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: June 2014

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













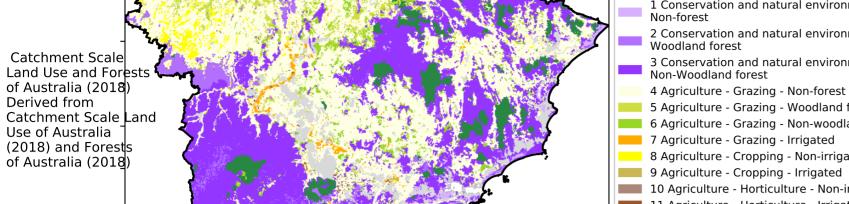
Vegetation Cover Jun 2014

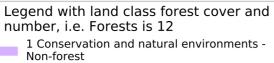
35

30 -

25

Land use and forest cover number, i.e. Forests is 12





2 Conservation and natural environments -

3 Conservation and natural environments -Non-Woodland forest 4 Agriculture - Grazing - Non-forest

5 Agriculture - Grazing - Woodland forest 6 Agriculture - Grazing - Non-woodland forest 7 Agriculture - Grazing - Irrigated 8 Agriculture - Cropping - Non-irrigated

10 Agriculture - Horticulture - Non-irrigated 11 Agriculture - Horticulture - Irrigated 12 Production native forests and plantation

13 Other uses

20 15 10

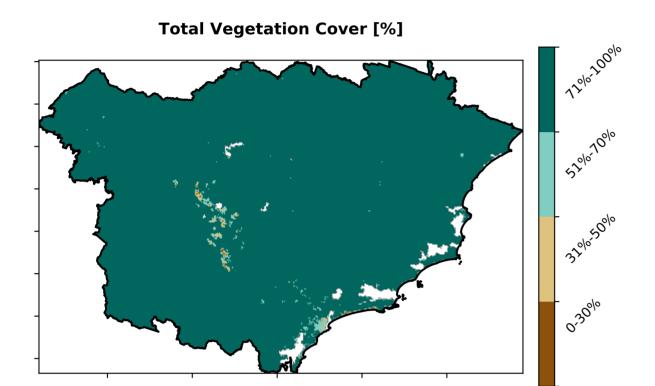
36.9%

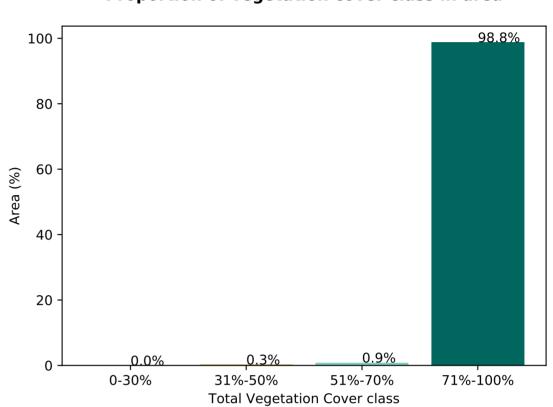
Proportion of vegetation cover class in area

Land use class

10 11 12 13

Proportion of each land class in area

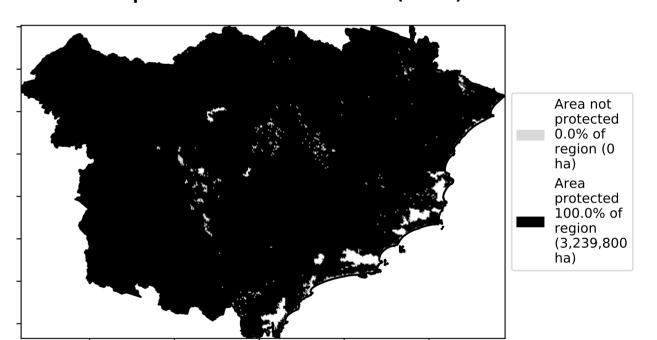




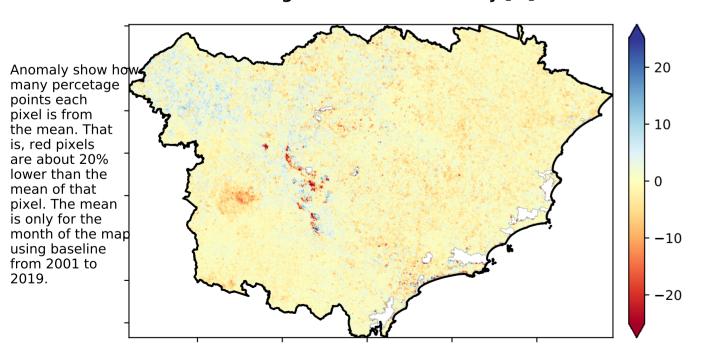
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

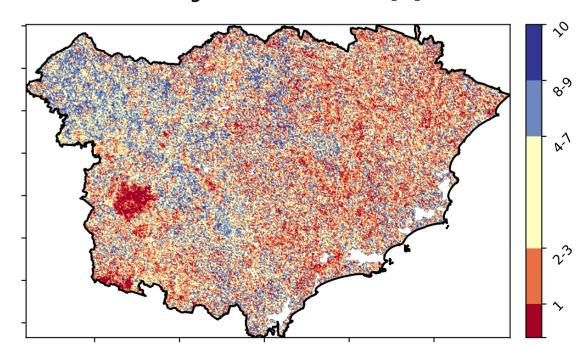


Total Vegetation Cover Anomaly [%]



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Total Vegetation Cover Decile [%]





