Total vegetation cover soil protection Region:NRM Hunter NSW

Date: January 2005

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:

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







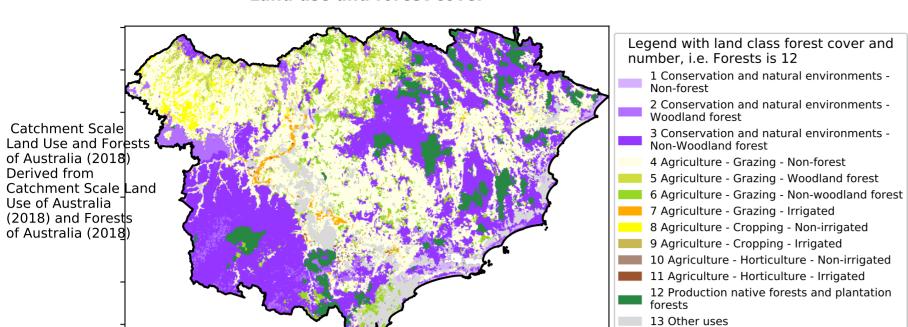




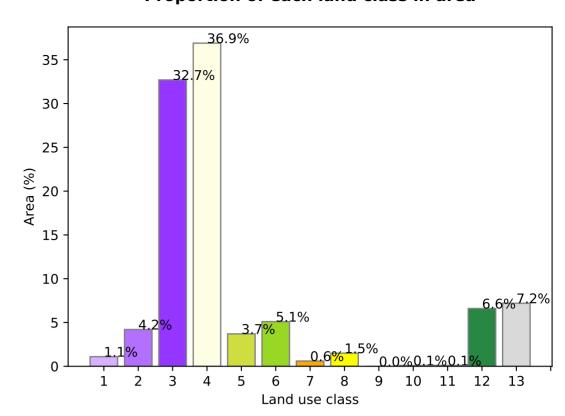


Vegetation Cover Jan 2005

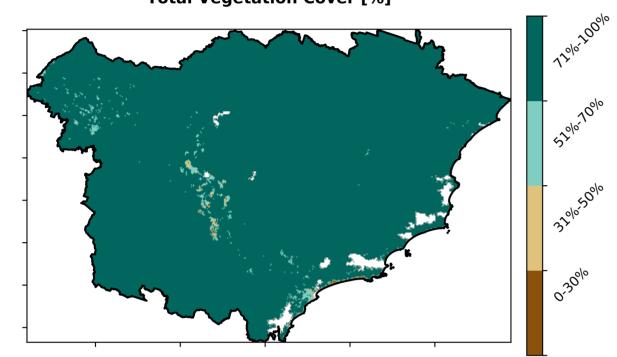
Land use and forest cover



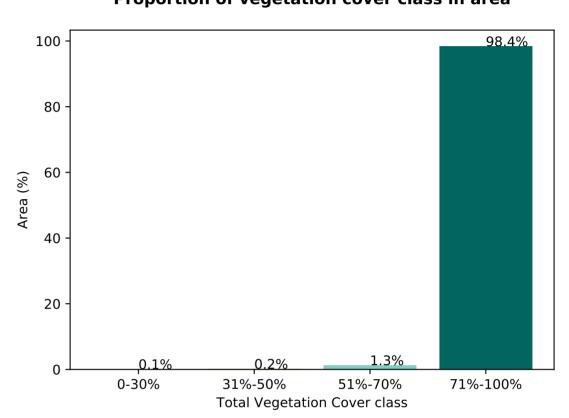
Proportion of each land class in area



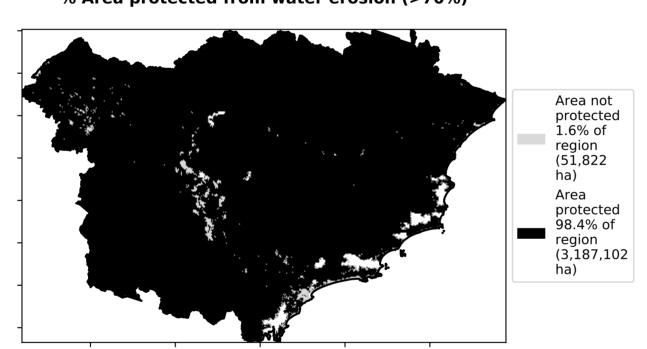
Total Vegetation Cover [%]



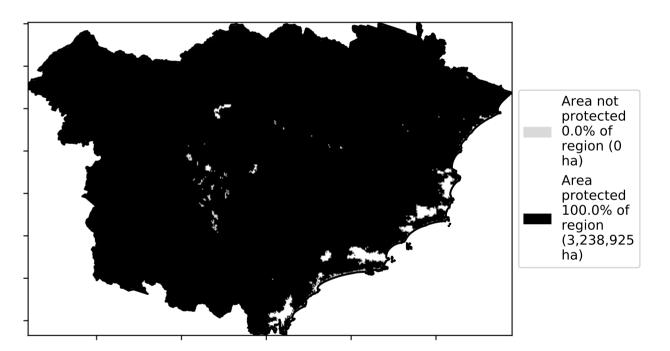
Proportion of vegetation cover class in area



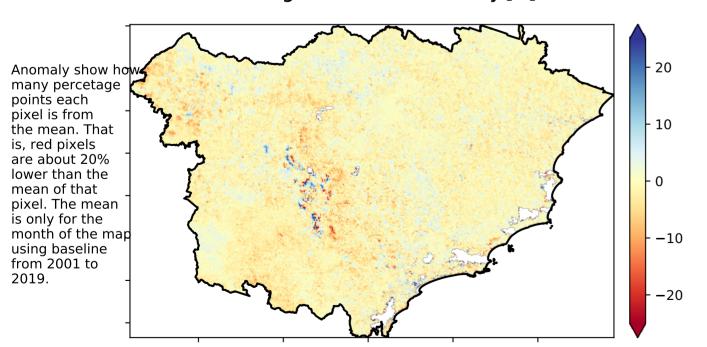
% Area protected from water erosion (>70%)



% 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 [%]



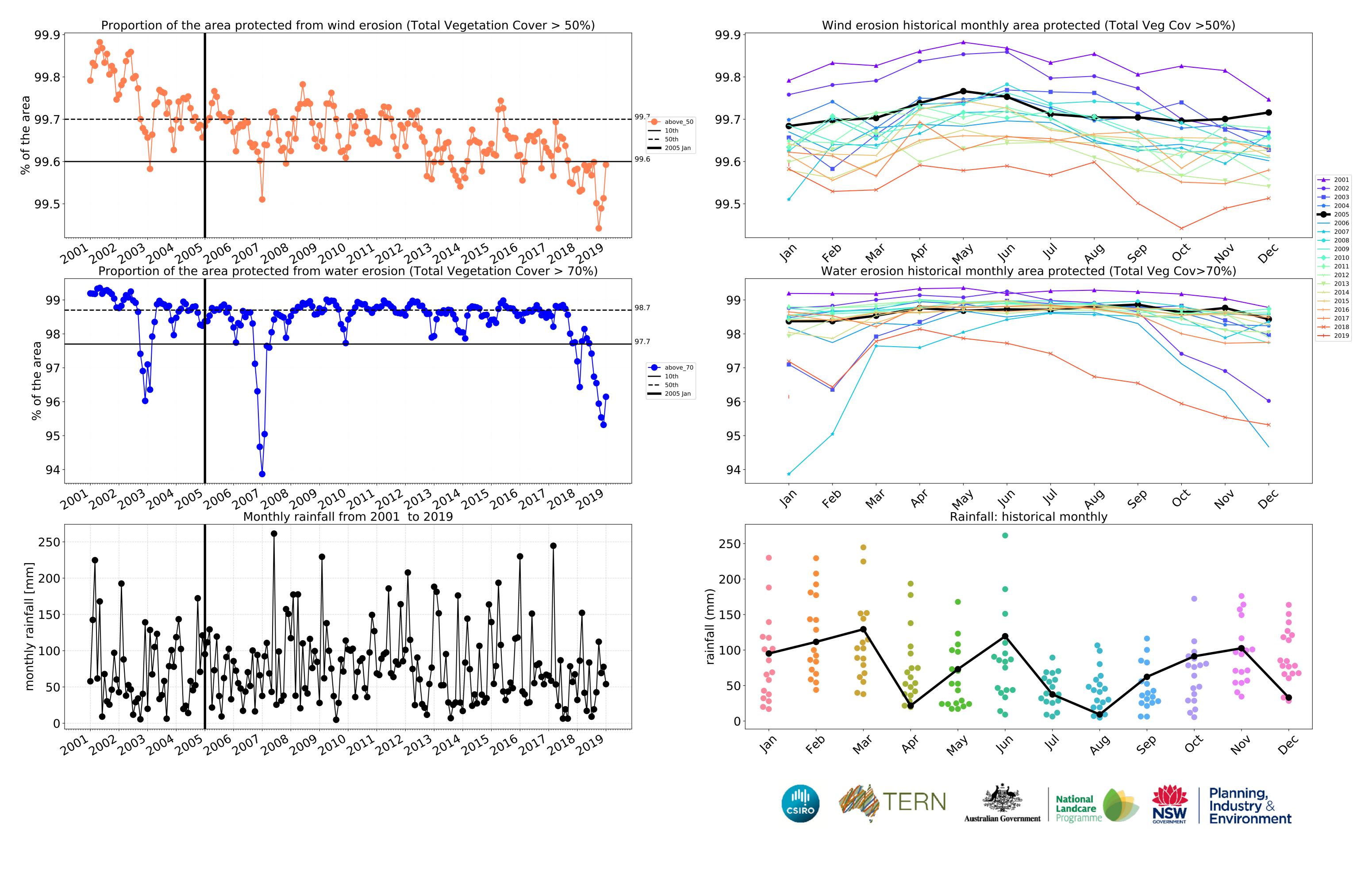


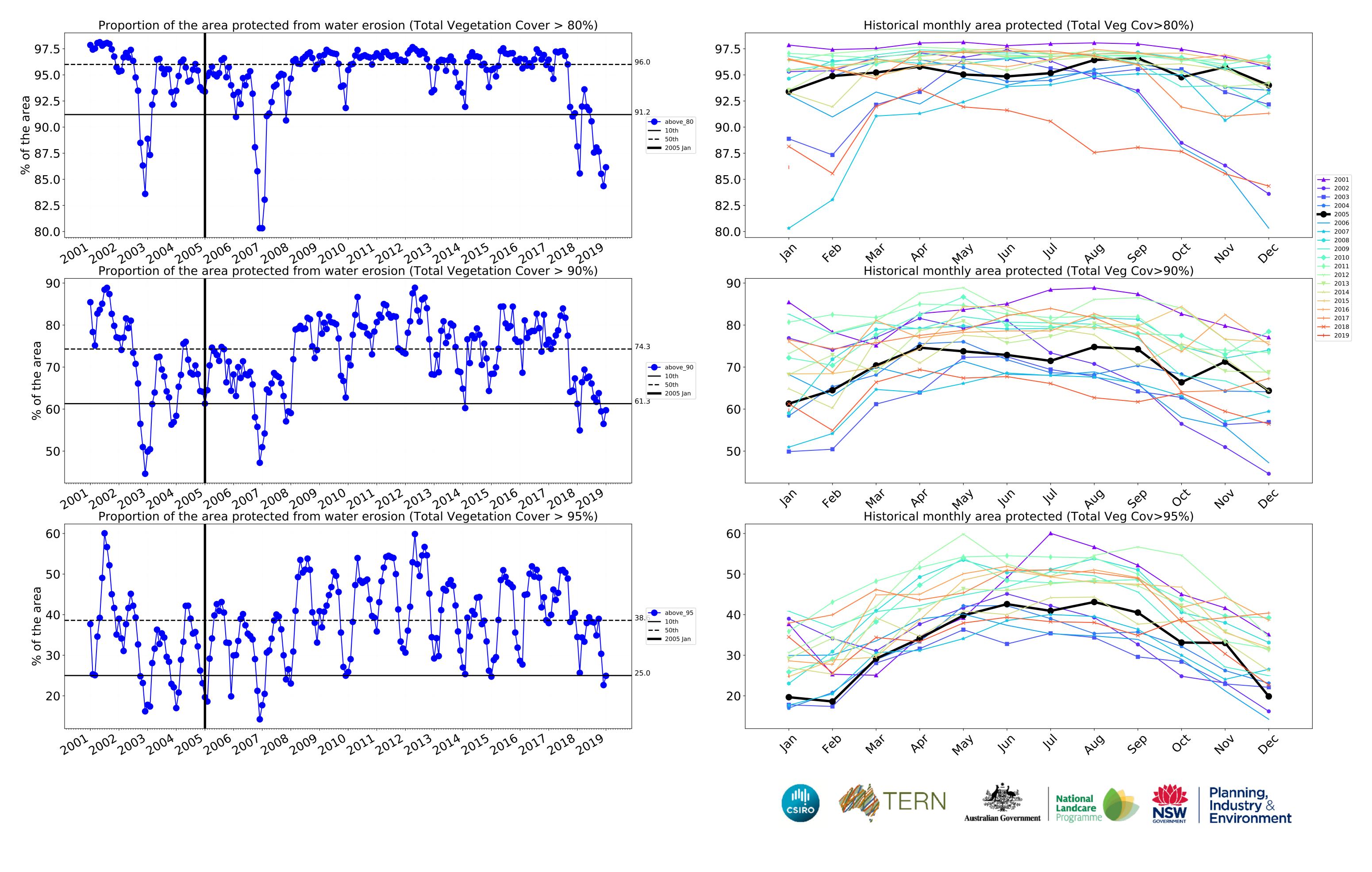






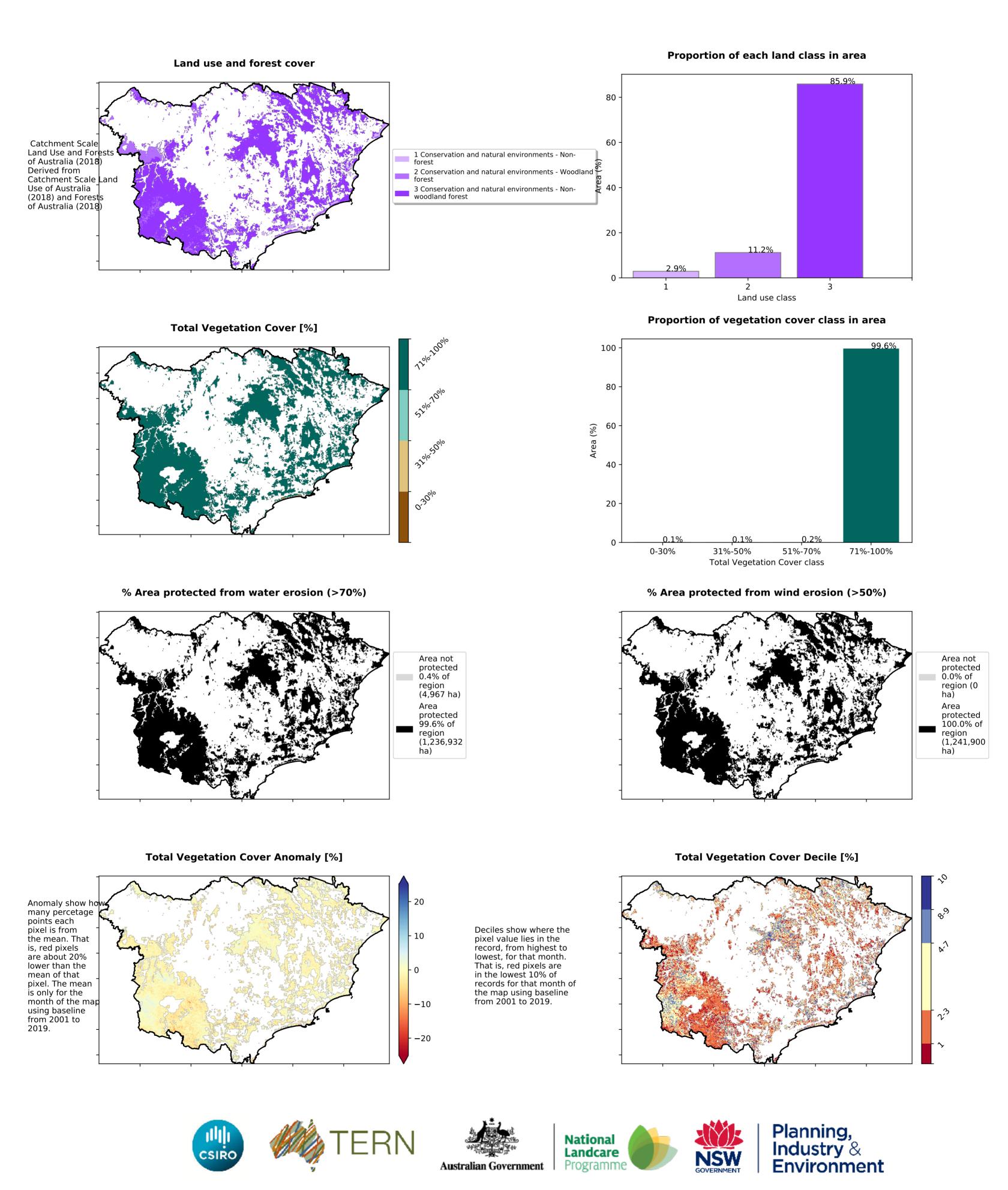




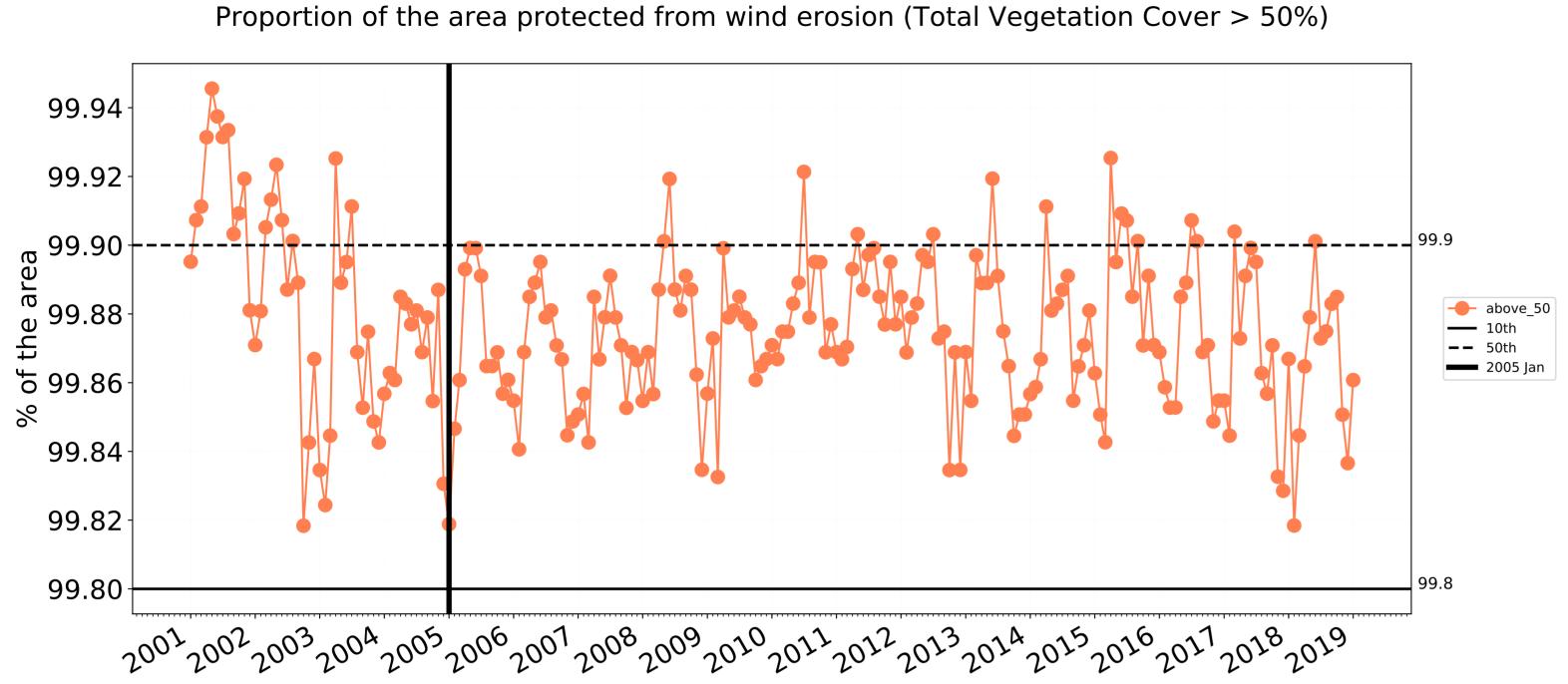


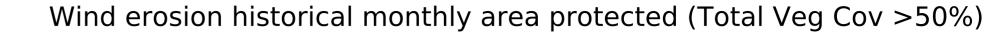
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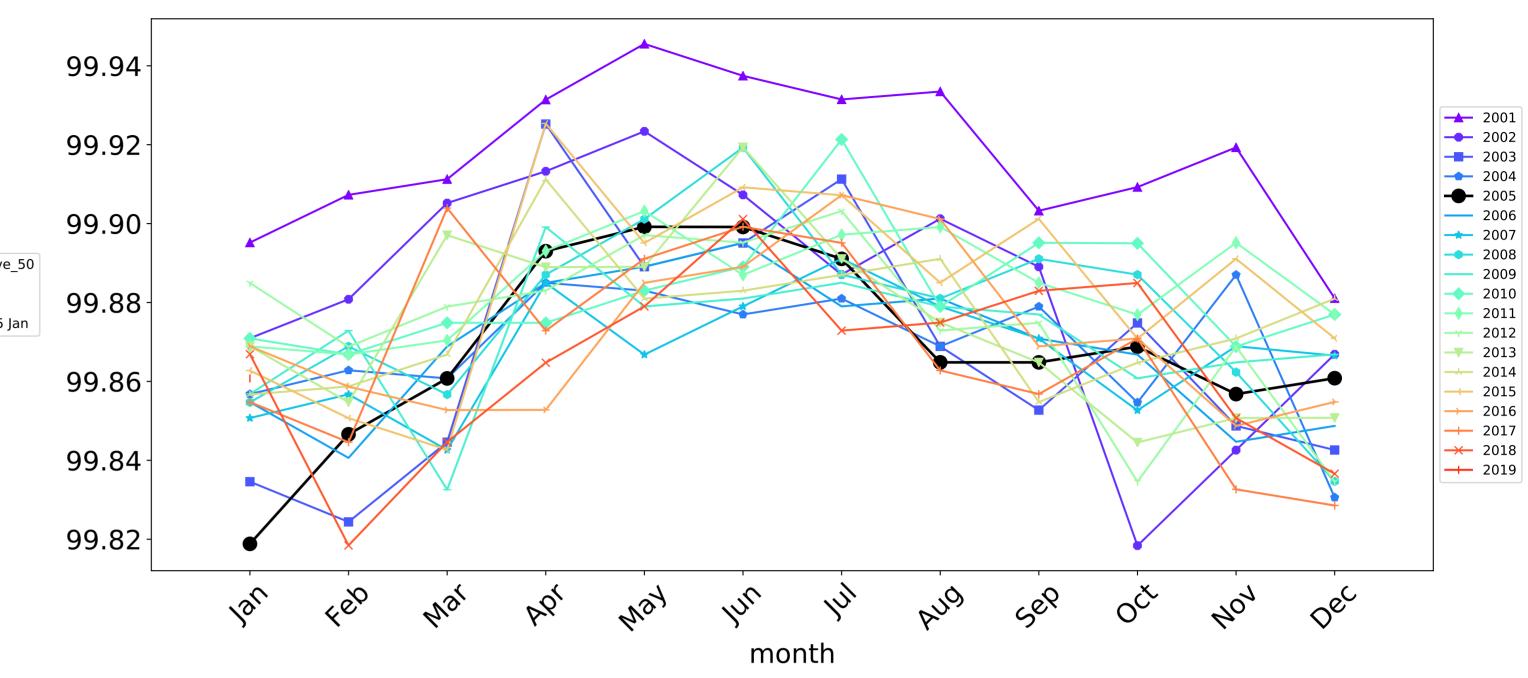
Conservation and natural environments

