

Total vegetation cover soil protection

Region:LGA Dumbleyung_(S) WA

Date: May 2024

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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Ecosystem Research Infrastructure



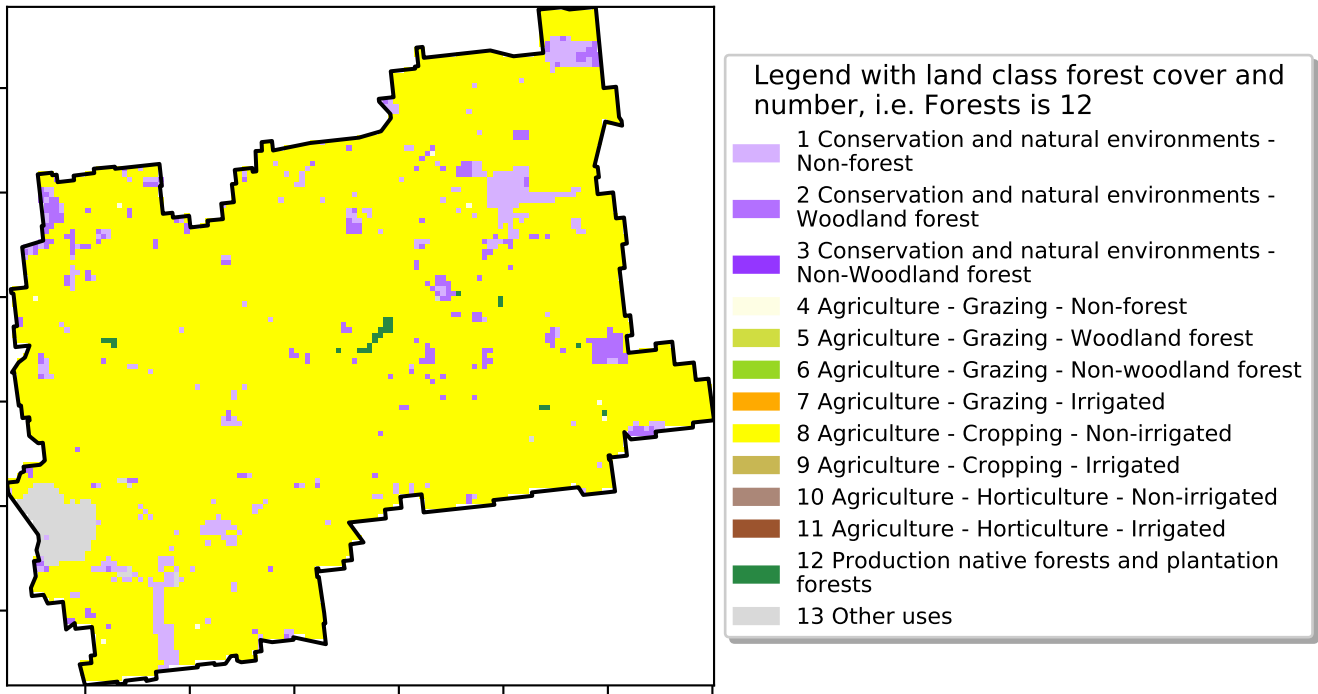
National
Landcare
Programme



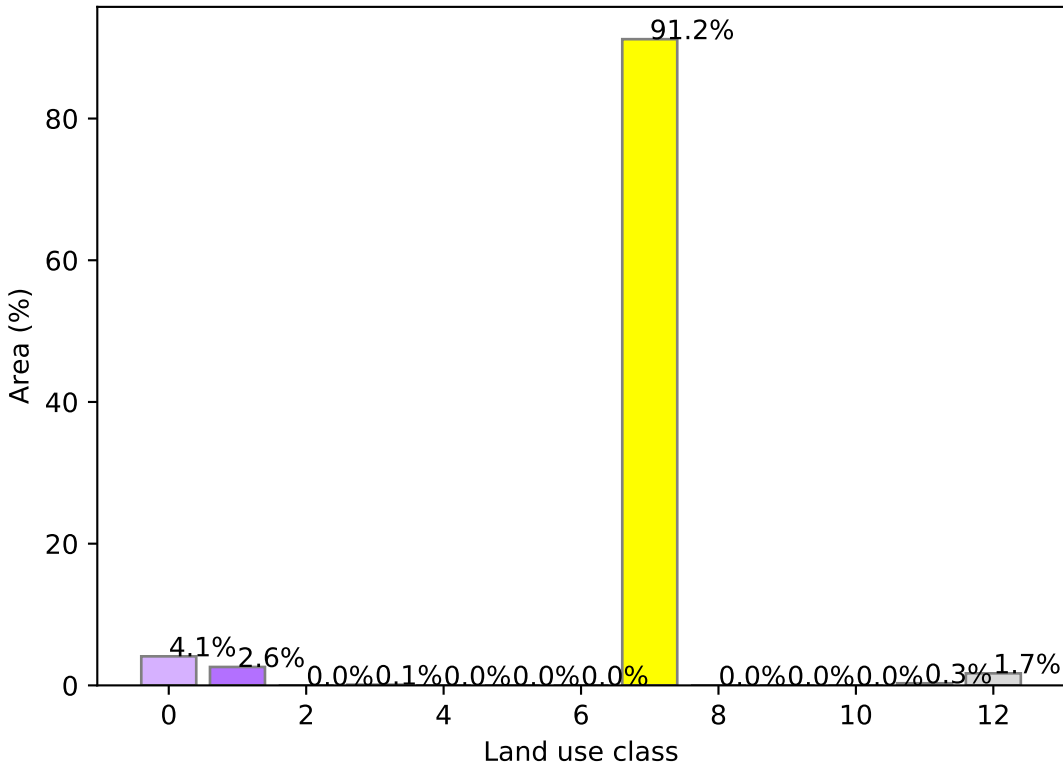
Vegetation Cover May 2024

Land use and forest cover

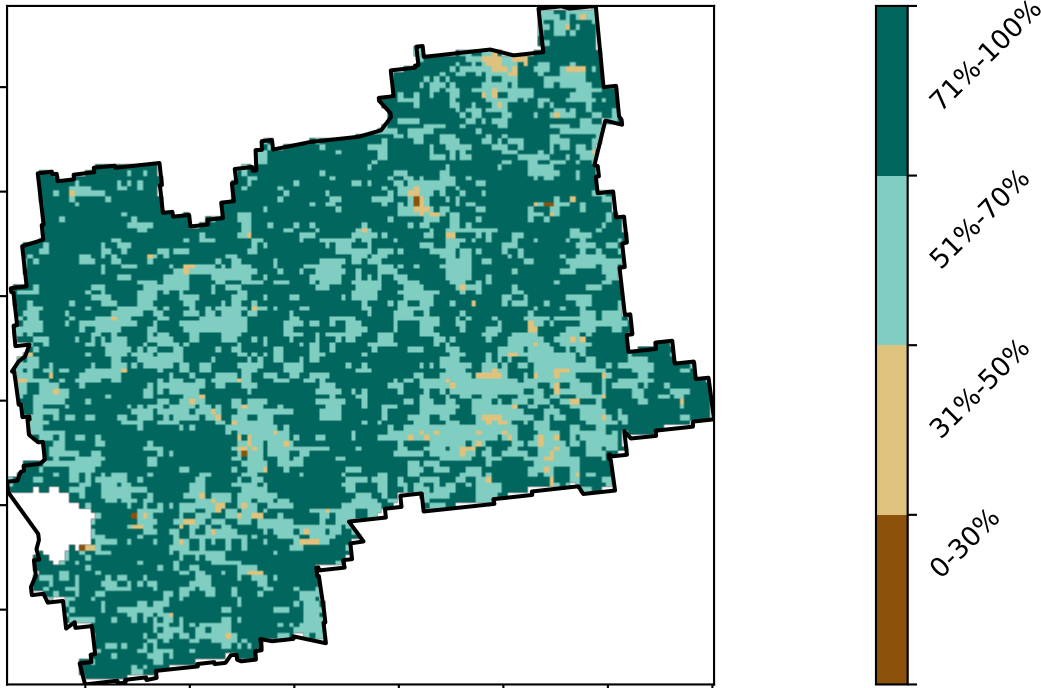
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



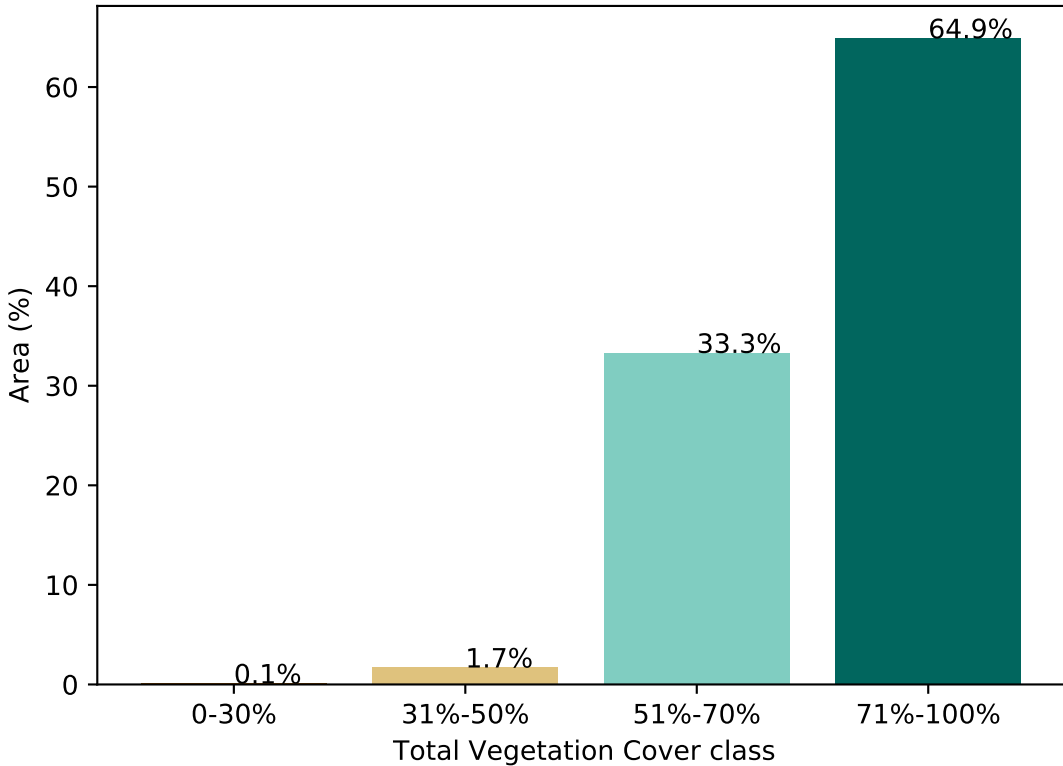
Proportion of each land class in area



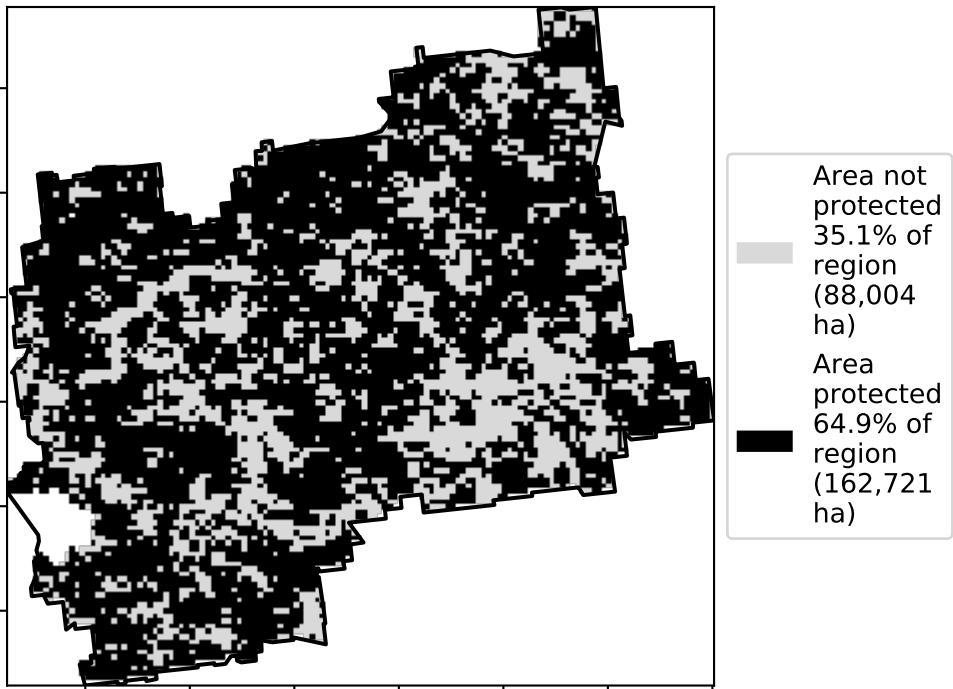
Total Vegetation Cover [%]



Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

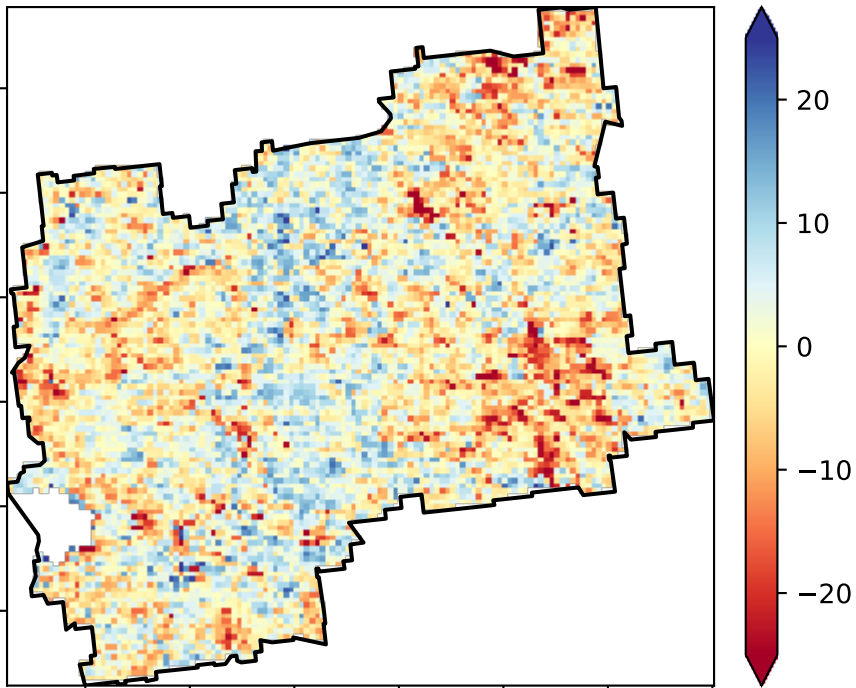


% Area protected from wind erosion (>50%)



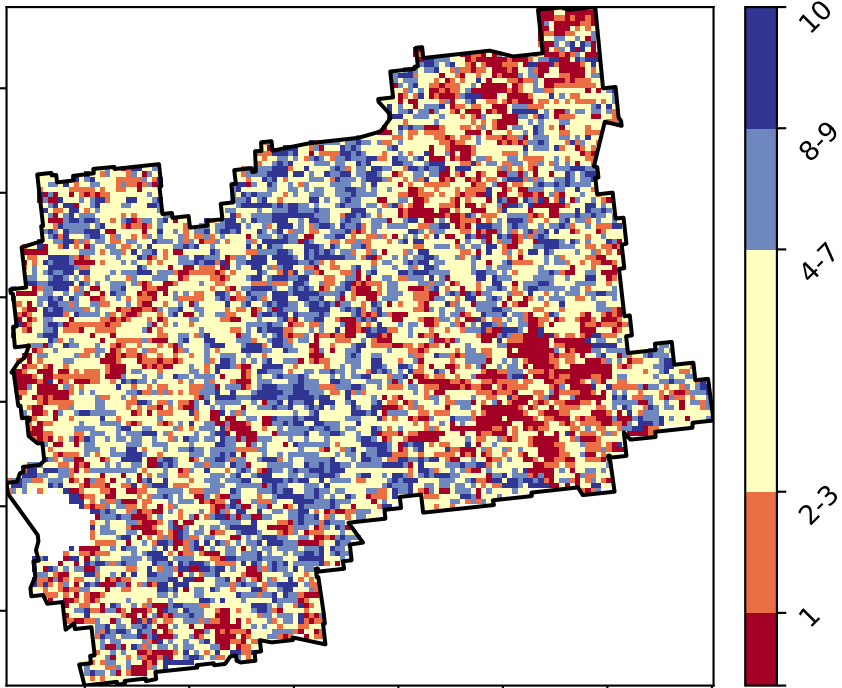
Total Vegetation Cover Anomaly [%]

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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Ecosystem Research Infrastructure



