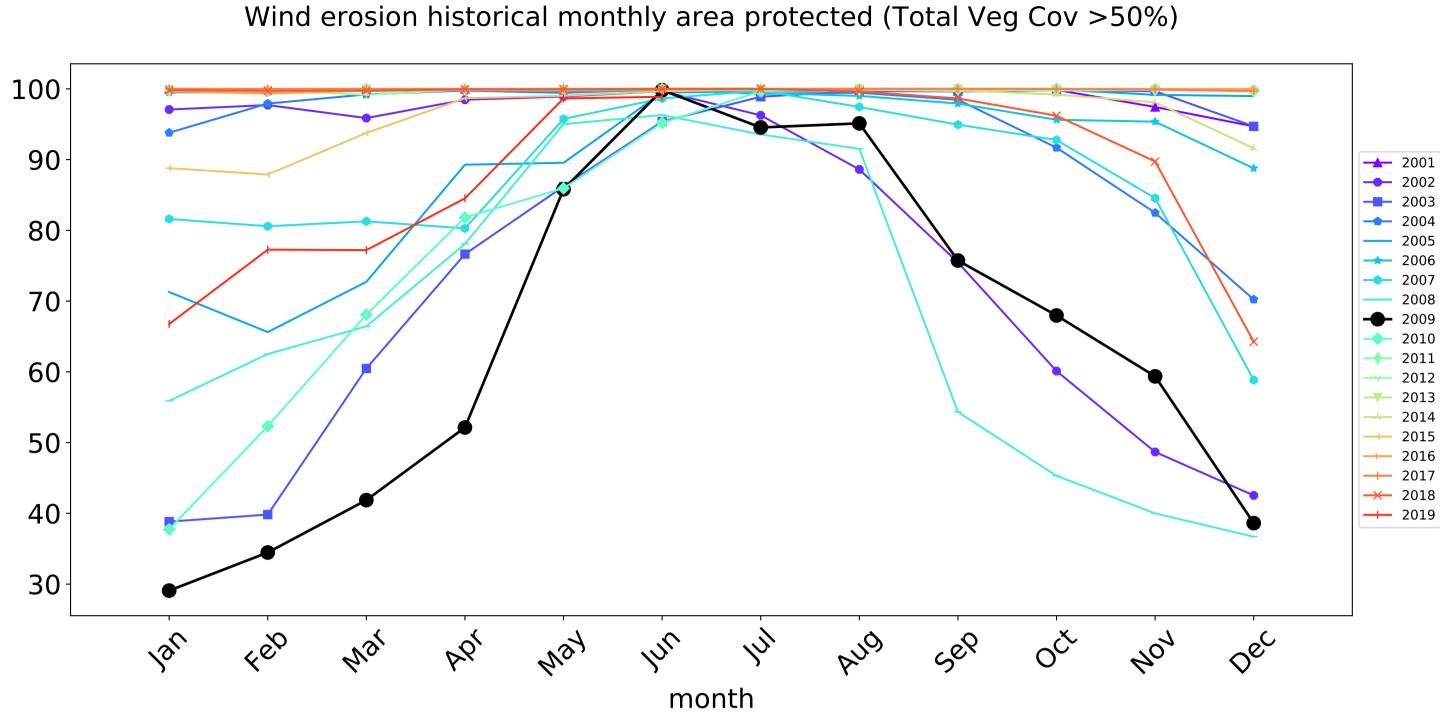


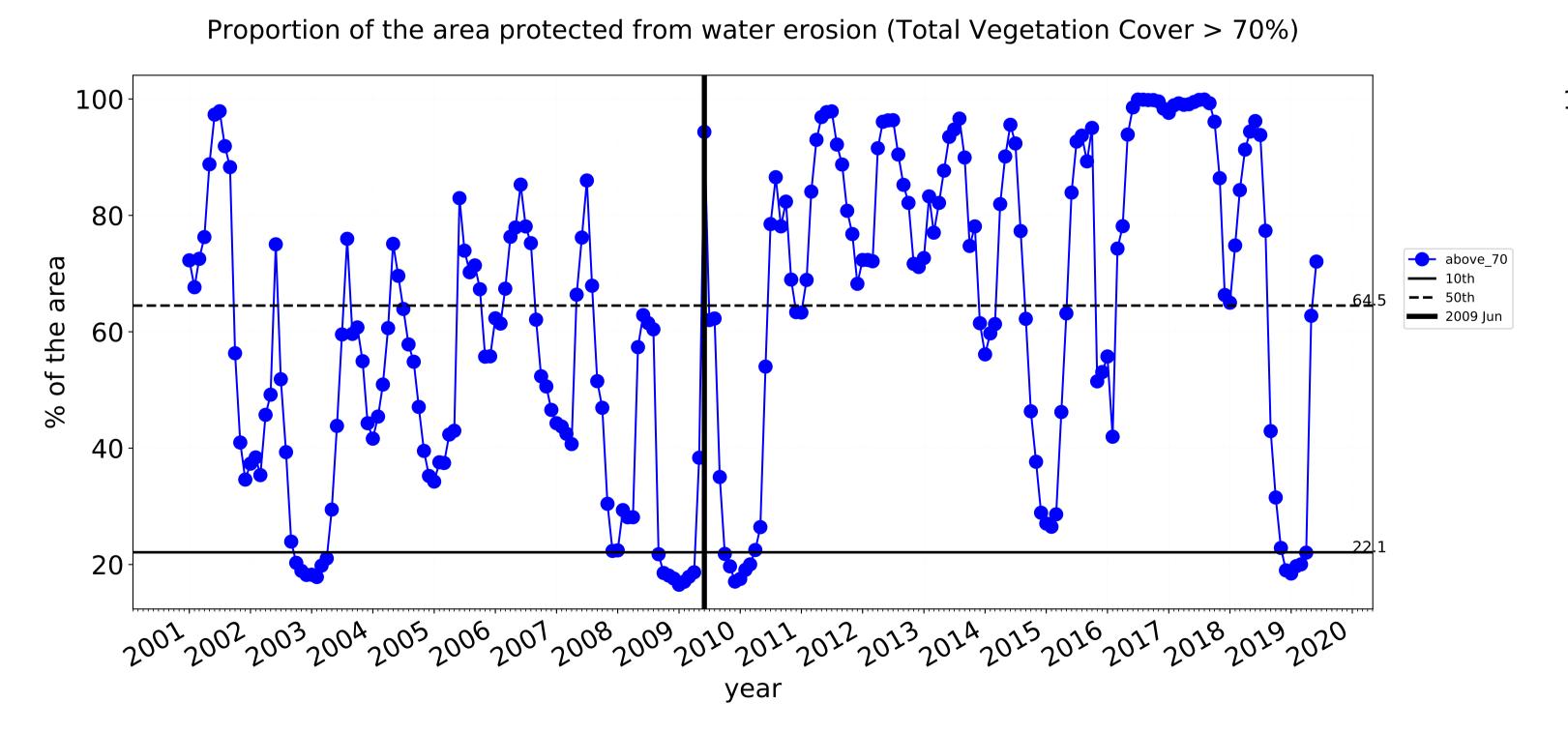


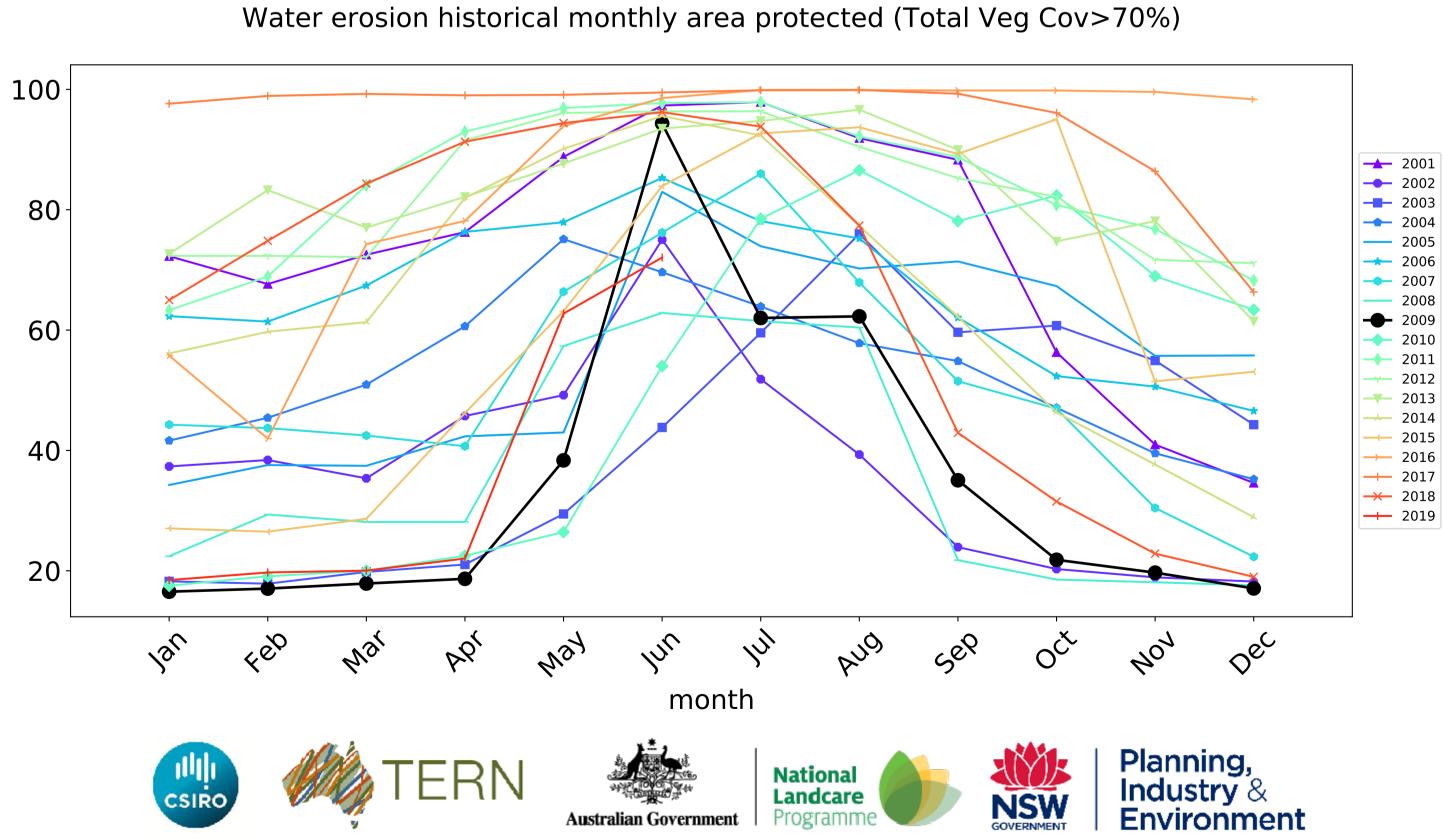


Conservation and natural environments non forest timeseries

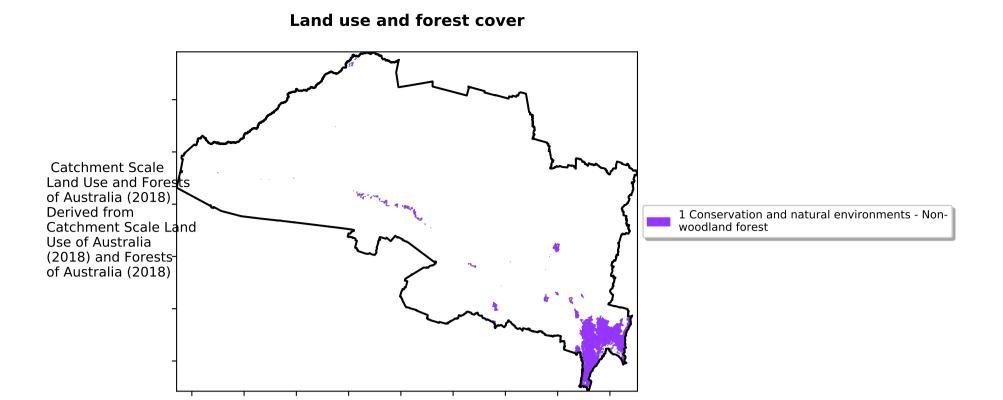




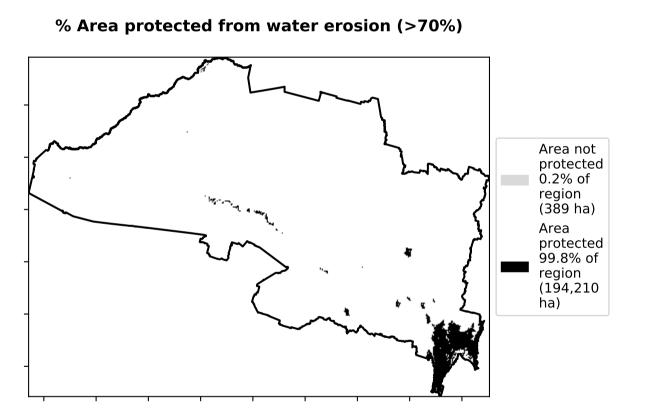


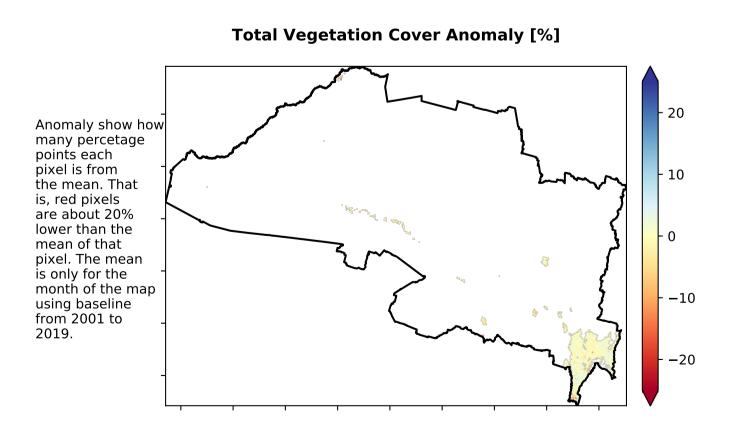


Conservation and natural environments Forest (non woodland)

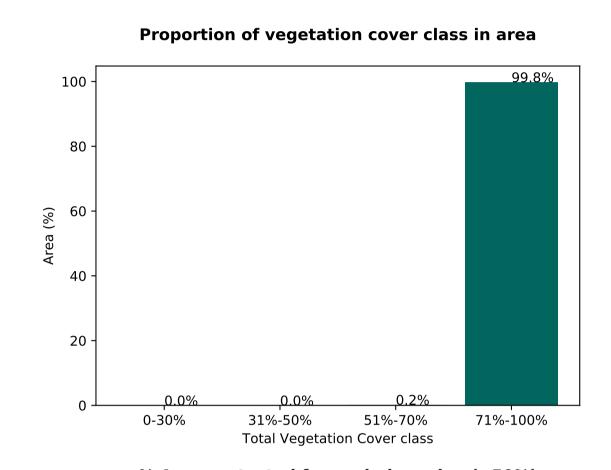


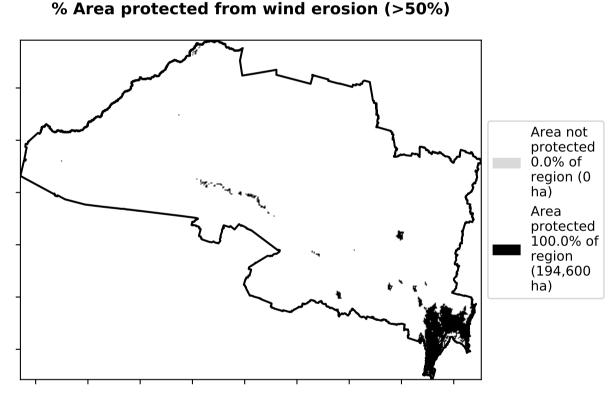
Total Vegetation Cover [%]

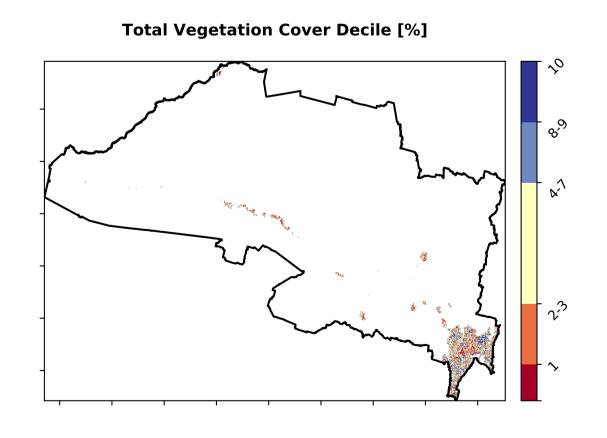




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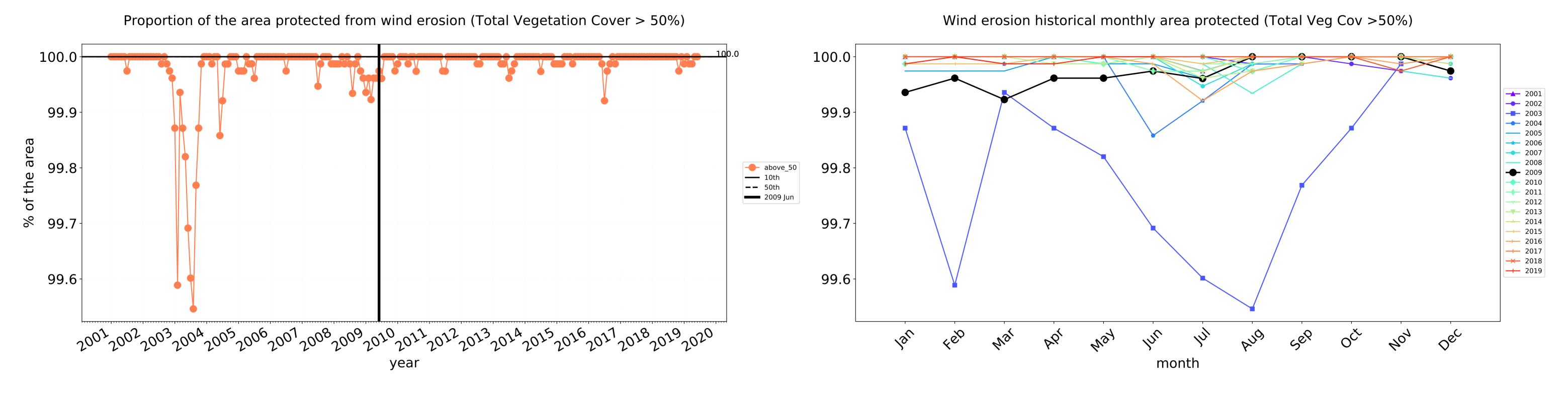


