Total vegetation cover soil protection Region:LGA Wellington_(S) VIC

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

Land use forest cover:

Date: June 2023

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

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

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

Erosion protection: Wind erosion 50% total vegetation cover

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

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

Comparison with previous years:

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

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

Erosion protection

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

Rainfall

• Millimetres rainfall each month (black line).

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

Water erosion protection for higher rainfall and steeper slopes:

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

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

Acknowledgment of data:

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

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









Vegetation Cover Jun 2023

Land use and forest cover

Catchment Scale

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

is only for the month of the map

using baseline from 2001 to

2019.

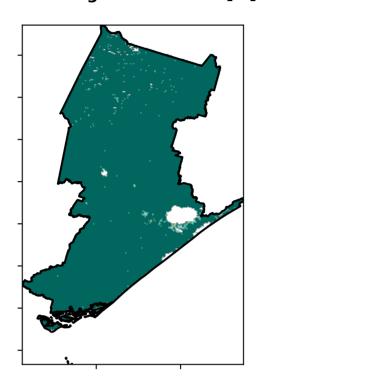
pixel. The mean

Land Use and Forests of Australia (2018)

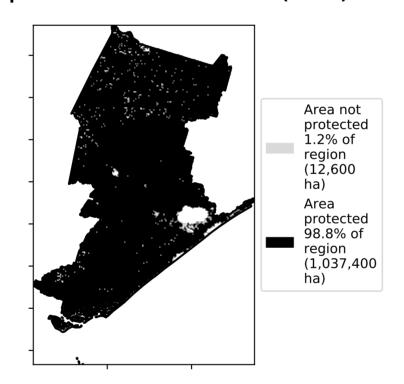
Catchment Scale Land

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

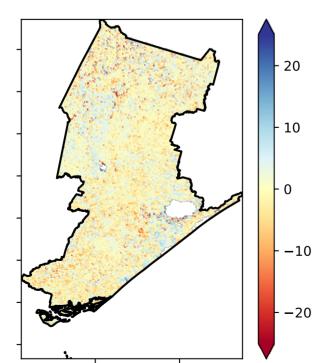
Total Vegetation Cover [%]



% 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.

35 -30 -25 -20 -8 20 -15 -10 -

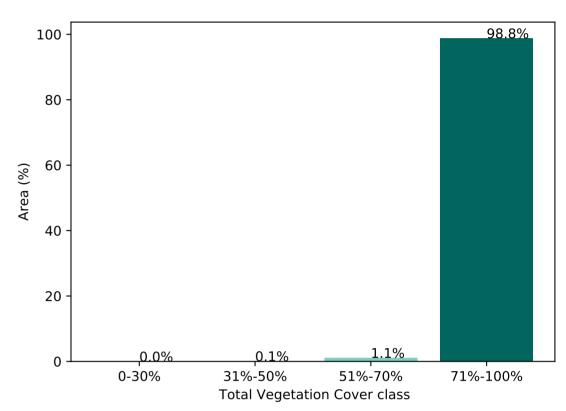
Proportion of each land class in area

Proportion of vegetation cover class in area

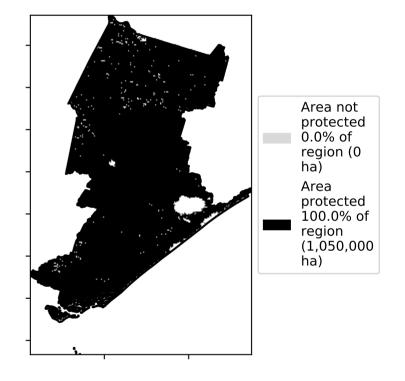
Land use class

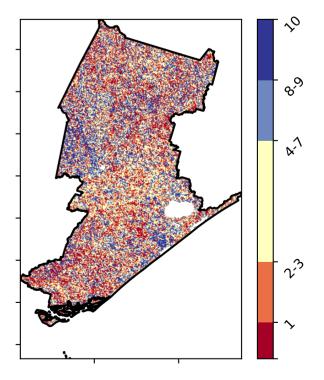
10

12



% Area protected from wind erosion (>50%)





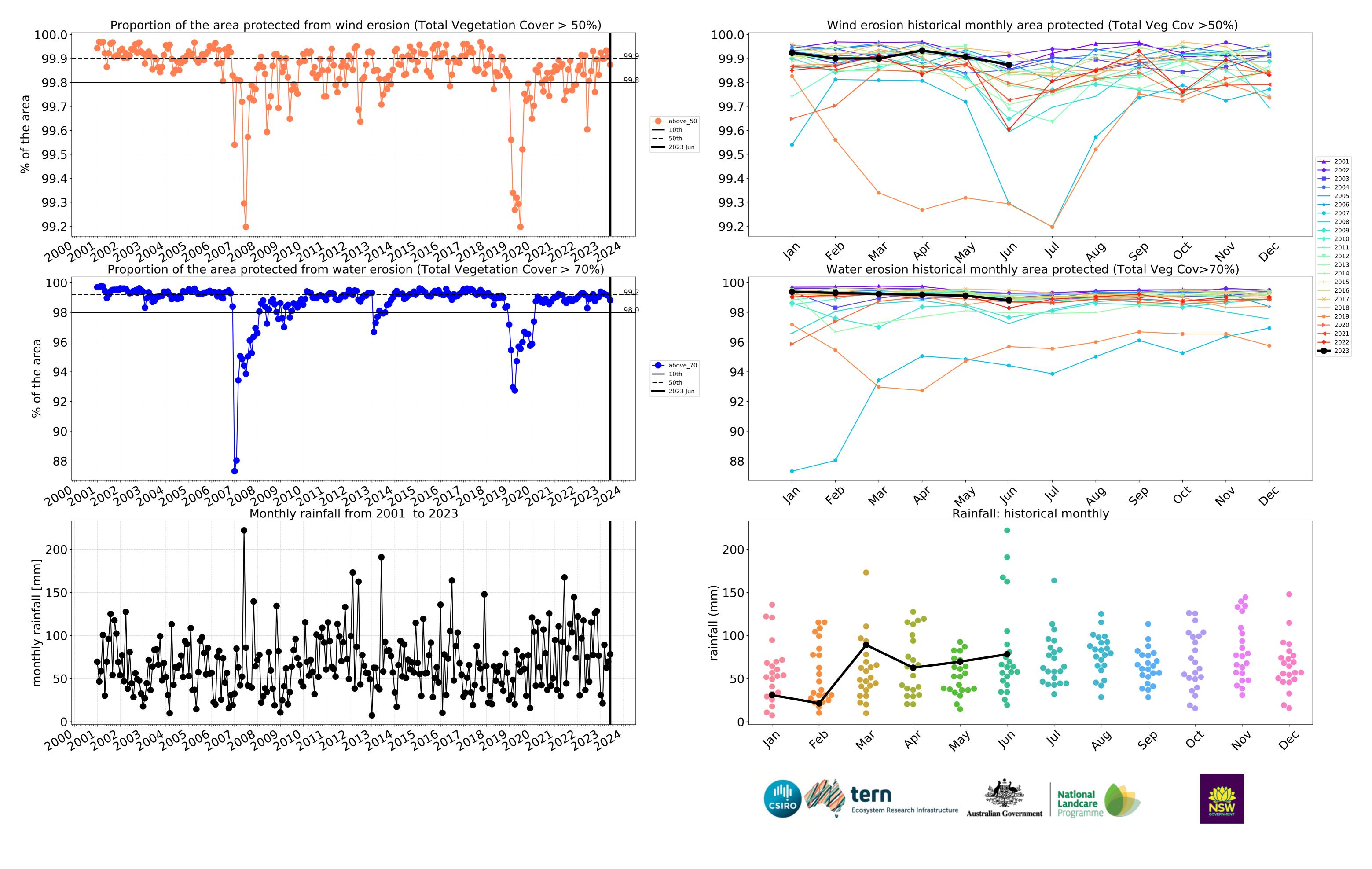


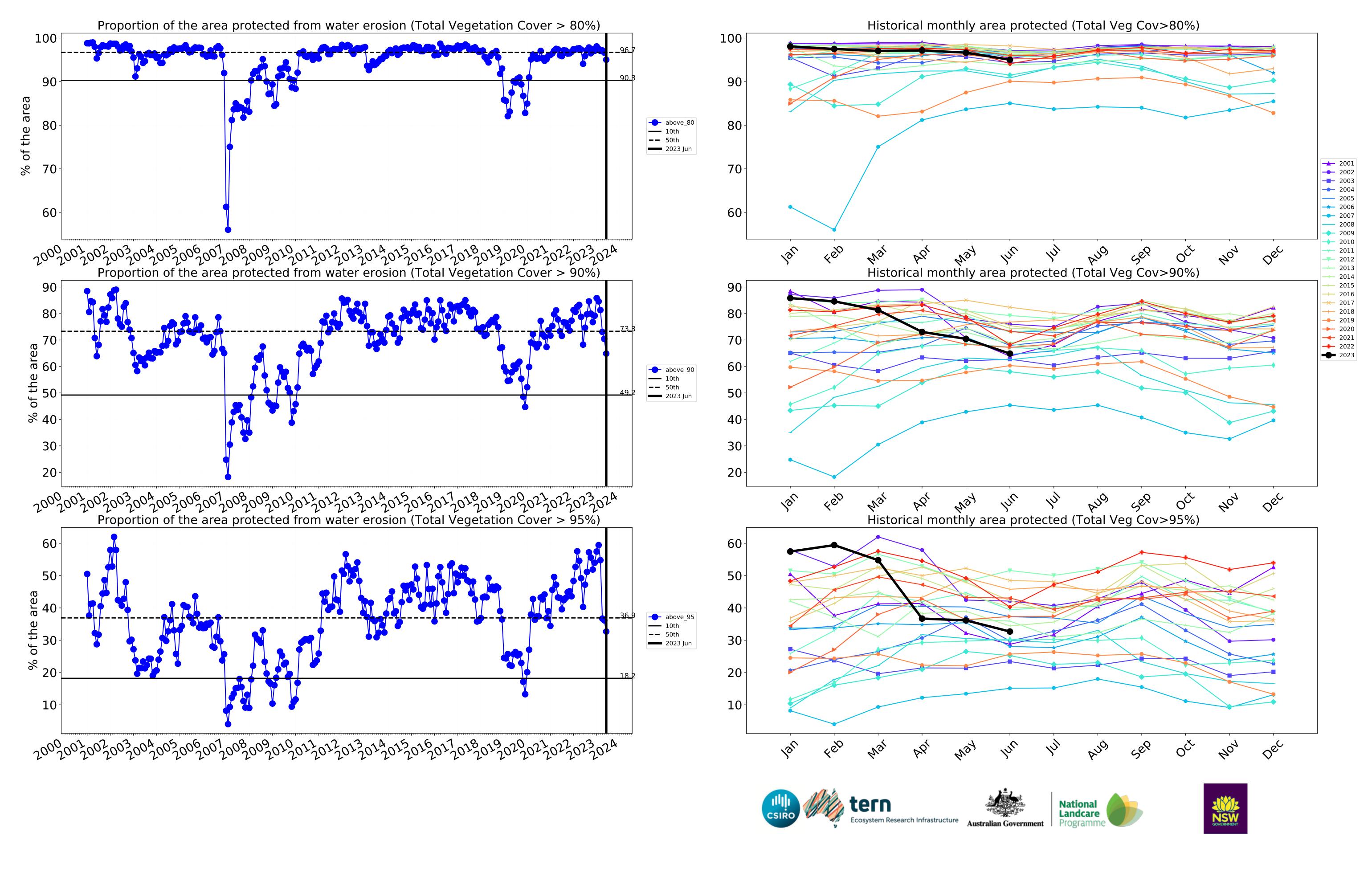










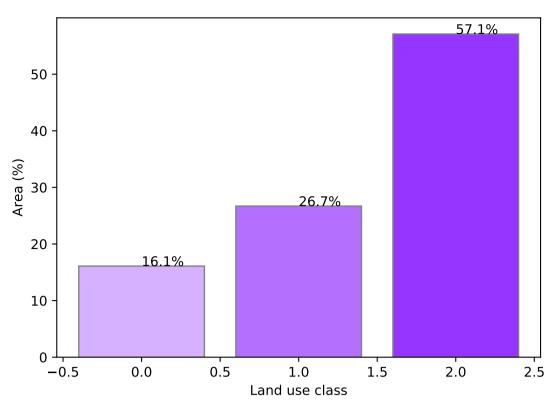


Conservation and natural environments

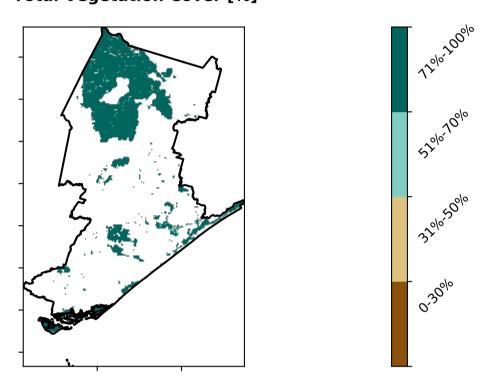
Land use and forest cover

1 Conservation and natural environments - Nonforest 2 Conservation and natural environments - Woodland forest 3 Conservation and natural environments - Nonwoodland forest

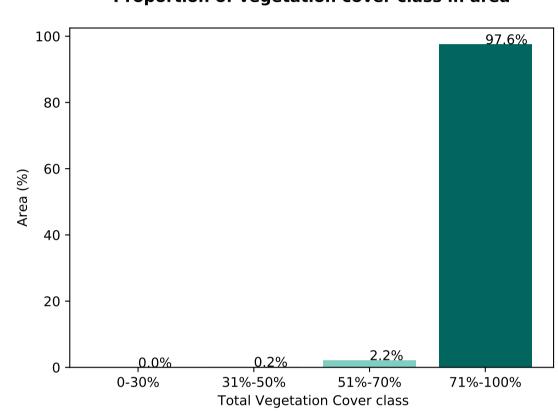
Proportion of each land class in area



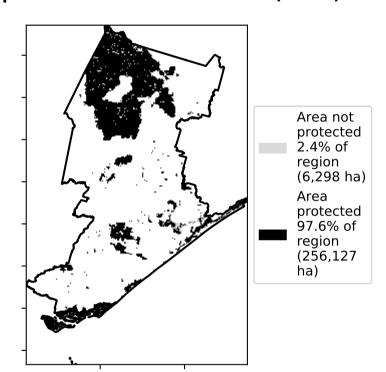
Total Vegetation Cover [%]



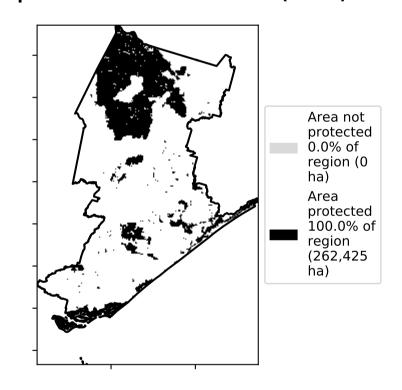
Proportion of vegetation cover class in area



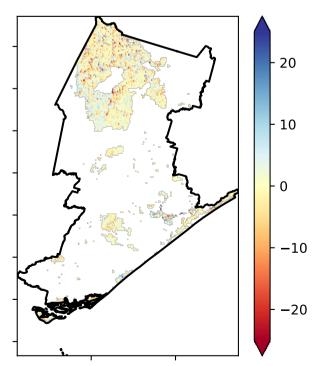
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

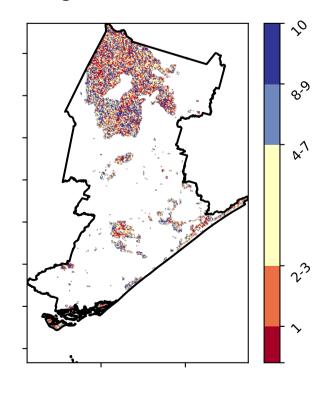


Total Vegetation Cover Anomaly [%]



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)

(2018) and Forests of Australia (2018)