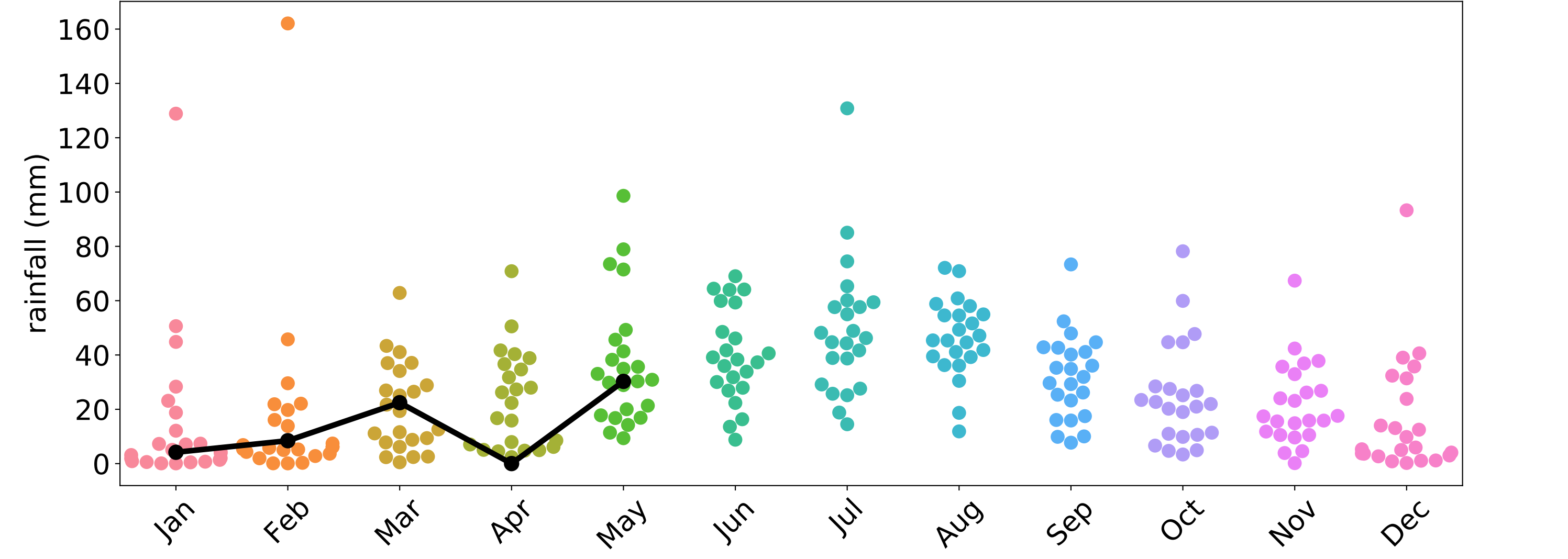
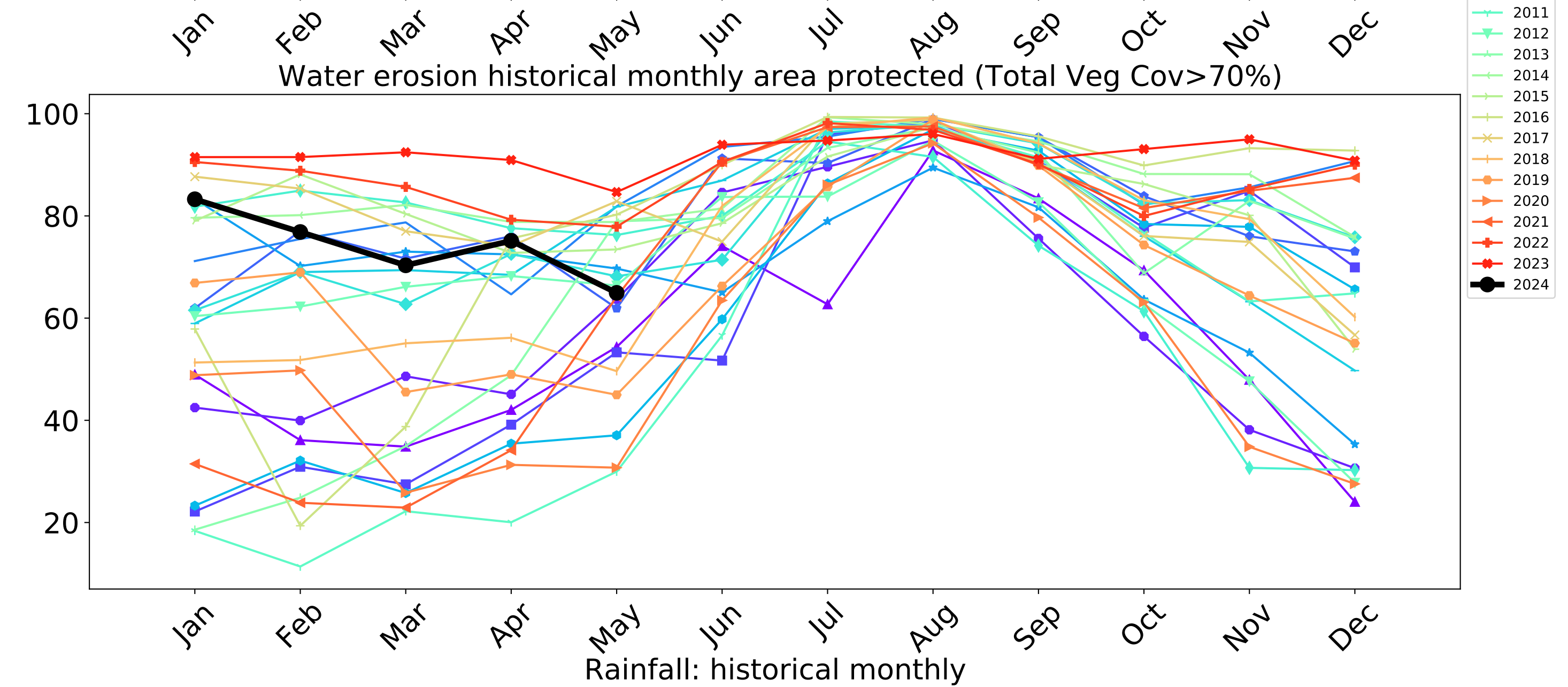
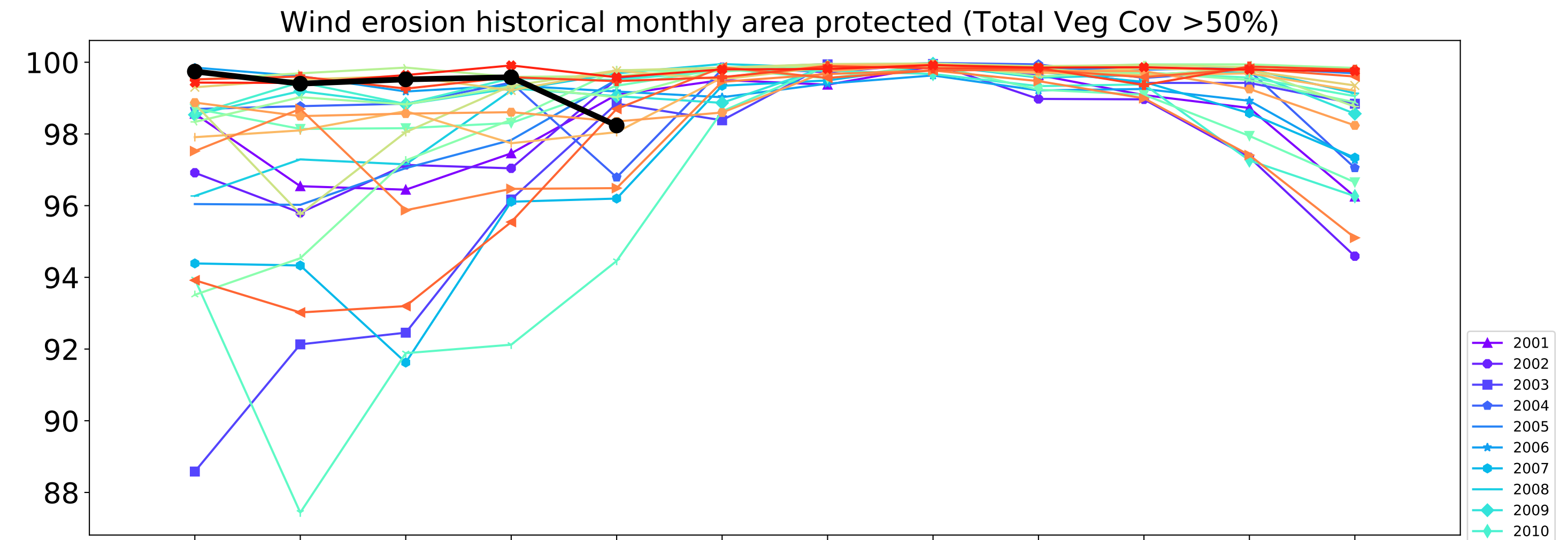
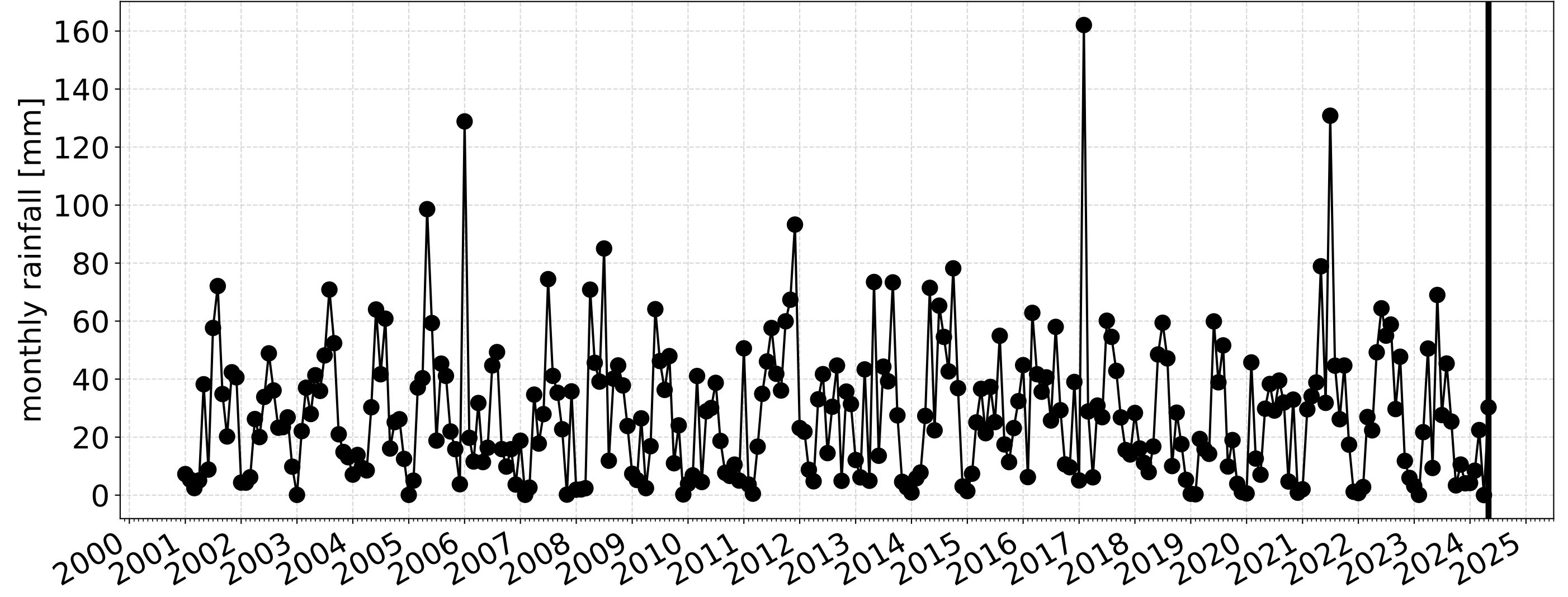
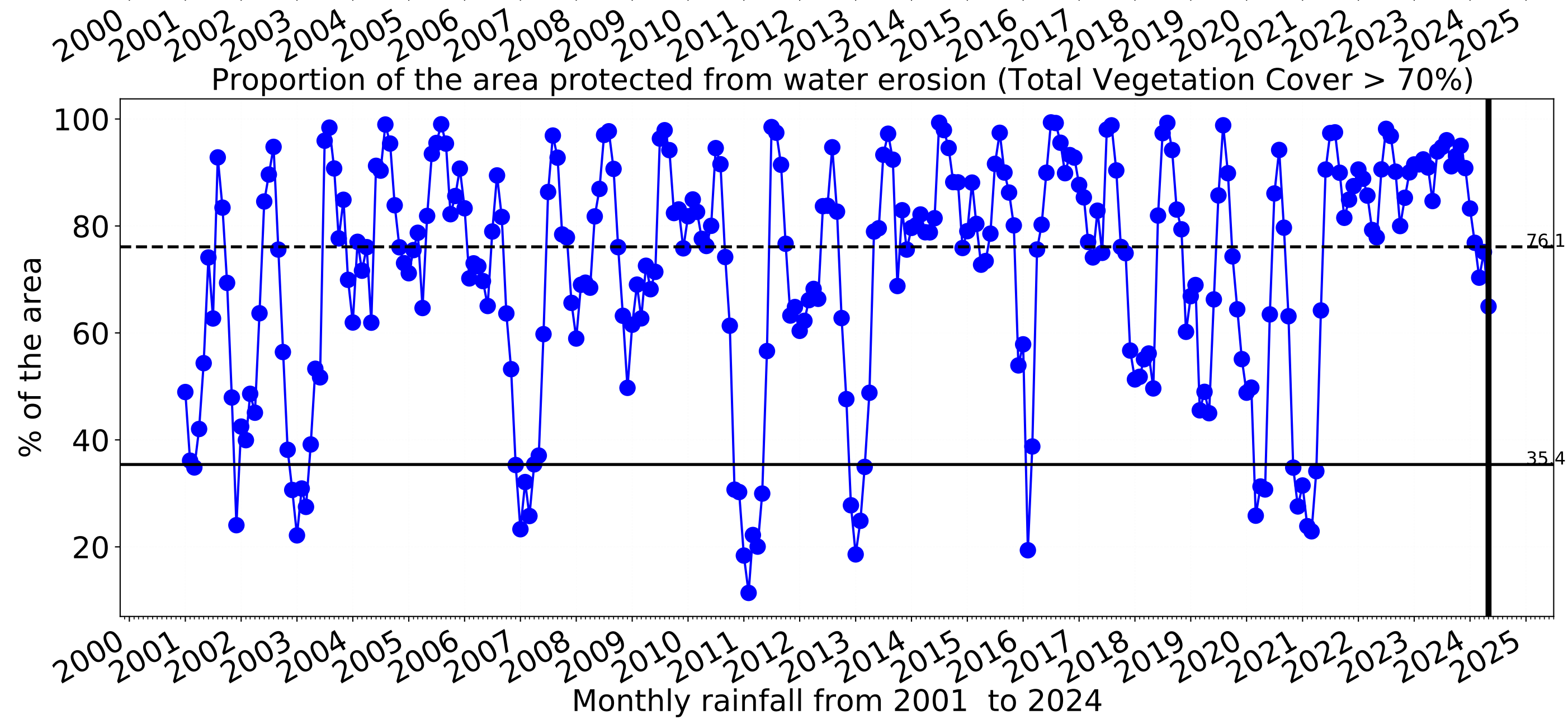
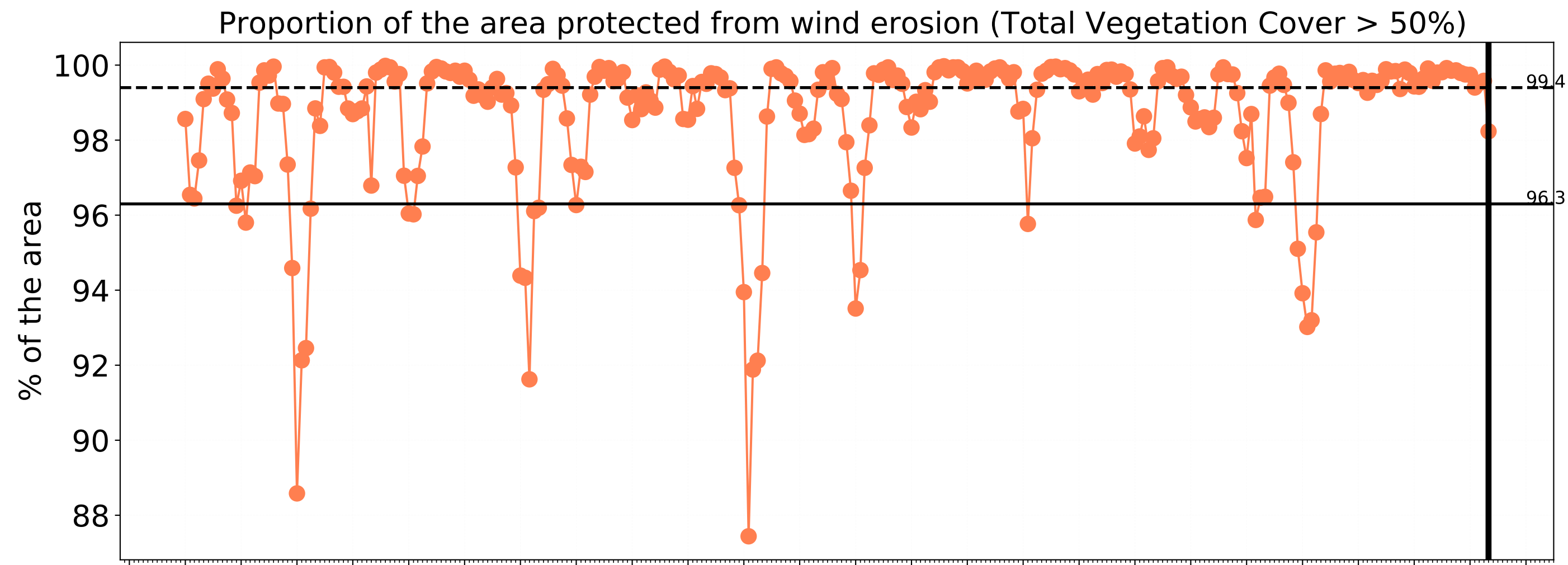
Australian Government

National Landcare Programme



NSW

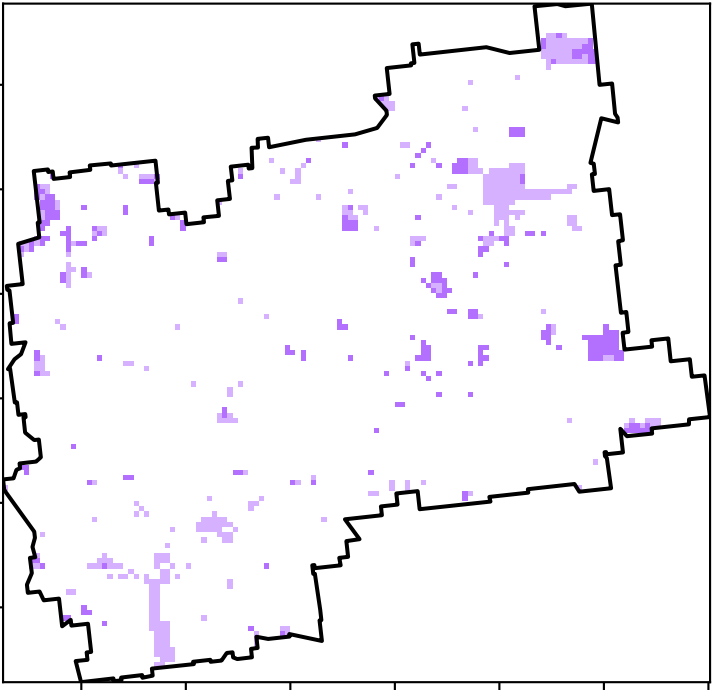
GOVERNMENT



Conservation and natural environments

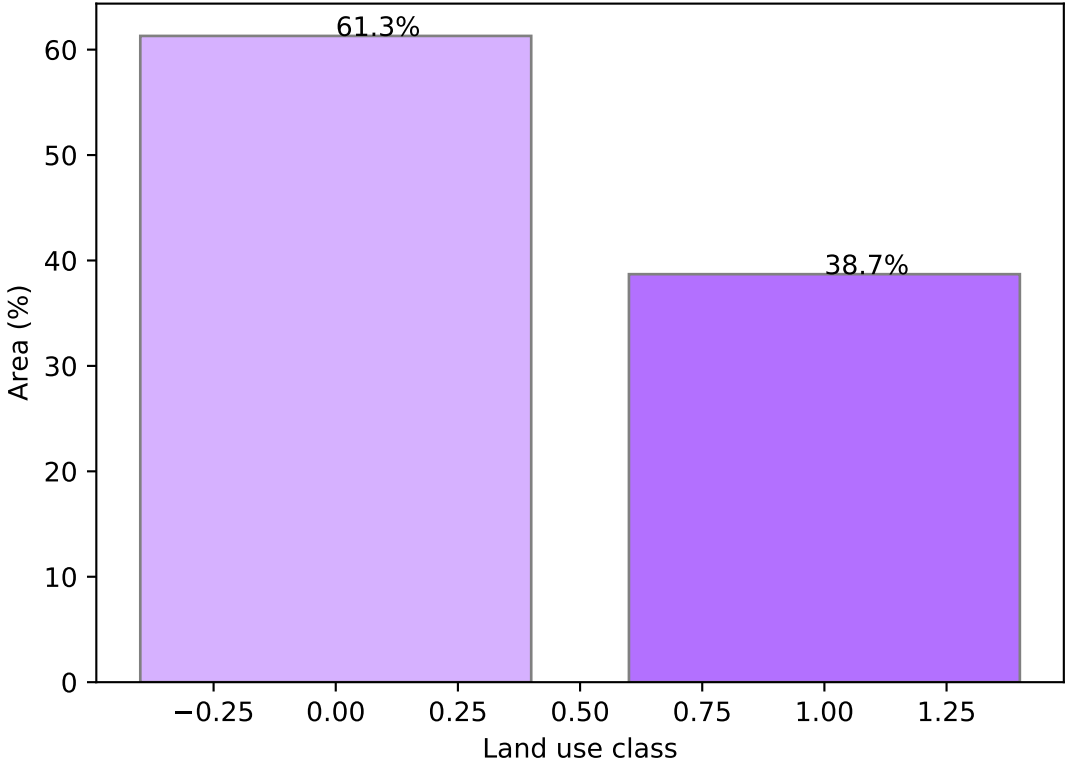
Land use and forest cover

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

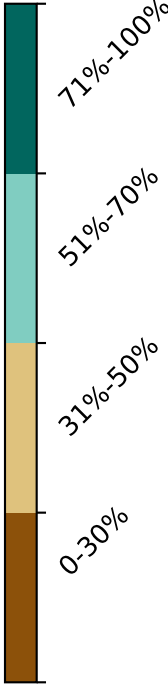
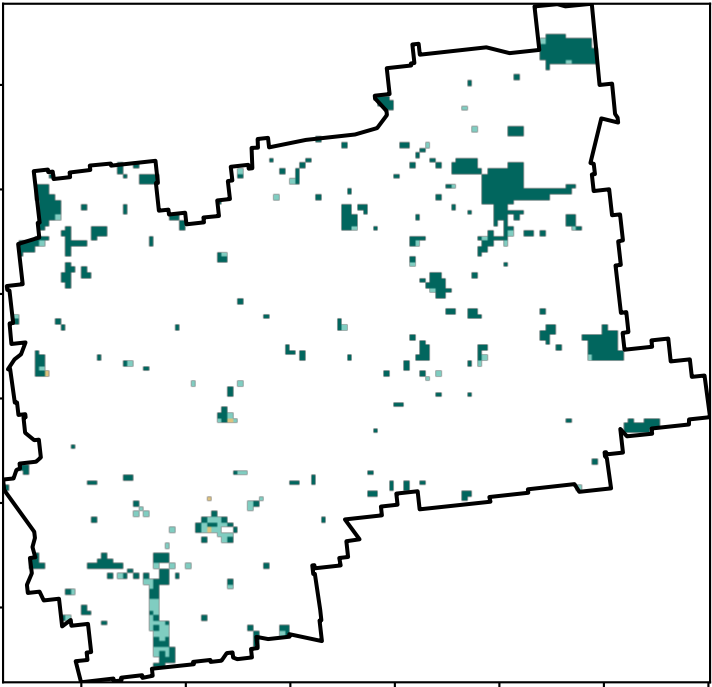


- 1 Conservation and natural environments - Non-forest
- 2 Conservation and natural environments - Woodland forest

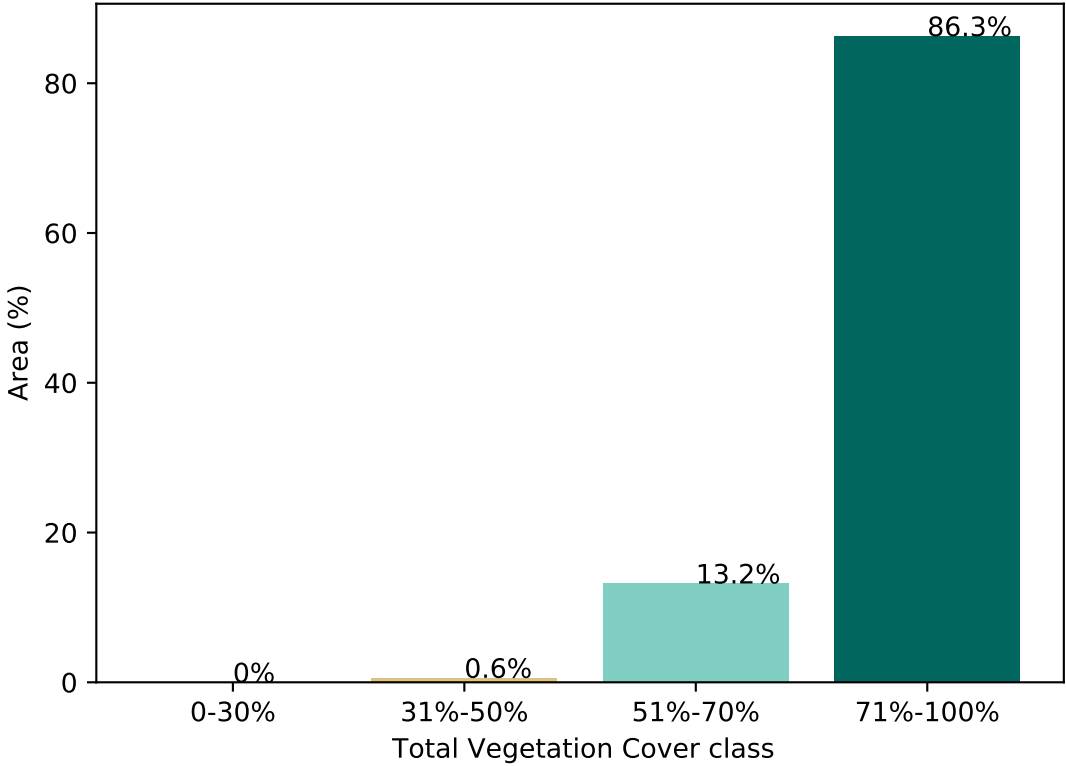
Proportion of each land class in area



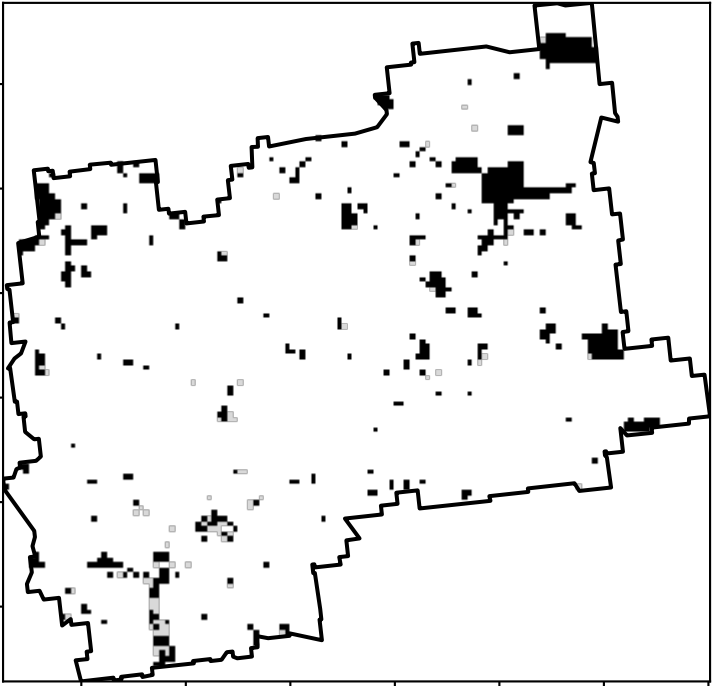
Total Vegetation Cover [%]



Proportion of vegetation cover class in area

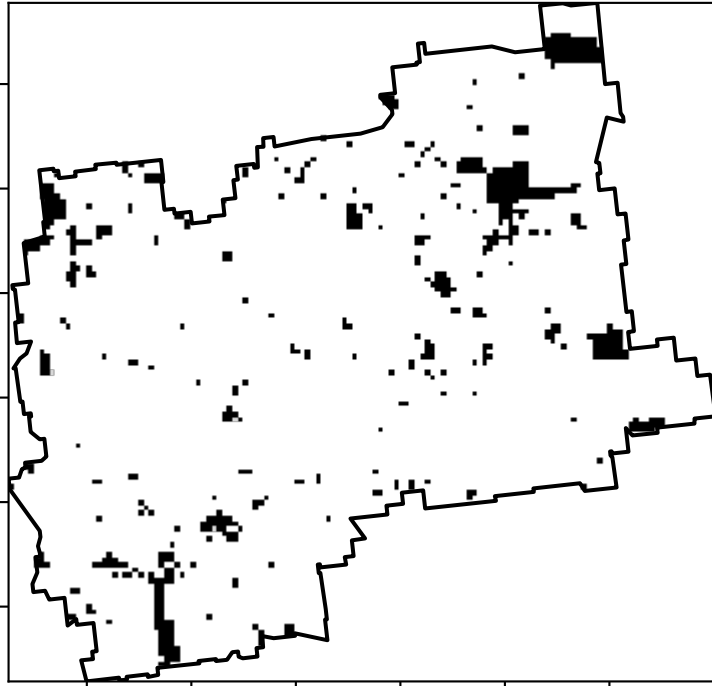


% Area protected from water erosion (>70%)