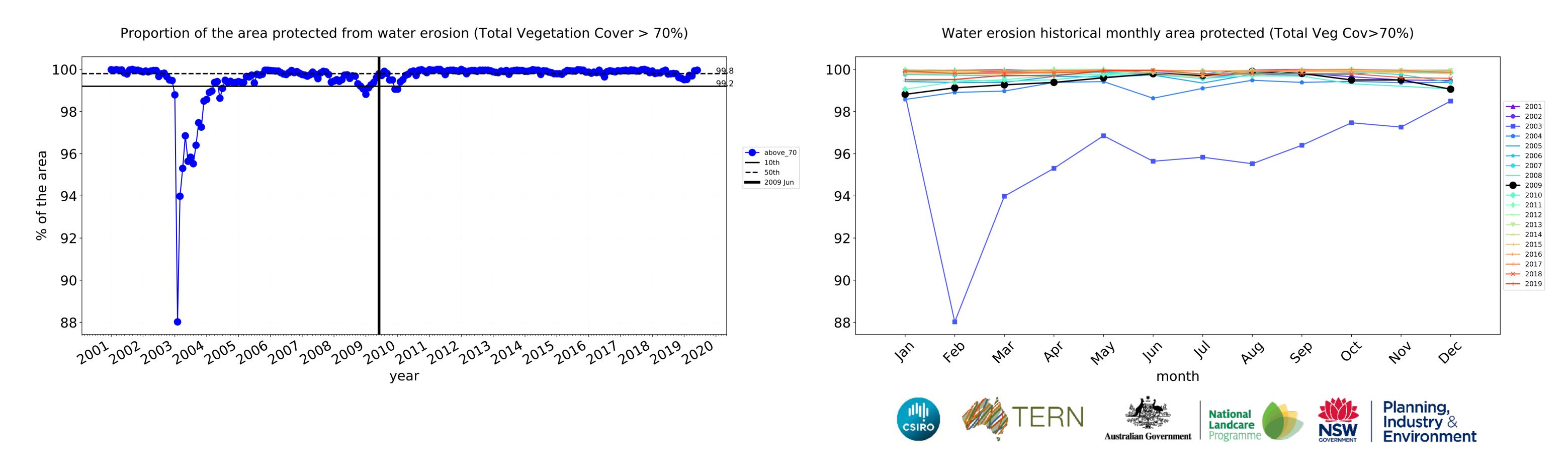








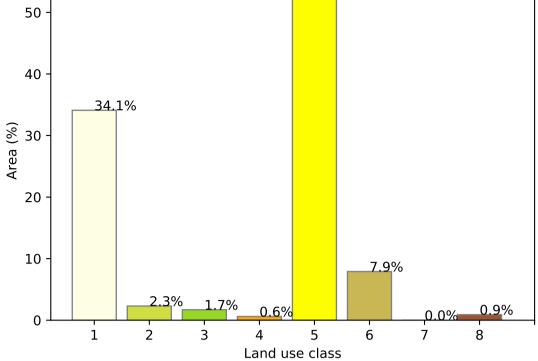




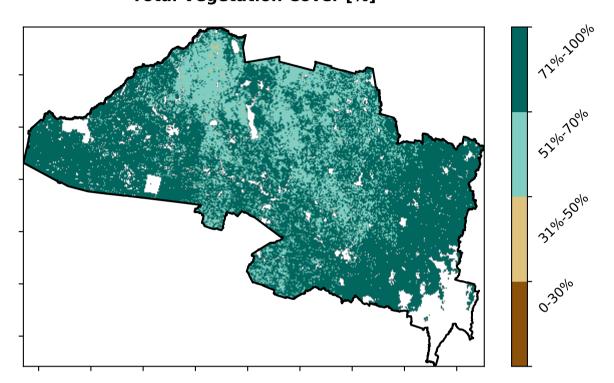
Agriculture

Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) 1 Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest Derived from 4 Agriculture - Grazing - Irrigated Catchment Scale Land Use of Australia 5 Agriculture - Cropping - Non-irrigated 6 Agriculture - Cropping - Irrigated (2018) and Forests-7 Agriculture - Horticulture - Non-irrigated of Australia (2018) 8 Agriculture - Horticulture - Irrigated

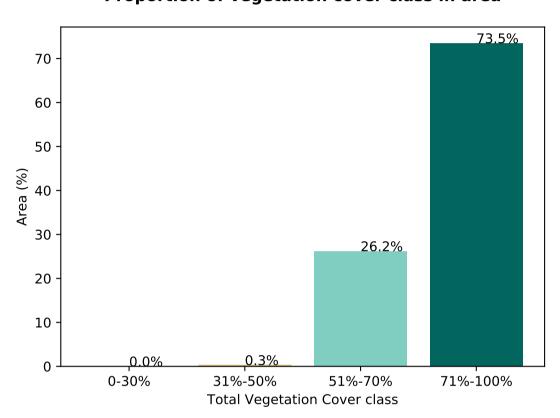
Proportion of each land class in area 52.5%



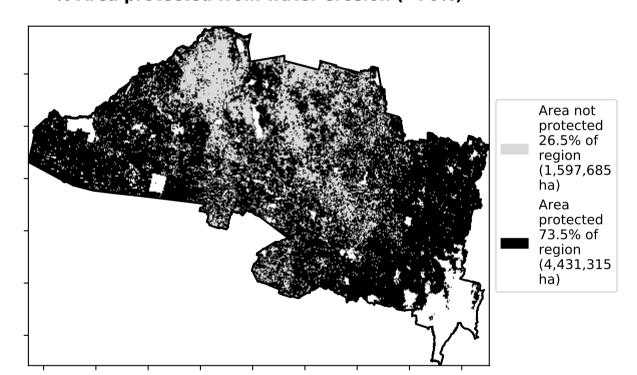
Total Vegetation Cover [%]



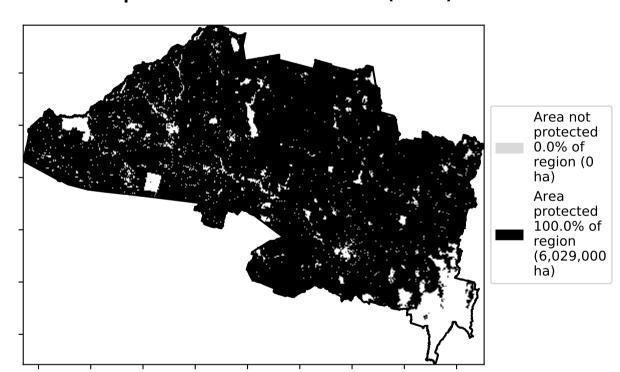
Proportion of vegetation cover class in area



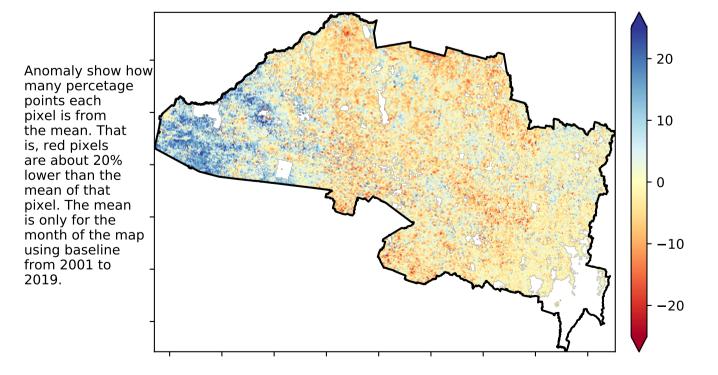
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

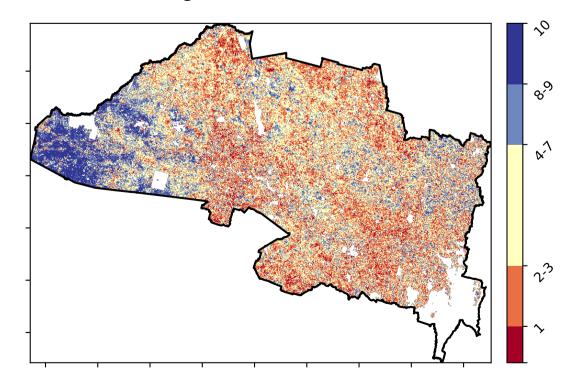


Total Vegetation Cover Anomaly [%]



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Total Vegetation Cover Decile [%]







