

Total vegetation cover soil protection

Region:LGA Cranbrook_(S) WA

Date: June 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



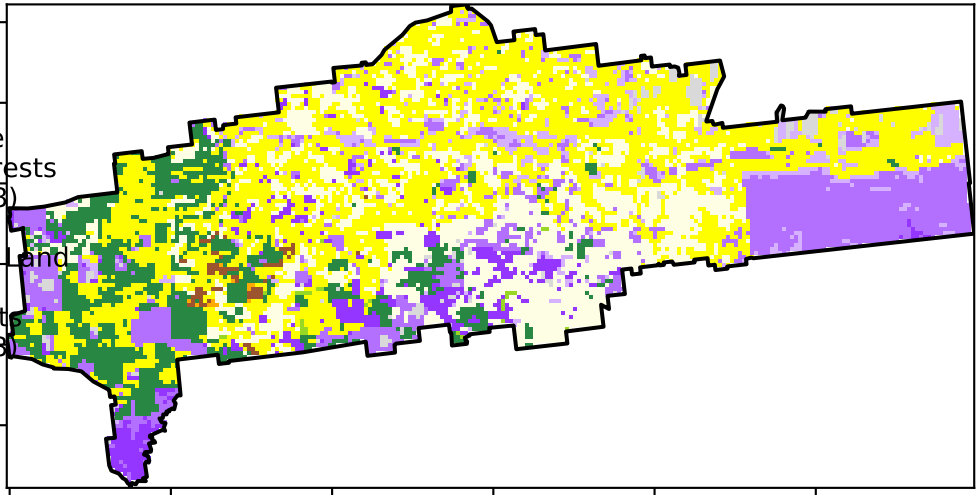
National
Landcare
Programme



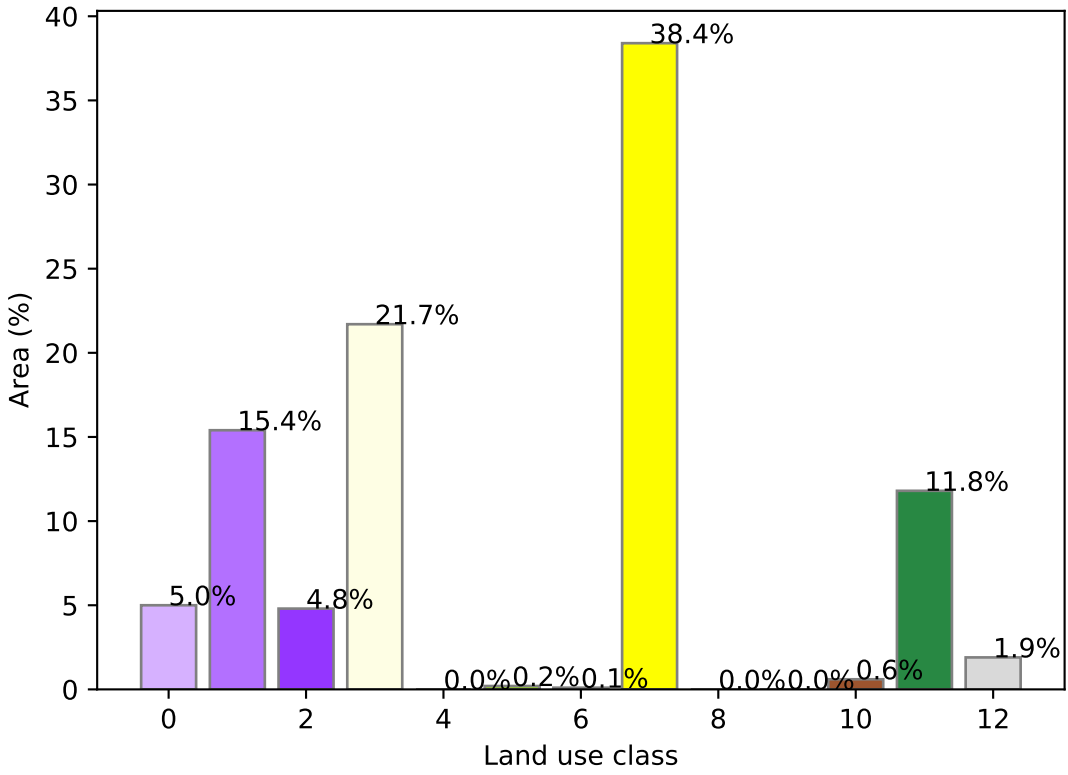
Vegetation Cover Jun 2024

Land use and forest cover

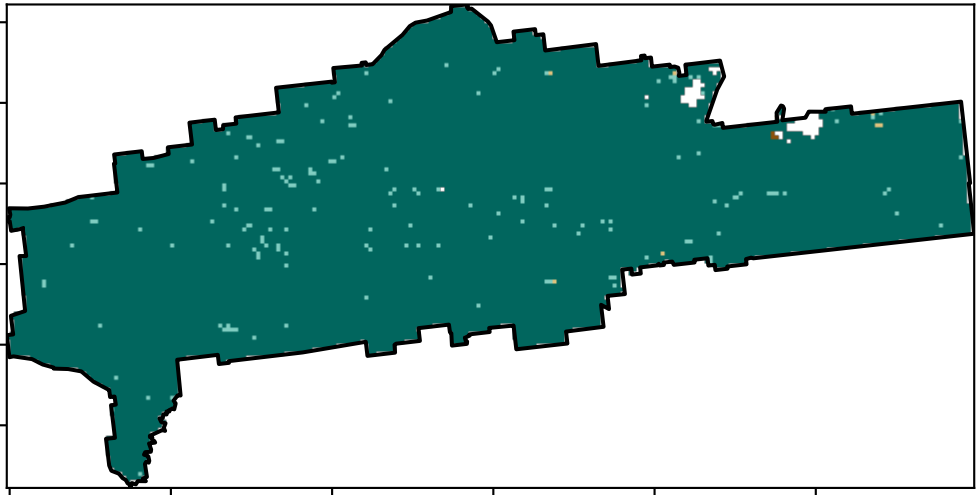
Catchment Scale
Land Use and Forests
of Australia (2018)
Derived from
Catchment Scale Land
Use of Australia
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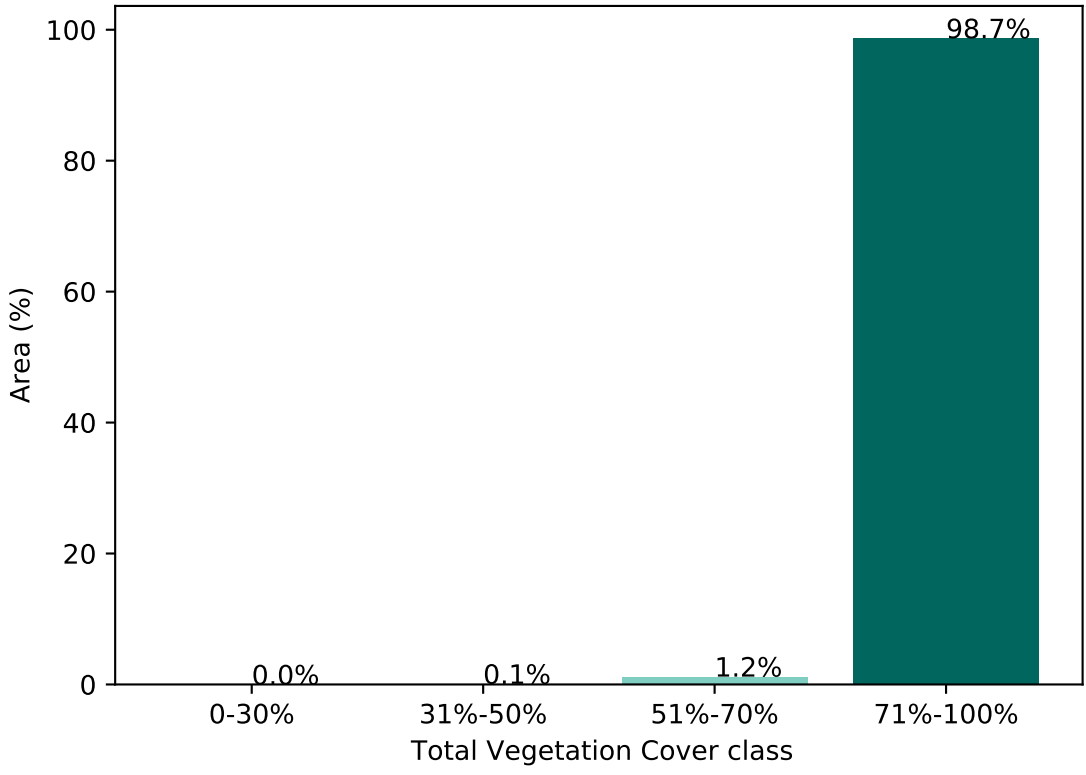
Proportion of each land class in area



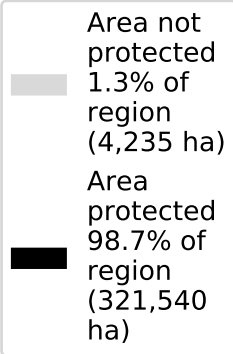
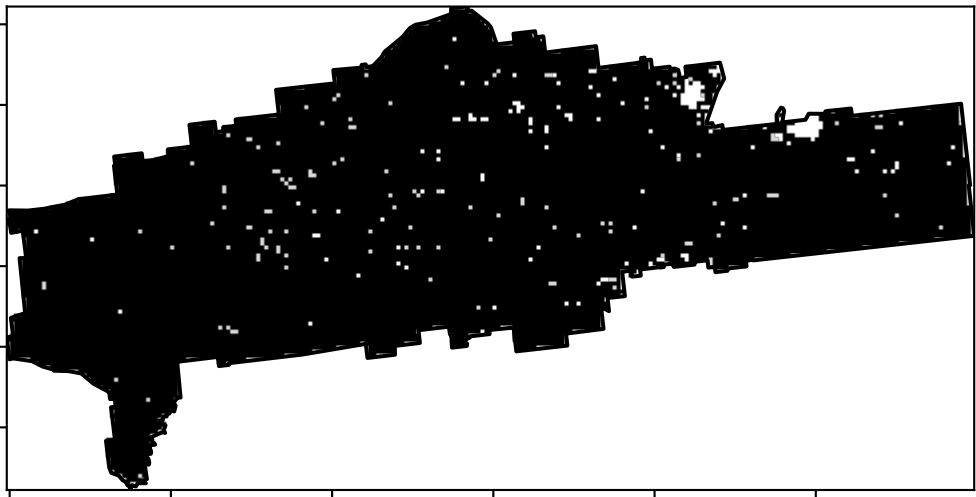
Total Vegetation Cover [%]



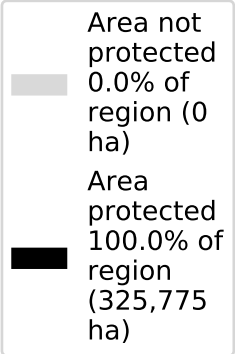
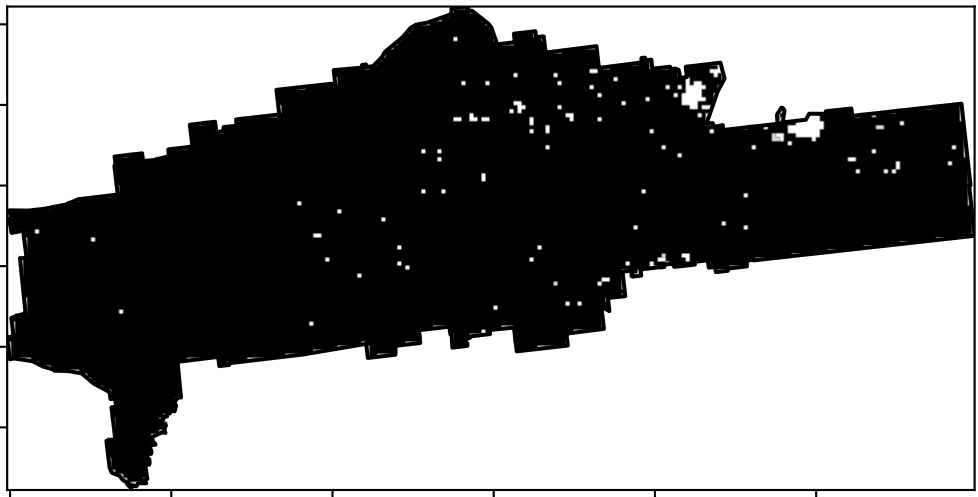
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

