Total vegetation cover soil protection Region:LGA Shoalhaven_(C) NSW

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

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 covers at least 1% of the area of the chosen region. Total vegetation Cover:

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

• 71-100% High cover - protected from wind and usually water erosion (high rainfall, steep slopes, and erodible soils may need greater than 80, 90, 95 and up to 100% cover)

- 51-70% Moderate cover protected from wind erosion
- 31-50% Low cover not protected
- 0-30% Very Low cover not protected

Erosion protection: Wind erosion 50% total vegetation cover

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

- Map: water erosion protection (>70% cover) percentage area and hectares.
- Map: wind erosion protection (>50% cover) percentage area and hectares. Comparison with previous years:
 - Map: anomaly comparing this month to the average cover from the same month in previous years.
 - Map: deciles rank of month against the same month in previous years.

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

Erosion protection

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

Rainfall

• Millimetres rainfall each month (black line).

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

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

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

Acknowledgment of data:

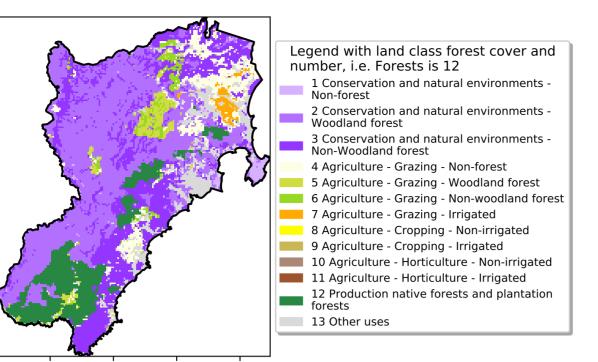
- 1. http://www.agriculture.gov.au/abares/aclump/land-use/alum-classification
- 2. http://www.agriculture.gov.au/abares/forestsaustralia/sofr/sofr-2018
- 3. https://www.dpi.nsw.gov.au/agriculture/pastures-and-rangelands/establishment-mgmt/production-management2/groundcover
- 4. MODIS Fractional cover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

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

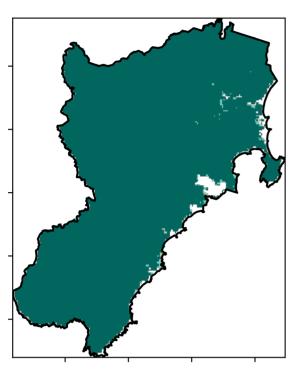


Vegetation Cover Nov 2023

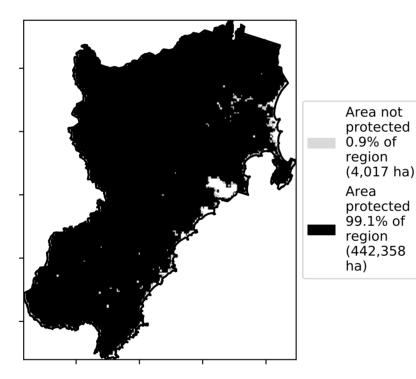
Land use and forest cover

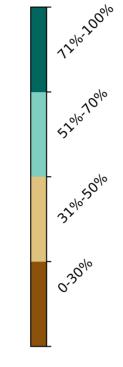


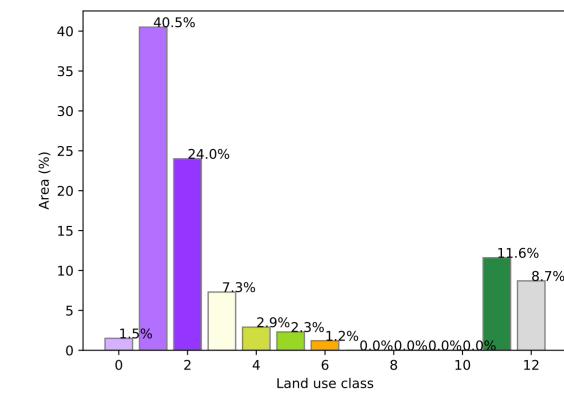
Total Vegetation Cover [%]



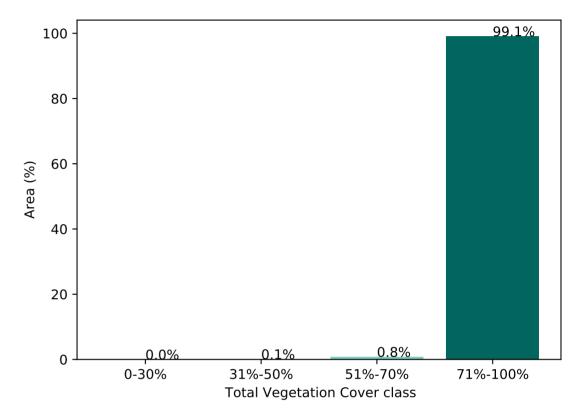
% Area protected from water erosion (>70%)



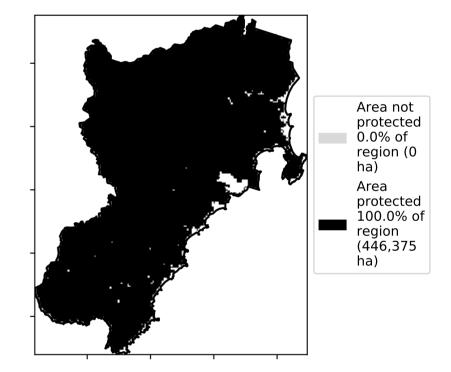




Proportion of vegetation cover class in area

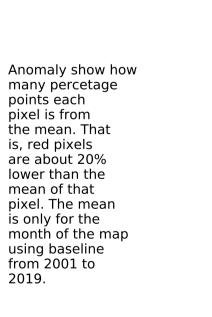


% Area protected from wind erosion (>50%)



Proportion of each land class in area

Total Vegetation Cover Anomaly [%]



Catchment Scale

of Australia (2018)

(2018) and Forests

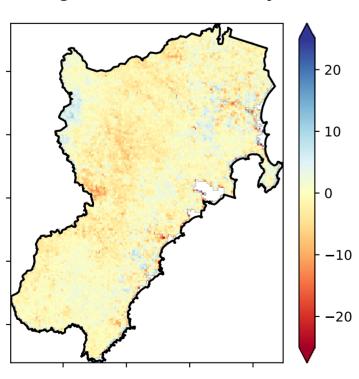
of Australia (2018)

Derived from

Use of Australia

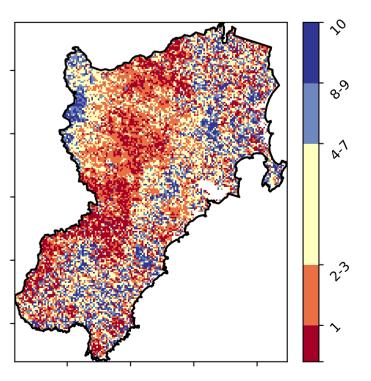
Land Use and Forests

Catchment Scale Land



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.

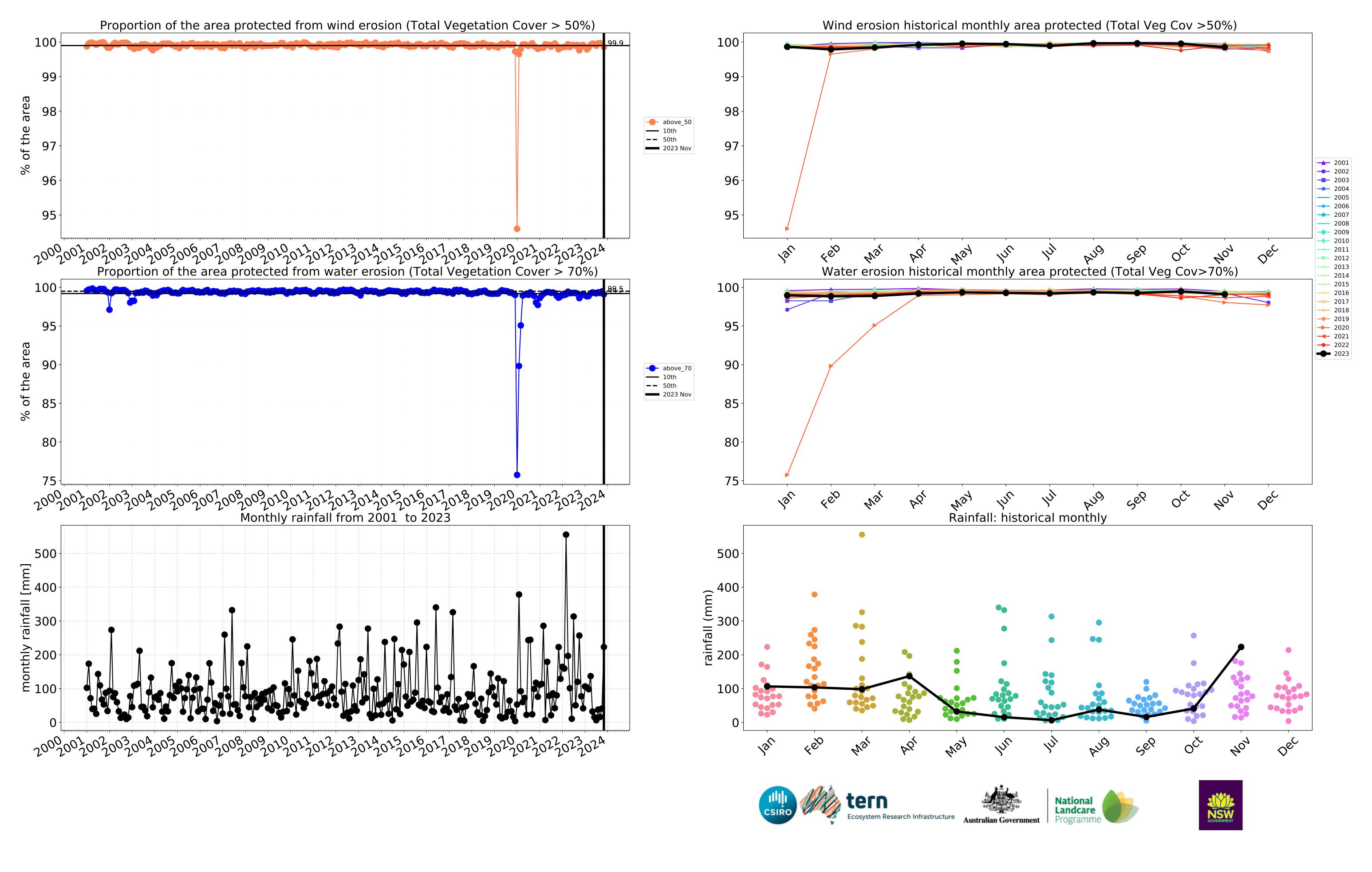
Total Vegetation Cover Decile [%]

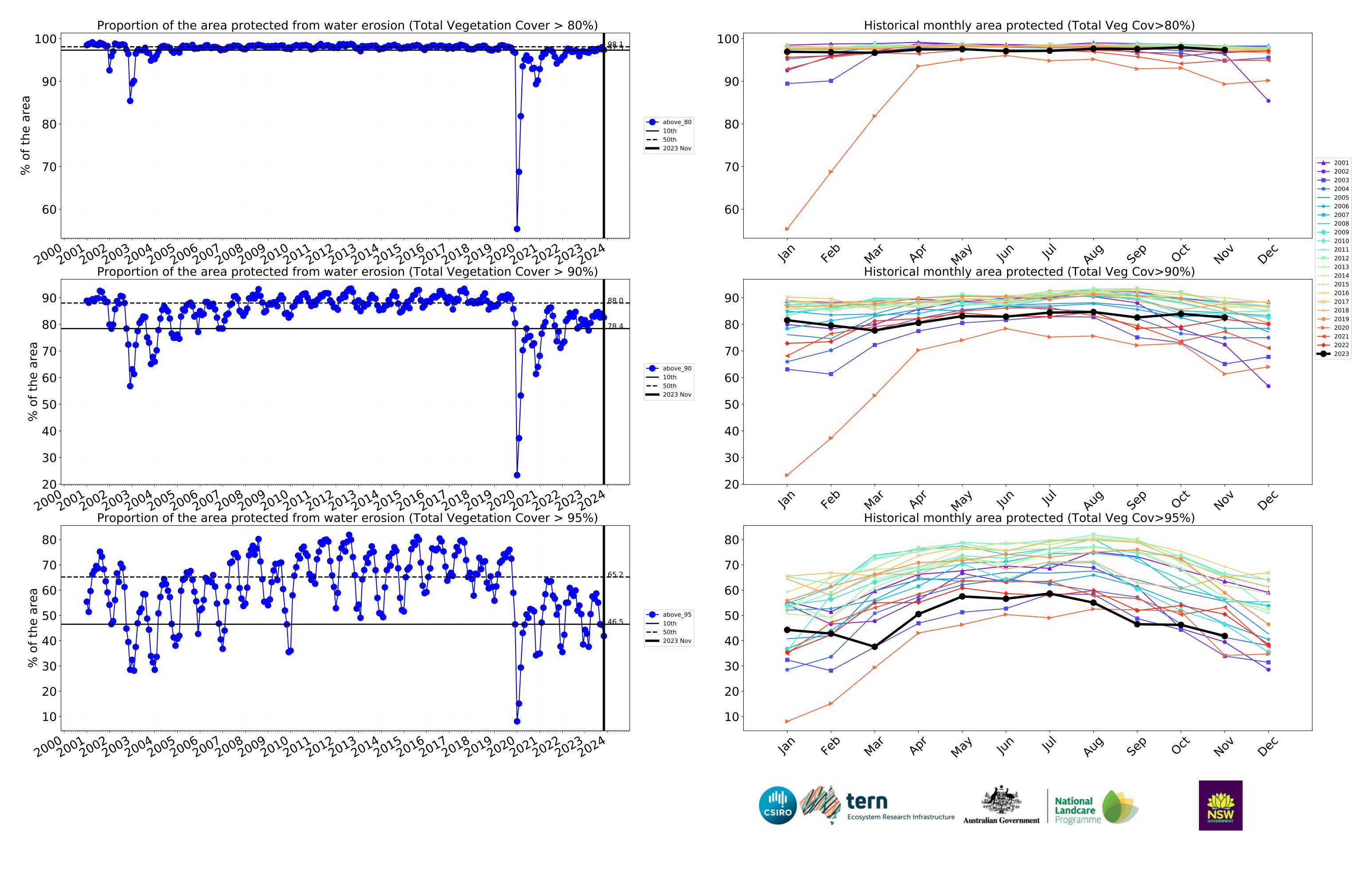






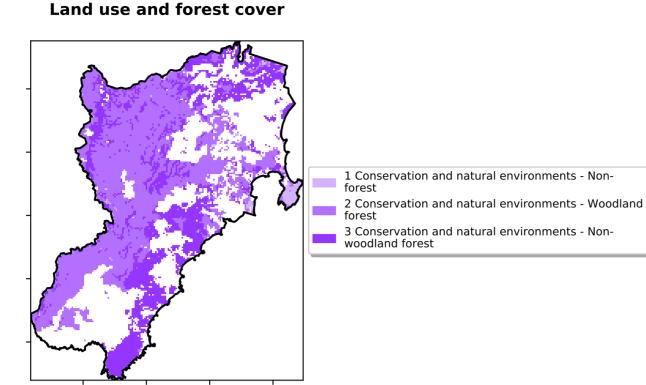
om 2001 to 201

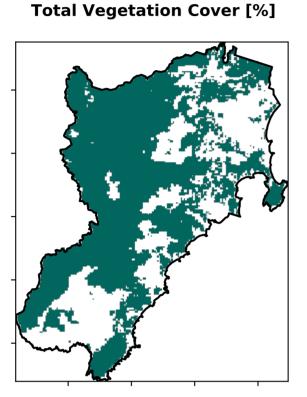




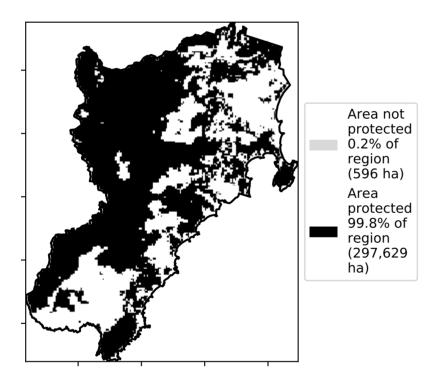
Conservation and natural environments

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



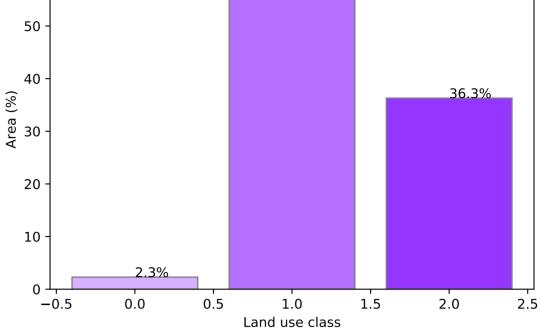


% Area protected from water erosion (>70%)

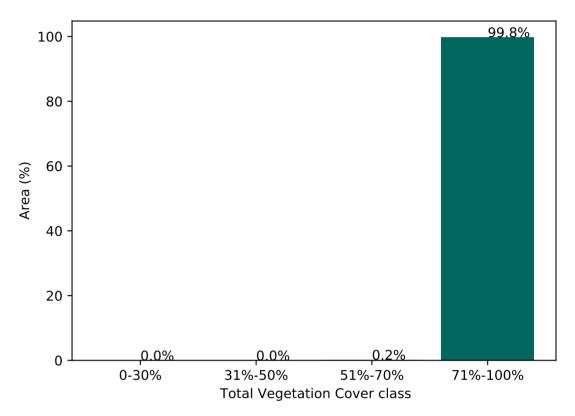


12%200% 52%70% 32010 0.30%

Proportion of each land class in area 61.4% 60 50 40 36.3%



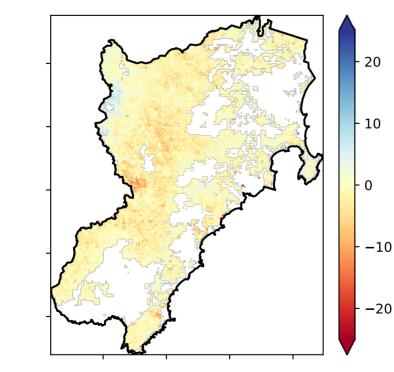
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



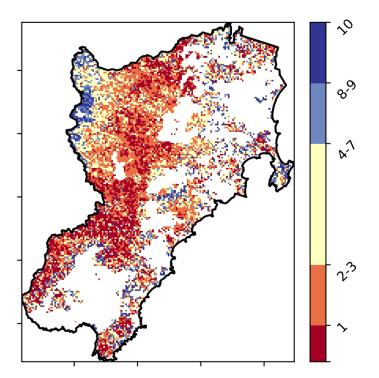
Total Vegetation Cover Anomaly [%]



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.

Area not protected 0.0% of region (0 ha) Area protected 100.0% of region (298,225 ha)

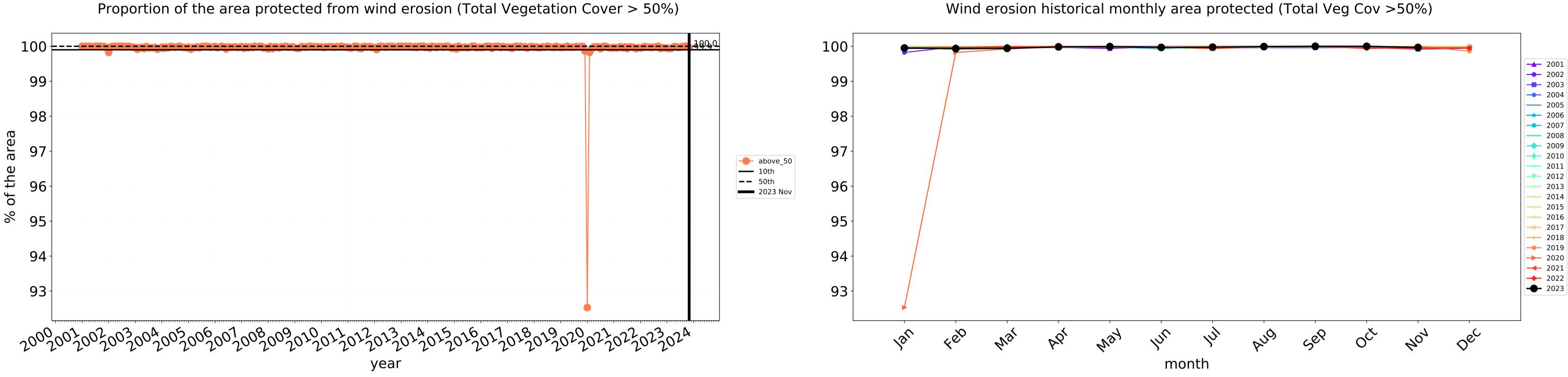
Total Vegetation Cover Decile [%]





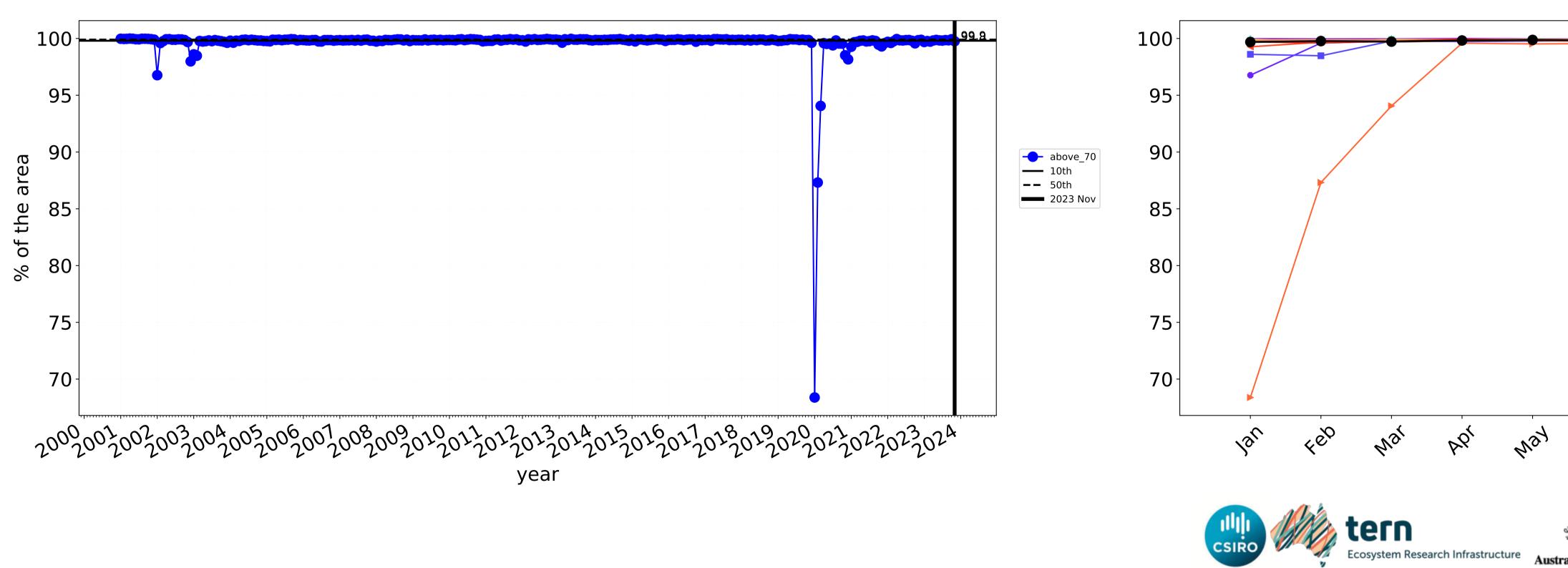
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.





Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

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



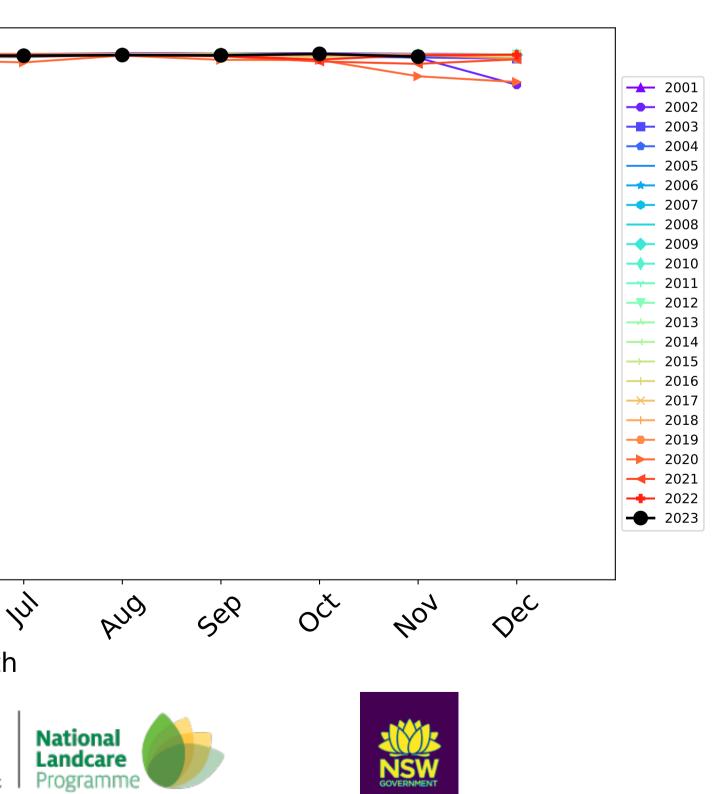
Conservation and natural environments timeseries

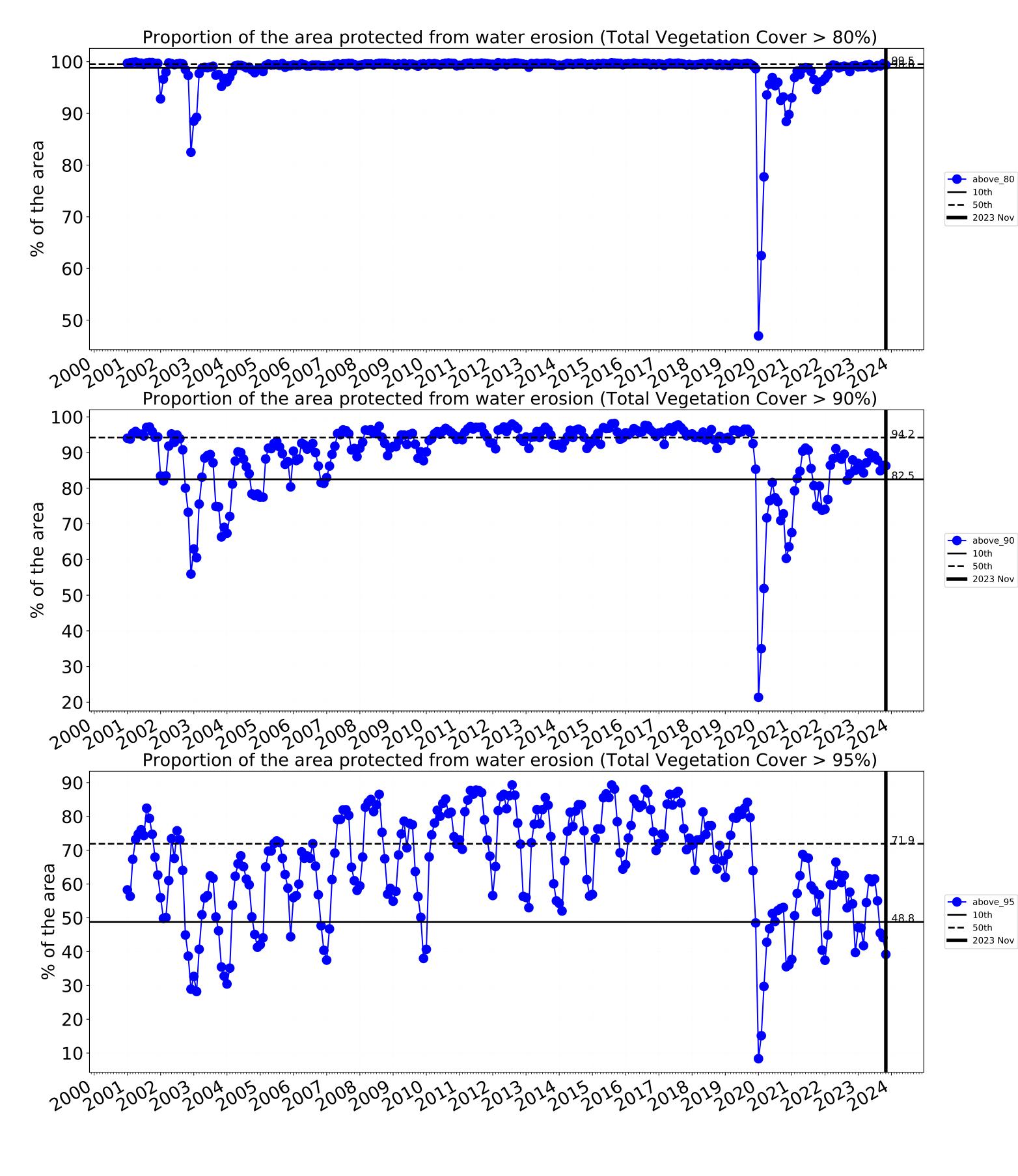
Water erosion historical monthly area protected (Total Veg Cov>70%)

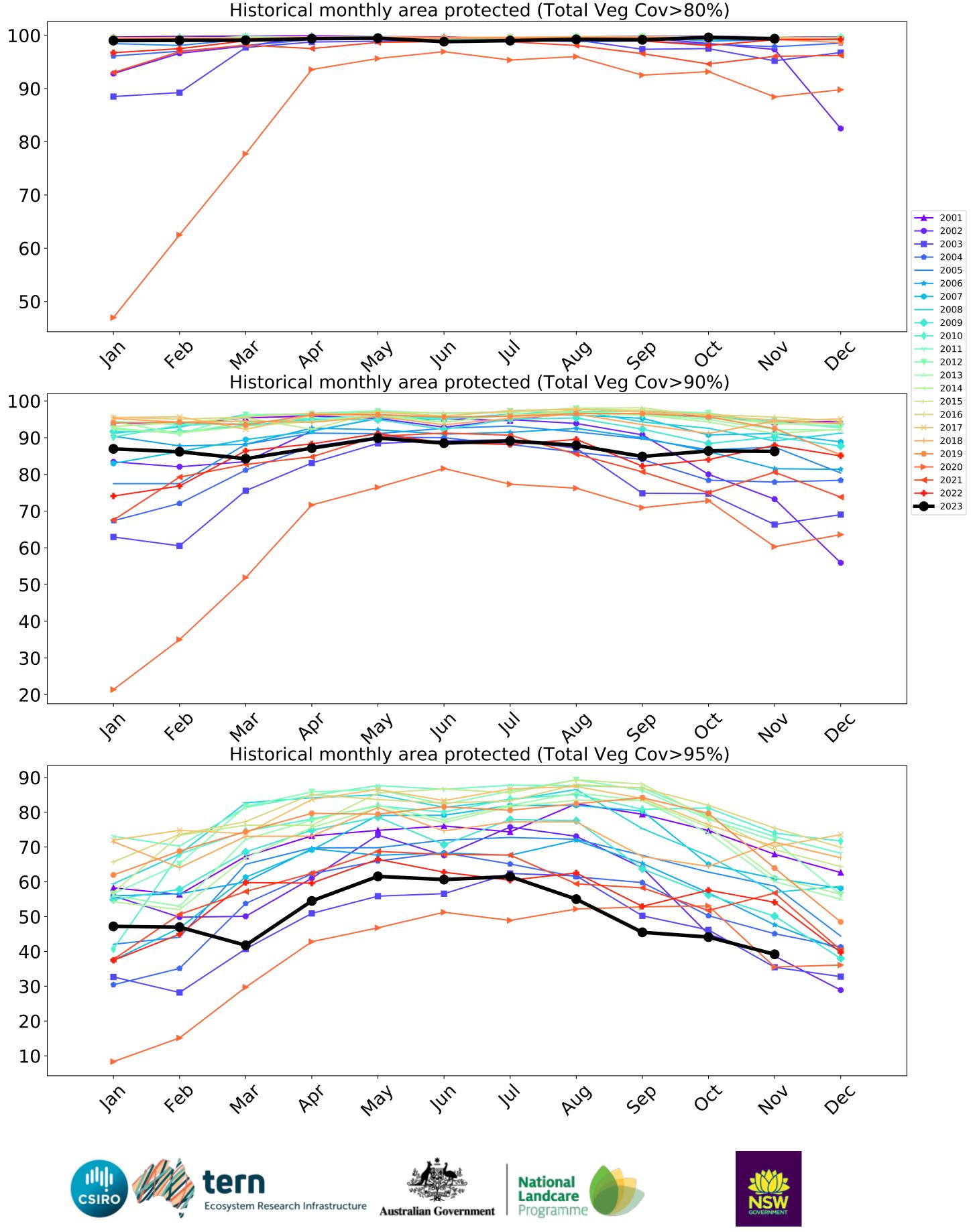
In

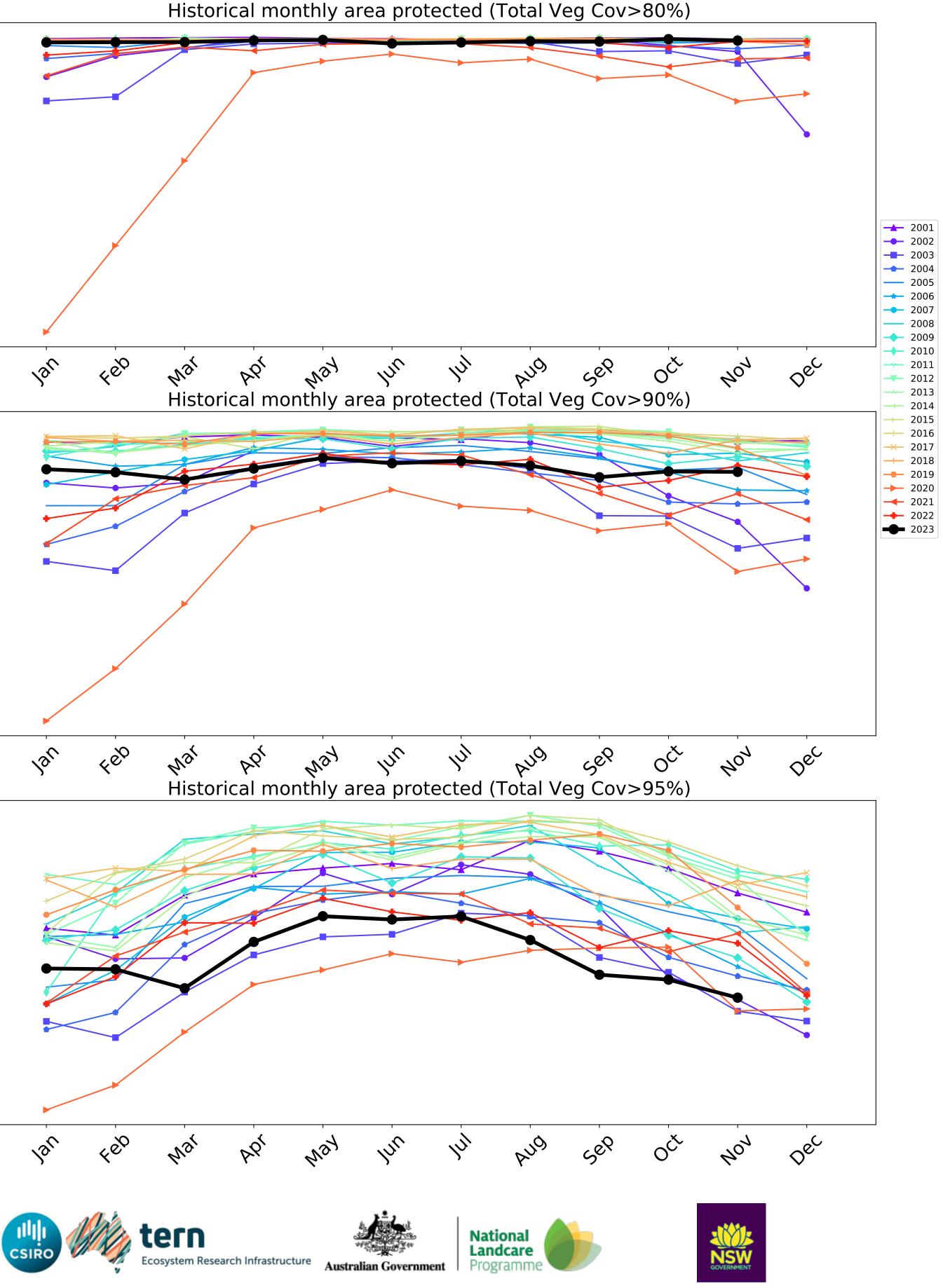
Australian Government

month



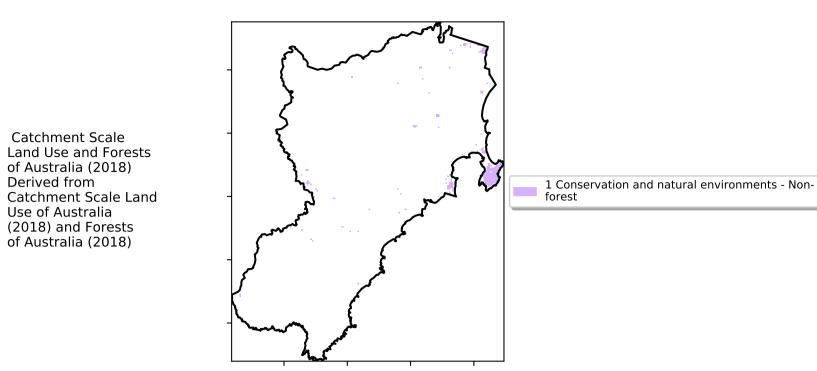




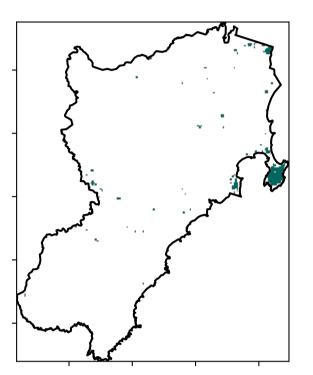


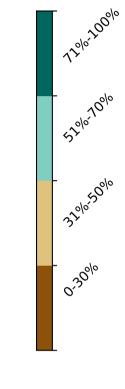
Conservation and natural environments non forest

Land use and forest cover

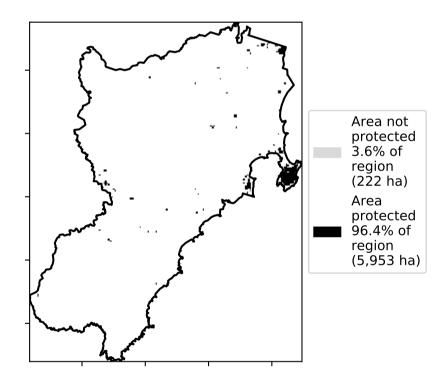


Total Vegetation Cover [%]





% Area protected from water erosion (>70%)





0.8%

Total Vegetation Cover class

% Area protected from wind erosion (>50%)

31%-50%

40

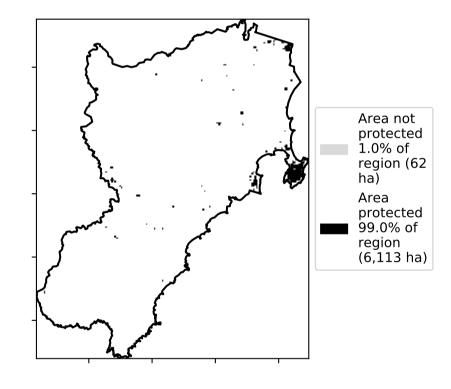
20

0 ·

0.0%

0-30%

Proportion of vegetation cover class in area



2.8%

71%-100%

51%-70%

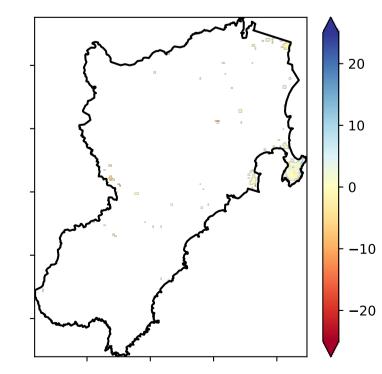
Total Vegetation Cover Anomaly [%]

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.

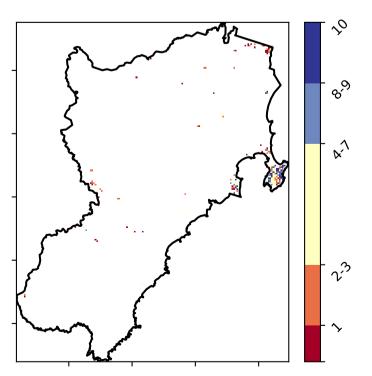
Catchment Scale

Derived from

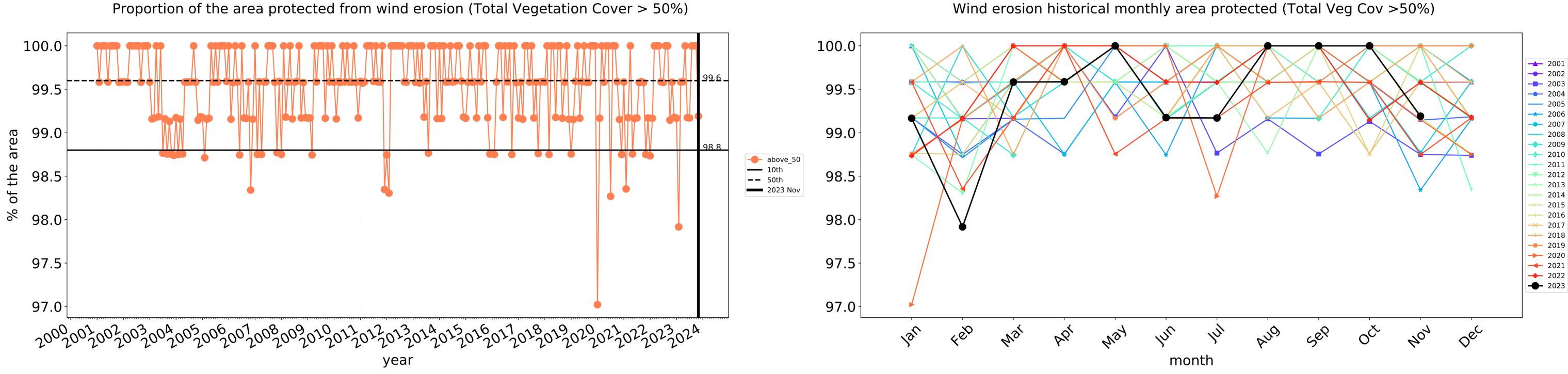
Use of Australia (2018) and Forests of Australia (2018)



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.

