Total vegetation cover soil protection Region:LGA Serpentine-Jarrahdale_(S) WA

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

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

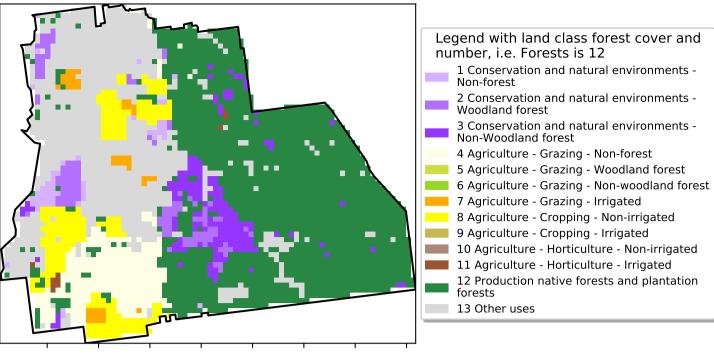


Vegetation Cover Apr 2025

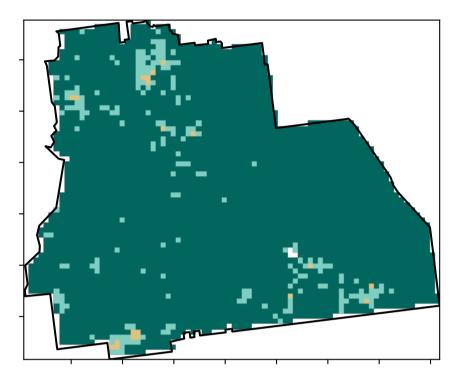
Land use and forest cover

Proportion of each land class in area

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



Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



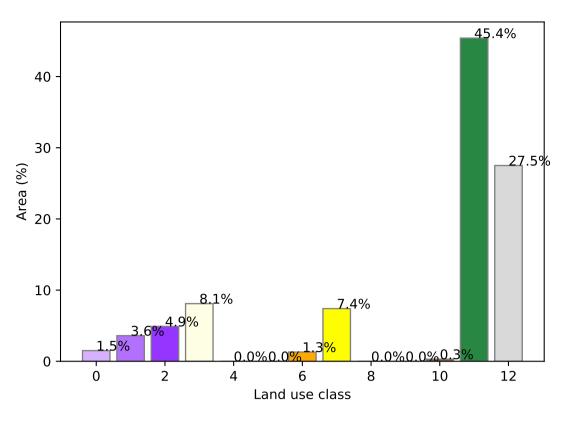
Area not protected 6.3% of (5,675 ha)

12%100%

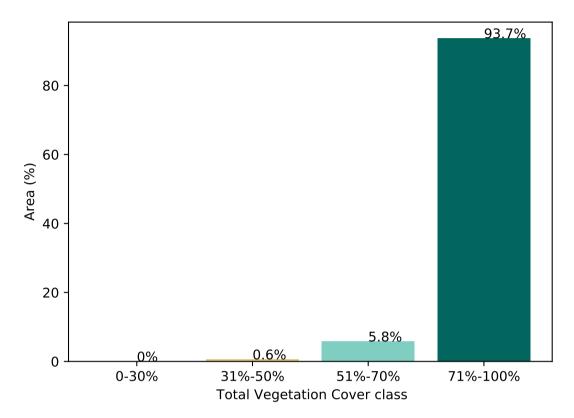
52% 70%

320050010

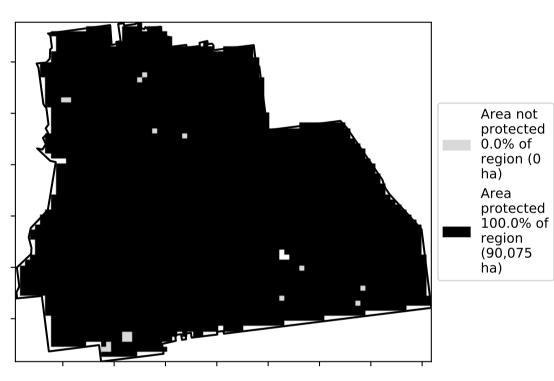
0.30%



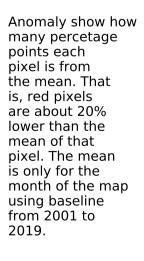
Proportion of vegetation cover class in area

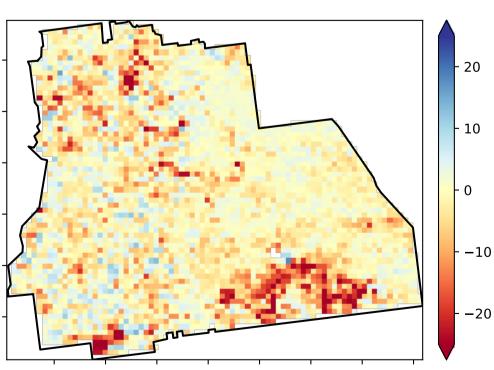


% Area protected from wind erosion (>50%)

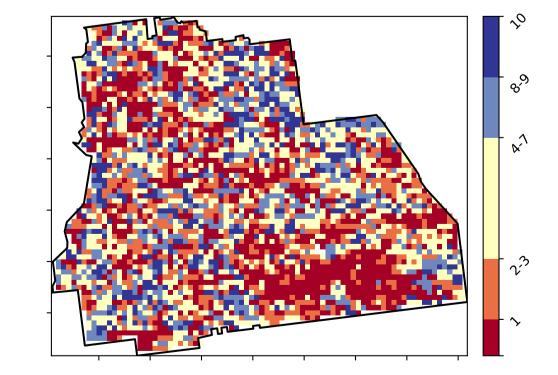


Total Vegetation Cover Anomaly [%]

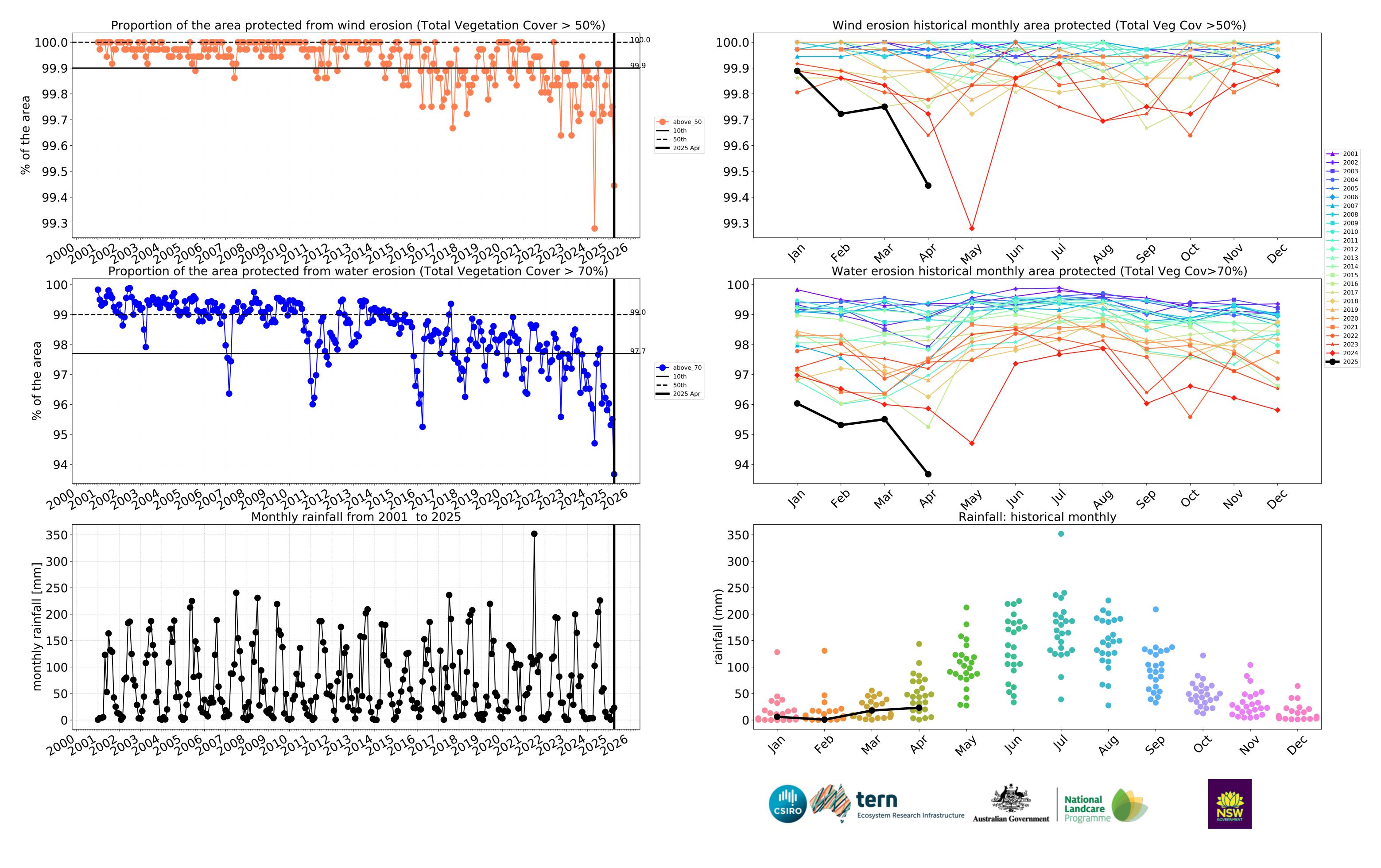


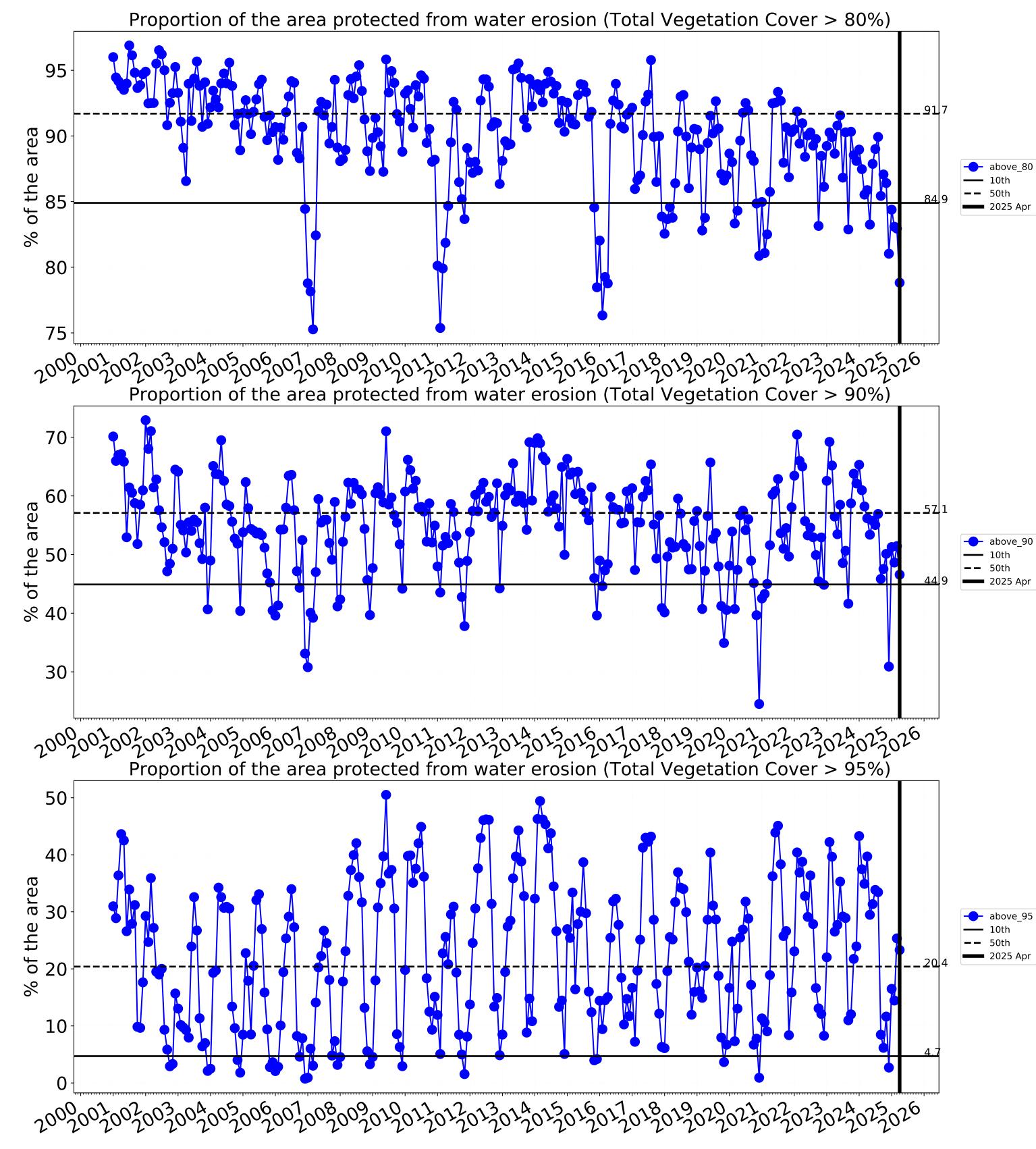


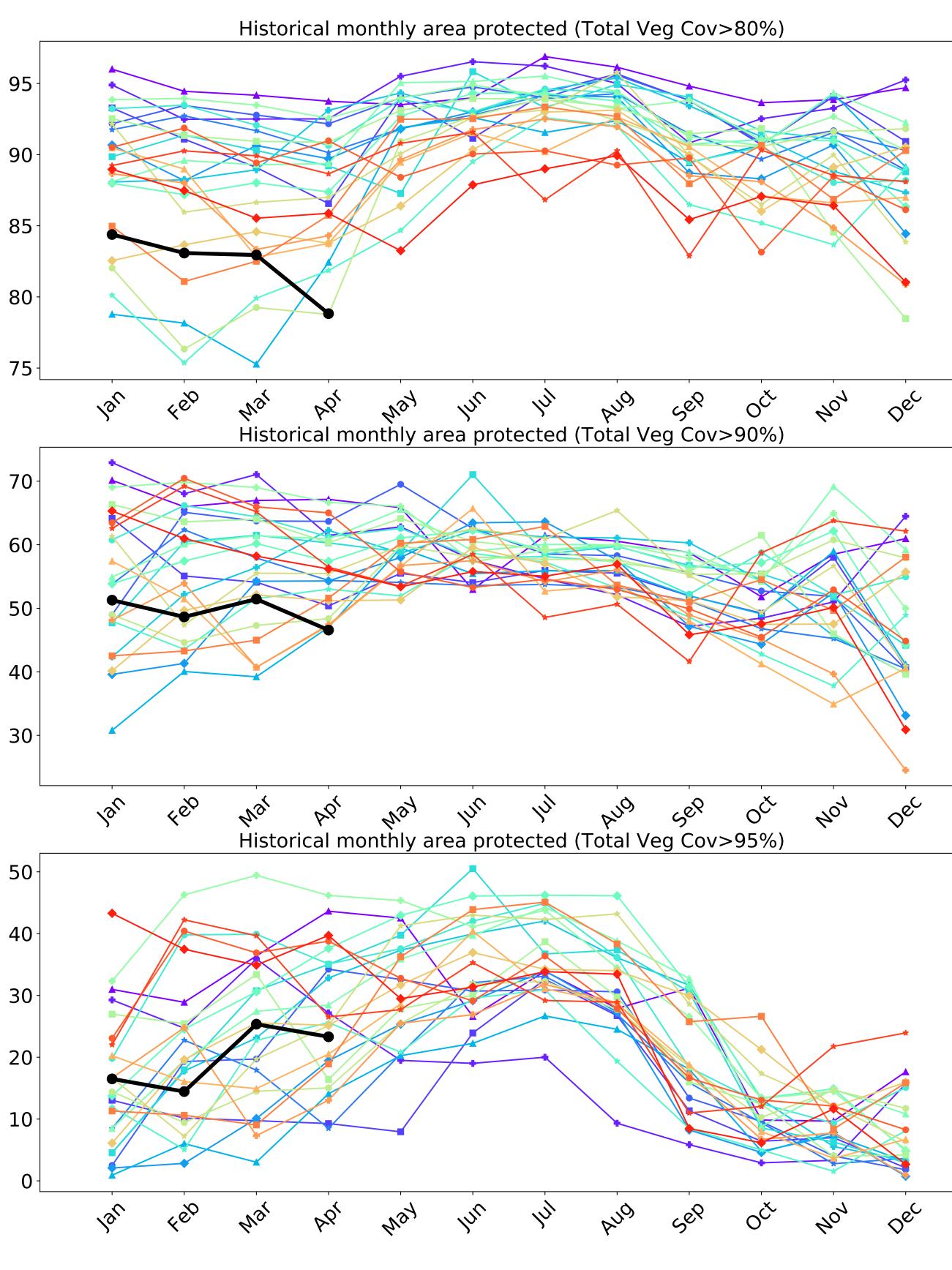
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.













___ 2001 **---** 2002 **—** 2003 **—** 2004 **----** 2005 **---** 2006 **___** 2007 ---- 2008 ---- 2009 **---** 2010 **---** 2011 --- 2012 **---** 2013 - 2014 - 2015 --- 2016 --- 2017 **—** 2019 **----** 2020 ---- 2021 **—** 2022 **---** 2023 **---** 2024 **---** 2025





Conservation and natural environments

Land use and forest cover

50 49.0% 40 -36.3% Area (%) 00 00 2 Conservation and natural environments - Woodland 20 14.7% 10 0 0.5 1.0 1.5 -0.5 2.0 2.5 0.0 Land use class



Catchment Scale Land Use and Forests of Australia (2018)

Catchment Scale Land

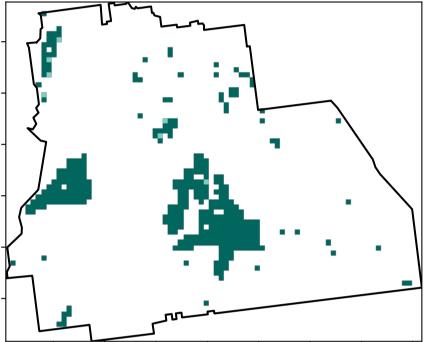
Derived from

Use of Australia

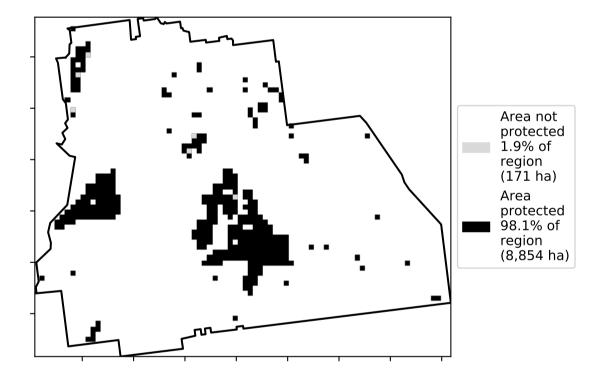
(2018) and Forests

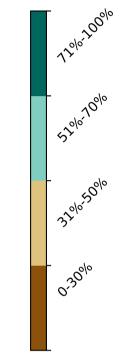
of Australia (2018)

Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

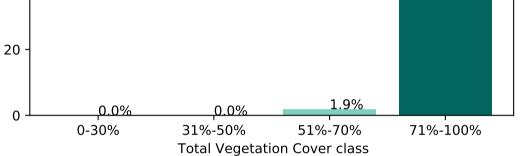




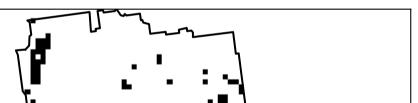
forest

1 Conservation and natural environments - Non-forest

3 Conservation and natural environments - Non-woodland forest



% Area protected from wind erosion (>50%)





98.1%

100

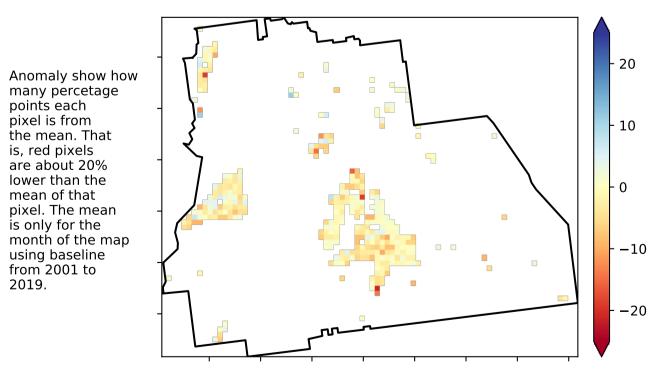
80

60

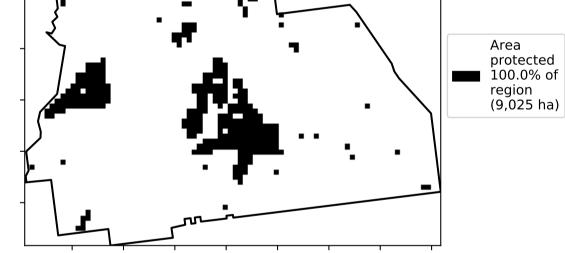
40

Area (%)

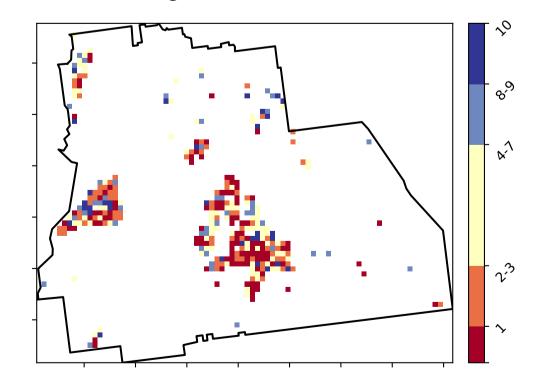
Total Vegetation Cover Anomaly [%]



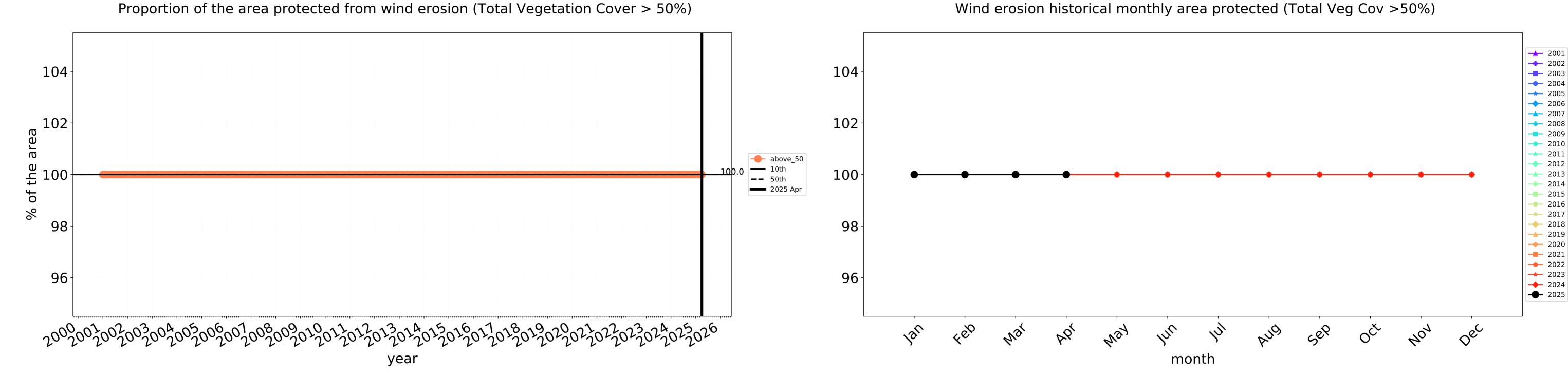
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

