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: November 2001

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









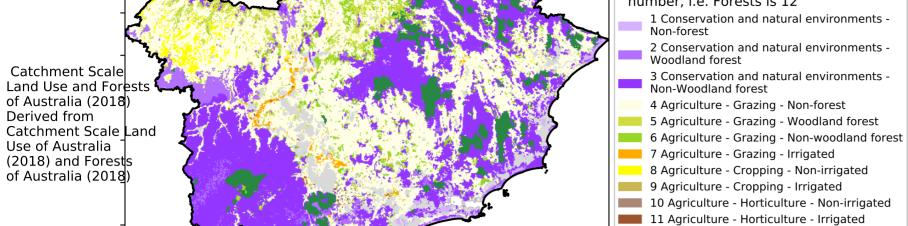


Vegetation Cover Nov 2001

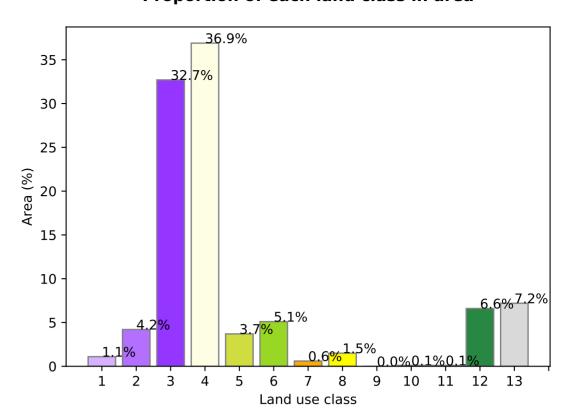
12 Production native forests and plantation

13 Other uses

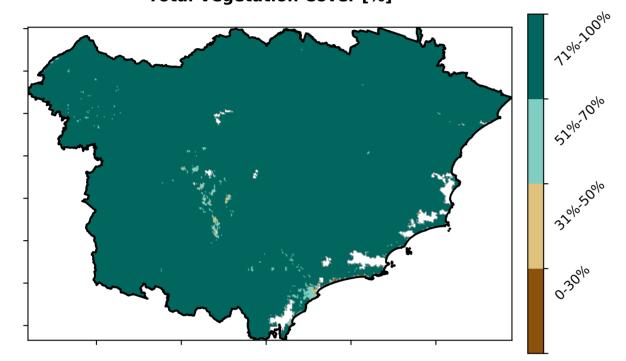
Land use and forest cover Legend with land class forest cover and number, i.e. Forests is 12 1 Conservation and natural environments - Non-forest



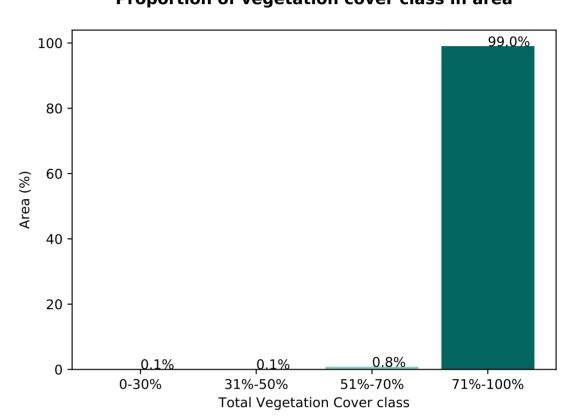
Proportion of each land class in area



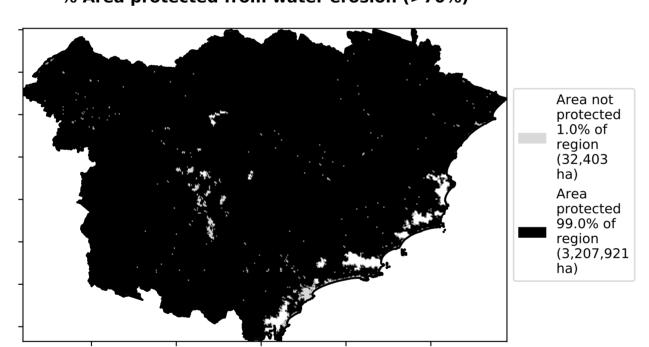




Proportion of vegetation cover class in area



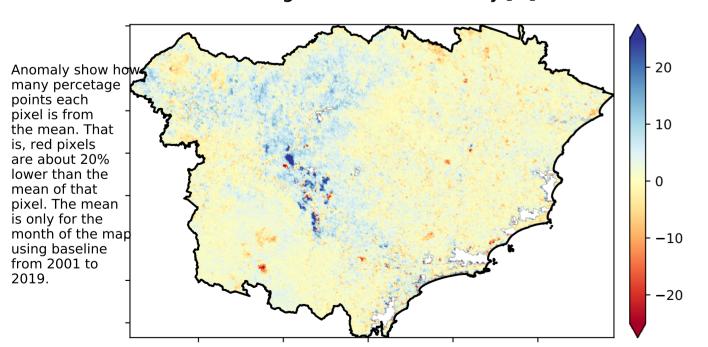
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

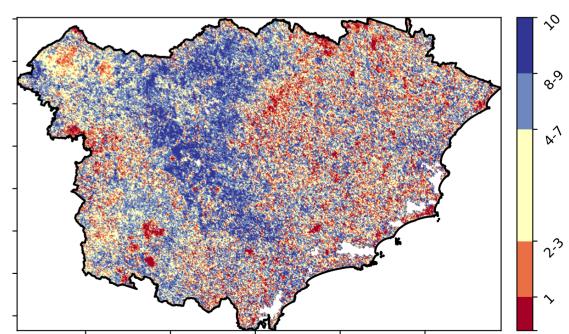


Total Vegetation Cover Anomaly [%]



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

Total Vegetation Cover Decile [%]





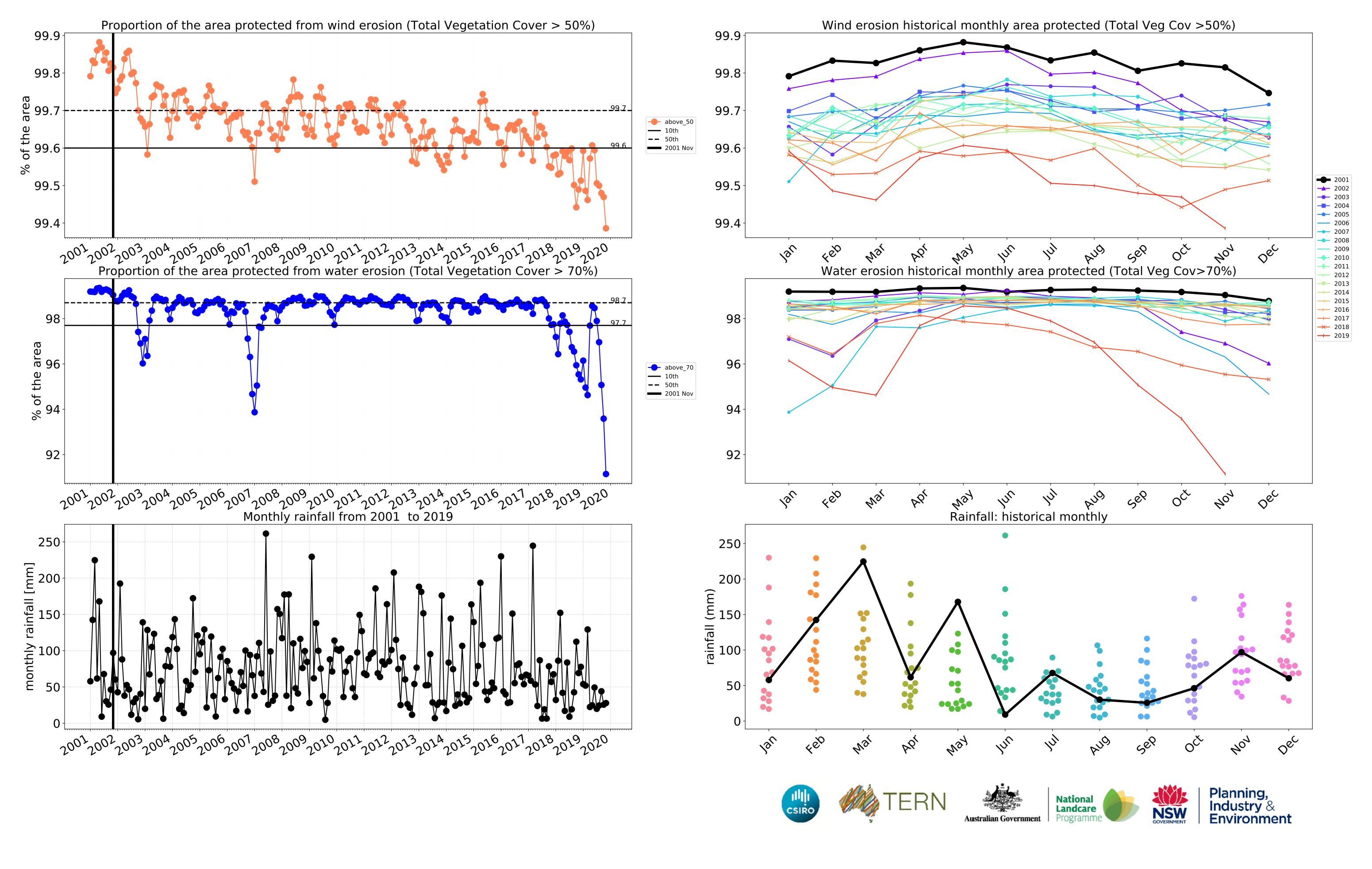


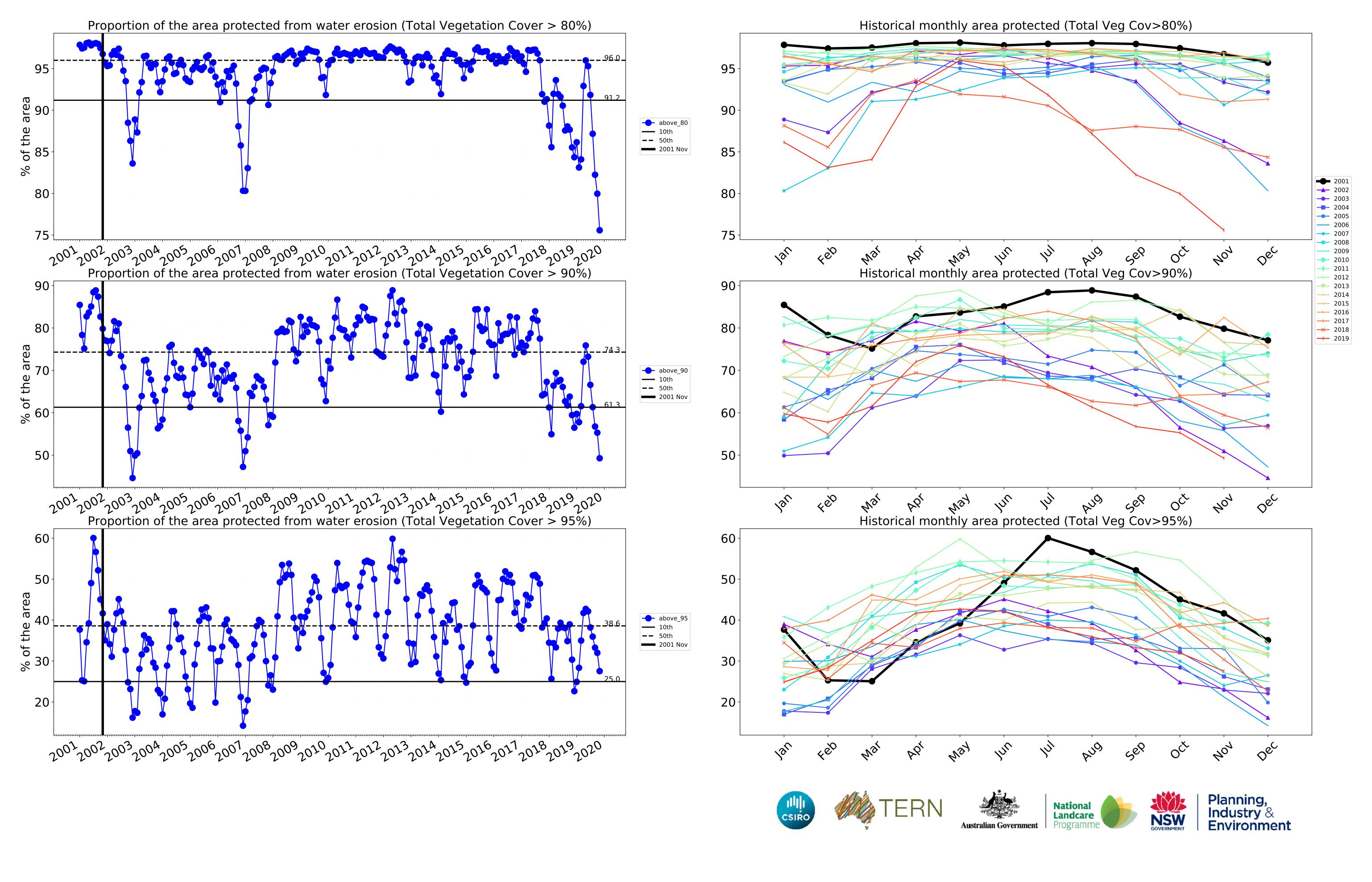




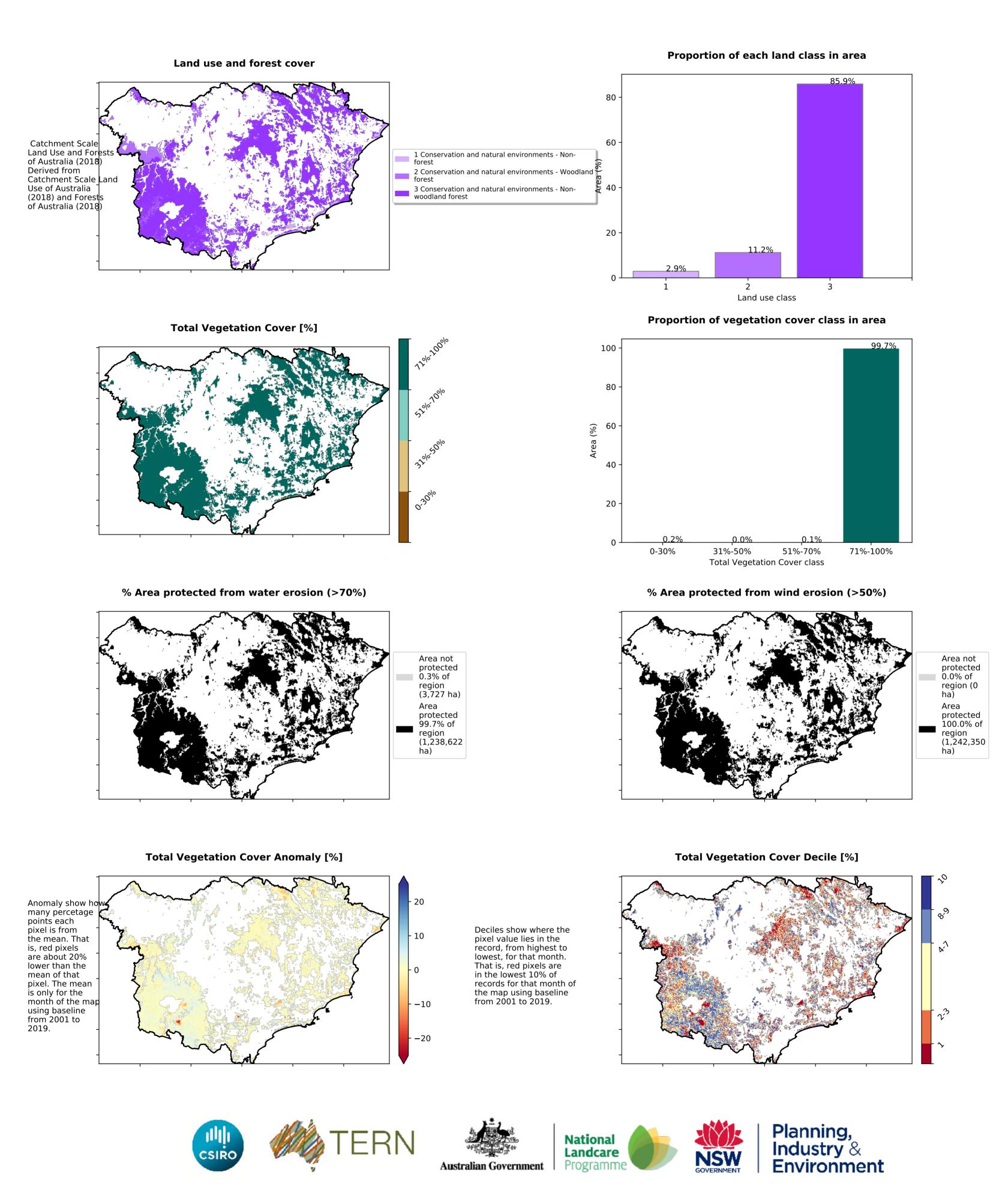




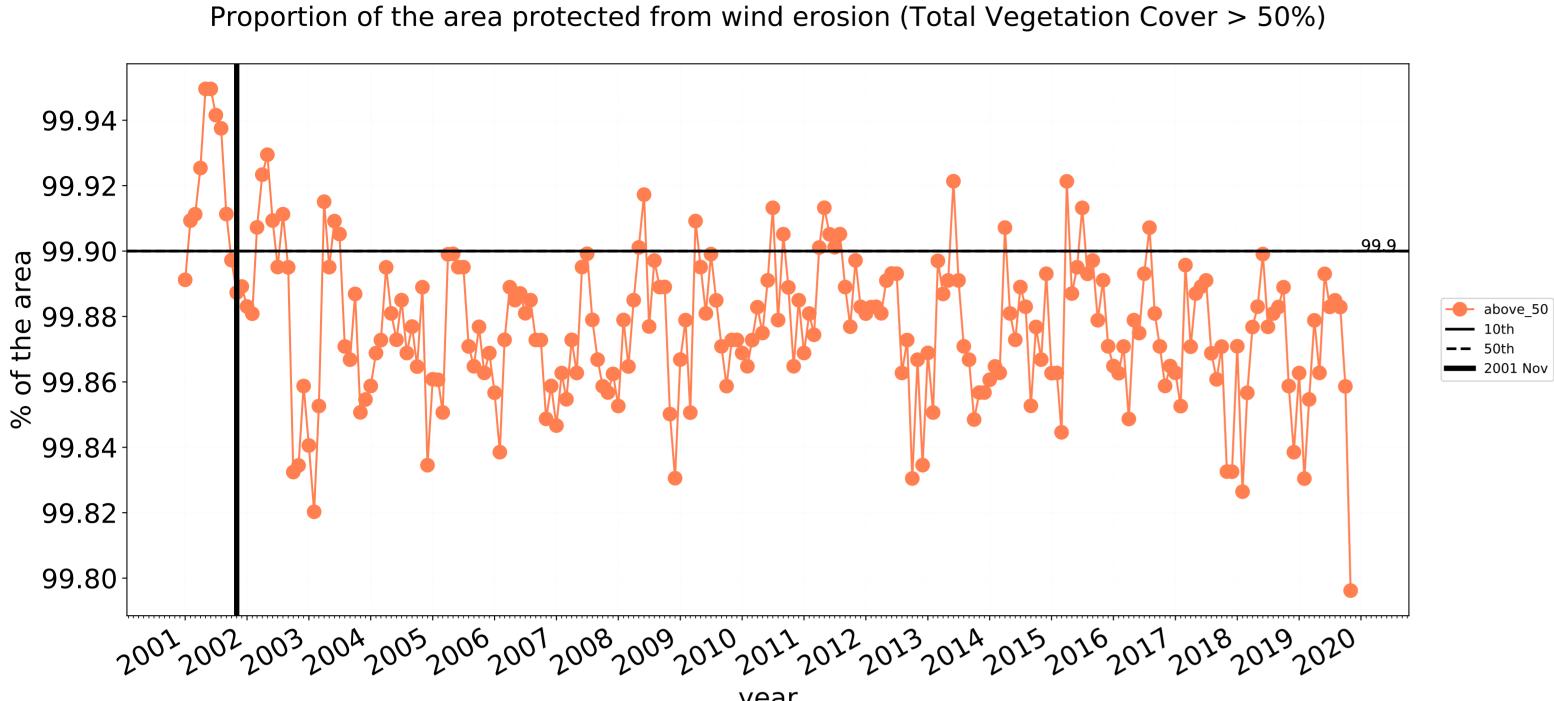


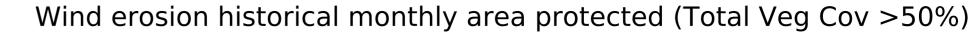


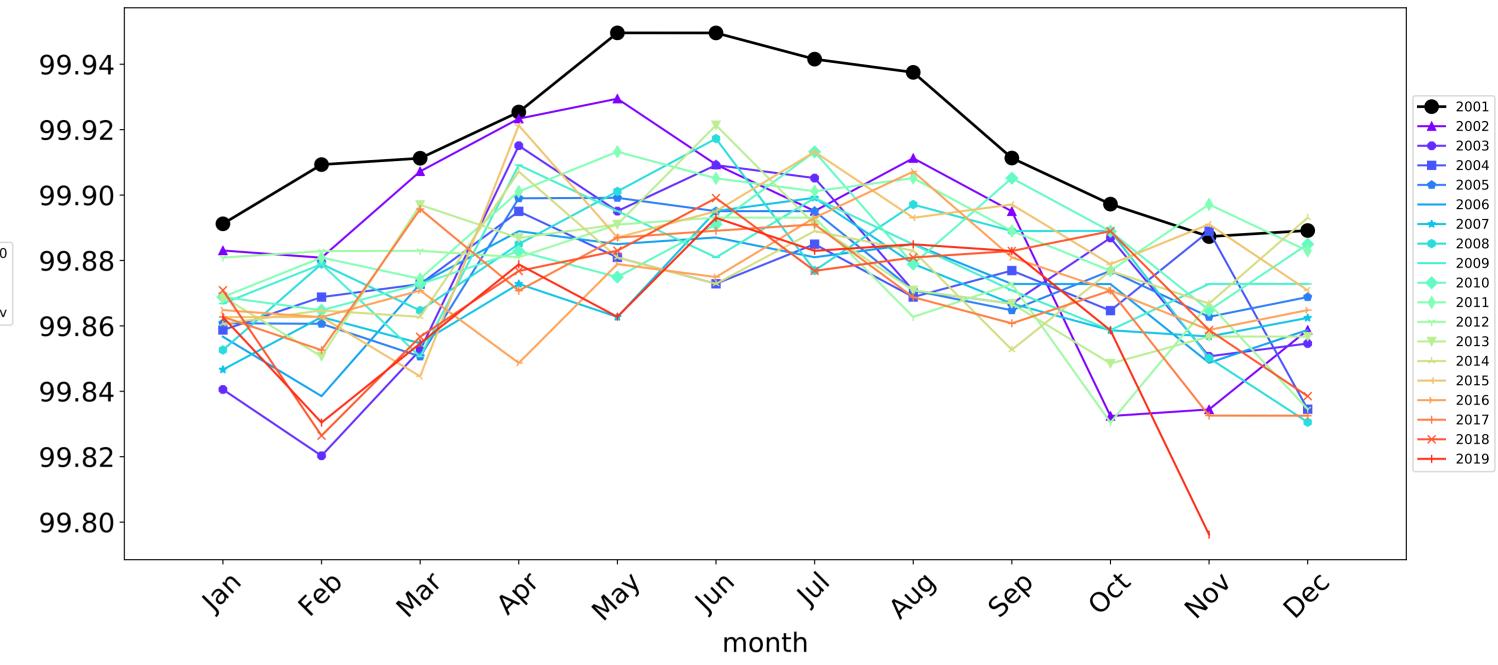
Conservation and natural environments

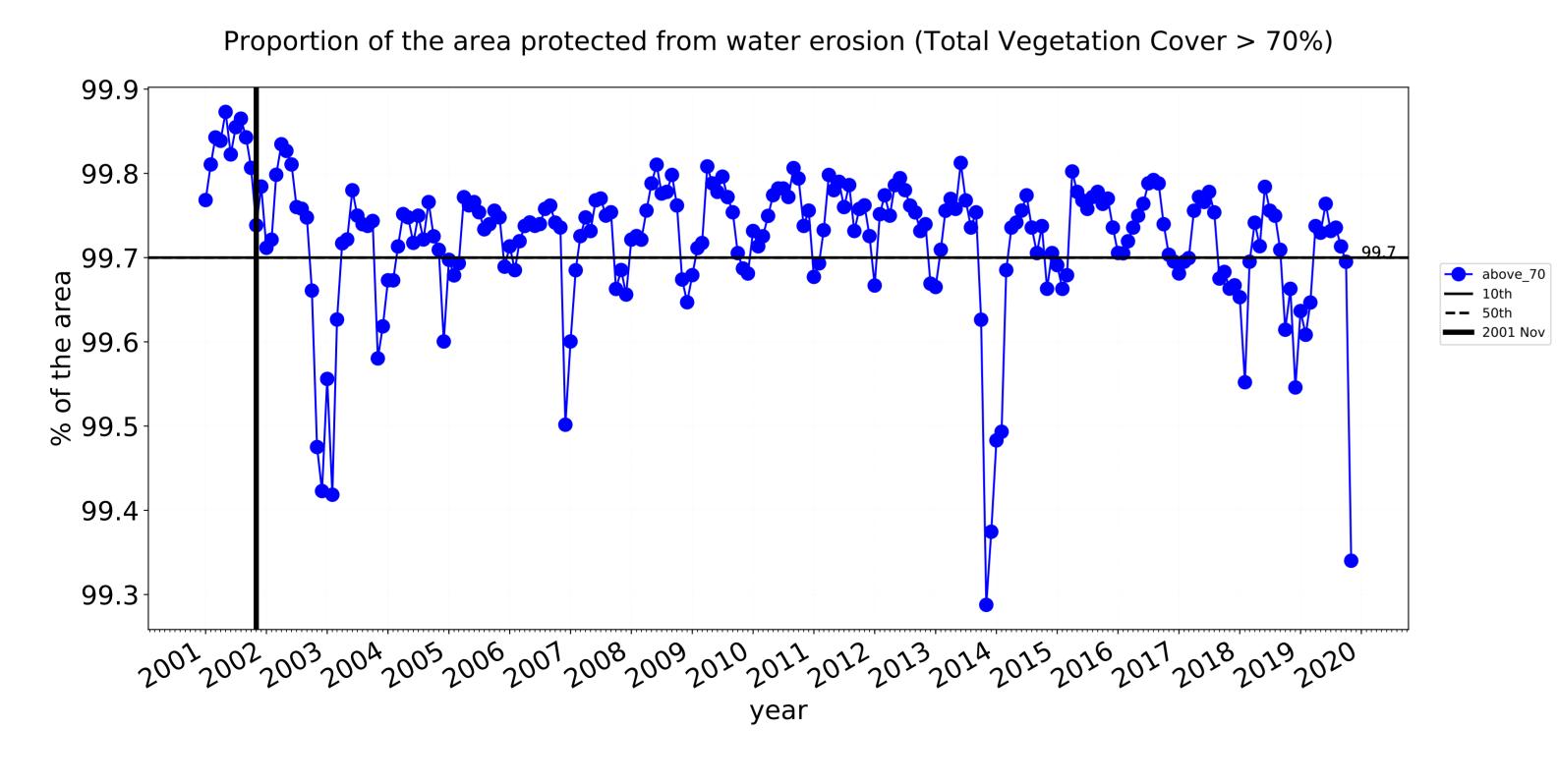


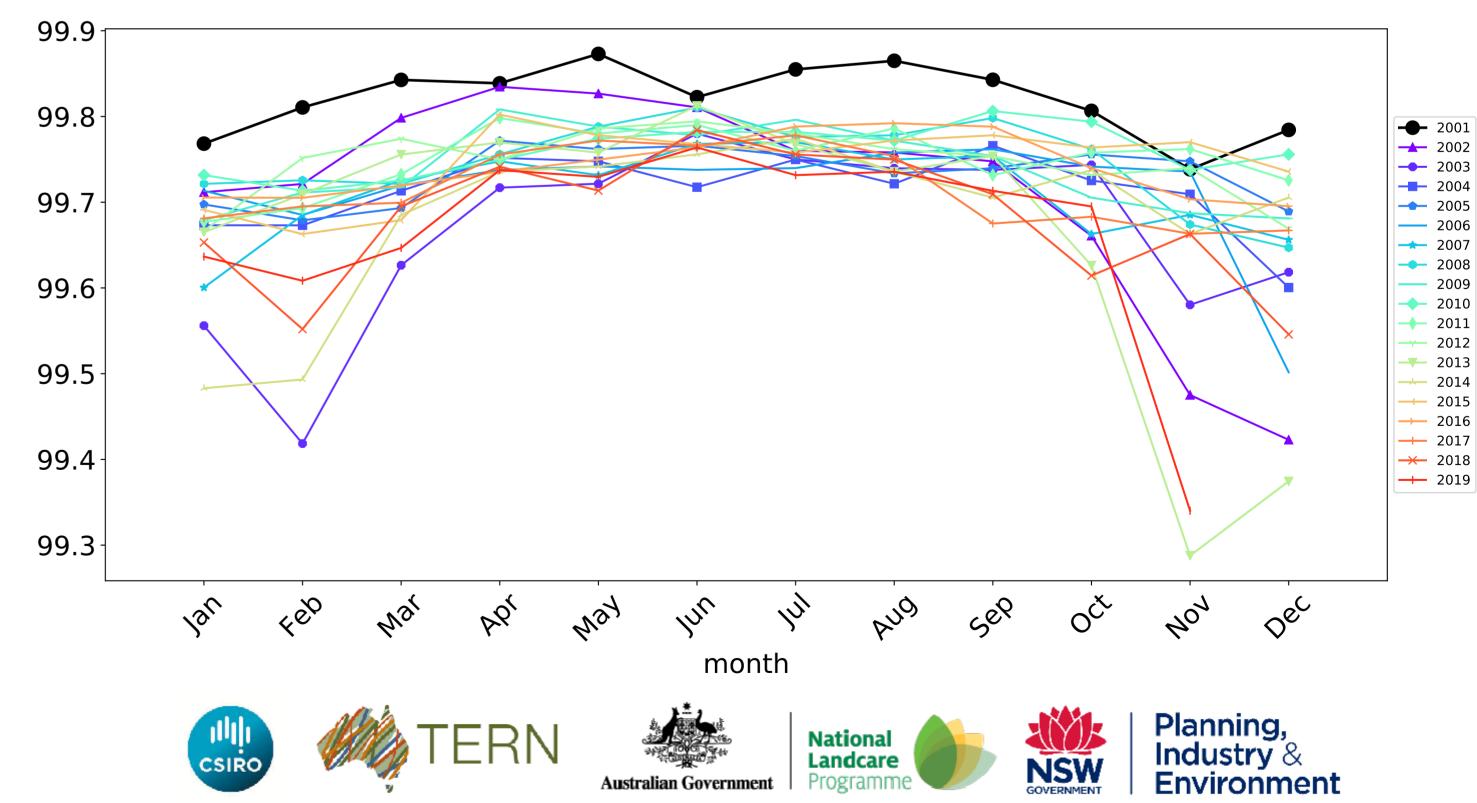
Conservation and natural environments timeseries



