Total vegetation cover soil protection Region:LGA Hinchinbrook_(S) QLD

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:

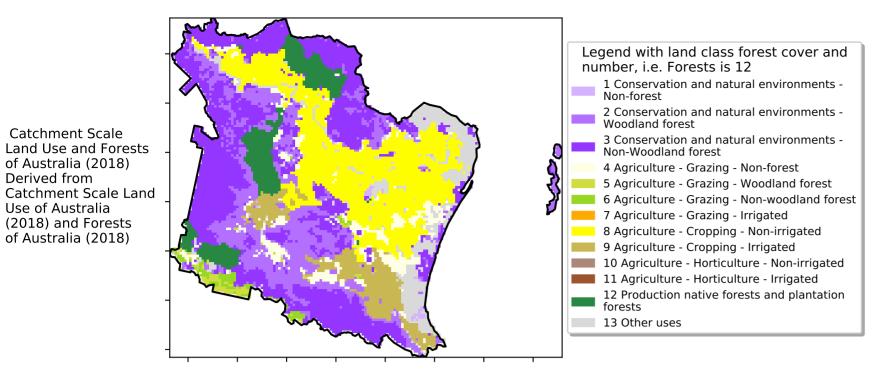
https://doi.org/10.4225/08/5848a3f19a7b3



Vegetation Cover Feb 2024

Land use and forest cover

Proportion of each land class in area



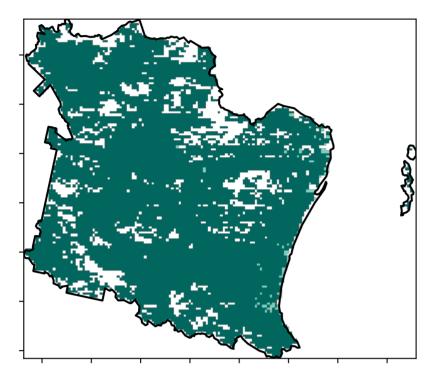
12º10-200°1

52°1070°1

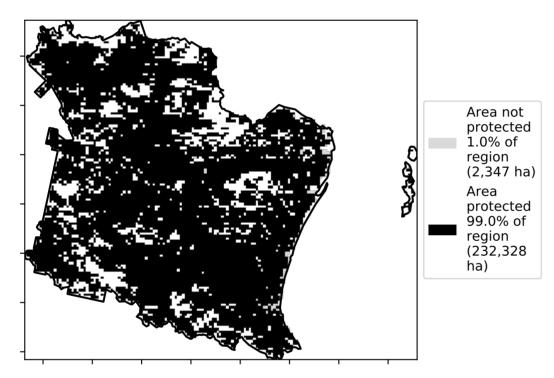
32005001

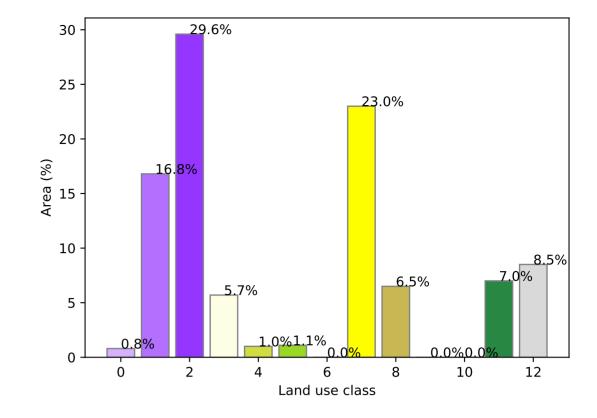
0.30%

Total Vegetation Cover [%]

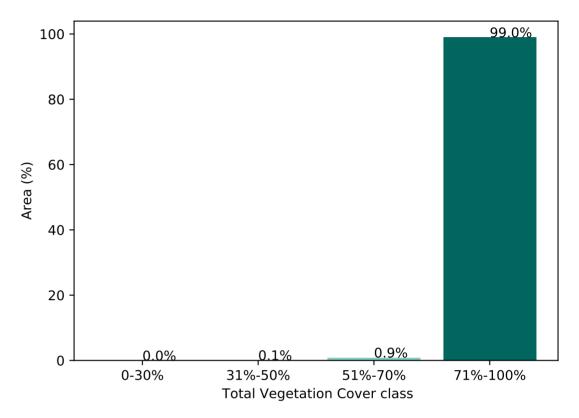


% Area protected from water erosion (>70%)

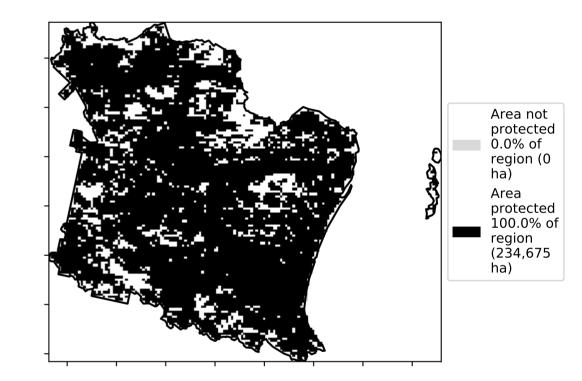




Proportion of vegetation cover class in area

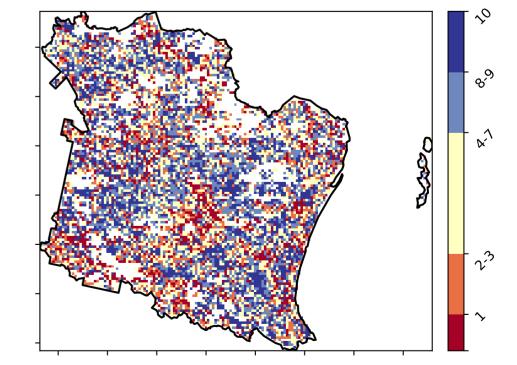


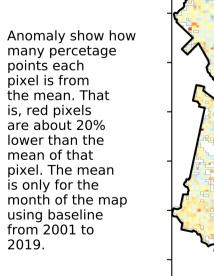
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]

Total Vegetation Cover Decile [%]

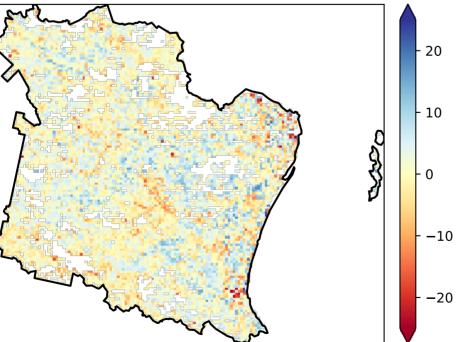




Catchment Scale

Derived from

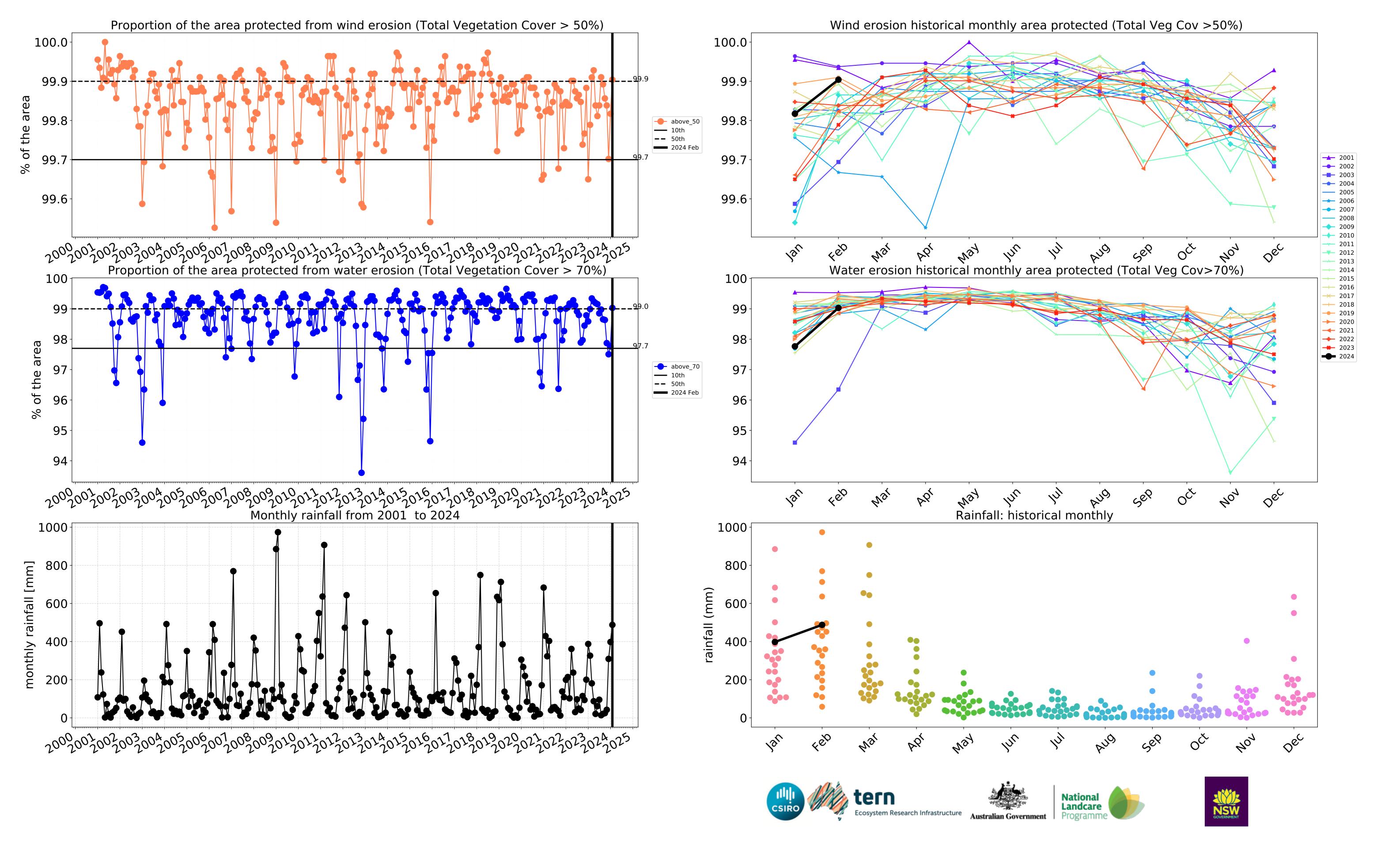
Use of Australia

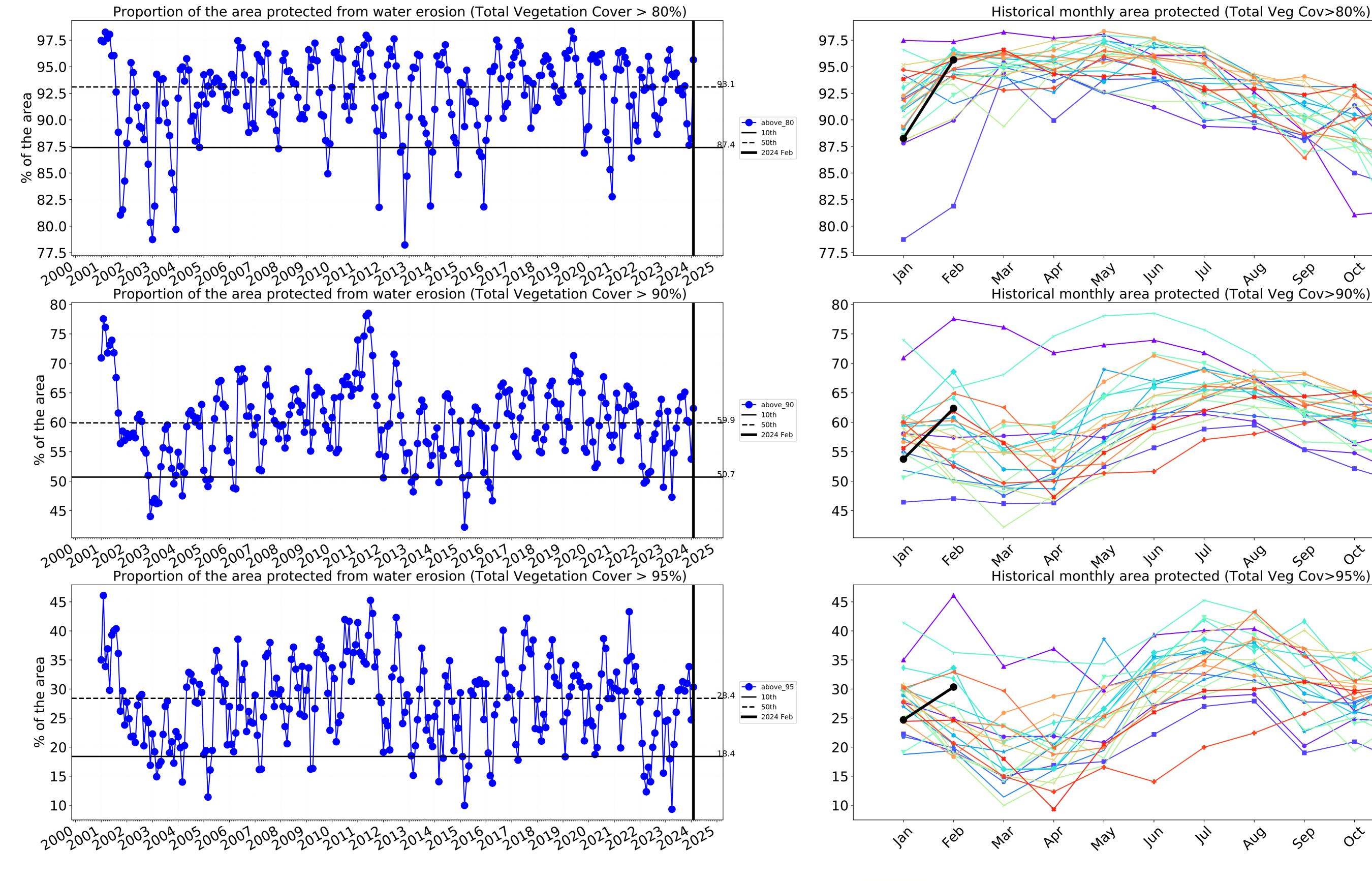


Deciles show where the pixel value lies in the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

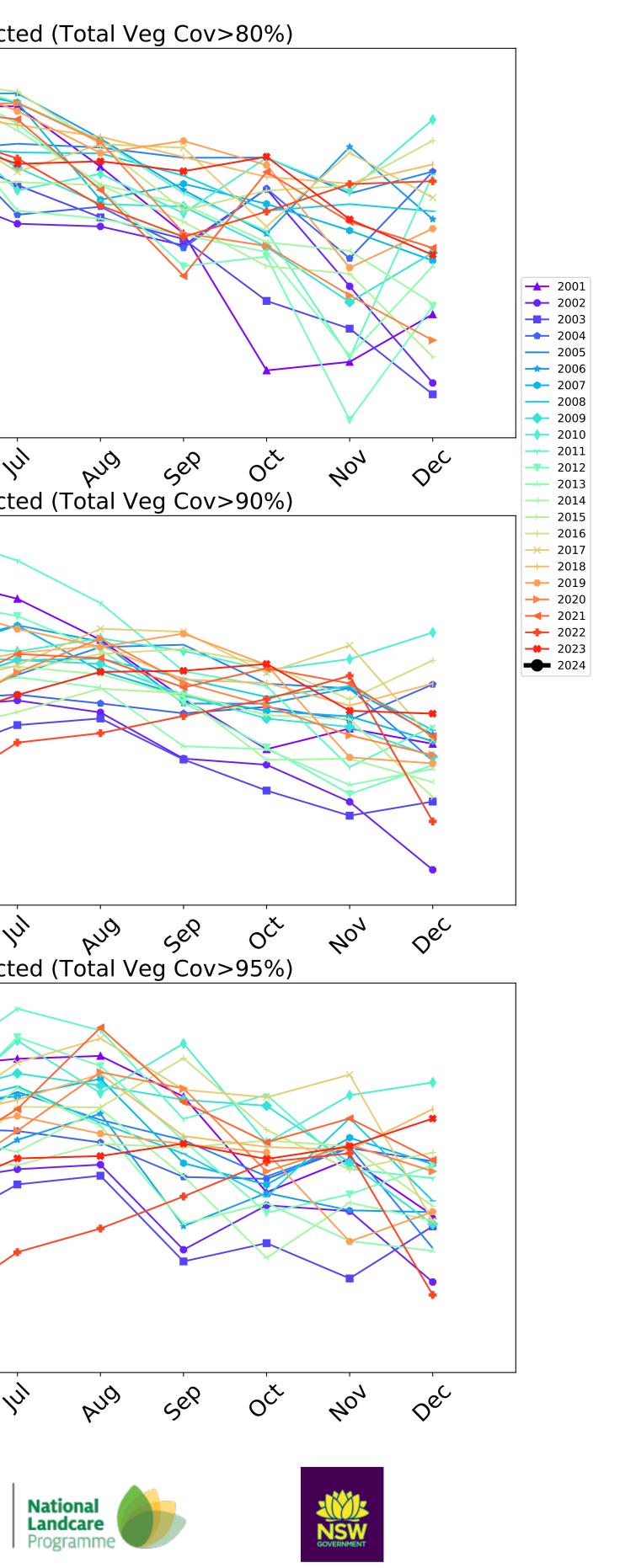












Conservation and natural environments

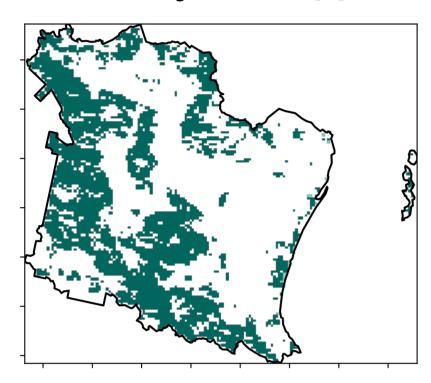
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forest

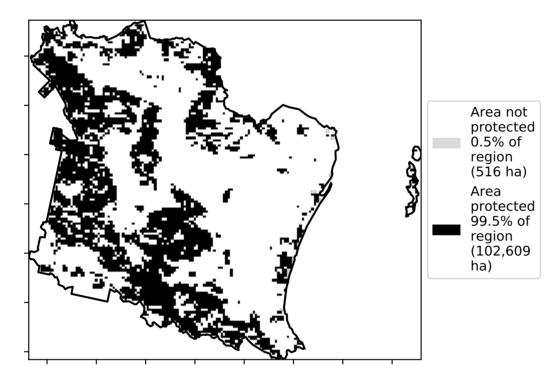
woodland forest

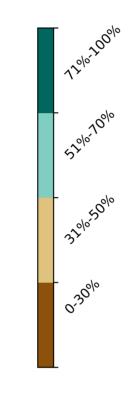
Land use and forest cover

Total Vegetation Cover [%]



% Area protected from water erosion (>70%)





1 Conservation and natural environments - Non-forest

3 Conservation and natural environments - Non-

2 Conservation and natural environments - Woodland

20

10

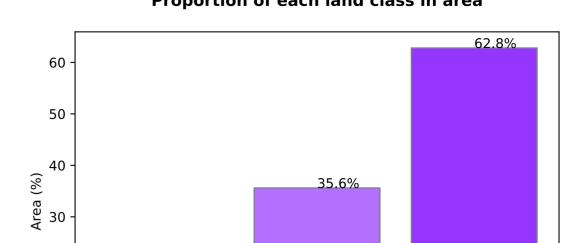
0

-0.5

1.6%

0.0

0.5



Proportion of each land class in area

Proportion of vegetation cover class in area

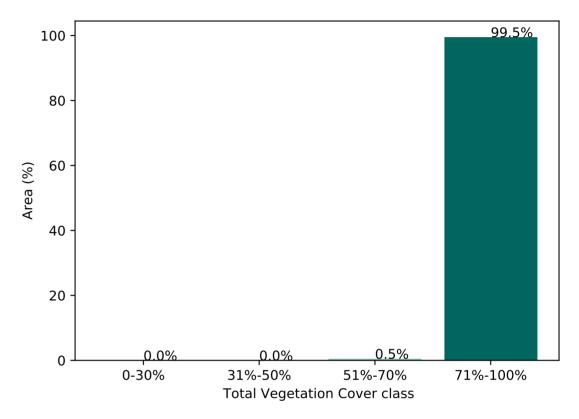
1.0

Land use class

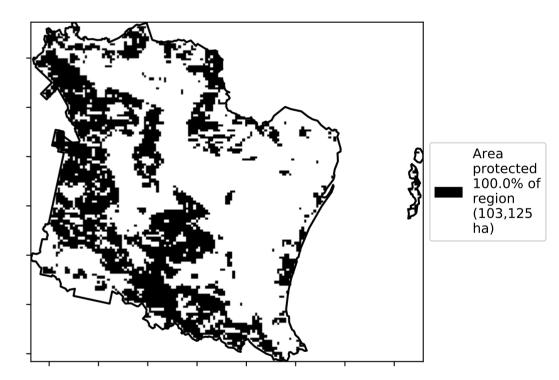
1.5

2.0

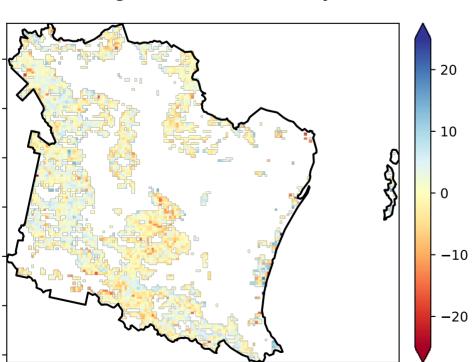
2.5



% Area protected from wind erosion (>50%)

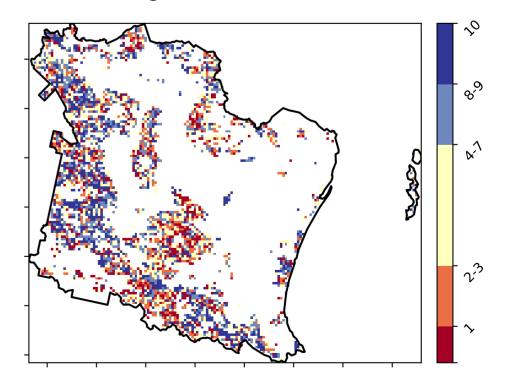


Total Vegetation Cover Anomaly [%]



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 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.