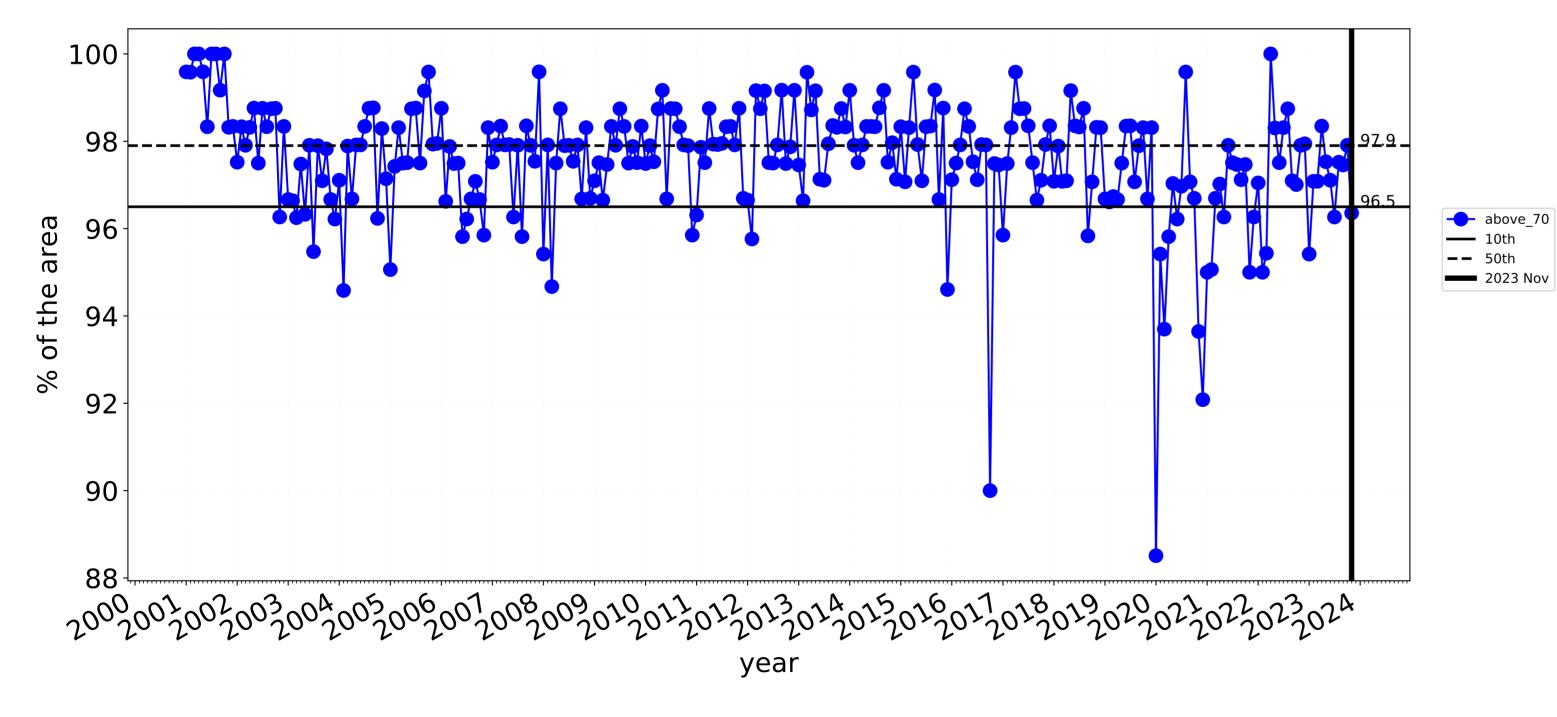


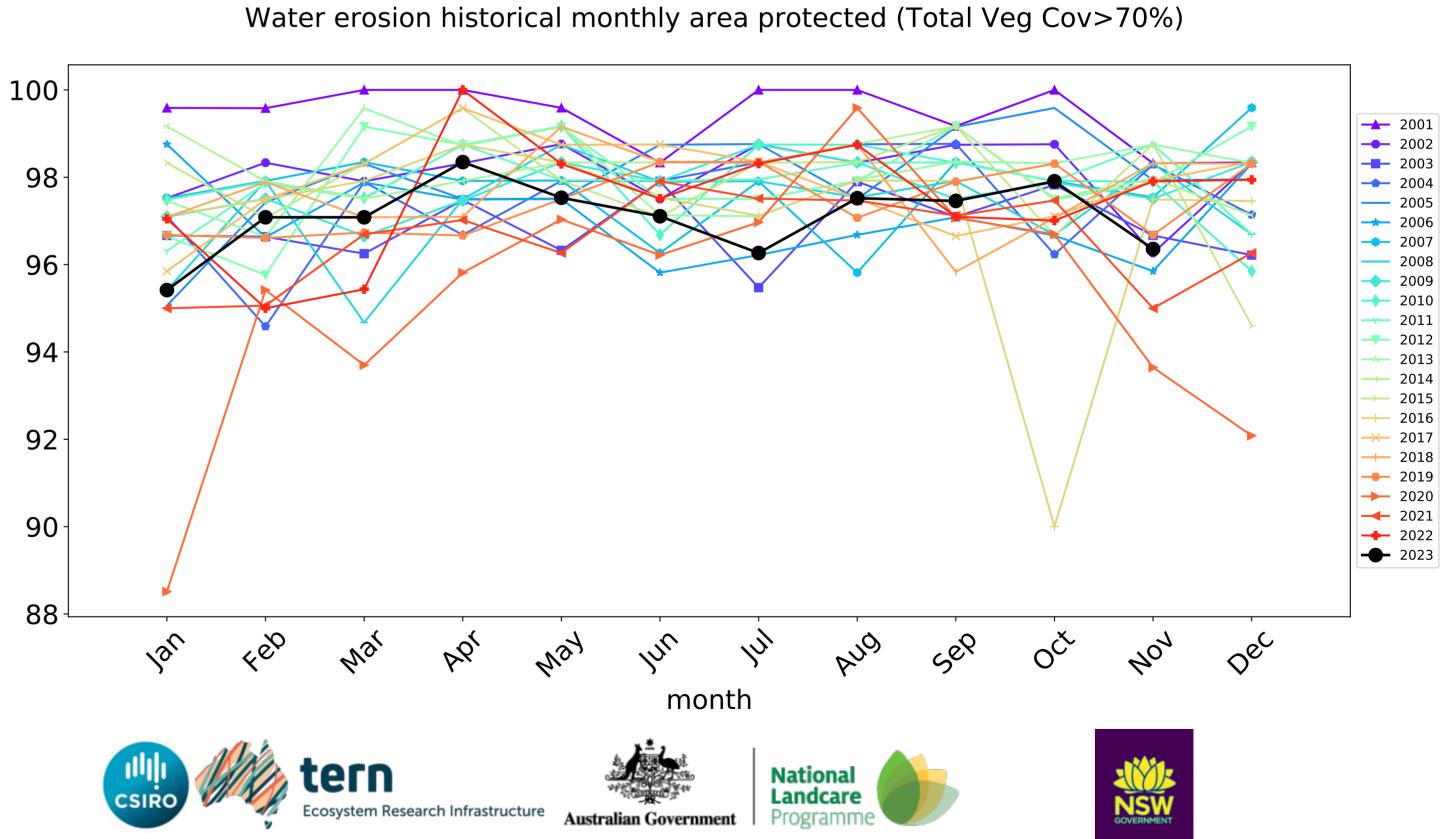




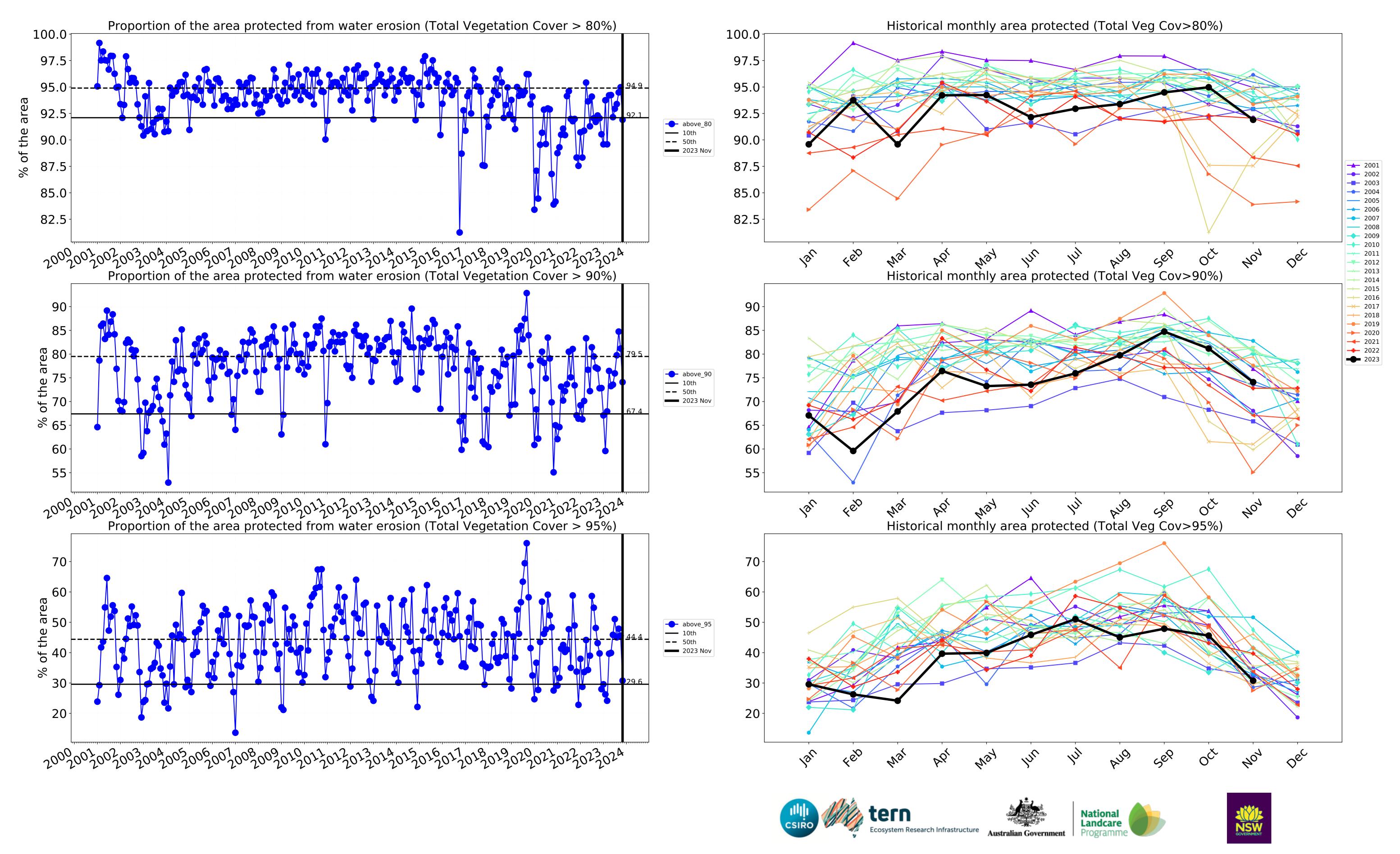
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

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



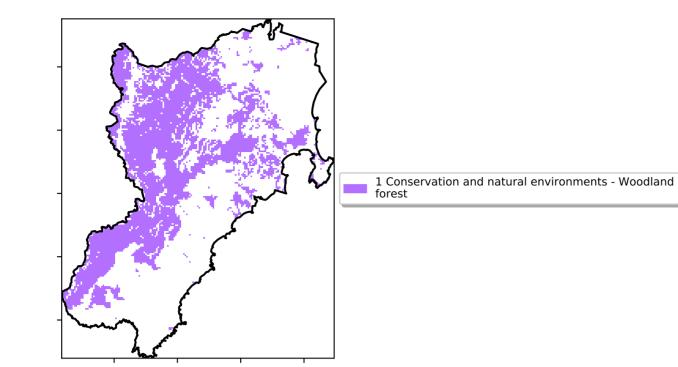


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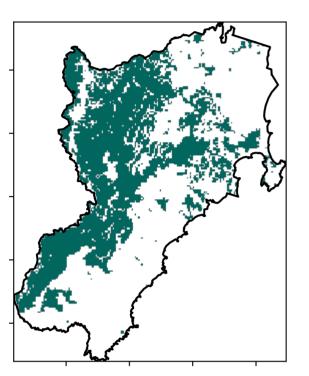


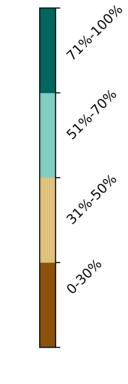
Conservation and natural environments Woodland forest

Land use and forest cover

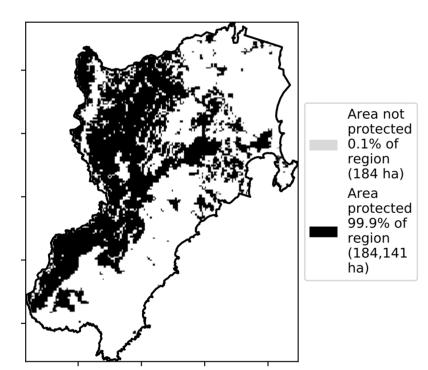


Total Vegetation Cover [%]

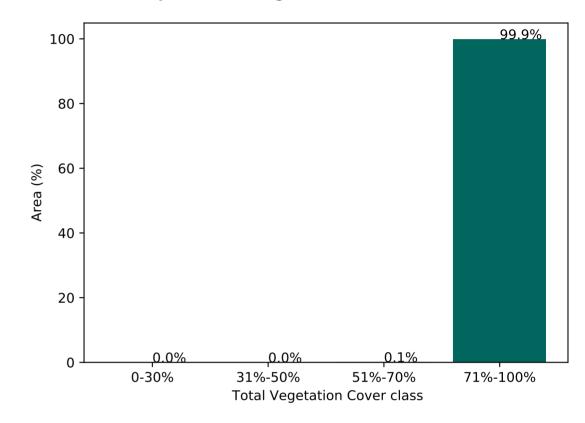




% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



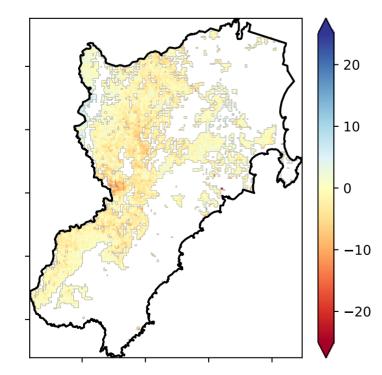
% Area protected from wind erosion (>50%)



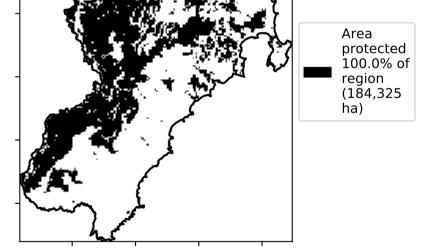
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

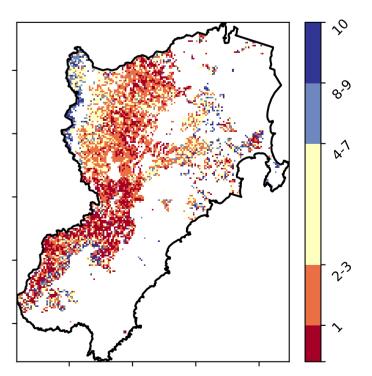
Total Vegetation Cover Anomaly [%]

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.



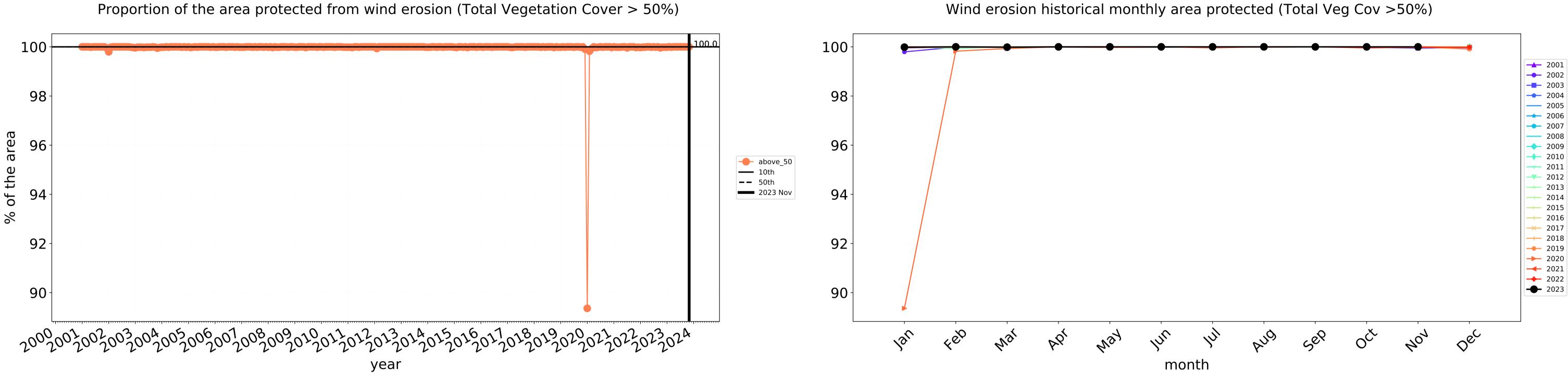
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.



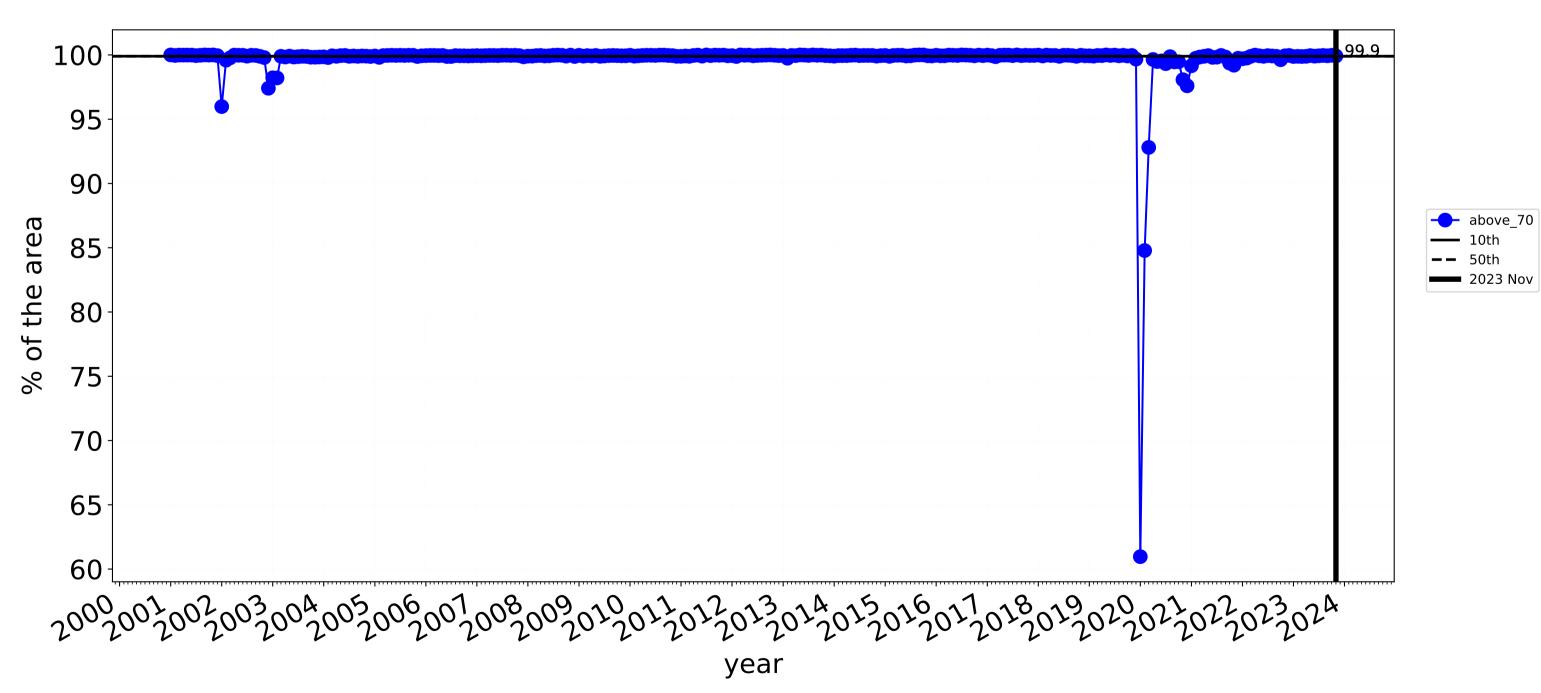




Conservation and natural environments Woodland forest timeseries



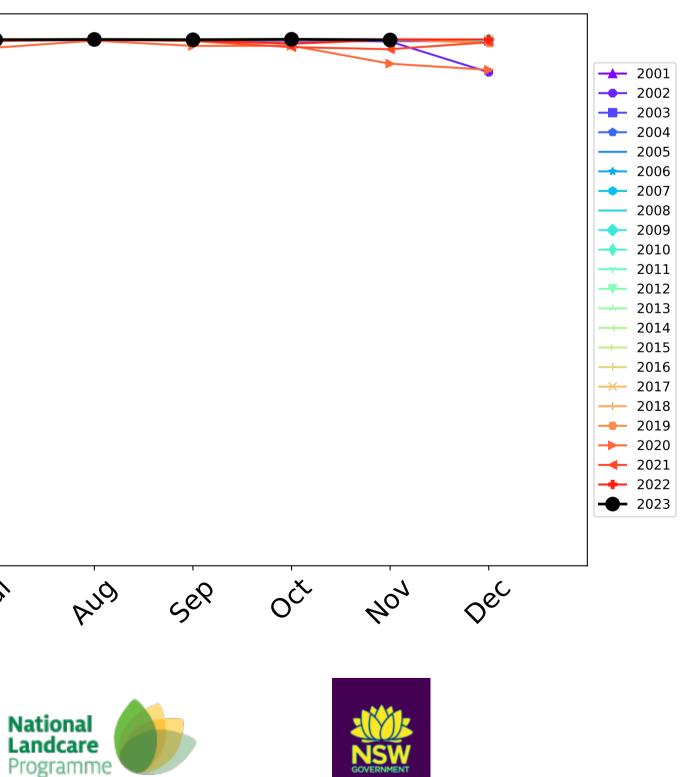
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