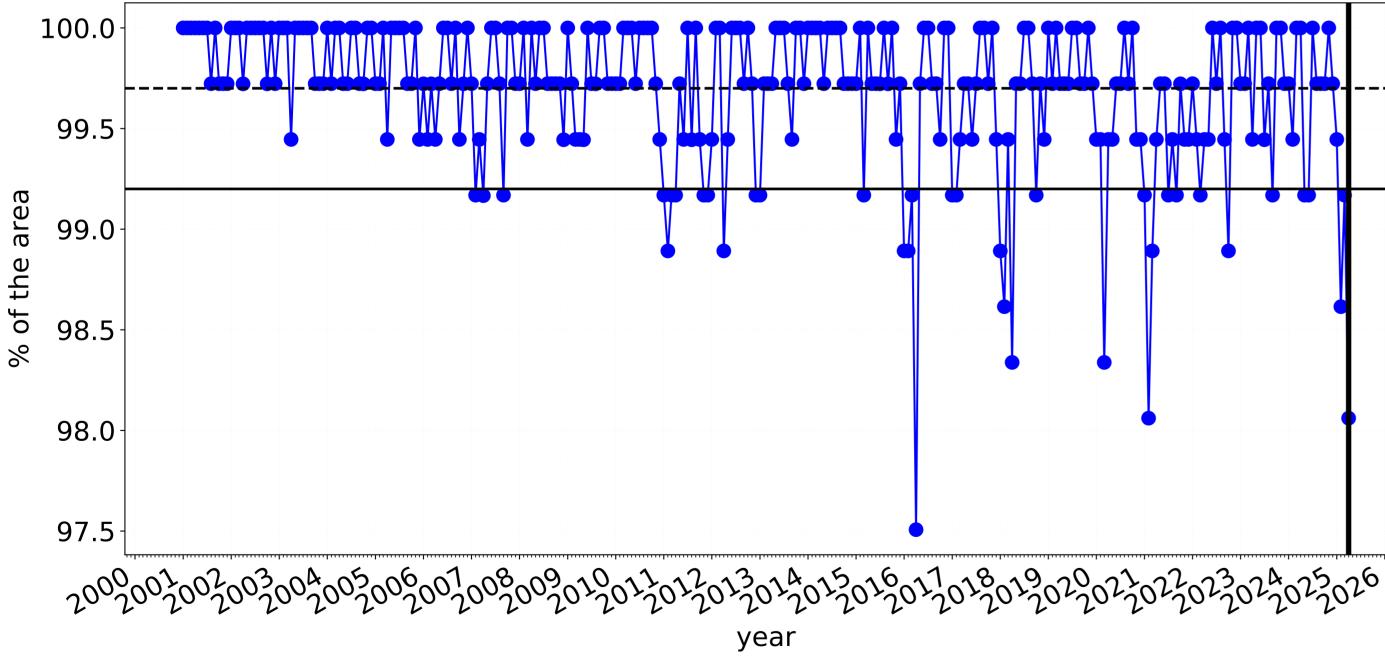


Total Vegetation Cover Decile [%]







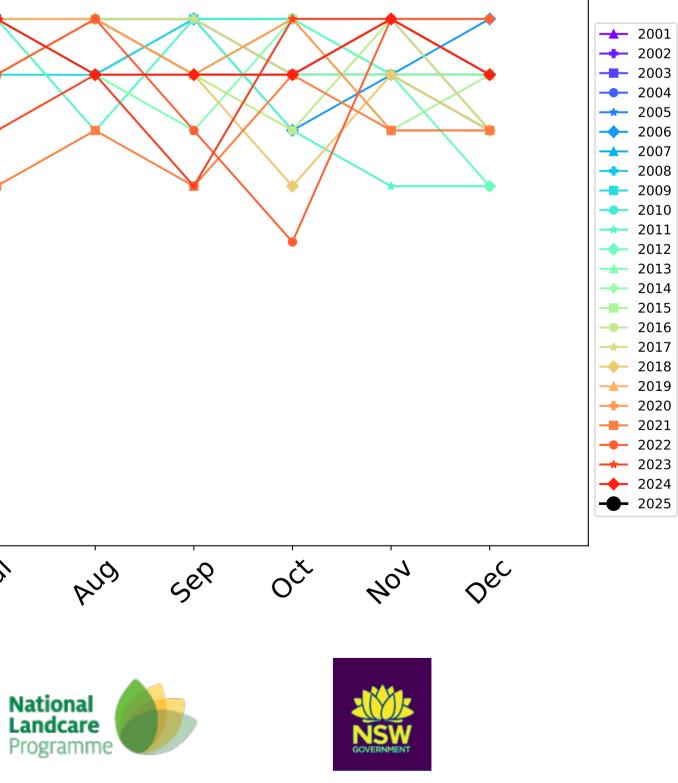


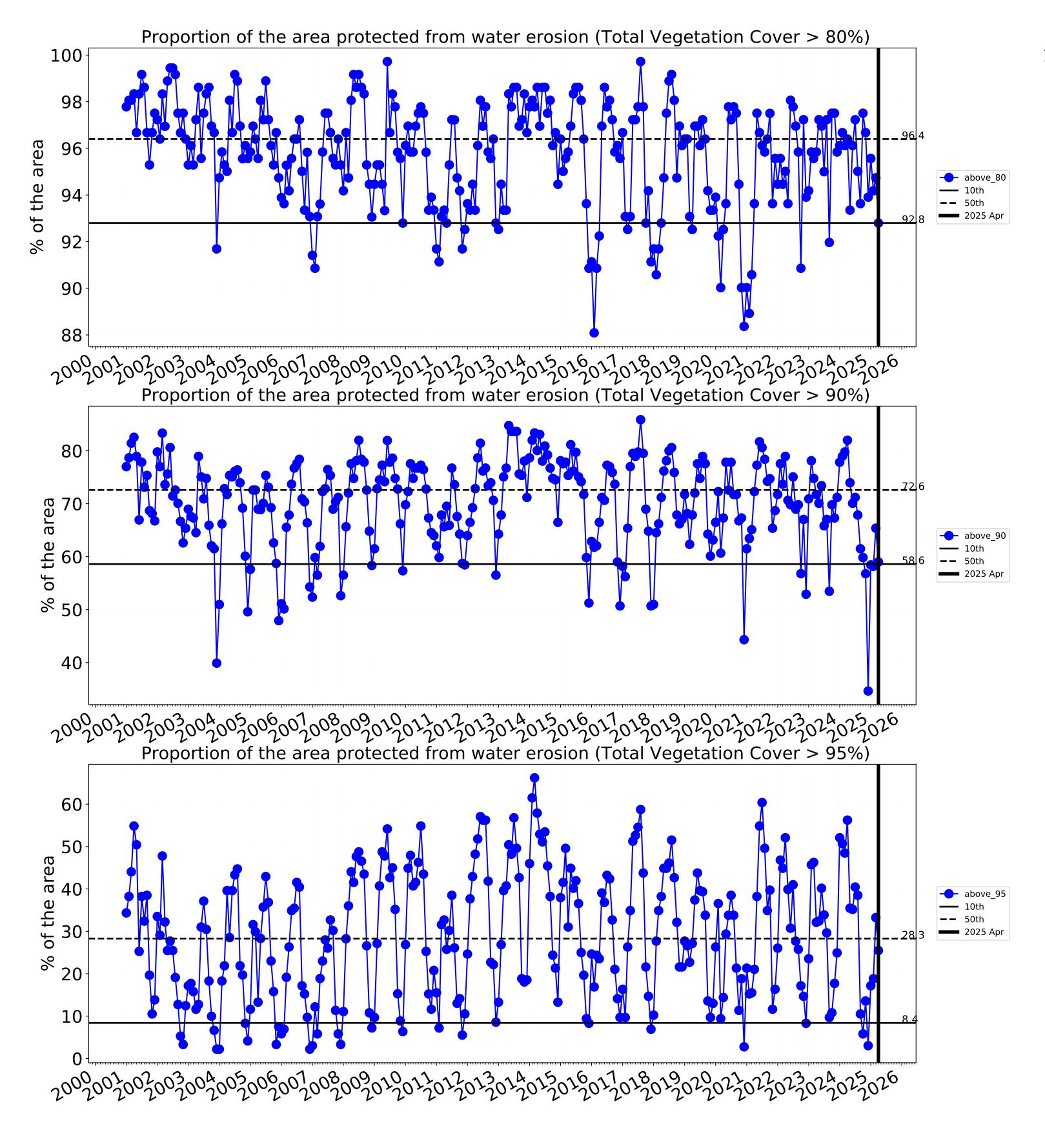
Conservation and natural environments timeseries

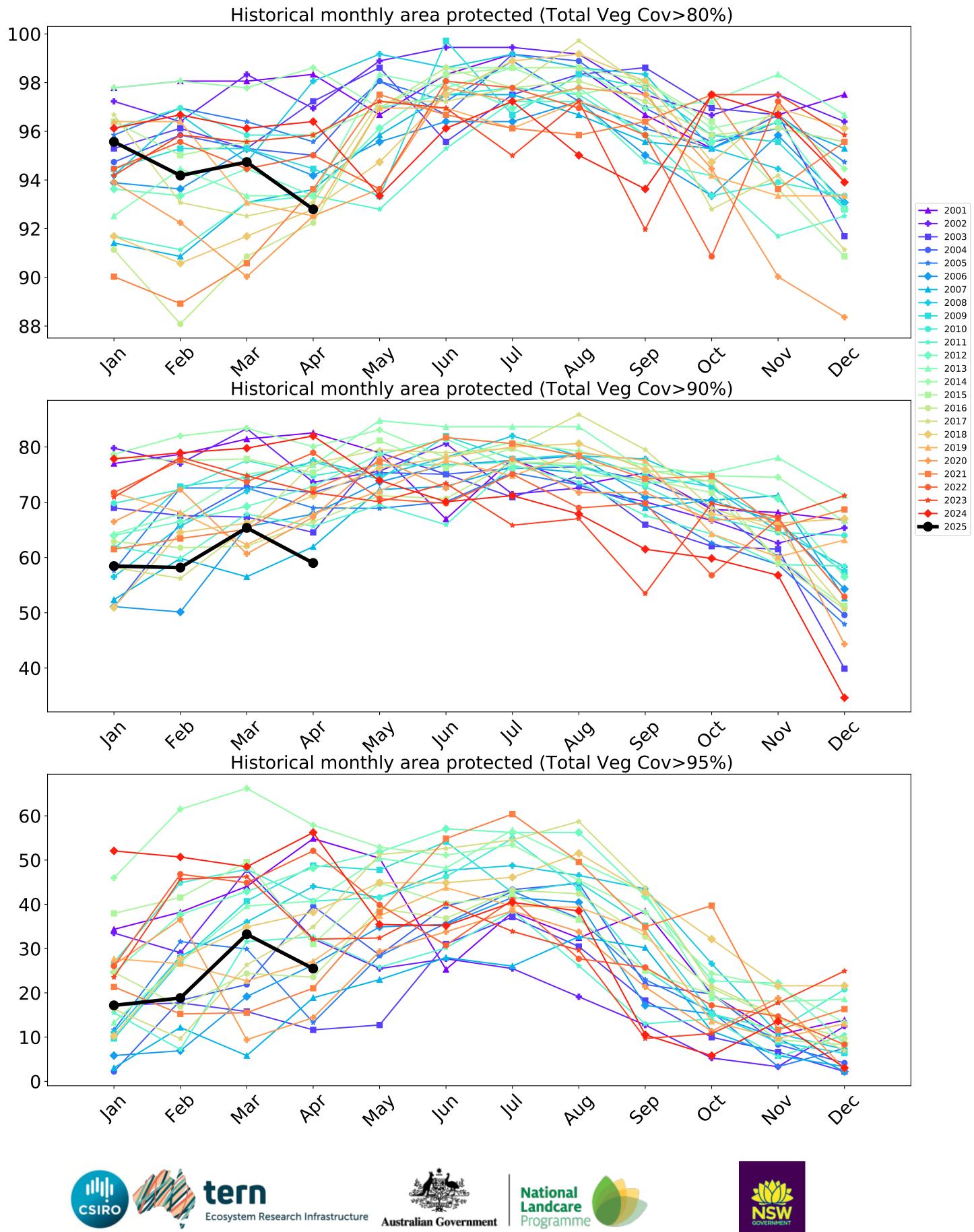
100.0-99.5 ---- above_70 **—** 10th 99.0 **——** 50th 98.5 98.0 97.5 4eb Jan In PQ way In In Mar month tern Ecosystem Research Infrastructure Australian Government

6

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







Conservation and natural environments non forest

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

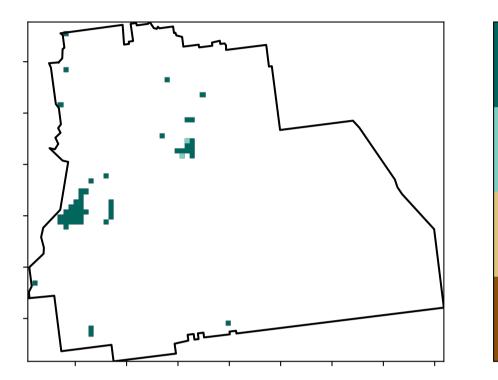
12% 100%

52°10°10°10

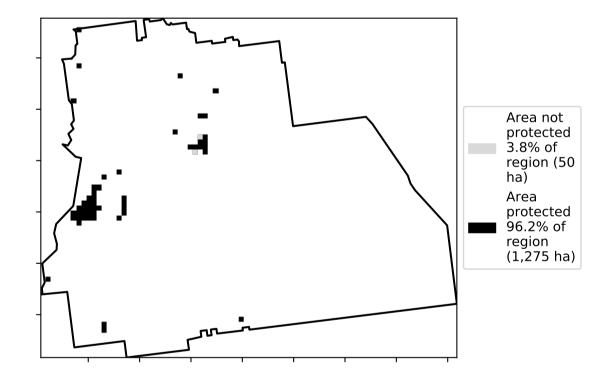
1 32°10'50010

0.30%

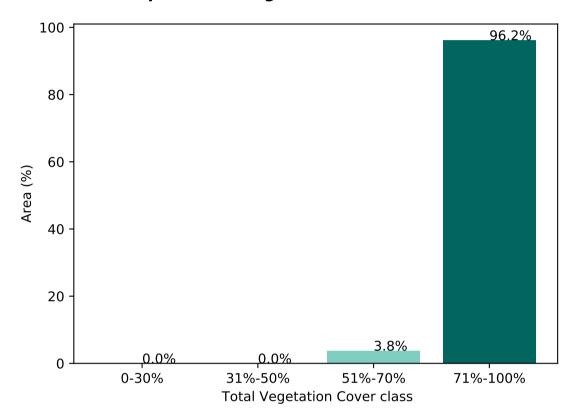
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area

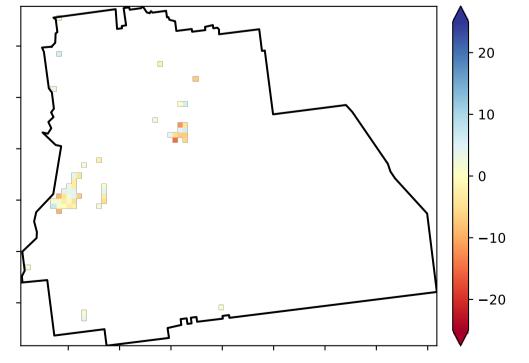


% Area protected from wind erosion (>50%)

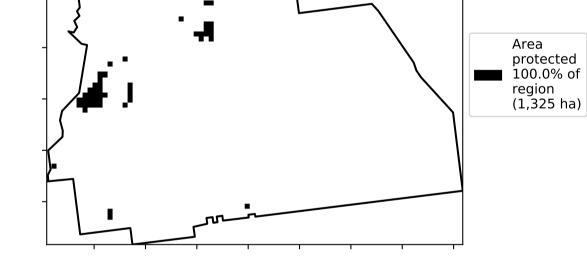


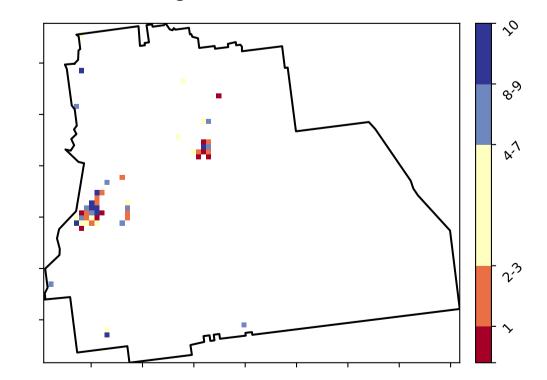
Total Vegetation Cover Anomaly [%]

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.

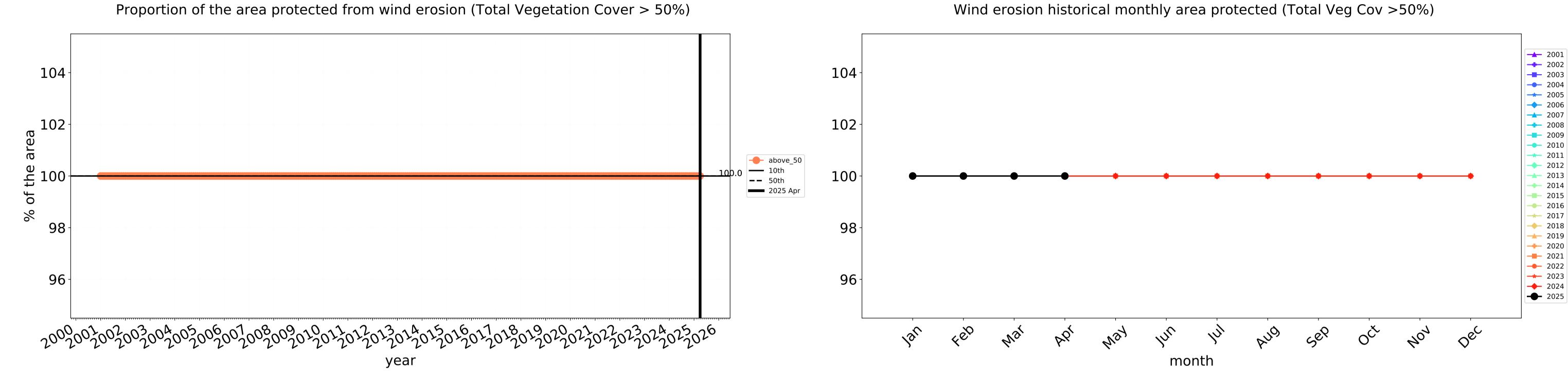


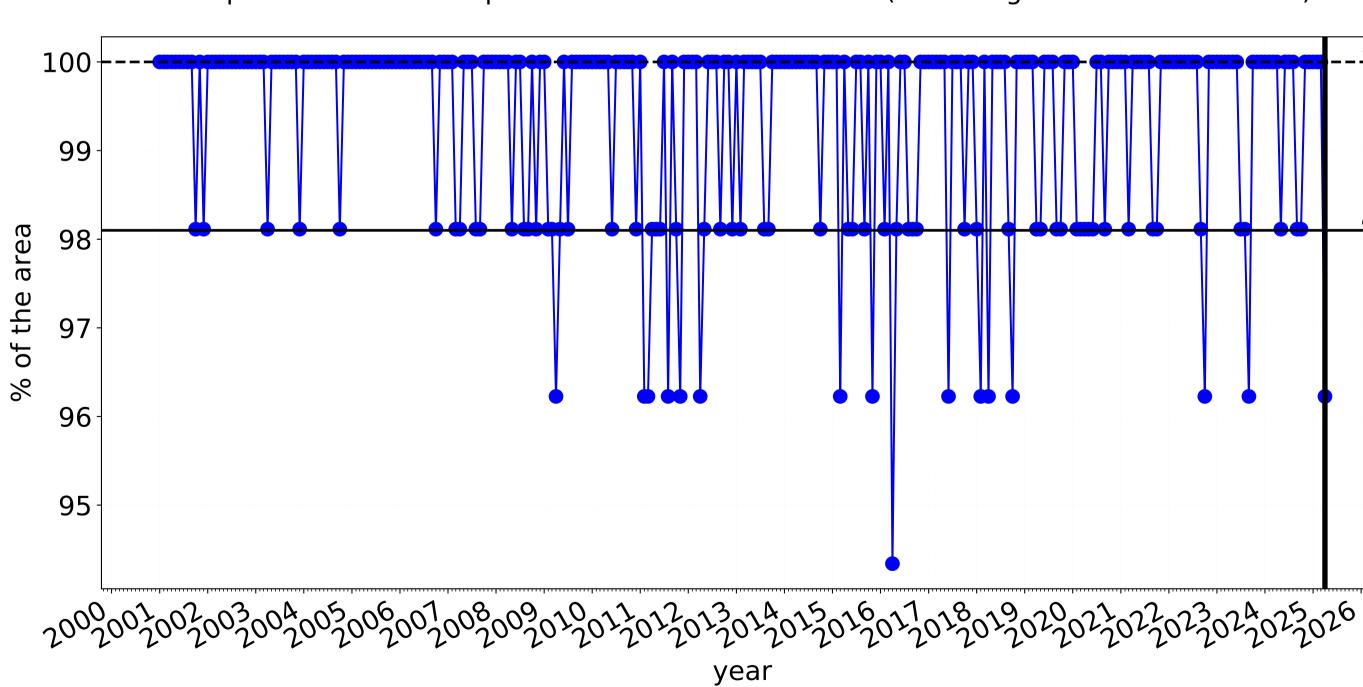
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.







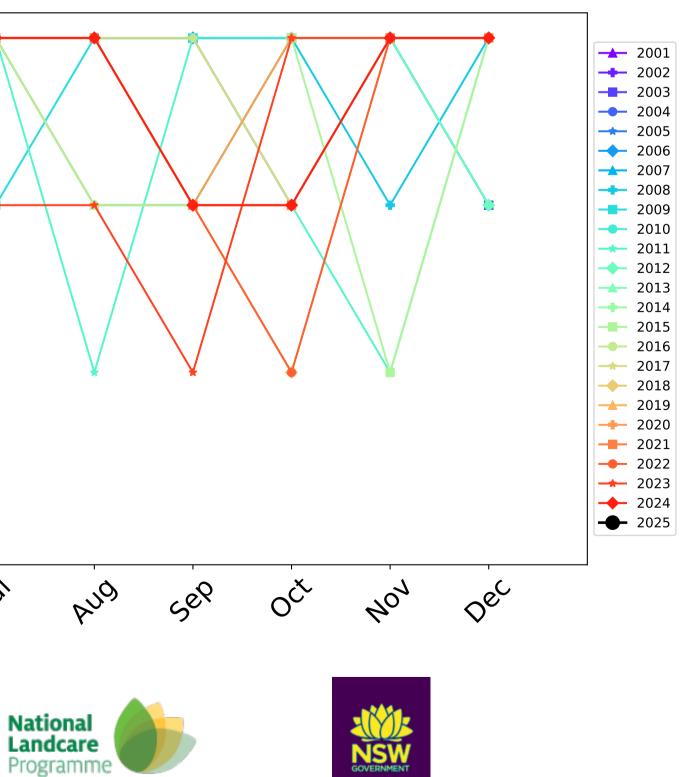


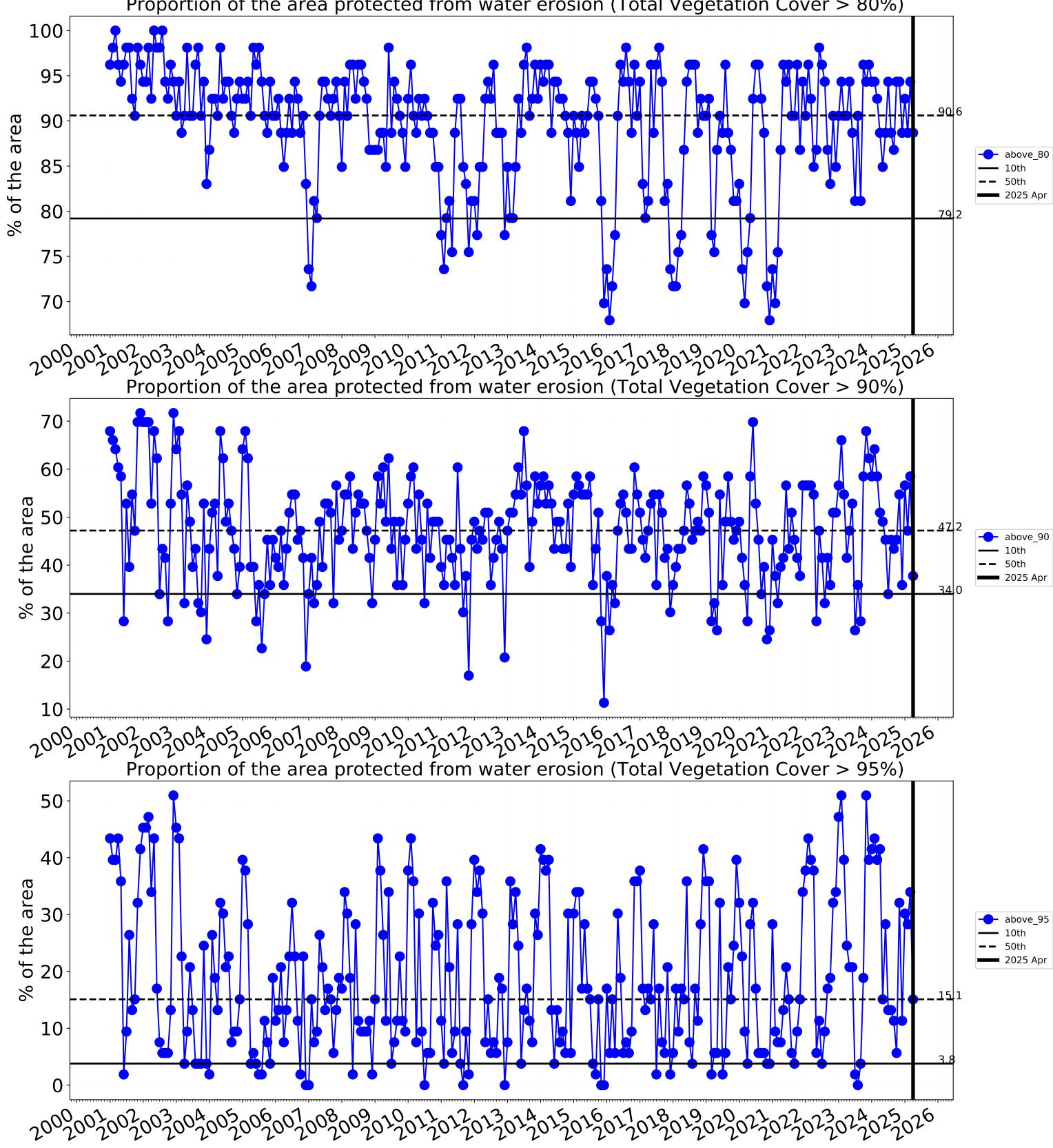


___10p.0 ---- above_70 **——** 10th **——** 50th **——** 2025 Apr

100 99-98-97 96-95-4eb may 1ar In War PQ In In month tern Ecosystem Research Infrastructure Australian Government