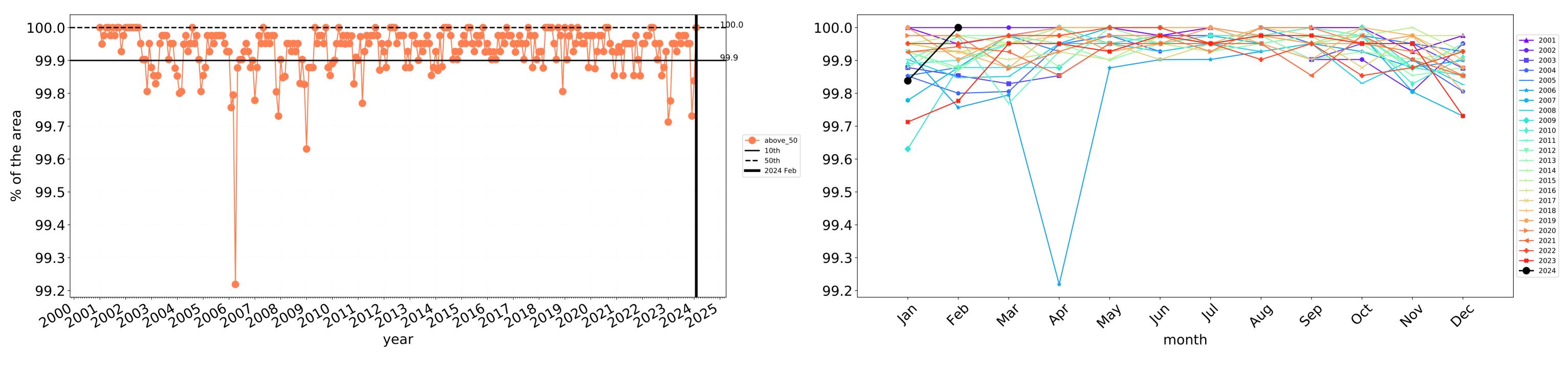
Catchment Scale Land Use and Forests of Australia (2018)

Use of Australia (2018) and Forests

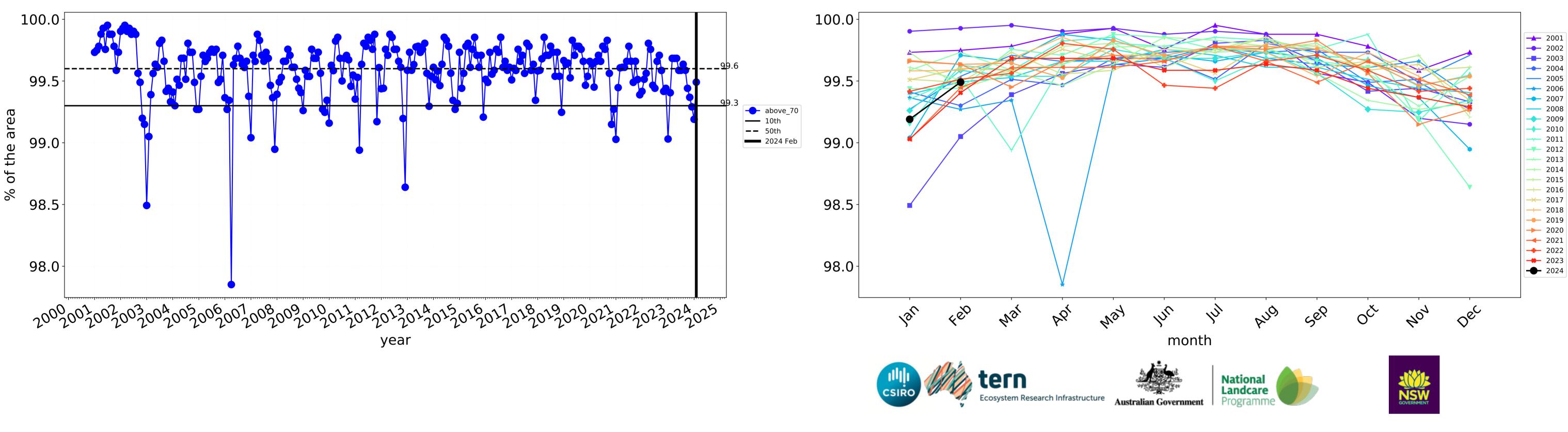
of Australia (2018)

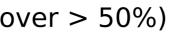
Catchment Scale Land

Derived from



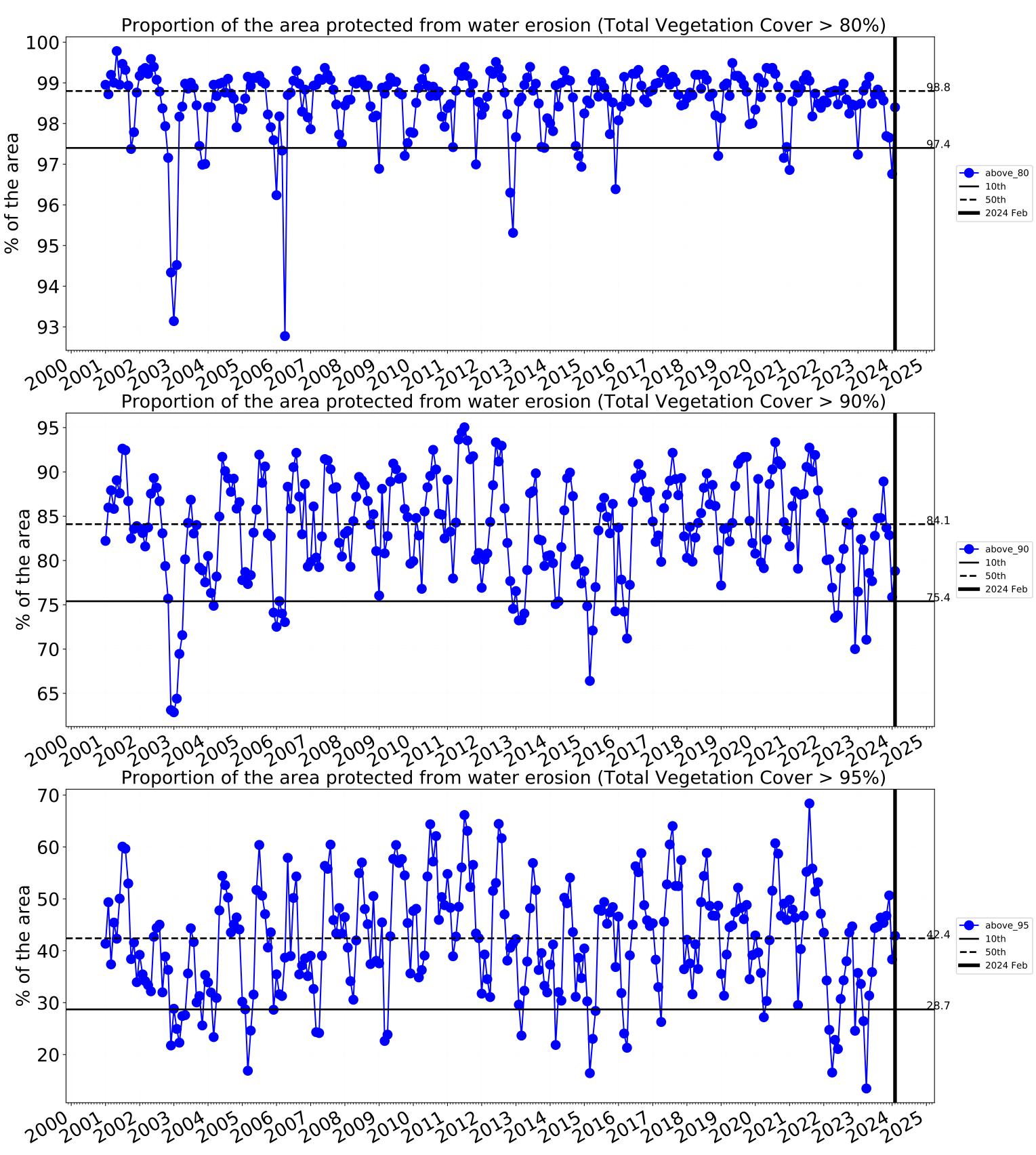


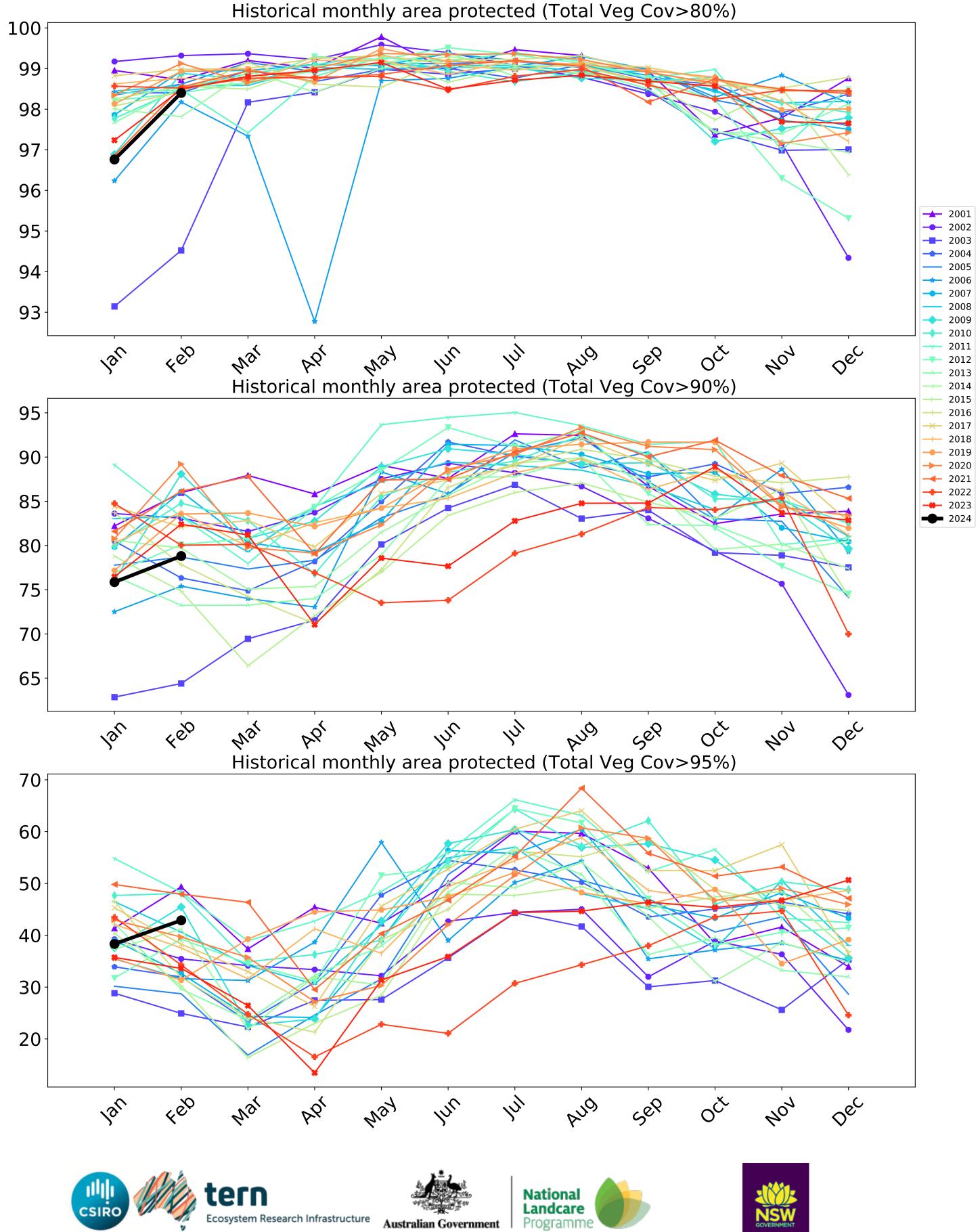


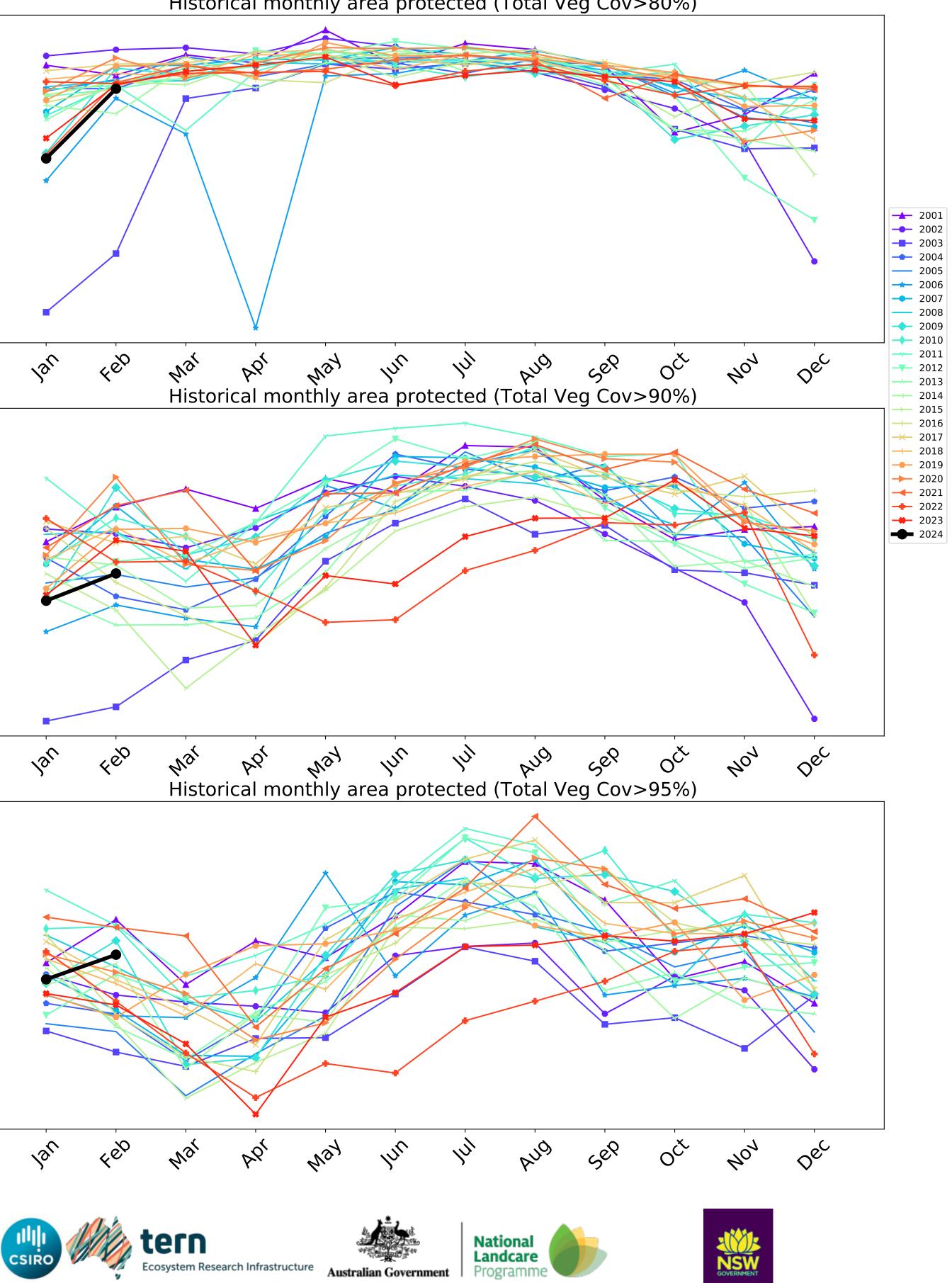


Wind erosion historical monthly area protected (Total Veg Cov >50%)

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







Conservation and natural environments Woodland forest

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120001

52°1070°1

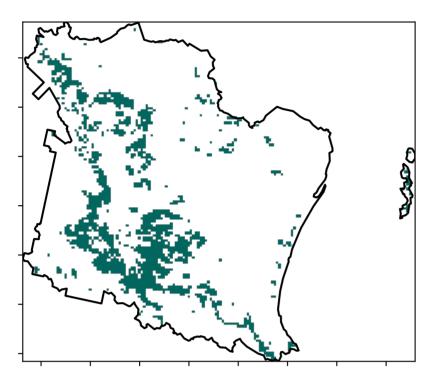
32%50

0.30%

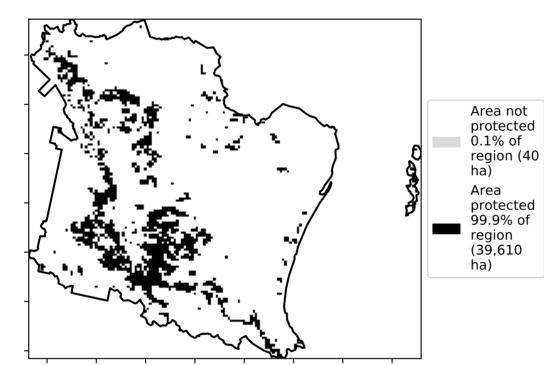
Catchment Scale Land Use and Forests _ of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

Total Vegetation Cover [%]

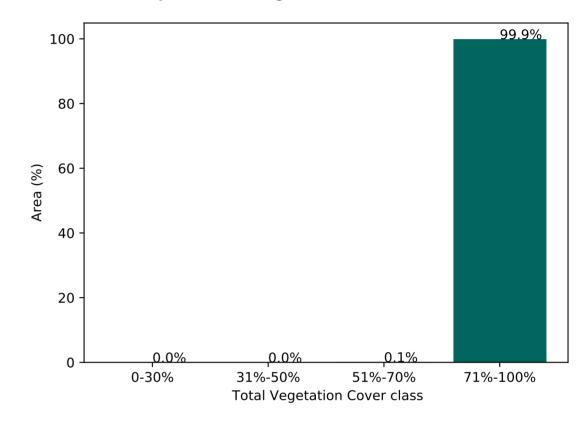
Land use and forest cover



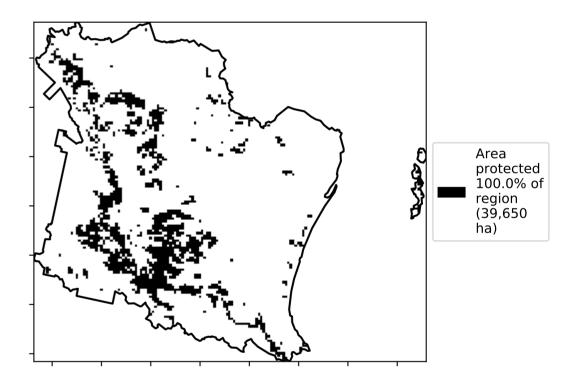
% Area protected from water erosion (>70%)



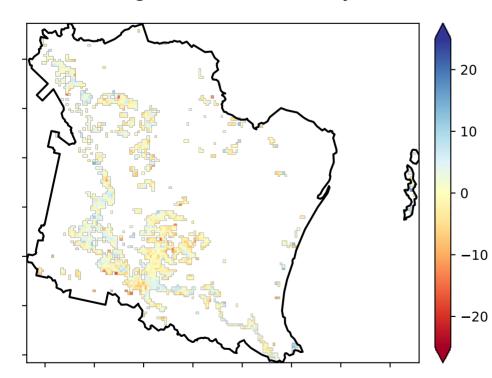




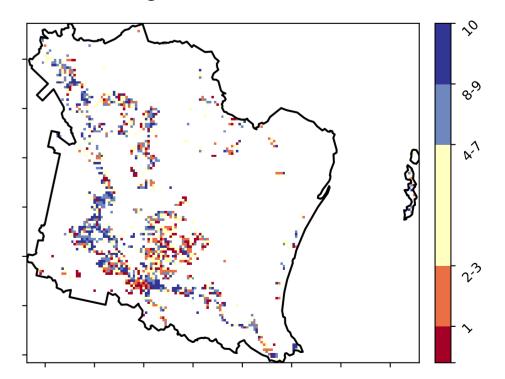
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



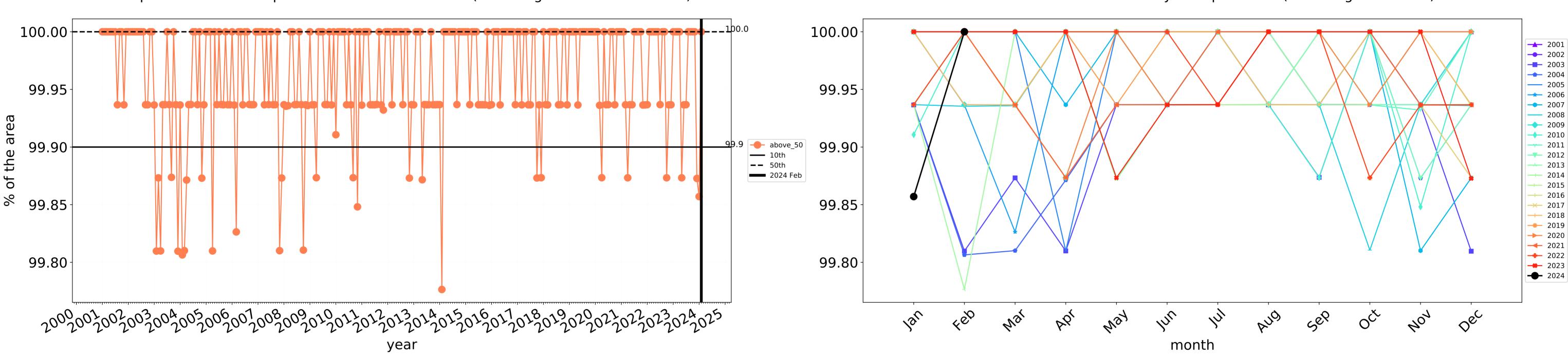
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019. **Total Vegetation Cover Decile [%]**

