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 2009

Results can be shown for the whole region (polygon), and separated by land use and forest cover classes which are likely to show different cover patterns and targets. Land use is divided into four broad classes: Conservation and natural environments, Agriculture, production native forests and plantation forests (no report), and other (no report). Agriculture is divided into grazing, crops and horticulture which are sub-divided into non-irrigated and irrigated. If forest is present land use is further divided into: non-forest, woodland forest and non-woodland forest. The area of each land use and forest class are shown as a map and chart. The report content is repeated for each land use and forest cover class that covers at least 1% of the area of the chosen region. Total vegetation Cover:

The total vegetation cover indicates where soil is likely to be protected from wind and or water hillslope erosion. Total vegetation cover for this month is shown on a map and chart classified into 4 classes.

- 71-100% High cover protected from wind and usually water erosion (high rainfall, steep slopes, and erodible soils may need greater than 80, 90, 95 and up to 100% cover)
 - 51-70% Moderate cover protected from wind erosion
 - 31-50% Low cover not protected
 - 0-30% Very Low cover not protected

Erosion protection: Wind erosion 50% total vegetation cover

The vegetation cover threshold required to prevent soil erosion is usually 50% to reduce wind erosion, 70% or 80% to reduce water (hillslope) erosion depending on the steepness and rainfall. Areas protected from erosion for the month:

- Map: water erosion protection (>70% cover) percentage area and hectares.
- Map: wind erosion protection (>50% cover) percentage area and hectares.

Comparison with previous years:

- Map: anomaly comparing this month to the average cover from the same month in previous years.
- Map: deciles rank of month against the same month in previous years.

Anomalies and deciles until September 2019 are calculated comparing to the same months 2001 to 2019. Extra monthly data will be used to calculate anomalies and deciles post September 2019 as they become available. Time series monthly from January 2001 to current:

Erosion protection

- Wind erosion protection time series: percentage of the area of the region with greater than 50% cover for each month (orange lines). Horizontal lines are 10th (cover target) and 50th percentiles.
- Water erosion protection time series: percentage of the area of the region with greater than 70% cover for each month (blue line). Horizontal lines are 10th (cover target) and 50th percentiles.

Rainfall

• Millimetres rainfall each month (black line).

Each time series is also stacked by year. The black line shows the current year of data.

Water erosion protection for higher rainfall and steeper slopes:

Water erosion protection on higher slopes. As slope increases, more cover is required to control water erosion. The thresholds reported are:

- the percentage area with pixels greater than 80% total cover.
- the percentage area with pixels greater than 90% total cover.
- the percentage area with pixels greater than 95% total cover.

Acknowledgment of data:

- 1. http://www.agriculture.gov.au/abares/aclump/land-use/alum-classification
- 2. http://www.agriculture.gov.au/abares/forestsaustralia/sofr/sofr-2018
- 3. https://www.dpi.nsw.gov.au/agriculture/pastures-and-rangelands/establishment-mgmt/production-management2/groundcover
- 4. MODIS Fractional cover algorithm:

https://doi.org/10.4225/08/5848a3f19a7b3







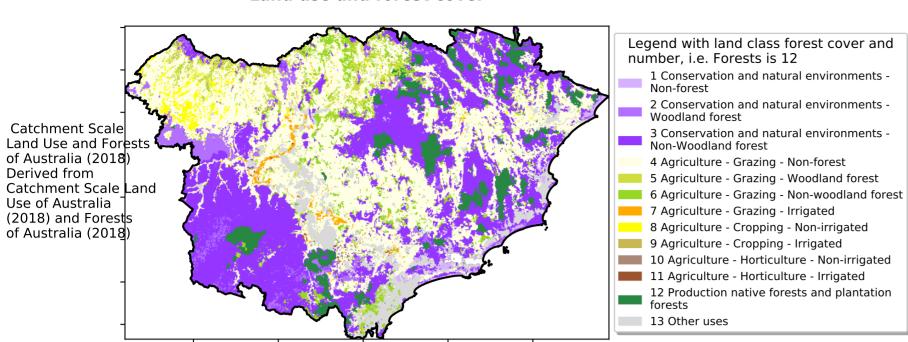




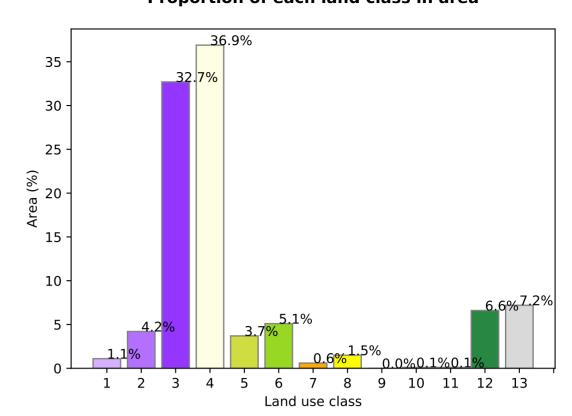


Vegetation Cover Nov 2009

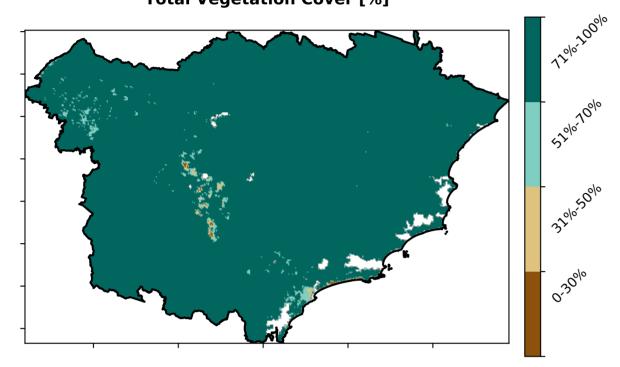
Land use and forest cover



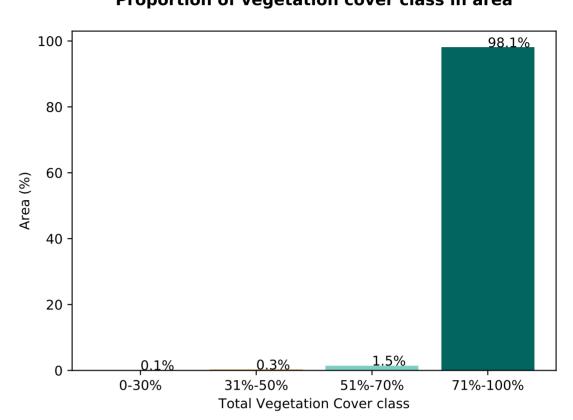
Proportion of each land class in area



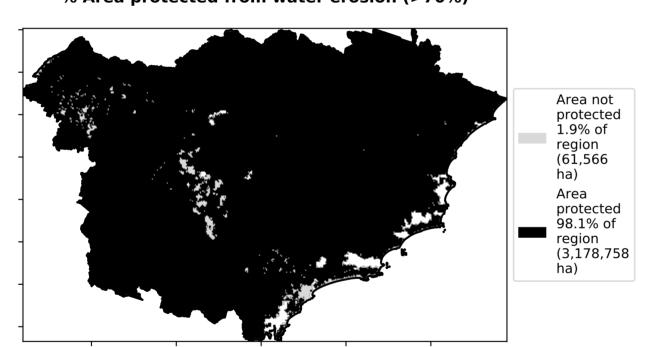
Total Vegetation Cover [%]



Proportion of vegetation cover class in area



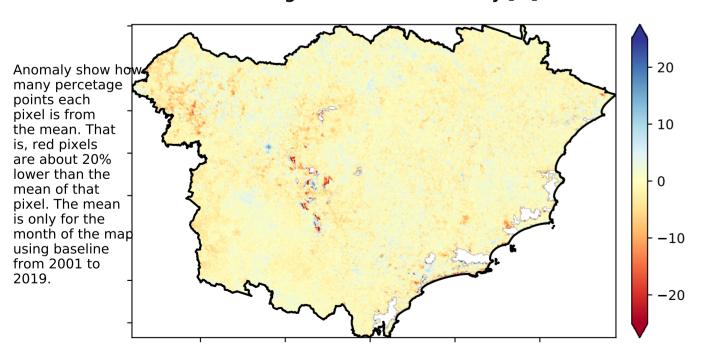
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

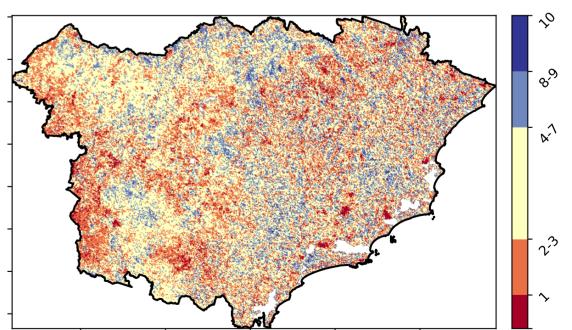


Total Vegetation Cover Anomaly [%]



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

Total Vegetation Cover Decile [%]





