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: July 2002

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 Jul 2002

10 Agriculture - Horticulture - Non-irrigated

12 Production native forests and plantation

11 Agriculture - Horticulture - Irrigated

13 Other uses

Legend with land class forest cover and number, i.e. Forests is 12 1 Conservation and natural environments - Non-forest 2 Conservation and natural environments - Woodland forest 3 Conservation and natural environments - Non-Woodland forest 4 Agriculture - Grazing - Non-forest 5 Agriculture - Grazing - Woodland forest 6 Agriculture - Grazing - Irrigated 8 Agriculture - Grazing - Irrigated 9 Agriculture - Cropping - Irrigated

35 - 32.7% 30 - 25 - 20 - 25 - 10 - 10 - 1 2 3 4 5 6 7 8 9 10 11 12 13

Proportion of each land class in area

Total Vegetation Cover [%]

Catchment Scale Land Use and Forests

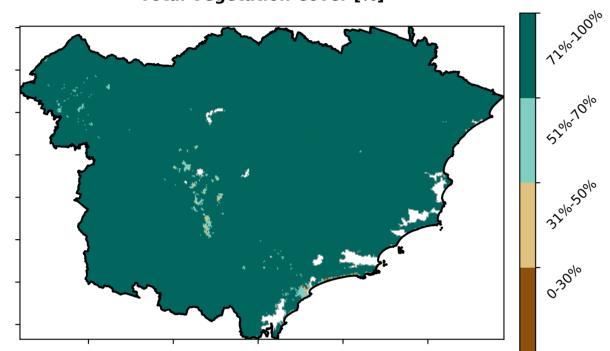
Catchment Scale Land

of Australia (2018)

Derived from

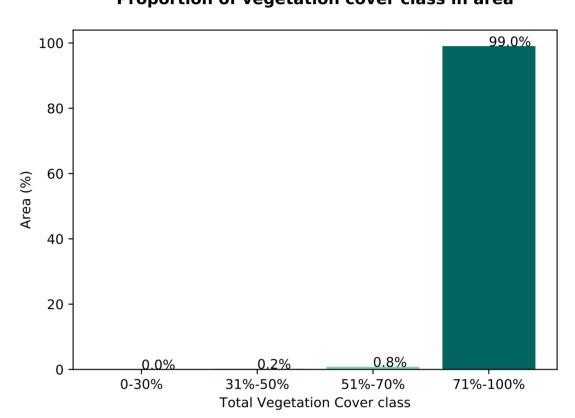
Use of Australia

(2018) and Forests of Australia (2018)

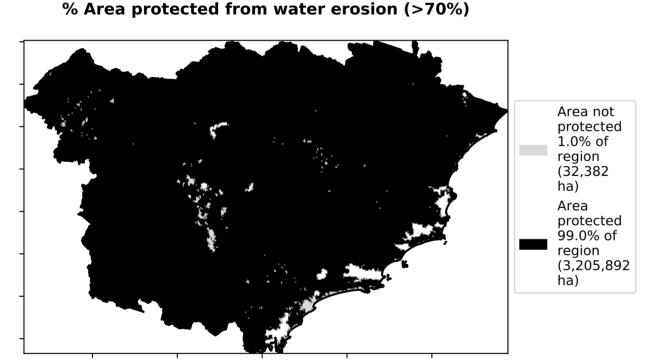


Proportion of vegetation cover class in area

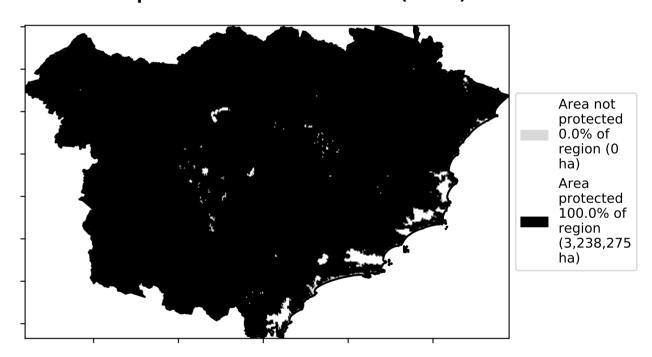
Land use class



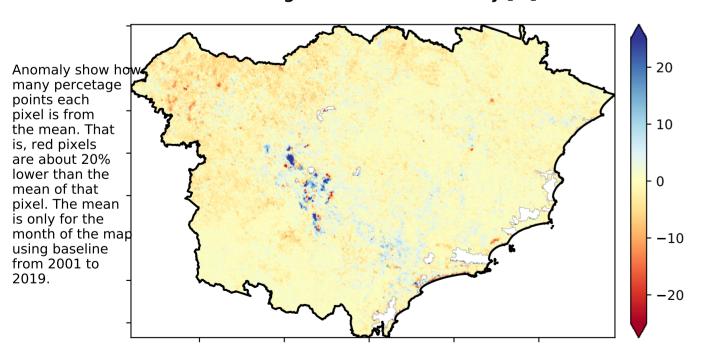
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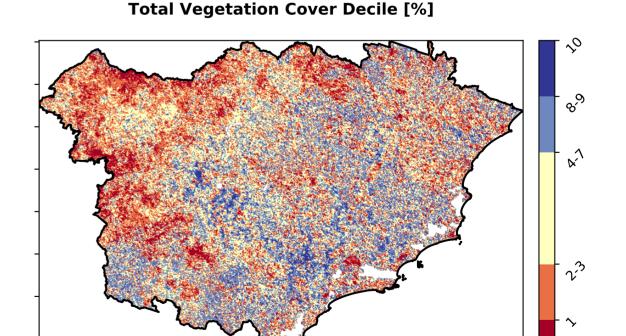


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]