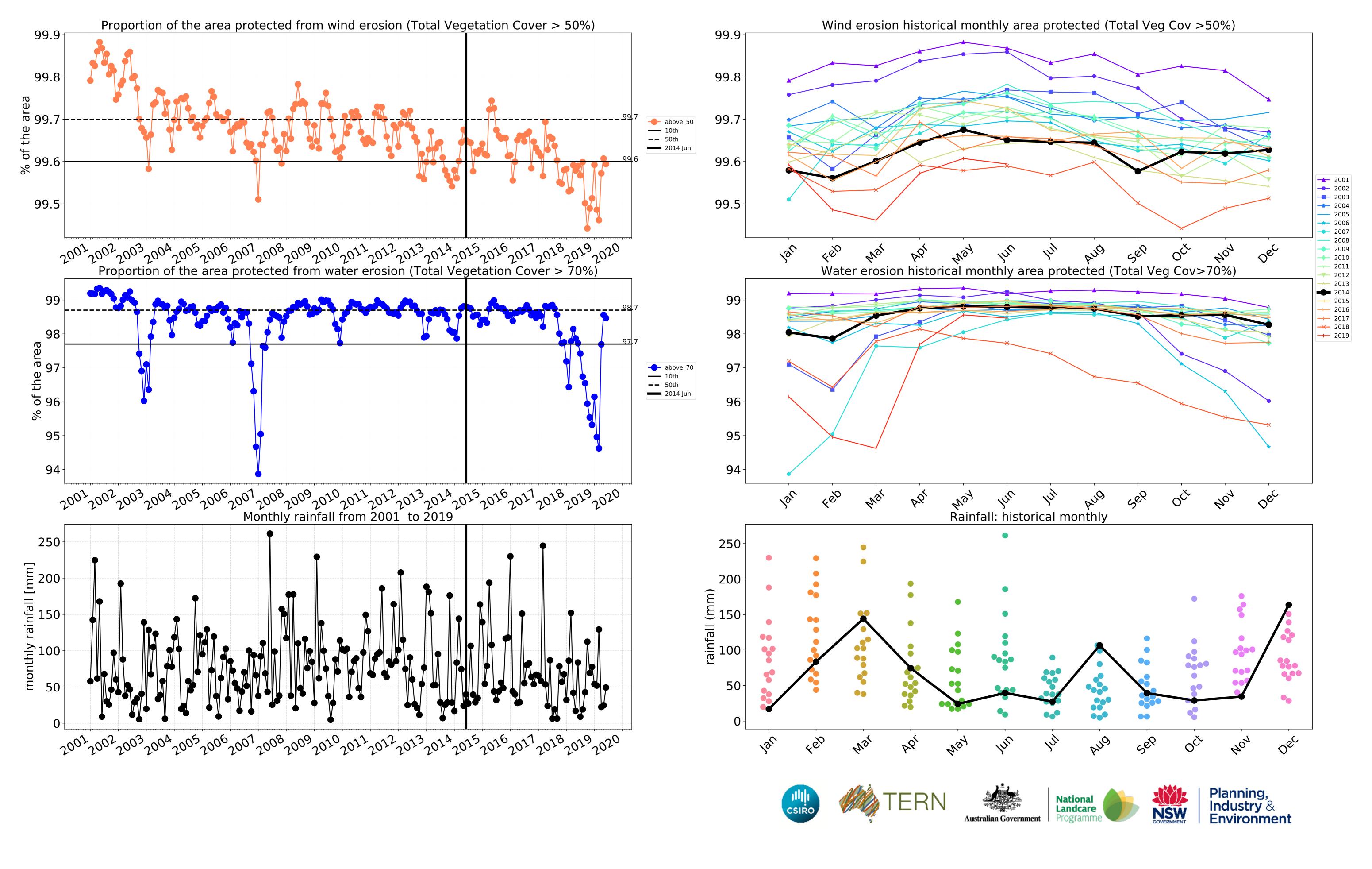


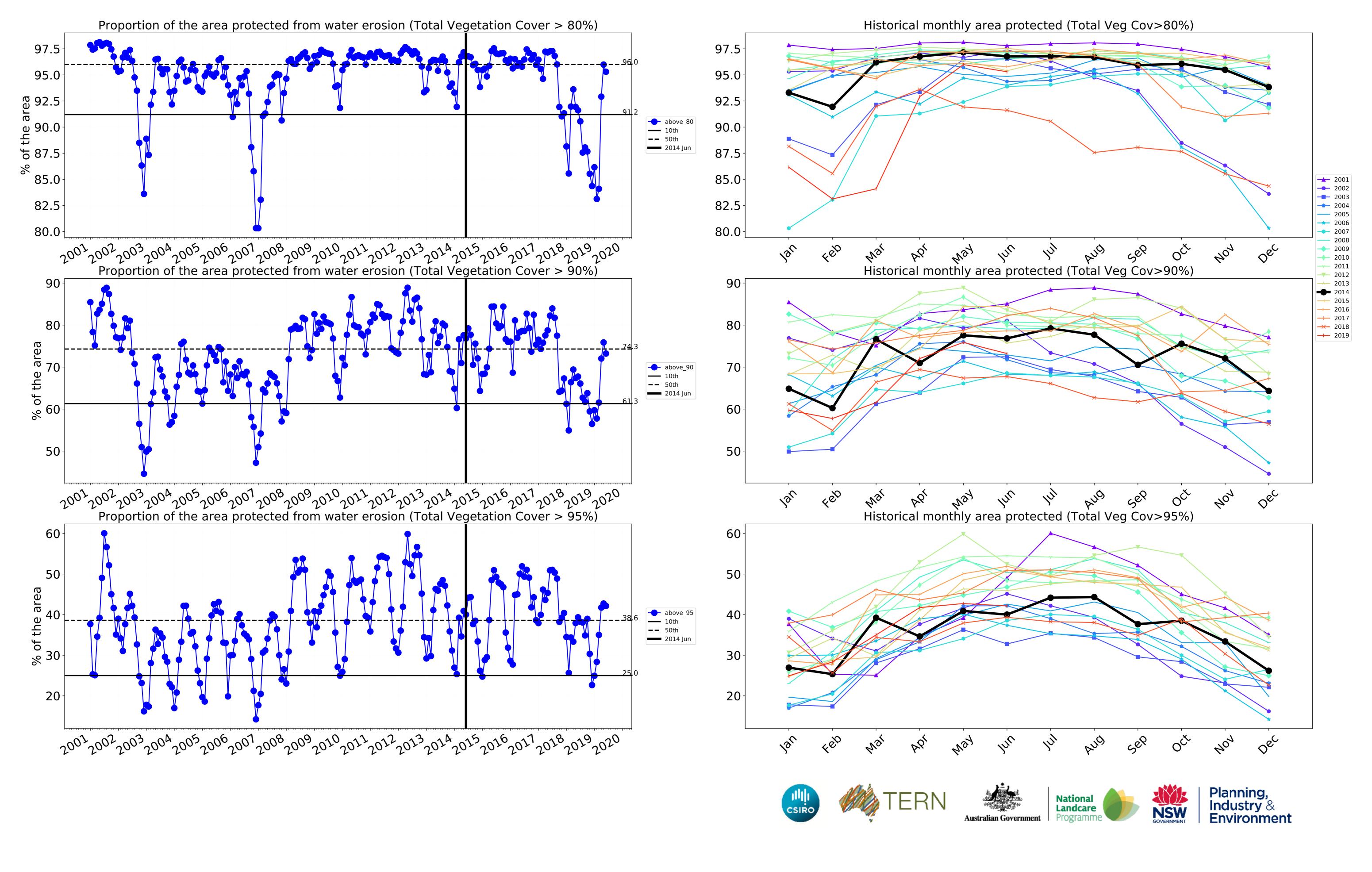






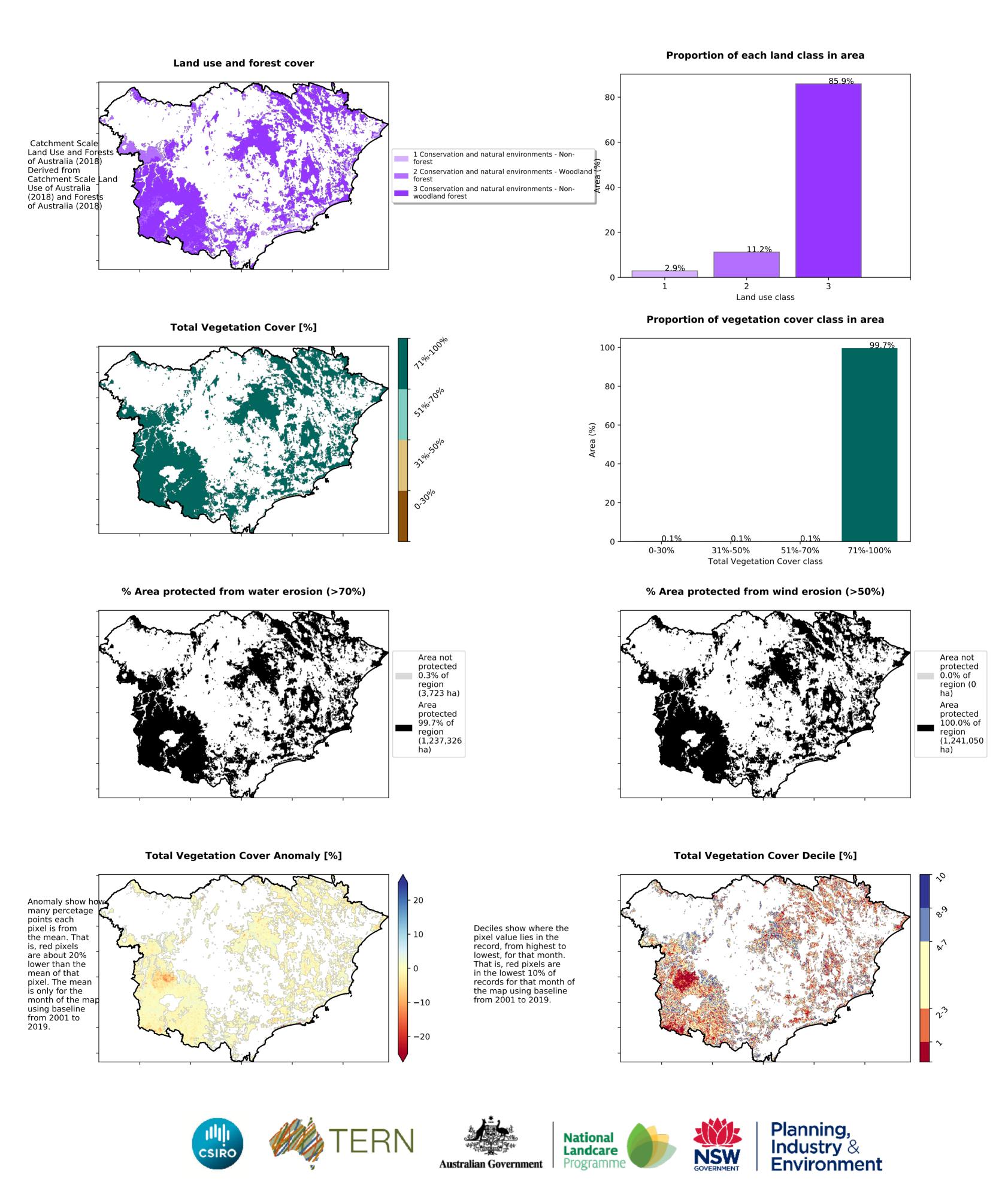




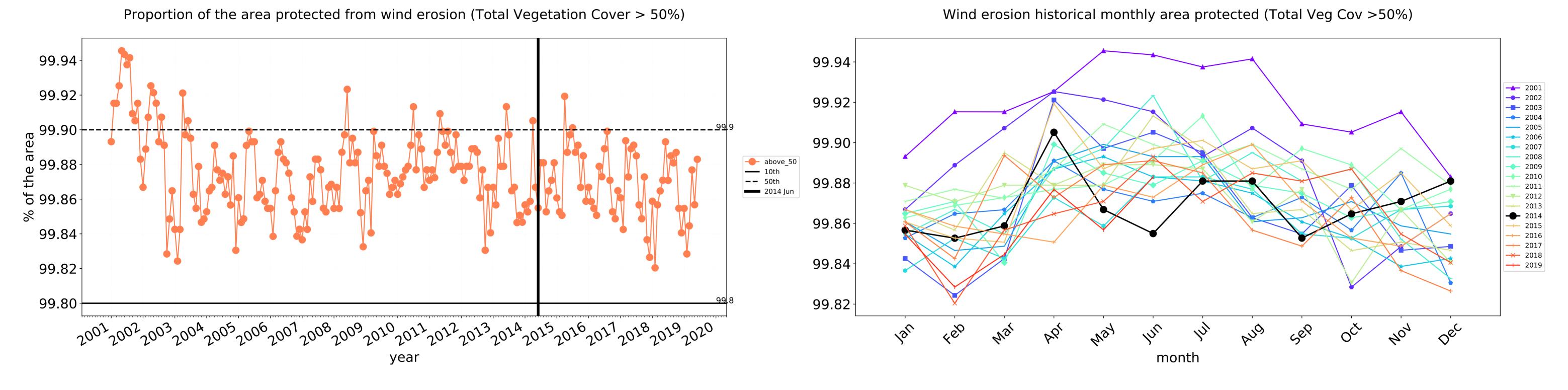


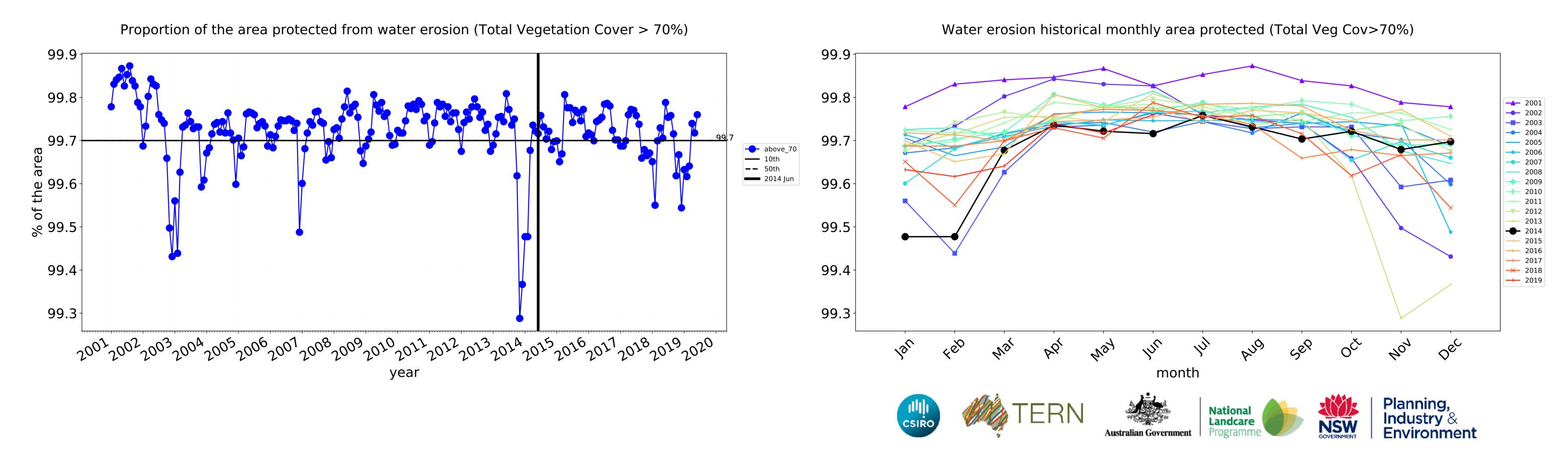
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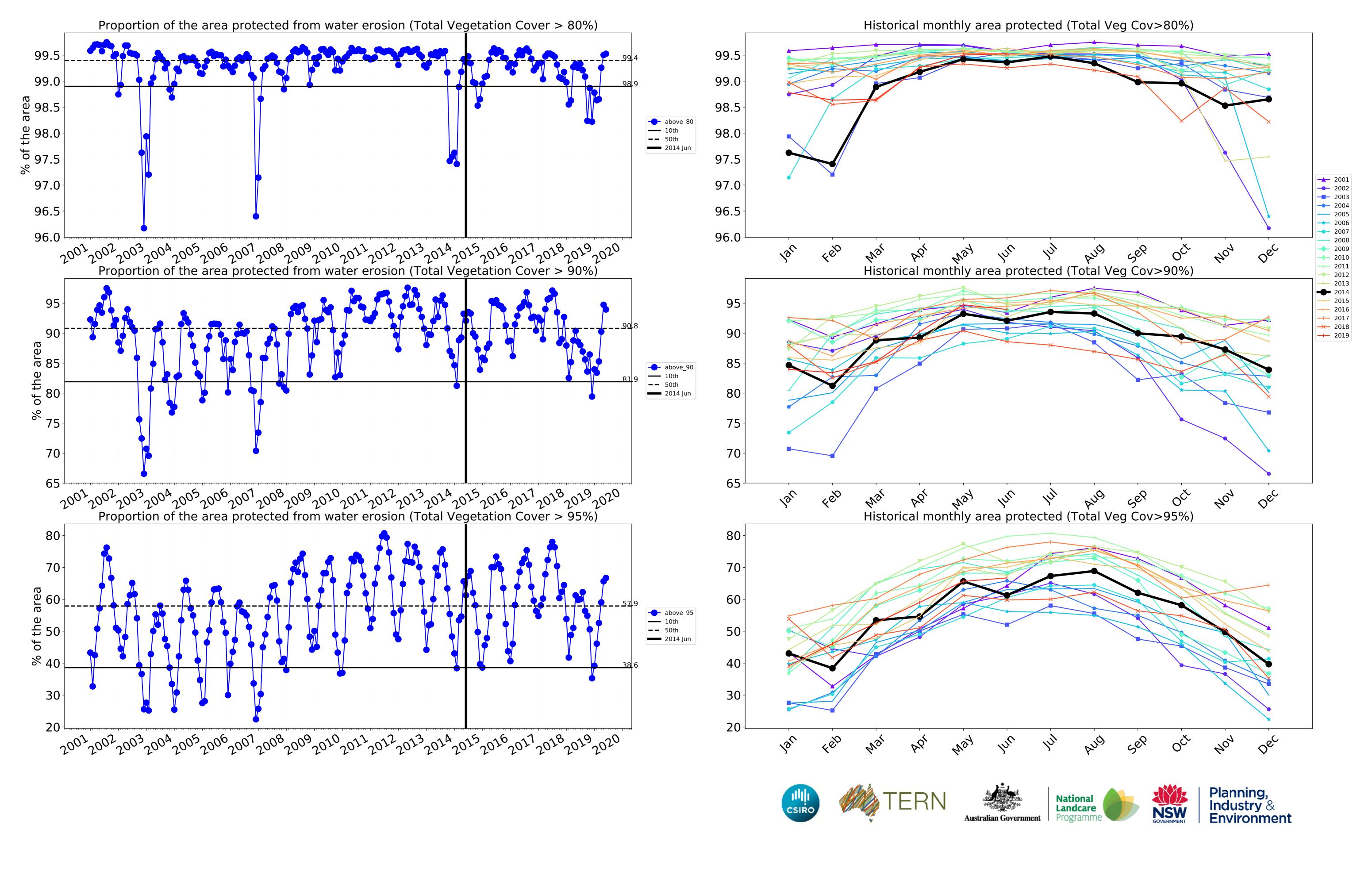
Conservation and natural environments



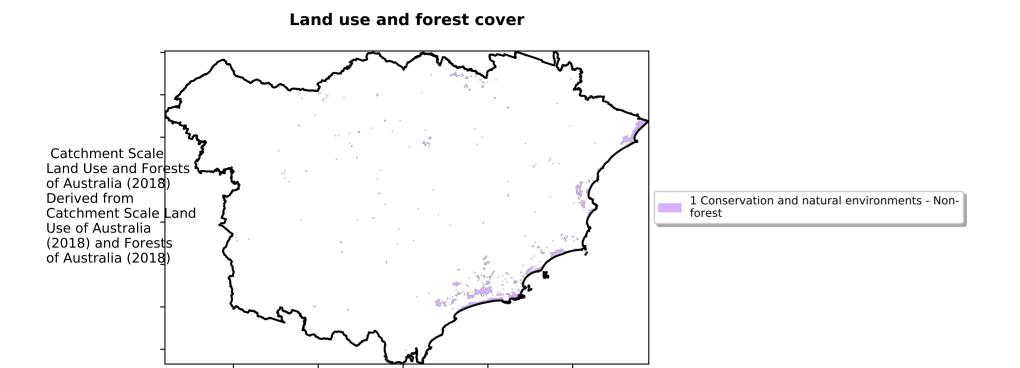
Conservation and natural environments timeseries



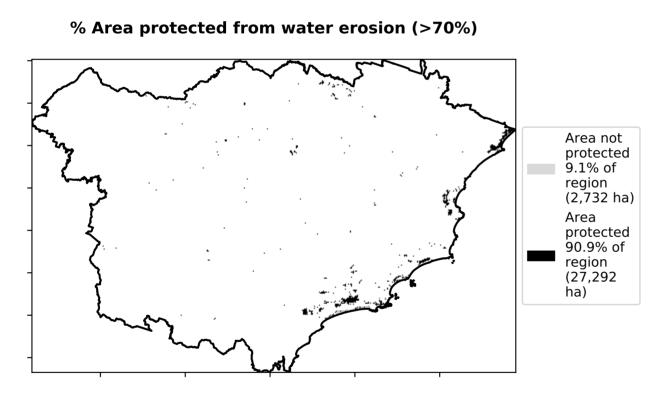


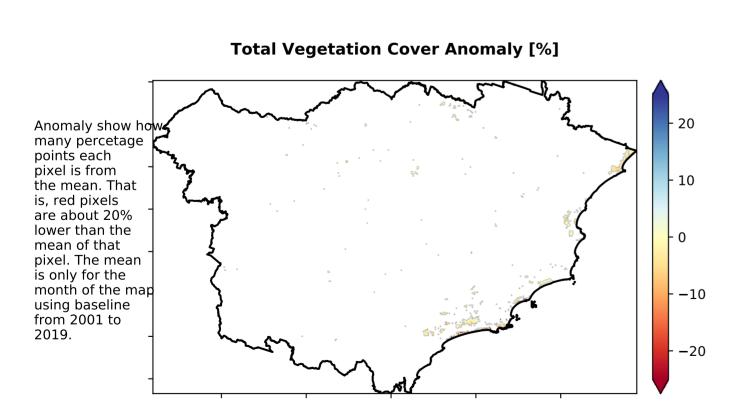


Conservation and natural environments non forest



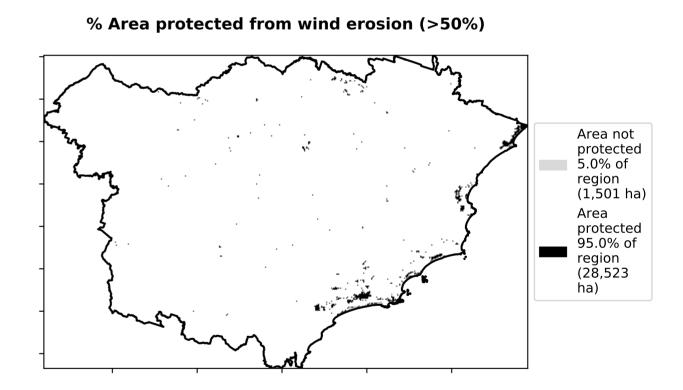
Total Vegetation Cover [%] Tipological and the state of the state of

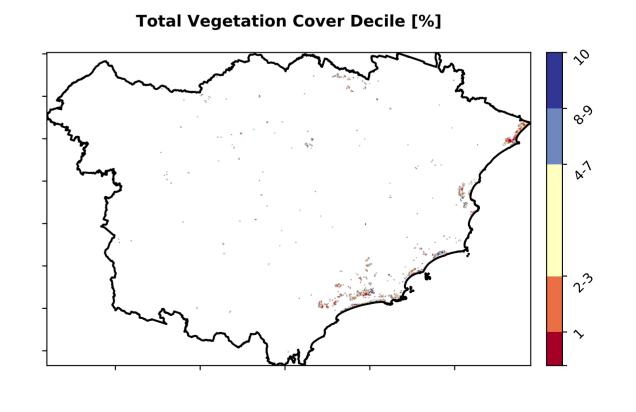




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area 90.9% 80 - 60 - 60 - 20 - 20 - 3.0% 2.4% 3.7% 0-30% 31%-50% 51%-70% 71%-100% Total Vegetation Cover class











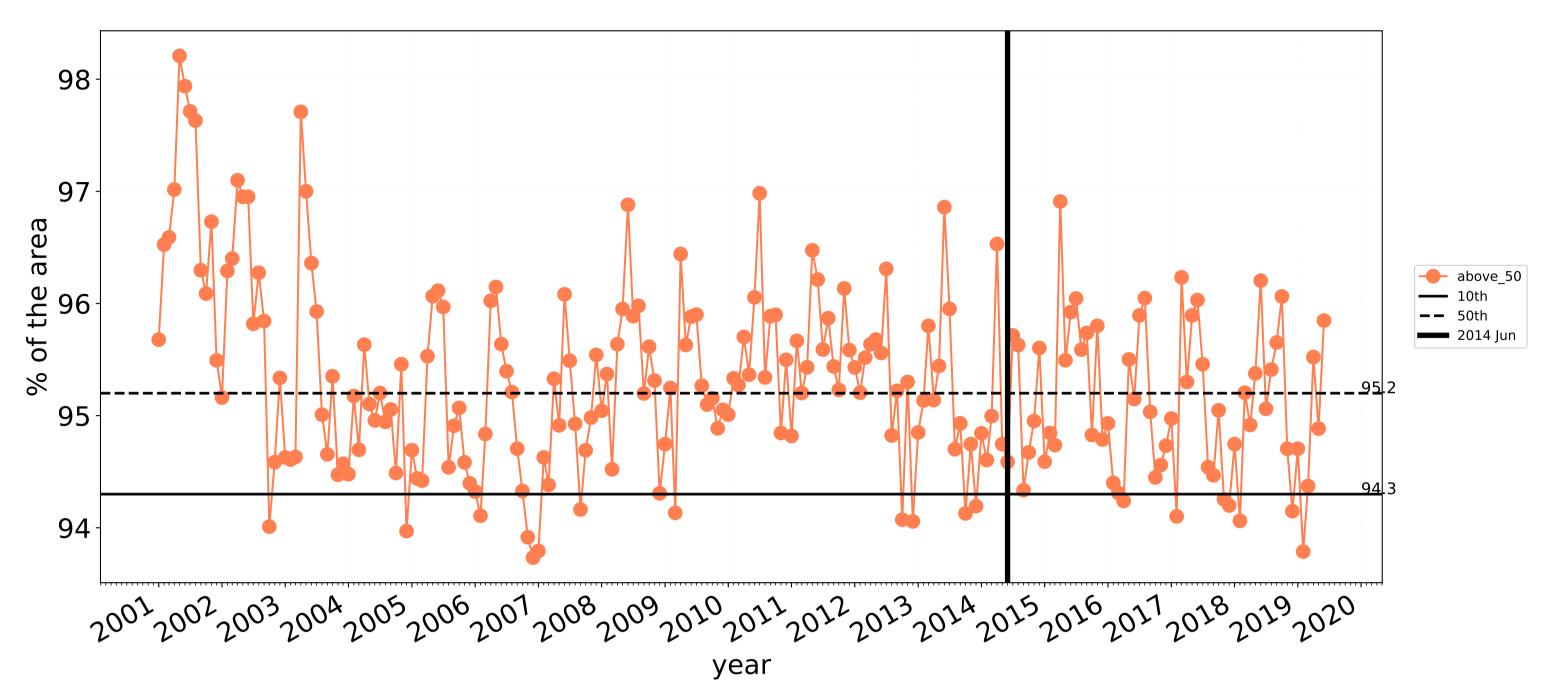




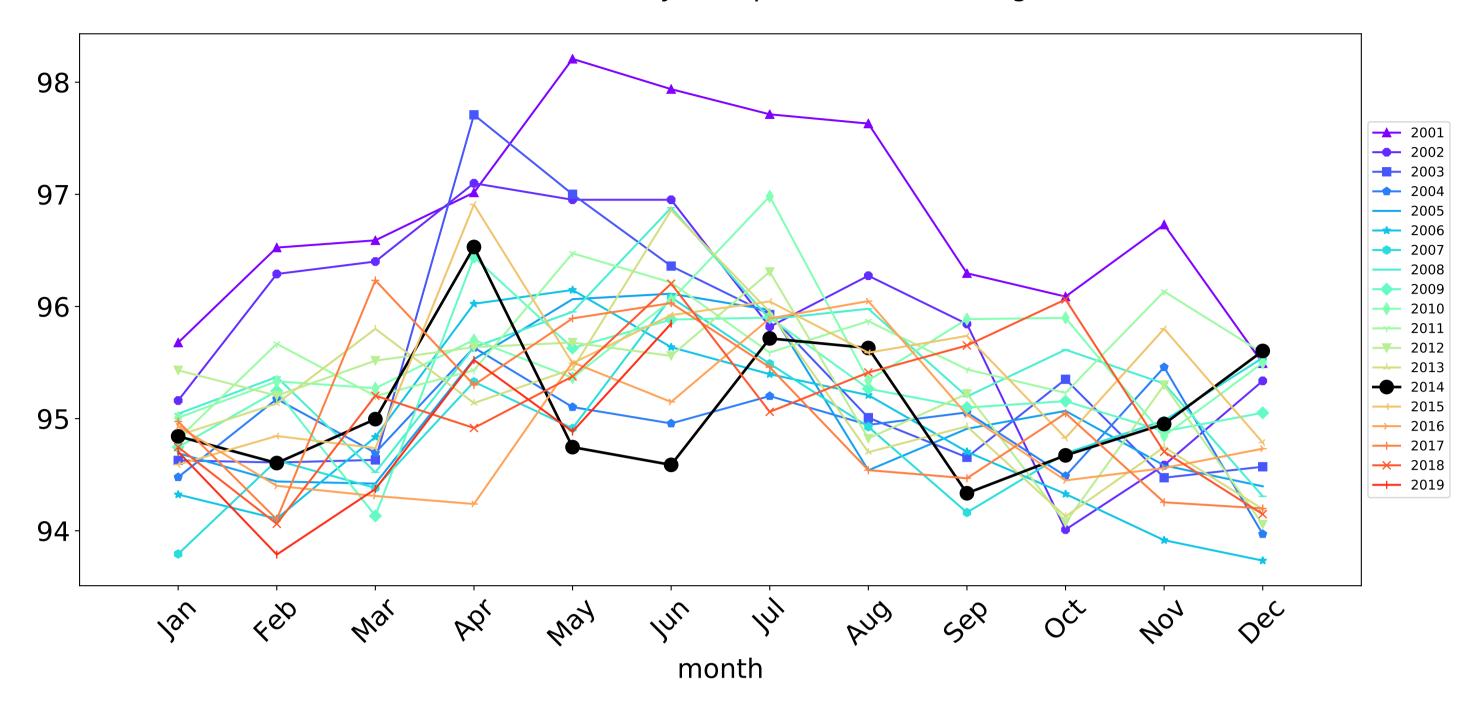


Conservation and natural environments non forest timeseries

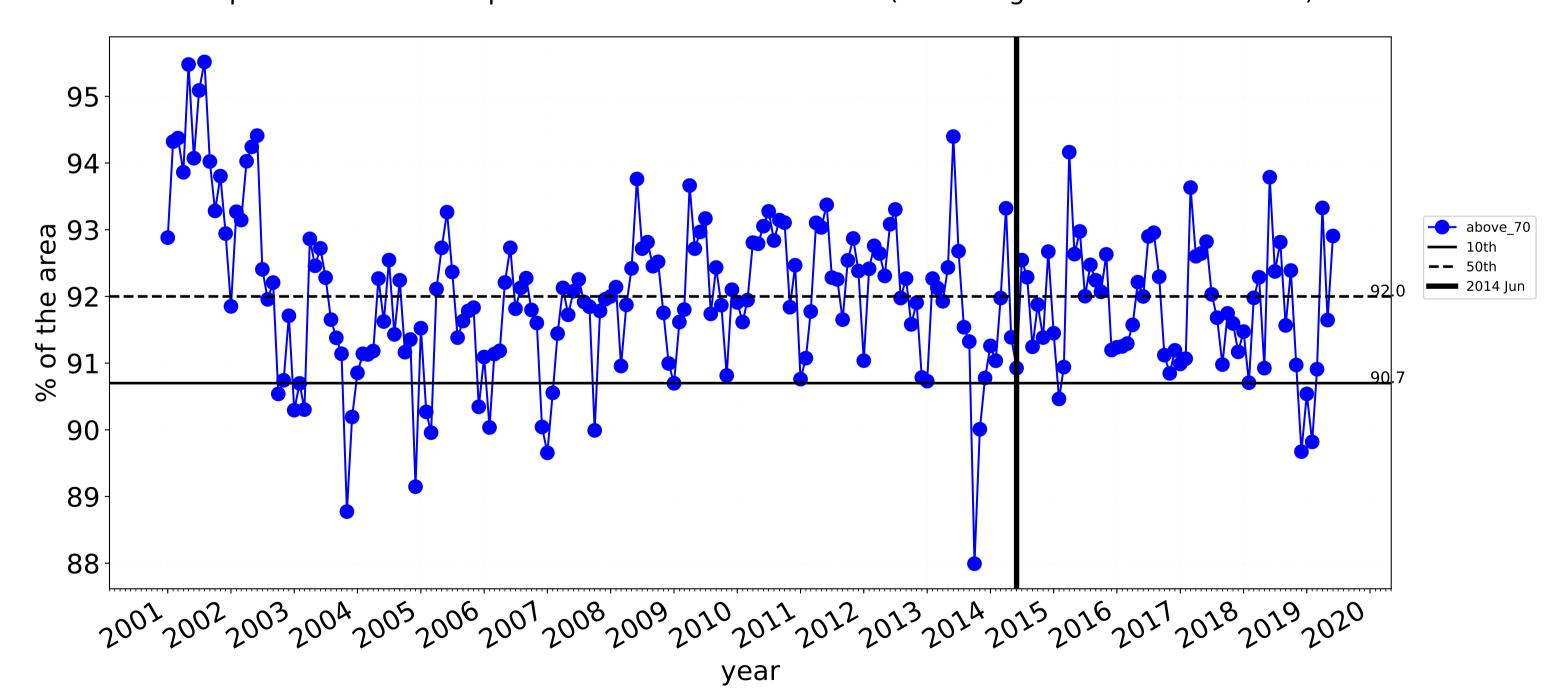




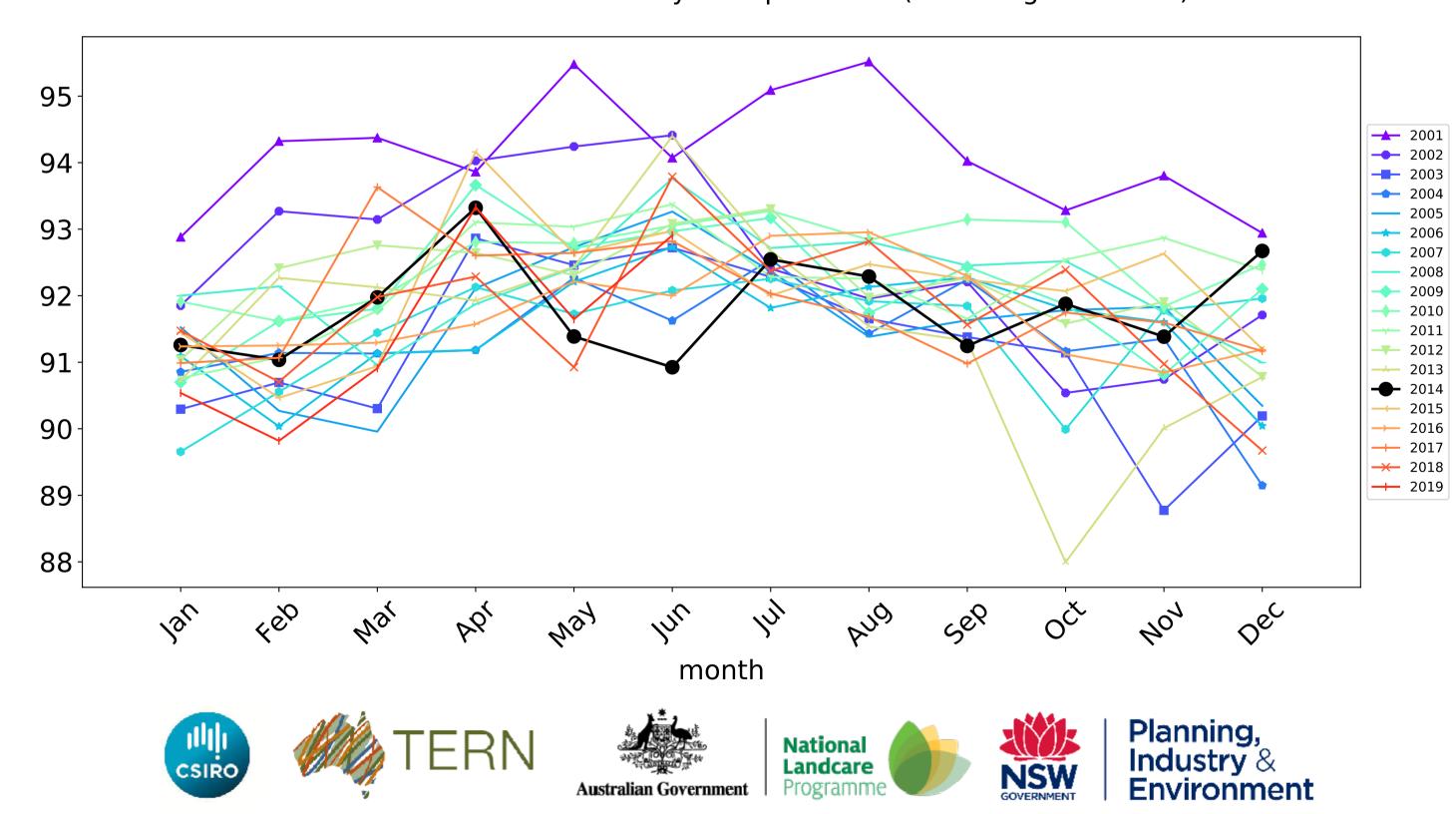
Wind erosion historical monthly area protected (Total Veg Cov >50%)