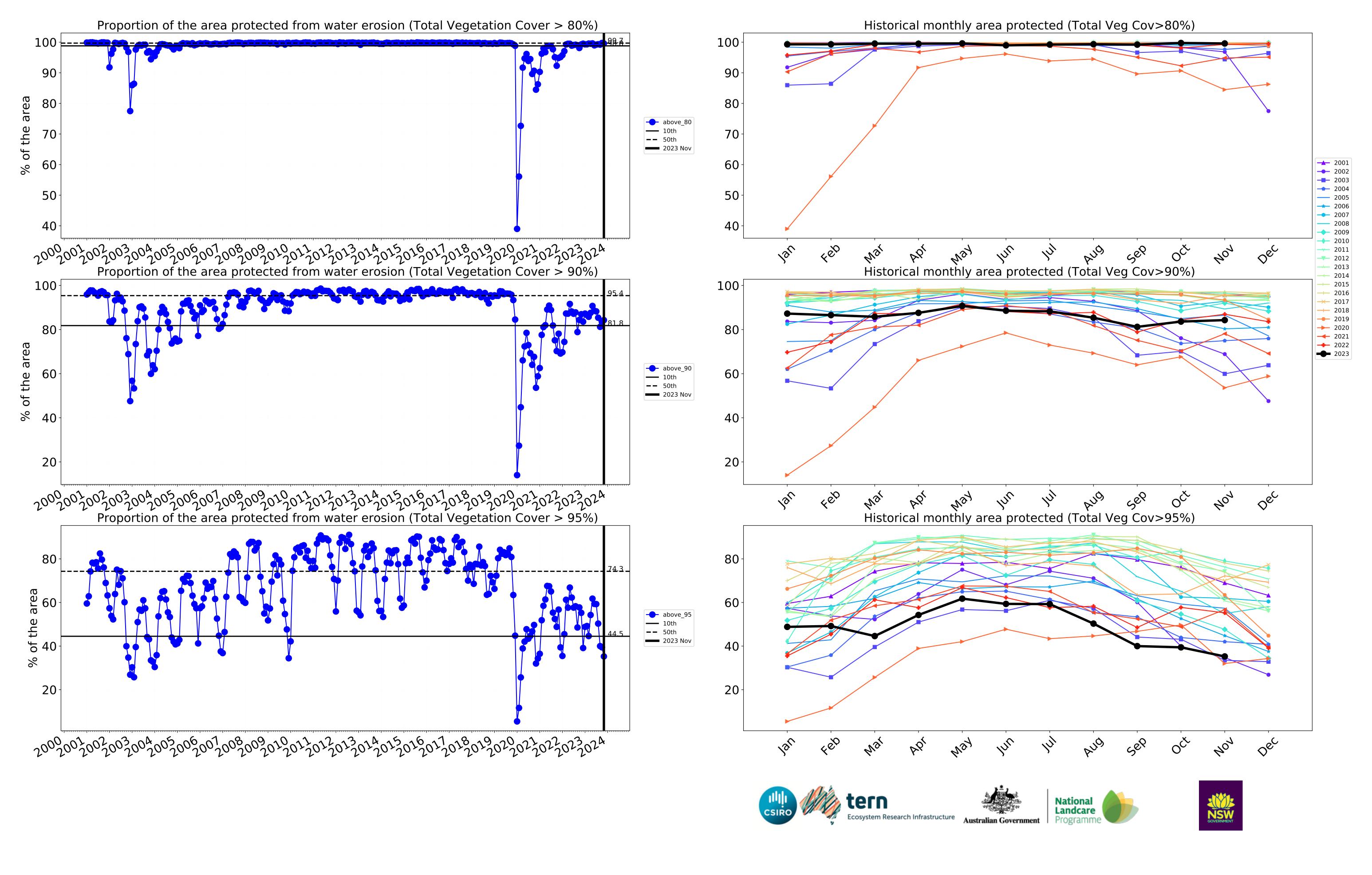


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13

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

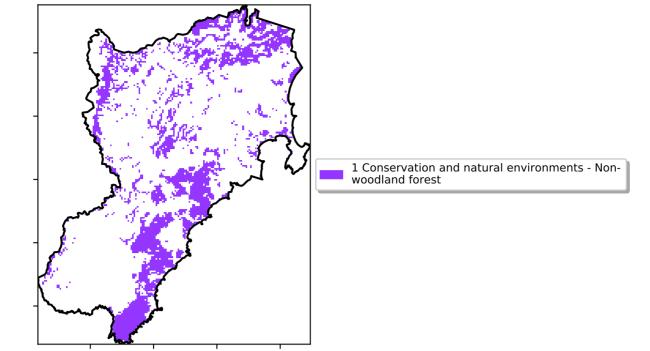




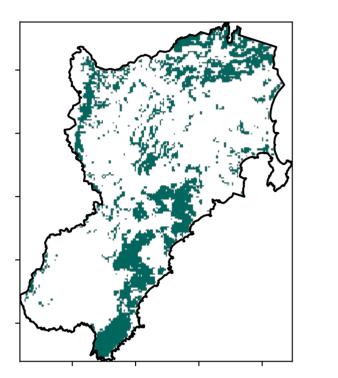
Conservation and natural environments Forest (non woodland)

Land use and forest cover

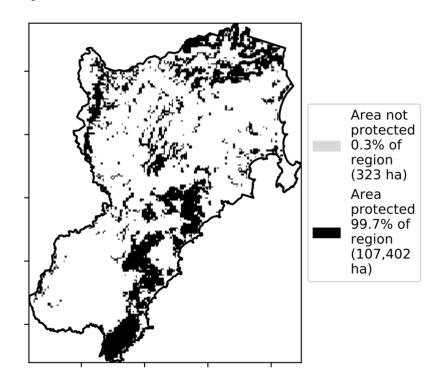


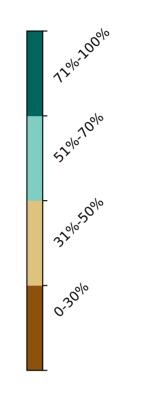


Total Vegetation Cover [%]

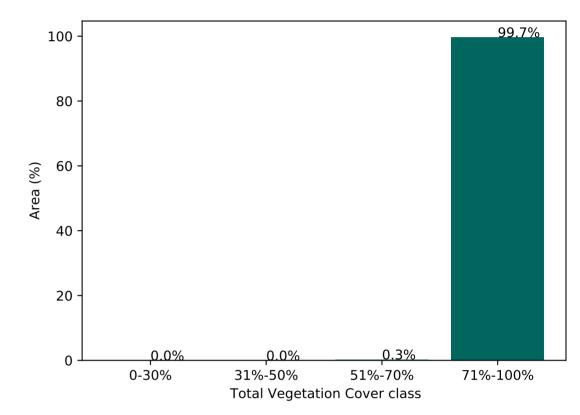


% Area protected from water erosion (>70%)





Proportion of vegetation cover class in area

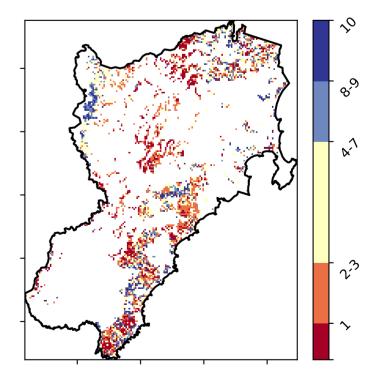


% Area protected from wind erosion (>50%)



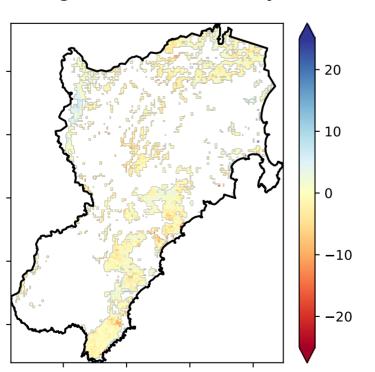
Area not protected 0.0% of region (0 ha) Area protected 100.0% of region (107,725 ha)

Total Vegetation Cover Decile [%]



Total Vegetation Cover Anomaly [%]

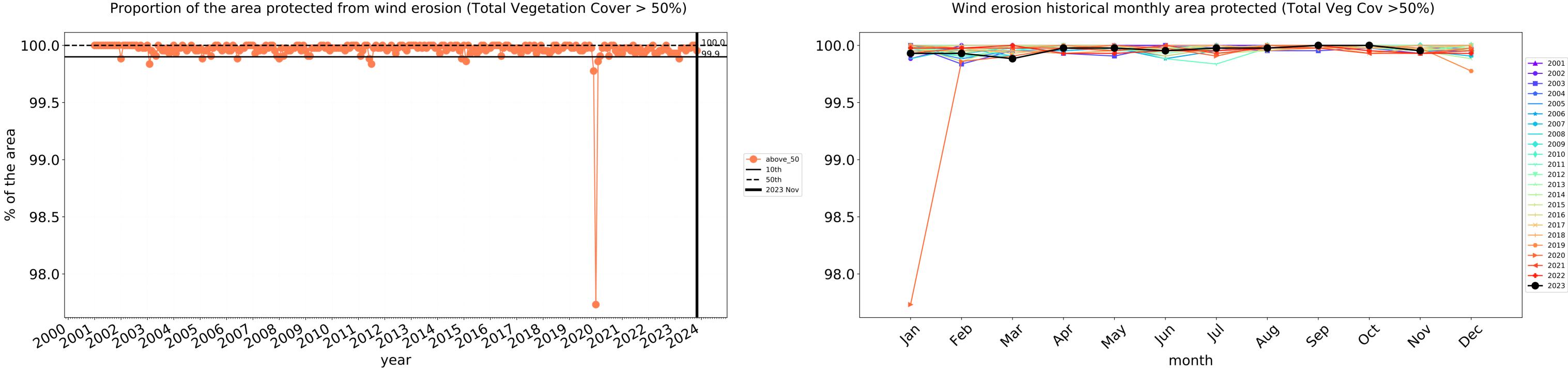
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



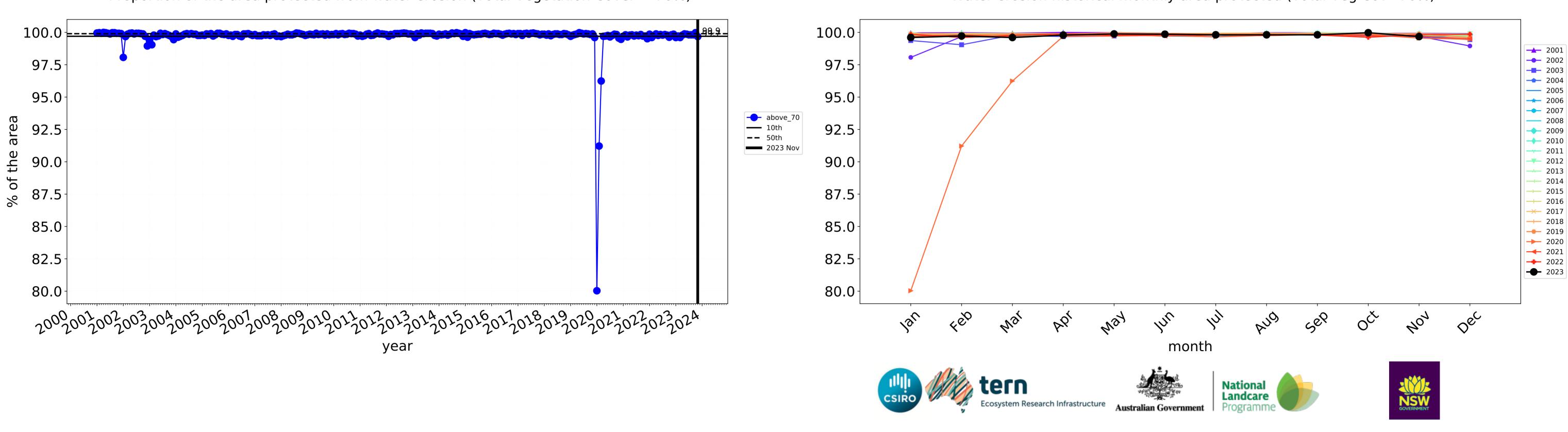
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.



Conservation and natural environments Forest (non woodland) timeseries

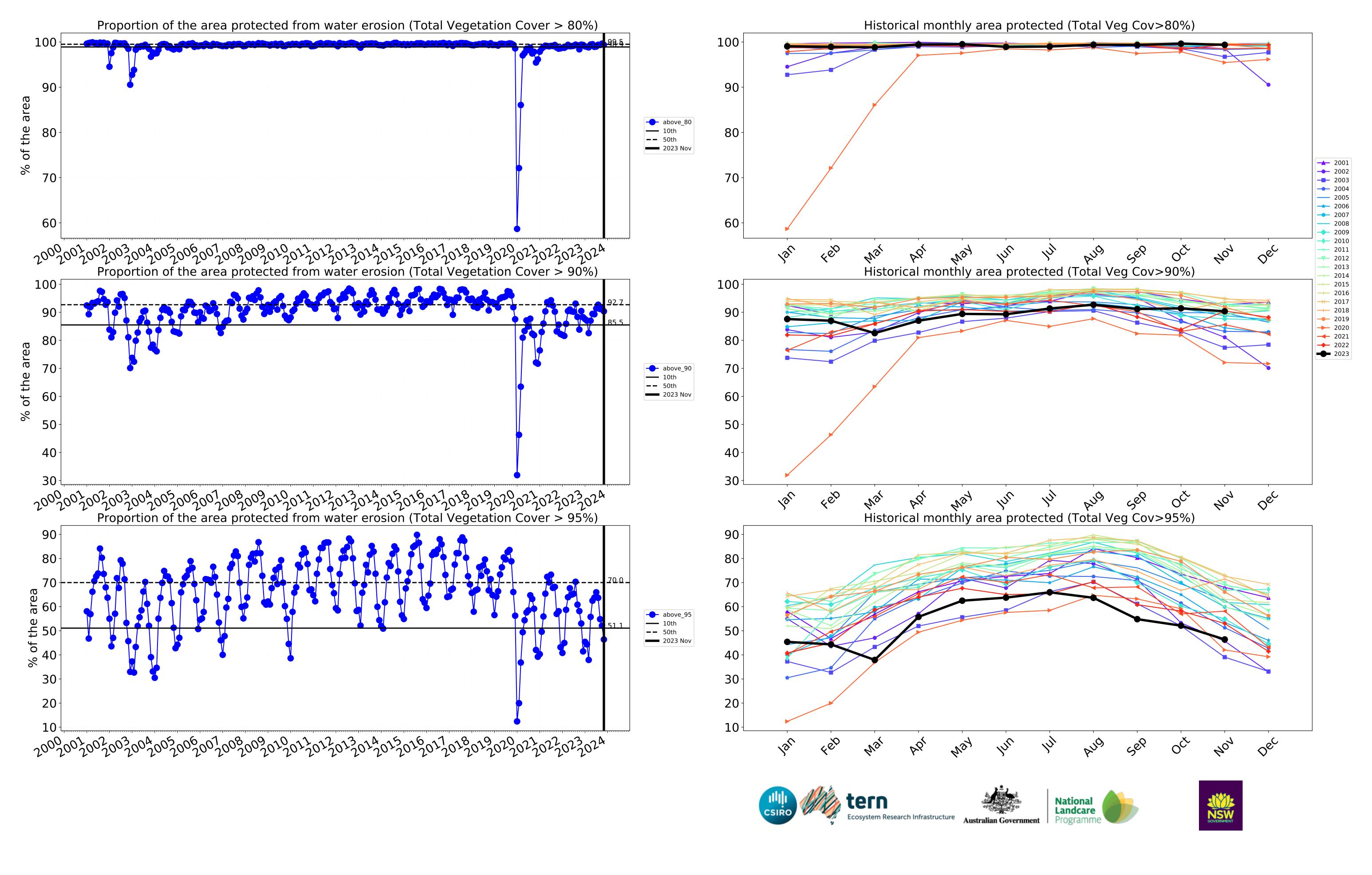


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



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

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

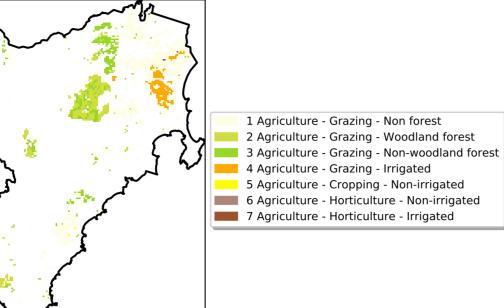


Agriculture

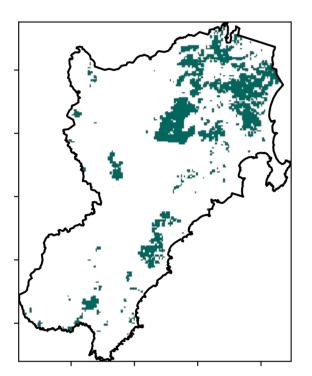
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

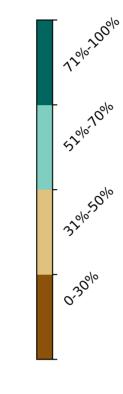
Land use and forest cover

Proportion of each land class in area

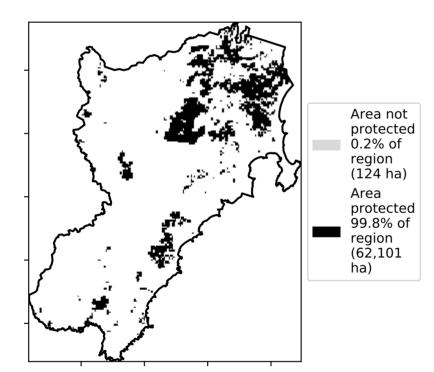


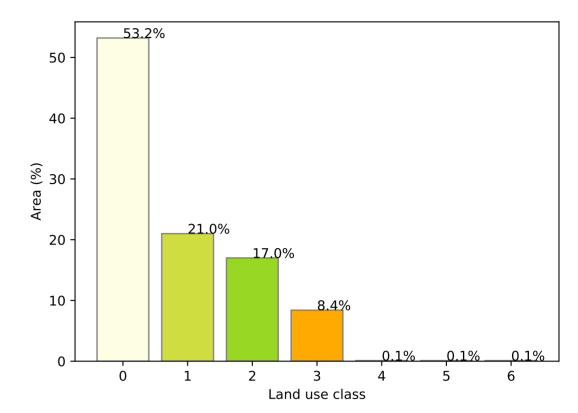
Total Vegetation Cover [%]



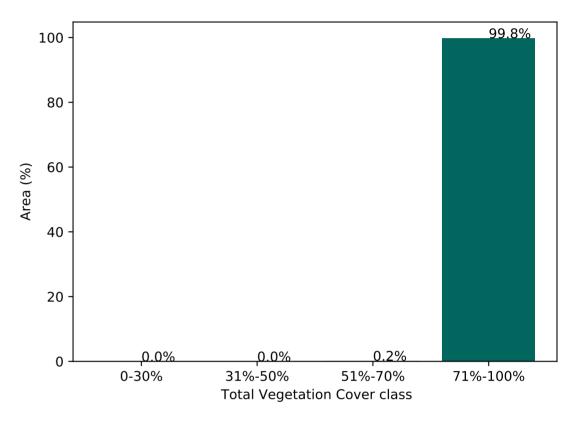


% Area protected from water erosion (>70%)

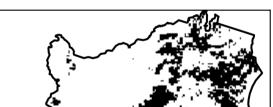




Proportion of vegetation cover class in area

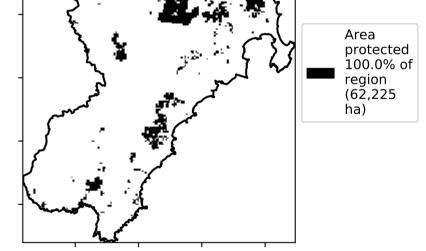


% Area protected from wind erosion (>50%)

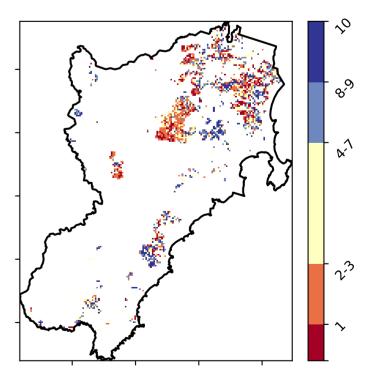


Total Vegetation Cover Anomaly [%]

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.