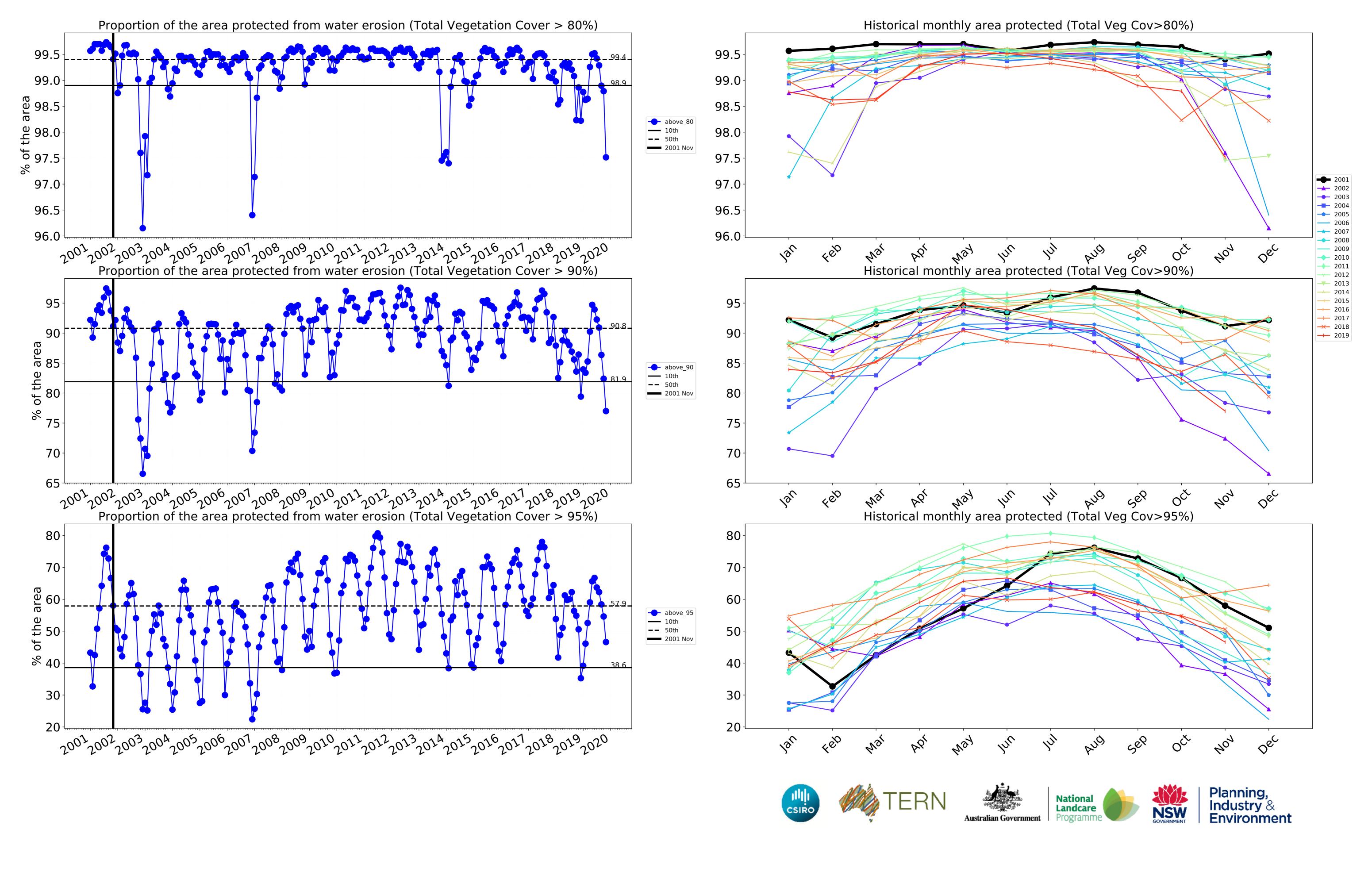




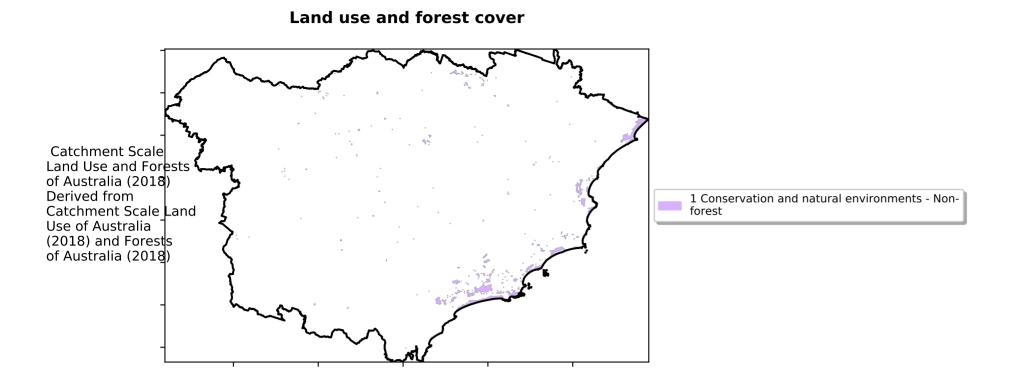




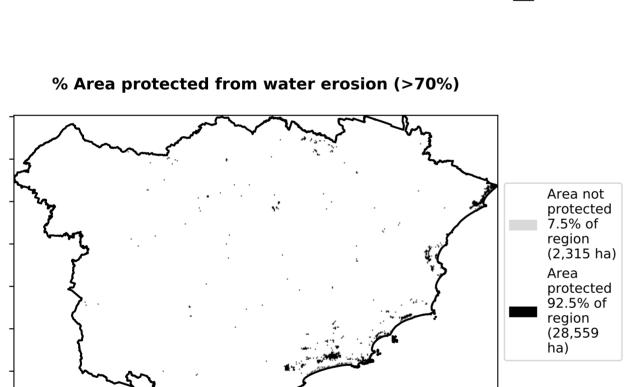
Water erosion historical monthly area protected (Total Veg Cov>70%)

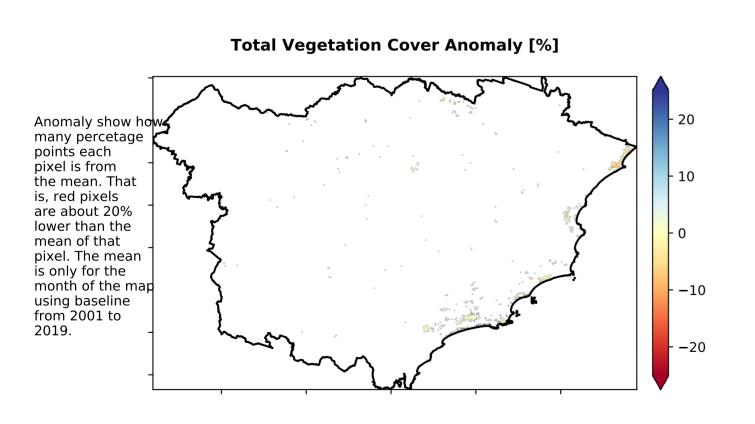


Conservation and natural environments non forest



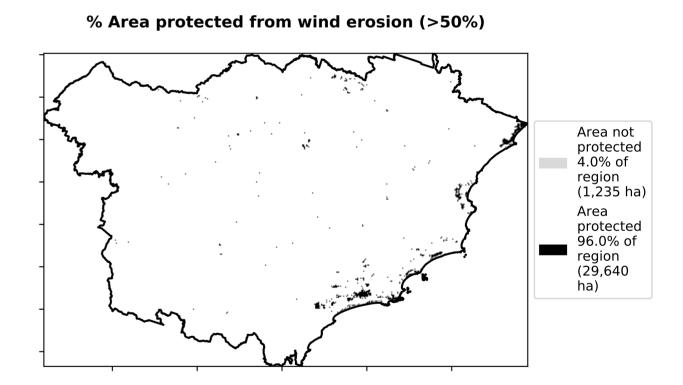
Total Vegetation Cover [%]

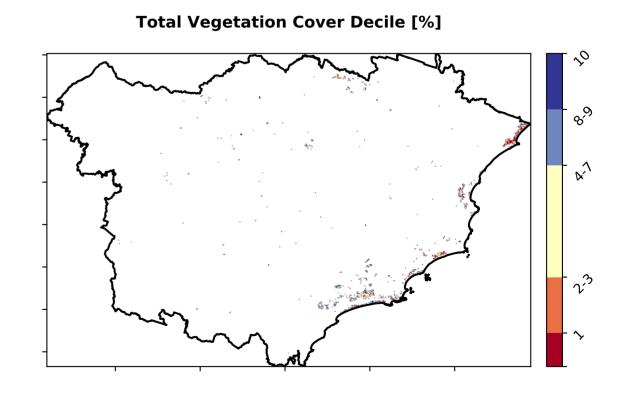




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area 92.5% 80 - 60 - 60 - 20 - 3.4% 0-30% 31%-50% 51%-70% 71%-100% Total Vegetation Cover class















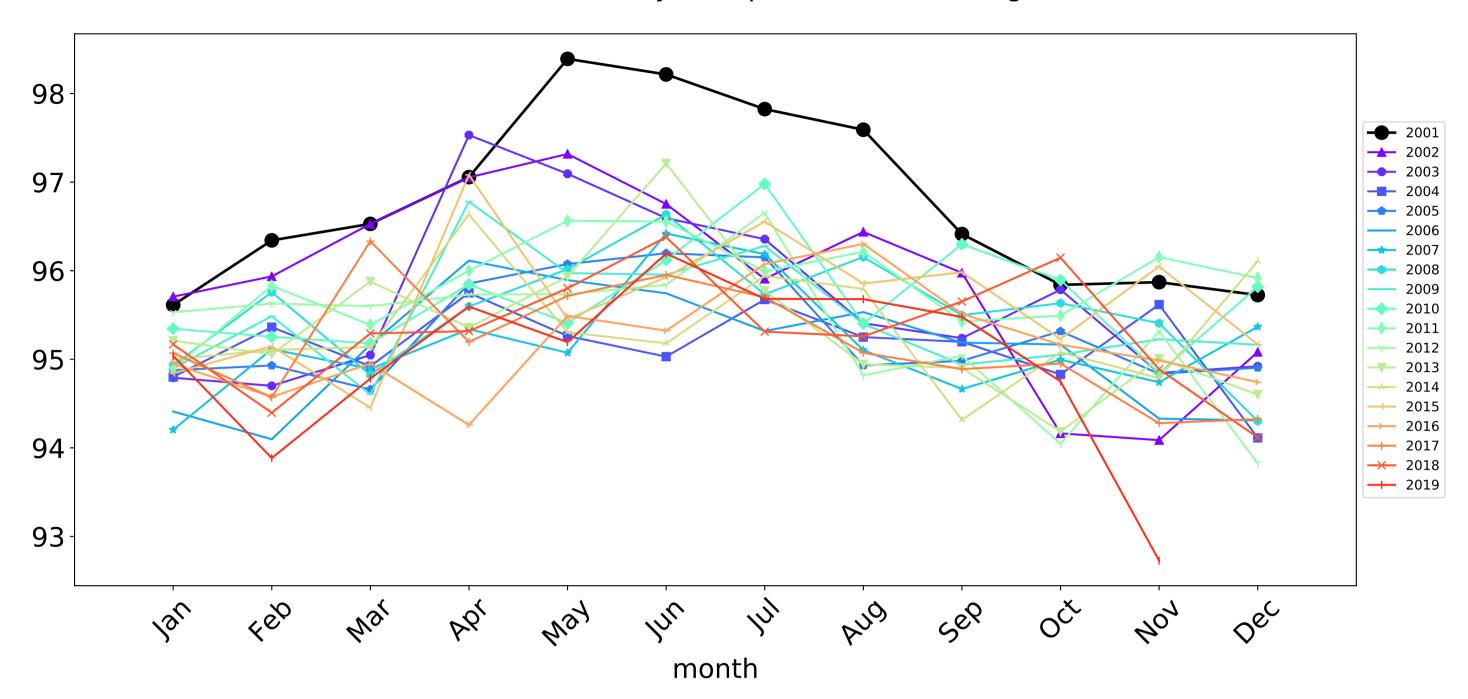


Conservation and natural environments non forest timeseries

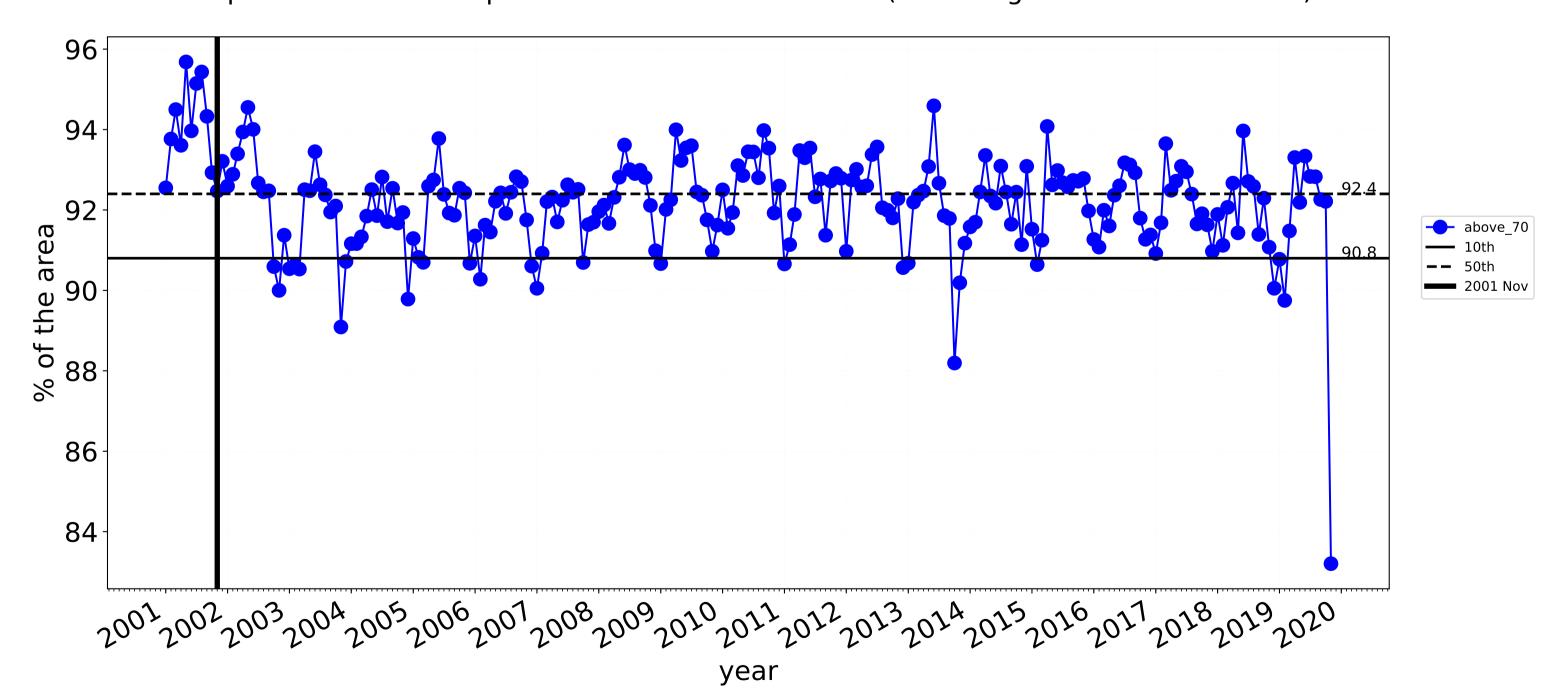




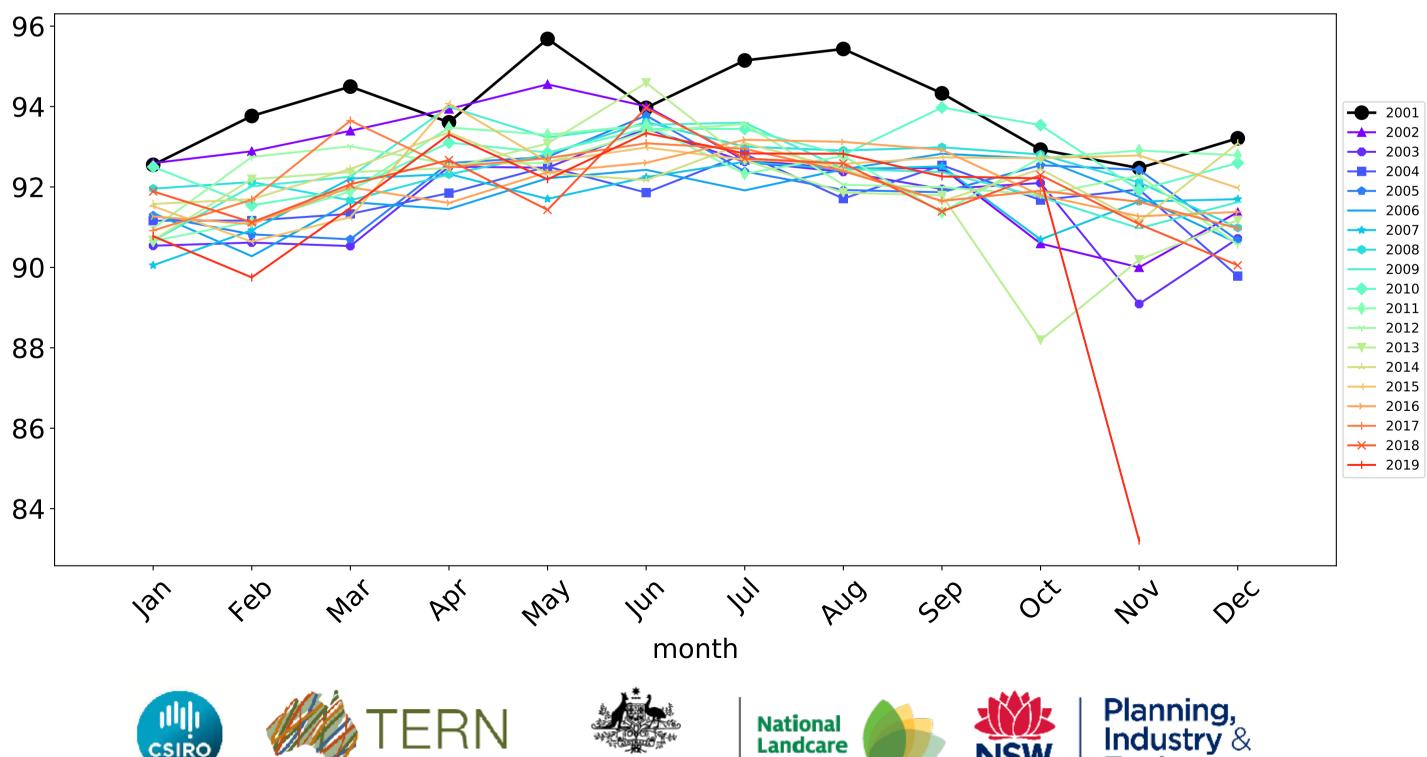
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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





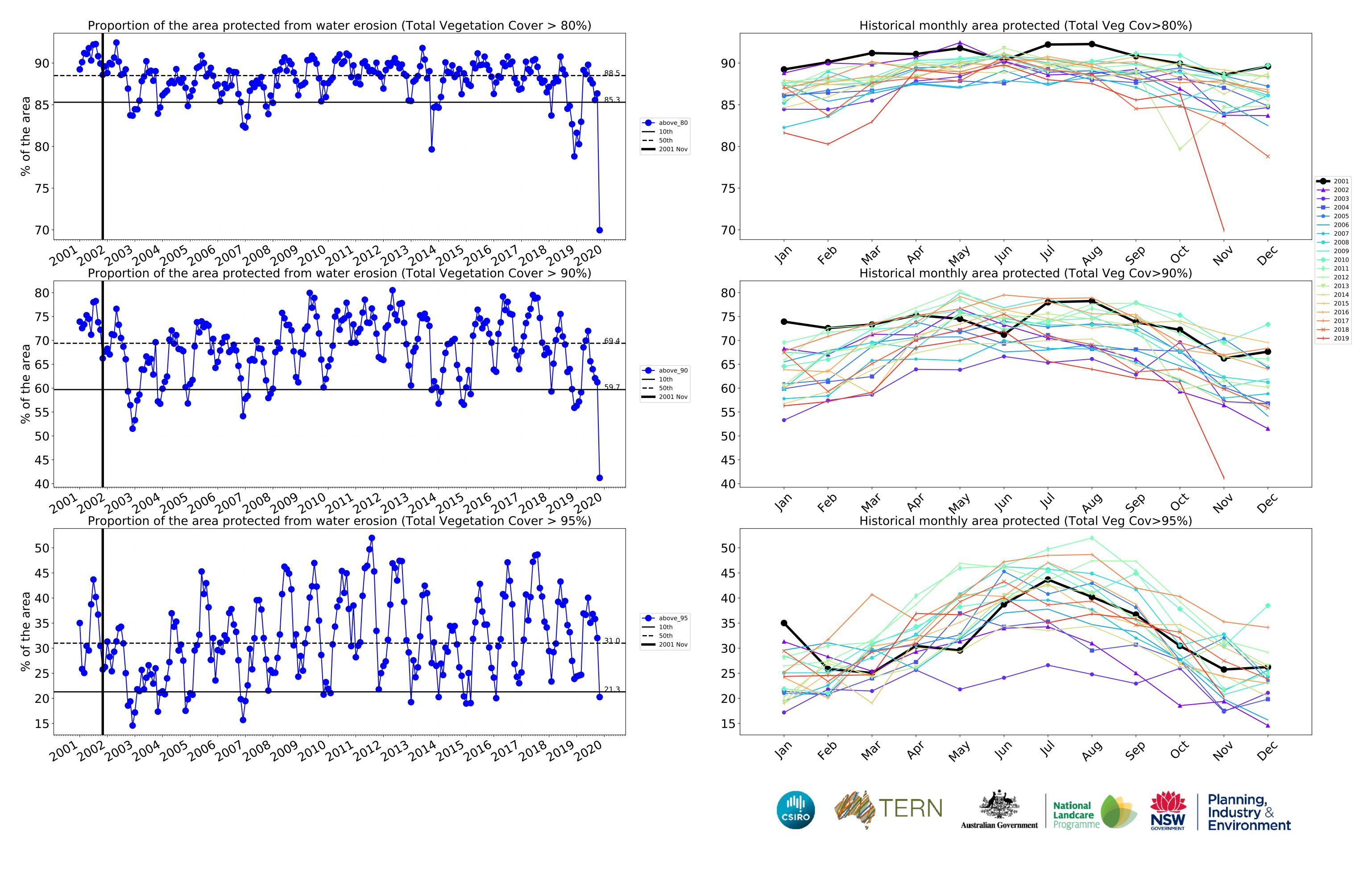




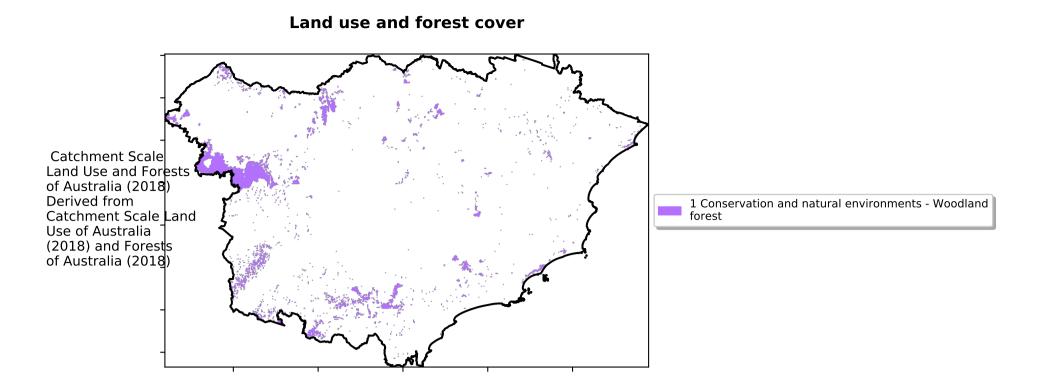




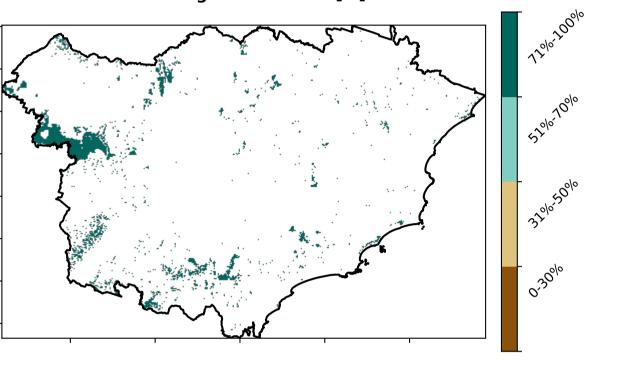


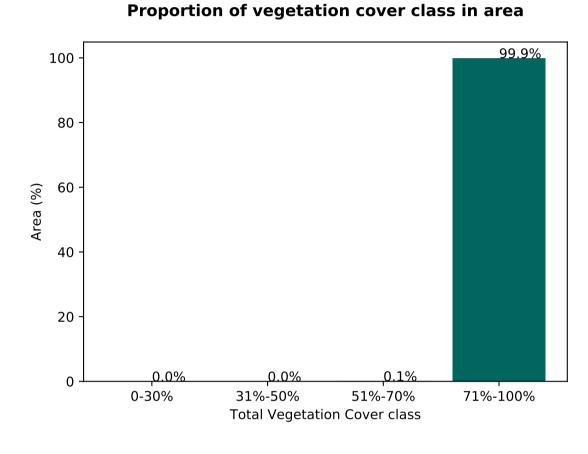


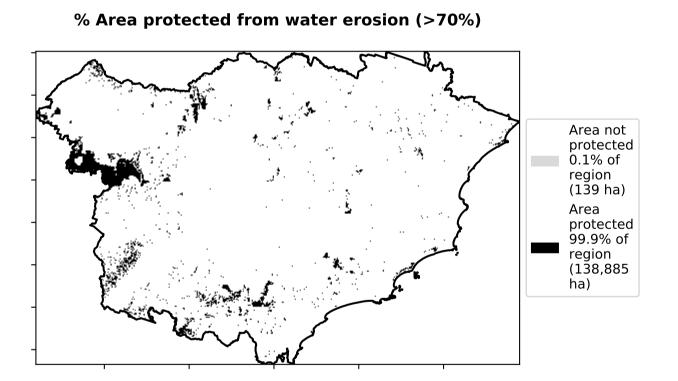
Conservation and natural environments Woodland forest

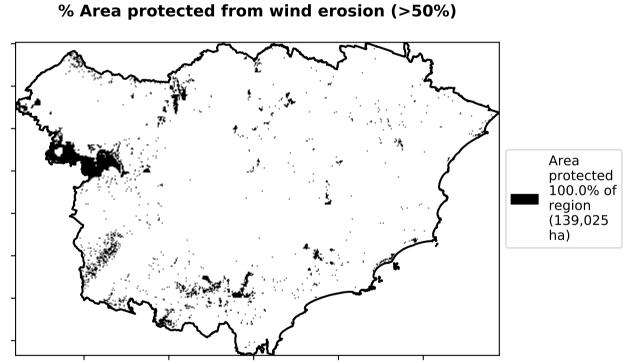


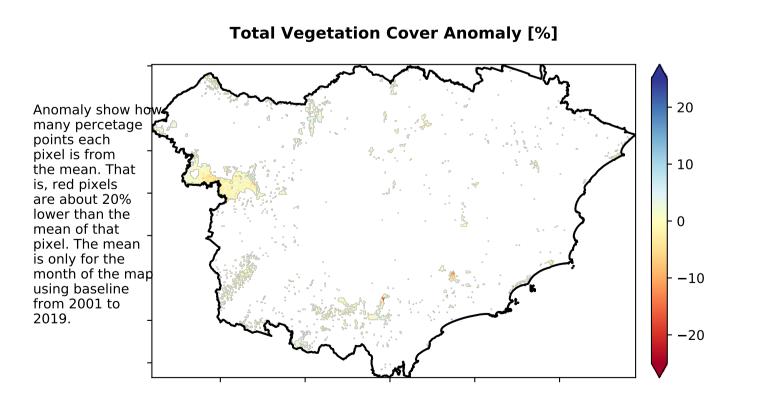
Total Vegetation Cover [%]