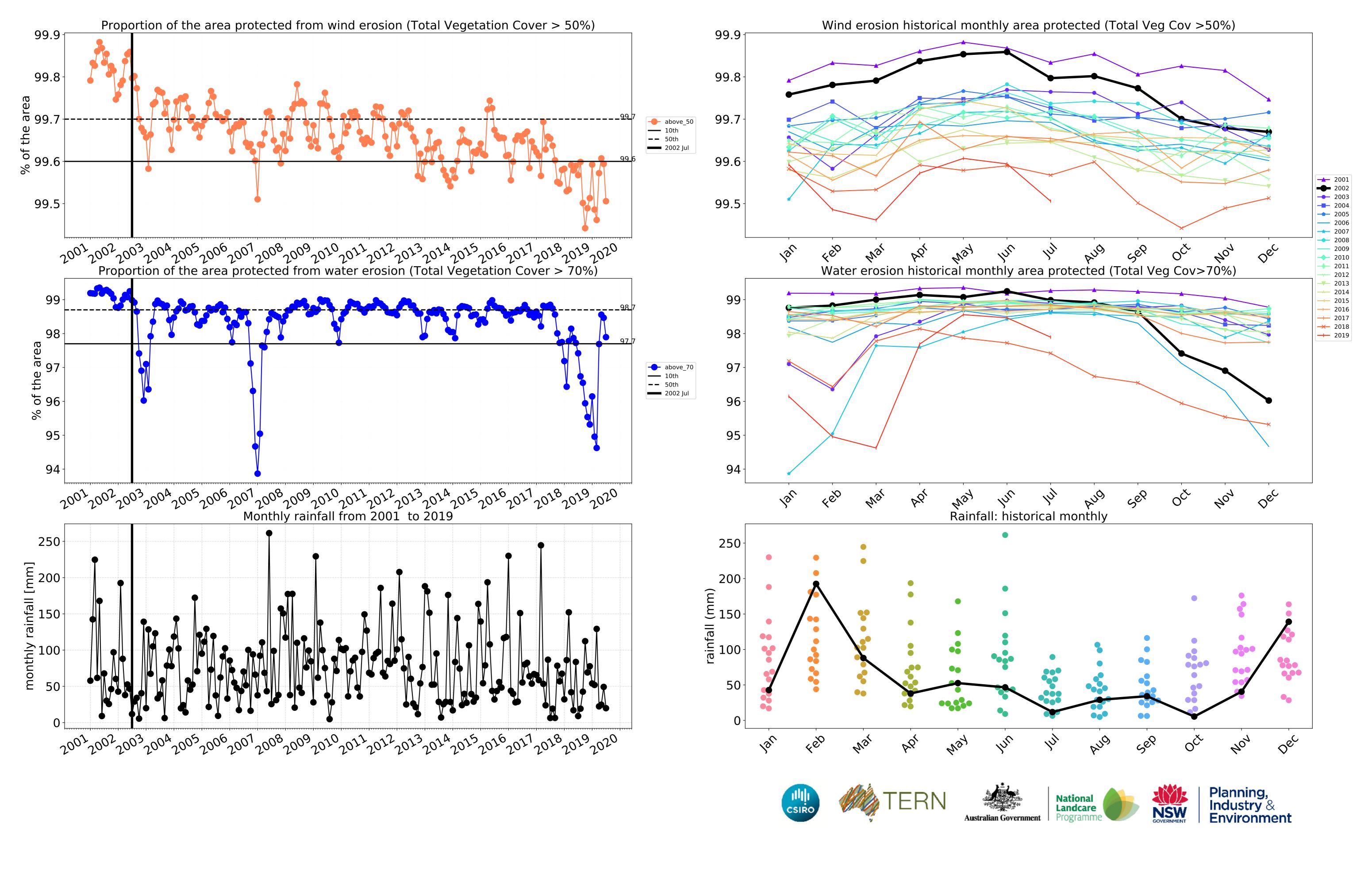


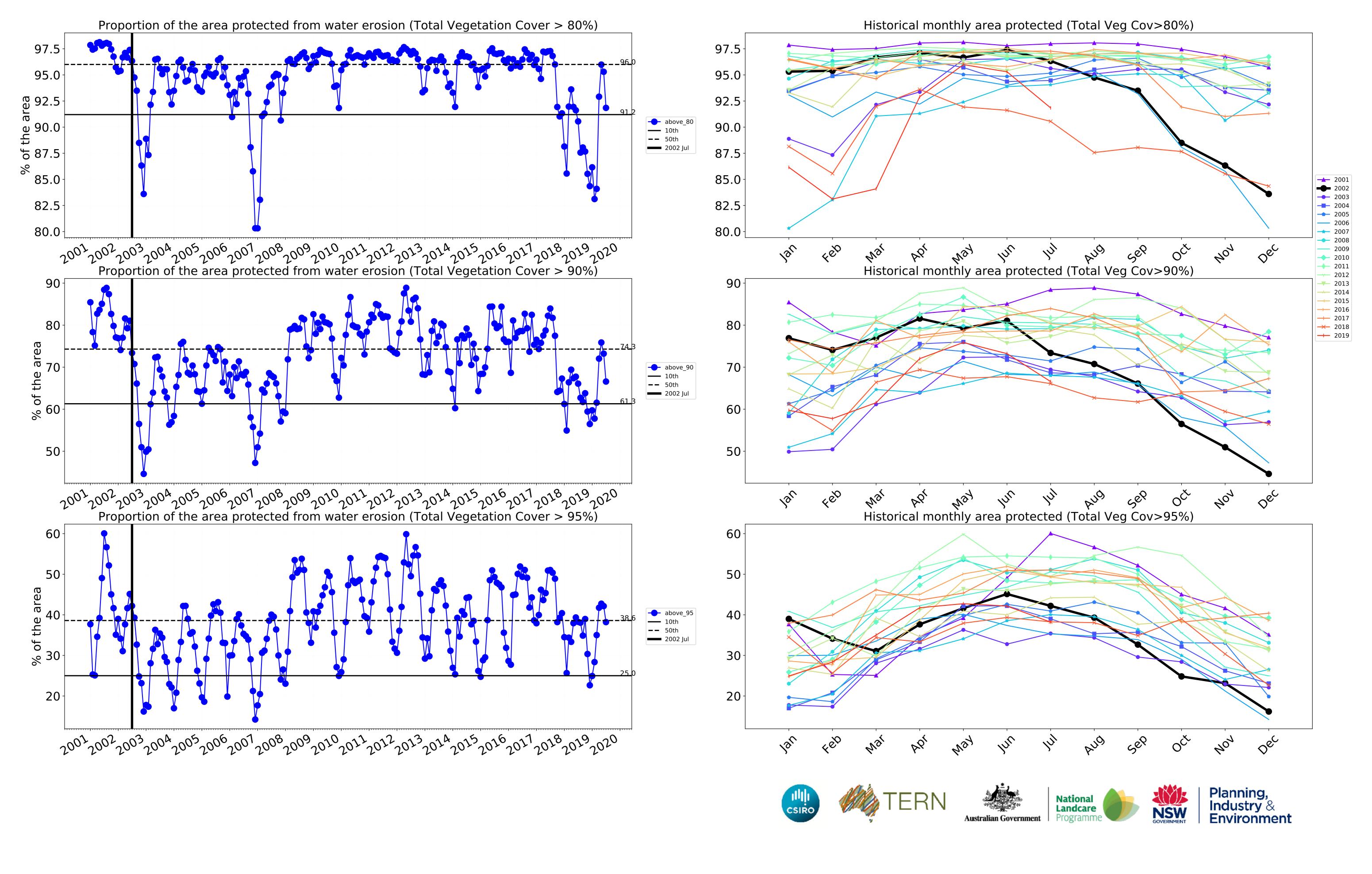




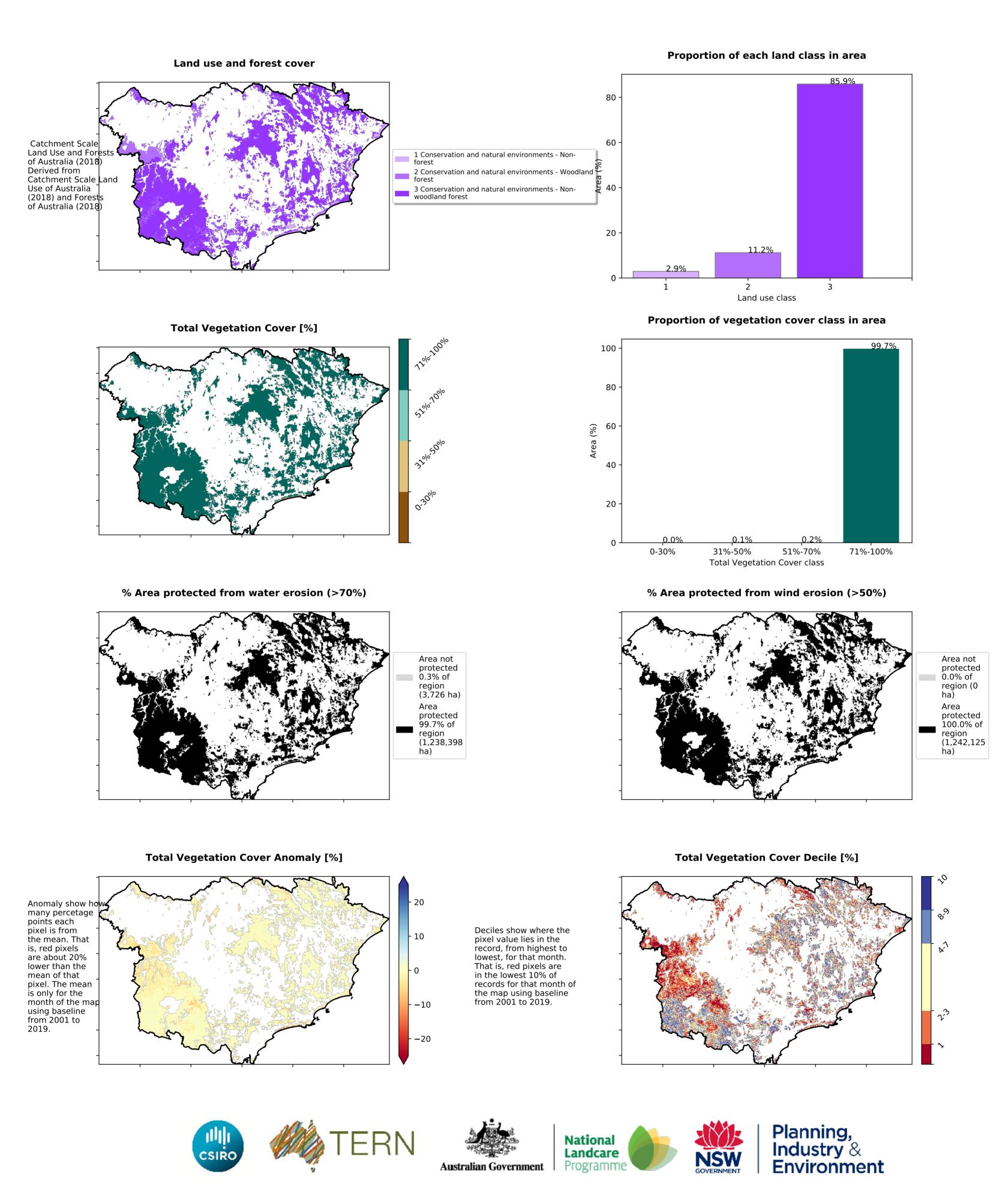




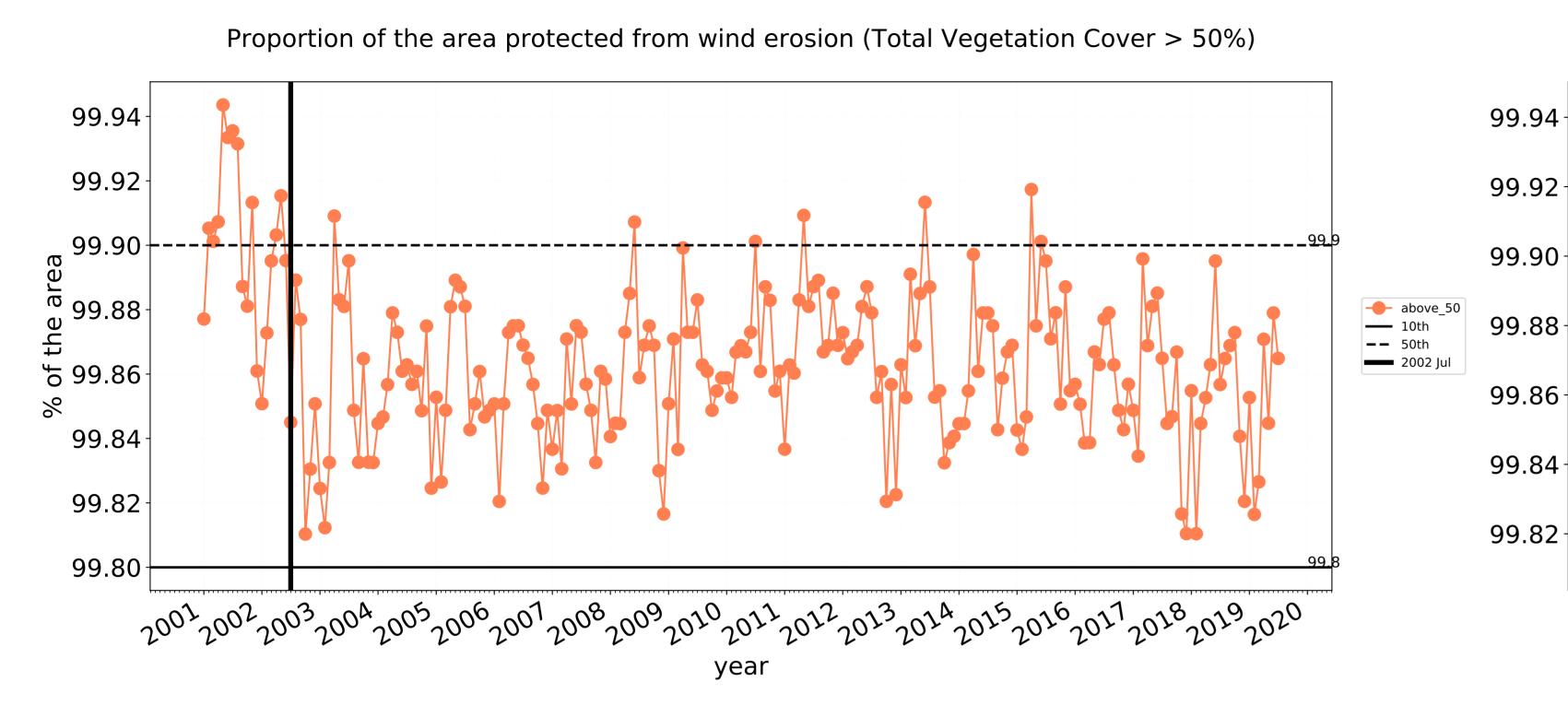


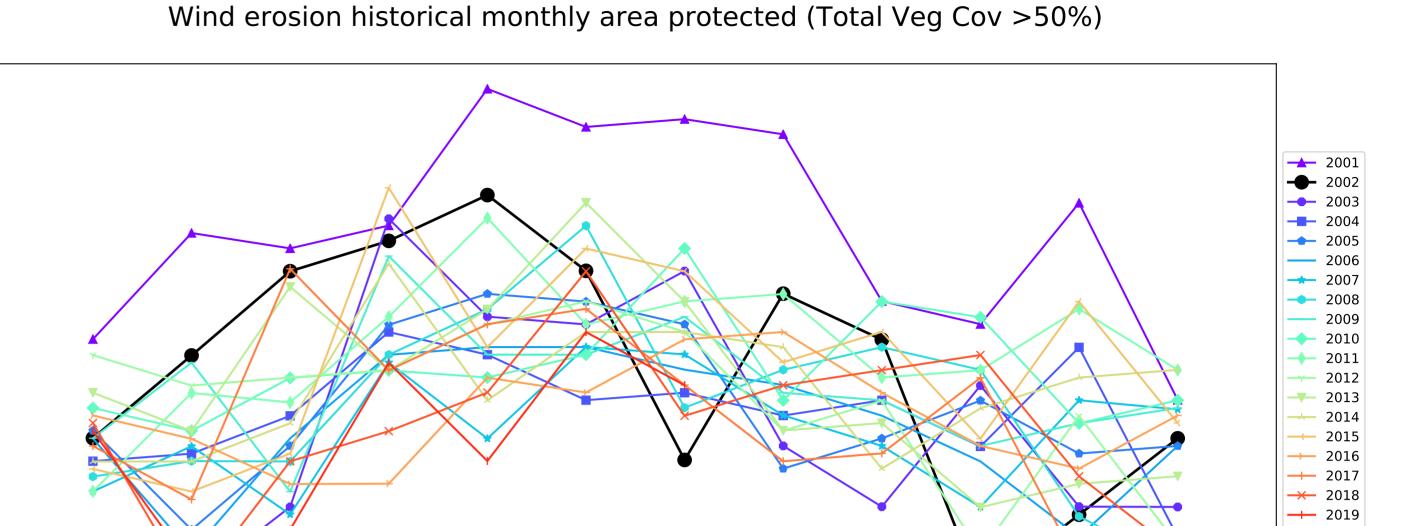


Conservation and natural environments

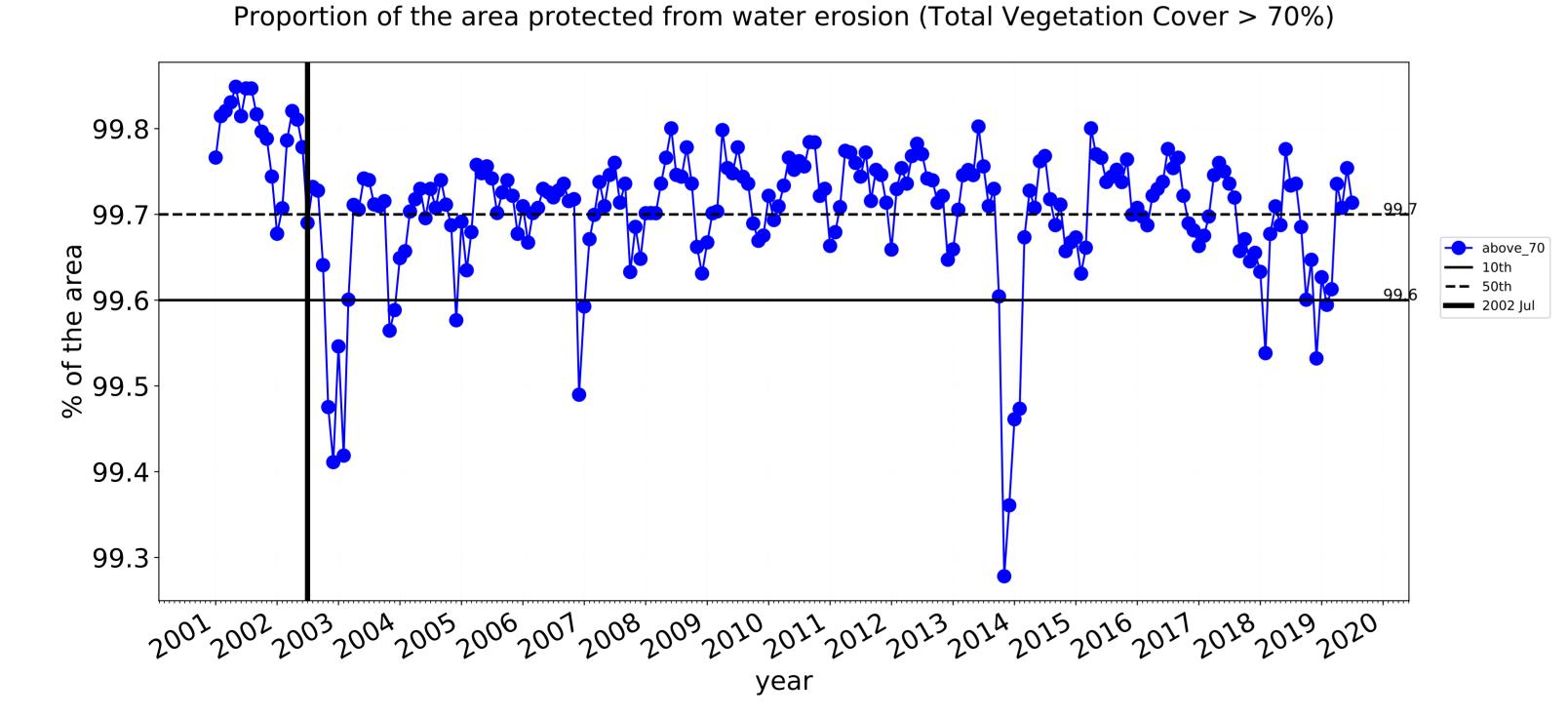


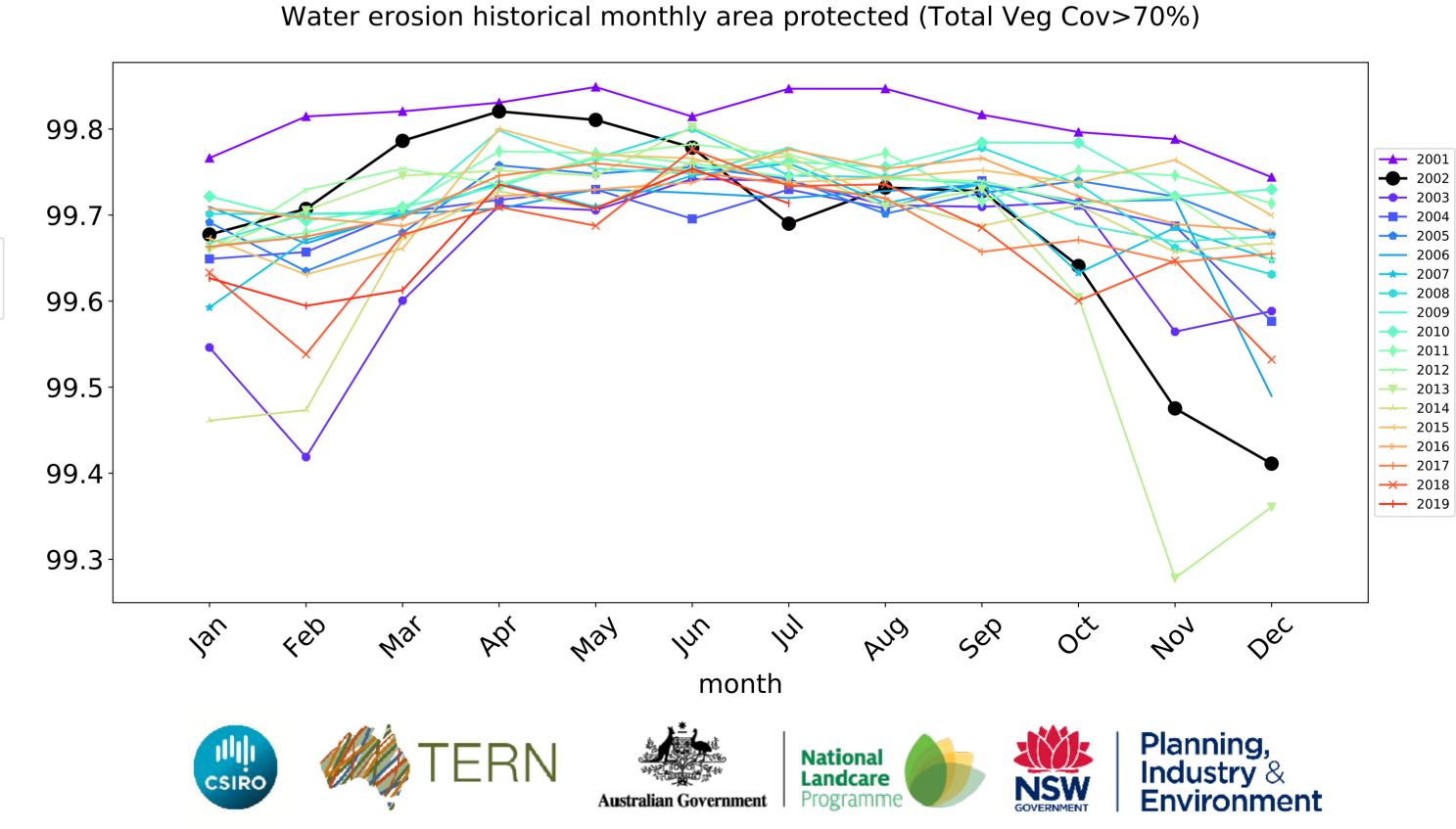
Conservation and natural environments timeseries

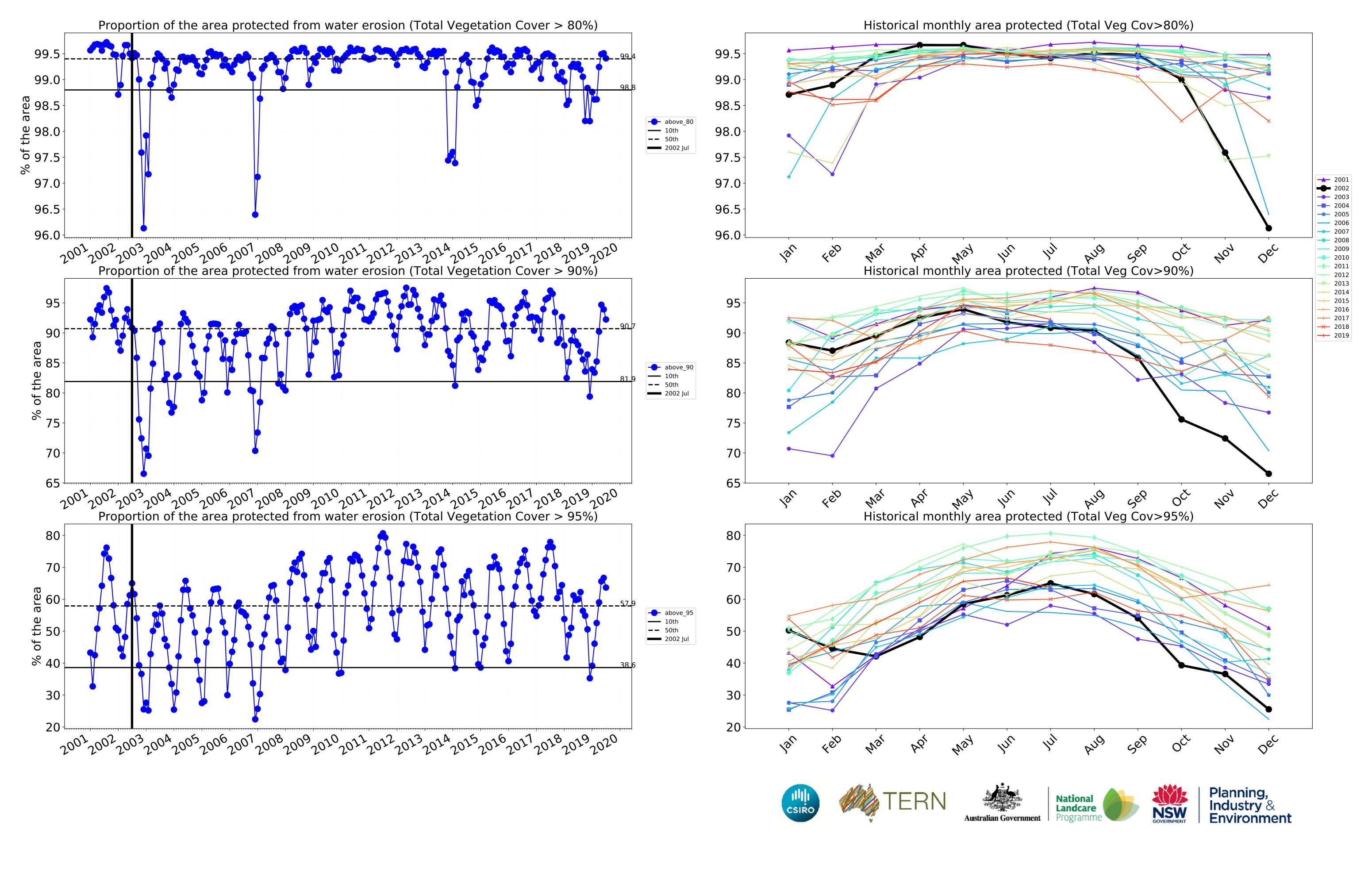




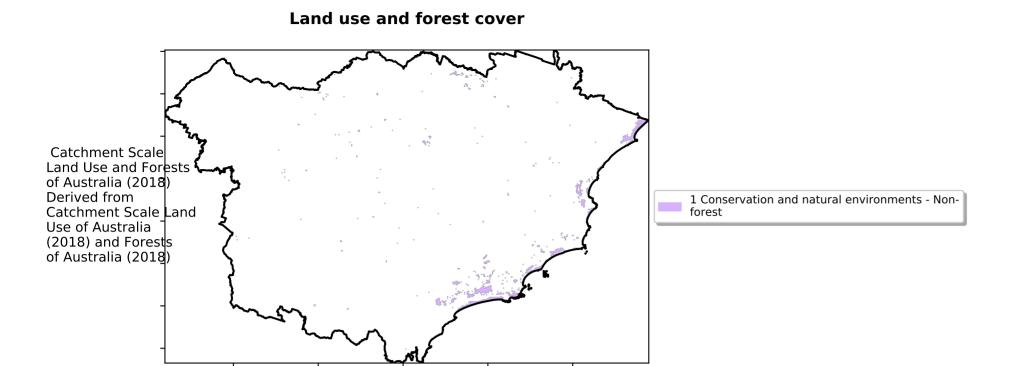
month



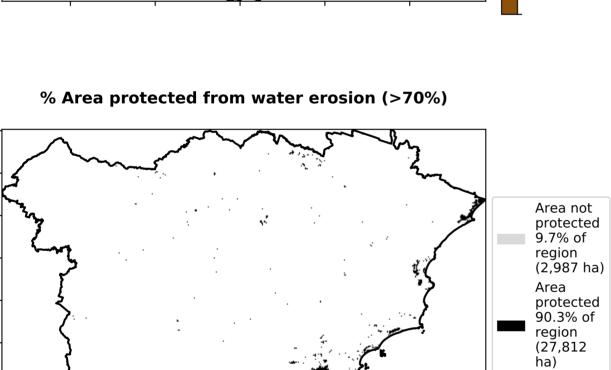


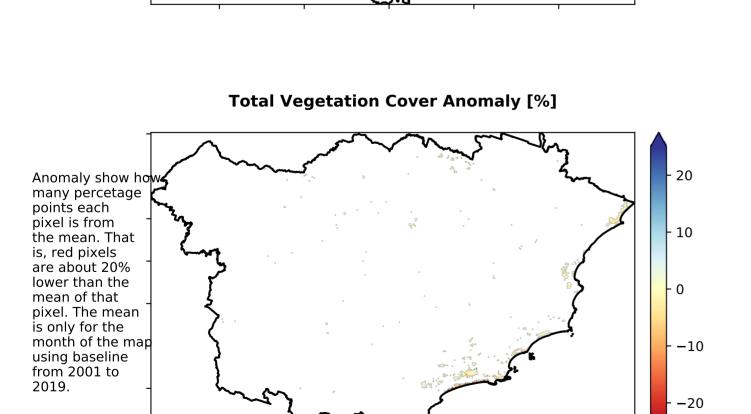


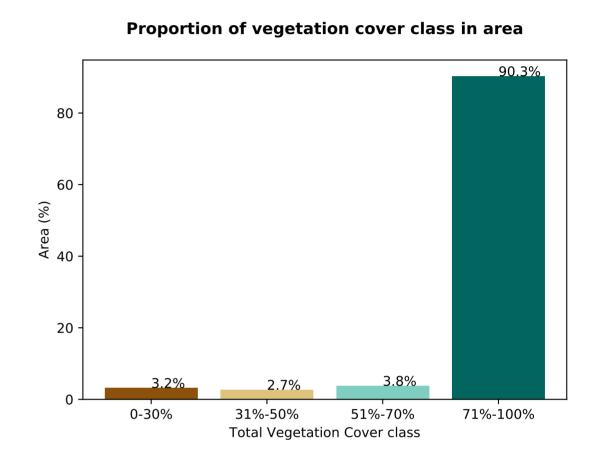
Conservation and natural environments non forest

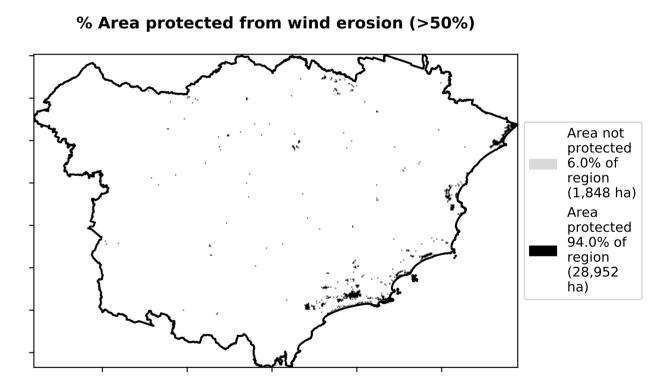


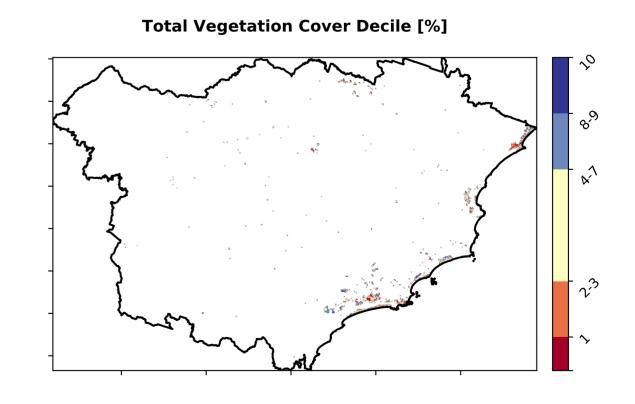
Total Vegetation Cover [%]