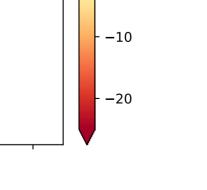


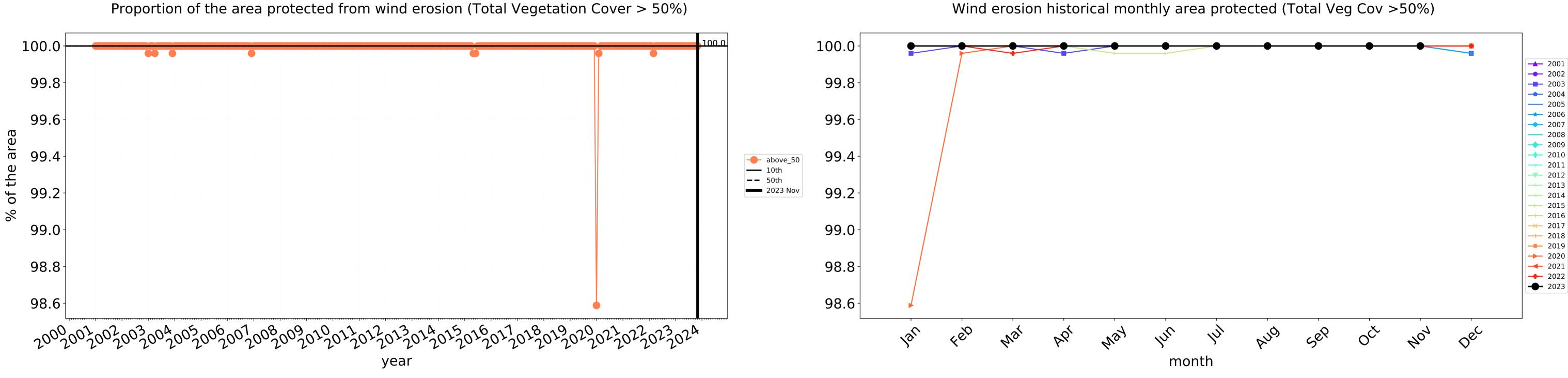
Total Vegetation Cover Decile [%]





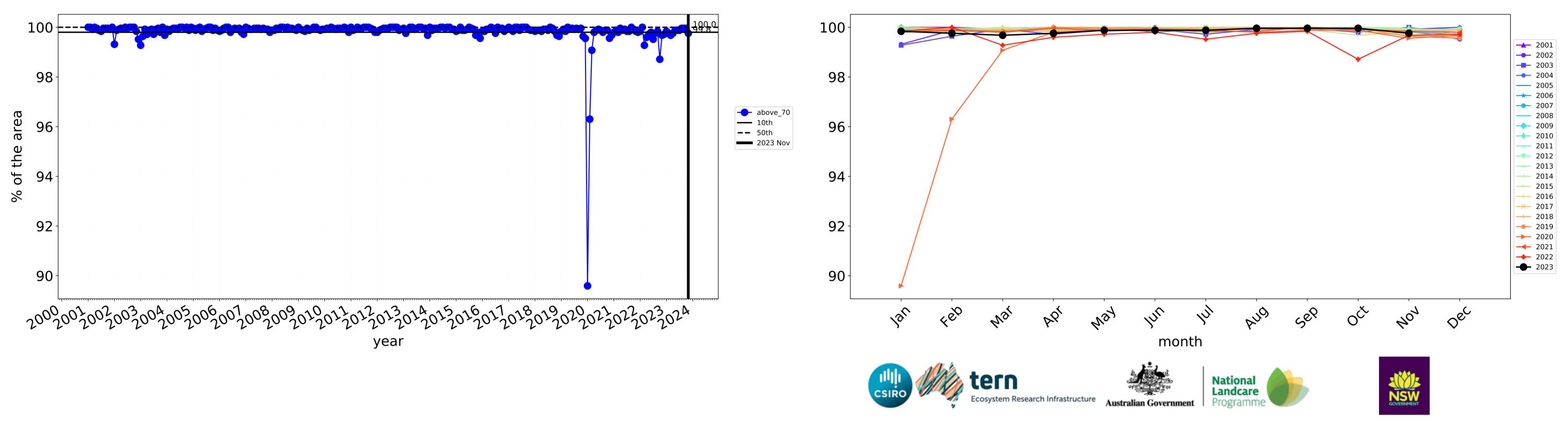
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.





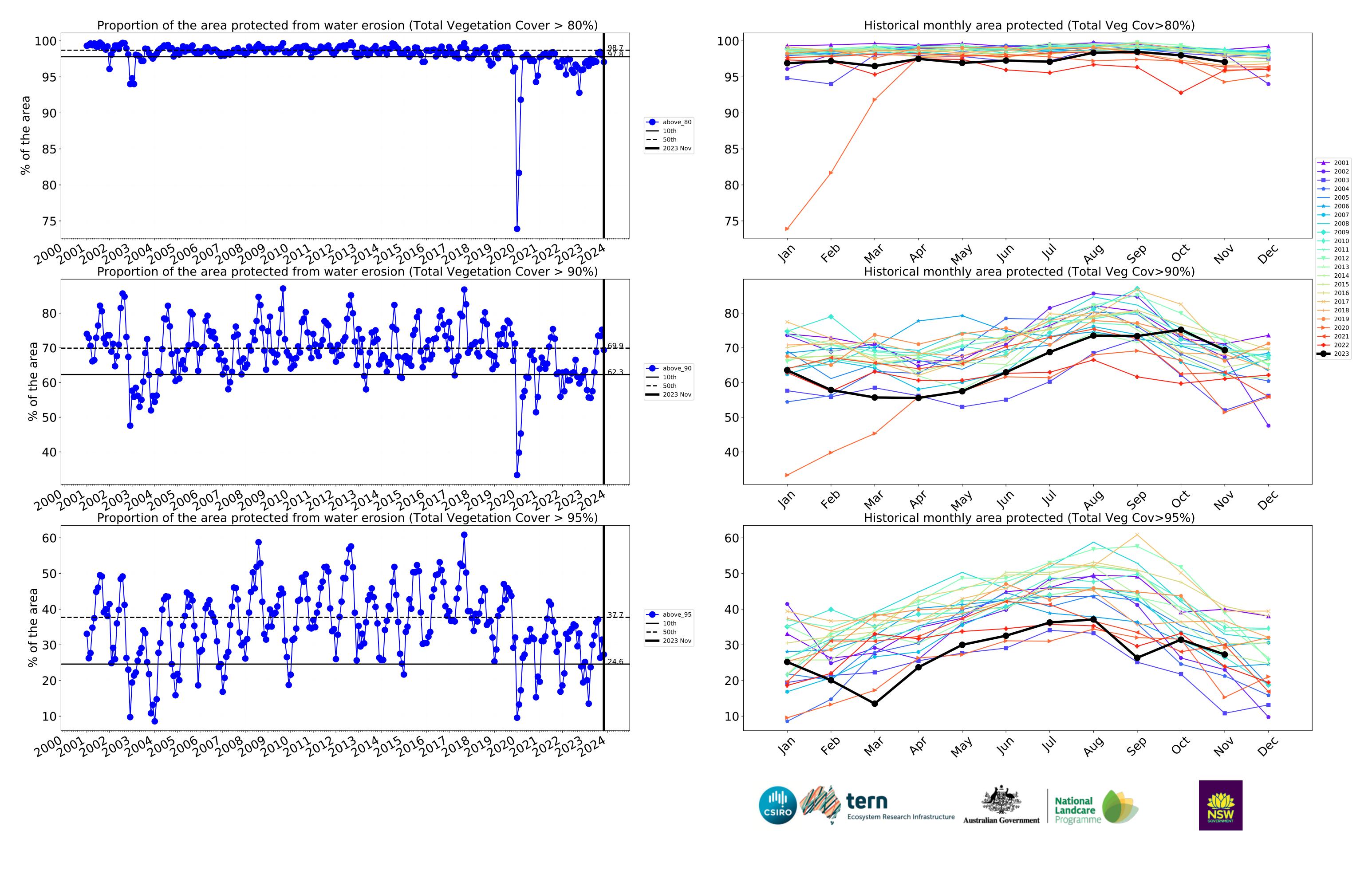
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

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



Agriculture timeseries

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



Grazing

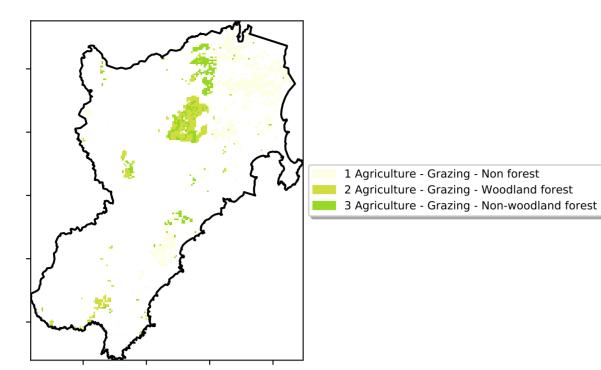
12%100%

52% 70%

32%50

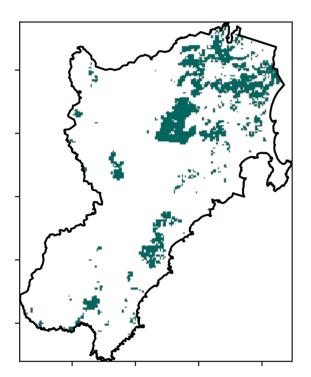
0.30%

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

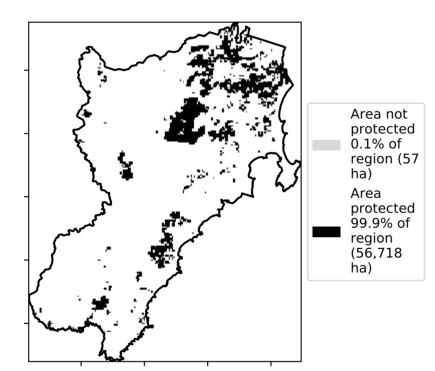


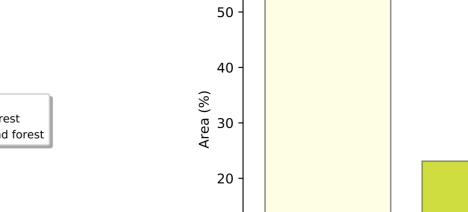
Total Vegetation Cover [%]

Land use and forest cover

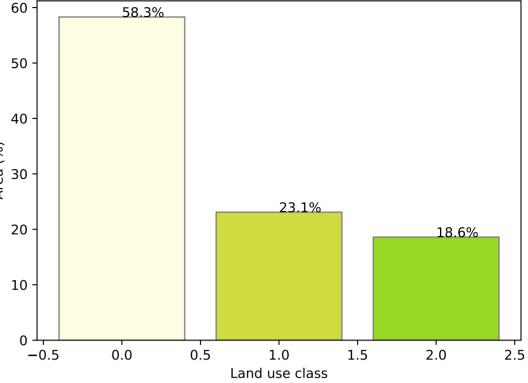


% Area protected from water erosion (>70%)

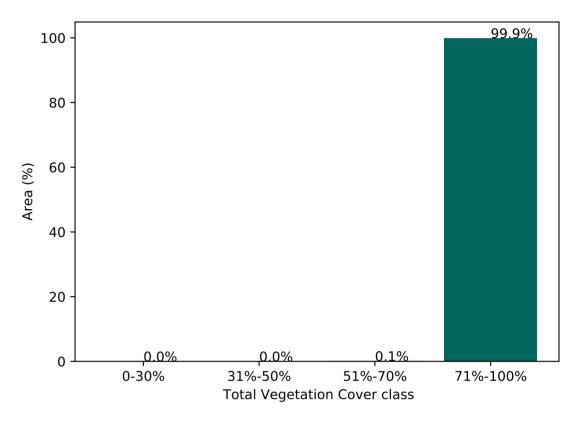




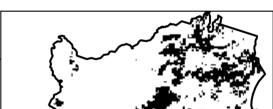
Proportion of each land class in area



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



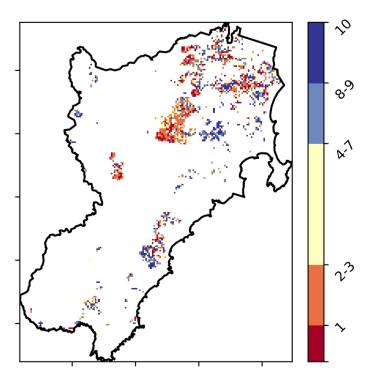
Total Vegetation Cover Anomaly [%]

- 20 - 10 - 0 -10 -20

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.

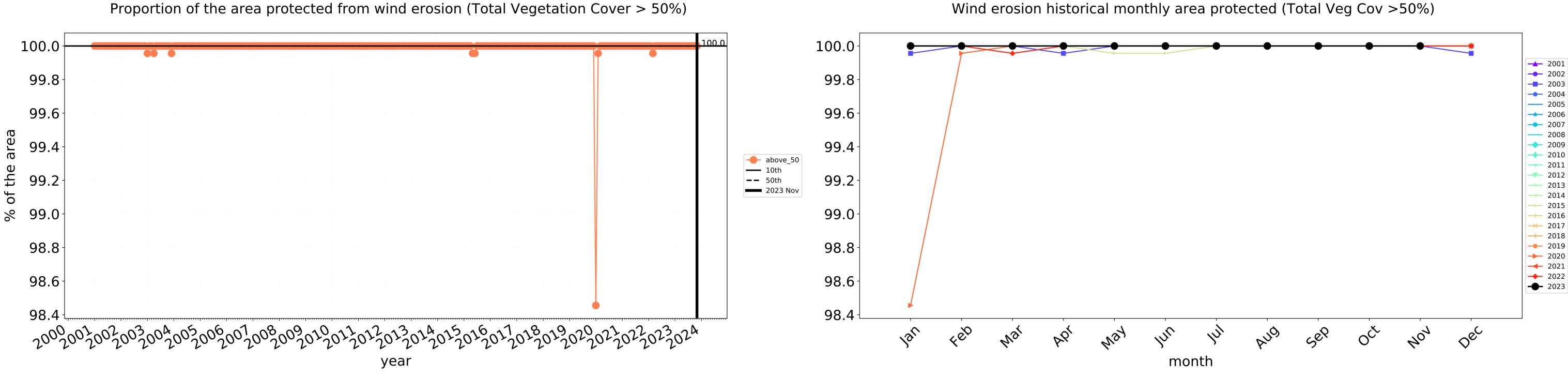
Area protected . 100.0% of region (56,775 ha)

Total Vegetation Cover Decile [%]



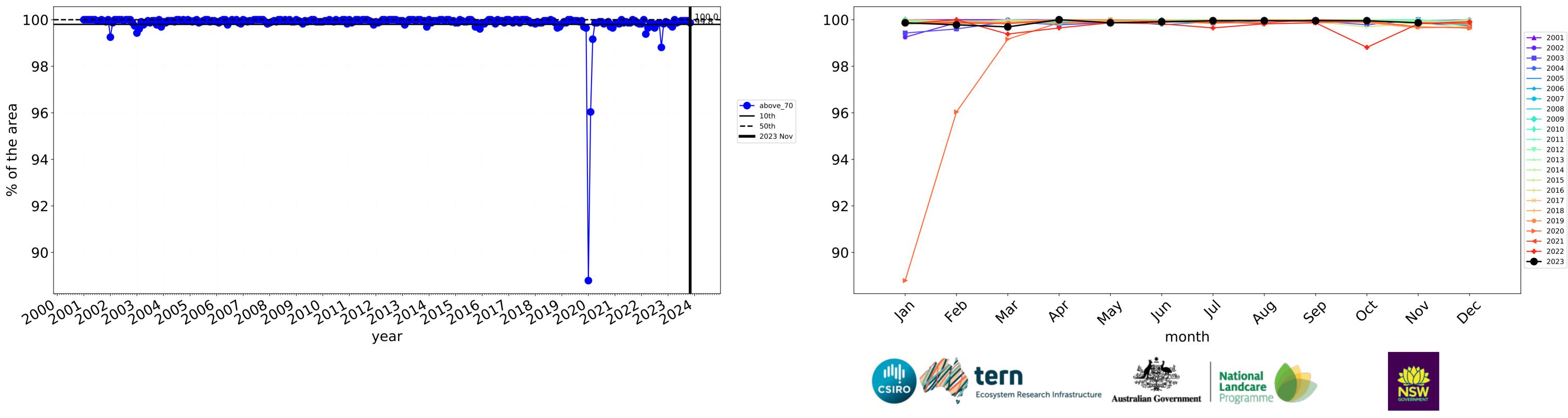


Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



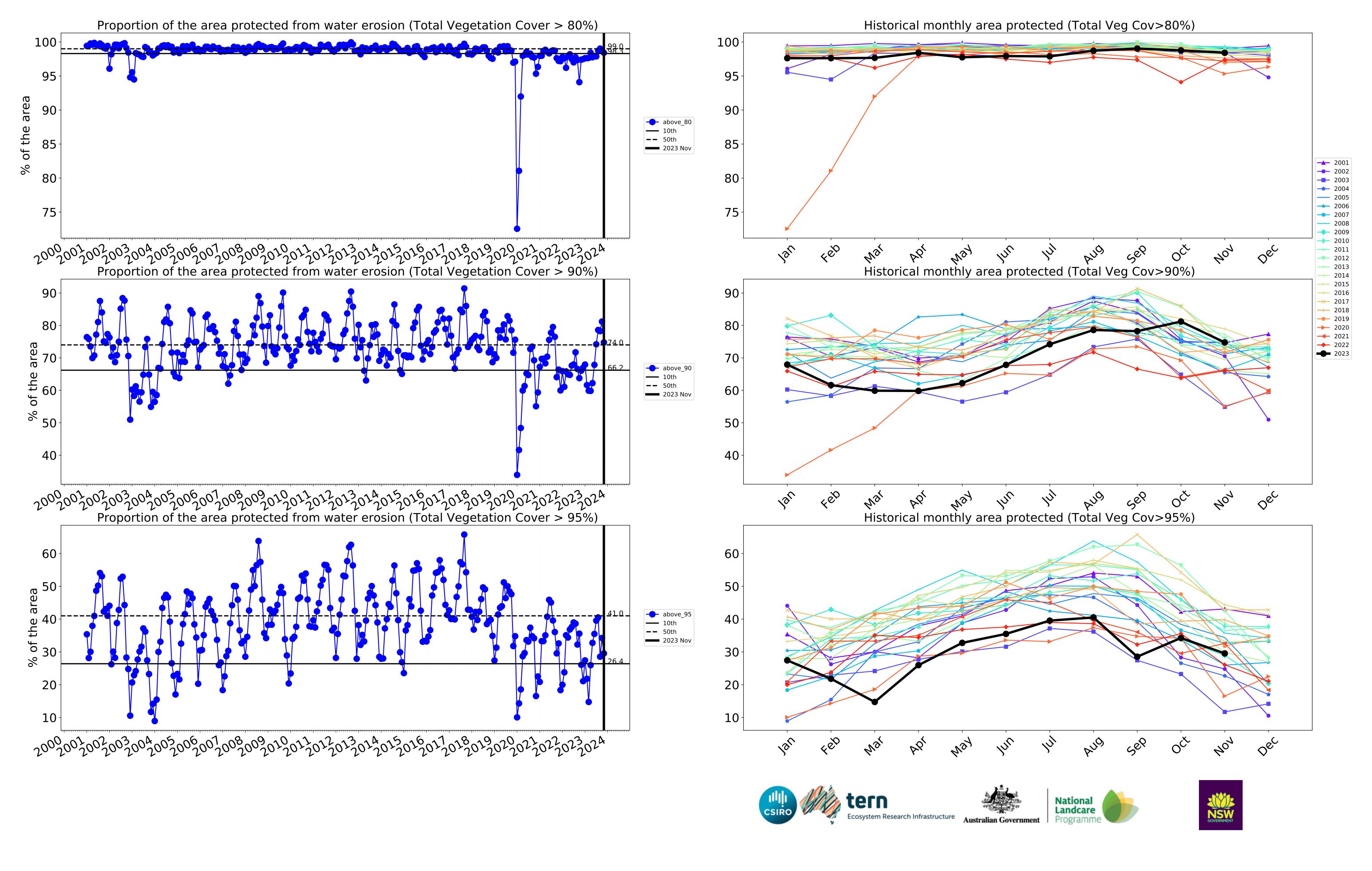
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)





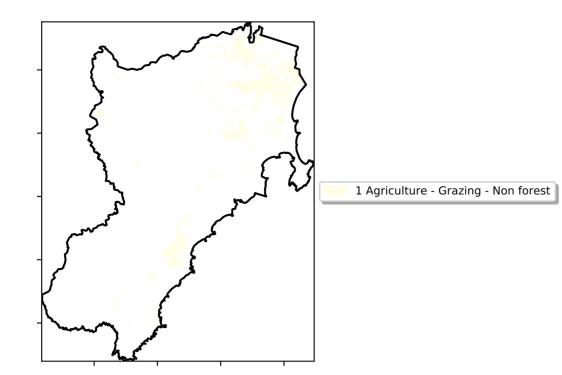
Grazing timeseries

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

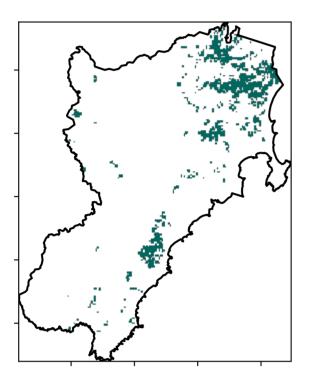


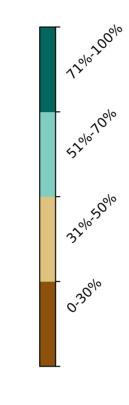
Grazing non forest

Land use and forest cover

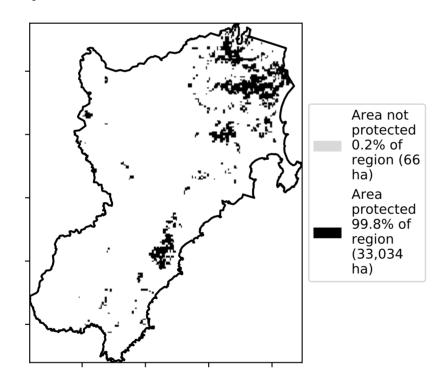


Total Vegetation Cover [%]