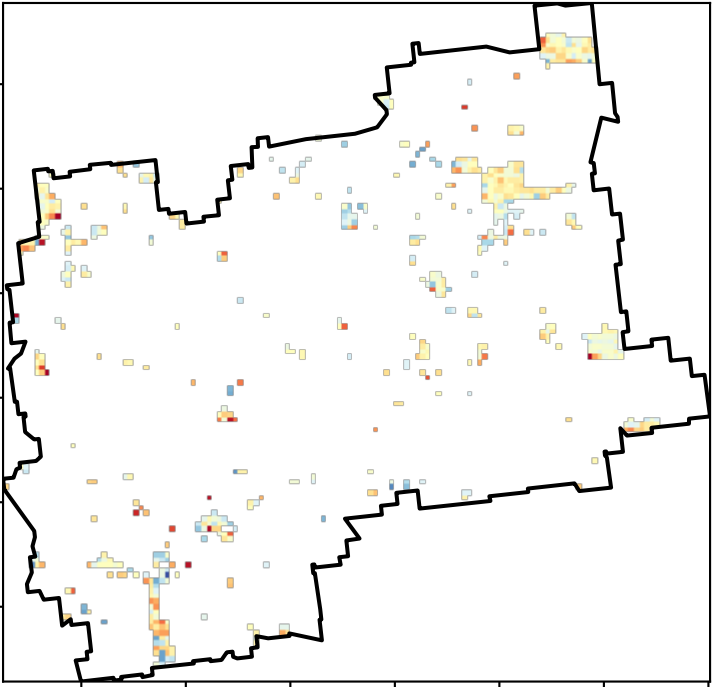
- Area not protected 13.7% of region (2,343 ha)
- Area protected 86.3% of region (14,757 ha)

% Area protected from wind erosion (>50%)



- Area not protected 0.0% of region (0 ha)
- Area protected 100.0% of region (17,100 ha)

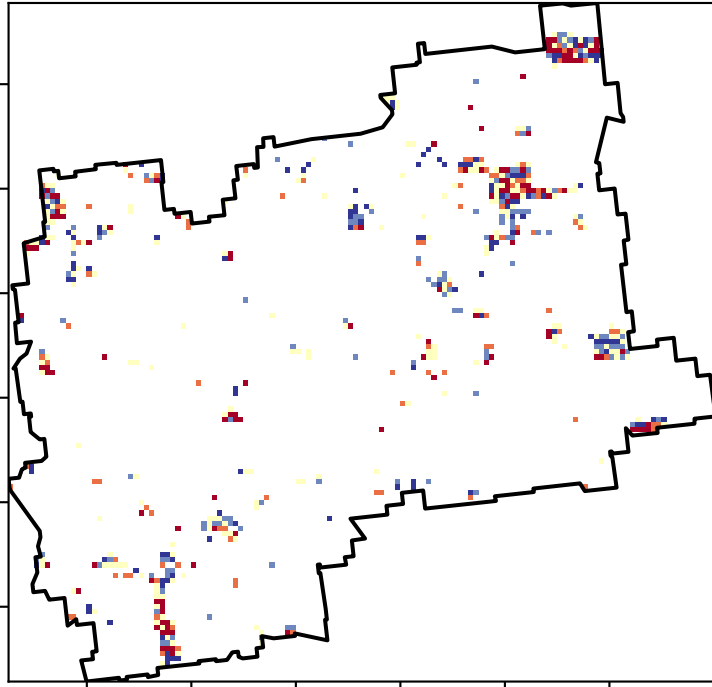
Total Vegetation Cover Anomaly [%]



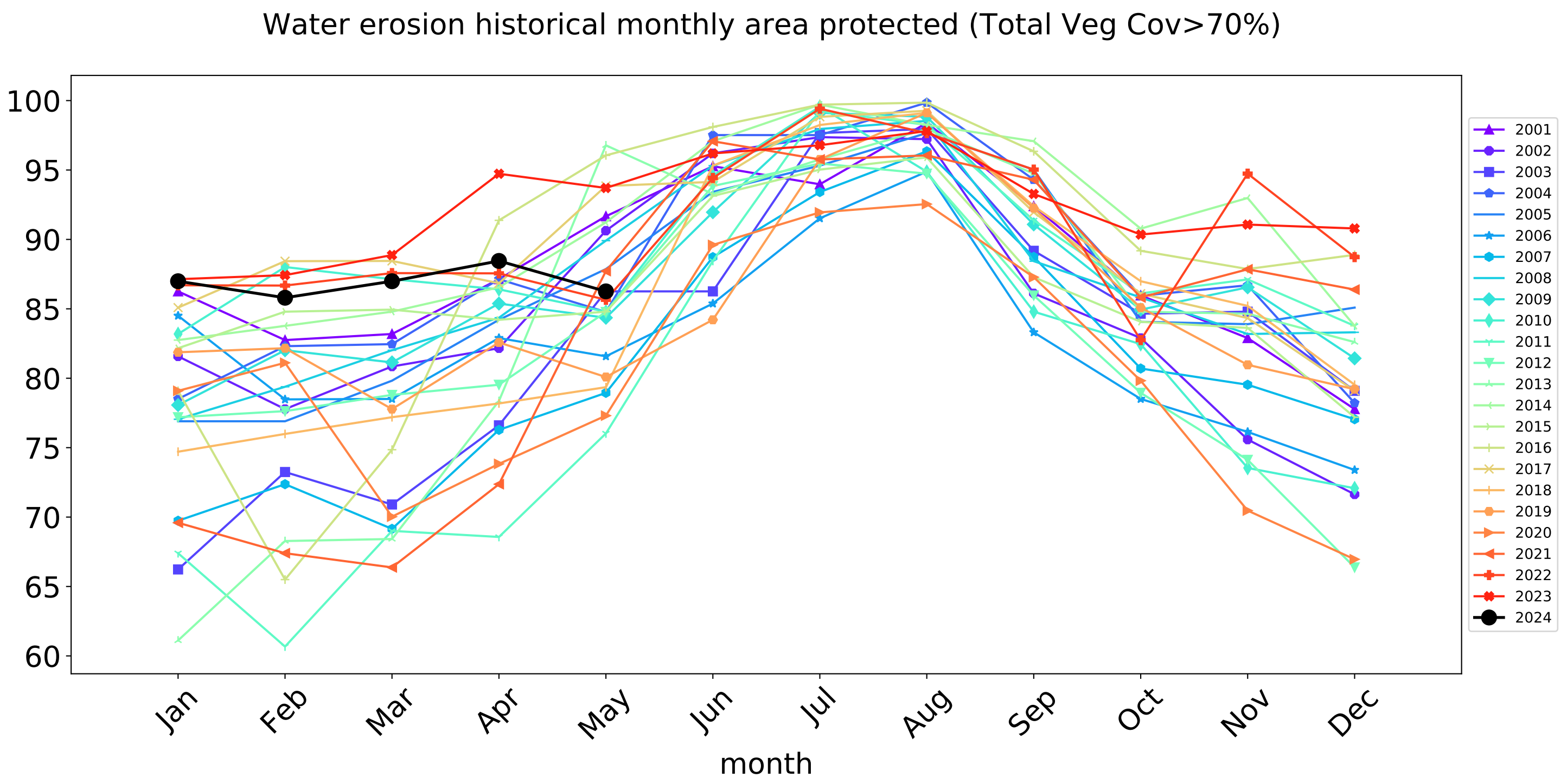
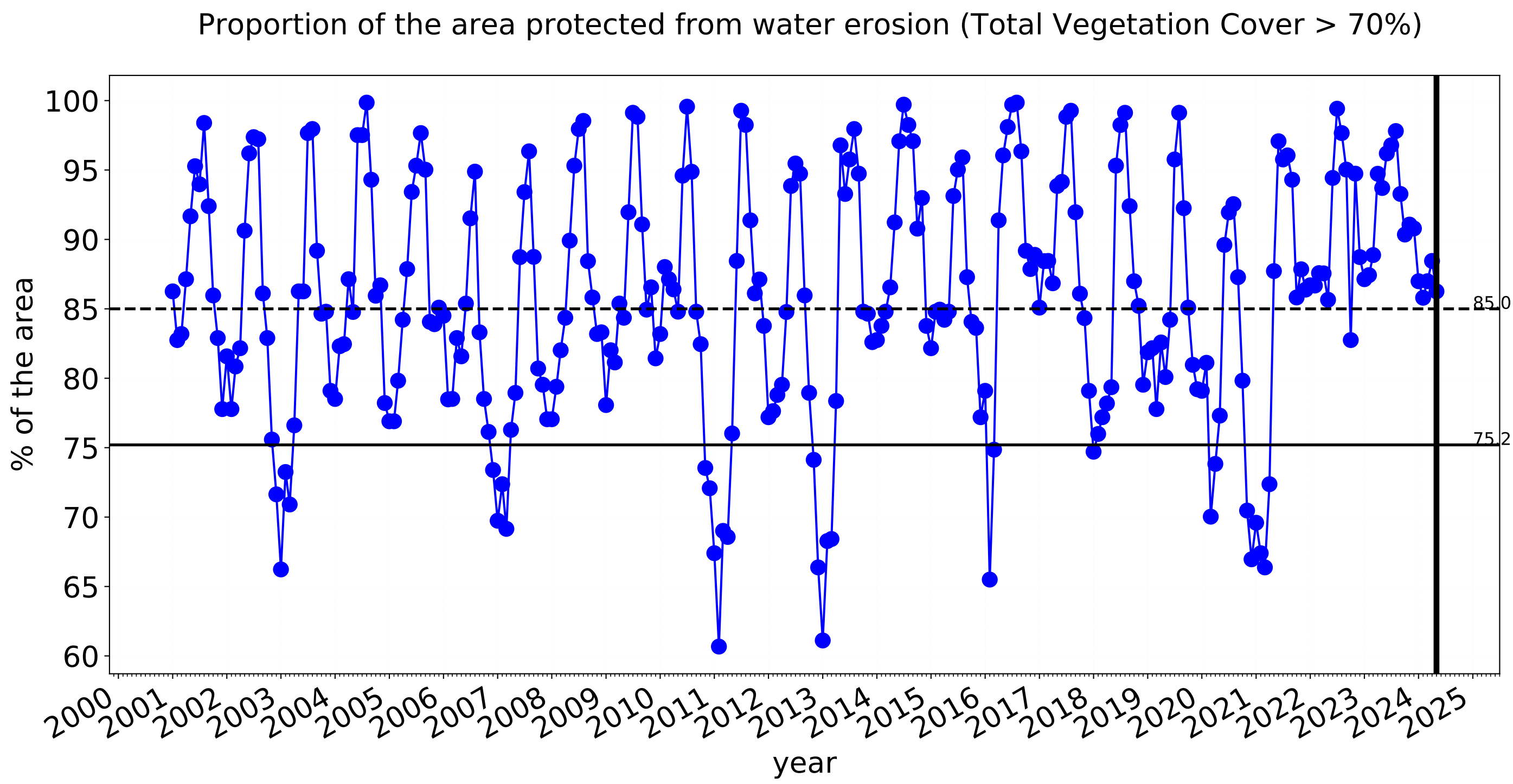
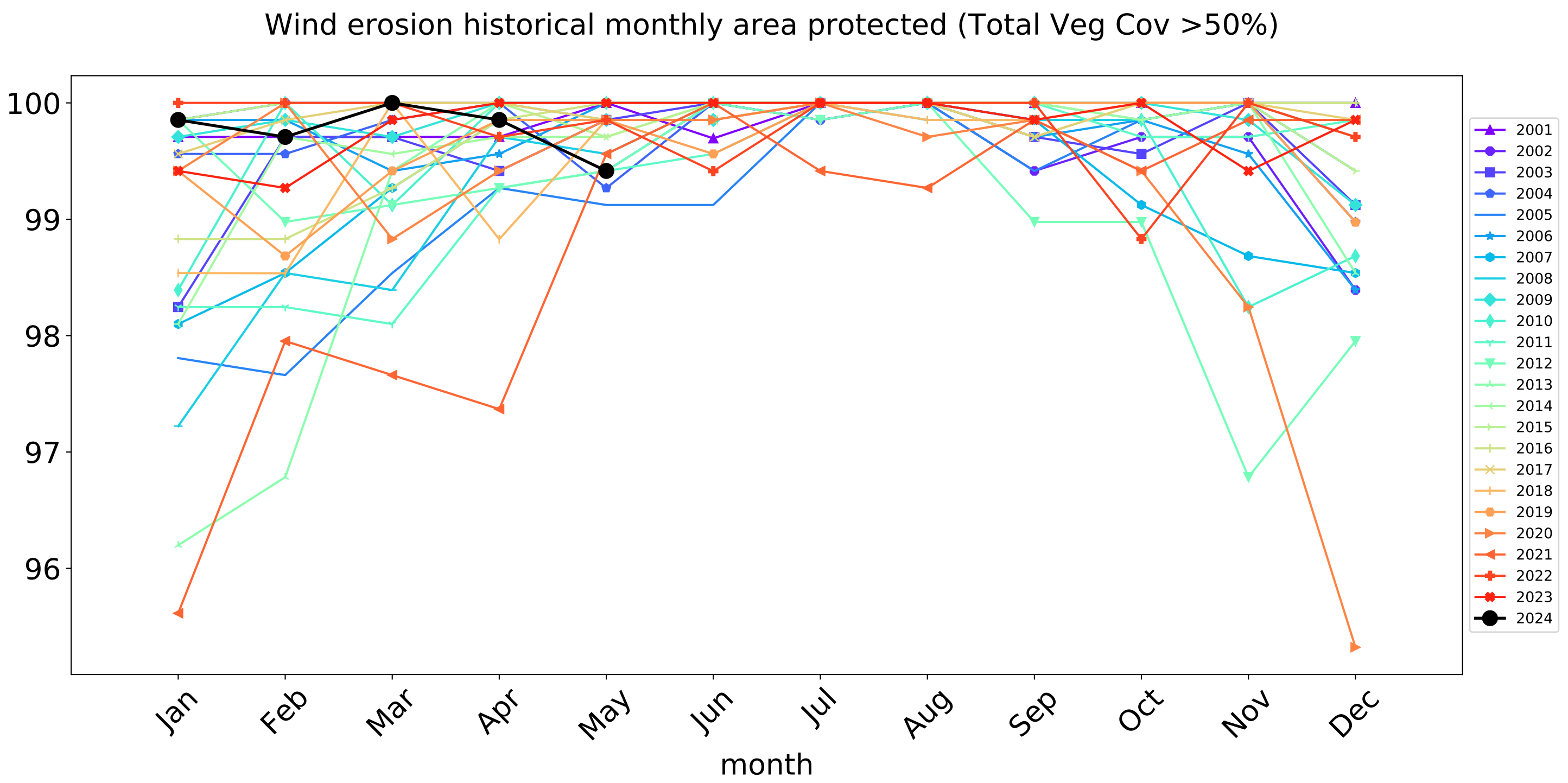
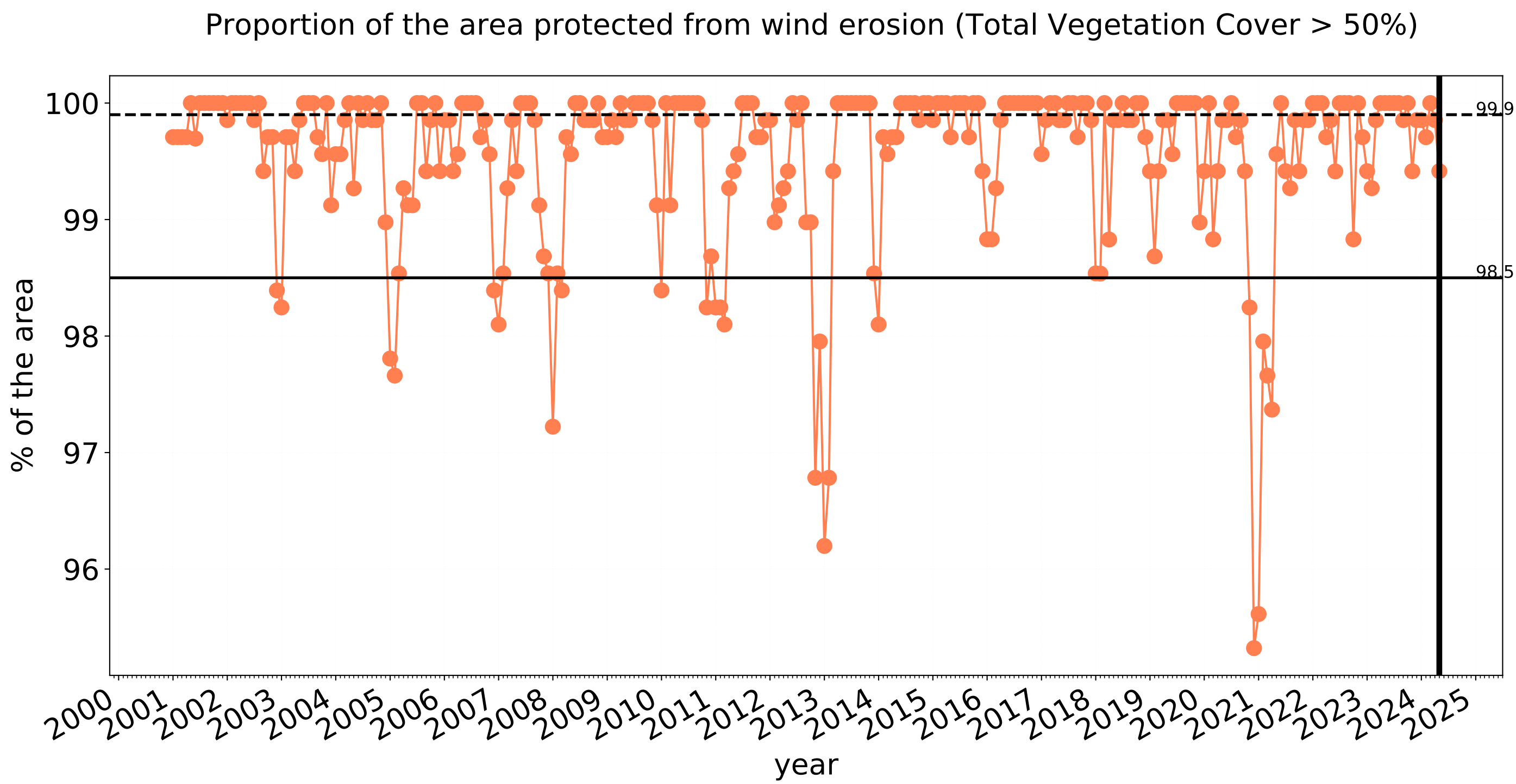
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Total Vegetation Cover Decile [%]



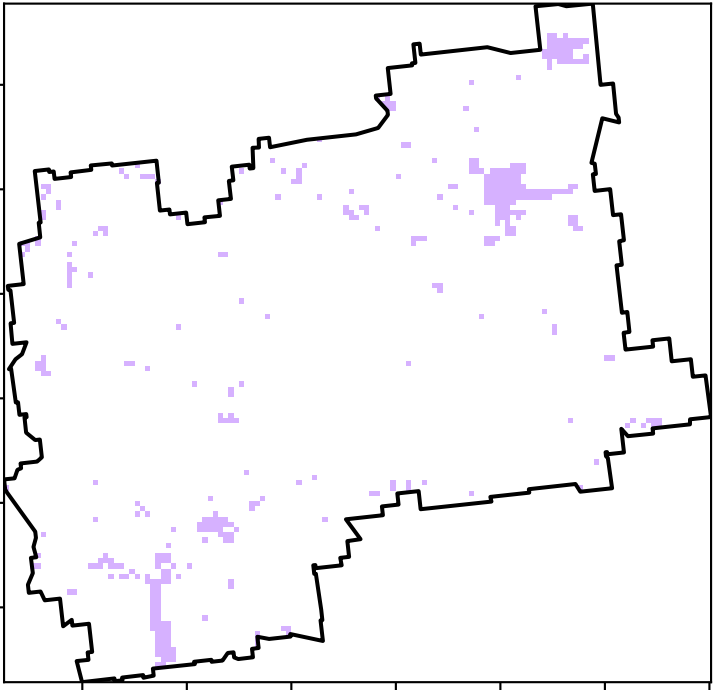
Conservation and natural environments timeseries



Conservation and natural environments non forest

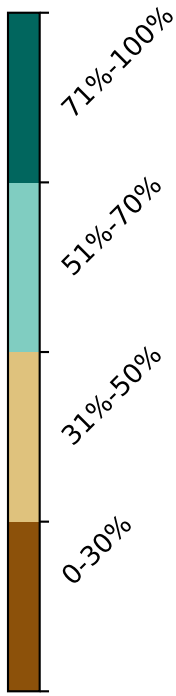
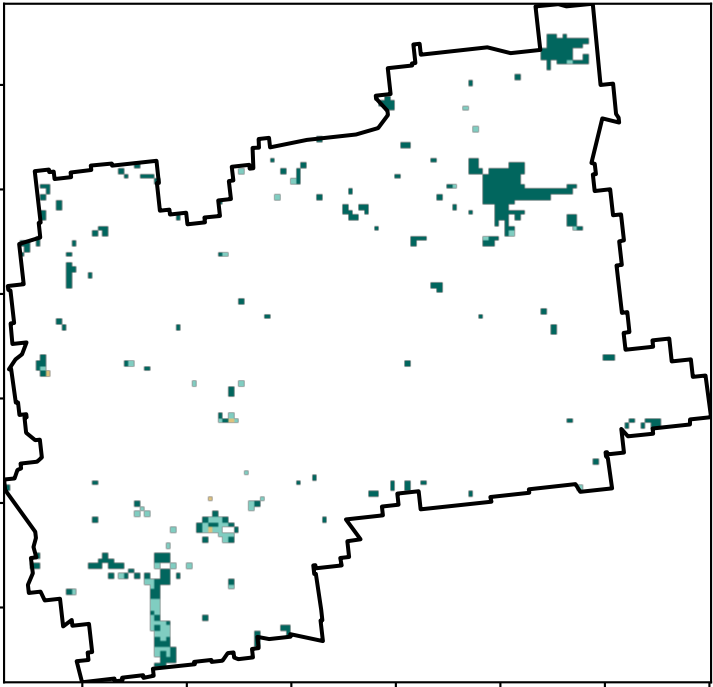
Land use and forest cover