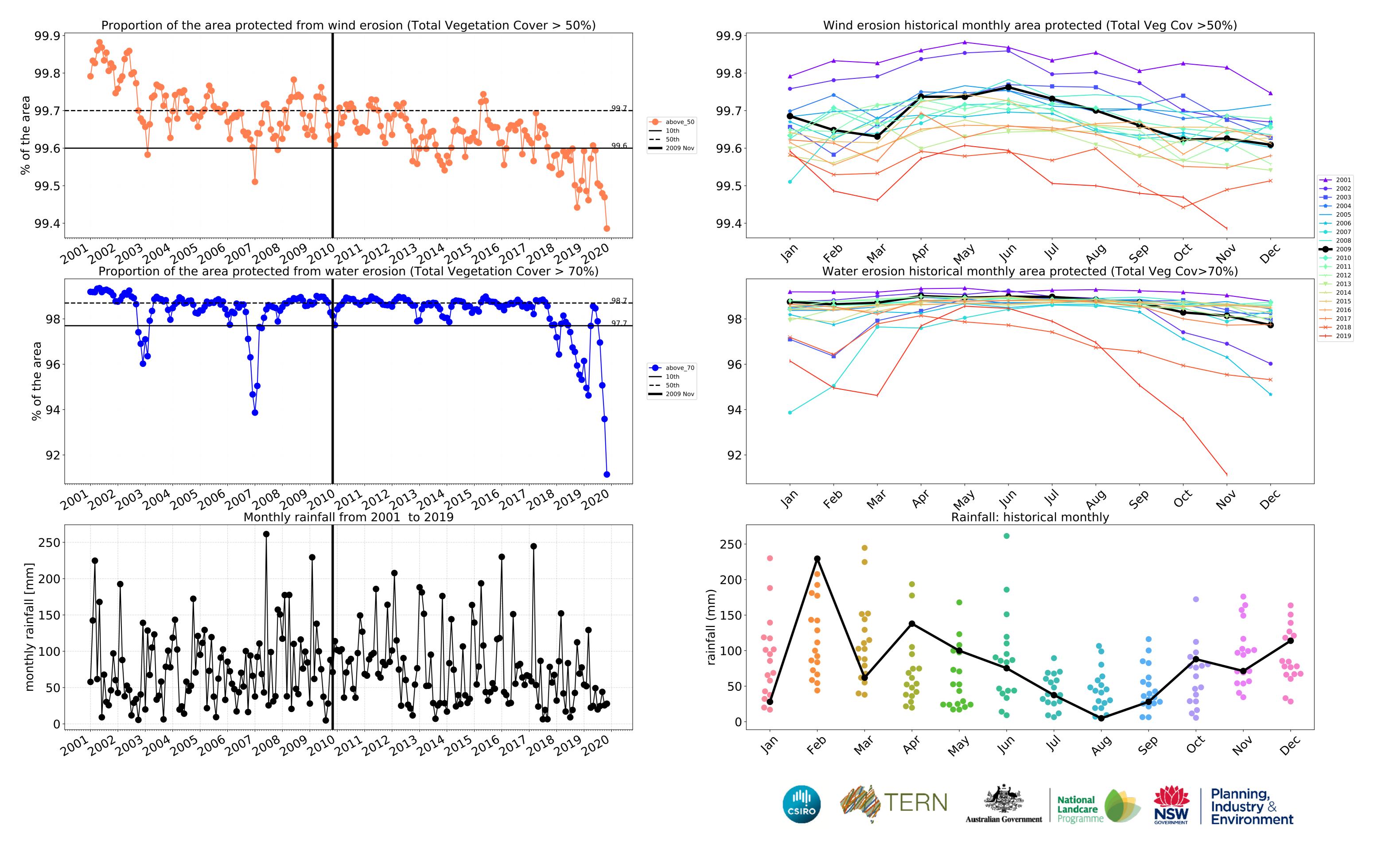


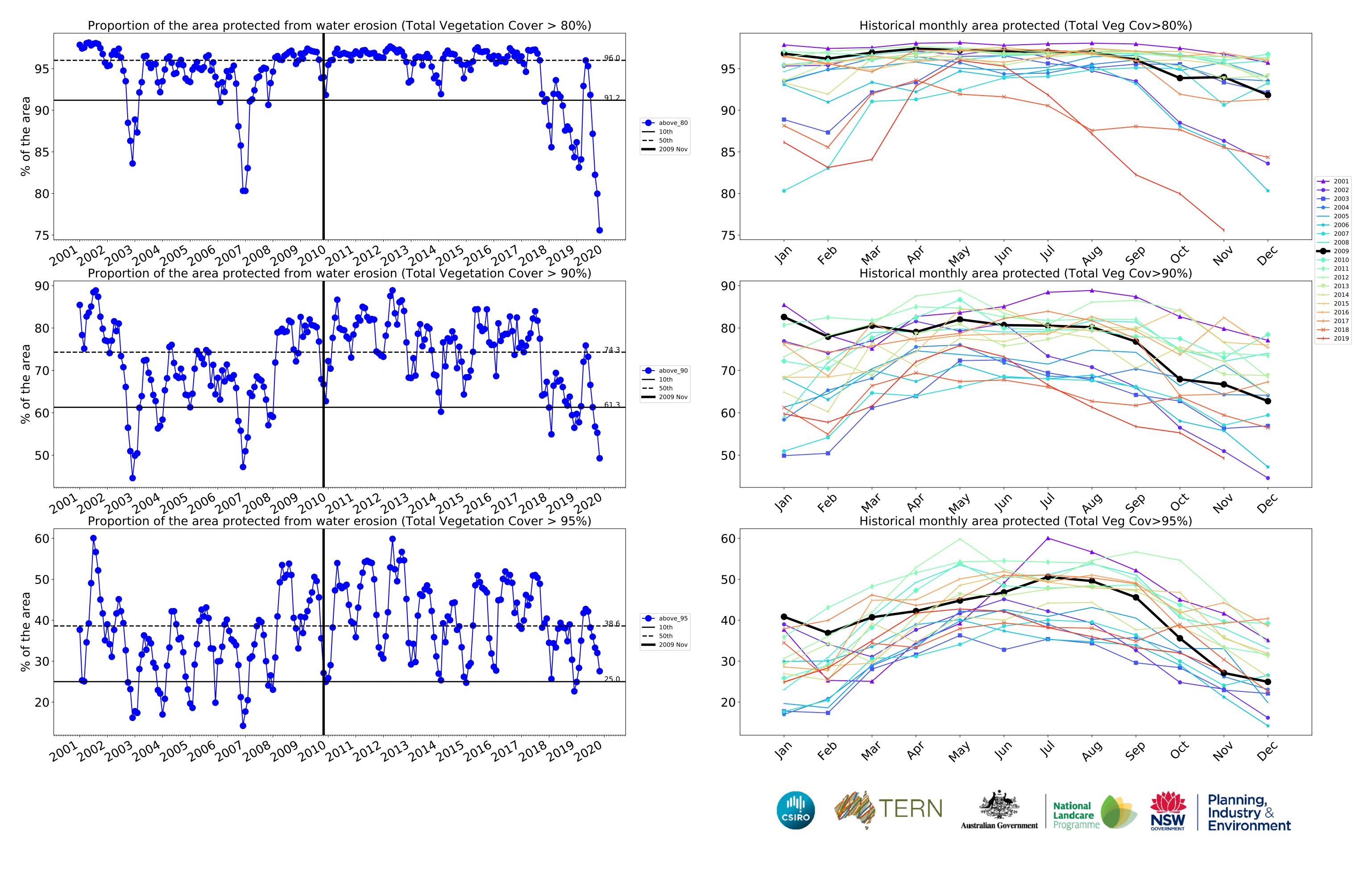




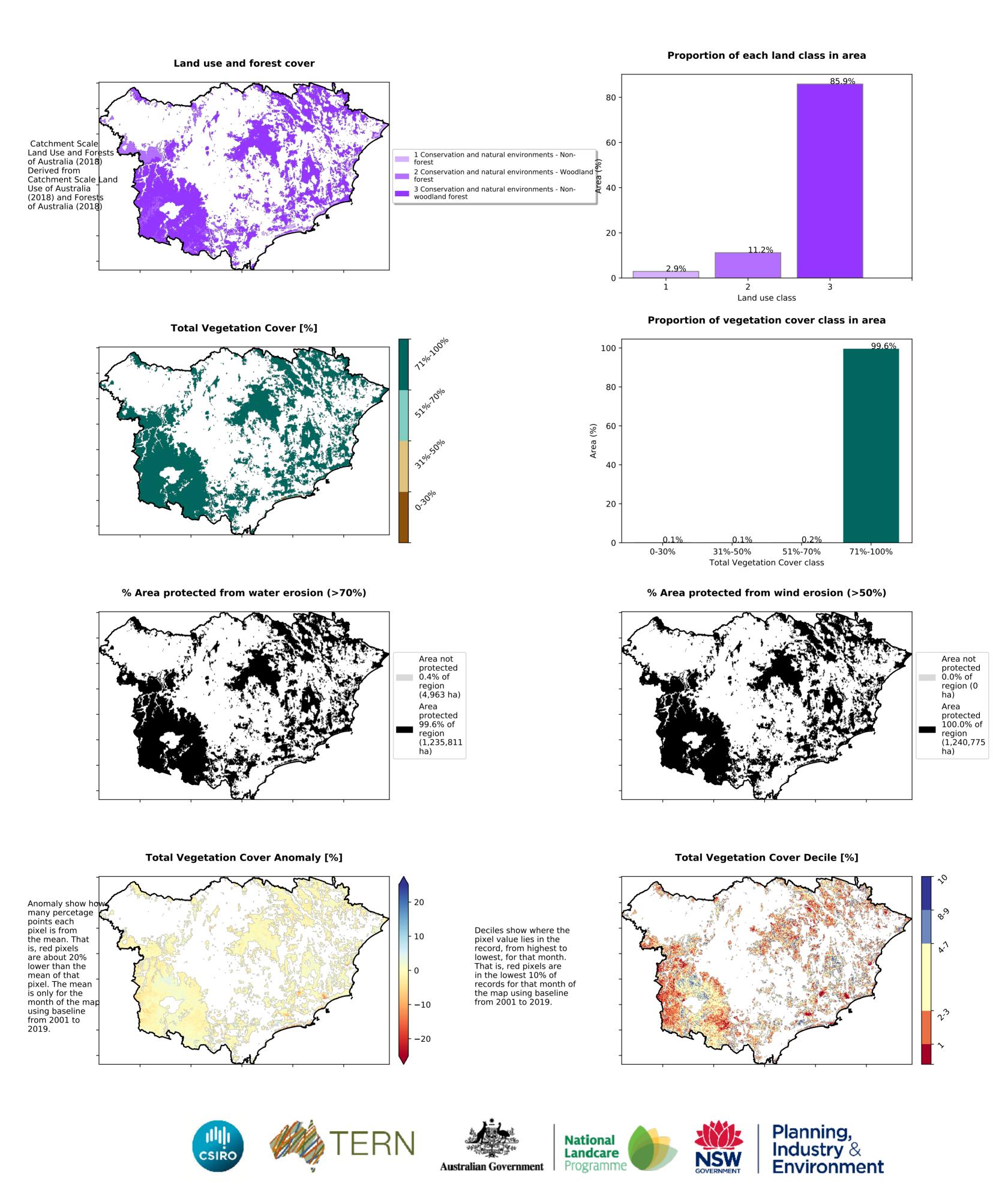




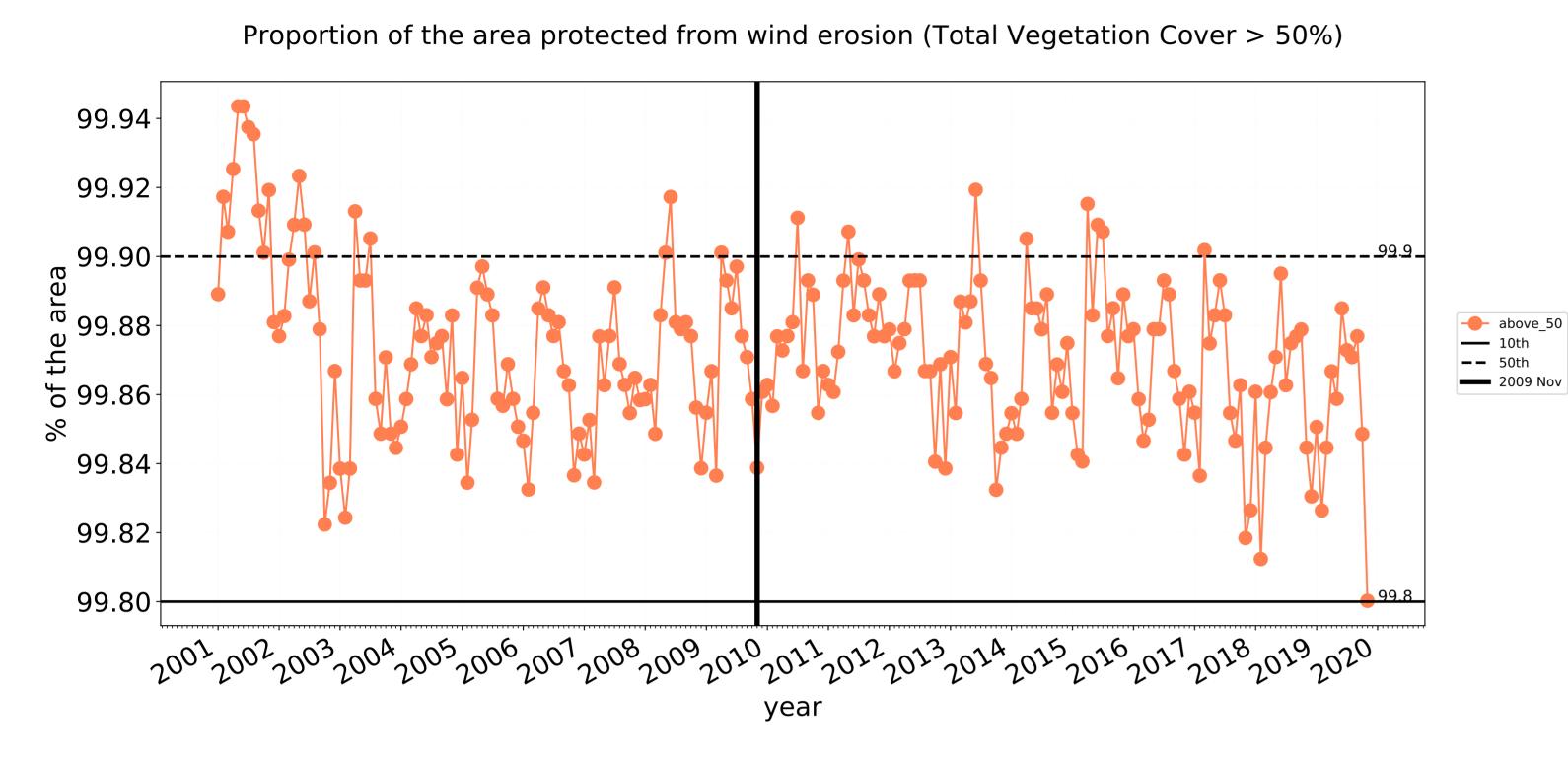




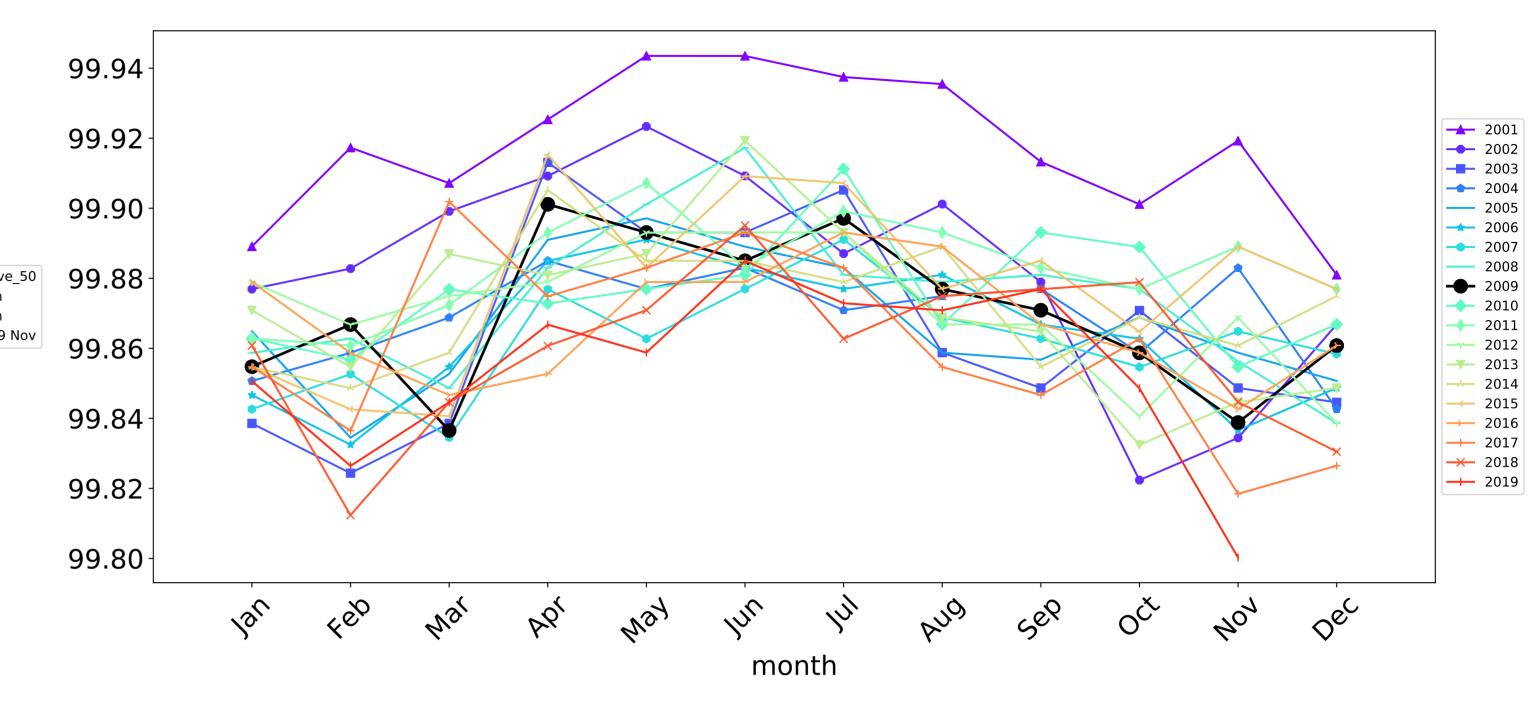
Conservation and natural environments

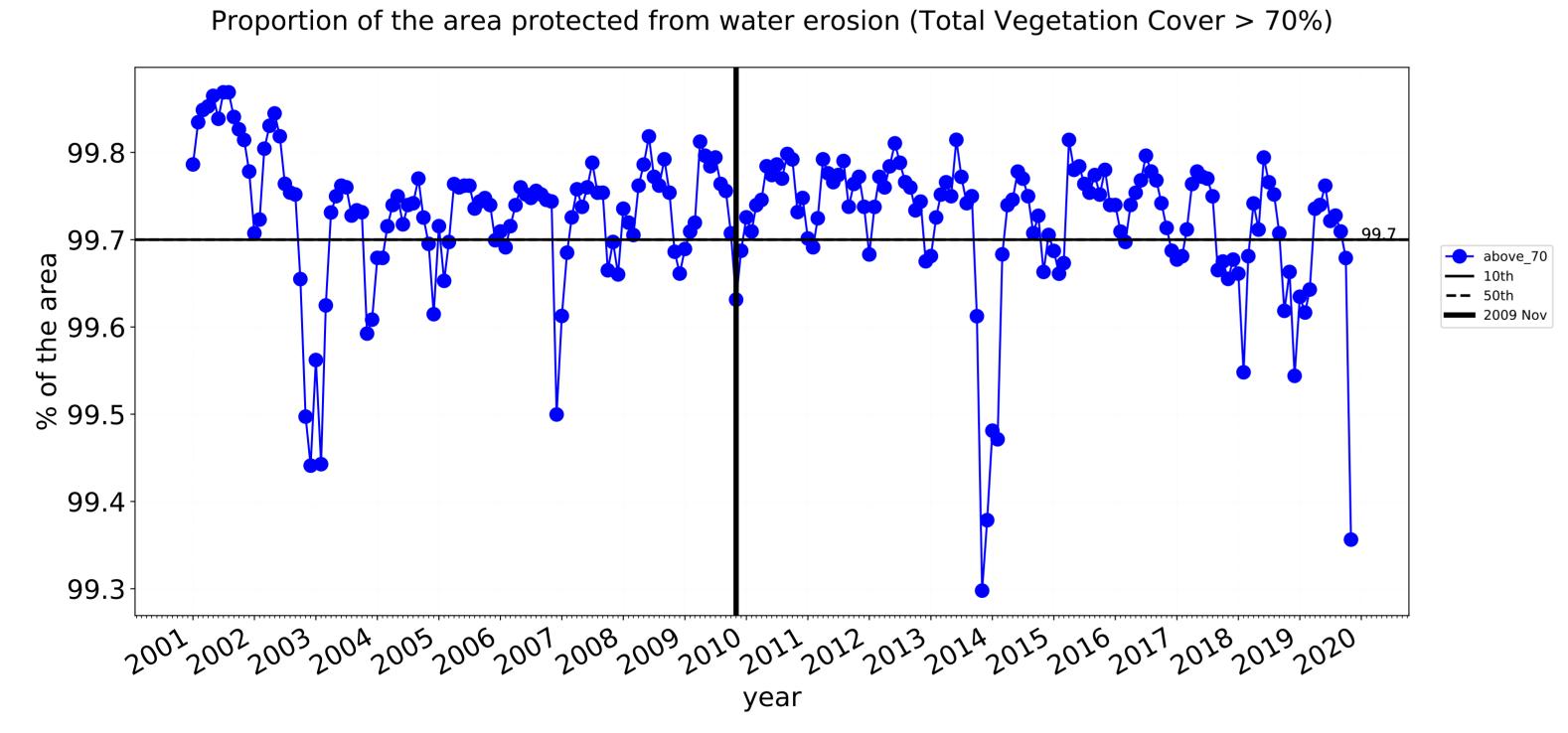


Conservation and natural environments timeseries



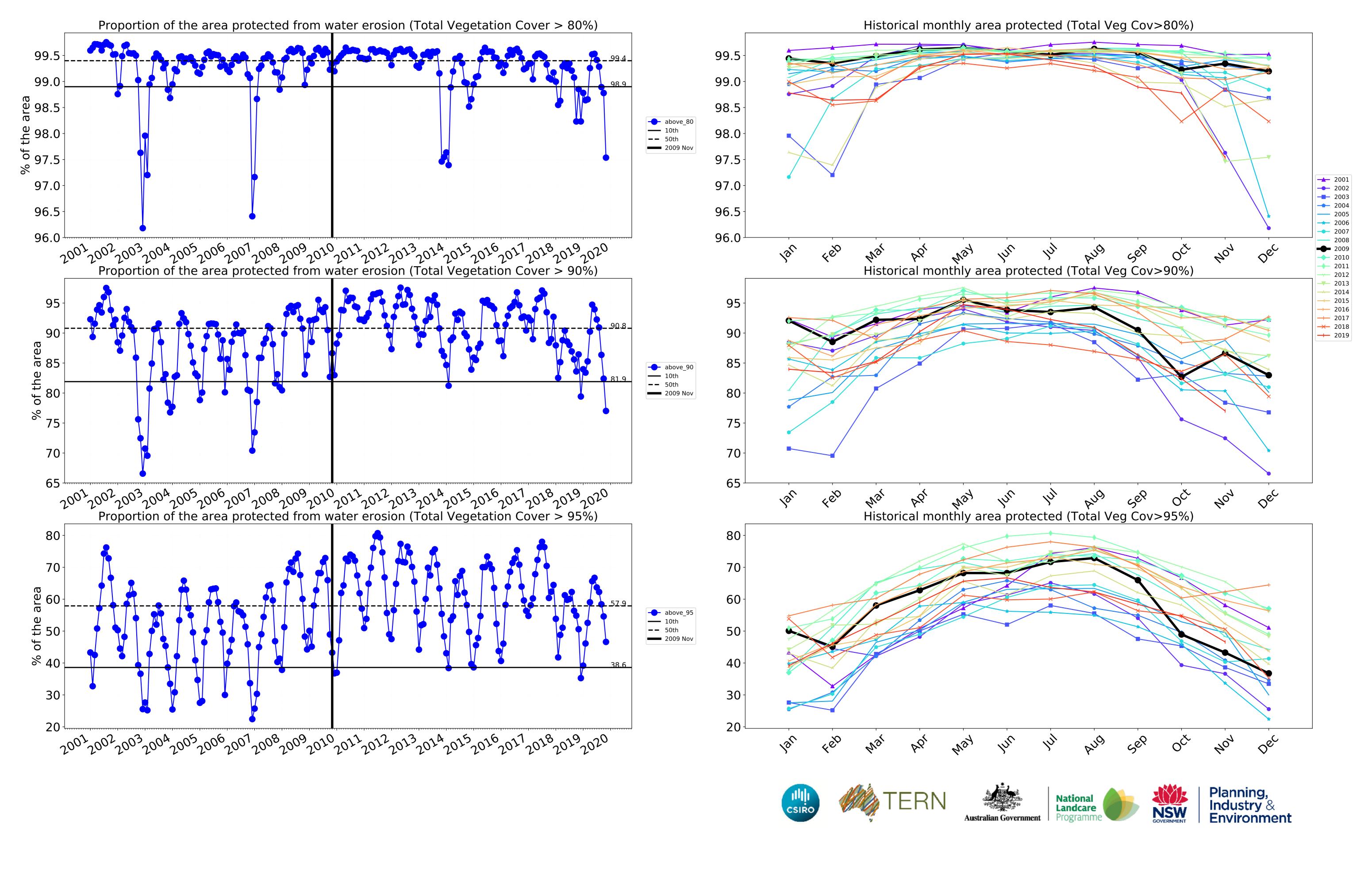
Wind erosion historical monthly area protected (Total Veg Cov >50%)



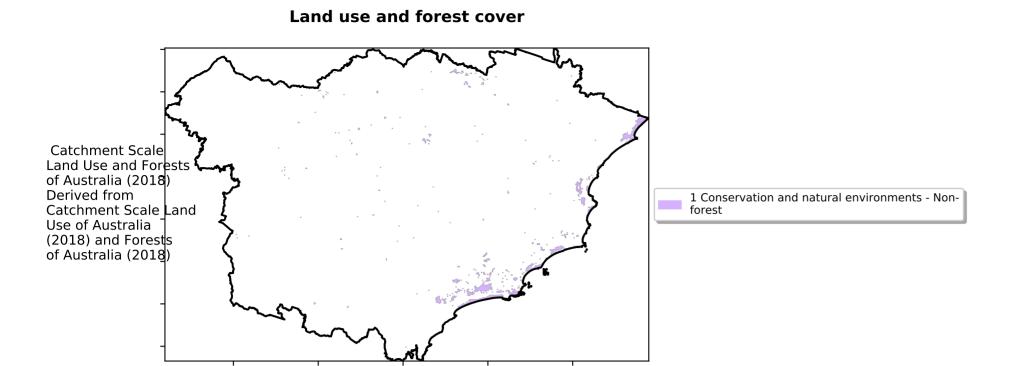


99.8 2001 2002 2003 2004 99.7 ____ 2005 → 2006 ---- 2007 2009 99.6 2010 2011 2012 99.5 ← 2015 **→** 2016 ---- 2017 × 2018 99.4 ---- 2019 99.3 month Planning, Industry & Environment **TERN** NSW GOVERNMENT National Landcare

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

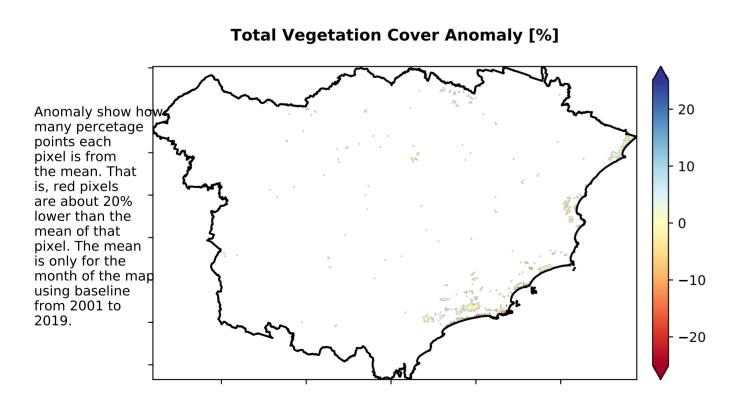


Conservation and natural environments non forest



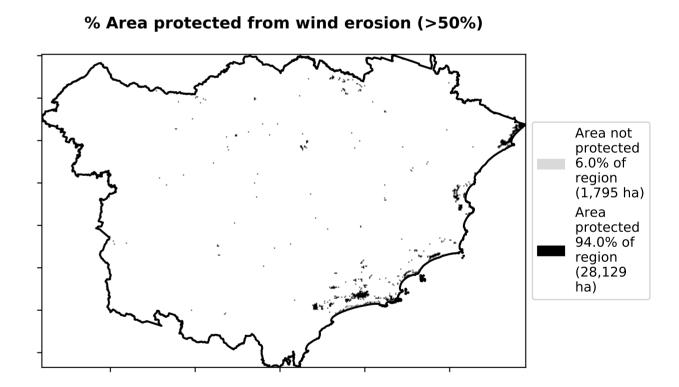
Total Vegetation Cover [%]

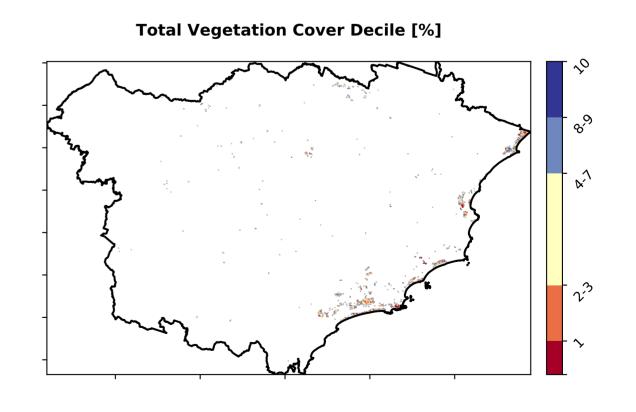
% Area protected from water erosion (>70%) Area not protected 10.7% of region (3,201 ha) Area protected 89.3% of region (26,723 ha)



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

80 - 89.3% 89.3% 89.3% 40 - 20 - 4.1% 1.9% 4.7% 71%-100% Total Vegetation Cover class









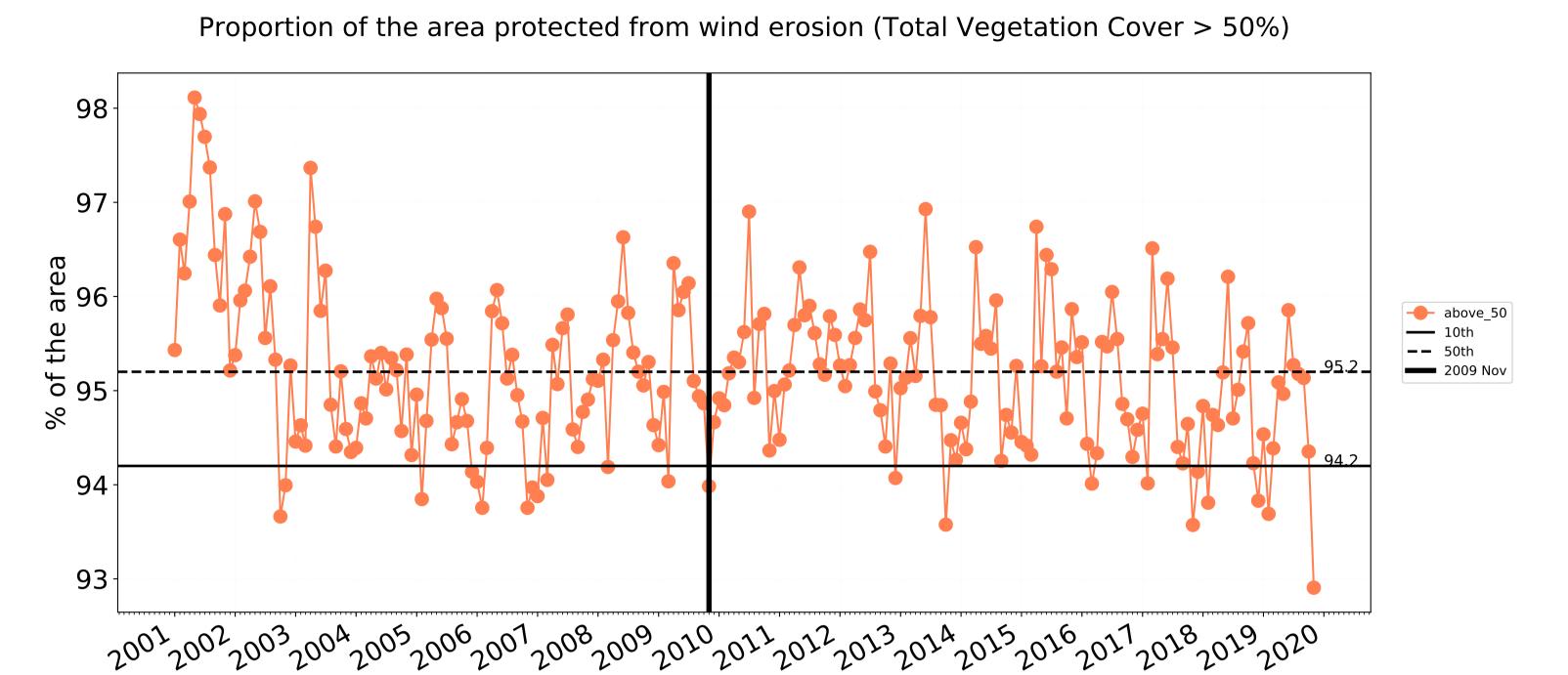




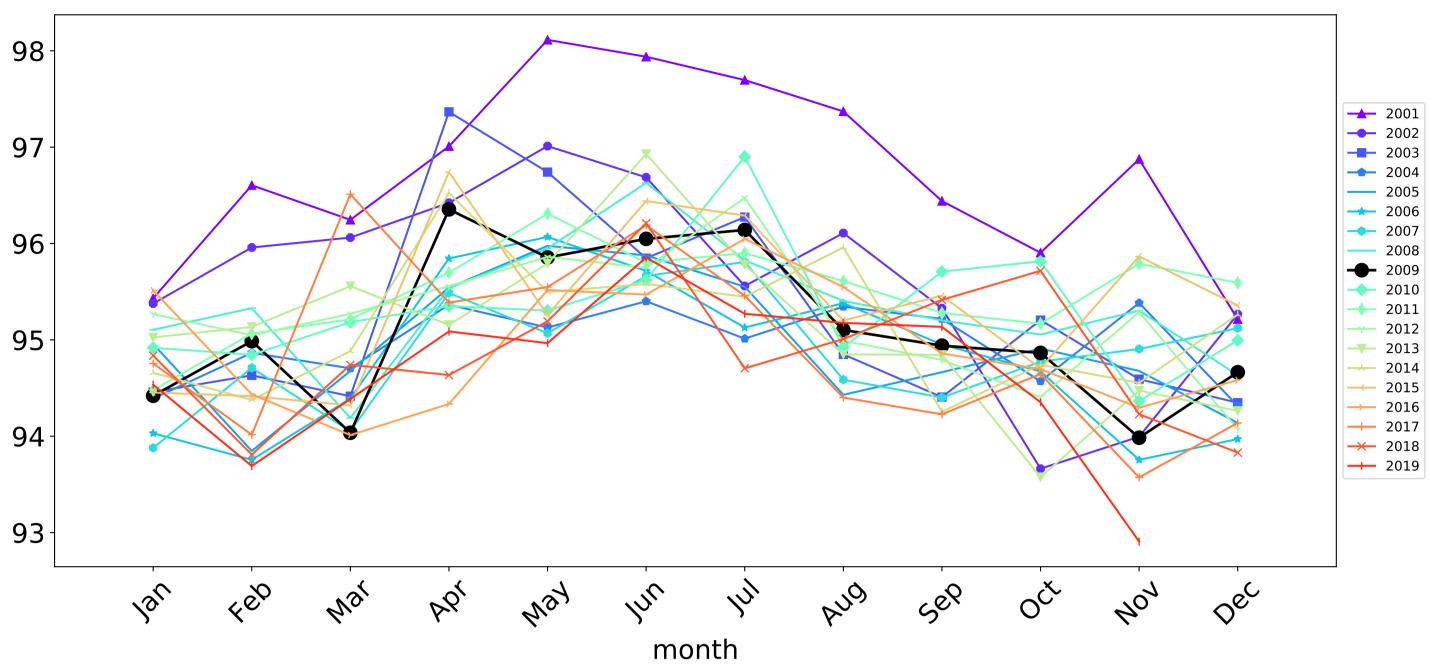


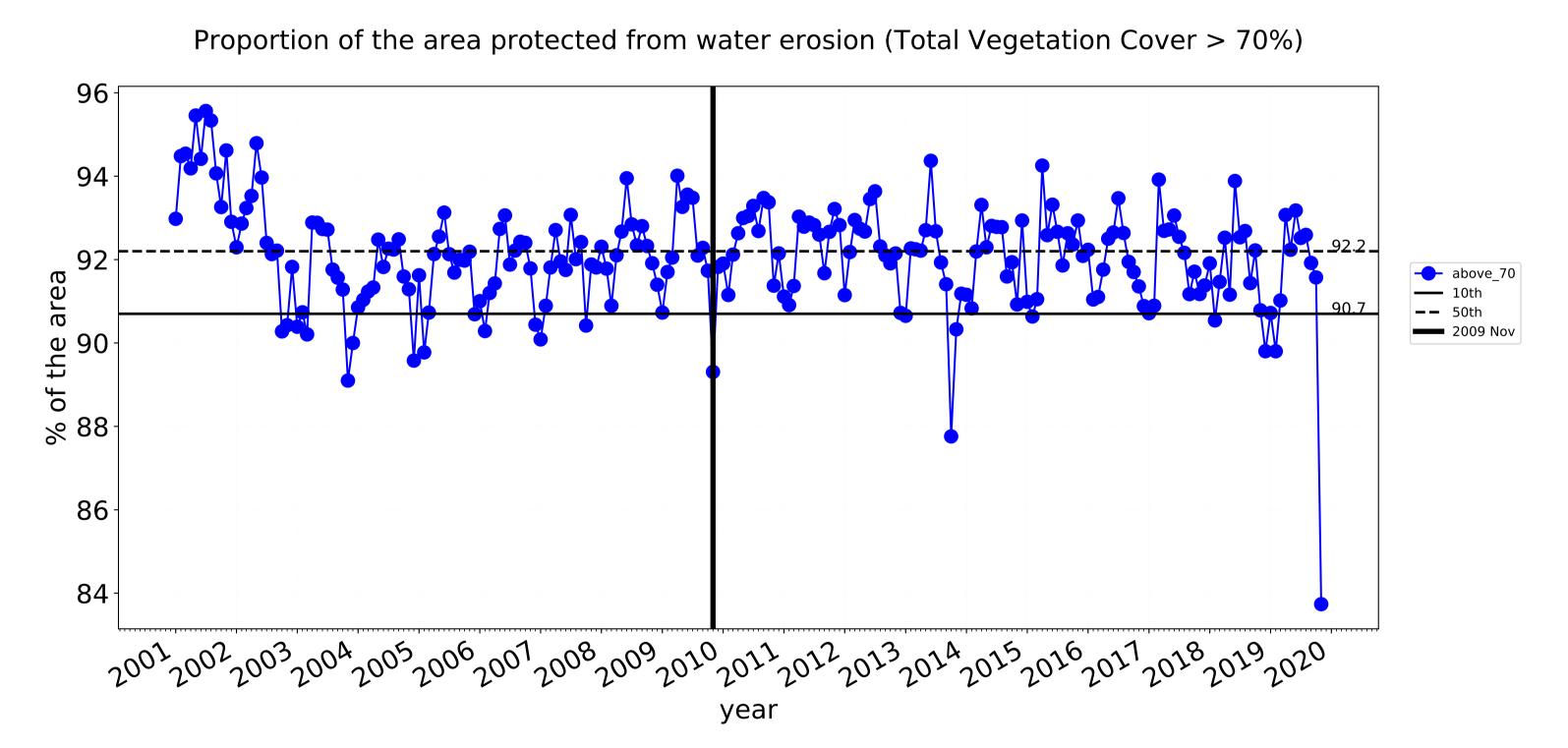


Conservation and natural environments non forest timeseries

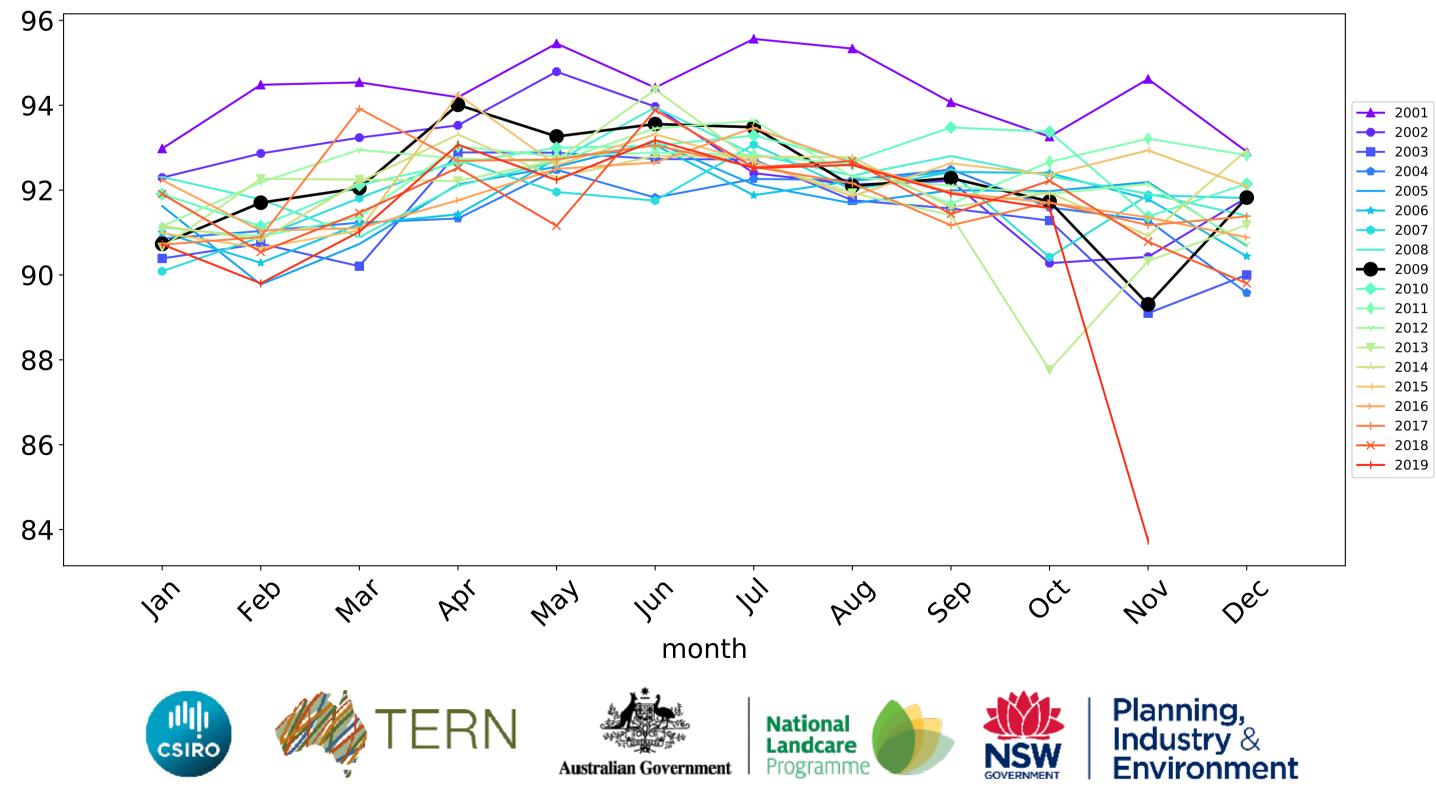


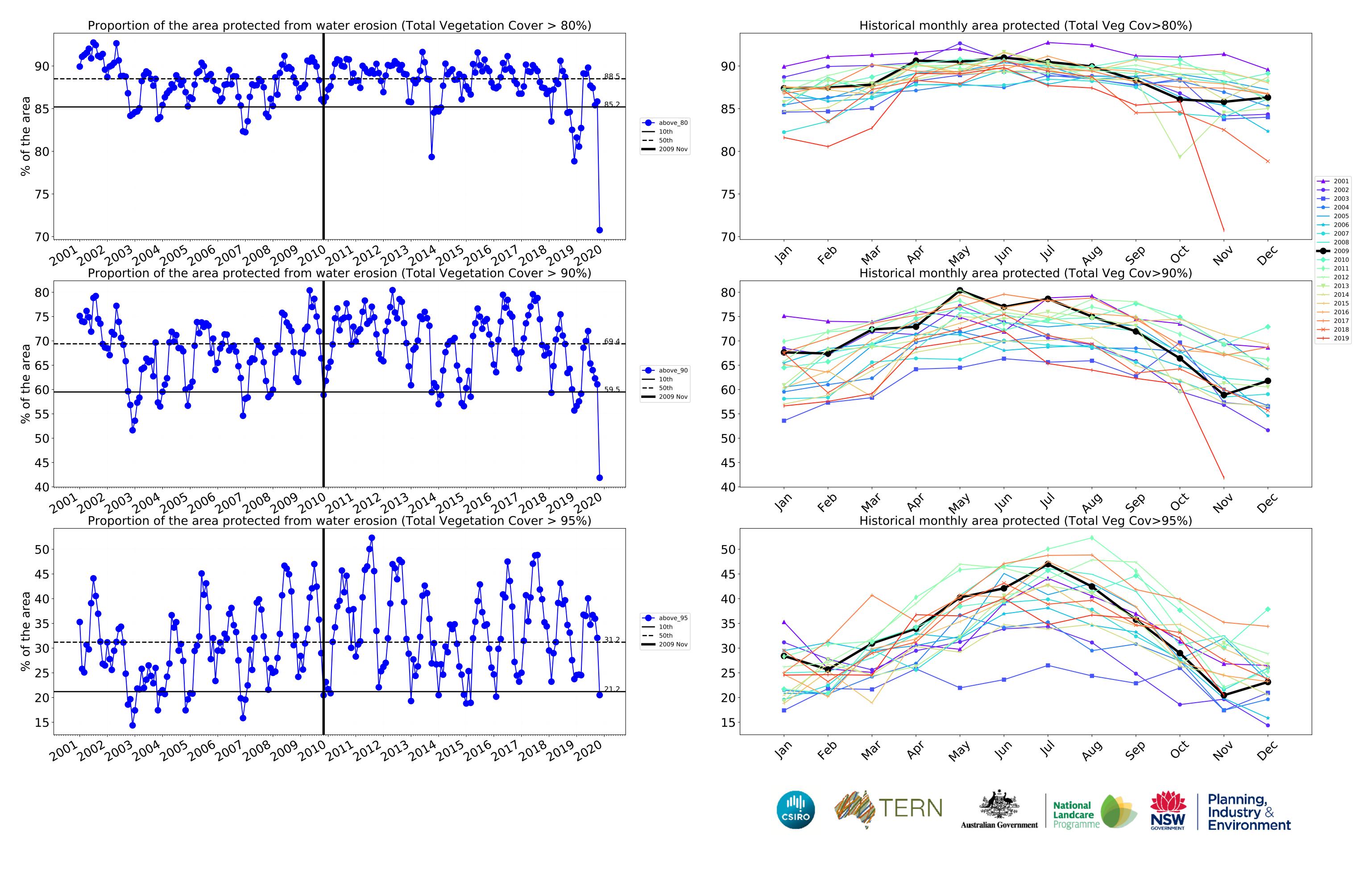




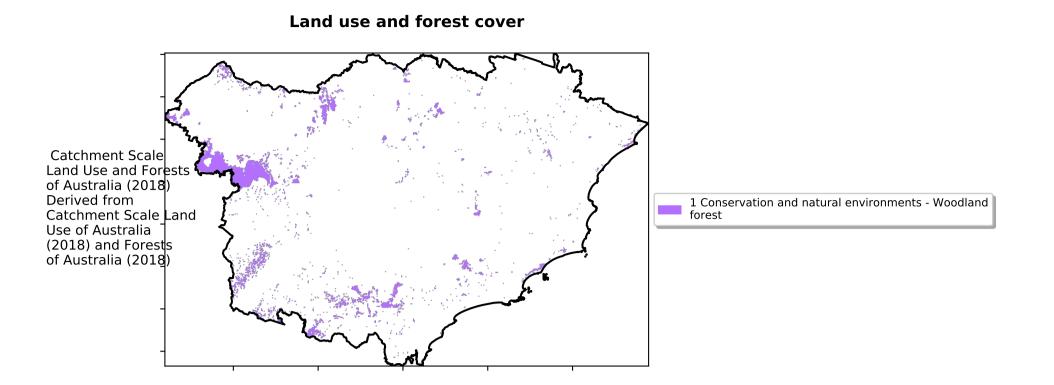


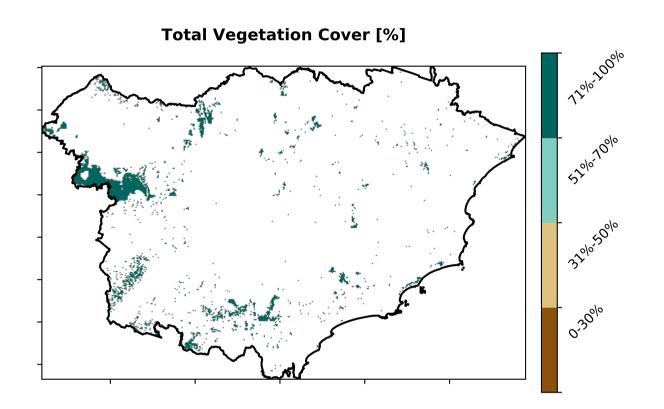


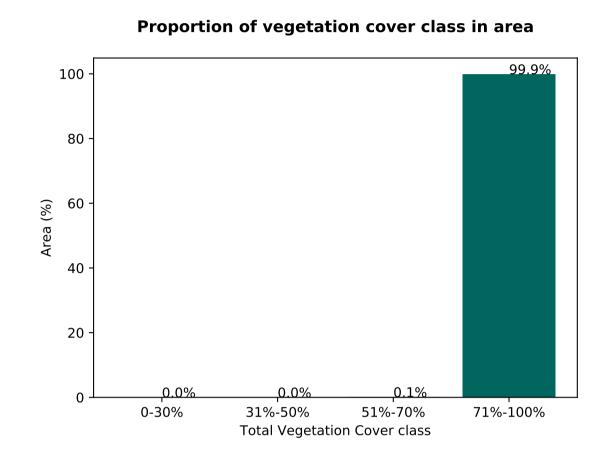


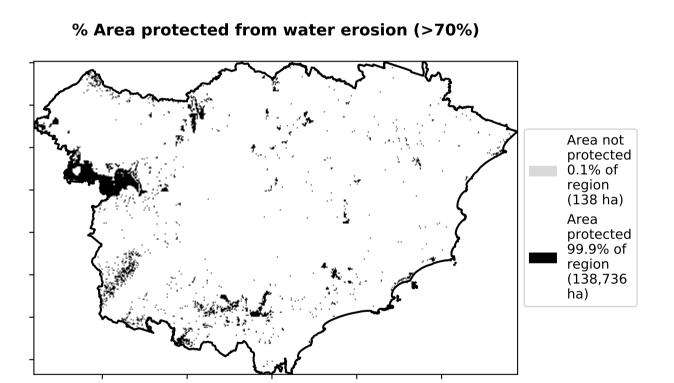


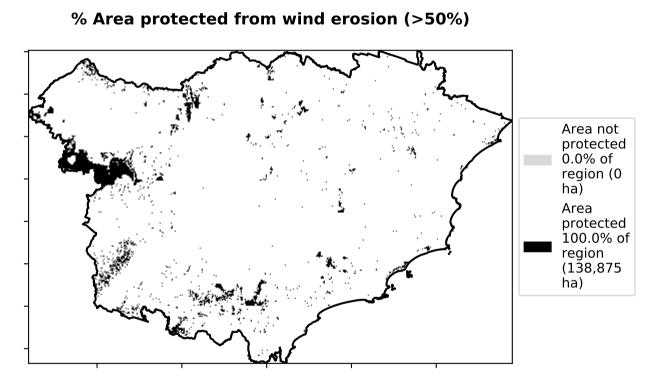
Conservation and natural environments Woodland forest