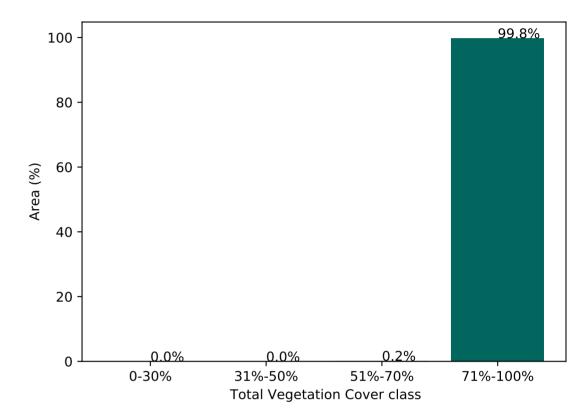




% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)

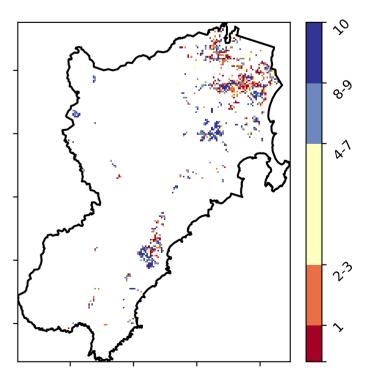


Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

Total Vegetation Cover 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. Area protected 100.0% of region (33,100 ha)

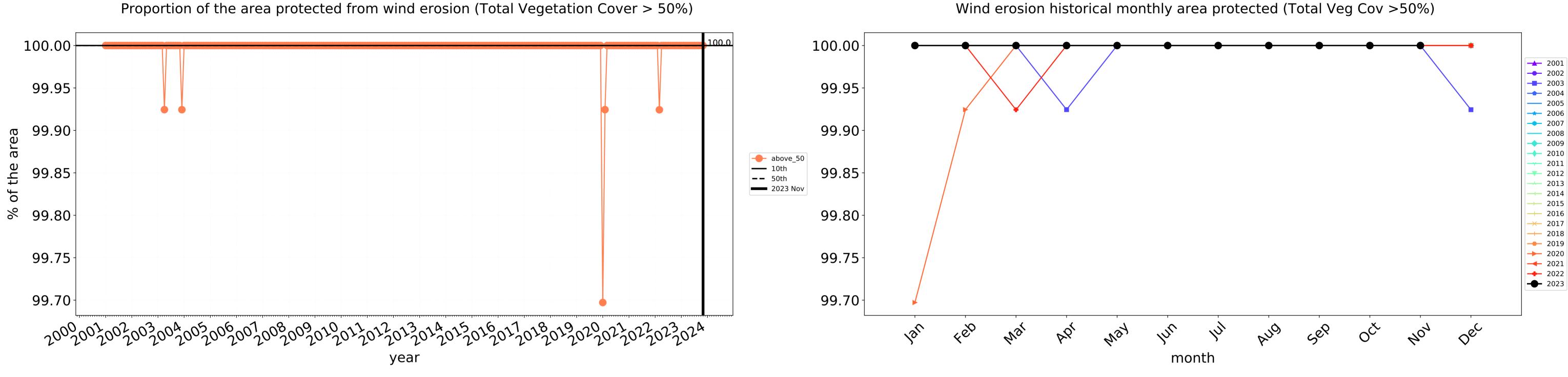
Total Vegetation Cover Decile [%]



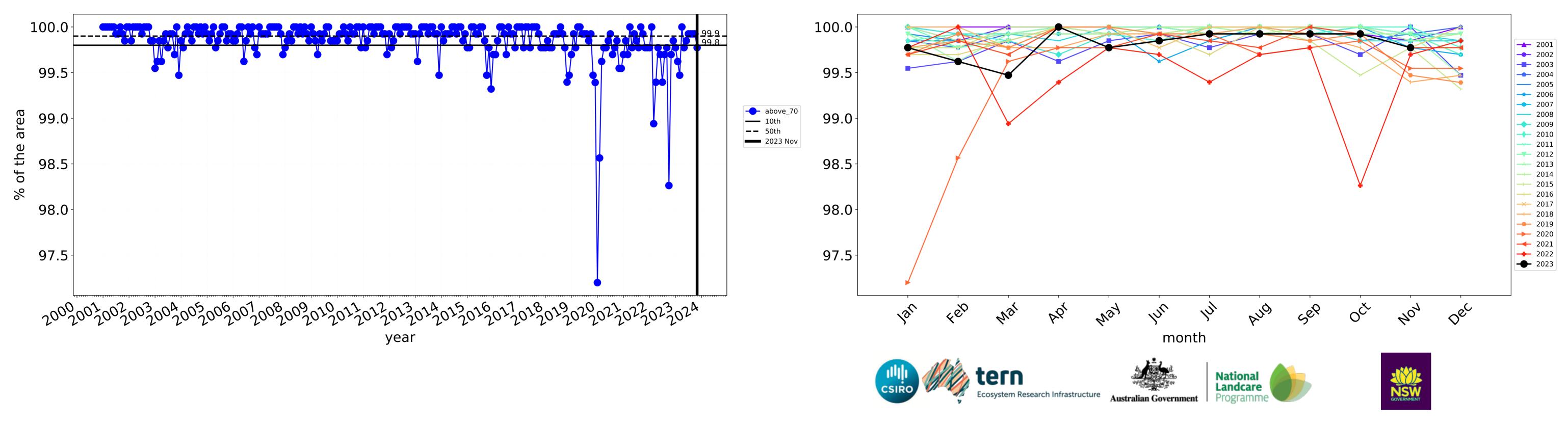




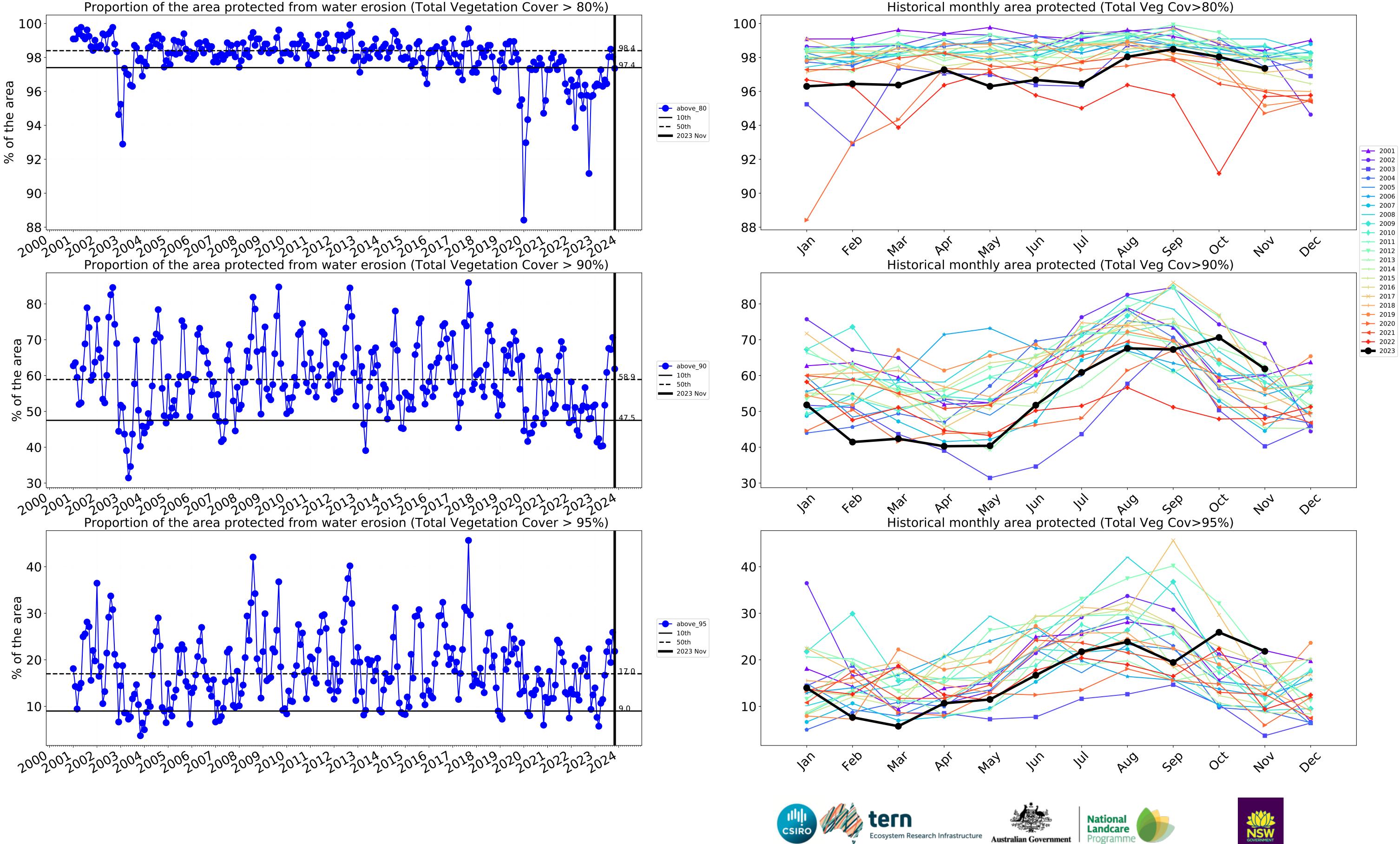
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



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



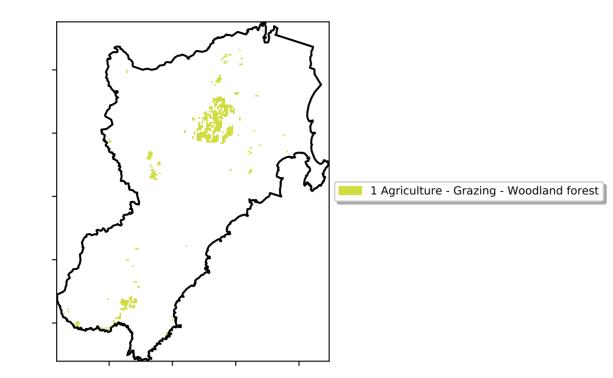
Water erosion historical monthly area protected (Total Veg Cov>70%)



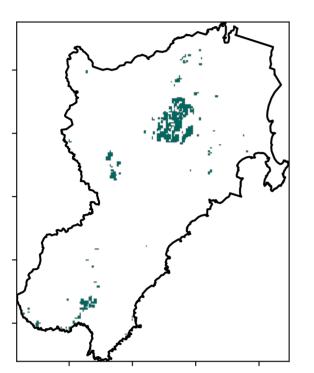
Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)

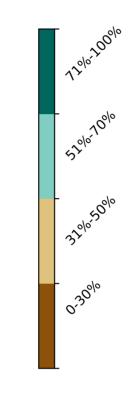
Grazing Woodland forest

Land use and forest cover

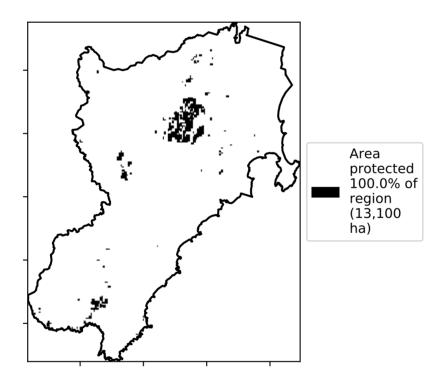


Total Vegetation Cover [%]

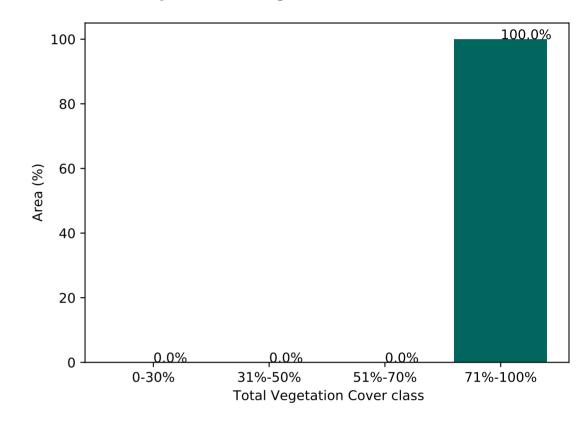




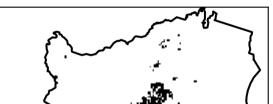
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



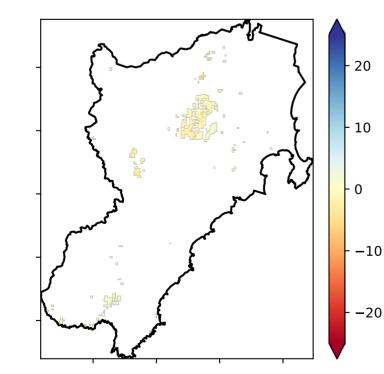
% Area protected from wind erosion (>50%)



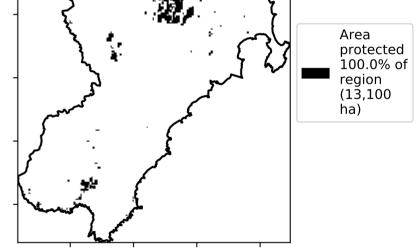
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

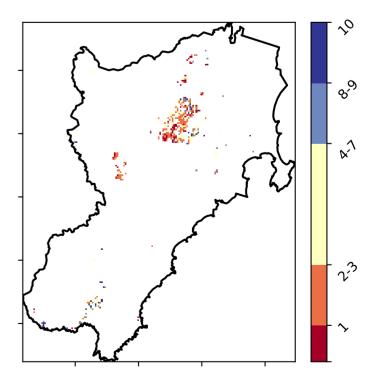
Total Vegetation Cover Anomaly [%]

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.



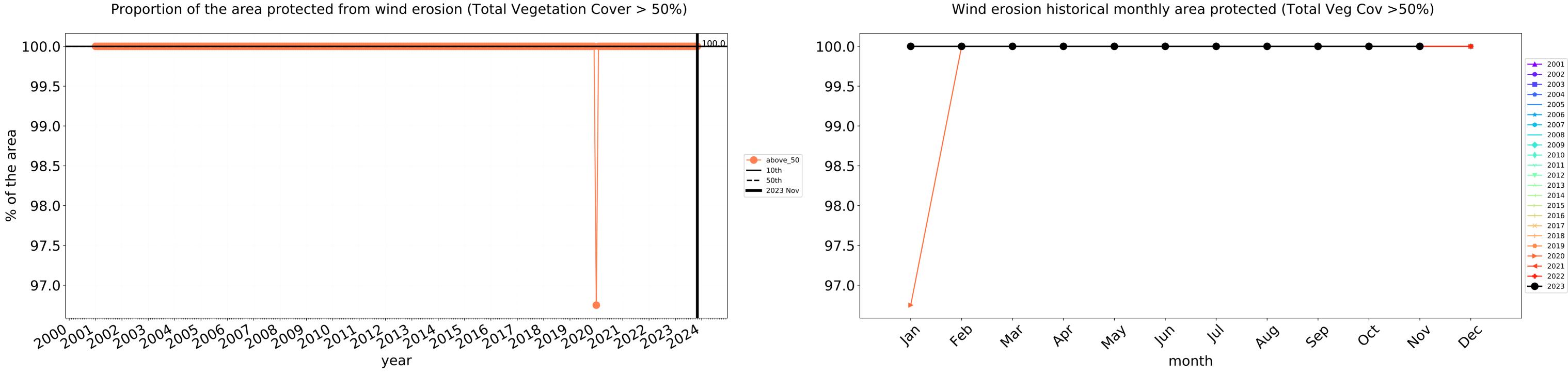
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.



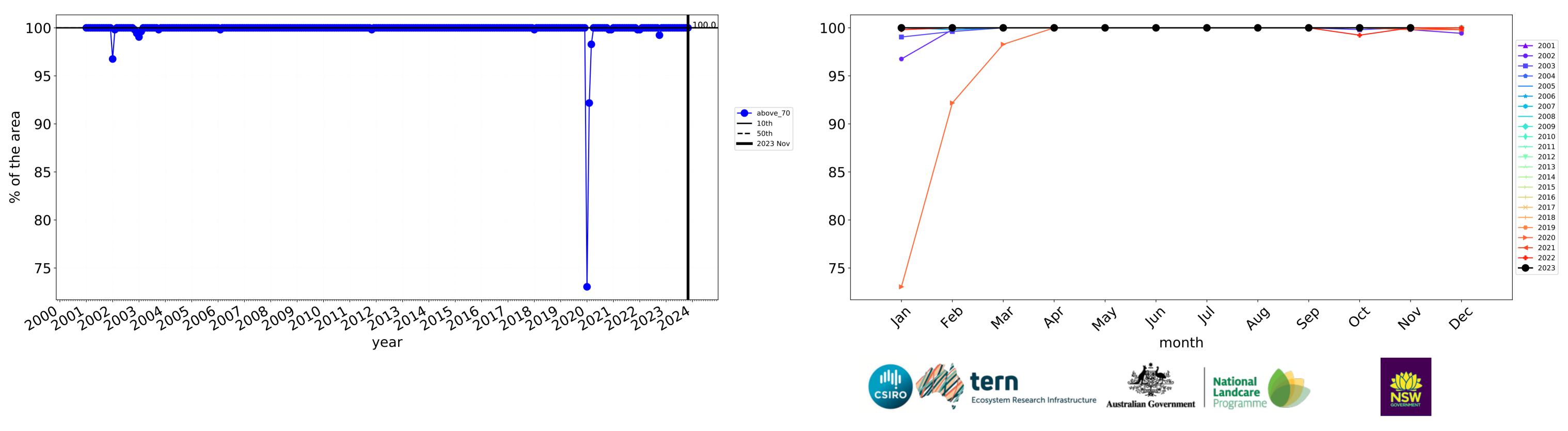




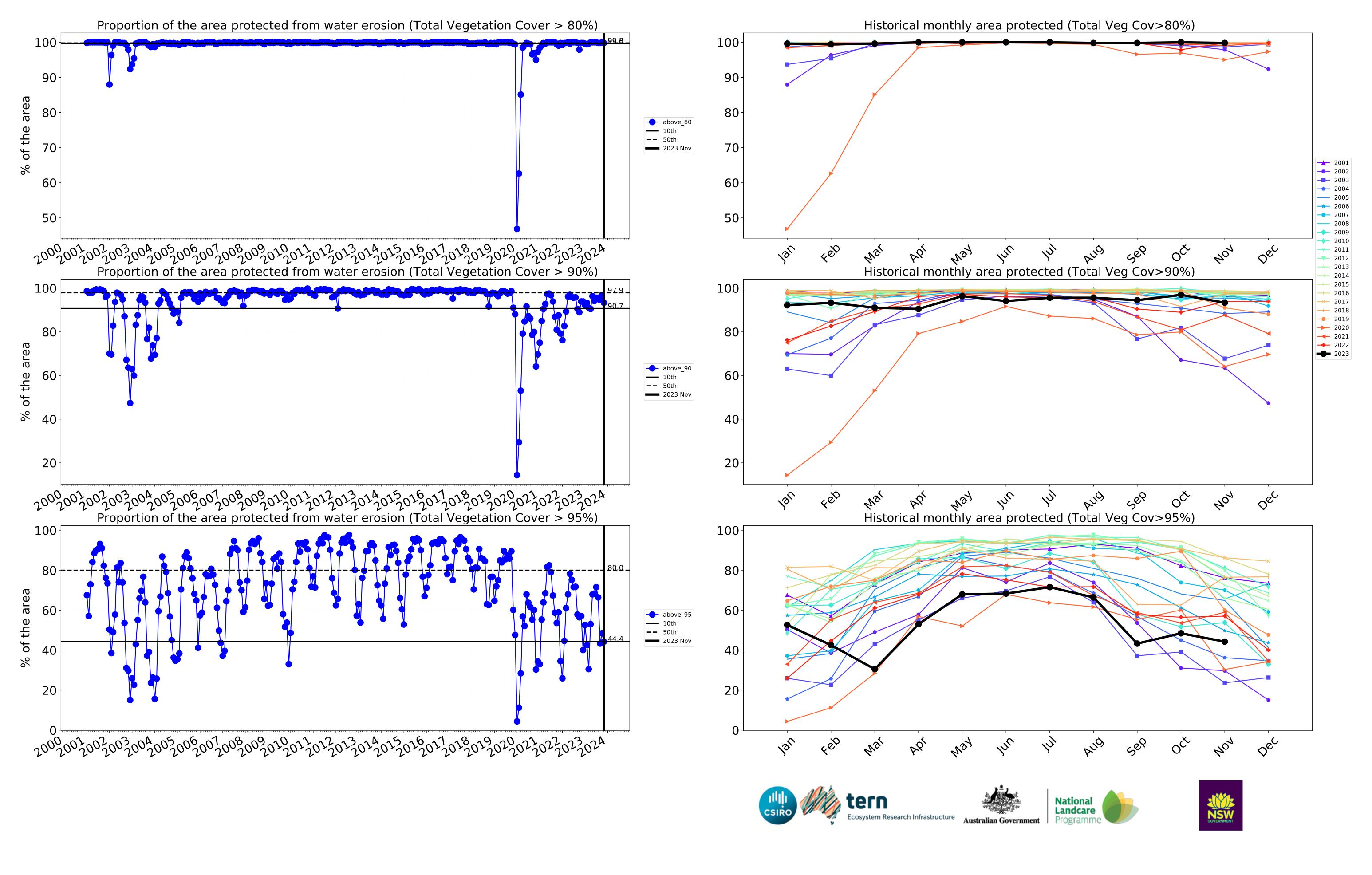
Grazing Woodland forest timeseries



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

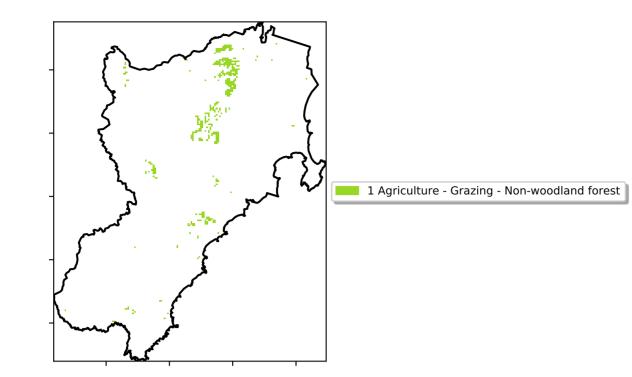


Water erosion historical monthly area protected (Total Veg Cov>70%)