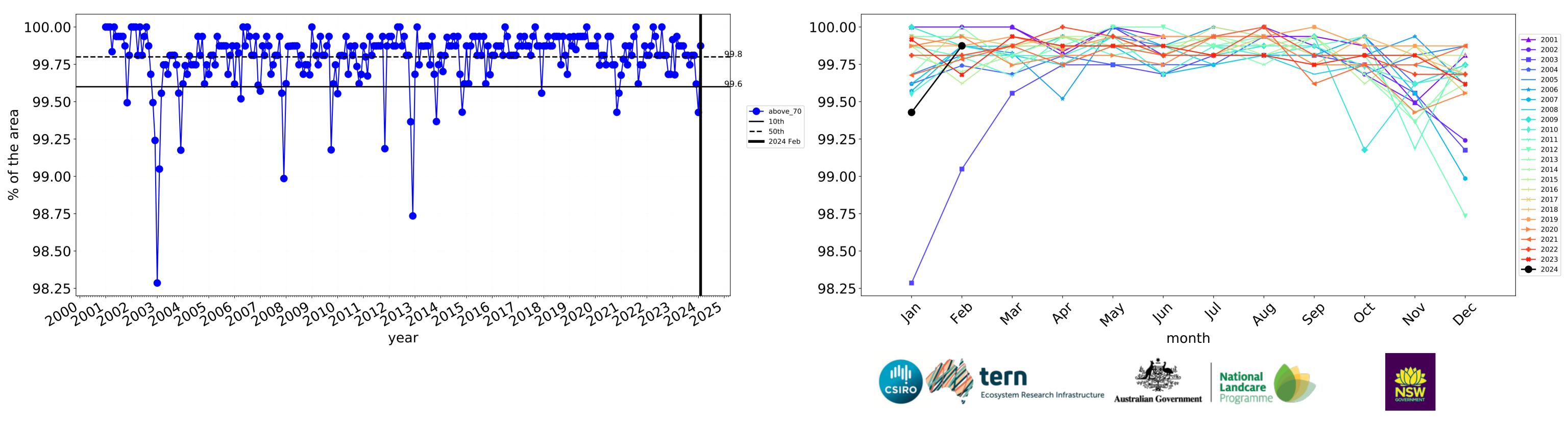




Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



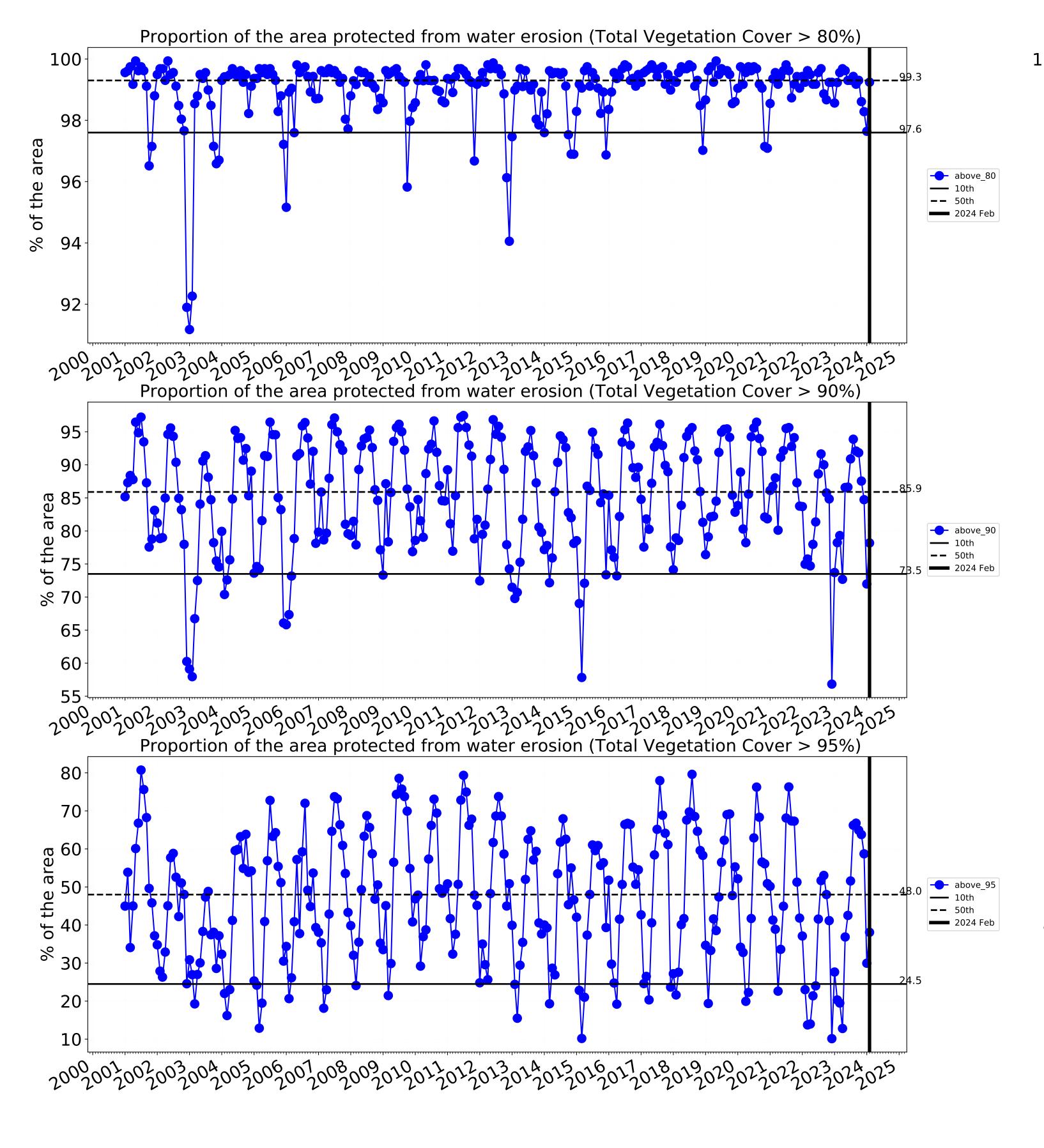


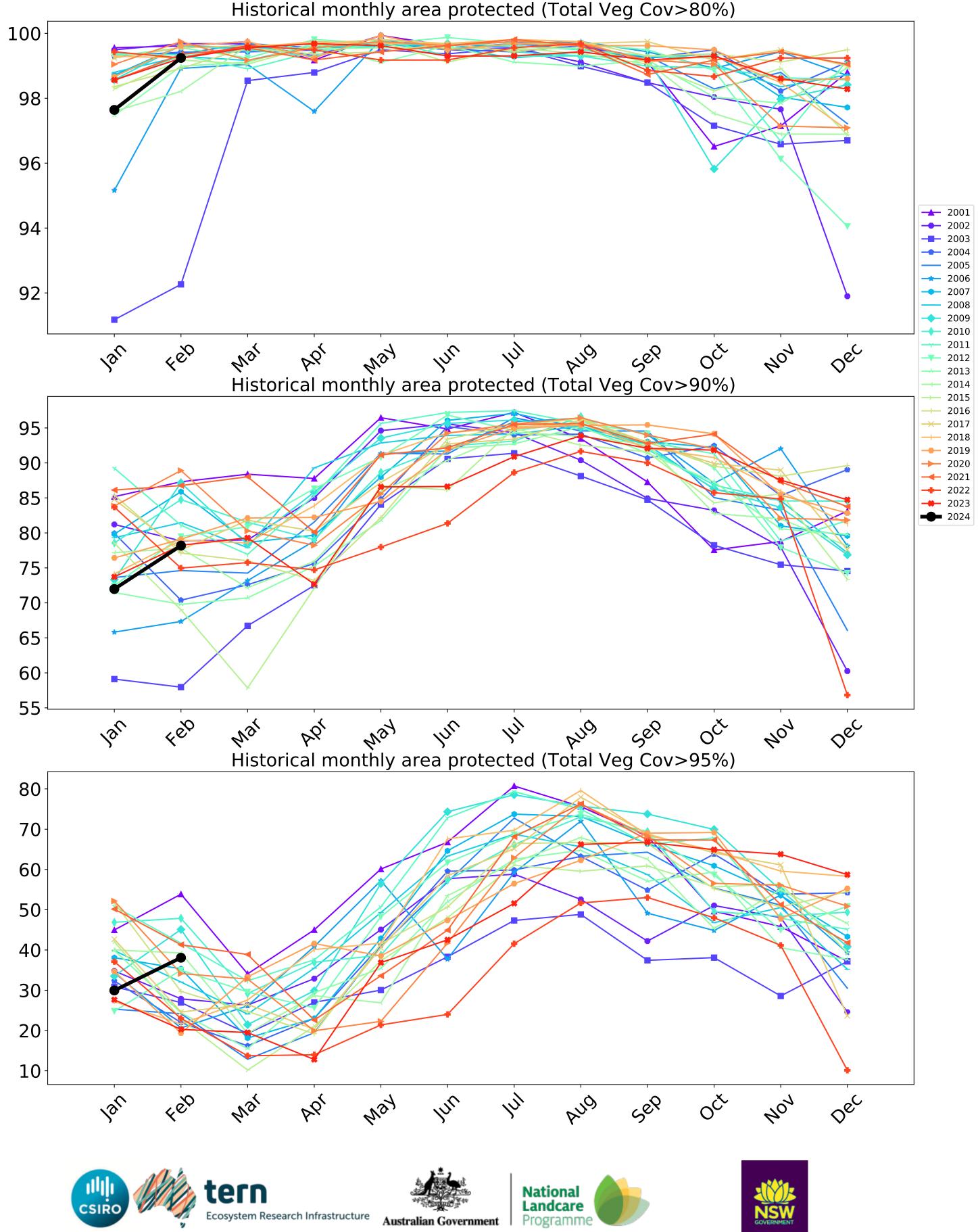


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

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

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

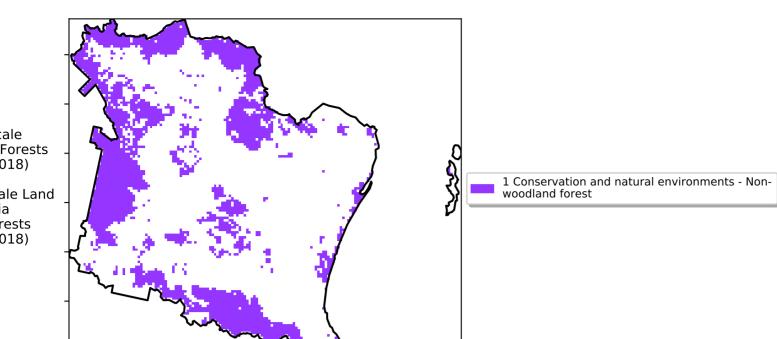






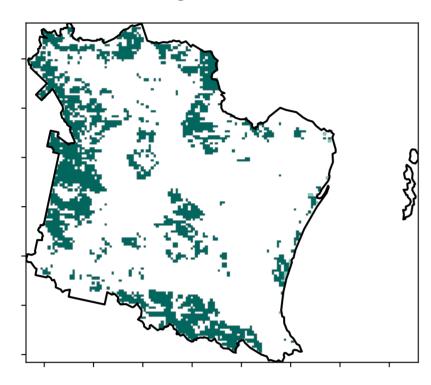
Conservation and natural environments Forest (non woodland)

Land use and forest cover

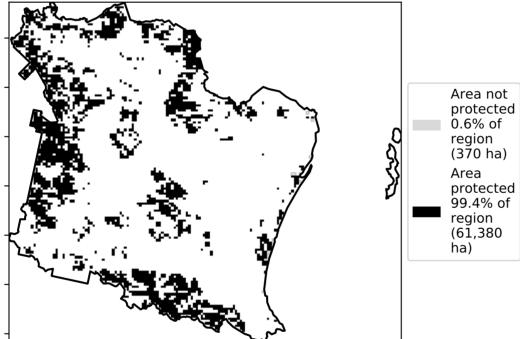


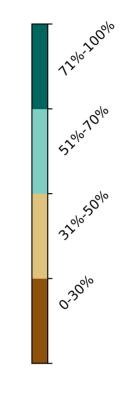
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

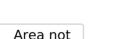
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)







- 20

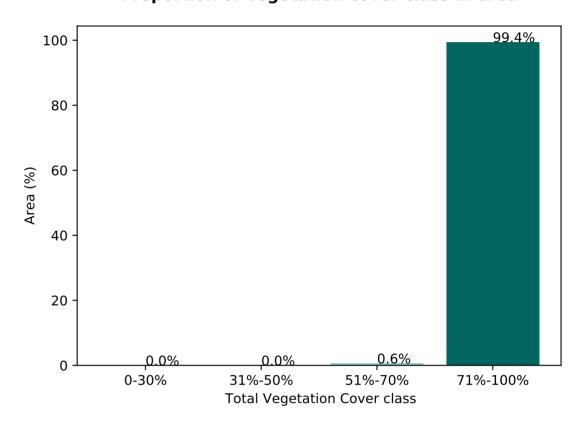
- 10

0

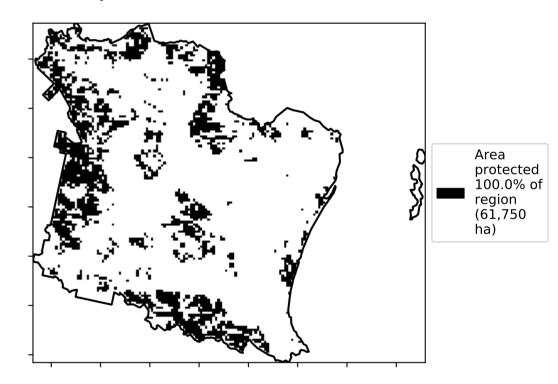
-10

-20

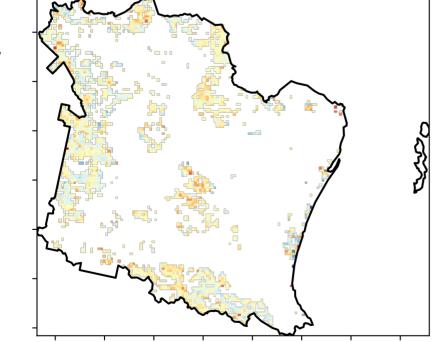
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)

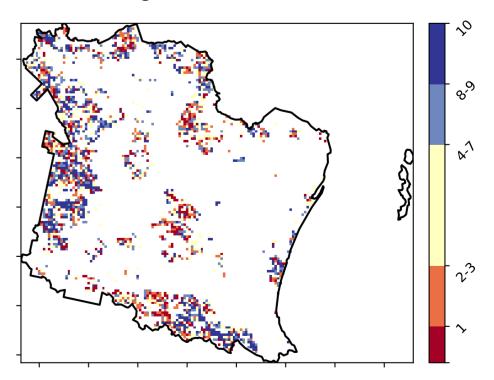


Total Vegetation Cover Anomaly [%]



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 man using baseline the map using baseline from 2001 to 2019.

Total Vegetation Cover Decile [%]



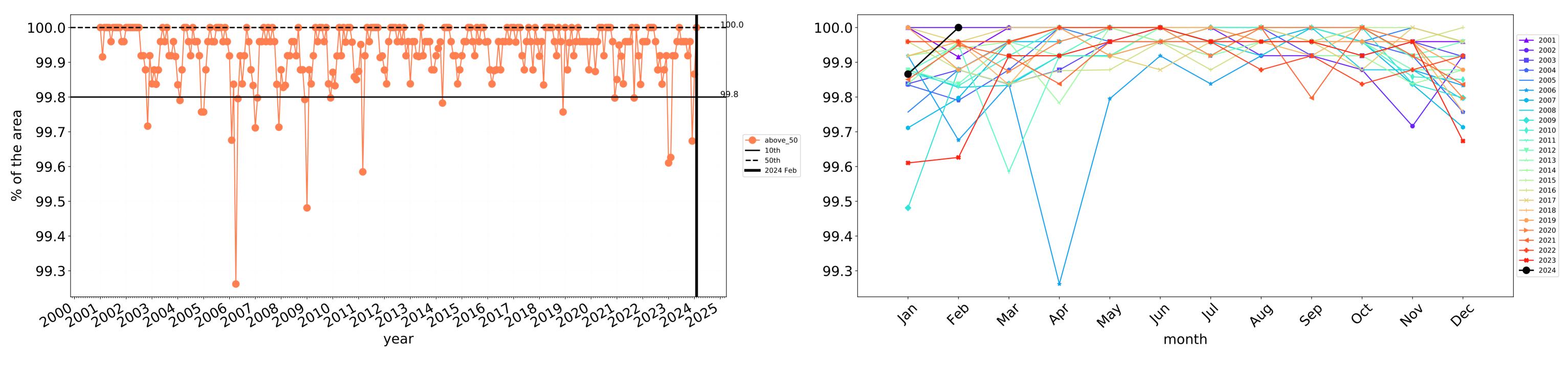
NSV



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

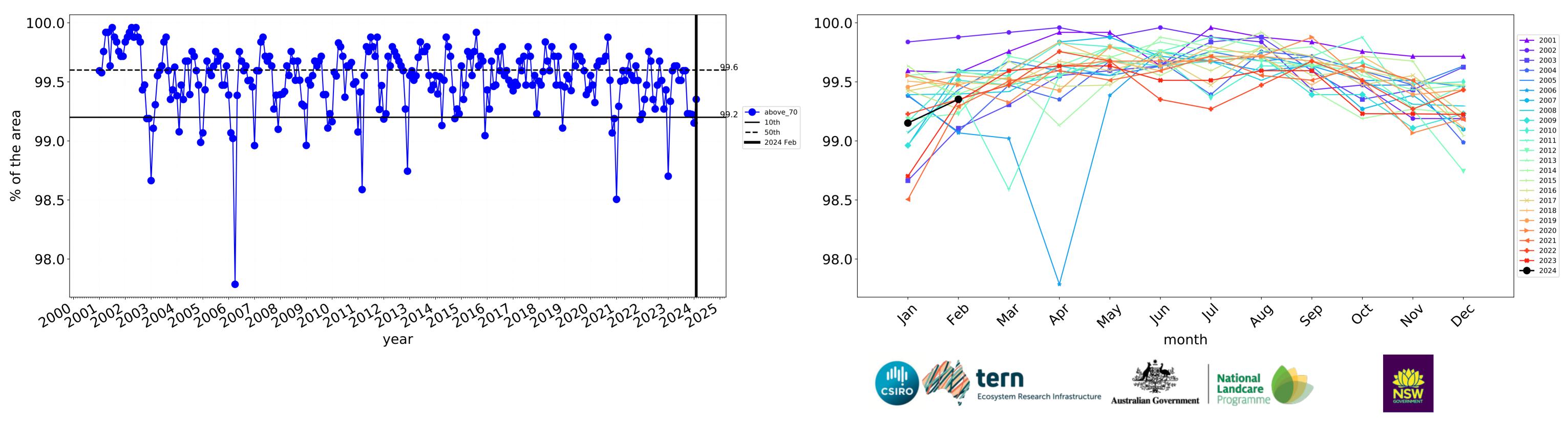


Conservation and natural environments Forest (non woodland) timeseries



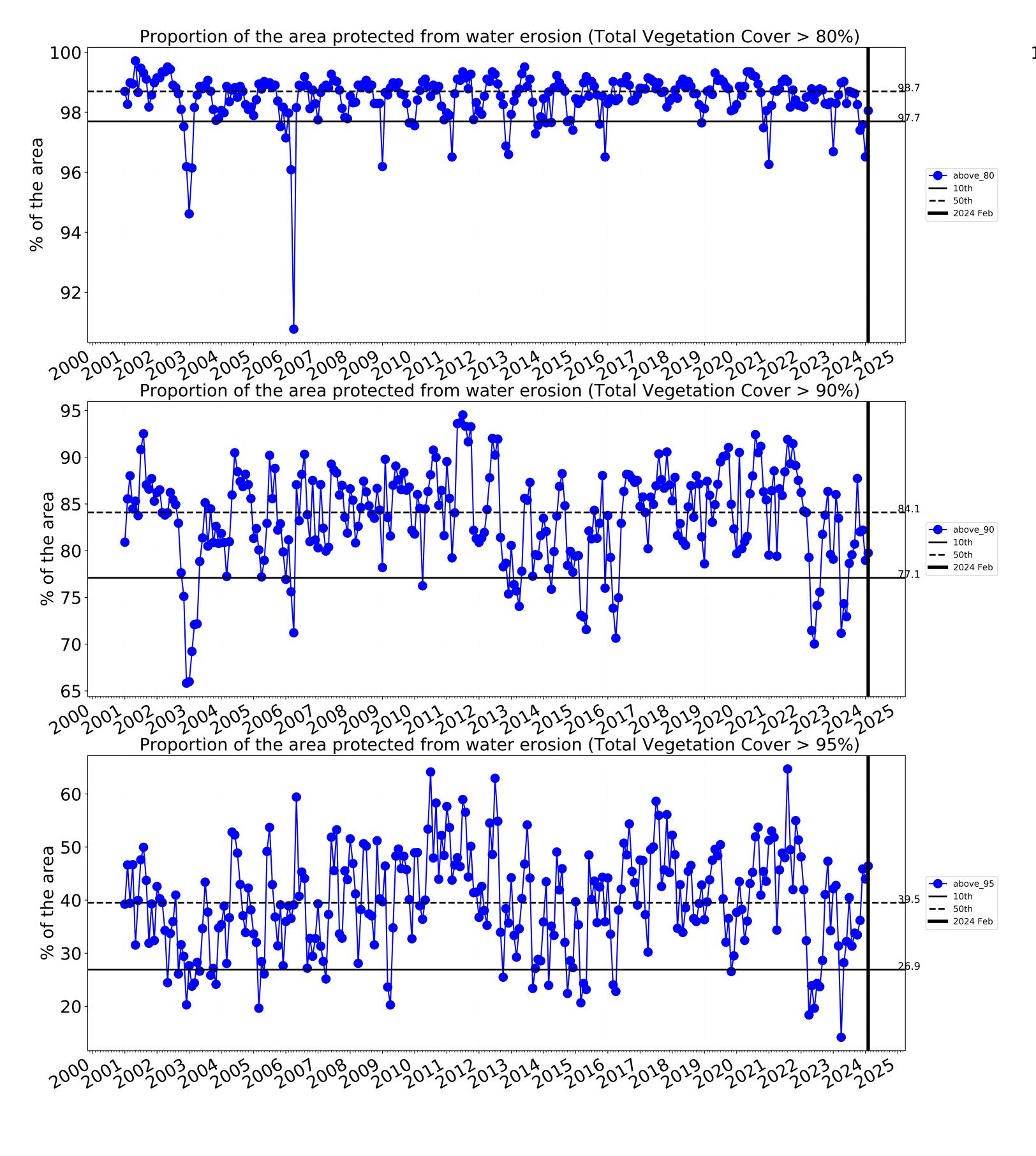
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

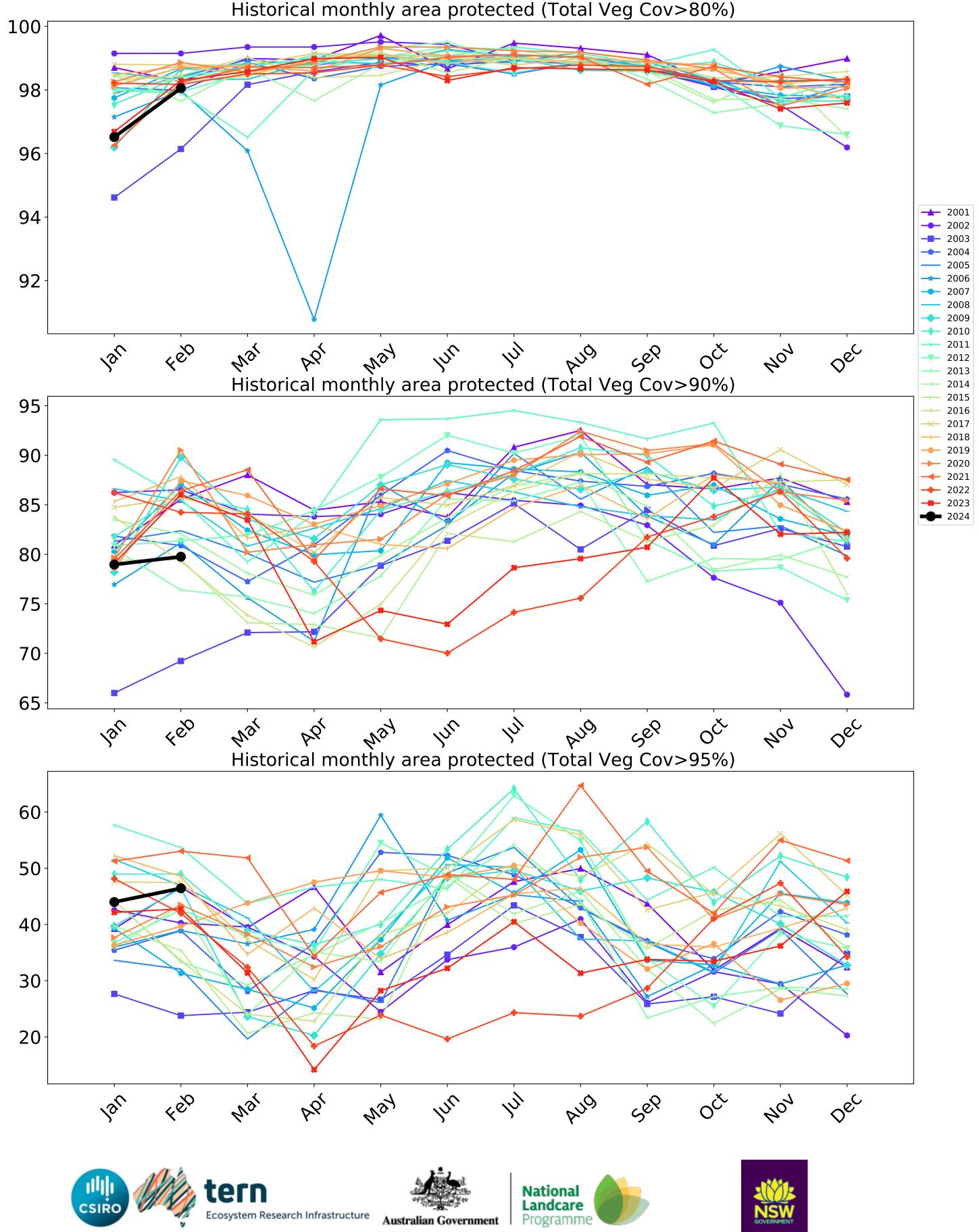
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



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

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

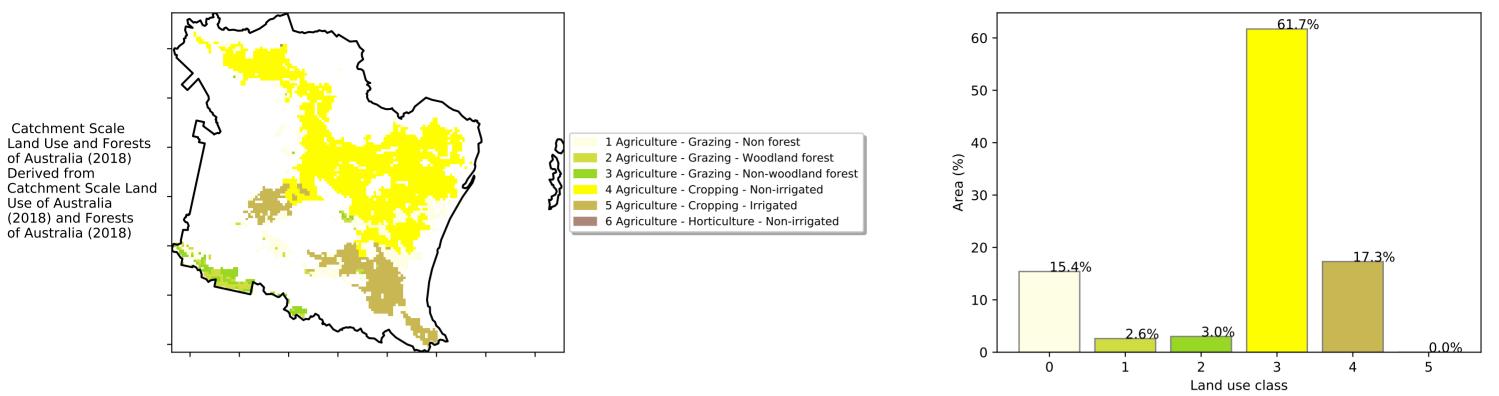




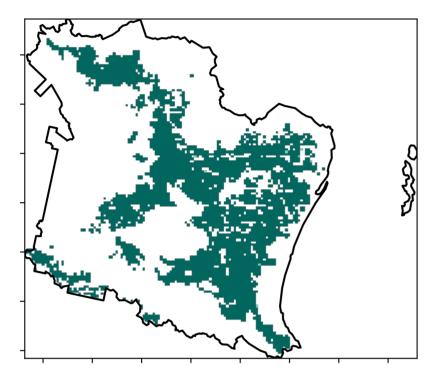
Agriculture

Land use and forest cover

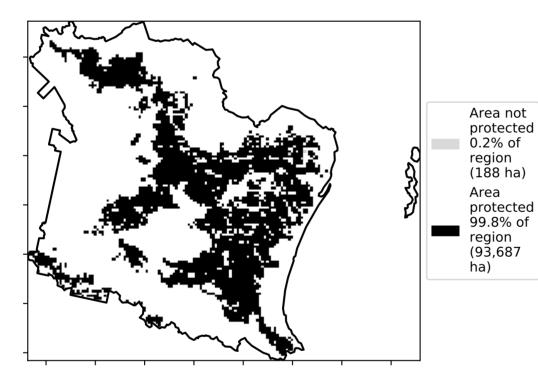
Proportion of each land class in area

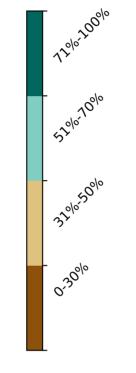


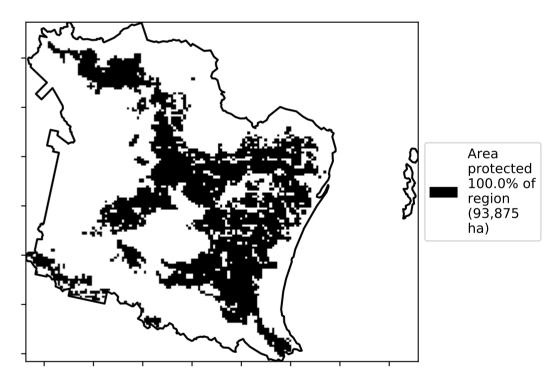
Total Vegetation Cover [%]



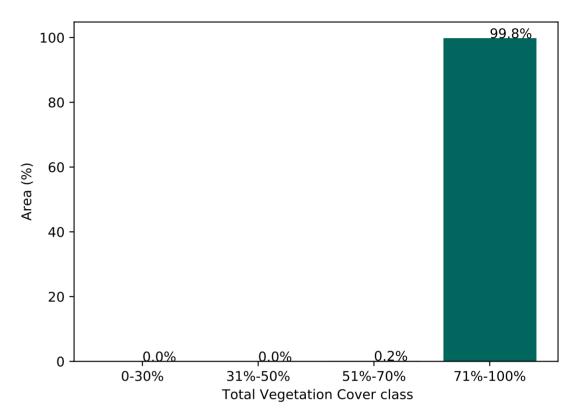
% Area protected from water erosion (>70%)





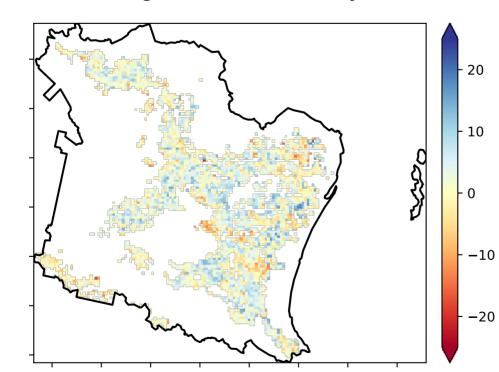


Proportion of vegetation cover class in area



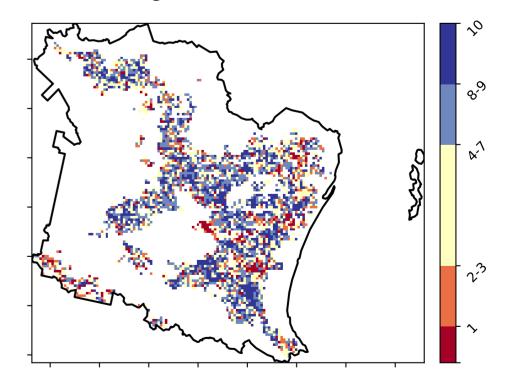
% Area protected from wind erosion (>50%)

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.