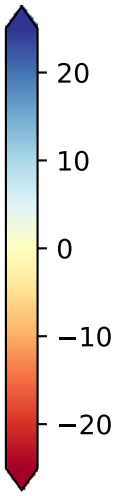
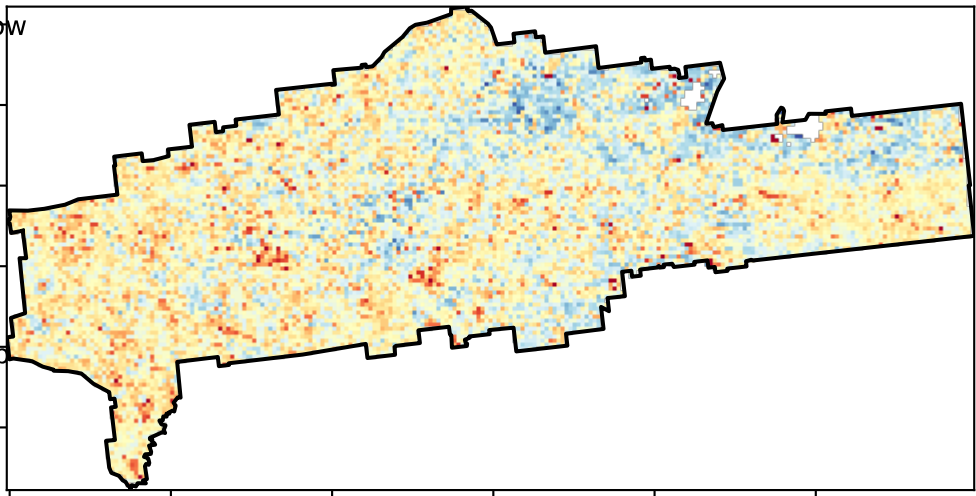


% Area protected from wind erosion (>50%)



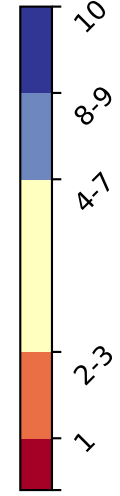
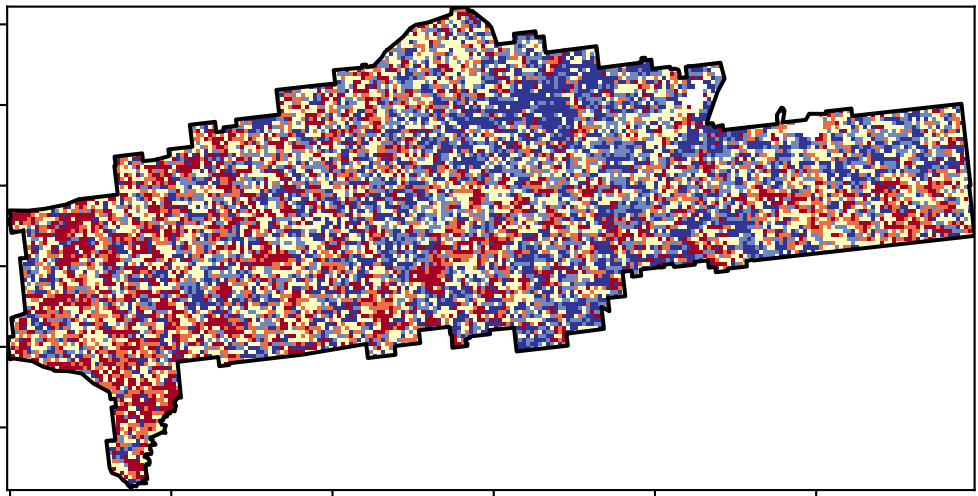
Total Vegetation Cover Anomaly [%]

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.



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Total Vegetation Cover Decile [%]