Catchment Scale
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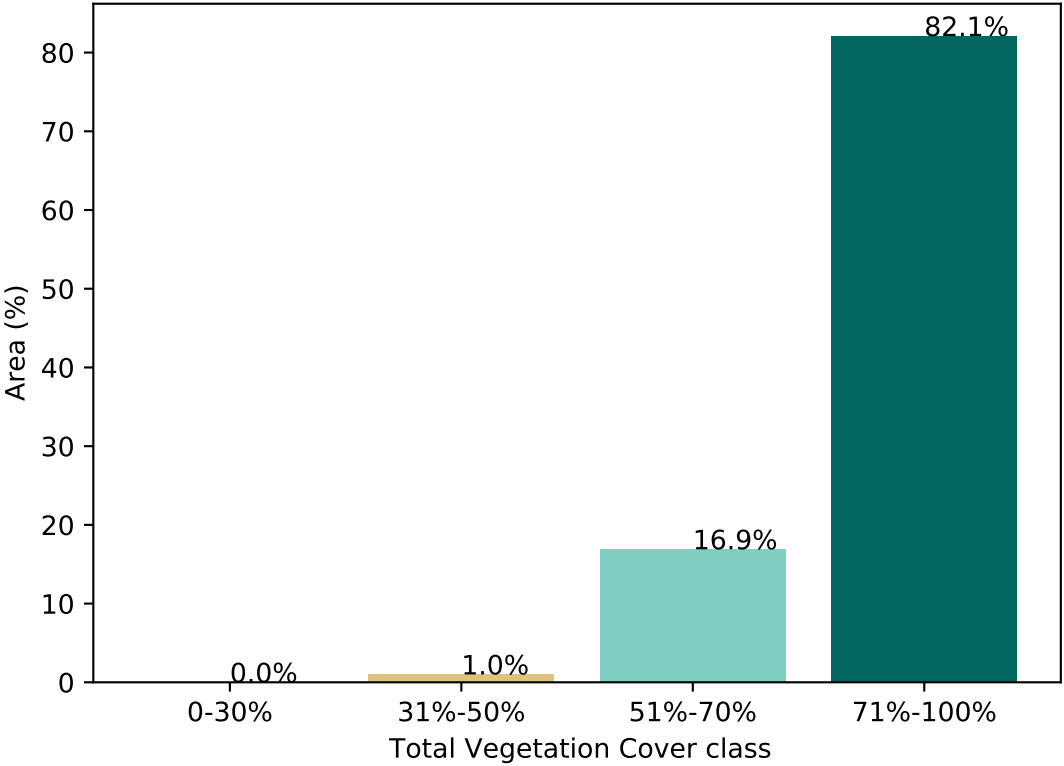


1 Conservation and natural environments - Non-forest

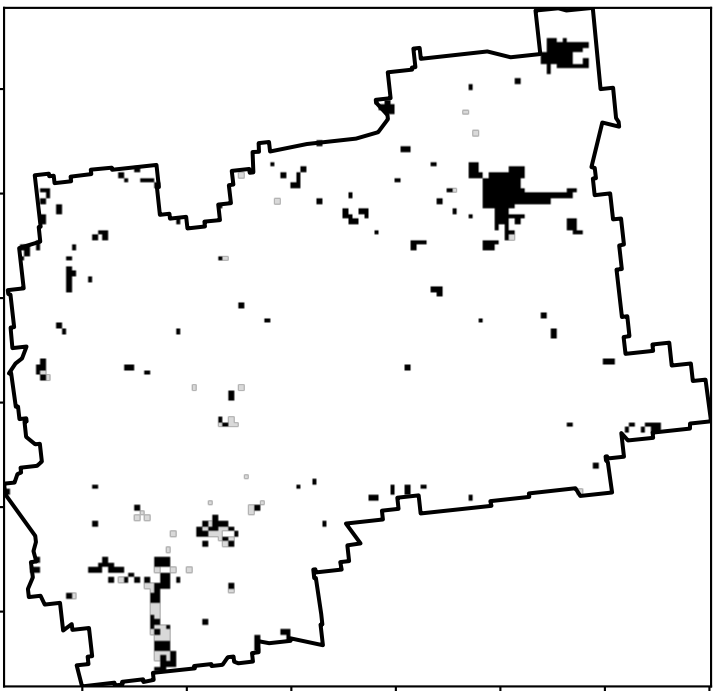
Total Vegetation Cover [%]



Proportion of vegetation cover class in area

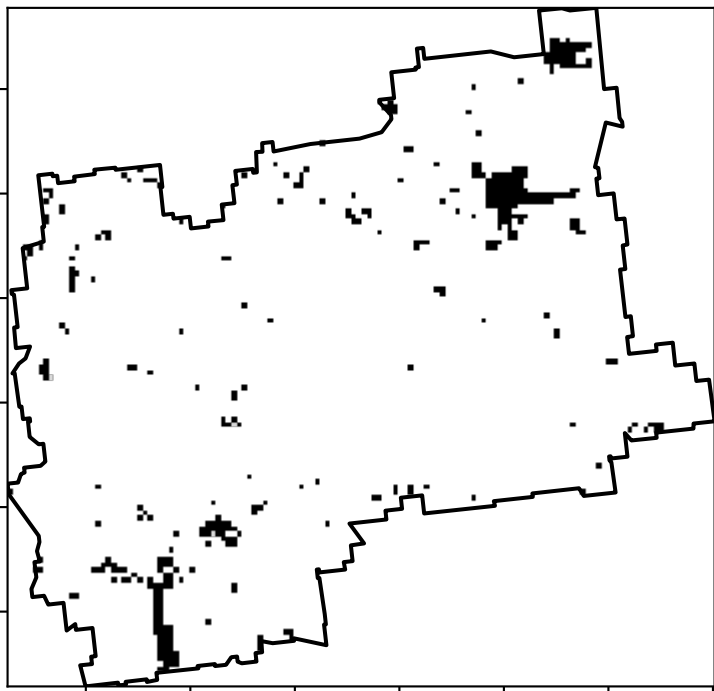


% Area protected from water erosion (>70%)



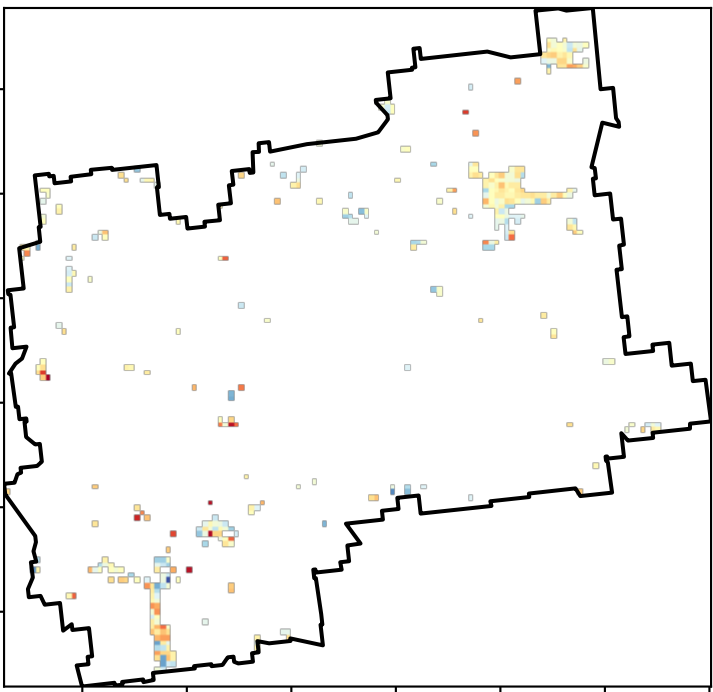
Area not protected
17.9% of region
(1,875 ha)
Area protected
82.1% of region
(8,600 ha)

% Area protected from wind erosion (>50%)

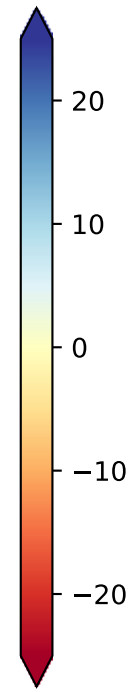


Area not protected
1.0% of region
(105 ha)
Area protected
99.0% of region
(10,370 ha)

Total Vegetation Cover Anomaly [%]

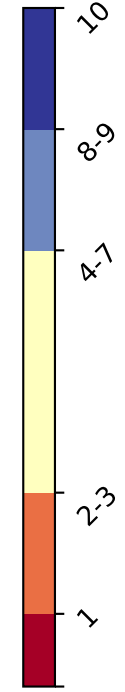
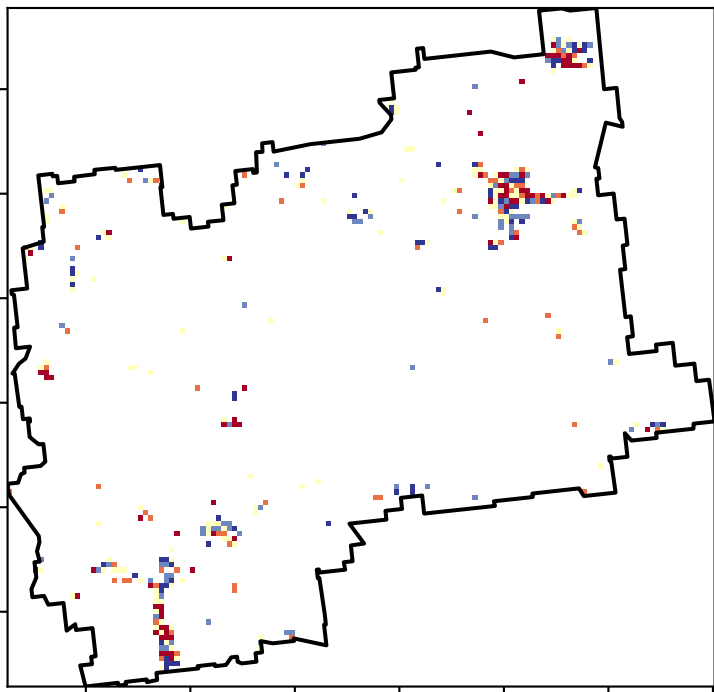


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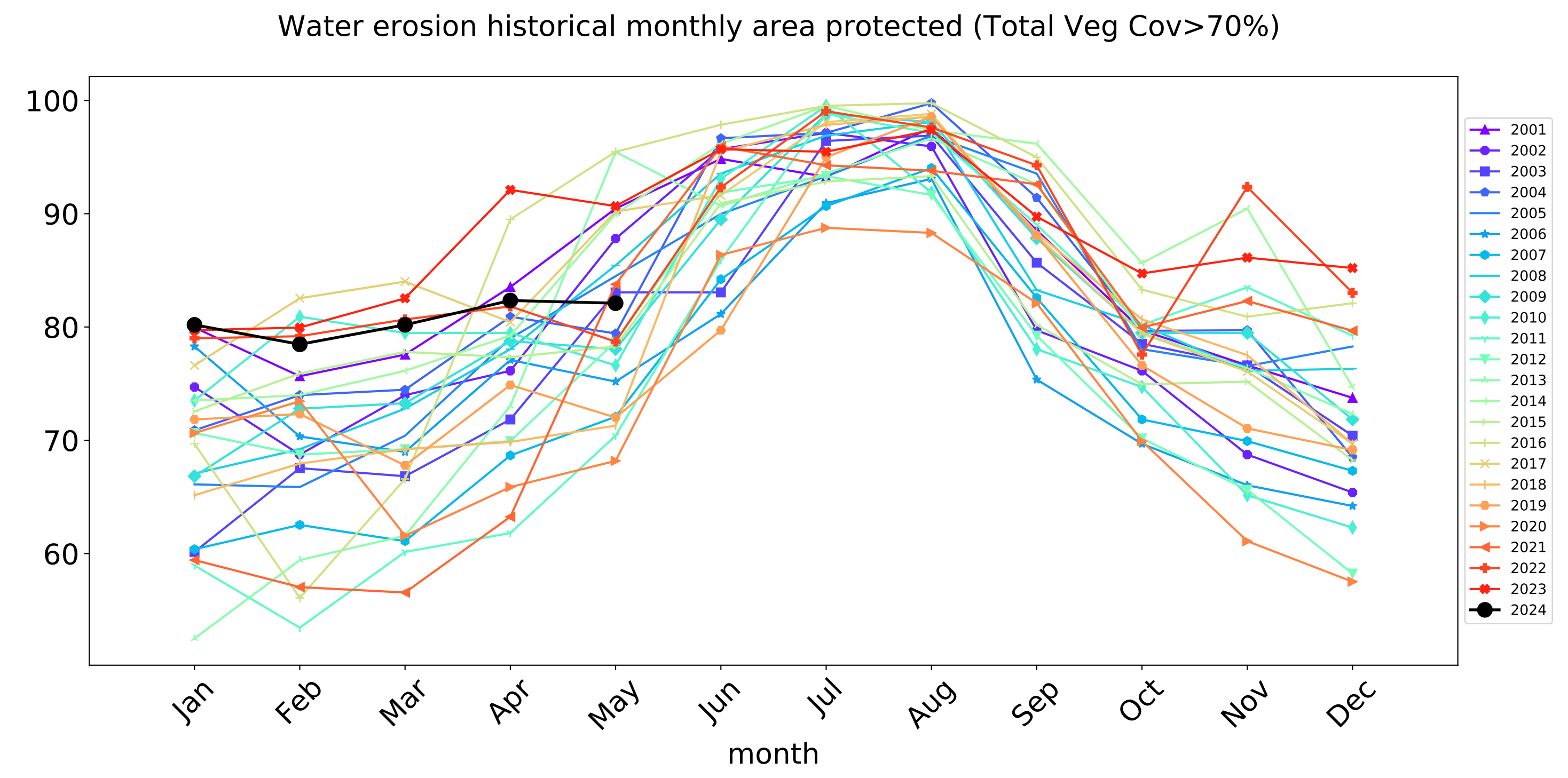
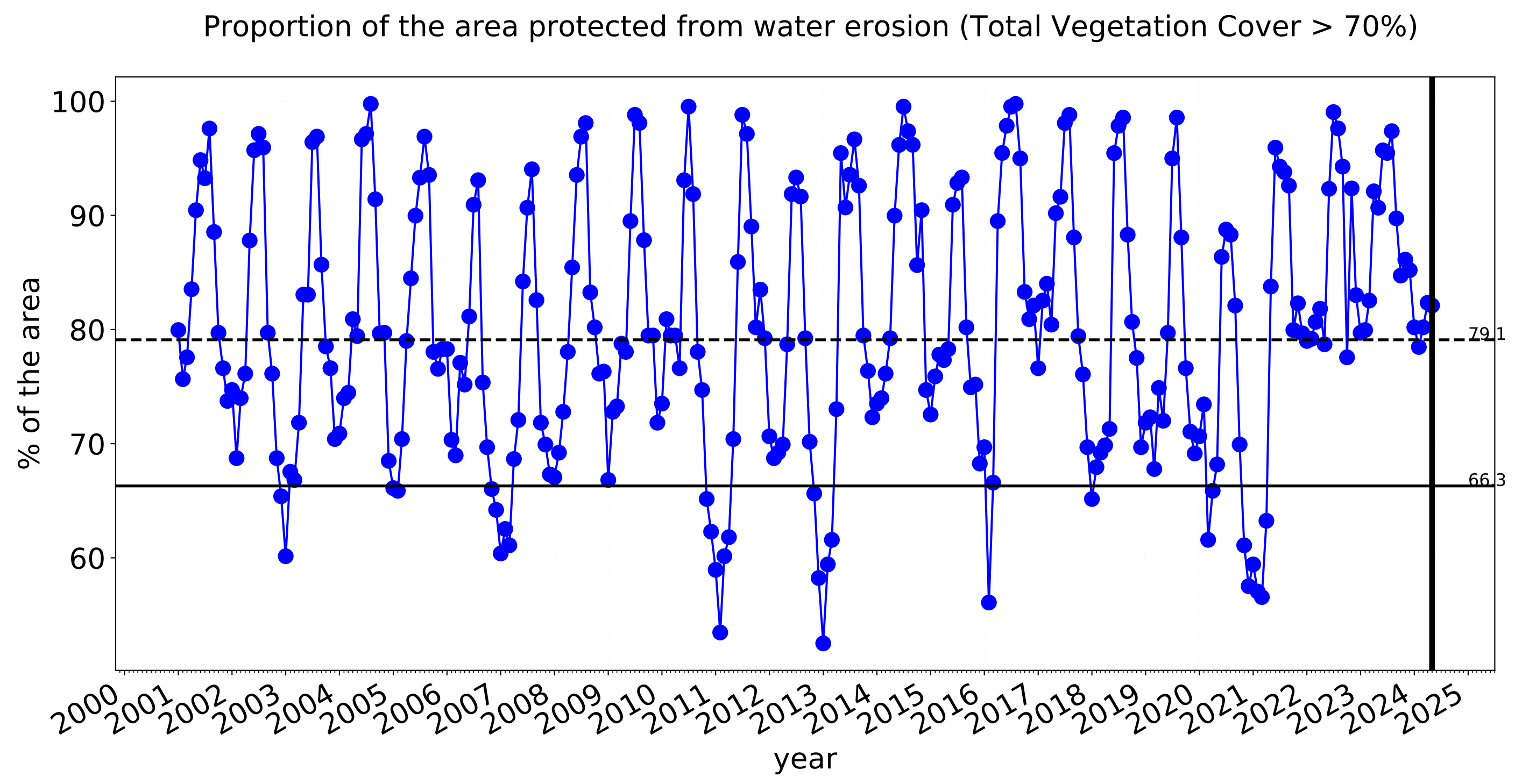
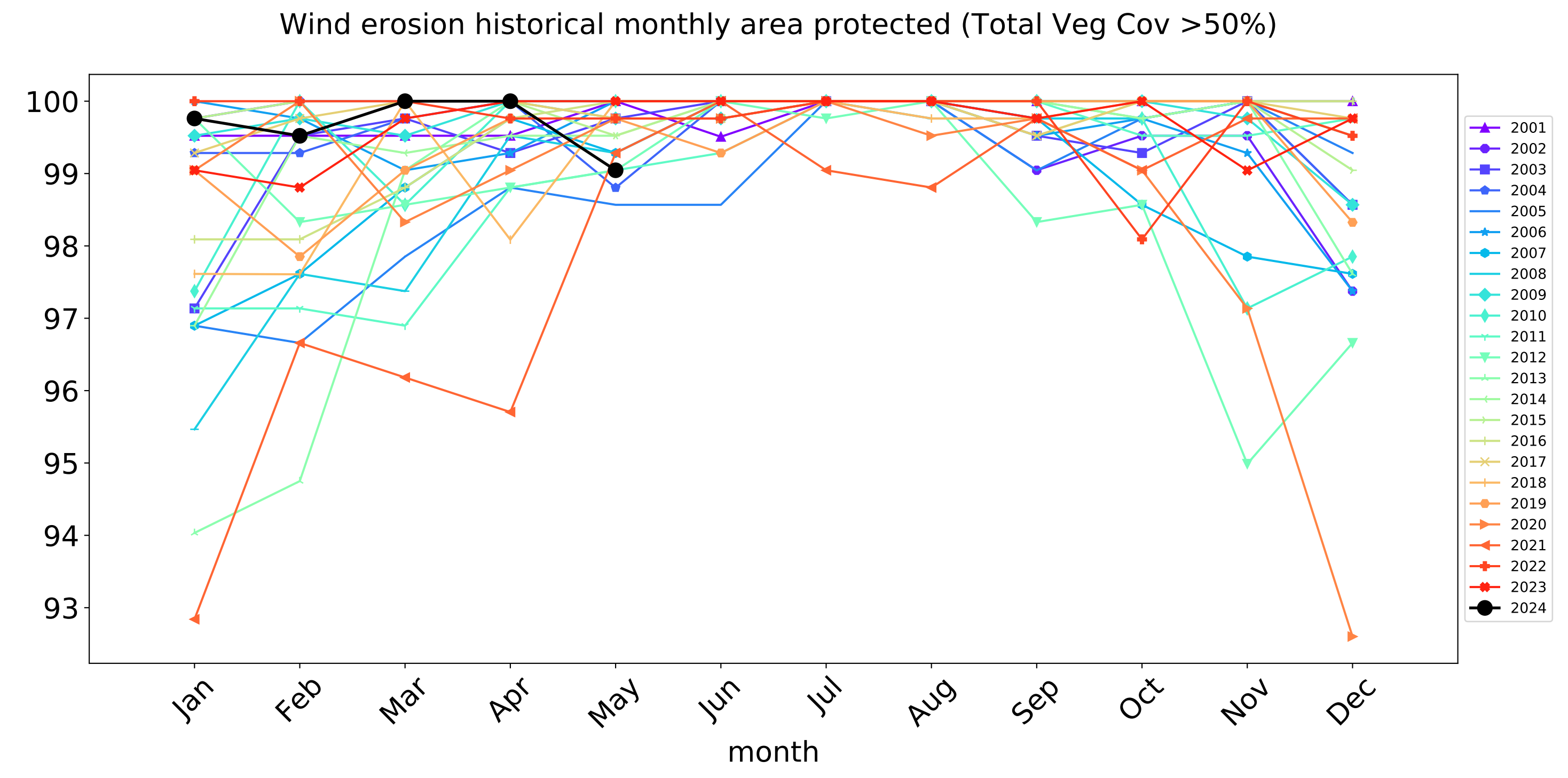
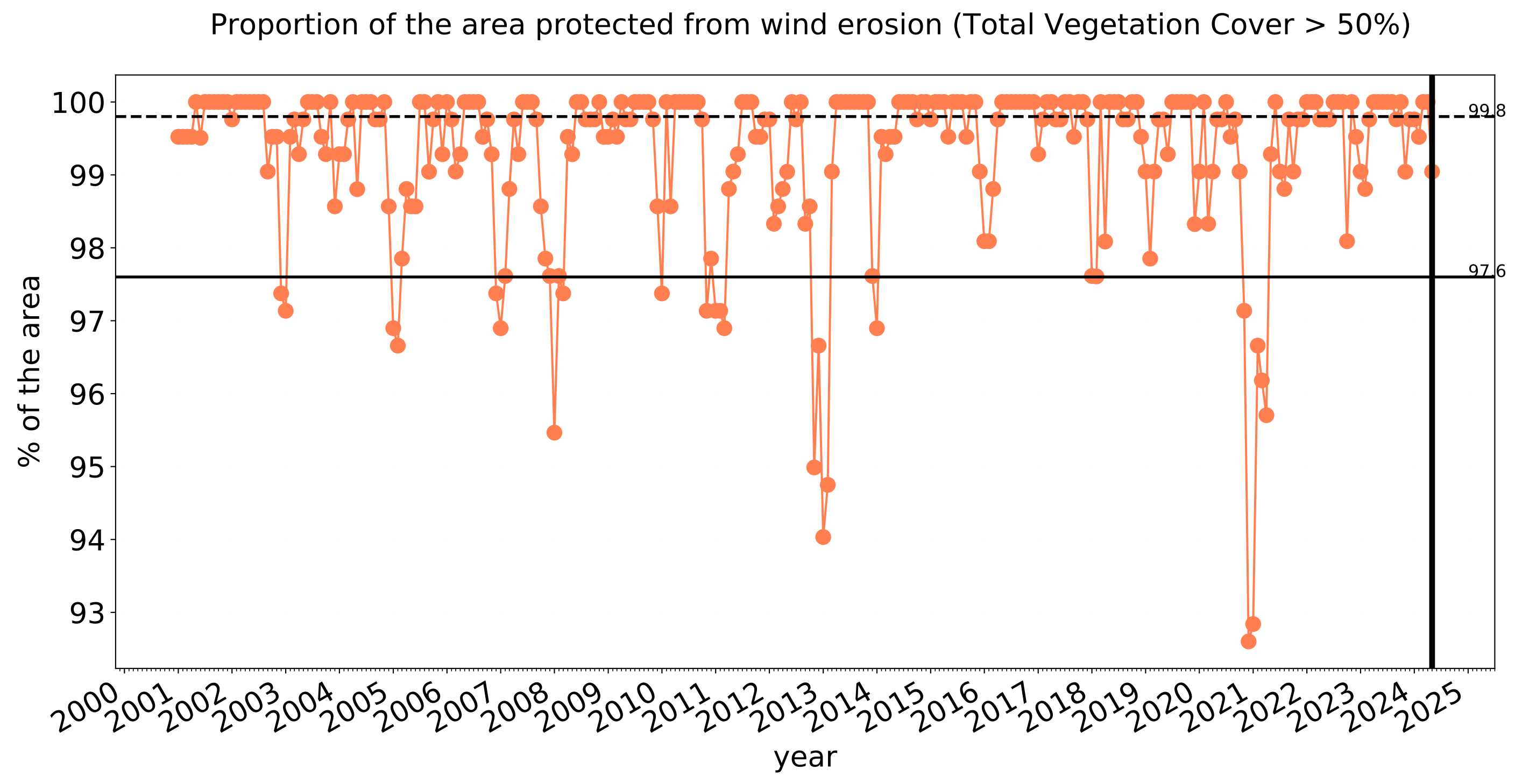