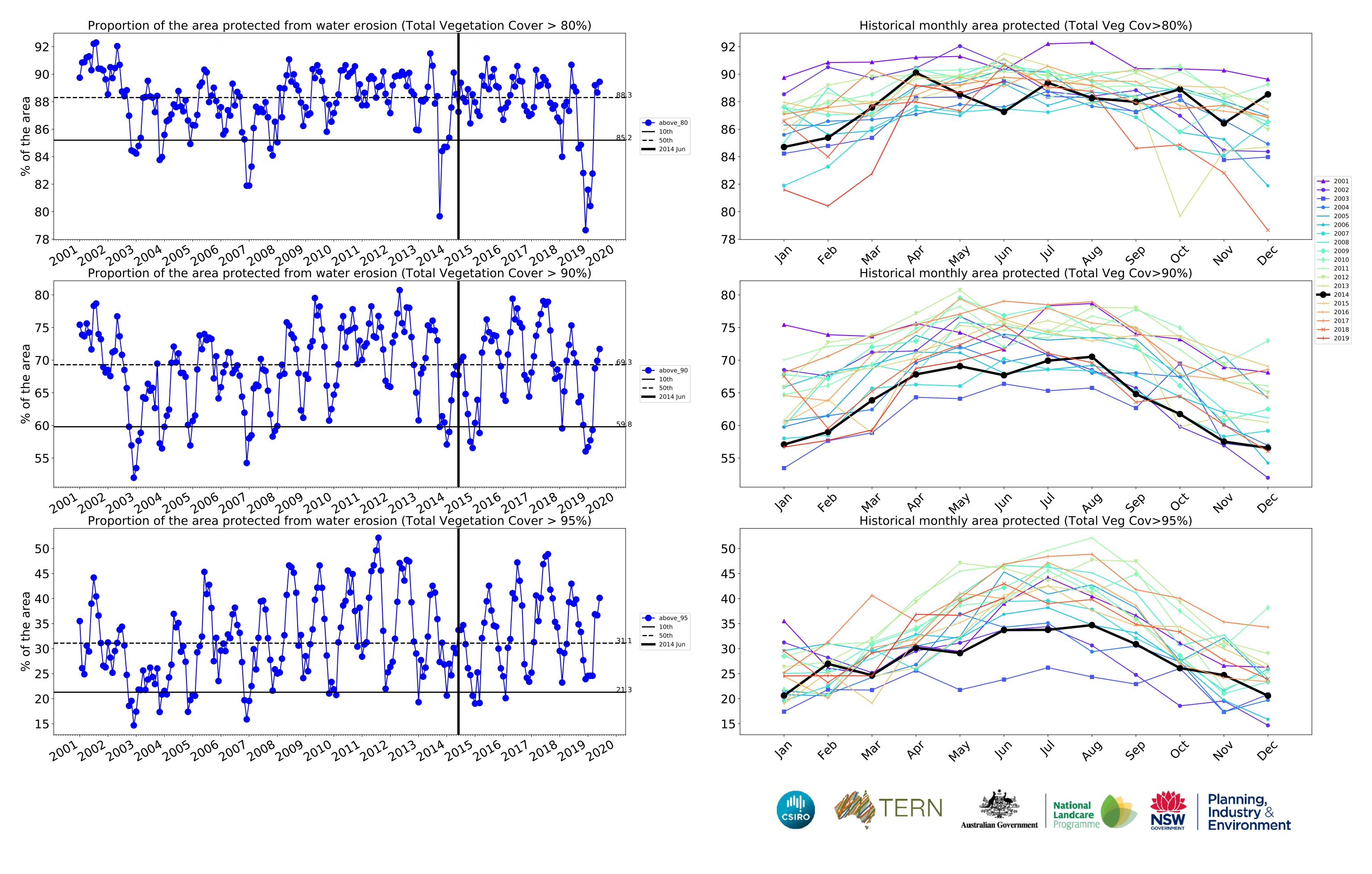


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

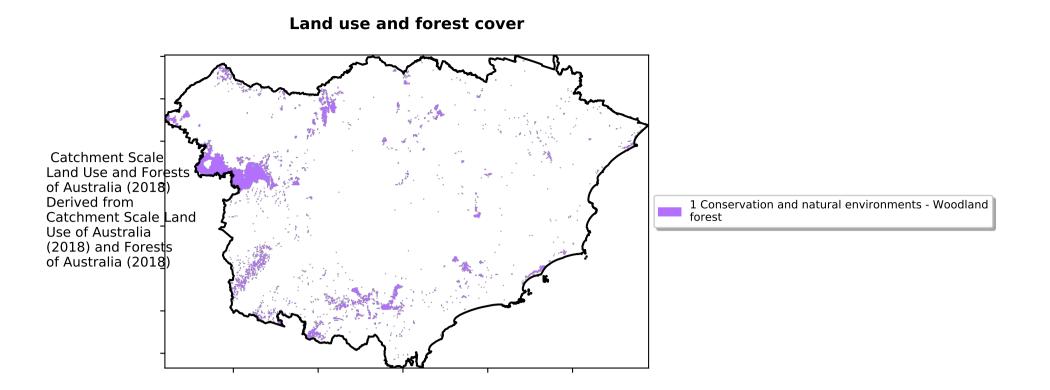


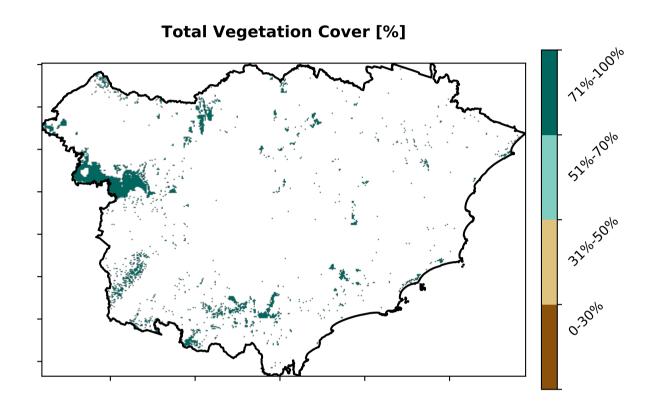
Water erosion historical monthly area protected (Total Veg Cov>70%)



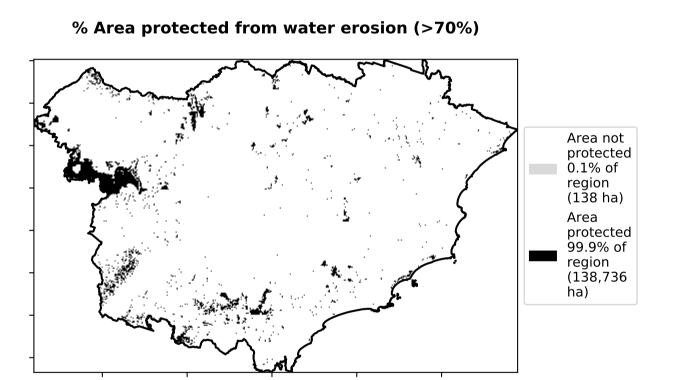


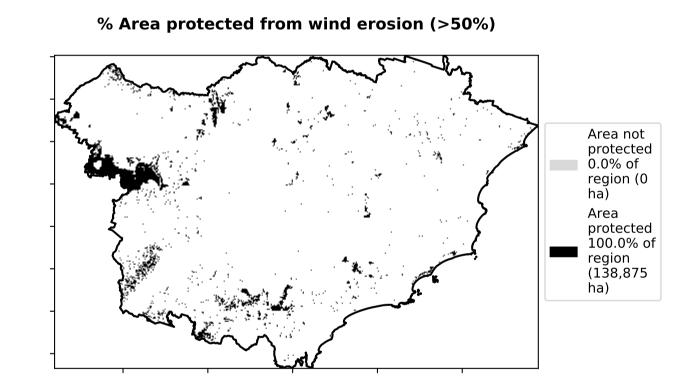
Conservation and natural environments Woodland forest

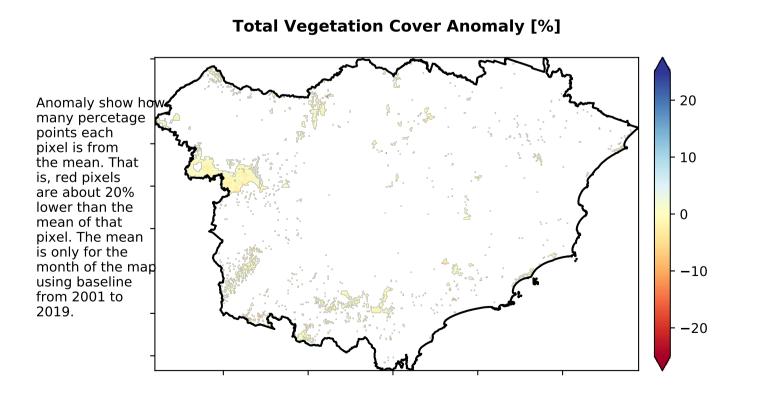




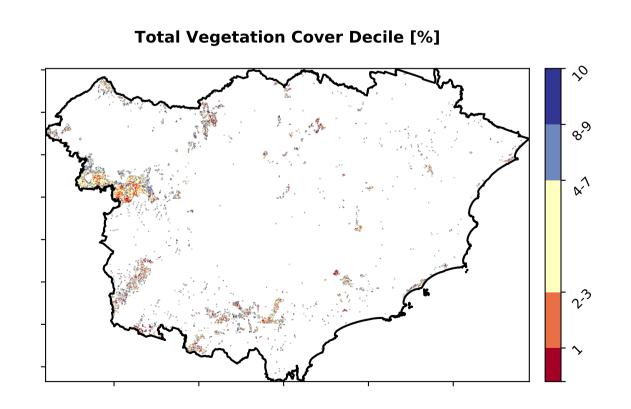
Proportion of vegetation cover class in area 100 - 99.9% 80 - 99.9% 40 - 20 - 0.0% 0.0% 0.1% 0-30% 31%-50% 51%-70% 71%-100% Total Vegetation Cover class







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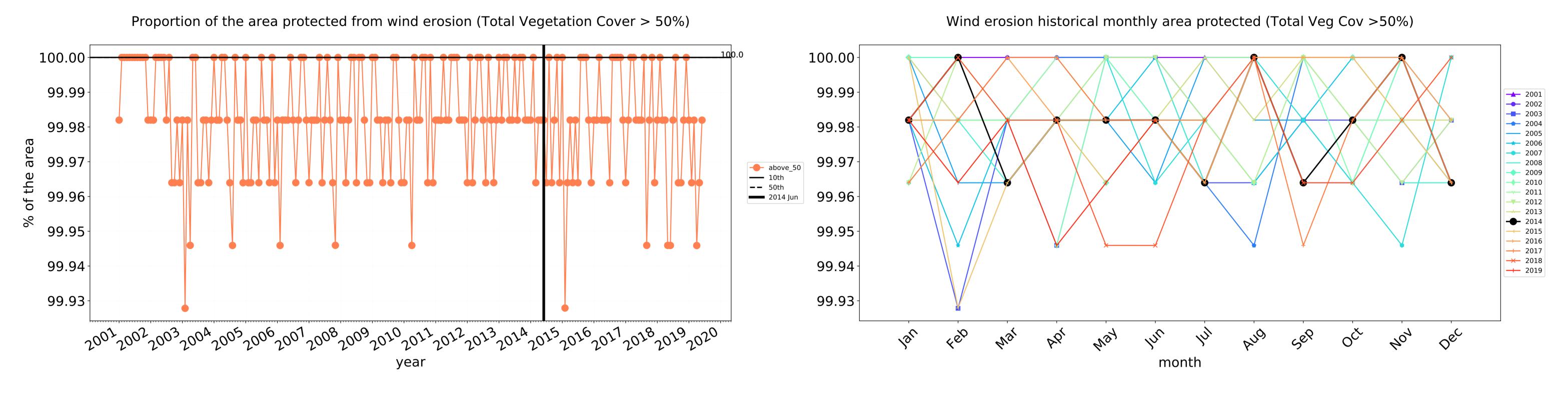


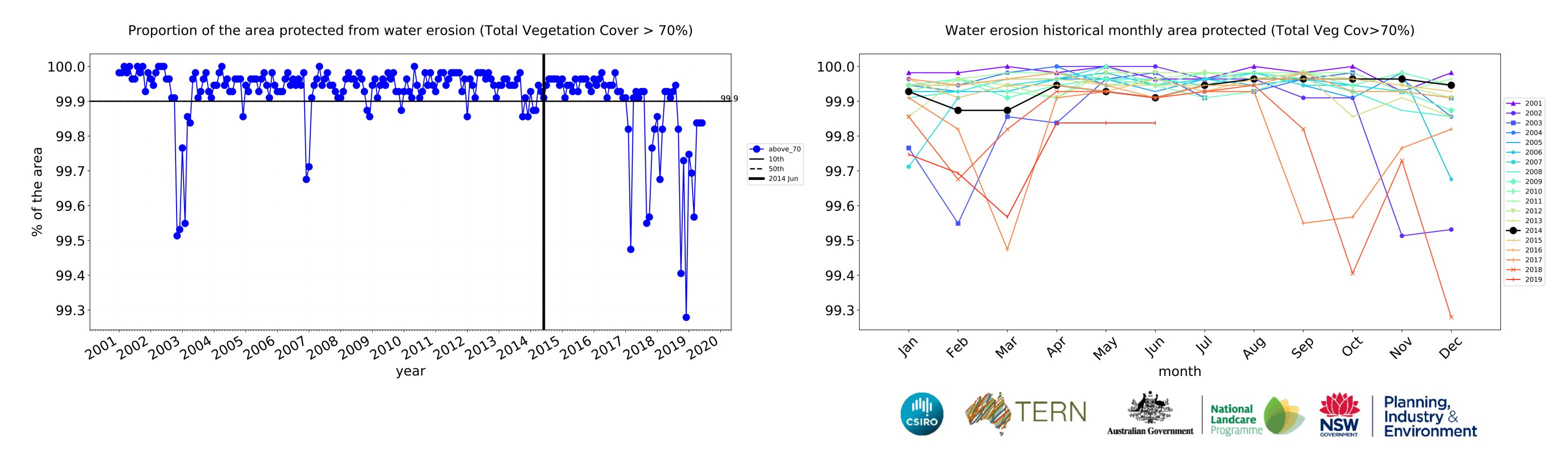


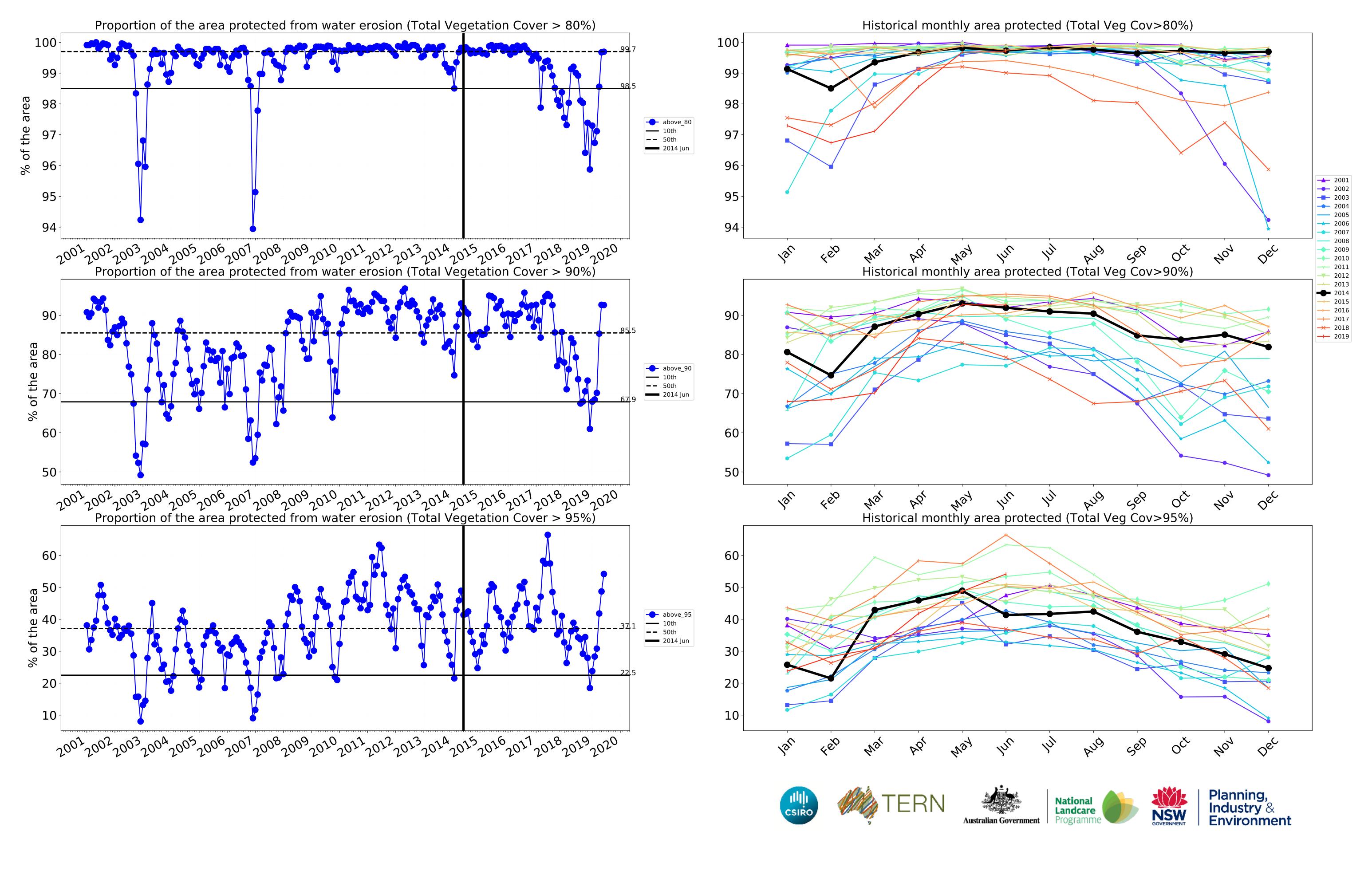








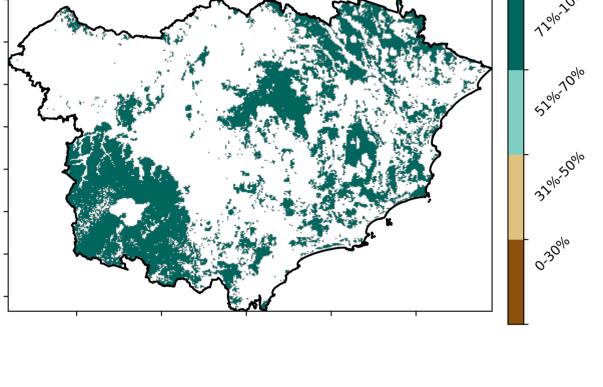


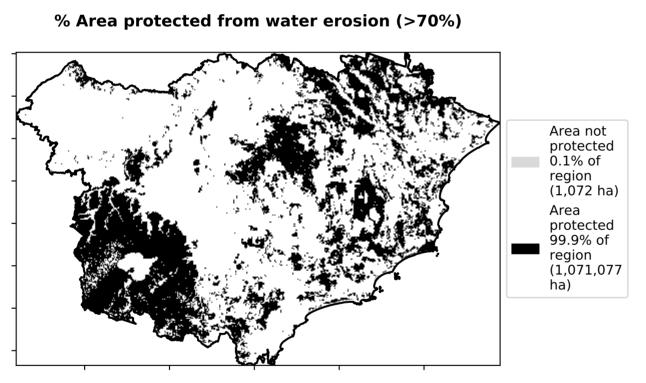


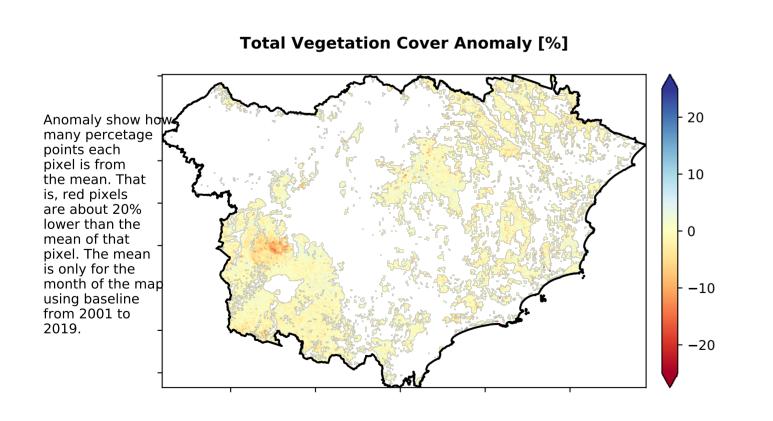
Conservation and natural environments Forest (non woodland)