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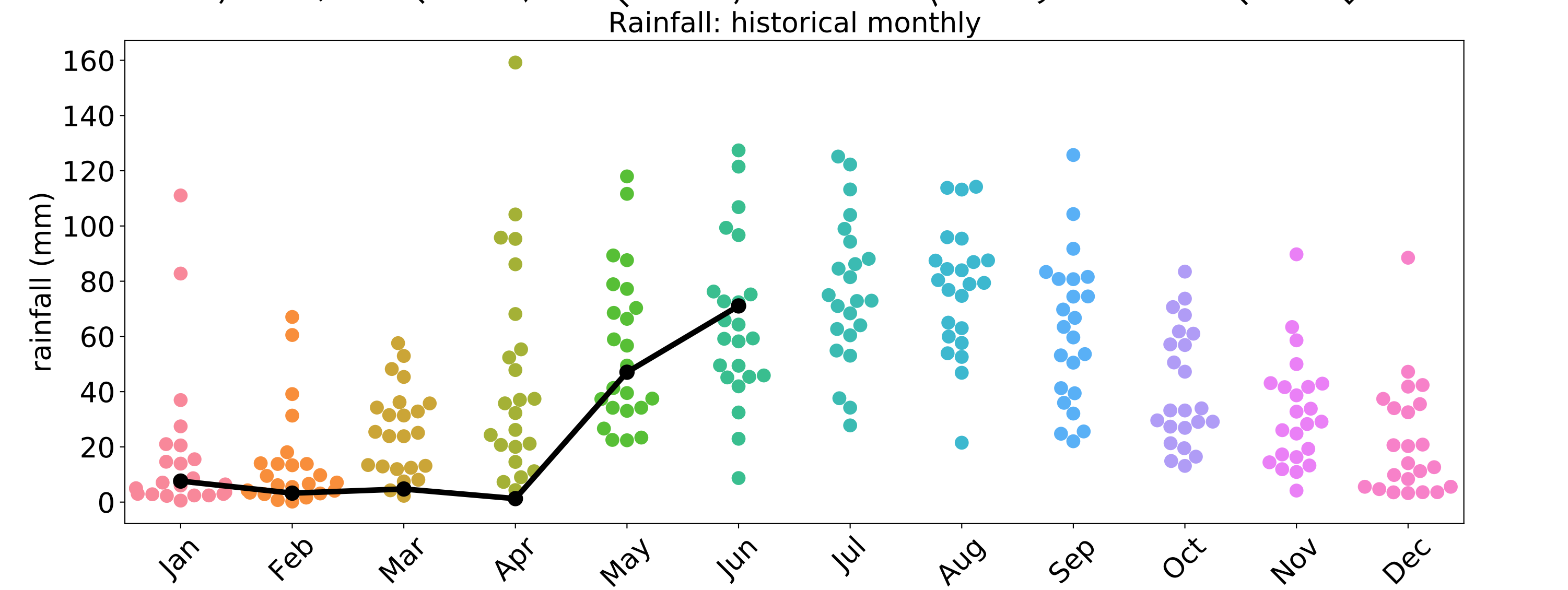
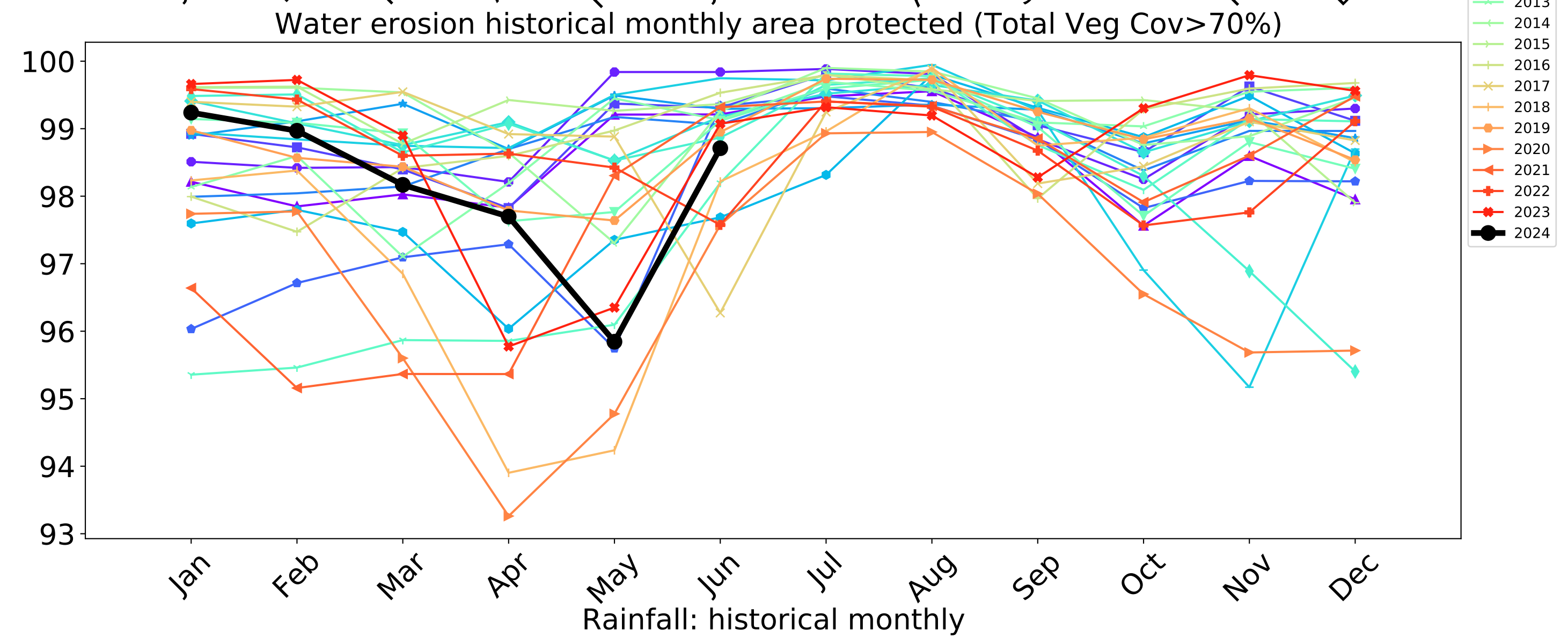
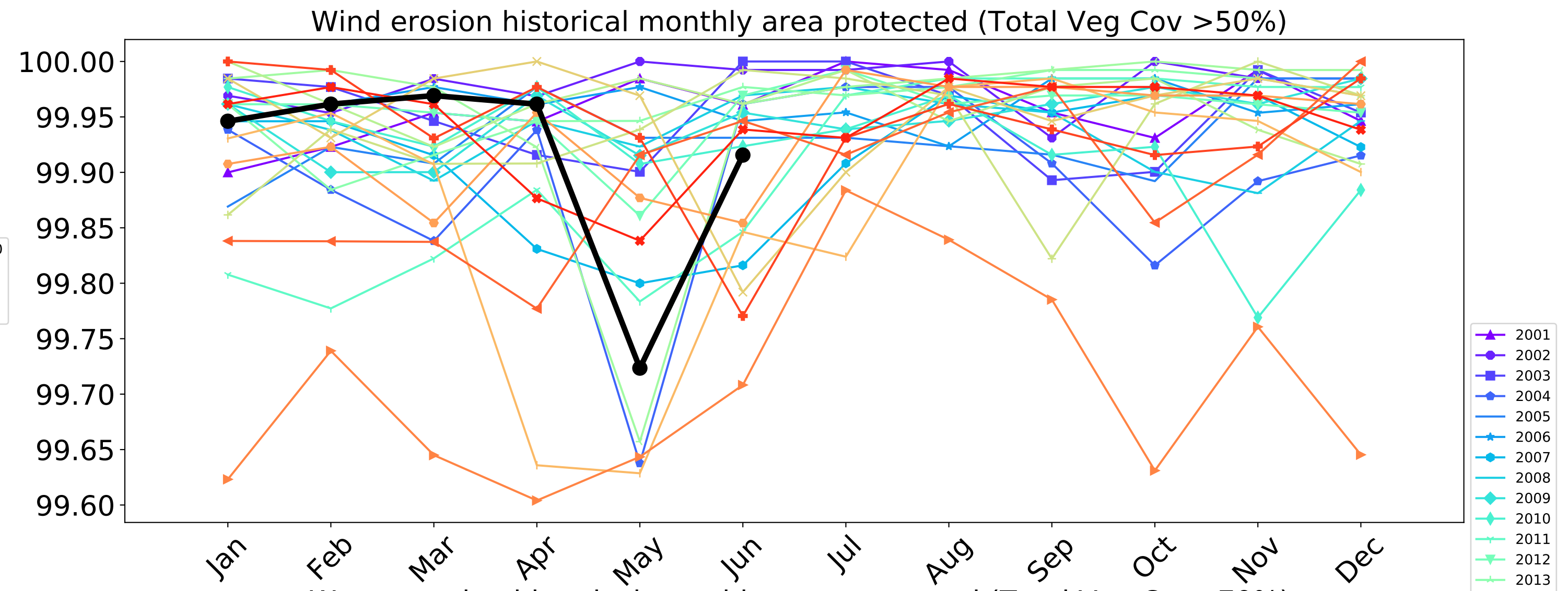
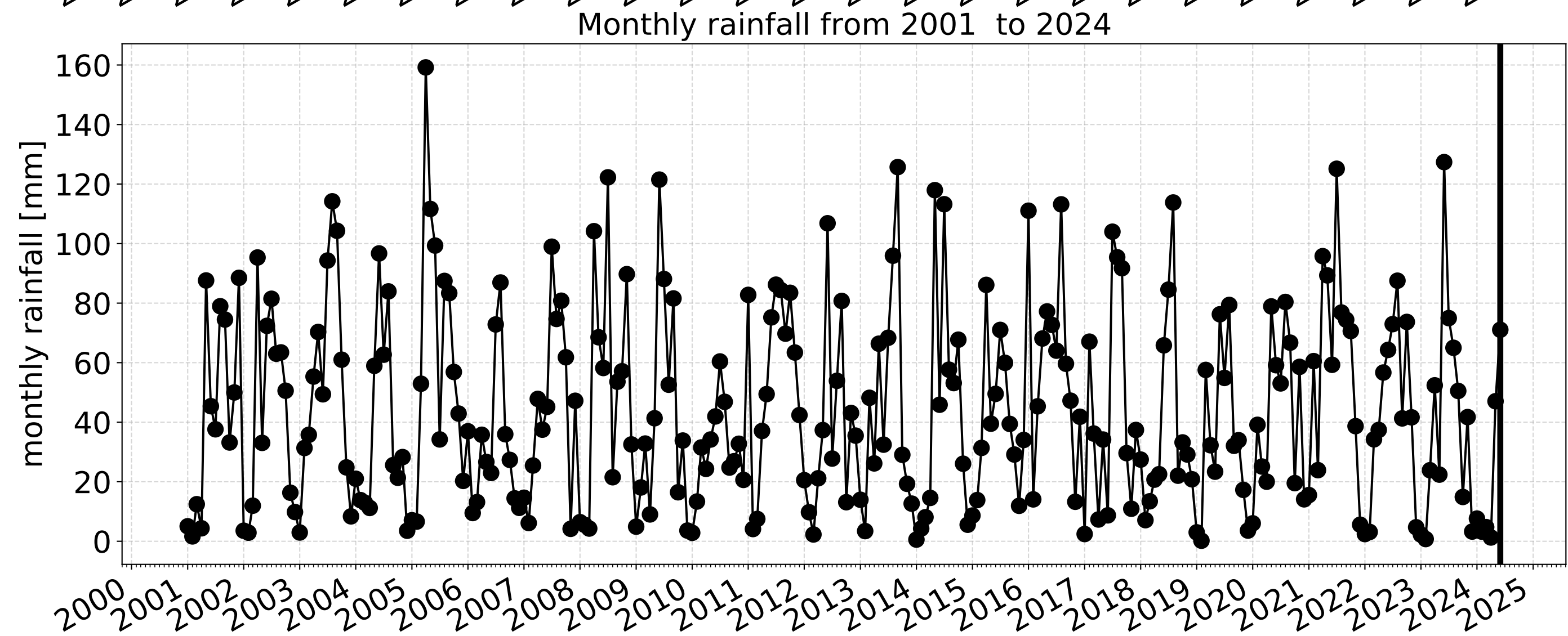
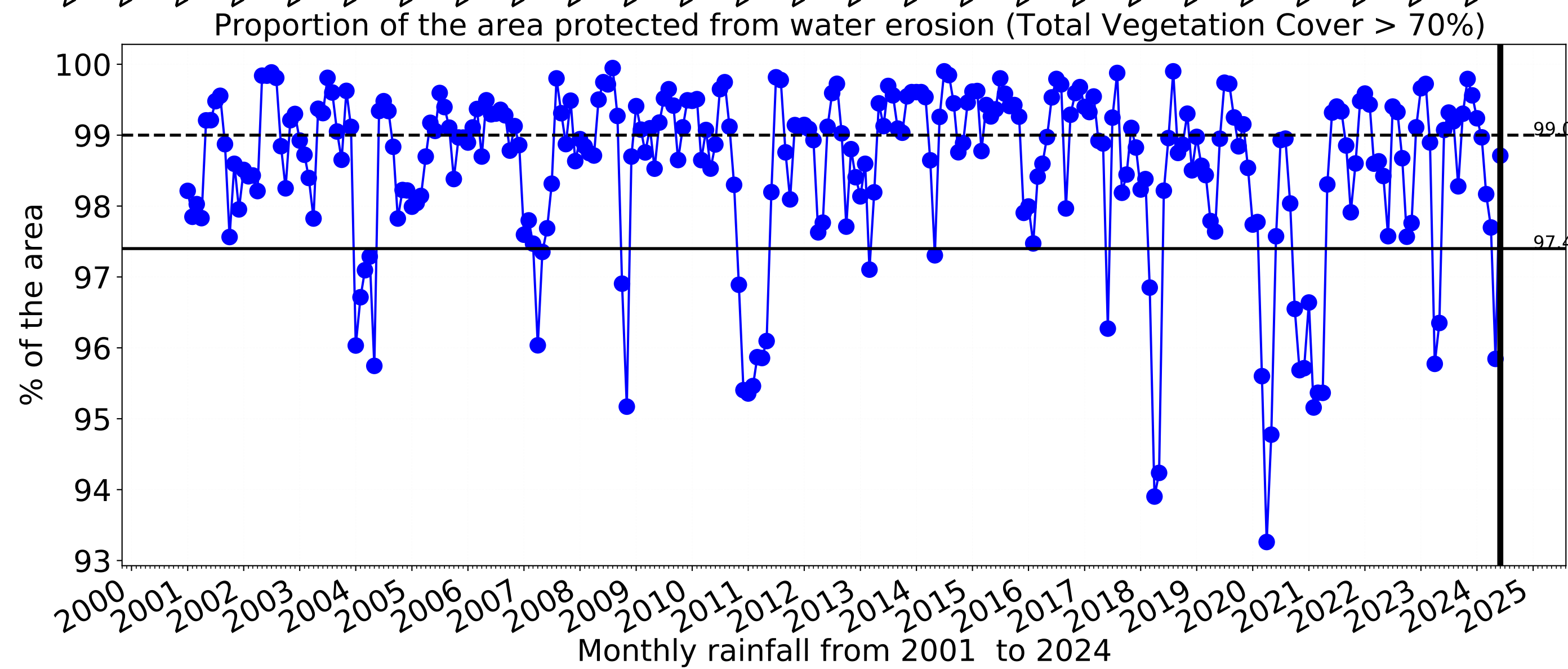
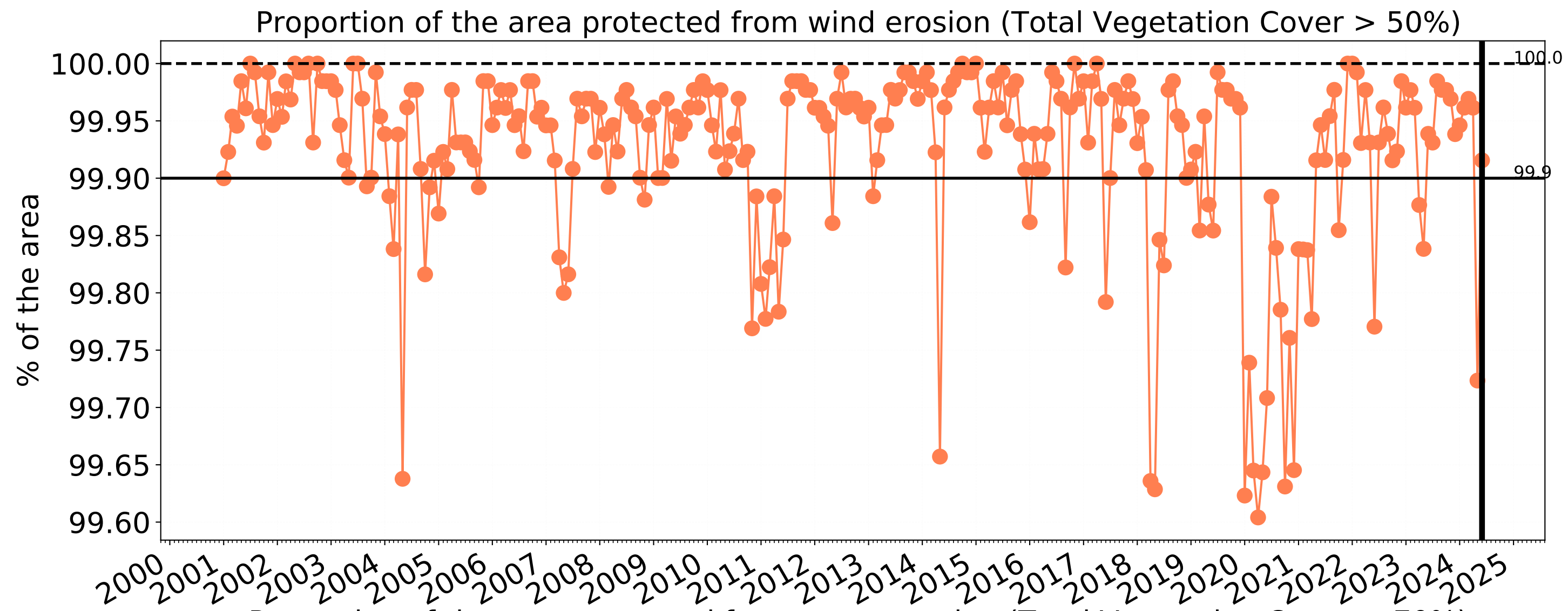
Ecosystem Research Infrastructure