Catchment Scale Land

Derived from

Use of Australia

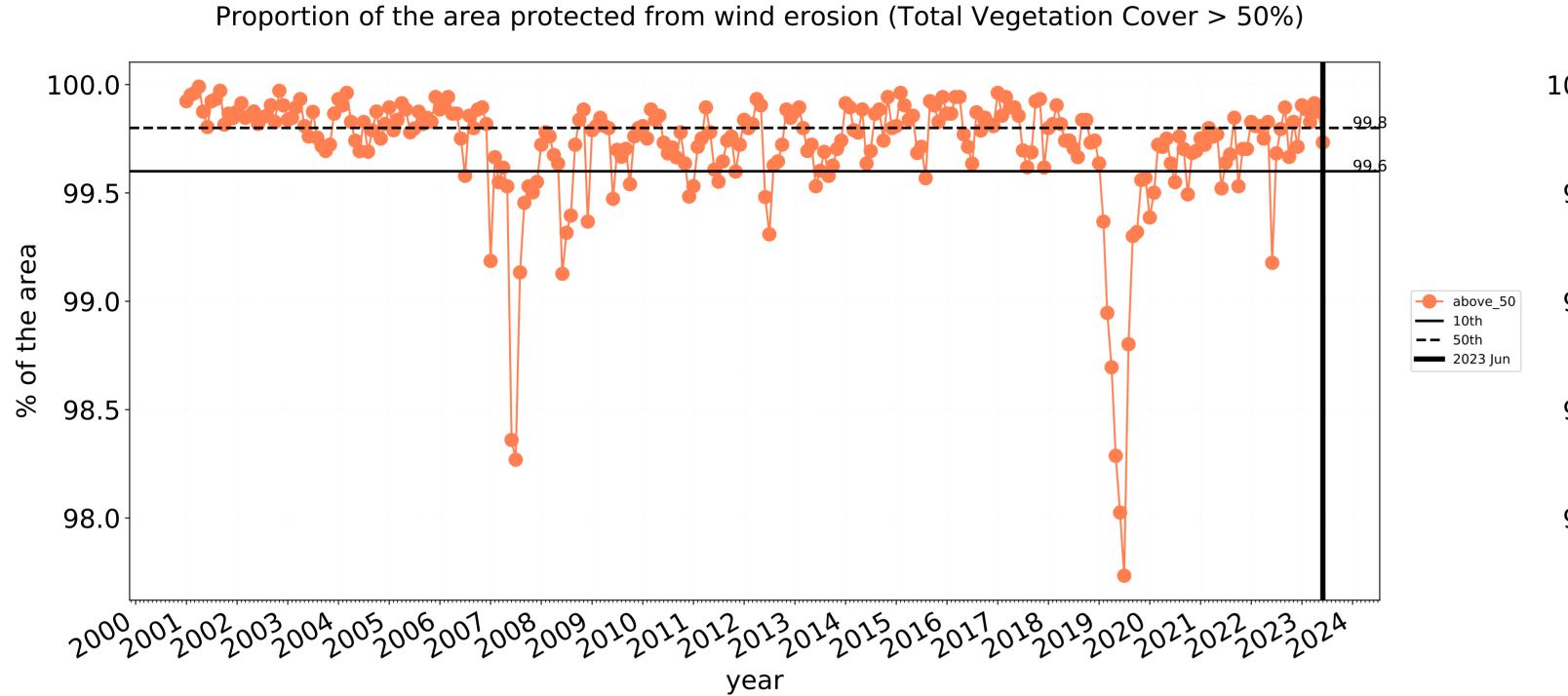


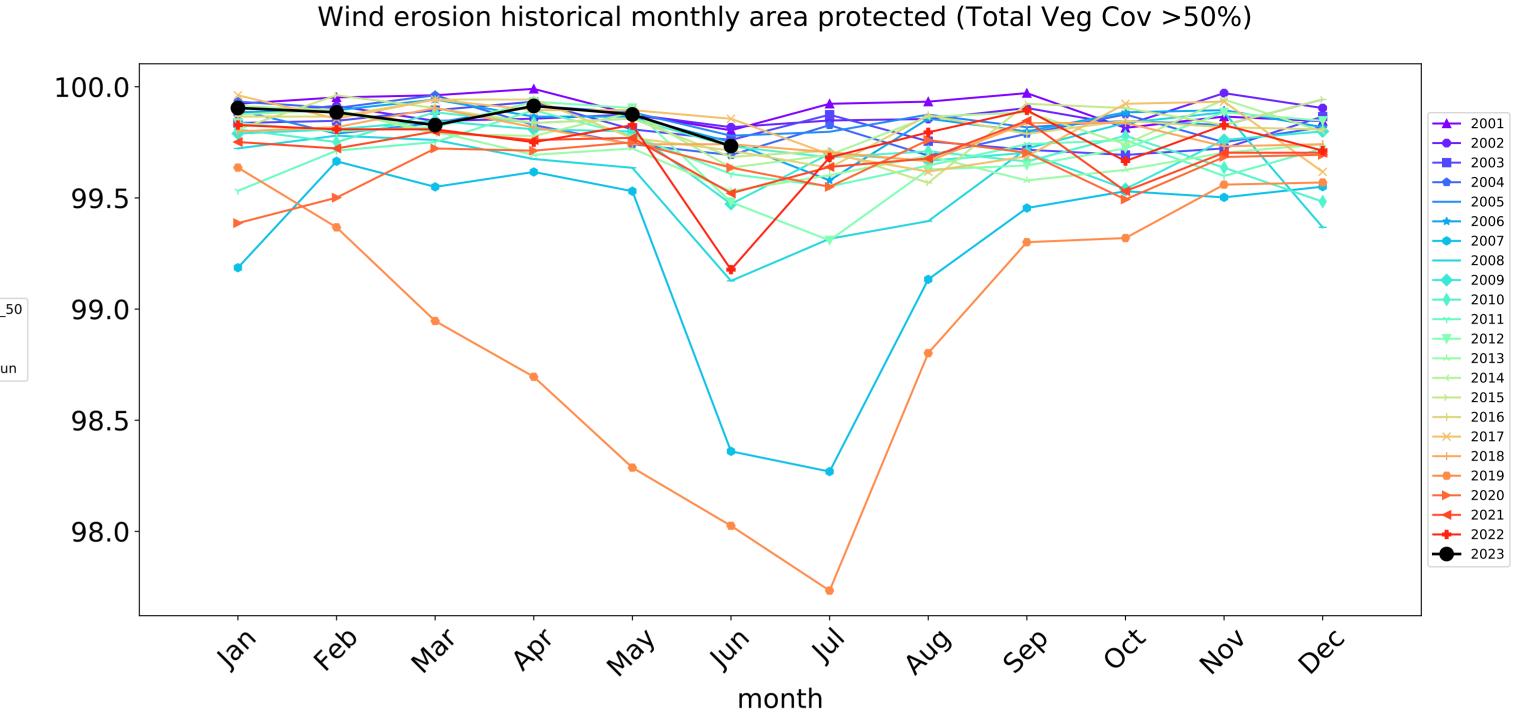


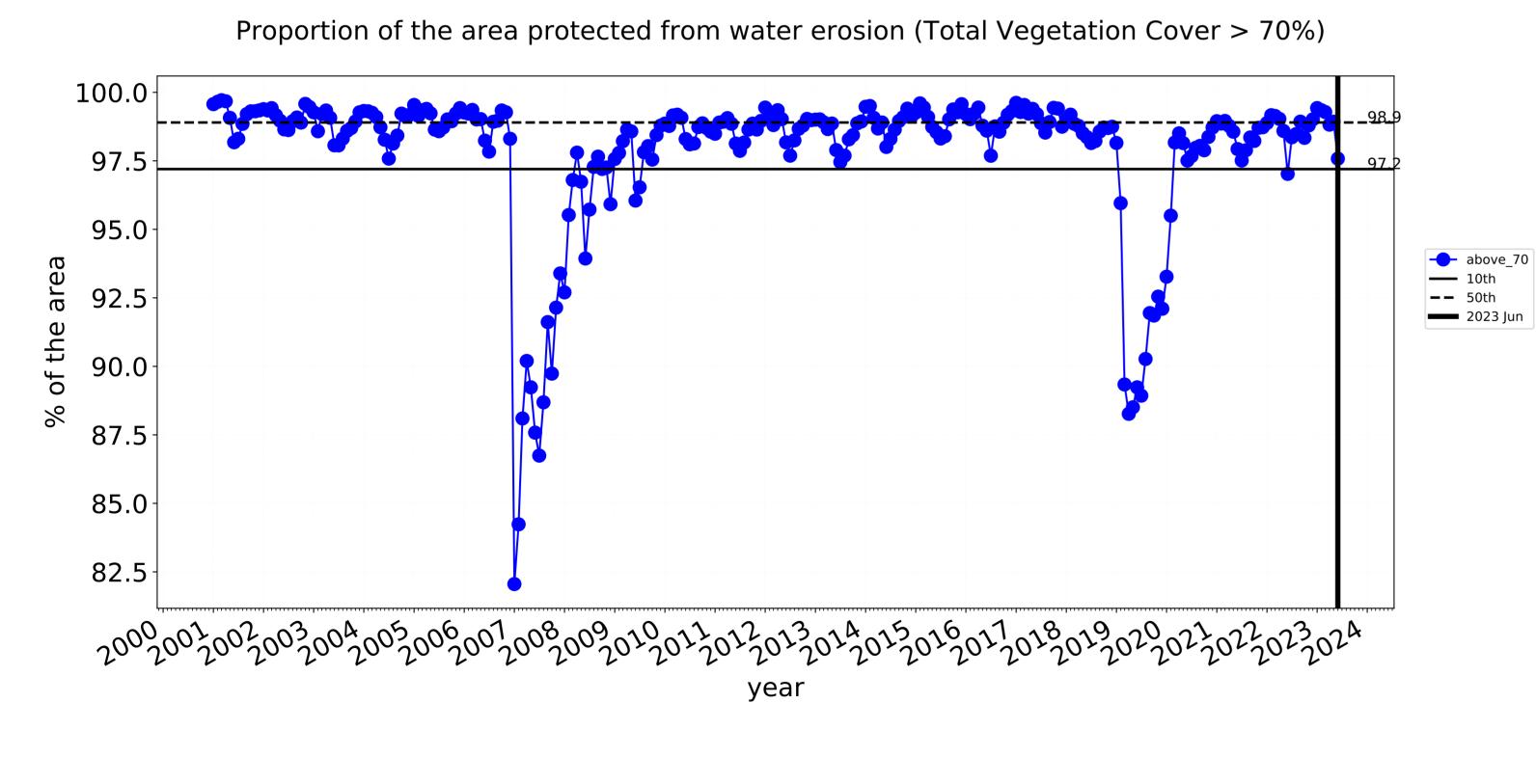


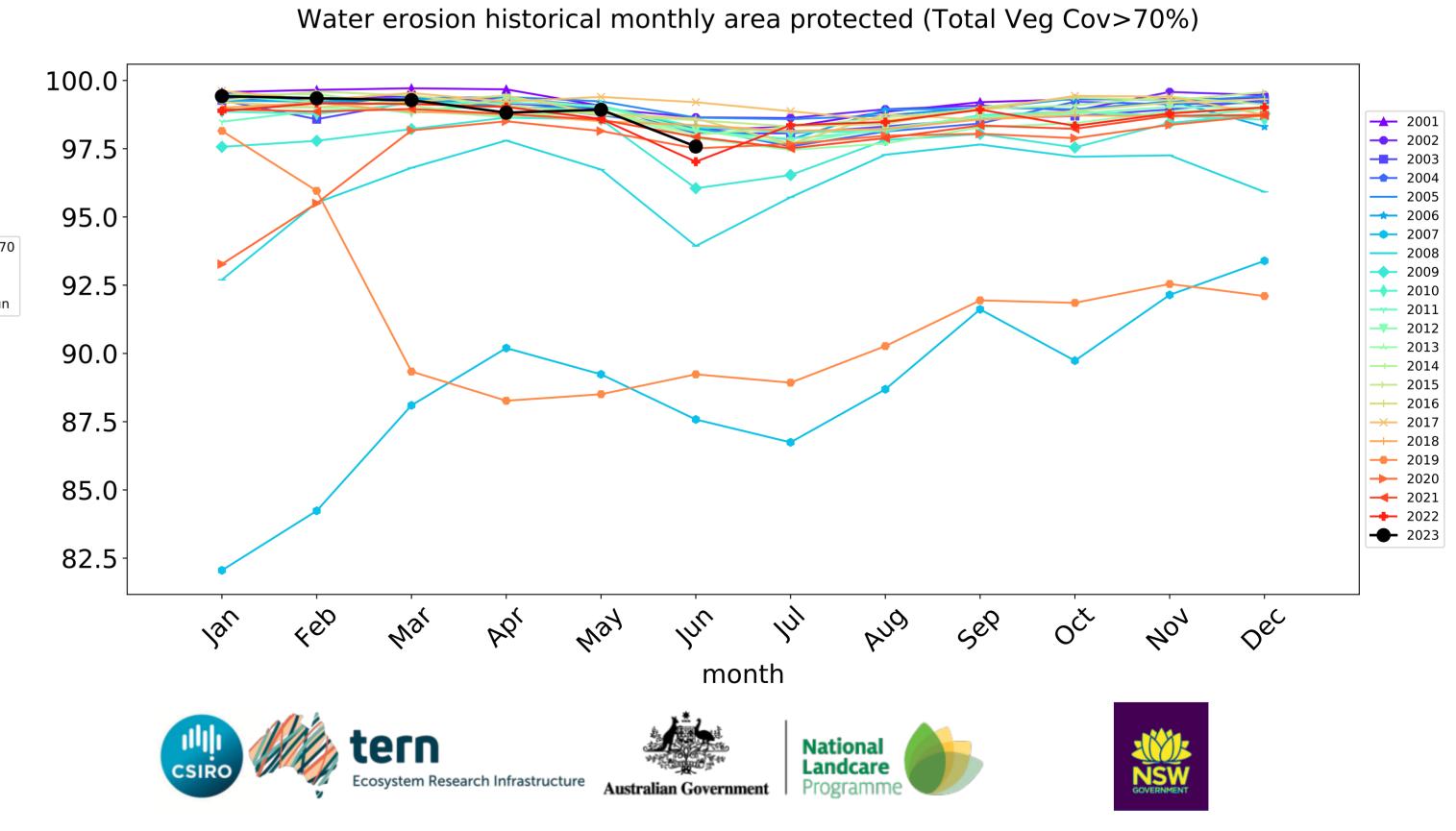


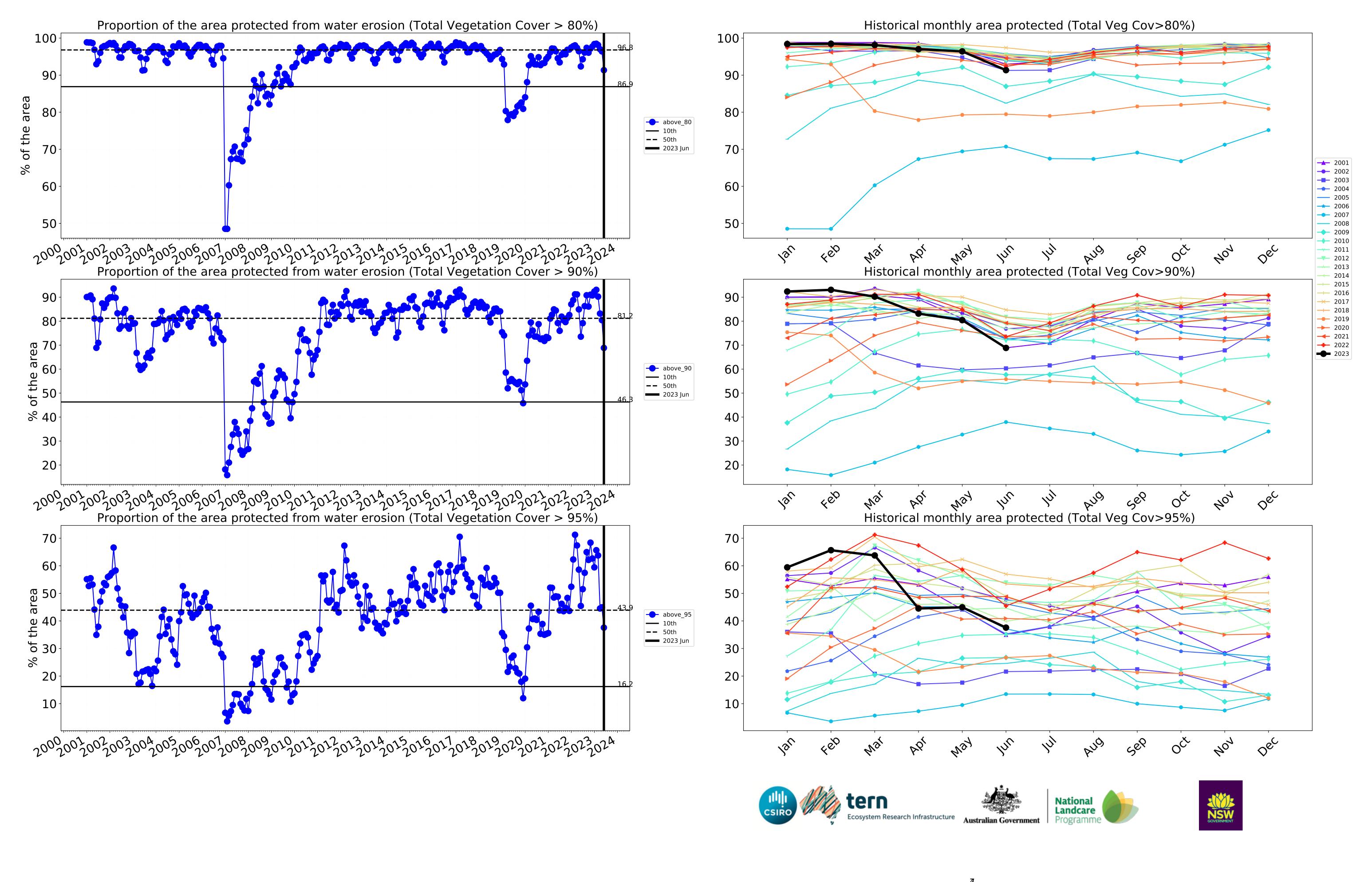
Conservation and natural environments timeseries











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

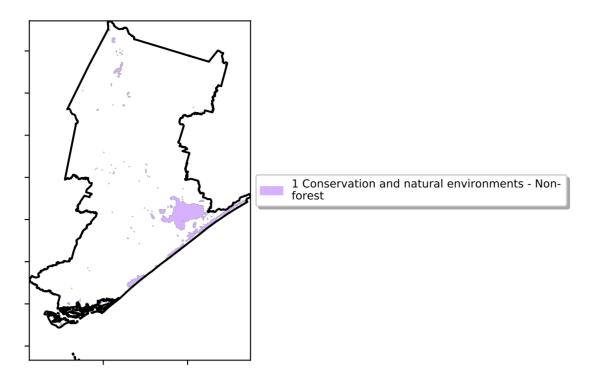
is, red pixels

are about 20% lower than the mean of that

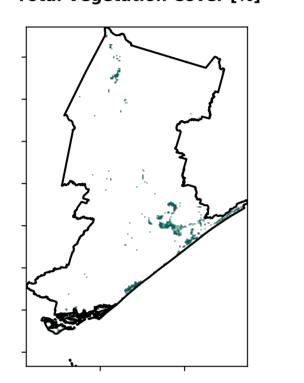
pixel. The mean

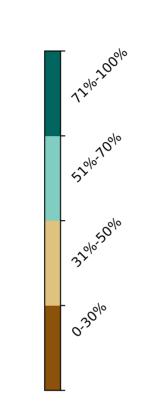
using baseline from 2001 to 2019.

is only for the month of the map

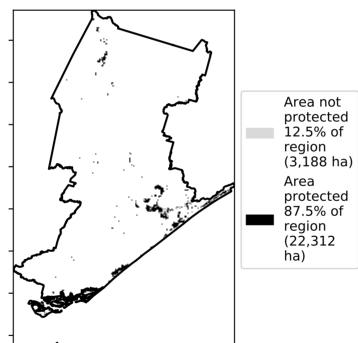


Total Vegetation Cover [%]



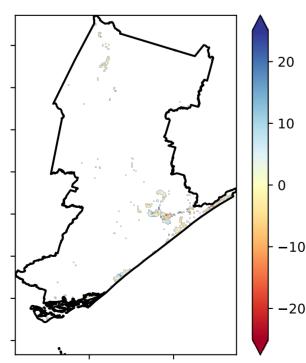


% Area protected from water erosion (>70%)



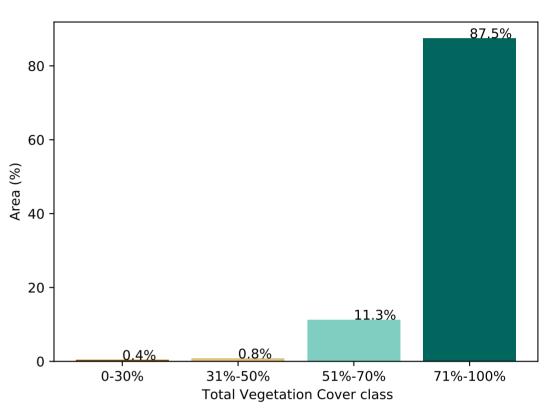
Area not protected

Total Vegetation Cover Anomaly [%]

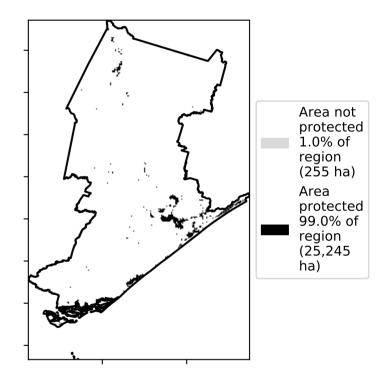


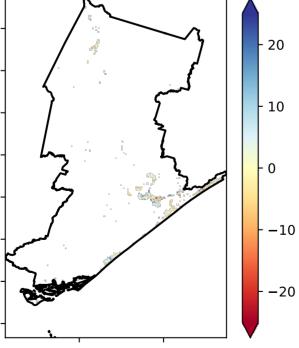
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

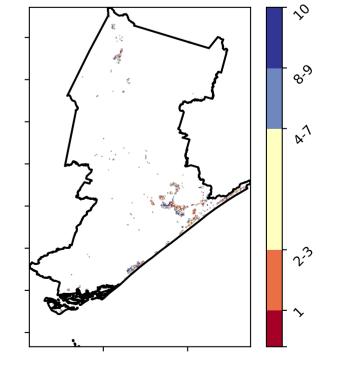
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