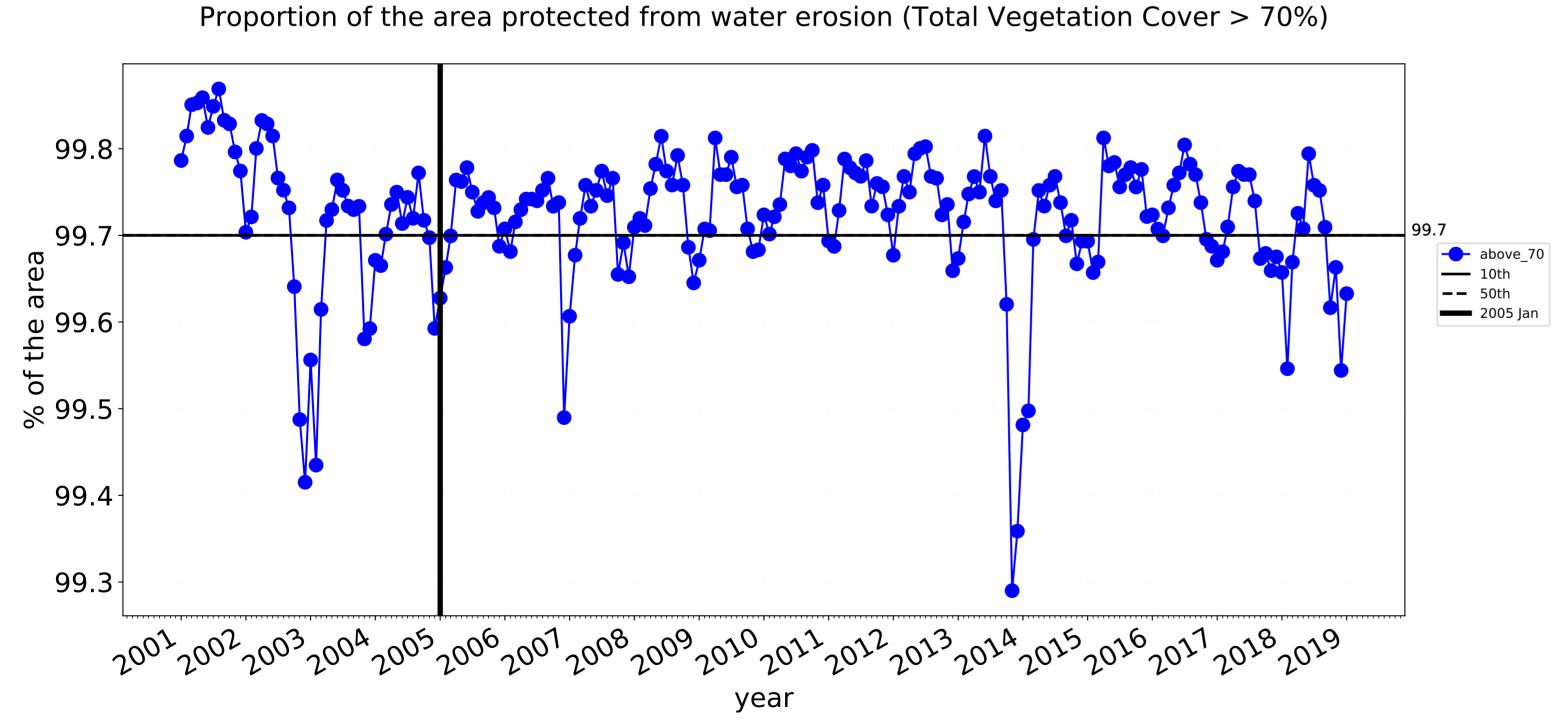


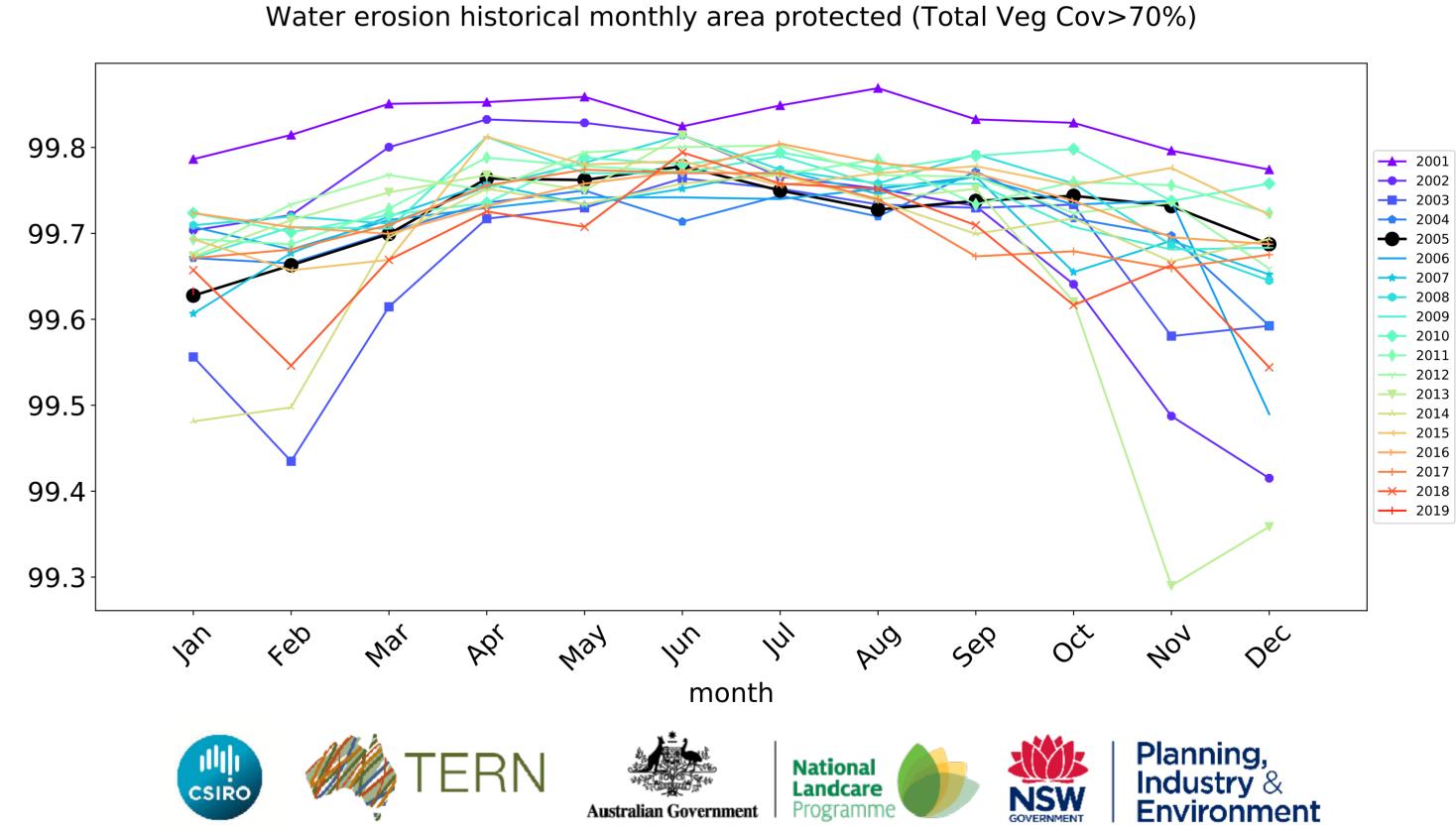
Conservation and natural environments timeseries

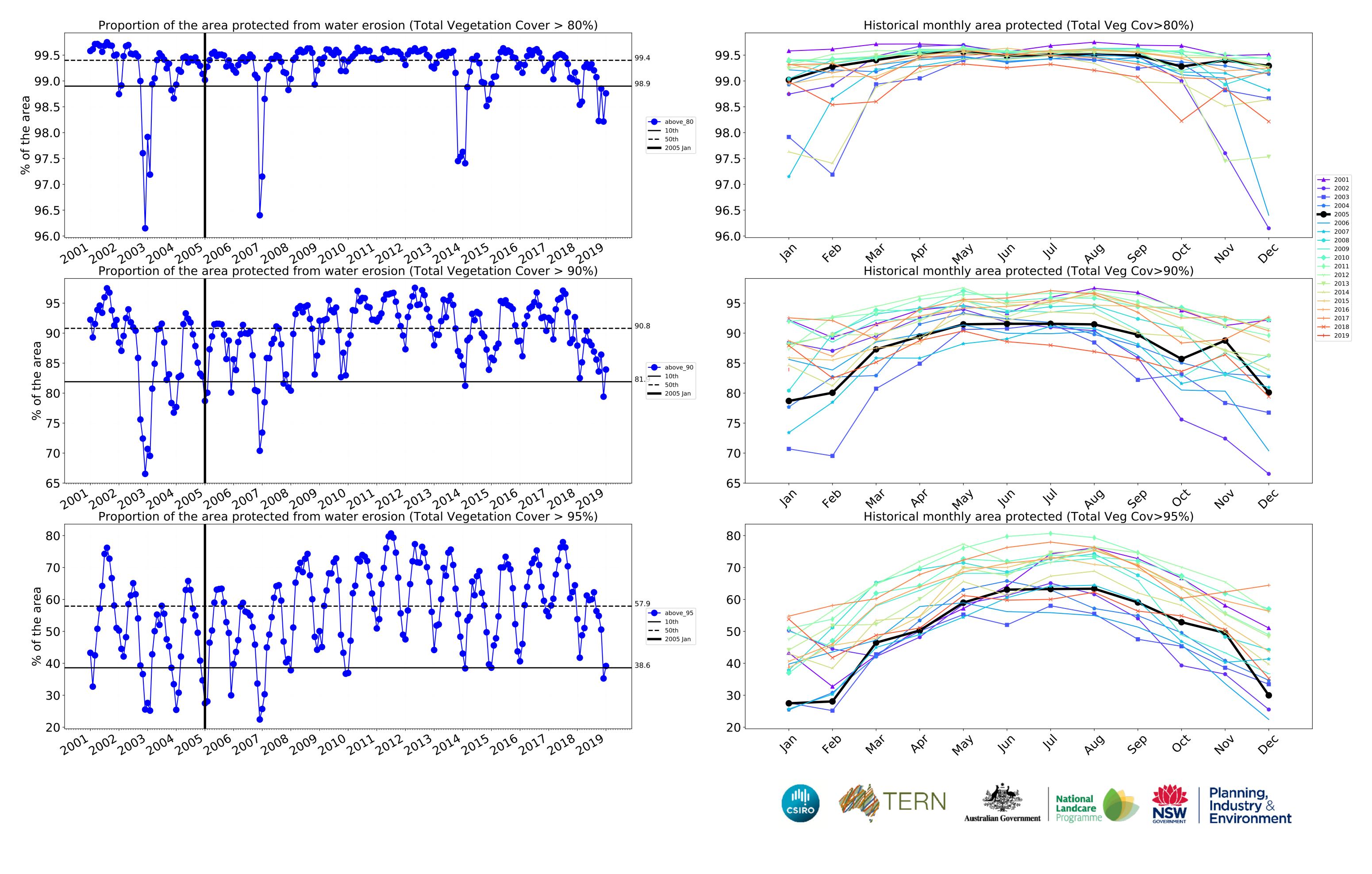




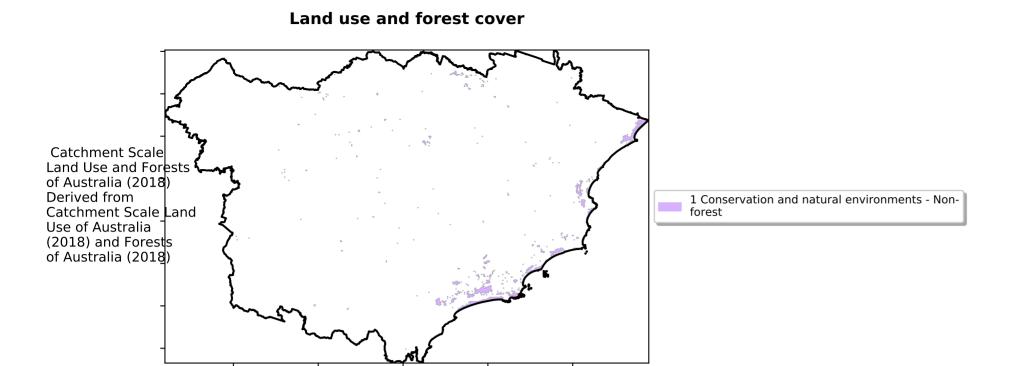








Conservation and natural environments non forest

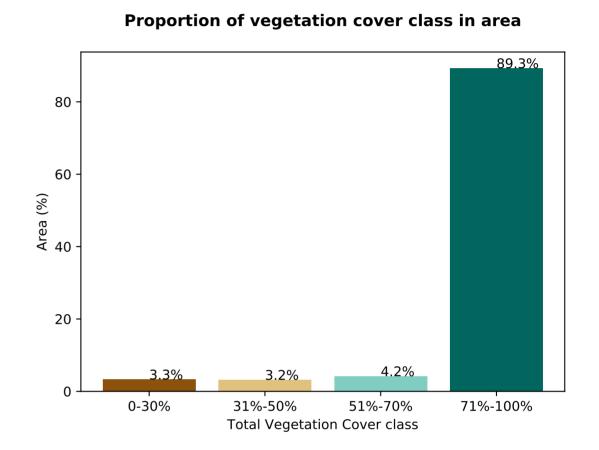


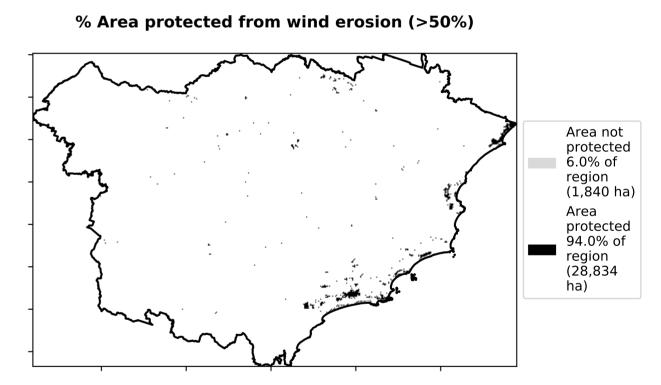
Total Vegetation Cover [%] Tiple Judolo Jiple Judolo Ji

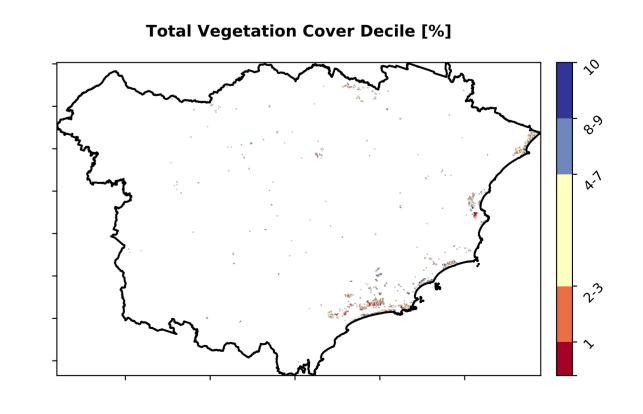
Area not protected 10.7% of region (3,282 ha) Area protected 10.7% of region (3,282 ha) Area protected 89.3% of region (27,392 ha)

Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the man using baseline from 2001 to 2019.

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.













