Total vegetation cover soil protection Region:LGA Fraser_Coast_(R) QLD

Date: May 2025

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 May 2025

Land use and forest cover

Proportion of each land class in area



many percetage points each pixel is from

the mean. That

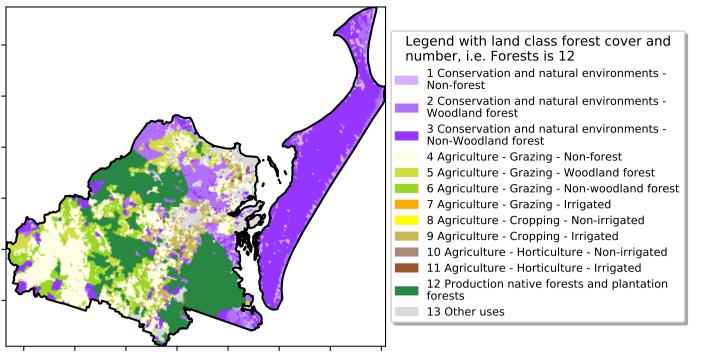
is, red pixels are about 20% lower than the

mean of that

pixel. The mean is only for the

using baseline from 2001 to 2019.

month of the map



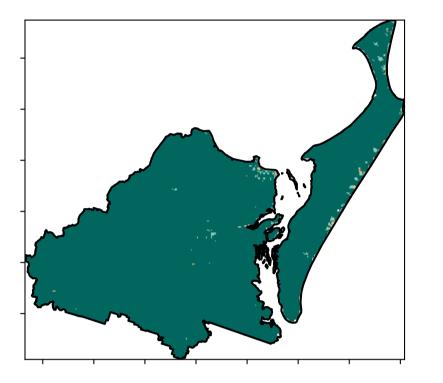
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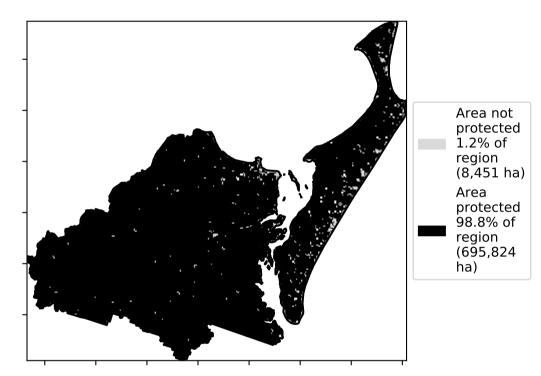
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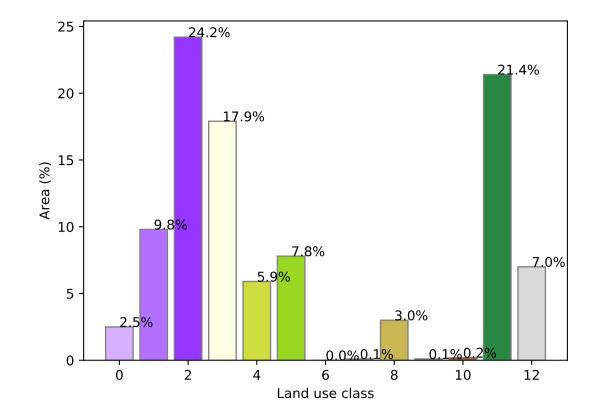
0.30%

Total Vegetation Cover [%]

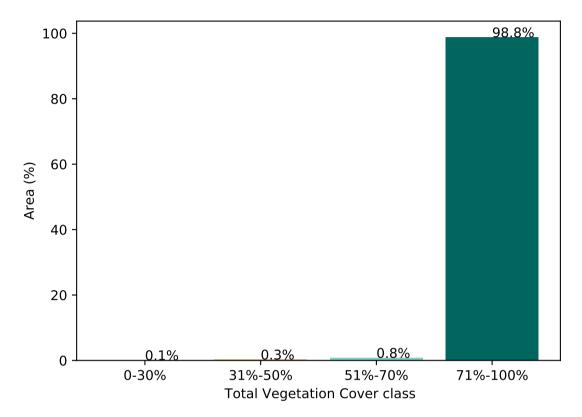


% Area protected from water erosion (>70%)

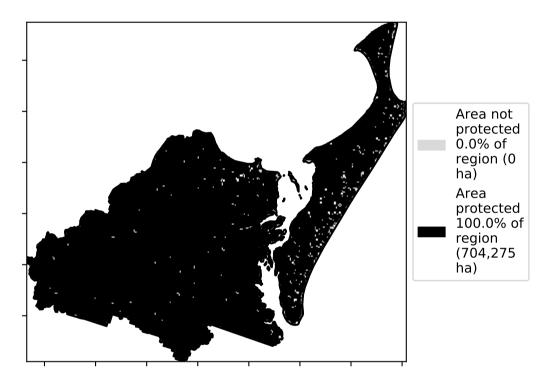




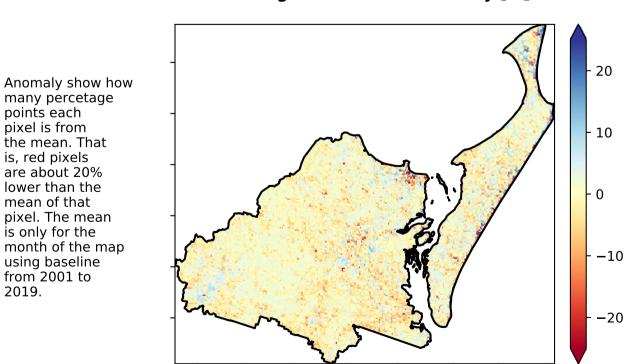
Proportion of vegetation cover class in area



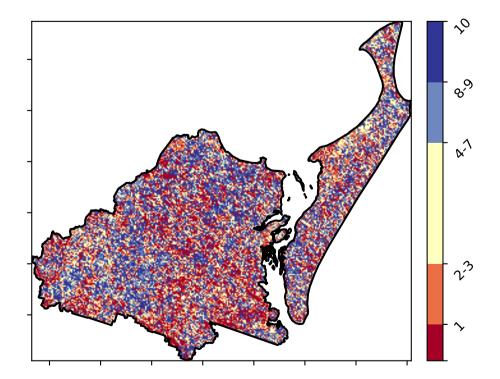
% Area protected from wind erosion (>50%)



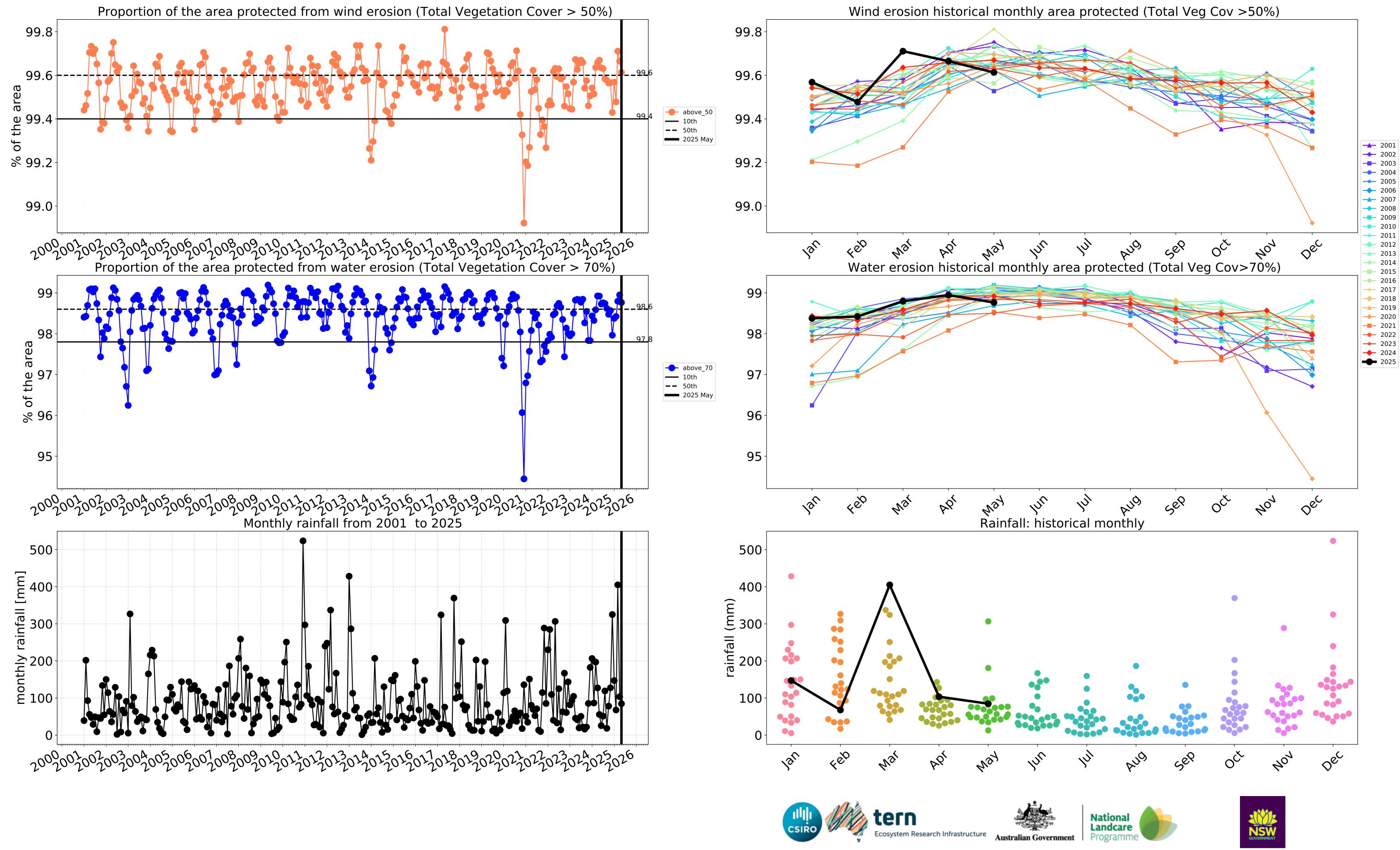
Total Vegetation Cover Anomaly [%]

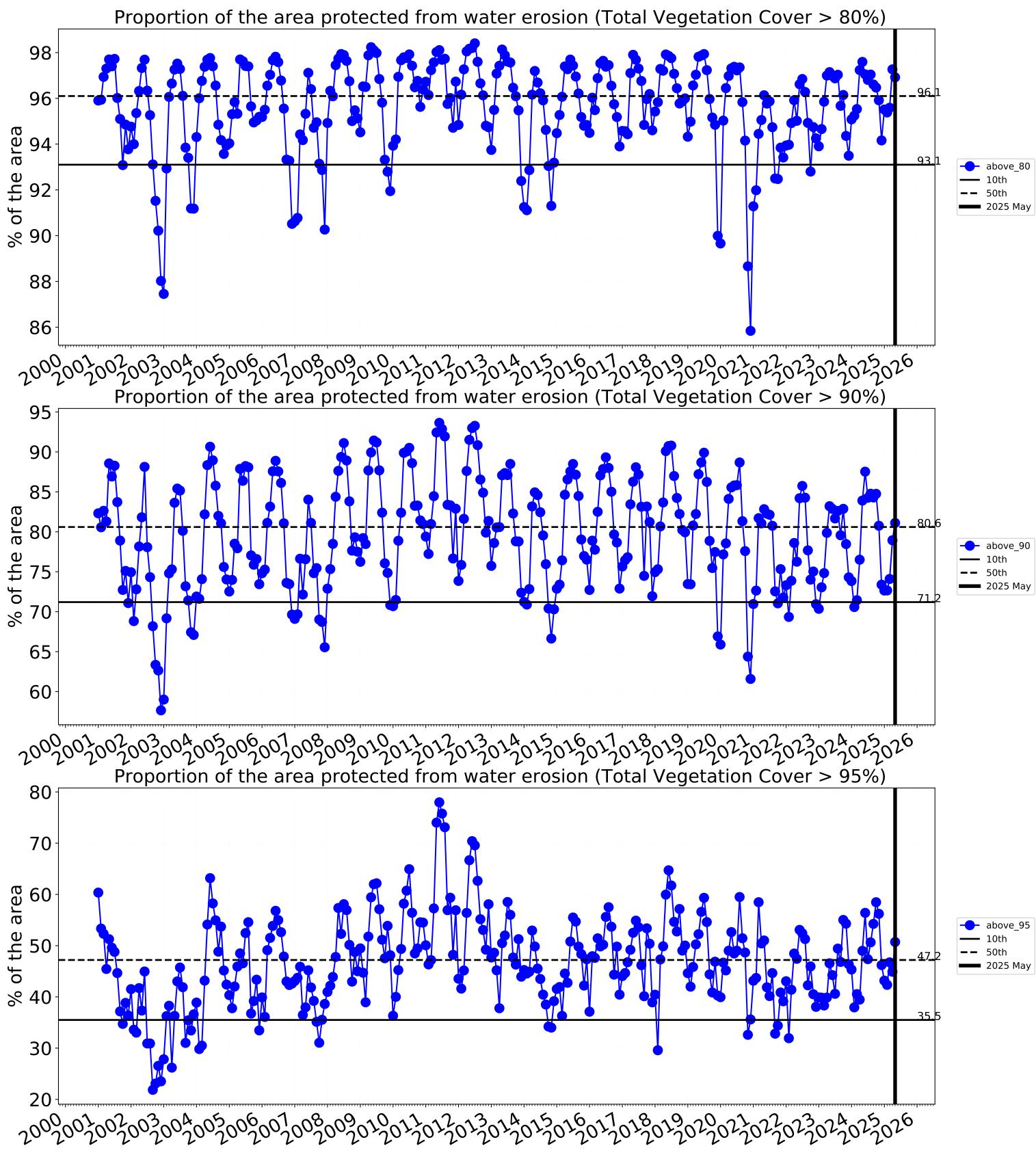


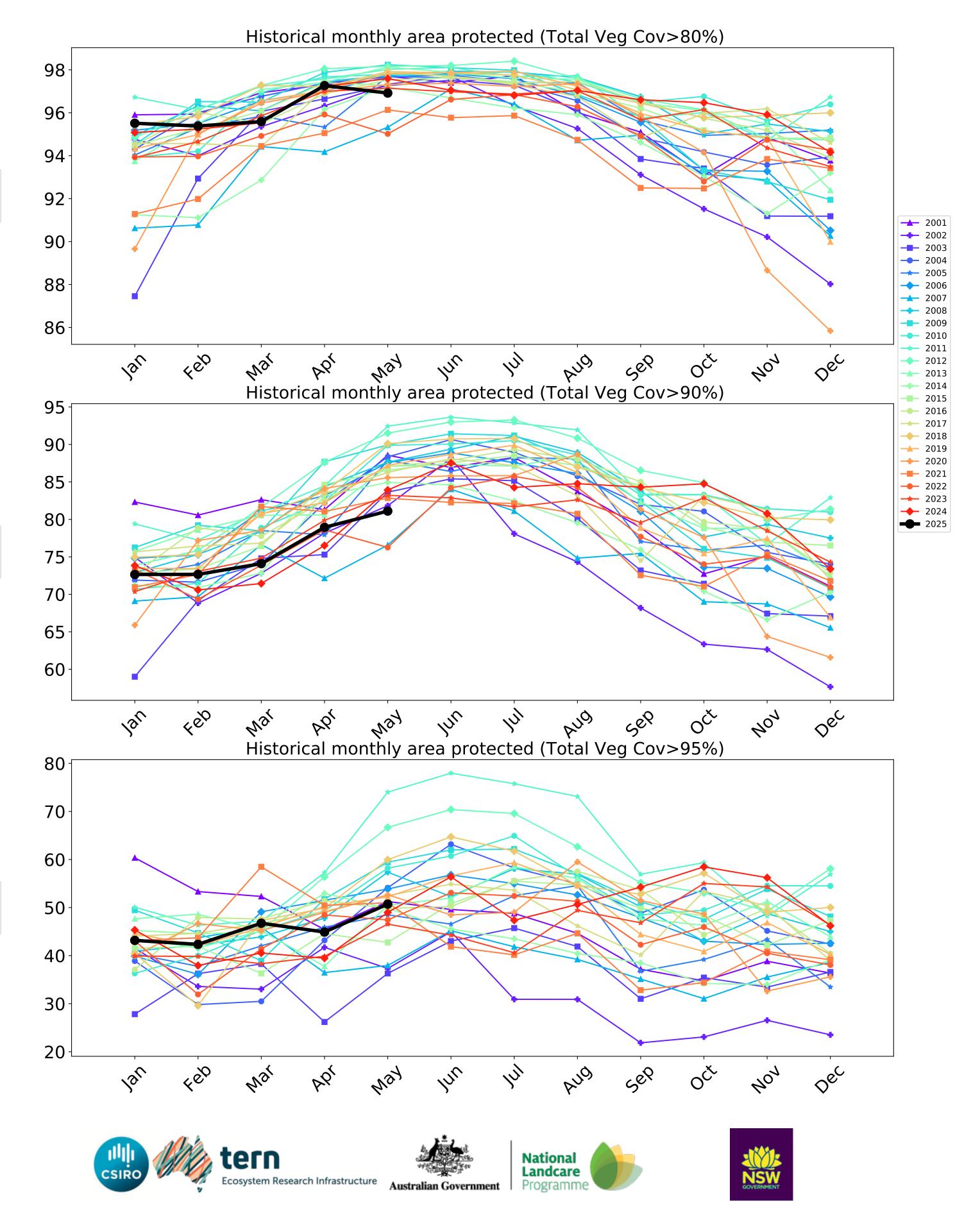
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.





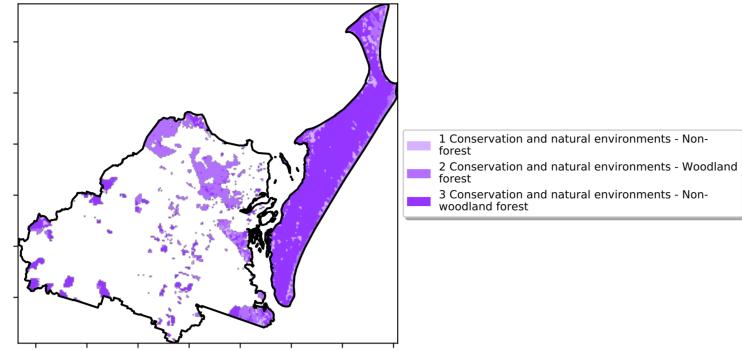






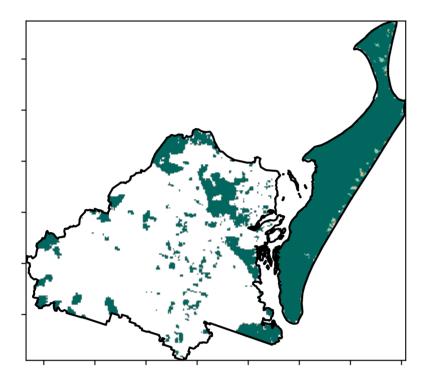
Conservation and natural environments

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

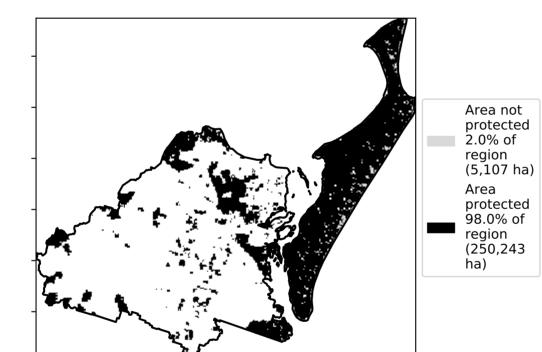


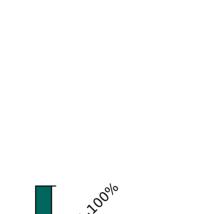
Land use and forest cover

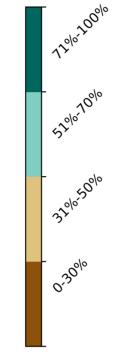
Total Vegetation Cover [%]



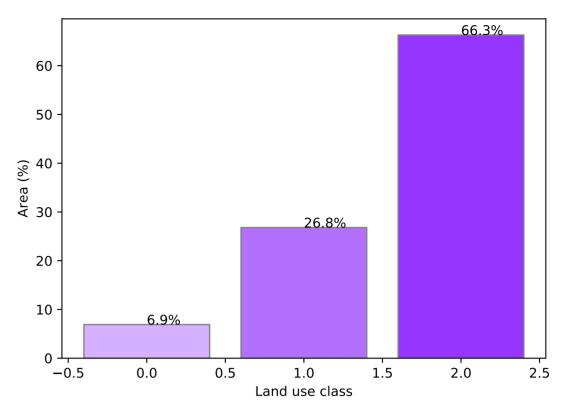
% Area protected from water erosion (>70%)



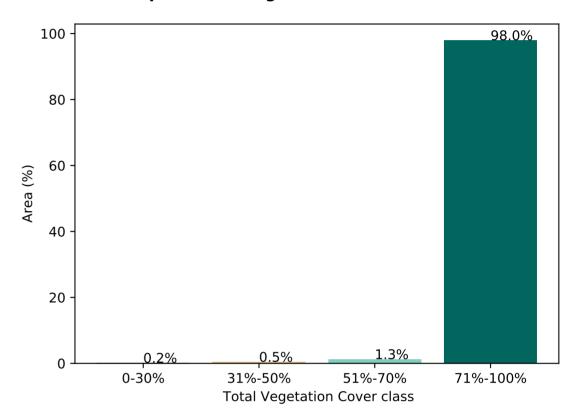




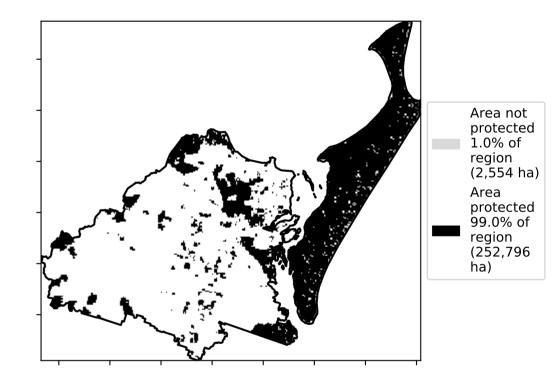
Proportion of each land class in area



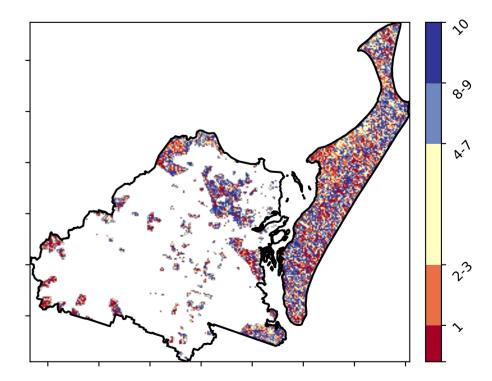
Proportion of vegetation cover class in area



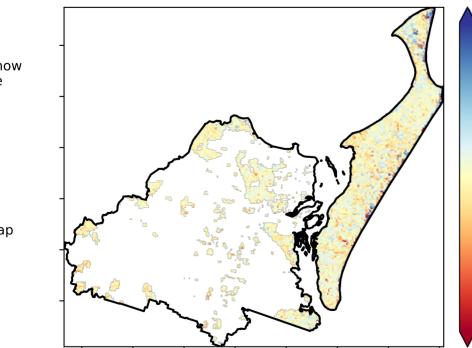
% Area protected from wind erosion (>50%)



Total Vegetation Cover 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.



