

# Total vegetation cover soil protection

Region:LGA Dandaragan\_(S) WA

Date: August 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 cover class that 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>



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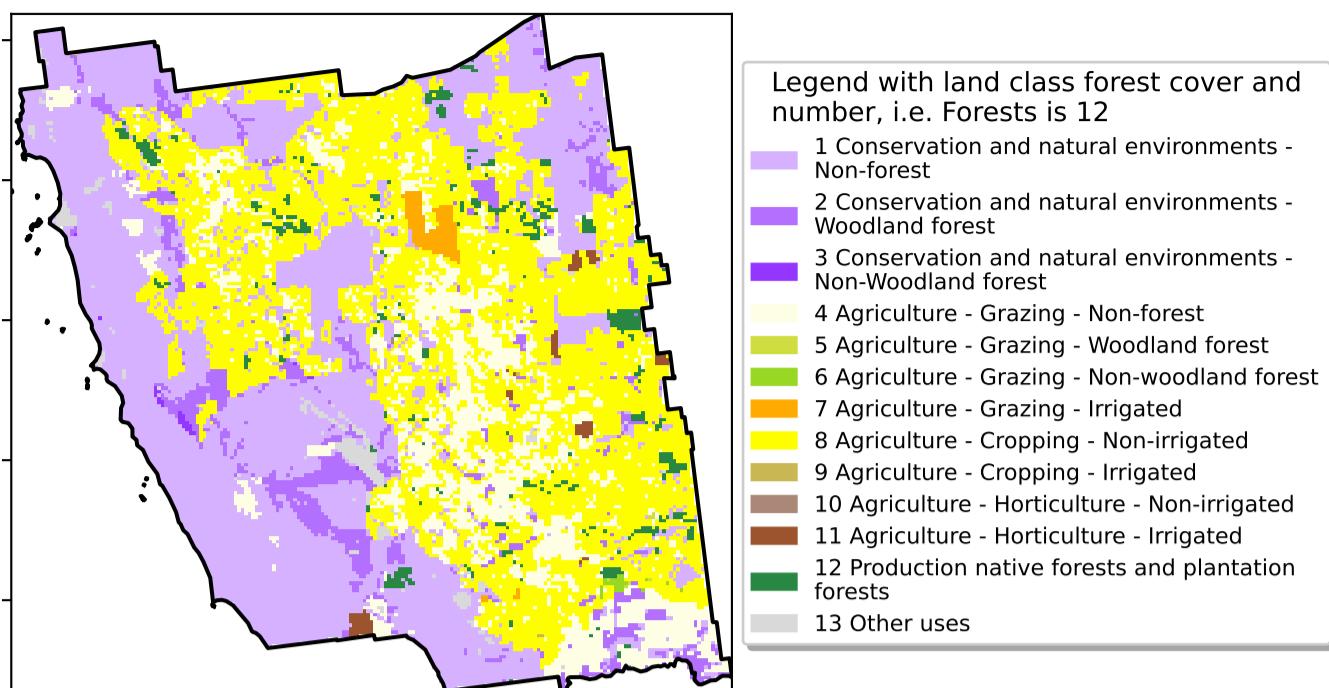
**National  
Landcare  
Programme**



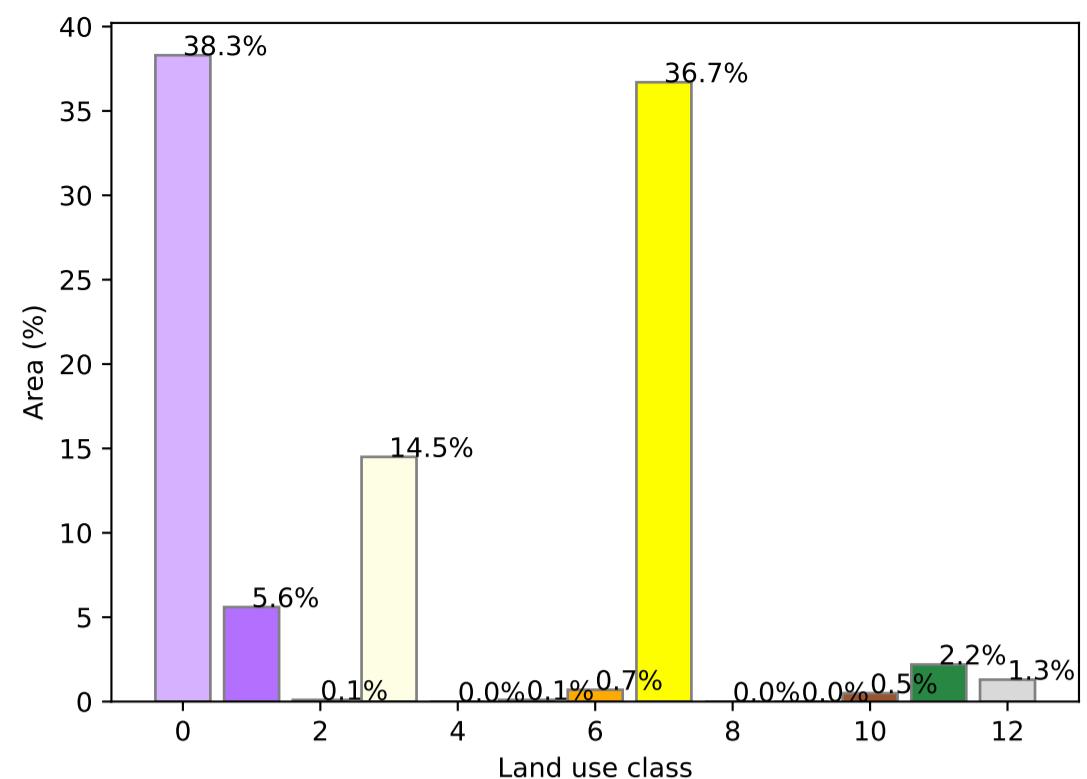
# Vegetation Cover Aug 2025

Land use and forest cover

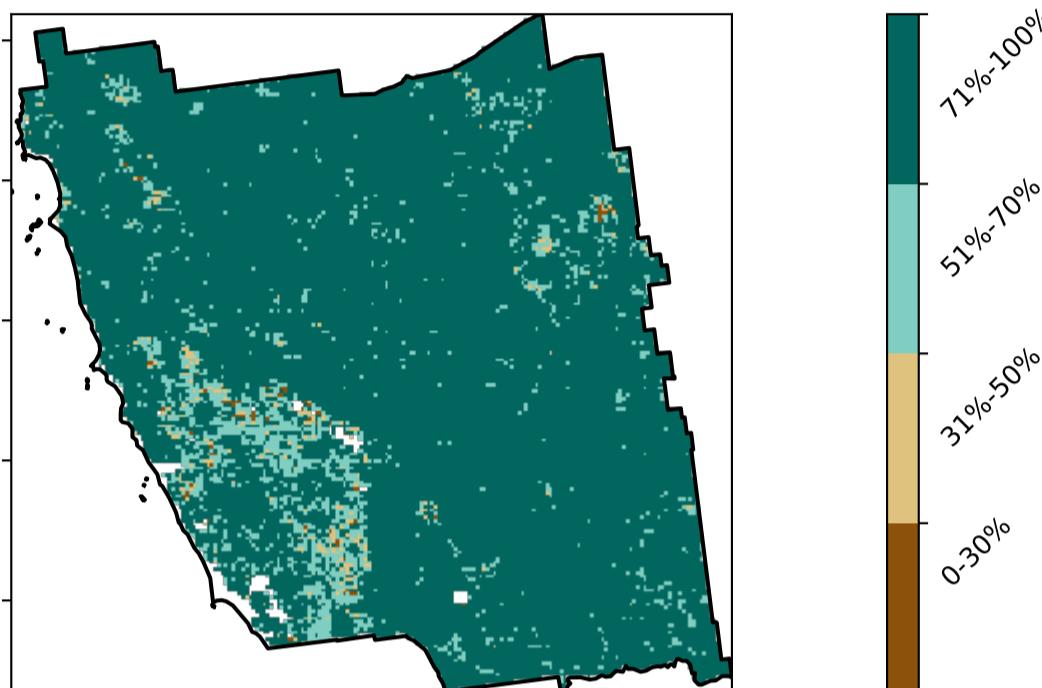
Catchment Scale  
Land Use and Forests  
of Australia (2018)  
Derived from  
Catchment Scale Land  
Use of Australia  
(2018) and Forests  
of Australia (2018)



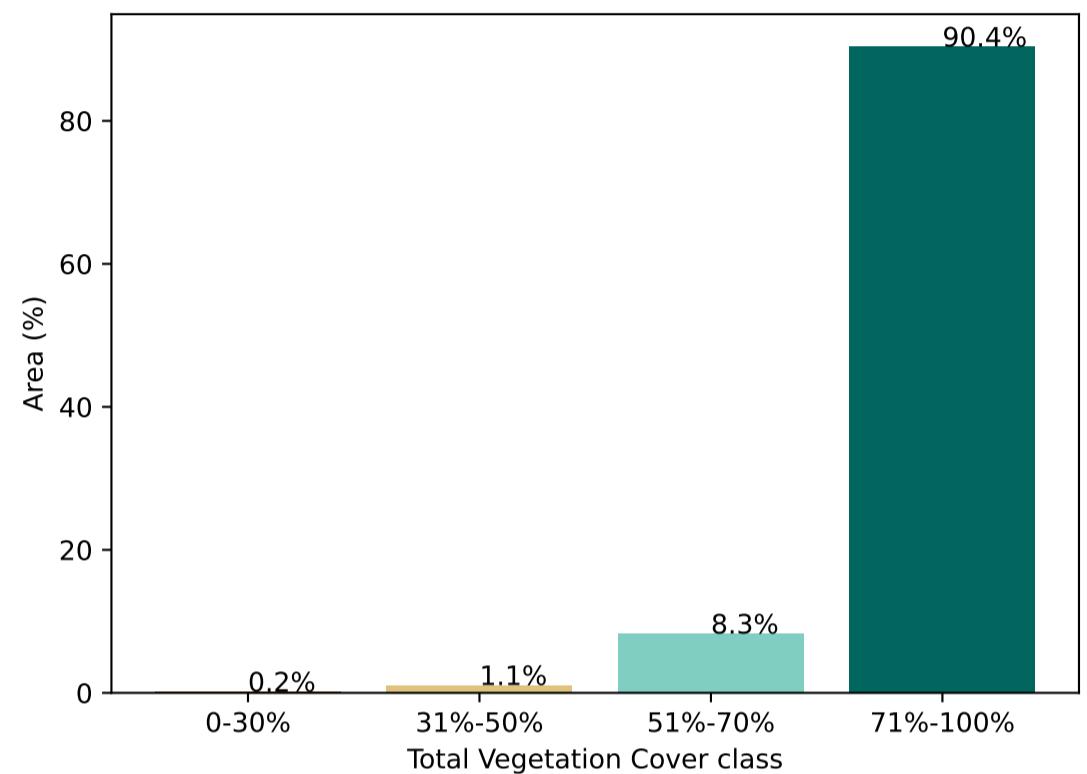
Proportion of each land class in area



Total Vegetation Cover [%]



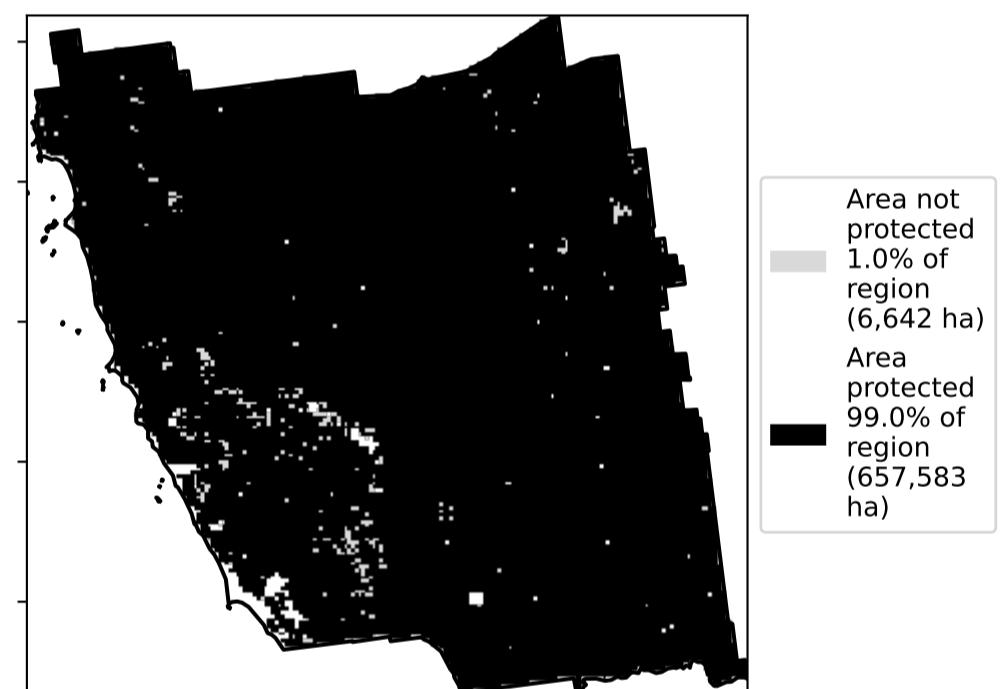
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

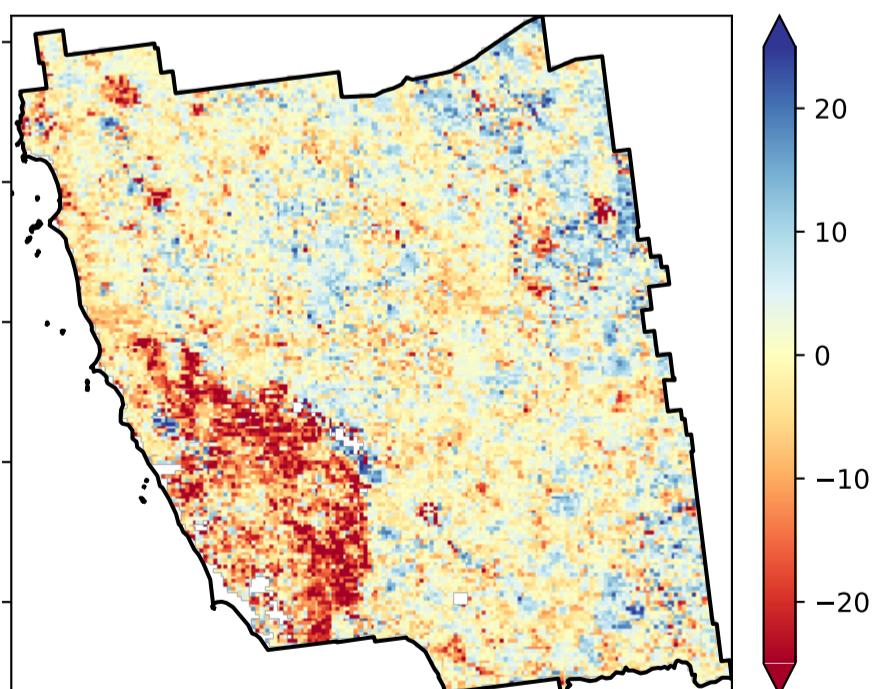


% Area protected from wind erosion (>50%)



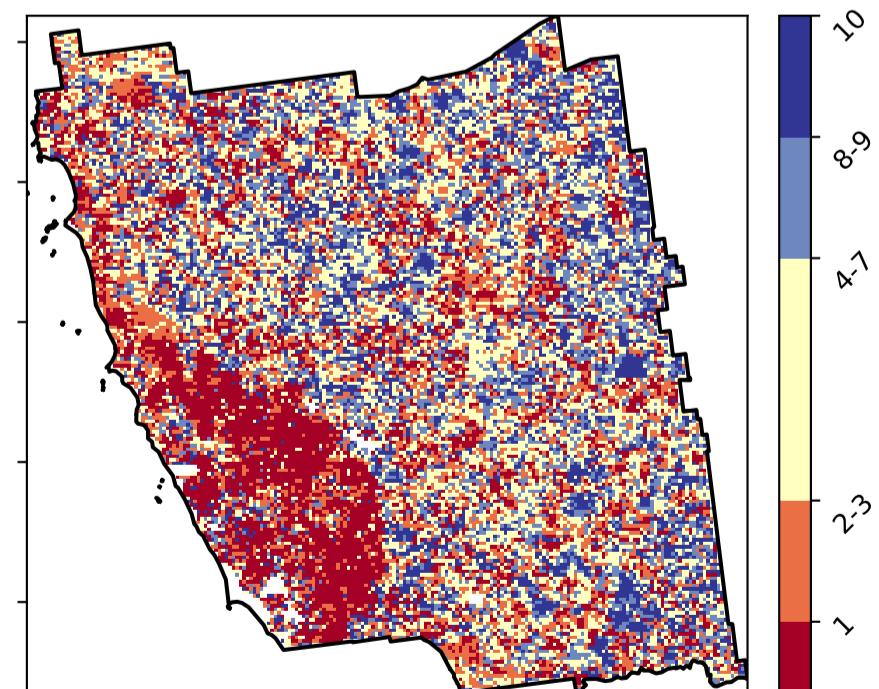
Total Vegetation Cover Anomaly [%]

Anomaly show how many percentage 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 [%]



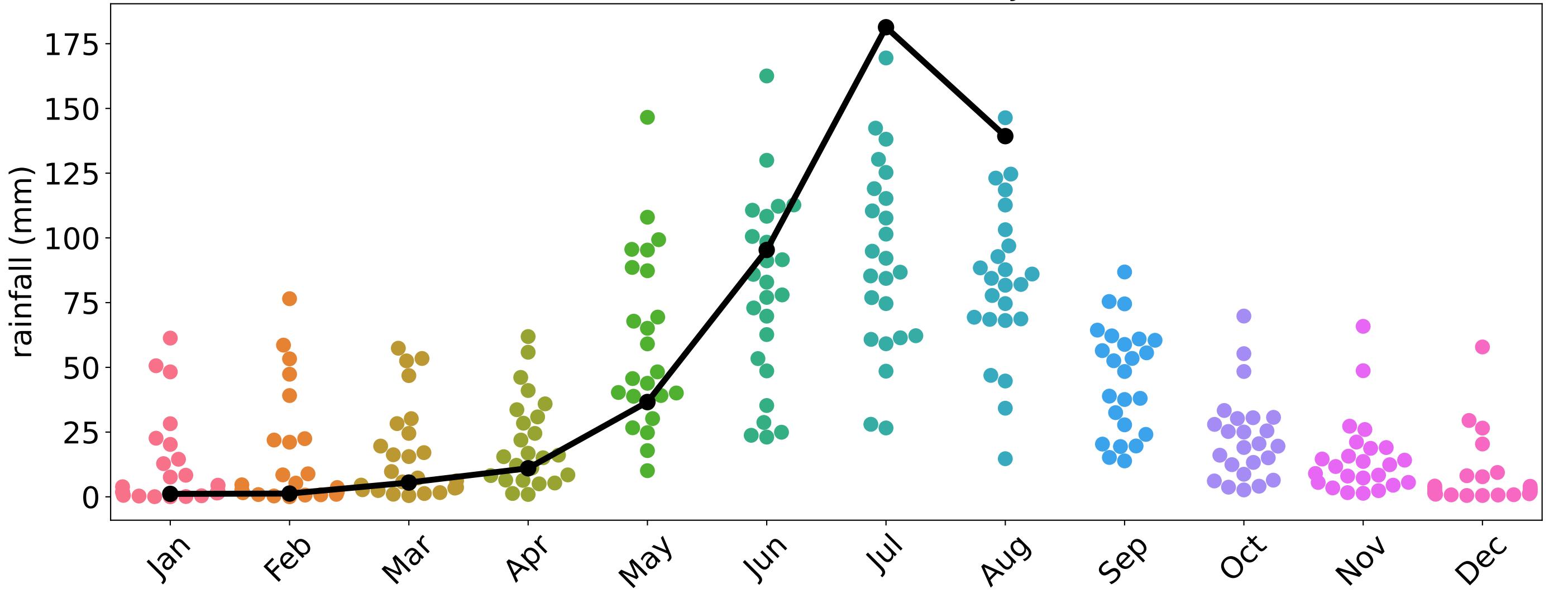
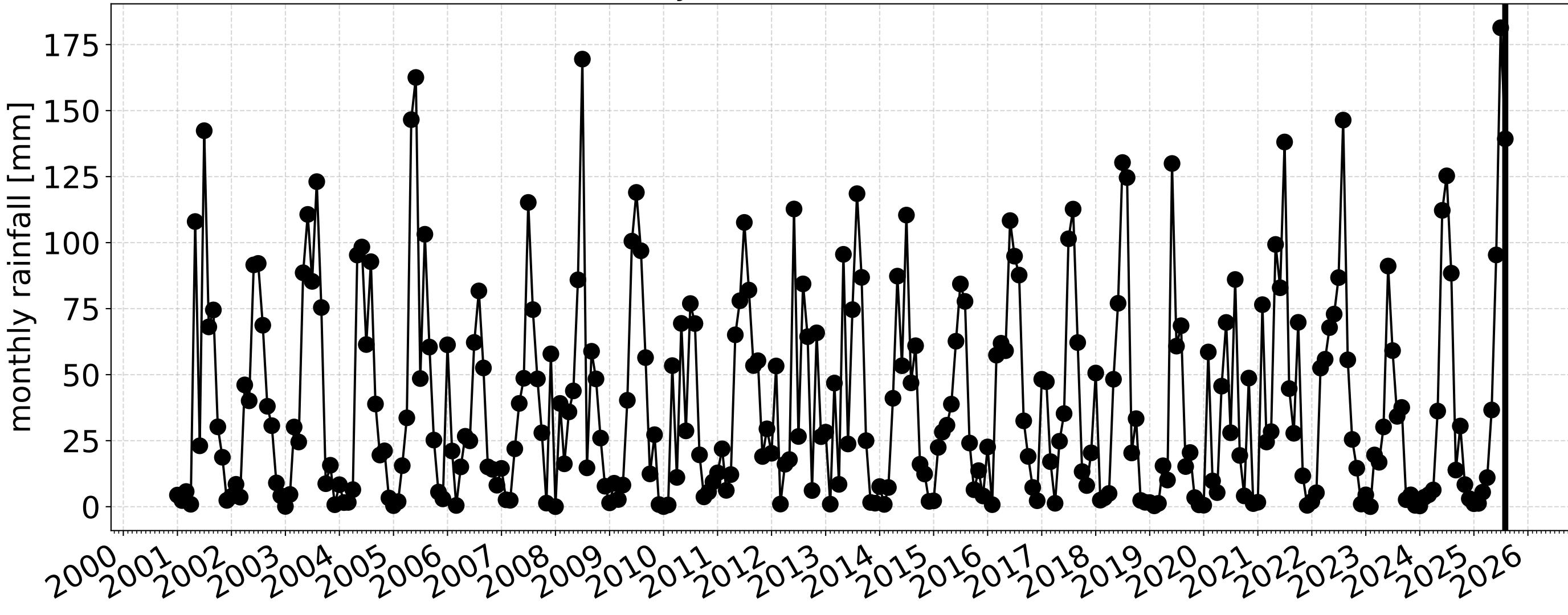
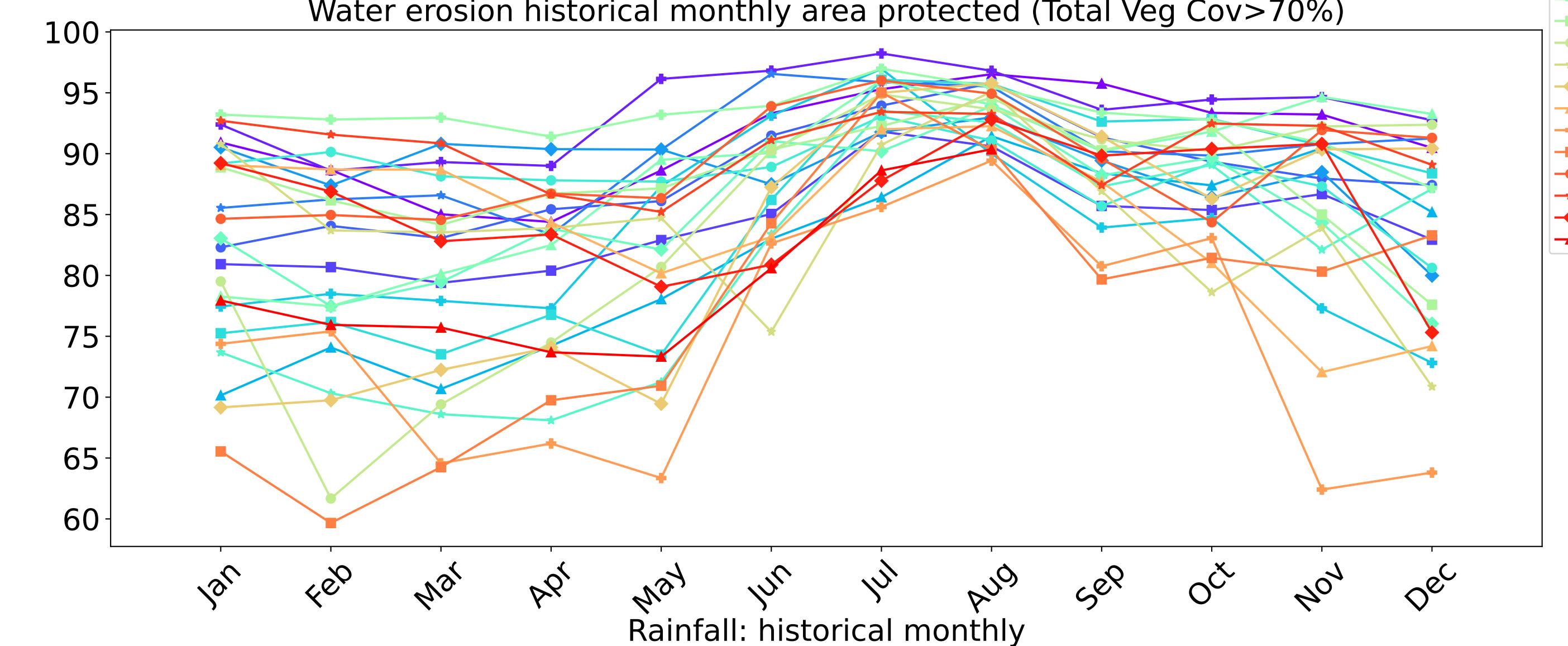
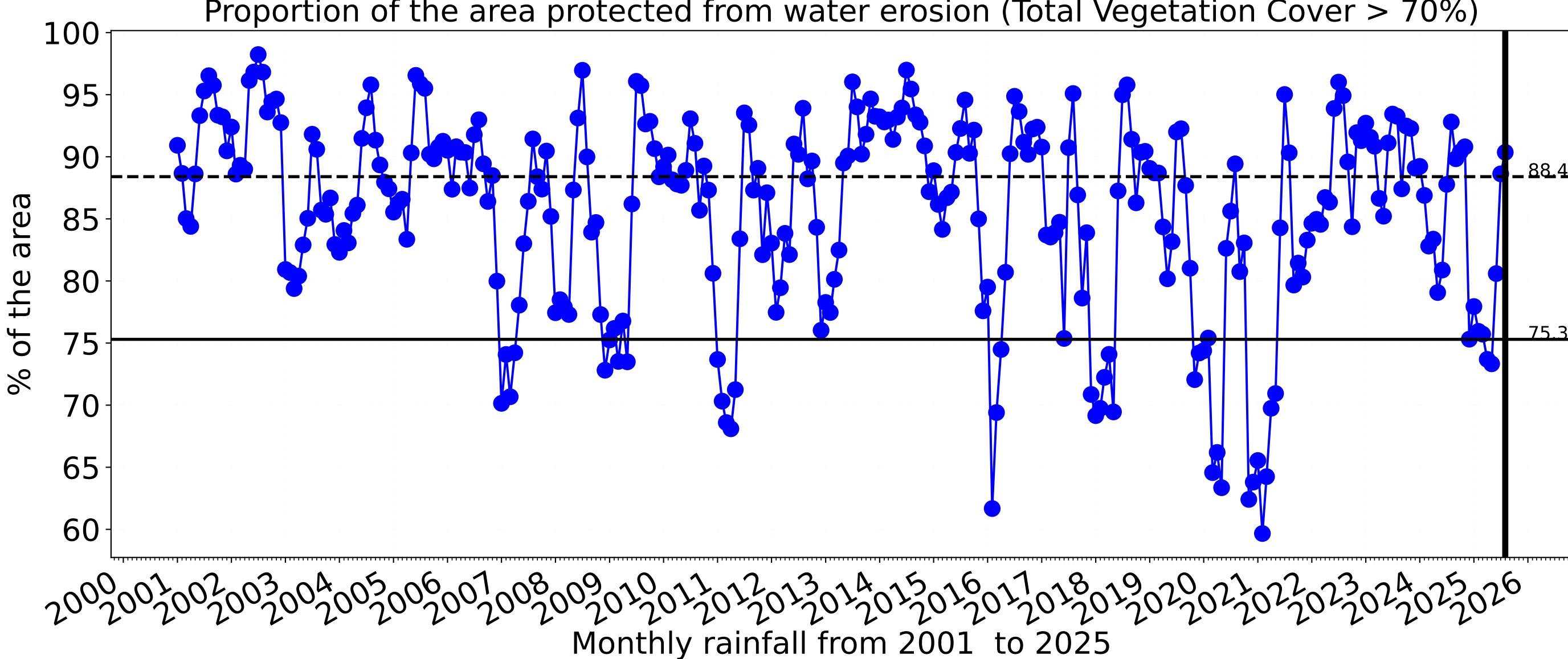
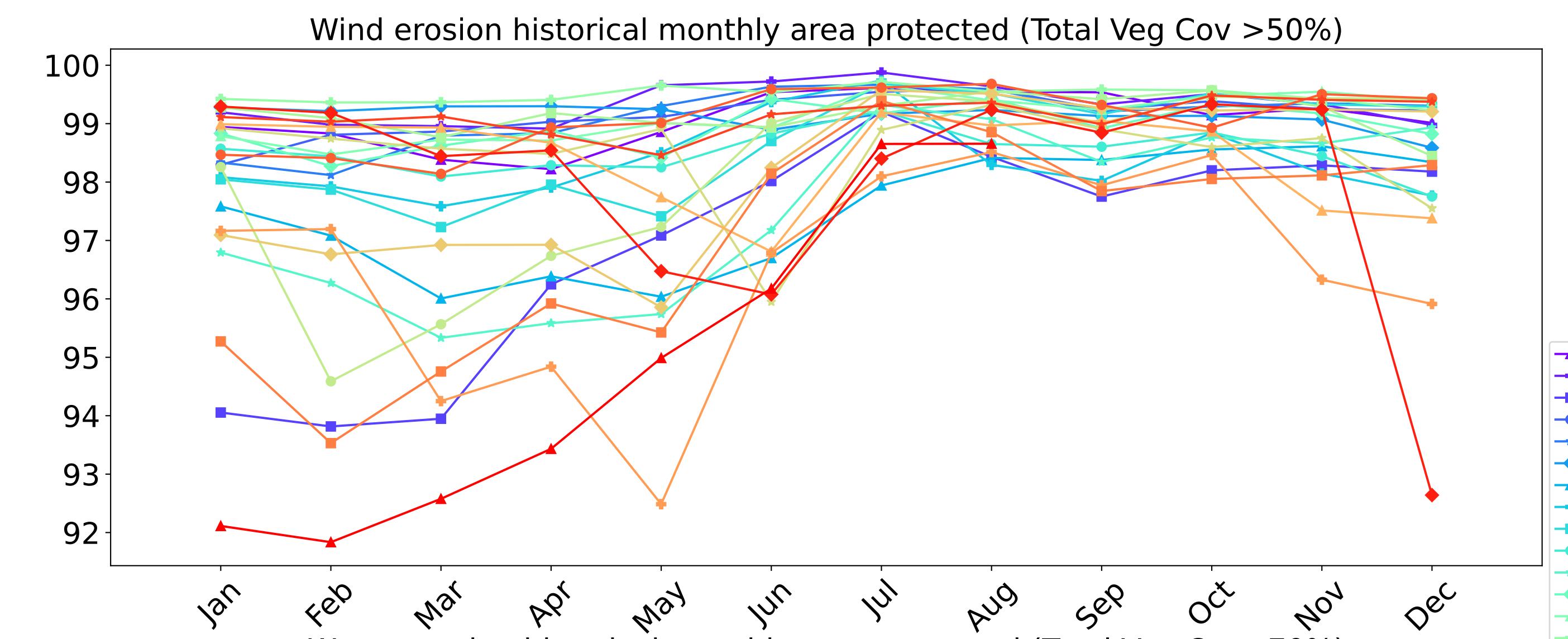
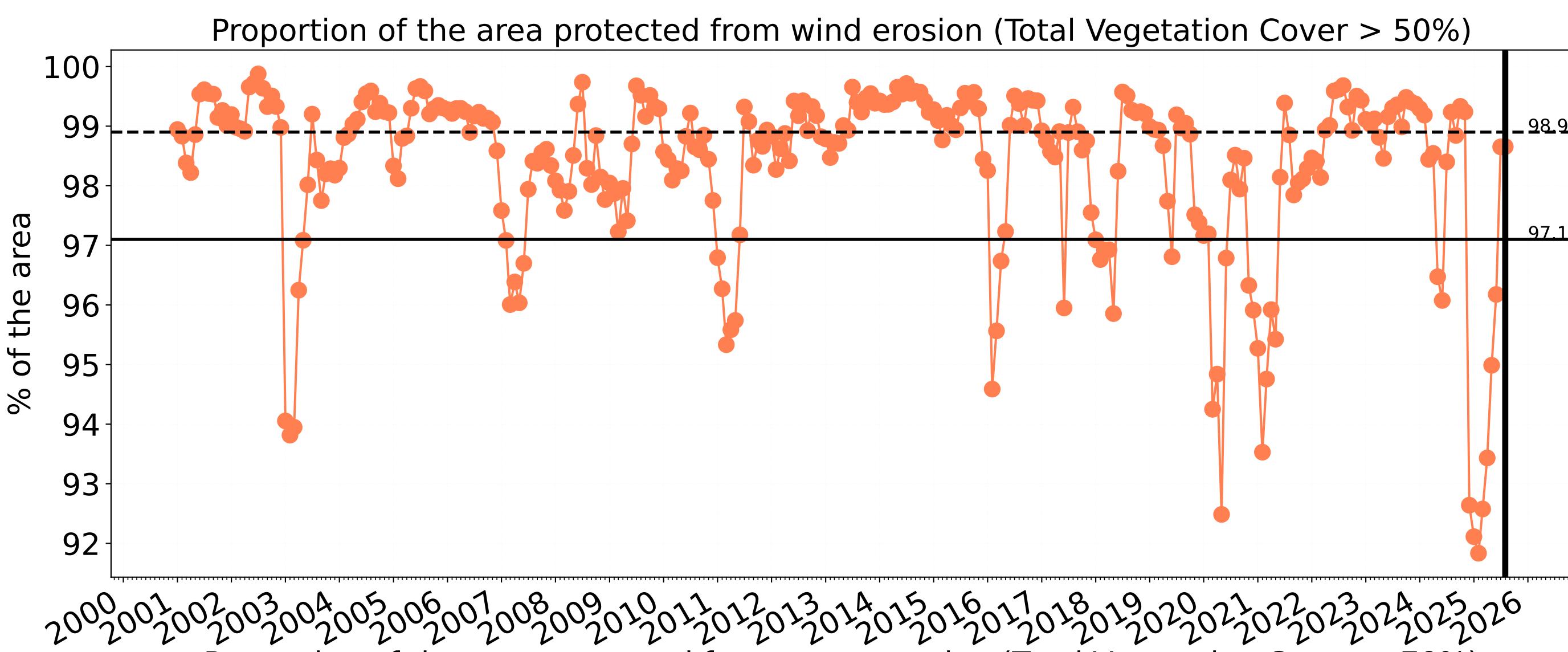
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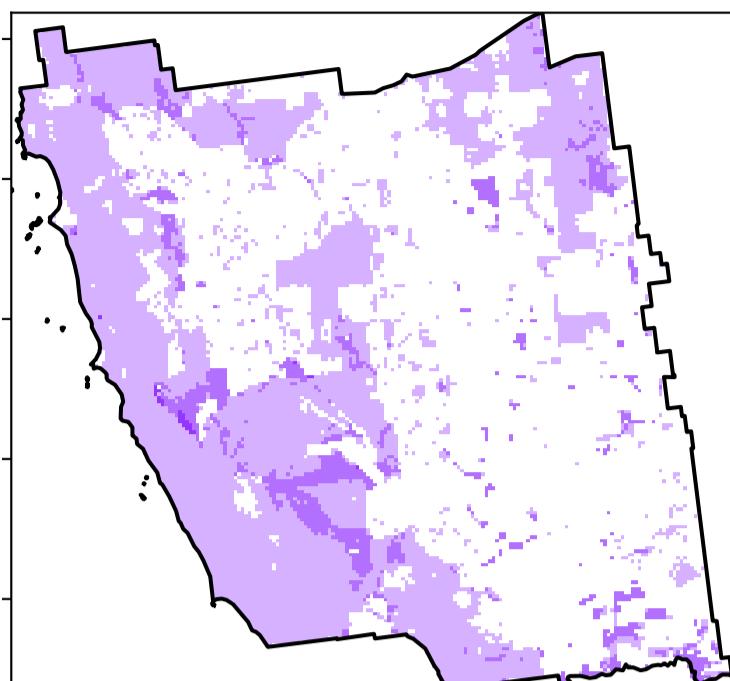
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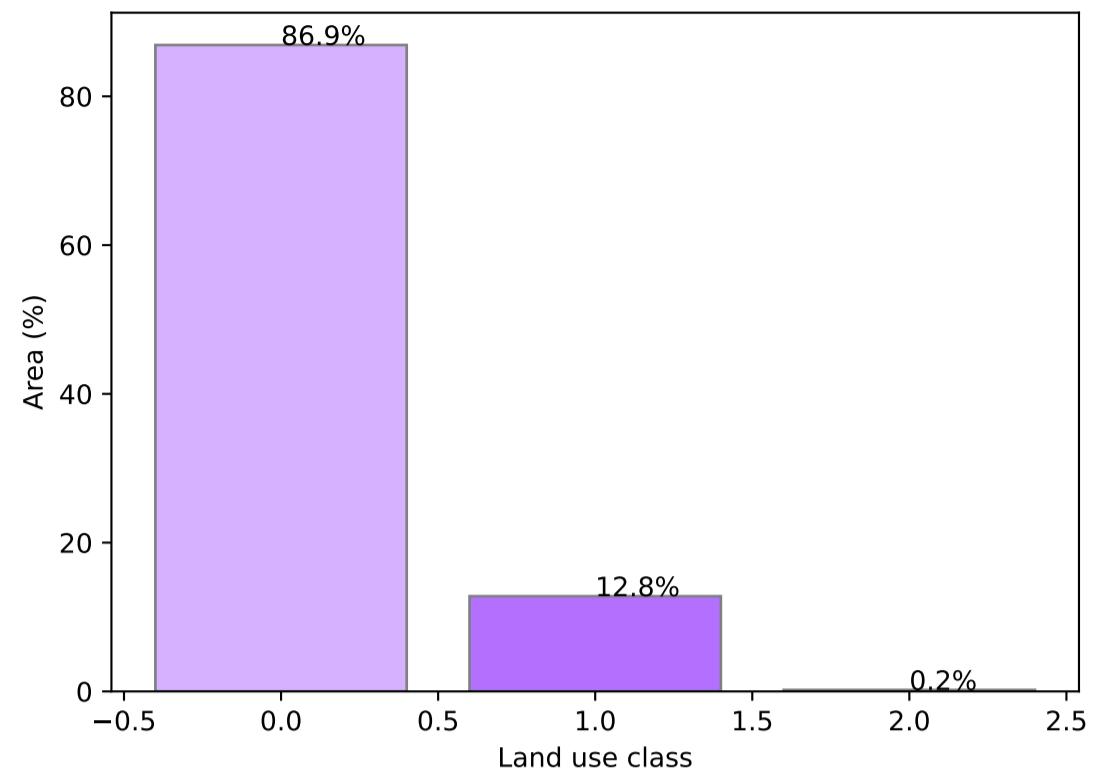
# Conservation and natural environments