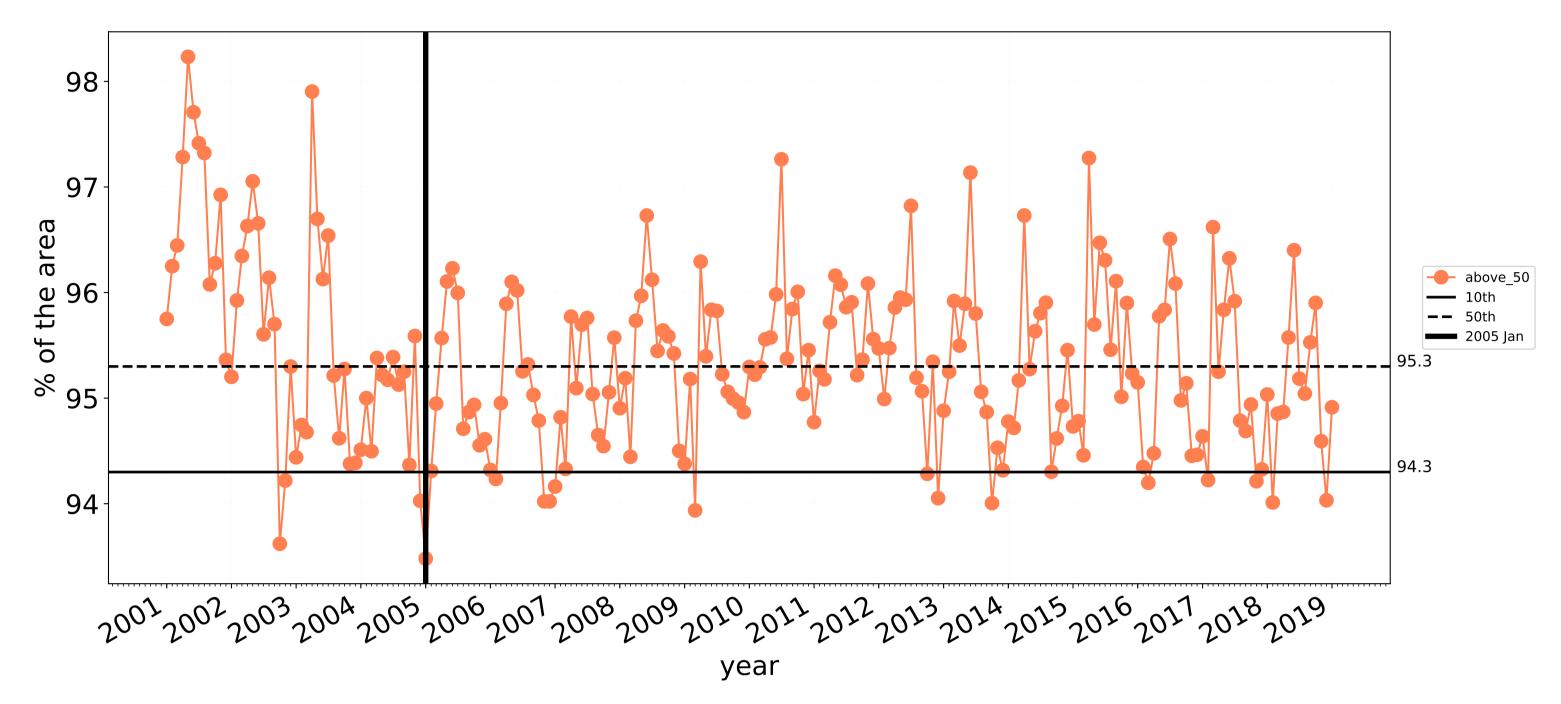




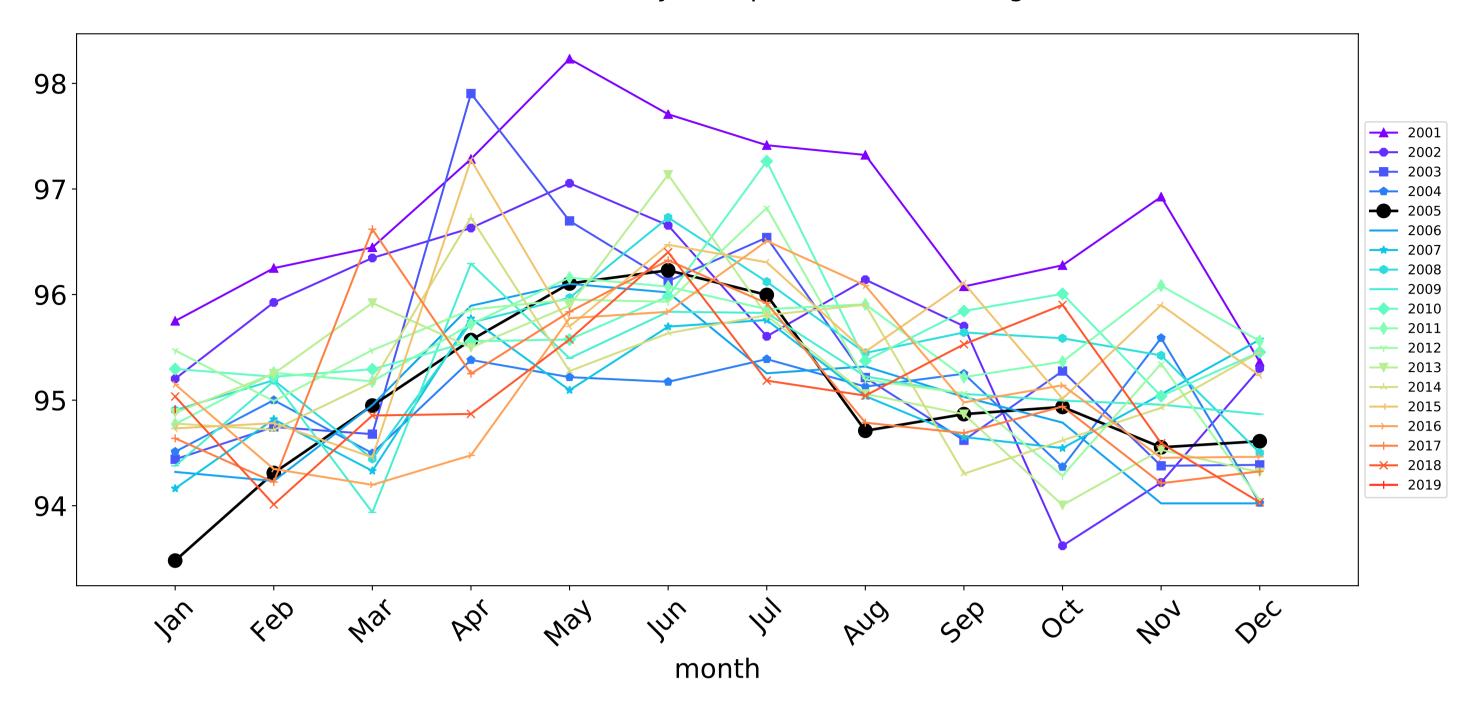


Conservation and natural environments non forest timeseries

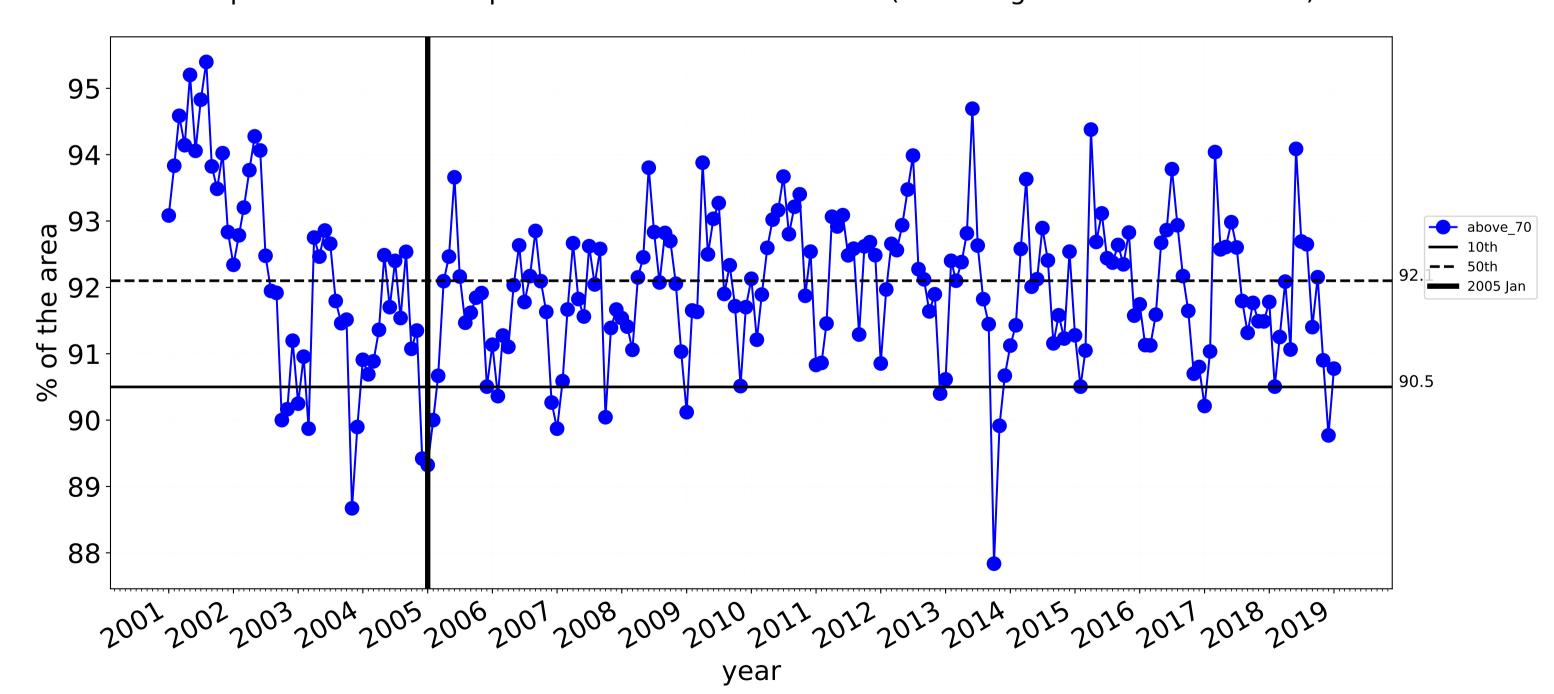




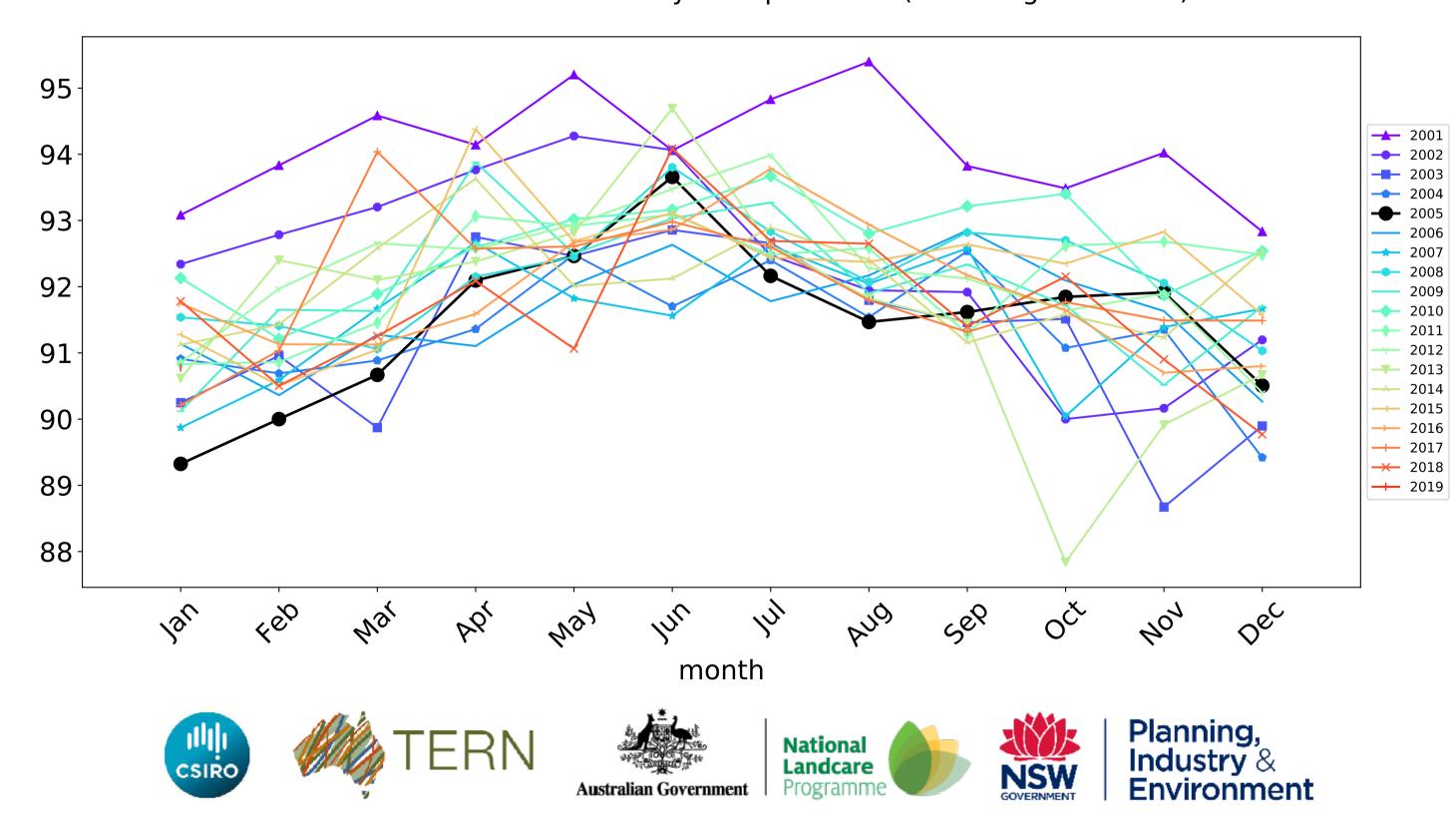
Wind erosion historical monthly area protected (Total Veg Cov >50%)



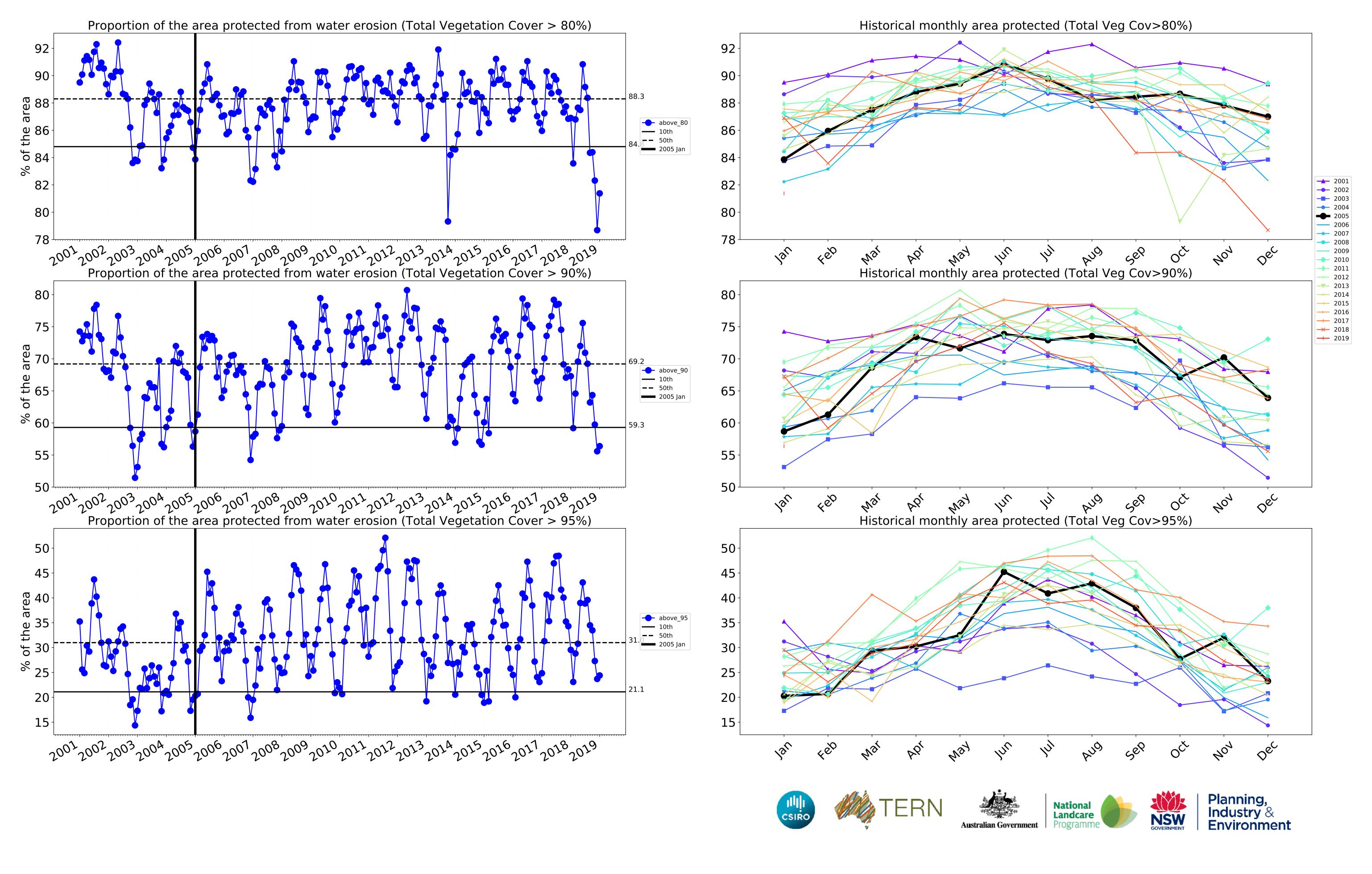
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



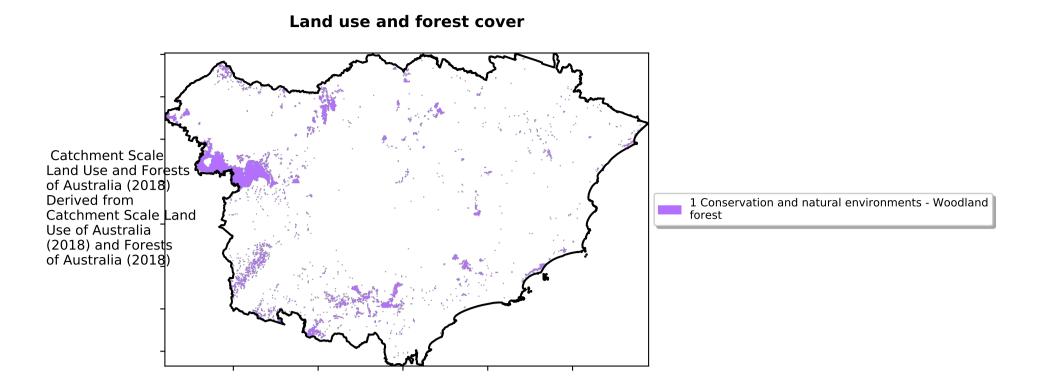
Water erosion historical monthly area protected (Total Veg Cov>70%)

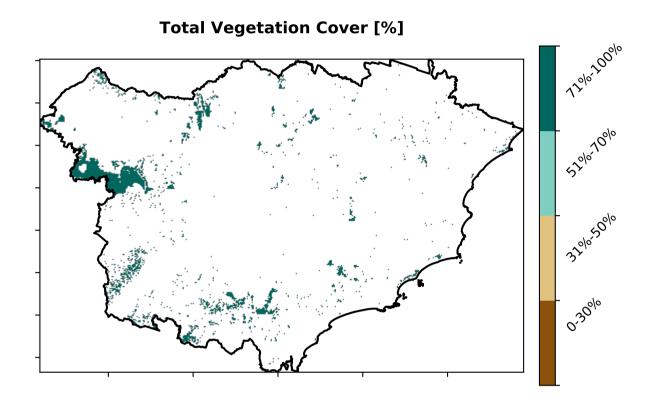


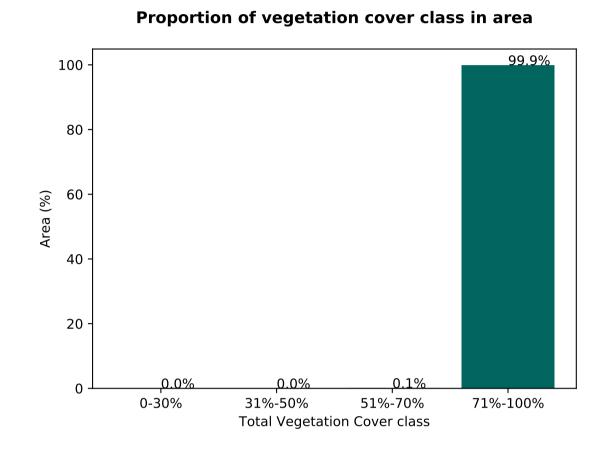
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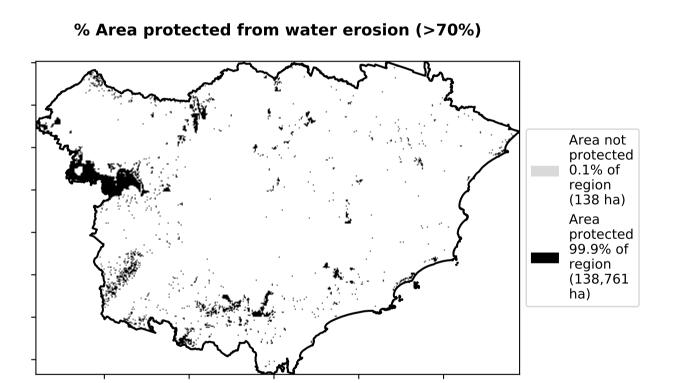


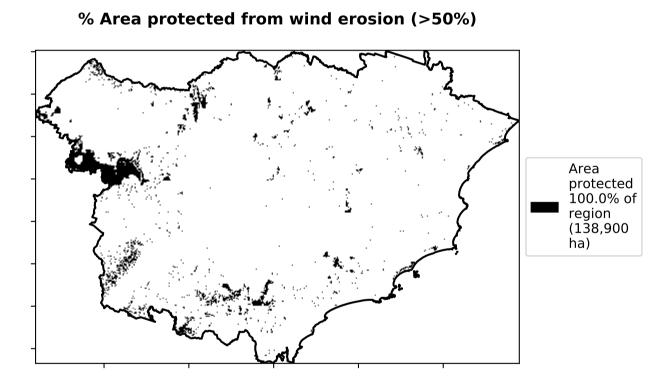
Conservation and natural environments Woodland forest

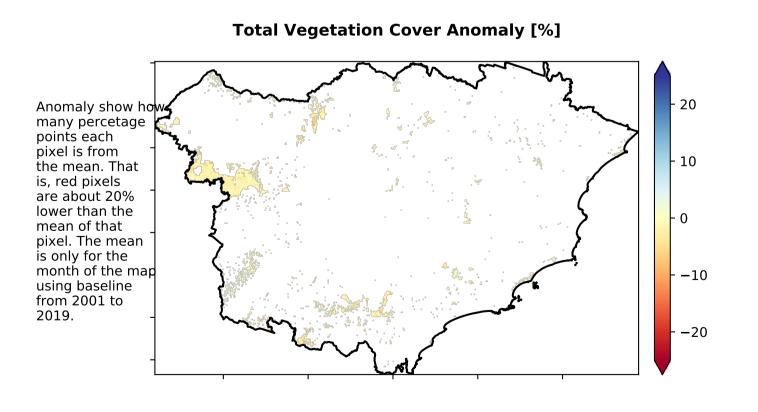




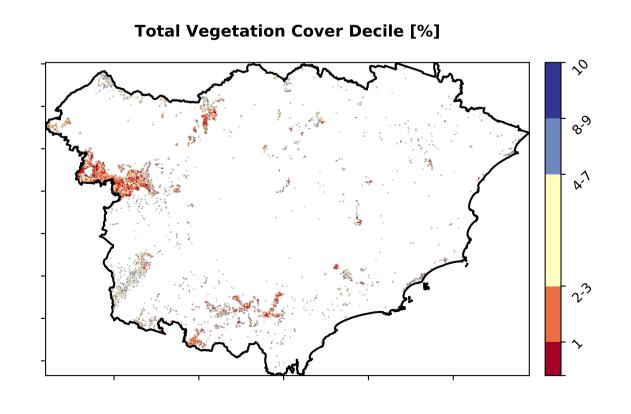








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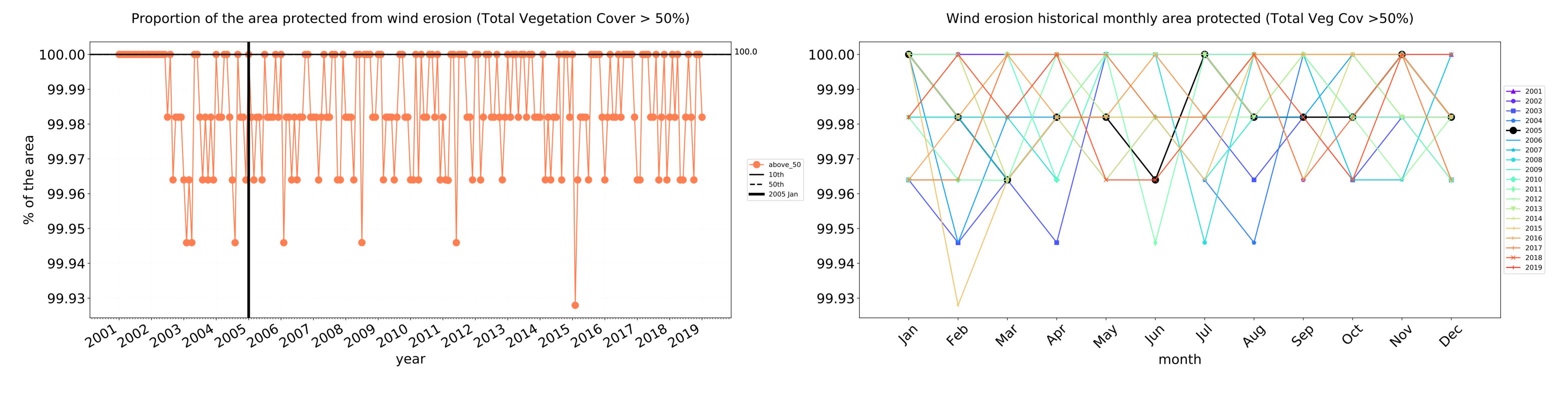