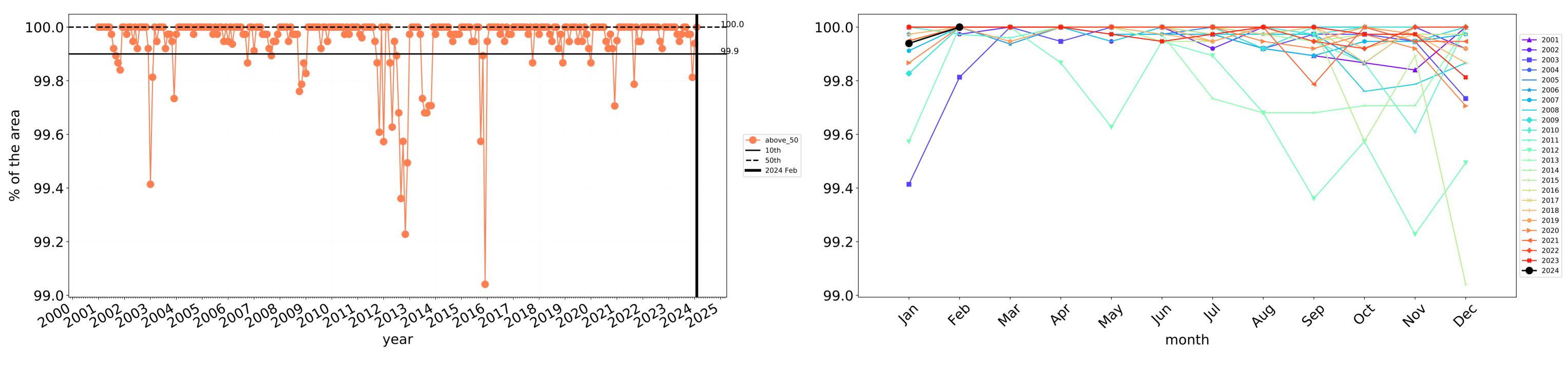
Total Vegetation Cover Decile [%]



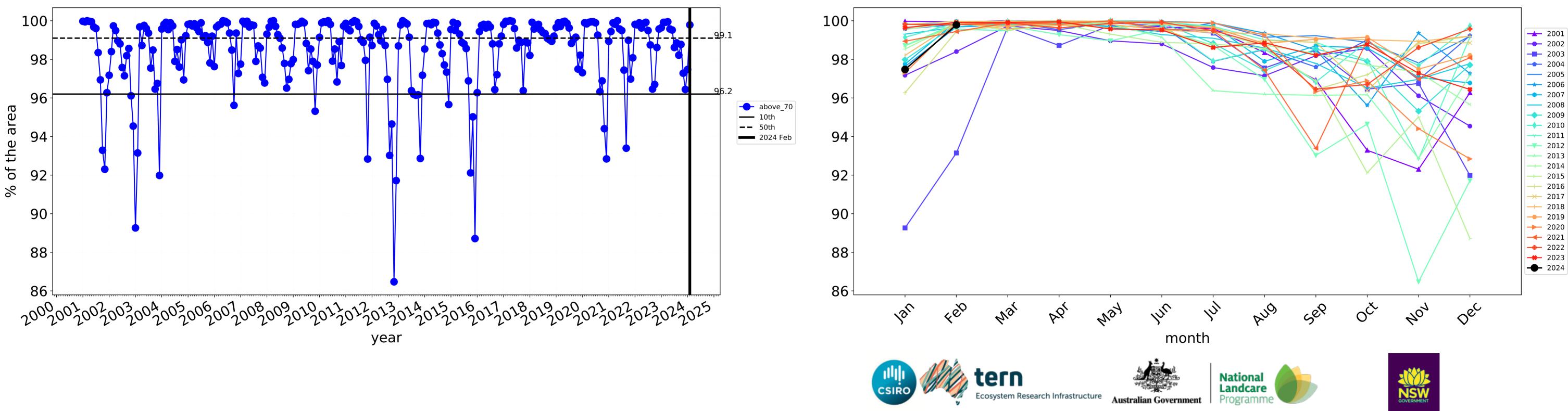


Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map from 2001 to 2019.





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

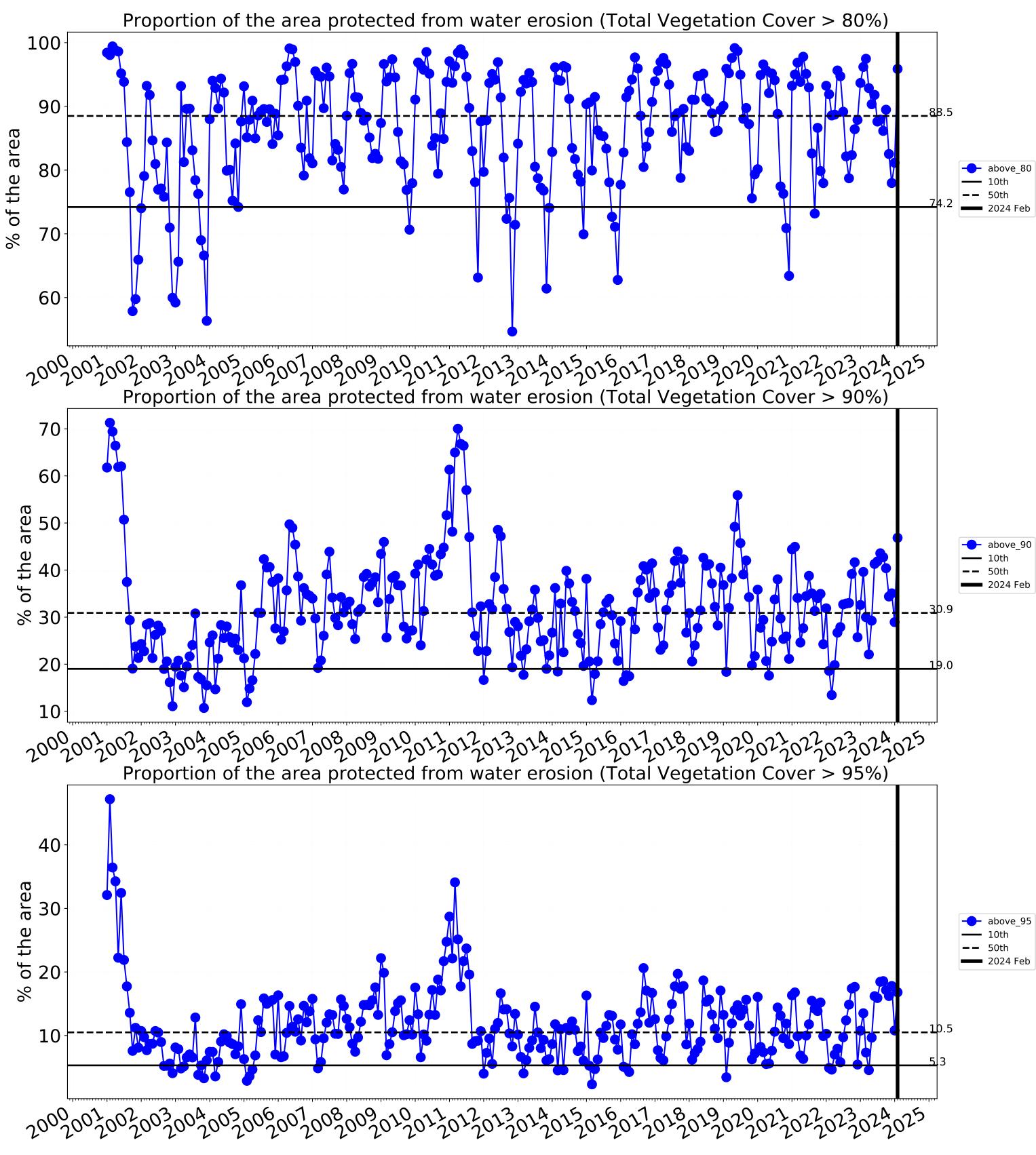


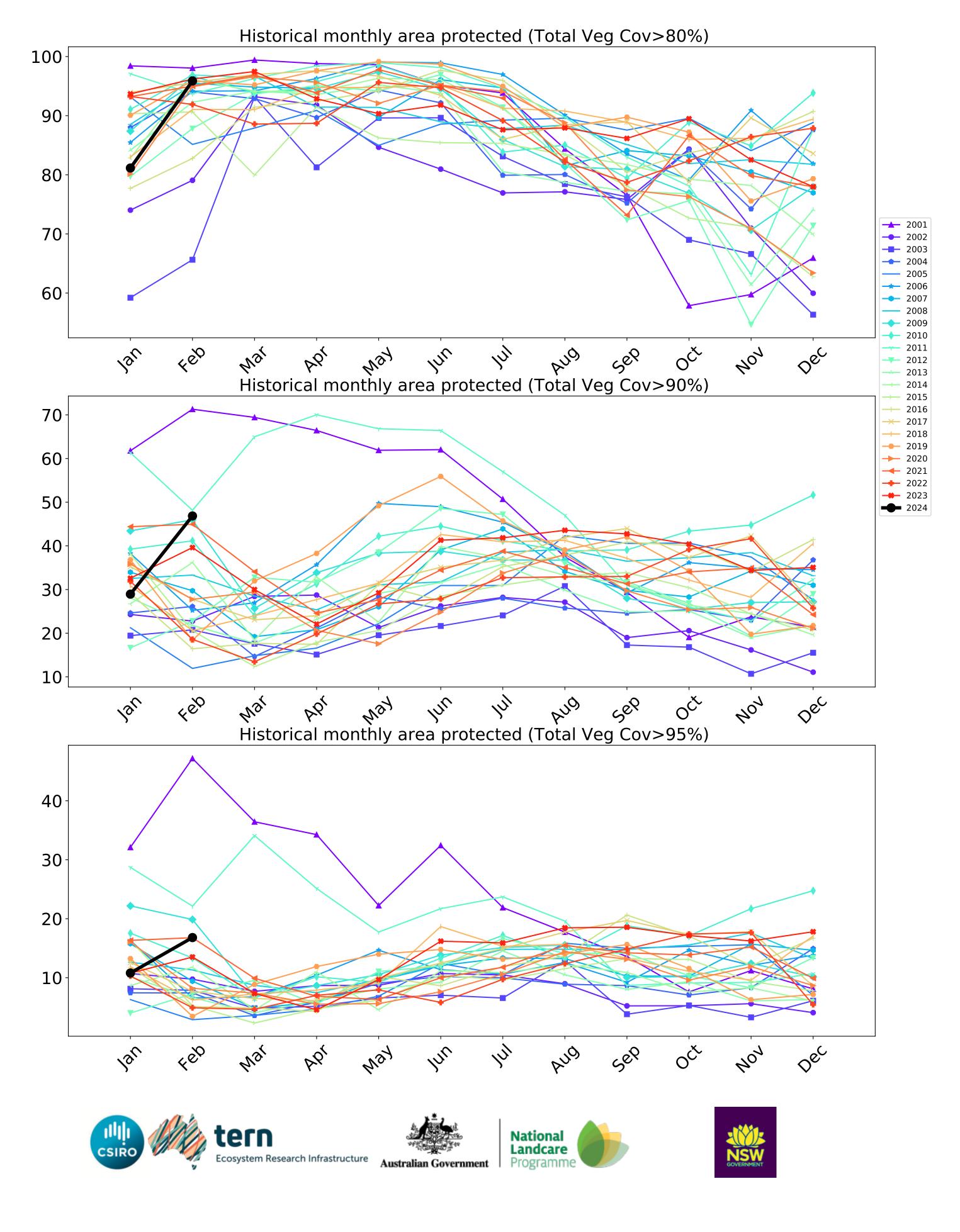
Agriculture timeseries

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



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





Grazing

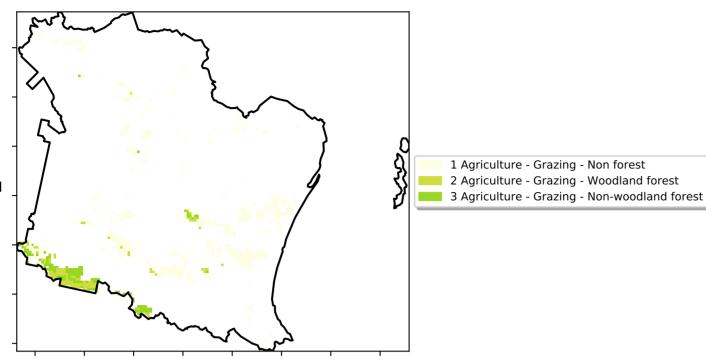
12%200%

52°1070°10

32905001

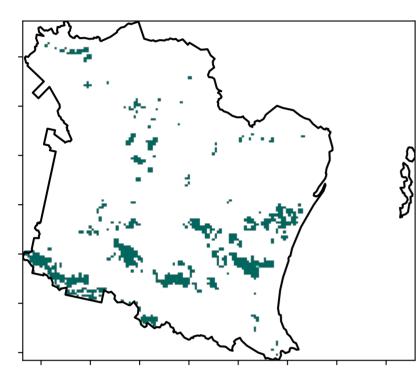
0.30%

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

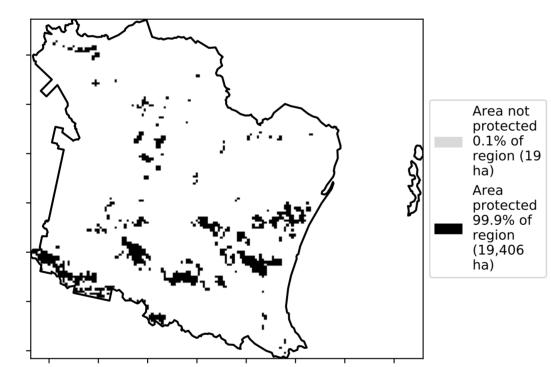


Land use and forest cover

Total Vegetation Cover [%]



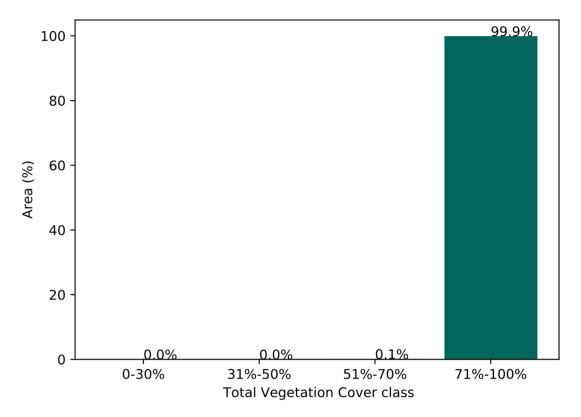
% Area protected from water erosion (>70%)



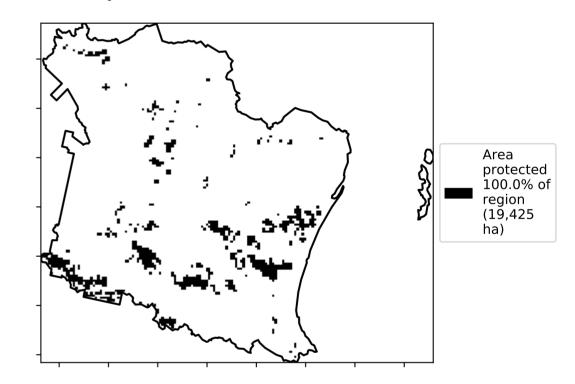
73.4% 70 60 50 Area (%) 30 20 14.4% 12.2% 10 0 0.5 1.0 1.5 2.0 2.5 -0.5 0.0 Land use class

Proportion of each land class in area

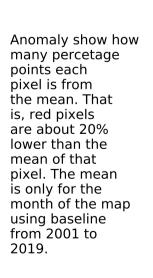
Proportion of vegetation cover class in area

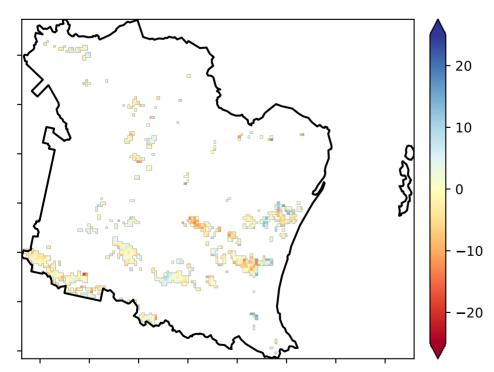


% Area protected from wind erosion (>50%)

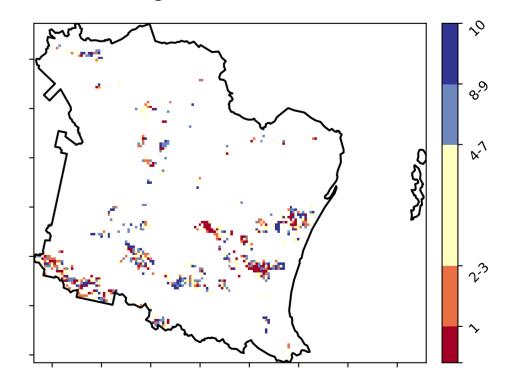


Total Vegetation Cover Anomaly [%]



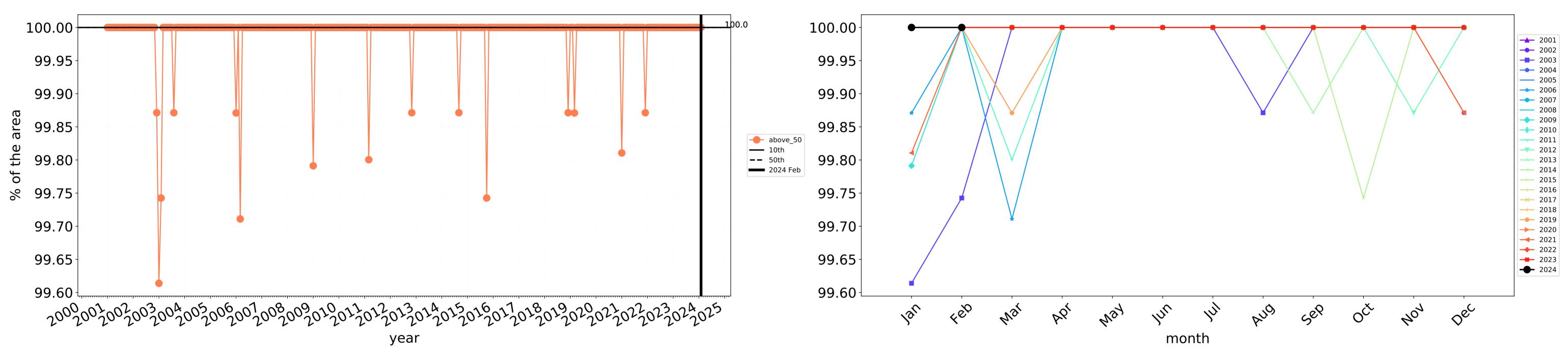


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019. Total Vegetation Cover Decile [%]