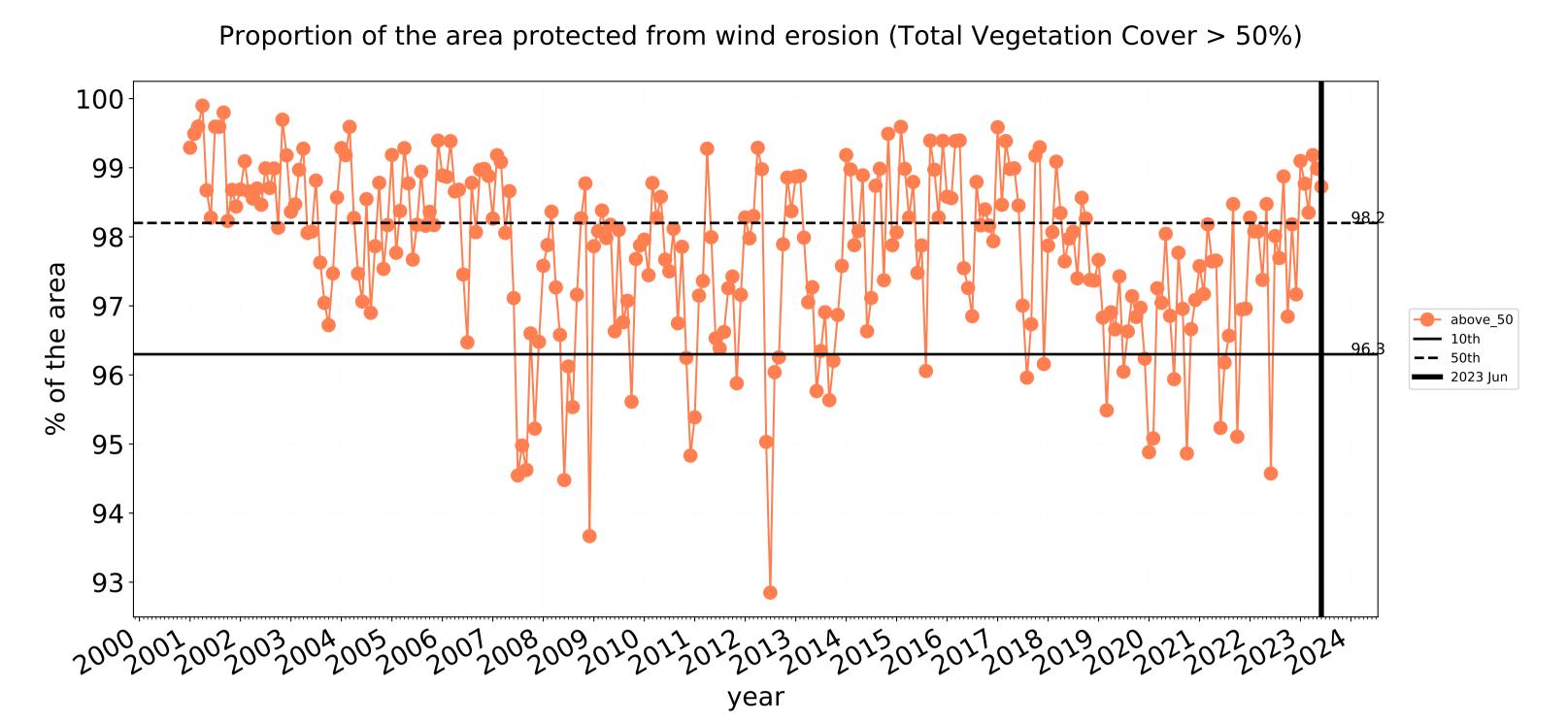


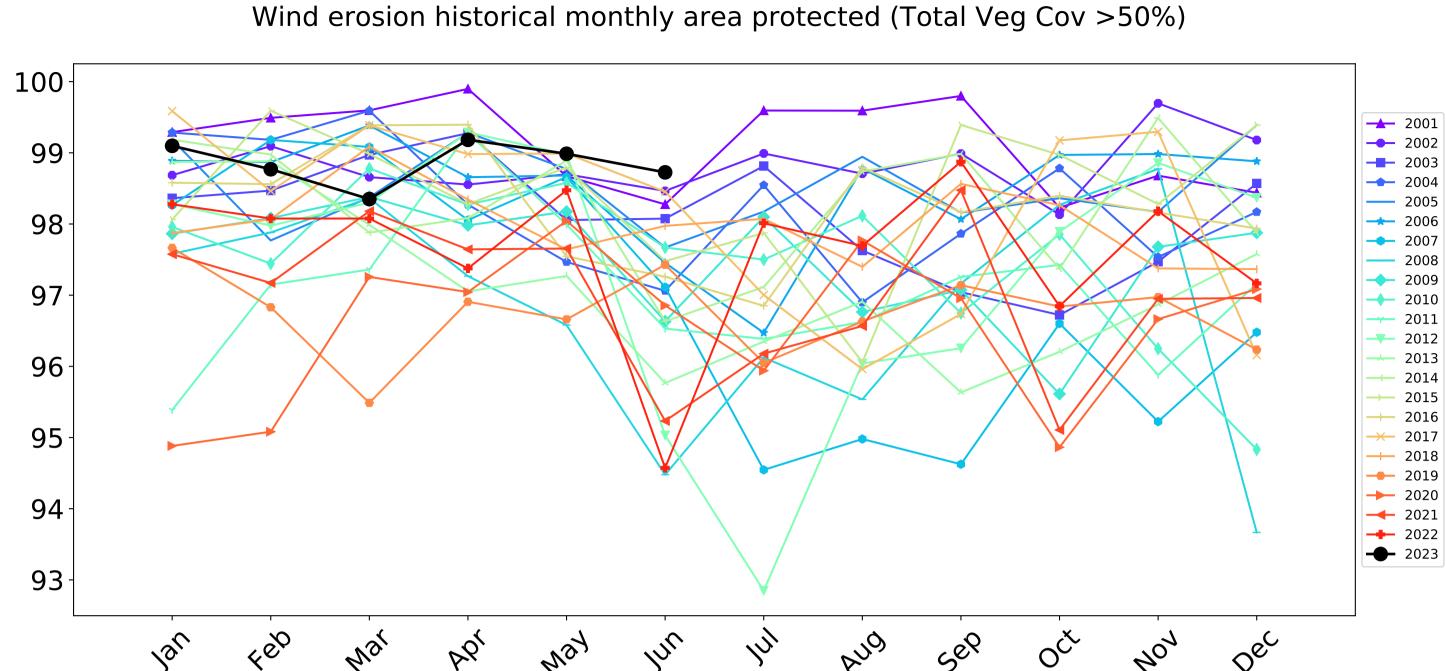




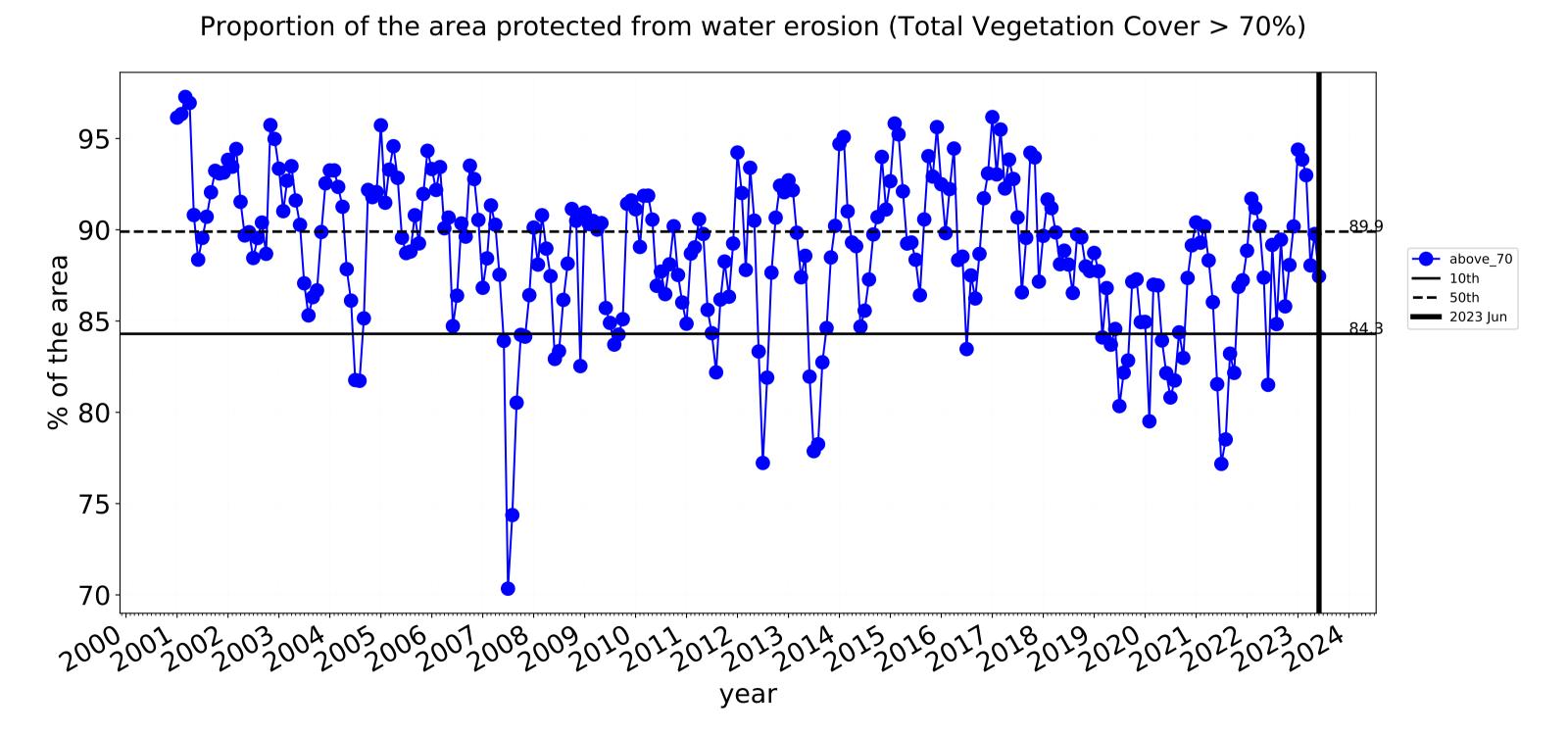


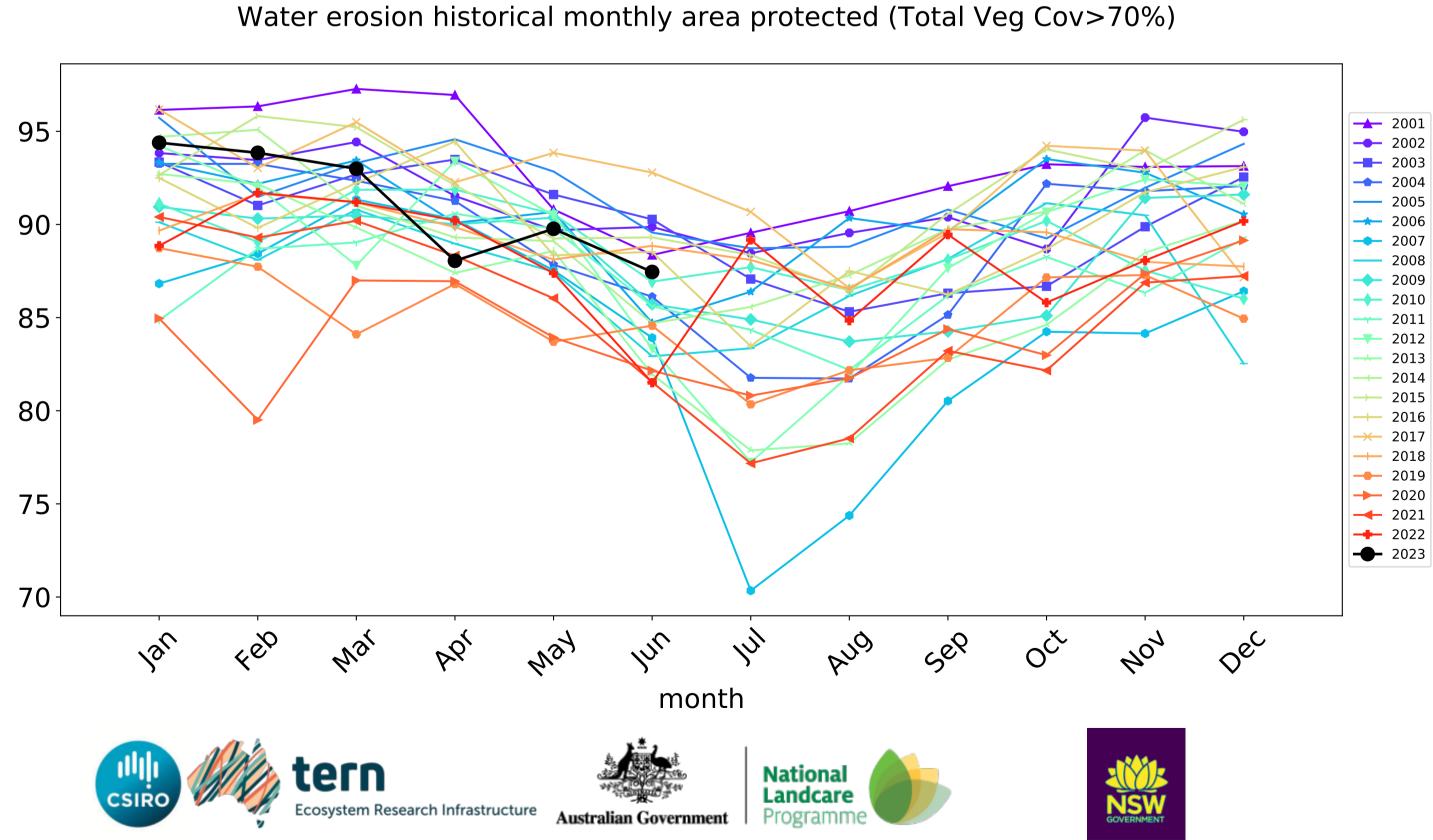
Conservation and natural environments non forest timeseries

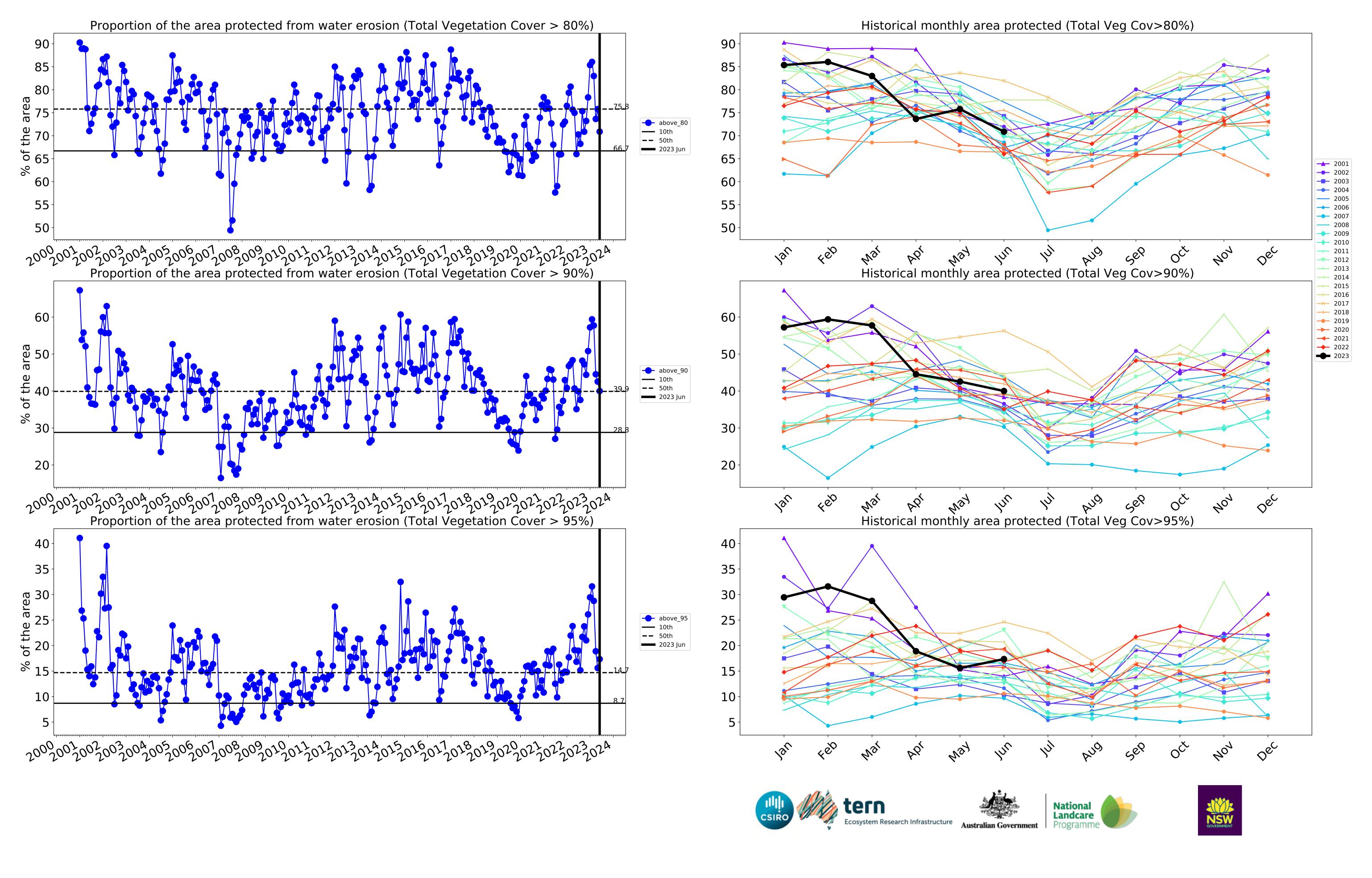




month



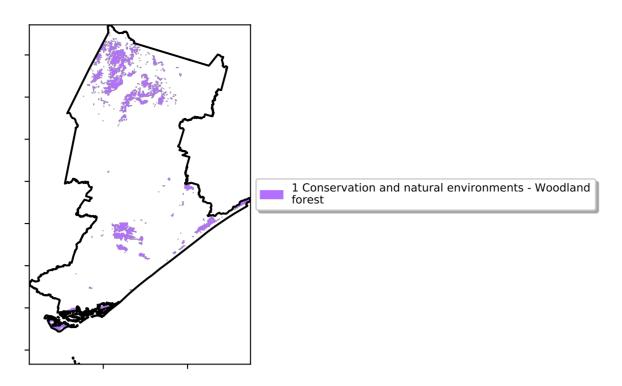




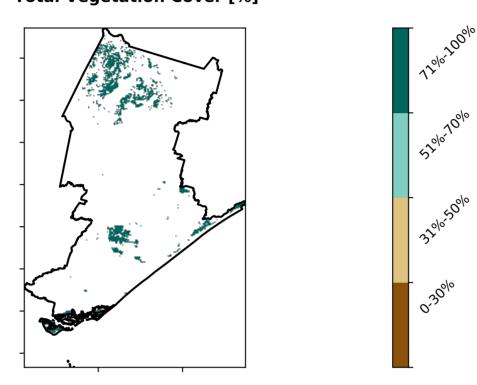
Conservation and natural environments Woodland forest

Land use and forest cover

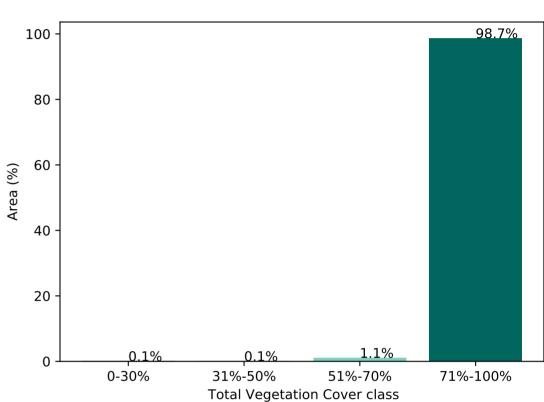
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



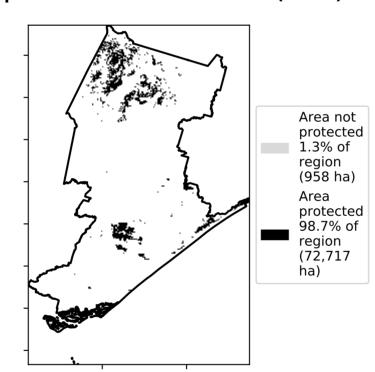
Total Vegetation Cover [%]



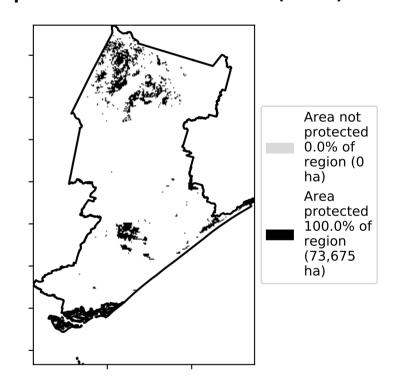
Proportion of vegetation cover class in area



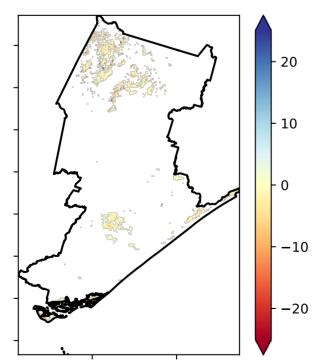
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

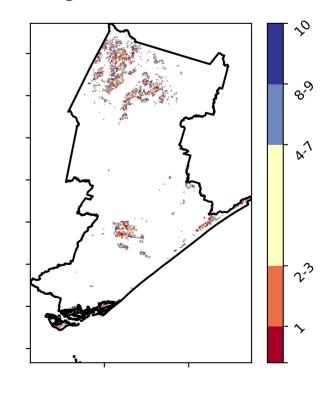


Total Vegetation Cover Anomaly [%]



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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.