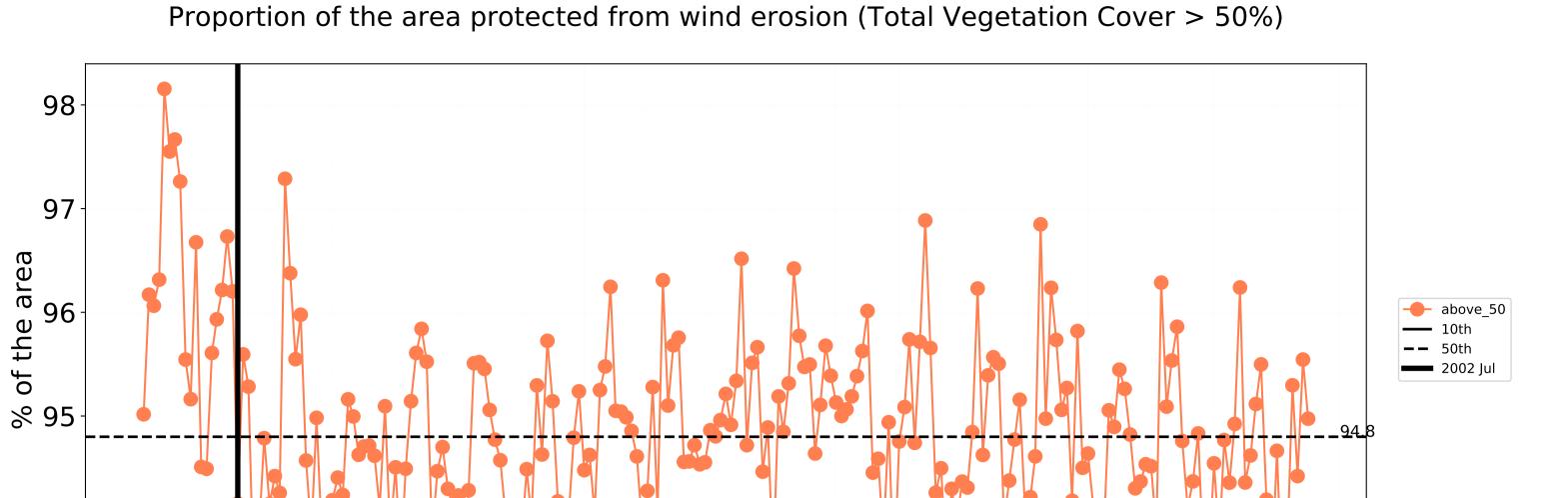




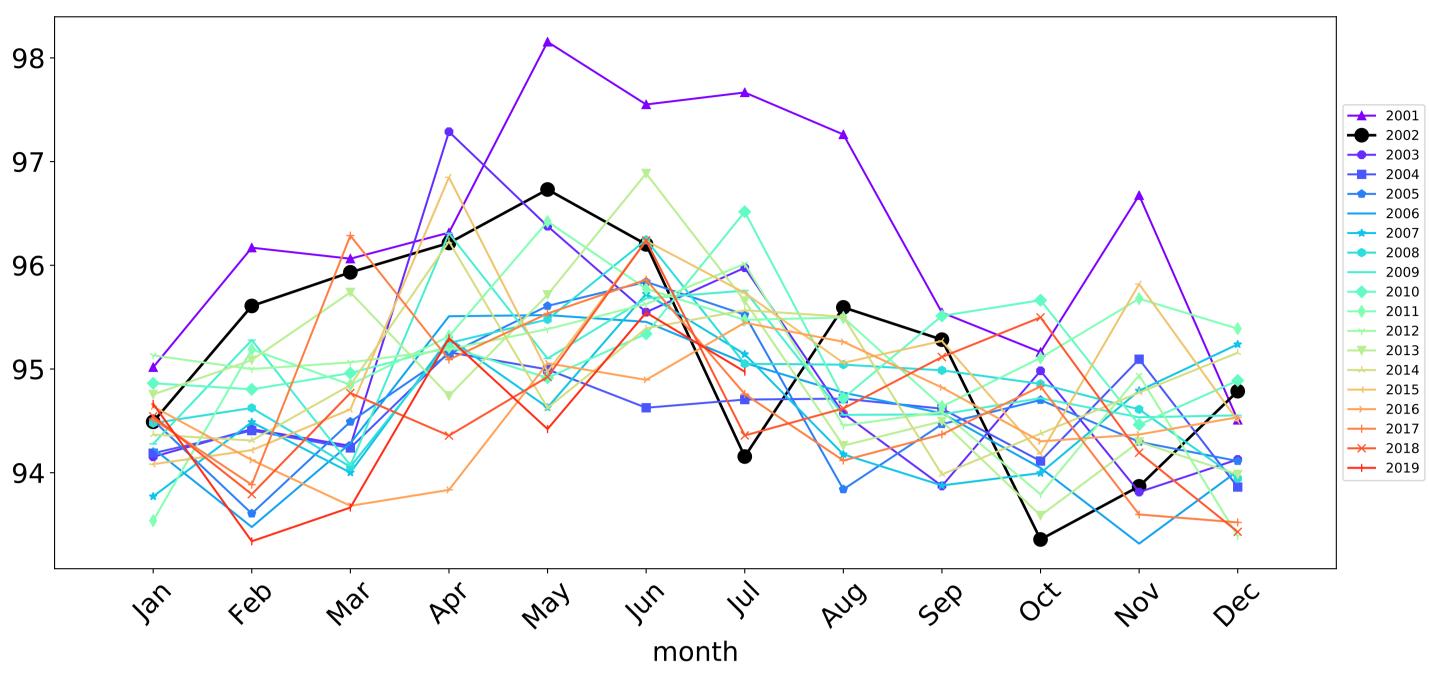




Conservation and natural environments non forest timeseries

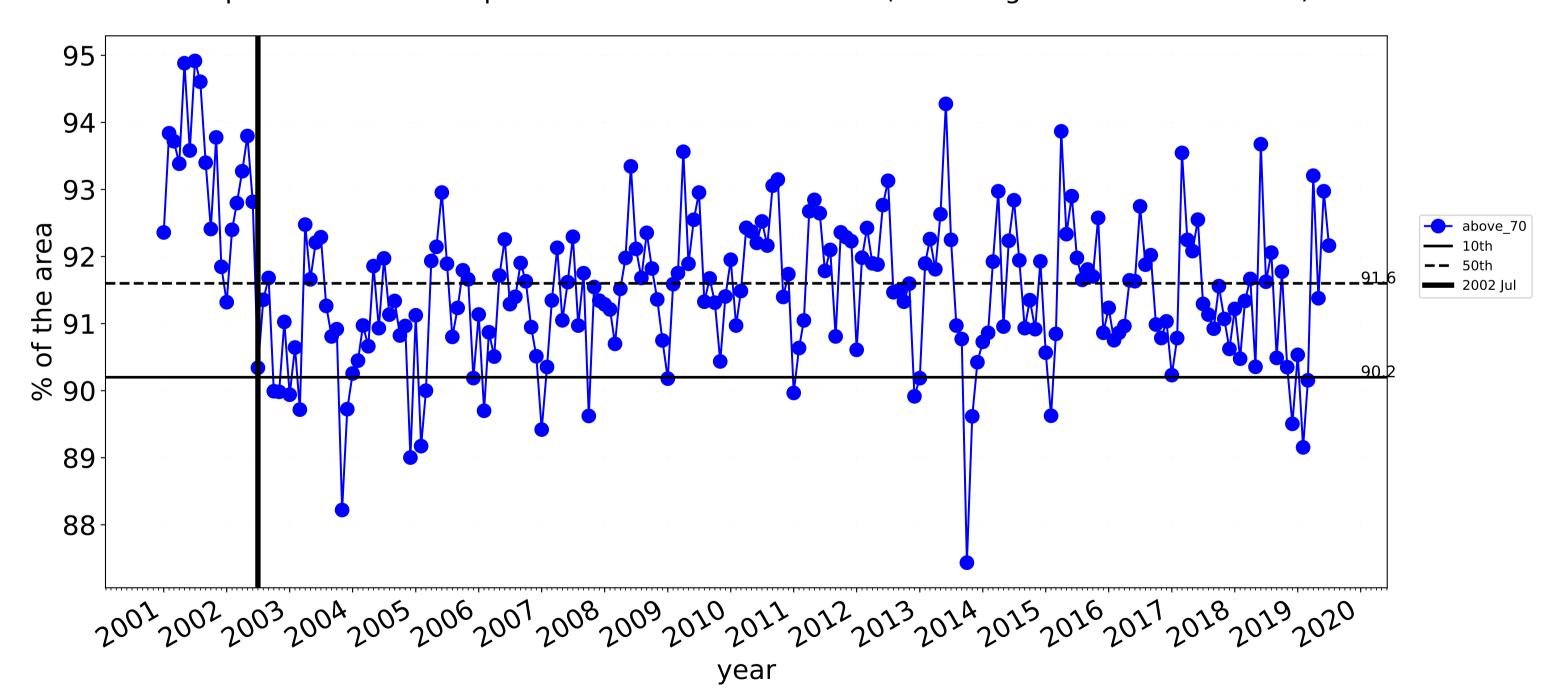




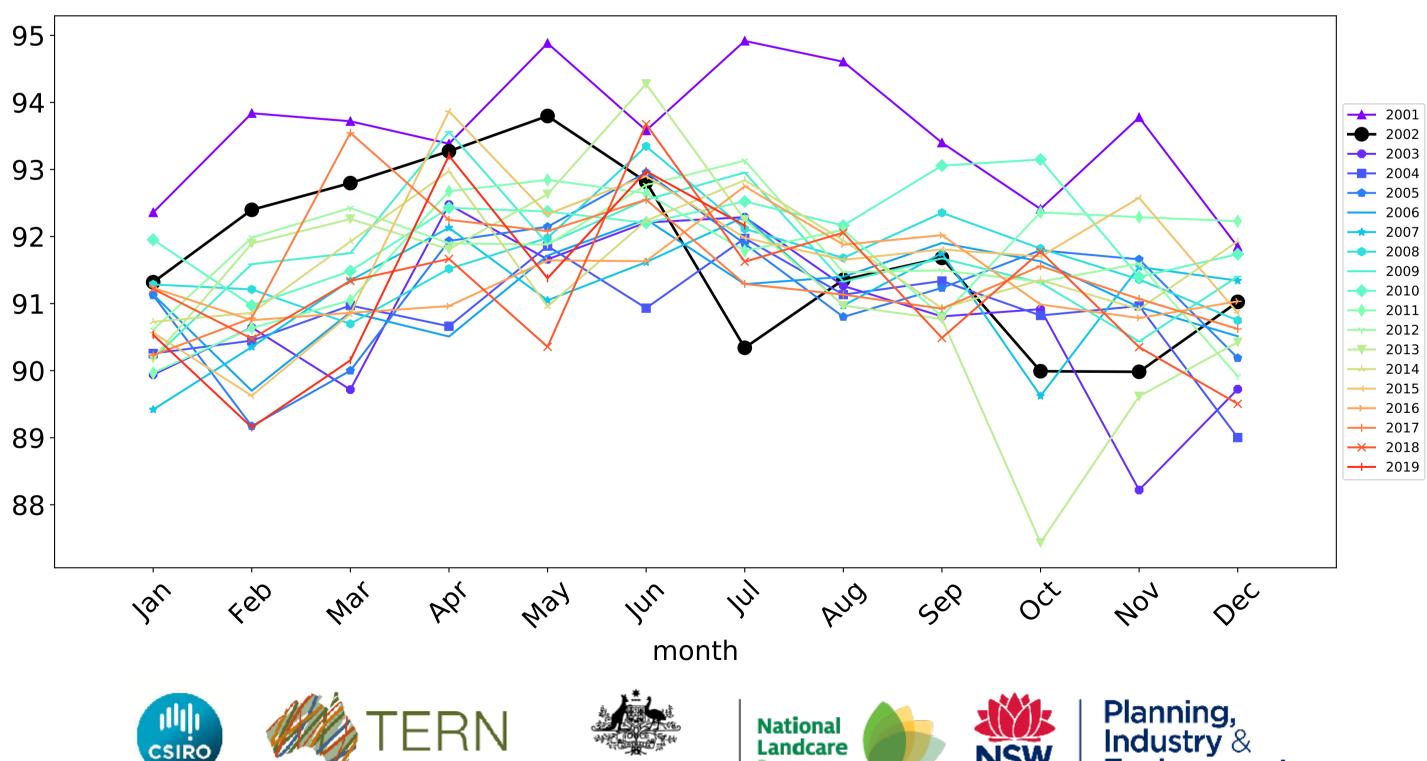




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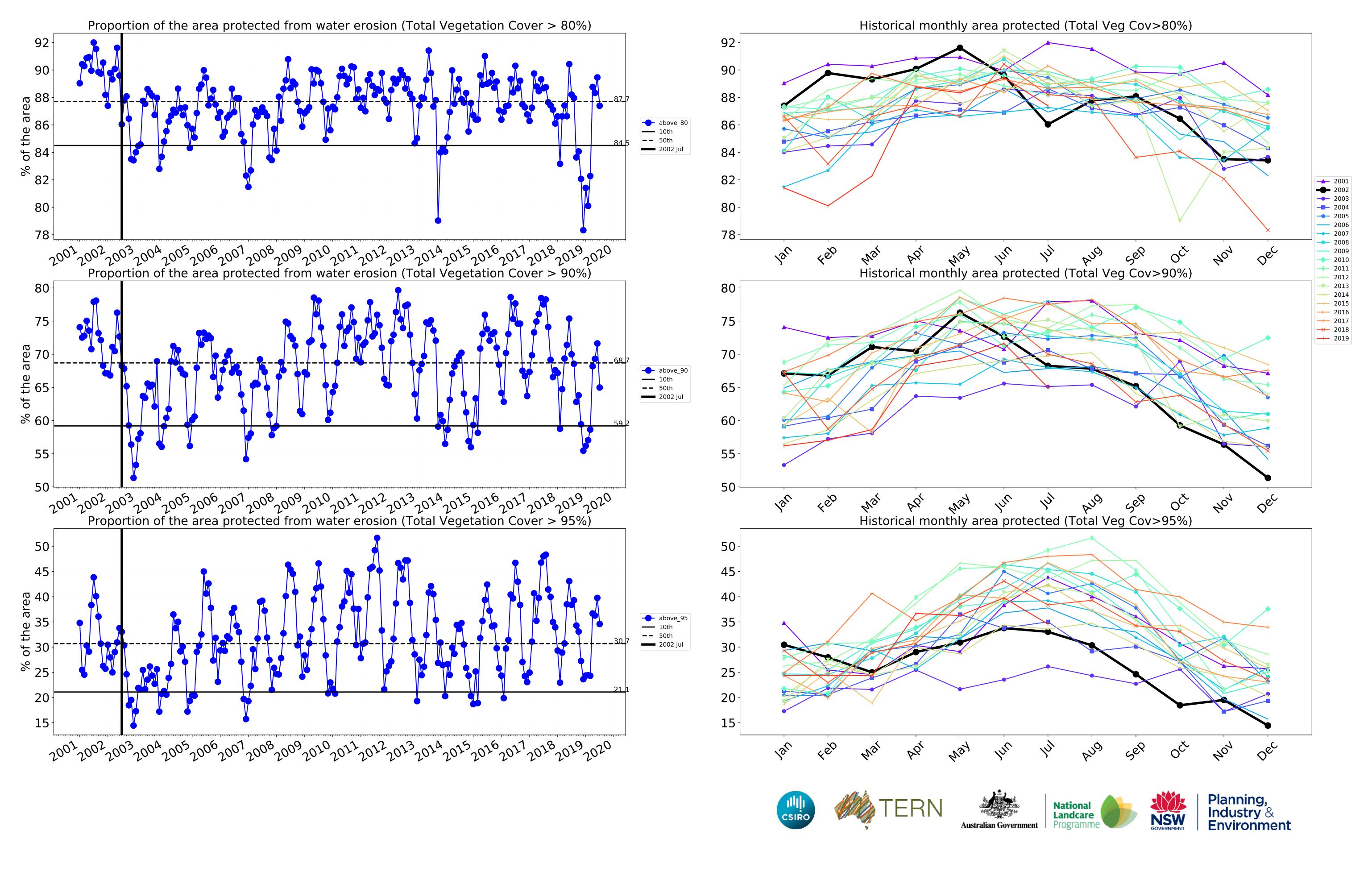
Water erosion historical monthly area protected (Total Veg Cov>70%)



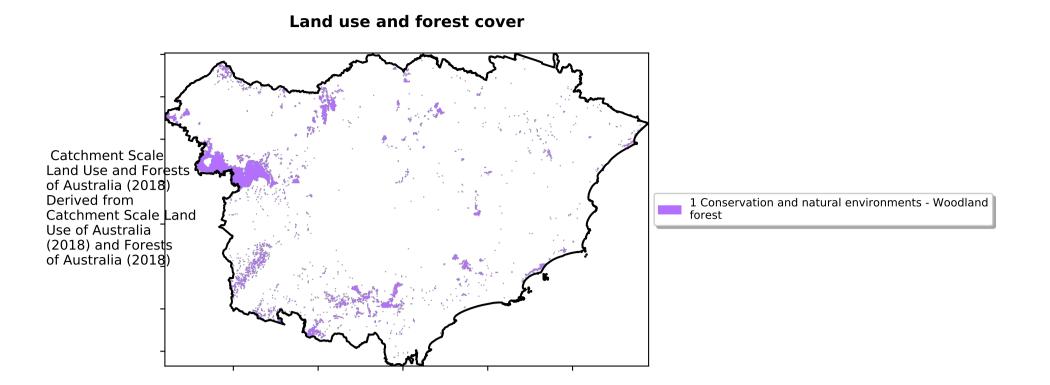


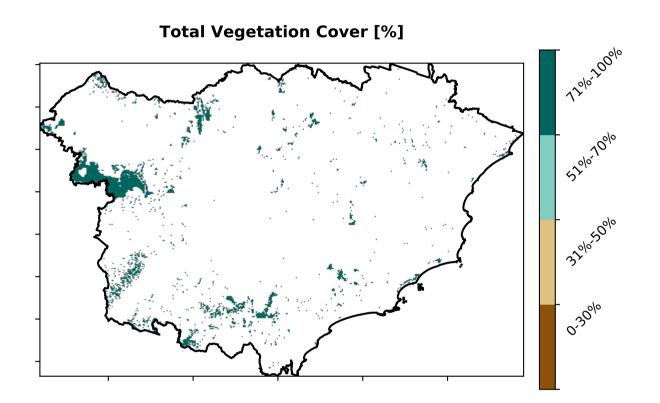


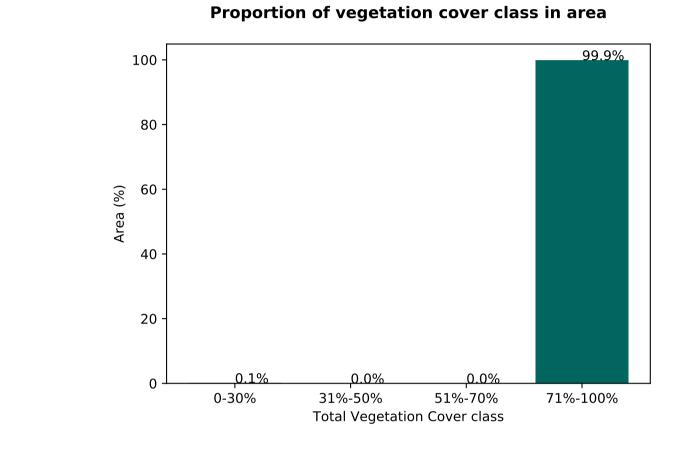


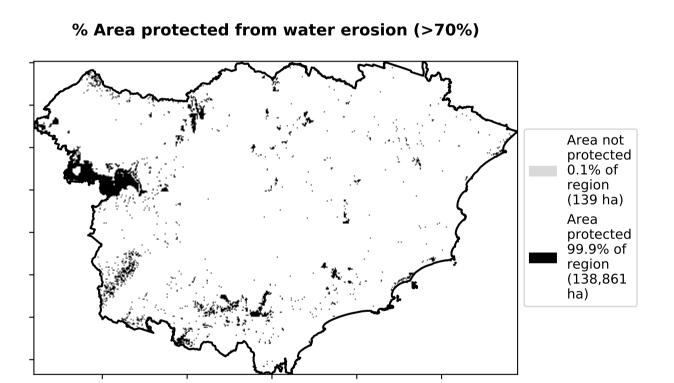


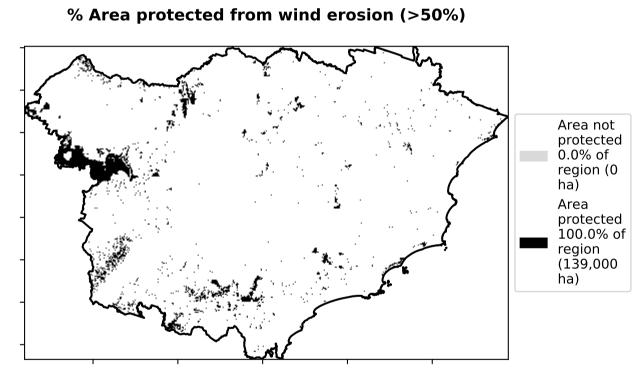
Conservation and natural environments Woodland forest

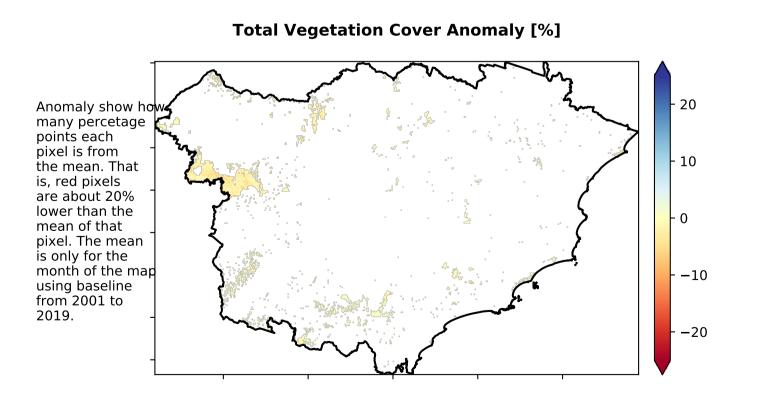


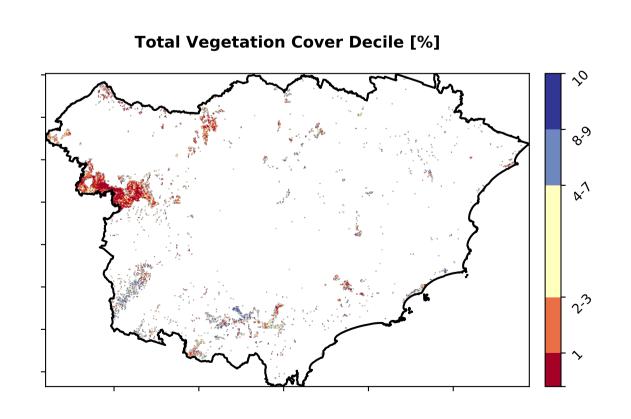
















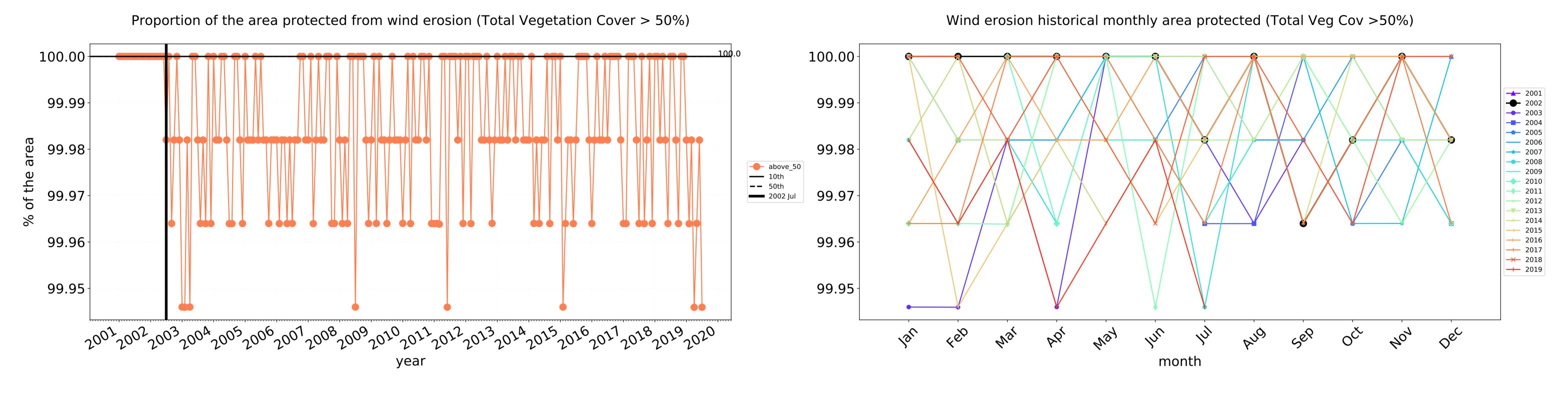


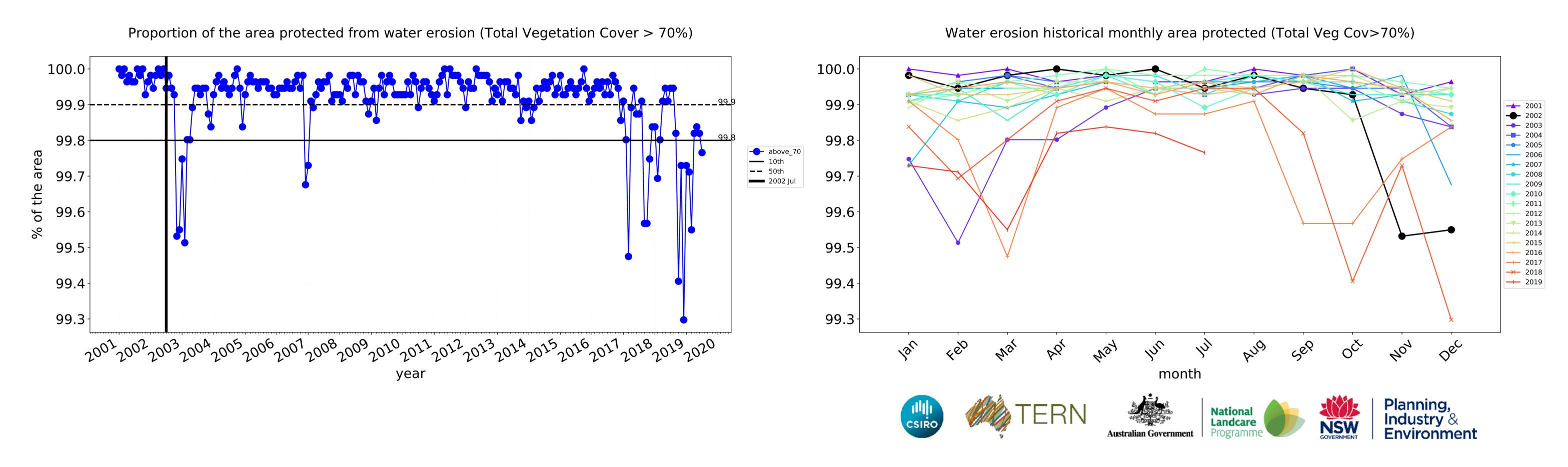


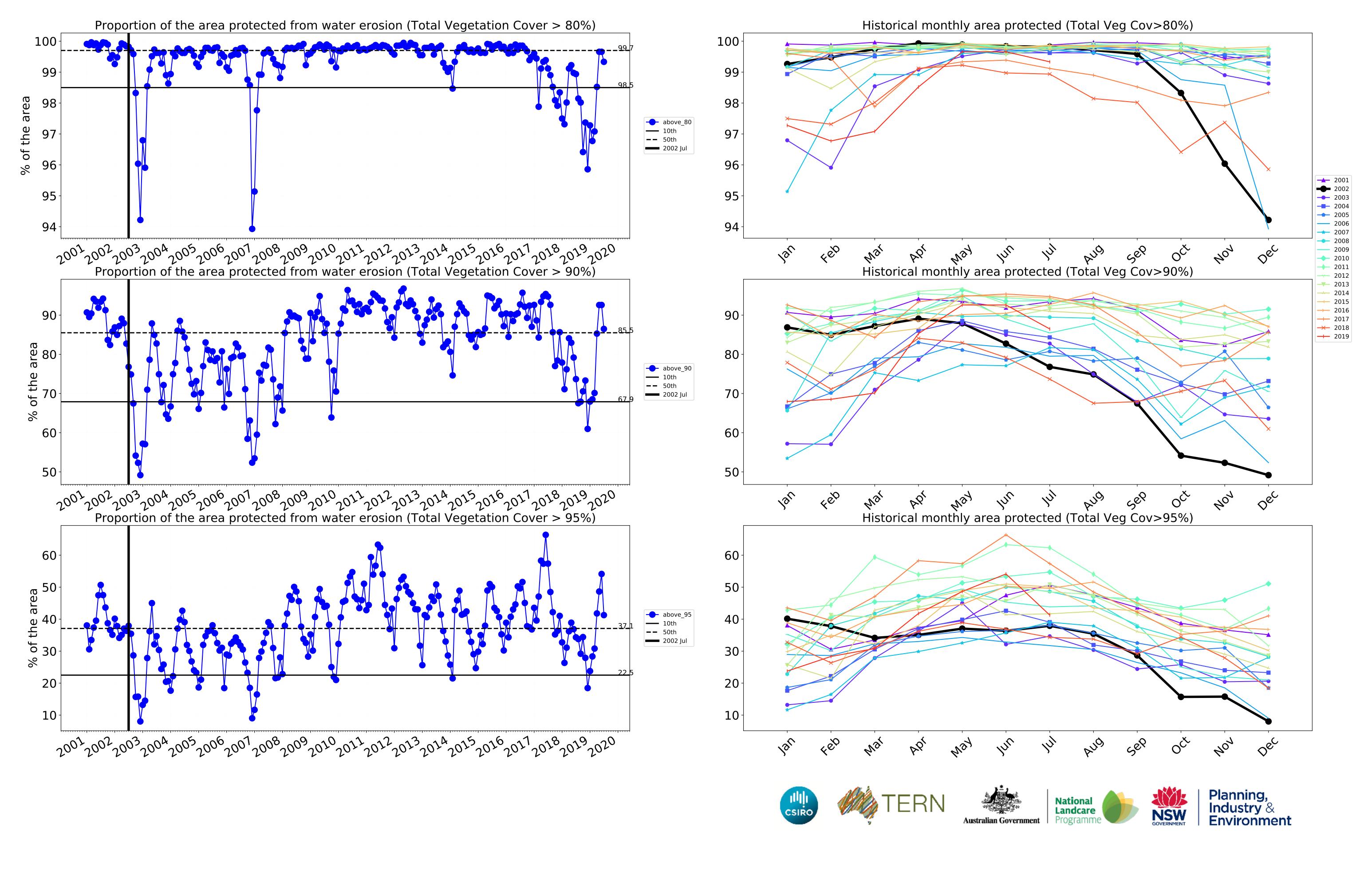




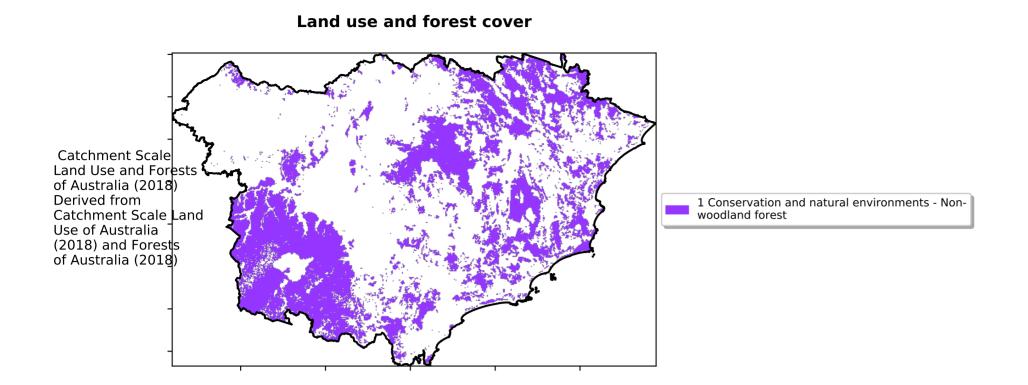
Conservation and natural environments Woodland forest timeseries



