Total vegetation cover soil protection Region:LGA Yankalilla_(DC) SA

Date: June 2023

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 Jun 2023

70 ·

60

50

% 40

Area 05

20

10

0

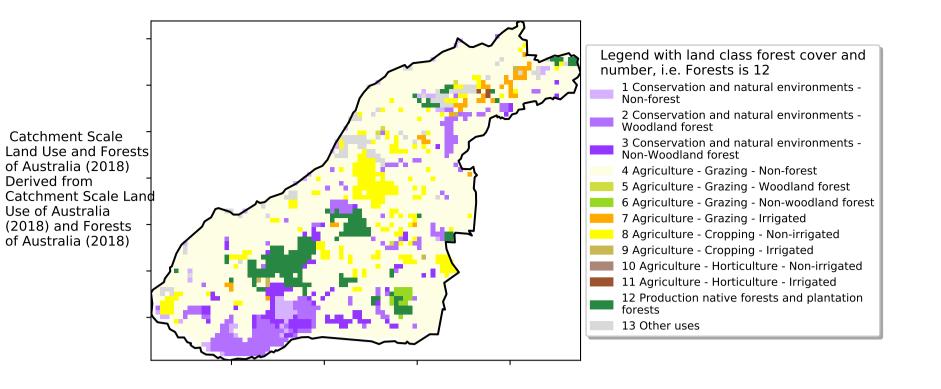
7.8%

3.6%

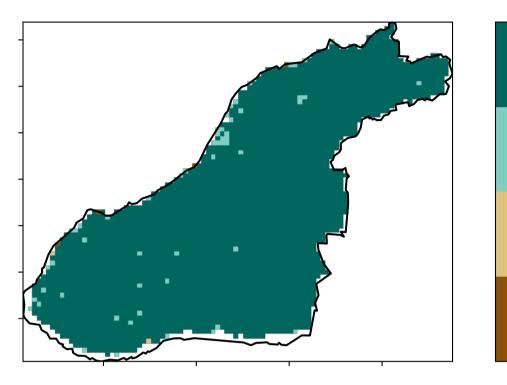
Land use and forest cover



67.9%



Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



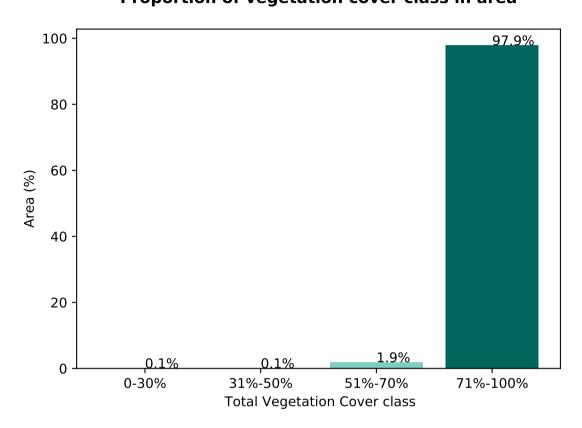
Proportion of vegetation cover class in area

6 Land use class 8

6.1%

10

12

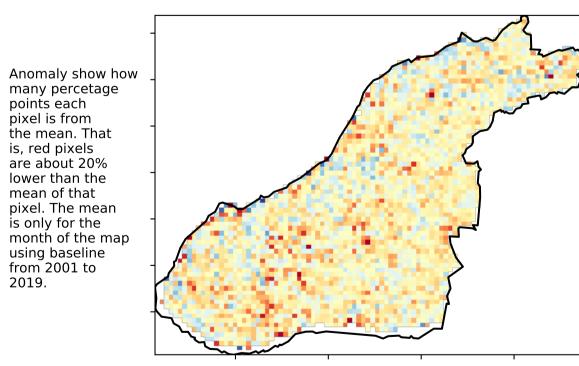


% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]

Total Vegetation Cover Anomaly [%]



- 20
- 10 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.

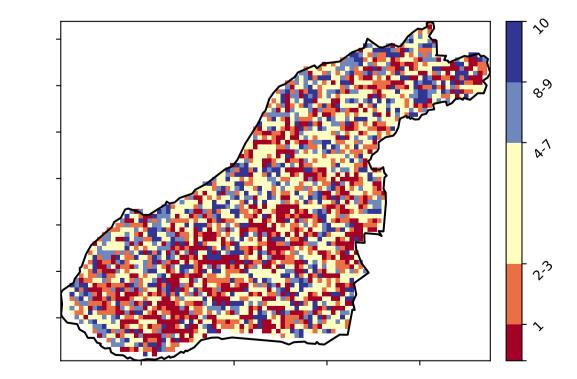
-20

12º0010000

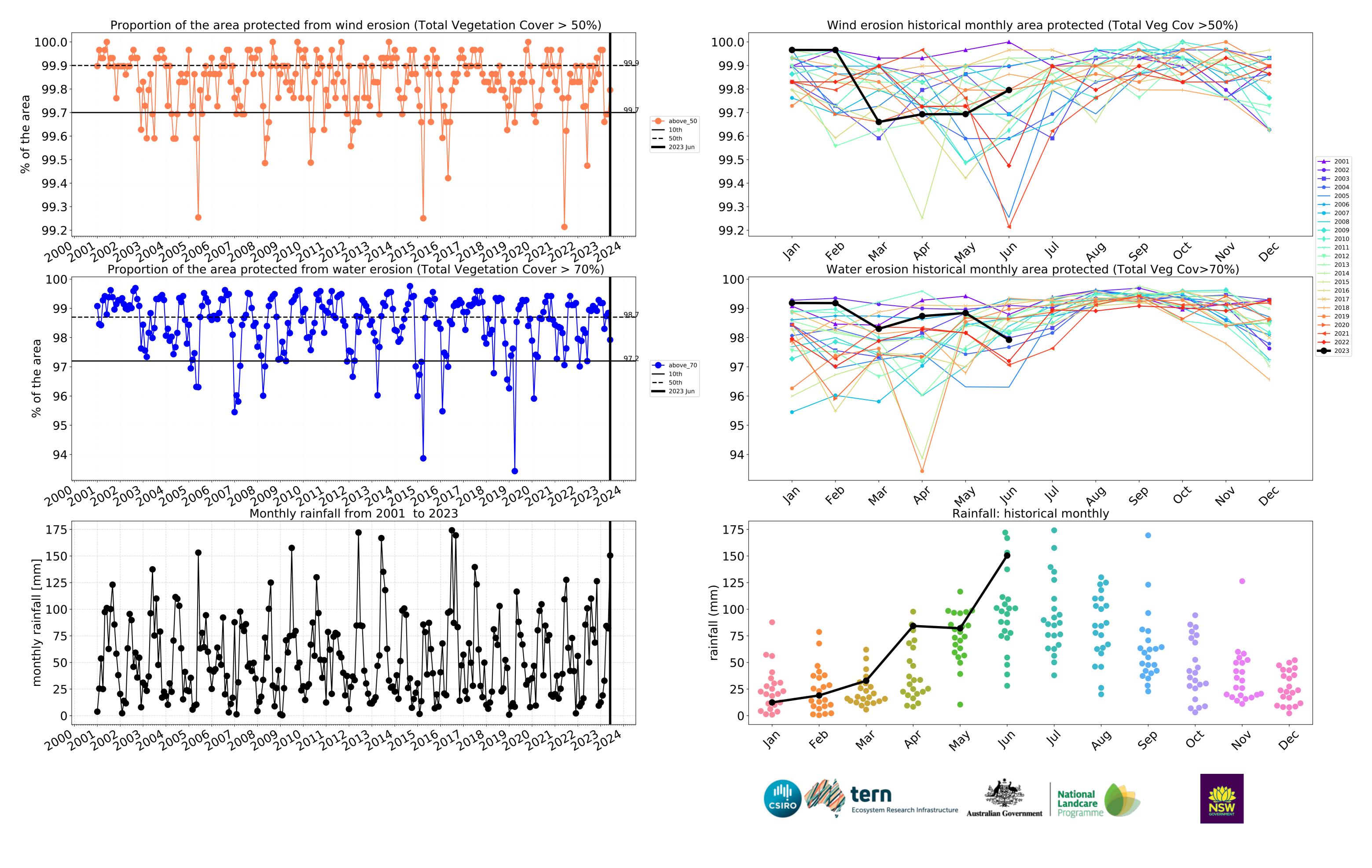
52% 70%

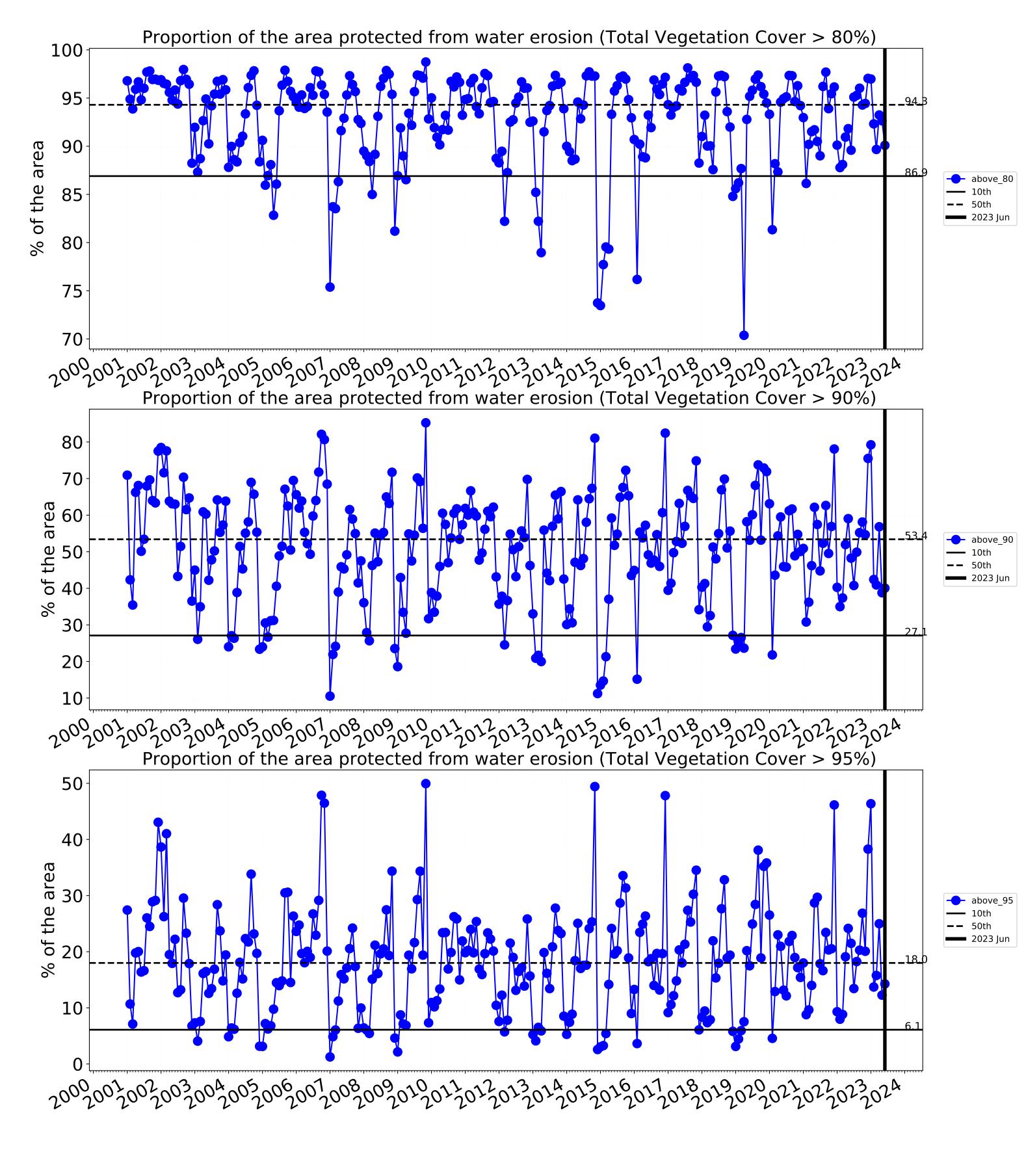
32%50%

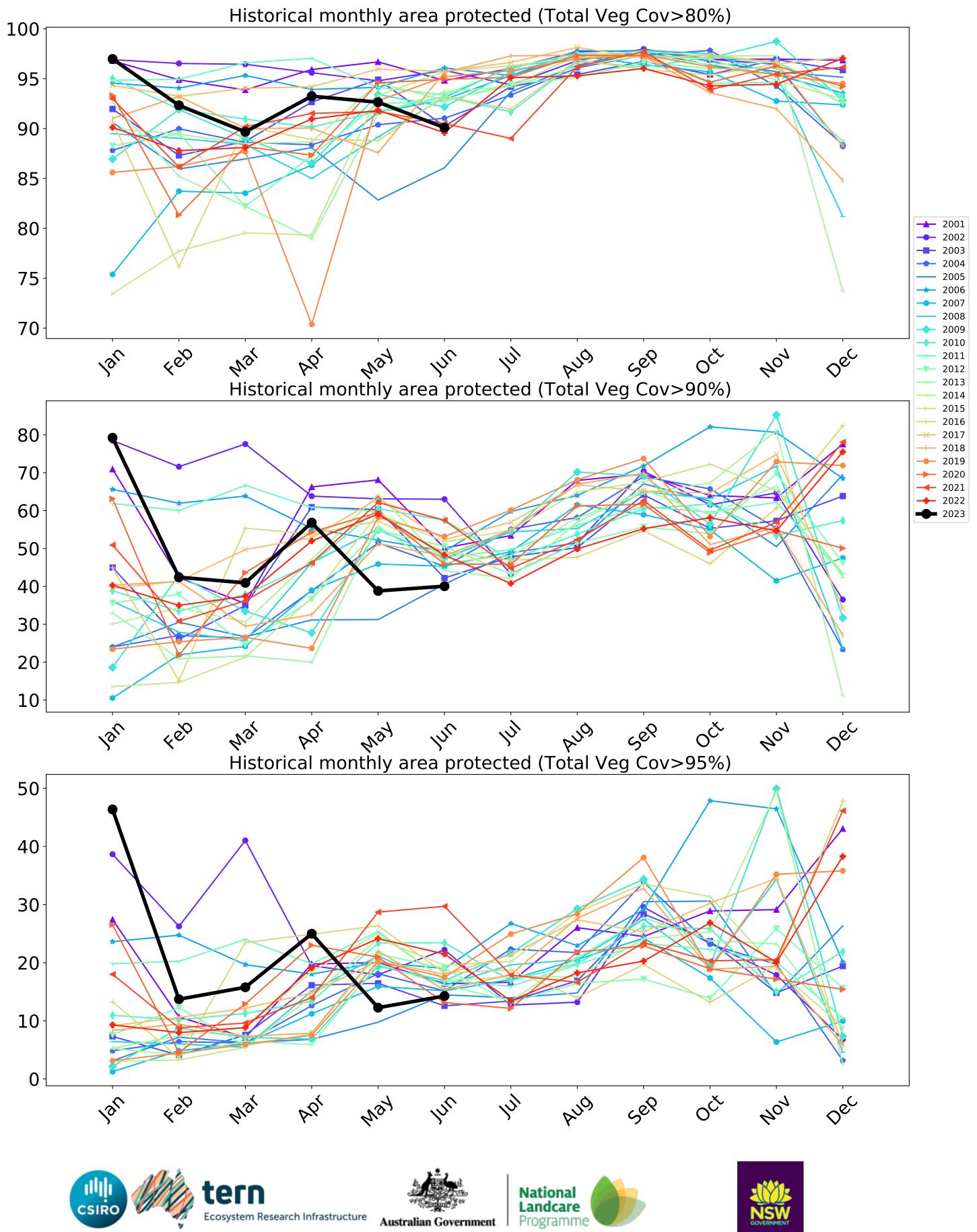
· 0.30%









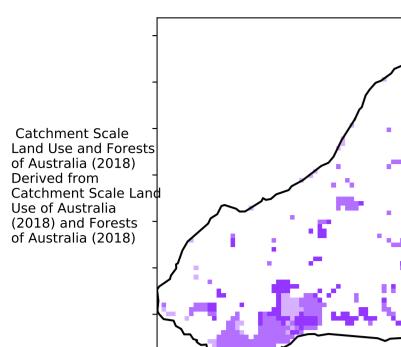




Conservation and natural environments

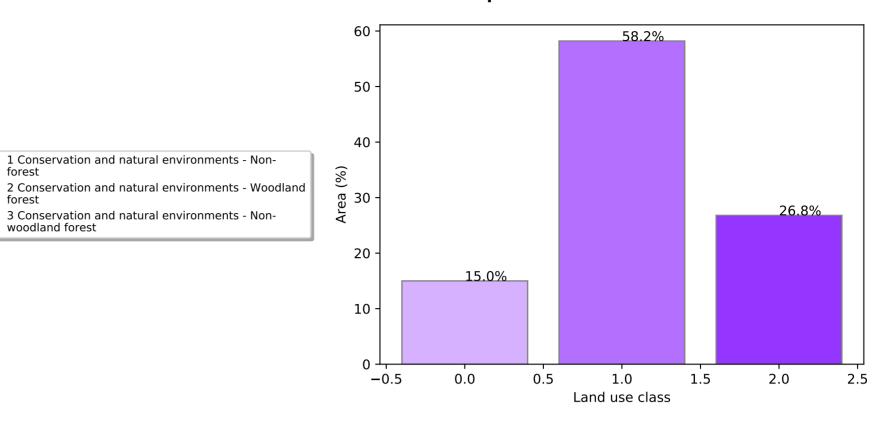
1 Conservation and natural environments - Non-forest

3 Conservation and natural environments - Non-woodland forest

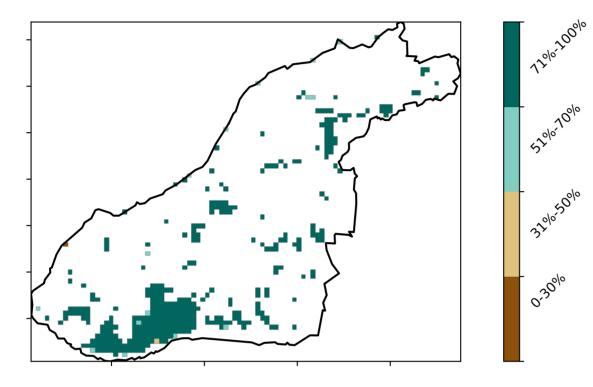


Land use and forest cover

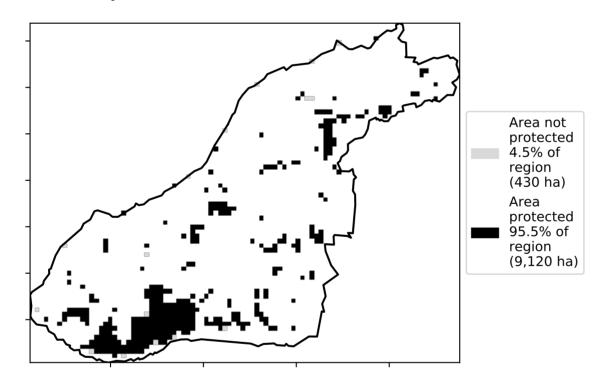
Proportion of each land class in area



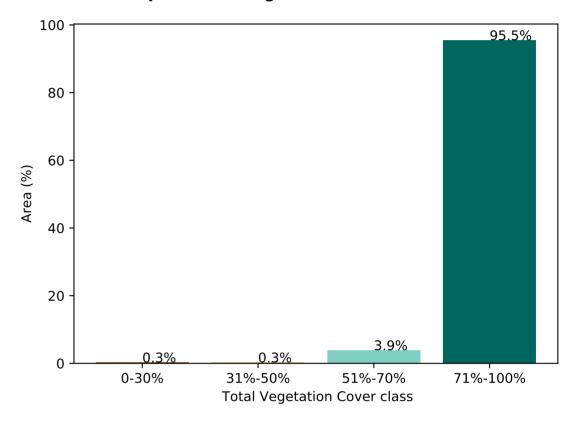
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



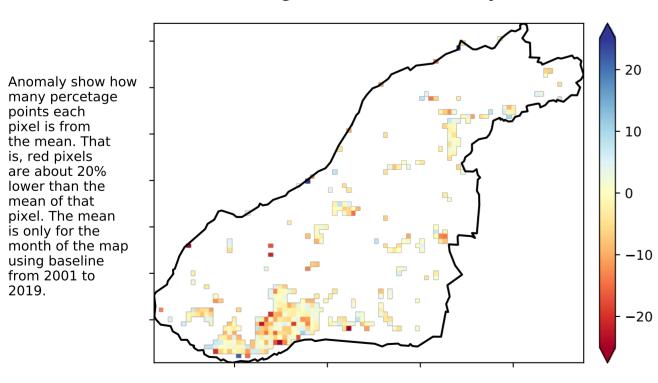
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]

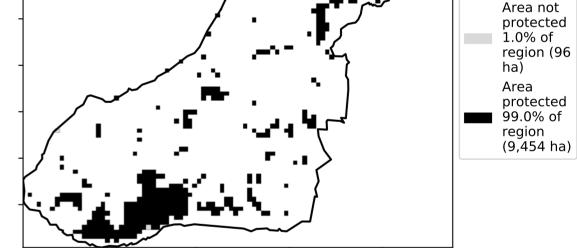


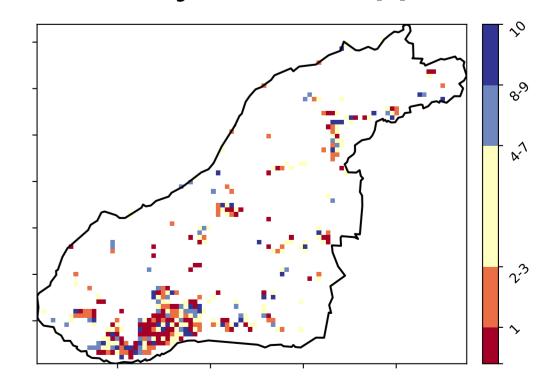
pixel is from

is, red pixels

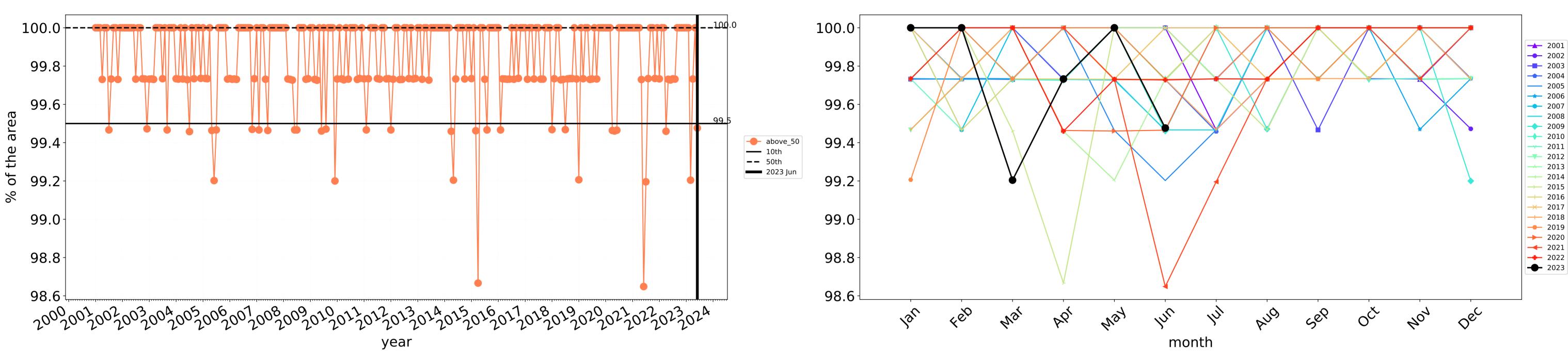
mean of that

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.



