

# Total vegetation cover soil protection

Region:LGA Yilgarn\_(S) WA

Date: December 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>



**tern**  
Ecosystem Research Infrastructure



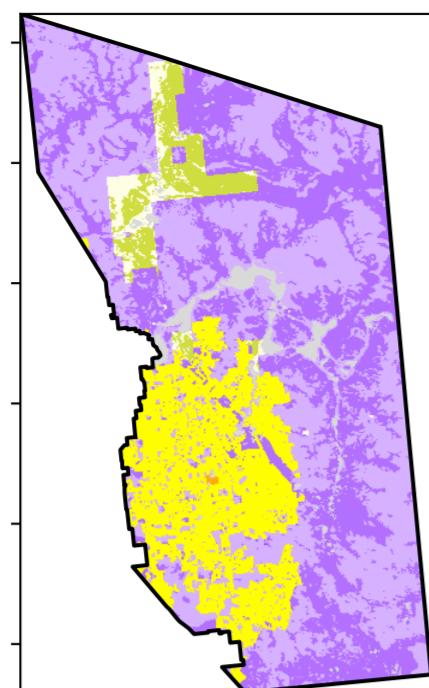
**National  
Landcare  
Programme**



# Vegetation Cover Dec 2025

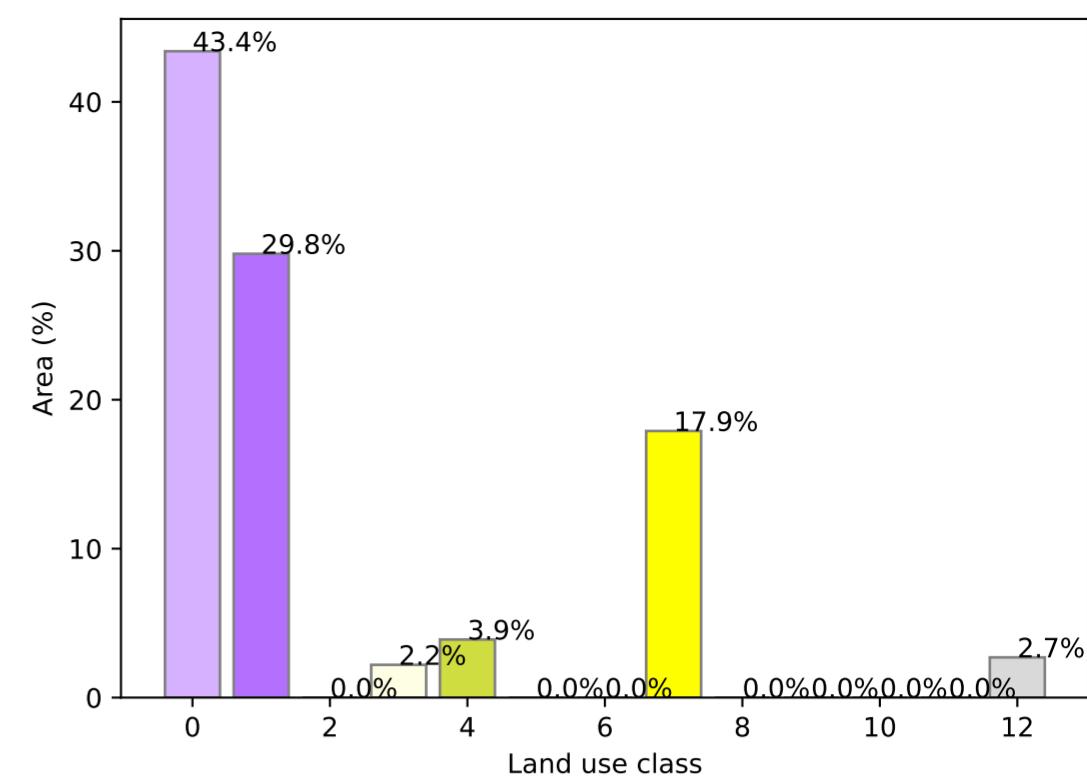
## Land use and forest cover

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

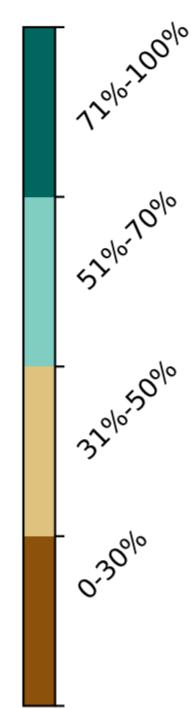
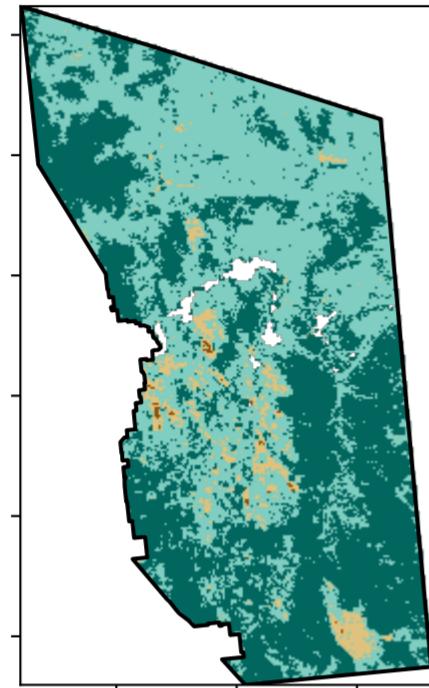


Legend with land class forest cover and number, i.e. Forests is 12	
1 Conservation and natural environments - Non-forest	
2 Conservation and natural environments - Woodland forest	
3 Conservation and natural environments - Non-Woodland forest	
4 Agriculture - Grazing - Non-forest	
5 Agriculture - Grazing - Woodland forest	
6 Agriculture - Grazing - Non-woodland forest	
7 Agriculture - Grazing - Irrigated	
8 Agriculture - Cropping - Non-irrigated	
9 Agriculture - Cropping - Irrigated	
10 Agriculture - Horticulture - Non-irrigated	
11 Agriculture - Horticulture - Irrigated	
12 Production native forests and plantation forests	
13 Other uses	

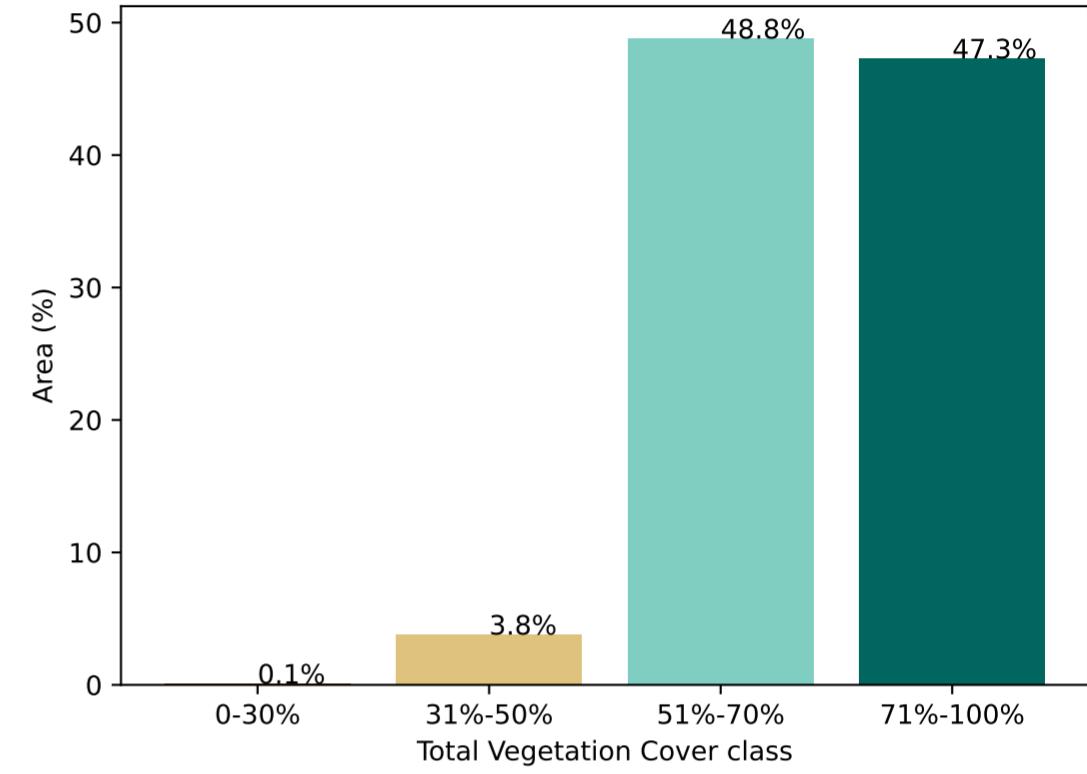
## Proportion of each land class in area



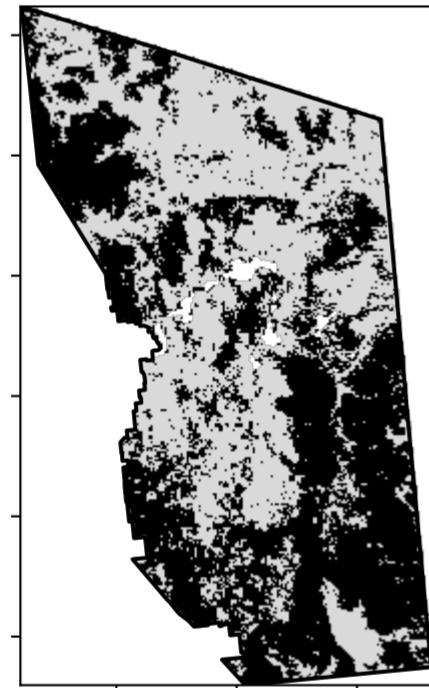
## Total Vegetation Cover [%]



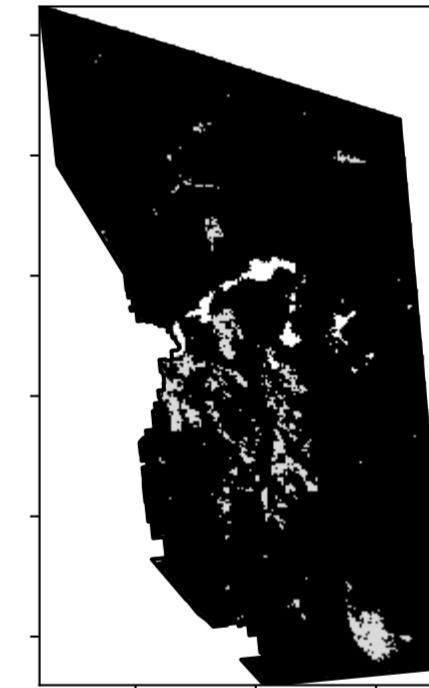
## Proportion of vegetation cover class in area



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

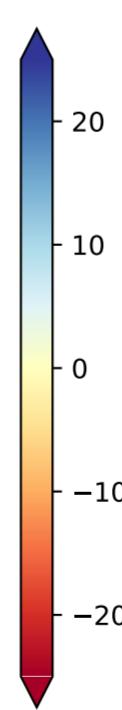
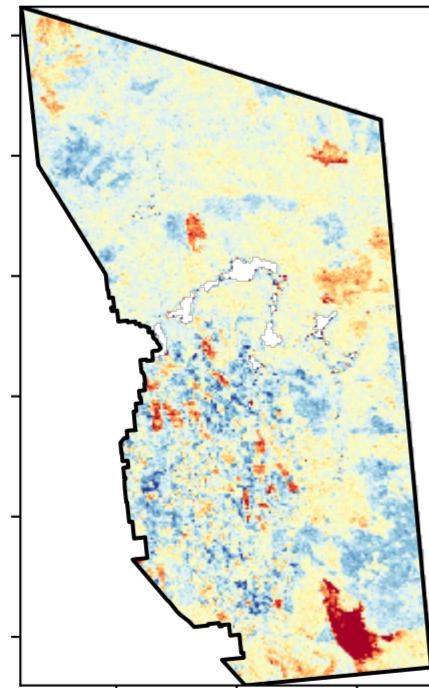


Area not protected	52.7% of region (1,584,478 ha)
Area protected	47.3% of region (1,422,122 ha)



Area not protected	4.0% of region (120,264 ha)
Area protected	96.0% of region (2,886,336 ha)

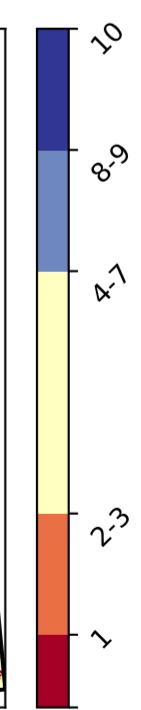
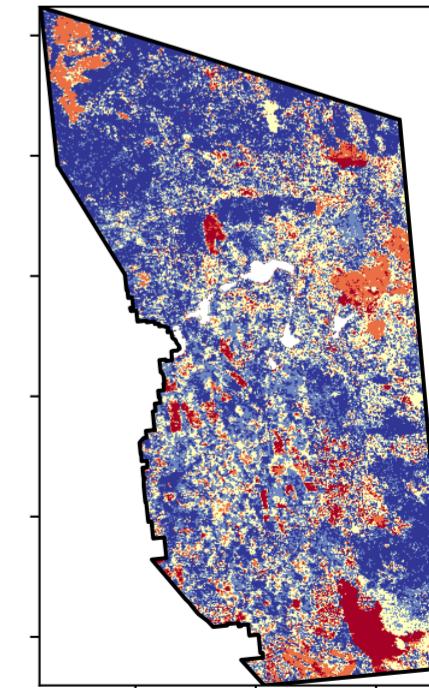
## Total Vegetation Cover Anomaly [%]



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.

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 [%]

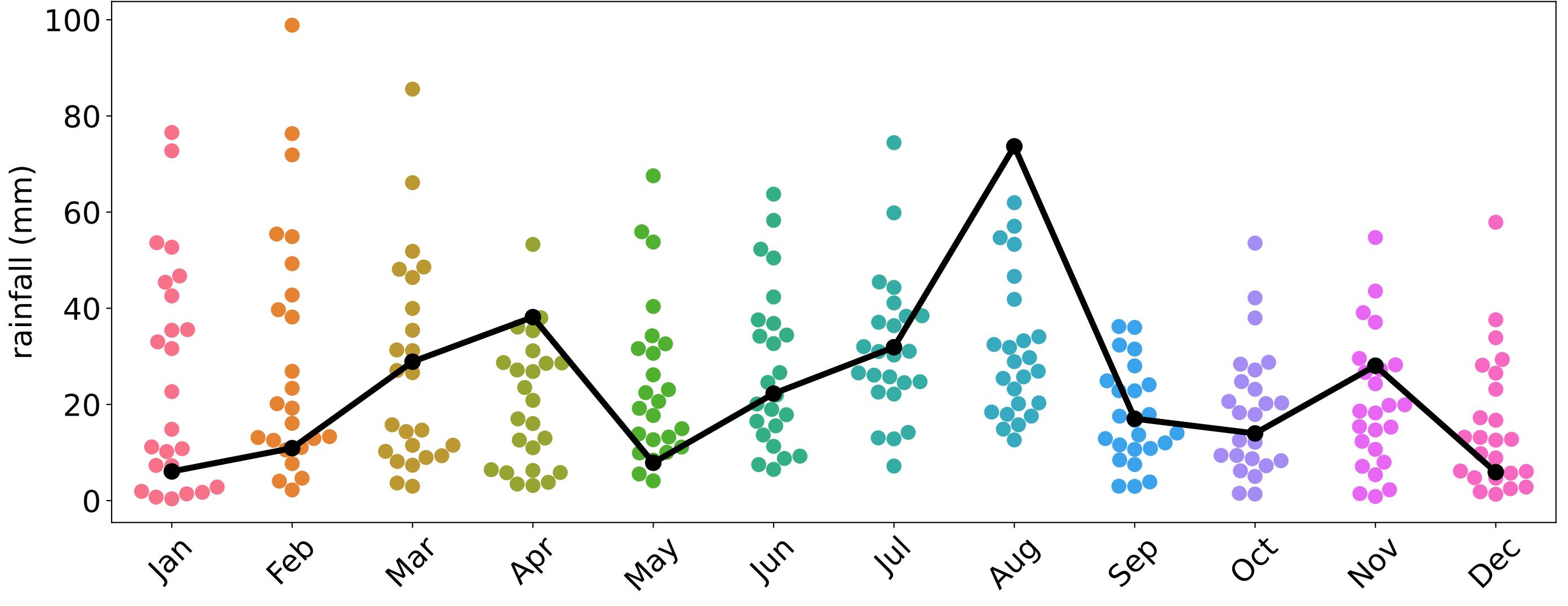
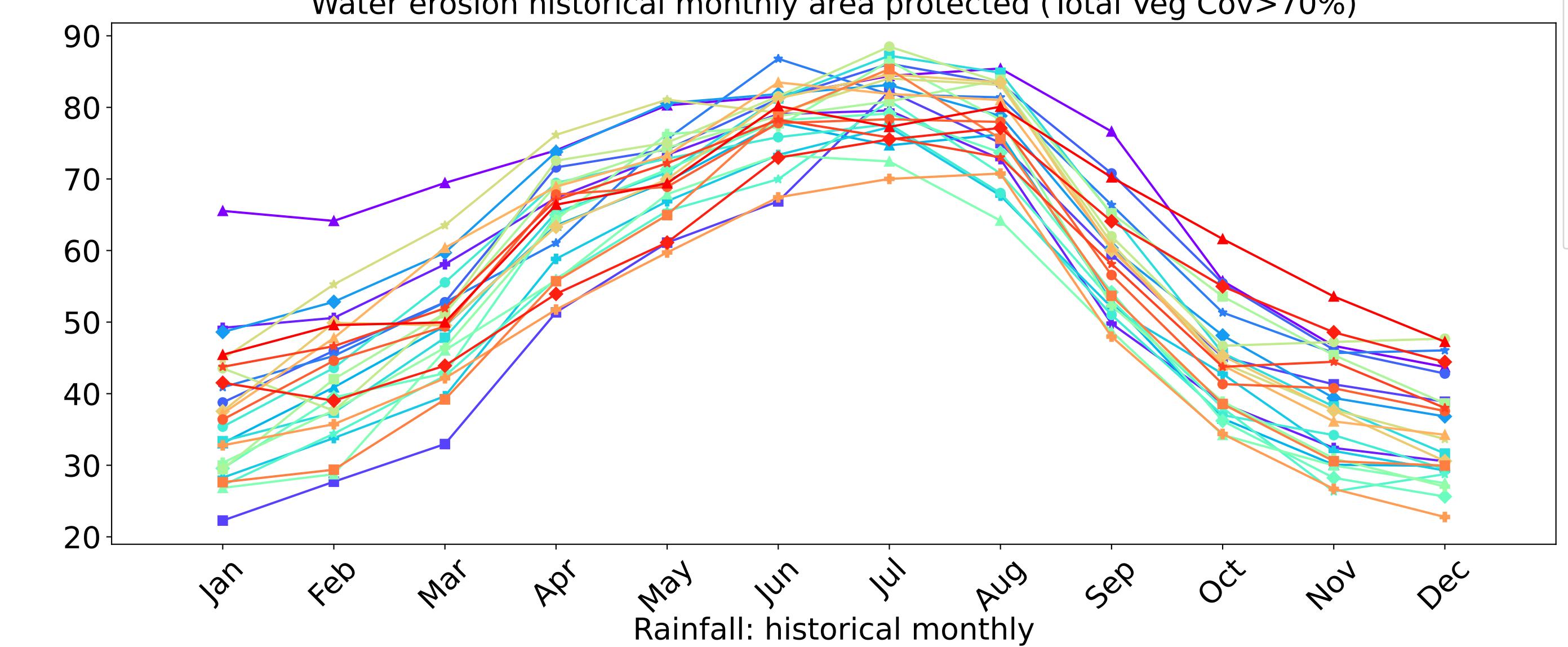
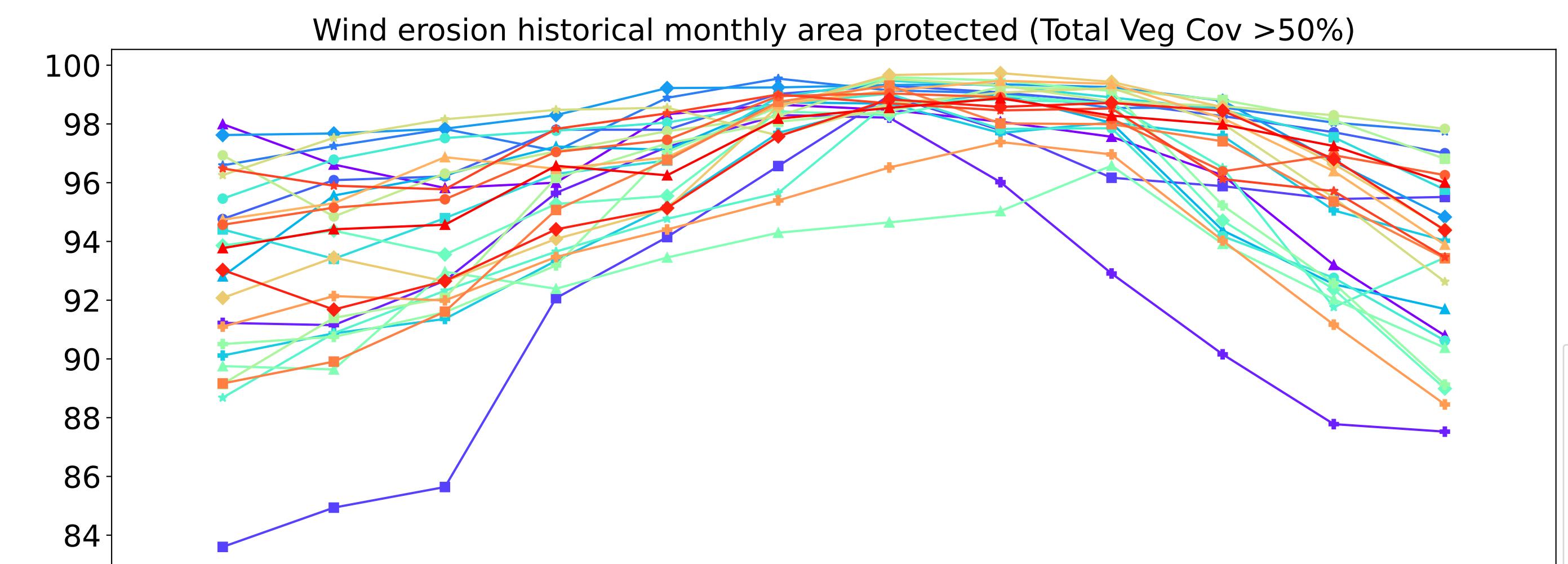
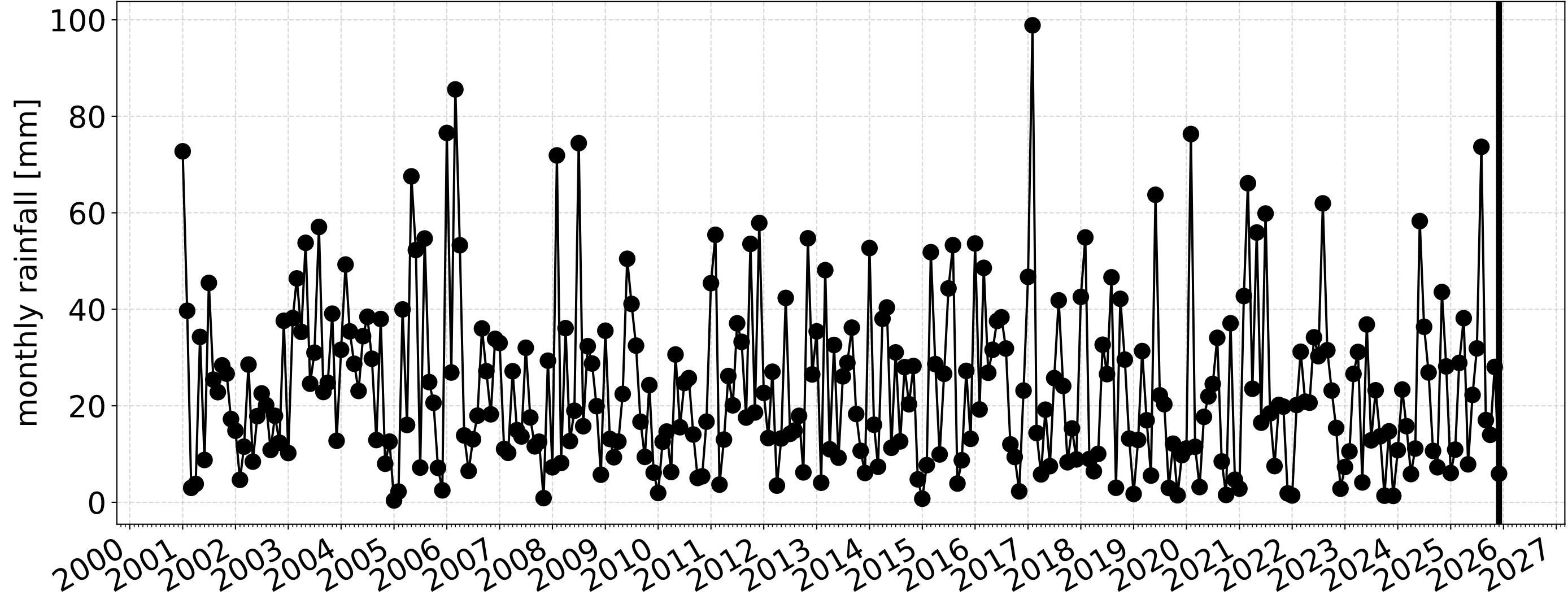
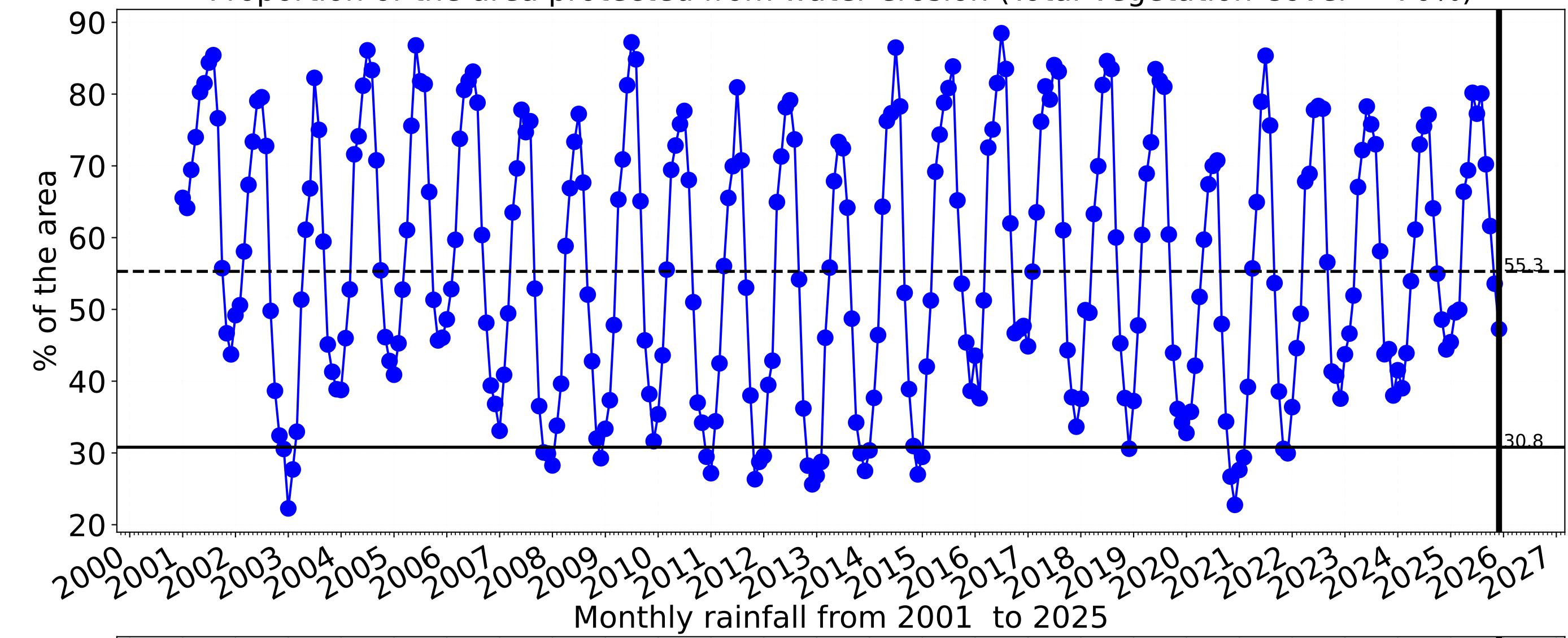
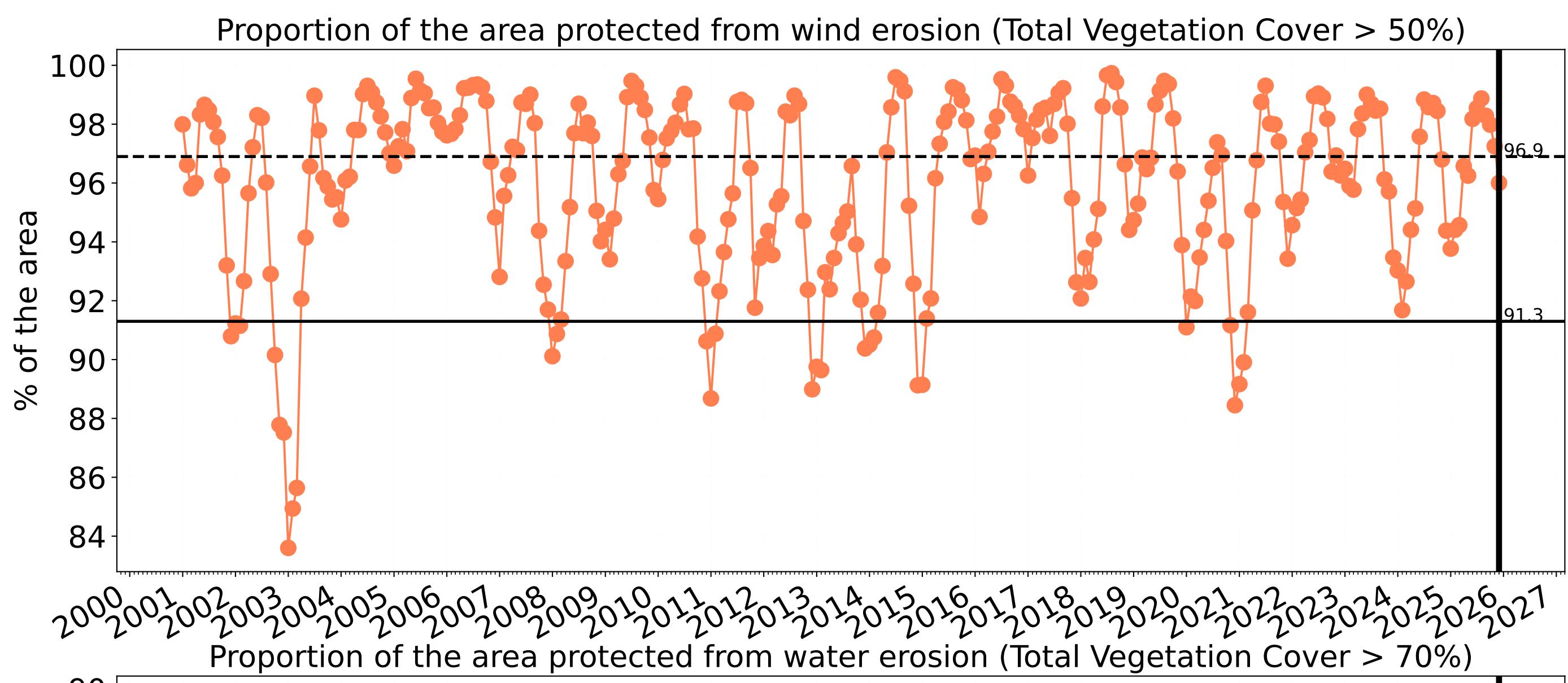