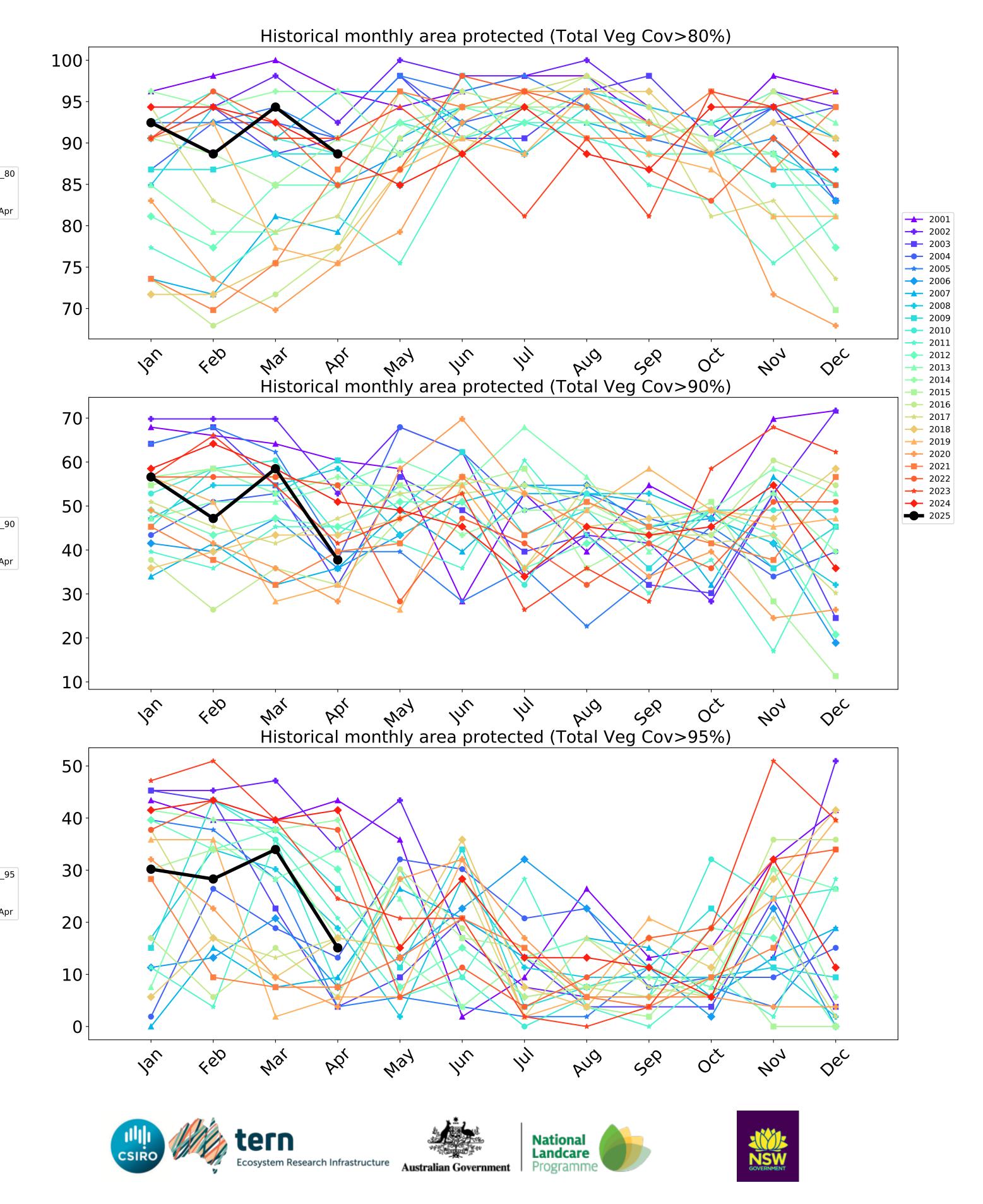
Water erosion historical monthly area protected (Total Veg Cov>70%)





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





Conservation and natural environments Woodland forest

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

12% 100%

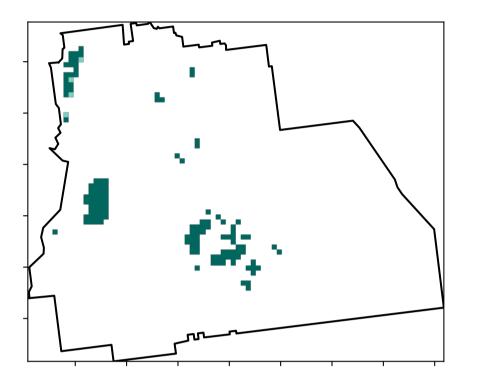
· 52% 70%

3201050010

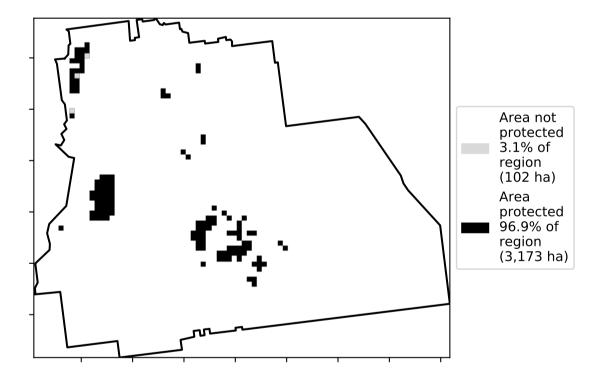
0.30%

Total Vegetation Cover [%]

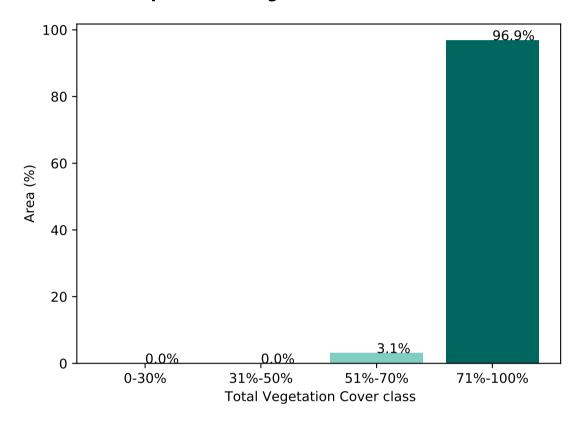
Land use and forest cover



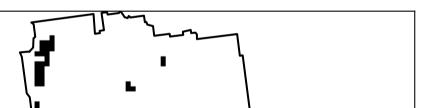
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area

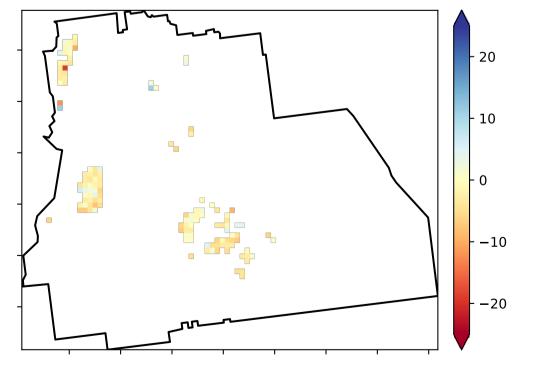


% Area protected from wind erosion (>50%)

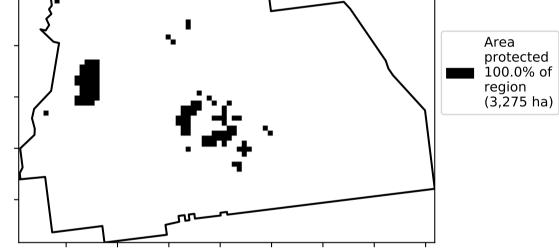


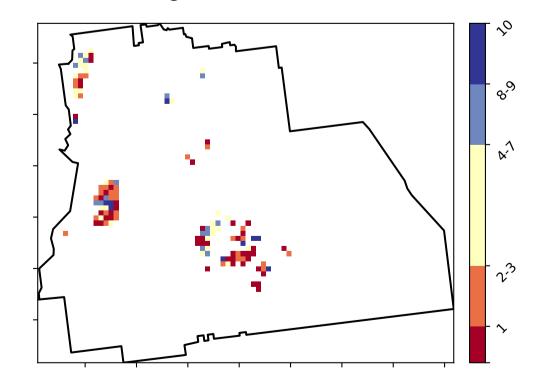
Total Vegetation Cover Anomaly [%]

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.

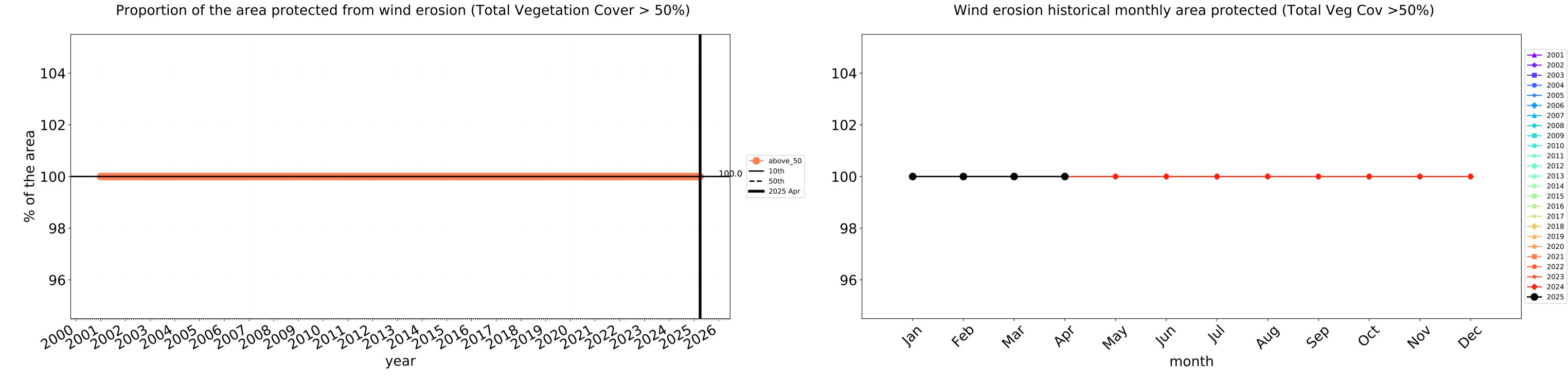


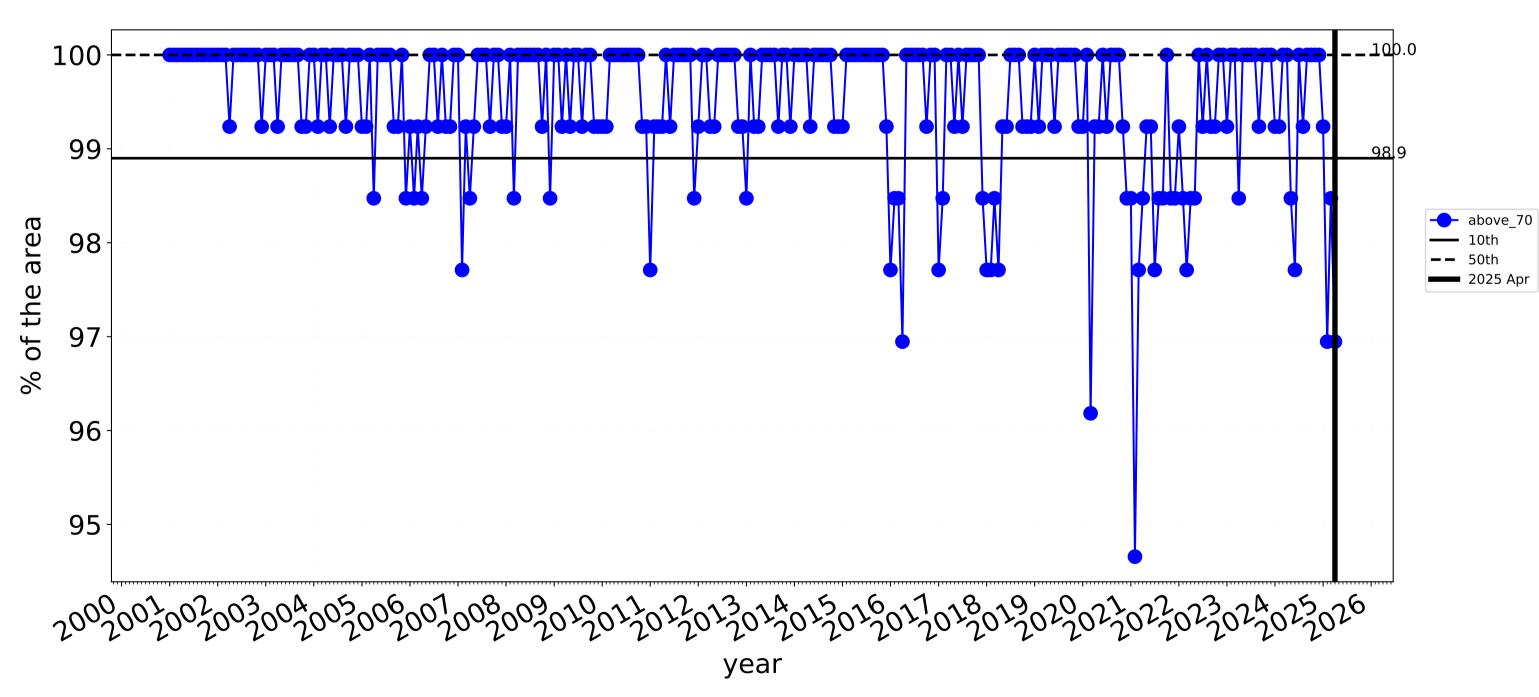
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.





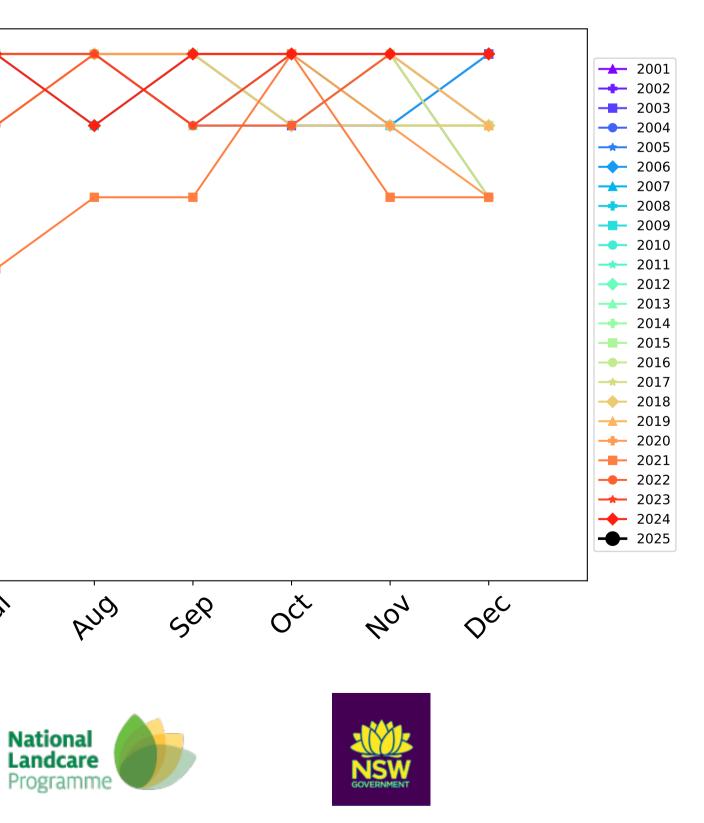


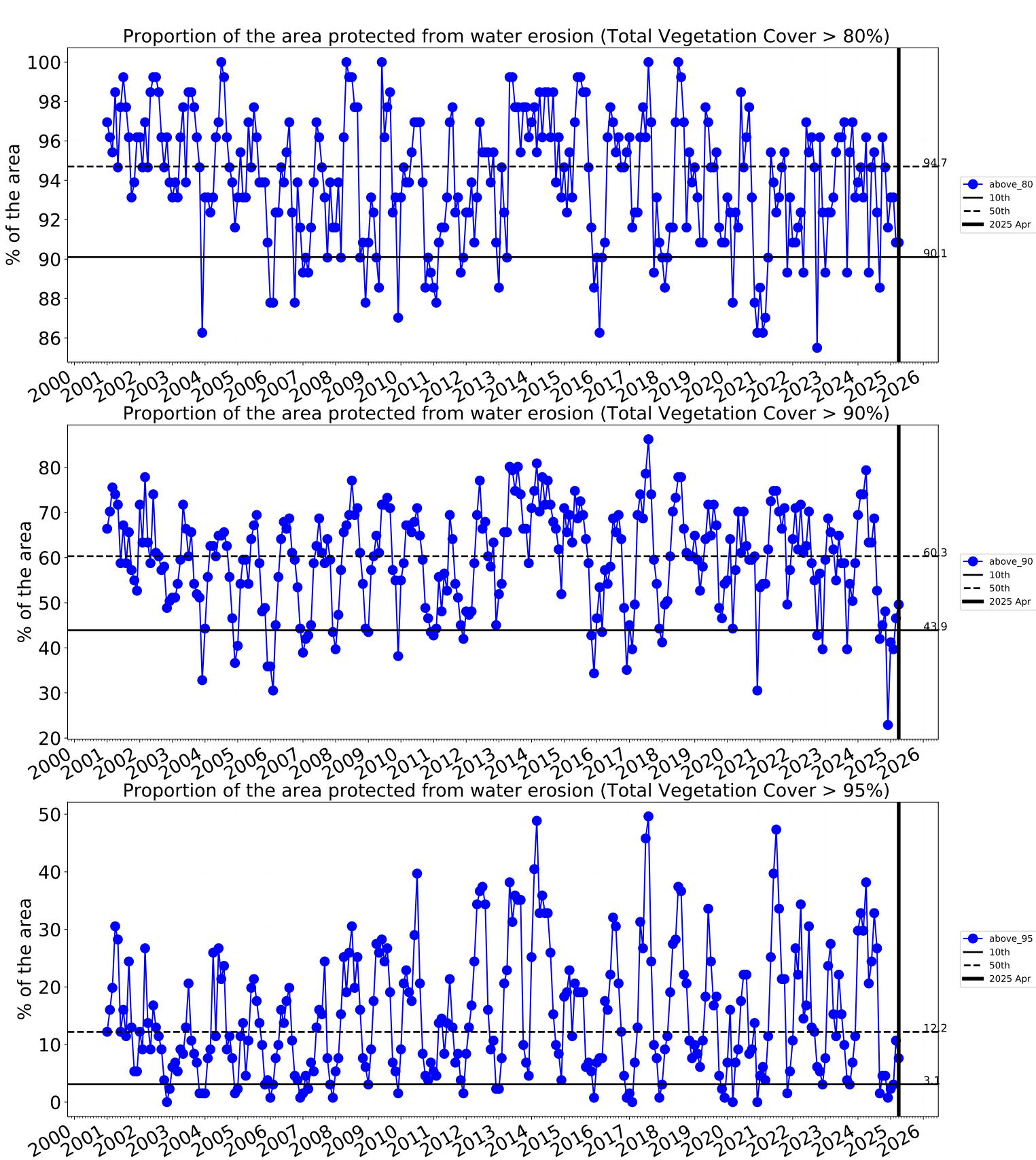


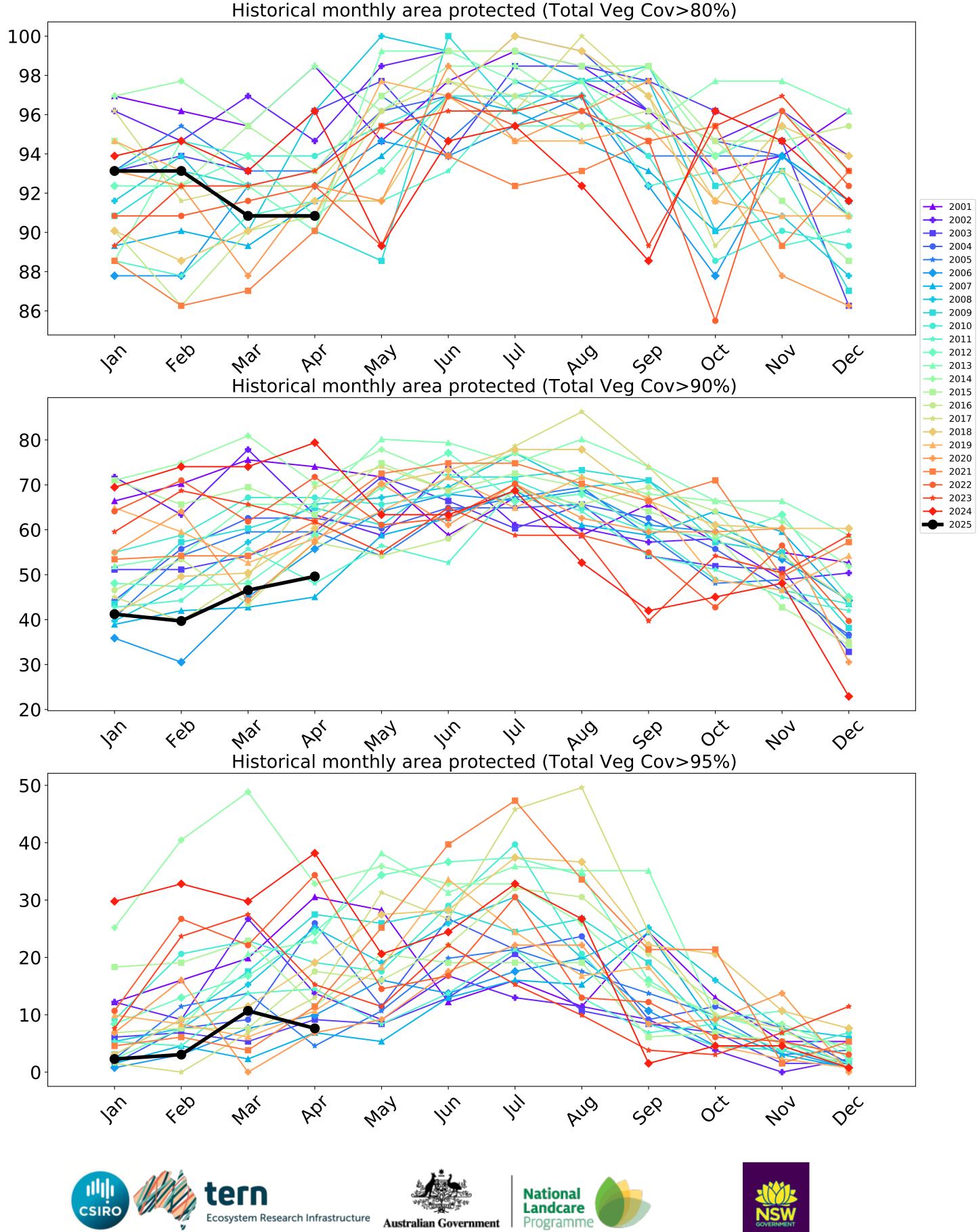


100 99 98-97 96-**9**5 4eb lar way In War PQ 1/2/ month tern Ecosystem Research Infrastructure Australian Government