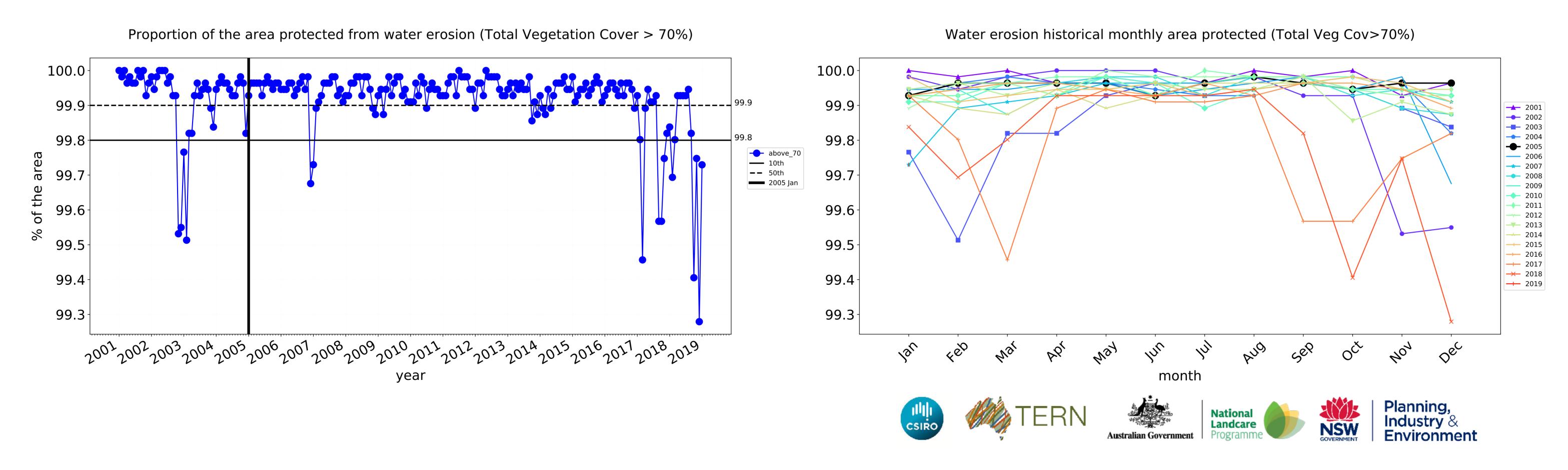


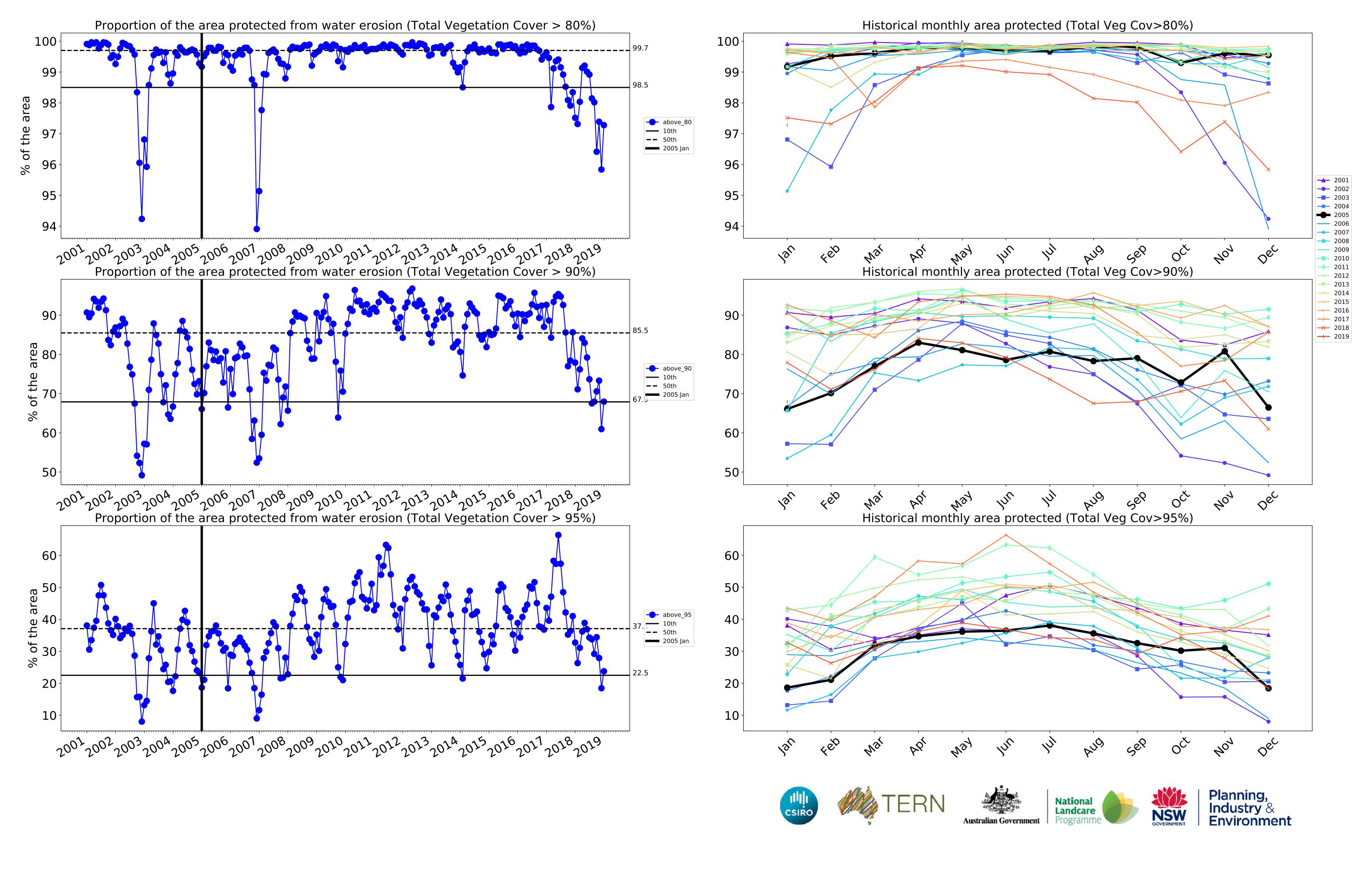




Conservation and natural environments Woodland forest timeseries

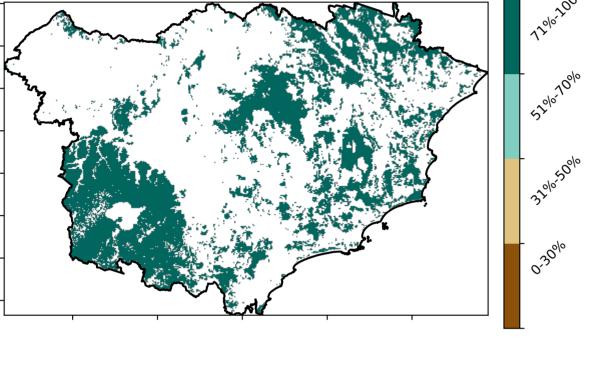


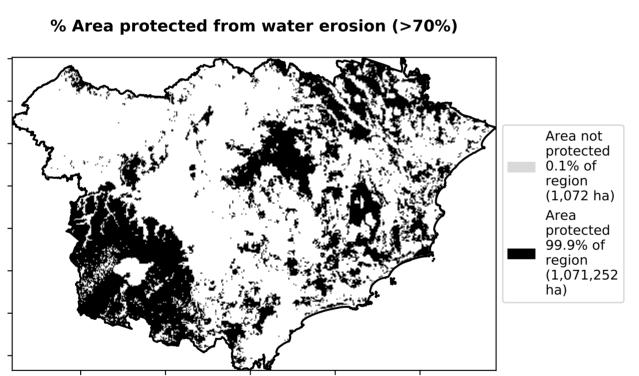


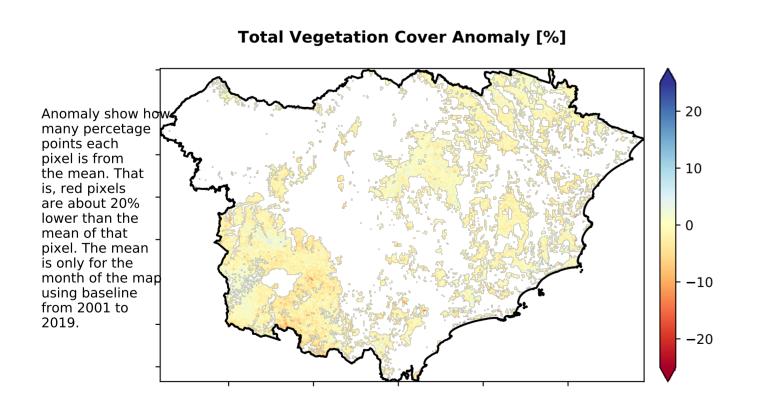


Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Use of Australia (2018) and Forests of Australia (2018) 1 Conservation and natural environments - Nonwoodland forest

Total Vegetation Cover [%]

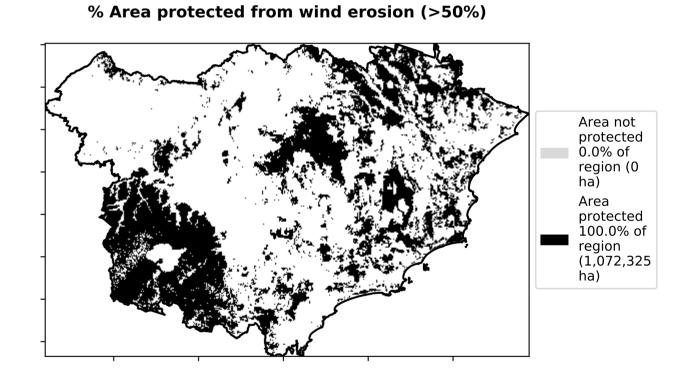


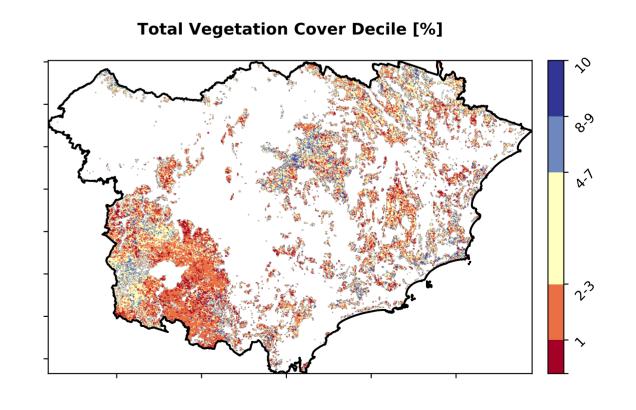




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline. the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area 99.9% 100 80 60 40 20 0.1% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**







