Total vegetation cover soil protection Region:NRM Swan Region WA

This report describes vegetation protecting the soil surface from erosion during a chosen month compared to previous years. This report has been generated using MODIS fractional vegetation cover information available in Rangelands and Pasture Productivity (RAPP) map tool https://map.geo-rapp.org/#australia. The report is based on 500 metre pixel data on monthly time steps.

Land use forest cover:

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

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

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

Erosion protection: Wind erosion 50% total vegetation cover

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

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

Comparison with previous years:

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

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

Erosion protection

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

Rainfall

• Millimetres rainfall each month (black line).

Each time series is also stacked by year. The black line shows the current year of data. Water erosion protection for higher rainfall and steeper slopes:

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

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

Acknowledgment of data:

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

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











Date: October 2006



Vegetation Cover Oct 2006

Land use and forest cover

Legend with land class forest cover and number, i.e. Forests is 12 1 Conservation and natural environments -2 Conservation and natural environments -3 Conservation and natural environments -Non-Woodland forest 4 Agriculture - Grazing - Non-forest 5 Agriculture - Grazing - Woodland forest 6 Agriculture - Grazing - Non-woodland forest 7 Agriculture - Grazing - Irrigated 8 Agriculture - Cropping - Non-irrigated 9 Agriculture - Cropping - Irrigated 10 Agriculture - Horticulture - Non-irrigated 11 Agriculture - Horticulture - Irrigated 12 Production native forests and plantation forests 13 Other uses

Catchment Scale

of Australia (2018)

(2018) and Forests

of Australia (2018)

Anomaly show how many percetage points each pixel is from

the mean. That

is, red pixels are about 20%

lower than the

month of the map

using baseline from 2001 to 2019.

mean of that pixel. The mean is only for the

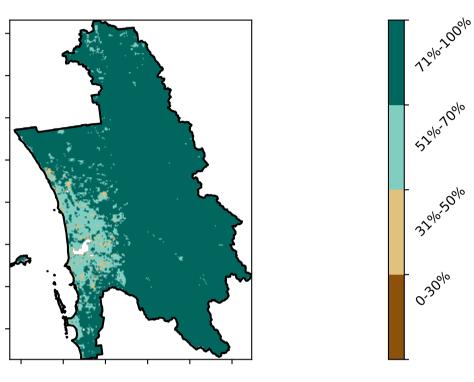
Derived from

Use of Australia

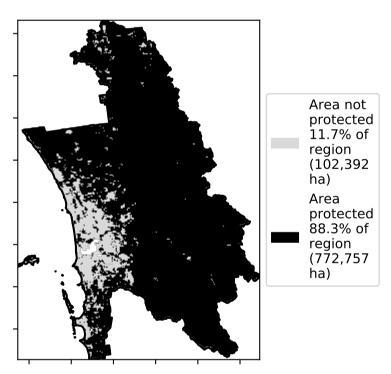
Land Use and Forests

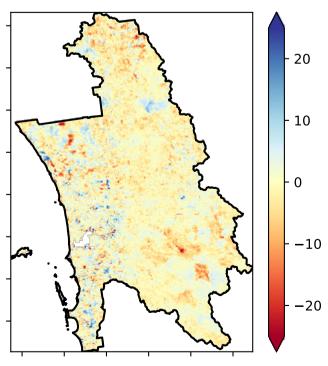
Catchment Scale Land

Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



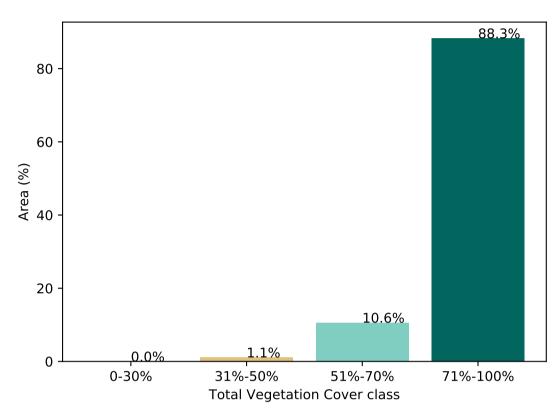


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

35 30 25 € 20 _19.6% Prea 15 **15**.3% 12.4% 10 5 0.0%0.0%0.4<mark>%</mark> 5 6 8 9 10 11 12 13 3 4 Land use class

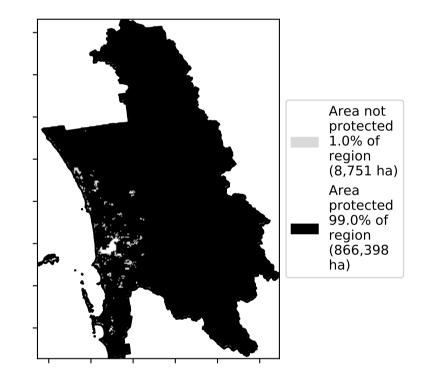
Proportion of each land class in area

Proportion of vegetation cover class in area

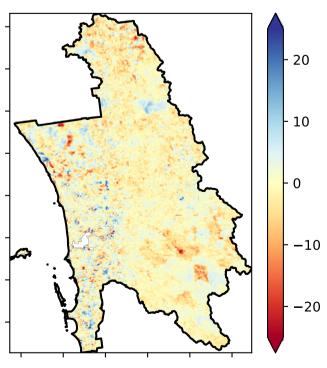


% Area protected from wind erosion (>50%)

Total Vegetation Cover Decile [%]



Total Vegetation Cover Anomaly [%]



Australian Government

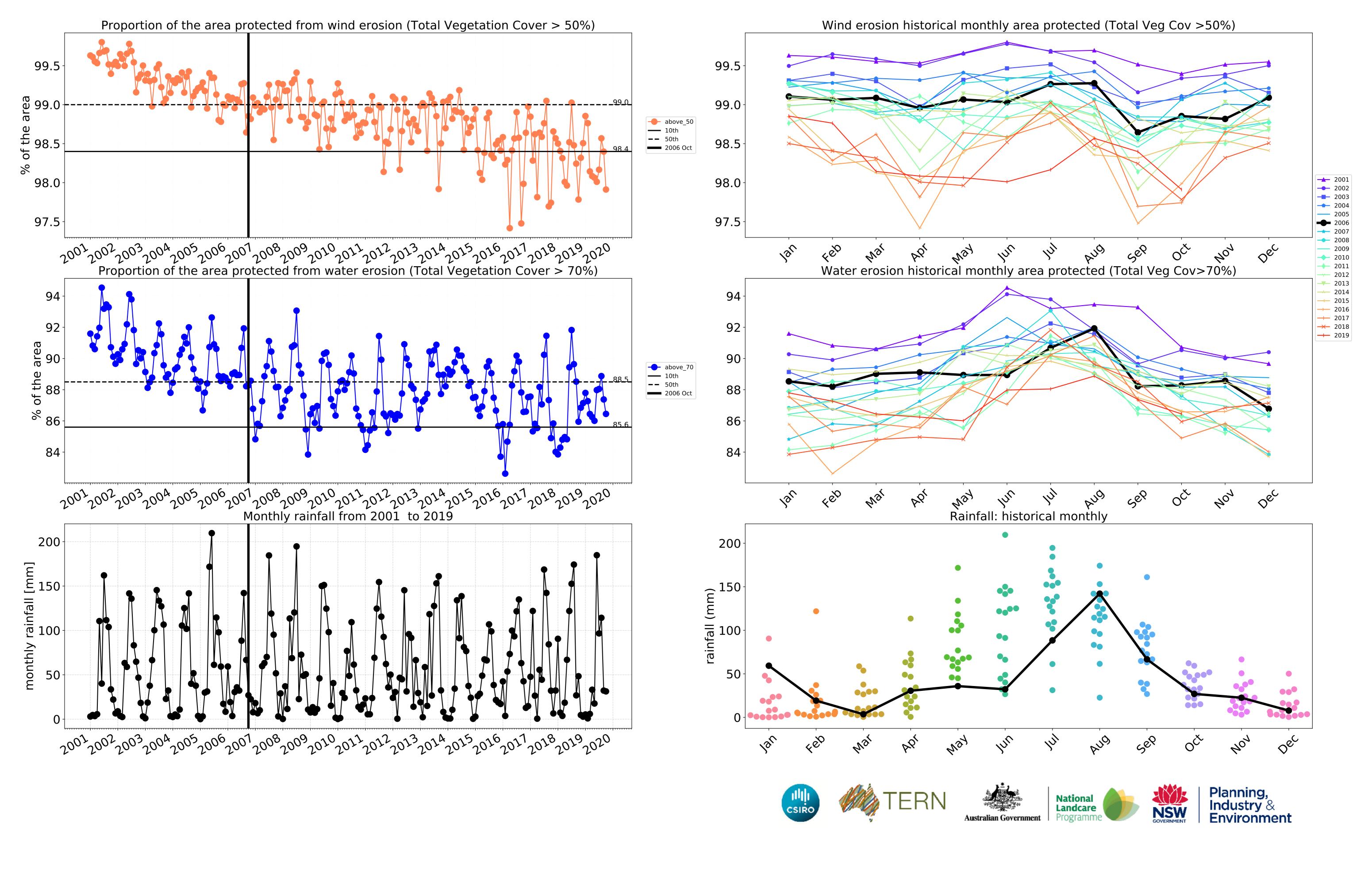
National Landcare Programme

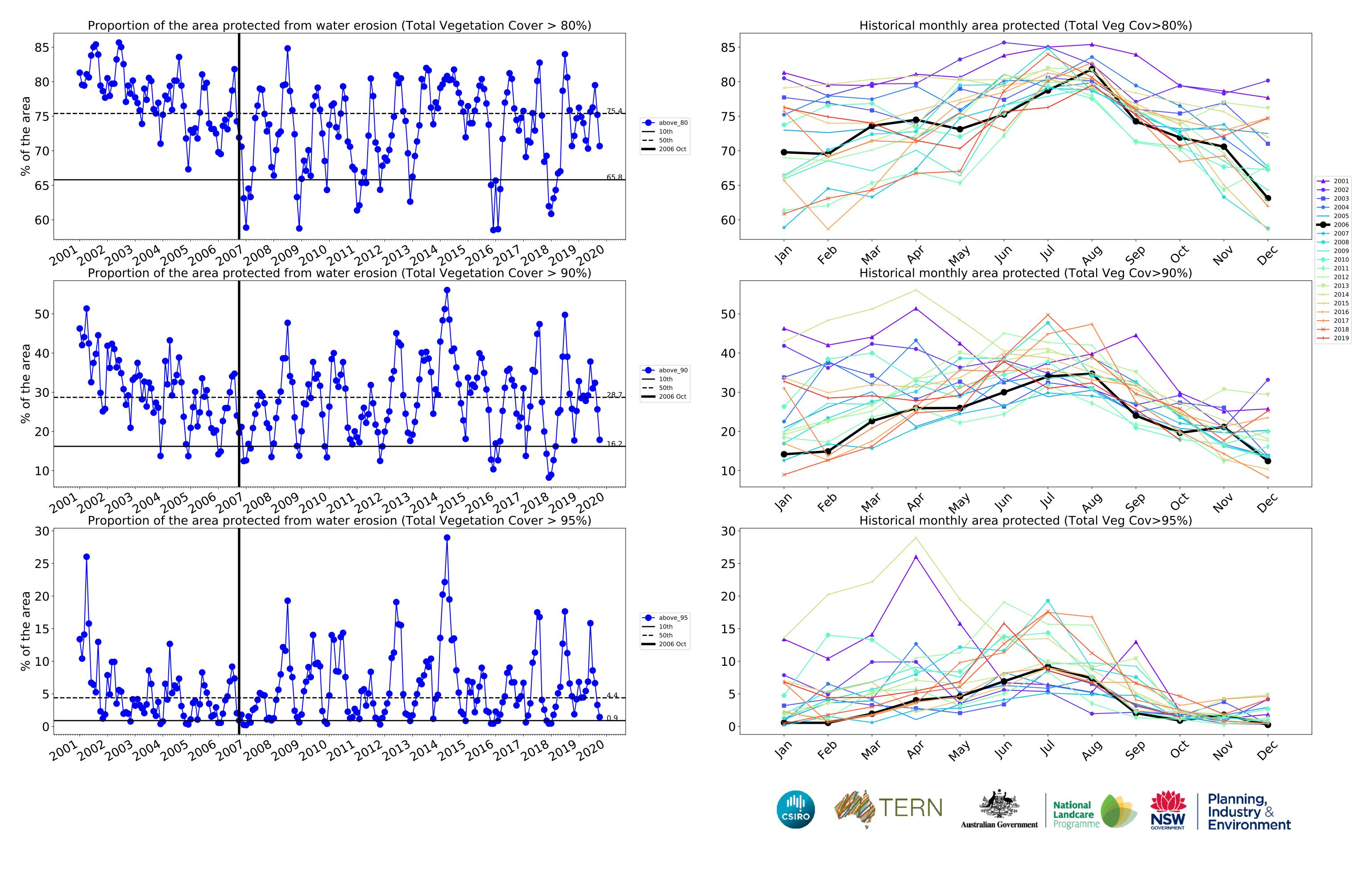












Conservation and natural environments

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

(2018) and Forests

of Australia (2018)

Anomaly show how many percetage points each

pixel is from the mean. That

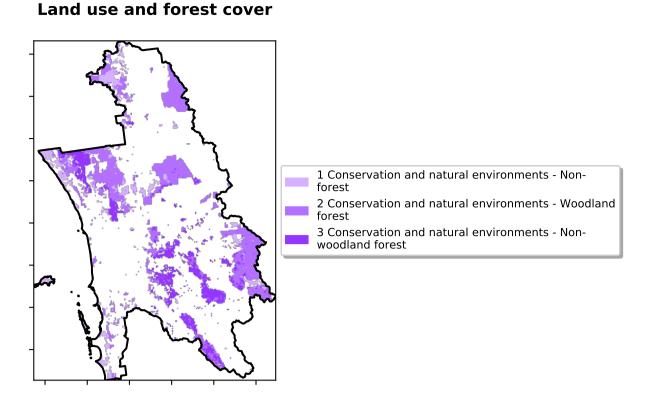
is, red pixels are about 20% lower than the

mean of that

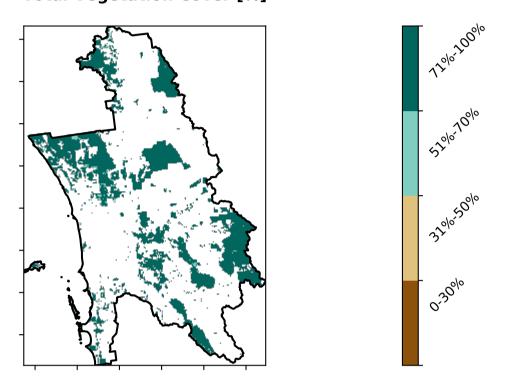
pixel. The mean

using baseline from 2001 to 2019.

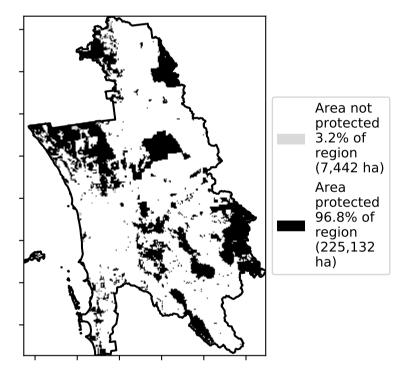
is only for the month of the map



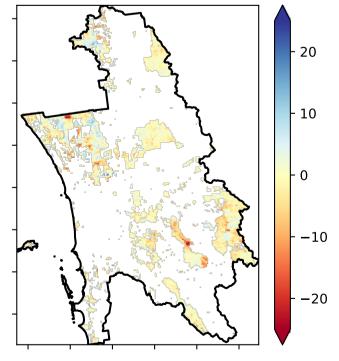
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

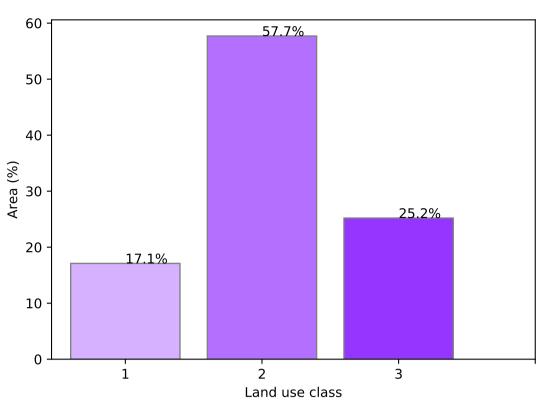


Total Vegetation Cover Anomaly [%]

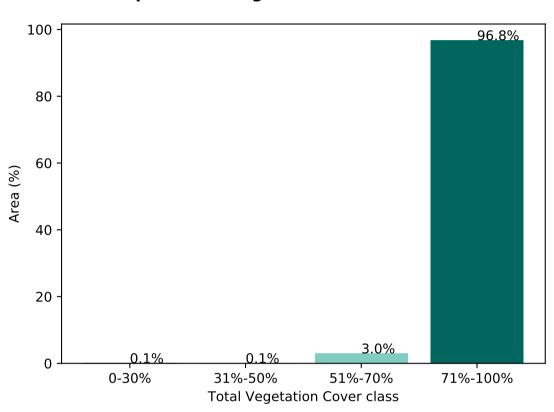


pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of the map using baseline from 2001 to 2019.

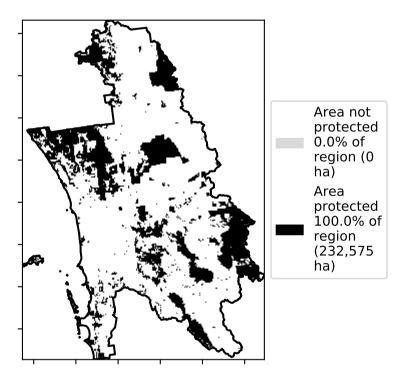
Proportion of each land class in area

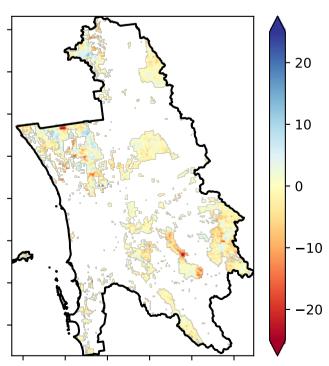


Proportion of vegetation cover class in area

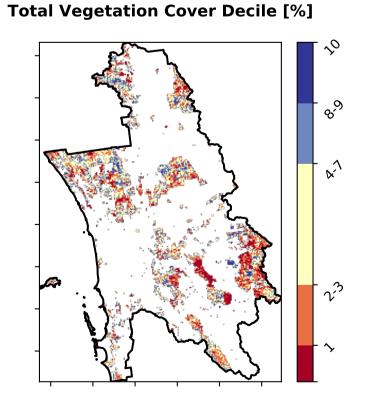


% Area protected from wind erosion (>50%)