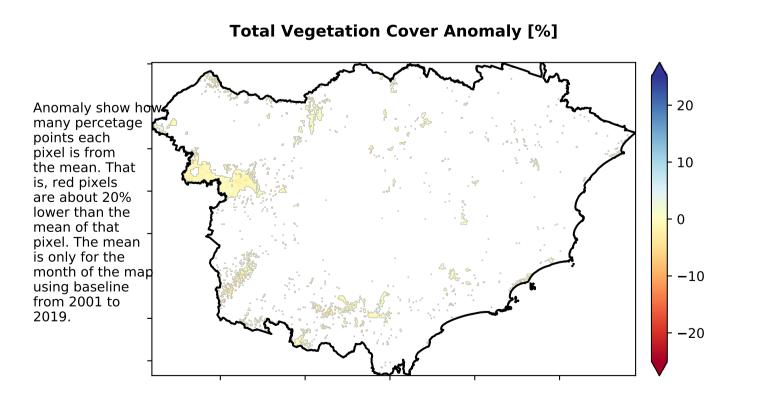


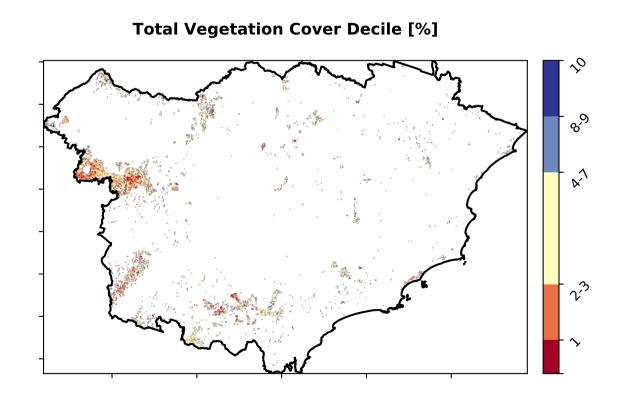
















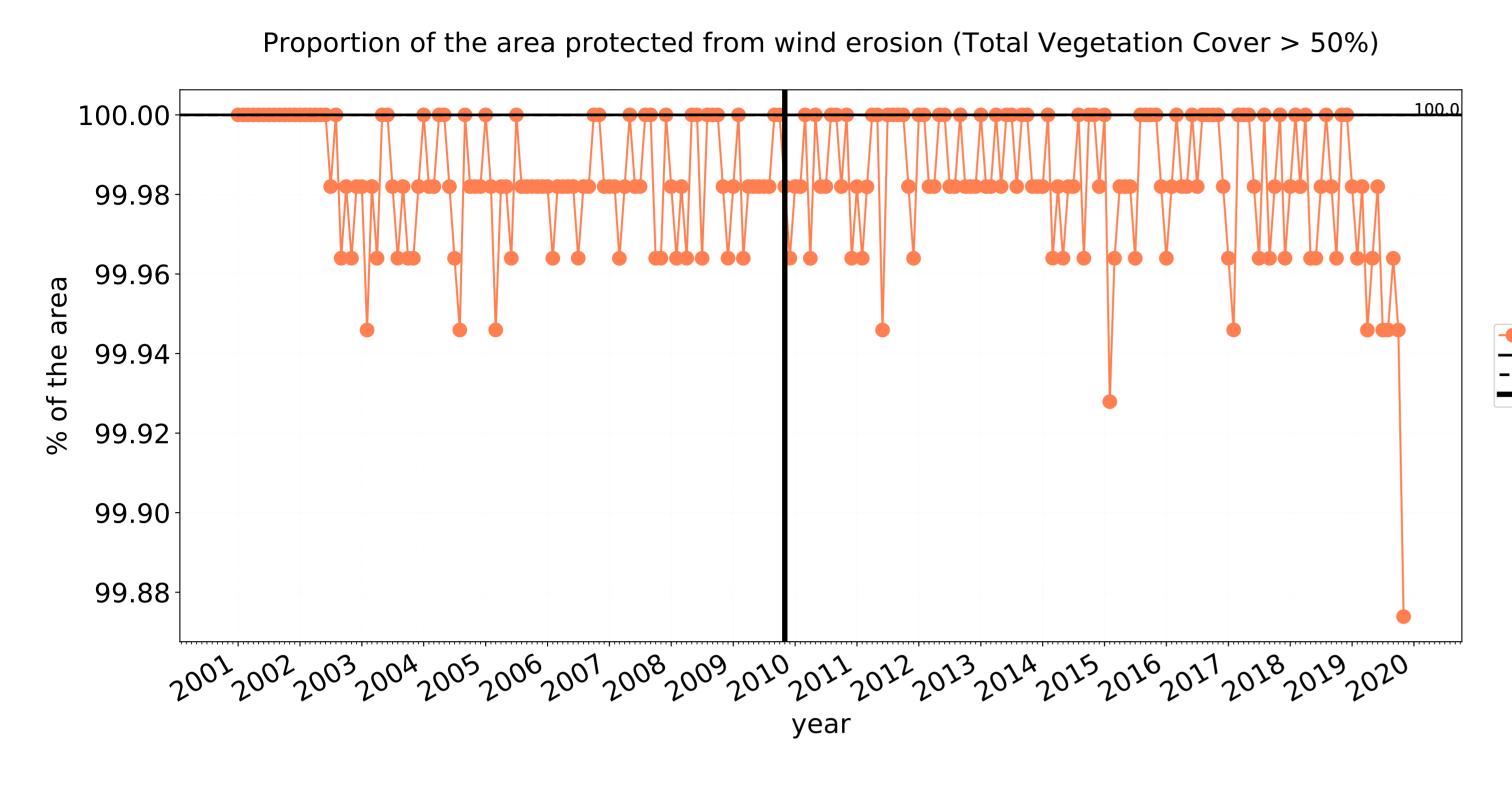


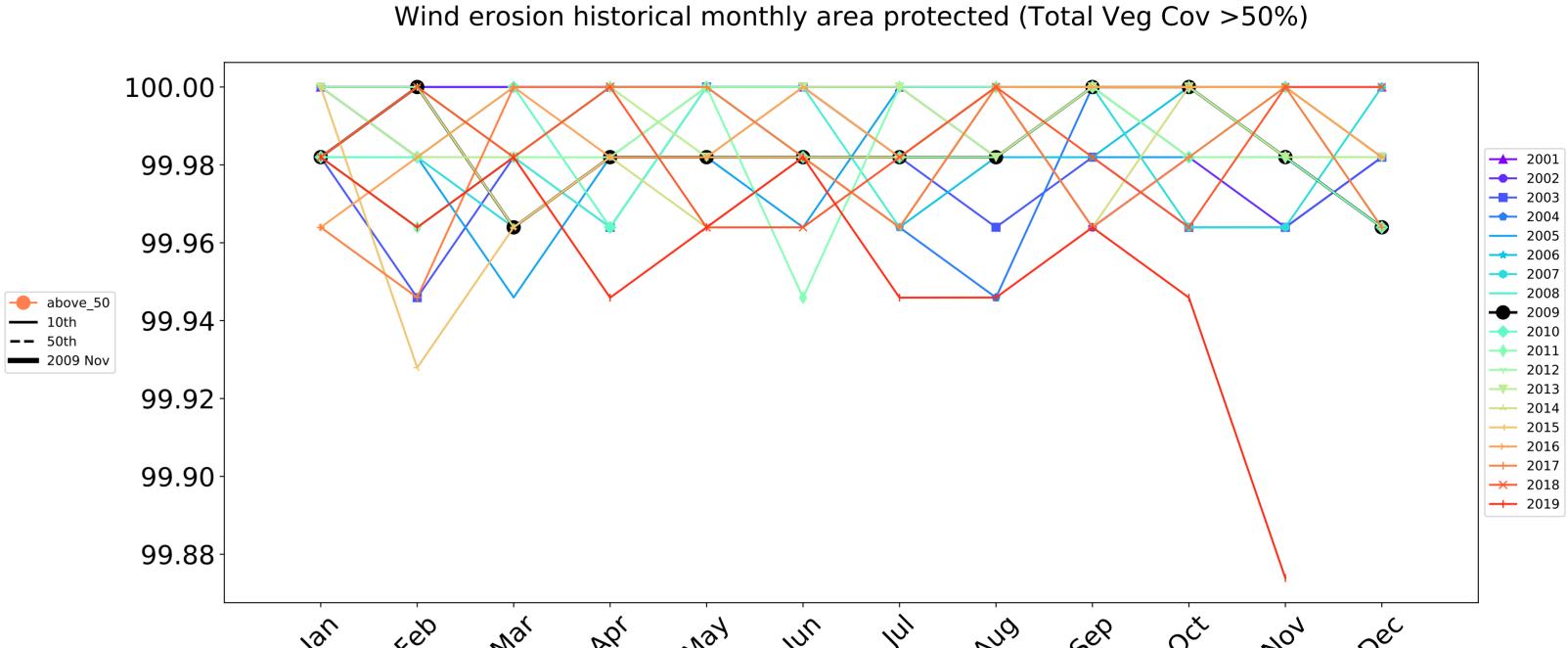




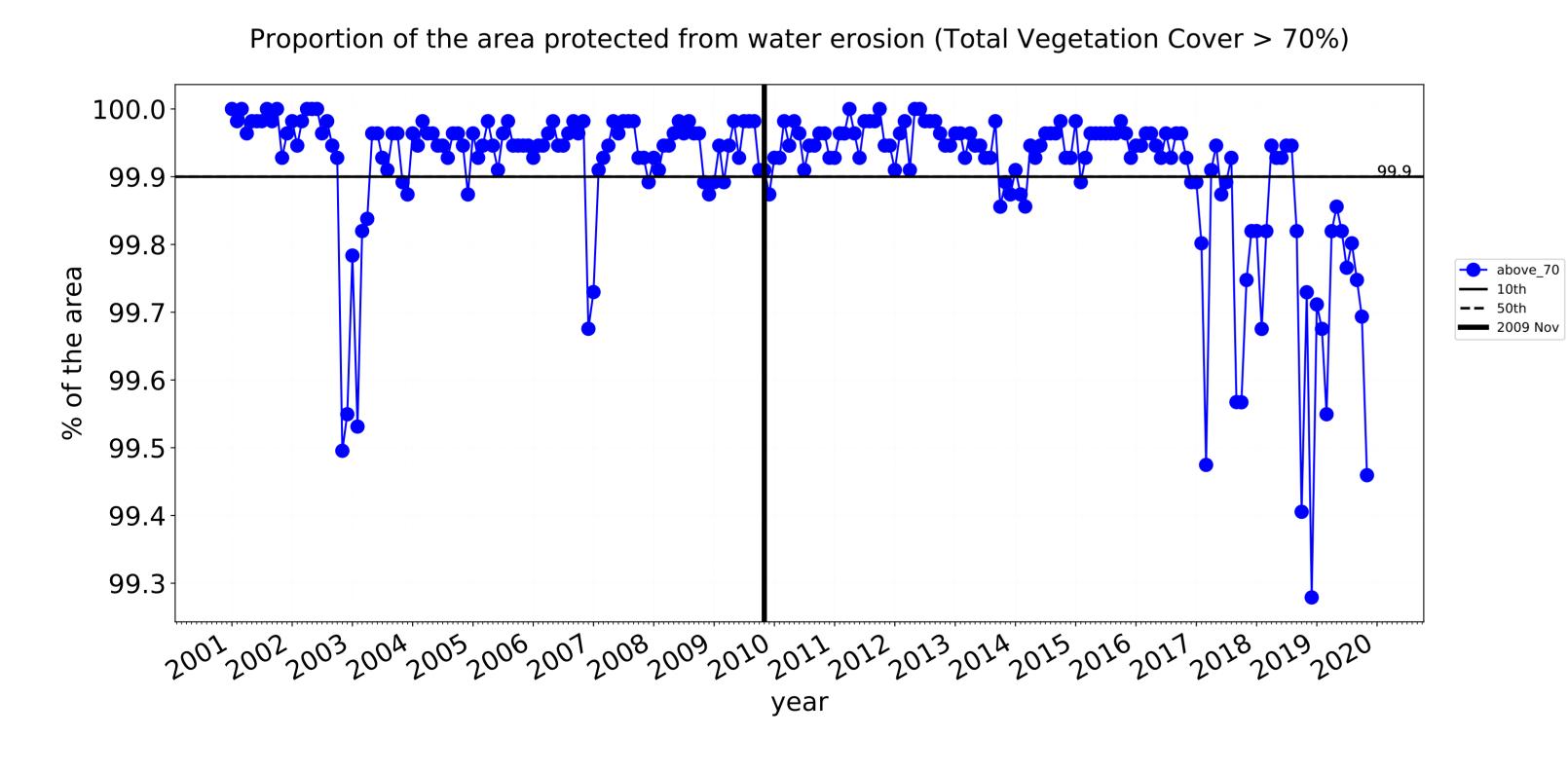


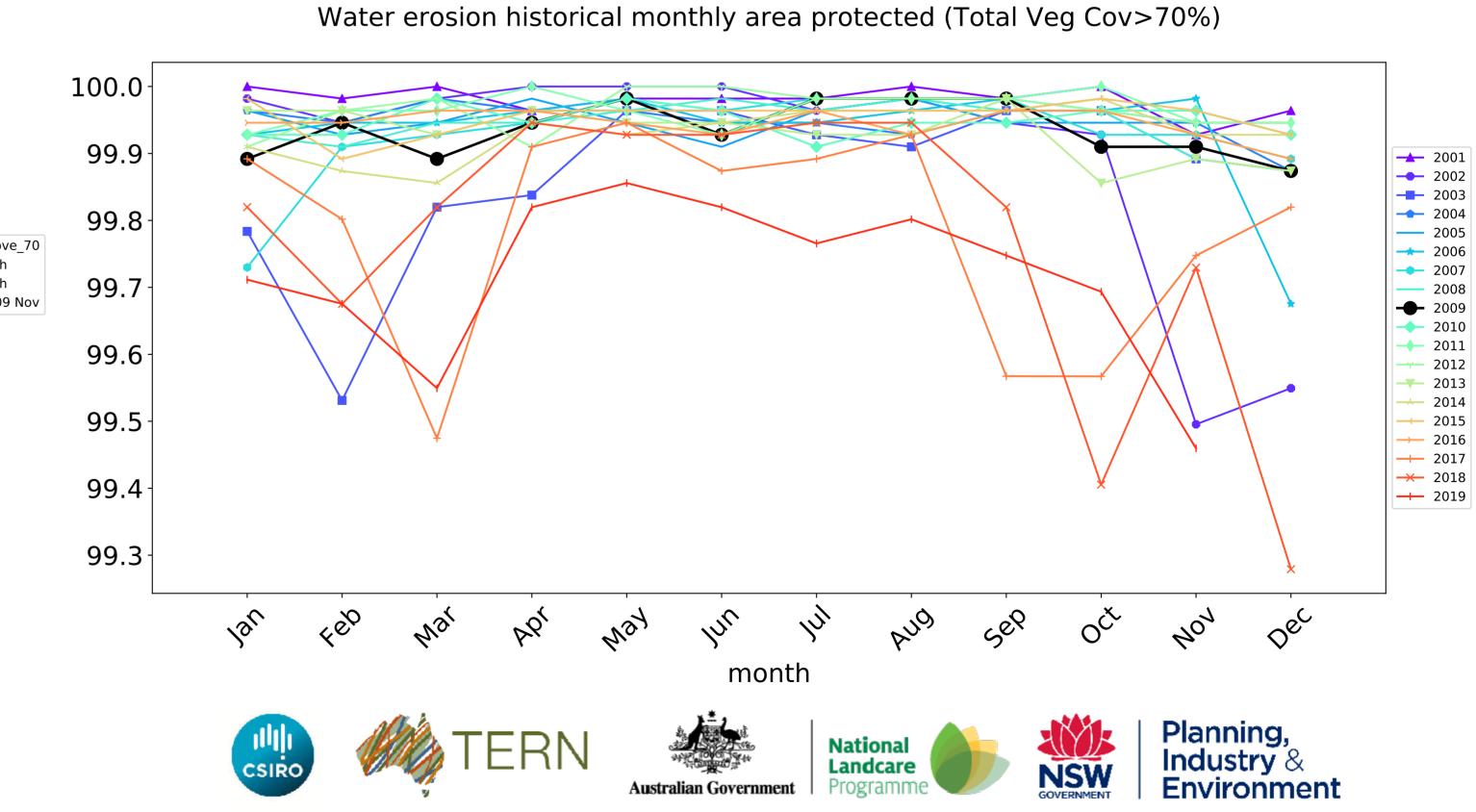
Conservation and natural environments Woodland forest timeseries

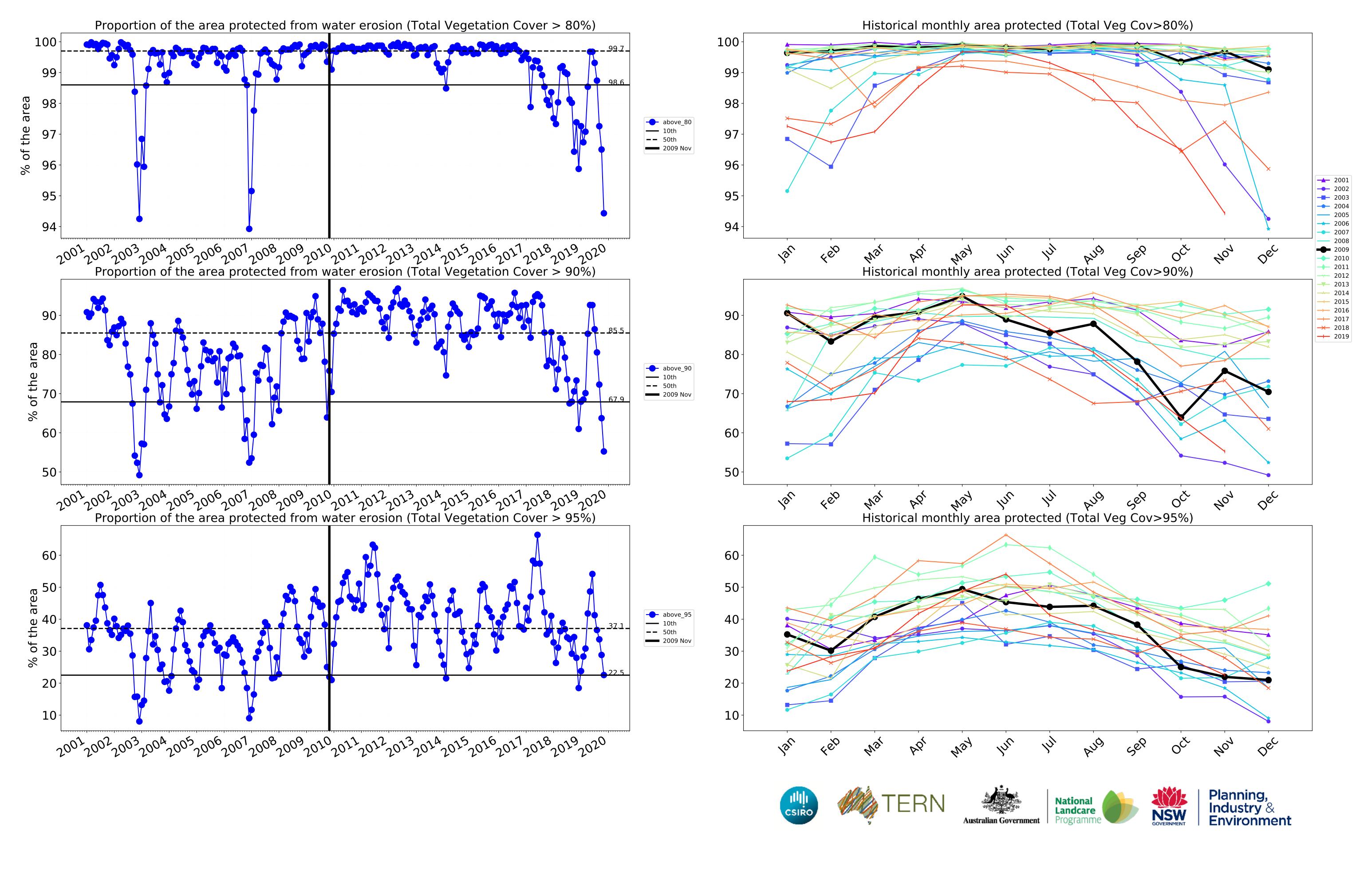




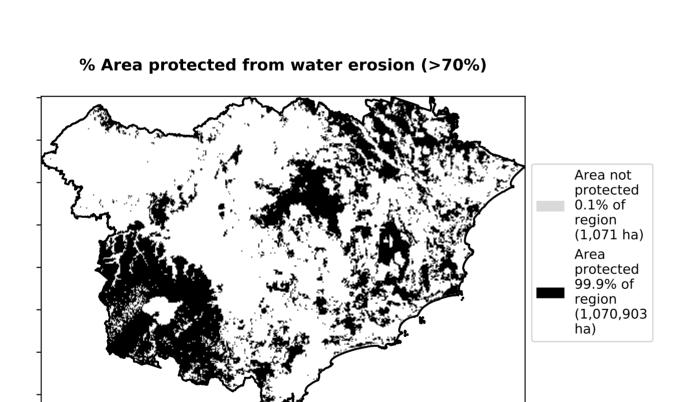
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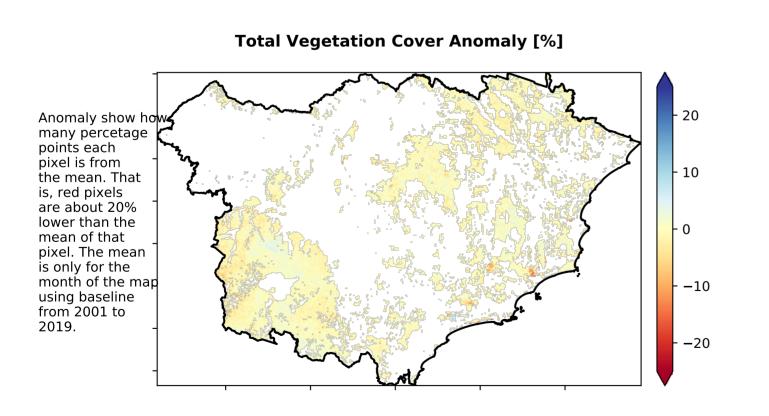


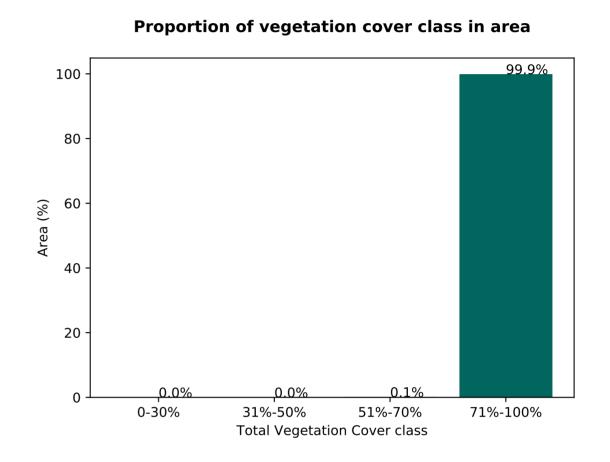


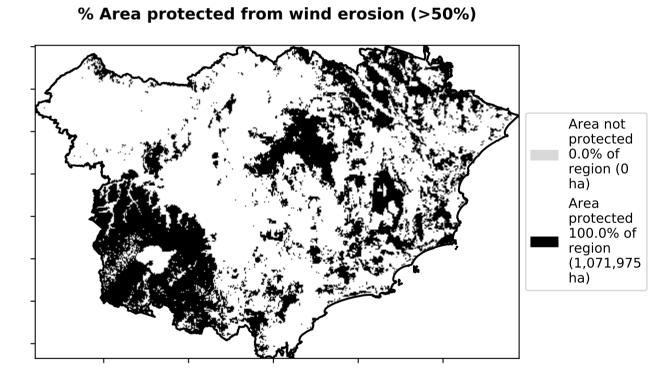


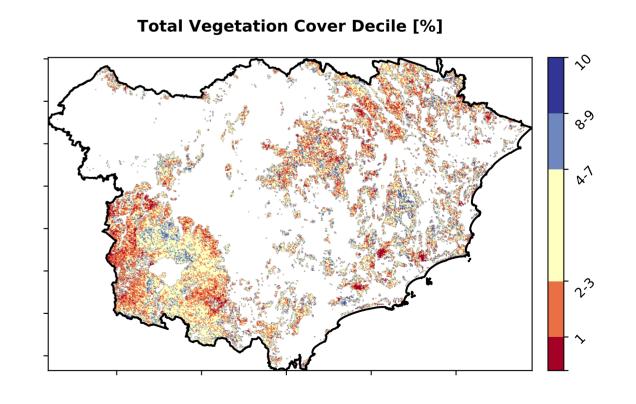
Total Vegetation Cover [%] Total Vegetation Cover [%] Teleption Teleption