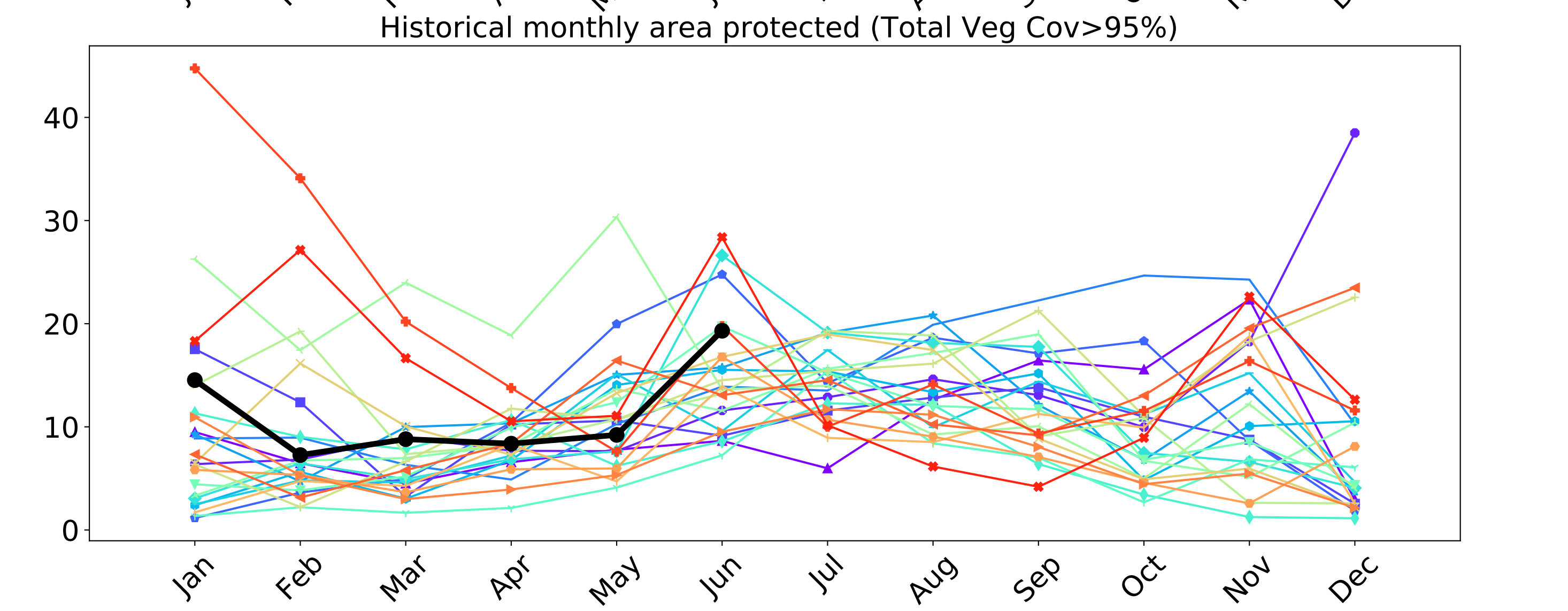
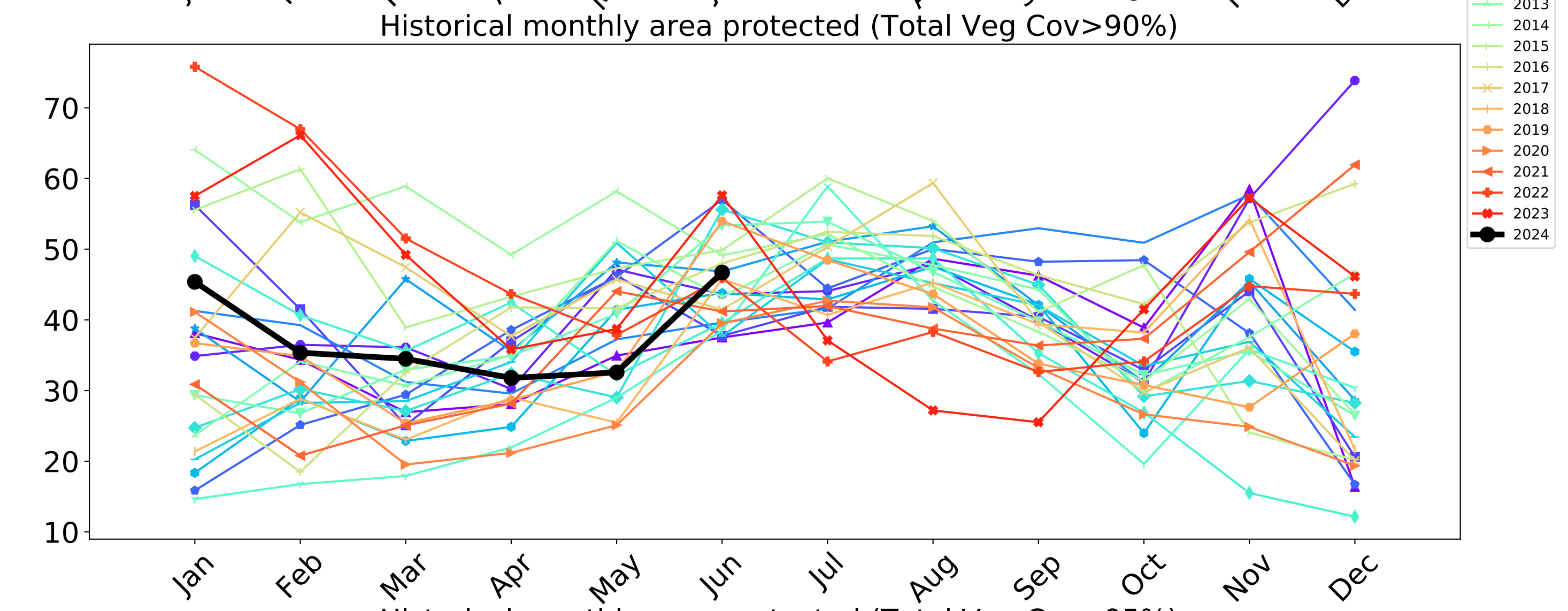
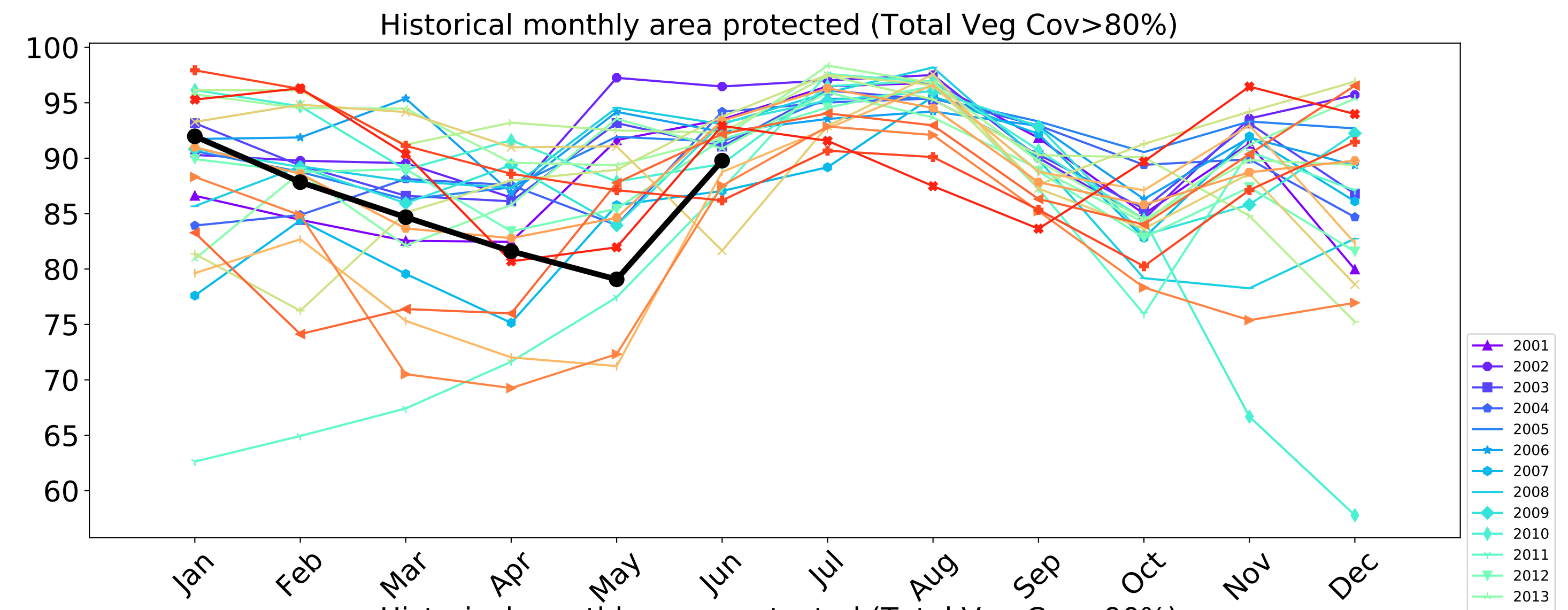
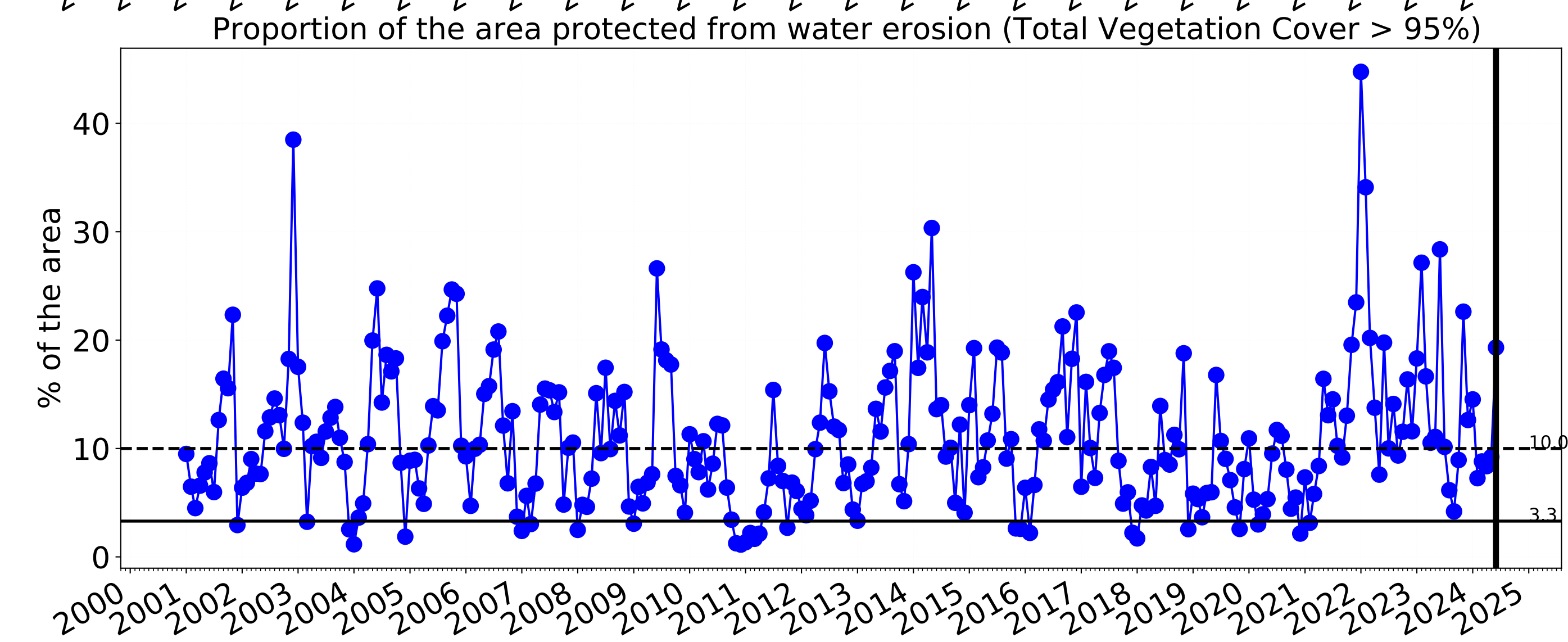
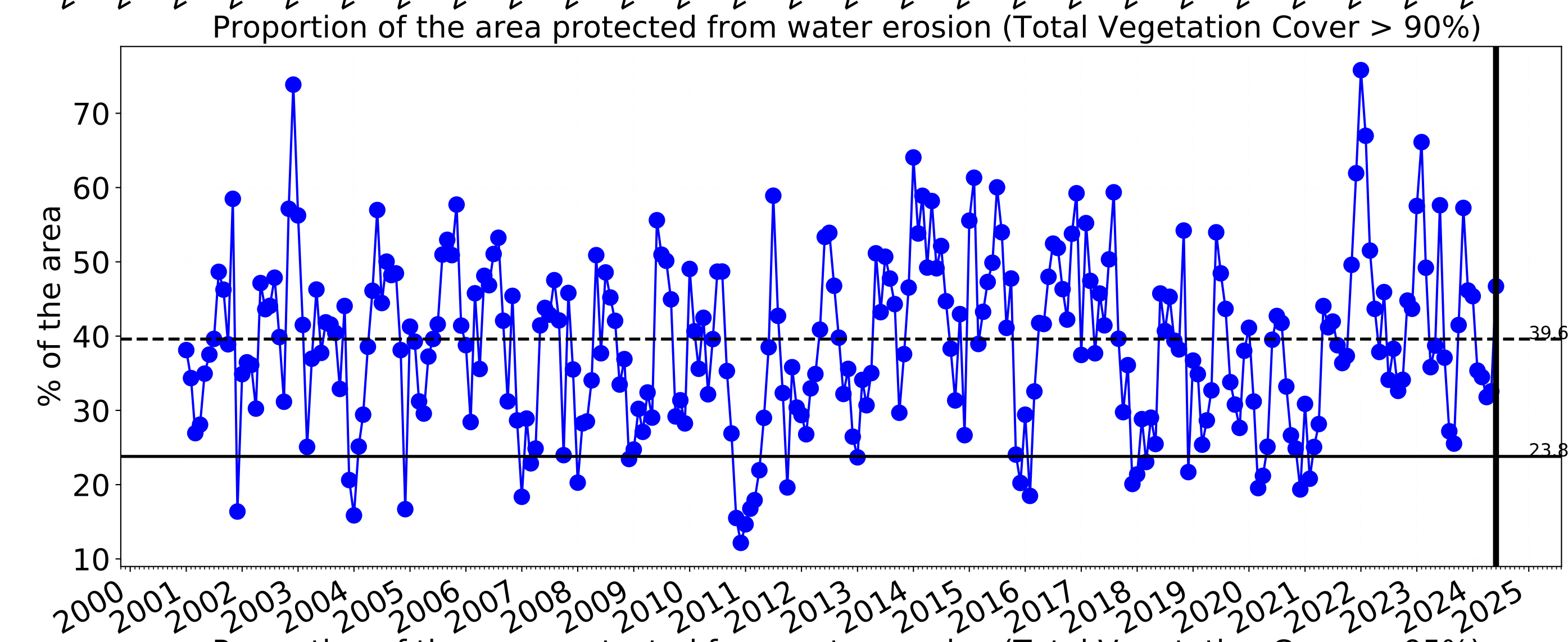
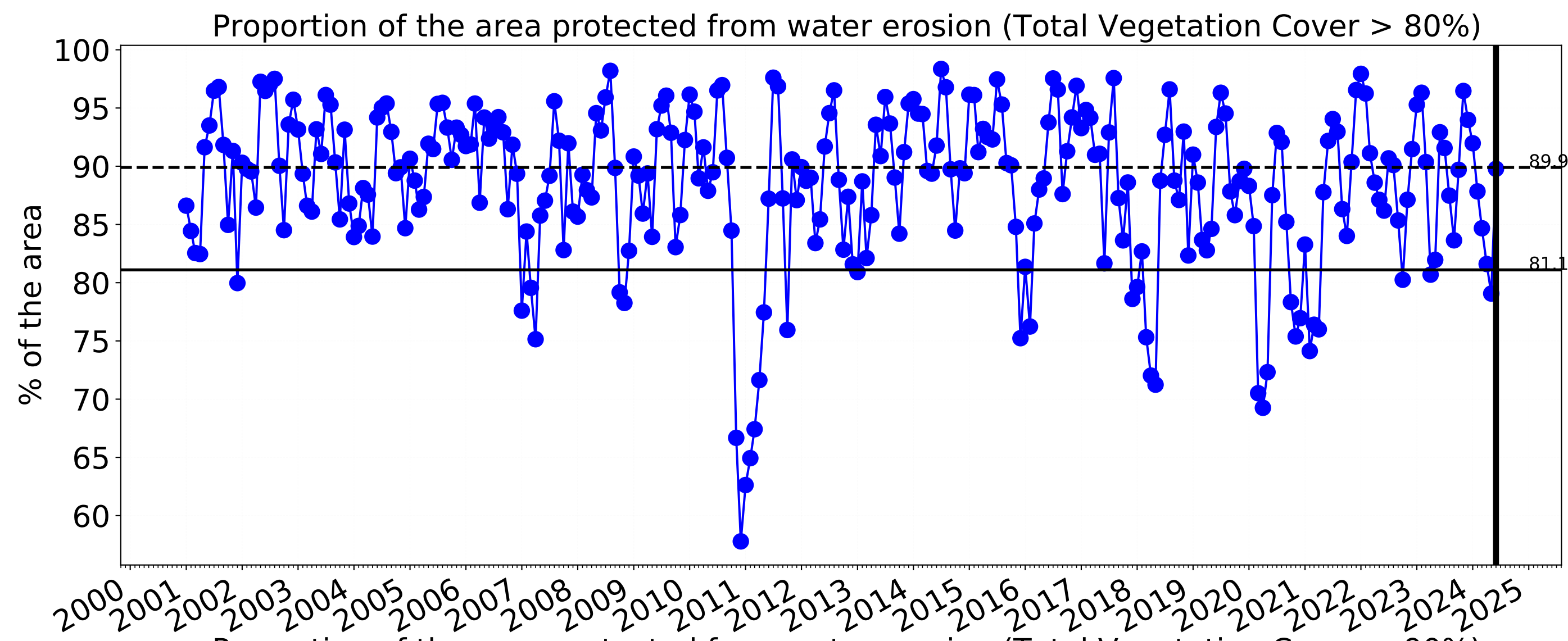