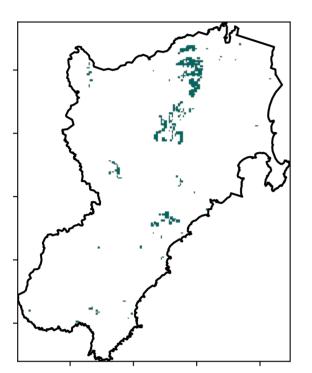


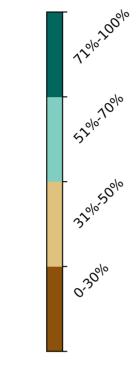
Grazing - Forest (non woodland)

Land use and forest cover

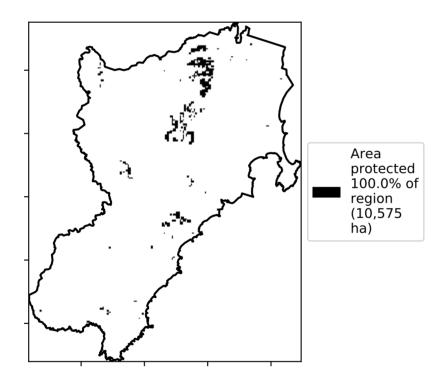


Total Vegetation Cover [%]

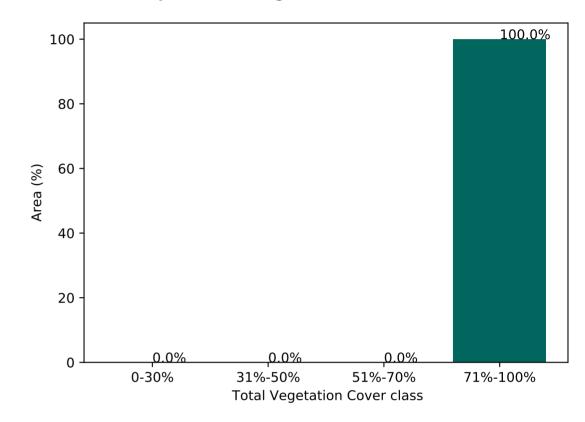




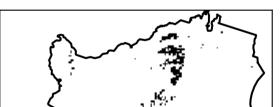
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



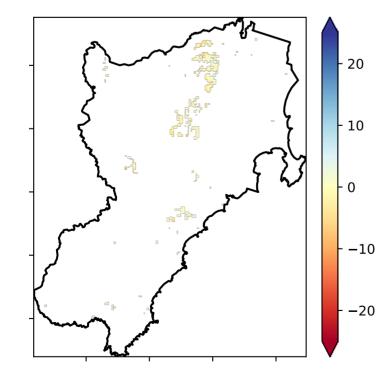
% Area protected from wind erosion (>50%)



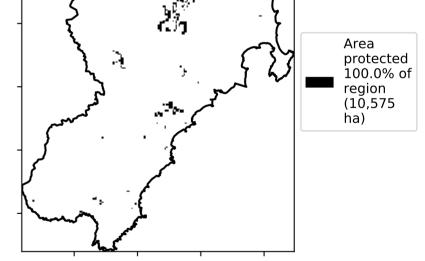
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

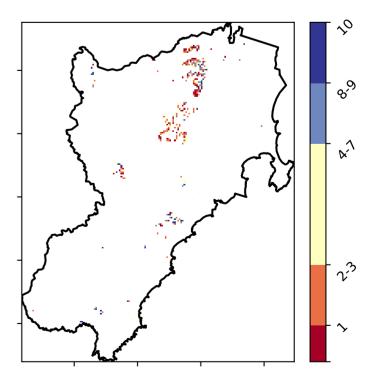
Total Vegetation Cover Anomaly [%]

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.



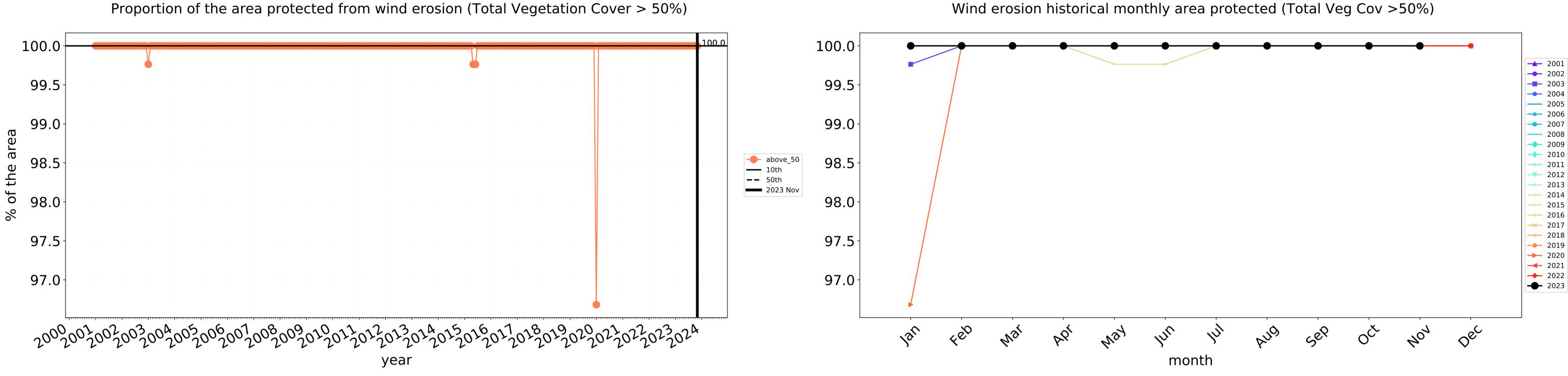
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

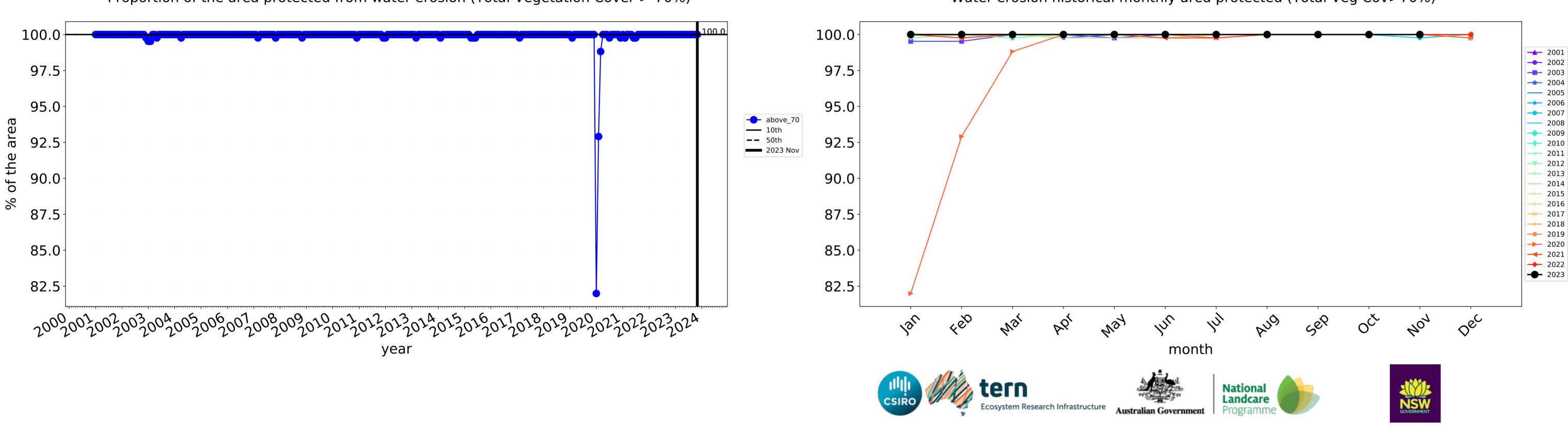






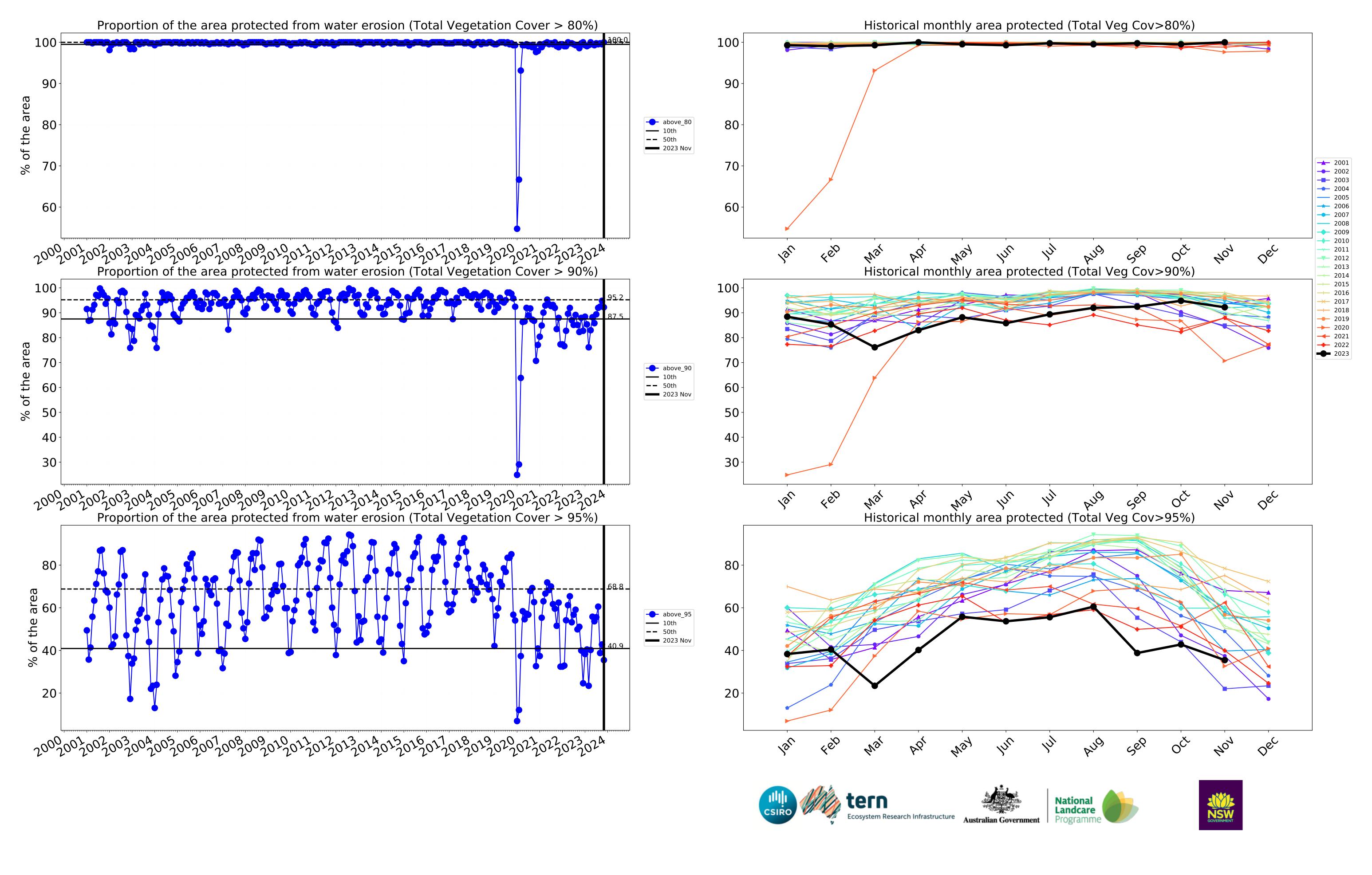
Grazing - Forest (non woodland) timeseries





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

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

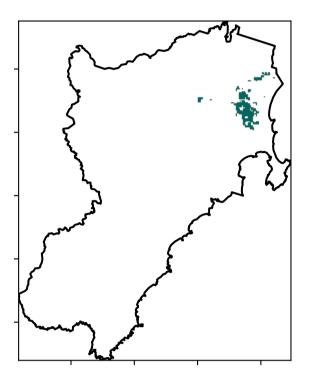


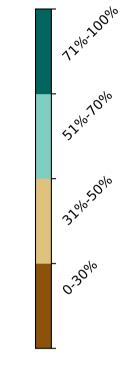
Irrigation

Agriculture - Grazing - Irrigated
Agriculture - Horticulture - Irrigated
Agriculture - Horticulture - Irrigated

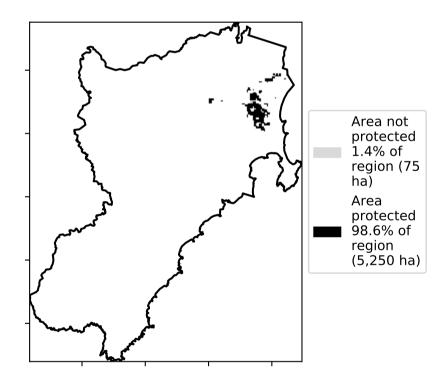
Land use and forest cover

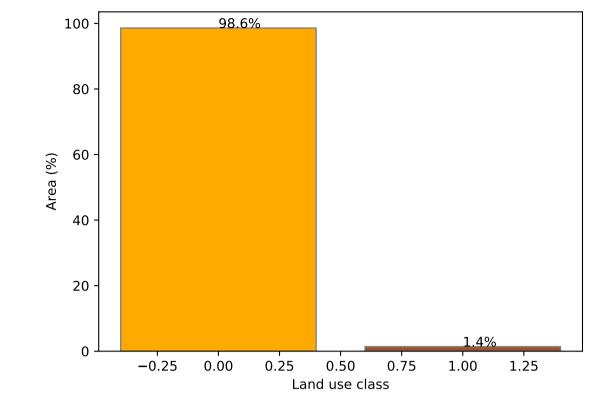
Total Vegetation Cover [%]





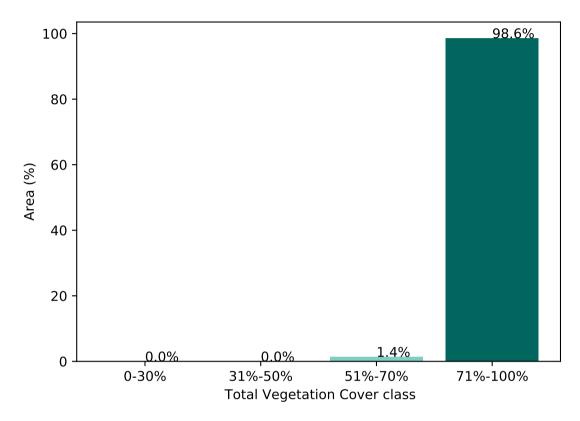
% Area protected from water erosion (>70%)



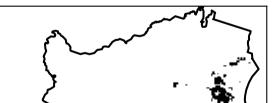


Proportion of each land class in area

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]

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.

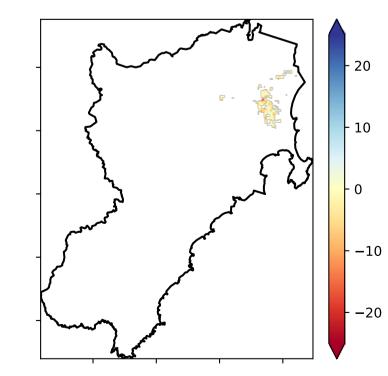
Catchment Scale Land Use and Forests of Australia (2018)

Catchment Scale Land

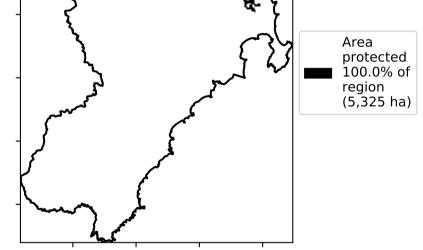
Derived from

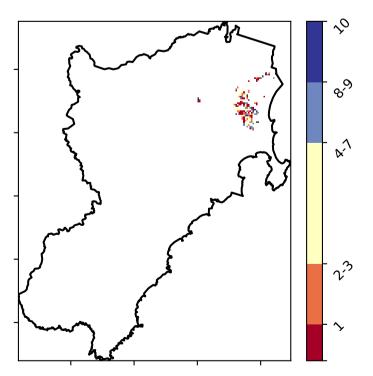
Use of Australia (2018) and Forests

of Australia (2018)

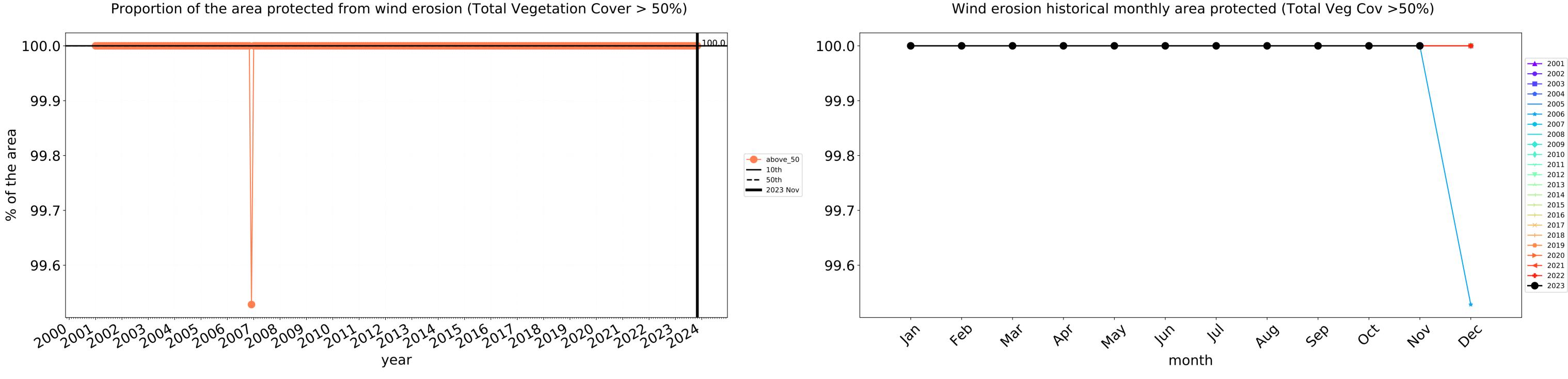


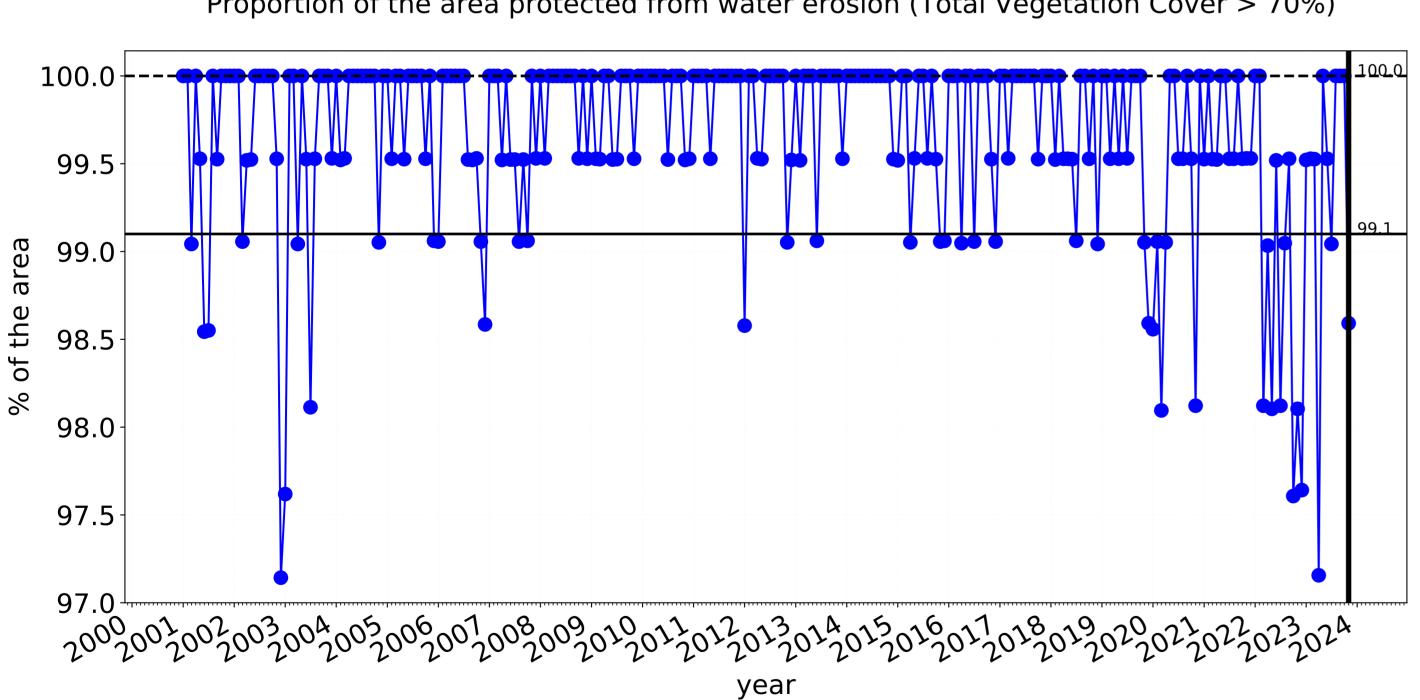
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.