Deciles show where the records for that month of







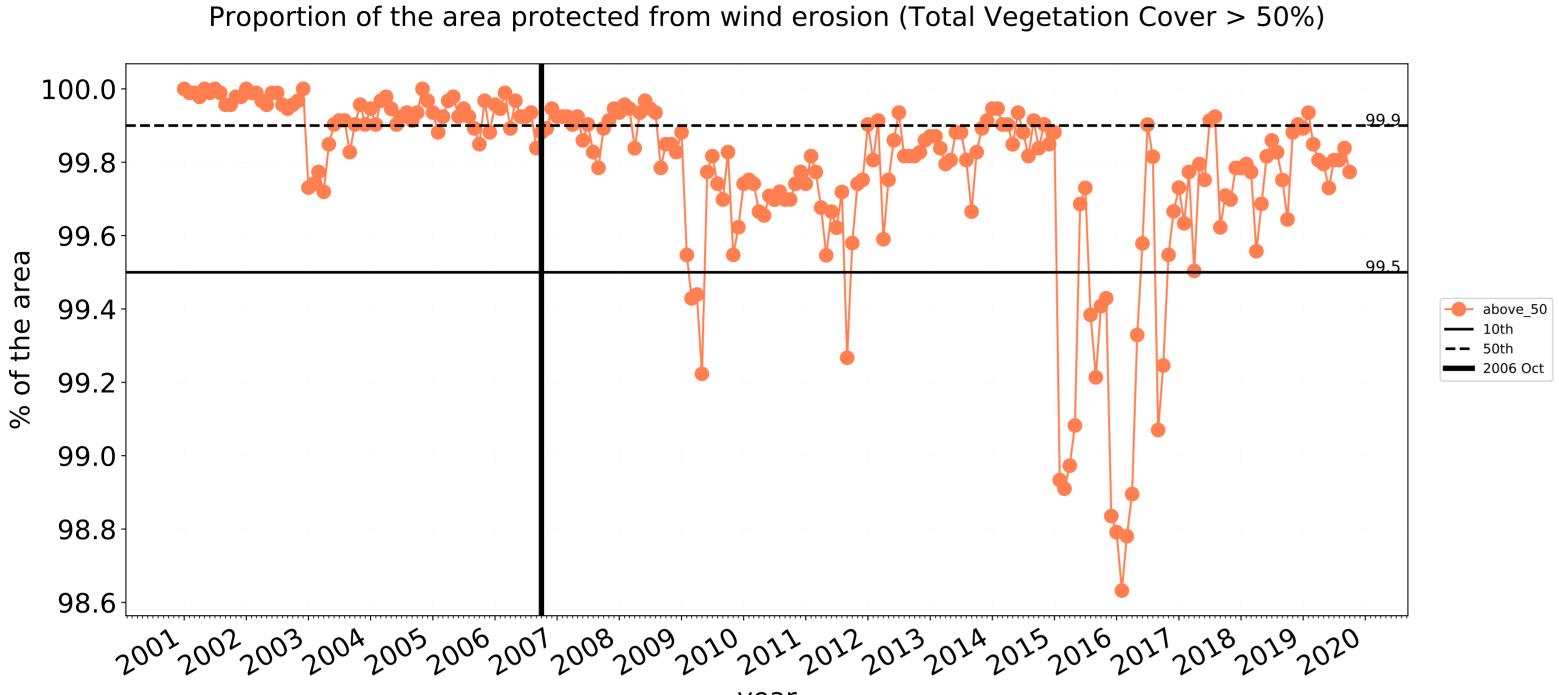




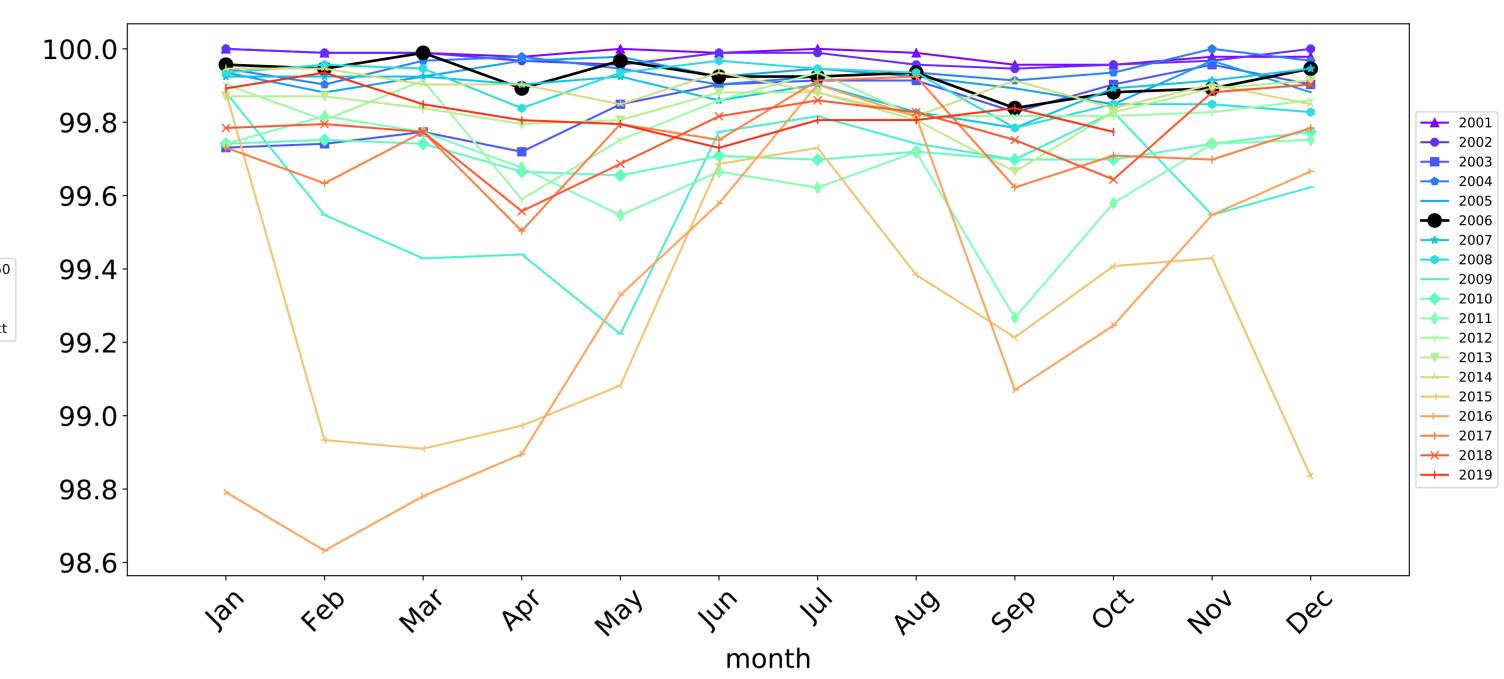


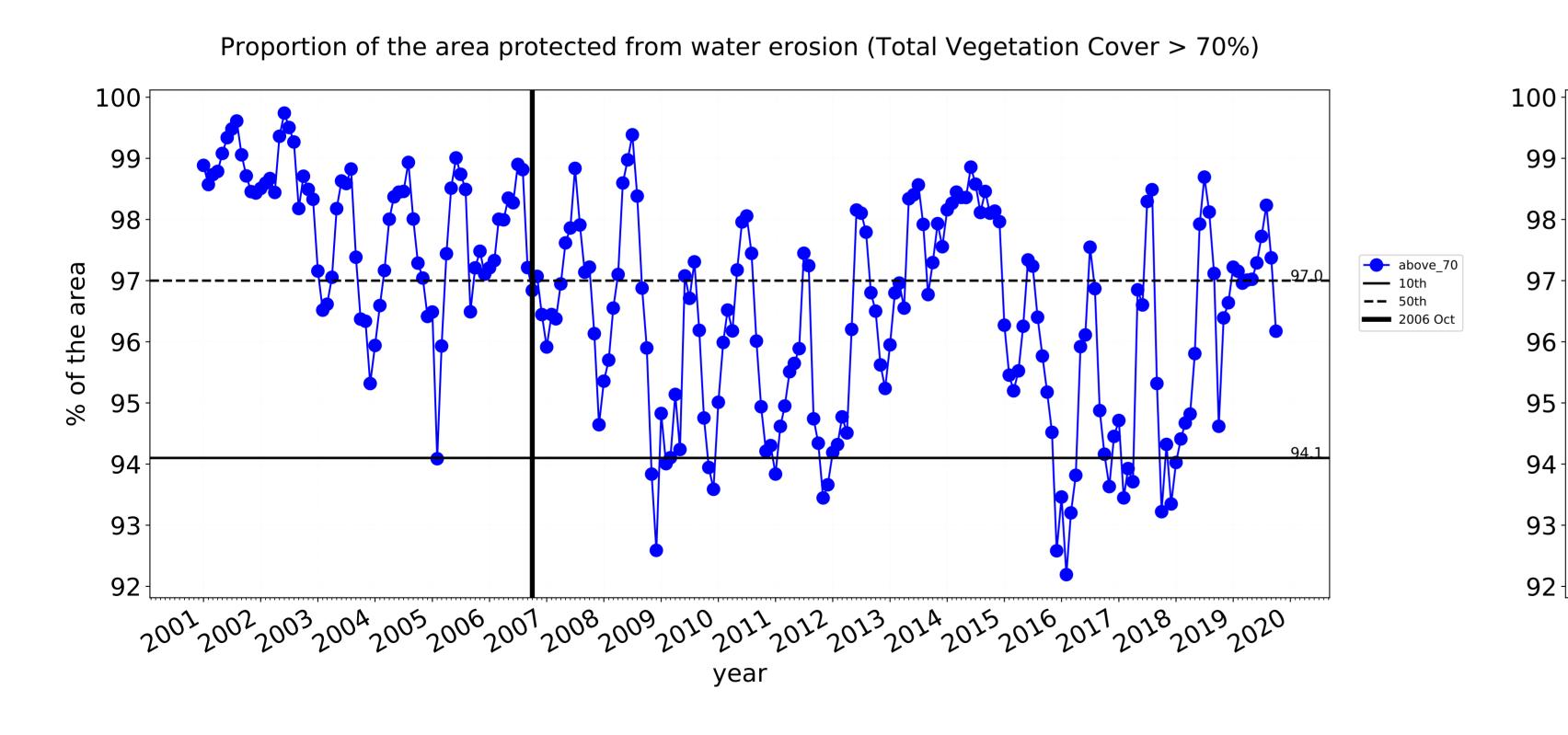


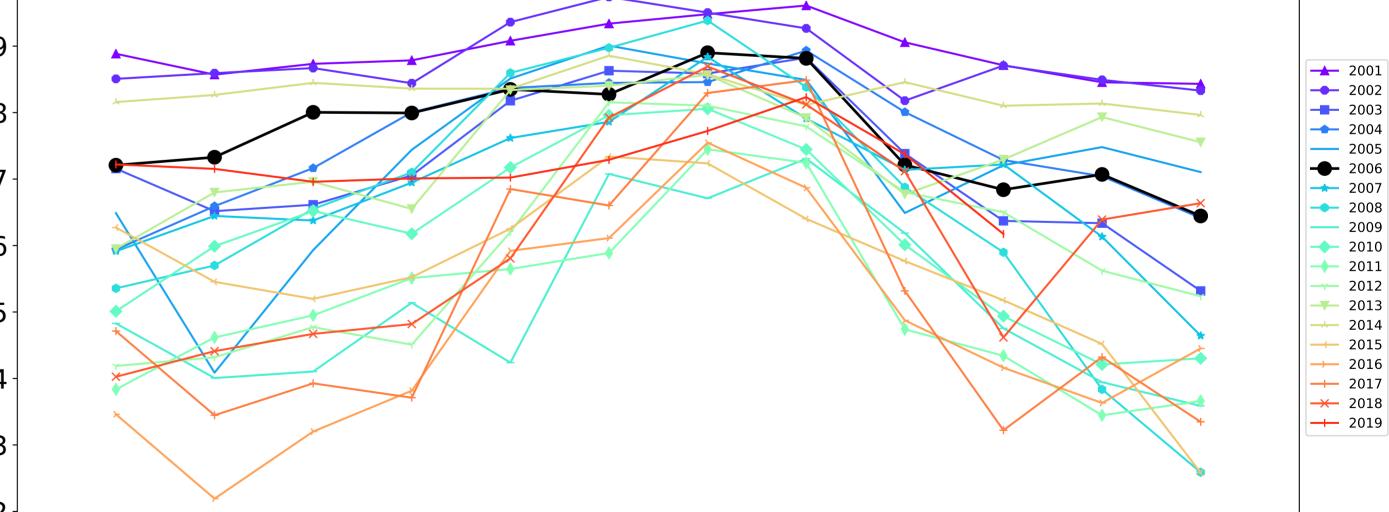
Conservation and natural environments timeseries



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





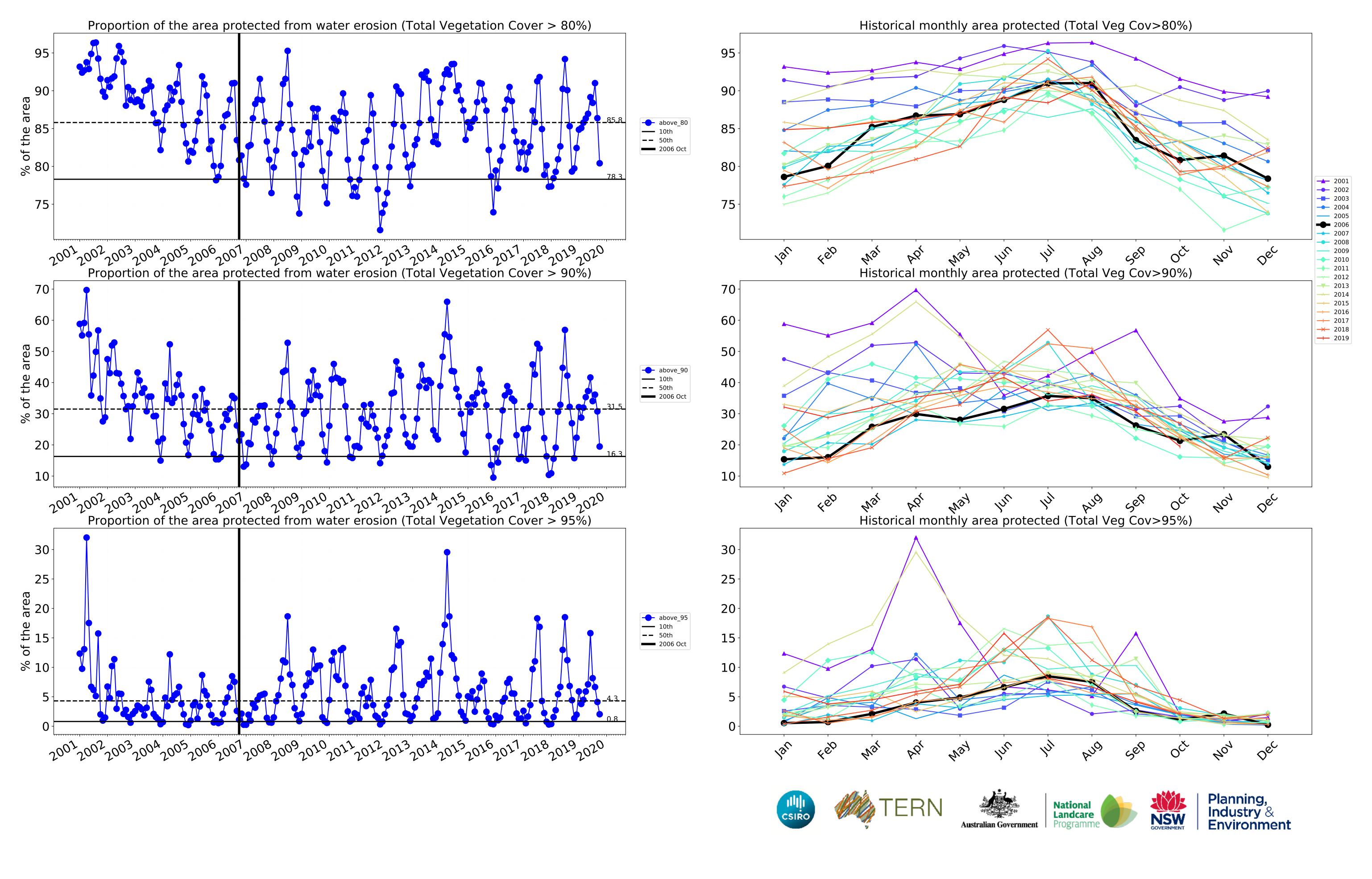


month

National Landcare Planning, Industry & Environment

NSW GOVERNMENT

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



Conservation and natural environments non forest

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)

Anomaly show how many percetage points each

pixel is from the mean. That

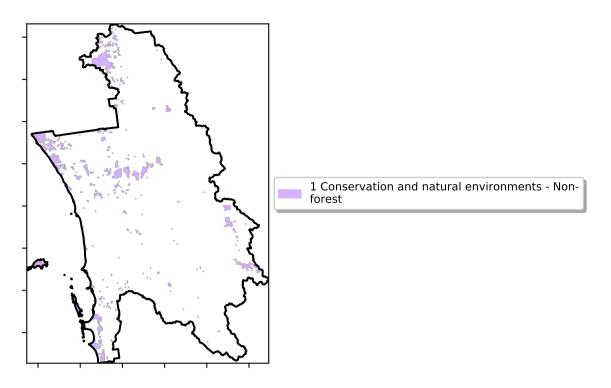
is, red pixels are about 20% lower than the

mean of that

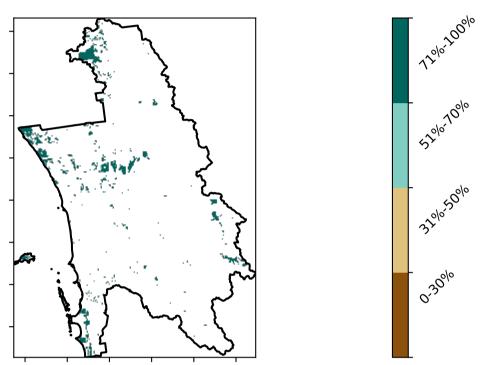
pixel. The mean

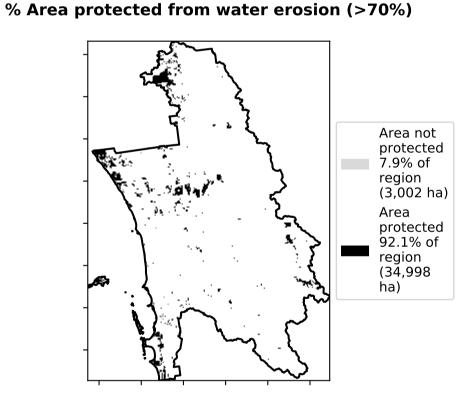
using baseline from 2001 to 2019.

is only for the month of the map

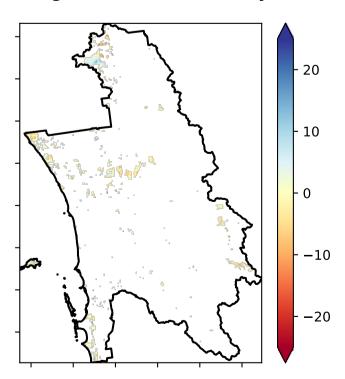


Total Vegetation Cover [%]



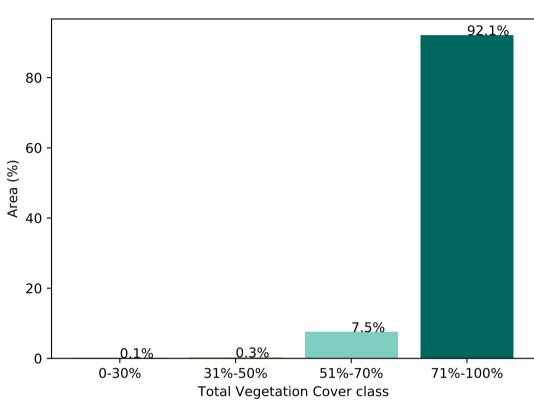


Total Vegetation Cover Anomaly [%]

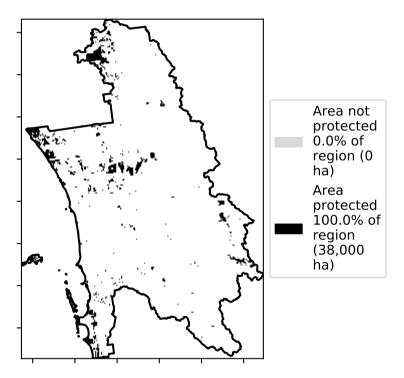


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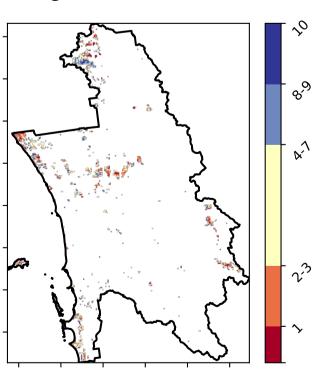
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







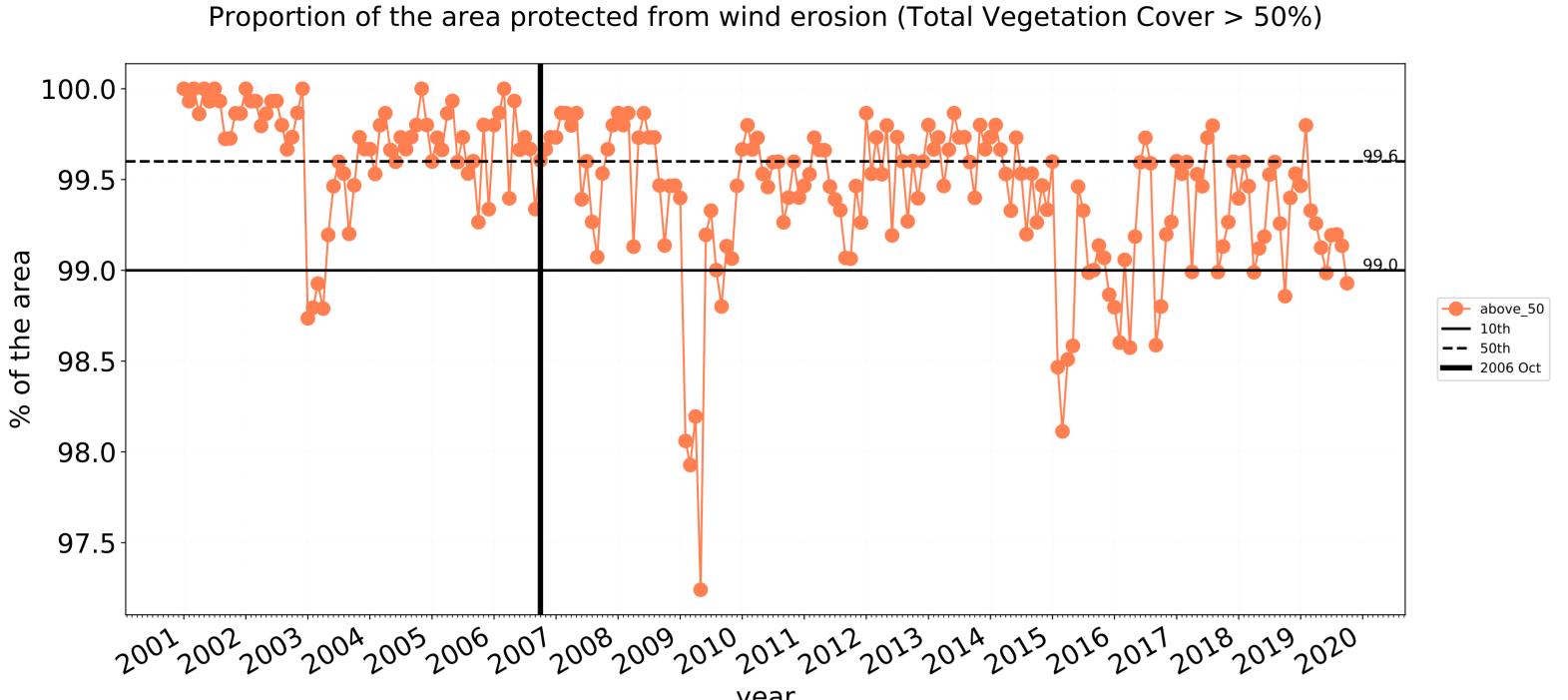


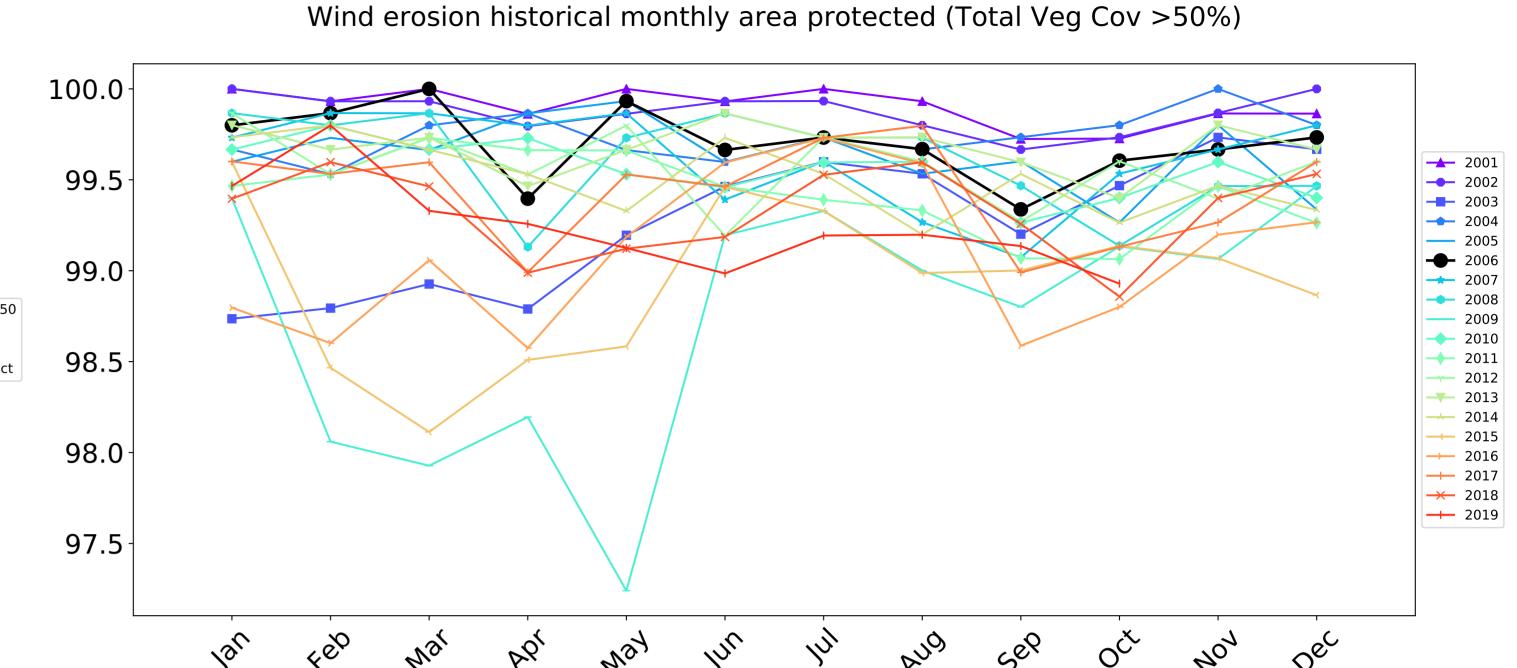


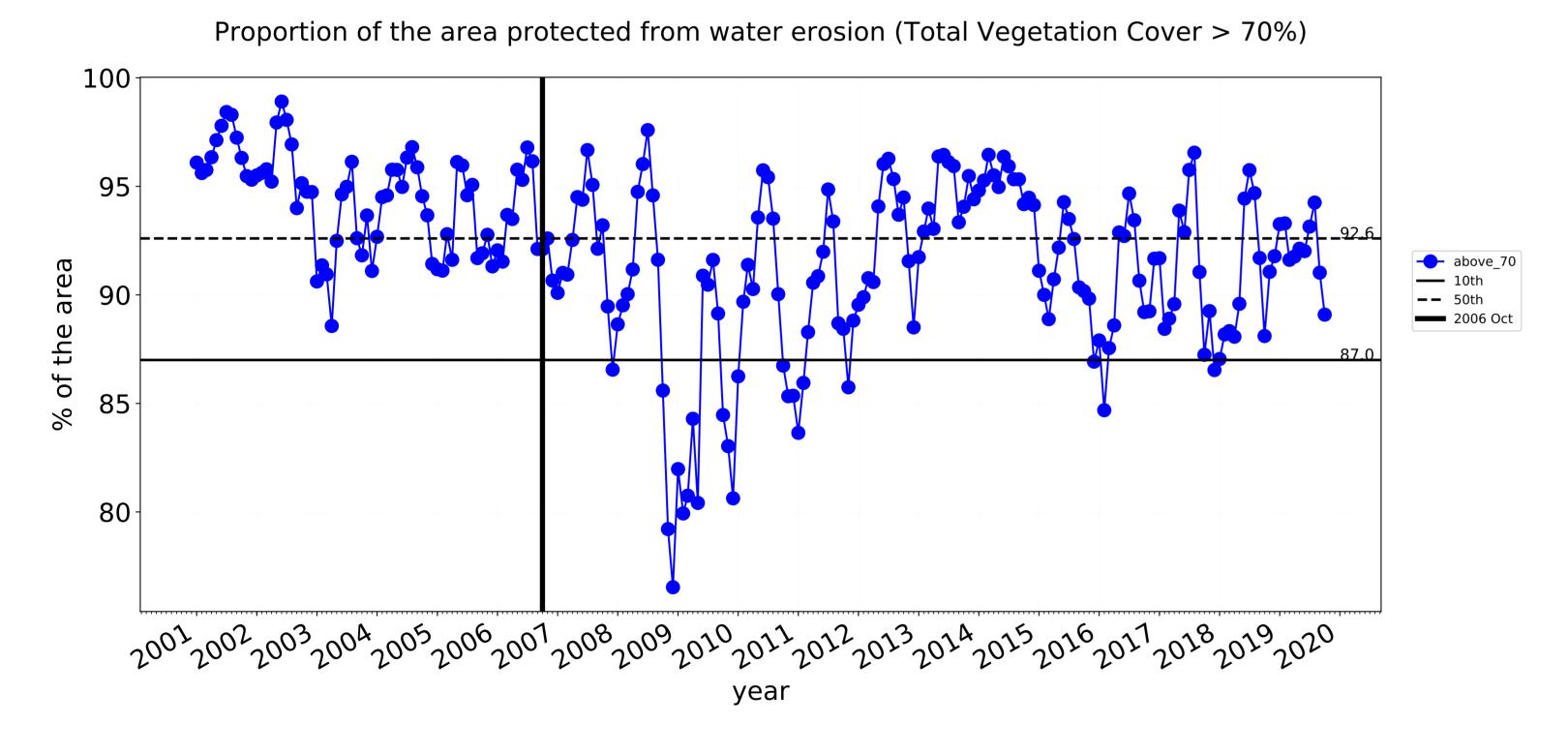


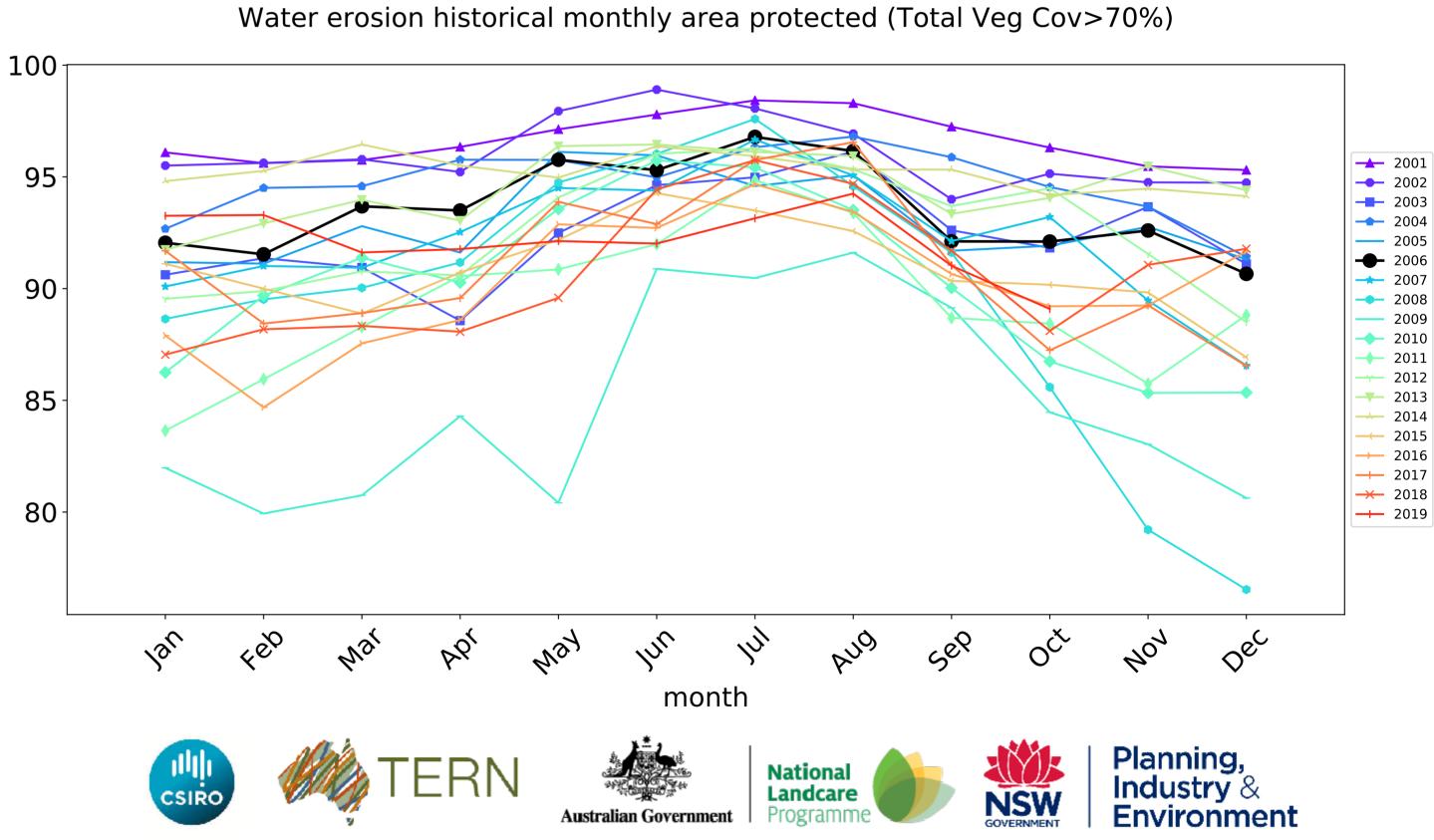


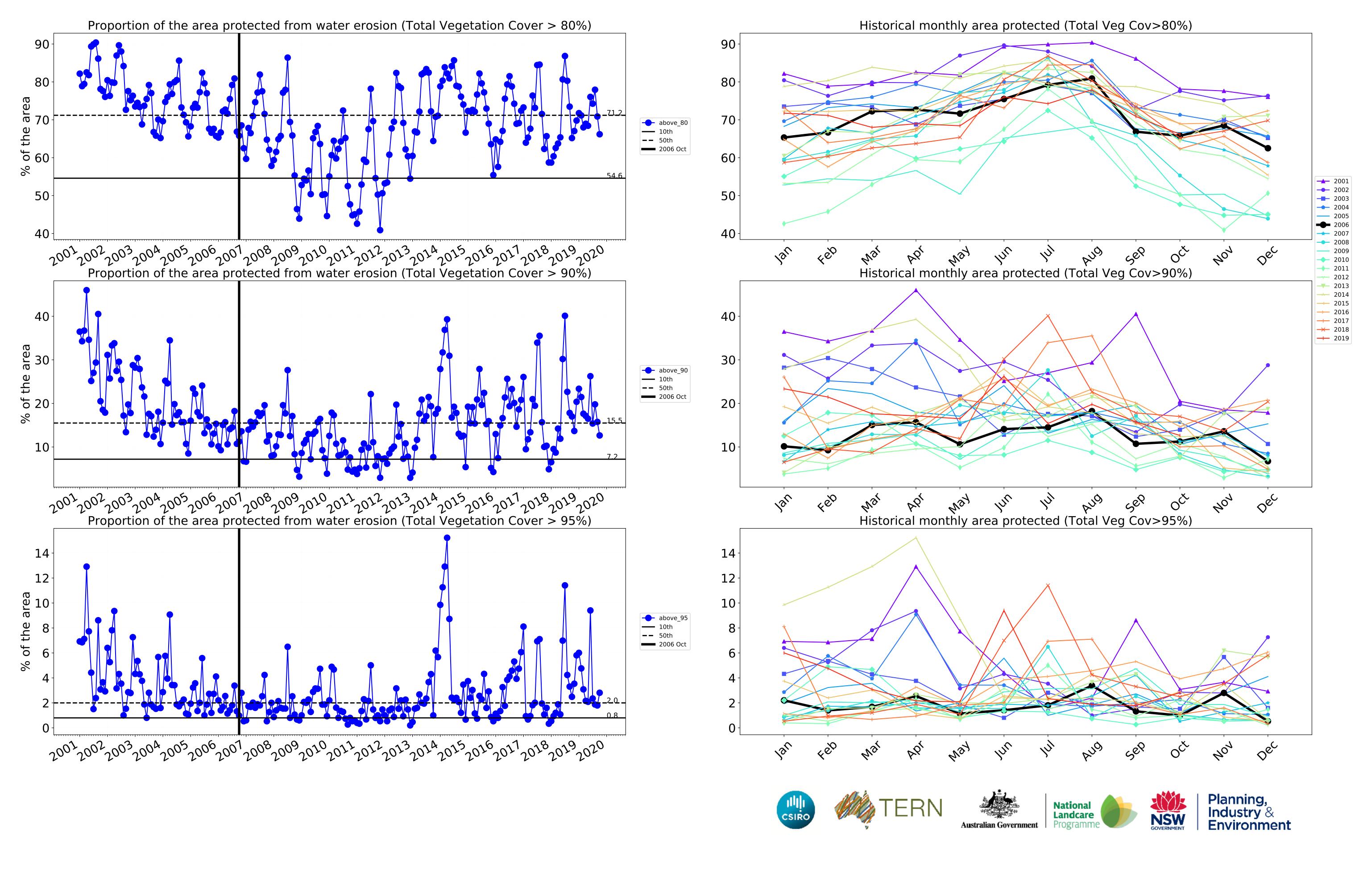
Conservation and natural environments non forest timeseries