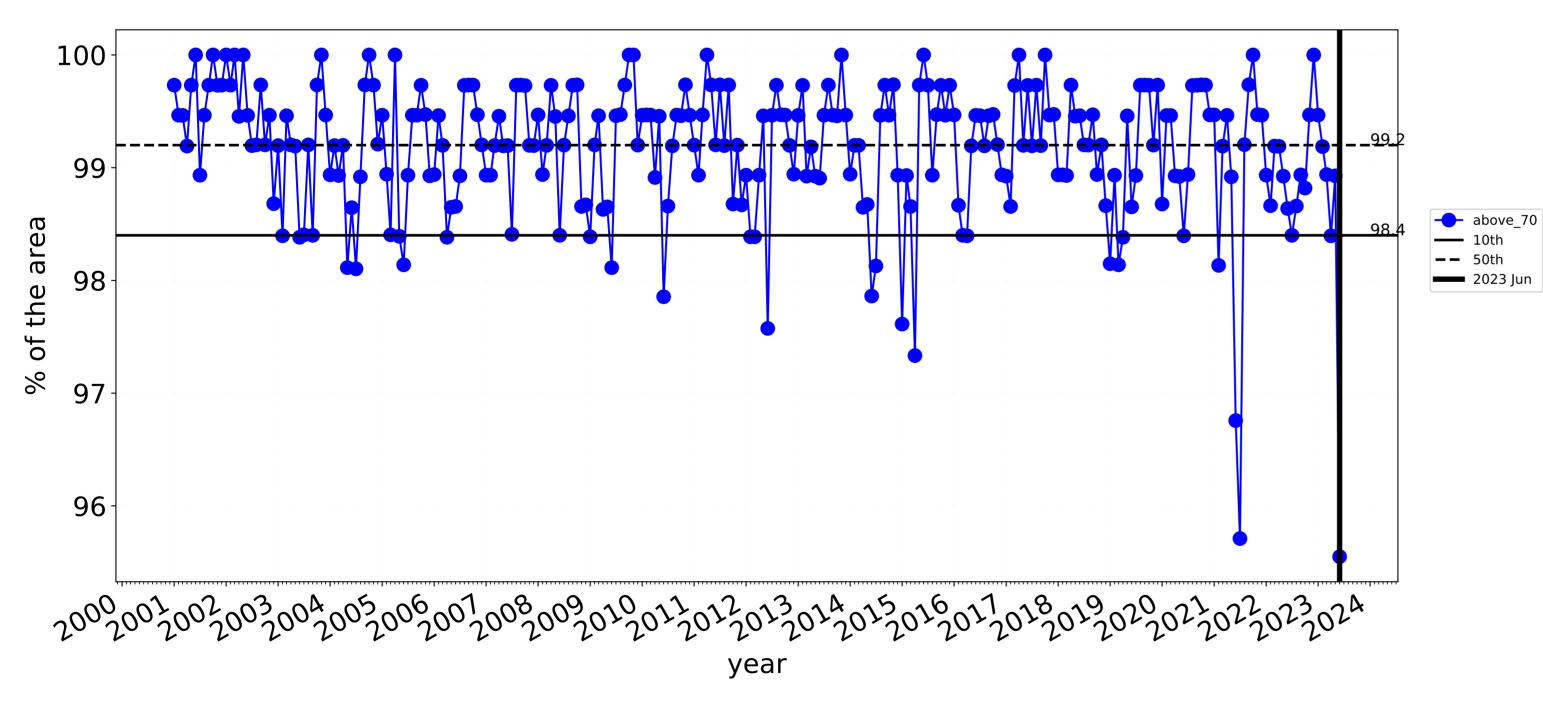


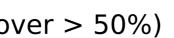




Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

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

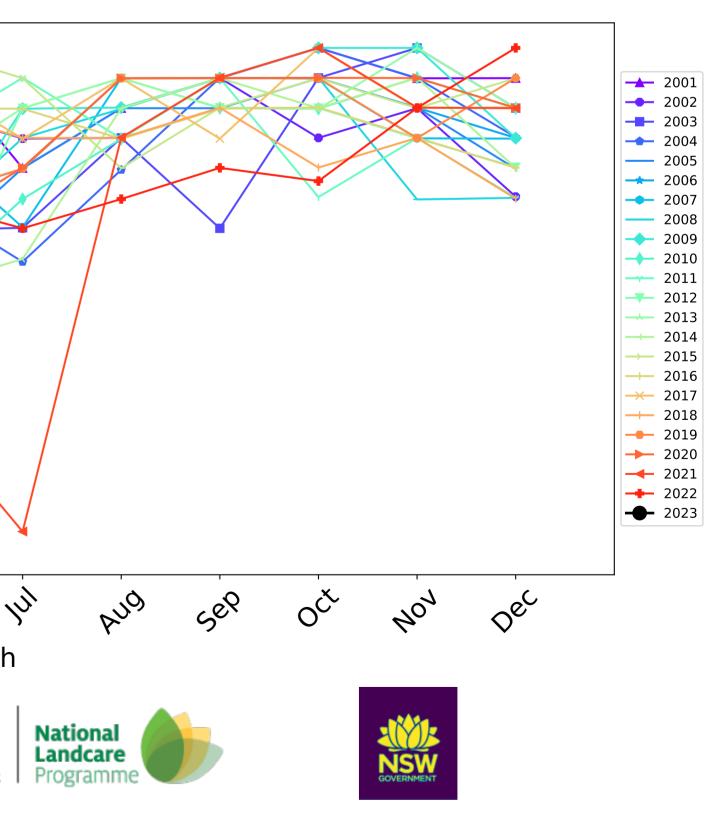


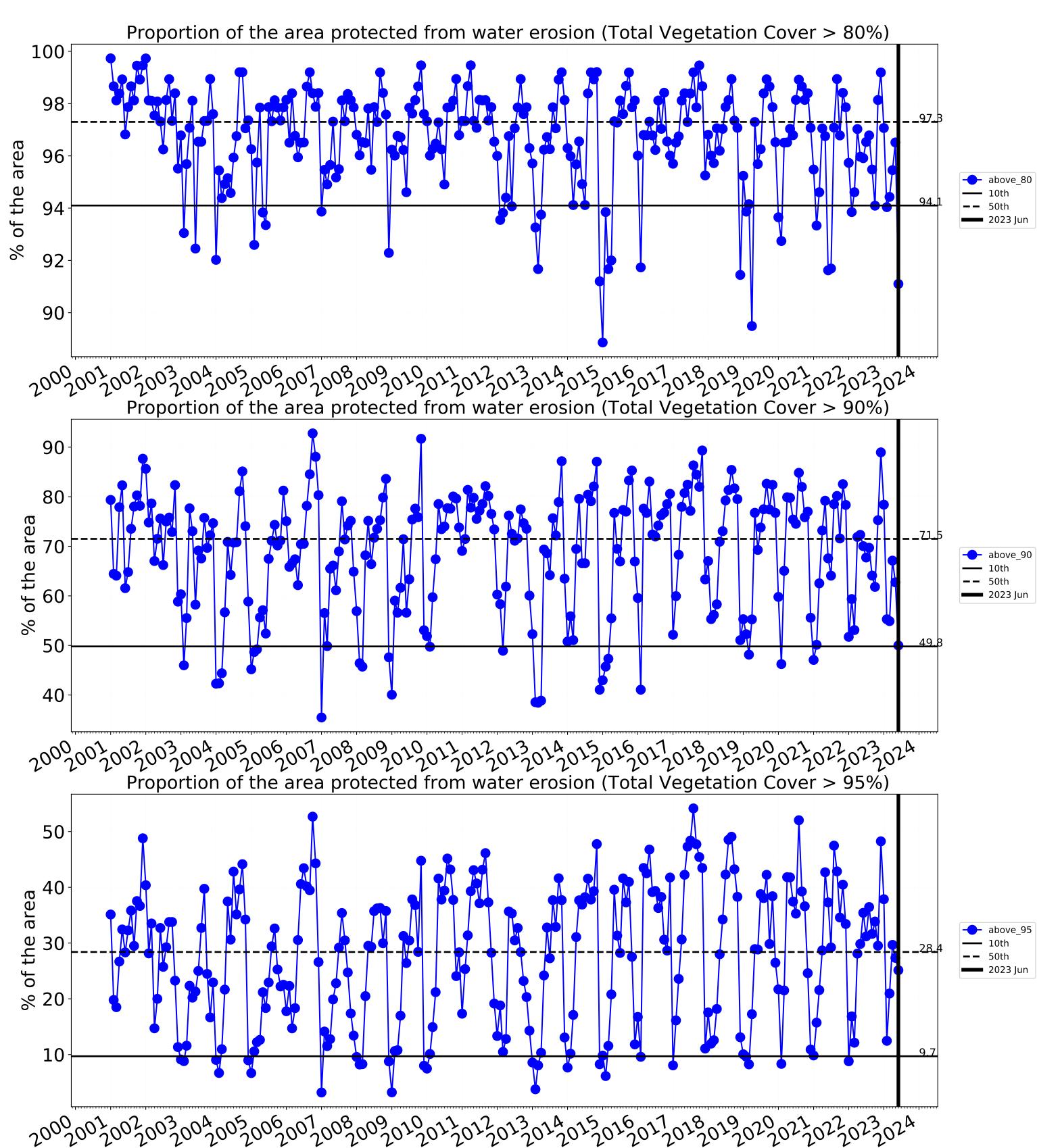


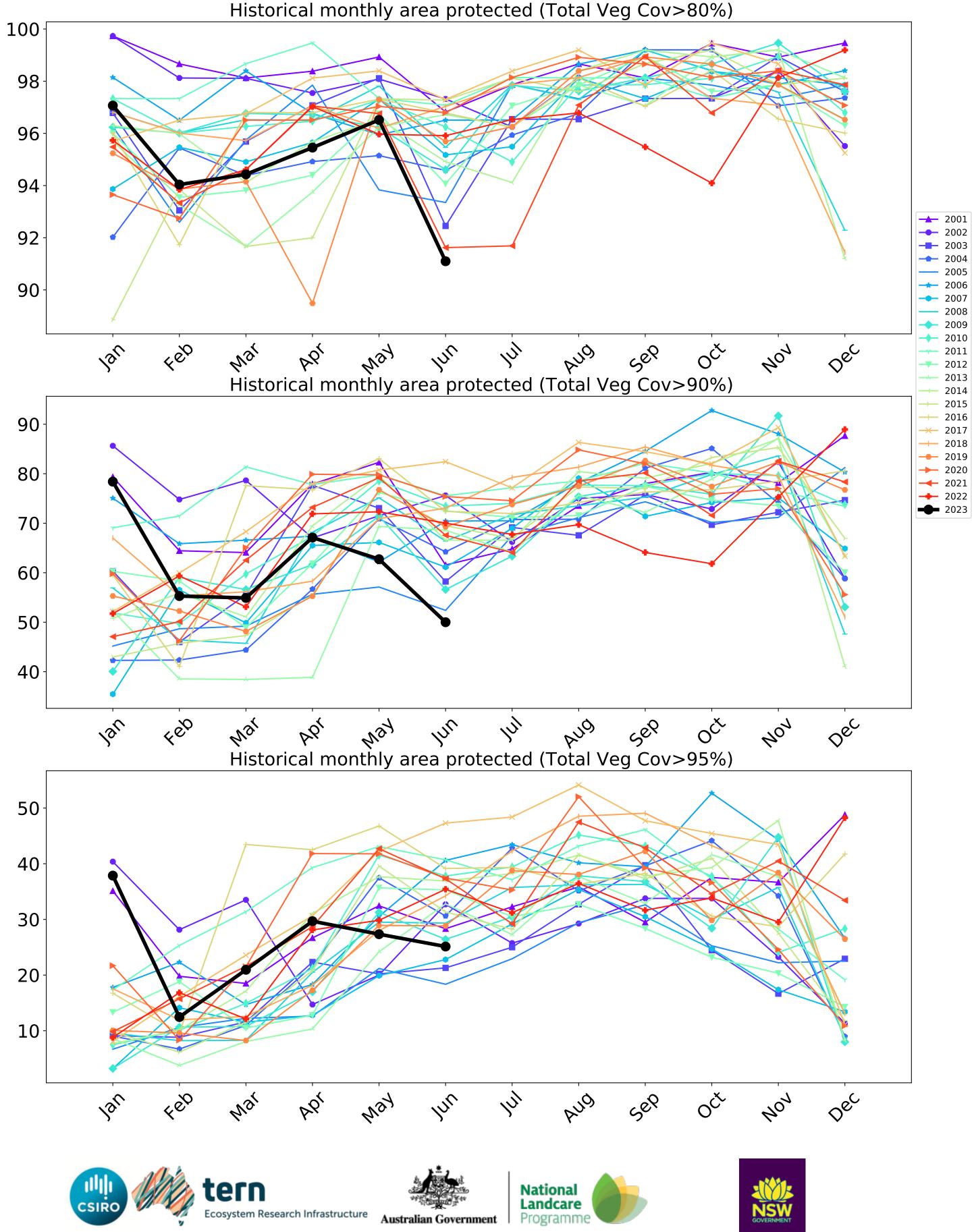
Wind erosion historical monthly area protected (Total Veg Cov >50%)

100 99 98 97 96 4eb hul Jan May Mai PQ month tern Ecosystem Research Infrastructure Australian Government

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

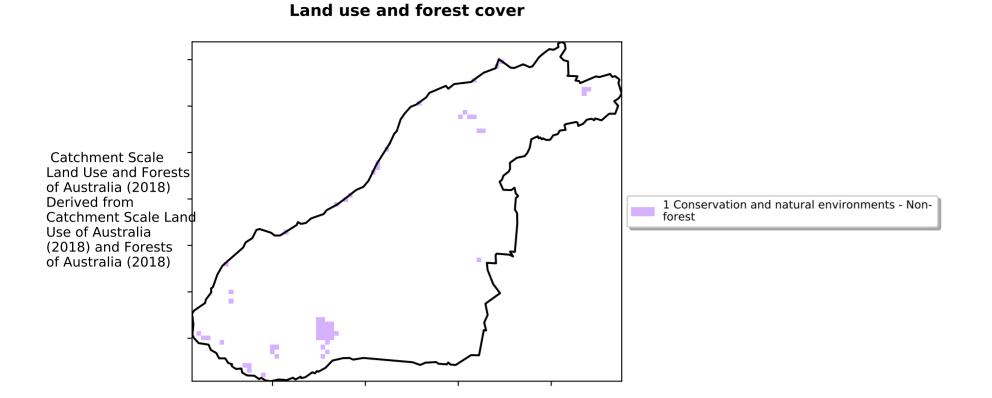








Conservation and natural environments non forest



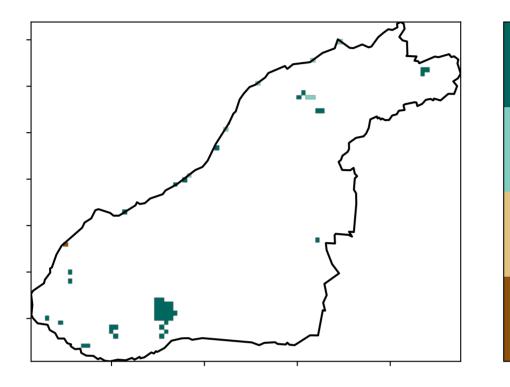
12º10-100010

· 52% 70%

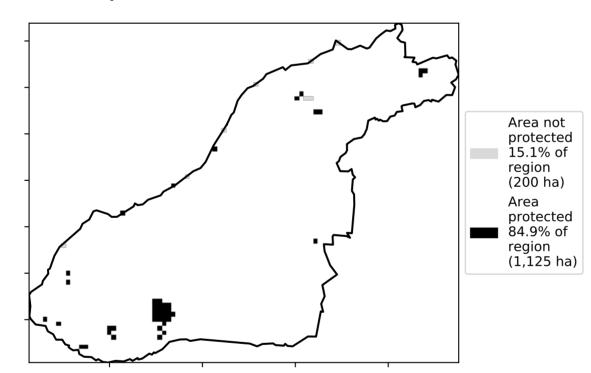
3201050010

0-30%

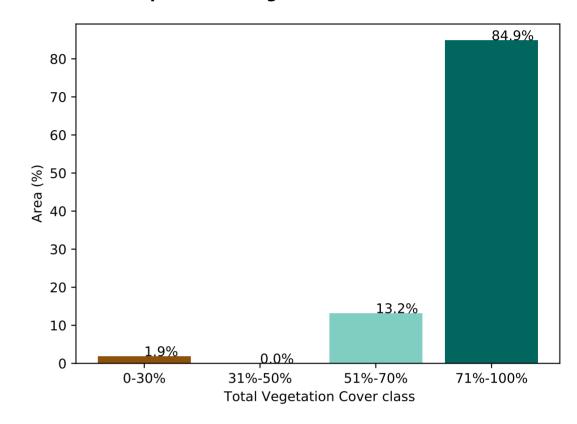
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



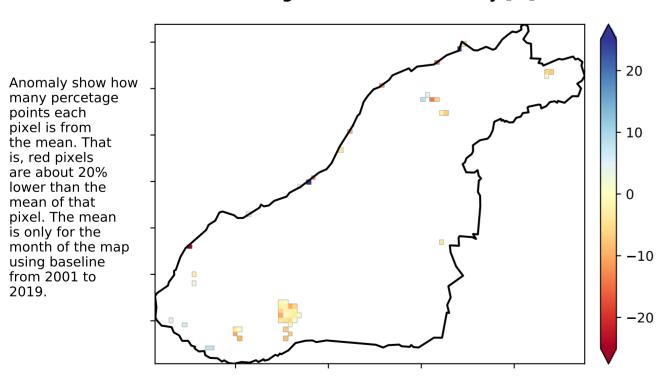
Proportion of vegetation cover class in area



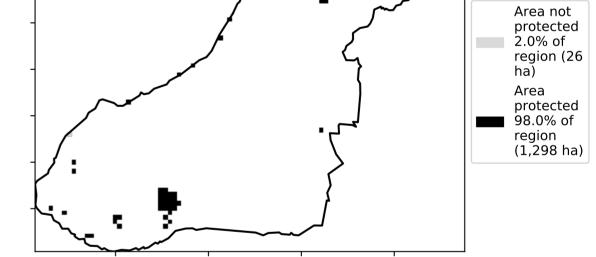
% Area protected from wind erosion (>50%)

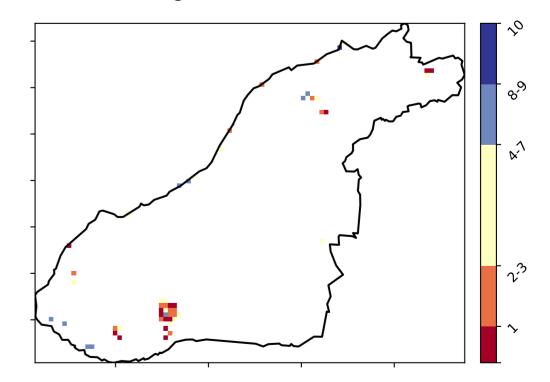


Total Vegetation Cover Anomaly [%]

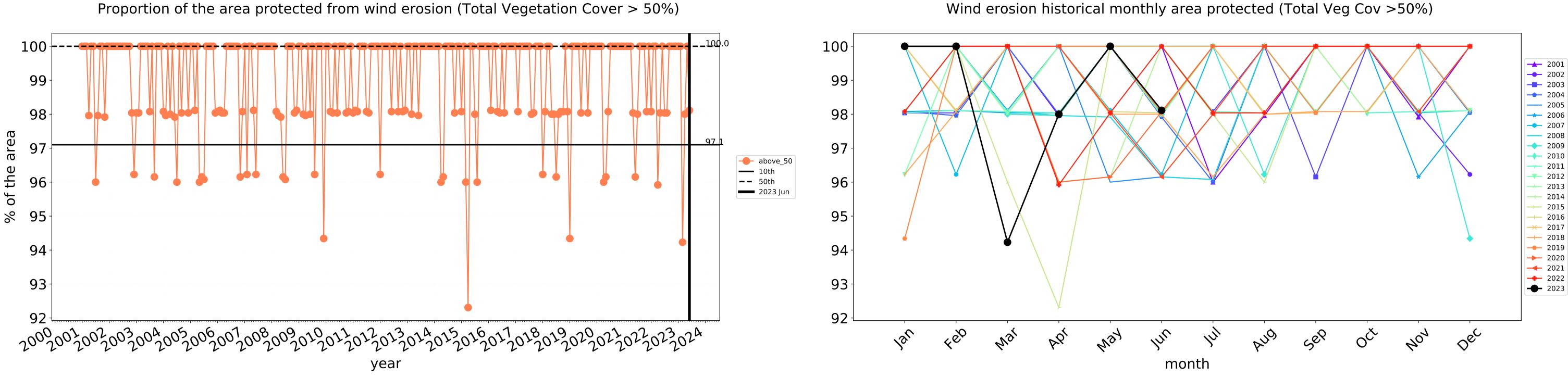


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

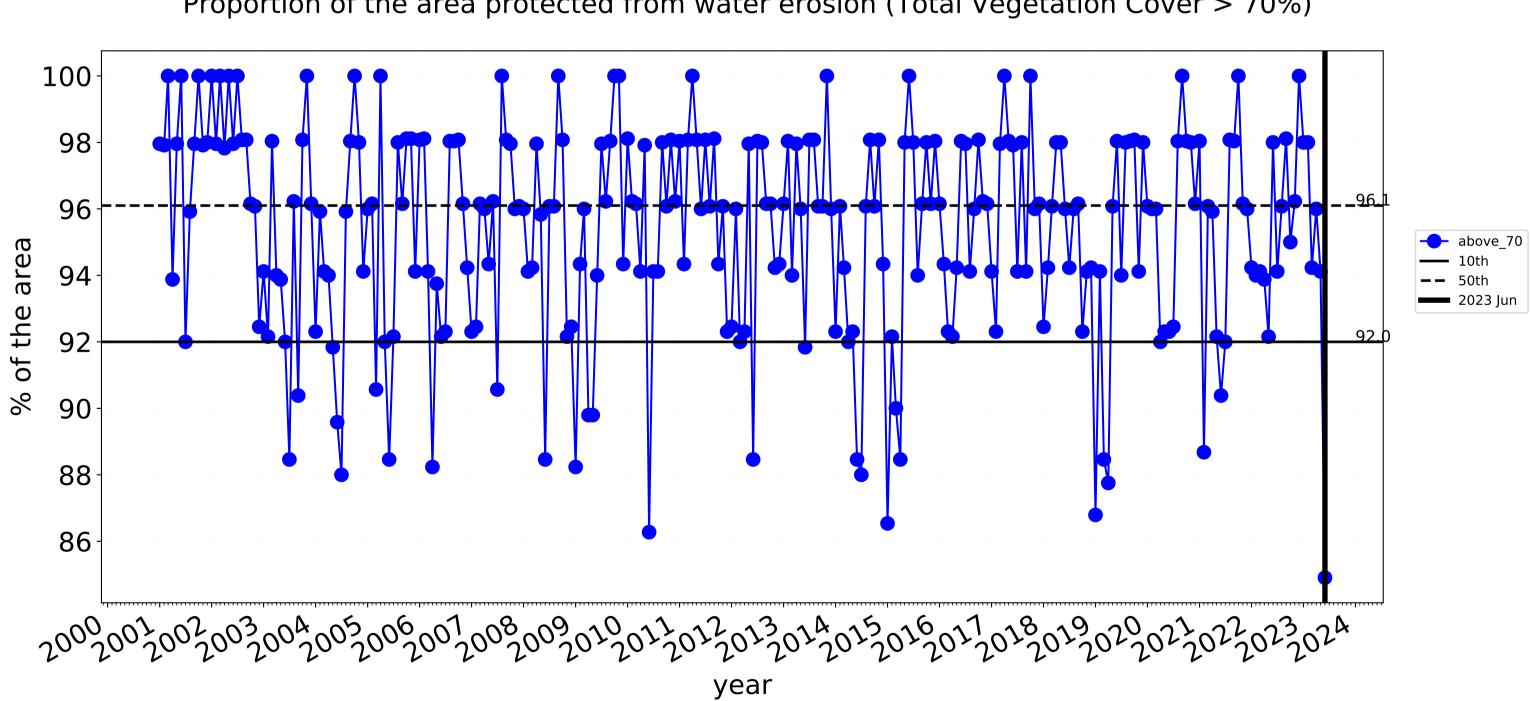






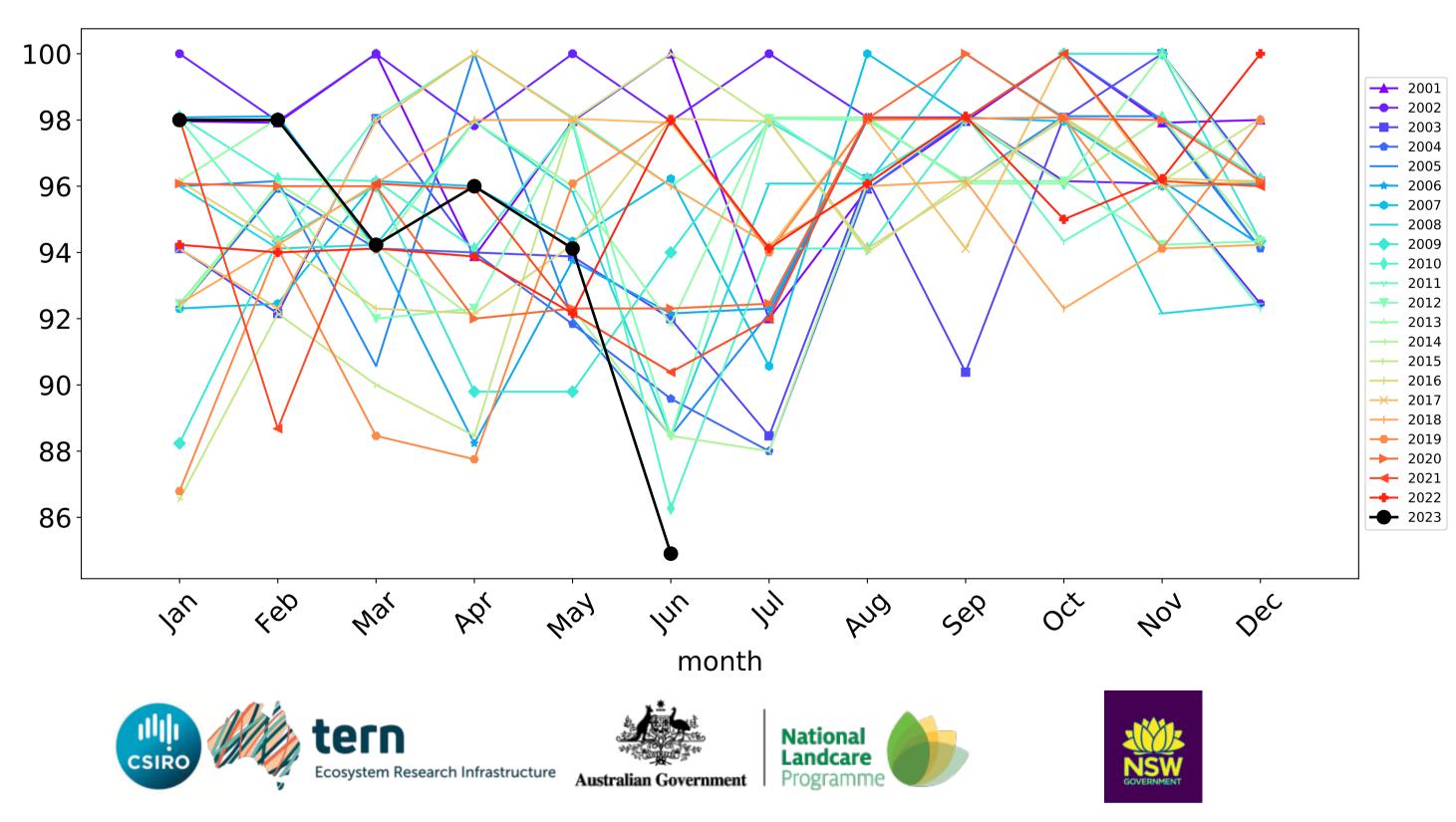


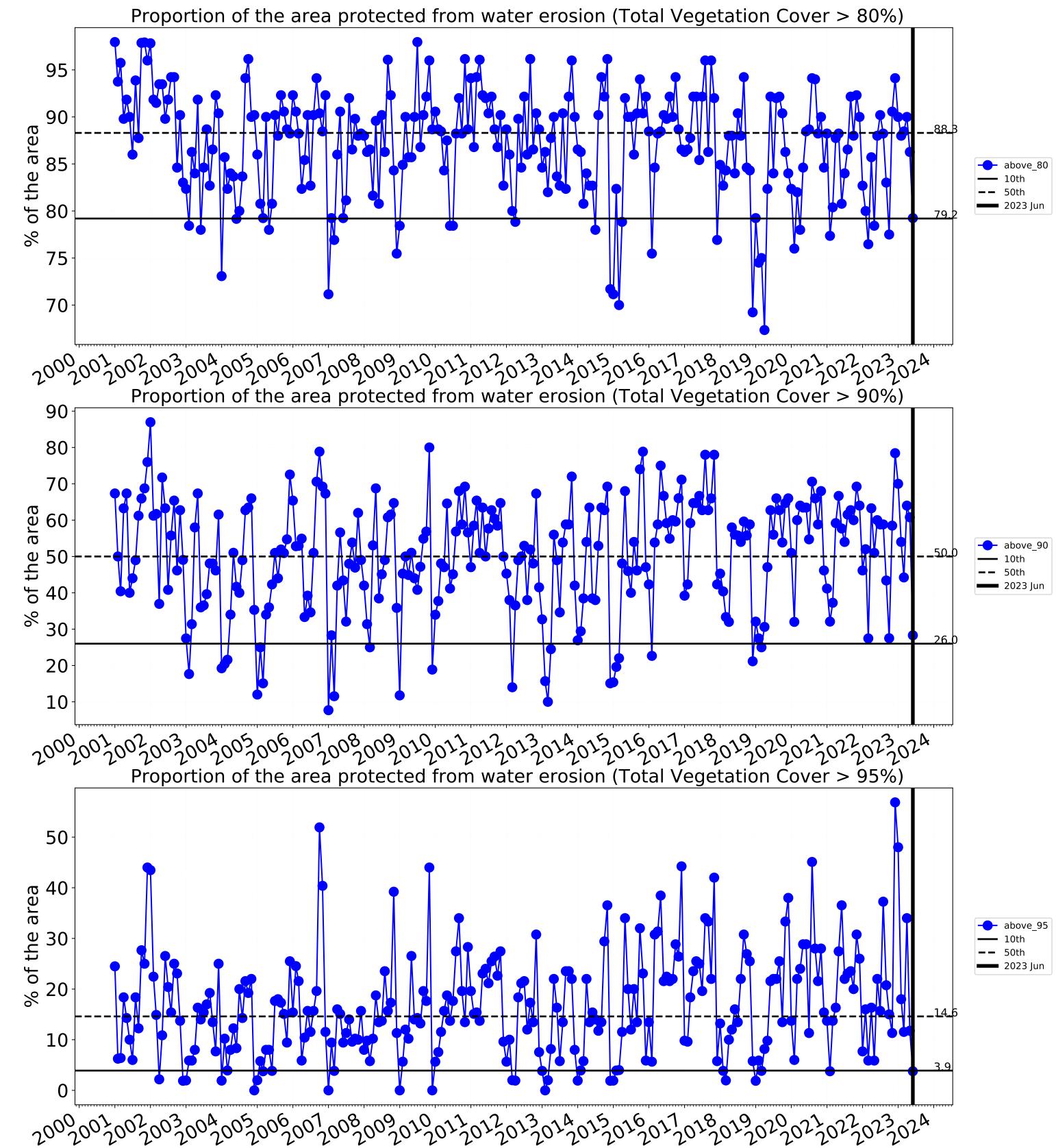
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