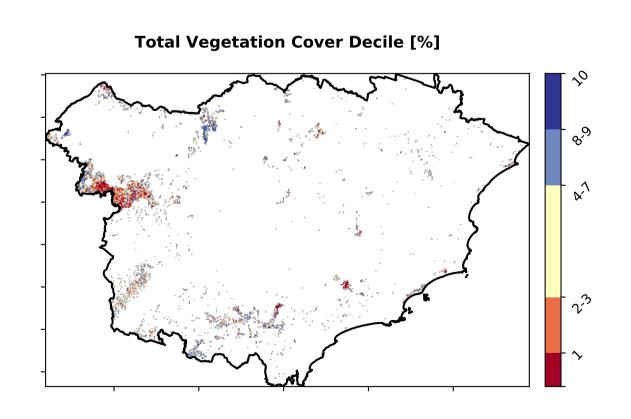














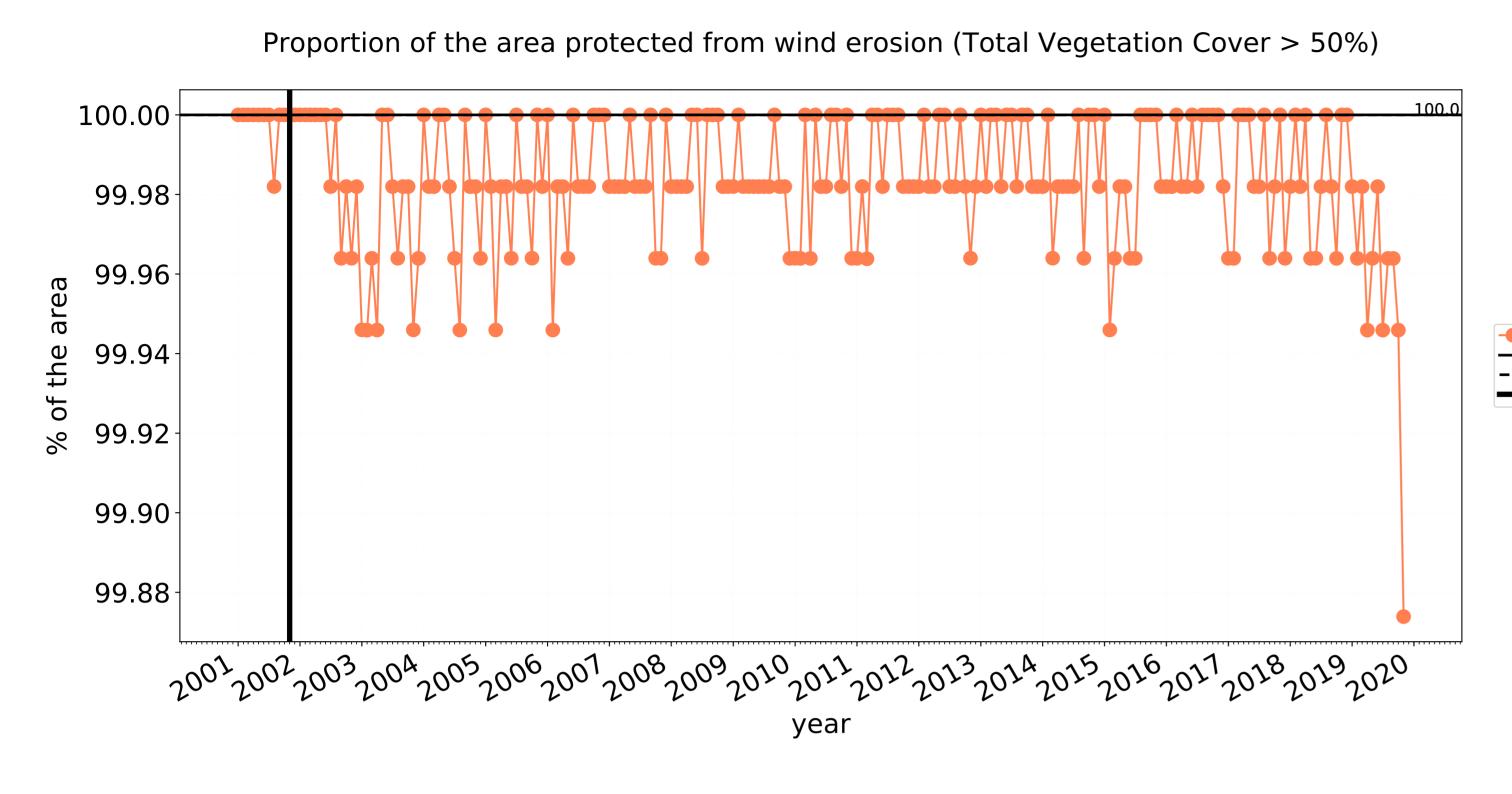


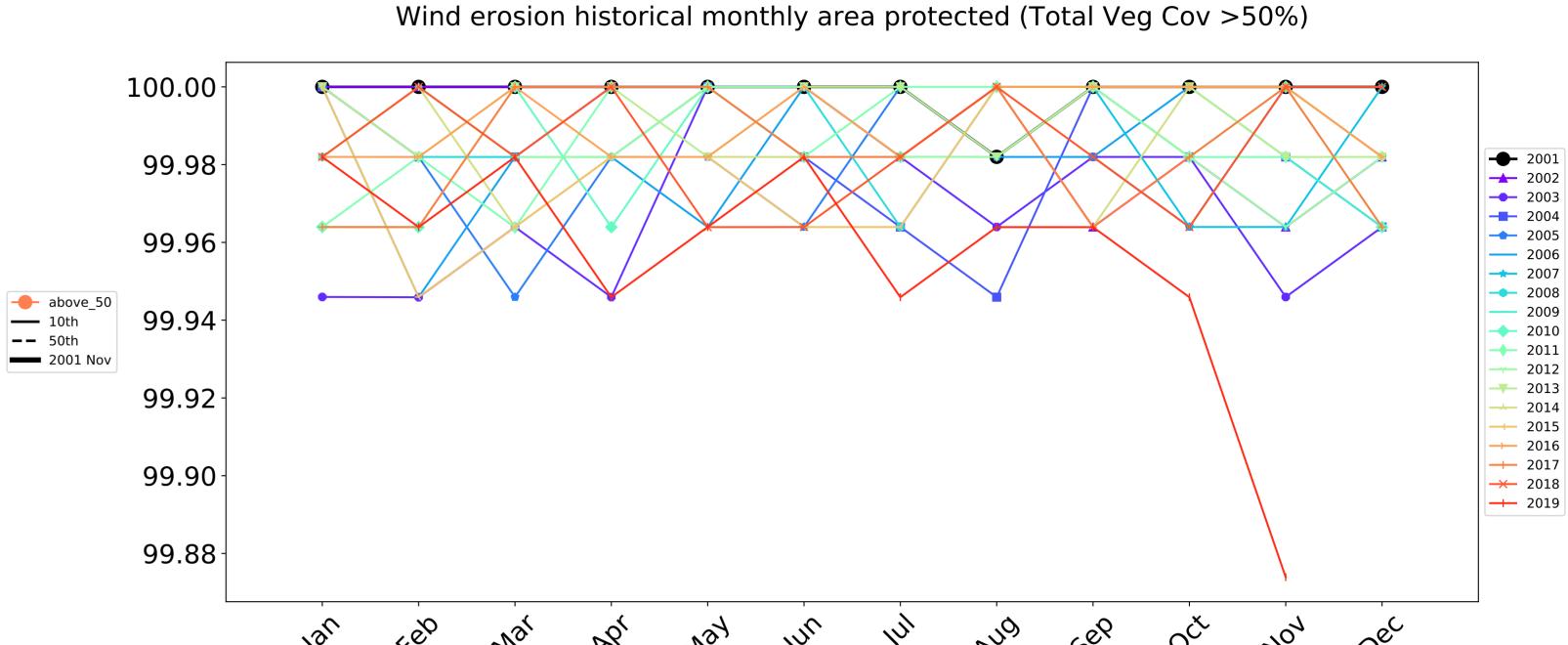




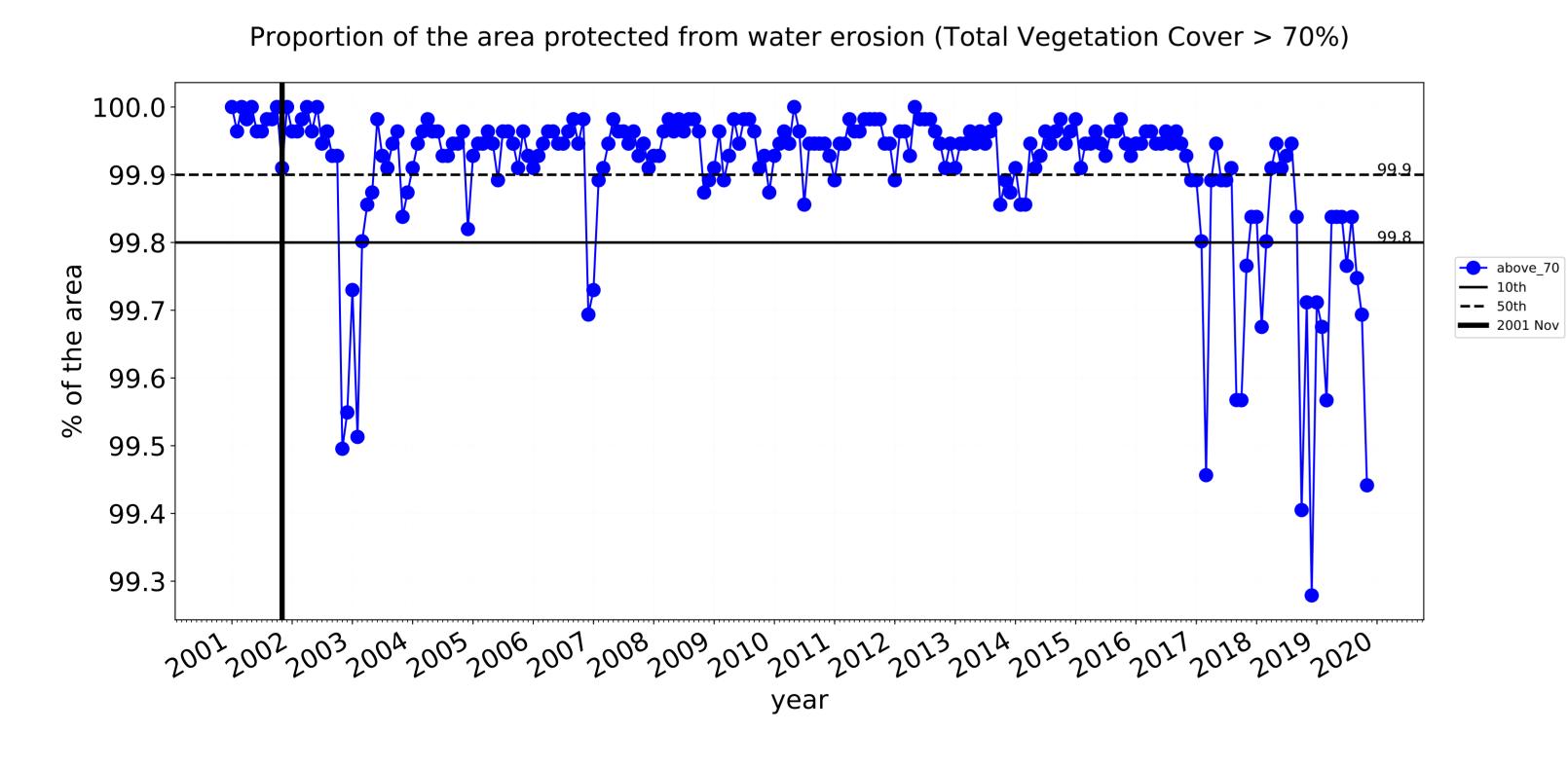


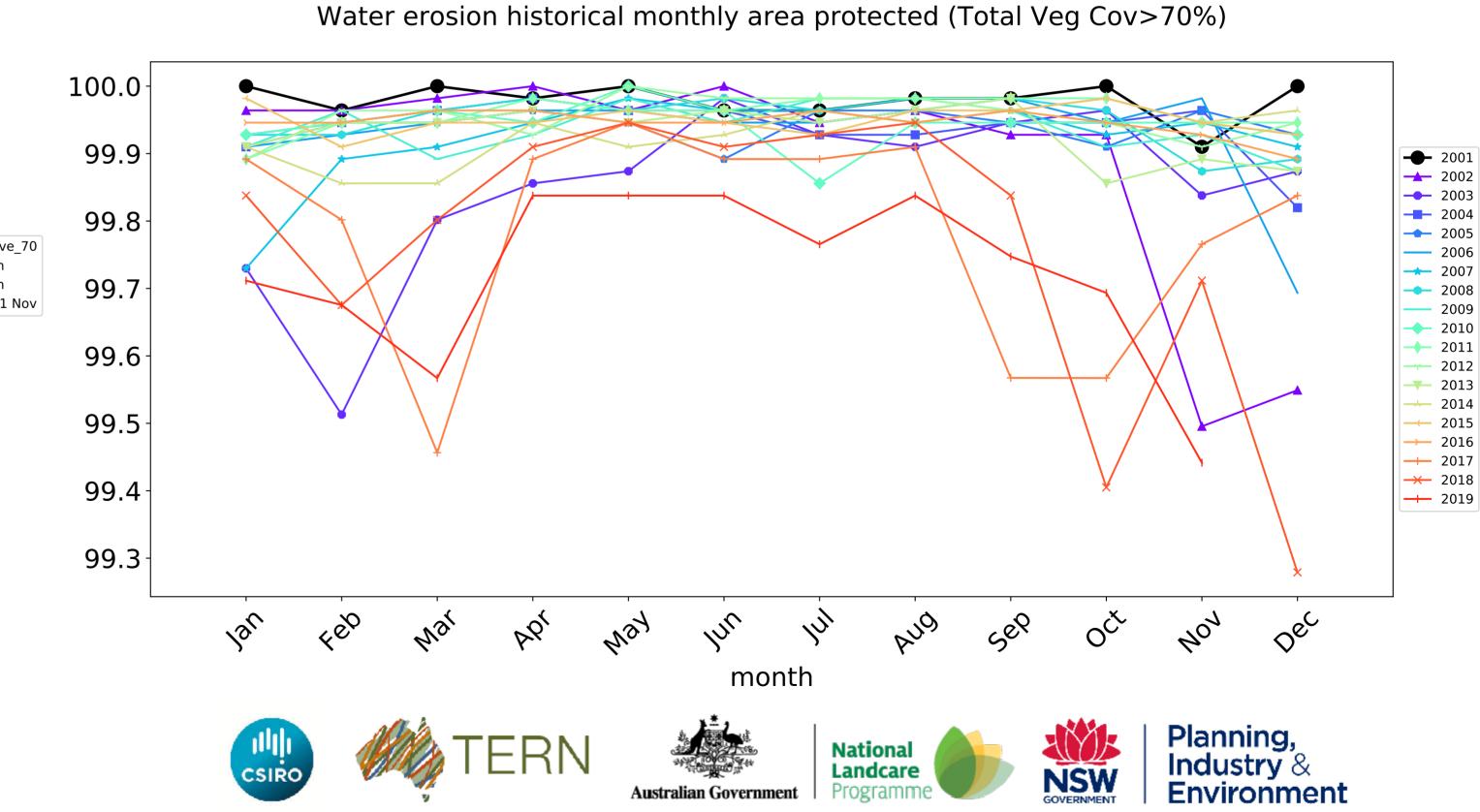


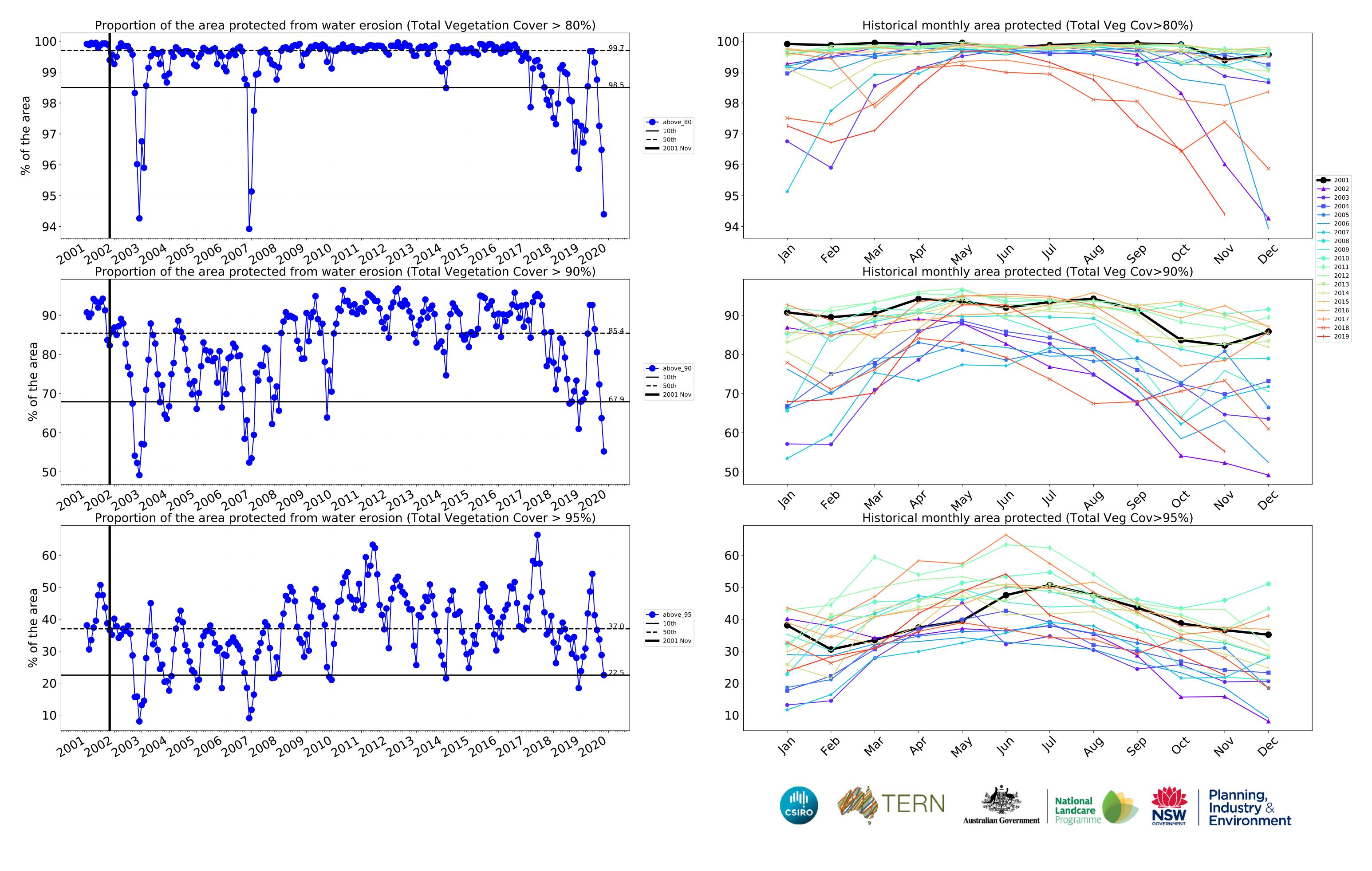




month



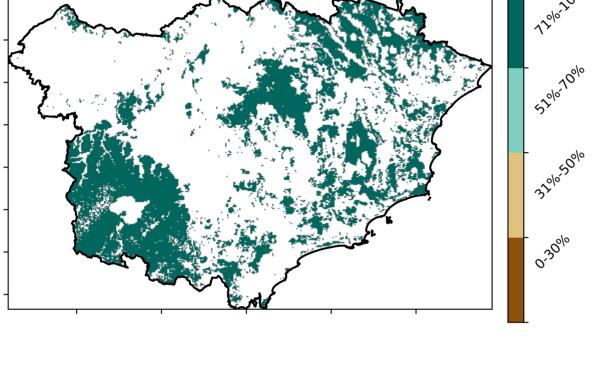


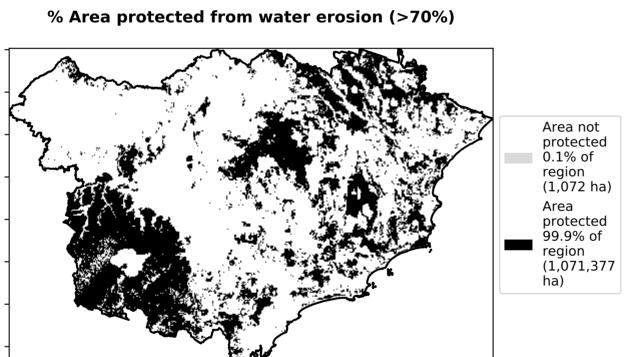


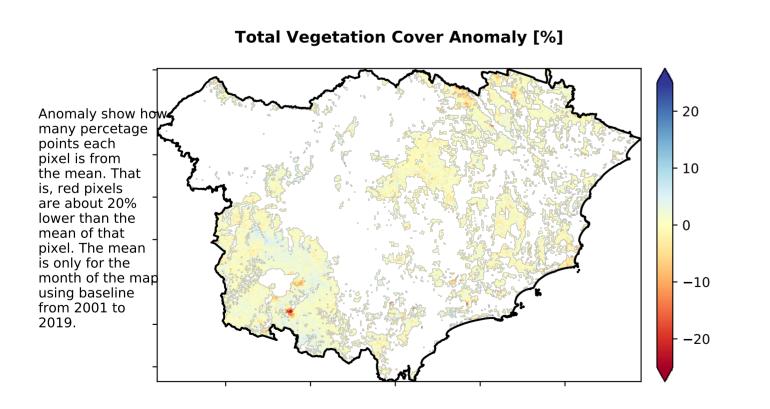
Conservation and natural environments Forest (non woodland)

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 [%]

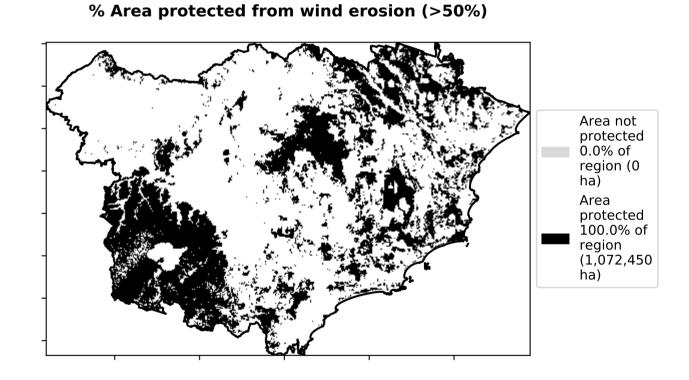


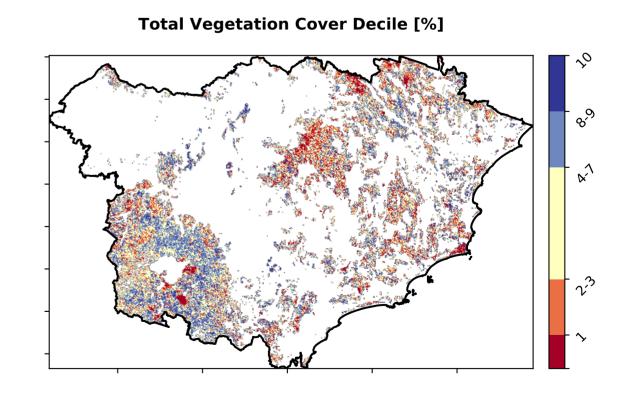




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Proportion of vegetation cover class in area 99.9% 100 80 60 40 20 0.1% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**