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Total Vegetation Cover Decile [%]



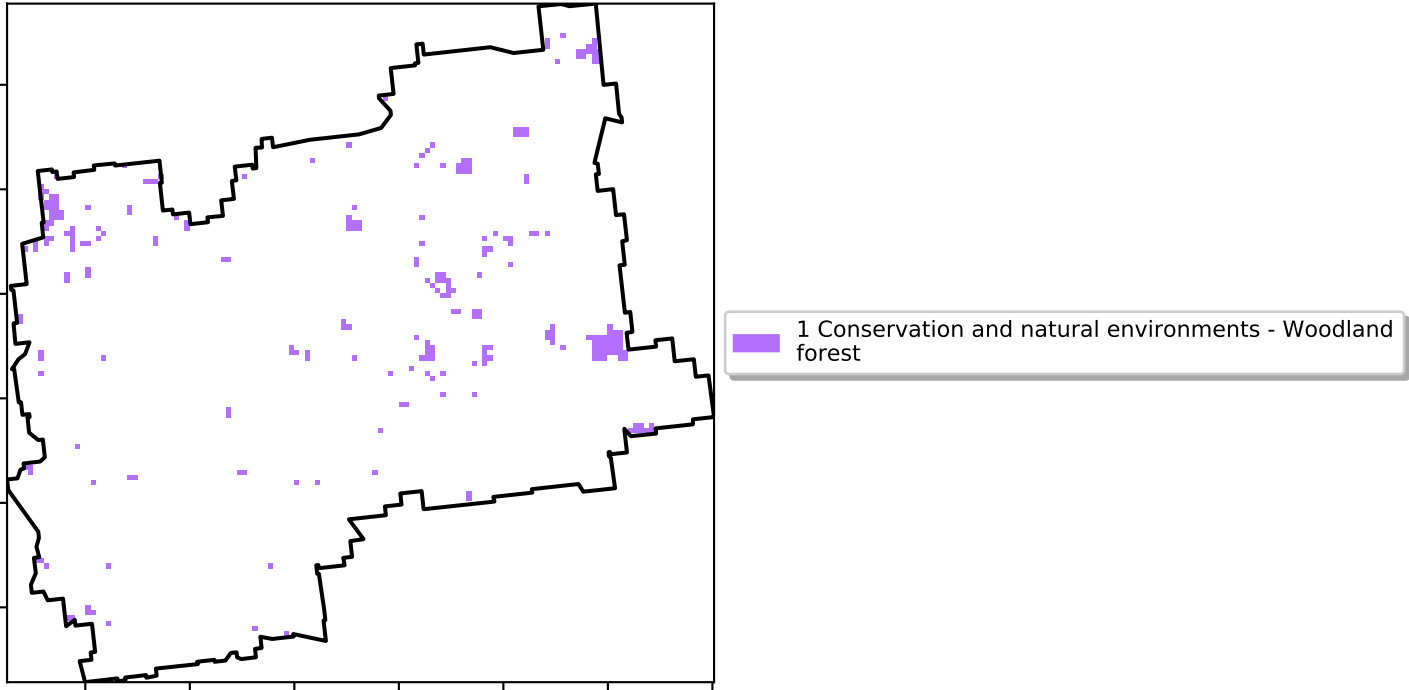
Conservation and natural environments non forest timeseries



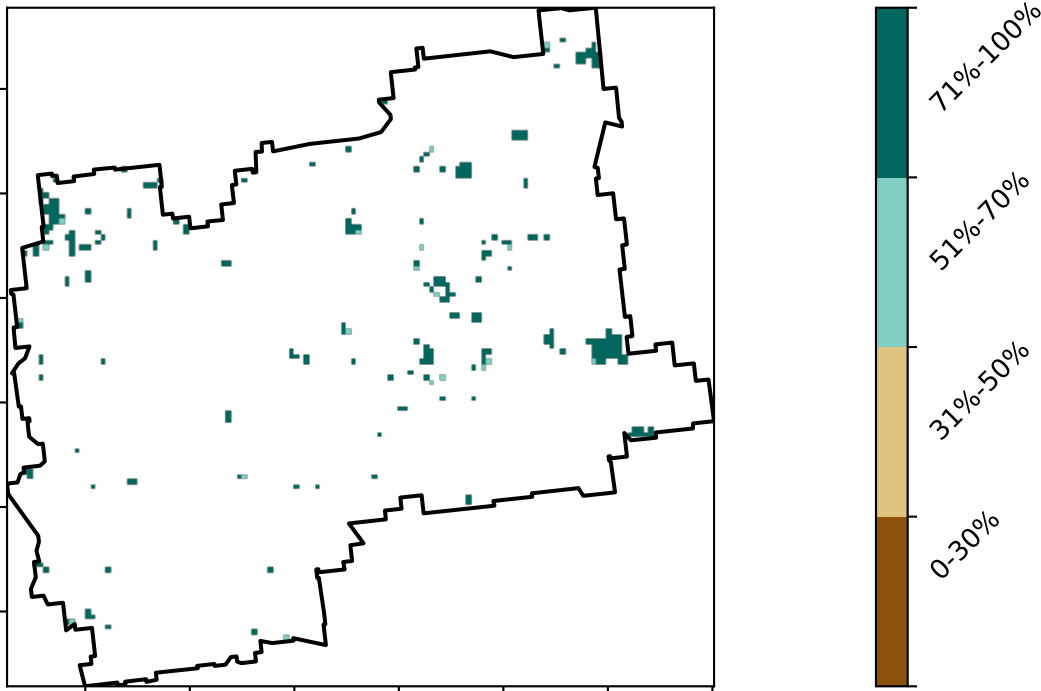
Conservation and natural environments Woodland forest

Land use and forest cover

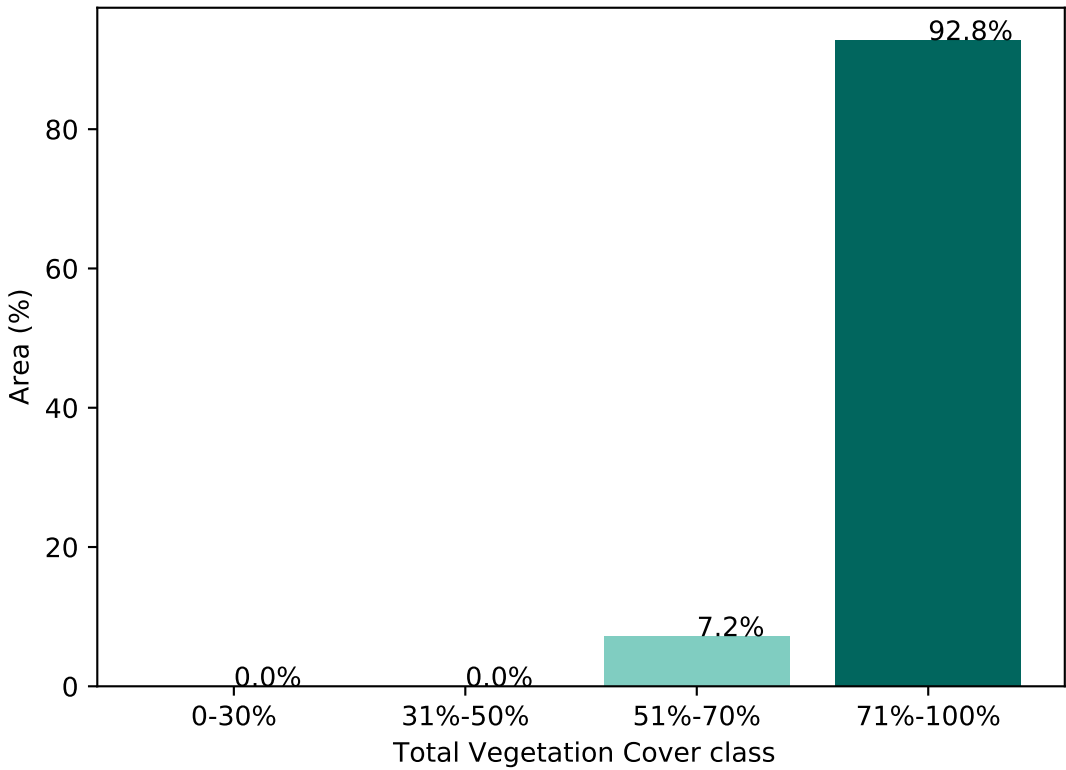
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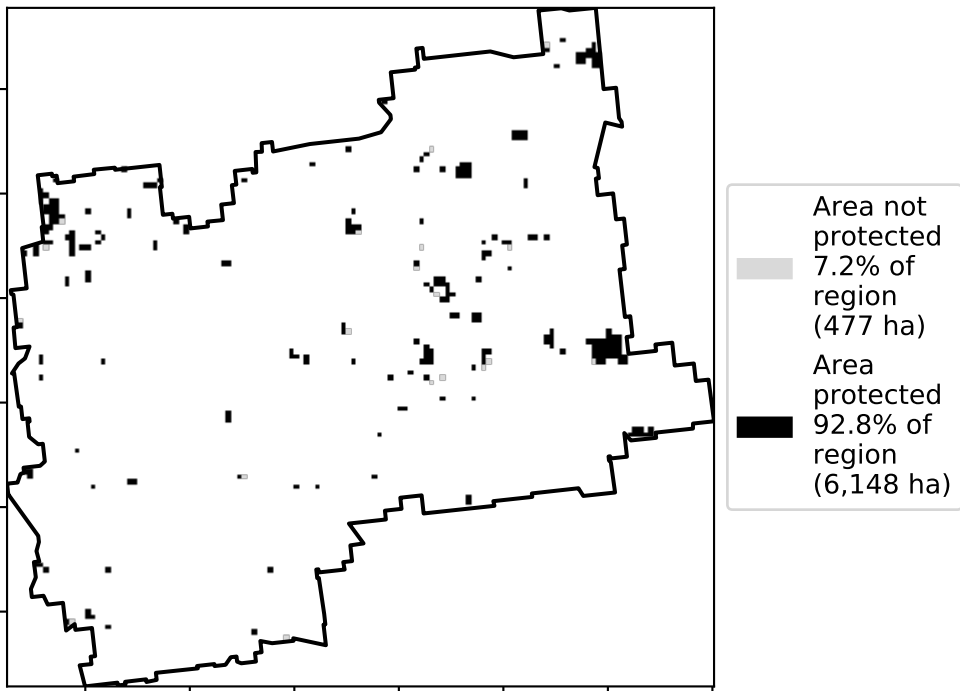
Total Vegetation Cover [%]



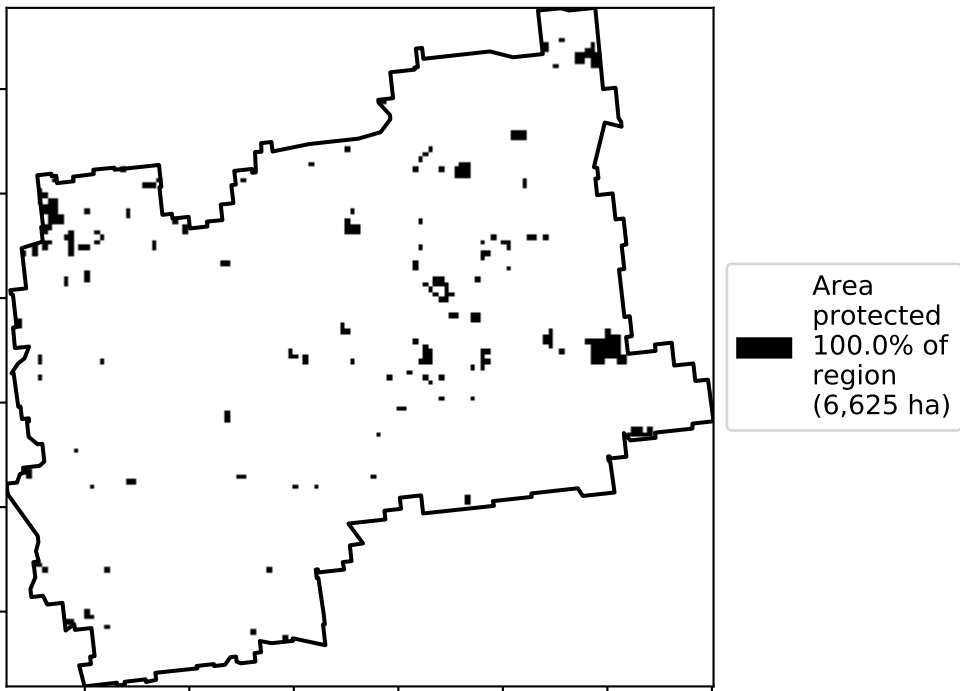
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

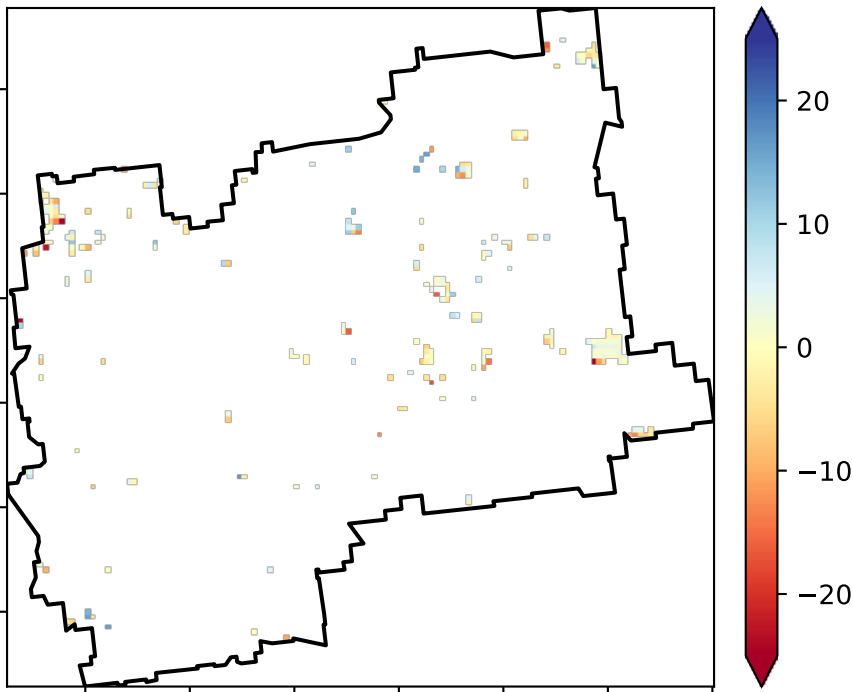


% Area protected from wind erosion (>50%)



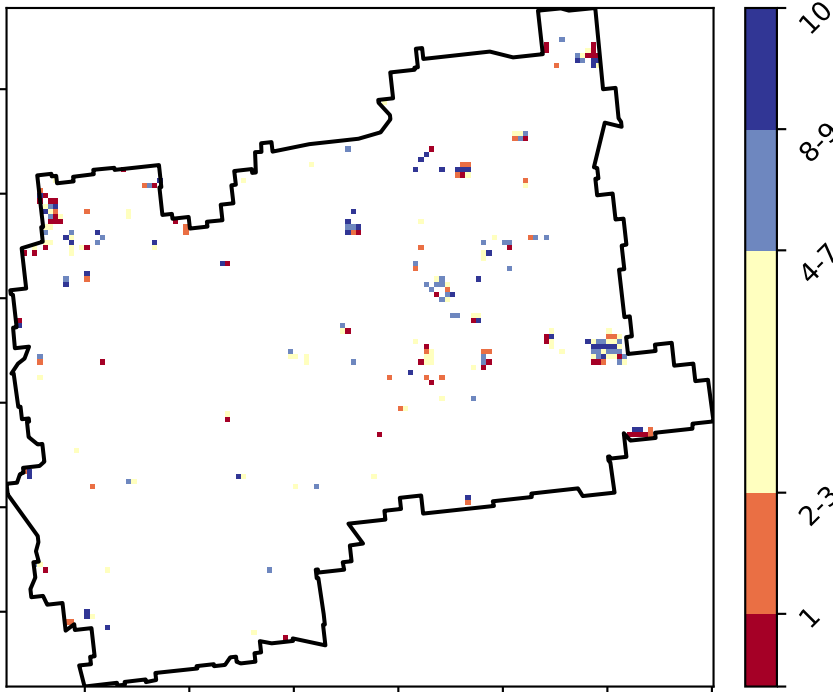
Total Vegetation Cover Anomaly [%]

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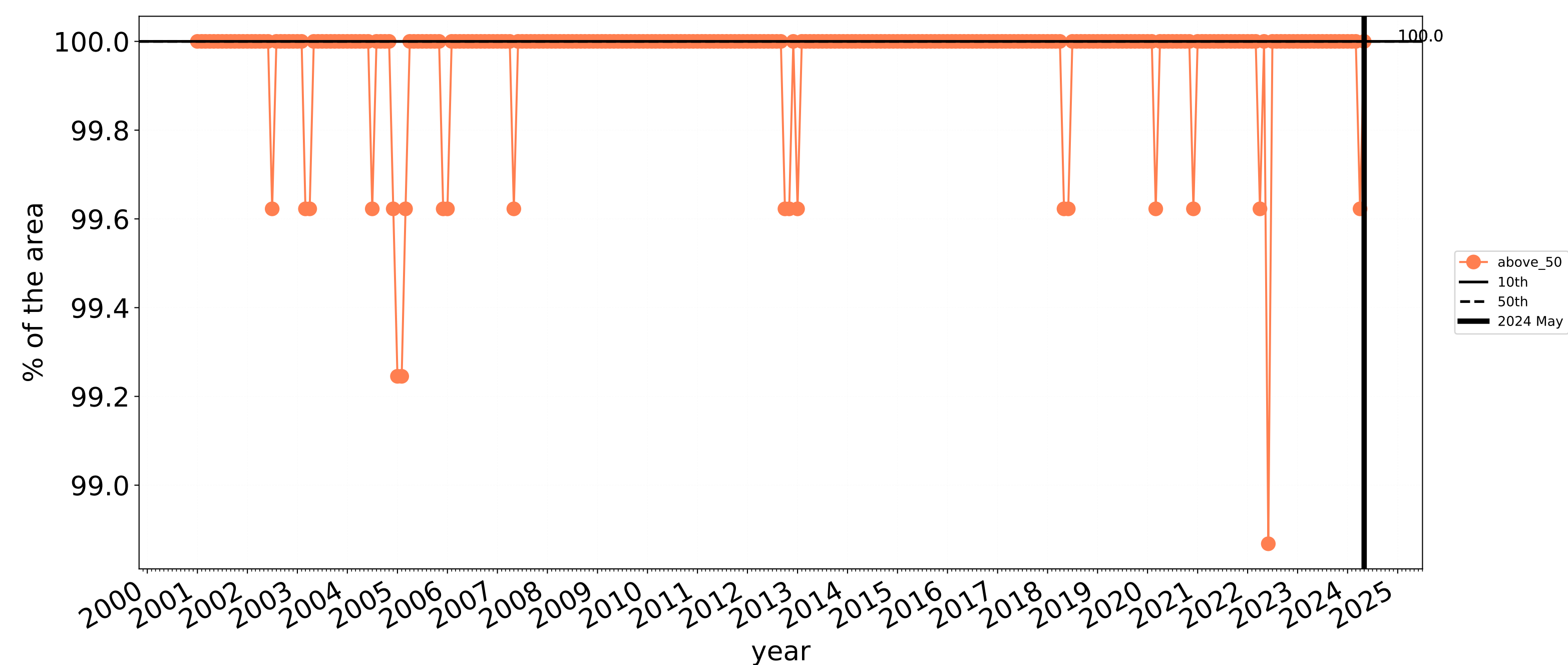
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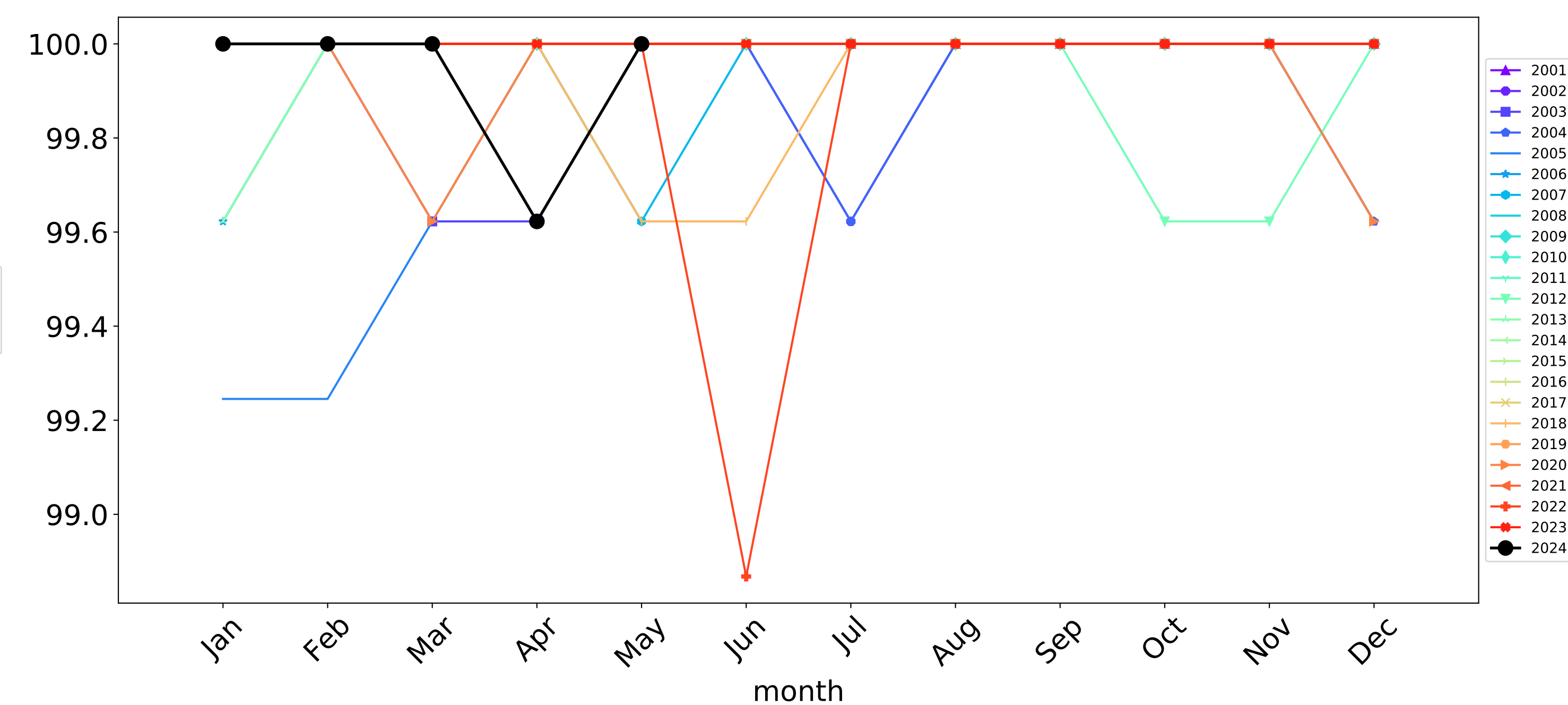