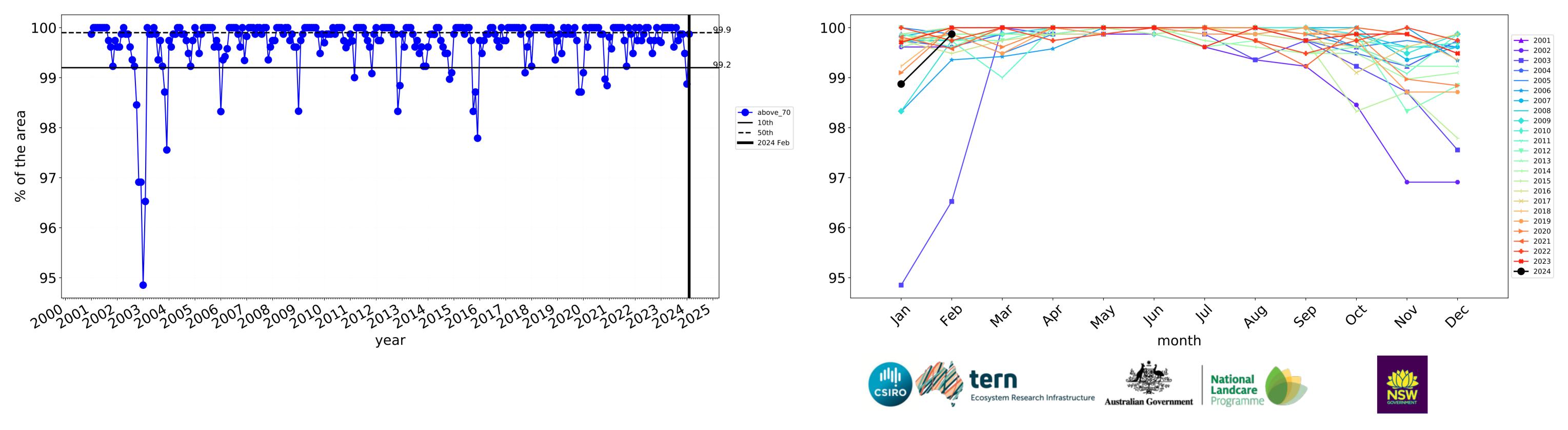




12



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

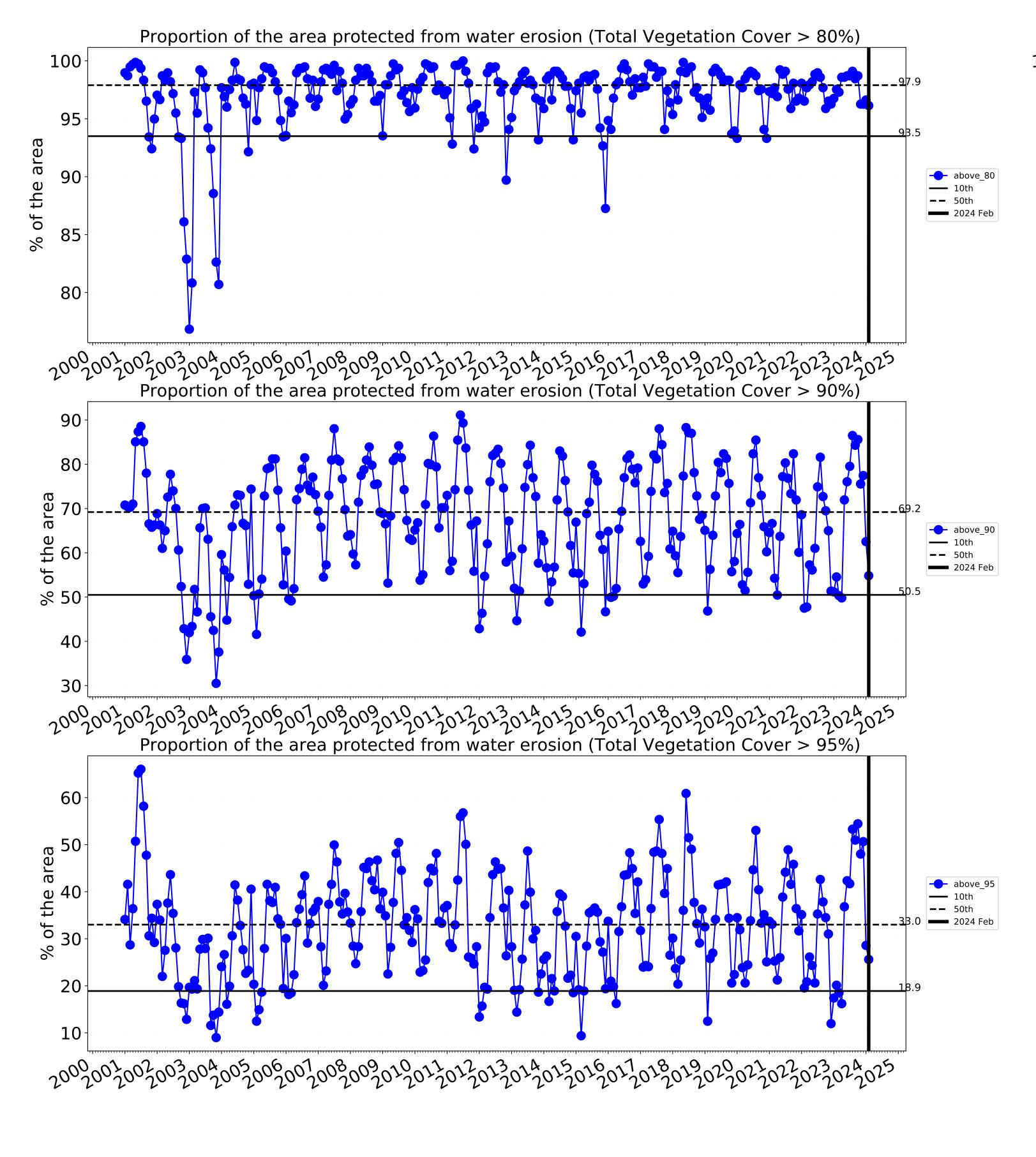


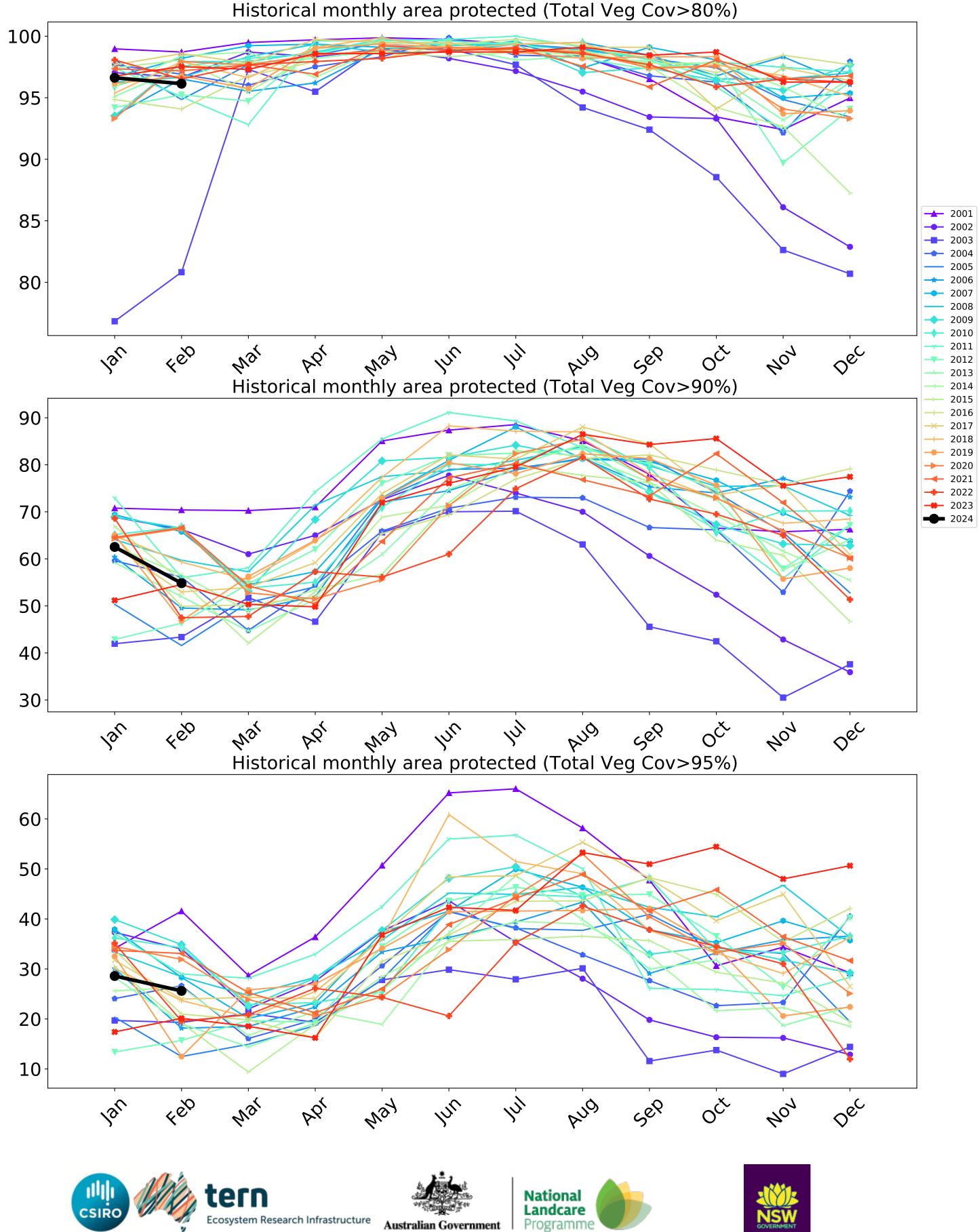
Grazing timeseries



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

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







Grazing non forest

12%200%

52°1070°10

32%50%

0.30%

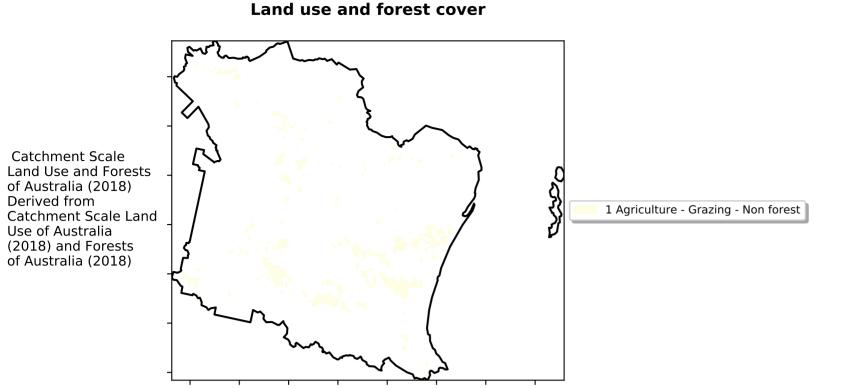
- 20

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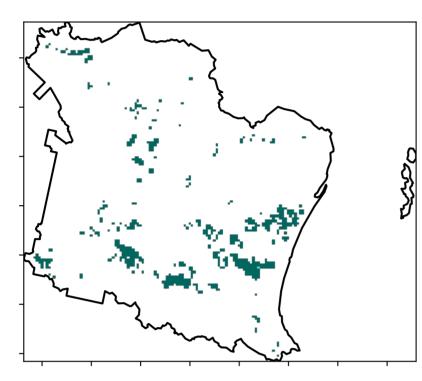
0

-10

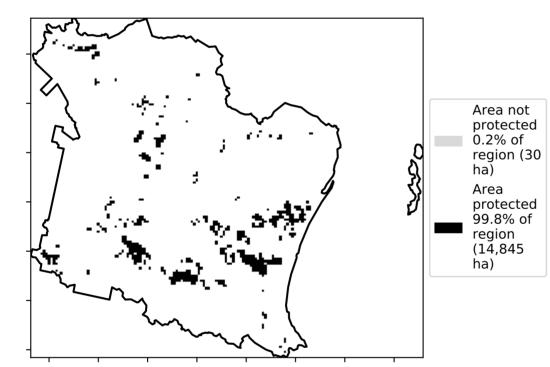
-20



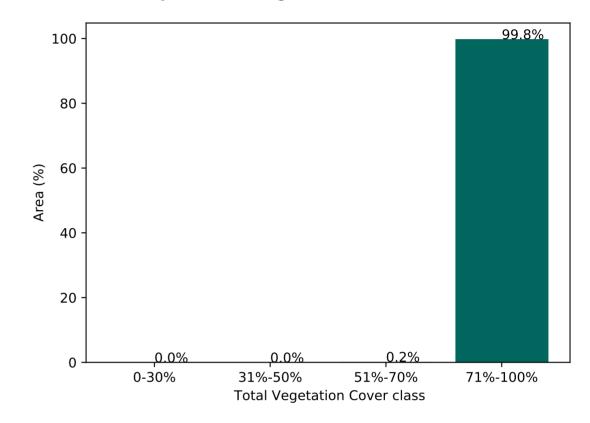
Total Vegetation Cover [%]



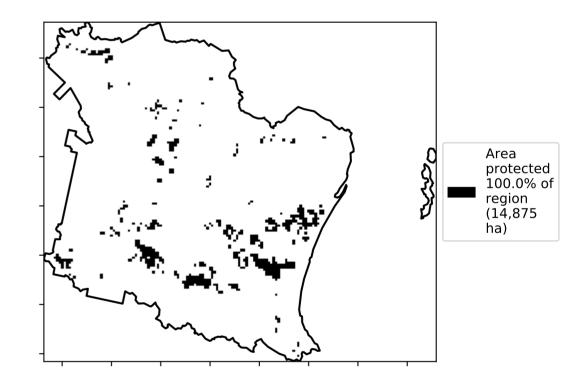
% Area protected from water erosion (>70%)



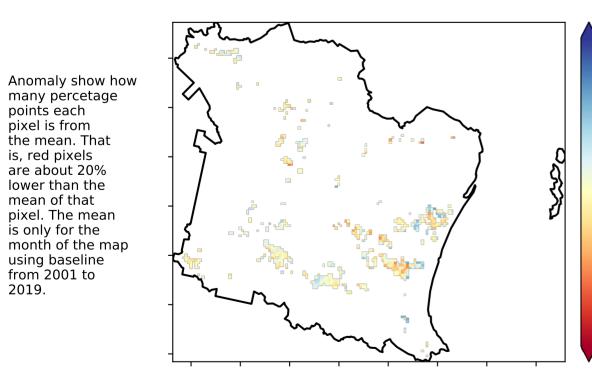
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]

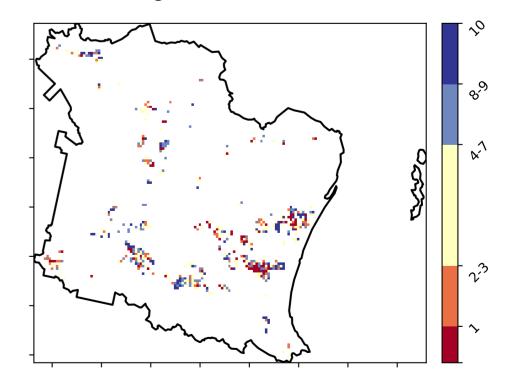


is, red pixels

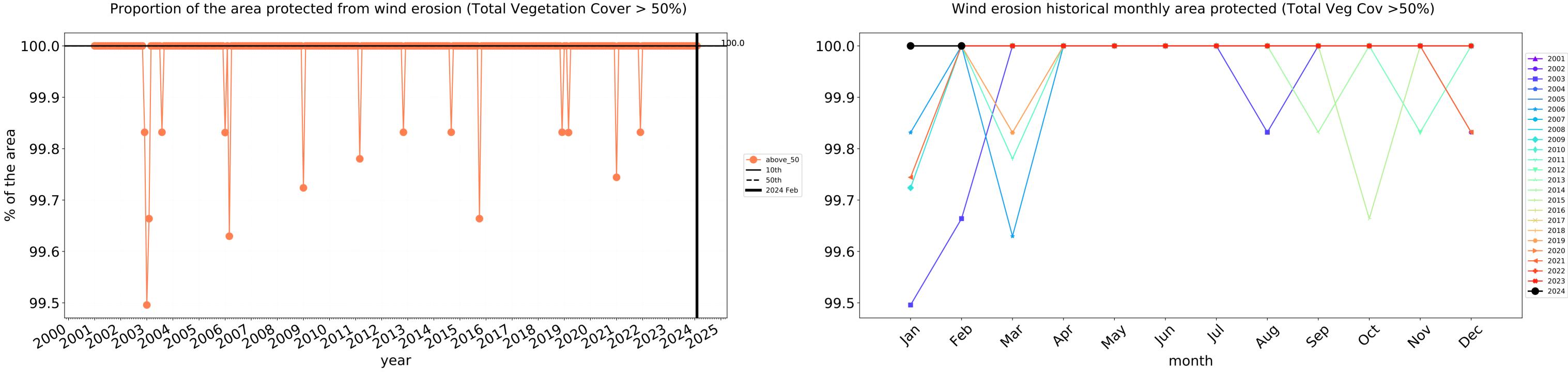
mean of that

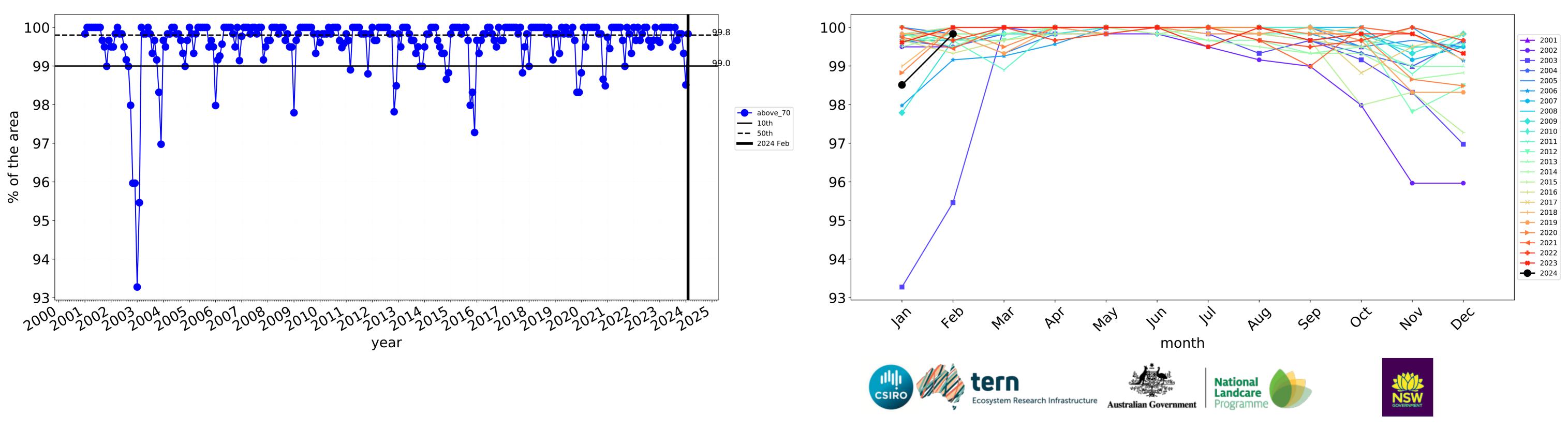
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Total Vegetation Cover Decile [%]



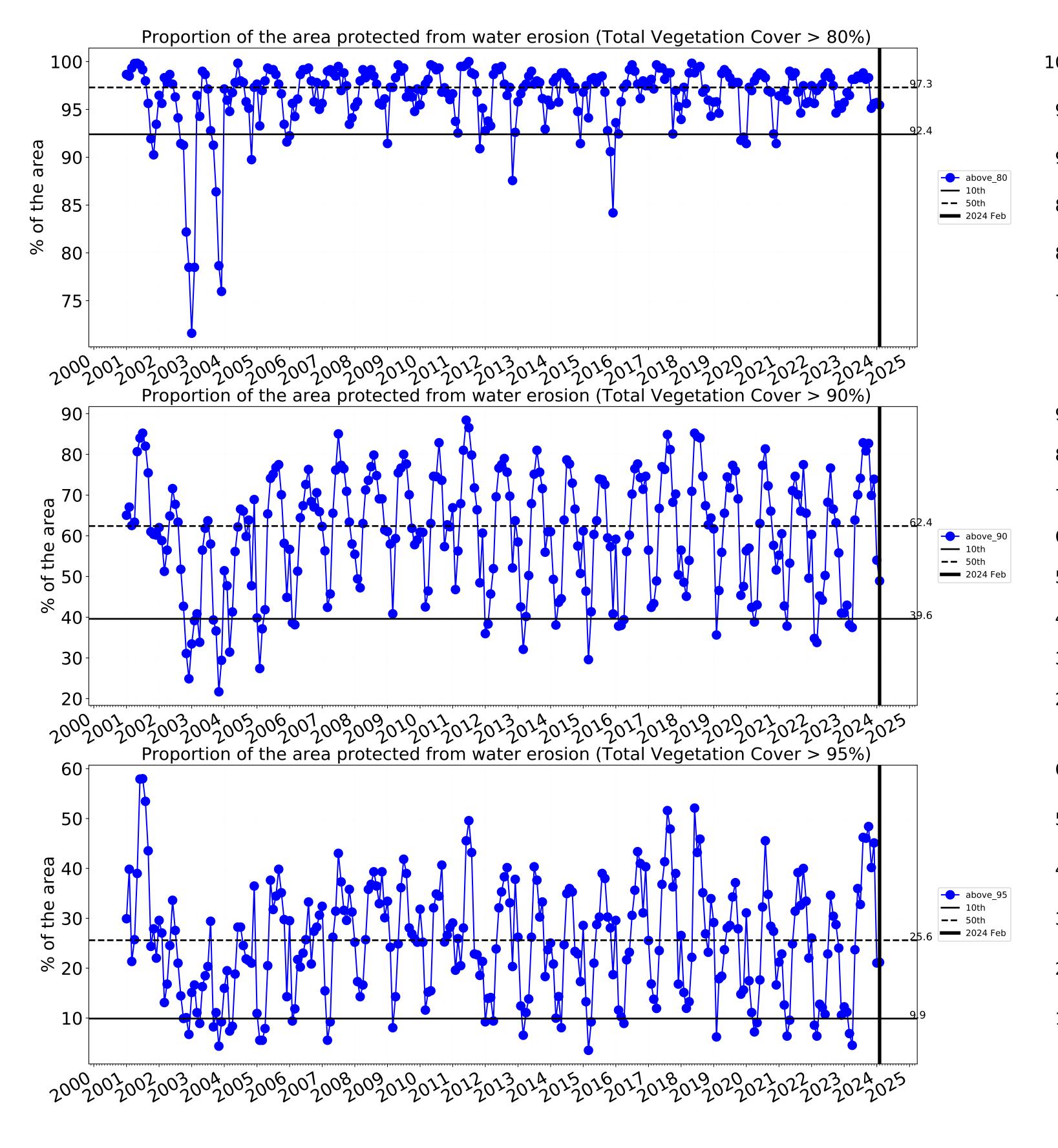


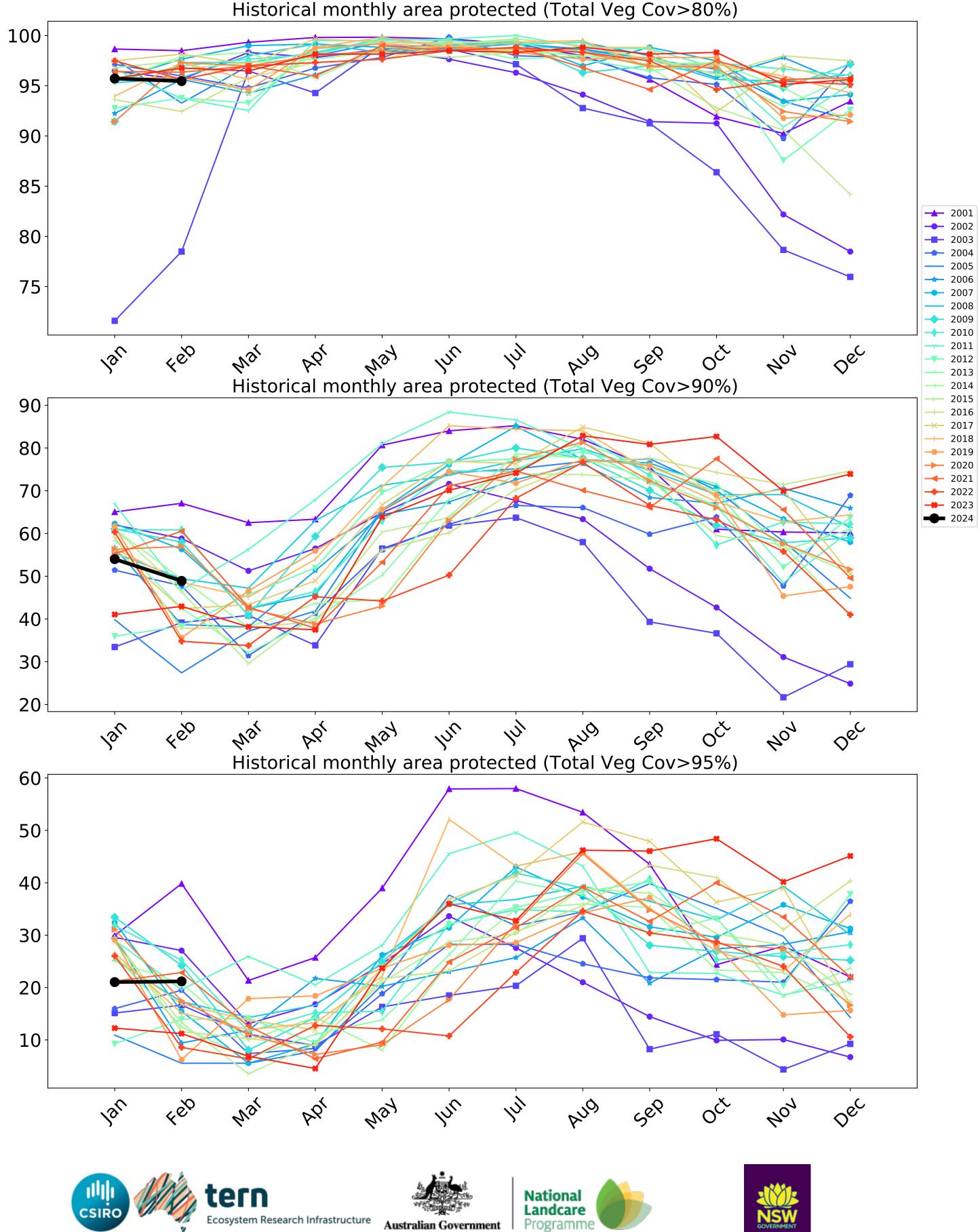




Grazing non forest timeseries

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





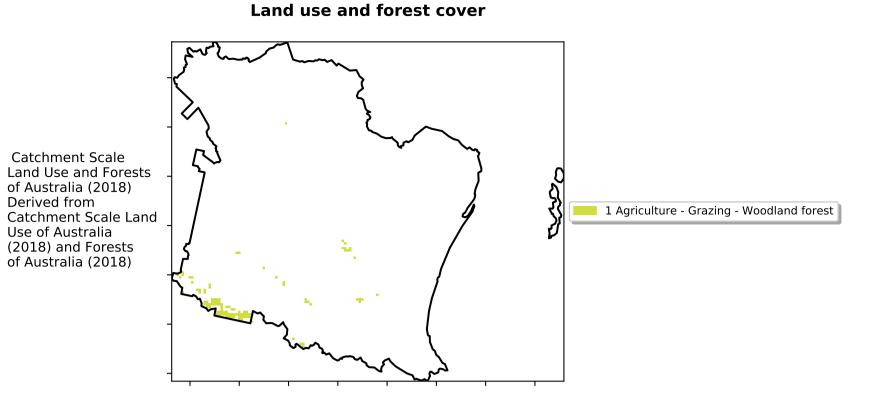
Grazing Woodland forest

1200-2000

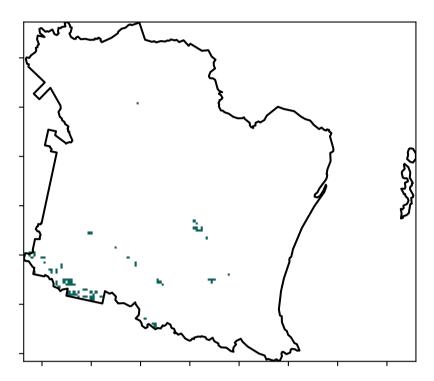
52°10-70°10

3201050010

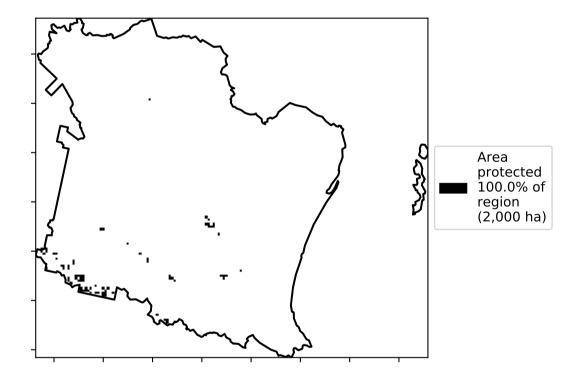
· 0.30%



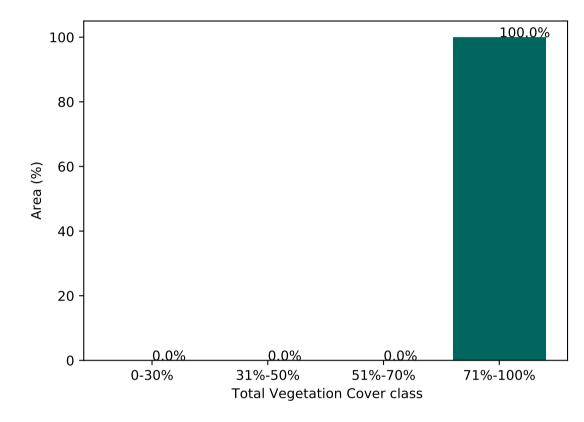
Total Vegetation Cover [%]



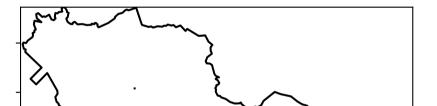
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area

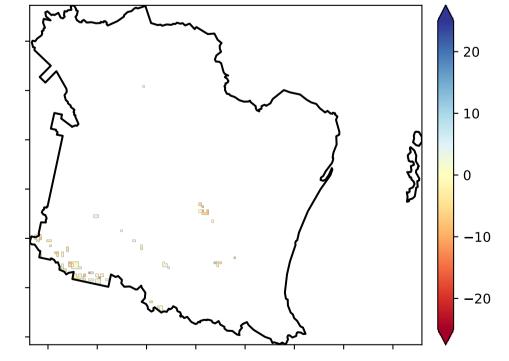


% Area protected from wind erosion (>50%)

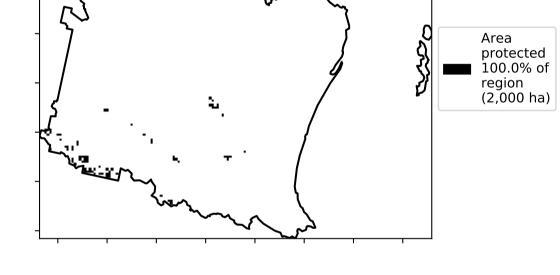


Total Vegetation Cover Anomaly [%]

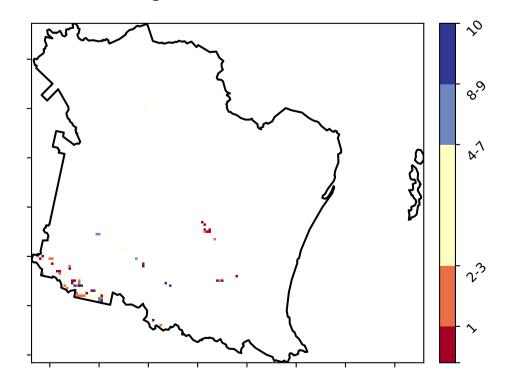
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



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.