Land use and forest cover

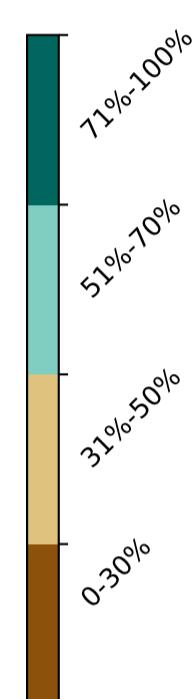
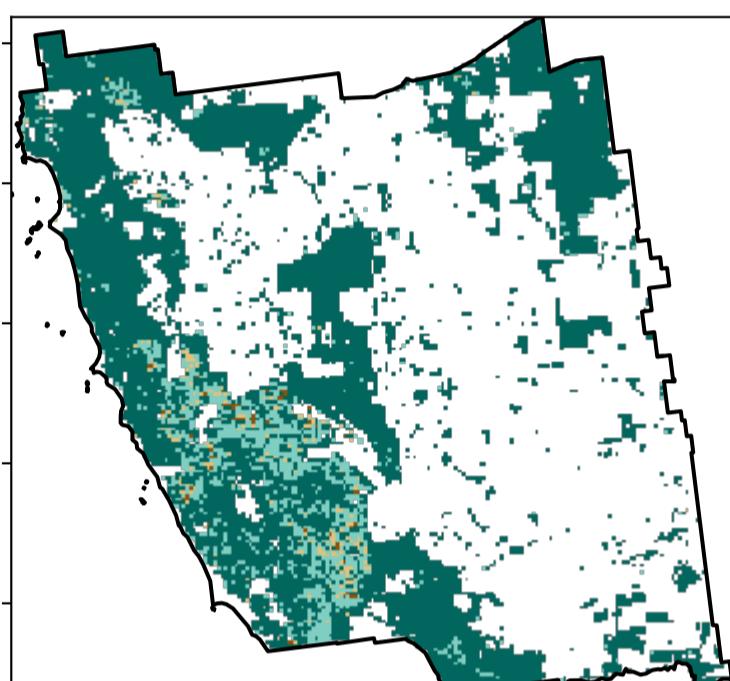


Catchment Scale  
Land Use and Forests  
of Australia (2018)  
Derived from  
Catchment Scale Land  
Use of Australia  
(2018) and Forests  
of Australia (2018)

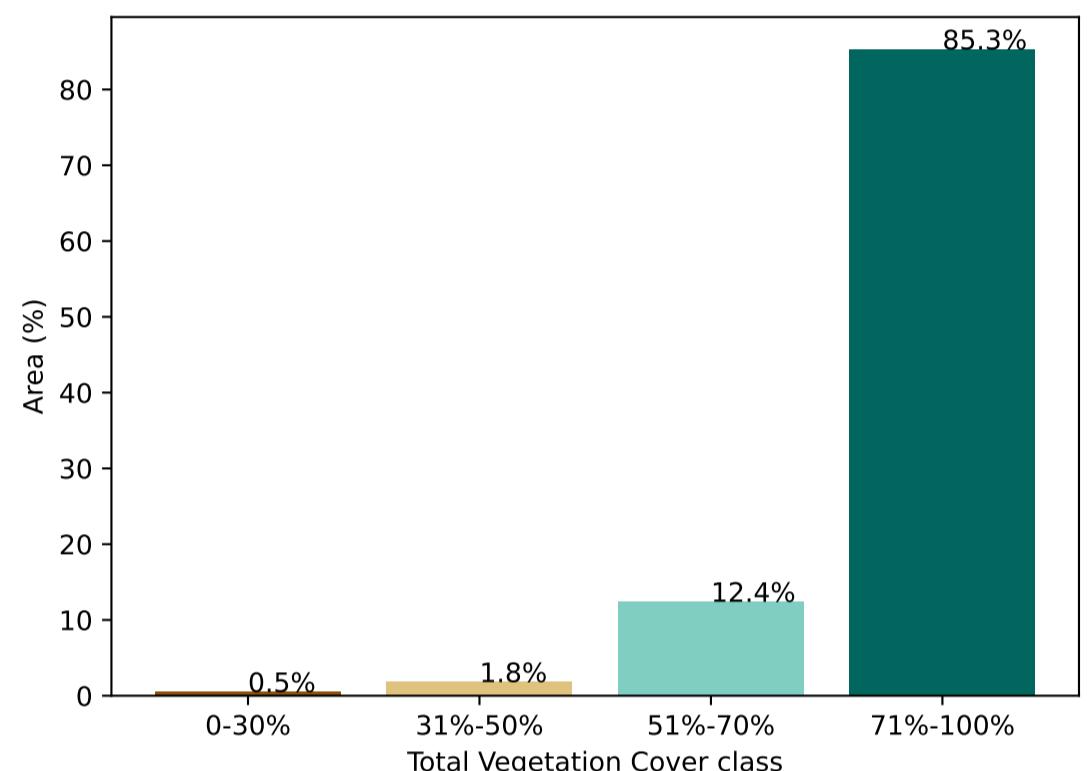
Proportion of each land class in area



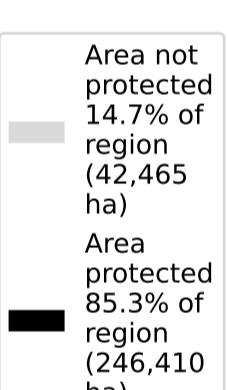
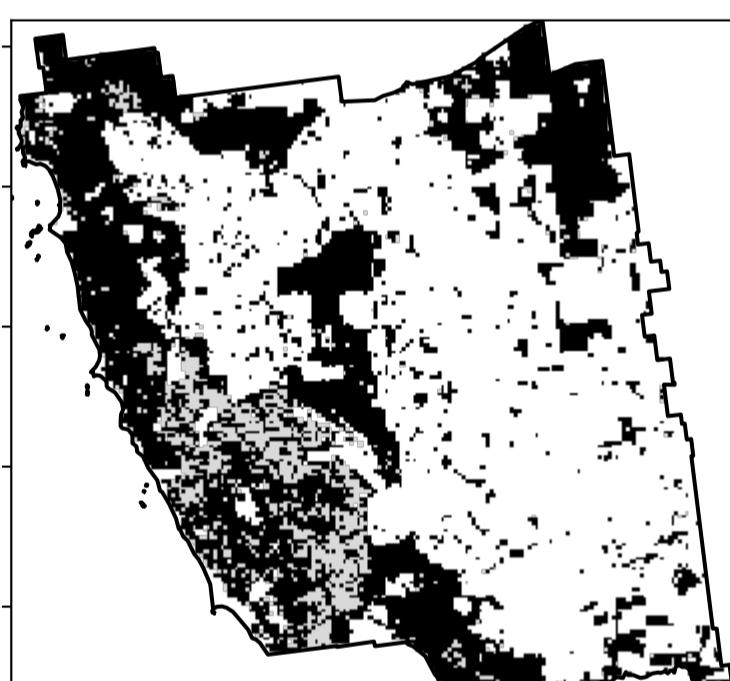
Total Vegetation Cover [%]



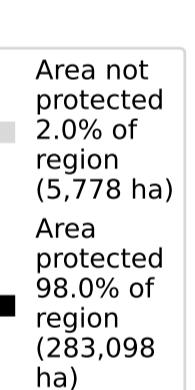
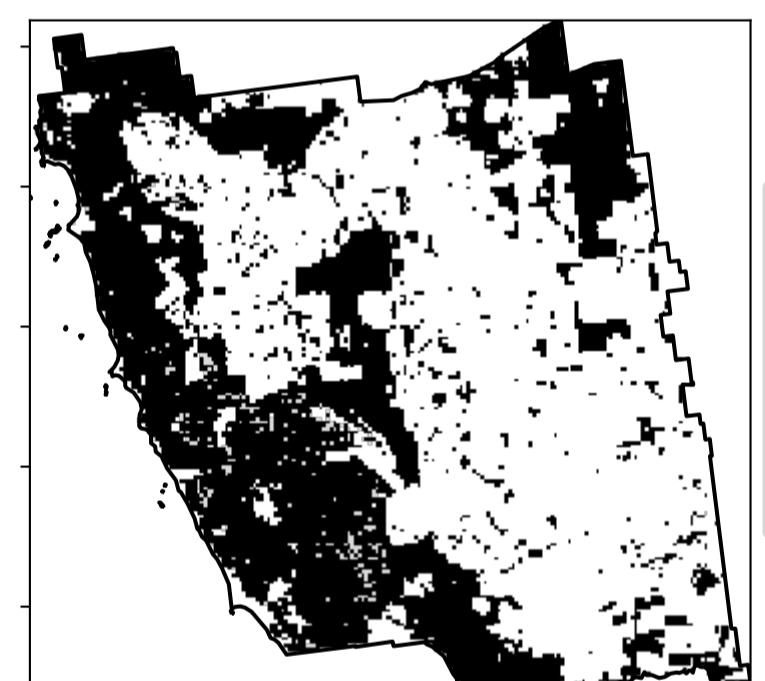
Proportion of vegetation cover class in area



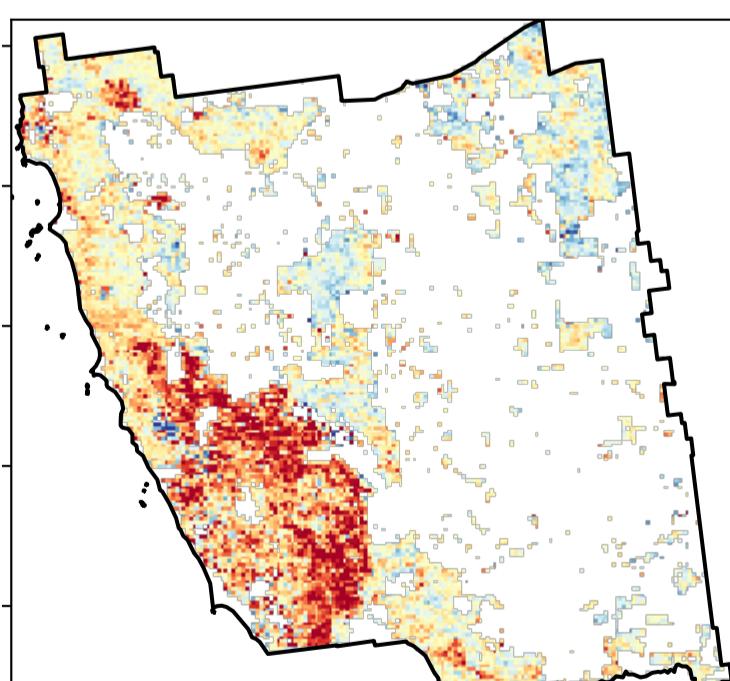
% Area protected from water erosion (>70%)



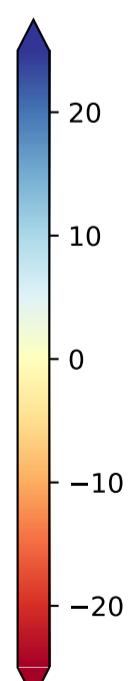
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]

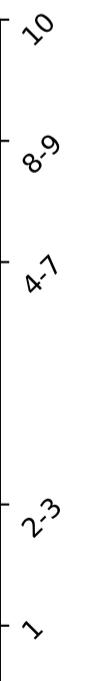
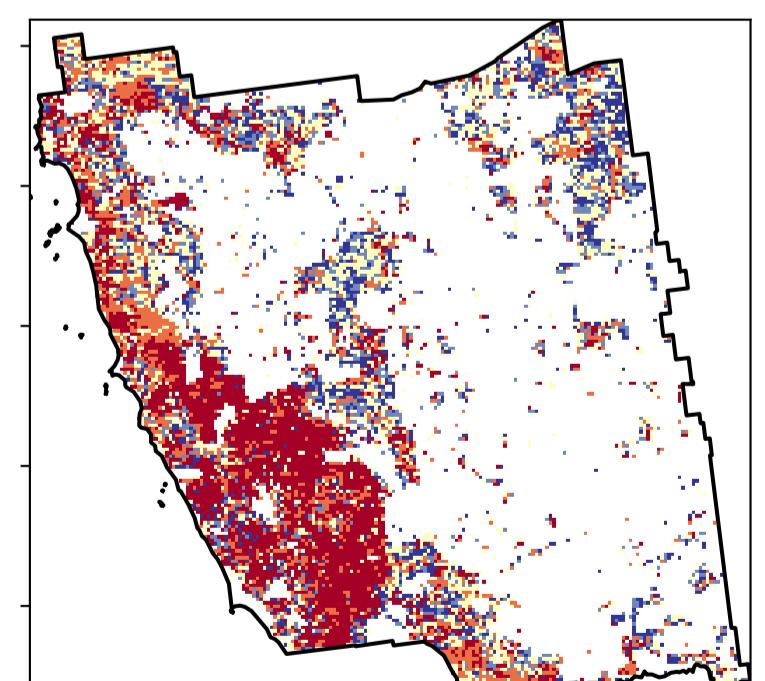


Anomaly show how many percentage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



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 [%]



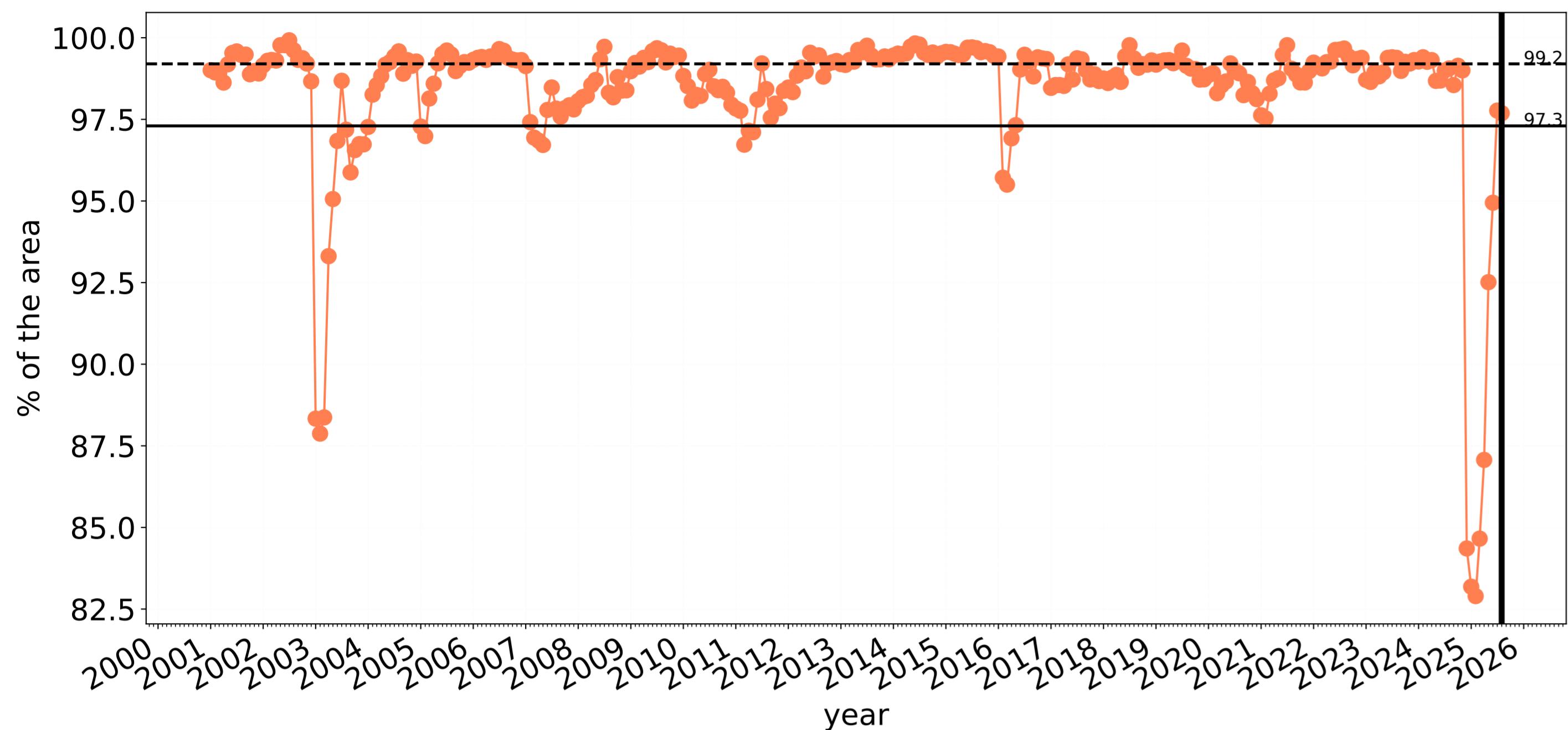
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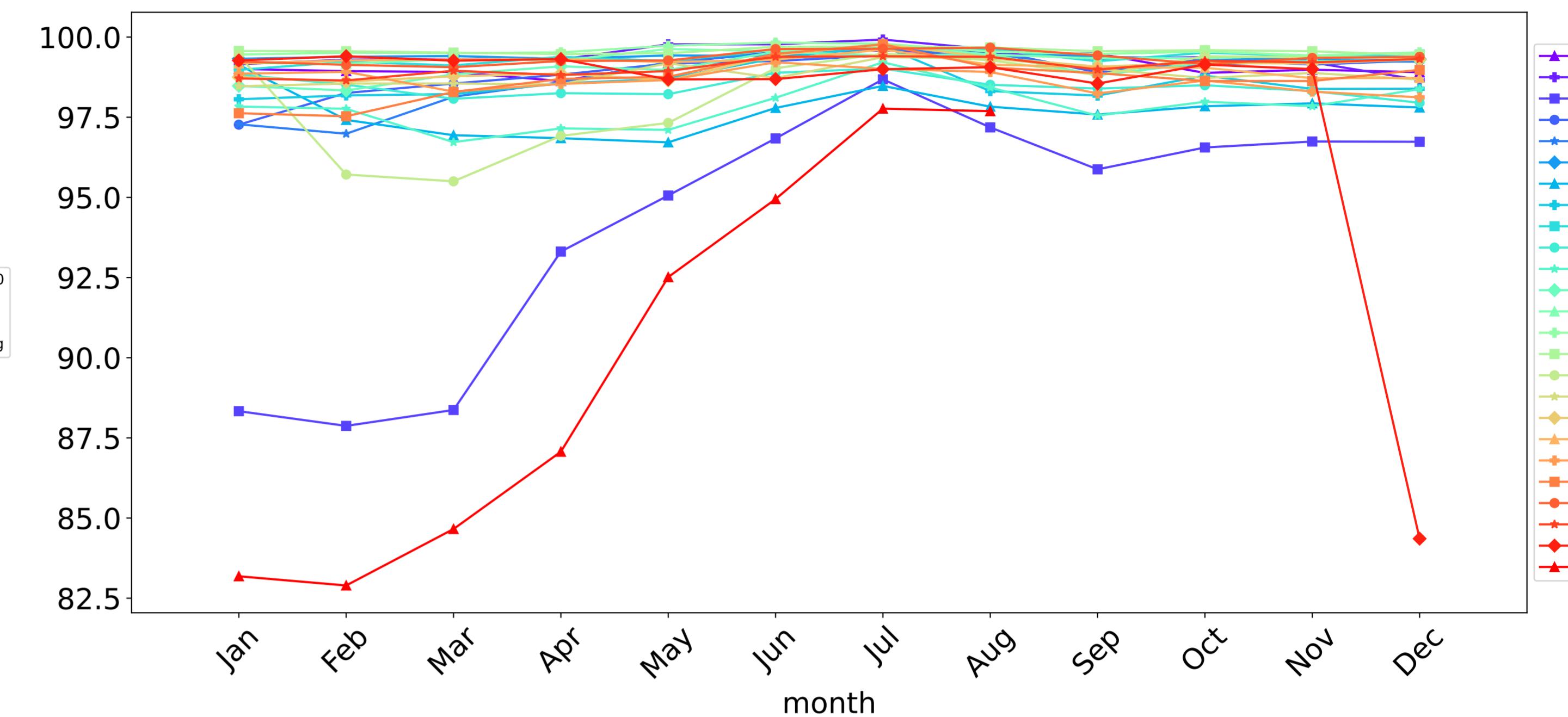


## Conservation and natural environments timeseries

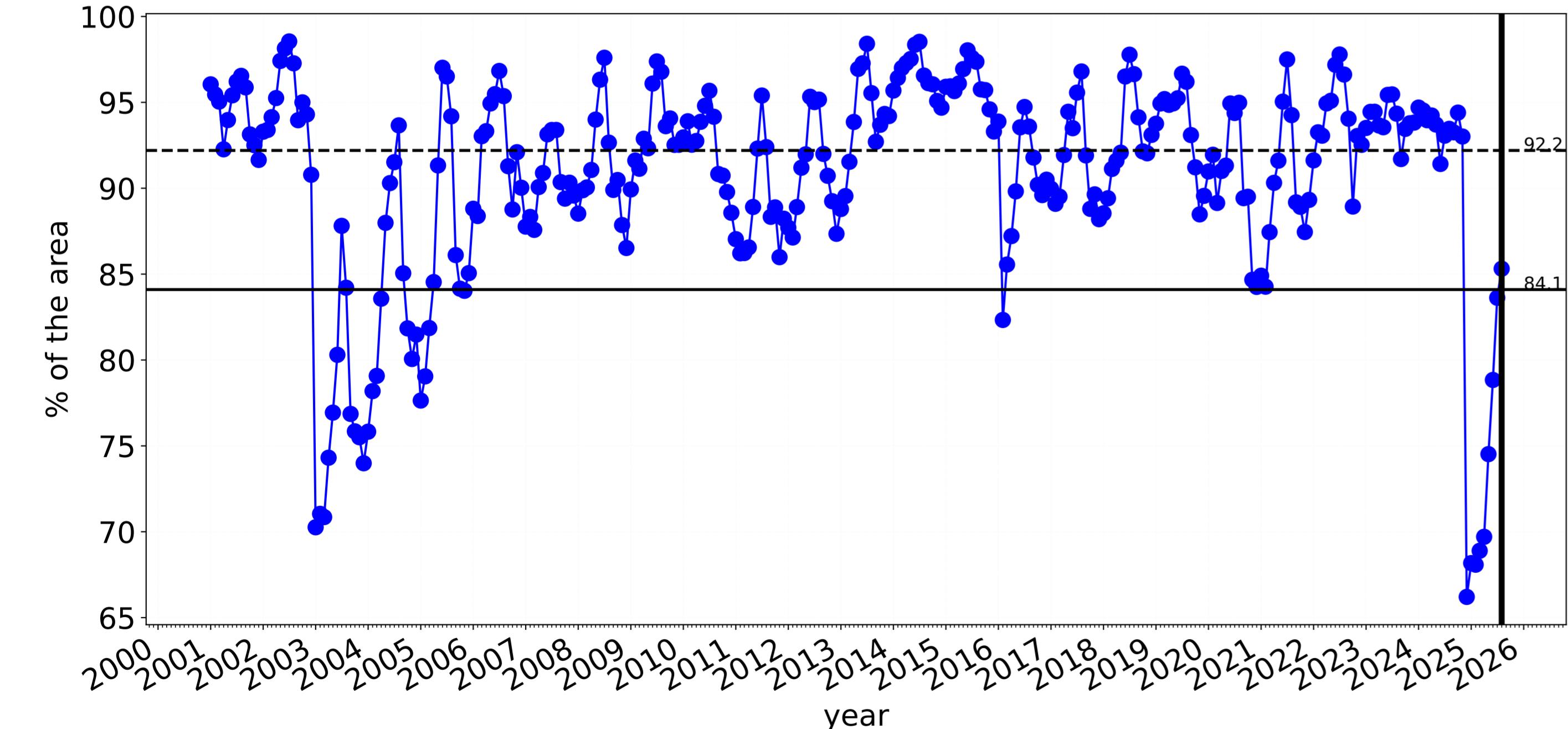
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



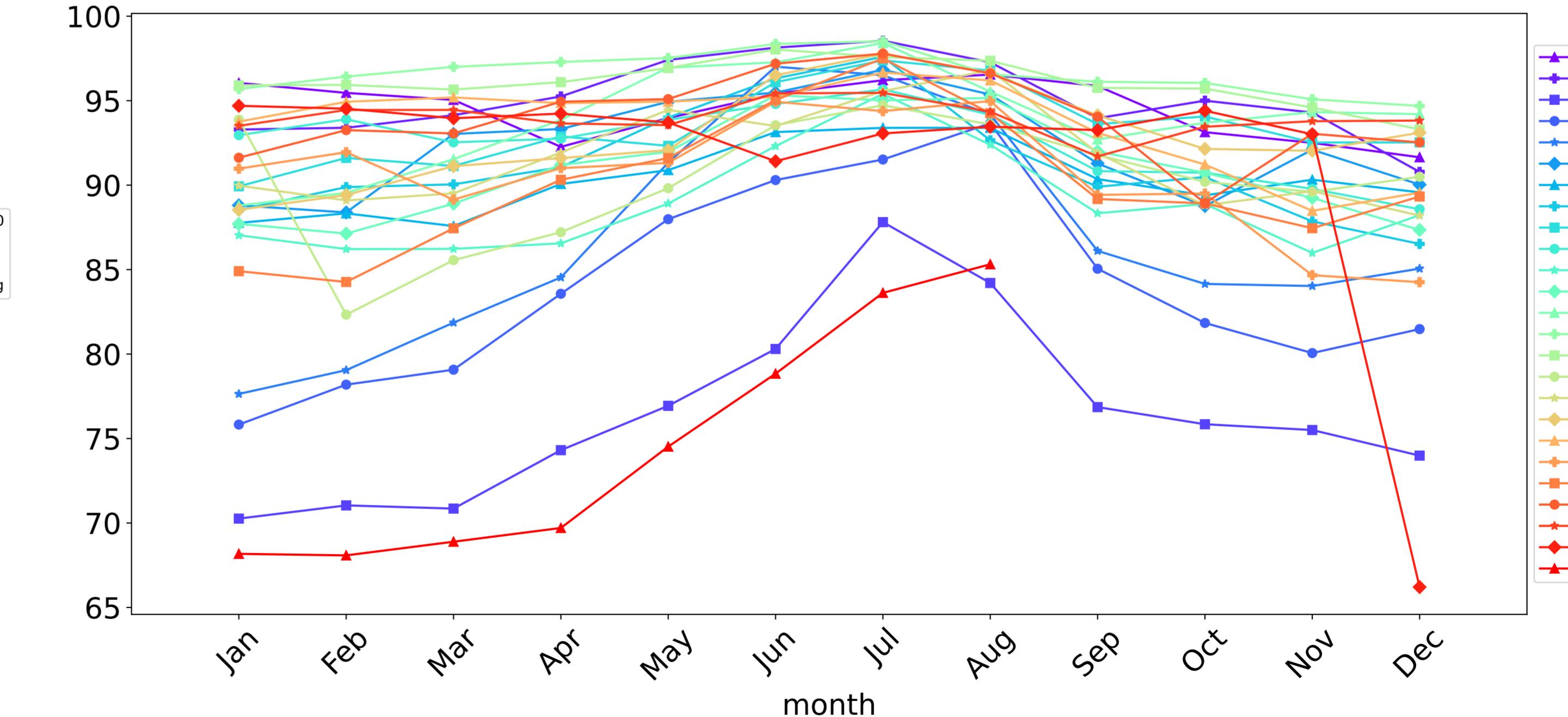
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



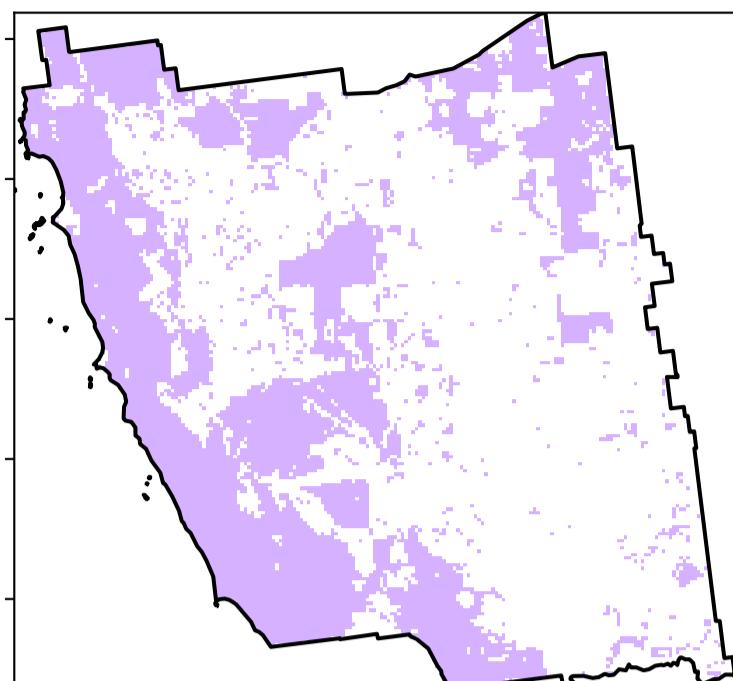
Water erosion historical monthly area protected (Total Veg Cov >70%)



# Conservation and natural environments non forest

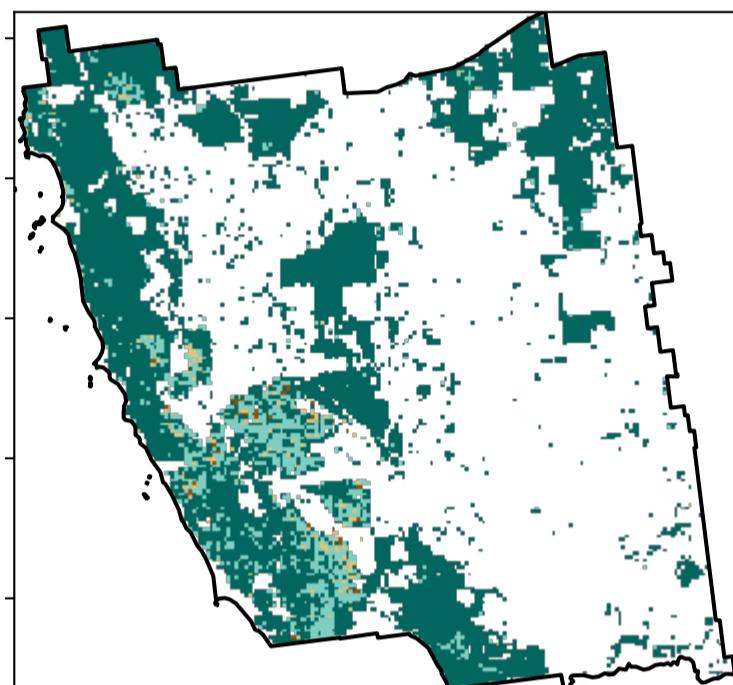
Land use and forest cover

Catchment Scale  
Land Use and Forests  
of Australia (2018)  
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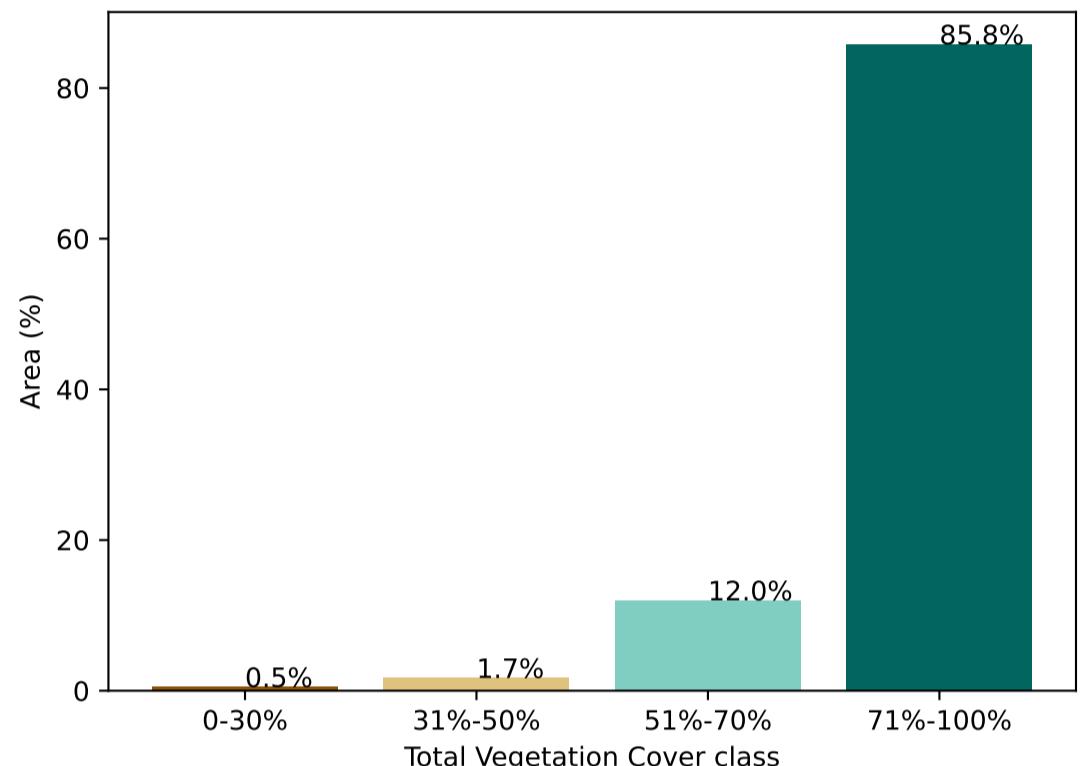
1 Conservation and natural environments - Non-forest

Total Vegetation Cover [%]

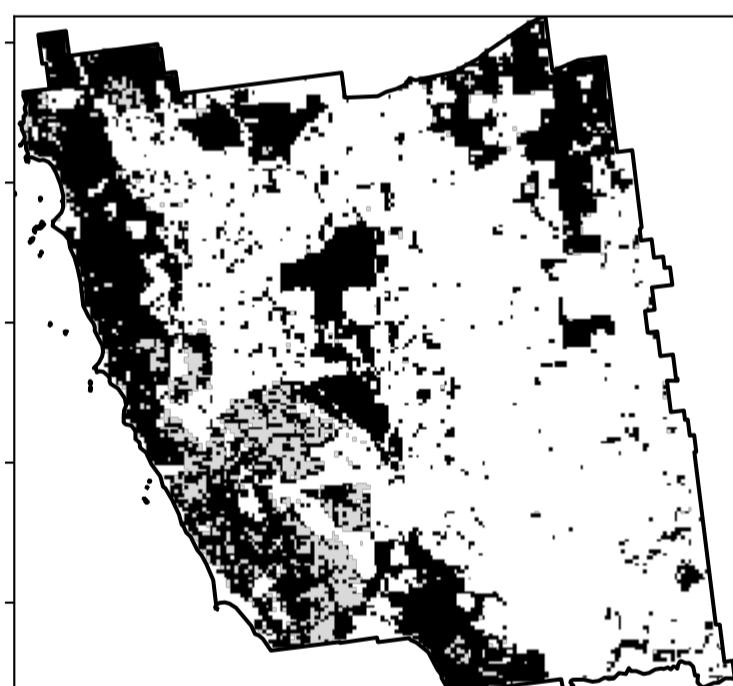


71%-100%  
51%-70%  
31%-50%  
0-30%

Proportion of vegetation cover class in area

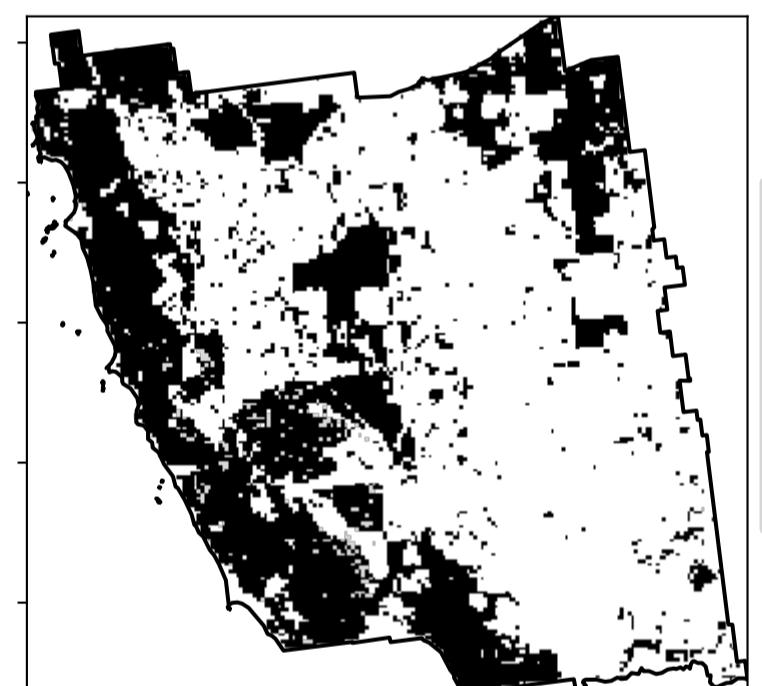


% Area protected from water erosion (>70%)