Conservation and natural environments Woodland forest timeseries

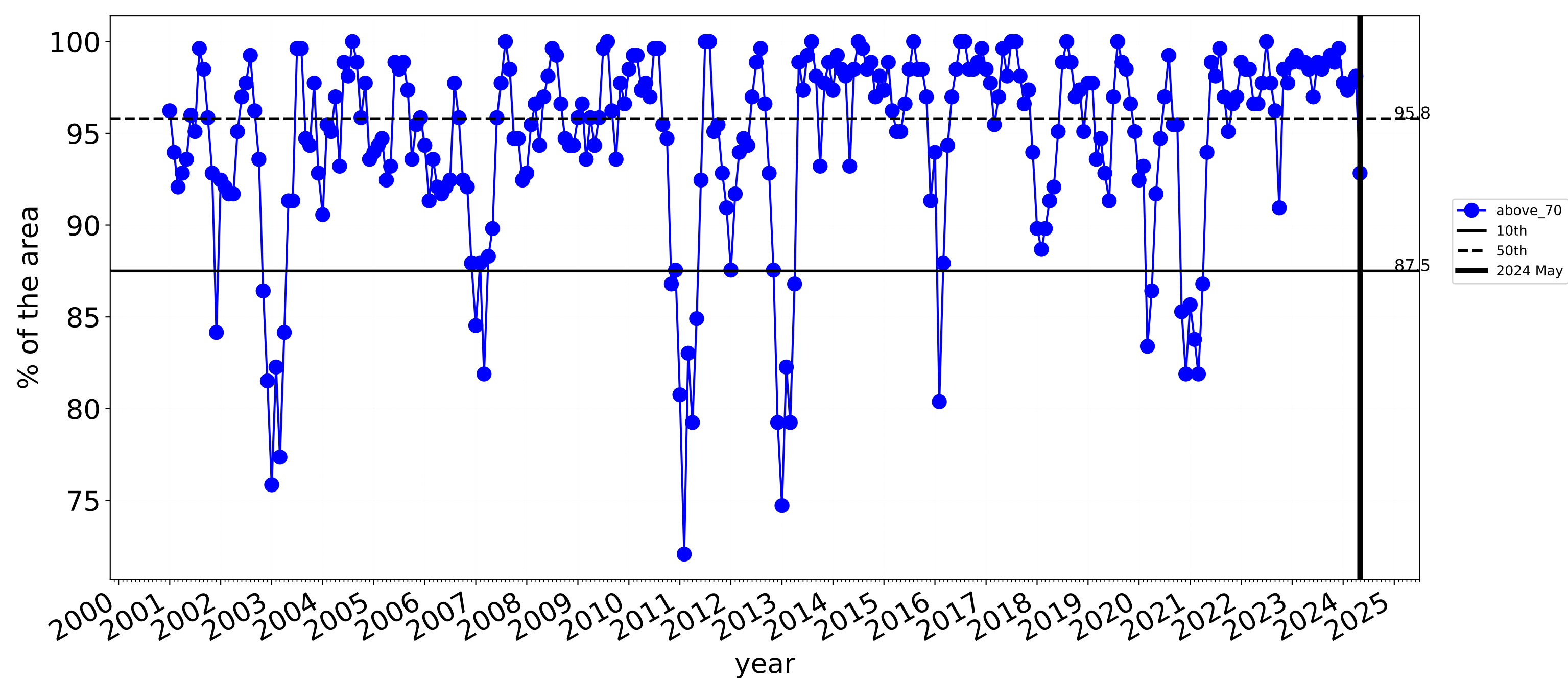
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



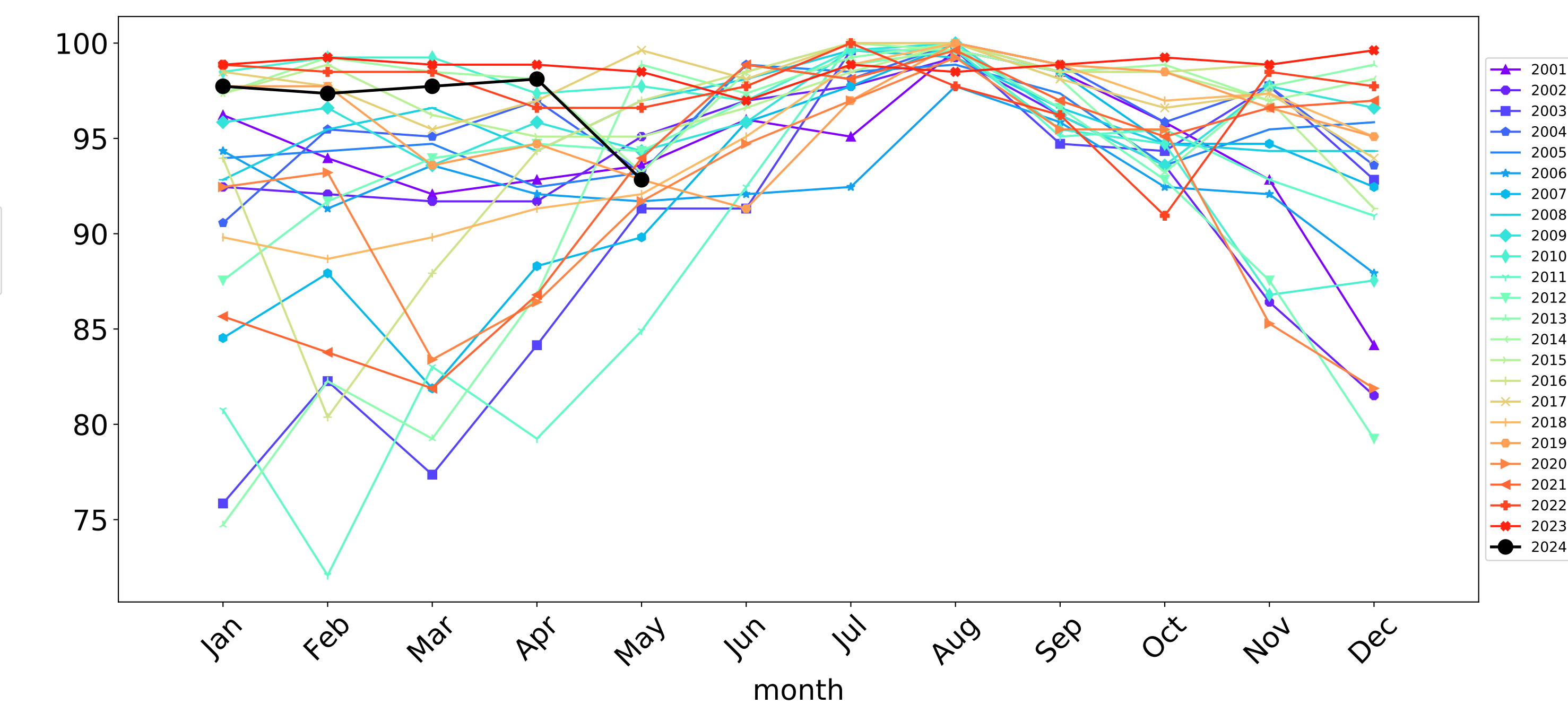
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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



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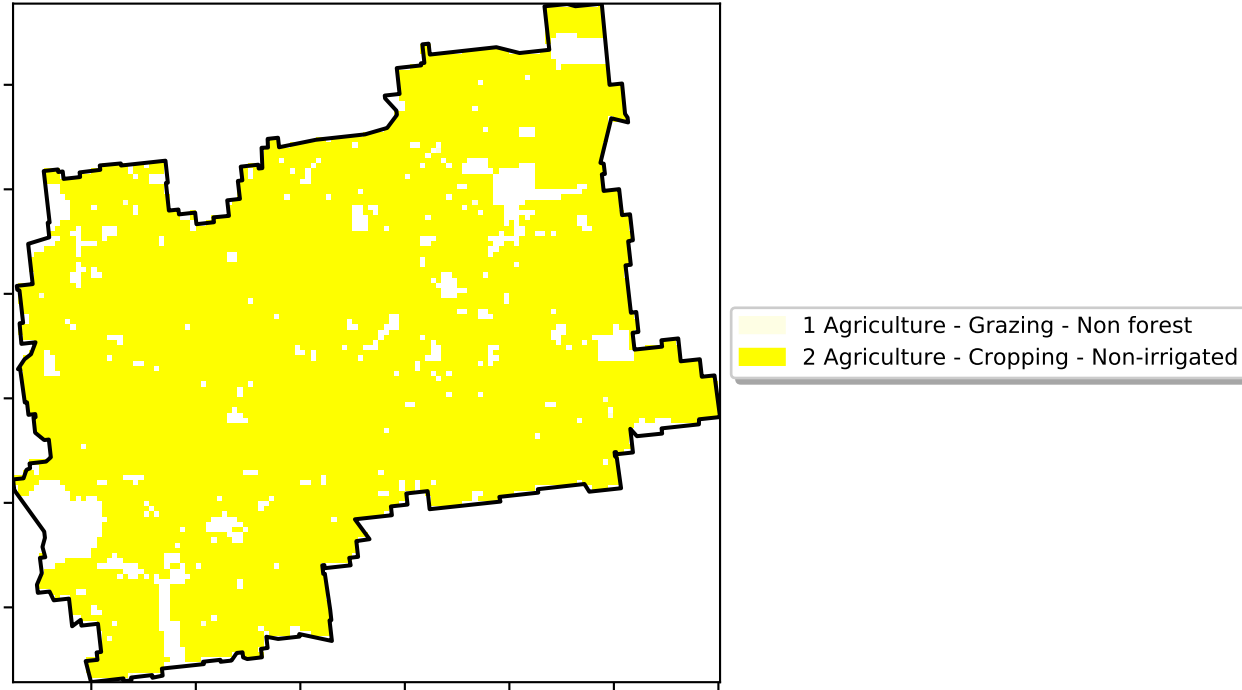
National
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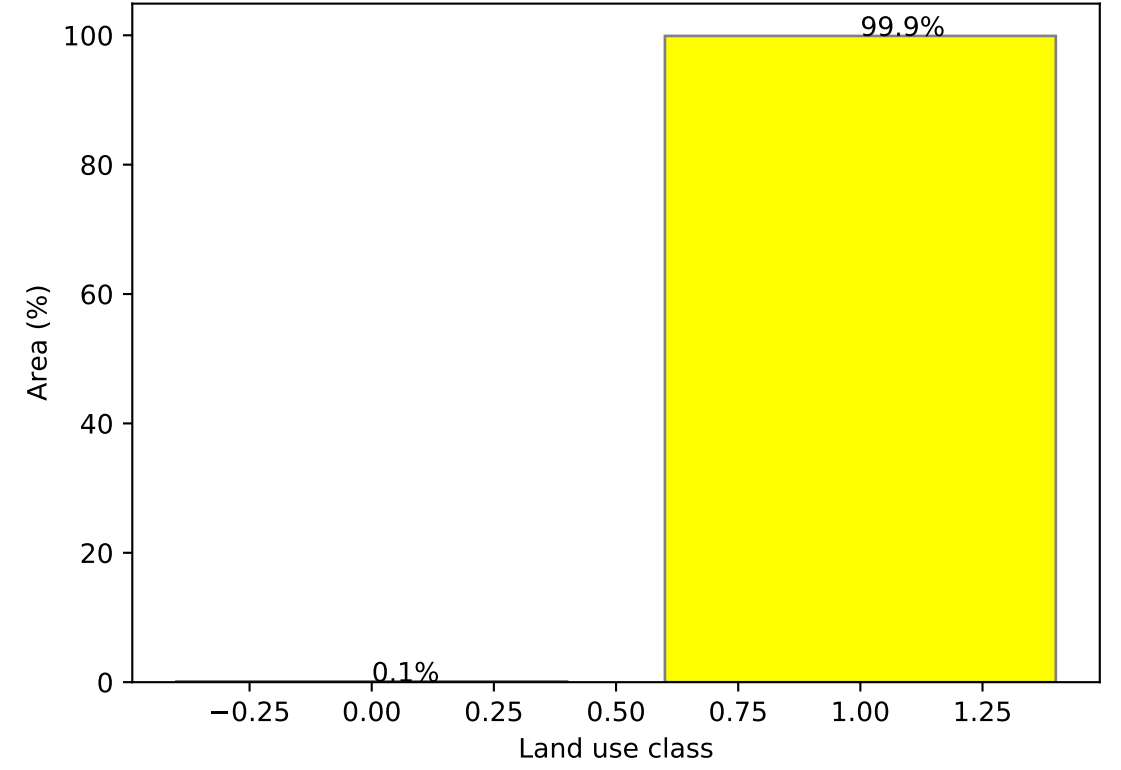
Agriculture

Land use and forest cover

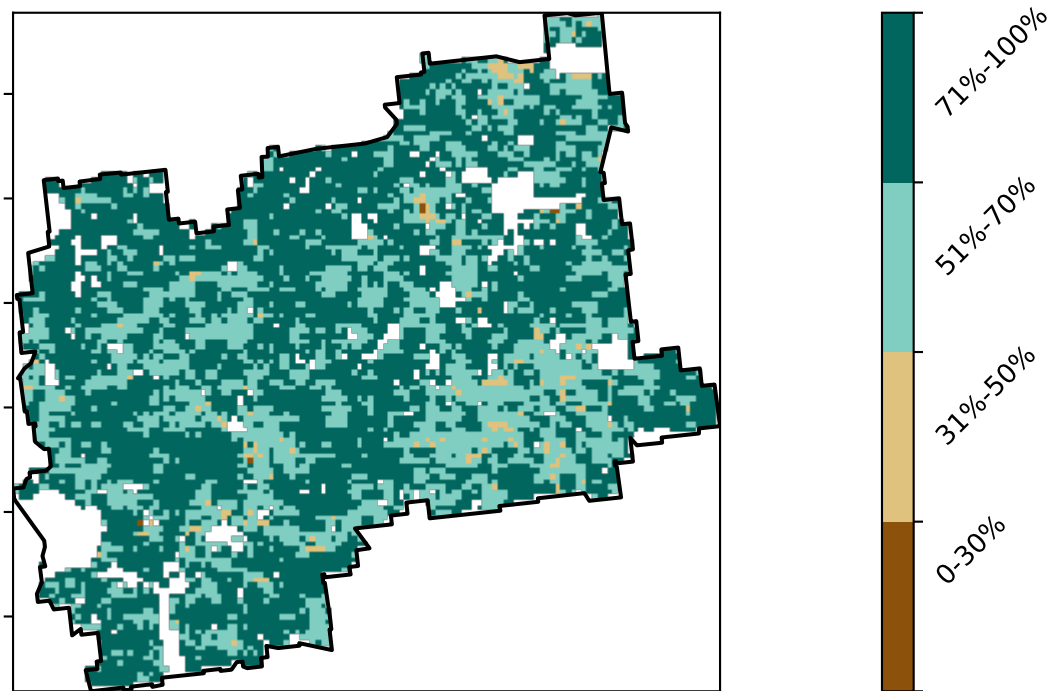
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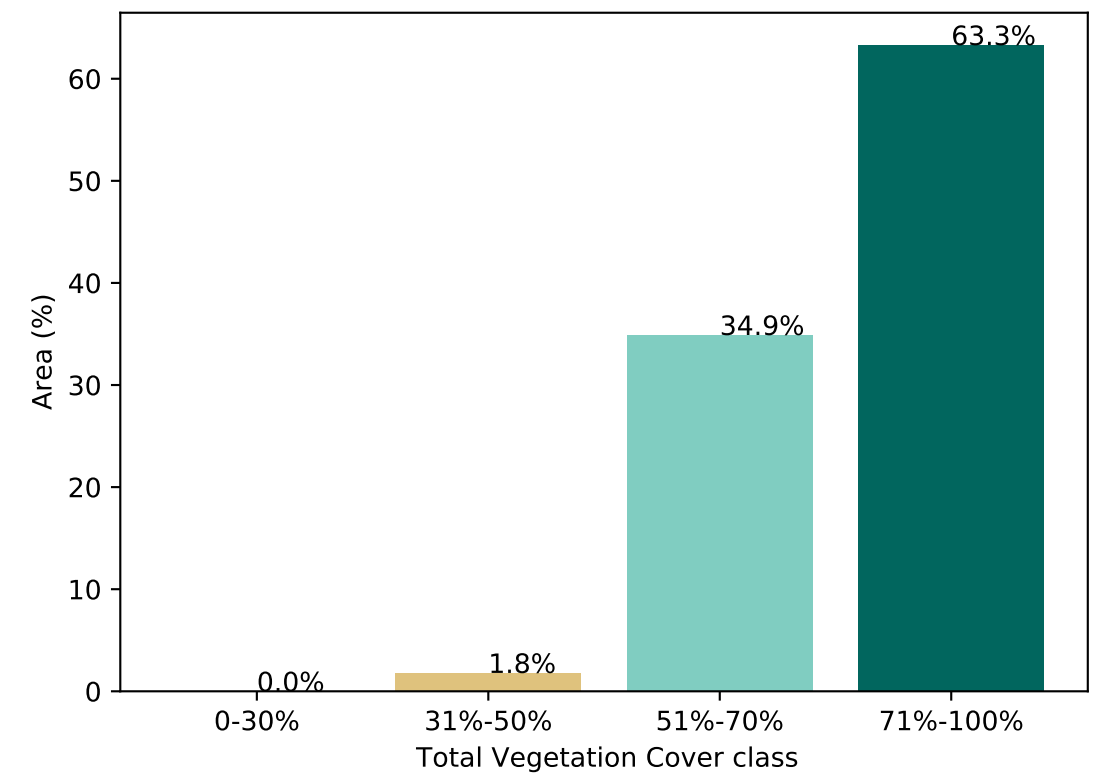
Proportion of each land class in area



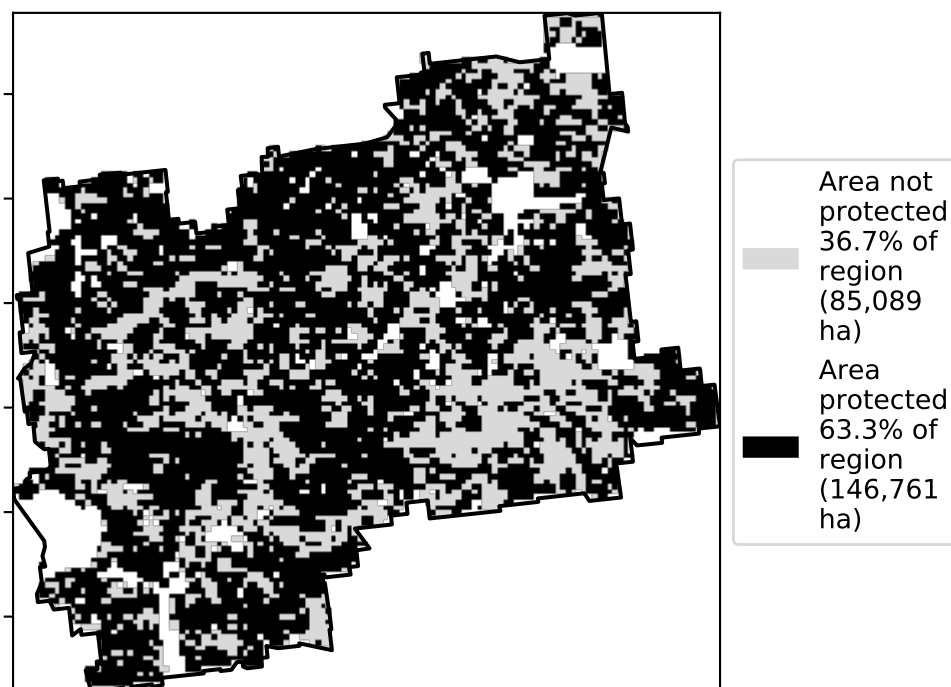
Total Vegetation Cover [%]



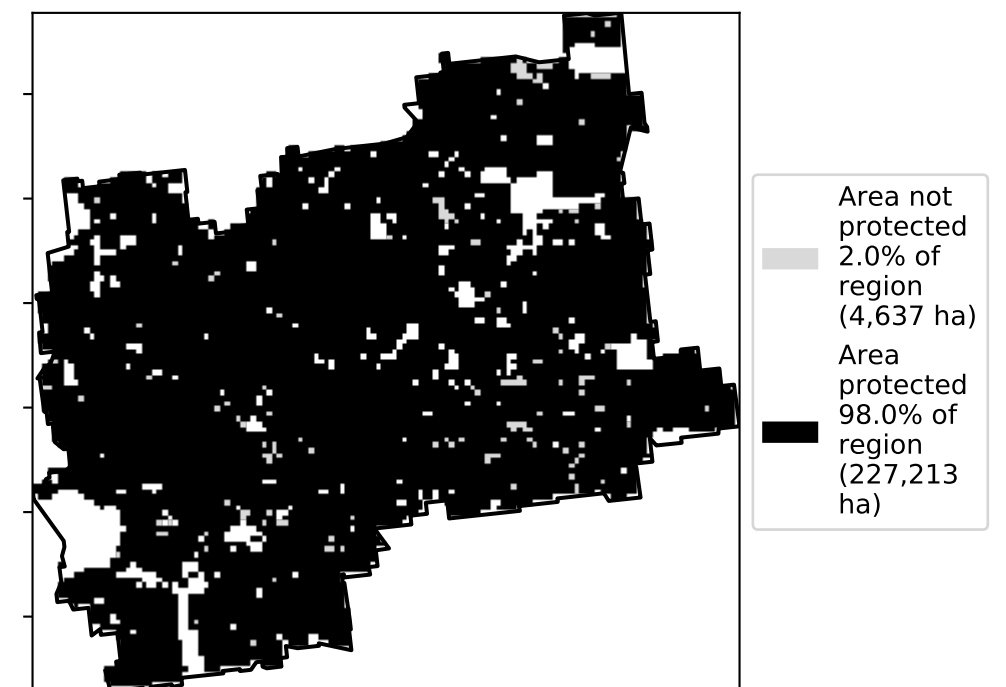
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