**tern**  
Ecosystem Research Infrastructure



National  
Landcare  
Programme

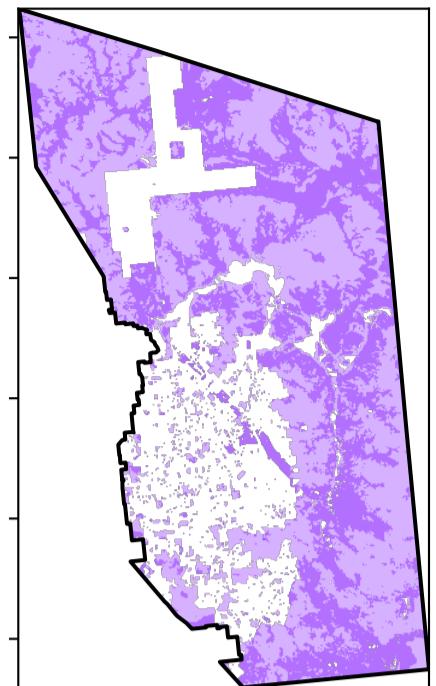




# Conservation and natural environments

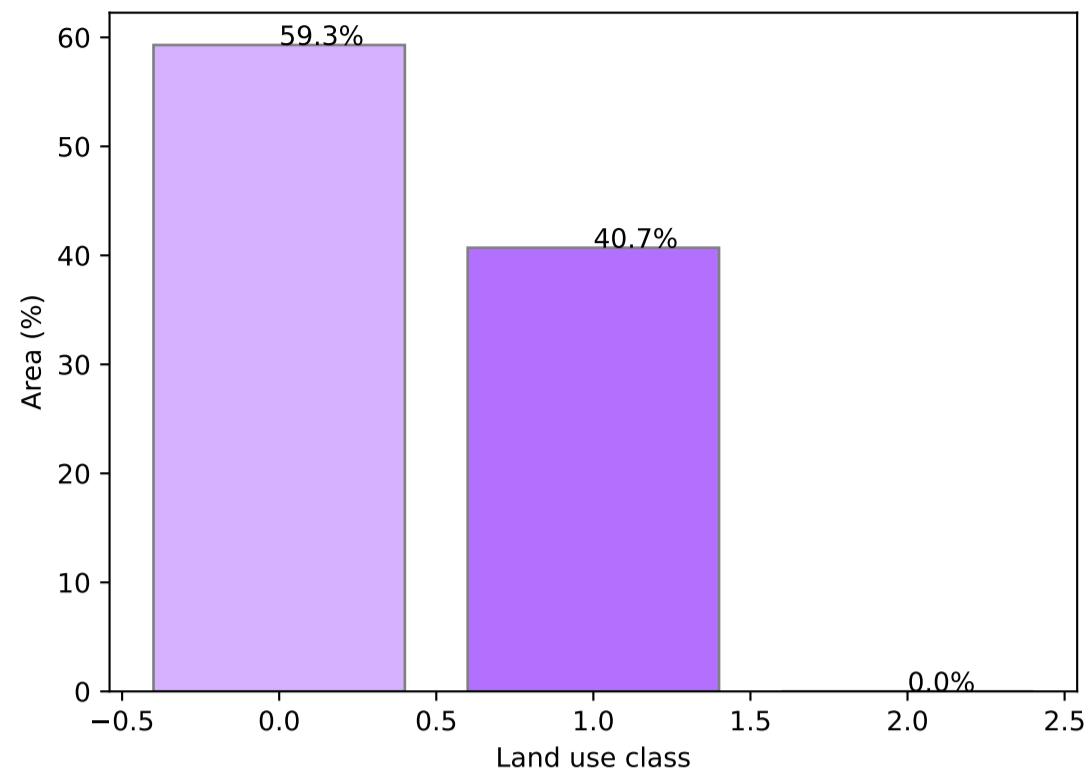
## Land use and forest cover

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

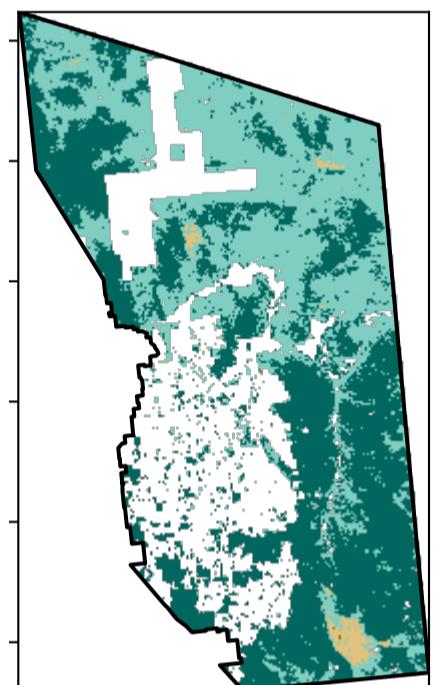


- 1 Conservation and natural environments - Non-forest
- 2 Conservation and natural environments - Woodland forest
- 3 Conservation and natural environments - Non-woodland forest

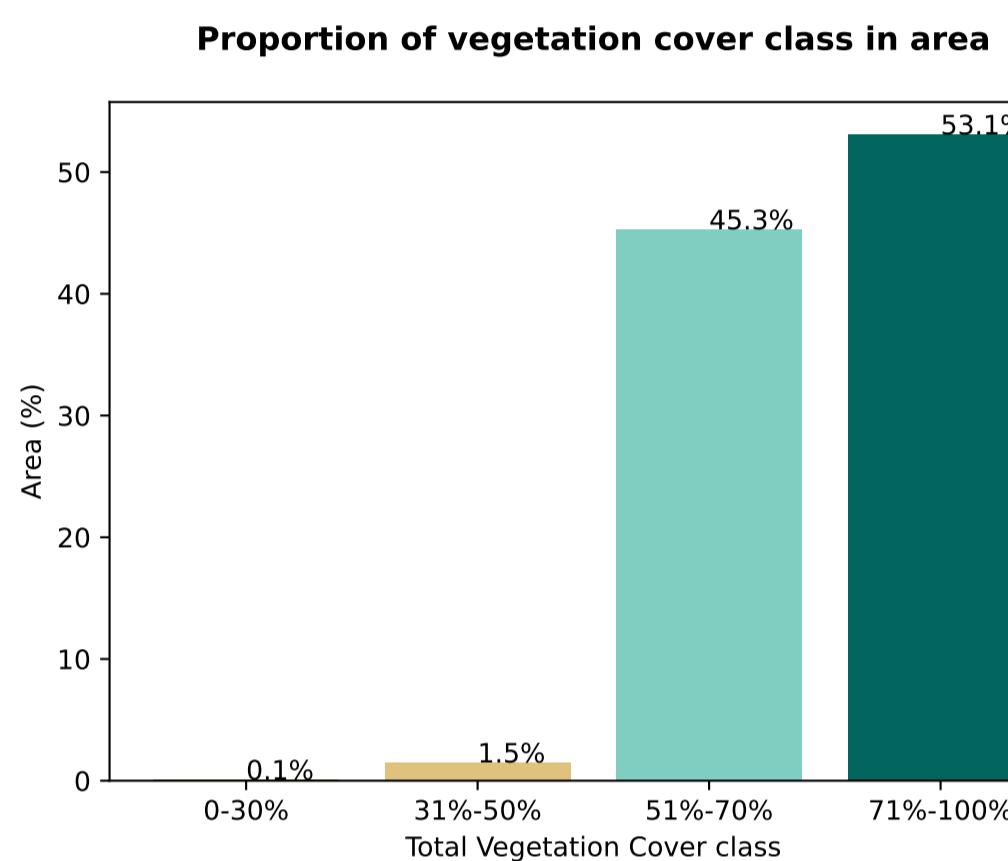
## Proportion of each land class in area



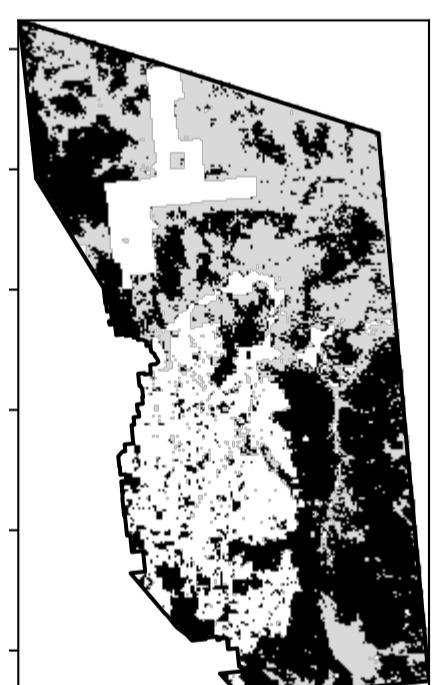
## Total Vegetation Cover [%]



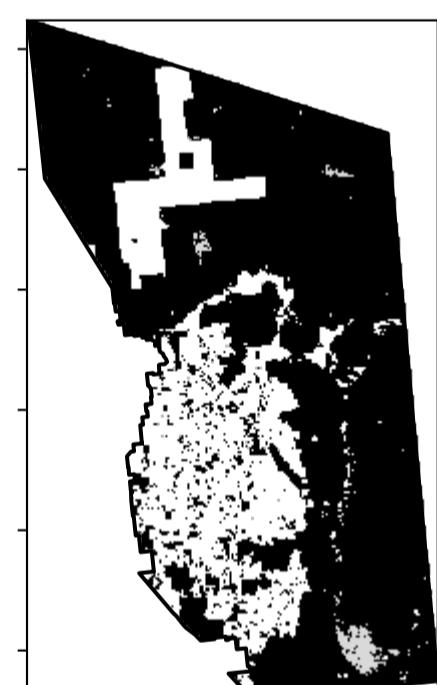
- 0-30%
- 31-50%
- 51-70%
- 71-100%



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



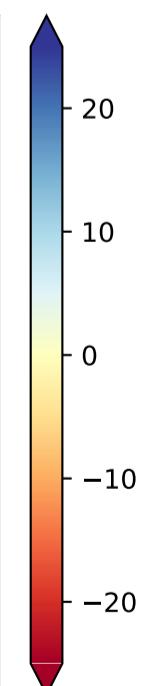
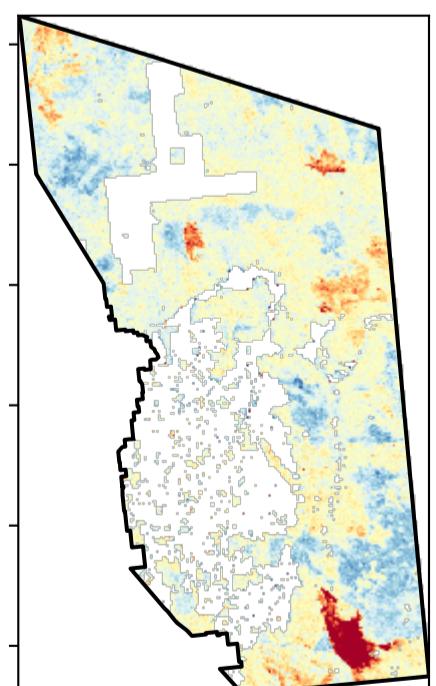
- Area not protected  
46.9% of region  
(1,043,466 ha)
- Area protected  
53.1% of region  
(1,181,409 ha)



- Area not protected  
2.0% of region  
(44,498 ha)
- Area protected  
98.0% of region  
(2,180,378 ha)

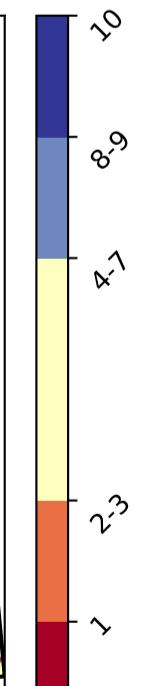
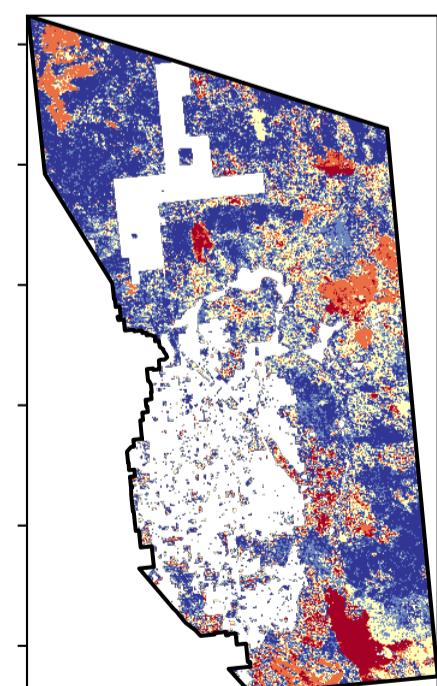
## Total Vegetation Cover Anomaly [%]

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 [%]



**tern**

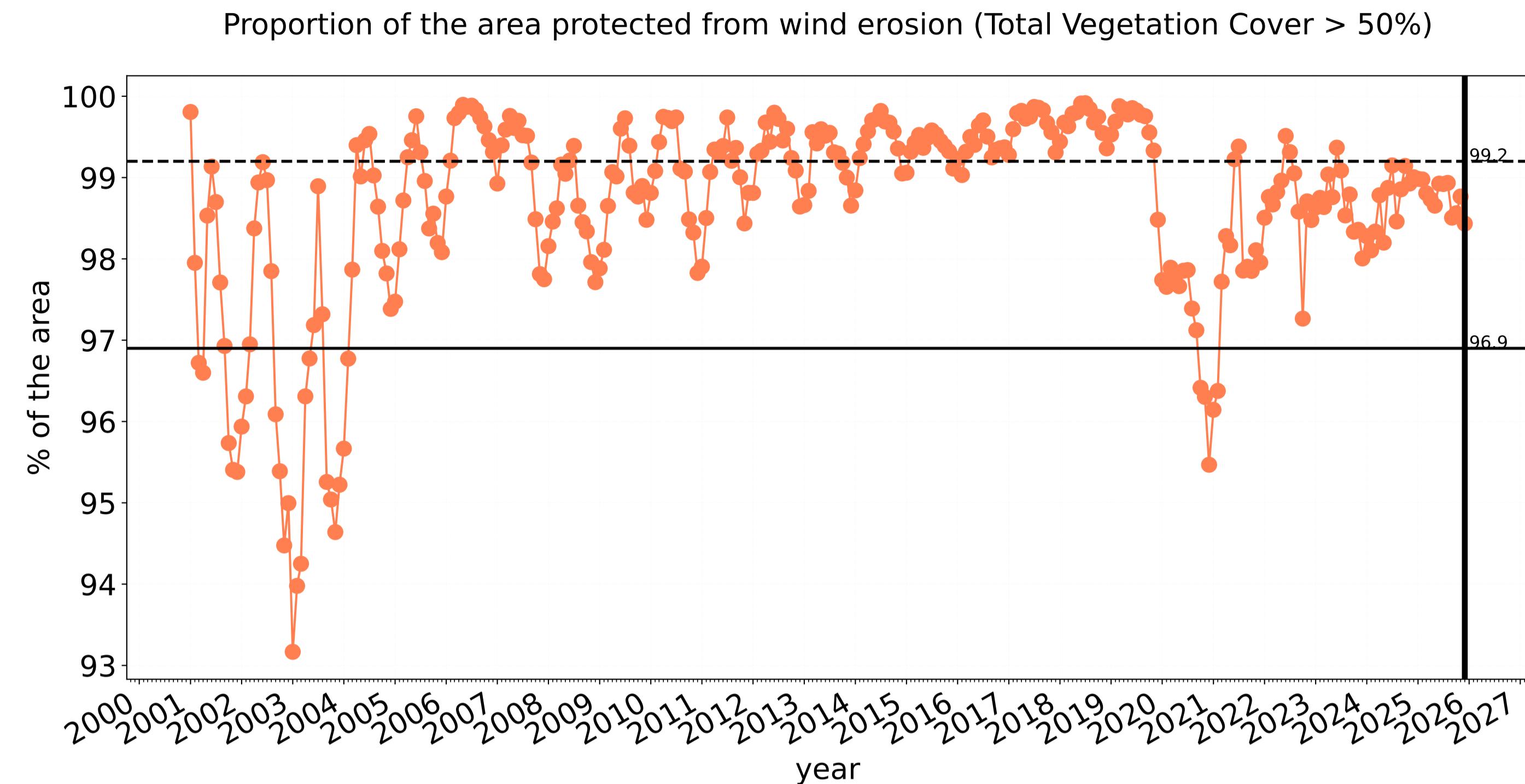
Ecosystem Research Infrastructure



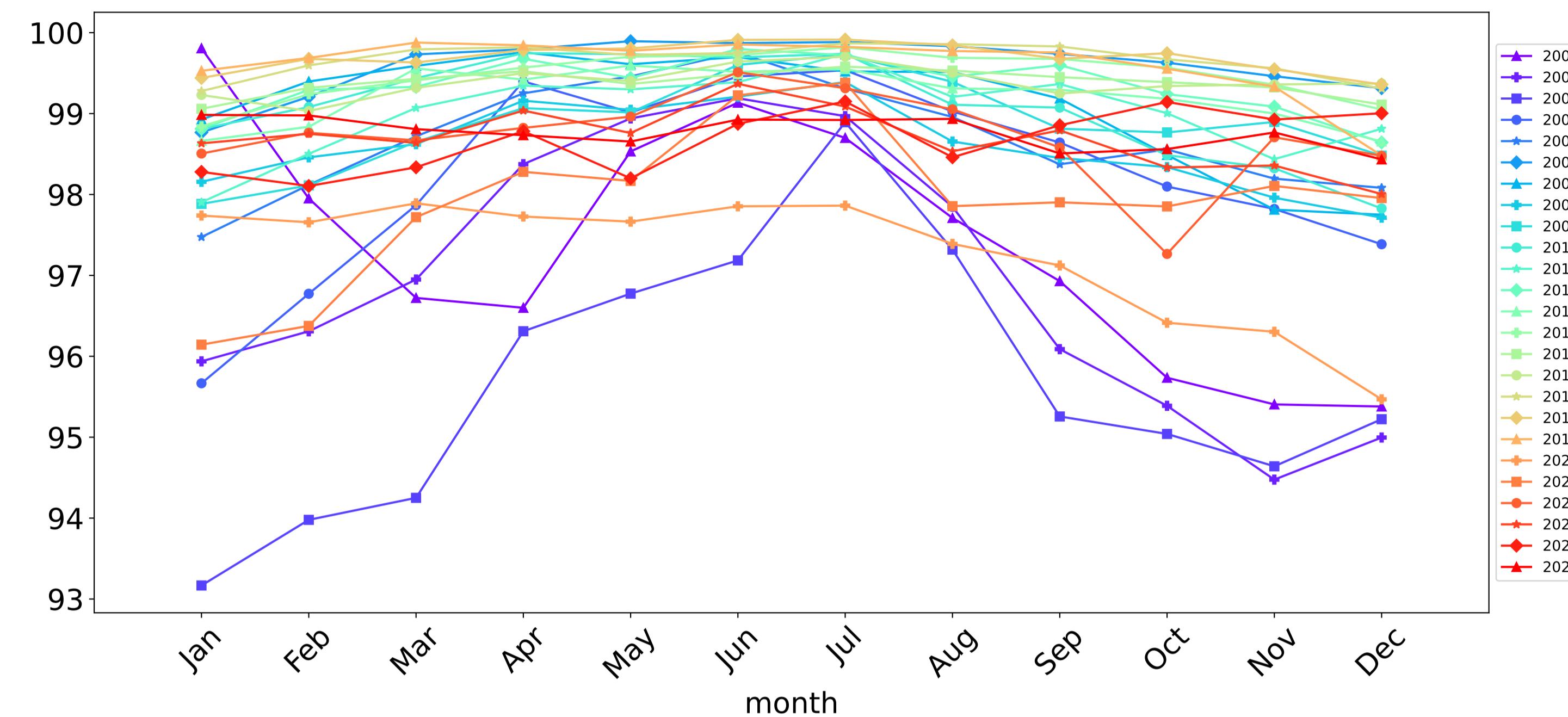
Australian Government



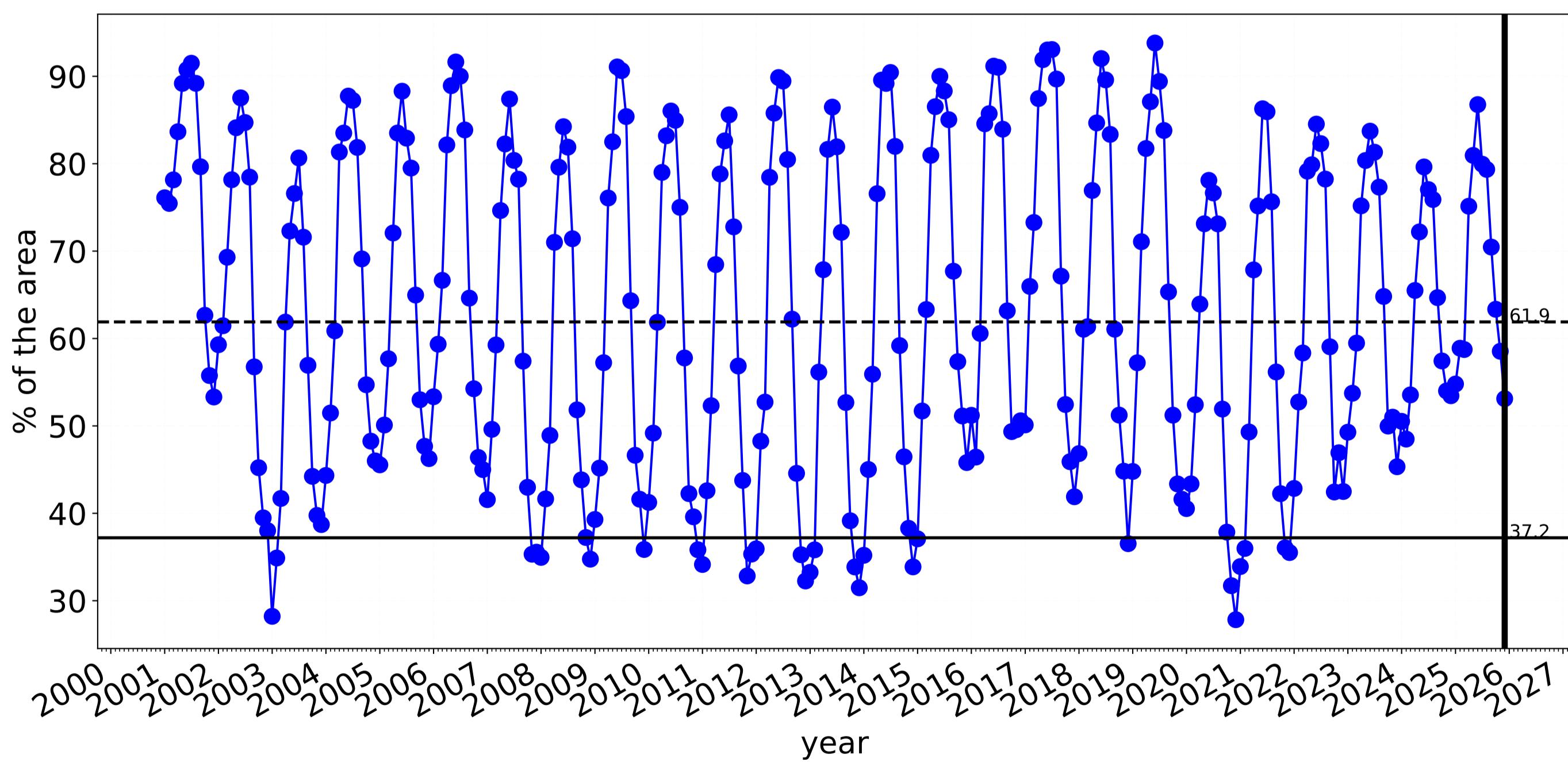
## Conservation and natural environments timeseries



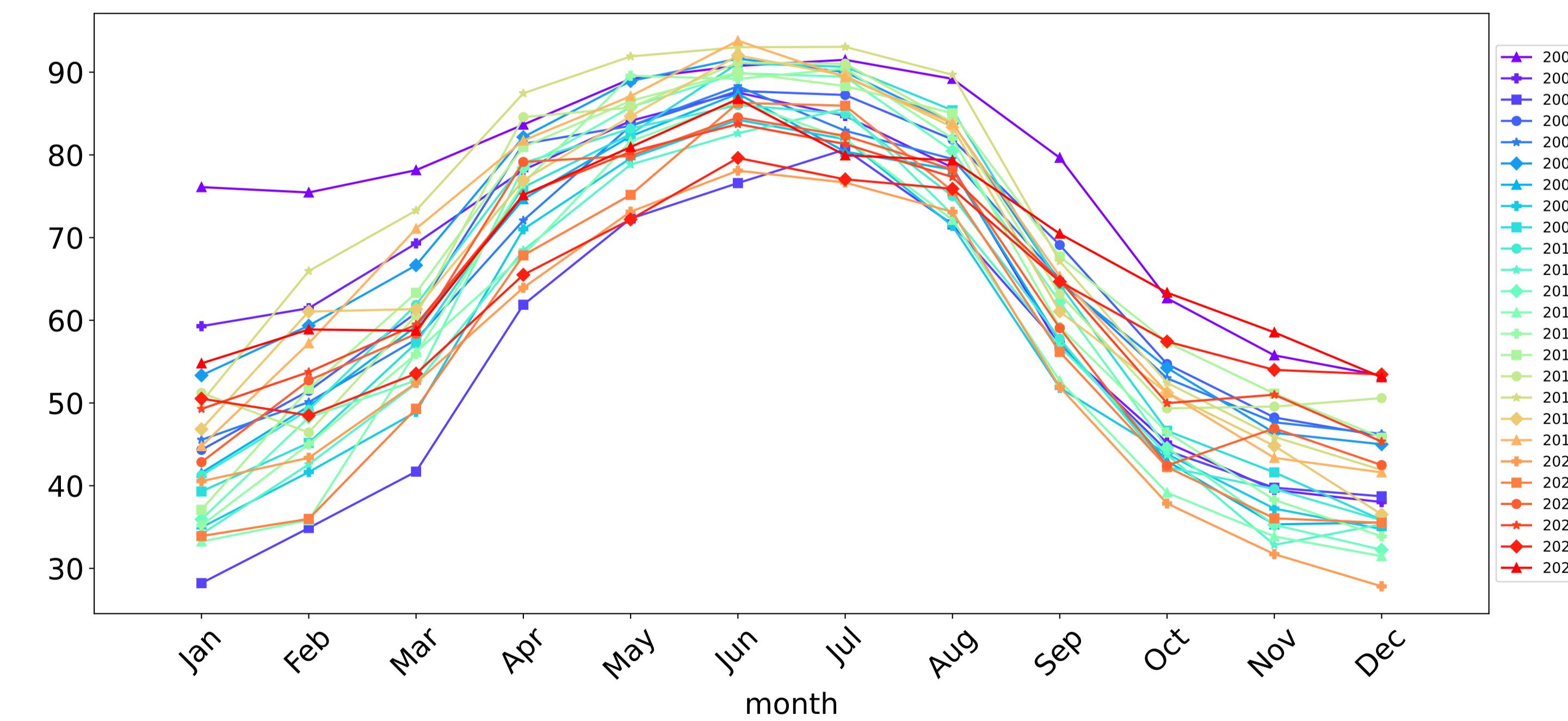
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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



tern  
Ecosystem Research Infrastructure



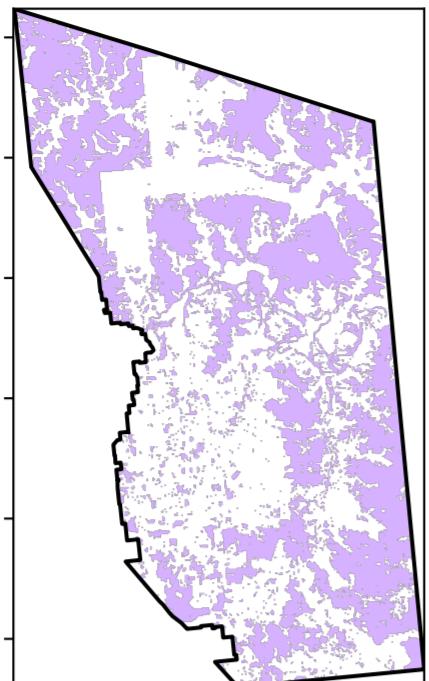
National  
Landcare  
Programme



# Conservation and natural environments non forest

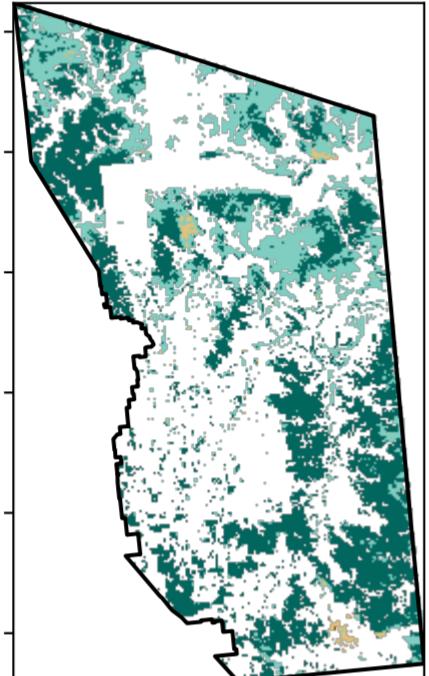
## Land use and forest cover

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



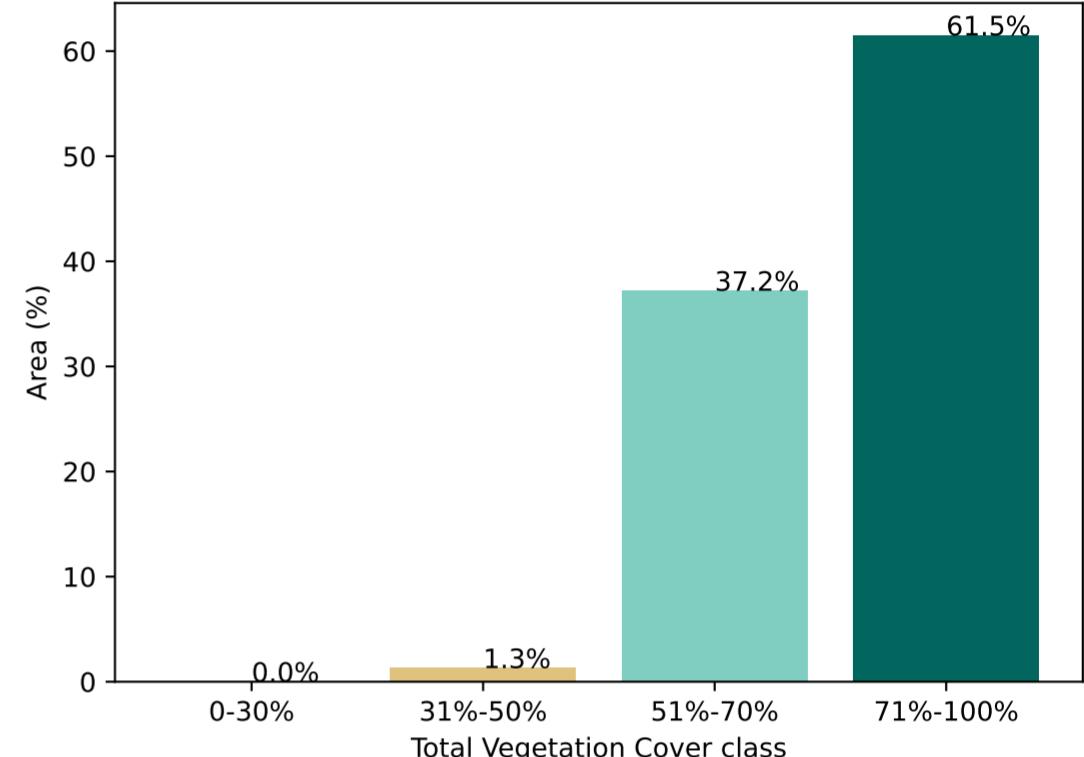
1 Conservation and natural environments - Non-forest

