Total vegetation cover soil protection Region:NRM Hunter 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: December 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







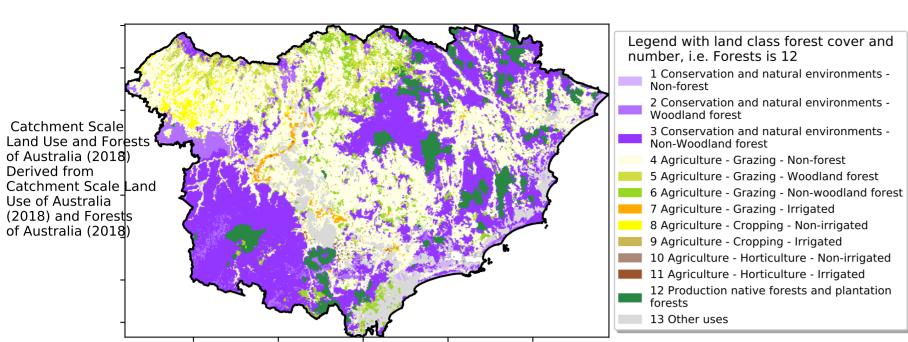




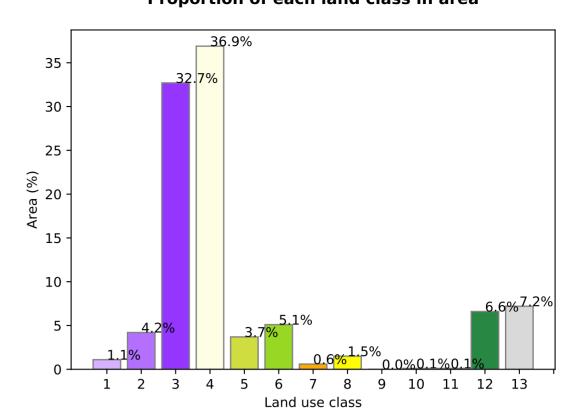


Vegetation Cover Dec 2009

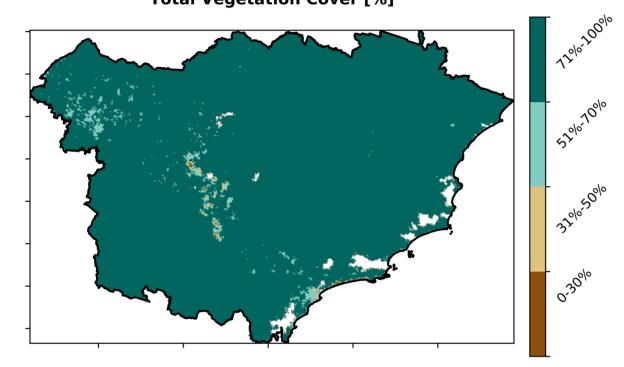
Land use and forest cover



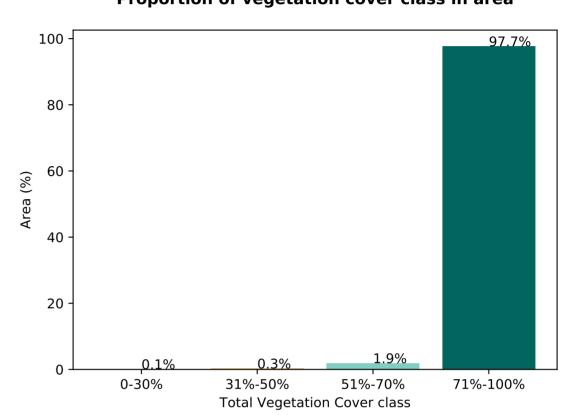
Proportion of each land class in area



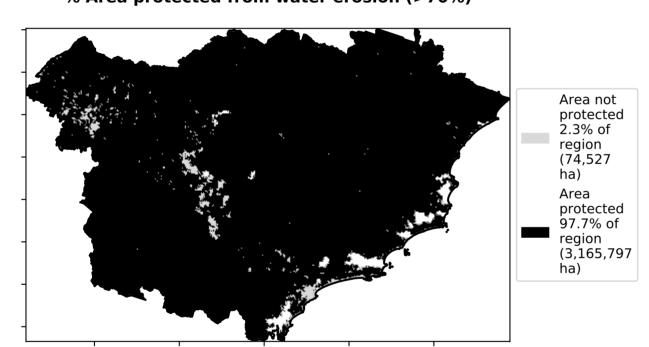
Total Vegetation Cover [%]



Proportion of vegetation cover class in area



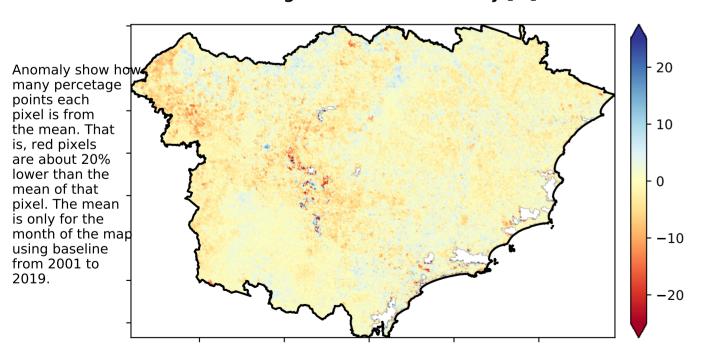
% Area protected from water erosion (>70%)



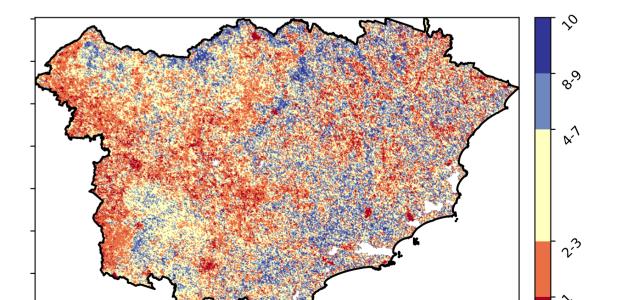
% Area protected from wind erosion (>50%)



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.



Total Vegetation Cover Decile [%]



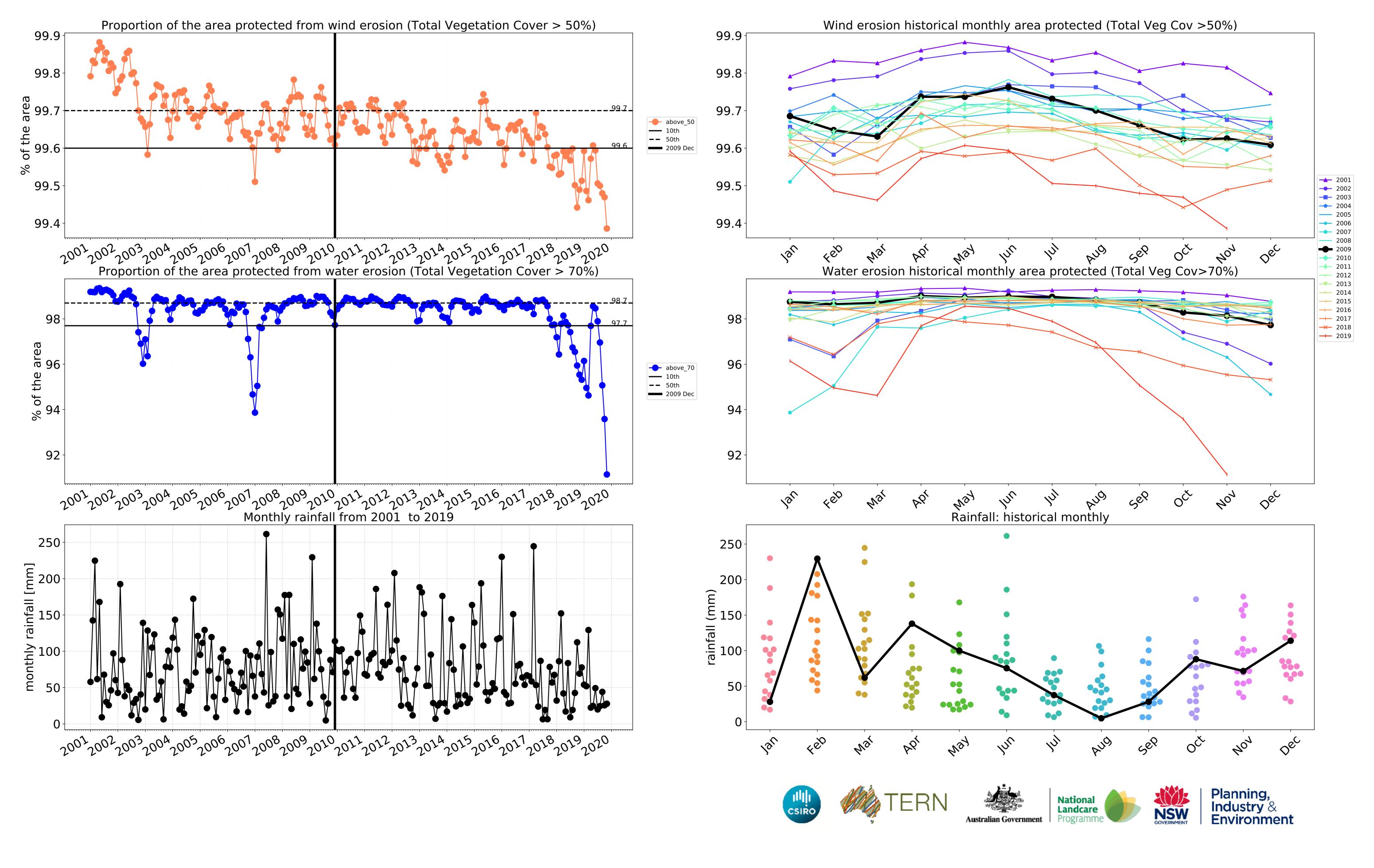


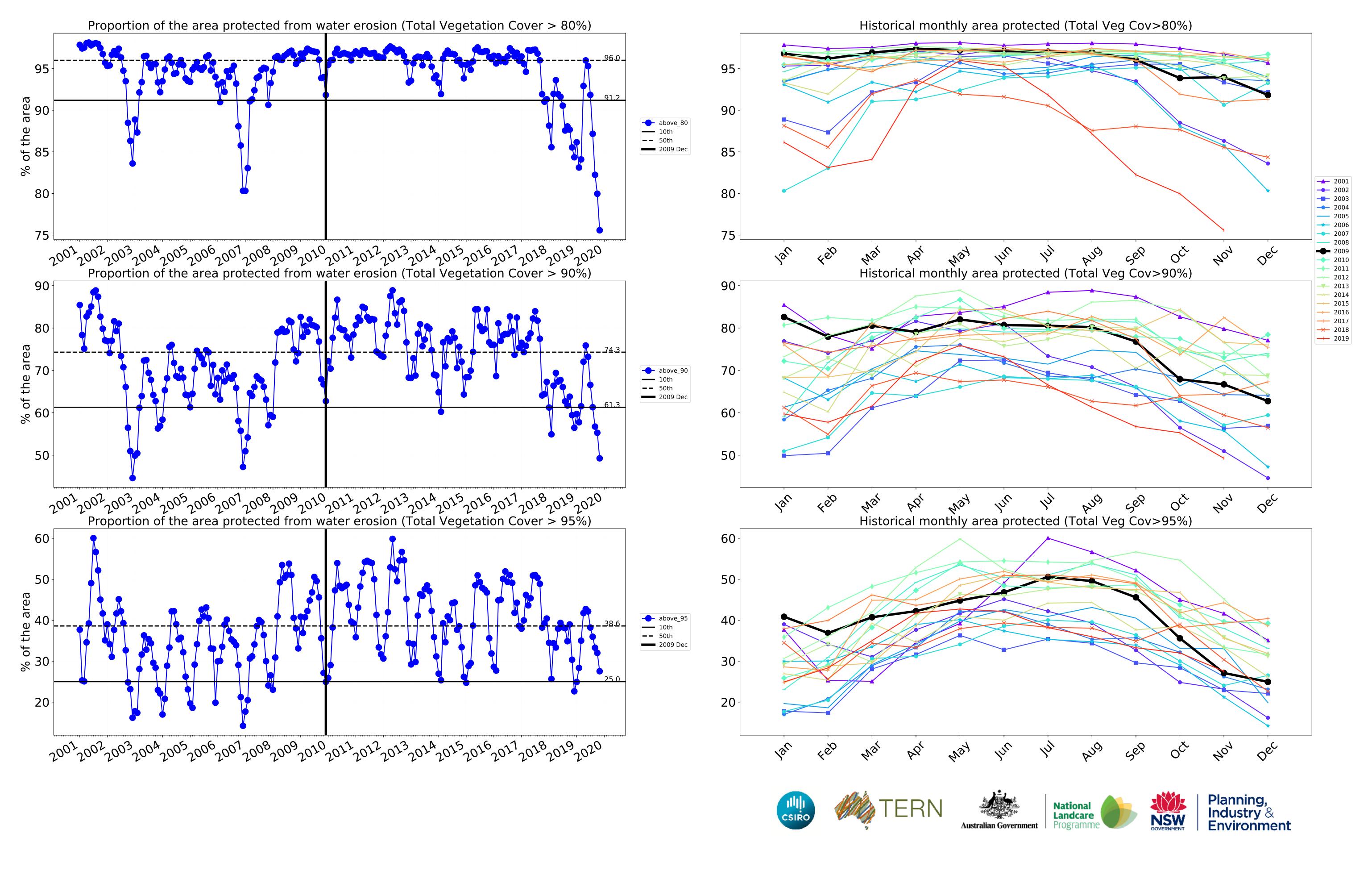




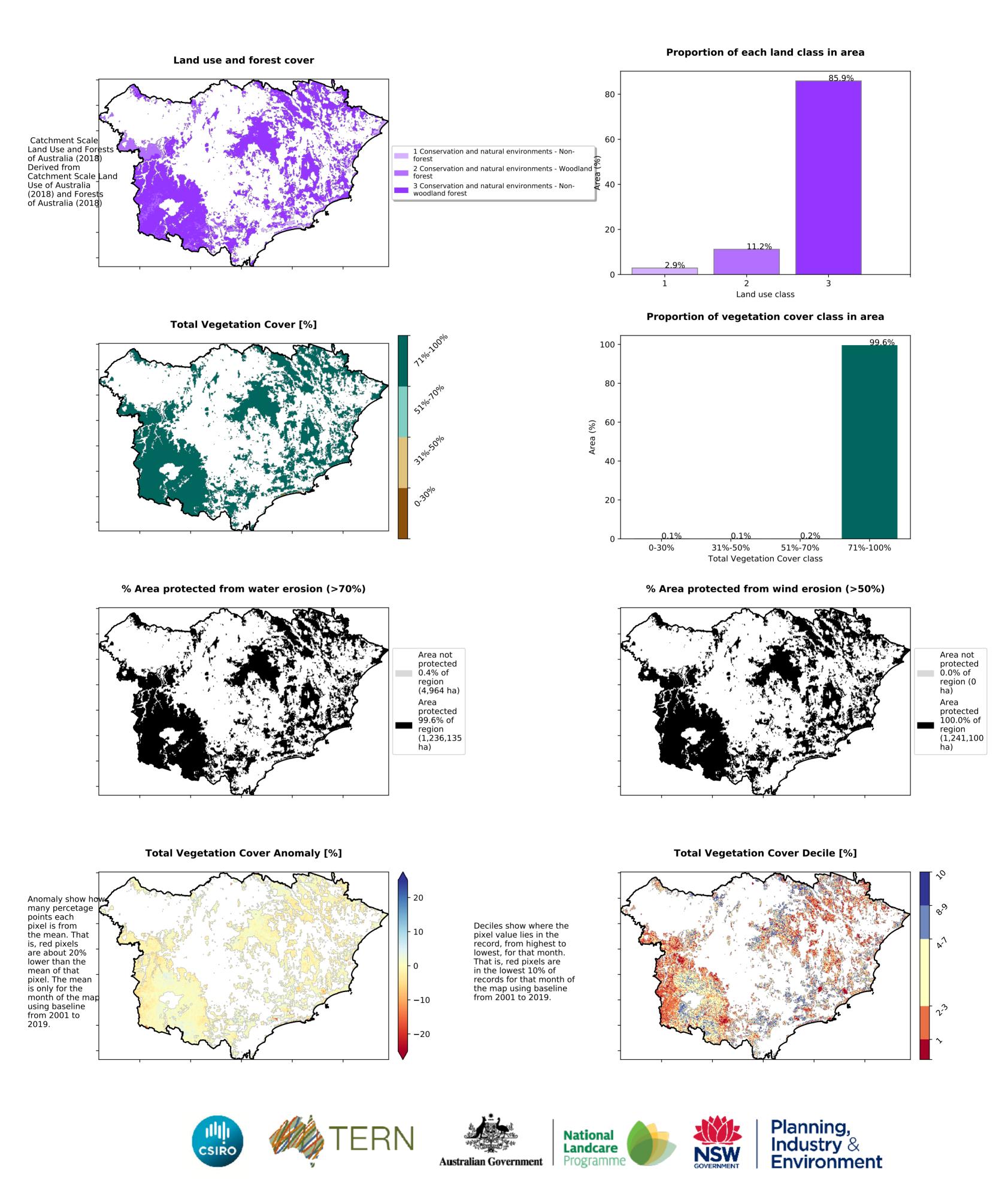




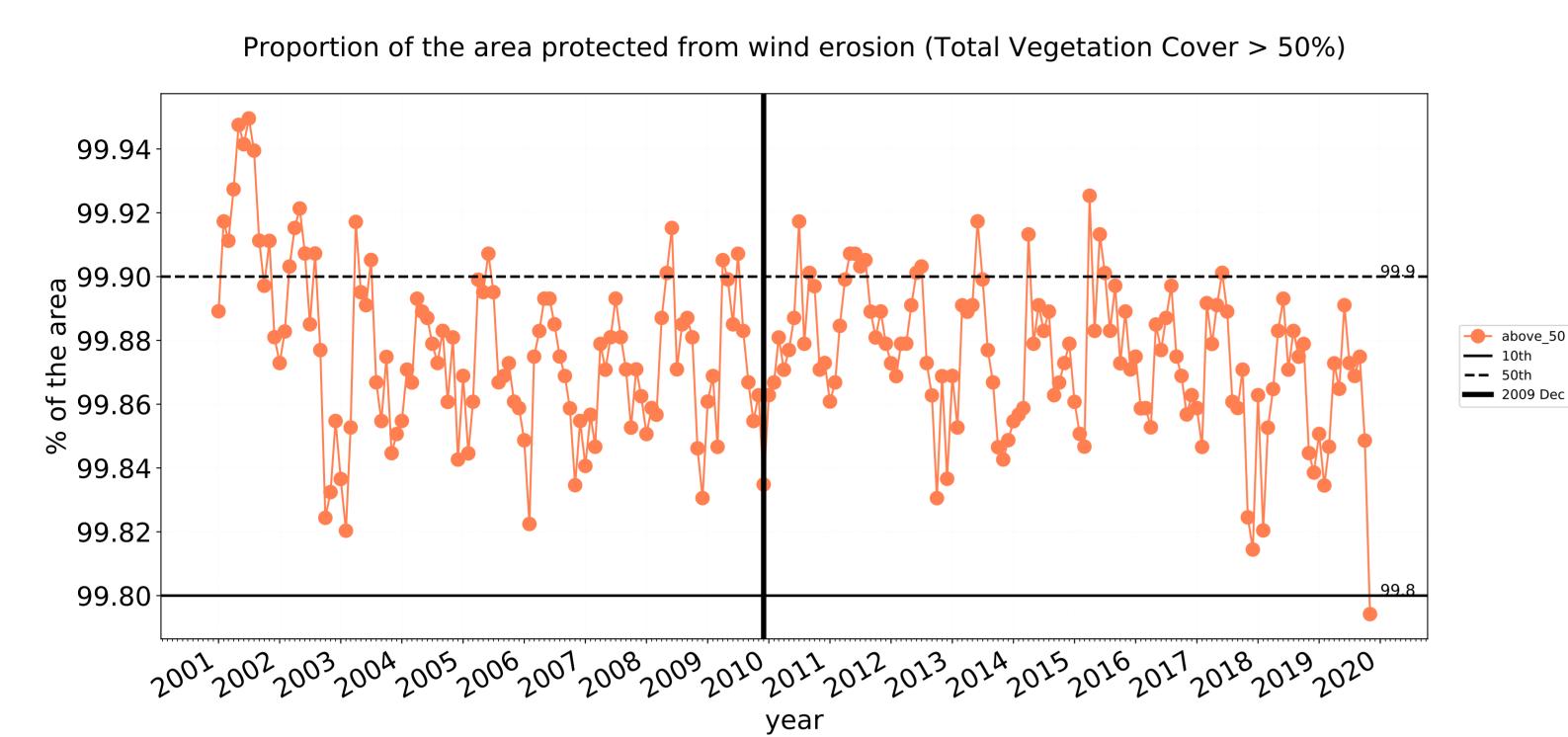


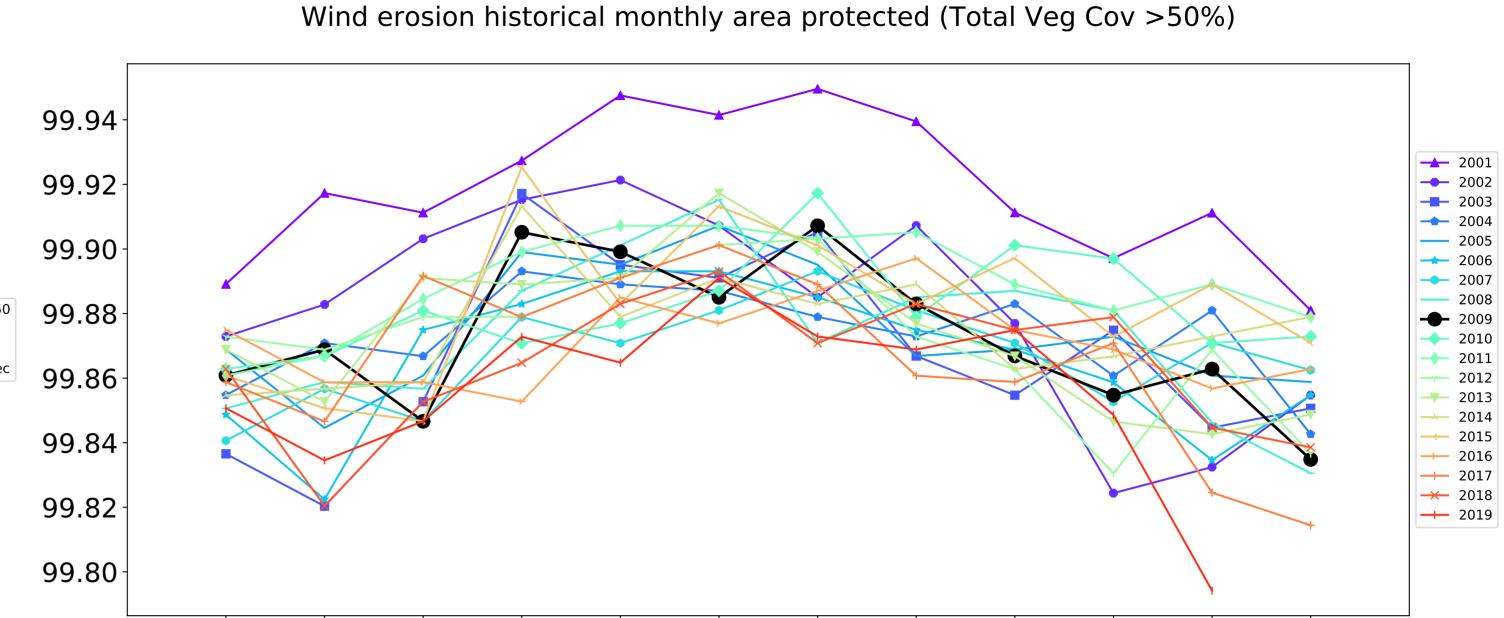


Conservation and natural environments

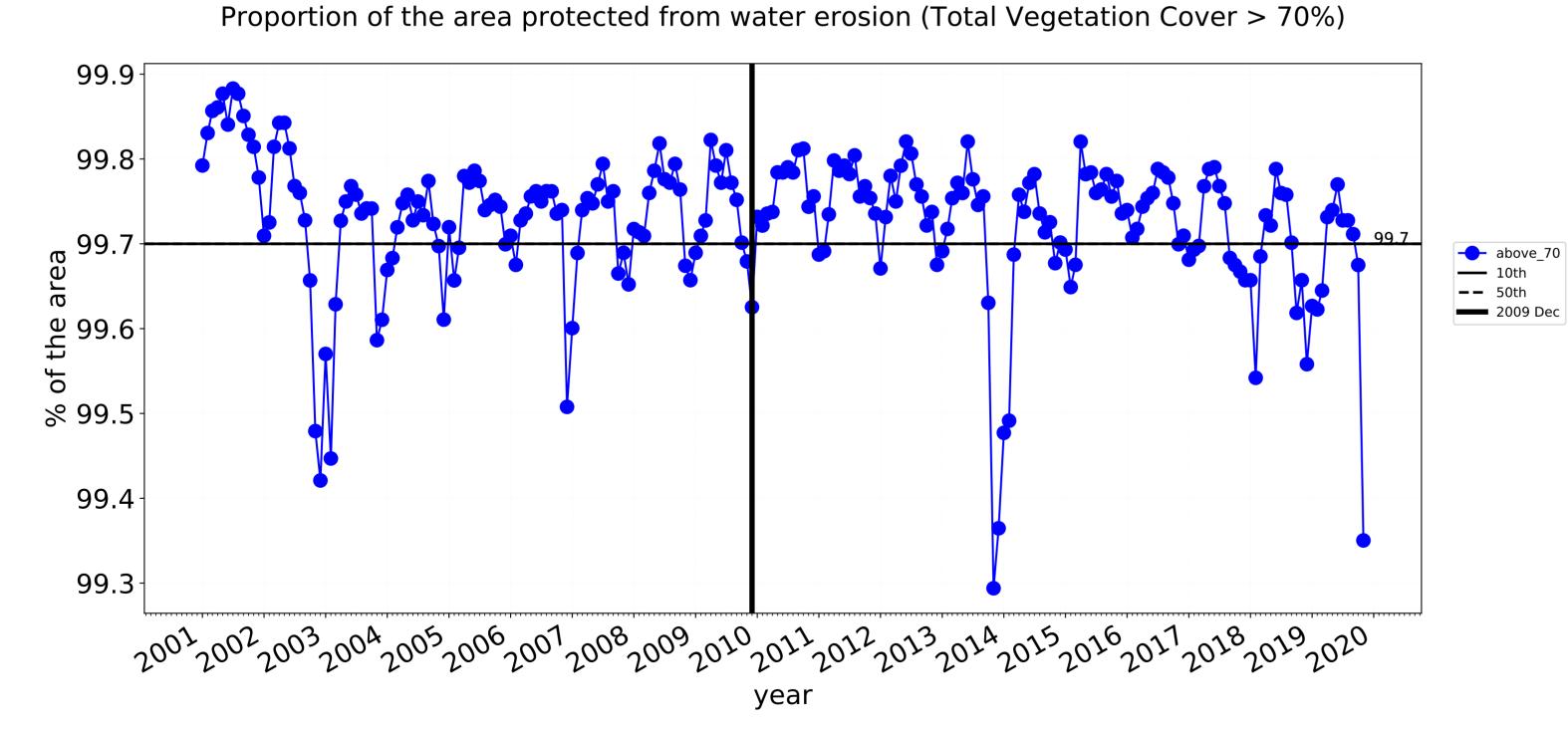


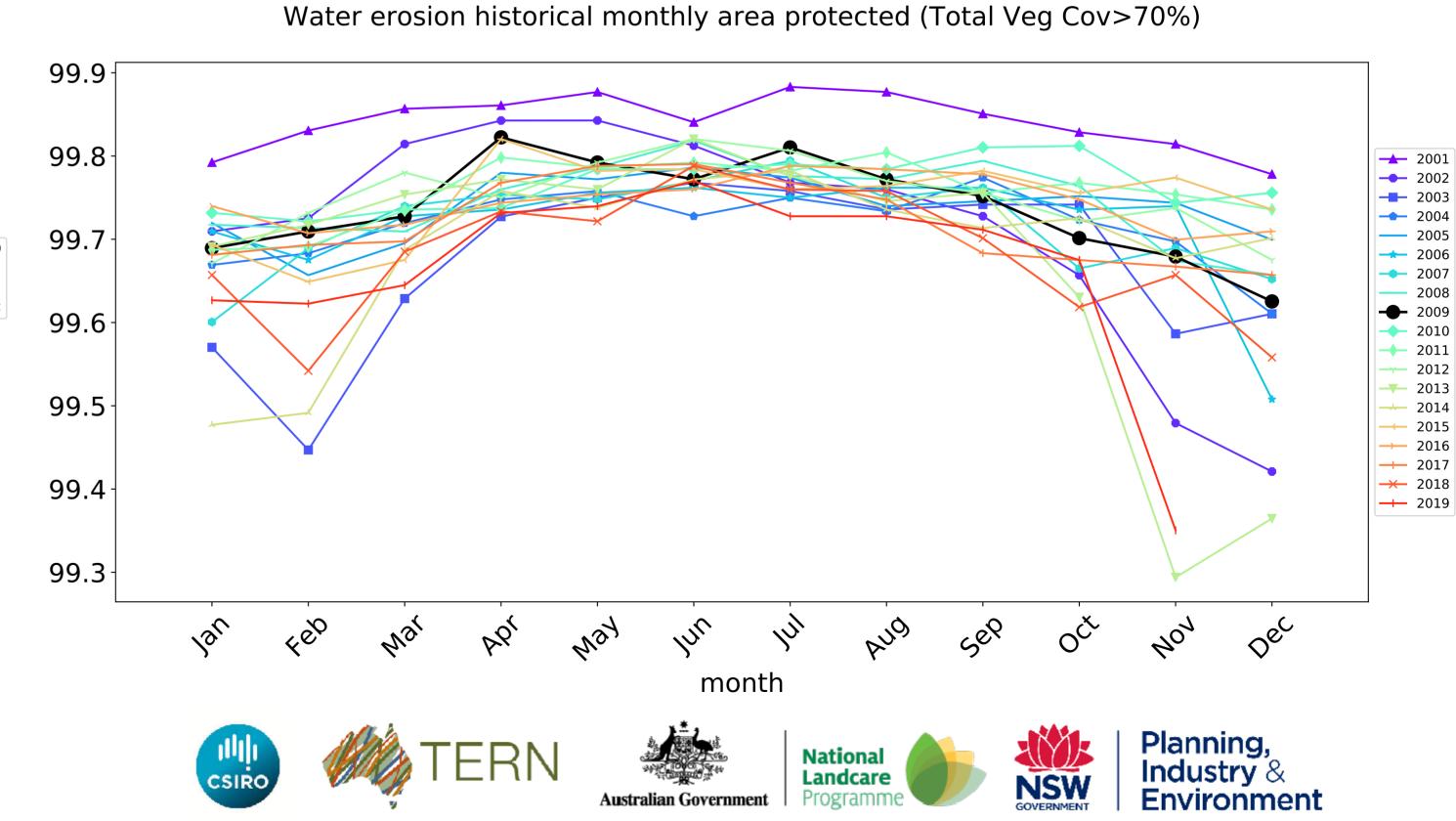
Conservation and natural environments timeseries