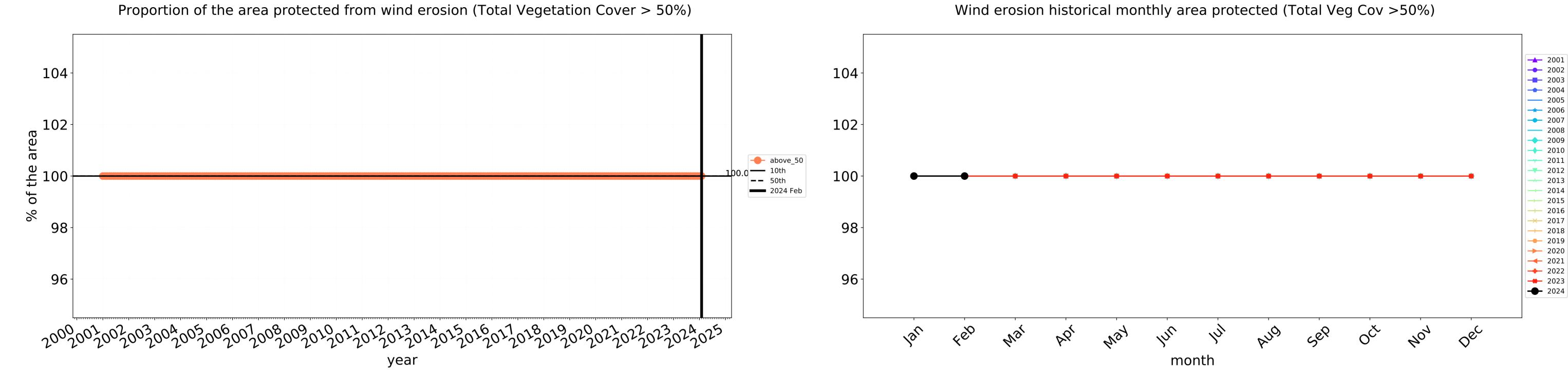


Total Vegetation Cover Decile [%]

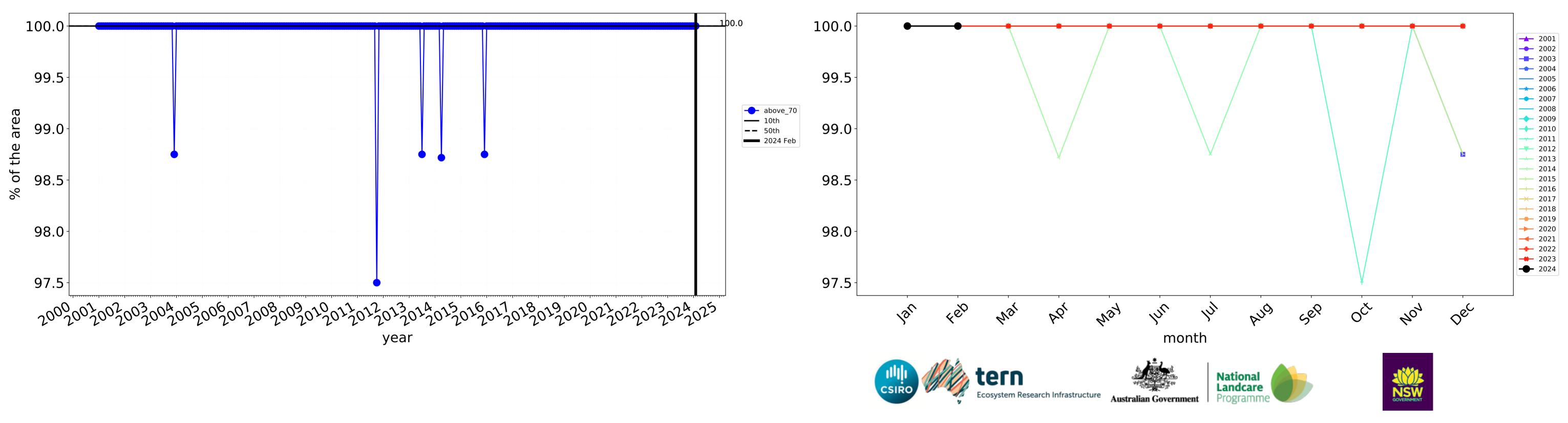




Grazing Woodland forest timeseries

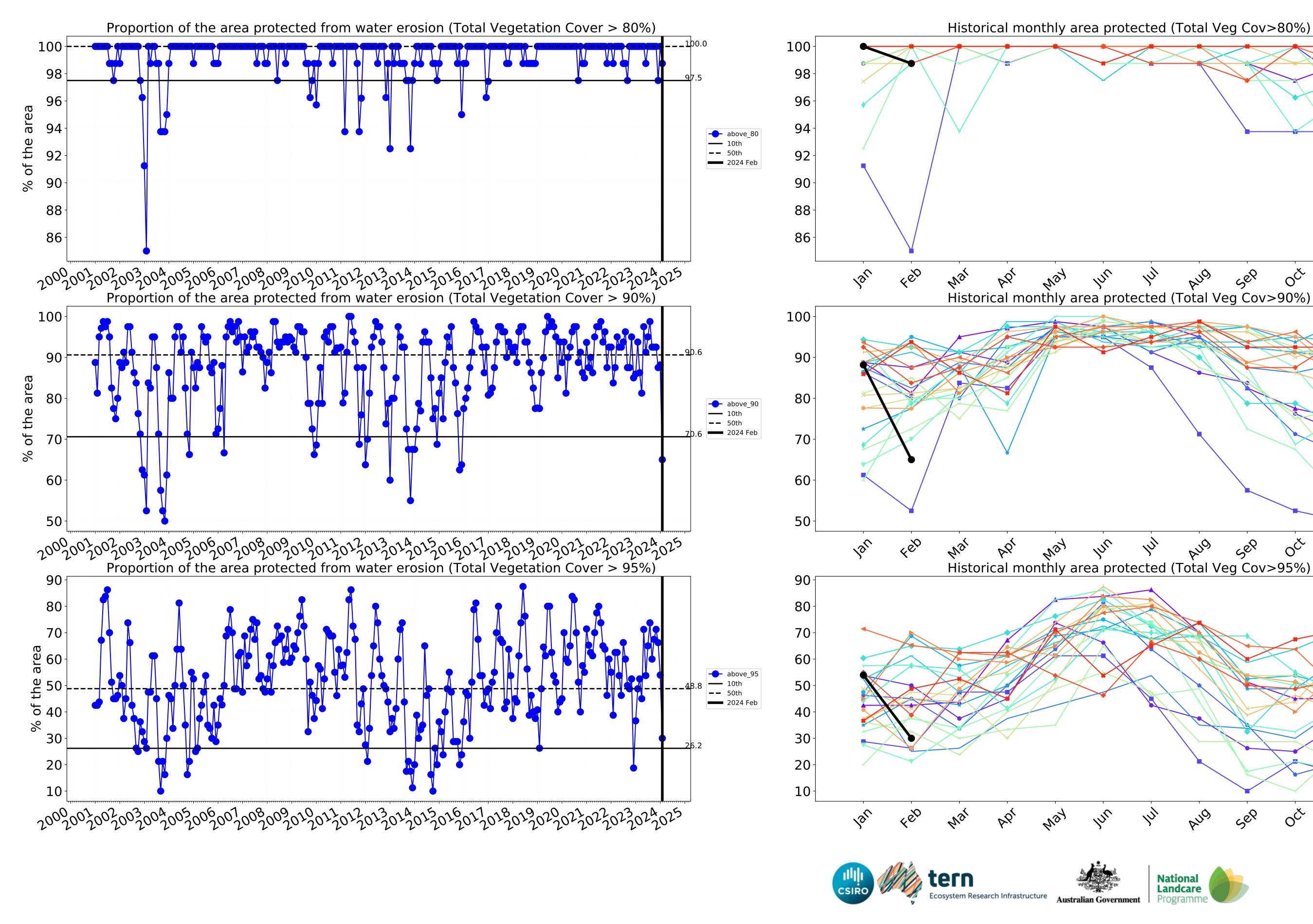


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



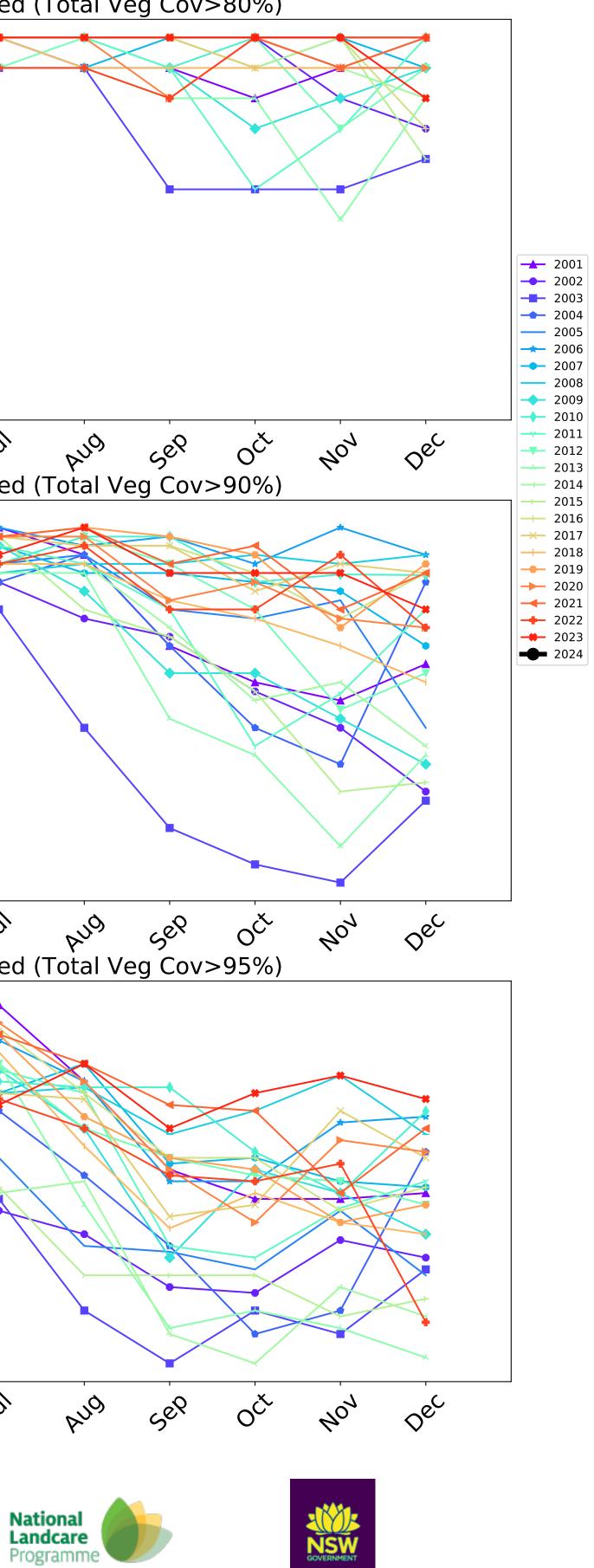


Water erosion historical monthly area protected (Total Veg Cov>70%)



1/2/

1/2/



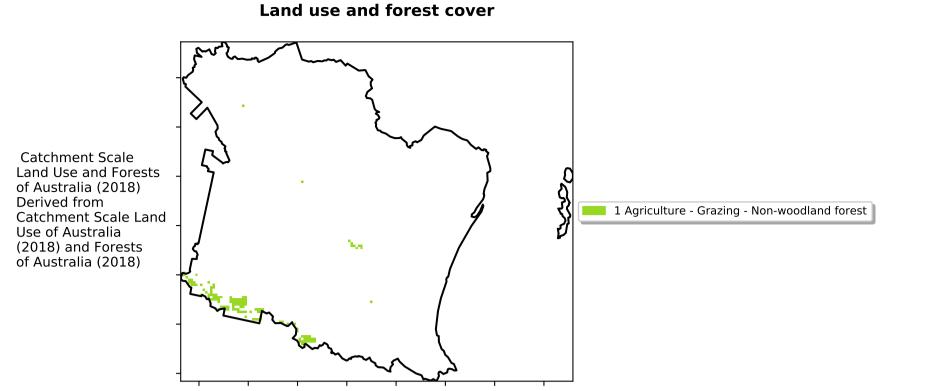
Grazing - Forest (non woodland)

1200-2000

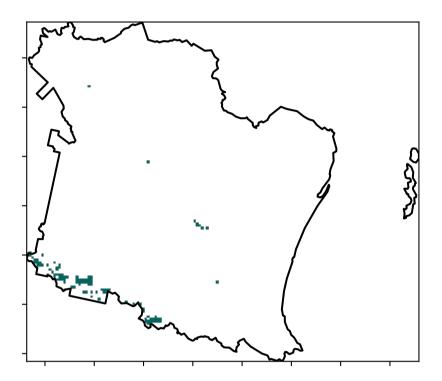
52°10010010

320050010

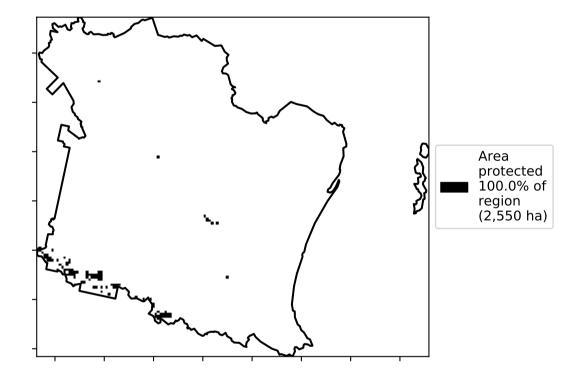
· 0.30%



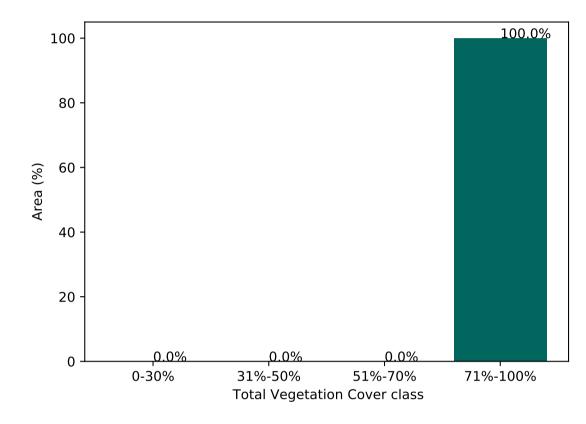
Total Vegetation Cover [%]



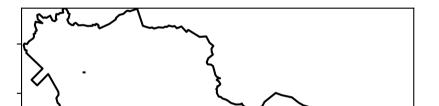
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area

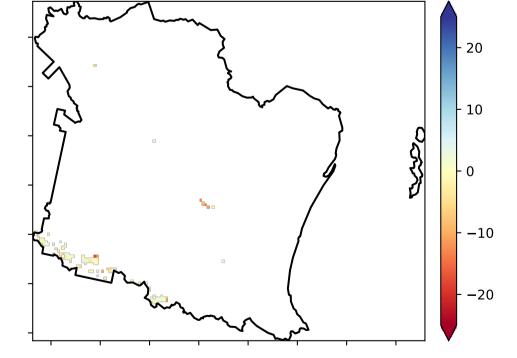


% Area protected from wind erosion (>50%)

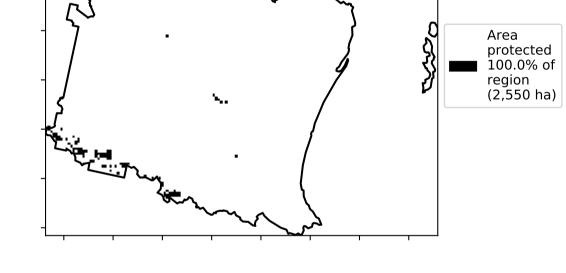


Total Vegetation Cover Anomaly [%]

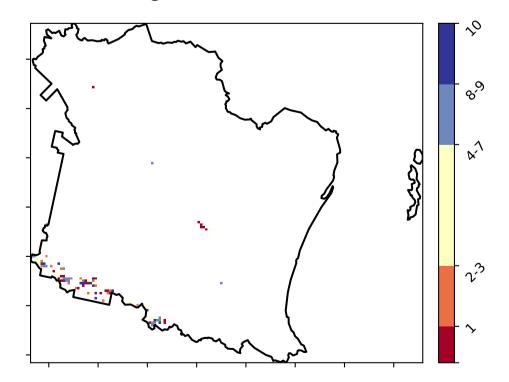
Anomaly show how many percetage points each pixel is from the mean That the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map from 2001 to 2019.



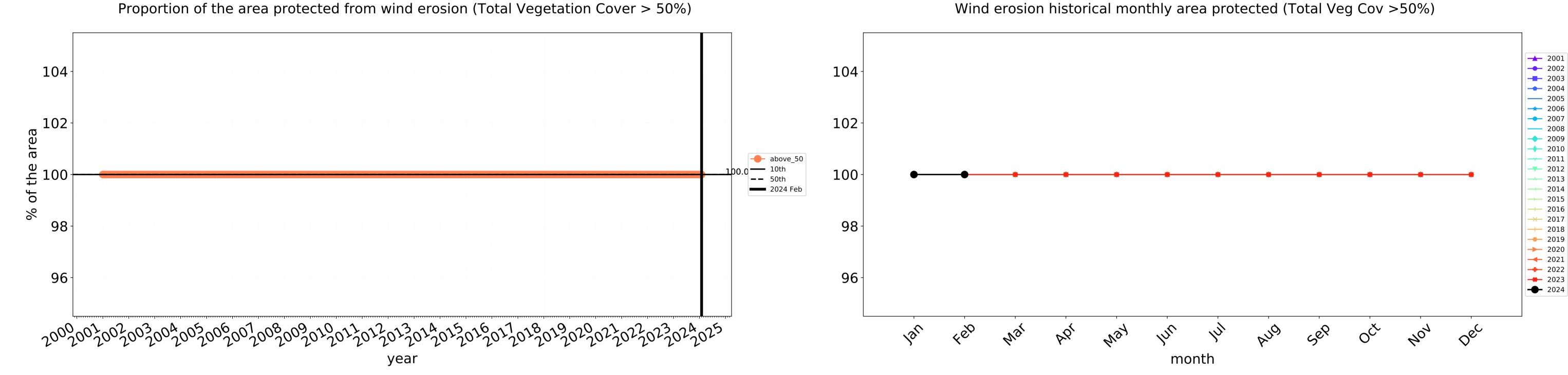
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

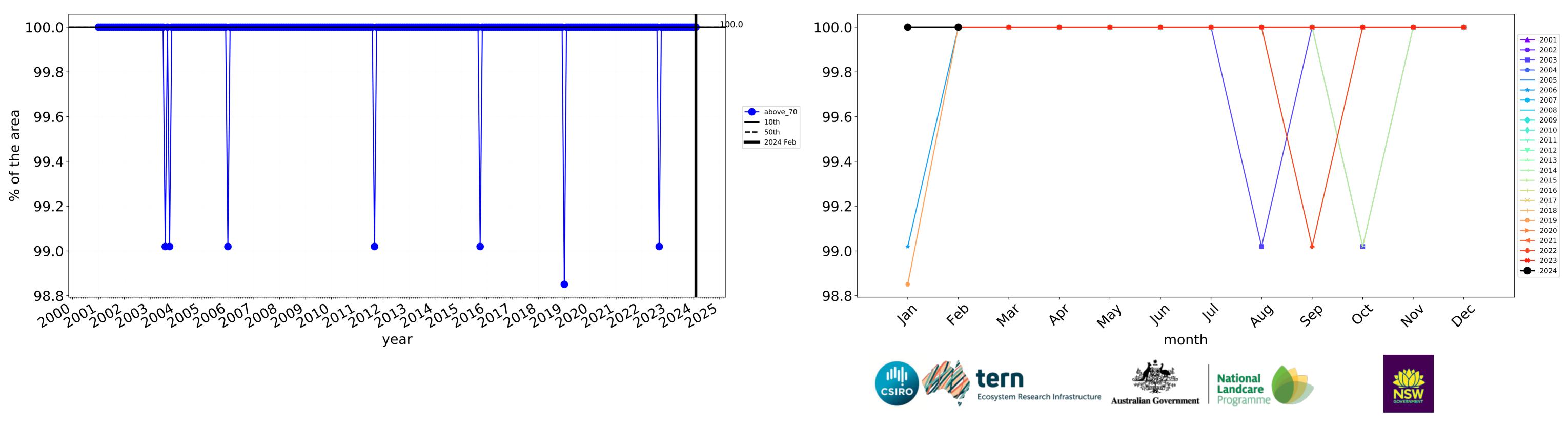


Total Vegetation Cover Decile [%]





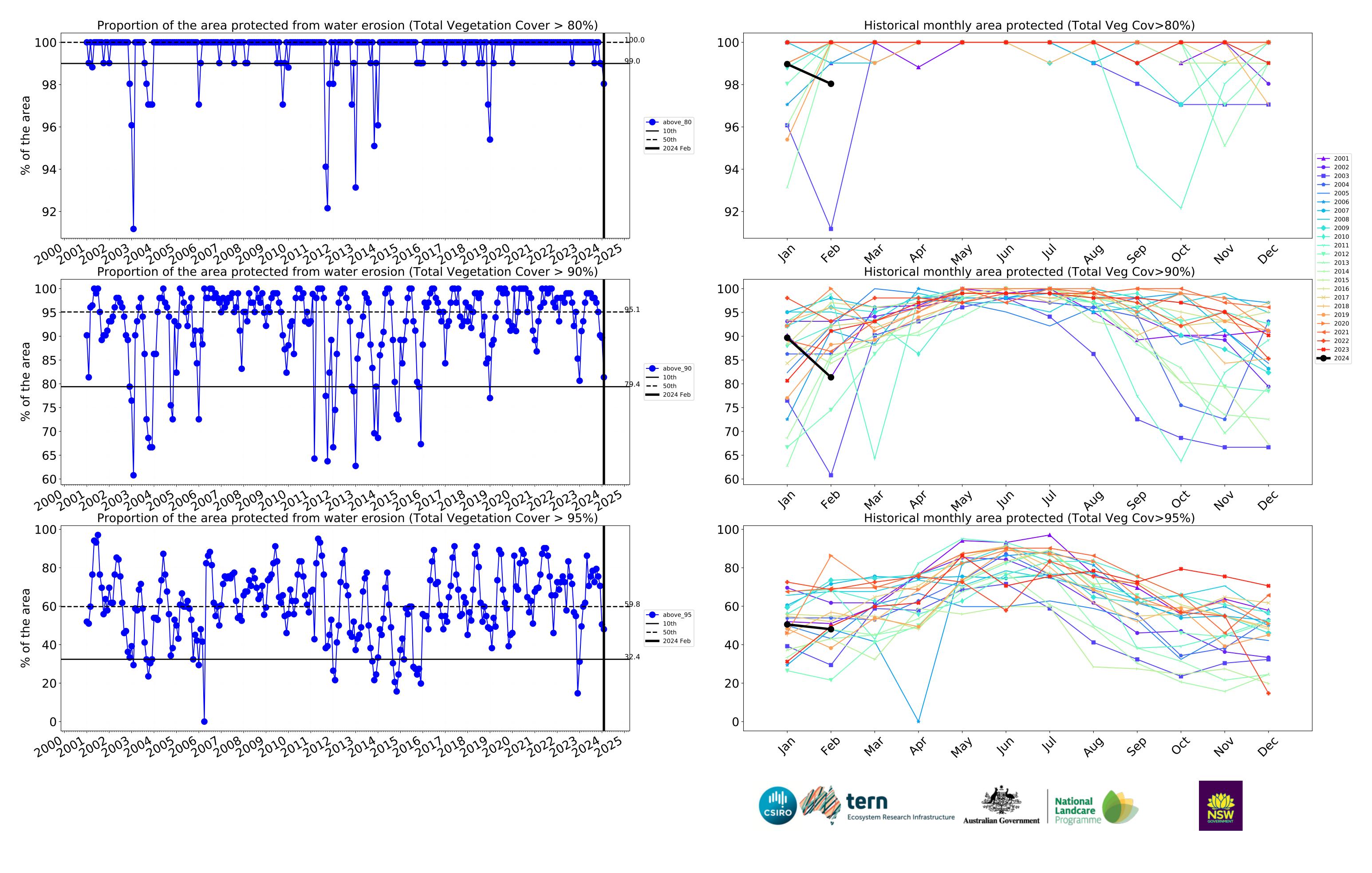




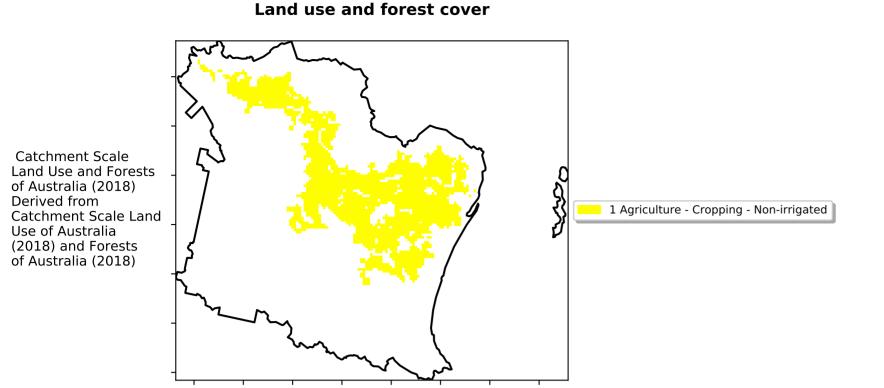
Grazing - Forest (non woodland) timeseries