## Total Vegetation Cover [%]

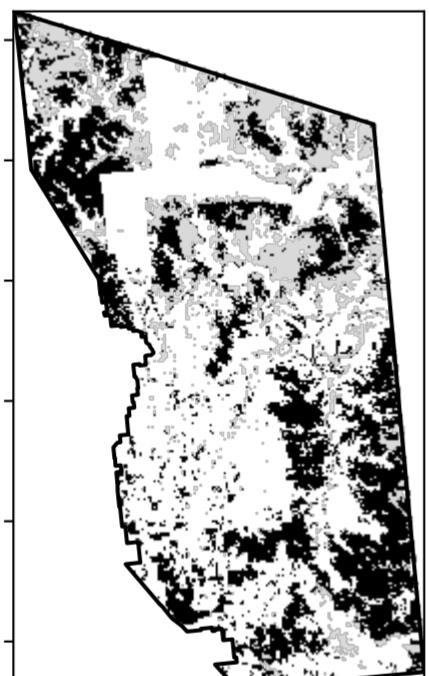


71-100%  
51-70%  
31-50%  
0-30%

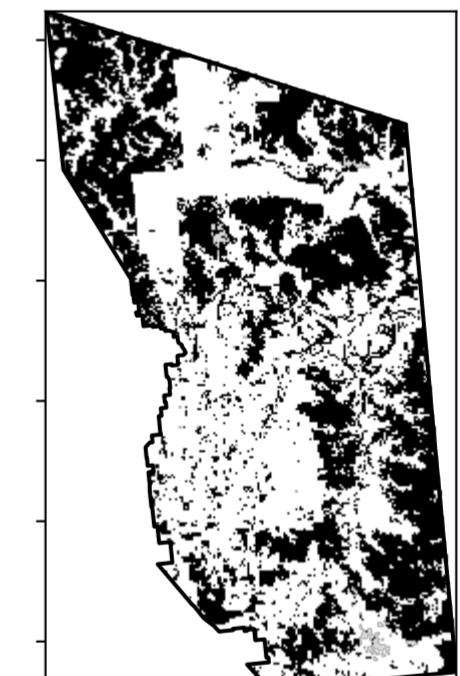
## Proportion of vegetation cover class in area



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

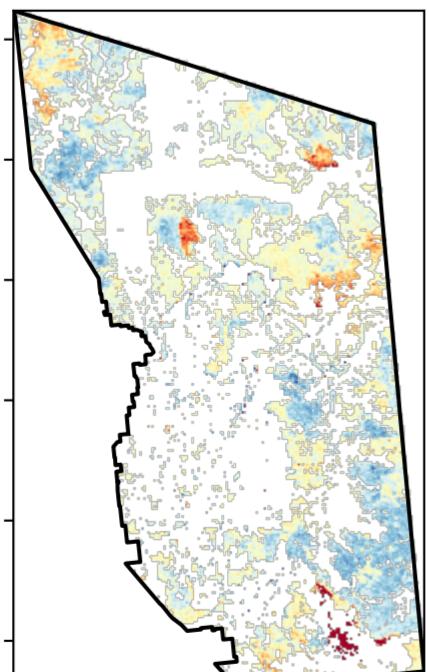


Area not protected  
38.5% of region  
(507,286 ha)  
Area protected  
61.5% of region  
(810,339 ha)



Area not protected  
1.0% of region  
(13,176 ha)  
Area protected  
99.0% of region  
(1,304,449 ha)

## Total Vegetation Cover Anomaly [%]

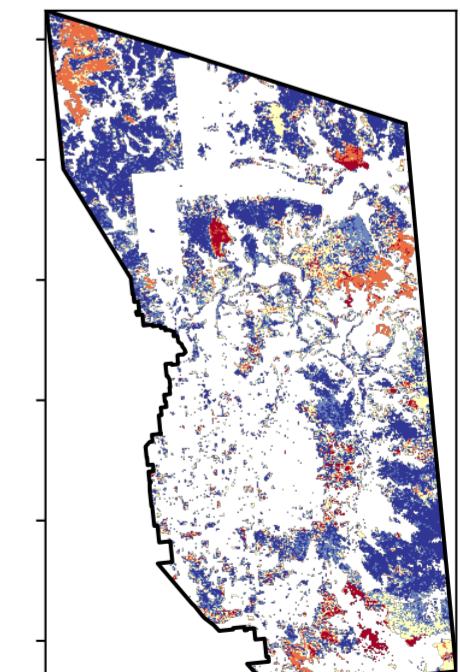


Anomaly shows how many percentage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

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  
9  
8  
7  
6  
5  
4  
3  
2  
1



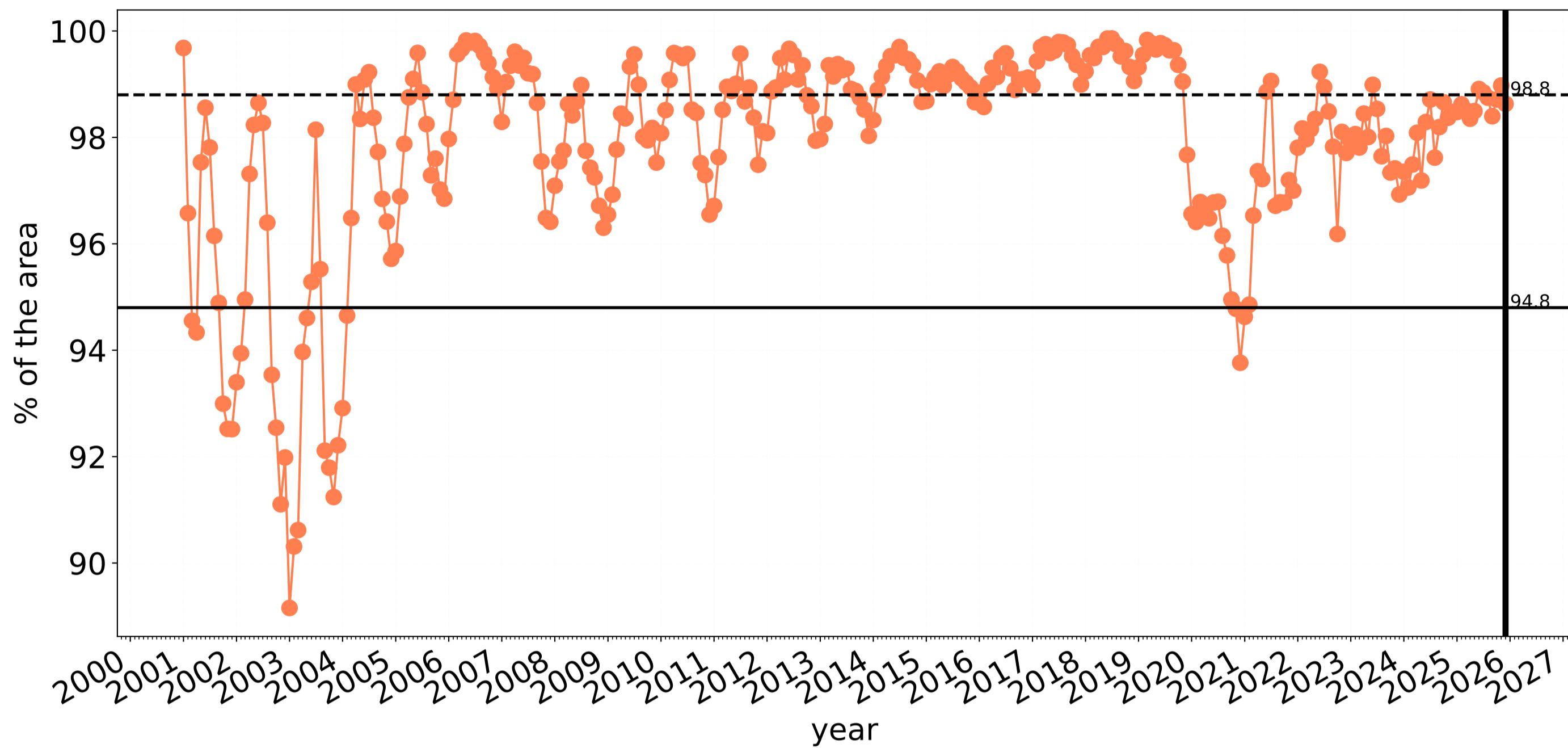
**tern**

Ecosystem Research Infrastructure

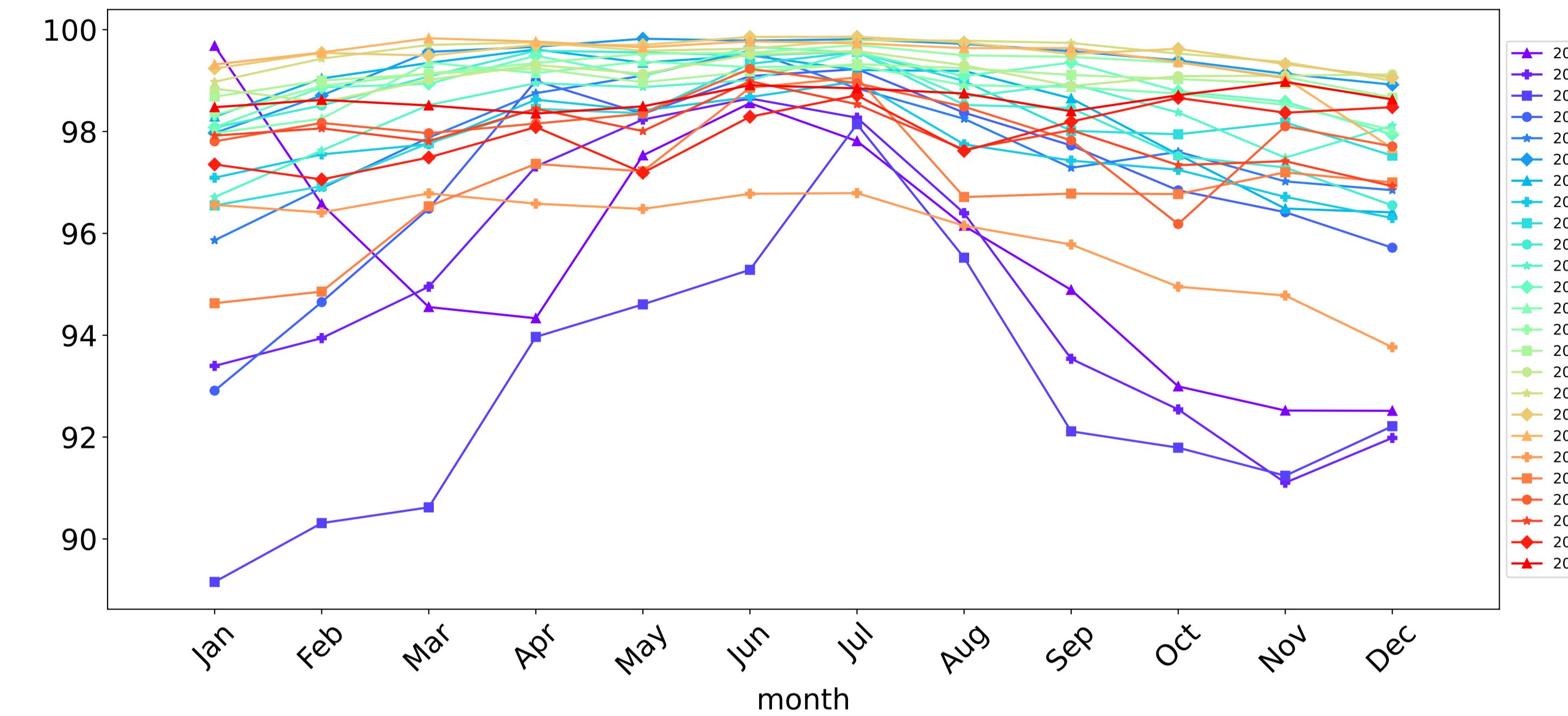


## Conservation and natural environments non forest timeseries

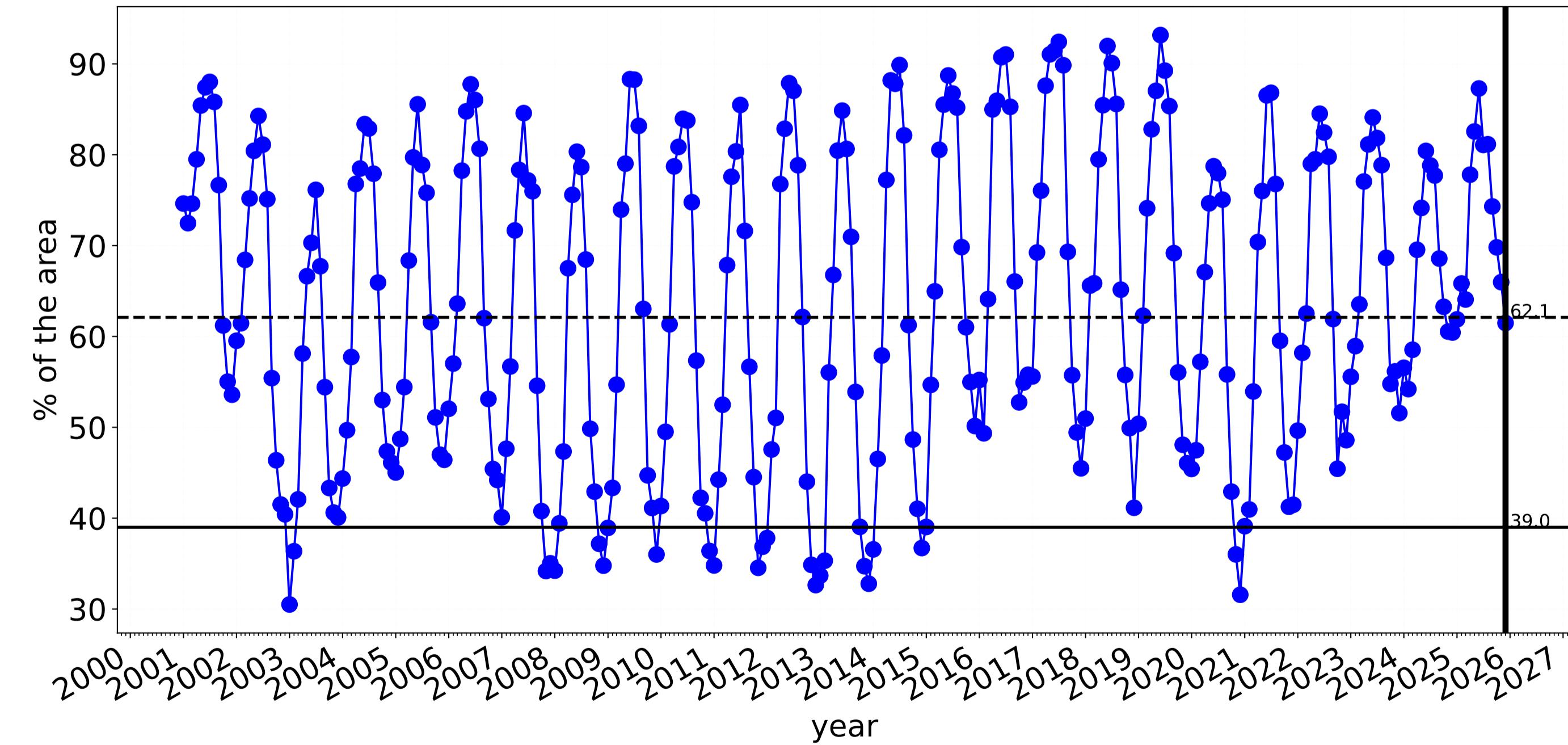
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



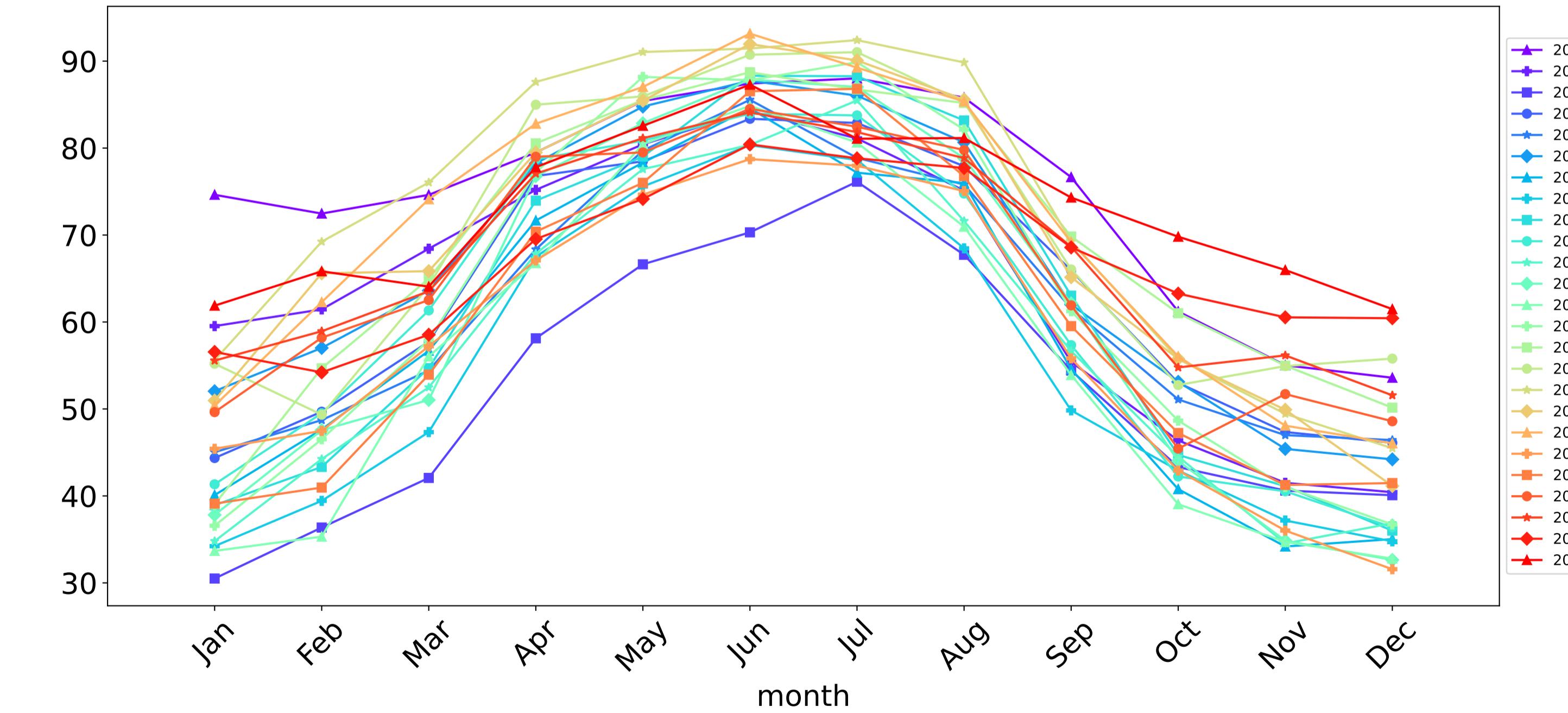
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



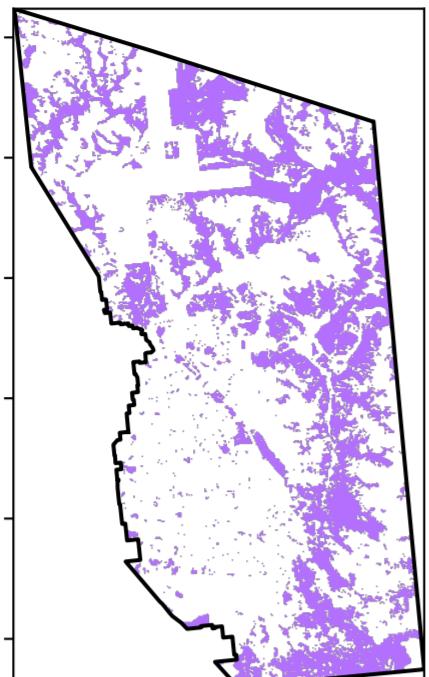
Water erosion historical monthly area protected (Total Veg Cov>70%)



# Conservation and natural environments Woodland forest

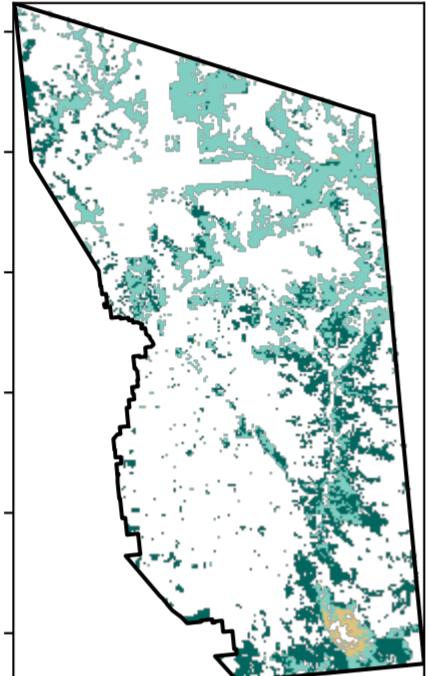
## Land use and forest cover

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



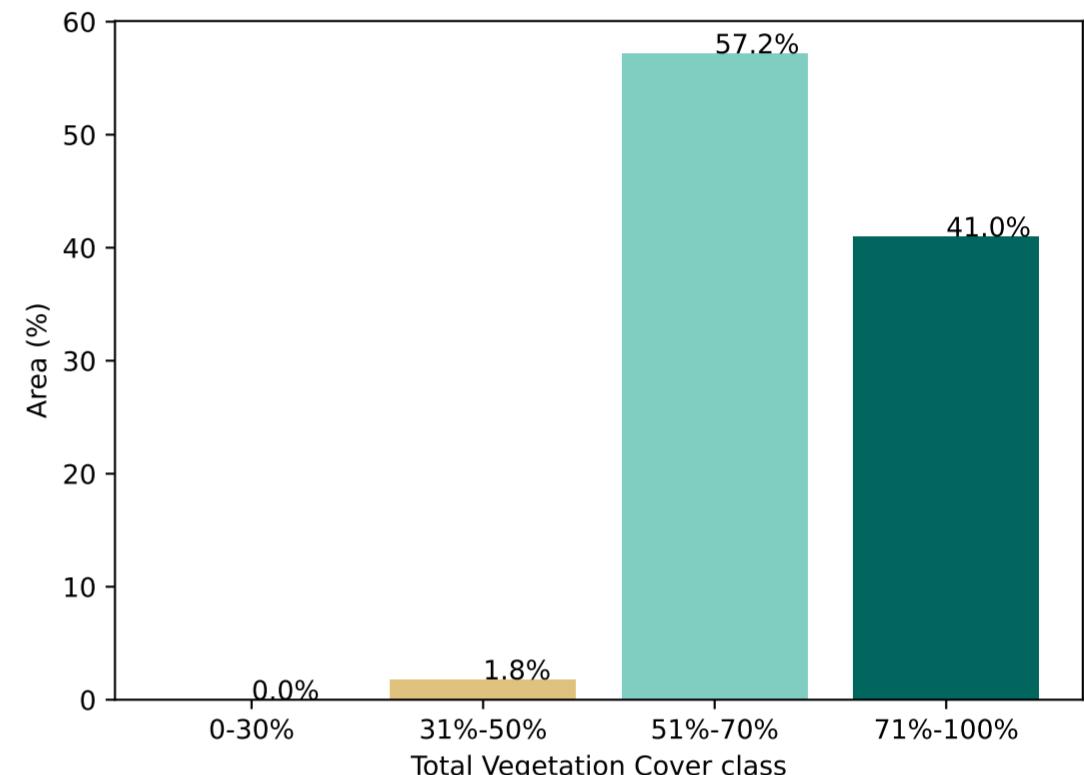
1 Conservation and natural environments - Woodland forest

## Total Vegetation Cover [%]

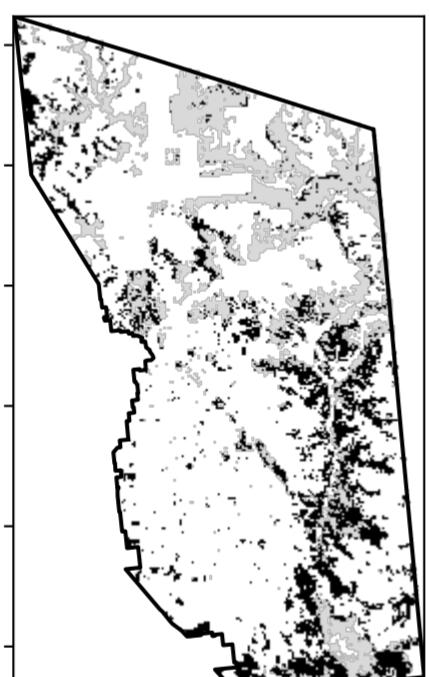


71-100%  
51-70%  
31-50%  
0-30%

## Proportion of vegetation cover class in area

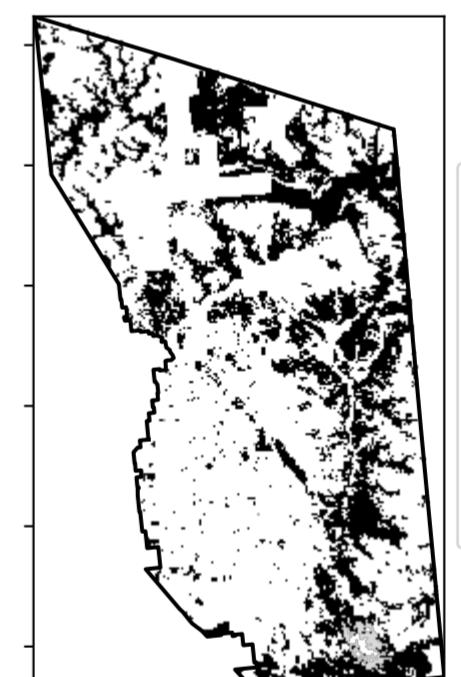


## % Area protected from water erosion (>70%)



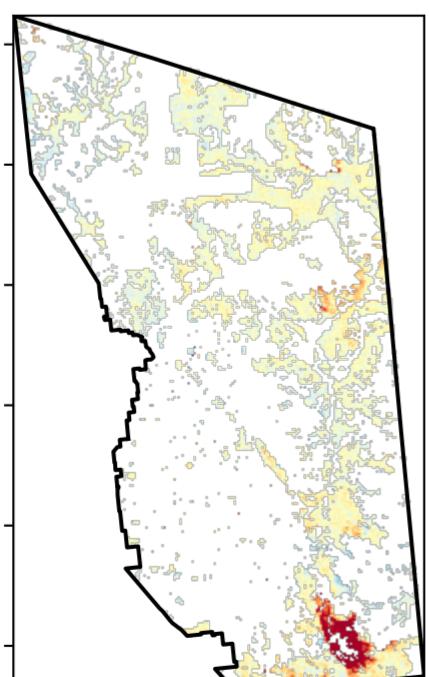
Area not protected  
59.0% of region  
(535,189 ha)  
Area protected  
41.0% of region  
(371,911 ha)

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



Area not protected  
2.0% of region  
(18,142 ha)  
Area protected  
98.0% of region  
(888,958 ha)

## Total Vegetation Cover Anomaly [%]

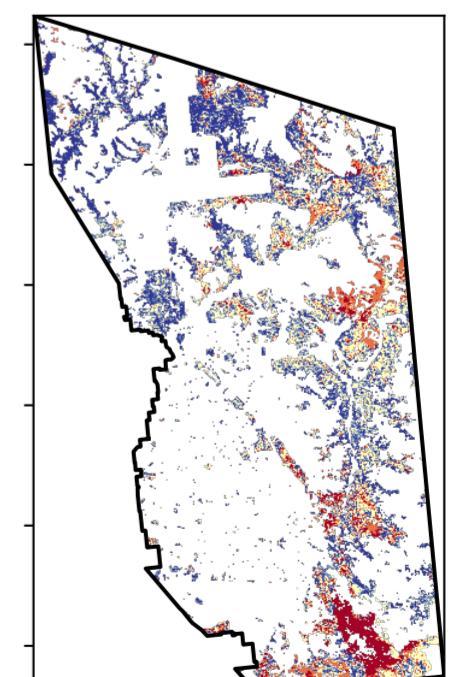


Anomaly shows how many percentage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