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

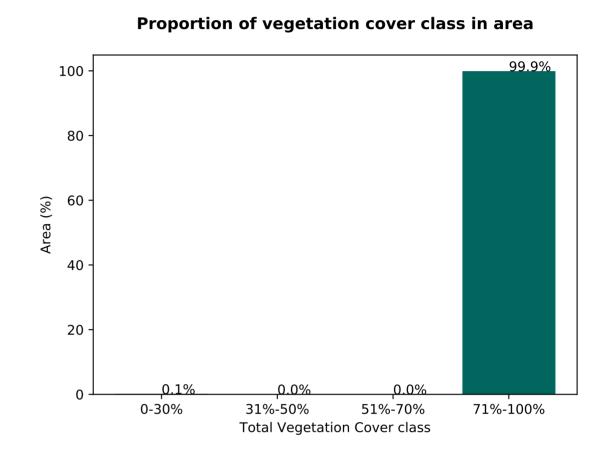
Total Vegetation Cover [%]

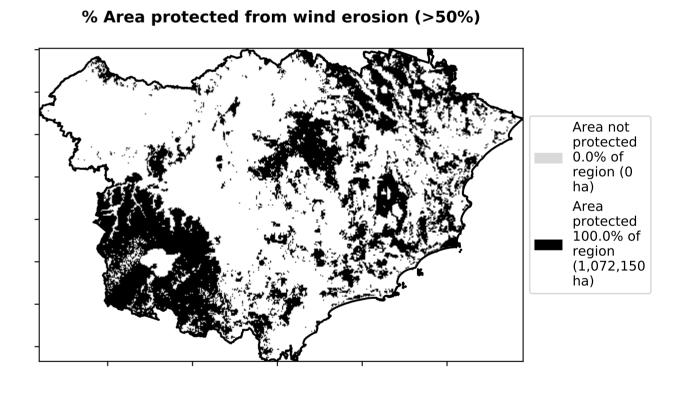


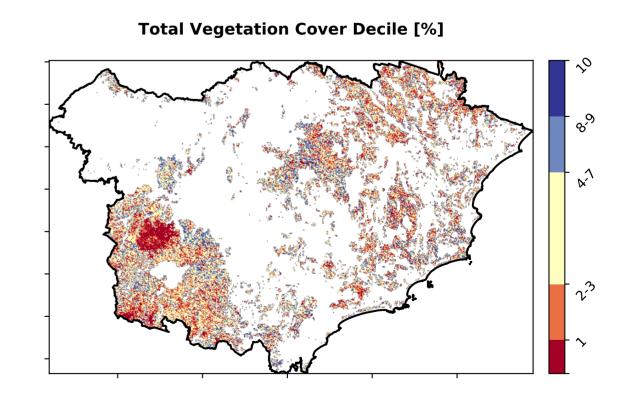




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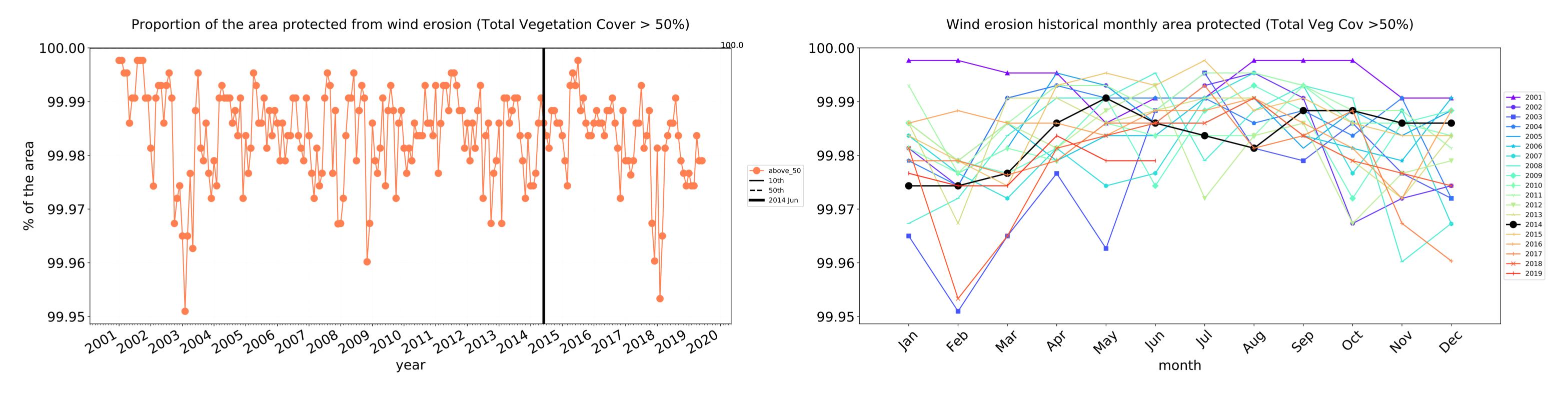


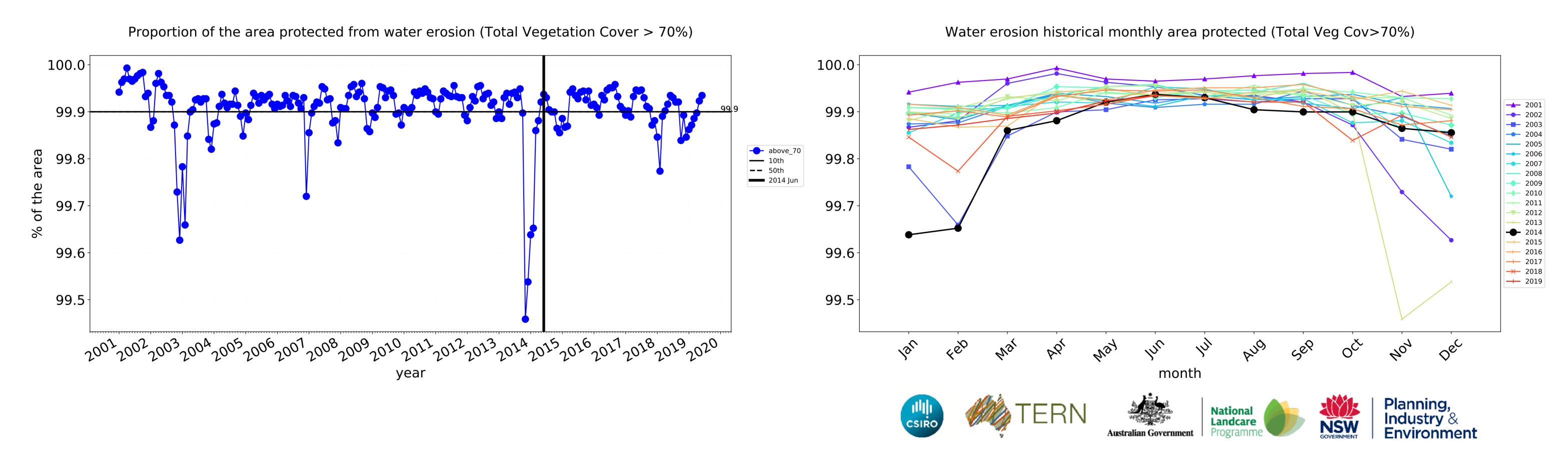


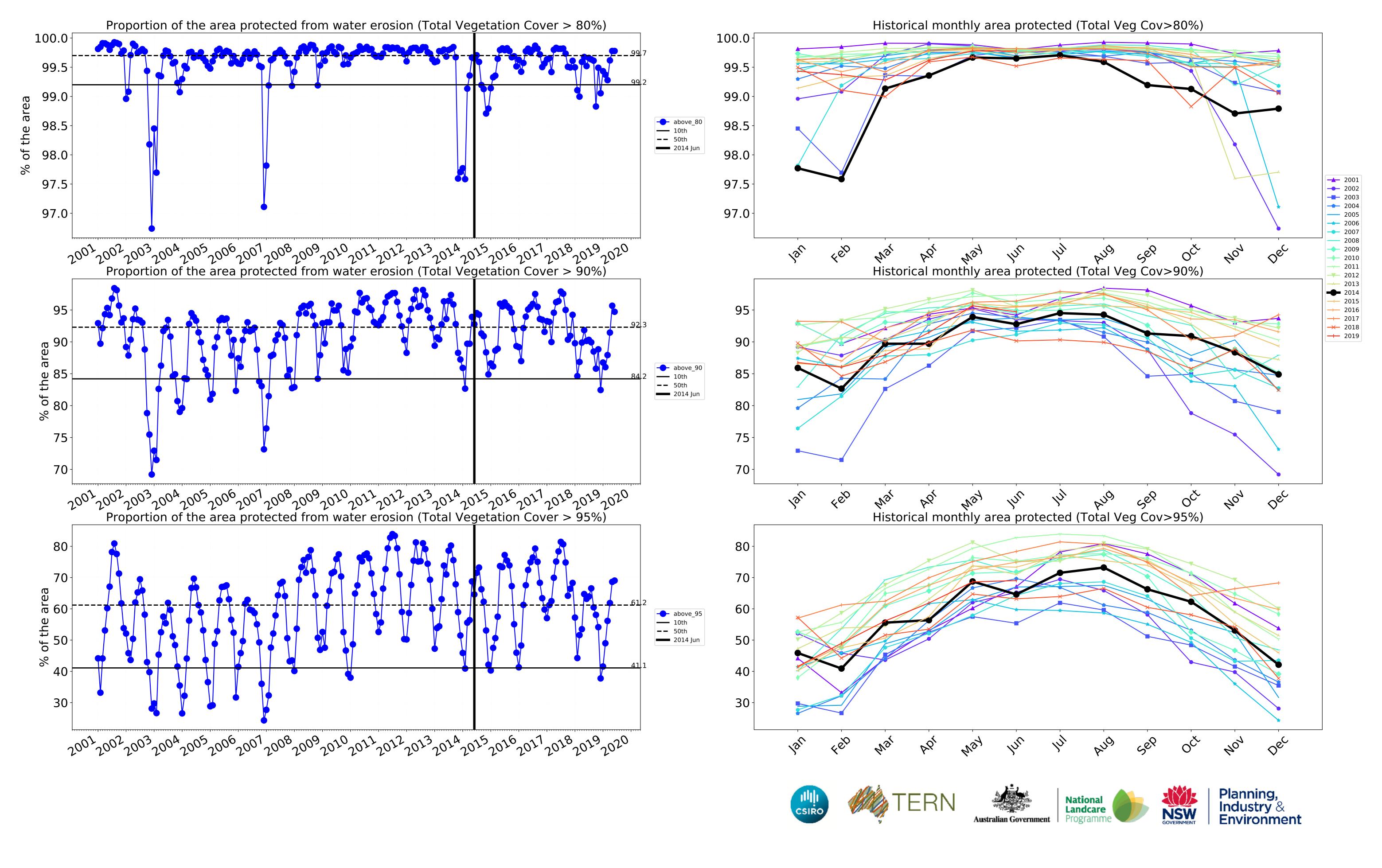




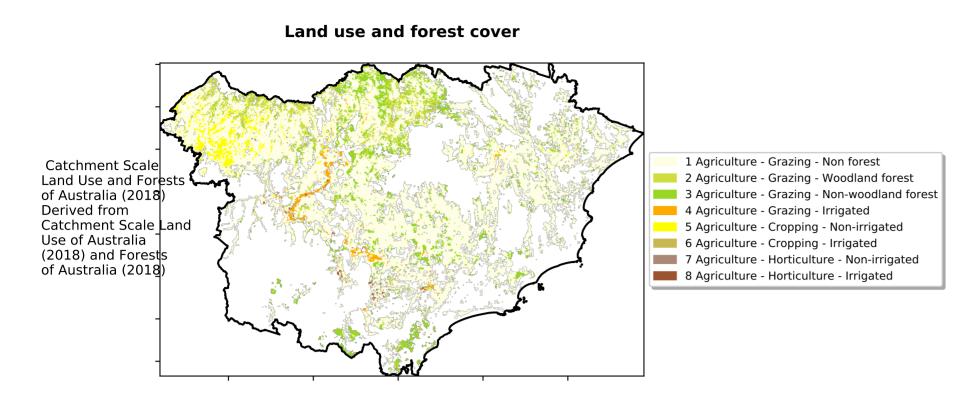
Conservation and natural environments Forest (non woodland) timeseries

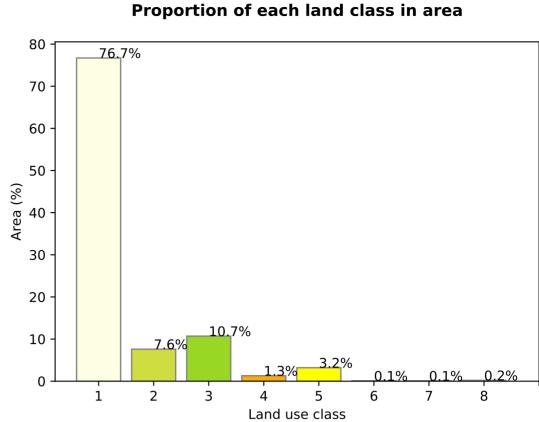




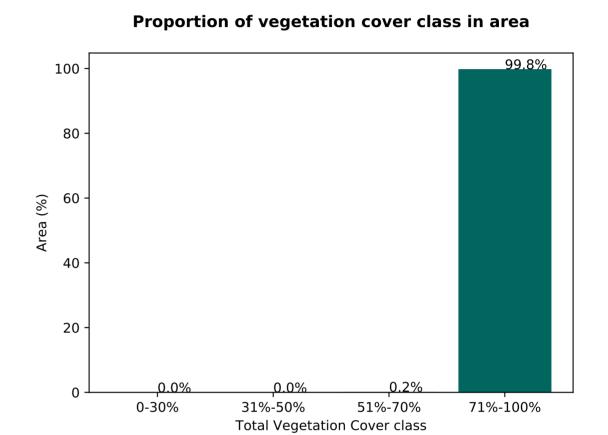


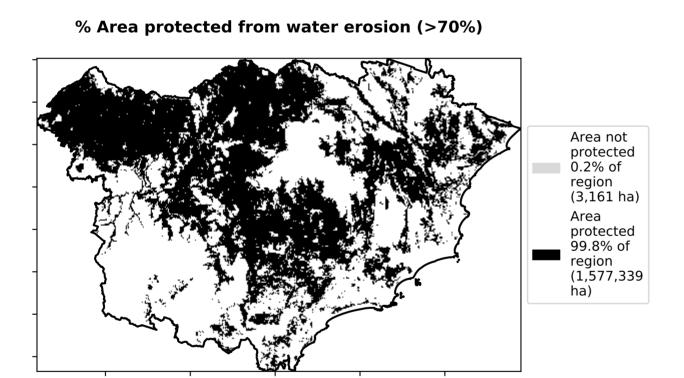
Agriculture

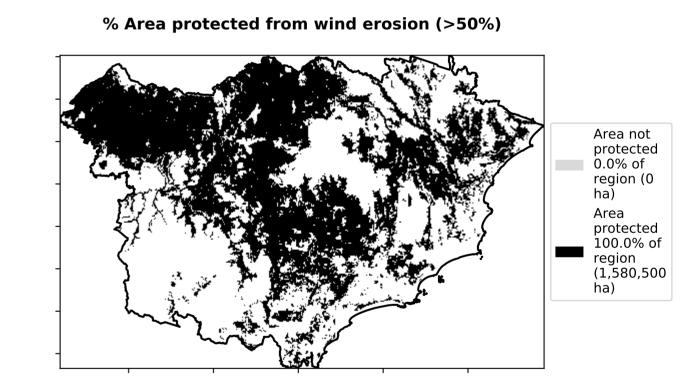


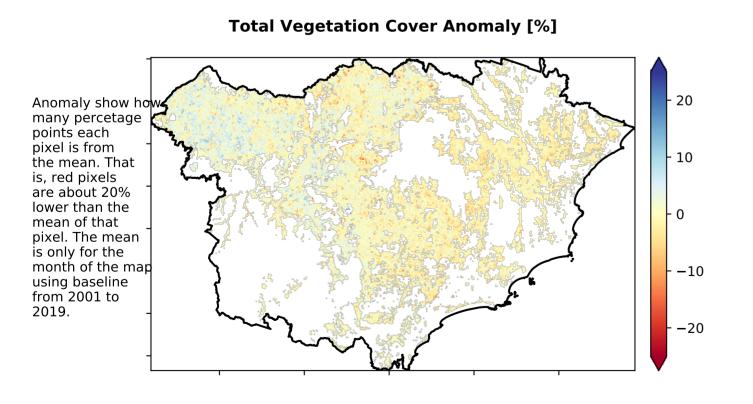


Total Vegetation Cover [%] Total Vegetation Cover [%] Tiple tude leading to the control of the

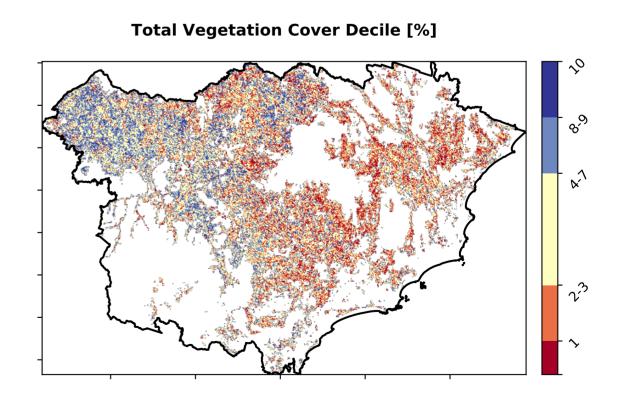








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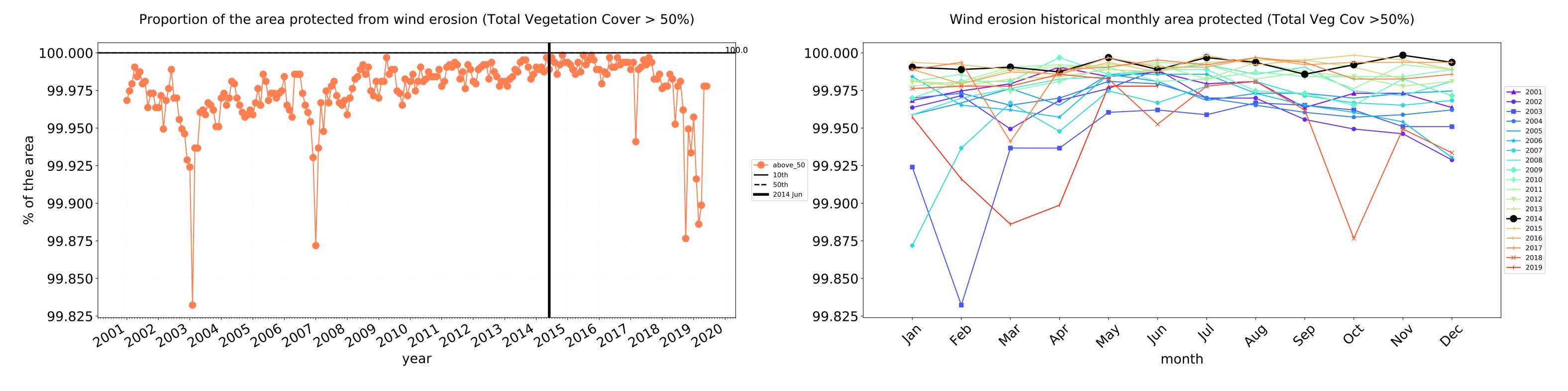