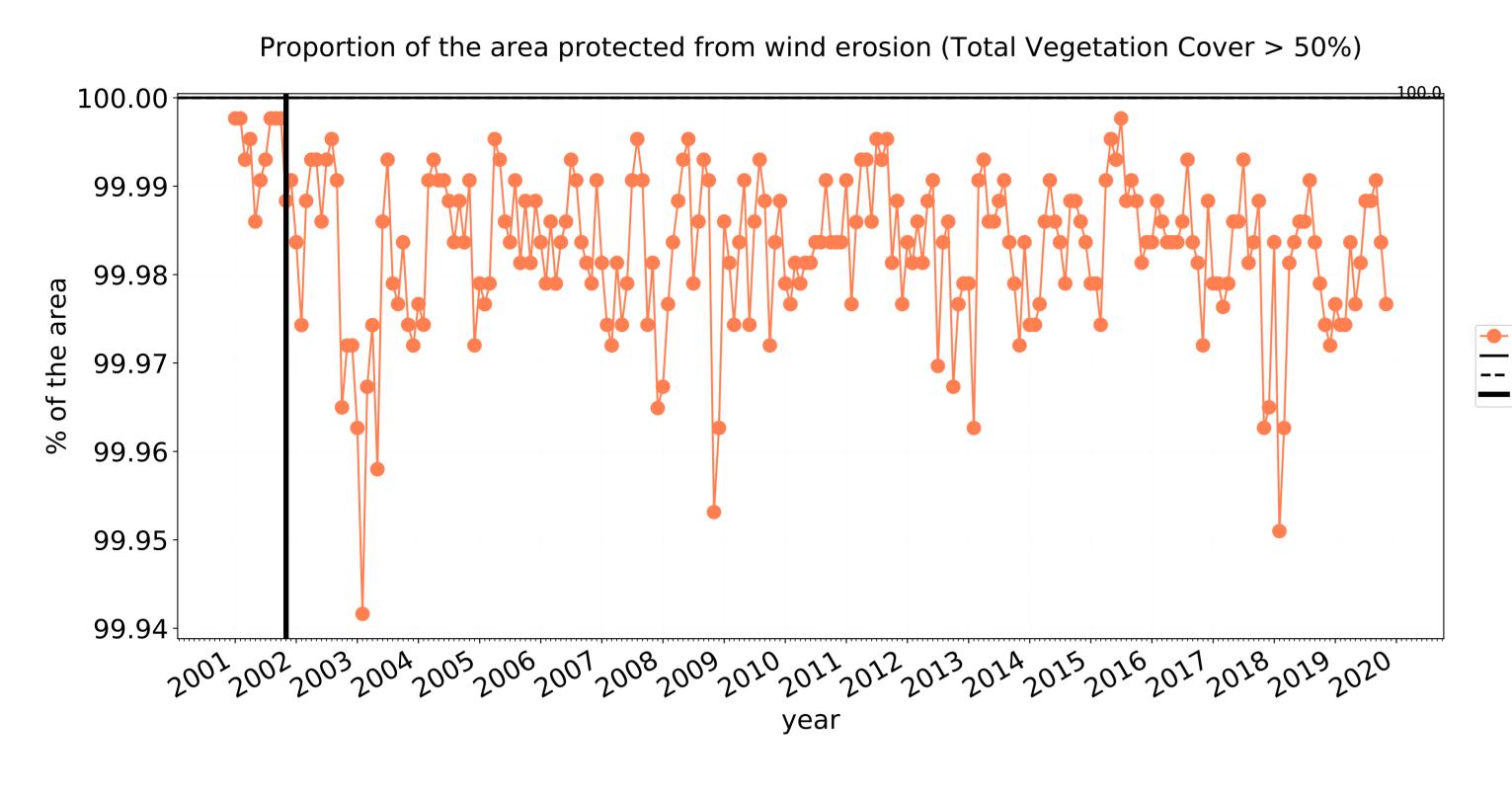


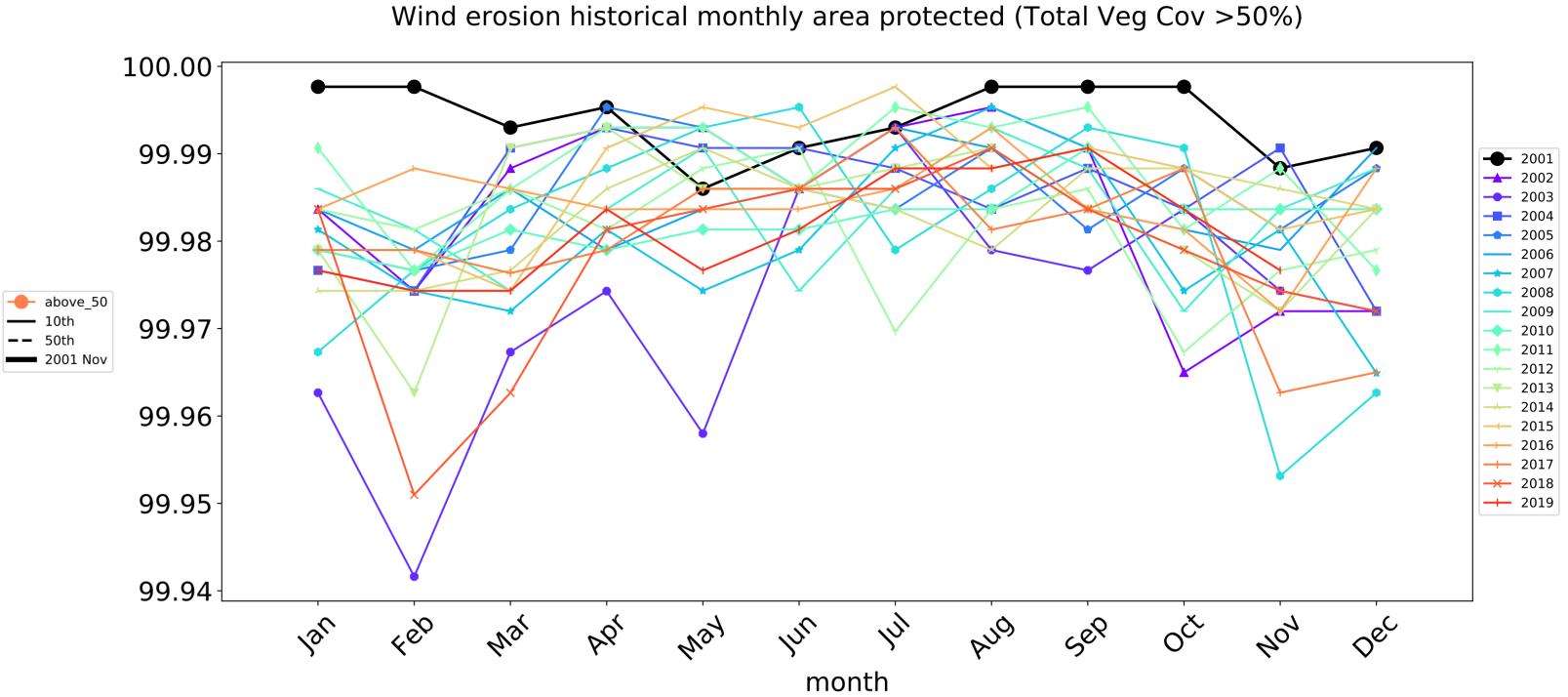


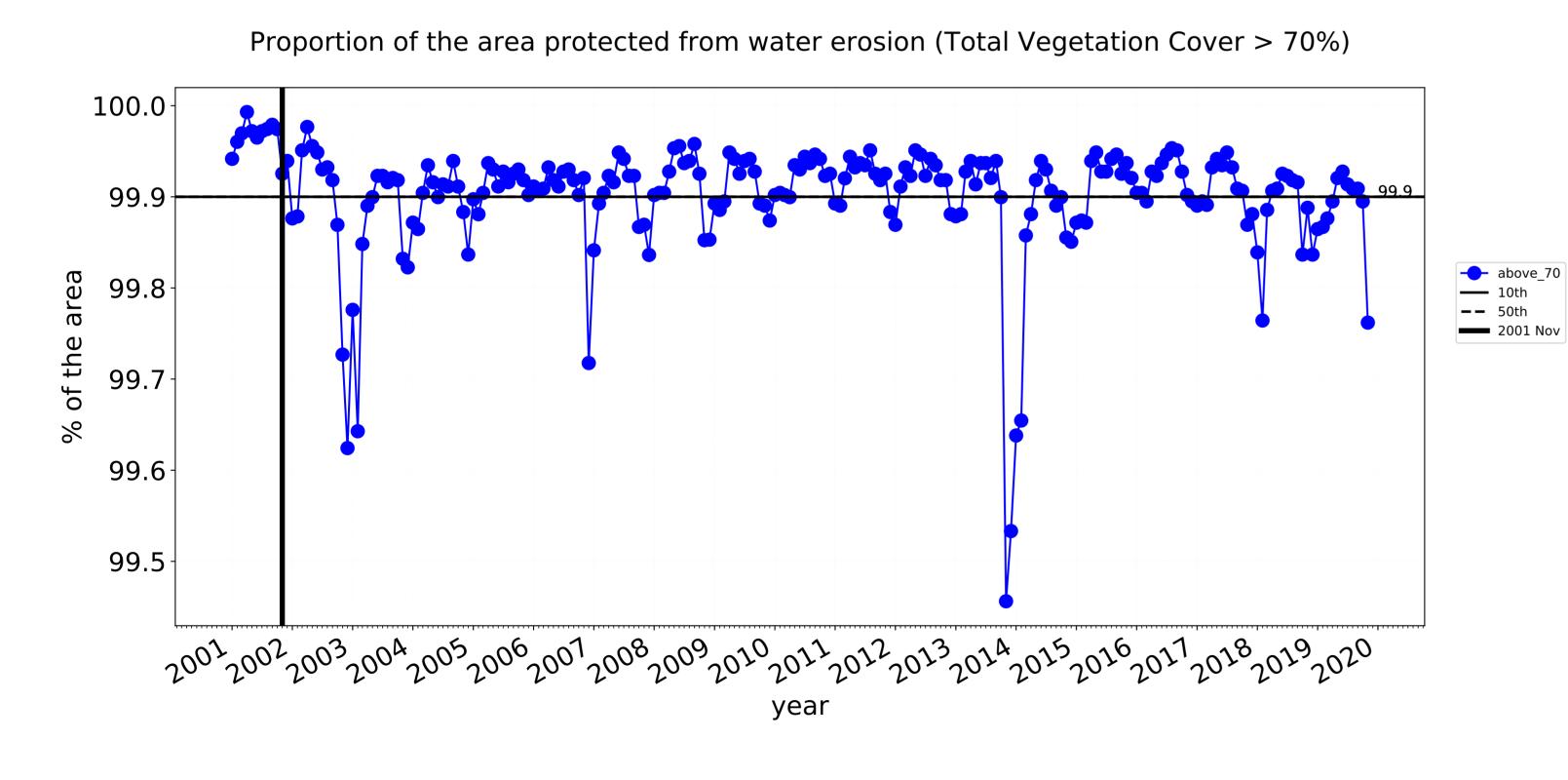


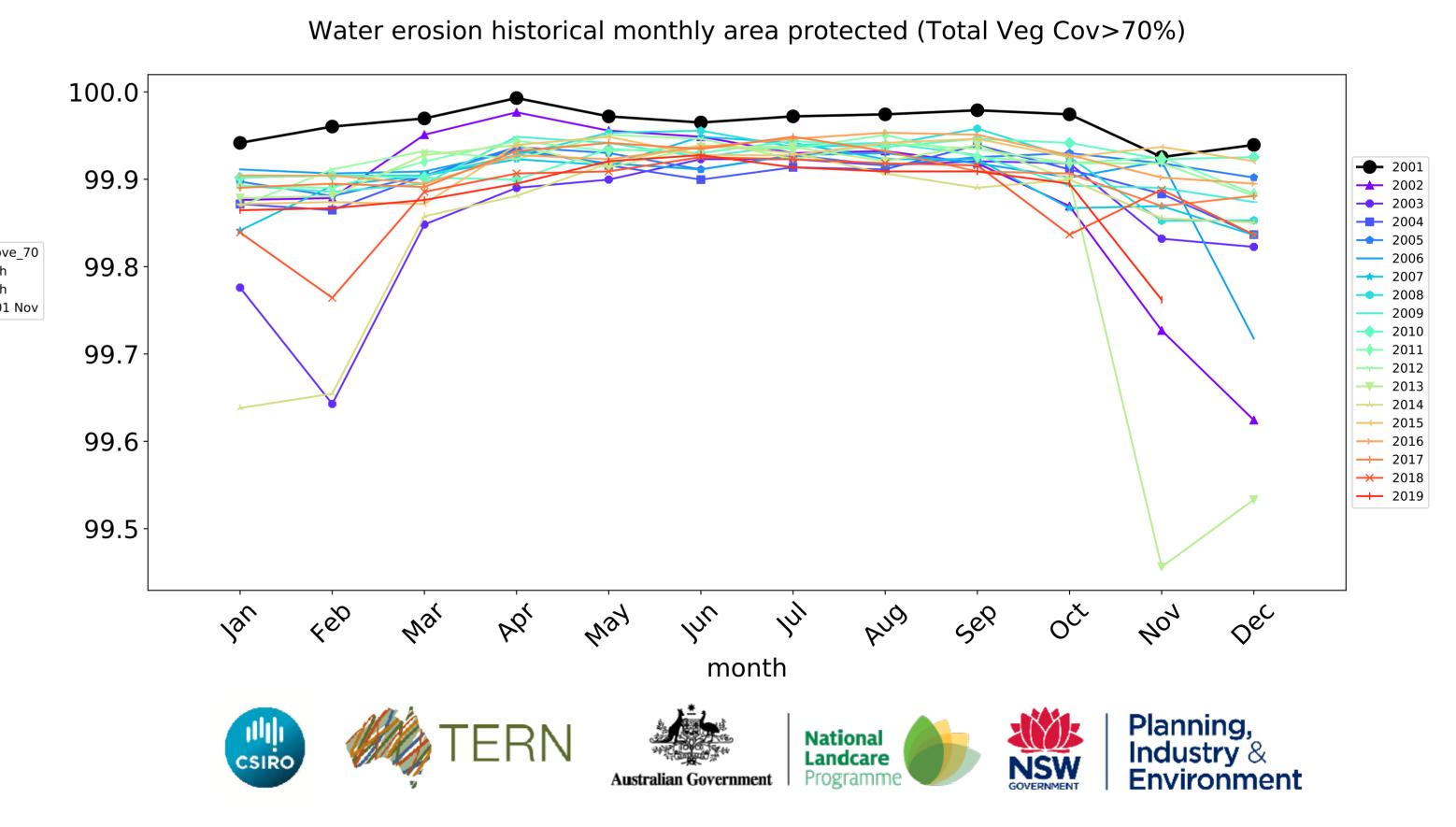


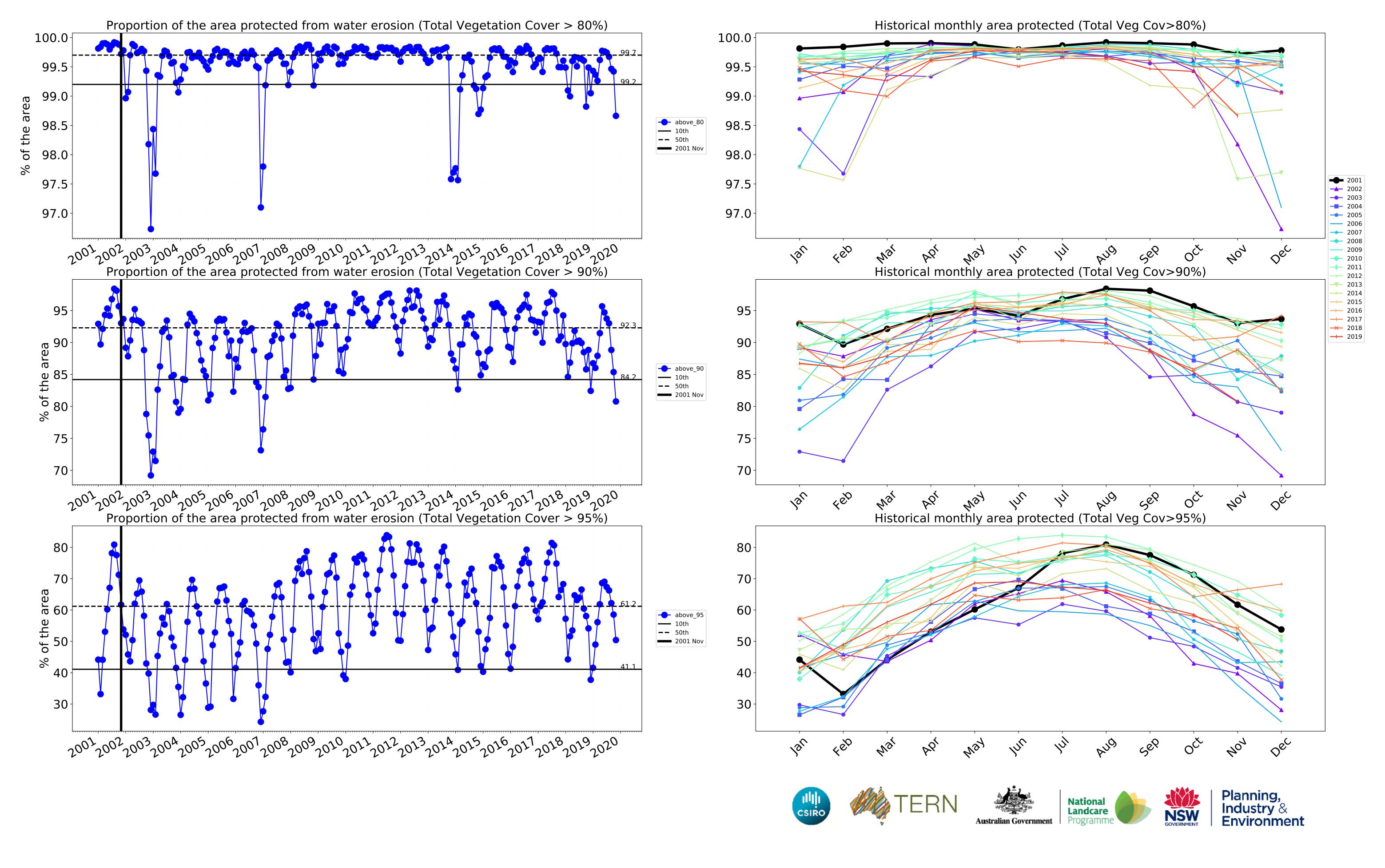




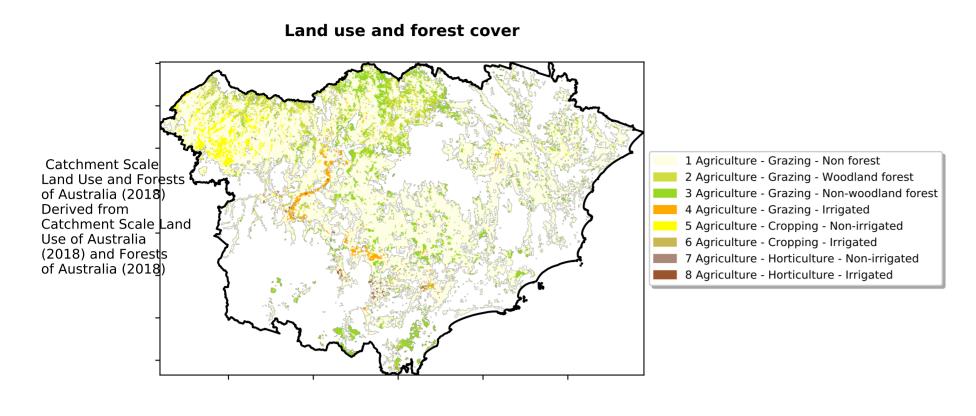


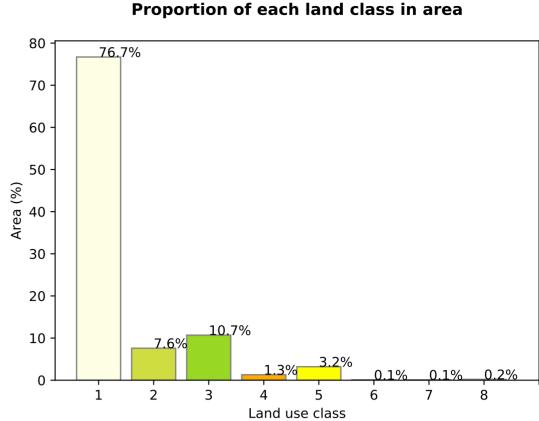




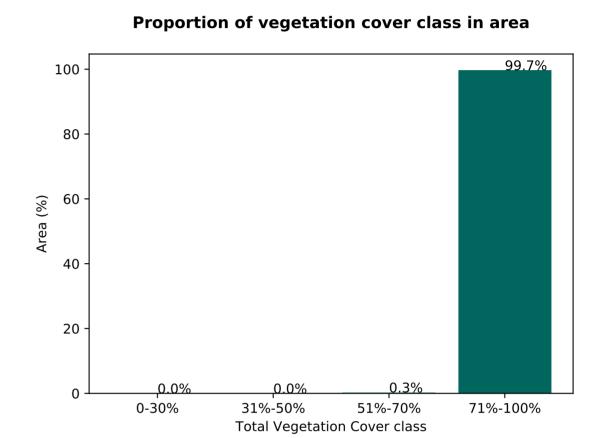


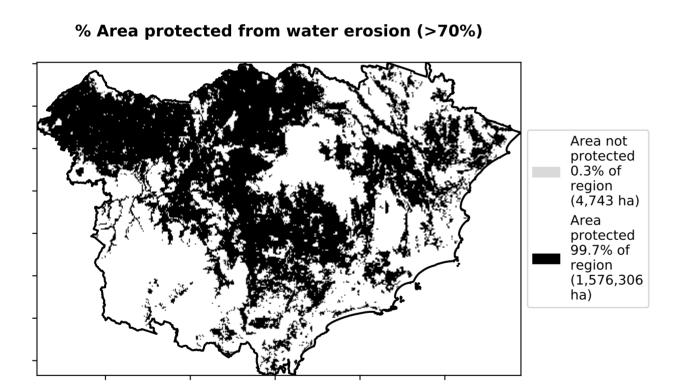
Agriculture

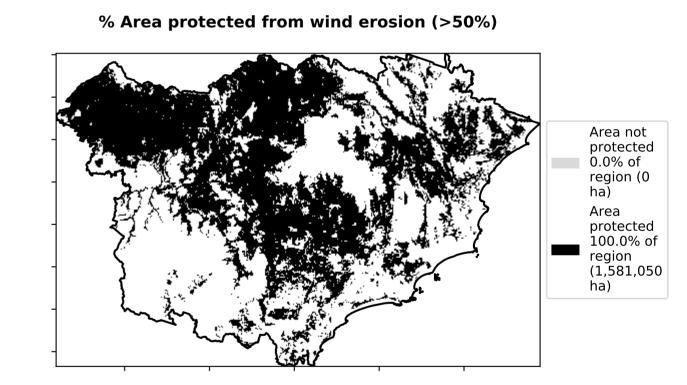


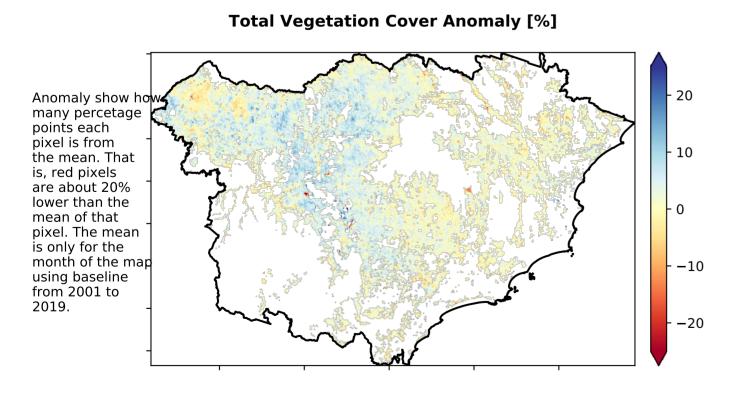


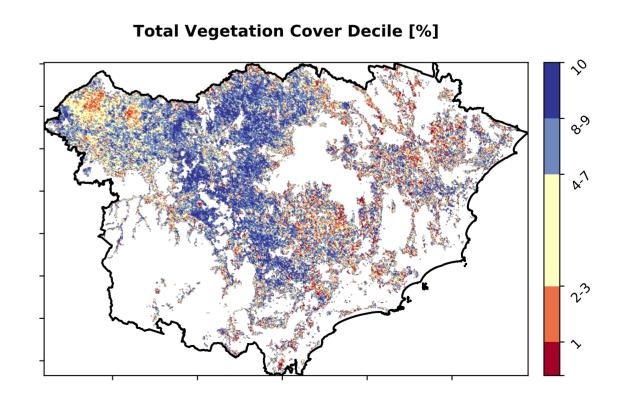
Total Vegetation Cover [%] Tale note to the state of the















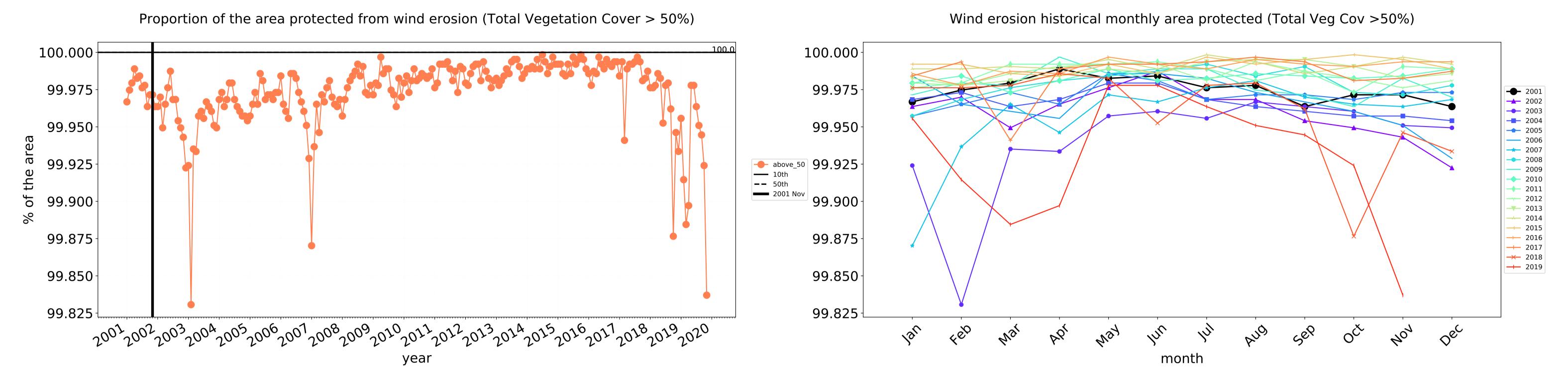


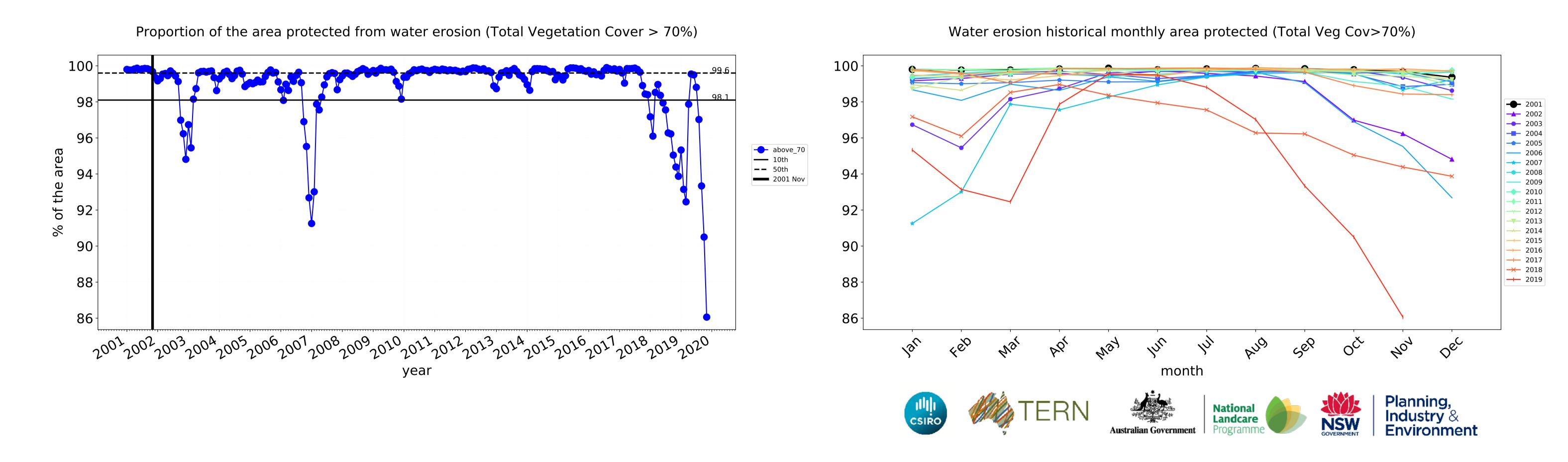


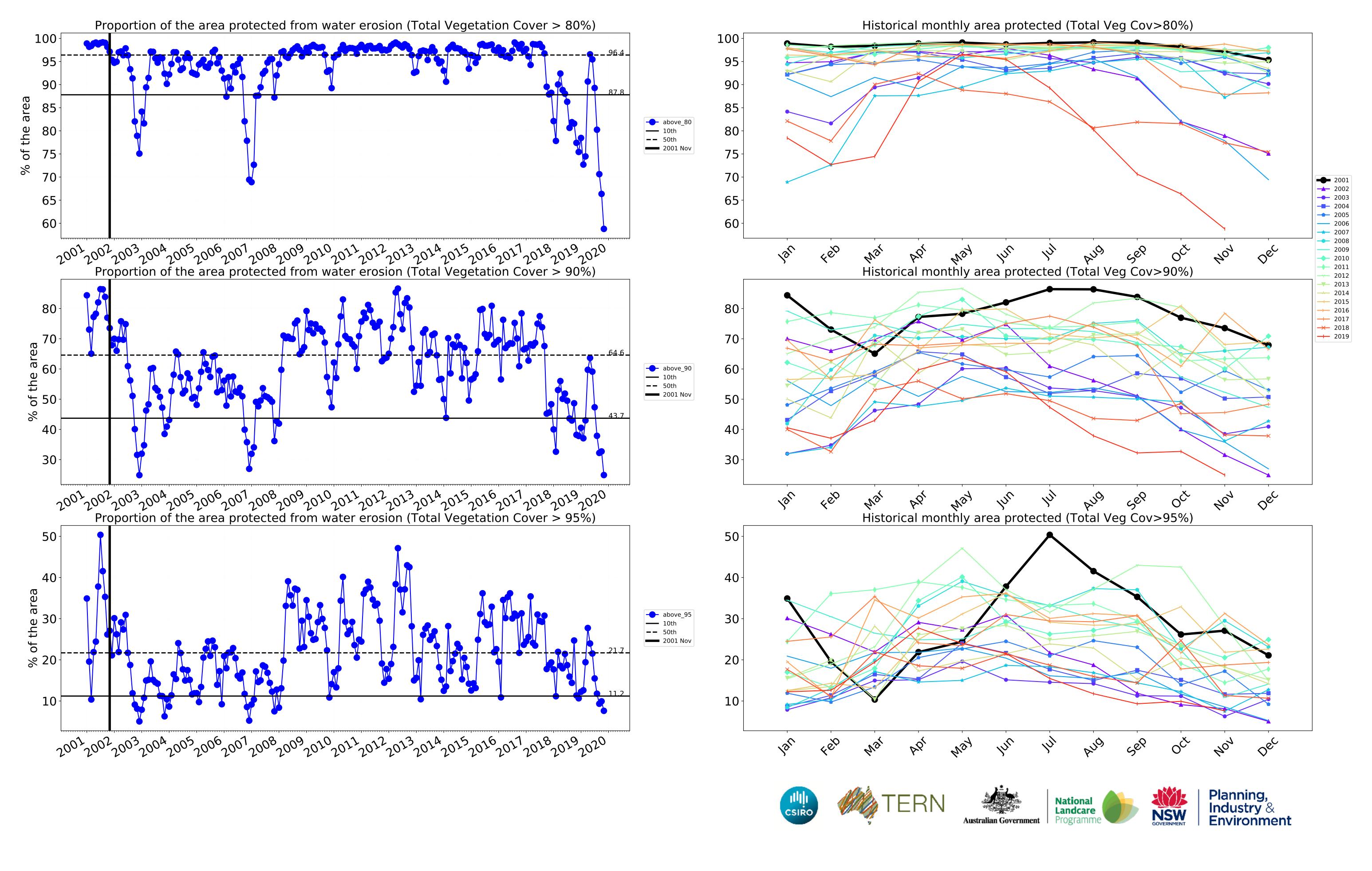




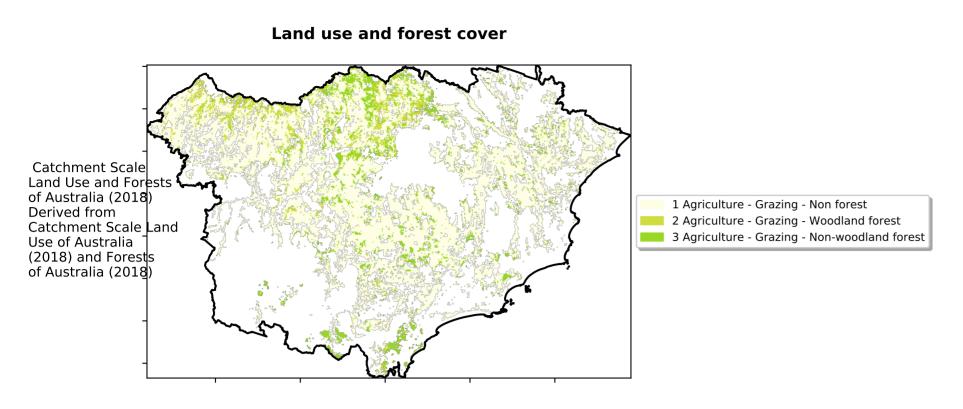
Agriculture timeseries



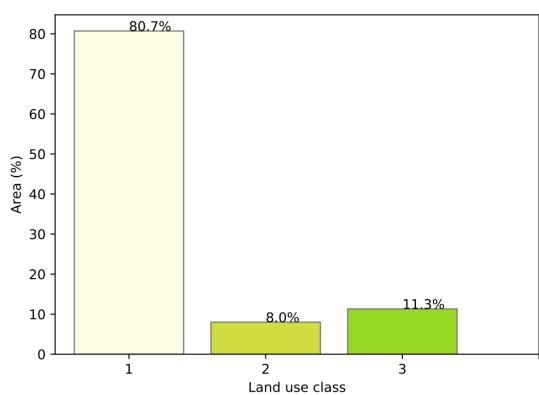




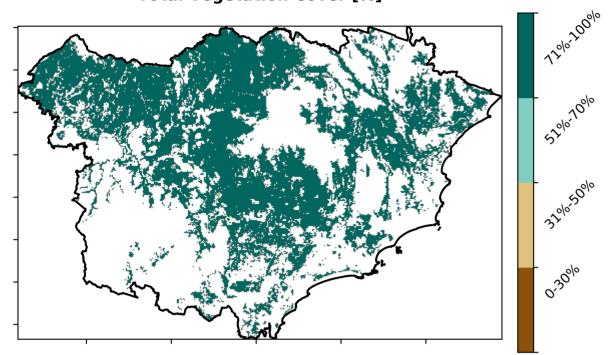
Grazing



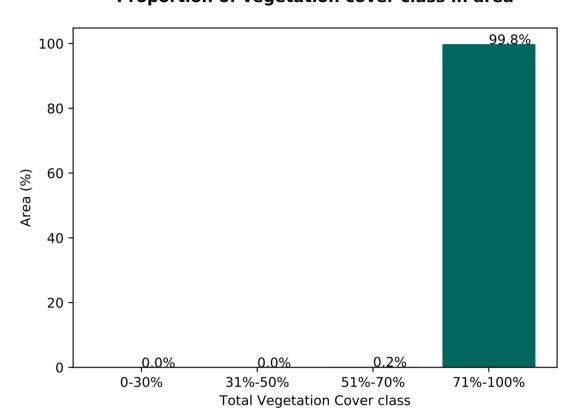
Proportion of each land class in area



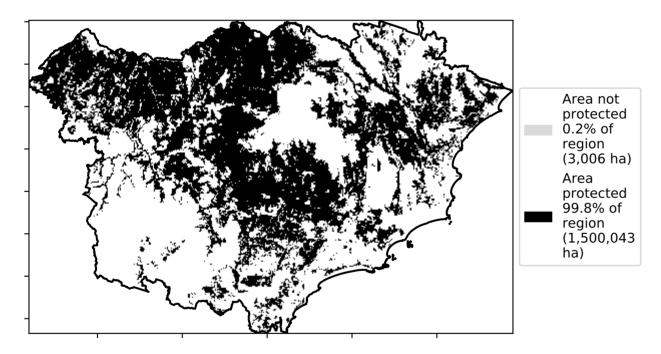




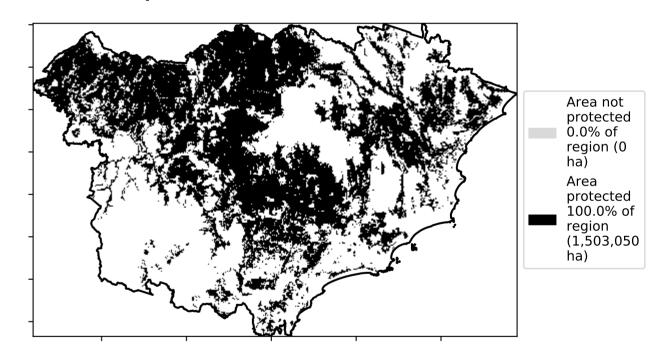
Proportion of vegetation cover class in area