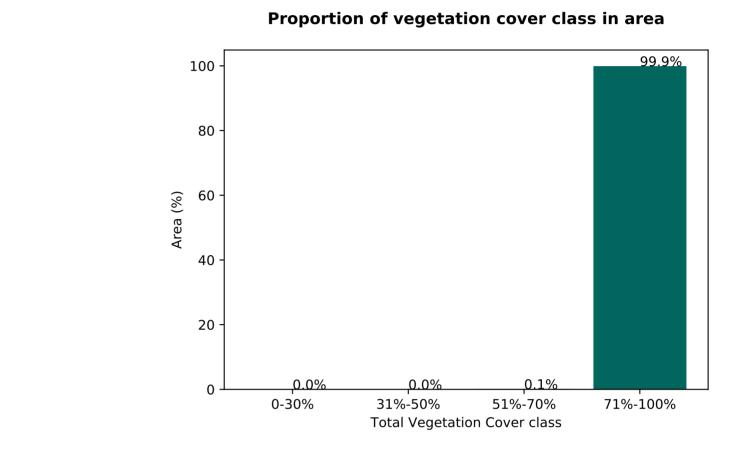


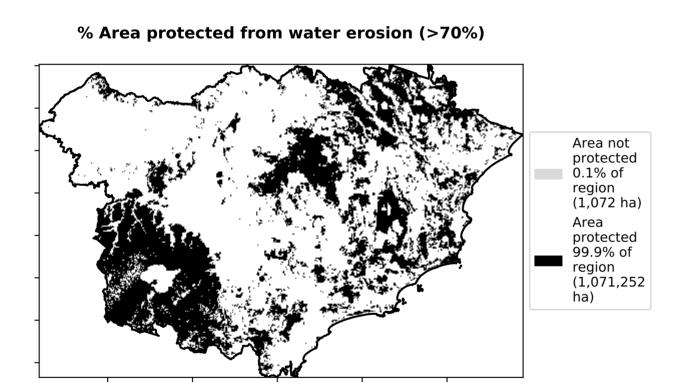


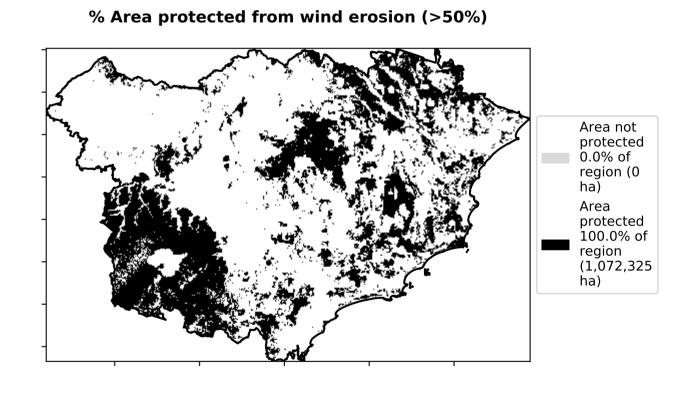
Conservation and natural environments Forest (non woodland)

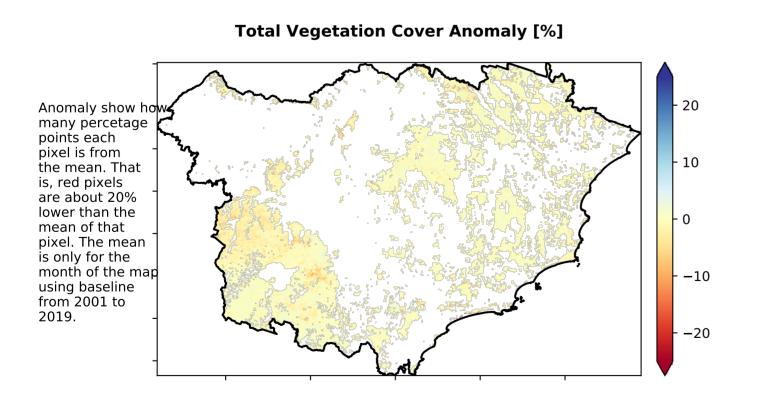


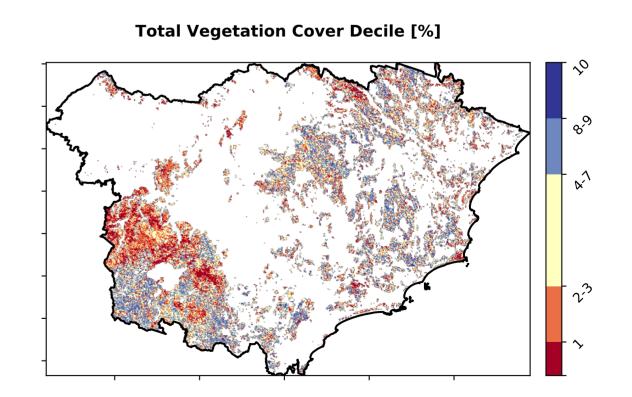
Total Vegetation Cover [%] Total Vegetation Cover [%] Total Vegetation Cover [%]















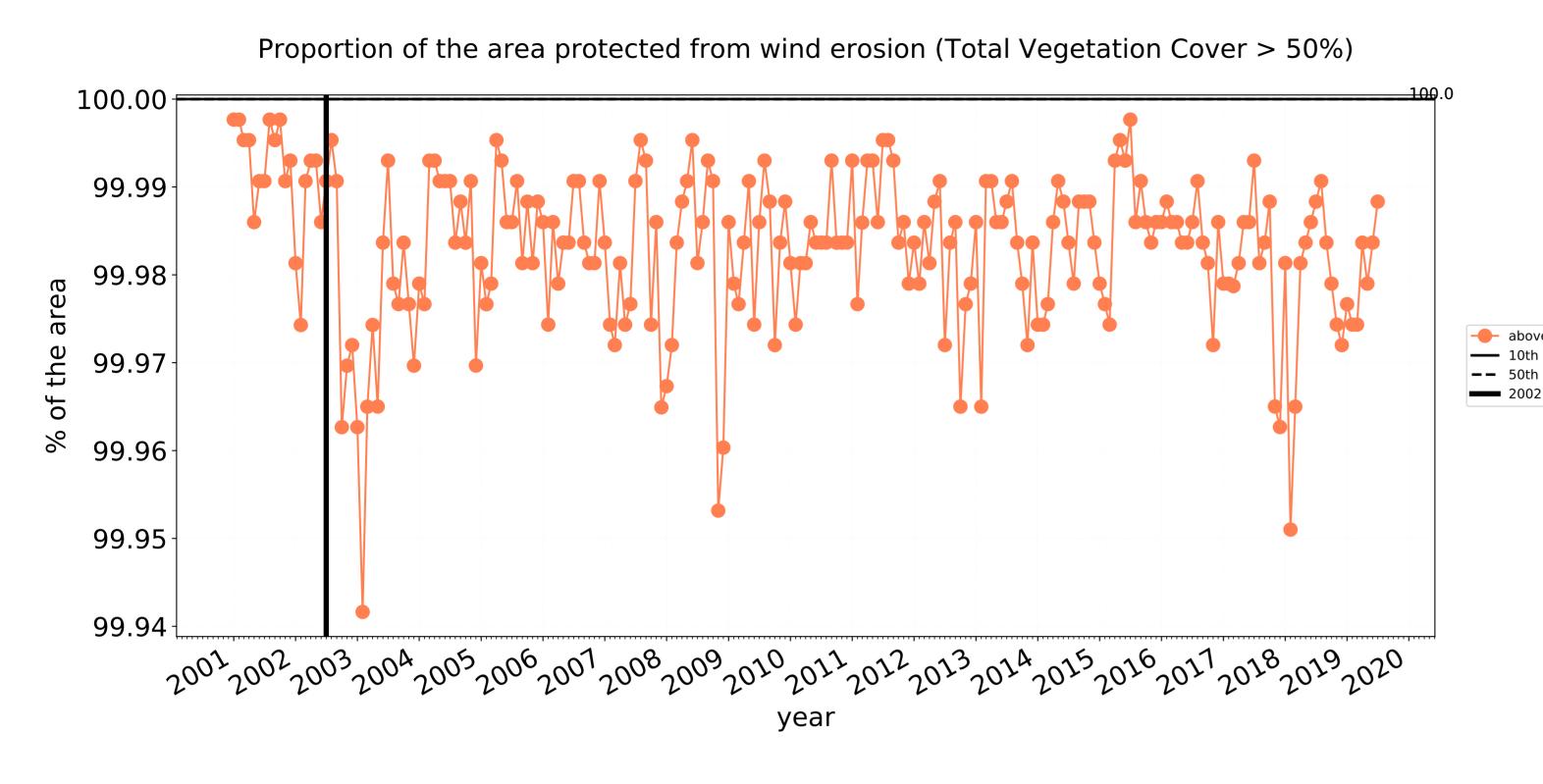


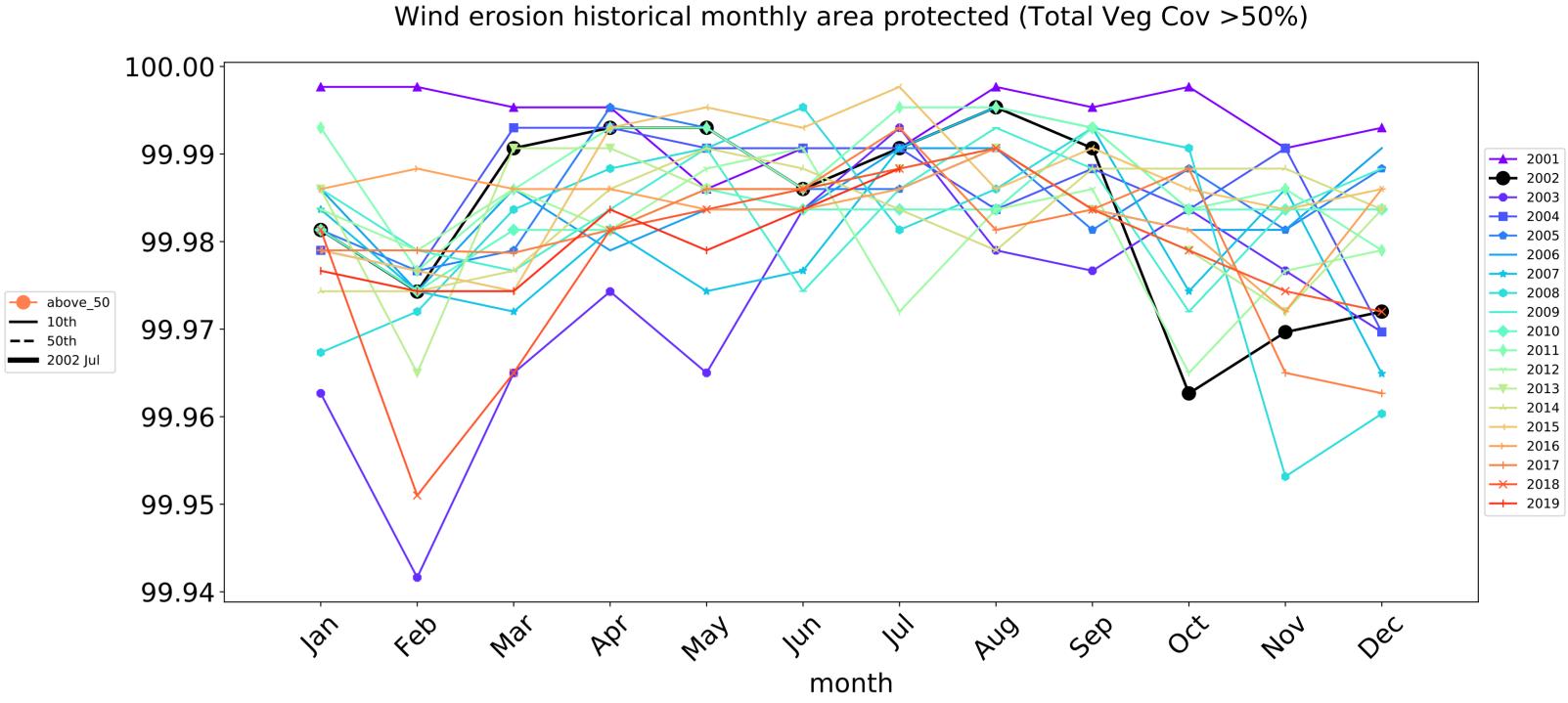


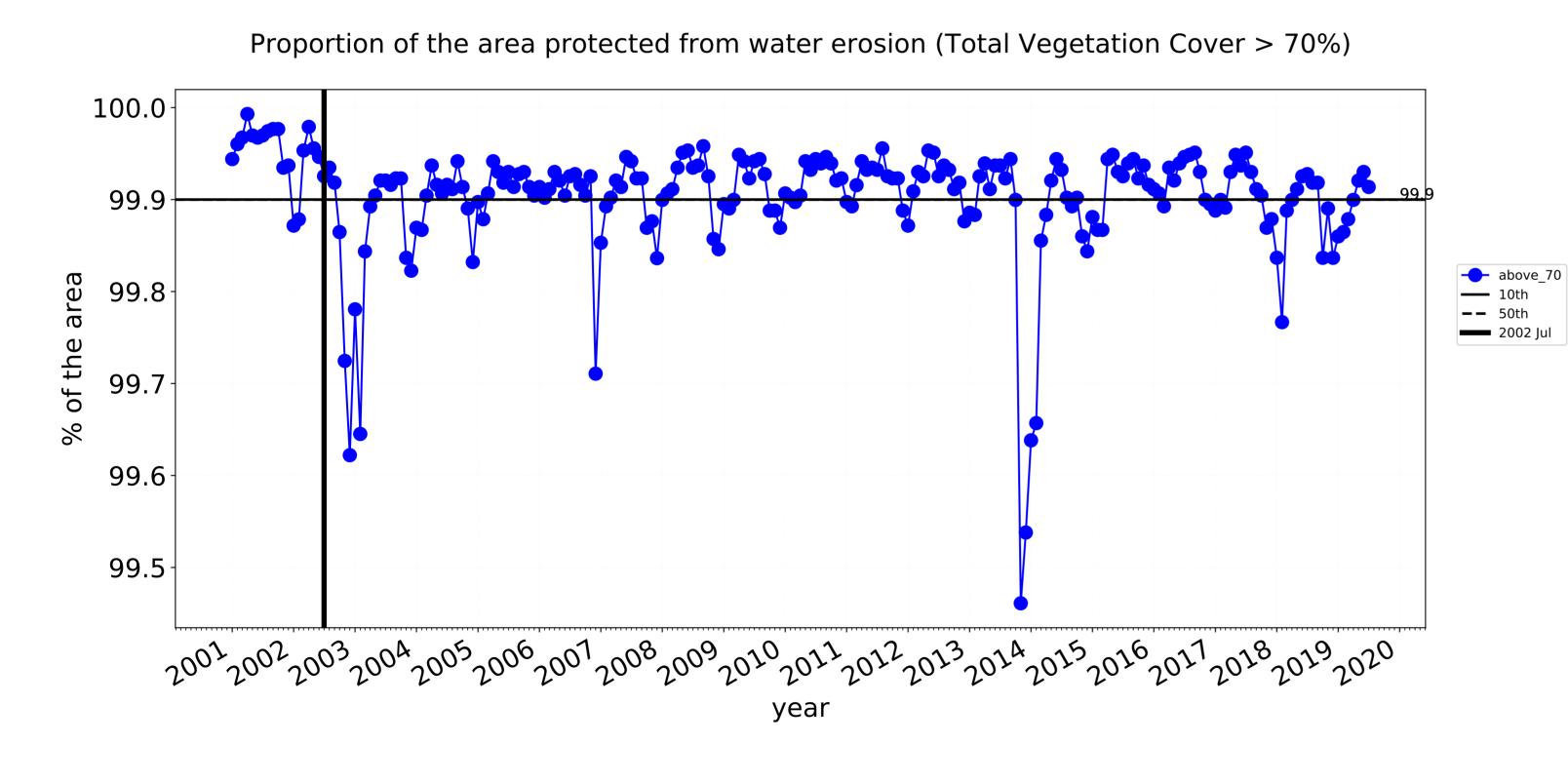


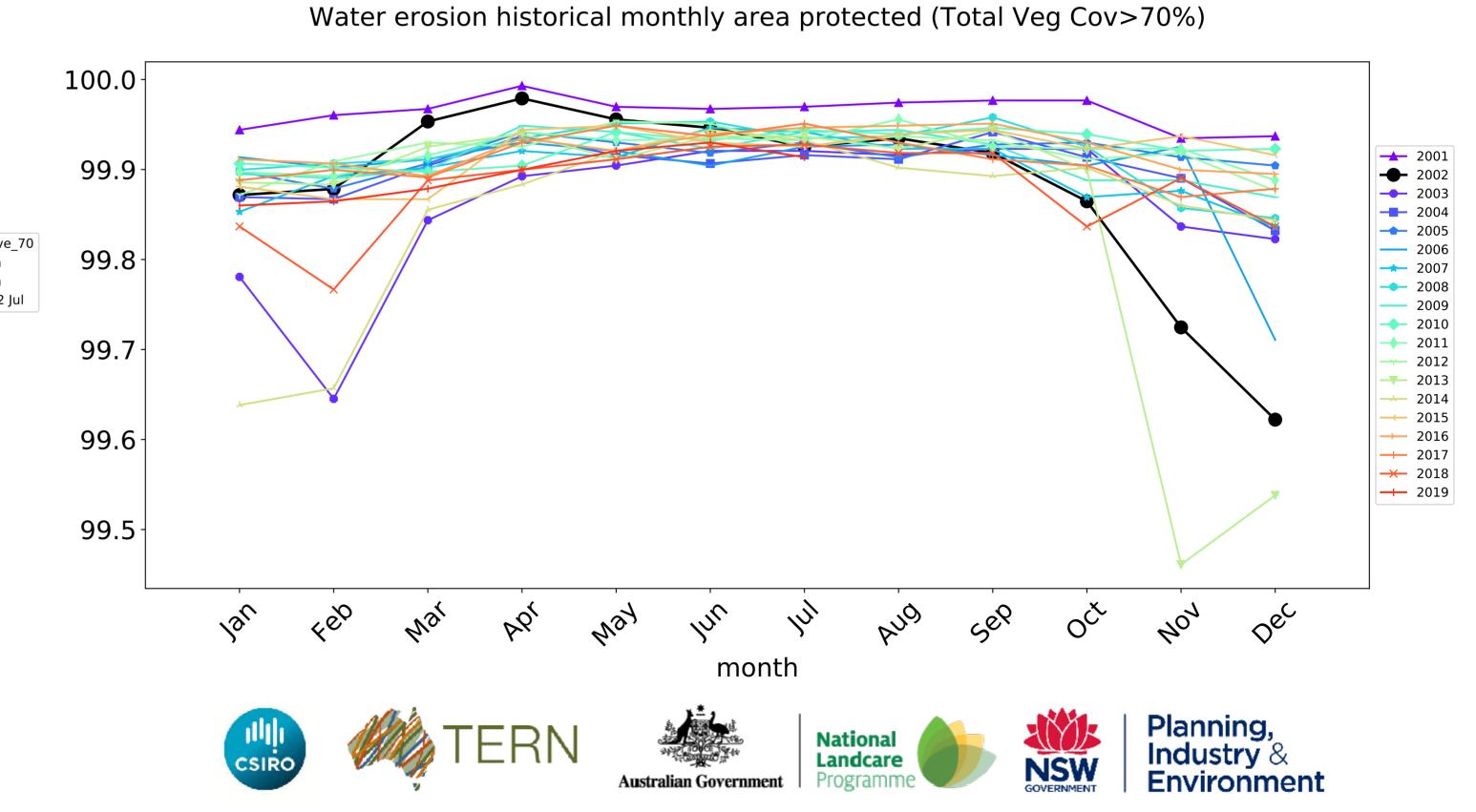


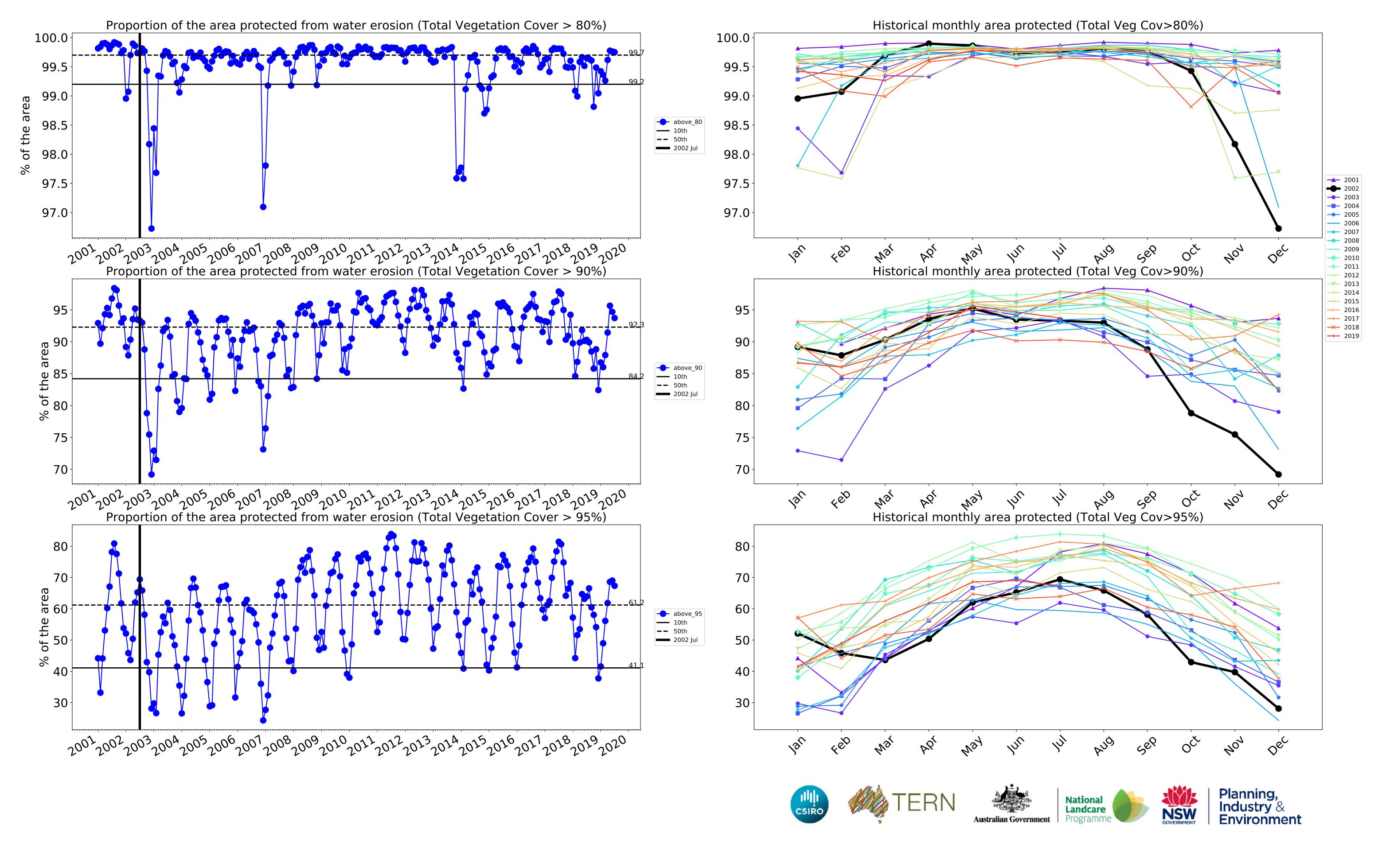
Conservation and natural environments Forest (non woodland) timeseries