Australian Government

National Landcare Programme







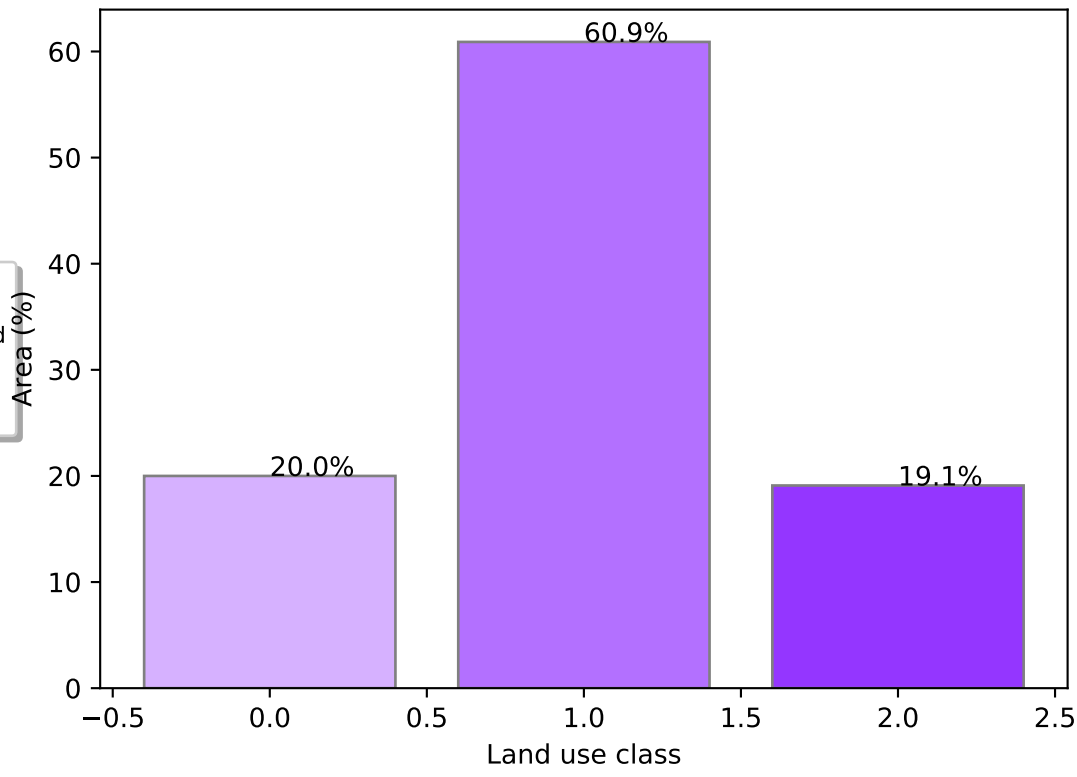
Conservation and natural environments

Land use and forest cover

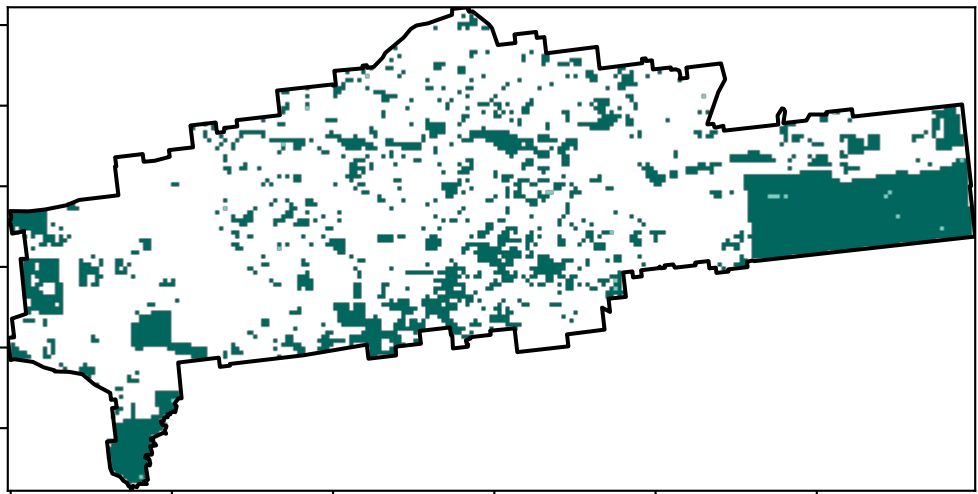
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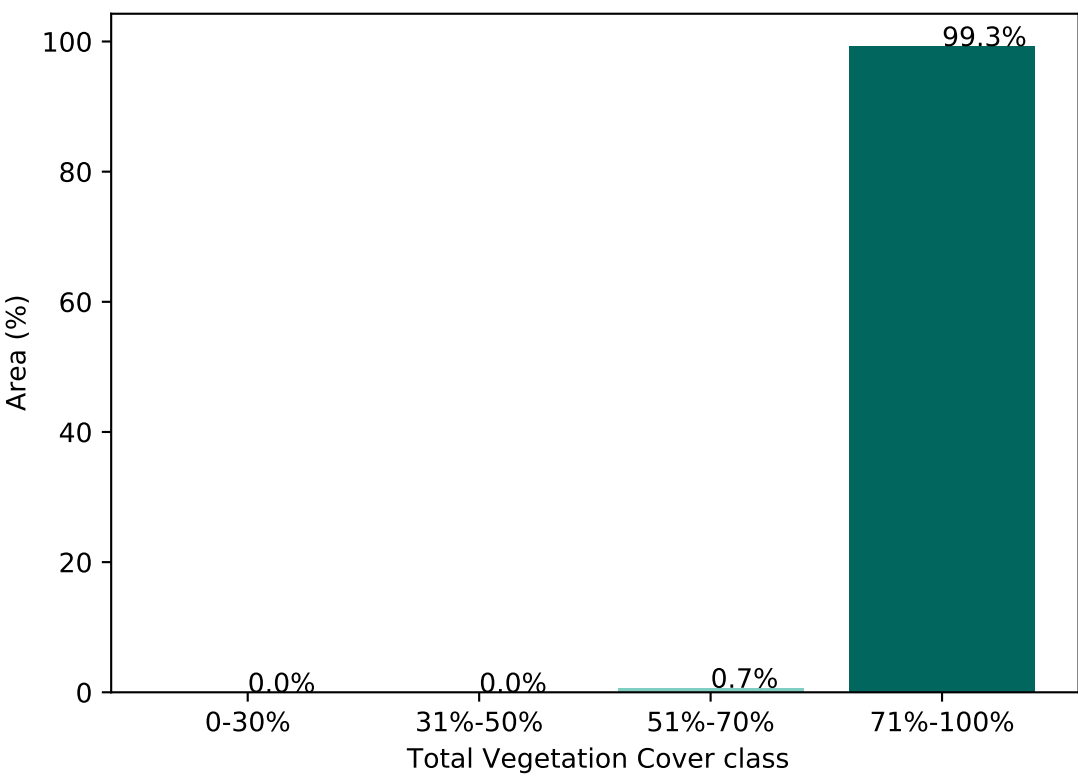
Proportion of each land class in area



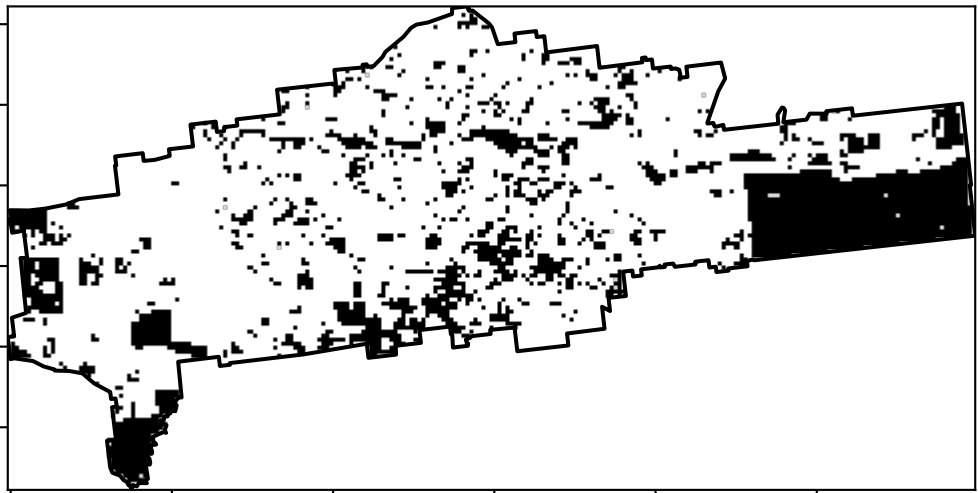
Total Vegetation Cover [%]