- 20

- 10

0

-10

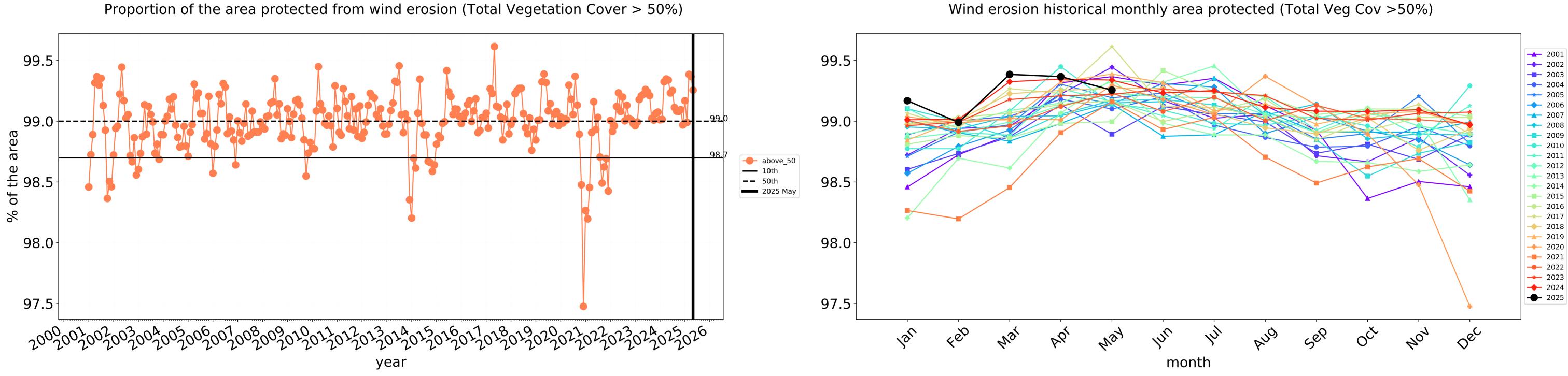
-20



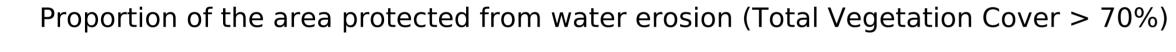


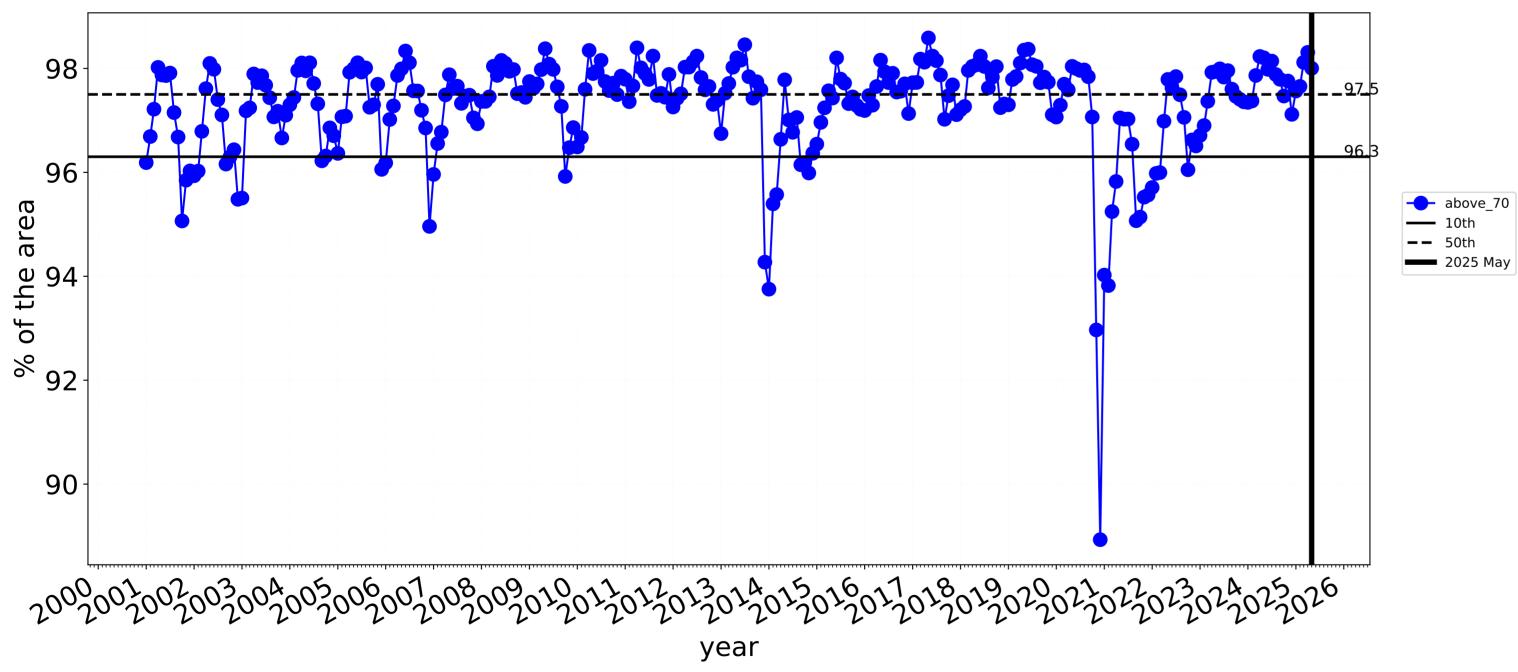




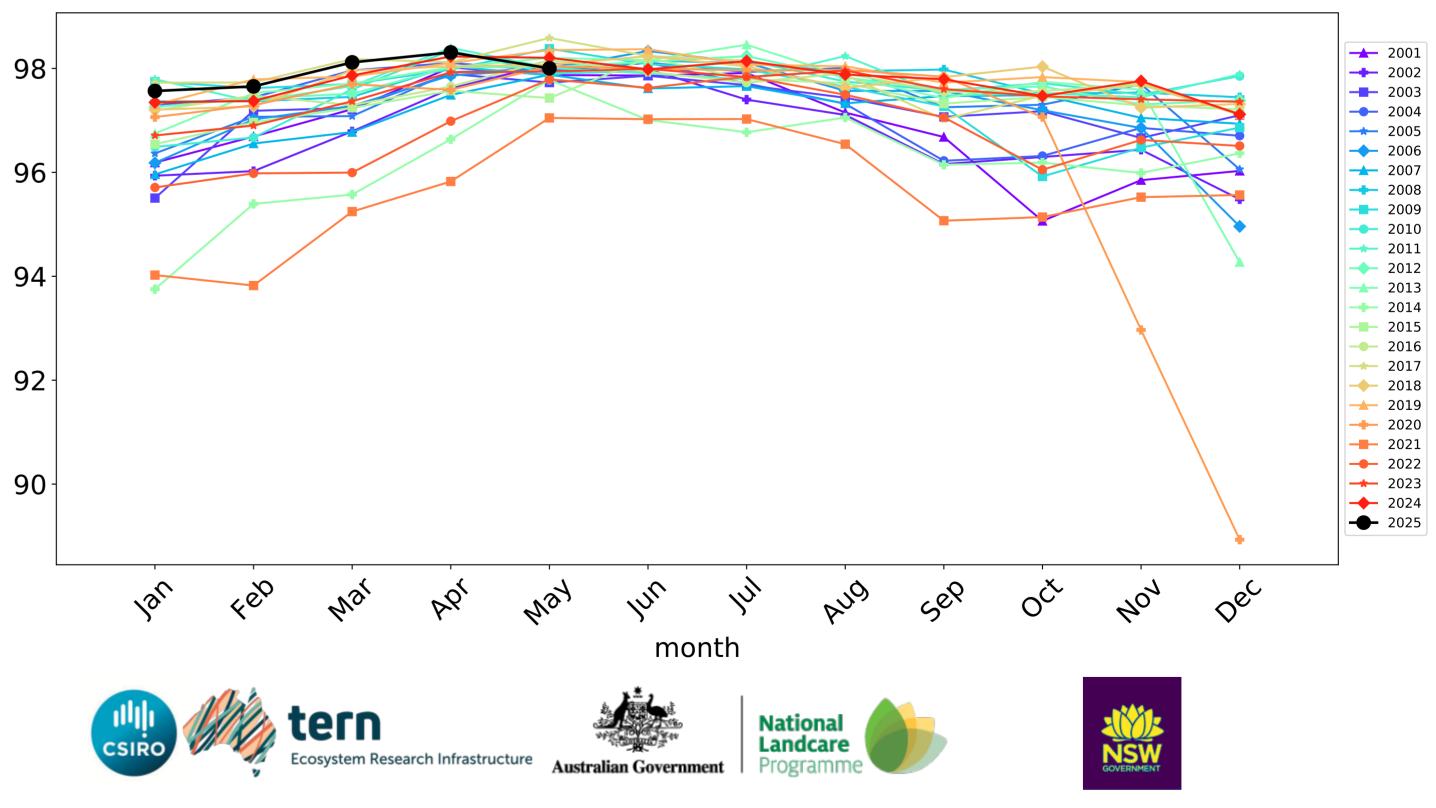


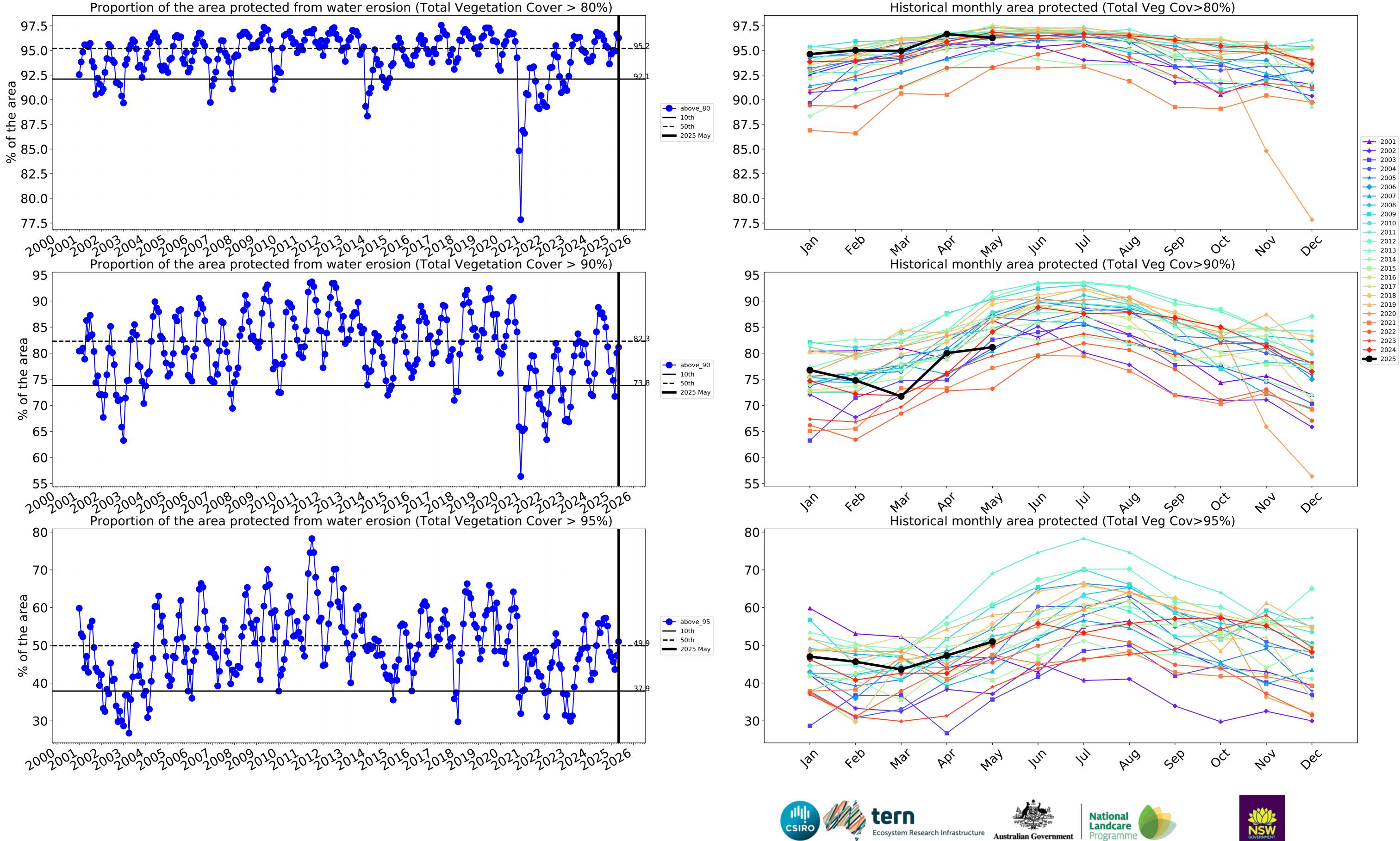
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)





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

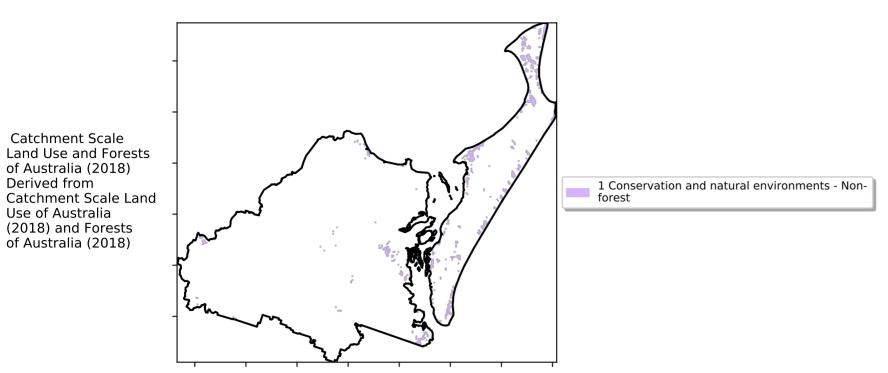




Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)

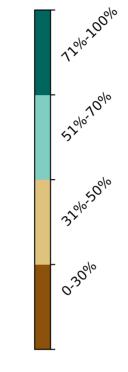
Conservation and natural environments non forest

Land use and forest cover

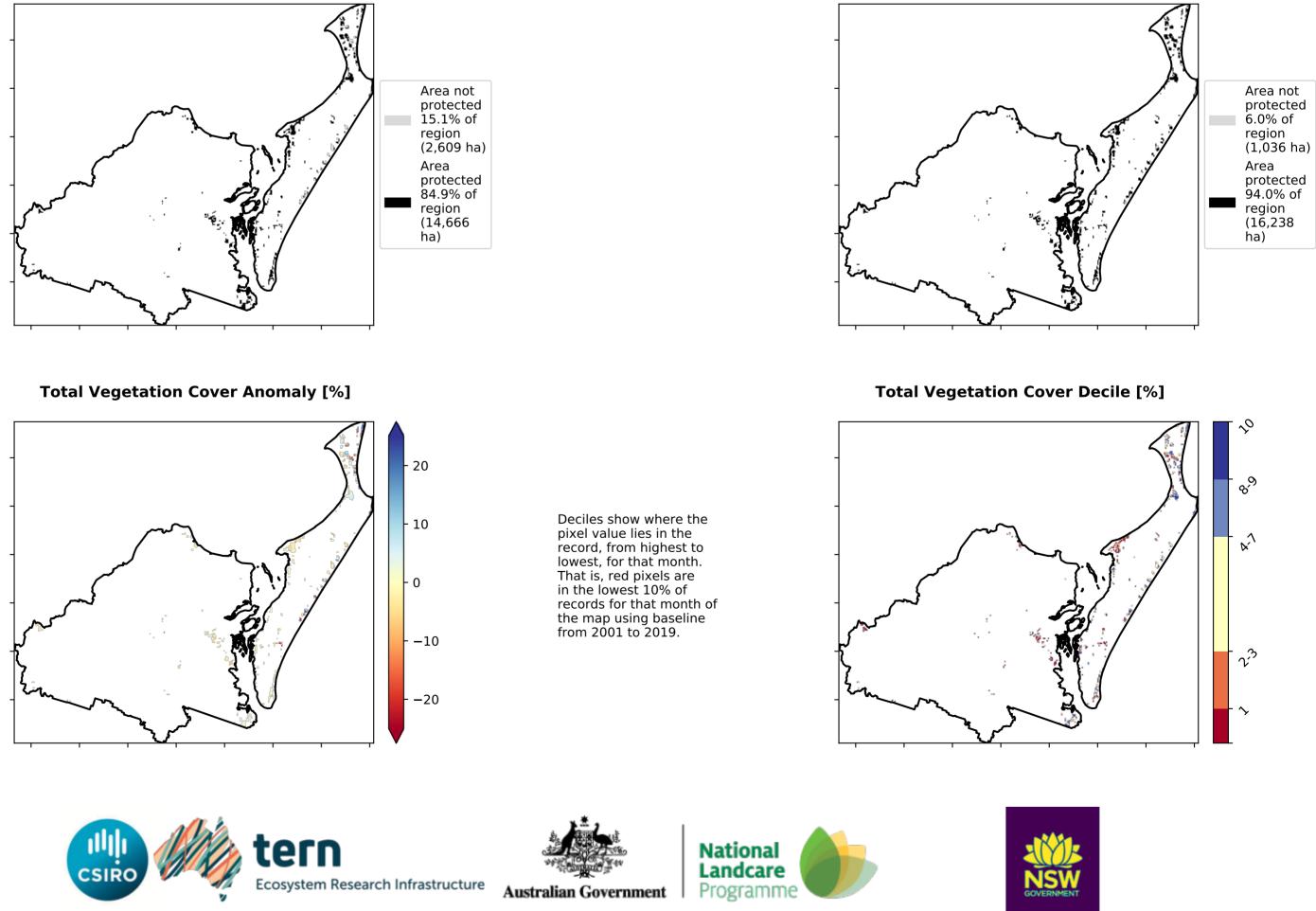


Total Vegetation Cover [%]

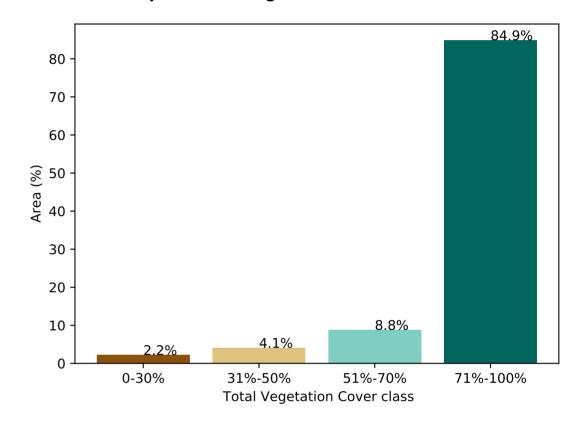




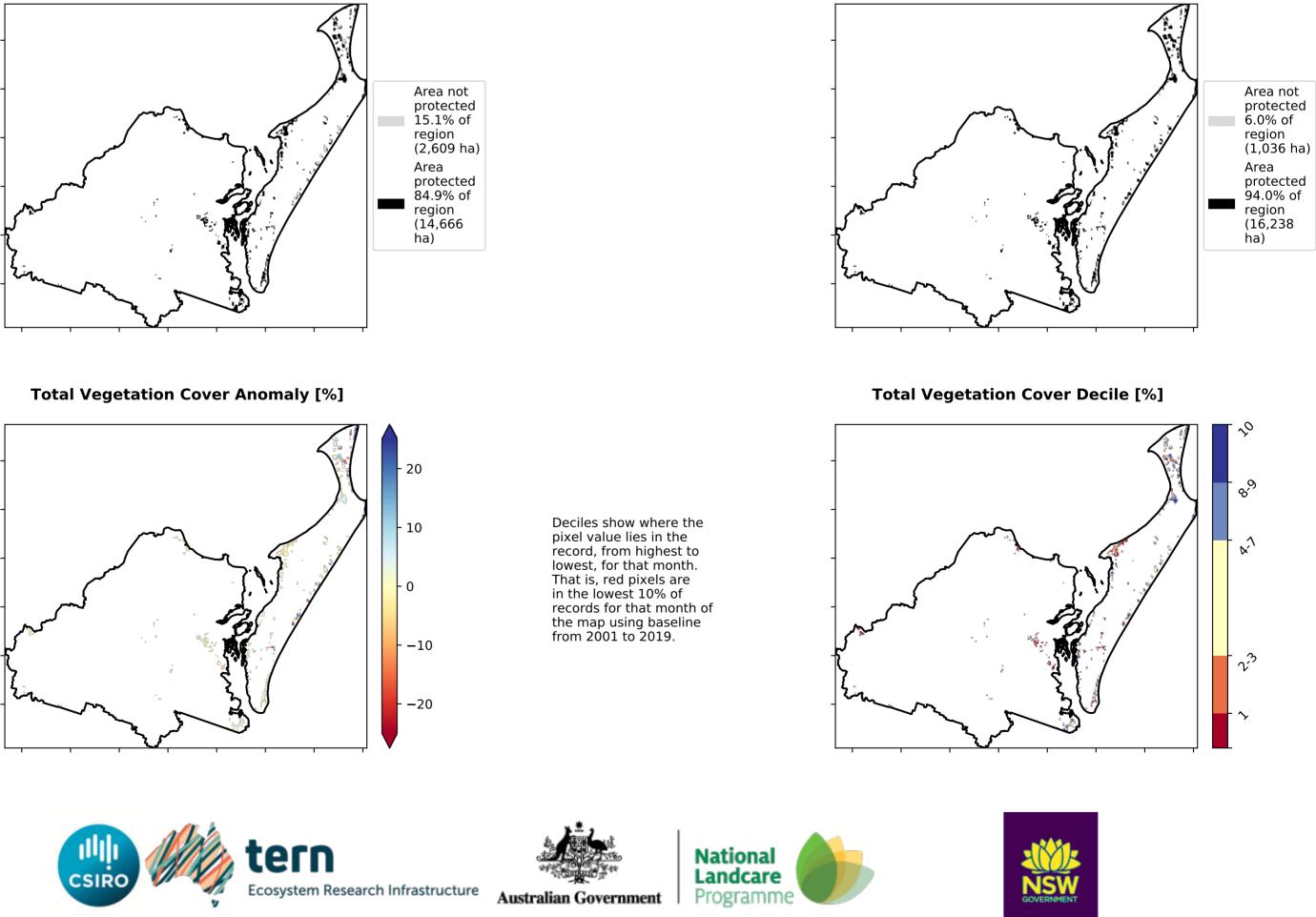
% Area protected from water erosion (>70%)

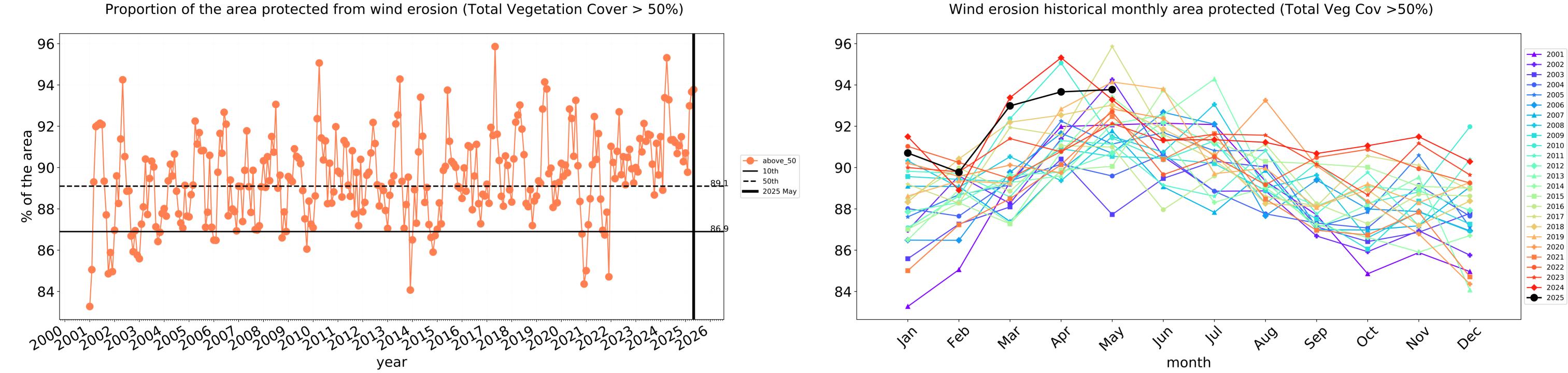


Proportion of vegetation cover class in area



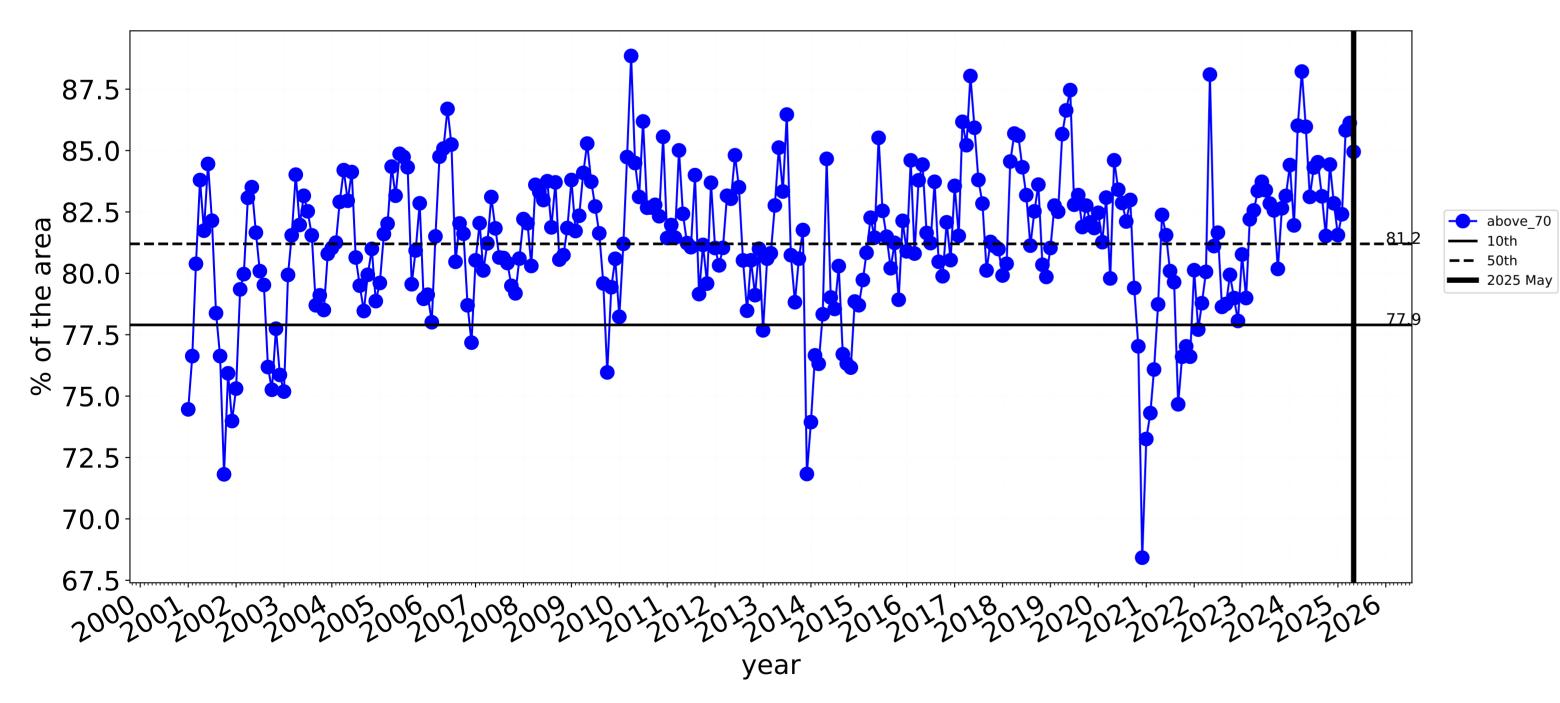
% Area protected from wind erosion (>50%)