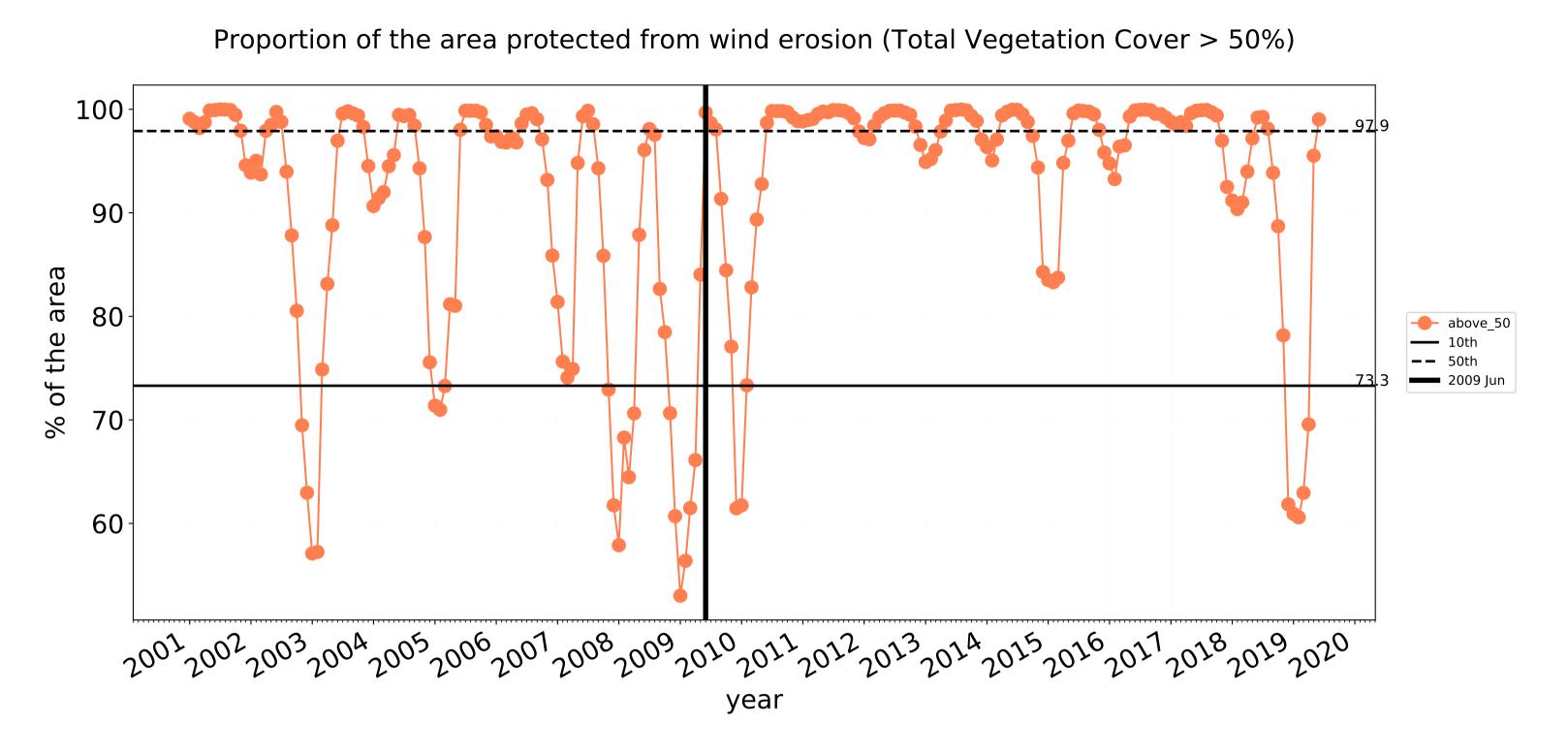


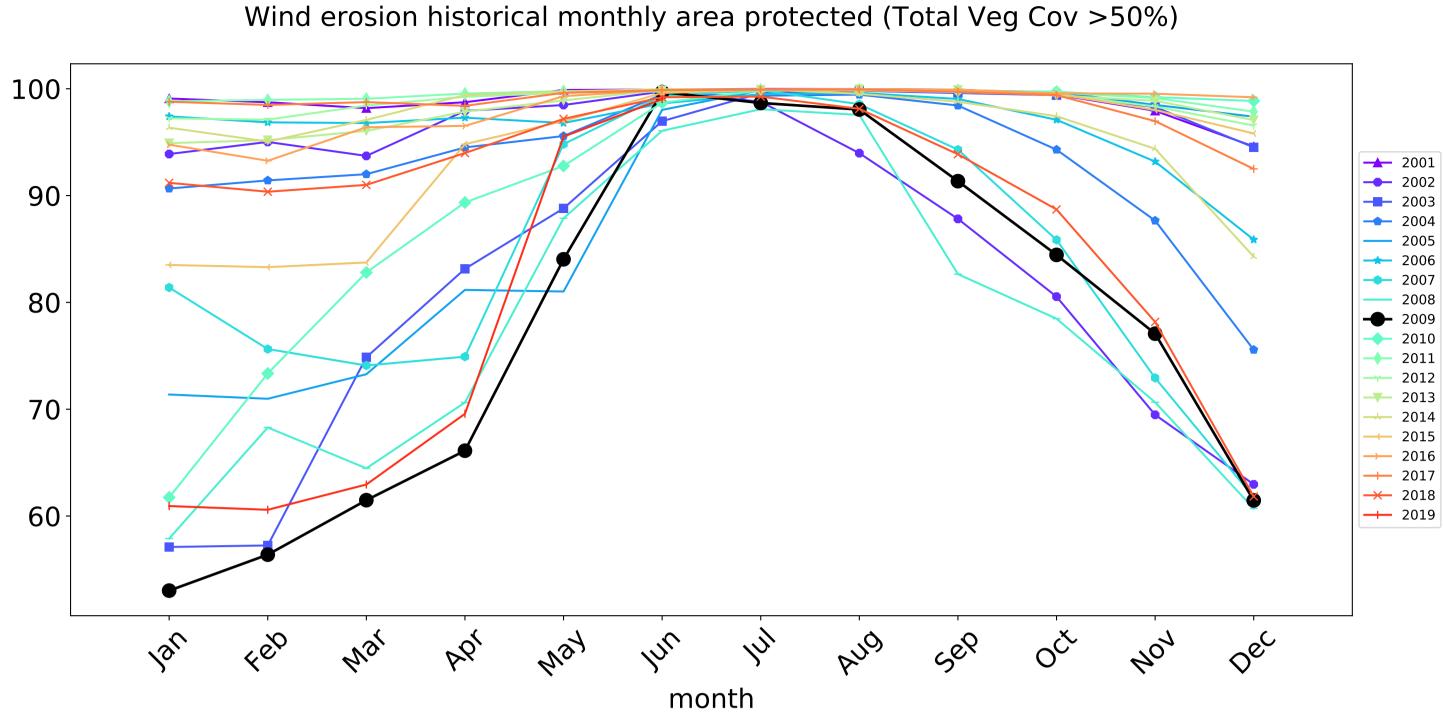


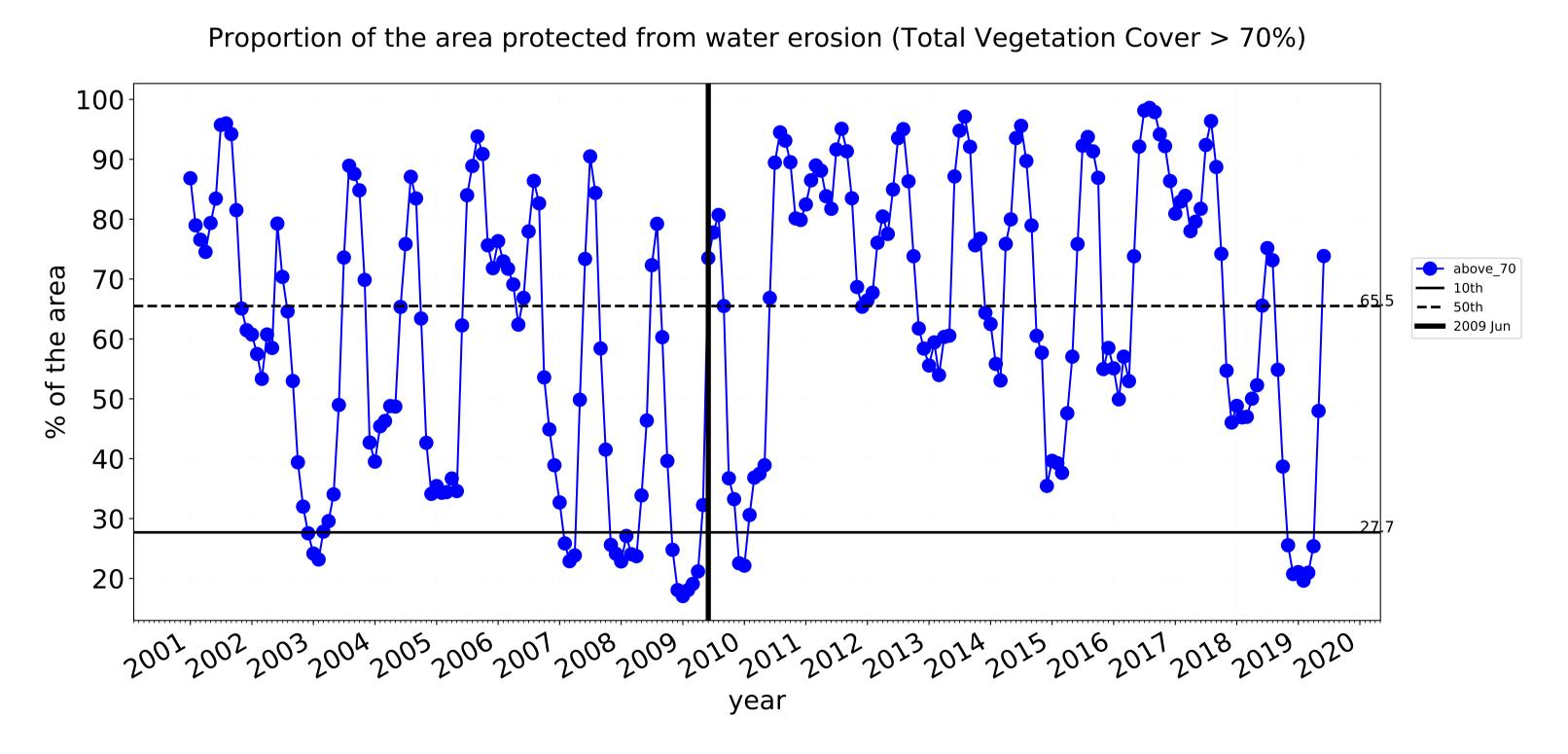


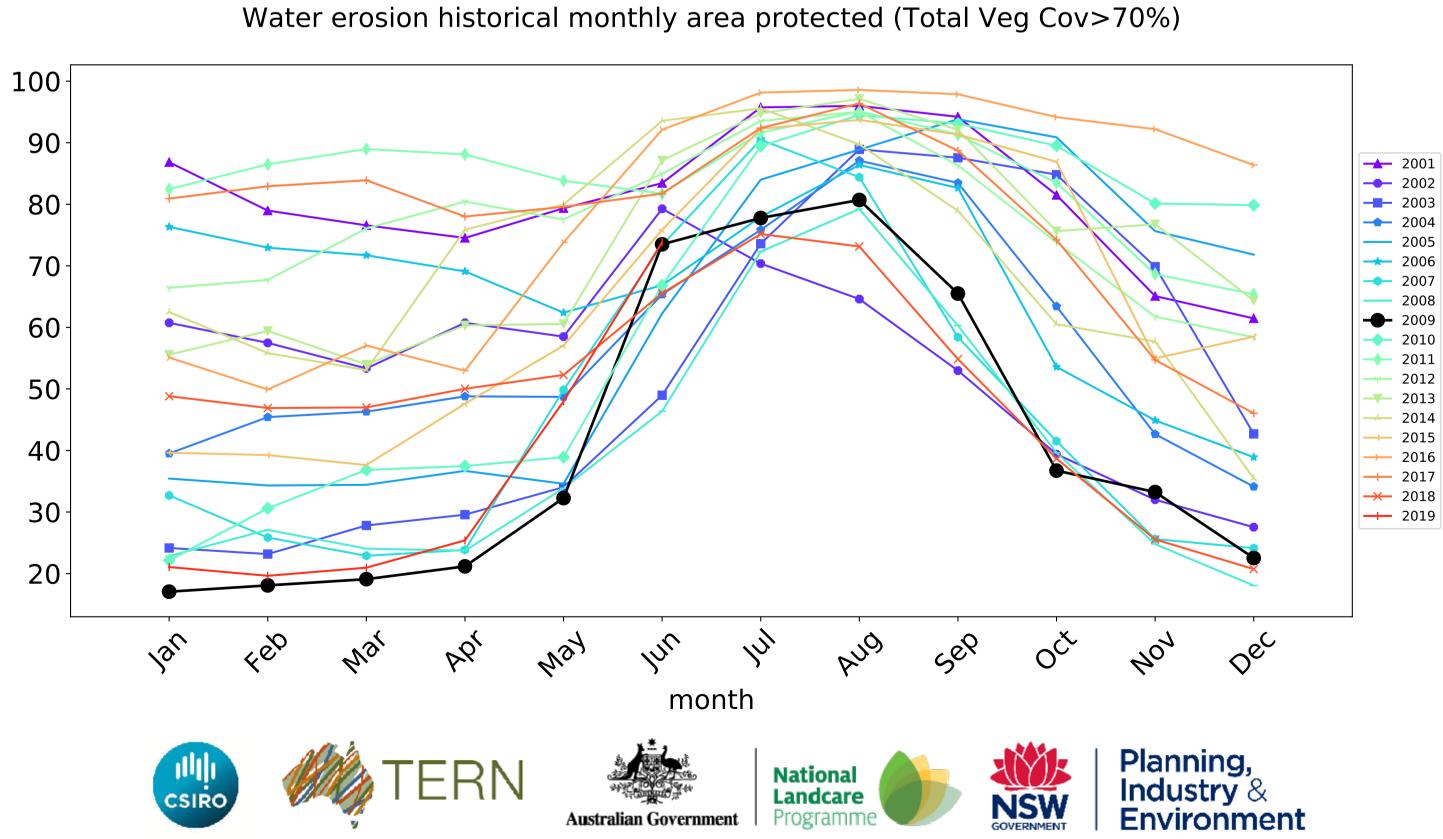


Agriculture timeseries





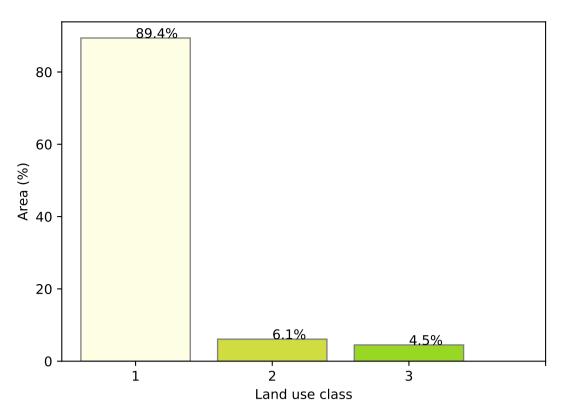




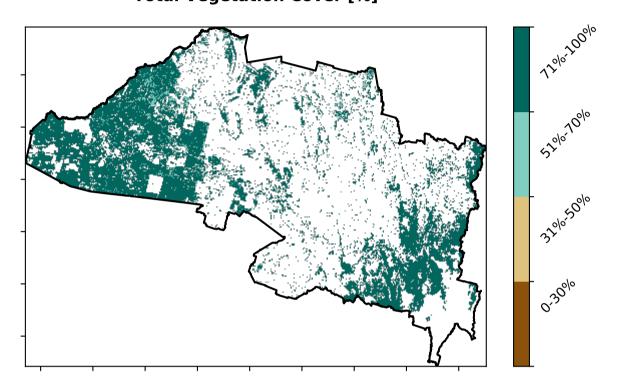
Grazing

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)

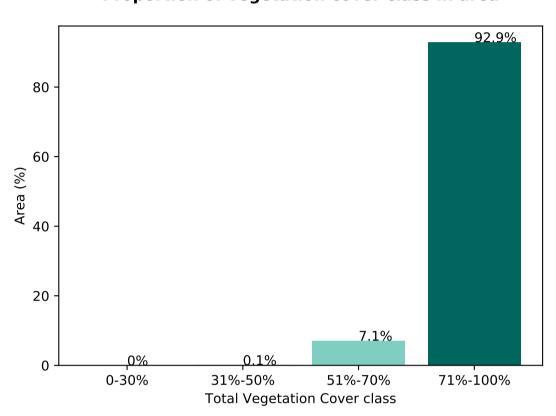
Proportion of each land class in area



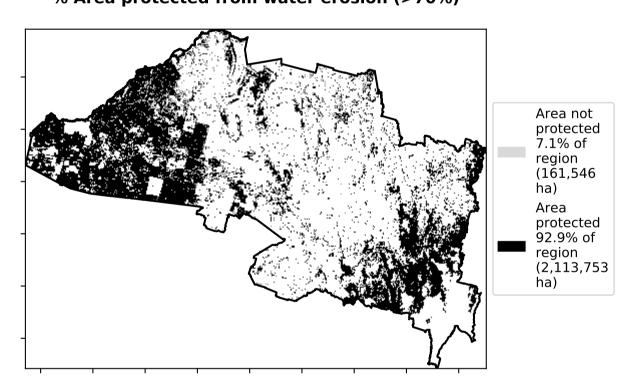
Total Vegetation Cover [%]



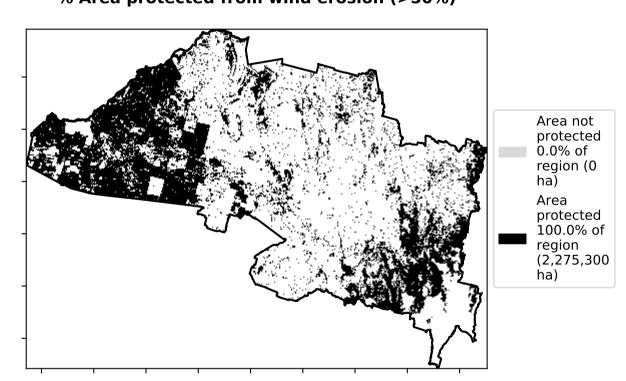
Proportion of vegetation cover class in area



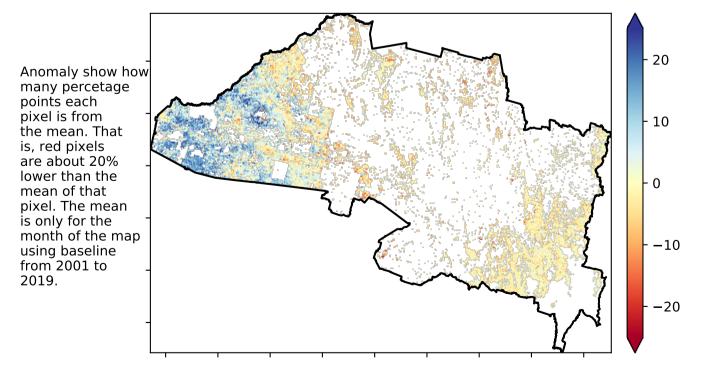
% Area protected from water erosion (>70%)



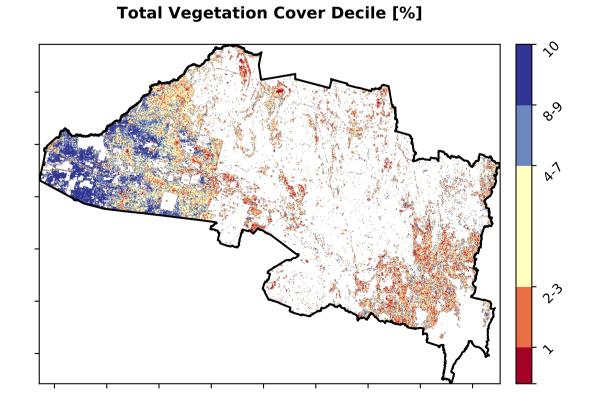
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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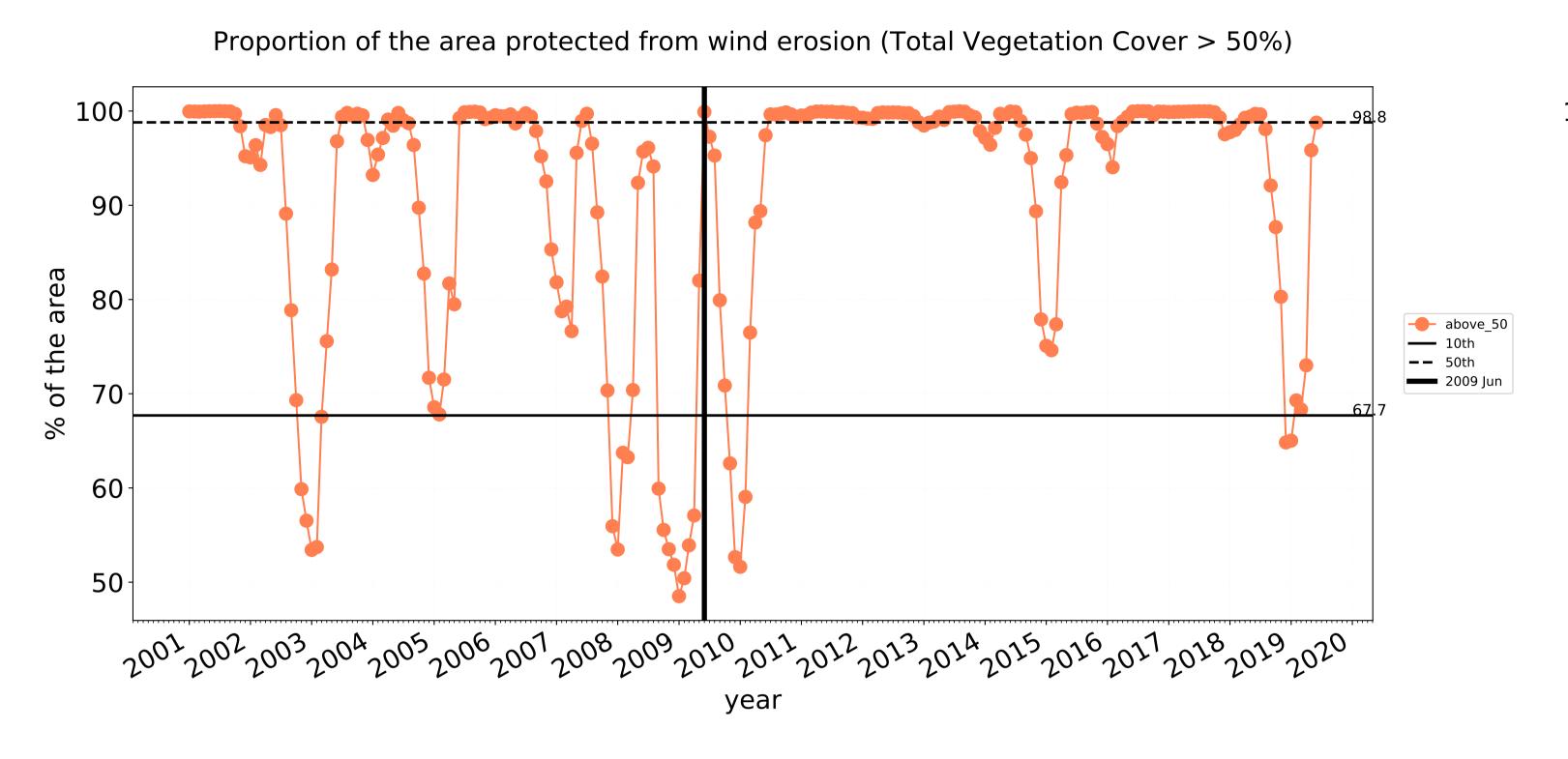