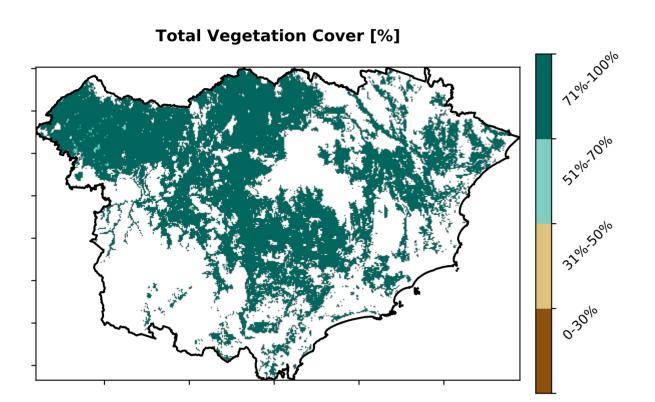


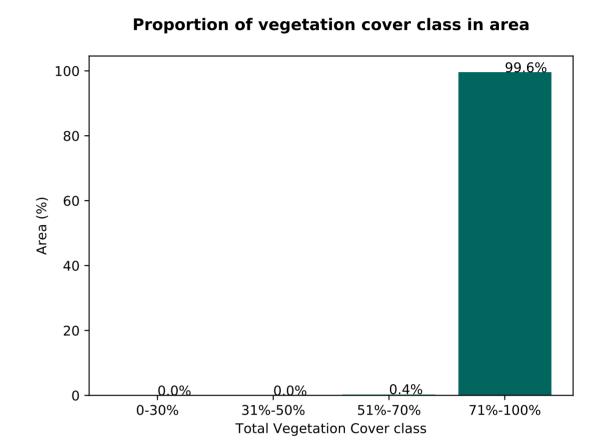


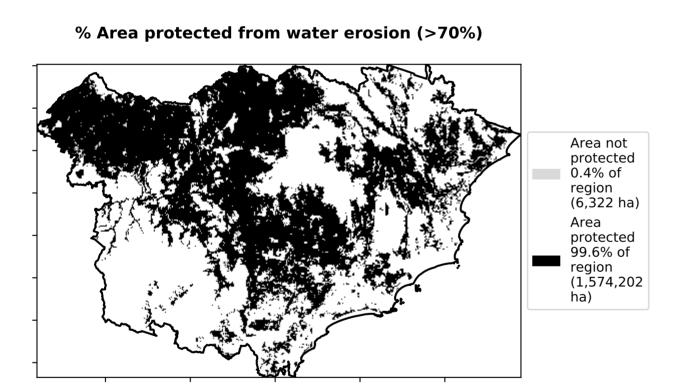
Agriculture

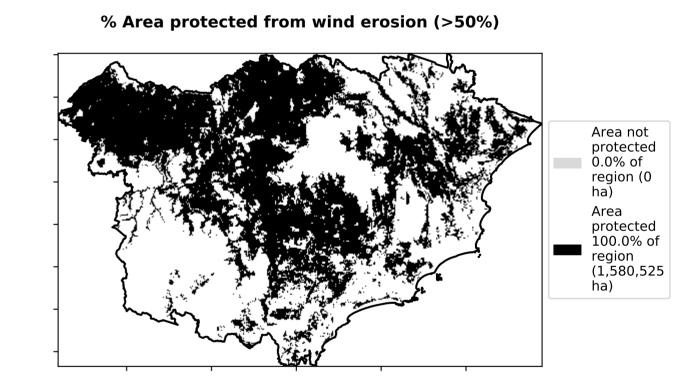


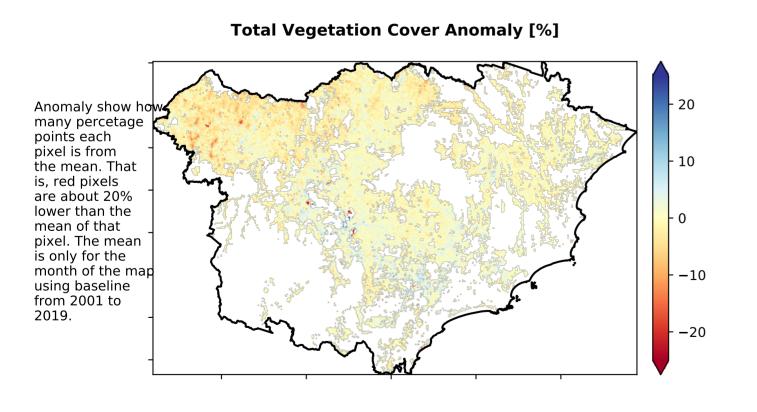


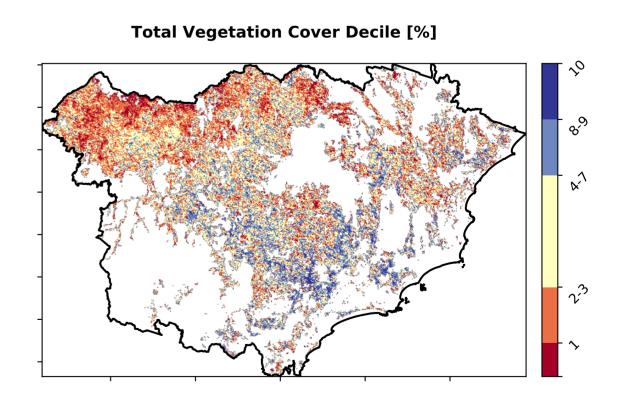
















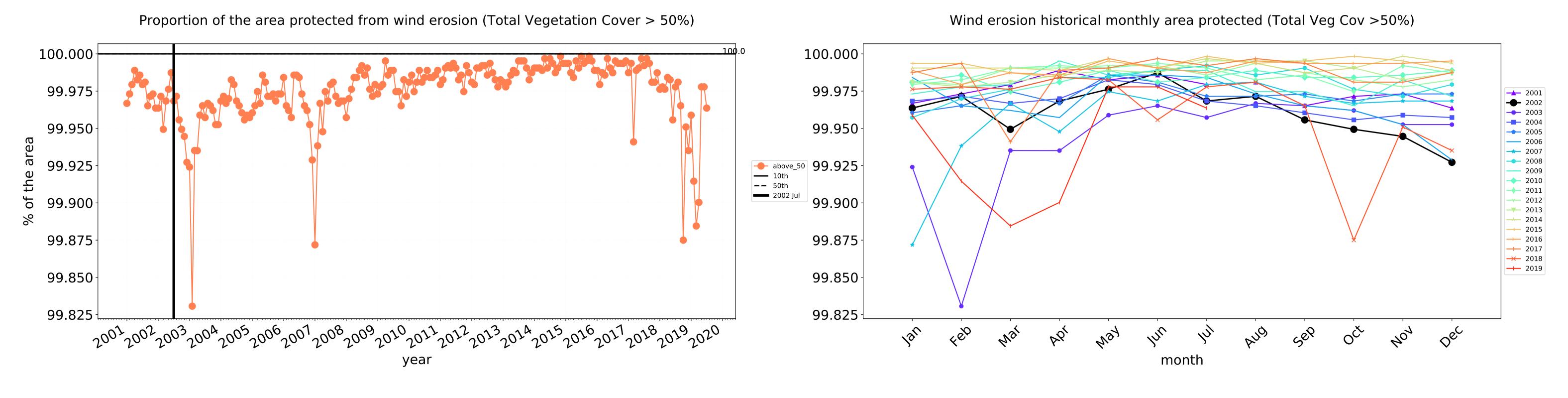


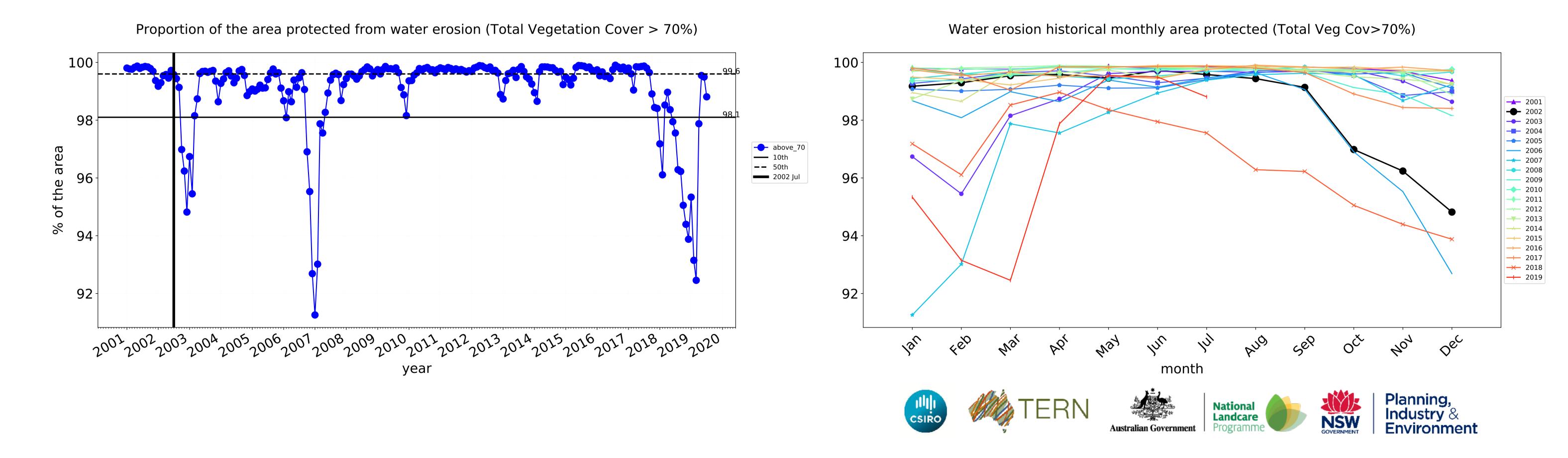


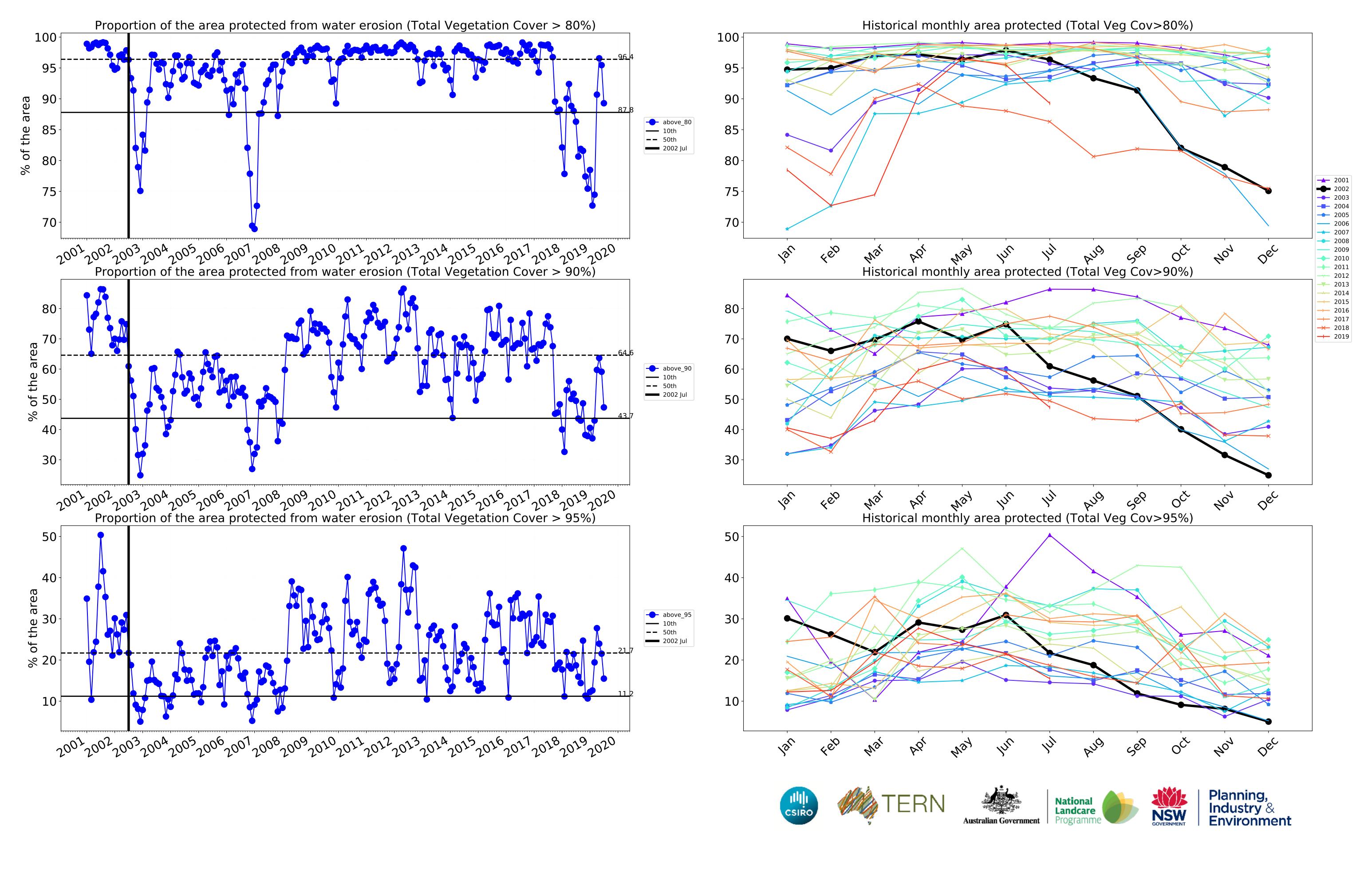




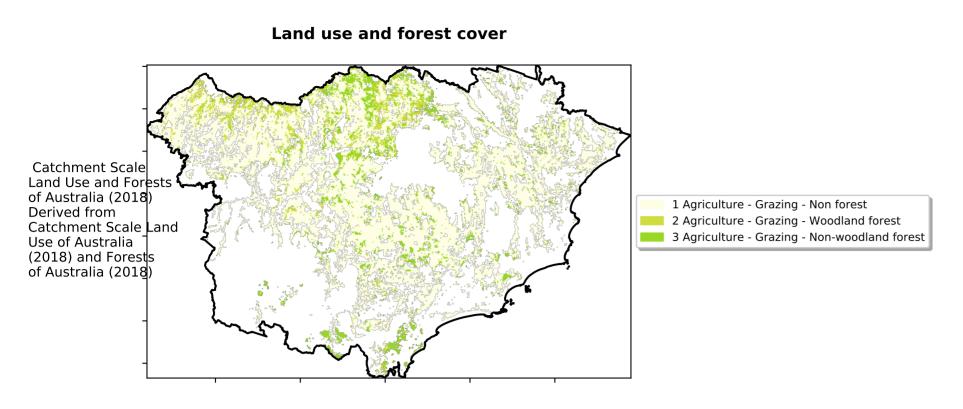
Agriculture timeseries



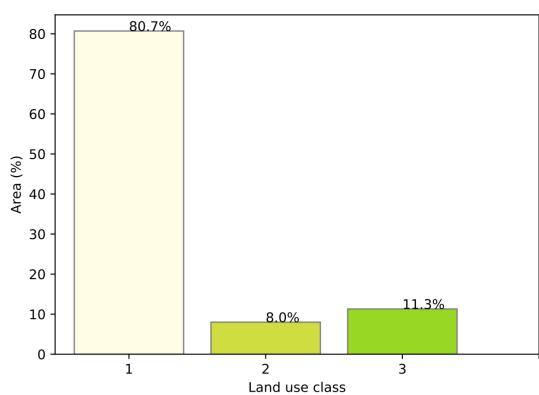




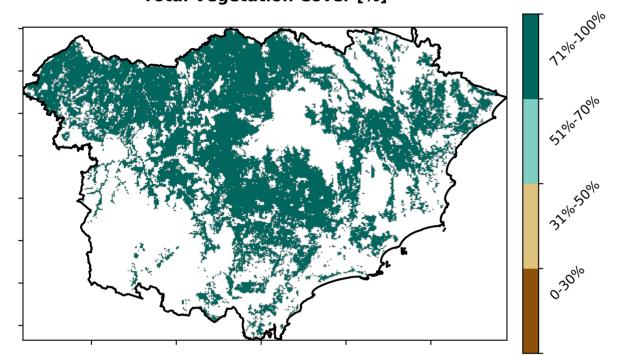
Grazing



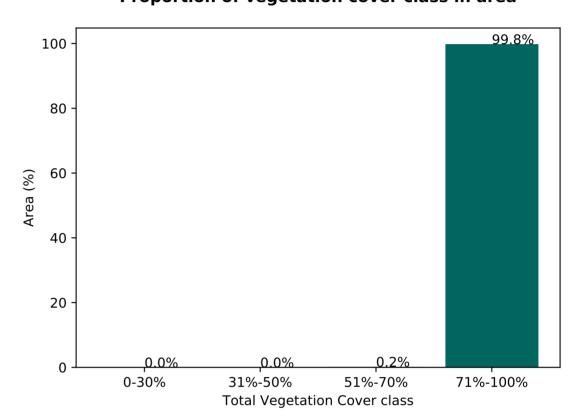
Proportion of each land class in area



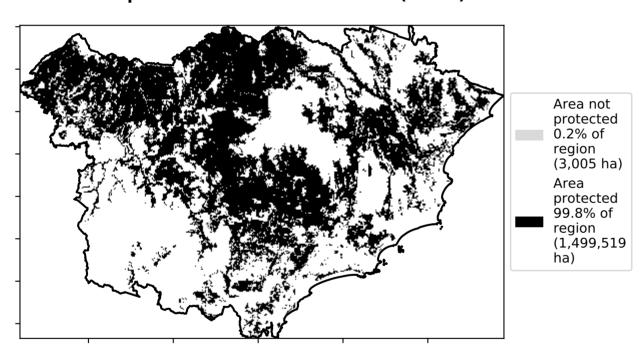
Total Vegetation Cover [%]



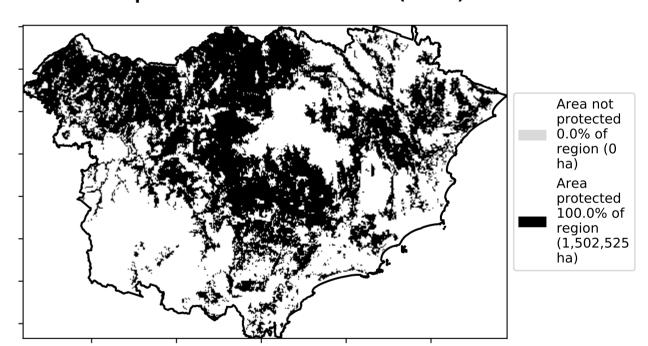
Proportion of vegetation cover class in area



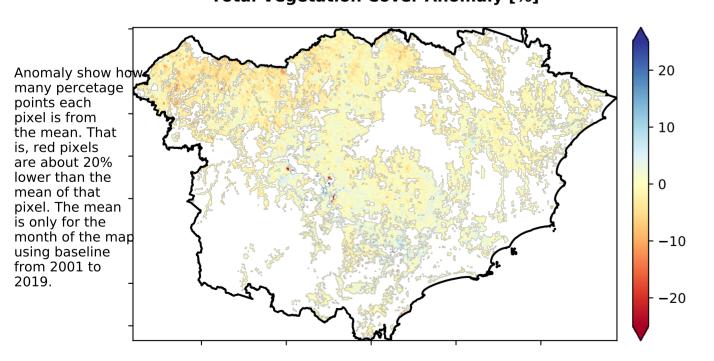
% Area protected from water erosion (>70%)

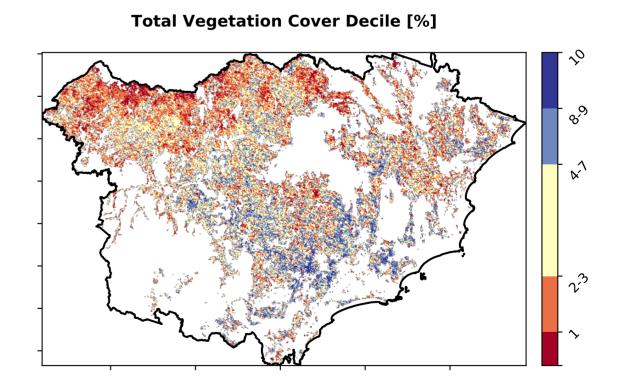


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]