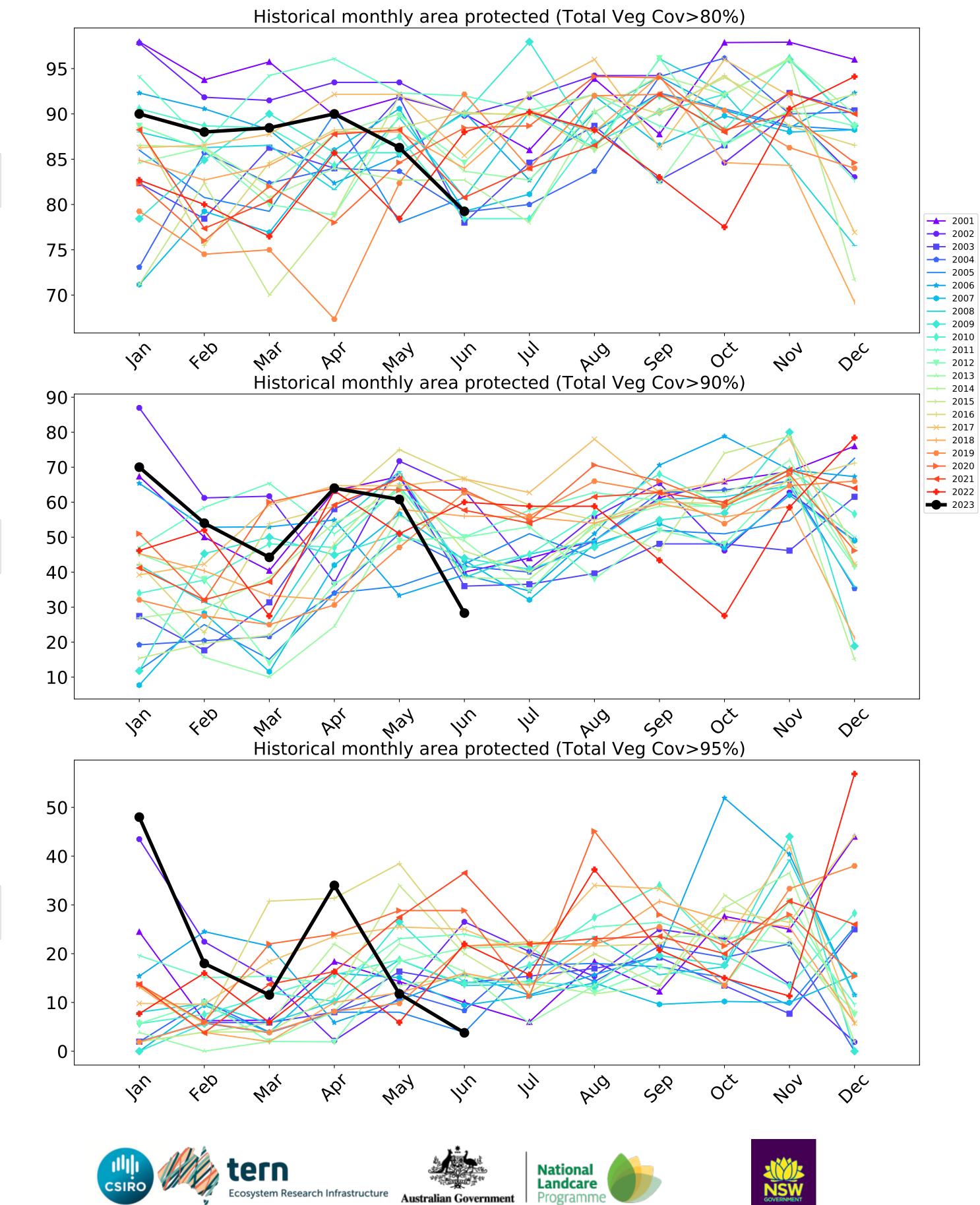


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

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

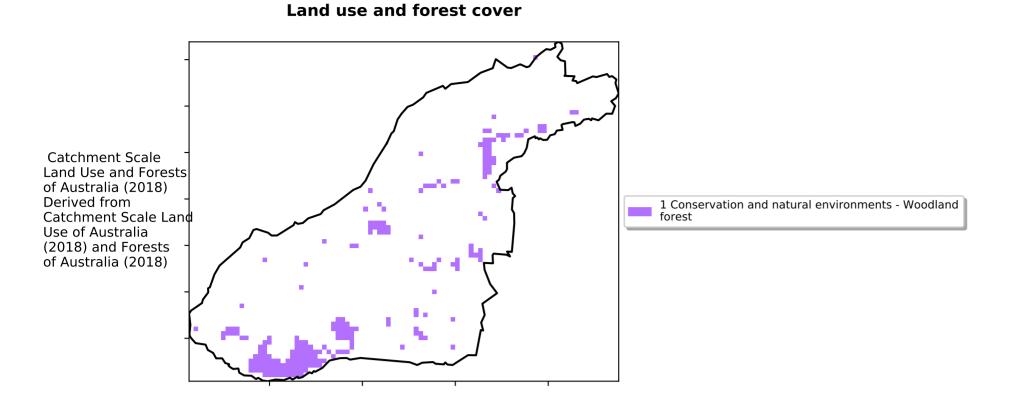




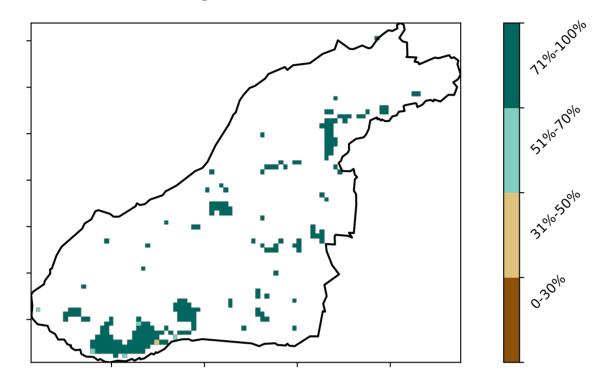




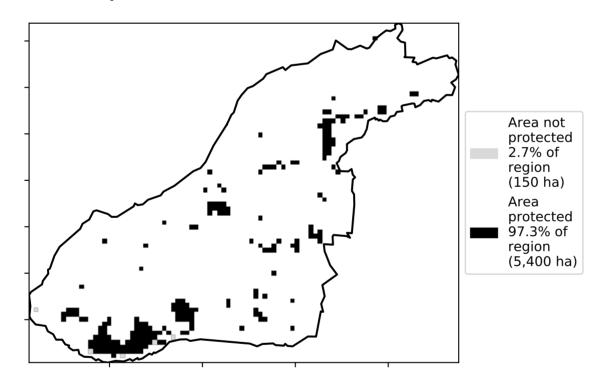
Conservation and natural environments Woodland forest



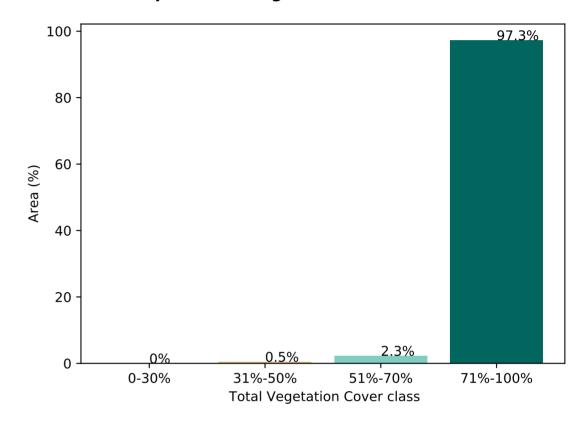
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



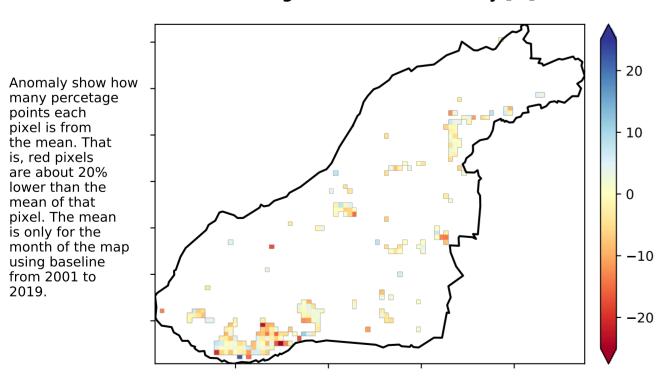
Proportion of vegetation cover class in area



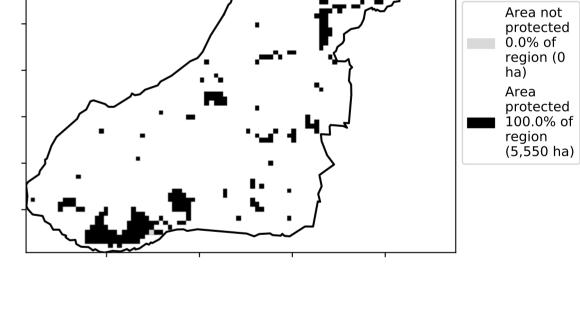
% Area protected from wind erosion (>50%)

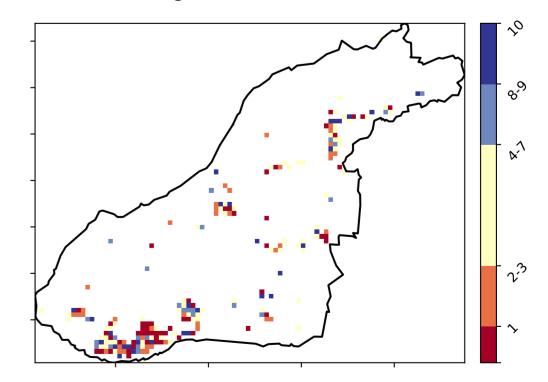


Total Vegetation Cover Anomaly [%]

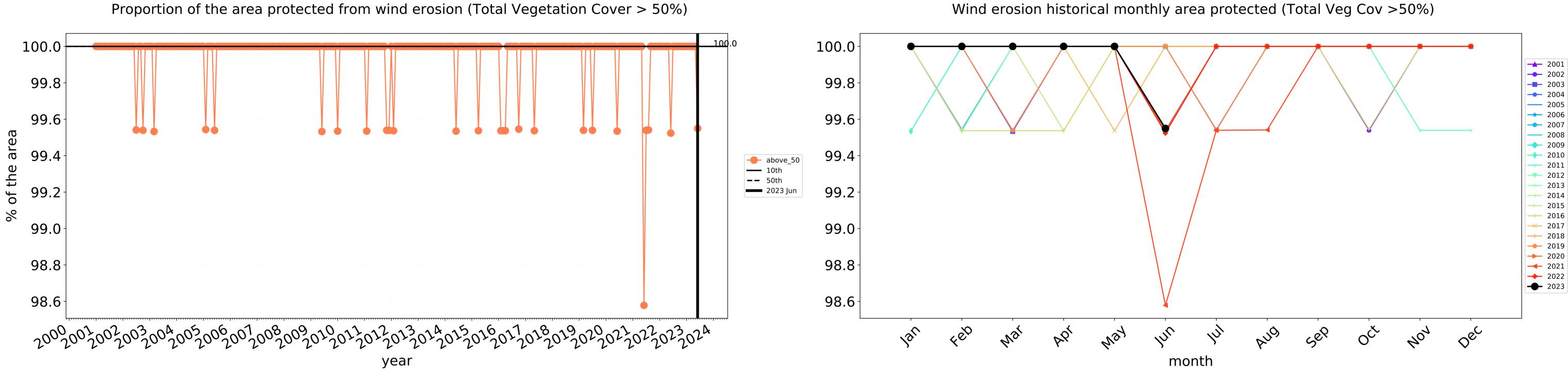


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

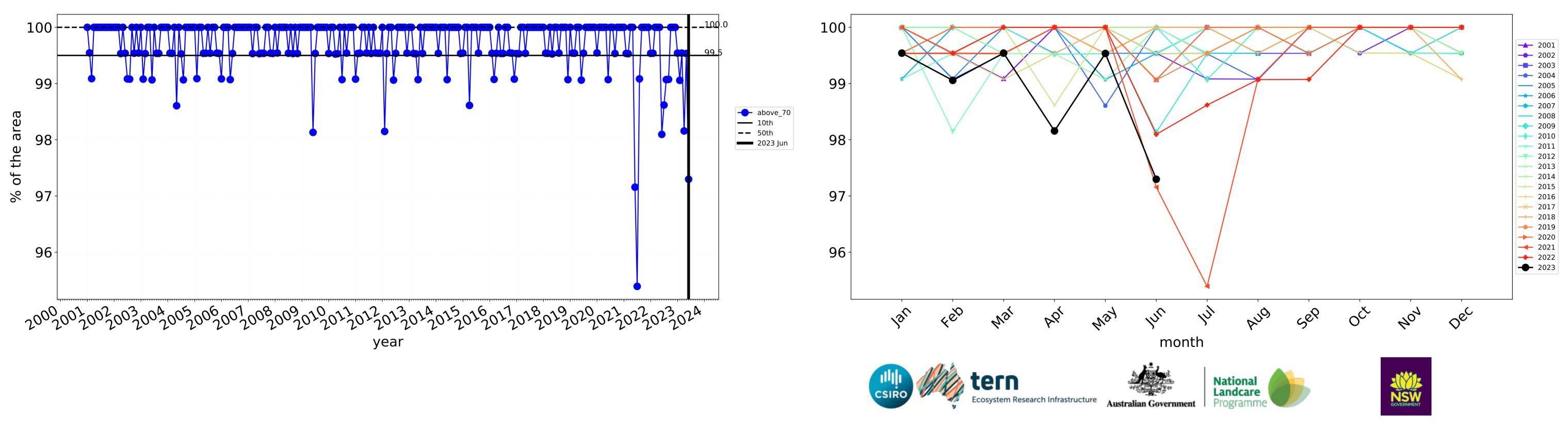




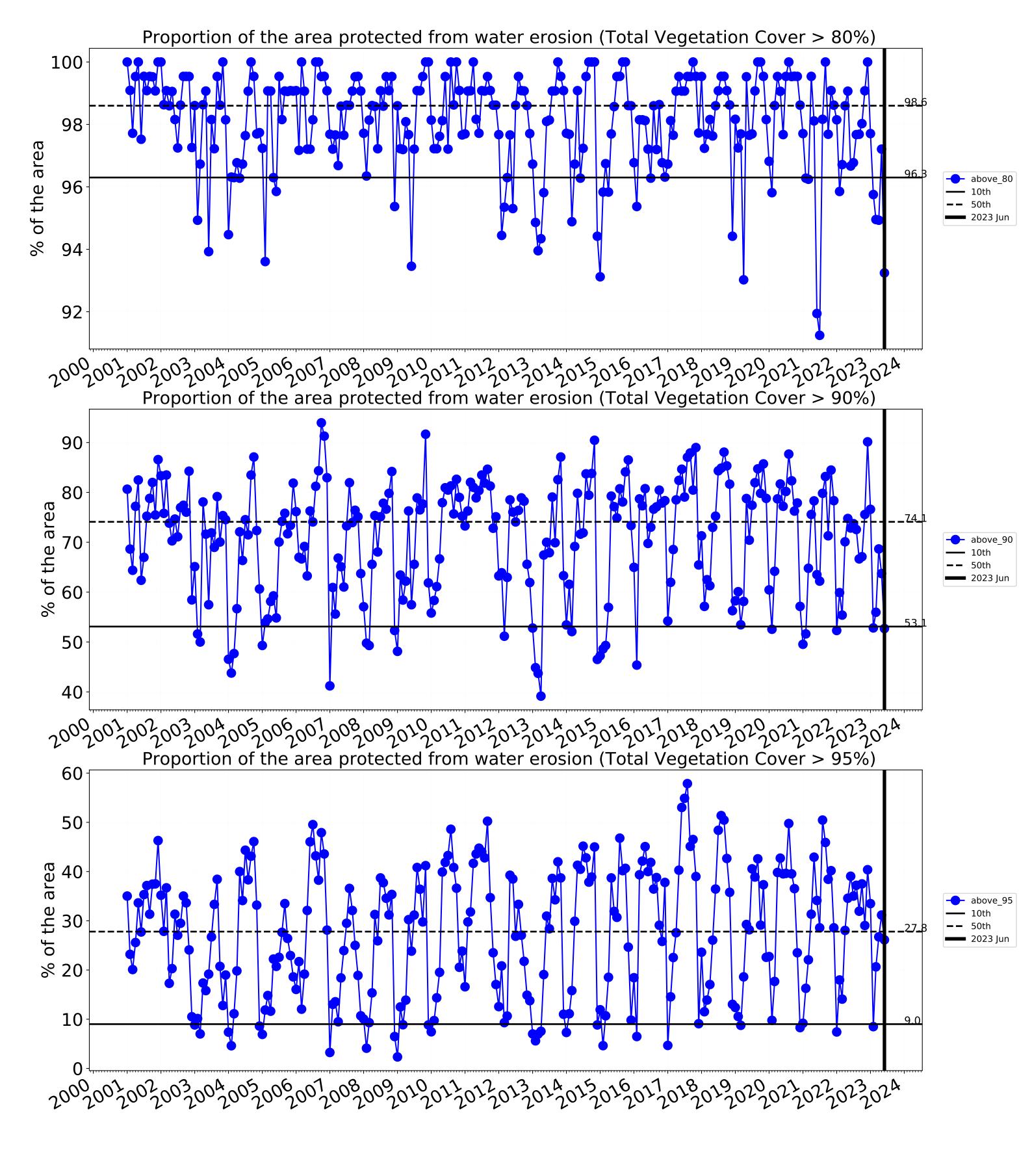


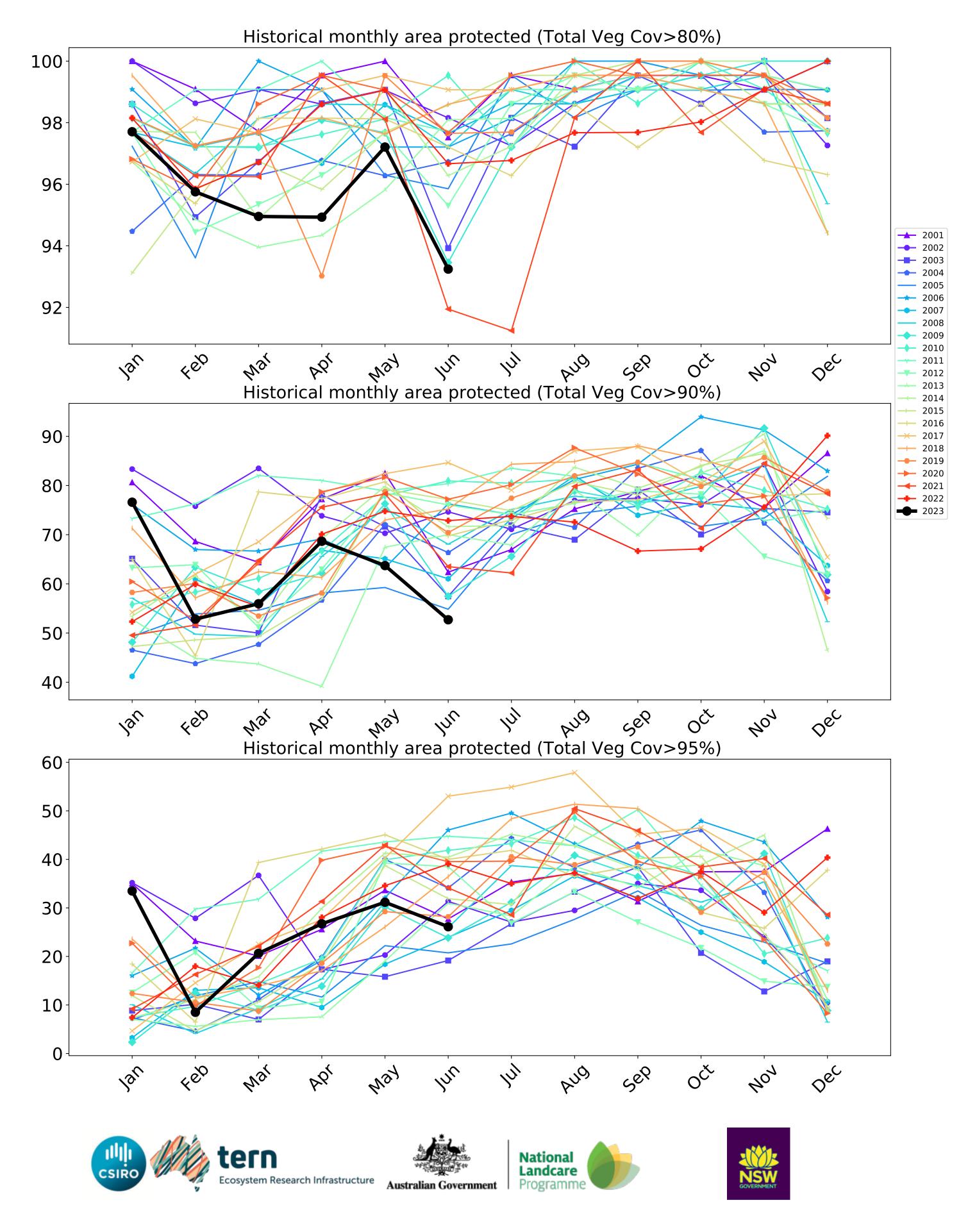


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)









Conservation and natural environments Forest (non woodland)

Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Conservation and natural environments - Non-woodland forest Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

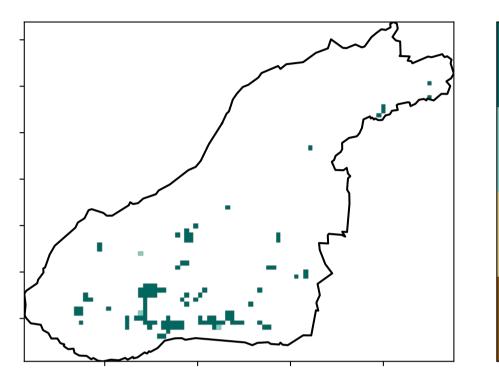
12% 10°10

· 52°1070010

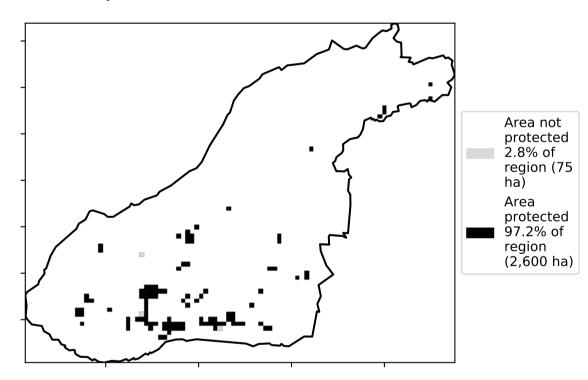
· 320050010

0.30%

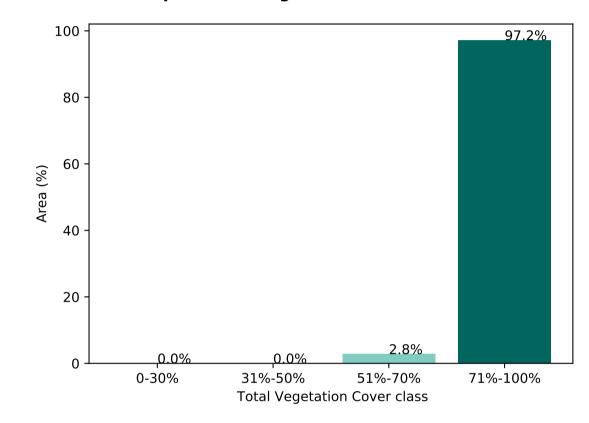
Total Vegetation Cover [%]



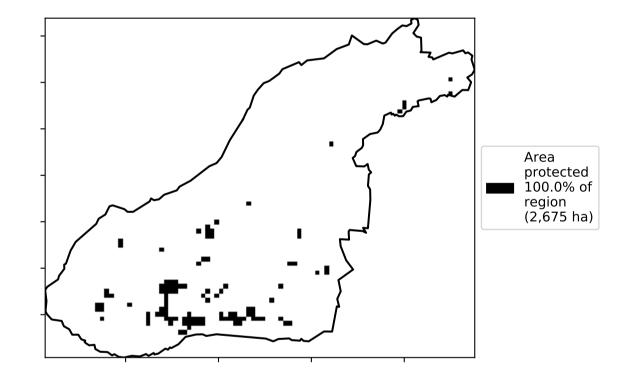
% Area protected from water erosion (>70%)



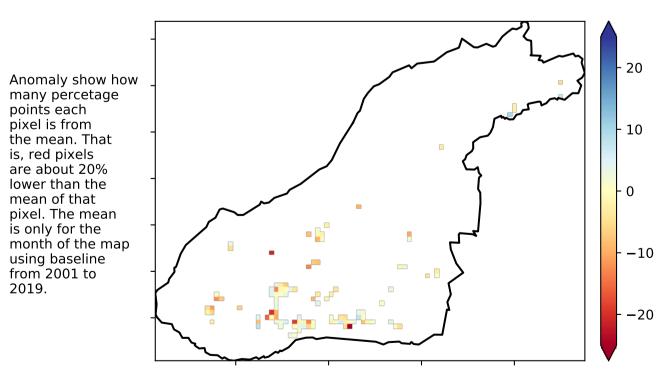
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)

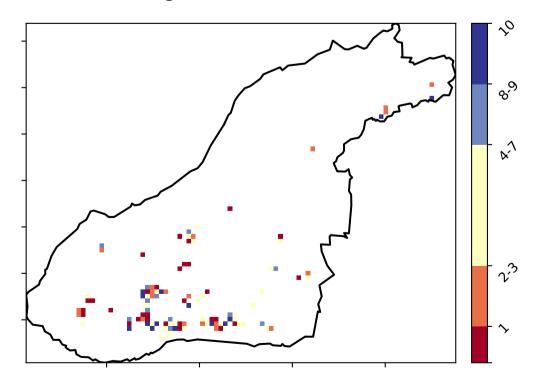


Total Vegetation Cover Anomaly [%]