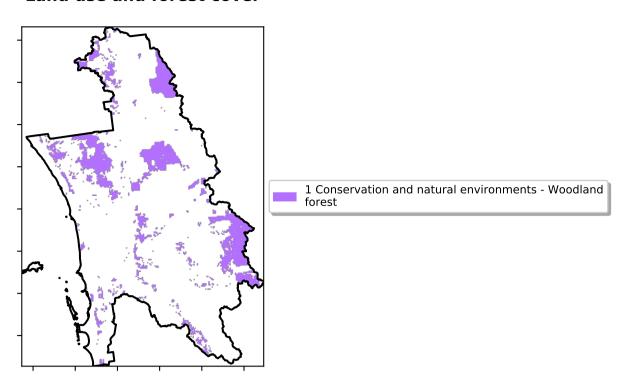




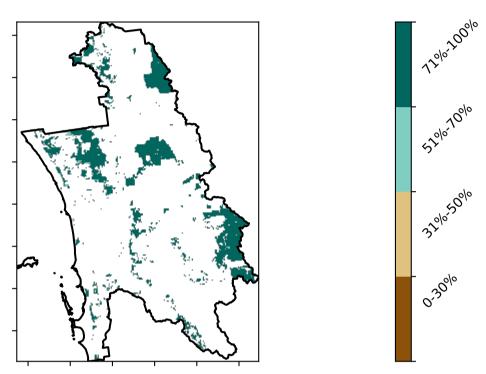
Conservation and natural environments Woodland forest

Land use and forest cover

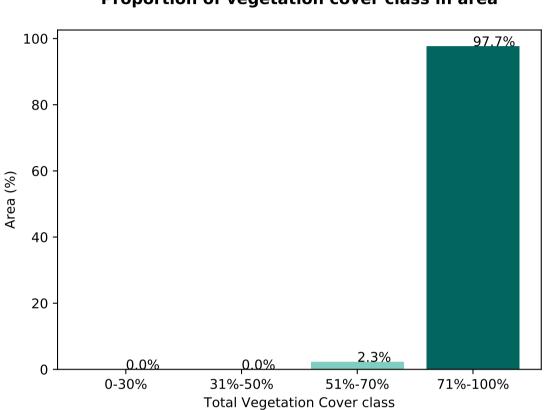
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



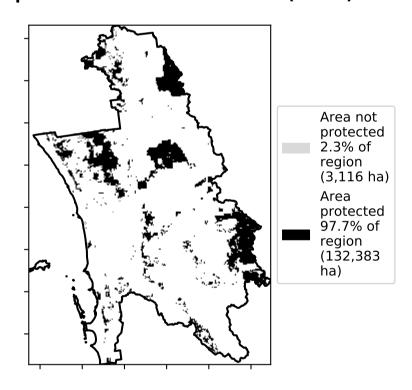
Total Vegetation Cover [%]



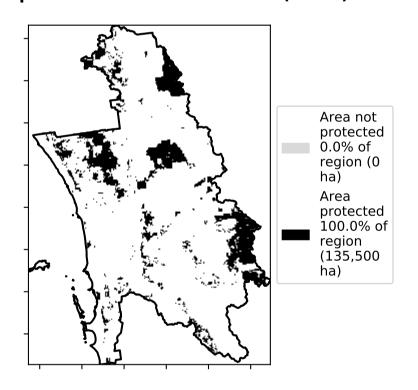
Proportion of vegetation cover class in area



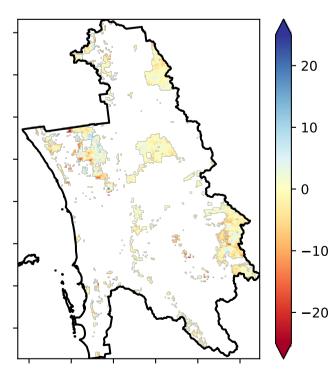
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

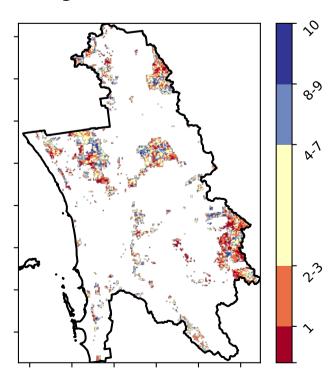


Total Vegetation Cover Anomaly [%]



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 [%]





Anomaly show how many percetage points each

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is only for the month of the map

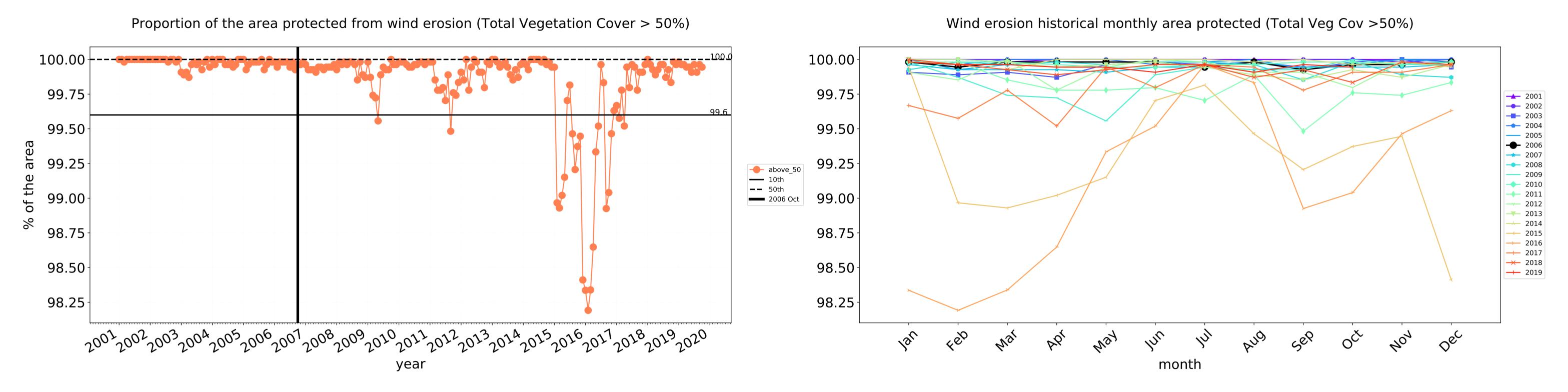


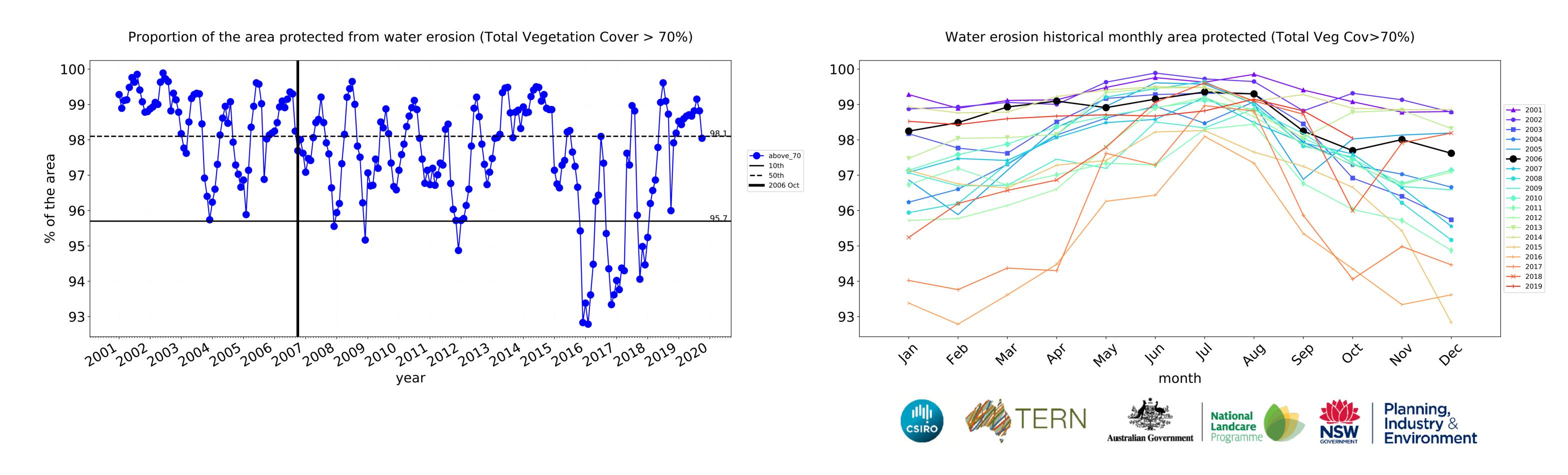


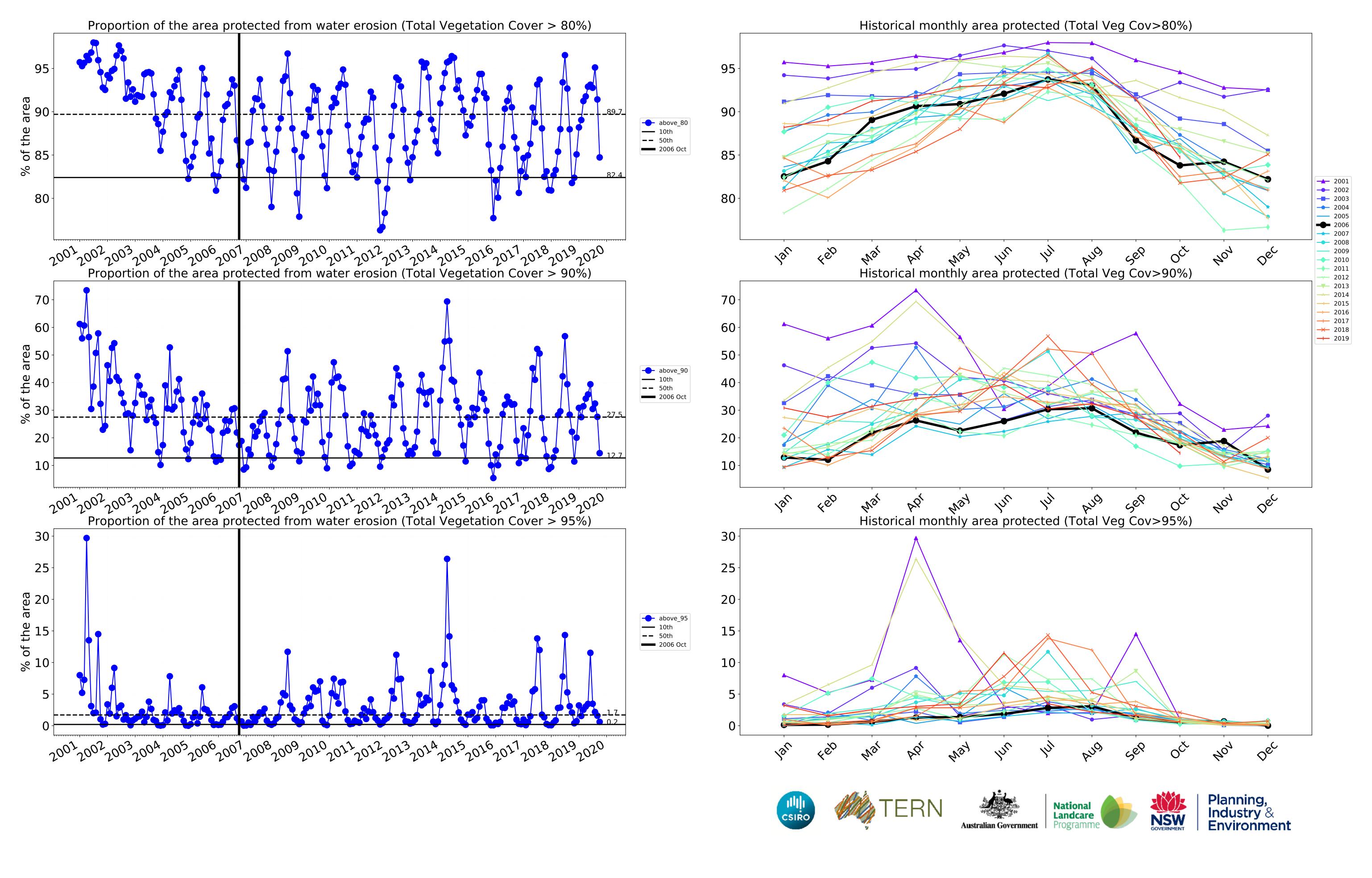












Conservation and natural environments Forest (non woodland)

Land use and forest cover

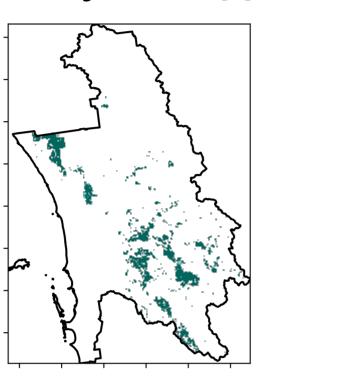
Catchment Scale Land Use and Forests of Australia (2018)

Derived from

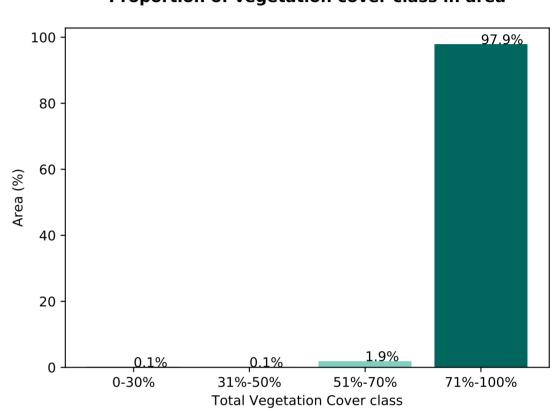
Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

1 Conservation and natural environments - Non-woodland forest

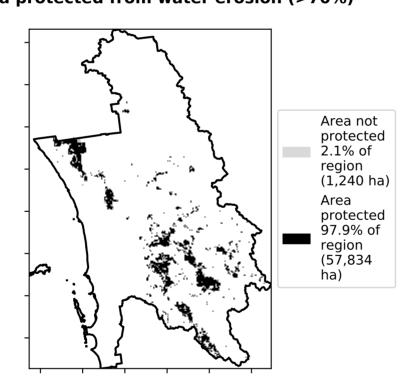
Total Vegetation Cover [%]



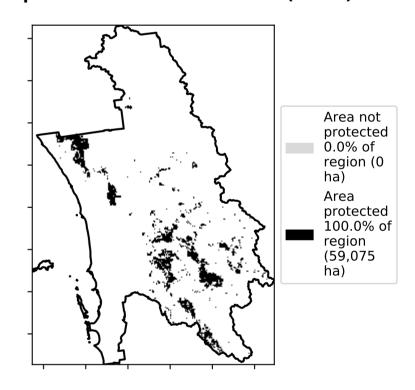
Proportion of vegetation cover class in area



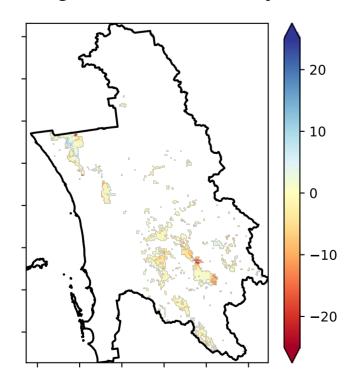
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

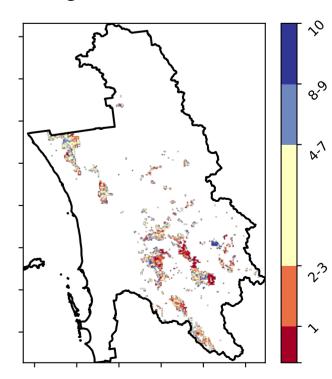


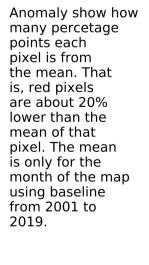
Total Vegetation Cover Anomaly [%]



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 [%]