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

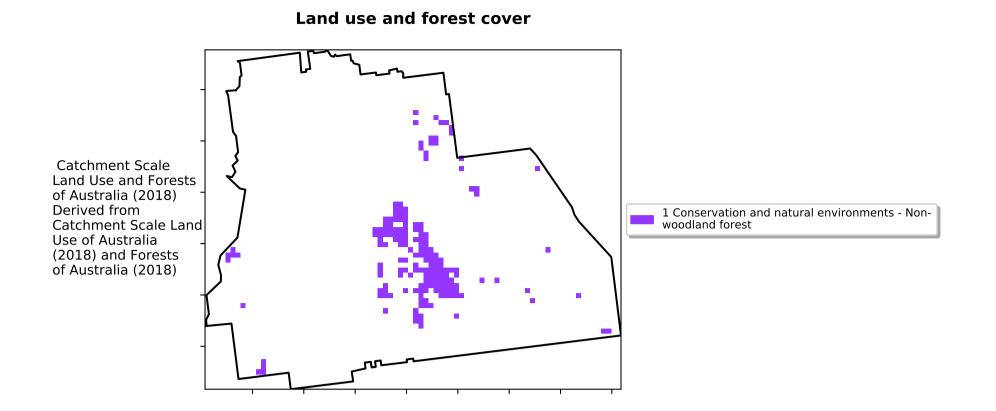








Conservation and natural environments Forest (non woodland)



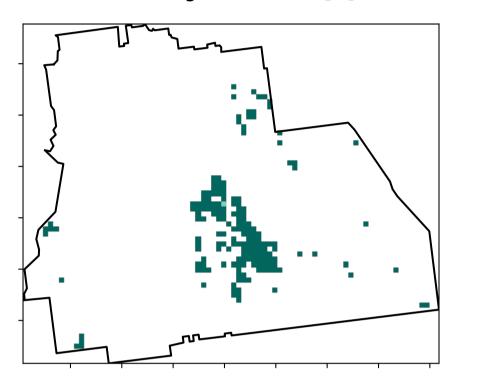
1 12% 100%

· 52% 70%

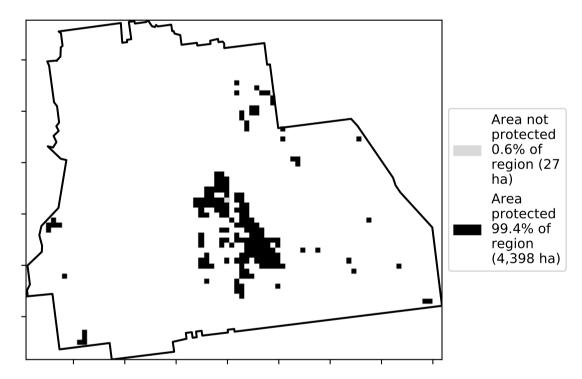
· 32%50%

0.30%

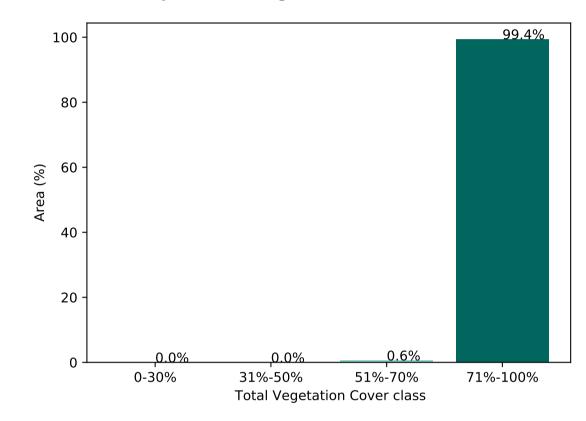
Total Vegetation Cover [%]



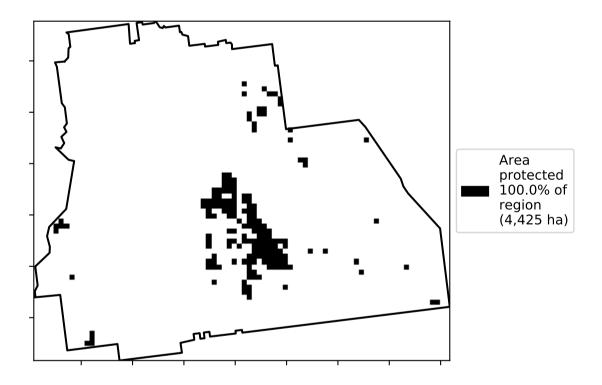
% Area protected from water erosion (>70%)



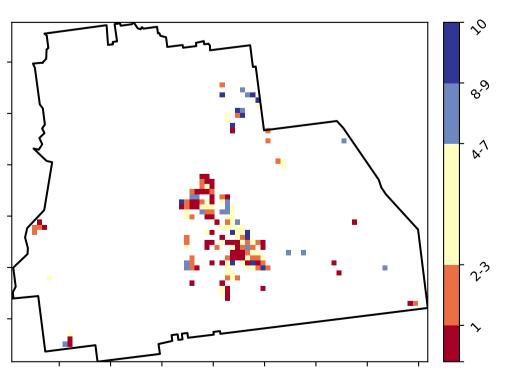




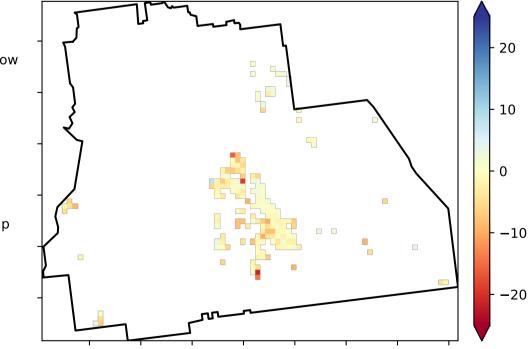
% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]



Total Vegetation Cover Anomaly [%]

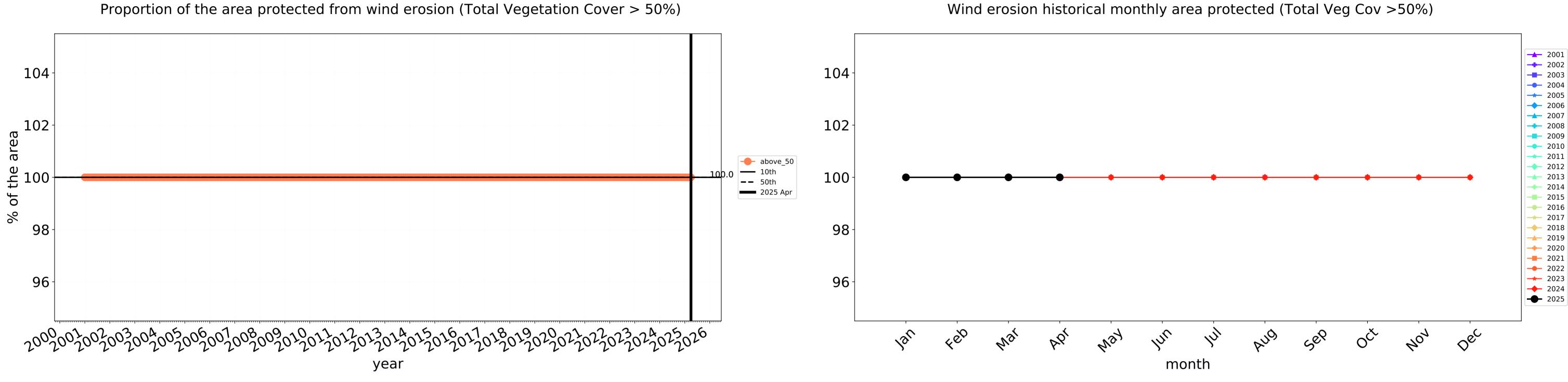


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

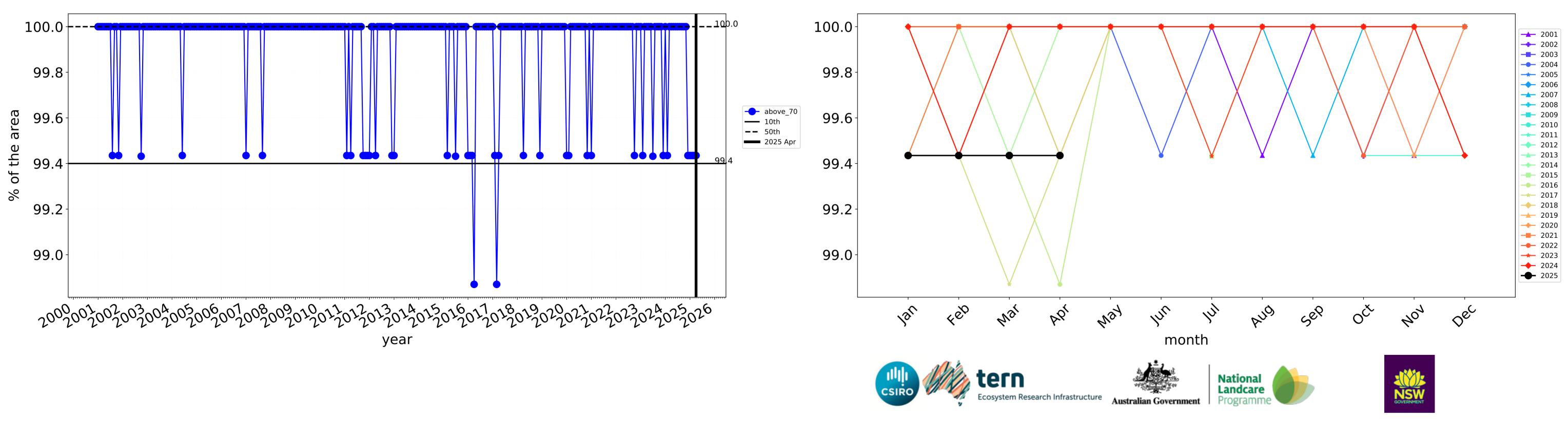


Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

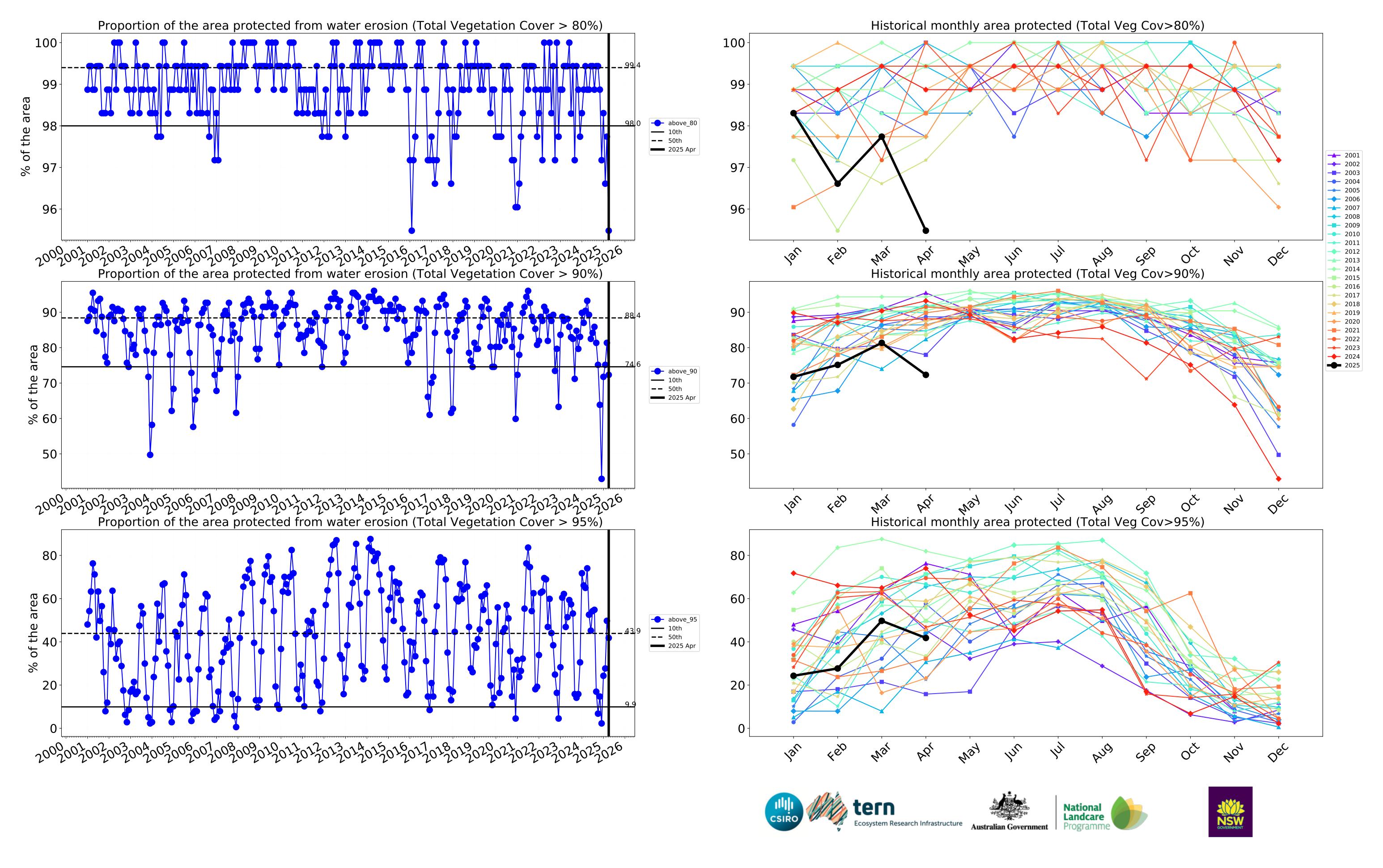
Conservation and natural environments Forest (non woodland) timeseries





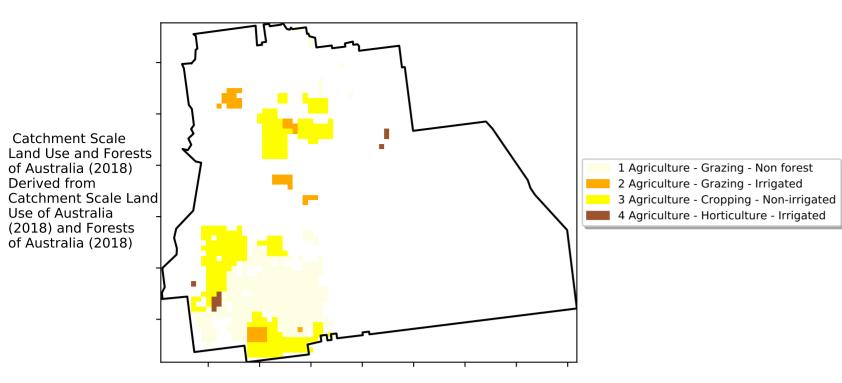


Water erosion historical monthly area protected (Total Veg Cov>70%)

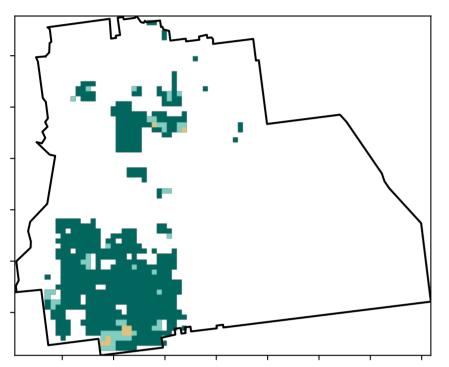


Agriculture

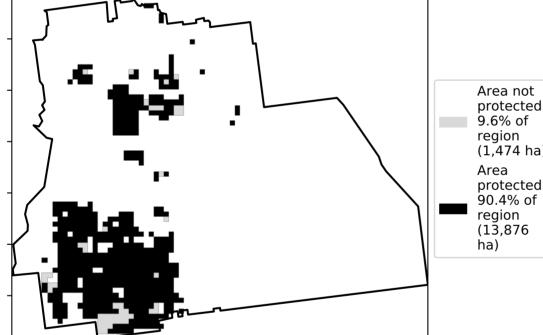
Land use and forest cover

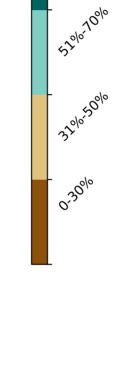


Total Vegetation Cover [%]

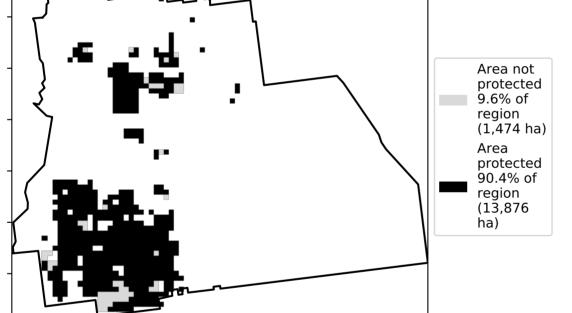


% Area protected from water erosion (>70%)

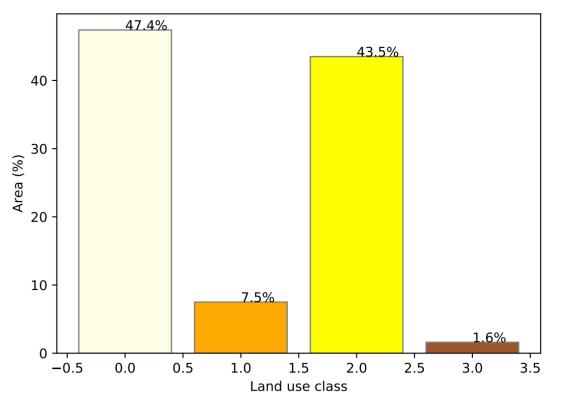




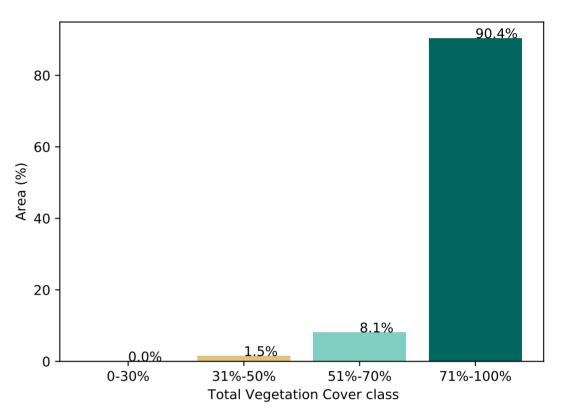
12%100%



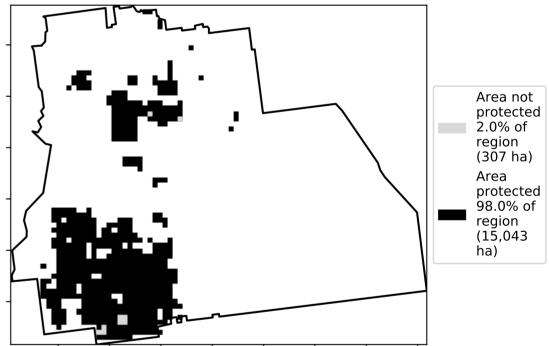
Proportion of each land class in area



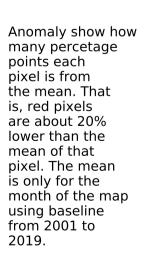
Proportion of vegetation cover class in area

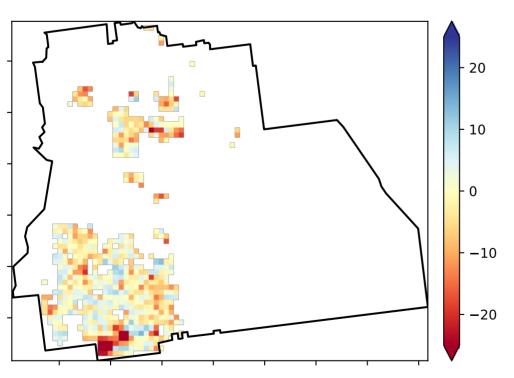


% Area protected from wind erosion (>50%)

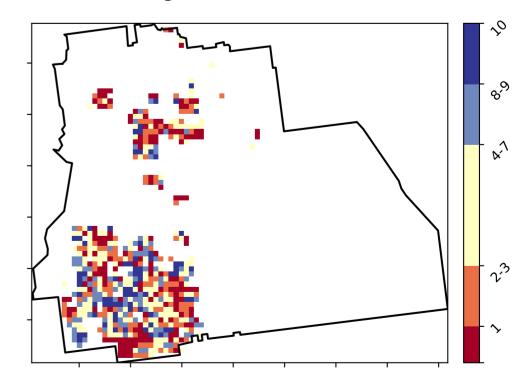


Total Vegetation Cover Anomaly [%]

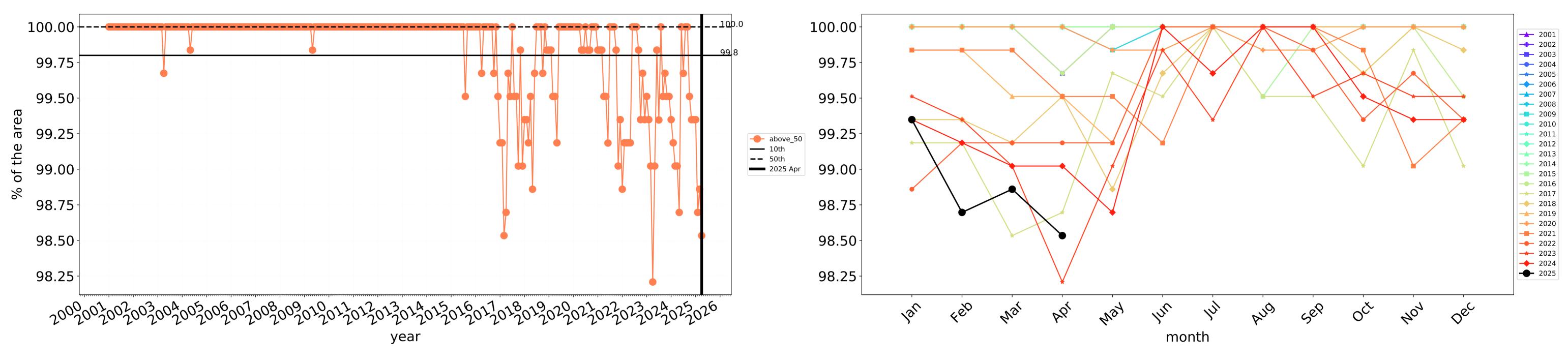




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

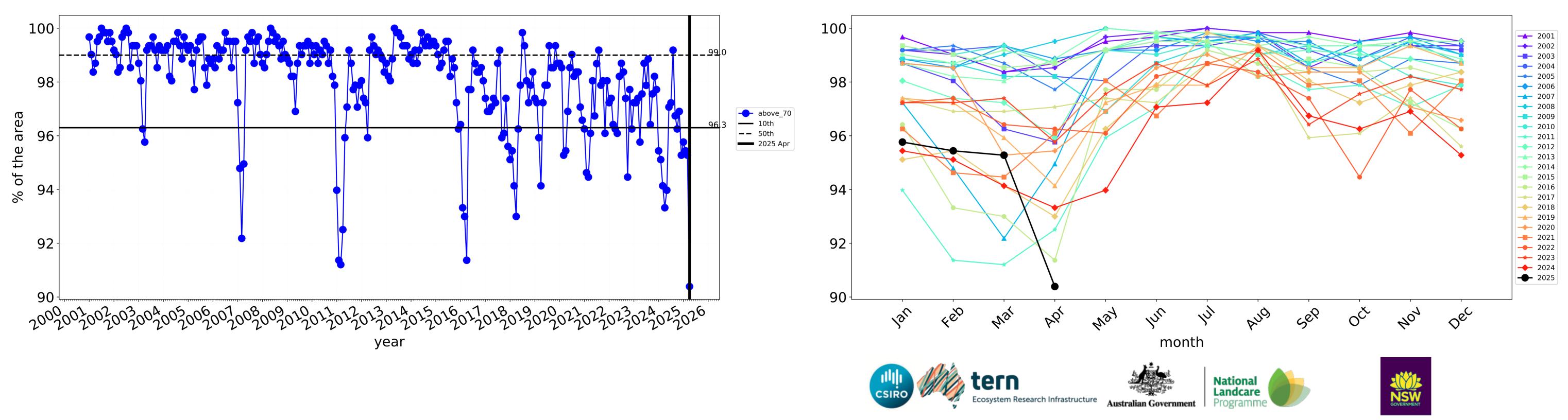






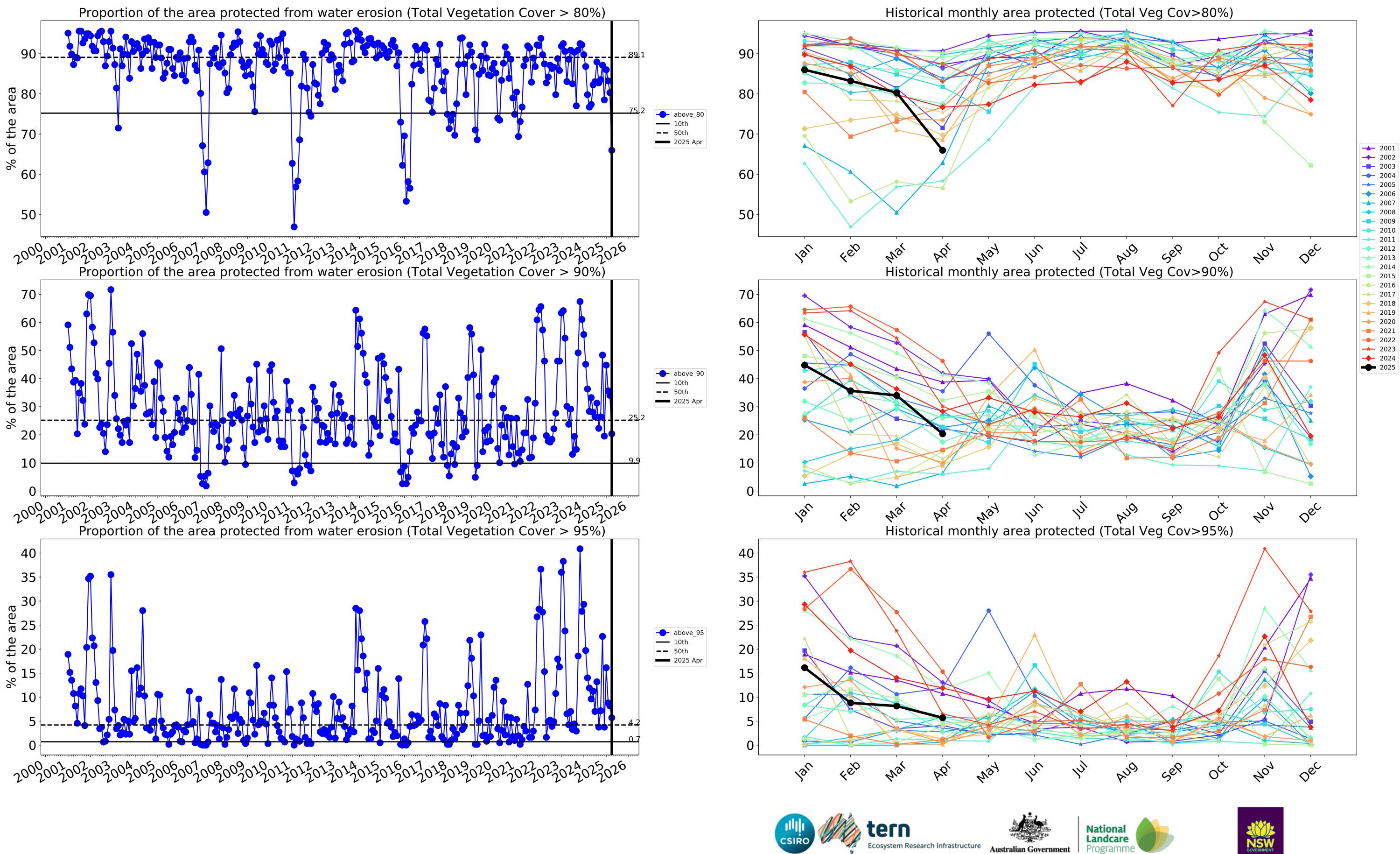
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