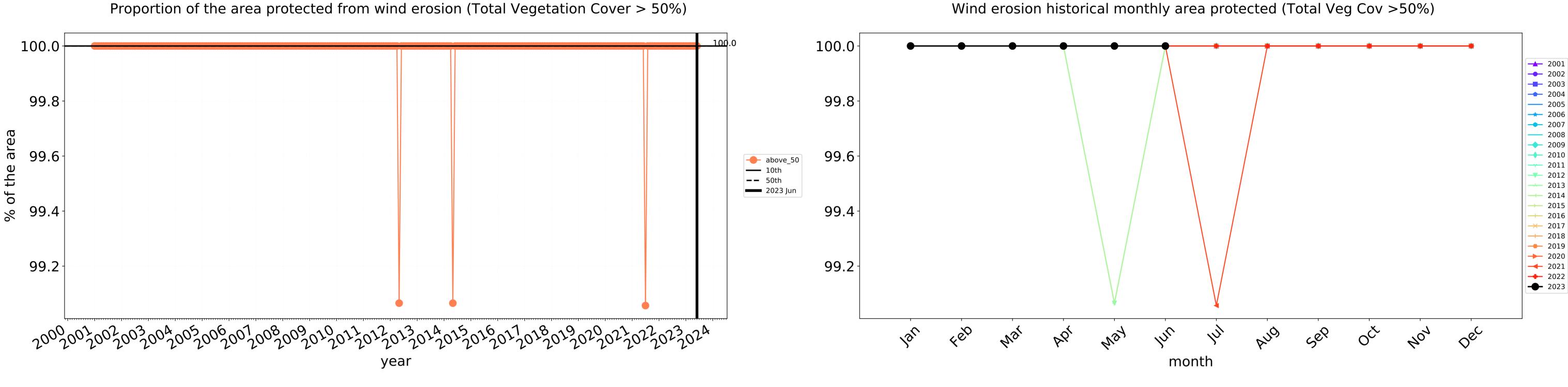
is, red pixels

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

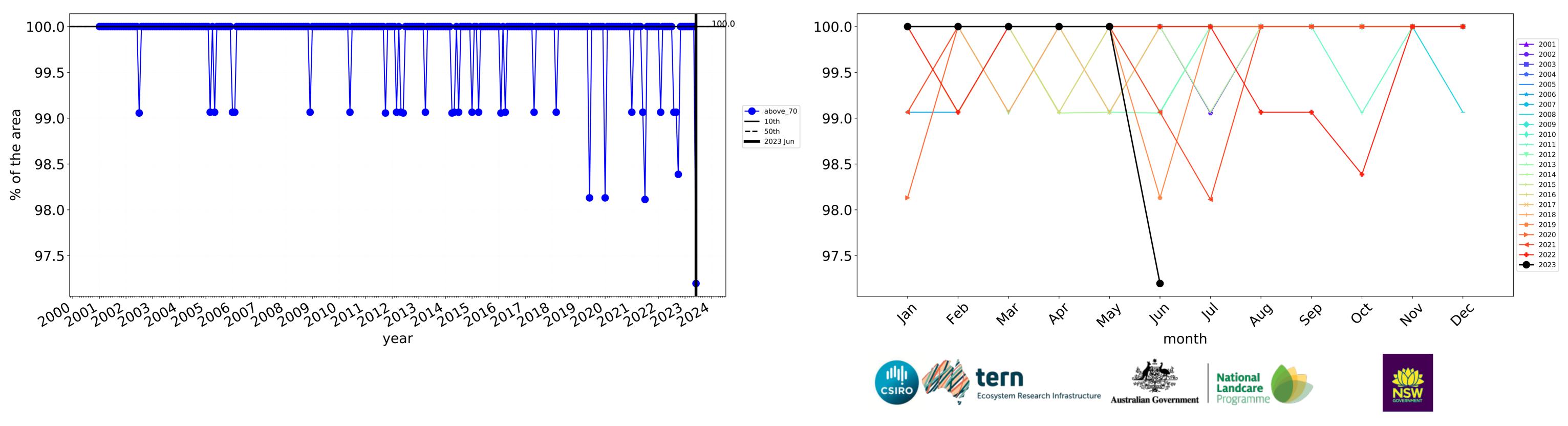




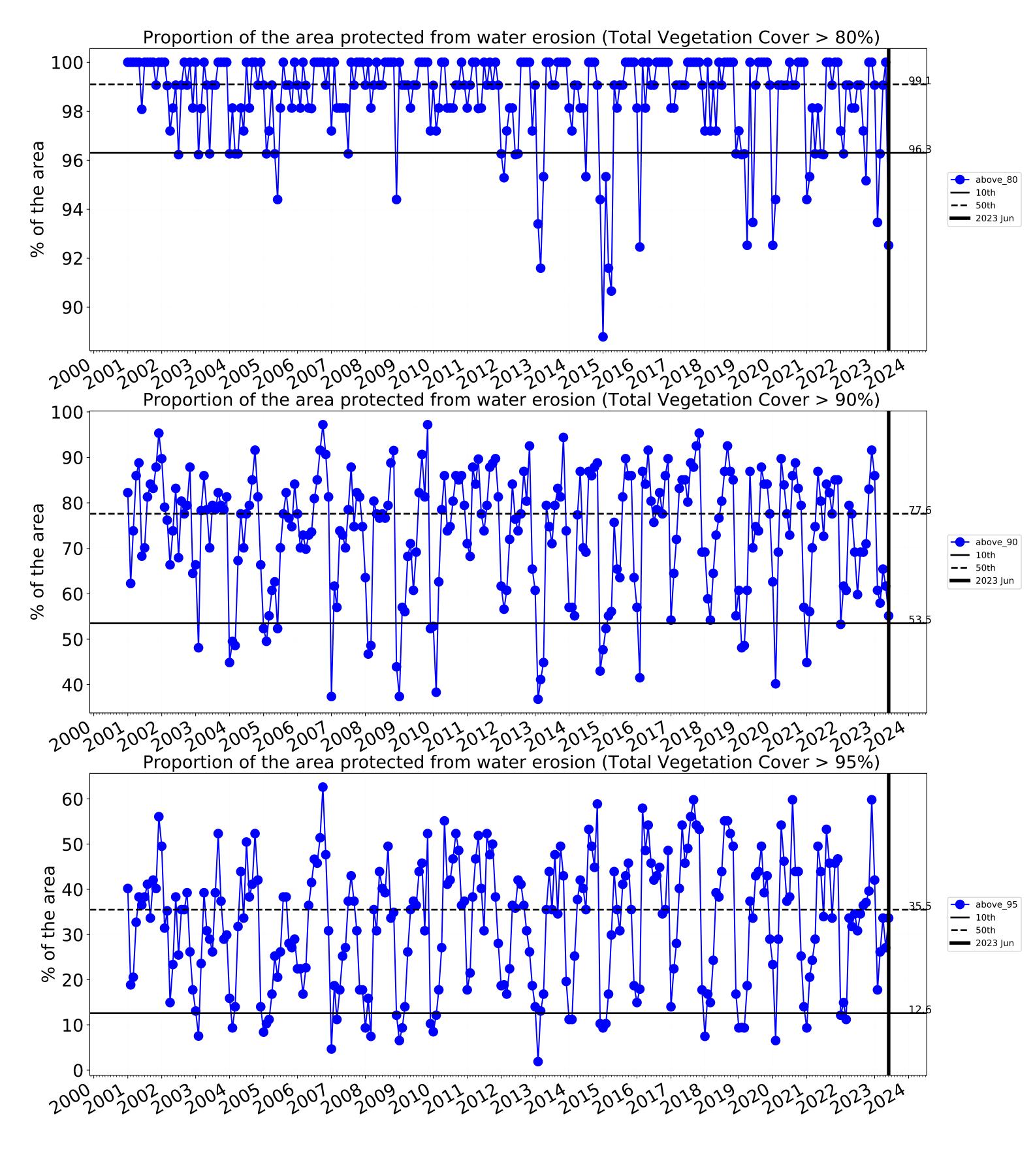
Conservation and natural environments Forest (non woodland) timeseries

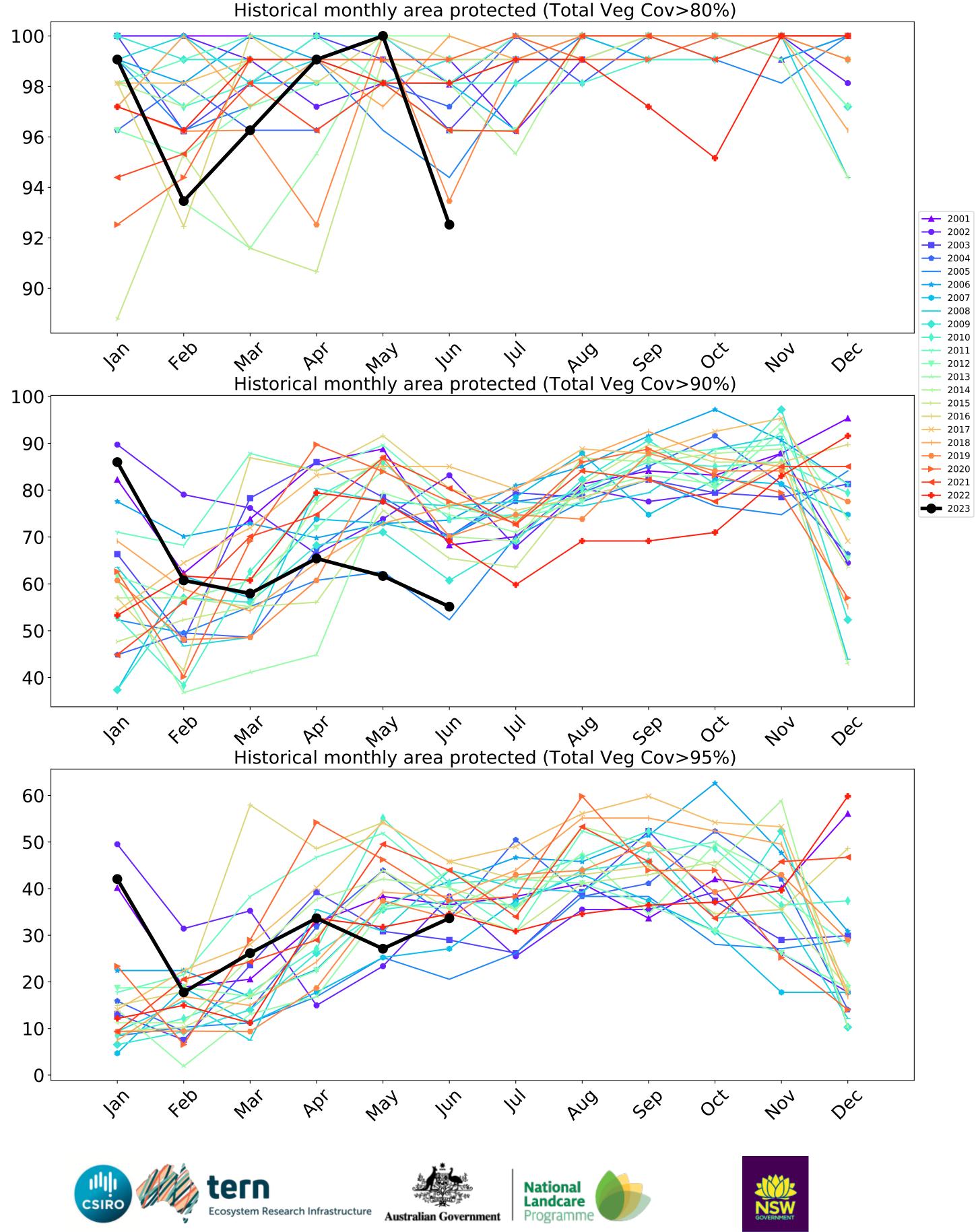


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



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





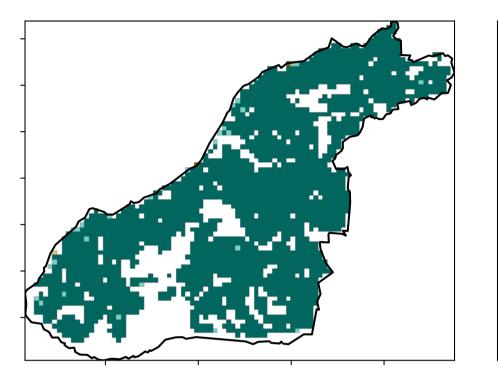


Agriculture

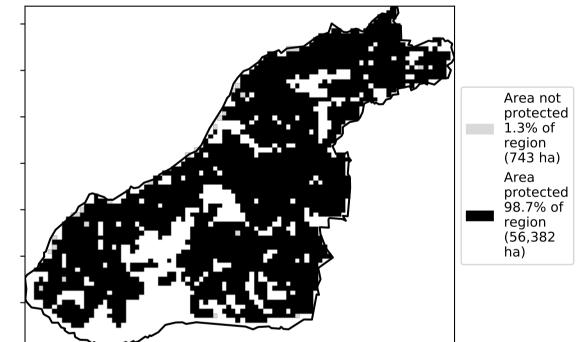
Catchment Scale Land Use and Forests of Australia (2018) 1 Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest Derived from Catchment Scale Land 4 Agriculture - Grazing - Irrigated 5 Agriculture - Cropping - Non-irrigated Use of Australia 6 Agriculture - Cropping - Irrigated (2018) and Forests of Australia (2018) 7 Agriculture - Horticulture - Irrigated

Total Vegetation Cover [%]

Land use and forest cover



% Area protected from water erosion (>70%)



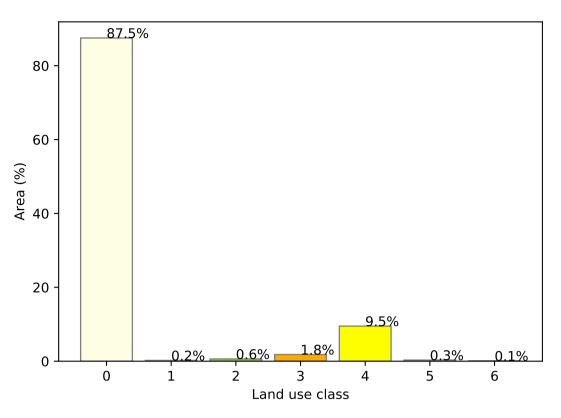
1 12º0010000

· 52% 70%

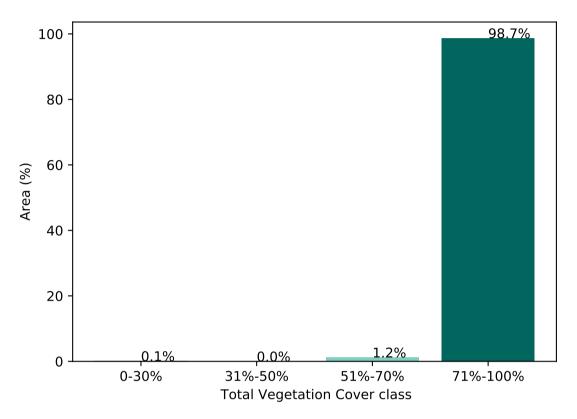
32005001

0-30%

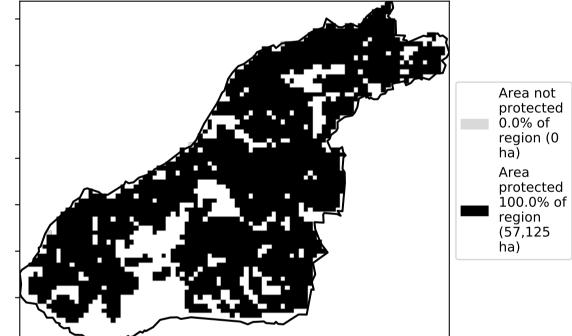




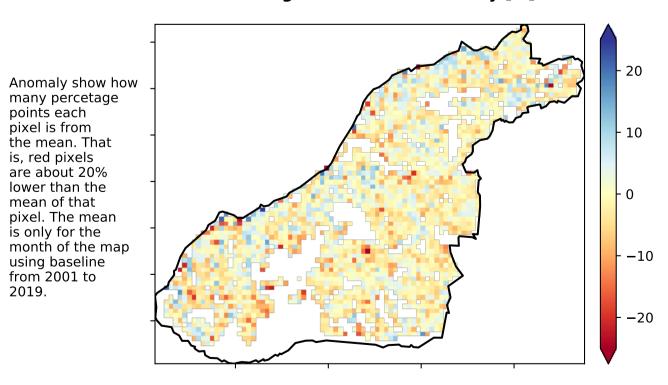
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



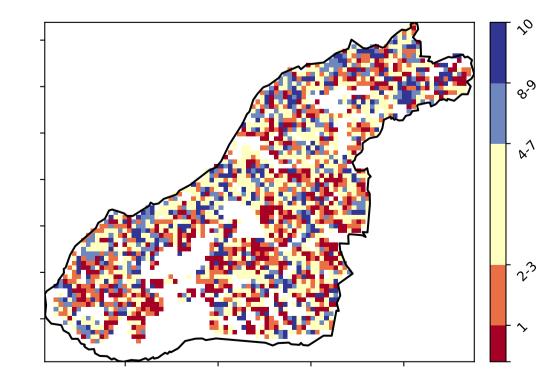
Total Vegetation Cover Anomaly [%]



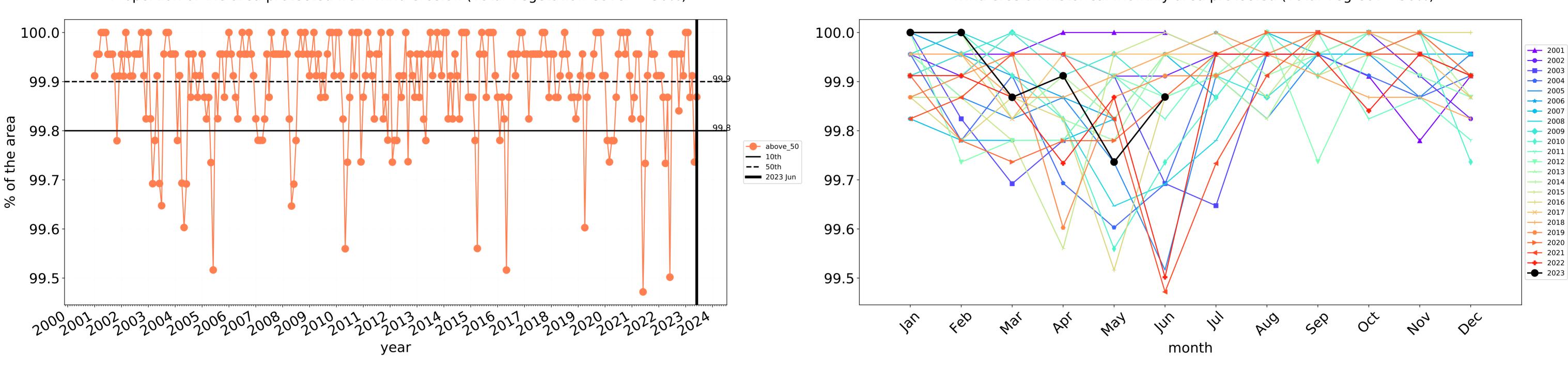
is, red pixels are about 20% lower than the mean of that

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 [%]

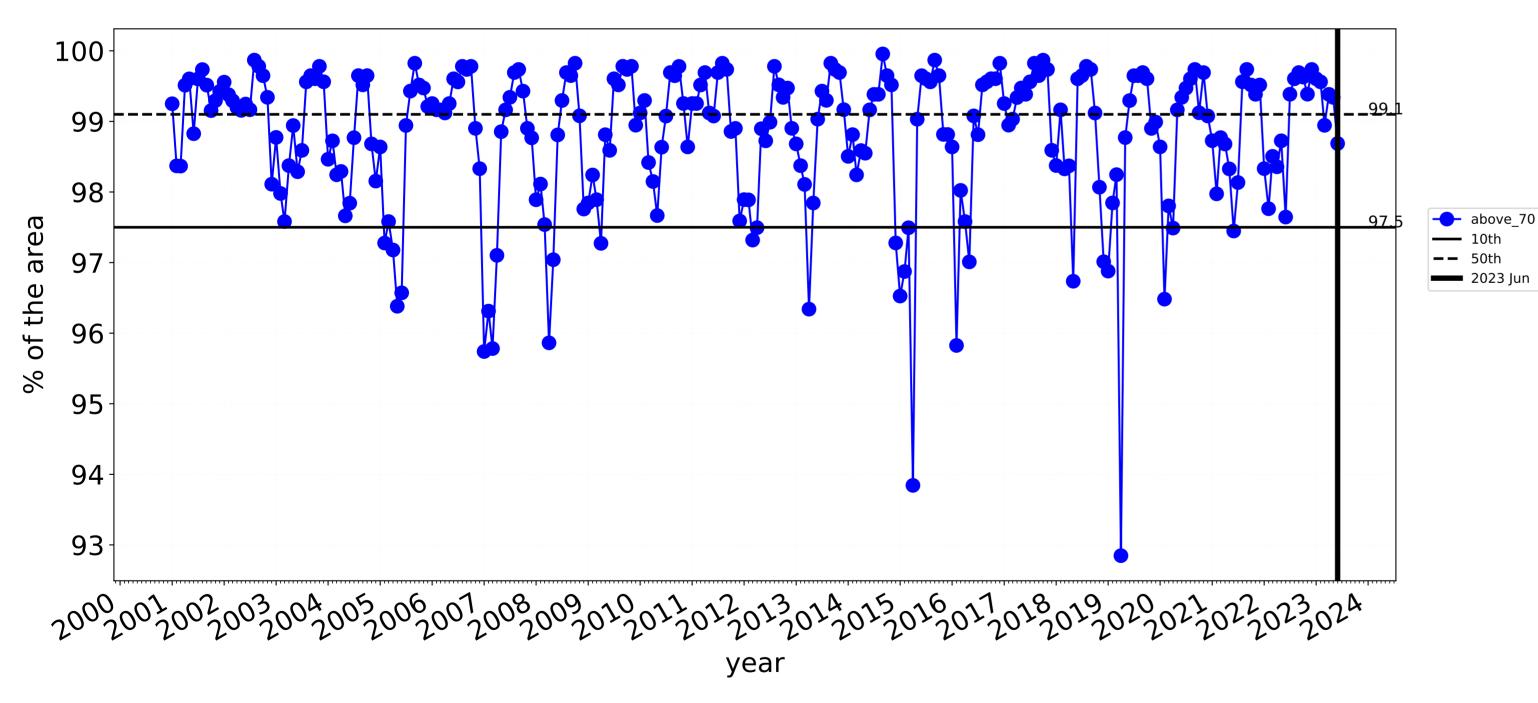


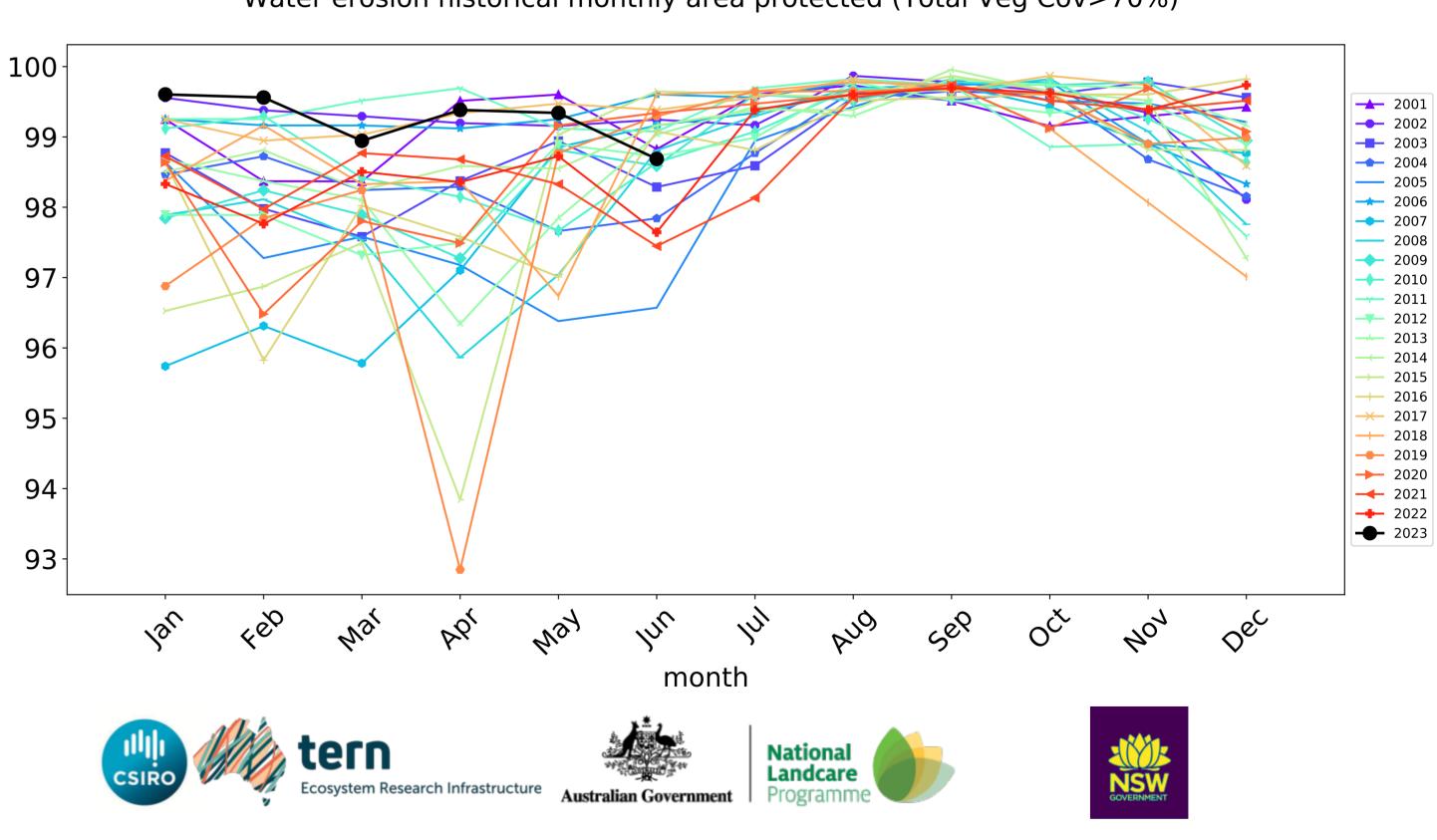




Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

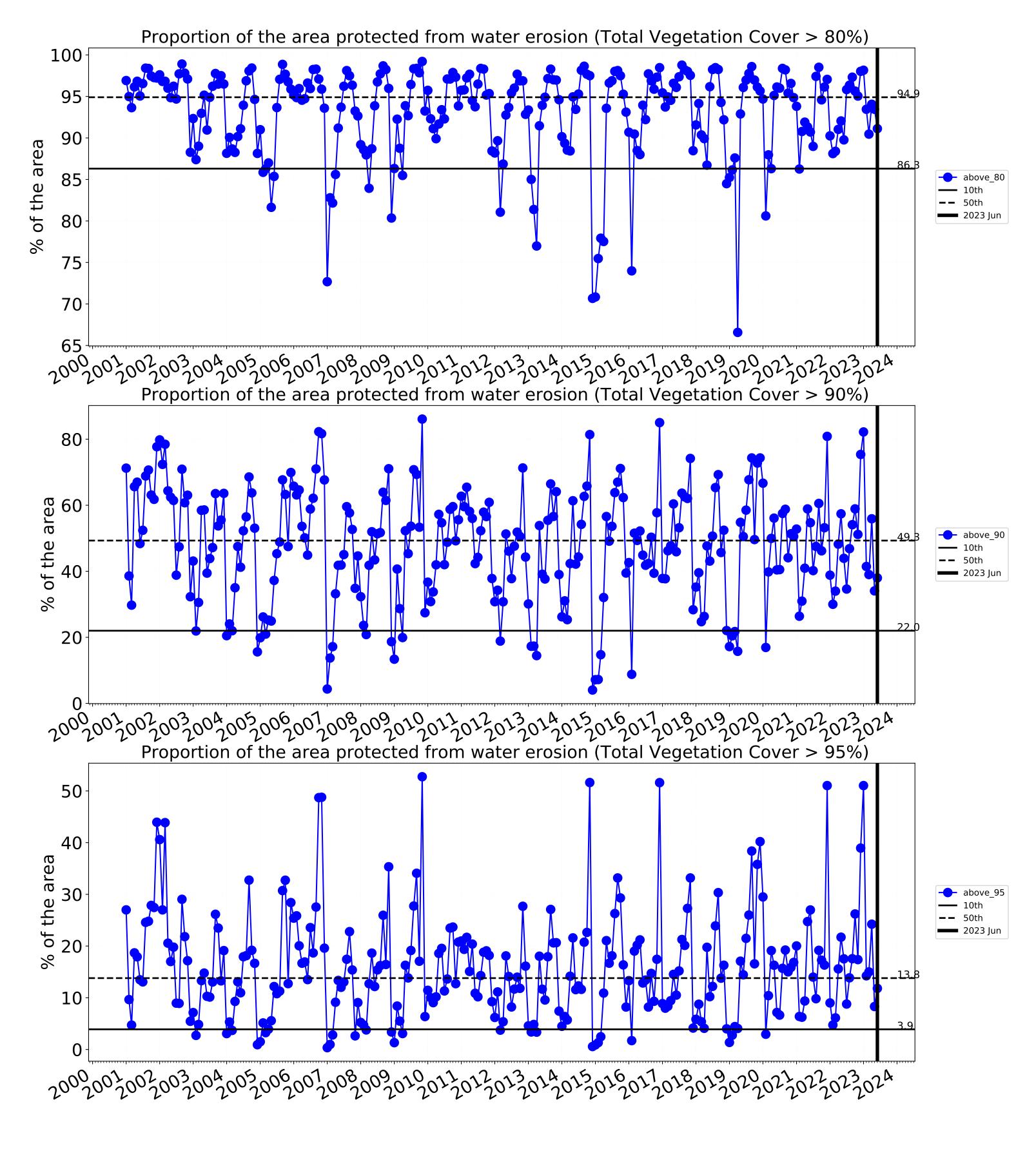
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