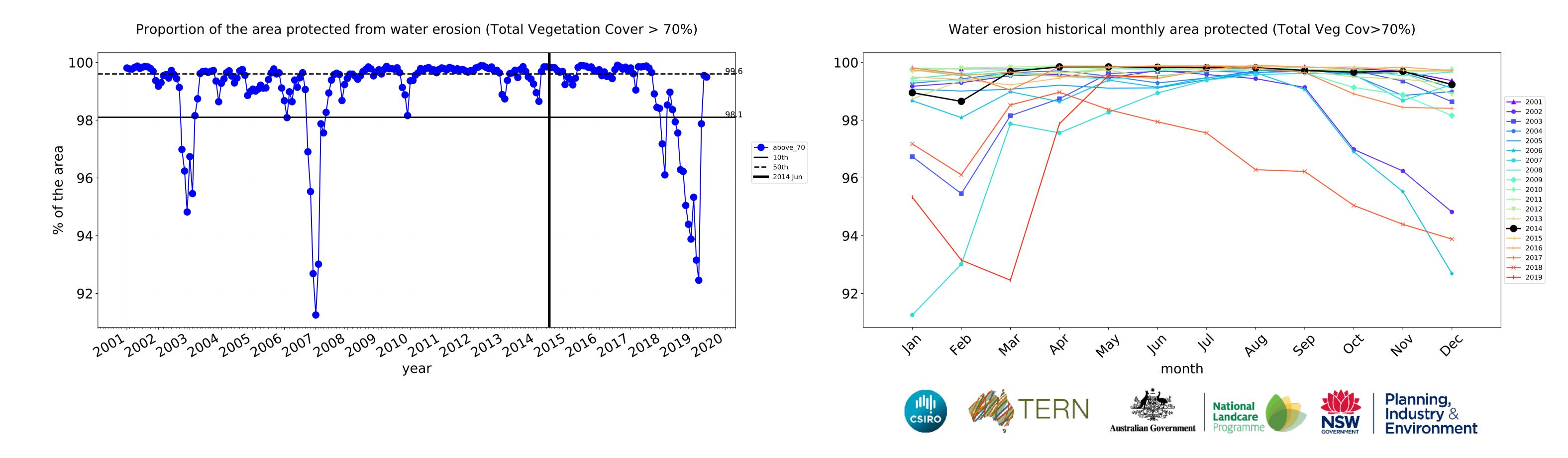


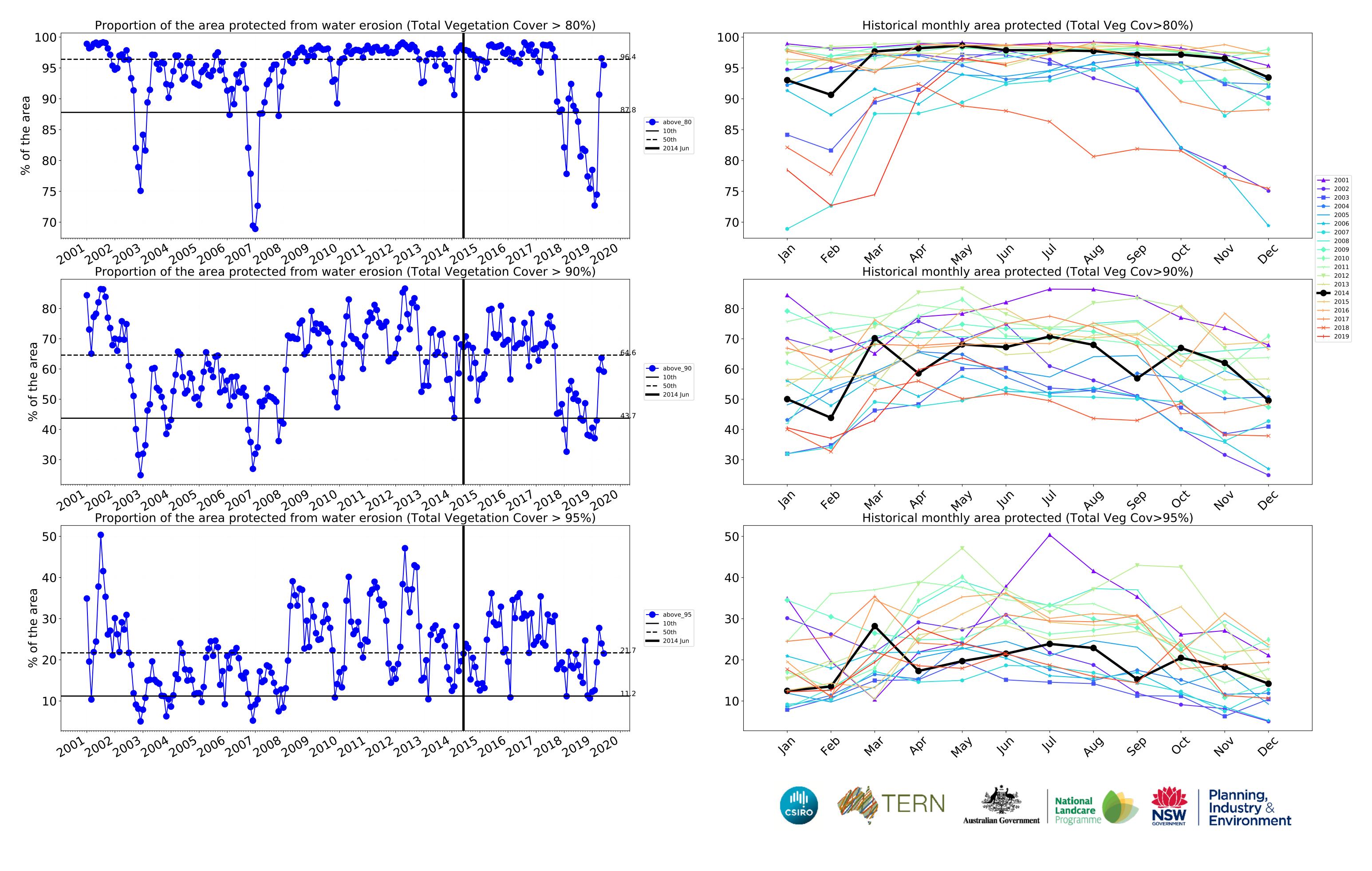




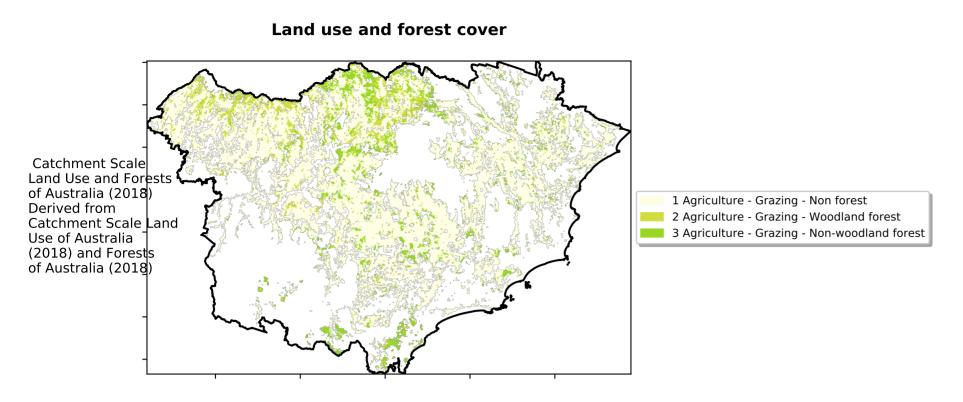
Agriculture timeseries



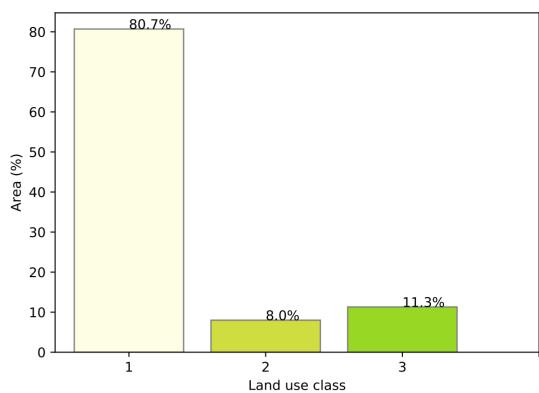




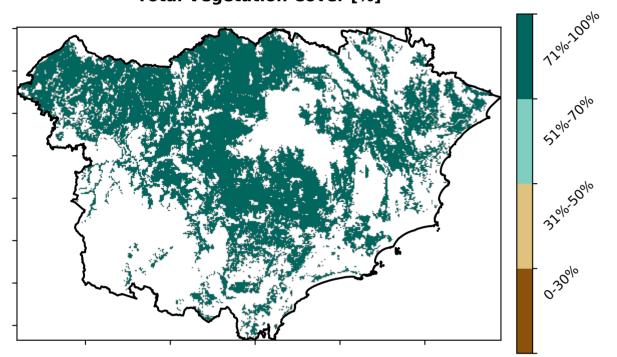
Grazing



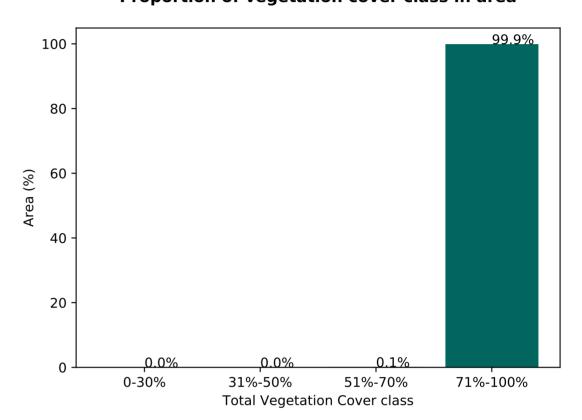
Proportion of each land class in area



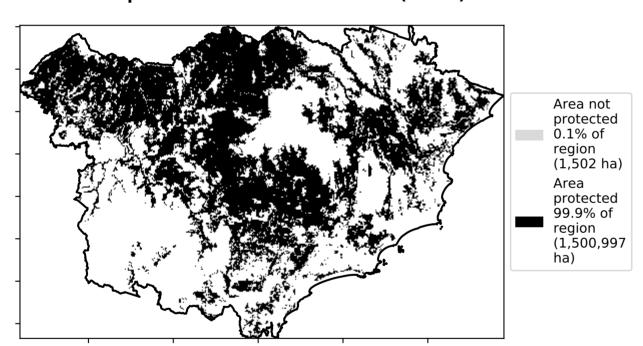
Total Vegetation Cover [%]



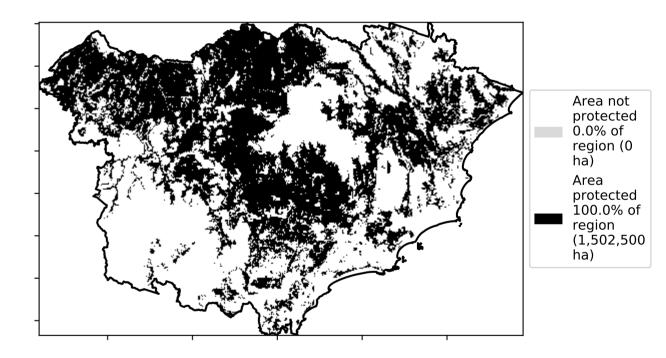
Proportion of vegetation cover class in area



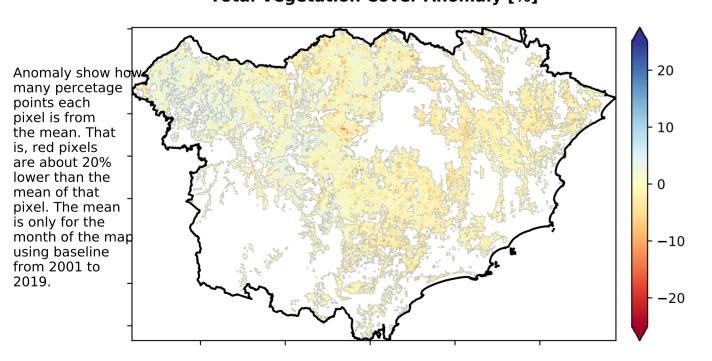
% Area protected from water erosion (>70%)



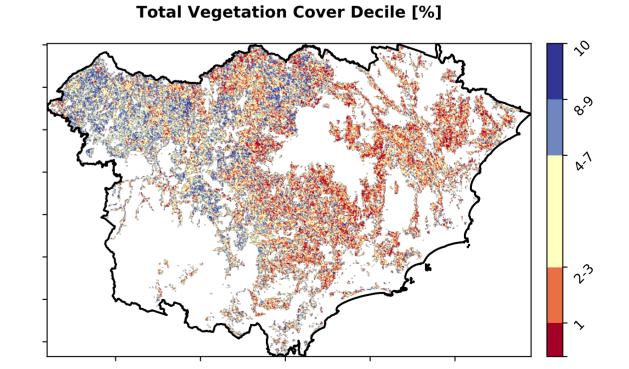
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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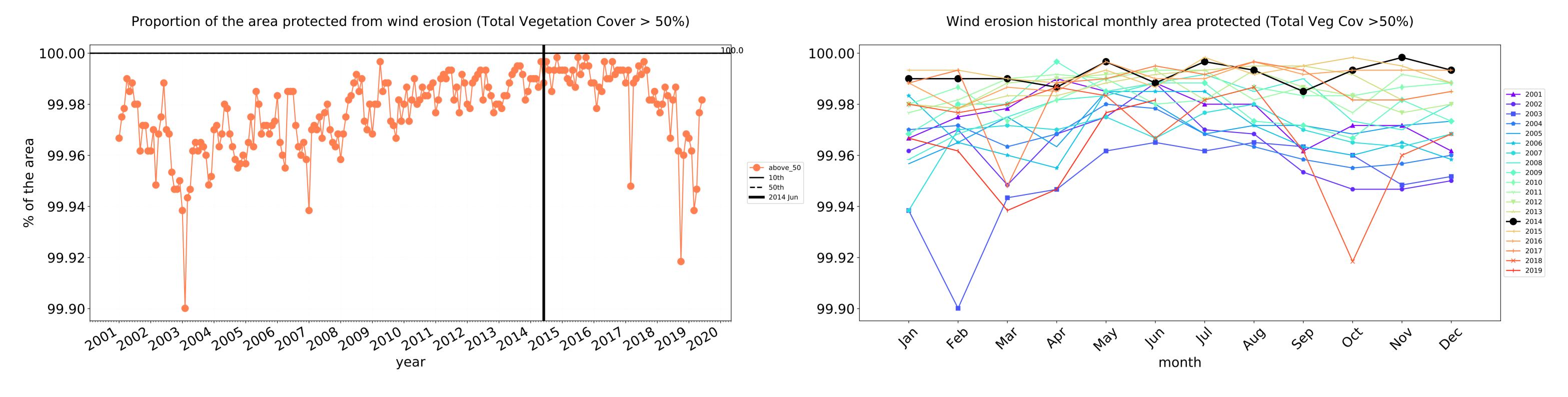


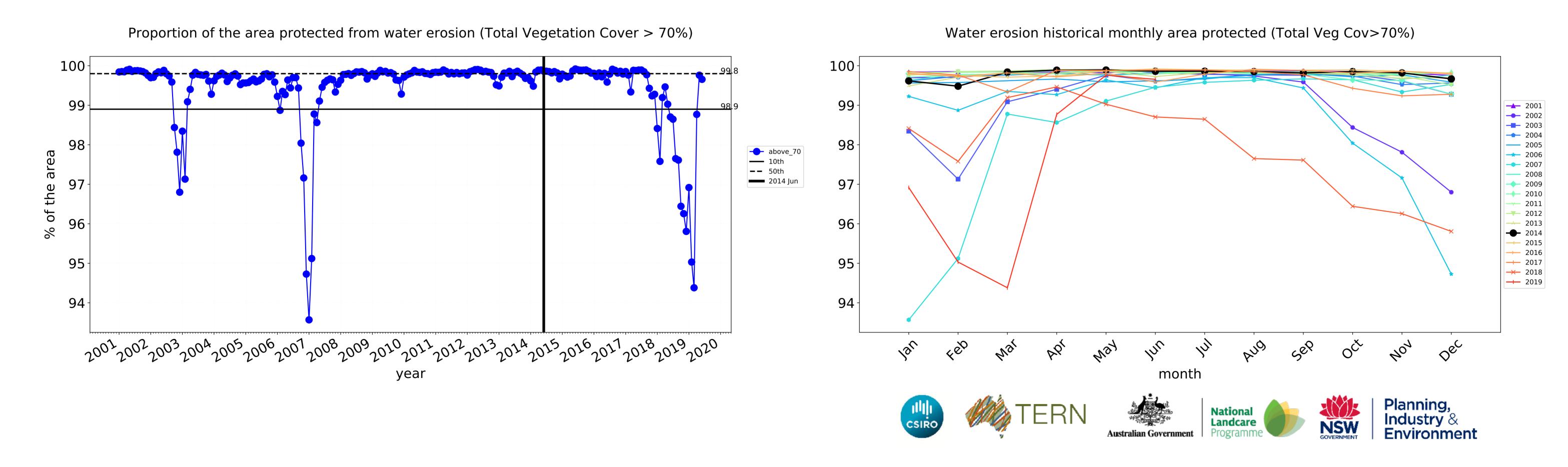


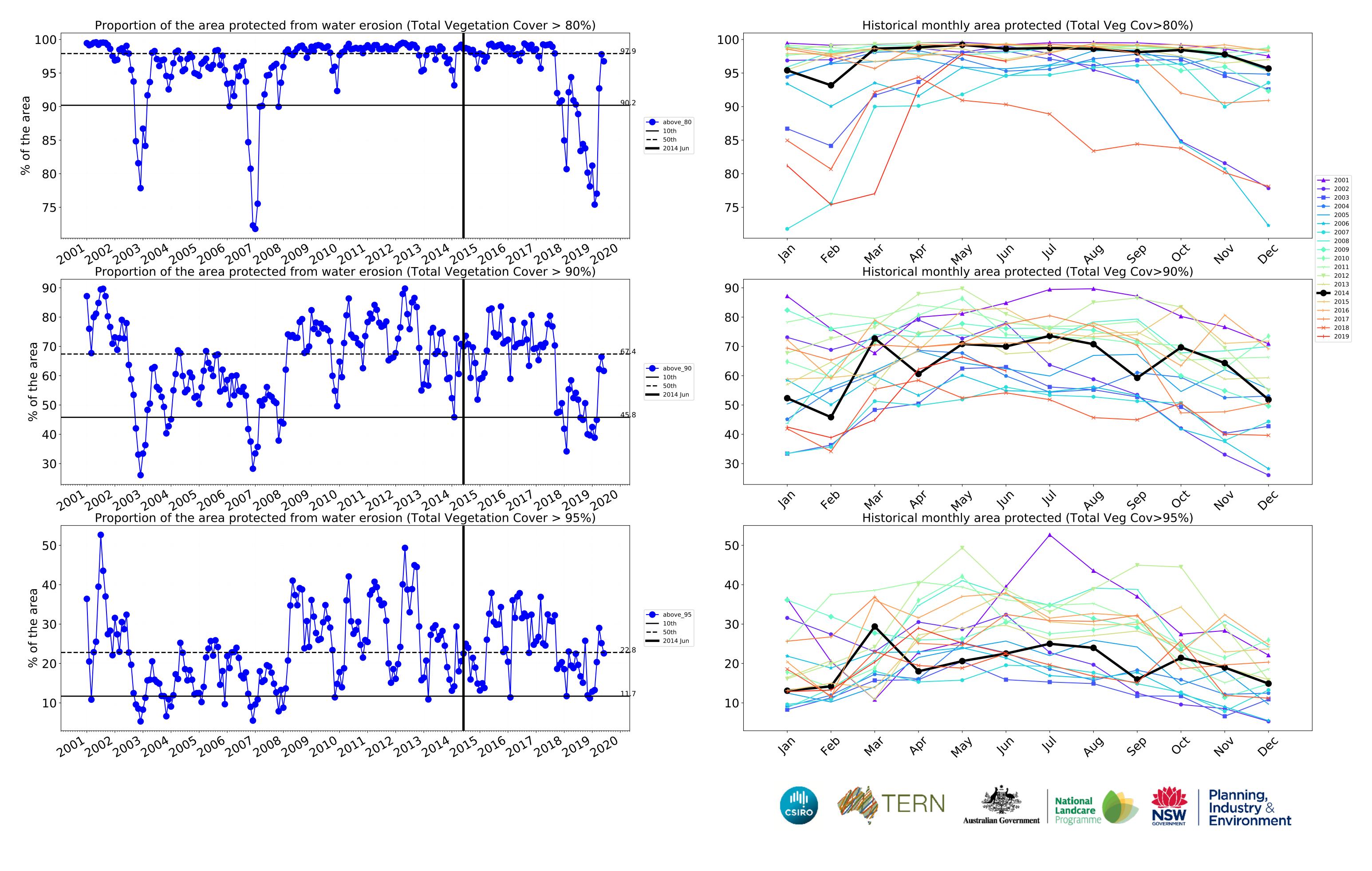




Grazing timeseries

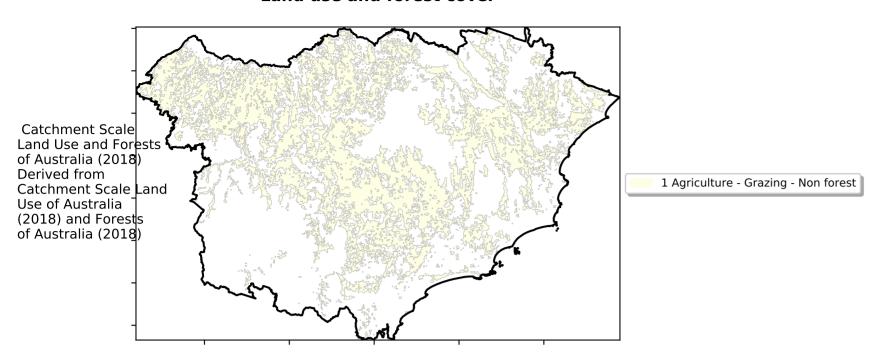




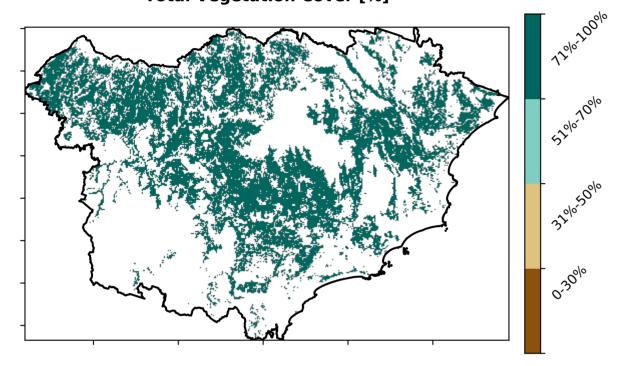


Grazing non forest

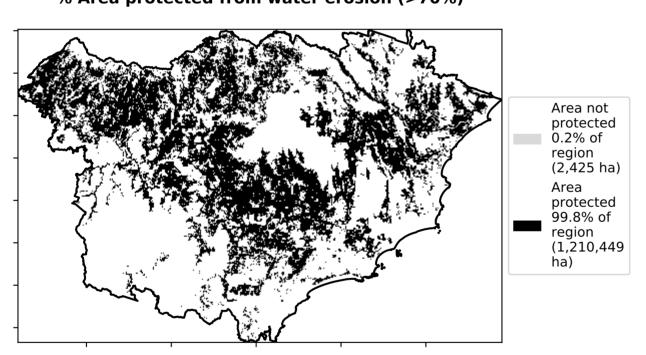
Land use and forest cover



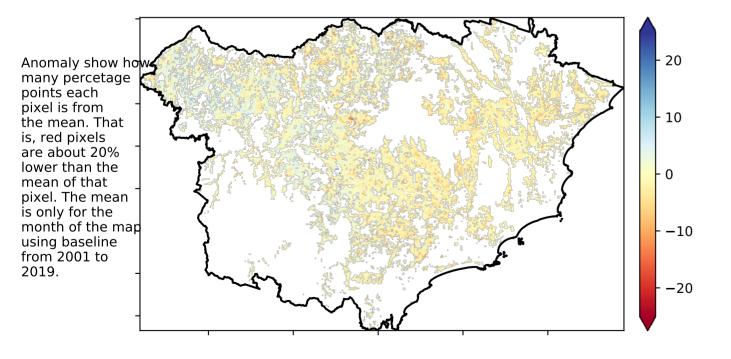
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