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 [%]

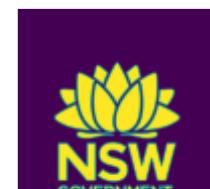


10  
9-10  
8-9  
7-8  
6-7  
5-6  
4-5  
3-4  
2-3  
1-2  
0-1



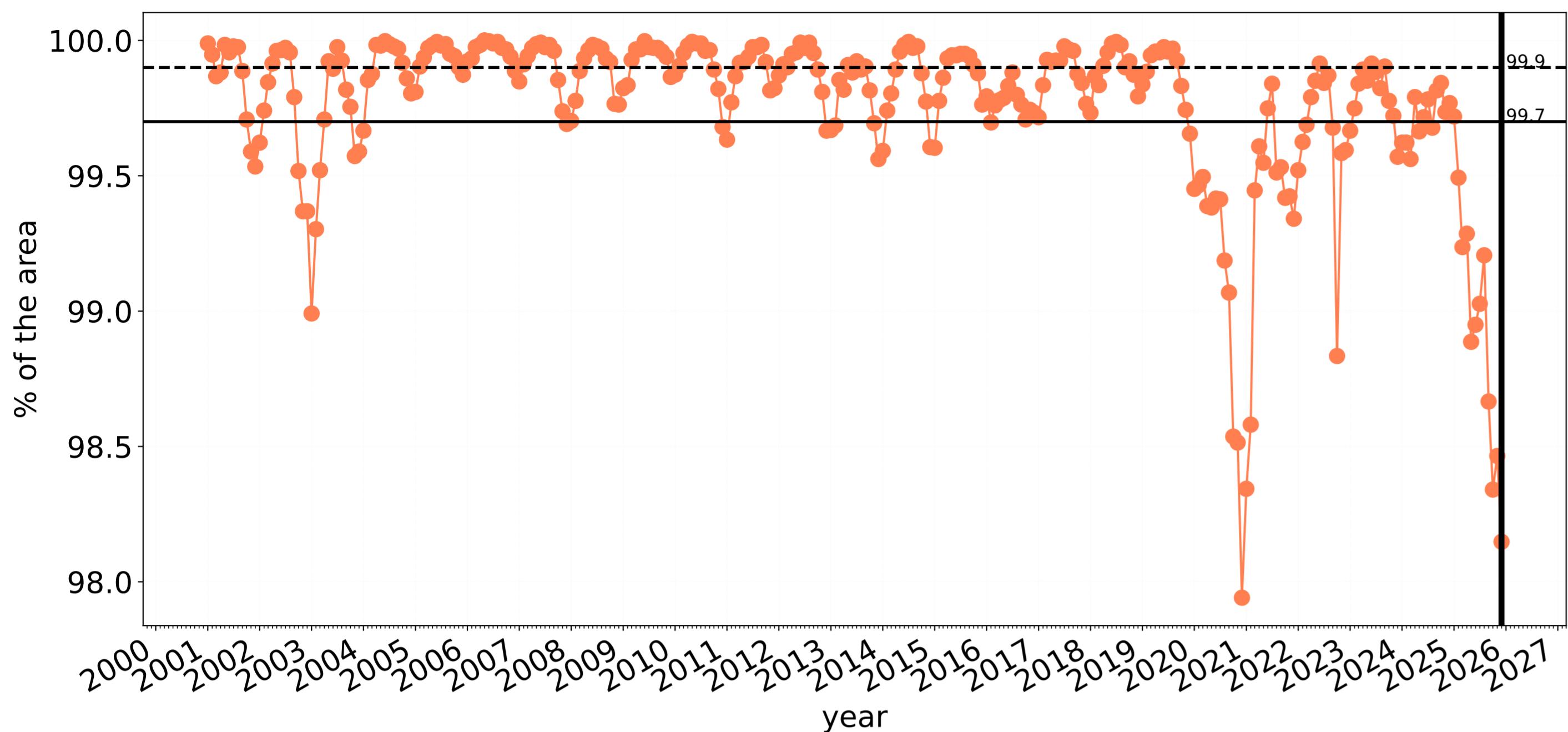
**tern**

Ecosystem Research Infrastructure

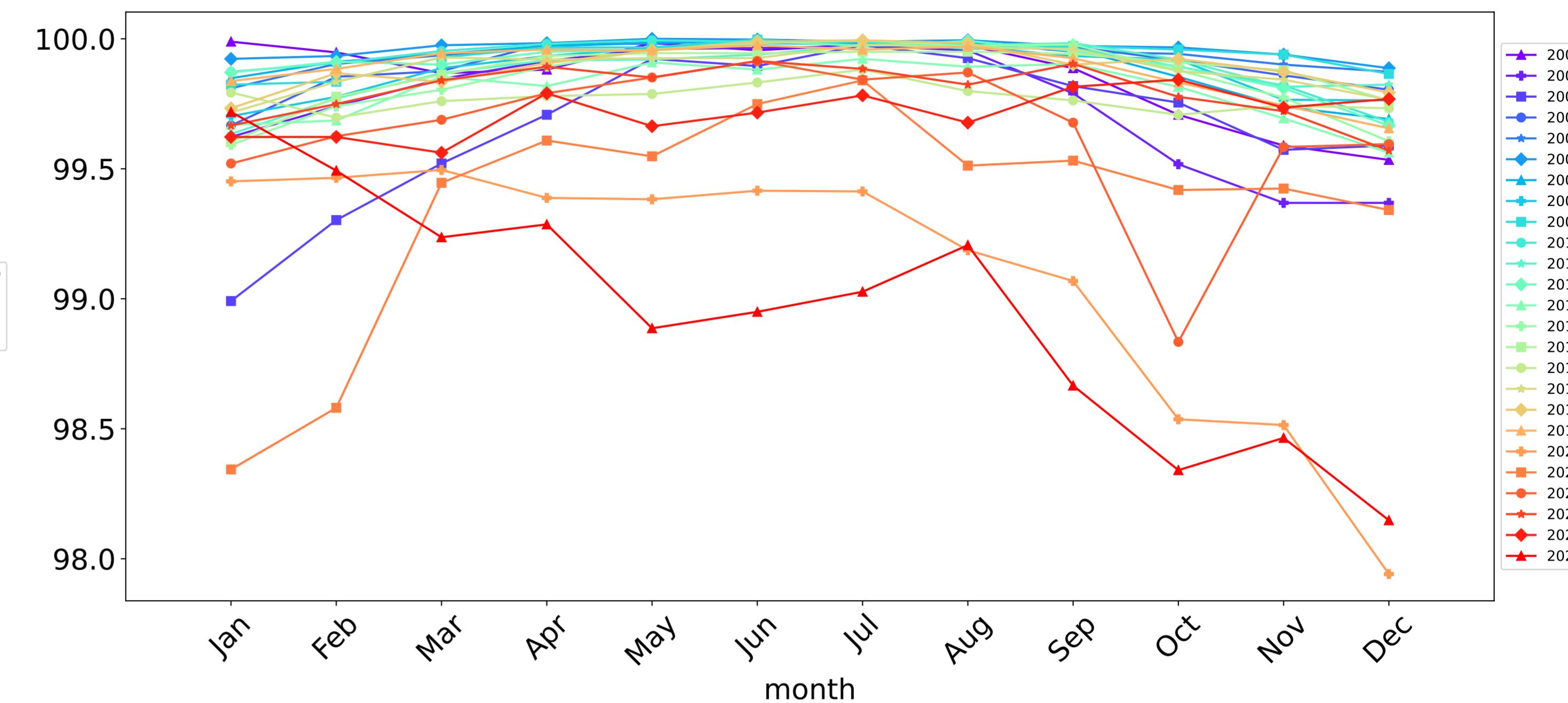


## Conservation and natural environments Woodland forest timeseries

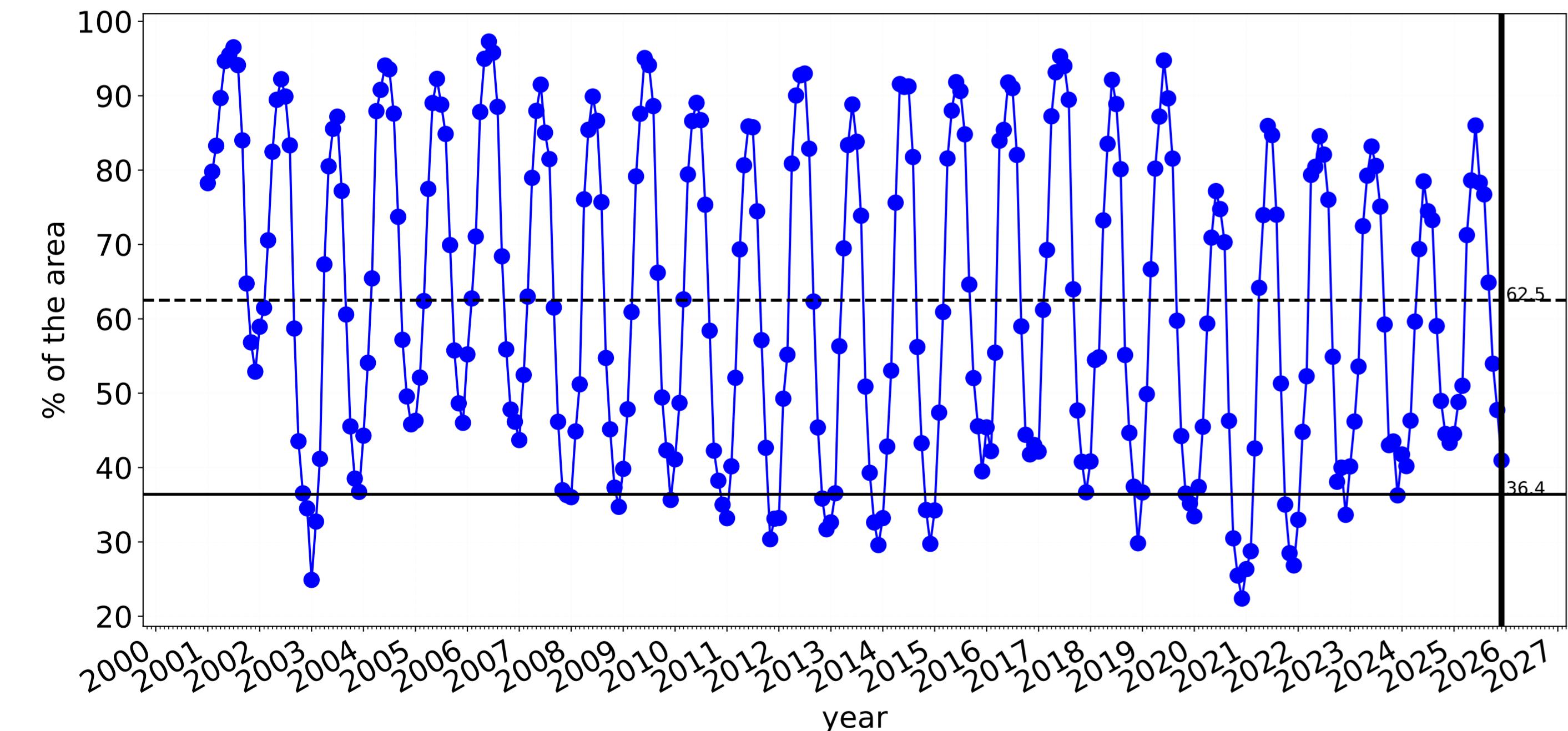
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



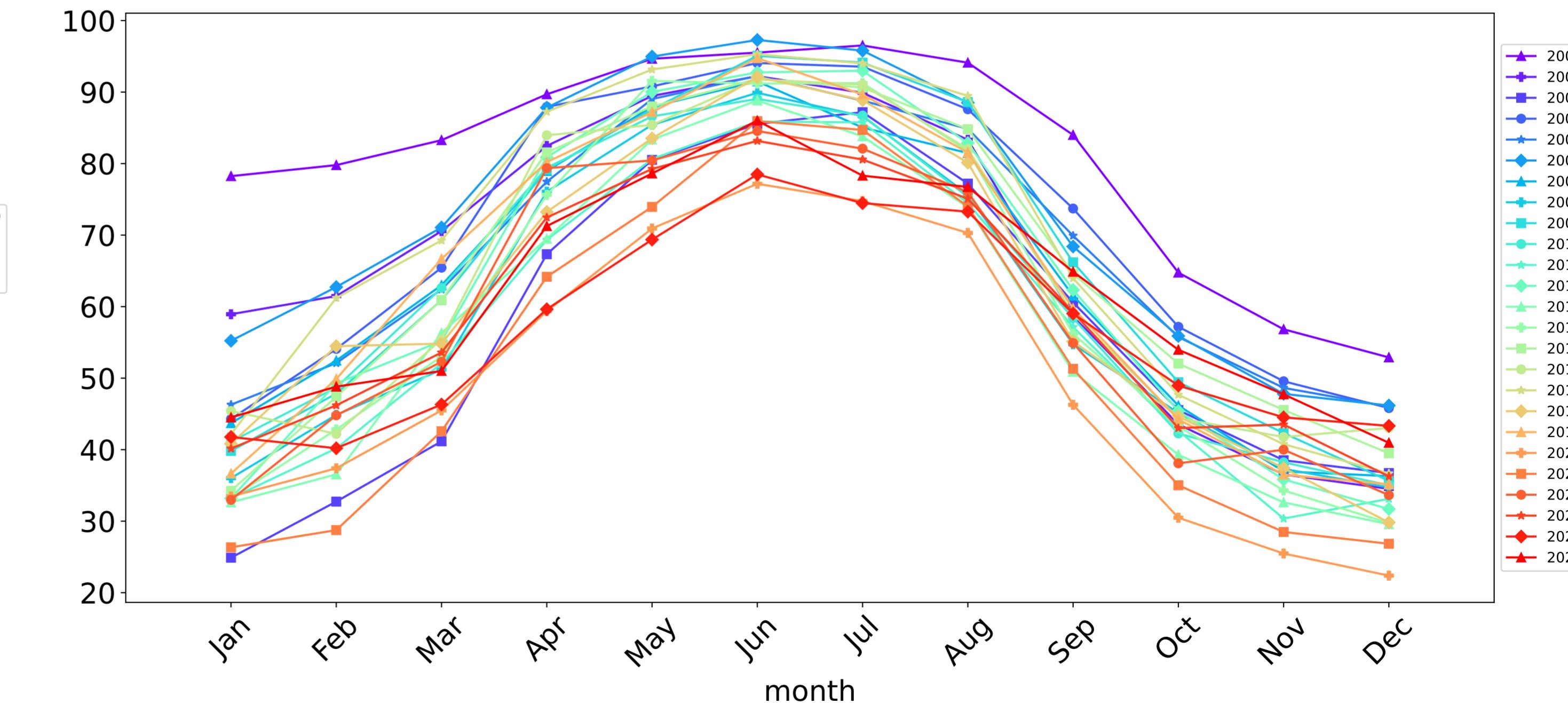
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



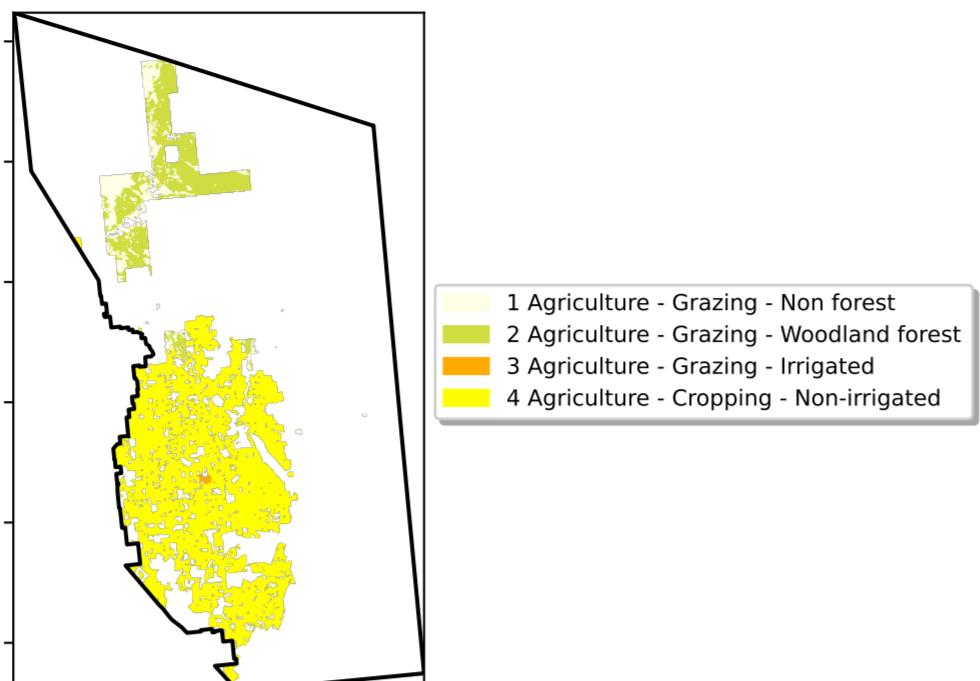
Water erosion historical monthly area protected (Total Veg Cov >70%)



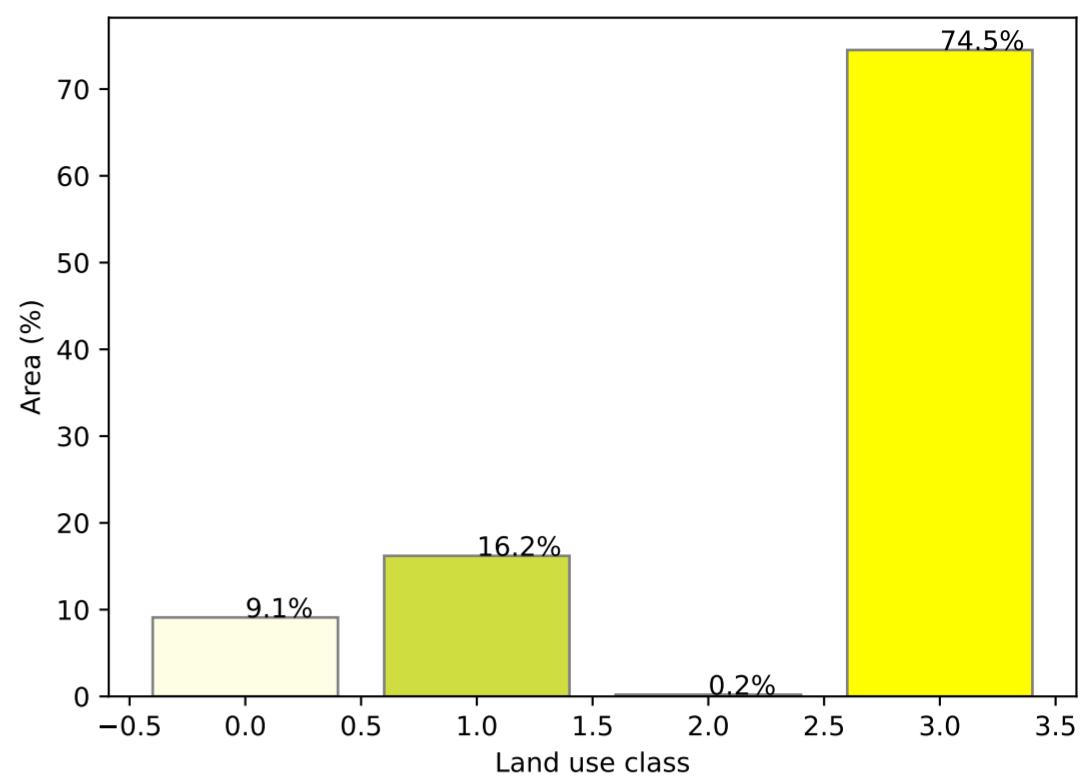
# Agriculture

## Land use and forest cover

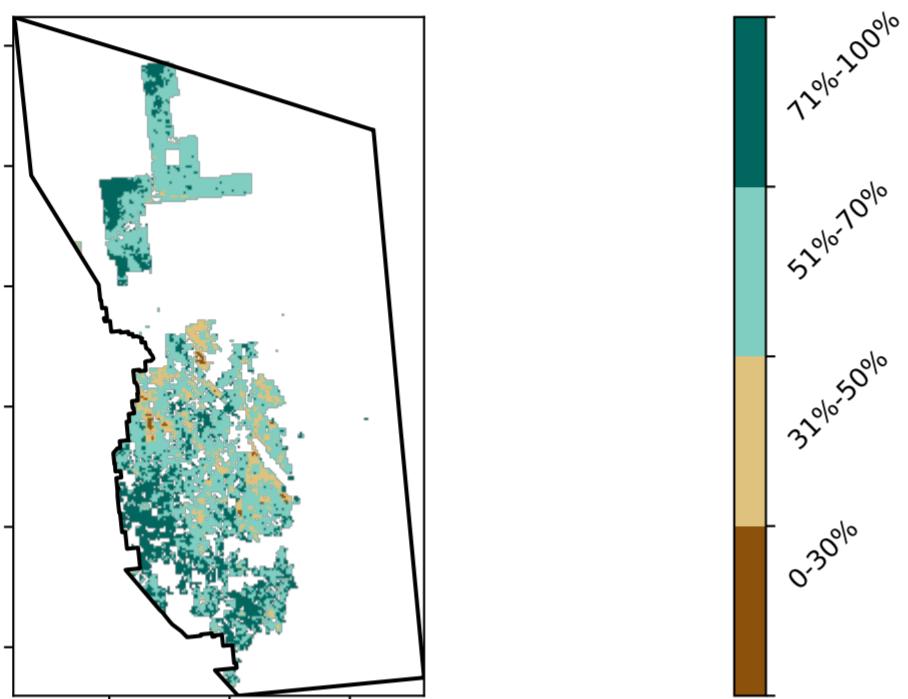
Catchment Scale Land Use and Forests of Australia (2018)  
Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



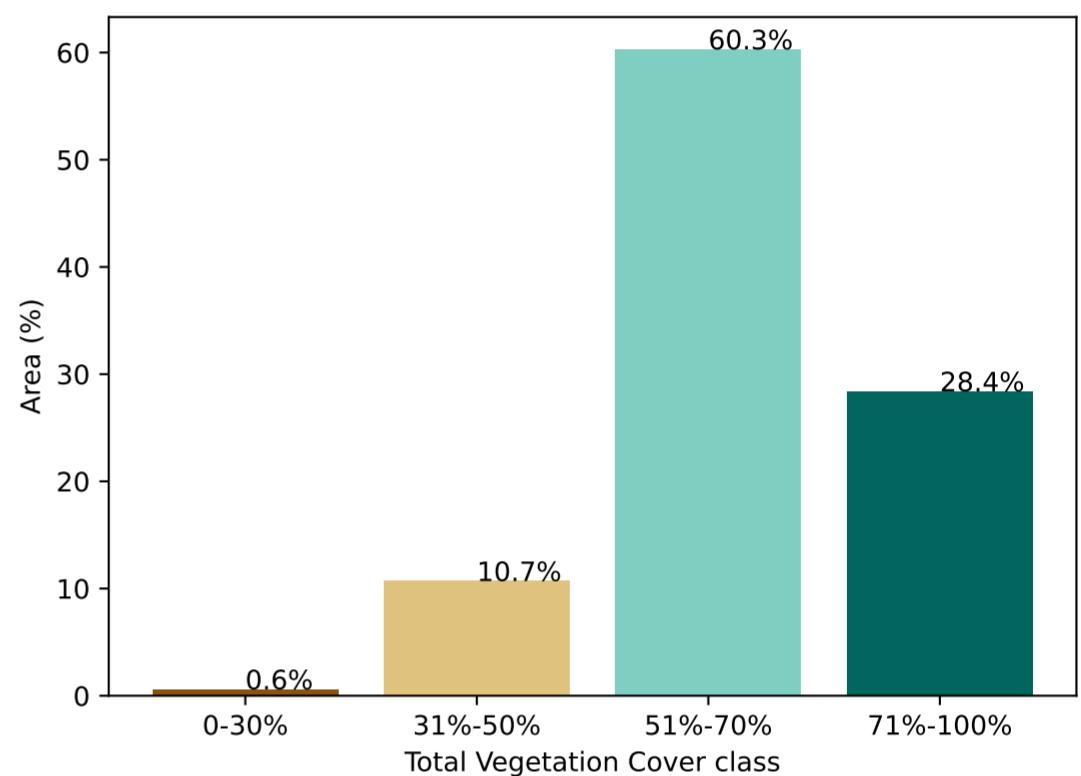
## Proportion of each land class in area



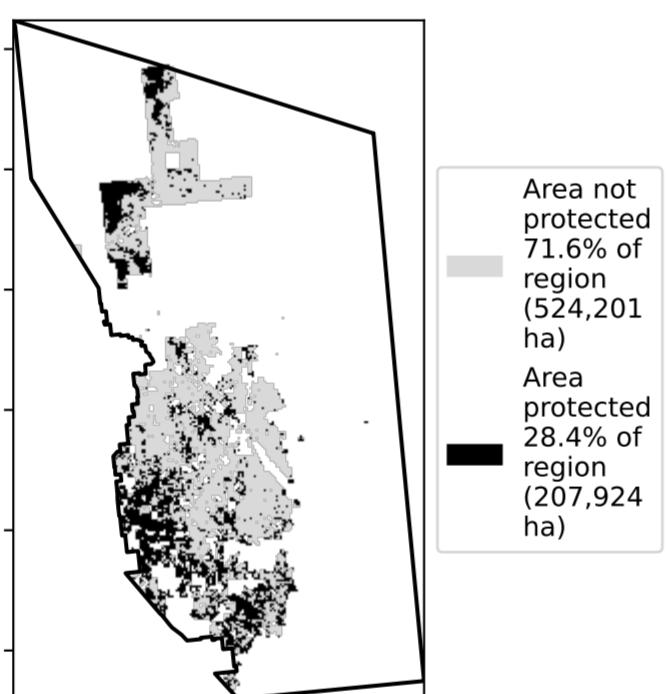
## Total Vegetation Cover [%]



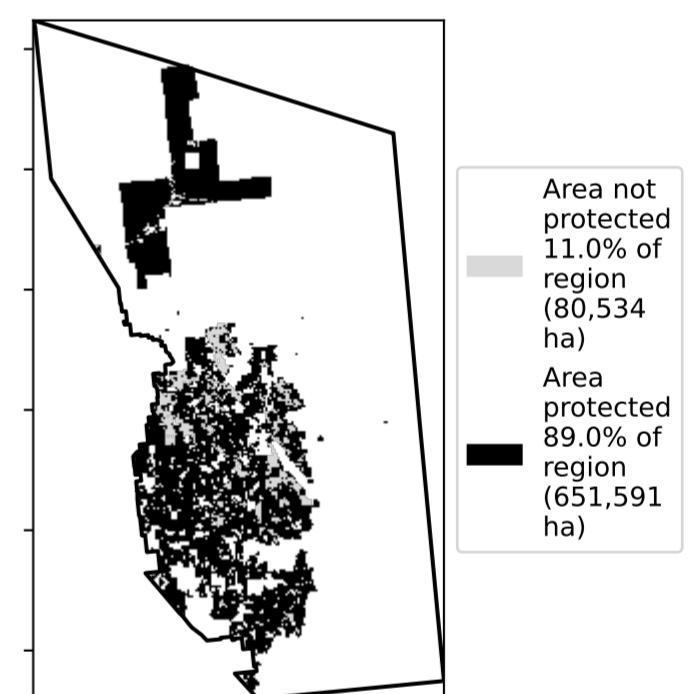
## Proportion of vegetation cover class in area



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

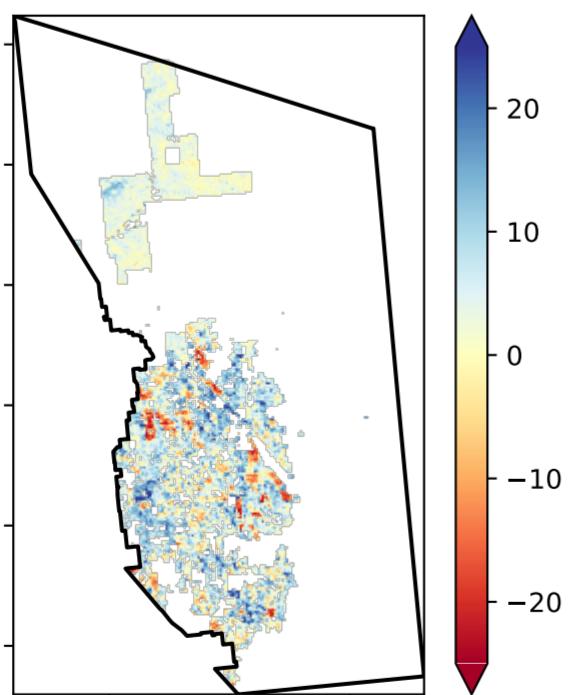


## % Area protected from wind erosion (>50%)



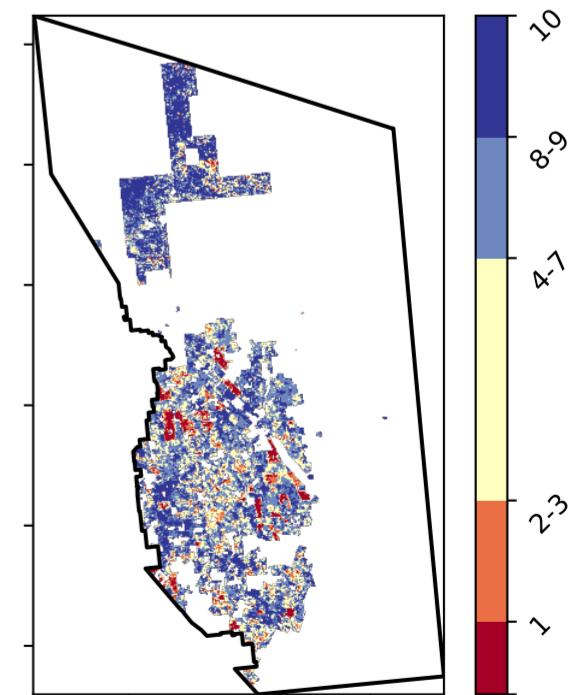
## Total Vegetation Cover Anomaly [%]

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.