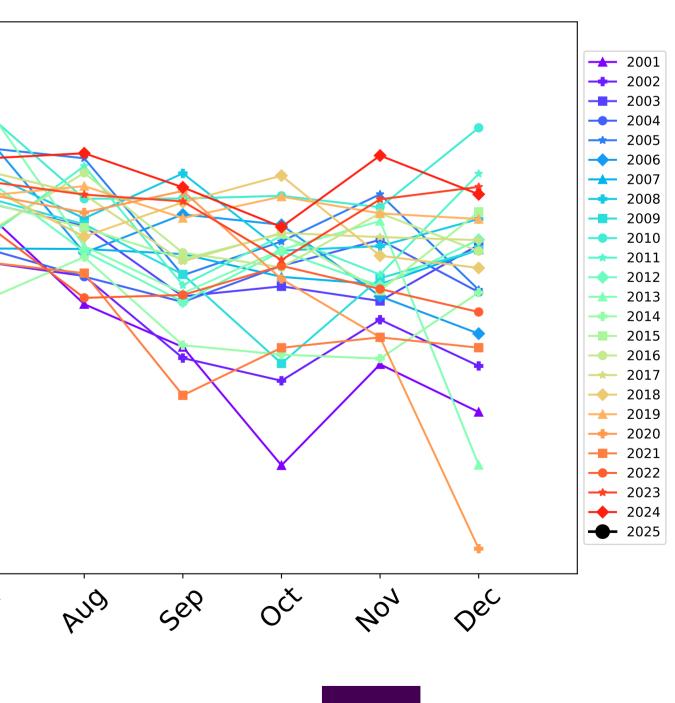
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



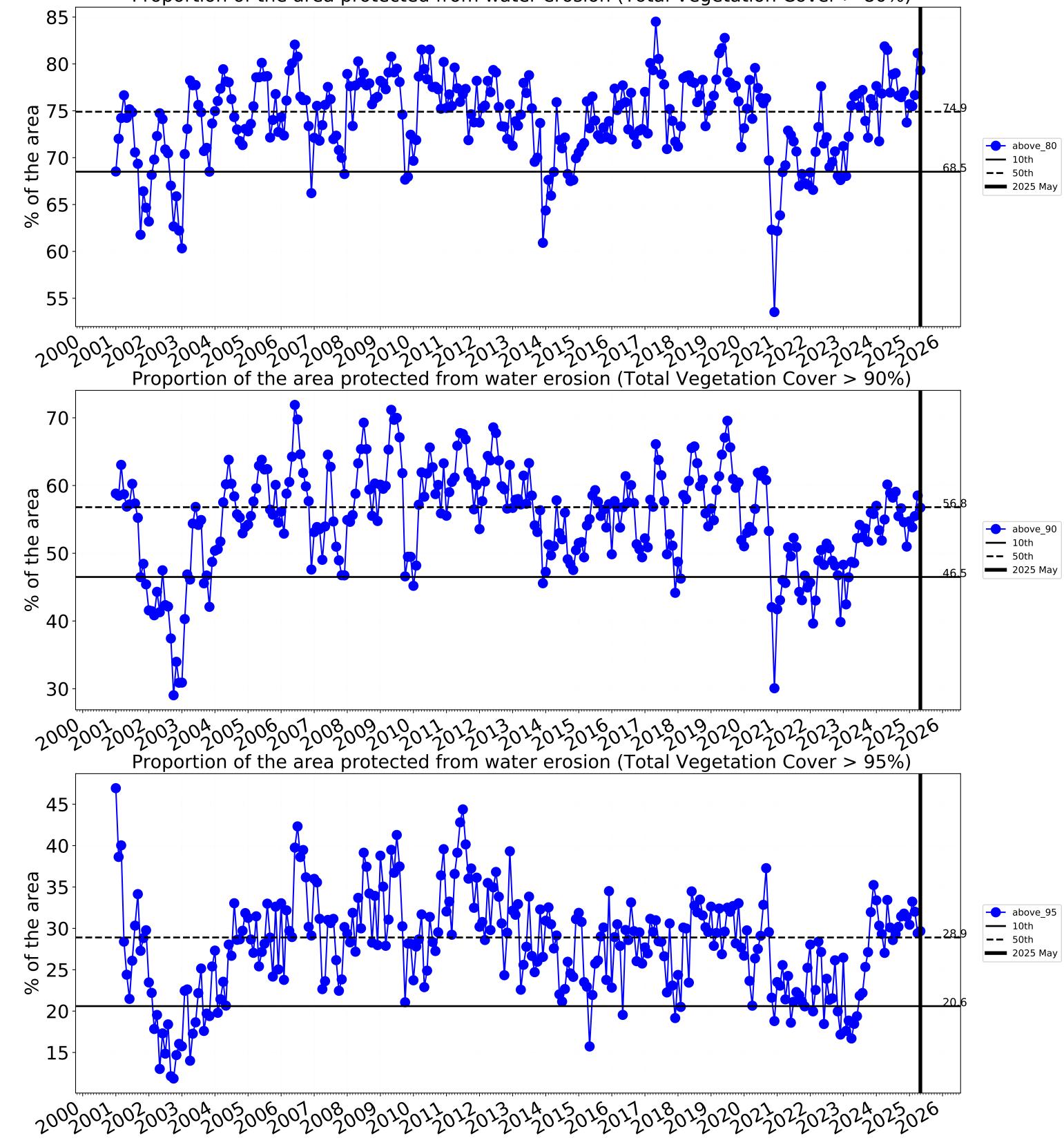


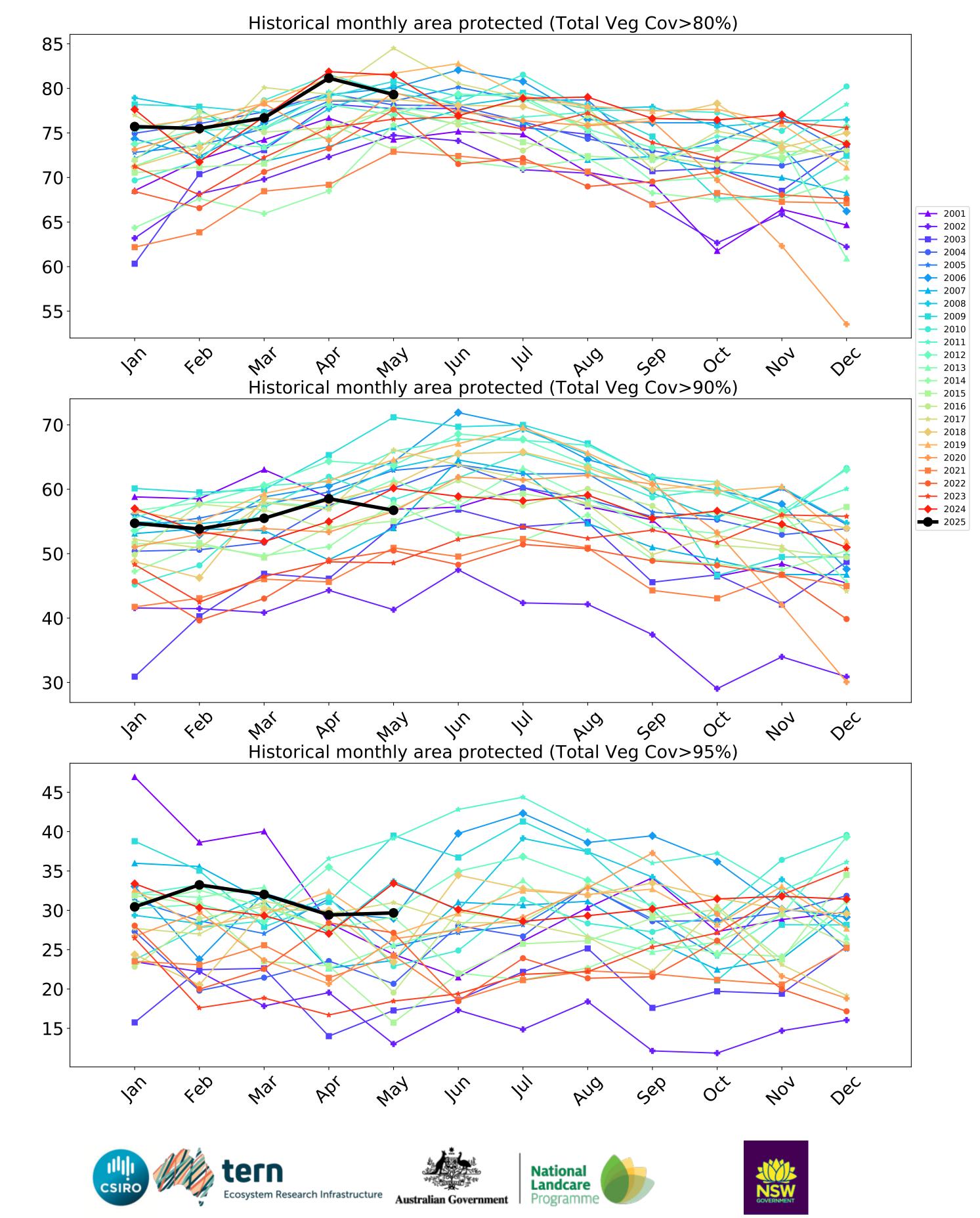
87.5 85.0 82.5 80.0 77.5 75.0 72.5 70.0-67.5 Jan 4eb In War May Þ6, month tern National Landcare Ecosystem Research Infrastructure Australian Government Programme

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)

ts nd a conservation and natural environments - Woodland forest

12%200%

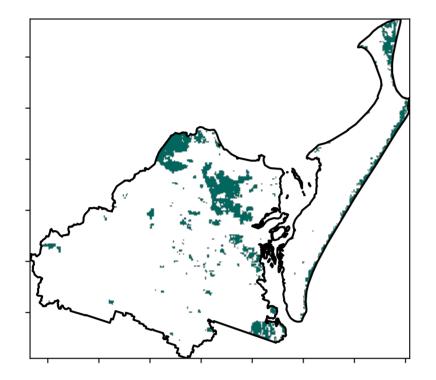
52% 70%

32°1050°10

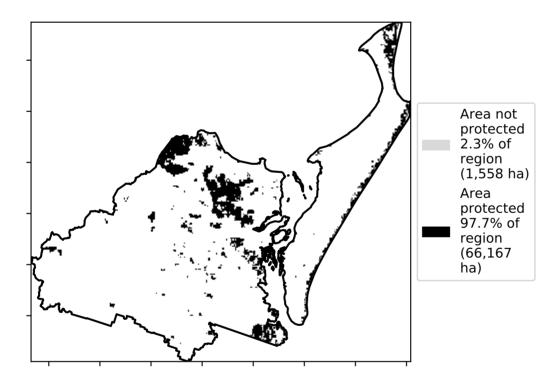
0.30%

Total Vegetation Cover [%]

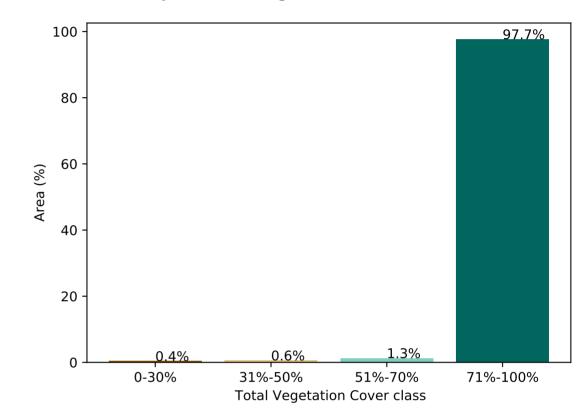
Land use and forest cover



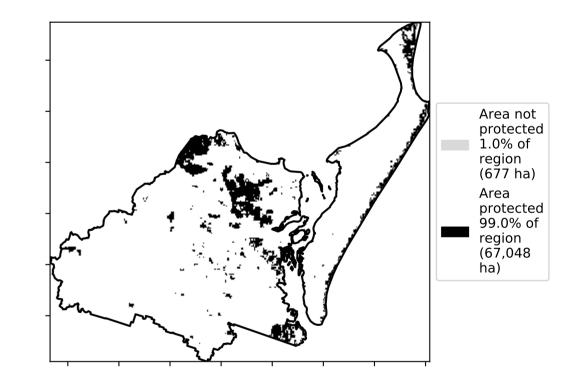
% Area protected from water erosion (>70%)



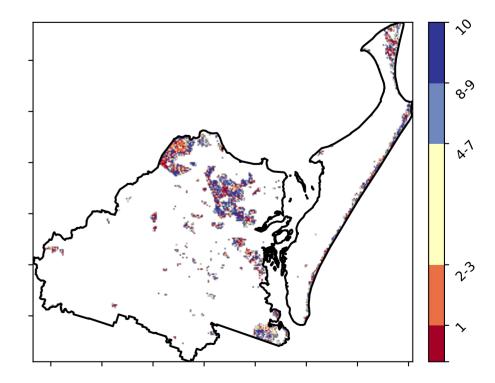




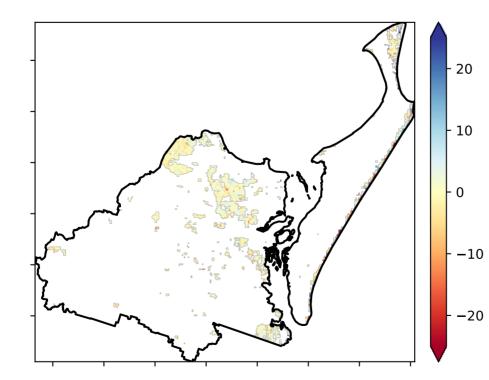
% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]

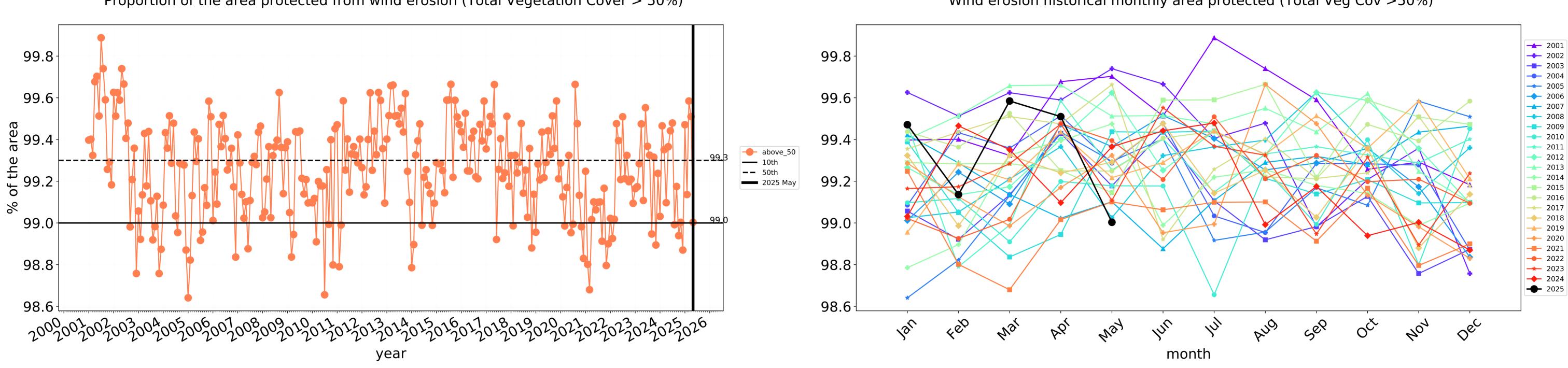


Total Vegetation Cover Anomaly [%]