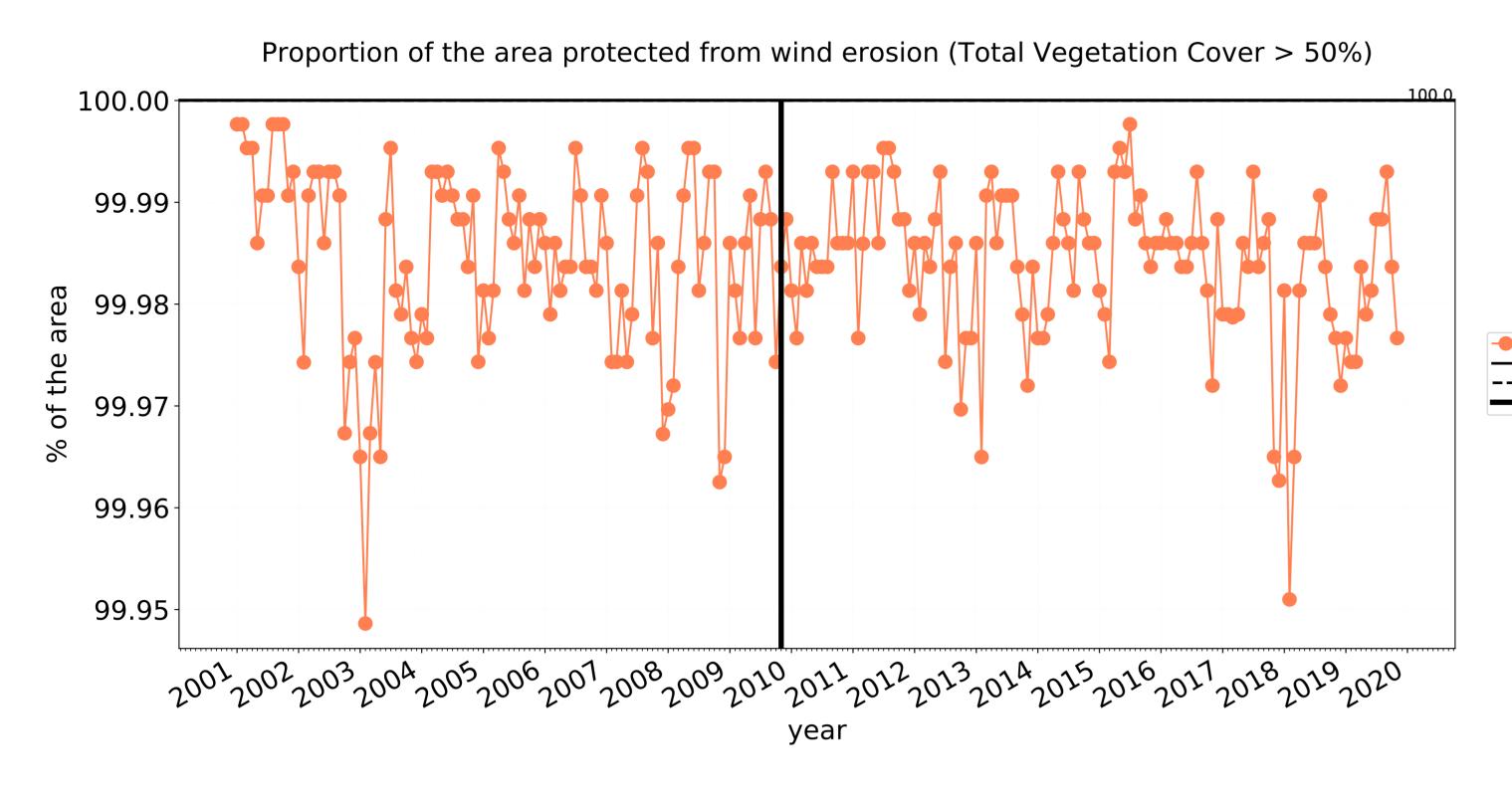


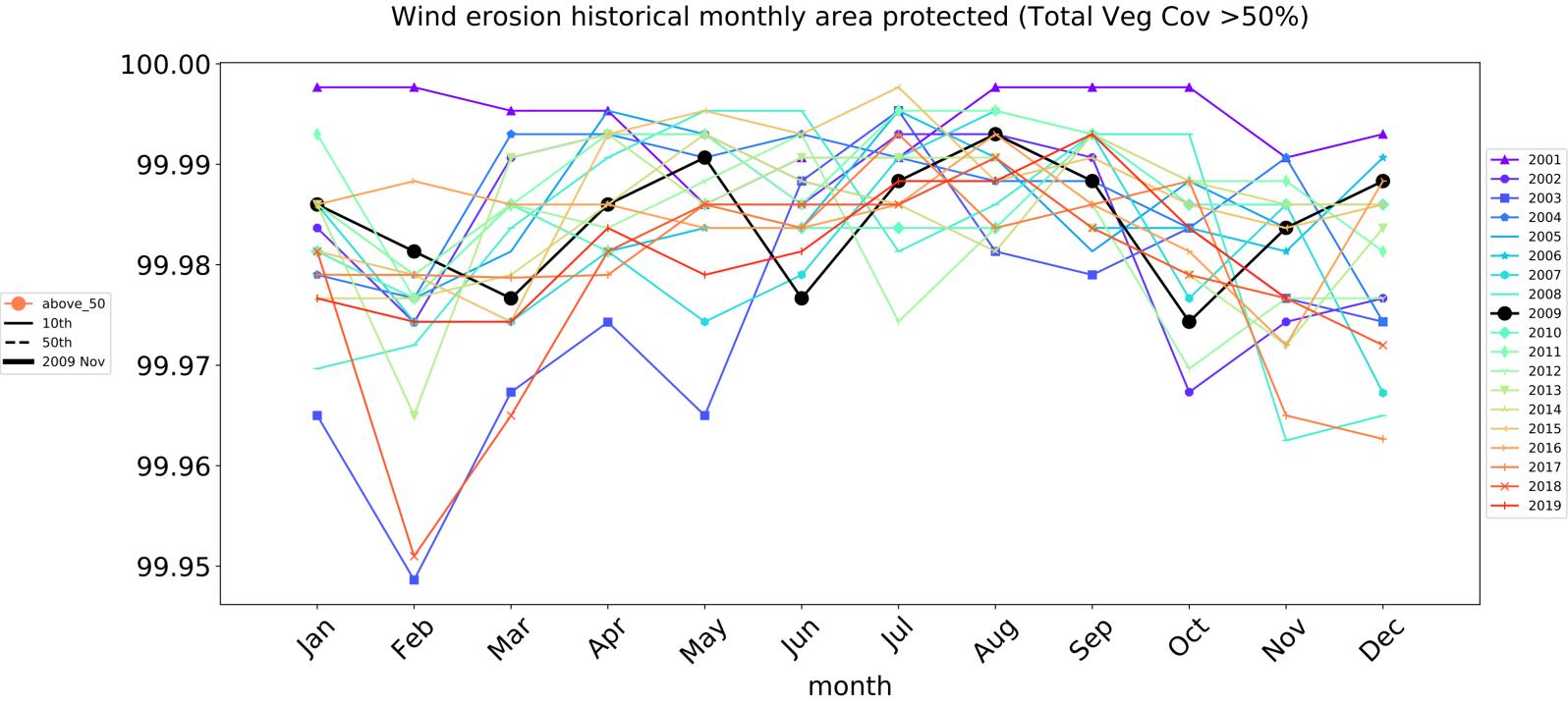


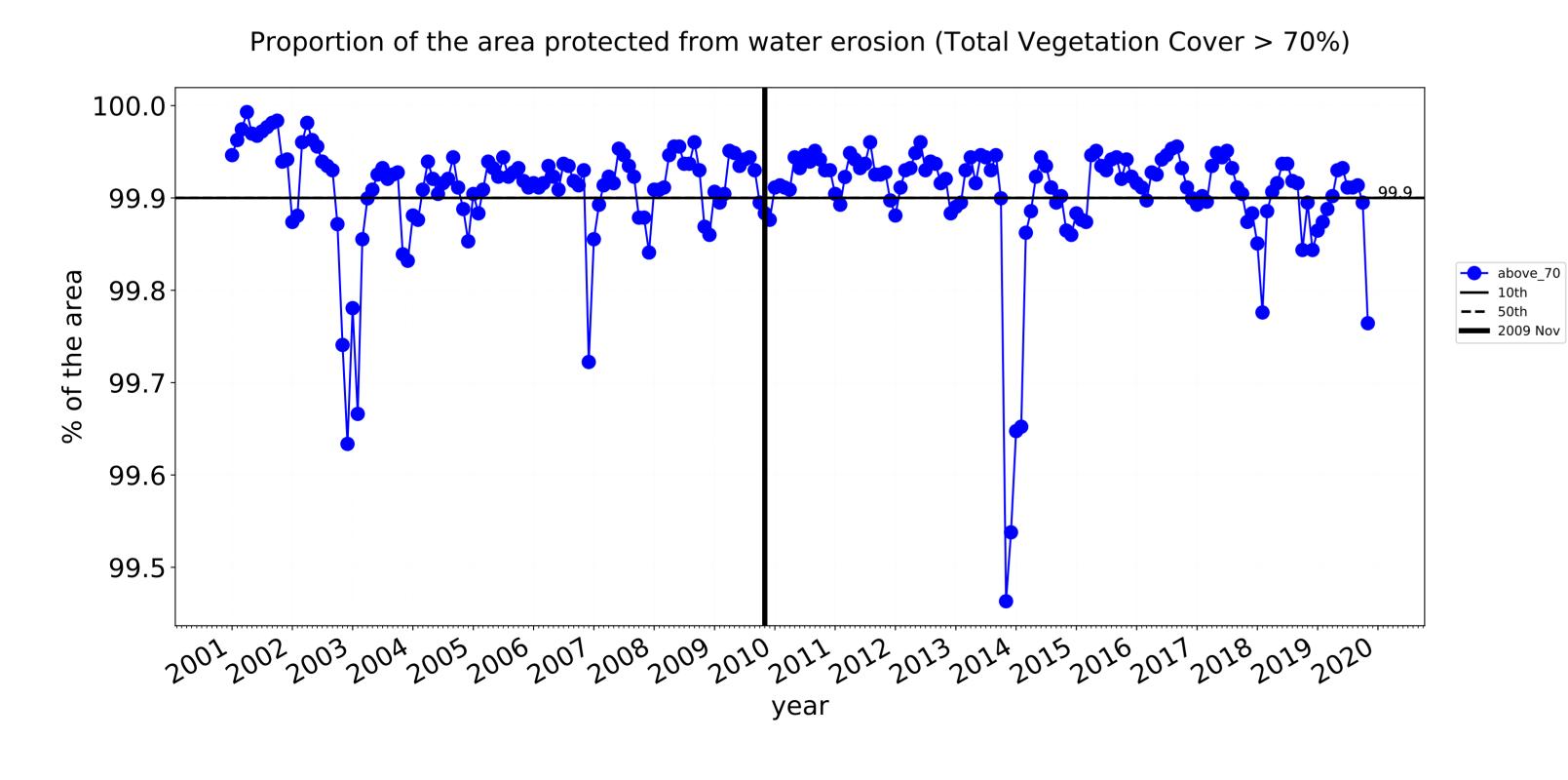


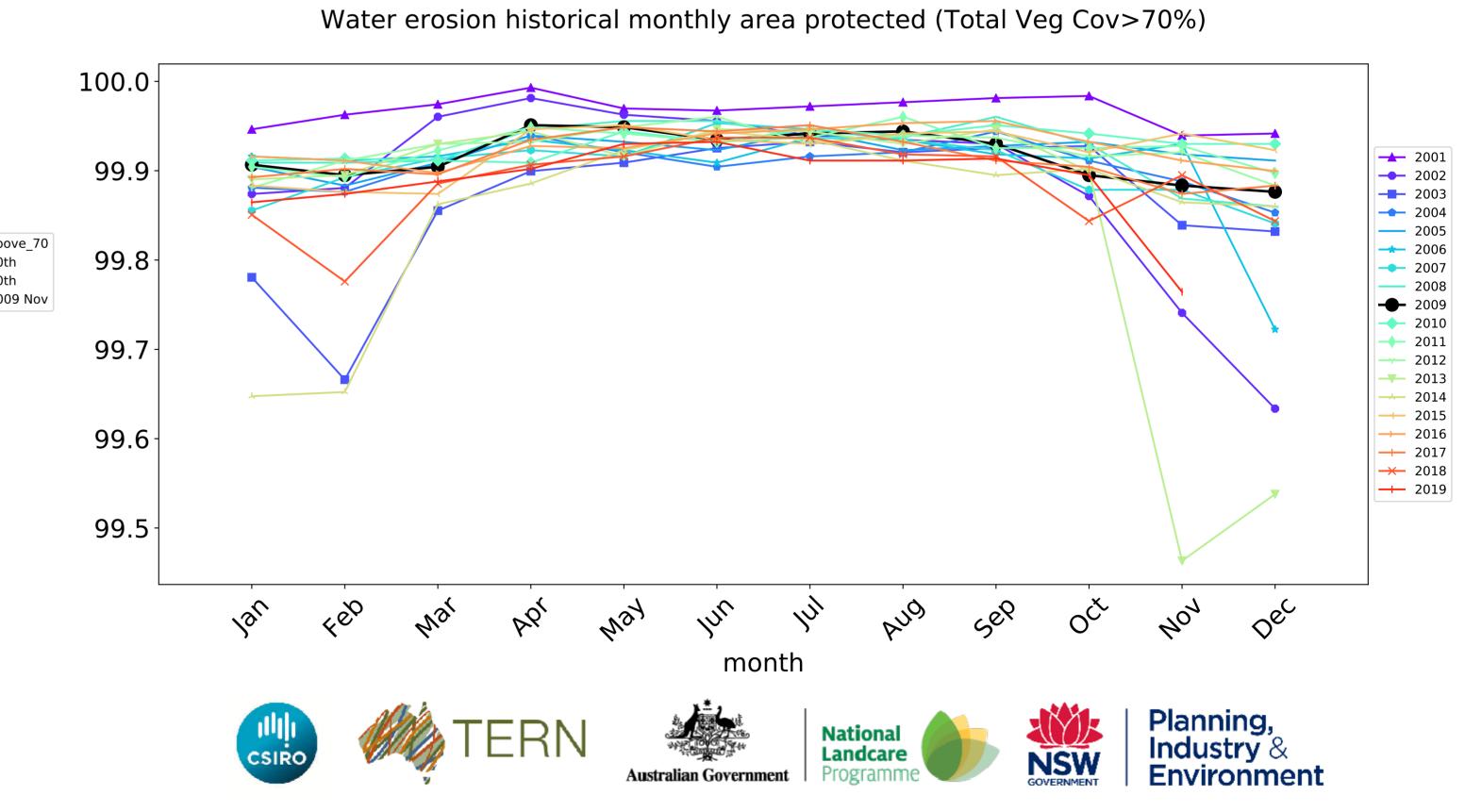


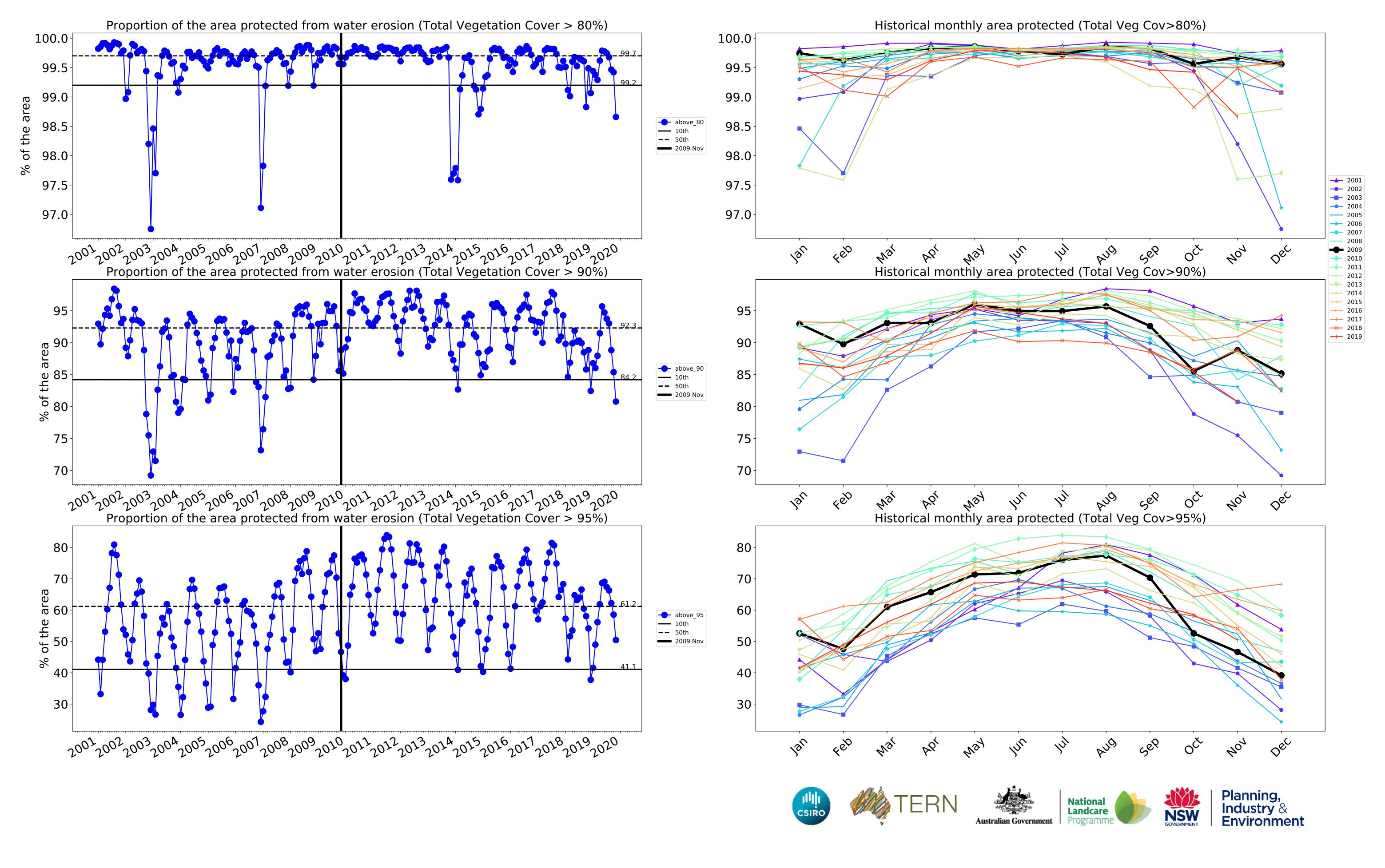
Conservation and natural environments Forest (non woodland) timeseries