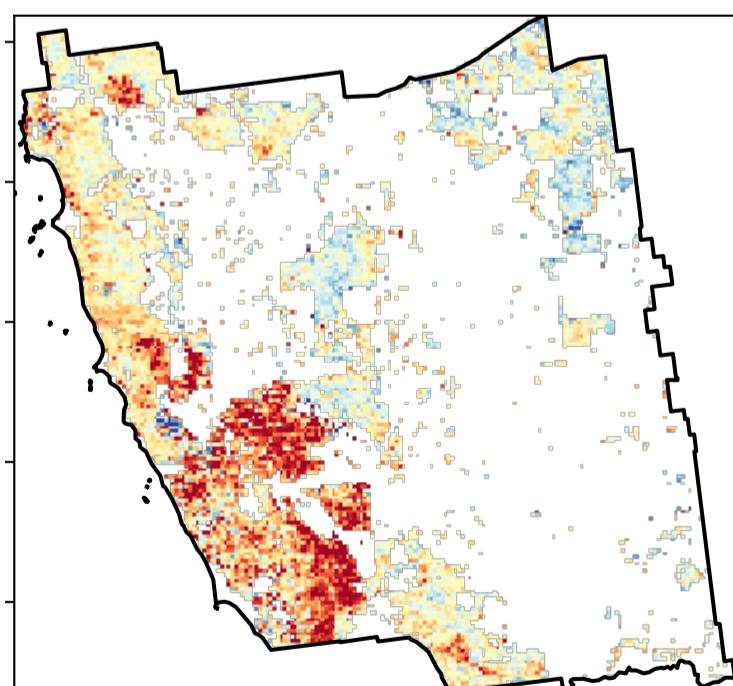
Area not protected  
14.2% of region  
(35,553 ha)  
Area protected  
85.8% of region  
(214,822 ha)

% Area protected from wind erosion (>50%)



Area not protected  
2.0% of region  
(5,008 ha)  
Area protected  
98.0% of region  
(245,368 ha)

Total Vegetation Cover Anomaly [%]

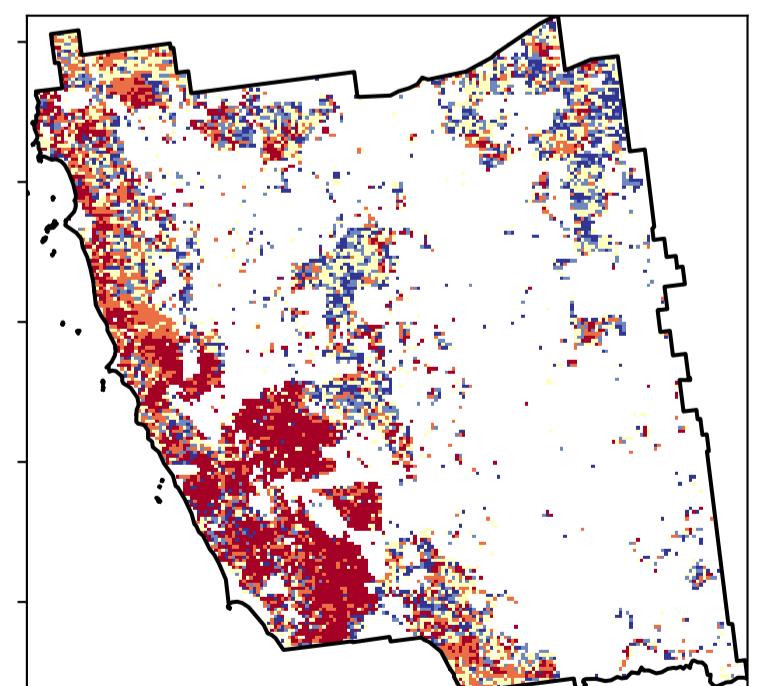


Anomaly shows how many percentage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

20  
10  
0  
-10  
-20

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

Total Vegetation Cover Decile [%]



10  
8.9  
7.1  
5.3  
3.5  
1.7  
0.9  
-0.9  
-2.7  
-4.5



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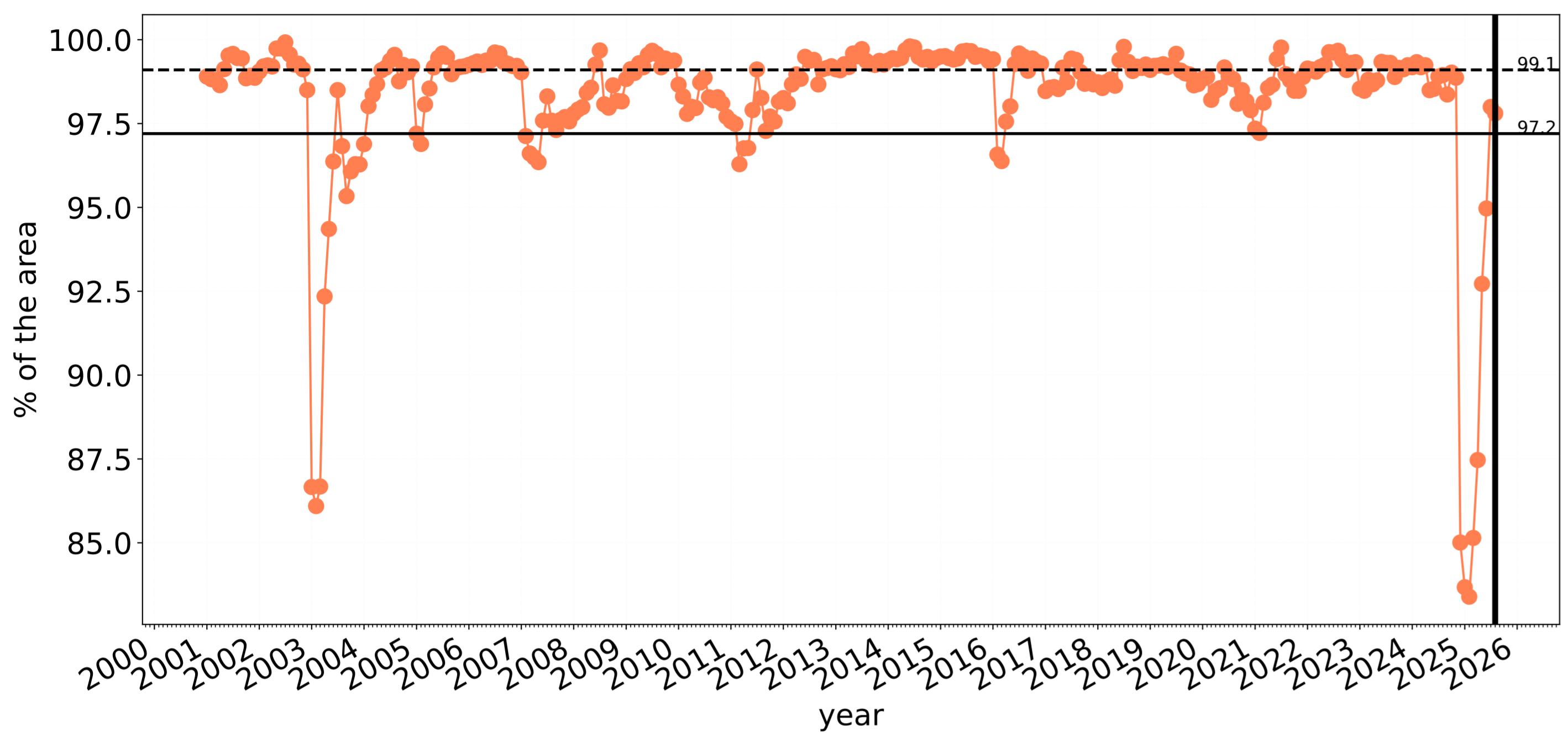


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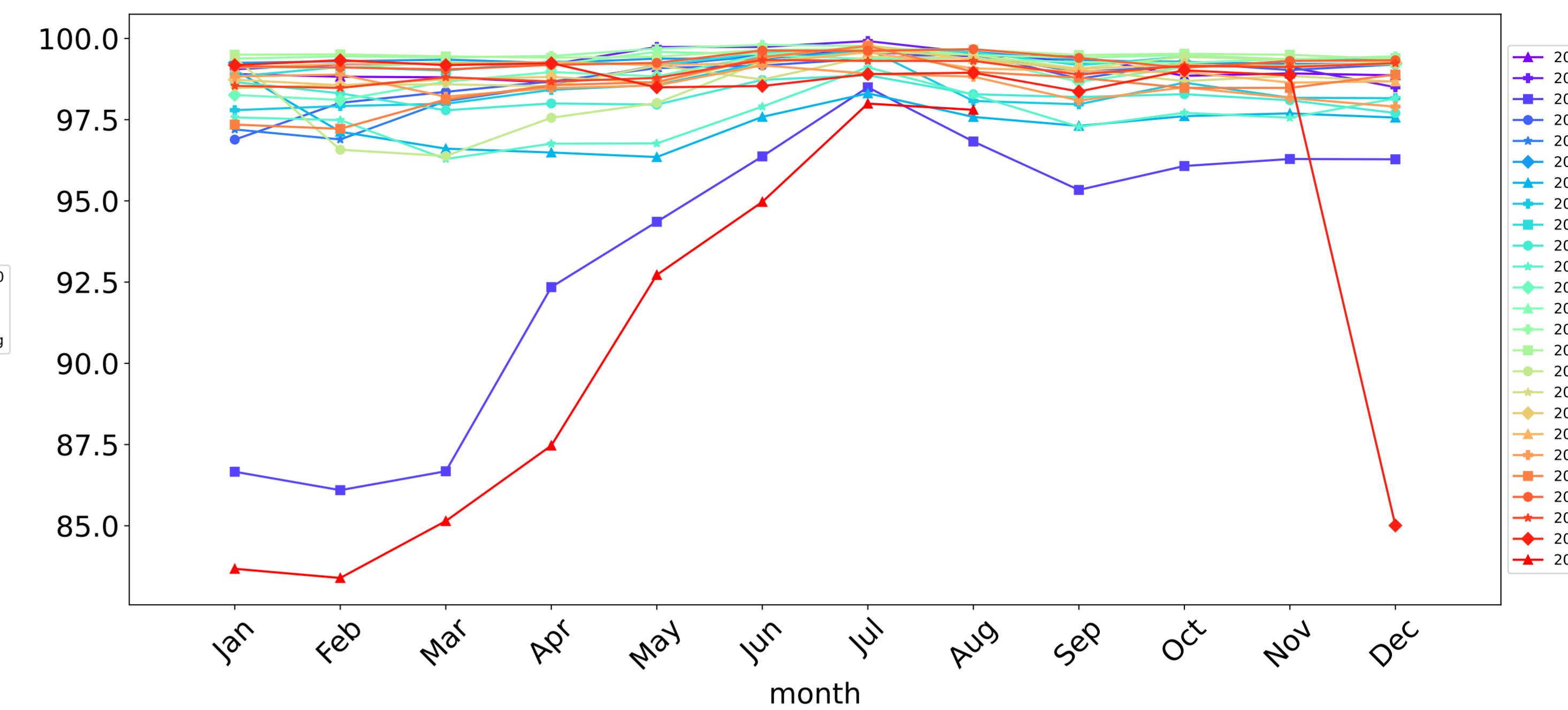


## Conservation and natural environments non forest timeseries

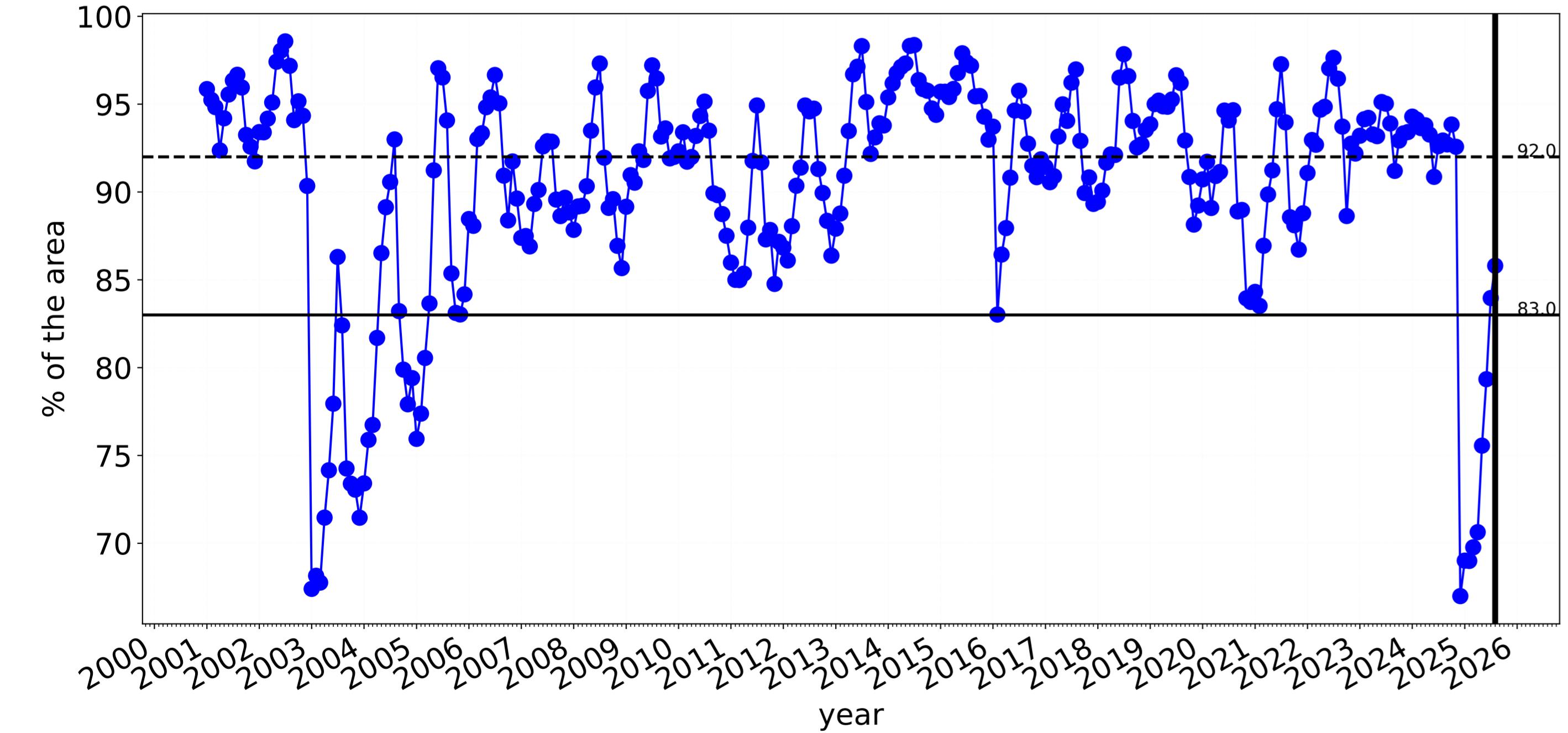
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



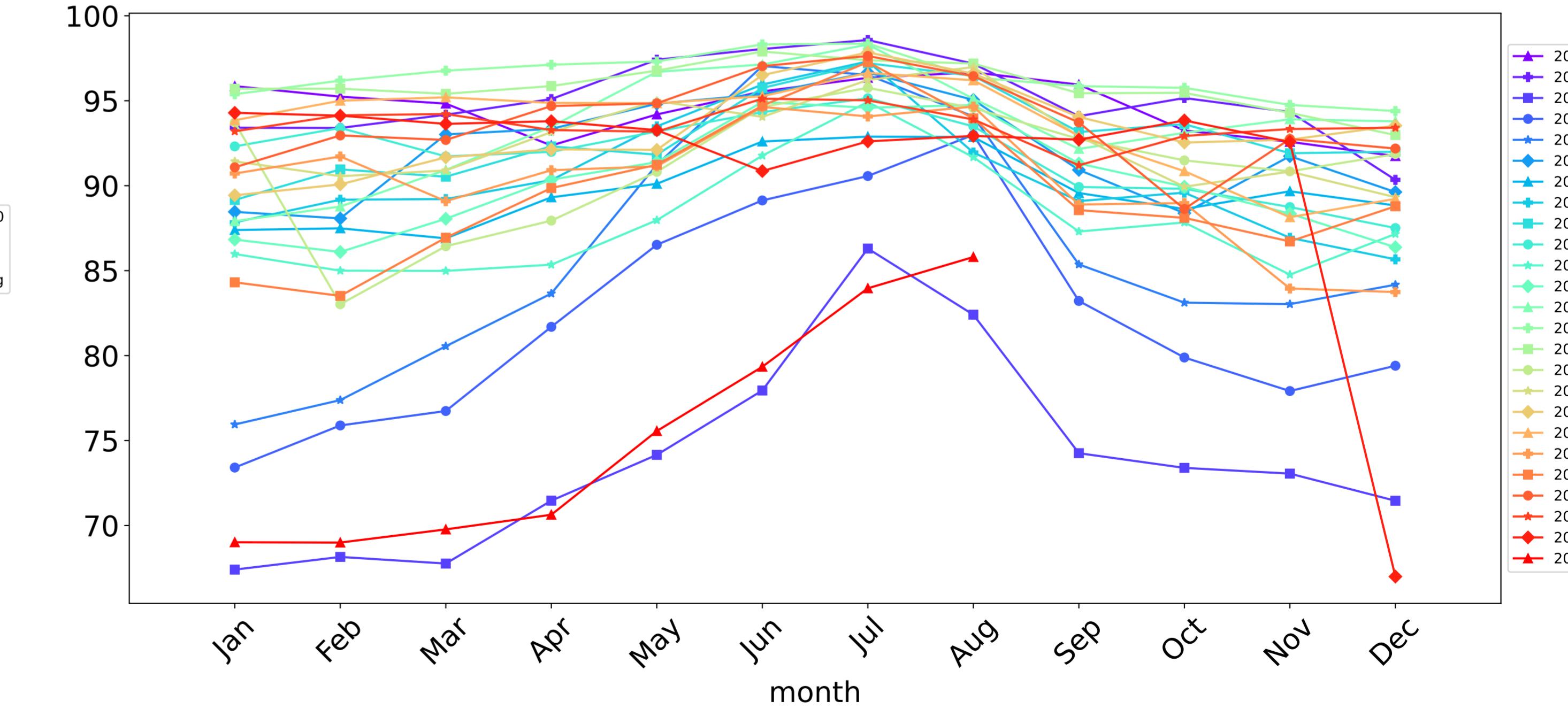
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



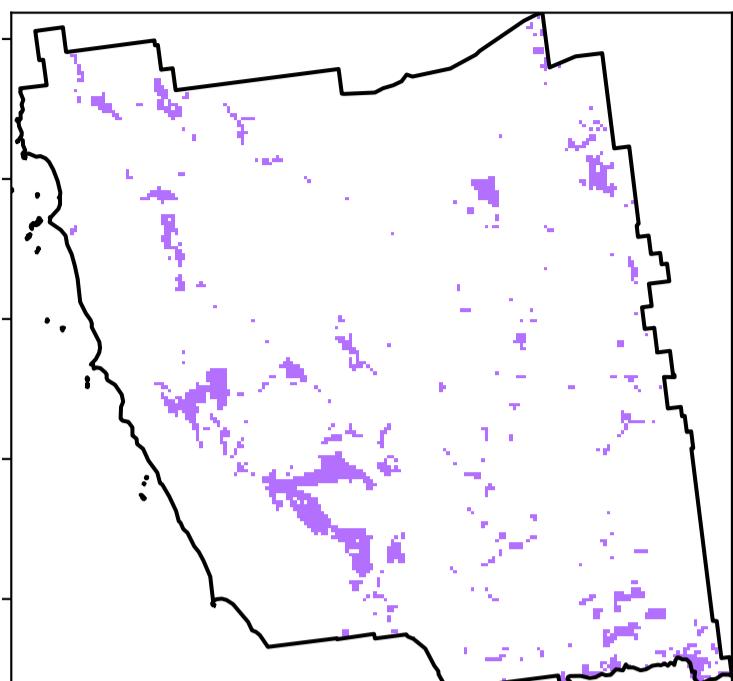
Water erosion historical monthly area protected (Total Veg Cov >70%)



# Conservation and natural environments Woodland forest

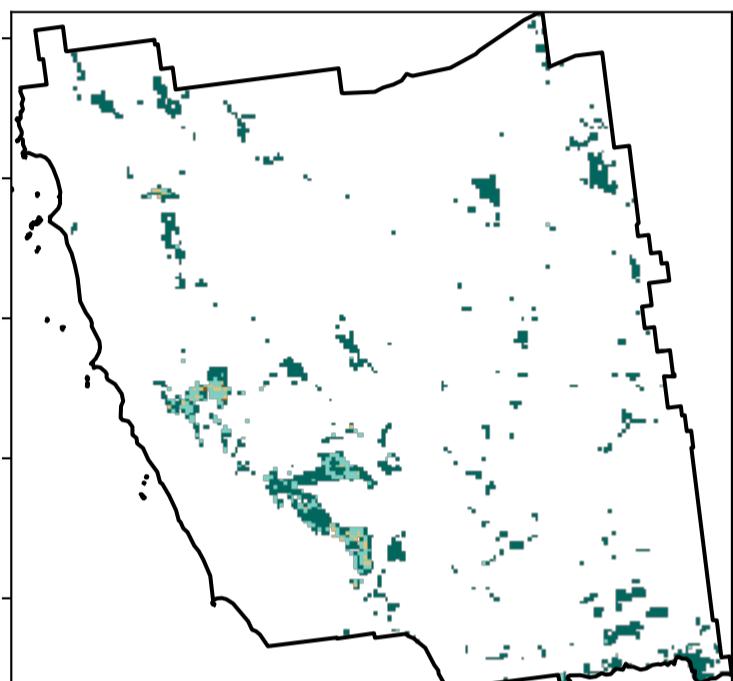
## Land use and forest cover

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



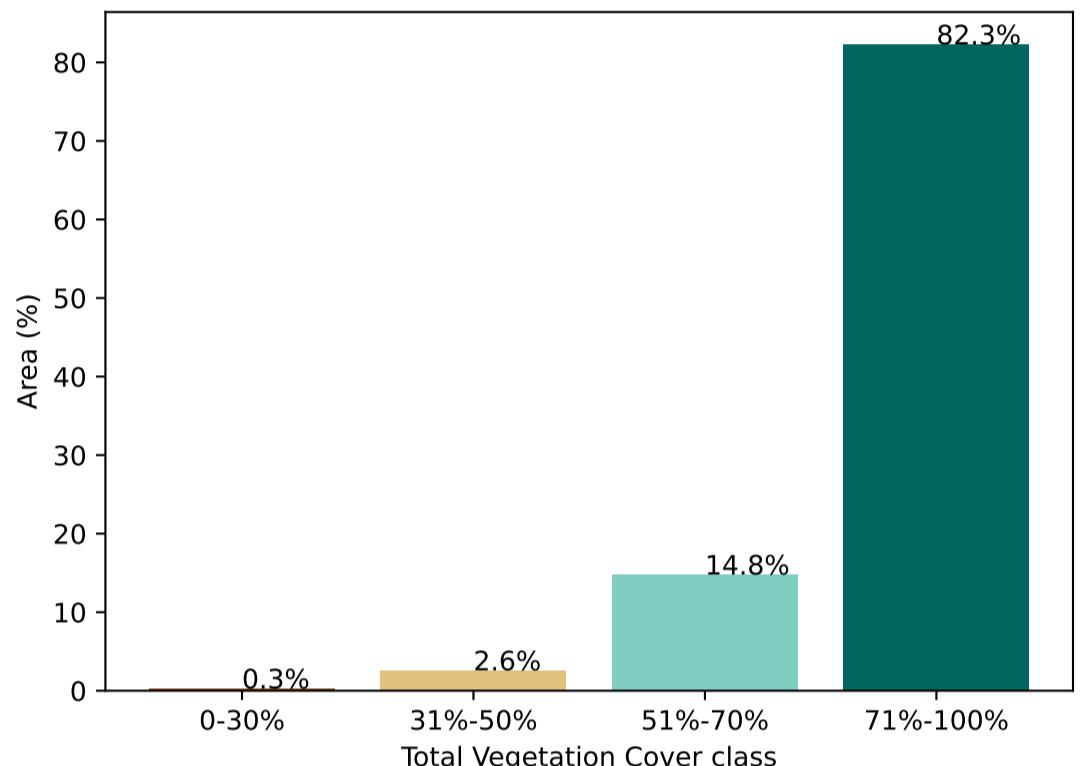
1 Conservation and natural environments - Woodland forest

## Total Vegetation Cover [%]

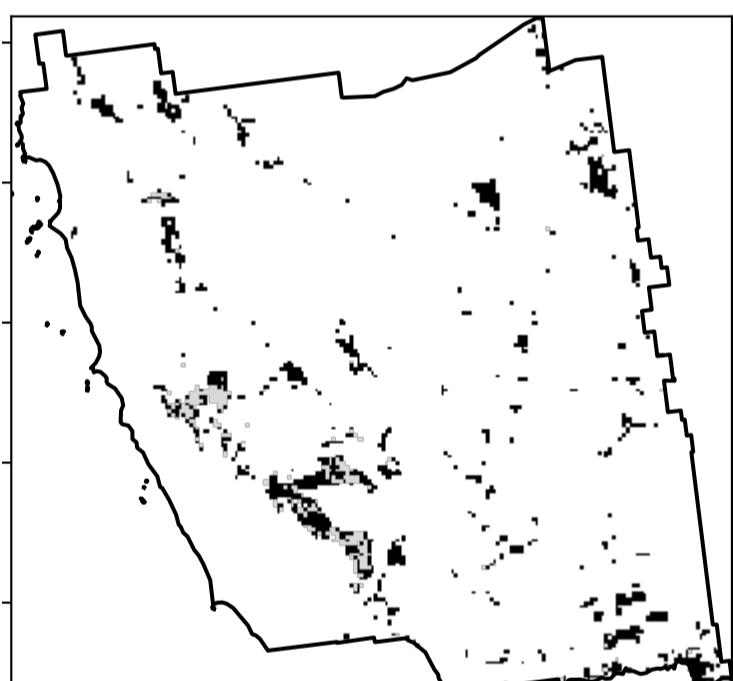


71-100%  
51-70%  
31-50%  
0-30%

## Proportion of vegetation cover class in area

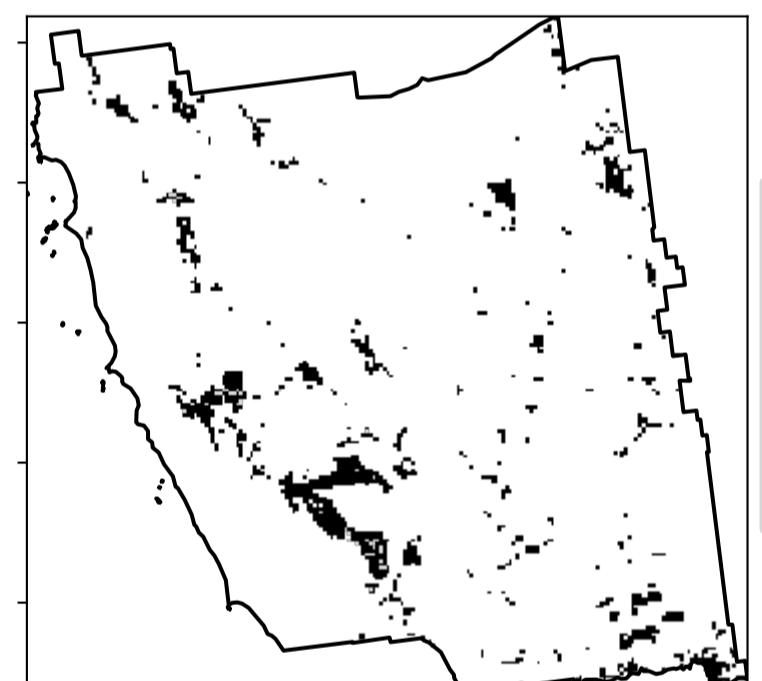


## % Area protected from water erosion (>70%)



Area not protected 17.7% of region (6,686 ha)  
Area protected 82.3% of region (31,089 ha)

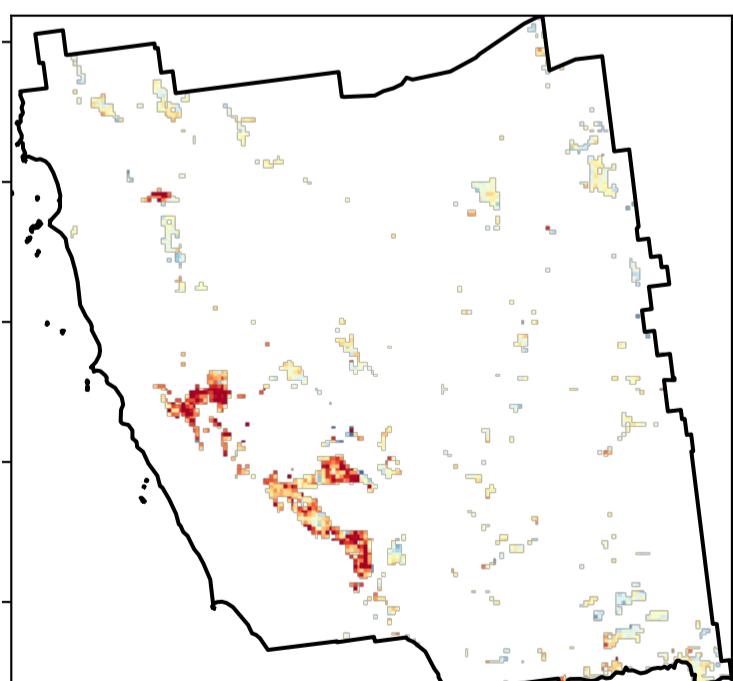
## % Area protected from wind erosion (>50%)



Area not protected 3.0% of region (1,133 ha)  
Area protected 97.0% of region (36,642 ha)

## Total Vegetation Cover Anomaly [%]

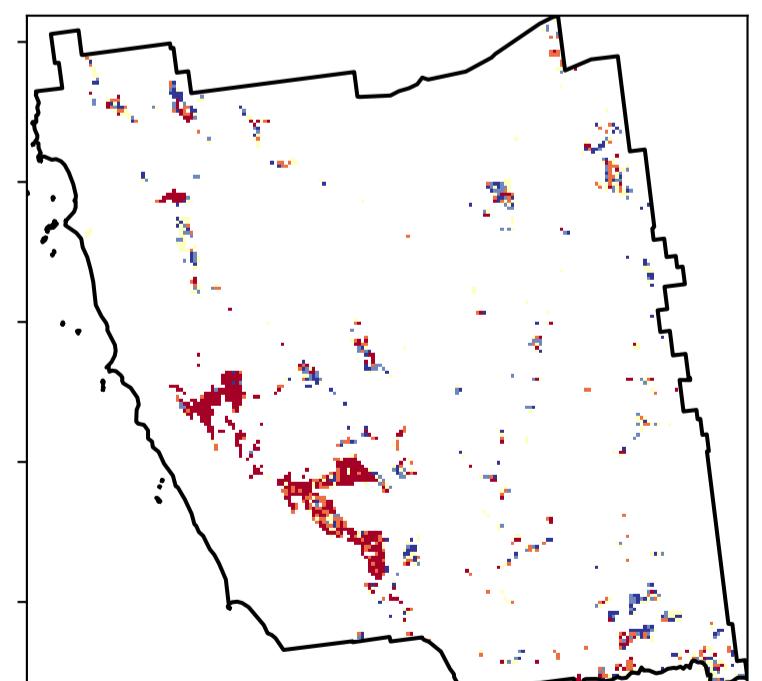
Anomaly shows how many percentage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



20  
10  
0  
-10  
-20

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## Total Vegetation Cover Decile [%]



10  
9  
8  
7  
6  
5  
4  
3  
2  
1



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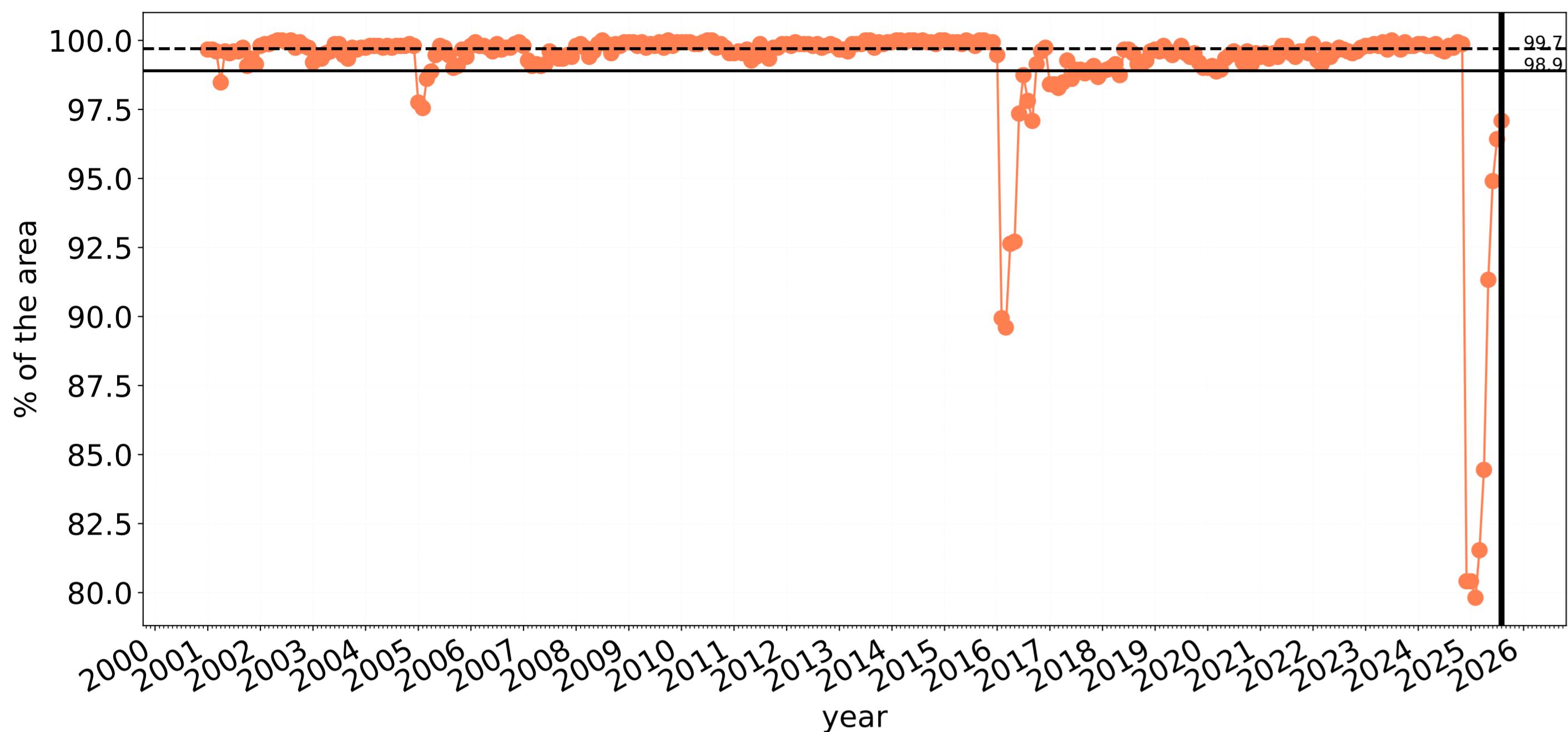


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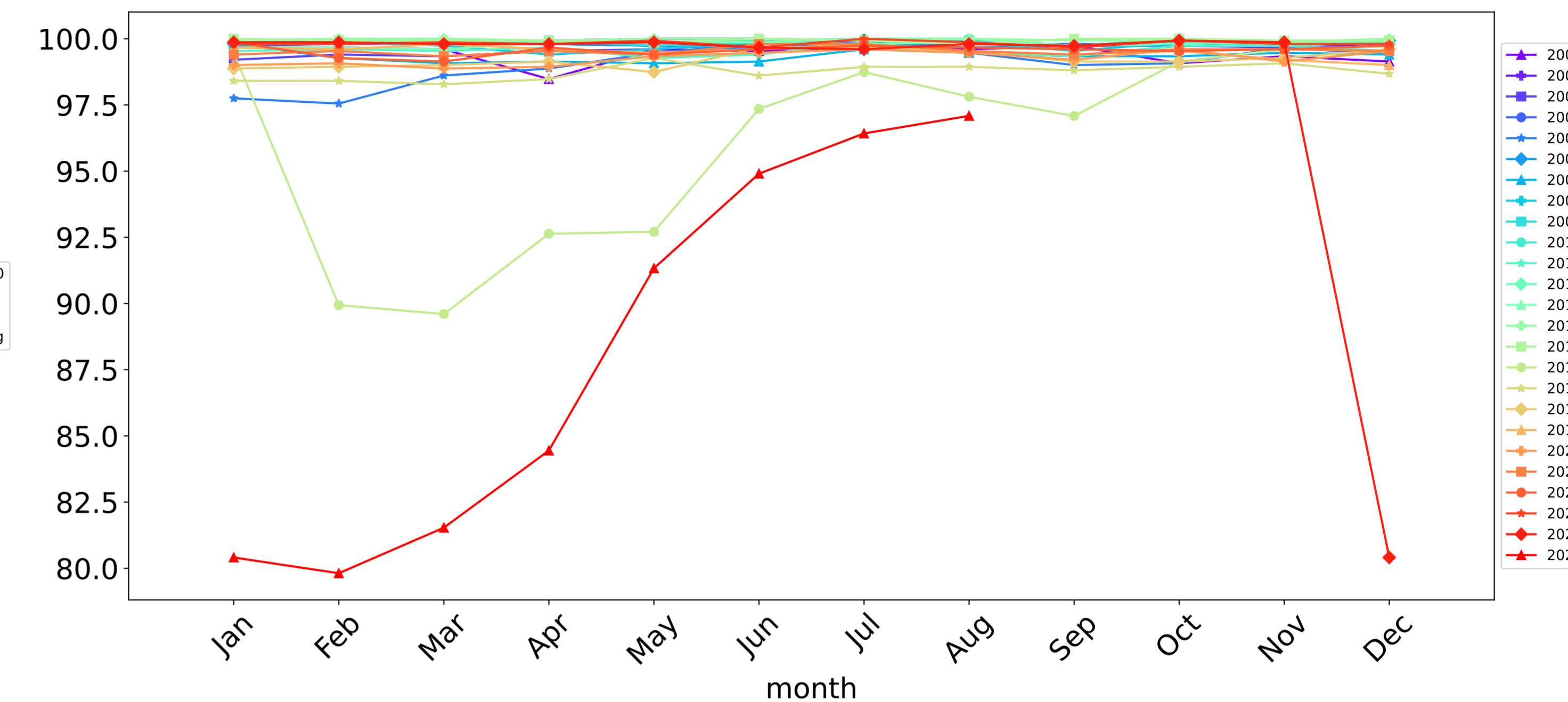