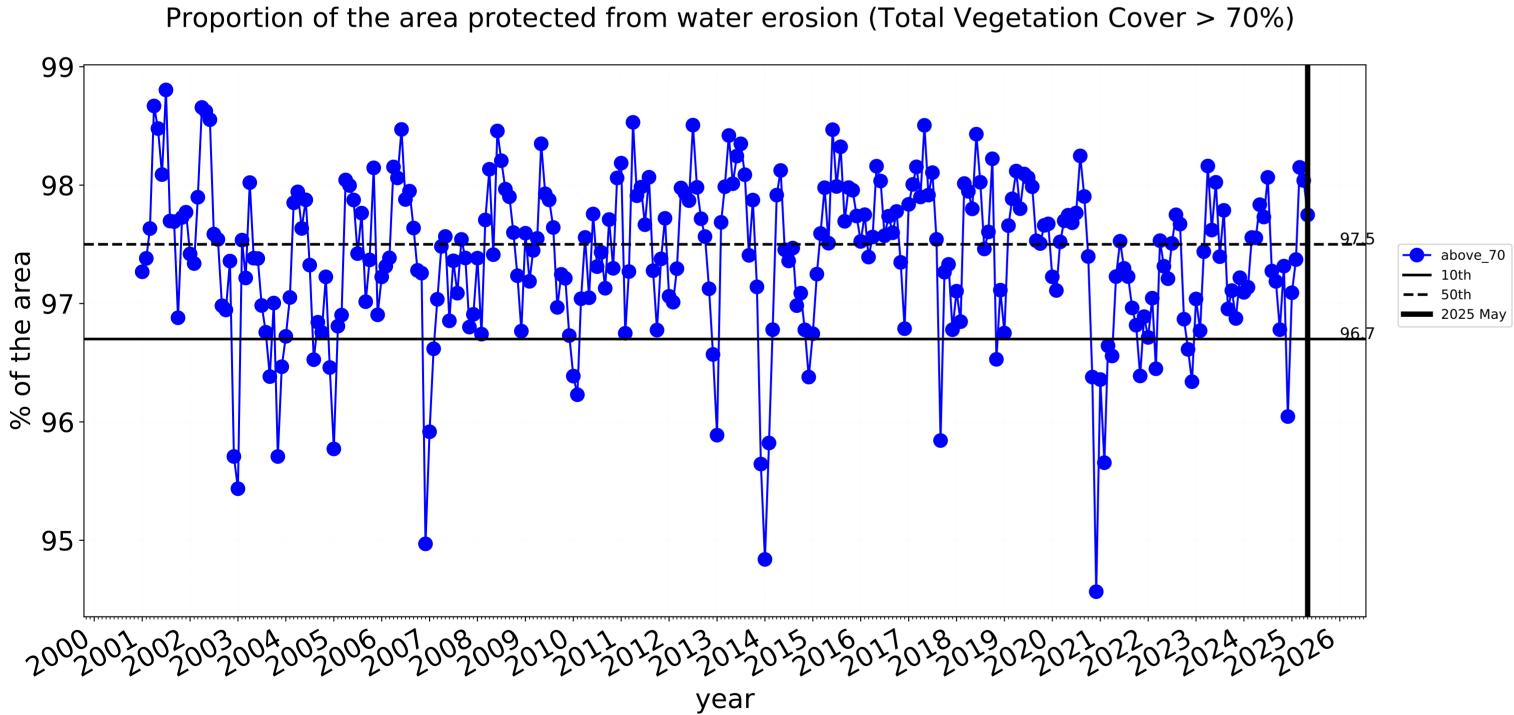


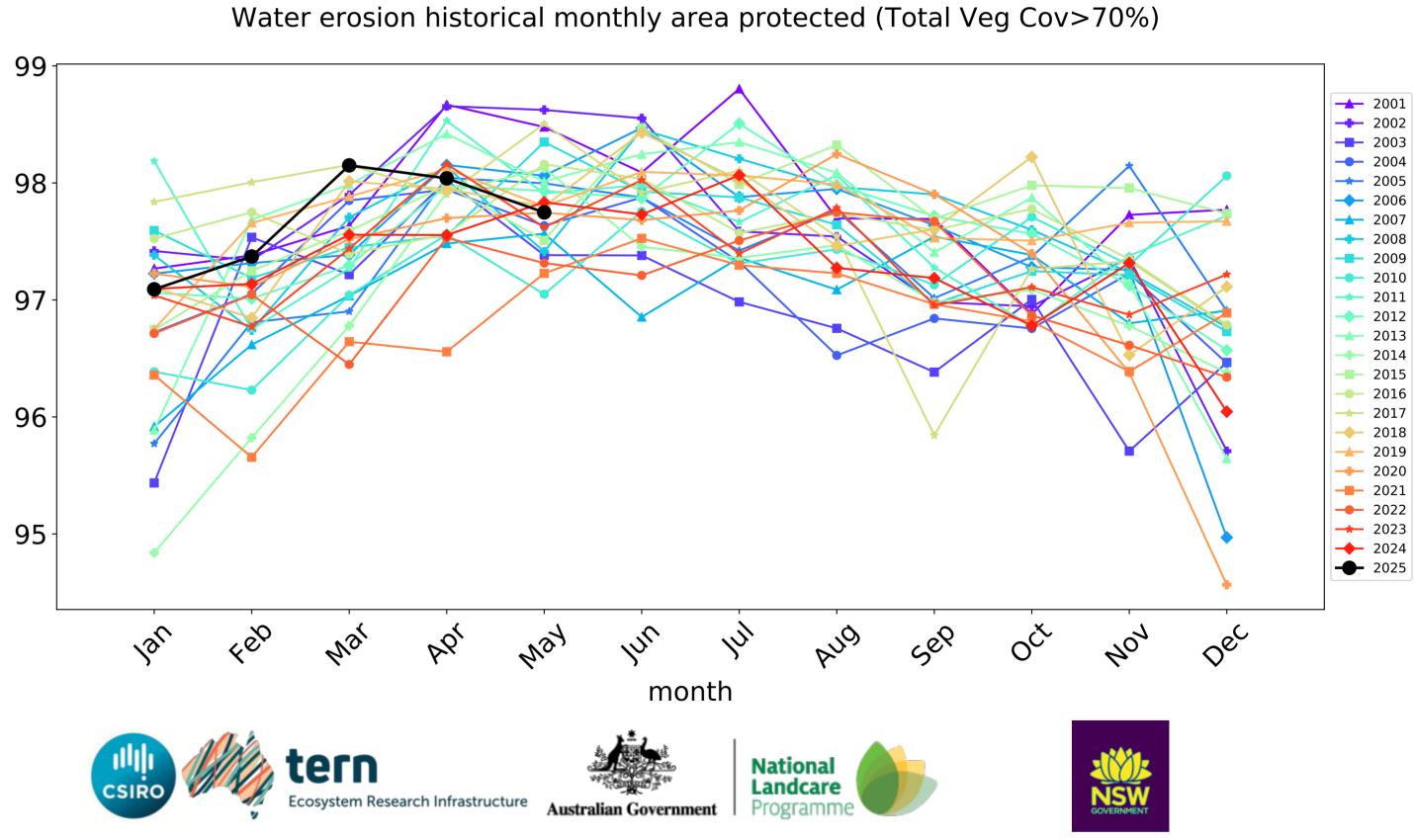
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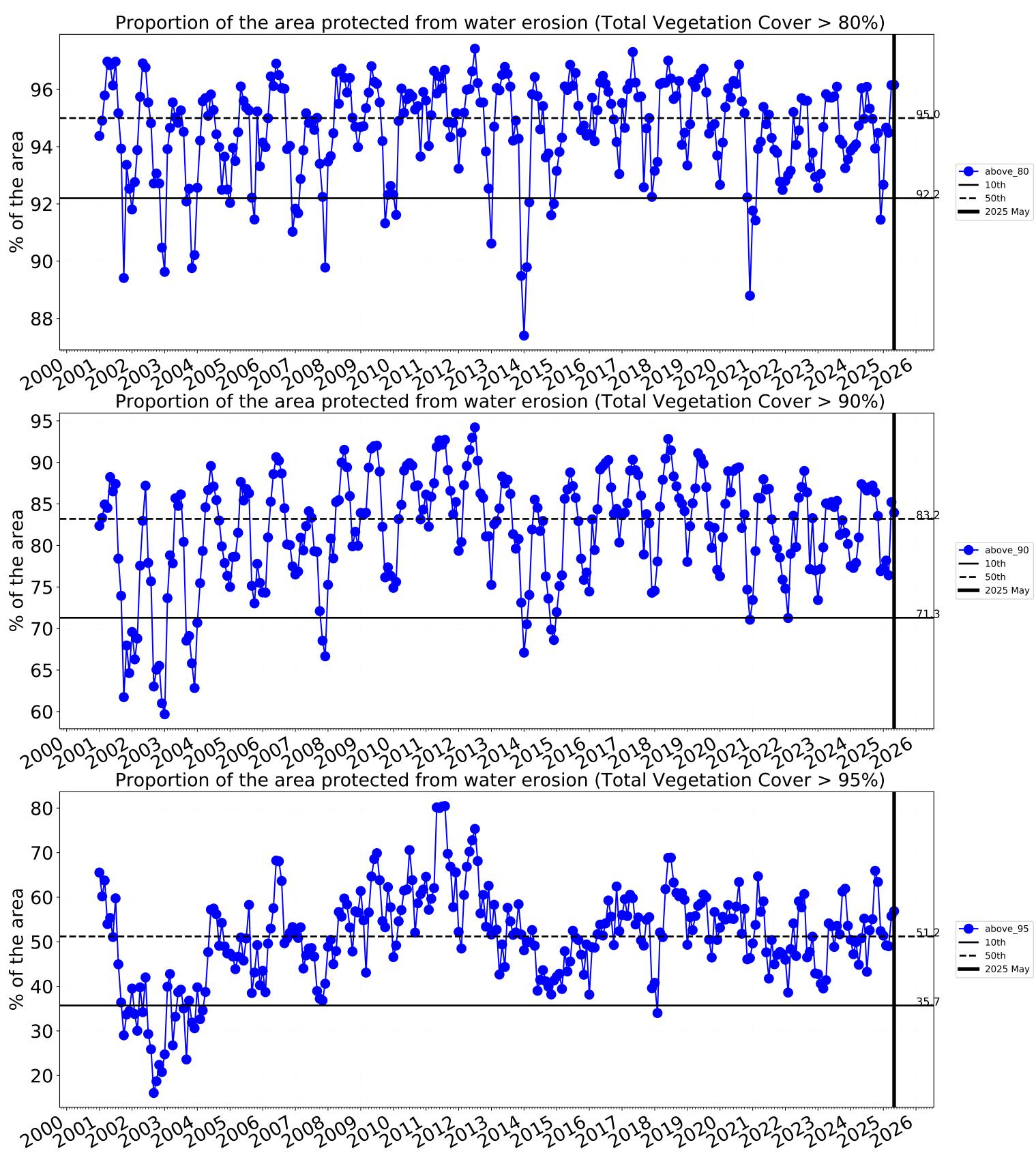


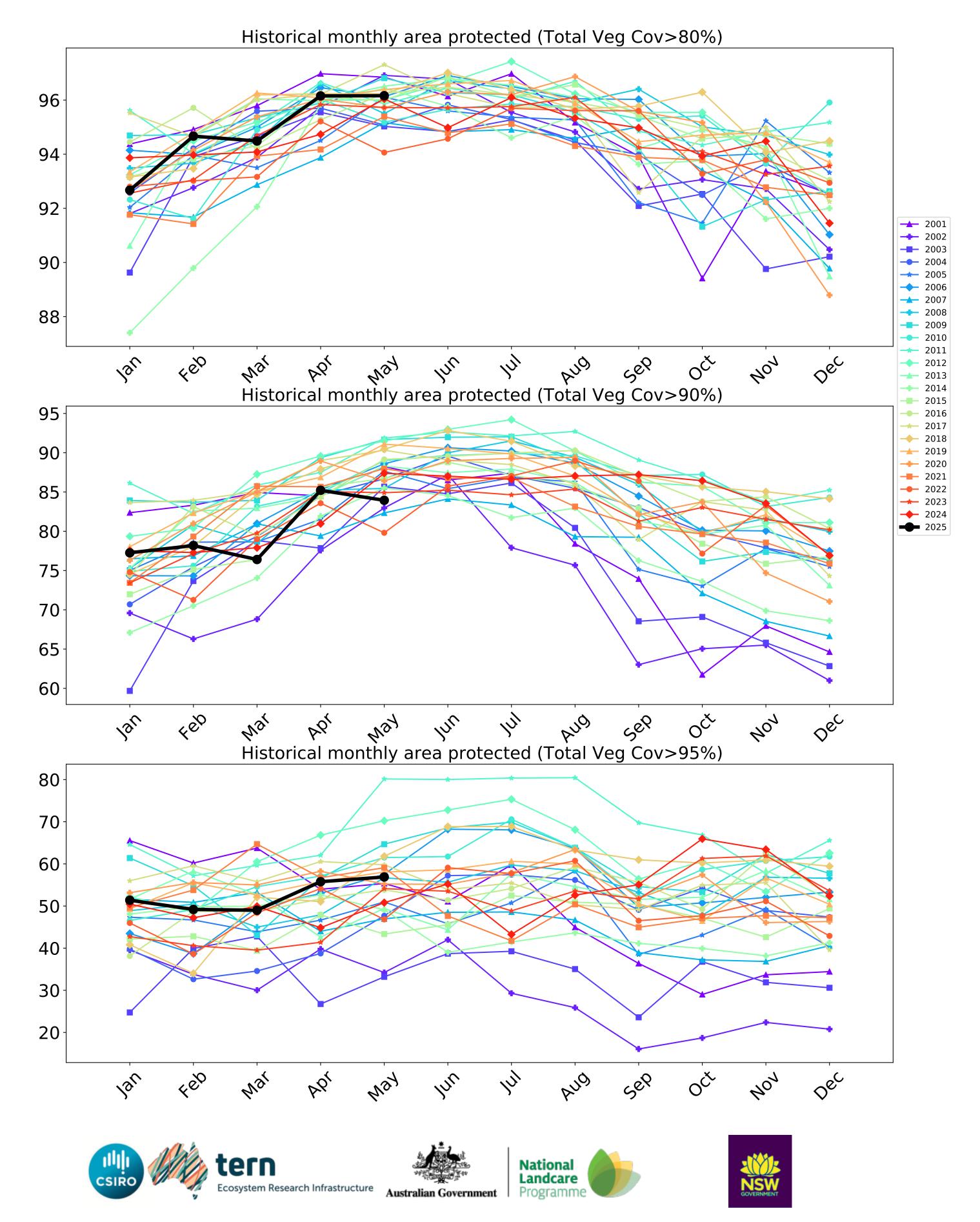
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)





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

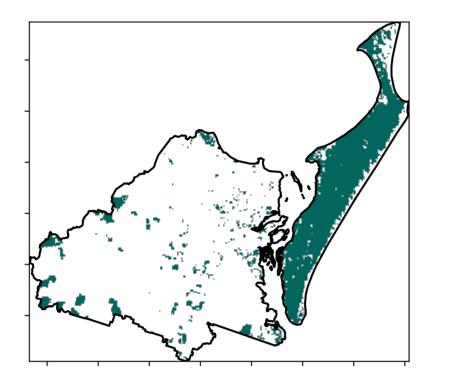




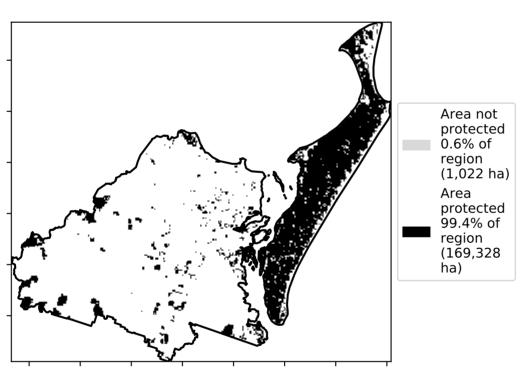
Conservation and natural environments Forest (non woodland)

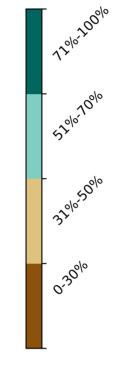
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests 1 Conservation and natural environments - Nonwoodland forest of Australia (2018)

Total Vegetation Cover [%]

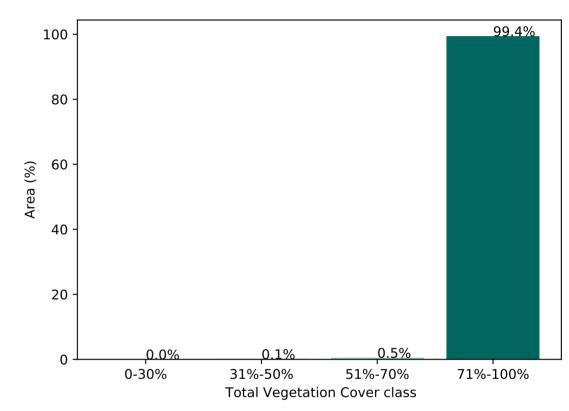


% Area protected from water erosion (>70%)

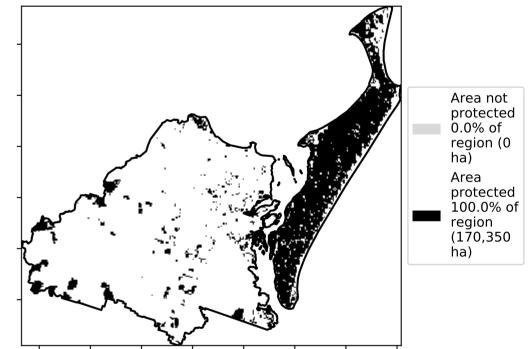




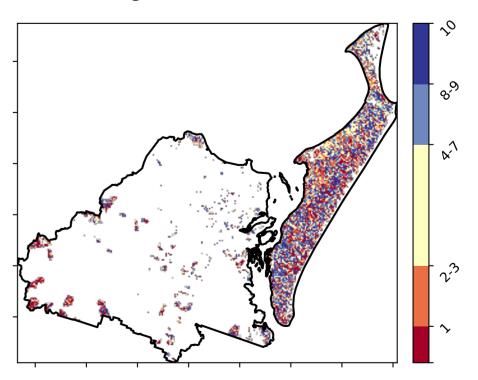




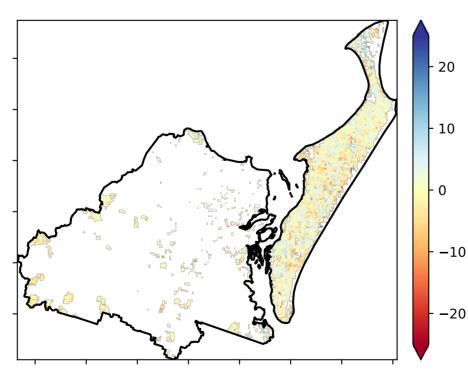
% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]



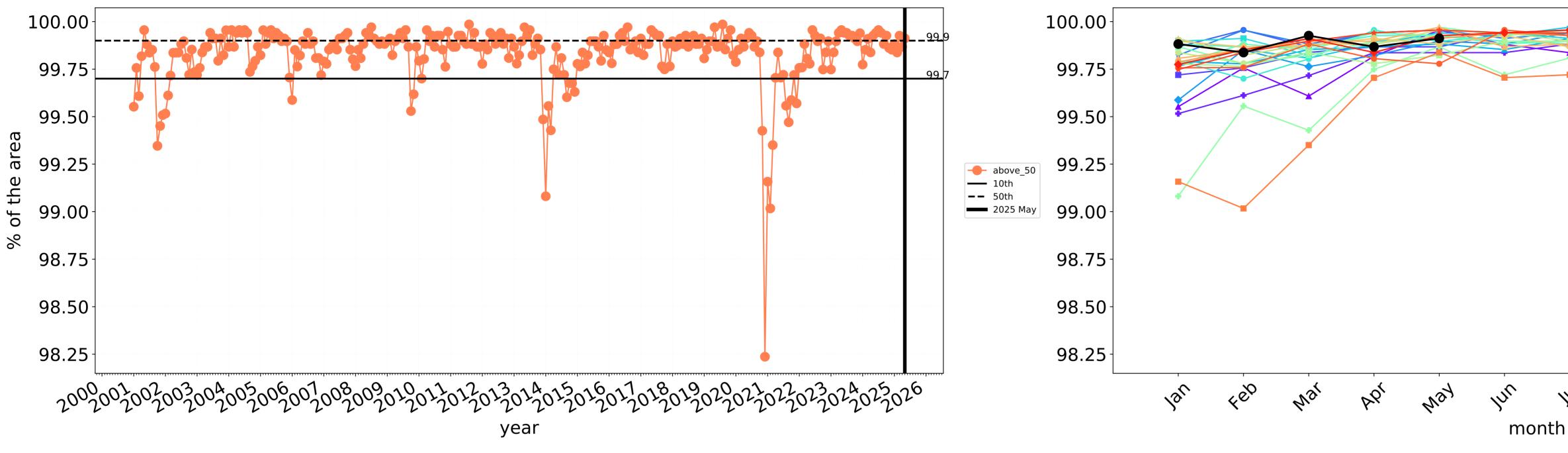
Total Vegetation Cover Anomaly [%]



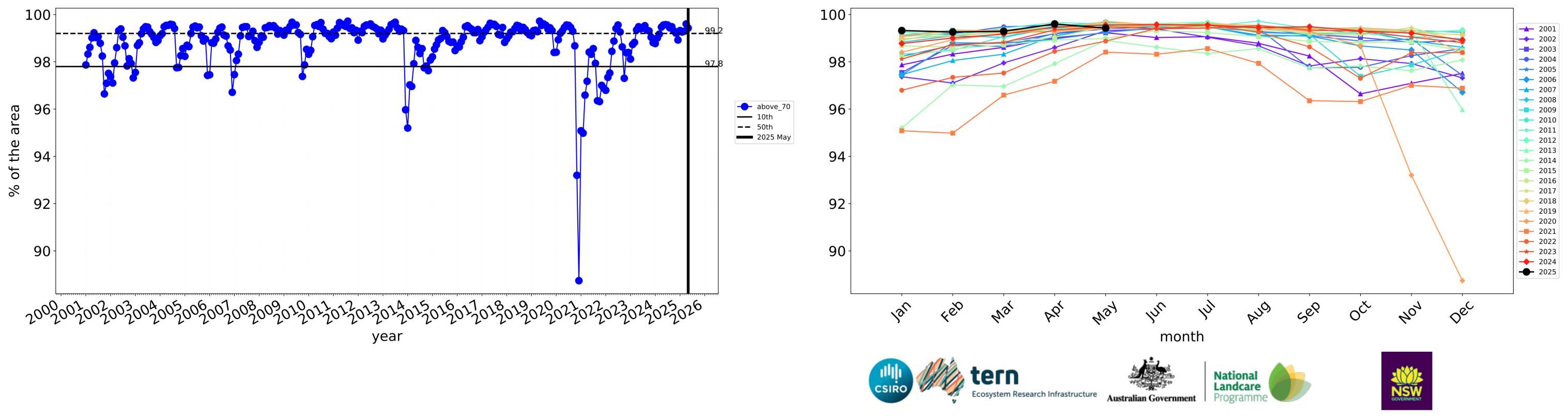
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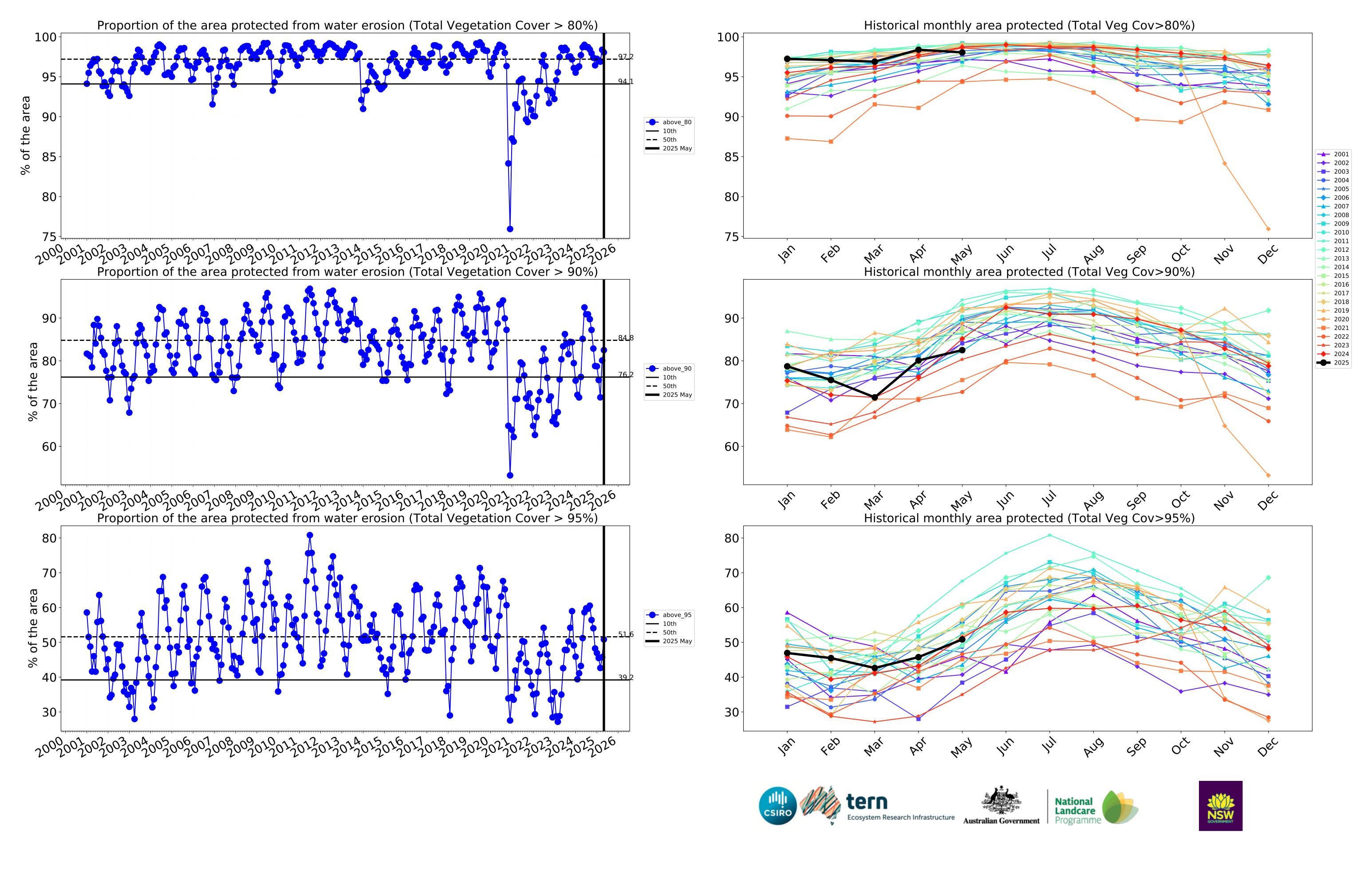




Wind erosion historical monthly area protected (Total Veg Cov >50%)

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

▲ 2001▲ 2002 ---- 2003 --- 2004 **----** 2005 **---** 2006 **___** 2007 ---- 2008 ---- 2009 --- 2010 → 2011 → 2012 ---- 2013 --- 2014 ---- 2015 ---- 2016 ---- 2017 ---- 2018 ---- 2020 ---- 2021 ---- 2022 **----** 2023 **---** 2024 OČ 401 Dec *()* DUD Sep



Agriculture

12%200%

52% 70%

32%50%

0.30%

Land use and forest cover

Catchment Scale

Derived from

pixel is from the mean. That

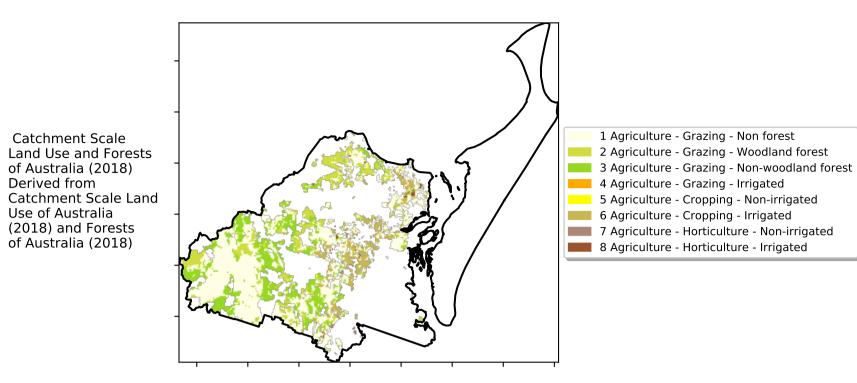
is, red pixels are about 20% lower than the

mean of that

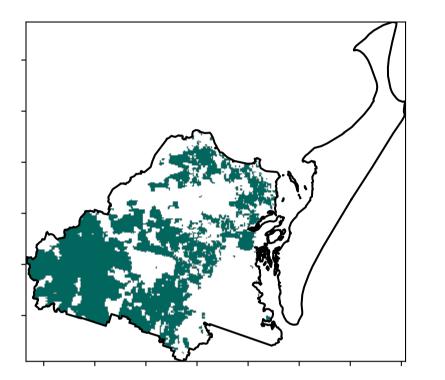
pixel. The mean

from 2001 to 2019.