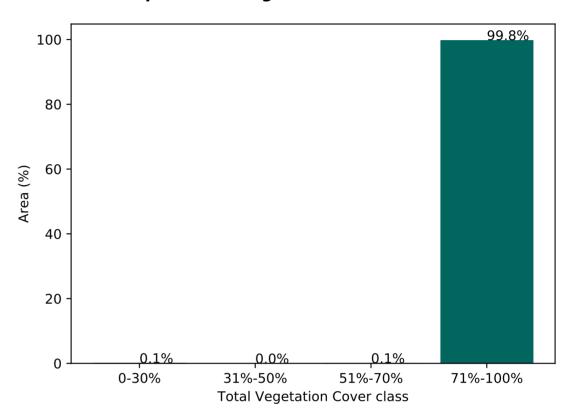


Total Vegetation Cover Anomaly [%]

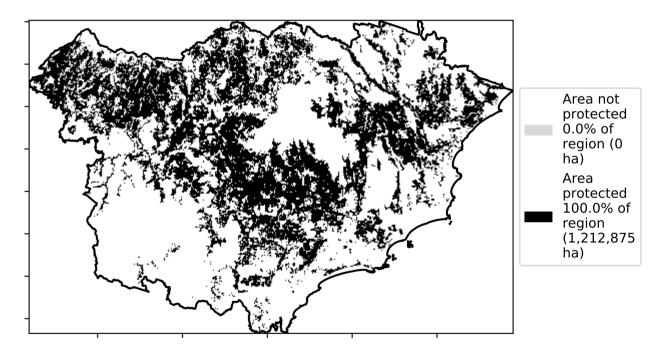


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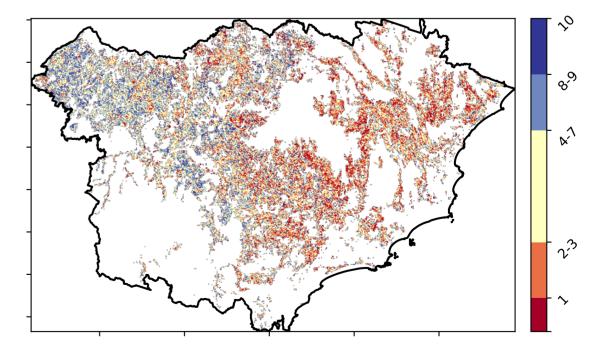
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







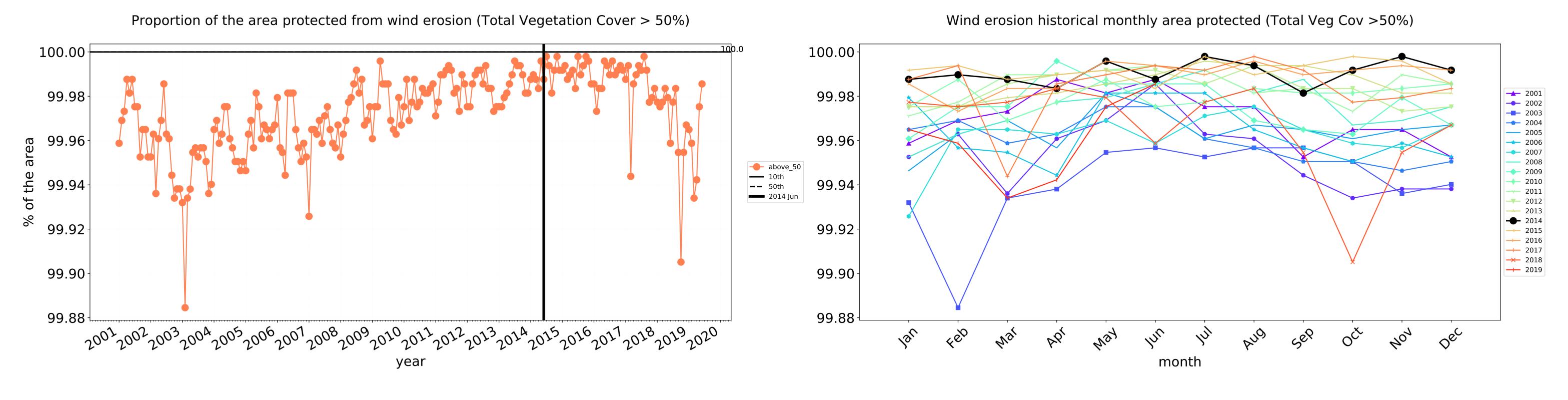


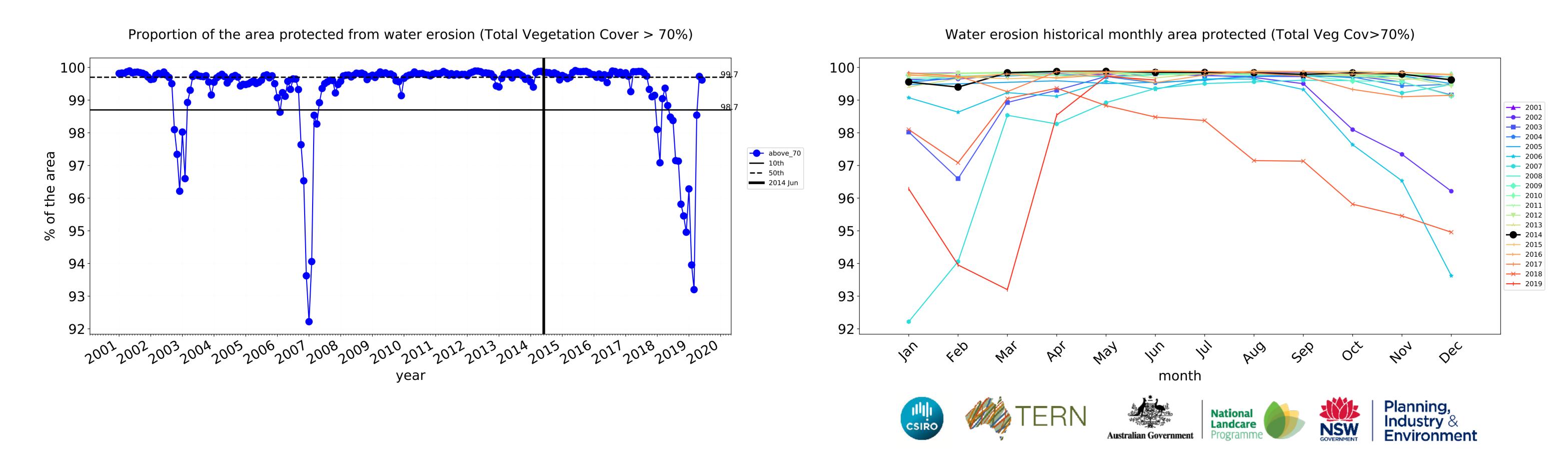


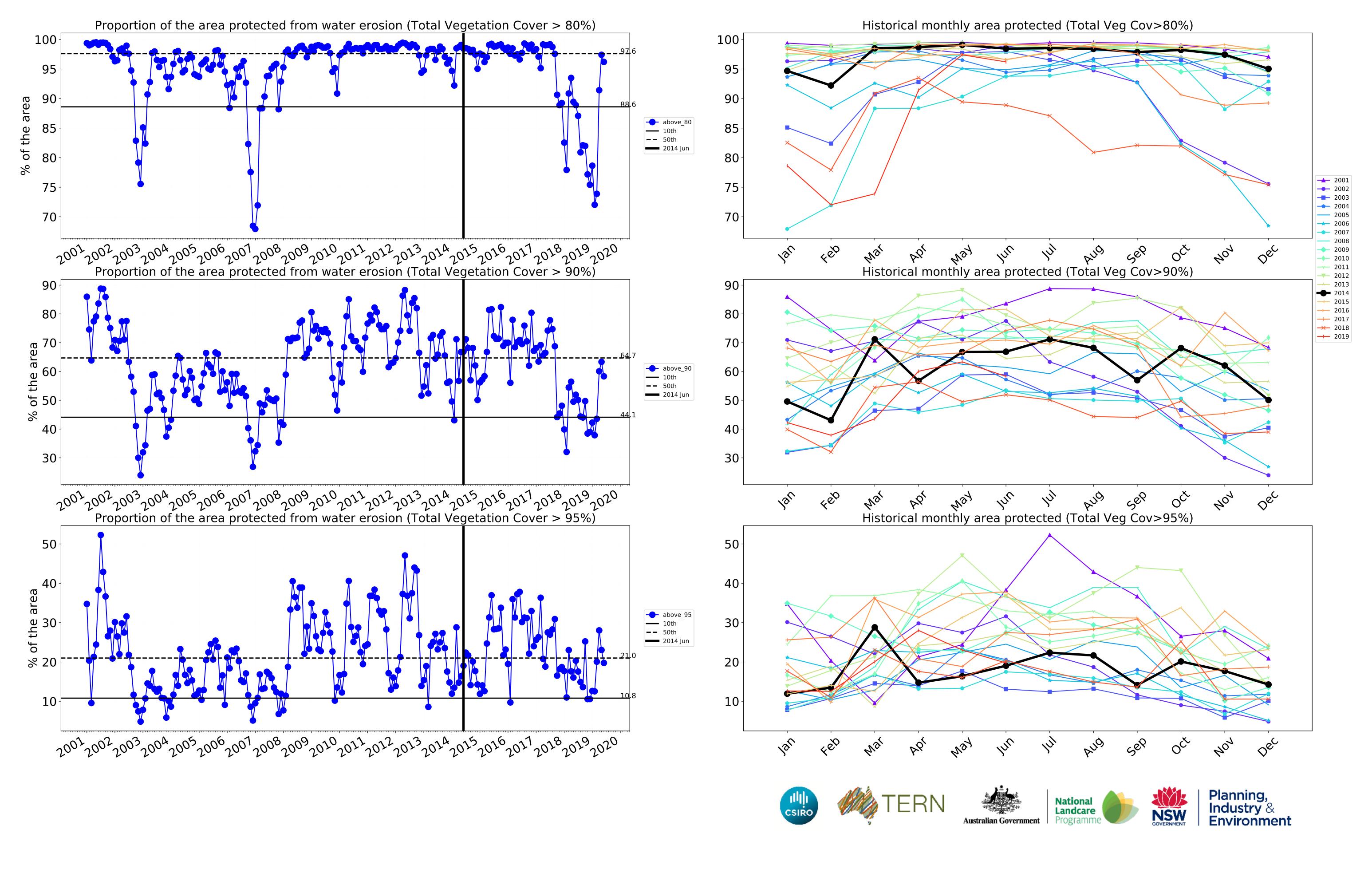




Grazing non forest timeseries





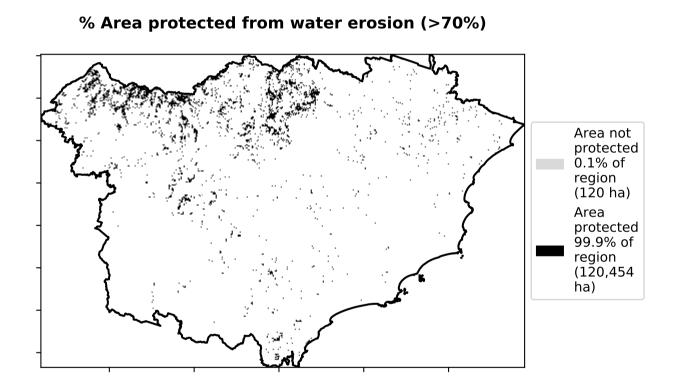


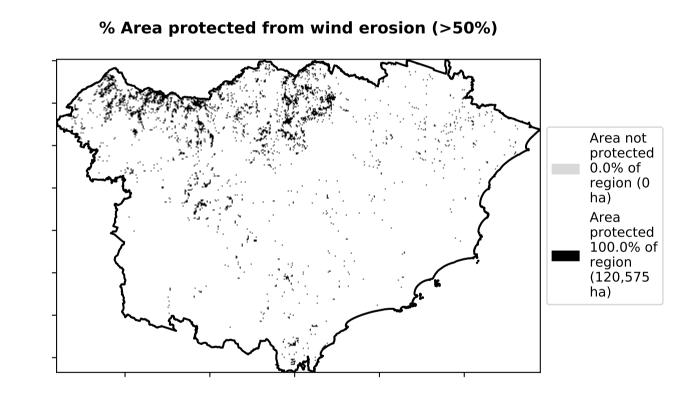
Grazing Woodland forest

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)

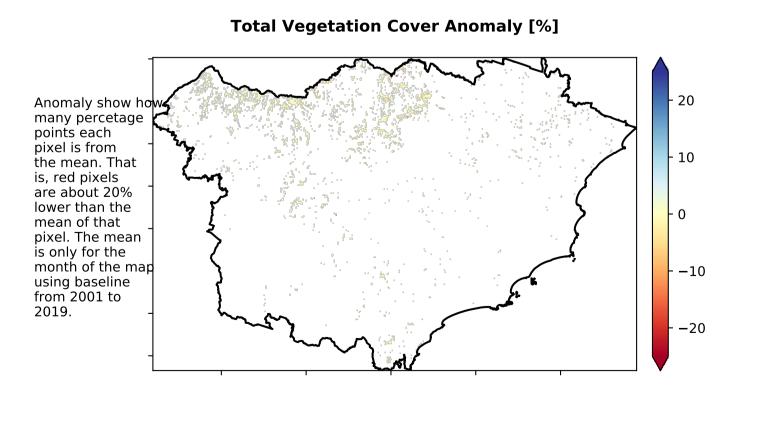
Total Vegetation Cover [%]

99.9% 100 80 Area (%) 40 20 -0.1% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**

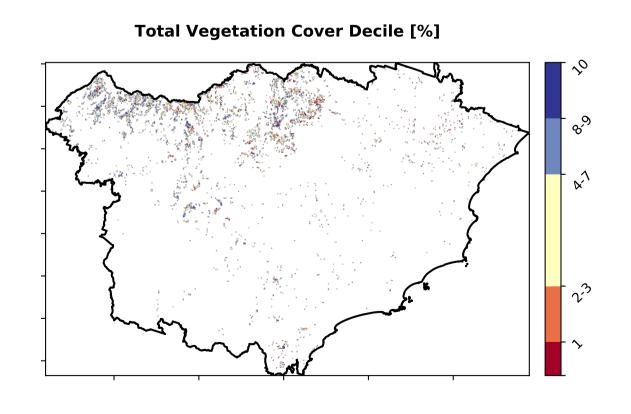




Proportion of vegetation cover class in area



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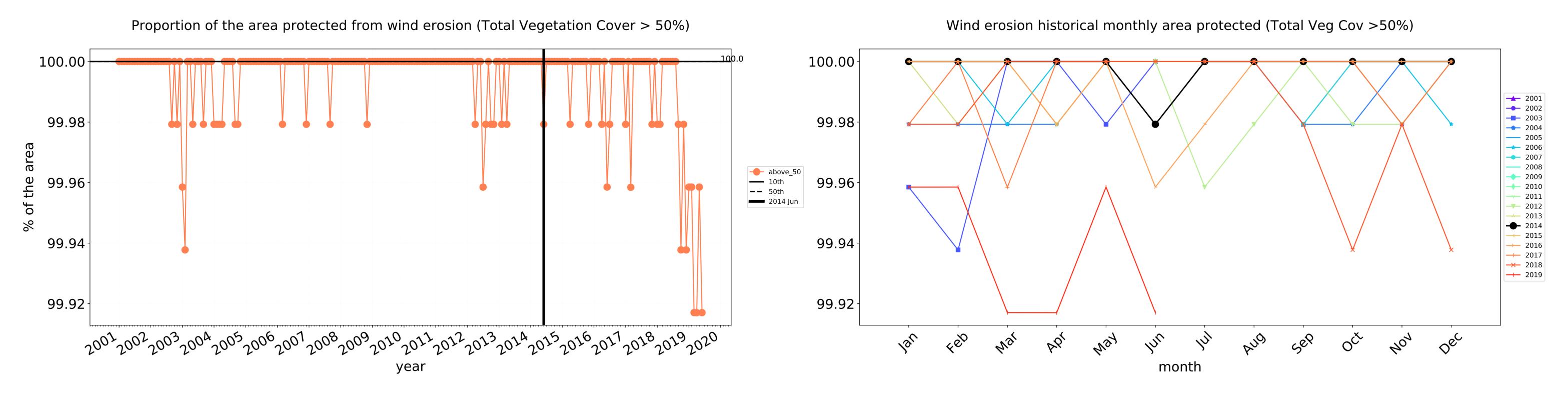