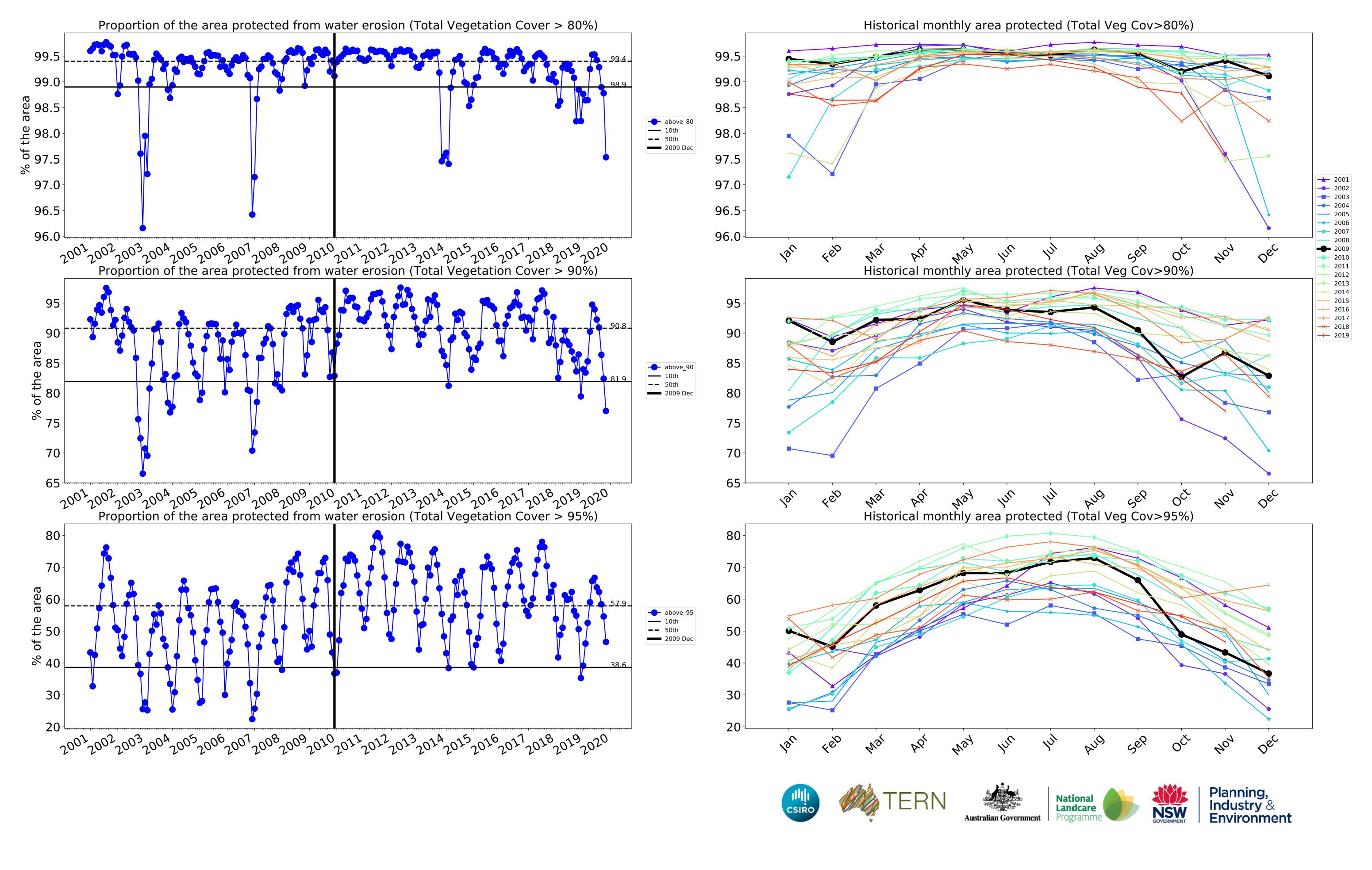




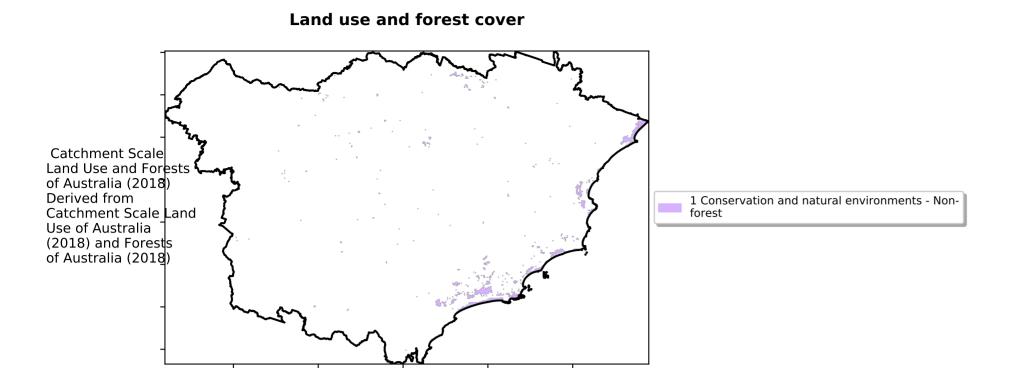
month





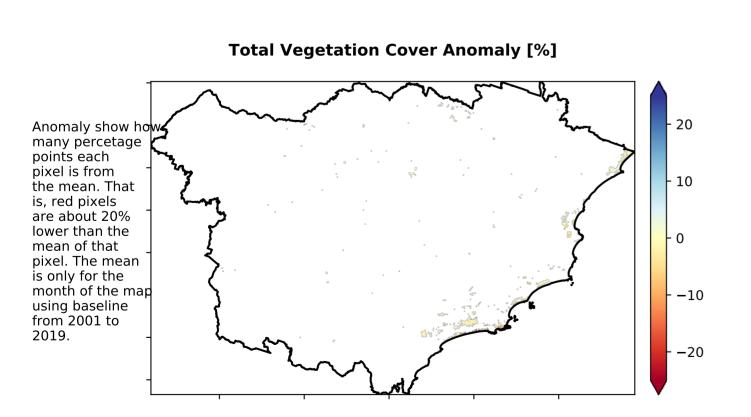


Conservation and natural environments non forest

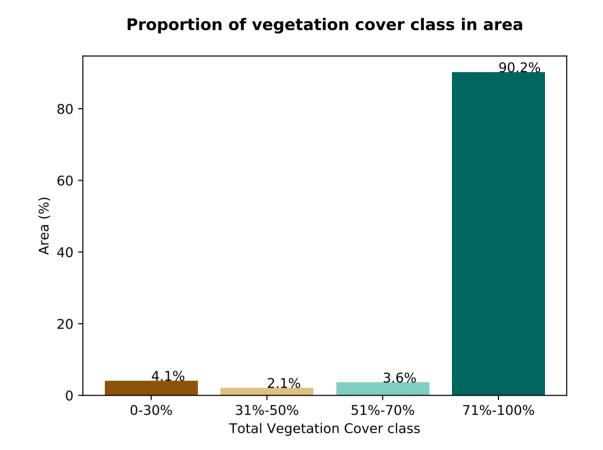


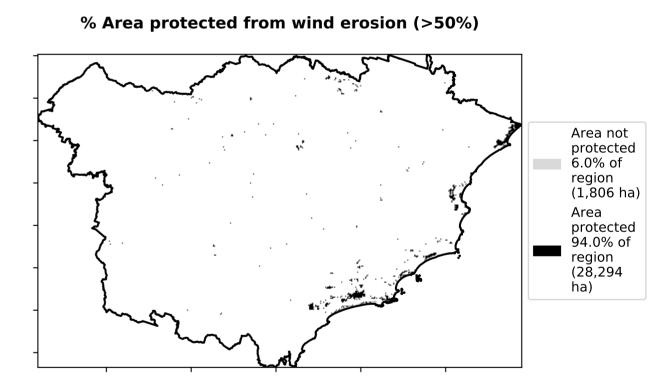
Total Vegetation Cover [%] Tiple Judolo Jiple Judolo Ji

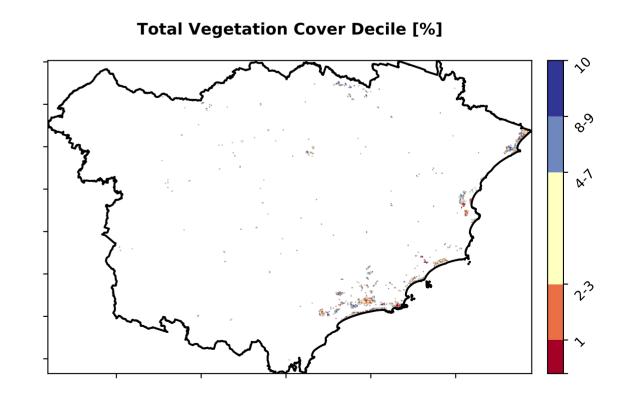
% Area protected from water erosion (>70%) Area not protected 9.8% of region (2,949 ha) Area protected 90.2% of region (27,150 ha)



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.













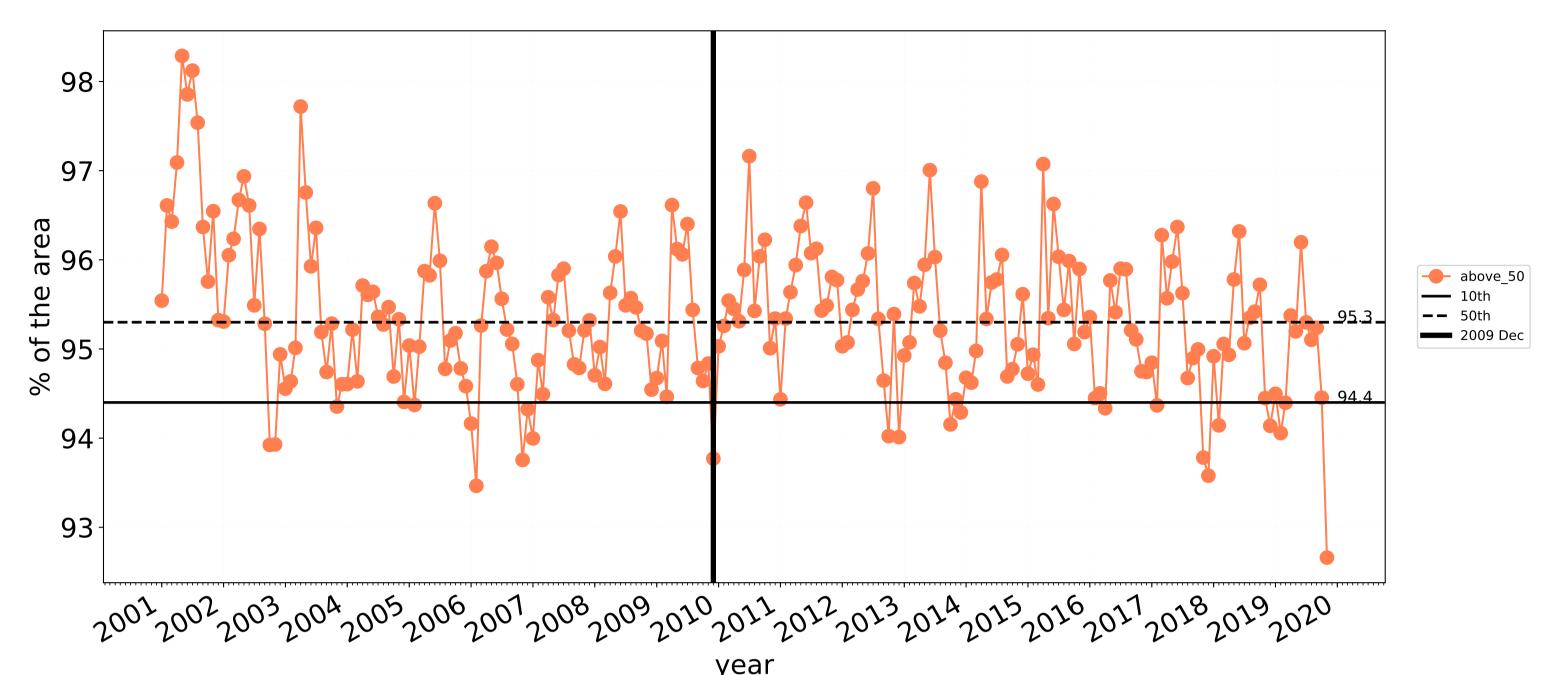




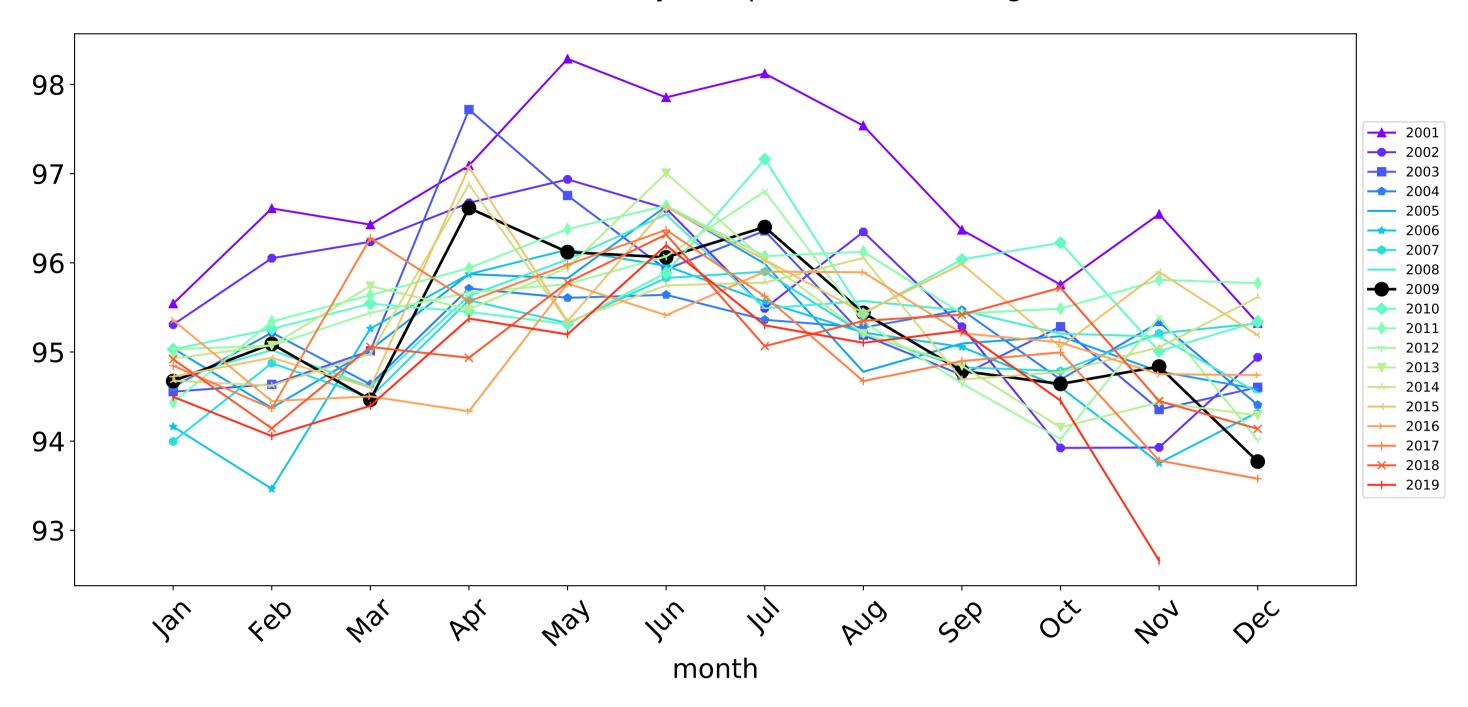


Conservation and natural environments non forest timeseries

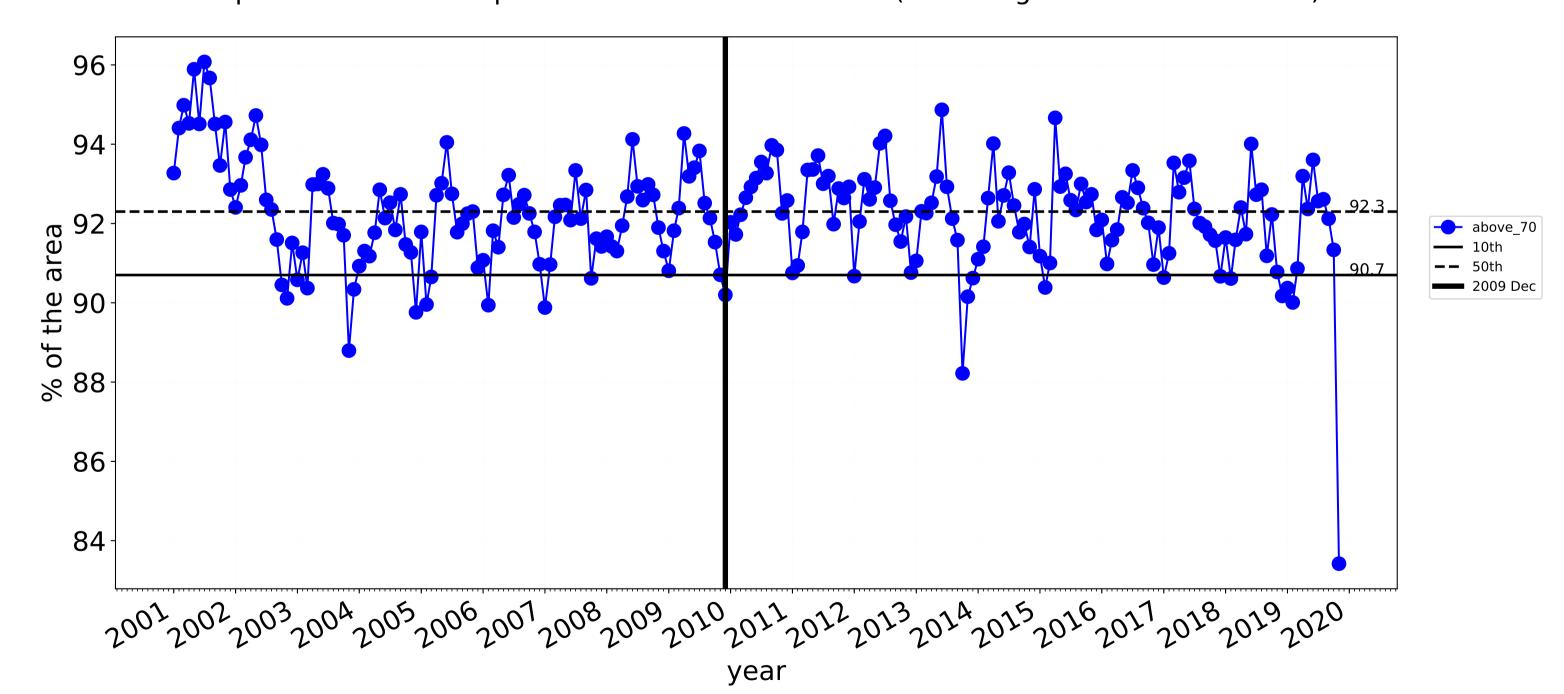




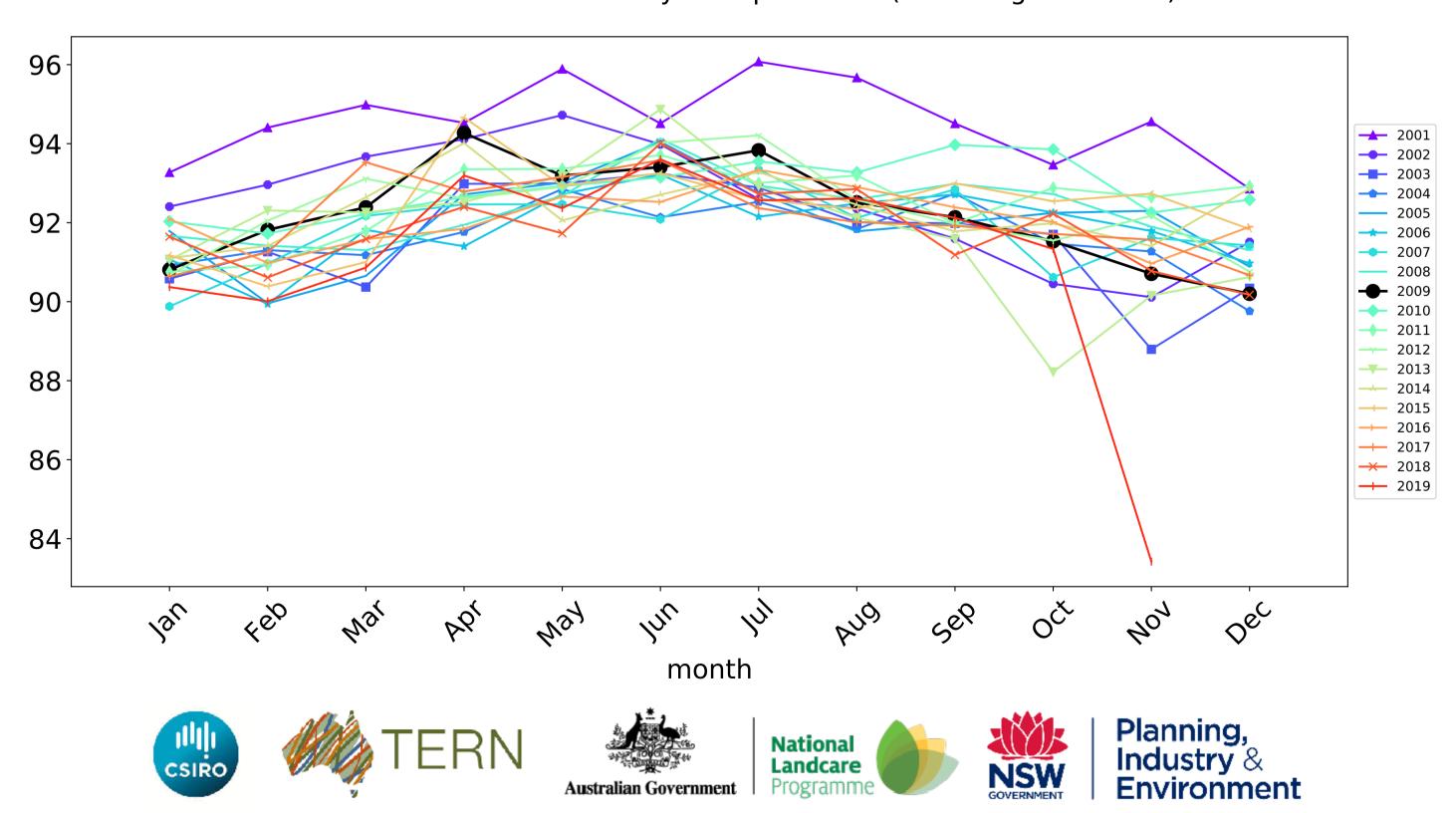
Wind erosion historical monthly area protected (Total Veg Cov >50%)