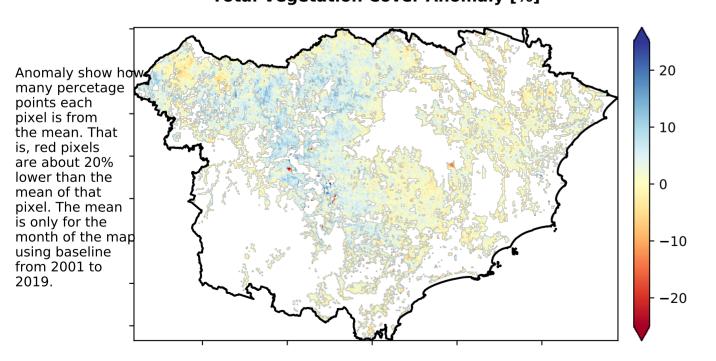
% Area protected from water erosion (>70%)

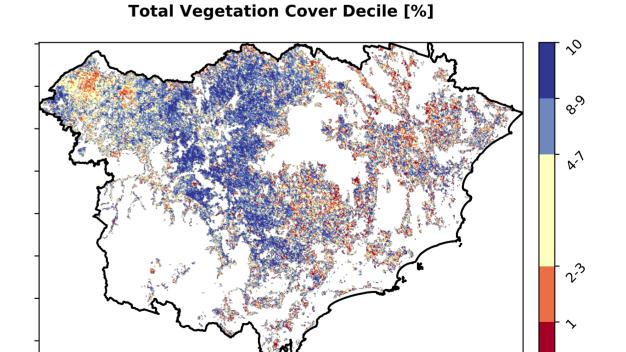


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]









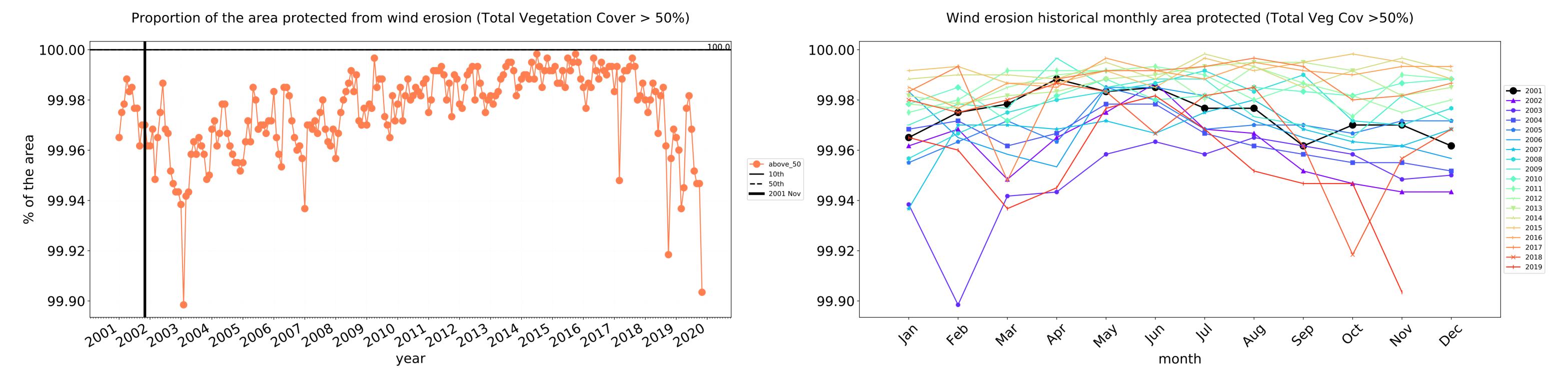


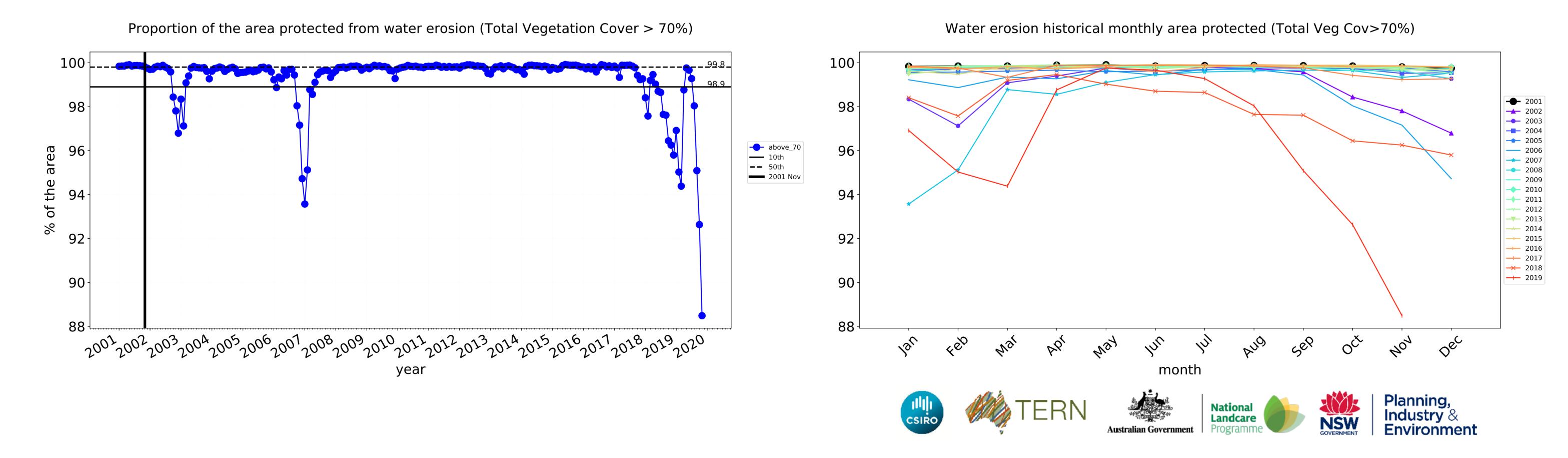


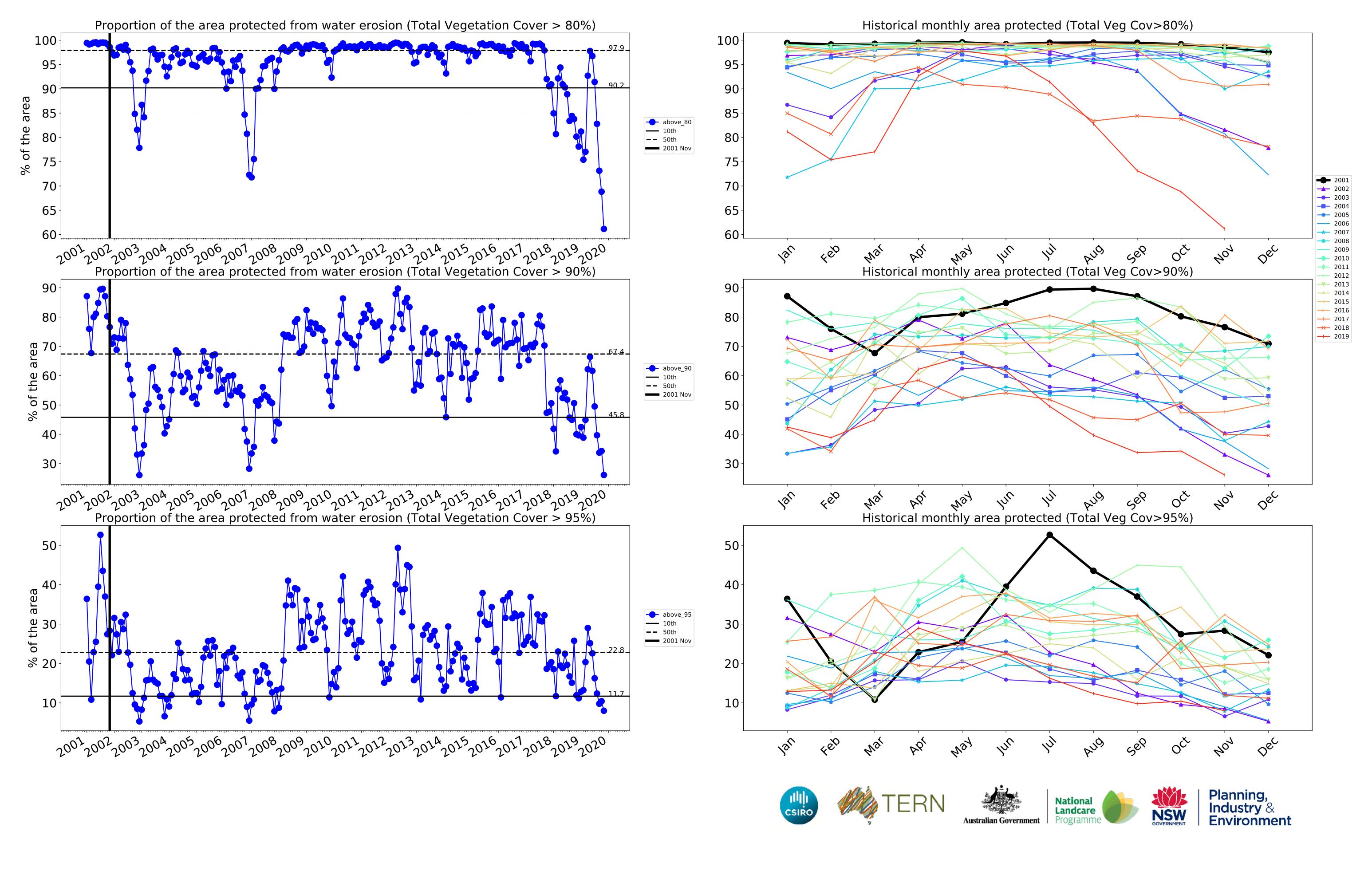




Grazing timeseries

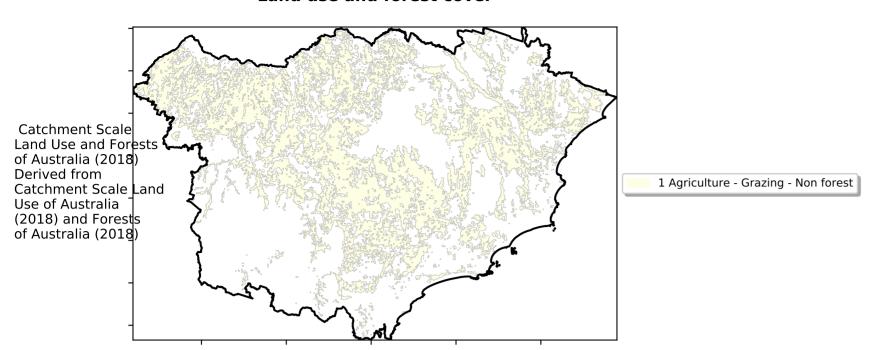




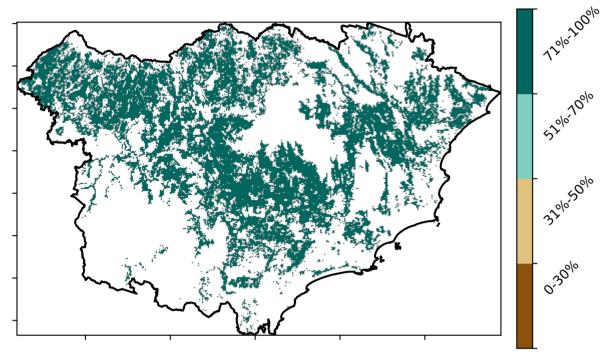


Grazing non forest

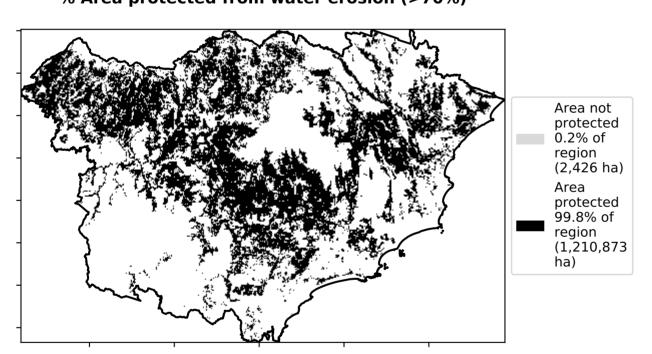
Land use and forest cover



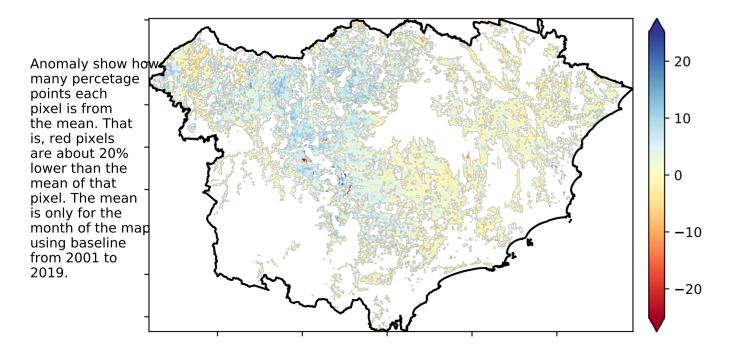
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

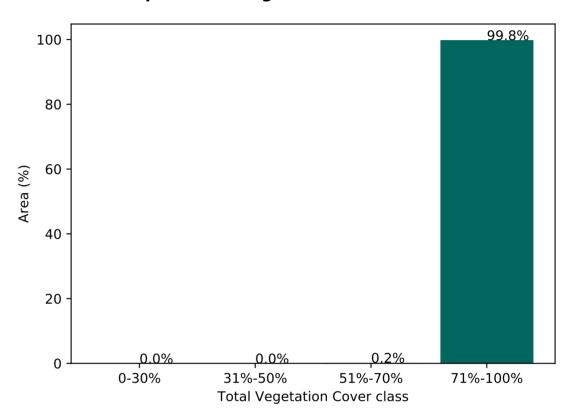


Total Vegetation Cover Anomaly [%]

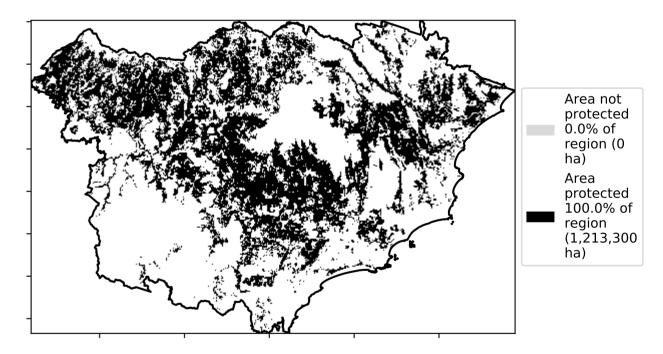


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

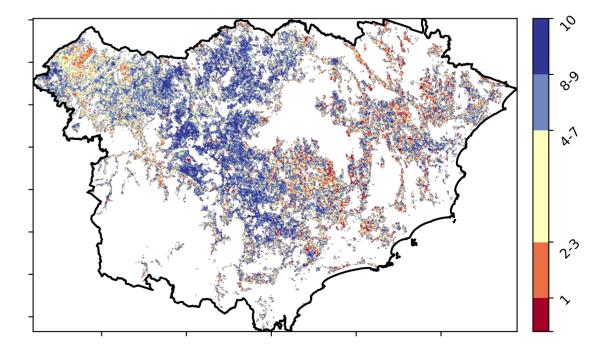
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







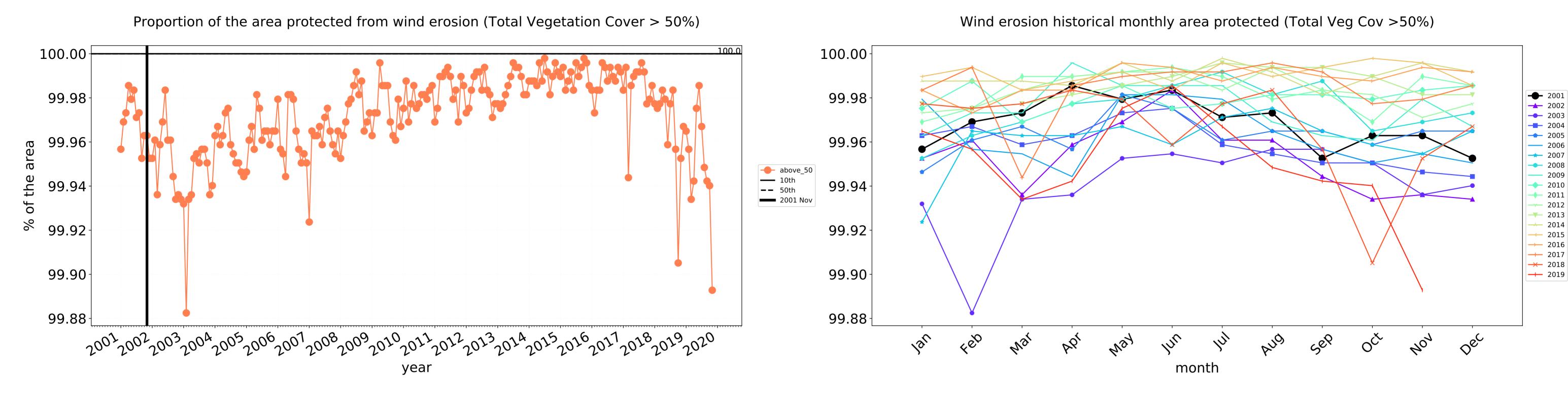


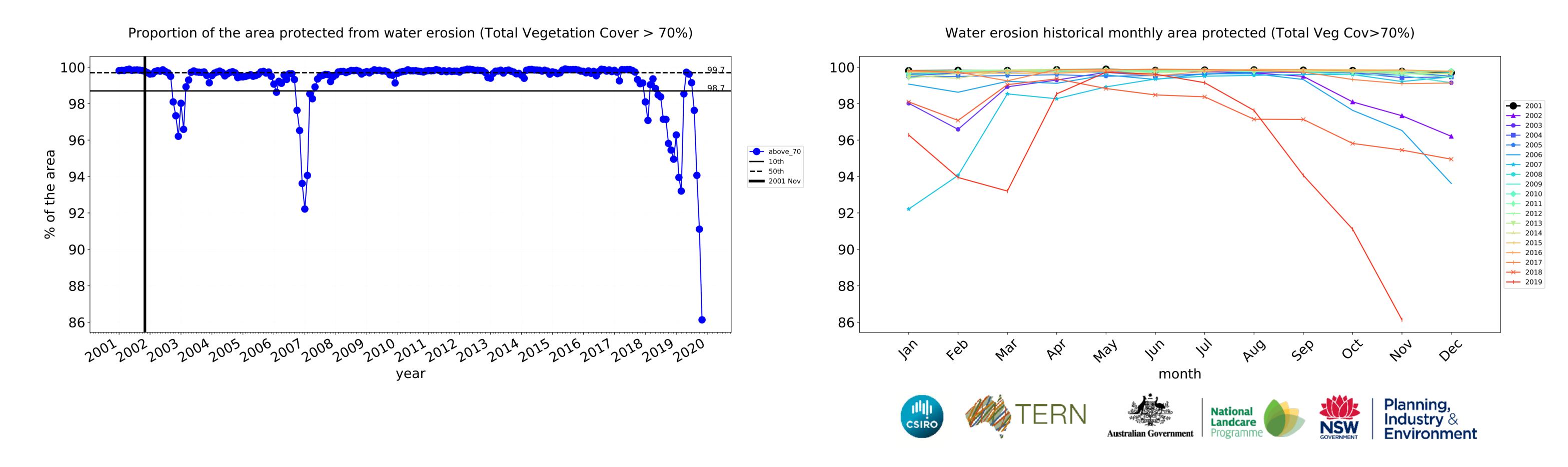


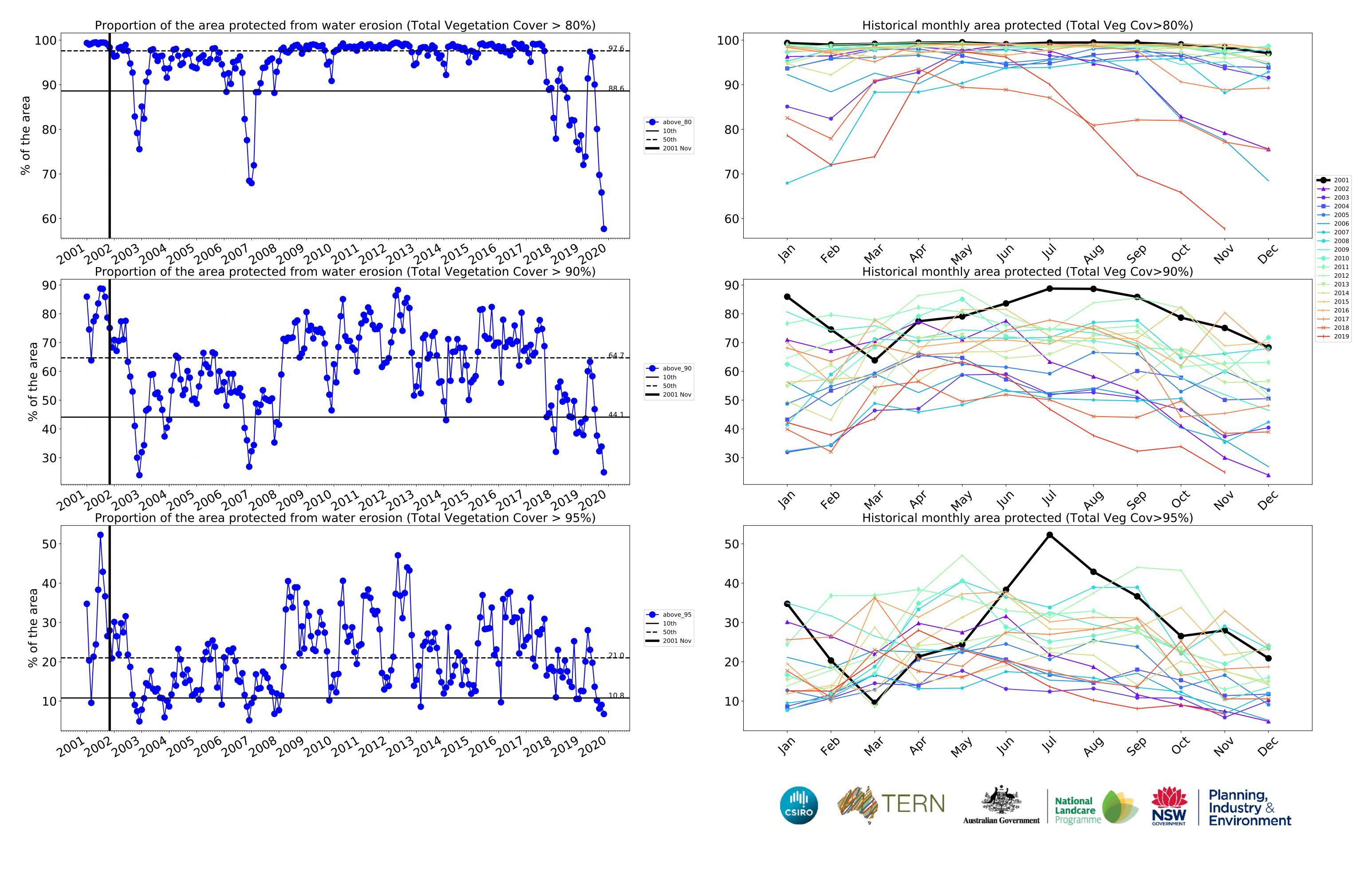




Grazing non forest timeseries



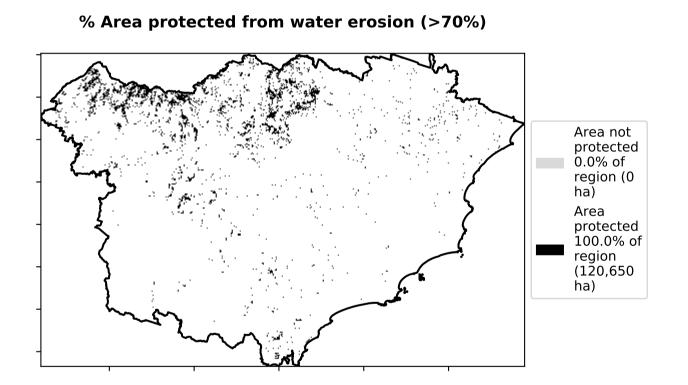


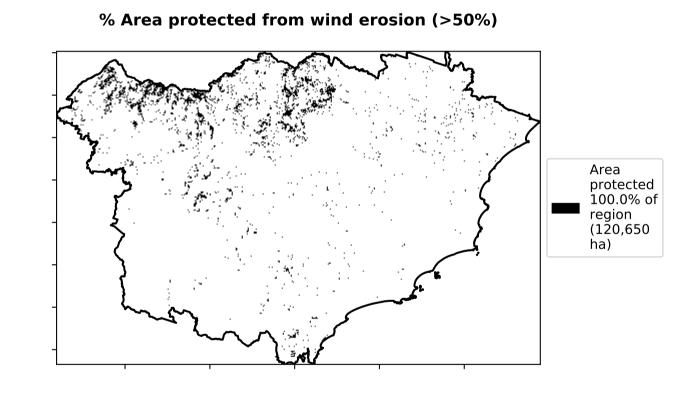


Grazing Woodland forest

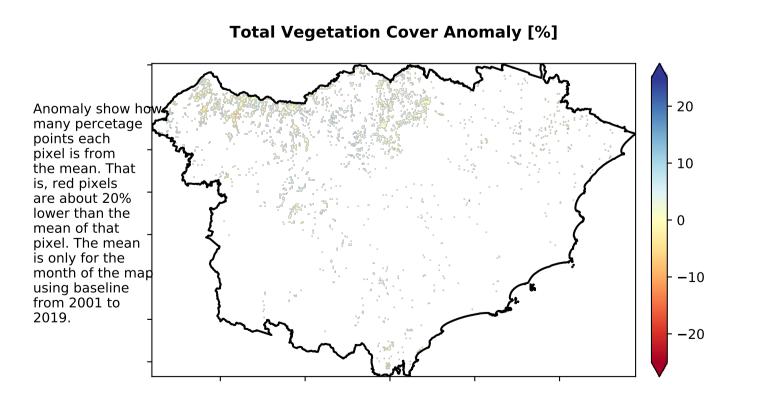
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Australia (2018) Of Australia (2018)

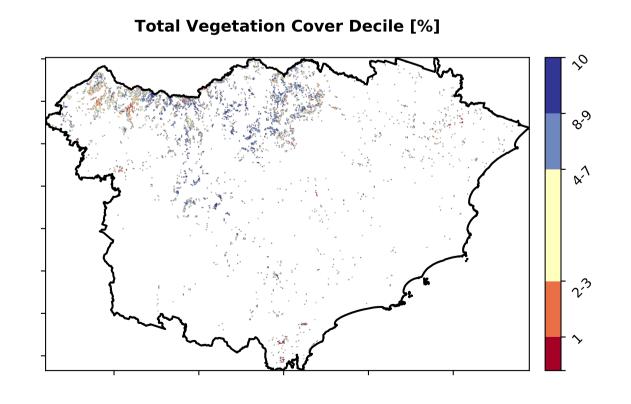
Total Vegetation Cover [%] Total Vegetation Cover [%] Total Vegetation Cover [%]