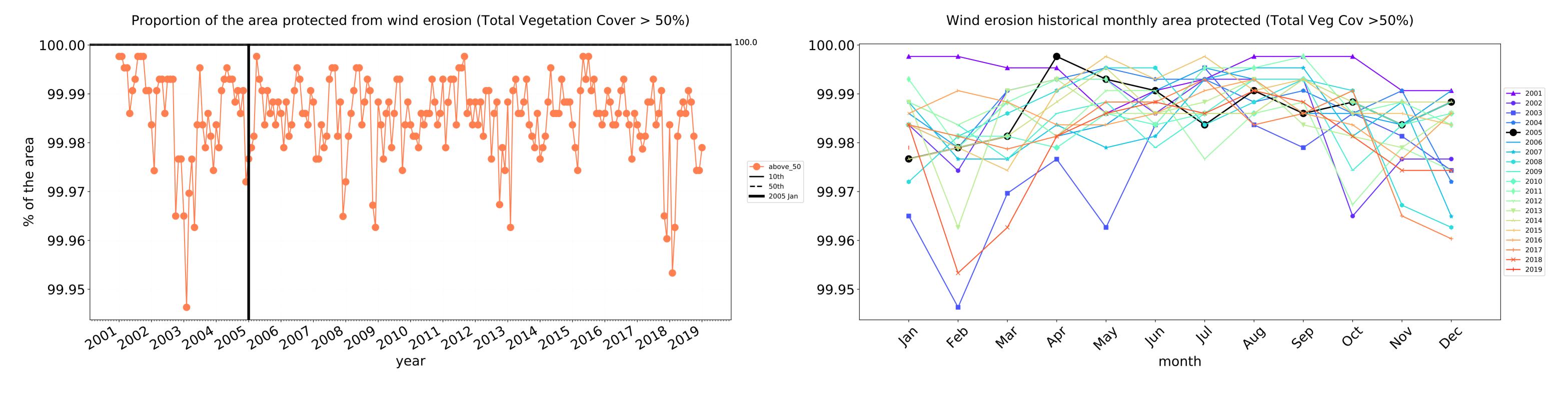


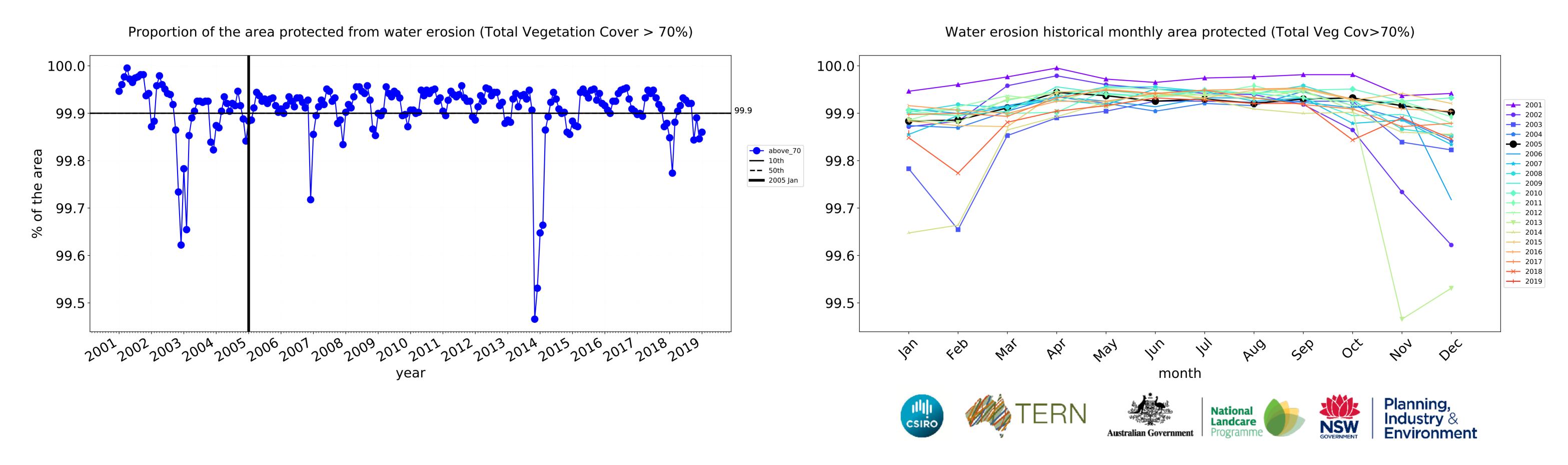


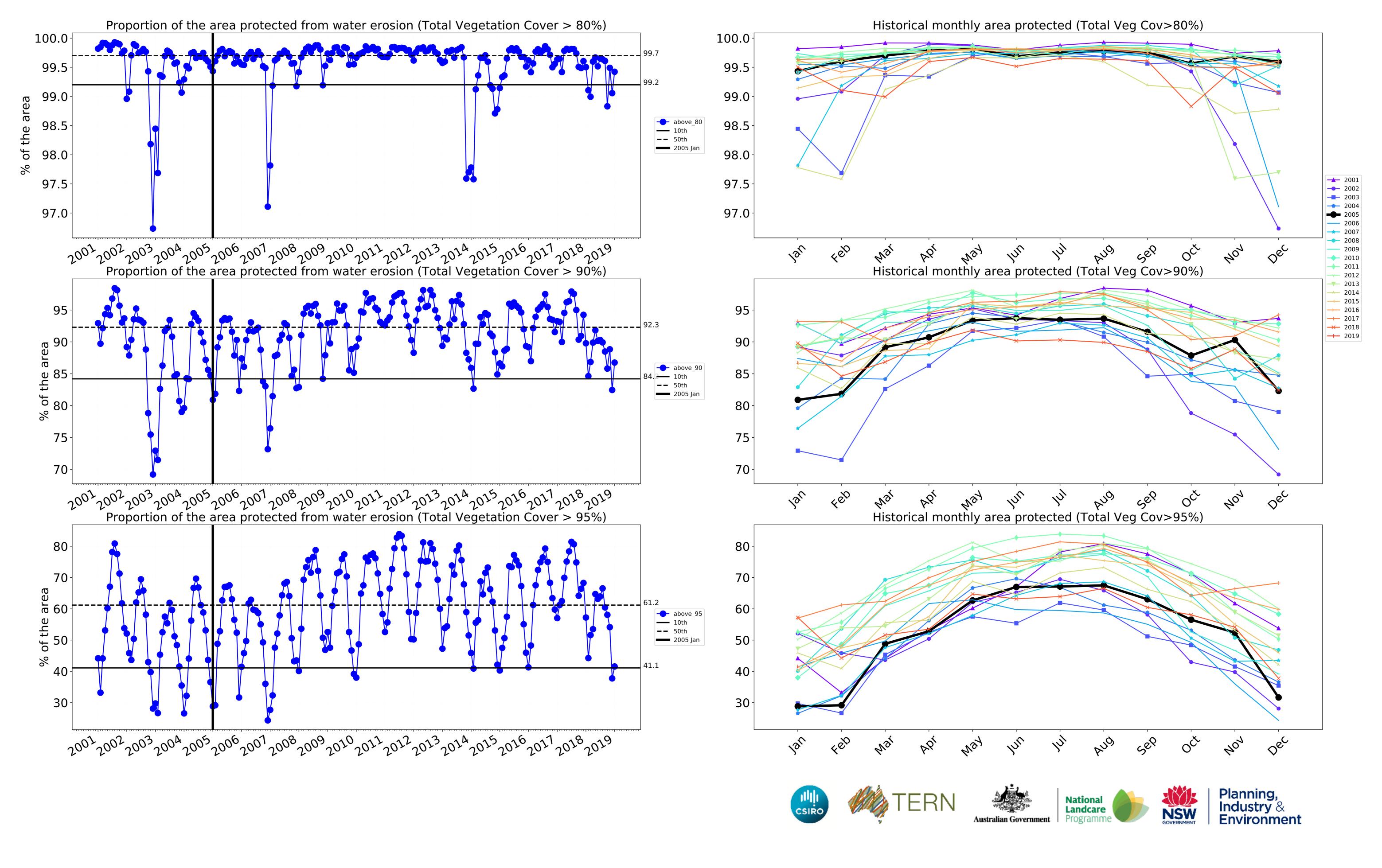




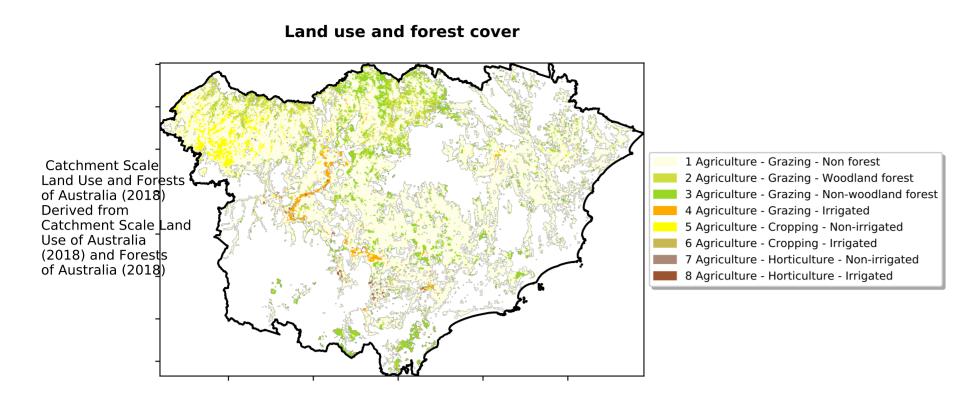


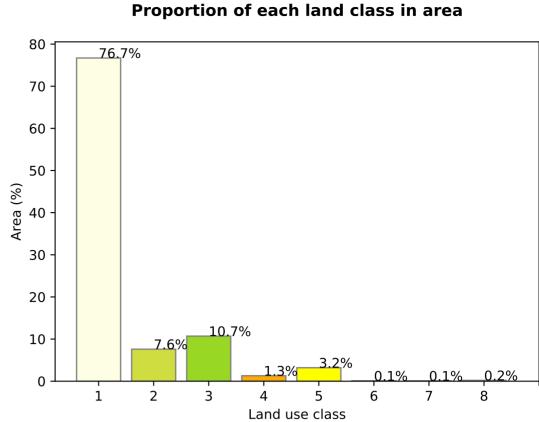


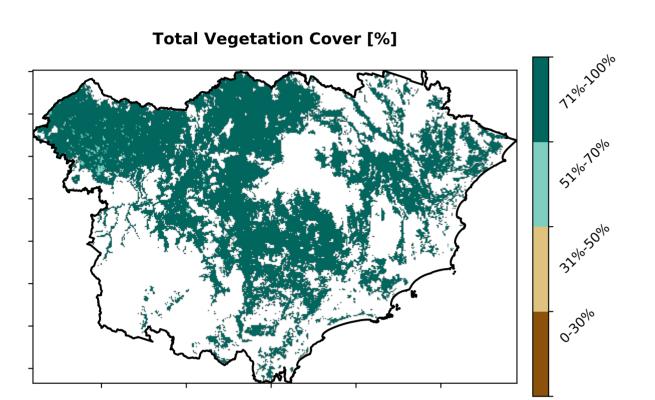


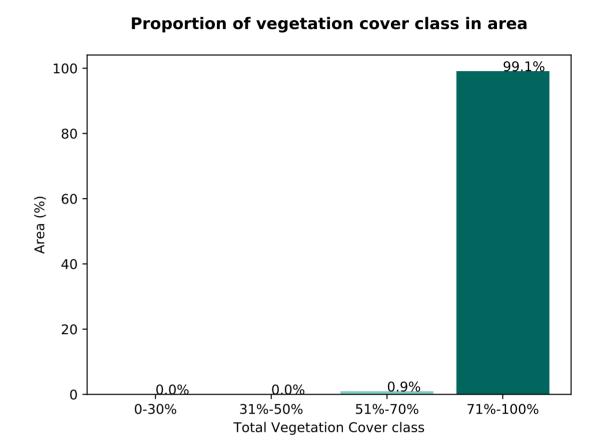


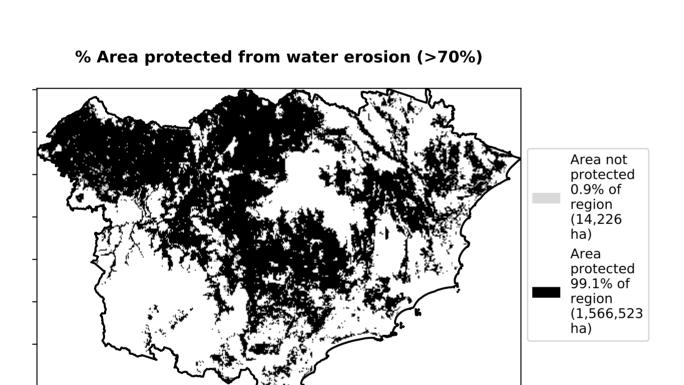
Agriculture

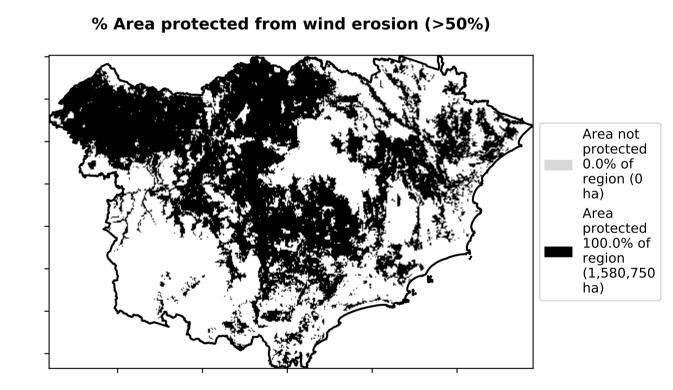


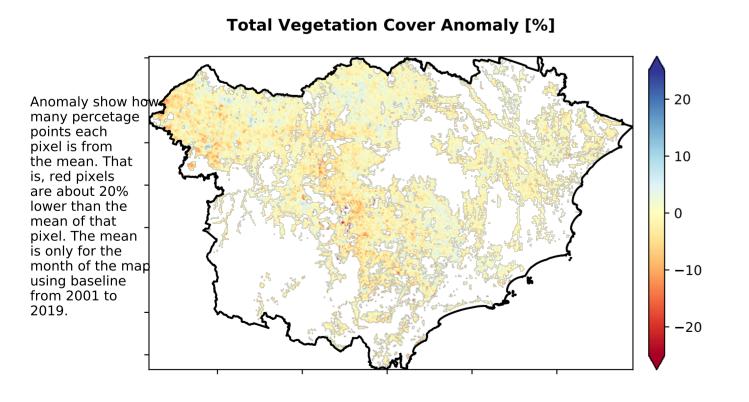




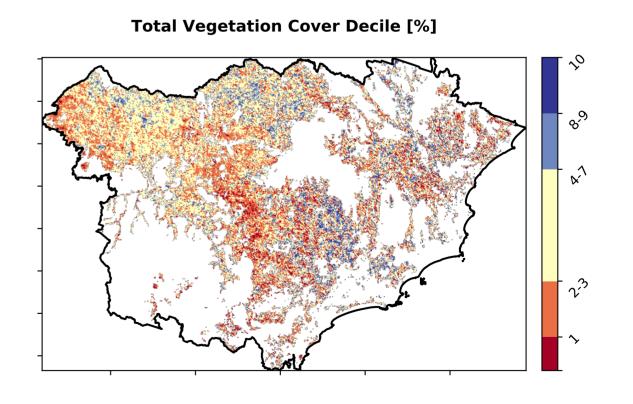








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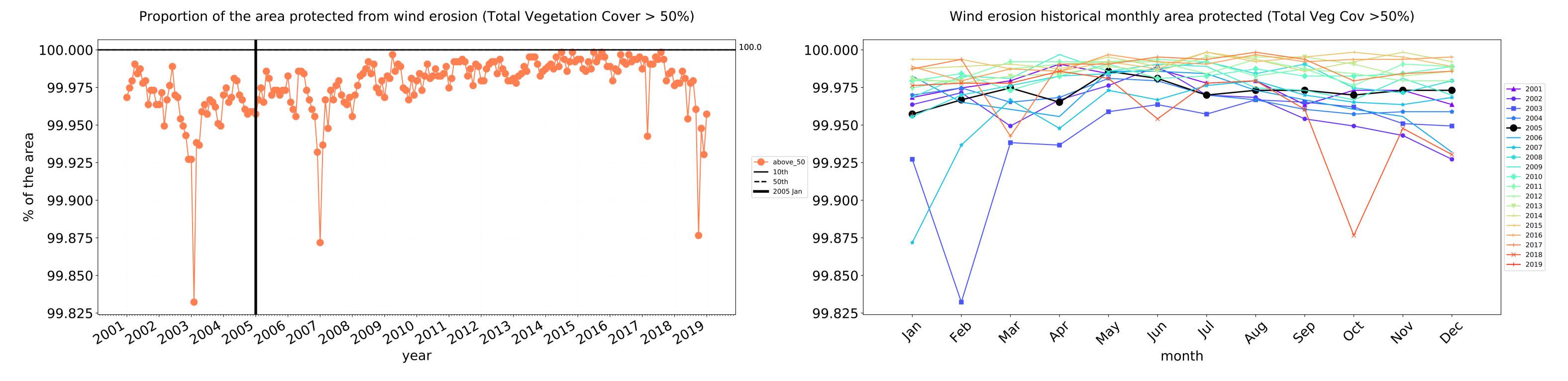


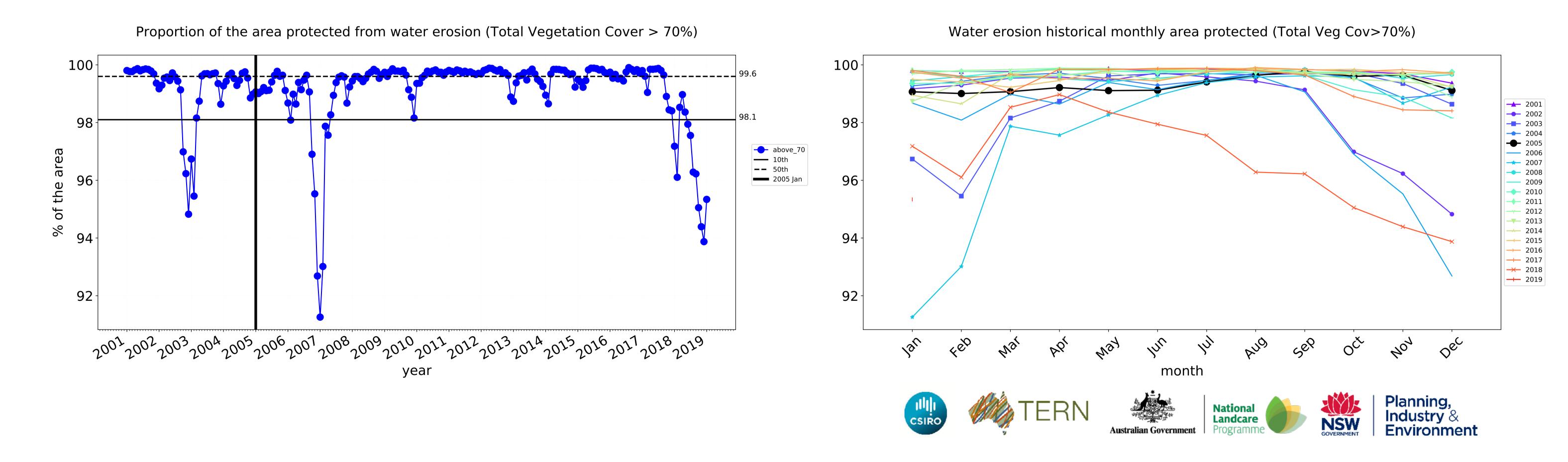


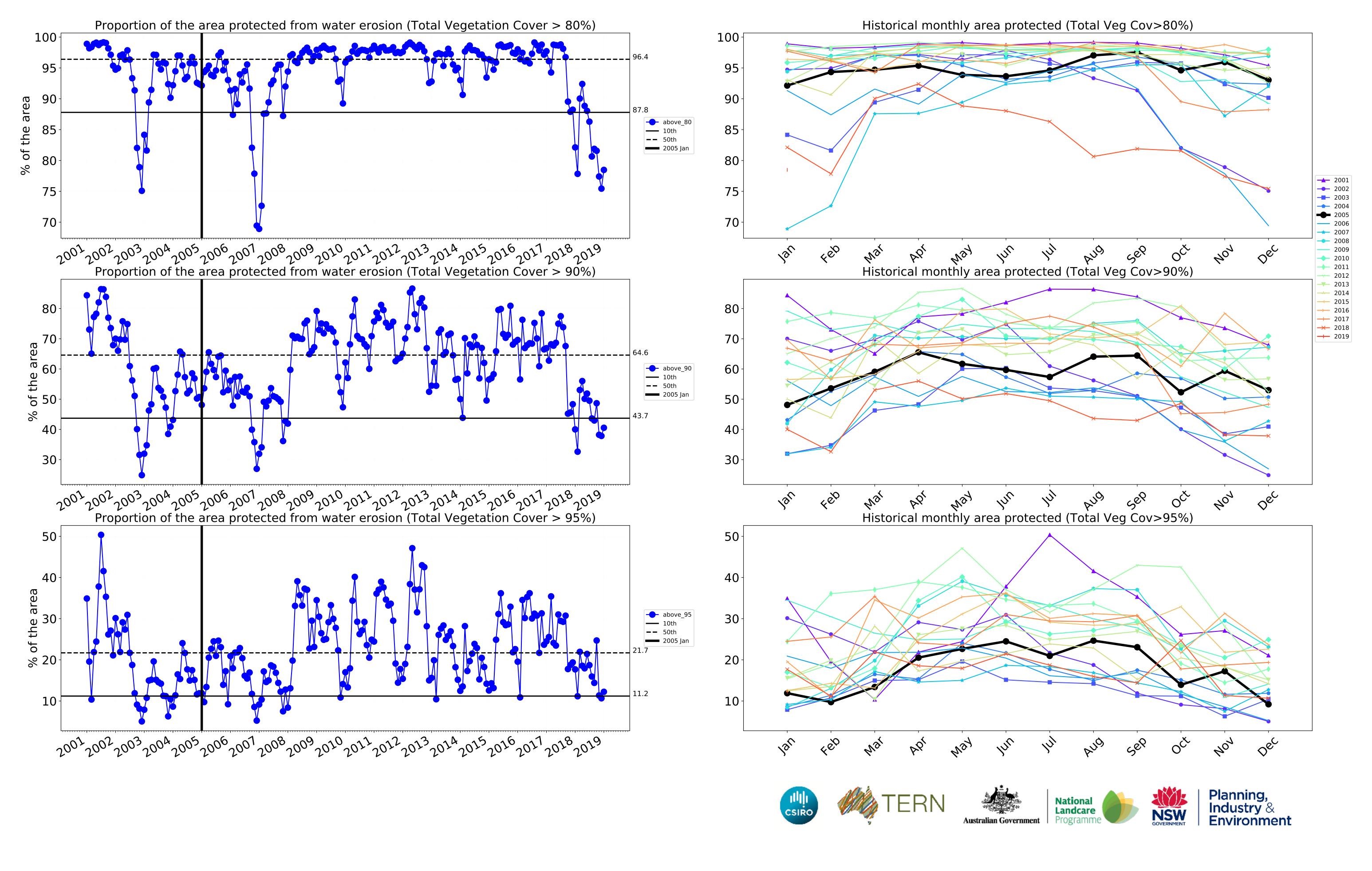




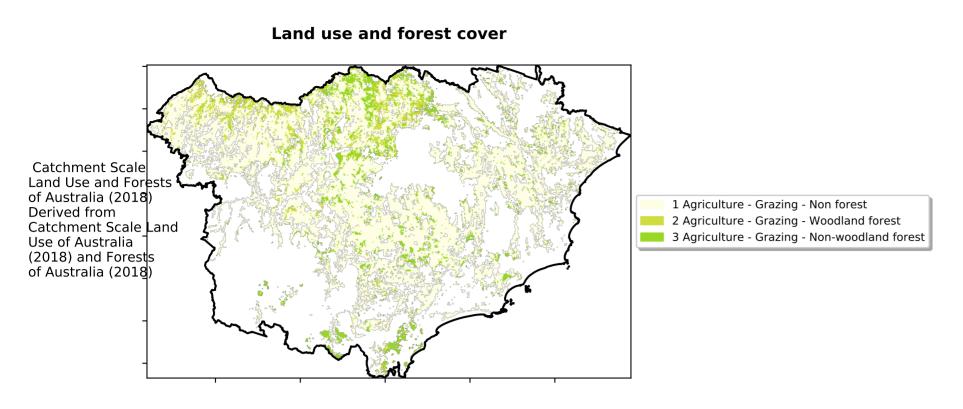
Agriculture timeseries



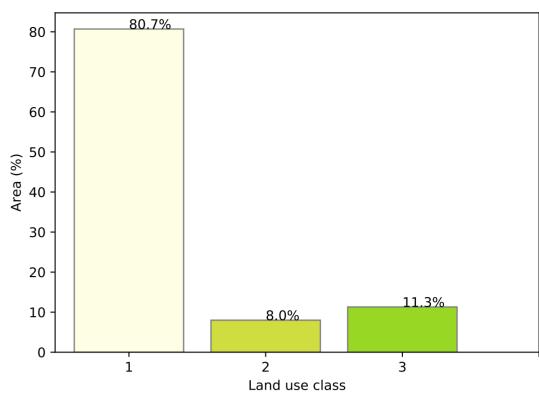




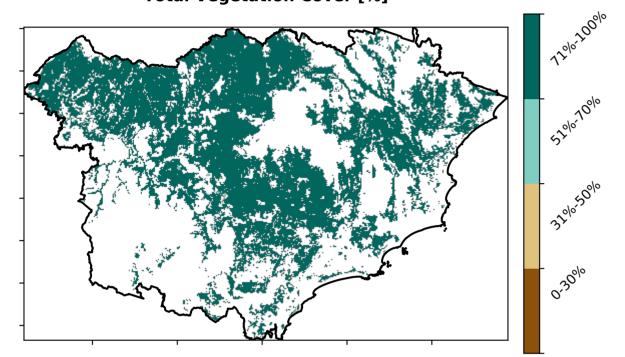
Grazing



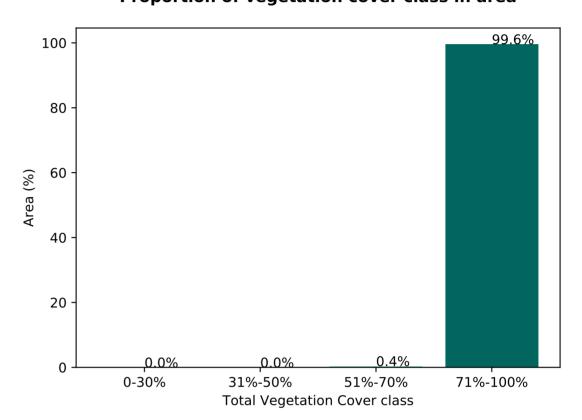
Proportion of each land class in area



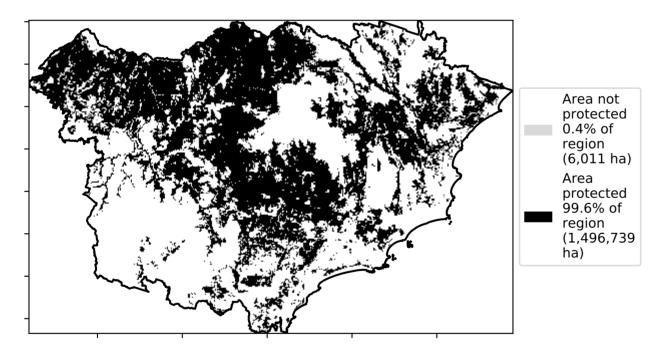
Total Vegetation Cover [%]



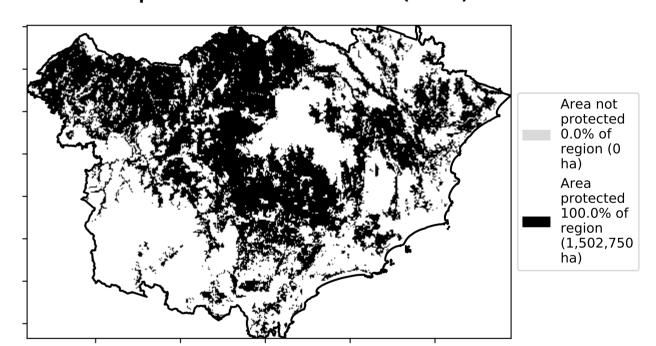
Proportion of vegetation cover class in area



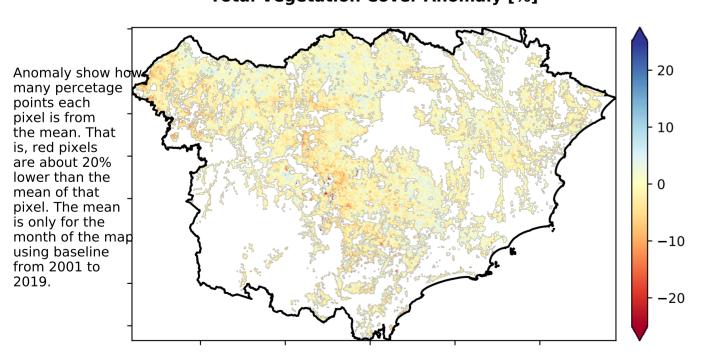
% Area protected from water erosion (>70%)



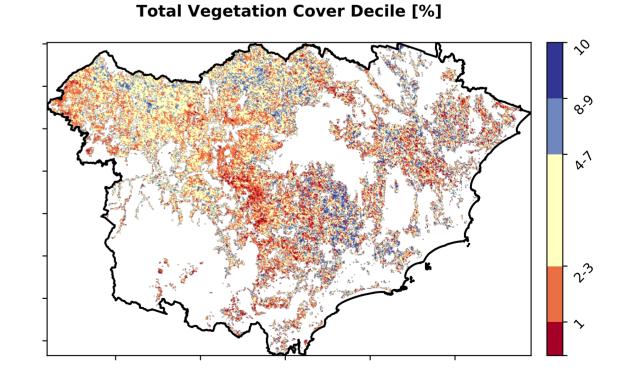
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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.