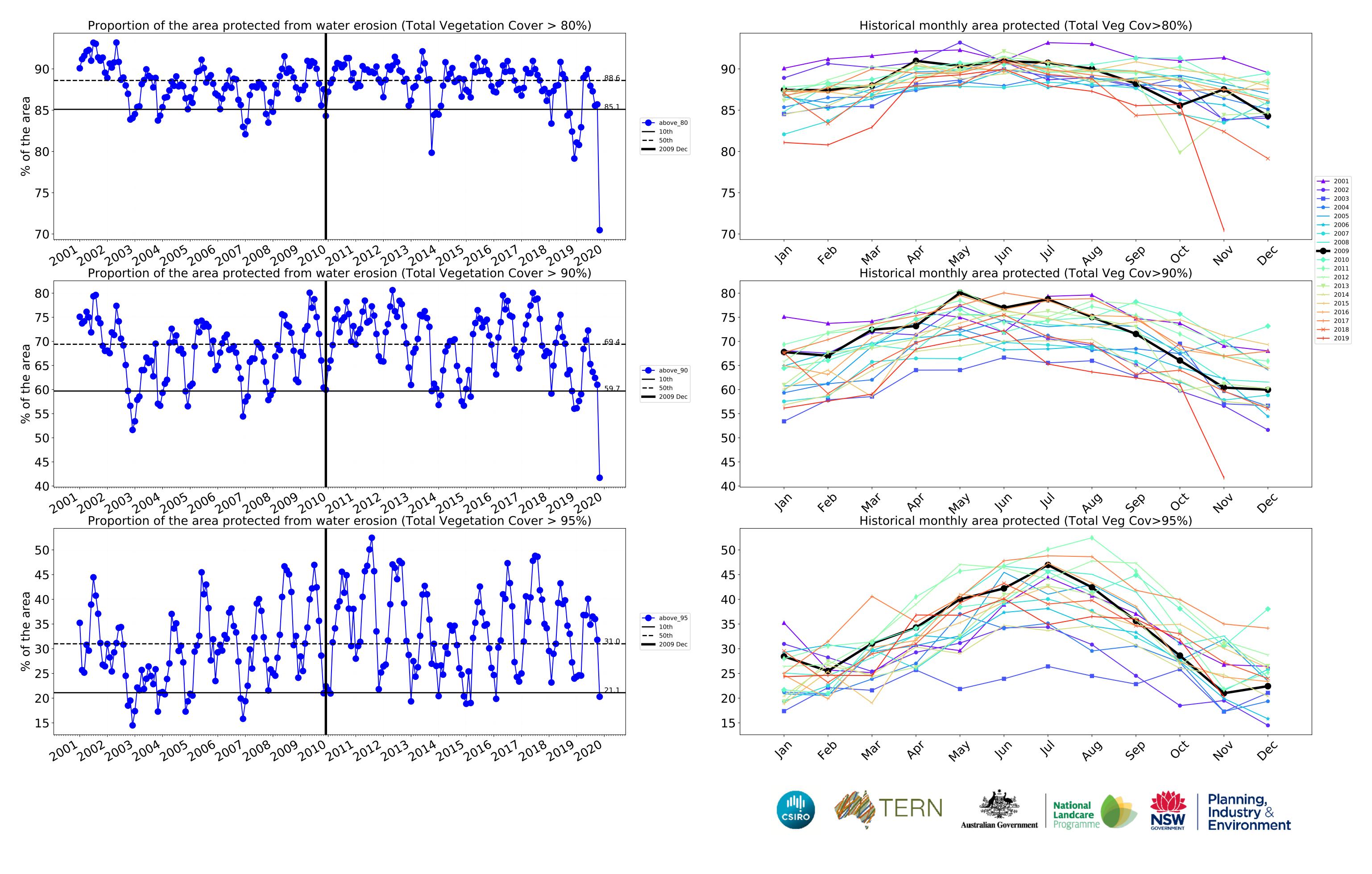


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

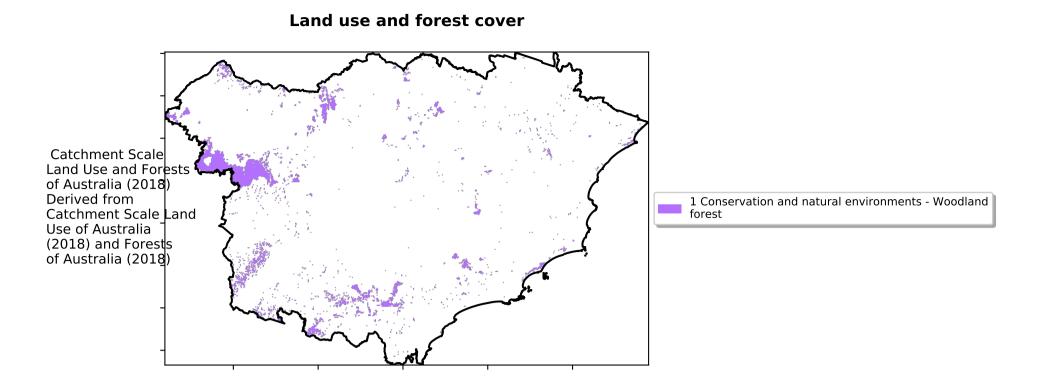


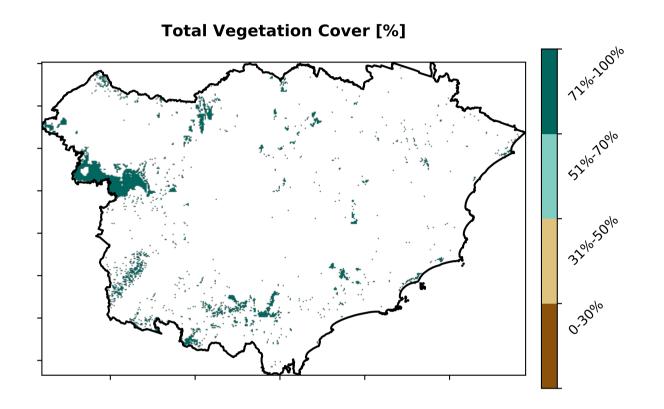
Water erosion historical monthly area protected (Total Veg Cov>70%)

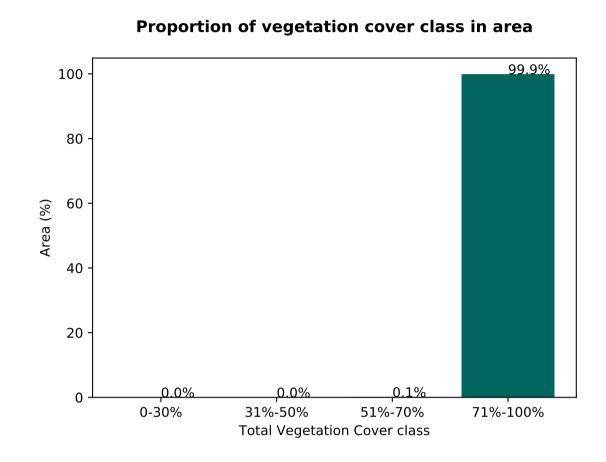


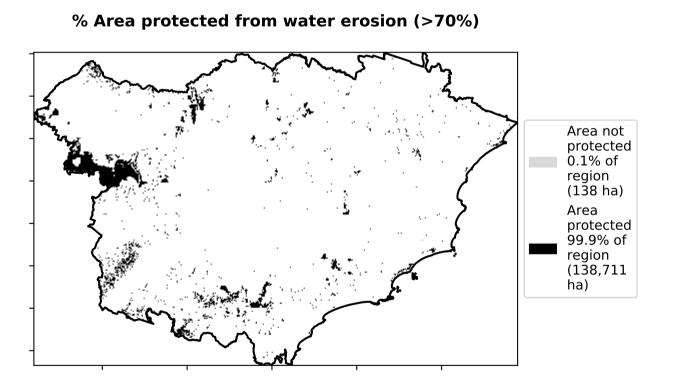


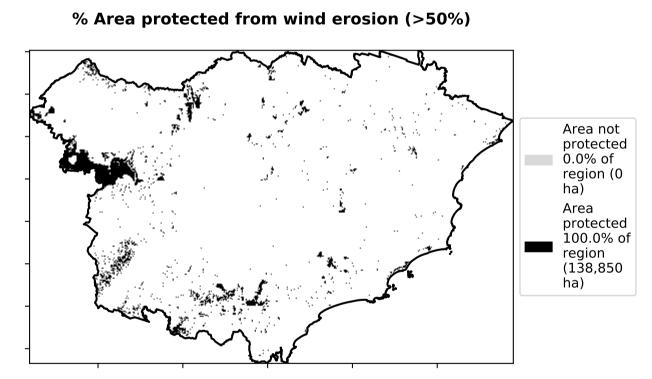
Conservation and natural environments Woodland forest

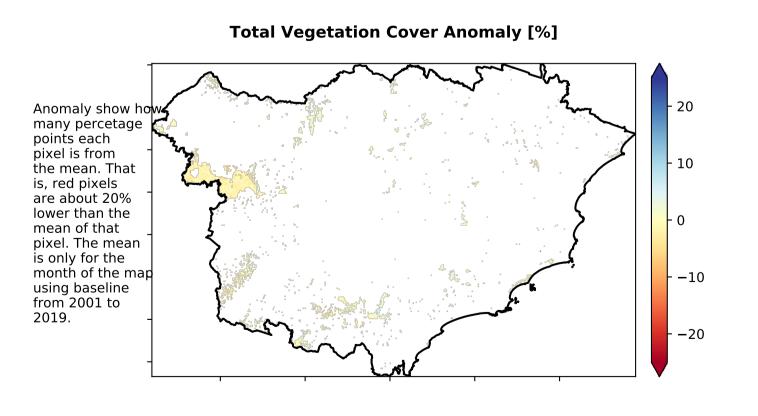




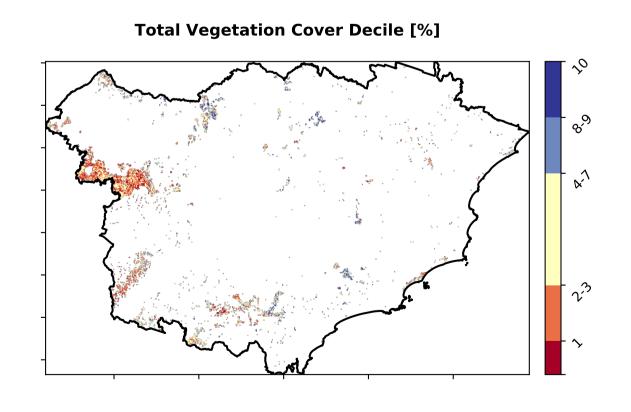








Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.







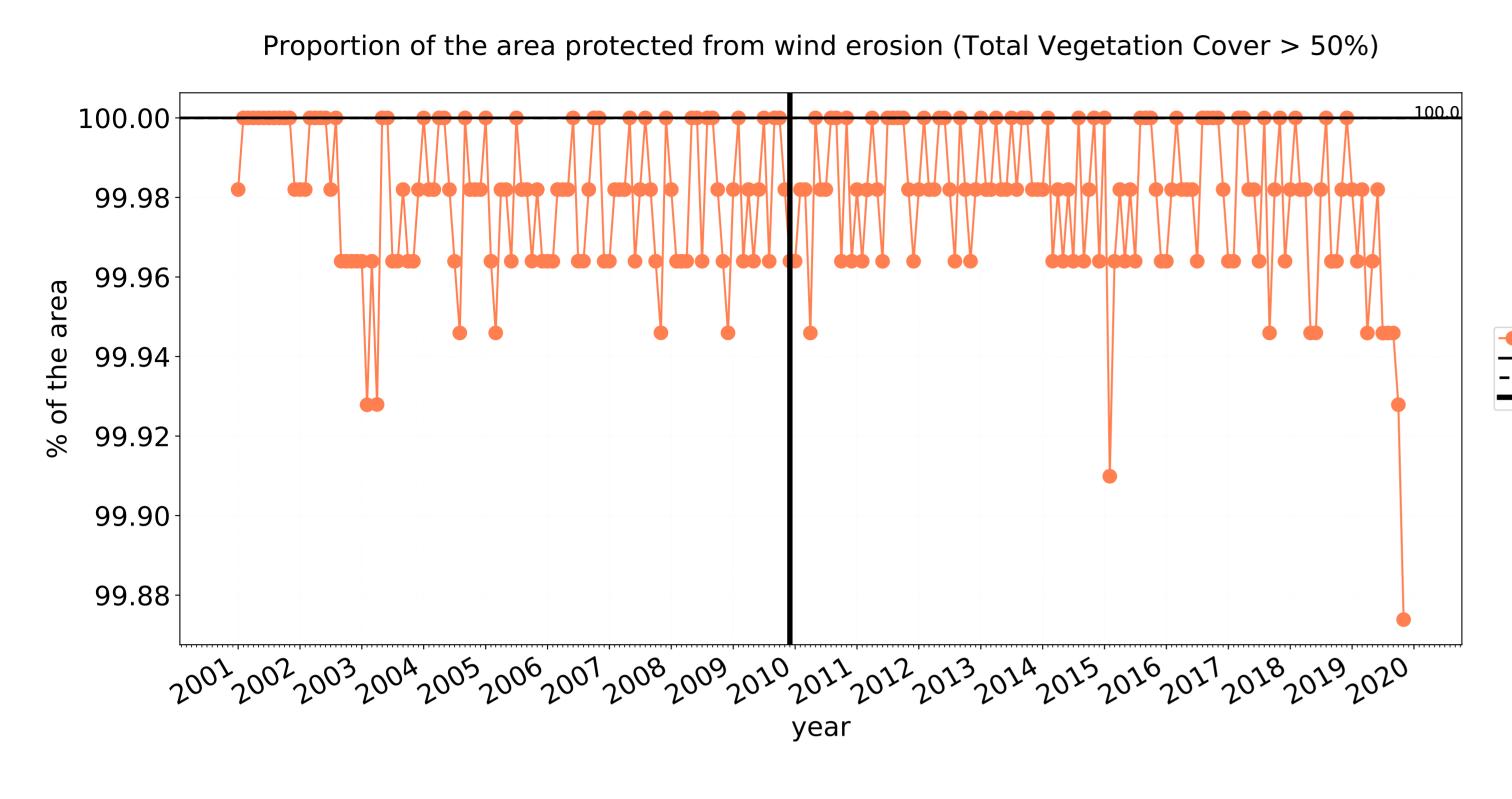


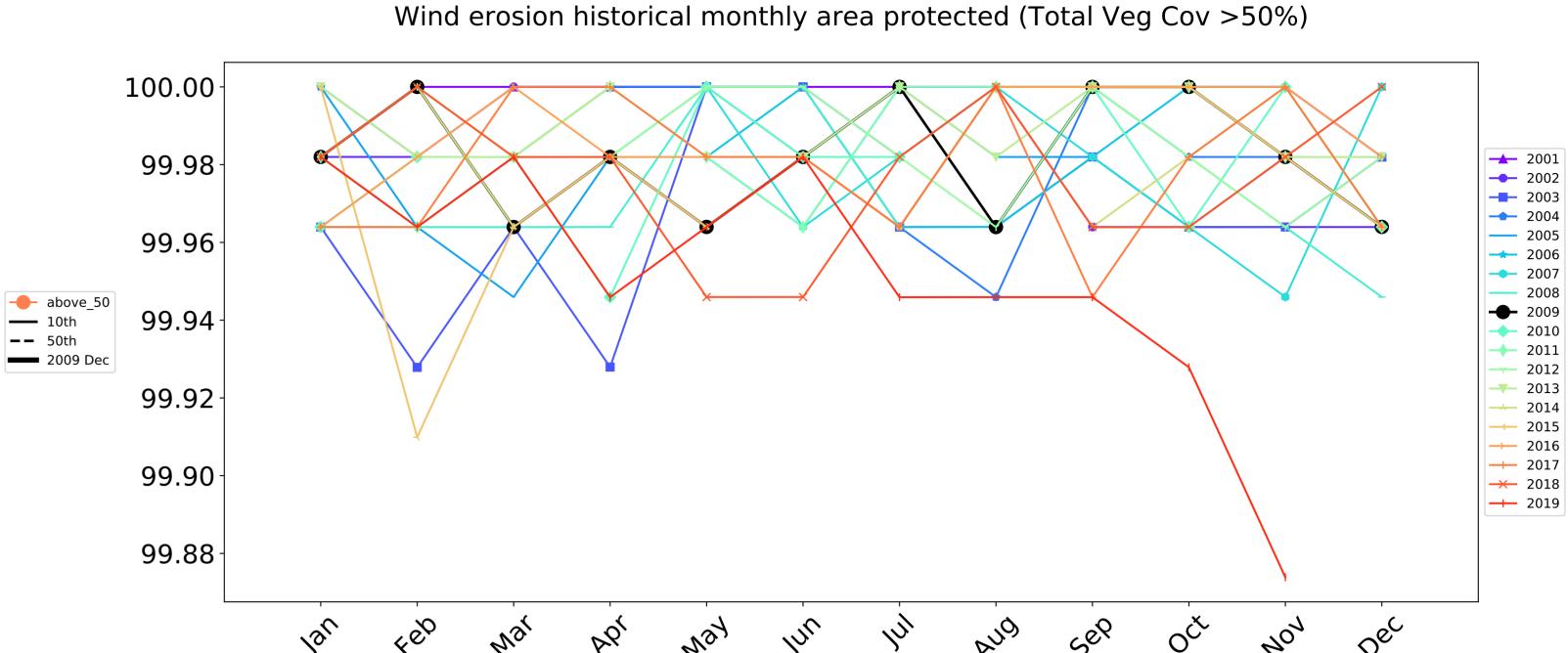




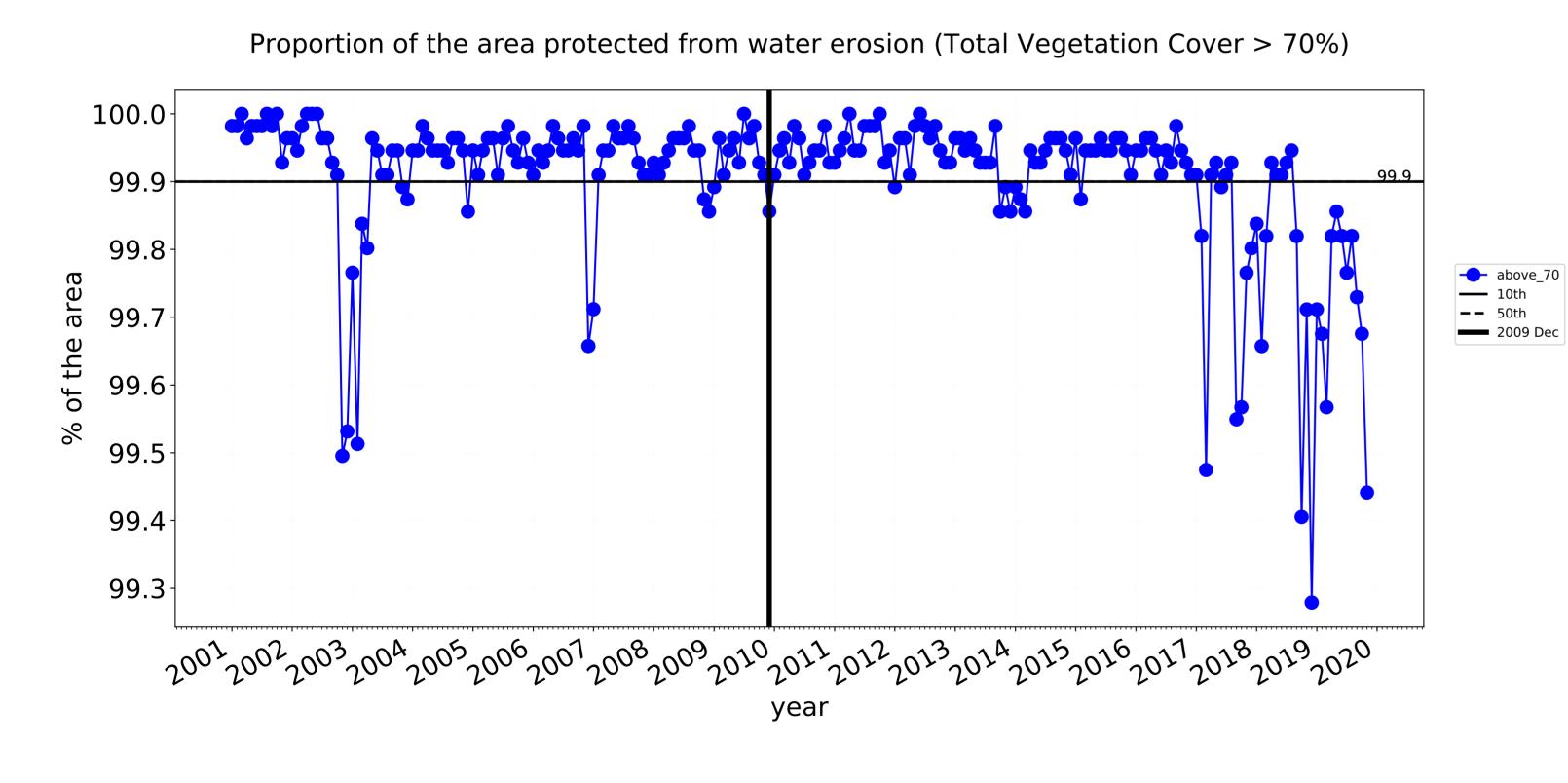


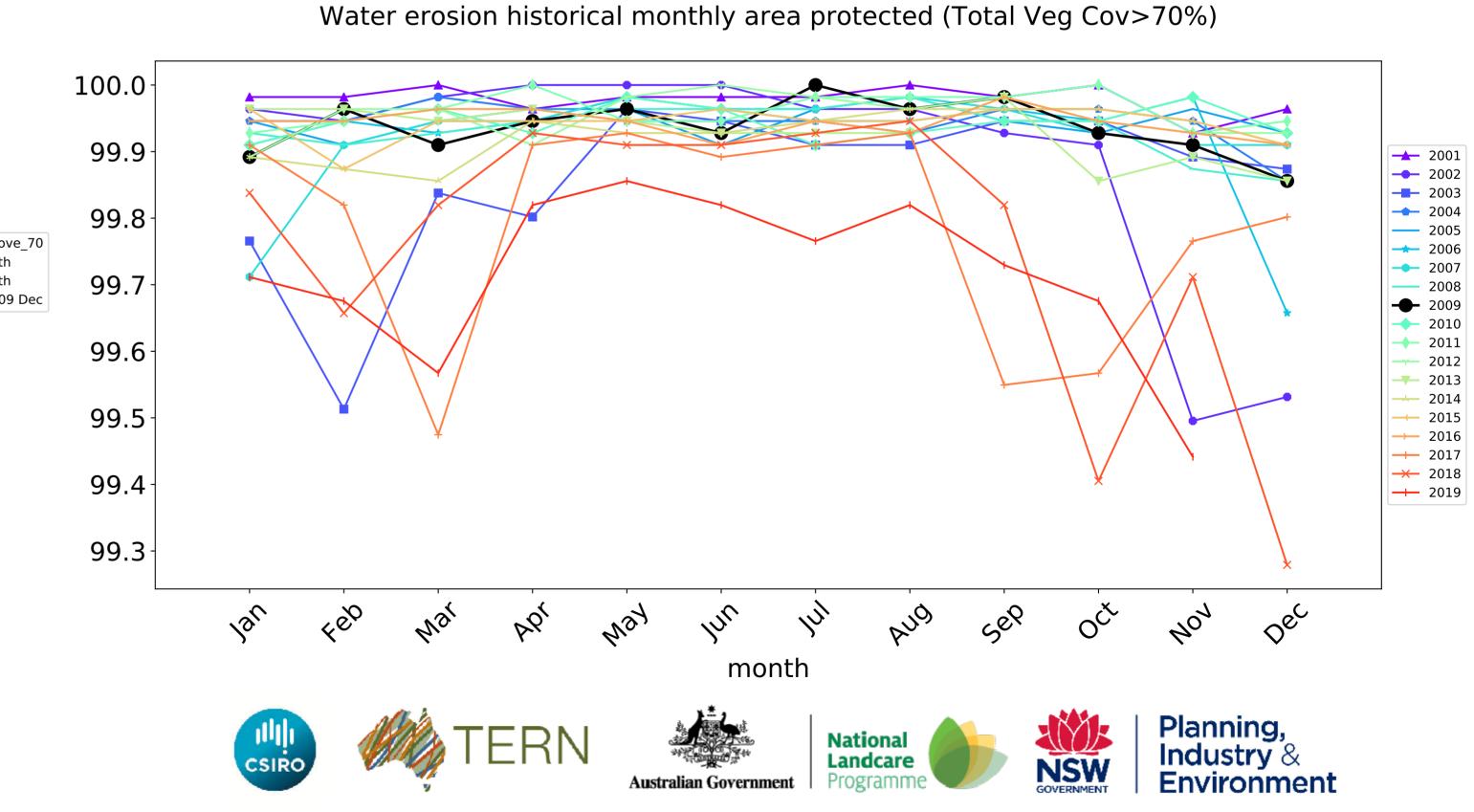
Conservation and natural environments Woodland forest timeseries

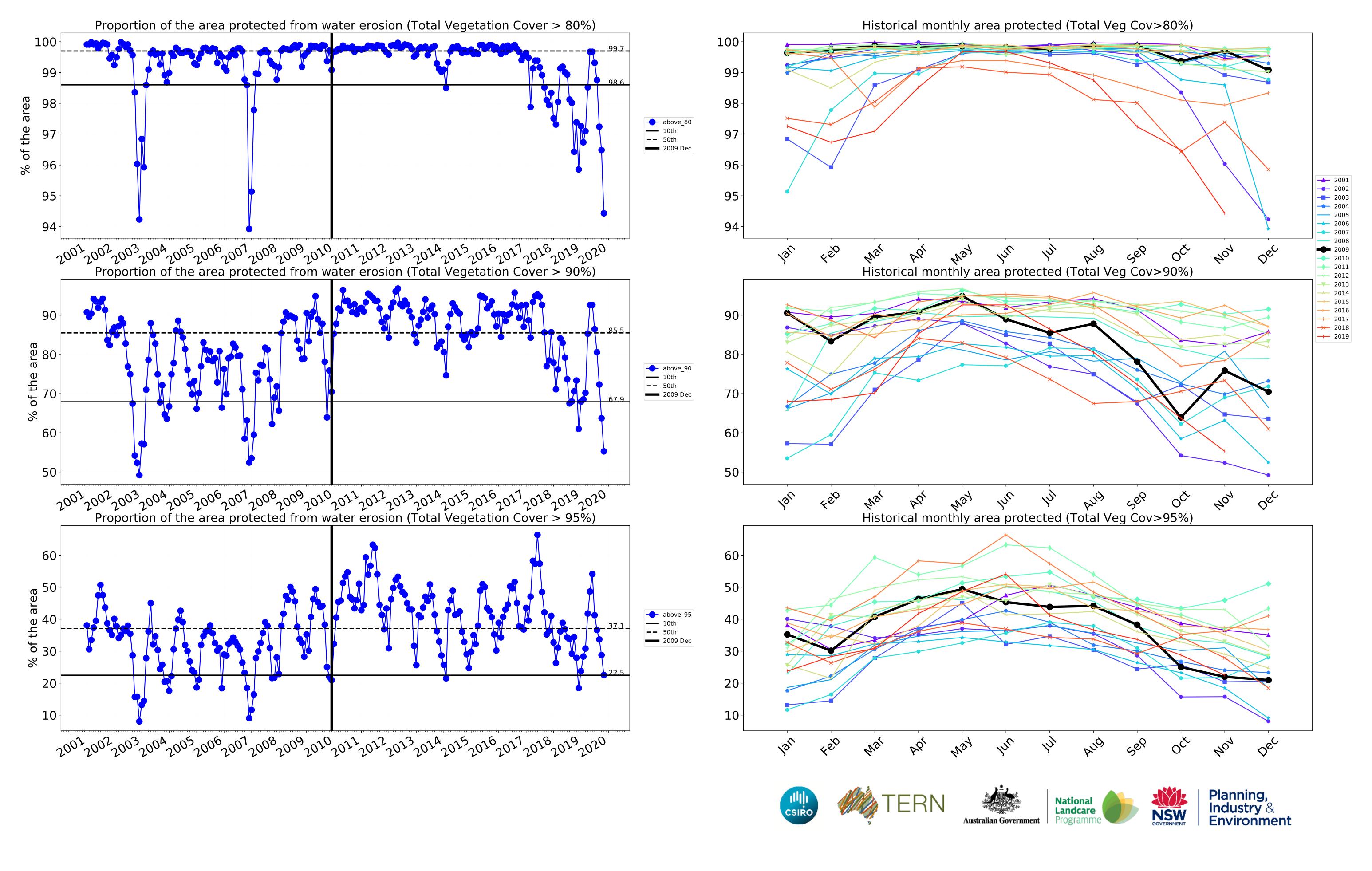


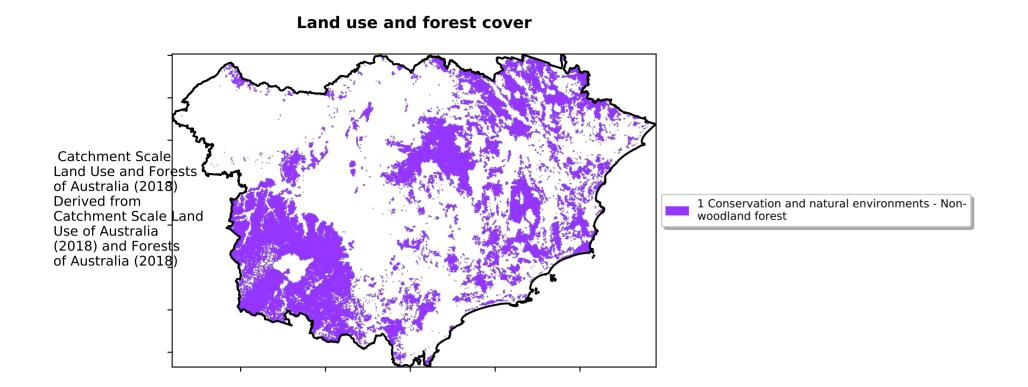


month

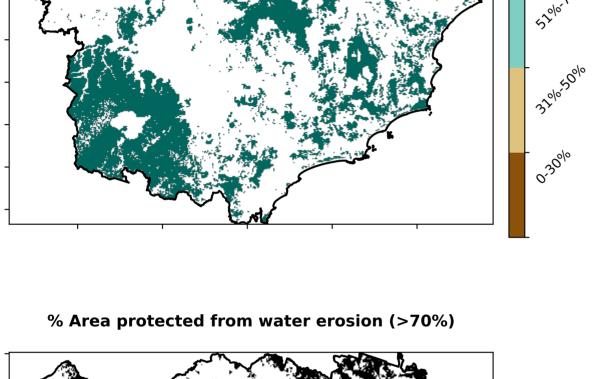


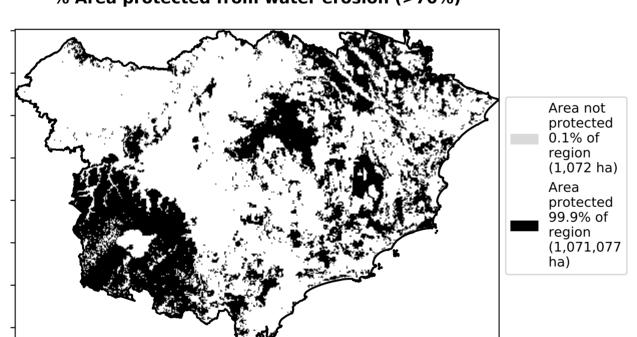


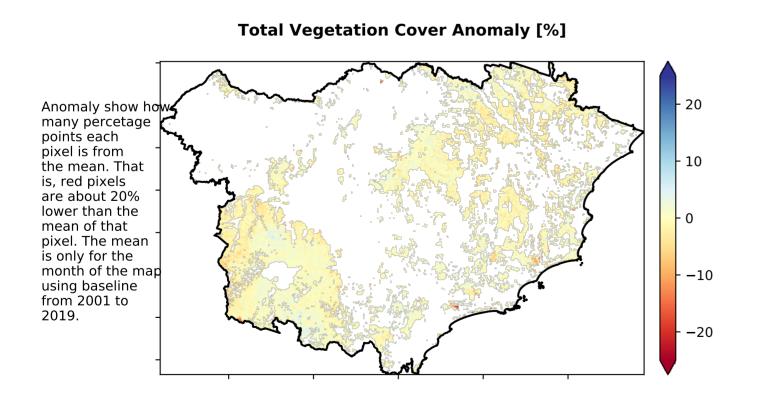




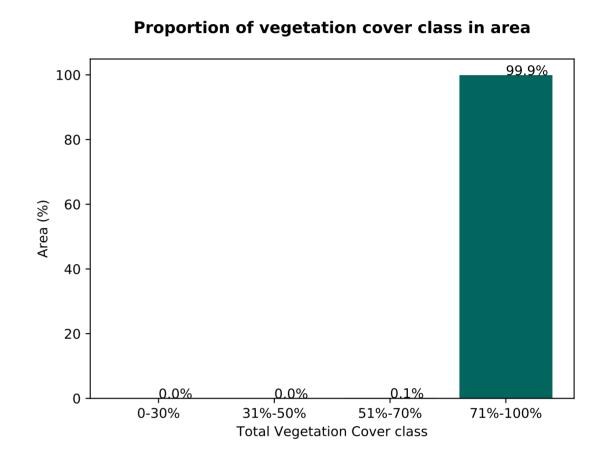
Total Vegetation Cover [%]