Proportion of vegetation cover class in area









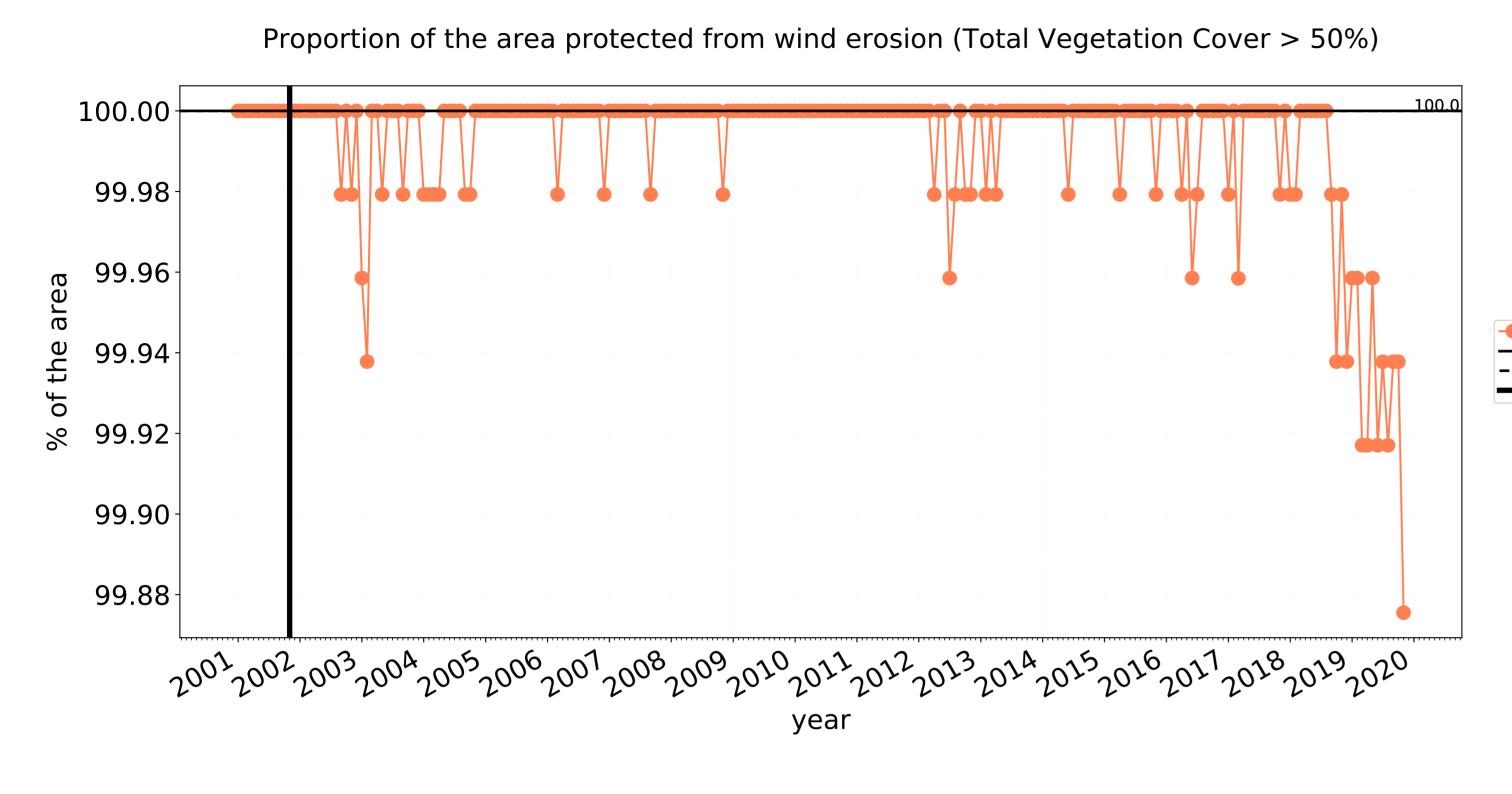


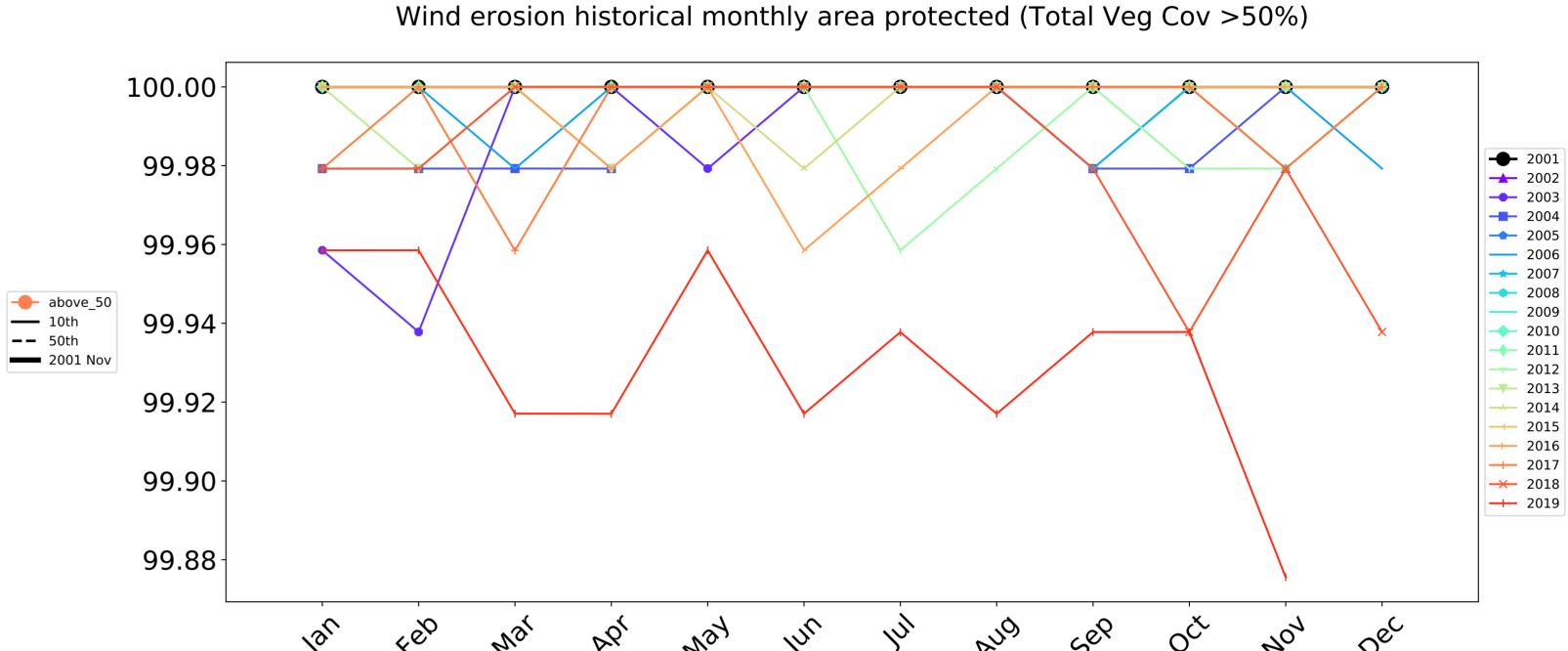




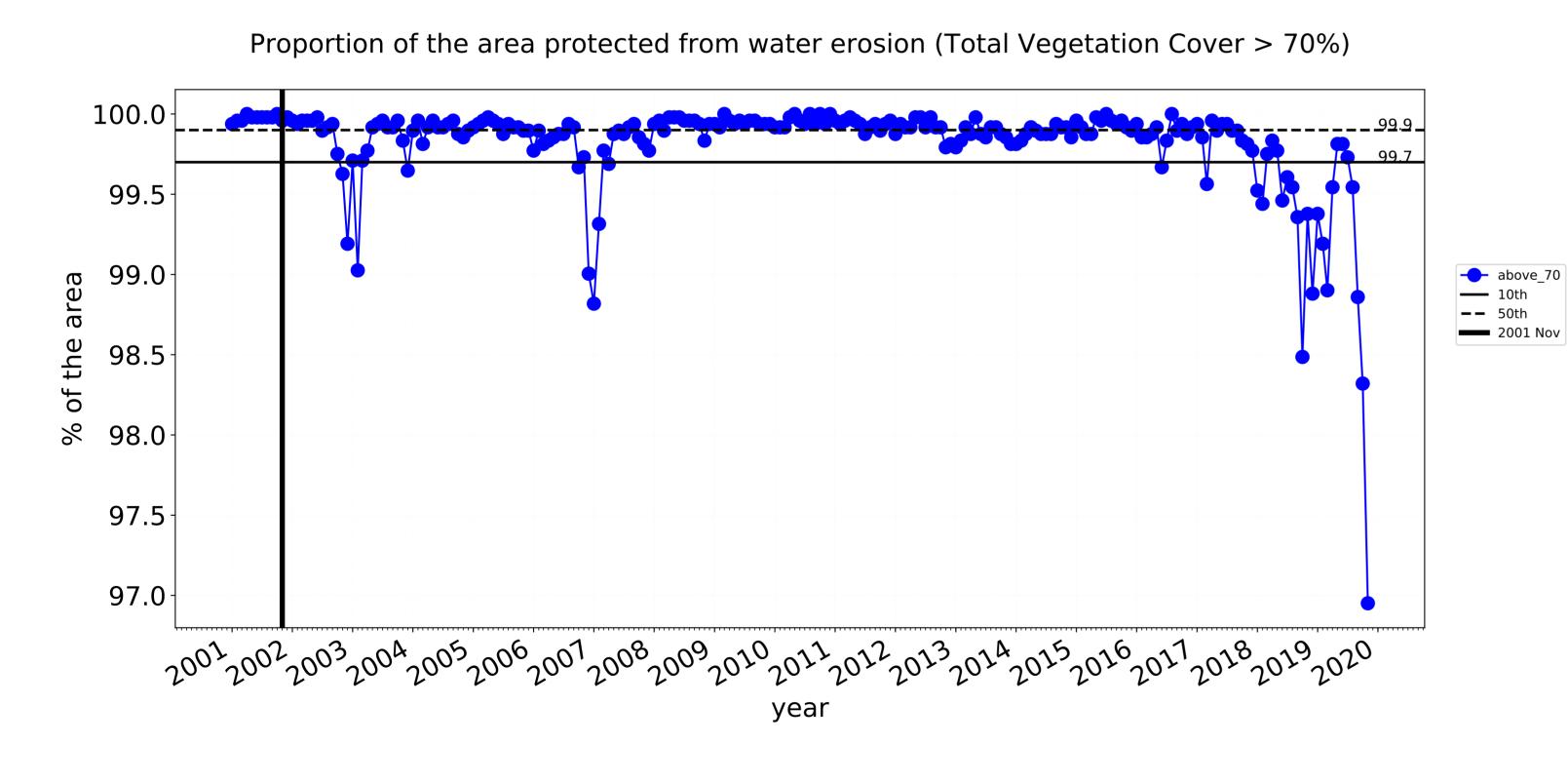


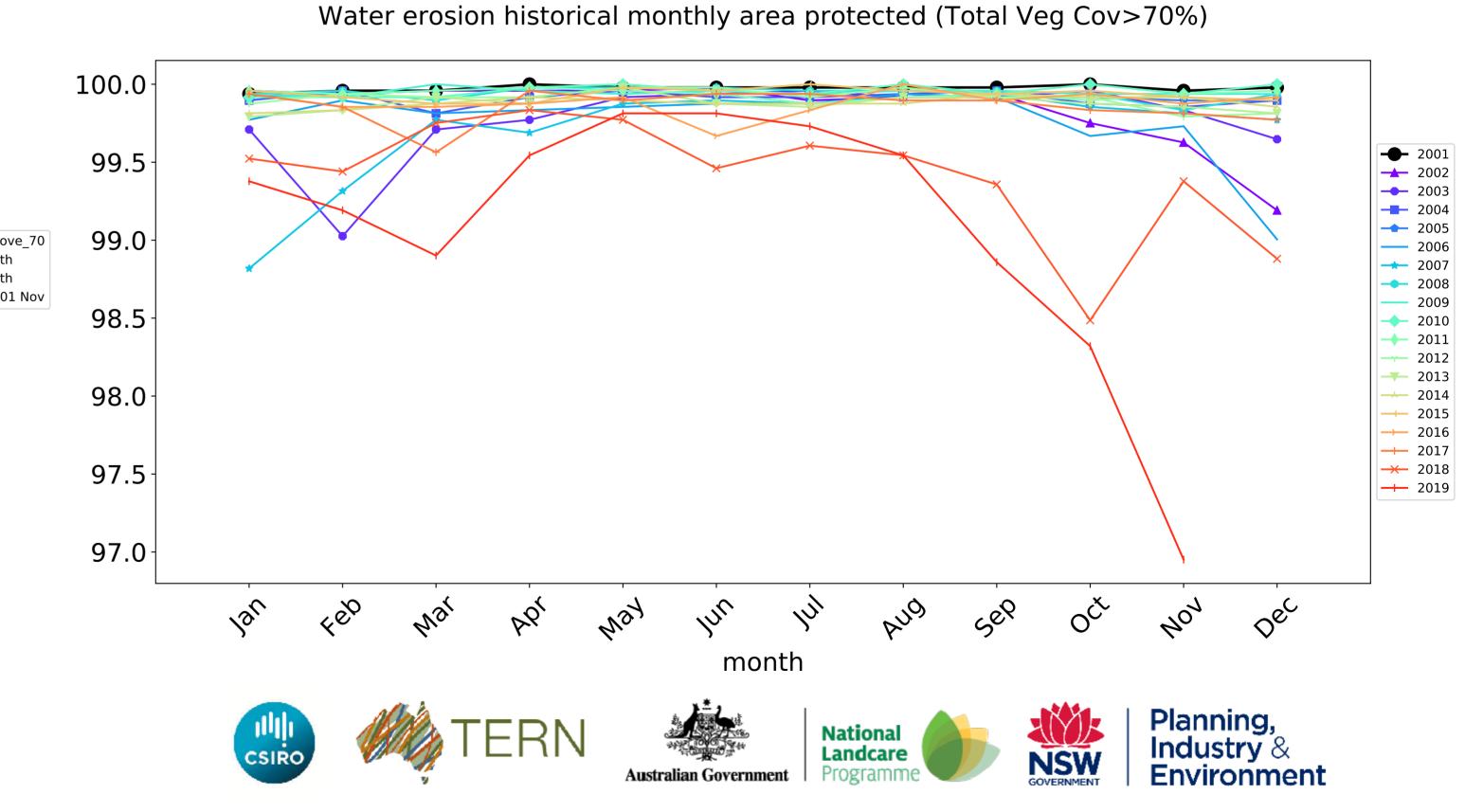
Grazing Woodland forest timeseries

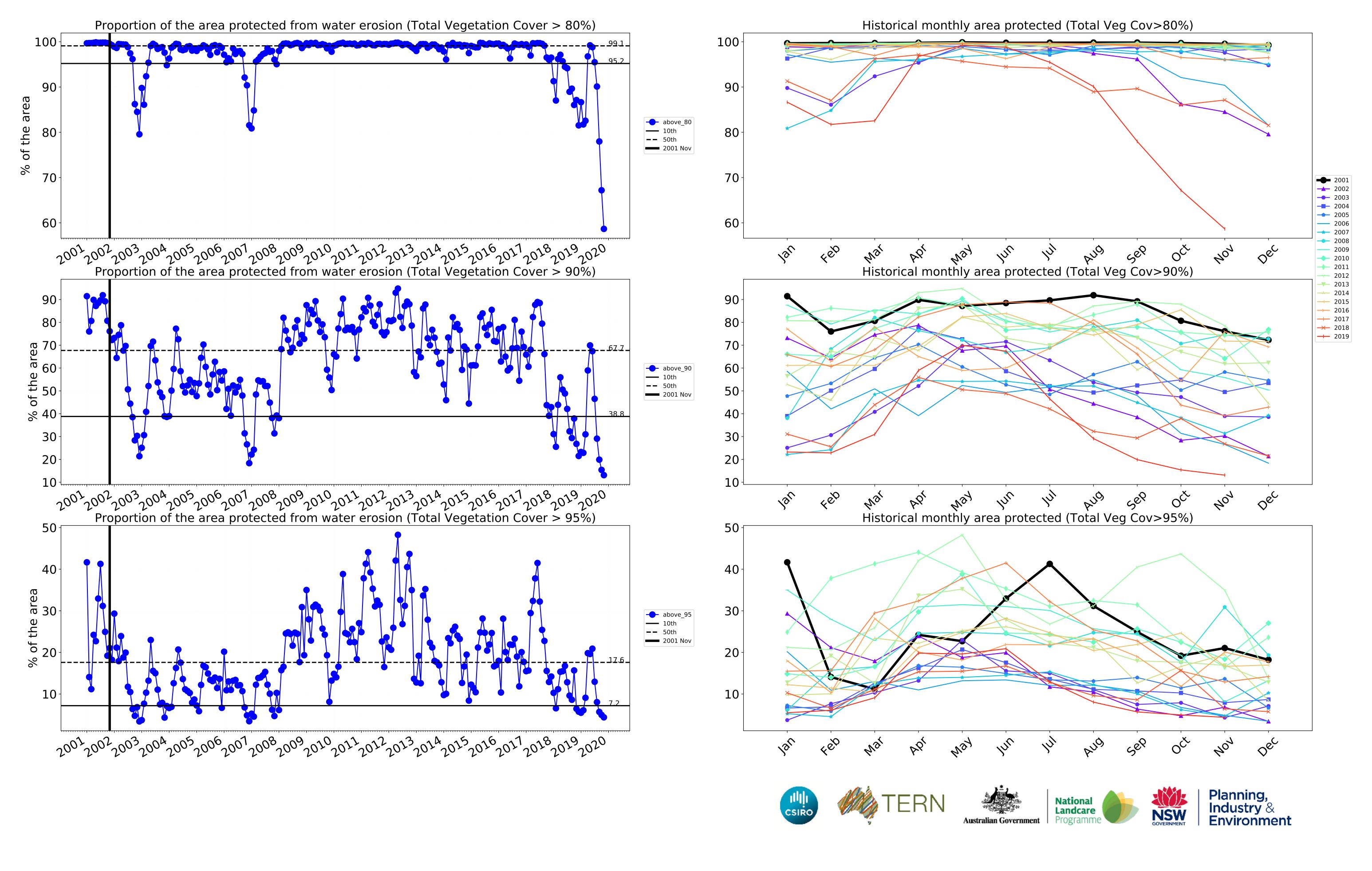




month



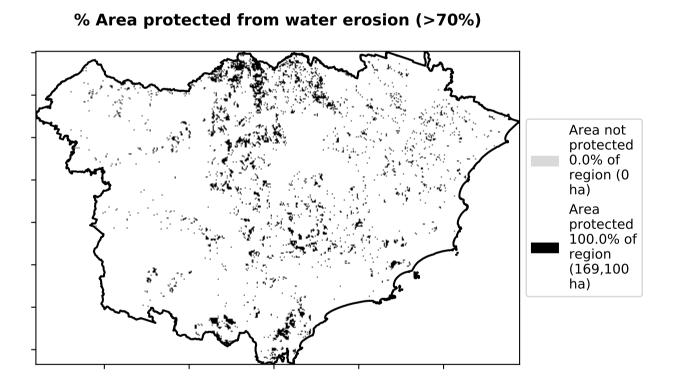


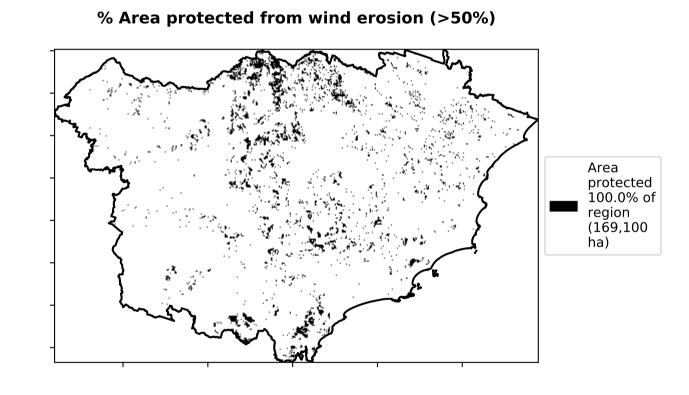


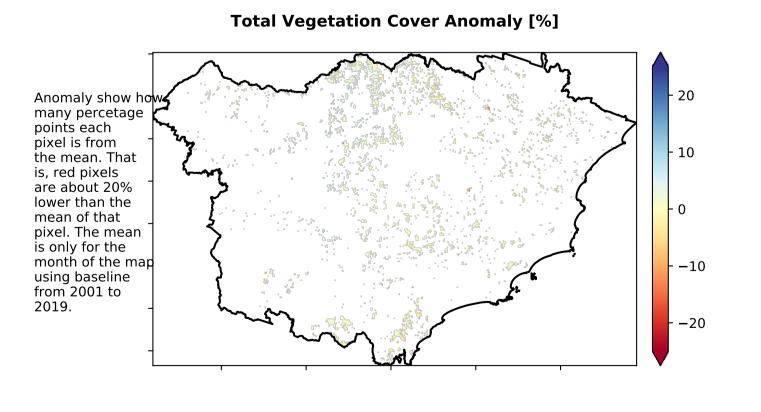
Grazing - Forest (non woodland)

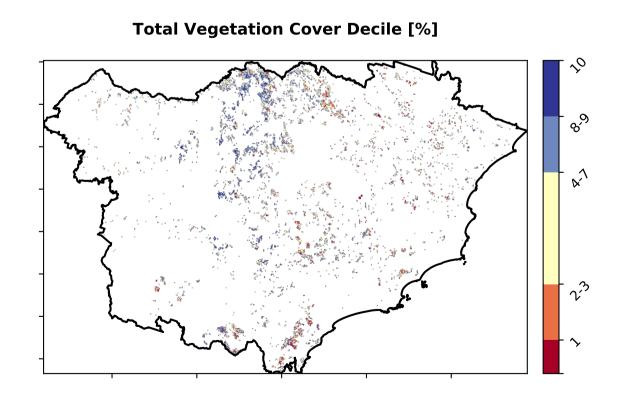
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Australia (2018) I Agriculture - Grazing - Non-woodland forest Of Australia (2018)

Total Vegetation Cover [%]