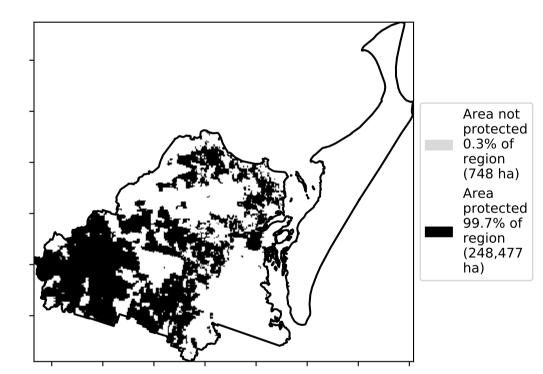


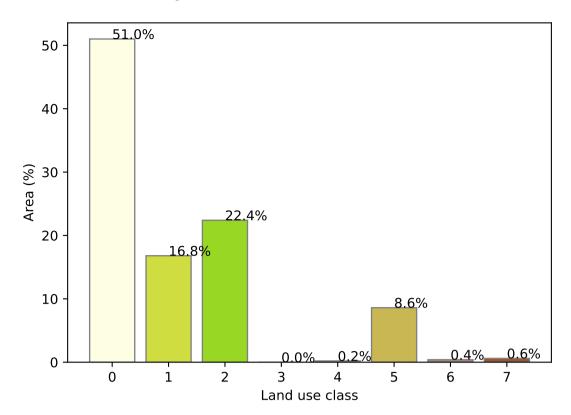


Total Vegetation Cover [%]

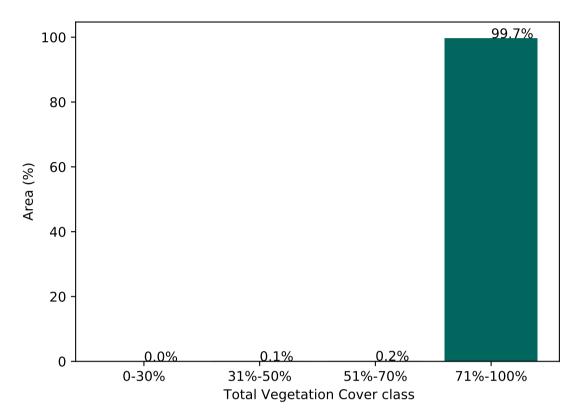


% Area protected from water erosion (>70%)

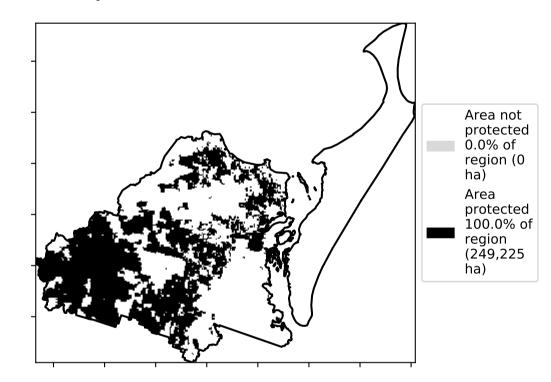




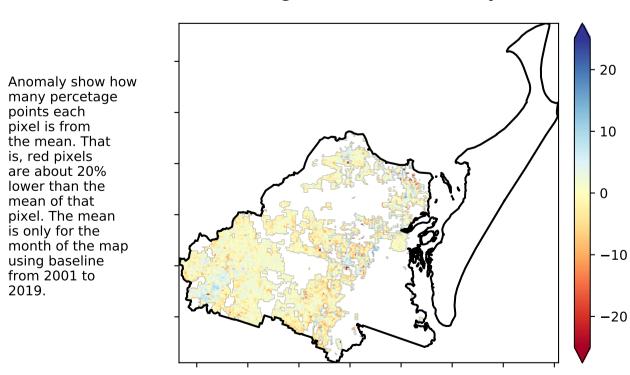
Proportion of vegetation cover class in area



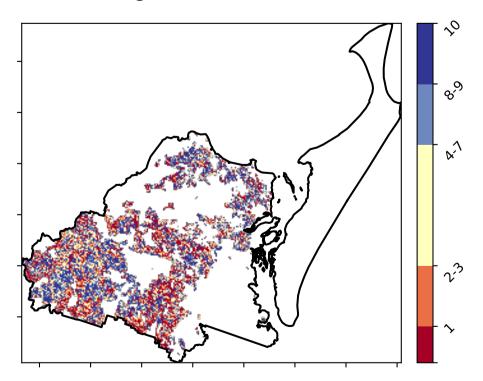
% Area protected from wind erosion (>50%)



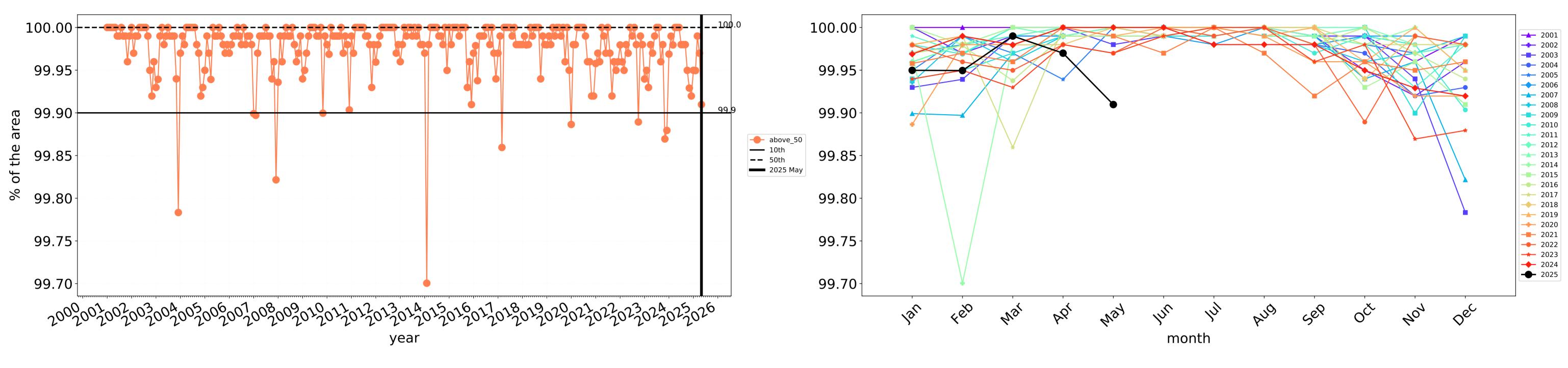
Total Vegetation Cover Anomaly [%]



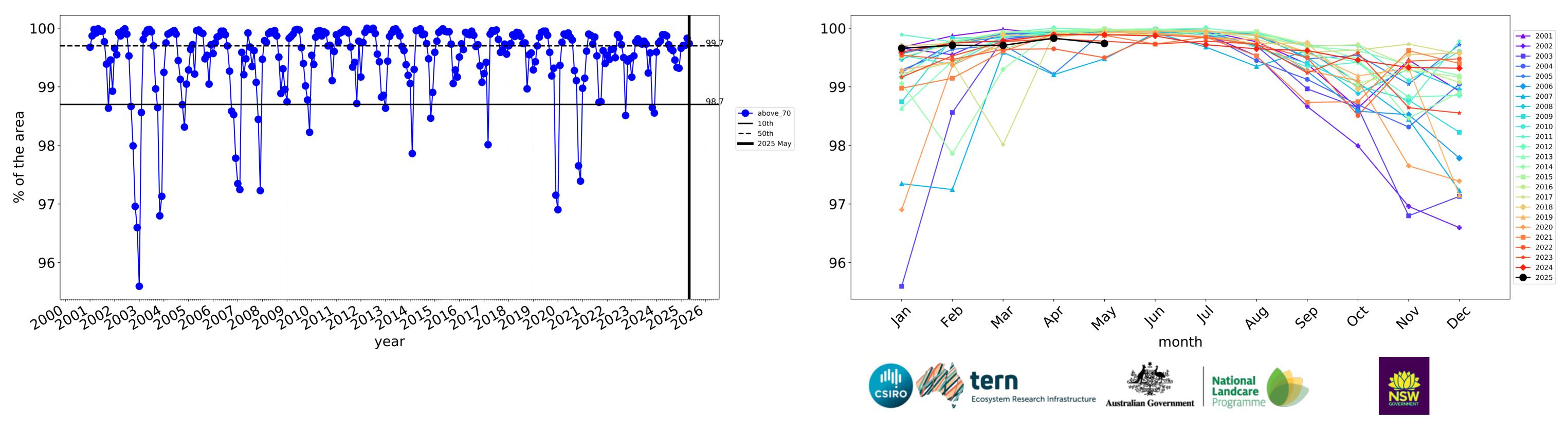
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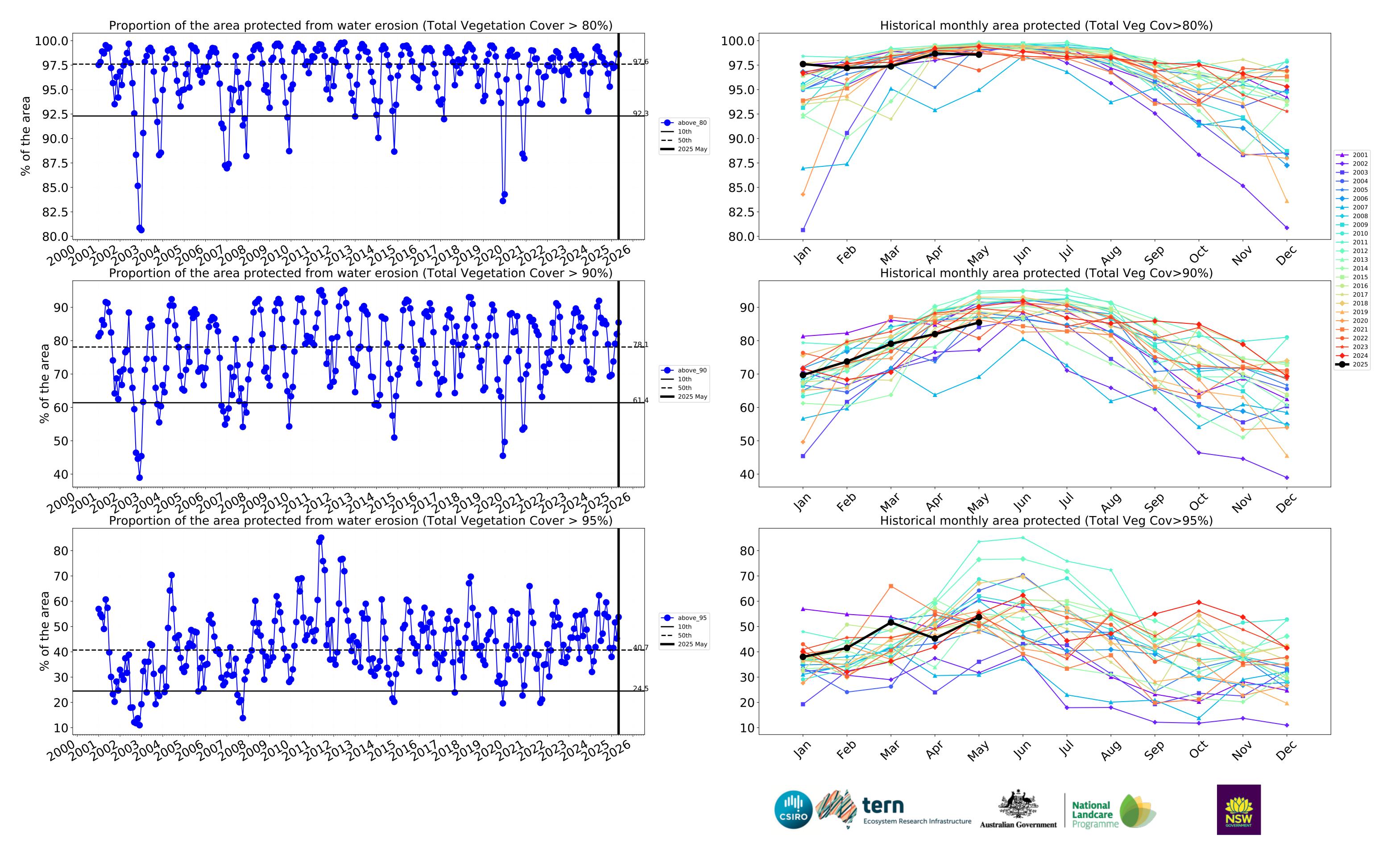


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



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

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



Grazing

12/070001

52% 70%

32%50%

· 0.30%

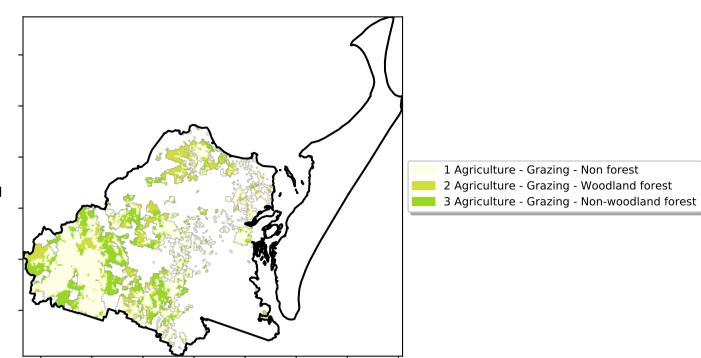
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

pixel is from the mean. That

is, red pixels are about 20% lower than the

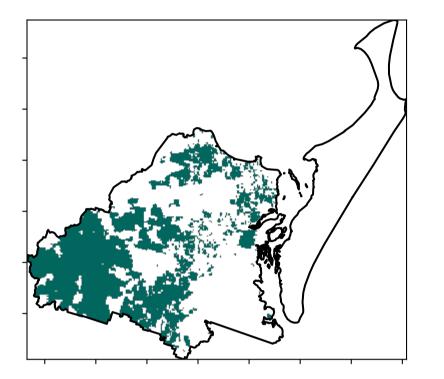
mean of that pixel. The mean

using baseline from 2001 to 2019.

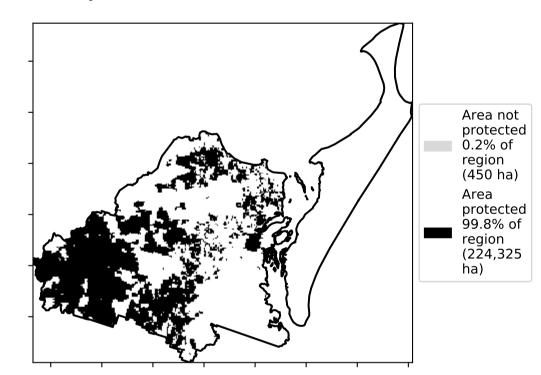


Total Vegetation Cover [%]

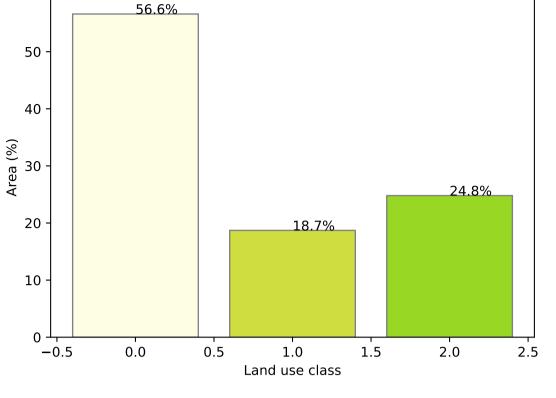
Land use and forest cover



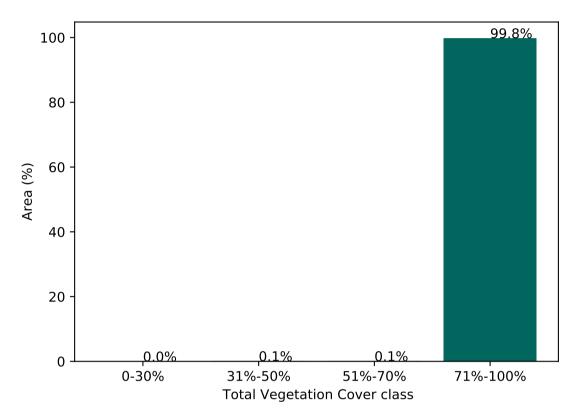
% Area protected from water erosion (>70%)



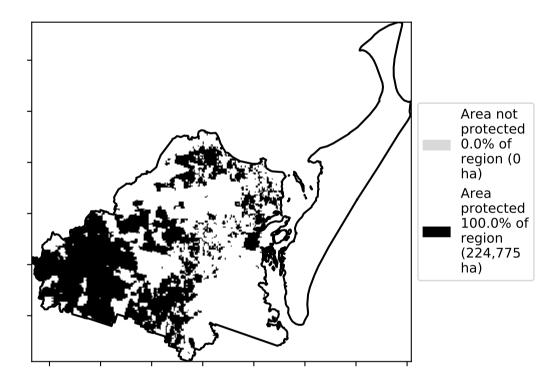
Proportion of each land class in area



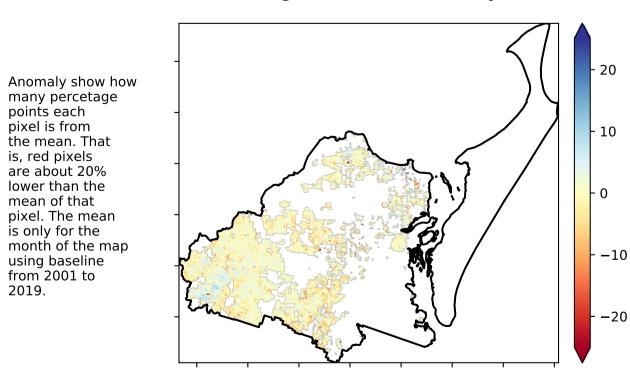
Proportion of vegetation cover class in area



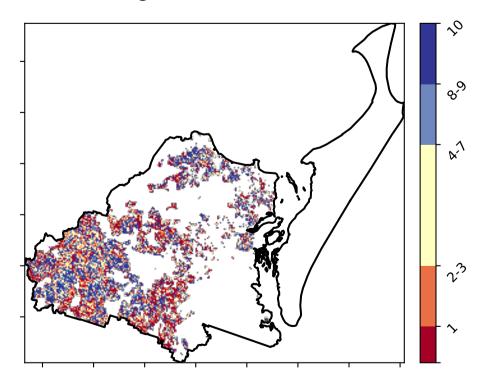
% Area protected from wind erosion (>50%)



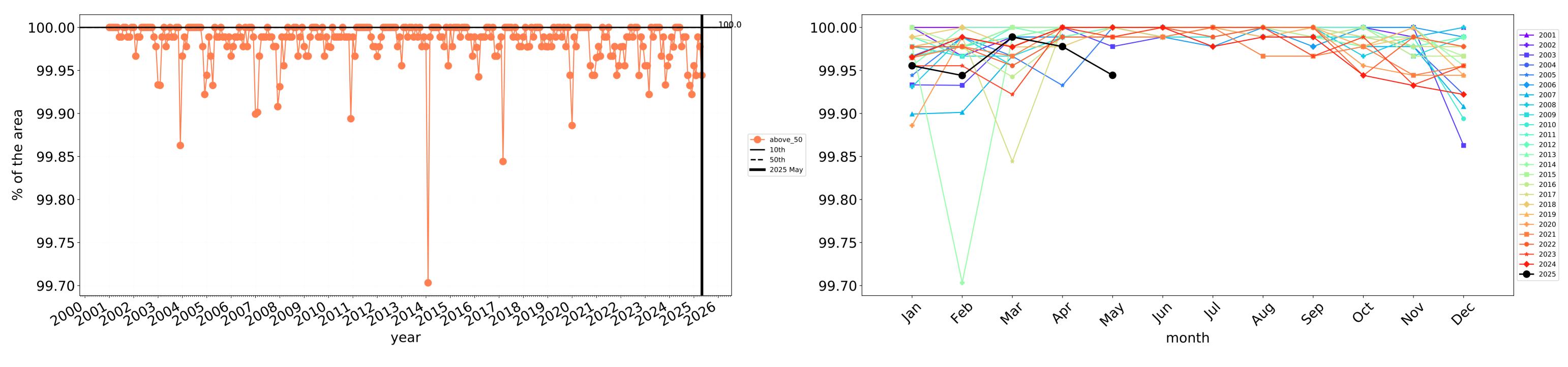
Total Vegetation Cover Anomaly [%]



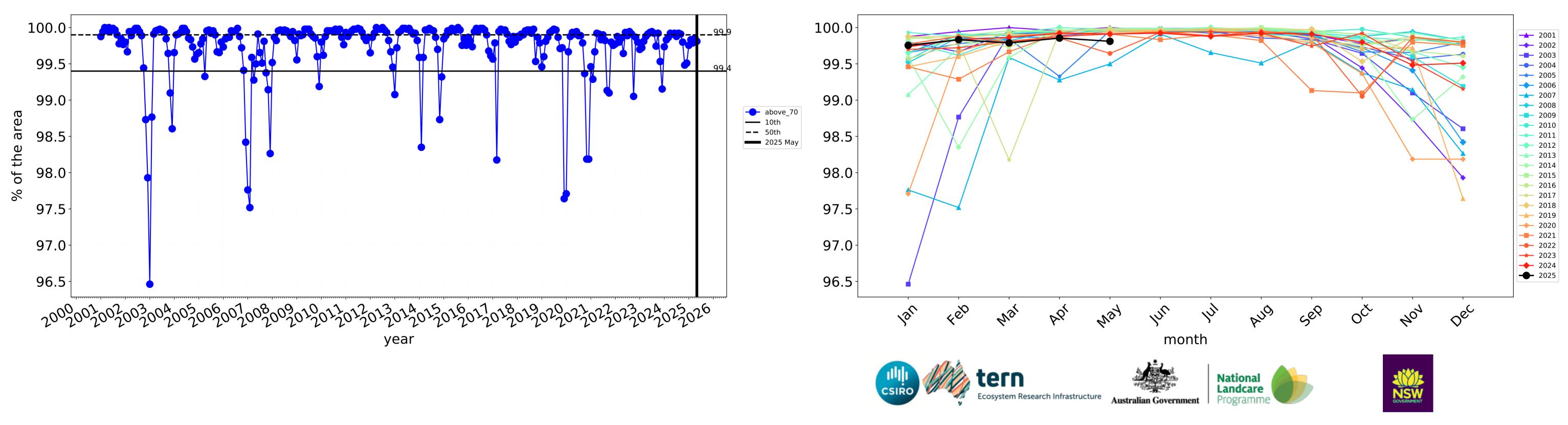
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.