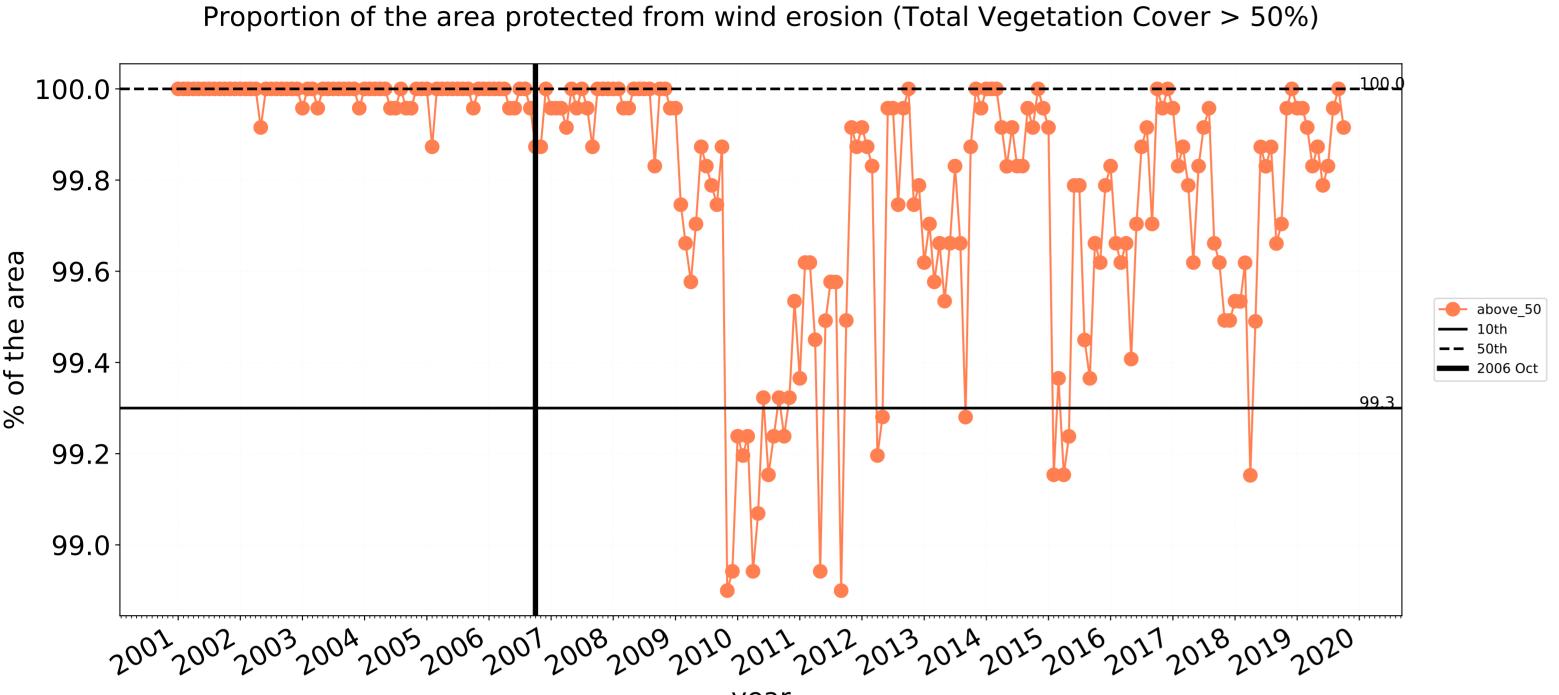


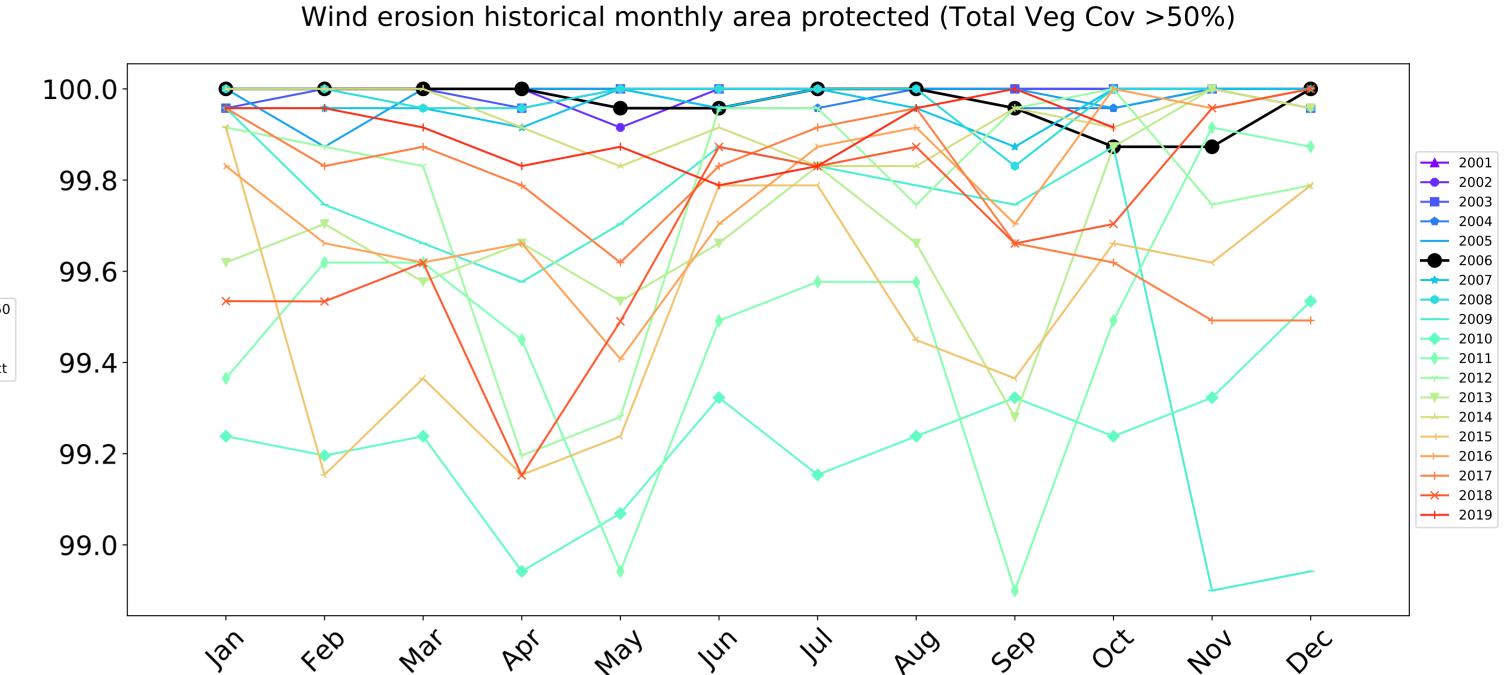


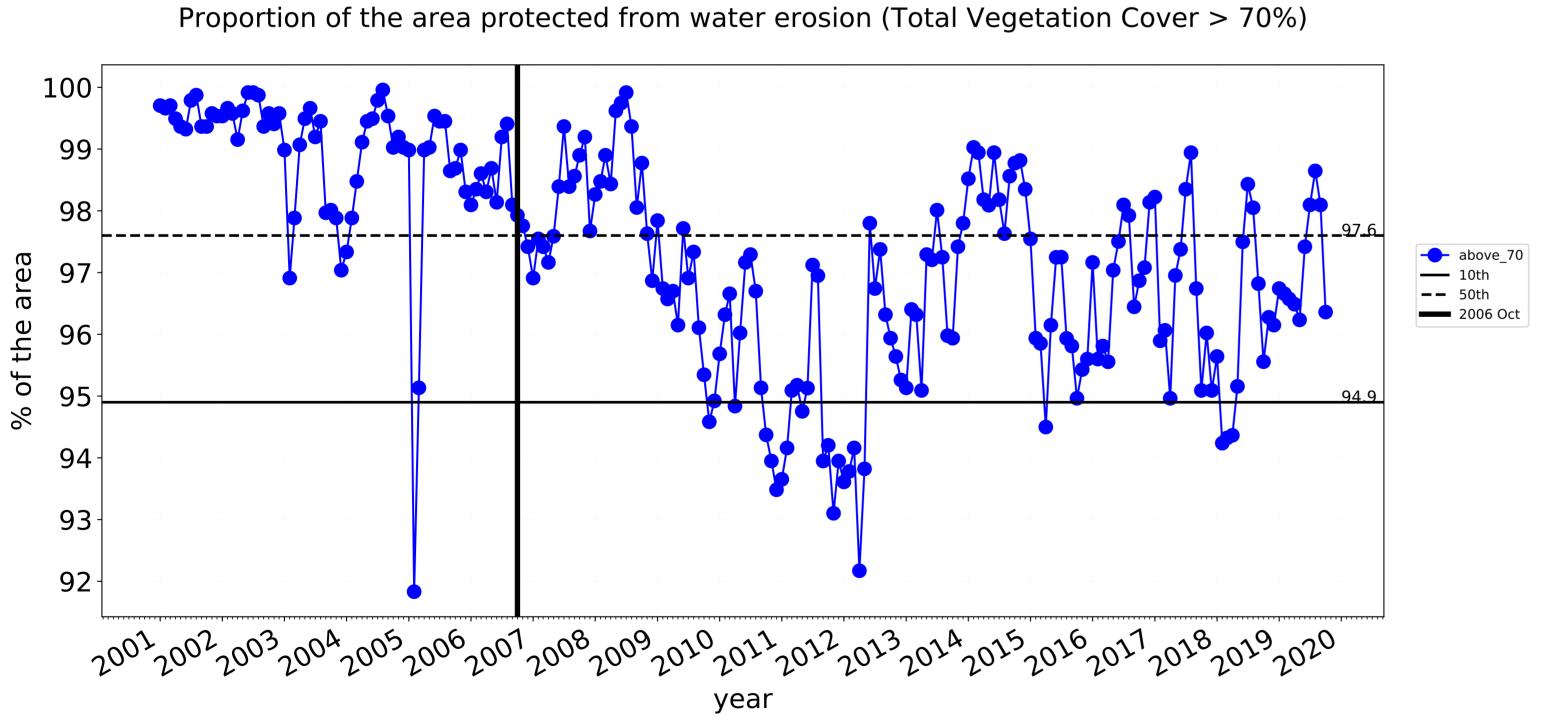


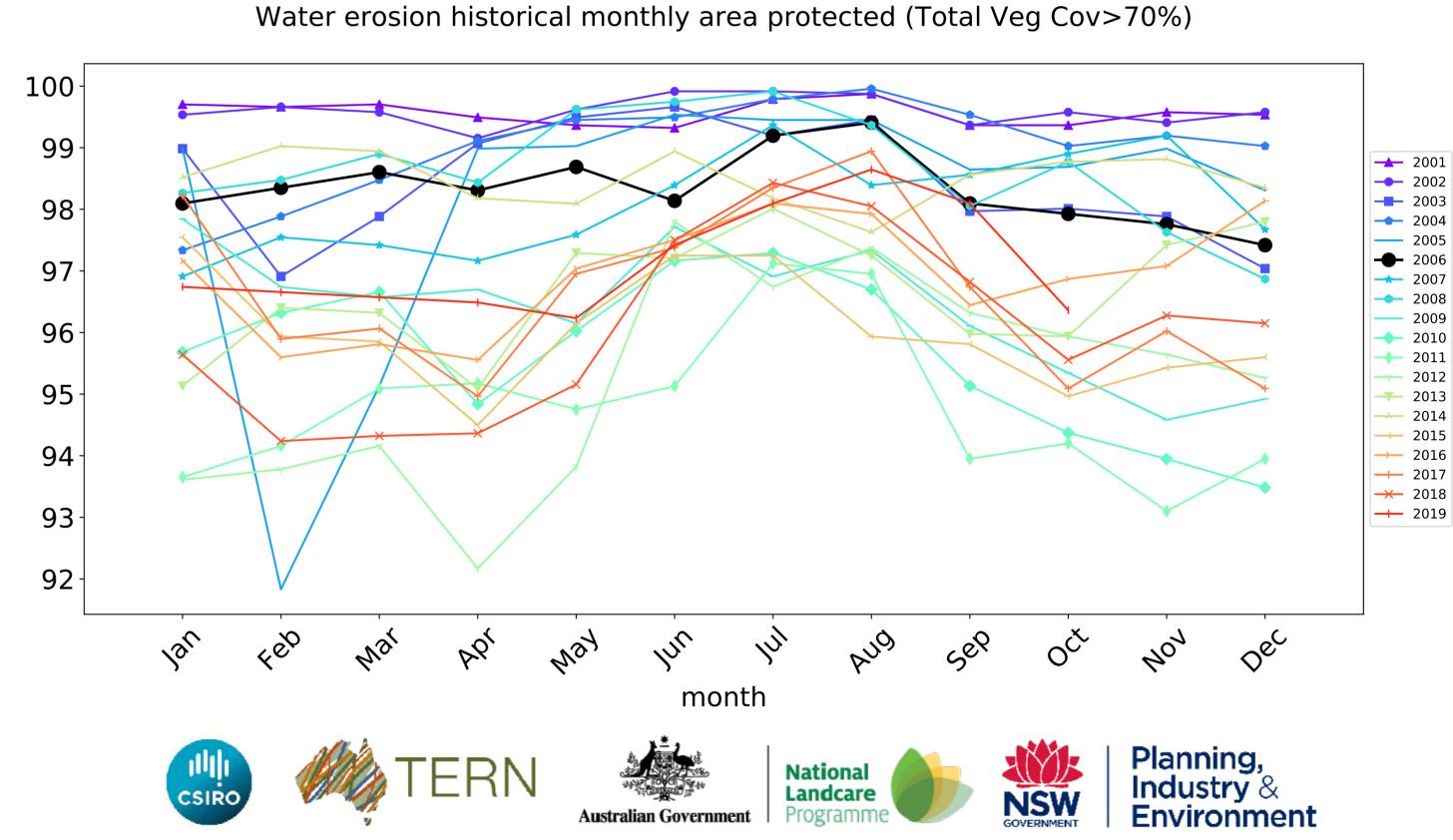


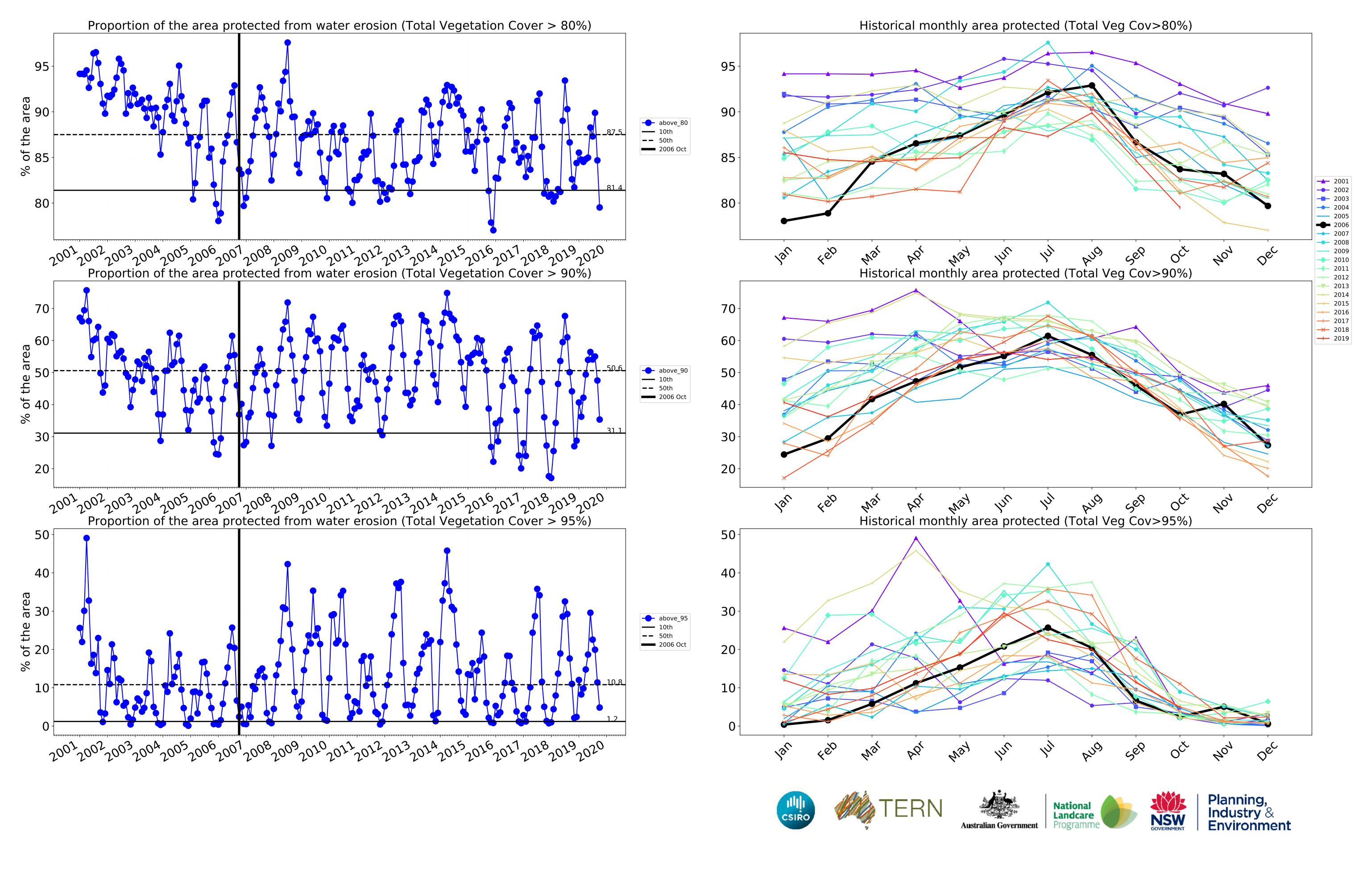












Agriculture

Land use and forest cover

Catchment Scale

of Australia (2018)

(2018) and Forests

of Australia (2018)

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is only for the month of the map

Derived from

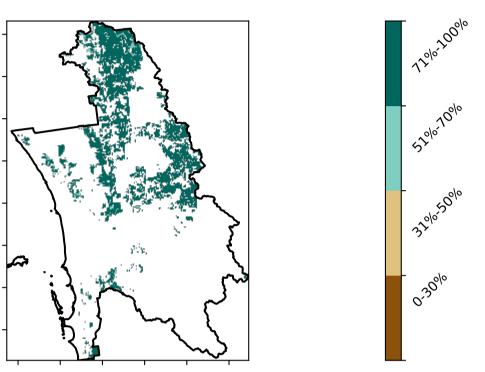
Use of Australia

Land Use and Forests

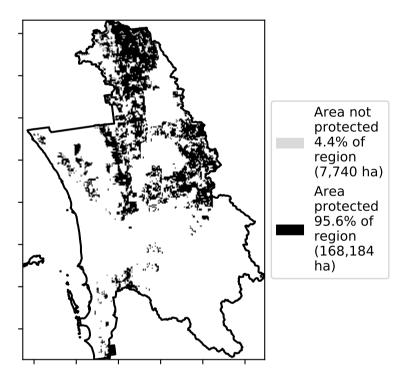
Catchment Scale Land

1 Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest 4 Agriculture - Grazing - Irrigated 5 Agriculture - Cropping - Non-irrigated 6 Agriculture - Cropping - Irrigated 7 Agriculture - Horticulture - Non-irrigated 8 Agriculture - Horticulture - Irrigated

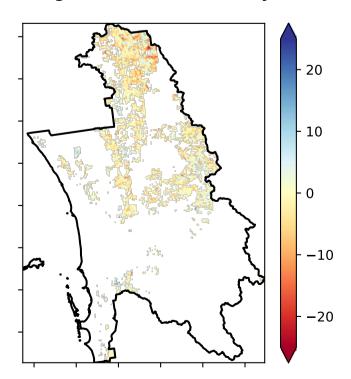
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

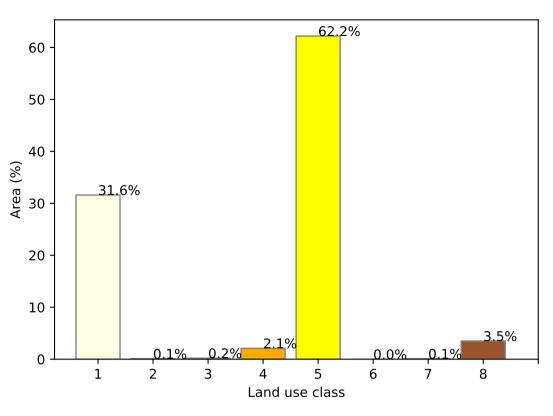


Total Vegetation Cover Anomaly [%]

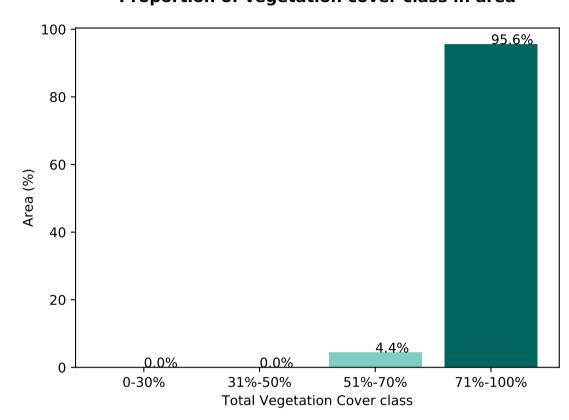


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

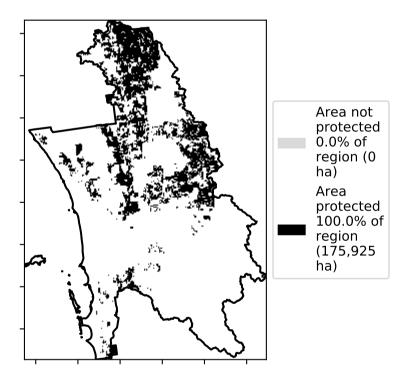
Proportion of each land class in area



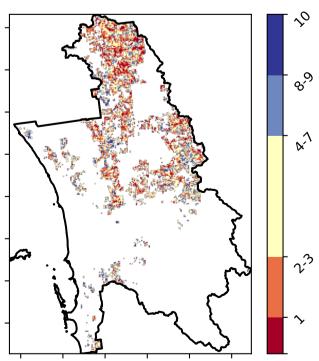
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