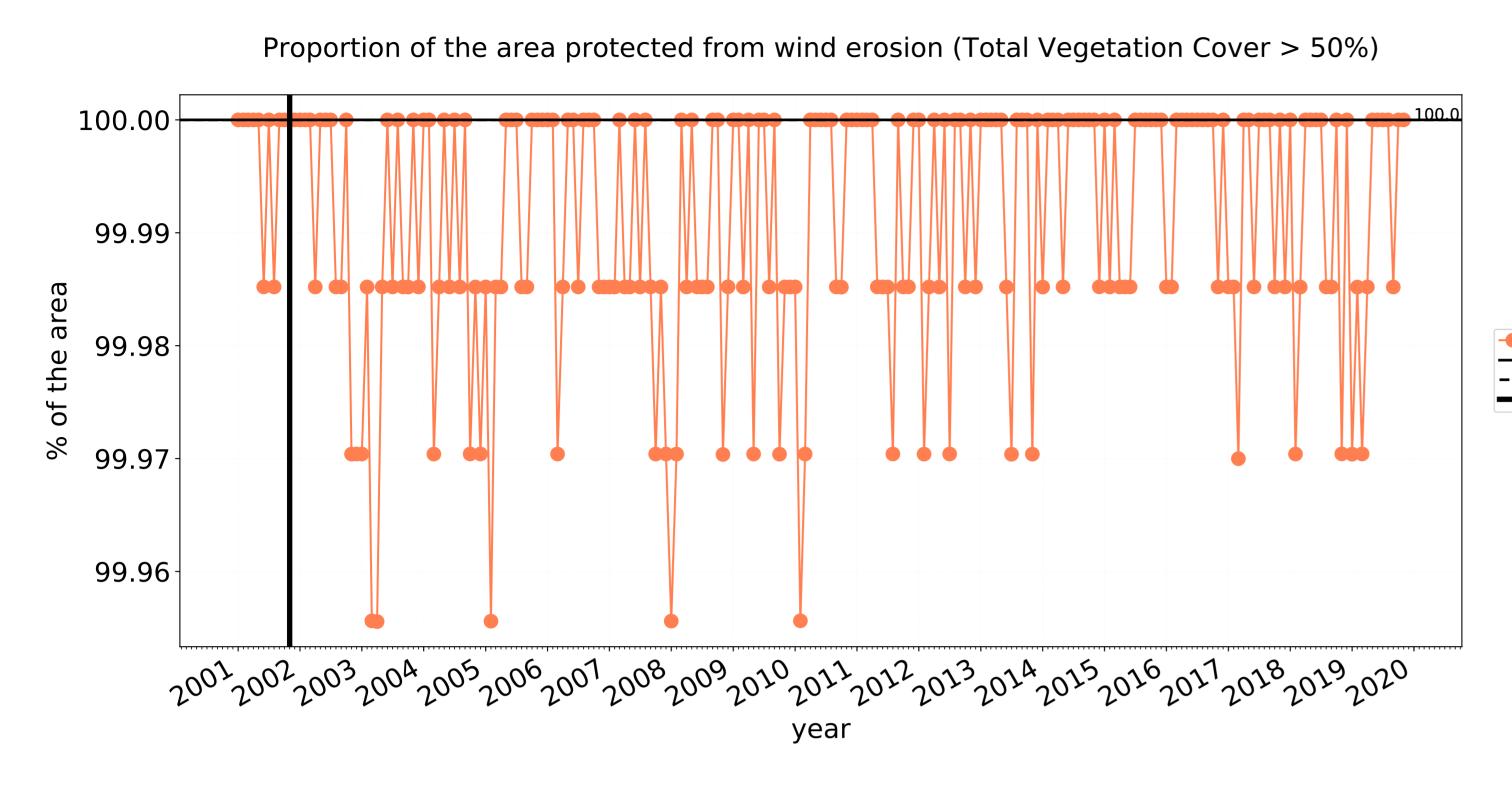


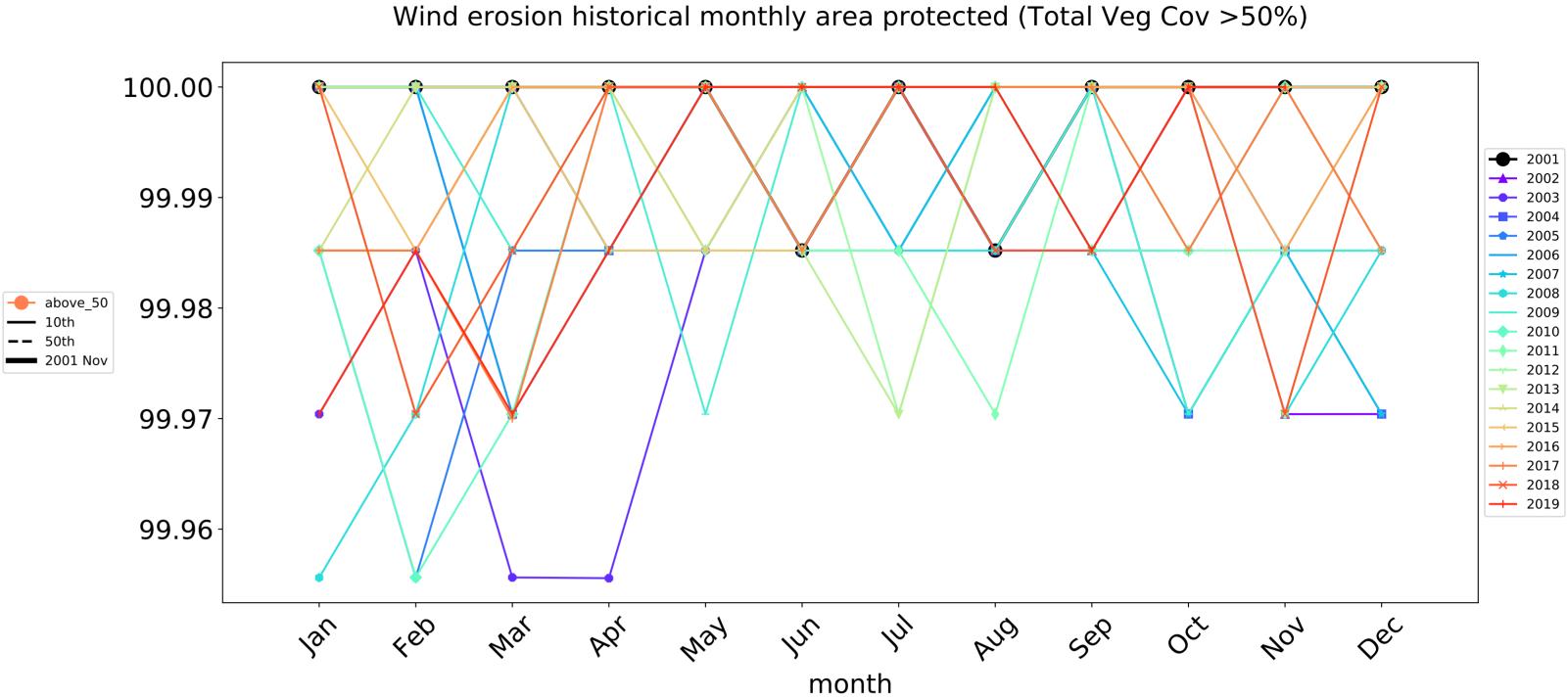


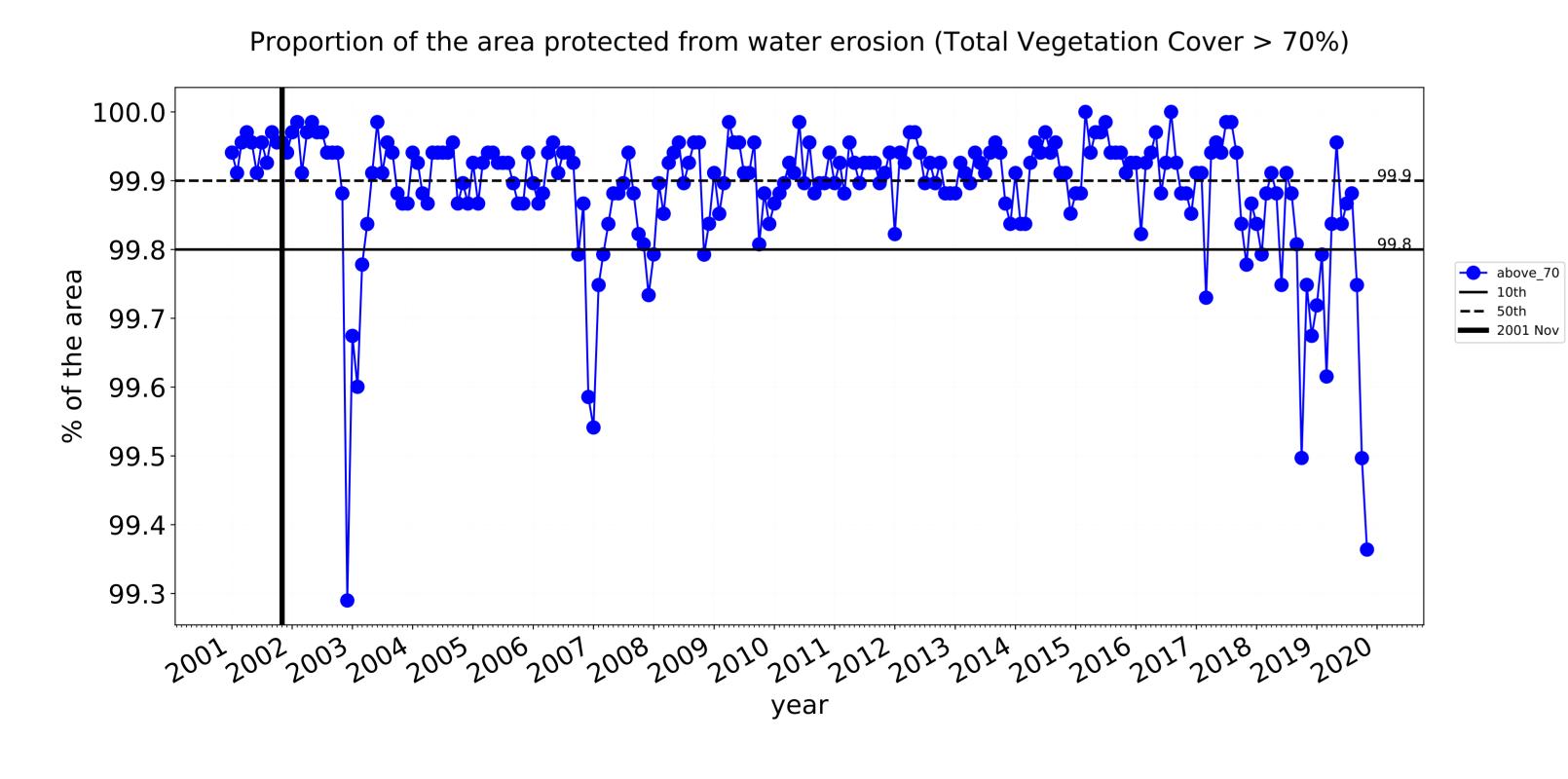


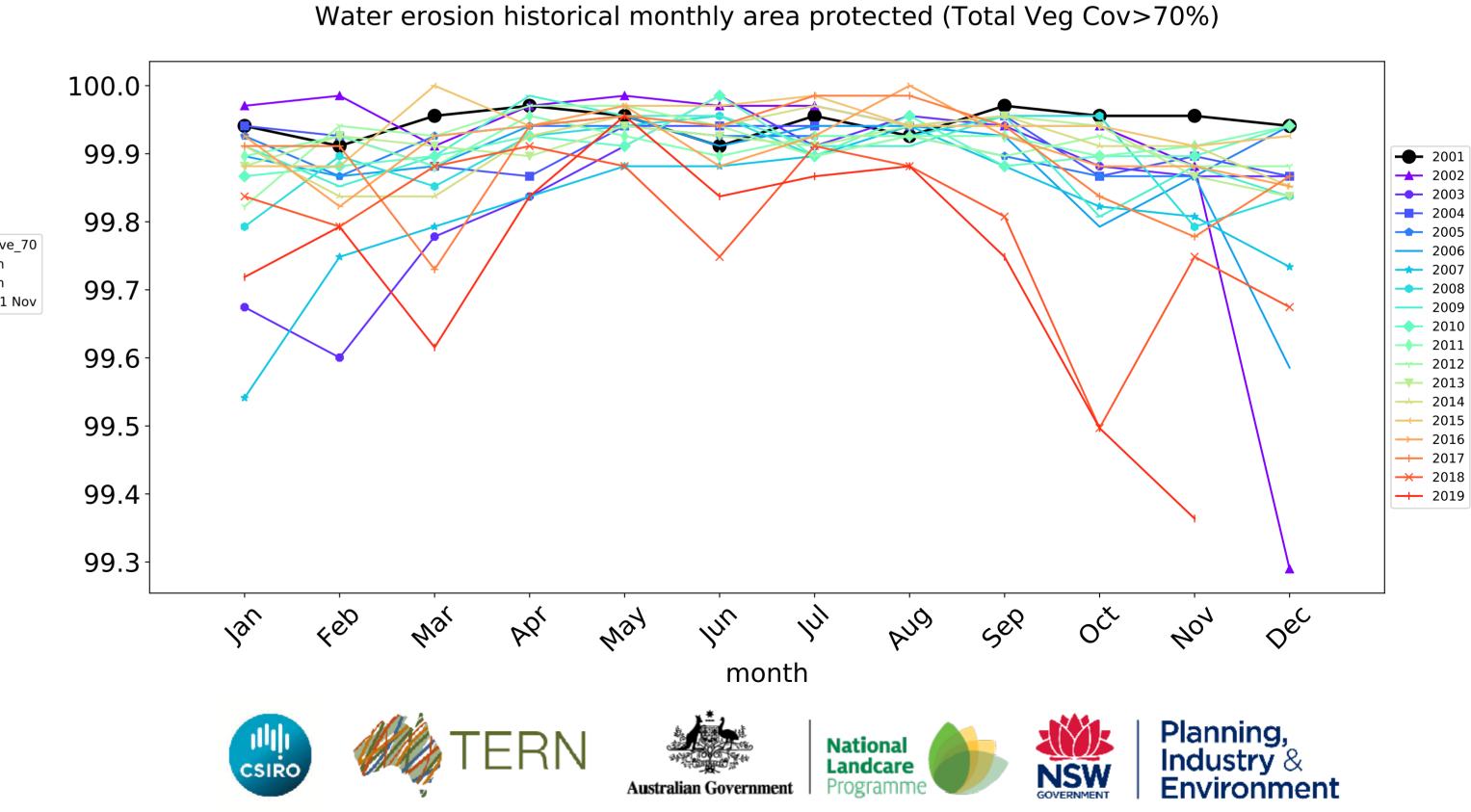


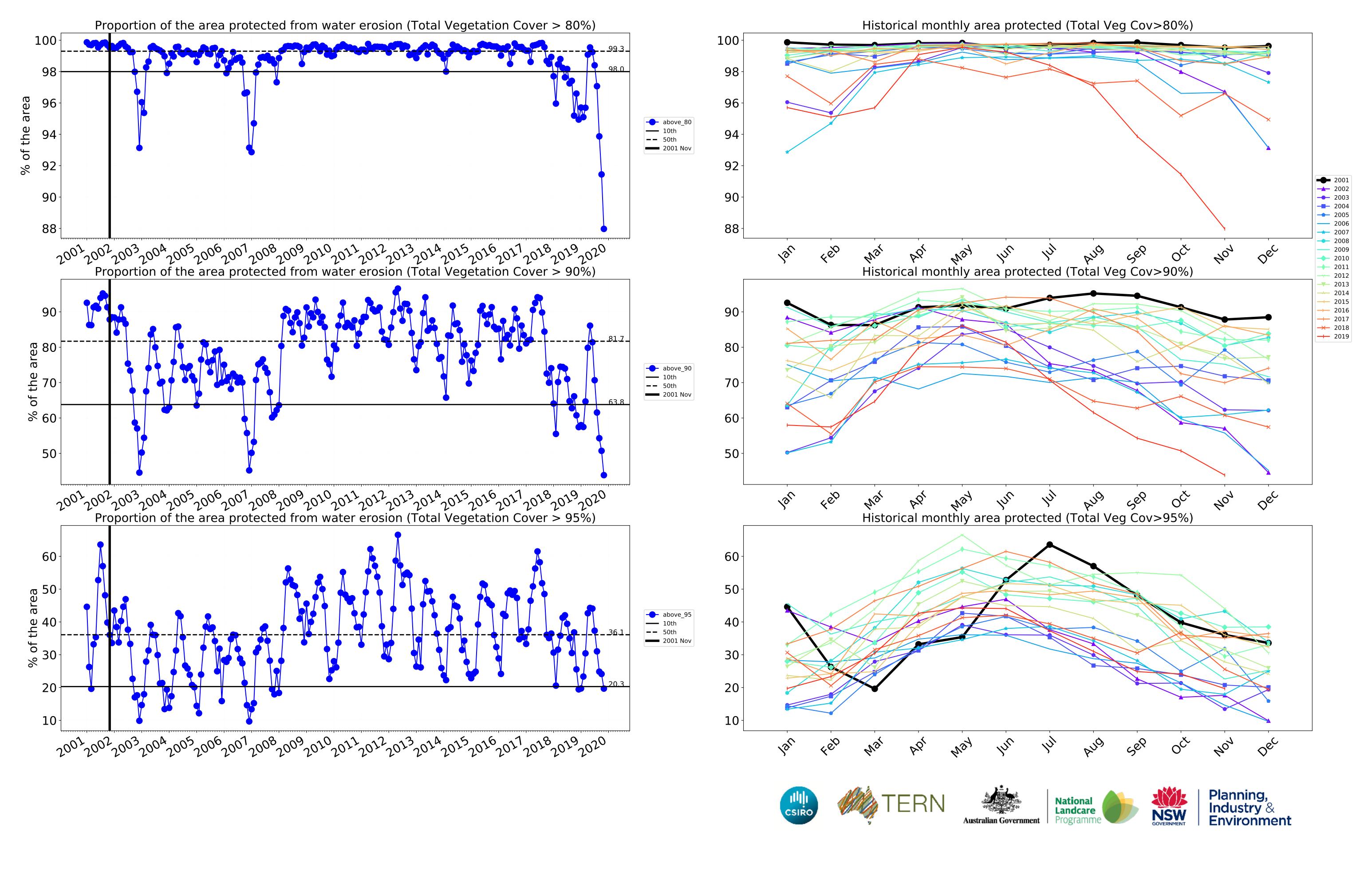






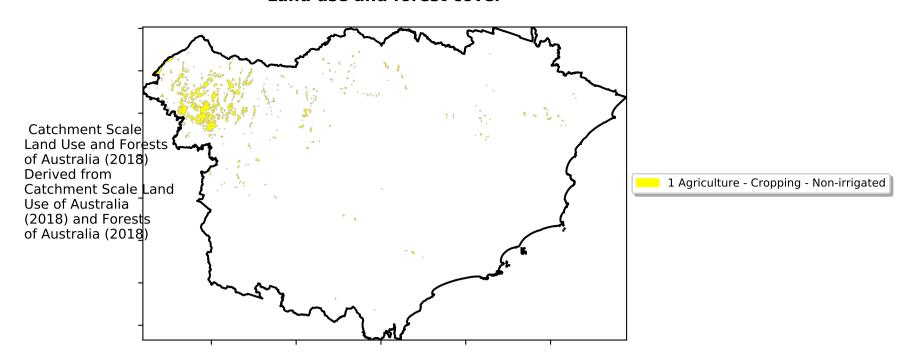




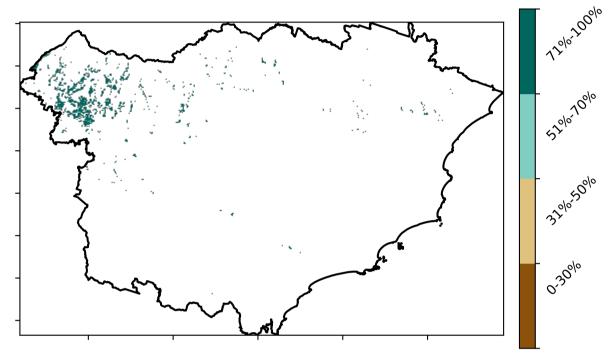


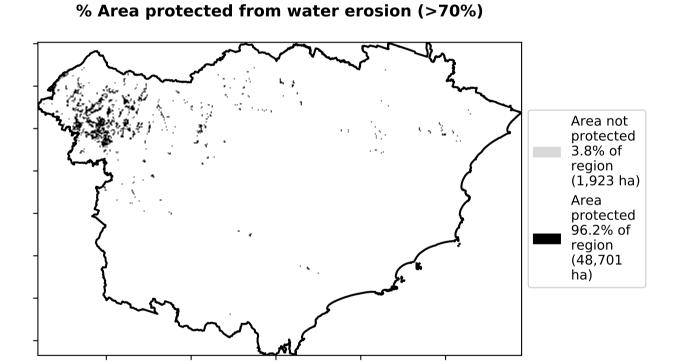
Cropping

Land use and forest cover

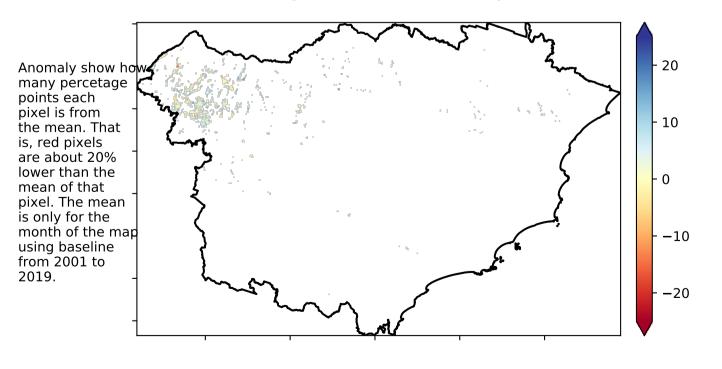


Total Vegetation Cover [%]



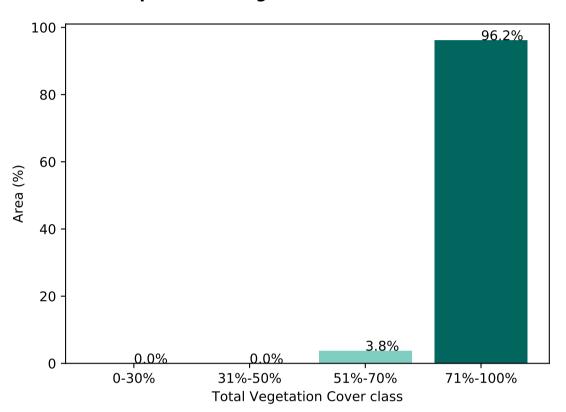


Total Vegetation Cover Anomaly [%]

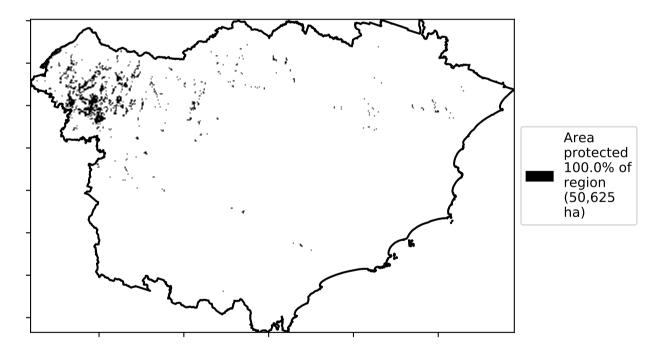


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

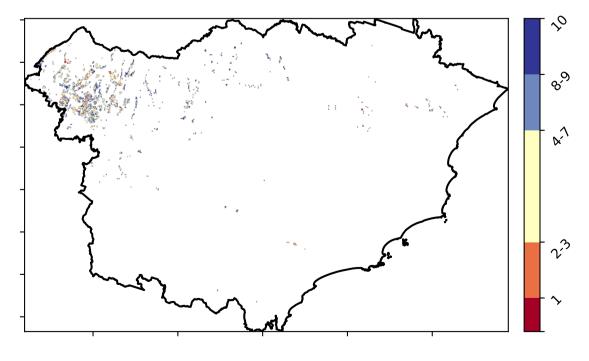
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