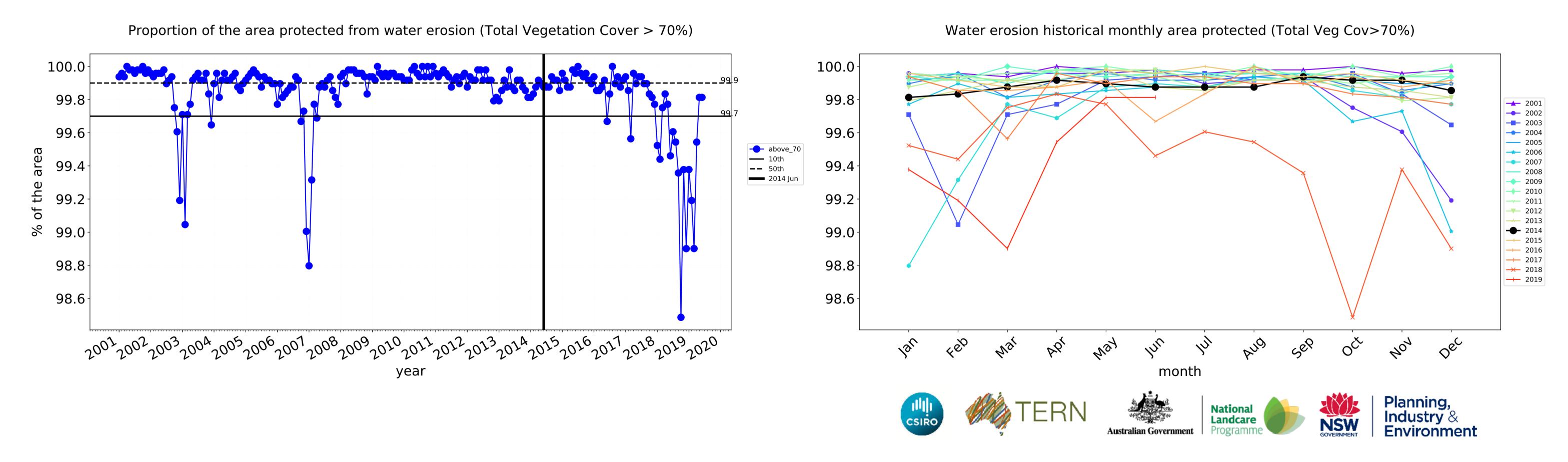


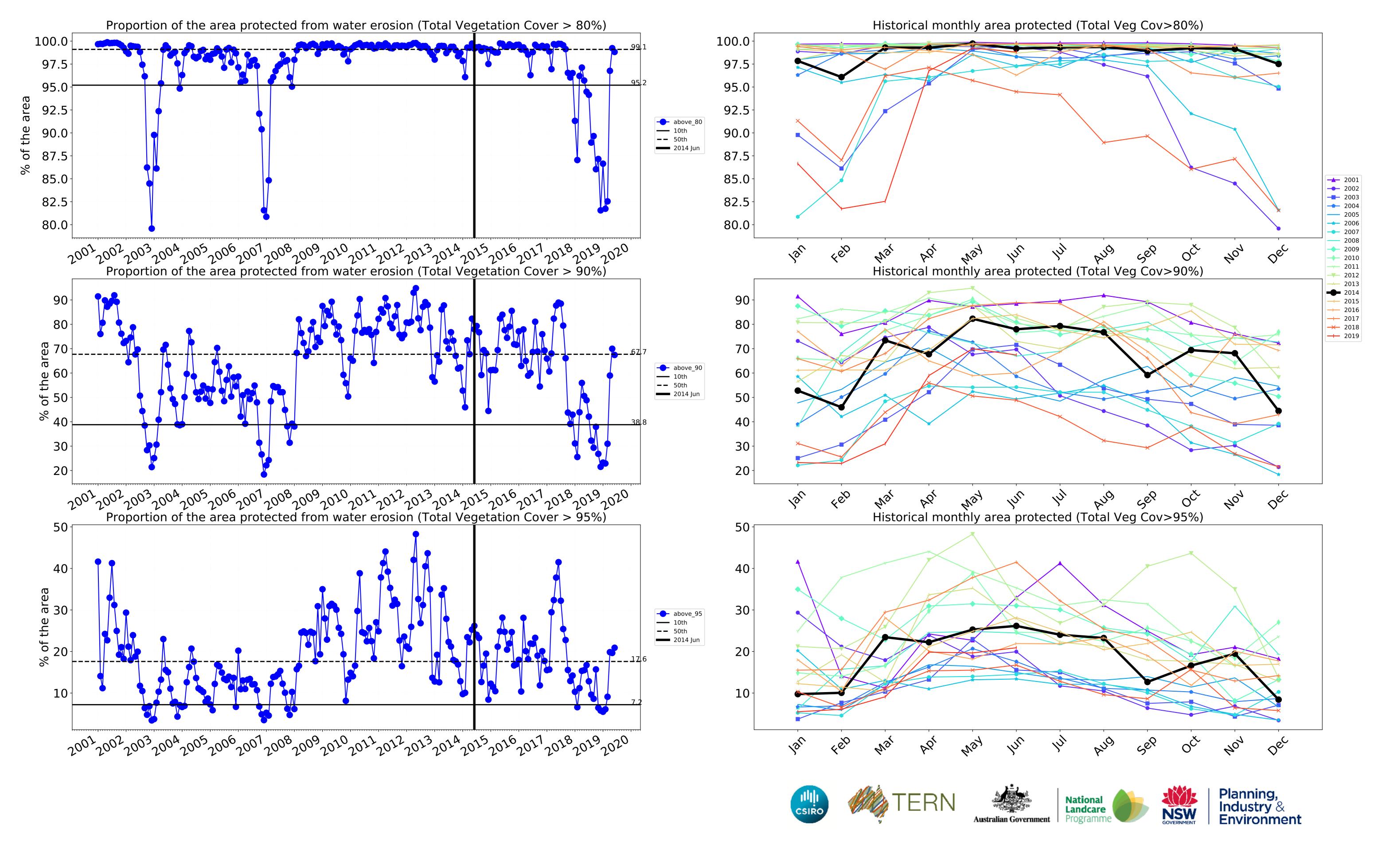




Grazing Woodland forest timeseries





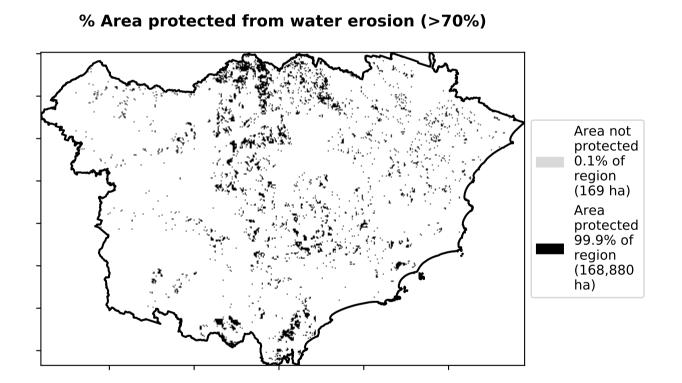


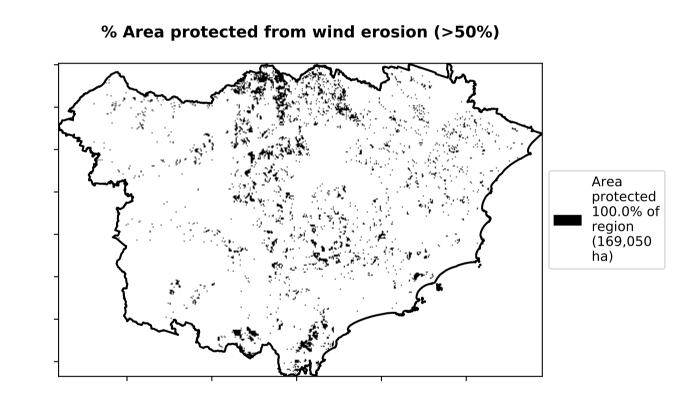
Grazing - Forest (non woodland)

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 [%]

100 Area (%) 60 40 20 -31%-50% 0-30% **Total Vegetation Cover class**





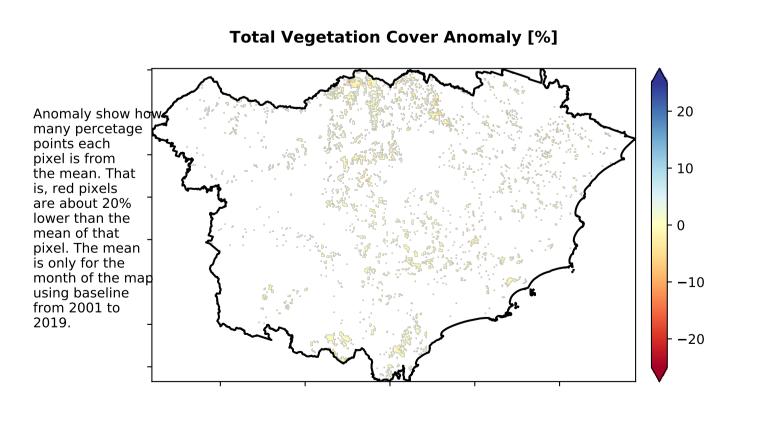
0.1%

51%-70%

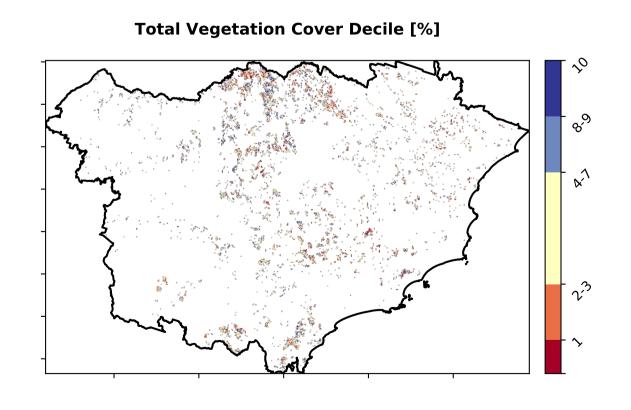
Proportion of vegetation cover class in area

99.9%

71%-100%



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





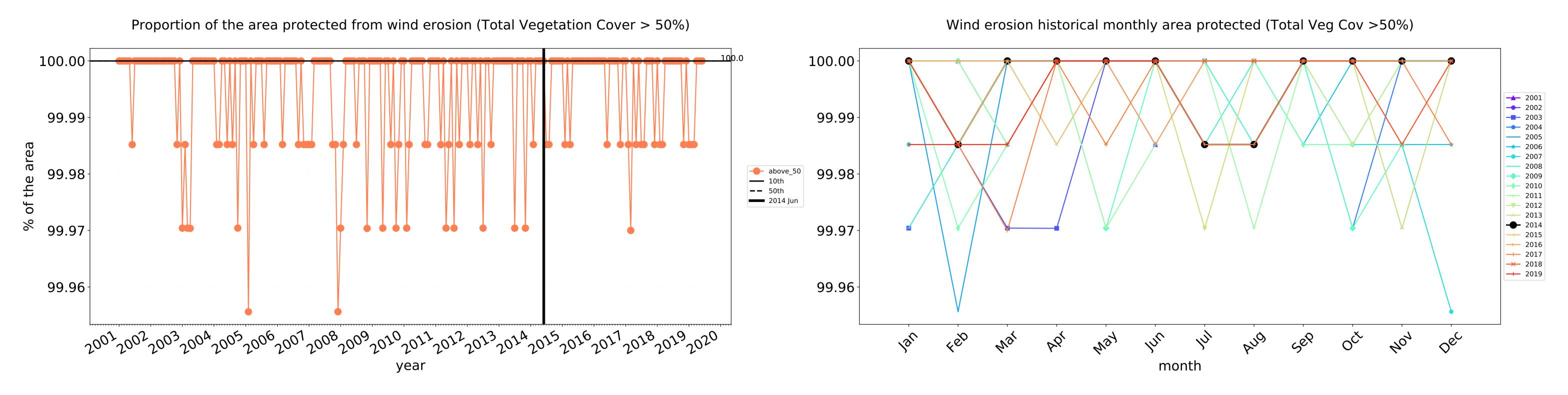


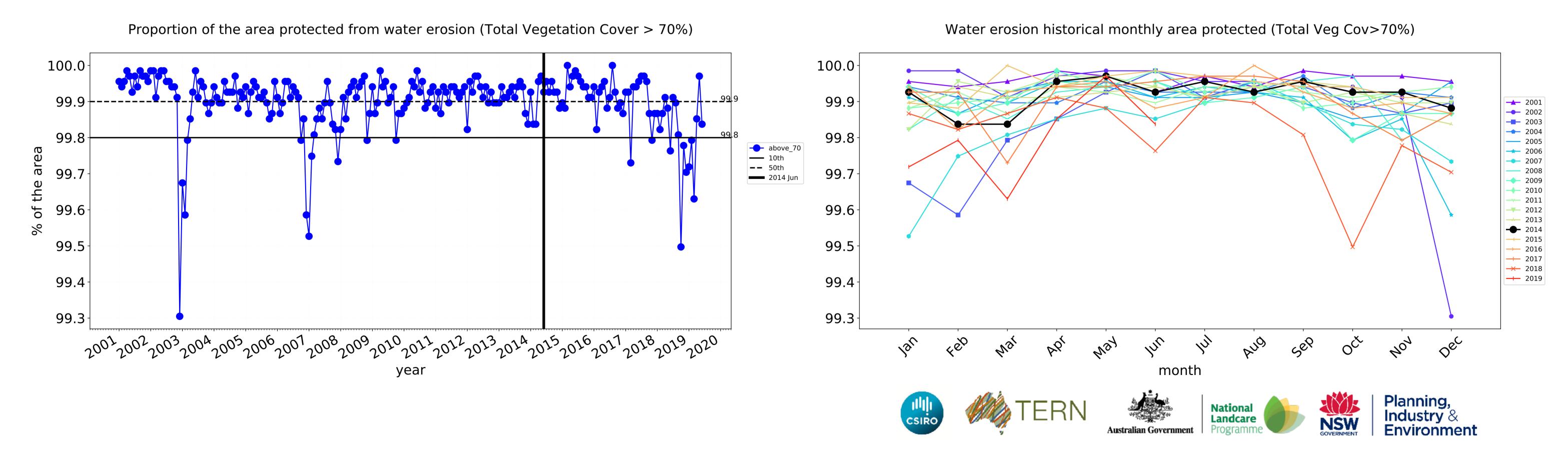


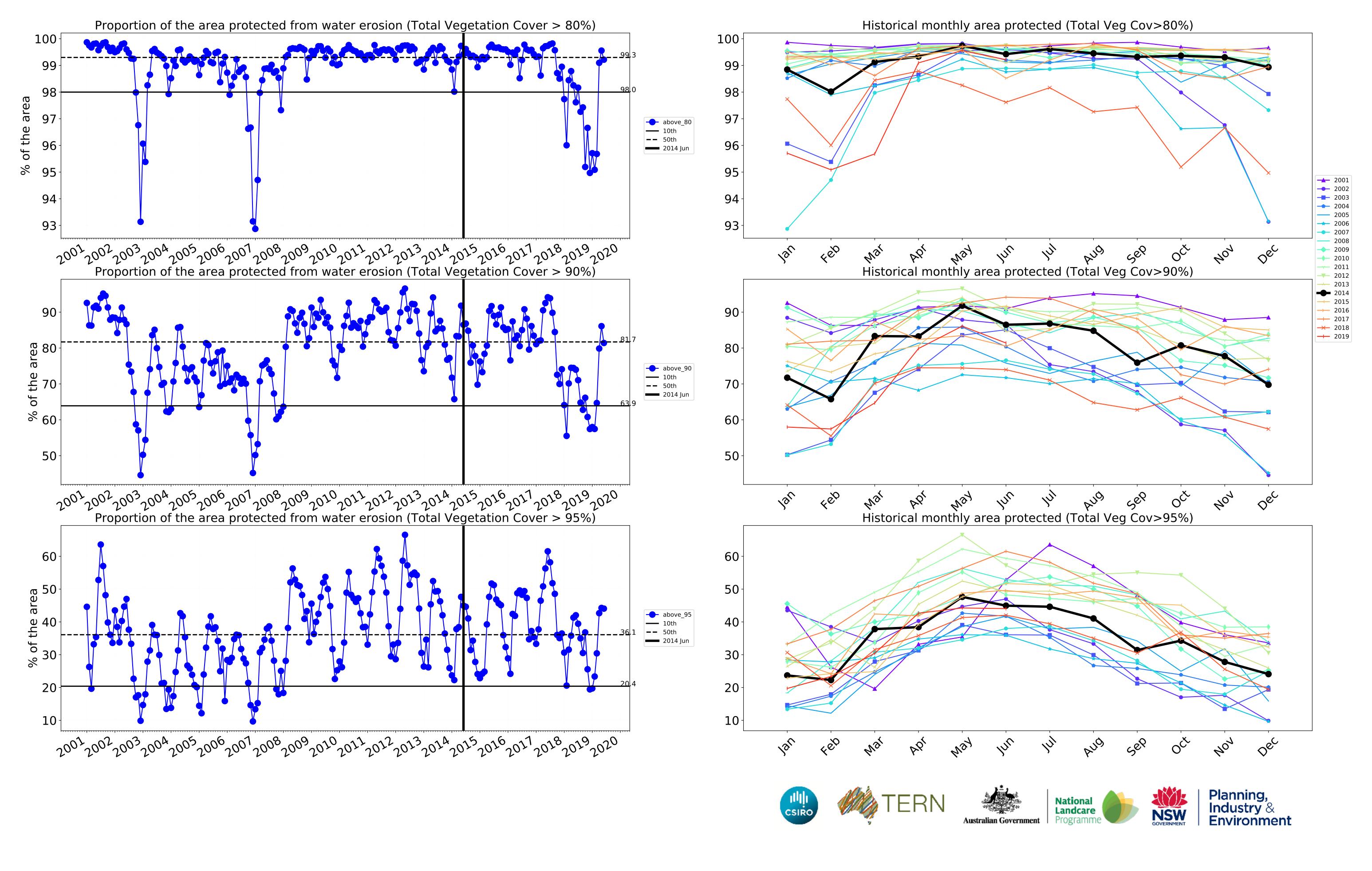






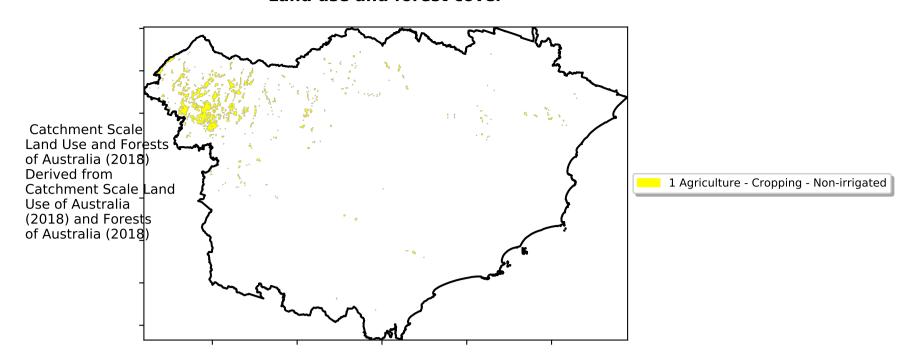




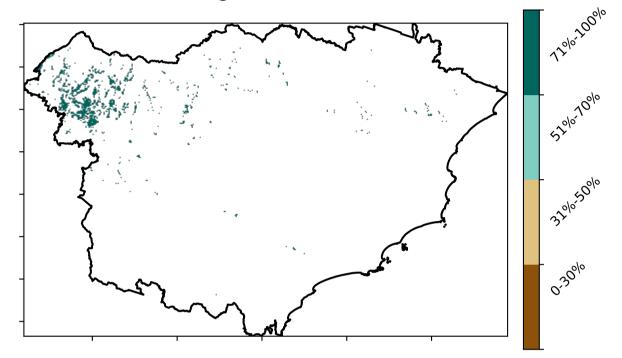


Cropping

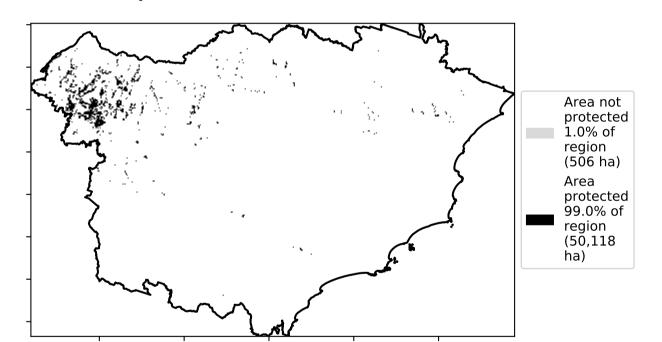
Land use and forest cover



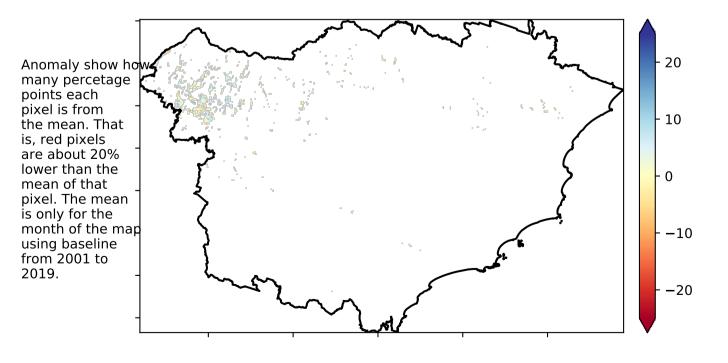
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

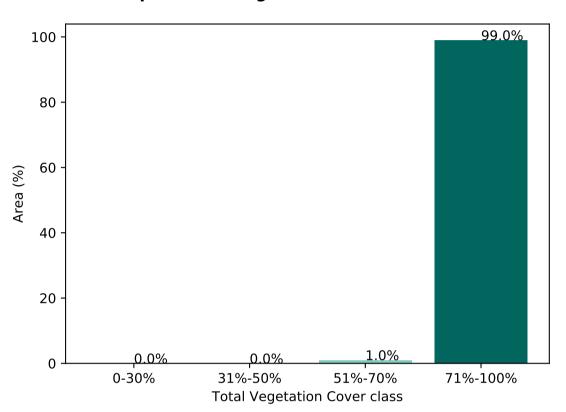


Total Vegetation Cover Anomaly [%]

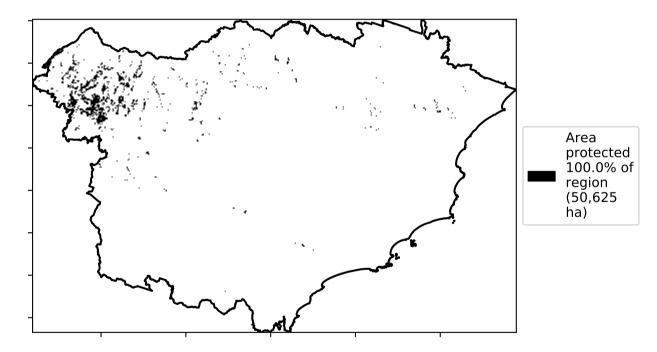


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

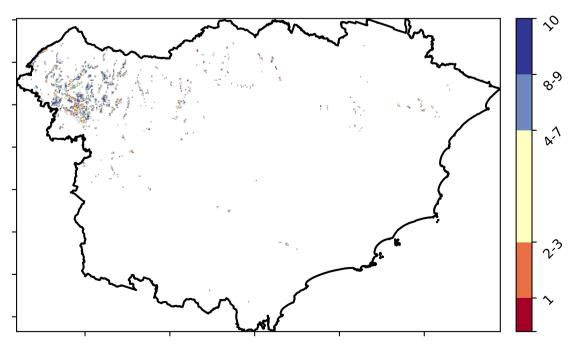
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