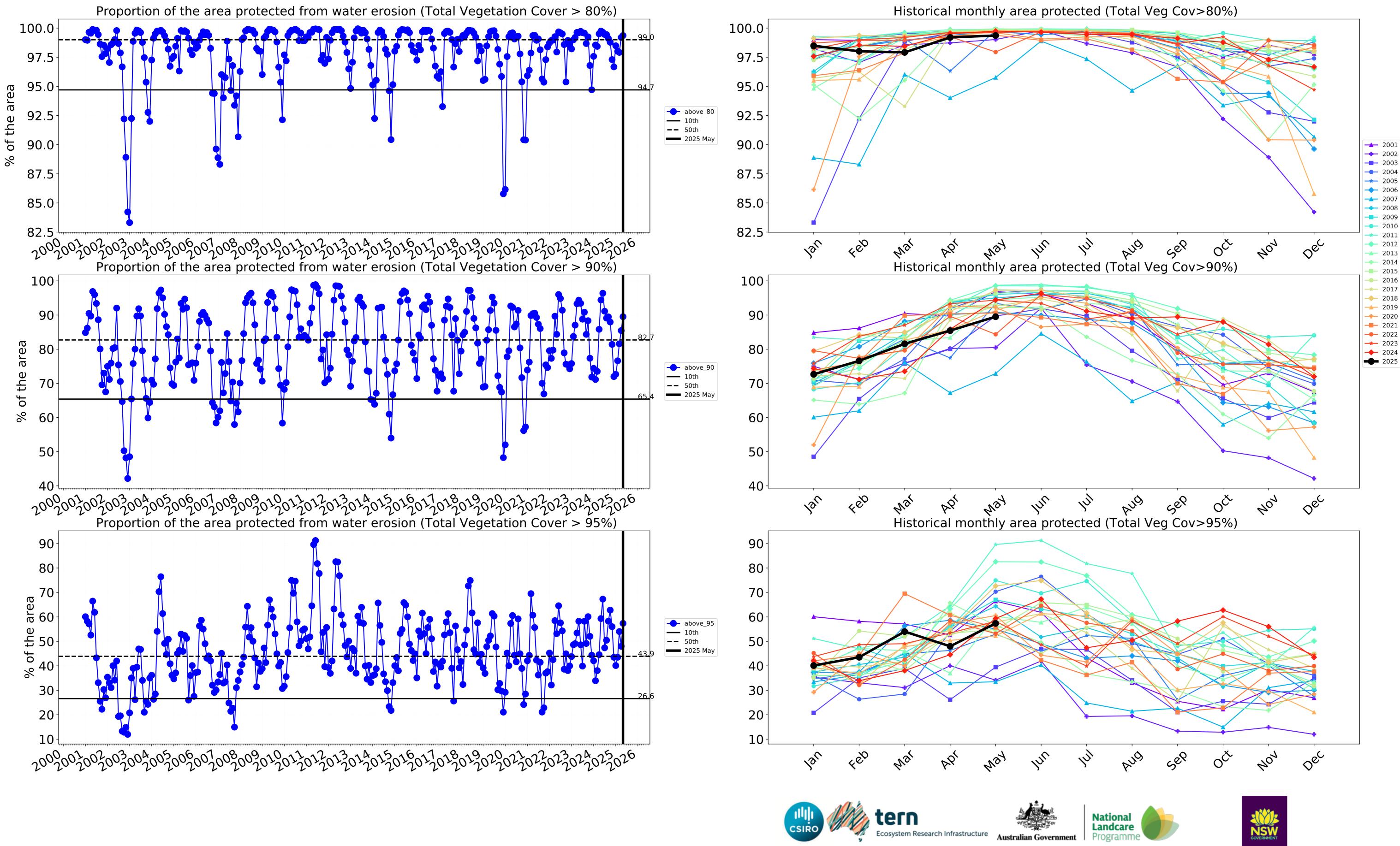


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



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

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



Grazing non forest

12/07/00%

52%70%

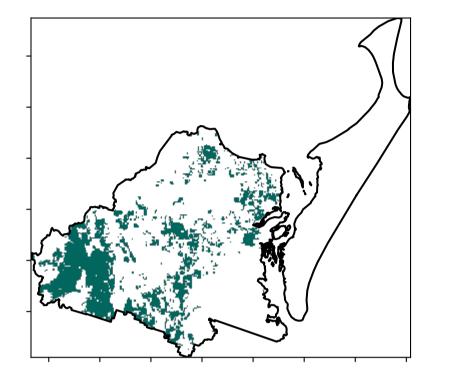
32%50%

0.30%

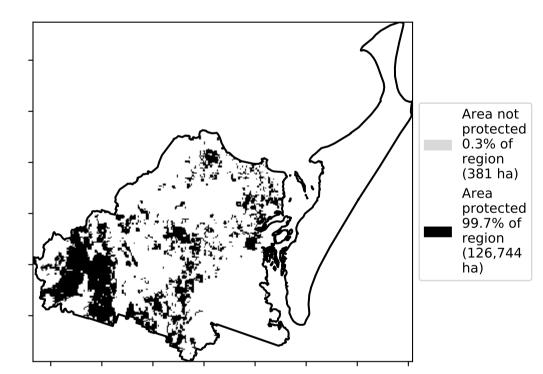
1 Agriculture - Grazing - Non forest

Total Vegetation Cover [%]

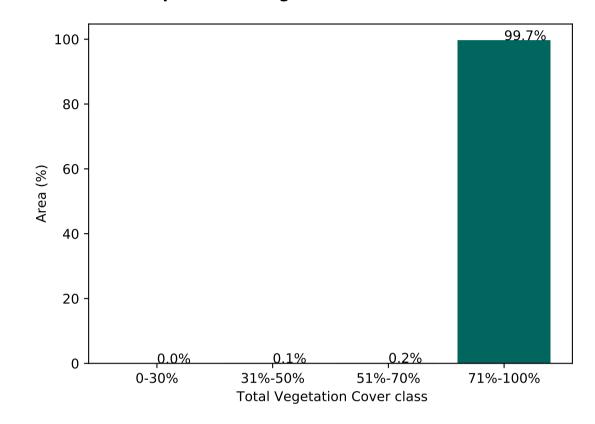
Land use and forest cover



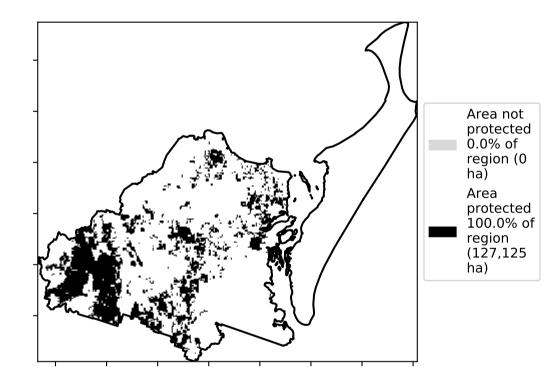
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)

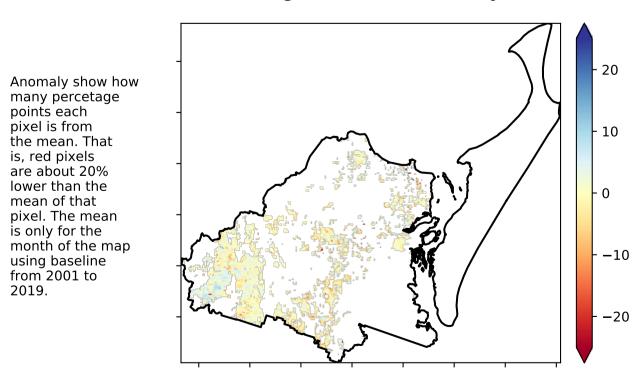


Catchment Scale Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

pixel is from the mean. That is, red pixels are about 20% lower than the

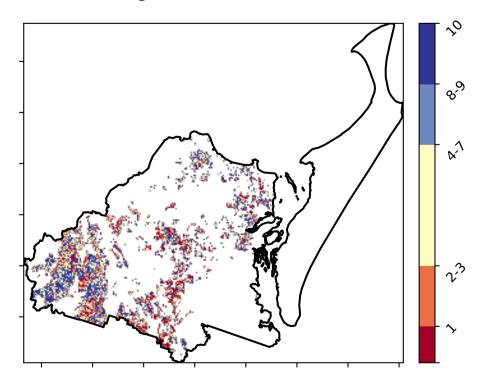
mean of that

Total Vegetation Cover Anomaly [%]



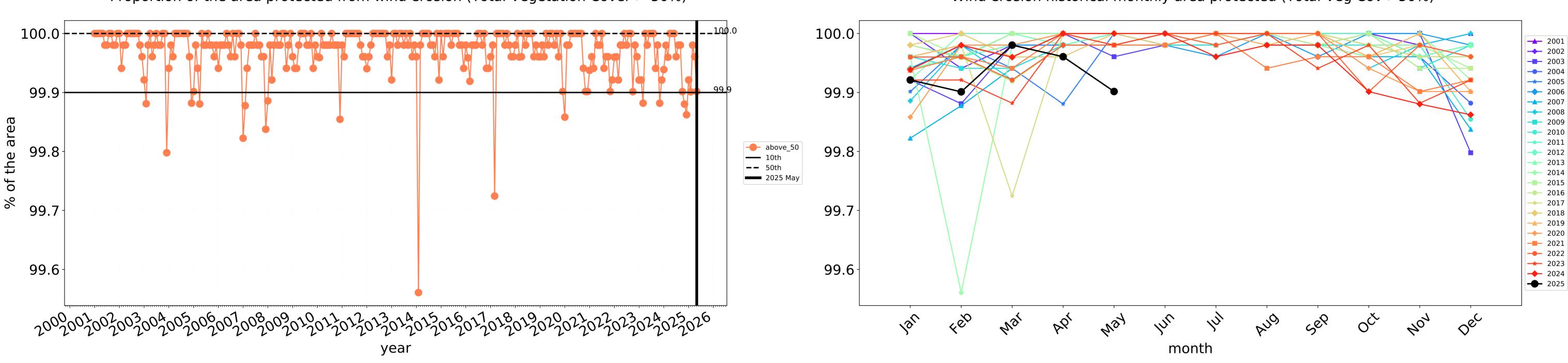
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline the map using baseline from 2001 to 2019.

Total Vegetation Cover Decile [%]

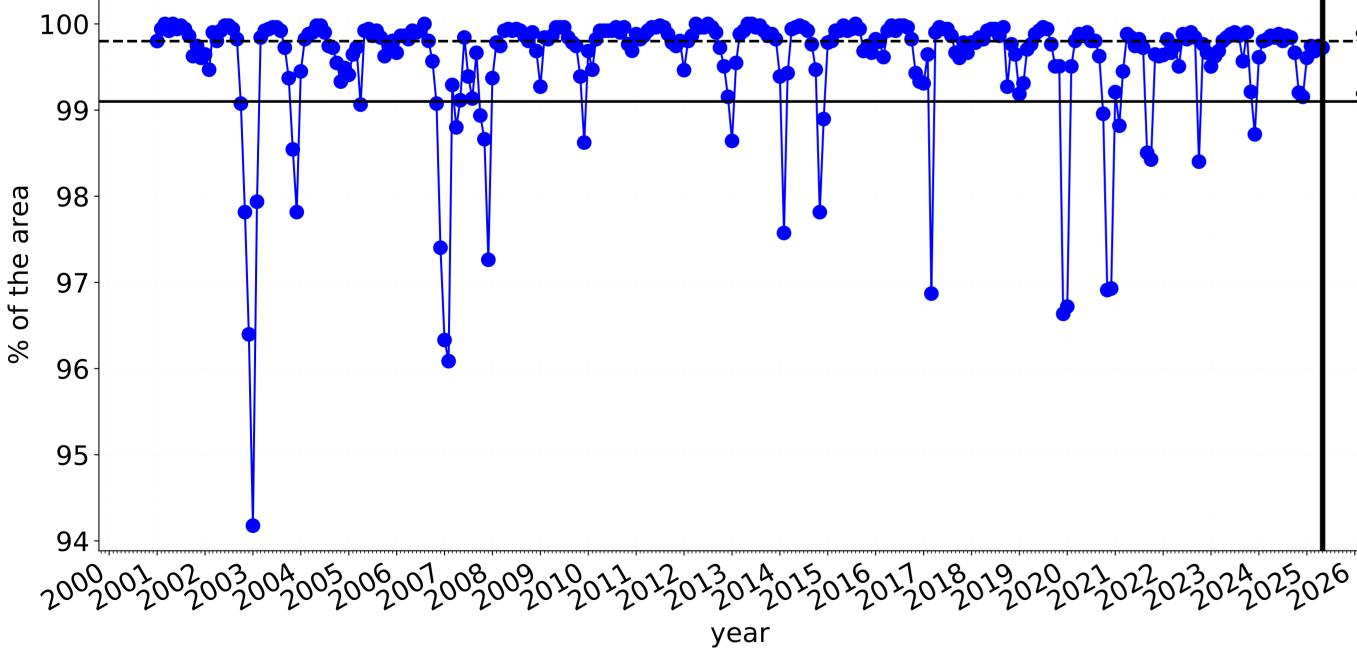




23



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

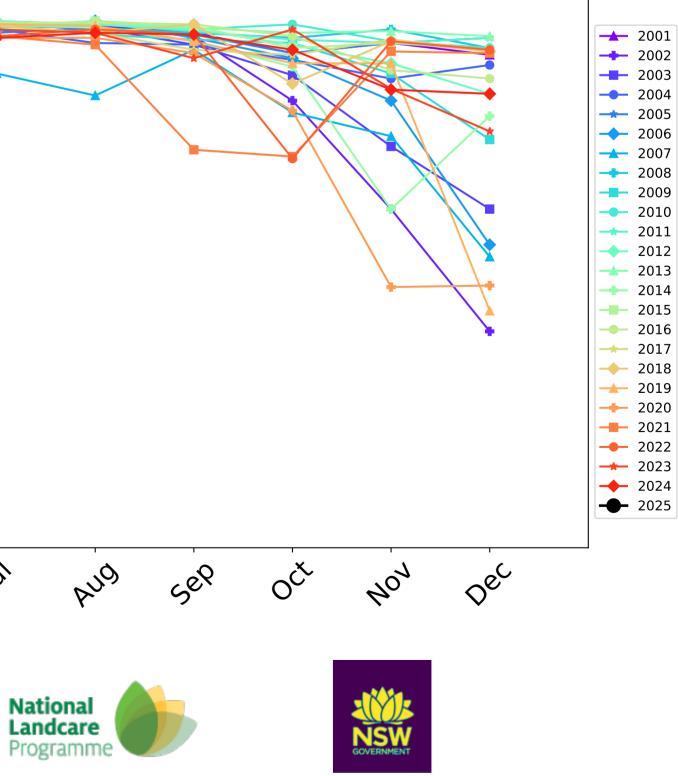


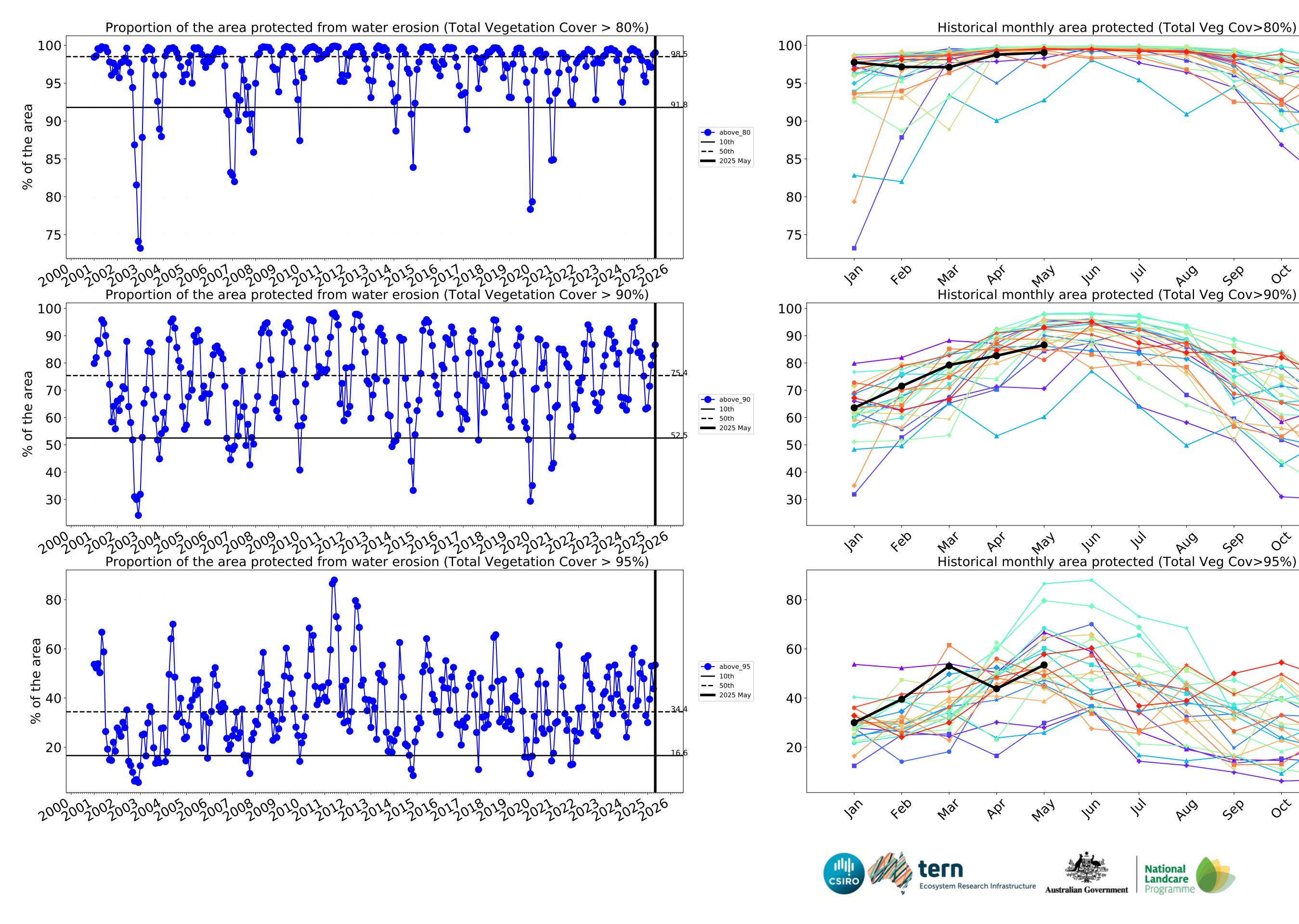
100 99 --- above_70 98 **—** 10th **——** 50th **——** 2025 May 97 96 95 94 4eb Jan Mai way In In In Þb, month tern Ecosystem Research Infrastructure Australian Government

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

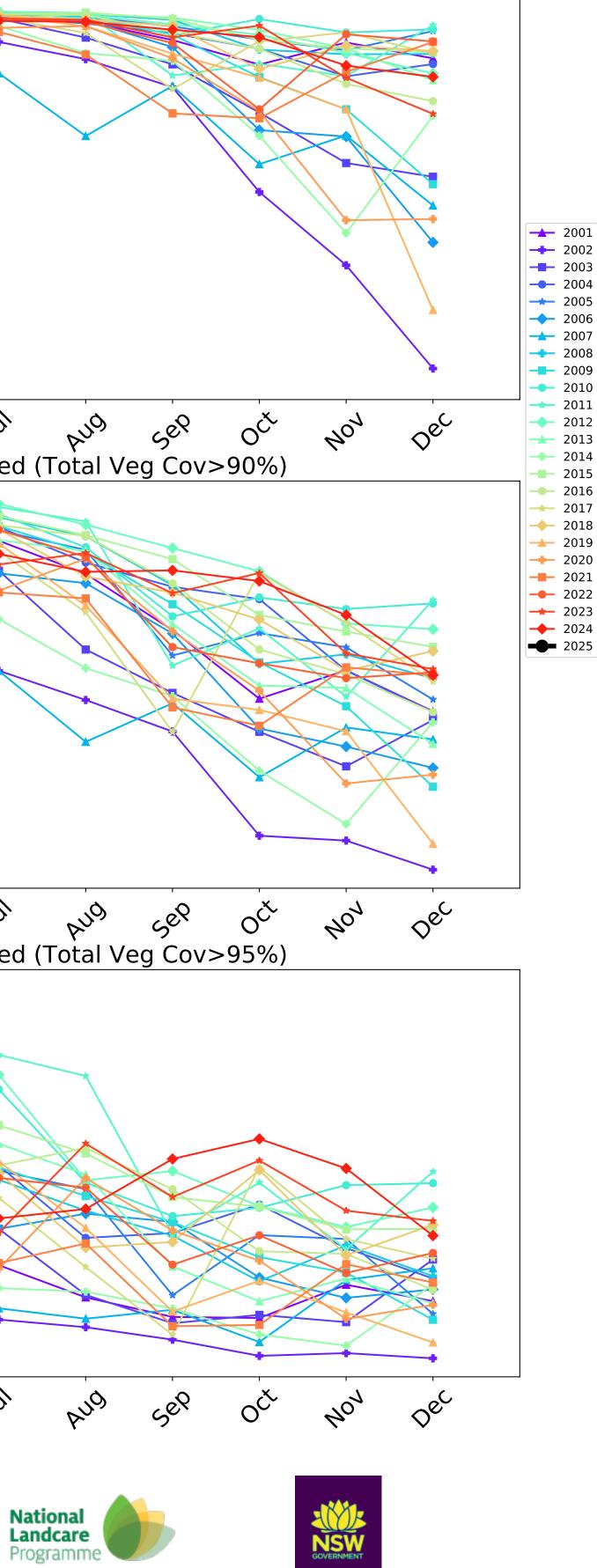
2**3**

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







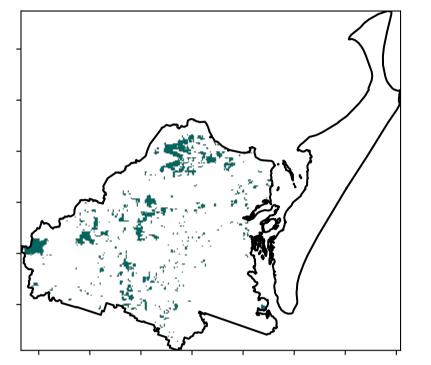


Grazing Woodland forest

Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) 1 Agriculture - Grazing - Woodland forest

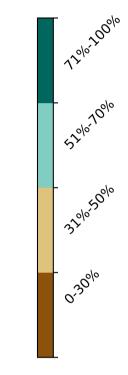
Total Vegetation Cover [%]

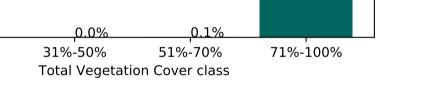
Land use and forest cover



% Area protected from water erosion (>70%)







99.9%

% Area protected from wind erosion (>50%)



Proportion of vegetation cover class in area

100

80

60

40

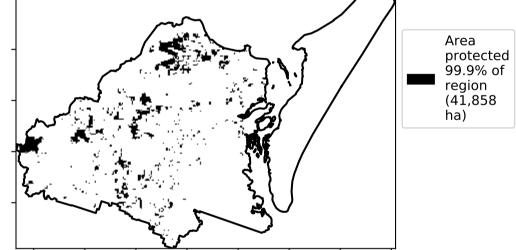
20

0

0.0%

0-30%

Area (%)



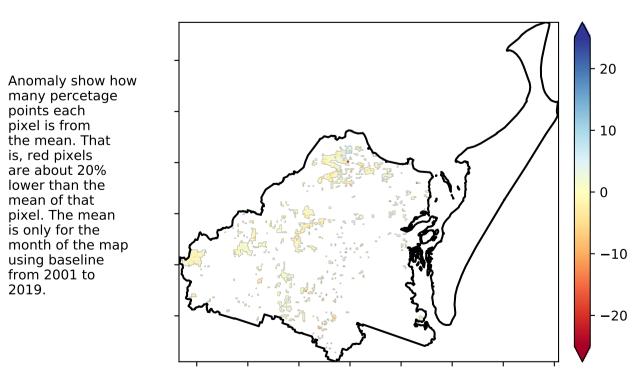
Total Vegetation Cover Anomaly [%]

pixel is from the mean. That

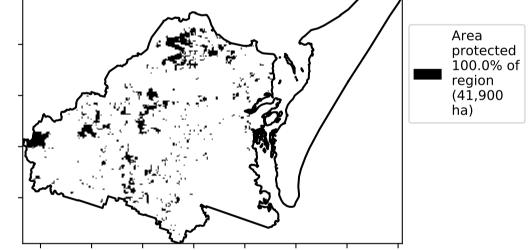
is, red pixels are about 20% lower than the

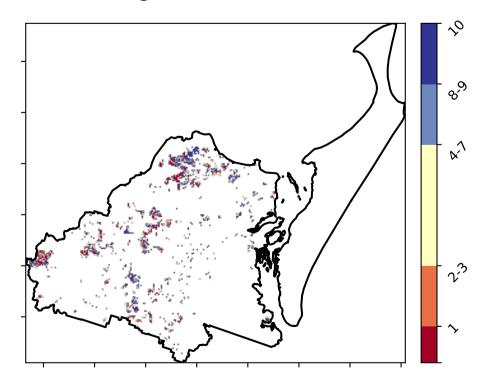
mean of that pixel. The mean

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



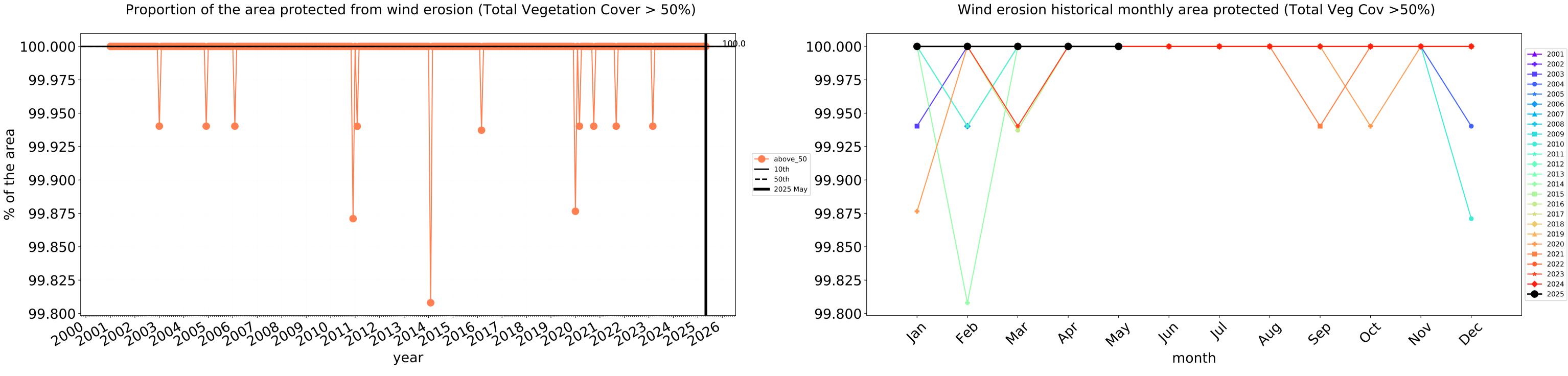
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