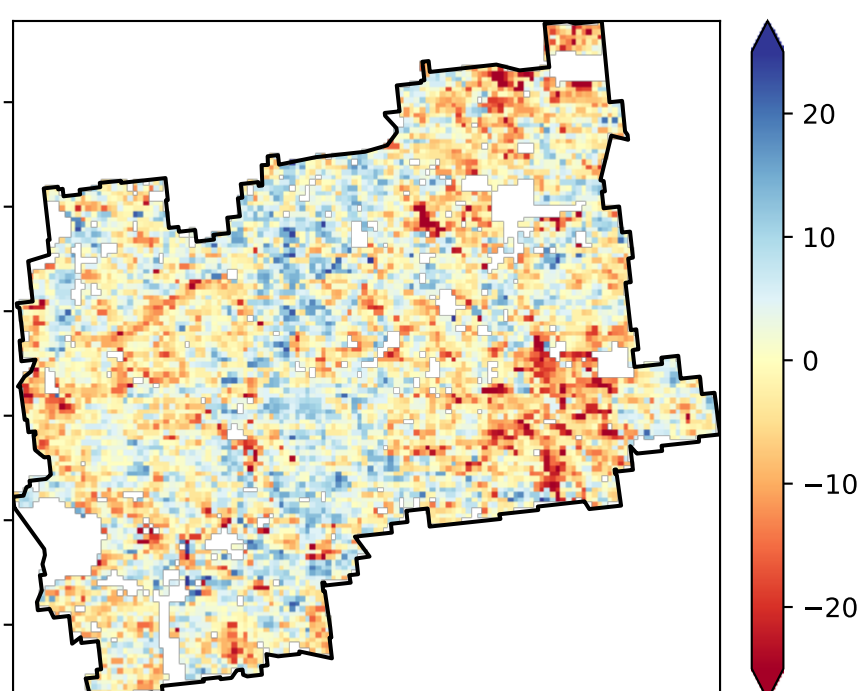


% Area protected from wind erosion (>50%)



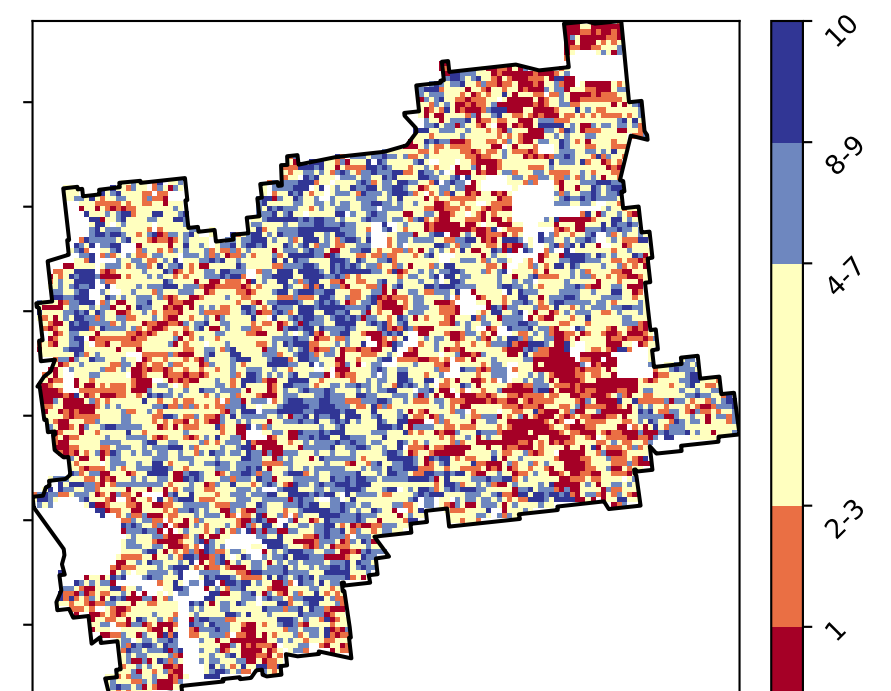
Total Vegetation Cover Anomaly [%]

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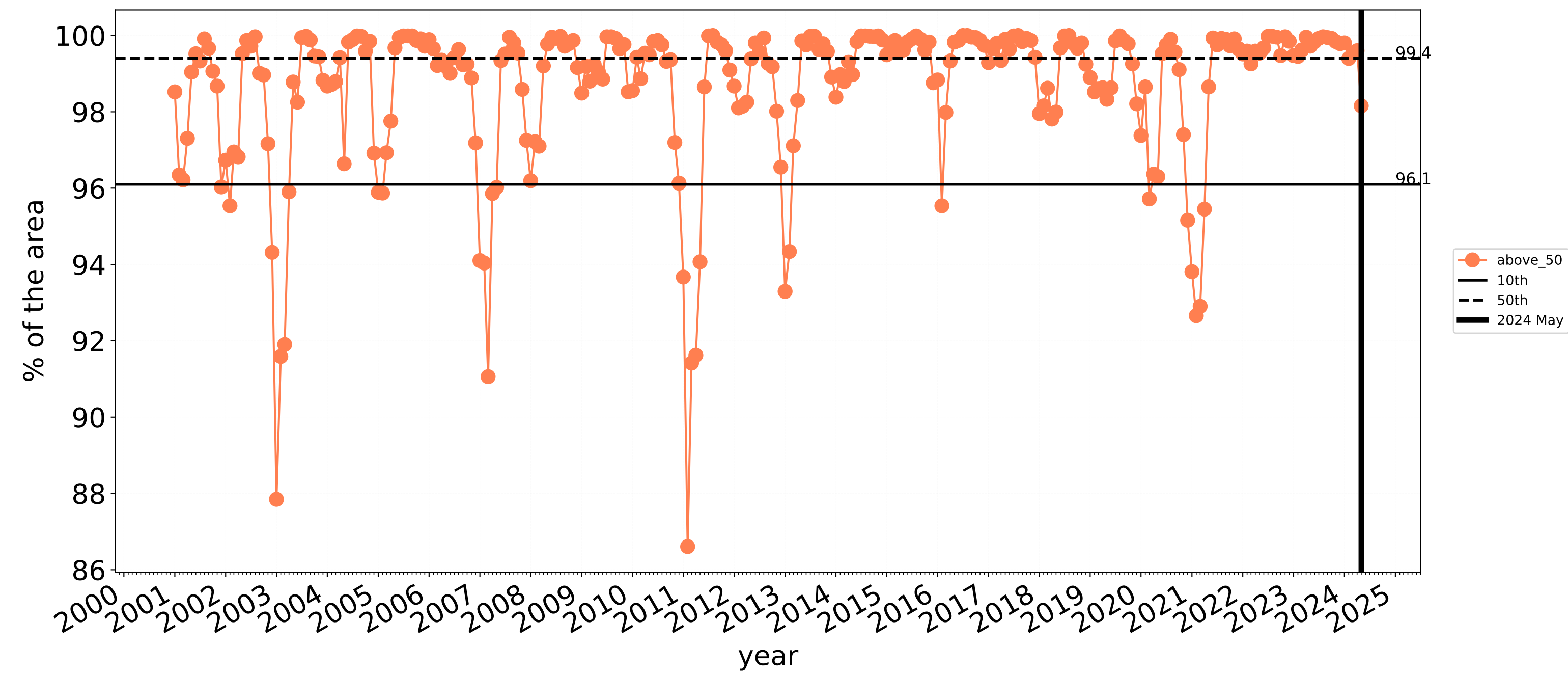
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Total Vegetation Cover Decile [%]

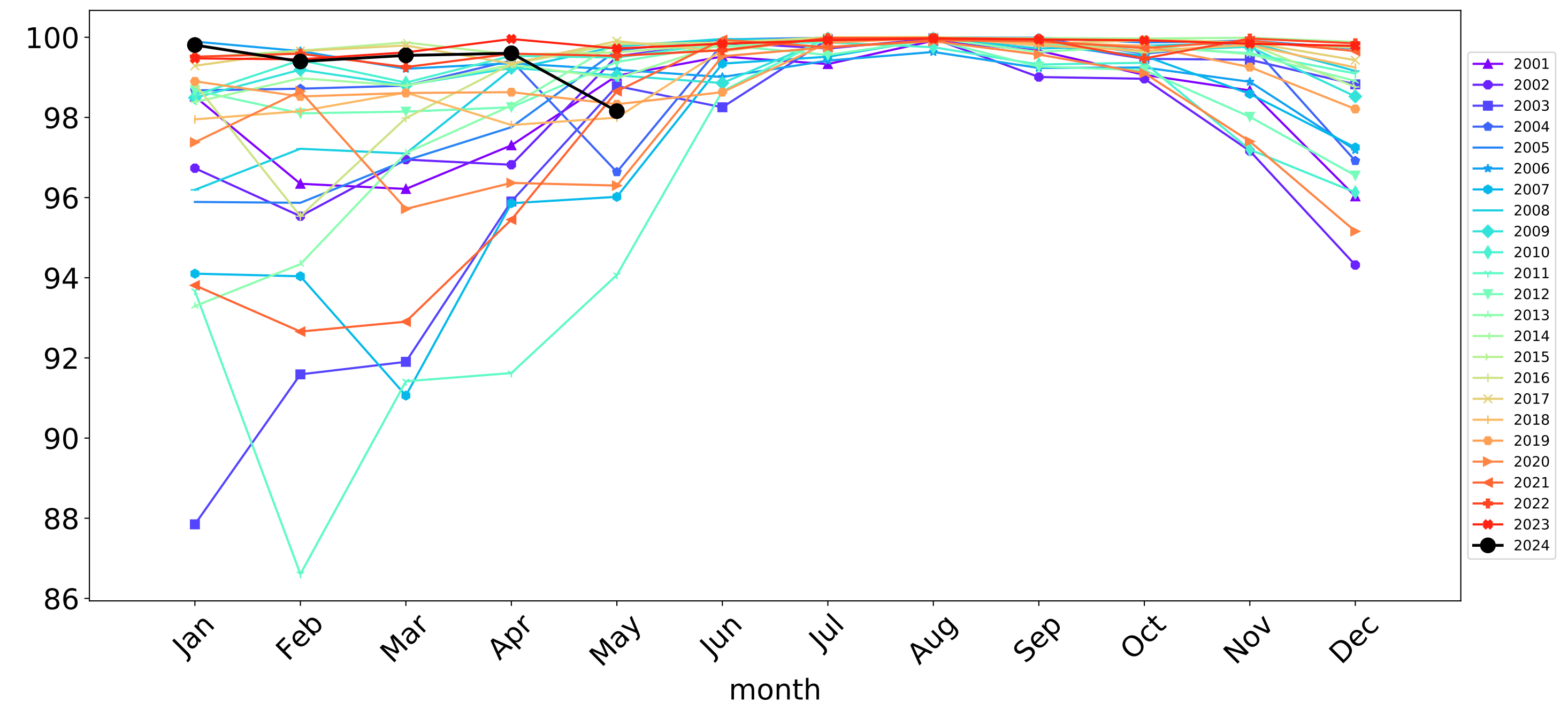


Agriculture timeseries

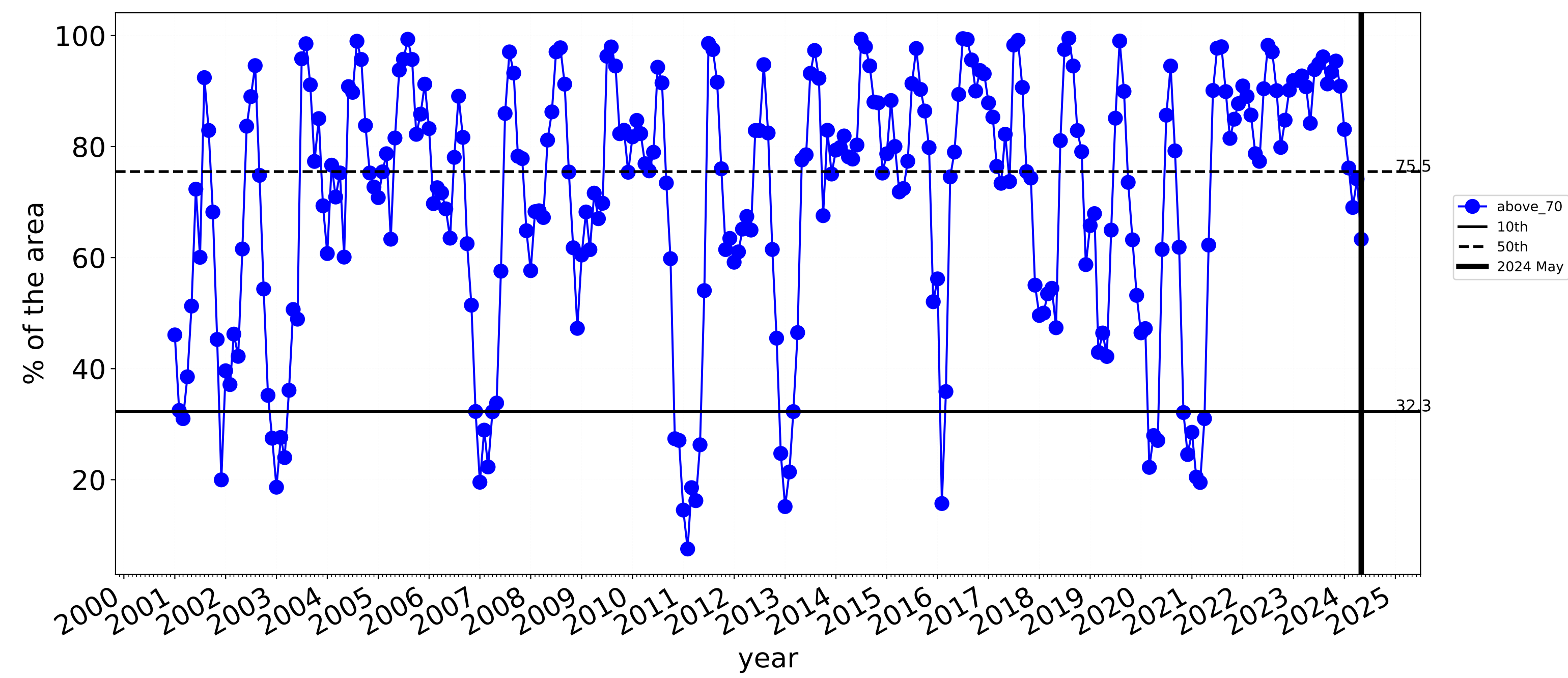
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



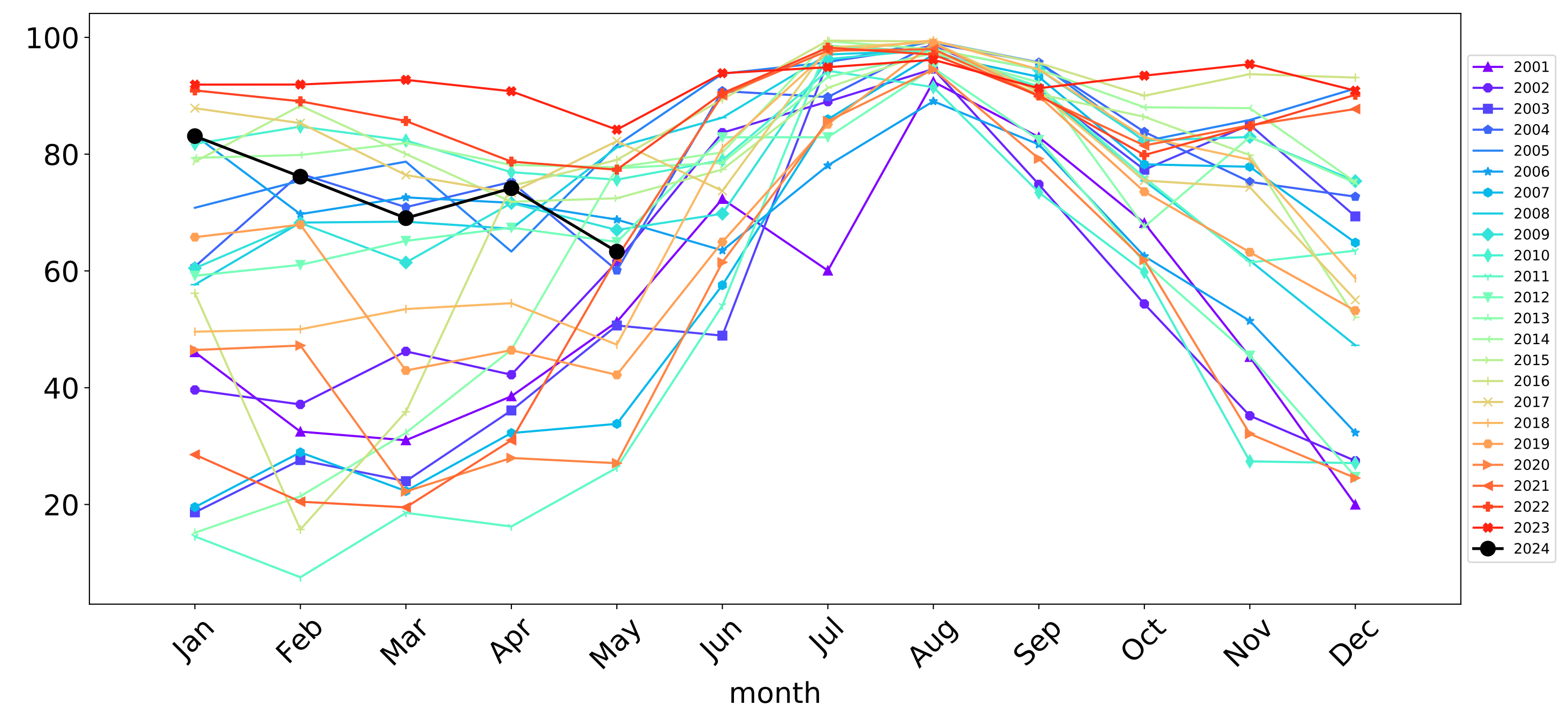
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



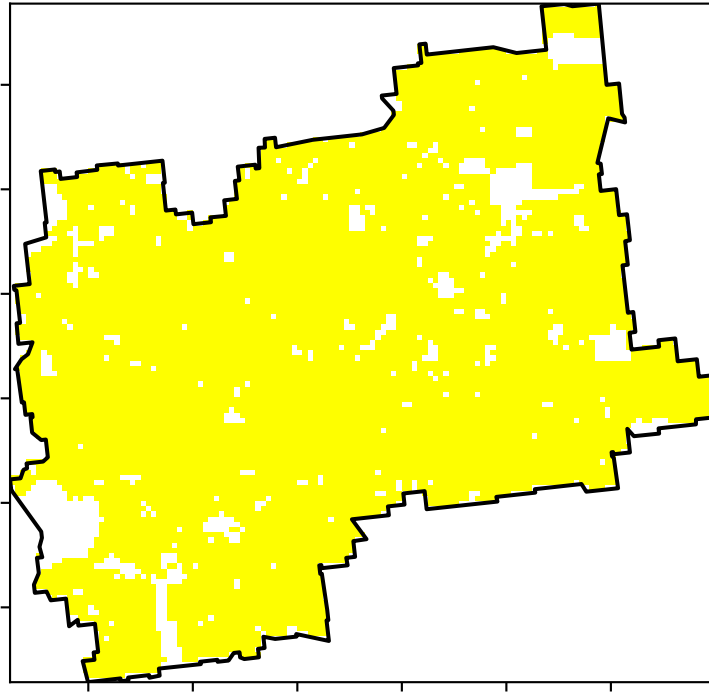
Water erosion historical monthly area protected (Total Veg Cov>70%)



Cropping

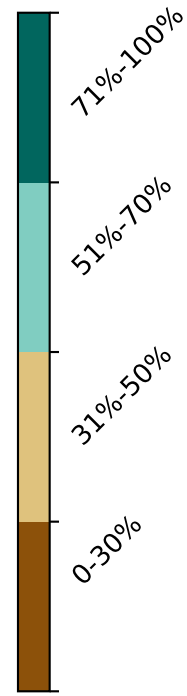
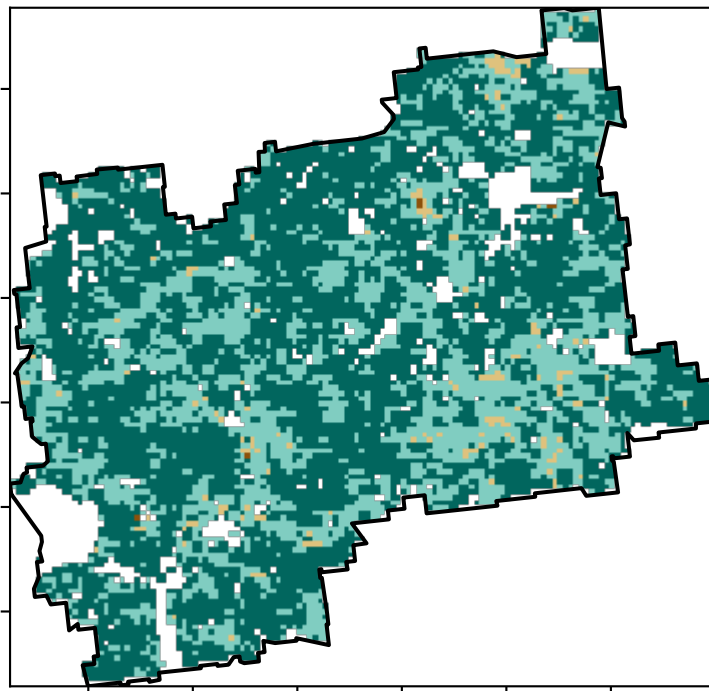
Land use and forest cover

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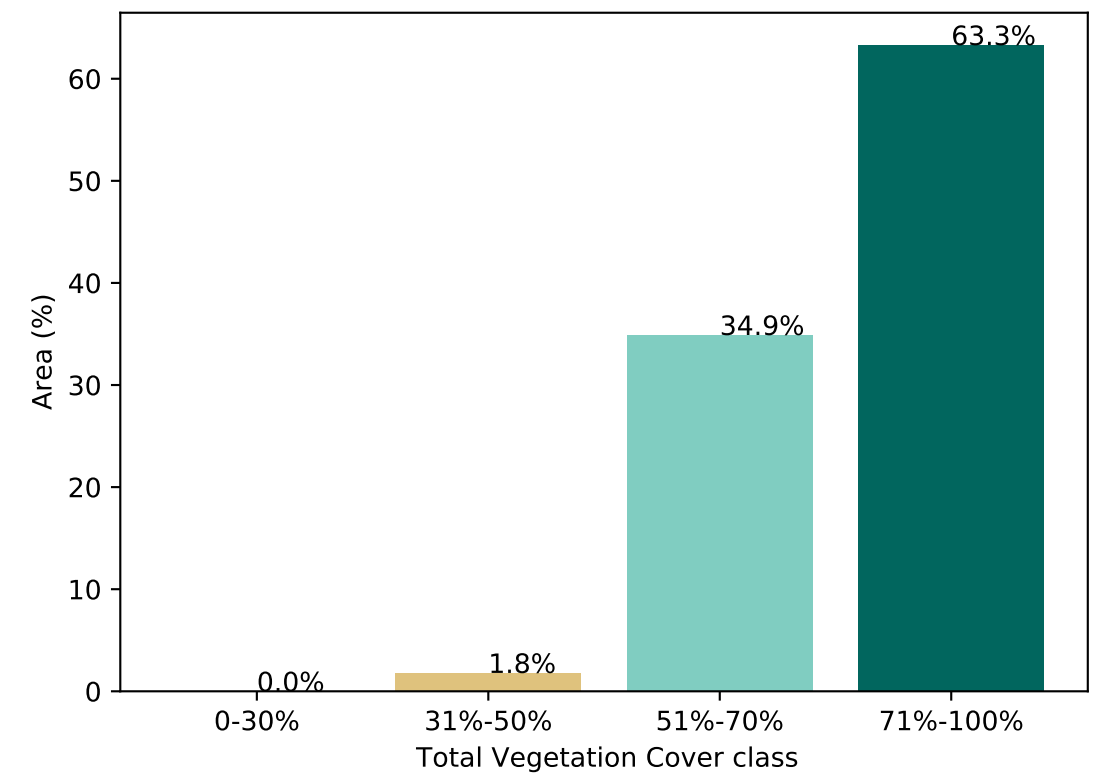