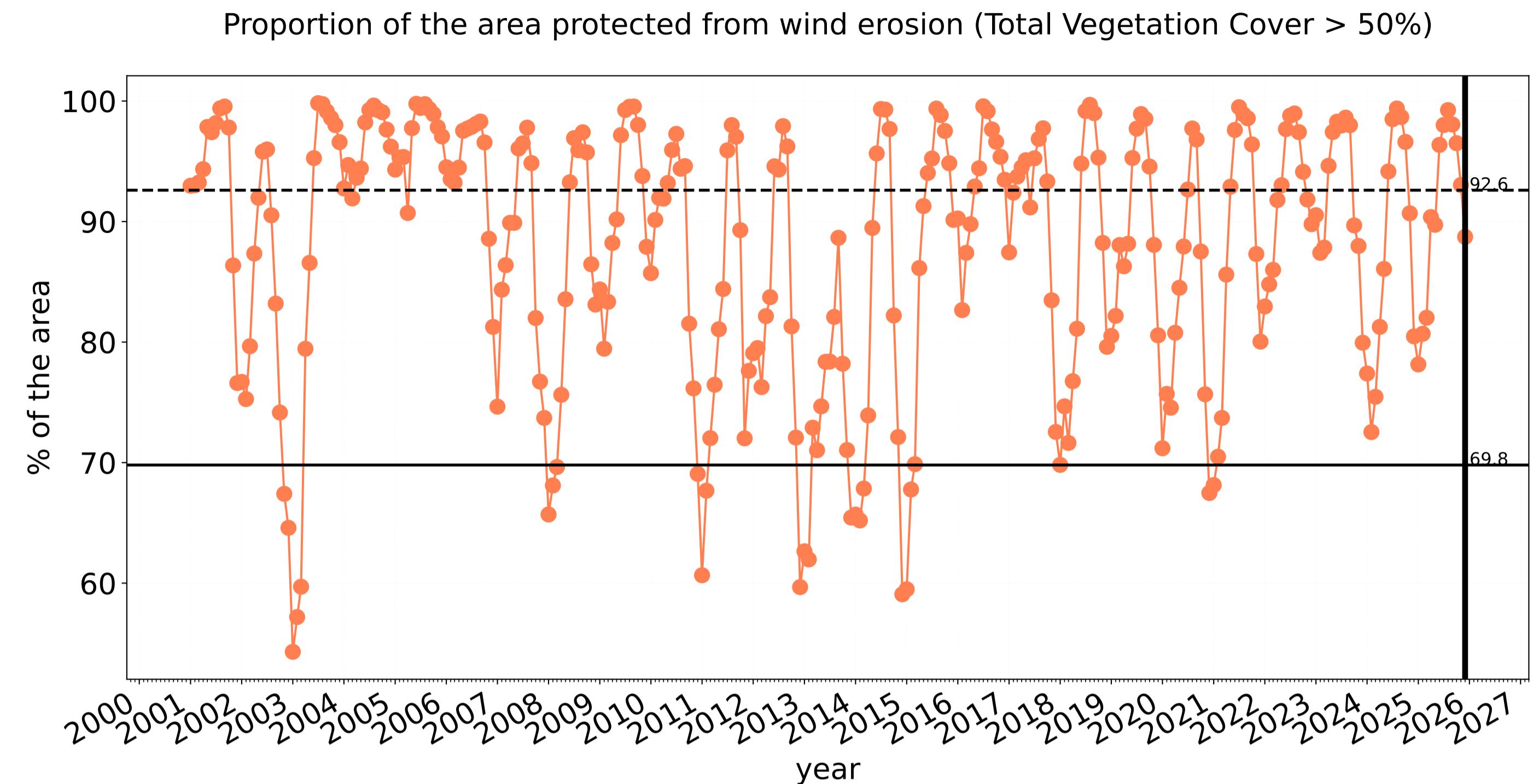


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

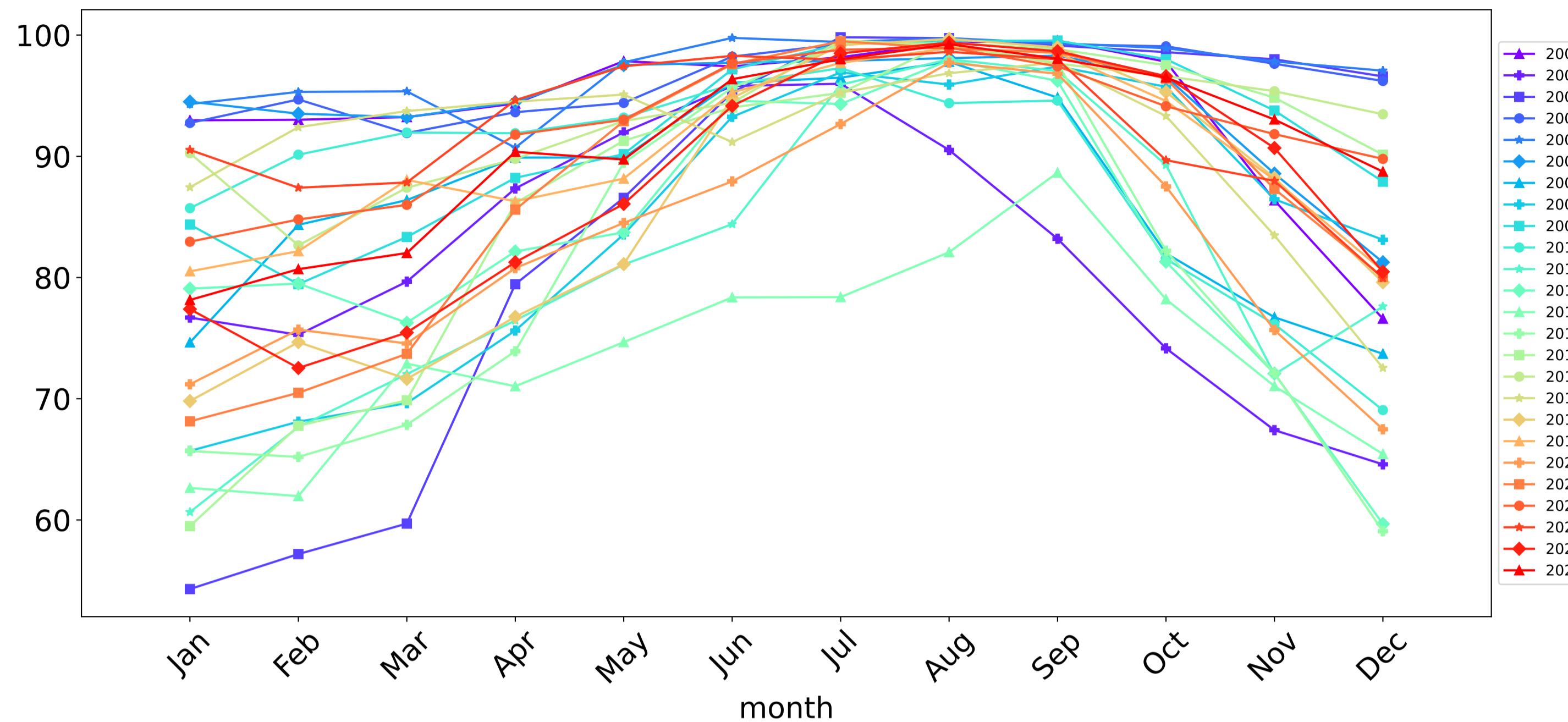
## Total Vegetation Cover Decile [%]



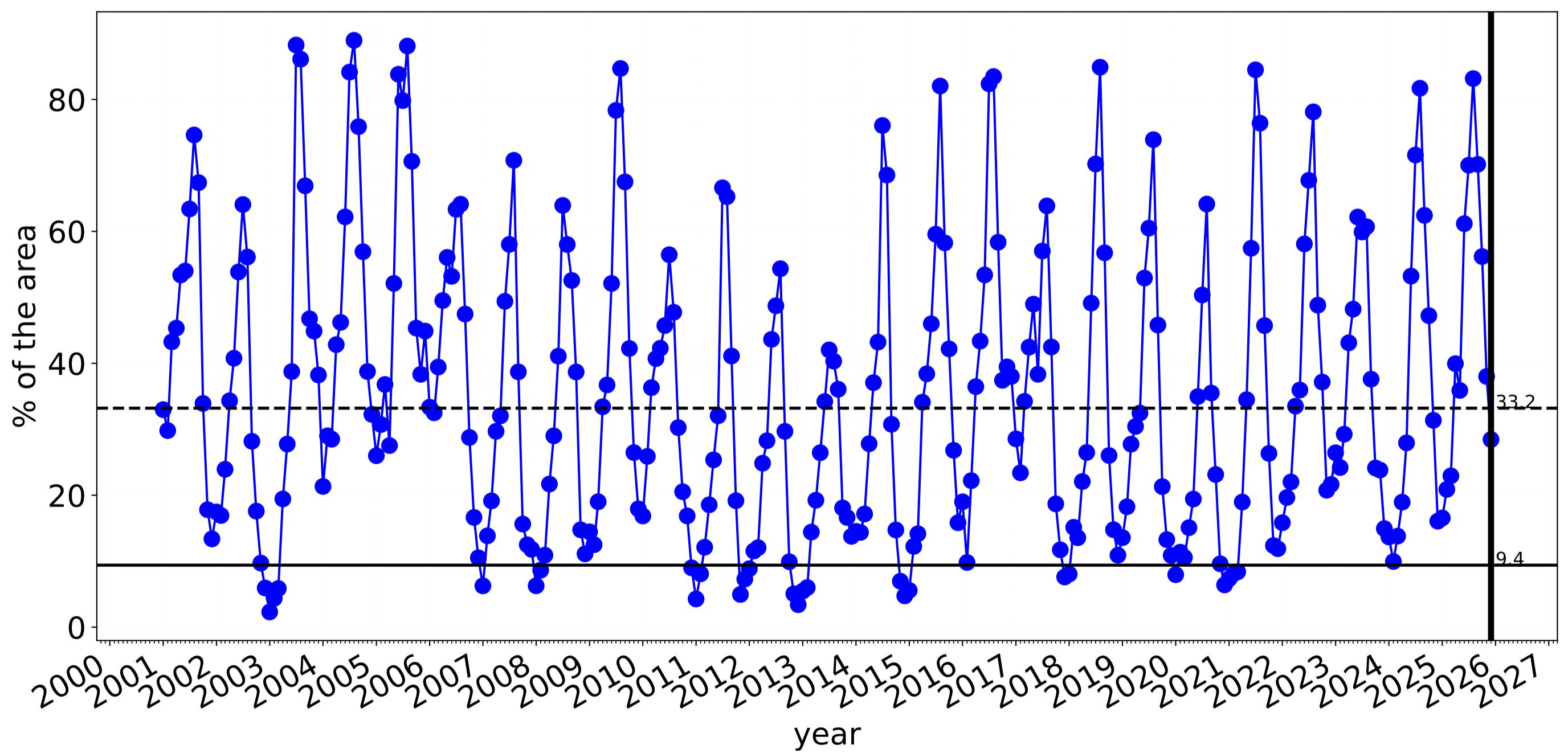
## Agriculture timeseries



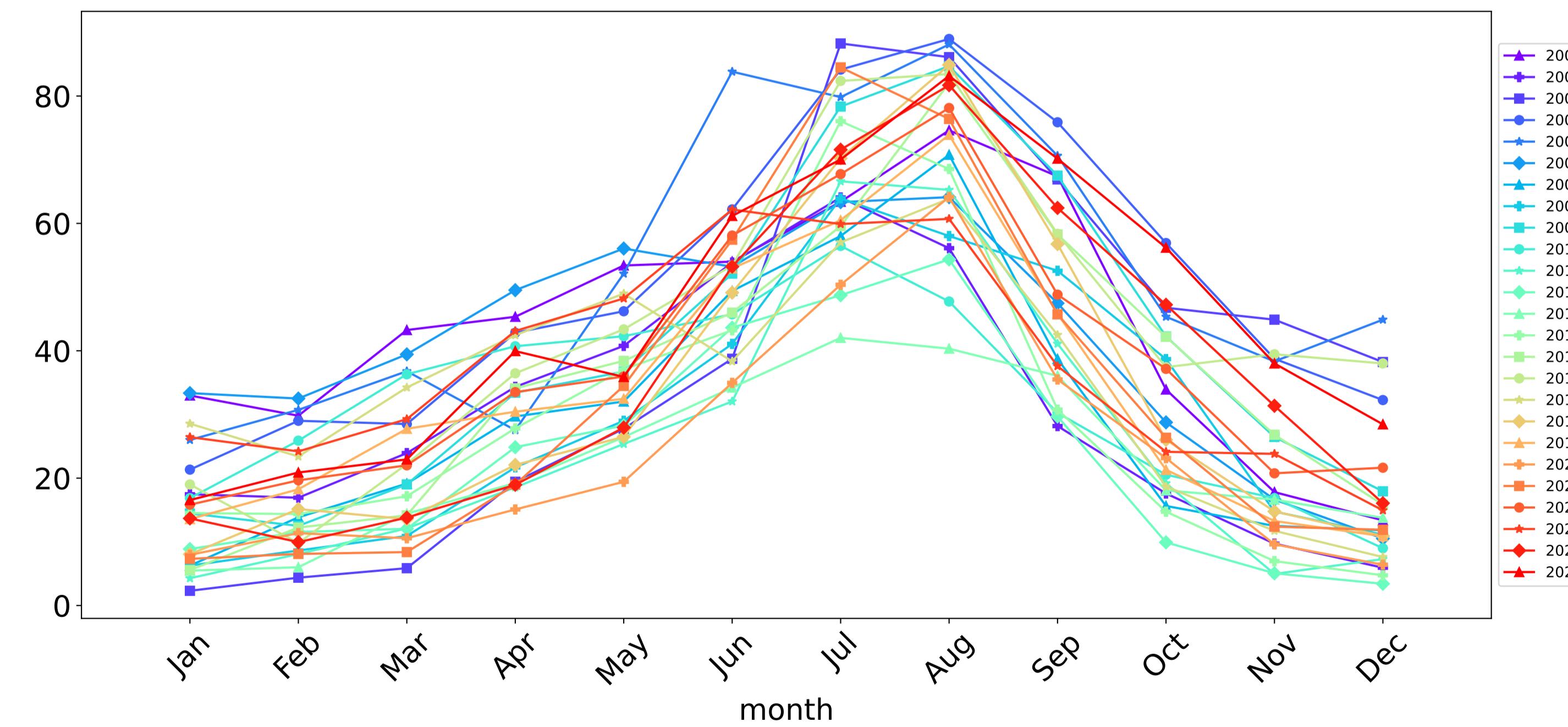
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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



tern  
Ecosystem Research Infrastructure



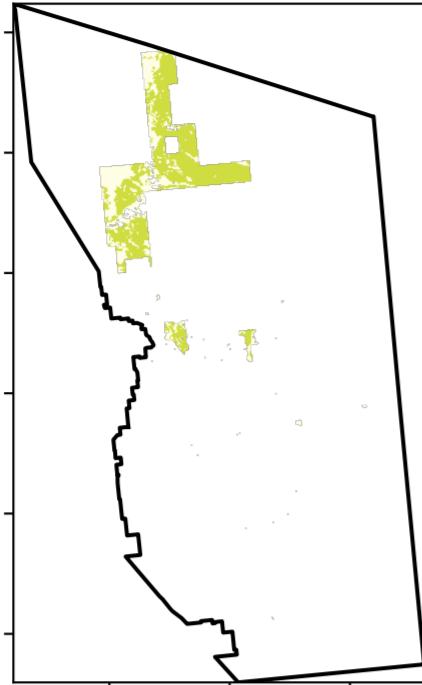
National  
Landcare  
Programme



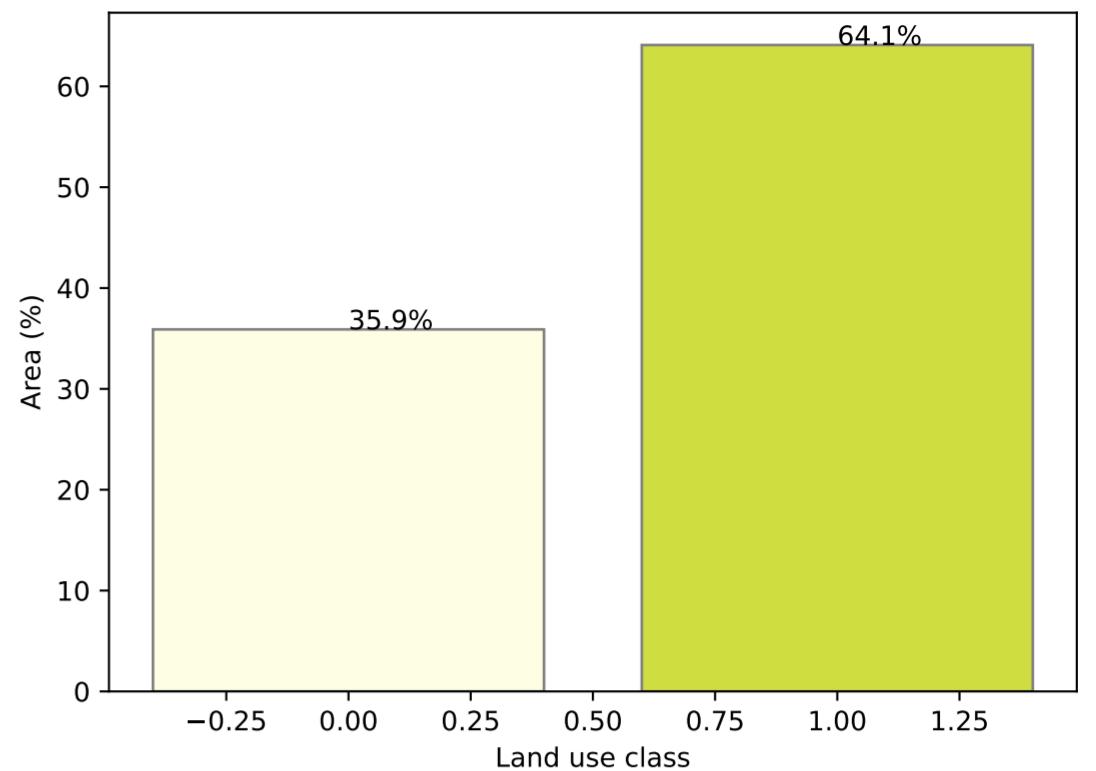
# Grazing

## Land use and forest cover

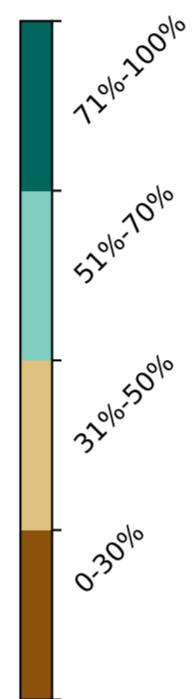
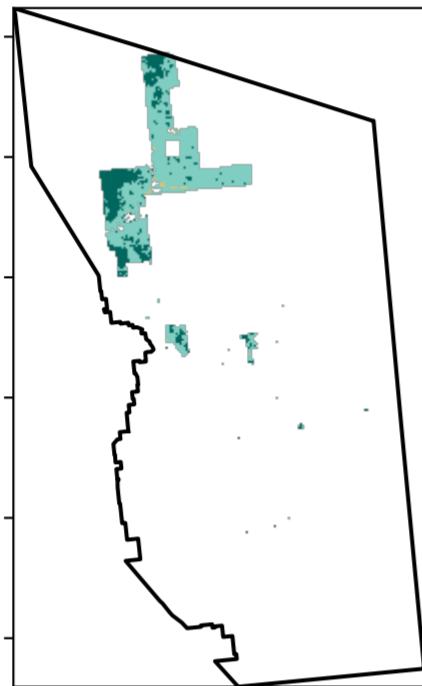
Catchment Scale Land Use and Forests of Australia (2018)  
Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



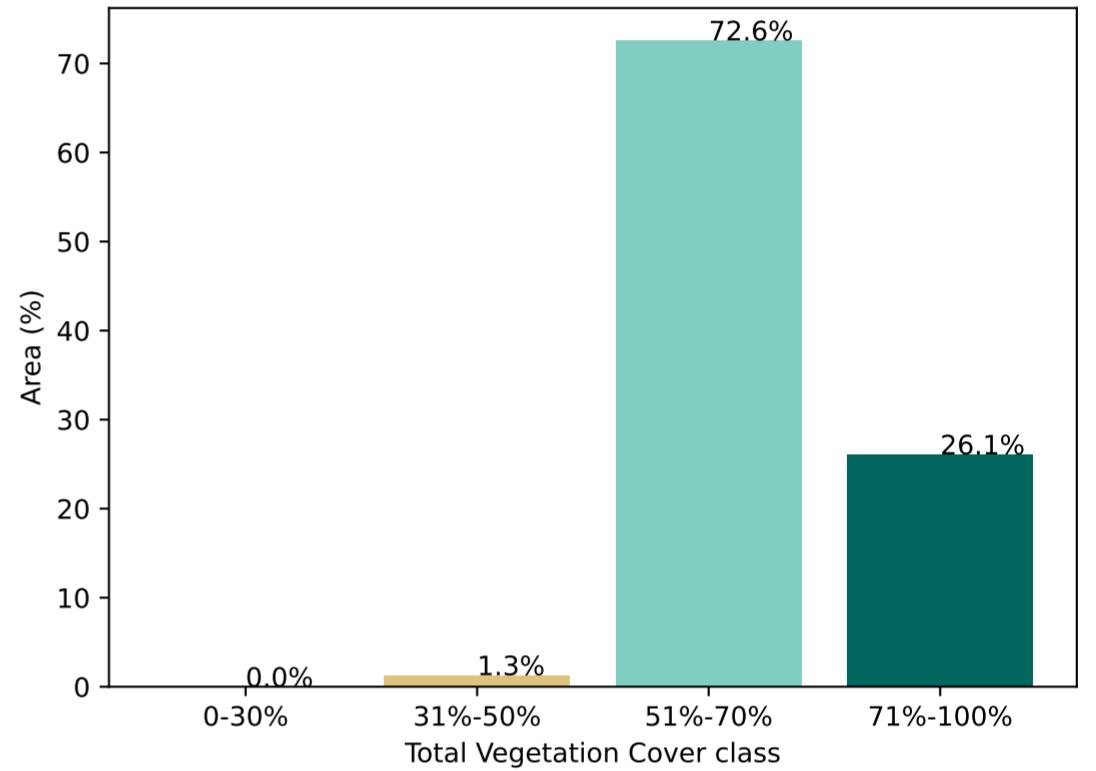
## Proportion of each land class in area



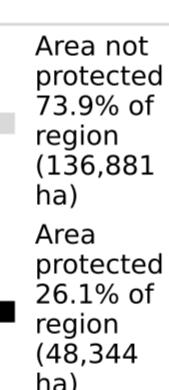
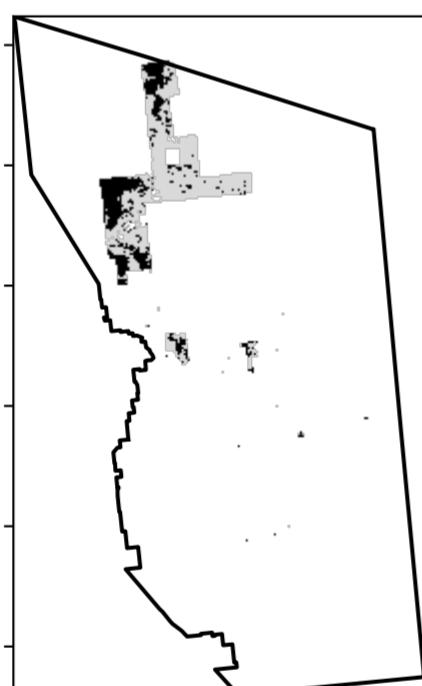
## Total Vegetation Cover [%]



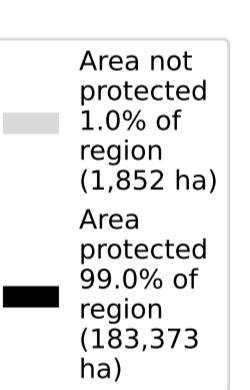
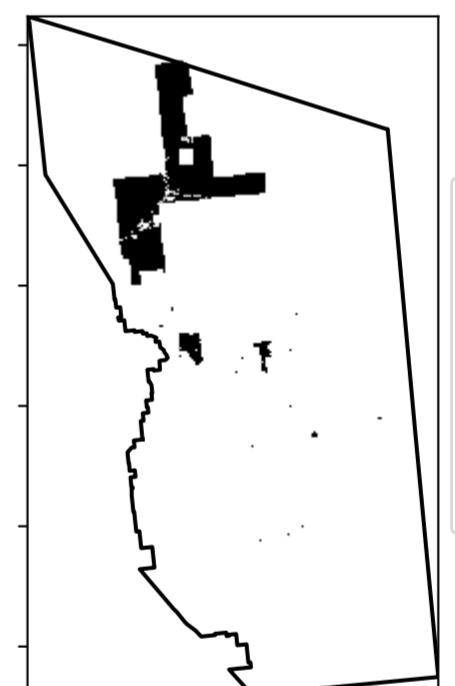
## Proportion of vegetation cover class in area



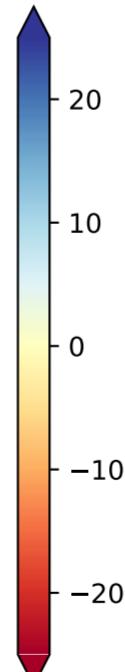
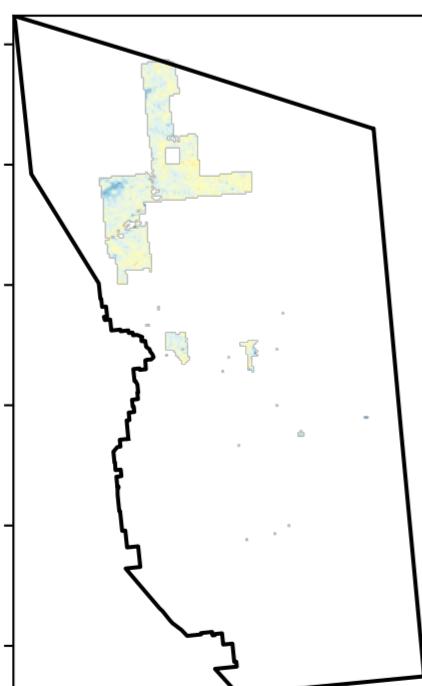
## % Area protected from water erosion (>70%)



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



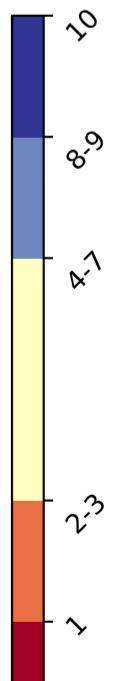
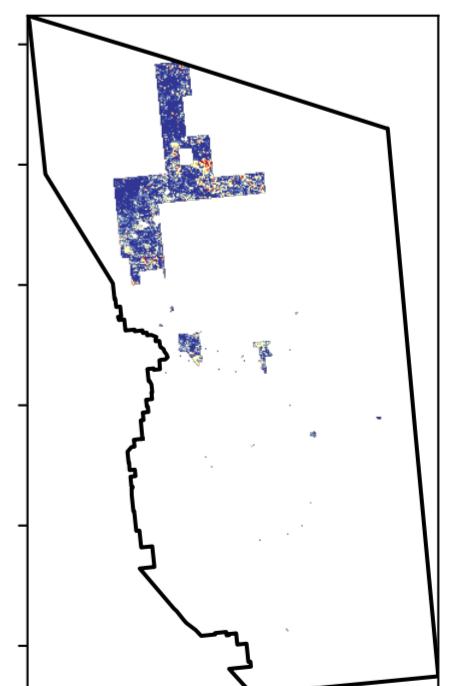
## Total Vegetation Cover Anomaly [%]



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.