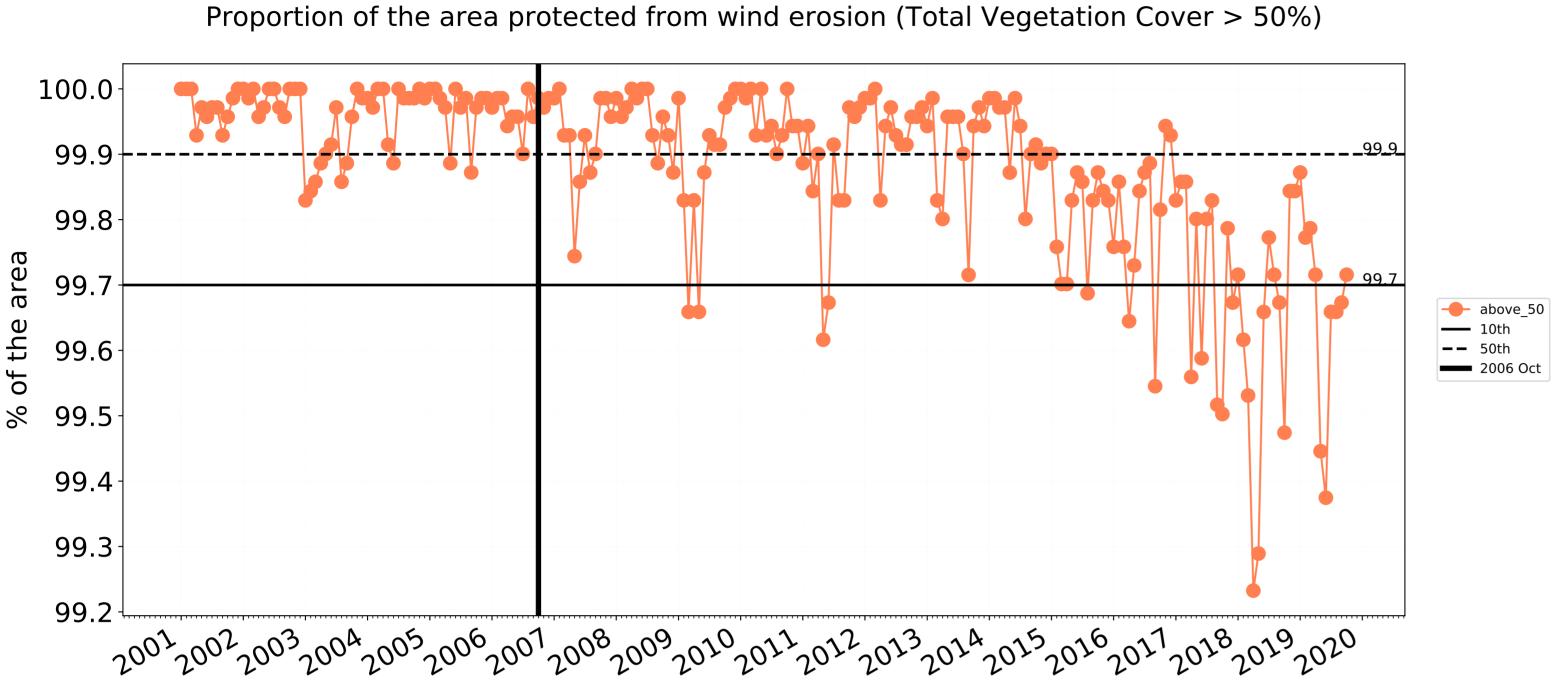




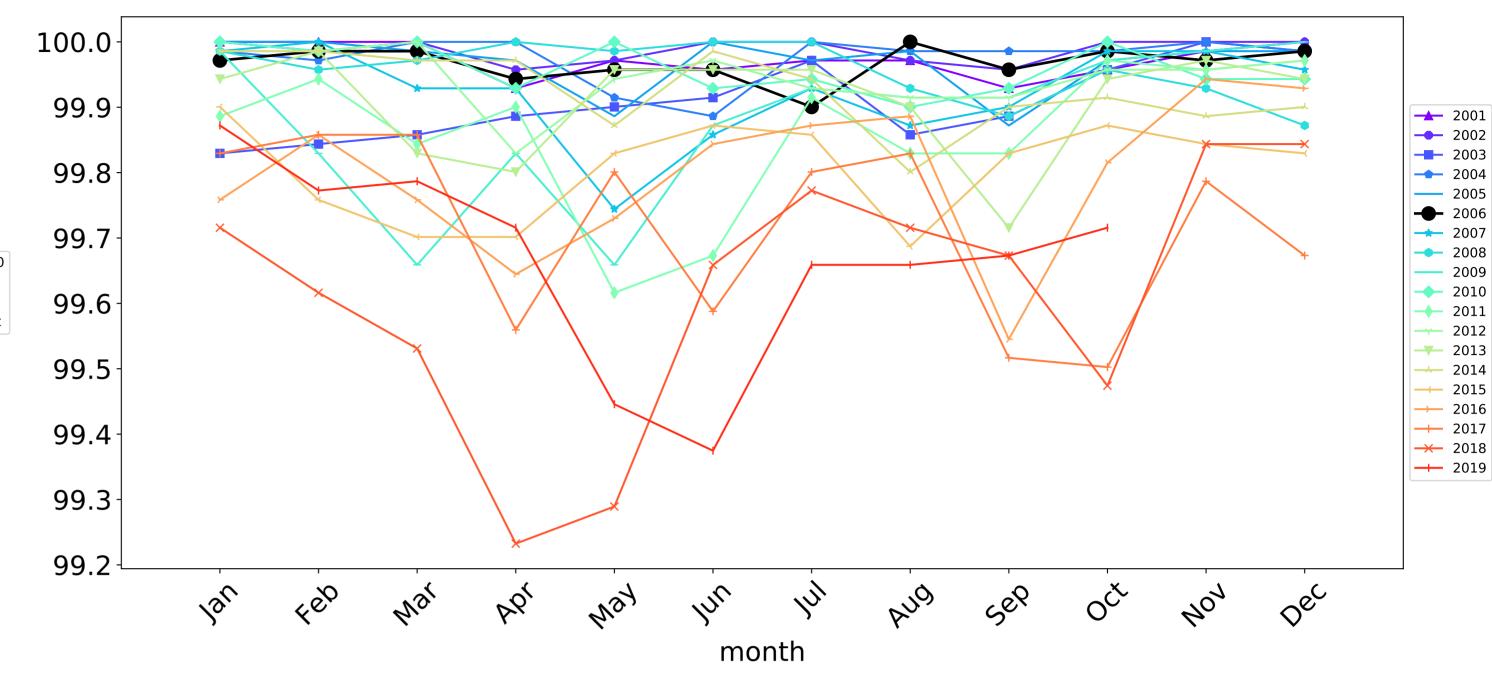


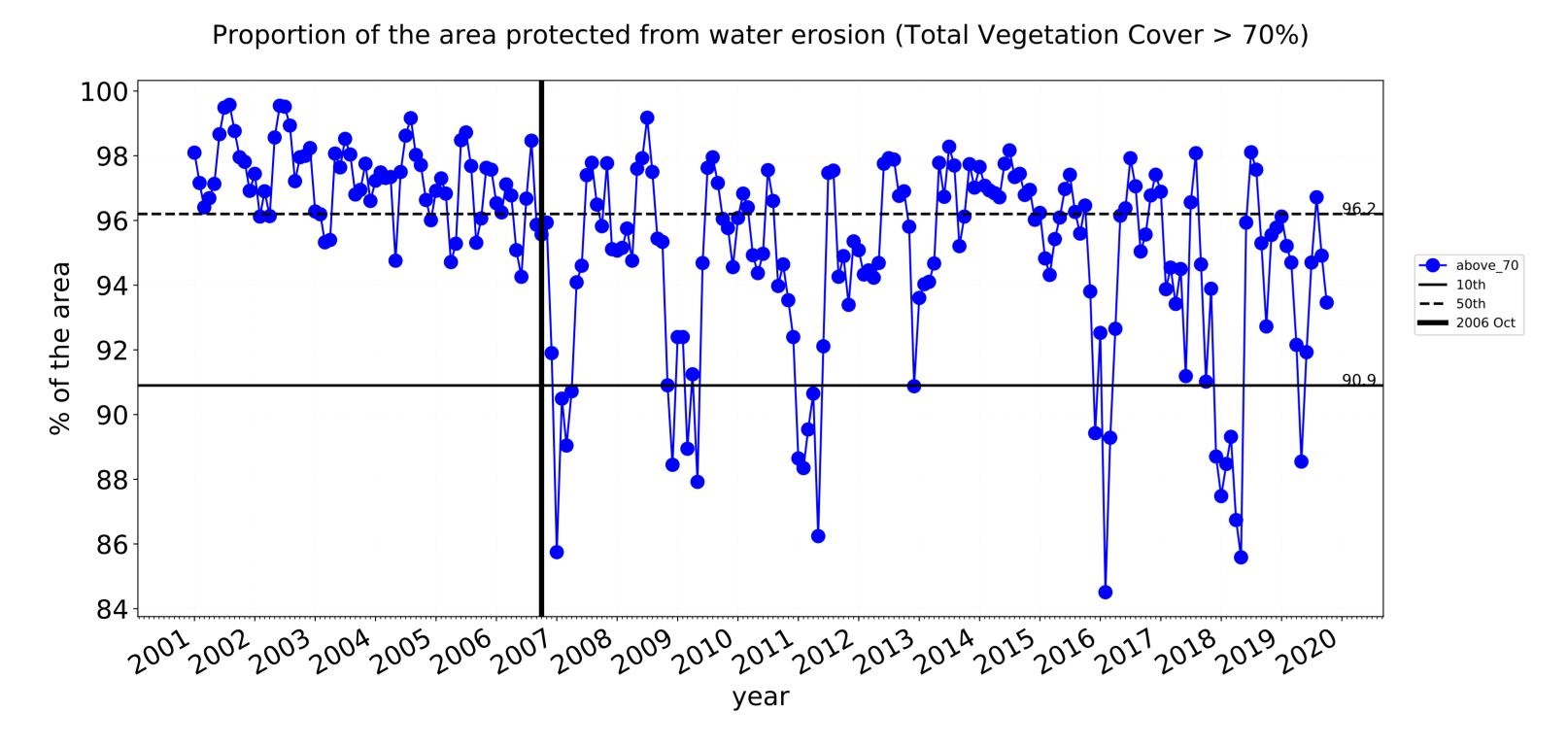


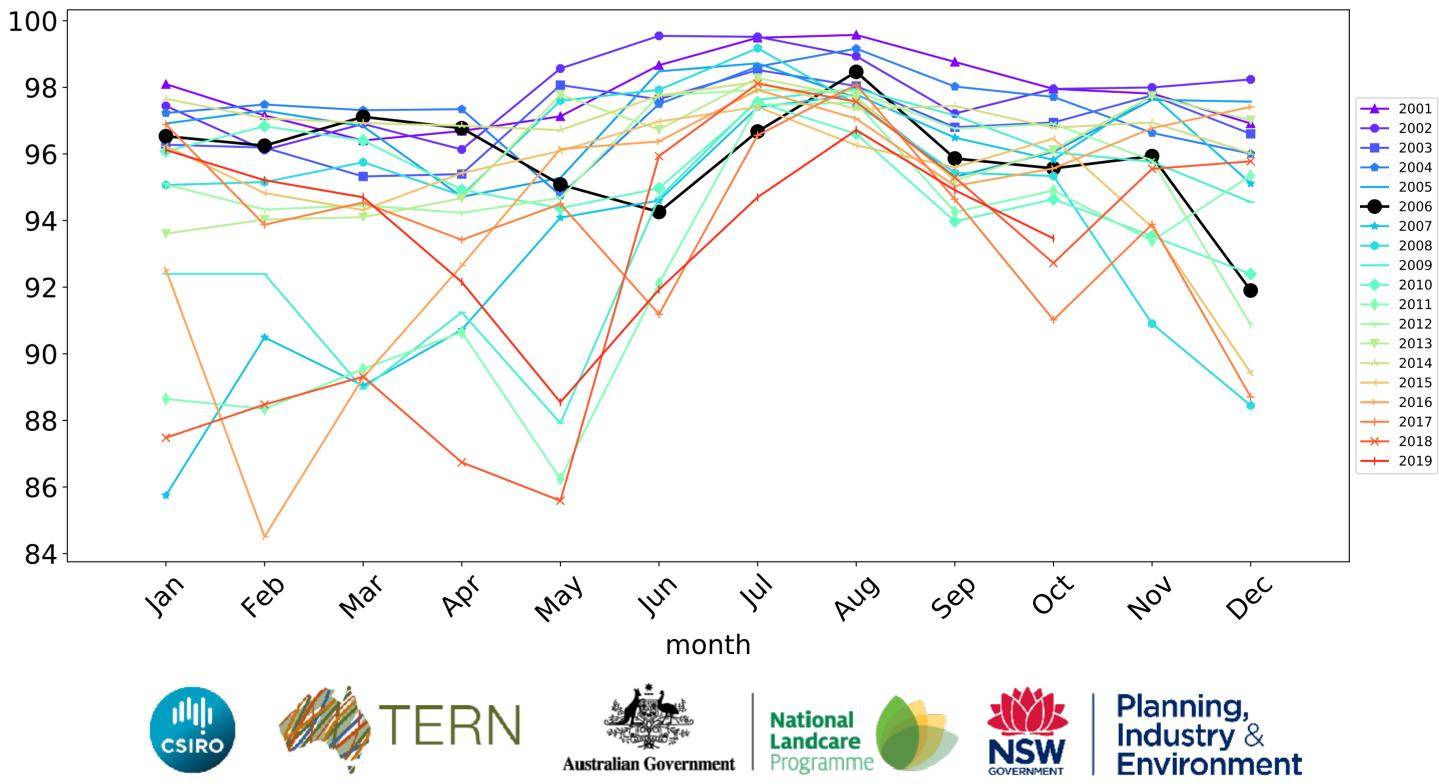
Agriculture timeseries



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



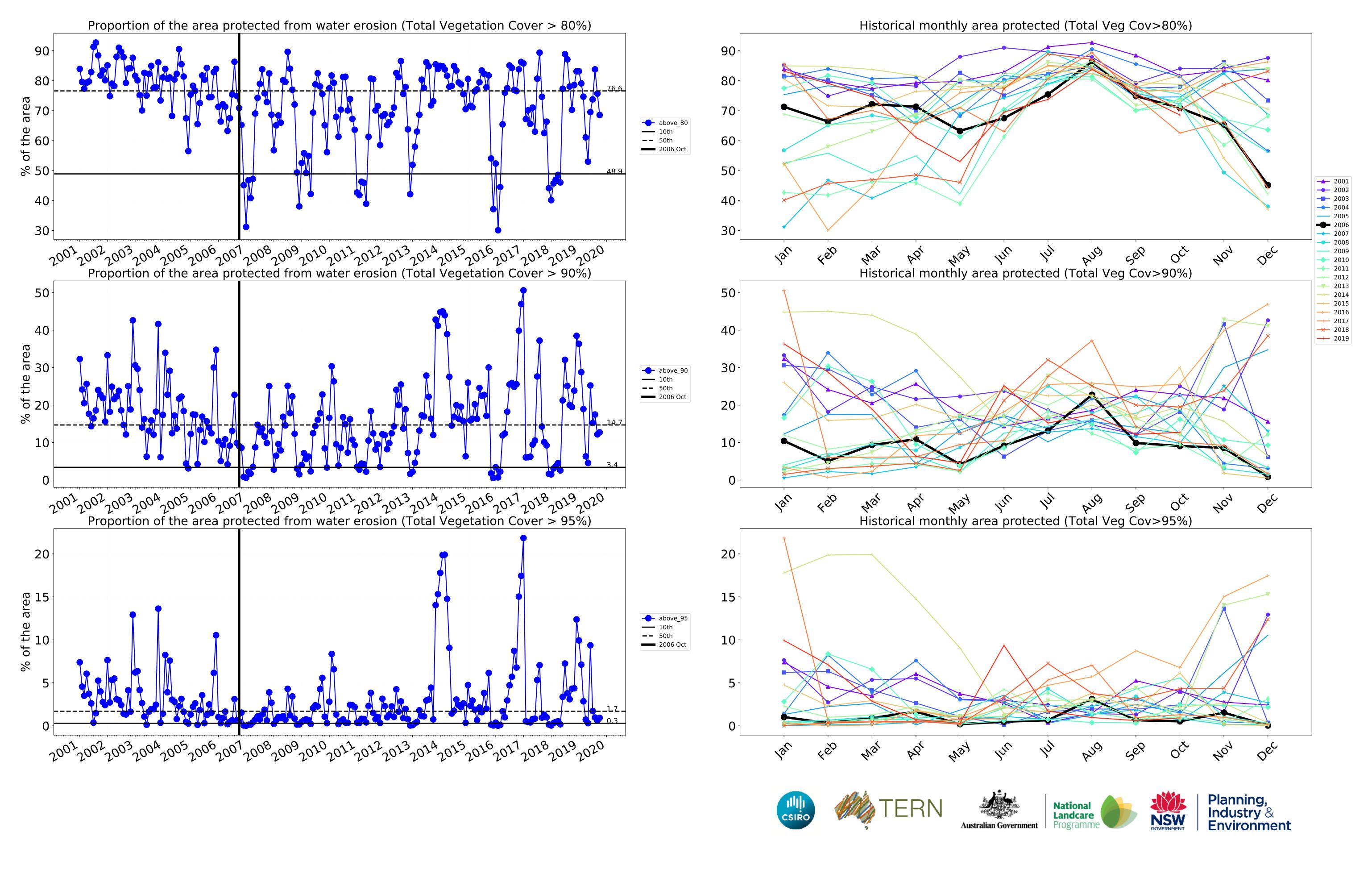




Landcare

NSW GOVERNMENT

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

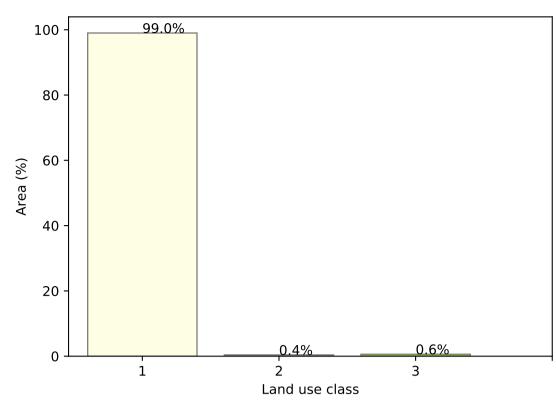


Grazing

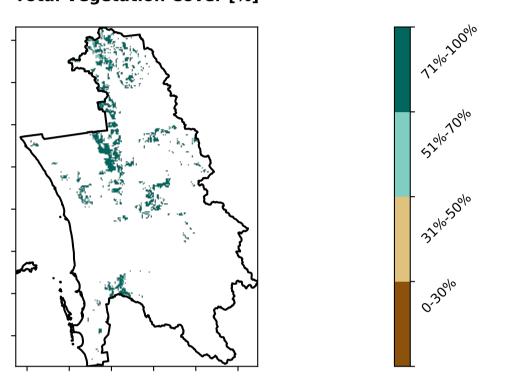
Land use and forest cover

1 Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest

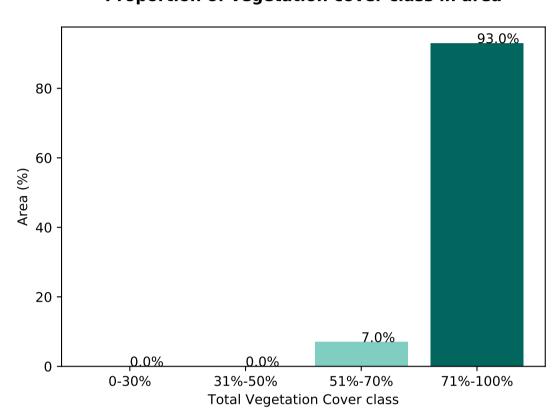
Proportion of each land class in area



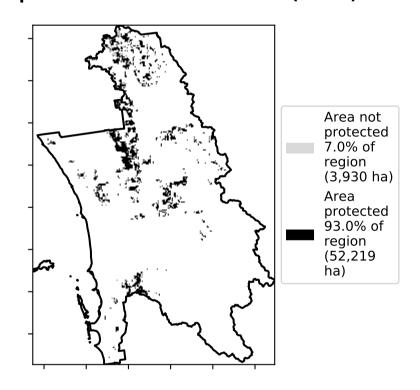
Total Vegetation Cover [%]



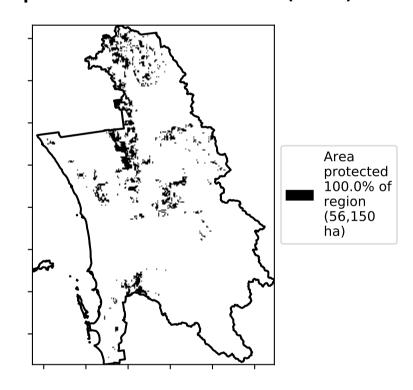
Proportion of vegetation cover class in area



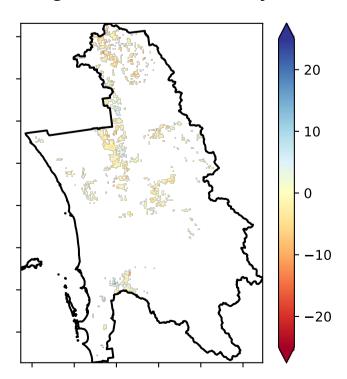
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

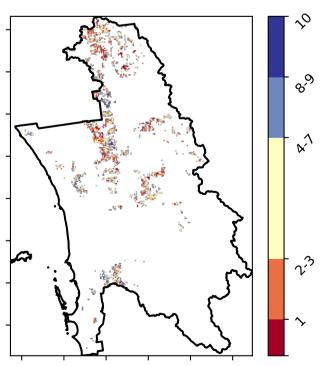


Total Vegetation Cover Anomaly [%]



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 [%]



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

Catchment Scale Land Use and Forests of Australia (2018)

Catchment Scale Land

Derived from

Use of Australia (2018) and Forests

of Australia (2018)



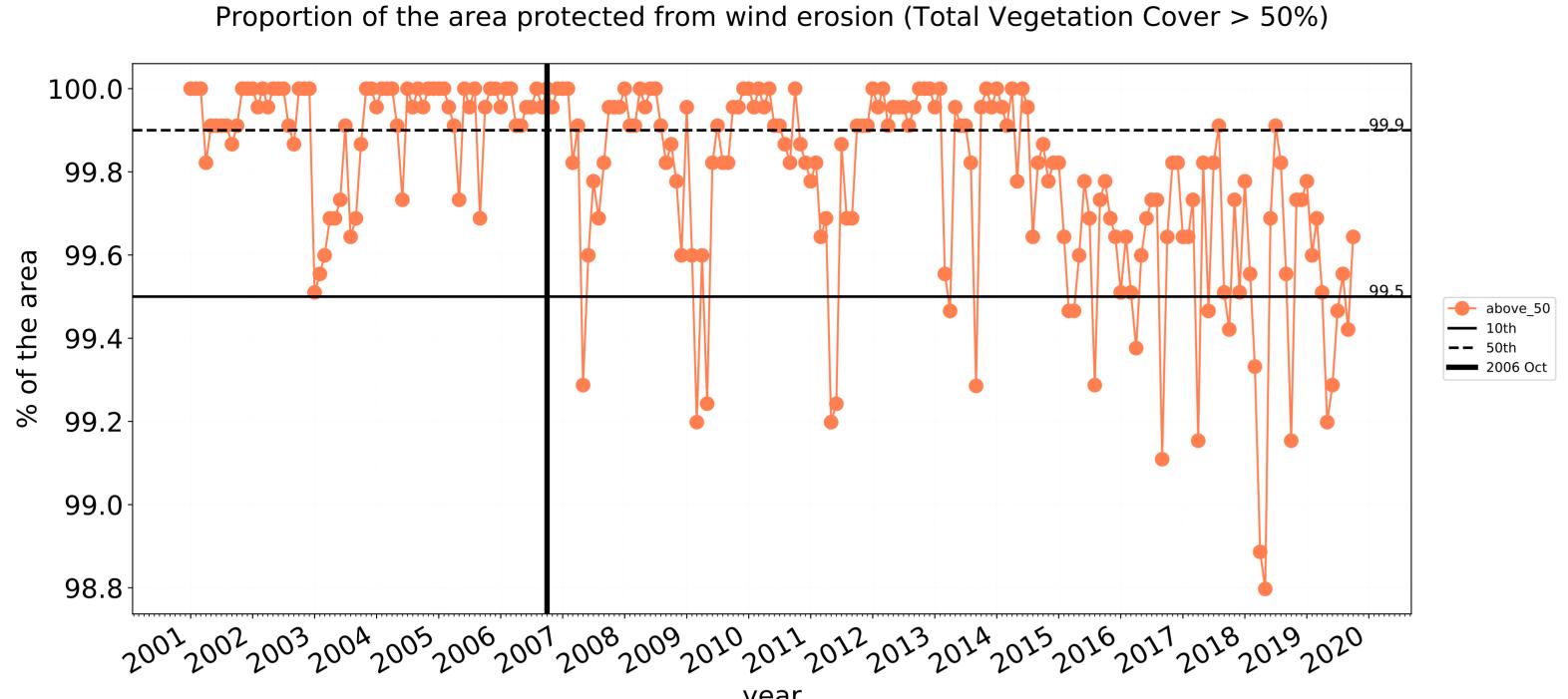


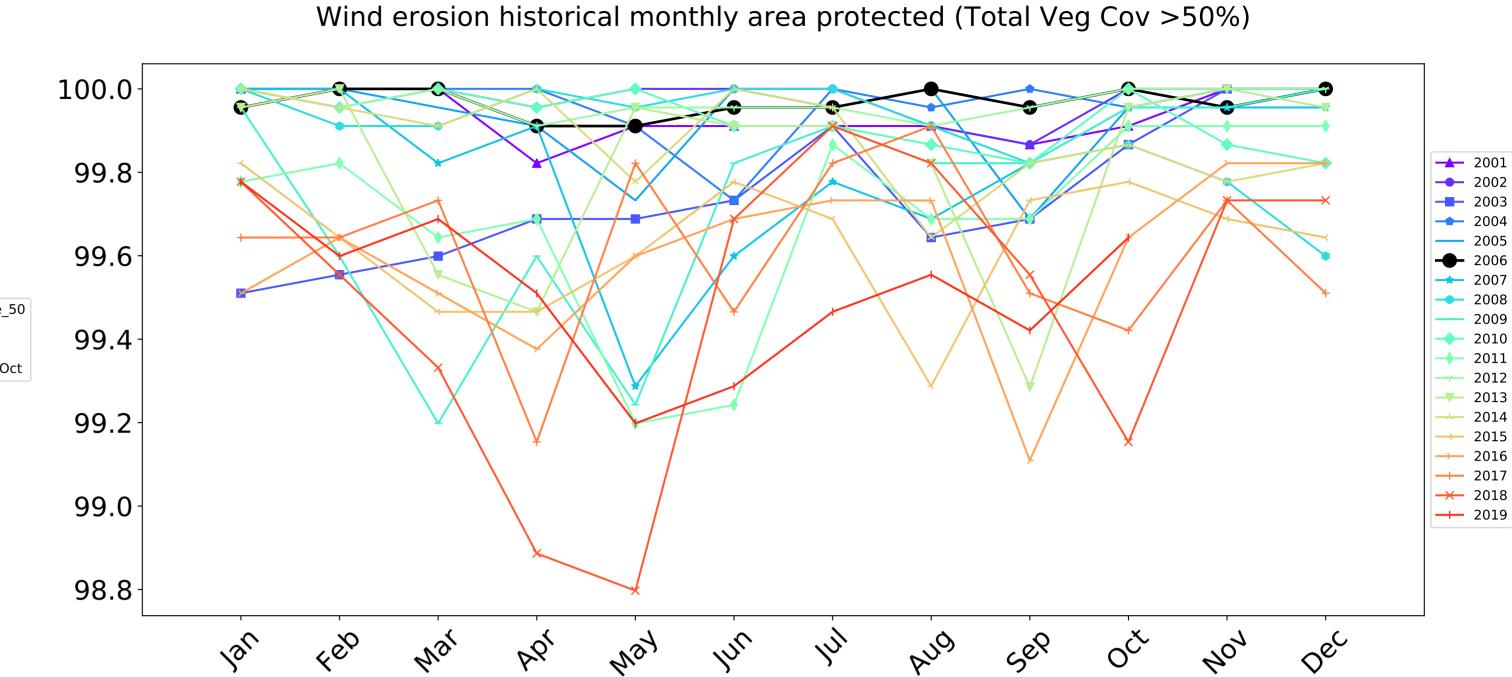


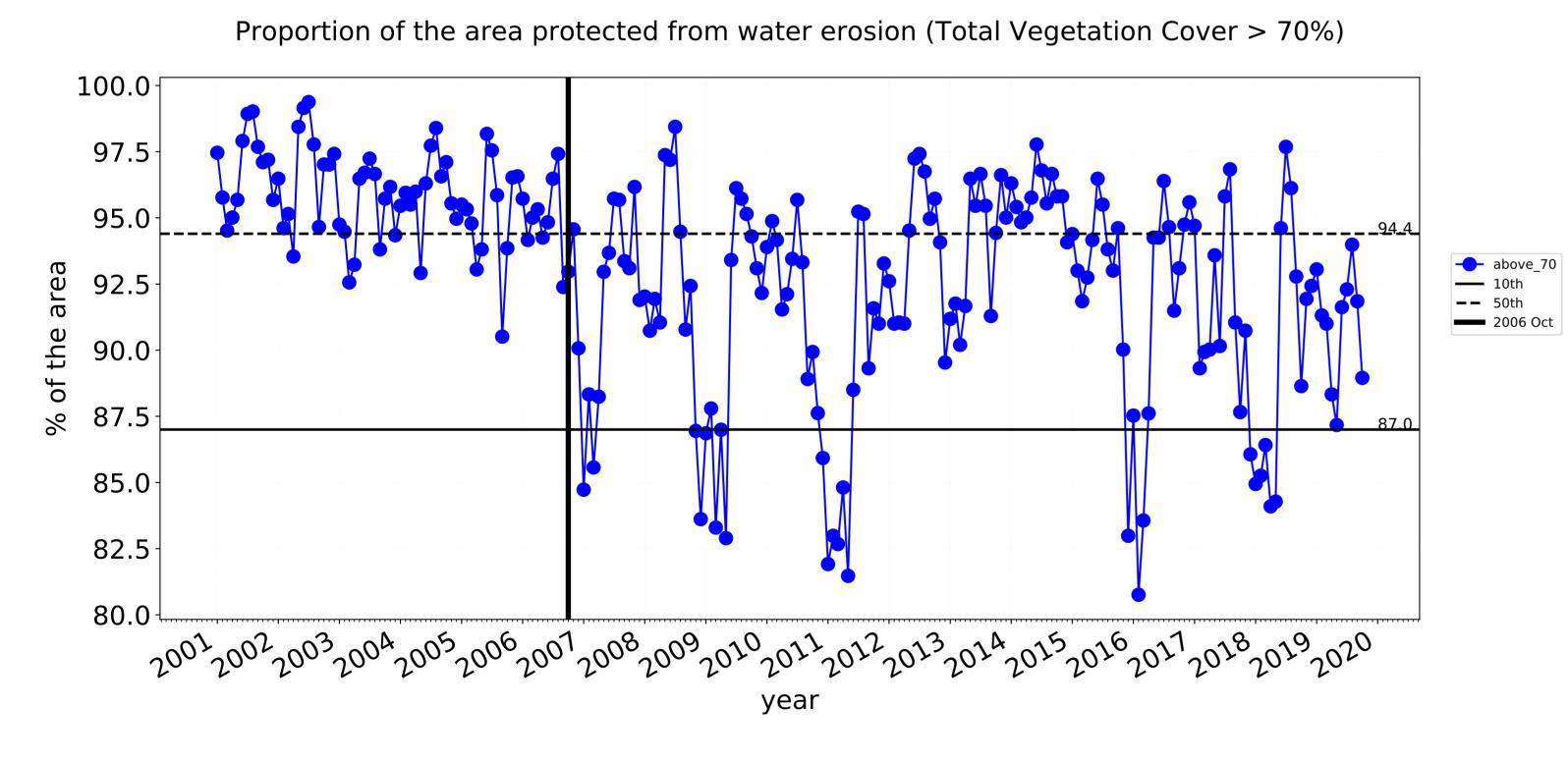


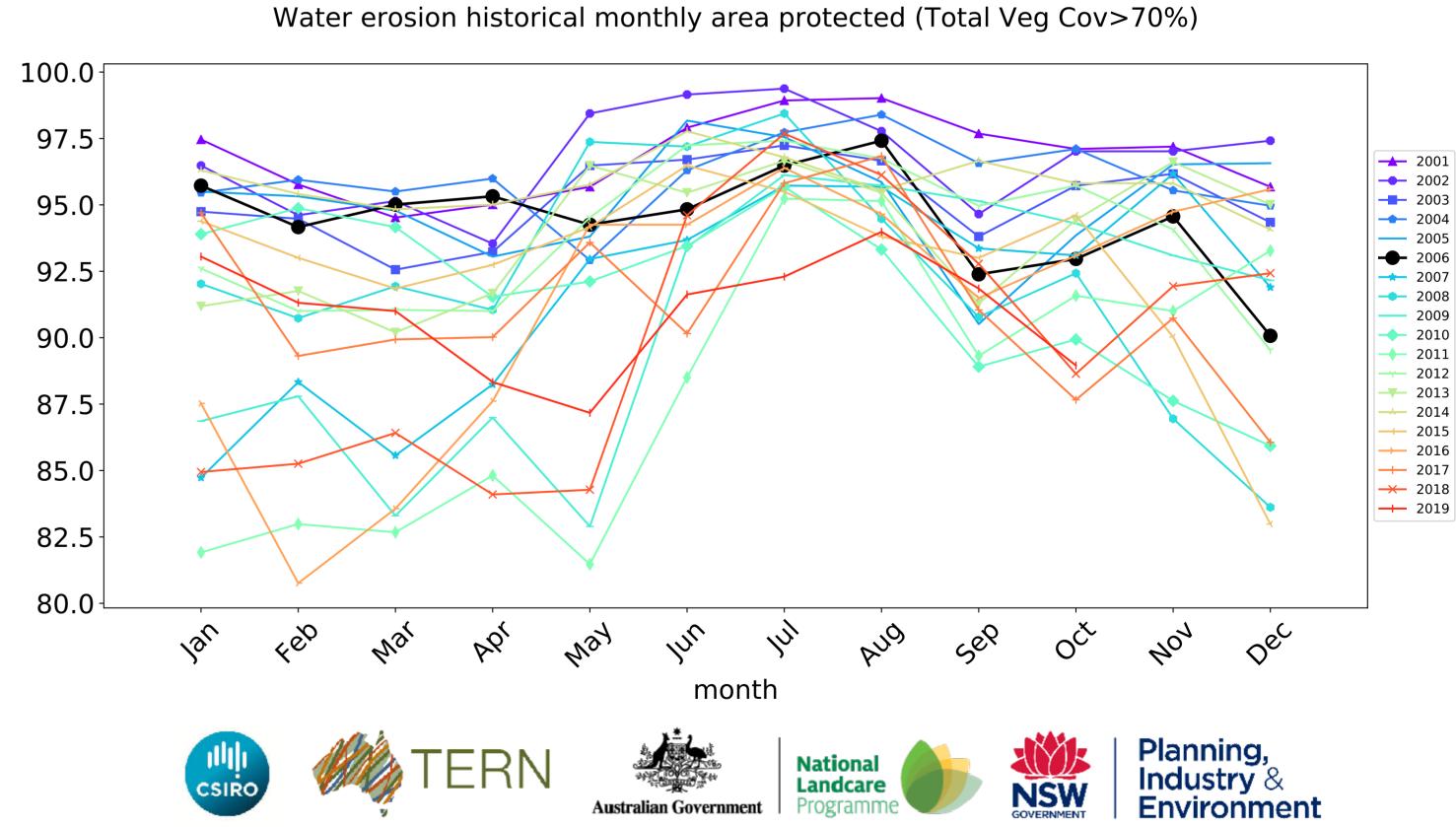


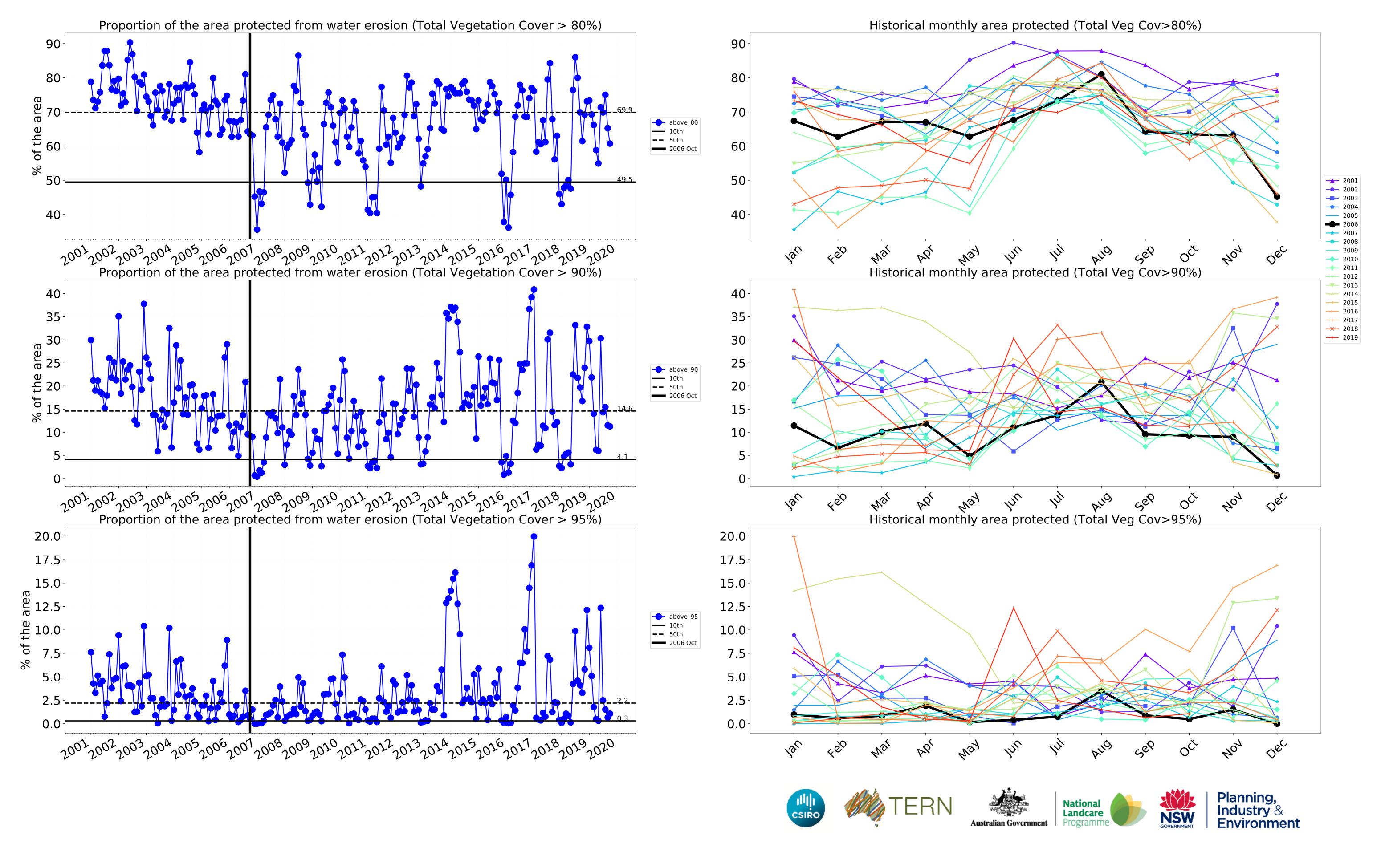
Grazing timeseries











Grazing non forest

Land use and forest cover

Catchment Scale 1 Agriculture - Grazing - Non forest

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

Anomaly show how many percetage points each pixel is from the mean. That

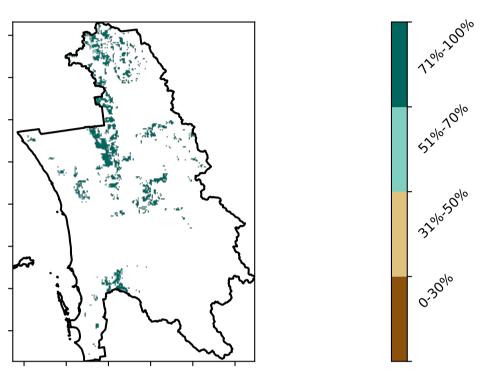
is, red pixels are about 20% lower than the

mean of that

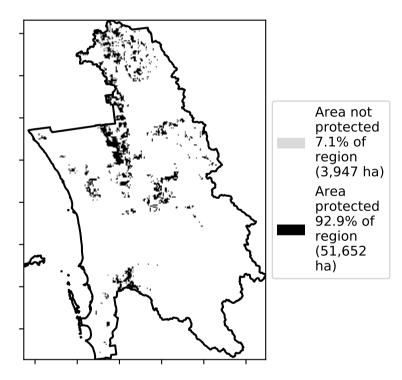
pixel. The mean

is only for the month of the map using baseline from 2001 to 2019.