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



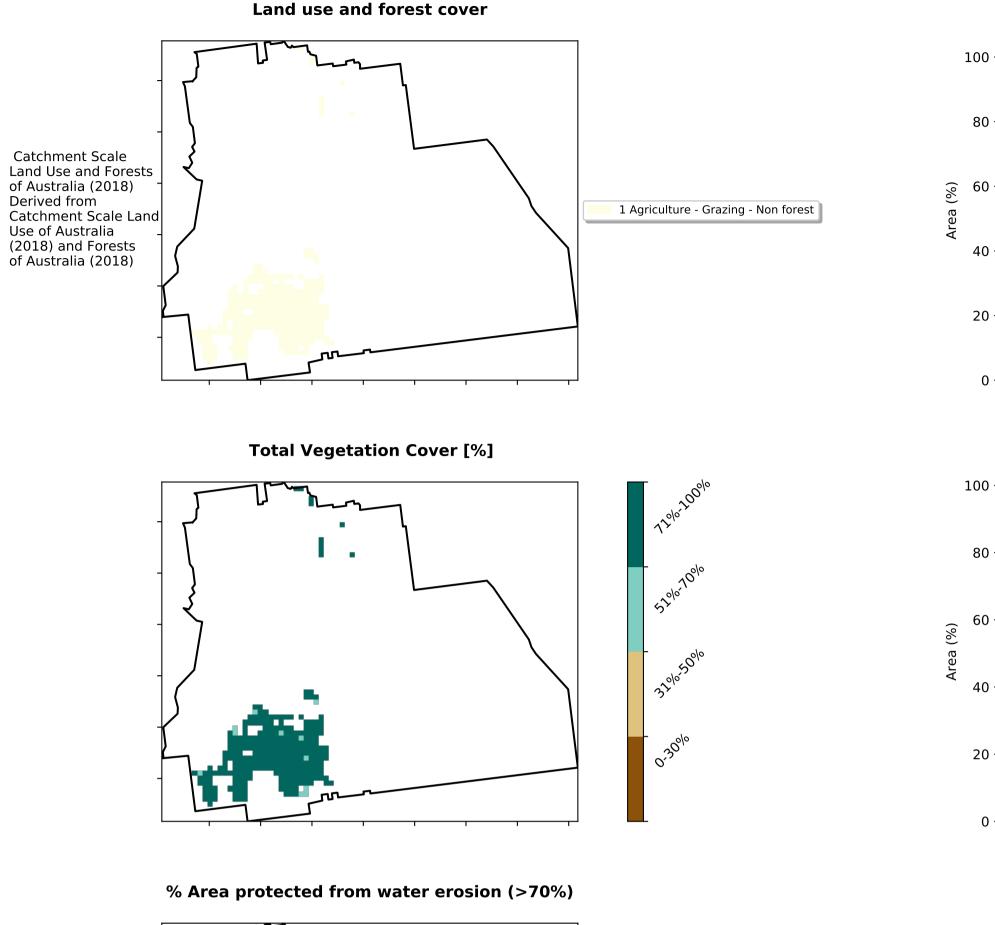
Wind erosion historical monthly area protected (Total Veg Cov >50%)

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



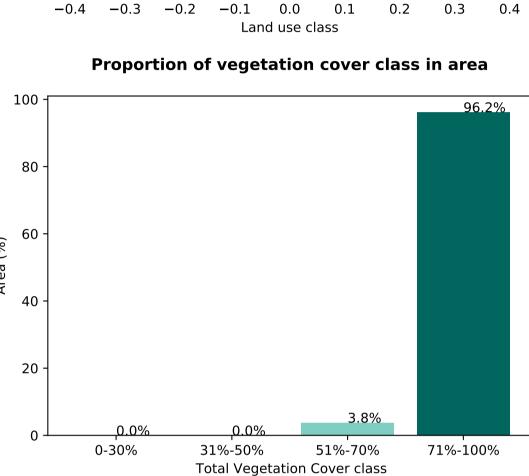


Grazing

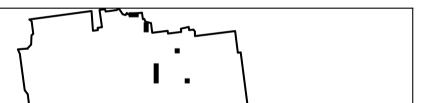


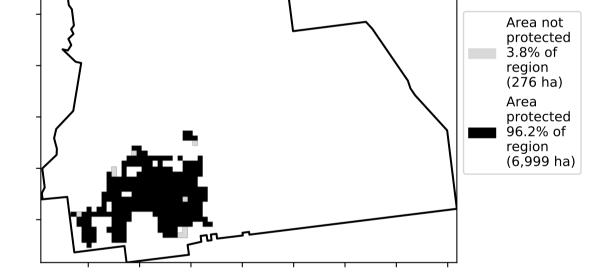
Proportion of each land class in area

100.0%



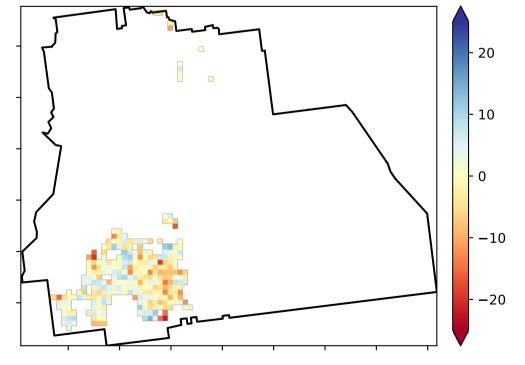
% Area protected from wind erosion (>50%)



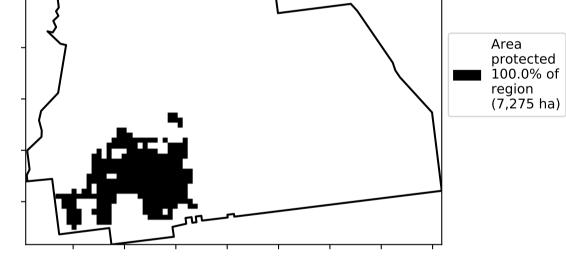


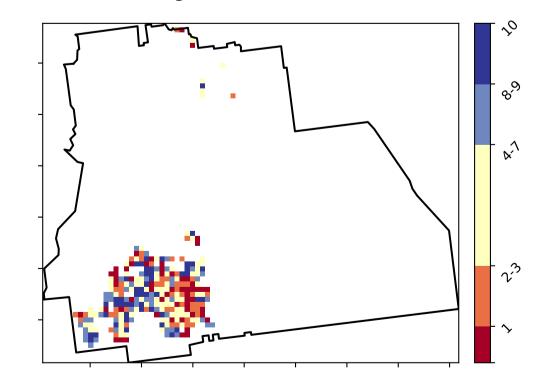
Total Vegetation Cover Anomaly [%]

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.

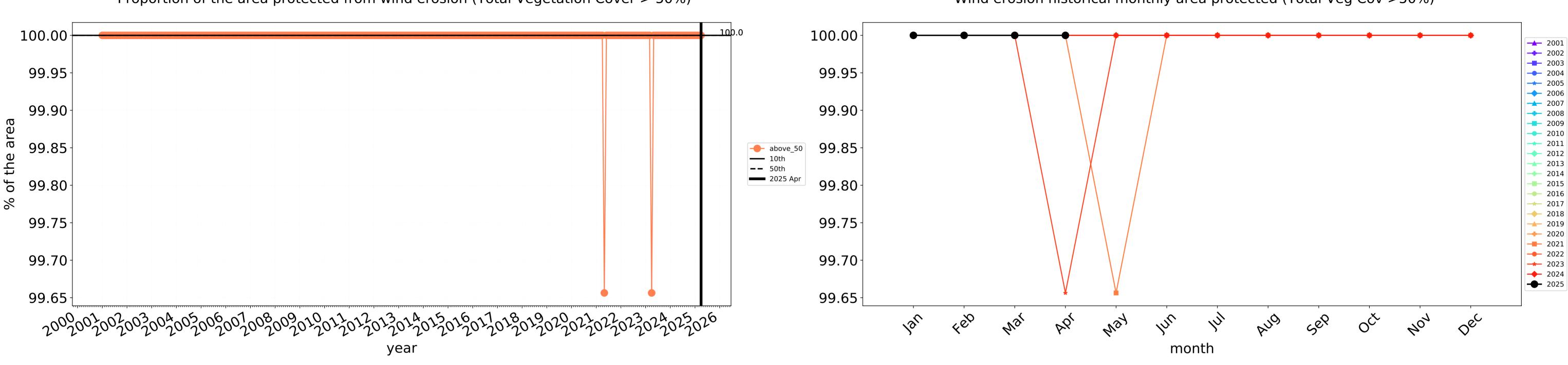


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

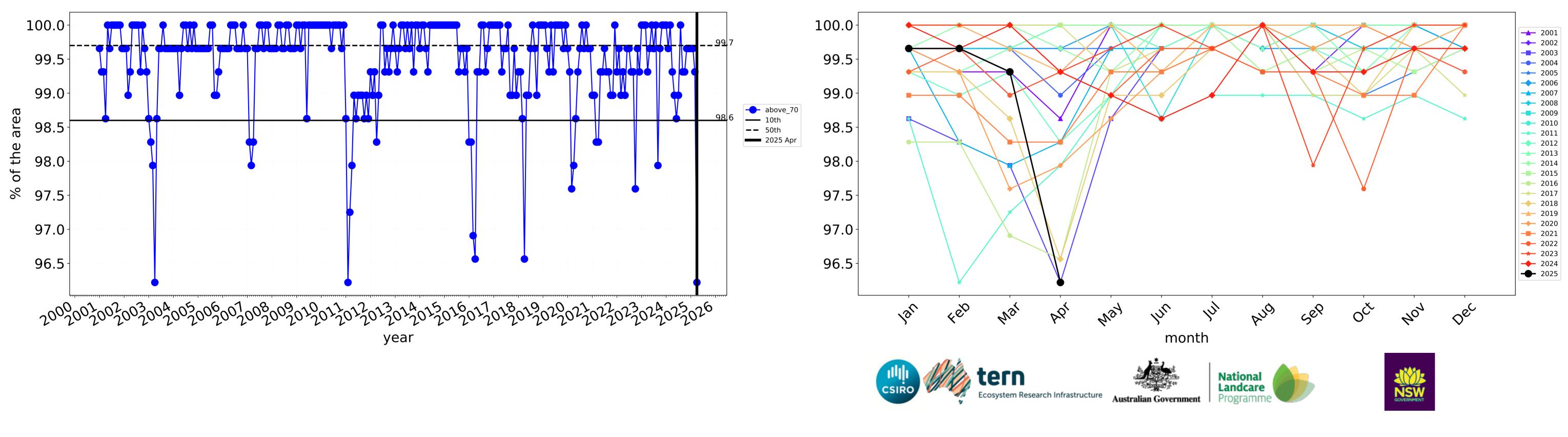


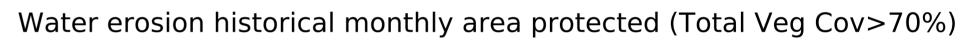




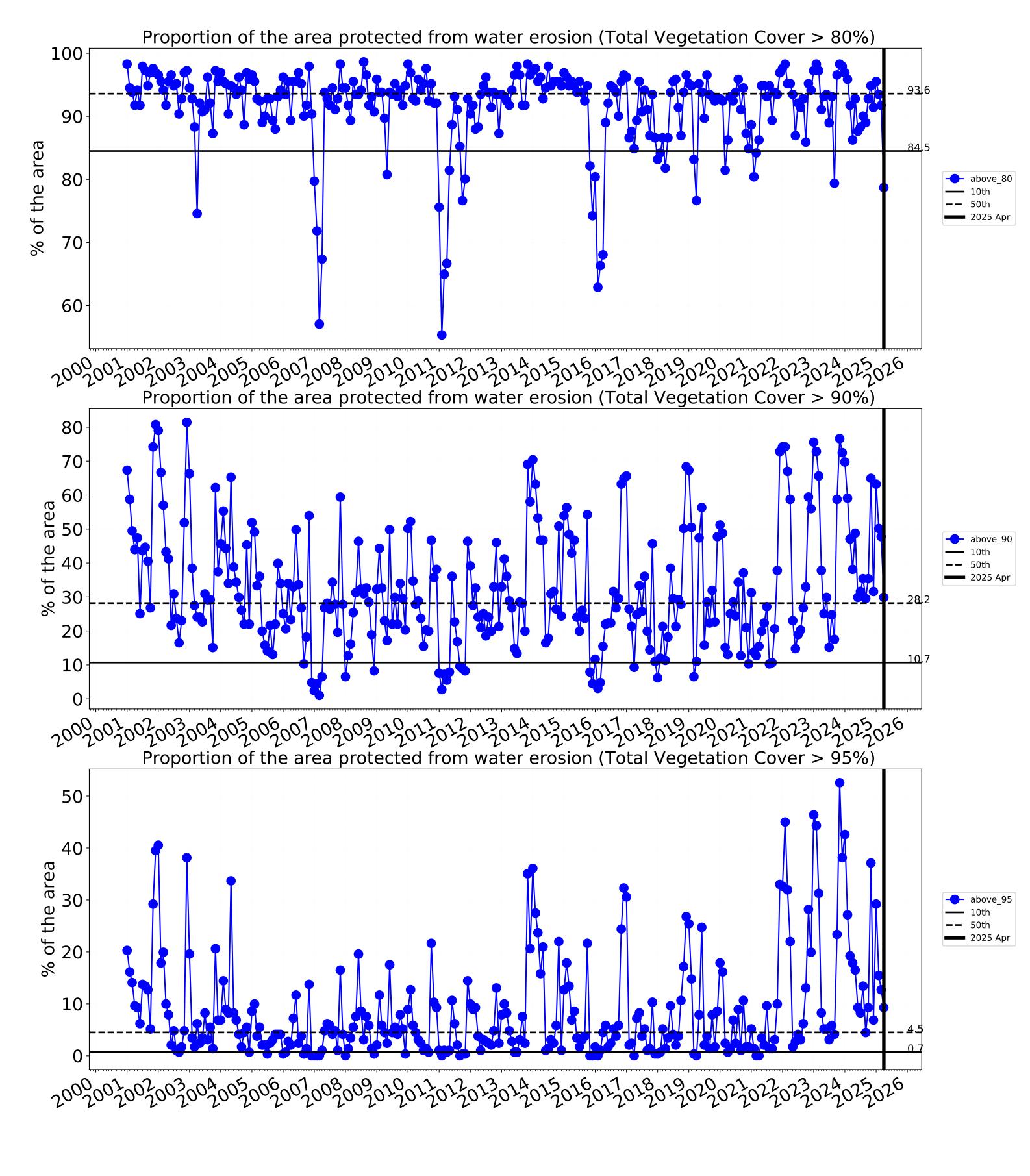


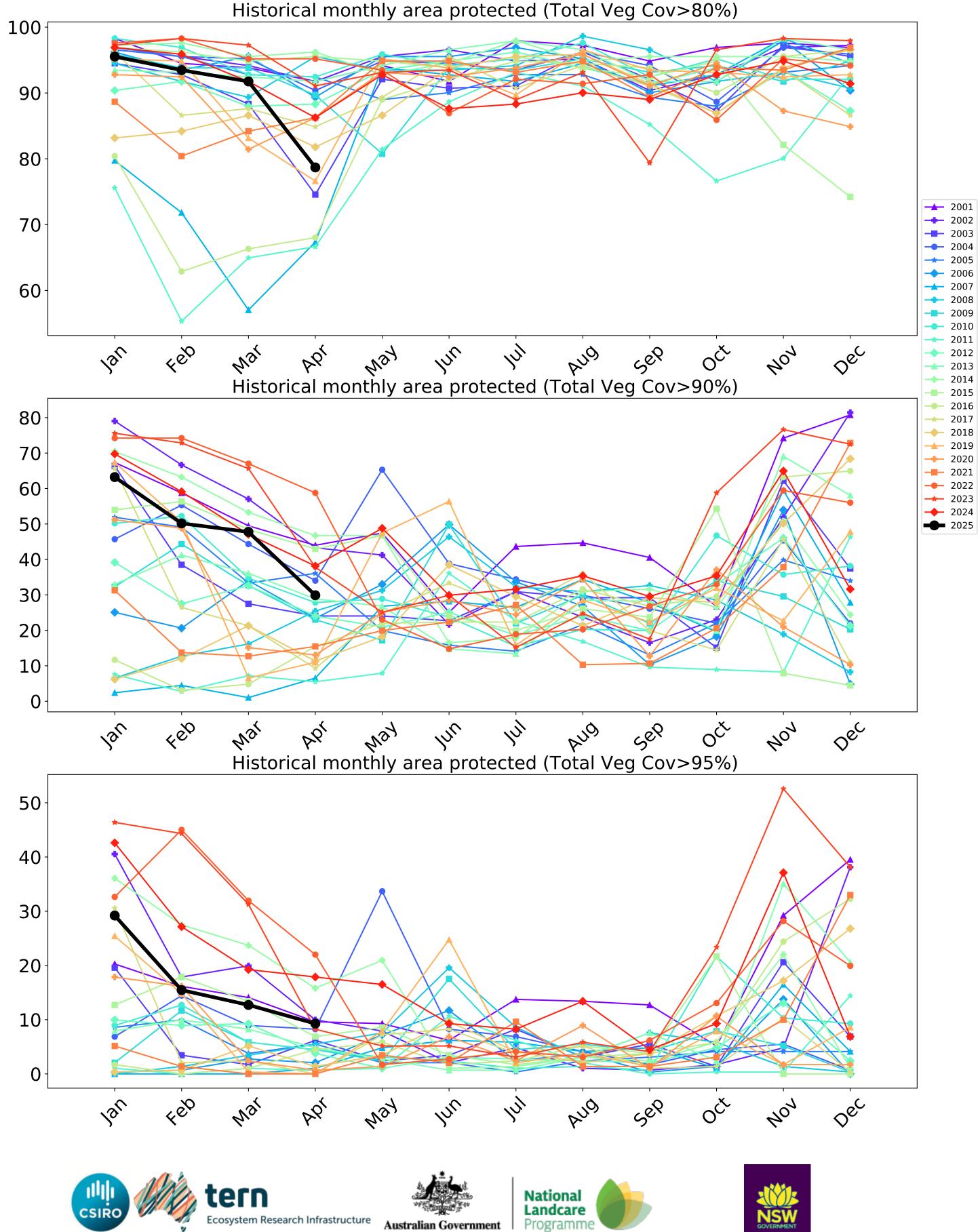






Wind erosion historical monthly area protected (Total Veg Cov >50%)







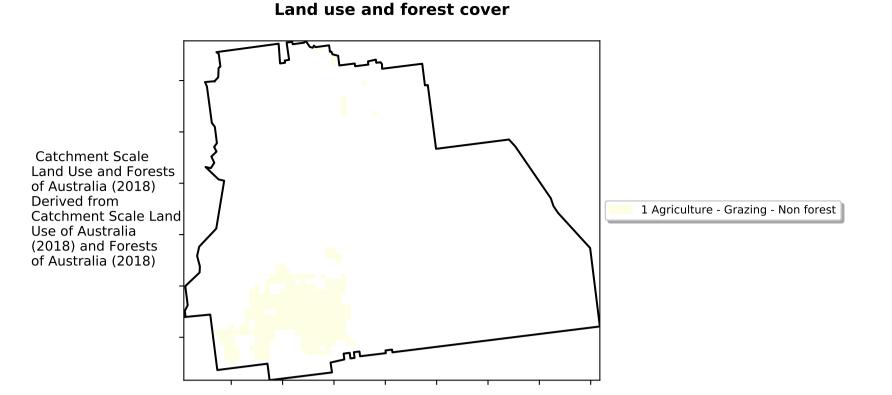
Grazing non forest

1 12% 100%

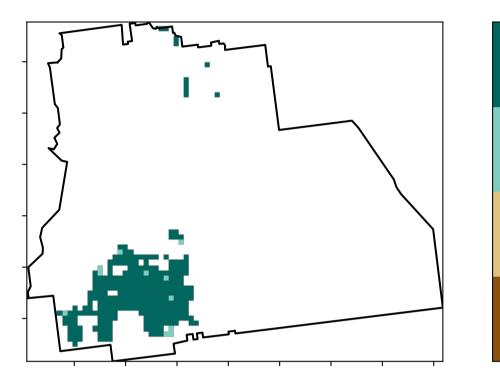
52°10°10°10

32°1050010

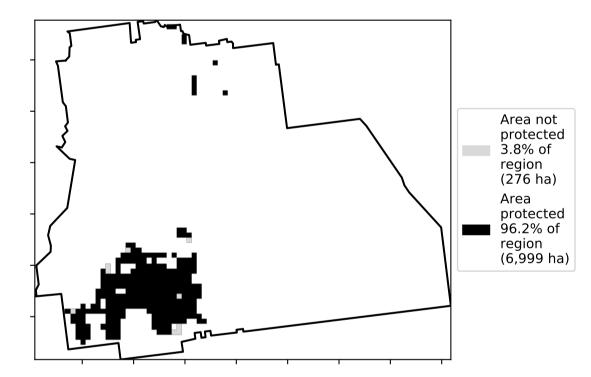
0-30%



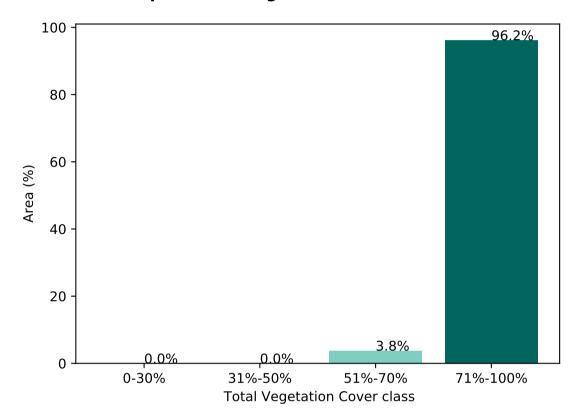
Total Vegetation Cover [%]



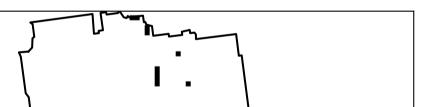
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area

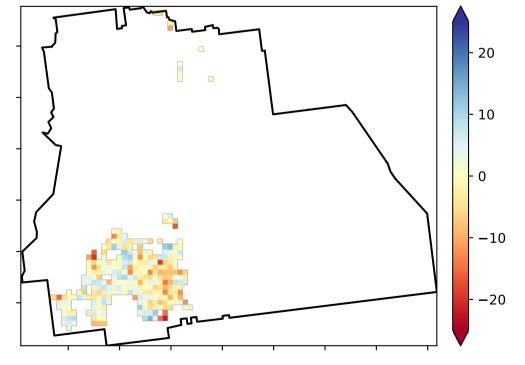


% Area protected from wind erosion (>50%)

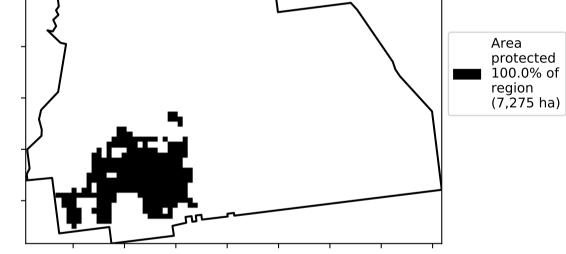


Total Vegetation Cover Anomaly [%]

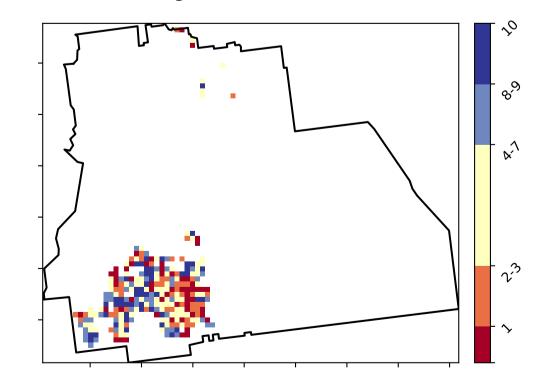
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



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.