## Conservation and natural environments Woodland forest timeseries

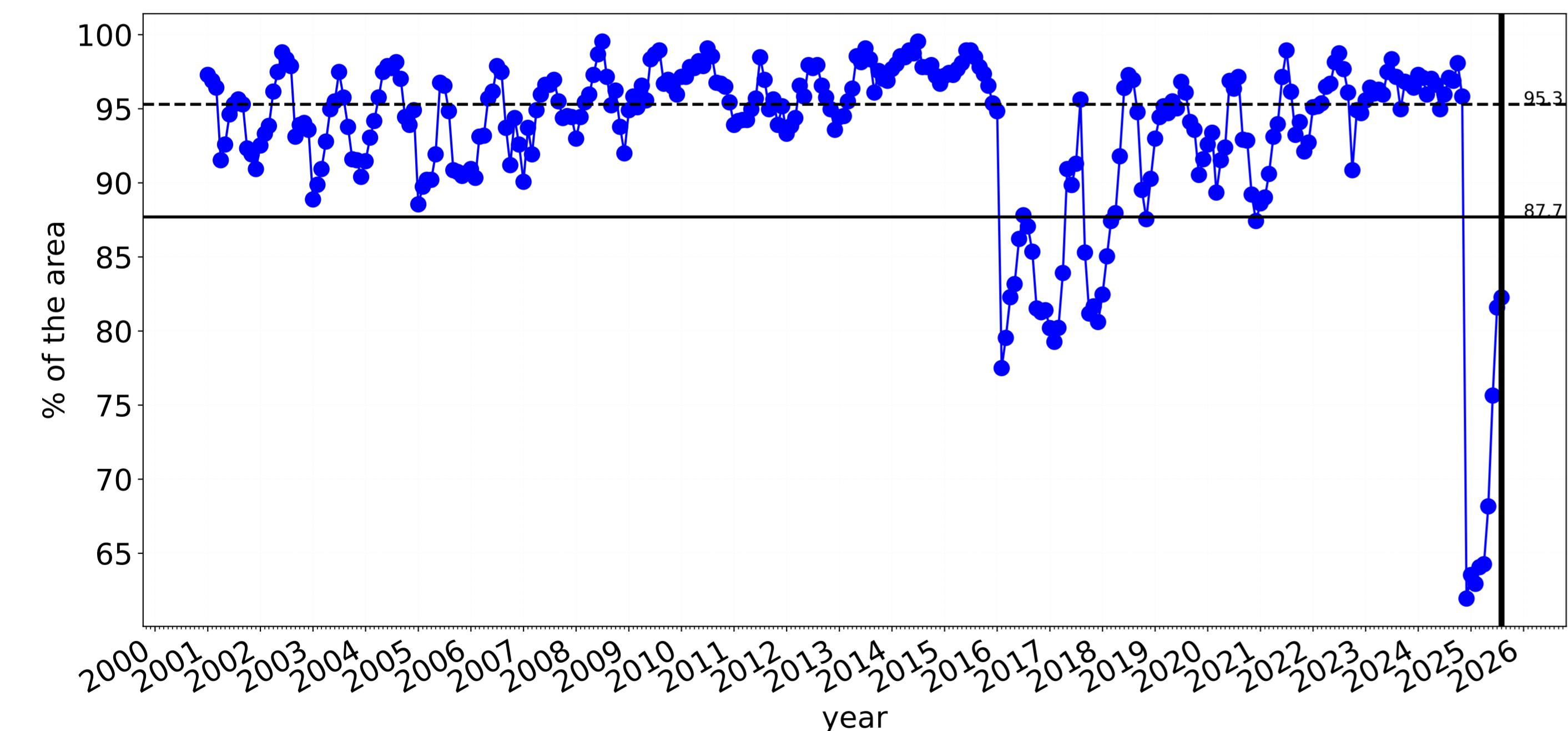
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



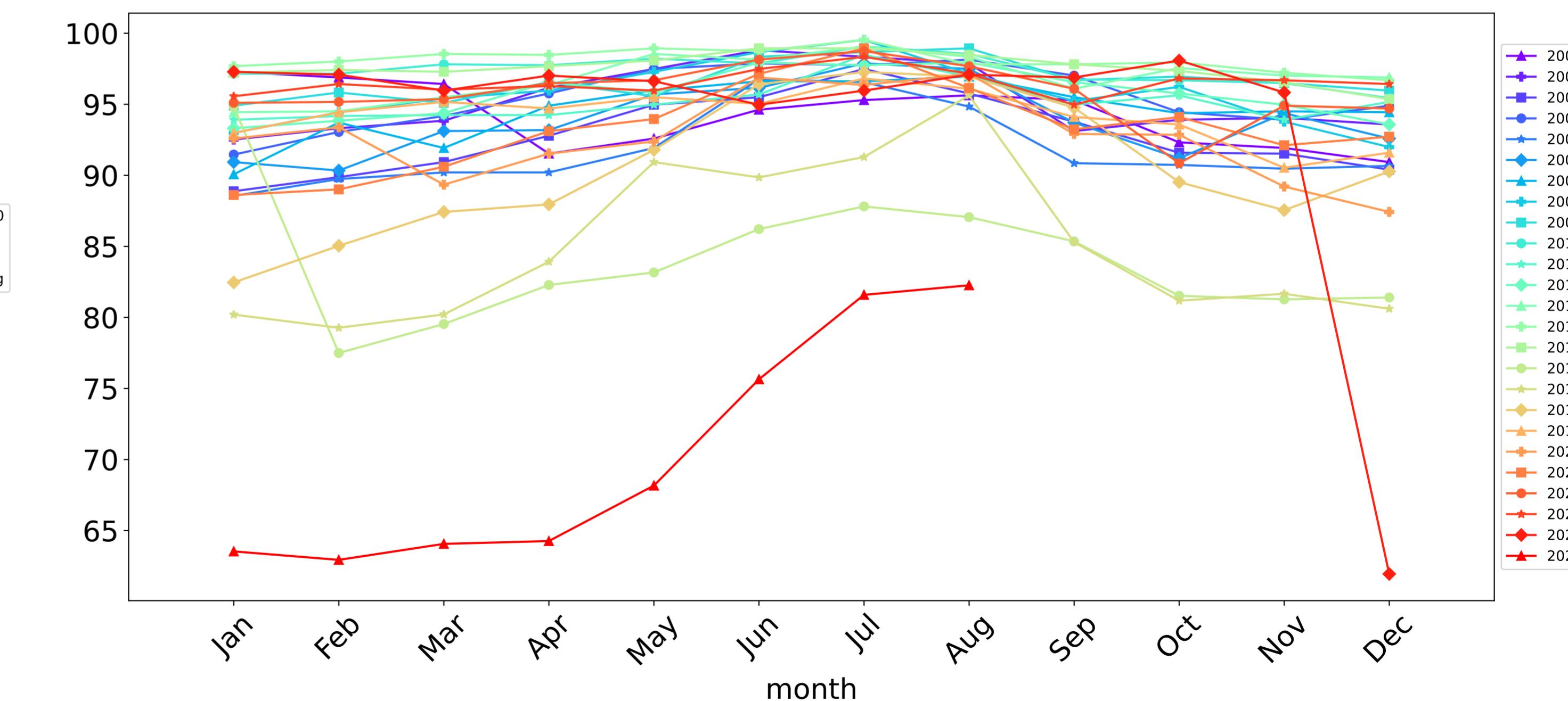
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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

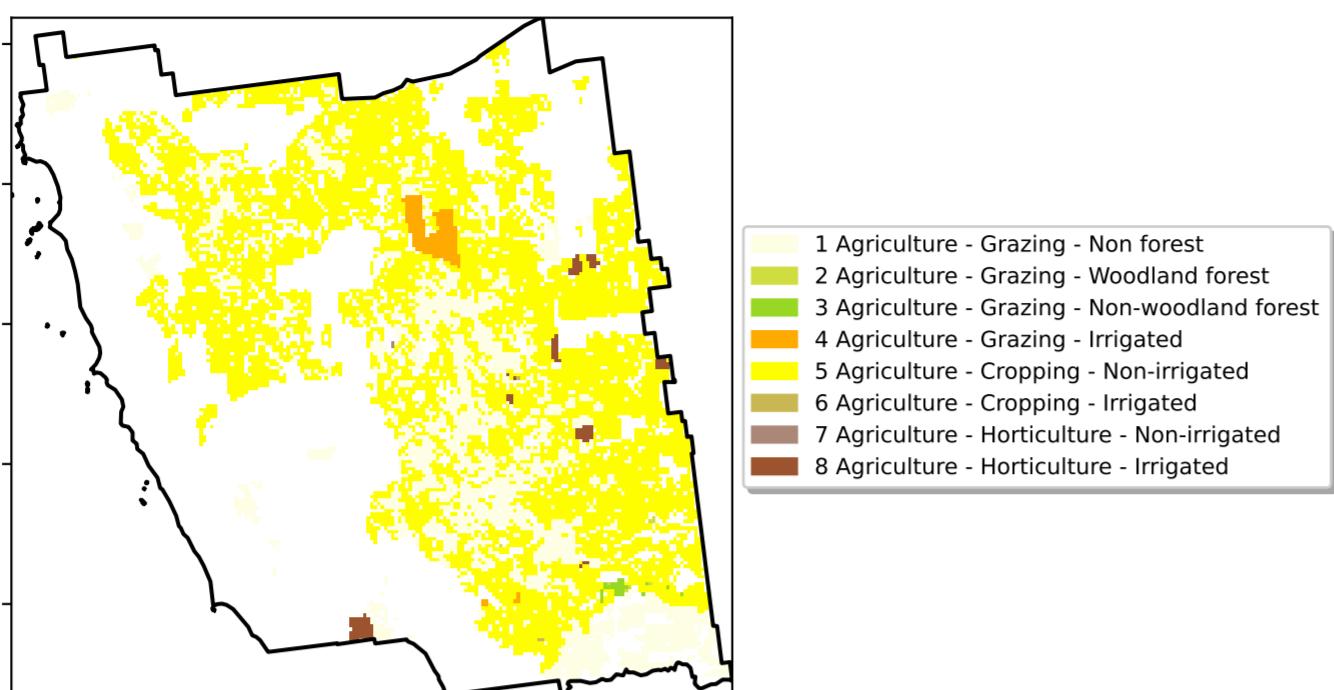


Water erosion historical monthly area protected (Total Veg Cov >70%)

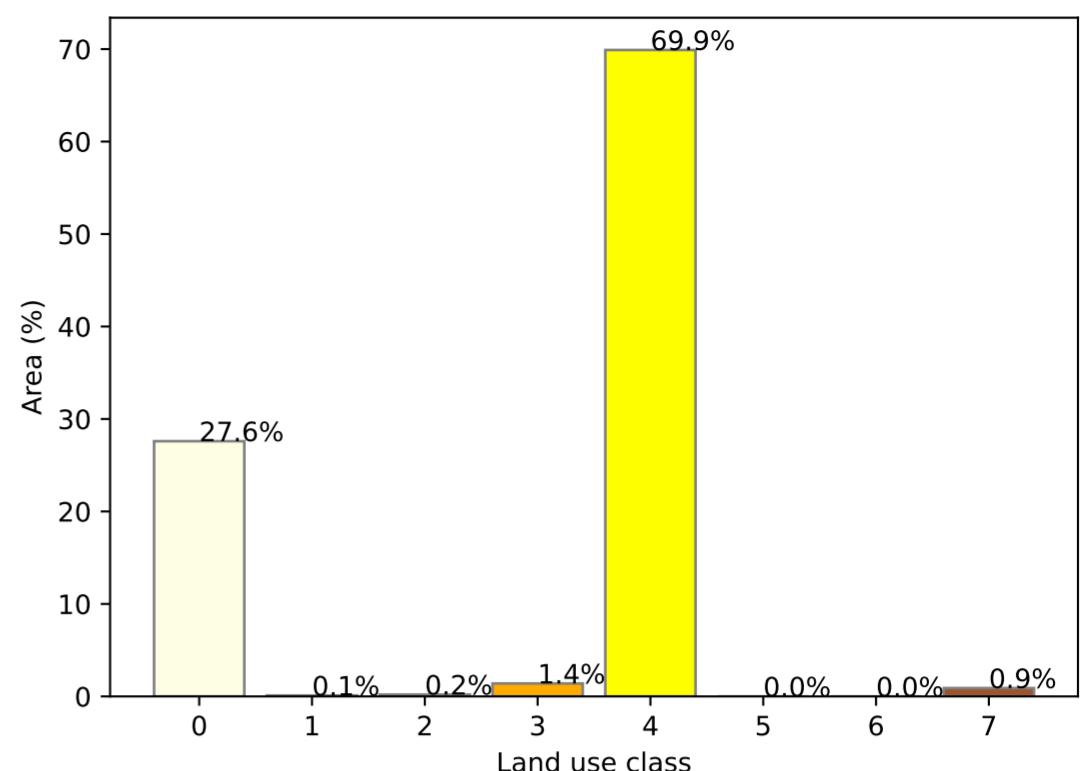


# Agriculture

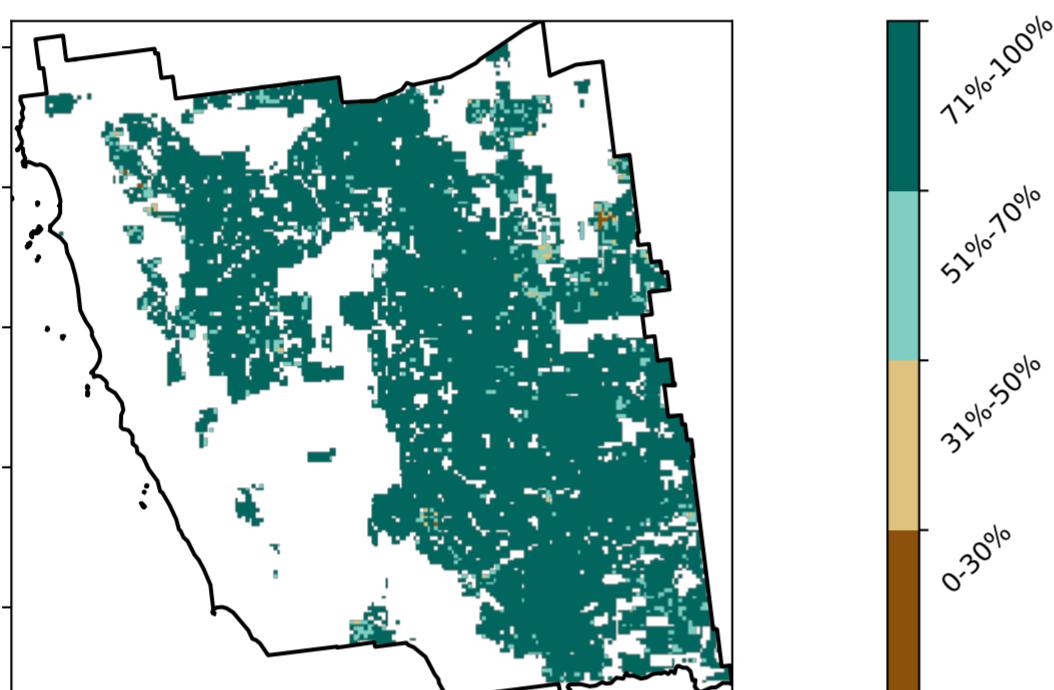
Land use and forest cover



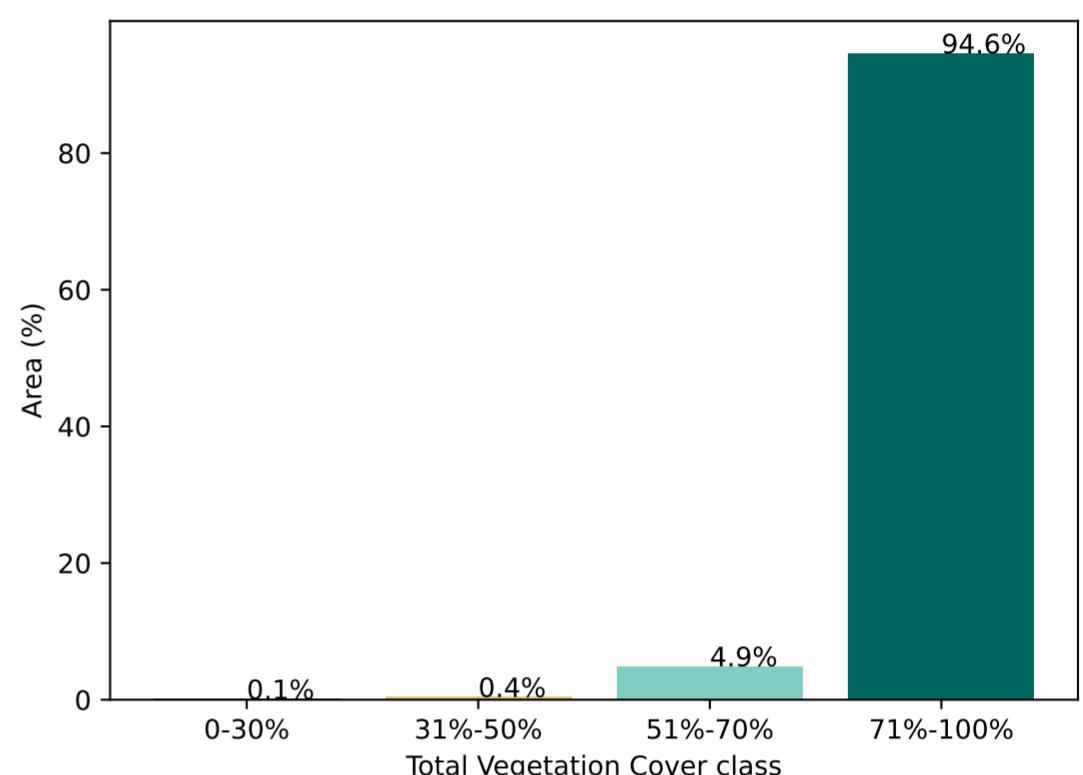
Proportion of each land class in area



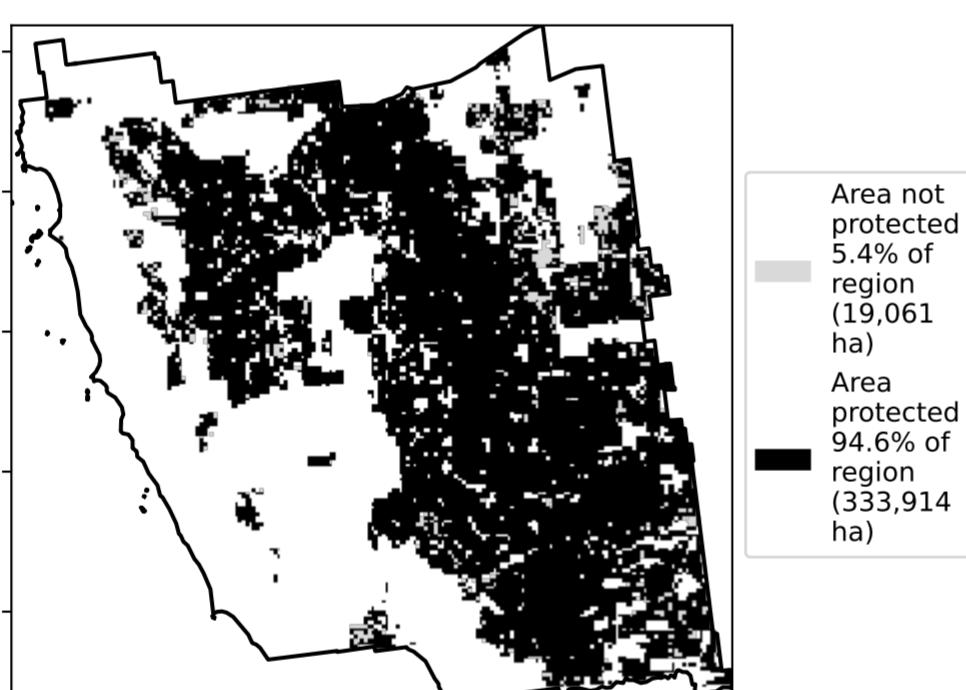
Total Vegetation Cover [%]



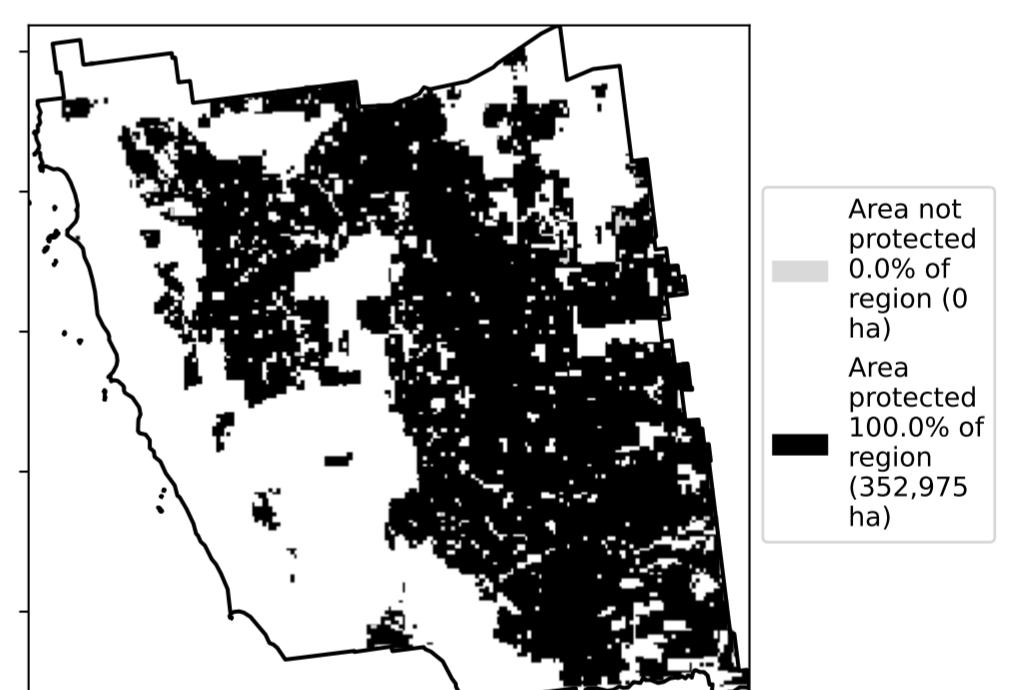
Proportion of vegetation cover class in area



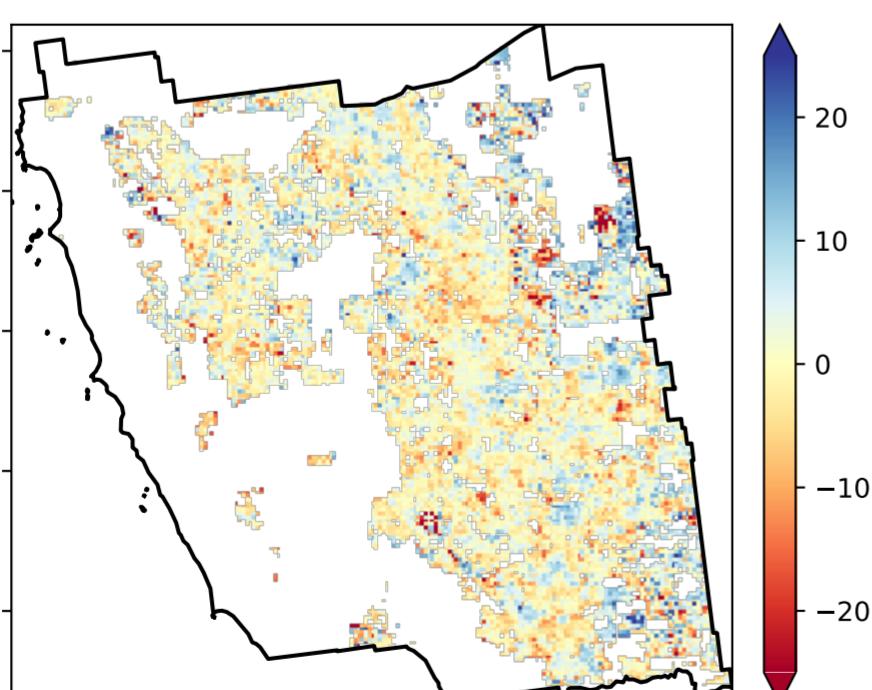
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

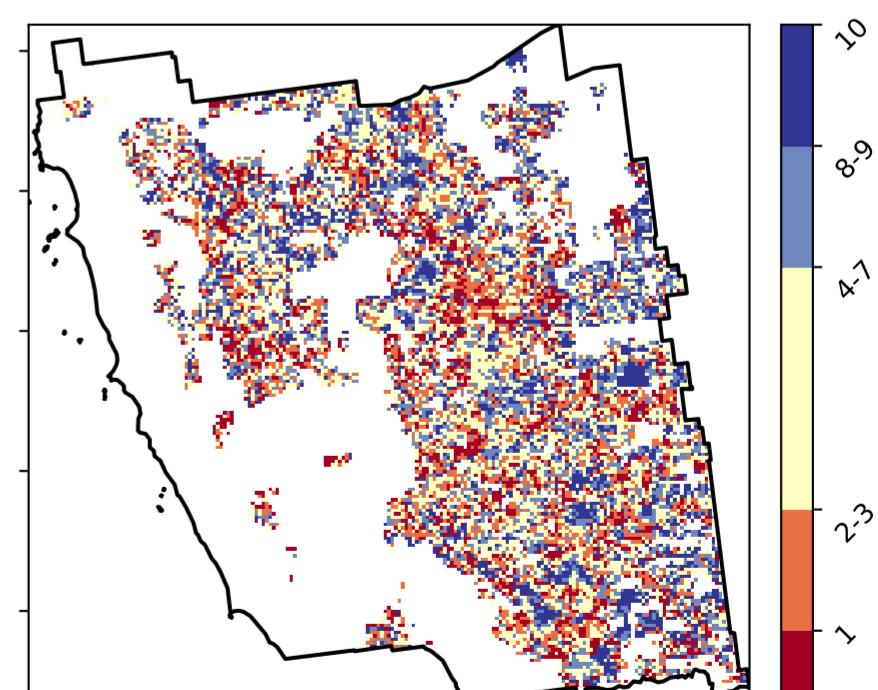


Total Vegetation Cover Anomaly [%]

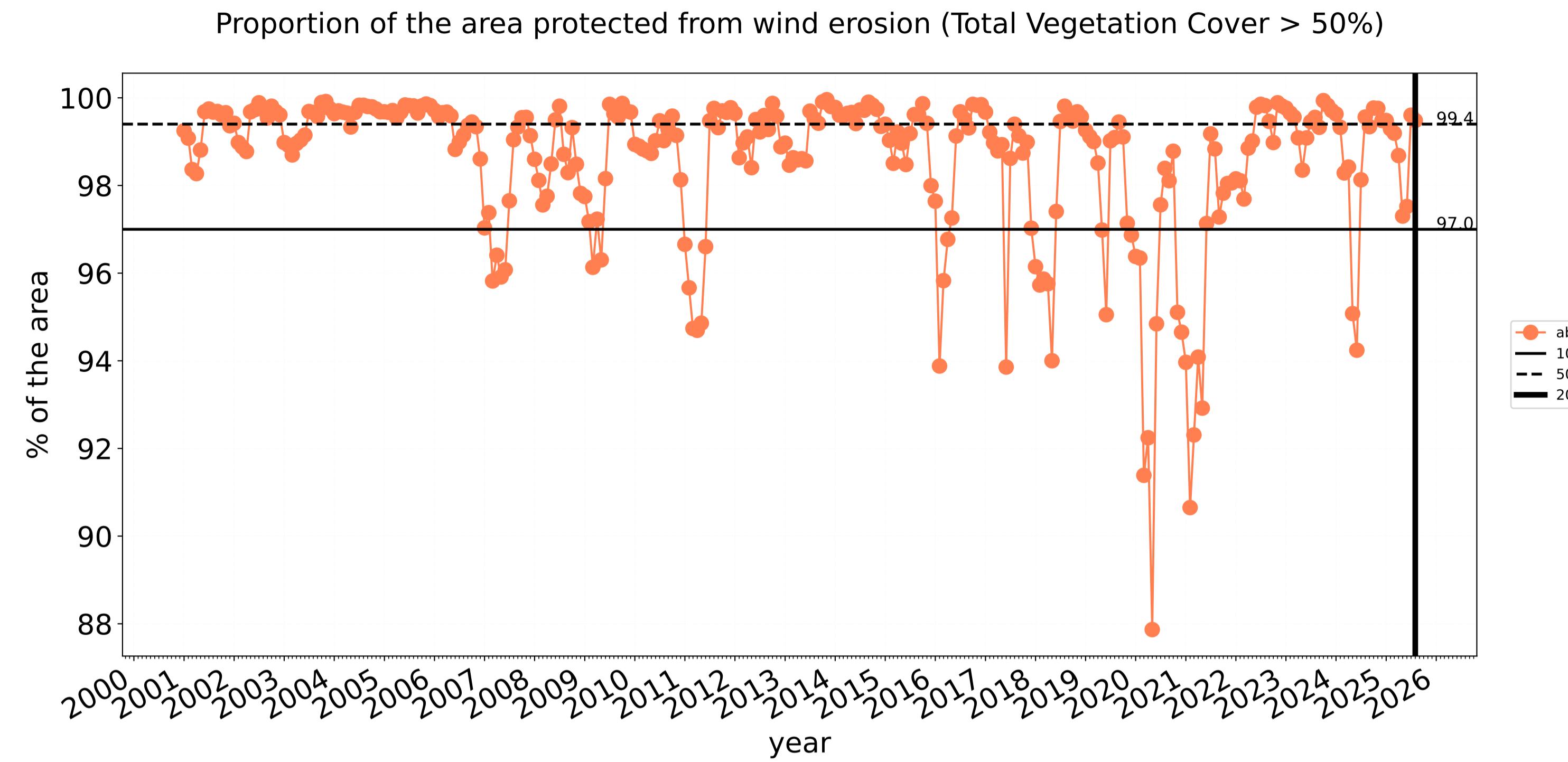


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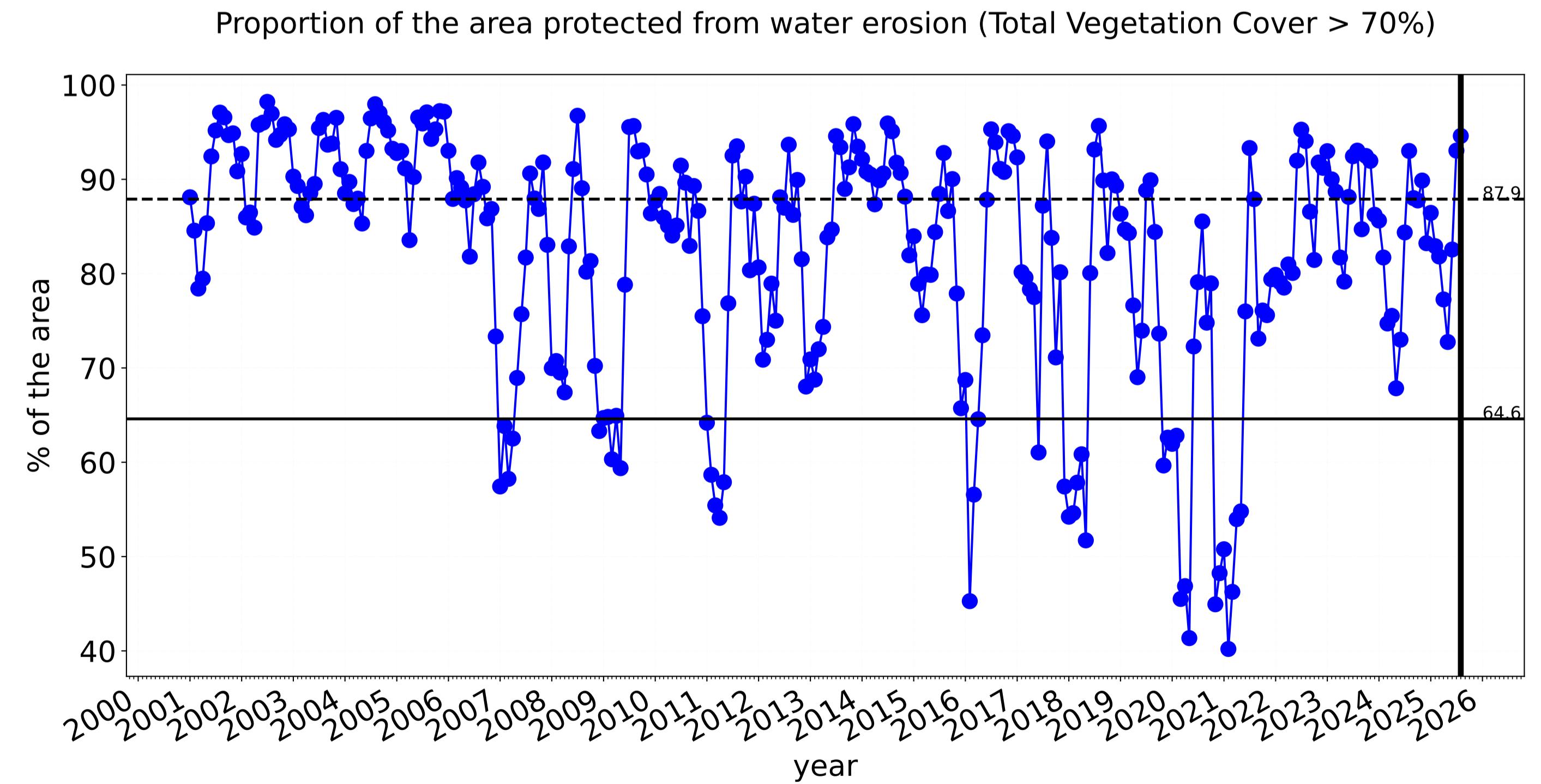
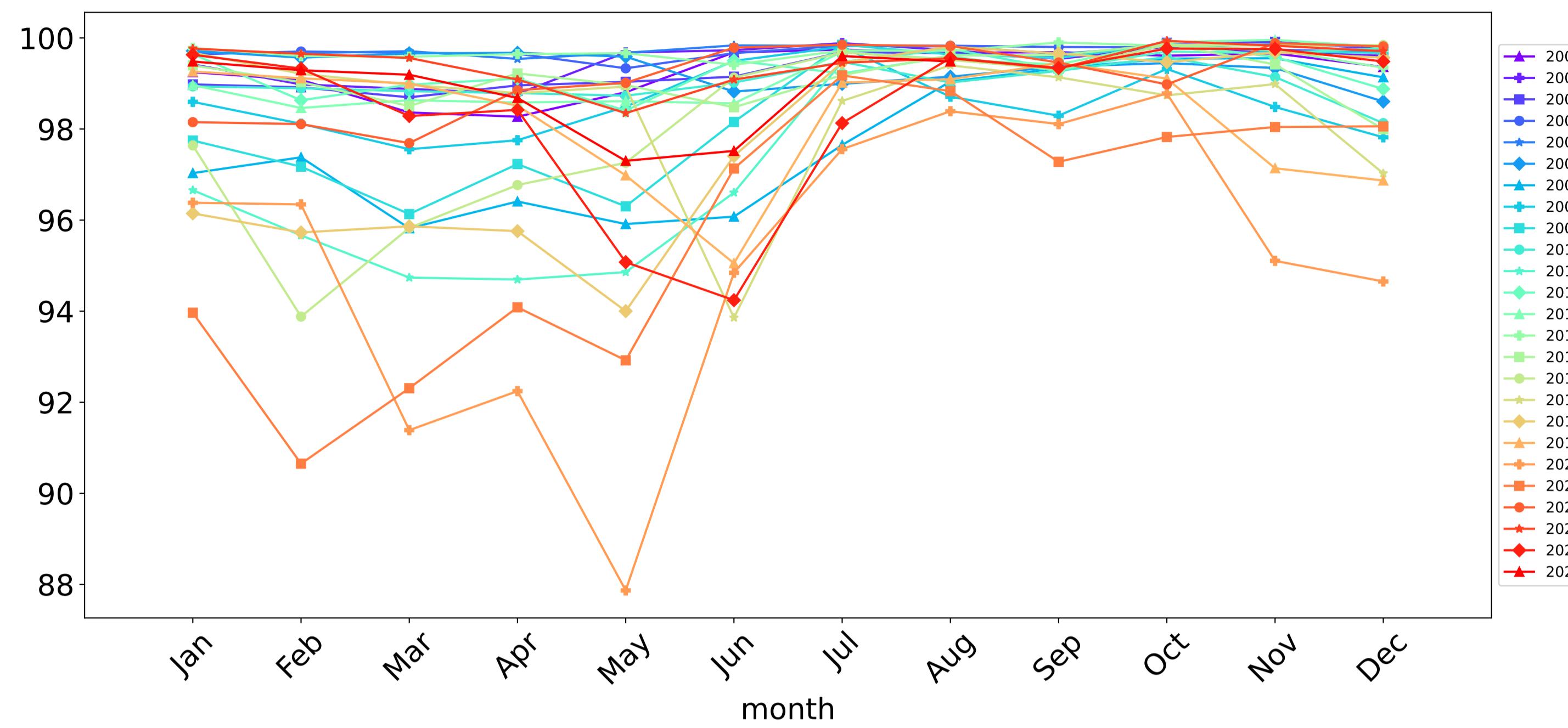
Total Vegetation Cover Decile [%]