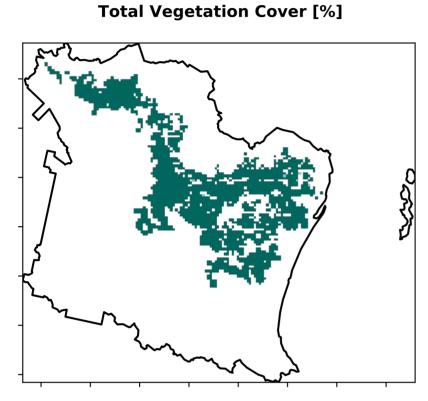


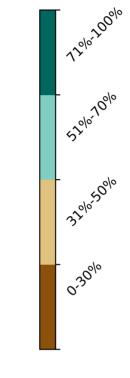
Water erosion historical monthly area protected (Total Veg Cov>70%)



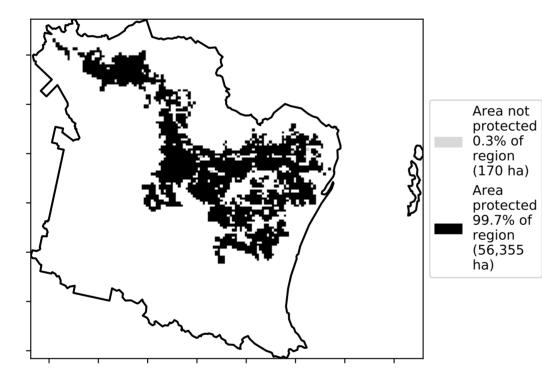
Cropping



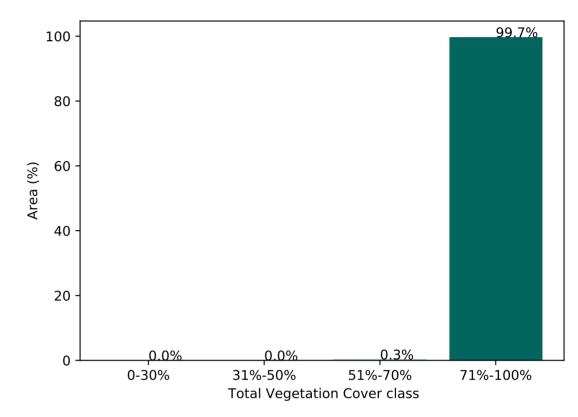




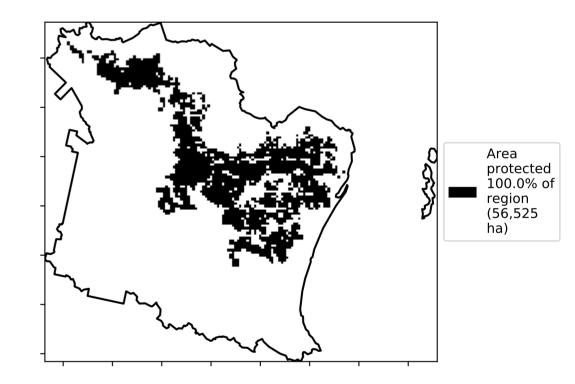
% Area protected from water erosion (>70%)



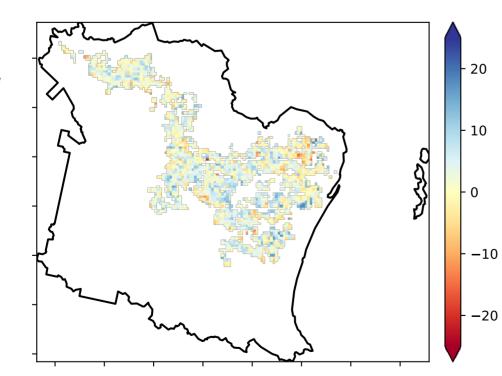




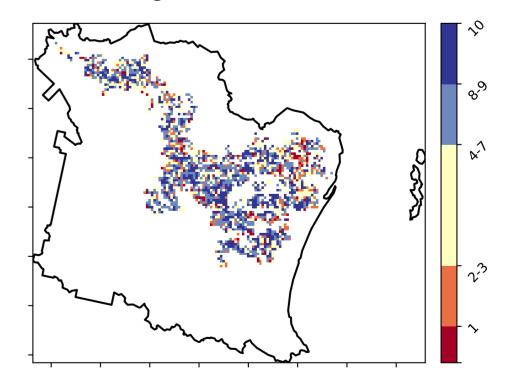
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



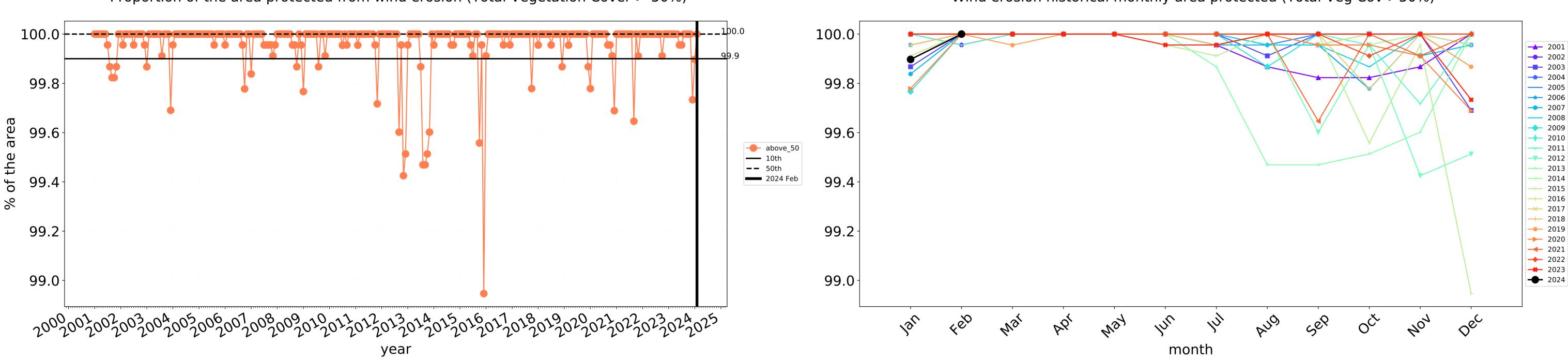
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019. Total Vegetation Cover Decile [%]



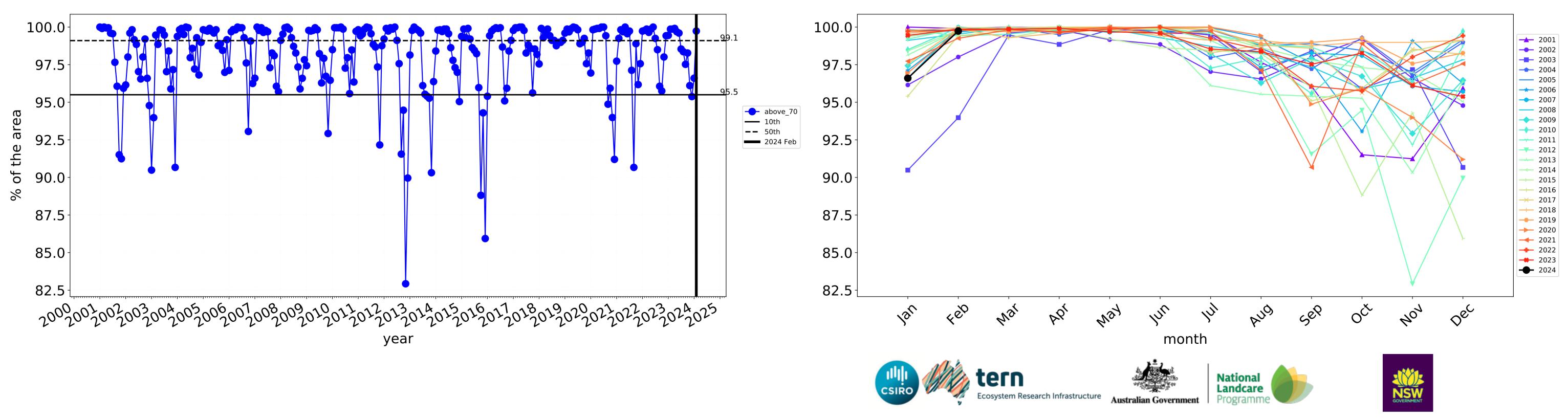


Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



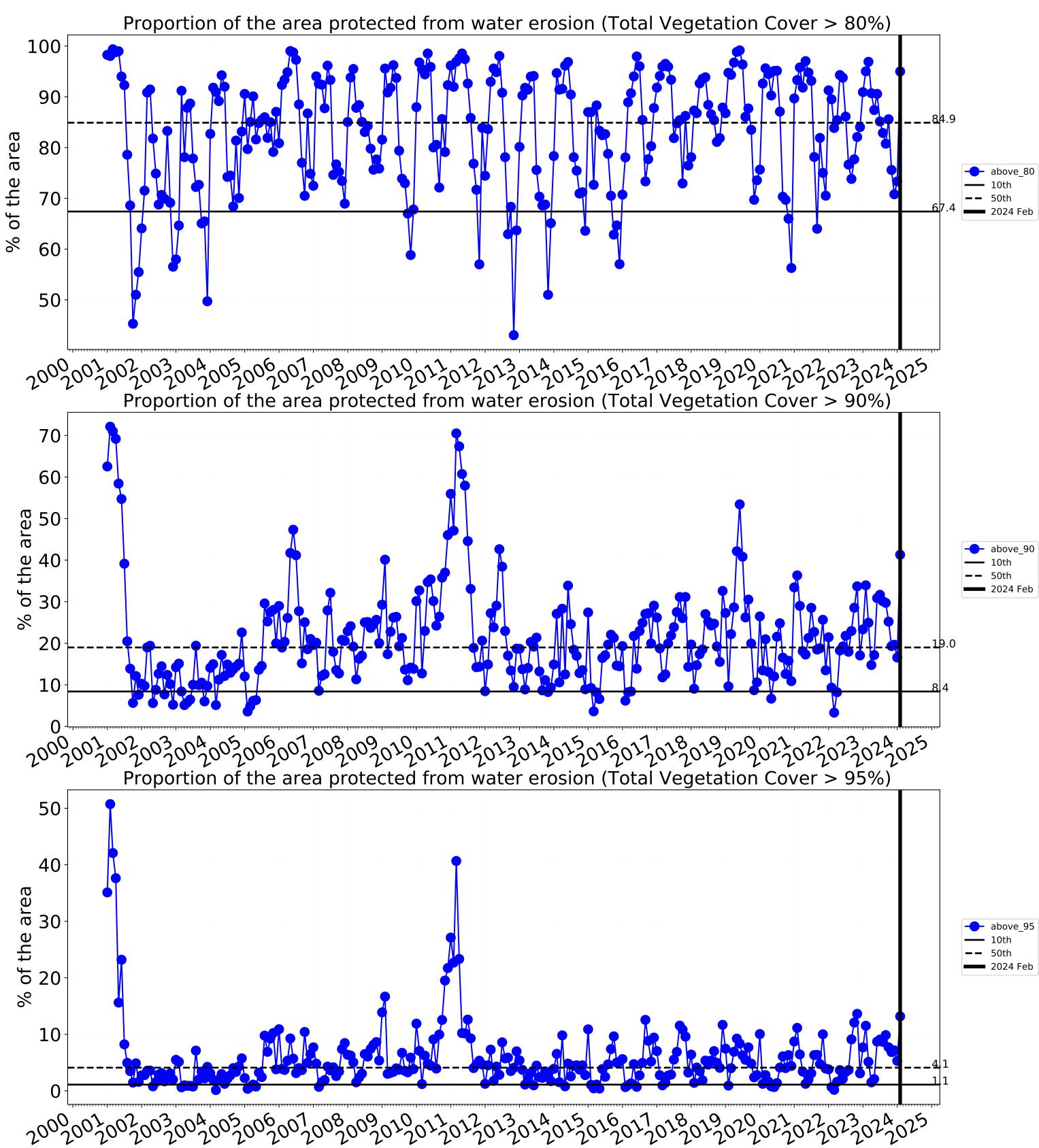


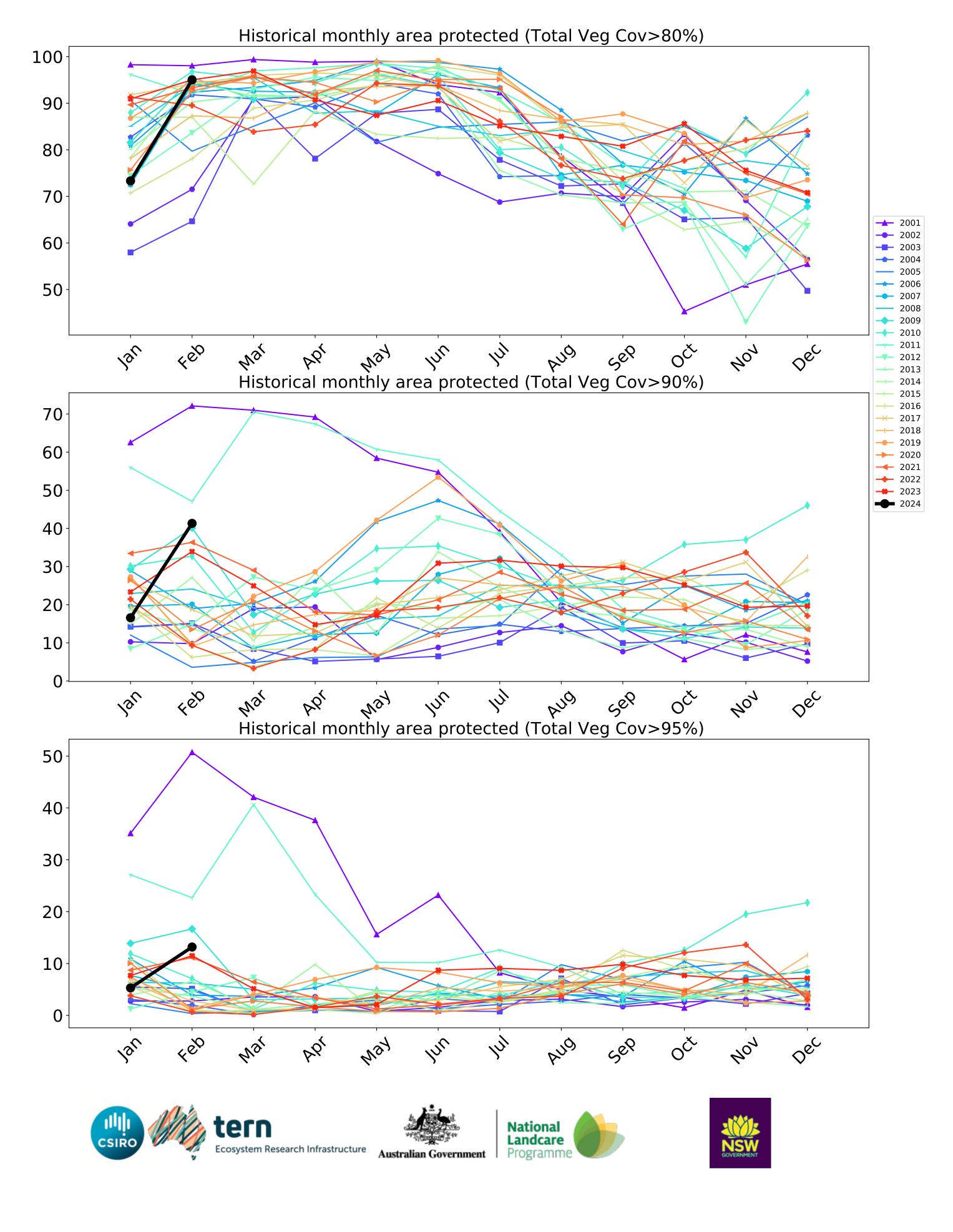
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



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

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

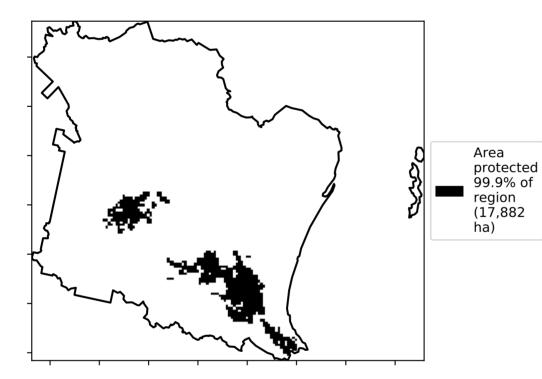


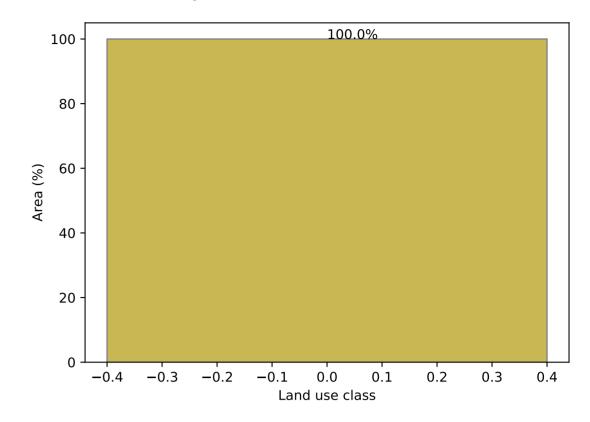


Irrigation

Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) Total Vegetation Cover [%] Total Vegetation Cover [%]

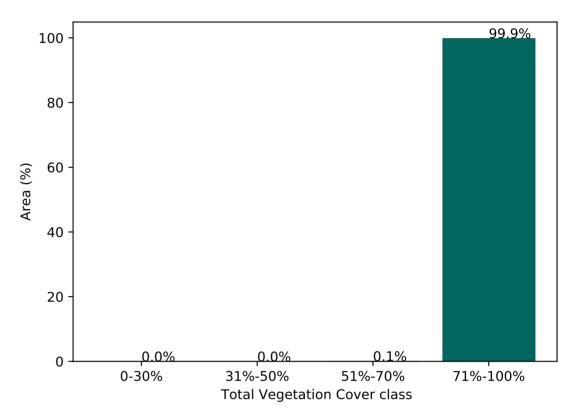
% Area protected from water erosion (>70%)





Proportion of each land class in area

Proportion of vegetation cover class in area

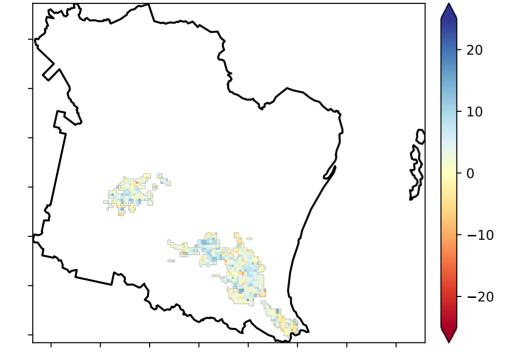


% Area protected from wind erosion (>50%)

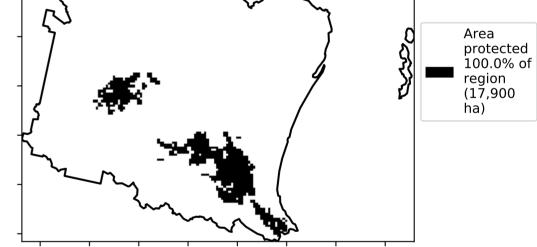


Total Vegetation Cover Anomaly [%]

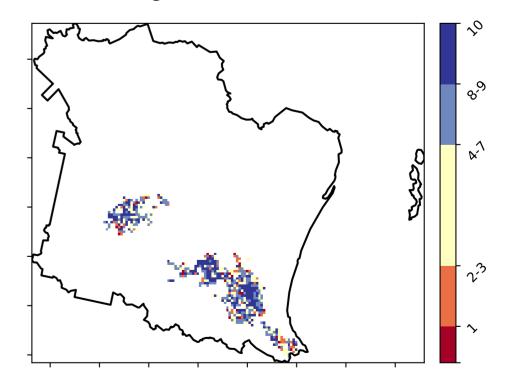
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



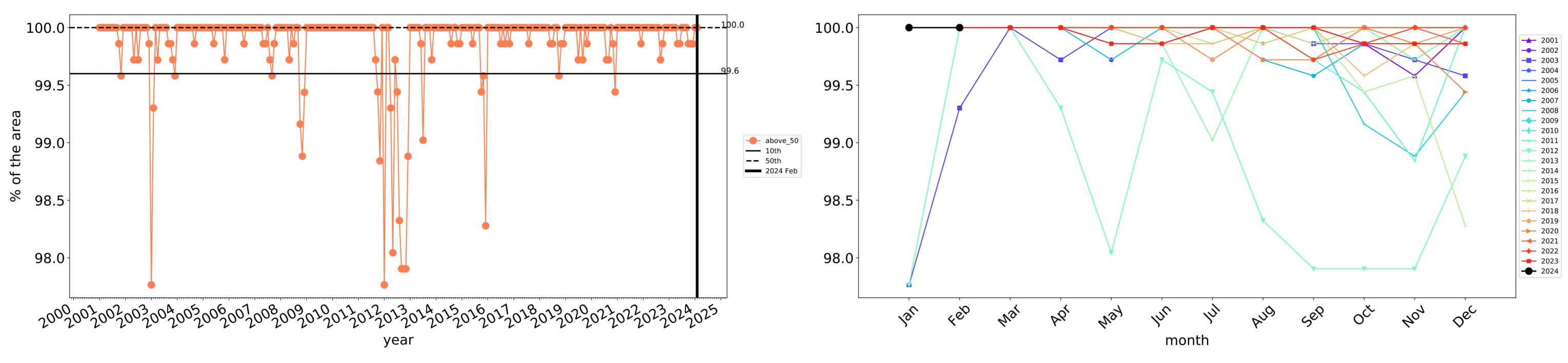
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.