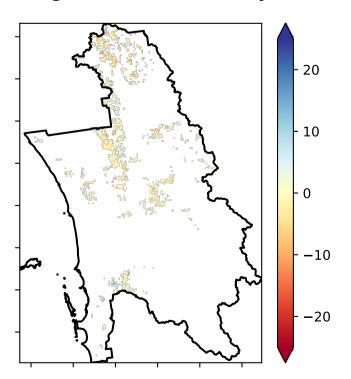
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

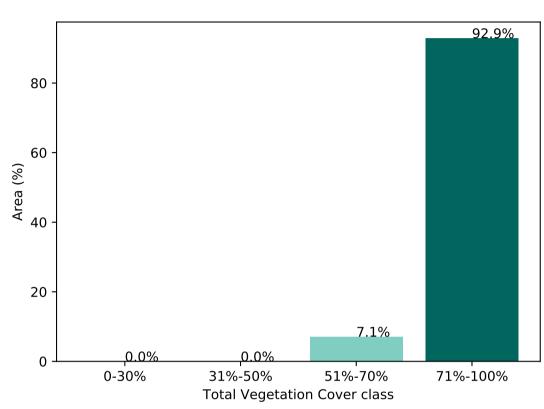


Total Vegetation Cover Anomaly [%]

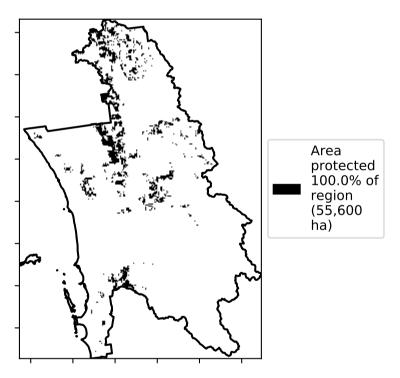


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

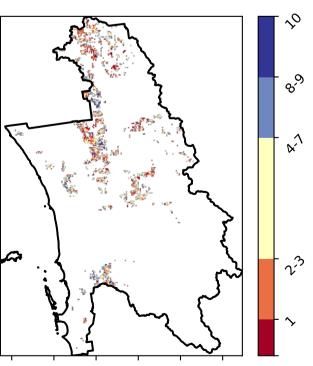
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







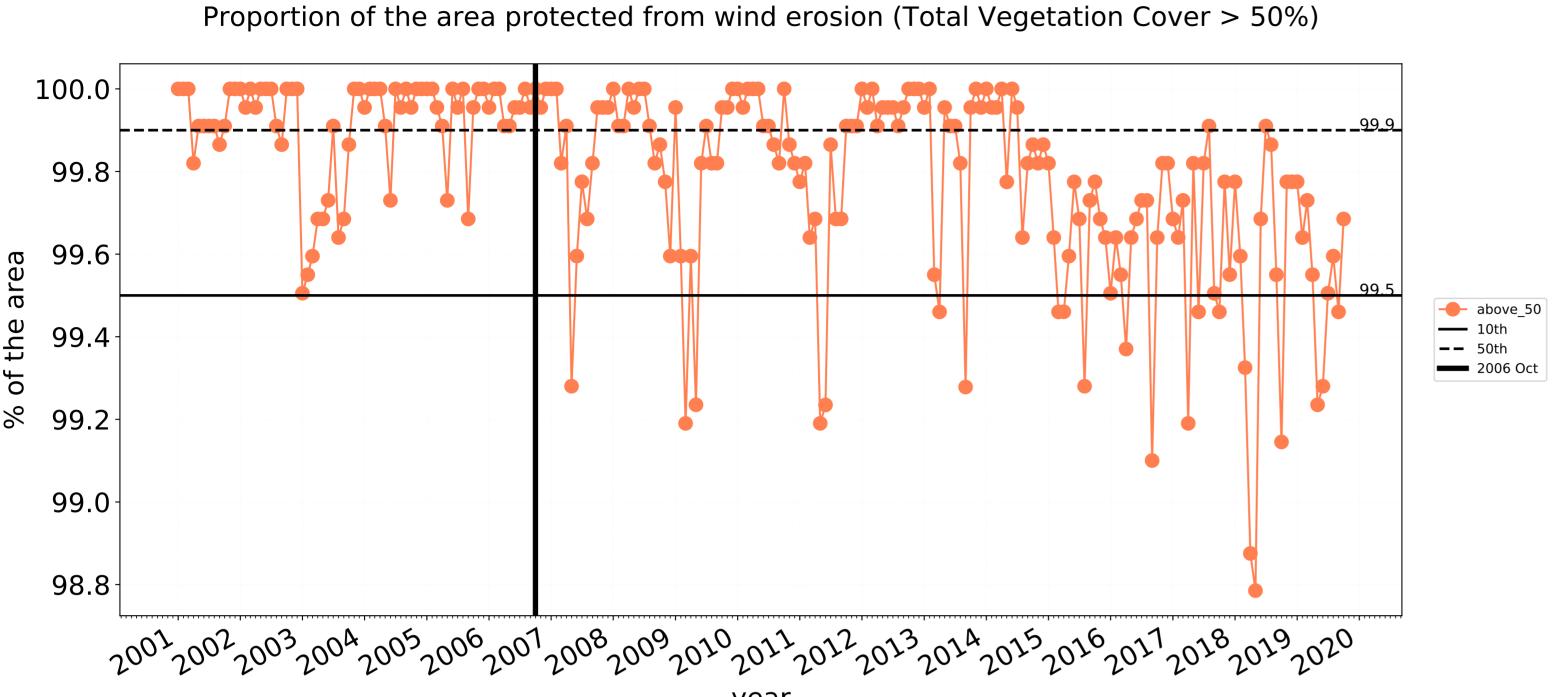


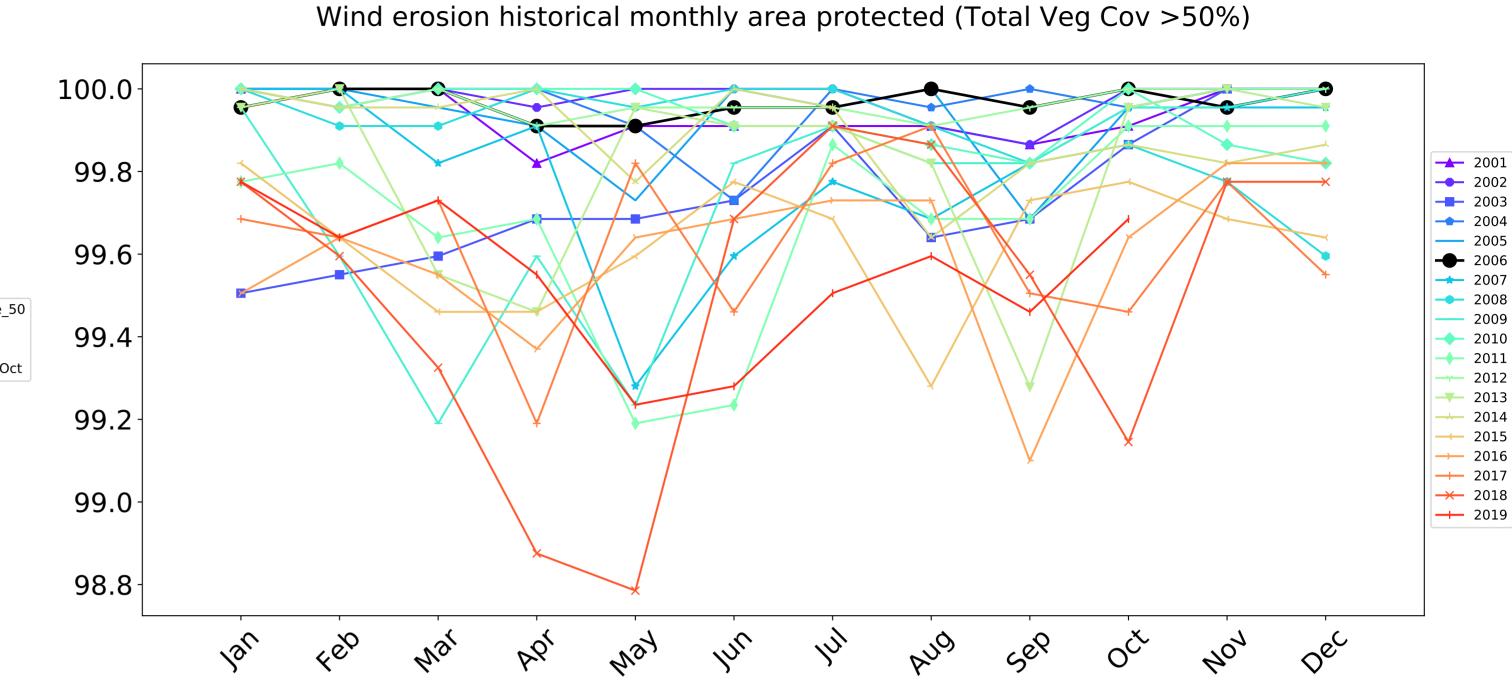


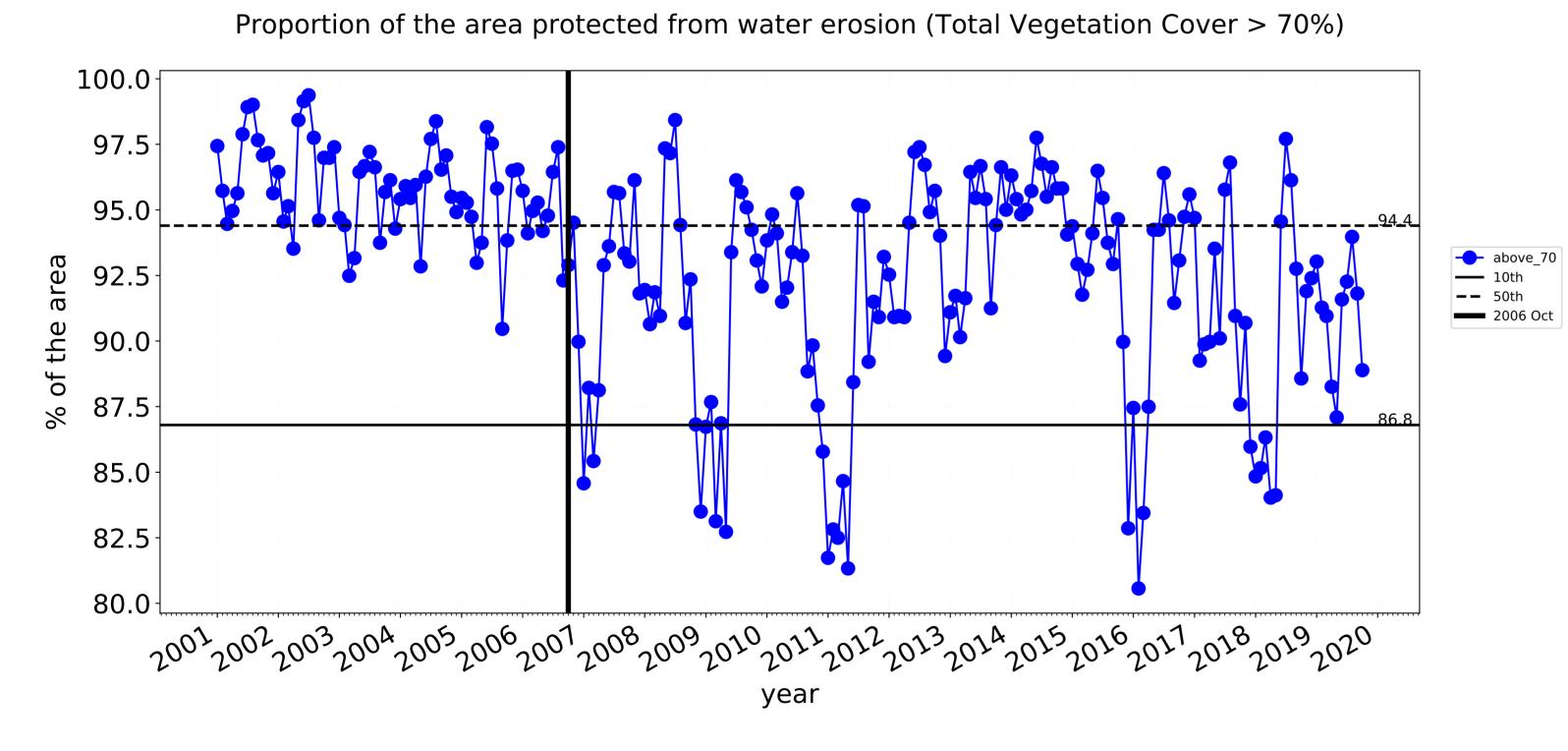


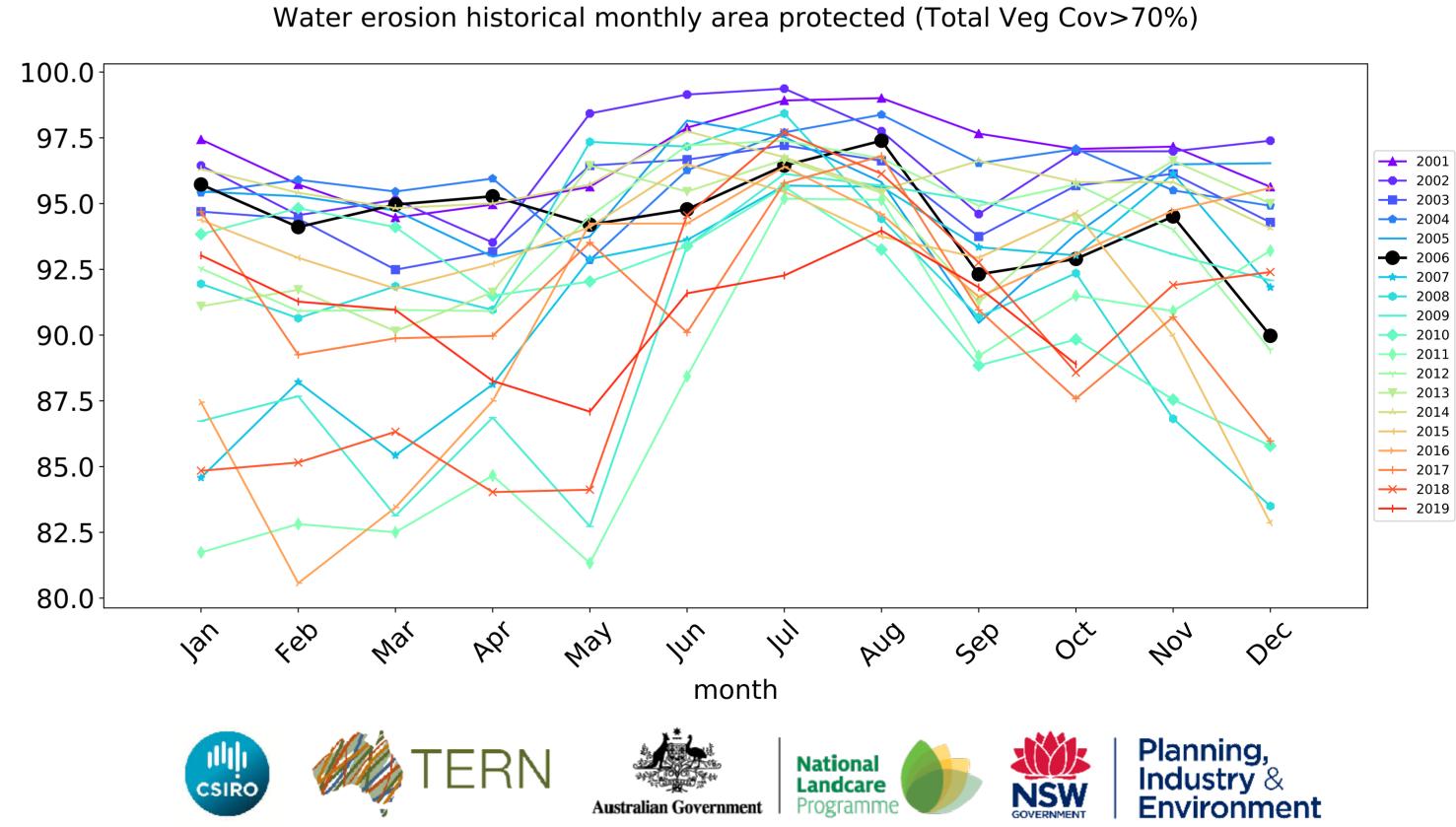


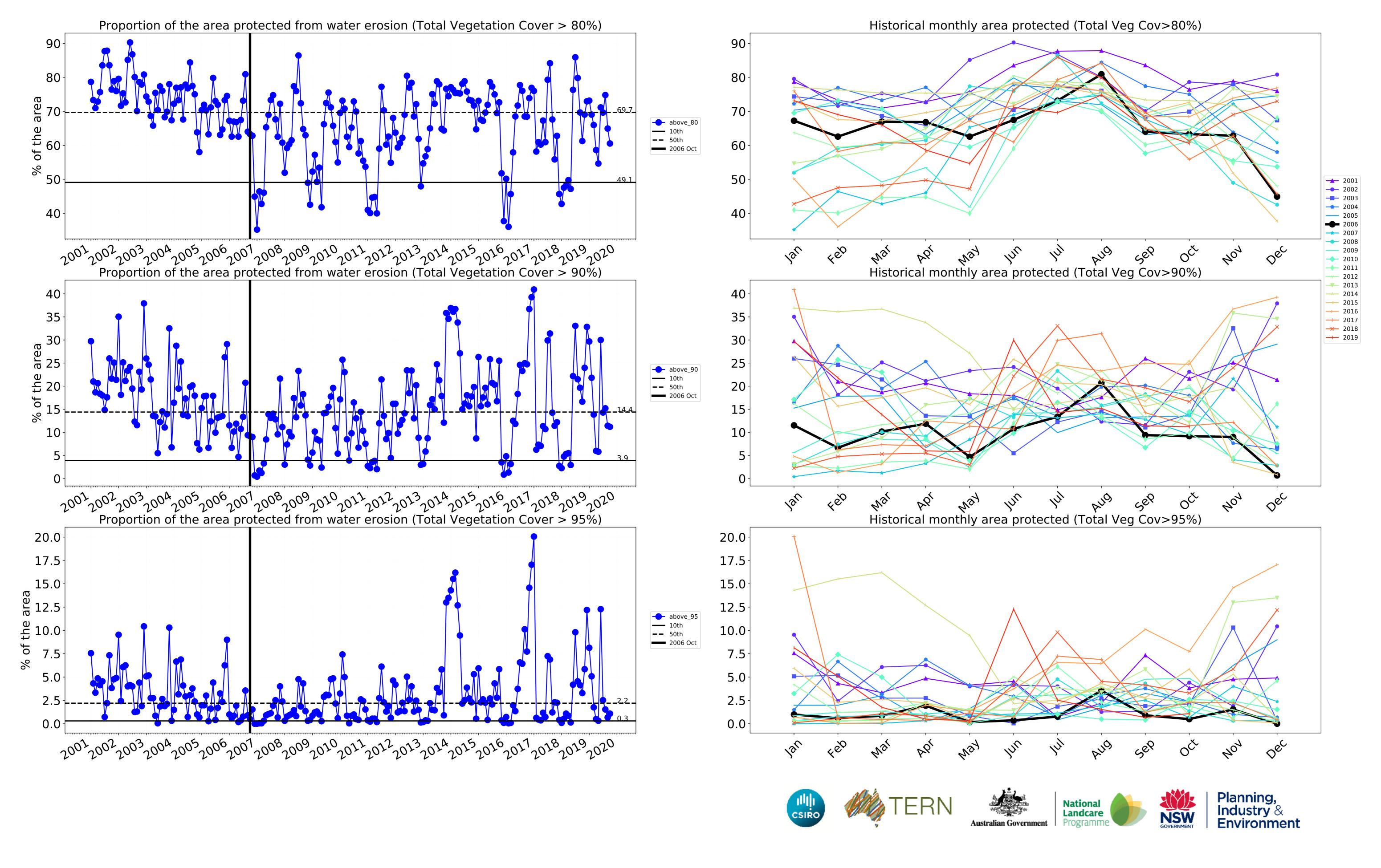
Grazing non forest timeseries







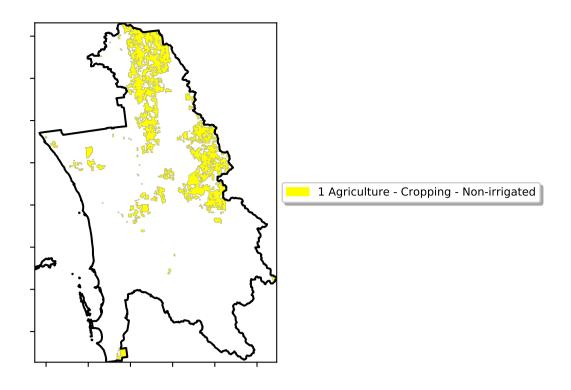




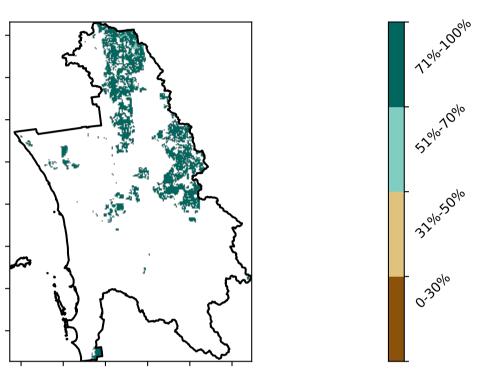
Cropping

Land use and forest cover

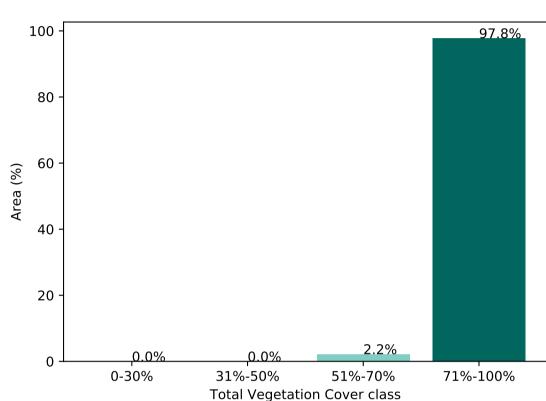
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



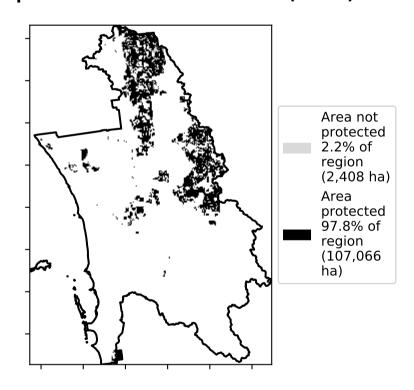
Total Vegetation Cover [%]



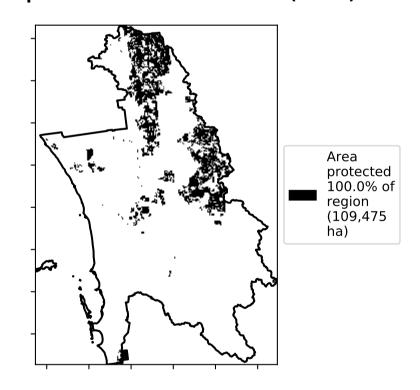
Proportion of vegetation cover class in area



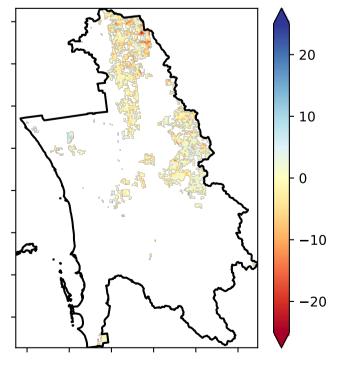
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

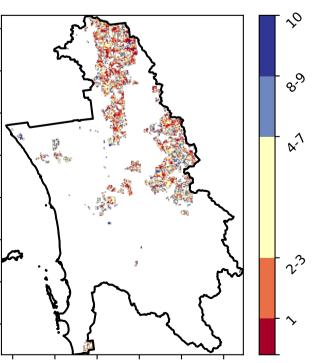


Total Vegetation Cover Anomaly [%]



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 [%]





Anomaly show how many percetage points each pixel is from the mean. That

is, red pixels are about 20% lower than the

mean of that

pixel. The mean

is only for the month of the map using baseline from 2001 to 2019.