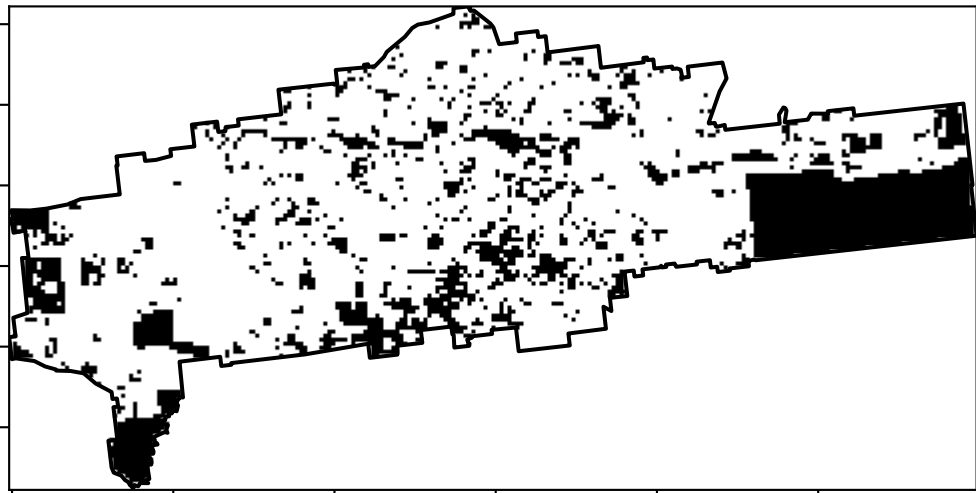
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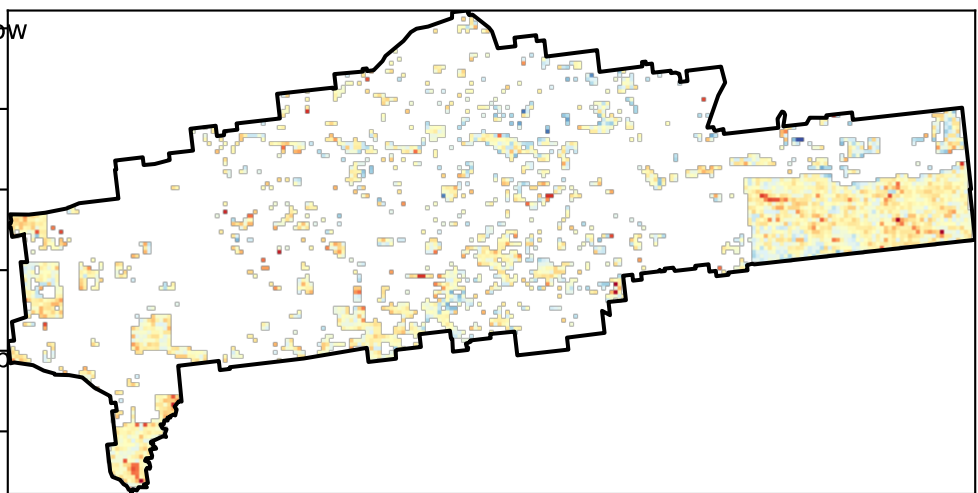


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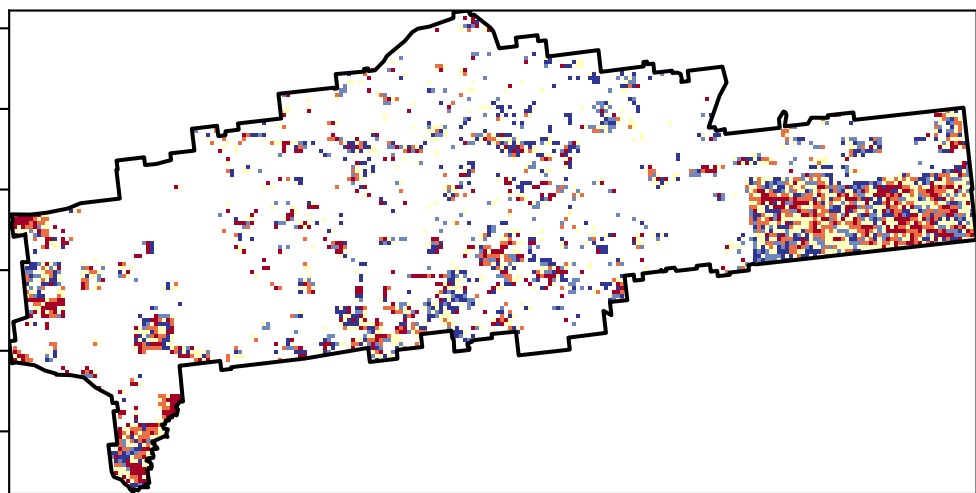