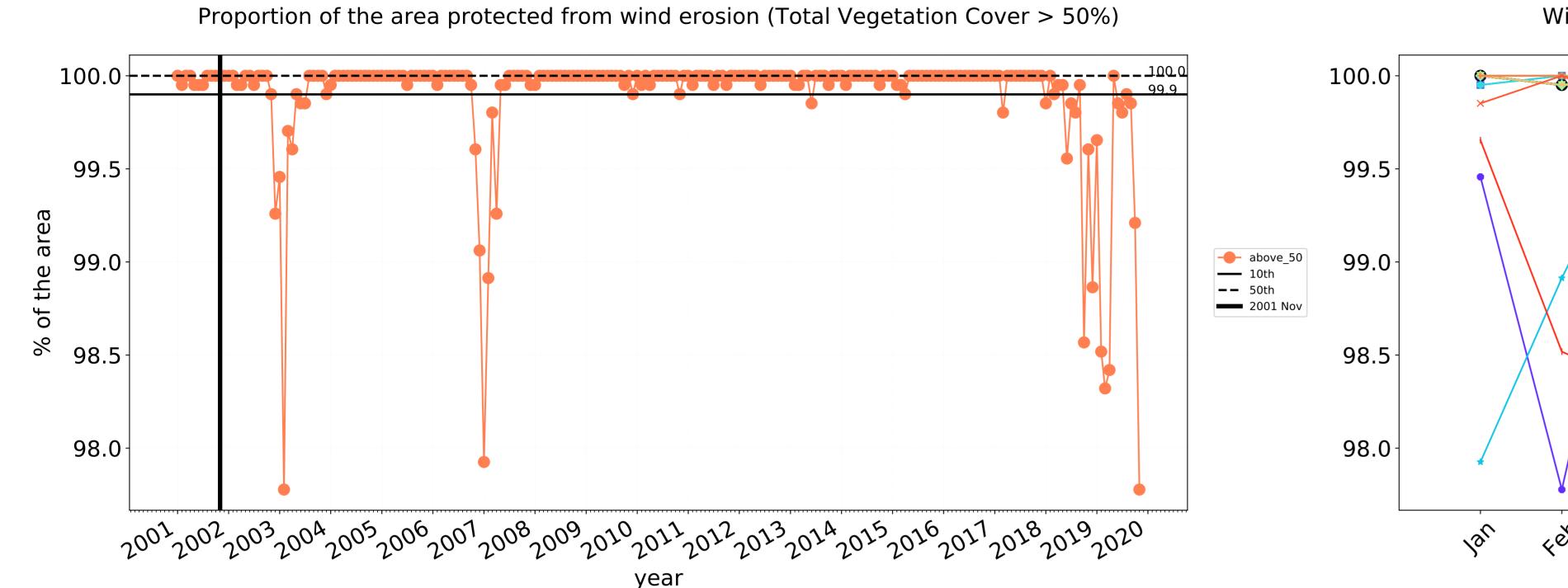


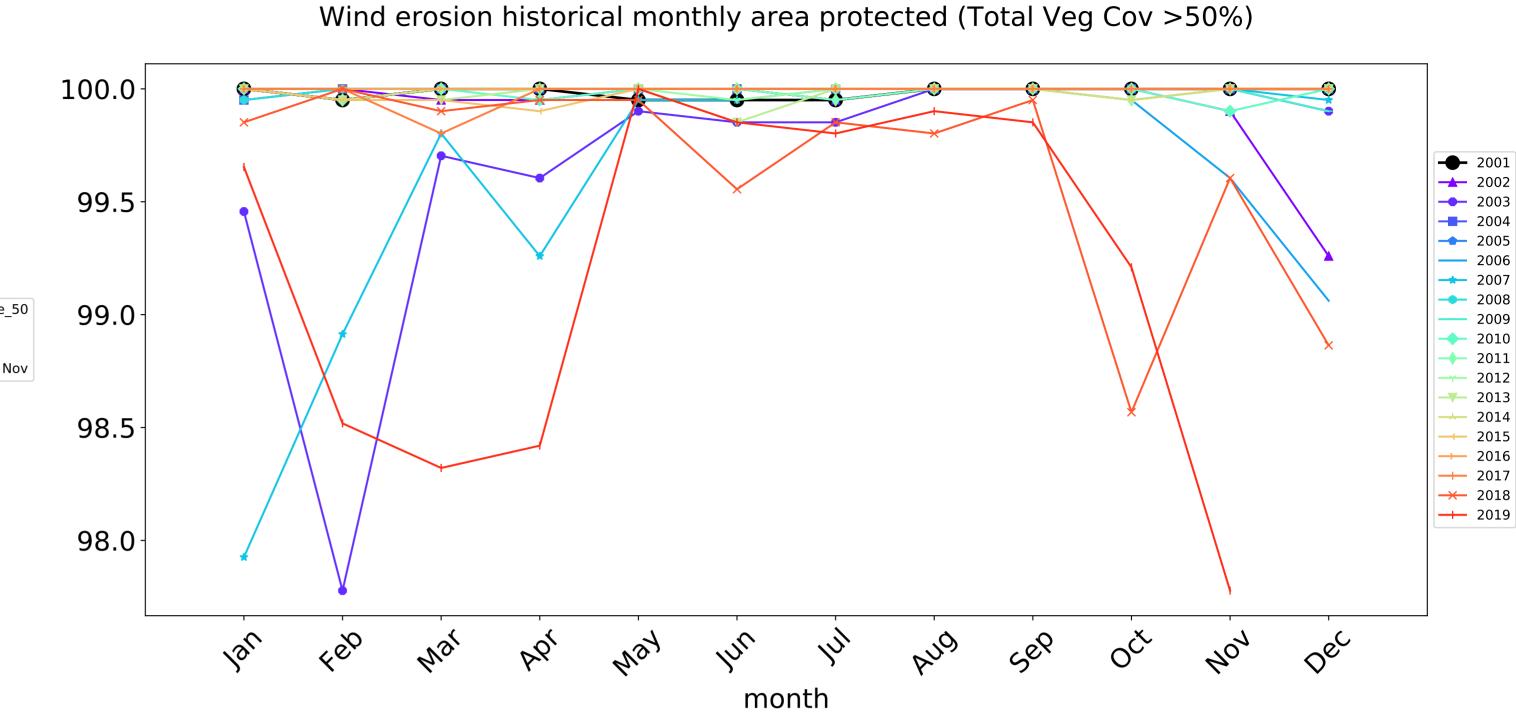


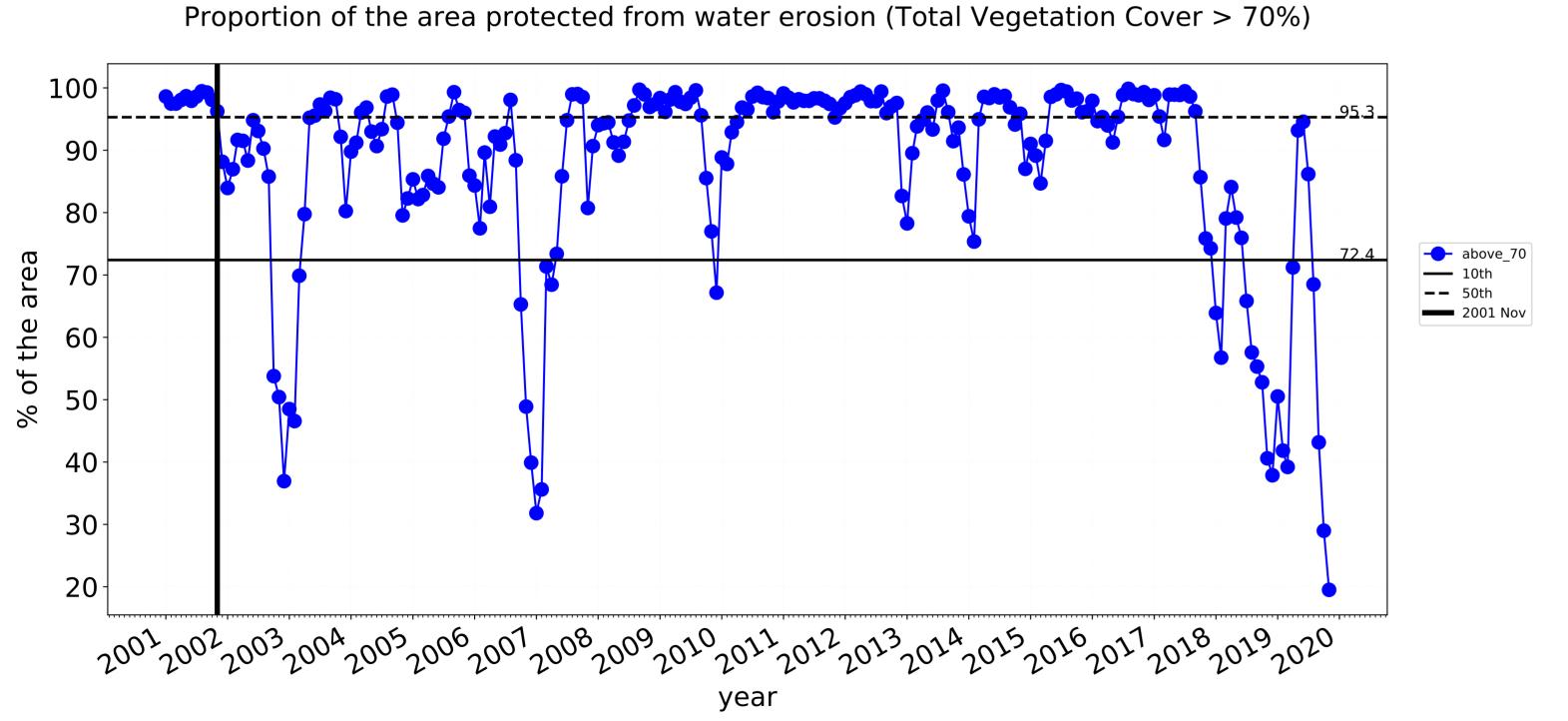


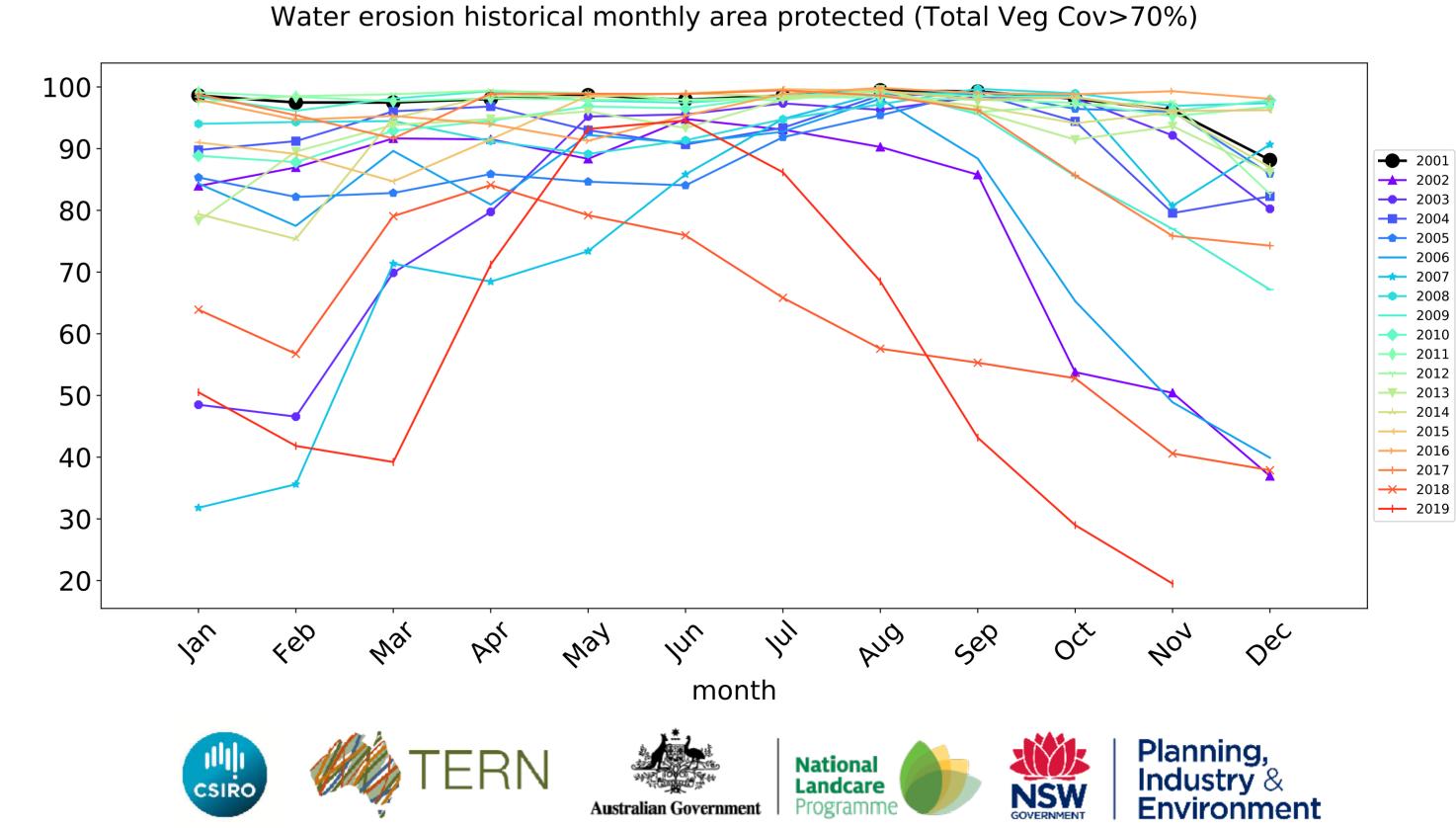


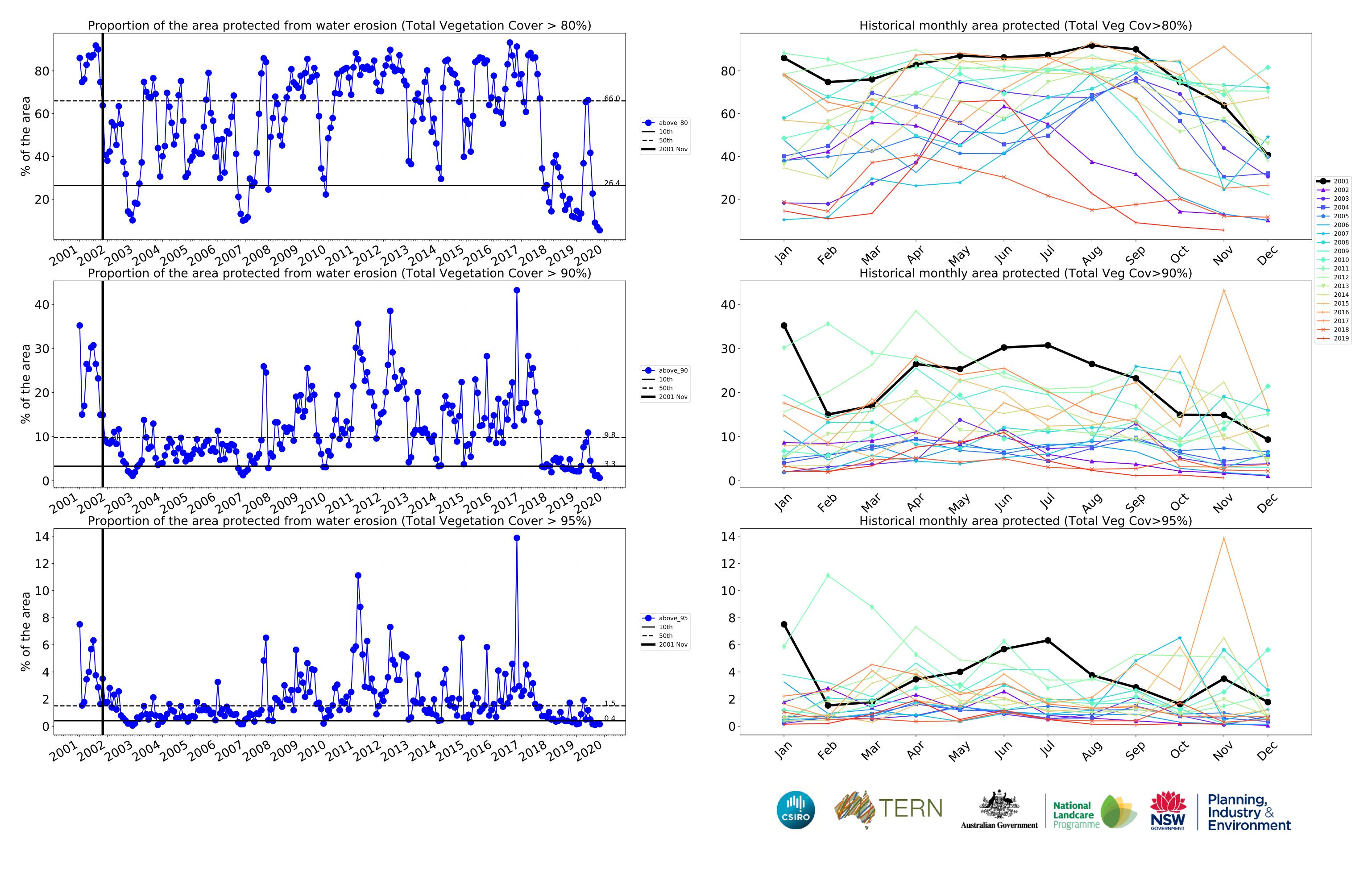
Cropping timeseries









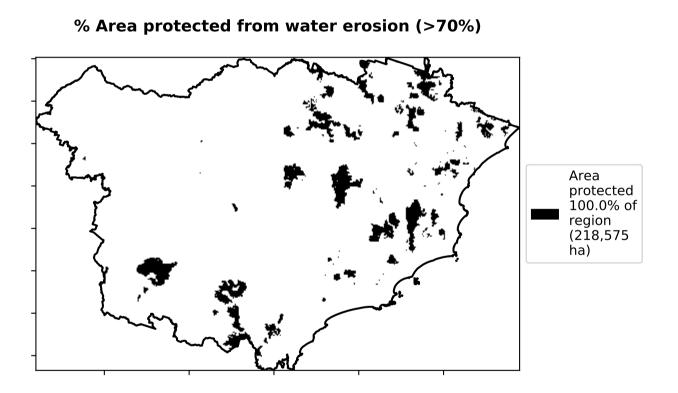


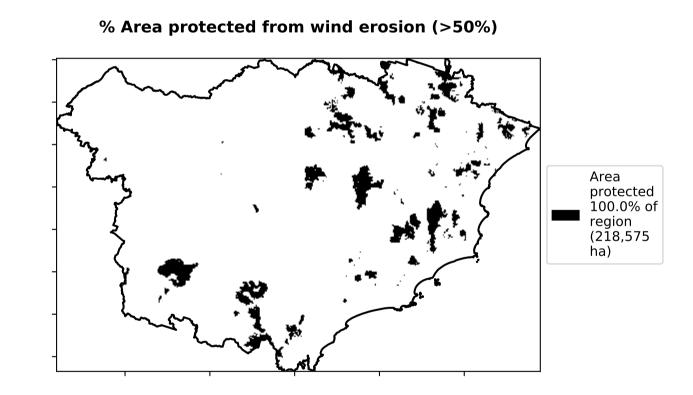
Production native forests and plantation forests

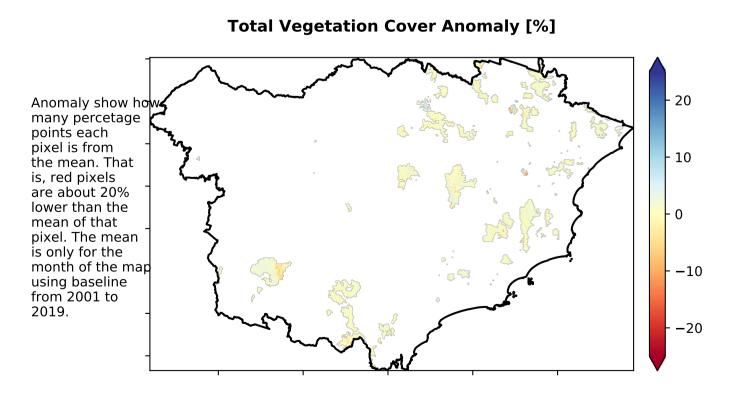
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) and Forests of Australia (2018)

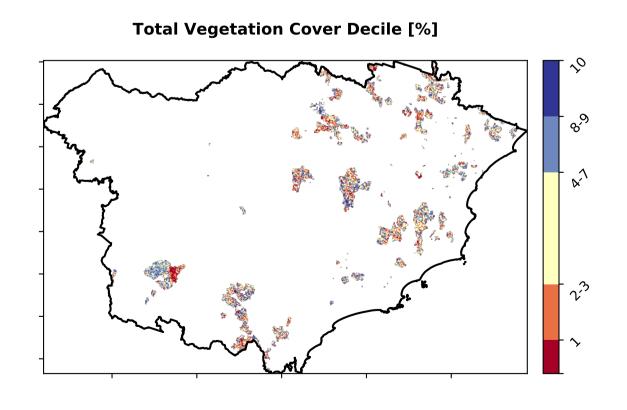
Total Vegetation Cover [%]

Proportion of vegetation cover class in area 100 - 100.0% 80 - 20 - 20 - 0.0% 0.0% 51%-70% 71%-100% Total Vegetation Cover class













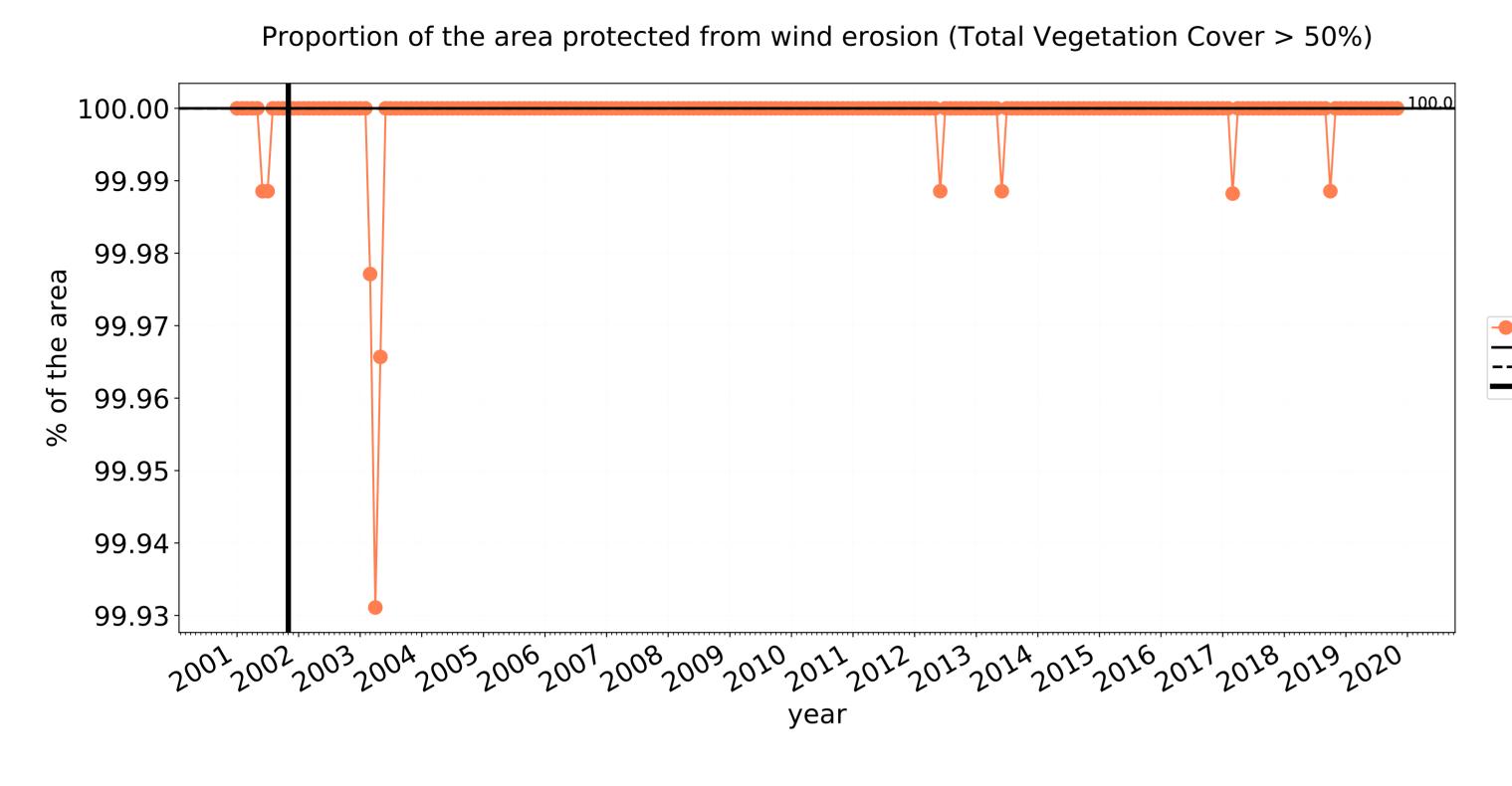


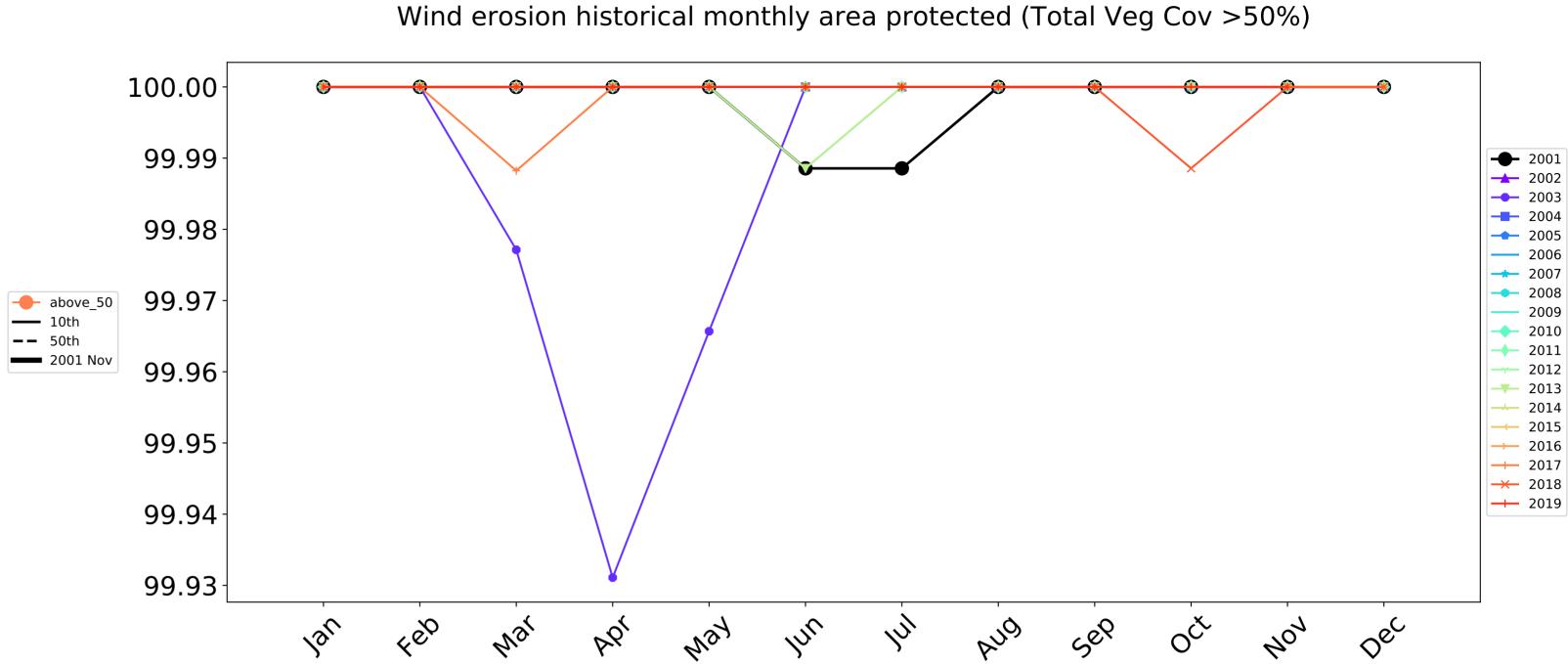




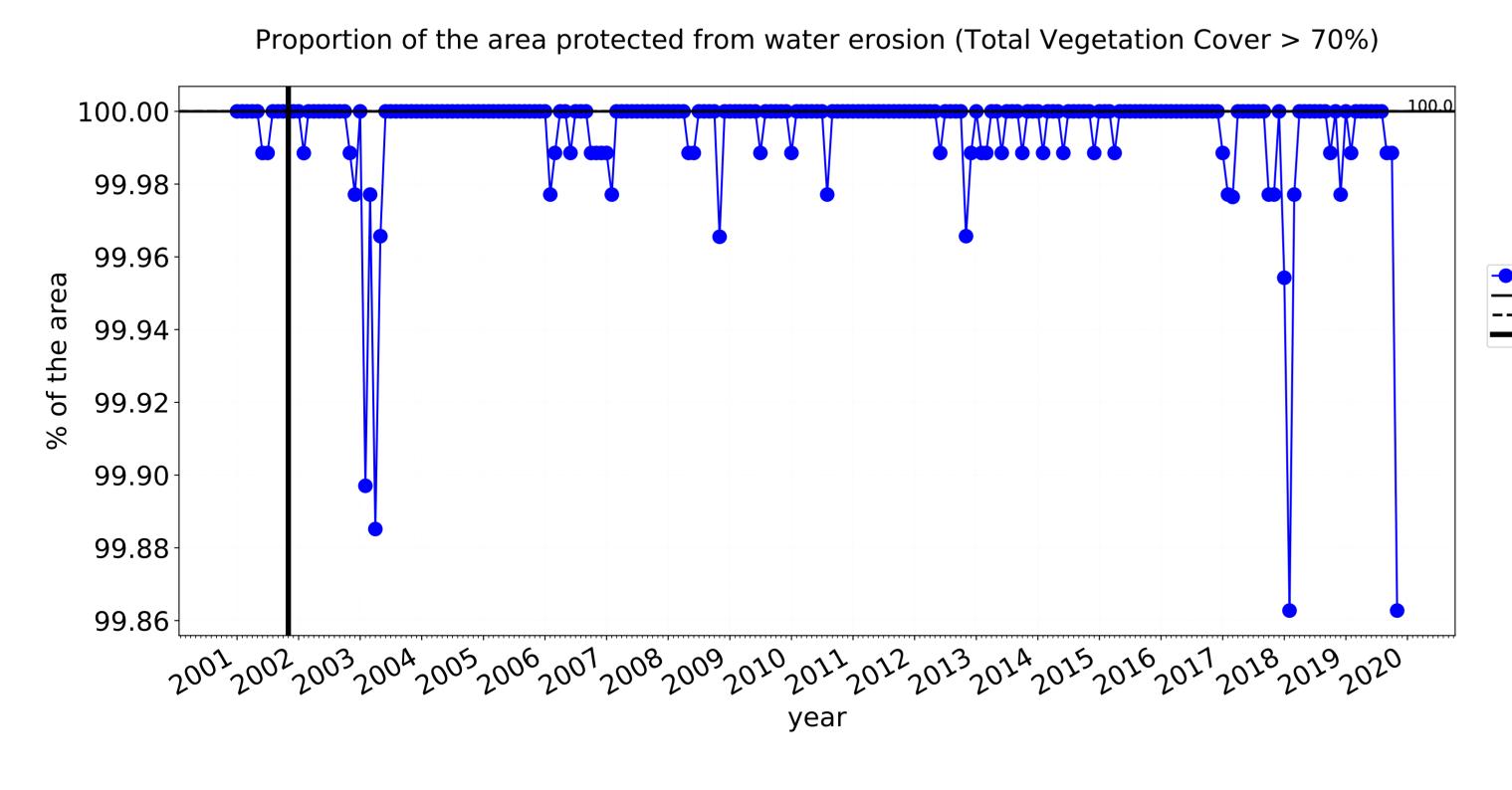


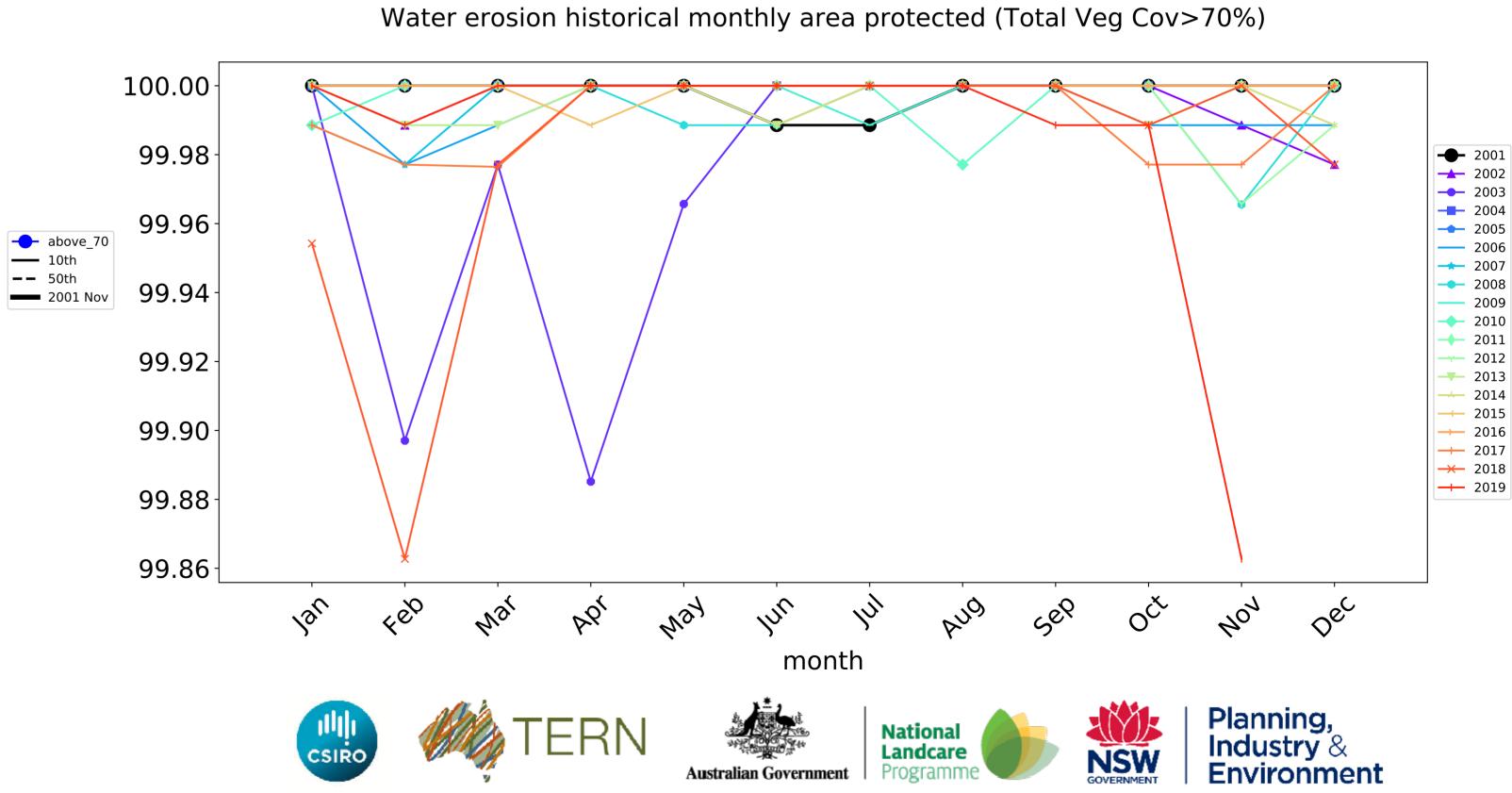
Production native forests and plantation forests timeseries

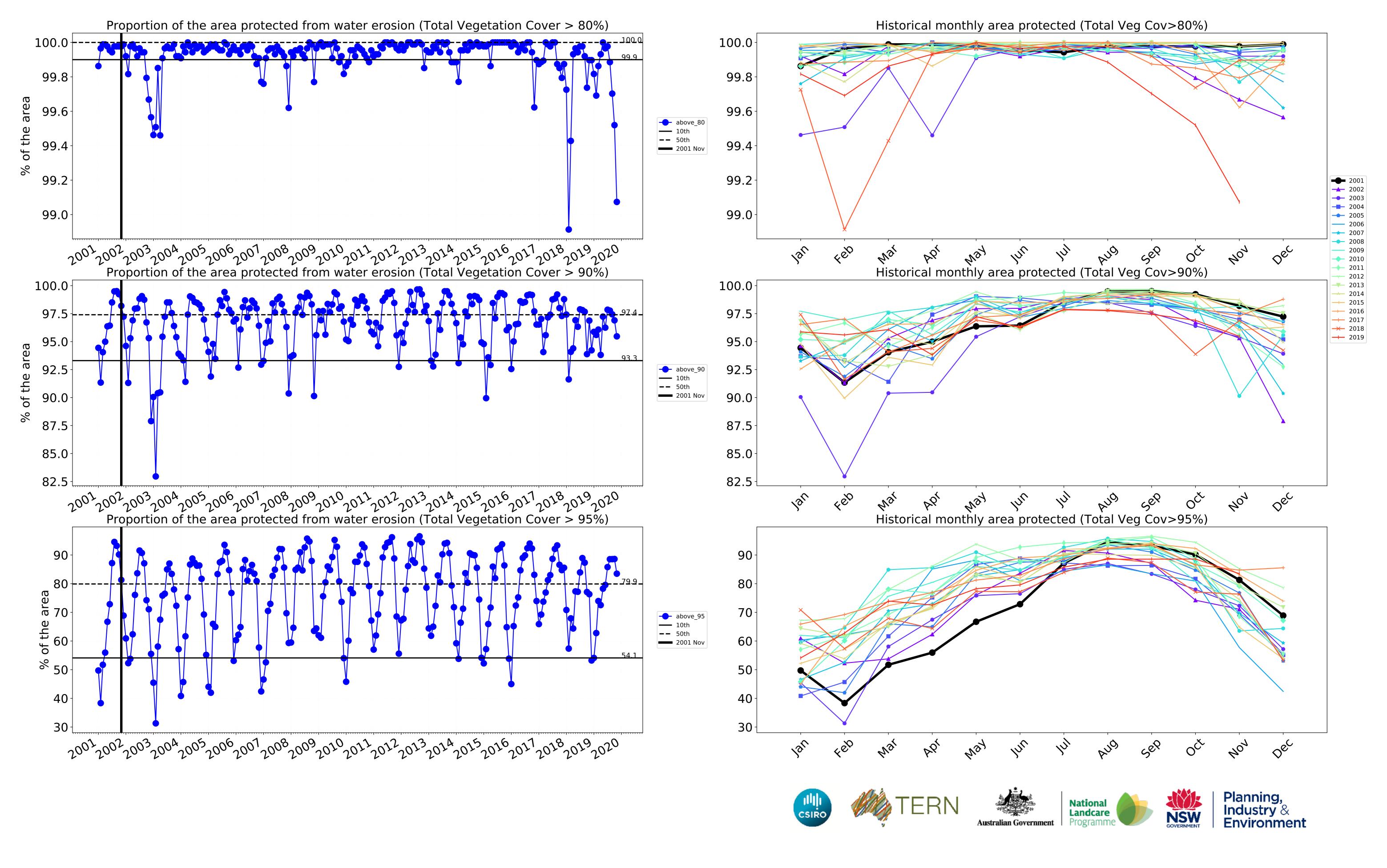




month







Hunter (3,240,325 ha and no data 60,100 ha) Percentage area and hectares protected with TVC threshold 30,50,70,80,90 and 95%

Land use and forest cover Class	area(ha)	above_30	above_50	above_70	above_80	above_90	above_95
Entire region	3,240,325	99.9% 3,238,551	99.8% 3,234,330	99.0% 3,209,229	96.8% 3,135,074	79.8% 2,586,520	41.7% 1,349,694
Conservation and natural environments	1,242,350	99.9% 1,241,300	99.9% 1,240,950	99.7% 1,239,100	99.4% 1,234,975	91.1% 1,132,325	58.0% 720,650
Conservation and natural environments non forest	30,875	96.6% 29,825	95.9% 29,600	92.5% 28,550	88.6% 27,350	66.2% 20,450	25.7% 7,950
Conservation and natural environments Woodland forest	139,025	100.0% 139,025	100.0% 139,025	99.9% 138,900	99.4% 138,175	82.3% 114,400	36.6% 50,850
Conservation and natural environments Forest (non woodland)	1,072,450	100.0% 1,072,450	100.0% 1,072,325	99.9% 1,071,650	99.7% 1,069,450	93.0% 997,475	61.7% 661,850
Agriculture	1,581,050	100.0% 1,581,025	100.0% 1,580,600	99.7% 1,576,050	97.1% 1,535,700	73.5% 1,162,600	27.1% 428,225
Grazing	1,503,050	100.0% 1,503,025	100.0% 1,502,600	99.8% 1,500,175	98.6% 1,481,825	76.6% 1,151,225	28.3% 425,825
Grazing non forest	1,213,300	100.0% 1,213,275	100.0% 1,212,850	99.8% 1,210,550	98.4% 1,193,425	75.1% 910,875	28.0% 339,450
Grazing Woodland forest	120,650	100.0% 120,650	100.0% 120,650	100.0% 120,600	99.5% 120,100	76.1% 91,825	21.1% 25,400
Grazing - Forest (non woodland)	169,100	100.0% 169,100	100.0% 169,100	100.0% 169,025	99.5% 168,300	87.8% 148,525	36.1% 60,975
Cropping	50,625	100.0% 50,625	100.0% 50,625	96.2% 48,725	63.8% 32,300	14.9% 7,550	3.5% 1,775
Production native forests and plantation forests	218,575	100.0% 218,575	100.0% 218,575	100.0% 218,575	100.0% 218,525	98.2% 214,625	81.3% 177,700