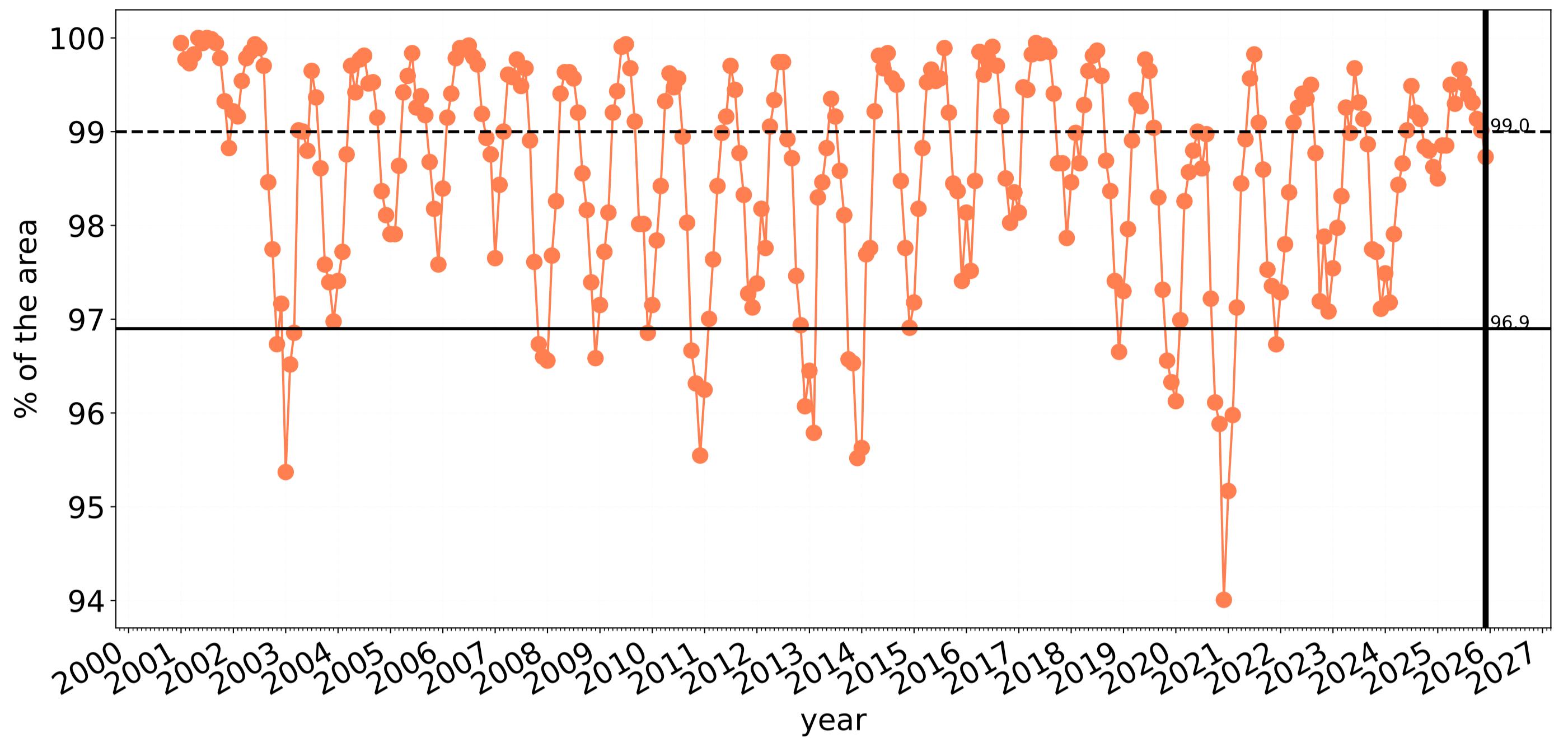
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

## Total Vegetation Cover Decile [%]

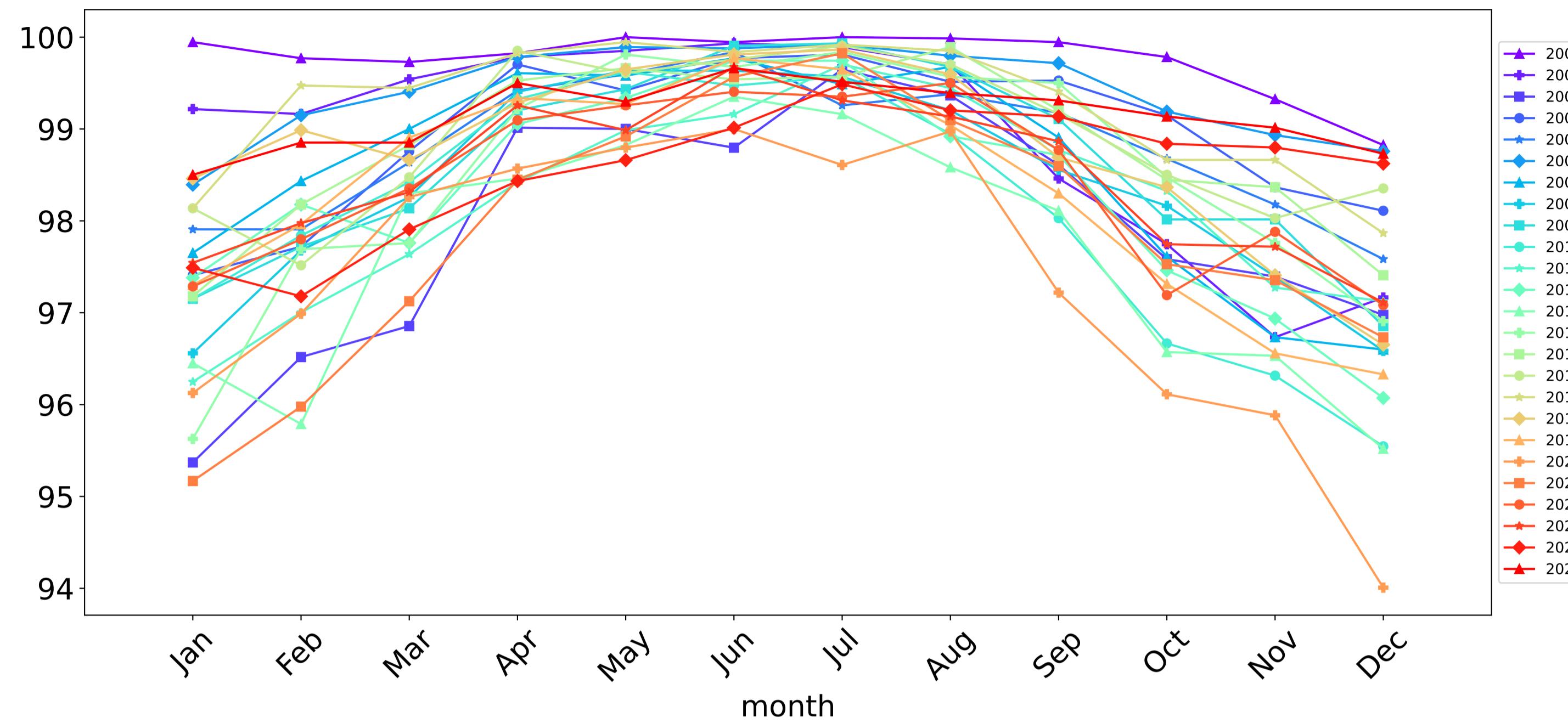


## Grazing timeseries

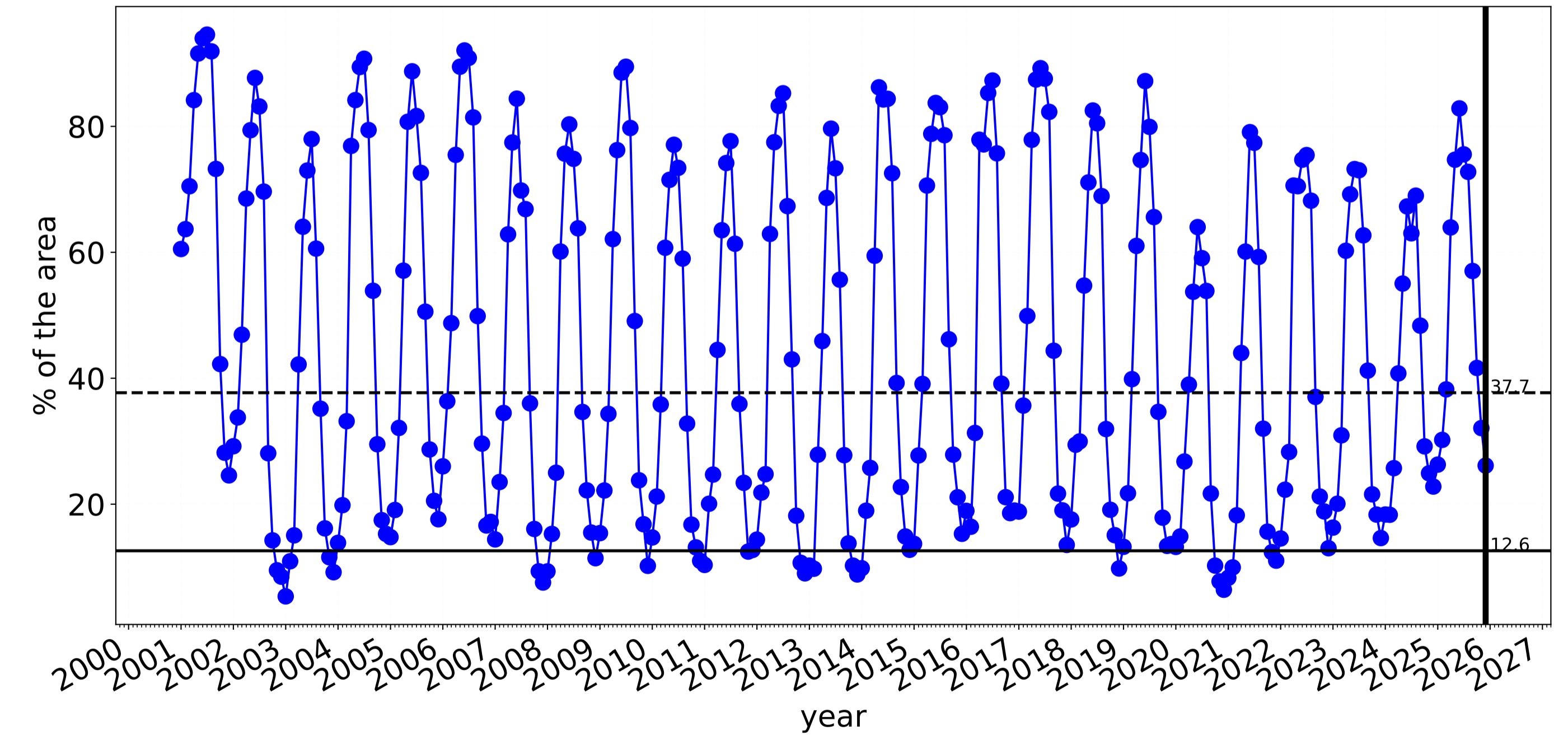
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



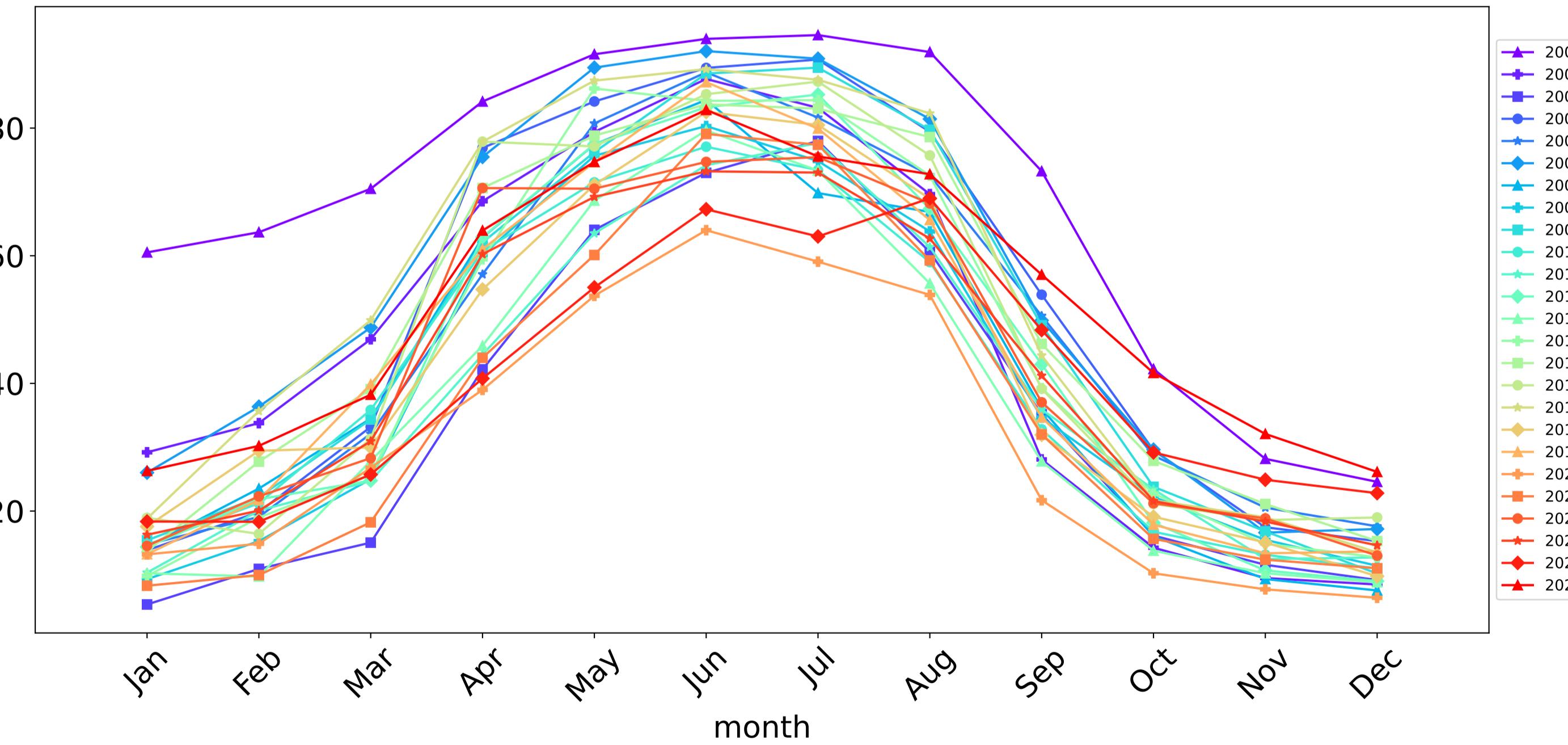
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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



tern  
Ecosystem Research Infrastructure



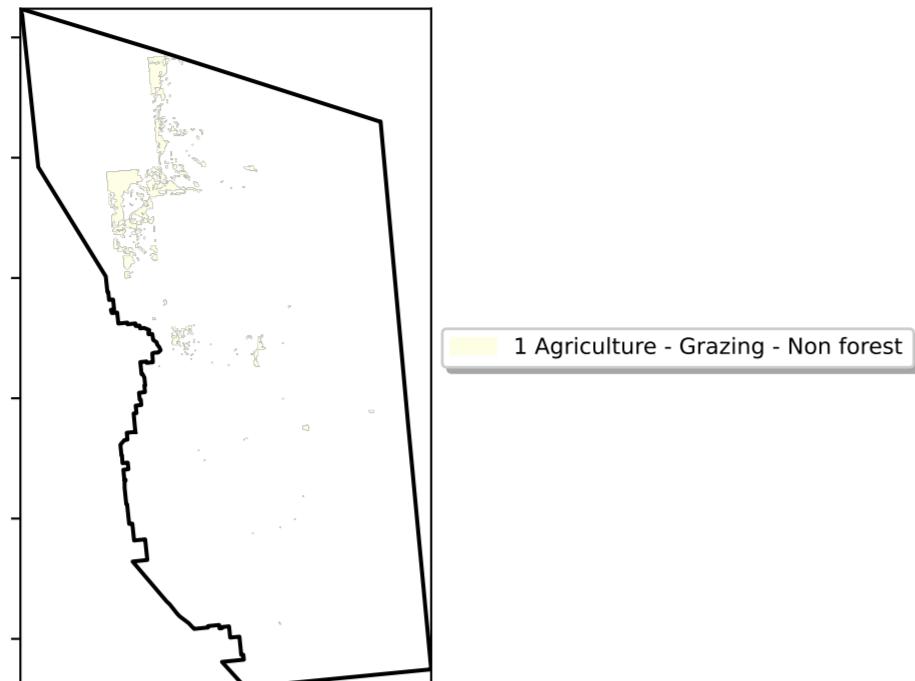
National  
Landcare  
Programme



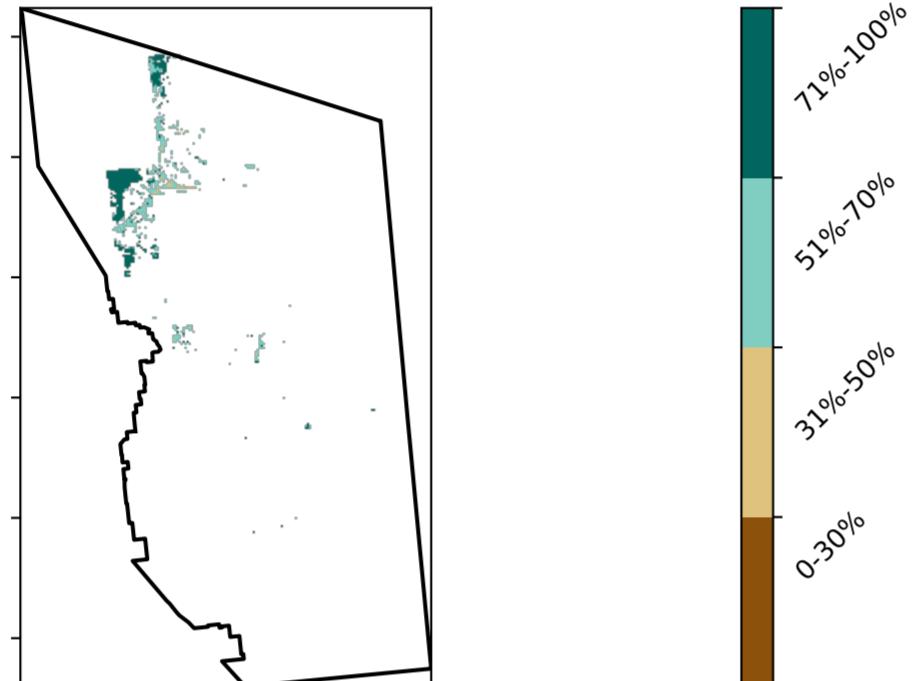
# Grazing non forest

## Land use and forest cover

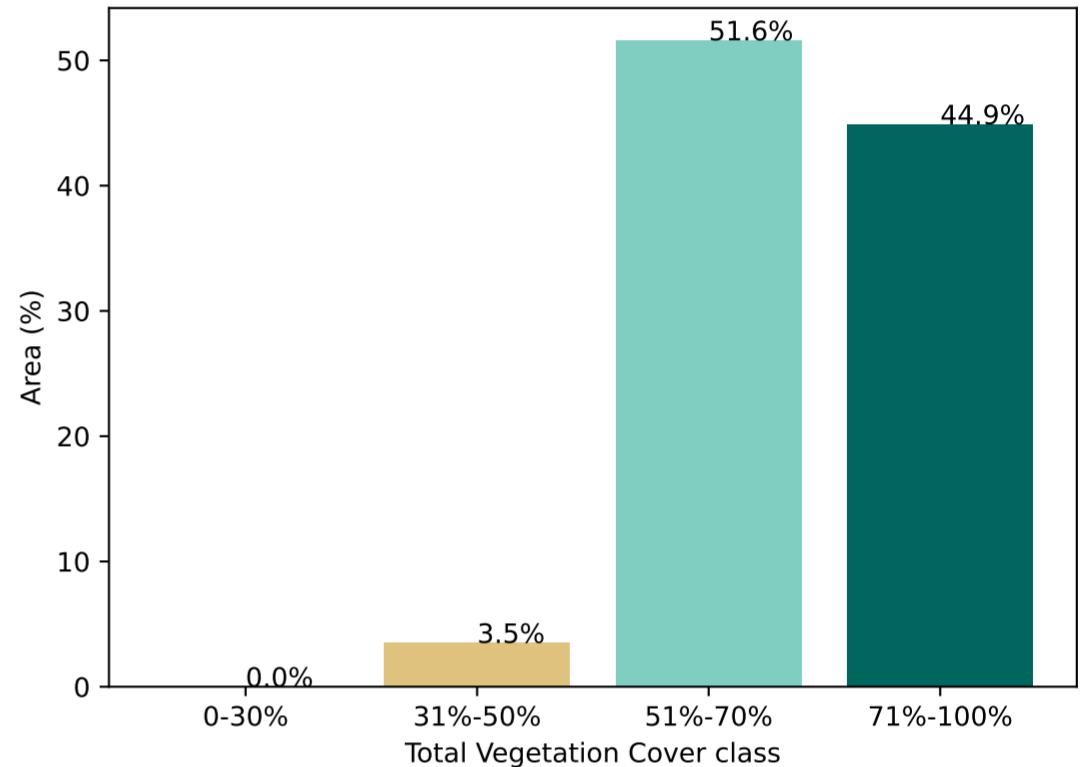
Catchment Scale Land Use and Forests of Australia (2018)  
Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



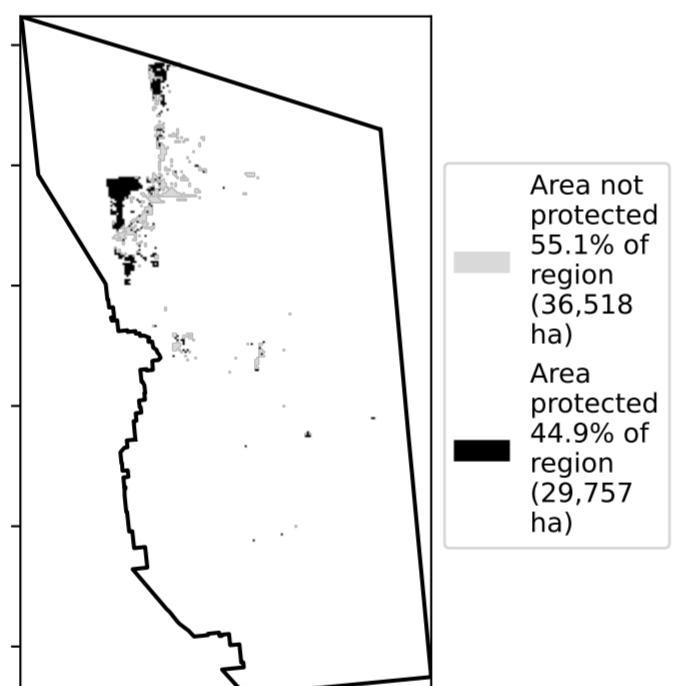
## Total Vegetation Cover [%]



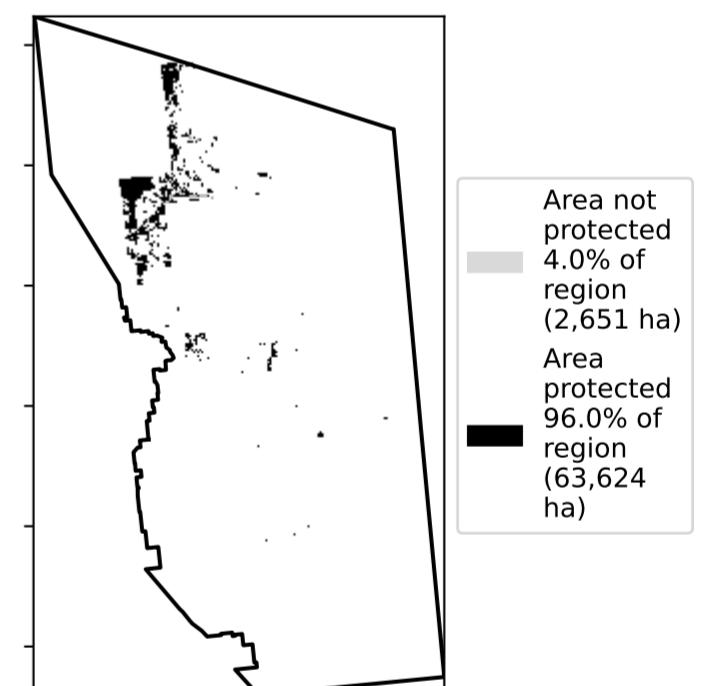
## Proportion of vegetation cover class in area



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

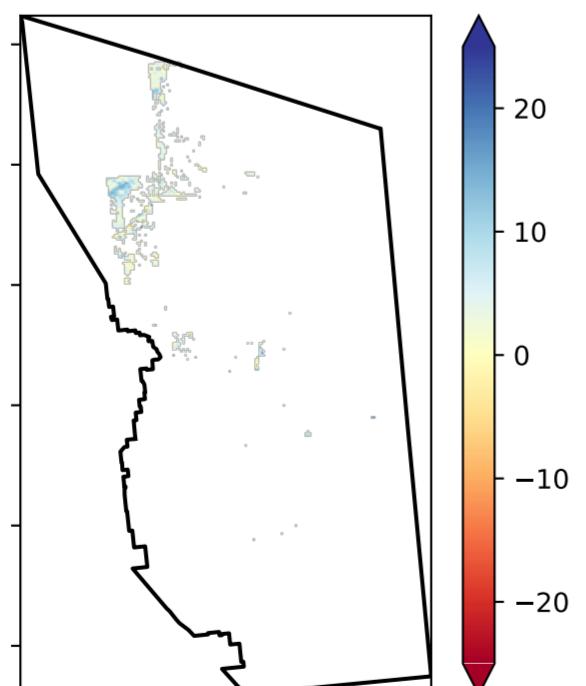


## % Area protected from wind erosion (>50%)



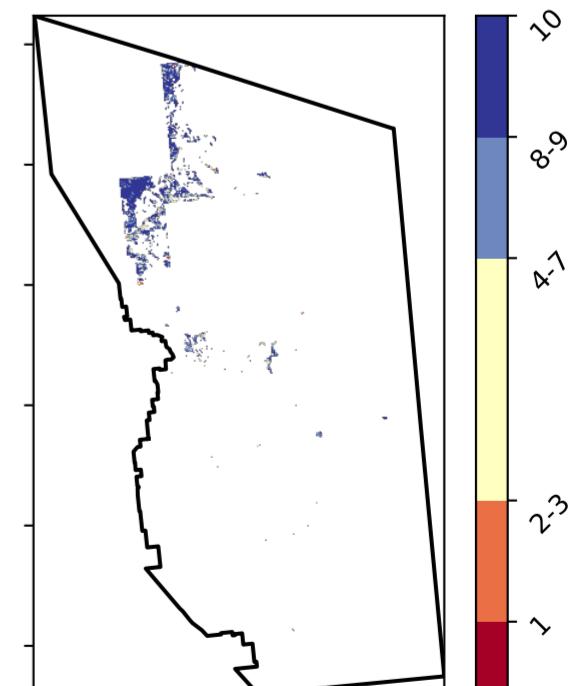
## Total Vegetation Cover Anomaly [%]

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 [%]

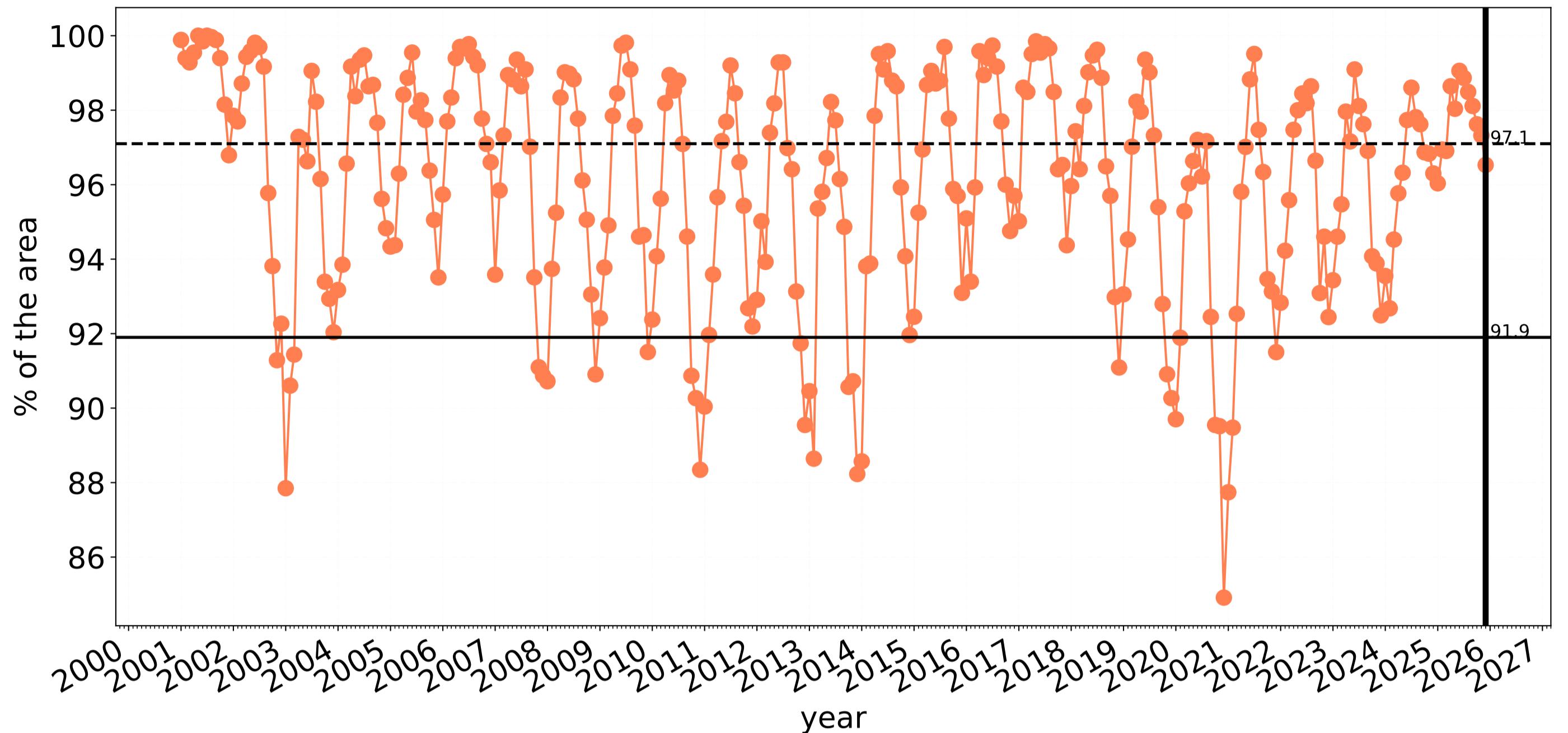


**tern**  
Ecosystem Research Infrastructure

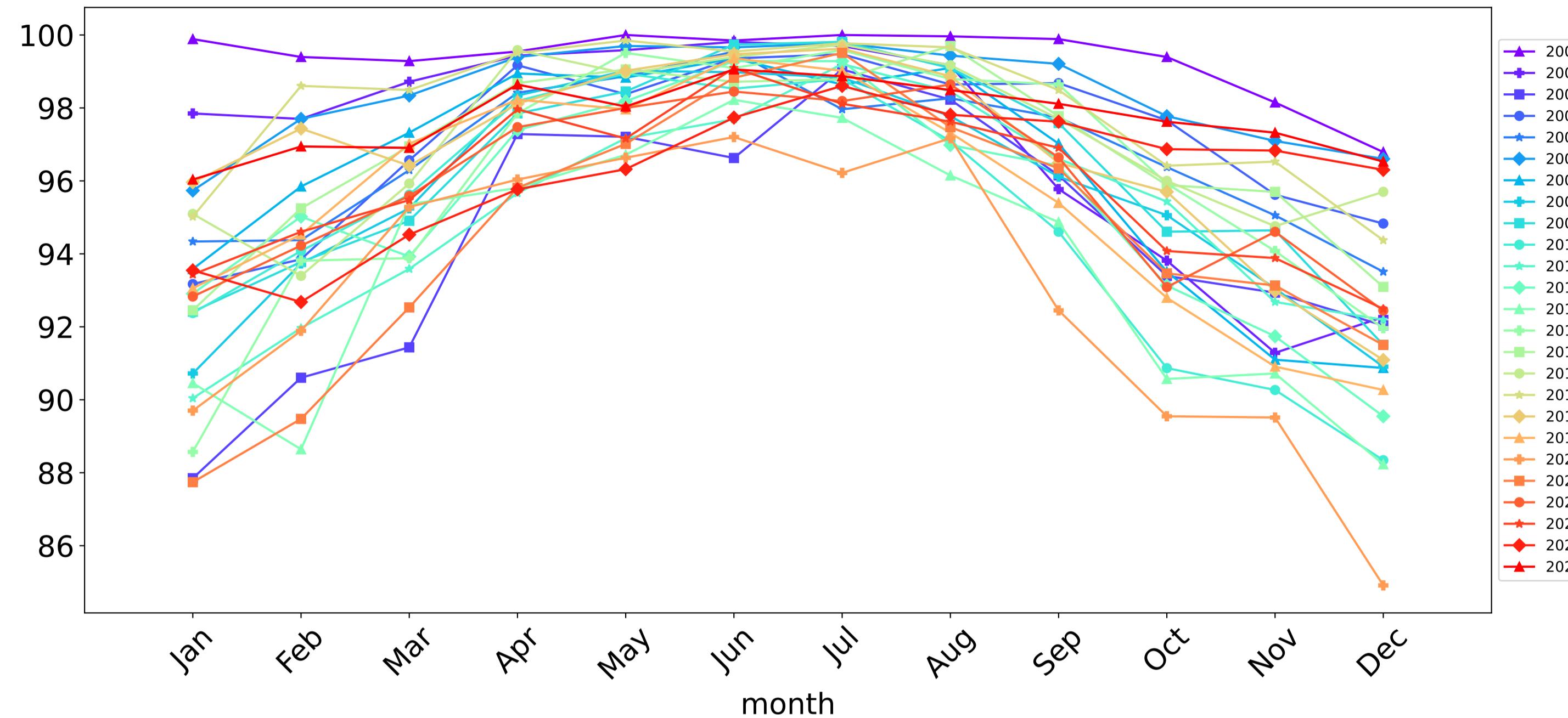


## Grazing non forest timeseries

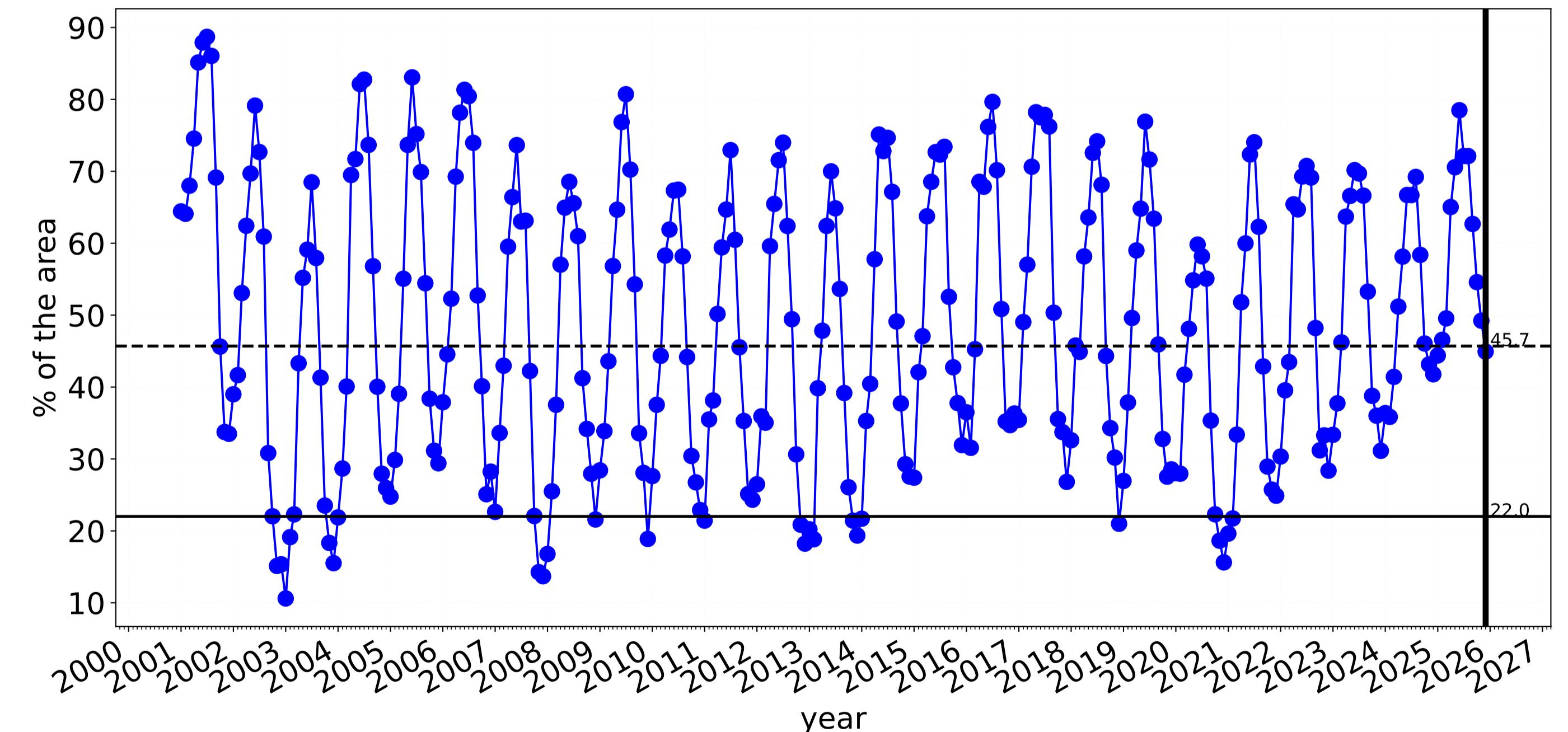
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