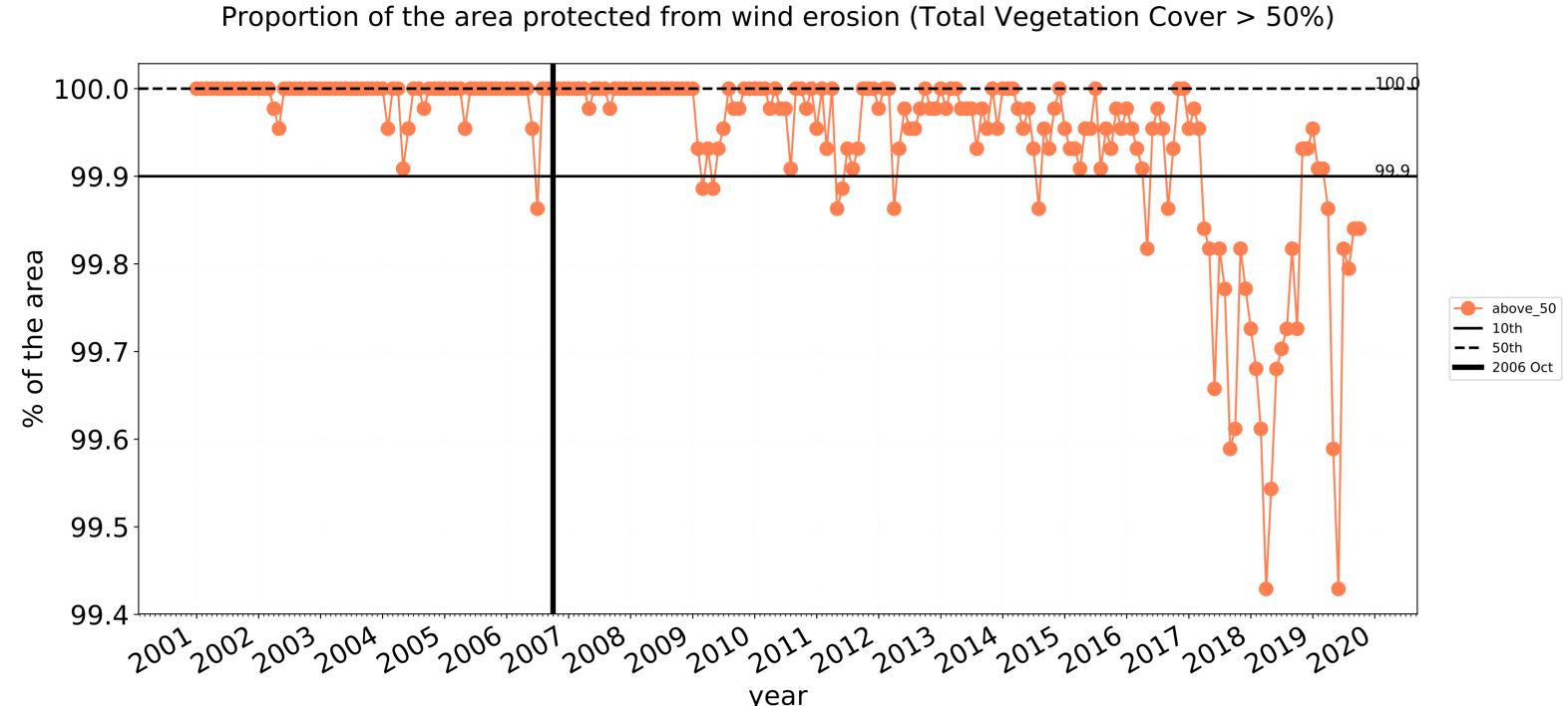


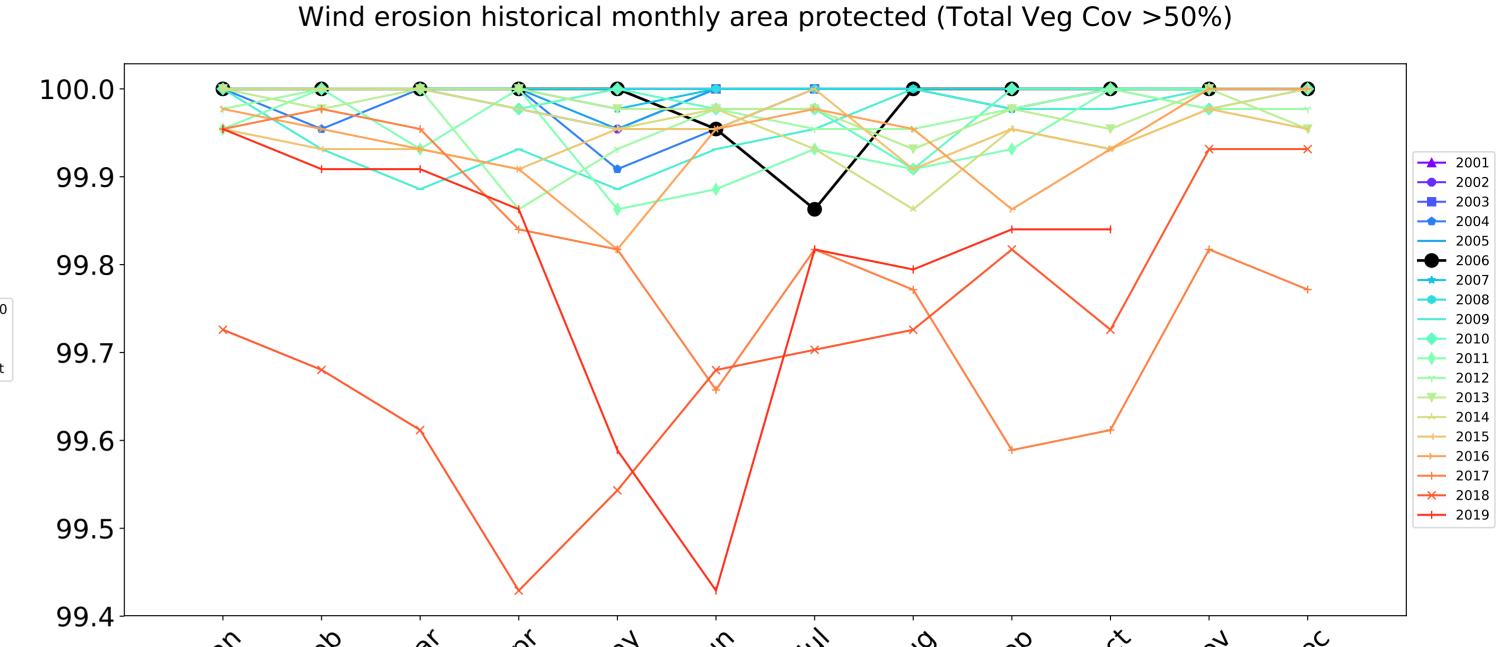


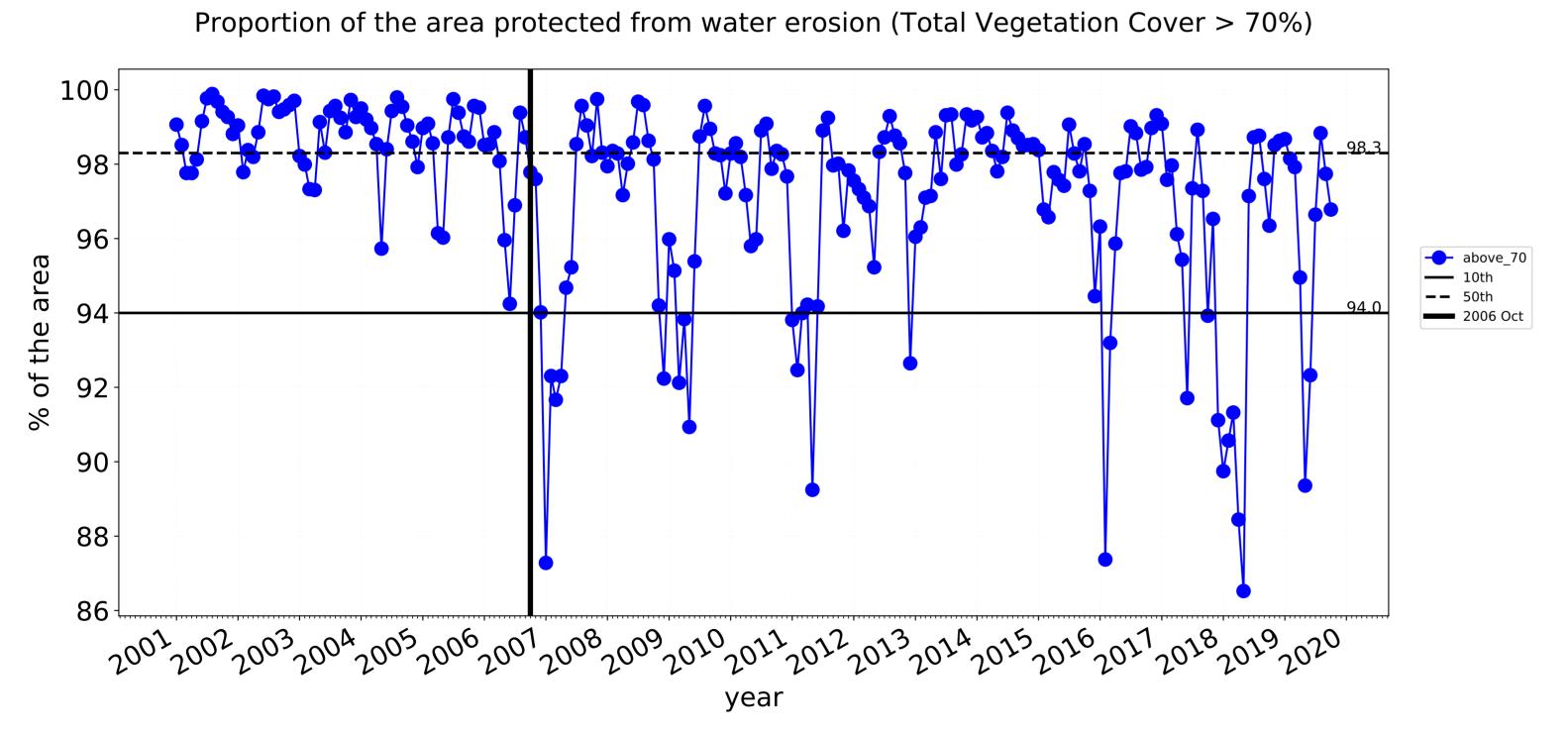


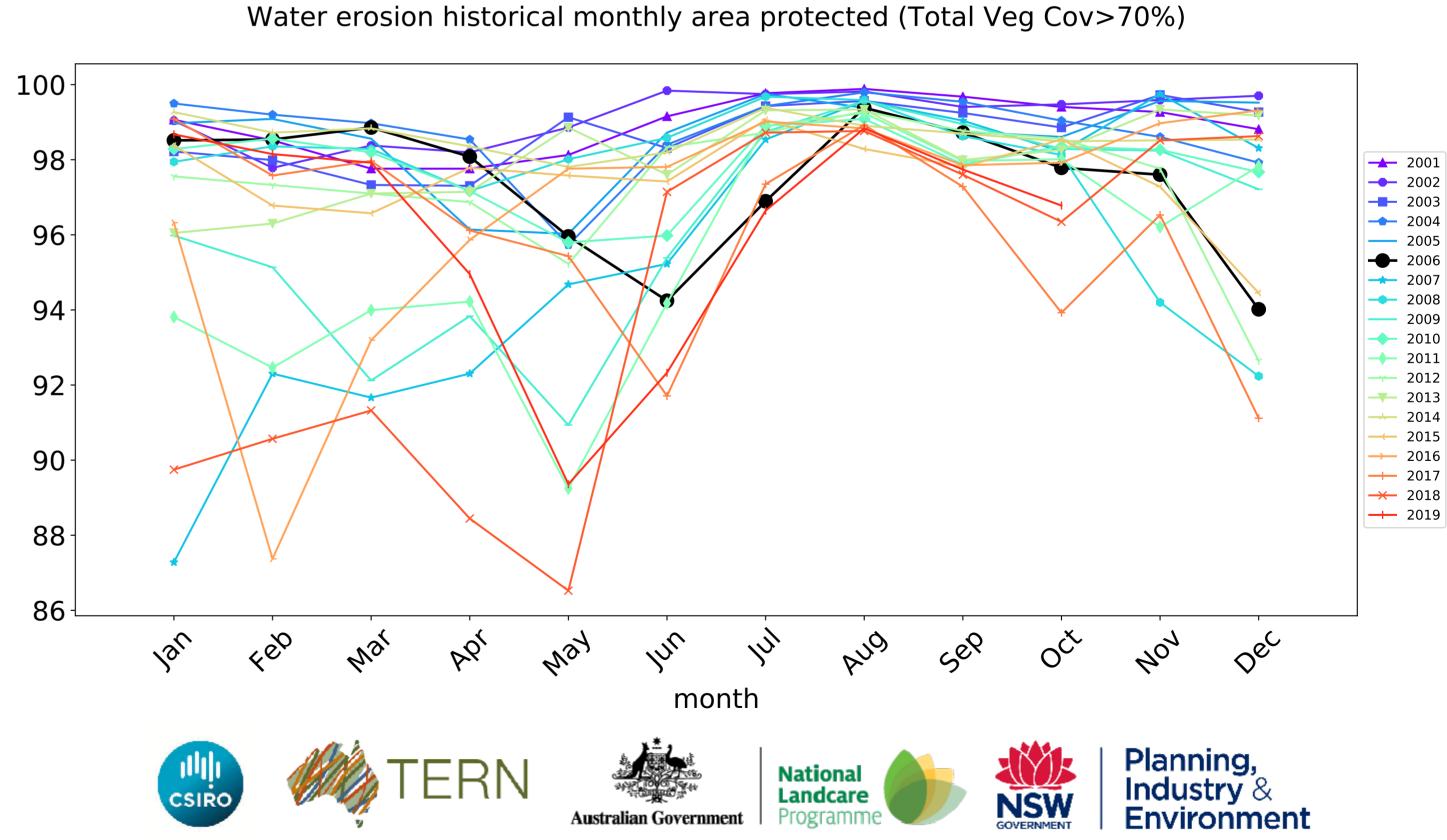


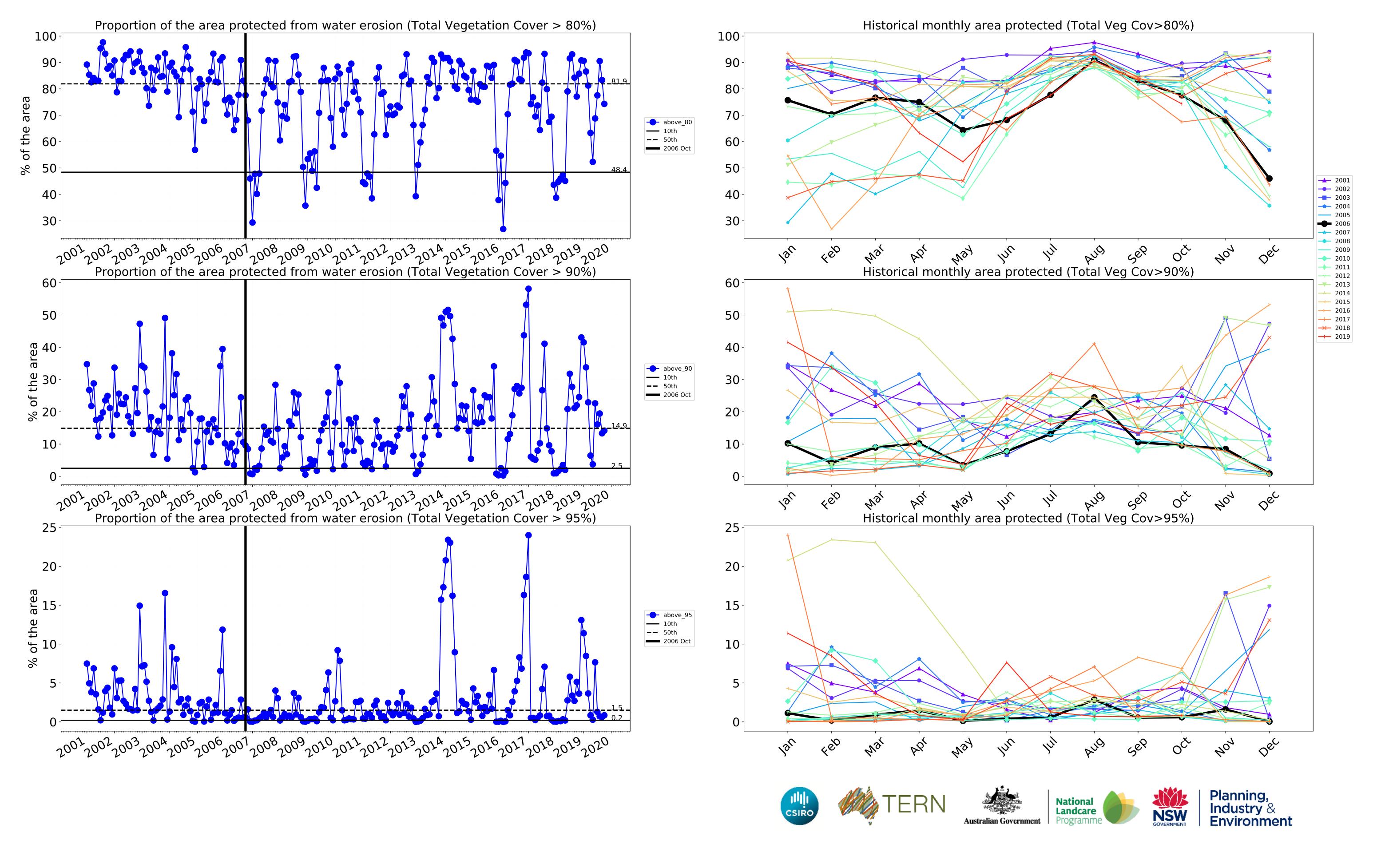
Cropping timeseries











Irrigation

Land use and forest cover

Catchment Scale Land Use and Forests

of Australia (2018)

Anomaly show how many percetage points each

pixel is from the mean. That

is, red pixels are about 20% lower than the

mean of that

pixel. The mean

using baseline from 2001 to 2019.

is only for the month of the map

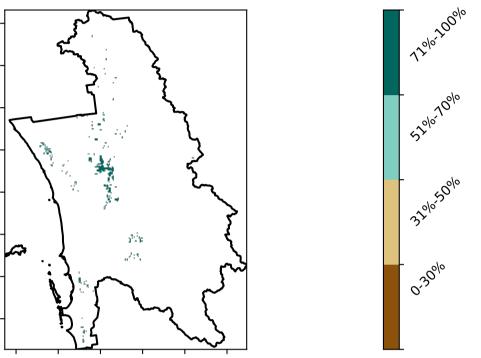
Catchment Scale Land

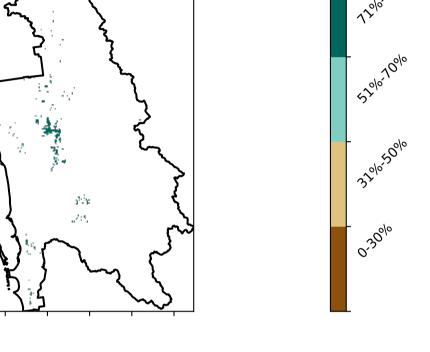
Derived from

Use of Australia (2018) and Forests of Australia (2018)

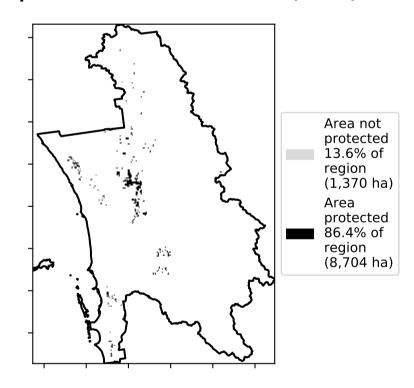
1 Agriculture - Grazing - Irrigated 2 Agriculture - Cropping - Irrigated 3 Agriculture - Horticulture - Irrigated

Total Vegetation Cover [%]

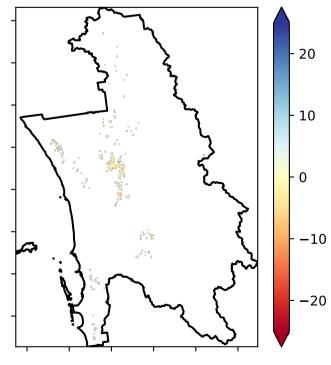




% Area protected from water erosion (>70%)

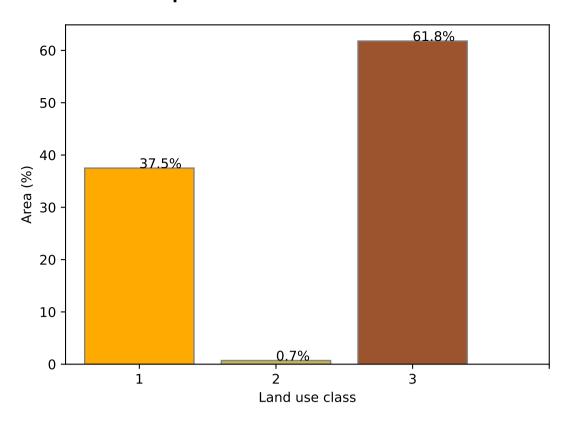


Total Vegetation Cover Anomaly [%]

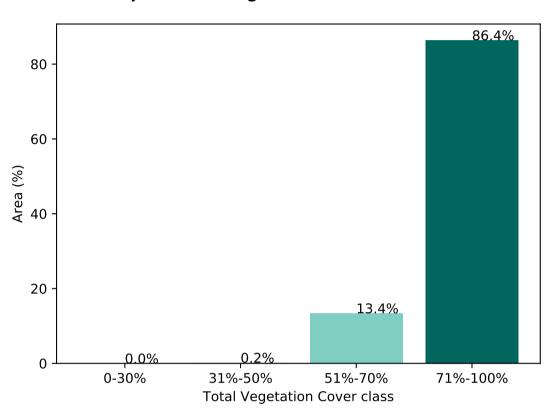


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of

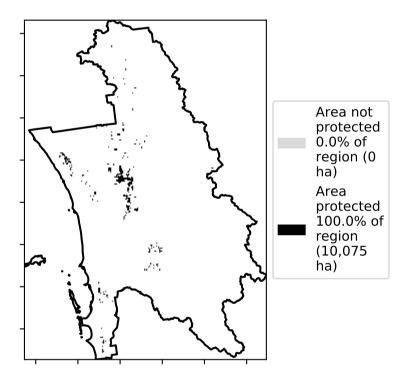
Proportion of each land class in area

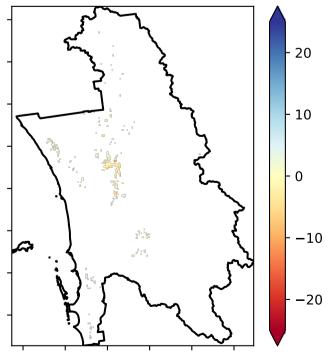


Proportion of vegetation cover class in area

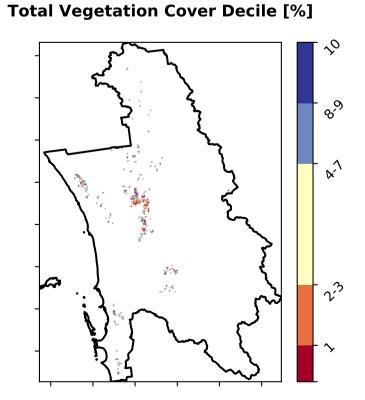


% Area protected from wind erosion (>50%)





the map using baseline from 2001 to 2019.







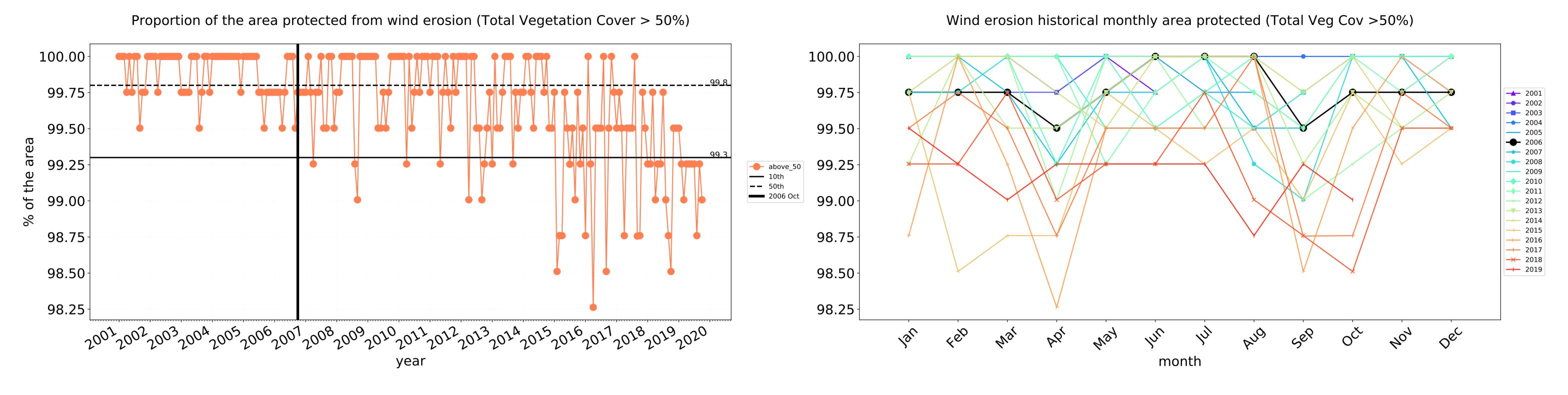


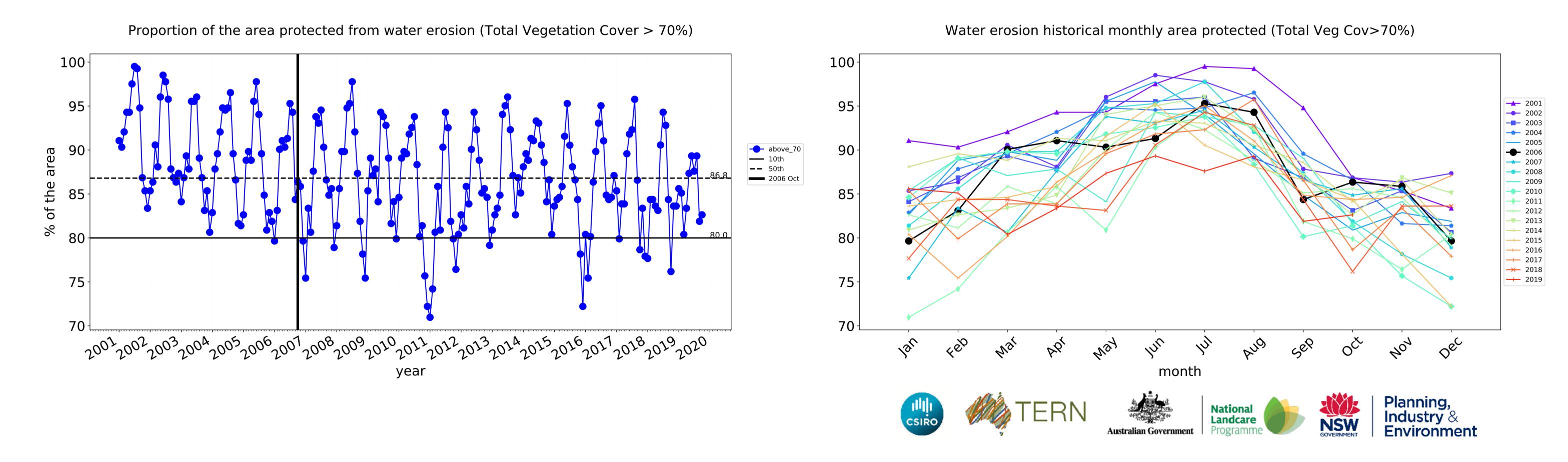


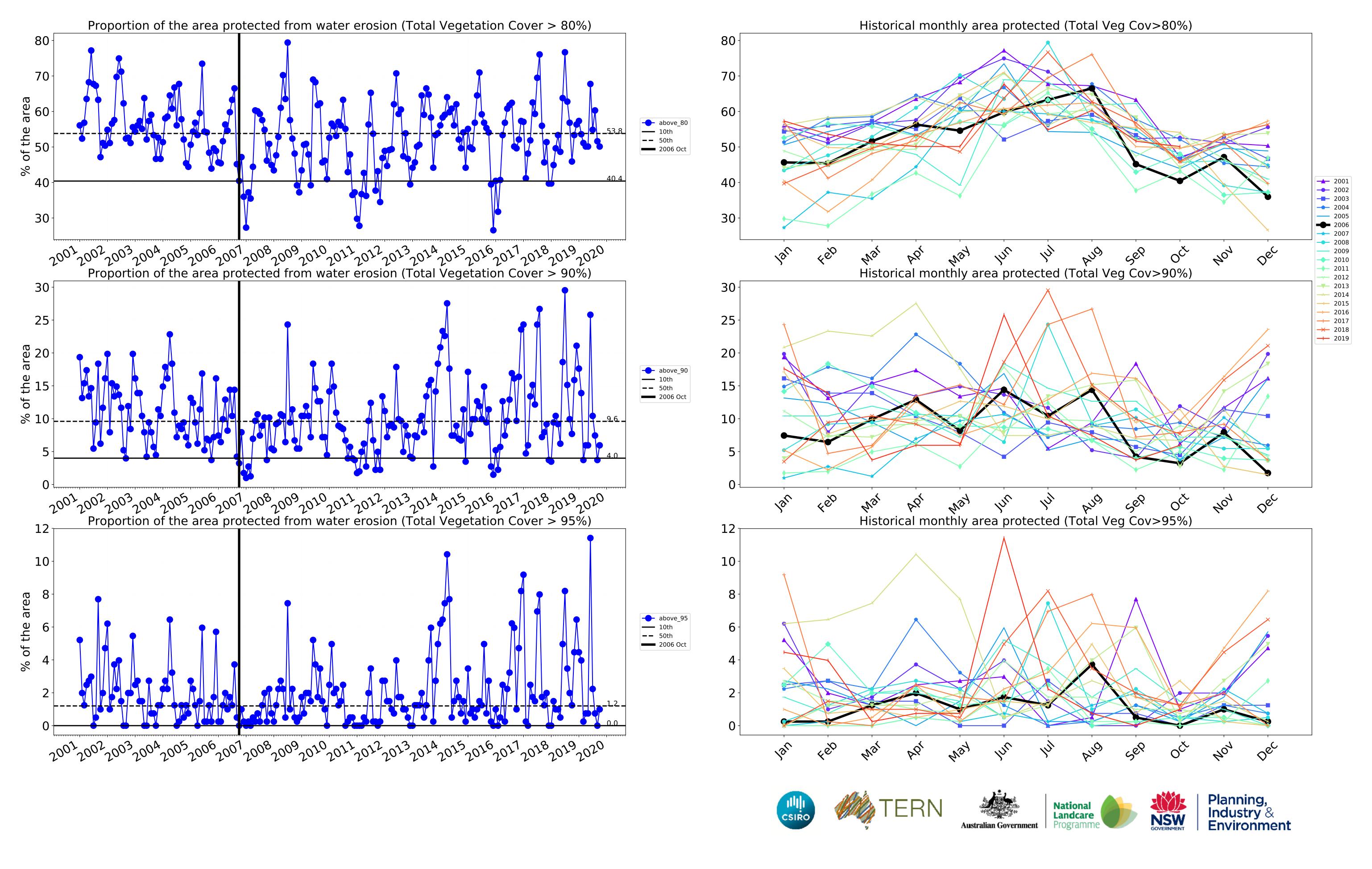




Irrigation timeseries







Production native forests and plantation forests

Land use and forest cover

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

Use of Australia (2018) and Forests of Australia (2018)