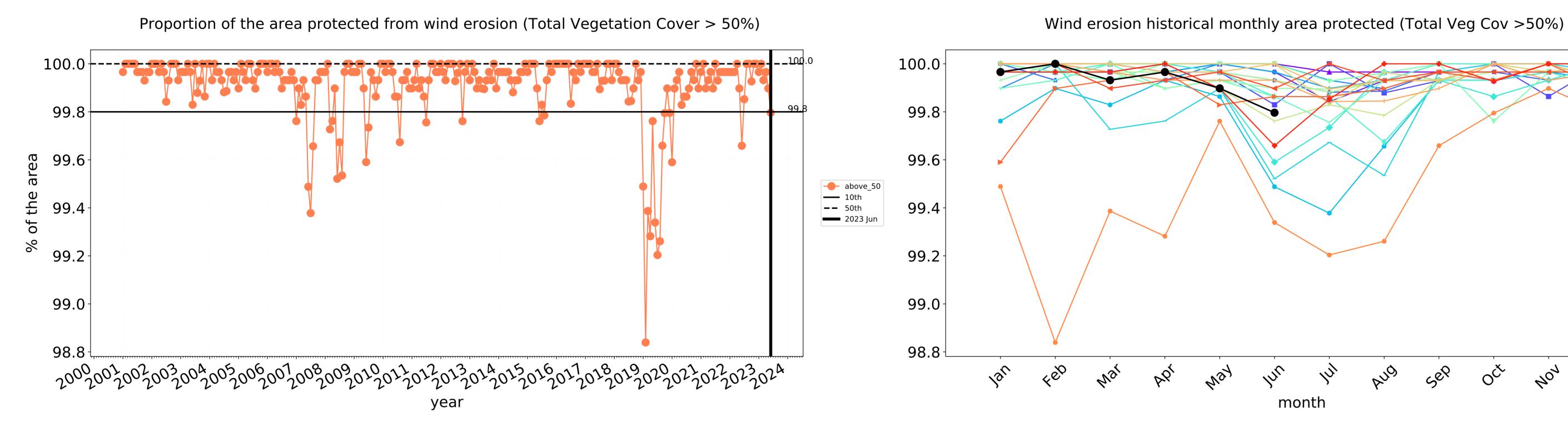


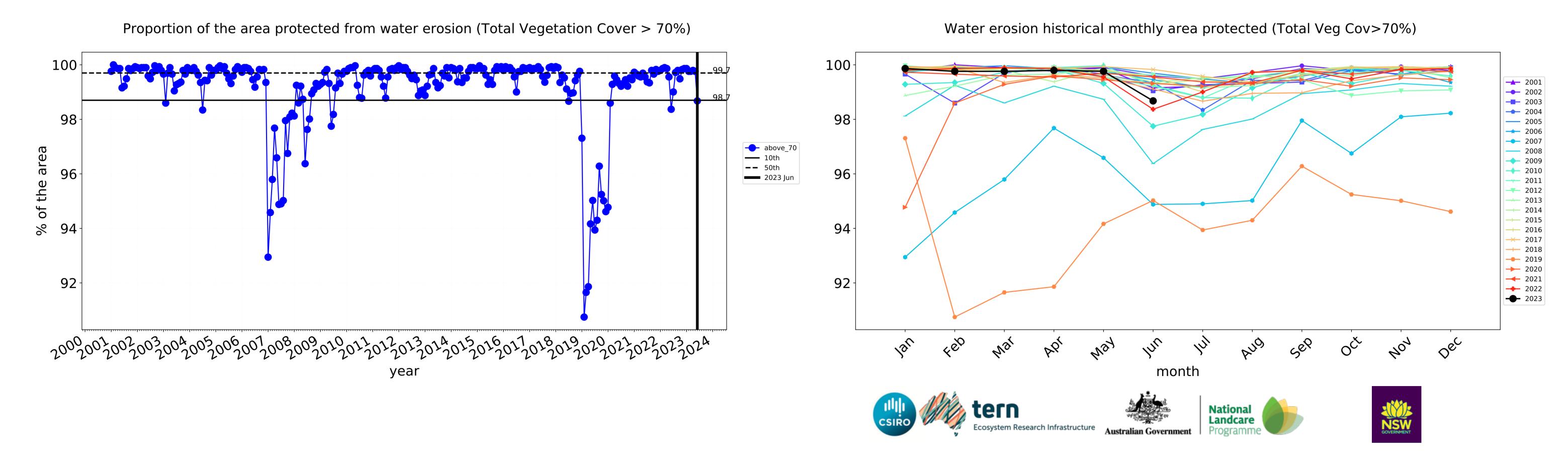




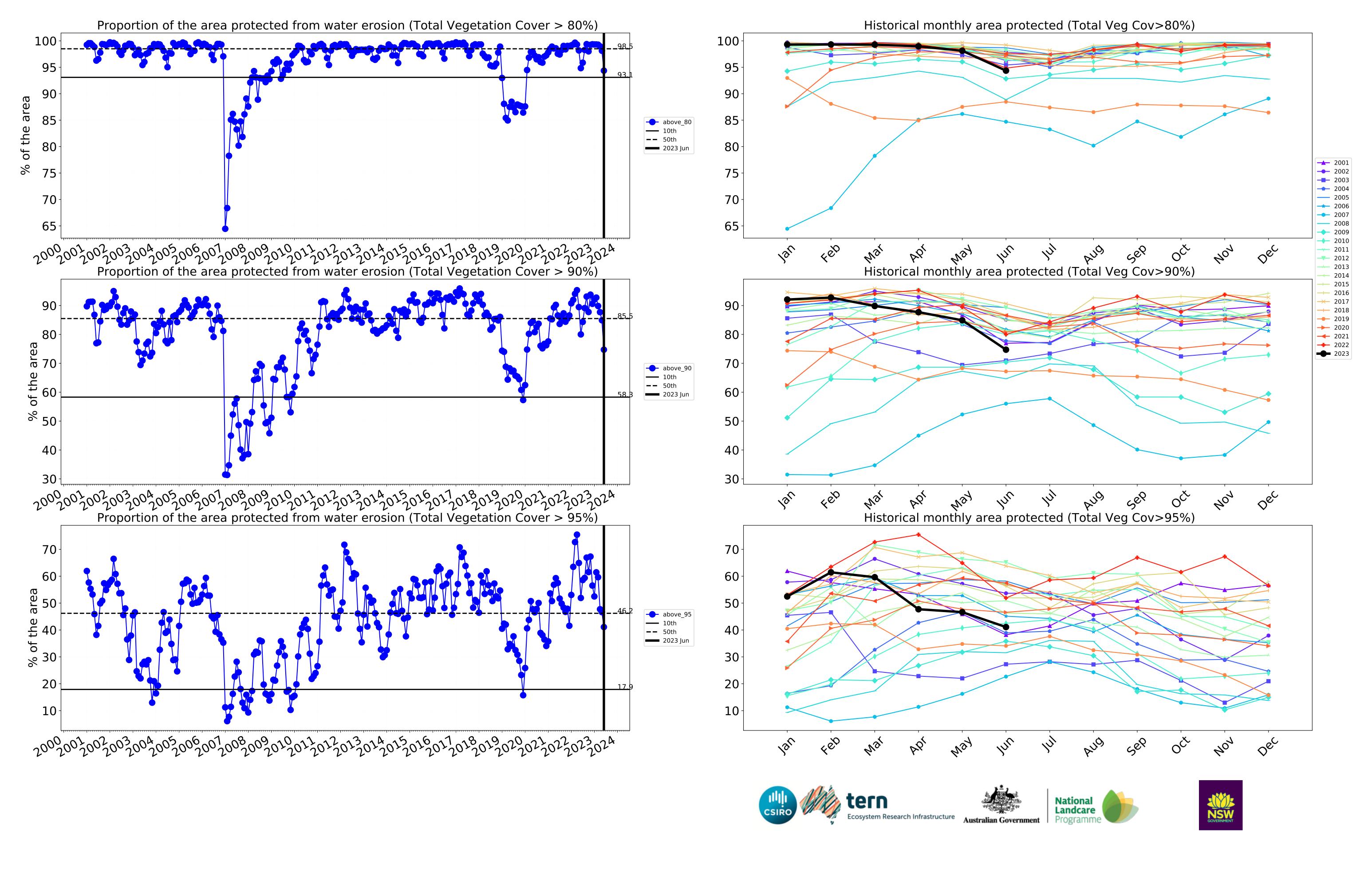


Conservation and natural environments Woodland forest timeseries





→ 2021



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)

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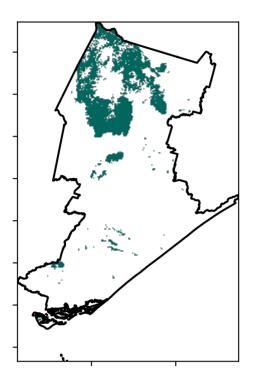
pixel. The mean

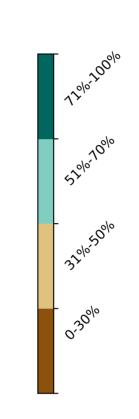
using baseline from 2001 to 2019.

is only for the month of the map

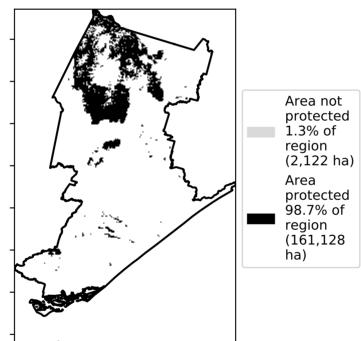
1 Conservation and natural environments - Non-woodland forest

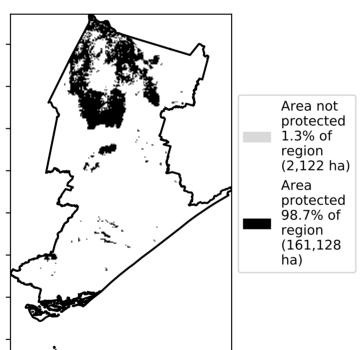
Total Vegetation Cover [%]



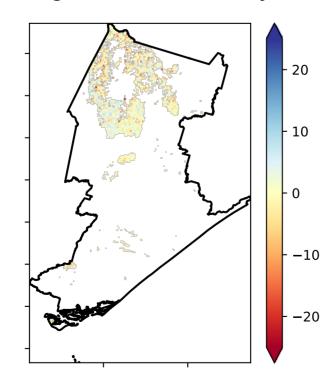


% Area protected from water erosion (>70%)



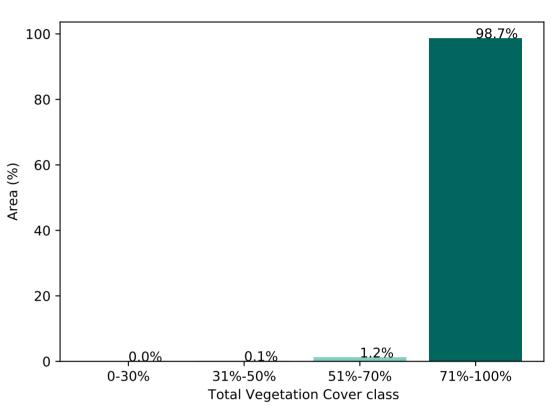


Total Vegetation Cover Anomaly [%]

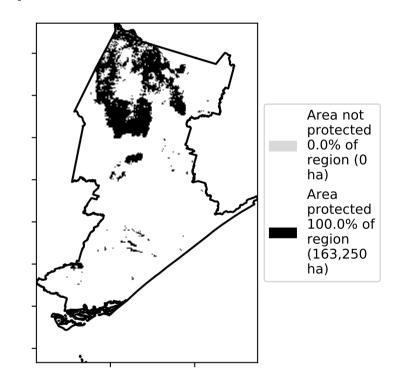


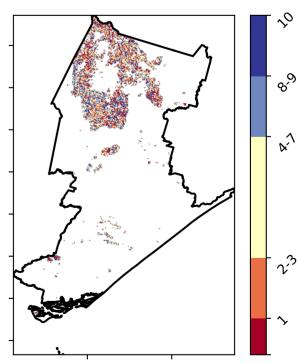
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



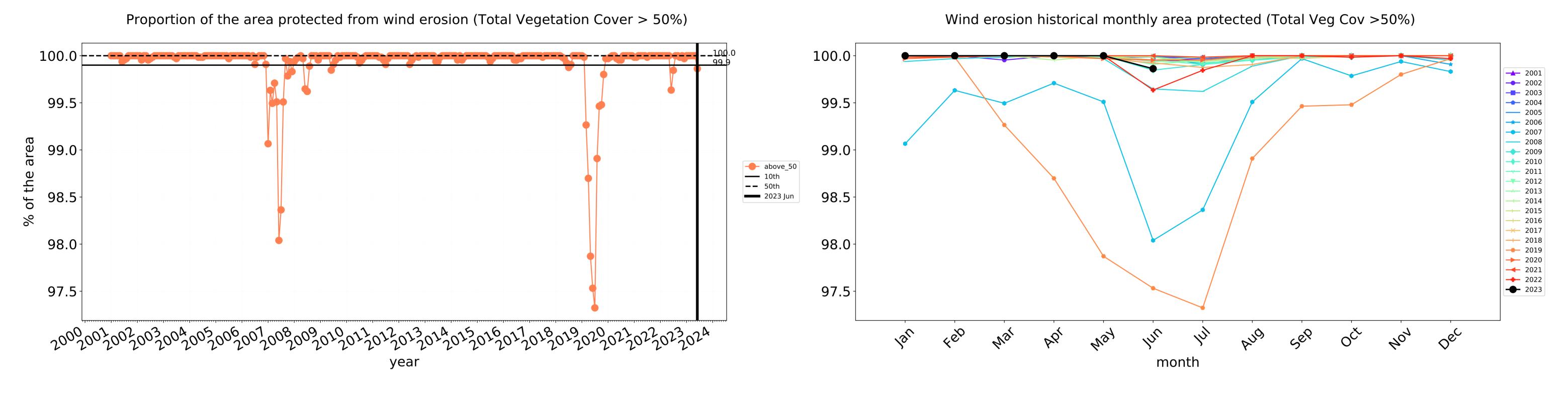


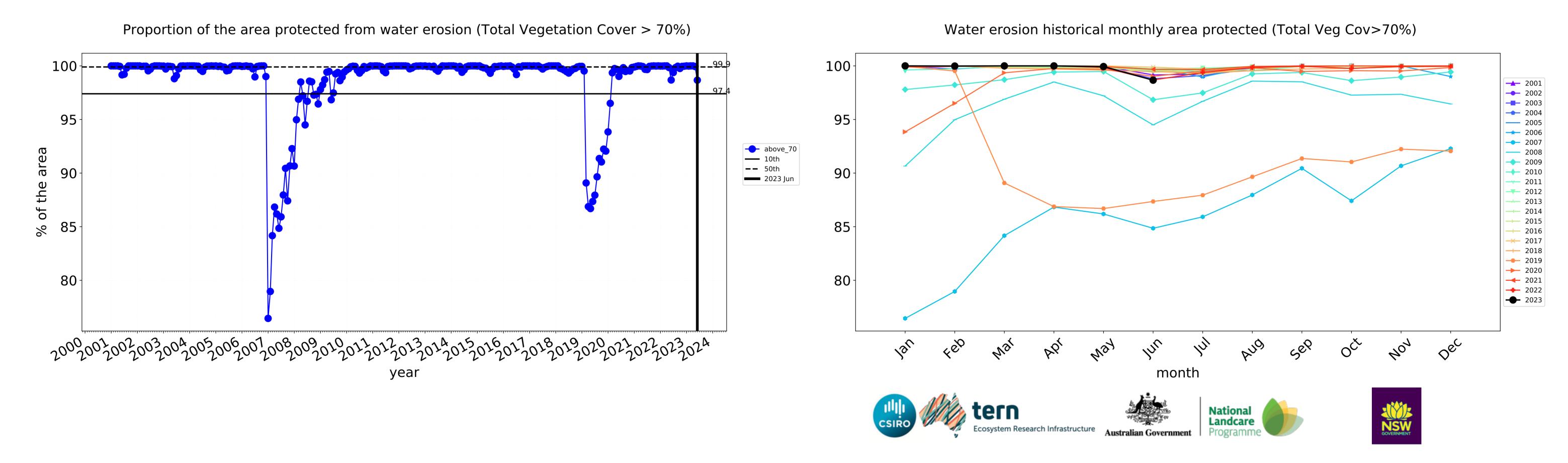


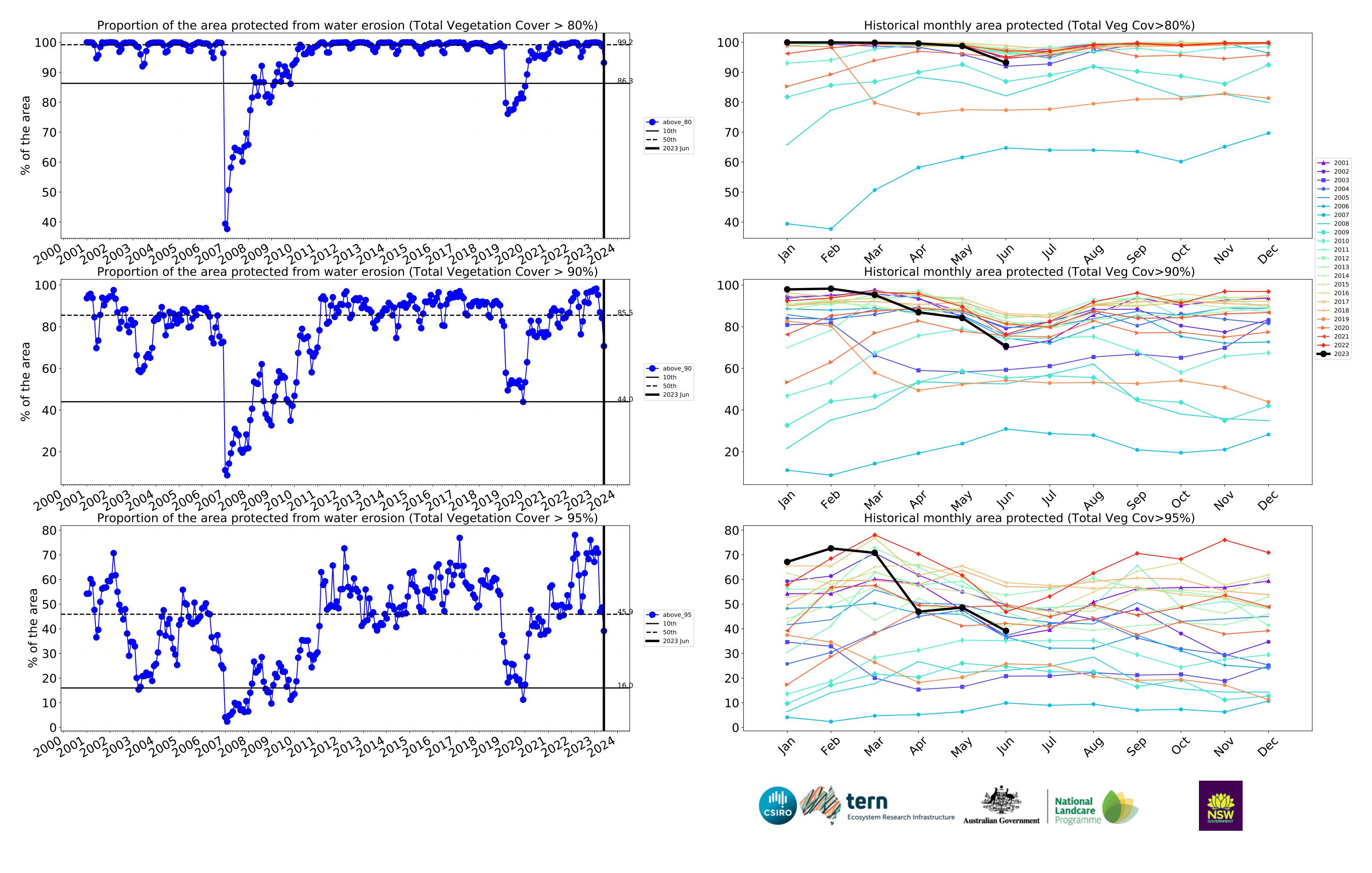












Agriculture

Land use and forest cover

Catchment Scale Land Use and Forests of Australia (2018)

Catchment Scale Land

Derived from

Use of Australia

(2018) and Forests

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Anomaly show how many percetage points each

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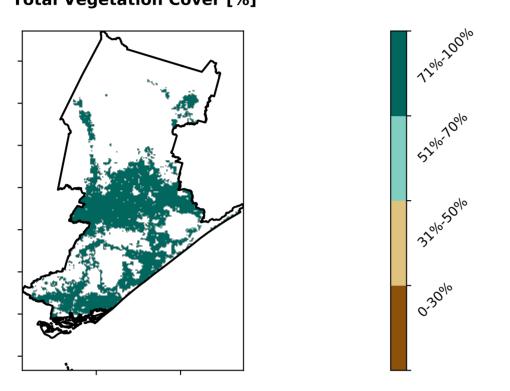
pixel. The mean

using baseline from 2001 to 2019.