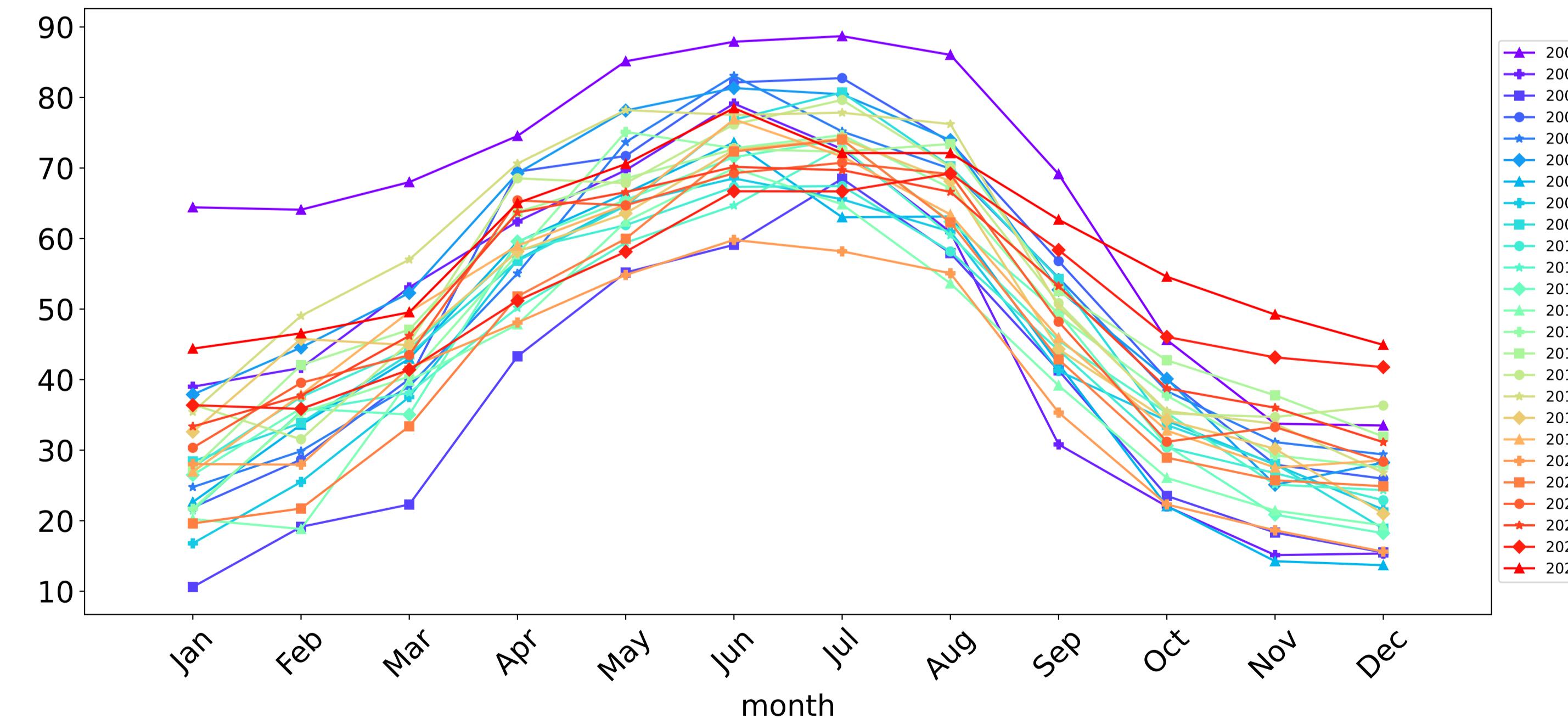
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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



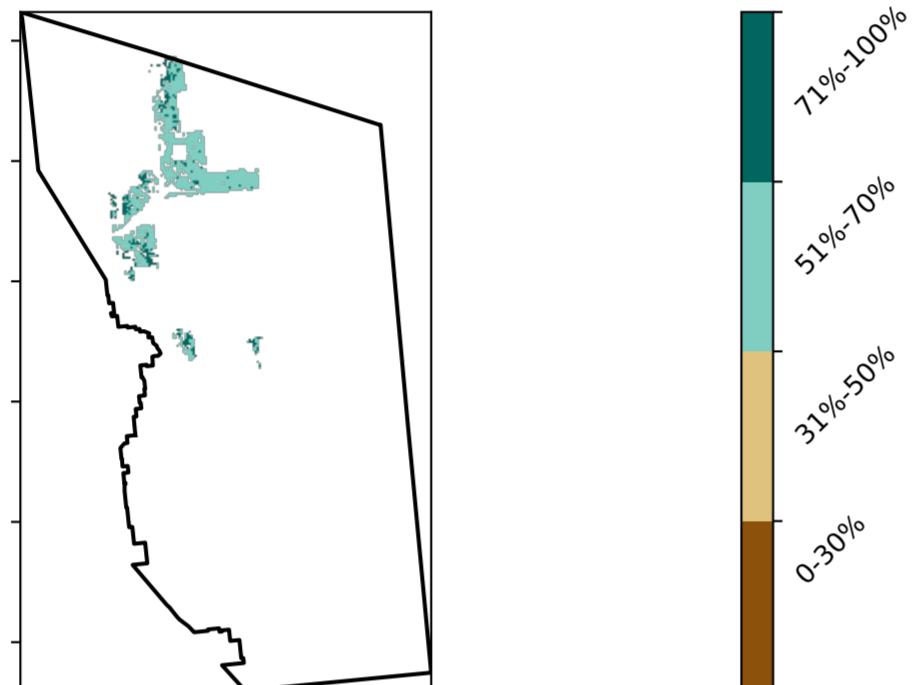
# Grazing Woodland forest

## Land use and forest cover

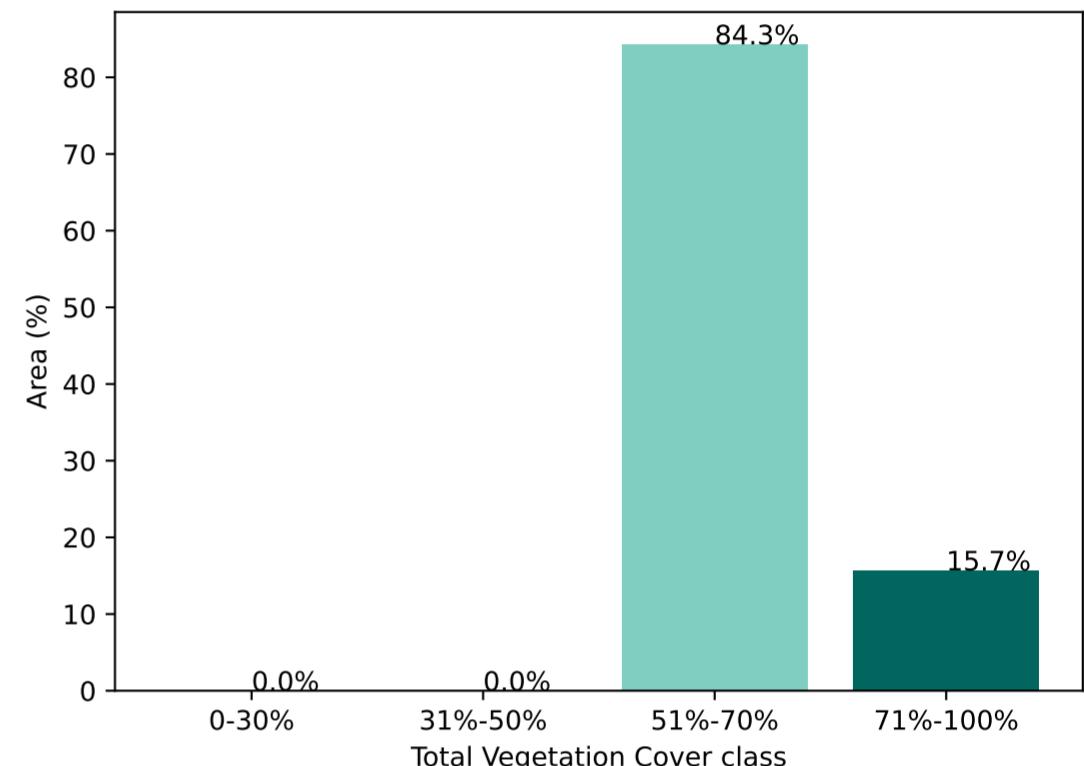
Catchment Scale Land Use and Forests of Australia (2018)  
Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



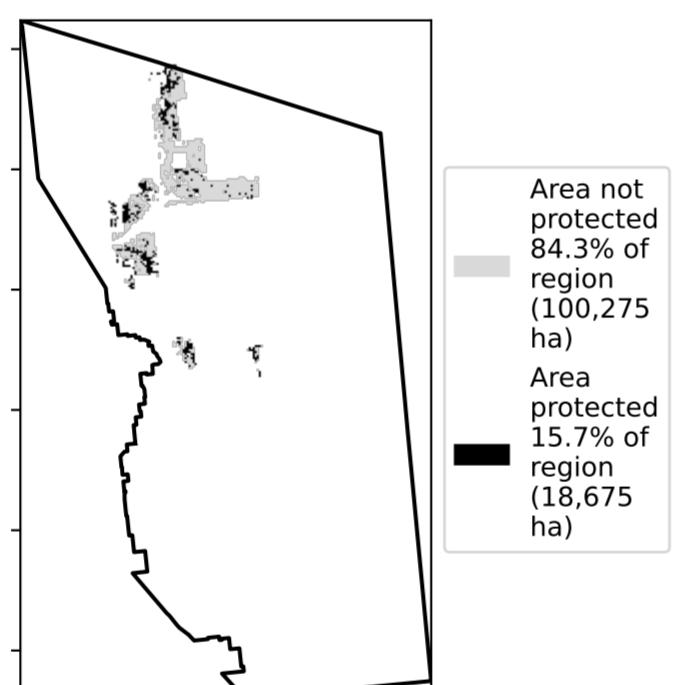
## Total Vegetation Cover [%]



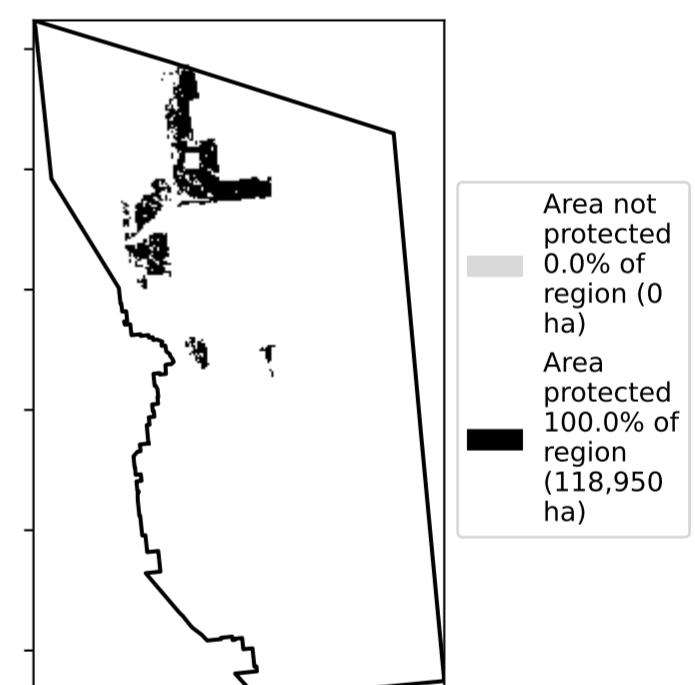
## Proportion of vegetation cover class in area



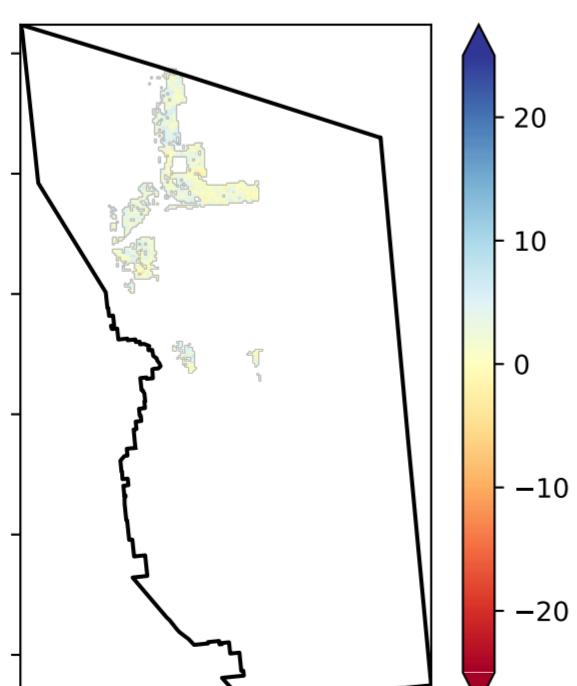
## % Area protected from water erosion (>70%)



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



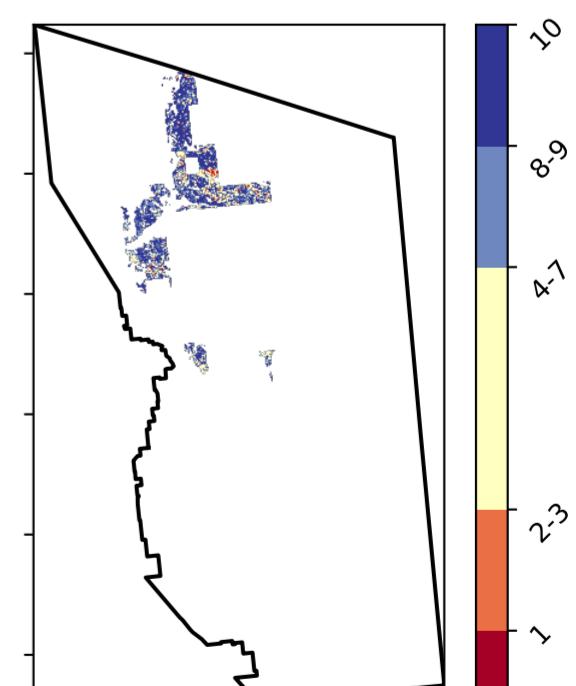
## Total Vegetation Cover Anomaly [%]



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 [%]



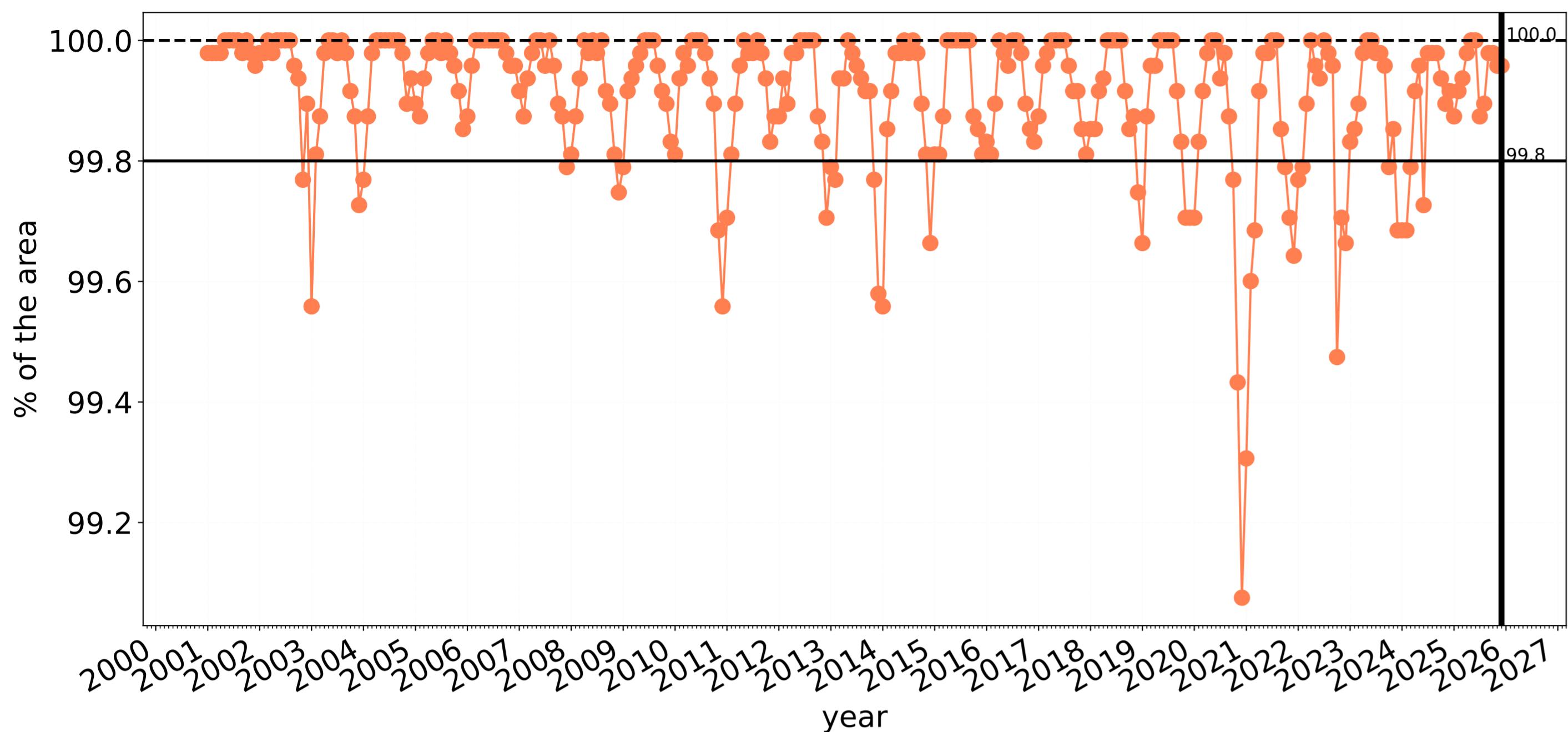
**tern**

Ecosystem Research Infrastructure

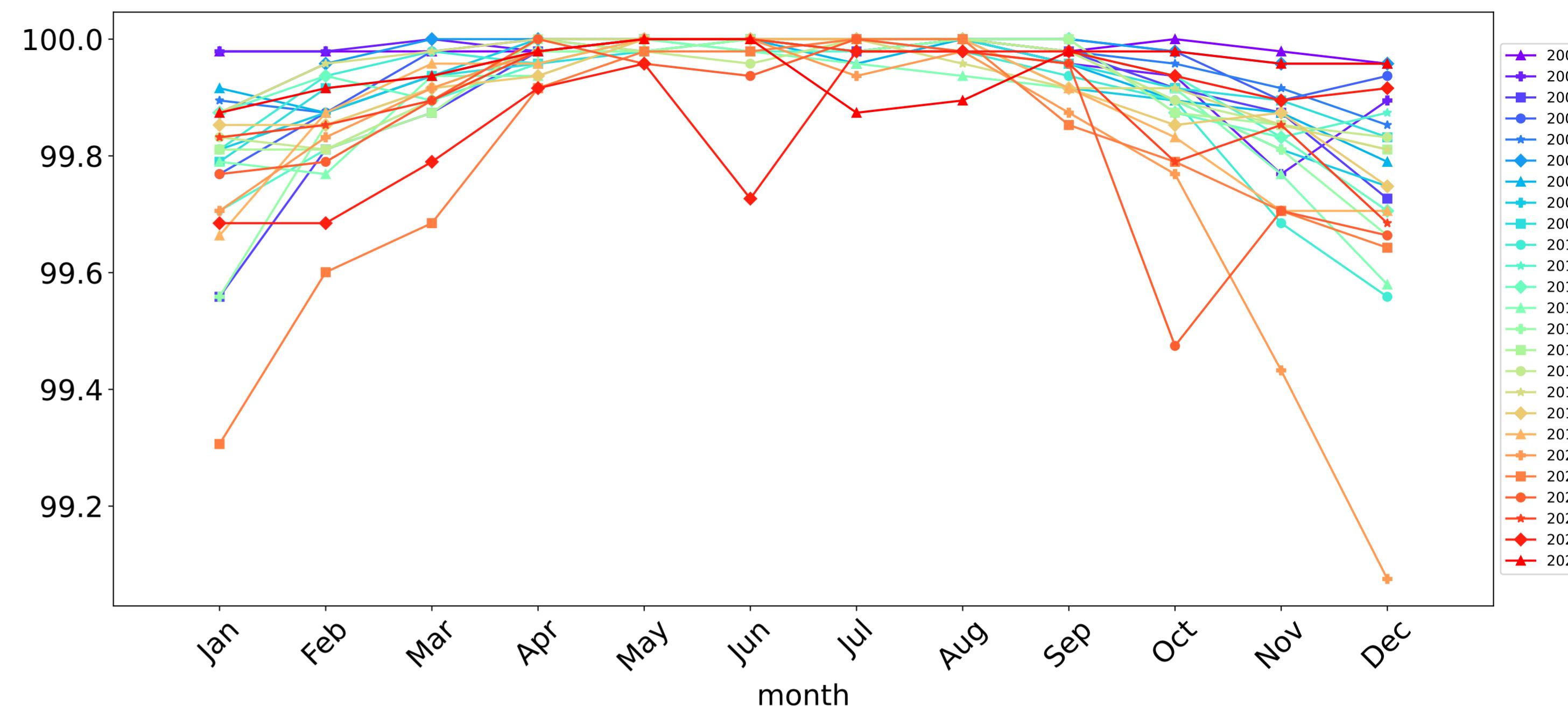


## Grazing Woodland forest timeseries

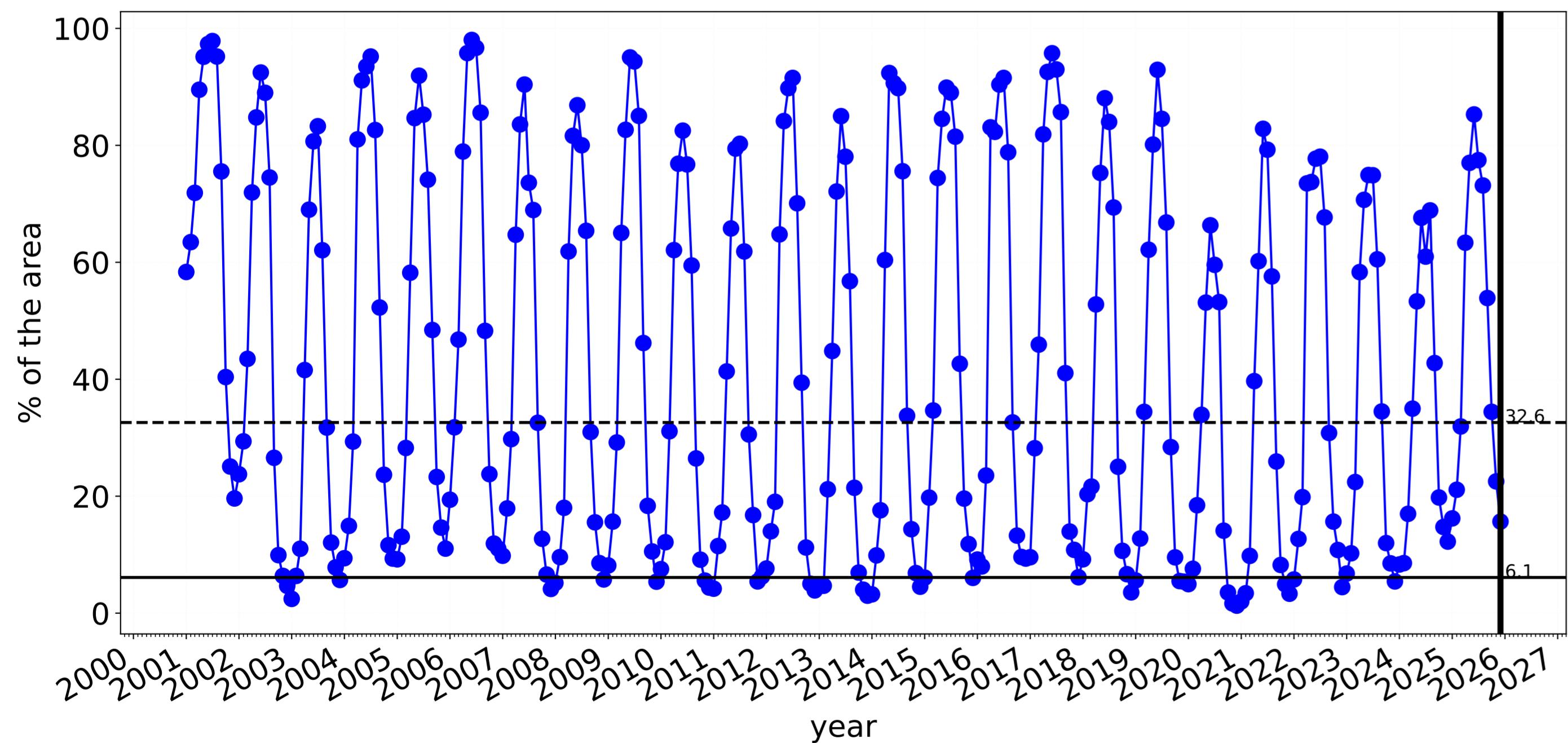
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



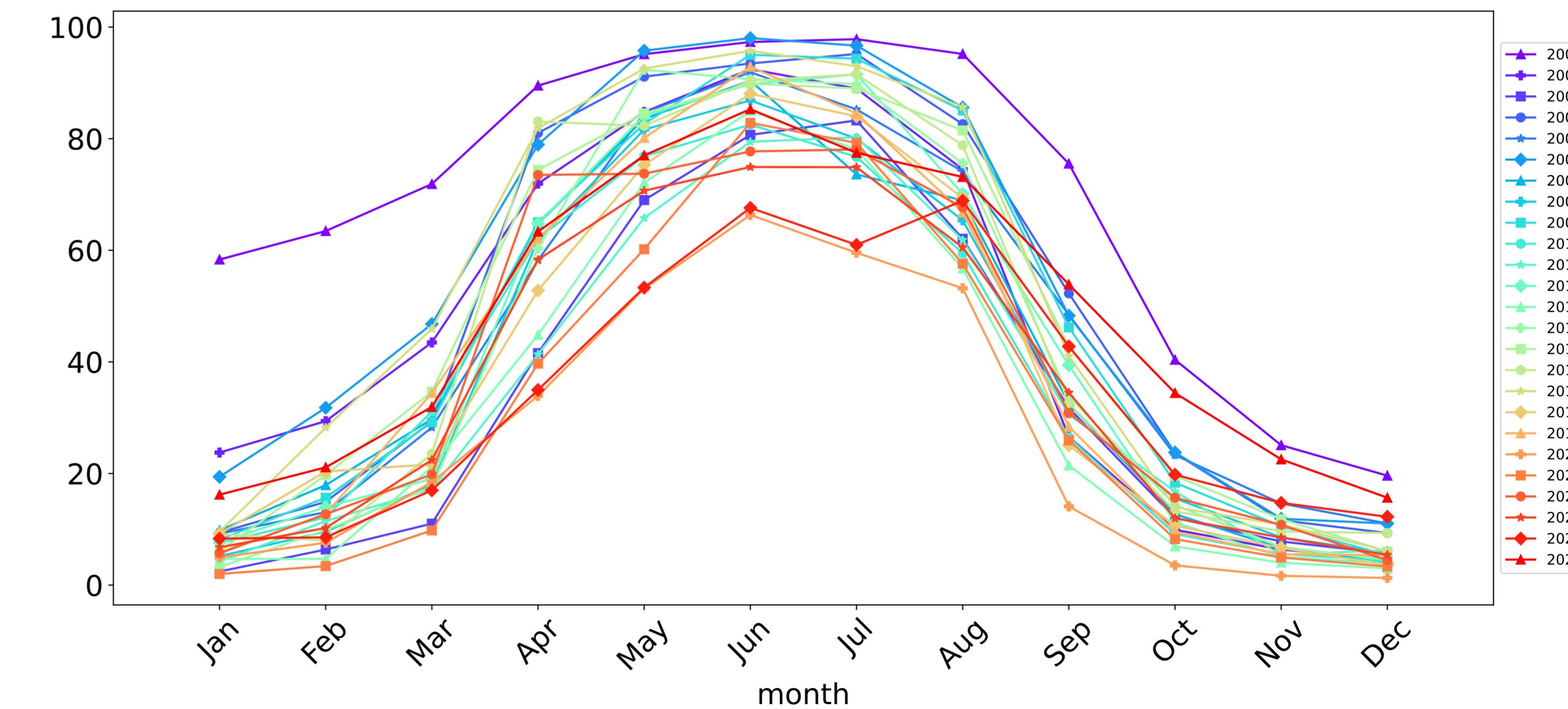
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