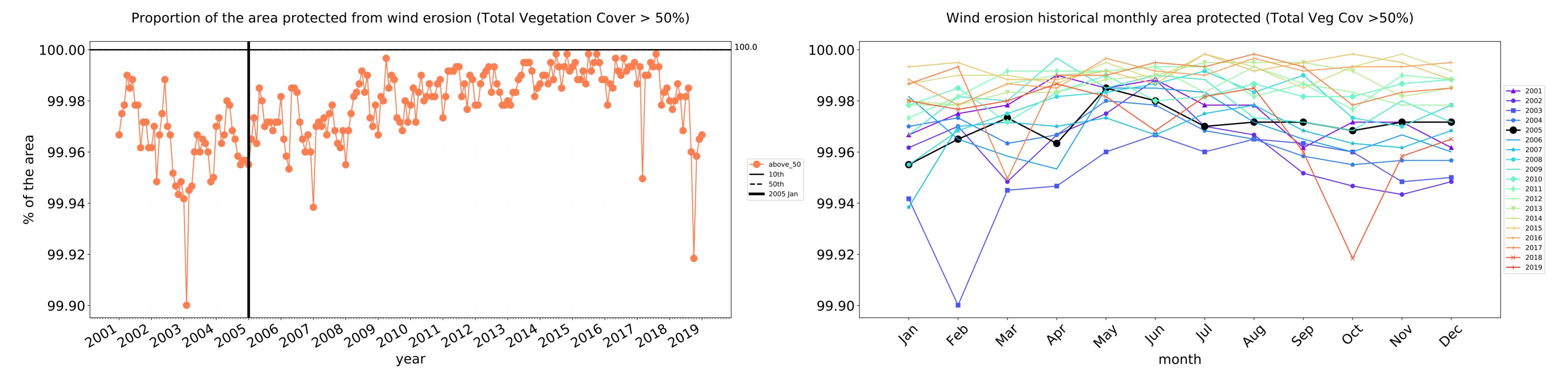


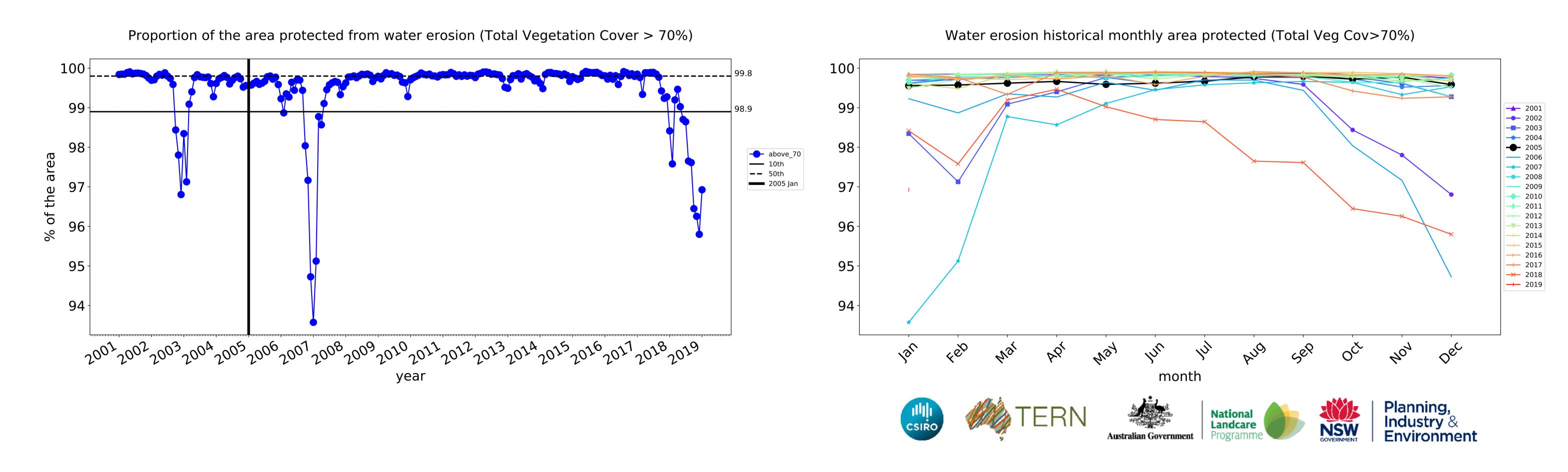


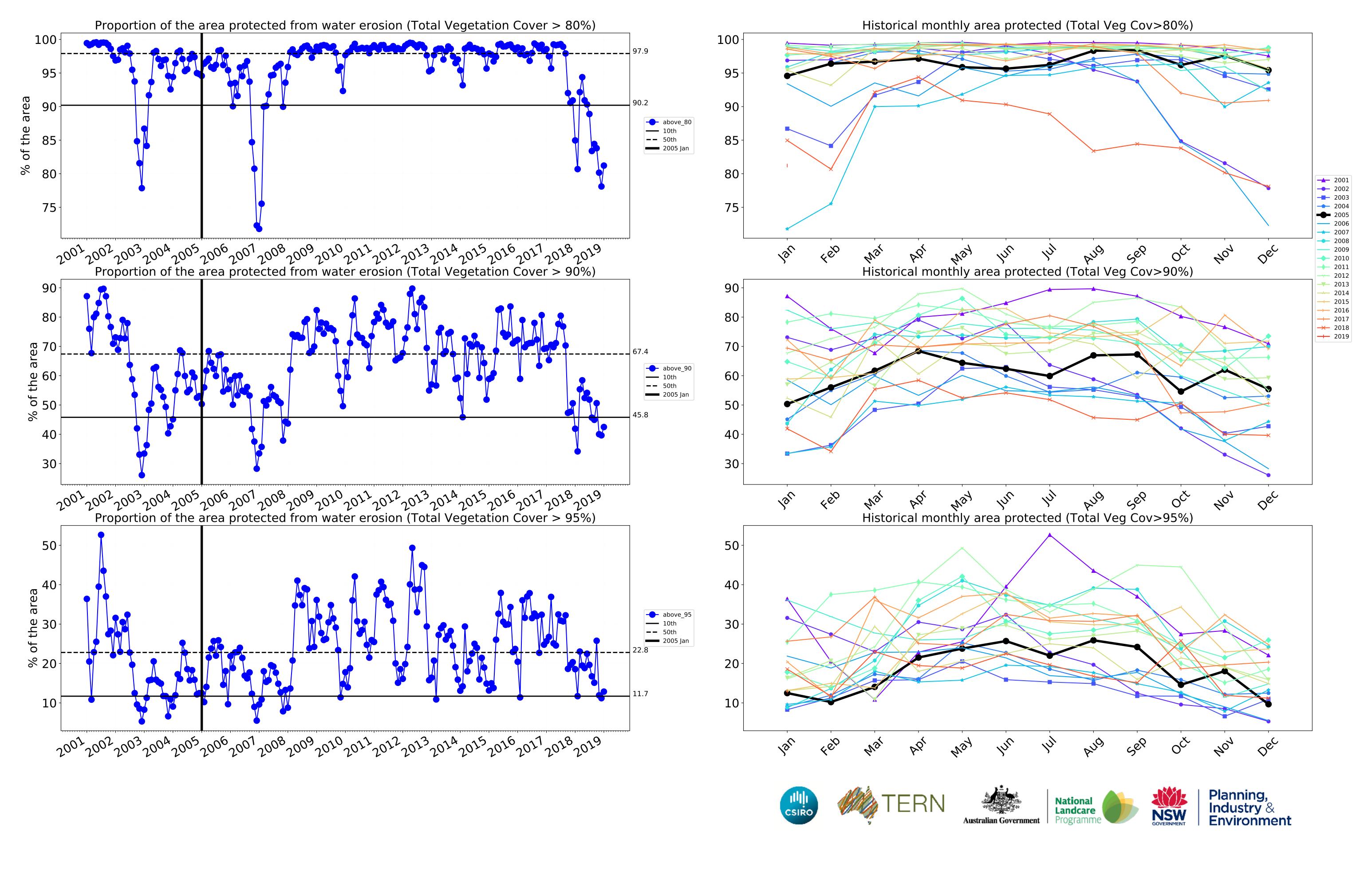




Grazing timeseries

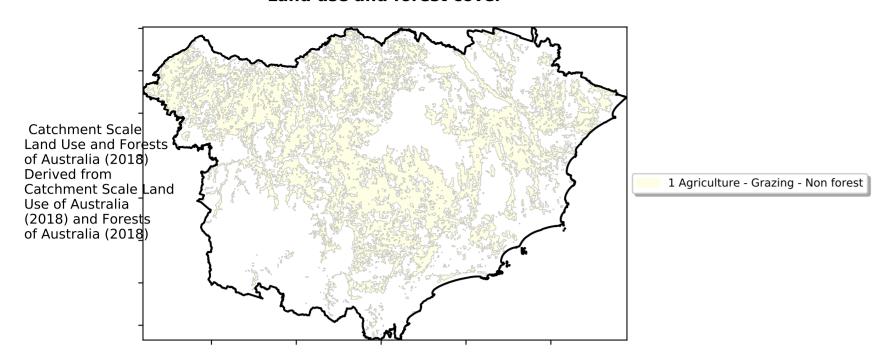




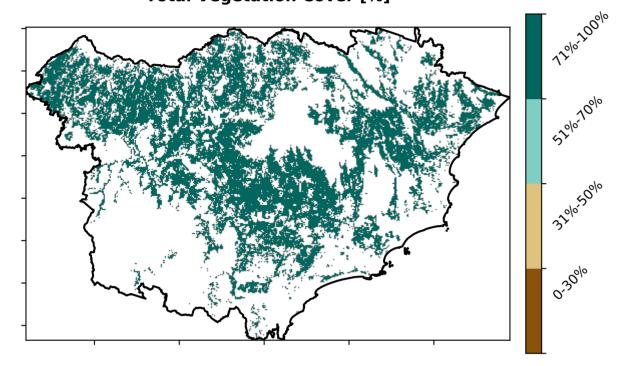


Grazing non forest

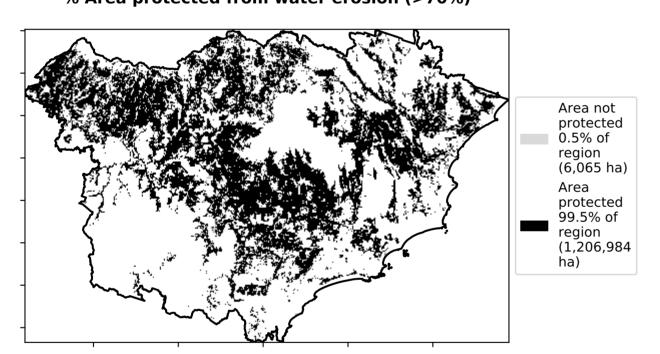
Land use and forest cover



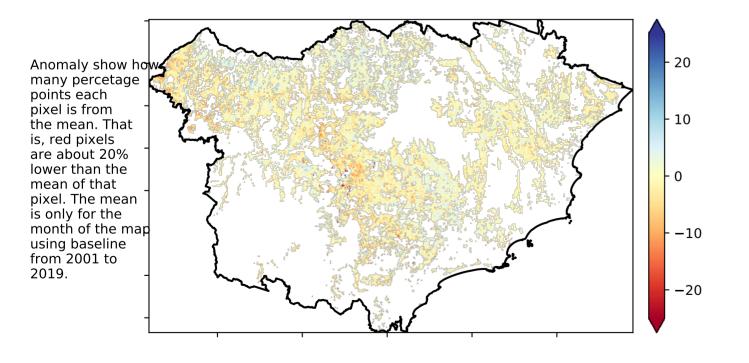
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

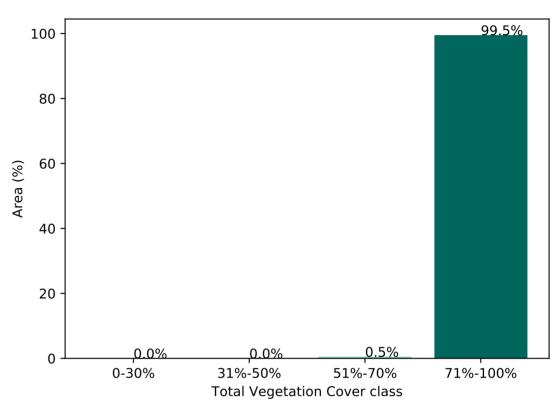


Total Vegetation Cover Anomaly [%]

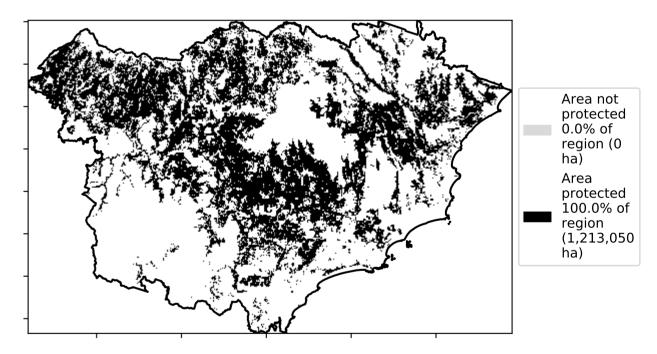


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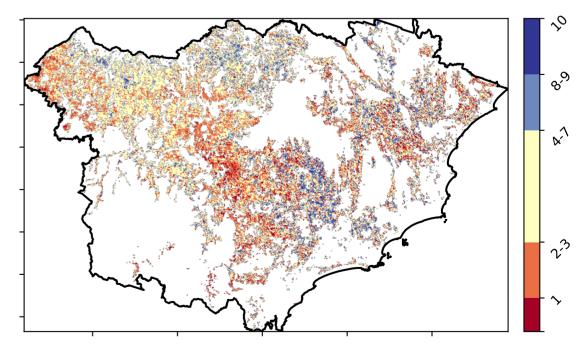
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







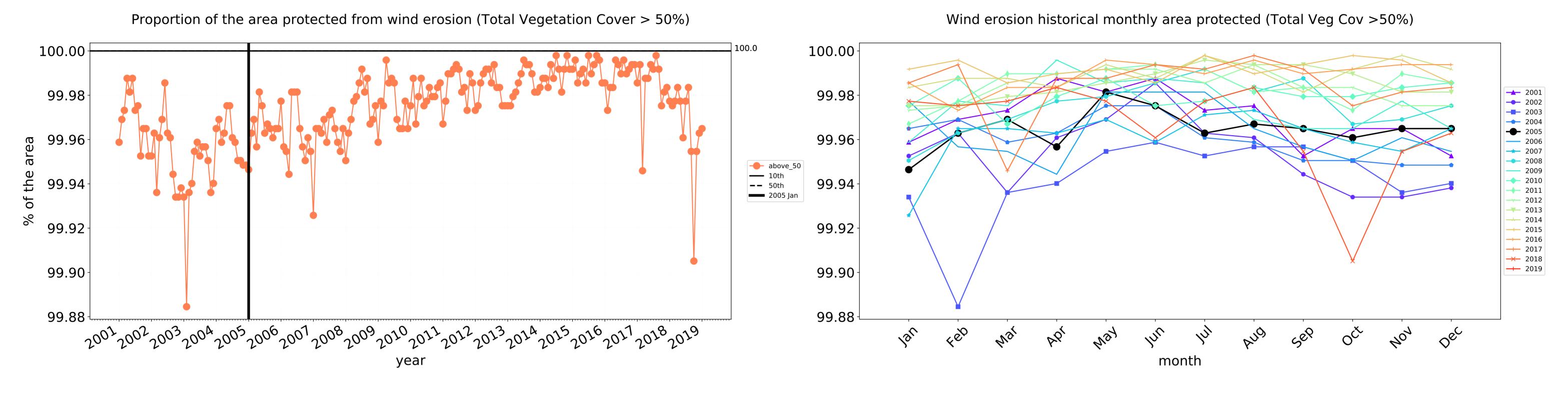


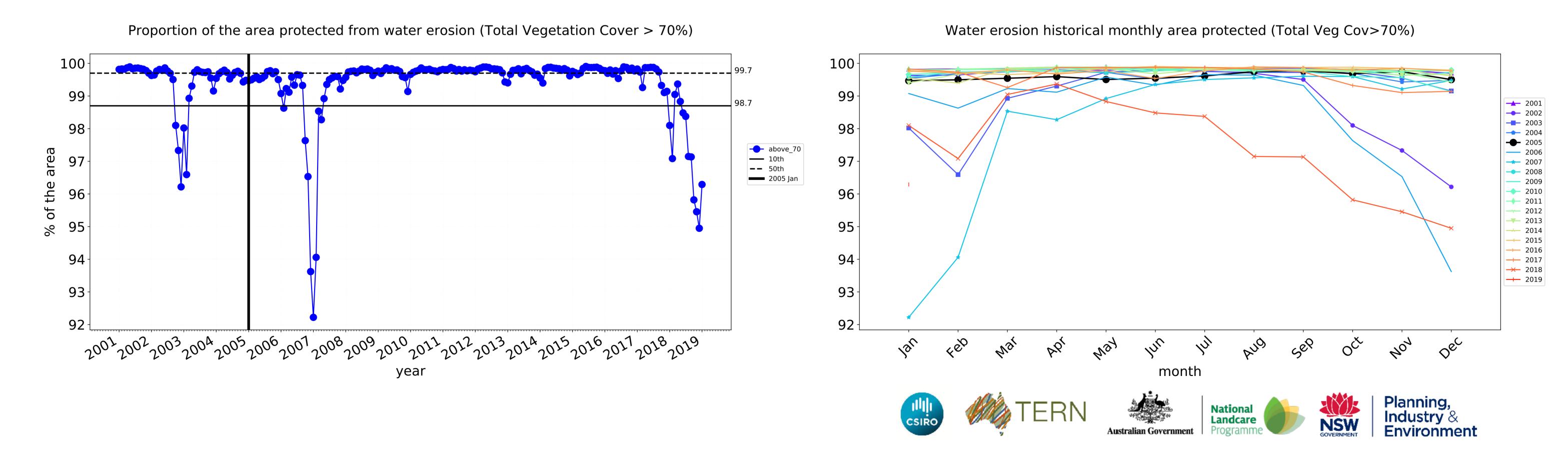


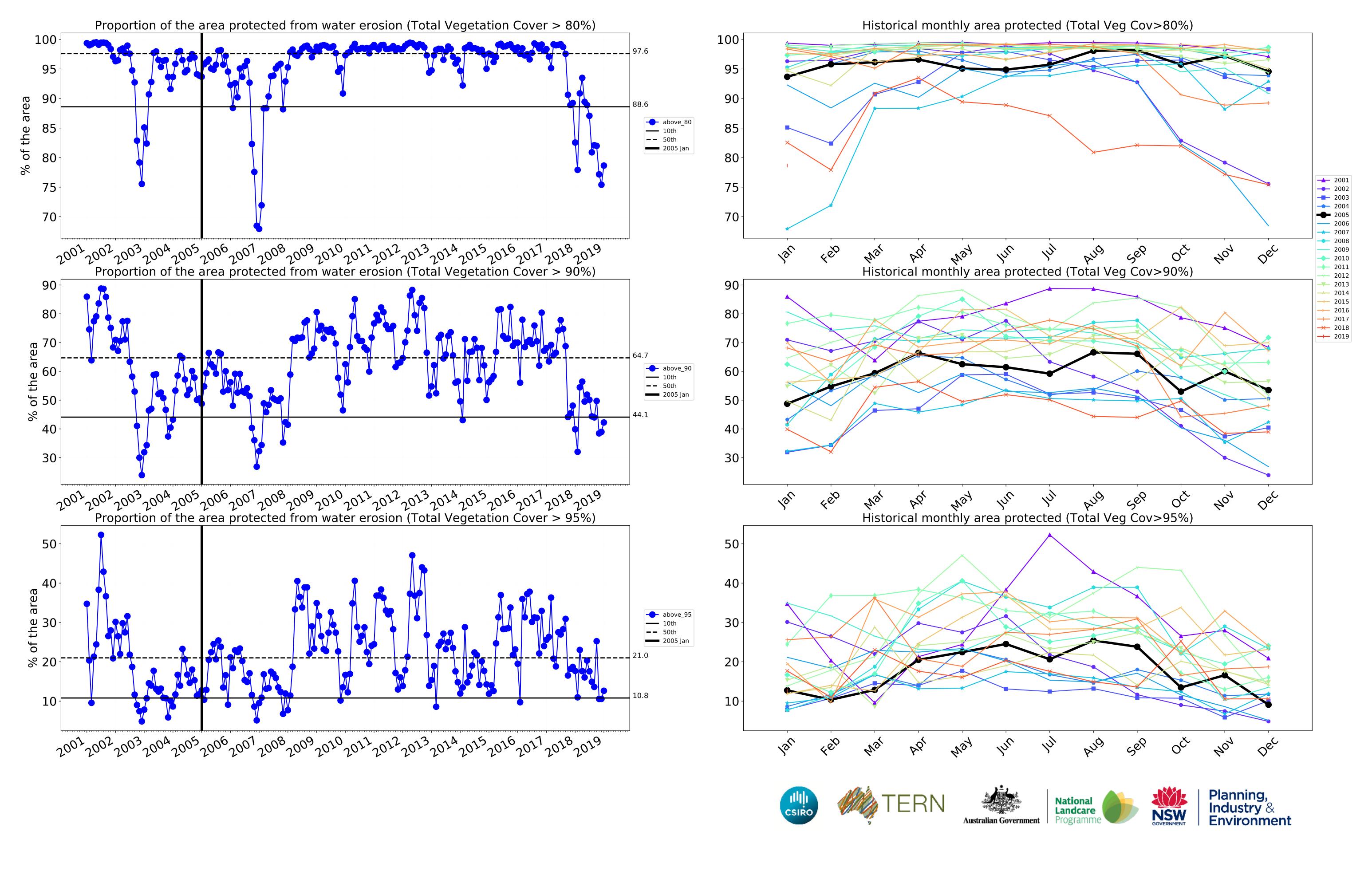




Grazing non forest timeseries





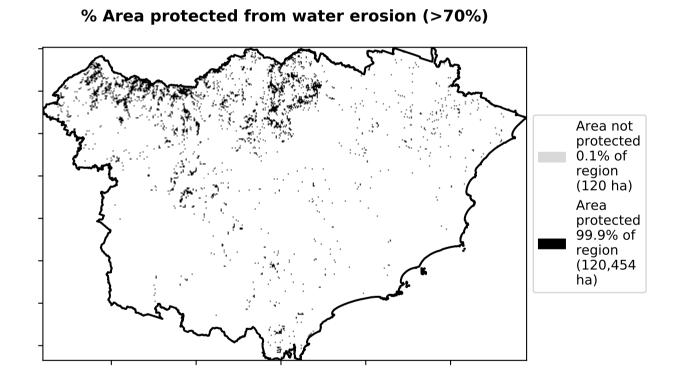


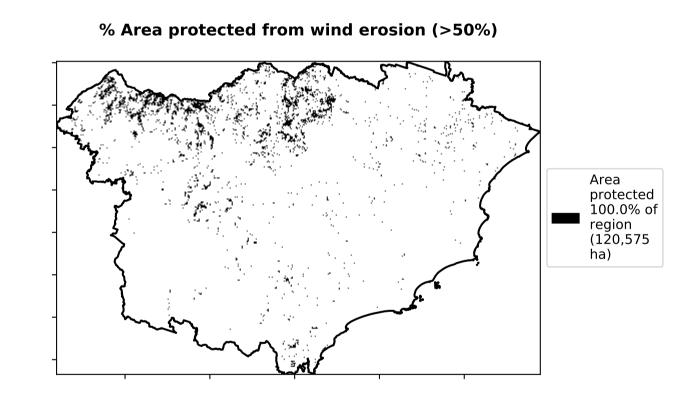
Grazing Woodland forest

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

Total Vegetation Cover [%]

100 80 Area (%) 40 20 -0-30% 31%-50% 51%-70% **Total Vegetation Cover class**



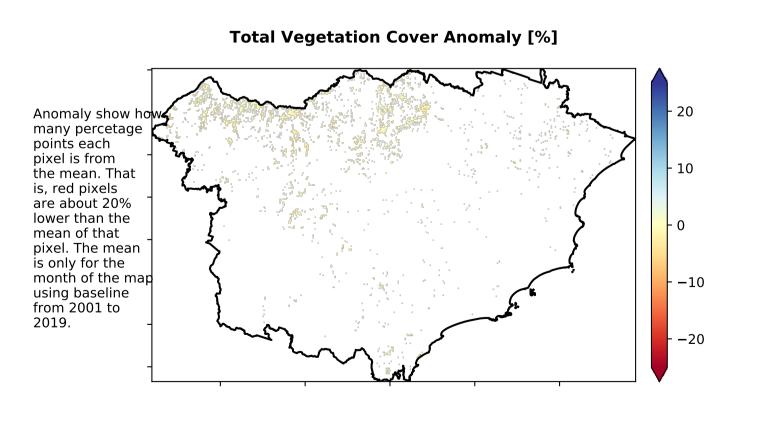


0.1%

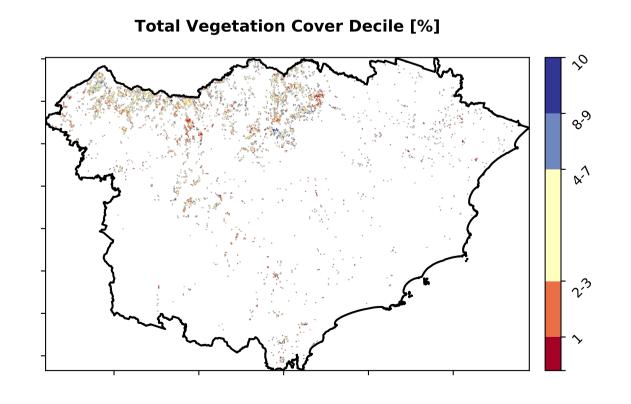
Proportion of vegetation cover class in area

99.9%

71%-100%



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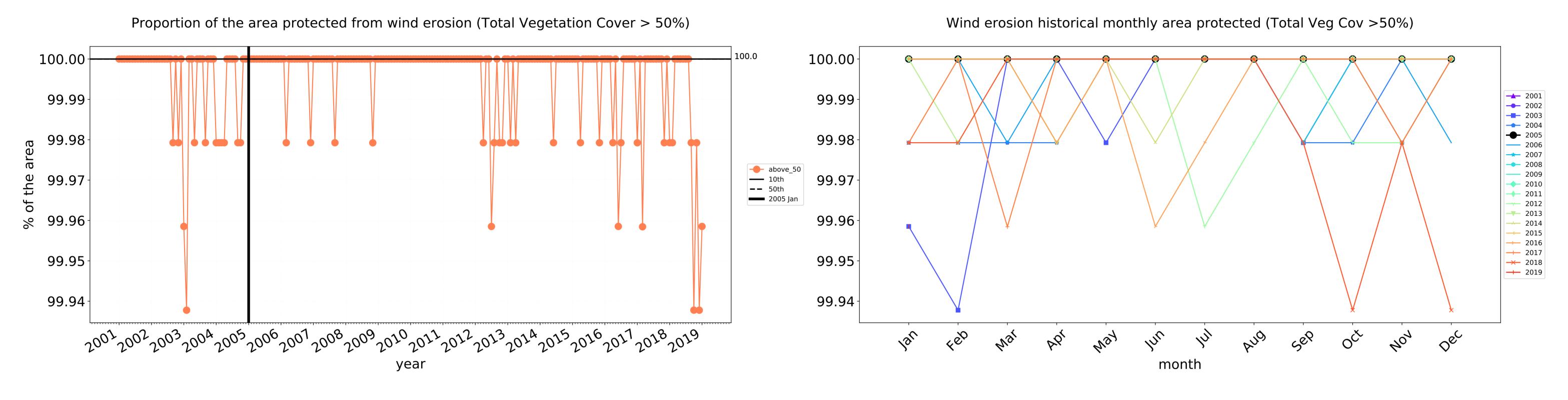