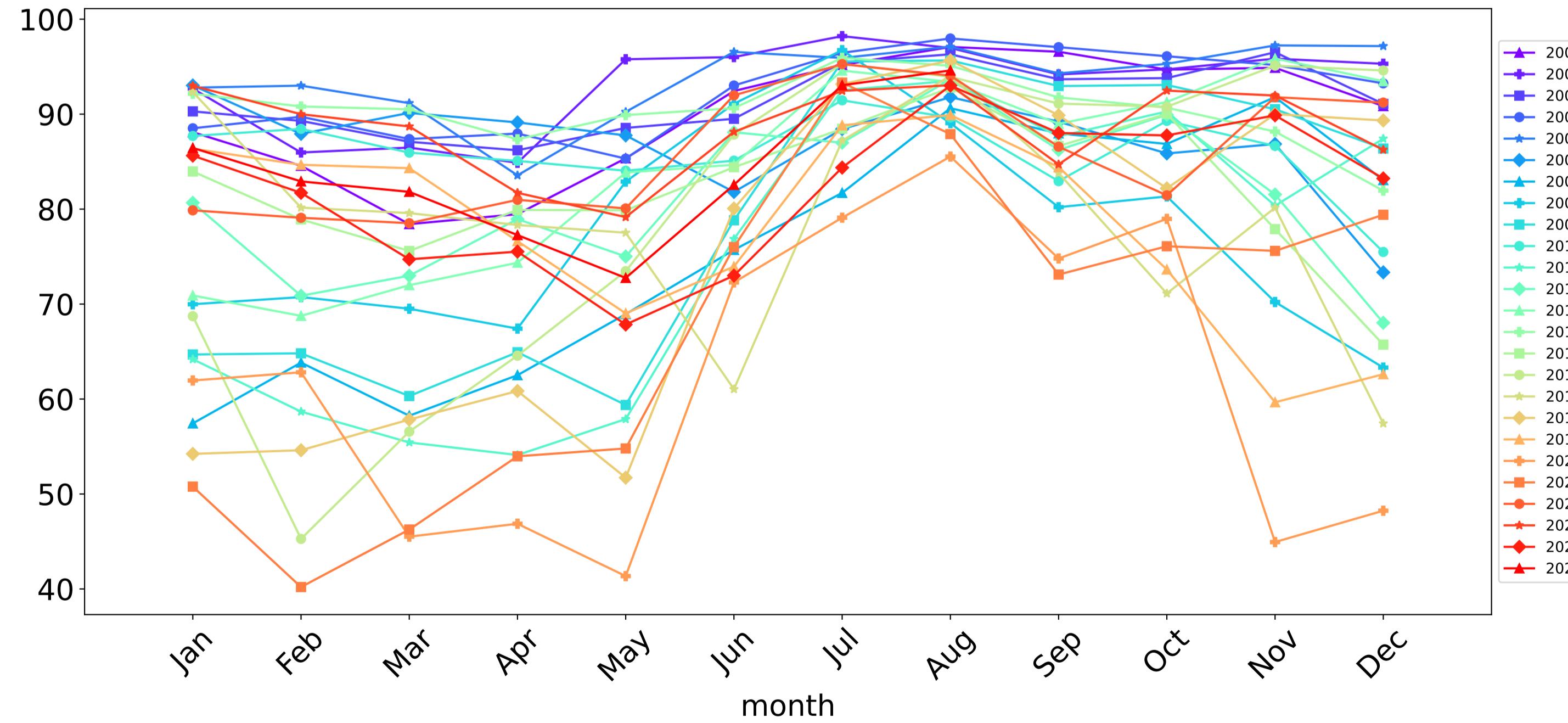
## Agriculture timeseries



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



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



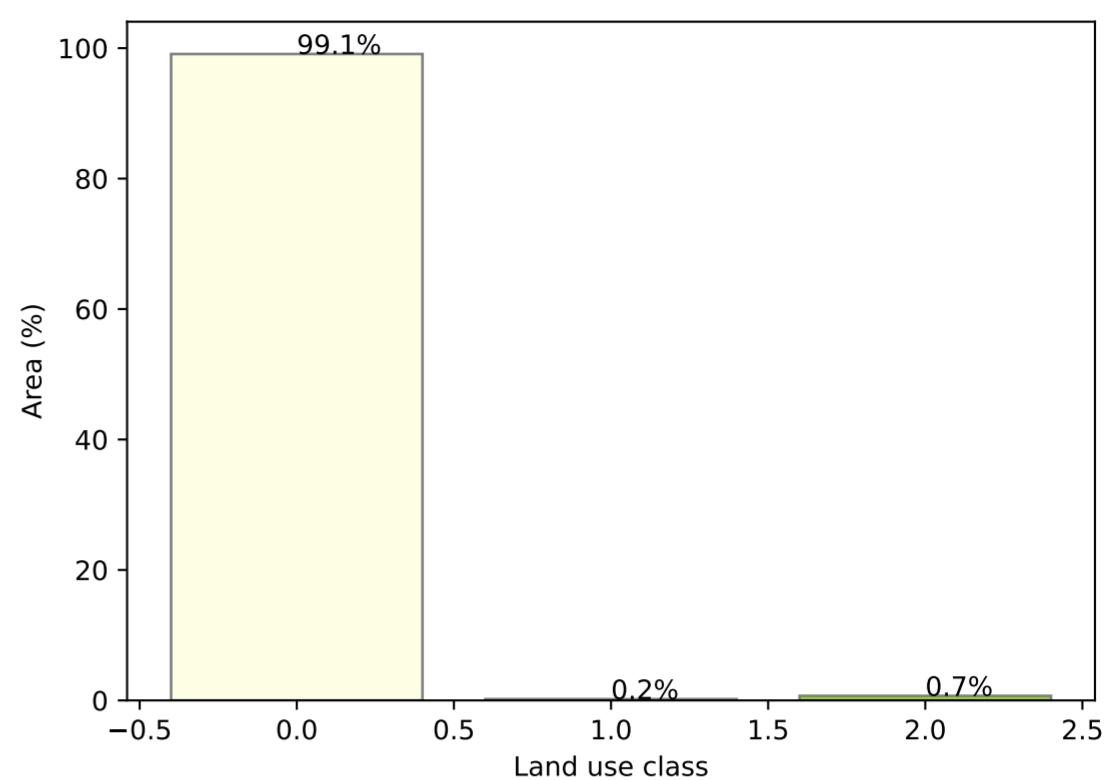
## Grazing

### Land use and forest cover

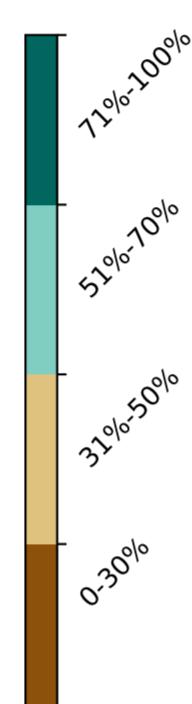
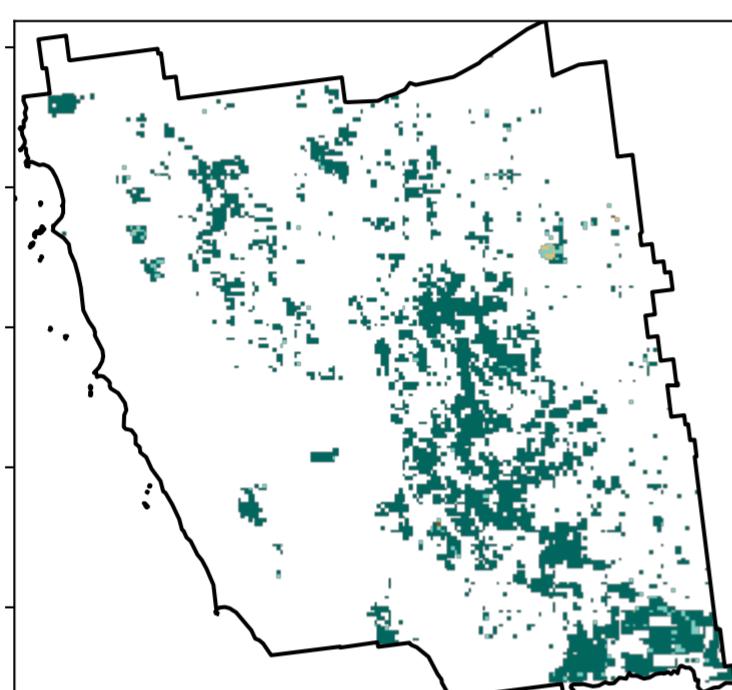
Catchment Scale Land Use and Forests of Australia (2018)  
Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



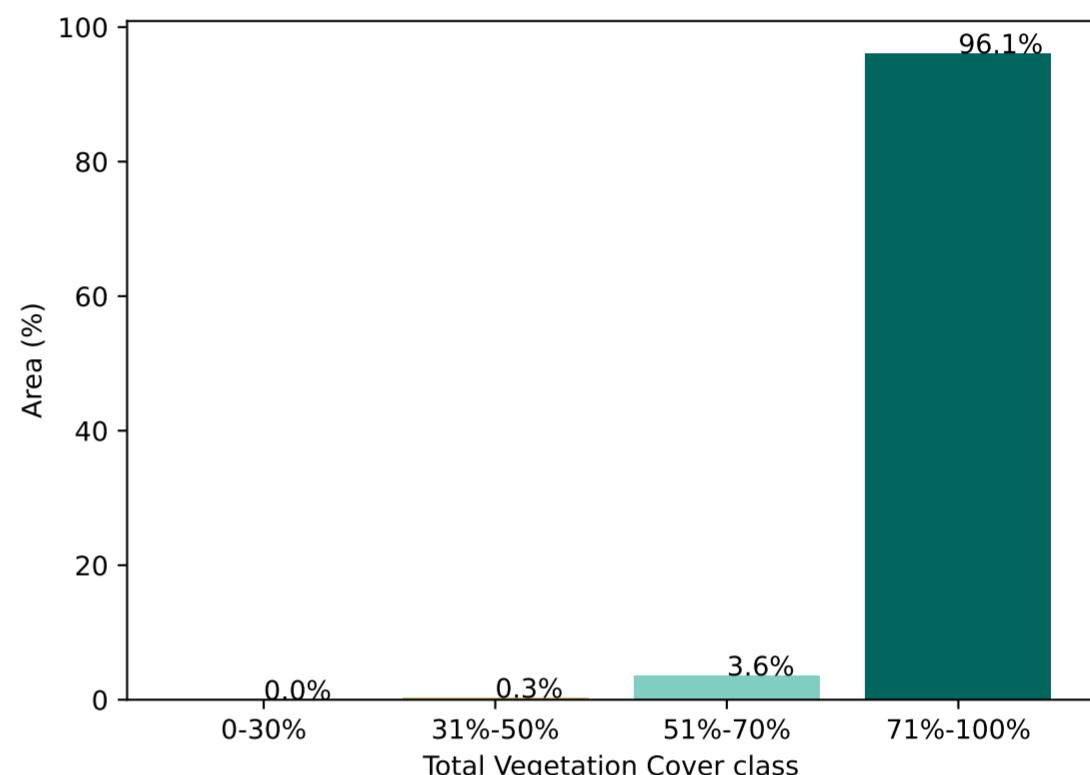
### Proportion of each land class in area



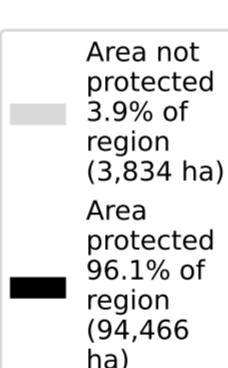
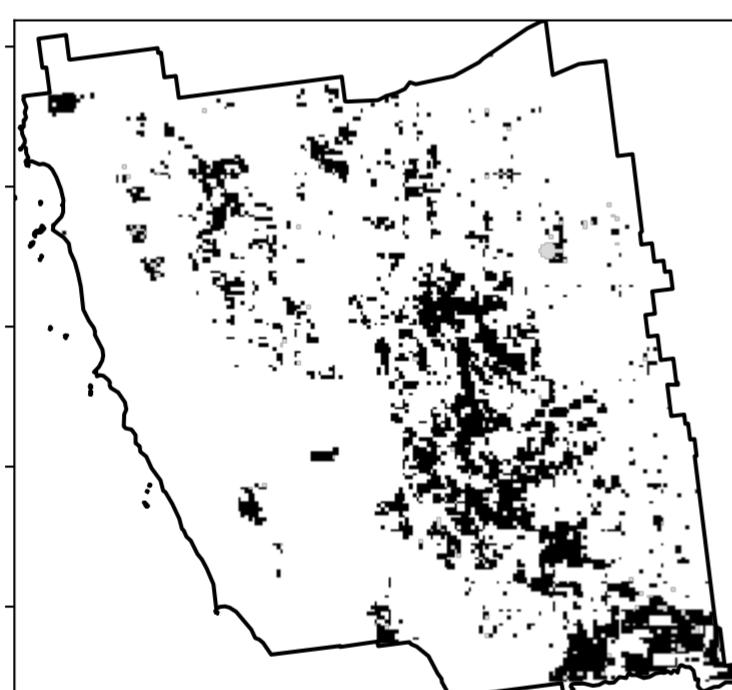
### Total Vegetation Cover [%]



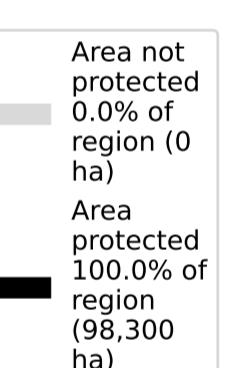
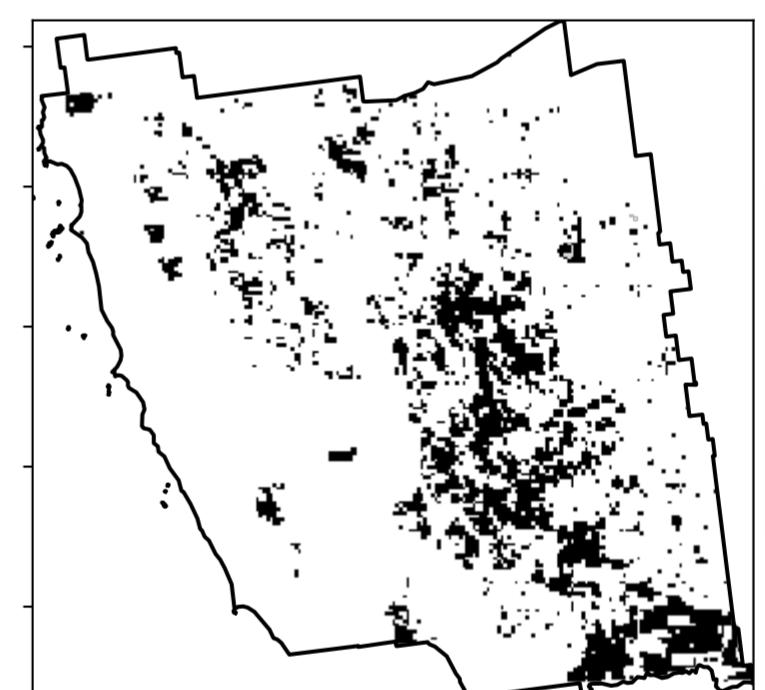
### Proportion of vegetation cover class in area



### % Area protected from water erosion (>70%)

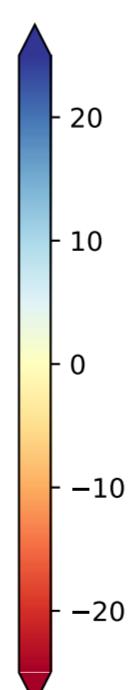
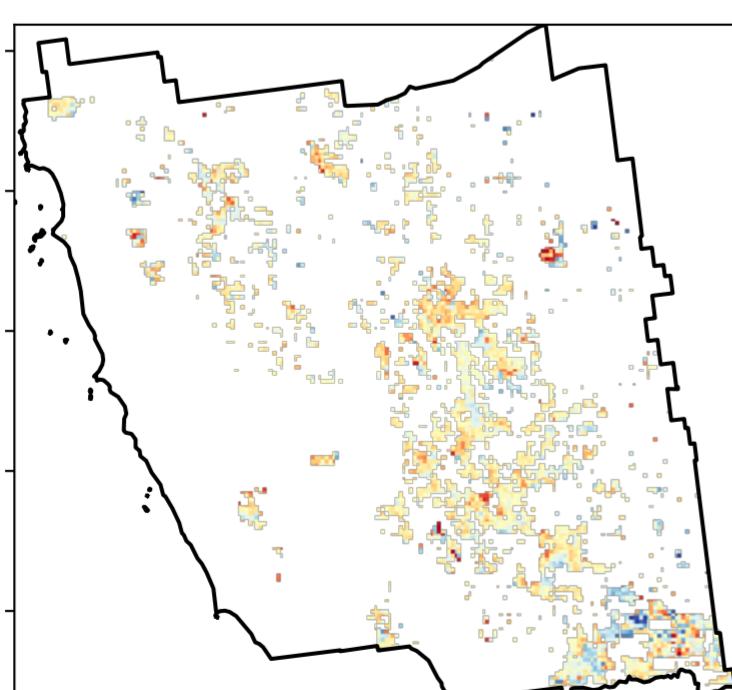


### % Area protected from wind erosion (>50%)

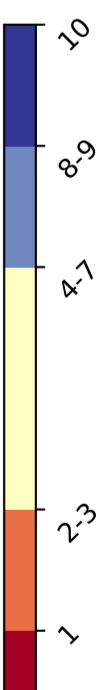
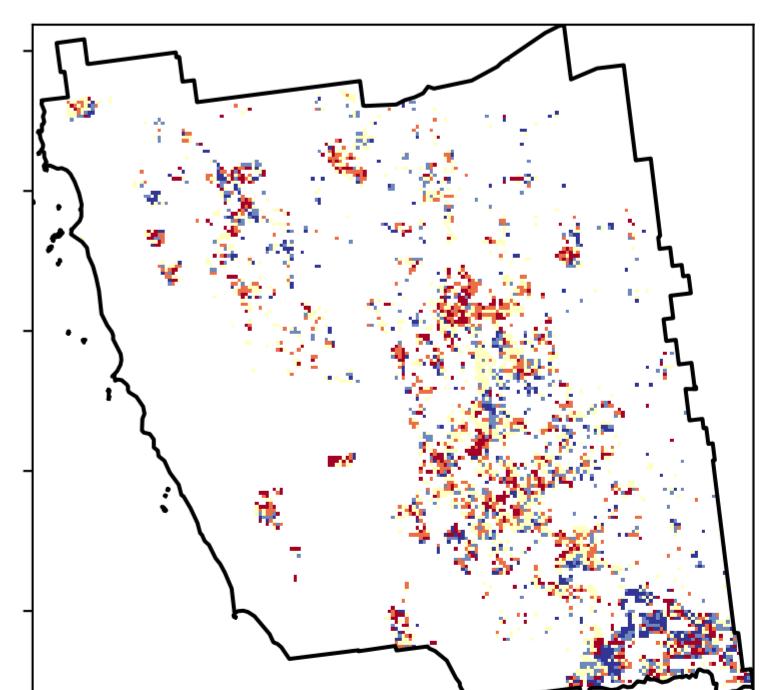


### Total Vegetation Cover Anomaly [%]

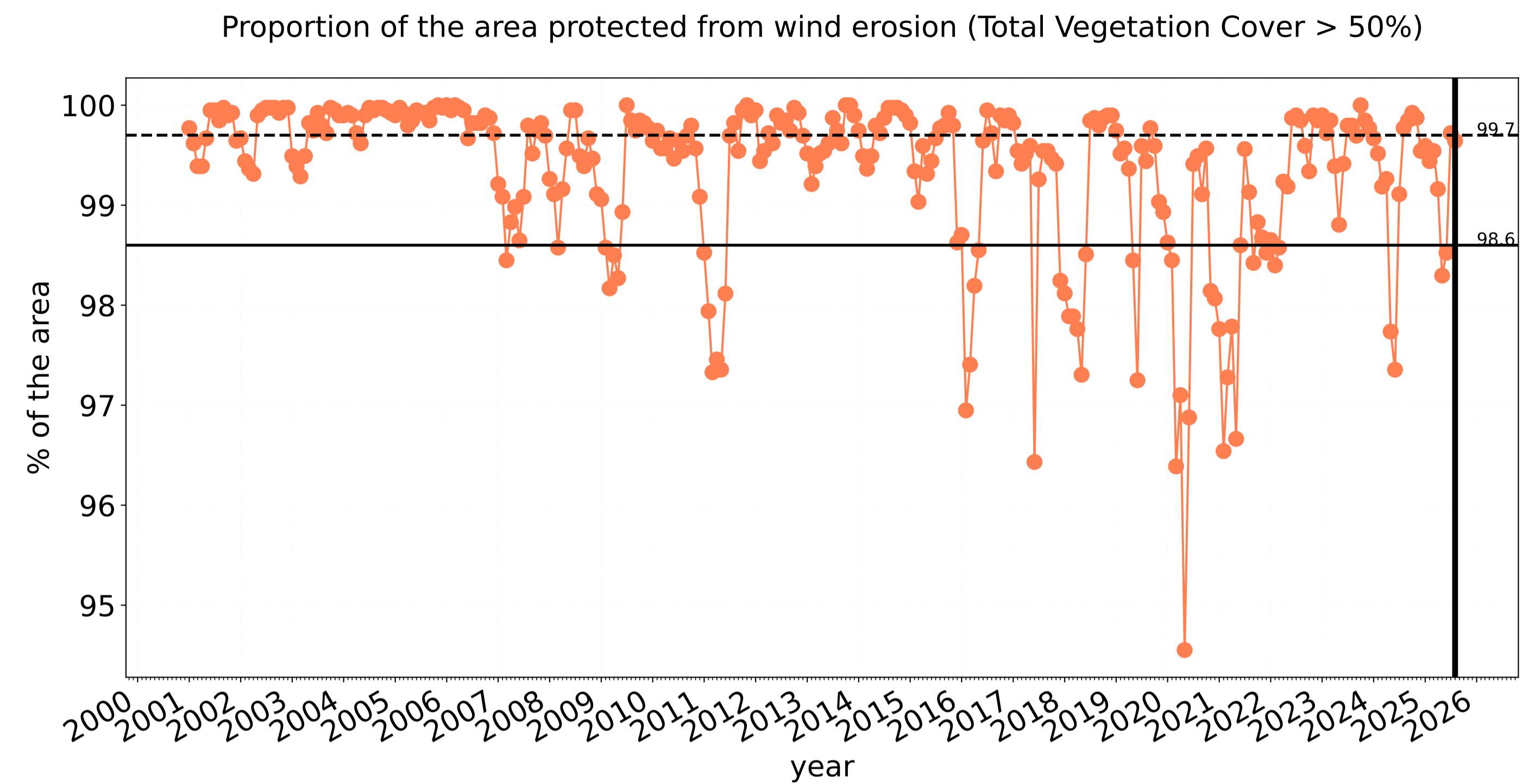
Anomaly shows how many percentage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



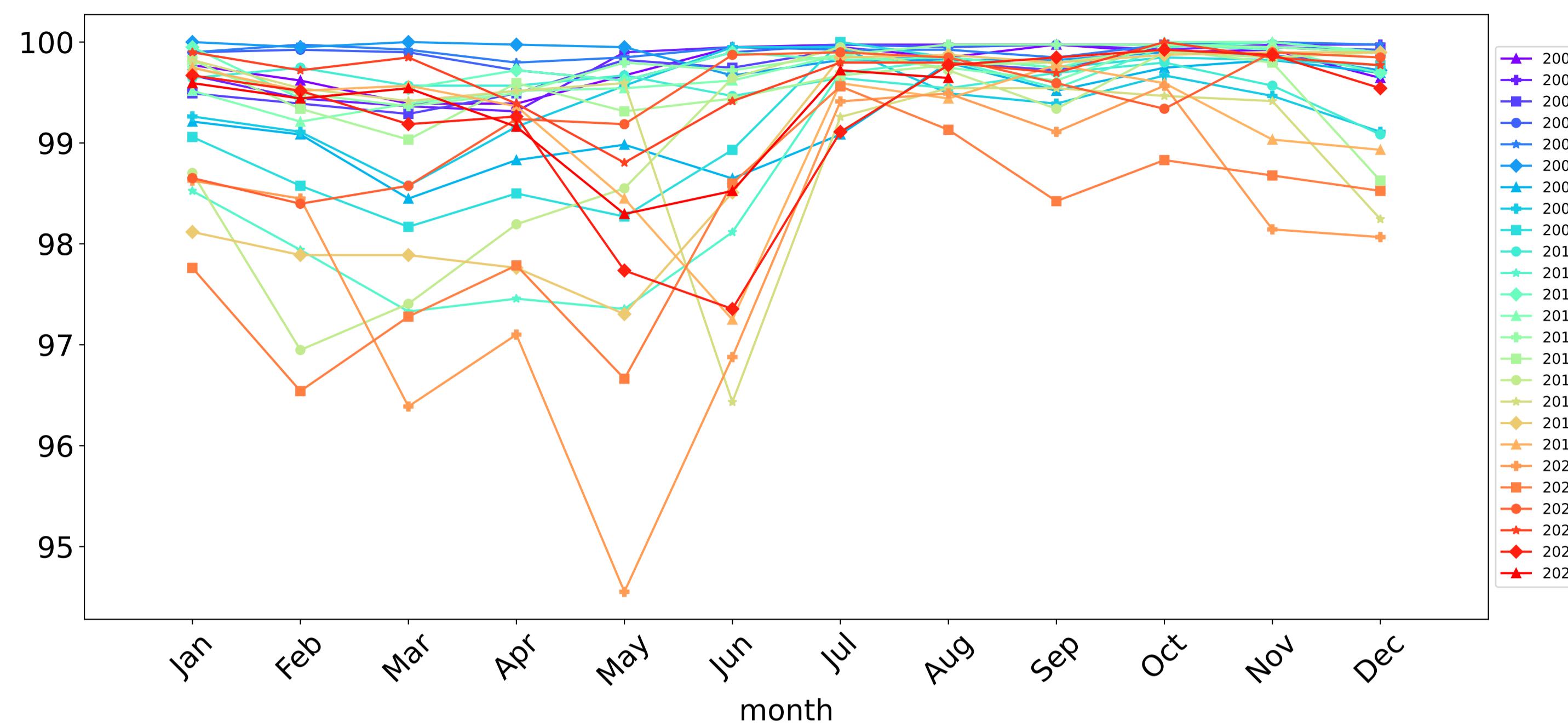
### Total Vegetation Cover Decile [%]



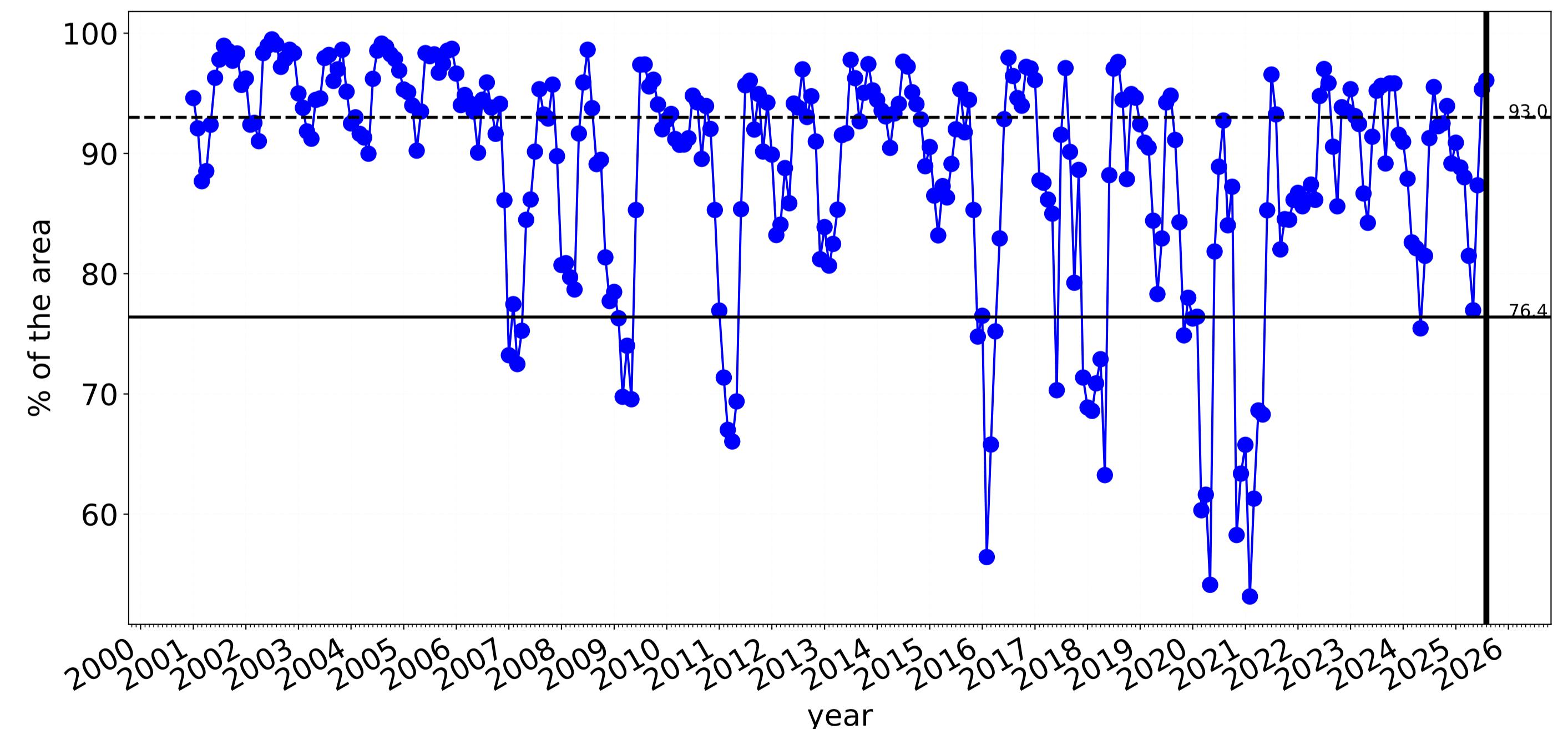
### Grazing timeseries



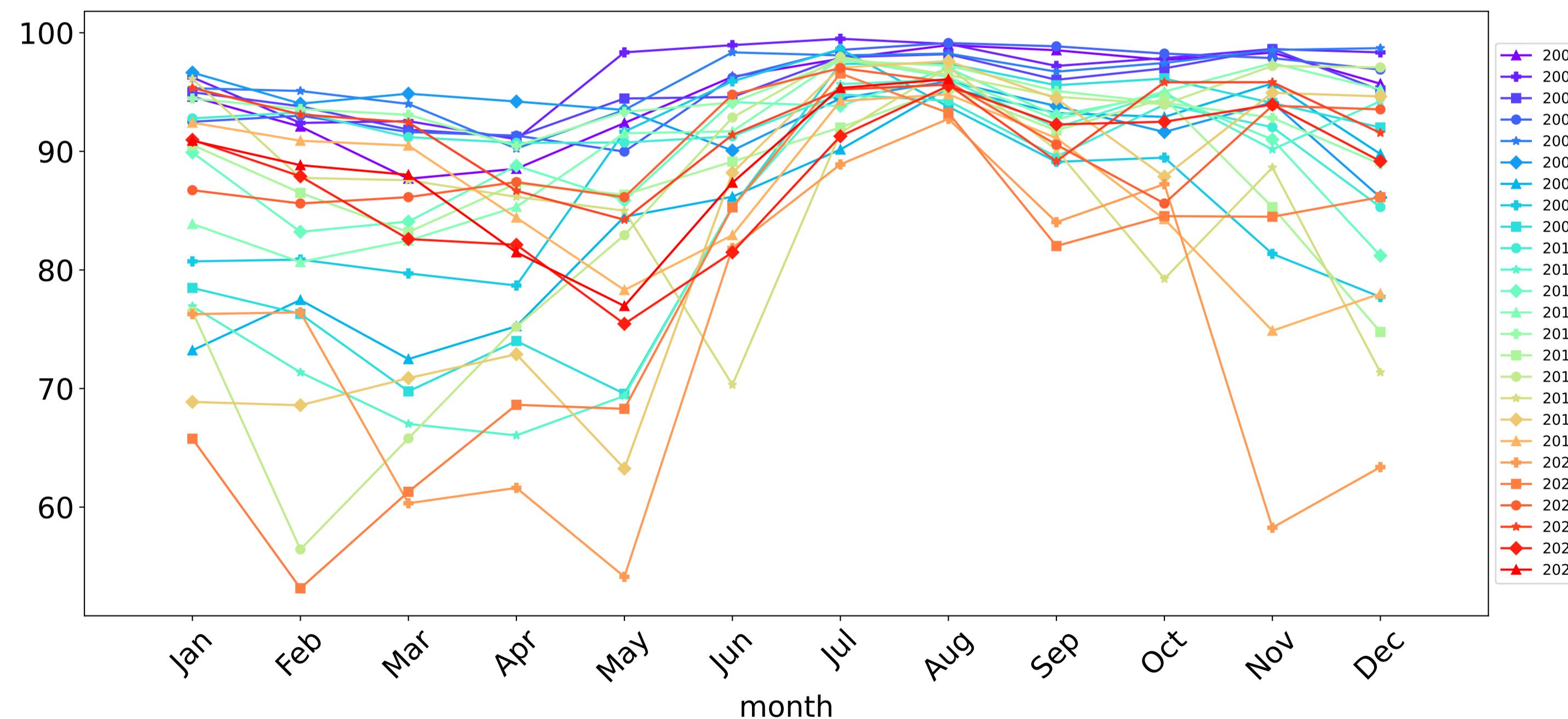
### Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



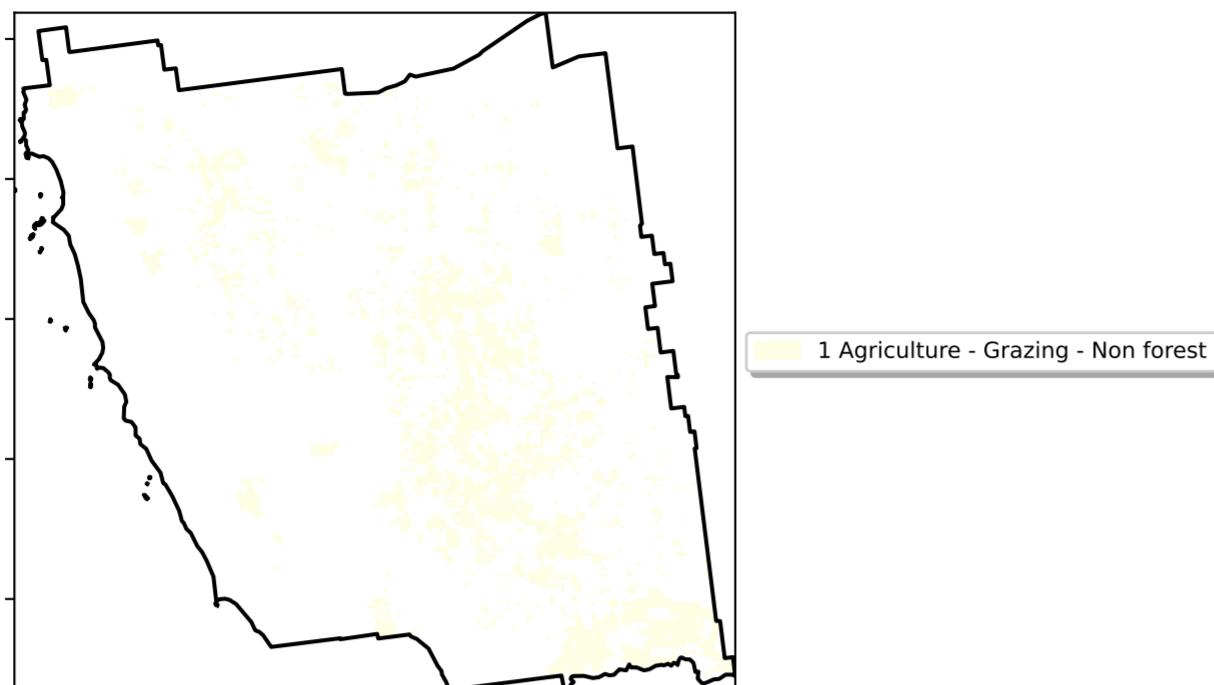
### Water erosion historical monthly area protected (Total Veg Cov>70%)



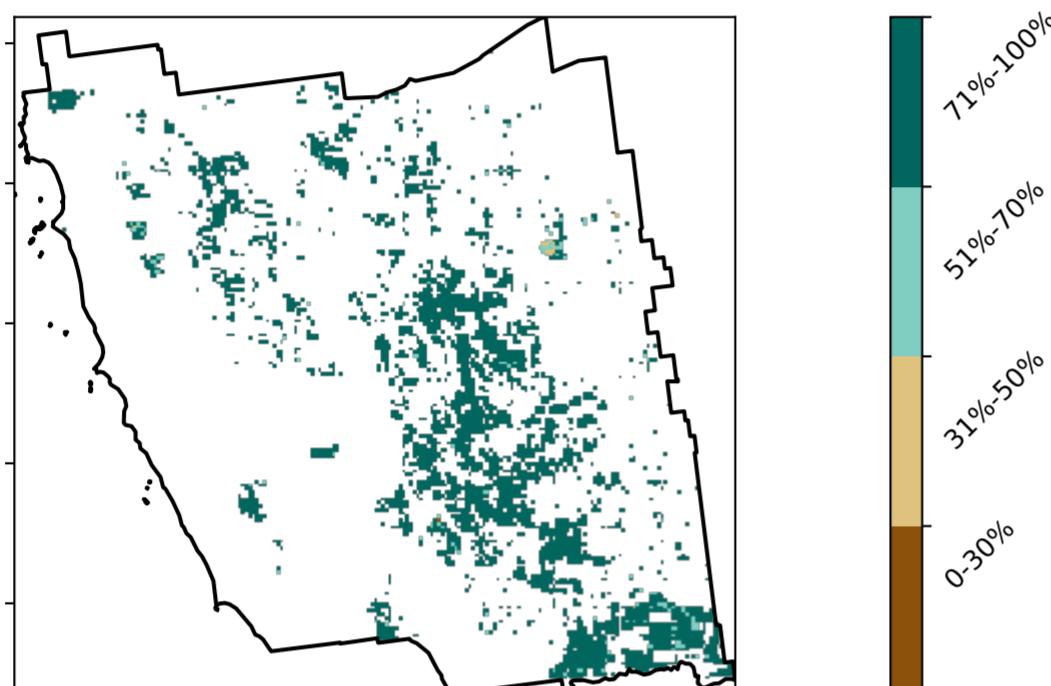
## Grazing non forest

Land use and forest cover

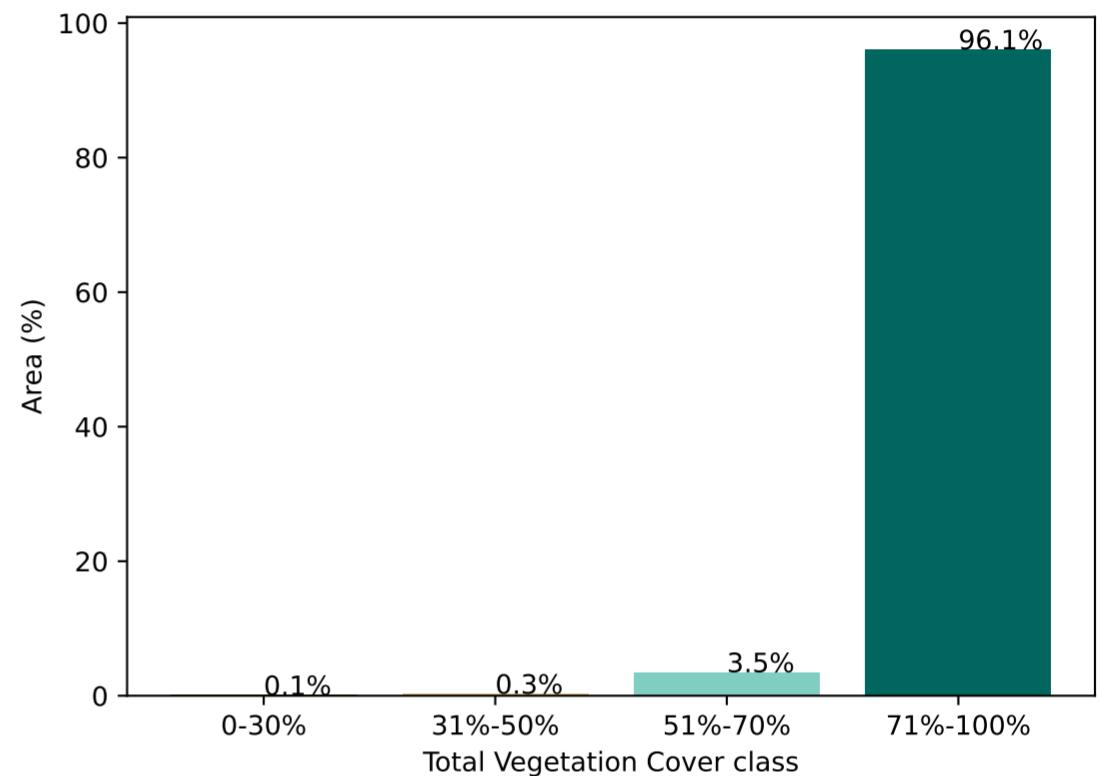
Catchment Scale Land Use and Forests of Australia (2018)  
Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