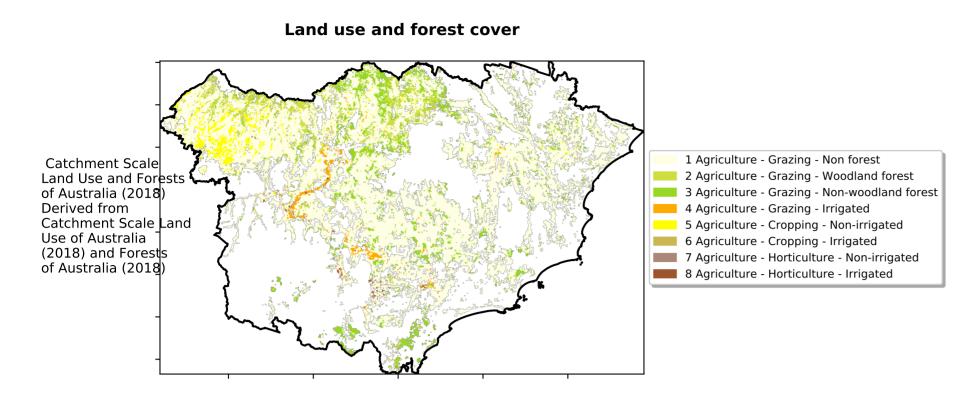


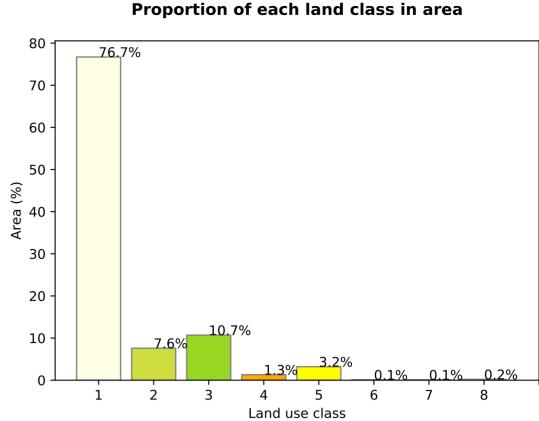


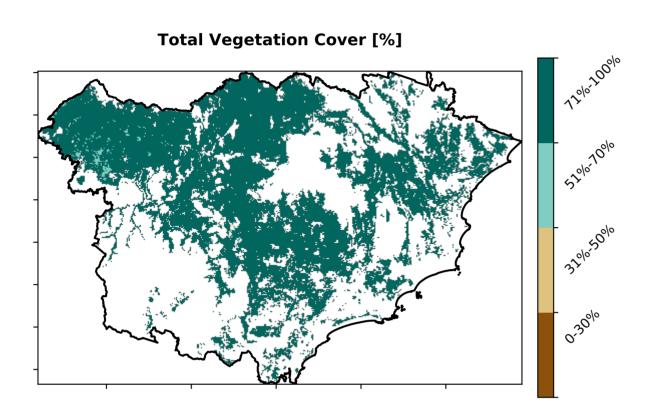


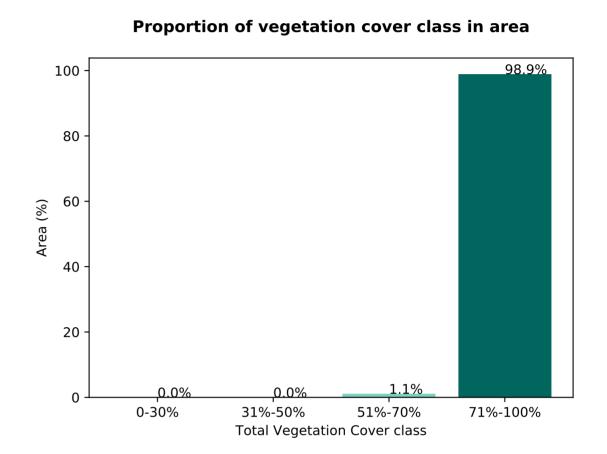


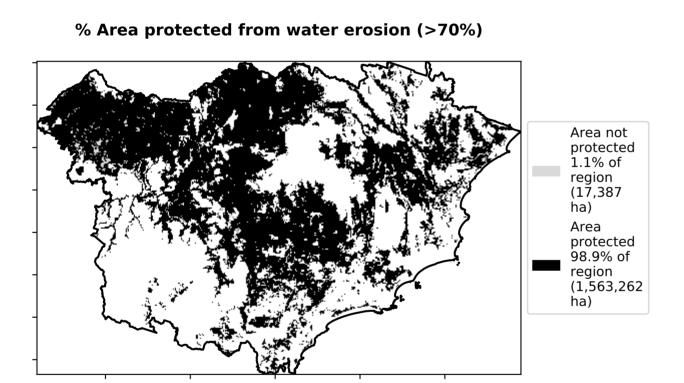
Agriculture

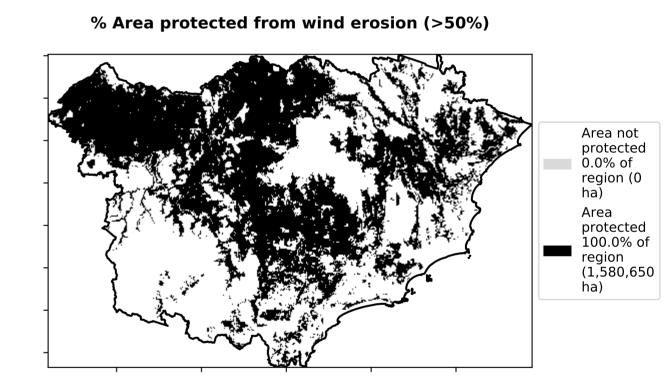


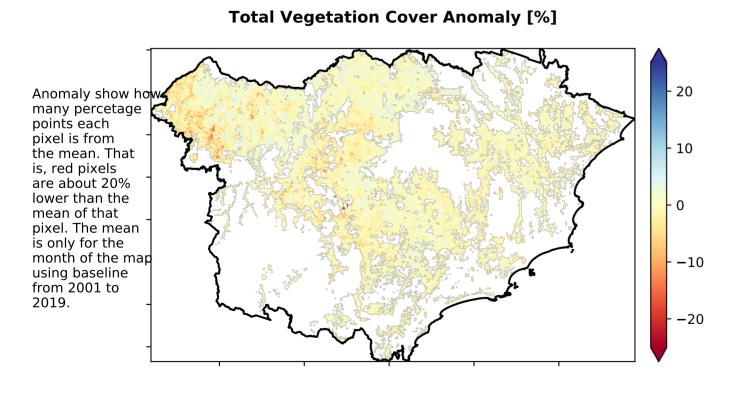


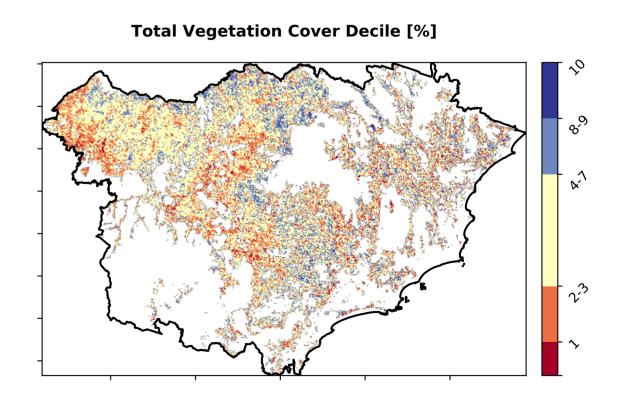
















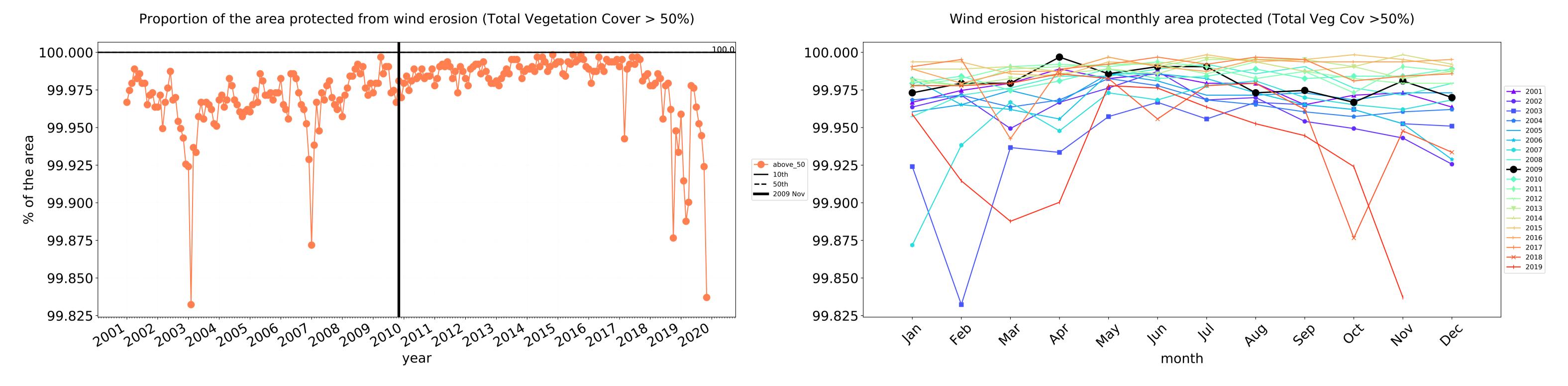


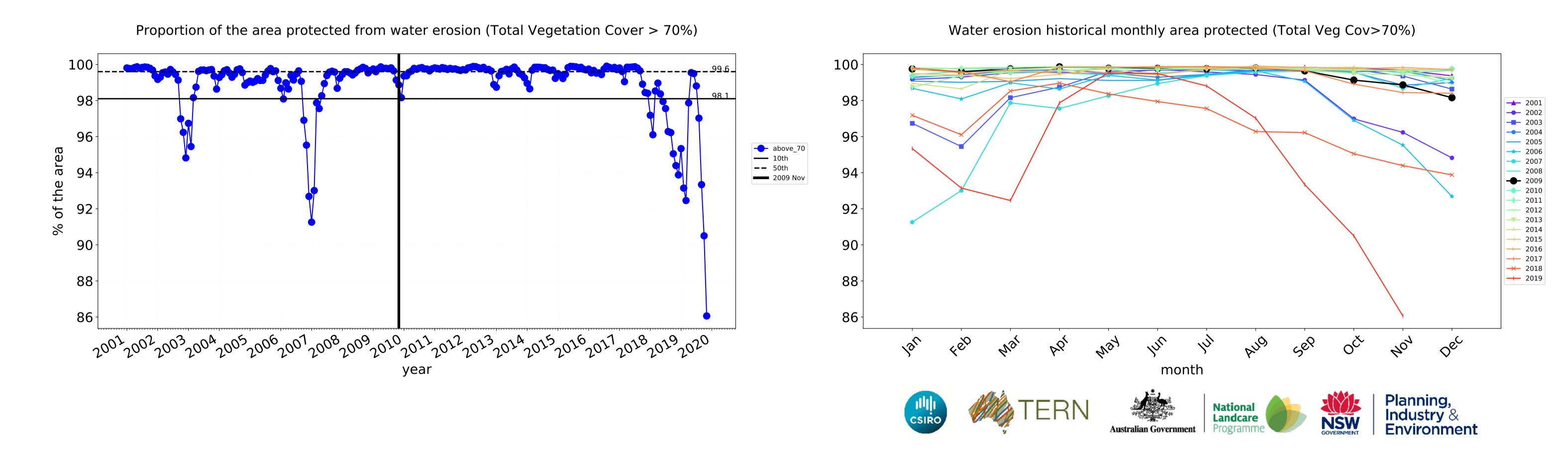


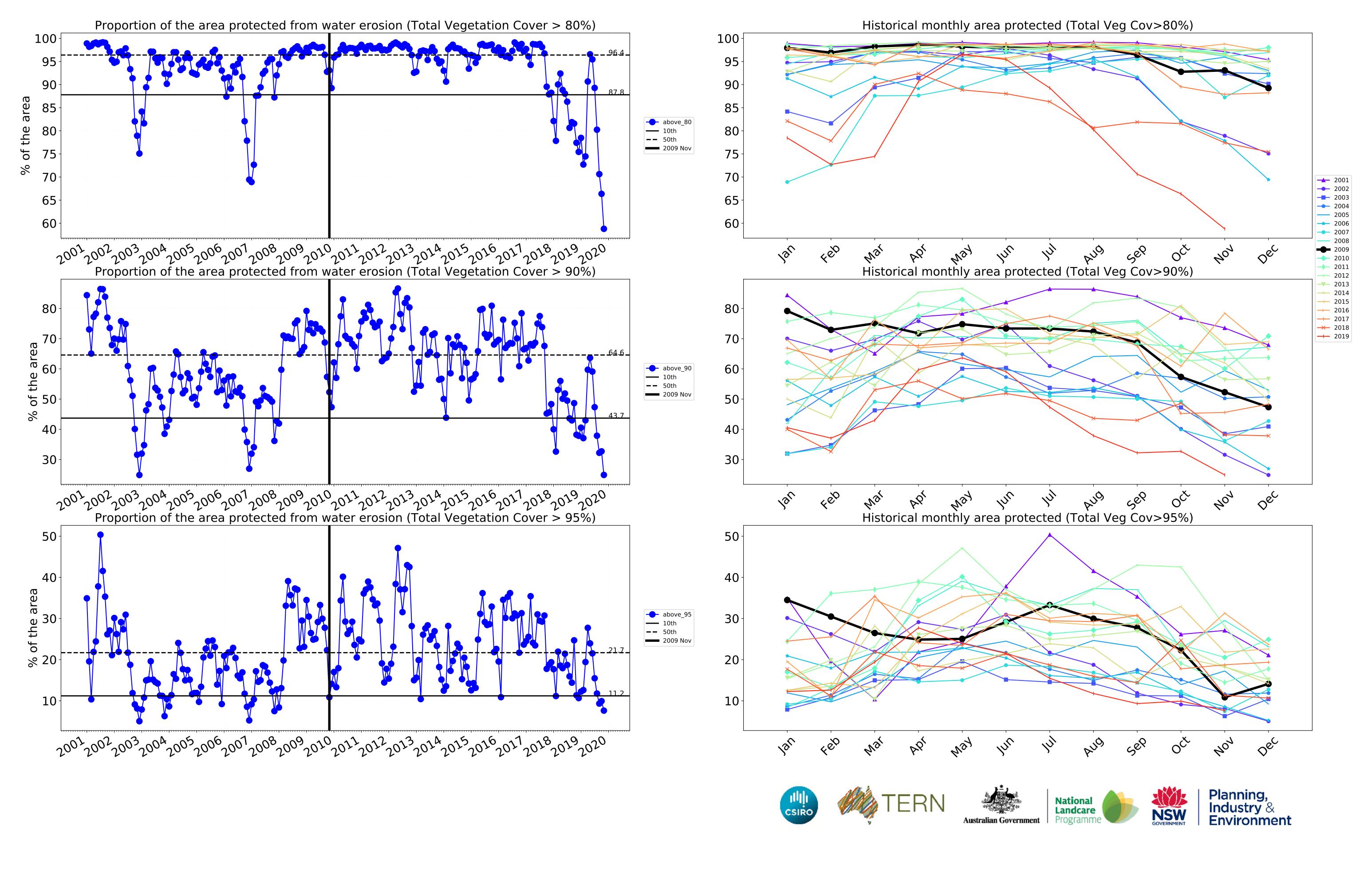




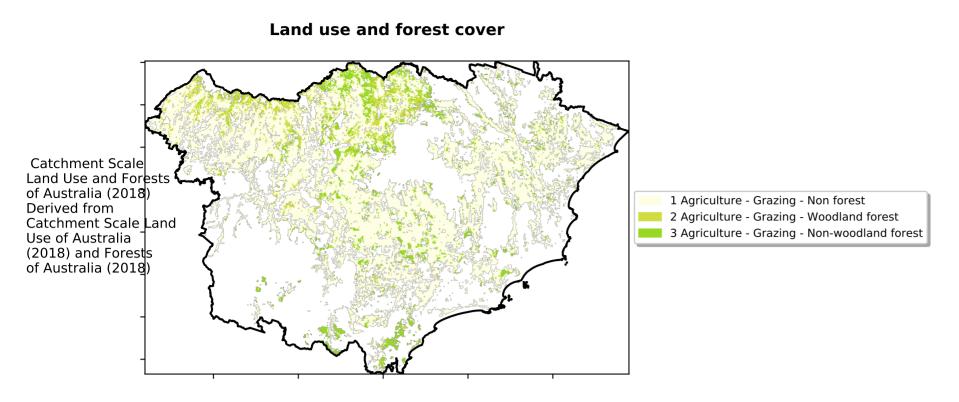
Agriculture timeseries



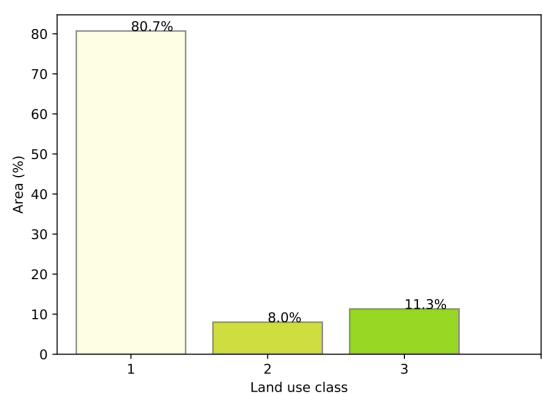




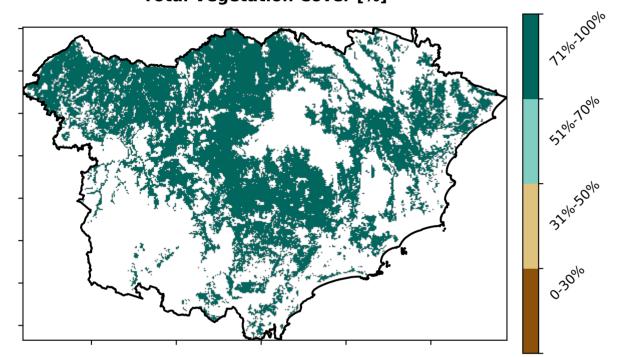
Grazing



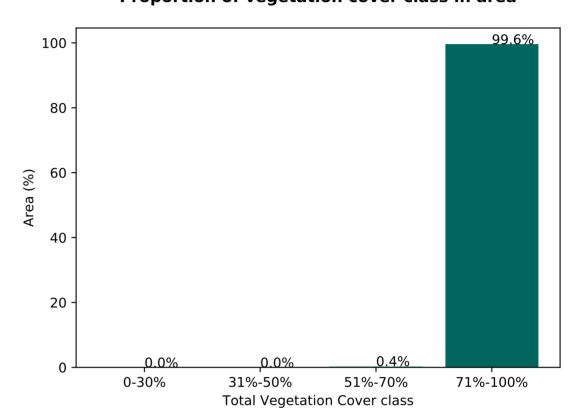
Proportion of each land class in area



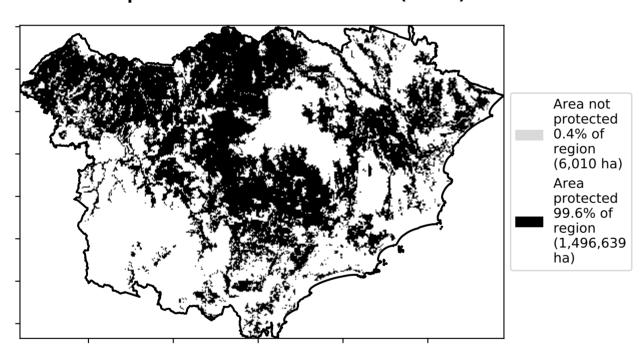
Total Vegetation Cover [%]



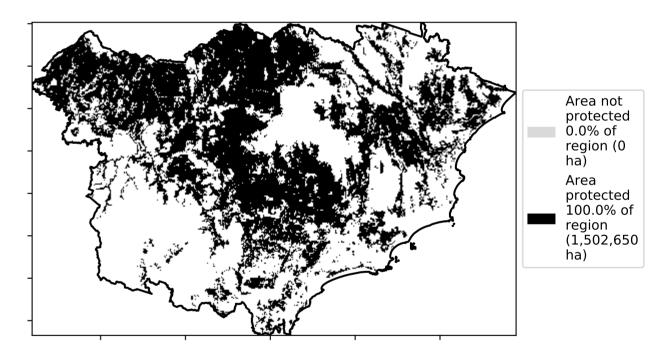
Proportion of vegetation cover class in area



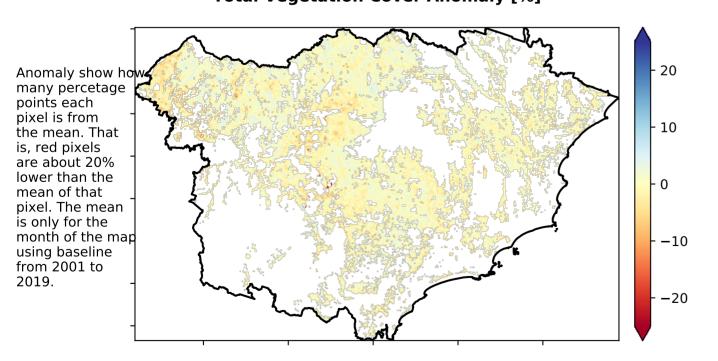
% Area protected from water erosion (>70%)

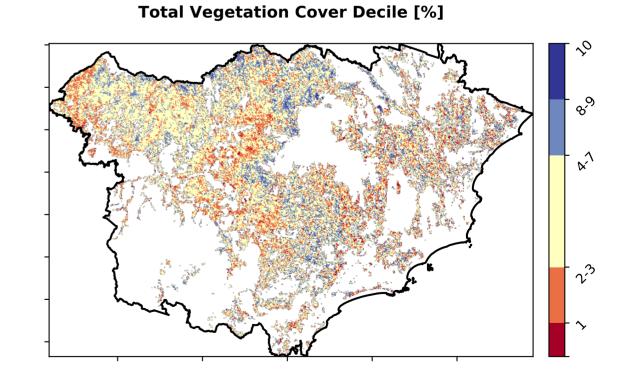


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]









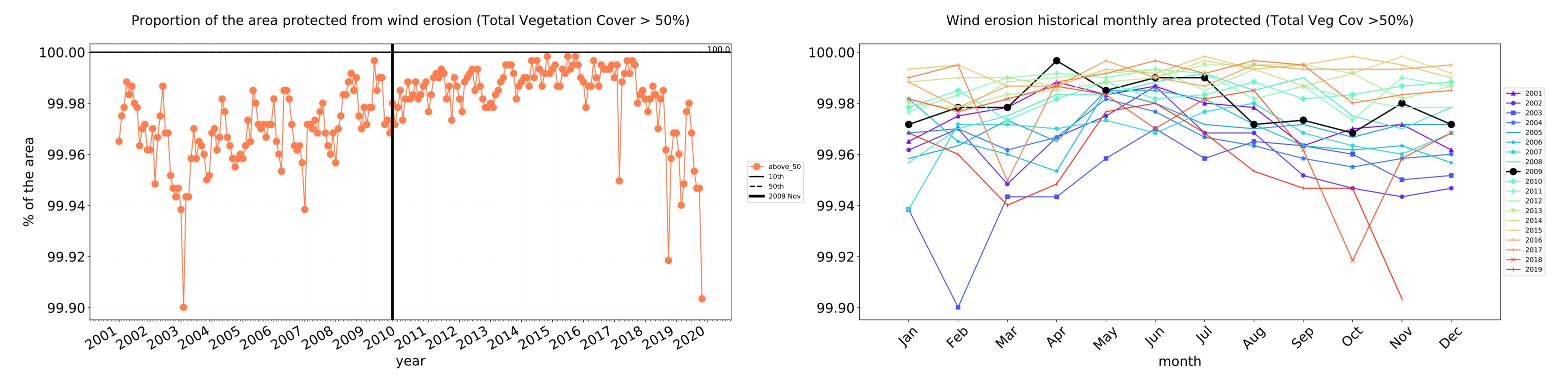


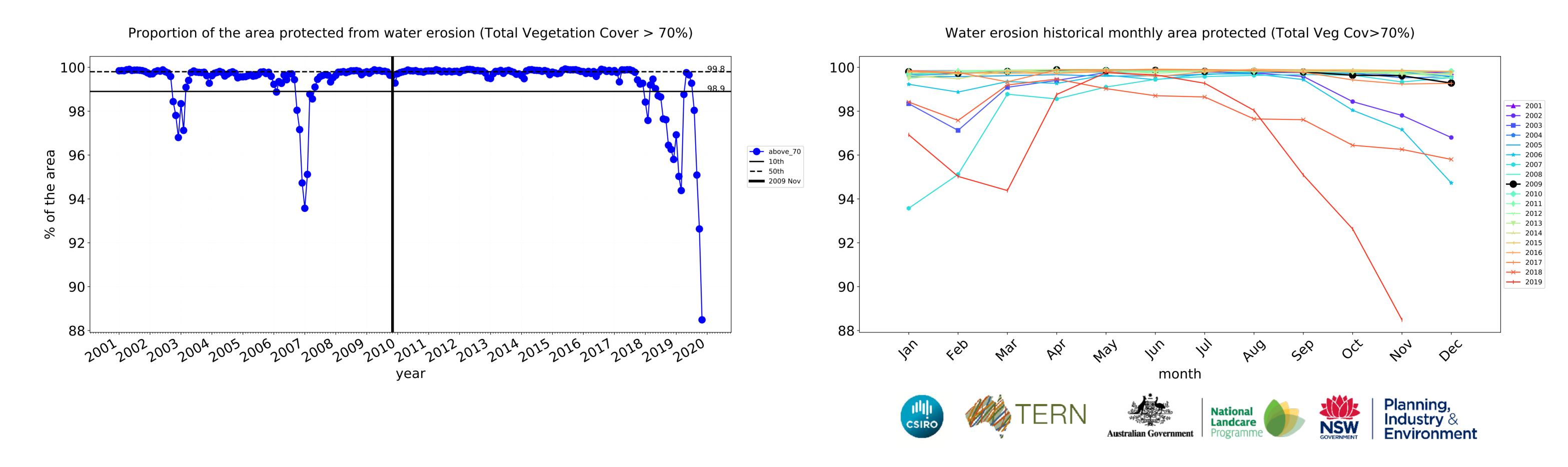


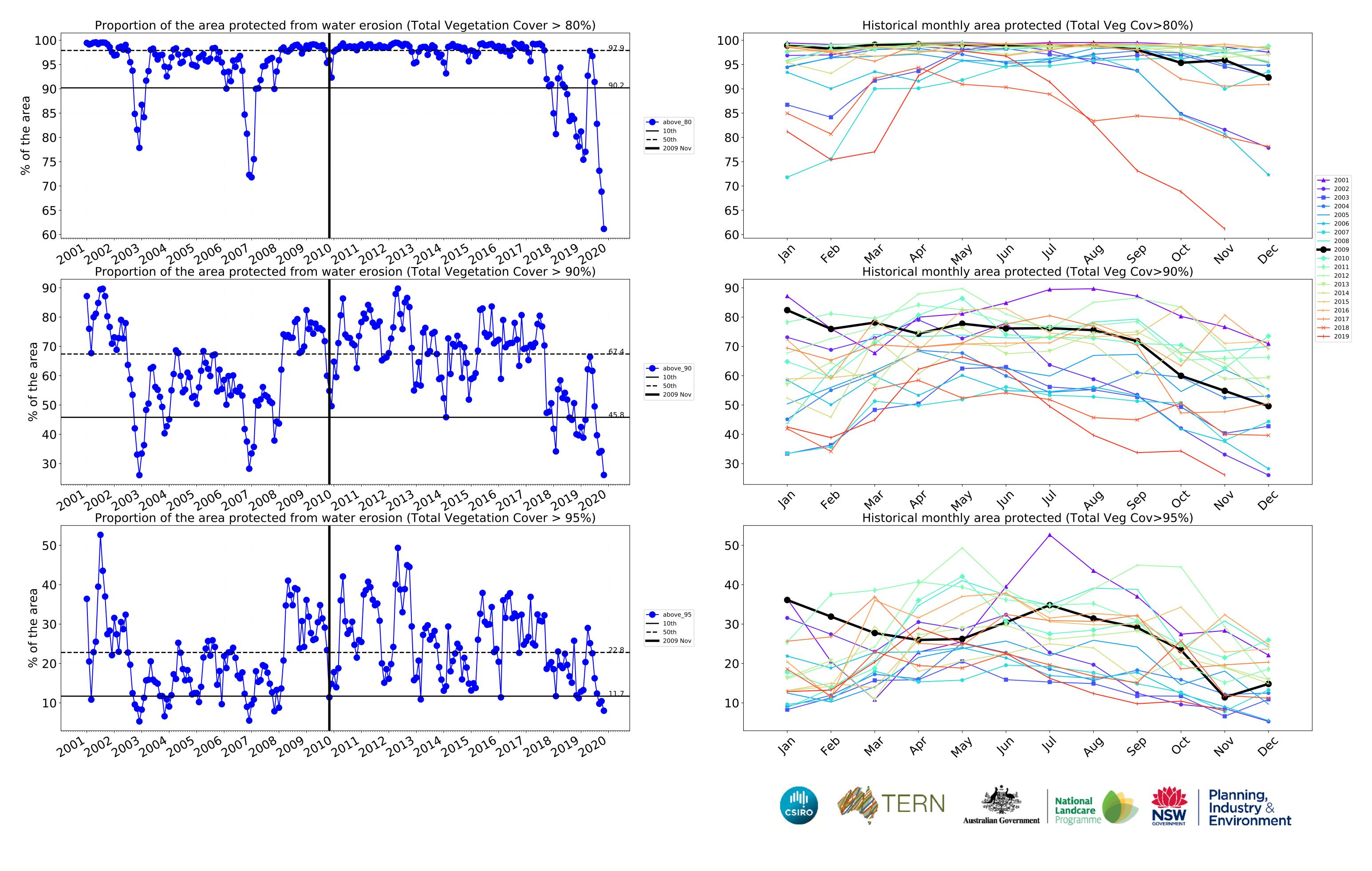




Grazing timeseries

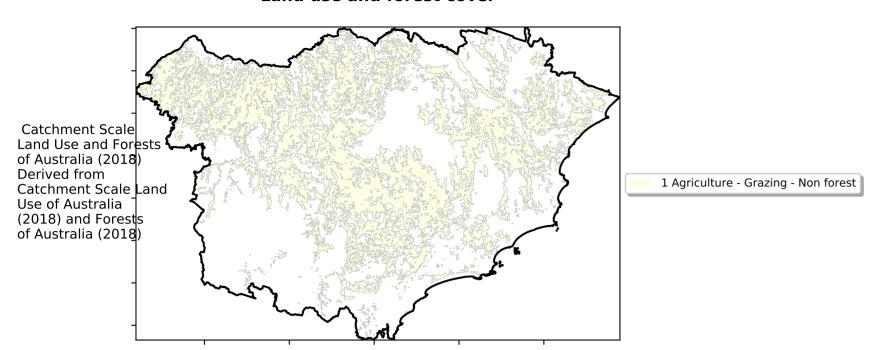




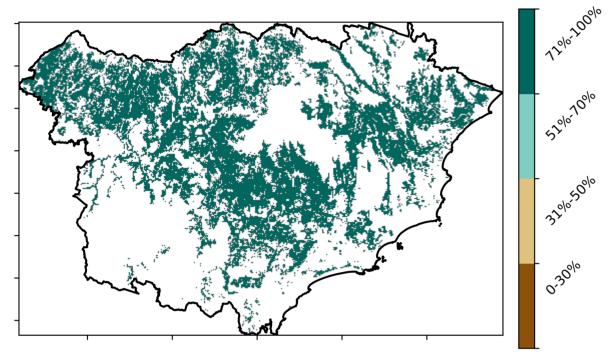


Grazing non forest

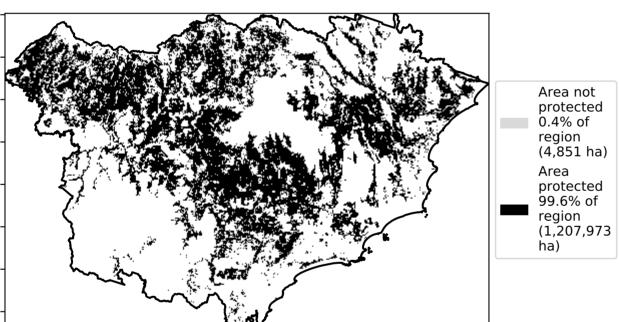
Land use and forest cover

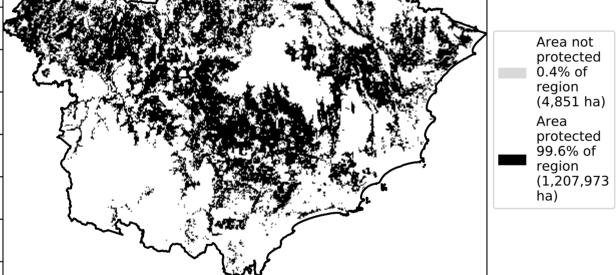


Total Vegetation Cover [%]

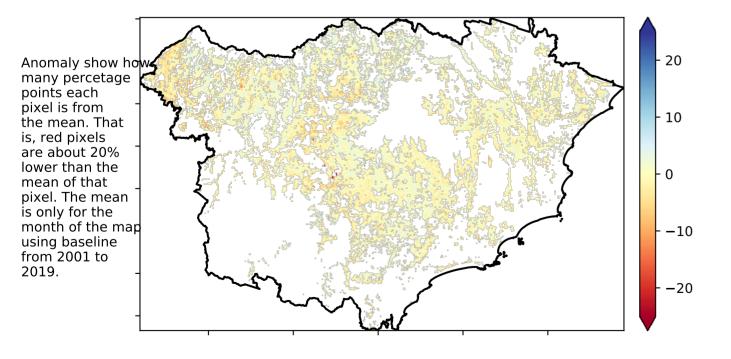


% Area protected from water erosion (>70%)



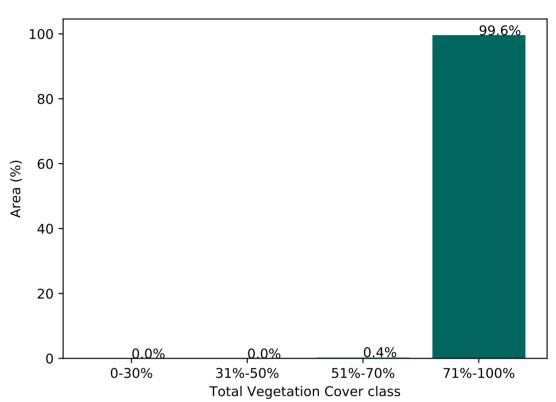


Total Vegetation Cover Anomaly [%]

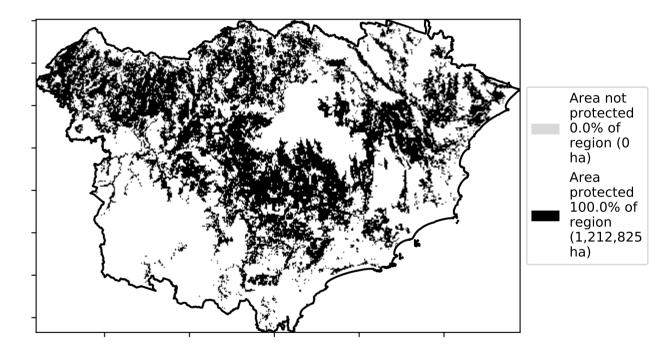


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline. the map using baseline from 2001 to 2019.

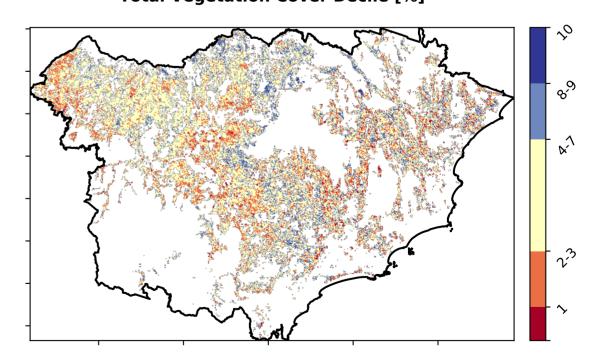
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