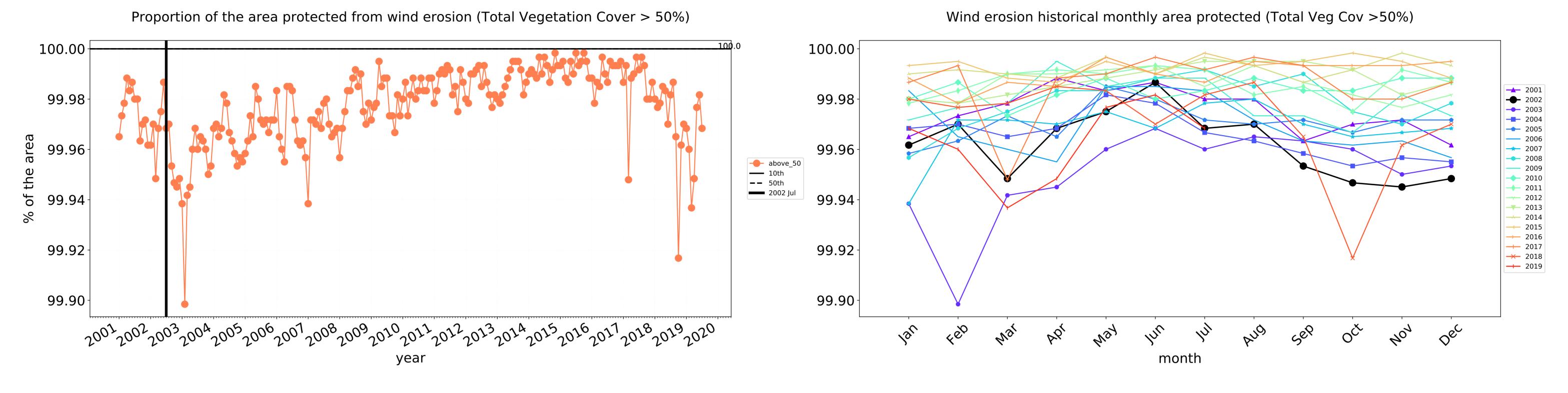


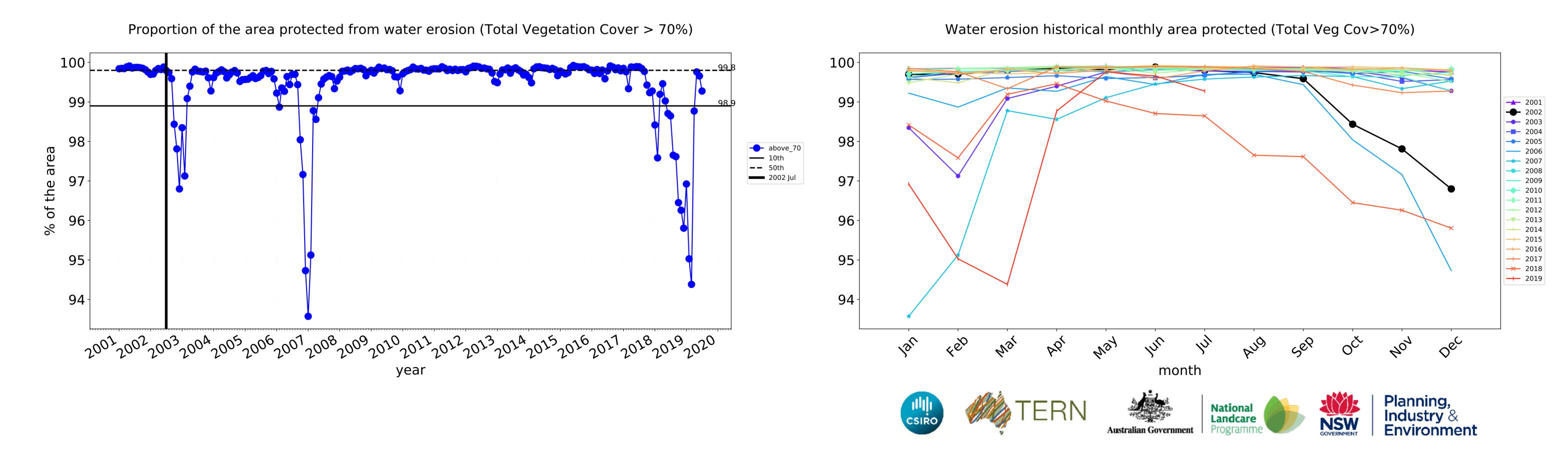


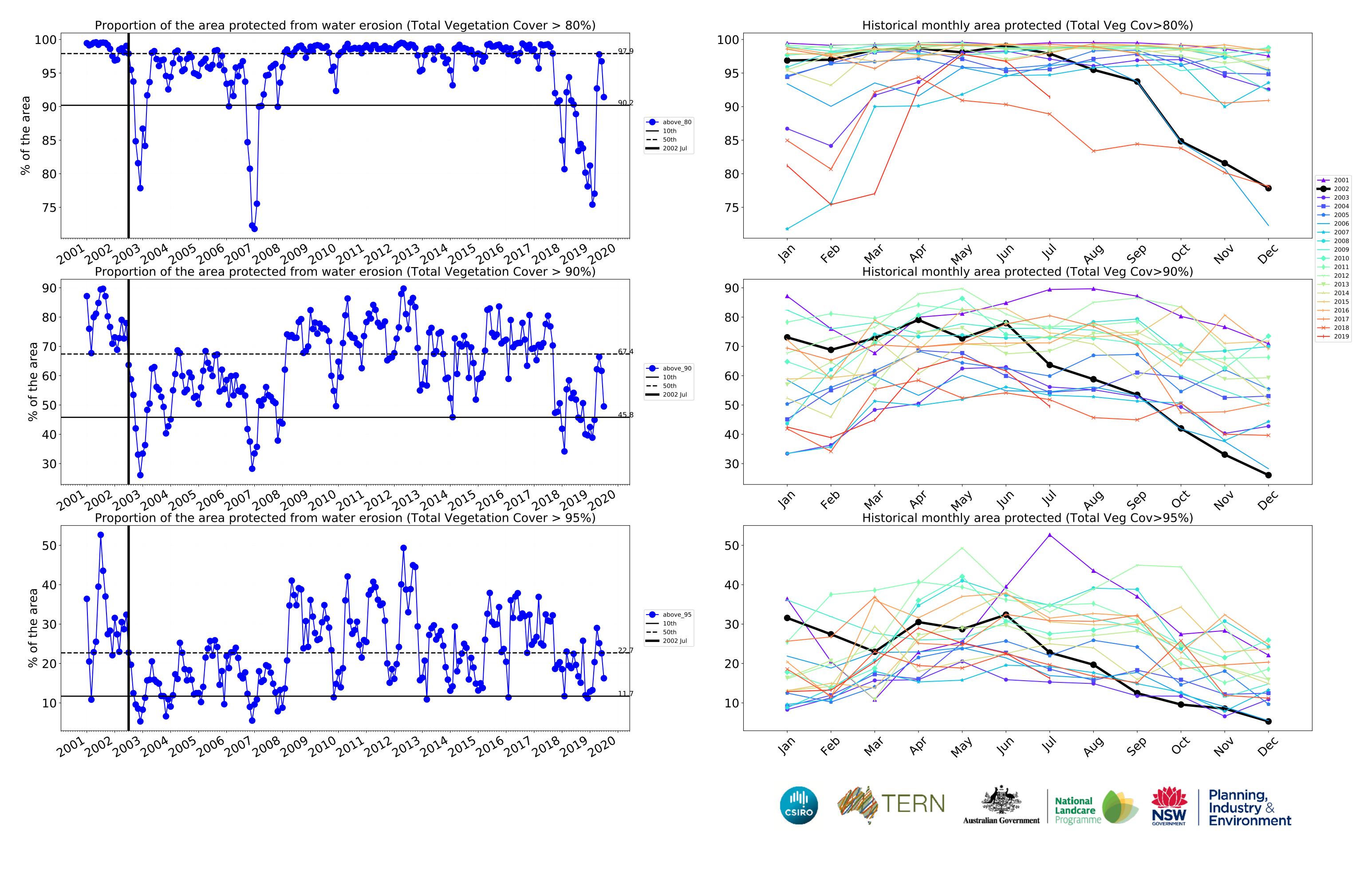




Grazing timeseries

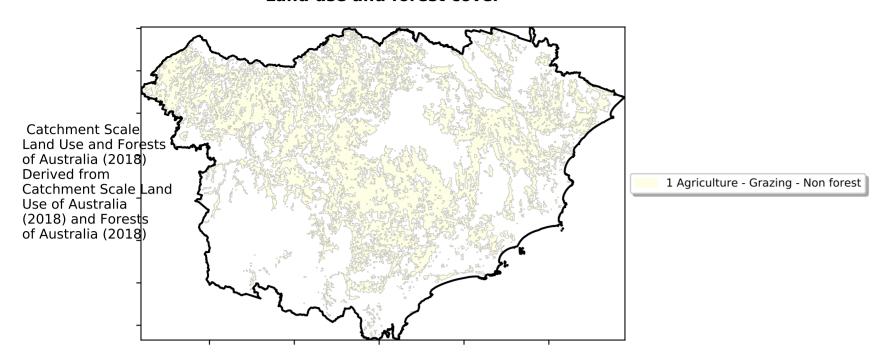




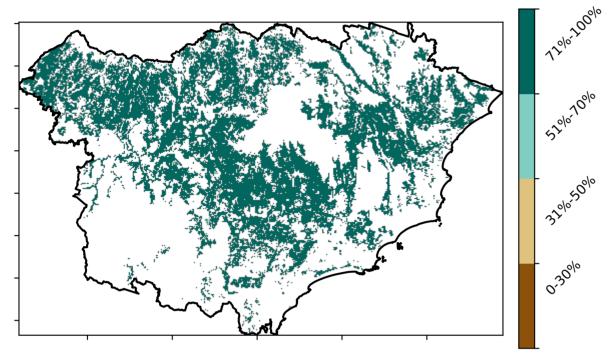


Grazing non forest

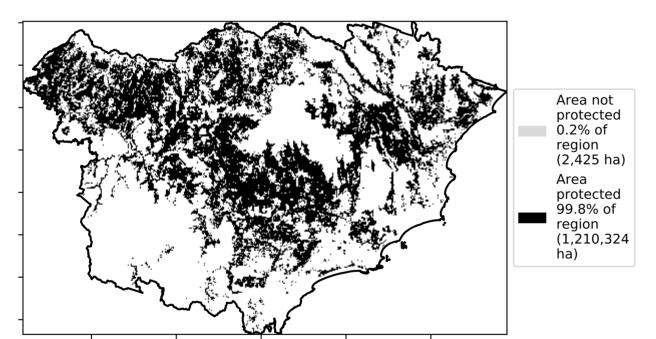
Land use and forest cover



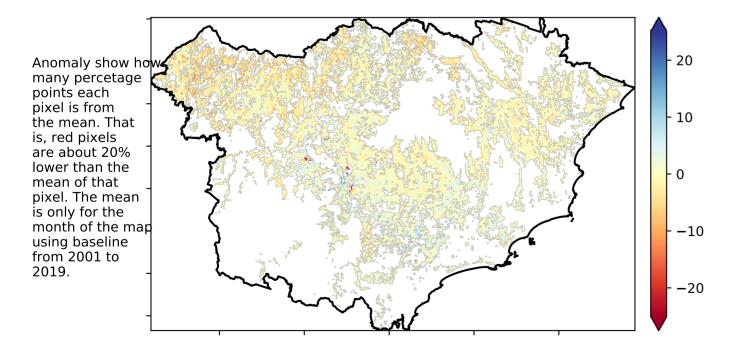
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

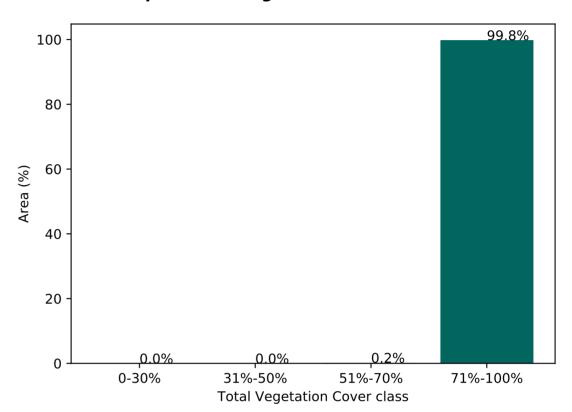


Total Vegetation Cover Anomaly [%]

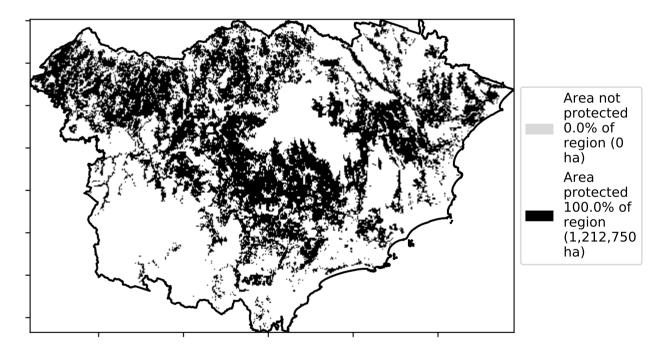


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

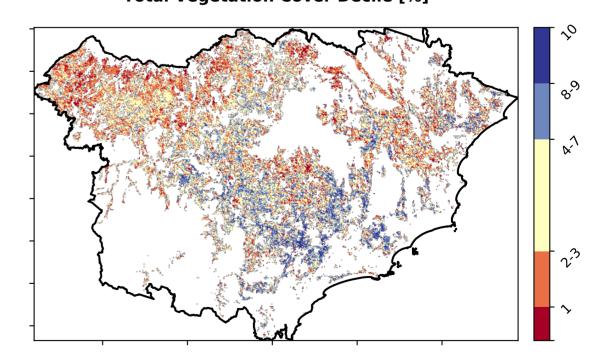
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







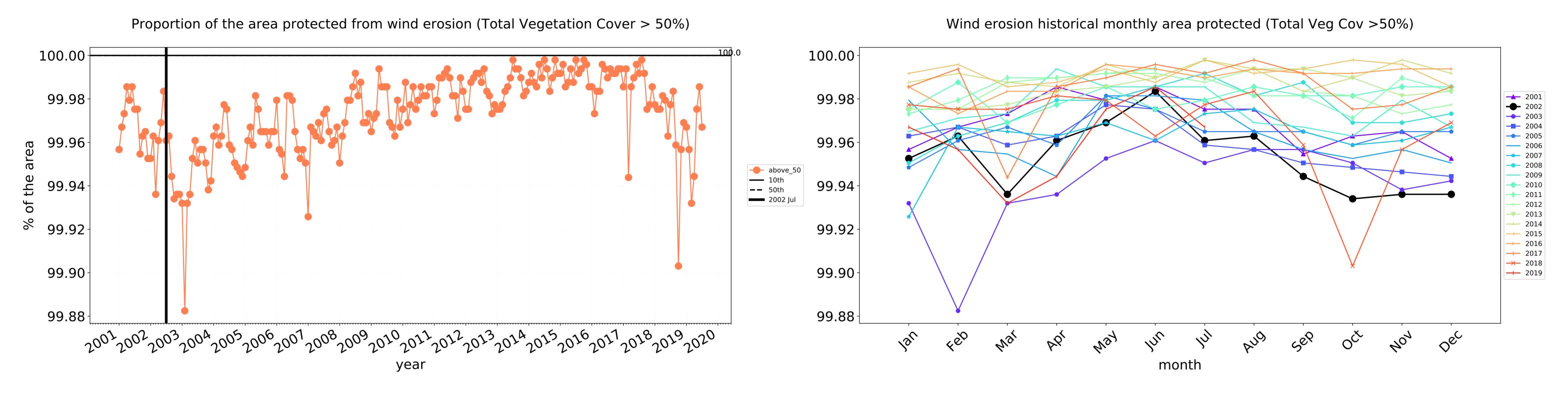


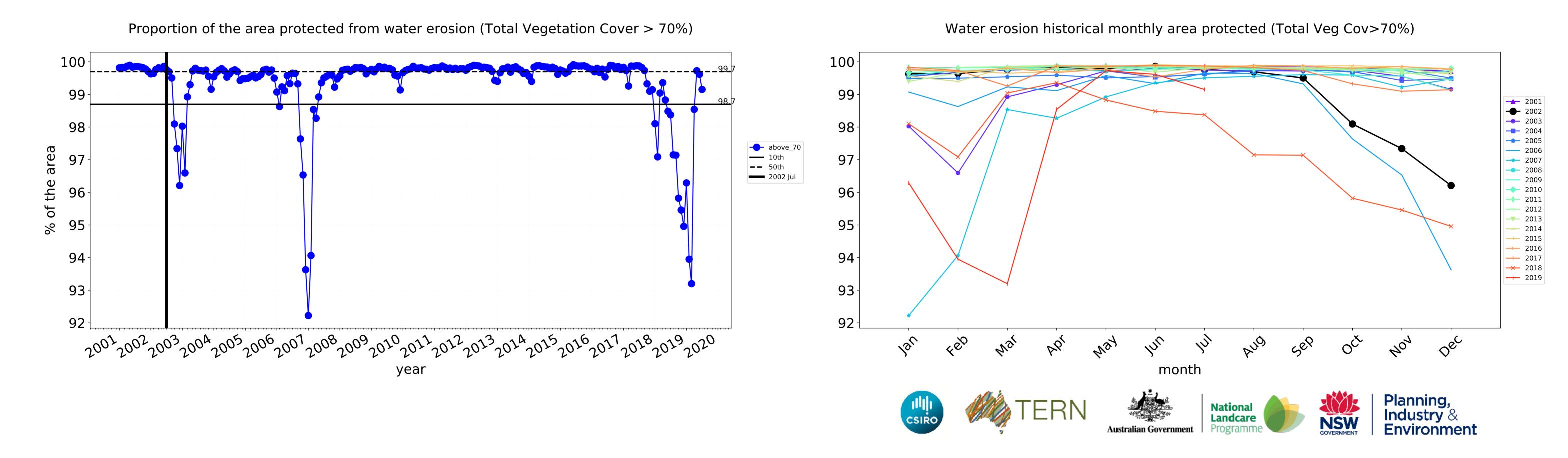


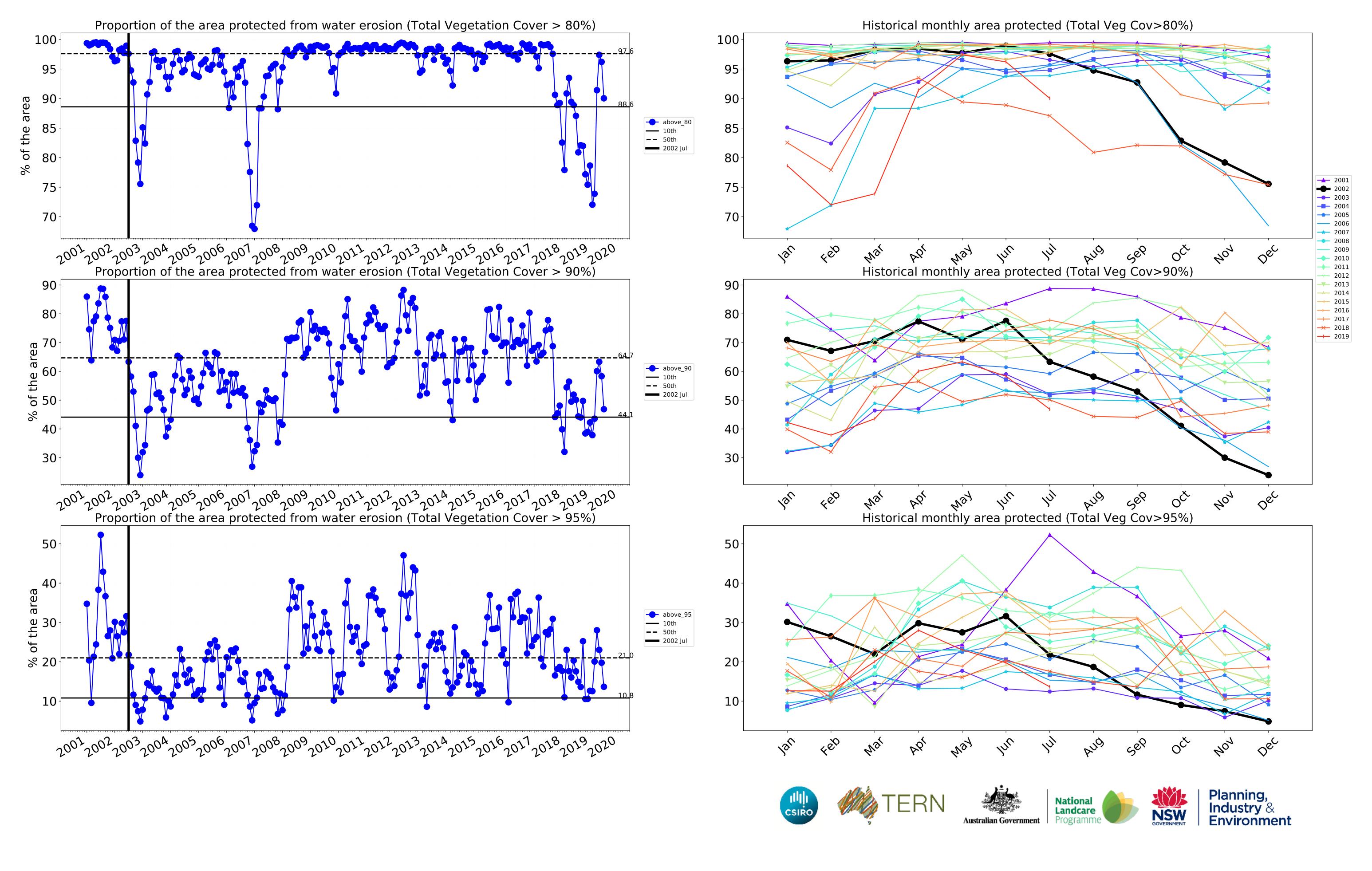




Grazing non forest timeseries







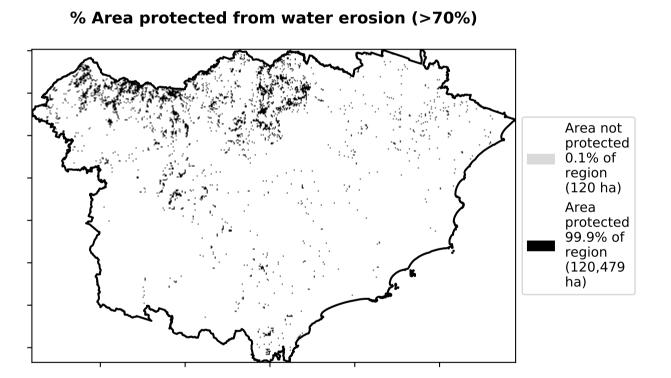
Grazing Woodland forest

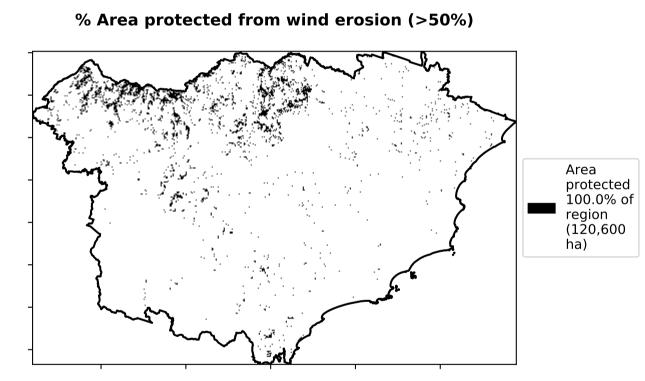
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Agriculture - Grazing - Woodland forest Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

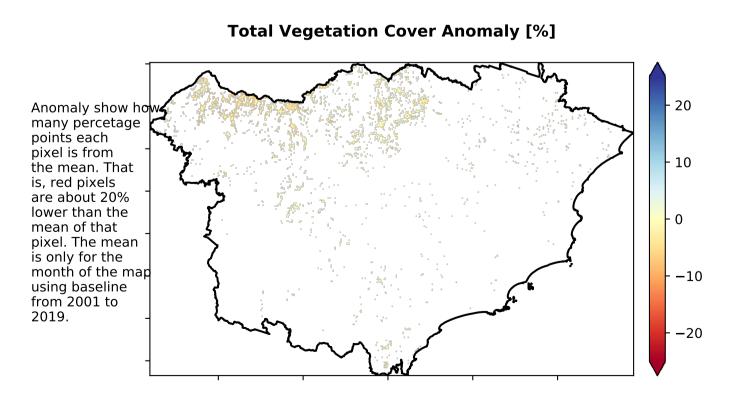
Total Vegetation Cover [%]

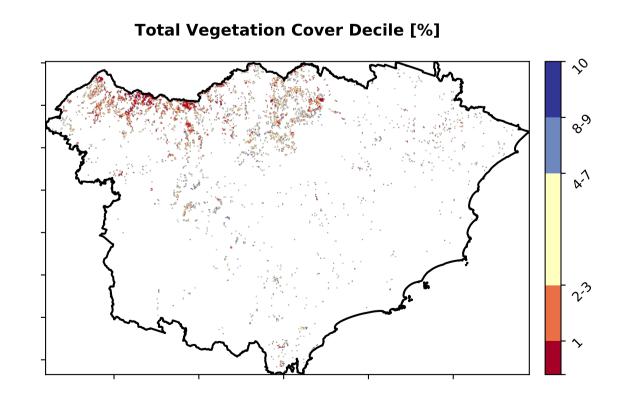
99.9% 100 80 Area (%) 40 20 -0.1% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**