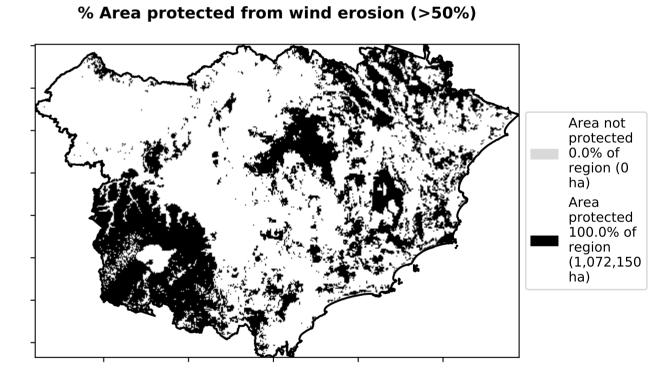


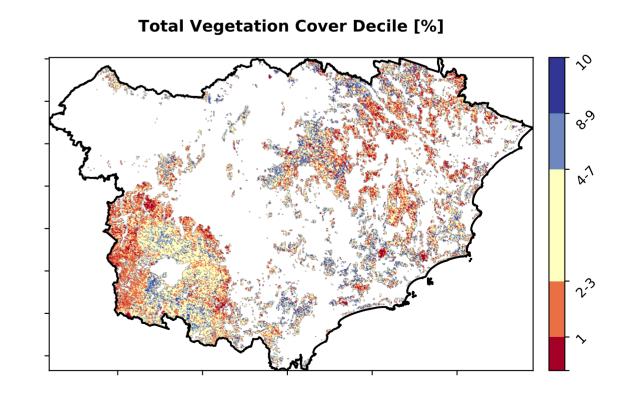




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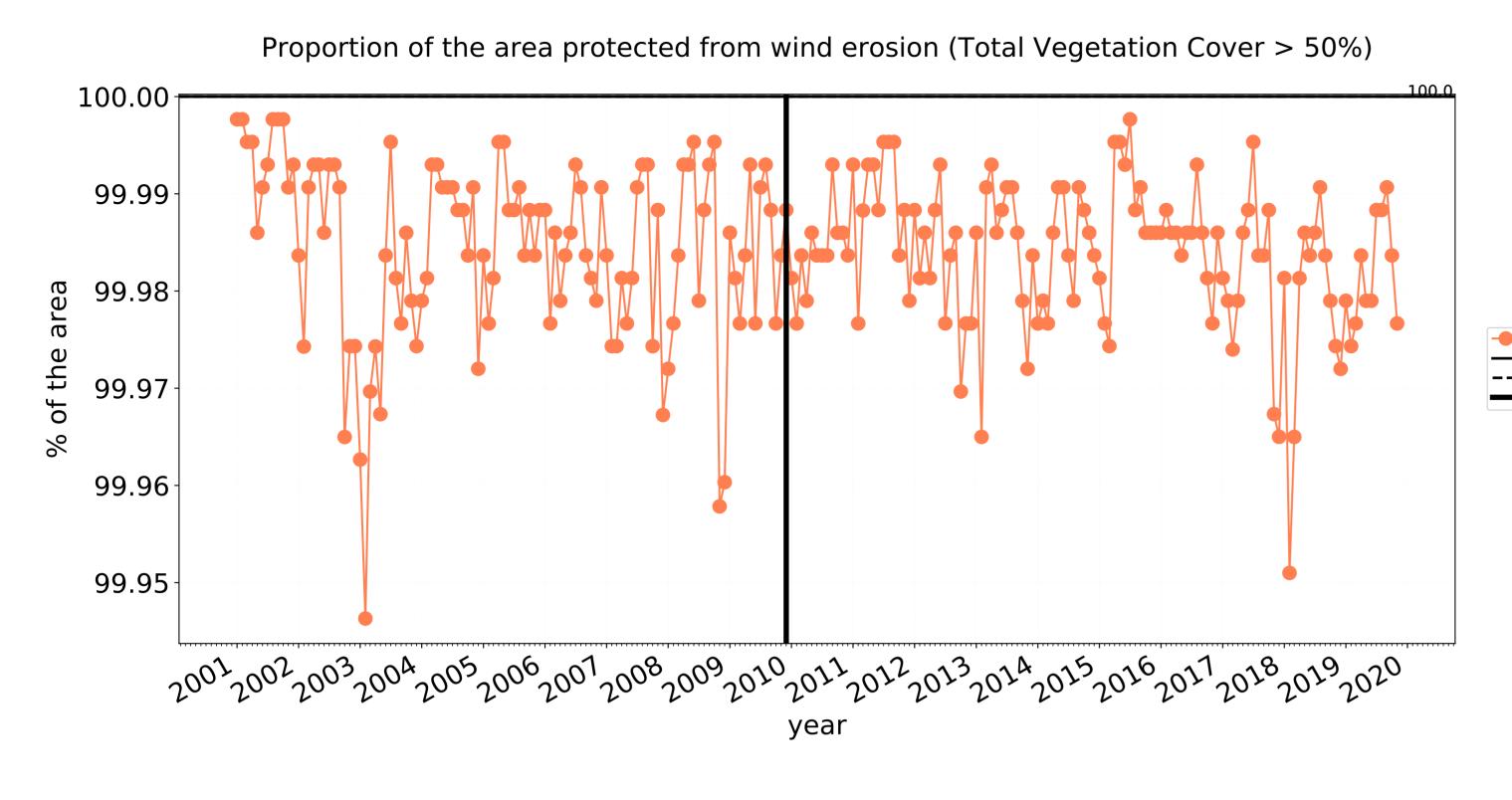


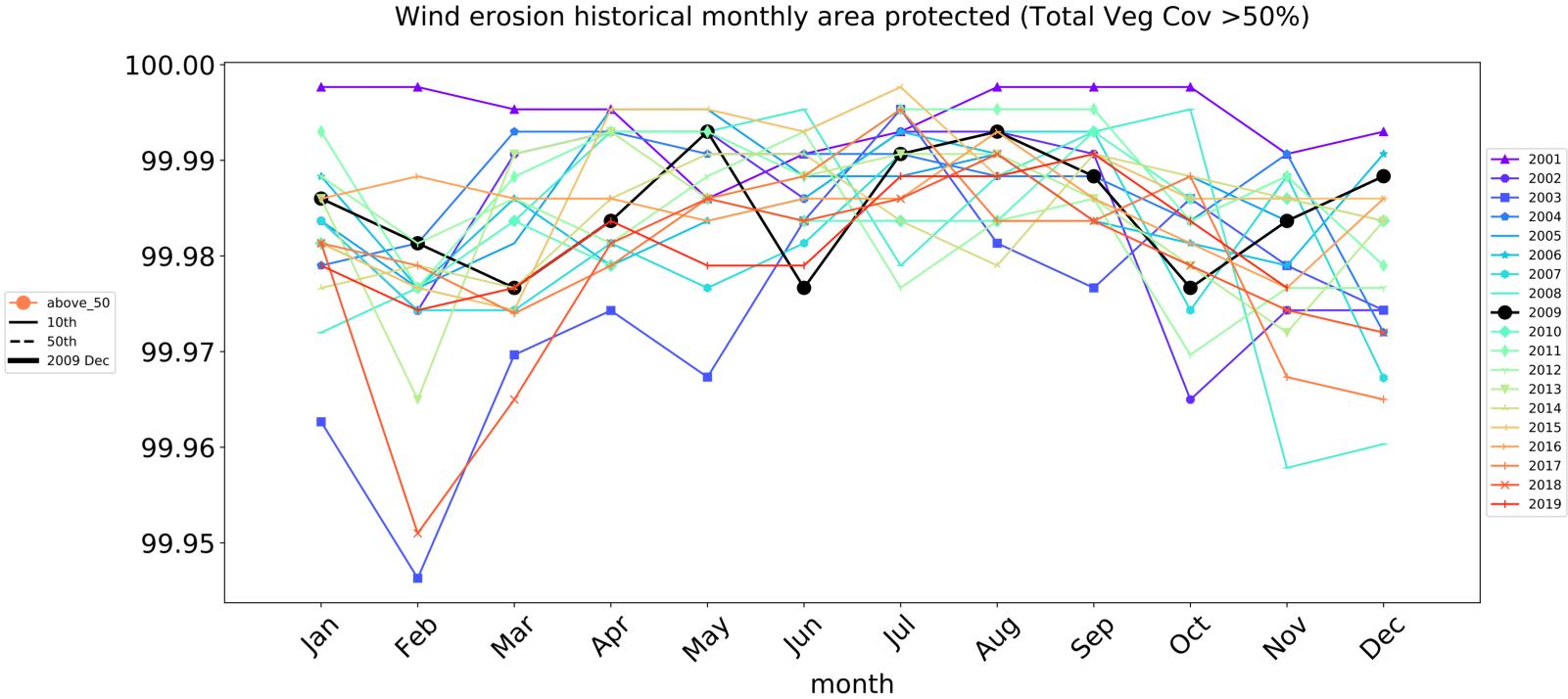


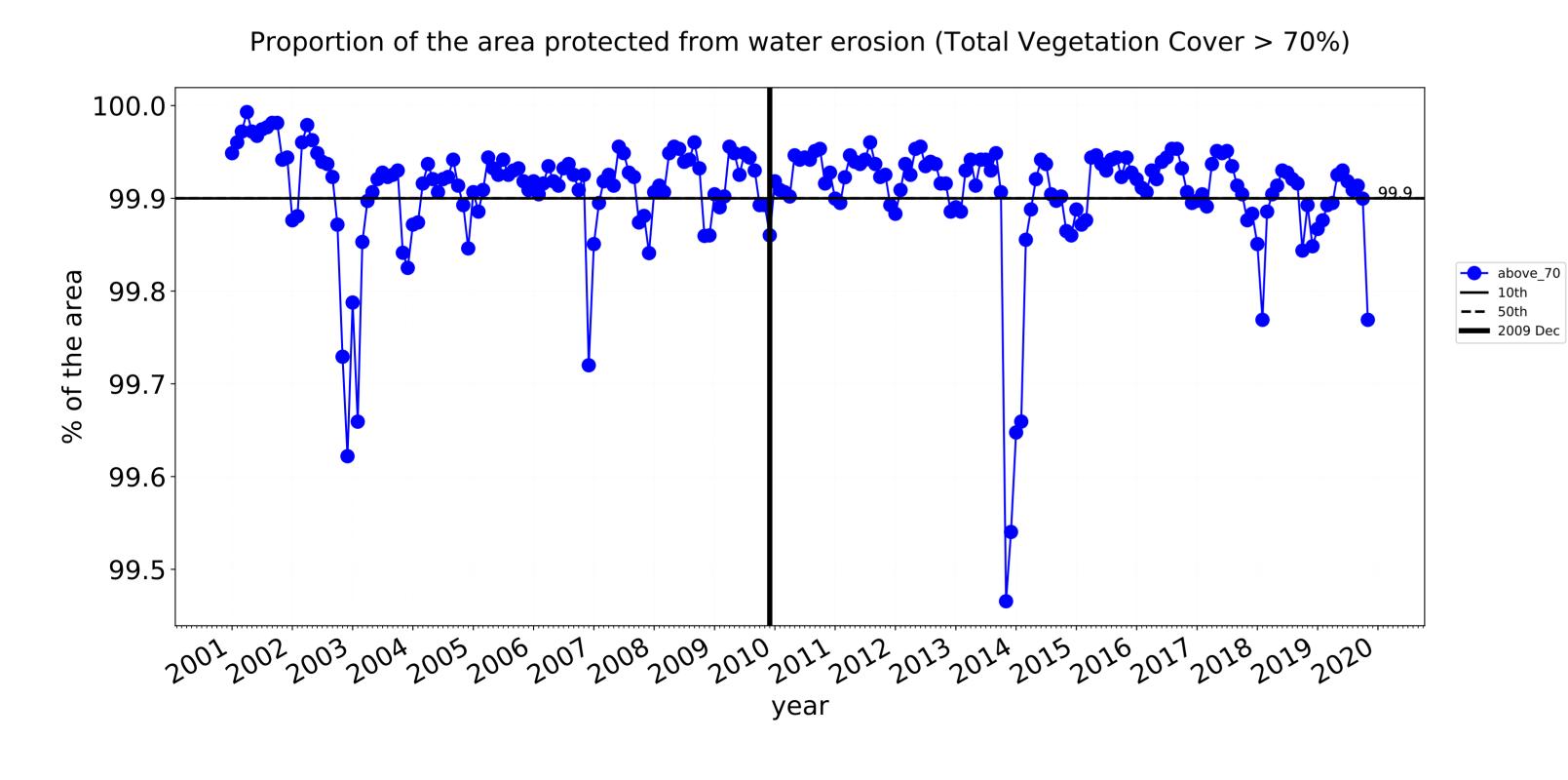


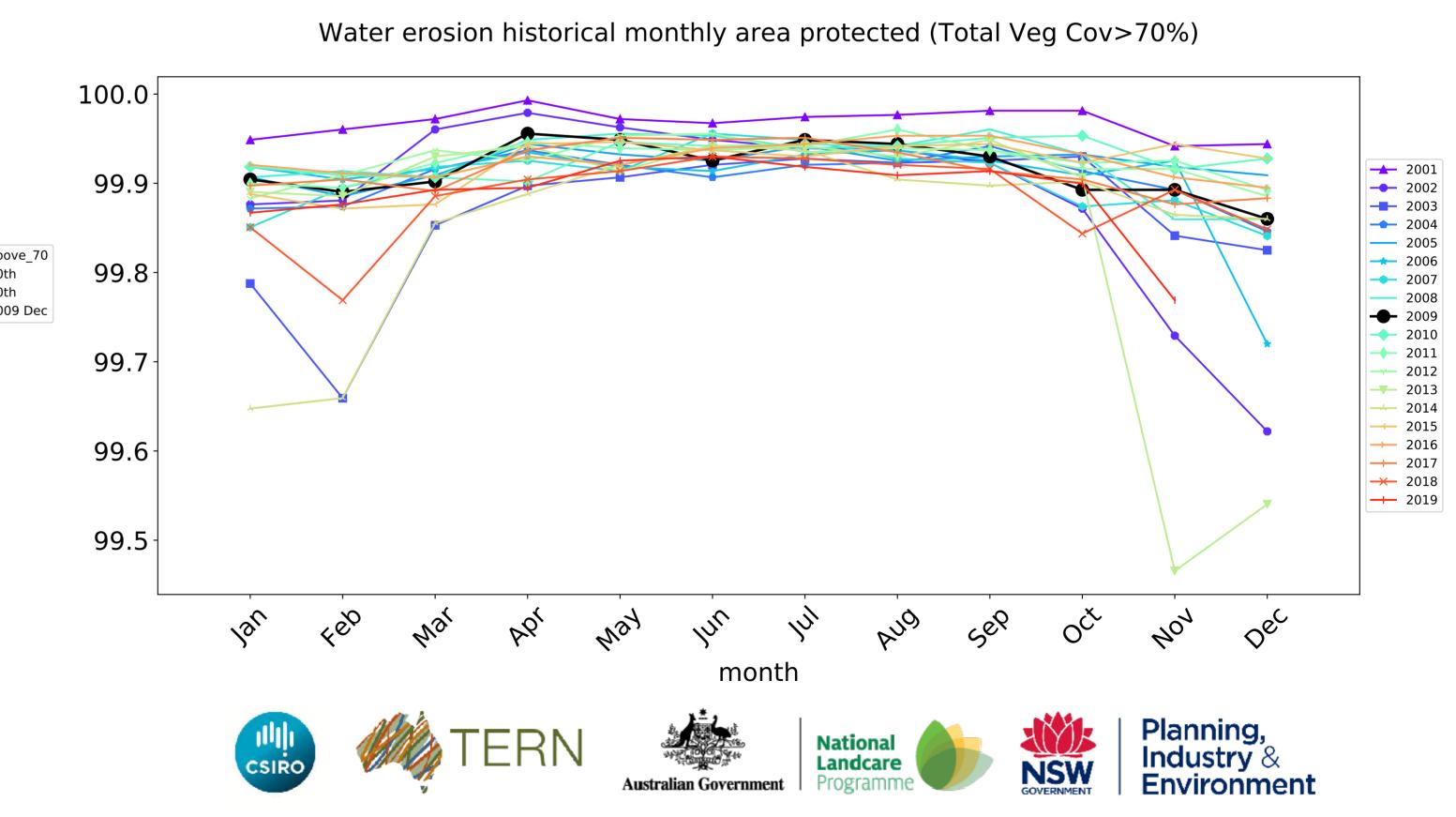


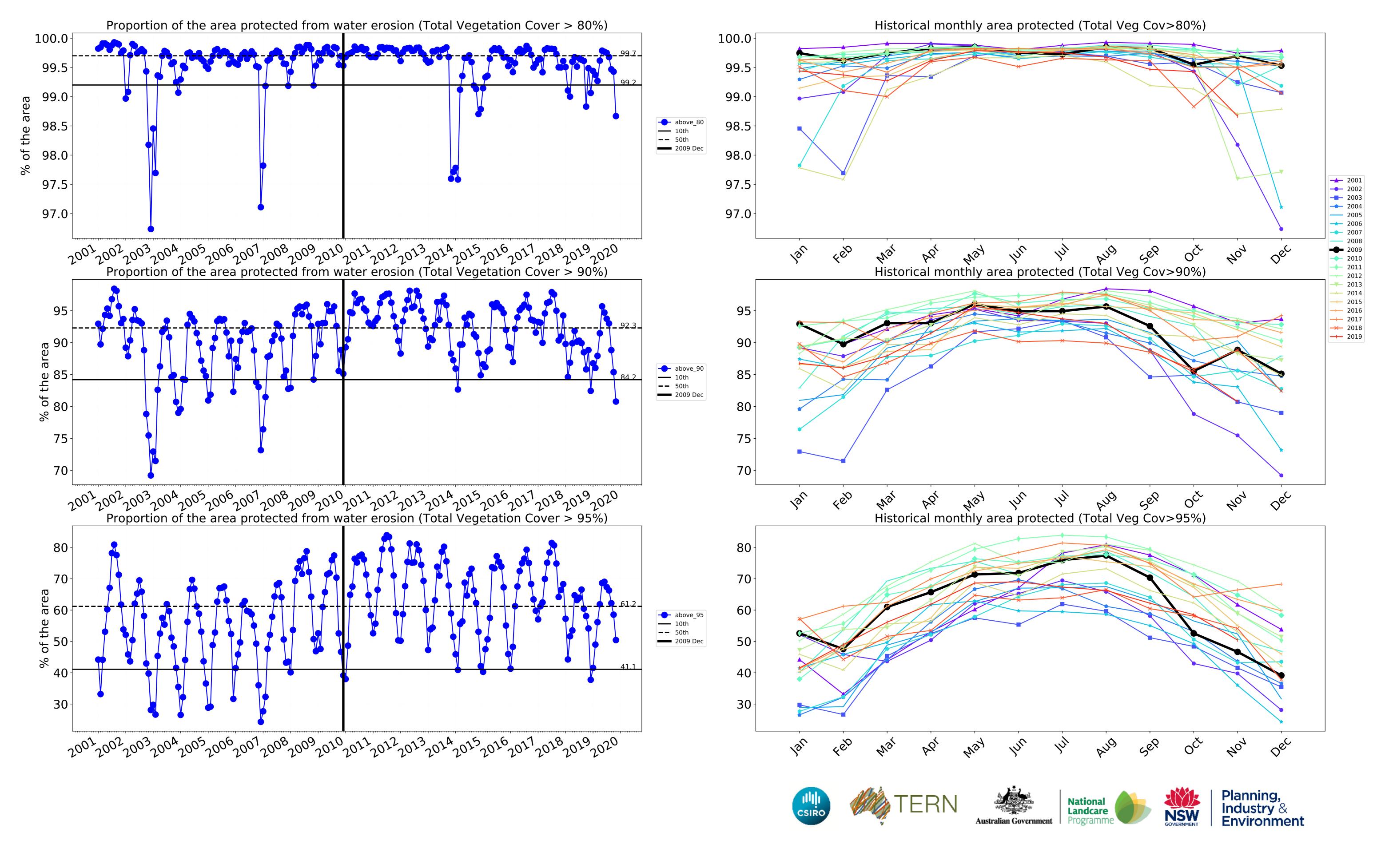
Conservation and natural environments Forest (non woodland) timeseries