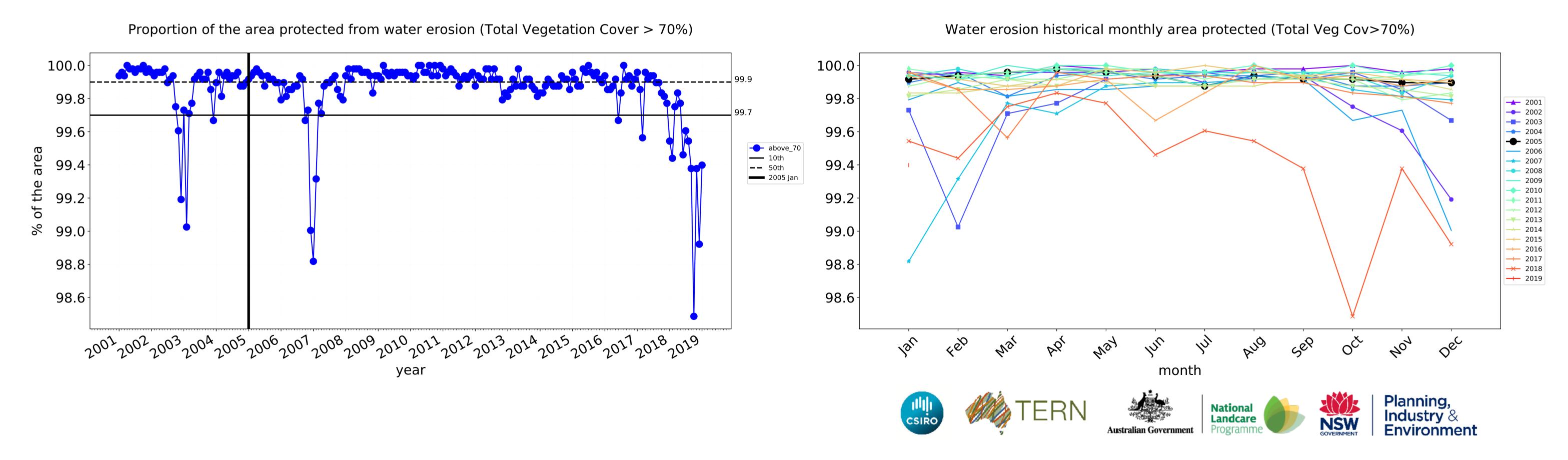


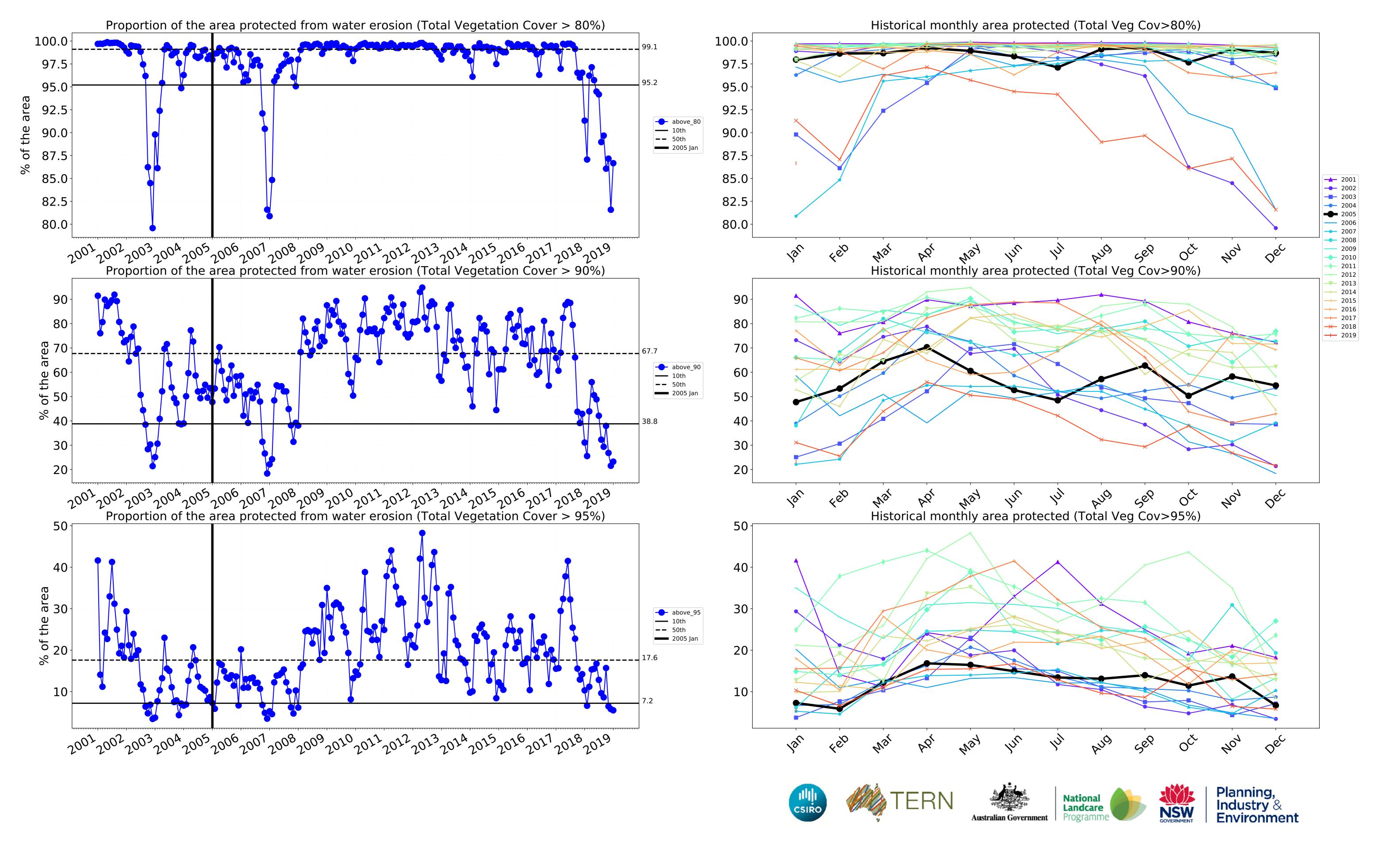




Grazing Woodland forest timeseries



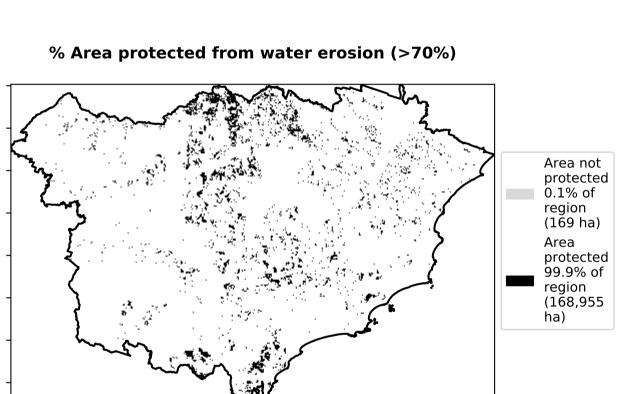


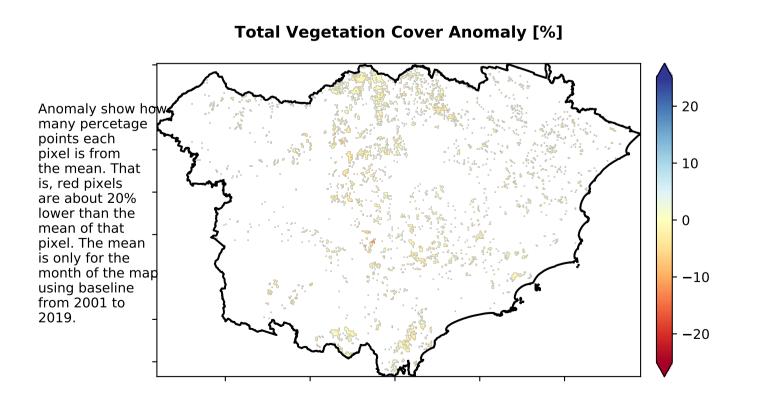


Grazing - Forest (non woodland)

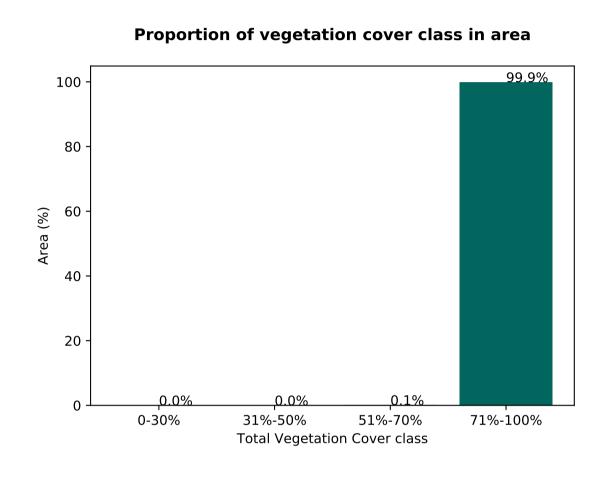
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Agriculture - Grazing - Non-woodland forest Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

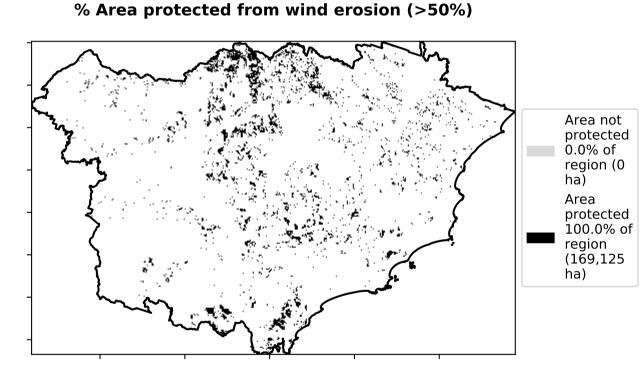
Total Vegetation Cover [%]

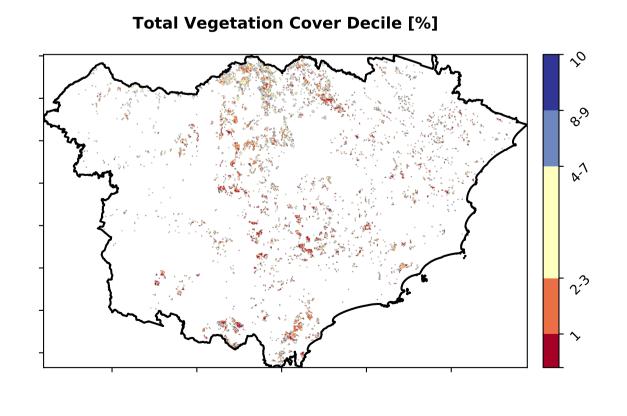




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseling. the map using baseline from 2001 to 2019.









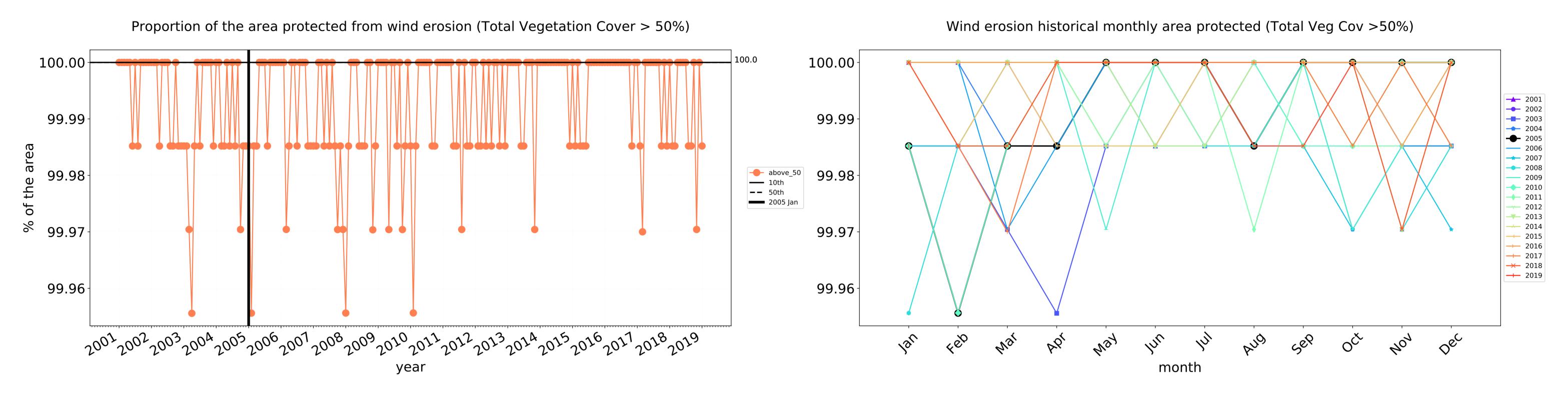


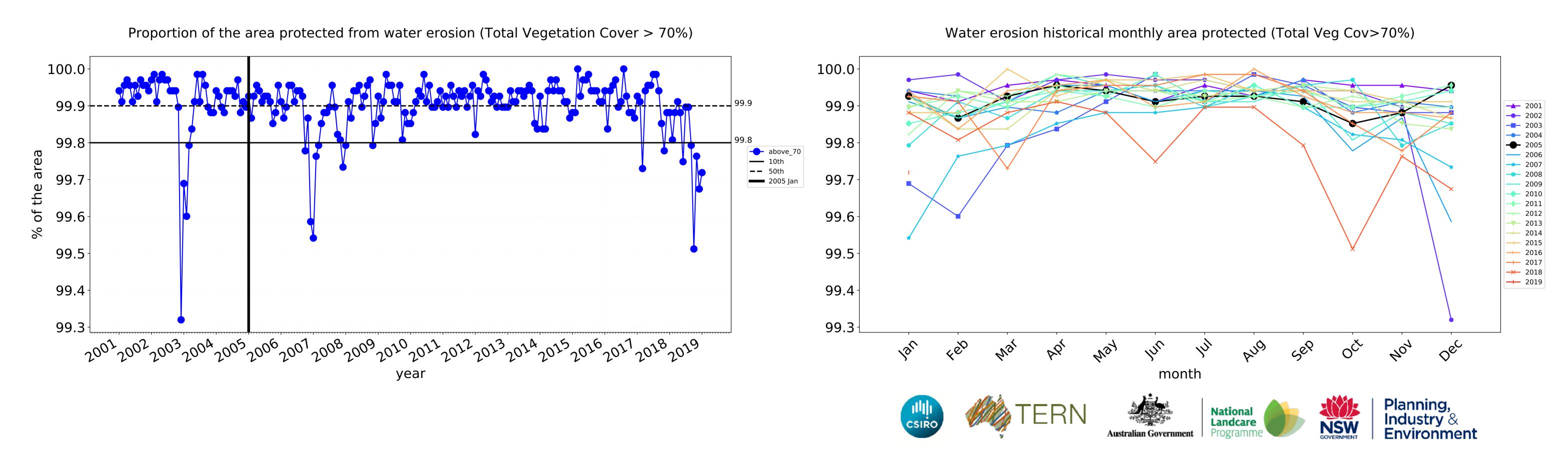


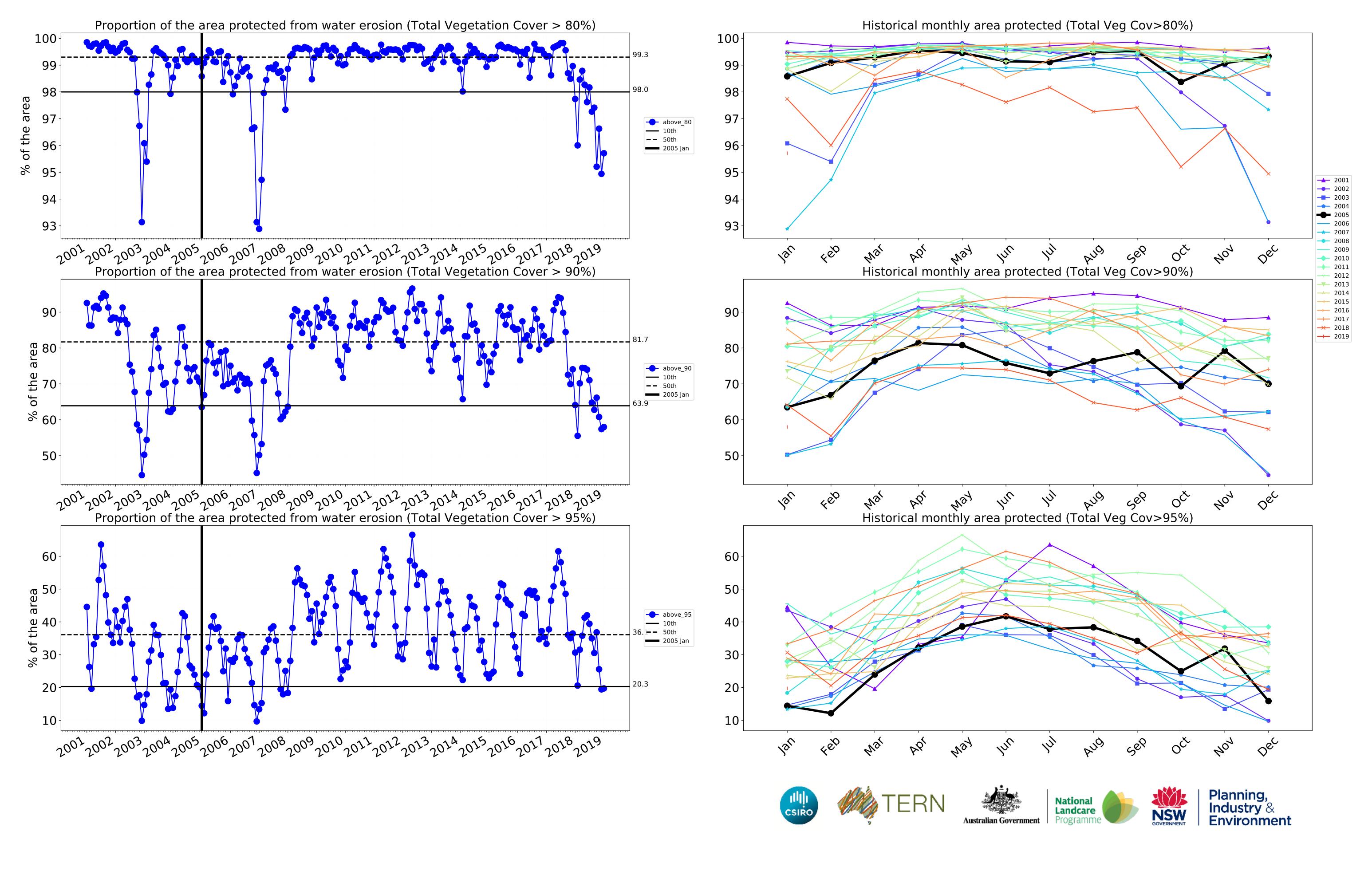






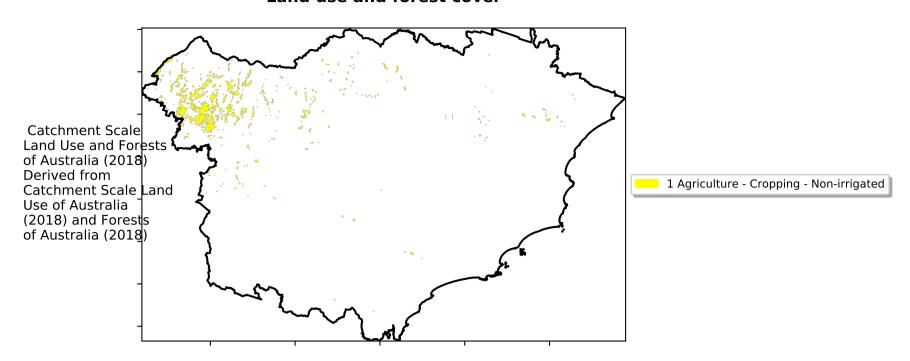




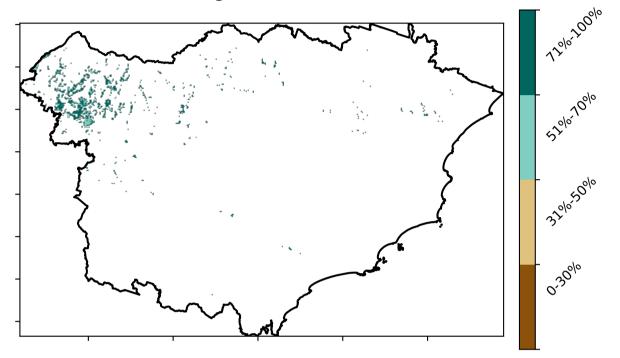


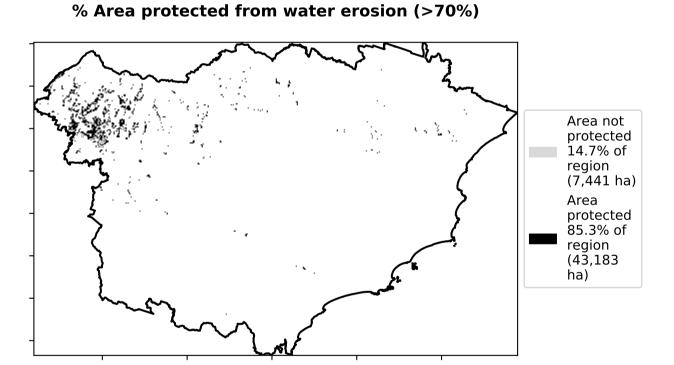
Cropping

Land use and forest cover

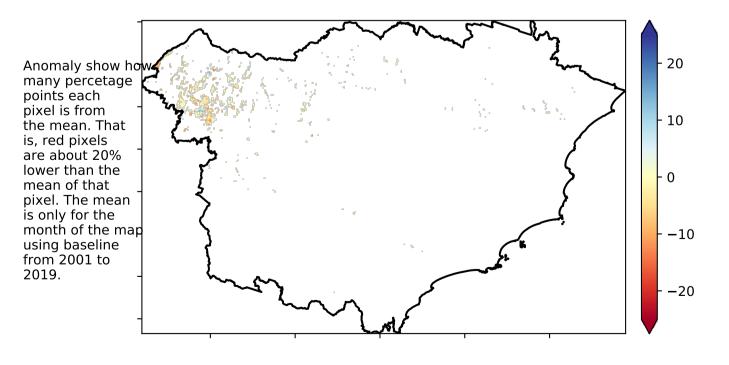


Total Vegetation Cover [%]



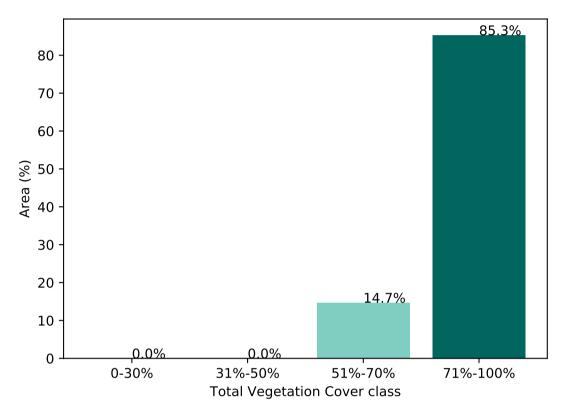


Total Vegetation Cover Anomaly [%]