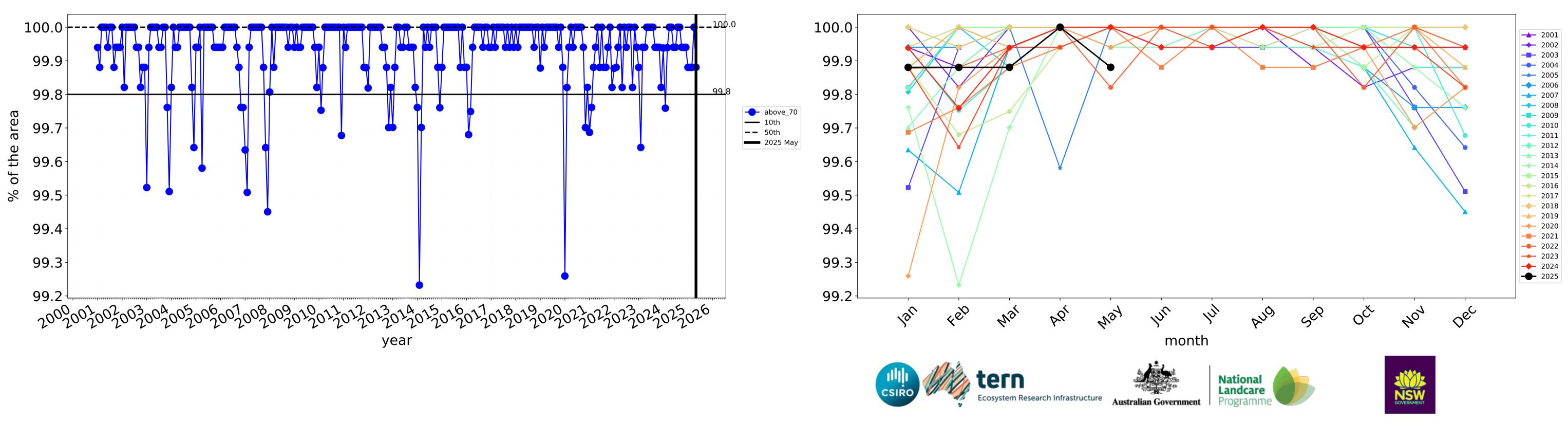




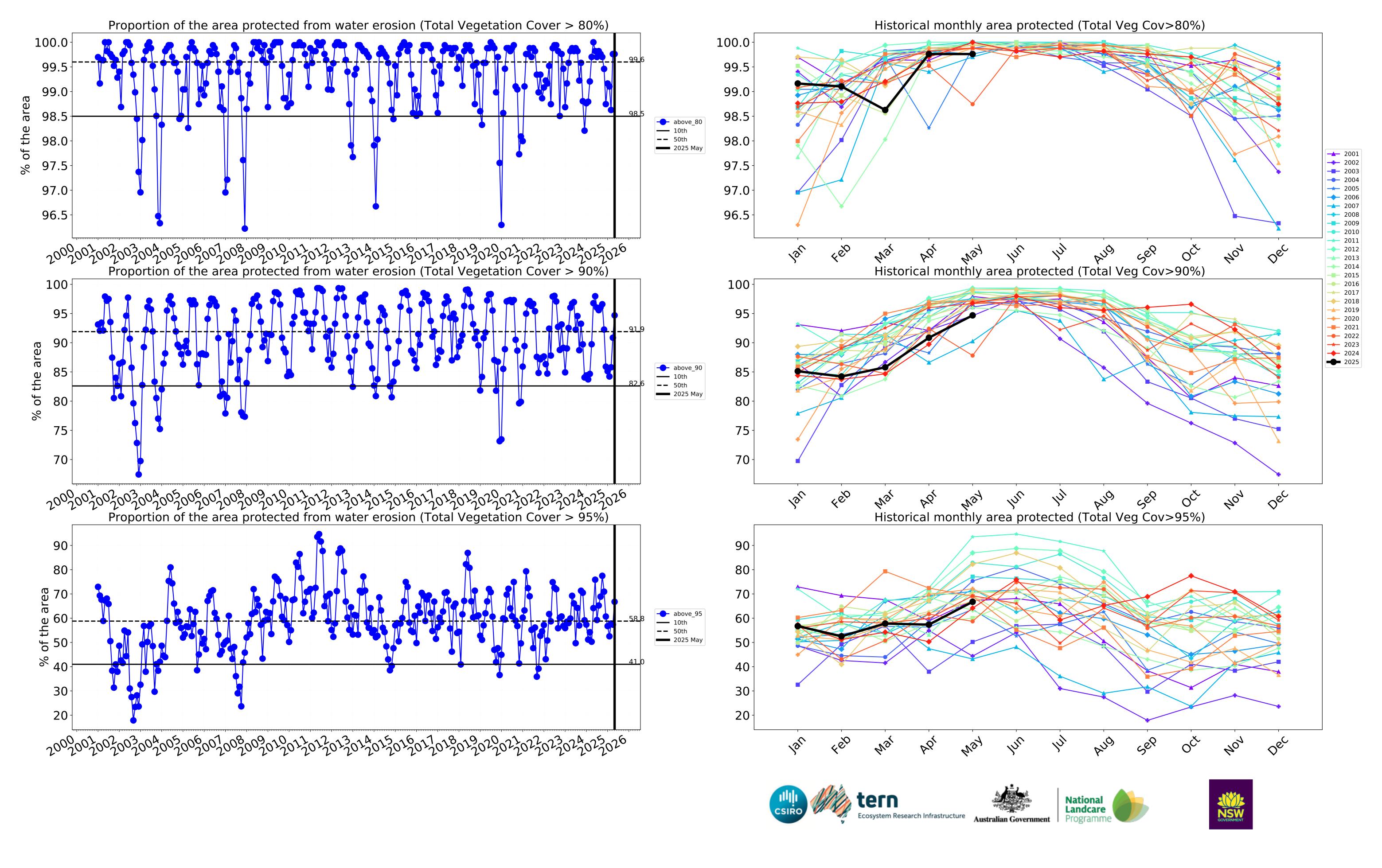








Water erosion historical monthly area protected (Total Veg Cov>70%)



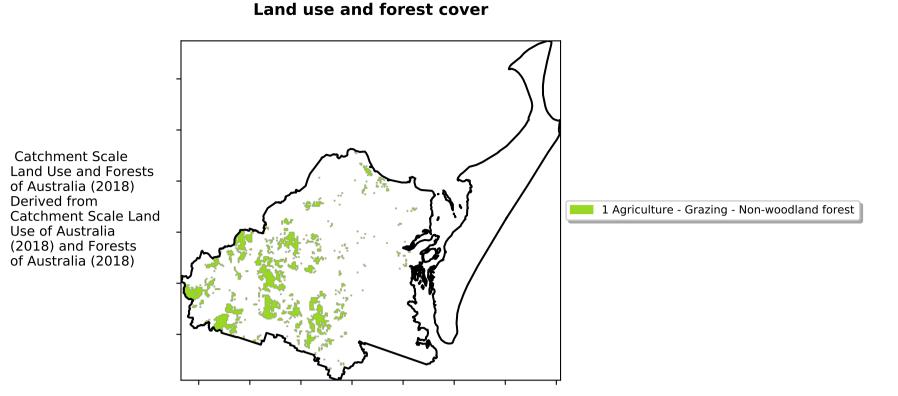
Grazing - Forest (non woodland)

12%200%

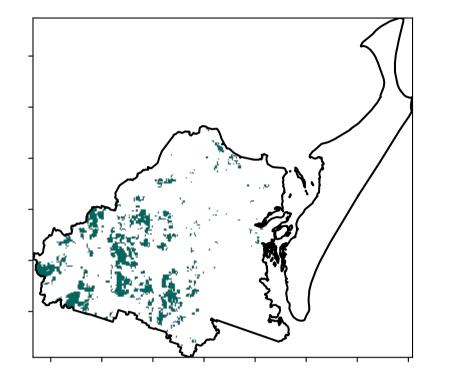
52%70%

32005001

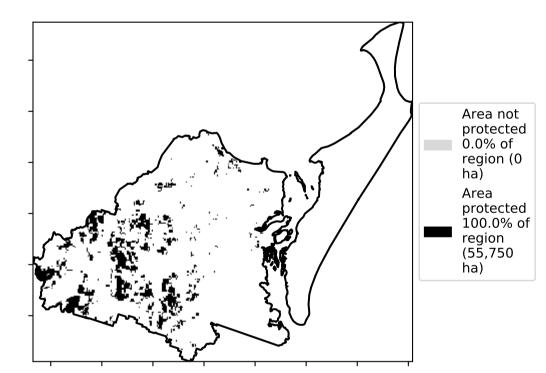
· 0.30%



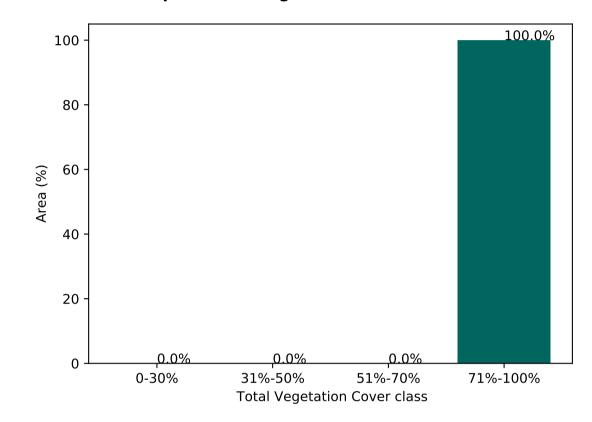
Total Vegetation Cover [%]



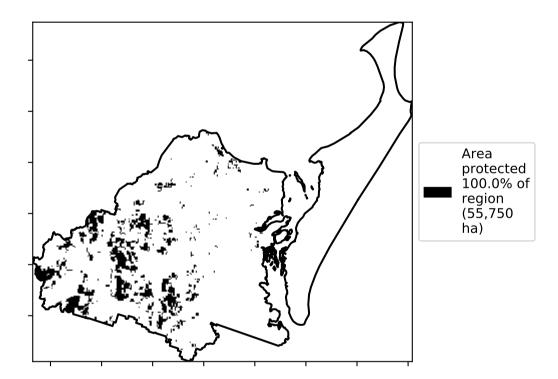
% Area protected from water erosion (>70%)



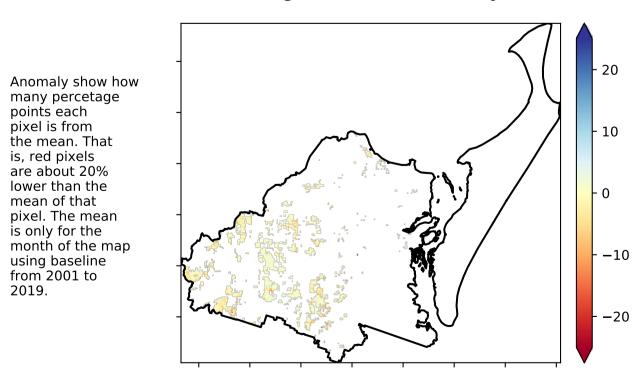
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



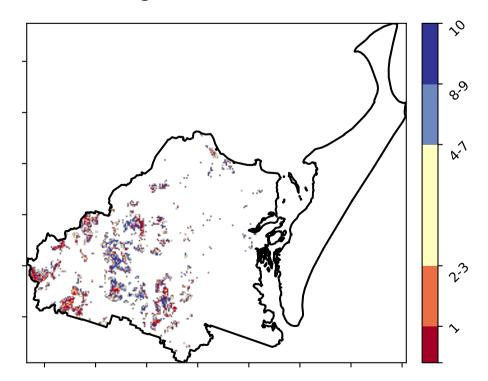
Total Vegetation Cover Anomaly [%]



pixel is from the mean. That

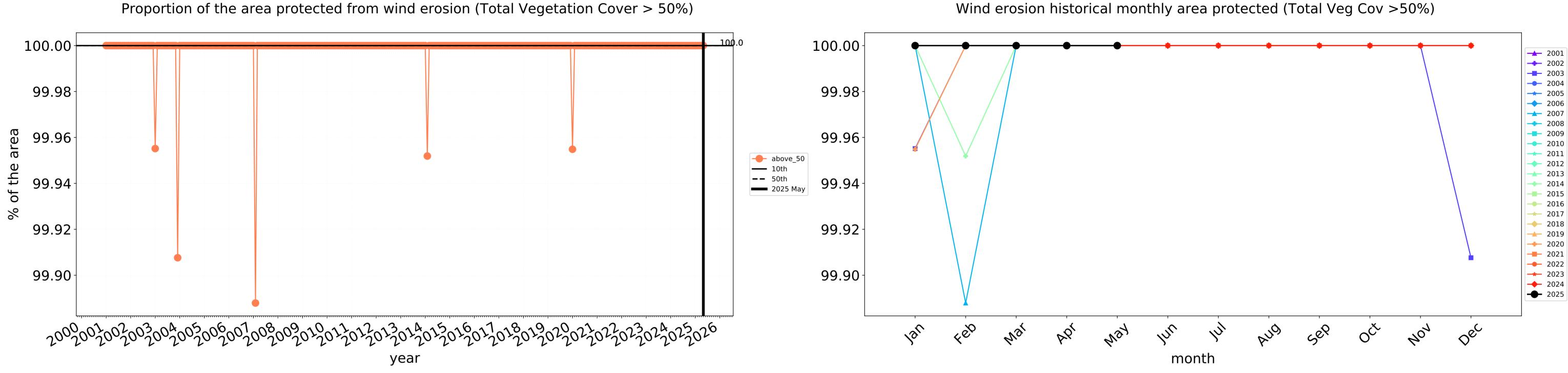
is, red pixels are about 20% lower than the

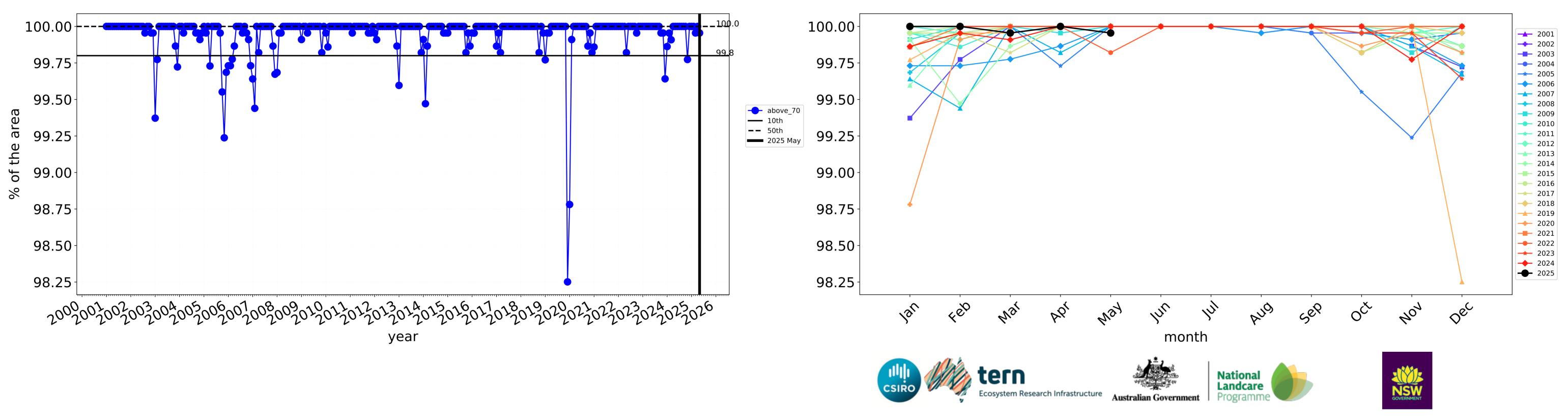
mean of that pixel. The mean Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline the map using baseline from 2001 to 2019.

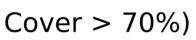




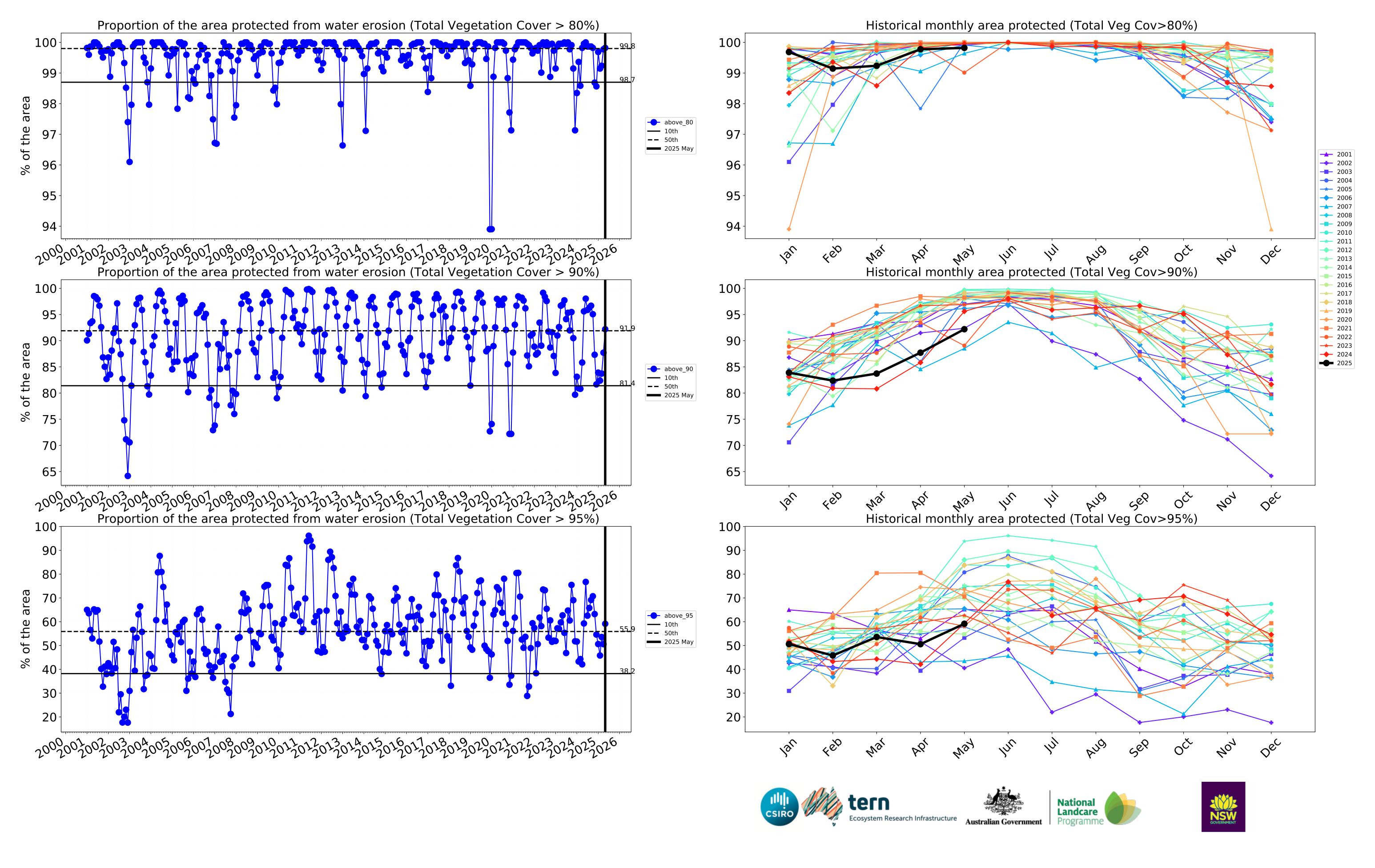








Water erosion historical monthly area protected (Total Veg Cov>70%)



Irrigation

120020000

5200070012

320050010

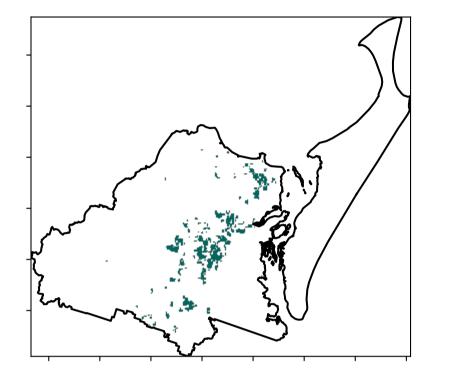
· 0.30%

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

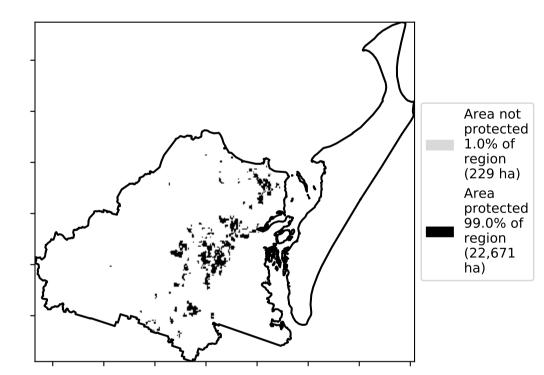
s nd d

Total Vegetation Cover [%]

Land use and forest cover



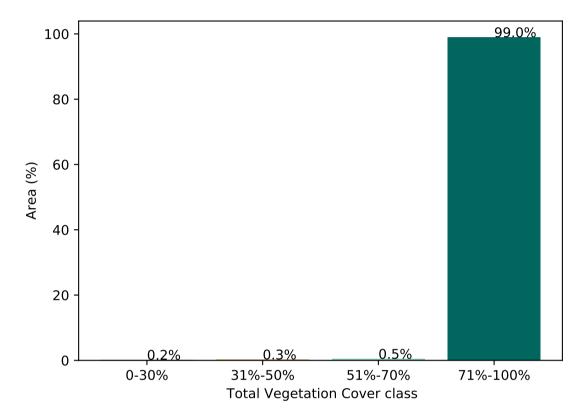
% Area protected from water erosion (>70%)



93.6% 80 60 Area (%) 40 20 6.1% 0.3% 0 -0.5 0.0 0.5 1.0 2.0 1.5 2.5 Land use class



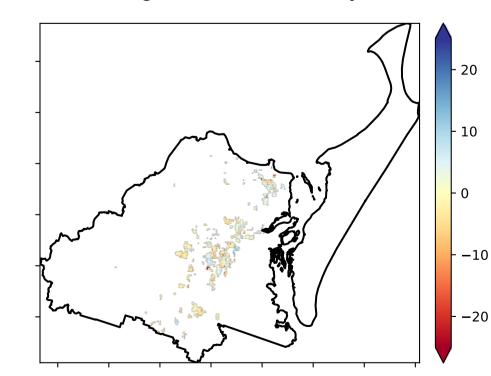
Proportion of vegetation cover class in area



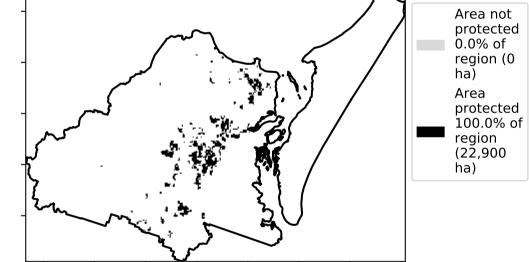
% Area protected from wind erosion (>50%)



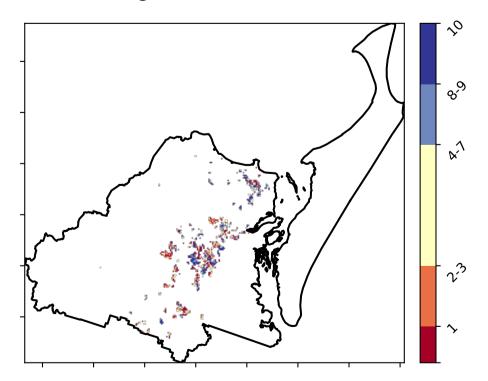
Total Vegetation Cover Anomaly [%]



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.