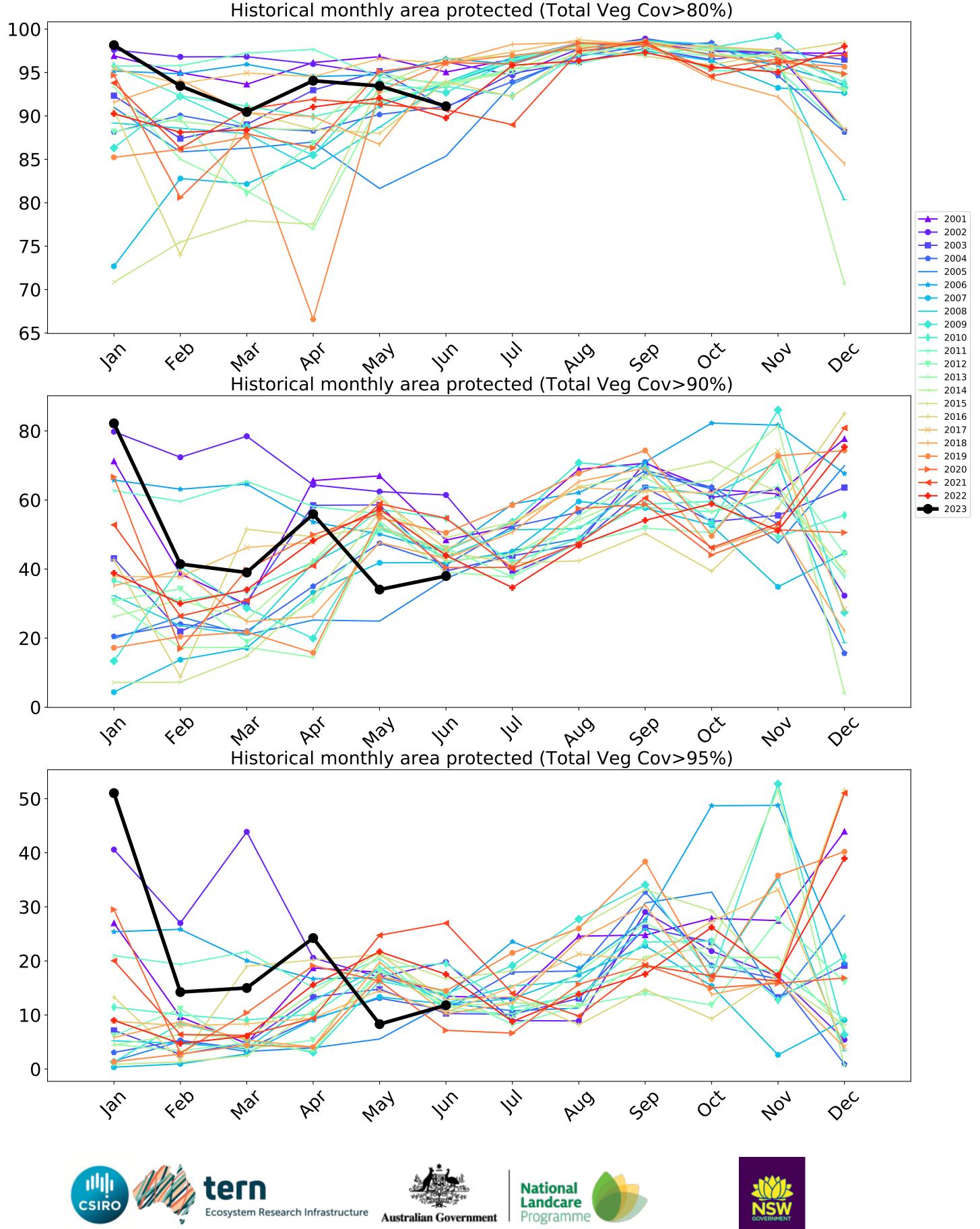




Water erosion historical monthly area protected (Total Veg Cov>70%)

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



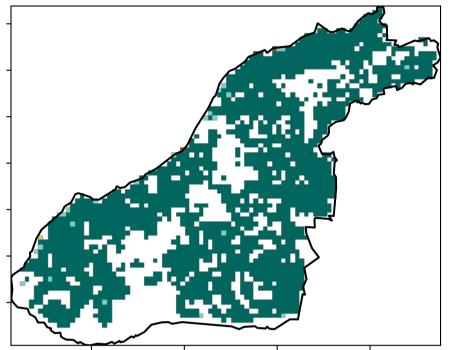


Grazing

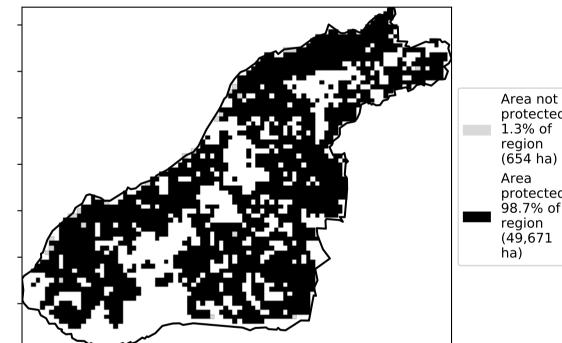
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia 3 Agriculture - Grazing - Non-woodland forest (2018) and Forests of Australia (2018)

Total Vegetation Cover [%]

Land use and forest cover

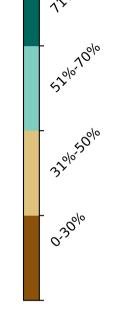


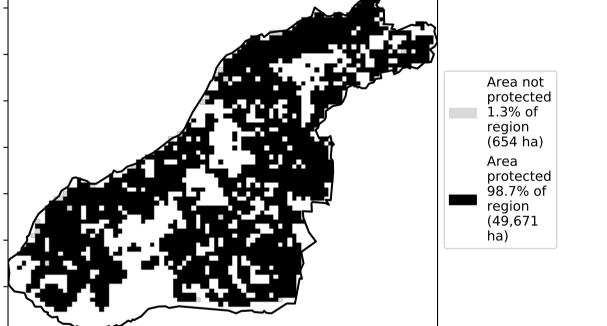
% Area protected from water erosion (>70%)



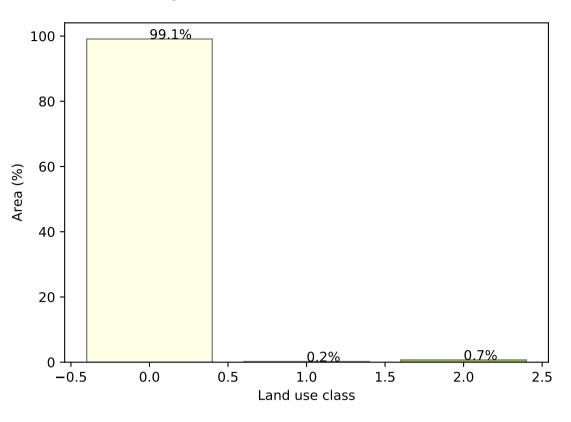
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1 Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest

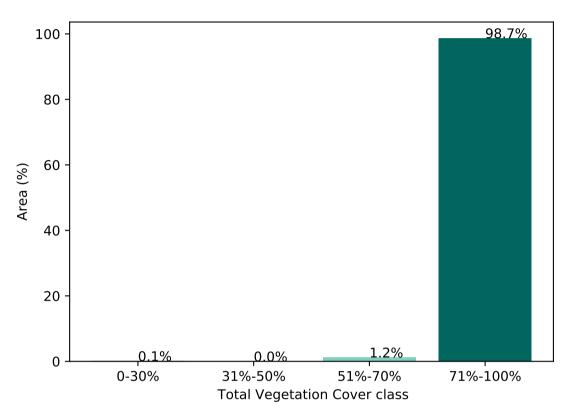




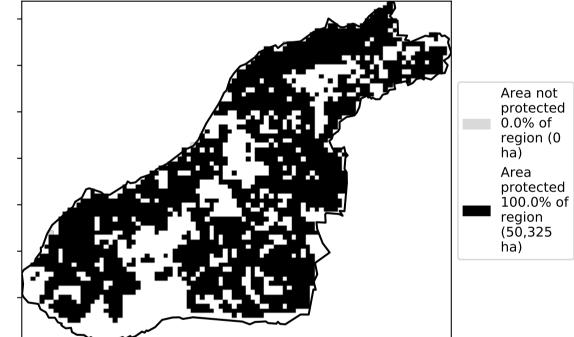
Proportion of each land class in area



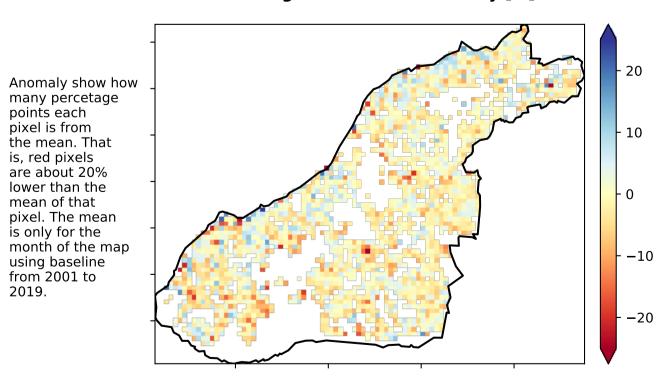
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



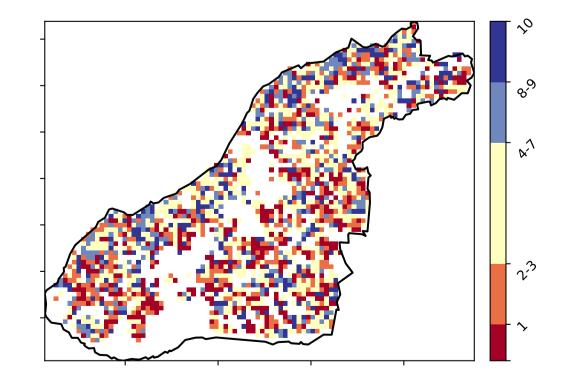
Total Vegetation Cover Anomaly [%]



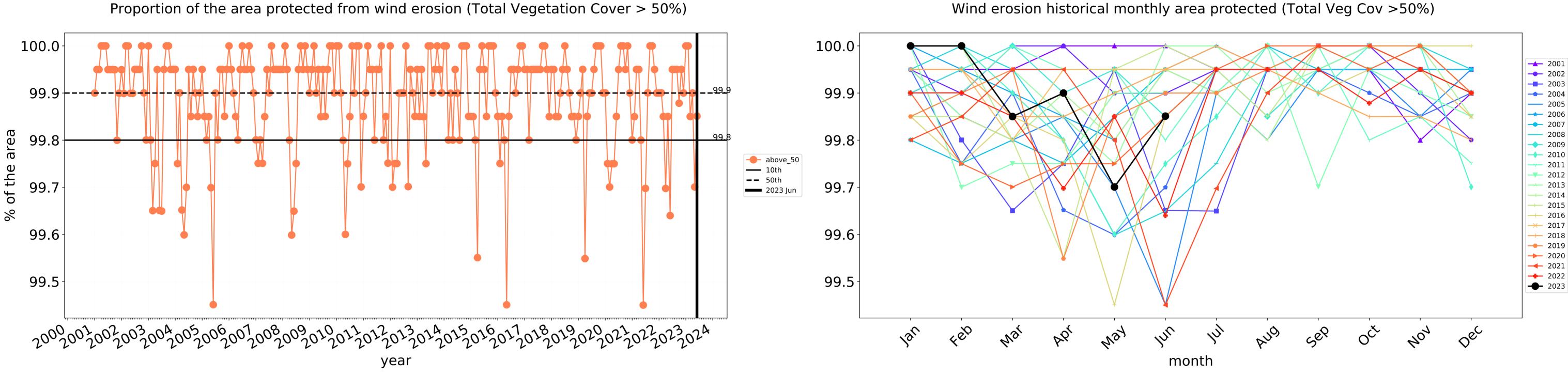
is, red pixels are about 20% lower than the mean of that

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 [%]

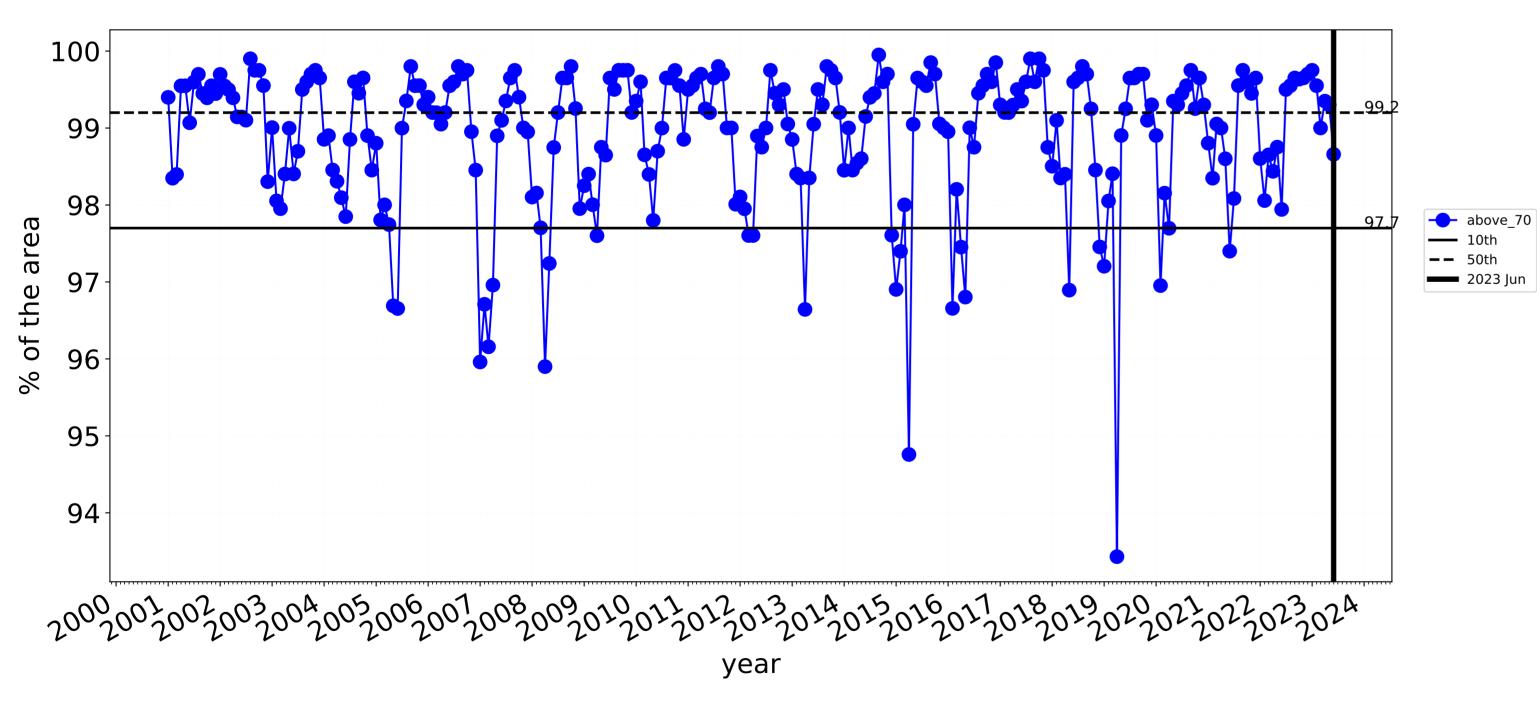


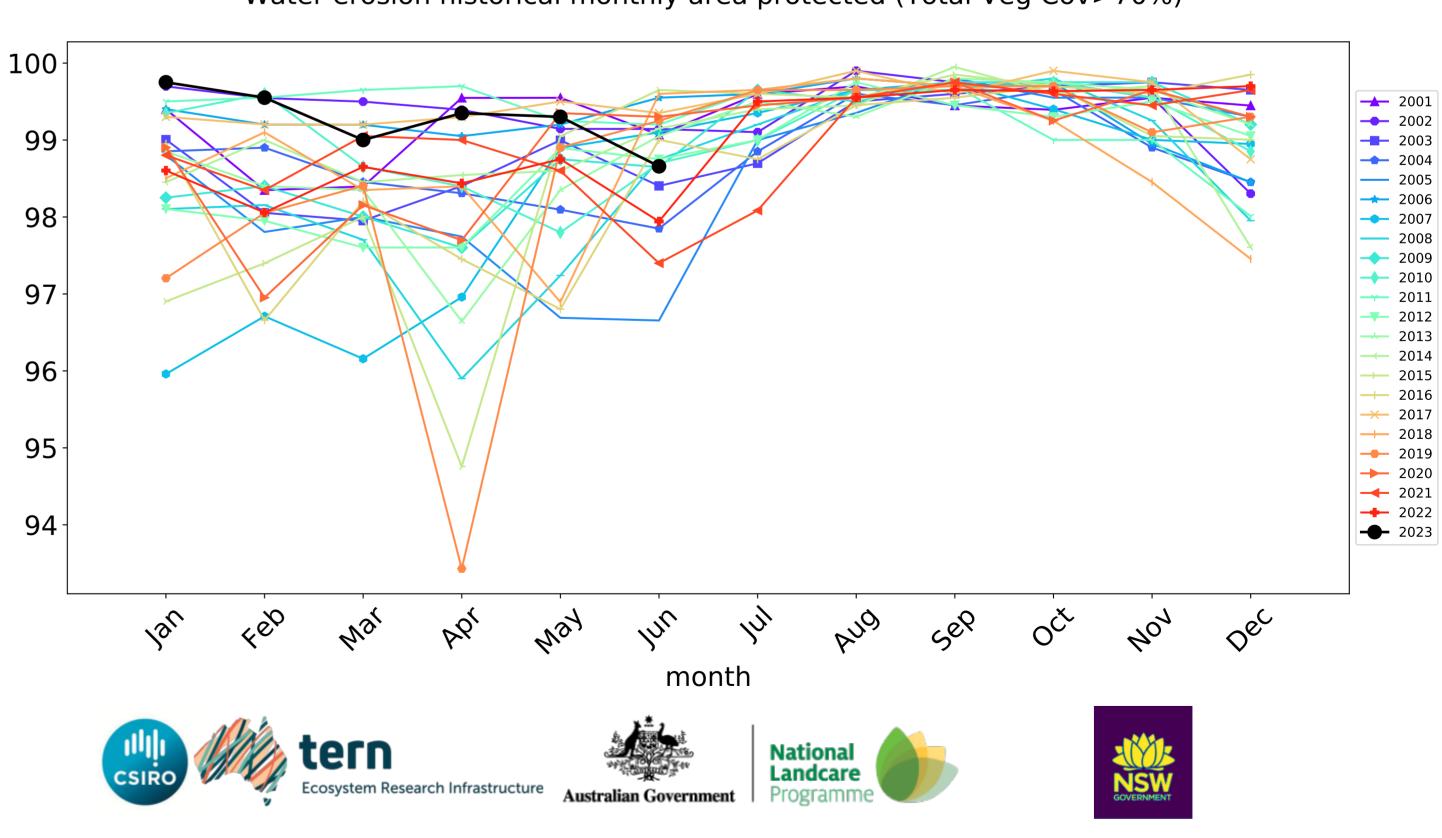




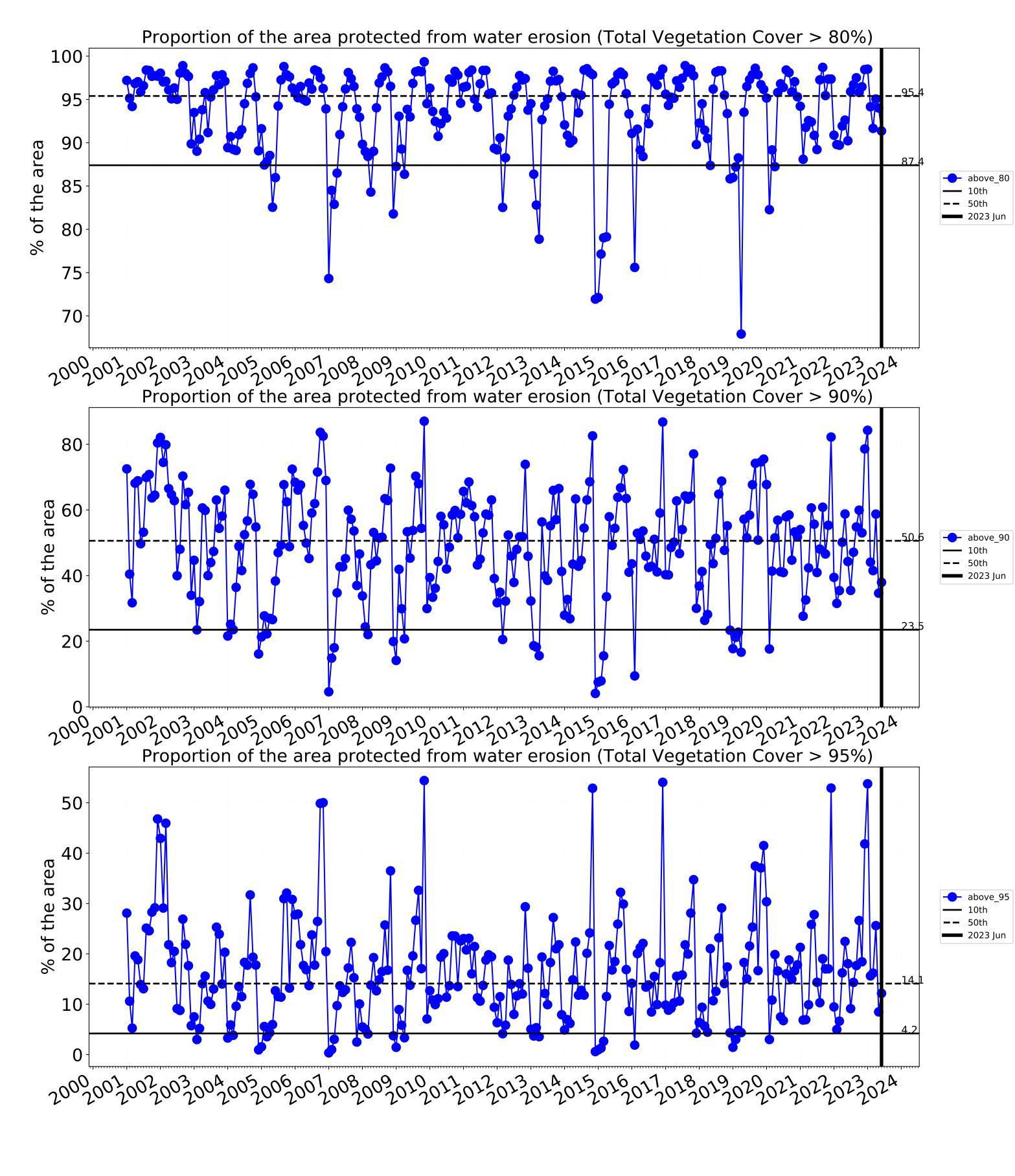
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