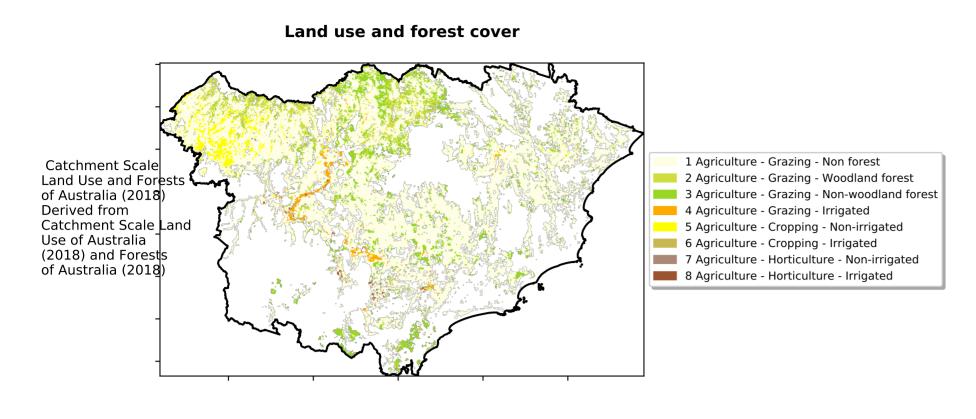


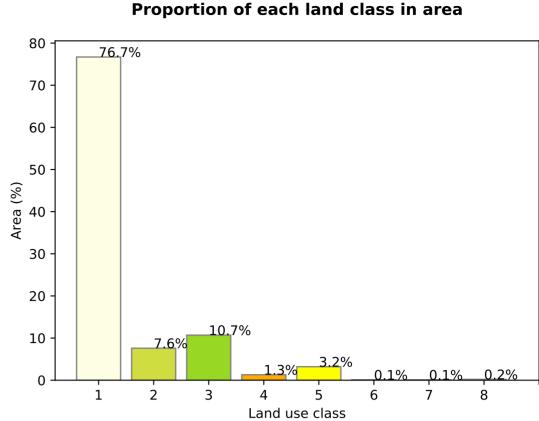


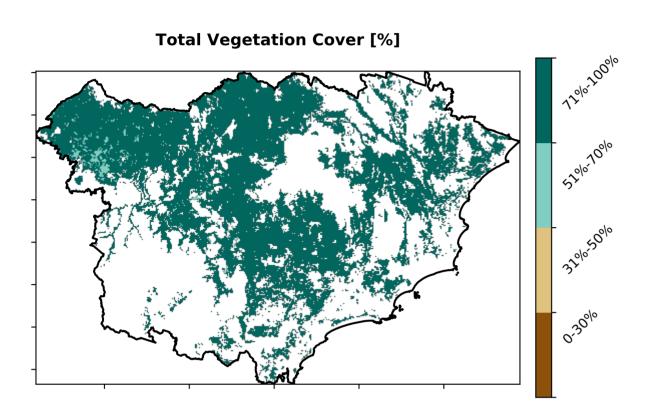


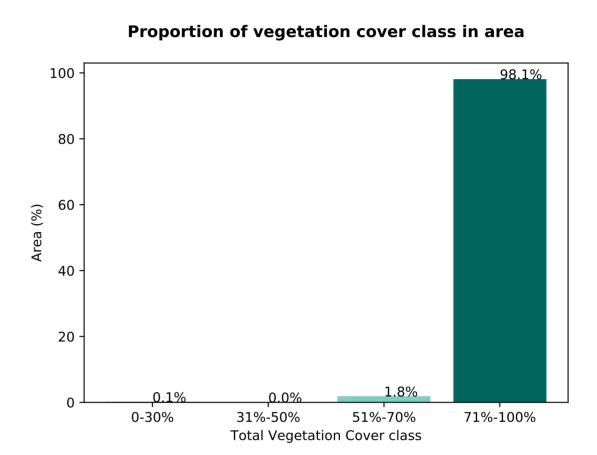


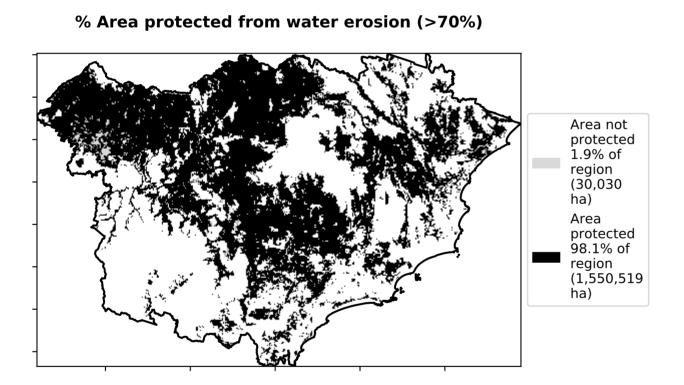
Agriculture

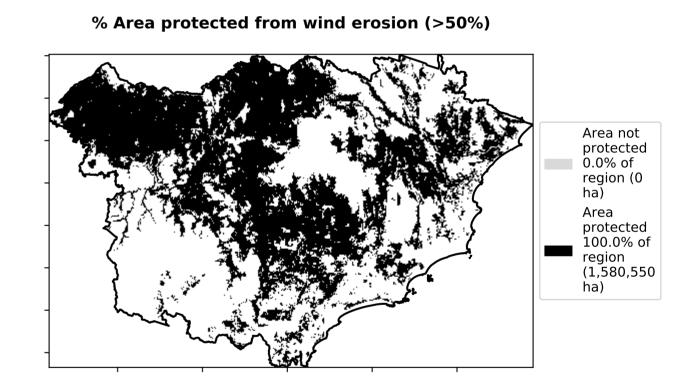


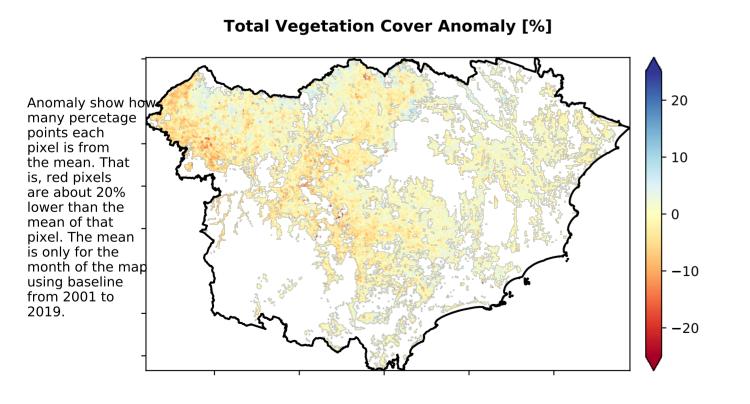




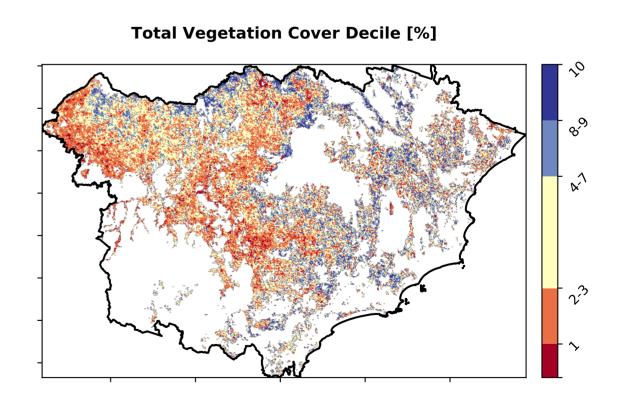








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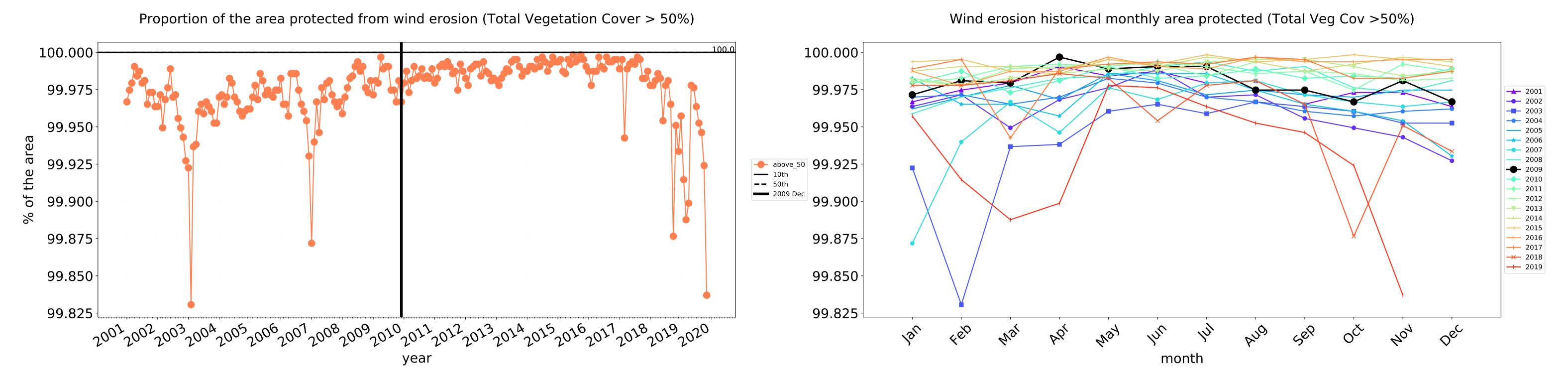


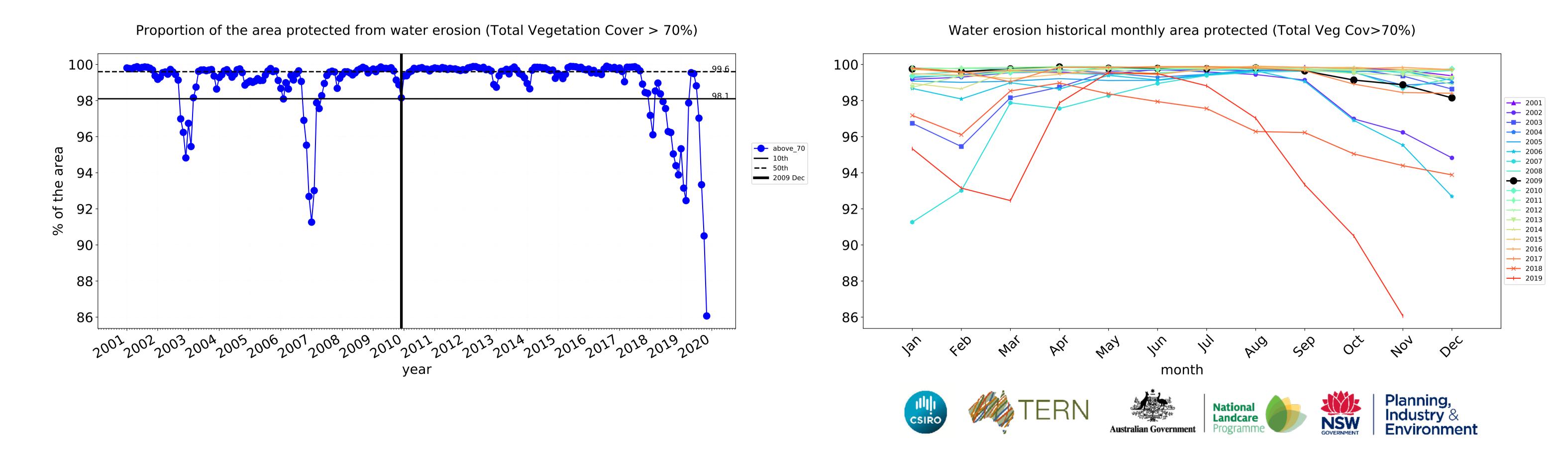


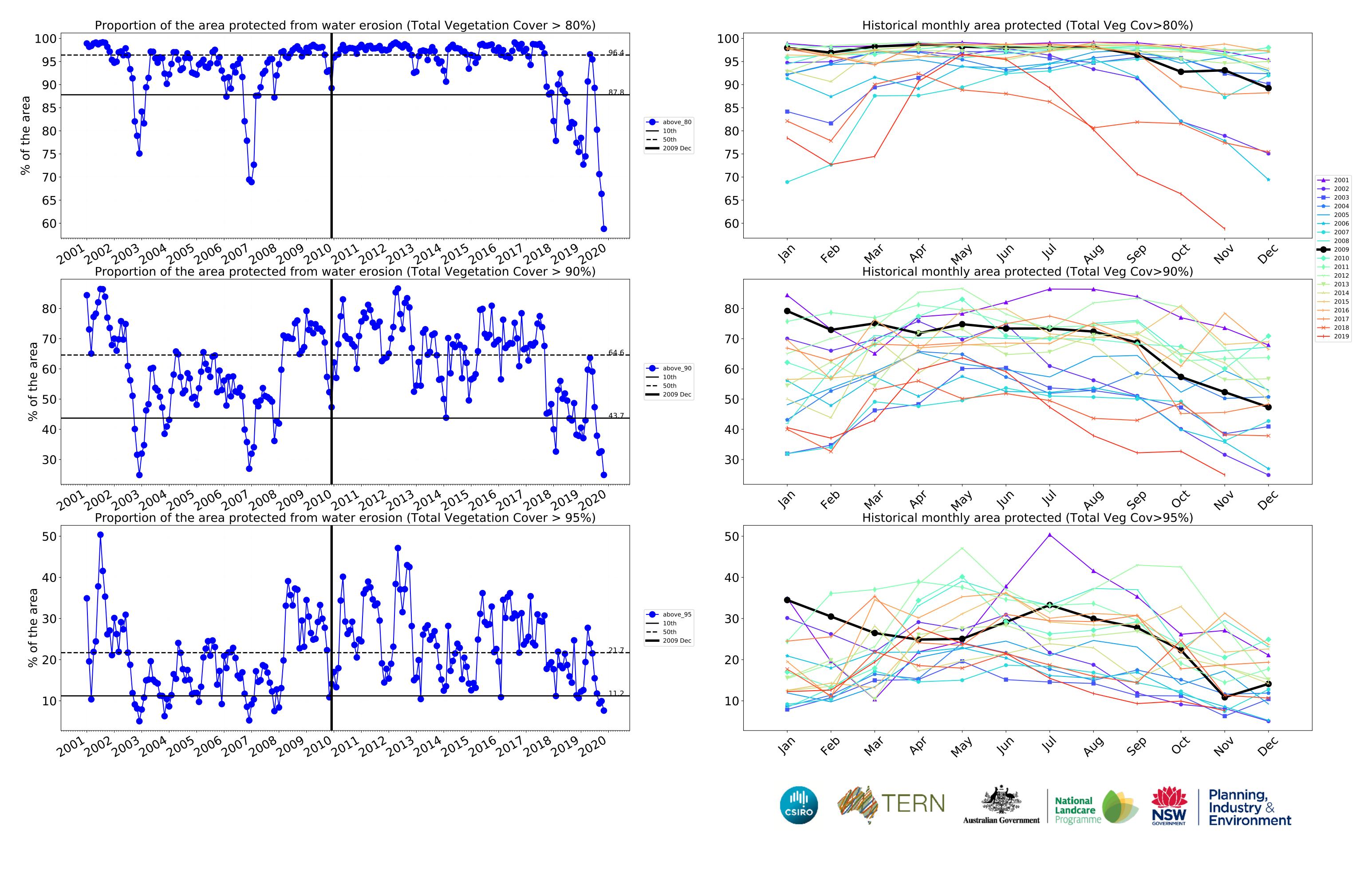




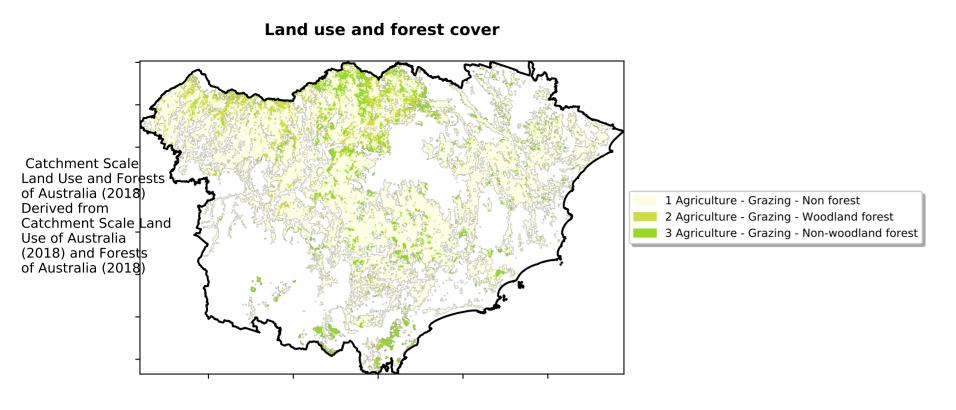
Agriculture timeseries



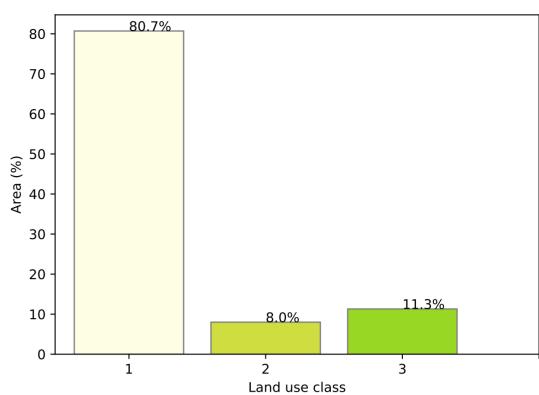




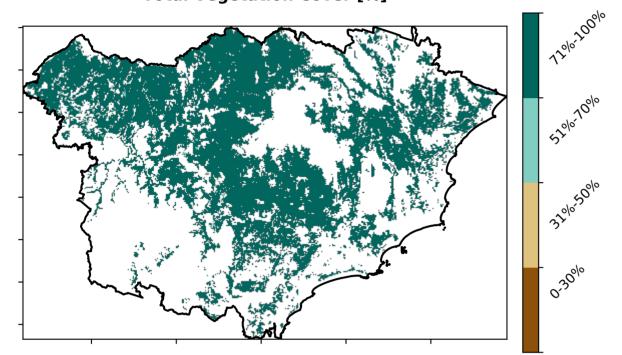
Grazing

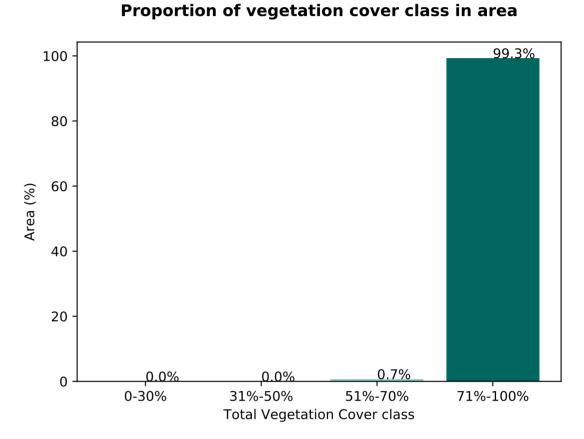


Proportion of each land class in area

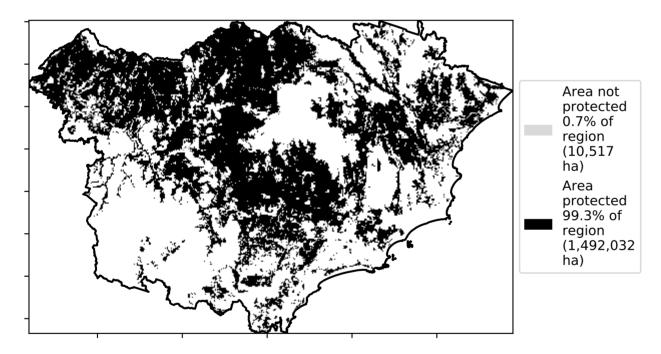


Total Vegetation Cover [%]

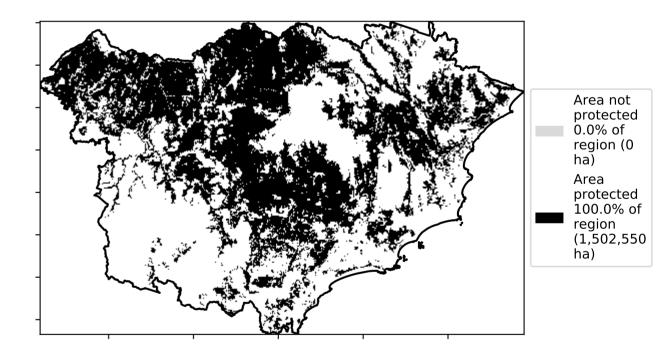




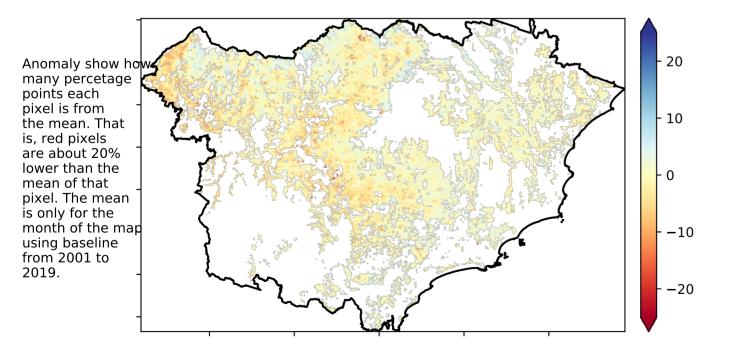
% Area protected from water erosion (>70%)



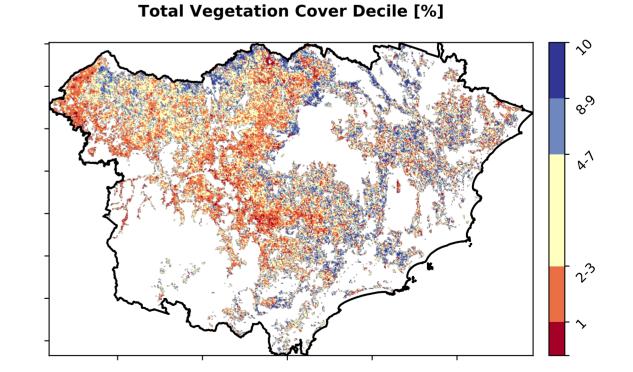
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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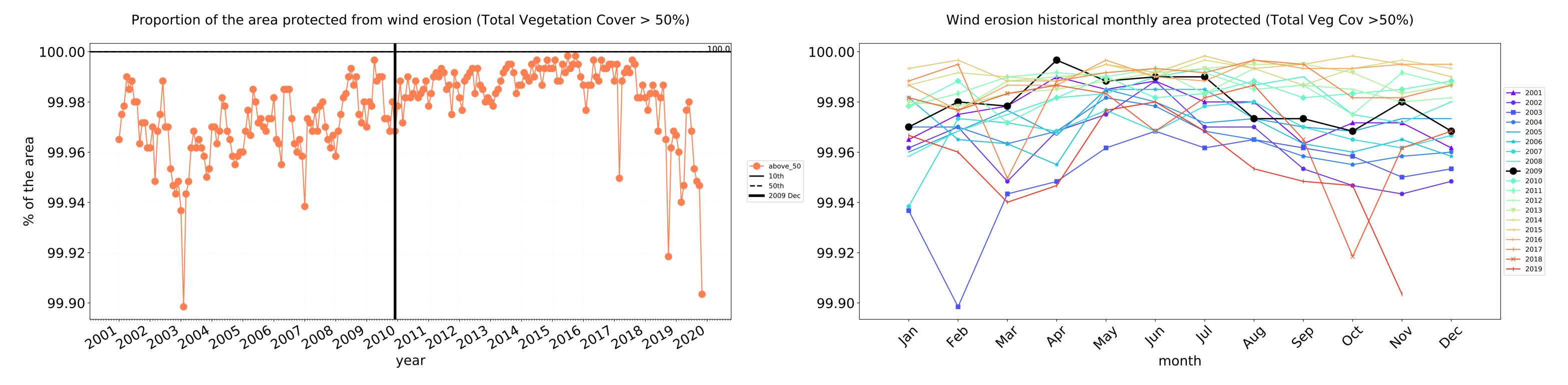


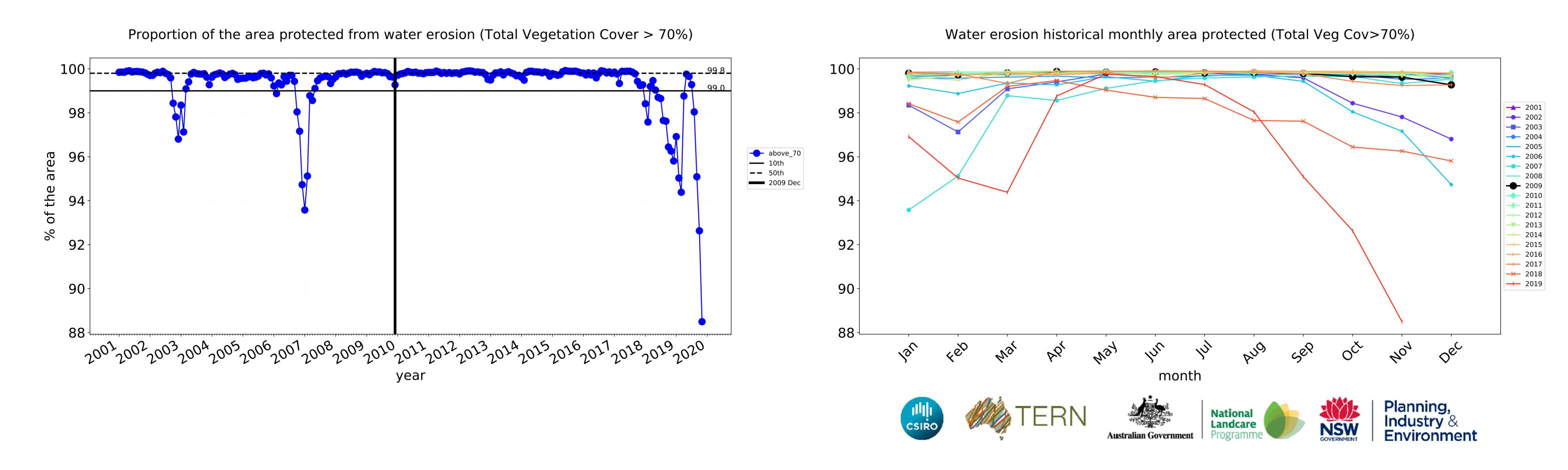


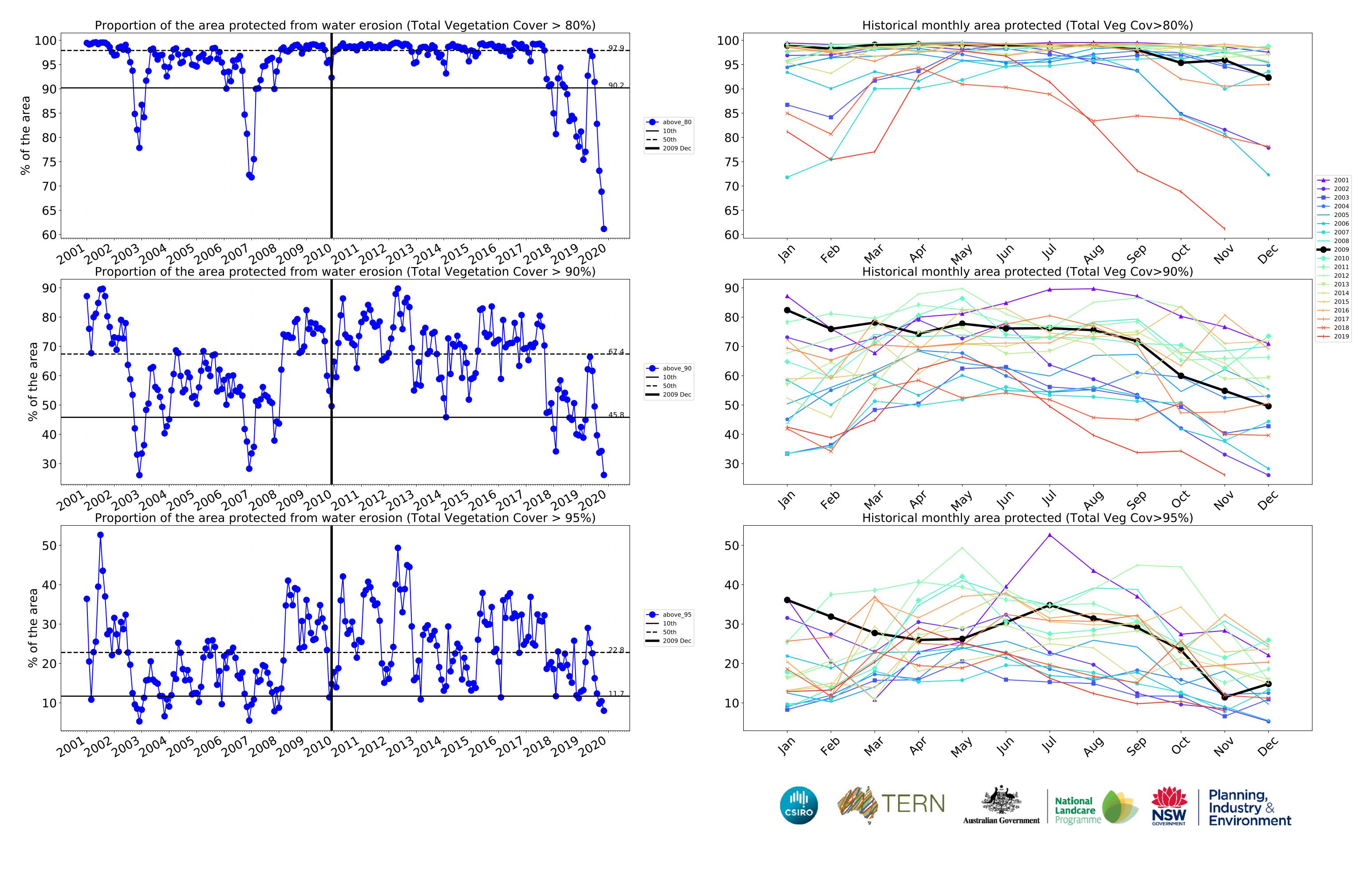




Grazing timeseries

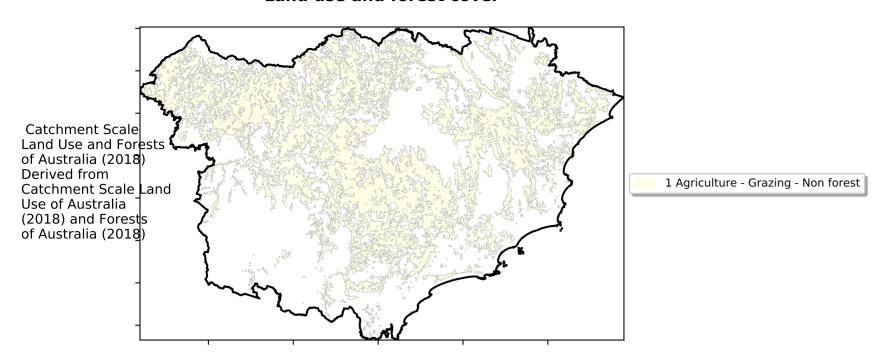




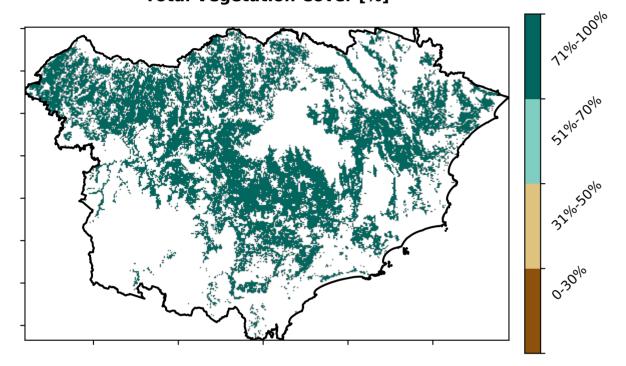


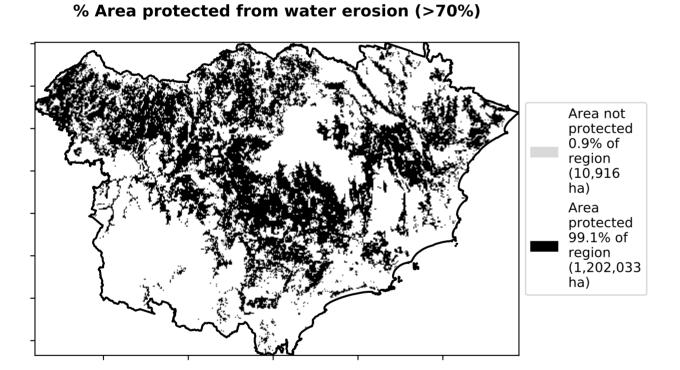
Grazing non forest

Land use and forest cover

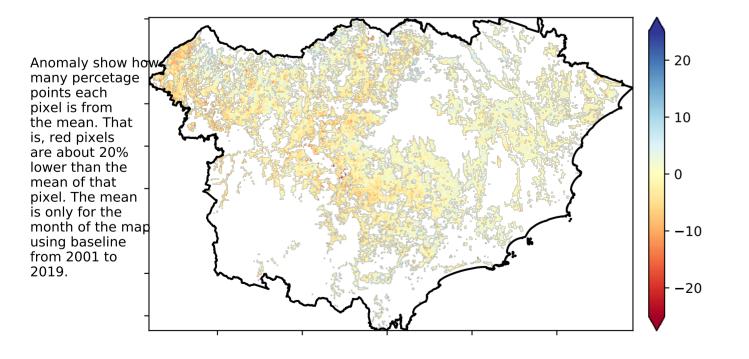


Total Vegetation Cover [%]