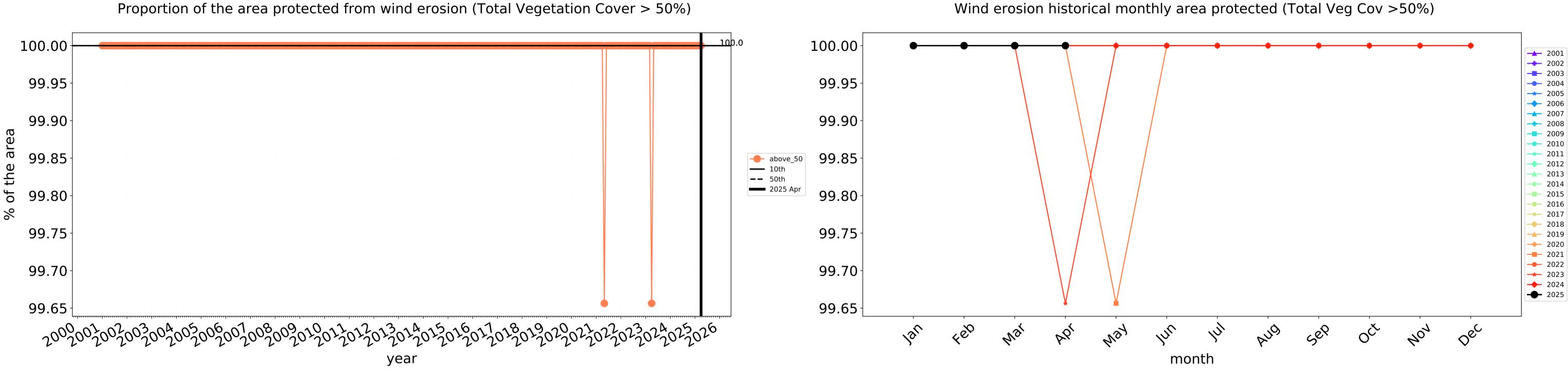
Total Vegetation Cover Decile [%]

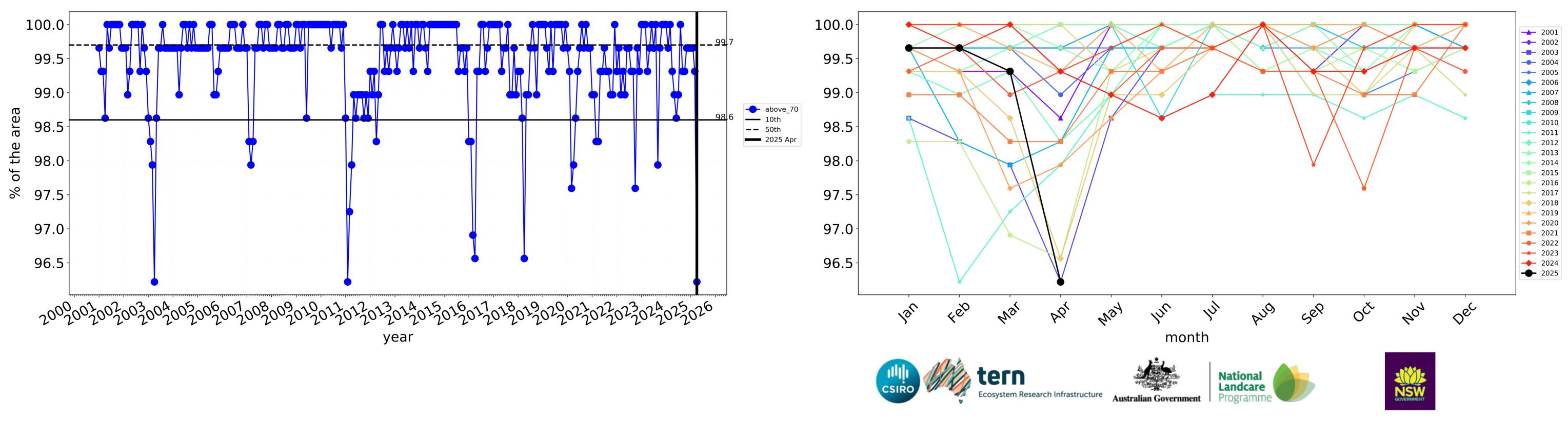




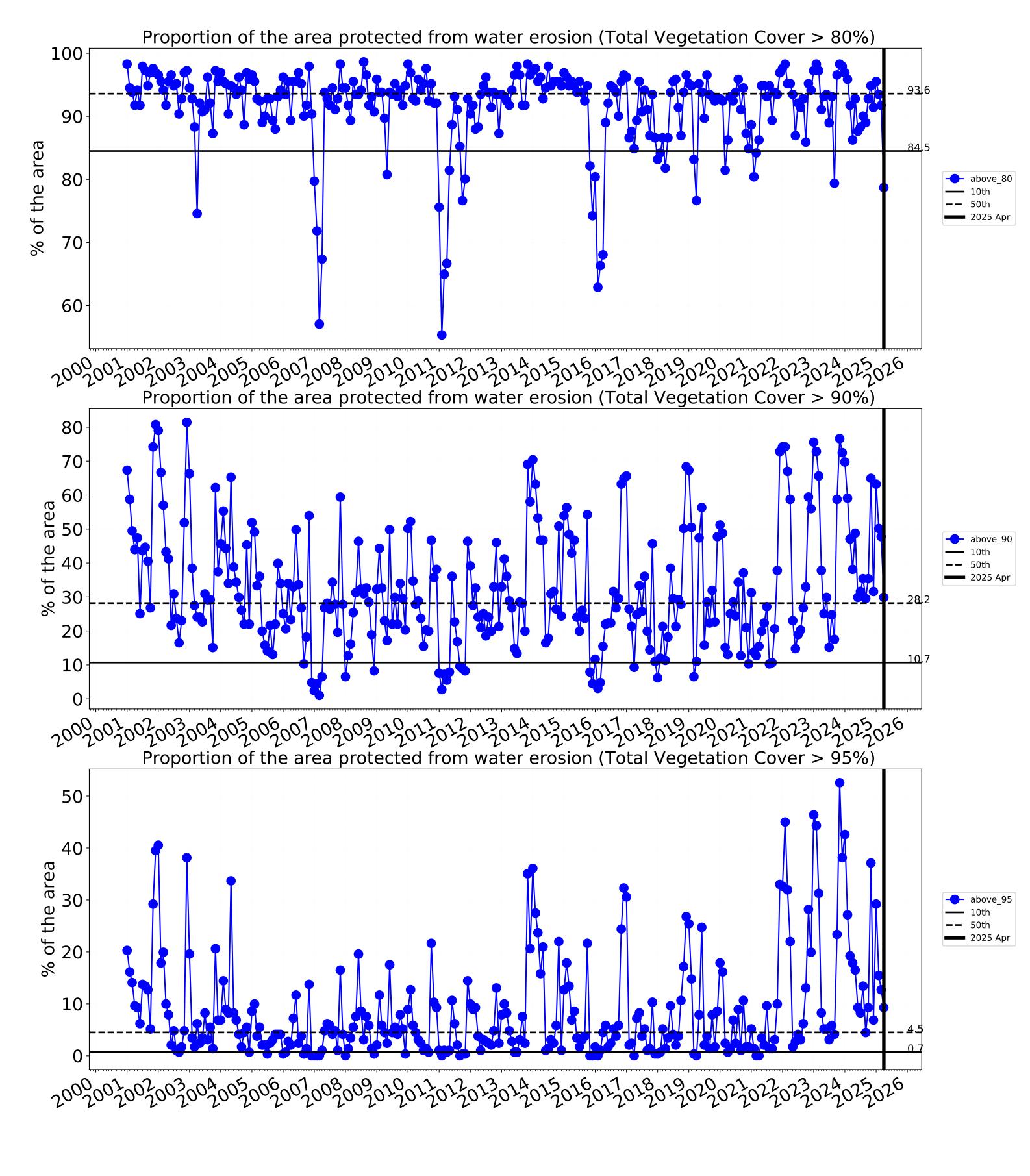
23

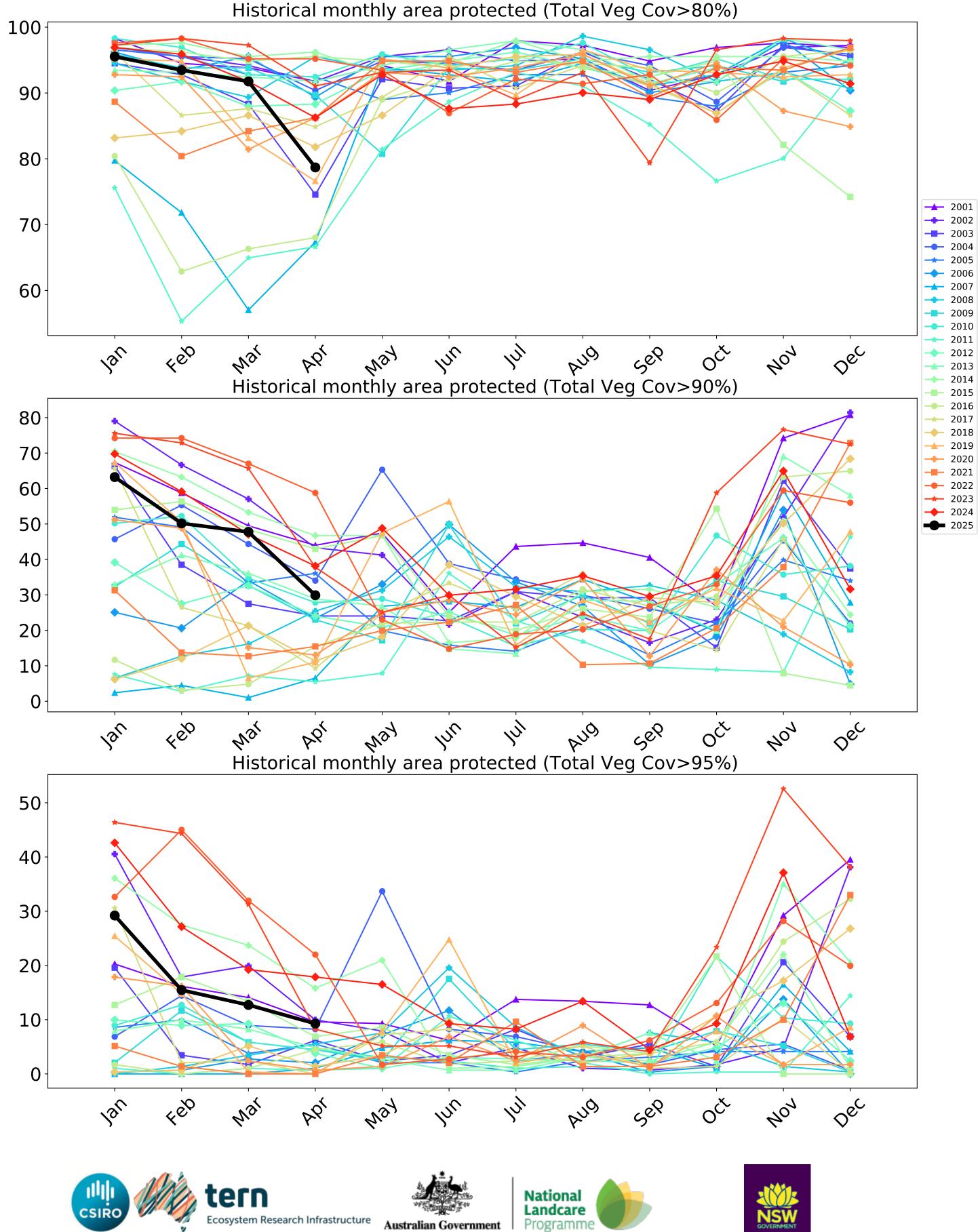






Water erosion historical monthly area protected (Total Veg Cov>70%)





Ecosystem Research Infrastructure Australian Government

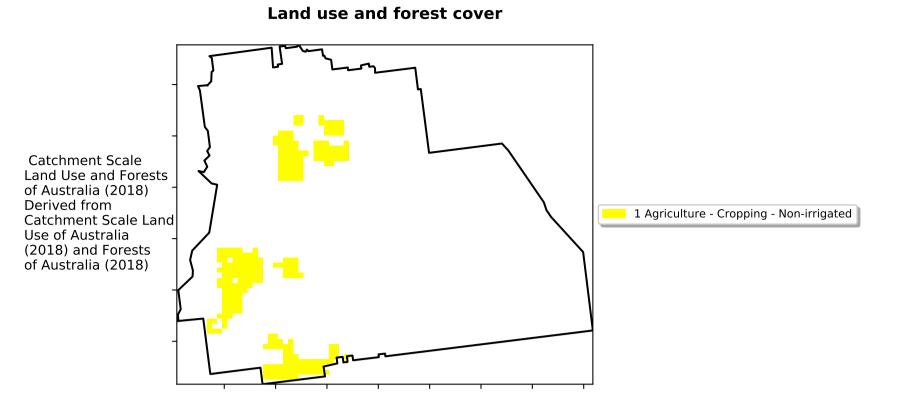
Cropping

12%20000

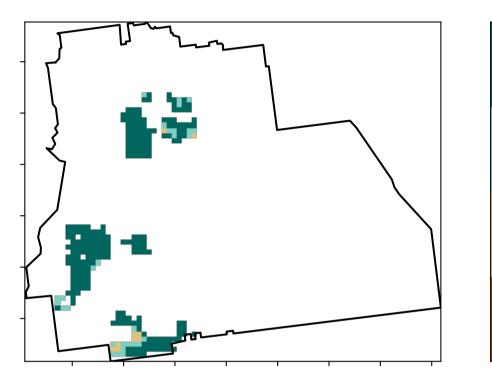
52°10°10°10

32005000

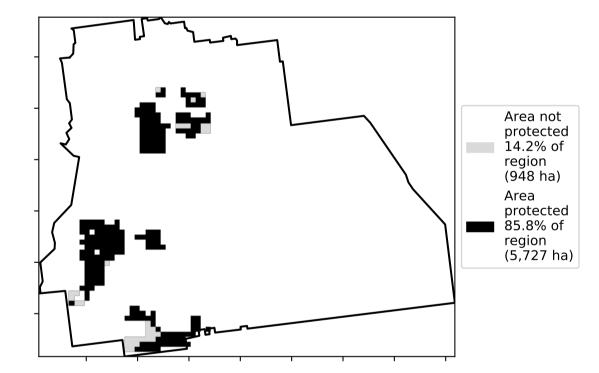
· 0.30%



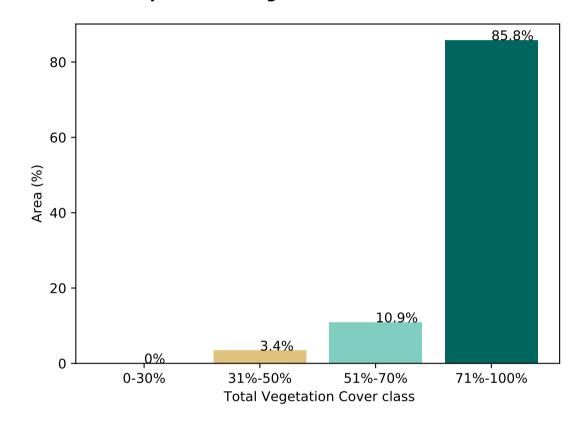
Total Vegetation Cover [%]



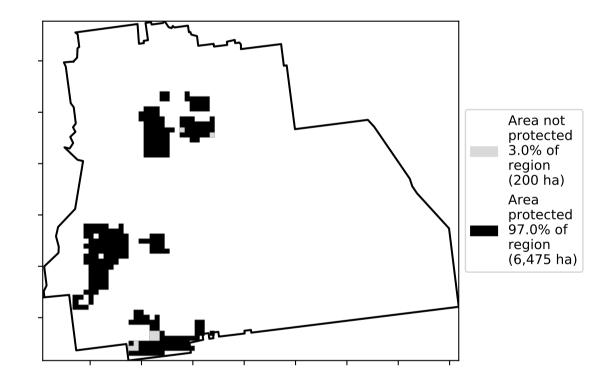
% Area protected from water erosion (>70%)



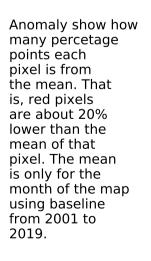
Proportion of vegetation cover class in area

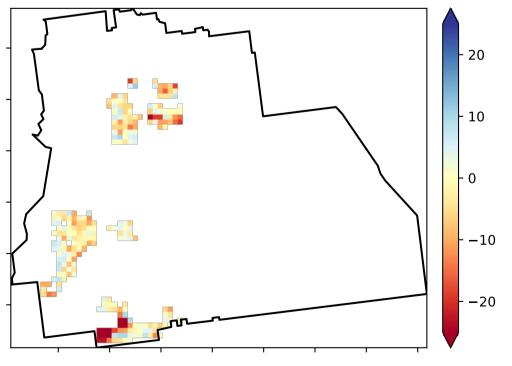


% Area protected from wind erosion (>50%)

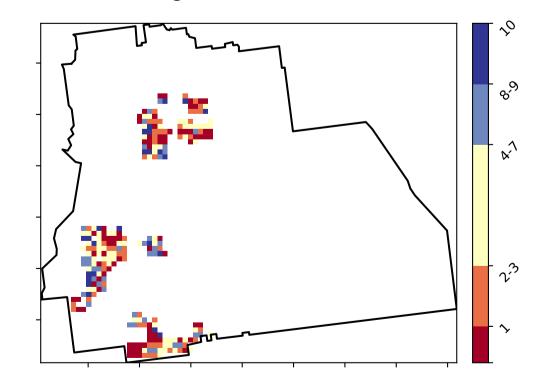


Total Vegetation Cover Anomaly [%]