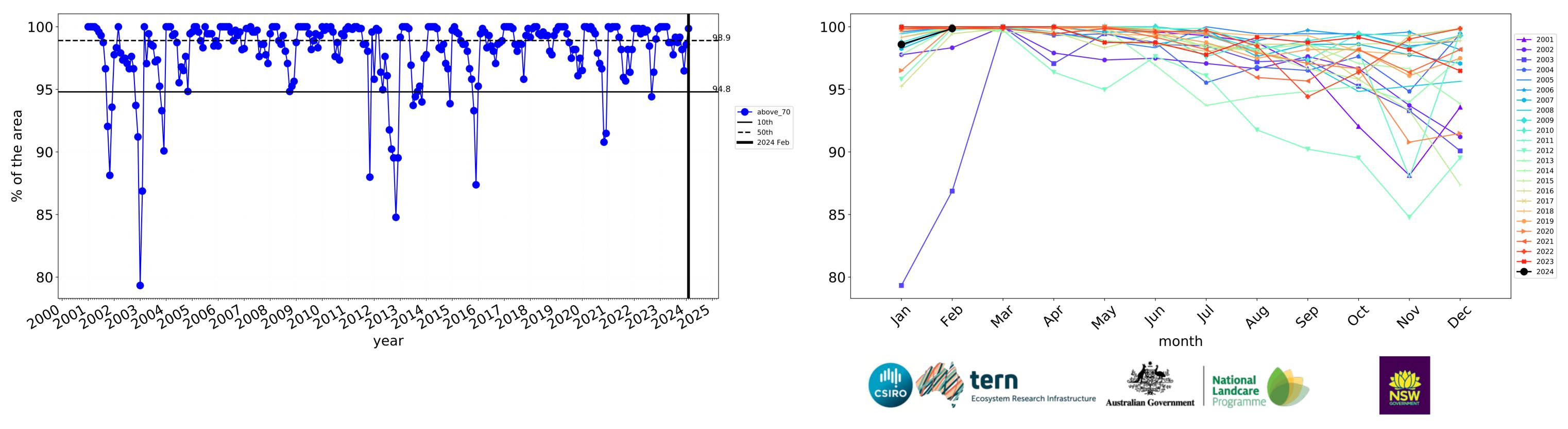
Total Vegetation Cover Decile [%]





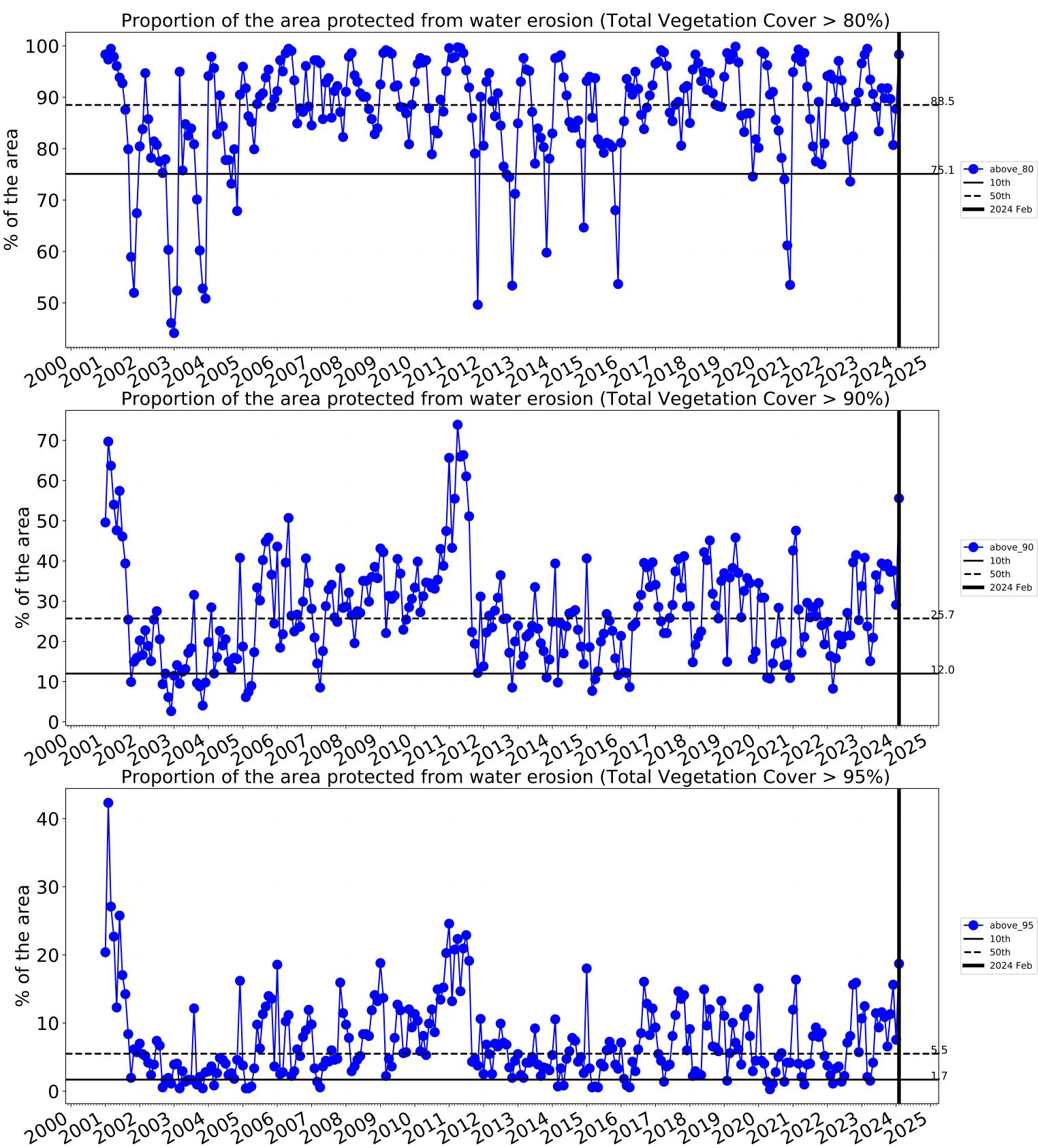


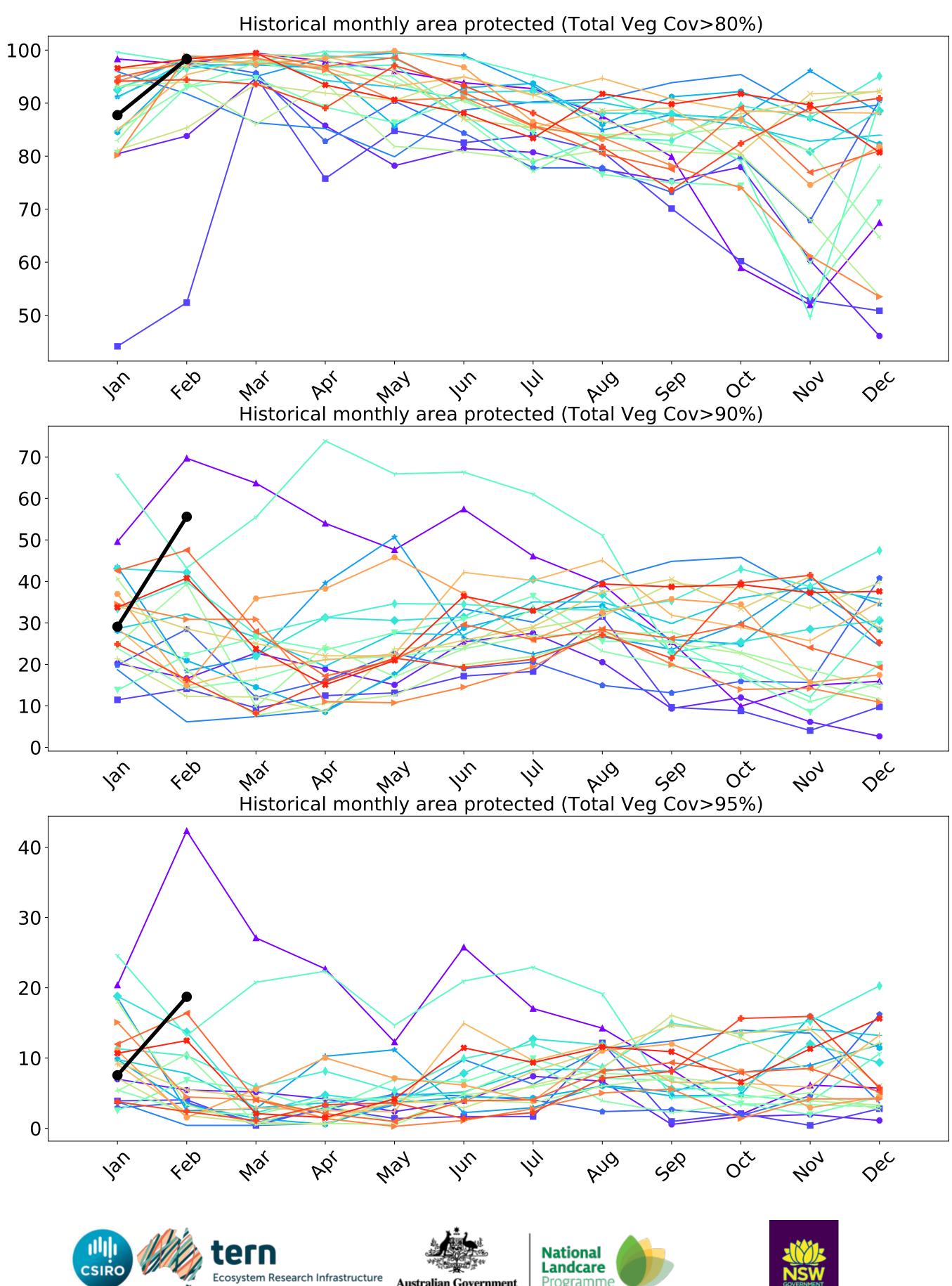
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



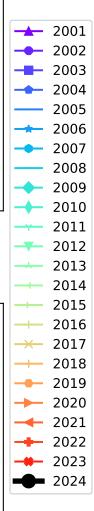
Wind erosion historical monthly area protected (Total Veg Cov >50%)

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





Ecosystem Research Infrastructure Australian Government







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)

12º10-100'

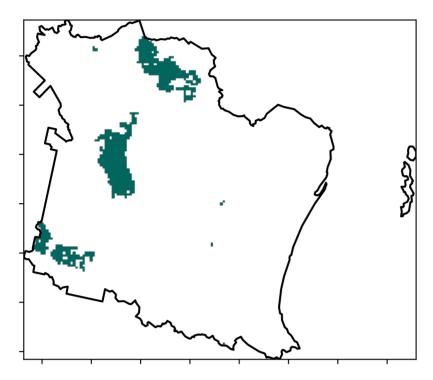
52°1070°1

32905001

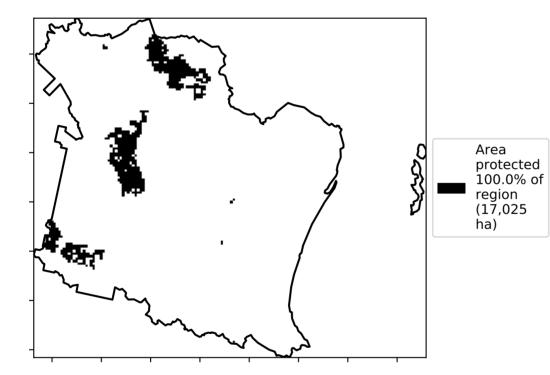
0.30%

Total Vegetation Cover [%]

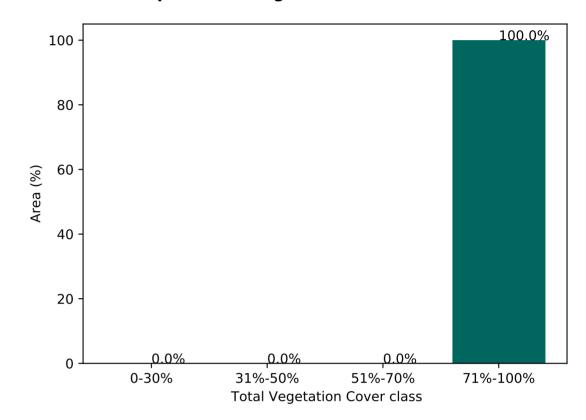
Land use and forest cover



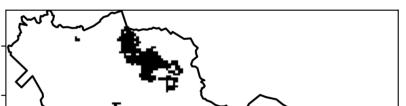
% Area protected from water erosion (>70%)



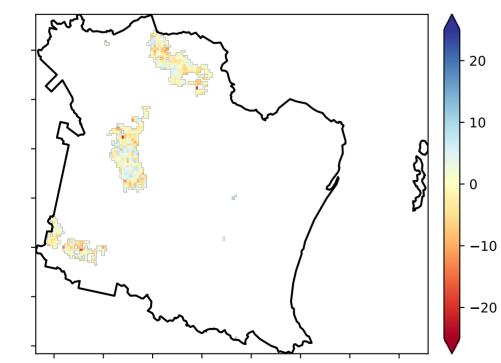




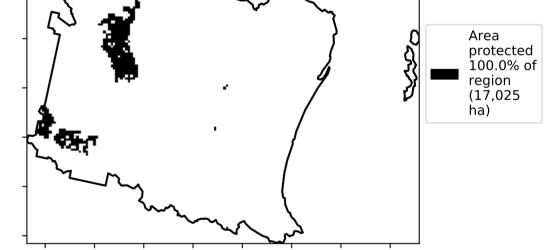
% Area protected from wind erosion (>50%)



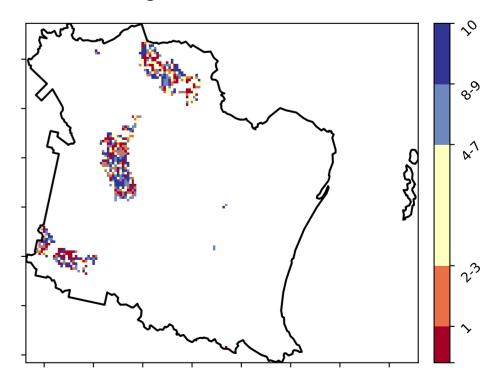
Total Vegetation Cover Anomaly [%]



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



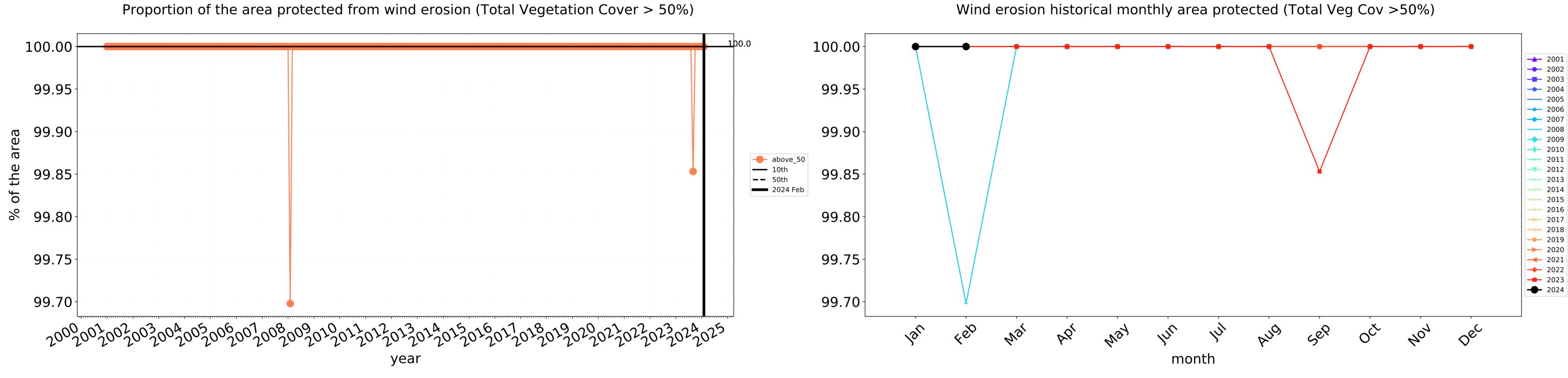
Total Vegetation Cover Decile [%]

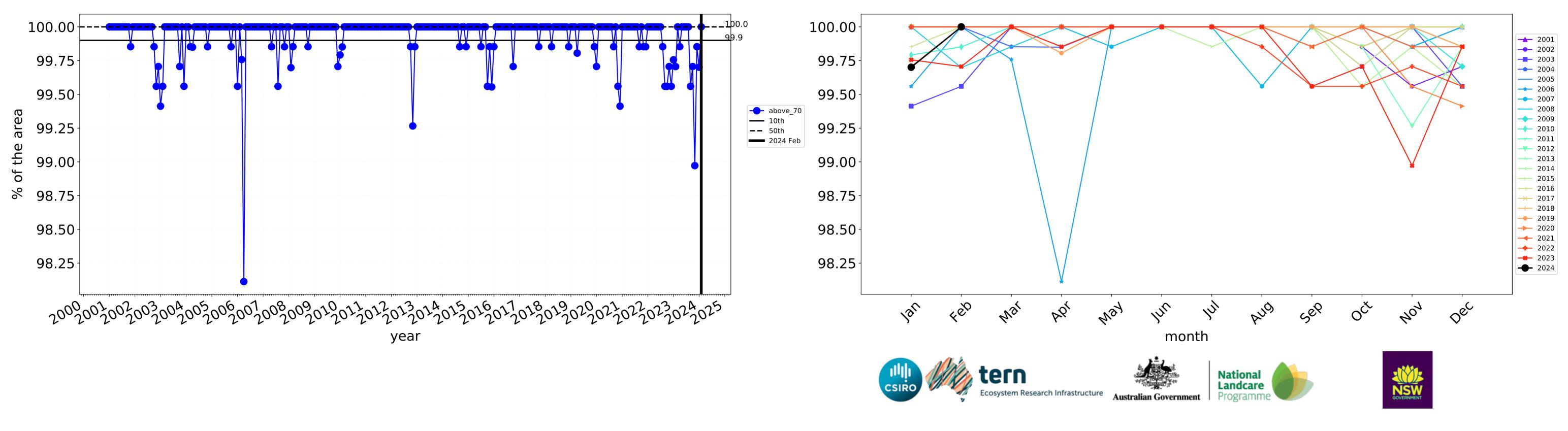




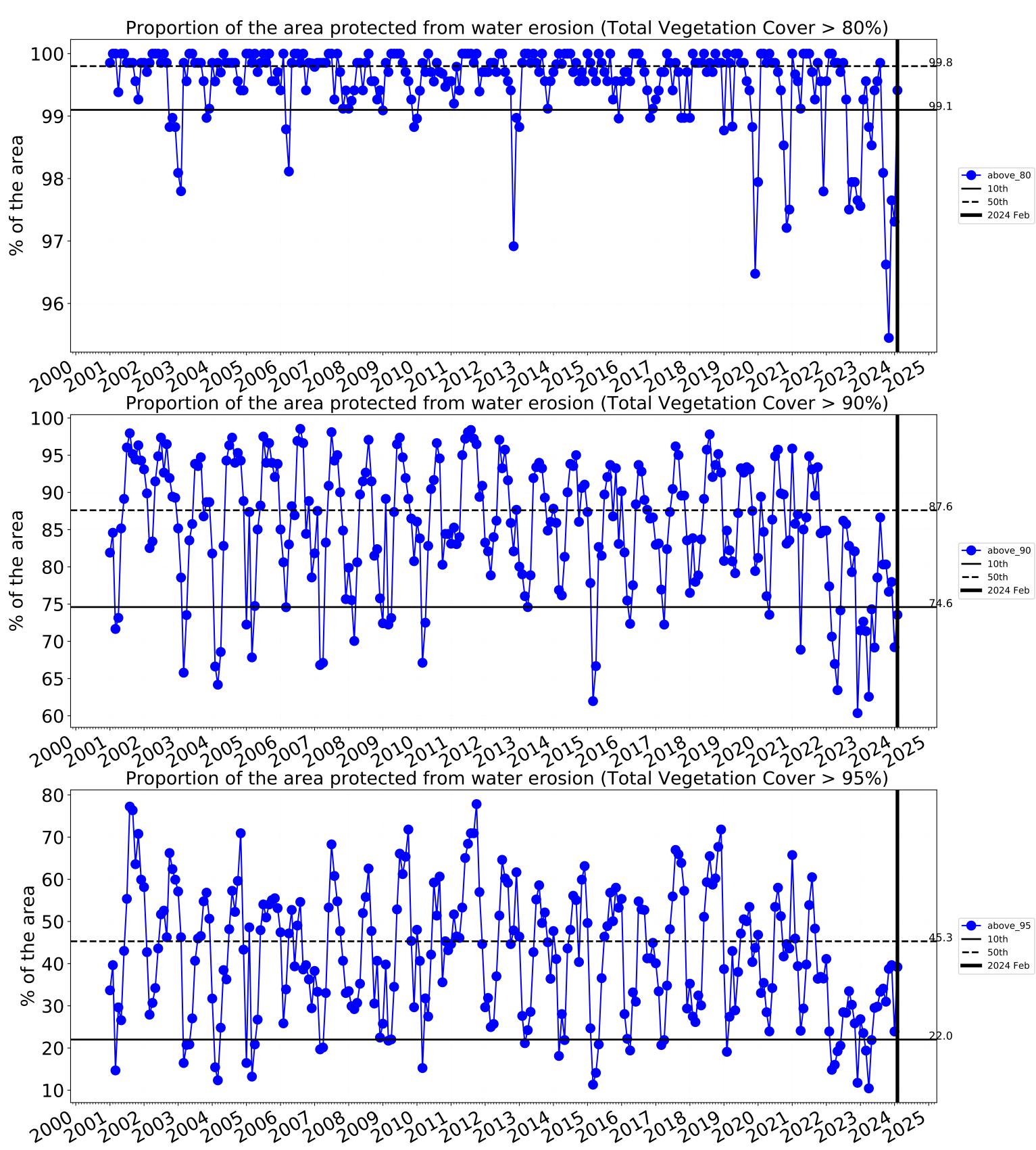
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

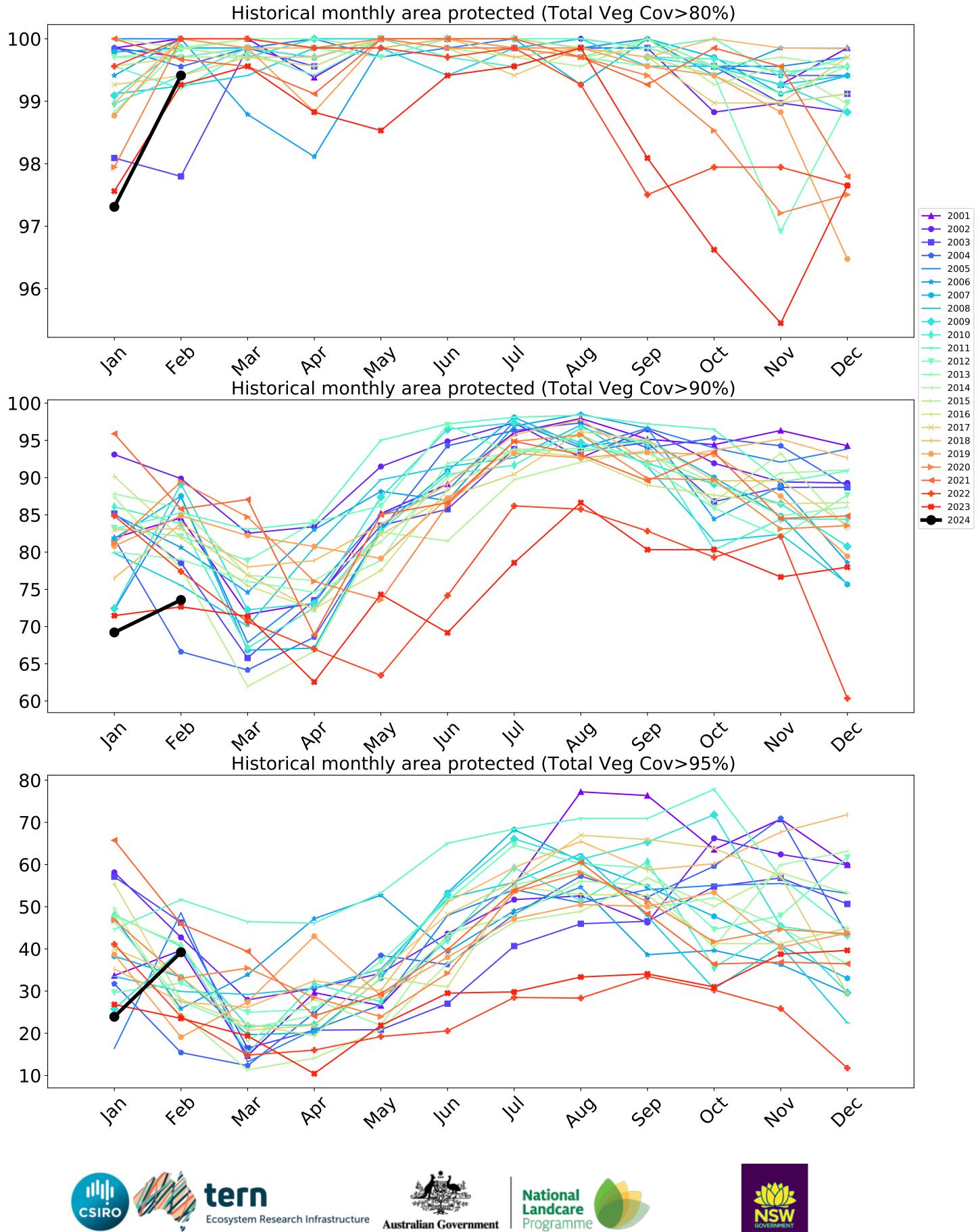






Water erosion historical monthly area protected (Total Veg Cov>70%)







Hinchinbrook_(S) (234,675 ha and no data 45,987 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	234,675	100.0% 234,600	99.9% 234,450	99.0% 232,400	95.7% 224,475	62.4% 146,350	30.3% 71,200
Conservation and natural environments	103,125	100.0% 103,125	100.0% 103,125	99.5% 102,600	98.4% 101,475	78.8% 81,275	42.9% 44,225
Conservation and natural environments Woodland forest	39,650	100.0% 39,650	100.0% 39,650	99.9% 39,600	99.2% 39,350	78.2% 31,000	38.1% 15,100
Conservation and natural environments Forest (non woodland)	61,750	100.0% 61,750	100.0% 61,750	99.4% 61,350	98.1% 60,550	79.8% 49,250	46.4% 28,675
Agriculture	93,875	100.0% 93,875	100.0% 93,875	99.8% 93,675	95.9% 90,000	46.8% 43,975	16.8% 15,775
Grazing	19,425	100.0% 19,425	100.0% 19,425	99.9% 19,400	96.1% 18,675	54.8% 10,650	25.6% 4,975
Grazing non forest	14,875	100.0% 14,875	100.0% 14,875	99.8% 14,850	95.5% 14,200	48.9% 7,275	21.2% 3,150
Grazing Woodland forest	2,000	100.0% 2,000	100.0% 2,000	100.0% 2,000	98.8% 1,975	65.0% 1,300	30.0% 600
Grazing - Forest (non woodland)	2,550	100.0% 2,550	100.0% 2,550	100.0% 2,550	98.0% 2,500	81.4% 2,075	48.0% 1,225
Cropping	56,525	100.0% 56,525	100.0% 56,525	99.7% 56,375	95.0% 53,700	41.3% 23,350	13.2% 7,450
Irrigation	17,900	100.0% 17,900	100.0% 17,900	99.9% 17,875	98.3% 17,600	55.6% 9,950	18.7% 3,350
Production native forests and plantation forests	17,025	100.0% 17,025	100.0% 17,025	100.0% 17,025	99.4% 16,925	73.6% 12,525	39.2% 6,675