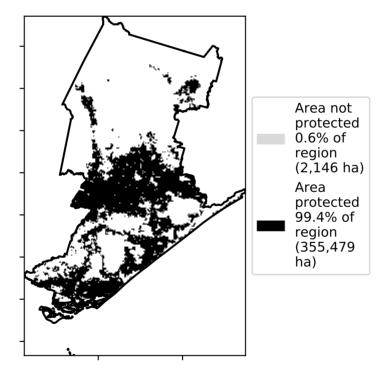
is only for the month of the map

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

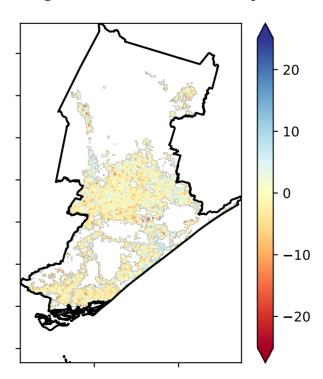
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

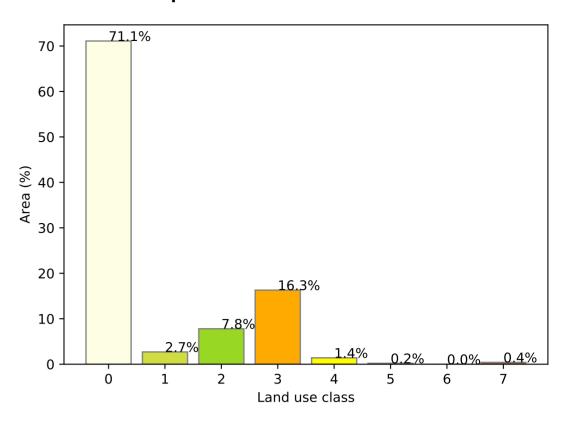


Total Vegetation Cover Anomaly [%]

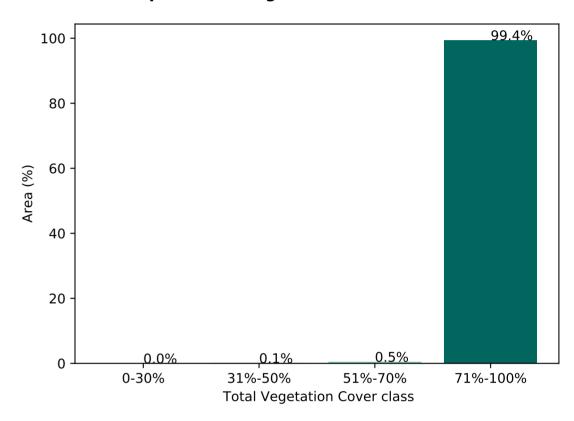


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

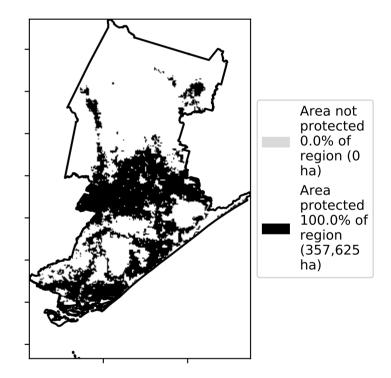
Proportion of each land class in area

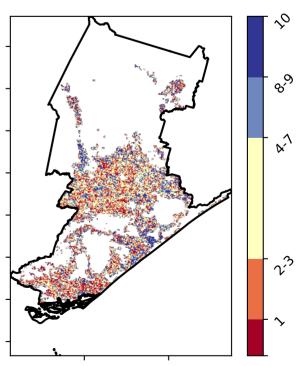


Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





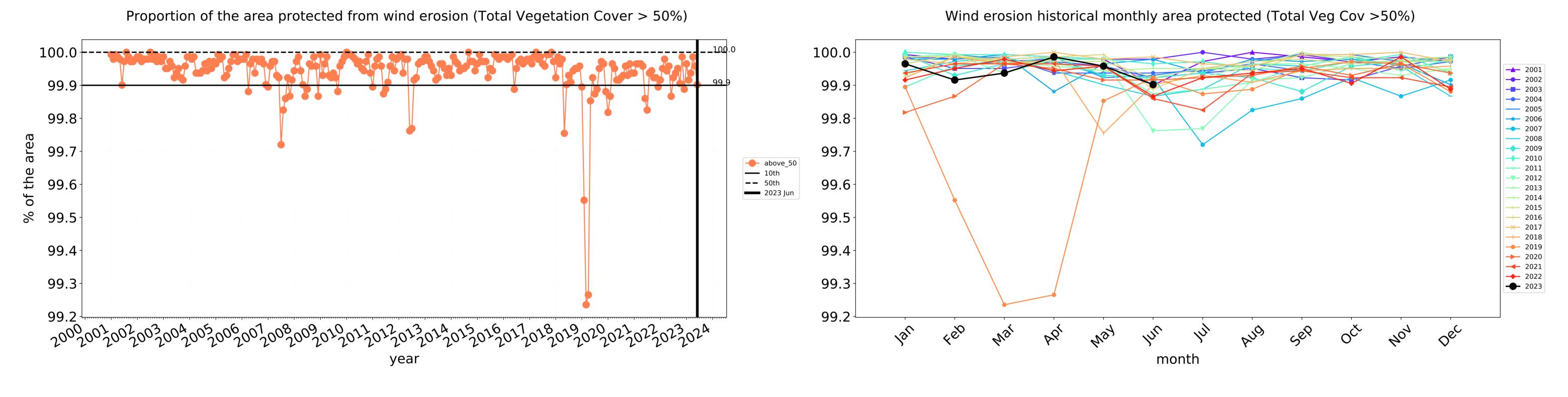


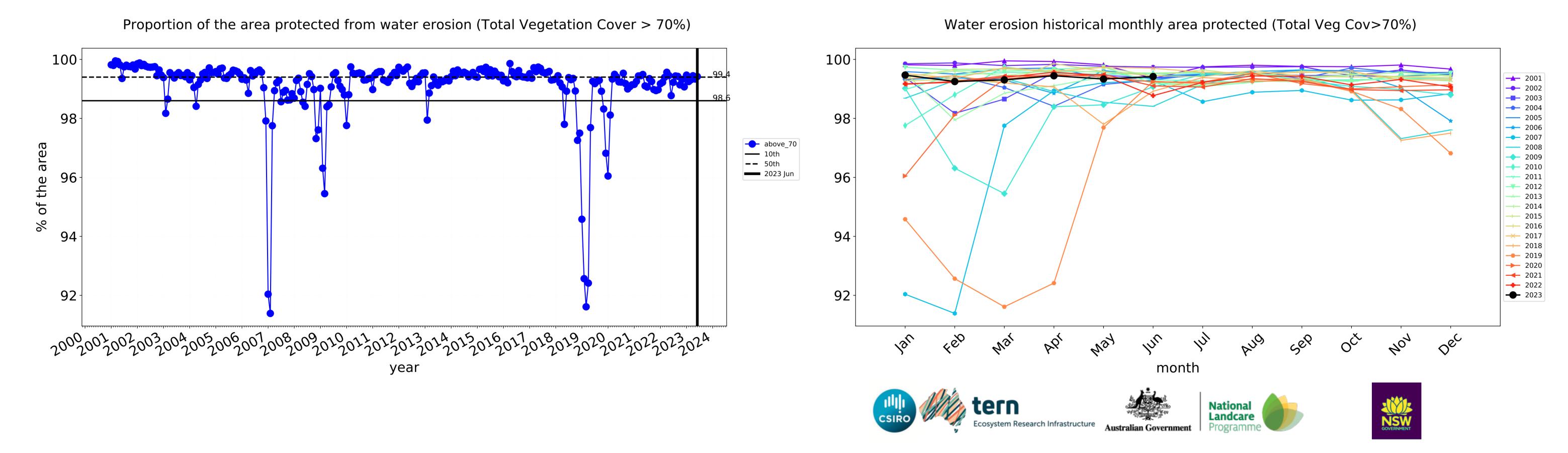


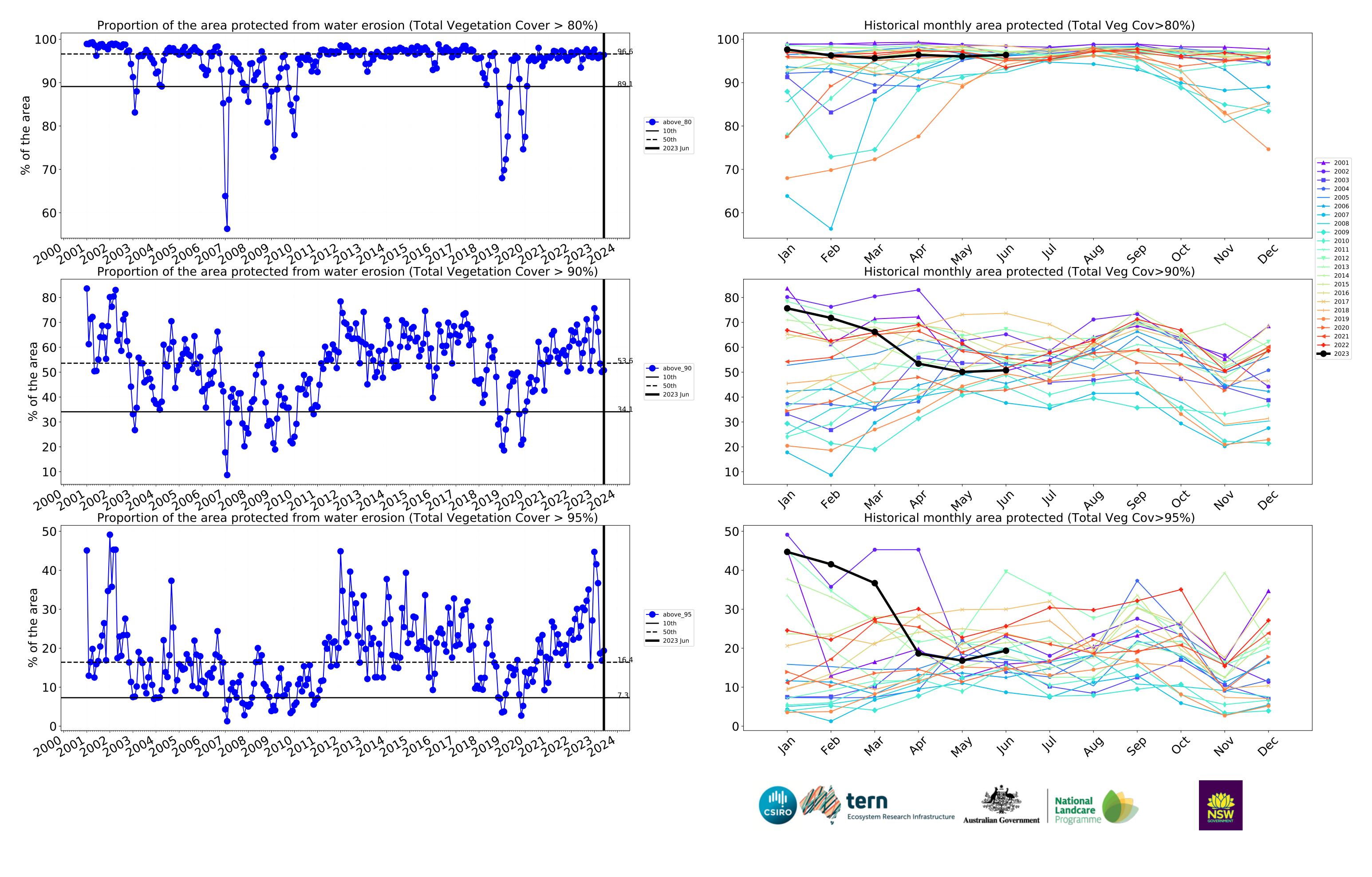




Agriculture timeseries







Grazing

Land use and forest cover

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

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

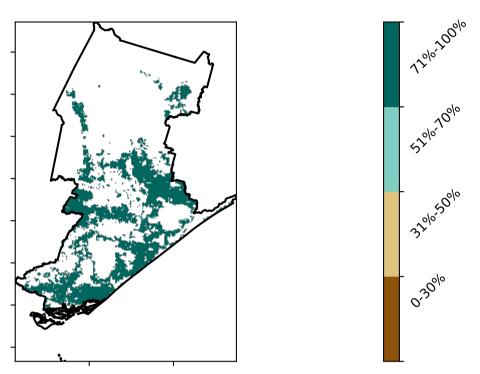
is, red pixels are about 20% lower than the

mean of that

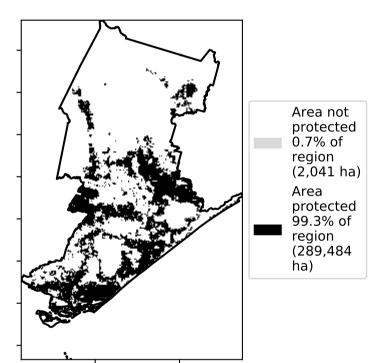
pixel. The mean

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

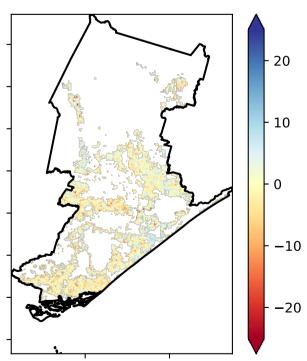
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

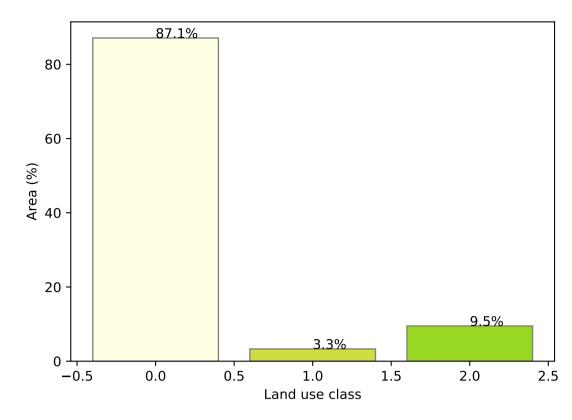


Total Vegetation Cover Anomaly [%]

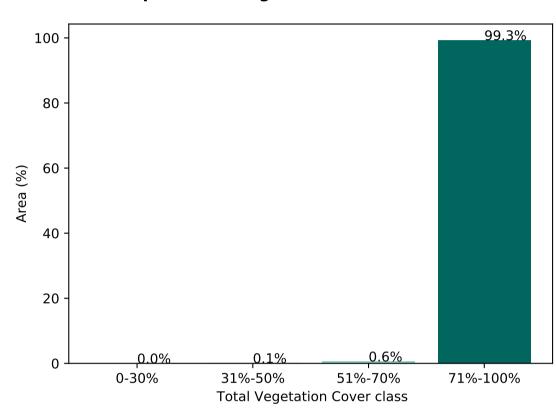


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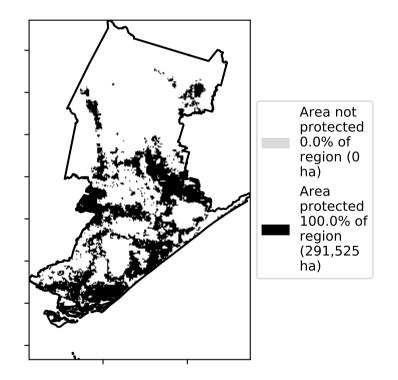
Proportion of each land class in area



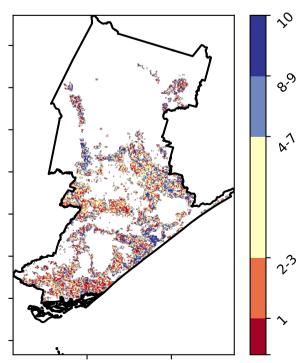
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]