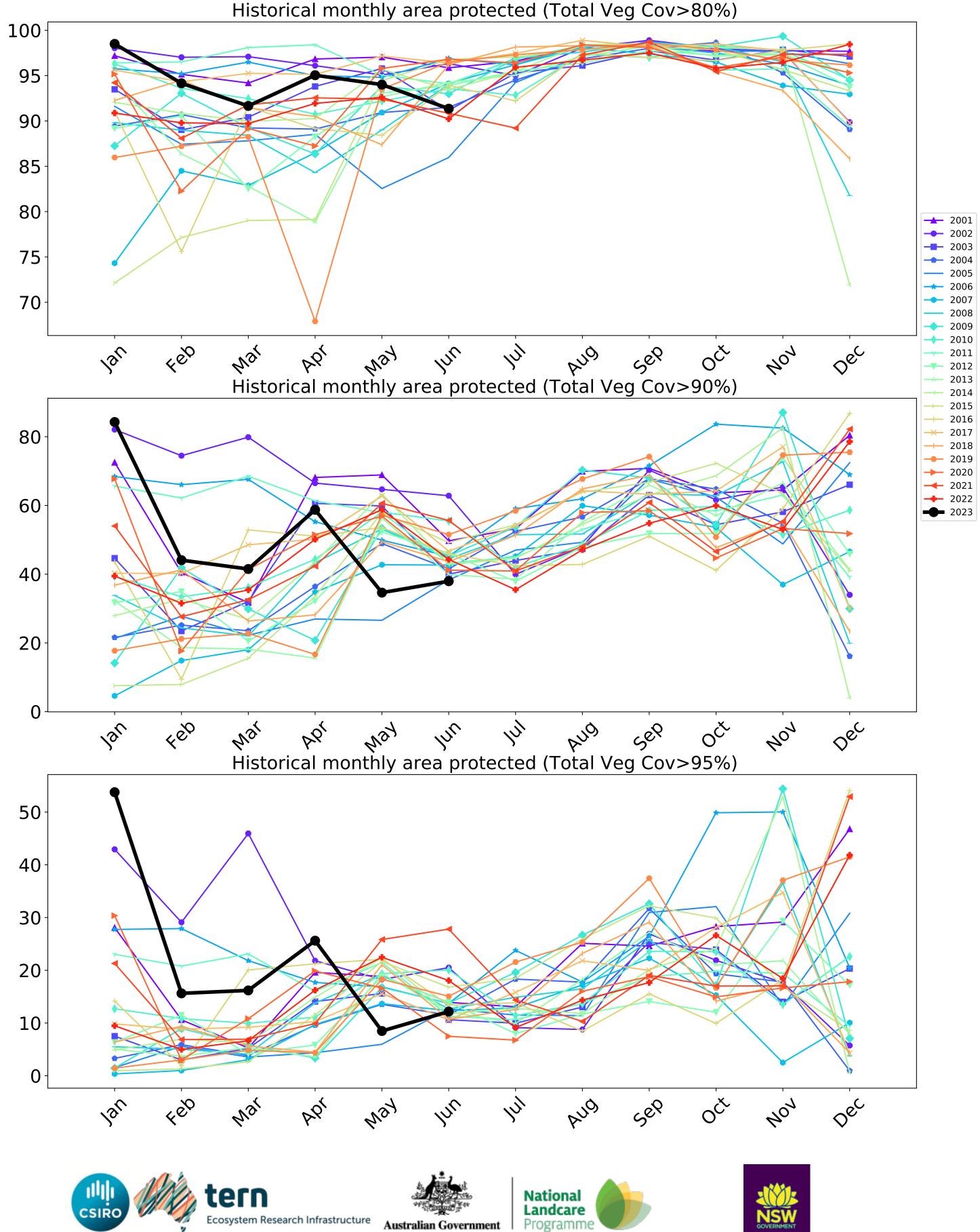
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)





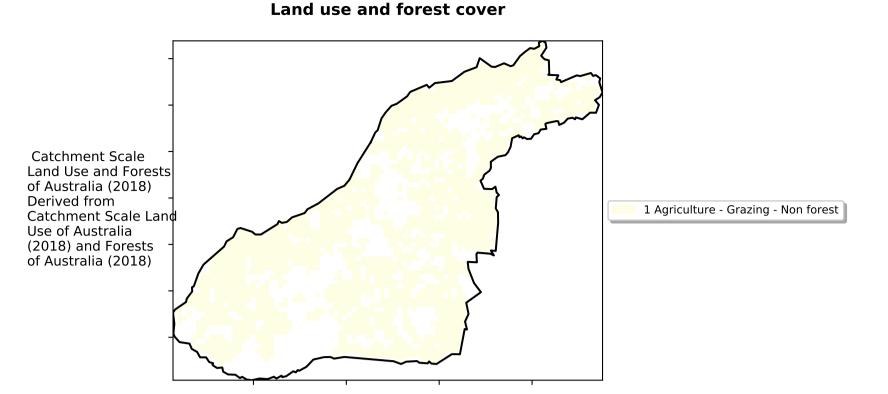
Water erosion historical monthly area protected (Total Veg Cov>70%)



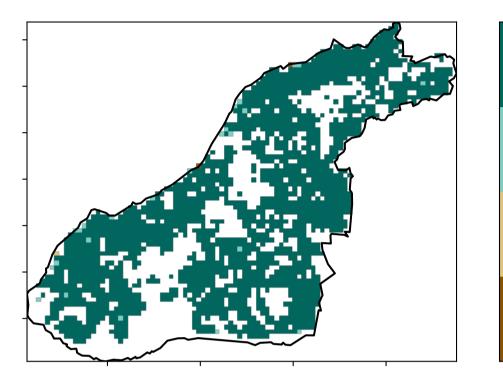




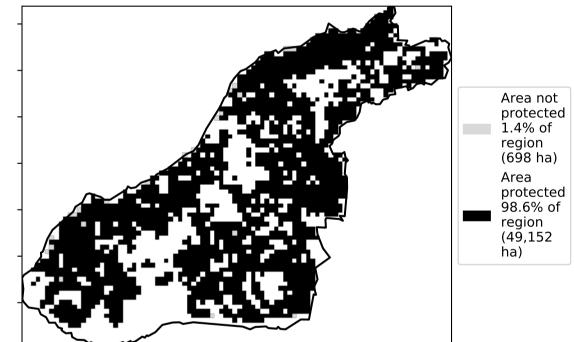
Grazing non forest



Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



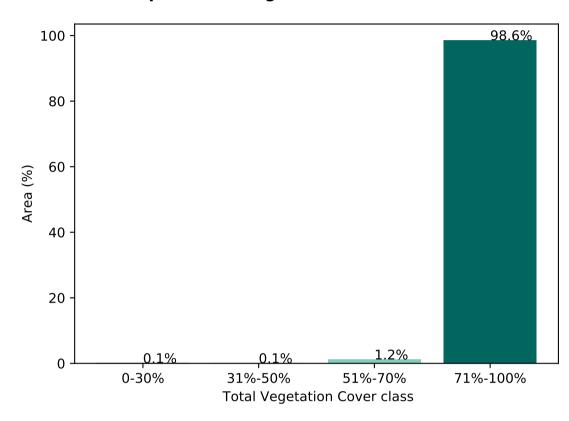
1 12º00 200%

52°10°10°10

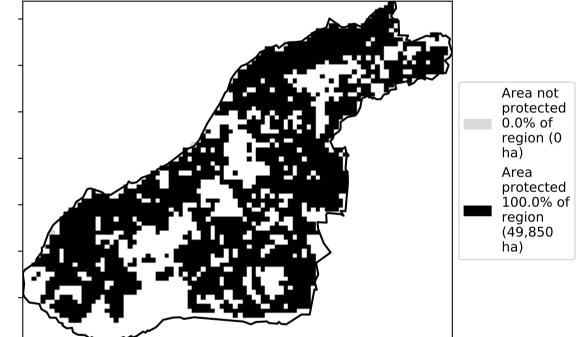
32005001

0.30%

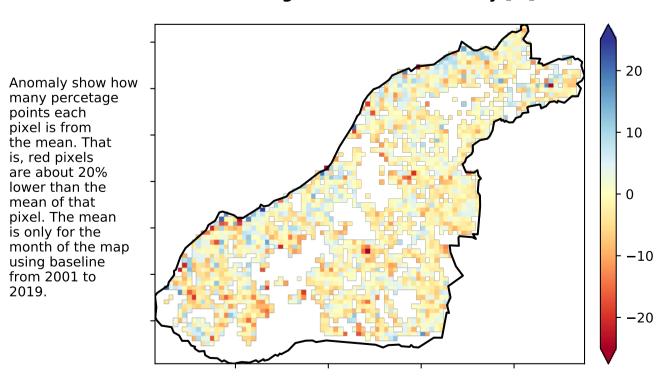




% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]

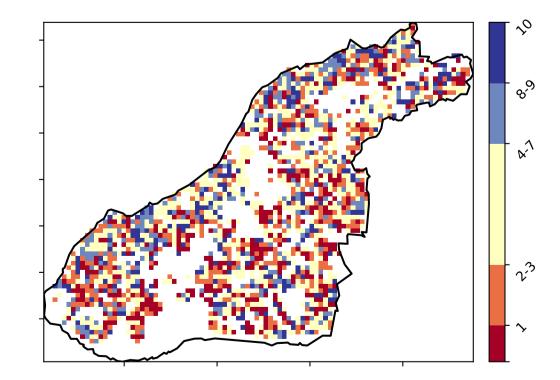


is, red pixels are about 20%

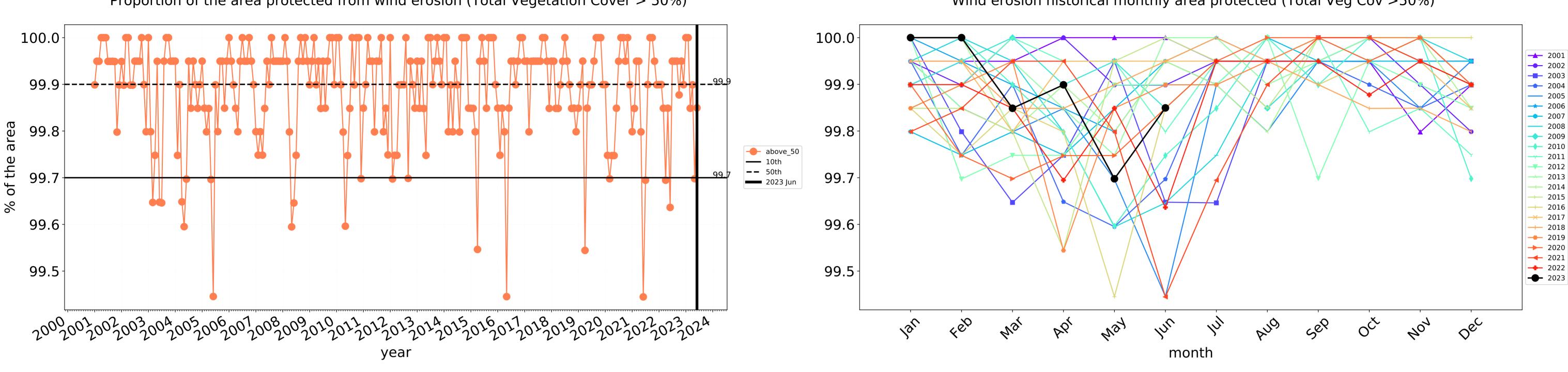
lower than the mean of that

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

Total Vegetation Cover Decile [%]

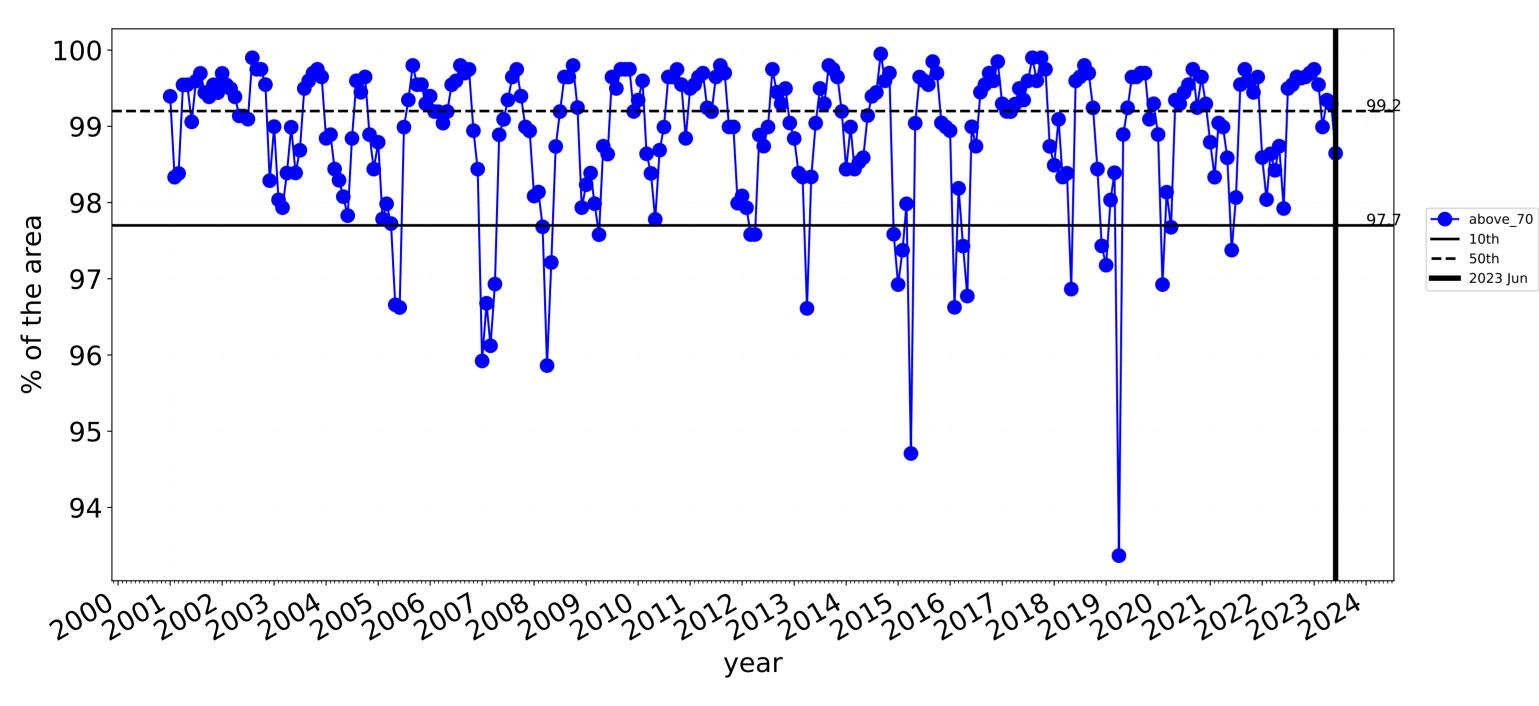


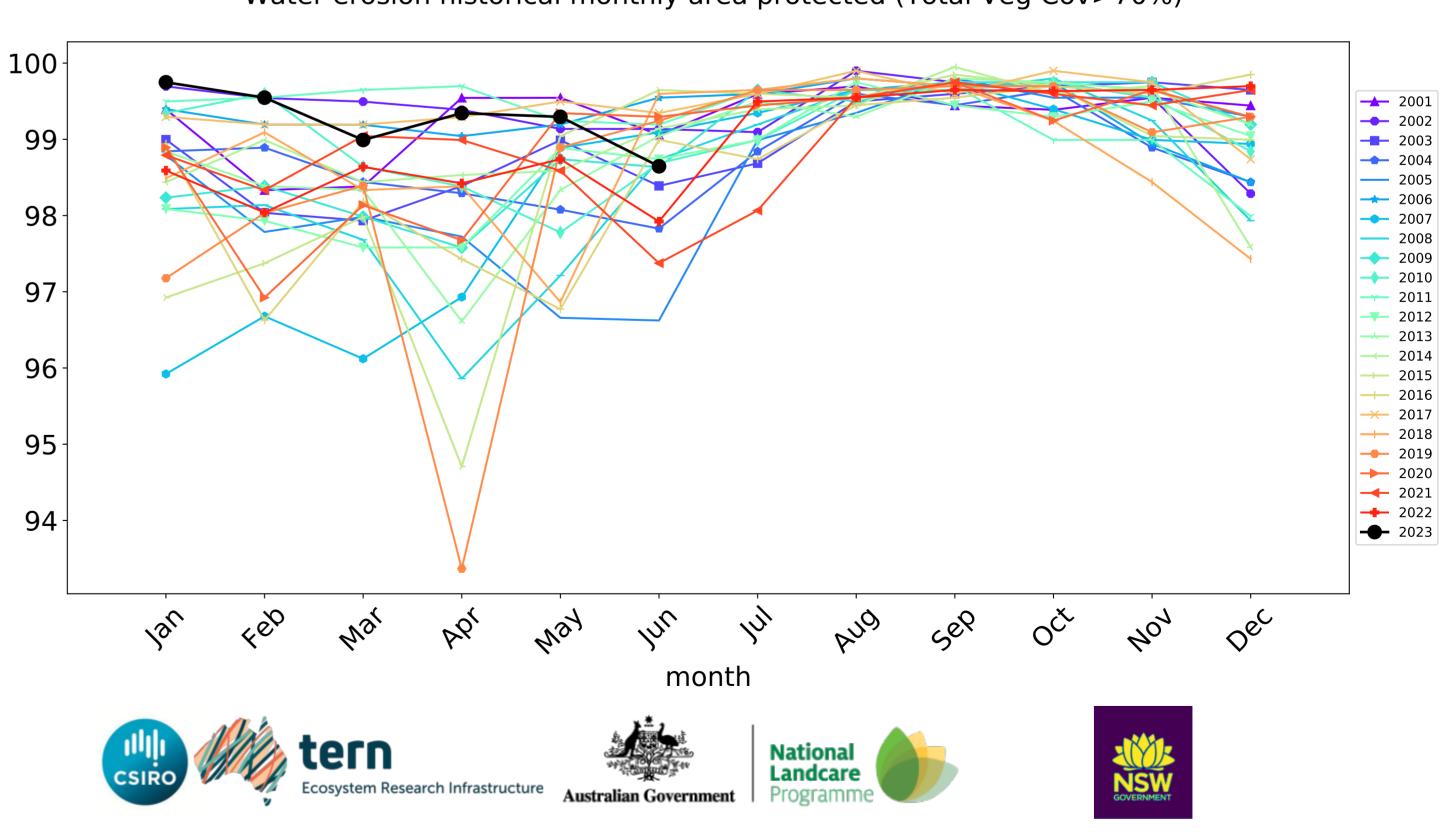




Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

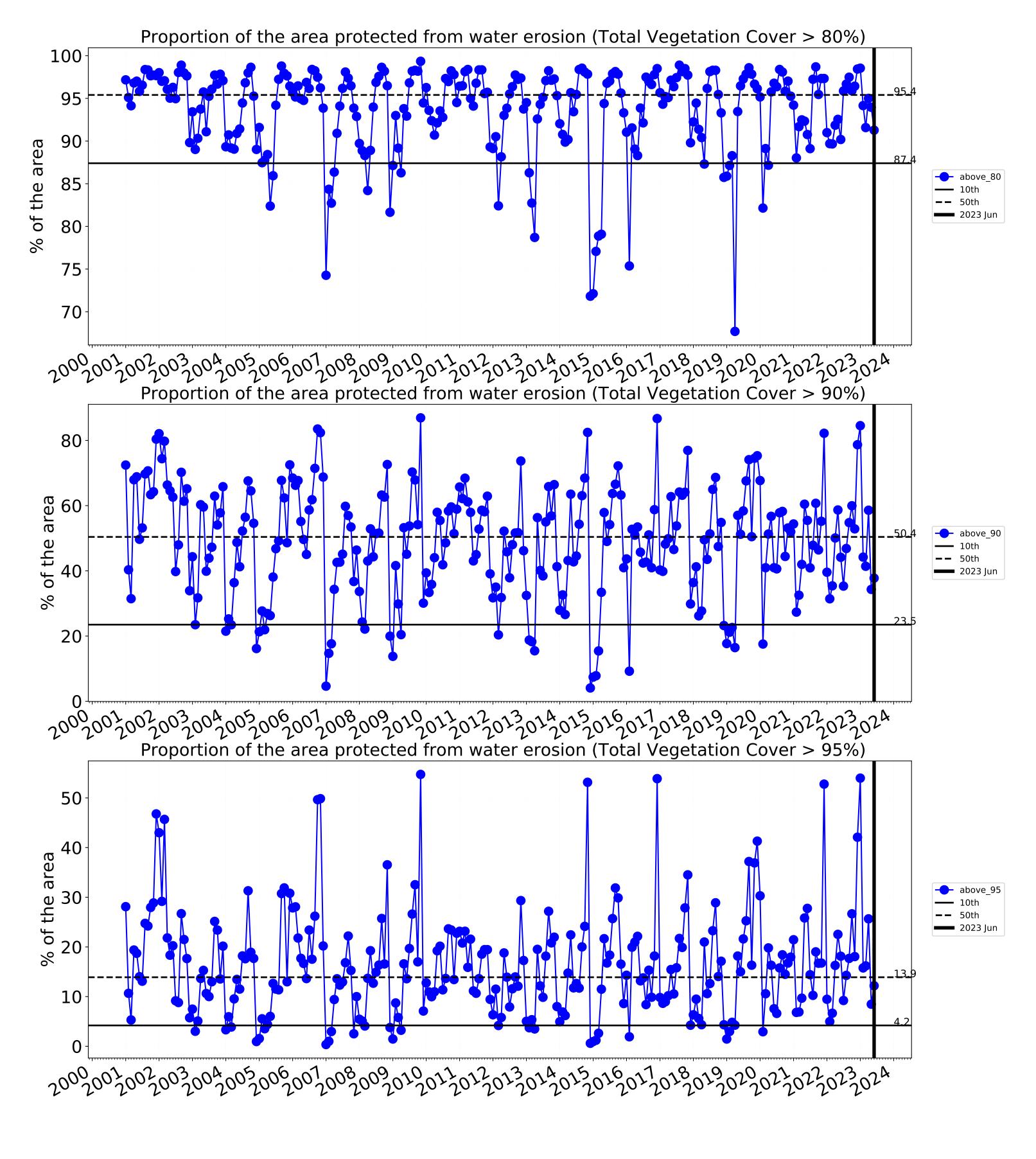
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

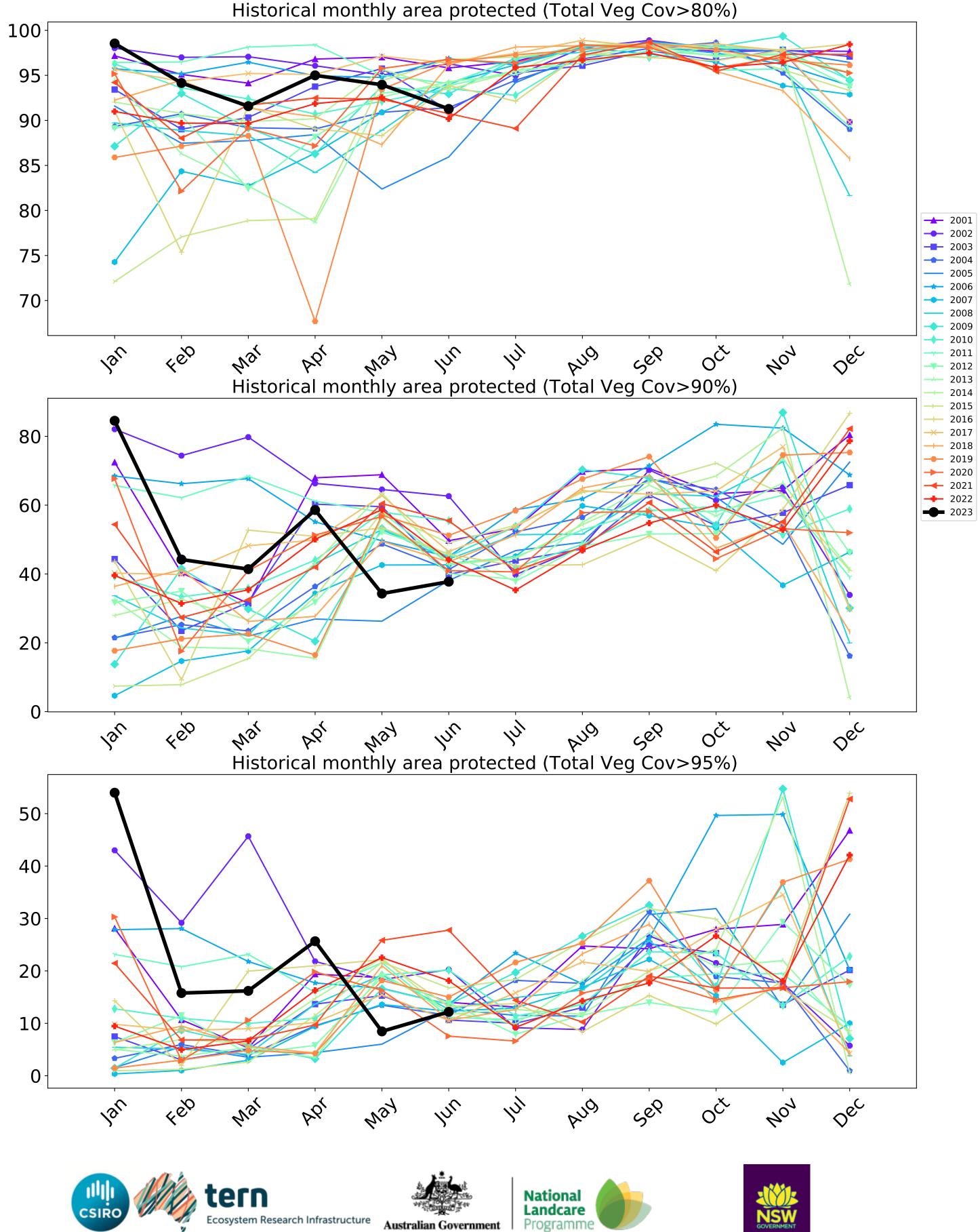




Wind erosion historical monthly area protected (Total Veg Cov >50%)

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





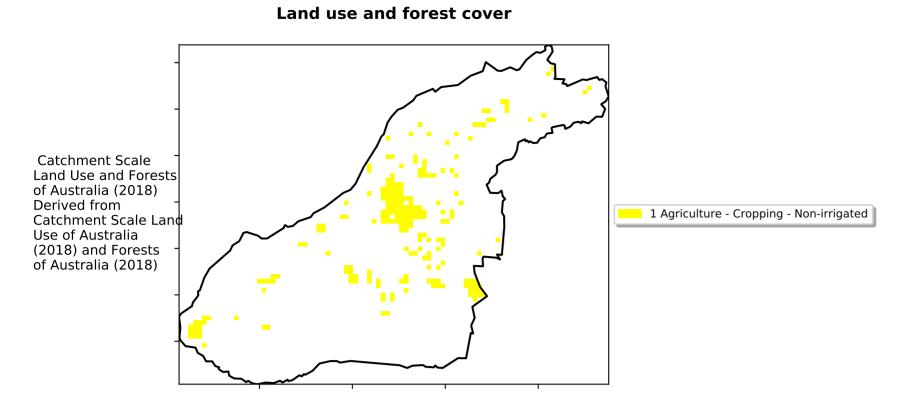
Cropping

12% 200%

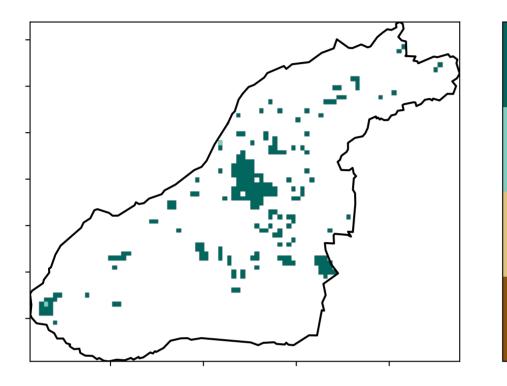
52°10°10°10

32°1050°10

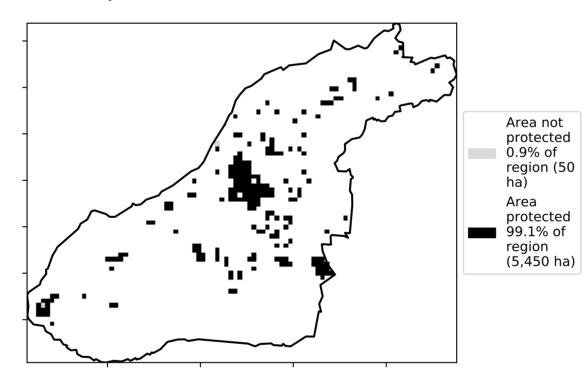
0.30%



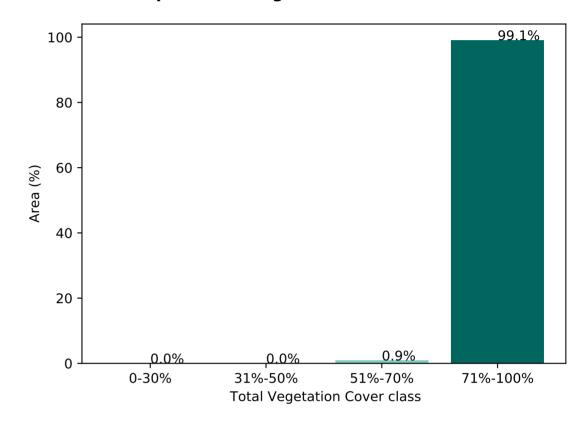
Total Vegetation Cover [%]