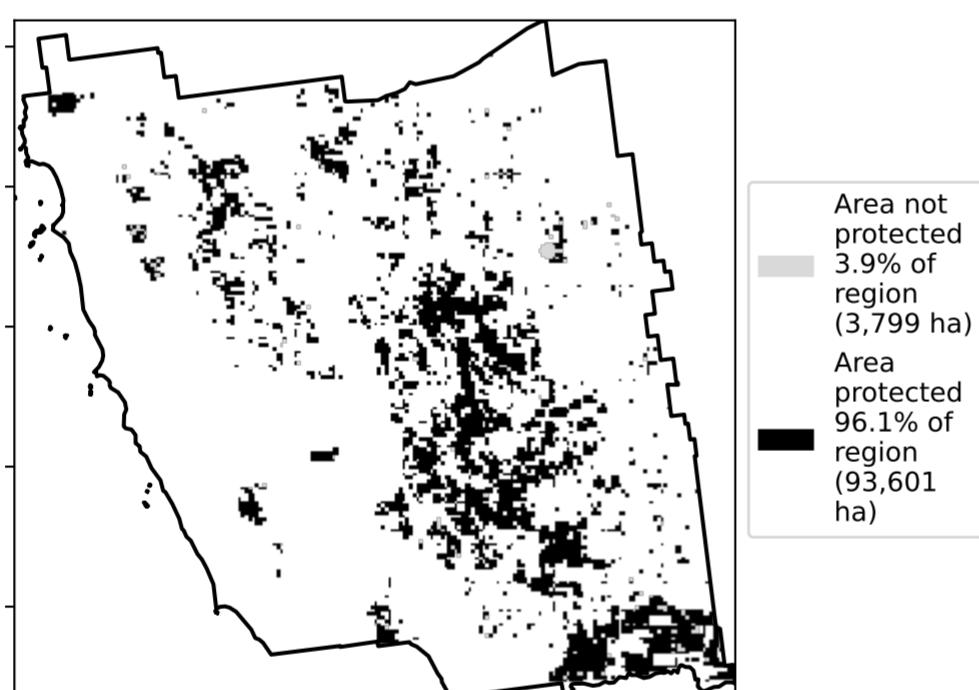
Total Vegetation Cover [%]



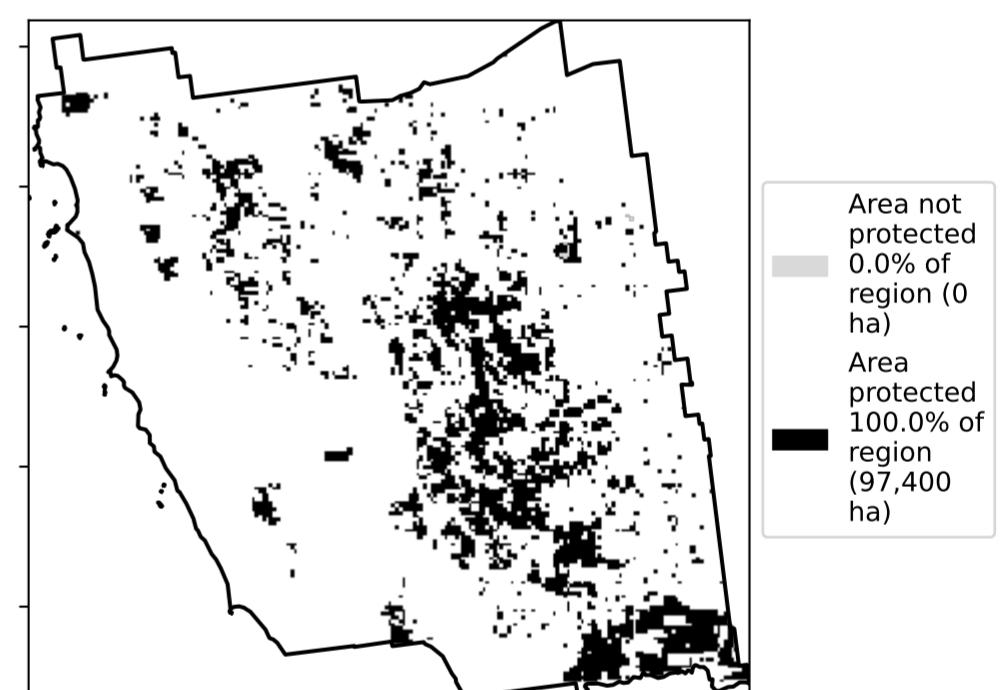
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

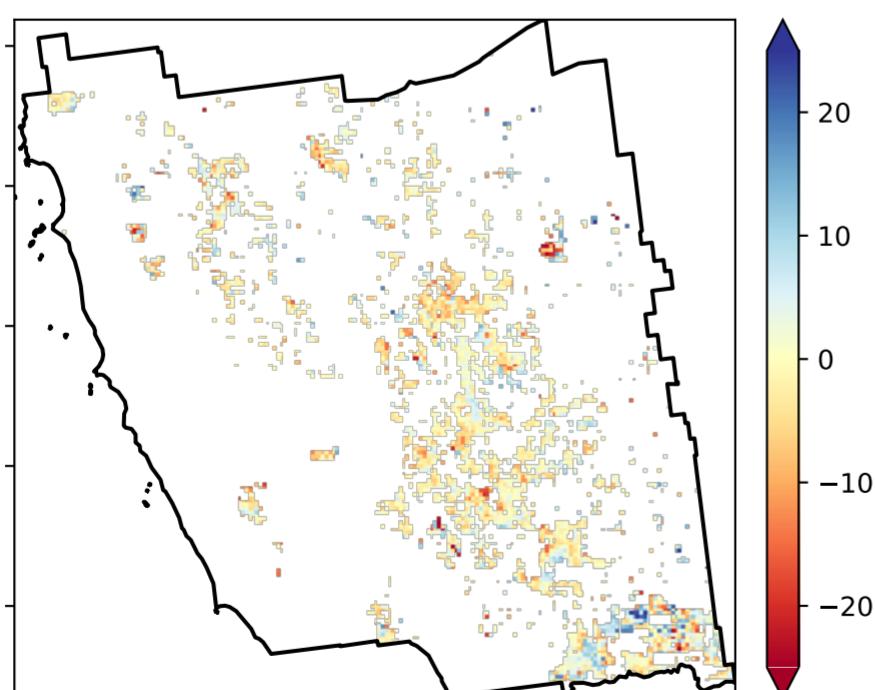


% Area protected from wind erosion (>50%)



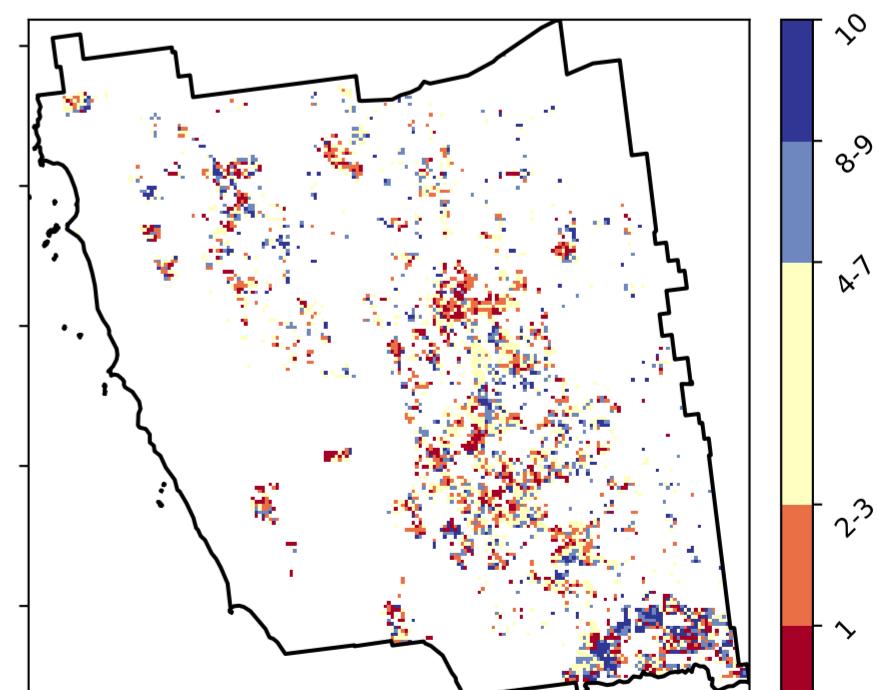
Total Vegetation Cover Anomaly [%]

Anomaly shows how many percentage 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.

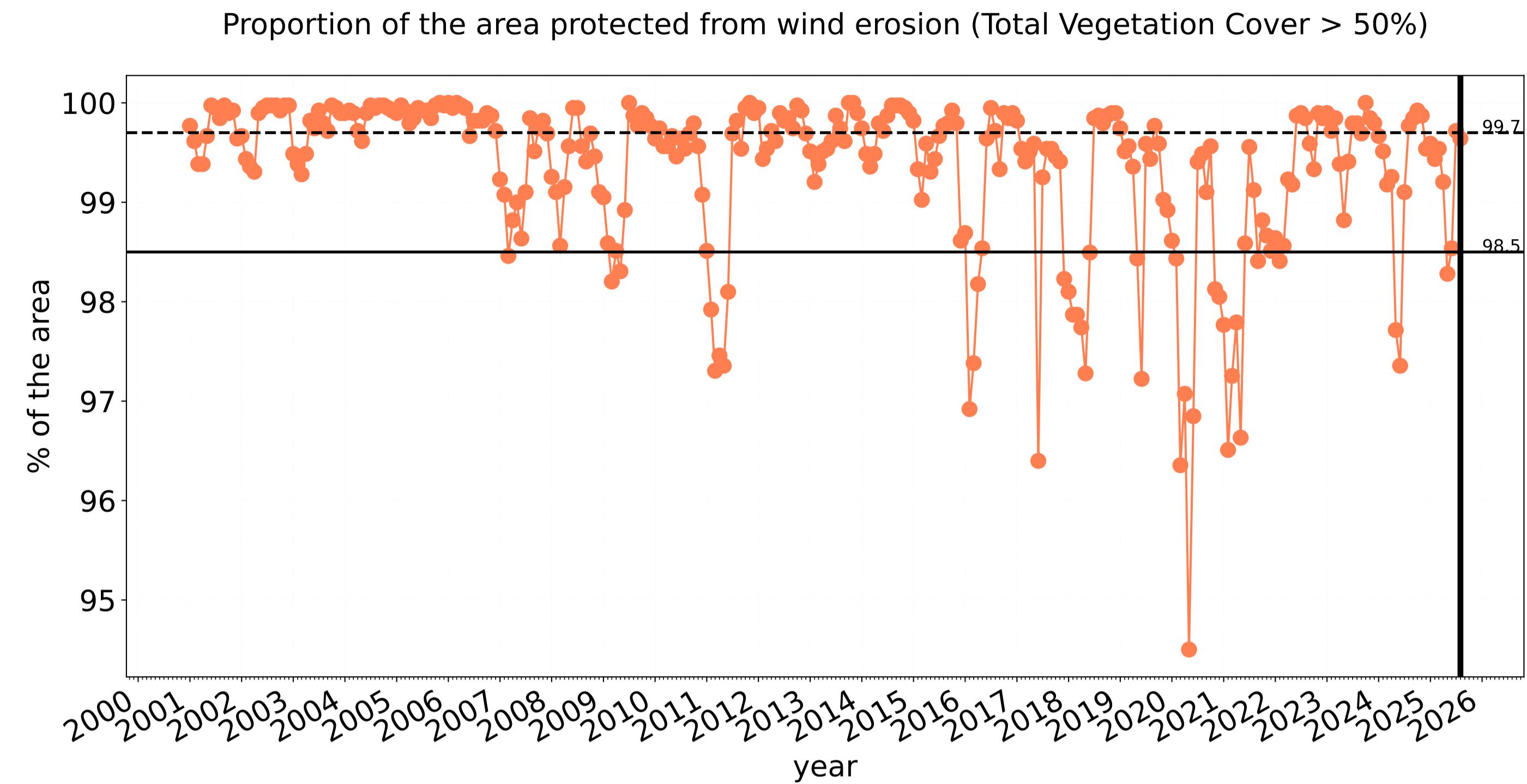


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

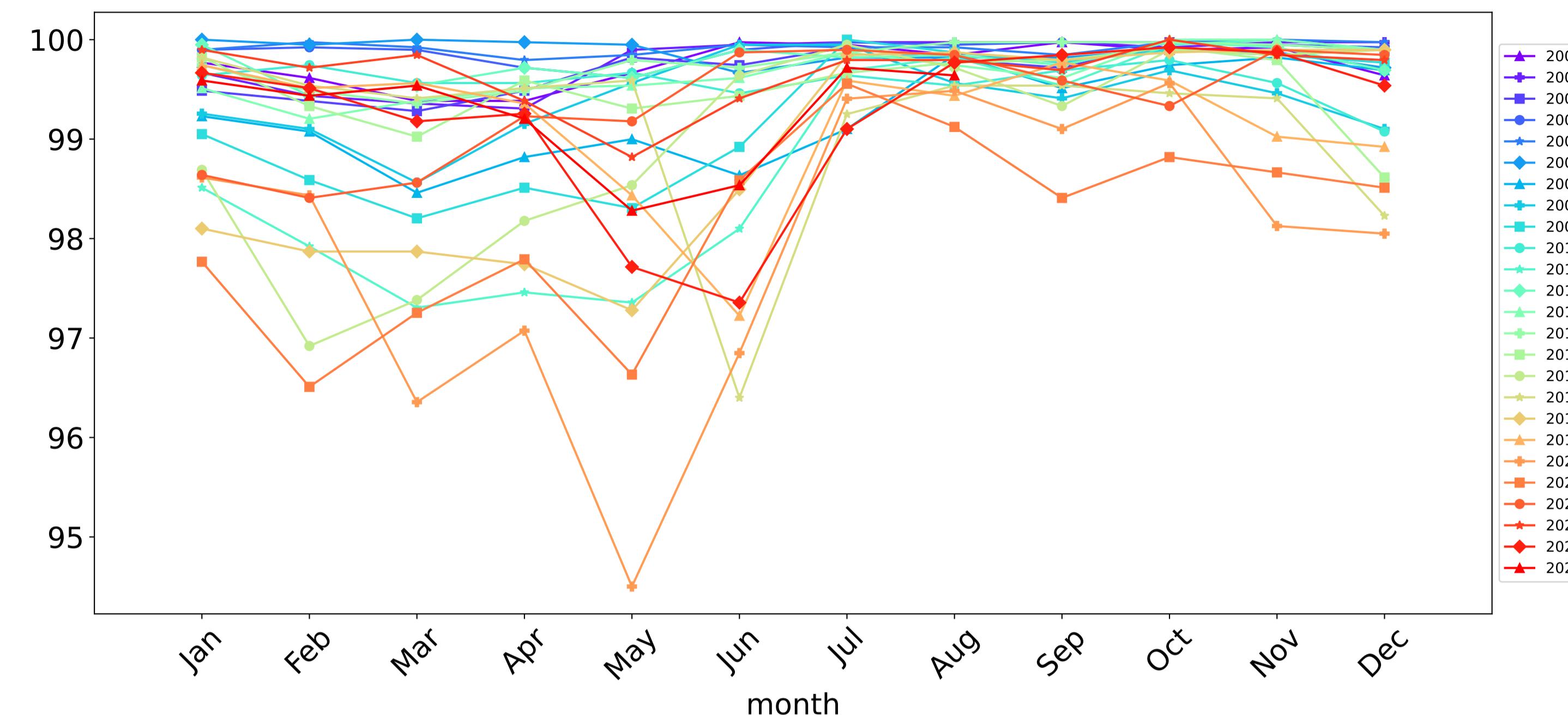
Total Vegetation Cover Decile [%]



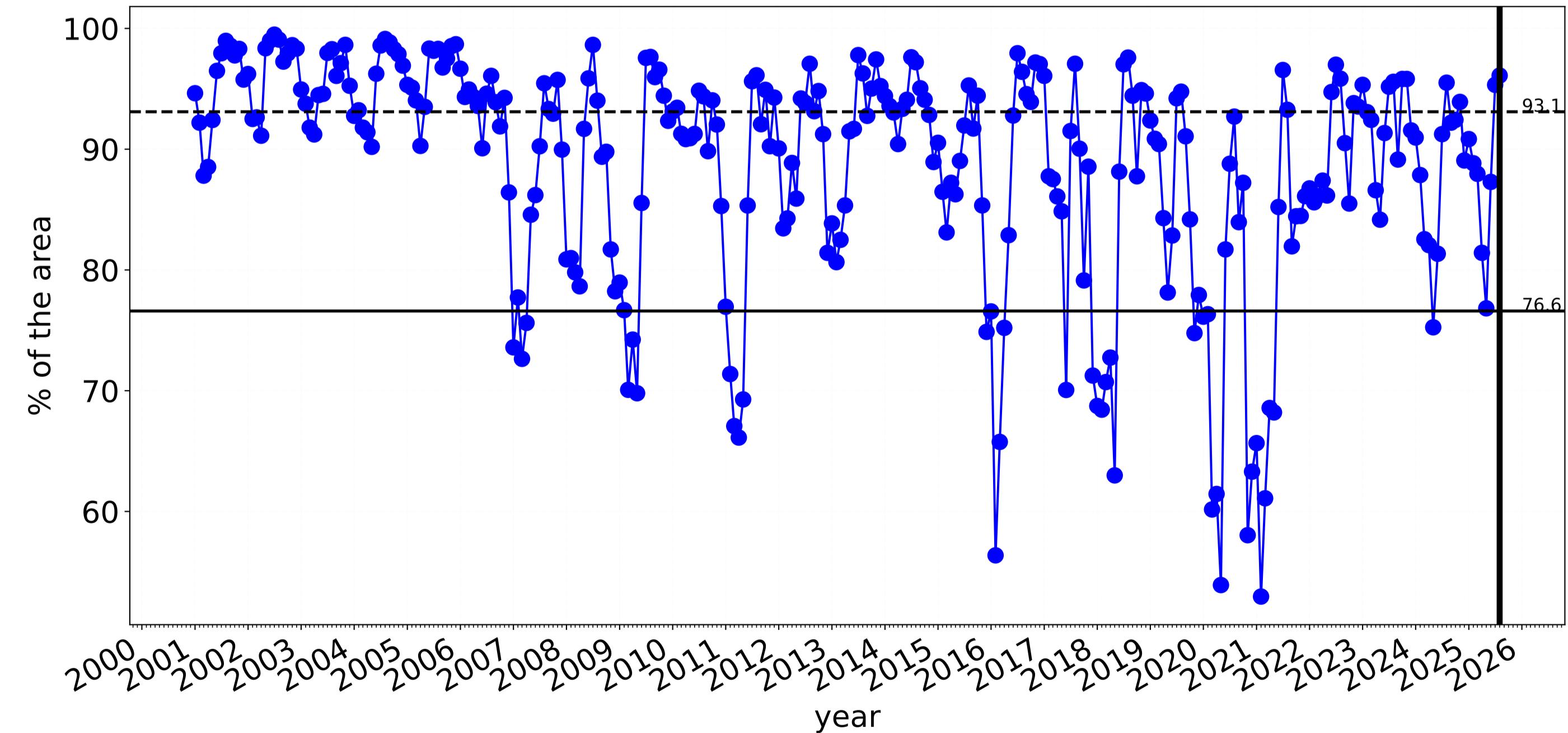
## Grazing non forest timeseries



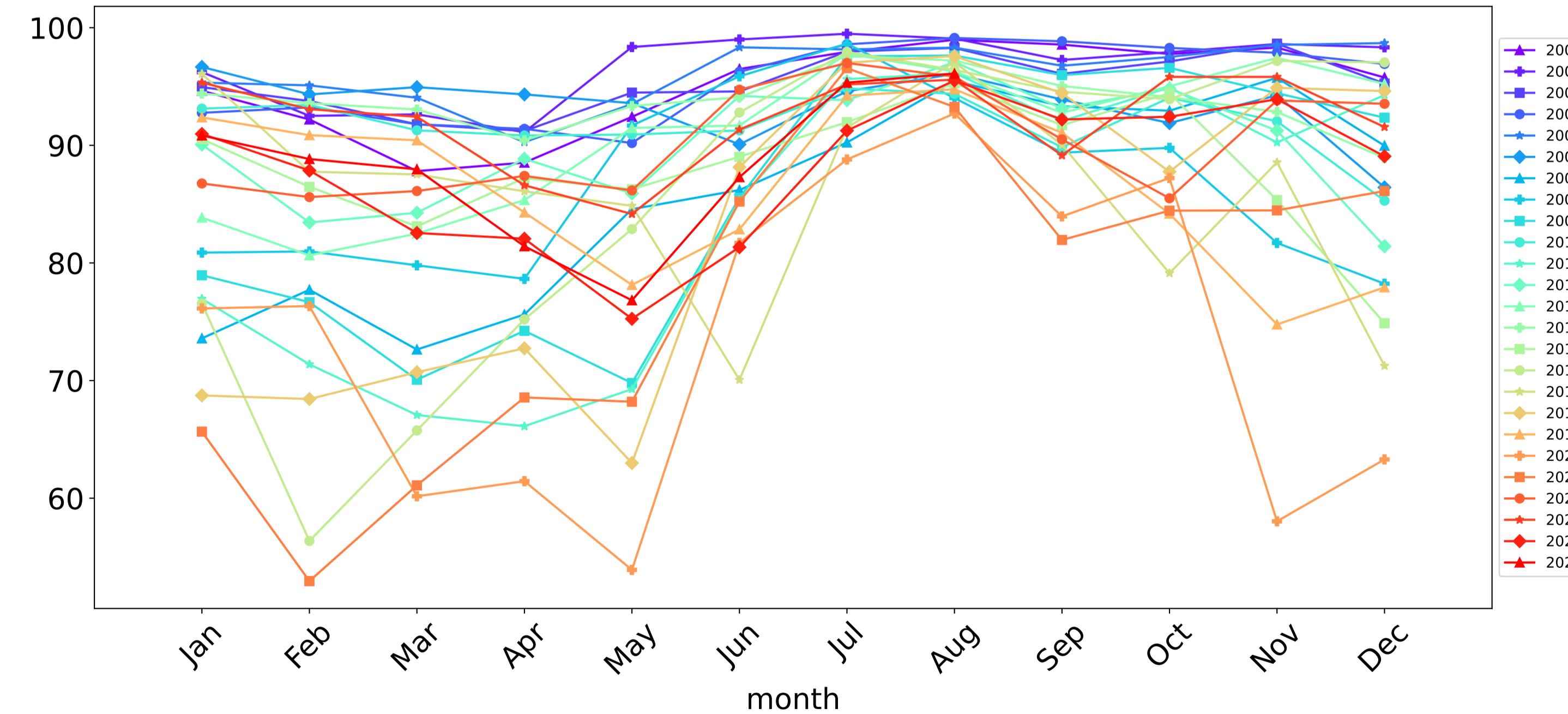
## Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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



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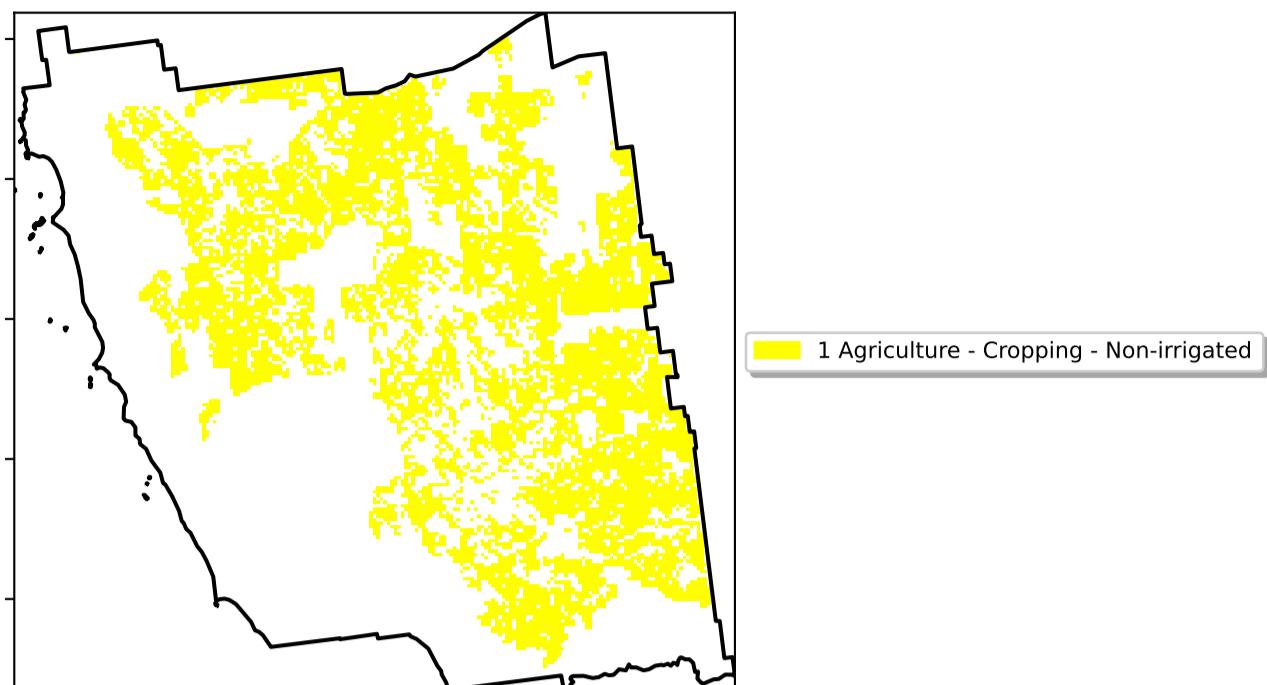
National  
Landcare  
Programme



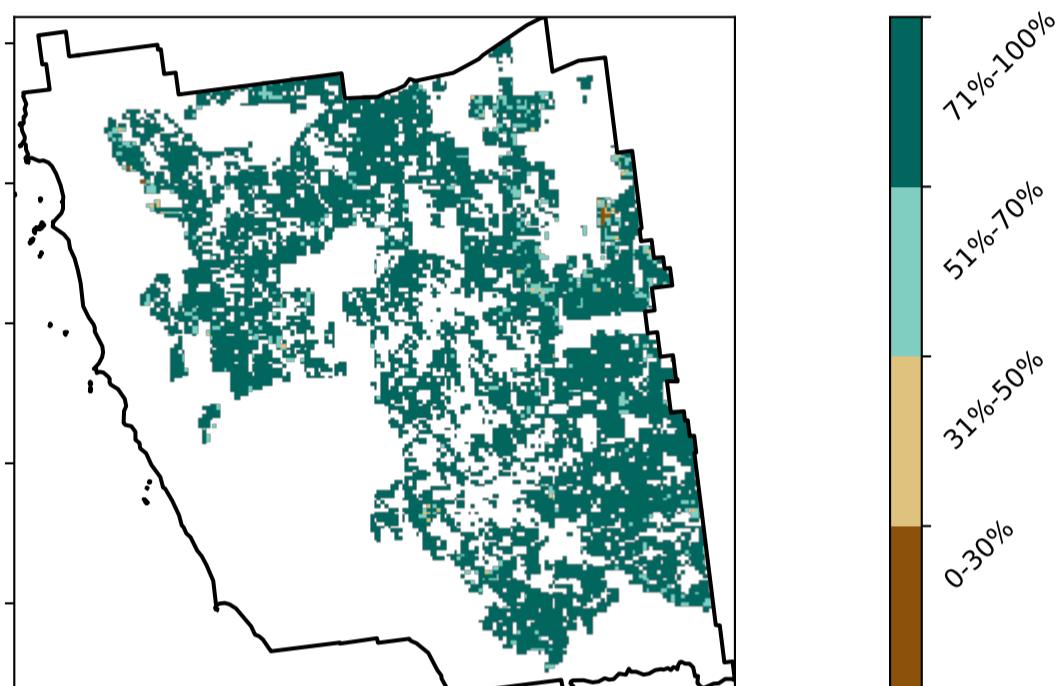
# Cropping

Land use and forest cover

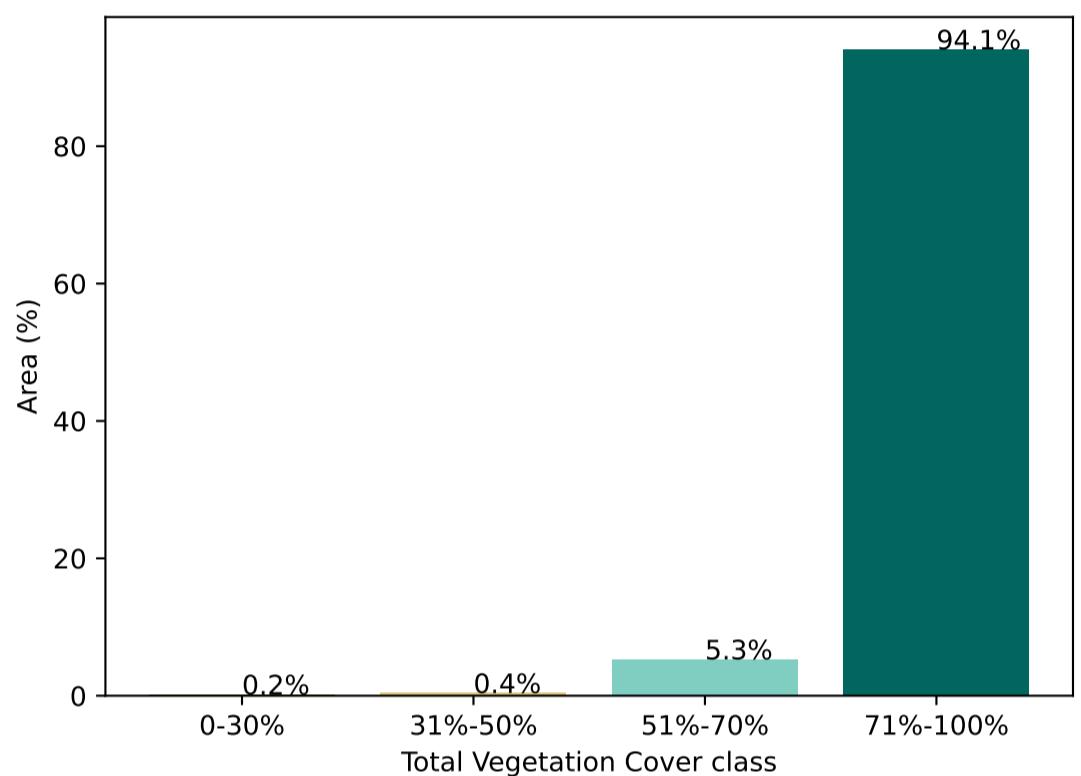
Catchment Scale Land Use and Forests of Australia (2018)  
Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



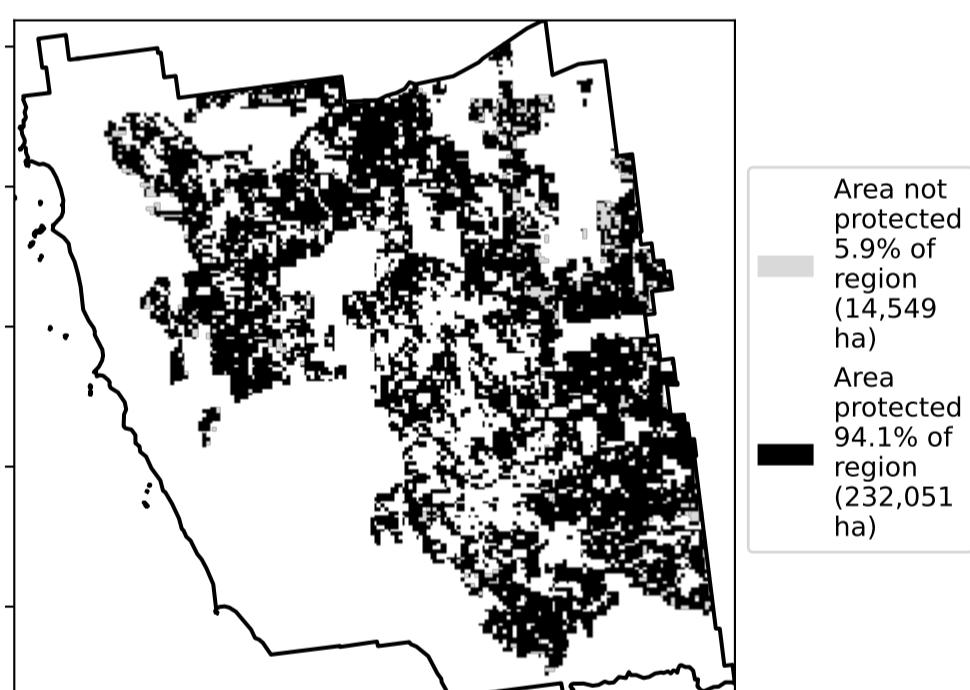
Total Vegetation Cover [%]



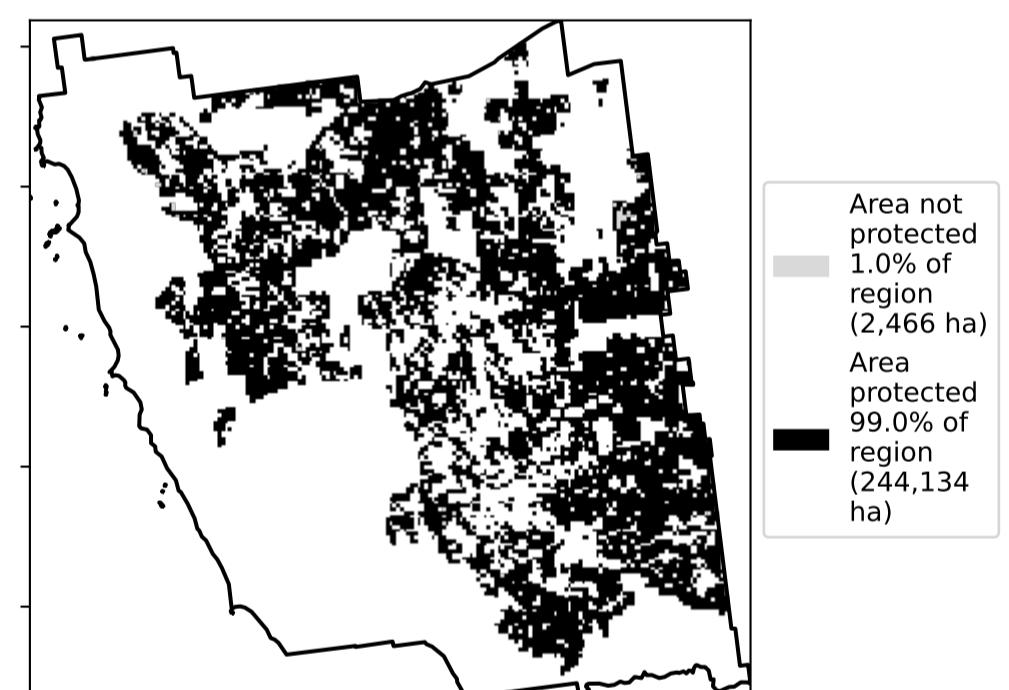
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

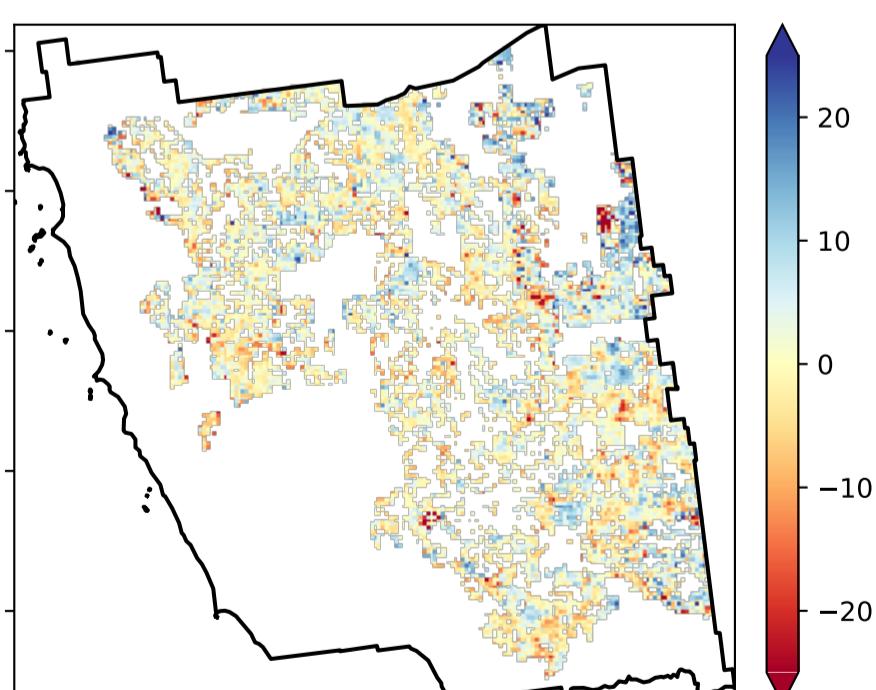


% Area protected from wind erosion (>50%)