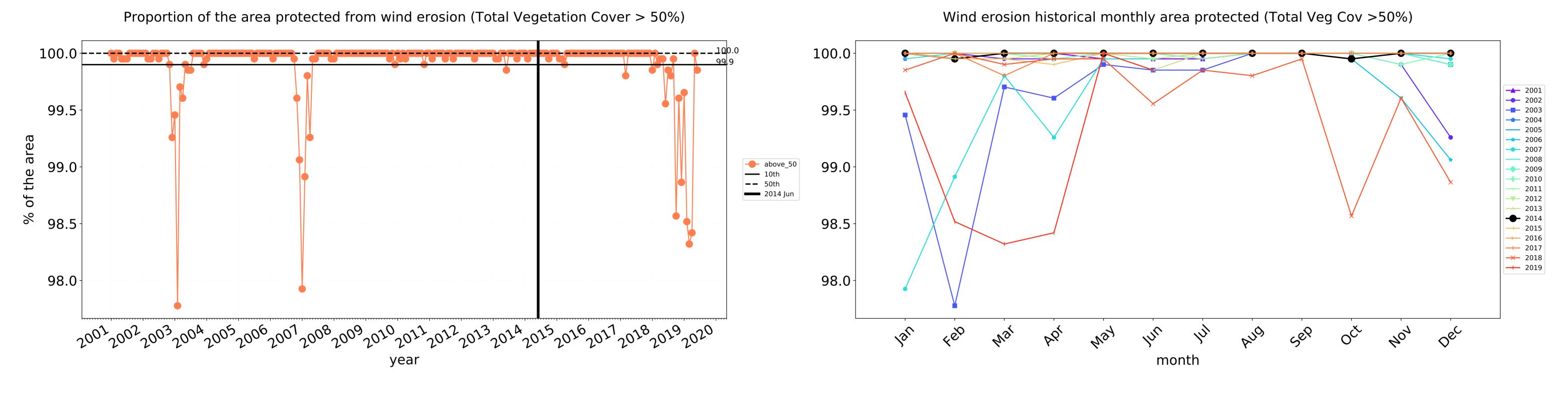


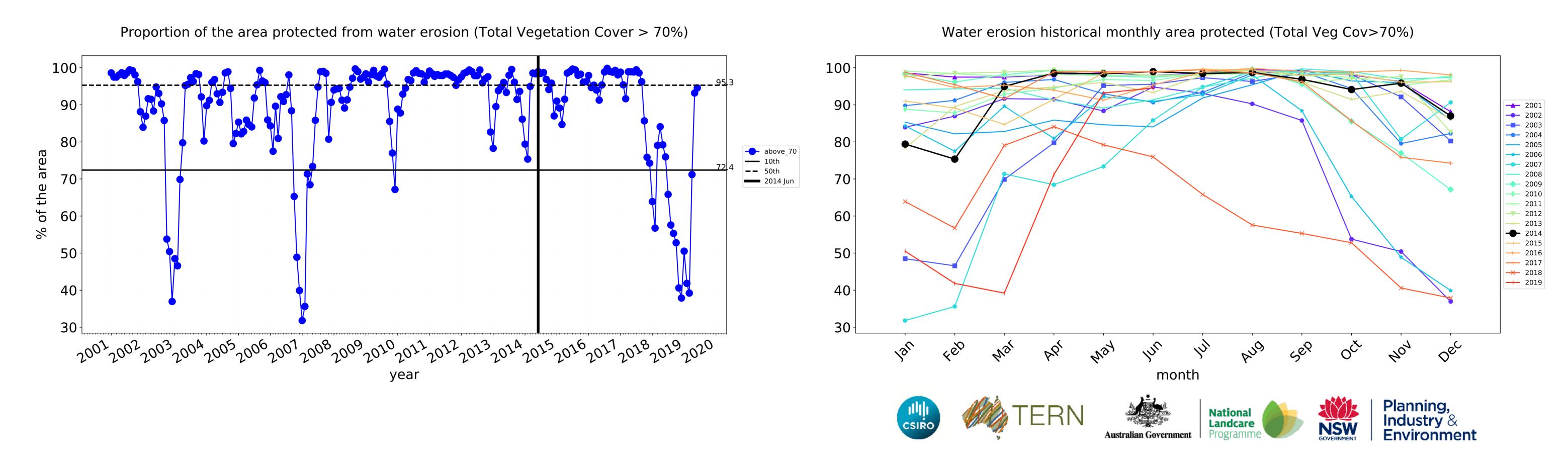


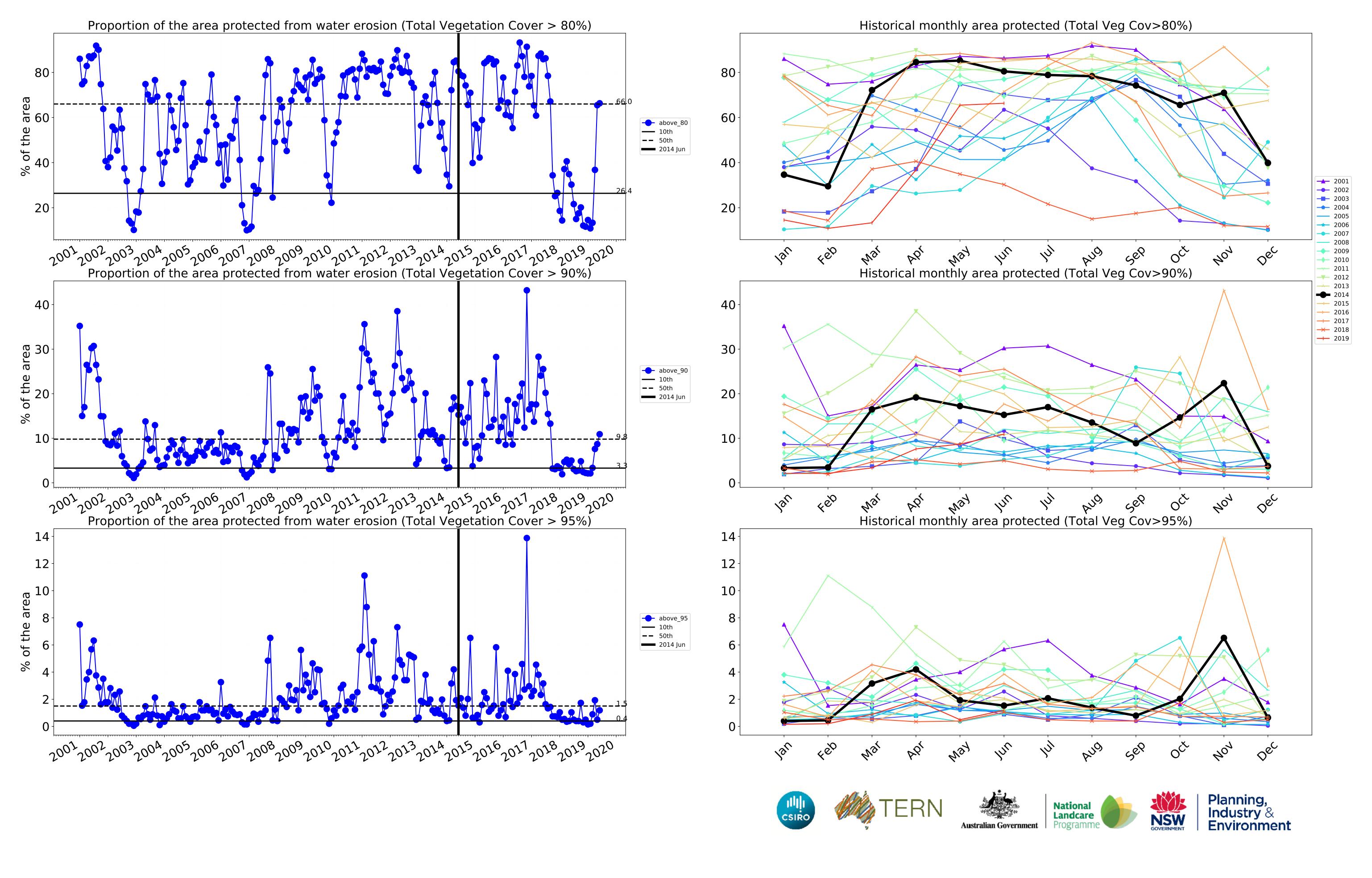




Cropping timeseries





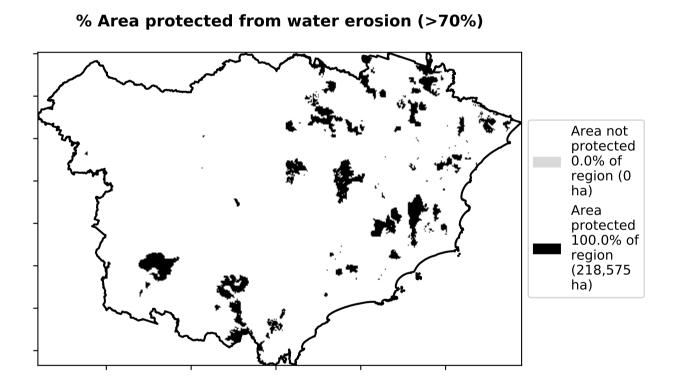


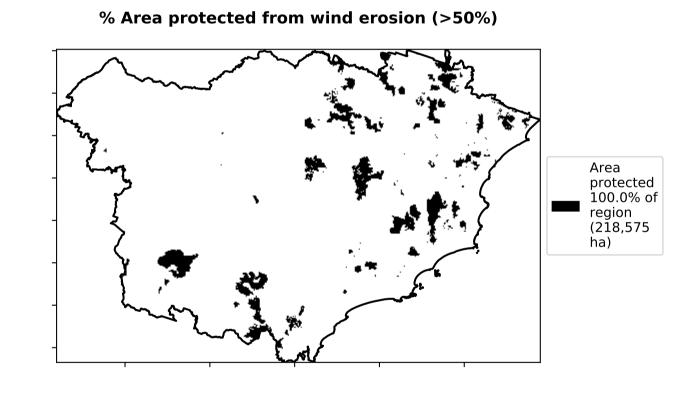
Production native forests and plantation forests

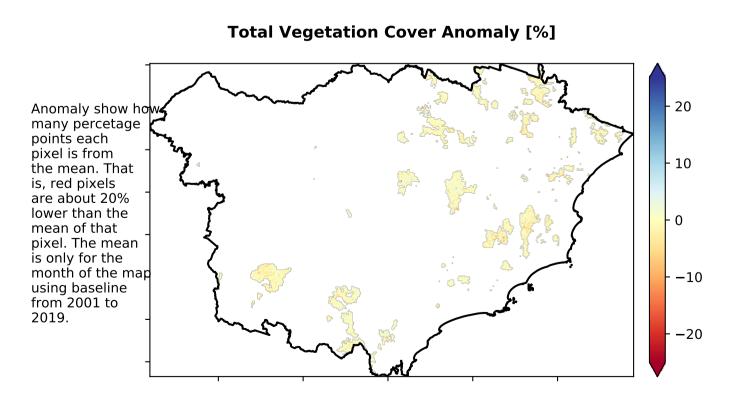
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Australia (2018) Of Australia (2018)

Total Vegetation Cover [%]

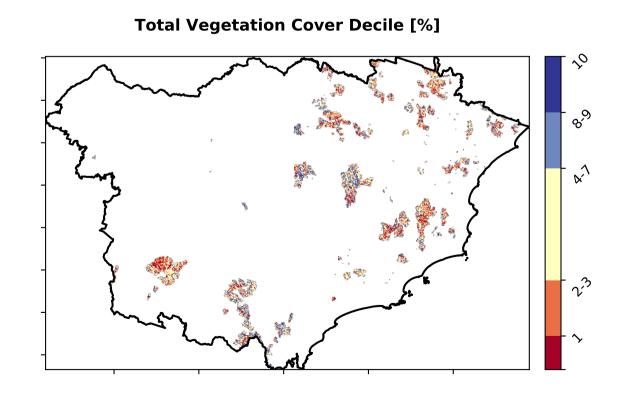
Proportion of vegetation cover class in area 100 - 100.0% 80 - 100.0% 40 - 20 - 100.0% 0-30% 31%-50% 51%-70% 71%-100% Total Vegetation Cover class







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.







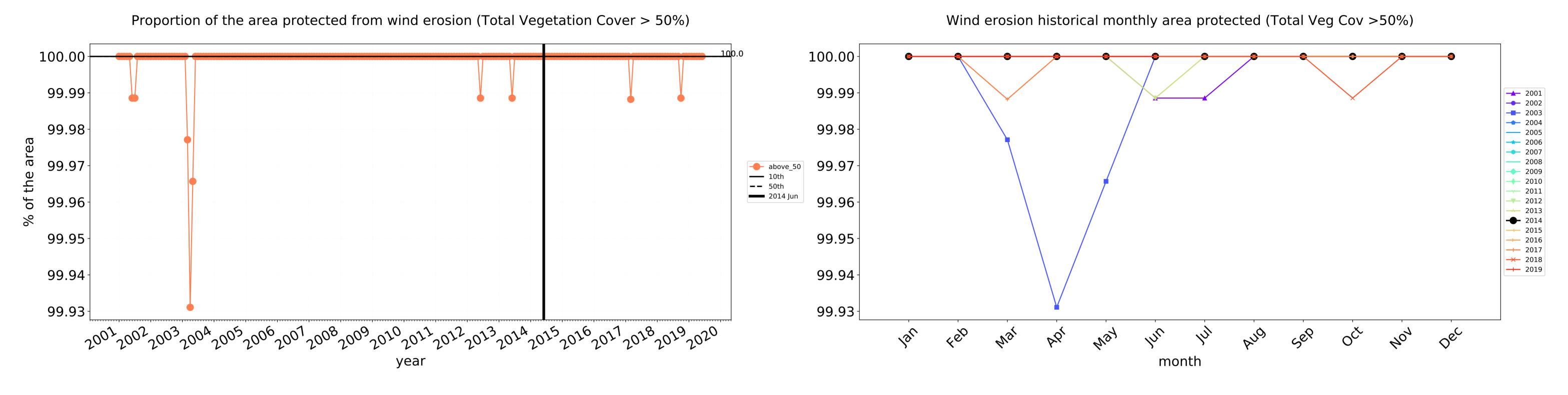


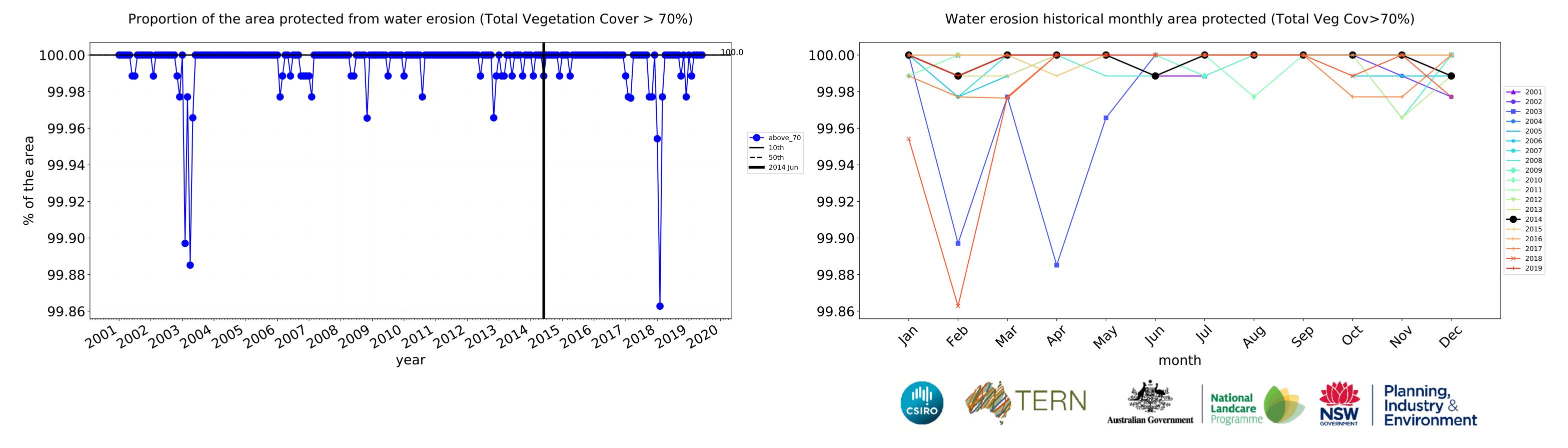


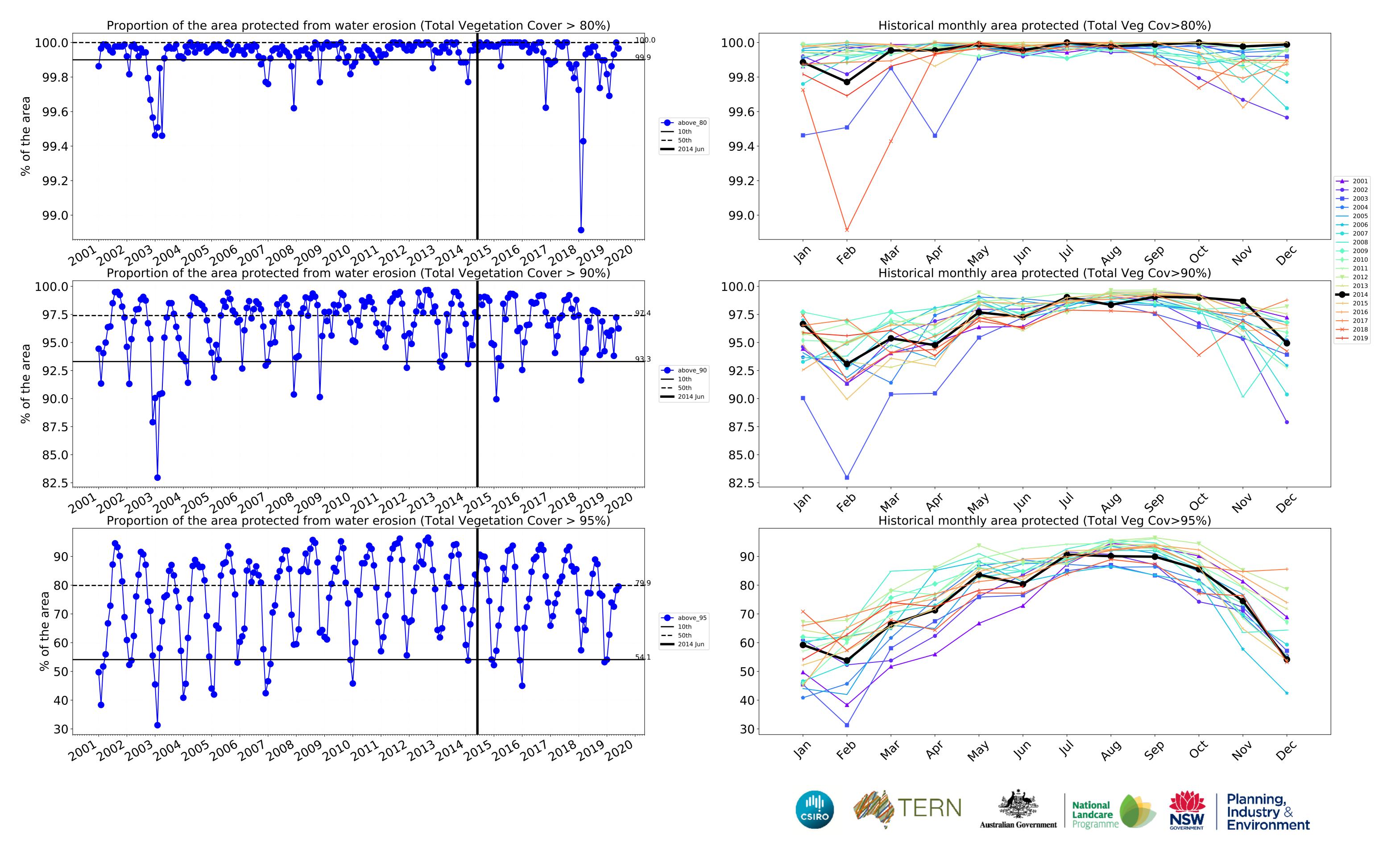




Production native forests and plantation forests timeseries







Hunter (3,239,800 ha and no data 60,625 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	3,239,800	99.9% 3,236,874	99.7% 3,228,474	98.8% 3,200,797	96.8% 3,135,093	76.8% 2,489,128	40.0% 1,296,555
Conservation and natural environments	1,241,050	99.9% 1,240,075	99.9% 1,239,250	99.7% 1,237,525	99.4% 1,233,100	92.1% 1,142,650	61.3% 760,250
Conservation and natural environments non forest	30,025	97.0% 29,125	94.6% 28,400	90.9% 27,300	87.3% 26,200	67.7% 20,325	33.7% 10,125
Conservation and natural environments Woodland forest	138,875	100.0% 138,875	100.0% 138,850	99.9% 138,750	99.7% 138,500	91.9% 127,675	41.4% 57,425
Conservation and natural environments Forest (non woodland)	1,072,150	100.0% 1,072,075	100.0% 1,072,000	99.9% 1,071,475	99.7% 1,068,400	92.8% 994,650	64.6% 692,700
Agriculture	1,580,500	100.0% 1,580,475	100.0% 1,580,325	99.8% 1,577,875	97.9% 1,546,975	67.2% 1,062,675	21.5% 339,775
Grazing	1,502,500	100.0% 1,502,475	100.0% 1,502,325	99.9% 1,500,400	98.6% 1,481,675	70.0% 1,051,300	22.5% 338,475
Grazing non forest	1,212,875	100.0% 1,212,850	100.0% 1,212,725	99.8% 1,211,050	98.4% 1,194,000	66.9% 811,100	19.0% 230,925
Grazing Woodland forest	120,575	100.0% 120,575	100.0% 120,550	99.9% 120,425	99.2% 119,600	78.0% 94,000	26.2% 31,550
Grazing - Forest (non woodland)	169,050	100.0% 169,050	100.0% 169,050	99.9% 168,925	99.4% 168,075	86.5% 146,200	45.0% 76,000
Cropping	50,625	100.0% 50,625	100.0% 50,625	99.0% 50,100	80.5% 40,750	15.3% 7,725	1.5% 775
Production native forests and plantation forests	218,575	100.0% 218,575	100.0% 218,575	100.0% 218,550	100.0% 218,475	97.3% 212,600	80.3% 175,575