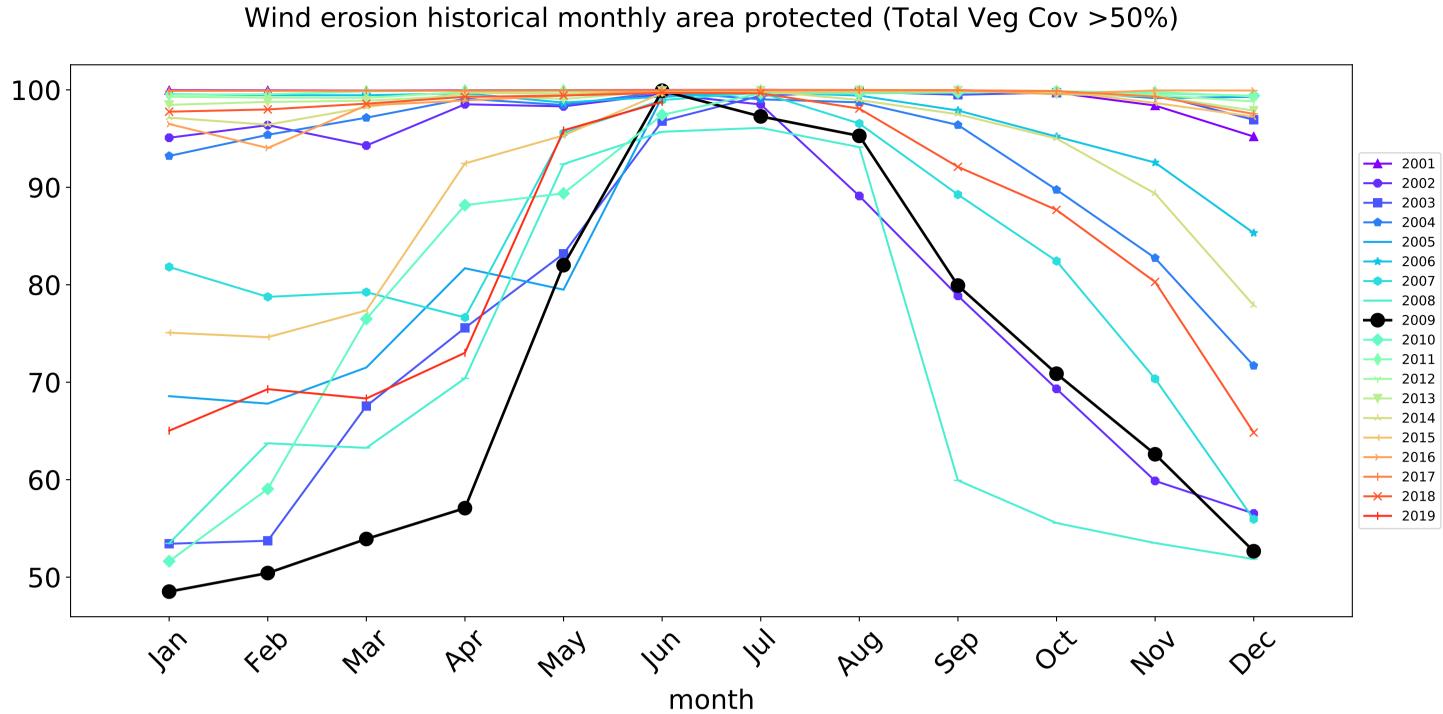


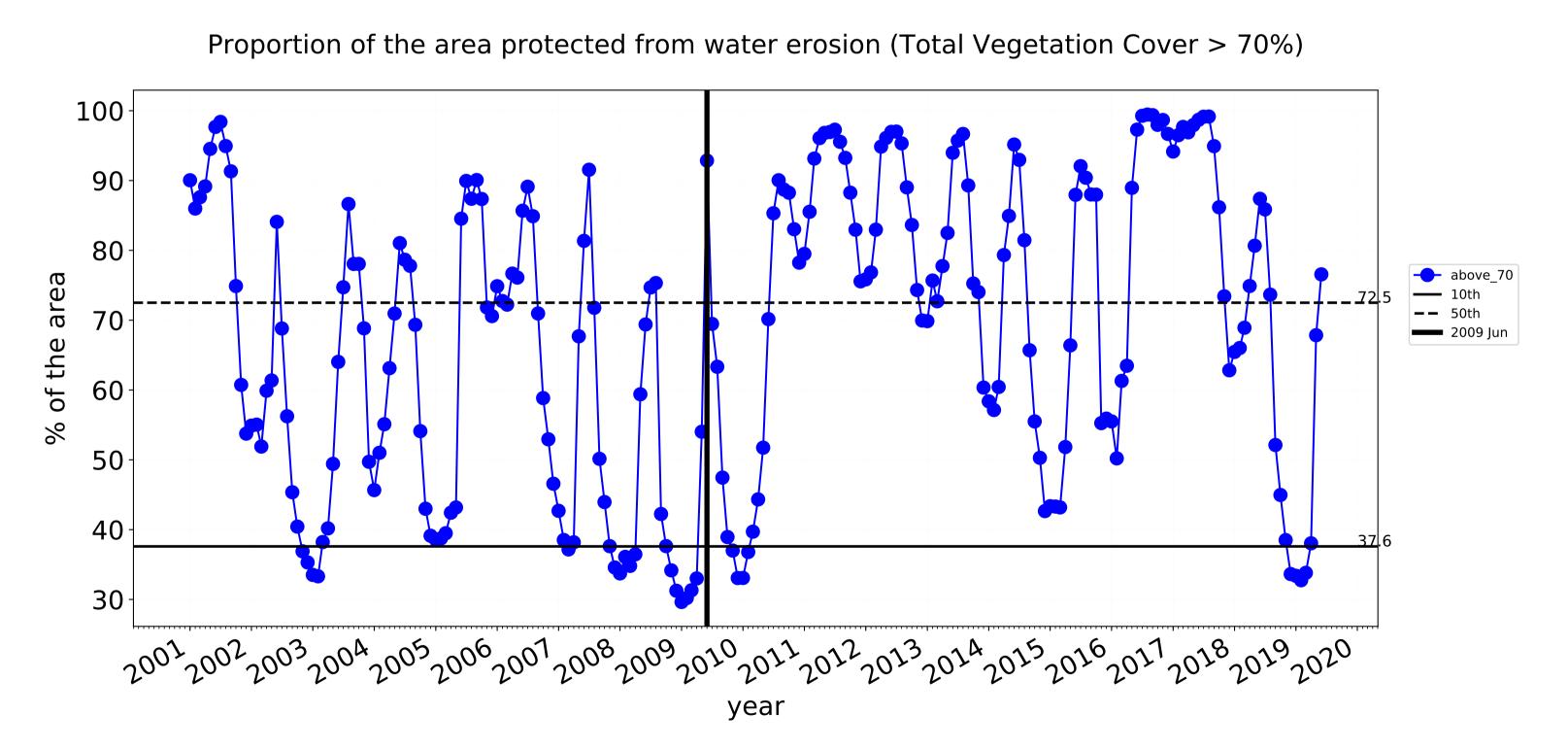


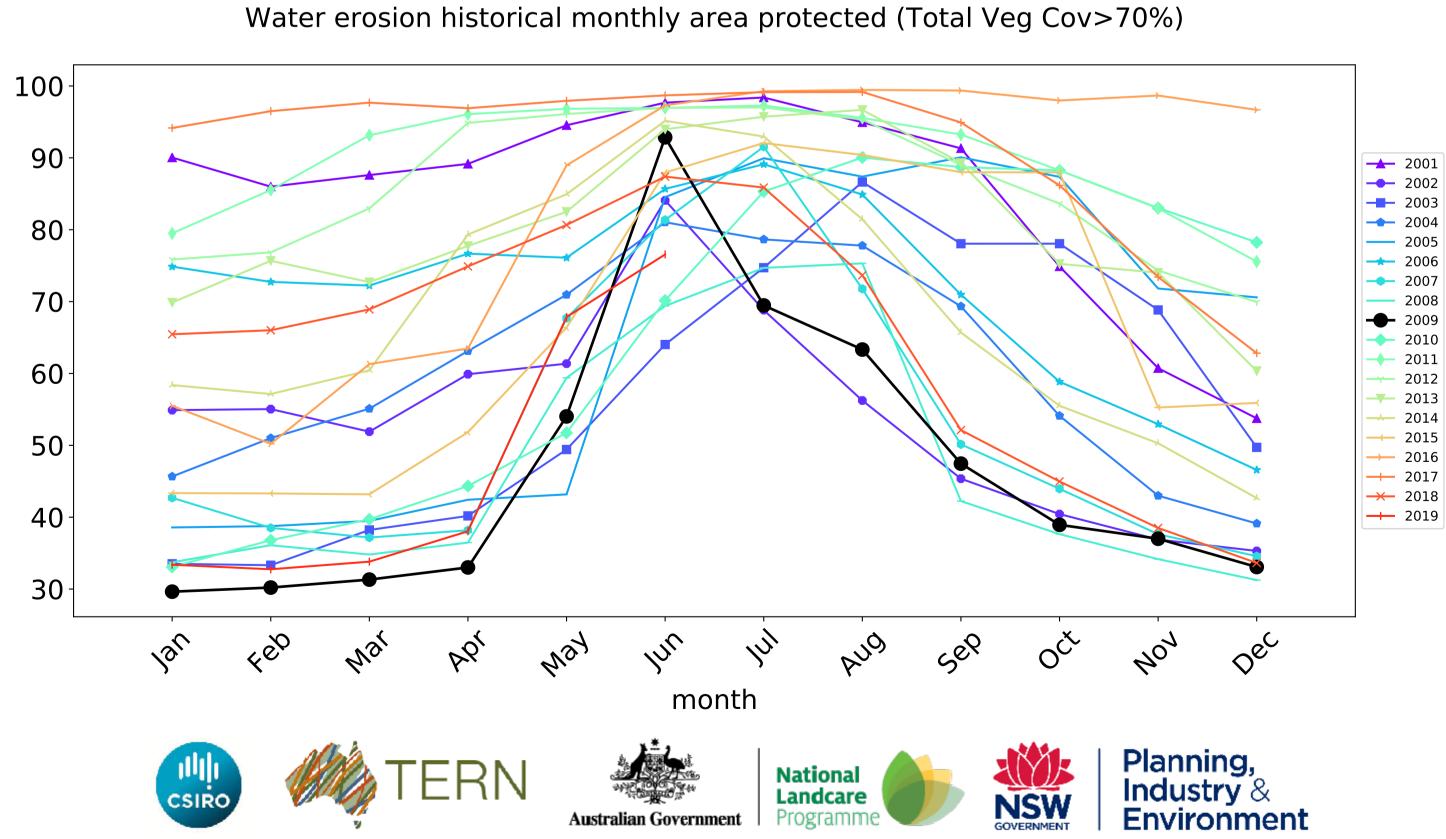


Grazing timeseries



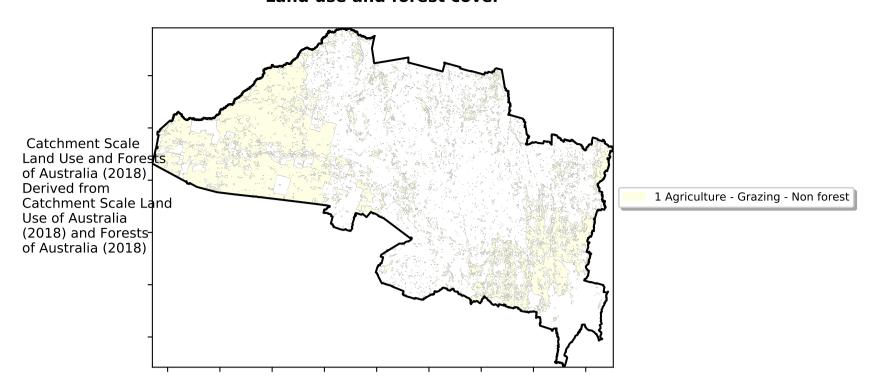




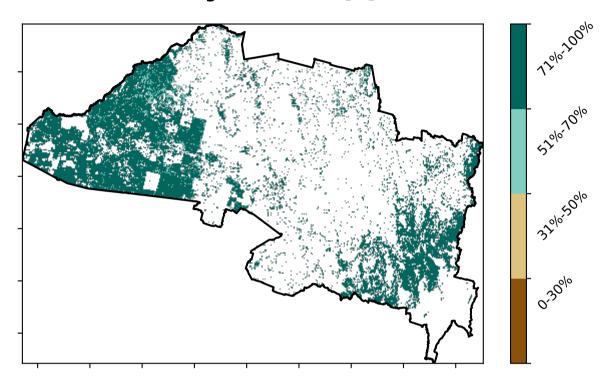


Grazing non forest

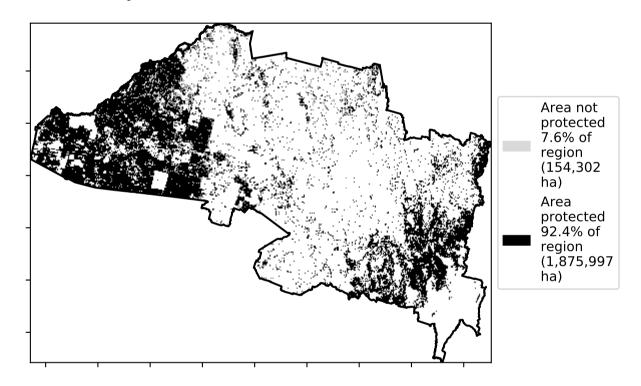
Land use and forest cover



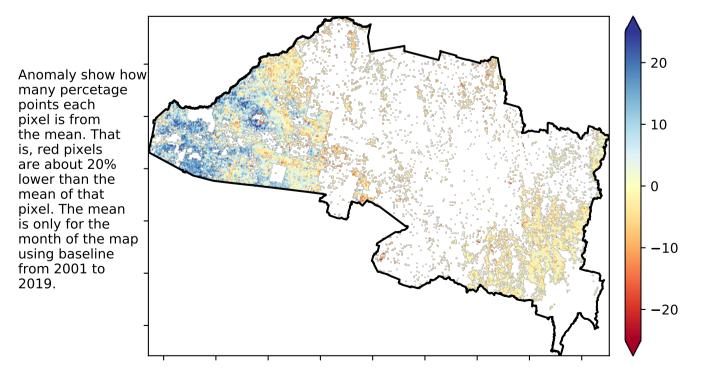
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

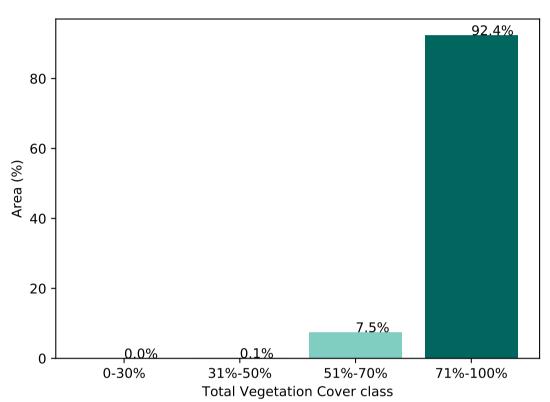


Total Vegetation Cover Anomaly [%]

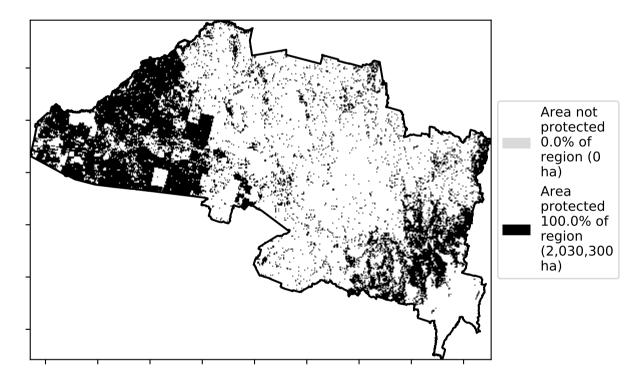


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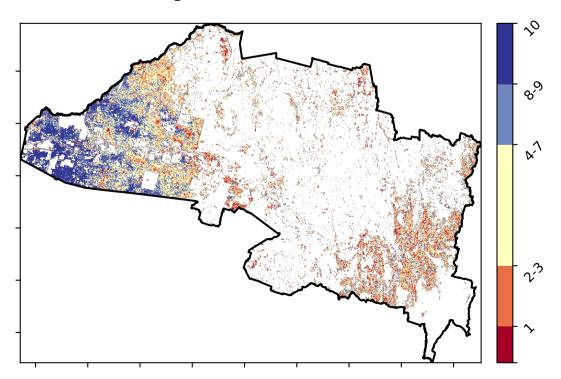
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