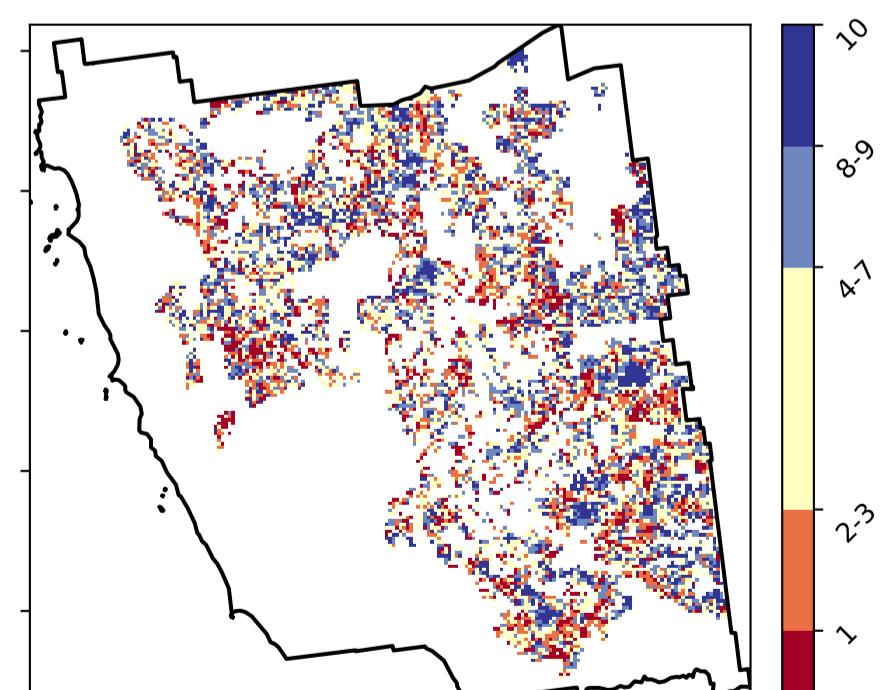
Total Vegetation Cover Anomaly [%]

Anomaly shows how many percentage 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 [%]

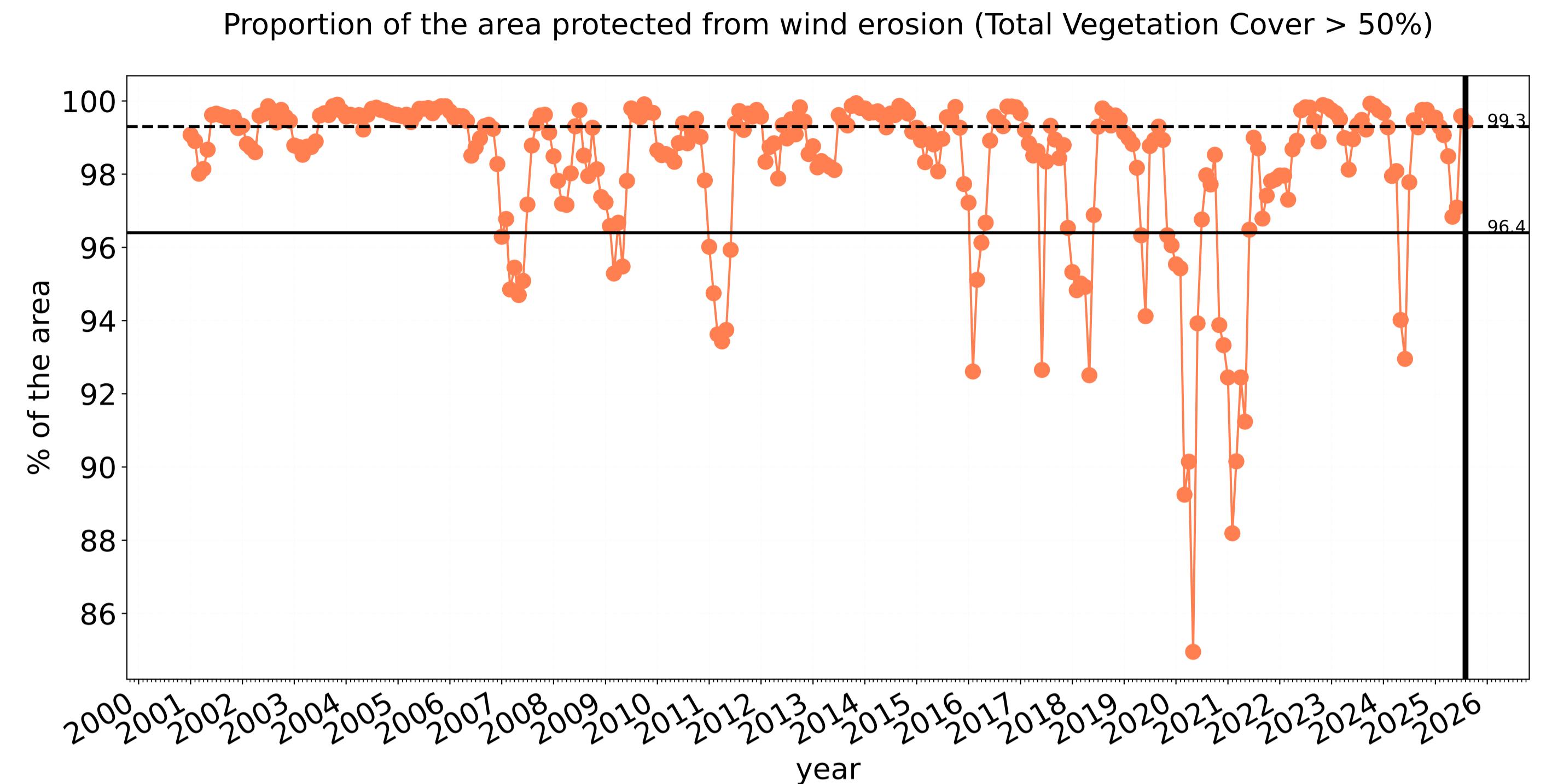


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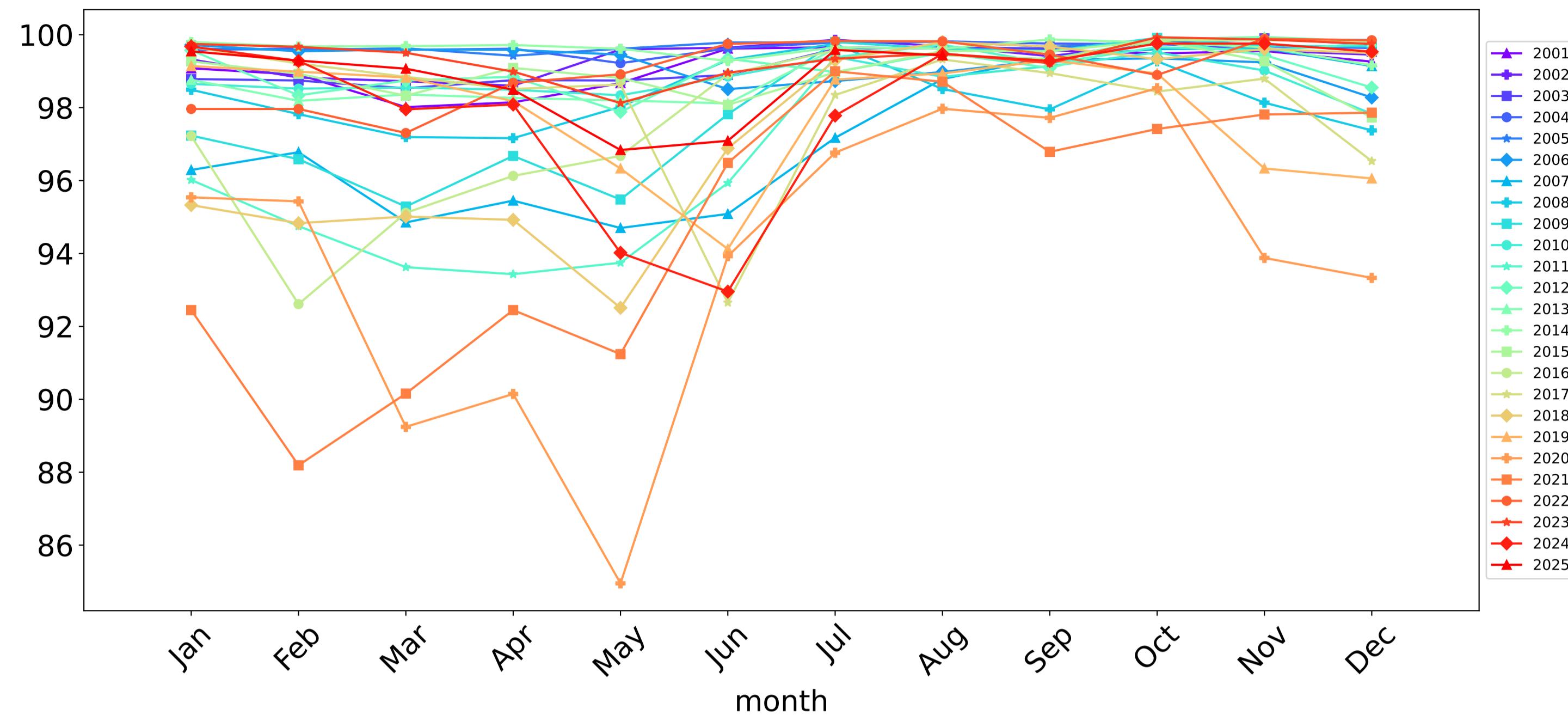
Ecosystem Research Infrastructure



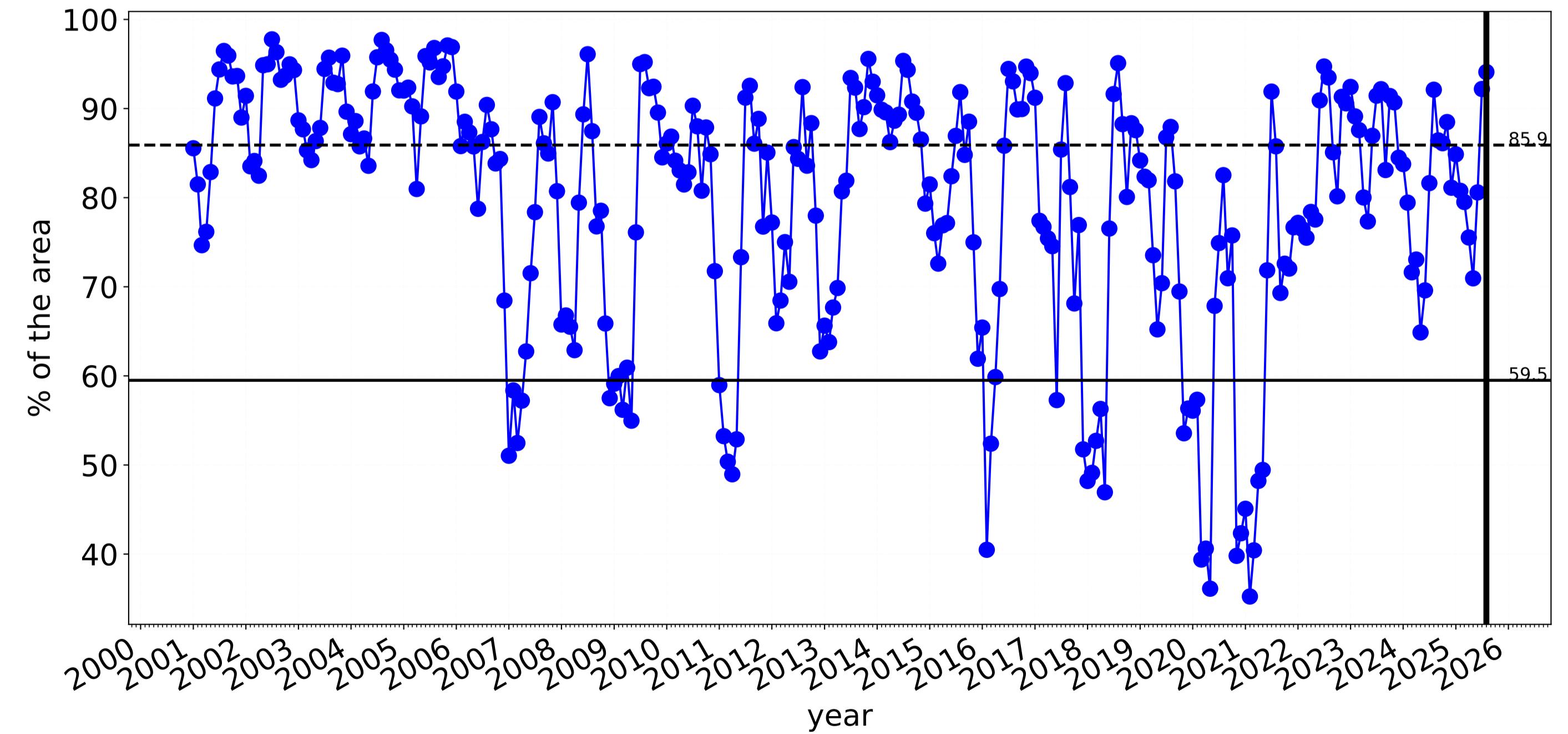
### Cropping timeseries



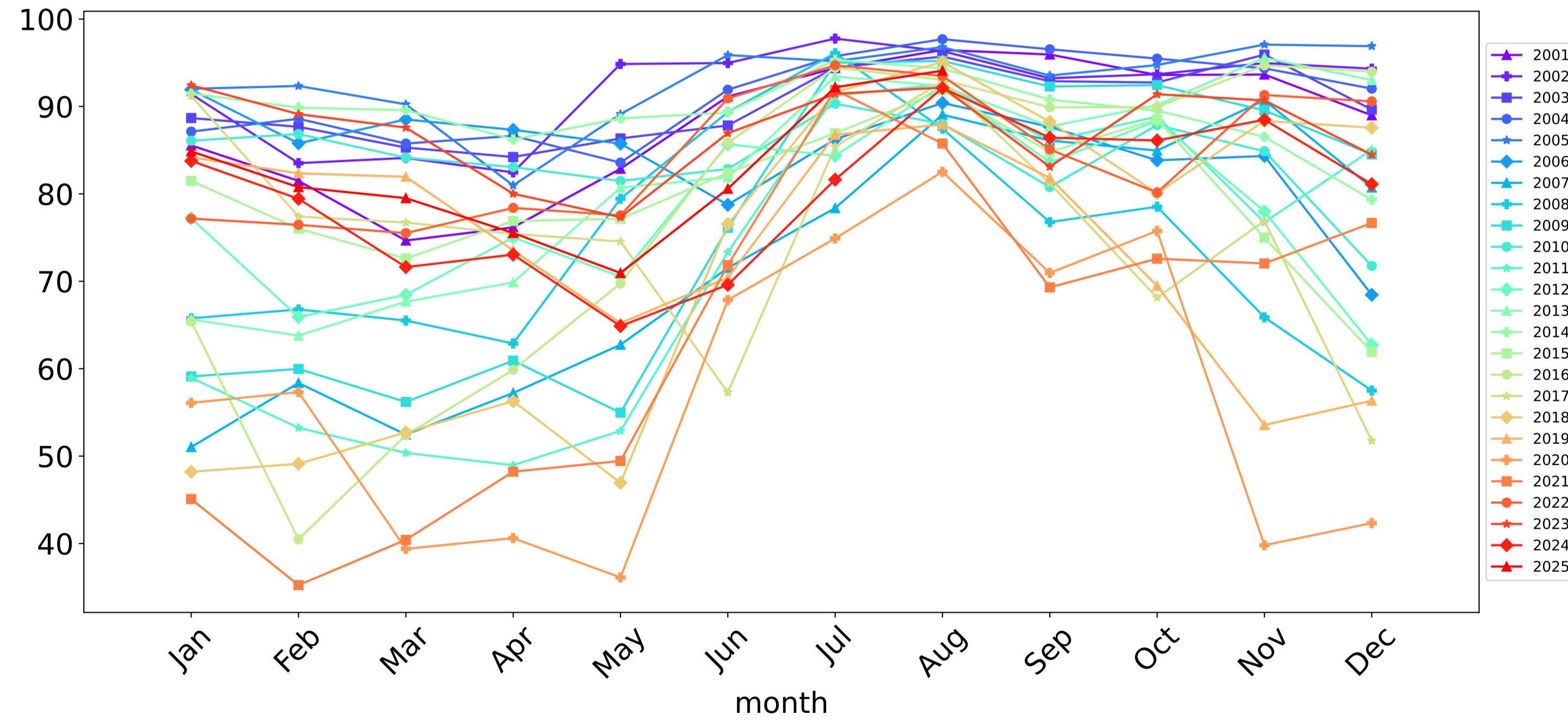
### Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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



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Ecosystem Research Infrastructure



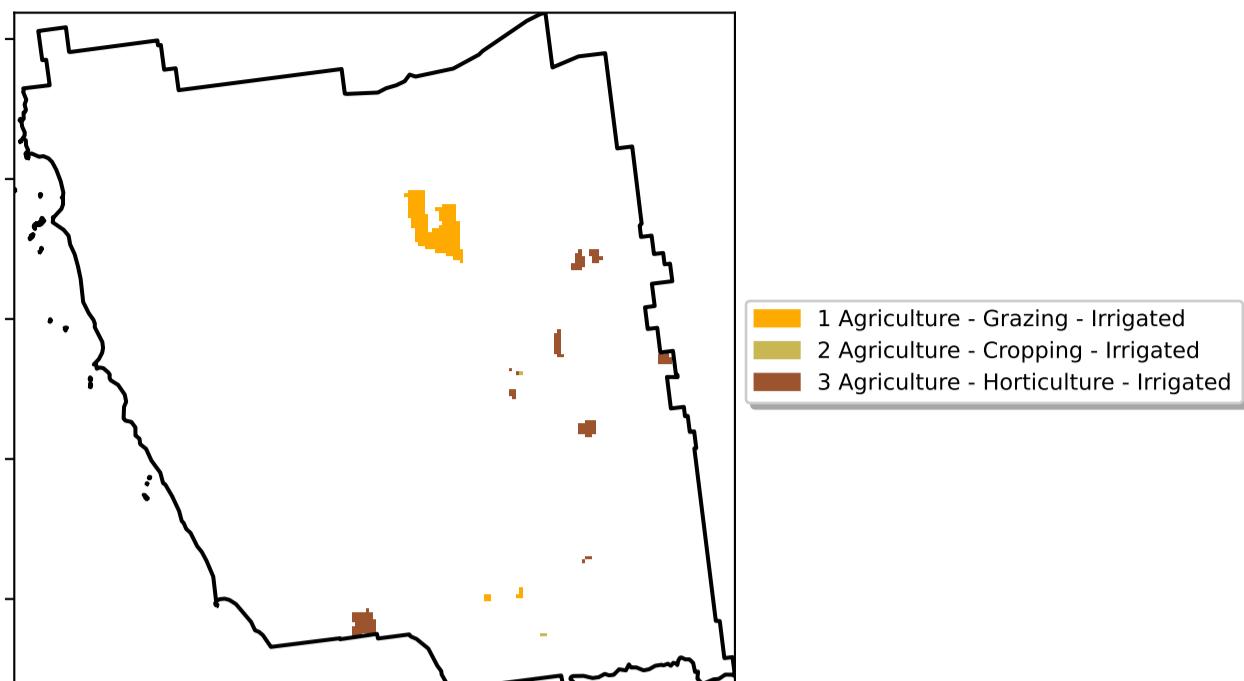
National  
Landcare  
Programme



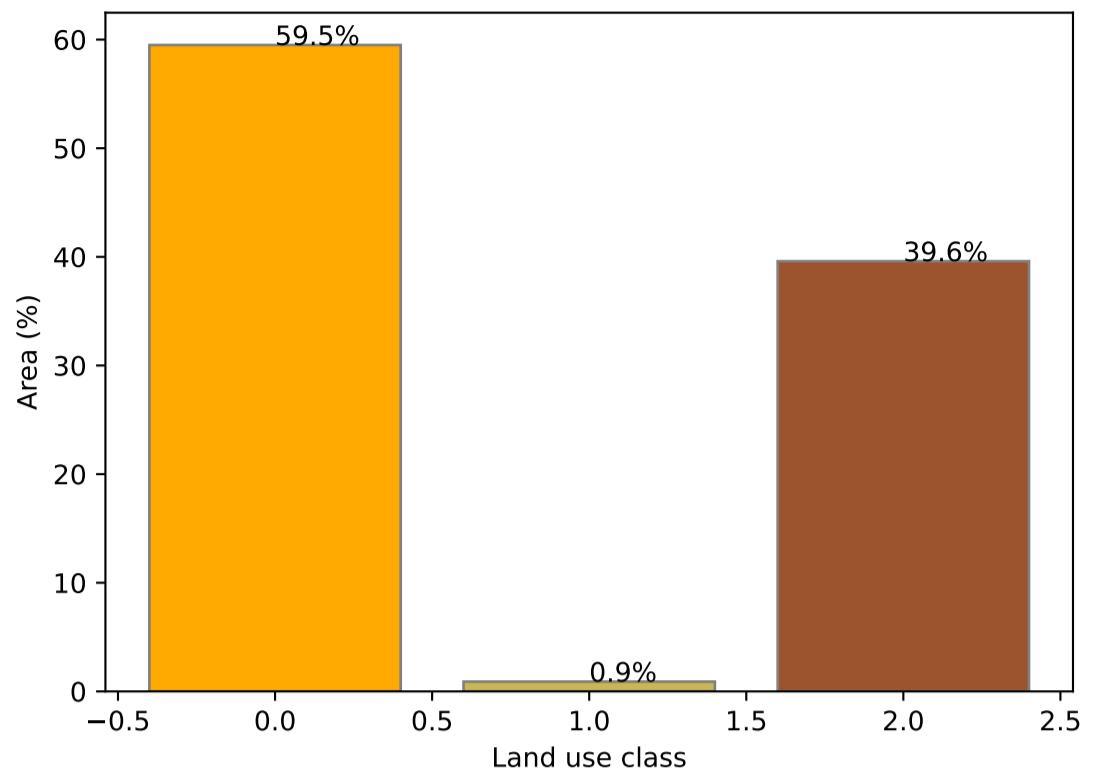
# Irrigation

Land use and forest cover

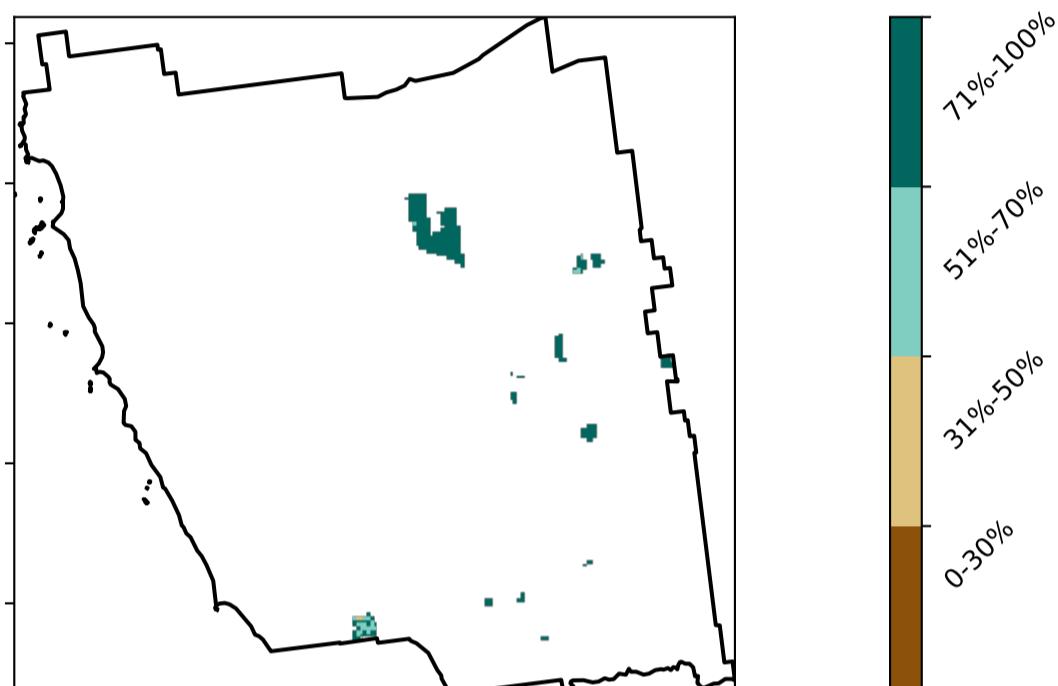
Catchment Scale Land Use and Forests of Australia (2018)  
Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



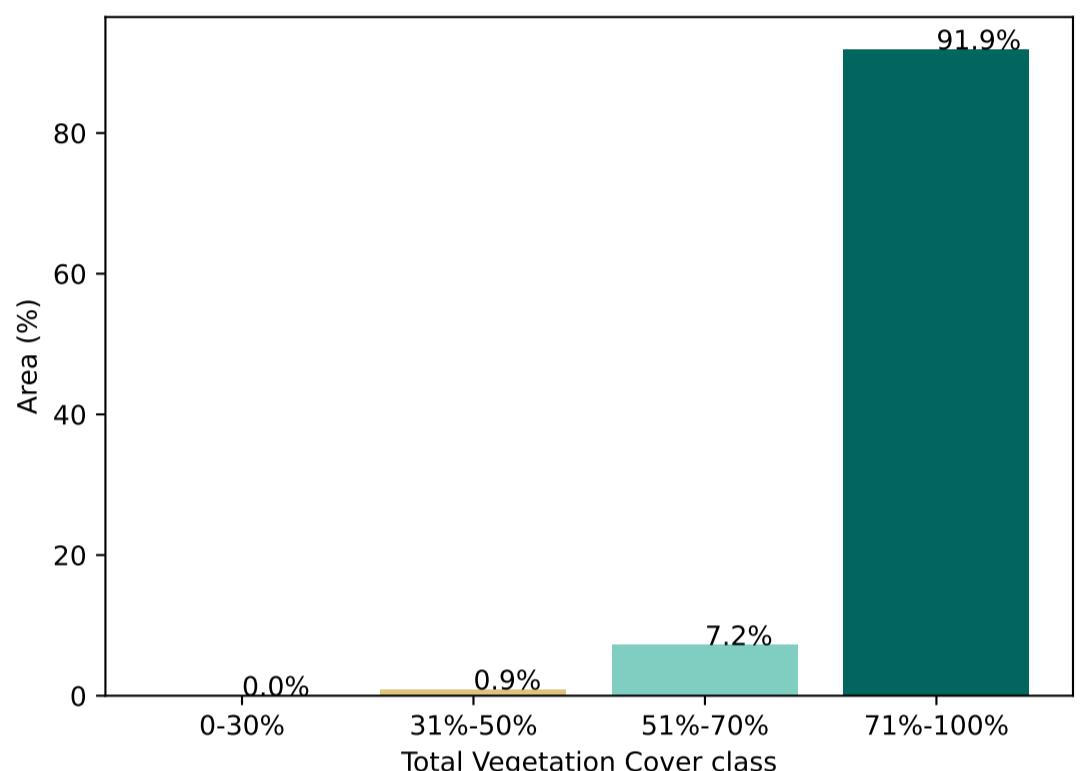
Proportion of each land class in area



Total Vegetation Cover [%]



Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

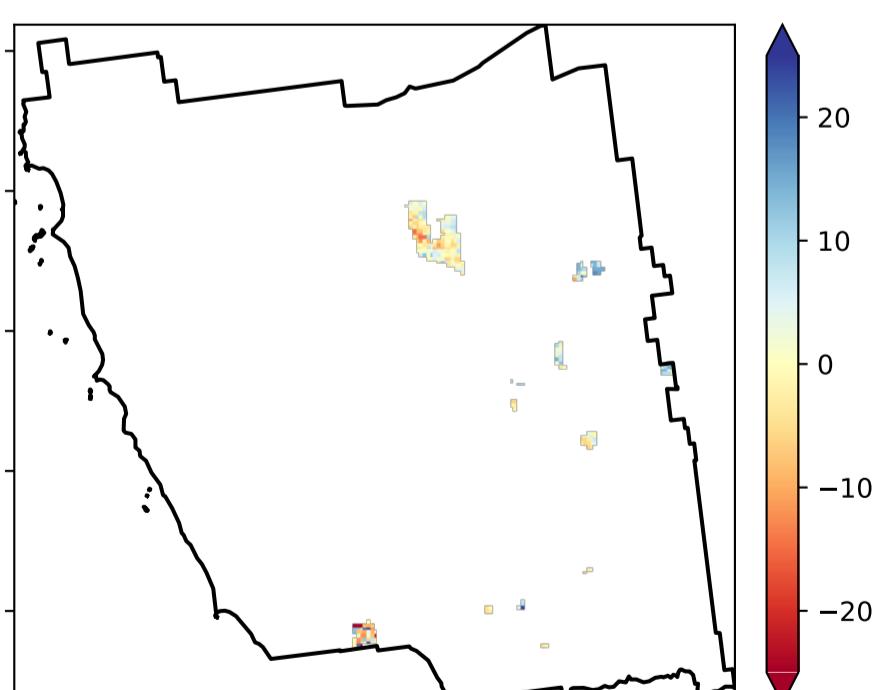


% Area protected from wind erosion (>50%)



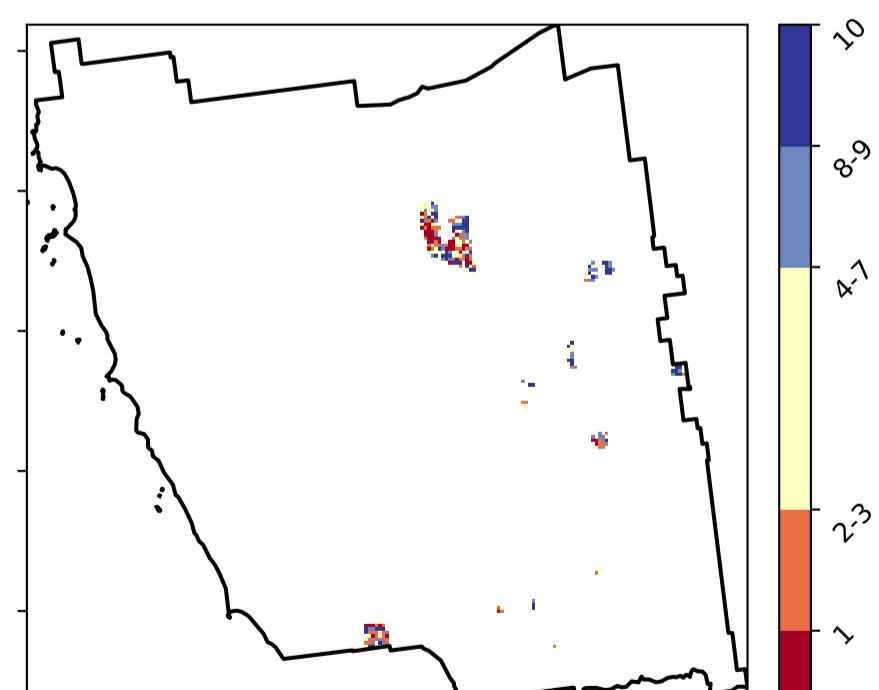
Total Vegetation Cover Anomaly [%]

Anomaly shows how many percentage 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.



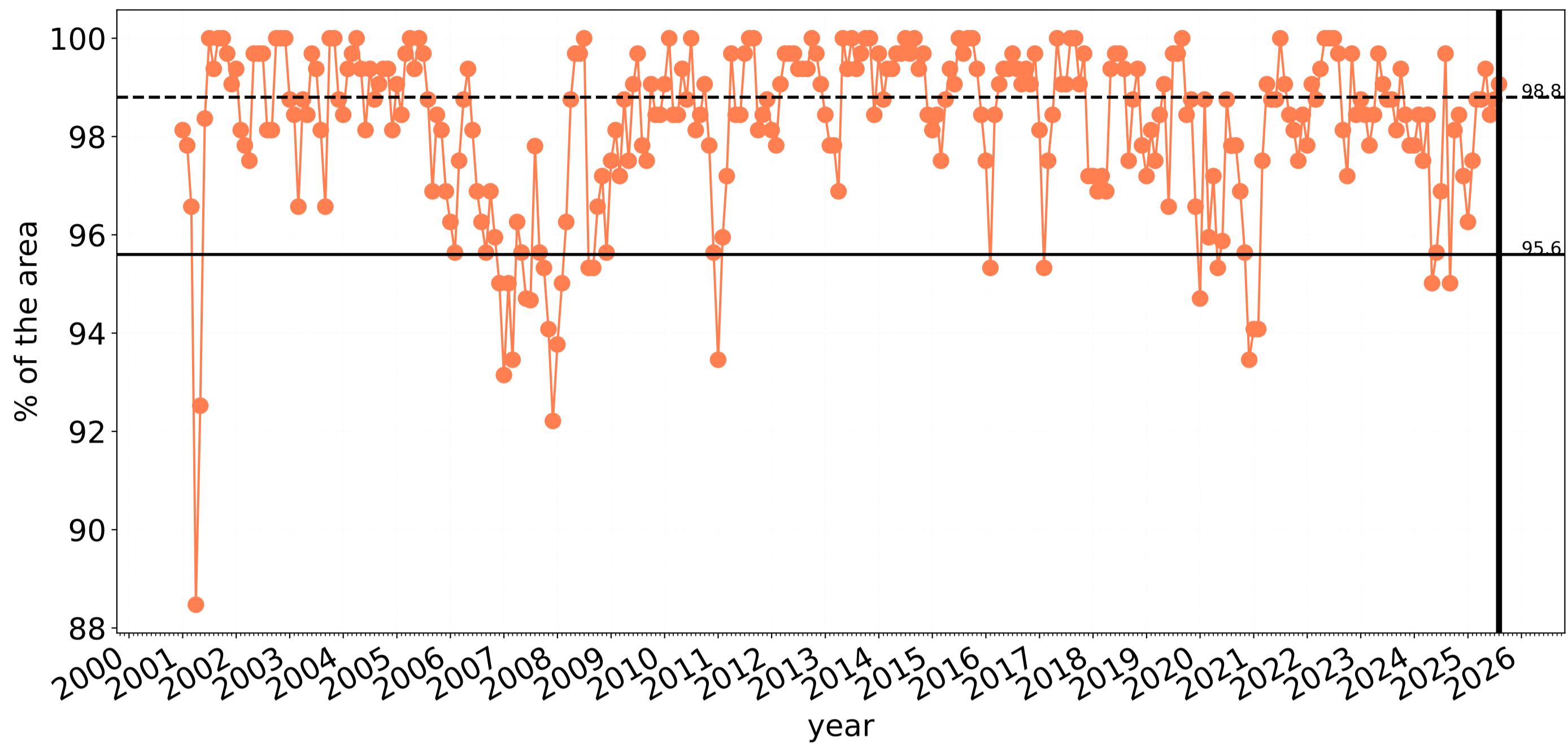
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Total Vegetation Cover Decile [%]

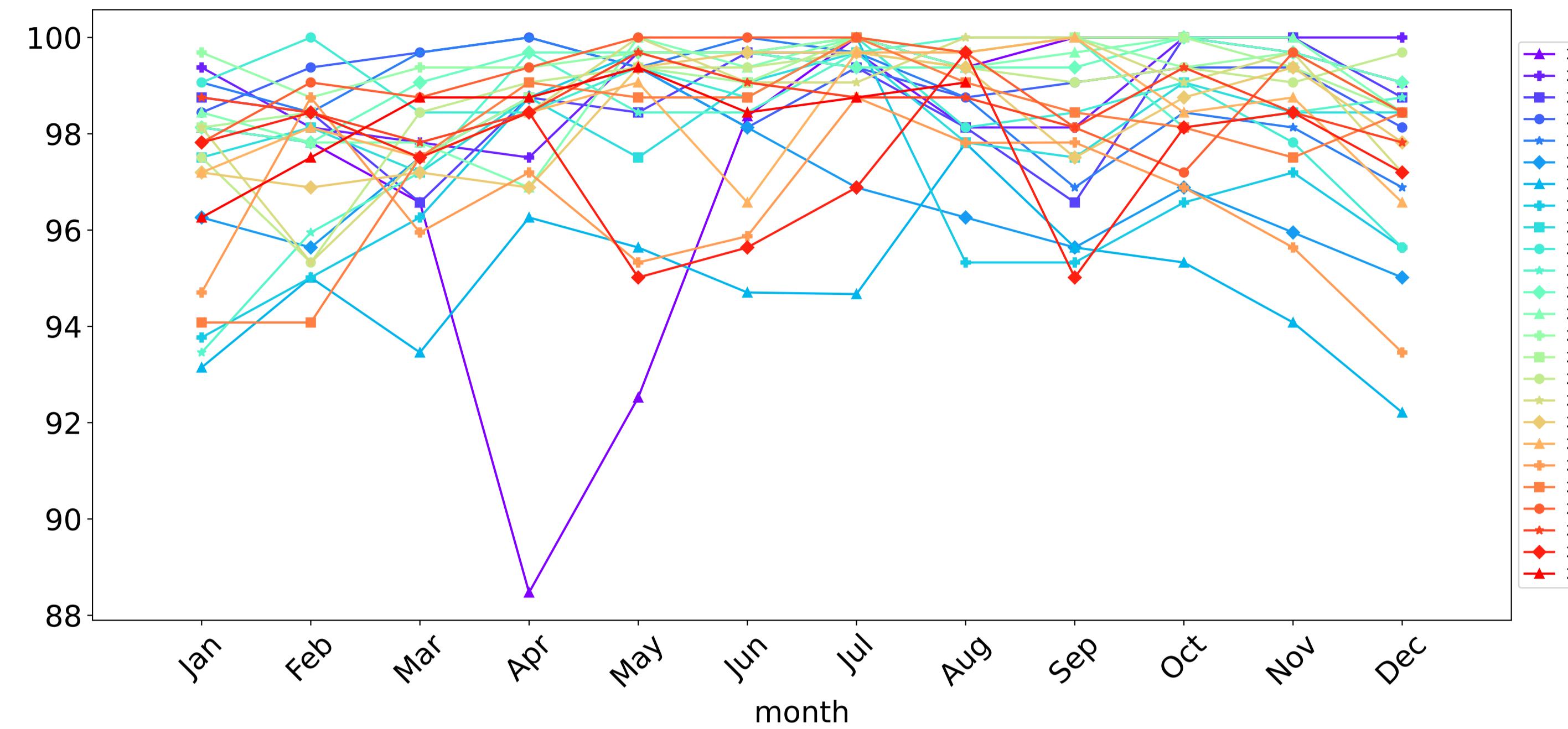


## Irrigation timeseries

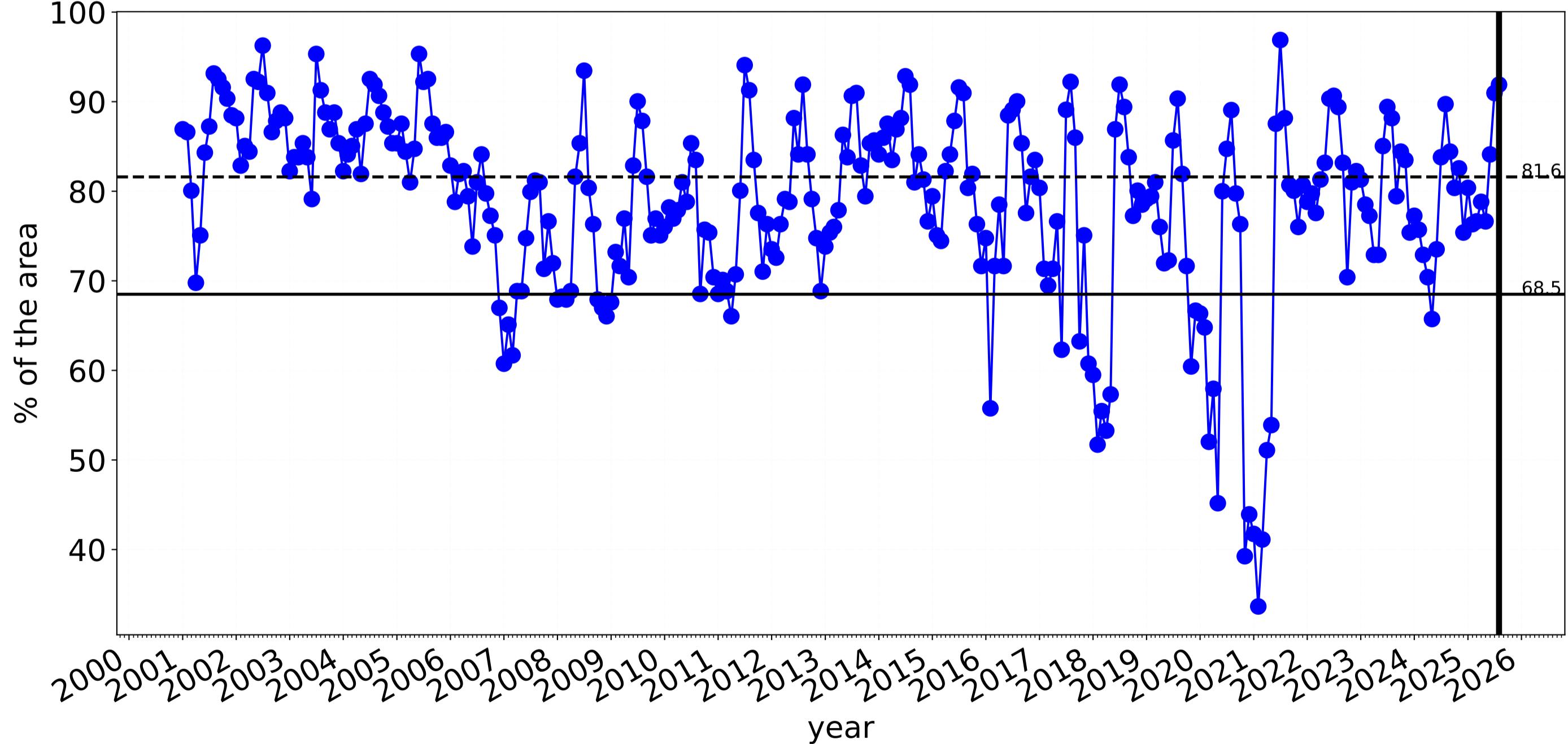
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