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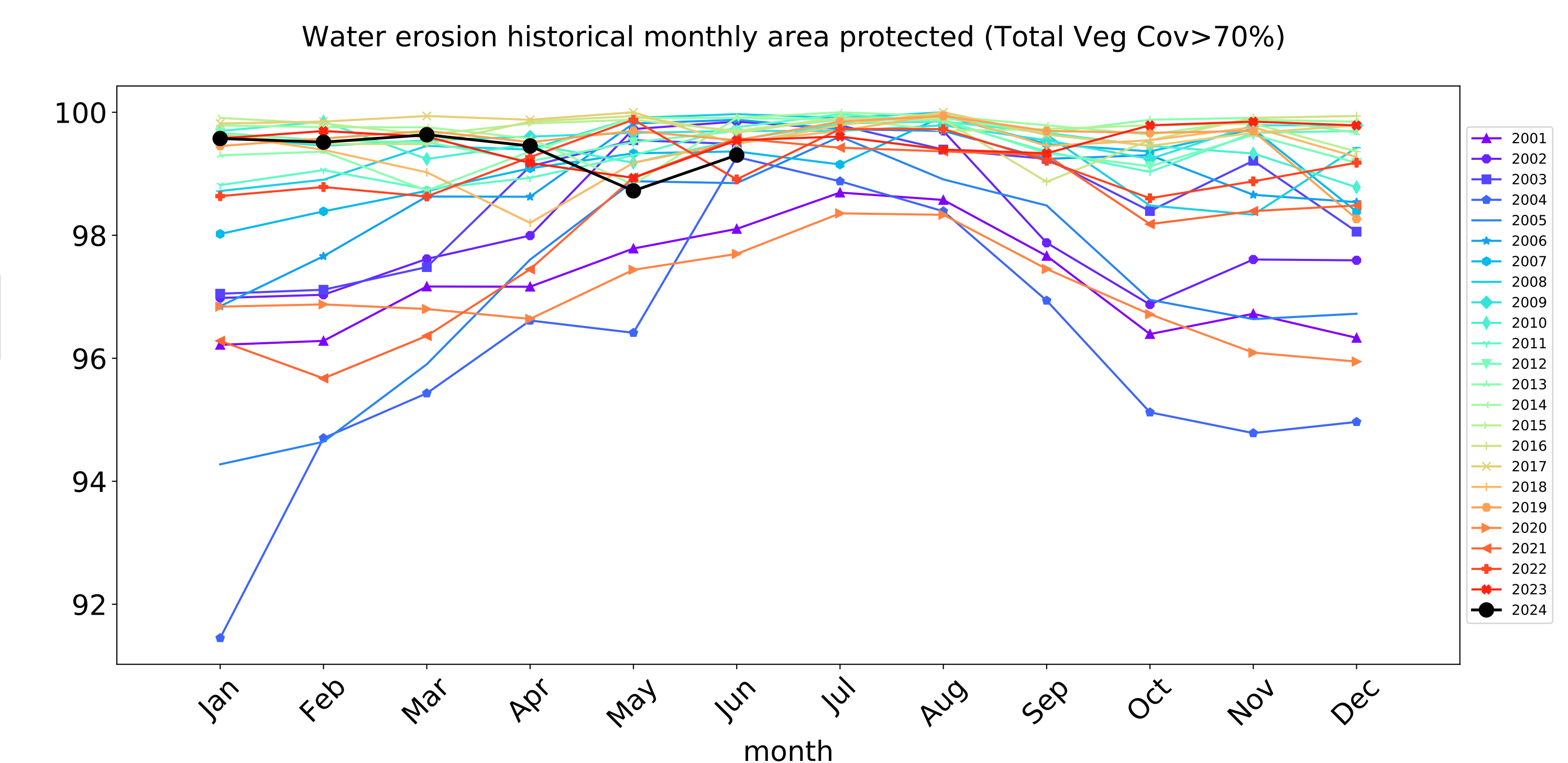
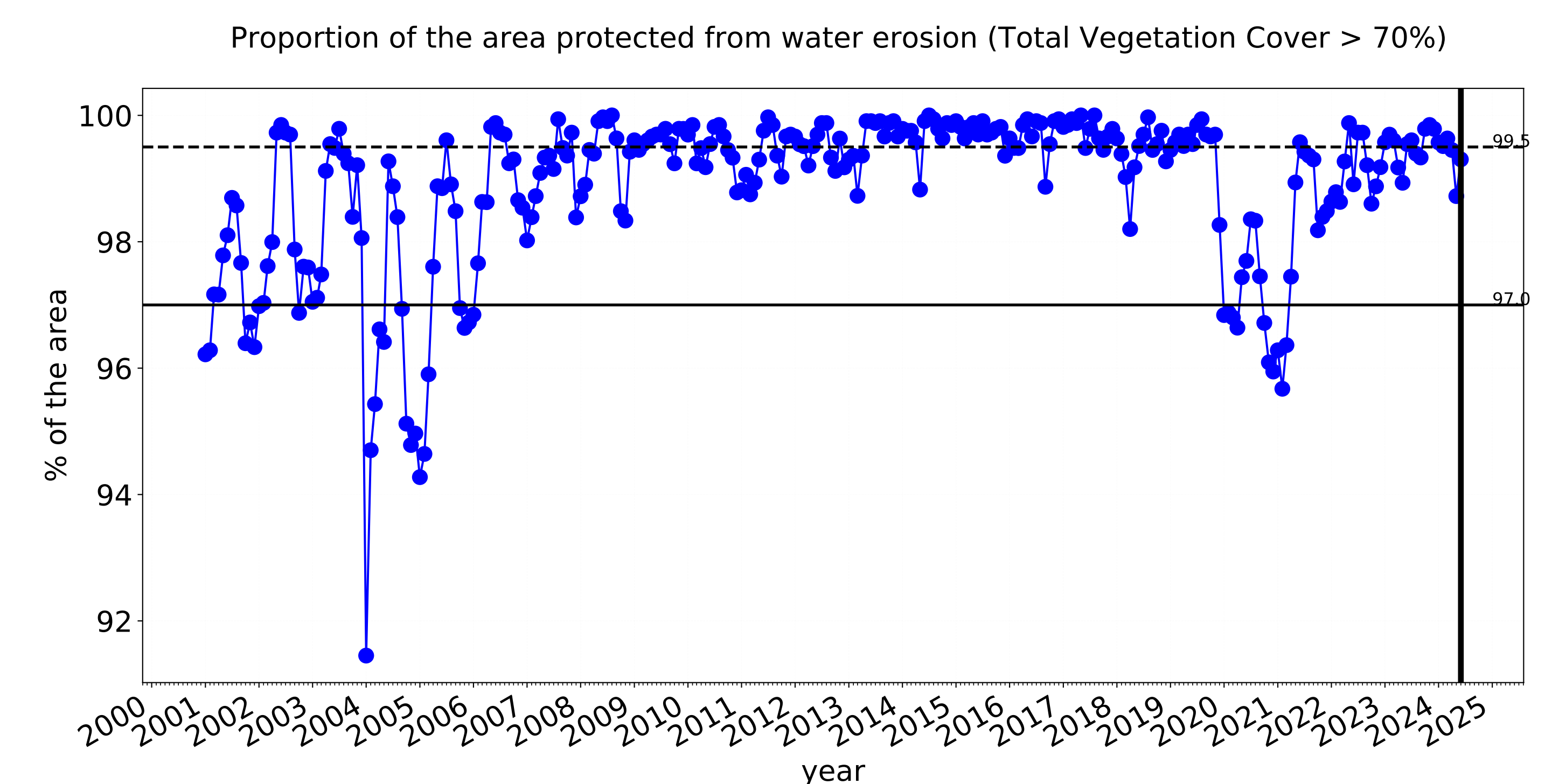
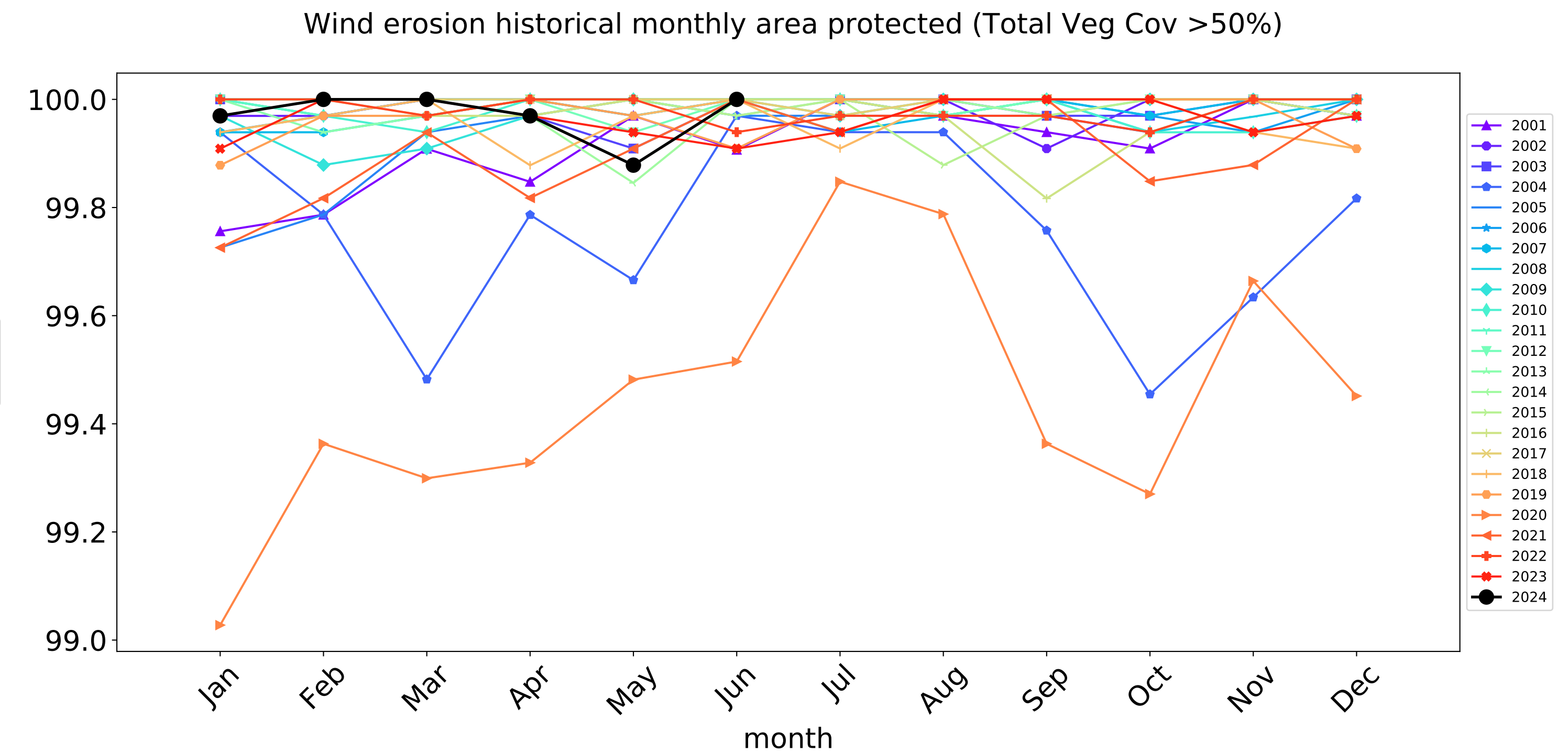
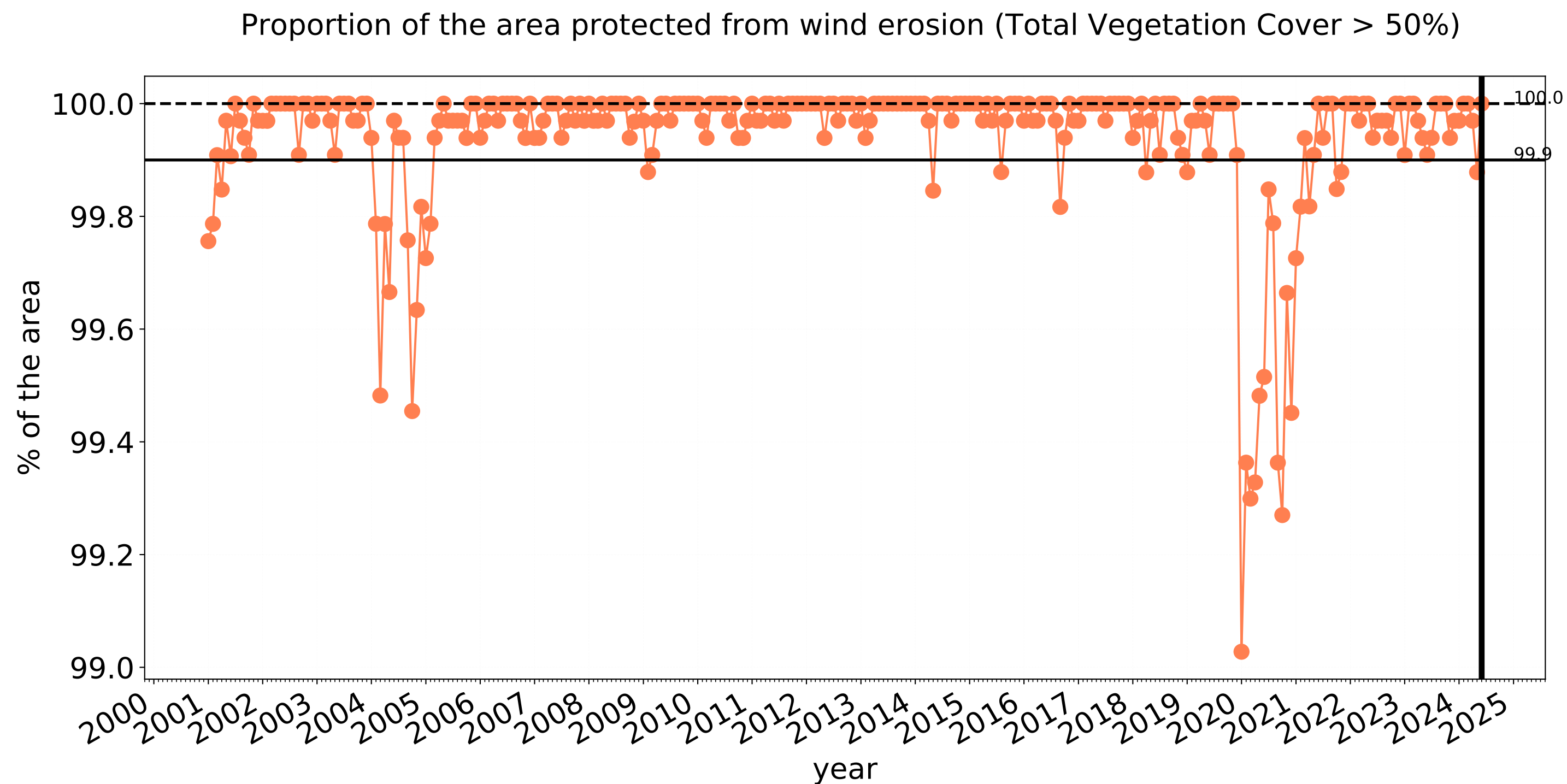
Ecosystem Research Infrastructure