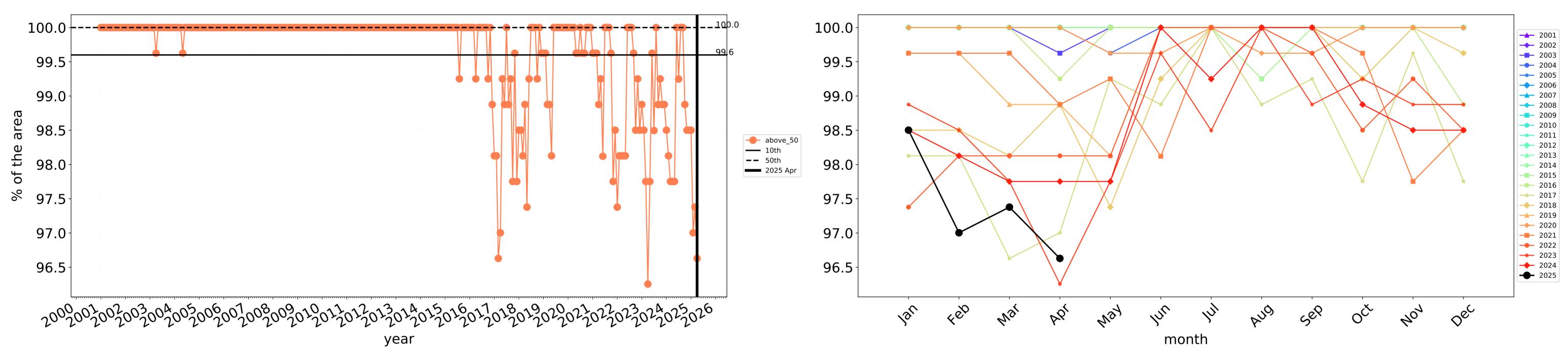




Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

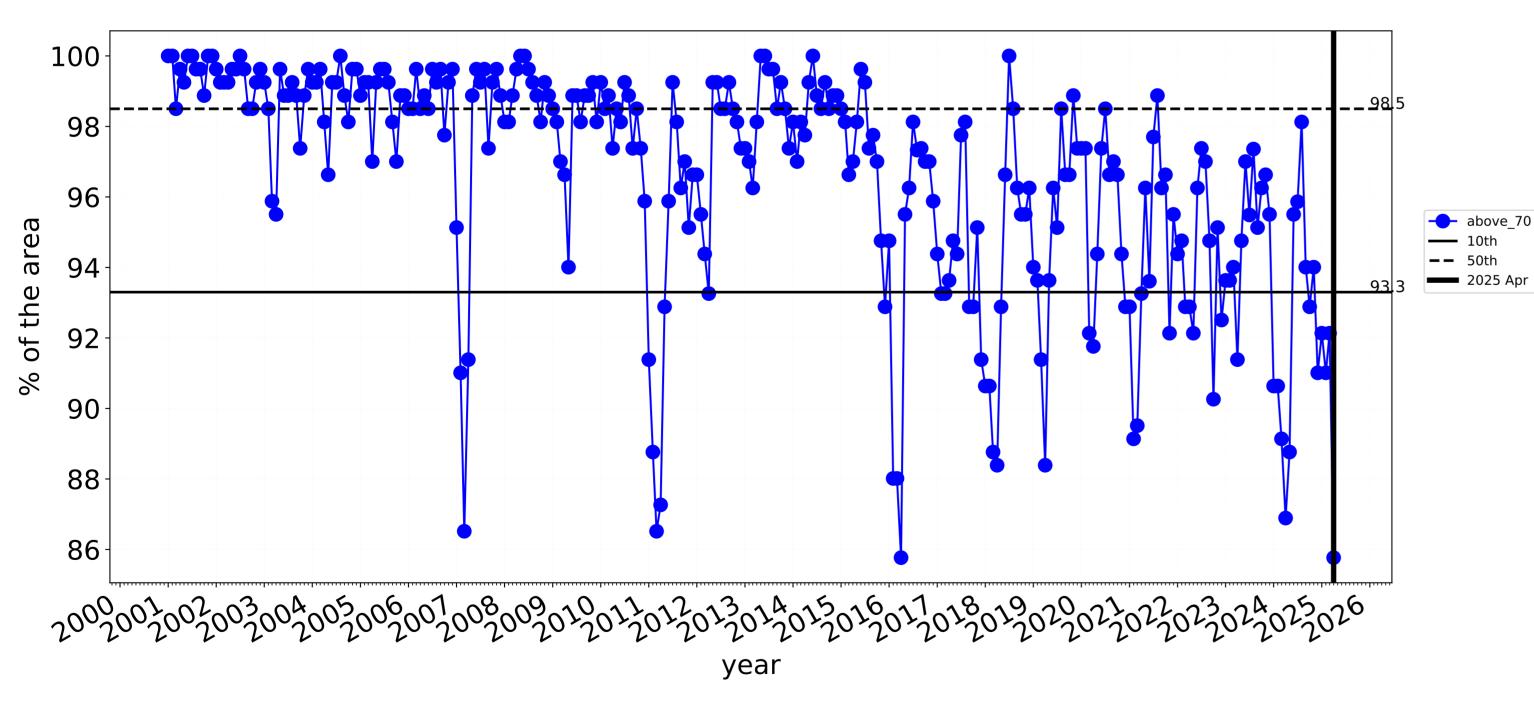


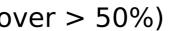




Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

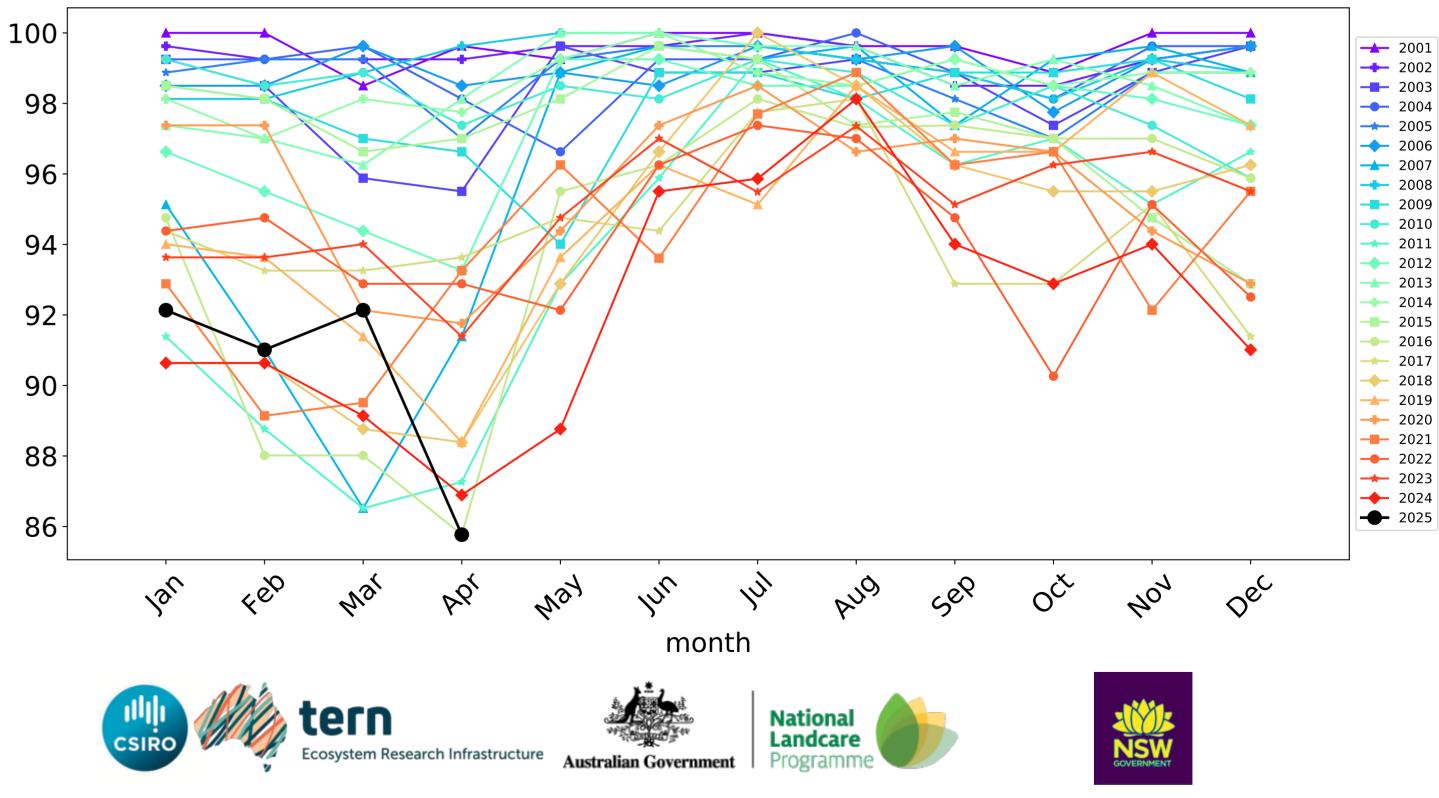
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

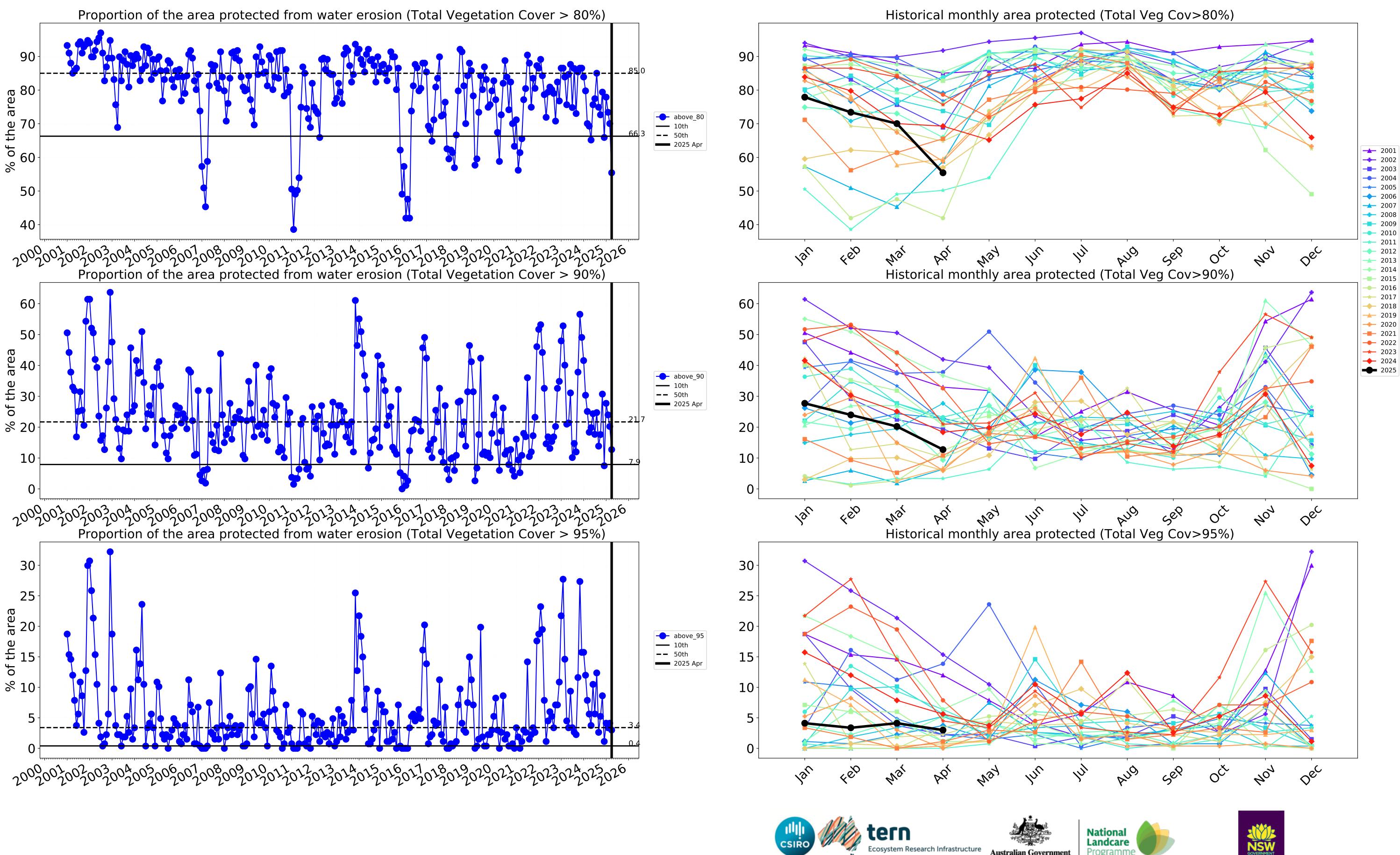




Wind erosion historical monthly area protected (Total Veg Cov >50%)

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





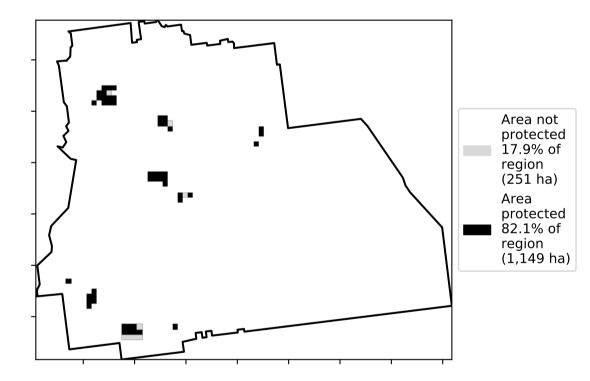
Australian Government

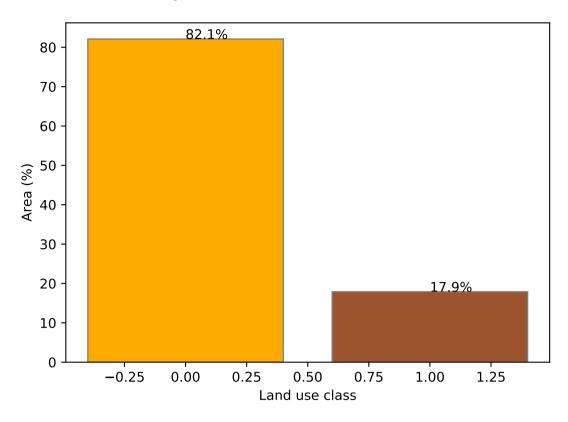
Ecosystem Research Infrastructure

Irrigation

Each use and forest cover

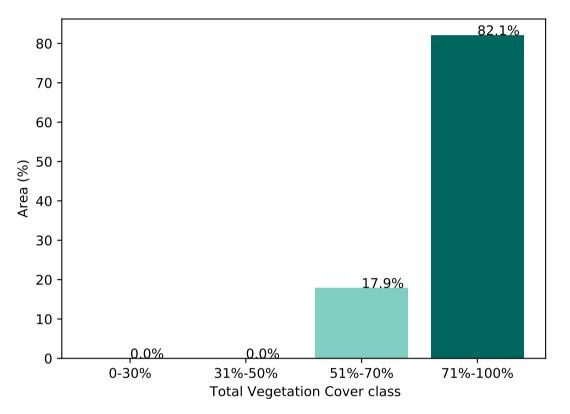
% Area protected from water erosion (>70%)



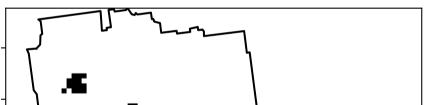


Proportion of each land class in area

Proportion of vegetation cover class in area

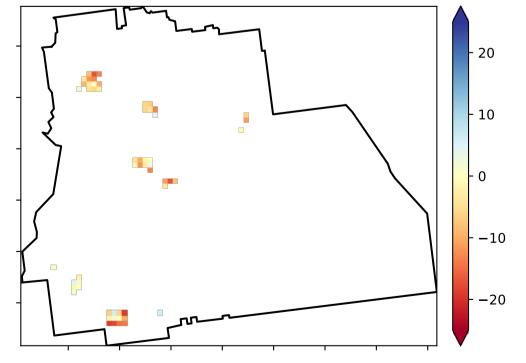


% Area protected from wind erosion (>50%)

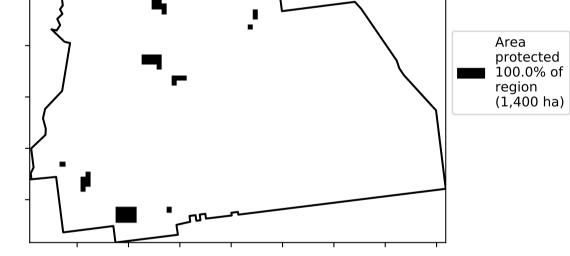


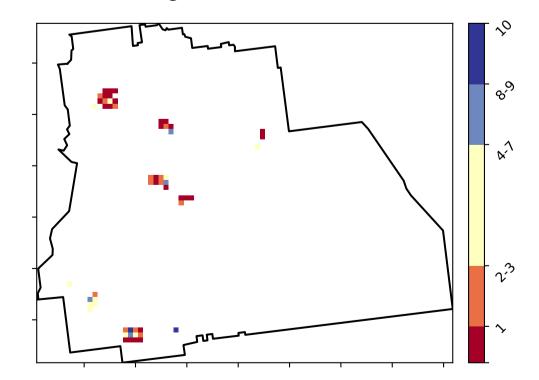
Total Vegetation Cover Anomaly [%]

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.

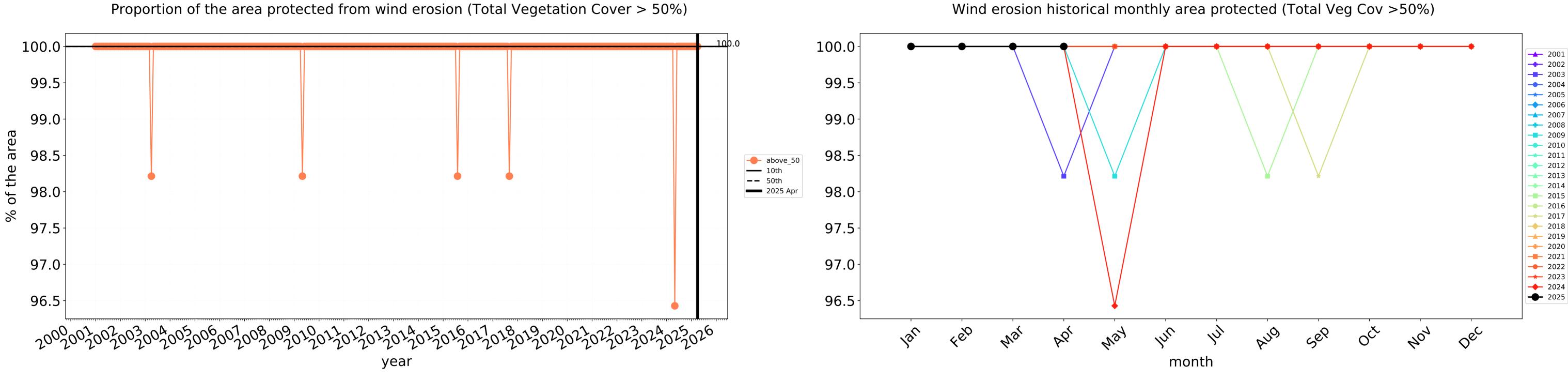


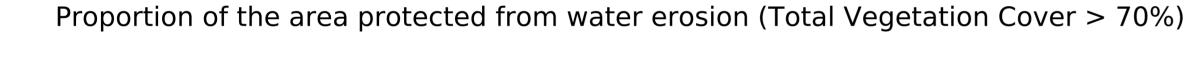
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

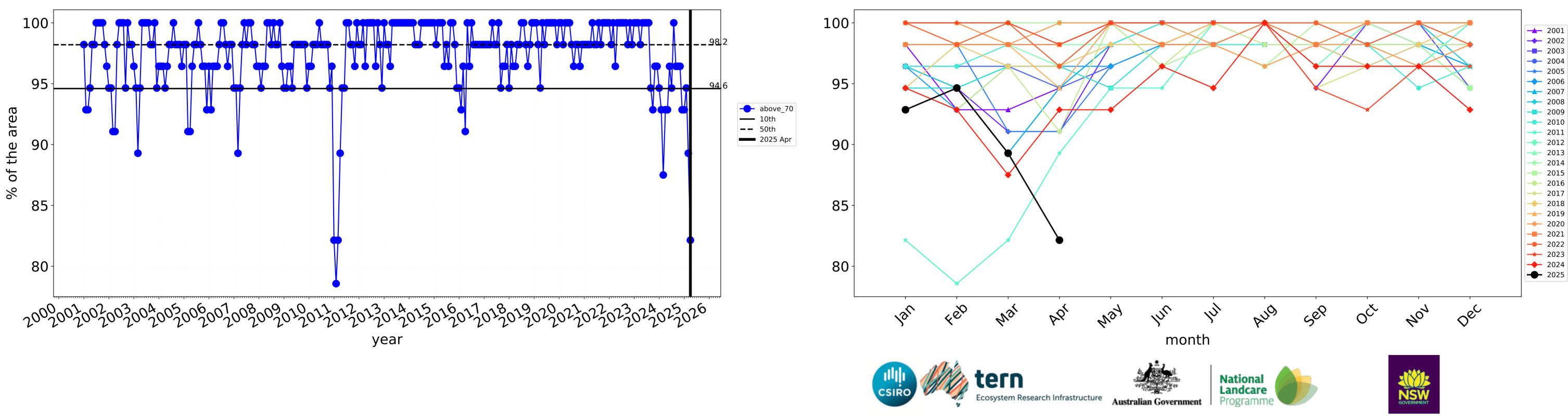




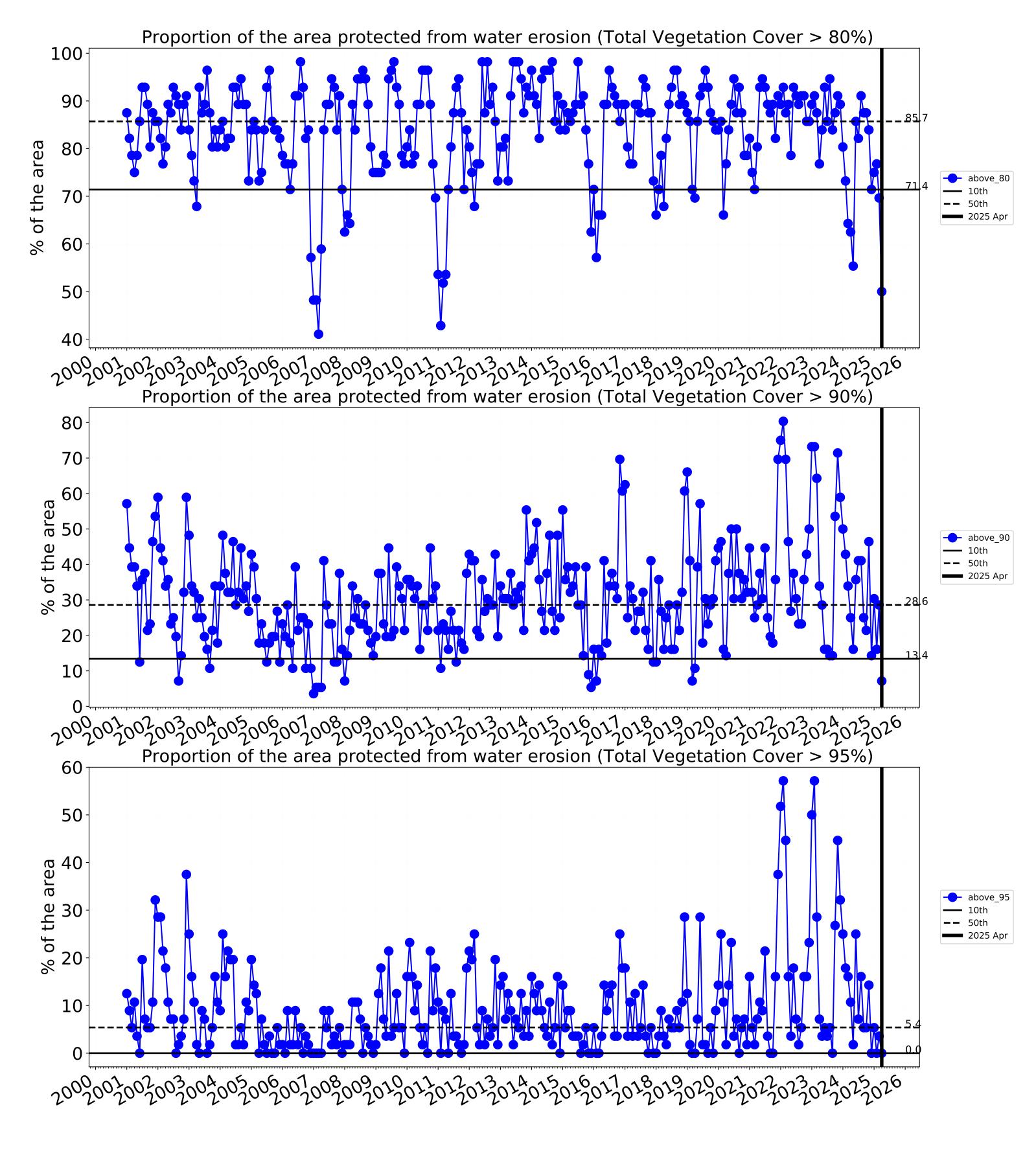


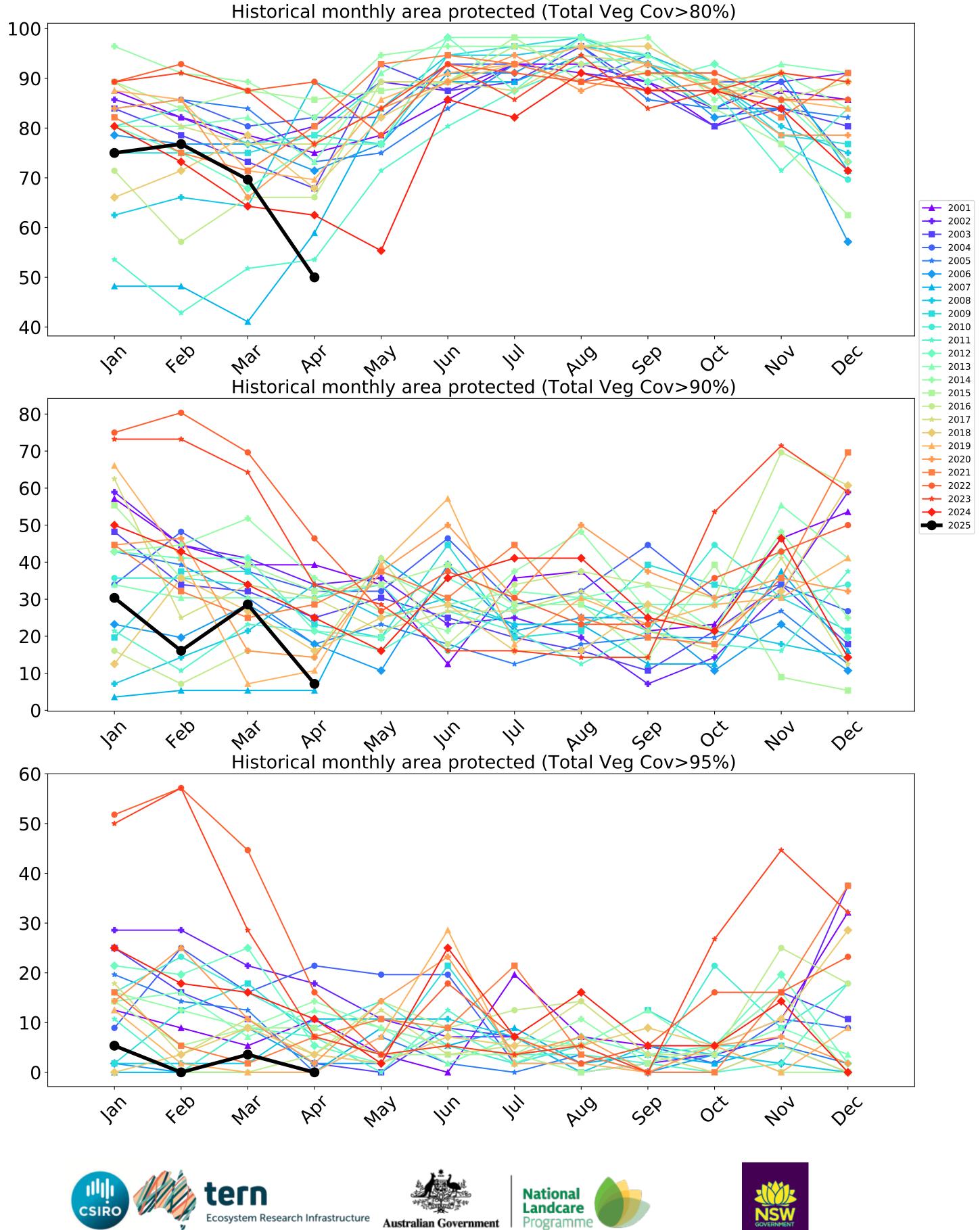






Water erosion historical monthly area protected (Total Veg Cov>70%)