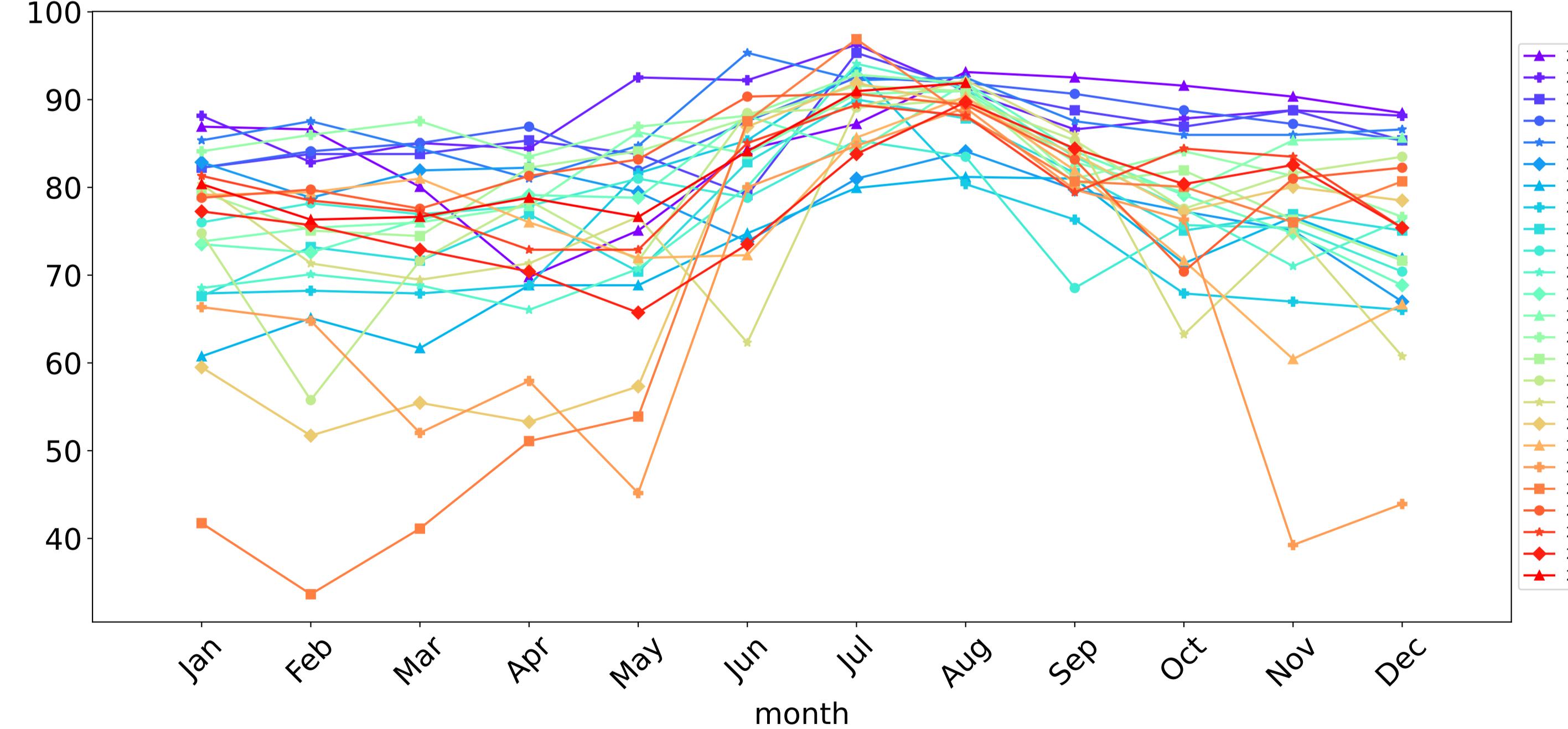
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



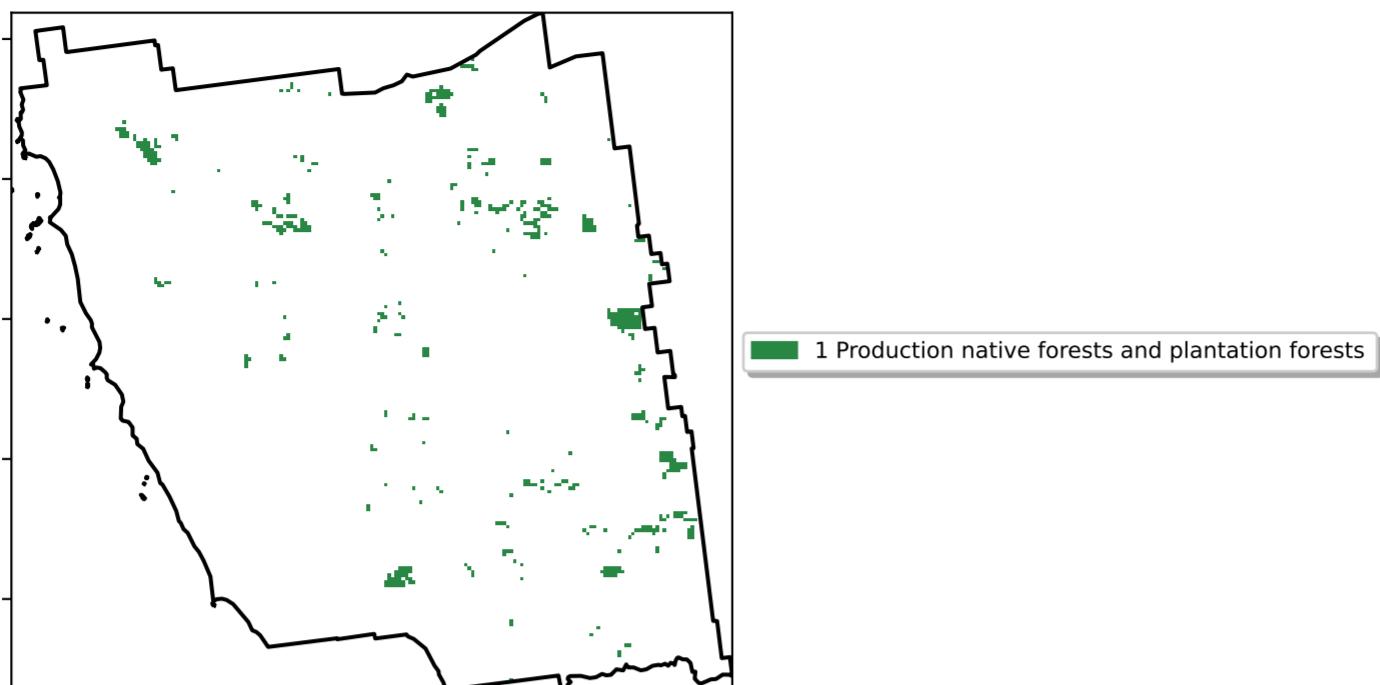
Water erosion historical monthly area protected (Total Veg Cov>70%)



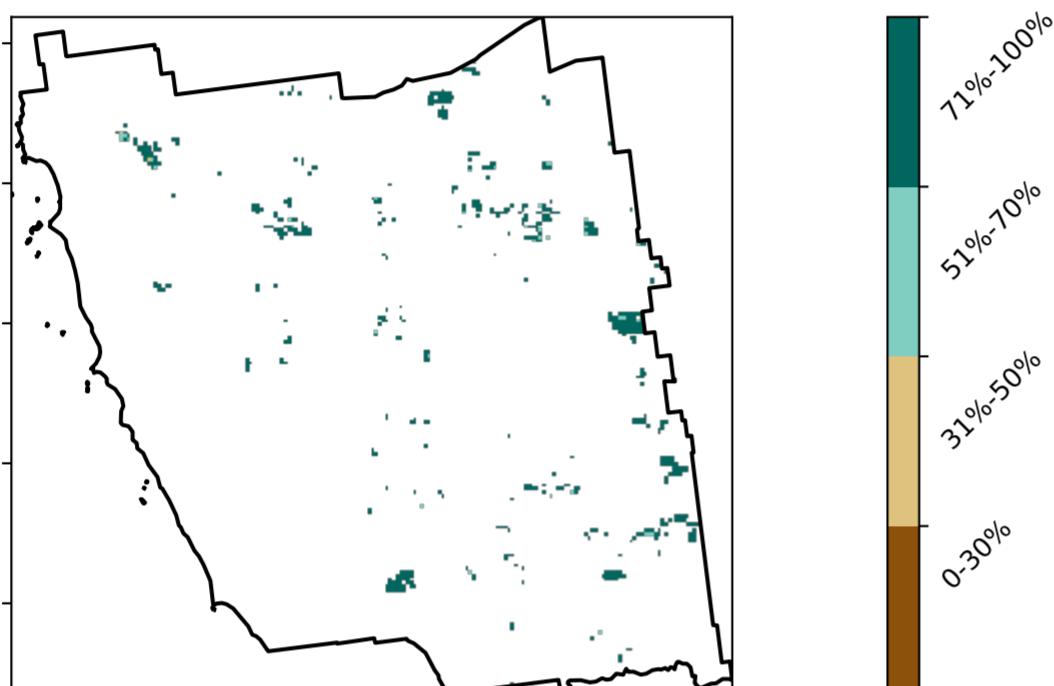
# Production native forests and plantation forests

Land use and forest cover

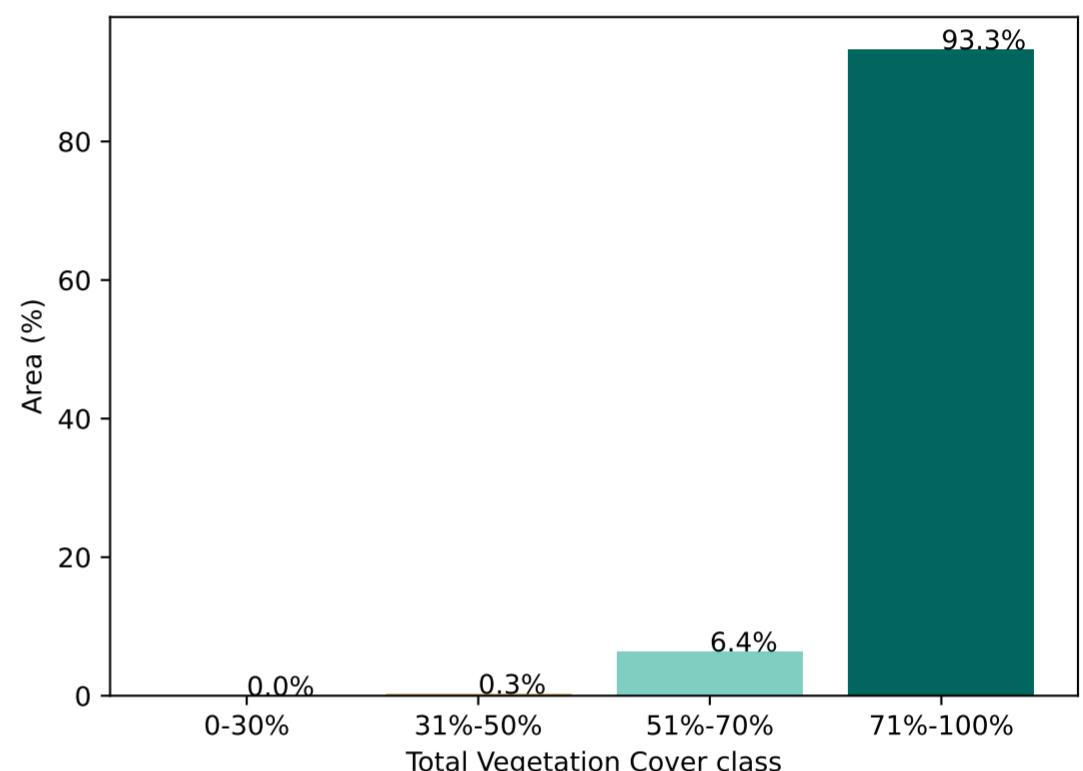
Catchment Scale  
Land Use and Forests  
of Australia (2018)  
Derived from  
Catchment Scale Land  
Use of Australia  
(2018) and Forests  
of Australia (2018)



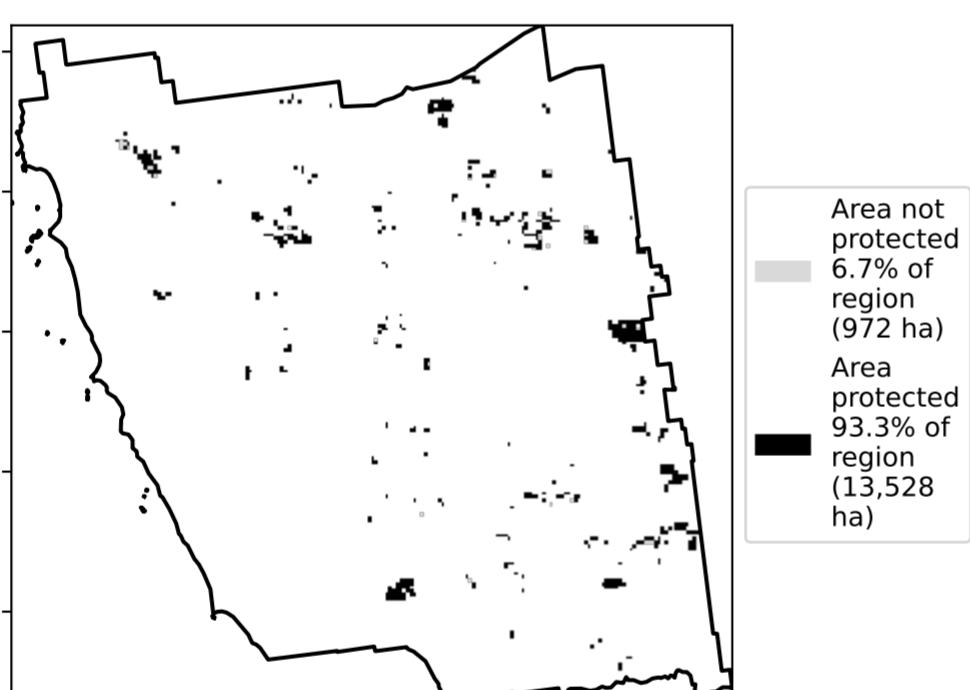
Total Vegetation Cover [%]



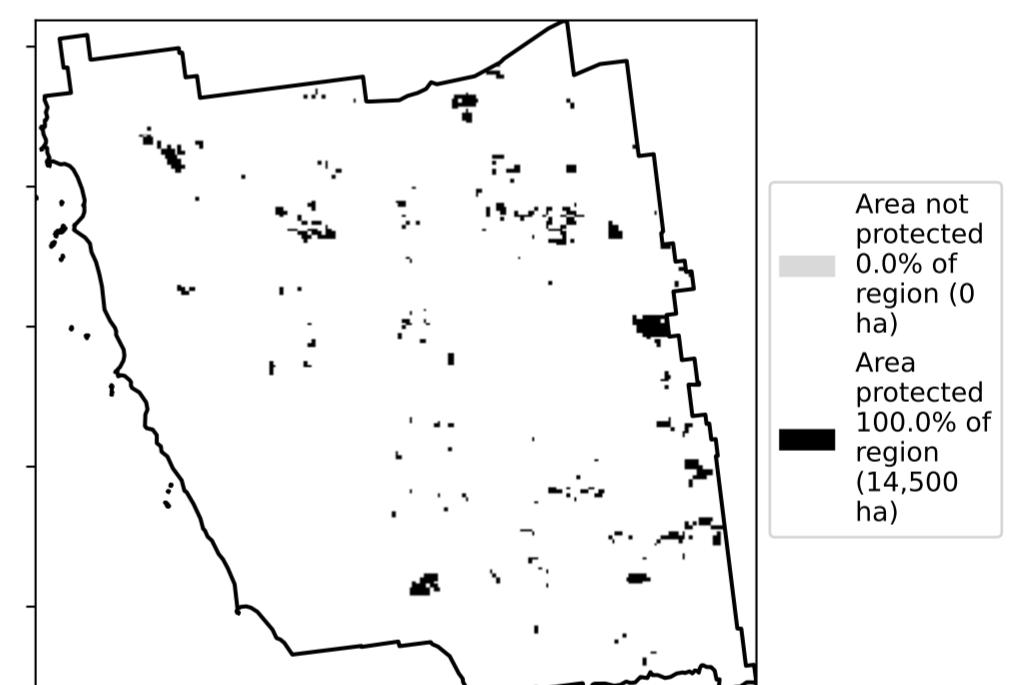
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

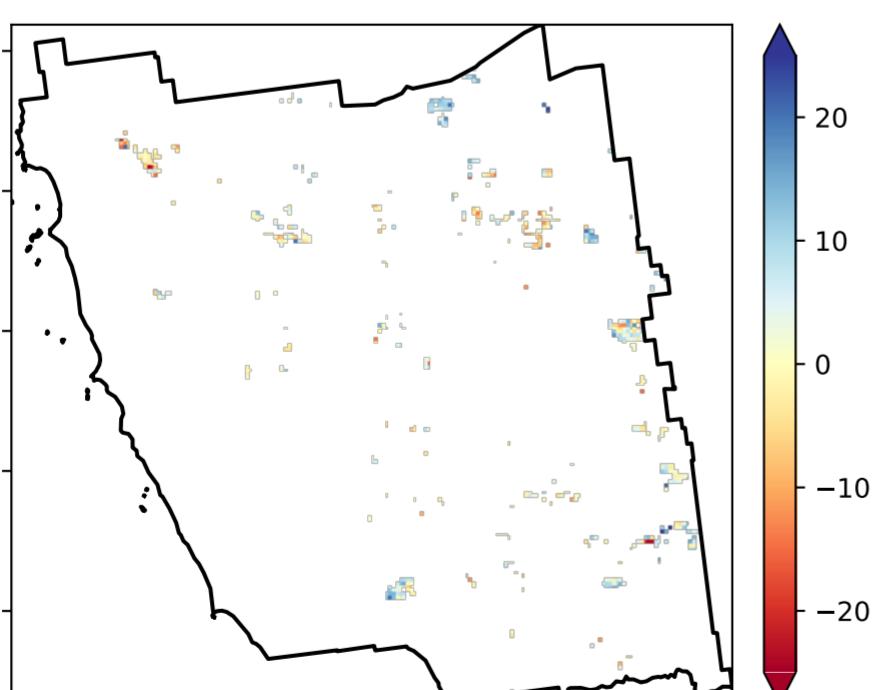


% Area protected from wind erosion (>50%)



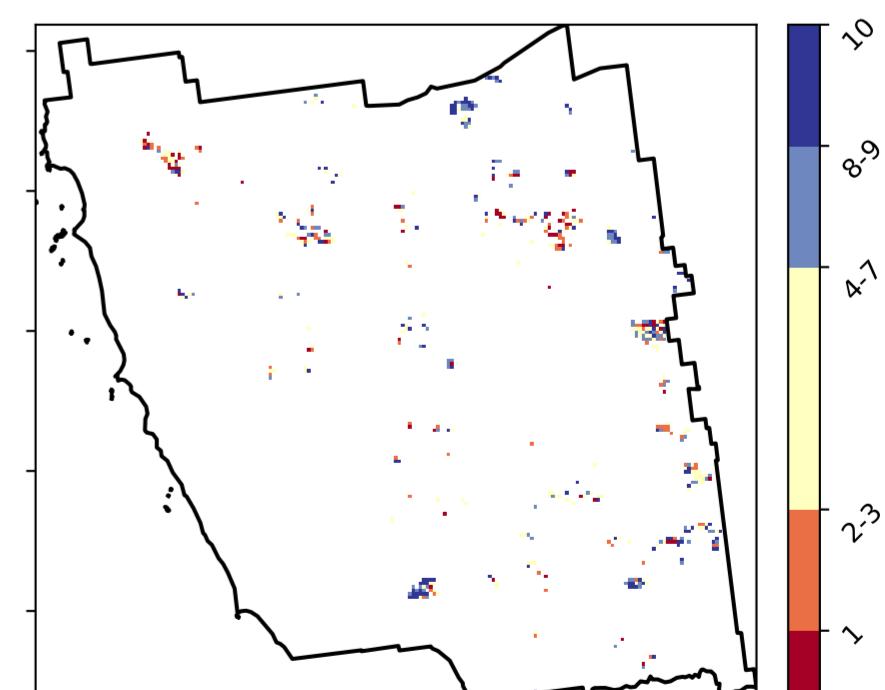
Total Vegetation Cover Anomaly [%]

Anomaly shows how many percentage 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.



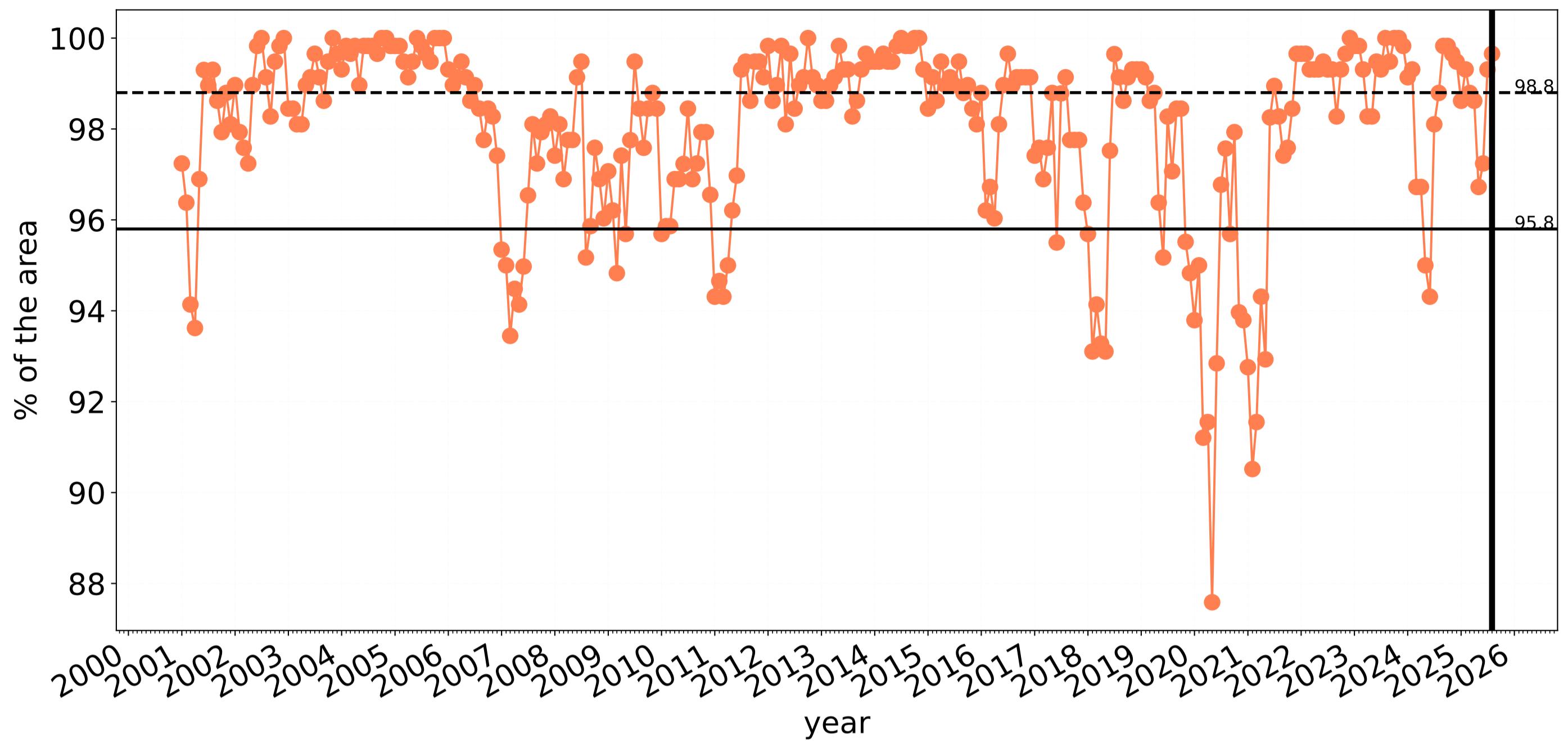
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Total Vegetation Cover Decile [%]

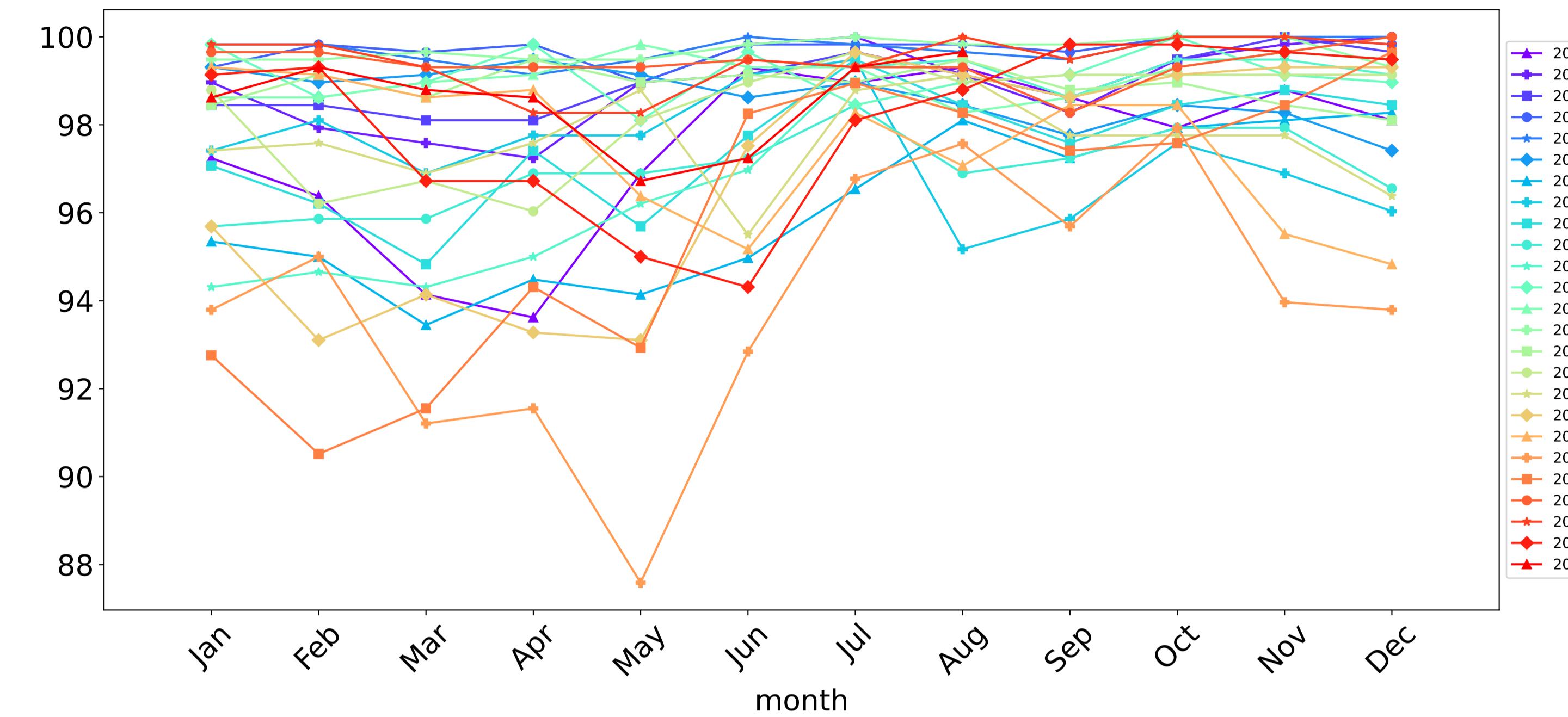


## Production native forests and plantation forests timeseries

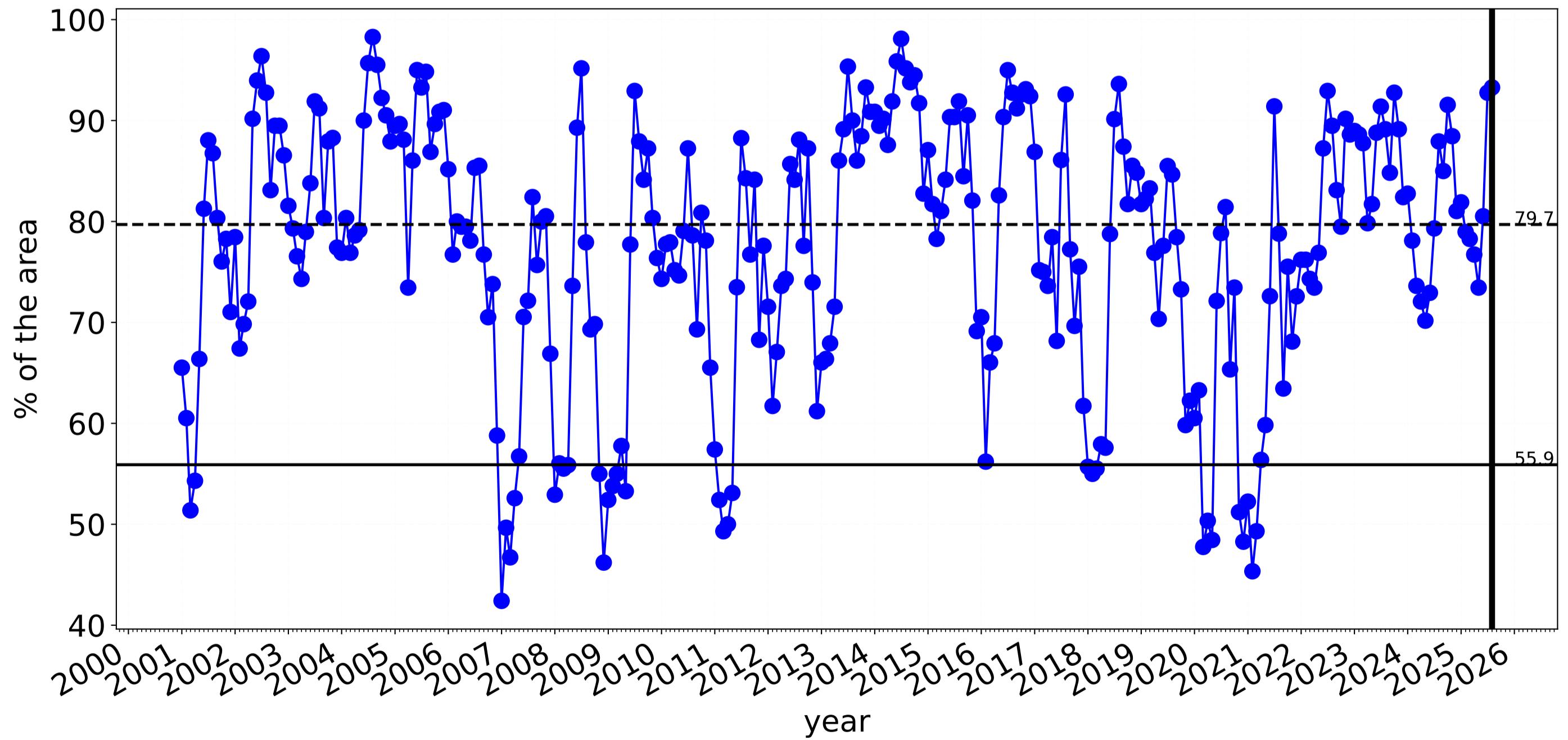
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



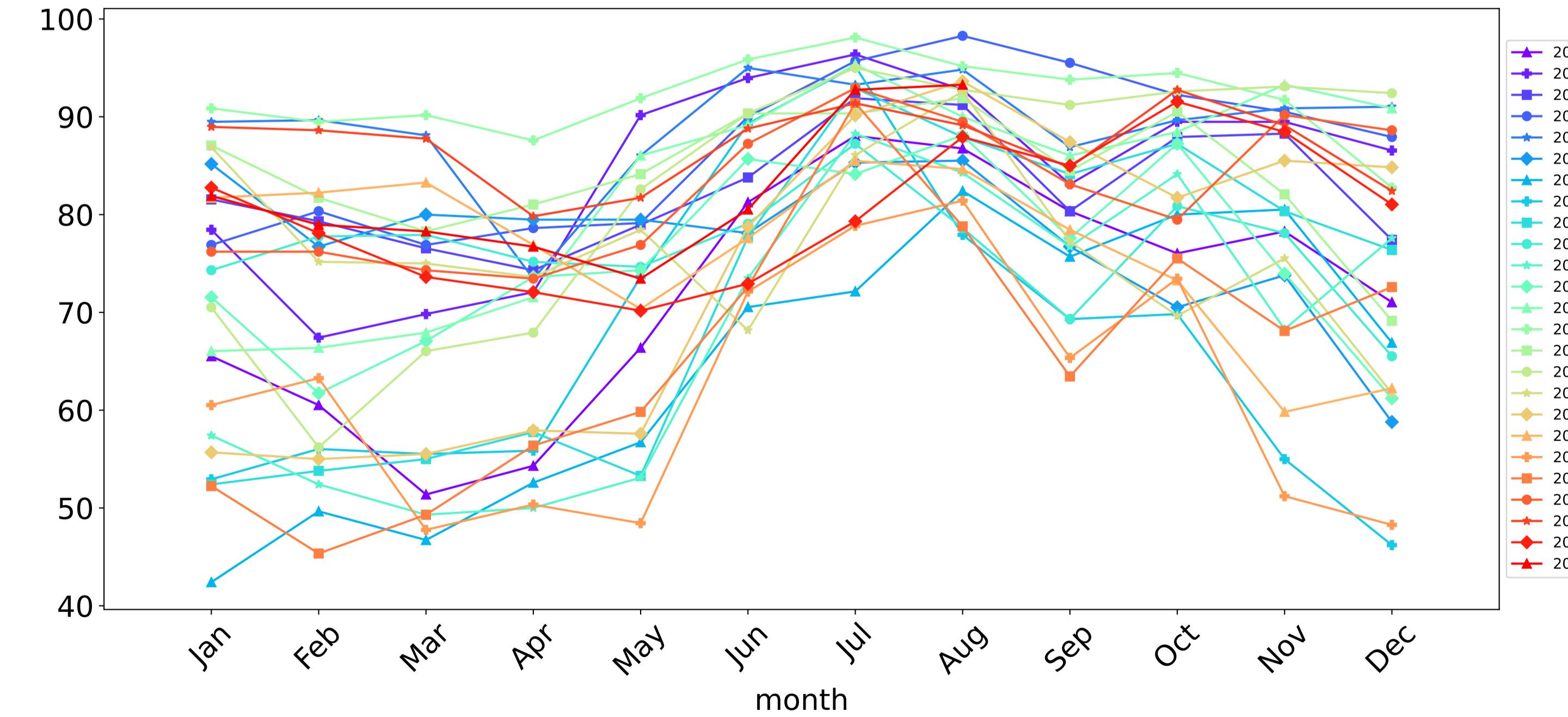
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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



**Dandaragan\_(S) (664,225 ha and no data 7,089 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	664,225	99.7% 662,300	98.7% 655,300	90.4% 600,200	68.2% 452,775	16.2% 107,500	4.0% 26,300
Conservation and natural environments	288,875	99.5% 287,425	97.7% 282,200	85.3% 246,450	63.4% 183,275	16.0% 46,275	3.8% 10,925
Conservation and natural environments non forest	250,375	99.5% 249,050	97.8% 244,875	85.8% 214,825	63.6% 159,325	16.0% 39,950	3.9% 9,800
Conservation and natural environments Woodland forest	37,775	99.7% 37,675	97.1% 36,675	82.3% 31,075	62.9% 23,750	16.7% 6,325	3.0% 1,125
Agriculture	352,975	99.9% 352,625	99.5% 351,150	94.6% 333,925	72.5% 255,800	16.5% 58,375	4.1% 14,550
Grazing	98,300	99.9% 98,250	99.6% 97,950	96.1% 94,450	80.0% 78,600	21.7% 21,325	5.7% 5,625
Grazing non forest	97,400	99.9% 97,350	99.6% 97,050	96.1% 93,600	79.9% 77,800	21.3% 20,775	5.4% 5,250
Cropping	246,600	99.9% 246,300	99.4% 245,200	94.1% 232,050	69.4% 171,250	14.4% 35,575	3.5% 8,625
Irrigation	8,025	100.0% 8,025	99.1% 7,950	91.9% 7,375	73.8% 5,925	18.4% 1,475	3.7% 300
Production native forests and plantation forests	14,500	100.0% 14,500	99.7% 14,450	93.3% 13,525	65.7% 9,525	11.9% 1,725	2.4% 350



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