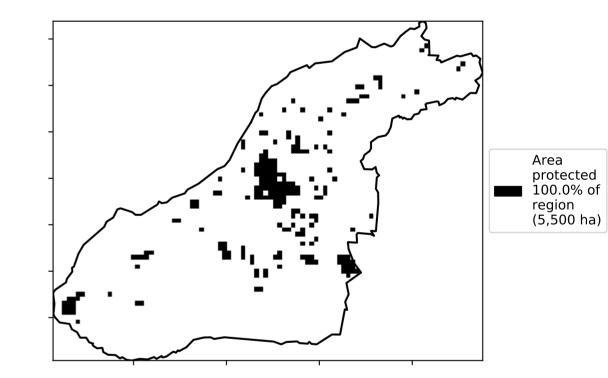
% Area protected from water erosion (>70%)



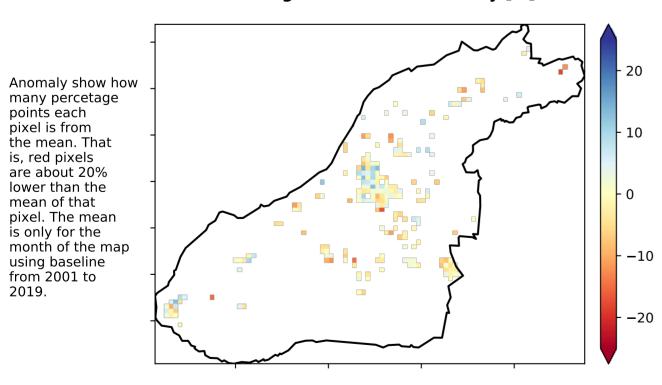
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



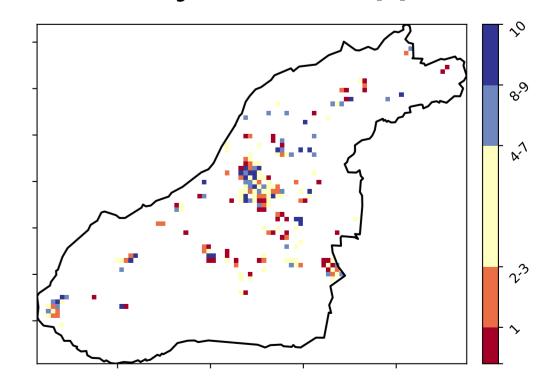
Total Vegetation Cover Anomaly [%]



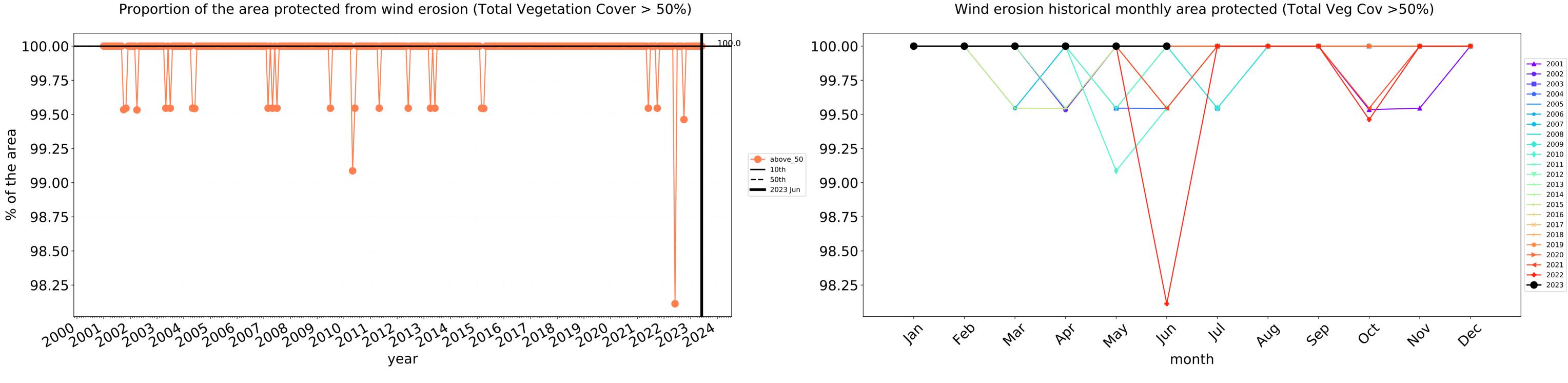
is, red pixels

mean of that

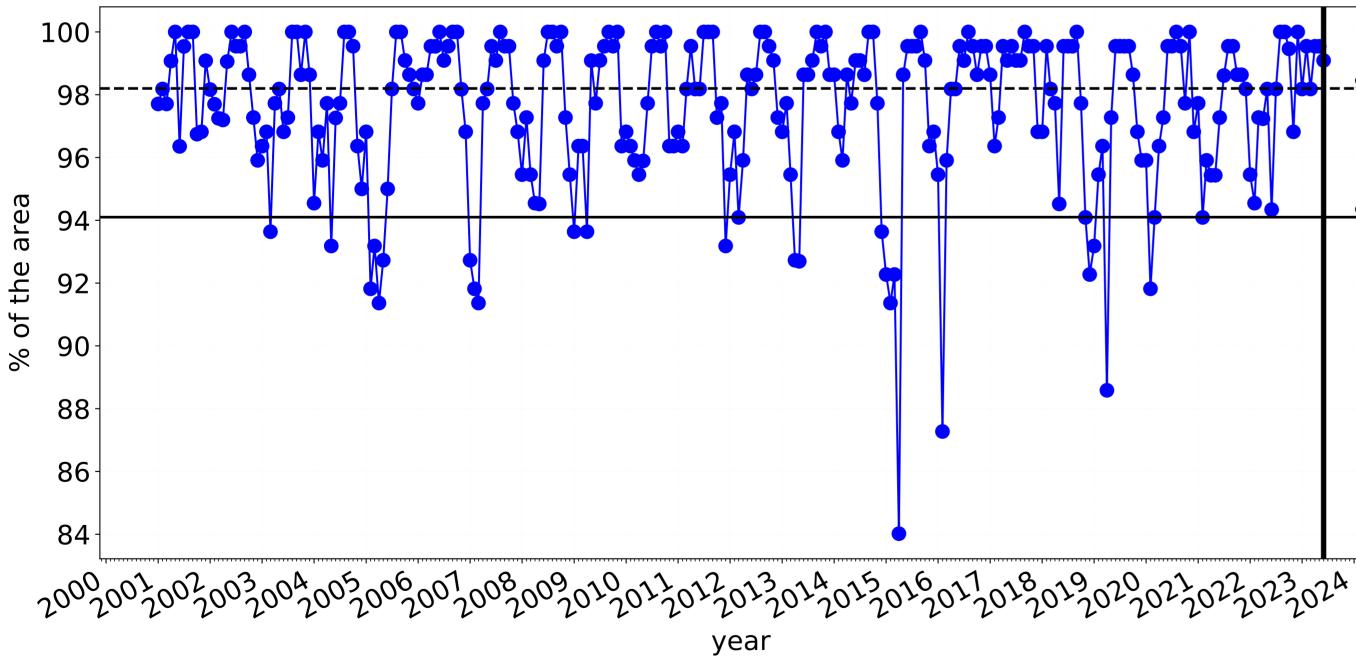
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline the map using baseline from 2001 to 2019.





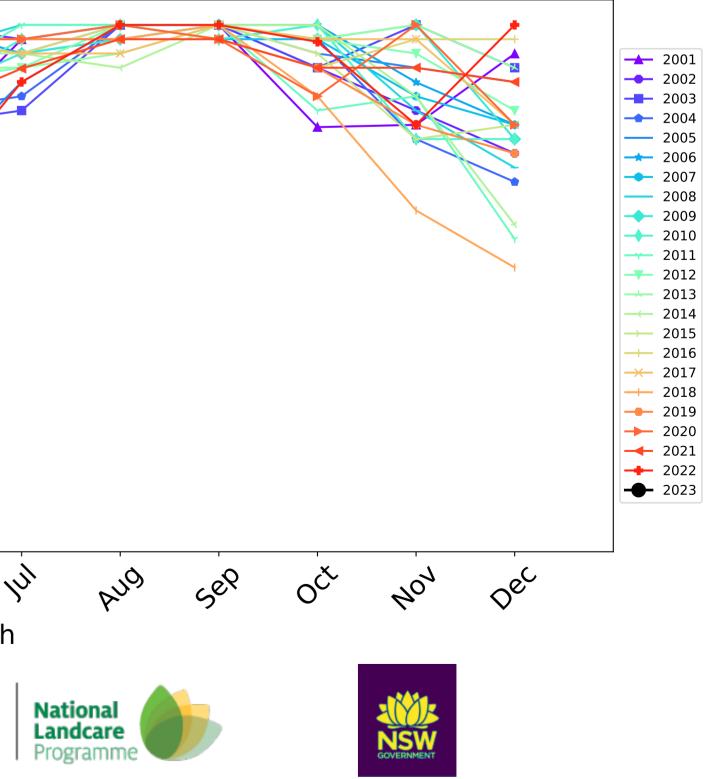


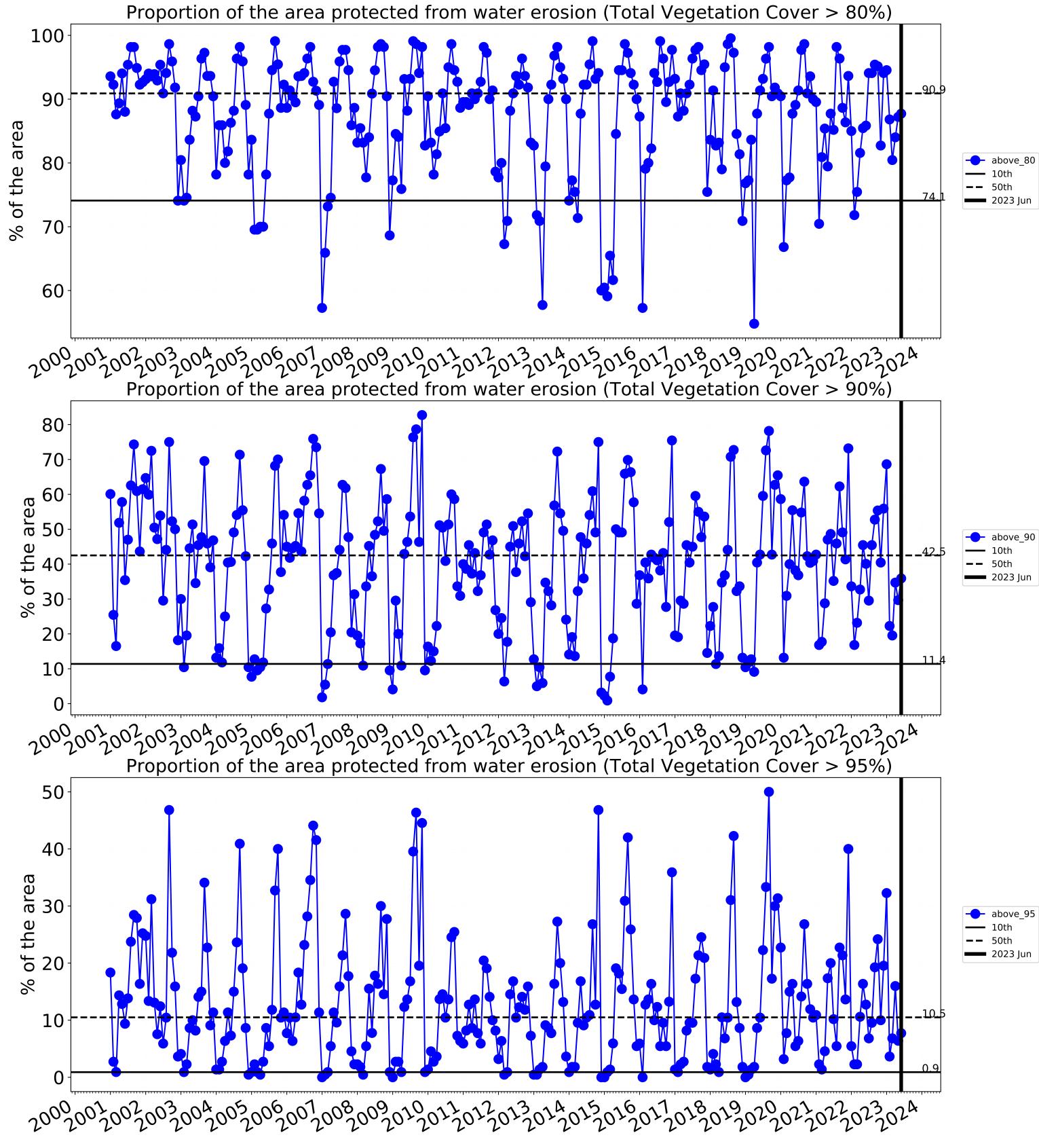
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

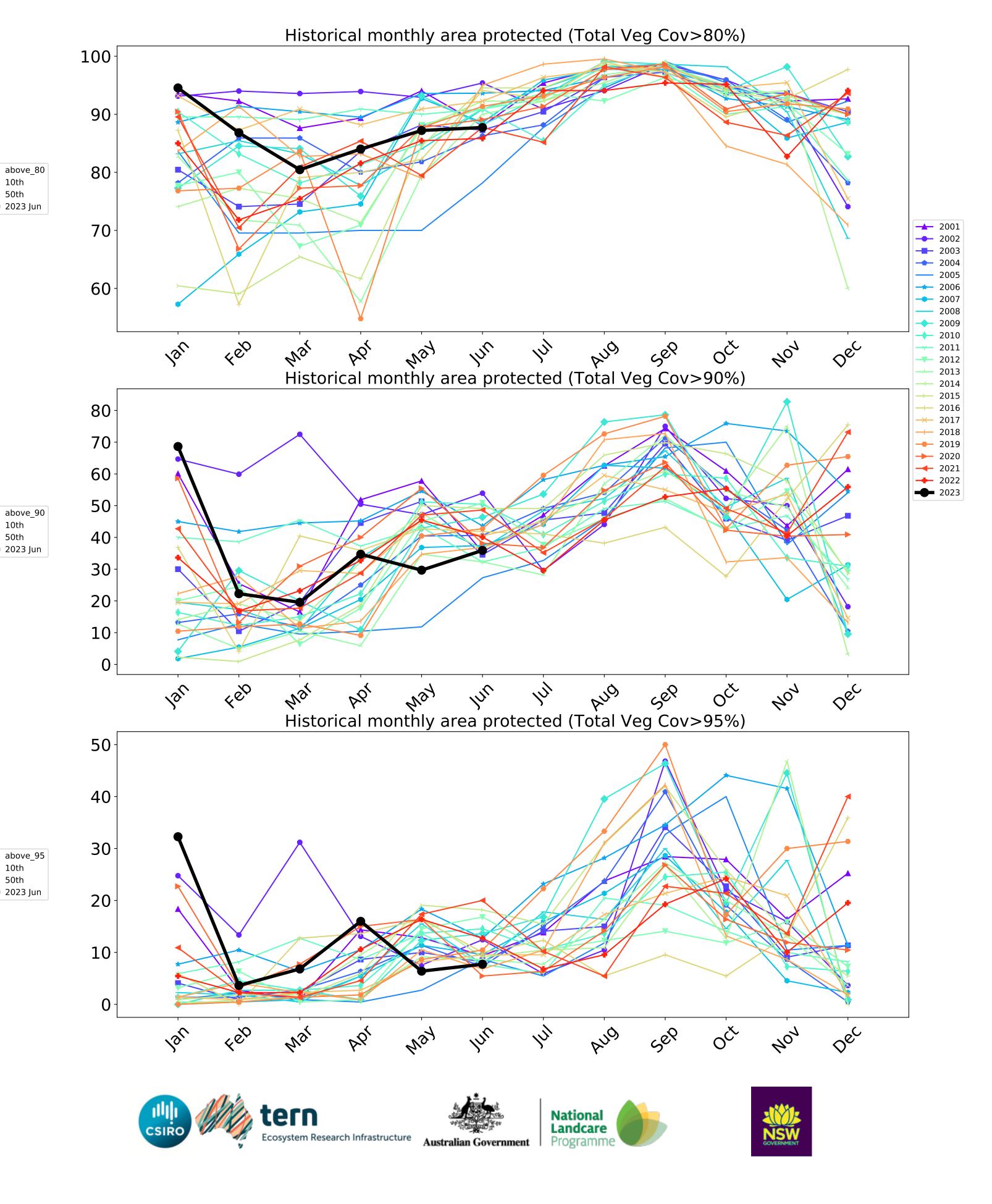


100 98 96 ---- above_70 Q1 94 **—** 10th **--** 50th **——** 2023 Jun 92 90 88 86 84 fed Jan In way War PQ' month tern min CSIRO Ecosystem Research Infrastructure Australian Government

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





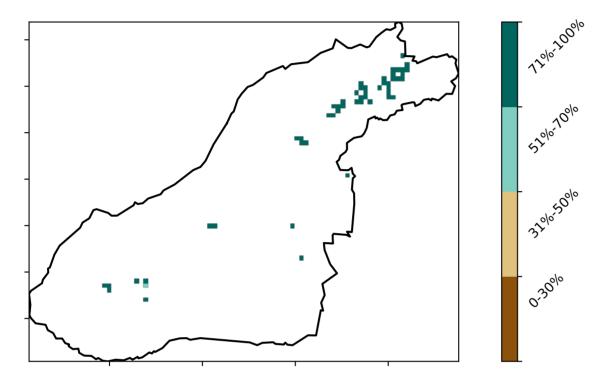


Irrigation

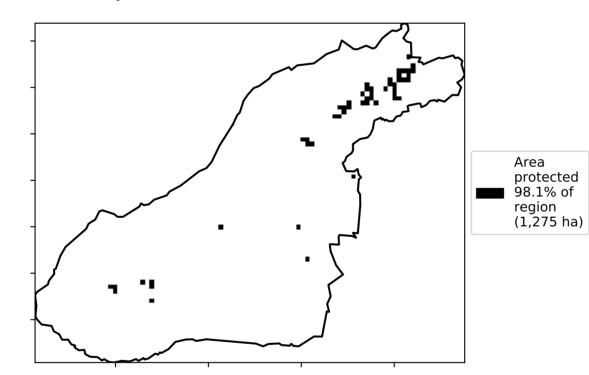
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

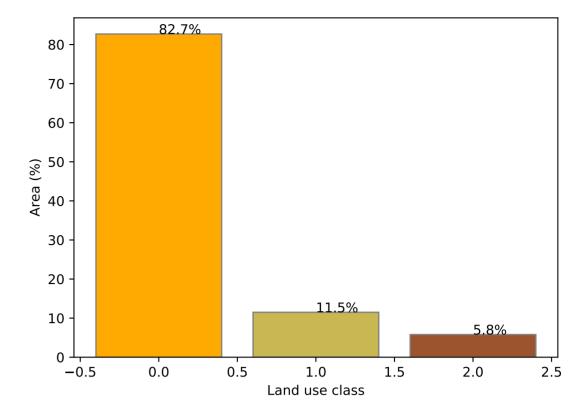
Land use and forest cover

Total Vegetation Cover [%]



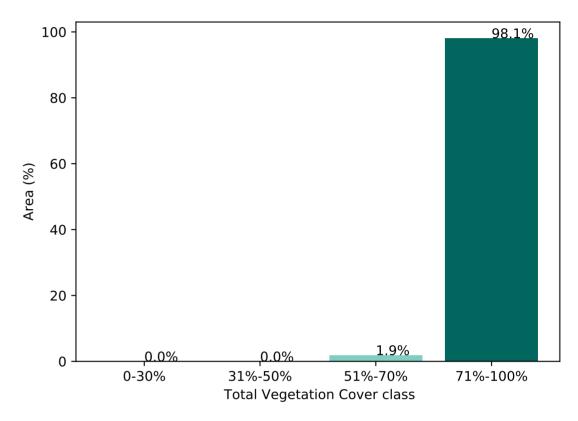
% Area protected from water erosion (>70%)





Proportion of each land class in area

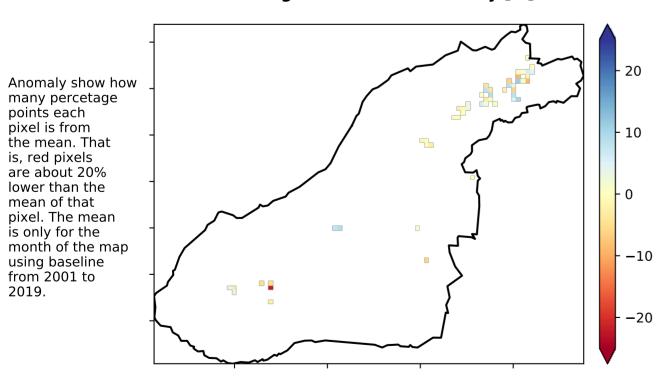
Proportion of vegetation cover class in area



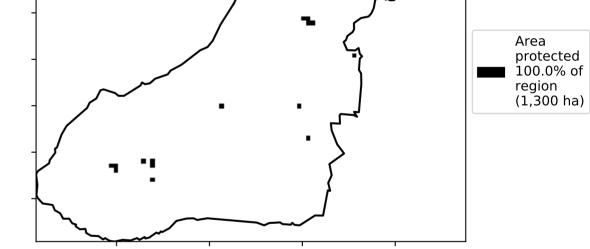
% Area protected from wind erosion (>50%)



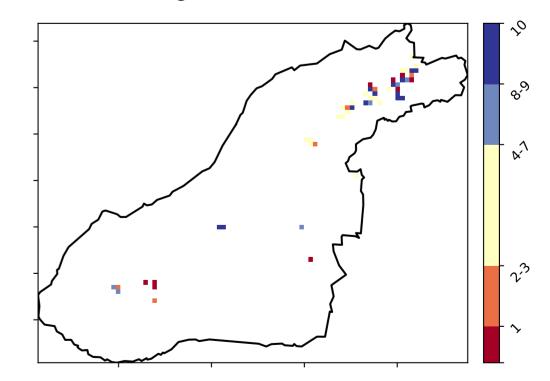
Total Vegetation Cover Anomaly [%]



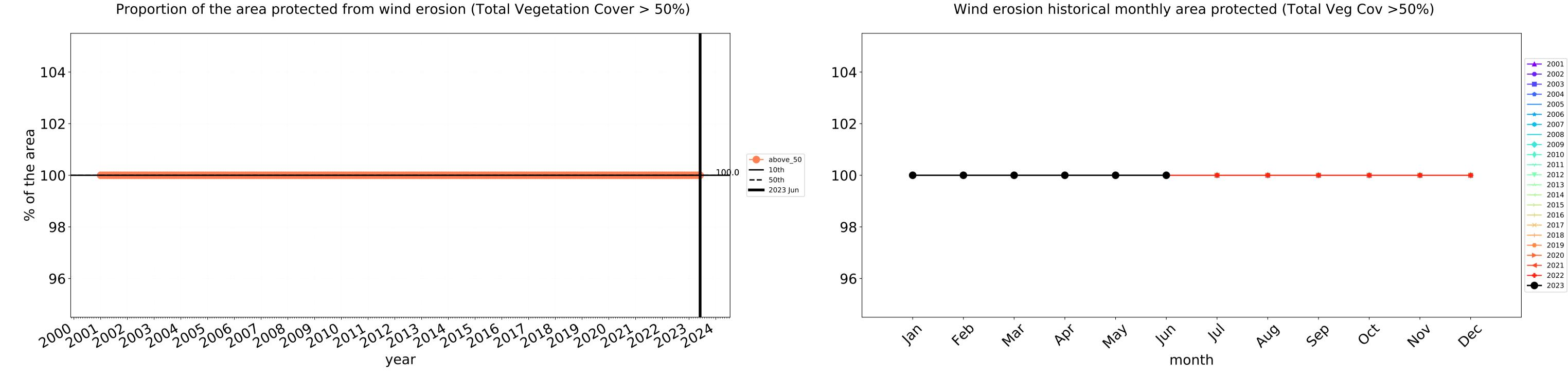
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.