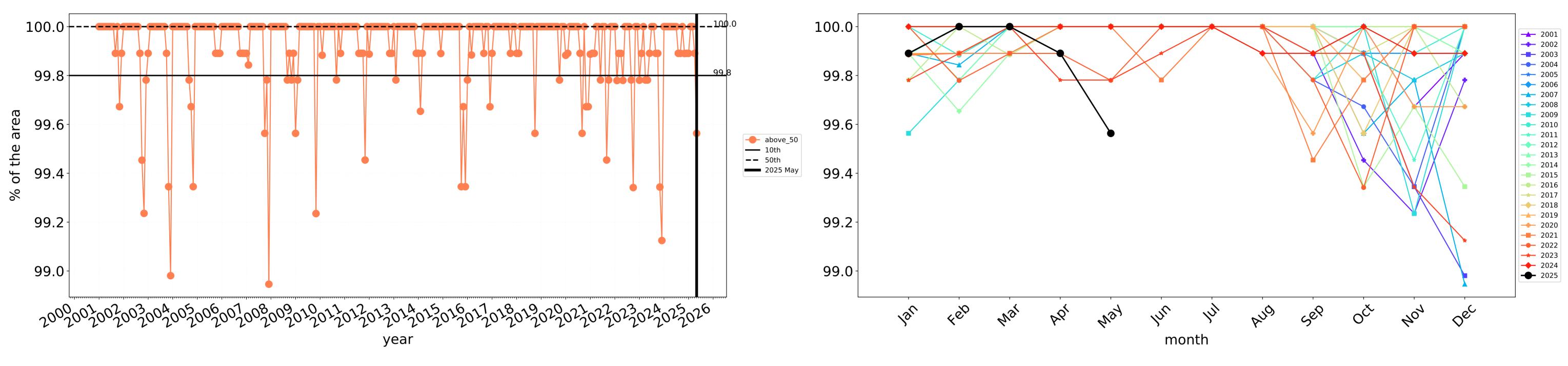
Total Vegetation Cover Decile [%]





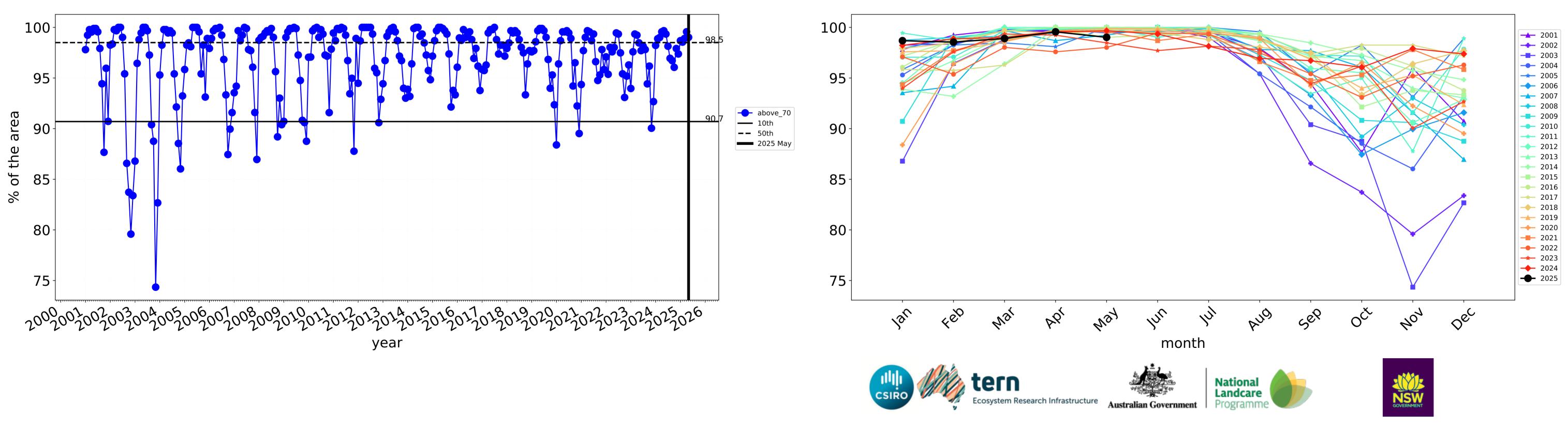
32





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

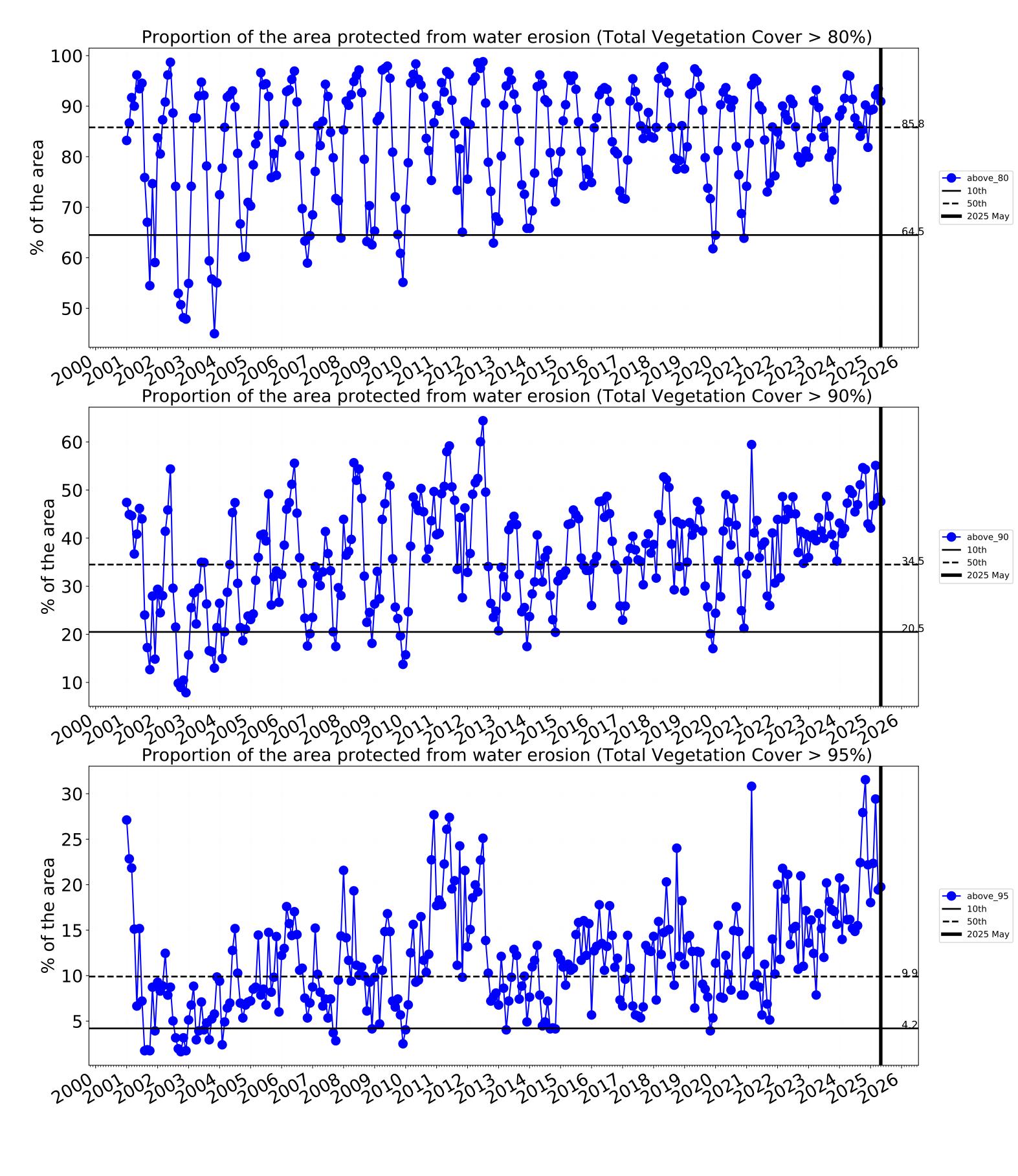
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

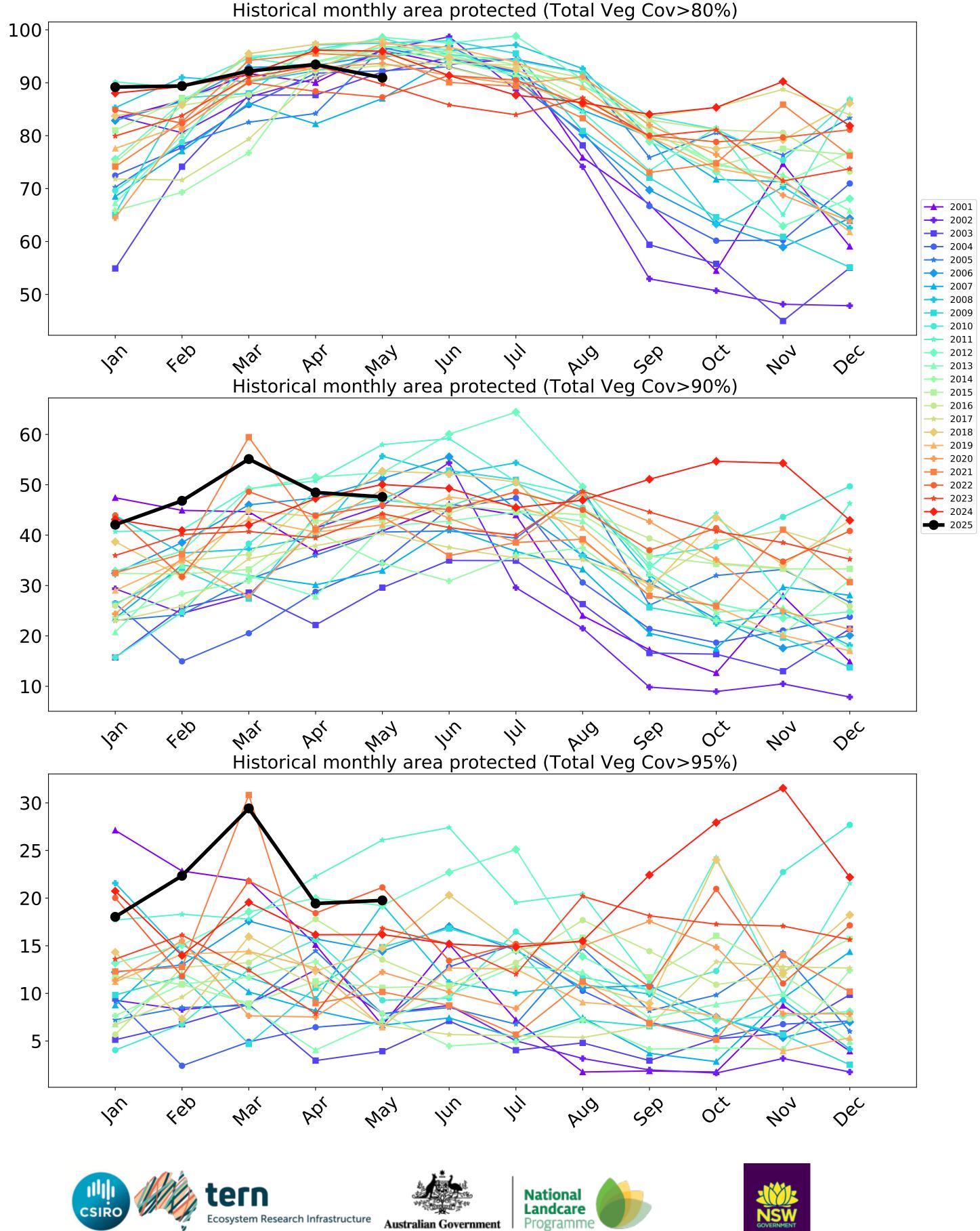




Wind erosion historical monthly area protected (Total Veg Cov >50%)









Production native forests and plantation forests

12%200%

52%70%

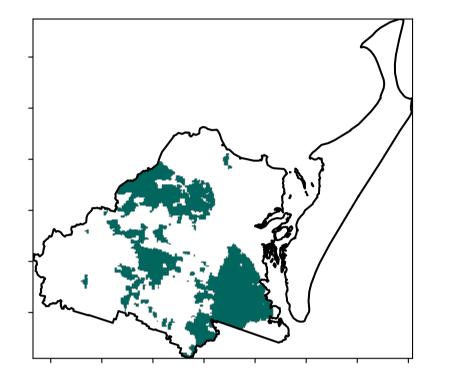
32%50%

0.30%

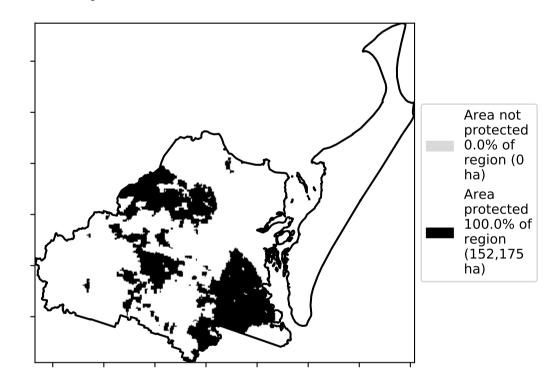
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

Land use and forest cover

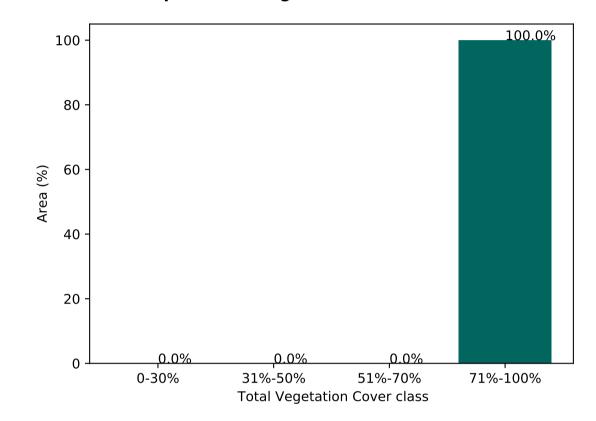
Total Vegetation Cover [%]



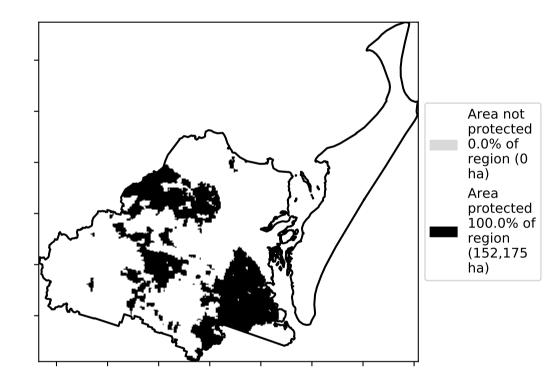
% Area protected from water erosion (>70%)



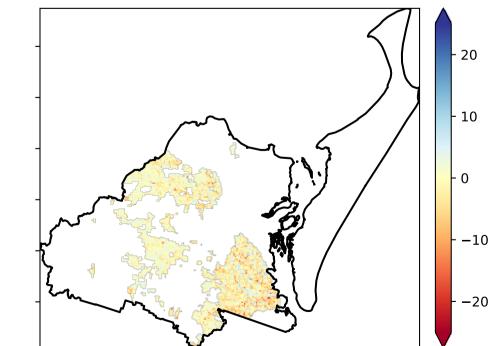




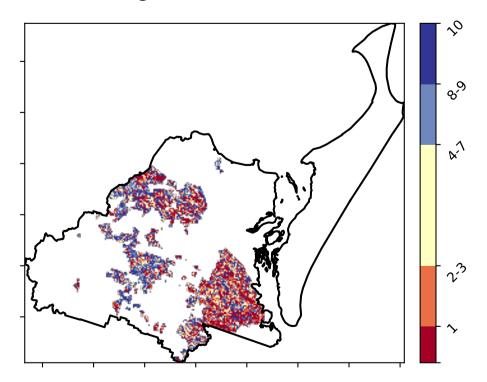
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]

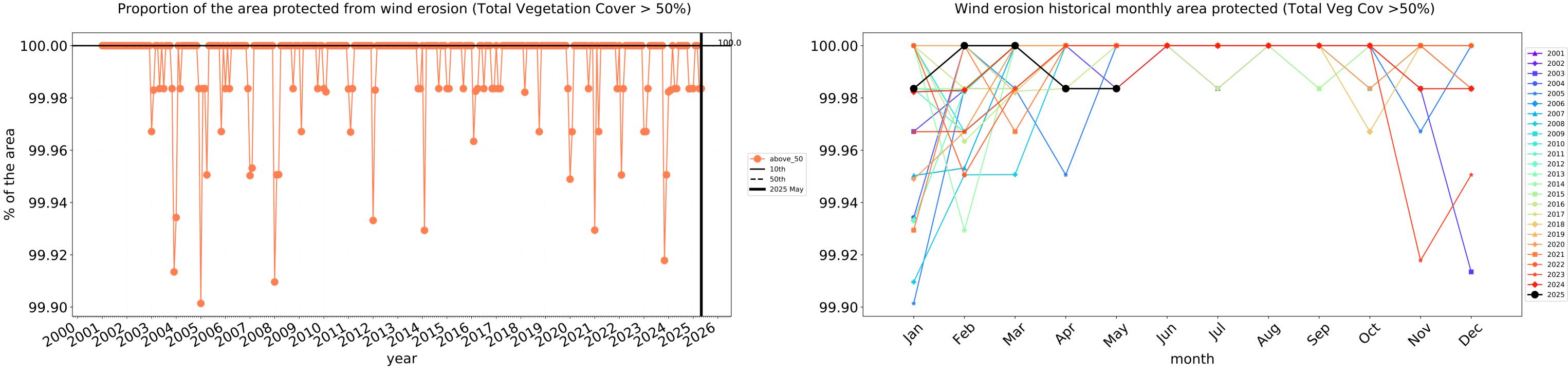


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019. **Total Vegetation Cover Decile [%]**

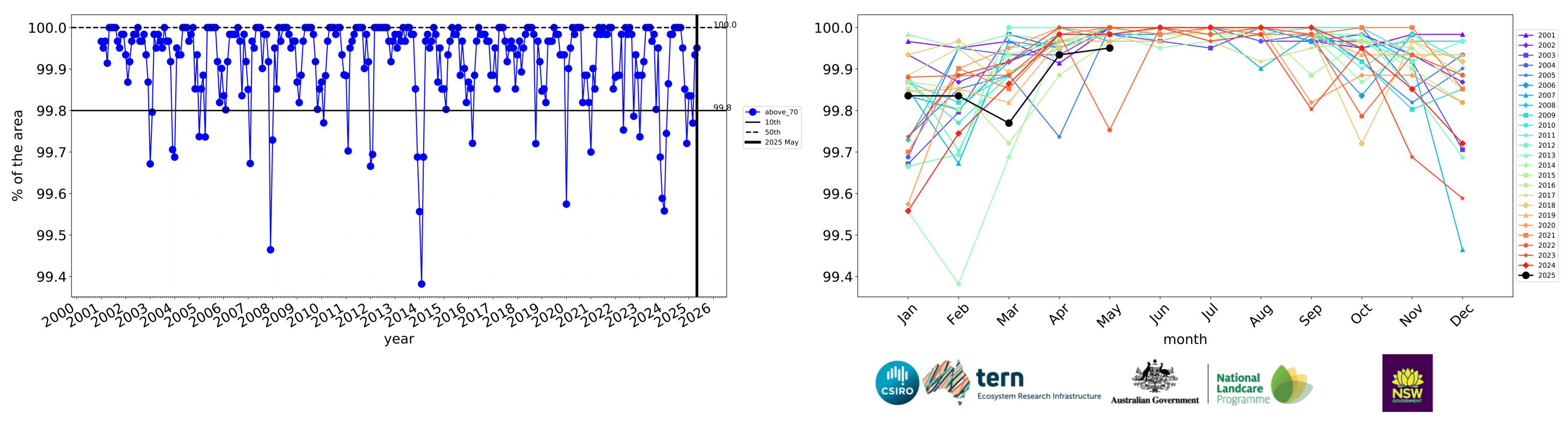




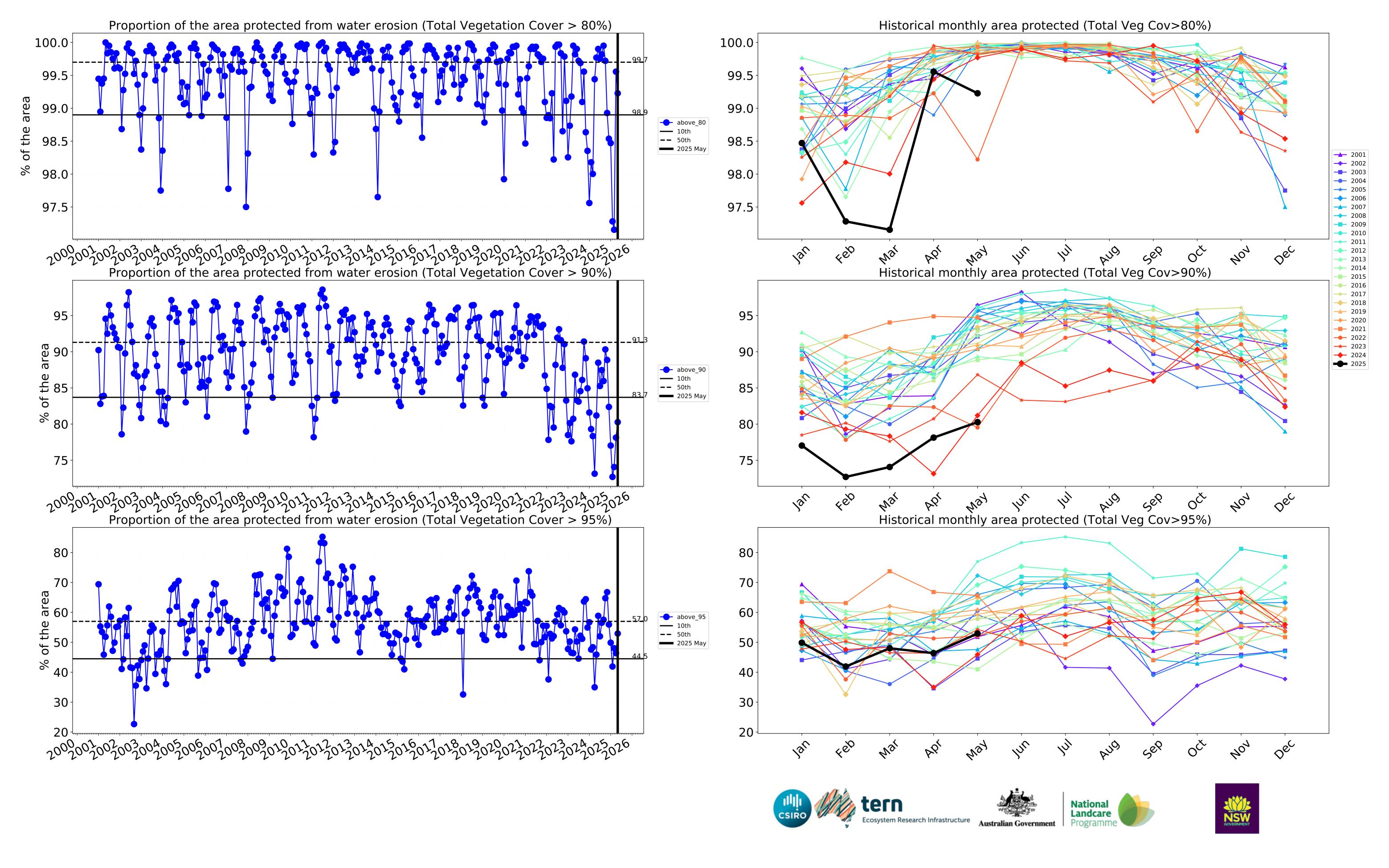




Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



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



Fraser_Coast_(R) (704,275 ha and no data 5,826 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	704,275	99.9% 703,350	99.6% 701,550	98.8% 695,575	96.9% 682,575	81.1% 571,225	50.7% 357,175
Conservation and natural environments	255,350	99.7% 254,650	99.3% 253,450	98.0% 250,250	96.3% 245,850	81.1% 207,200	51.0% 130,250
Conservation and natural environments non forest	17,275	97.8% 16,900	93.8% 16,200	84.9% 14,675	79.3% 13,700	56.7% 9,800	29.7% 5,125
Conservation and natural environments Woodland forest	67,725	99.6% 67,450	99.0% 67,050	97.7% 66,200	96.2% 65,125	83.9% 56,850	56.9% 38,525
Conservation and natural environments Forest (non woodland)	170,350	100.0% 170,300	99.9% 170,200	99.4% 169,375	98.0% 167,025	82.5% 140,550	50.8% 86,600
Agriculture	249,225	100.0% 249,200	99.9% 249,000	99.7% 248,575	98.6% 245,675	85.5% 212,975	53.7% 133,950
Grazing	224,775	100.0% 224,775	99.9% 224,650	99.8% 224,350	99.4% 223,350	89.5% 201,200	57.4% 128,925
Grazing non forest	127,125	100.0% 127,125	99.9% 127,000	99.7% 126,775	99.0% 125,900	86.6% 110,125	53.5% 67,975
Grazing Woodland forest	41,900	100.0% 41,900	100.0% 41,900	99.9% 41,850	99.8% 41,800	94.7% 39,675	66.8% 27,975
Grazing - Forest (non woodland)	55,750	100.0% 55,750	100.0% 55,750	100.0% 55,725	99.8% 55,650	92.2% 51,400	59.1% 32,975
Irrigation	22,900	99.9% 22,875	99.6% 22,800	99.0% 22,675	90.9% 20,825	47.6% 10,900	19.8% 4,525
Production native forests and plantation forests	152,175	100.0% 152,175	100.0% 152,150	100.0% 152,100	99.2% 151,000	80.3% 122,150	52.9% 80,550