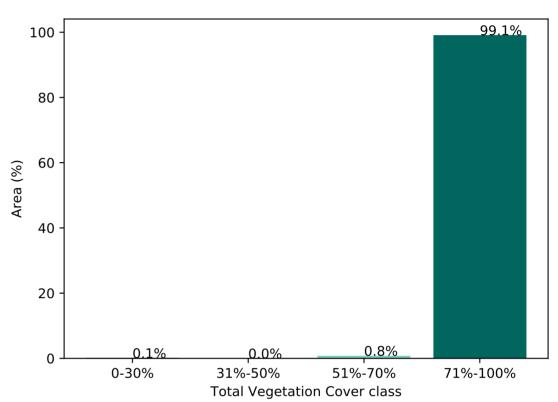


Total Vegetation Cover Anomaly [%]

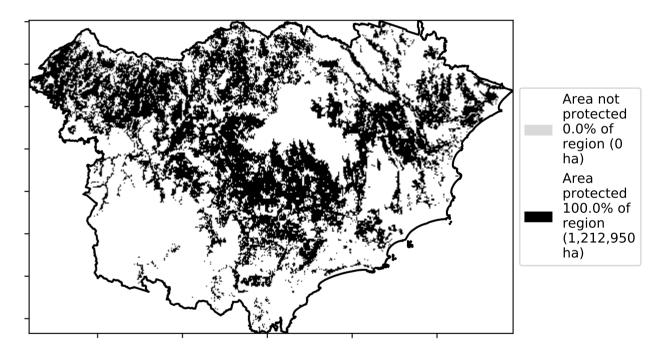


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

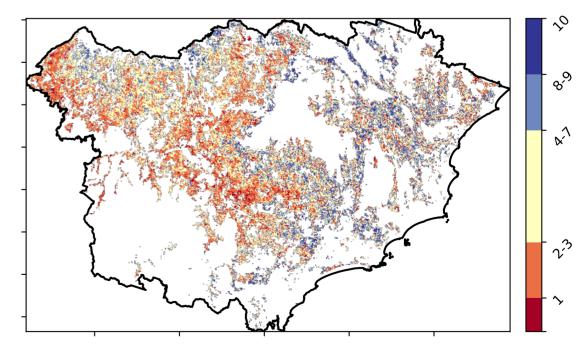
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







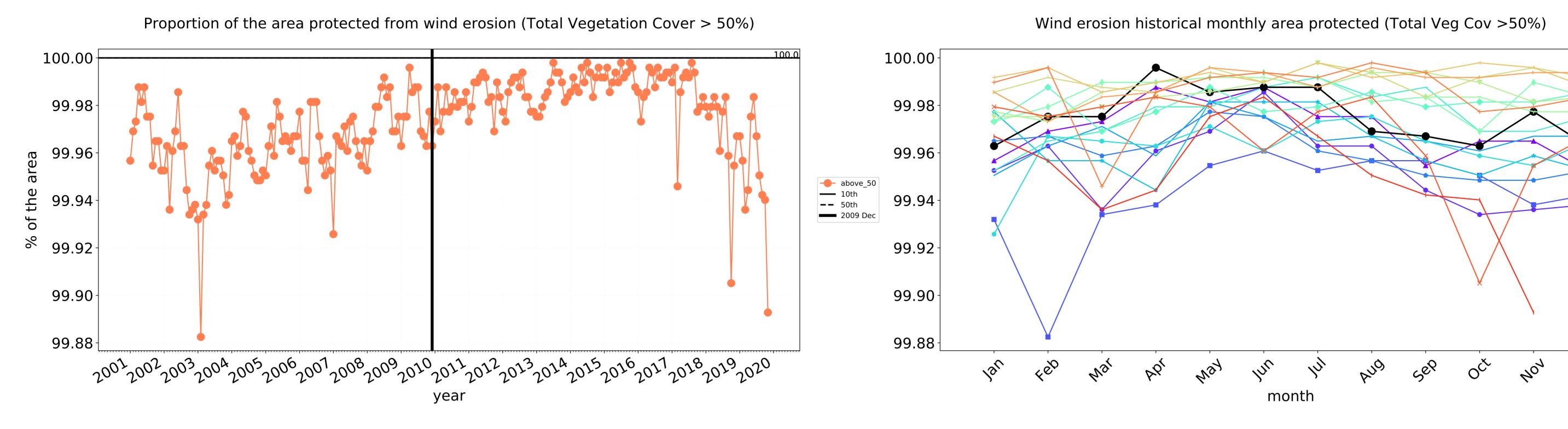


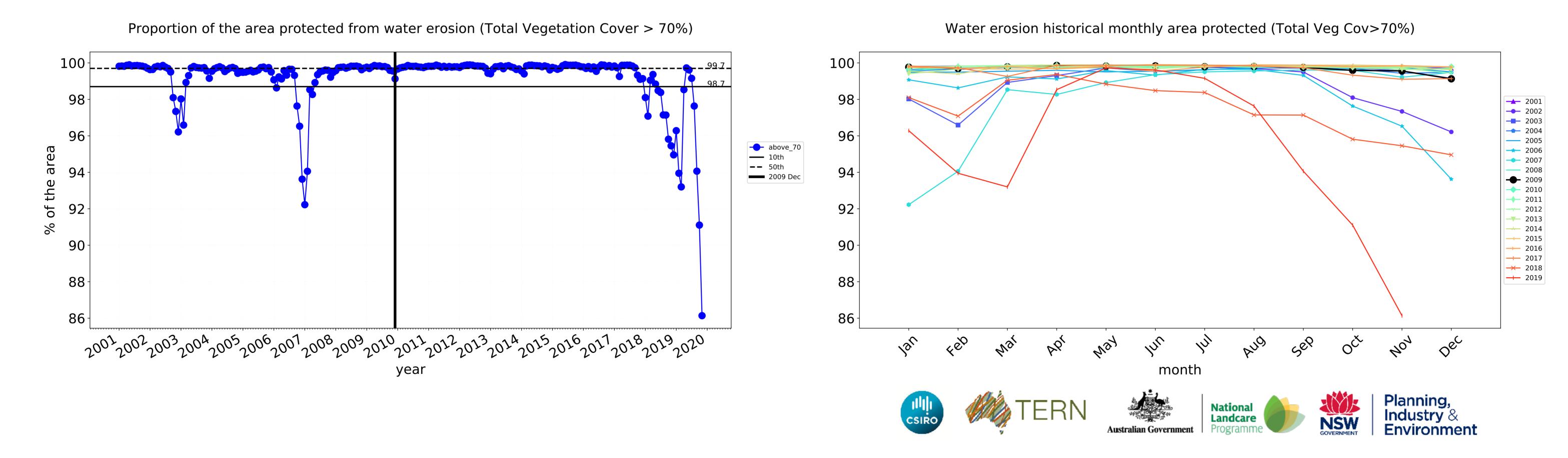






Grazing non forest timeseries

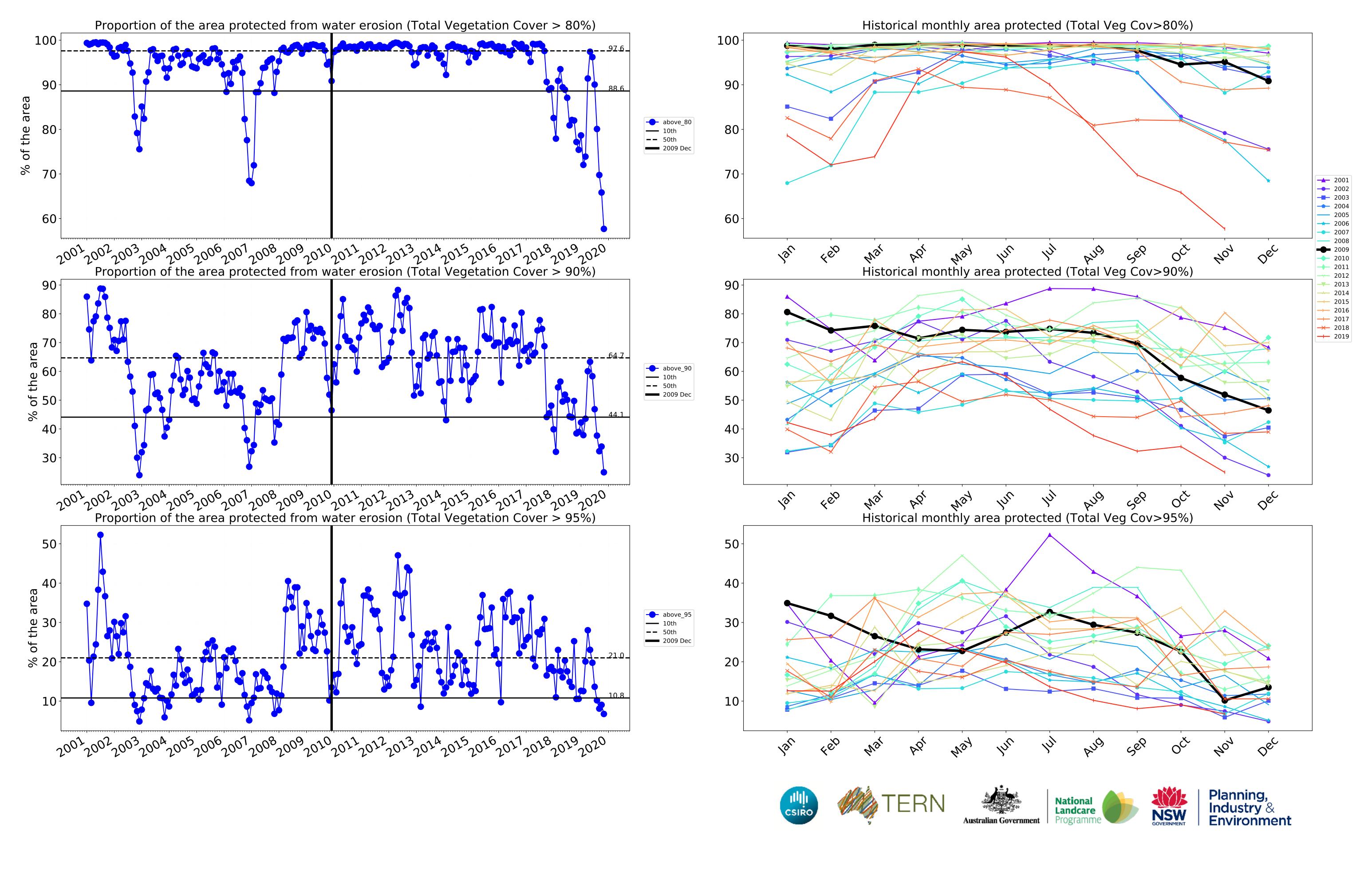




2012 2013 2014

→ 2015 → 2016

→ 2017 → 2018 → 2019

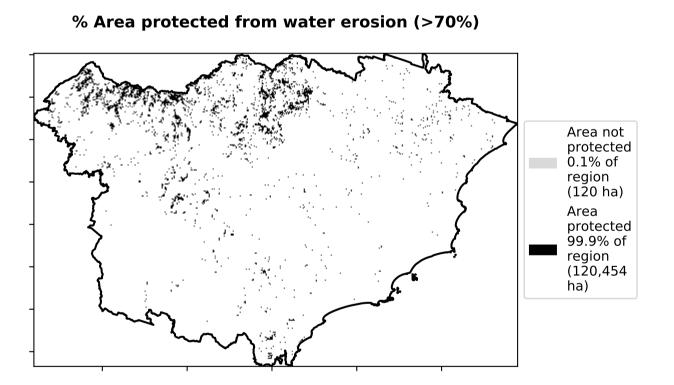


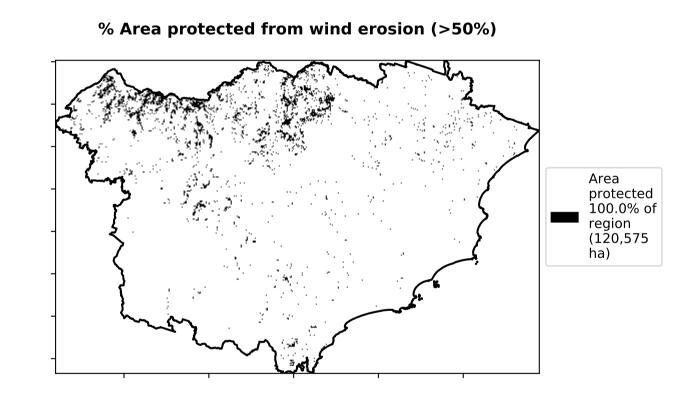
Grazing Woodland forest

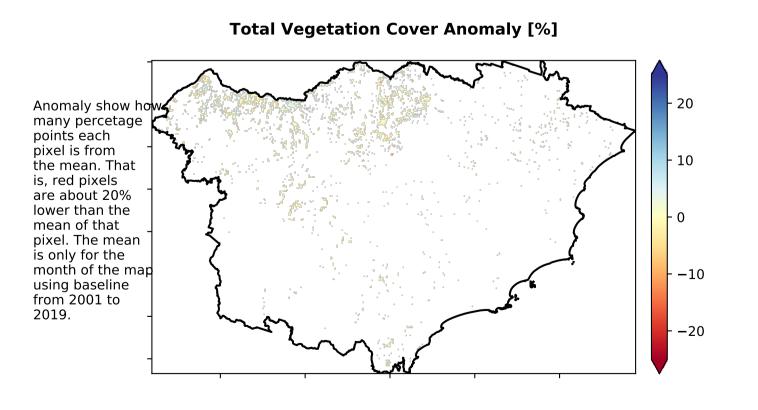
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Australia (2018) Of Australia (2018) I Agriculture - Grazing - Woodland forest and Use of Australia (2018)

Total Vegetation Cover [%]

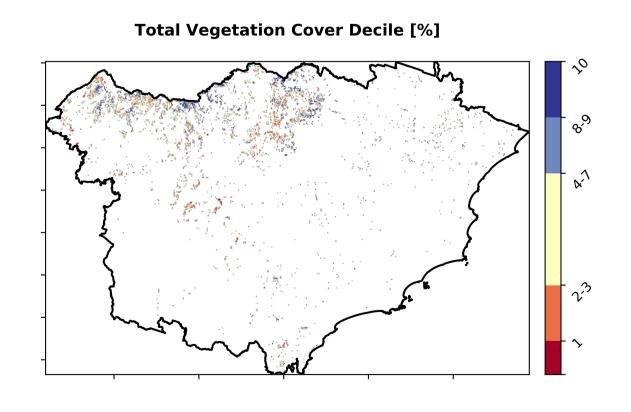
Proportion of vegetation cover class in area 100 99.9% 80 - 99.9% 40 - 20 - 0.0% 0.0% 0.1% Total Vegetation Cover class 71%-100% Total Vegetation Cover class