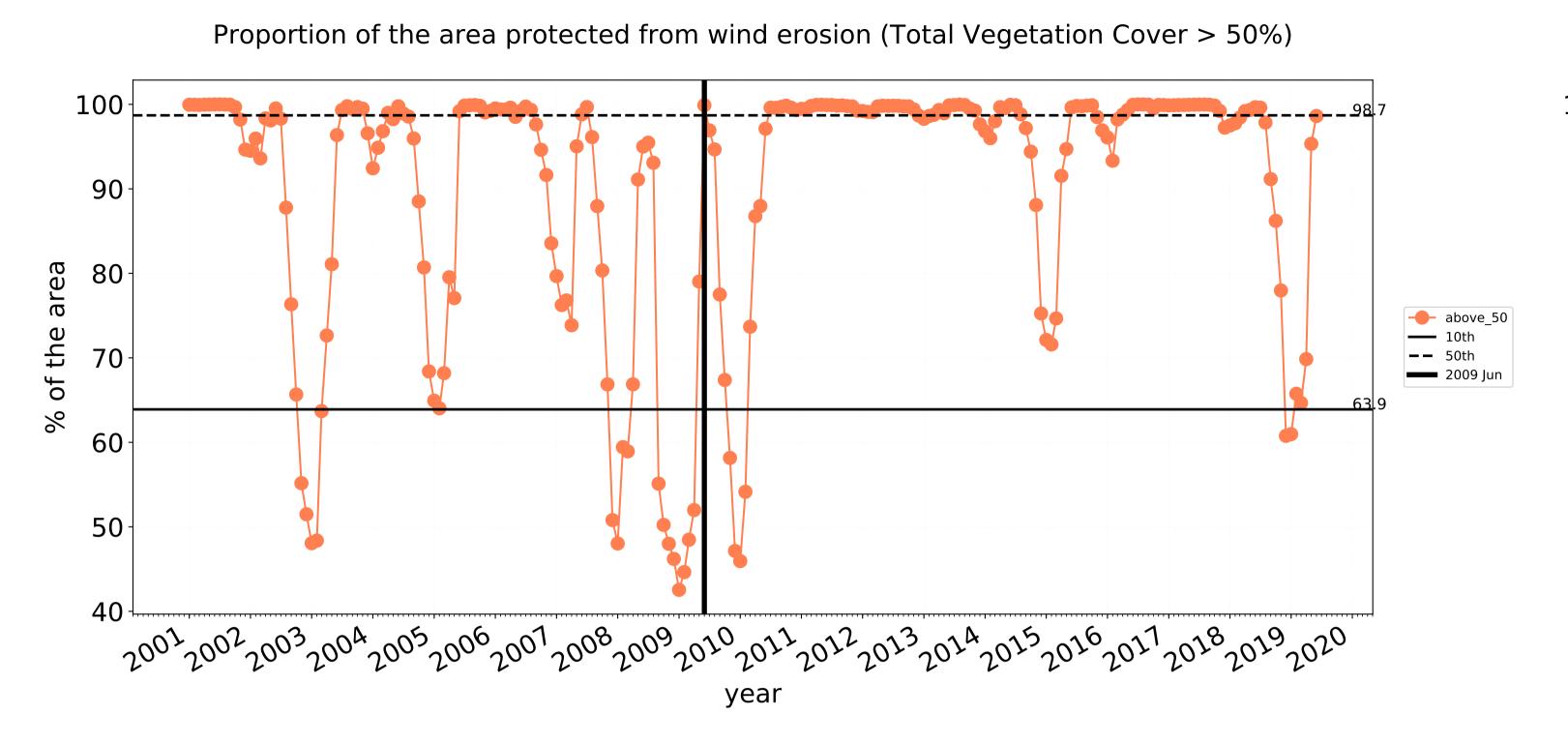


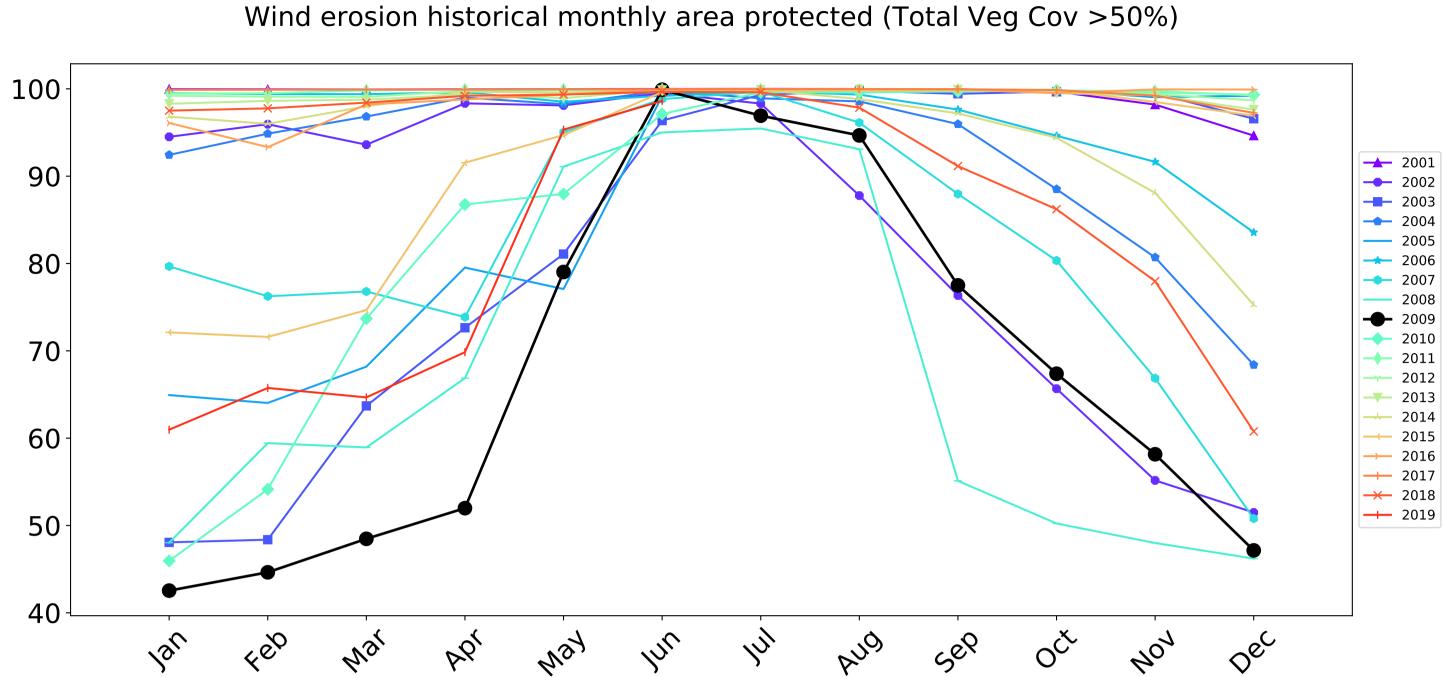




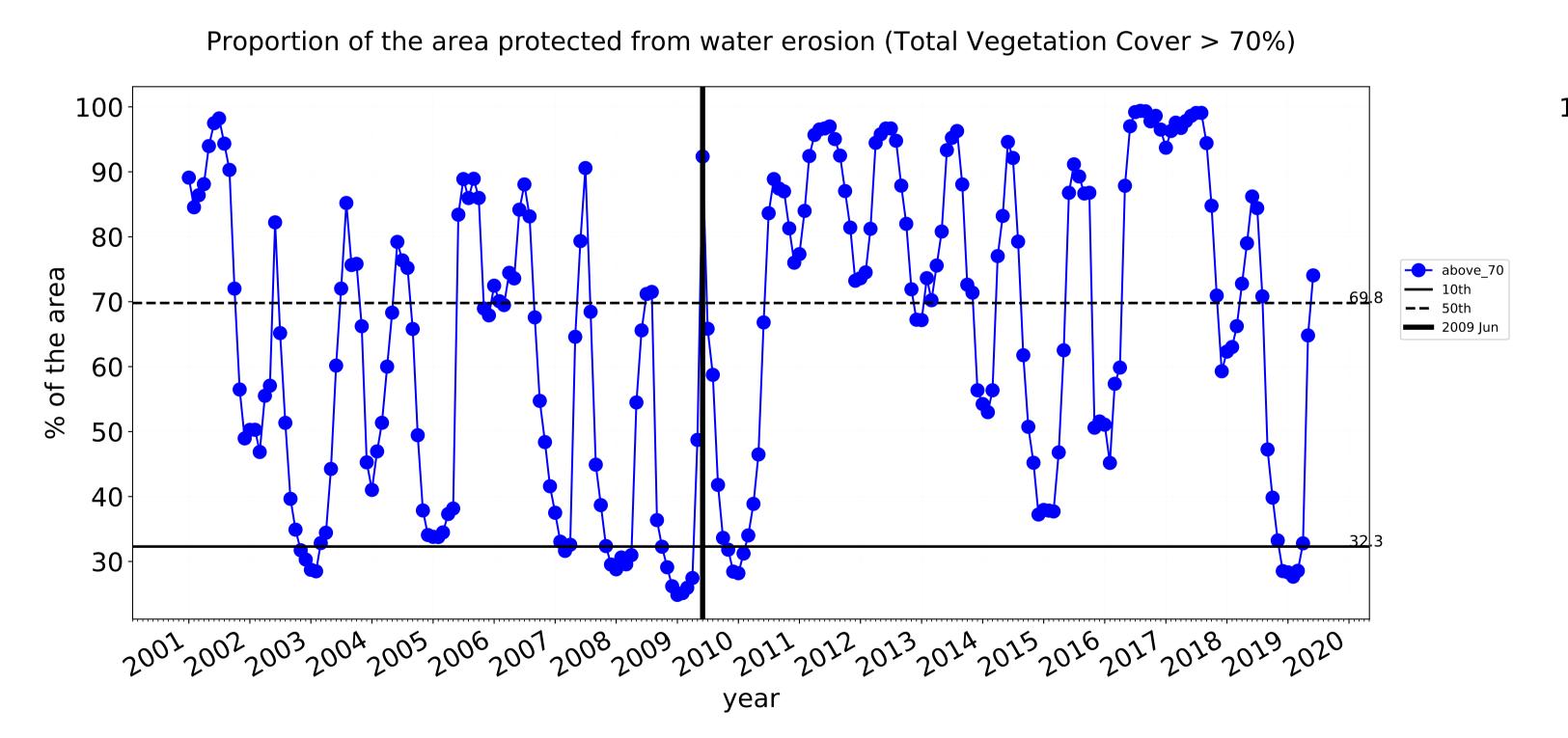


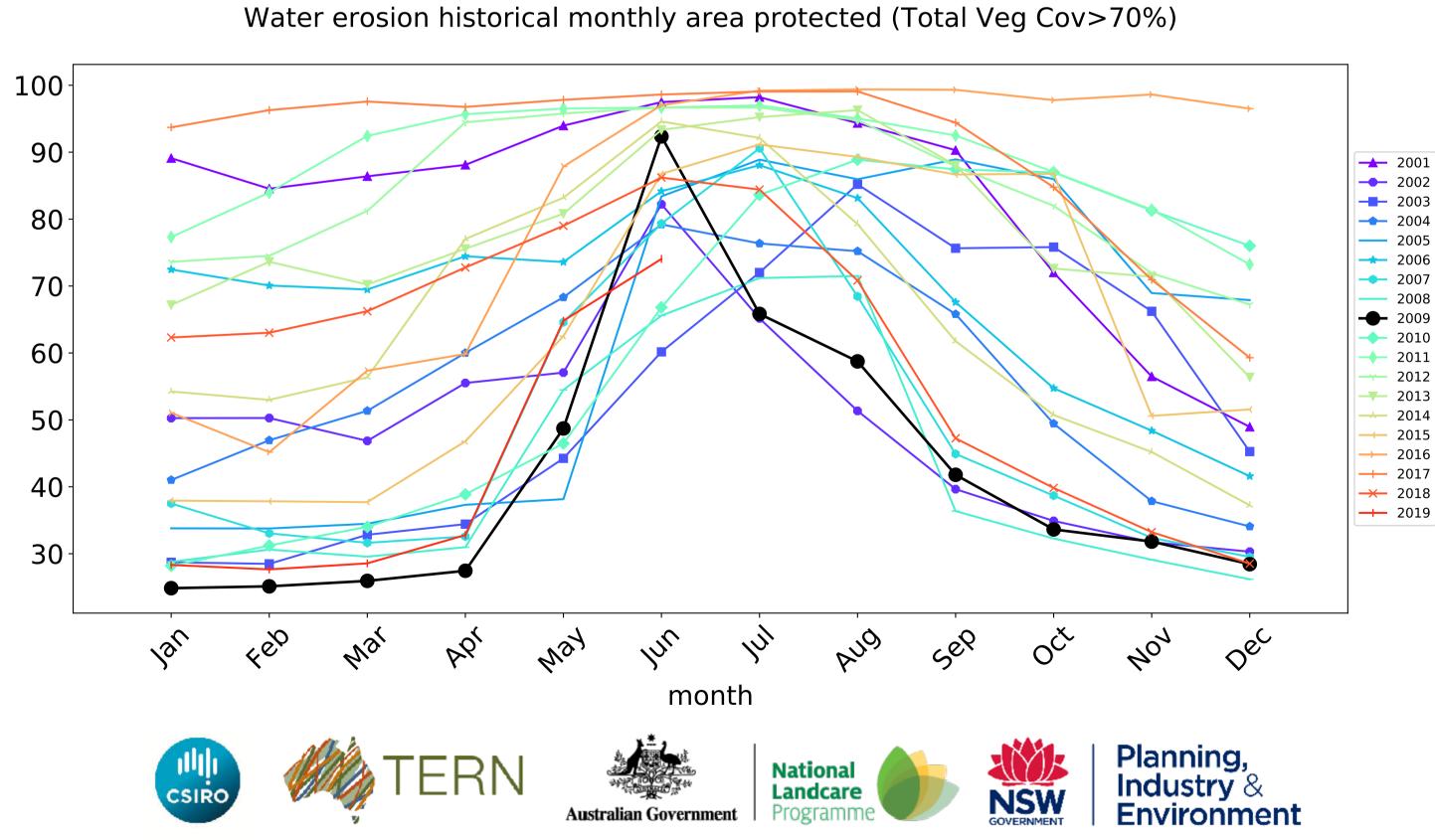
Grazing non forest timeseries





month



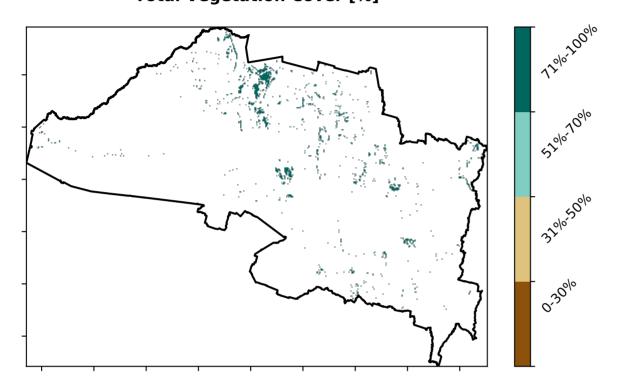


Grazing Woodland forest

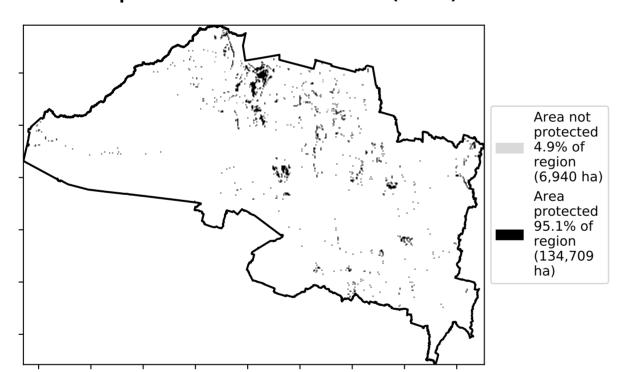
Land use and forest cover

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

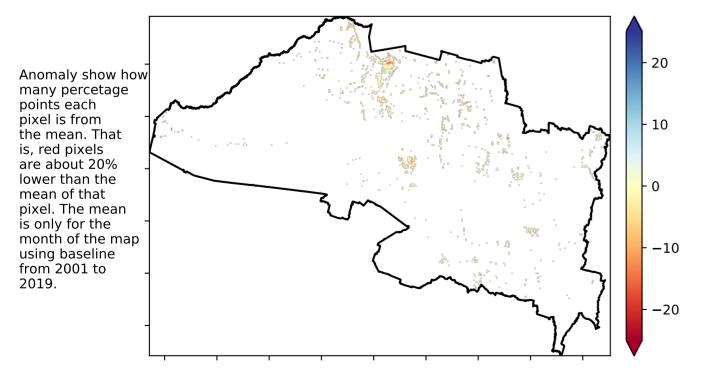
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

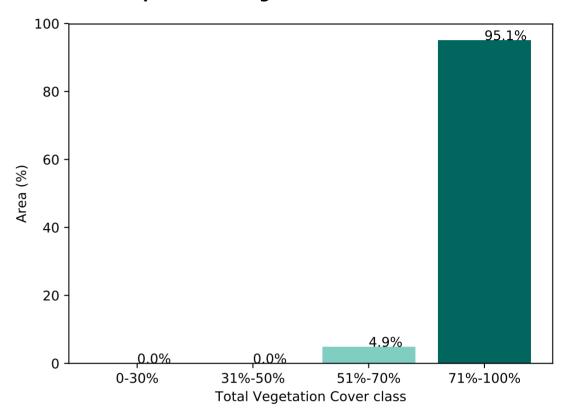


Total Vegetation Cover Anomaly [%]

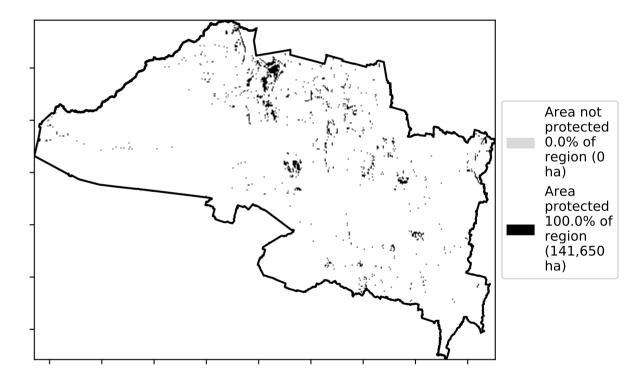


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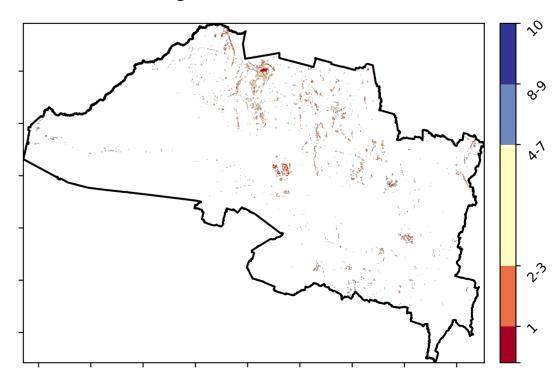
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







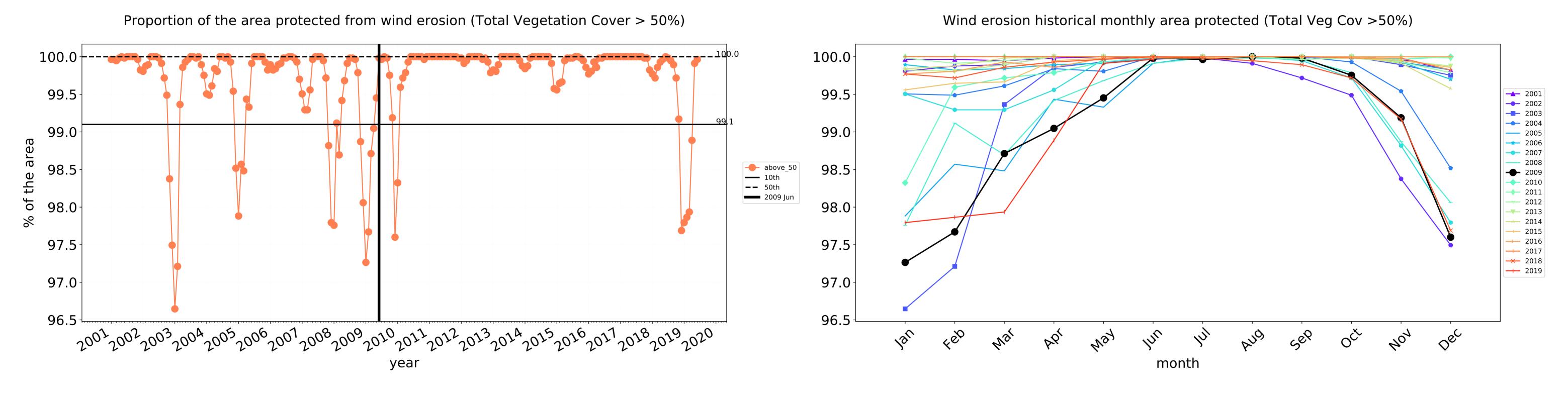


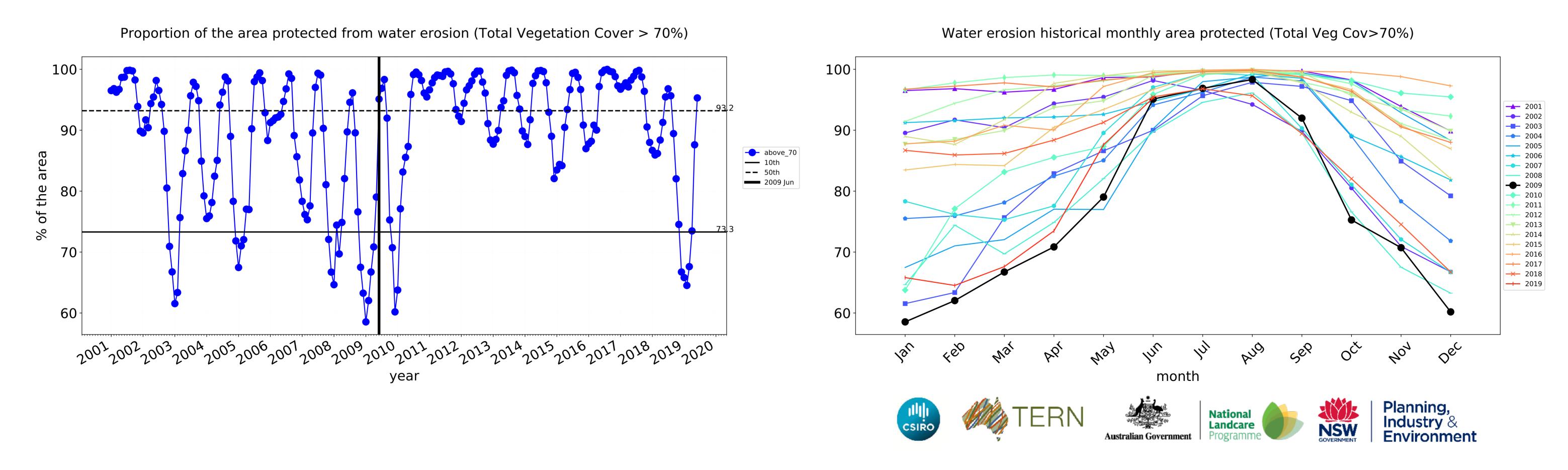






Grazing Woodland forest timeseries



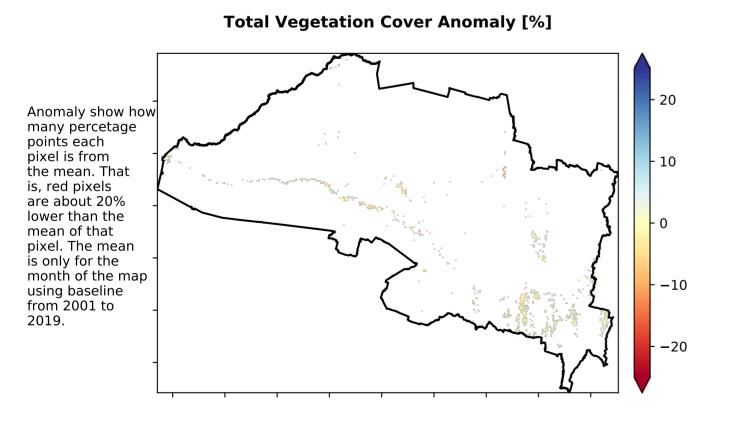


Grazing - Forest (non woodland)

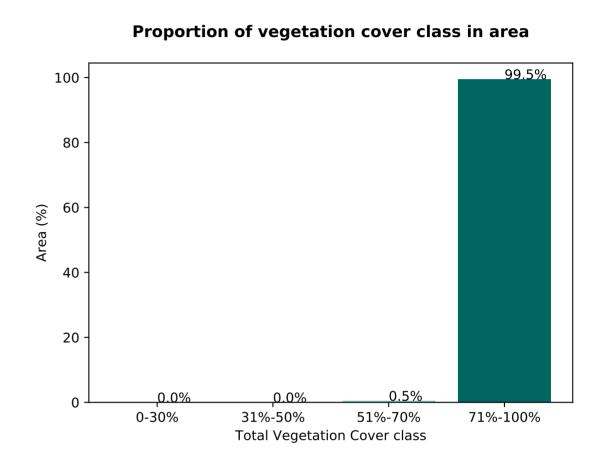
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Agriculture - Grazing - Non-woodland forest Catchment Scale Land Use of Australia (2018) and Forests-of Australia (2018)

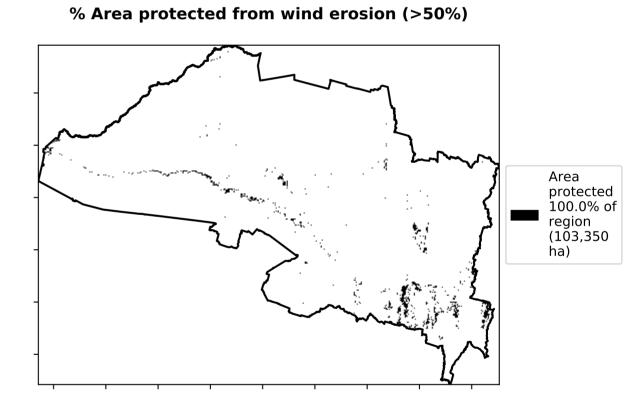
Total Vegetation Cover [%]

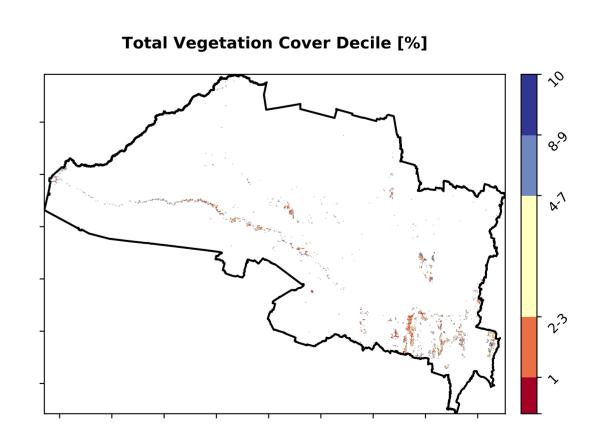
% Area protected from water erosion (>70%) Area not protected 0.5% of region (516 ha) Area protected 99.5% of region (102,833 ha)



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.