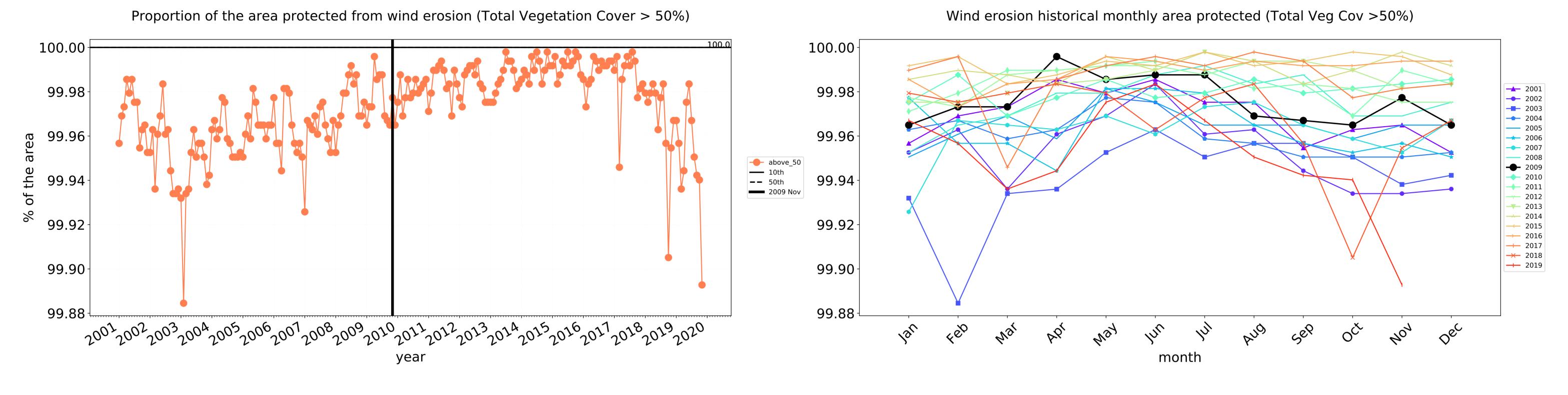


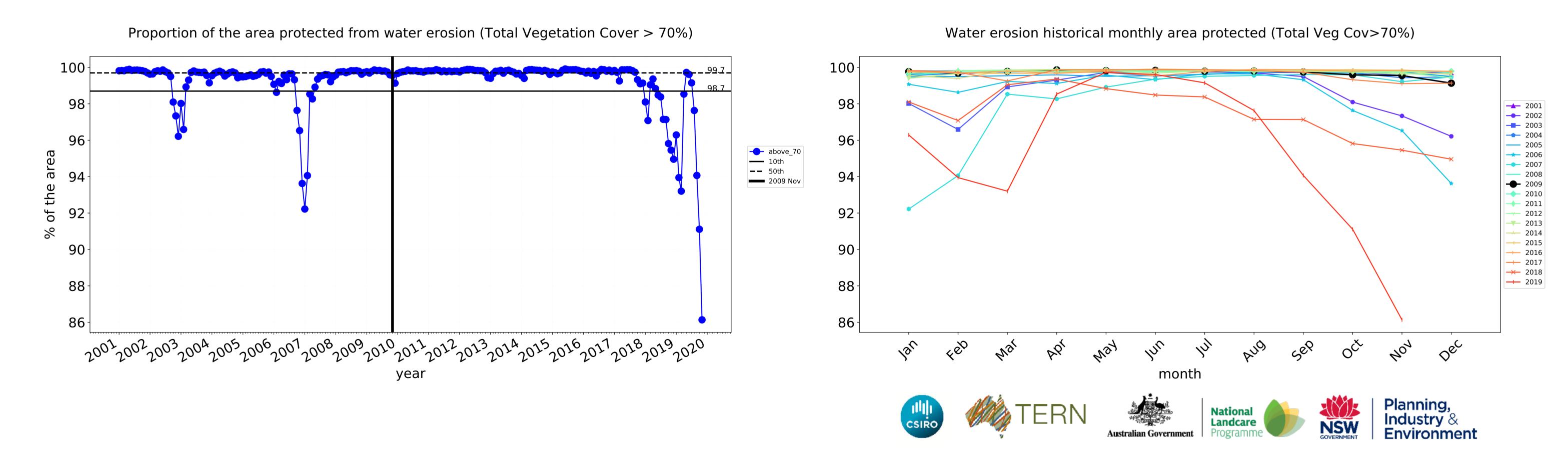


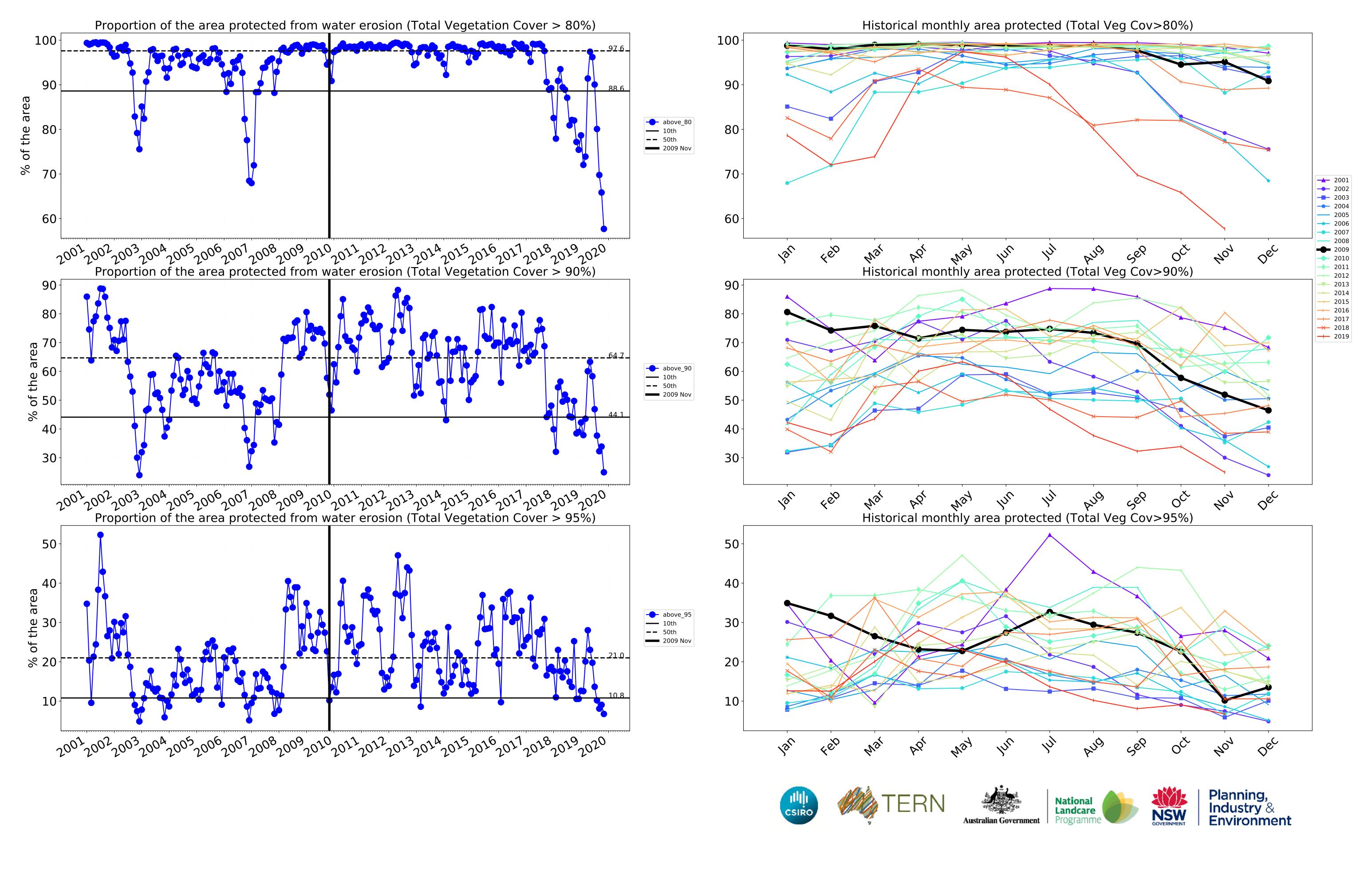




Grazing non forest timeseries





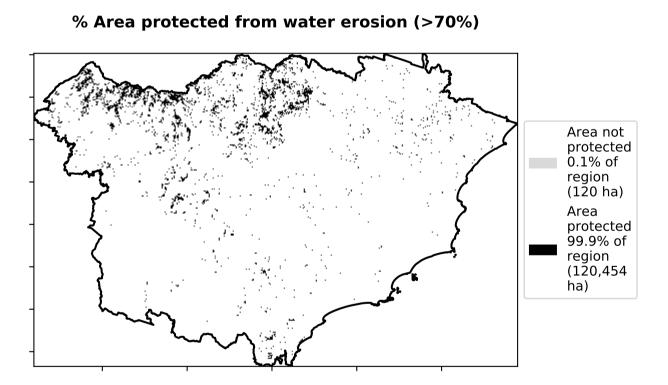


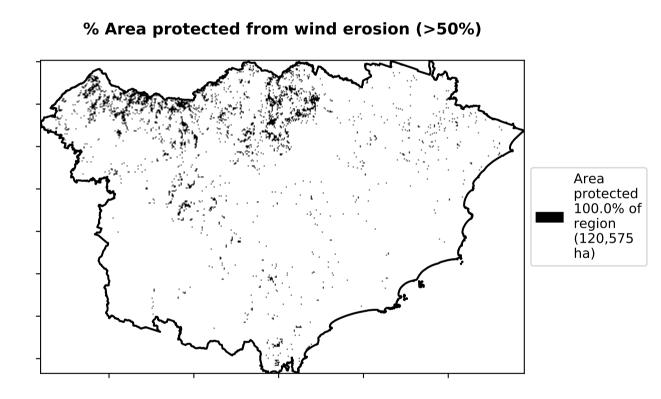
Grazing Woodland forest

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)

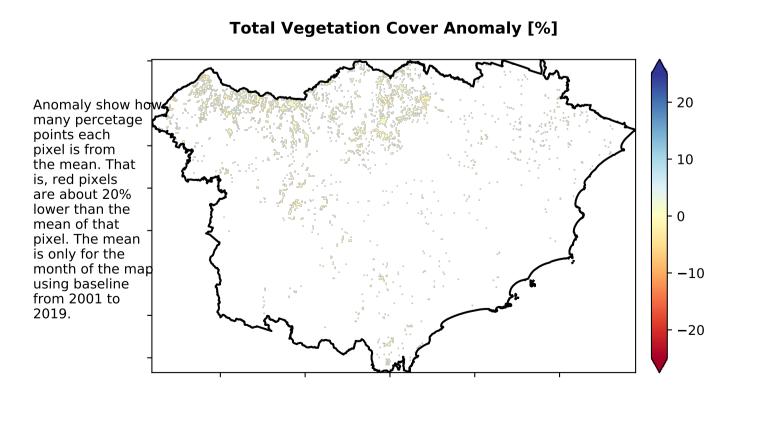
Total Vegetation Cover [%]

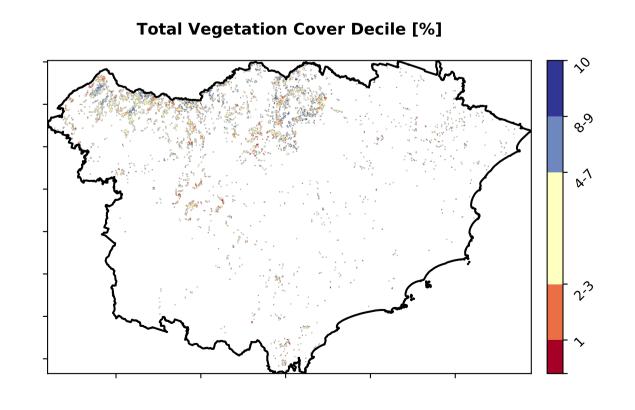
99.9% 100 80 Area (%) 40 20 -0.1% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**





Proportion of vegetation cover class in area









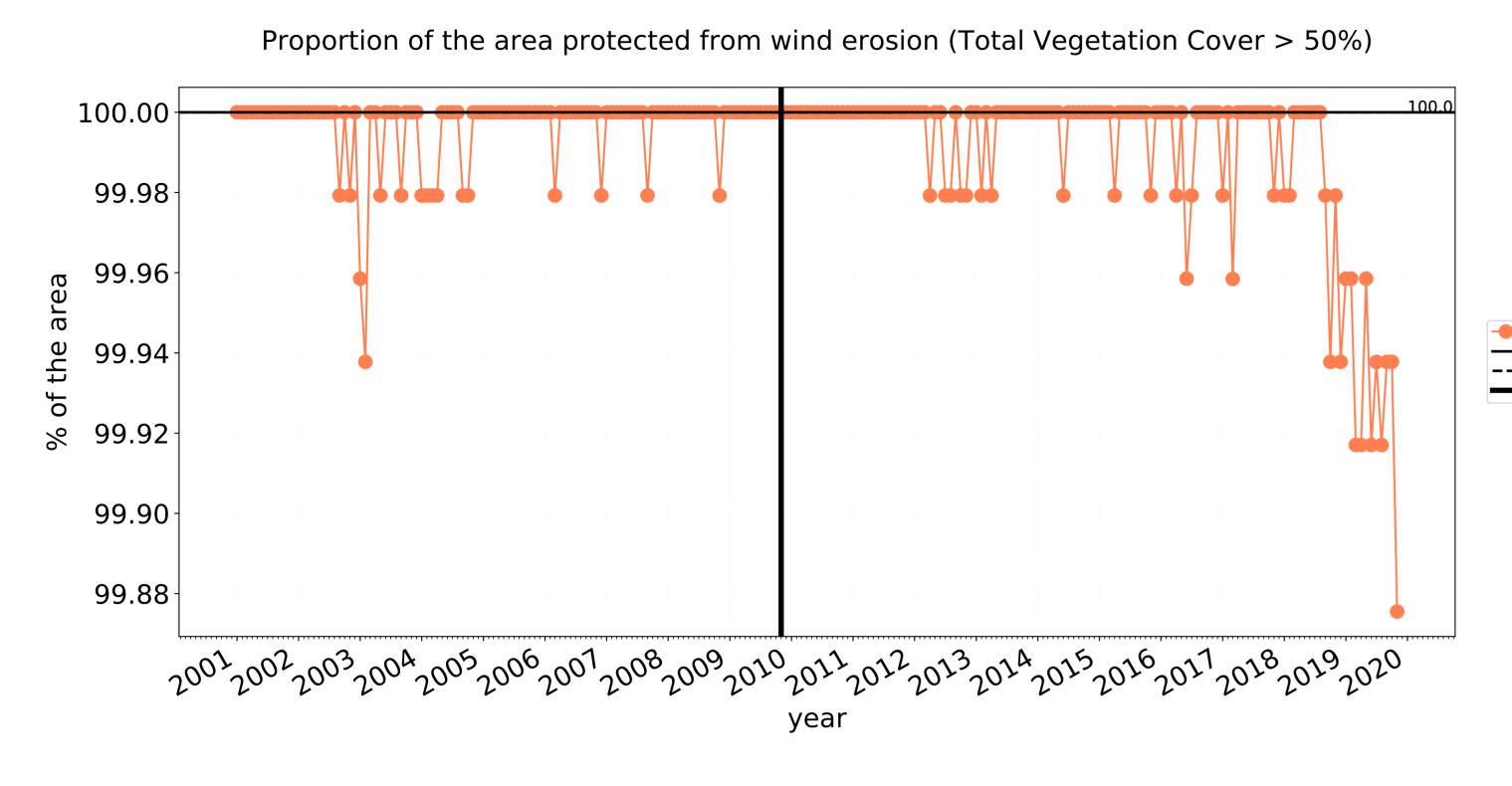


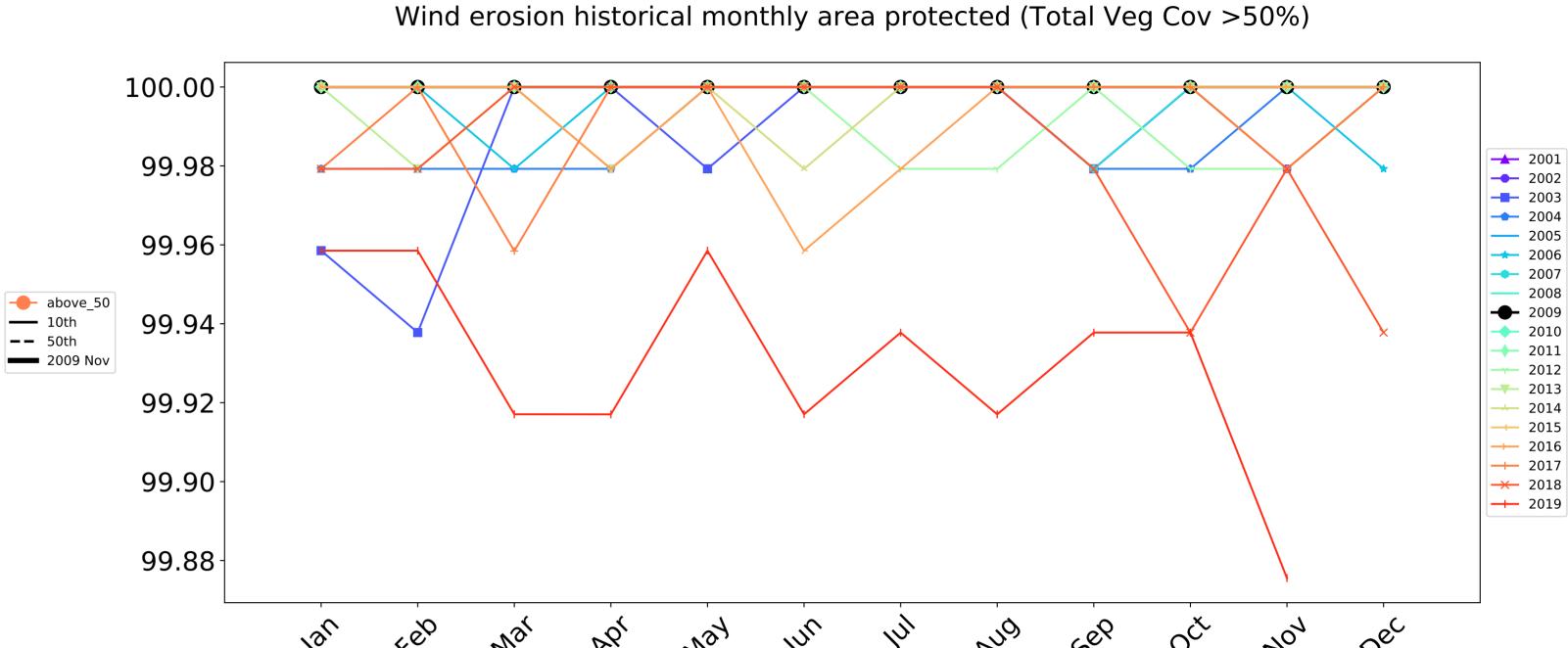




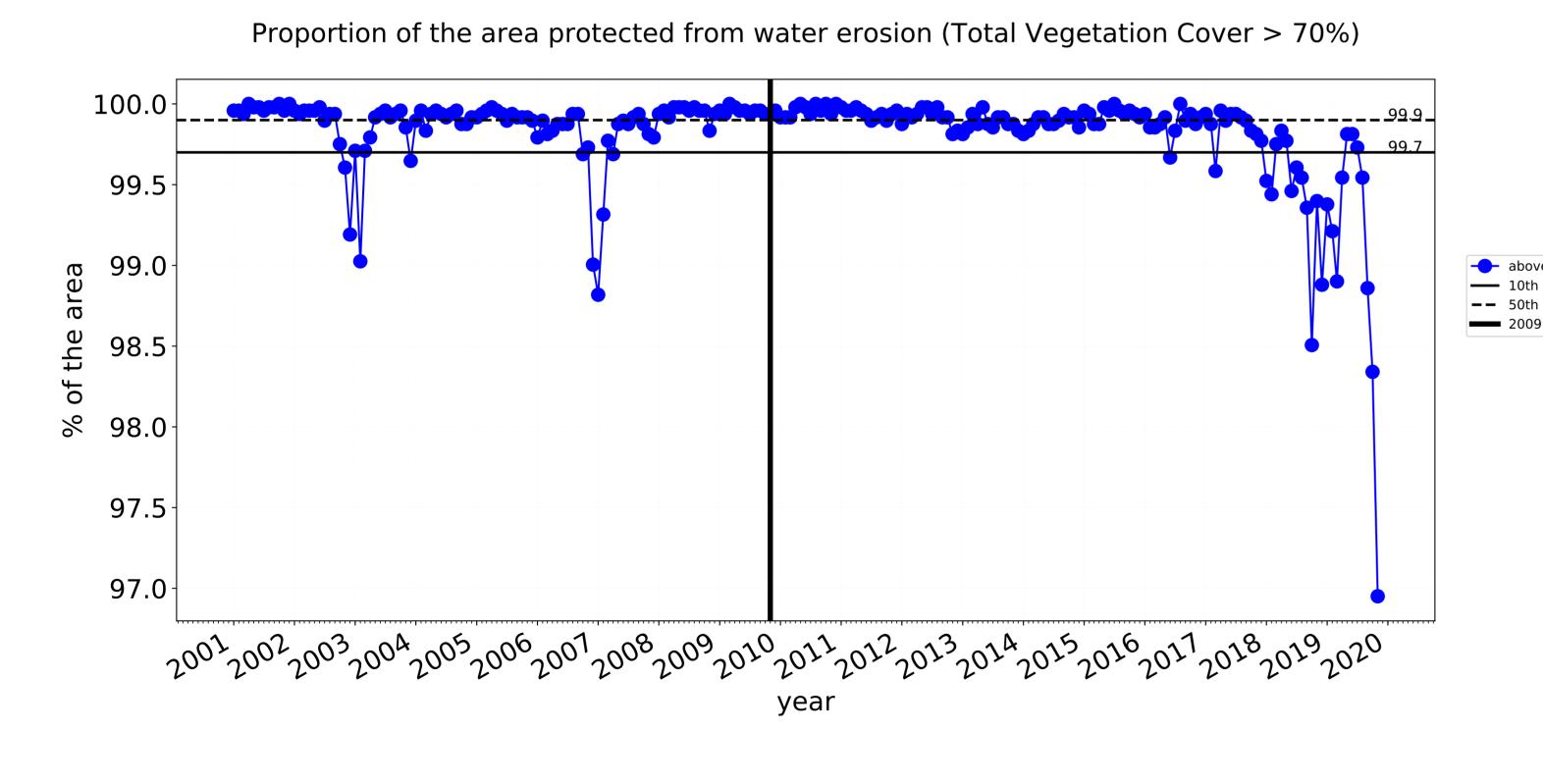


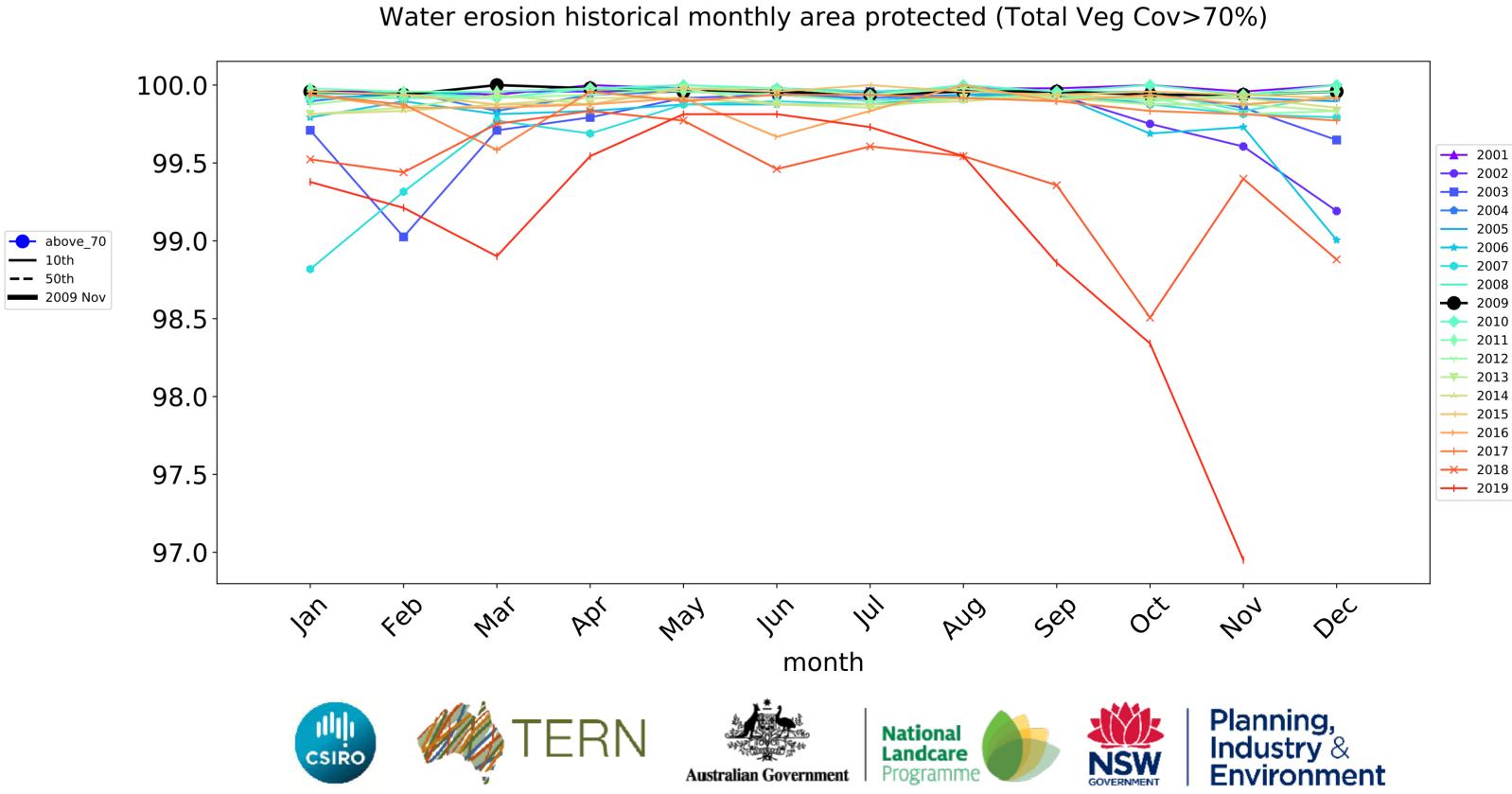
Grazing Woodland forest timeseries

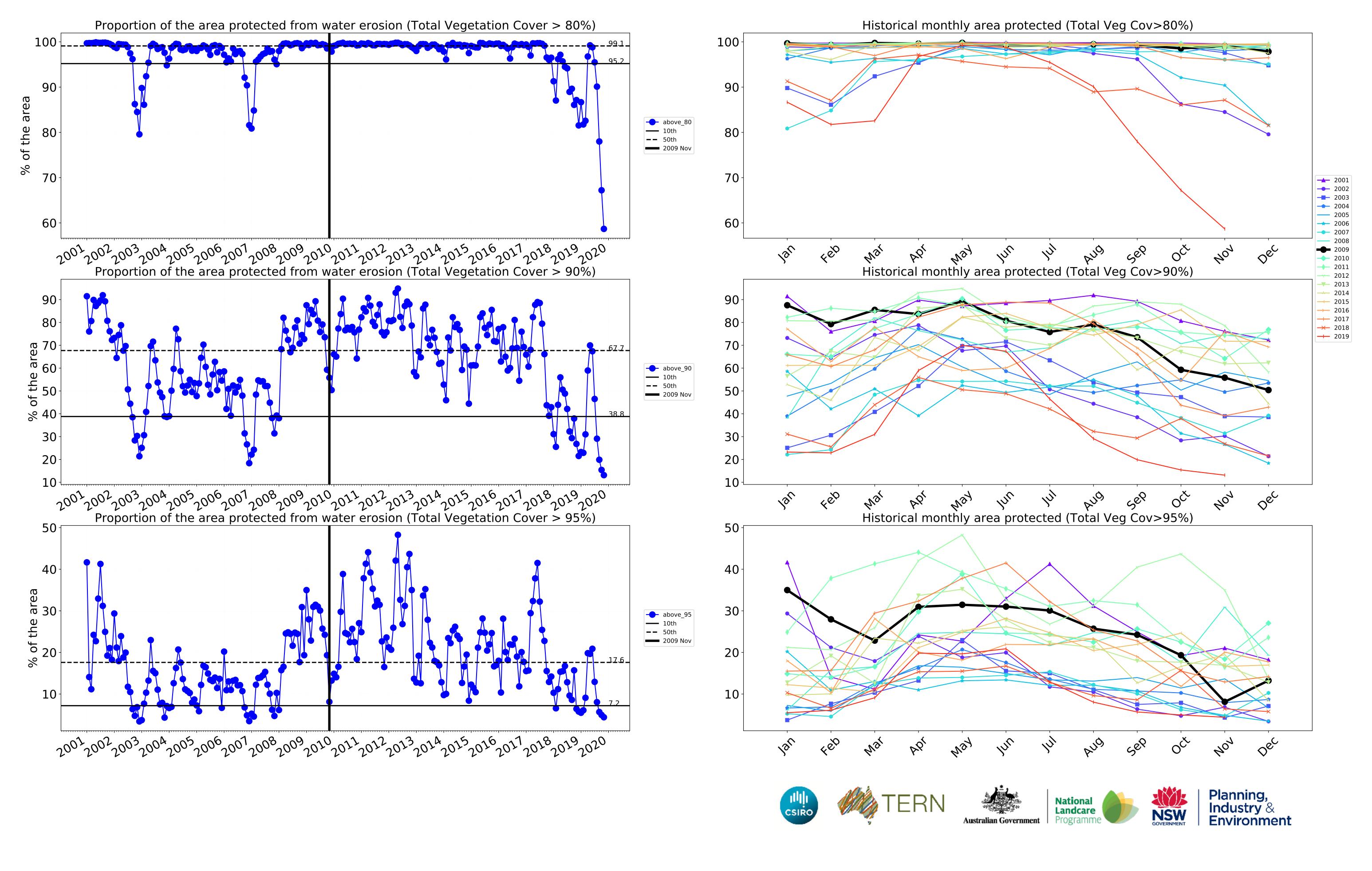




month



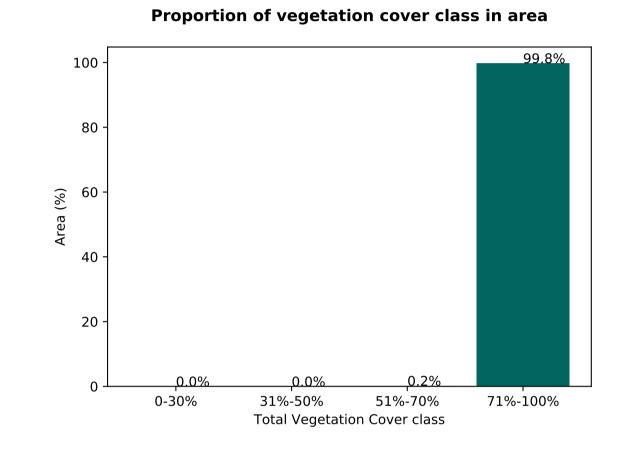


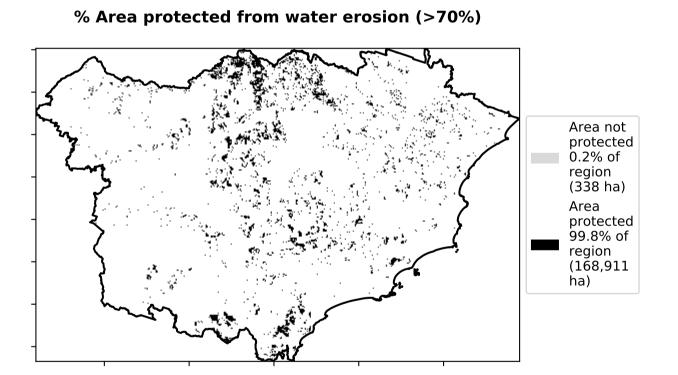


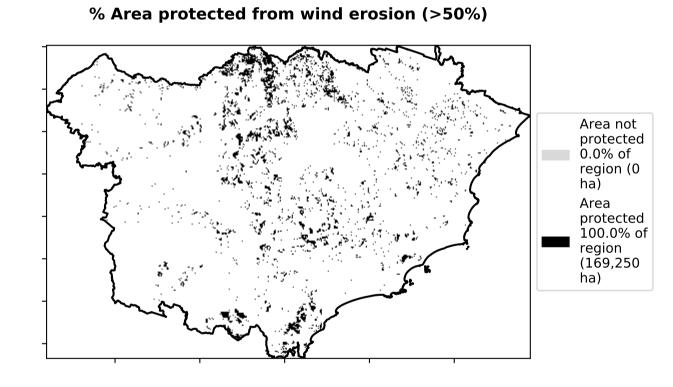
Grazing - Forest (non woodland)