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







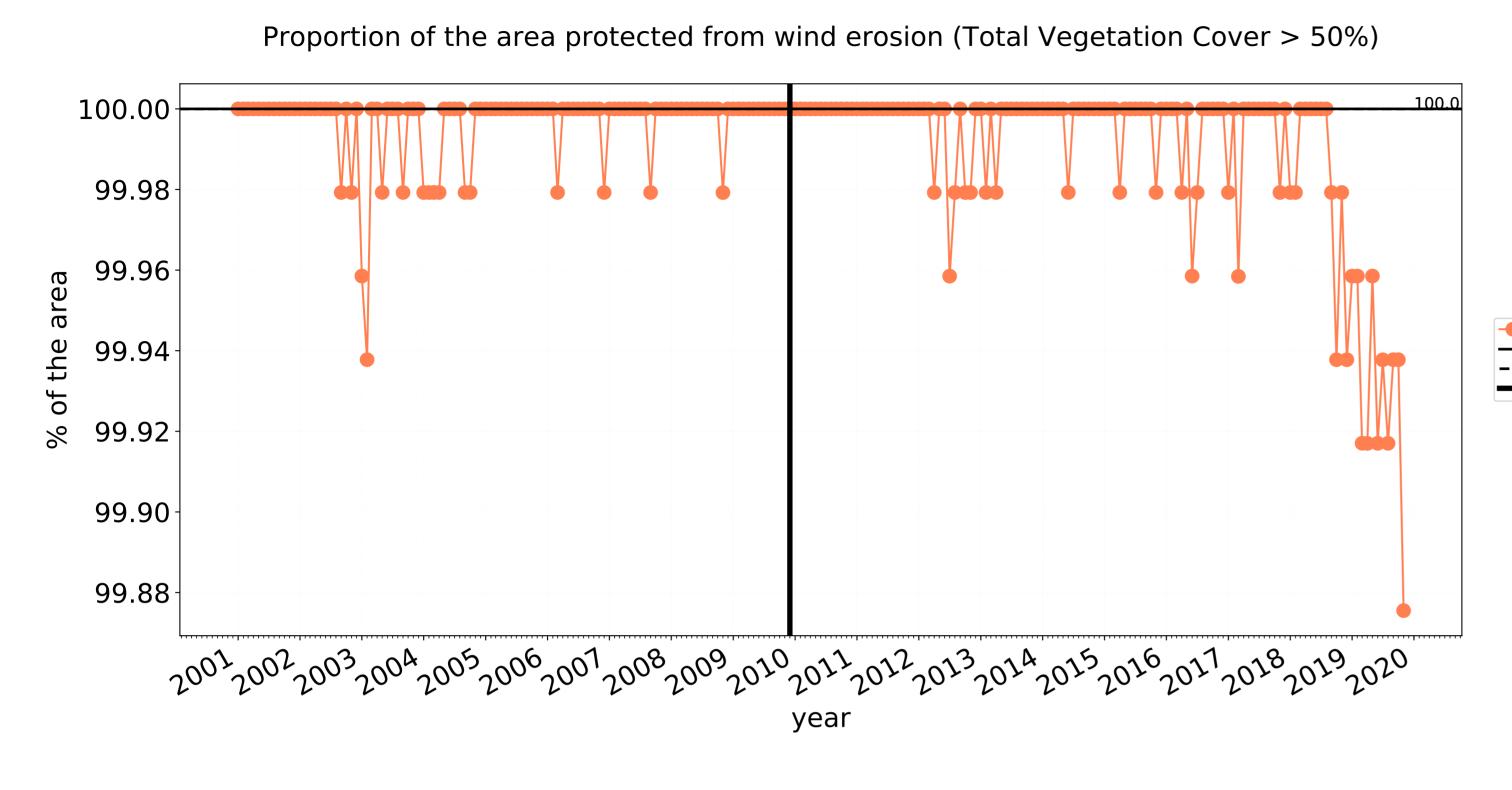


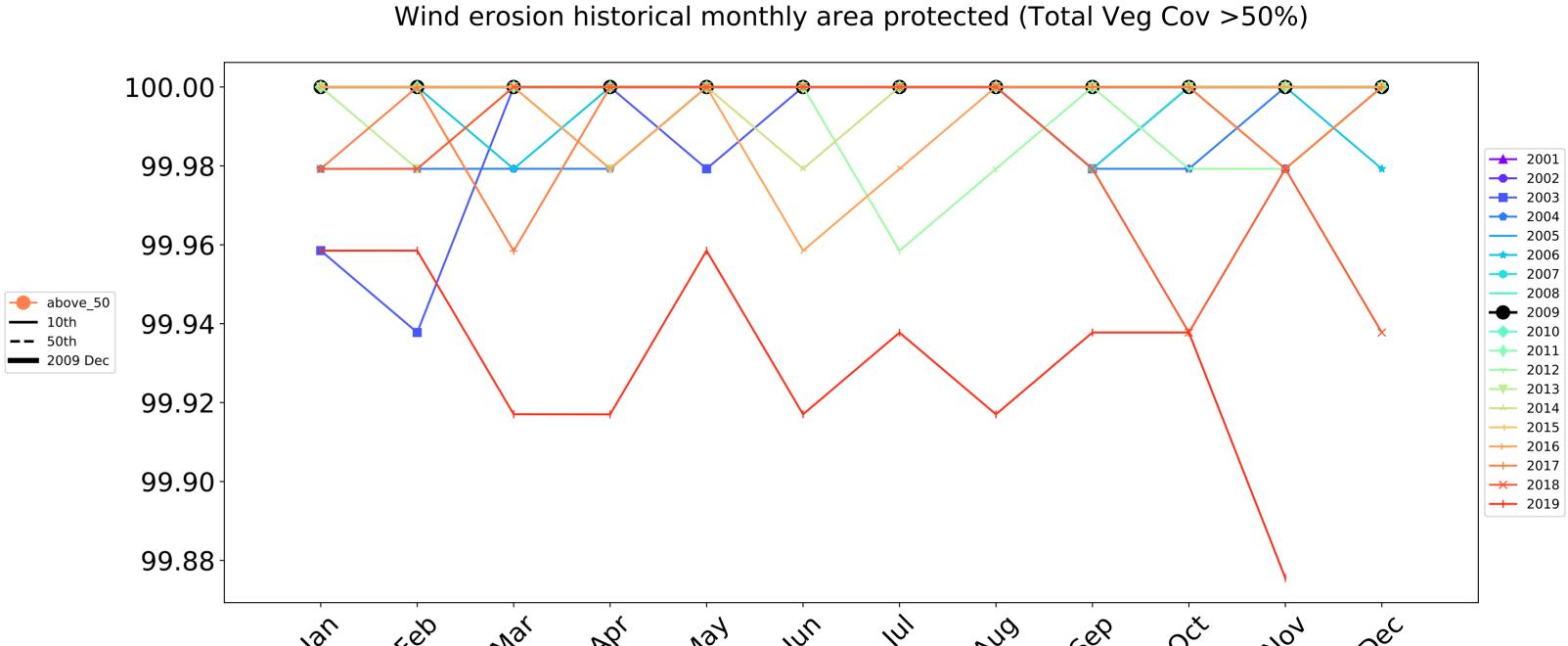




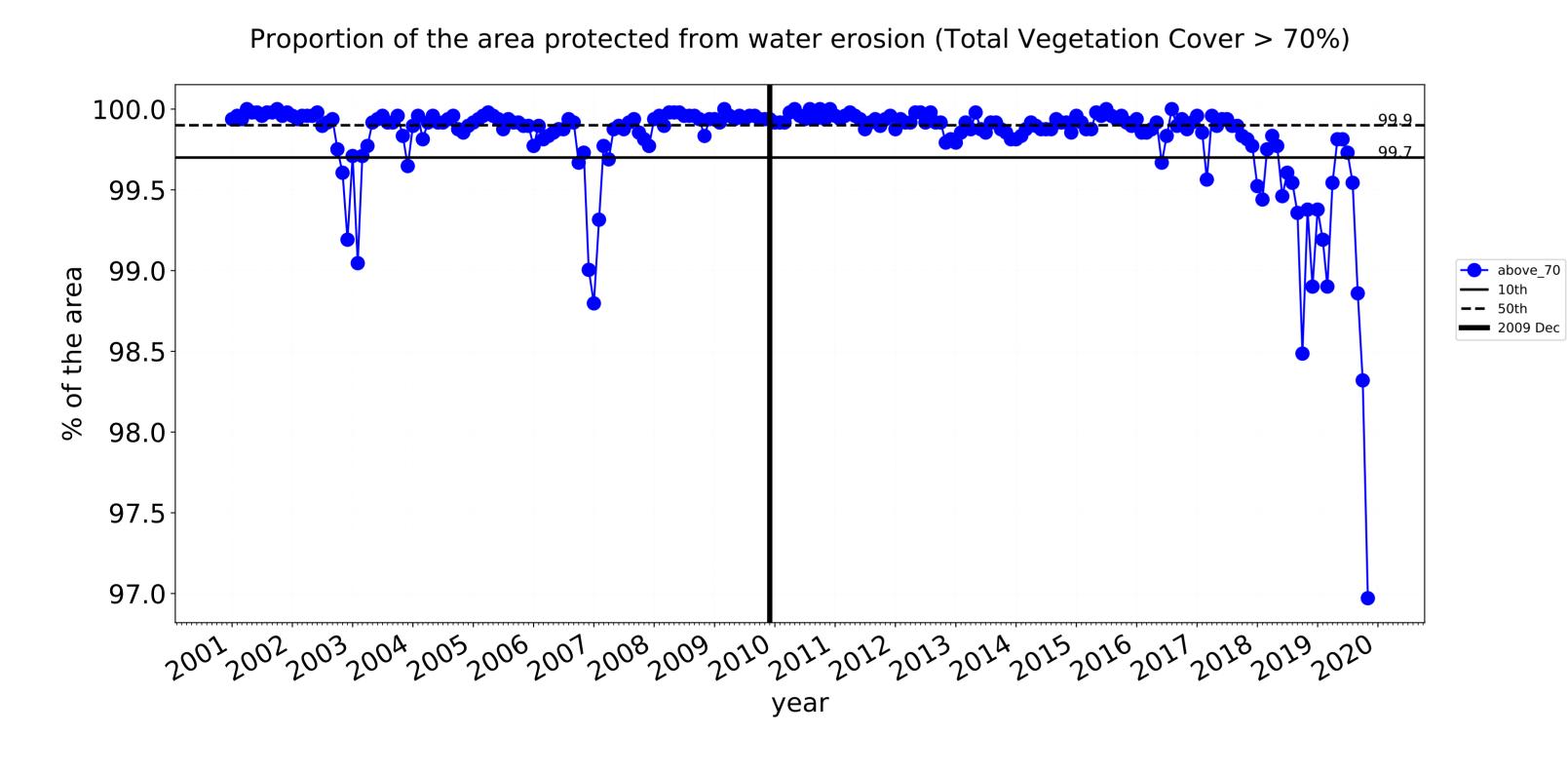


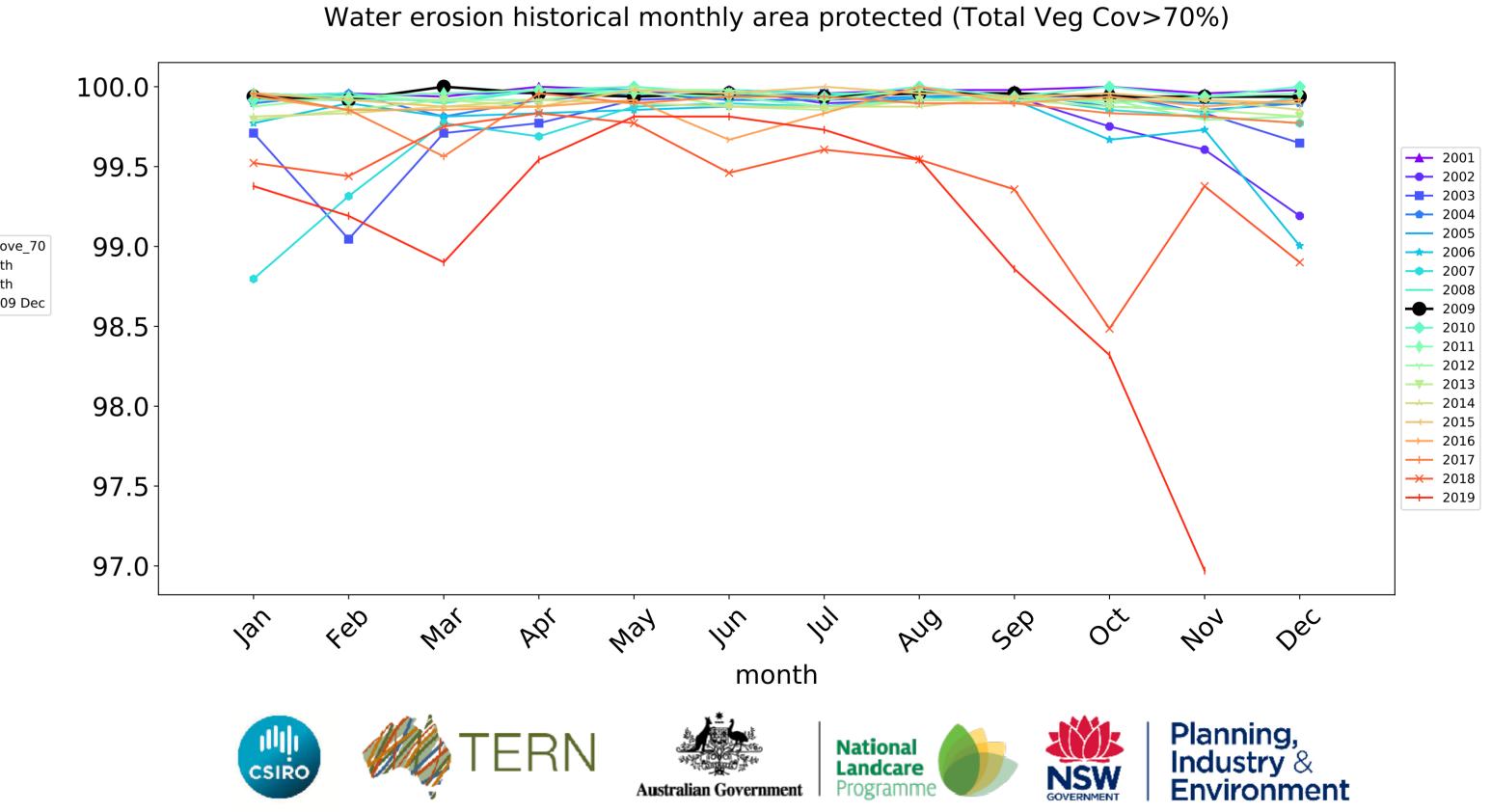
Grazing Woodland forest timeseries

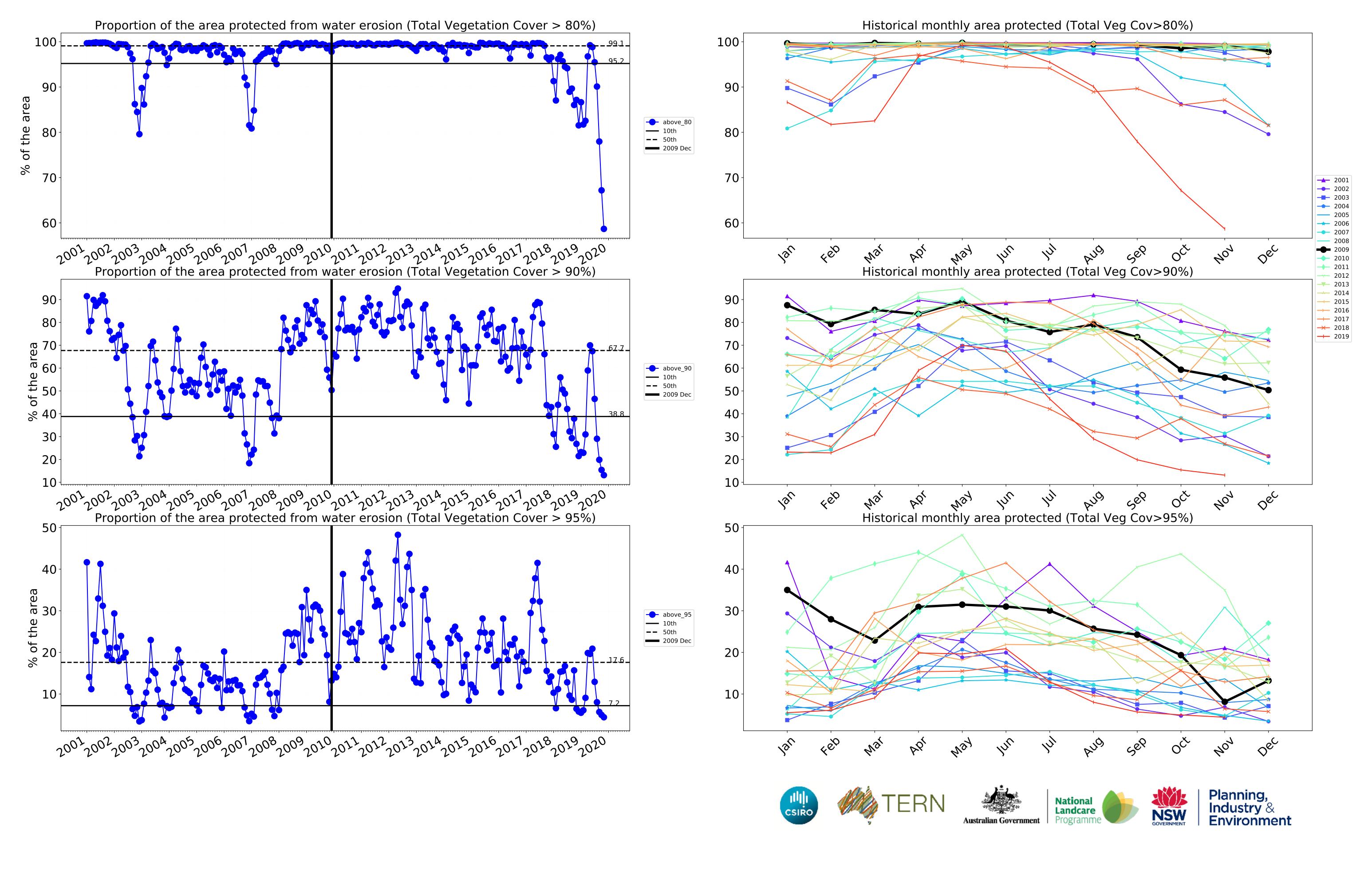




month



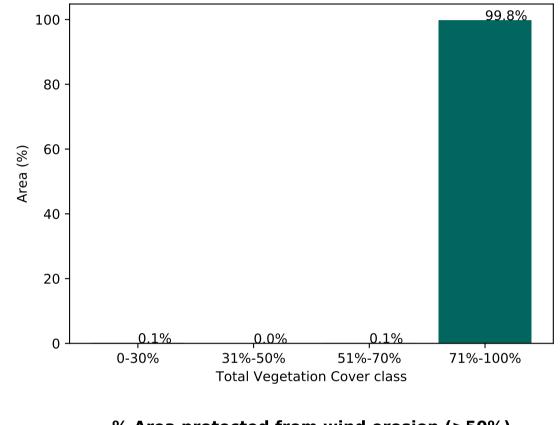




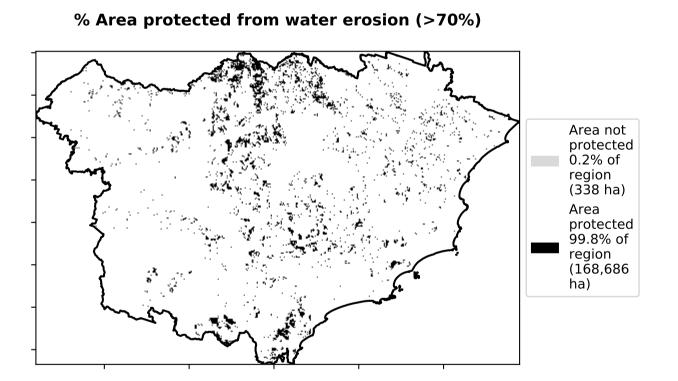
Grazing - Forest (non woodland)

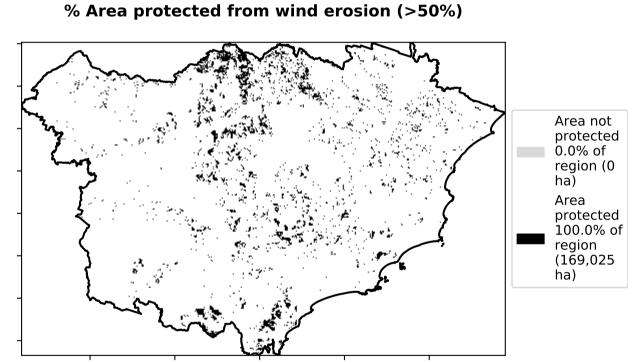
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Agriculture - Grazing - Non-woodland forest Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

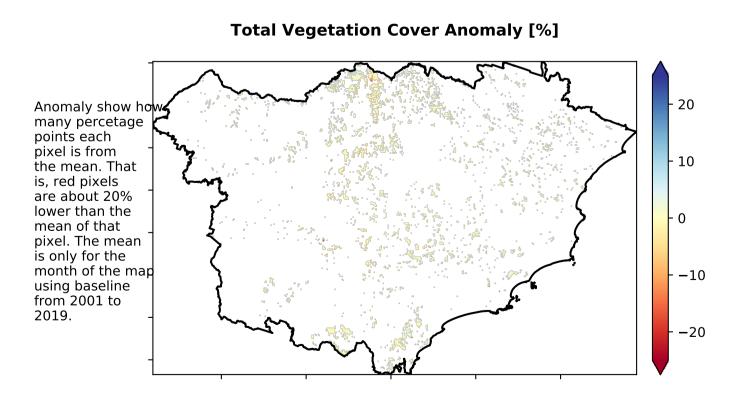
Total Vegetation Cover [%]



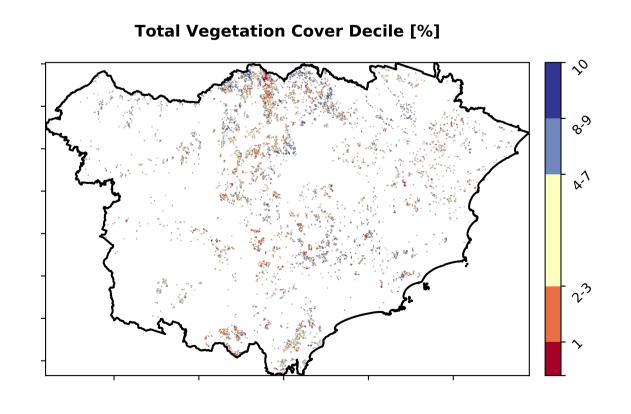
Proportion of vegetation cover class in area







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 baseling. the map using baseline from 2001 to 2019.





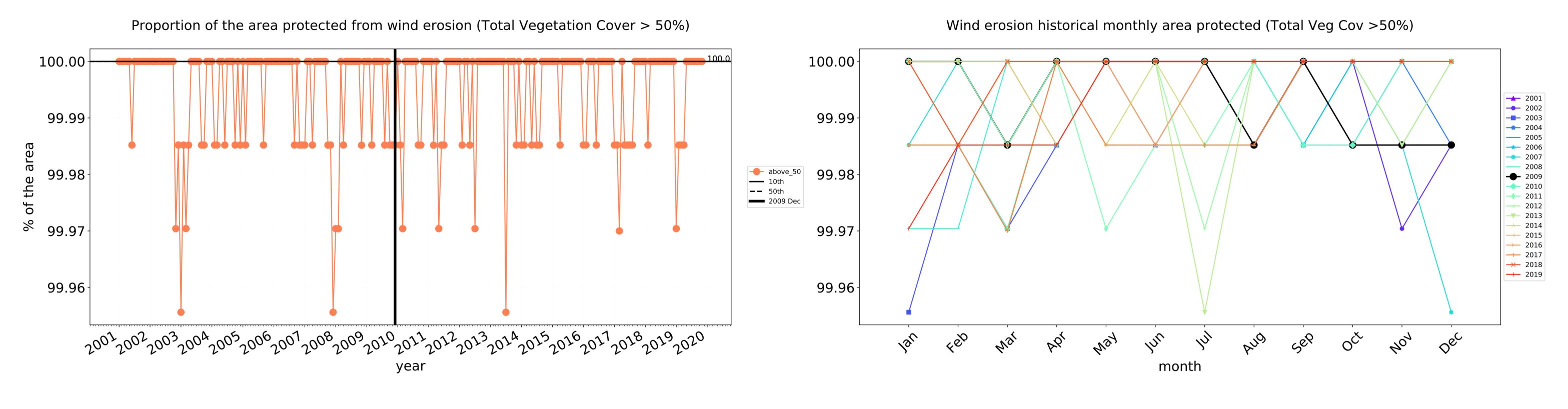


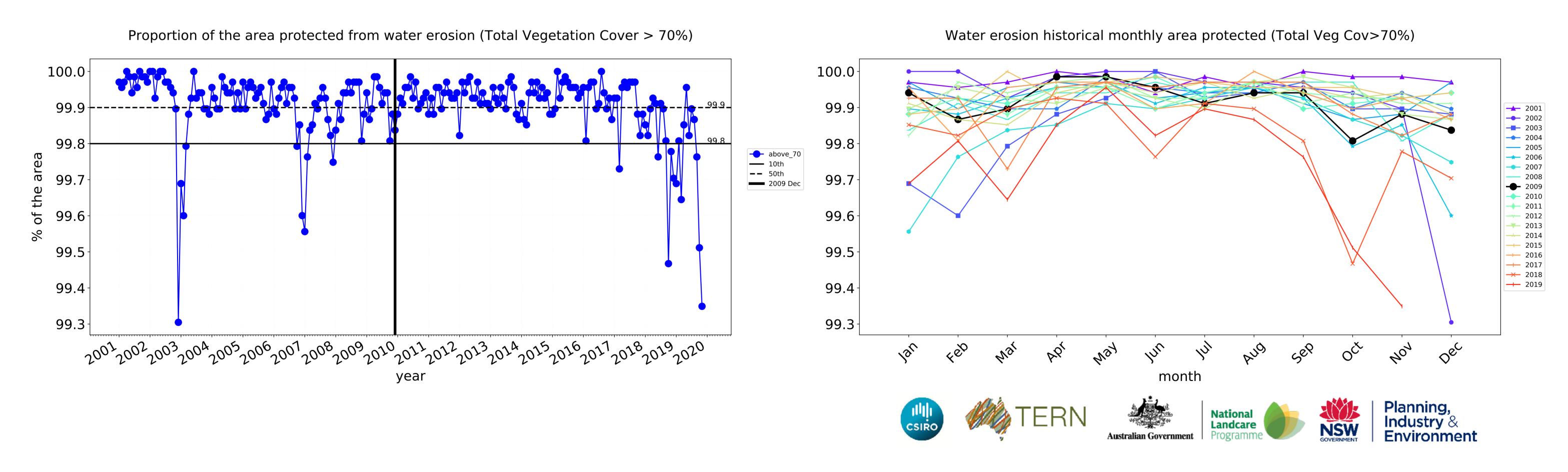


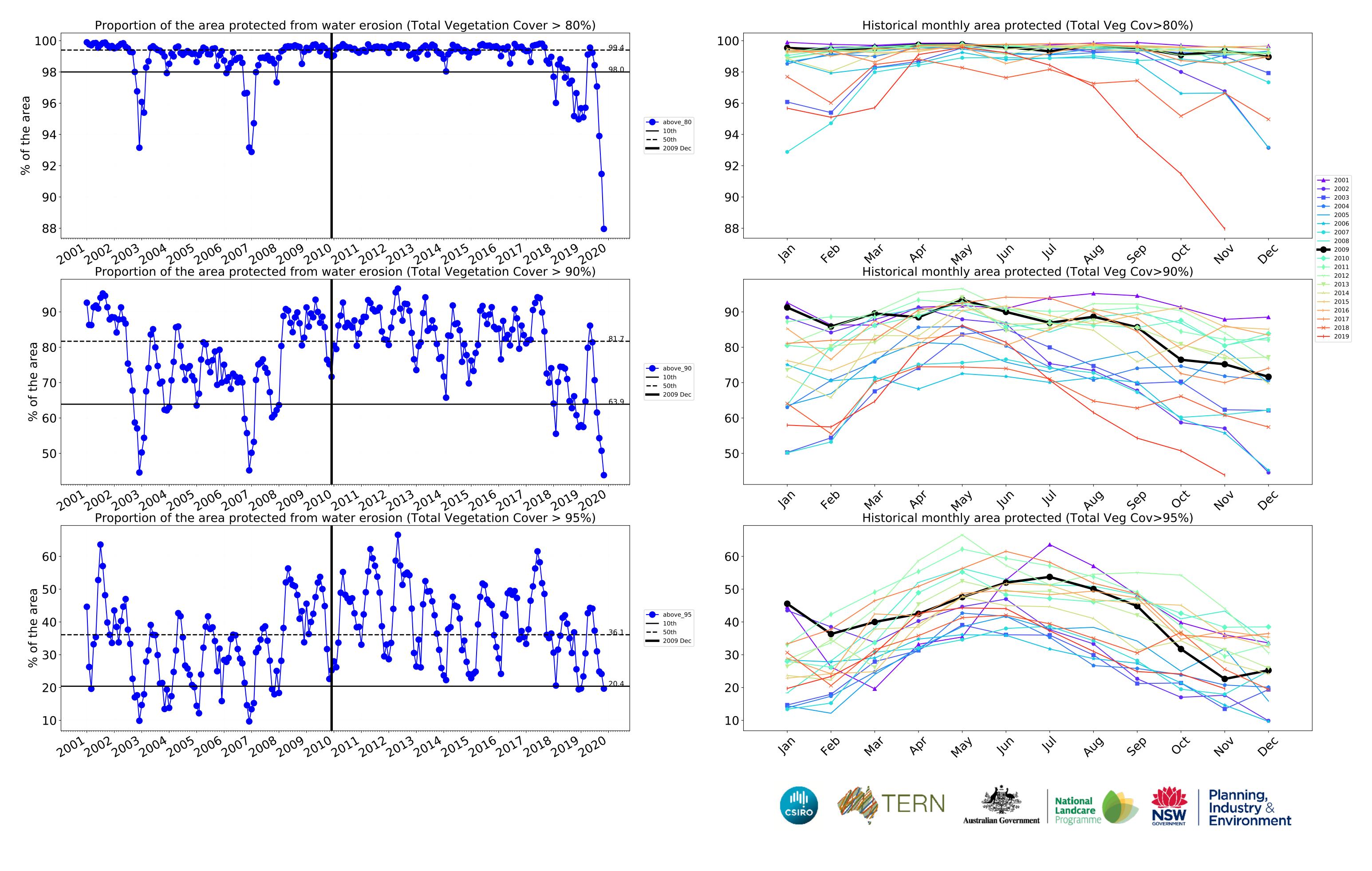






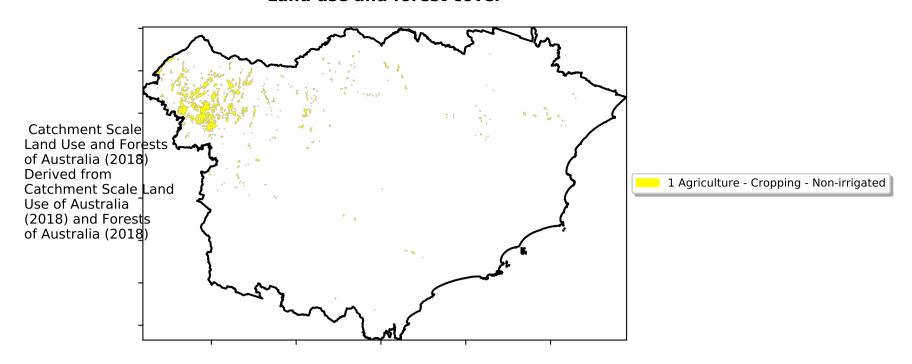




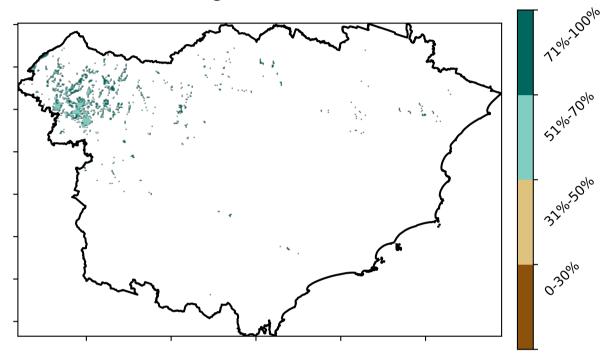


Cropping

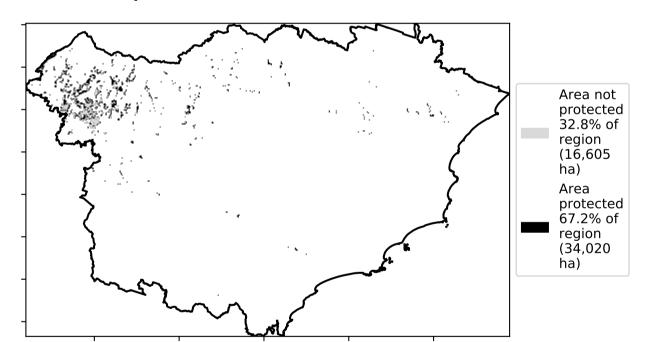
Land use and forest cover



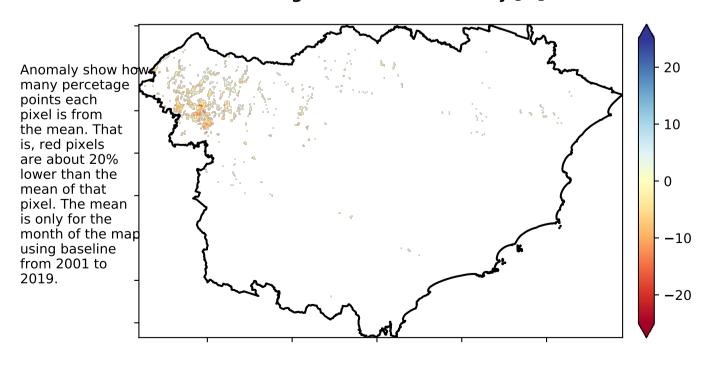
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

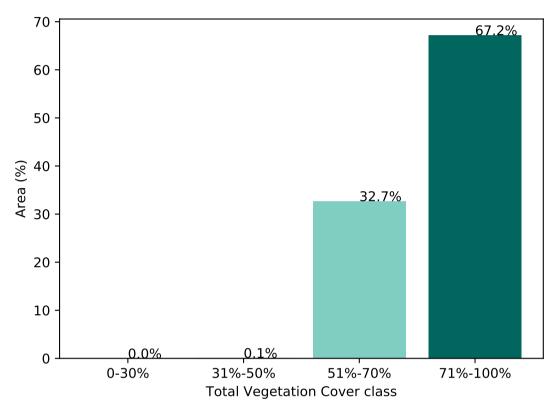


Total Vegetation Cover Anomaly [%]

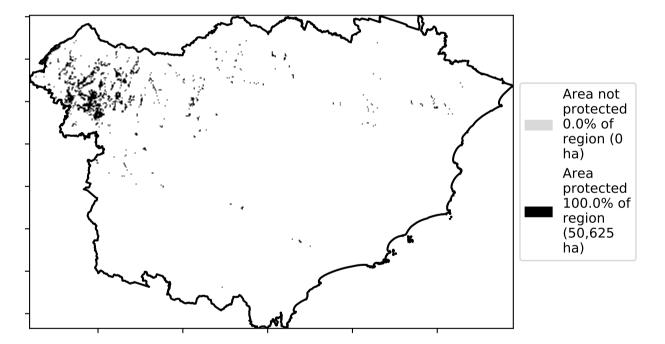


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

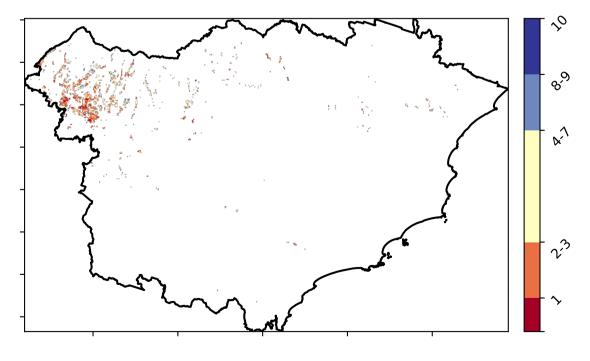
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