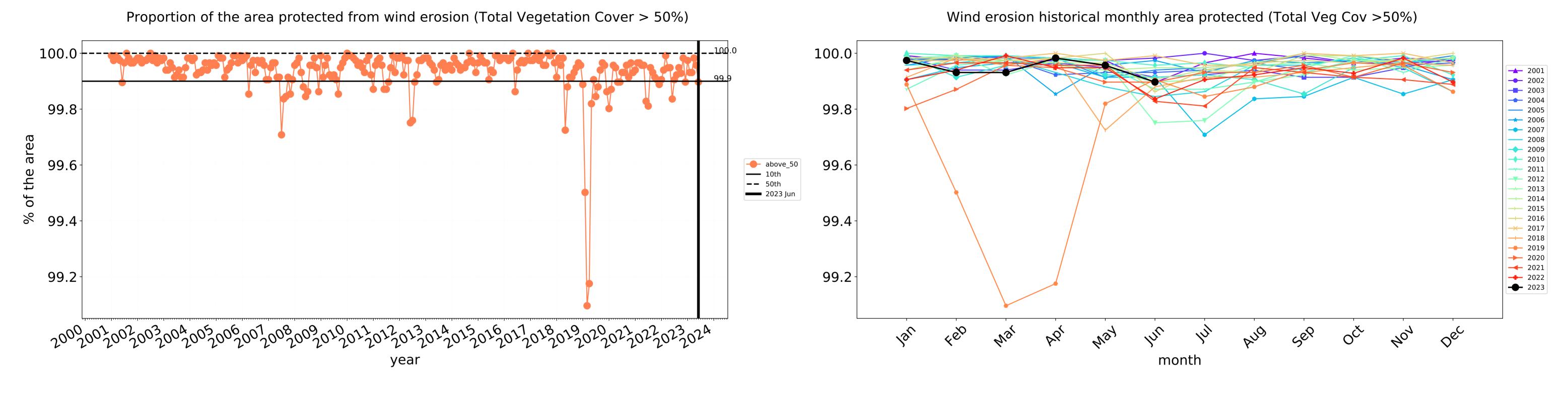


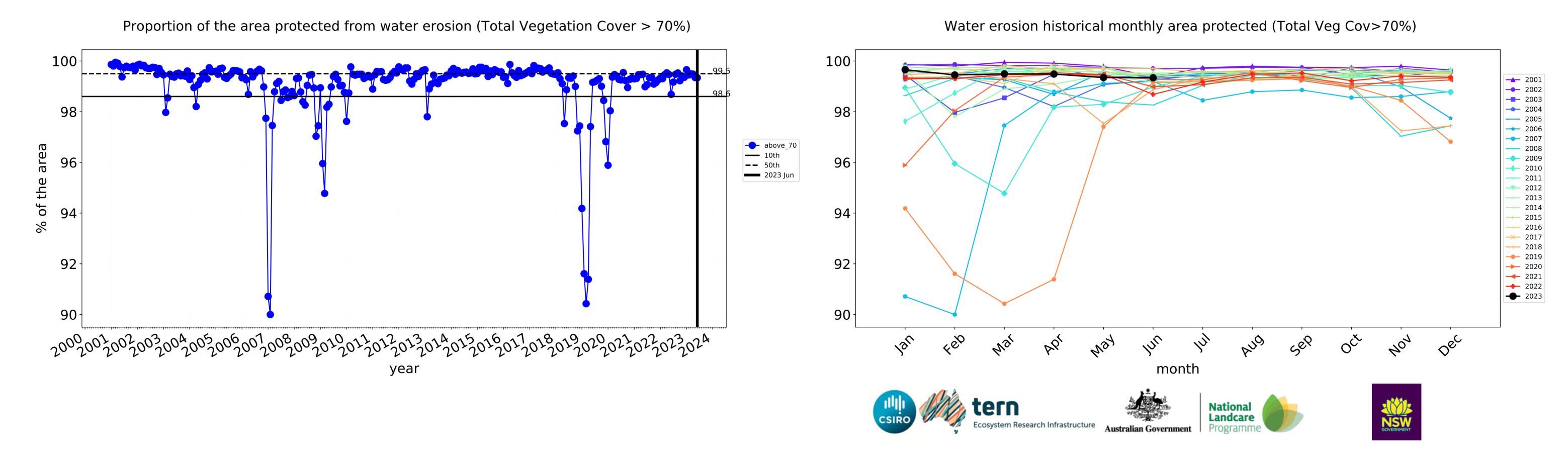


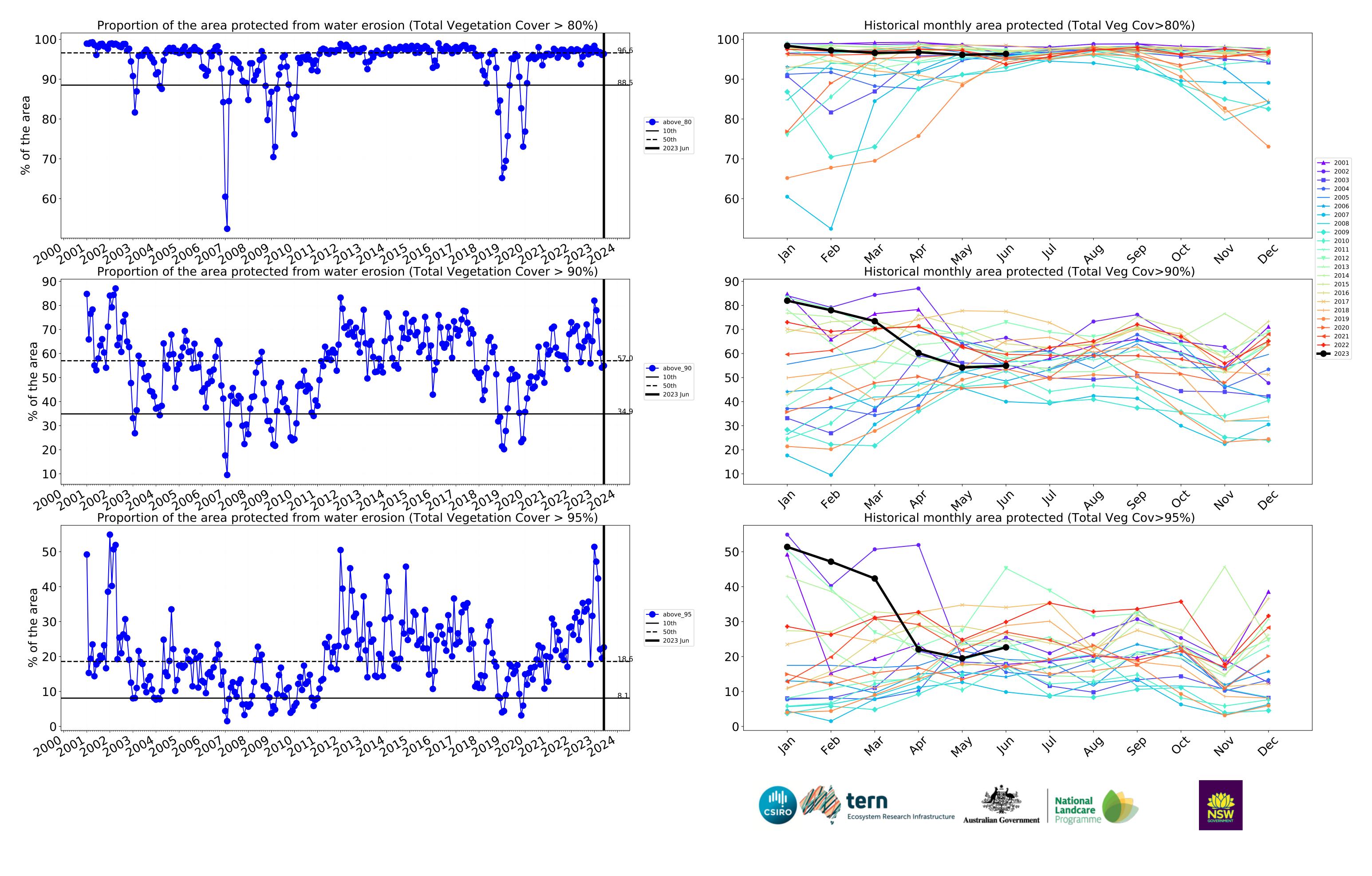




Grazing timeseries







Grazing 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)

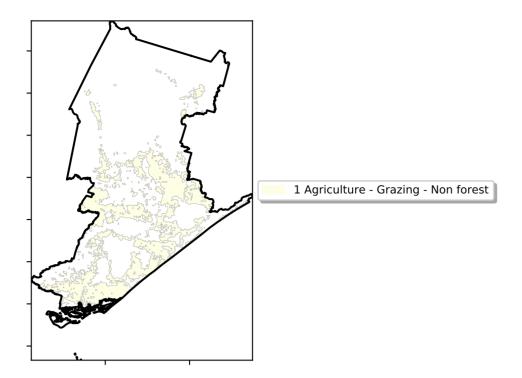
Anomaly show how many percetage points each

pixel is from the mean. That

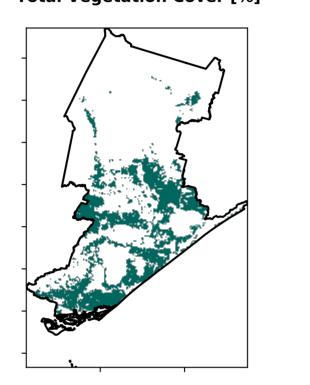
pixel. The mean

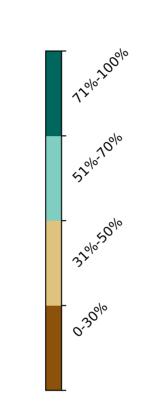
is only for the month of the map using baseline from 2001 to 2019.

is, red pixels are about 20% lower than the mean of that

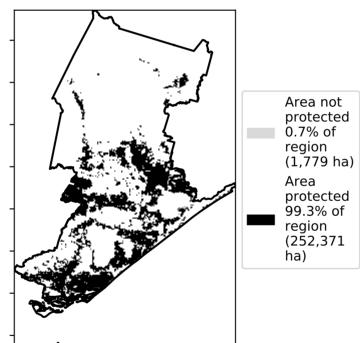


Total Vegetation Cover [%]



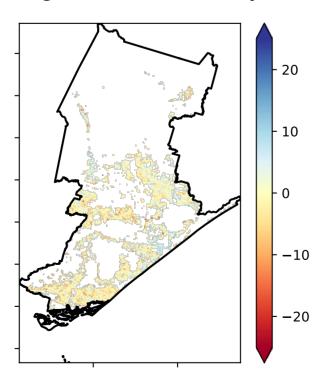


% Area protected from water erosion (>70%)



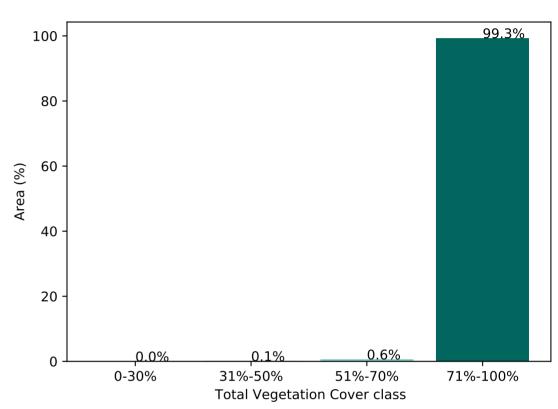
Area not protected 0.7% of

Total Vegetation Cover Anomaly [%]

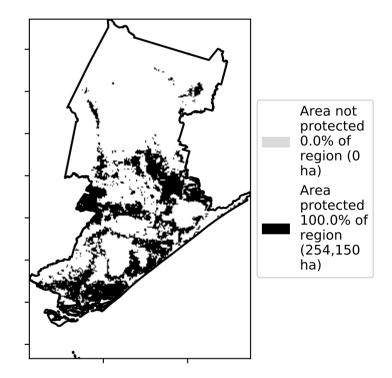


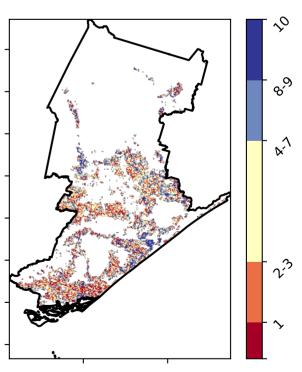
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)







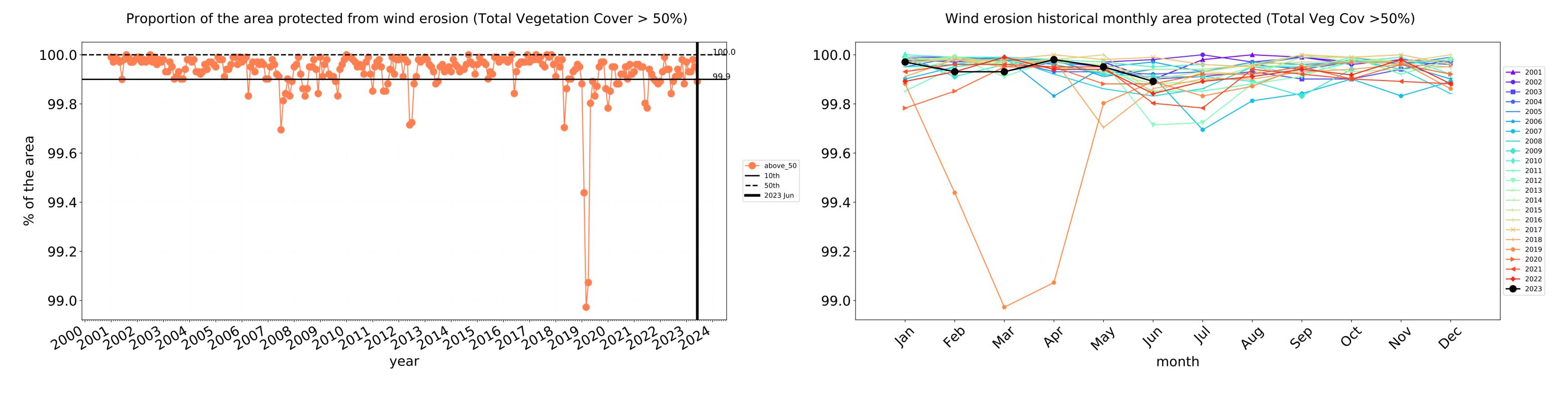


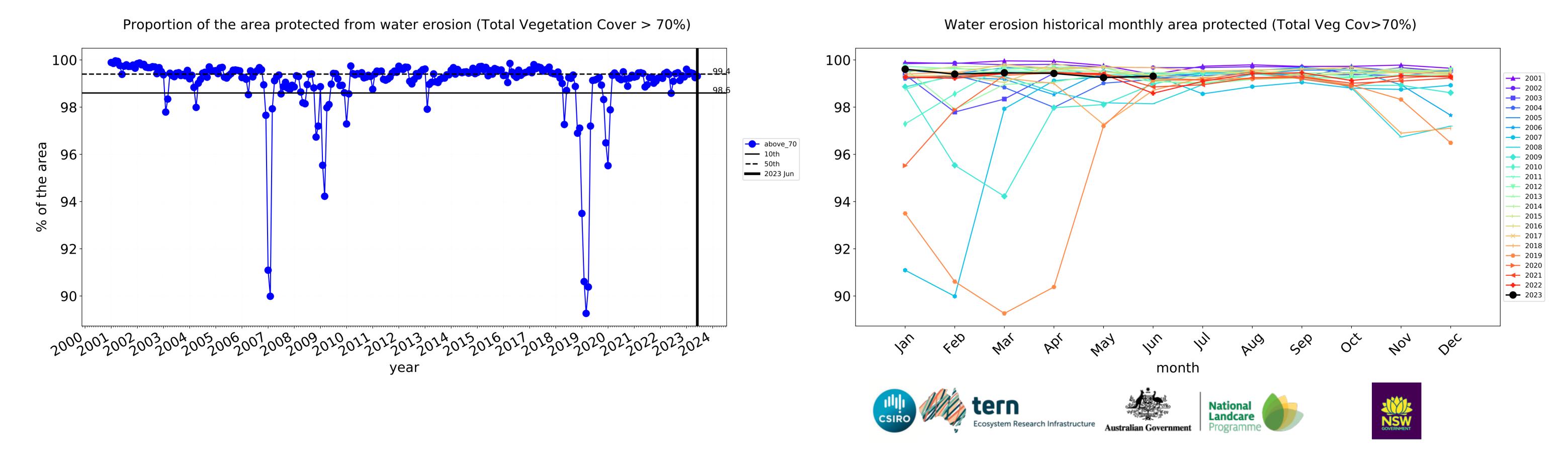


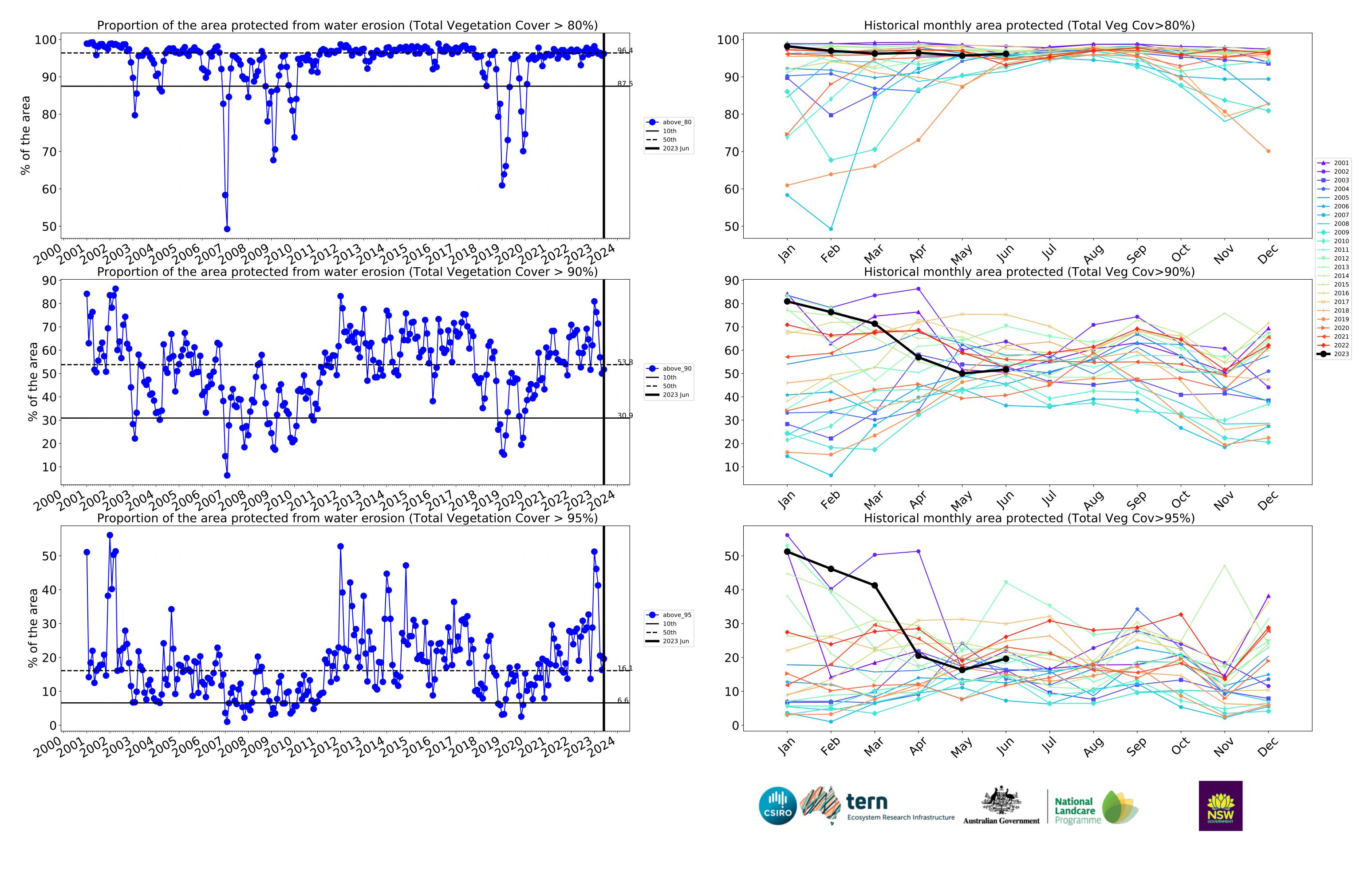




Grazing non forest timeseries







Grazing - 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)

Anomaly show how many percetage points each

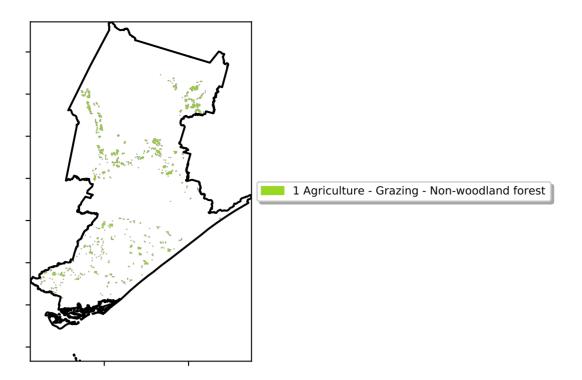
pixel is from the mean. That

is, red pixels

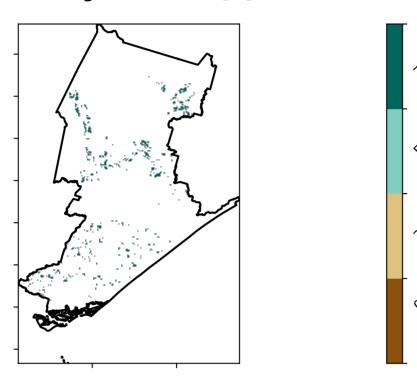
are about 20% lower than the mean of that

pixel. The mean

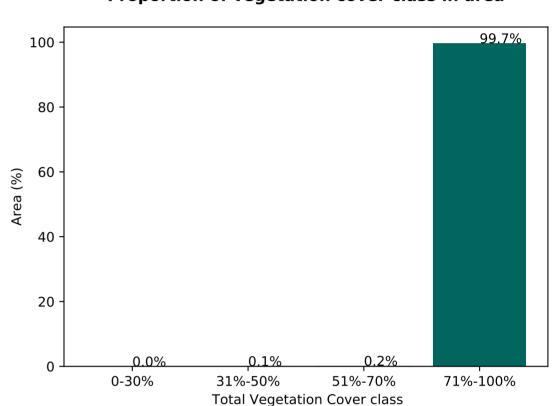
is only for the month of the map using baseline from 2001 to 2019.