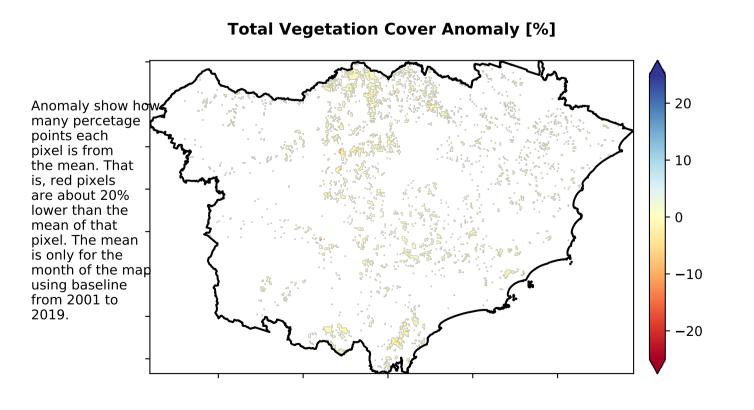
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) And Use of Australia (2018)

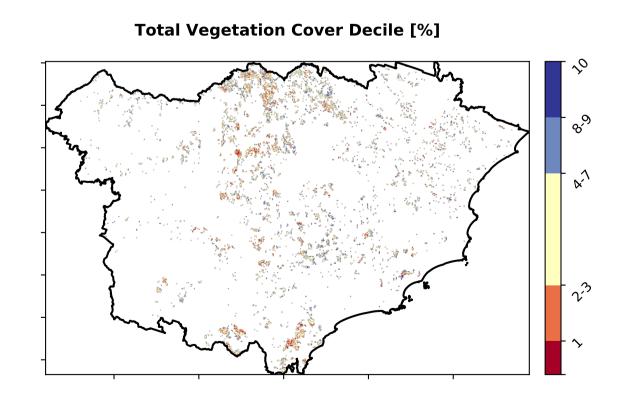
Total Vegetation Cover [%] Troloridolo Tro













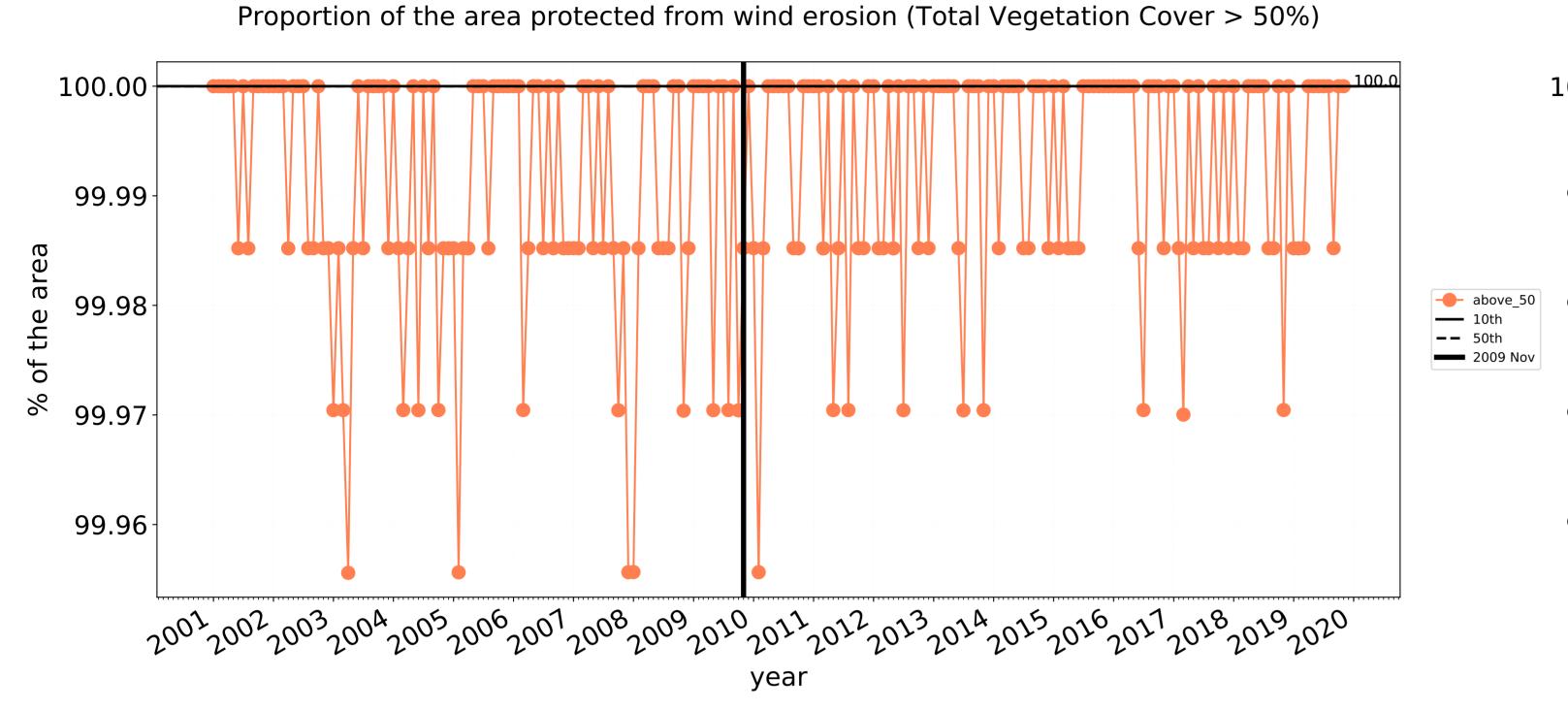


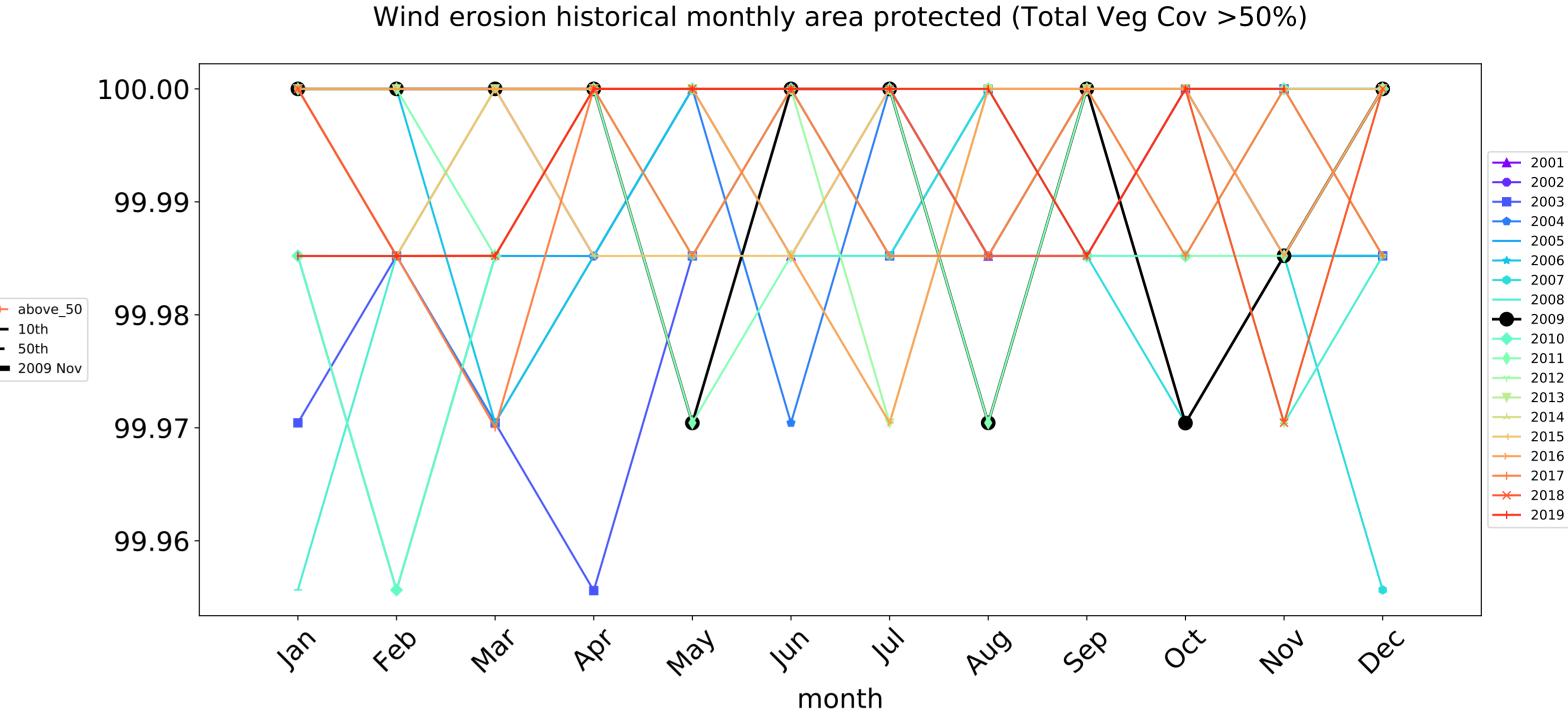


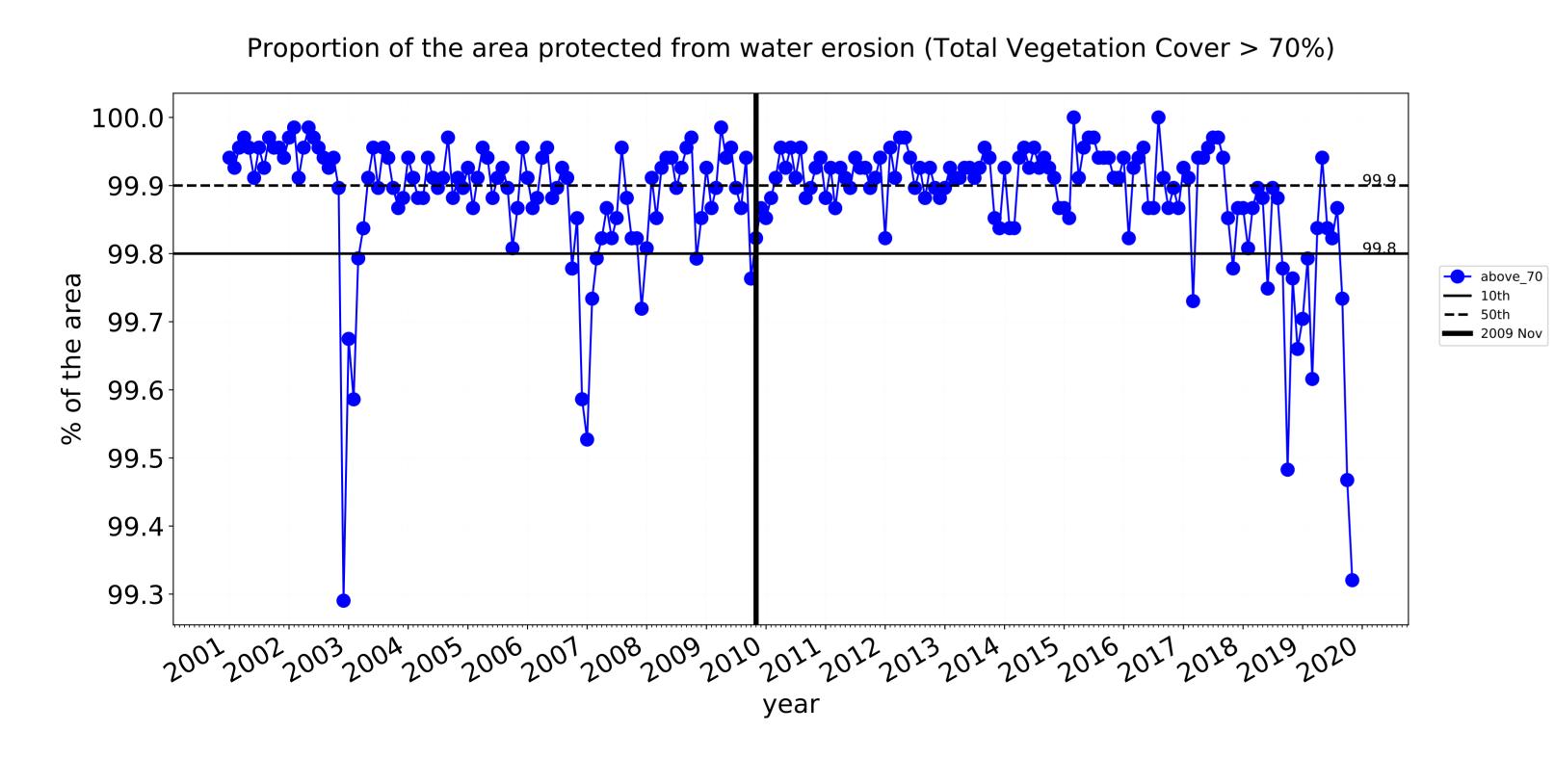


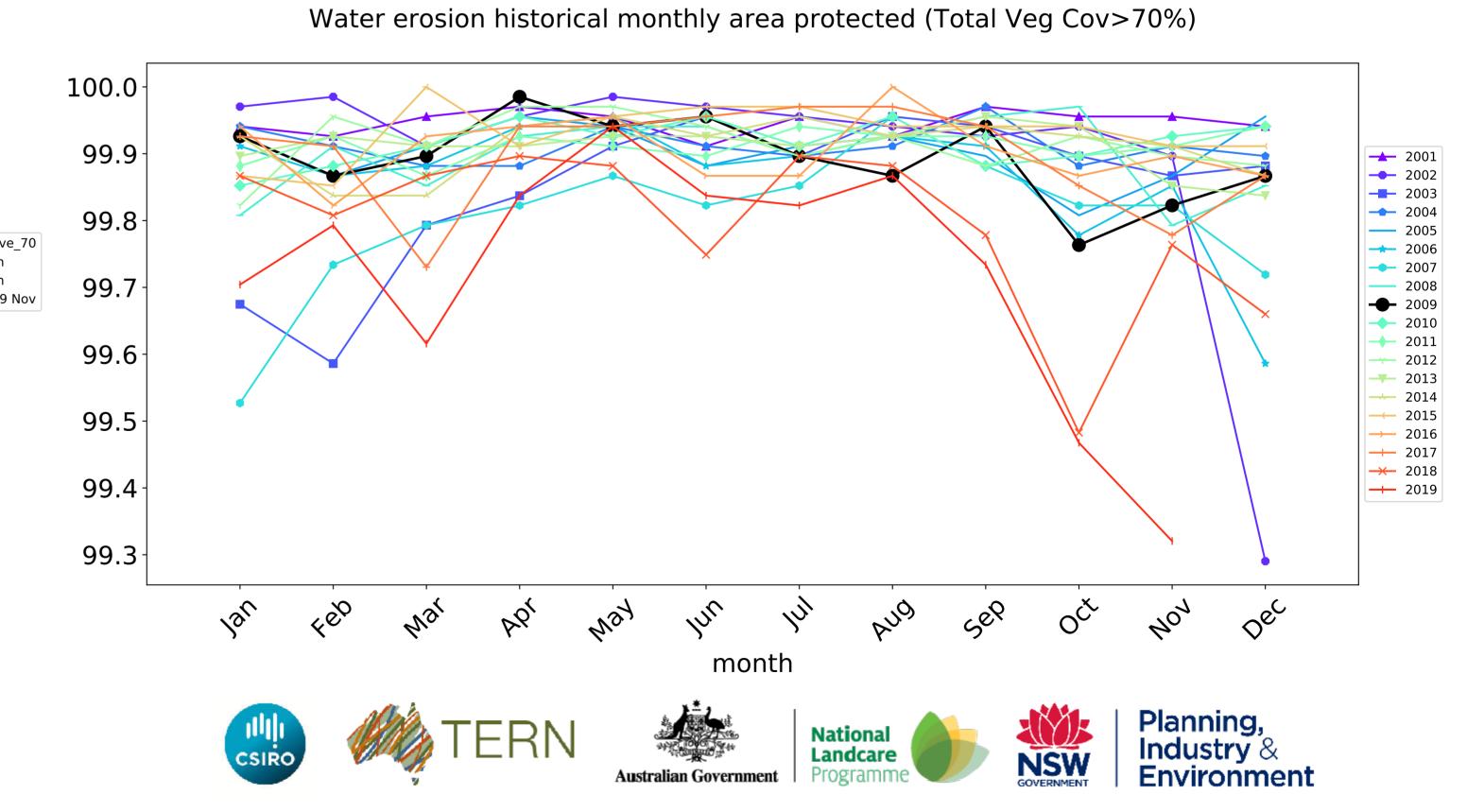


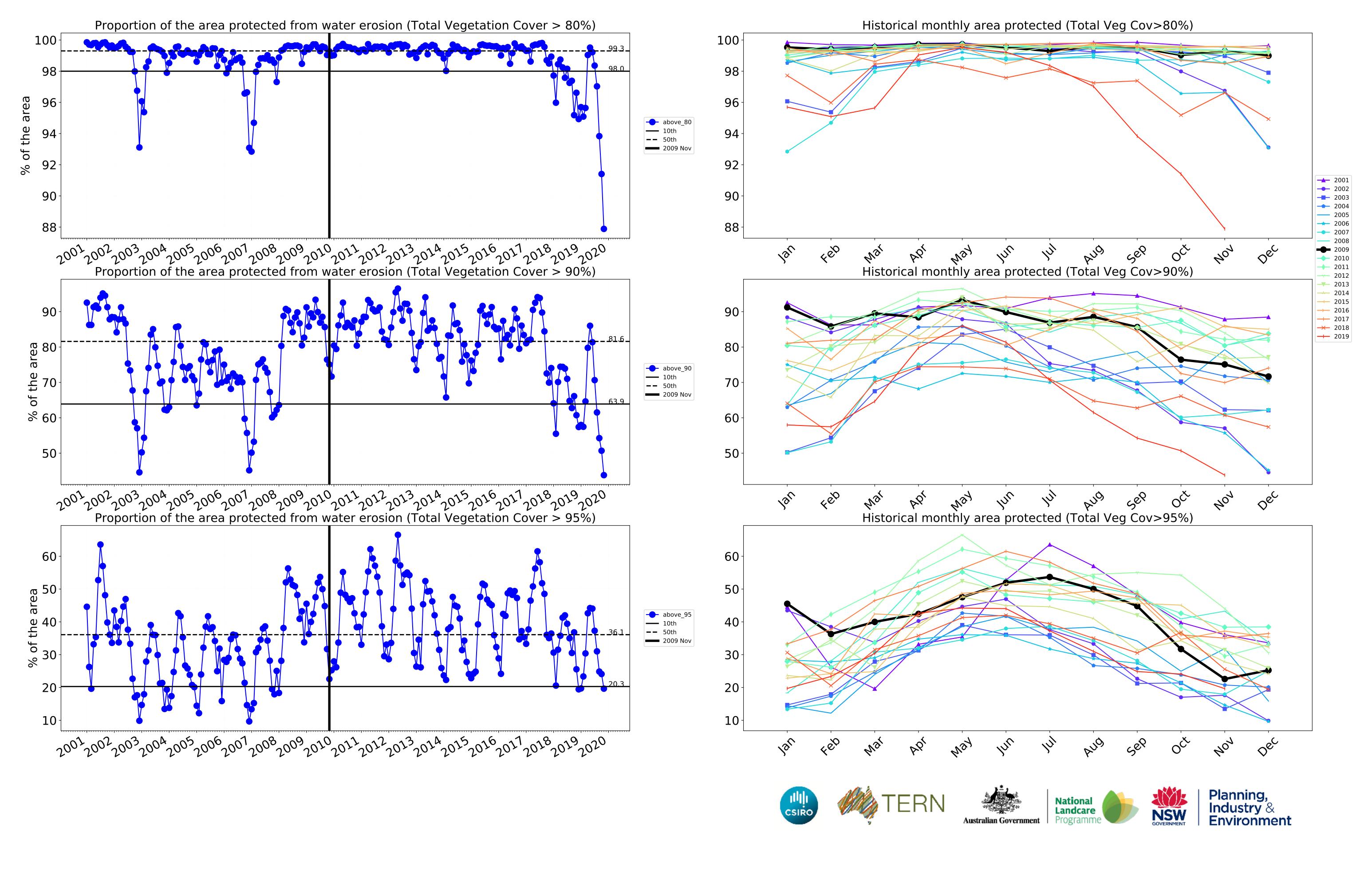






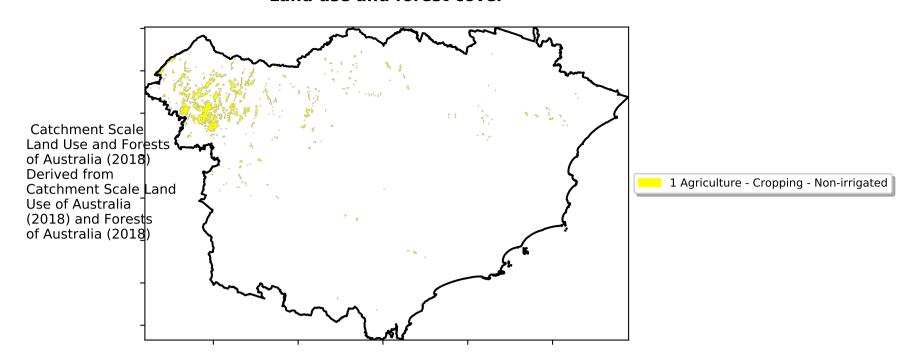




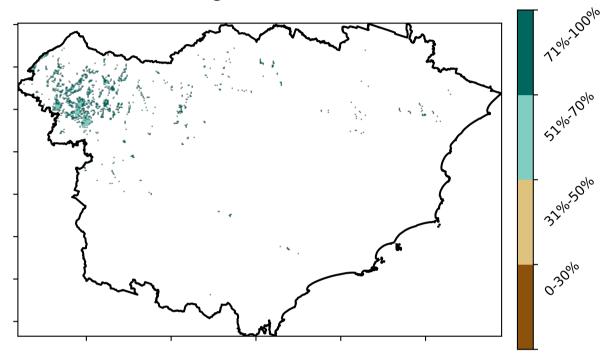


Cropping

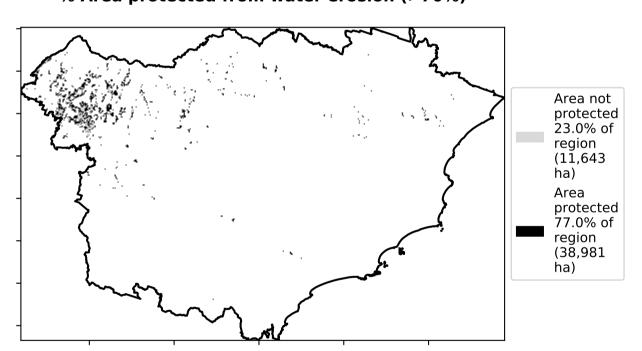
Land use and forest cover



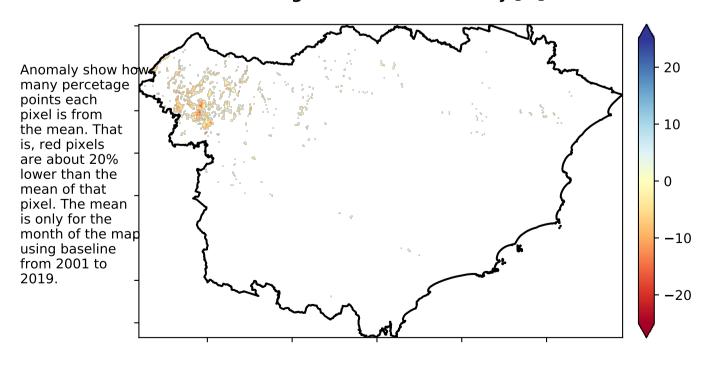
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

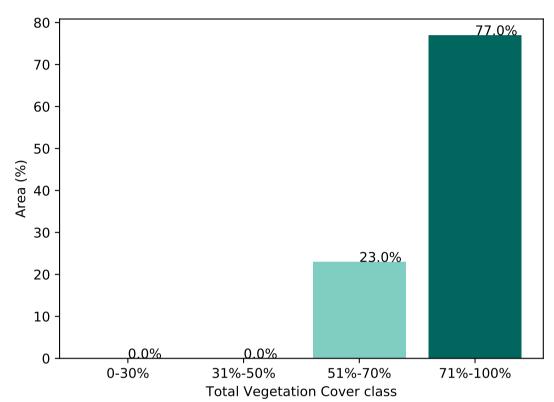


Total Vegetation Cover Anomaly [%]

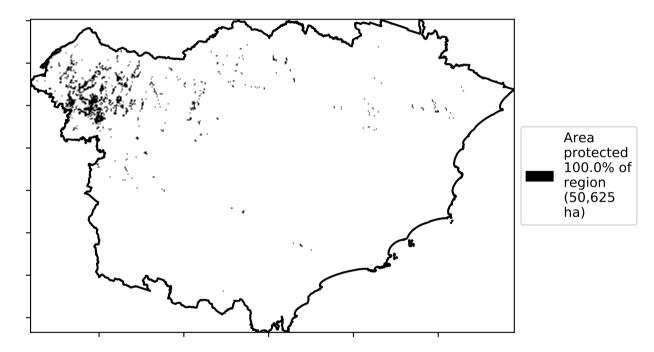


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

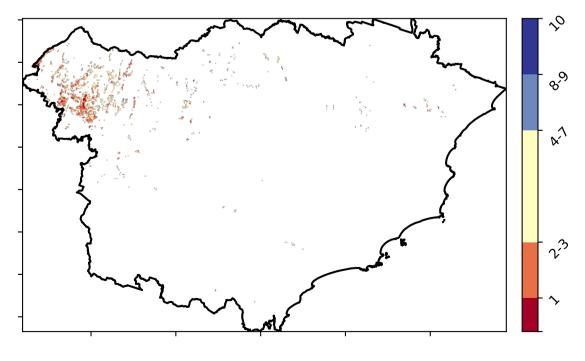
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