Proportion of vegetation cover class in area













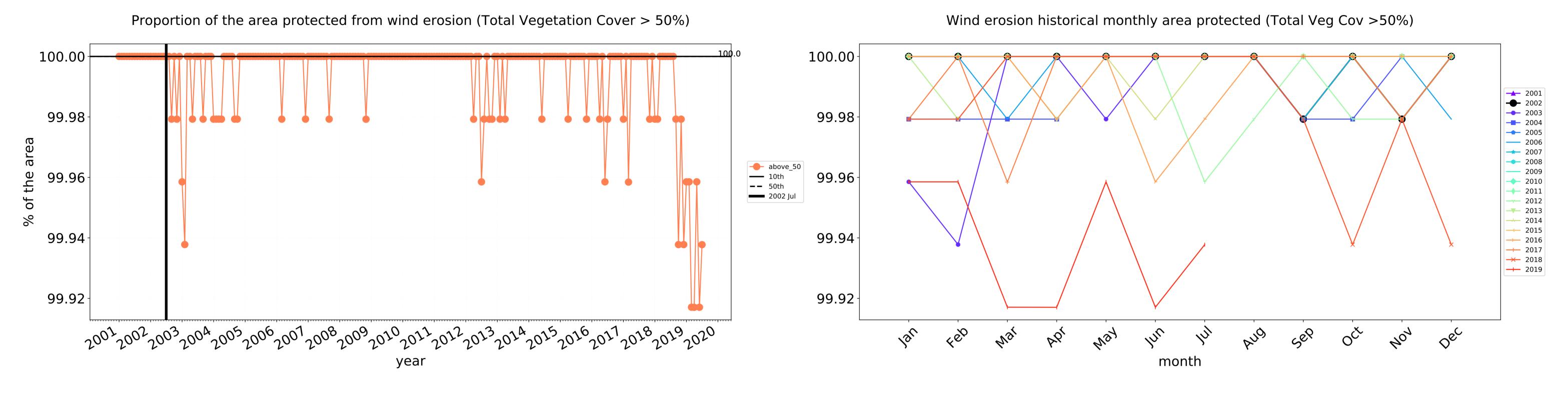


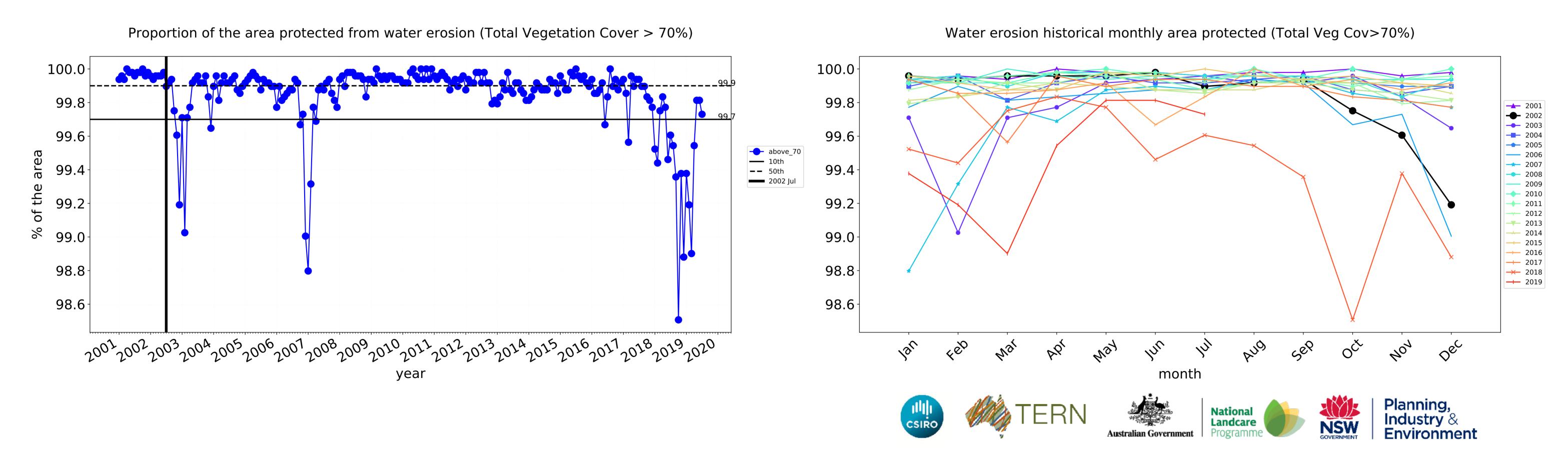


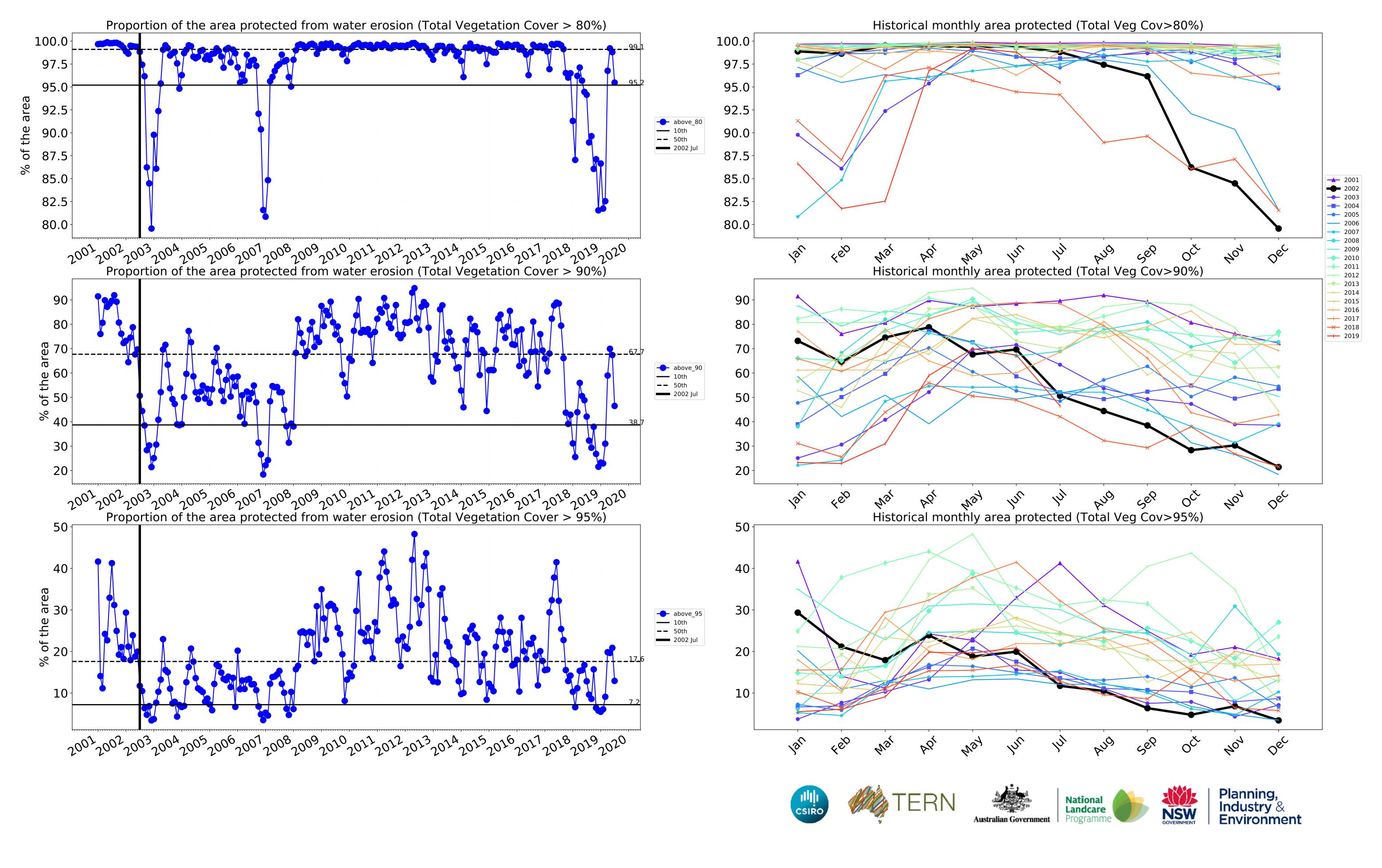




Grazing Woodland forest timeseries





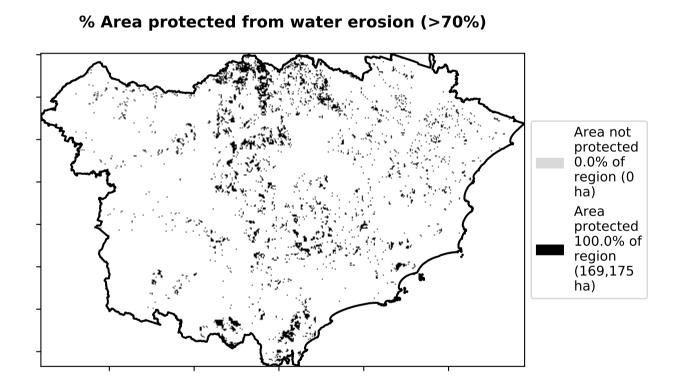


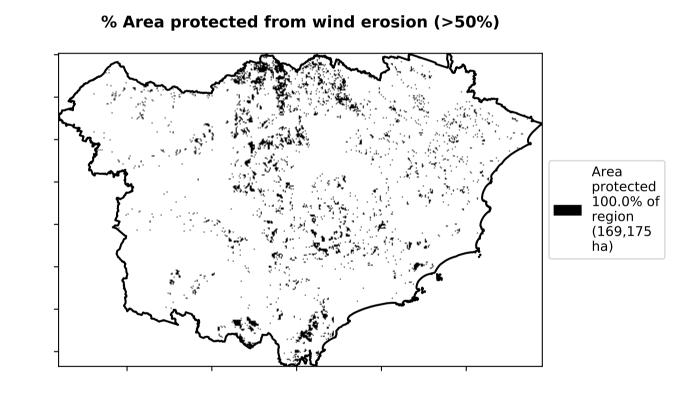
Grazing - Forest (non woodland)

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)

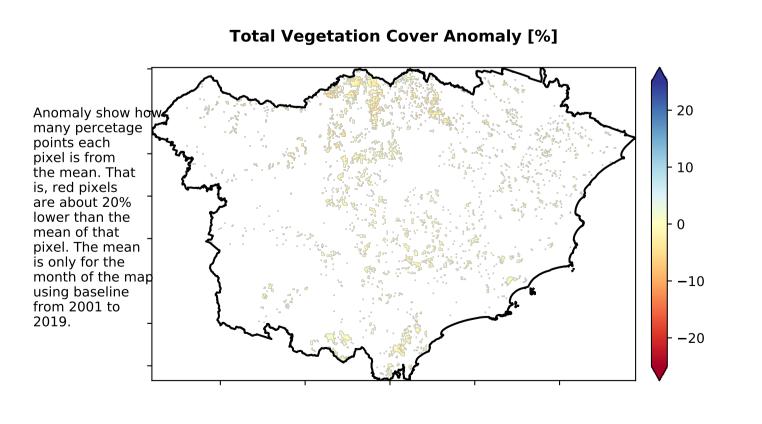
Total Vegetation Cover [%]

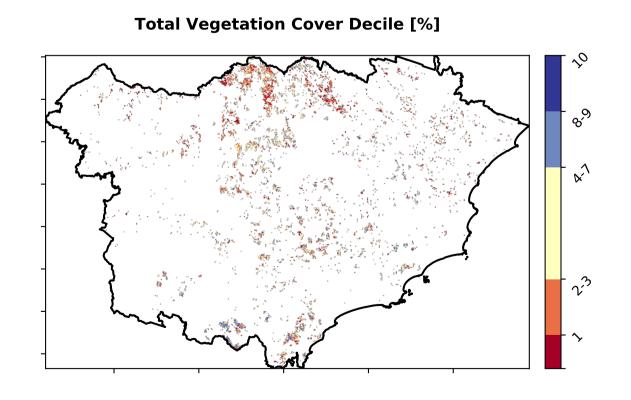
100.0% 100 Area (%) 60 40 20 -0.0% 31%-50% 51%-70% 0-30% 71%-100% **Total Vegetation Cover class**





Proportion of vegetation cover class in area







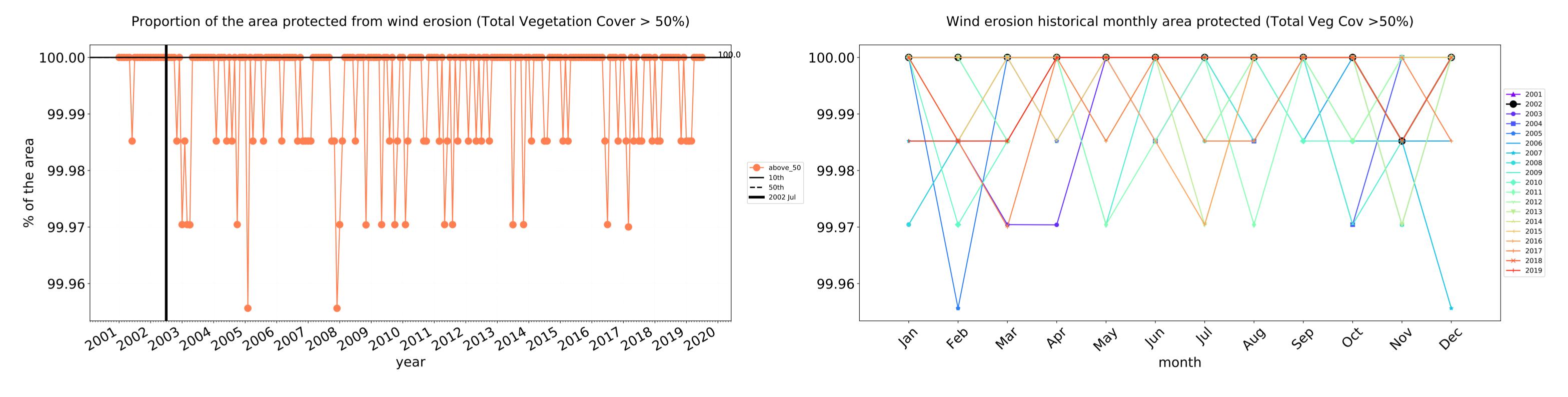


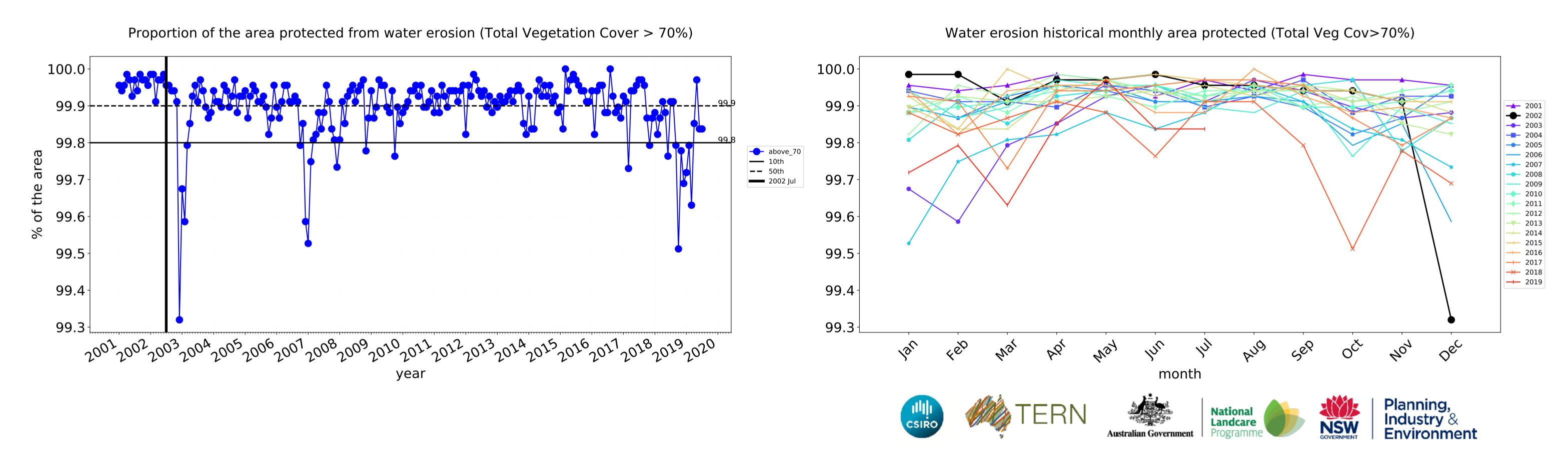


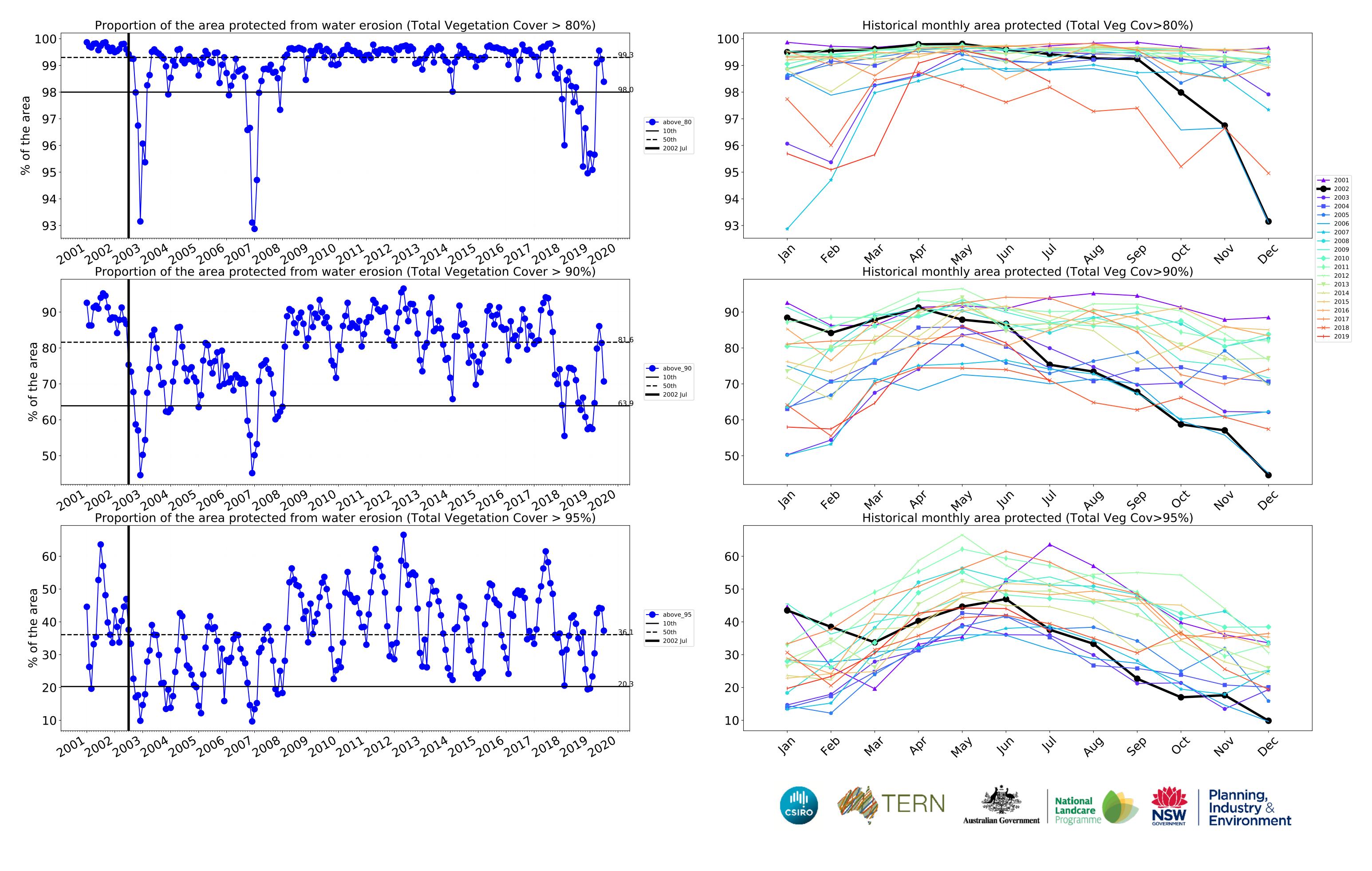






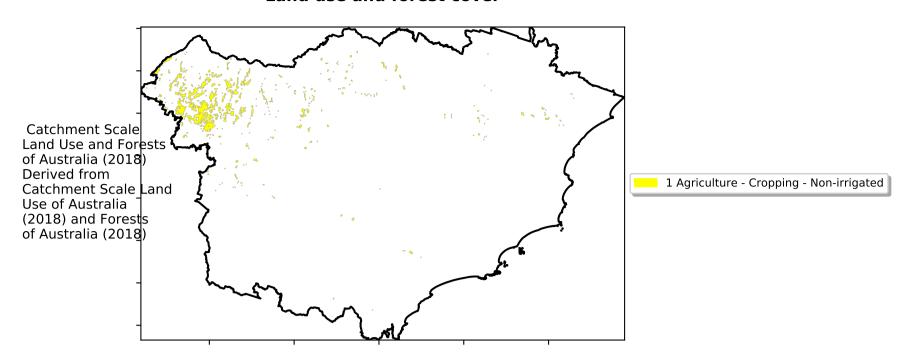




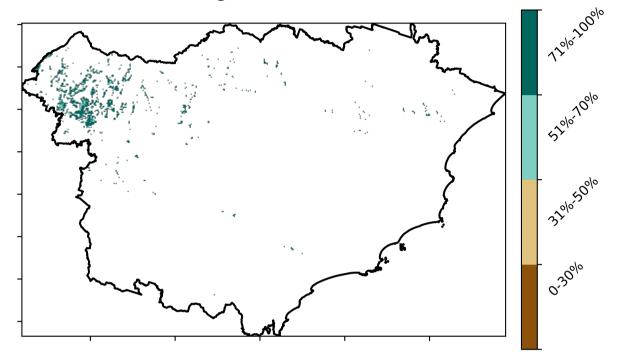


Cropping

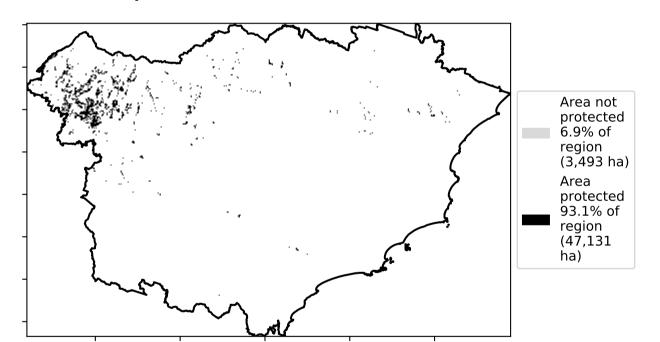
Land use and forest cover



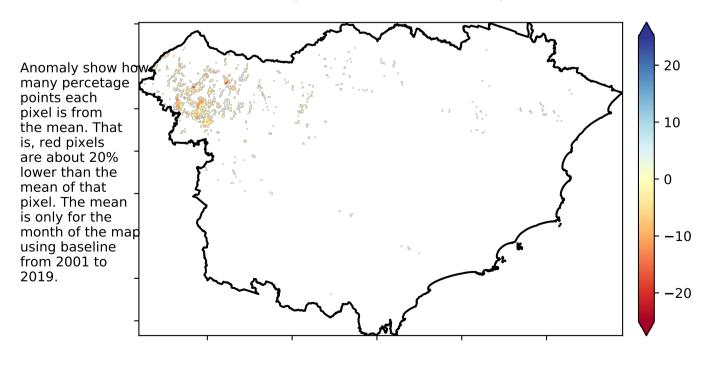
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

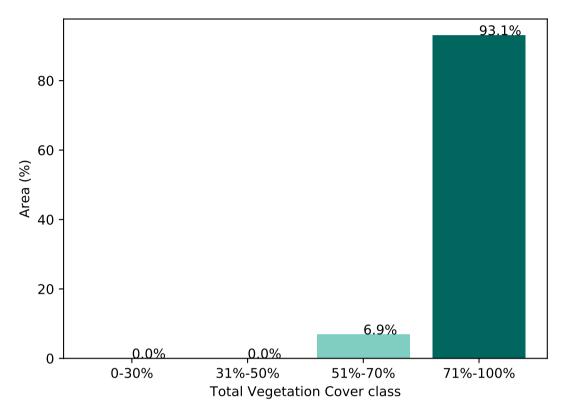


Total Vegetation Cover Anomaly [%]