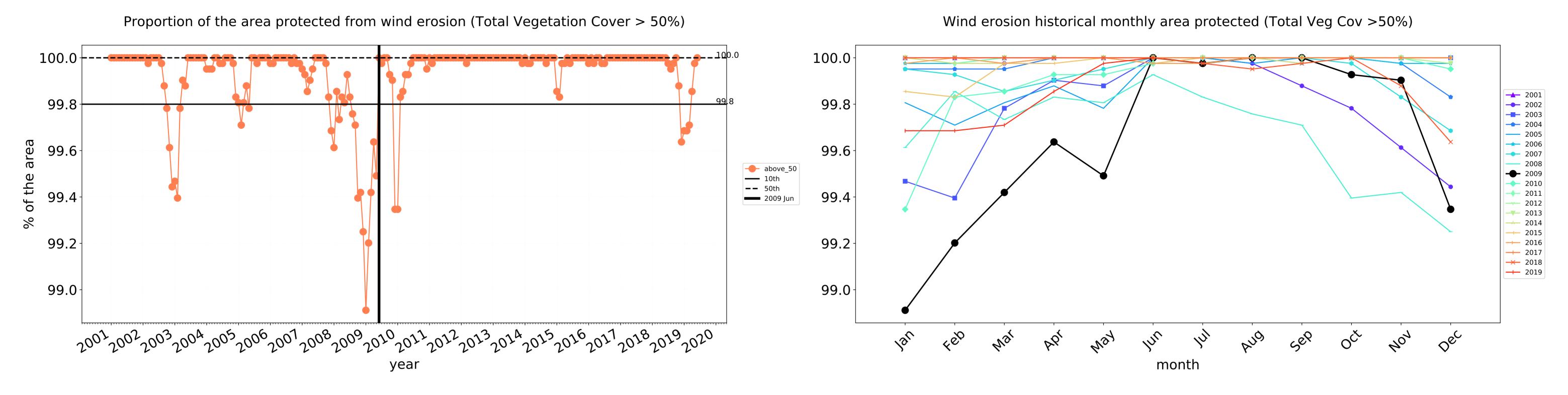


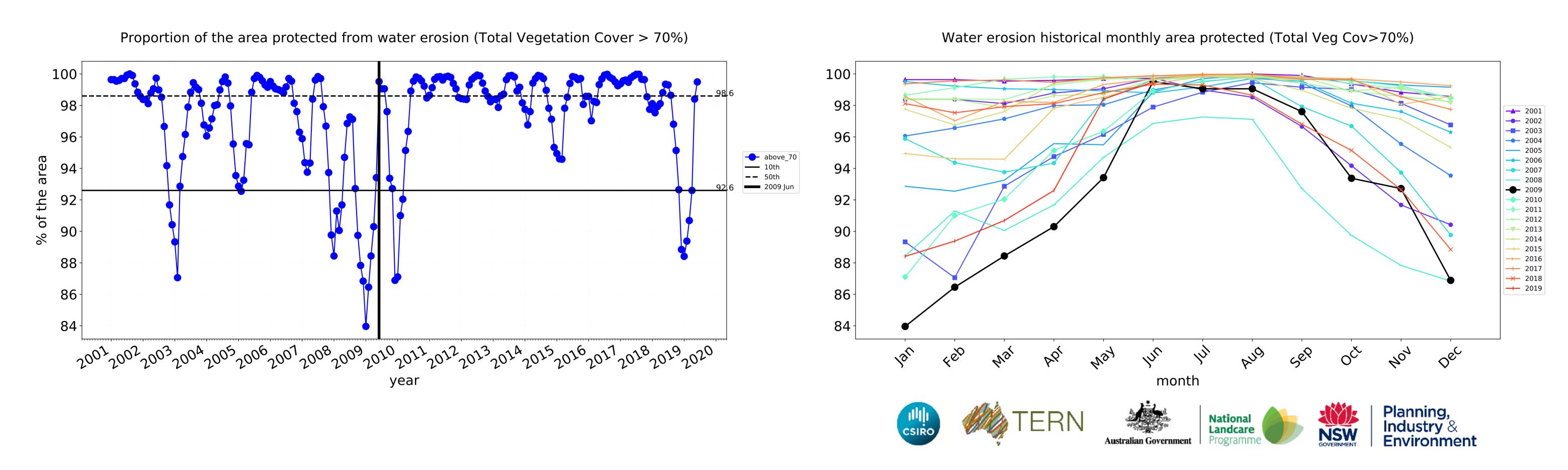






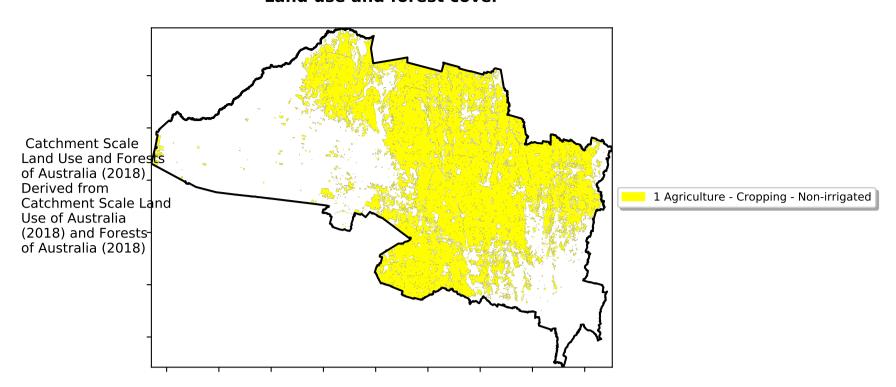




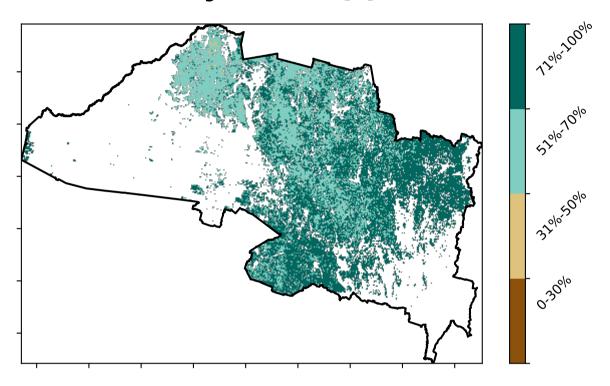


Cropping

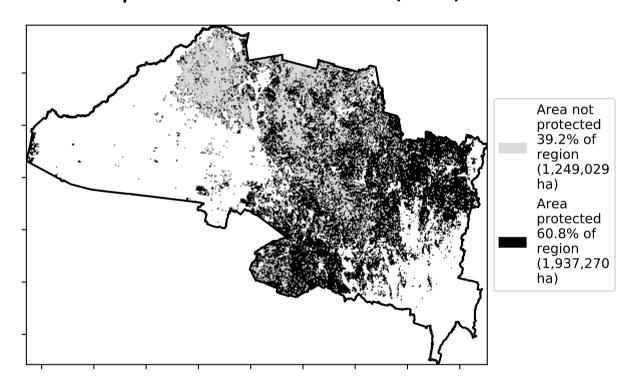
Land use and forest cover



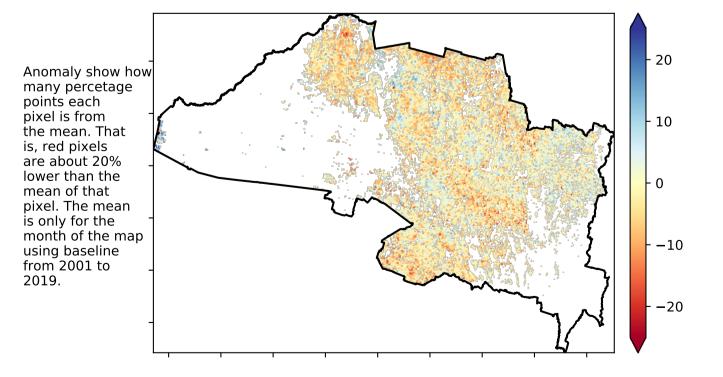
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

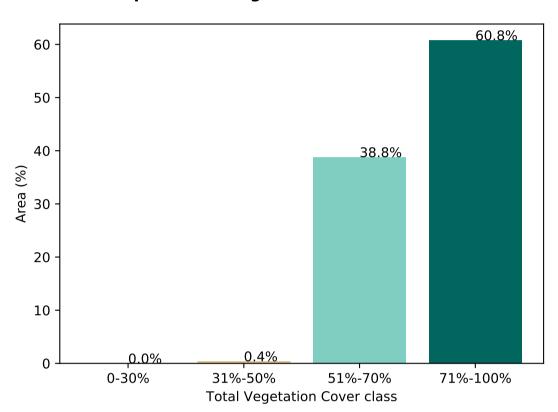


Total Vegetation Cover Anomaly [%]

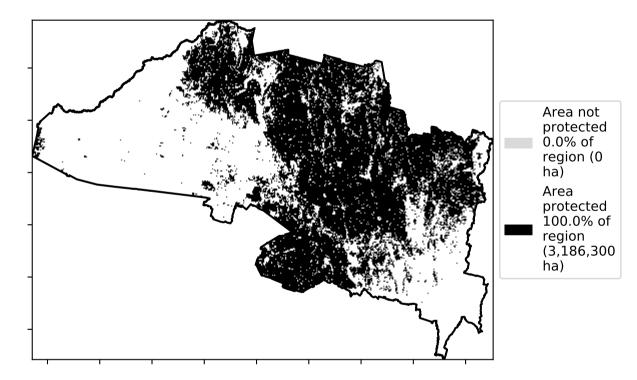


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

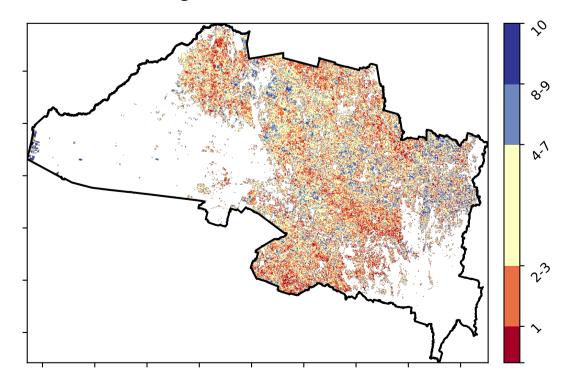
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