Anomaly show how many percetage points each

pixel is from the mean. That

is, red pixels are about 20% lower than the

mean of that

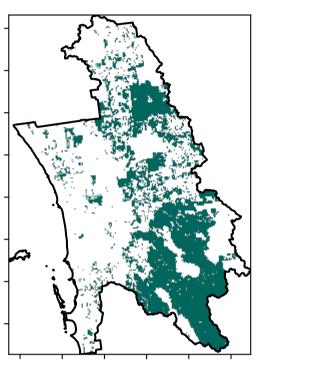
pixel. The mean

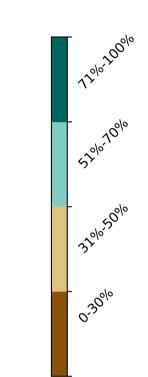
is only for the month of the map using baseline from 2001 to 2019.

Catchment Scale Land

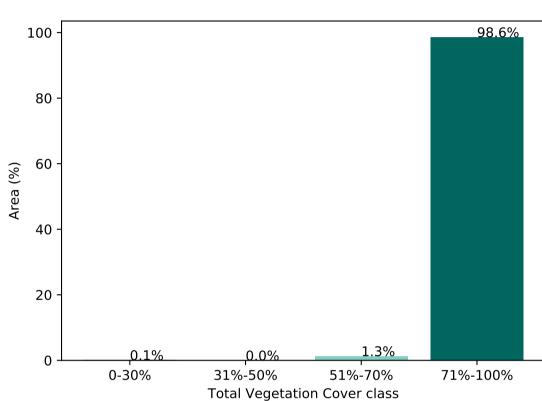
1 Production native forests and plantation forests

Total Vegetation Cover [%]

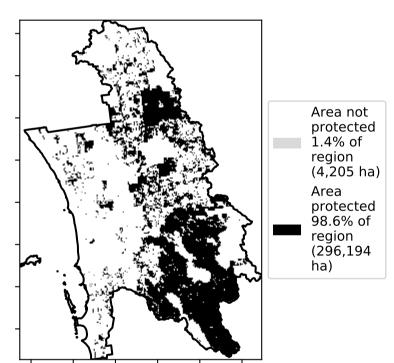




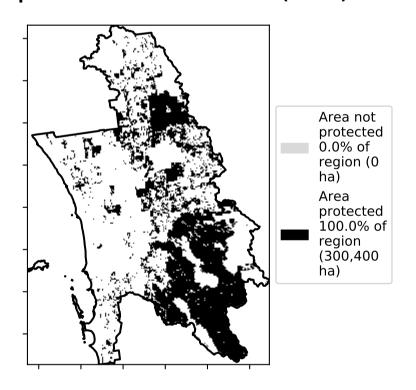
Proportion of vegetation cover class in area



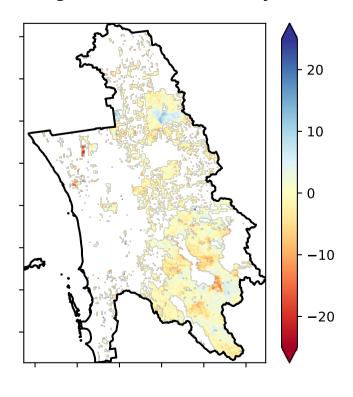
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

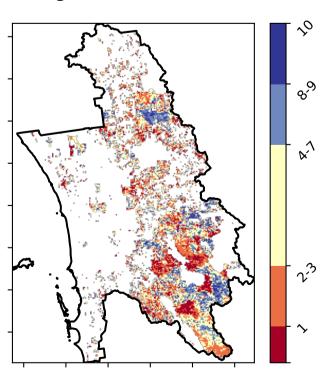


Total Vegetation Cover Anomaly [%]



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 [%]







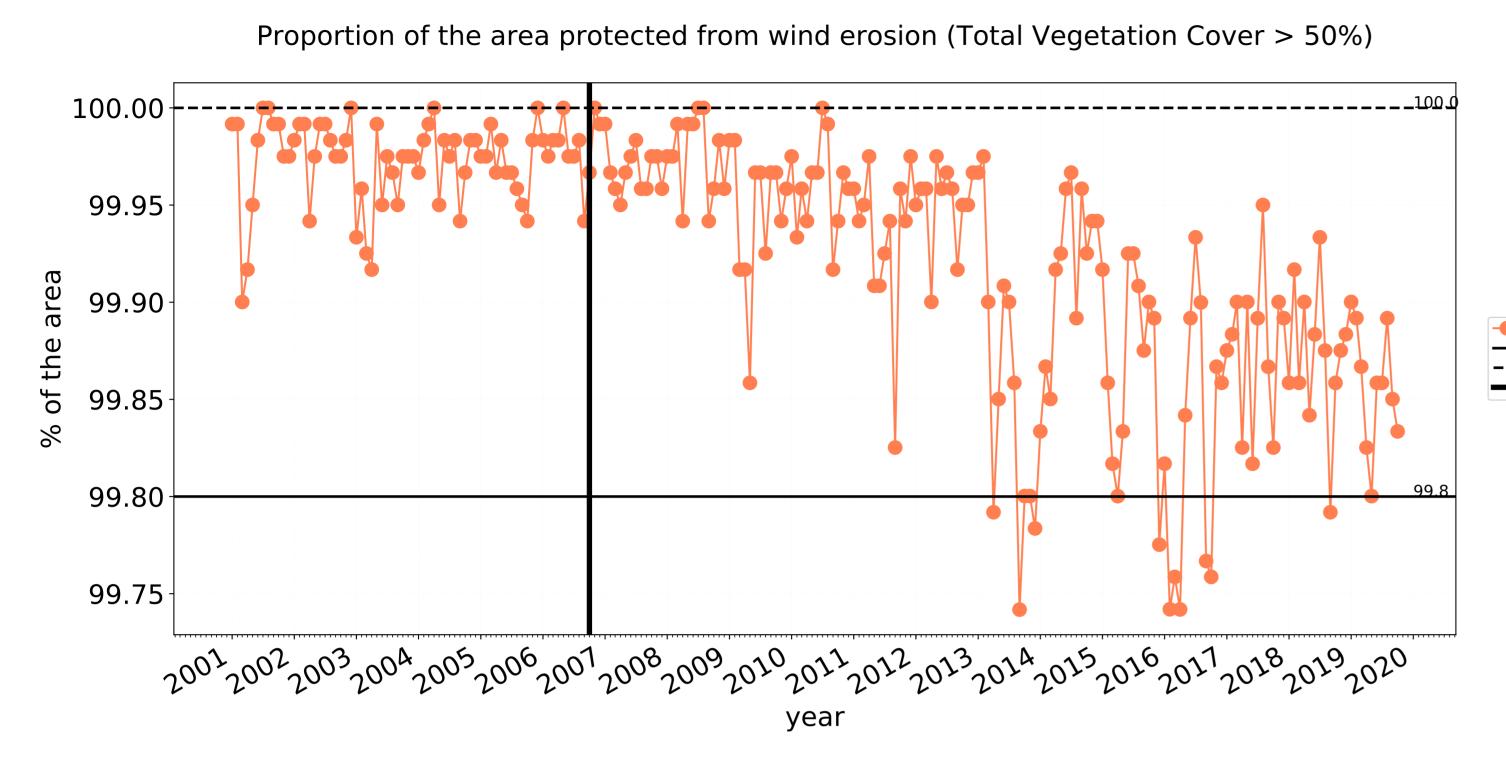




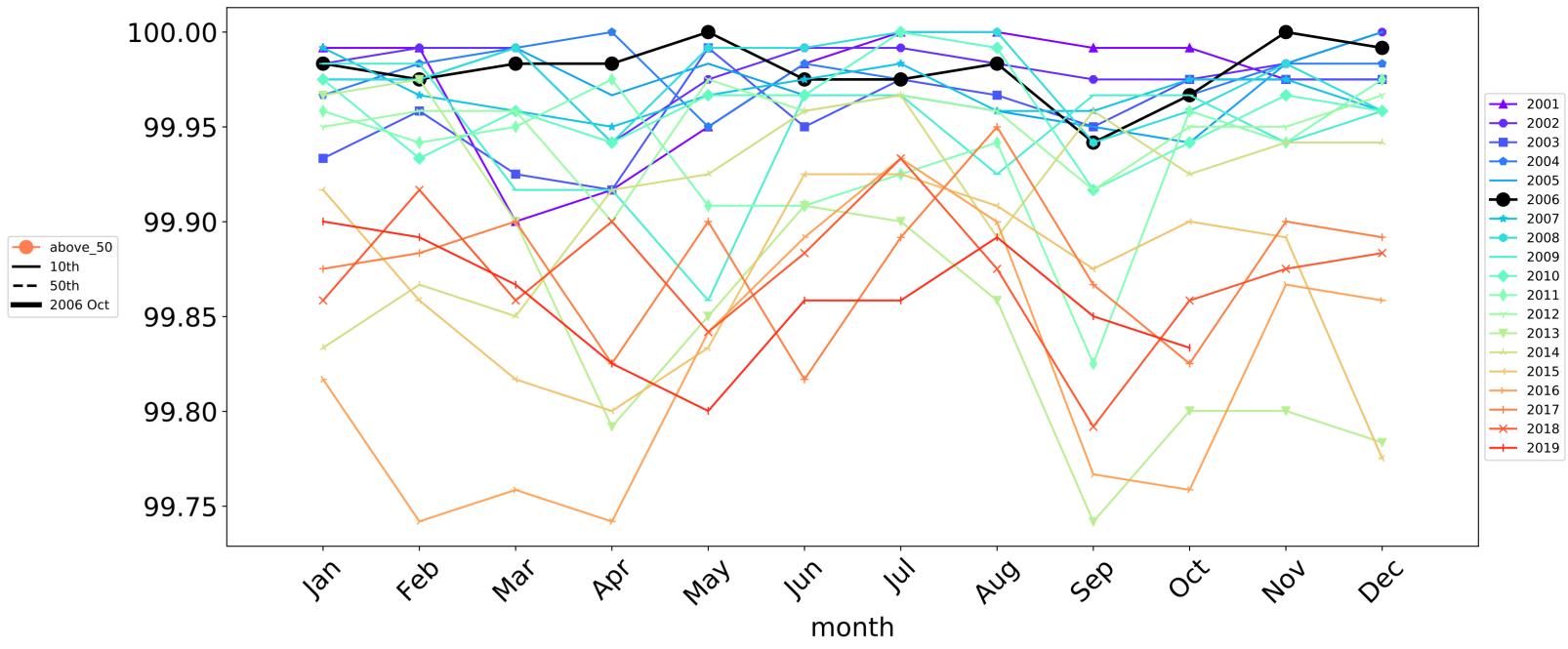


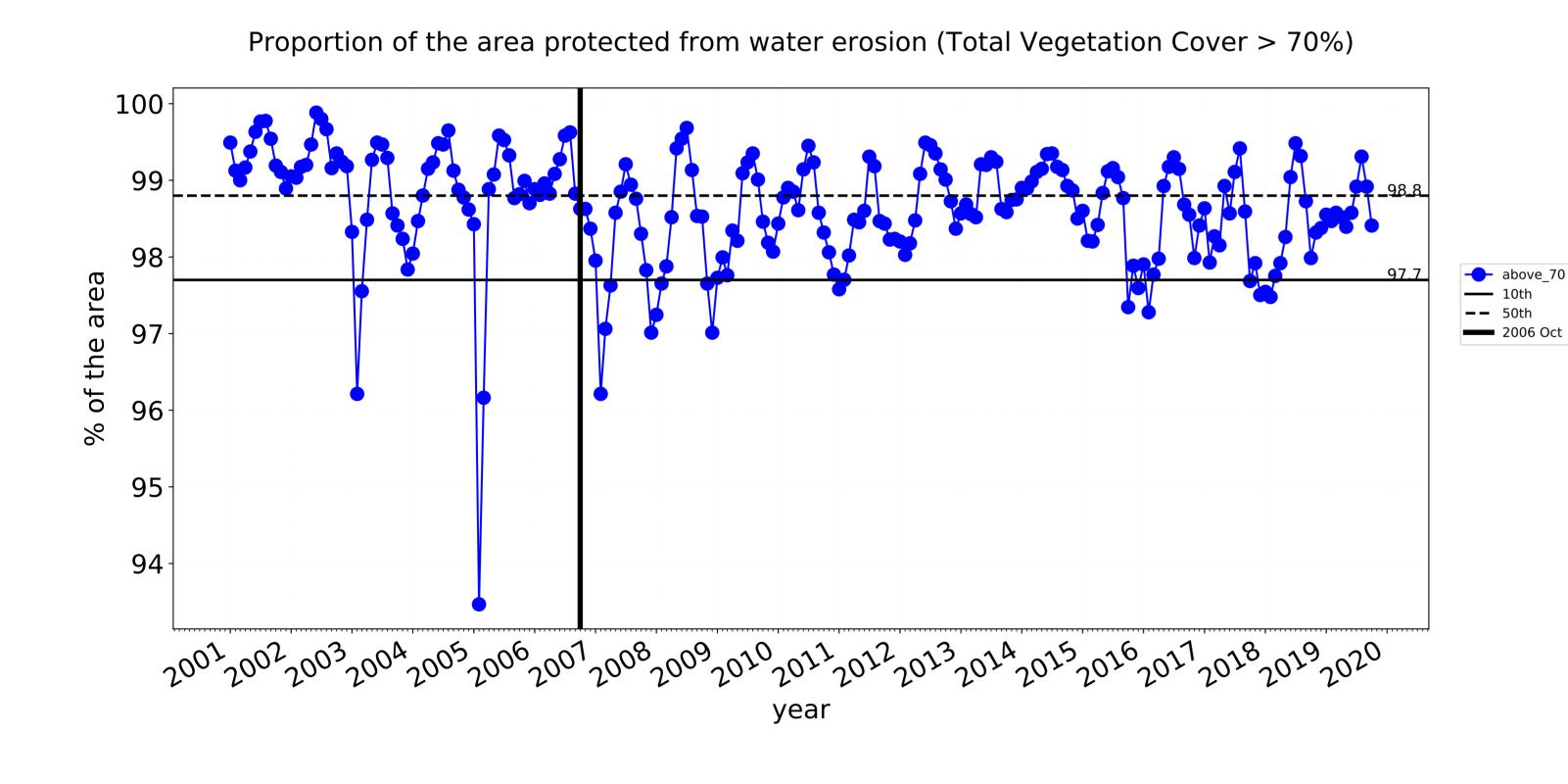


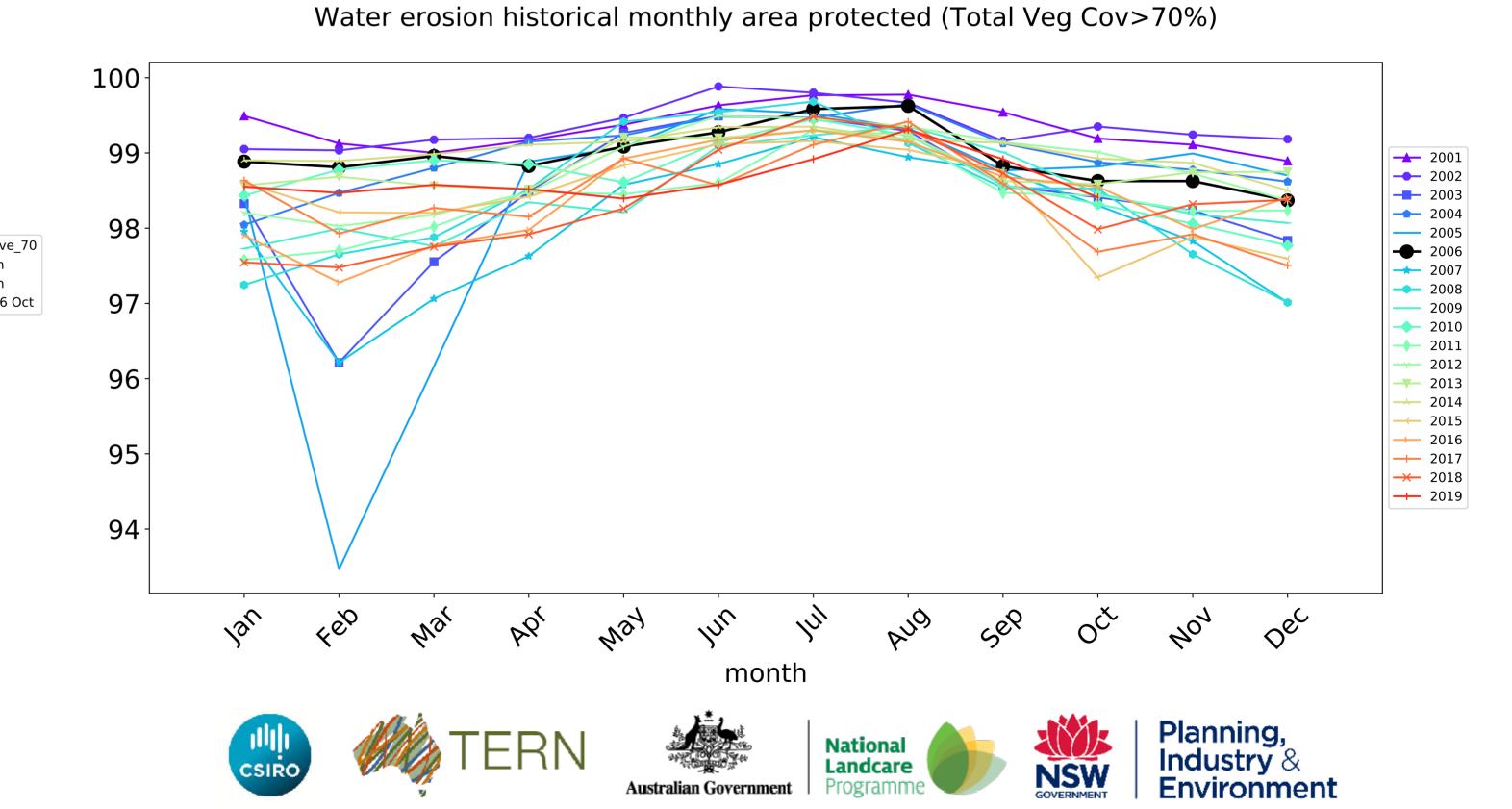
Production native forests and plantation forests timeseries

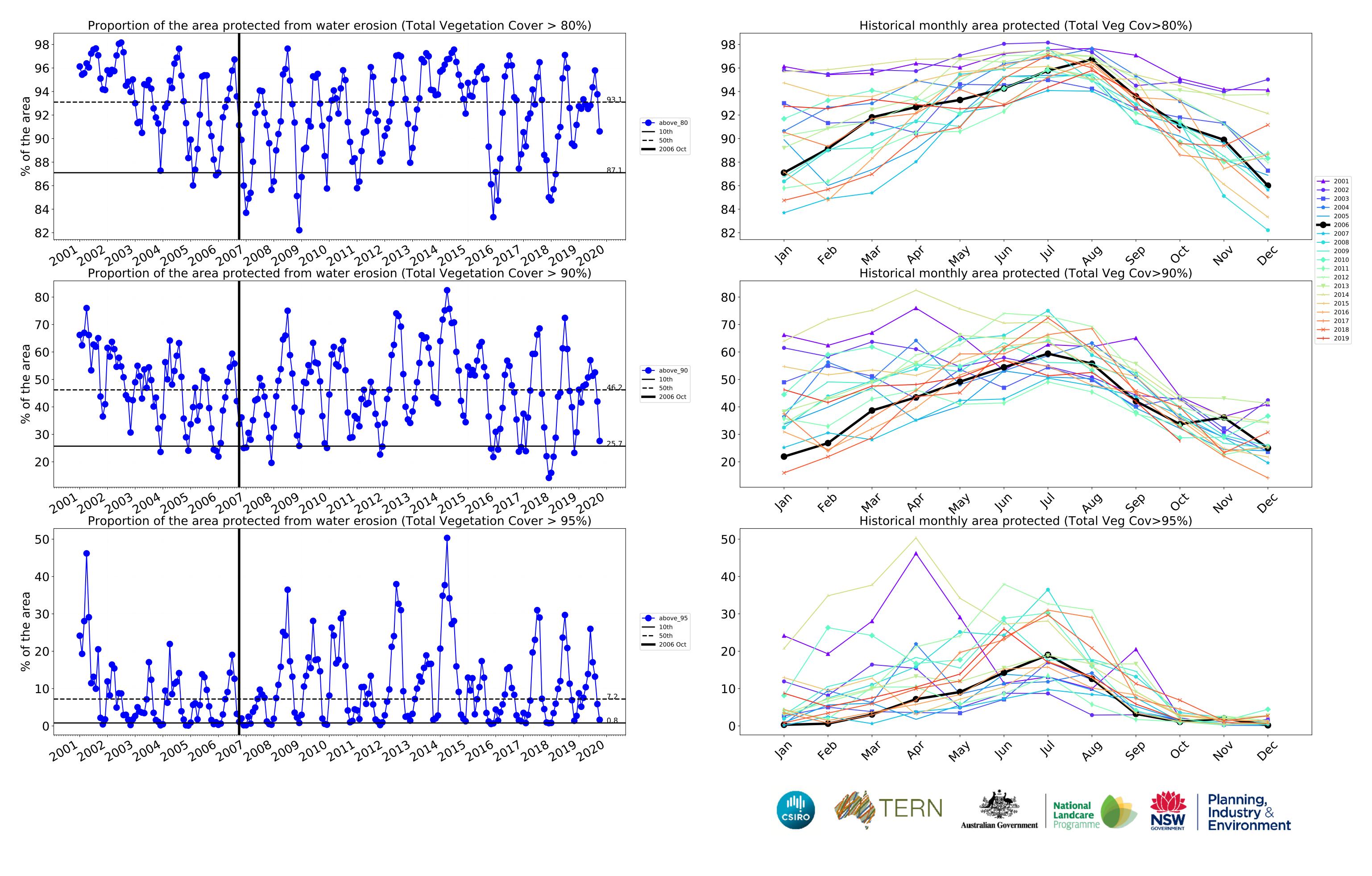


Wind erosion historical monthly area protected (Total Veg Cov >50%)









Swan Region (875,150 ha and no data 9,015 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	875,150	99.9% 874,476	98.9% 865,121	88.3% 772,547	71.9% 629,333	19.7% 172,076	0.9% 7,957
Conservation and natural environments	232,575	100.0% 232,550	99.9% 232,300	96.8% 225,225	80.8% 188,000	21.3% 49,575	1.1% 2,550
Conservation and natural environments non forest	38,000	99.9% 37,975	99.6% 37,850	92.1% 35,000	65.8% 25,000	11.2% 4,275	1.0% 375
Conservation and natural environments Woodland forest	135,500	100.0% 135,500	100.0% 135,450	97.7% 132,375	83.8% 113,550	17.3% 23,500	0.6% 750
Conservation and natural environments Forest (non woodland)	59,075	100.0% 59,075	99.9% 59,000	97.9% 57,850	83.7% 49,450	36.9% 21,800	2.4% 1,425
Agriculture	175,925	100.0% 175,925	100.0% 175,900	95.6% 168,125	70.9% 124,750	9.1% 16,000	0.5% 925
Grazing	56,150	100.0% 56,150	100.0% 56,150	93.0% 52,200	63.5% 35,650	9.3% 5,200	0.5% 275
Grazing non forest	55,600	100.0% 55,600	100.0% 55,600	92.9% 51,650	63.3% 35,200	9.2% 5,100	0.5% 275
Cropping	109,475	100.0% 109,475	100.0% 109,475	97.8% 107,050	77.6% 84,925	9.6% 10,475	0.6% 650
Irrigation	10,075	100.0% 10,075	99.8% 10,050	86.4% 8,700	40.4% 4,075	3.2% 325	0.0%
Production native forests and plantation forests	300,400	100.0% 300,400	100.0% 300,300	98.6% 296,275	91.1% 273,775	33.7% 101,200	1.1% 3,300