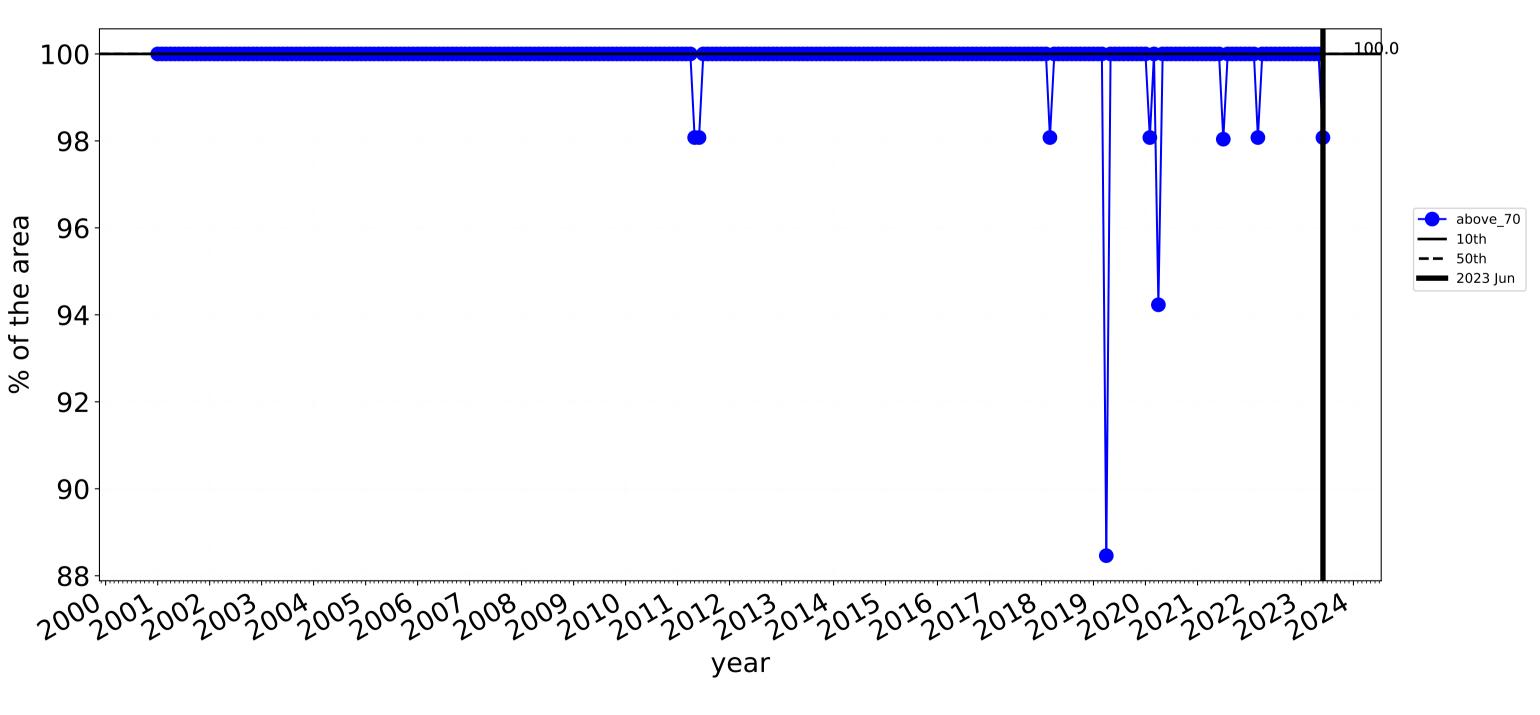
Total Vegetation Cover Decile [%]



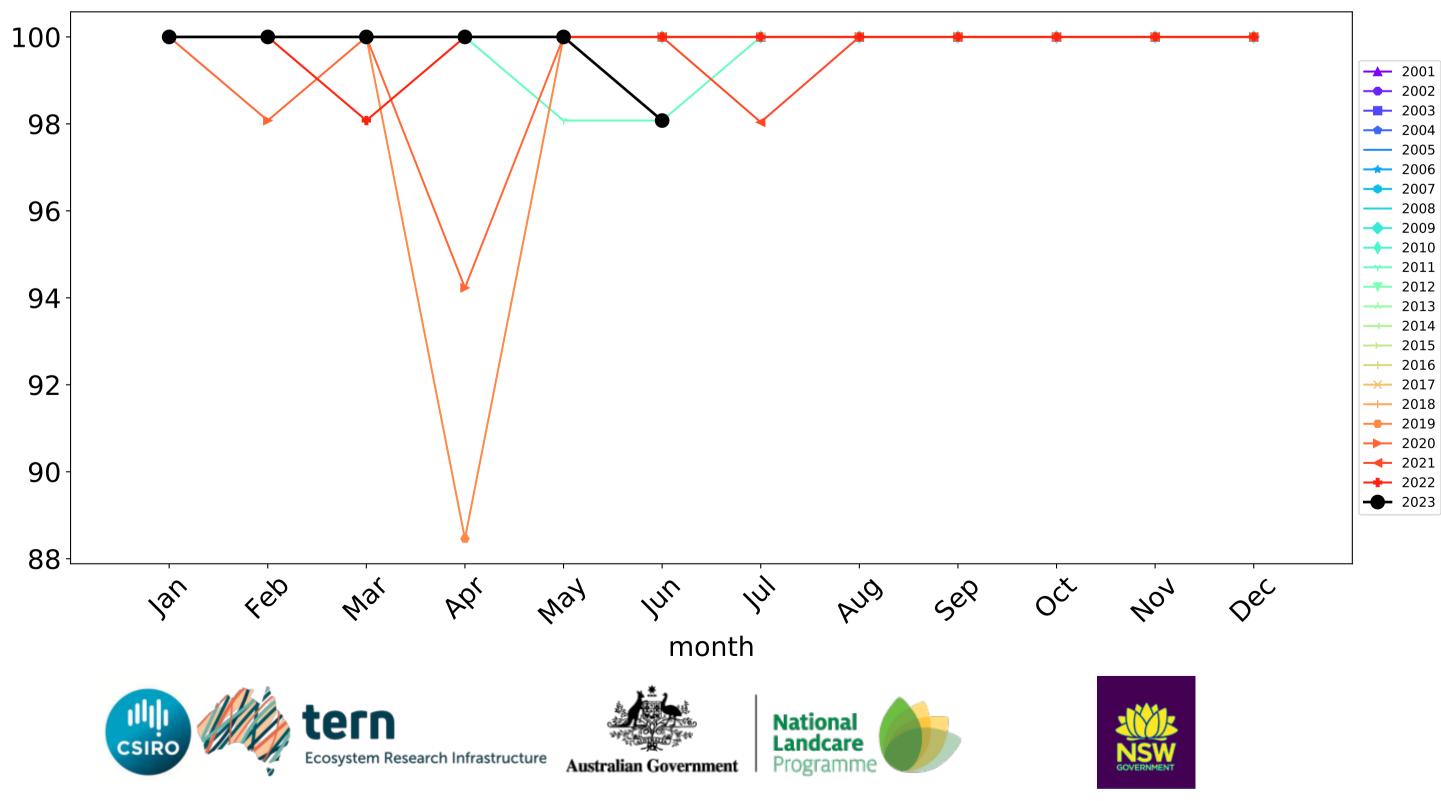




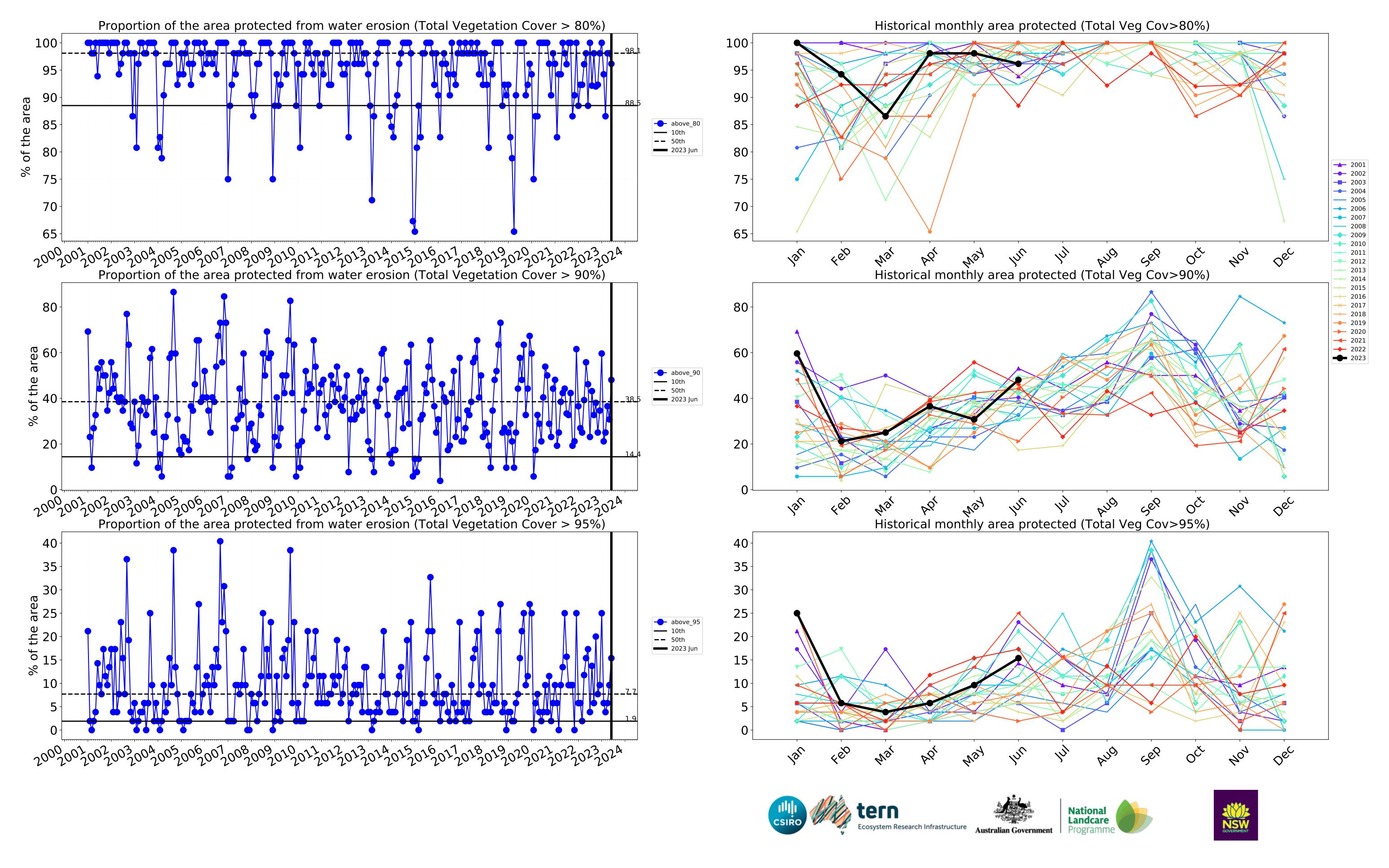
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



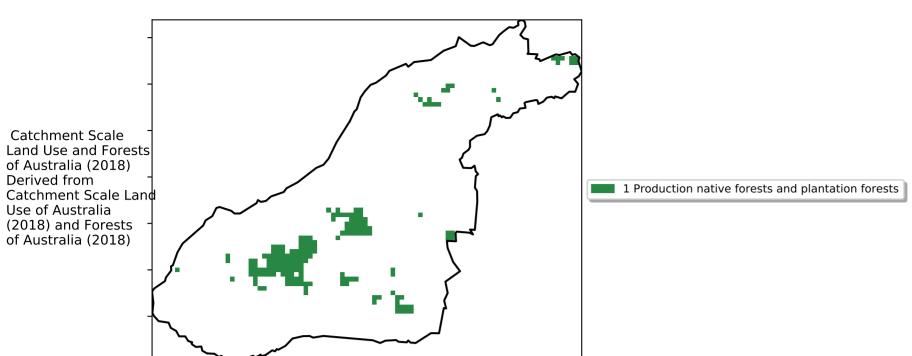
Irrigation timeseries



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



Production native forests and plantation forests



12% 10°10°%

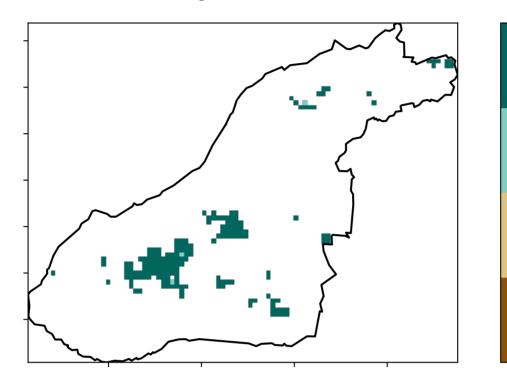
· 52°10°10°10

· 32°10,50°10

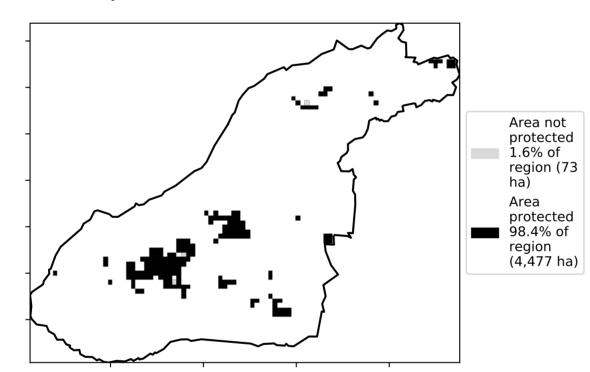
0.30%

Land use and forest cover

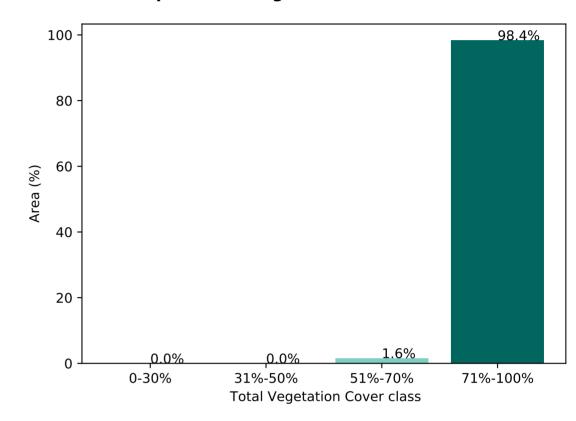
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



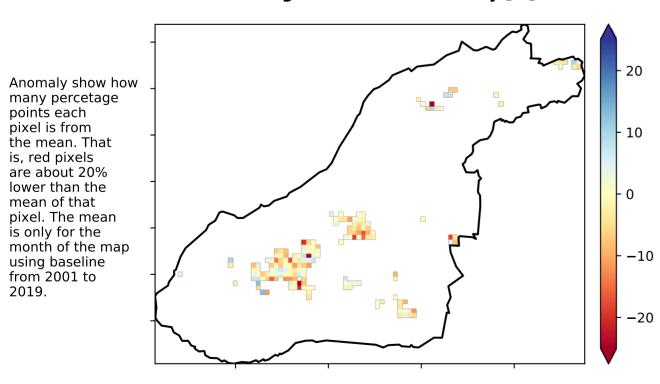
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)

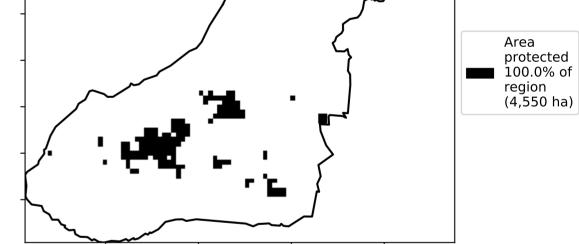


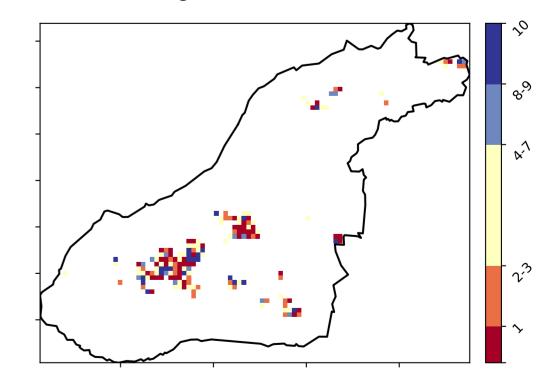
Total Vegetation Cover Anomaly [%]



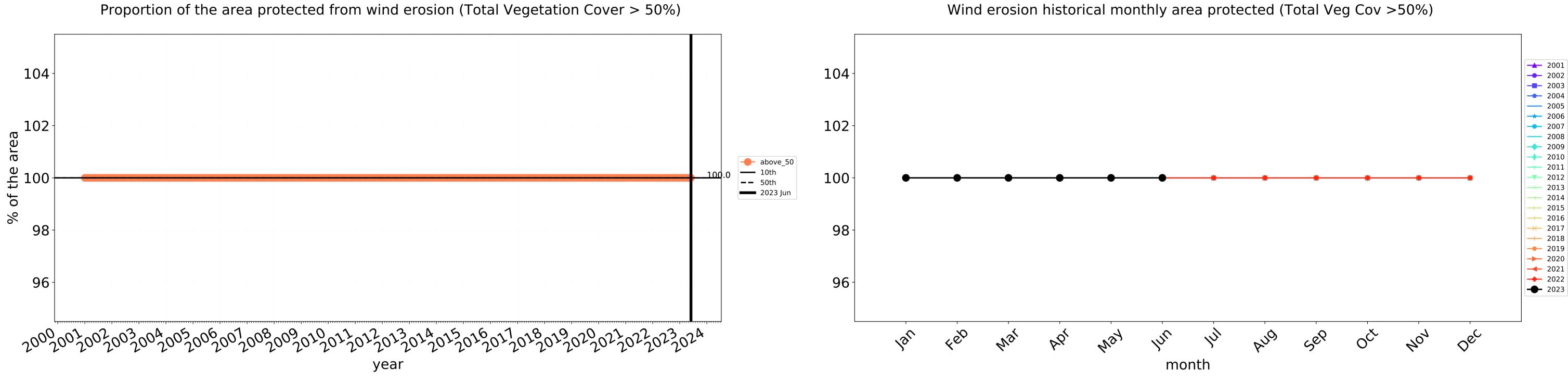
pixel is from

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.

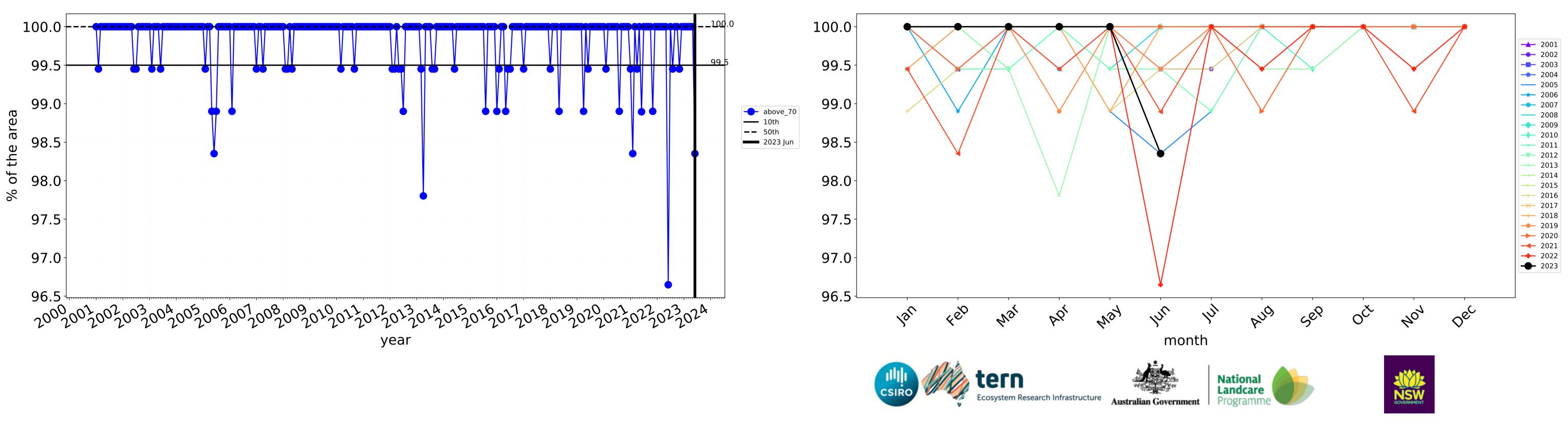




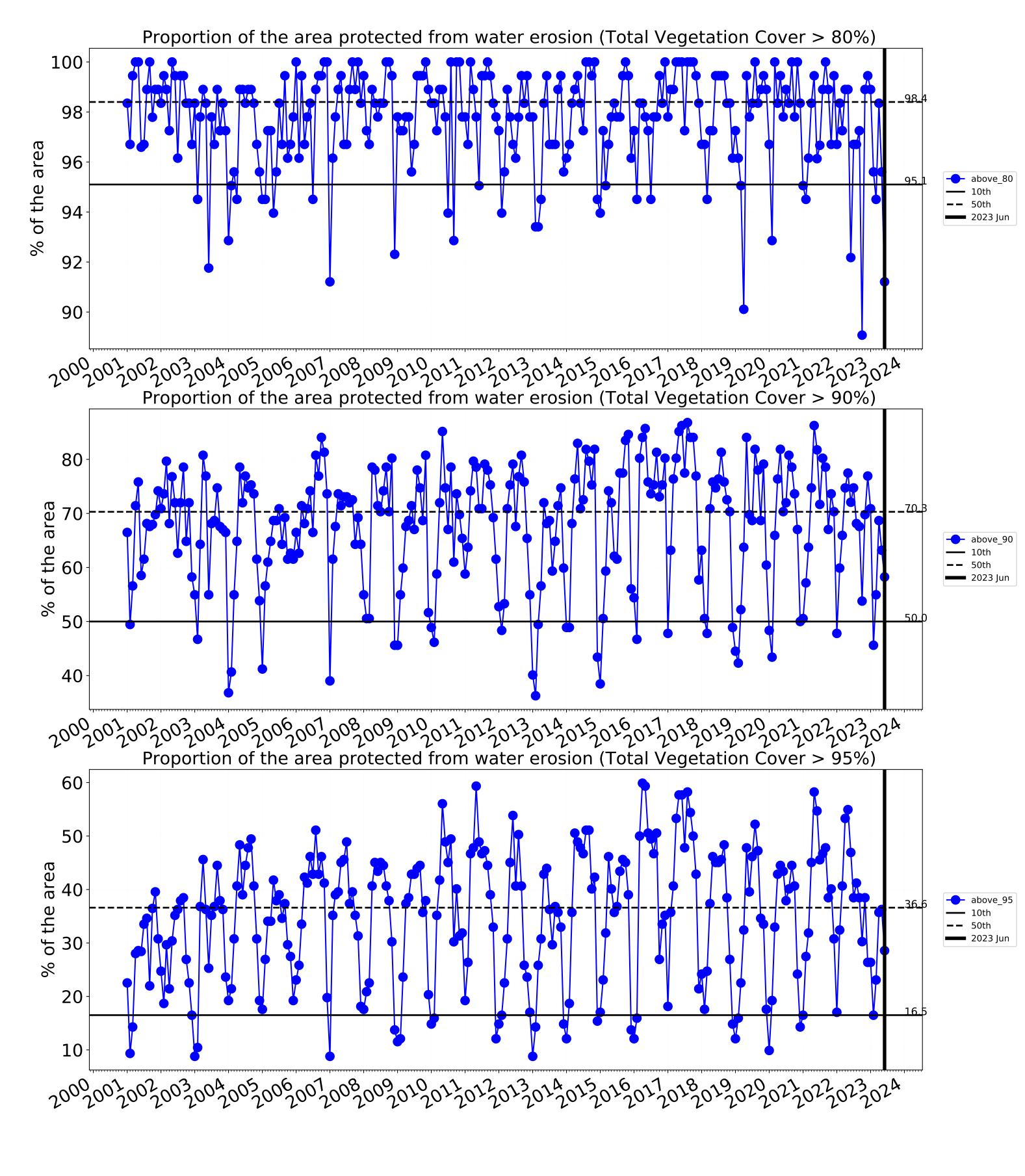


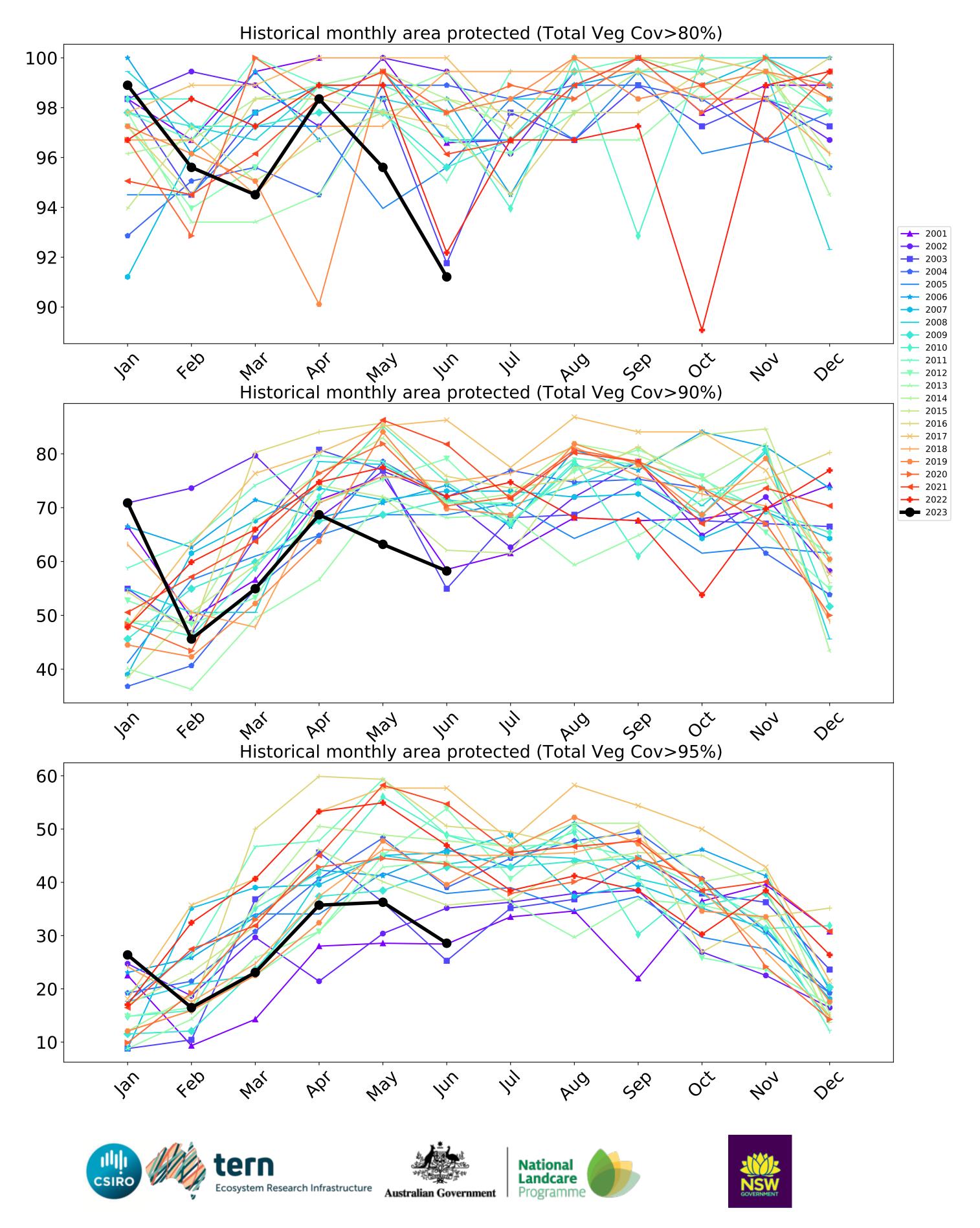


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



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





Yankalilla_(DC) (73,425 ha and no data 1,712 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	73,425	99.9% 73,325	99.8% 73,275	97.9% 71,900	90.1% 66,150	40.0% 29,400	14.3% 10,475
Conservation and natural environments	9,550	99.7% 9,525	99.5% 9,500	95.5% 9,125	91.1% 8,700	50.0% 4,775	25.1% 2,400
Conservation and natural environments non forest	1,325	98.1% 1,300	98.1% 1,300	84.9% 1,125	79.2% 1,050	28.3% 375	3.8% 50
Conservation and natural environments Woodland forest	5,550	100.0% 5,550	99.5% 5,525	97.3% 5,400	93.2% 5,175	52.7% 2,925	26.1% 1,450
Conservation and natural environments Forest (non woodland)	2,675	100.0% 2,675	100.0% 2,675	97.2% 2,600	92.5% 2,475	55.1% 1,475	33.6% 900
Agriculture	57,125	99.9% 57,075	99.9% 57,050	98.7% 56,375	91.1% 52,050	38.0% 21,700	11.8% 6,750
Grazing	50,325	99.9% 50,275	99.9% 50,250	98.7% 49,650	91.4% 45,975	38.0% 19,100	12.2% 6,125
Grazing non forest	49,850	99.9% 49,800	99.8% 49,775	98.6% 49,175	91.3% 45,500	37.8% 18,825	12.2% 6,075
Cropping	5,500	100.0% 5,500	100.0% 5,500	99.1% 5,450	87.7% 4,825	35.9% 1,975	7.7% 425
Irrigation	1,300	100.0% 1,300	100.0% 1,300	98.1% 1,275	96.2% 1,250	48.1% 625	15.4% 200
Production native forests and plantation forests	4,550	100.0% 4,550	100.0% 4,550	98.4% 4,475	91.2% 4,150	58.2% 2,650	28.6% 1,300