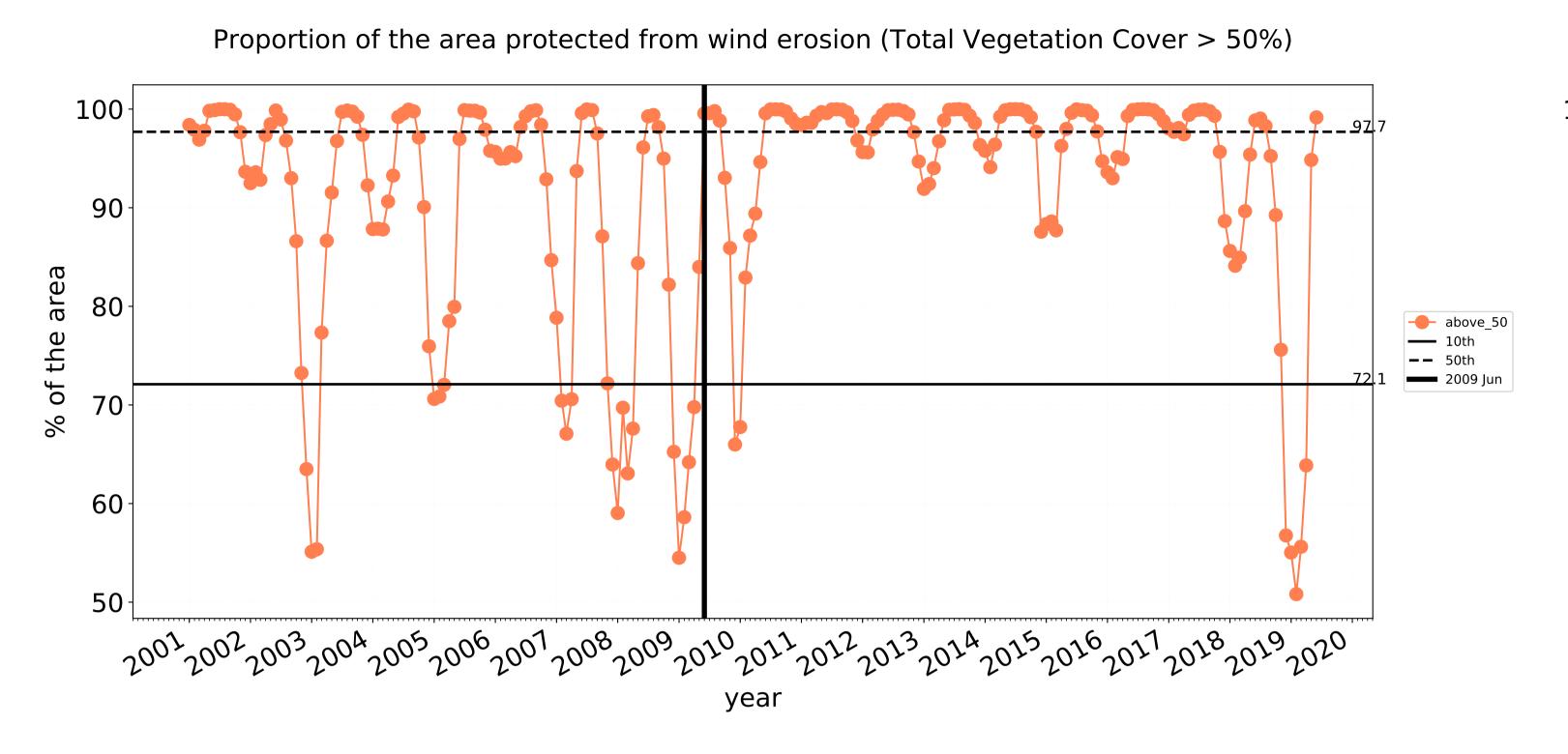


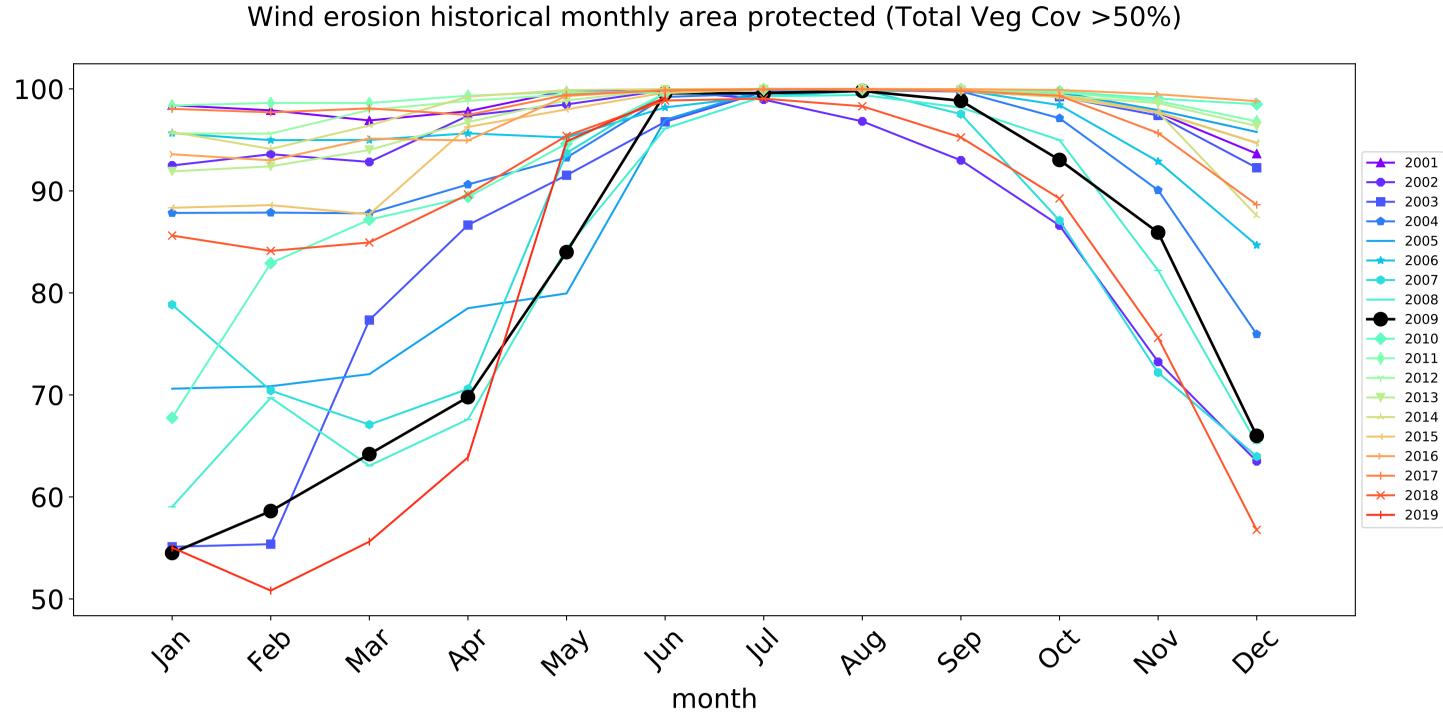


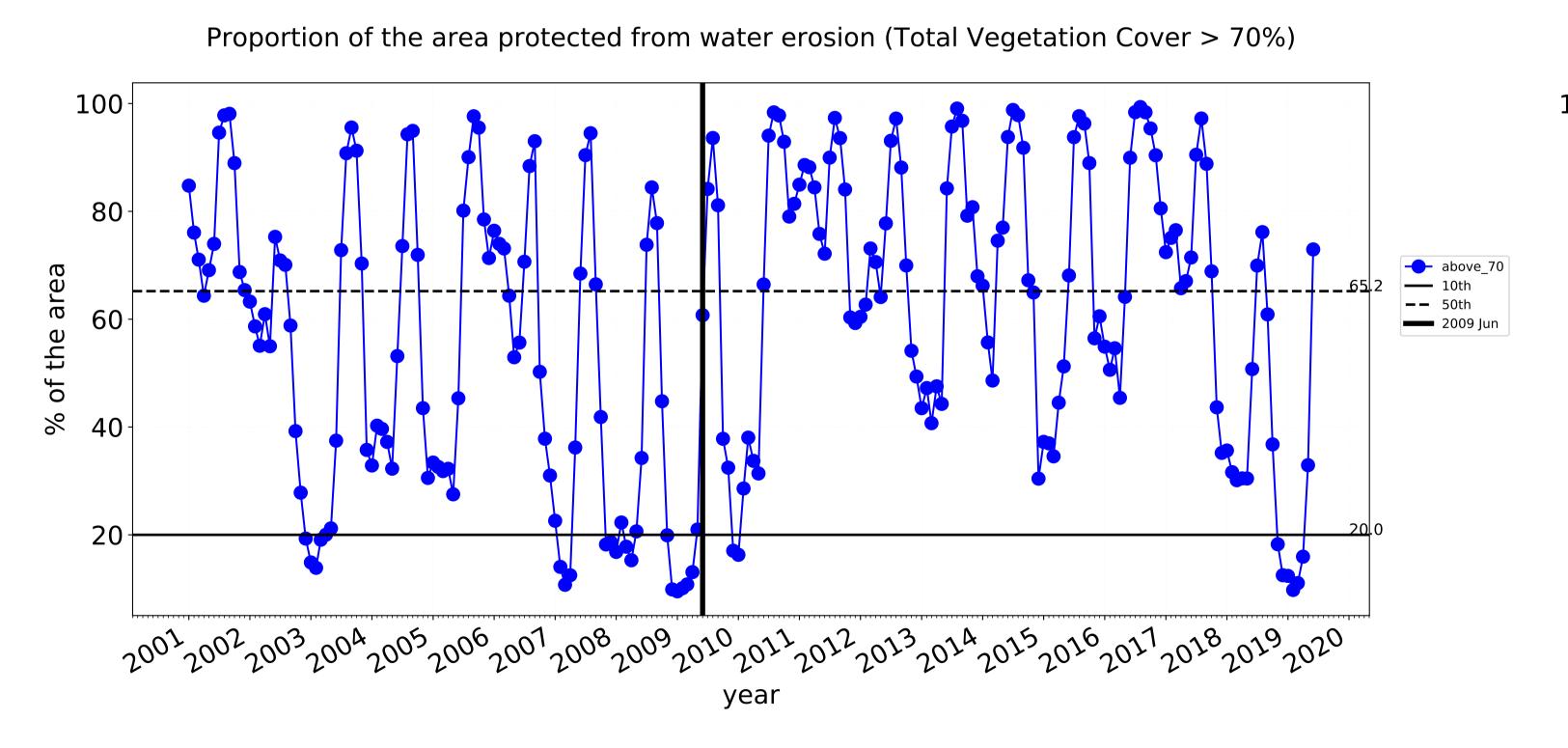


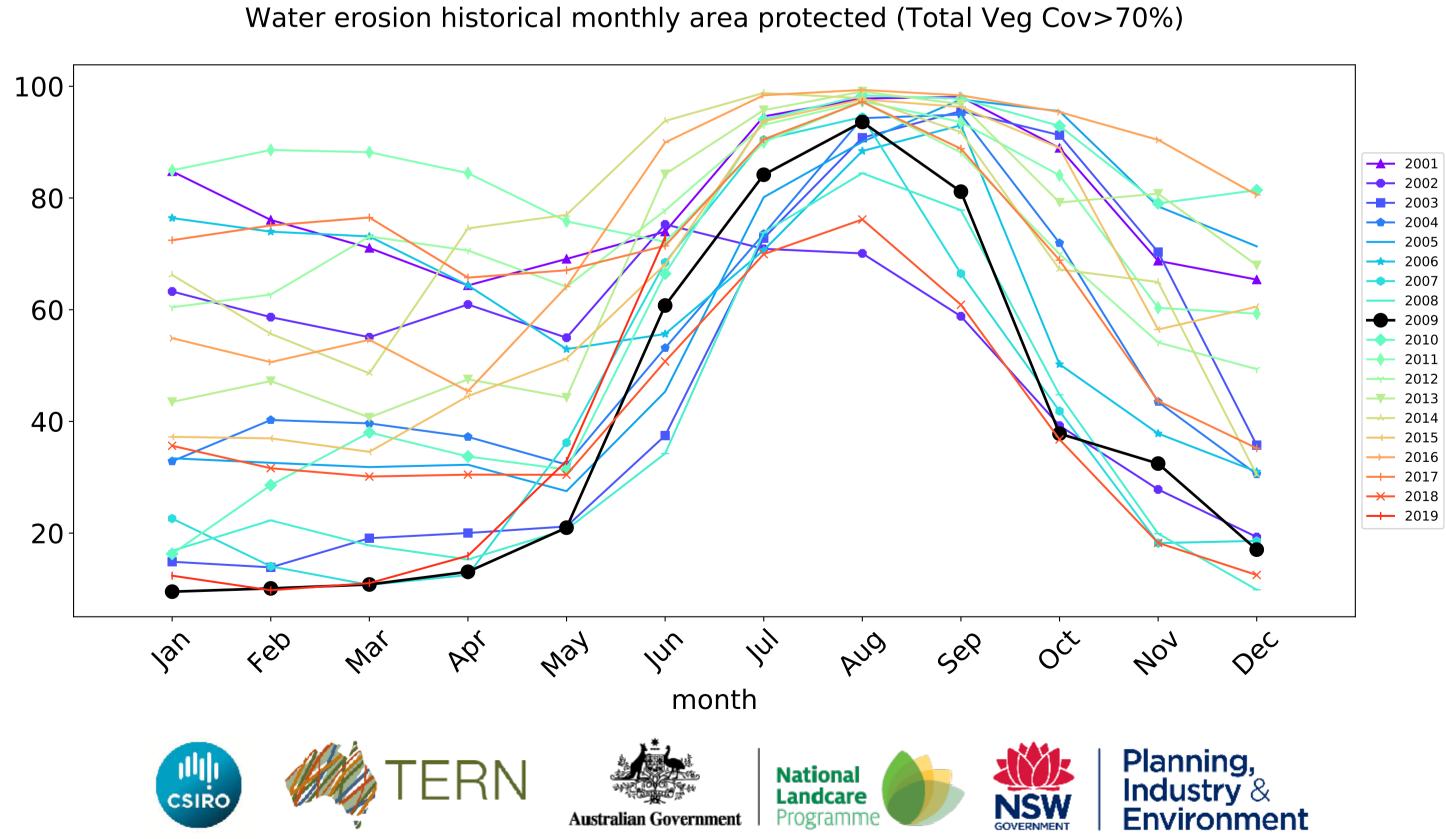


Cropping timeseries

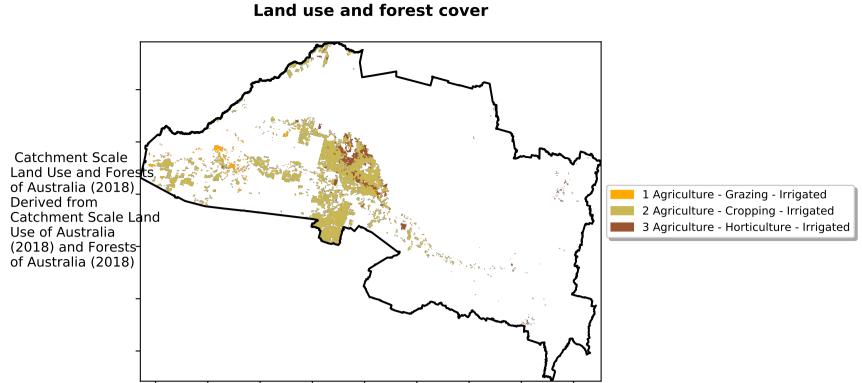


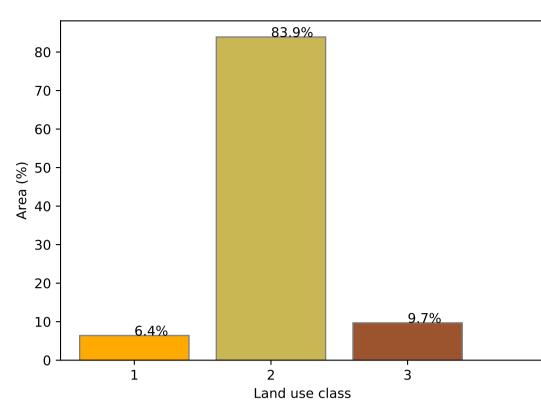




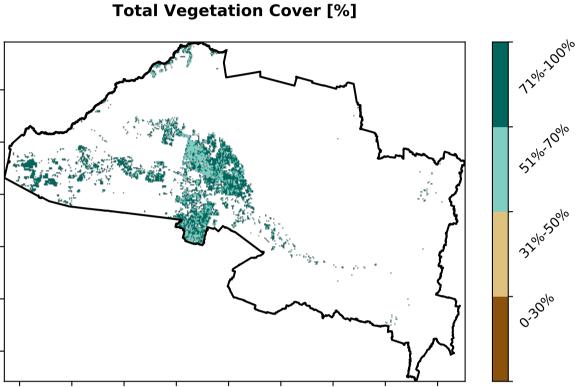


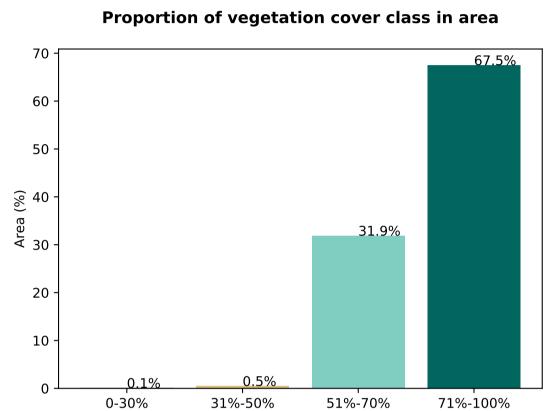
Irrigation

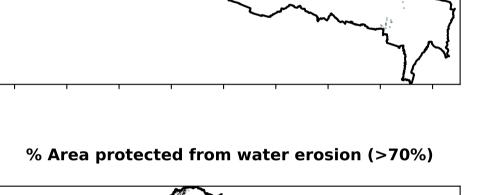




Proportion of each land class in area

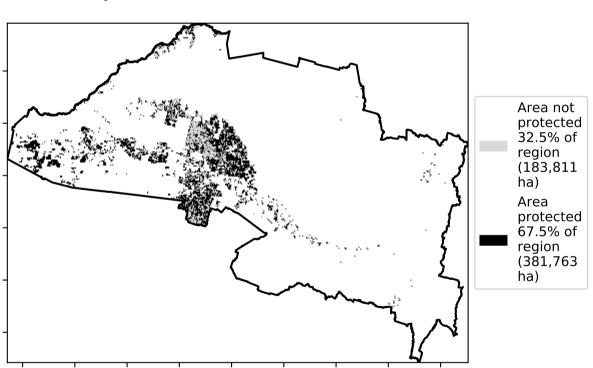


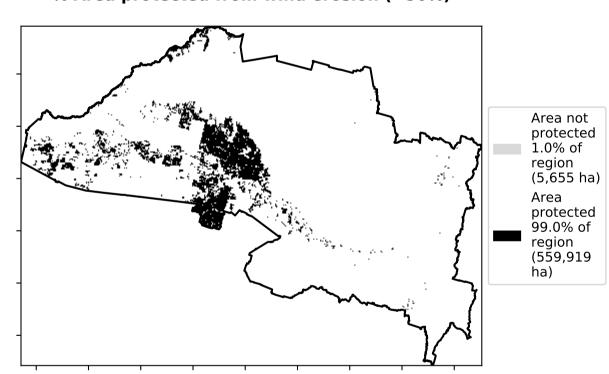


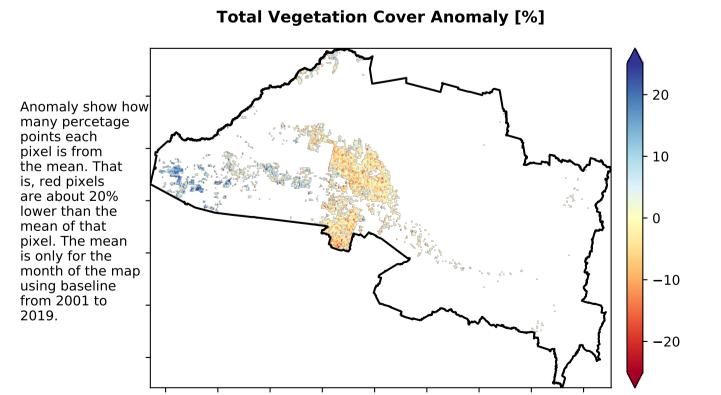


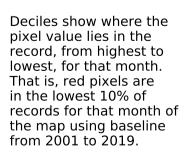


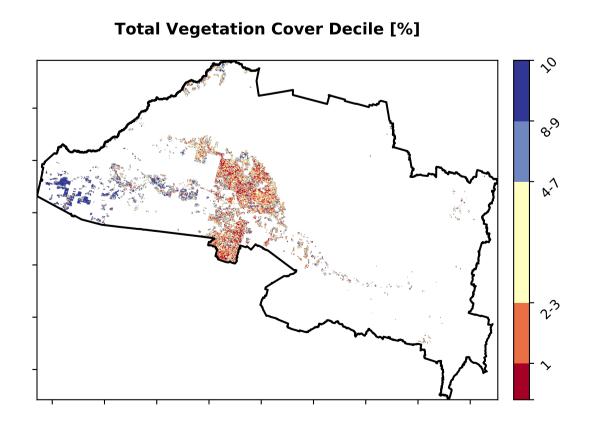
Total Vegetation Cover class











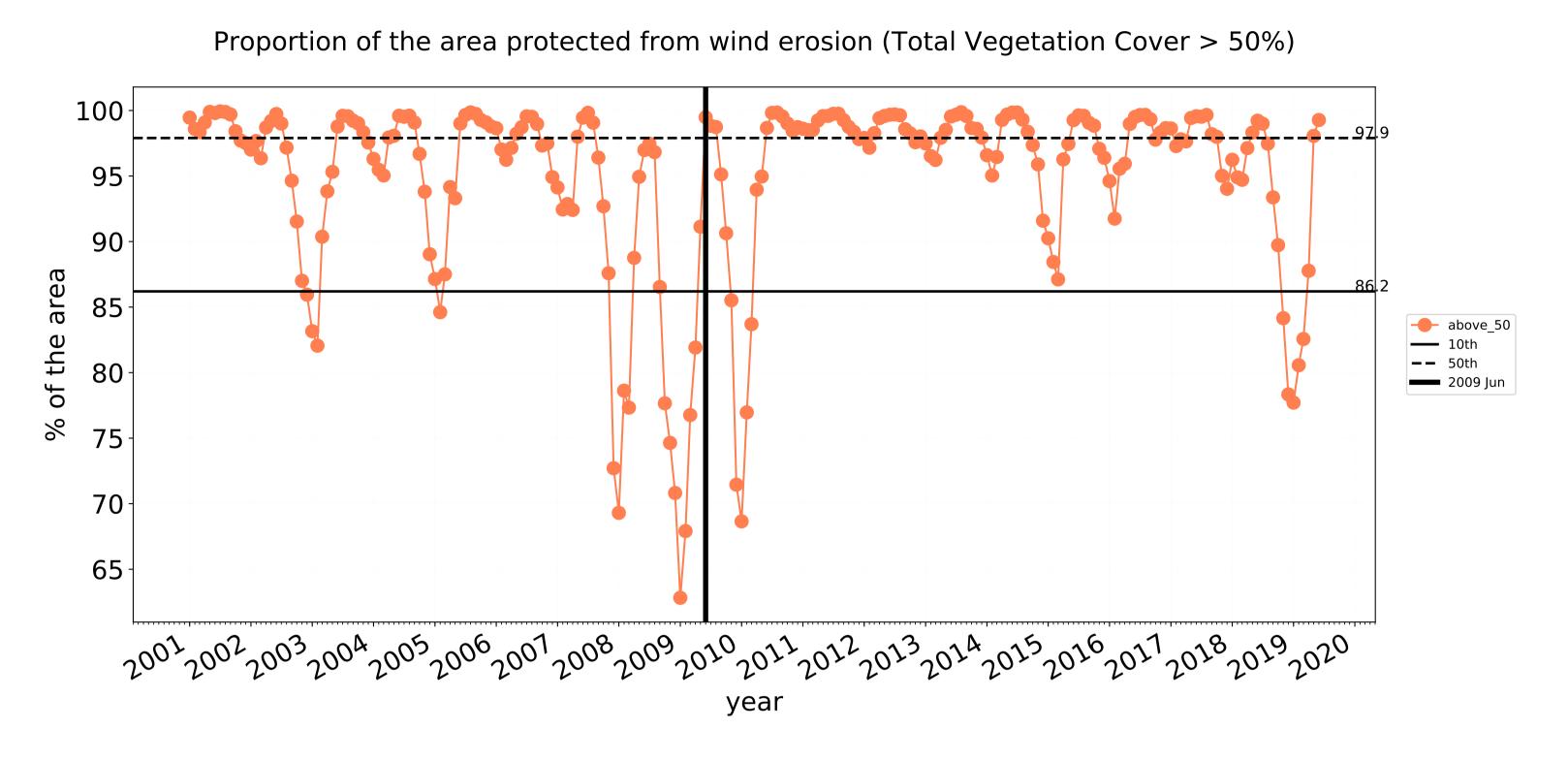


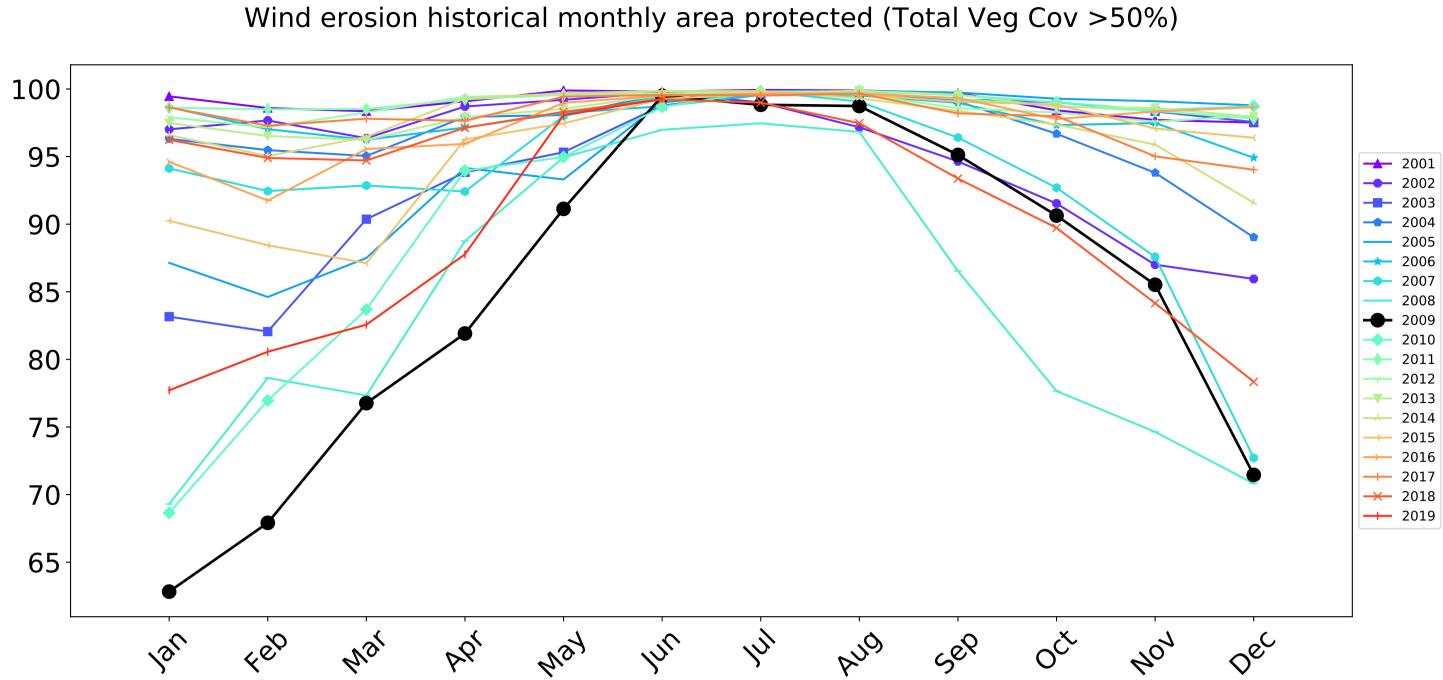




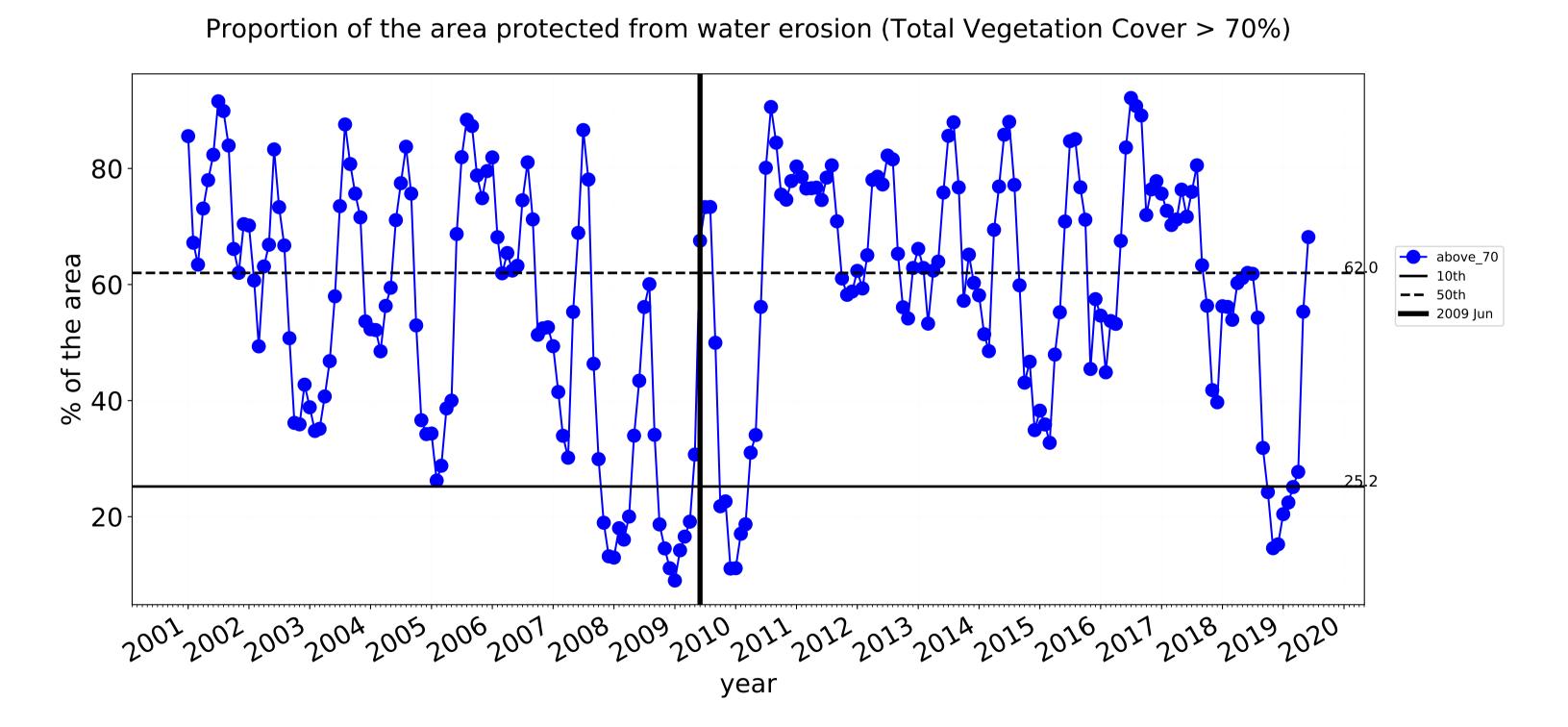


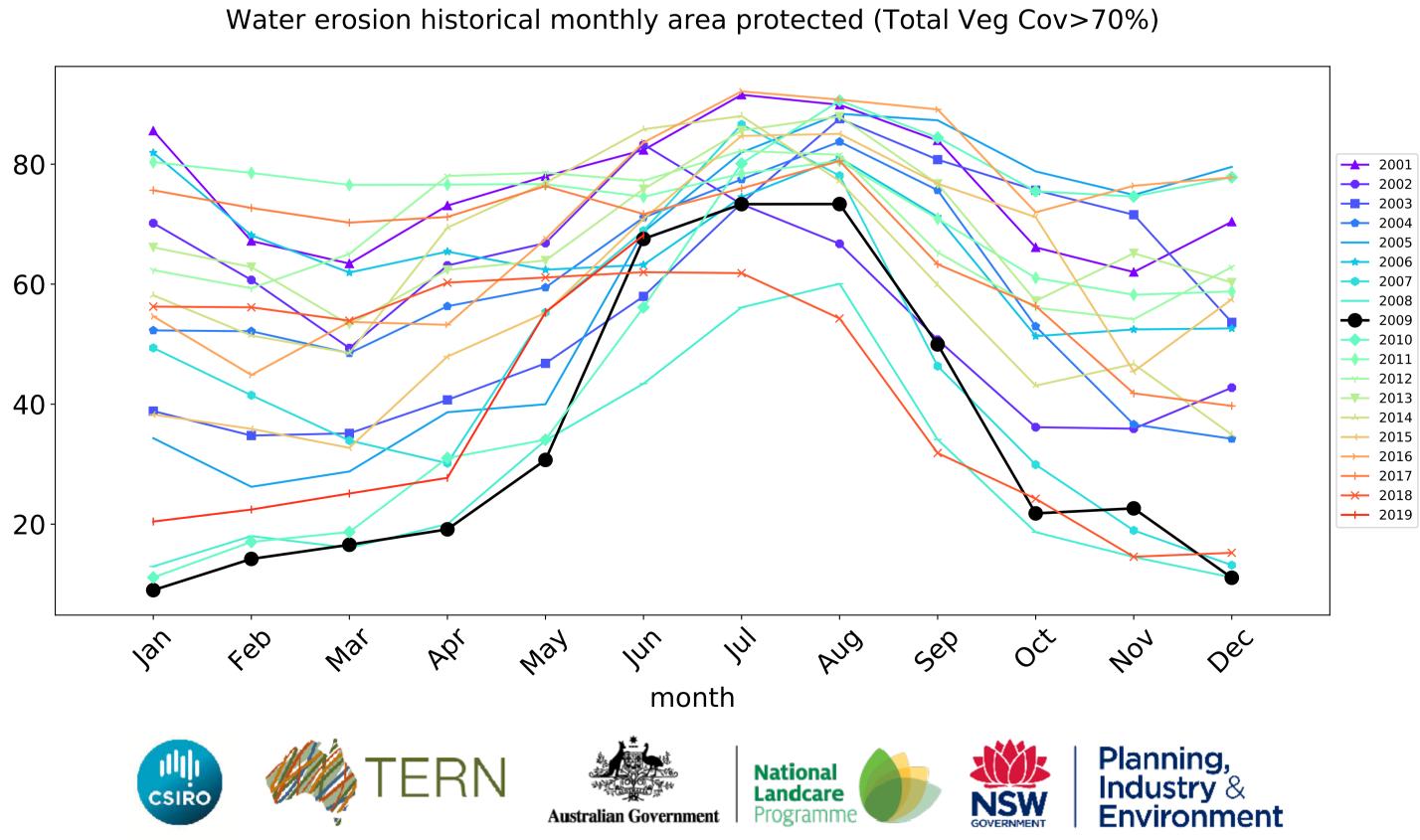






month



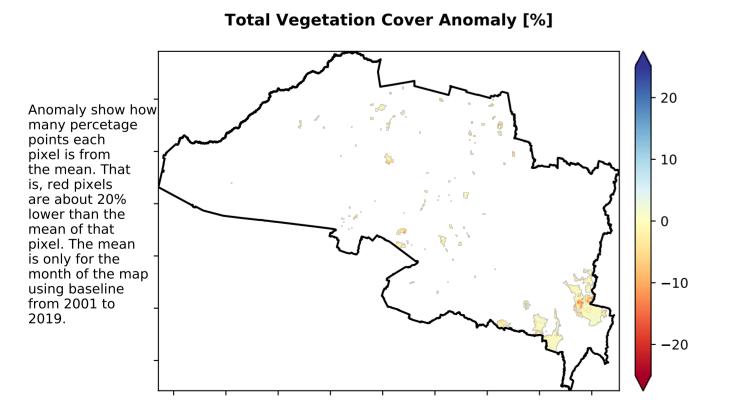


Production native forests and plantation forests

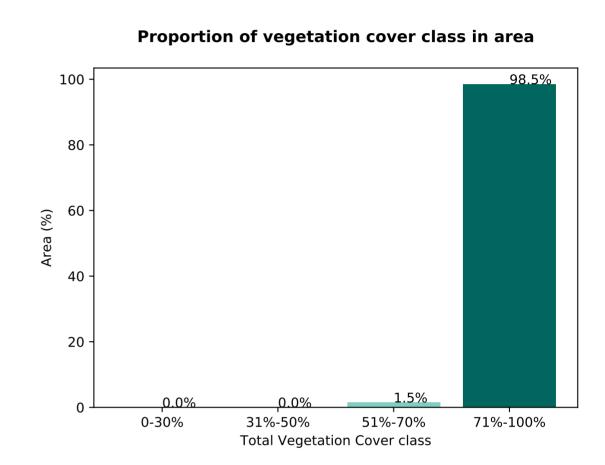
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

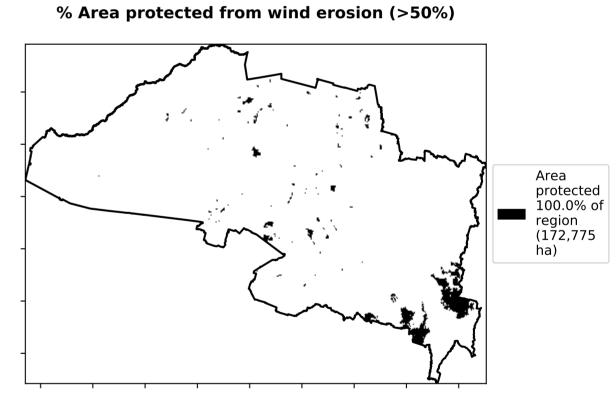
Total Vegetation Cover [%]

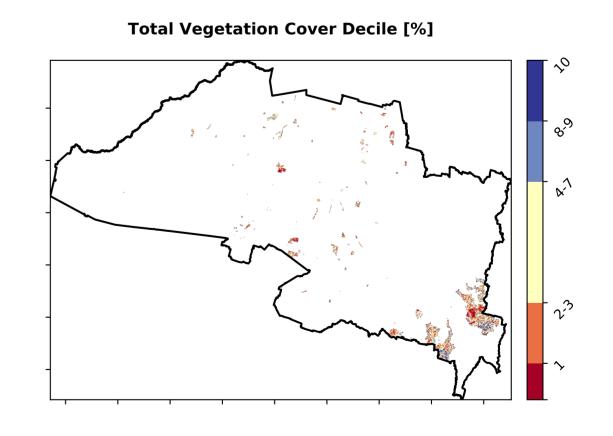
Area not protected 1.5% of region (2,591 ha) Area protected 98.5% of region (170,183 ha)



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.











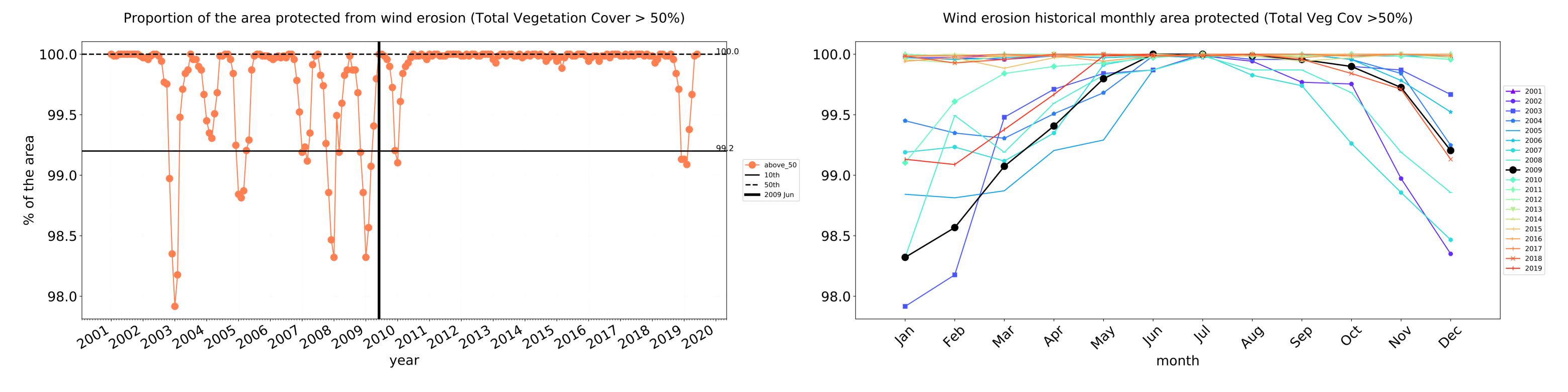


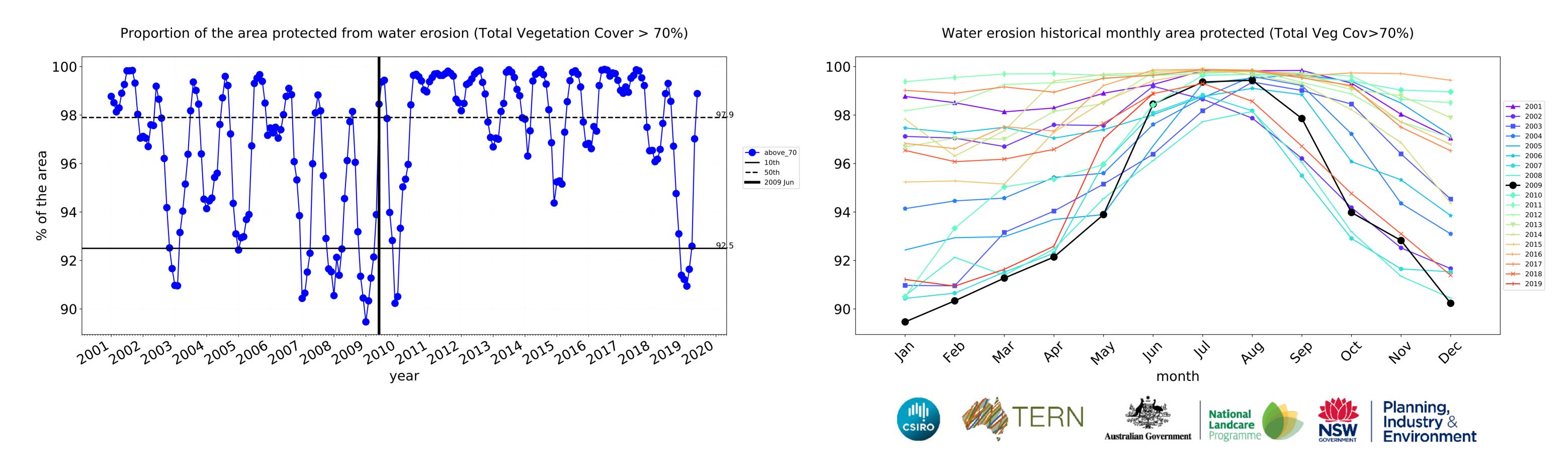






Production native forests and plantation forests timeseries