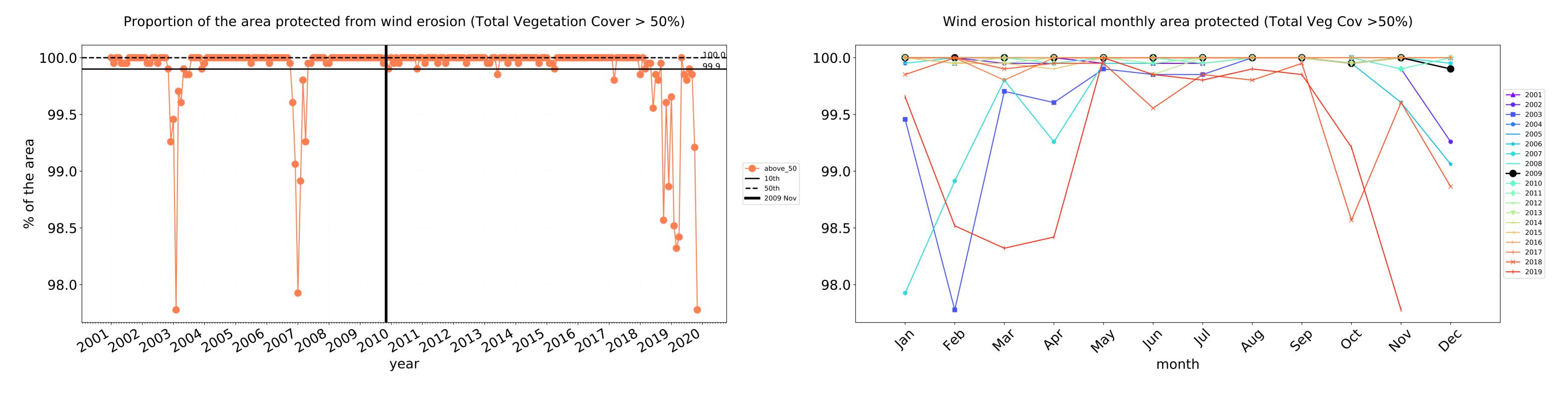


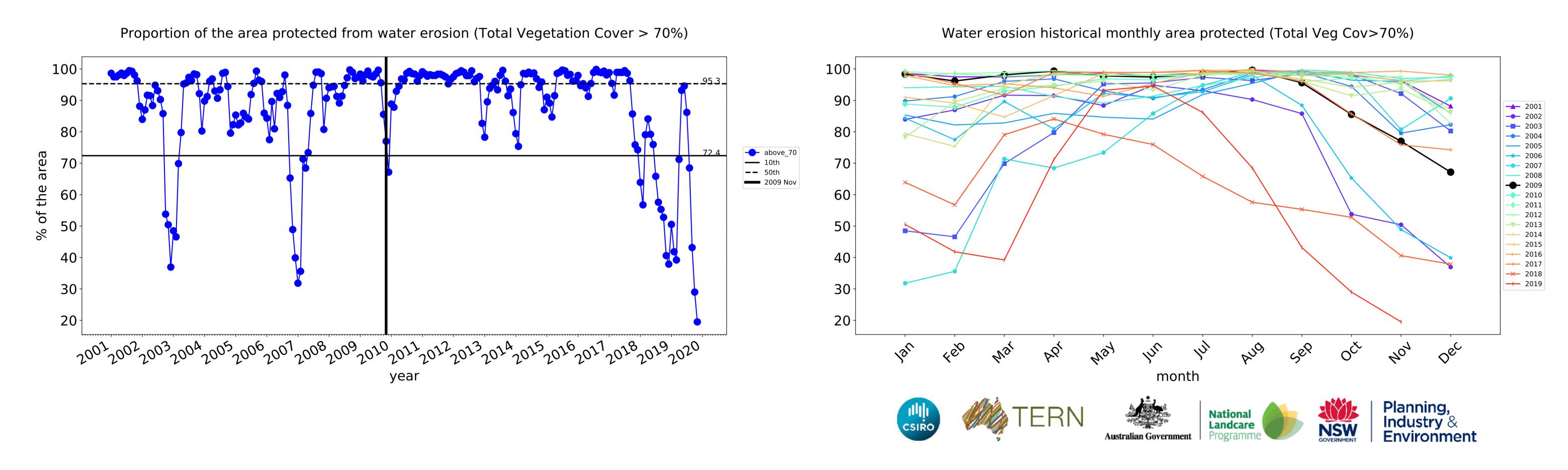


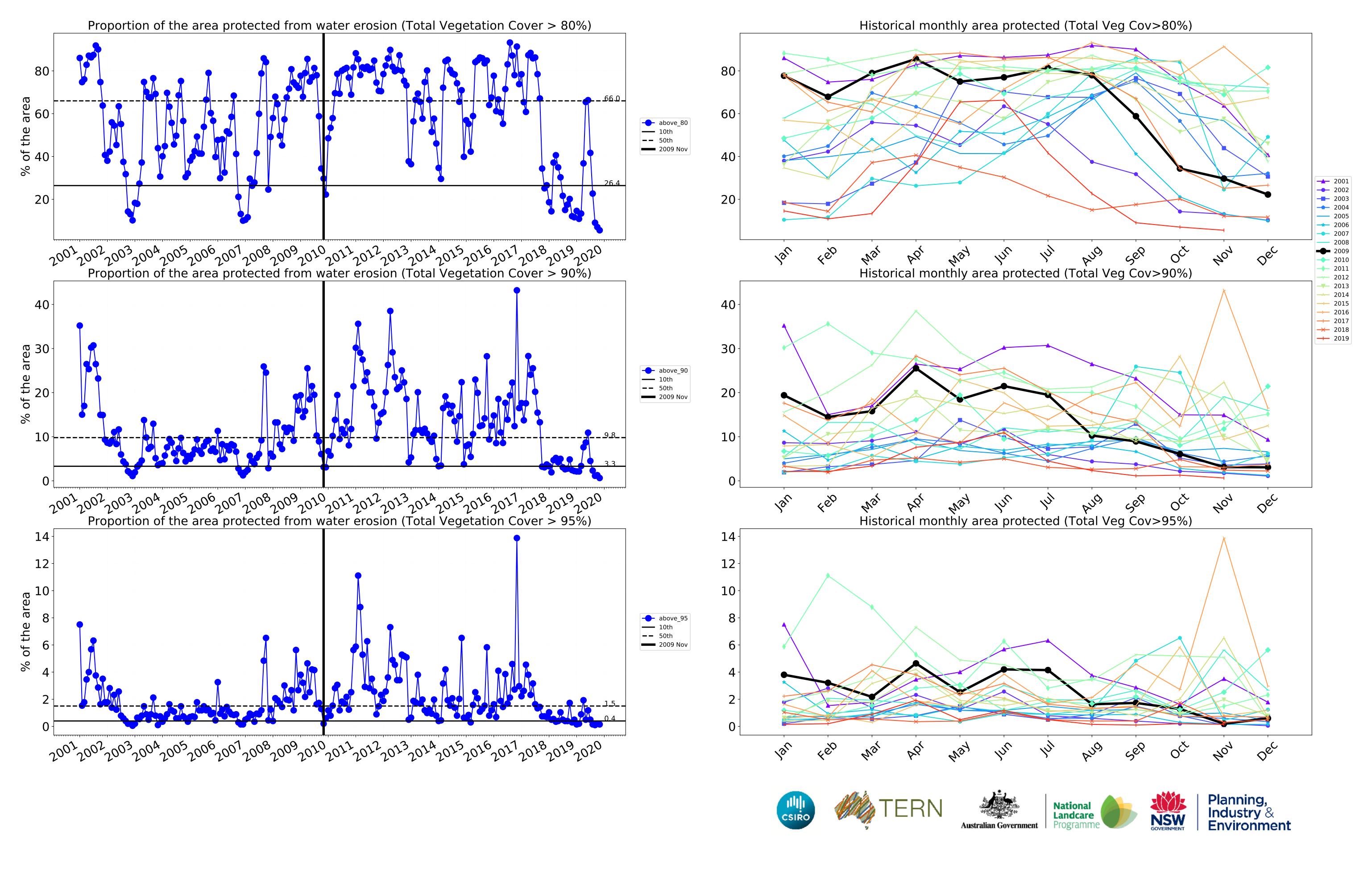




Cropping timeseries







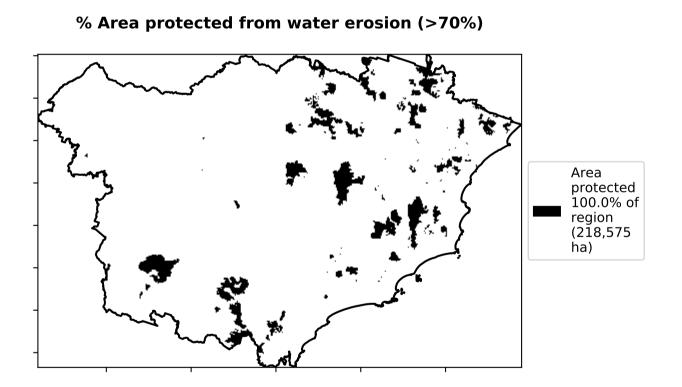
Production native forests and plantation forests

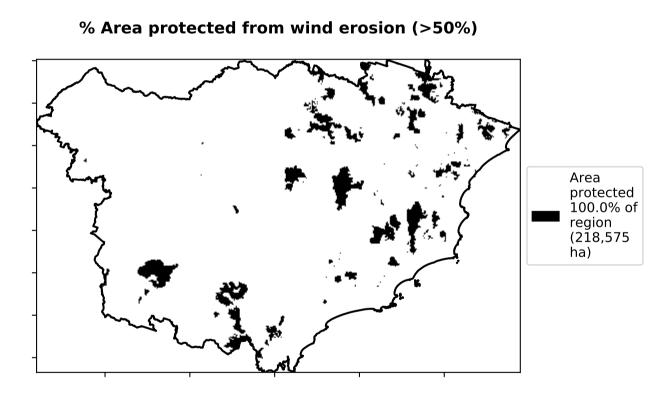
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) 1 Production native forests and plantation forests

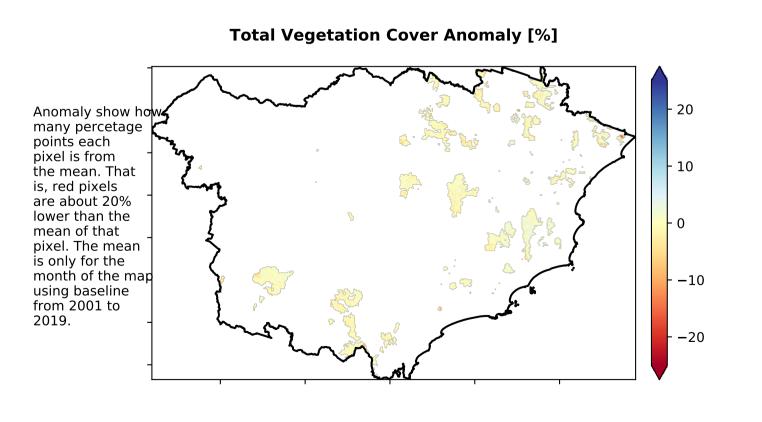
Total Vegetation Cover [%]

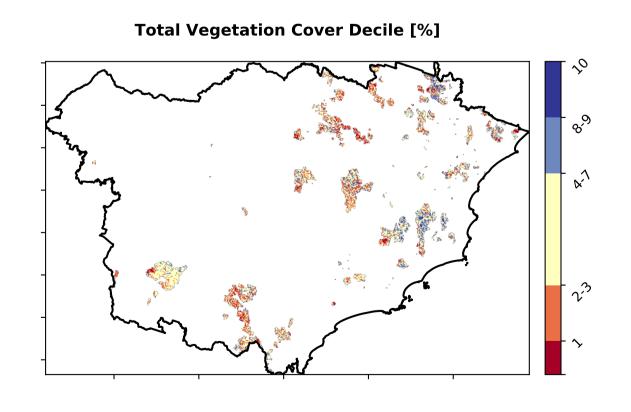
100.0% 100 Area (%) 60 40 20 -0.0% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**

Proportion of vegetation cover class in area













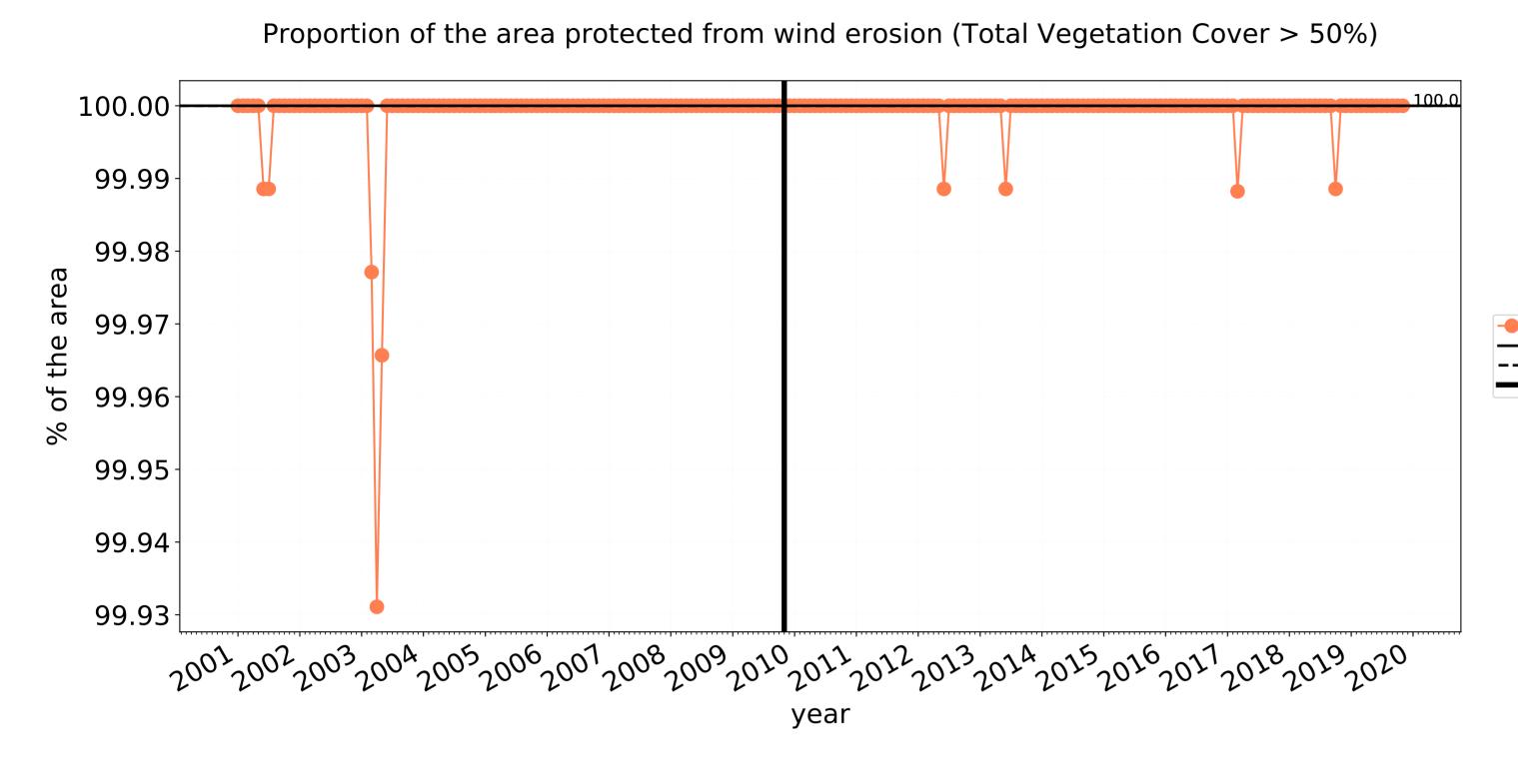


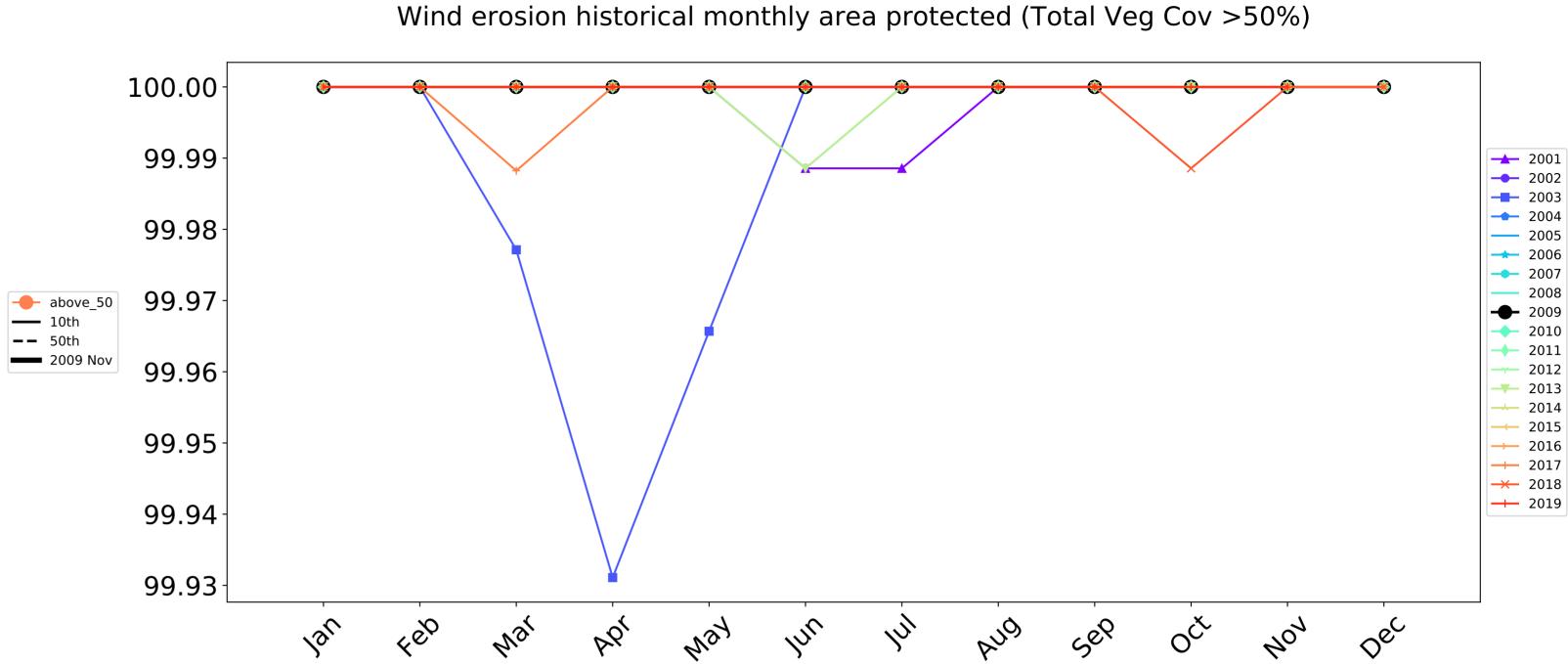




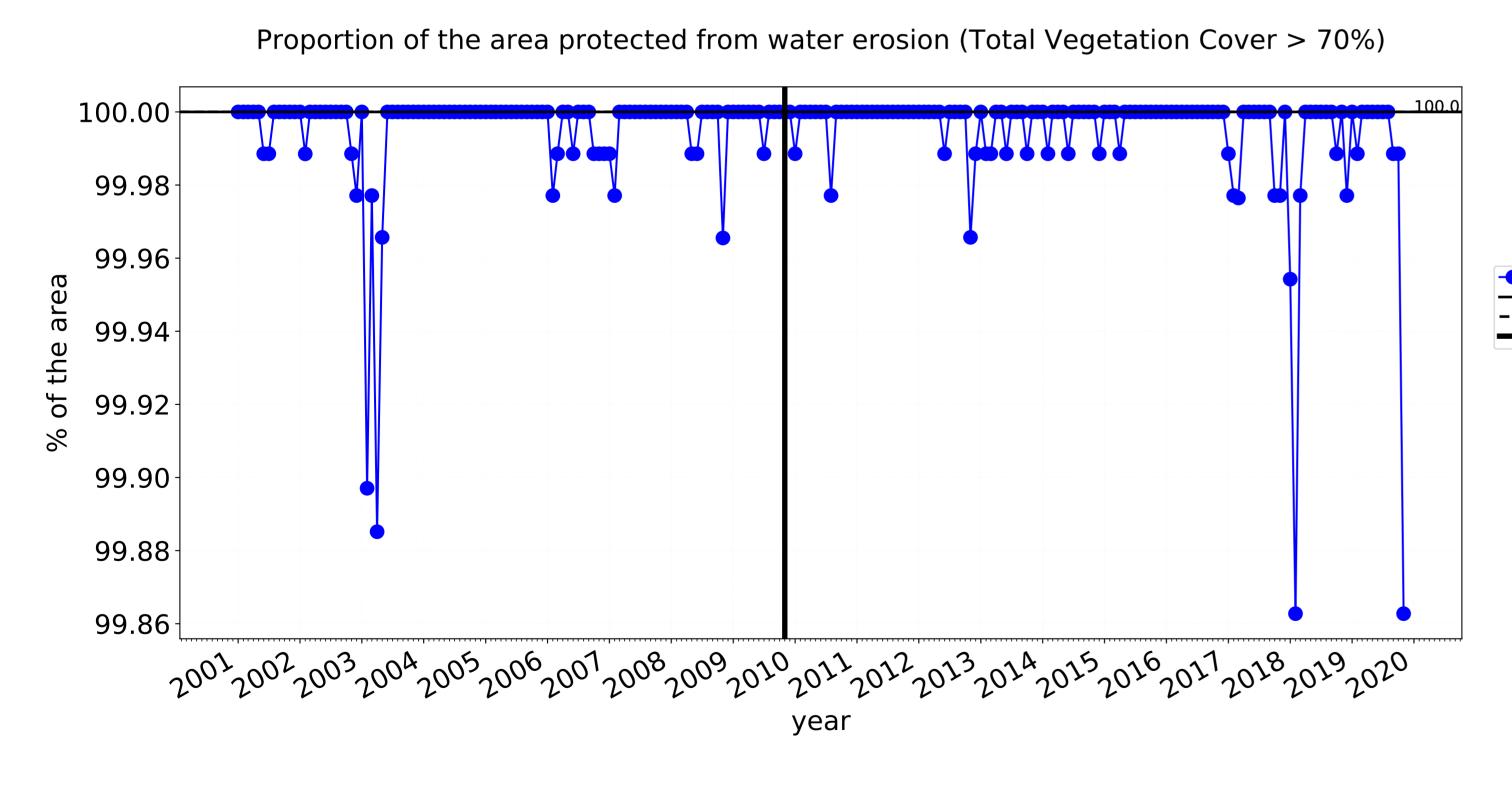


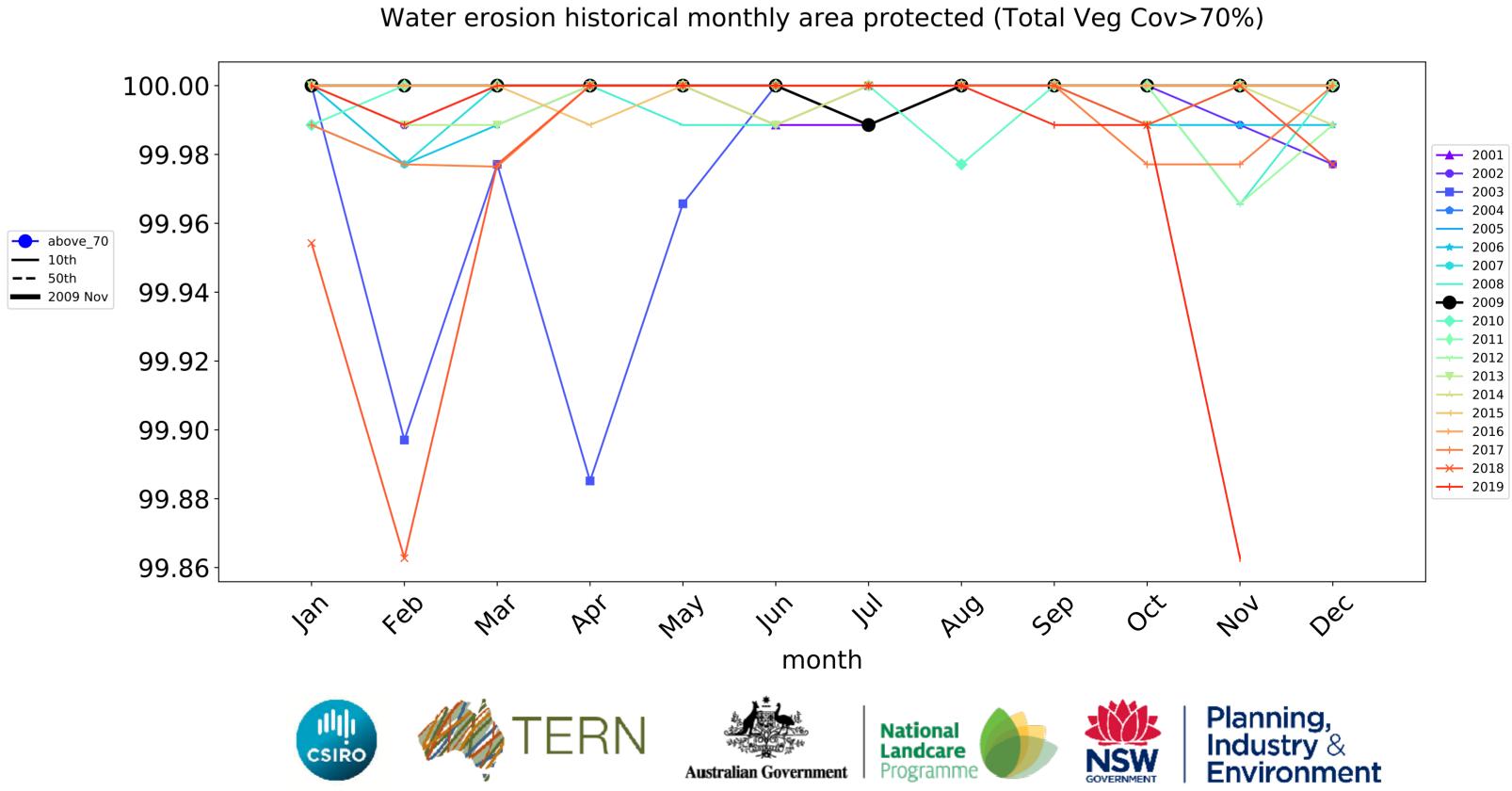
Production native forests and plantation forests timeseries

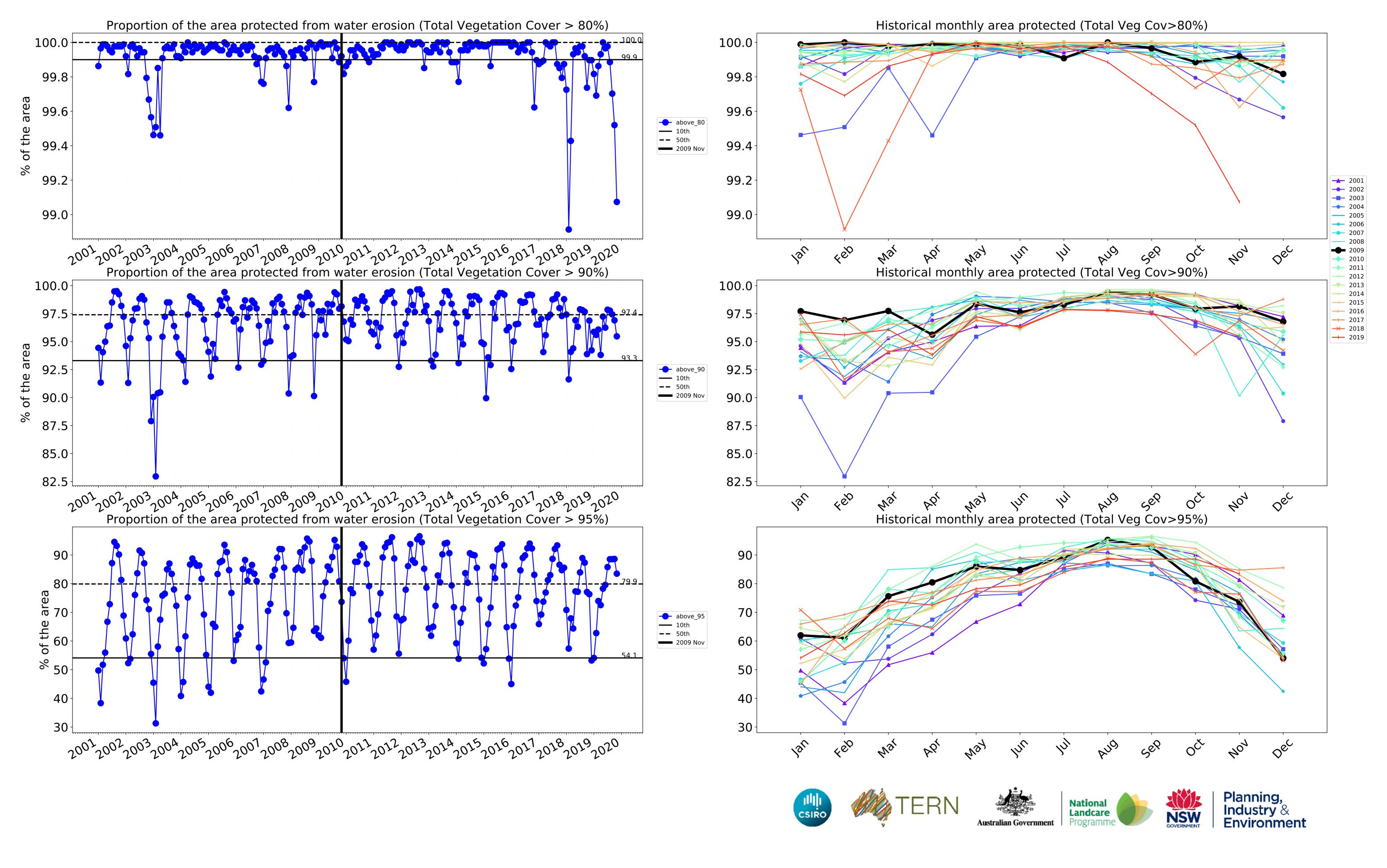




month







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

Land use and forest cover Class	area(ha)	above_30	above_50	above_70	above_80	above_90	above_95
Entire region	3,240,325	99.9% 3,236,949	99.6% 3,228,197	98.1% 3,180,012	94.0% 3,045,310	66.7% 2,161,533	27.1% 878,626
Conservation and natural environments	1,240,775	99.9% 1,239,525	99.8% 1,238,775	99.6% 1,236,200	99.3% 1,232,650	86.7% 1,075,150	43.3% 536,700
Conservation and natural environments non forest	29,925	95.9% 28,700	94.0% 28,125	89.3% 26,725	85.8% 25,675	58.9% 17,625	20.5% 6,125
Conservation and natural environments Woodland forest	138,875	100.0% 138,875	100.0% 138,850	99.9% 138,750	99.7% 138,450	75.8% 105,325	22.0% 30,500
Conservation and natural environments Forest (non woodland)	1,071,975	100.0% 1,071,950	100.0% 1,071,800	99.9% 1,070,725	99.7% 1,068,525	88.8% 952,200	46.6% 500,075
Agriculture	1,580,650	100.0% 1,580,650	100.0% 1,580,350	98.9% 1,562,700	93.1% 1,471,450	52.3% 826,500	10.9% 171,600
Grazing	1,502,650	100.0% 1,502,650	100.0% 1,502,350	99.6% 1,496,875	95.9% 1,441,350	54.8% 823,875	11.4% 171,400
Grazing non forest	1,212,825	100.0% 1,212,825	100.0% 1,212,550	99.6% 1,207,425	95.1% 1,153,825	51.9% 629,475	10.2% 123,375
Grazing Woodland forest	120,575	100.0% 120,575	100.0% 120,575	99.9% 120,500	99.1% 119,500	55.8% 67,300	8.1% 9,800
Grazing - Forest (non woodland)	169,250	100.0% 169,250	100.0% 169,225	99.8% 168,950	99.3% 168,025	75.1% 127,100	22.6% 38,225
Cropping	50,625	100.0% 50,625	100.0% 50,625	77.0% 38,975	29.7% 15,025	3.1% 1,575	0.2% 100
Production native forests and plantation forests	218,575	100.0% 218,575	100.0% 218,575	100.0% 218,575	99.9% 218,400	98.1% 214,525	73.6% 160,975