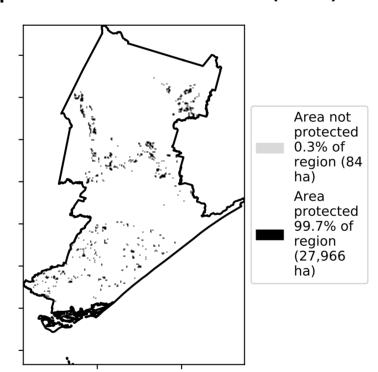
Total Vegetation Cover [%]



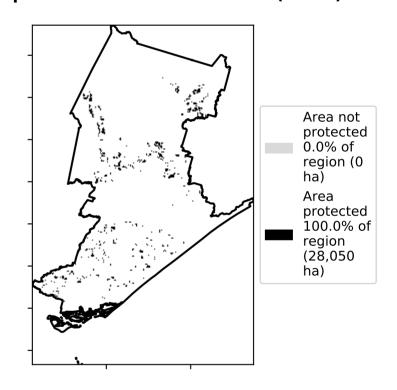
Proportion of vegetation cover class in area



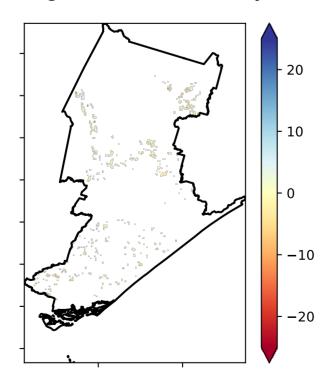
% Area protected from water erosion (>70%)



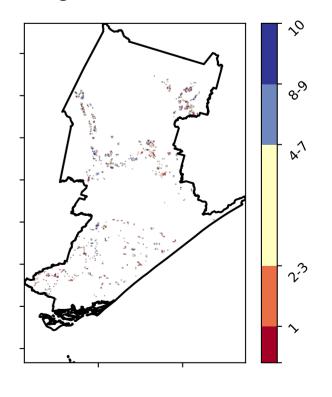
% Area protected from wind erosion (>50%)



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.



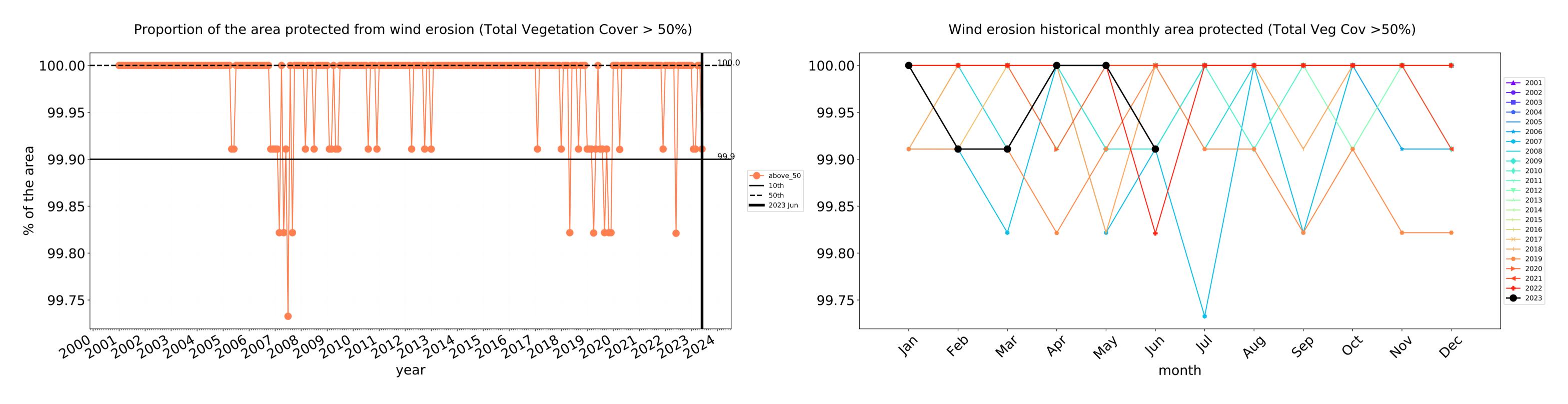


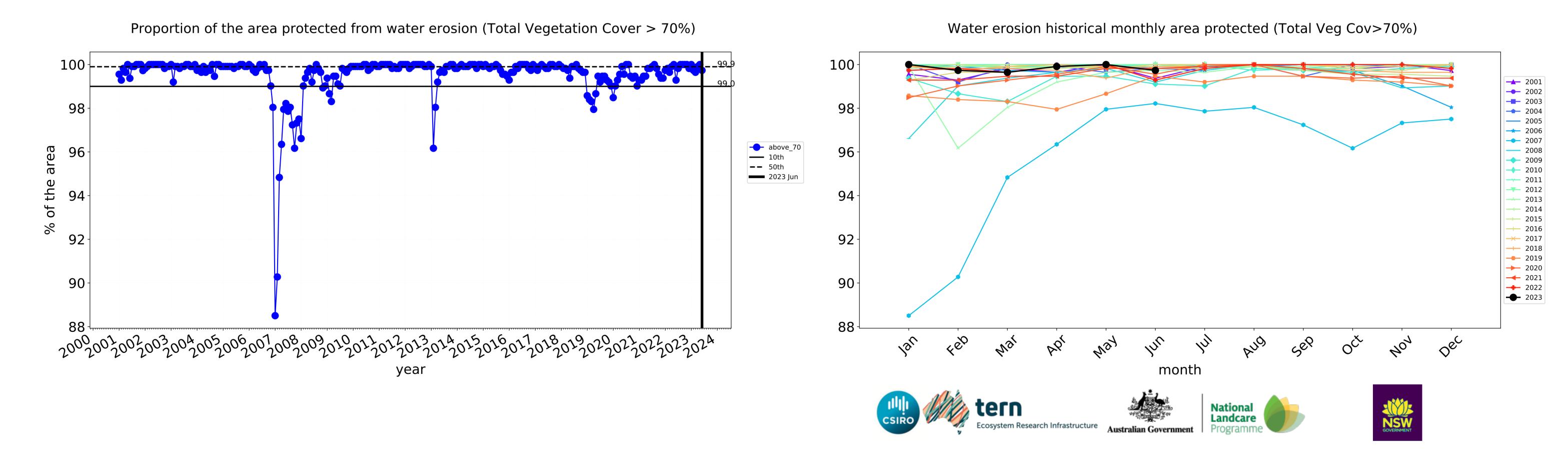


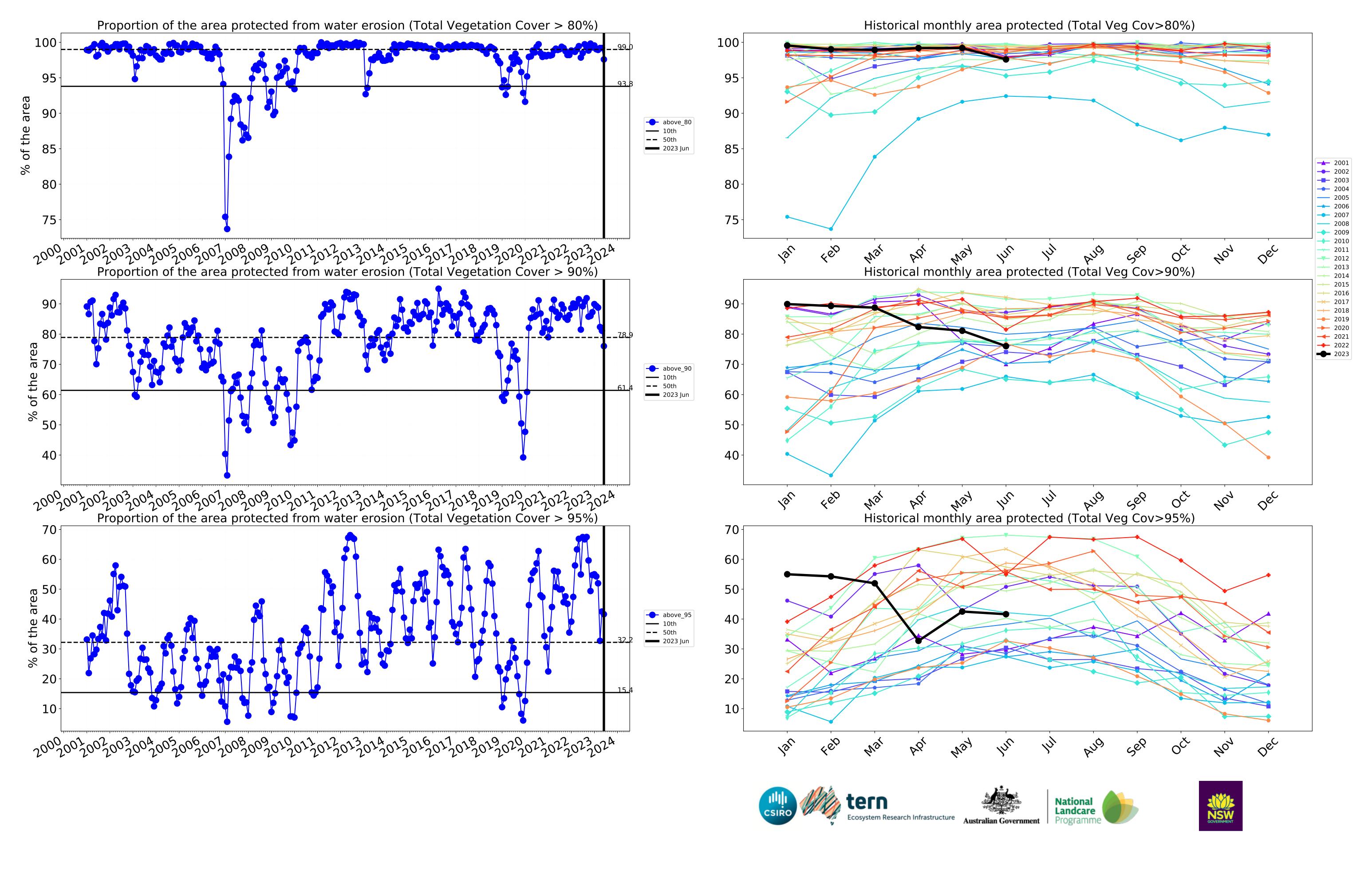












Irrigation

Land use and forest cover

Catchment Scale Land Use and Forests of Australia (2018)

Catchment Scale Land

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

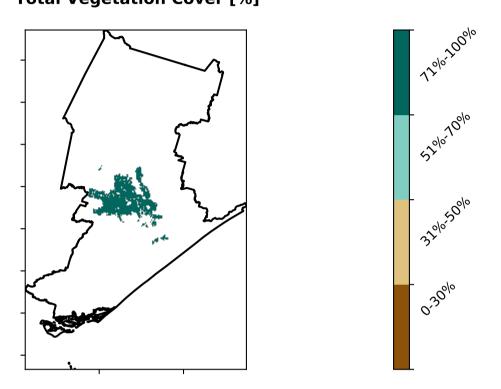
from 2001 to 2019.

pixel. The mean

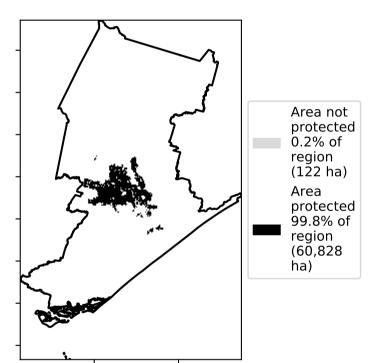
is only for the month of the map using baseline

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

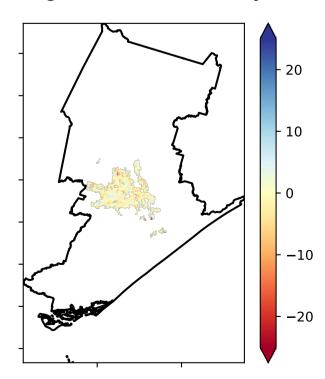
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

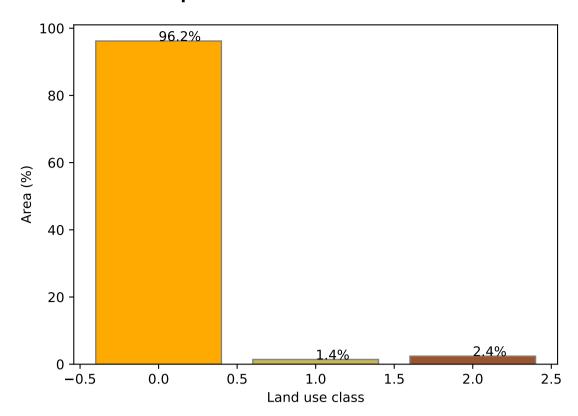


Total Vegetation Cover Anomaly [%]

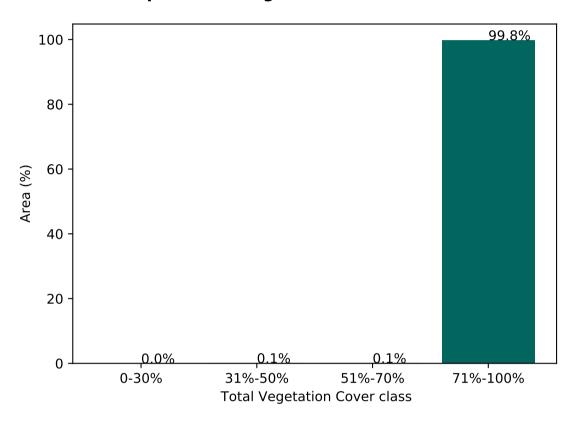


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

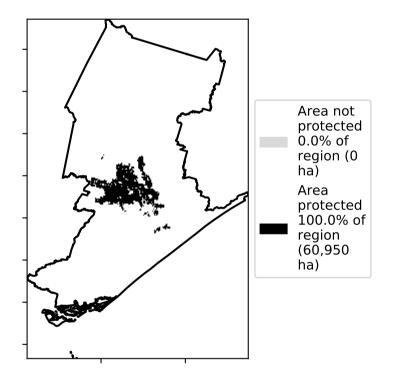
Proportion of each land class in area

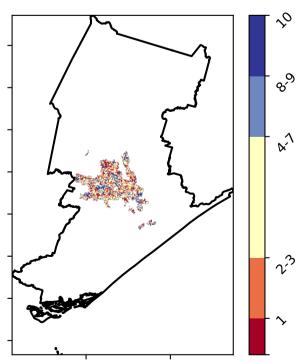


Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)