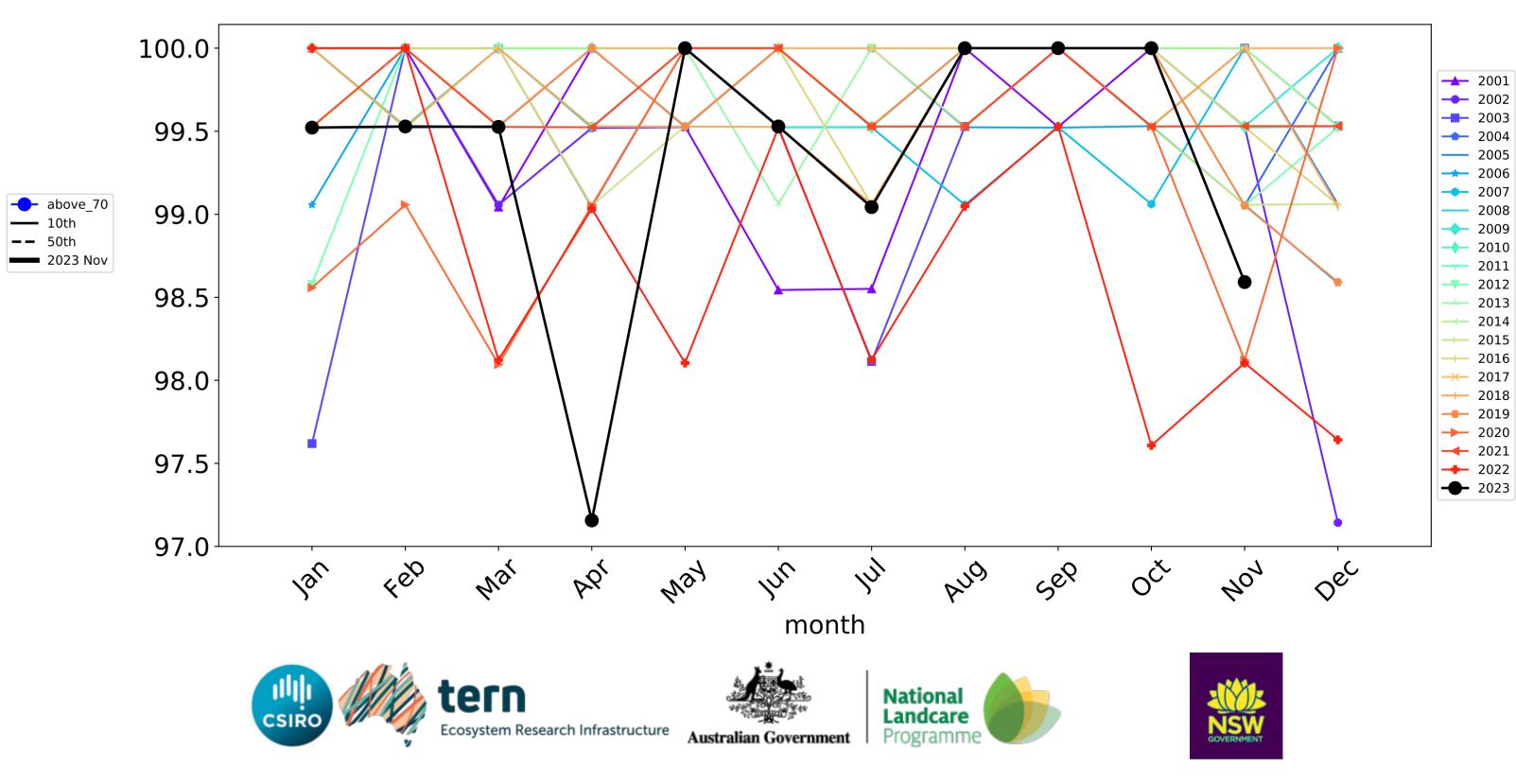


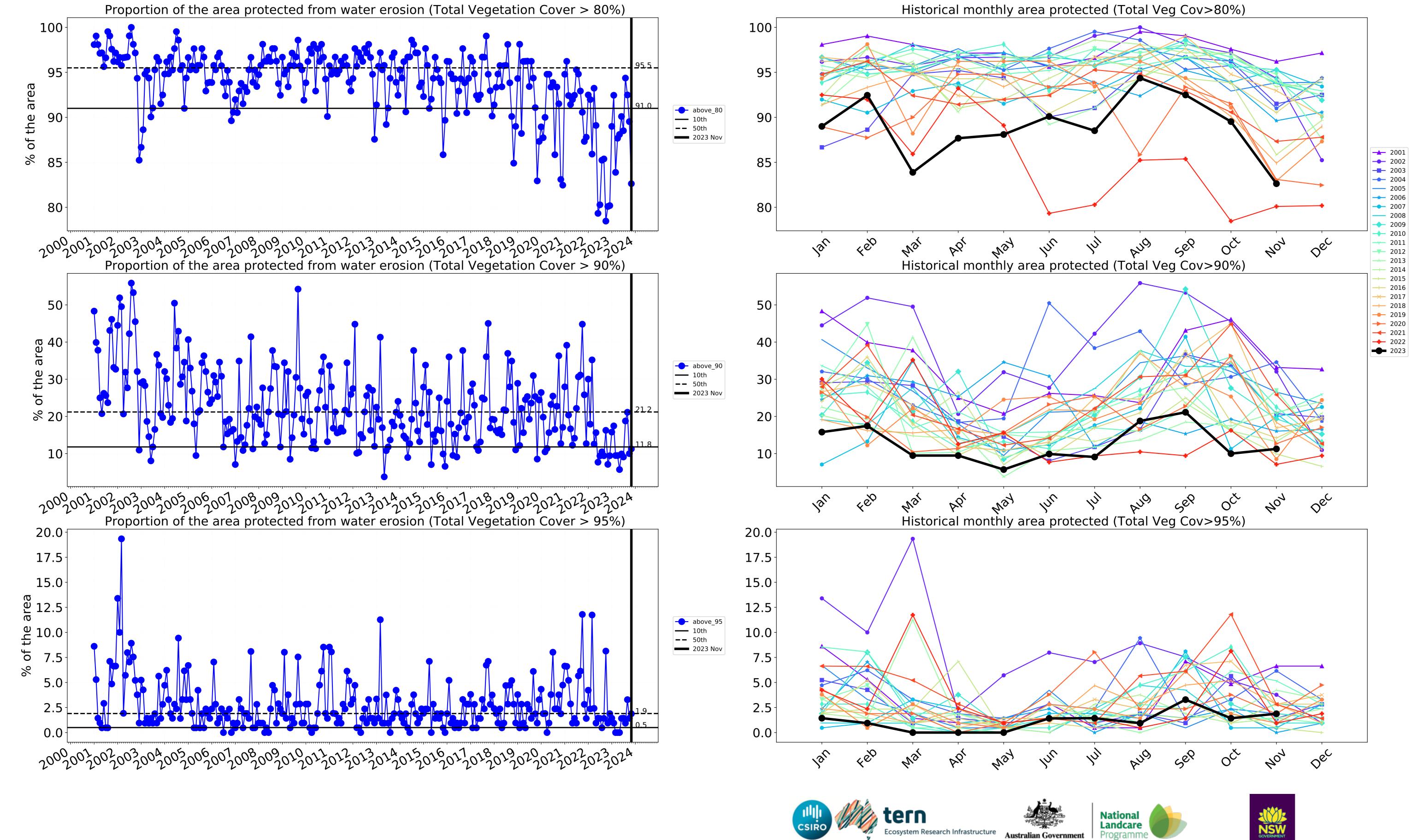




Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

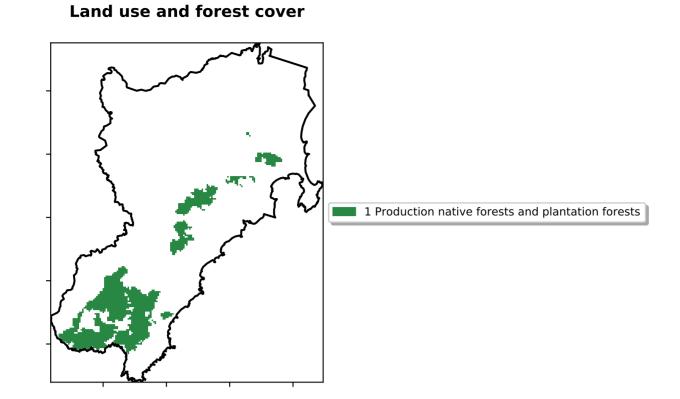
Water erosion historical monthly area protected (Total Veg Cov>70%)



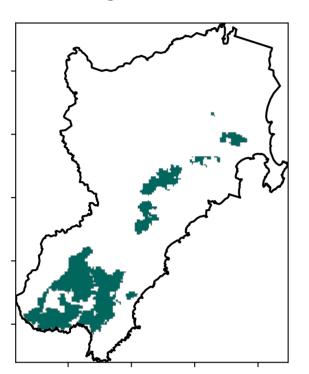


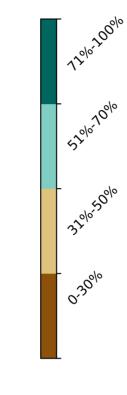
Production native forests and plantation forests

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

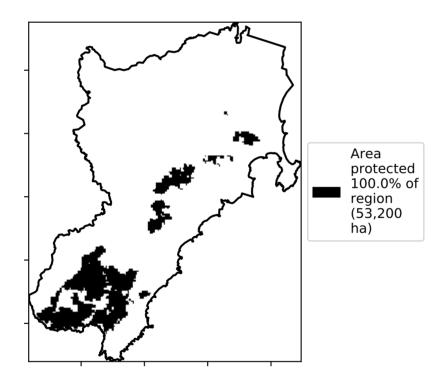


Total Vegetation Cover [%]

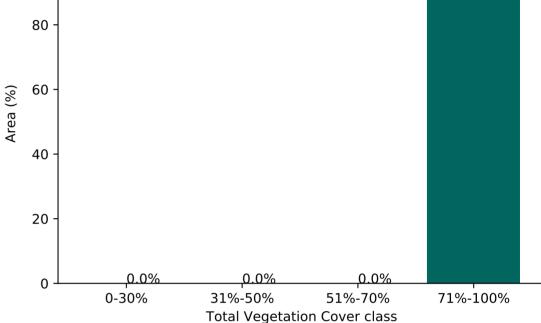




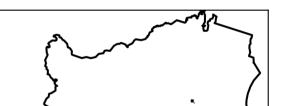
% Area protected from water erosion (>70%)







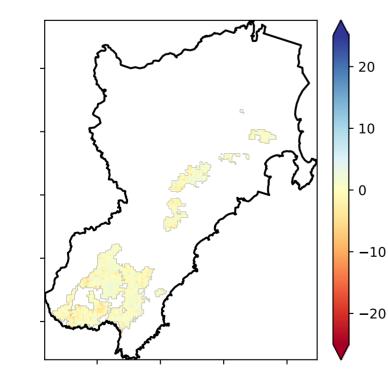
% Area protected from wind erosion (>50%)



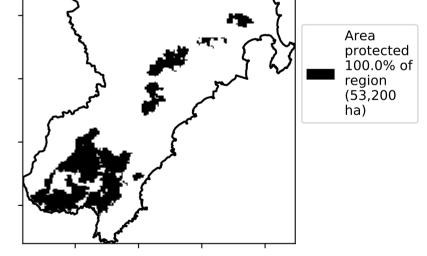
Proportion of vegetation cover class in area

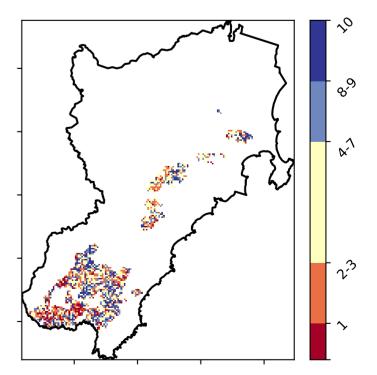
Total Vegetation Cover Anomaly [%]

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.



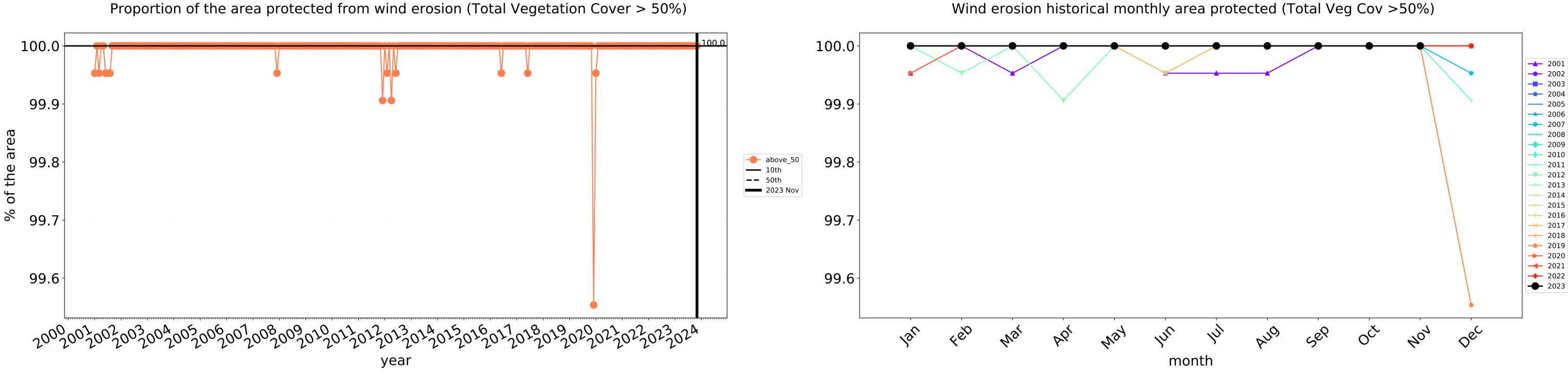
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.





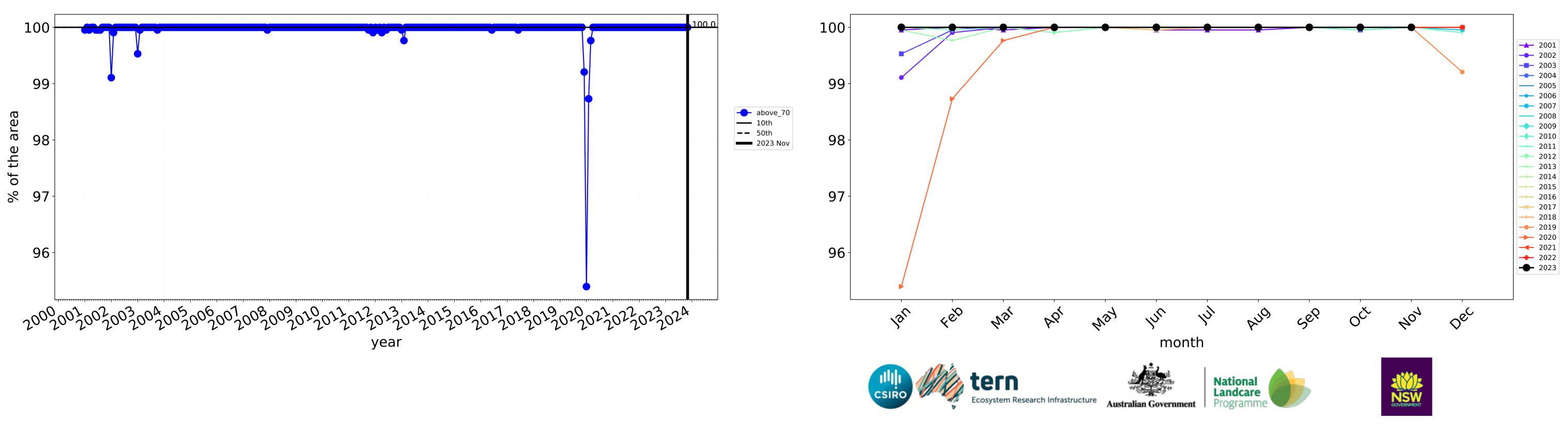


Production native forests and plantation forests timeseries

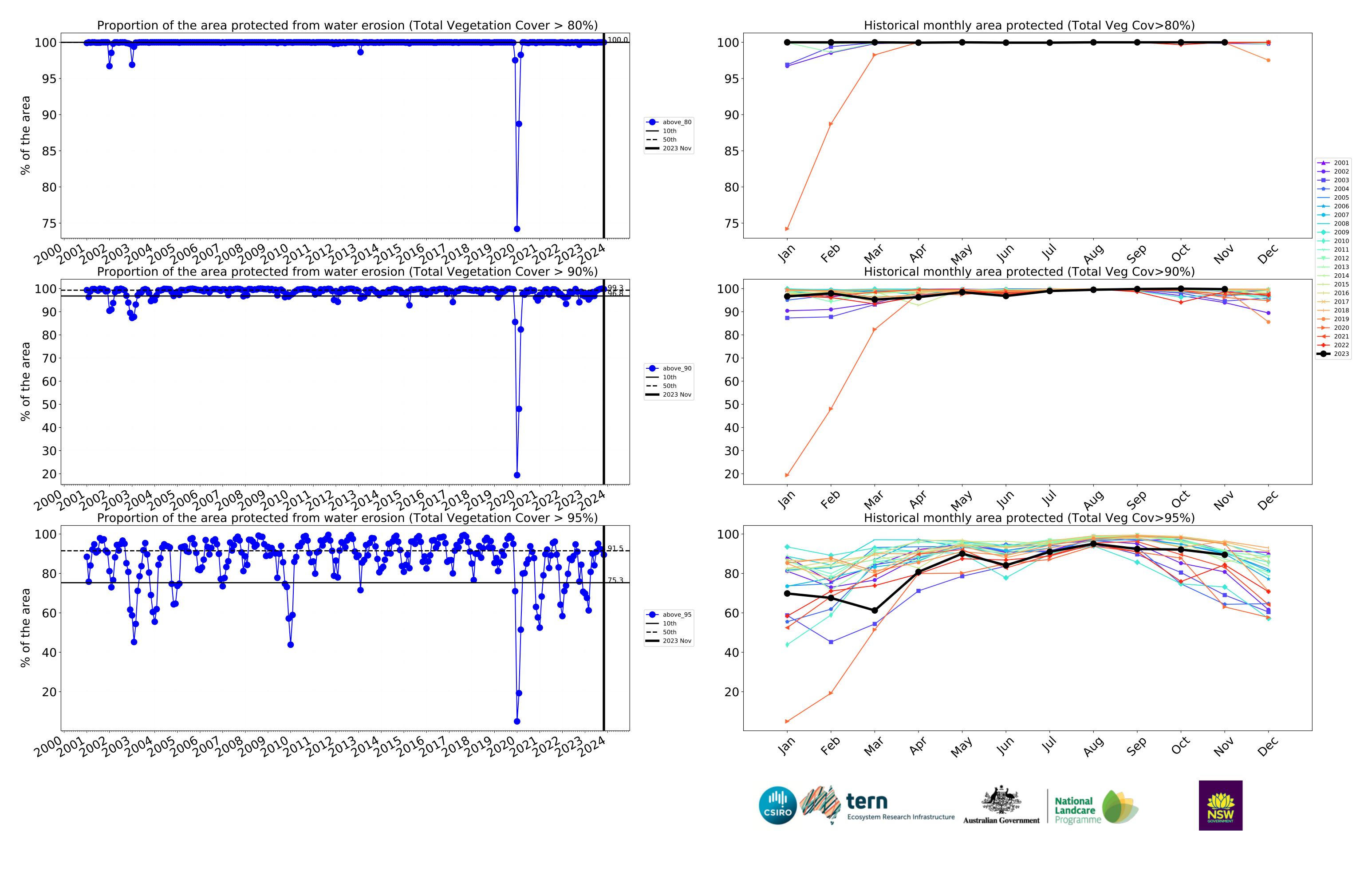


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

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



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



Shoalhaven_(C) (446,375 ha and no data 10,422 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	446,375	100.0% 446,225	99.9% 445,725	99.1% 442,375	97.4% 434,625	82.6% 368,575	41.8% 186,775
Conservation and natural environments	298,225	100.0% 298,225	100.0% 298,125	99.8% 297,500	99.3% 296,275	86.3% 257,300	39.2% 116,850
Conservation and natural environments non forest	6,175	100.0% 6,175	99.2% 6,125	96.4% 5,950	91.9% 5,675	74.1% 4,575	30.8% 1,900
Conservation and natural environments Woodland forest	184,325	100.0% 184,325	100.0% 184,325	99.9% 184,175	99.6% 183,550	84.3% 155,375	35.3% 64,975
Conservation and natural environments Forest (non woodland)	107,725	100.0% 107,725	100.0% 107,675	99.7% 107,375	99.4% 107,050	90.4% 97,350	46.4% 49,975
Agriculture	62,225	100.0% 62,225	100.0% 62,225	99.8% 62,075	97.1% 60,400	69.3% 43,150	27.3% 16,975
Grazing	56,775	100.0% 56,775	100.0% 56,775	99.9% 56,700	98.4% 55,875	74.8% 42,450	29.5% 16,775
Grazing non forest	33,100	100.0% 33,100	100.0% 33,100	99.8% 33,025	97.4% 32,225	61.9% 20,475	21.8% 7,225
Grazing Woodland forest	13,100	100.0% 13,100	100.0% 13,100	100.0% 13,100	99.8% 13,075	93.3% 12,225	44.3% 5,800
Grazing - Forest (non woodland)	10,575	100.0% 10,575	100.0% 10,575	100.0% 10,575	100.0% 10,575	92.2% 9,750	35.5% 3,750
Irrigation	5,325	100.0% 5,325	100.0% 5,325	98.6% 5,250	82.6% 4,400	11.3% 600	1.9% 100
Production native forests and plantation forests	53,200	100.0% 53,200	100.0% 53,200	100.0% 53,200	100.0% 53,200	99.8% 53,075	89.5% 47,600