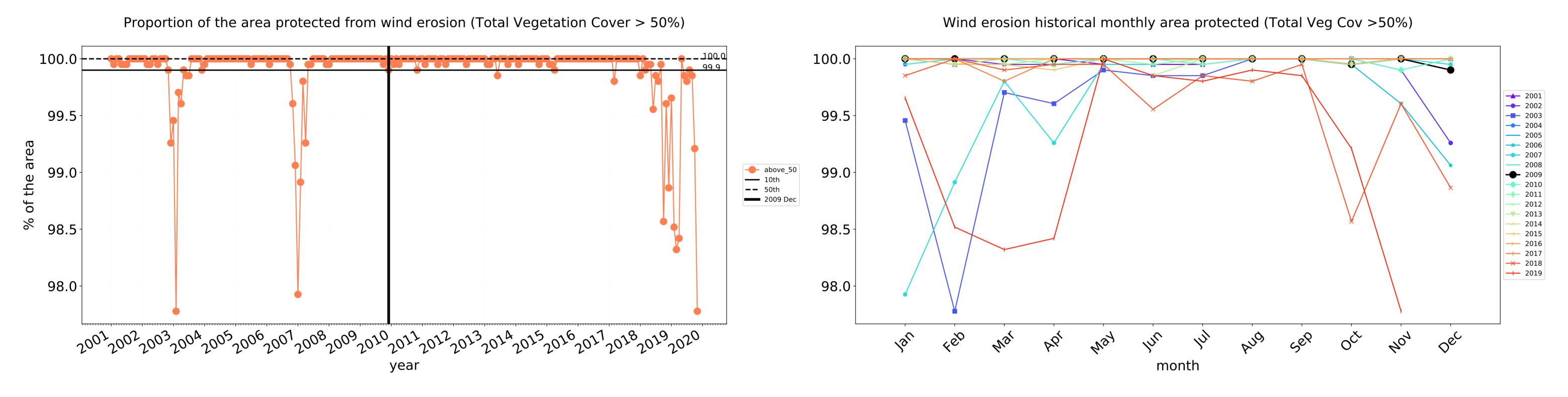


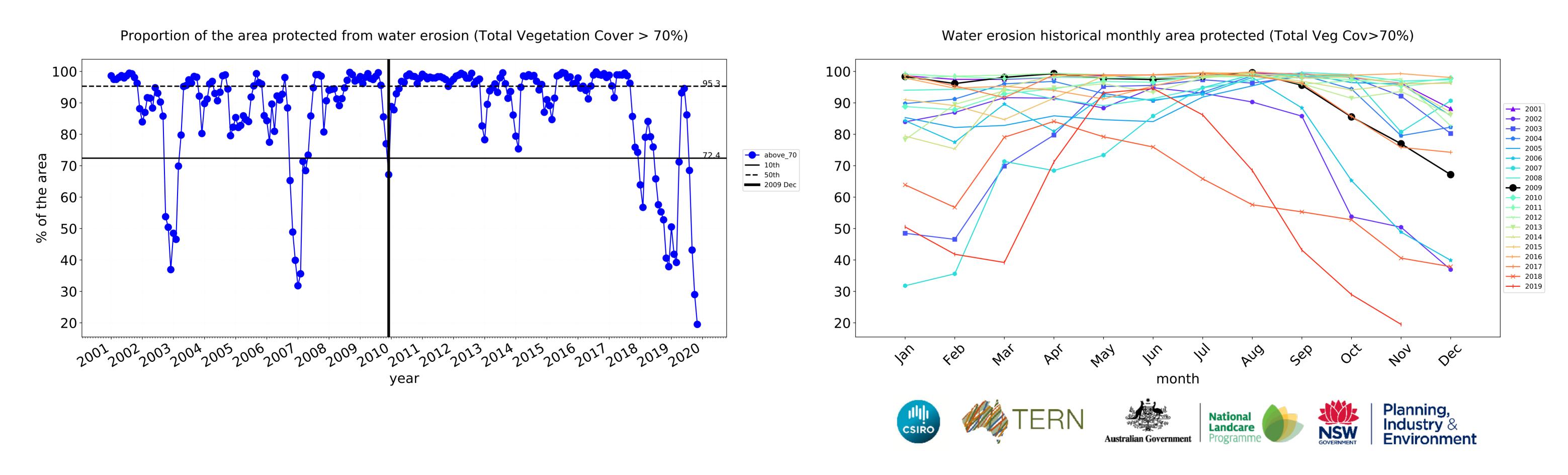


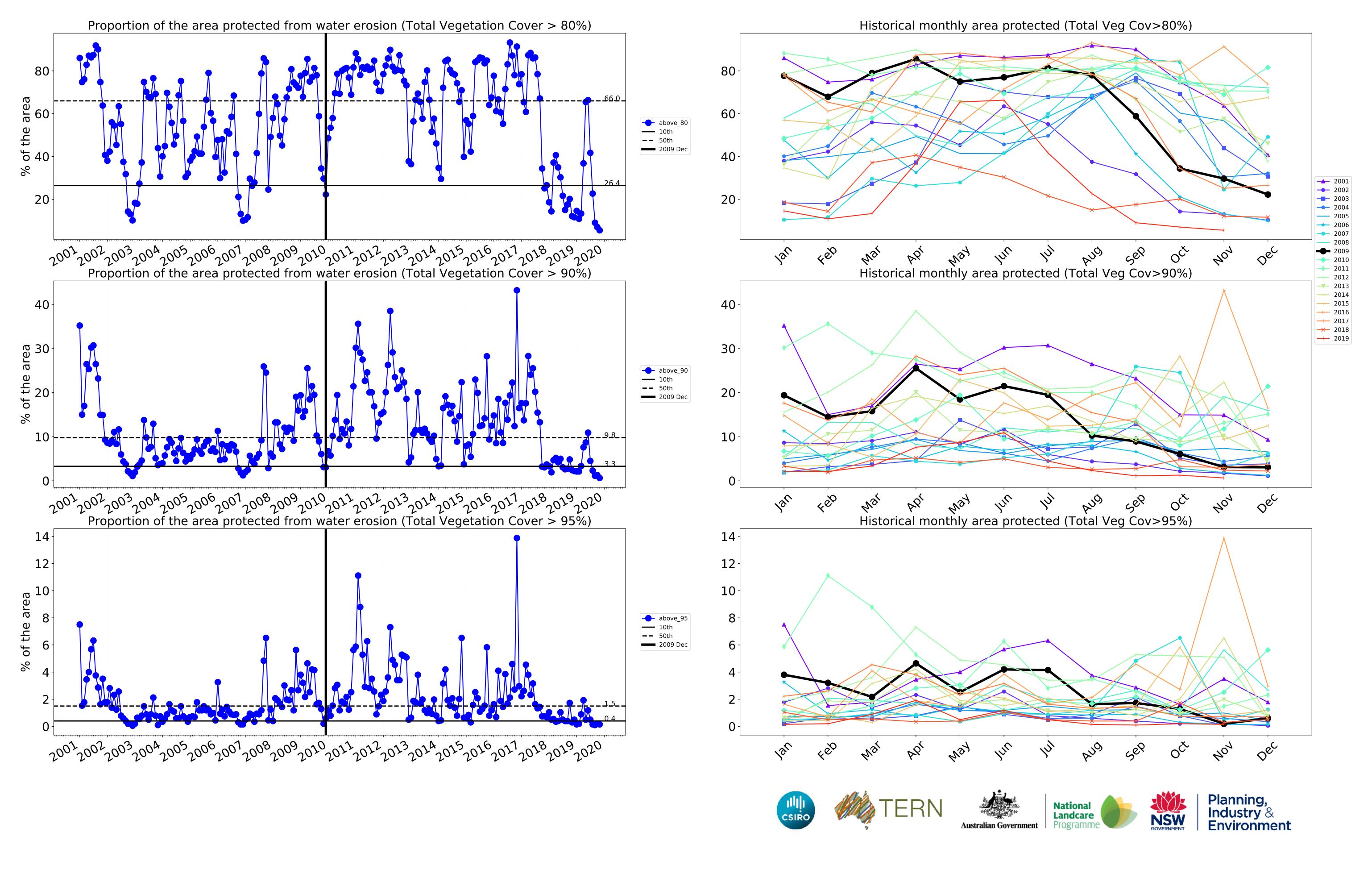




Cropping timeseries





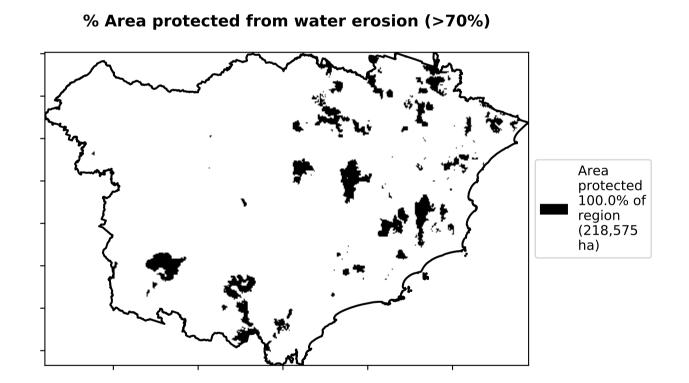


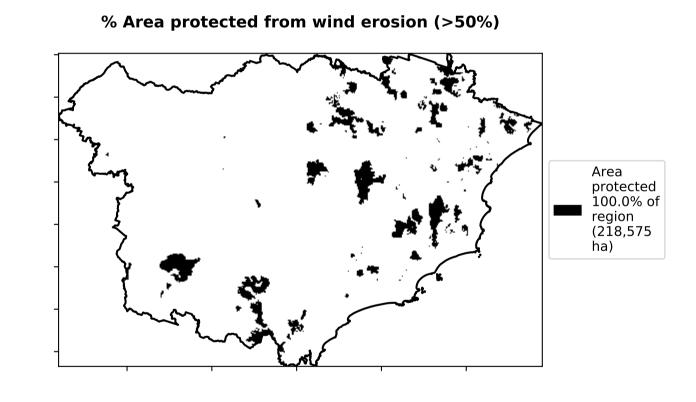
Production native forests and plantation forests

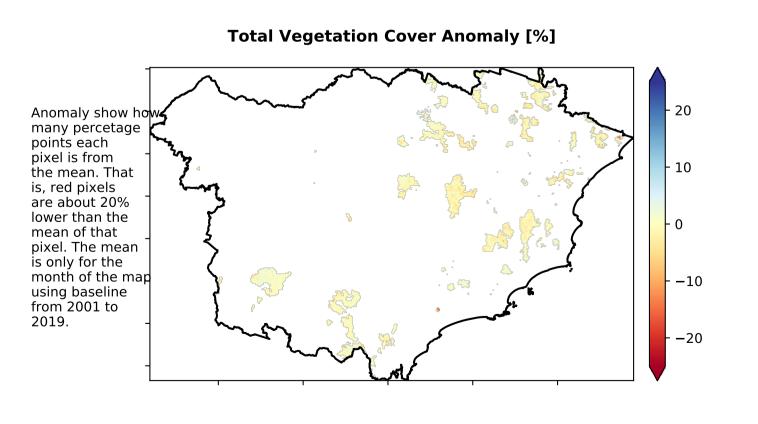
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) 1 Production native forests and plantation forests

Total Vegetation Cover [%]

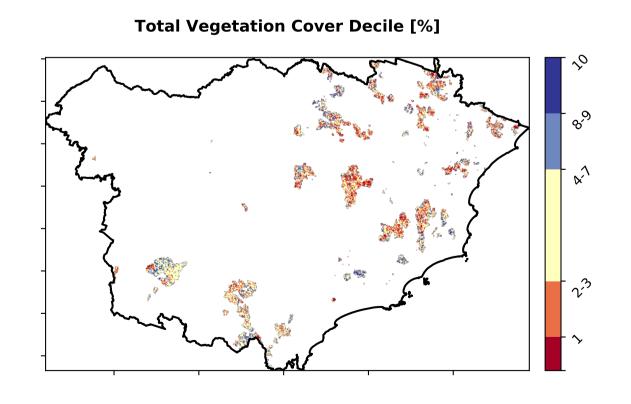
Proportion of vegetation cover class in area 100.0% 100 Area (%) 60 40 20 -0.0% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**







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 baseling. the map using baseline from 2001 to 2019.







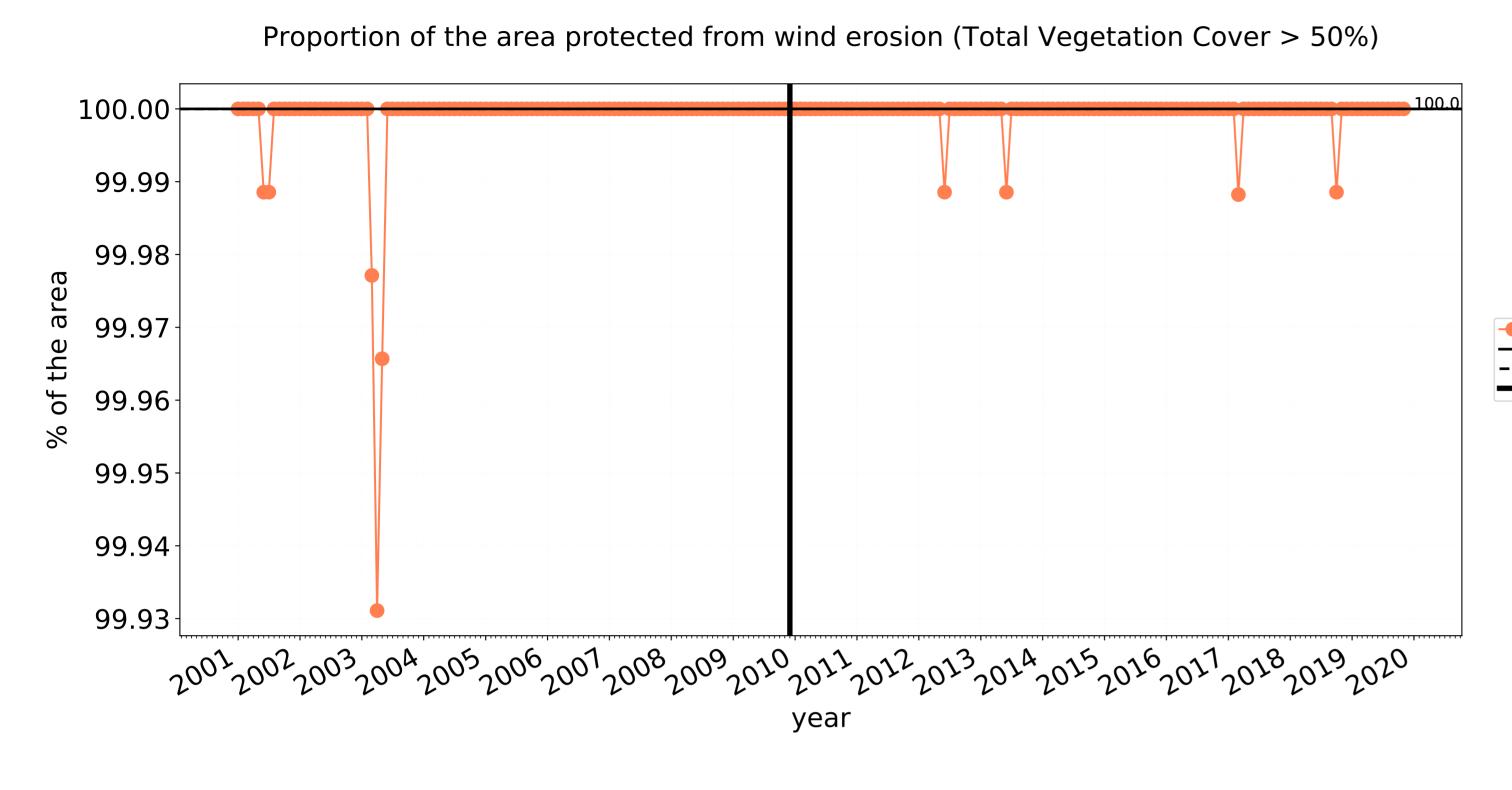


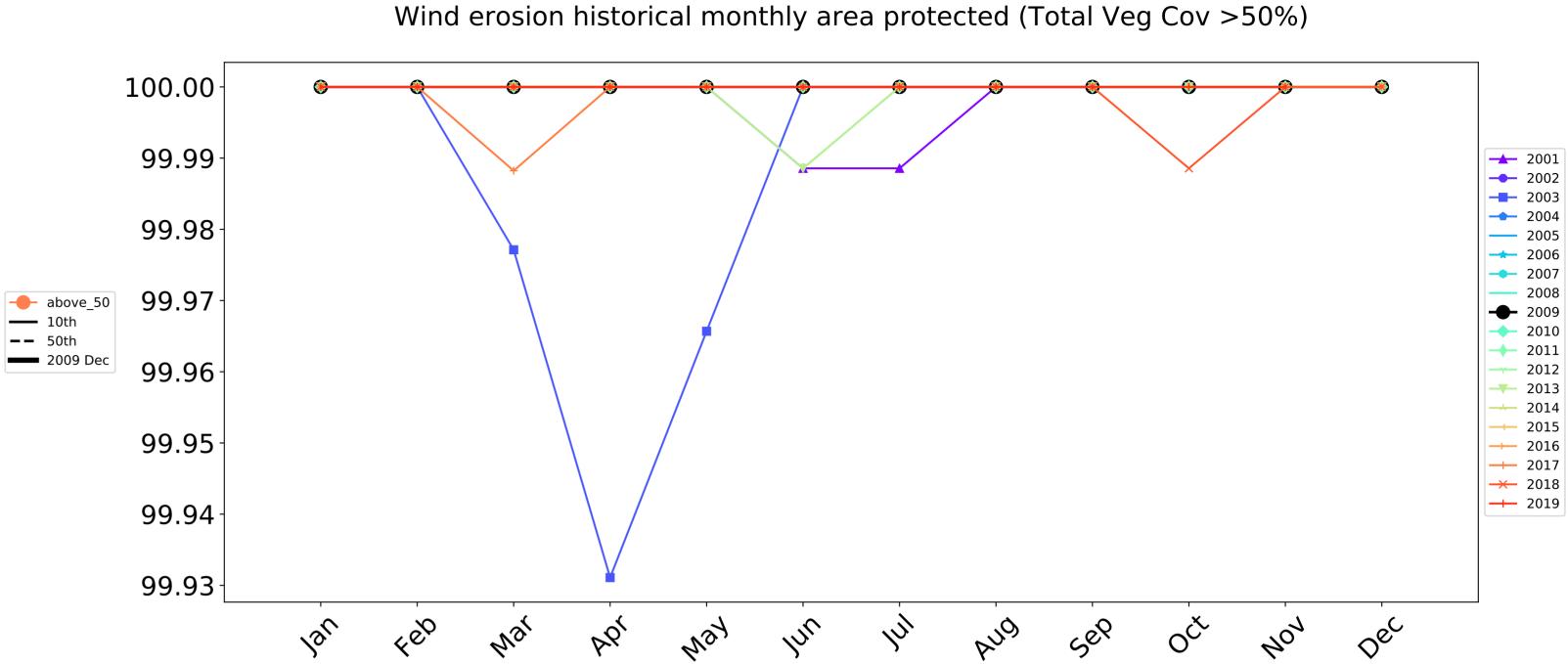




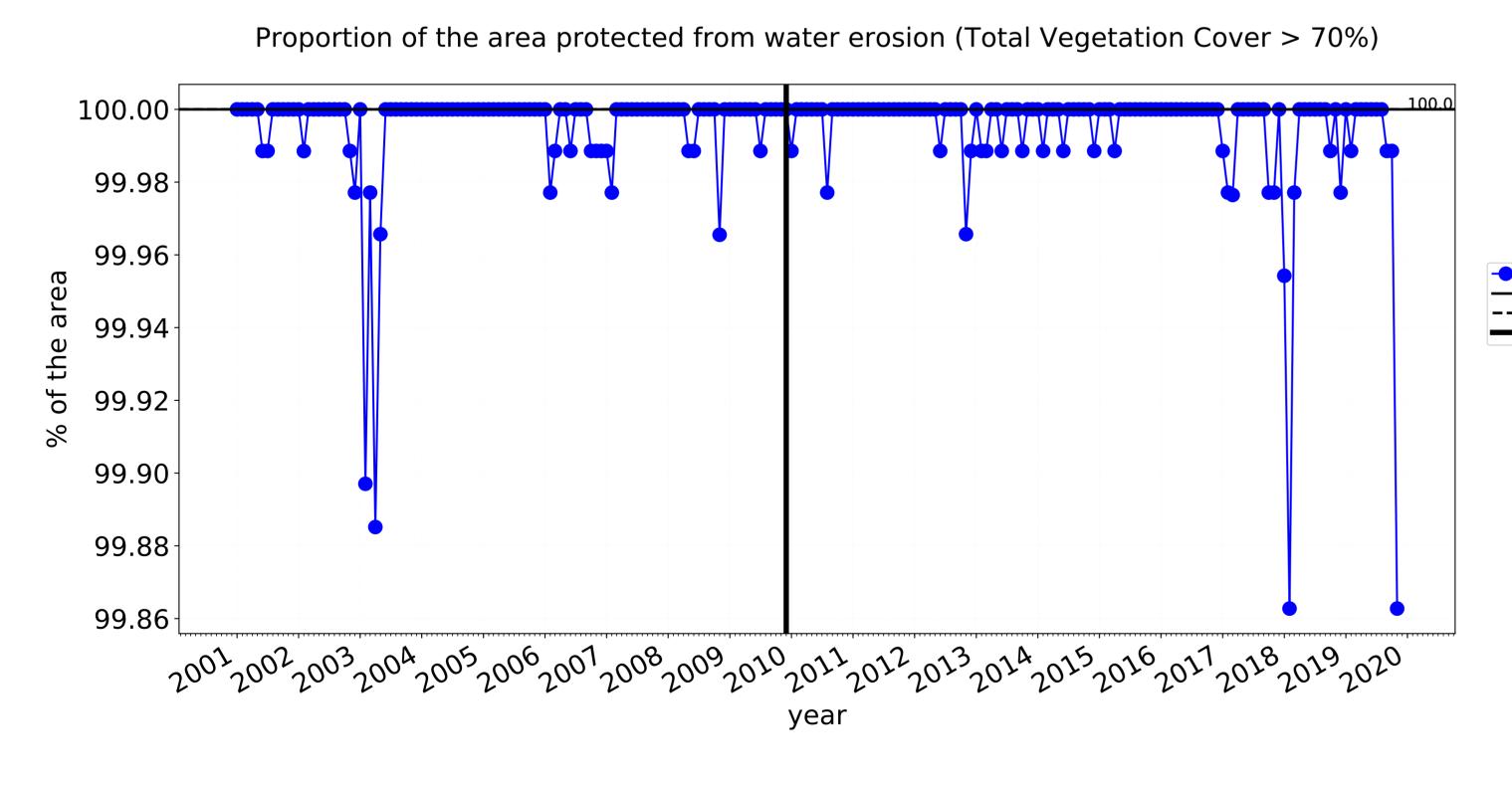


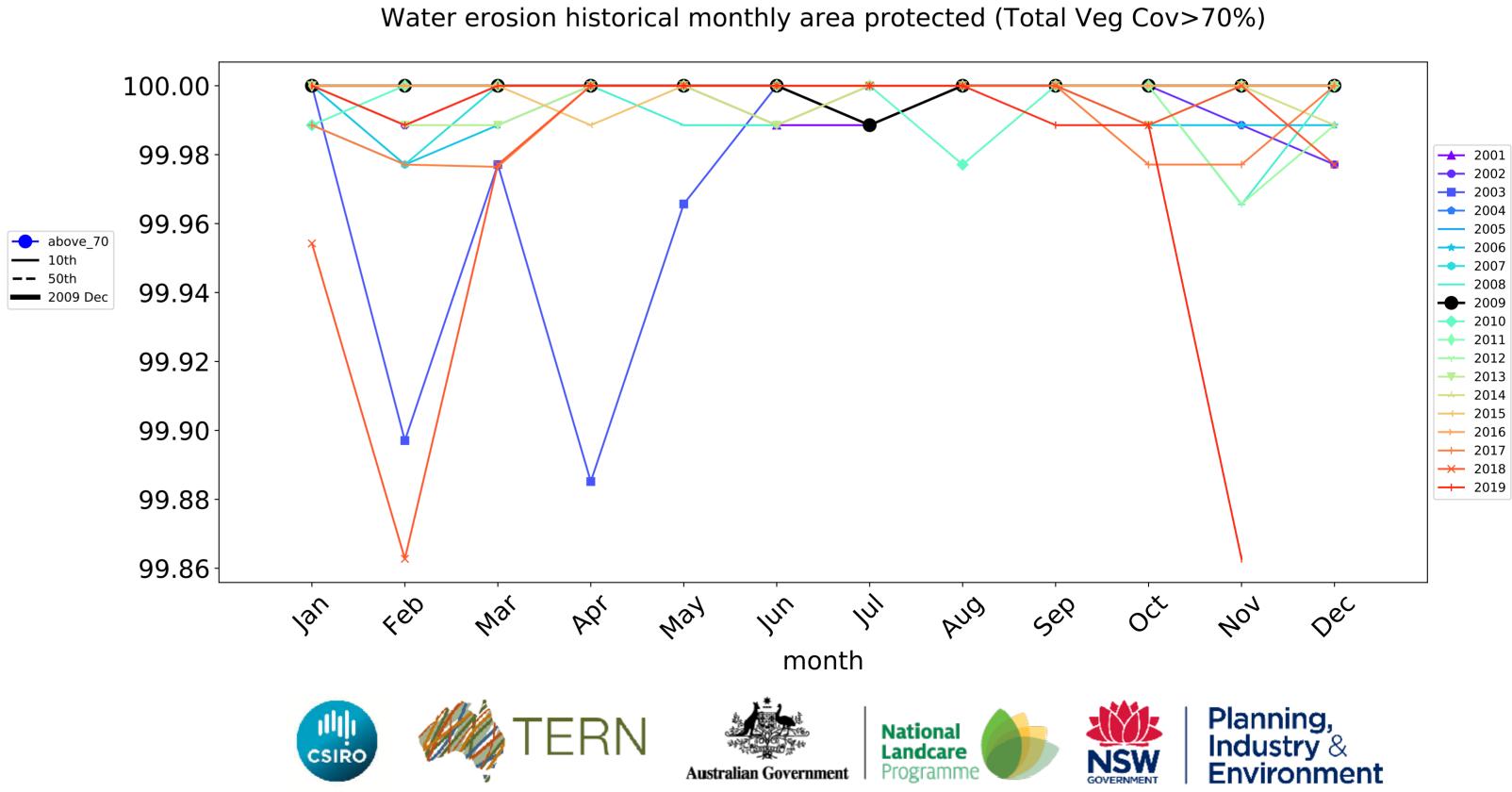
Production native forests and plantation forests timeseries

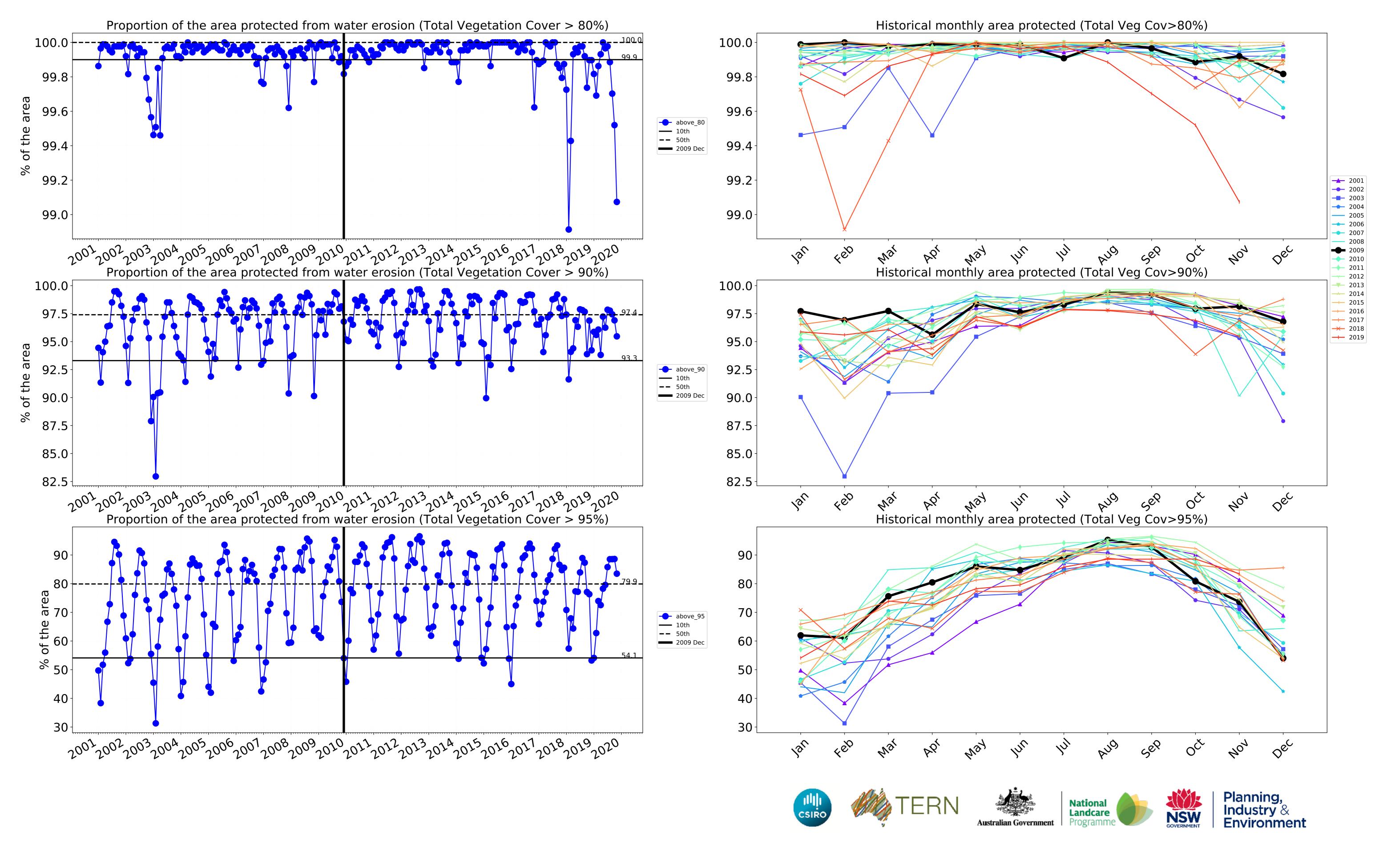




month







Hunter (3,240,325 ha and no data 60,100 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	3,240,325	99.9% 3,236,701	99.6% 3,227,654	97.7% 3,166,703	91.8% 2,975,752	62.8% 2,033,490	25.0% 808,513
Conservation and natural environments	1,241,100	99.9% 1,239,825	99.8% 1,239,050	99.6% 1,236,450	99.1% 1,230,075	82.9% 1,028,550	36.7% 455,475
Conservation and natural environments non forest	30,100	95.8% 28,850	93.8% 28,225	90.2% 27,150	84.3% 25,375	60.0% 18,050	22.4% 6,750
Conservation and natural environments Woodland forest	138,850	100.0% 138,850	100.0% 138,800	99.9% 138,650	99.1% 137,575	70.5% 97,825	21.0% 29,125
natural environments Forest (non woodland)	1,072,150	100.0% 1,072,125	100.0% 1,072,025	99.9% 1,070,650	99.5% 1,067,125	85.1% 912,675	39.1% 419,600
Agriculture	1,580,550	100.0% 1,580,500	100.0% 1,580,025	98.1% 1,551,300	89.2% 1,410,400	47.3% 747,950	14.1% 222,975
Grazing	1,502,550	100.0% 1,502,500	100.0% 1,502,075	99.3% 1,491,625	92.3% 1,387,075	49.6% 745,350	14.8% 222,550
Grazing non forest	1,212,950	100.0% 1,212,900	100.0% 1,212,500	99.1% 1,202,375	90.8% 1,101,875	46.5% 563,525	13.5% 163,925
Grazing Woodland forest	120,575	100.0% 120,575	100.0% 120,575	99.9% 120,500	97.8% 117,925	50.4% 60,725	13.2% 15,950
Grazing - Forest (non woodland)	169,025	100.0% 169,025	100.0% 169,000	99.8% 168,750	99.0% 167,275	71.6% 121,100	25.2% 42,675
Cropping	50,625	100.0% 50,625	99.9% 50,575	67.2% 34,000	22.2% 11,250	3.1% 1,550	0.6% 300
Production native forests and plantation forests	218,575	100.0% 218,575	100.0% 218,575	100.0% 218,575	99.8% 218,175	96.8% 211,550	54.0% 118,050