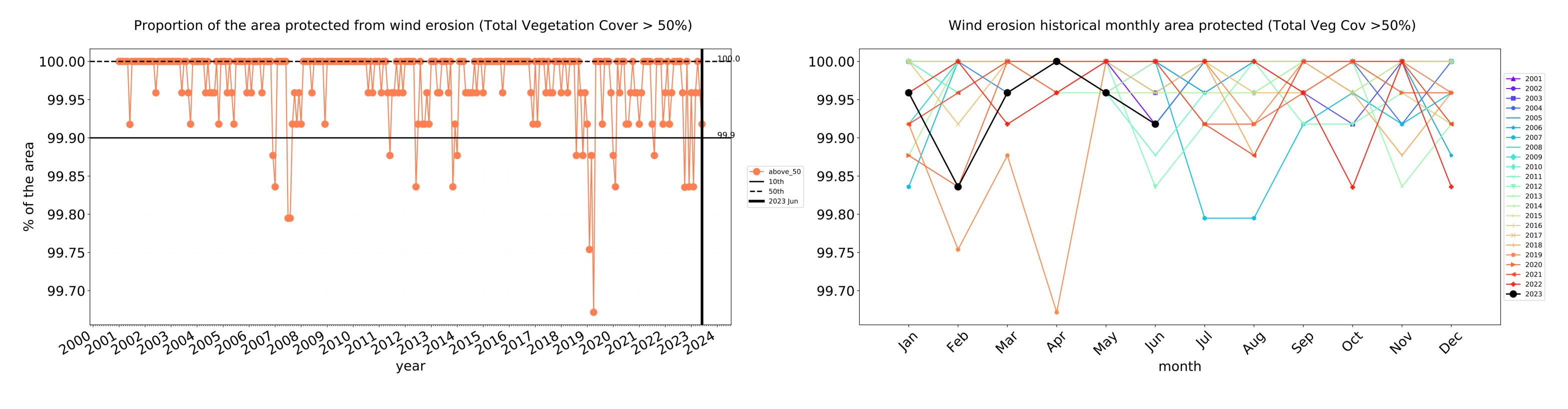


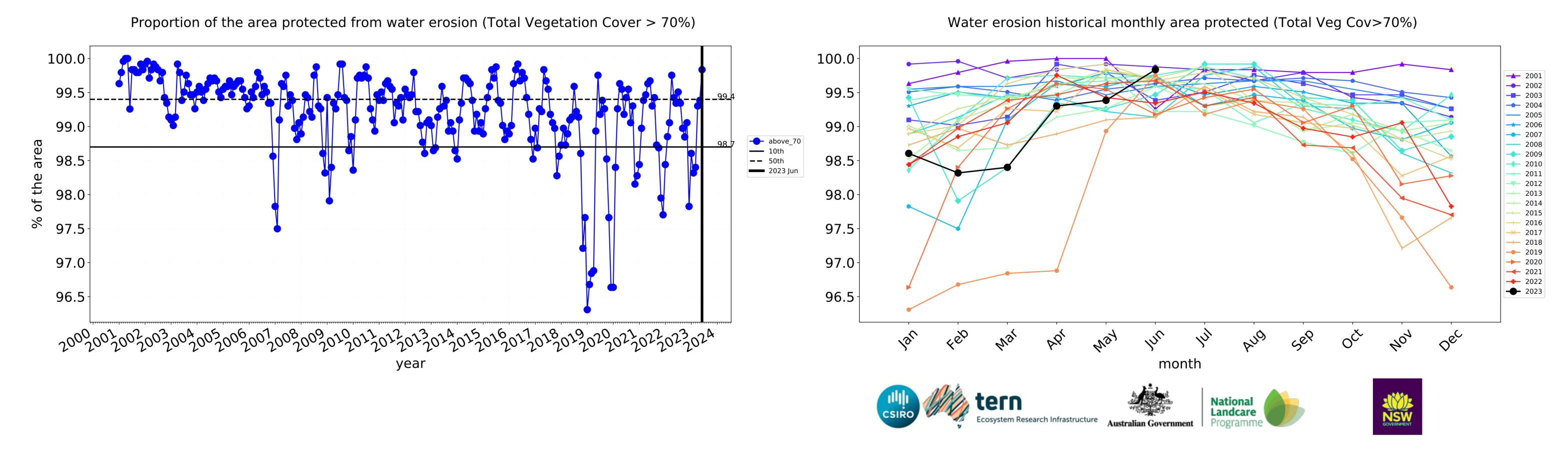


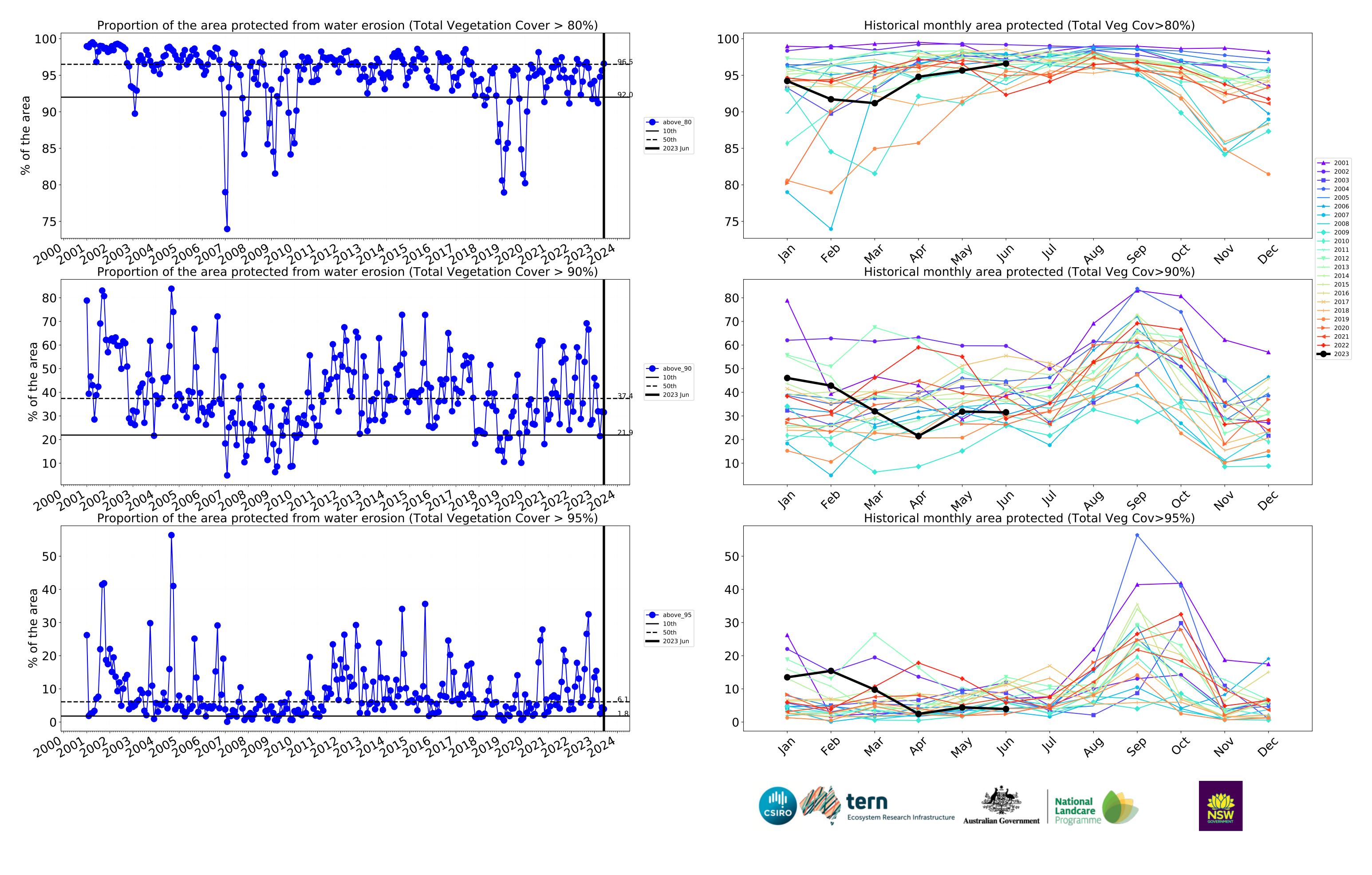




Irrigation timeseries







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)

Anomaly show how many percetage points each

pixel is from the mean. That

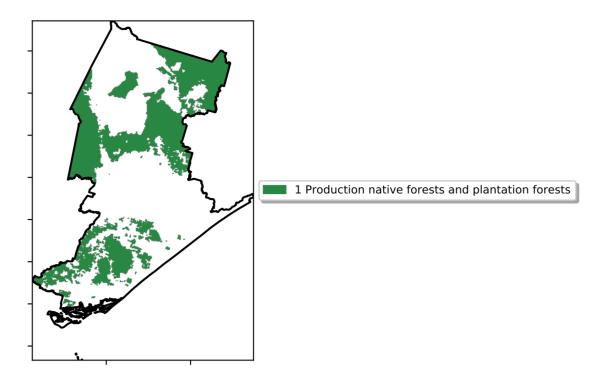
is, red pixels

are about 20% lower than the mean of that

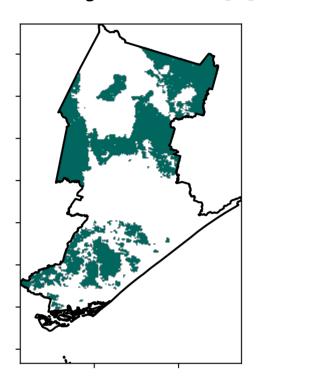
pixel. The mean

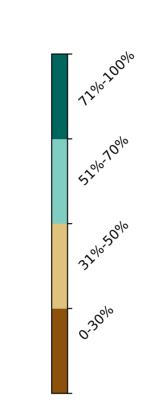
using baseline from 2001 to 2019.

is only for the month of the map

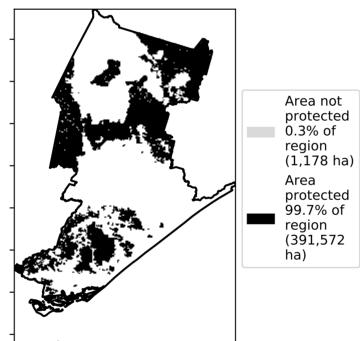


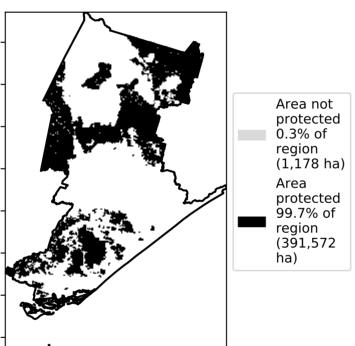
Total Vegetation Cover [%]



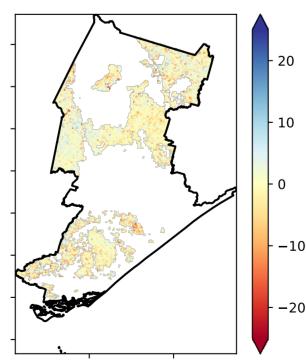


% Area protected from water erosion (>70%)



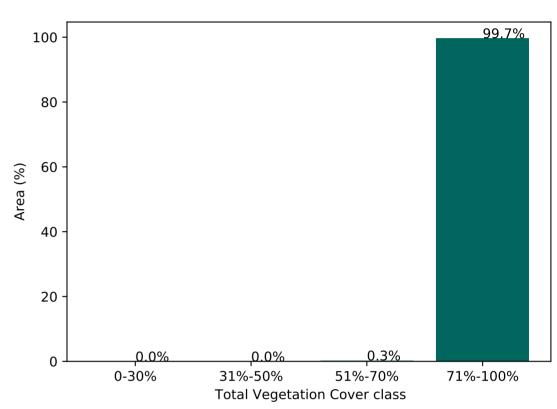


Total Vegetation Cover Anomaly [%]

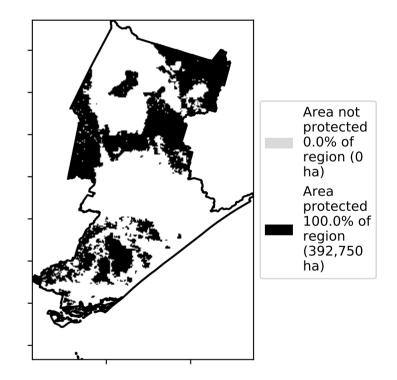


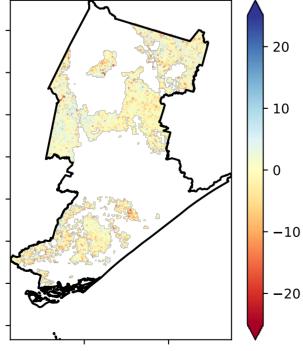
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

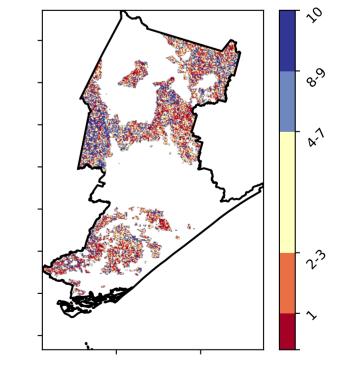
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)







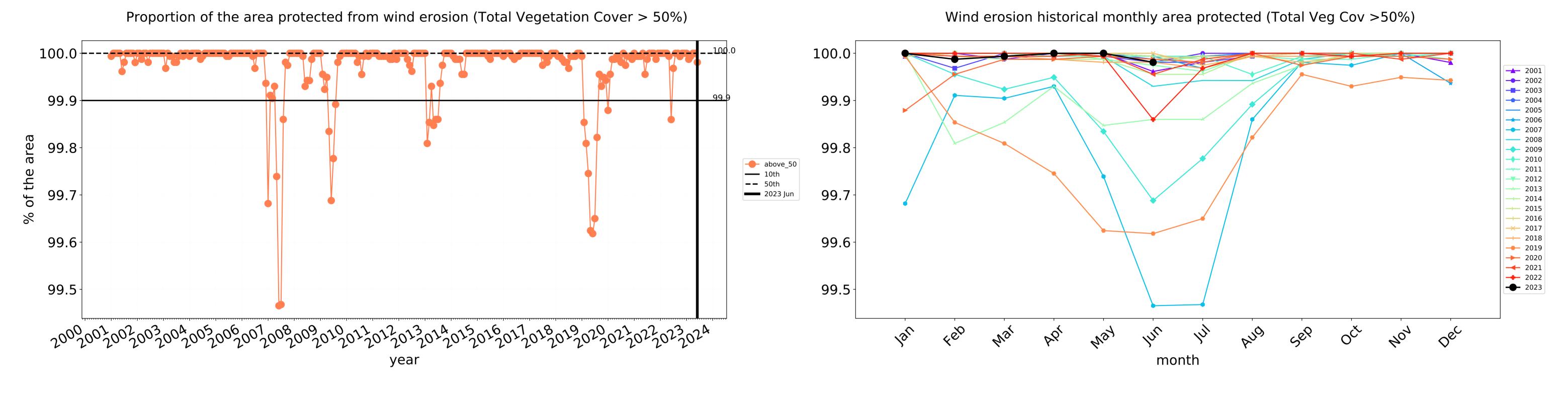


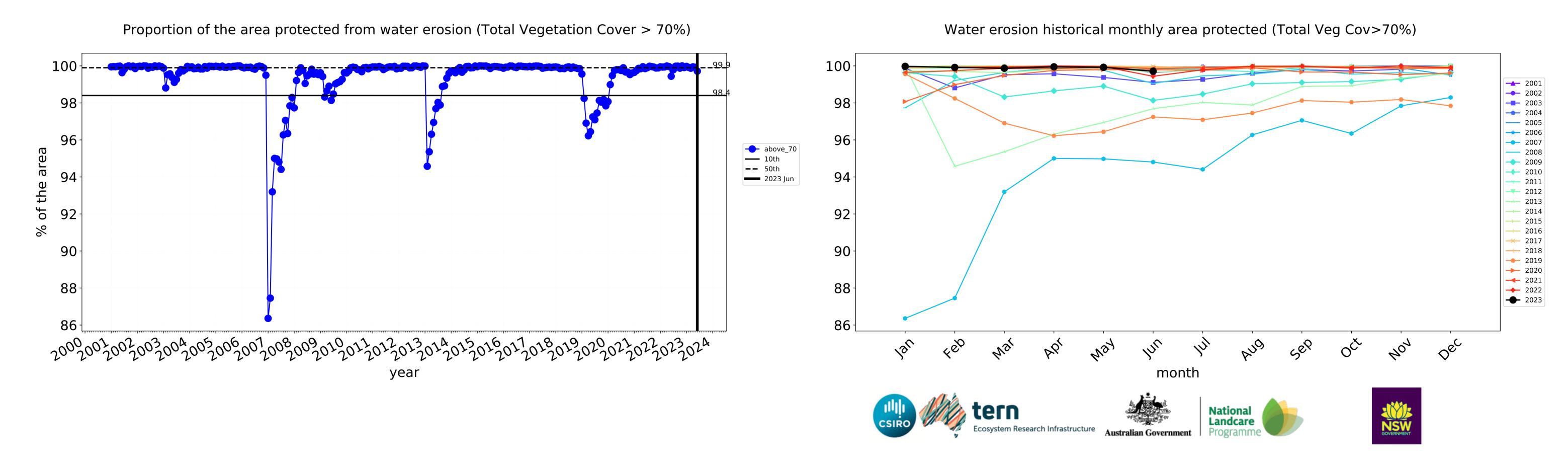


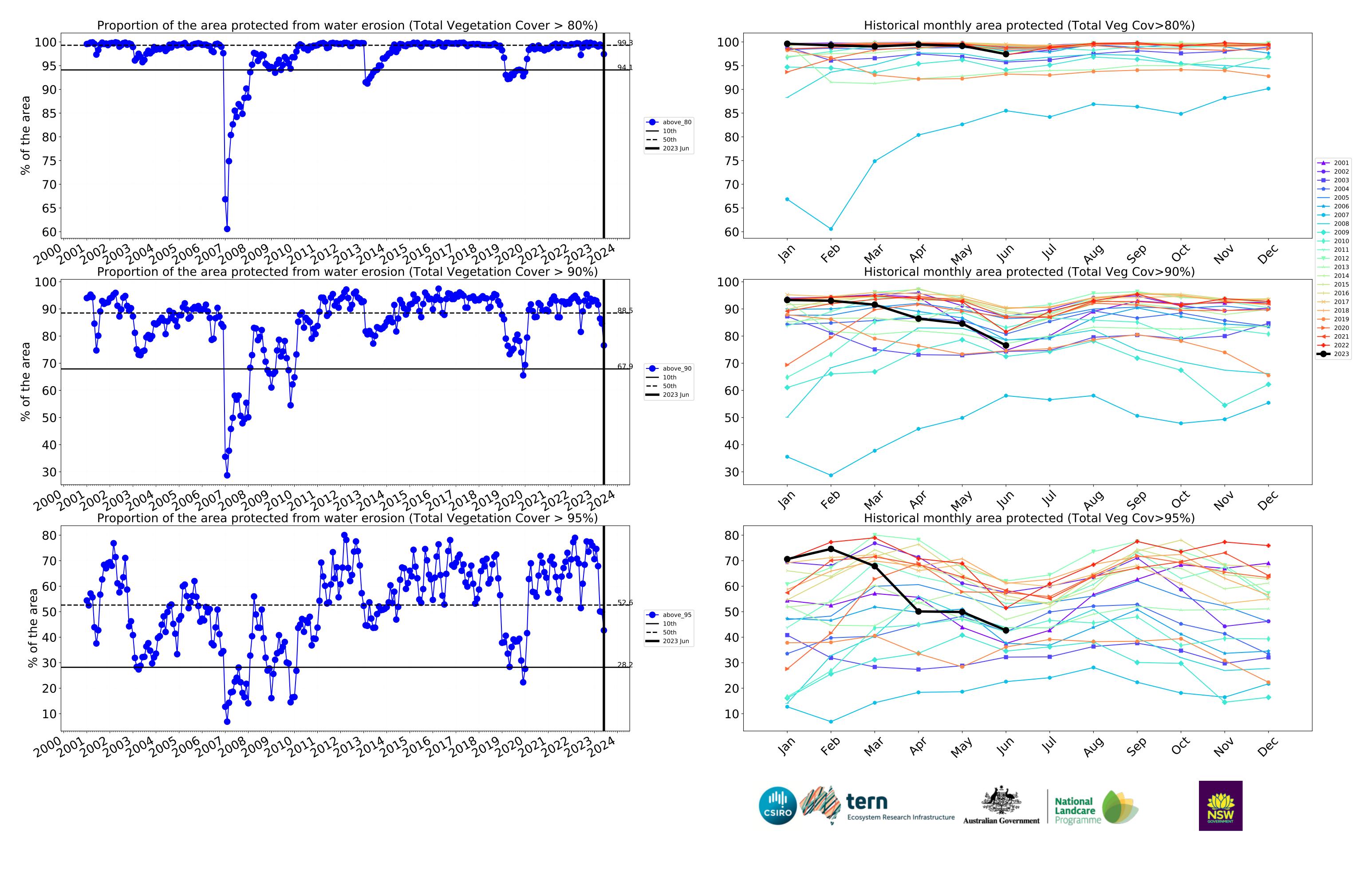




Production native forests and plantation forests timeseries







Wellington_(S) (1,050,000 ha and no data 31,805 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	1,050,000	100.0% 1,049,650	99.9% 1,048,675	98.8% 1,037,600	95.0% 997,825	64.9% 681,050	32.7% 343,175
Conservation and natural environments	262,425	99.9% 262,200	99.7% 261,725	97.6% 256,075	91.3% 239,725	68.8% 180,675	37.6% 98,600
Conservation and natural environments non forest	25,500	99.5% 25,375	98.7% 25,175	87.5% 22,300	70.9% 18,075	40.0% 10,200	17.4% 4,425
Conservation and natural environments Woodland forest	73,675	99.9% 73,600	99.8% 73,525	98.7% 72,700	94.4% 69,525	74.7% 55,050	41.1% 30,275
Conservation and natural environments Forest (non woodland)	163,250	100.0% 163,225	99.9% 163,025	98.7% 161,075	93.2% 152,125	70.7% 115,425	39.1% 63,900
Agriculture	357,625	100.0% 357,525	99.9% 357,275	99.4% 355,550	96.4% 344,725	50.8% 181,575	19.4% 69,250
Grazing	291,525	100.0% 291,425	99.9% 291,225	99.3% 289,600	96.3% 280,875	54.9% 160,075	22.6% 66,000
Grazing non forest	254,150	100.0% 254,050	99.9% 253,875	99.3% 252,400	96.2% 244,425	51.7% 131,475	19.6% 49,850
Grazing - Forest (non woodland)	28,050	100.0% 28,050	99.9% 28,025	99.7% 27,975	97.6% 27,375	76.0% 21,325	41.6% 11,675
Irrigation	60,950	100.0% 60,950	99.9% 60,900	99.8% 60,850	96.6% 58,875	31.5% 19,225	3.9% 2,400
Production native forests and plantation forests	392,750	100.0% 392,725	100.0% 392,675	99.7% 391,625	97.4% 382,675	76.6% 300,700	42.7% 167,650