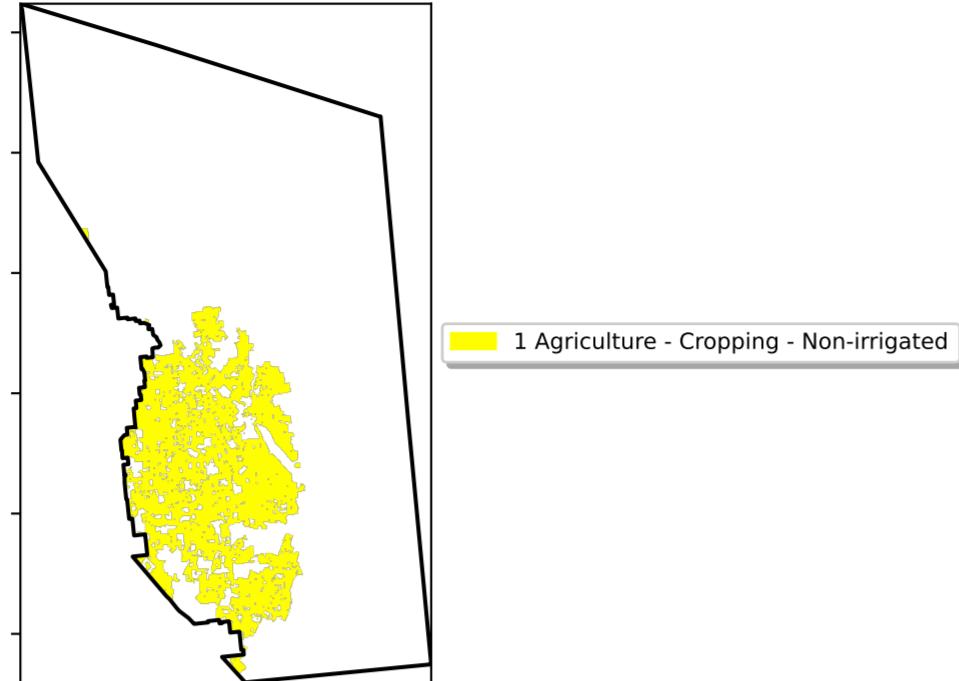
Water erosion historical monthly area protected (Total Veg Cov >70%)



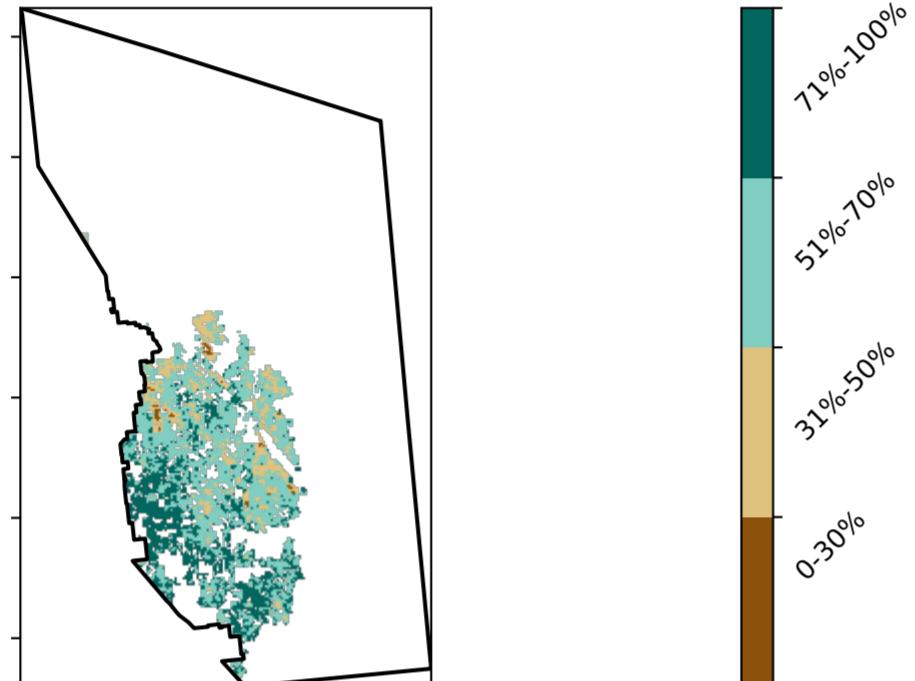
## Cropping

### Land use and forest cover

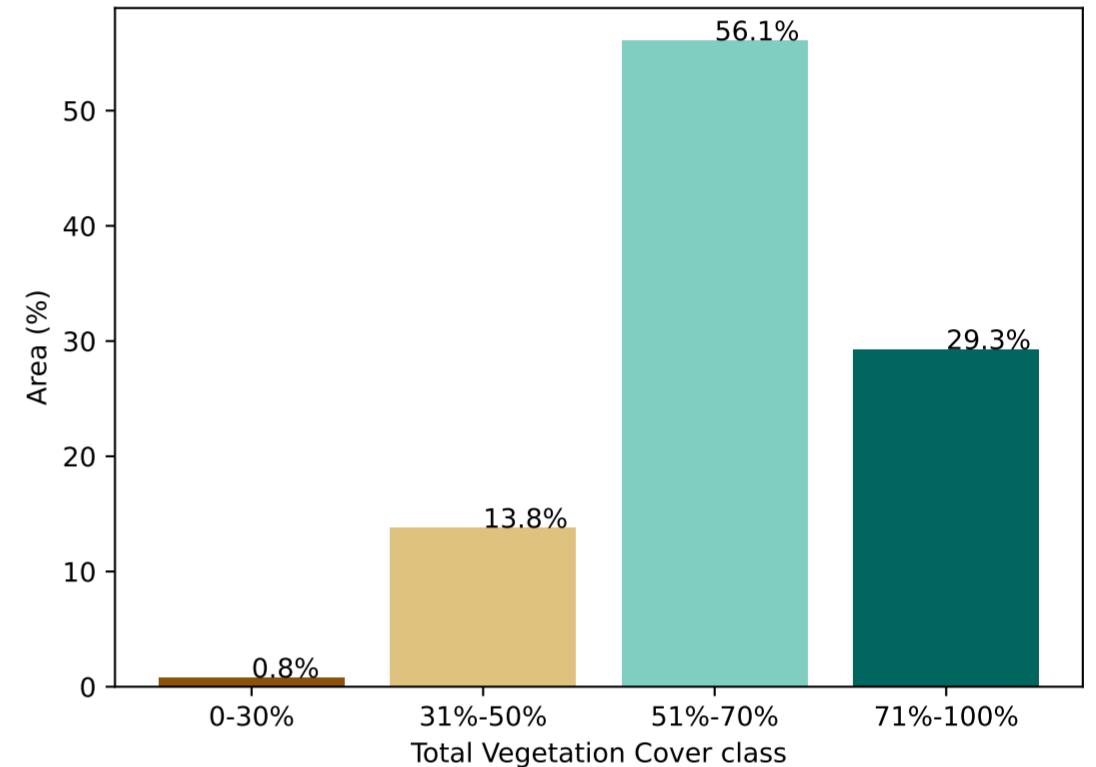
Catchment Scale Land Use and Forests of Australia (2018)  
Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



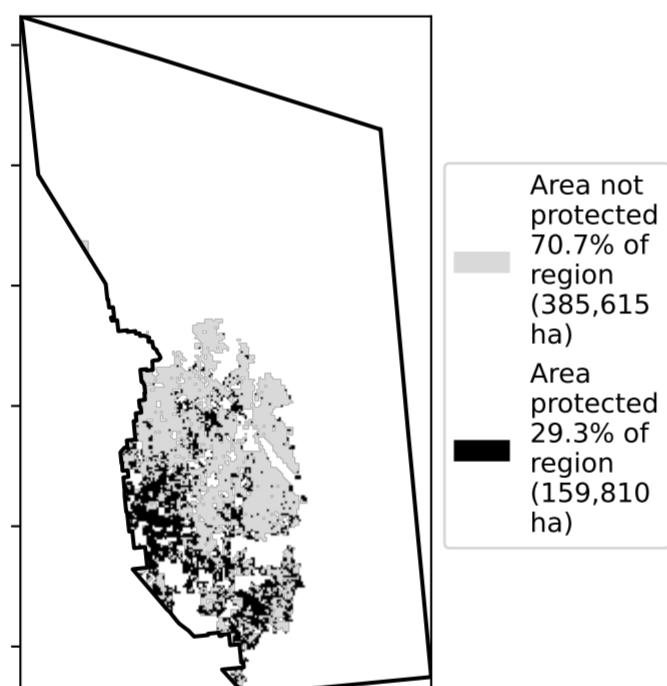
### Total Vegetation Cover [%]



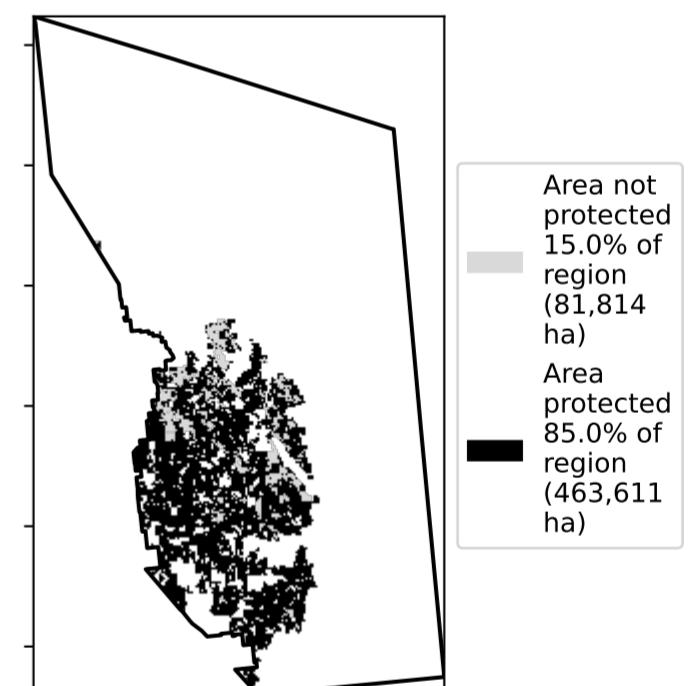
### Proportion of vegetation cover class in area



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

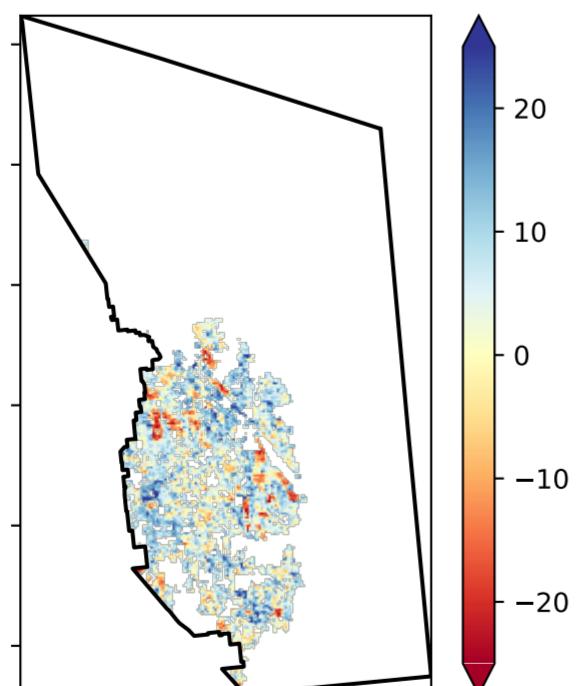


### % Area protected from wind erosion (>50%)



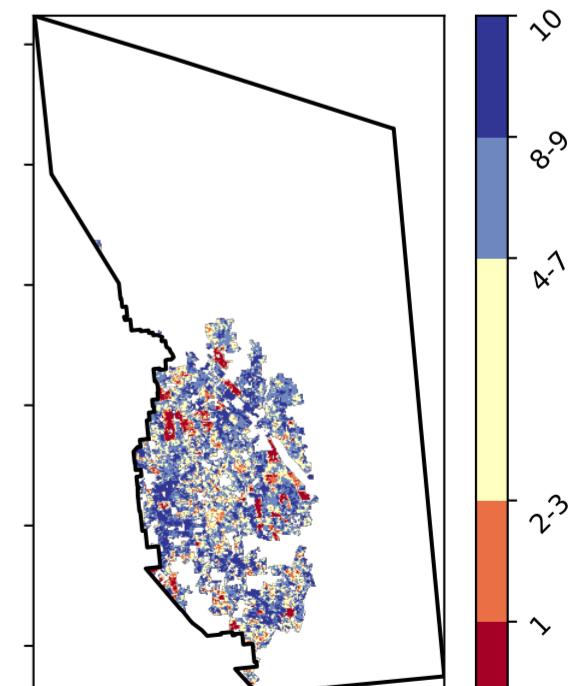
### Total Vegetation Cover Anomaly [%]

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 [%]

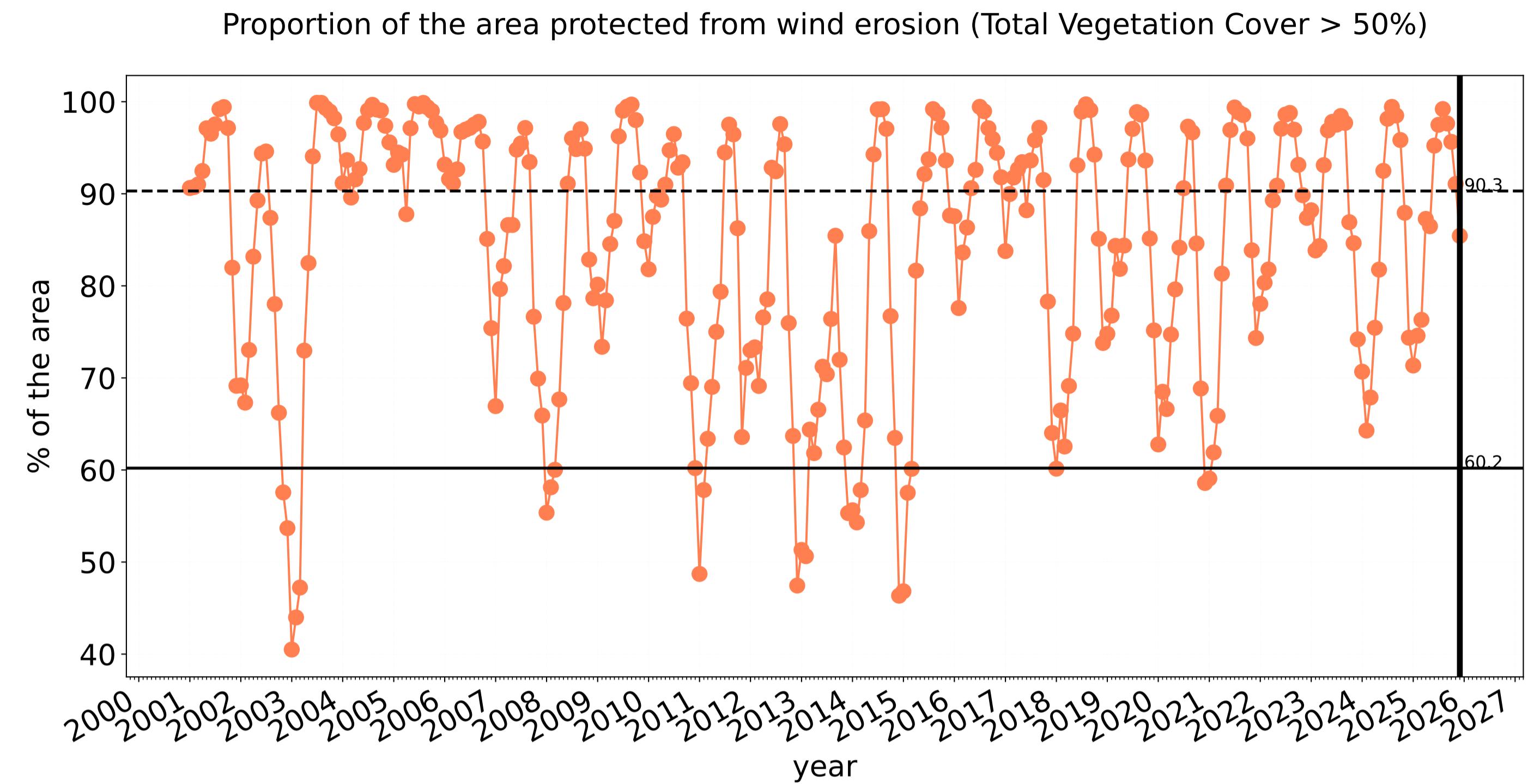


**tern**

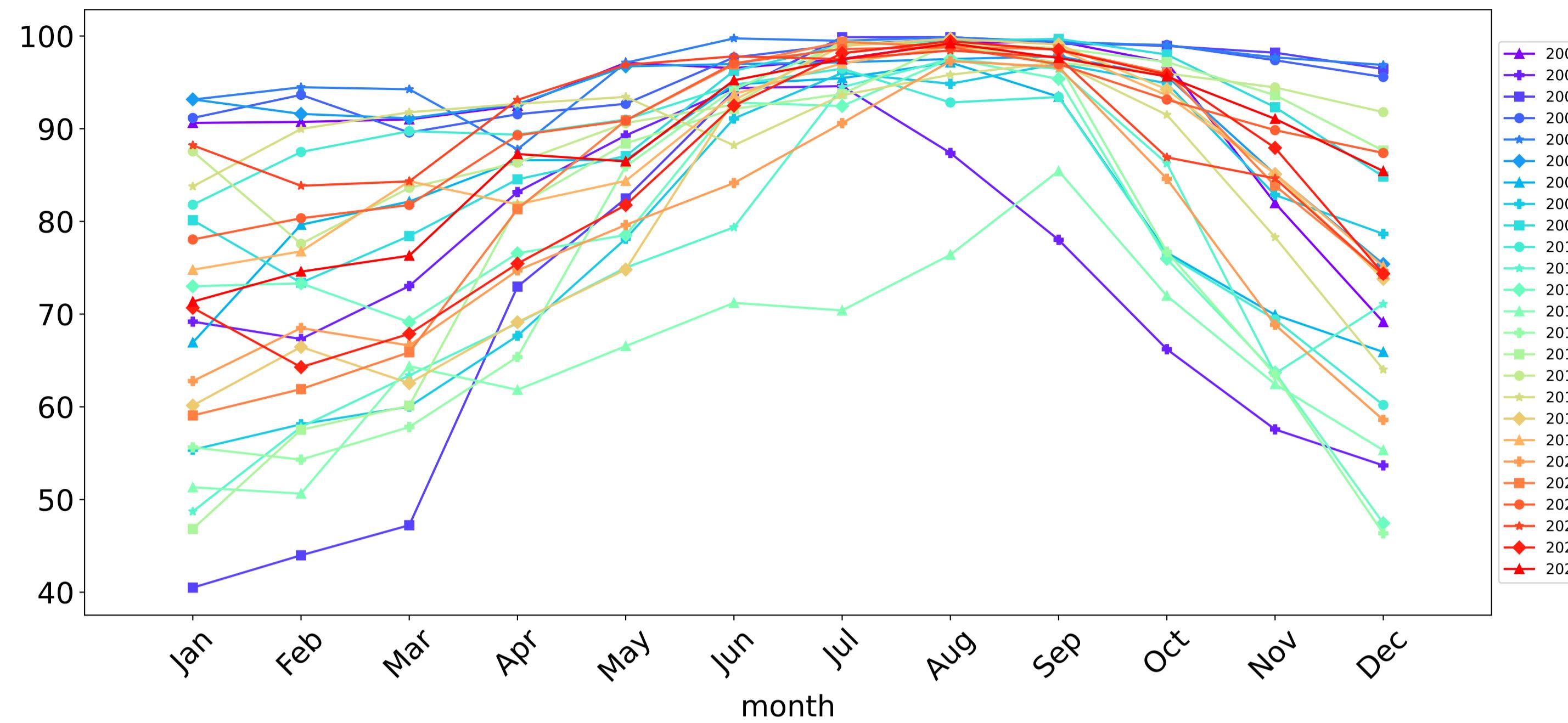
Ecosystem Research Infrastructure



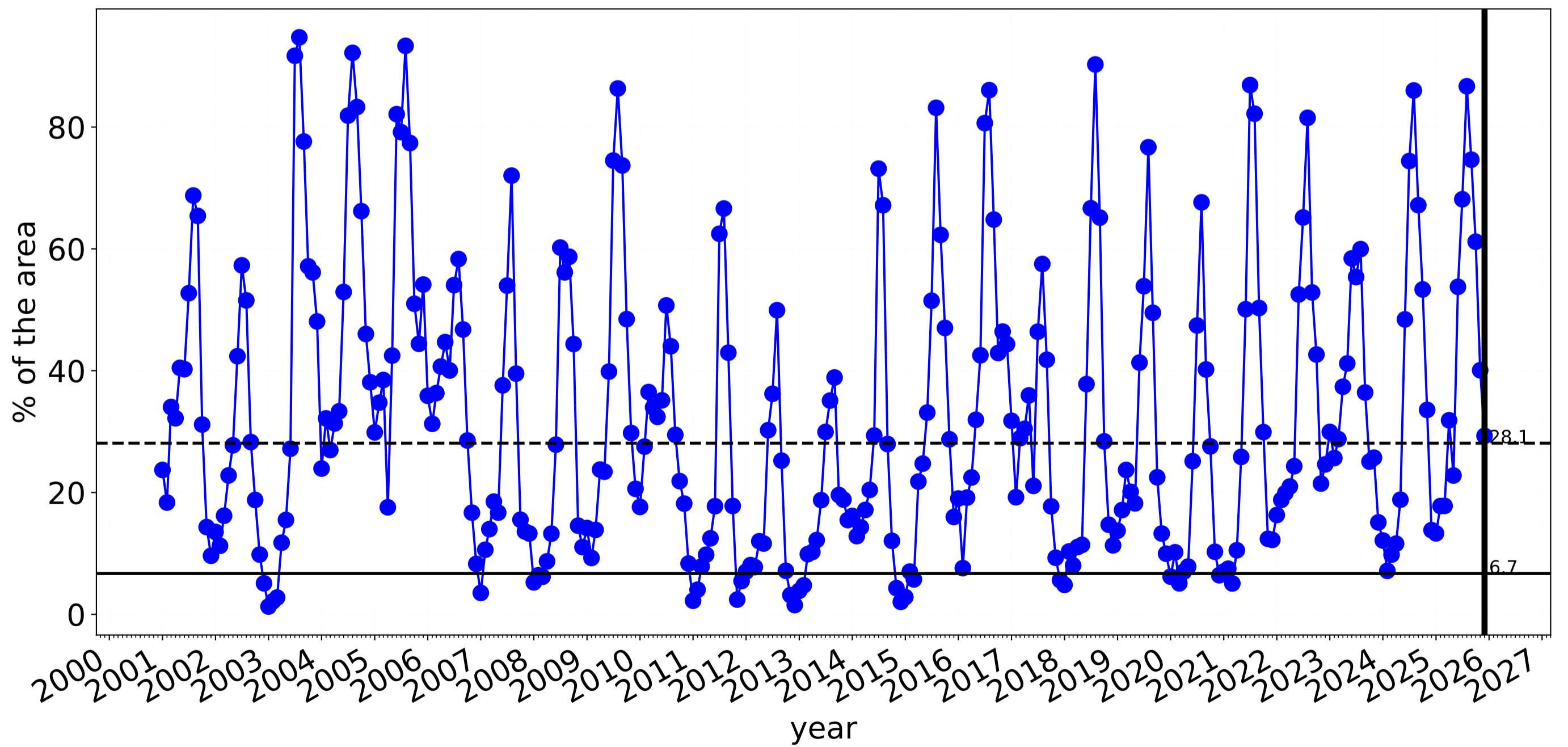
### Cropping timeseries



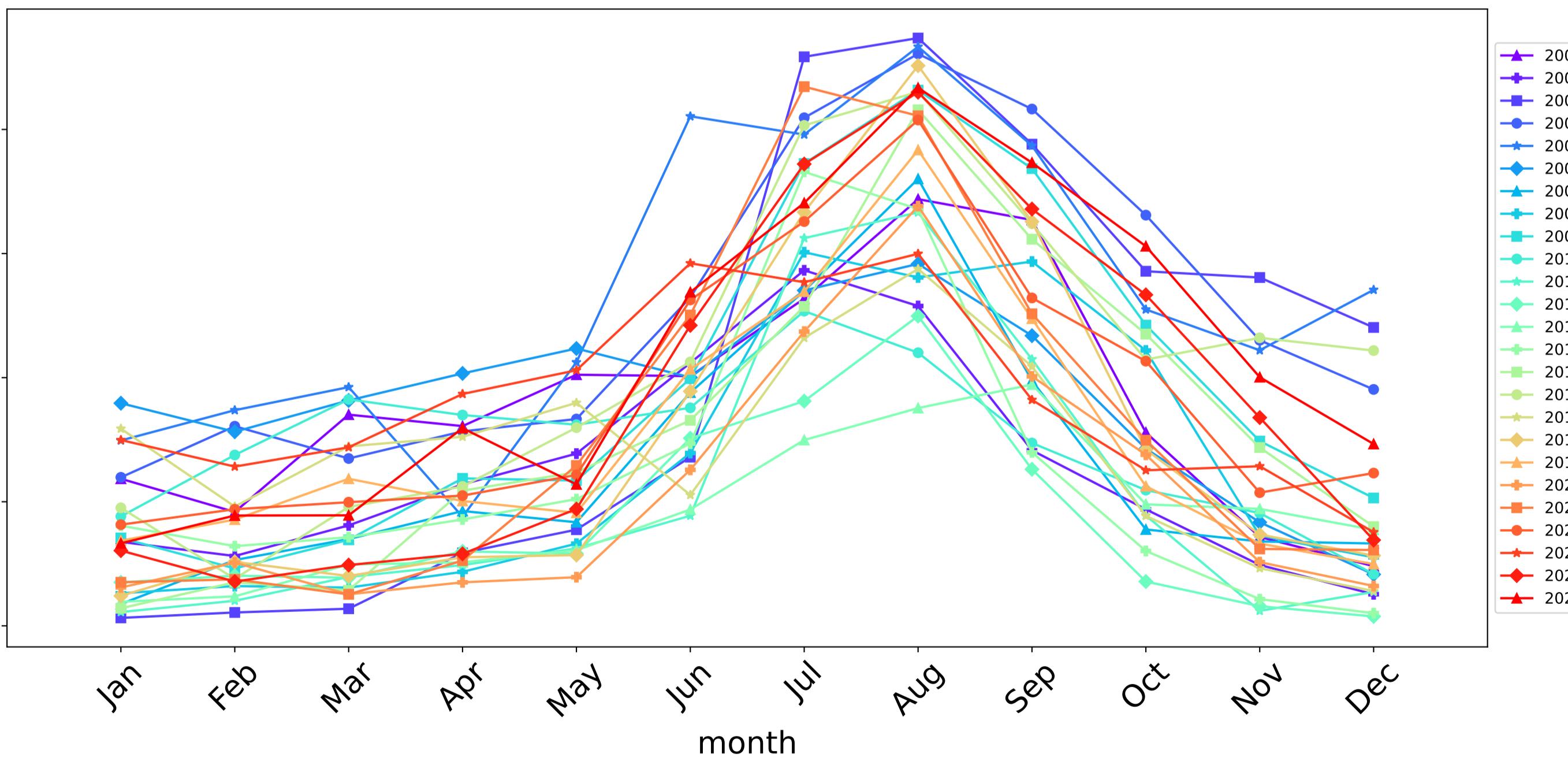
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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



Ecosystem Research Infrastructure



Australian Government



**Yilgarn\_(S) (3,006,600 ha and no data 35,804 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	3,006,600	99.8% 3,001,350	96.0% 2,886,400	47.3% 1,420,625	7.4% 221,250	0.7% 19,600	0.5% 13,700
Conservation and natural environments	2,224,875	100.0% 2,224,475	98.4% 2,190,025	53.1% 1,181,725	7.2% 159,300	0.1% 1,575	0.0% 1,025
Conservation and natural environments non forest	1,317,625	100.0% 1,317,300	98.6% 1,299,575	61.5% 810,050	9.2% 121,050	0.1% 1,575	0.1% 1,025
Conservation and natural environments Woodland forest	907,100	100.0% 907,025	98.1% 890,300	41.0% 371,525	4.2% 38,225	0.0% 0	0.0% 0
Agriculture	732,125	99.4% 727,850	88.7% 649,625	28.4% 208,250	5.5% 40,500	0.3% 2,200	0.1% 625
Grazing	185,225	100.0% 185,225	98.7% 182,875	26.1% 48,400	3.2% 5,875	0.1% 250	0.1% 150
Grazing non forest	66,275	100.0% 66,275	96.5% 63,975	44.9% 29,775	8.7% 5,750	0.4% 250	0.2% 150
Grazing Woodland forest	118,950	100.0% 118,950	100.0% 118,900	15.7% 18,625	0.1% 125	0.0% 0	0.0% 0
Cropping	545,425	99.2% 541,150	85.4% 465,950	29.3% 159,825	6.3% 34,625	0.4% 1,950	0.1% 475



**tern**  
Ecosystem Research Infrastructure