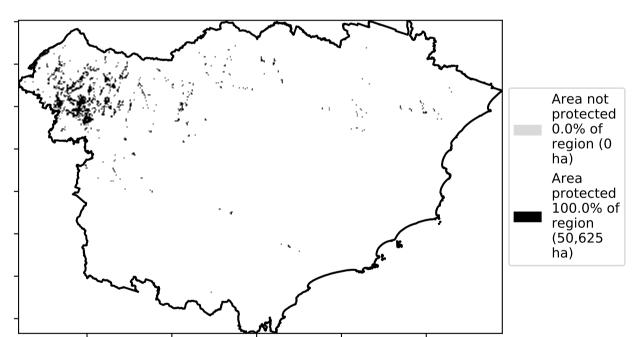


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

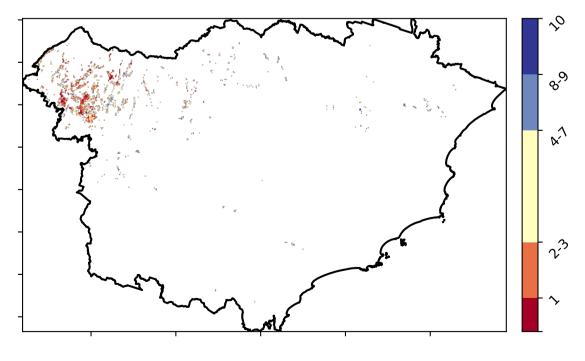
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







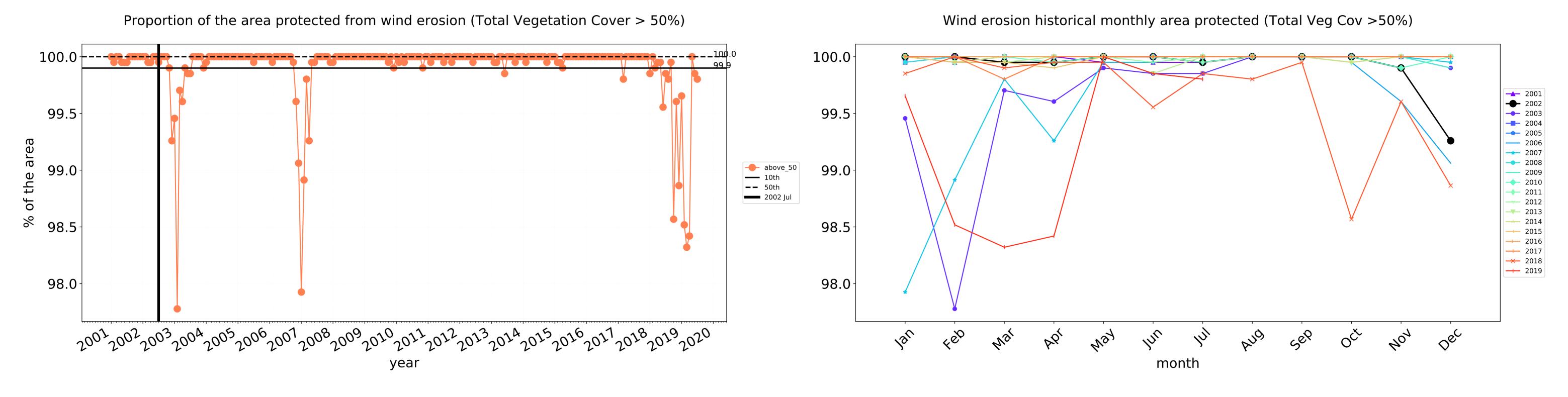


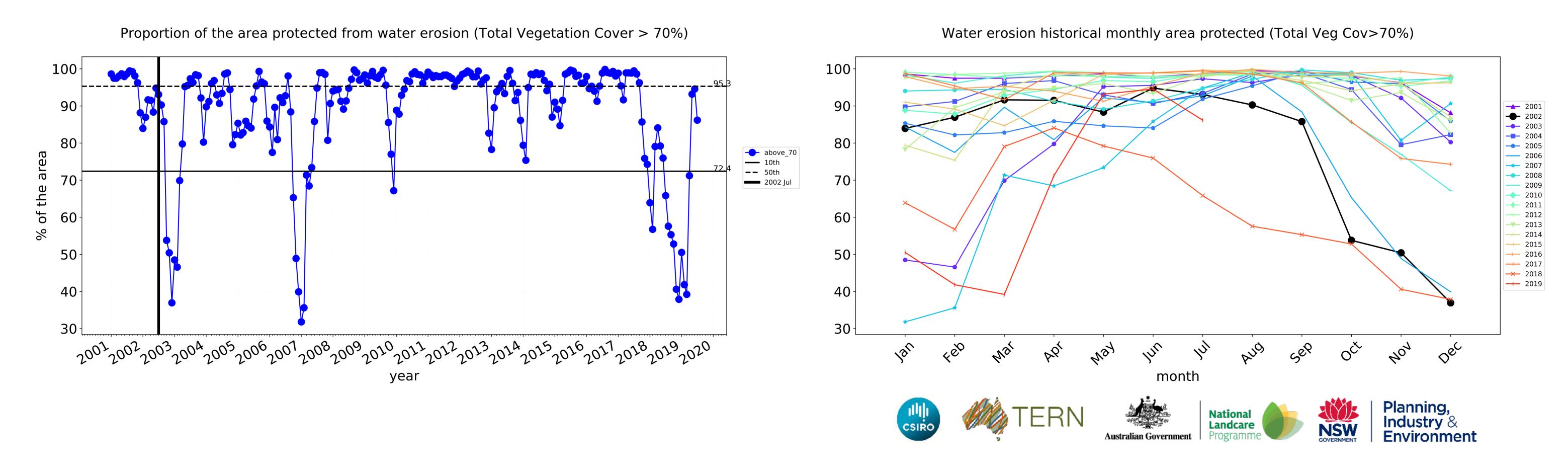


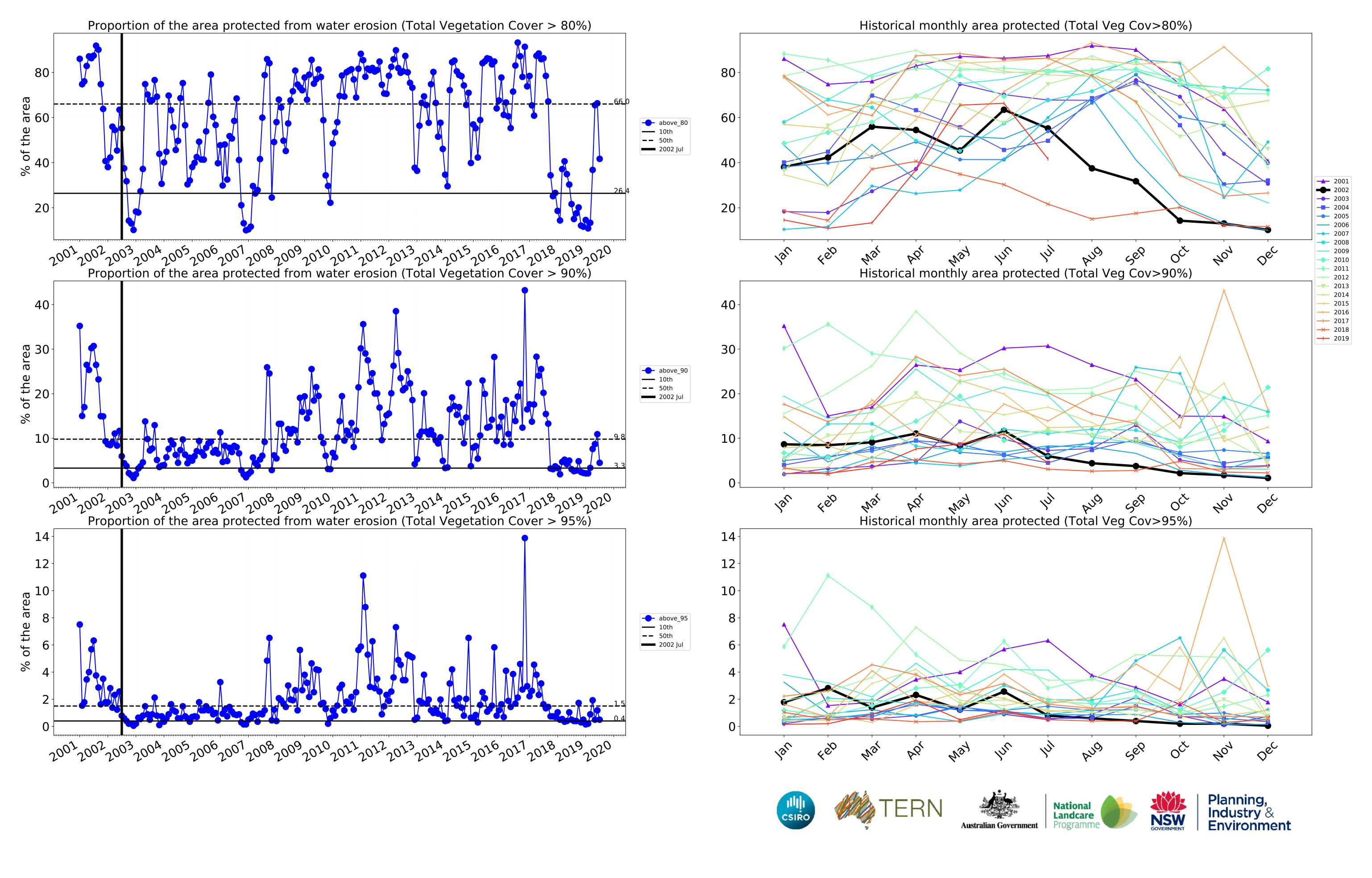




Cropping timeseries





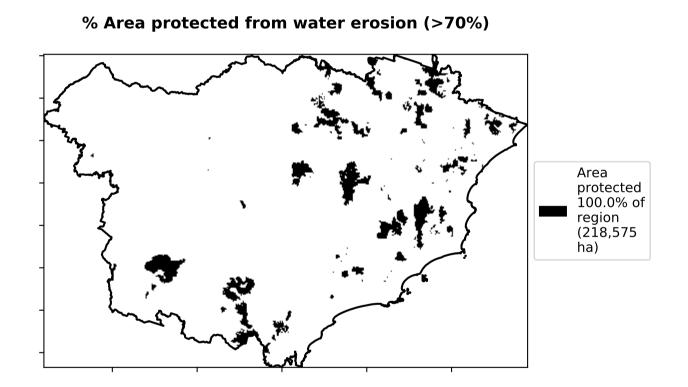


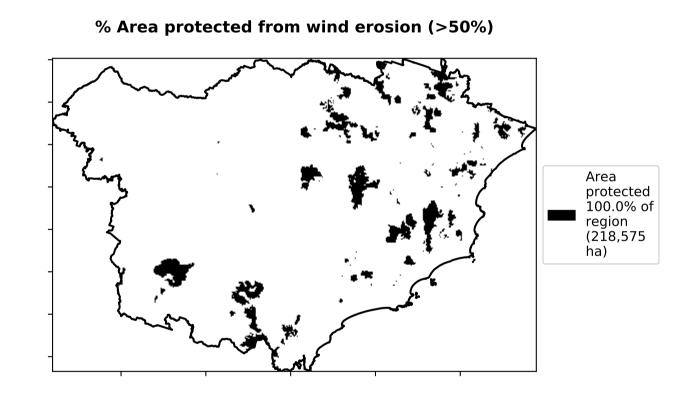
Production native forests and plantation forests

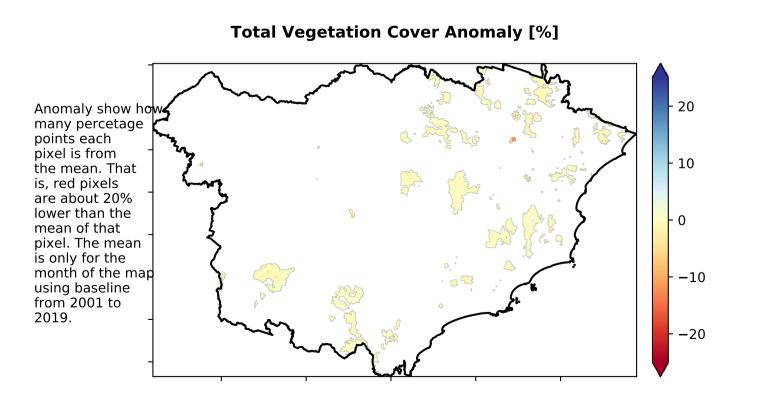
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Use of Australia (2018) and Forests of Australia (2018) I Production native forests and plantation forests of Australia (2018)

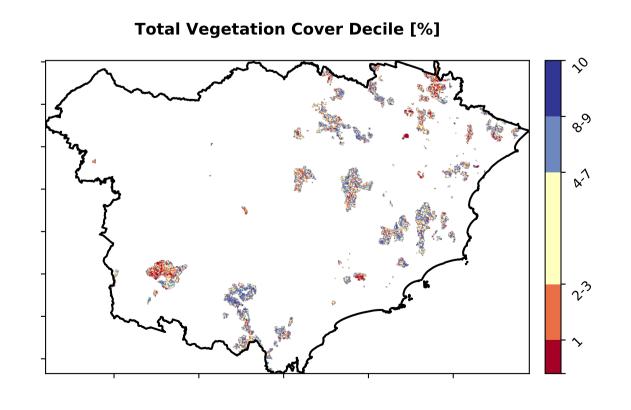
Total Vegetation Cover [%]

Proportion of vegetation cover class in area 100 - 100.0% 80 - 80 - 80 - 100.0% 9 - 40 - 9.30% 100 -













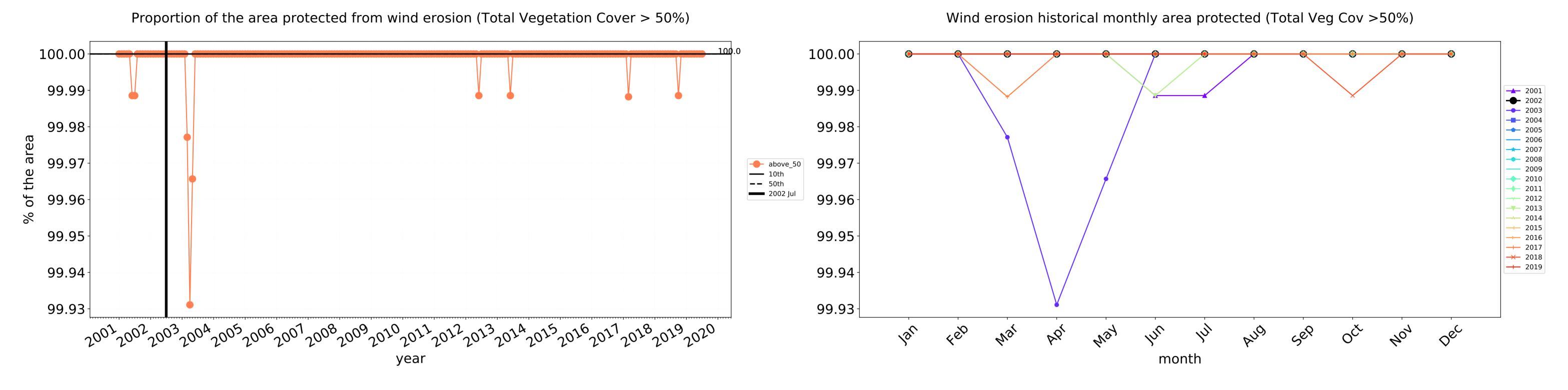


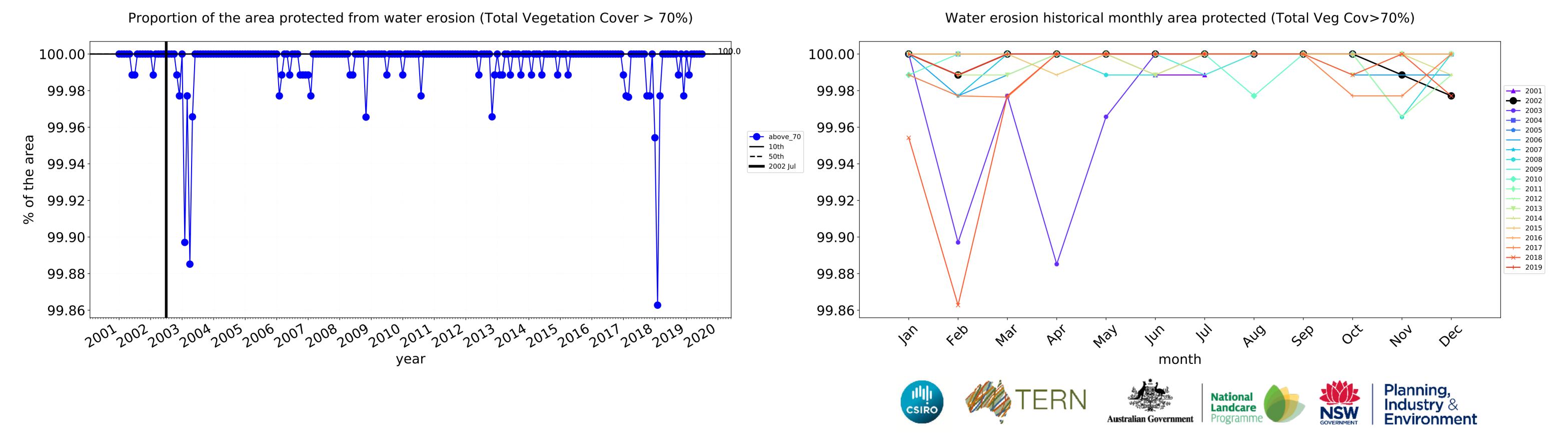


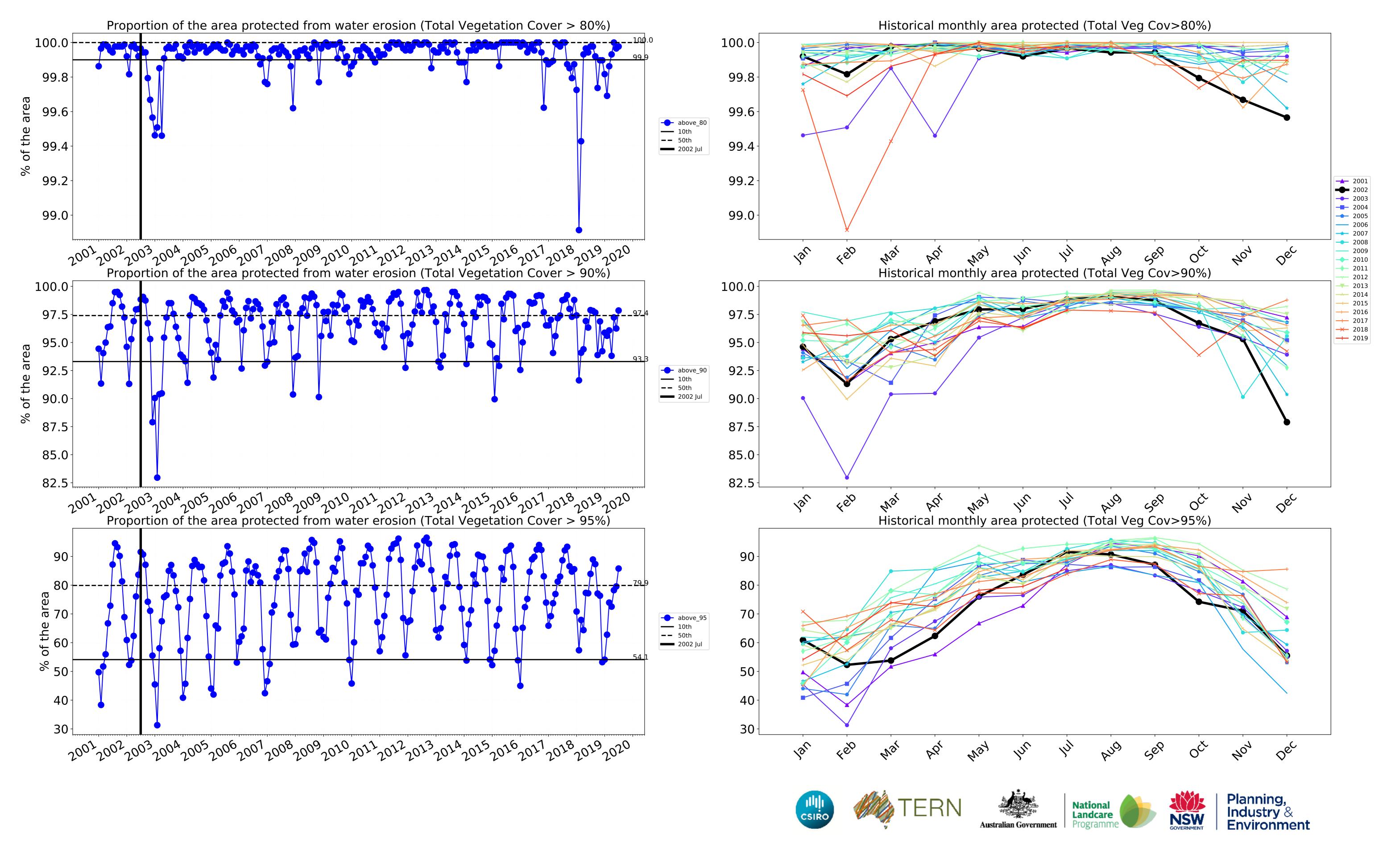




Production native forests and plantation forests timeseries







Hunter (3,238,275 ha and no data 62,150 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	3,238,275	99.9% 3,236,575	99.8% 3,231,702	99.0% 3,205,410	96.3% 3,119,738	73.4% 2,376,579	42.2% 1,366,356
Conservation and natural environments	1,242,125	99.9% 1,241,100	99.8% 1,240,200	99.7% 1,238,275	99.4% 1,234,850	90.8% 1,128,400	65.0% 807,250
Conservation and natural environments non forest	30,800	96.8% 29,825	94.2% 29,000	90.3% 27,825	86.0% 26,500	68.3% 21,025	33.0% 10,175
Conservation and natural environments Woodland forest	139,000	100.0% 139,000	100.0% 138,975	99.9% 138,925	99.8% 138,750	76.8% 106,750	37.9% 52,725
natural environments Forest (non woodland)	1,072,325	100.0% 1,072,275	100.0% 1,072,225	99.9% 1,071,525	99.7% 1,069,600	93.3% 1,000,625	69.4% 744,350
Agriculture	1,580,525	100.0% 1,580,500	100.0% 1,580,025	99.6% 1,573,875	96.3% 1,522,675	60.9% 963,100	21.7% 342,875
Grazing	1,502,525	100.0% 1,502,500	100.0% 1,502,050	99.8% 1,499,450	97.9% 1,470,825	63.7% 956,575	22.8% 342,150
Grazing non forest	1,212,750	100.0% 1,212,725	100.0% 1,212,275	99.8% 1,209,875	97.6% 1,183,450	63.3% 768,025	21.8% 264,375
Grazing Woodland forest	120,600	100.0% 120,600	100.0% 120,600	99.9% 120,475	98.8% 119,175	50.7% 61,125	11.7% 14,150
Grazing - Forest (non woodland)	169,175	100.0% 169,175	100.0% 169,175	100.0% 169,100	99.4% 168,200	75.3% 127,425	37.6% 63,625
Cropping	50,625	100.0% 50,625	100.0% 50,600	93.1% 47,125	55.2% 27,925	6.0% 3,025	0.8% 400
Production native forests and plantation forests	218,575	100.0% 218,575	100.0% 218,575	100.0% 218,575	100.0% 218,500	98.8% 216,025	91.6% 200,125