Riverina (6,662,175 ha and no data 46,160 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	6,662,175	100.0% 6,661,599	99.7% 6,641,772	75.5% 5,032,992	43.4% 2,892,725	15.3% 1,017,788	6.4% 425,194
Conservation and natural environments	322,075	100.0% 322,025	99.9% 321,825	98.2% 316,225	88.3% 284,350	62.6% 201,675	34.2% 110,025
Conservation and natural environments non forest	83,050	99.9% 83,000	99.8% 82,900	94.3% 78,350	64.0% 53,125	20.2% 16,775	8.5% 7,025
Conservation and natural environments Forest (non woodland)	194,600	100.0% 194,600	100.0% 194,550	99.8% 194,200	98.5% 191,625	85.8% 166,950	50.1% 97,575
Agriculture	6,029,000	100.0% 6,028,550	99.7% 6,010,200	73.5% 4,431,050	39.5% 2,381,650	11.4% 687,000	4.0% 238,775
Grazing	2,275,300	100.0% 2,275,150	99.9% 2,273,250	92.9% 2,112,750	65.4% 1,487,400	23.7% 538,450	8.4% 191,450
Grazing non forest	2,030,300	100.0% 2,030,150	99.9% 2,028,275	92.4% 1,875,175	63.6% 1,291,950	22.7% 460,200	8.4% 170,500
Grazing Woodland forest	141,650	100.0% 141,650	100.0% 141,625	95.1% 134,725	70.1% 99,275	19.5% 27,600	3.5% 5,000
Grazing - Forest (non woodland)	103,350	100.0% 103,350	100.0% 103,350	99.5% 102,850	93.1% 96,175	49.0% 50,650	15.4% 15,950
Cropping	3,186,300	100.0% 3,186,100	99.6% 3,172,475	60.8% 1,935,750	23.0% 732,025	3.1% 98,225	0.6% 18,300
Irrigation	565,575	100.0% 565,475	99.5% 562,650	67.5% 382,025	28.6% 162,000	8.9% 50,300	5.1% 29,025
Production native forests and plantation forests	172,775	100.0% 172,775	100.0% 172,775	98.5% 170,100	91.7% 158,350	65.4% 112,975	40.7% 70,375