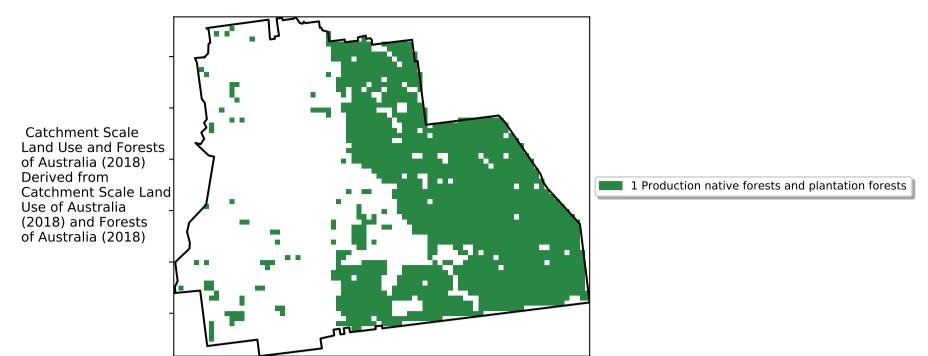




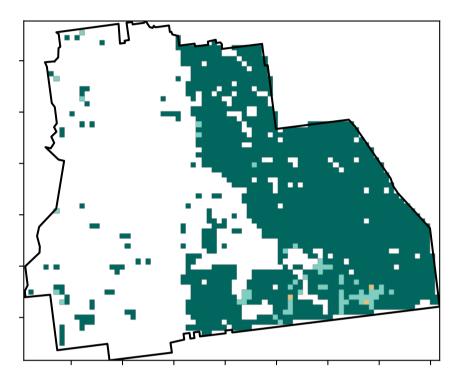


Production native forests and plantation forests

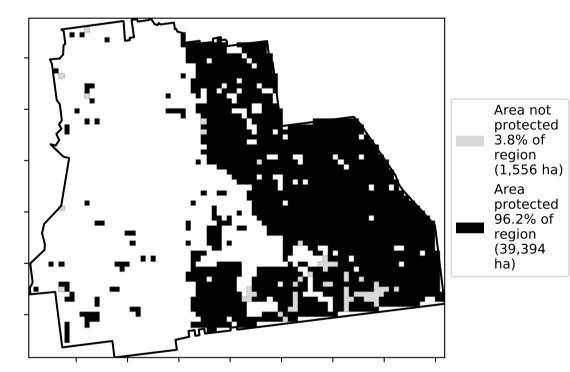
Land use and forest cover

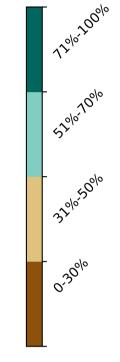


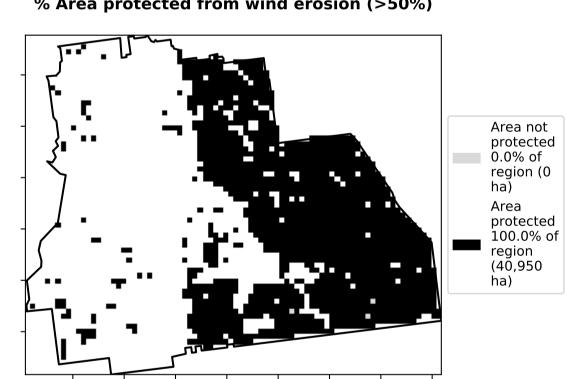
Total Vegetation Cover [%]



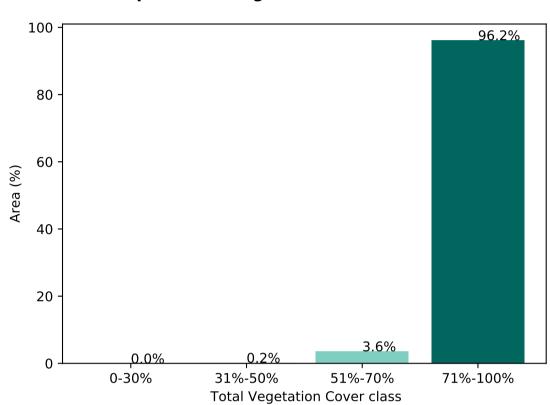
% Area protected from water erosion (>70%)







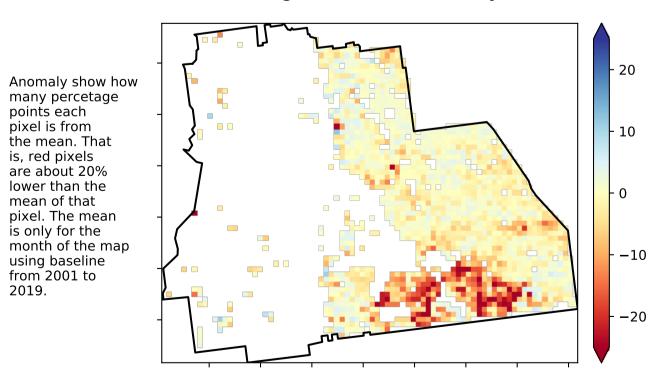
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]

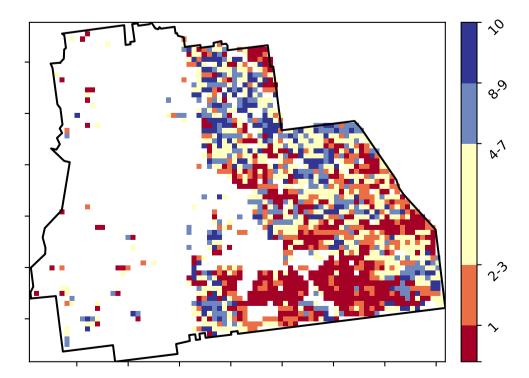


are about 20% lower than the

mean of that

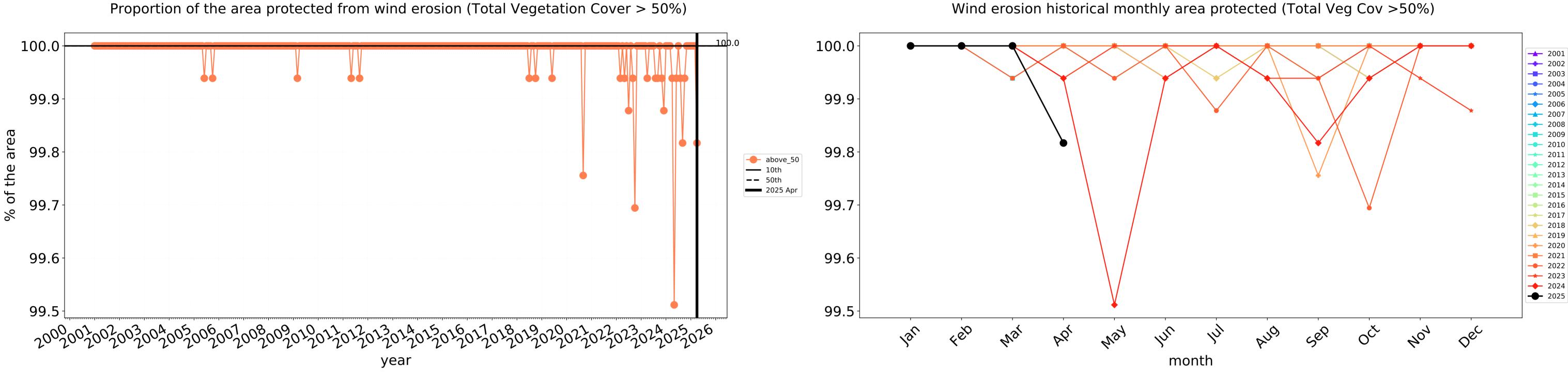
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

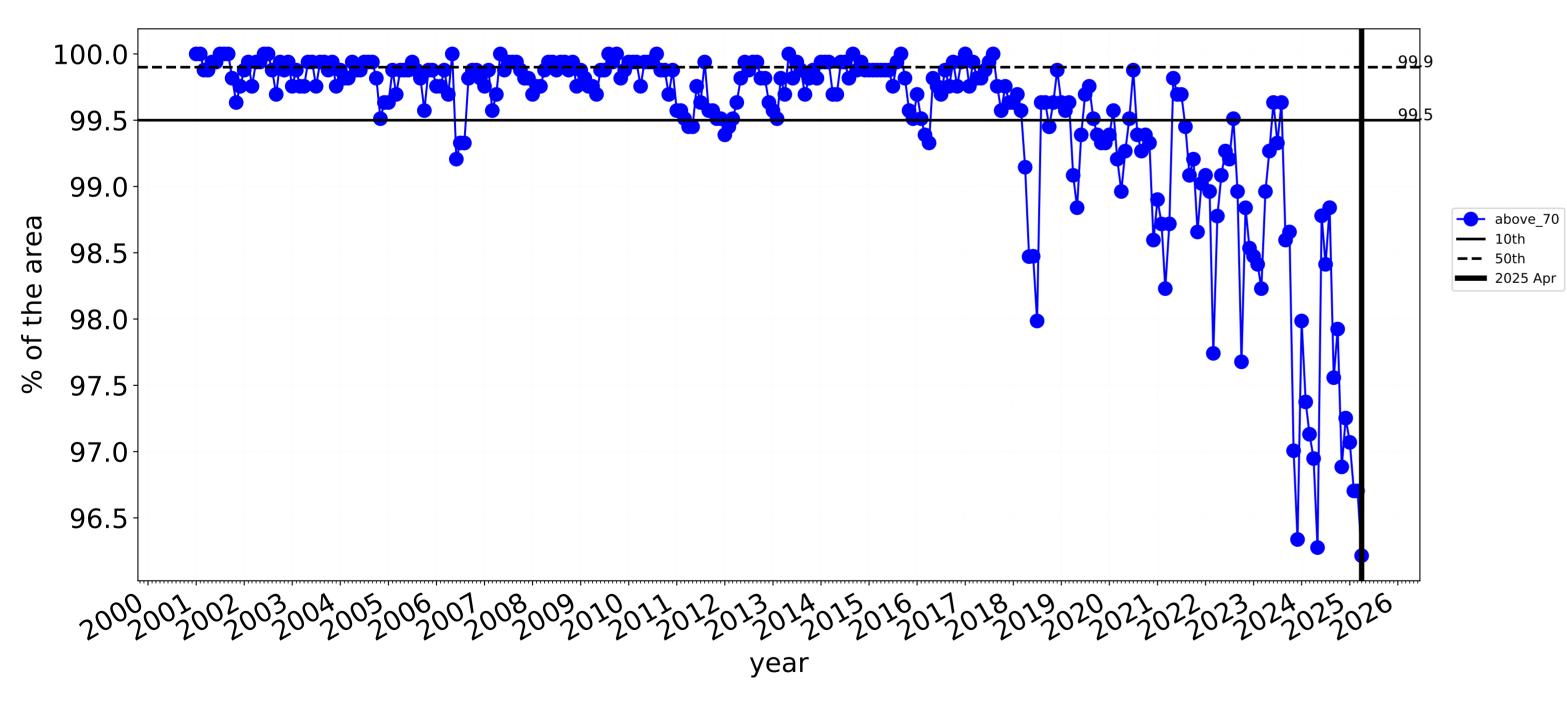
Total Vegetation Cover Decile [%]

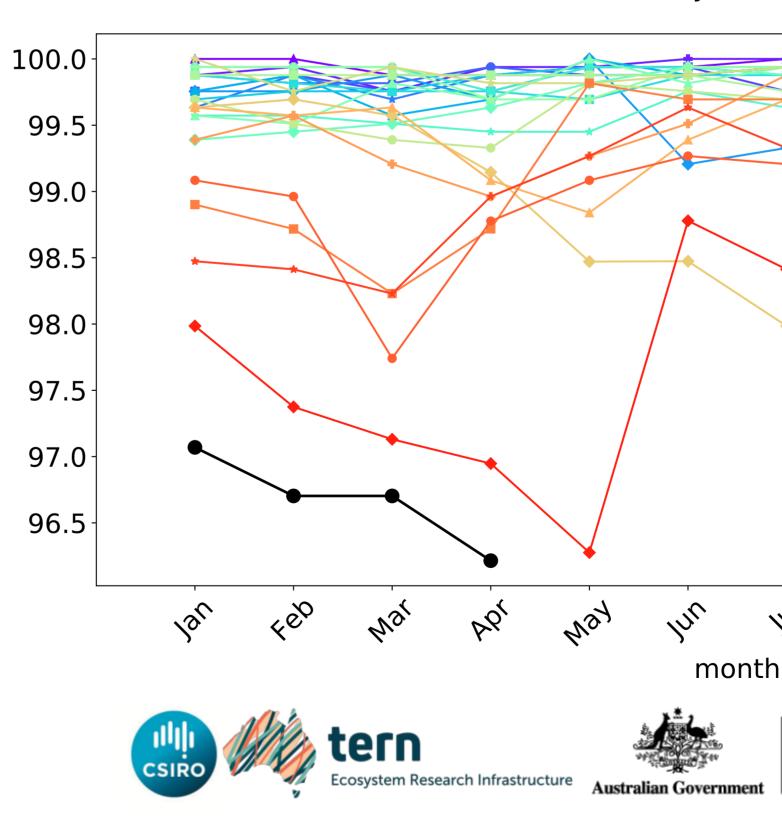




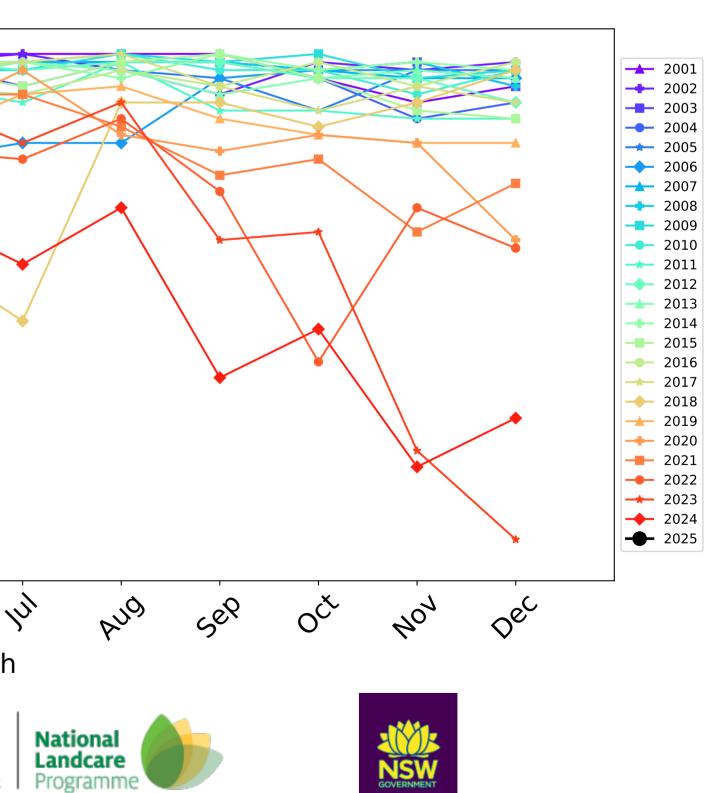
32

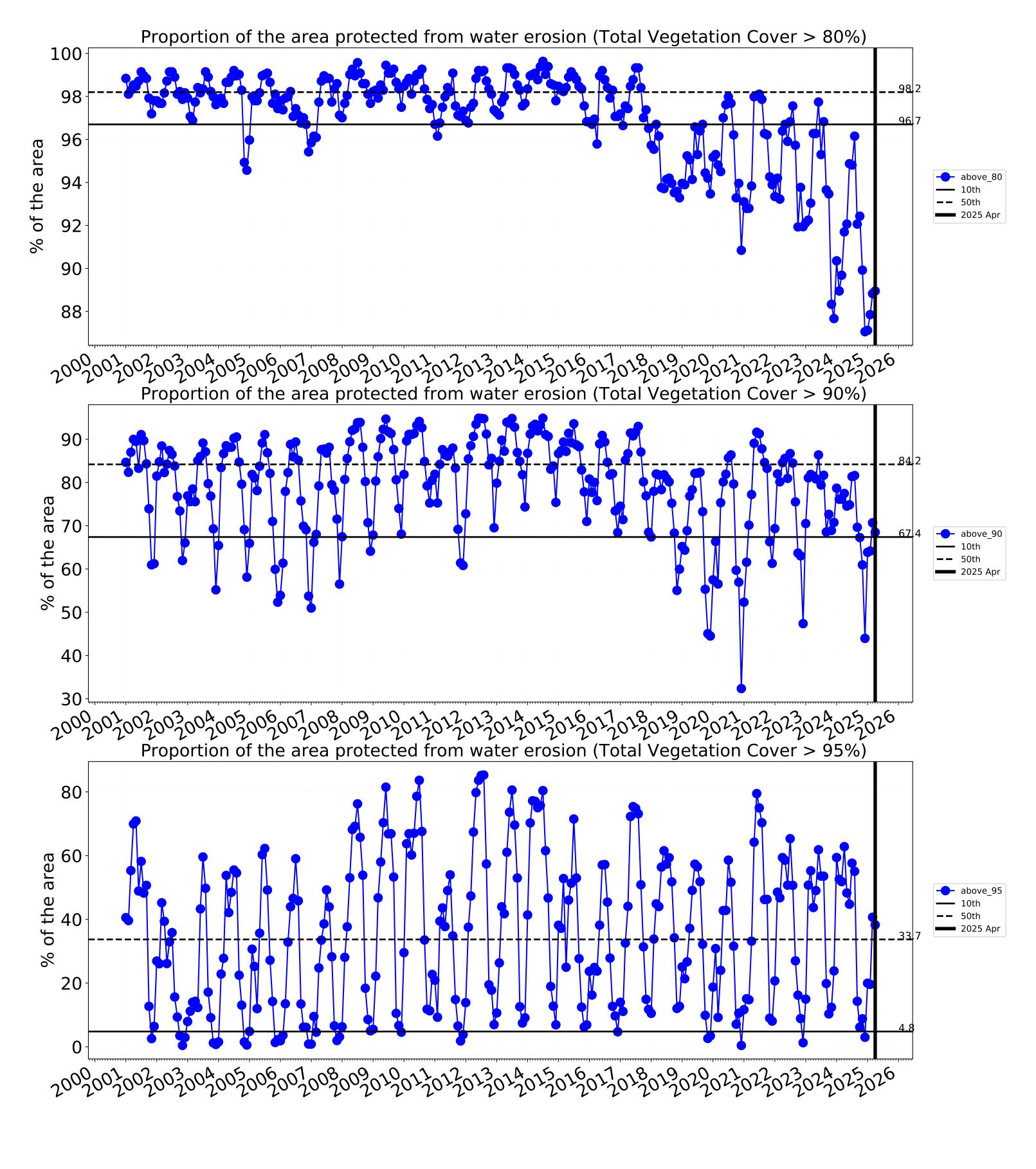


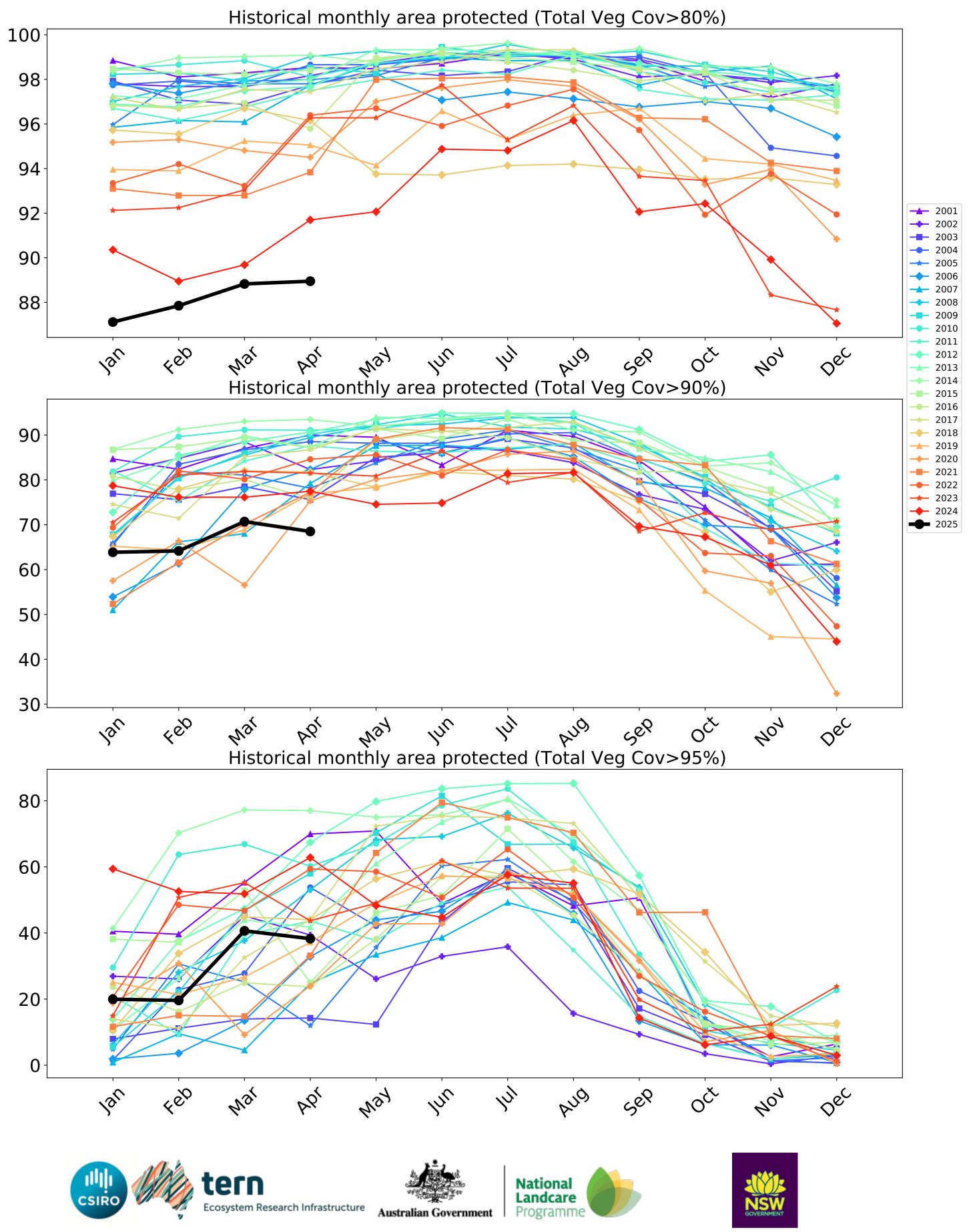




Water erosion historical monthly area protected (Total Veg Cov>70%)







Serpentine-Jarrahdale_(S) (90,075 ha and no data 59 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	90,075	100.0% 90,075	99.4% 89,575	93.7% 84,375	78.8% 71,000	46.6% 41,950	23.3% 21,000
Conservation and natural environments	9,025	100.0% 9,025	100.0% 9,025	98.1% 8,850	92.8% 8,375	59.0% 5,325	25.5% 2,300
Conservation and natural environments non forest	1,325	100.0% 1,325	100.0% 1,325	96.2% 1,275	88.7% 1,175	37.7% 500	15.1% 200
Conservation and natural environments Woodland forest	3,275	100.0% 3,275	100.0% 3,275	96.9% 3,175	90.8% 2,975	49.6% 1,625	7.6% 250
Conservation and natural environments Forest (non woodland)	4,425	100.0% 4,425	100.0% 4,425	99.4% 4,400	95.5% 4,225	72.3% 3,200	41.8% 1,850
Agriculture	15,350	100.0% 15,350	98.5% 15,125	90.4% 13,875	66.0% 10,125	20.4% 3,125	5.7% 875
Grazing	7,275	100.0% 7,275	100.0% 7,275	96.2% 7,000	78.7% 5,725	29.9% 2,175	9.3% 675
Grazing non forest	7,275	100.0% 7,275	100.0% 7,275	96.2% 7,000	78.7% 5,725	29.9% 2,175	9.3% 675
Cropping	6,675	100.0% 6,675	96.6% 6,450	85.8% 5,725	55.4% 3,700	12.7% 850	3.0% 200
Irrigation	1,400	100.0% 1,400	100.0% 1,400	82.1% 1,150	50.0% 700	7.1% 100	0.0%
Production native forests and plantation forests	40,950	100.0% 40,950	99.8% 40,875	96.2% 39,400	88.9% 36,425	68.5% 28,050	38.3% 15,675