1 Agriculture - Cropping - Non-irrigated

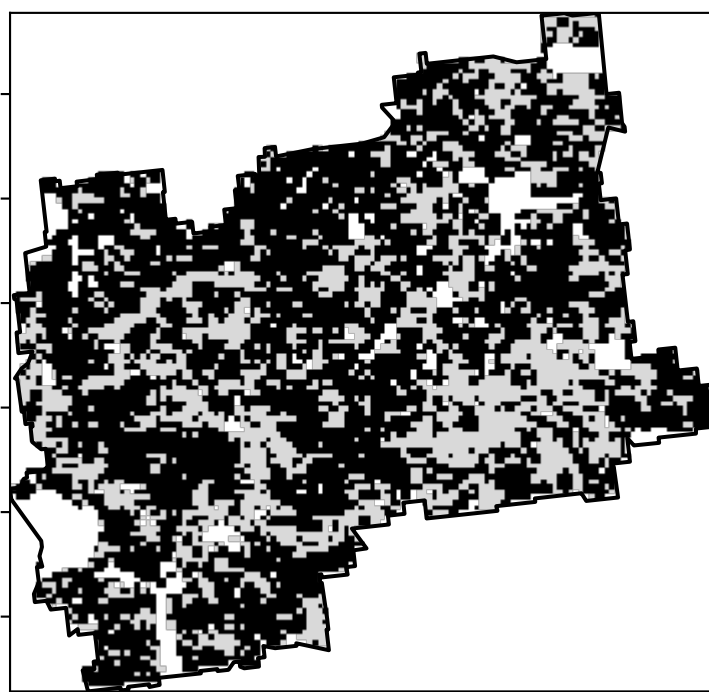
Total Vegetation Cover [%]



Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)



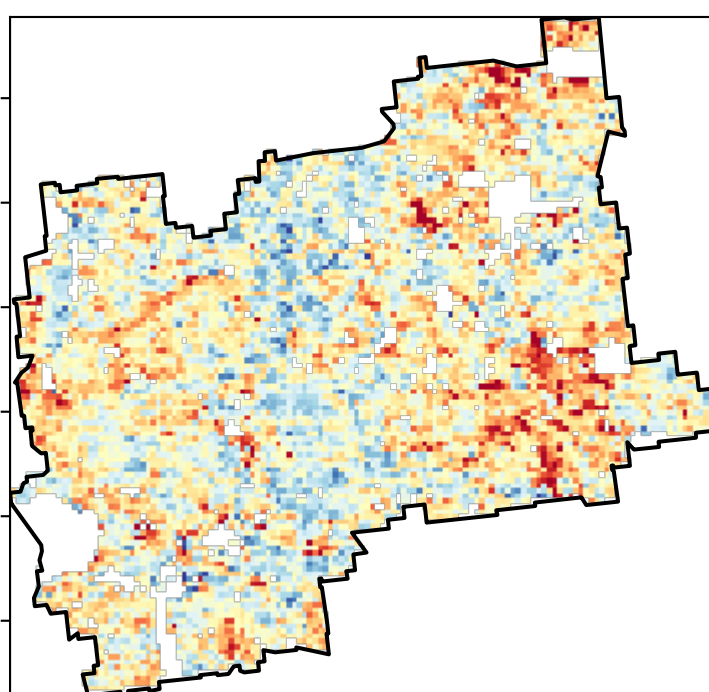
Area not protected
36.7% of region
(84,997 ha)
Area protected
63.3% of region
(146,603 ha)

% Area protected from wind erosion (>50%)

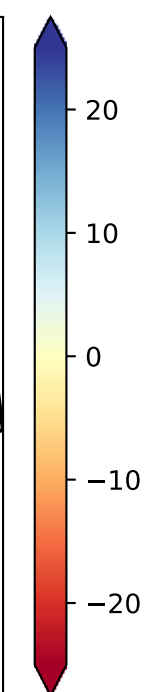


Area not protected
2.0% of region
(4,632 ha)
Area protected
98.0% of region
(226,968 ha)

Total Vegetation Cover Anomaly [%]

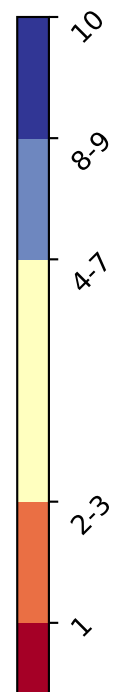
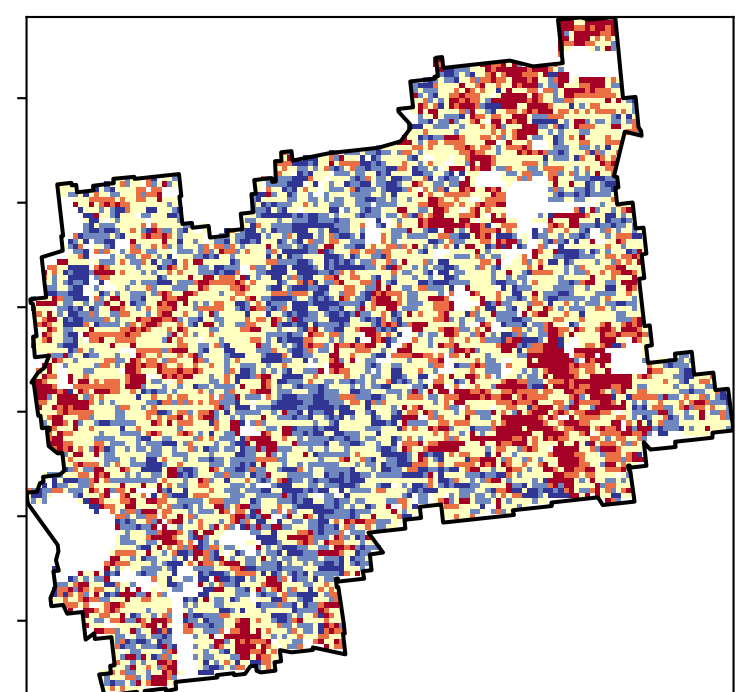


Anomaly show how many percentage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



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

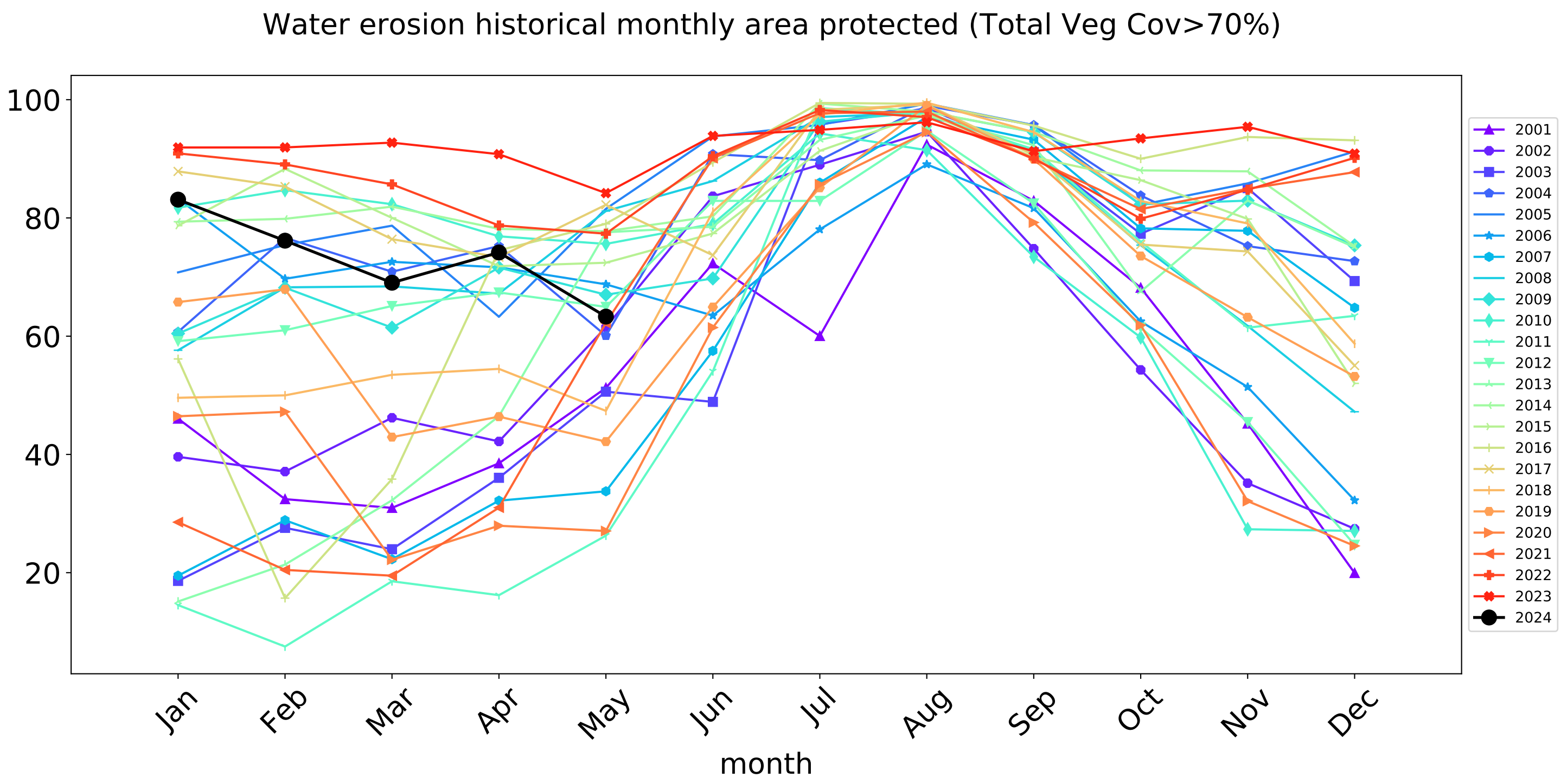
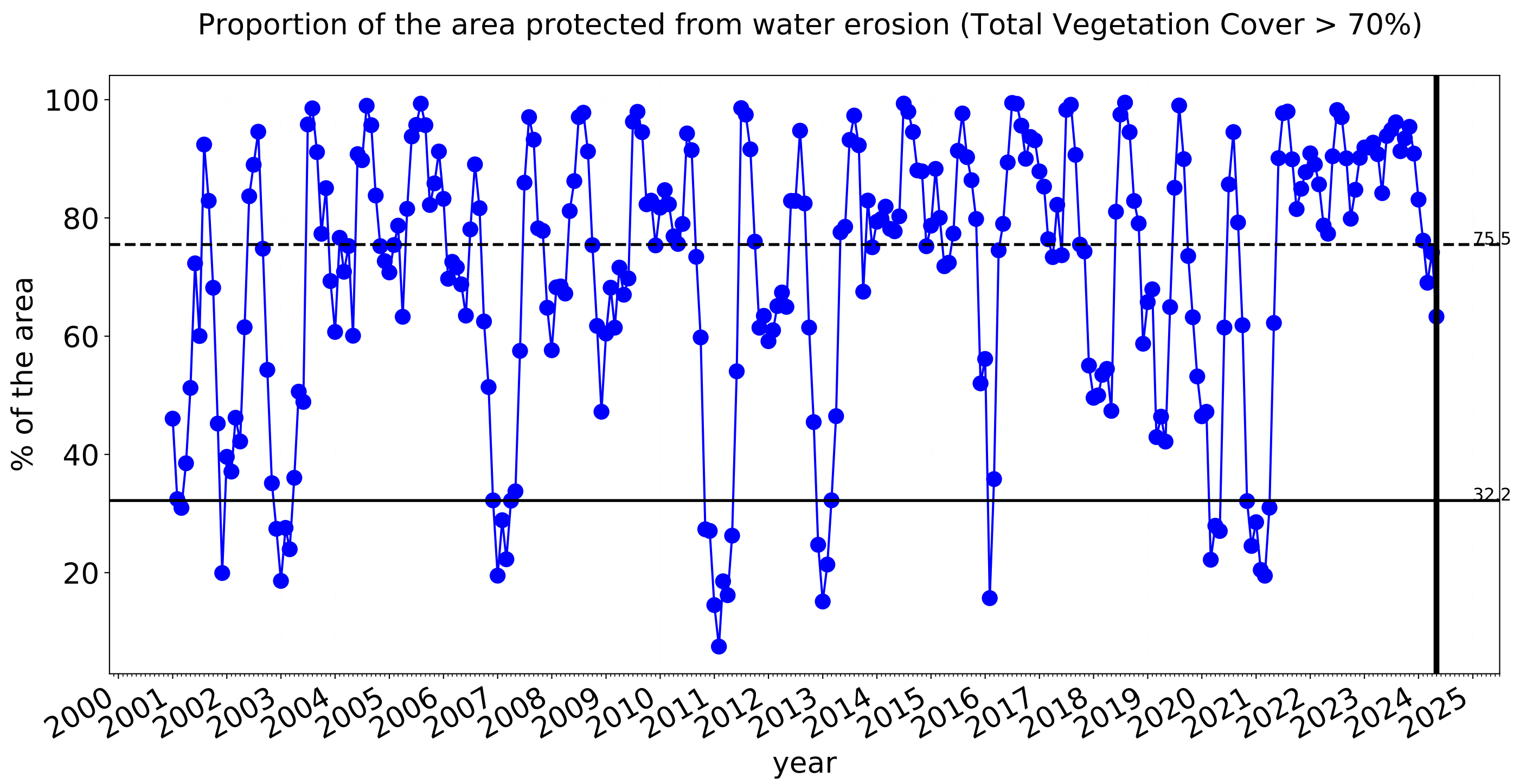
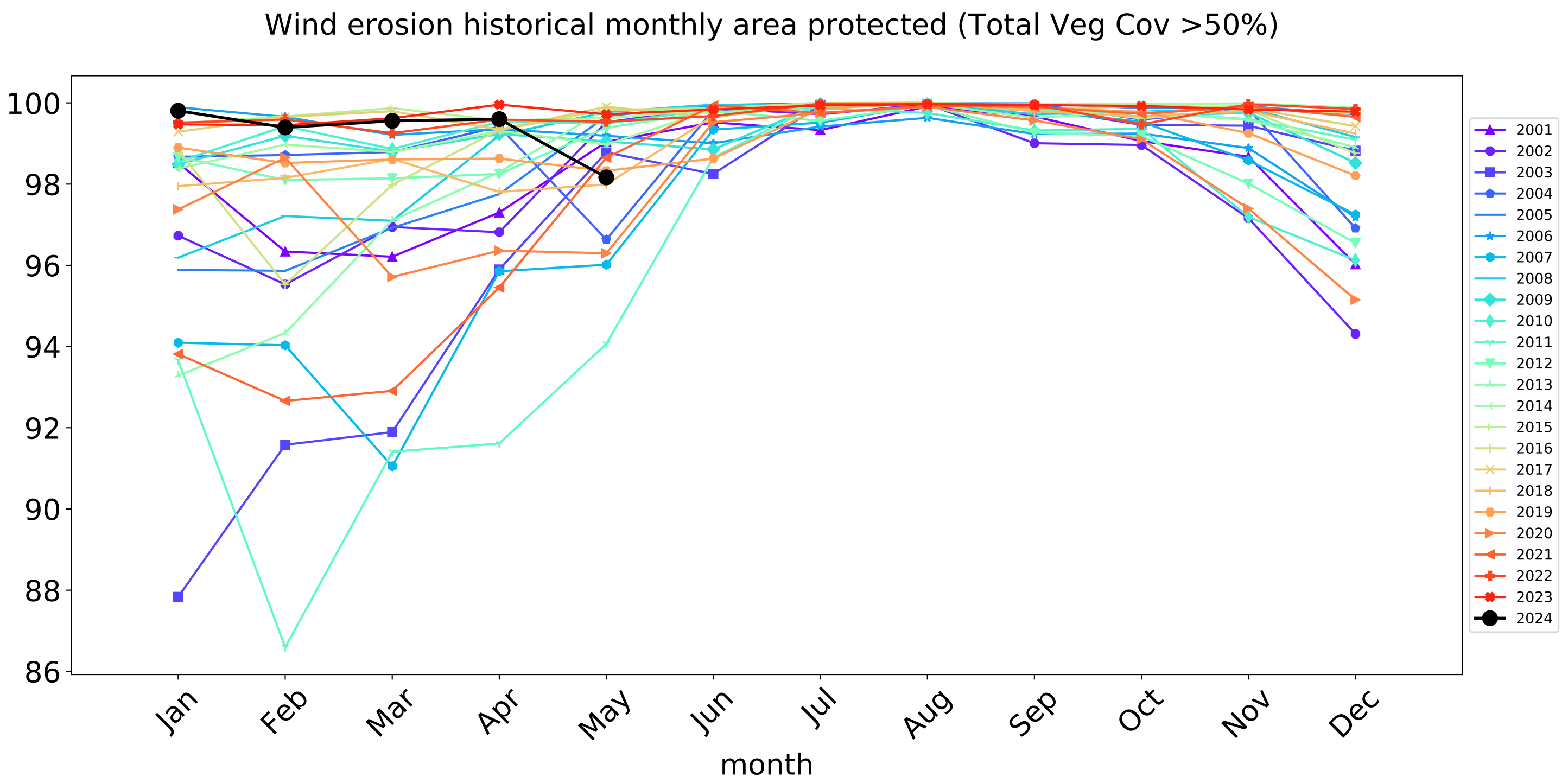
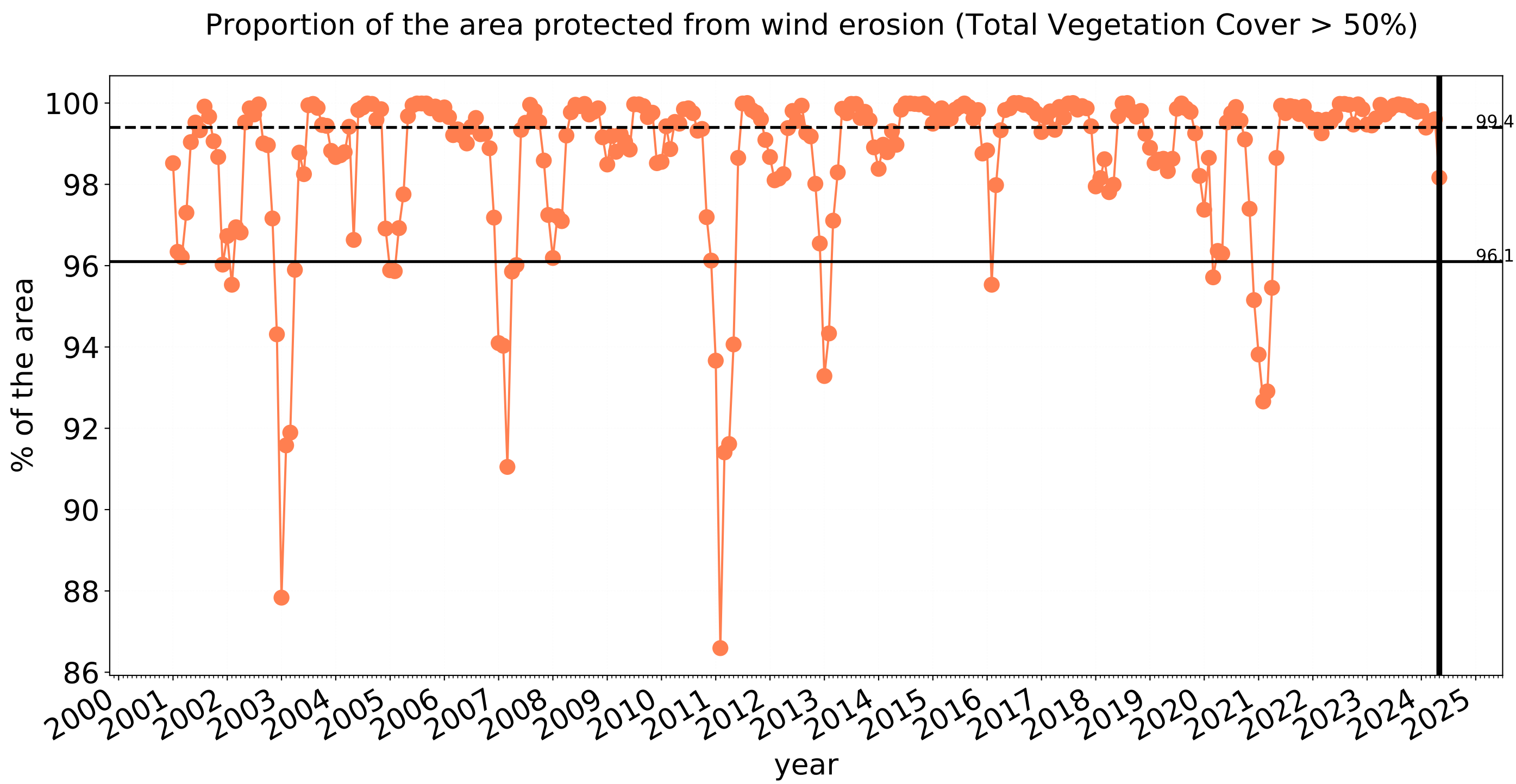
Ecosystem Research Infrastructure



National
Landcare
Programme



Cropping timeseries



Dumbleyung_(S) (250,725 ha and no data 3,169 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	250,725	99.9% 250,550	98.2% 246,300	64.9% 162,825	22.8% 57,275	2.7% 6,850	0.7% 1,700
Conservation and natural environments	17,100	100.0% 17,100	99.4% 17,000	86.3% 14,750	56.3% 9,625	11.3% 1,925	2.2% 375
Conservation and natural environments non forest	10,475	100.0% 10,475	99.0% 10,375	82.1% 8,600	52.5% 5,500	7.2% 750	1.7% 175
Conservation and natural environments Woodland forest	6,625	100.0% 6,625	100.0% 6,625	92.8% 6,150	62.3% 4,125	17.7% 1,175	3.0% 200
Agriculture	231,850	99.9% 231,700	98.2% 227,575	63.3% 146,775	20.3% 46,950	2.0% 4,600	0.5% 1,125
Cropping	231,600	99.9% 231,450	98.2% 227,350	63.3% 146,625	20.3% 46,900	2.0% 4,575	0.5% 1,125