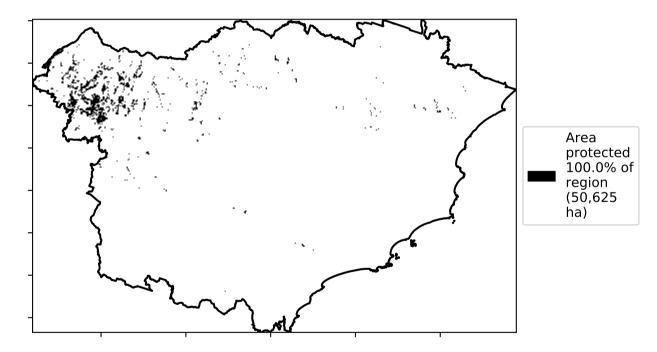


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

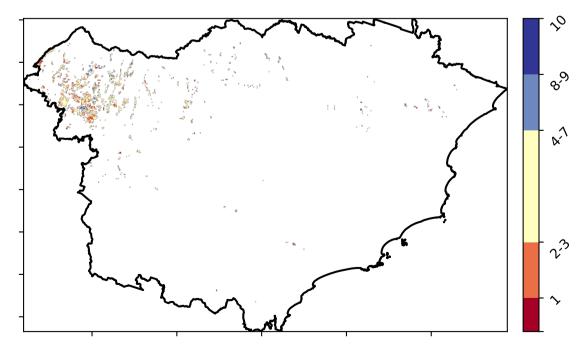
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







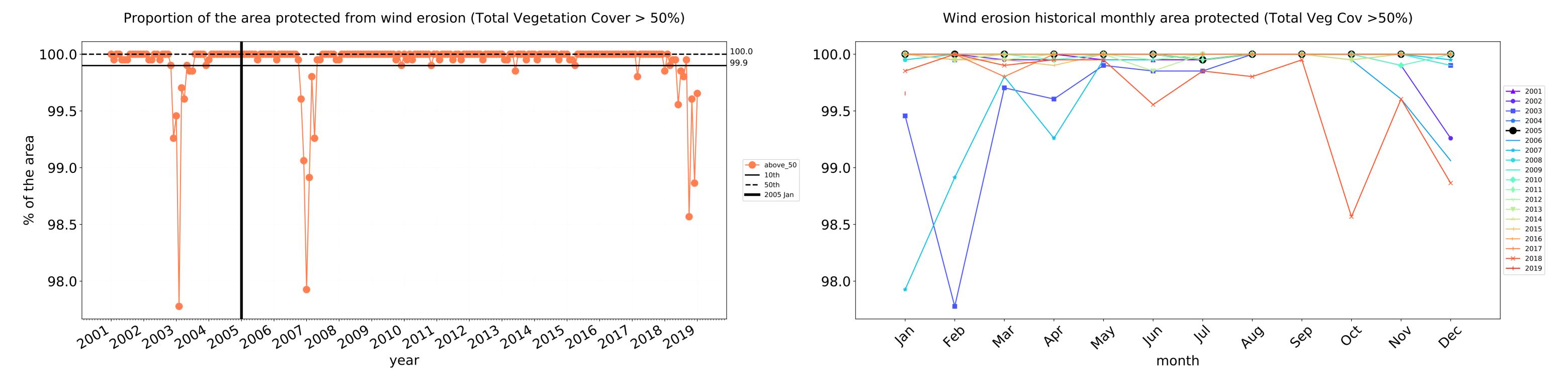


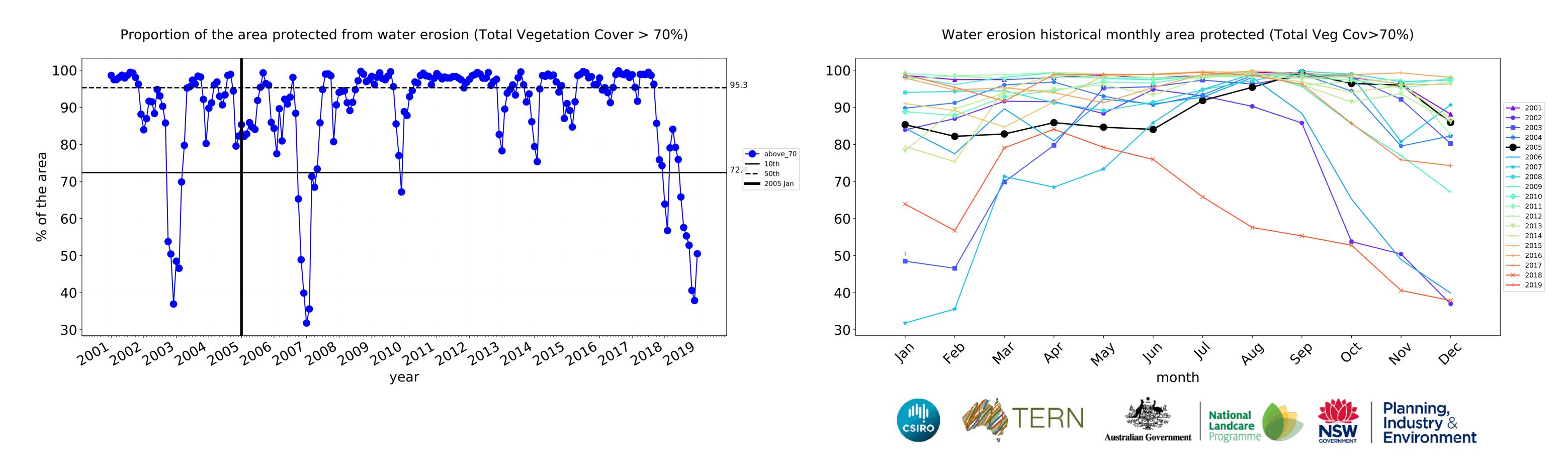


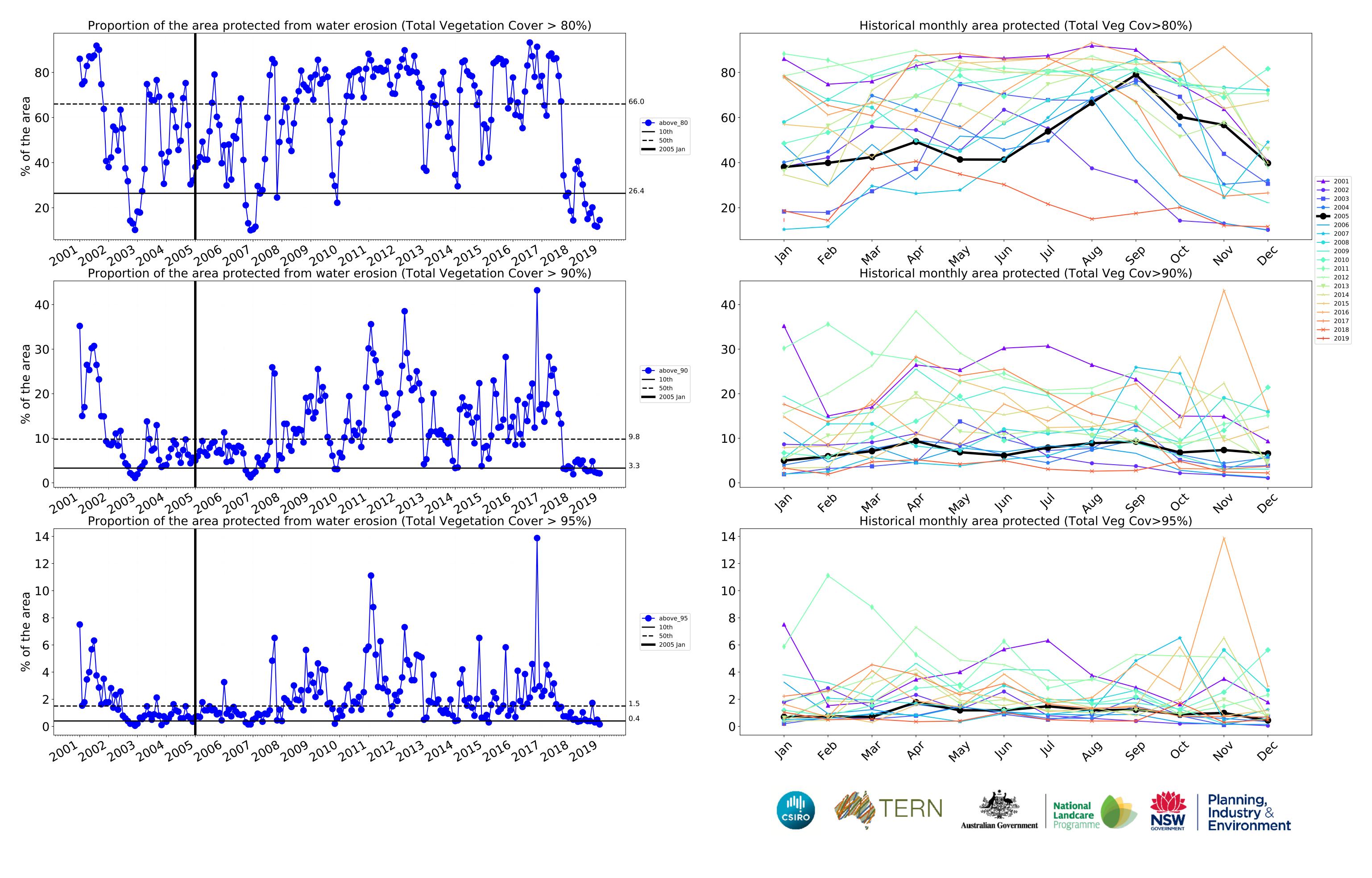




Cropping timeseries





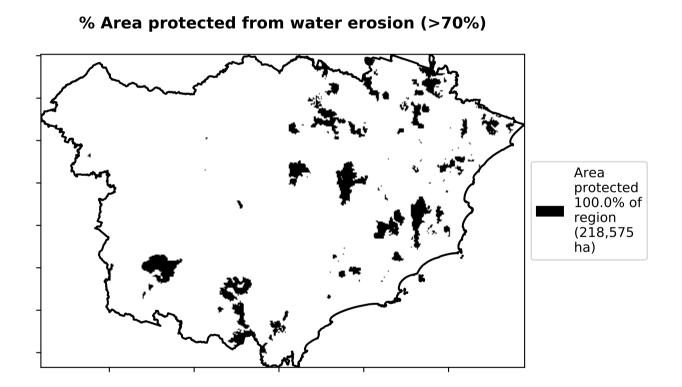


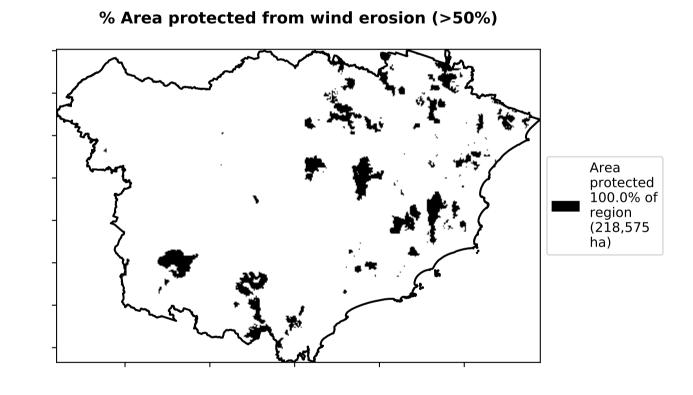
Production native forests and plantation forests

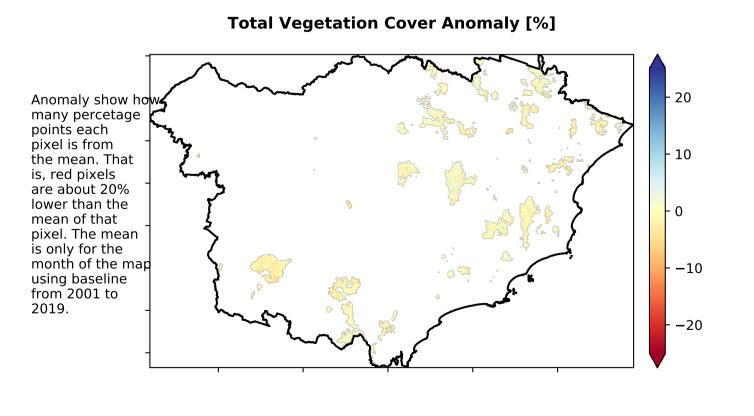
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) 1 Production native forests and plantation forests of Australia (2018)

Total Vegetation Cover [%]

Proportion of vegetation cover class in area 100 - 100.0% 80 - 20 - 20 - 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 map using baseline from 2001 to 2019.

Total Vegetation Cover Decile [%]



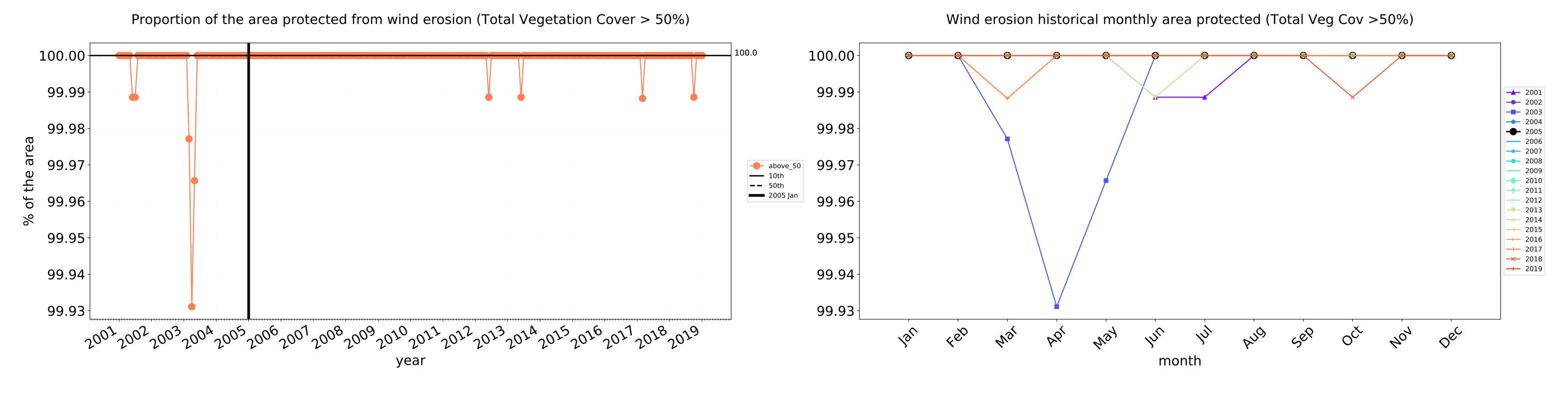


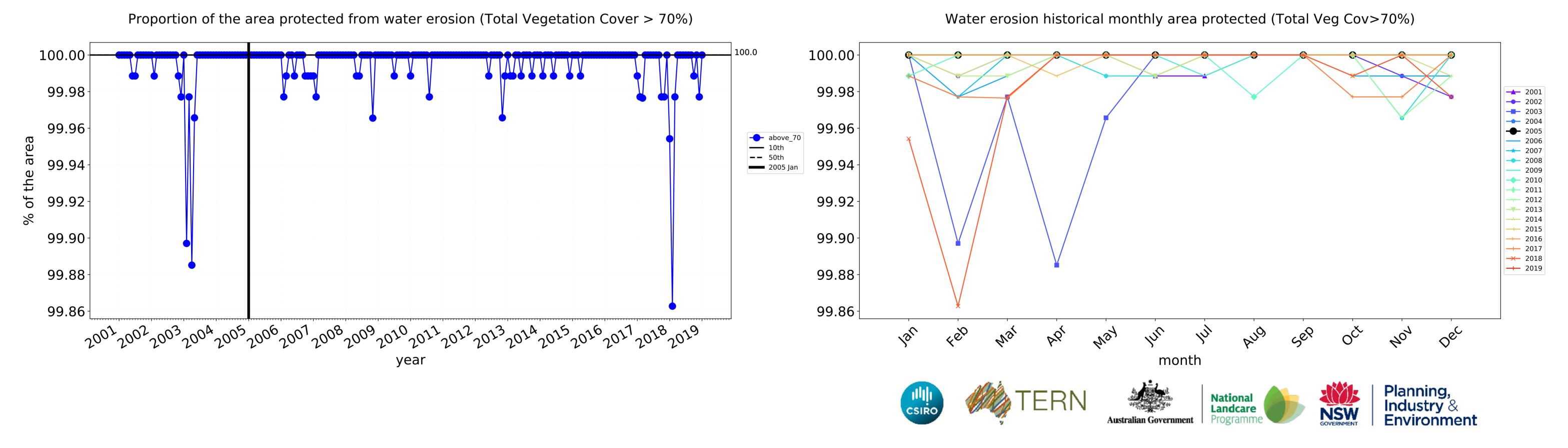


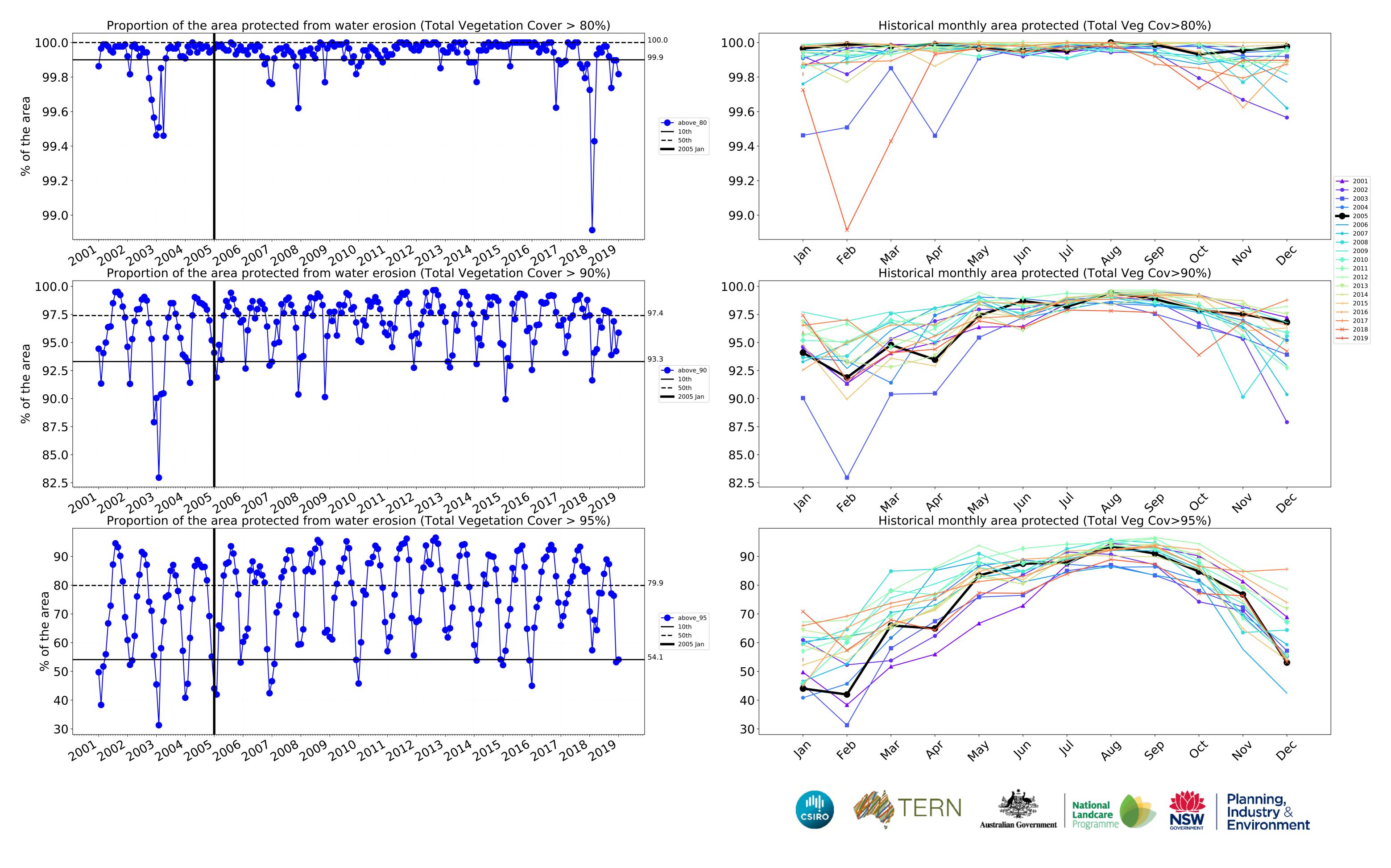




Production native forests and plantation forests timeseries







Hunter (3,238,925 ha and no data 61,500 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	3,238,925	99.9% 3,236,078	99.7% 3,228,688	98.4% 3,186,217	93.4% 3,025,047	61.3% 1,985,521	19.7% 636,789
Conservation and natural environments	1,241,900	99.9% 1,240,775	99.8% 1,239,650	99.6% 1,237,275	99.0% 1,229,725	78.7% 977,300	27.5% 341,225
Conservation and natural environments non forest	30,675	96.7% 29,650	93.5% 28,675	89.3% 27,400	83.9% 25,725	58.7% 18,000	20.3% 6,225
Conservation and natural environments Woodland forest	138,900	100.0% 138,900	100.0% 138,900	99.9% 138,800	99.2% 137,750	66.1% 91,775	18.6% 25,900
Conservation and natural environments Forest (non woodland)	1,072,325	100.0% 1,072,225	100.0% 1,072,075	99.9% 1,071,075	99.4% 1,066,250	80.9% 867,525	28.8% 309,100
Agriculture	1,580,750	100.0% 1,580,625	100.0% 1,580,075	99.1% 1,566,000	92.1% 1,456,600	48.1% 760,450	11.9% 188,250
Grazing	1,502,750	100.0% 1,502,625	100.0% 1,502,075	99.6% 1,496,075	94.6% 1,421,175	50.3% 756,400	12.5% 187,750
Grazing non forest	1,213,050	100.0% 1,212,925	99.9% 1,212,400	99.5% 1,206,600	93.7% 1,136,325	48.8% 591,450	12.7% 154,600
Grazing Woodland forest	120,575	100.0% 120,575	100.0% 120,575	99.9% 120,475	98.0% 118,125	47.7% 57,550	7.3% 8,750
Grazing - Forest (non woodland)	169,125	100.0% 169,125	100.0% 169,100	99.9% 169,000	98.6% 166,725	63.5% 107,400	14.4% 24,400
Cropping	50,625	100.0% 50,625	100.0% 50,625	85.3% 43,200	38.1% 19,275	5.0% 2,525	0.7% 350
Production native forests and plantation forests	218,575	100.0% 218,575	100.0% 218,575	100.0% 218,575	100.0% 218,500	94.1% 205,650	44.0% 96,250