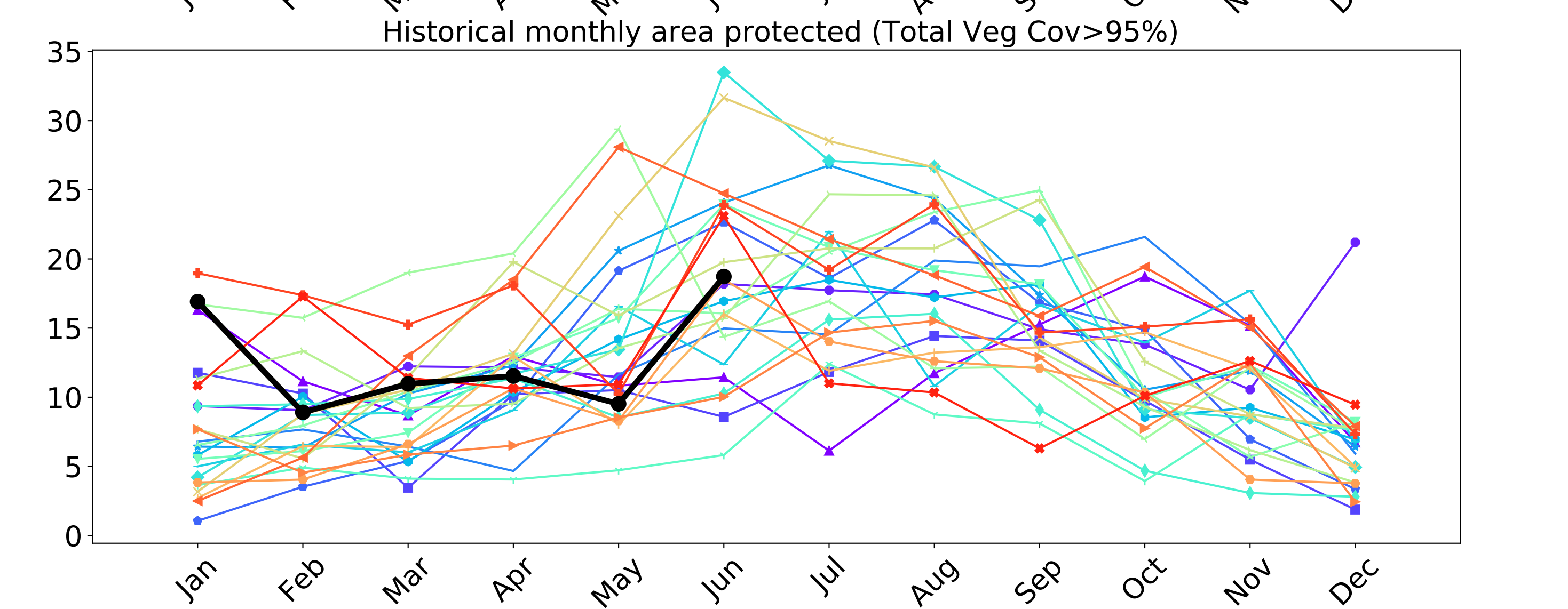
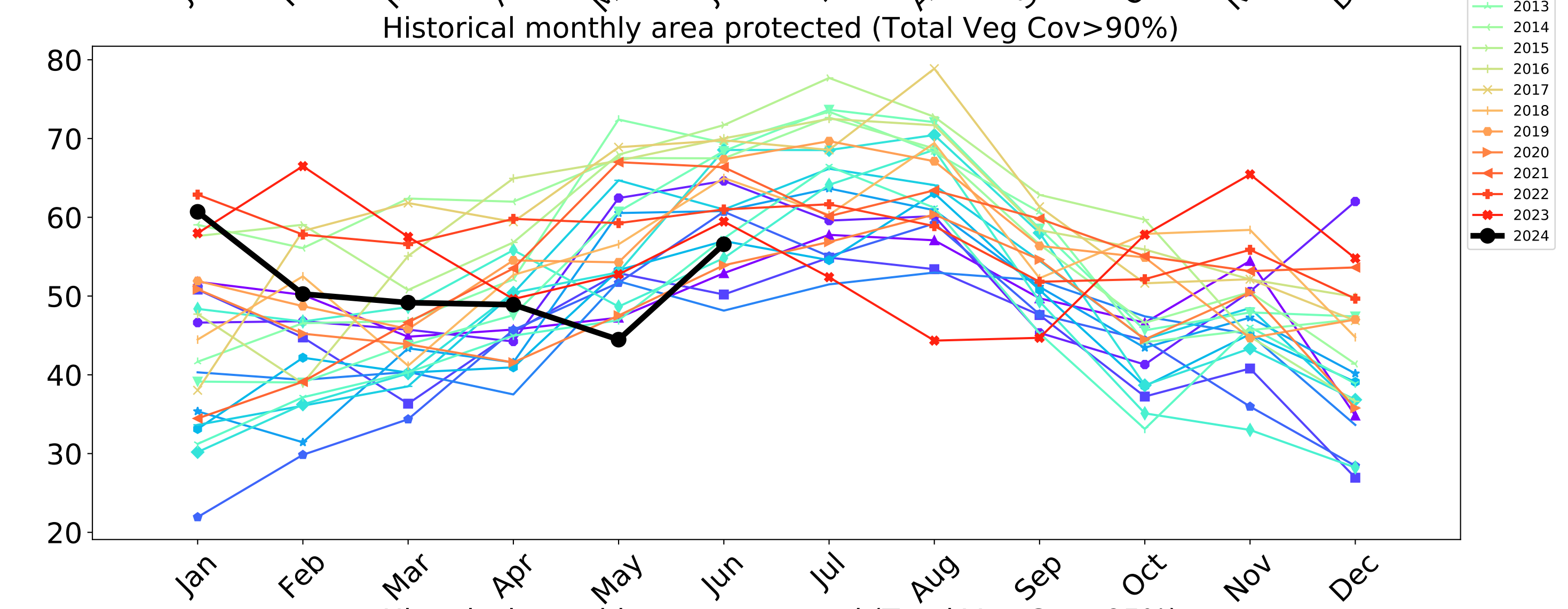
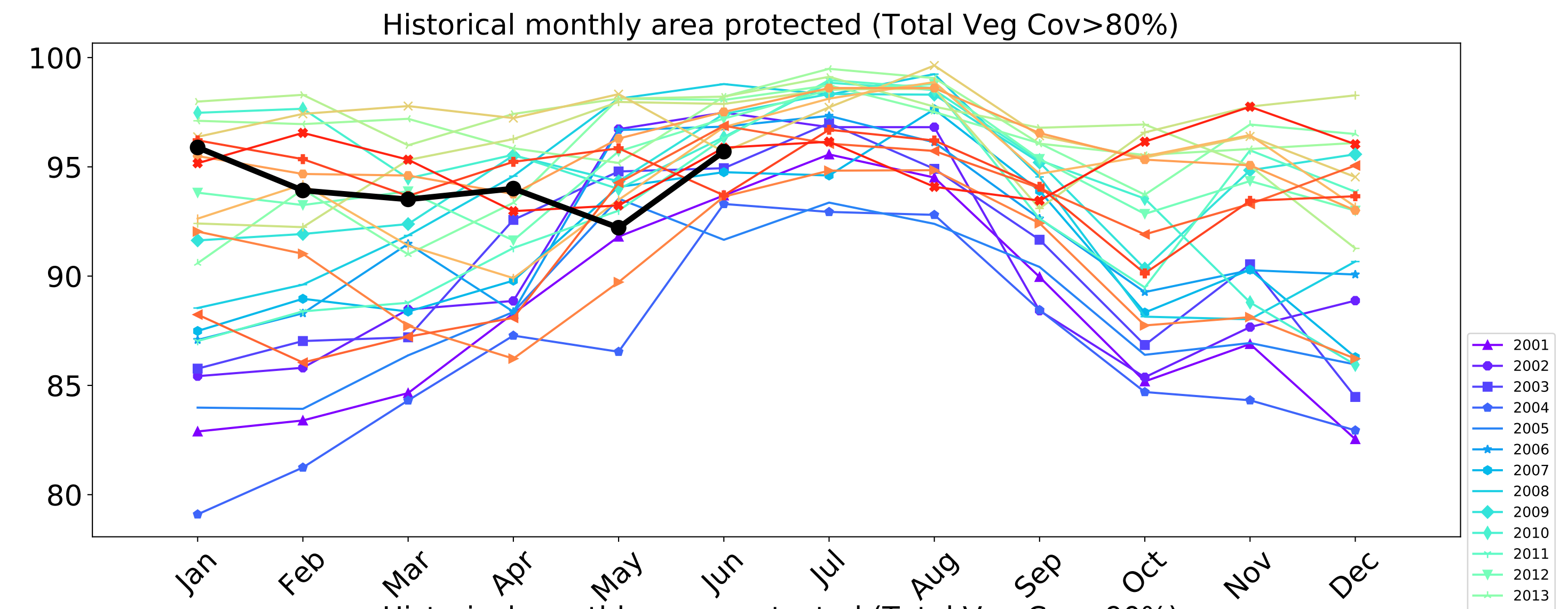
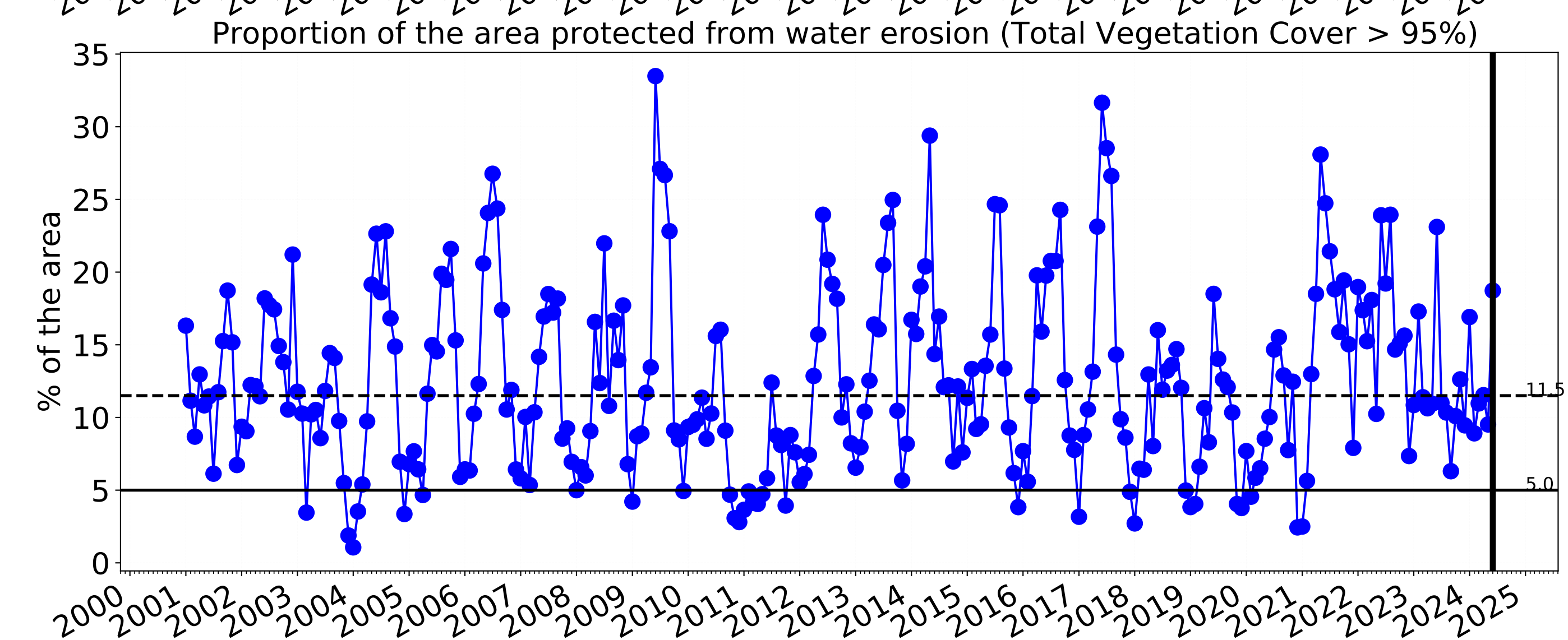
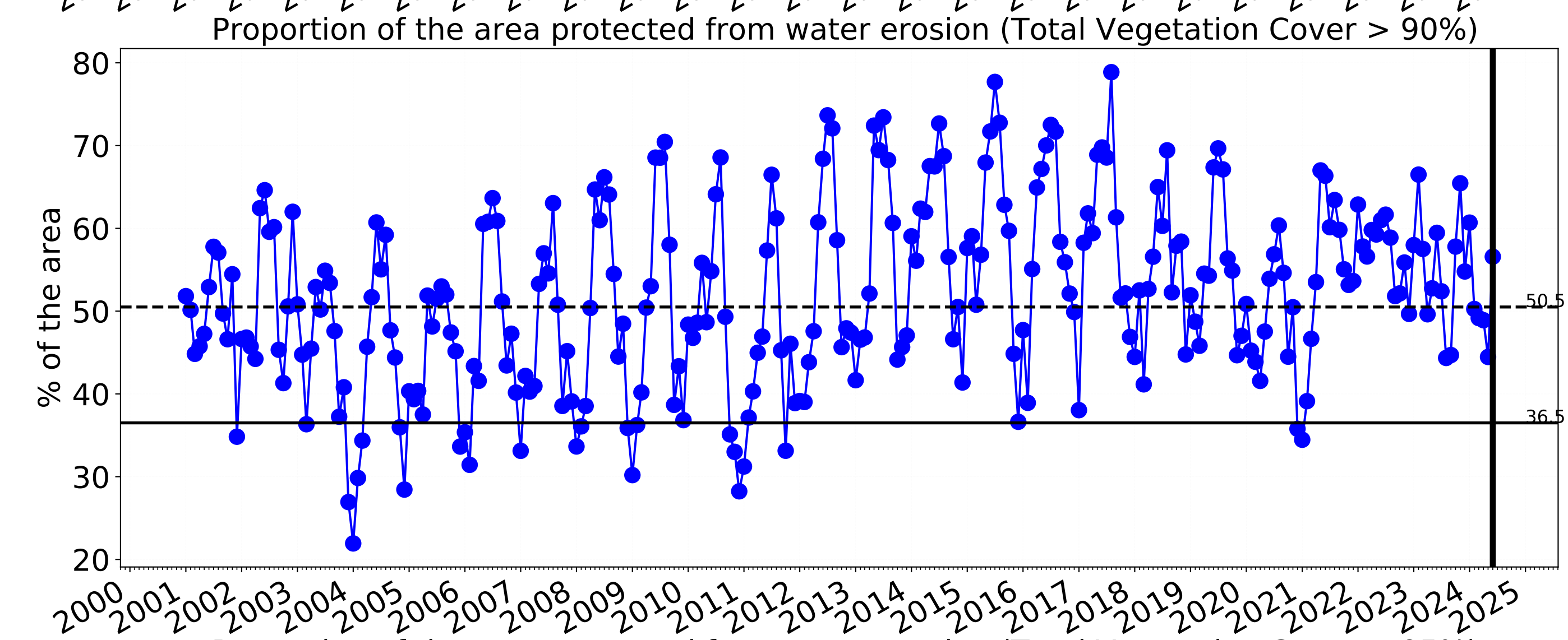
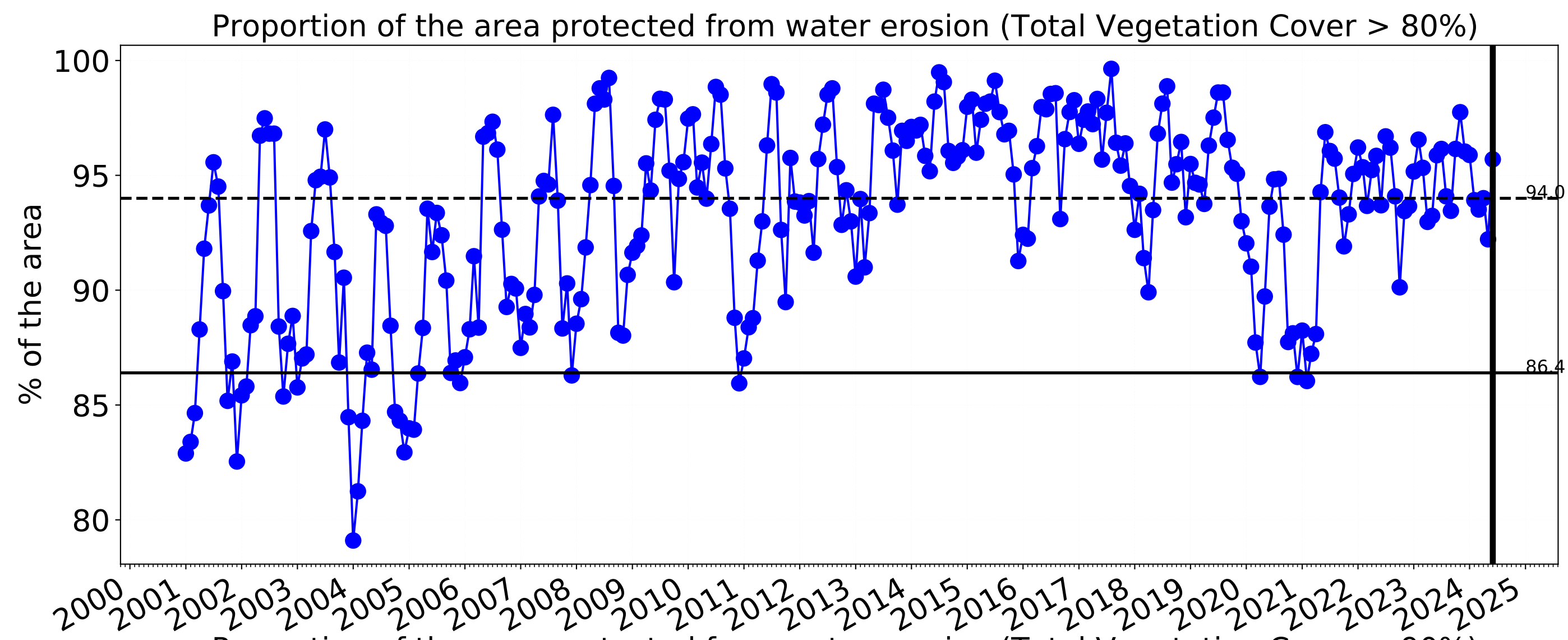


National Landcare Programme



Conservation and natural environments timeseries



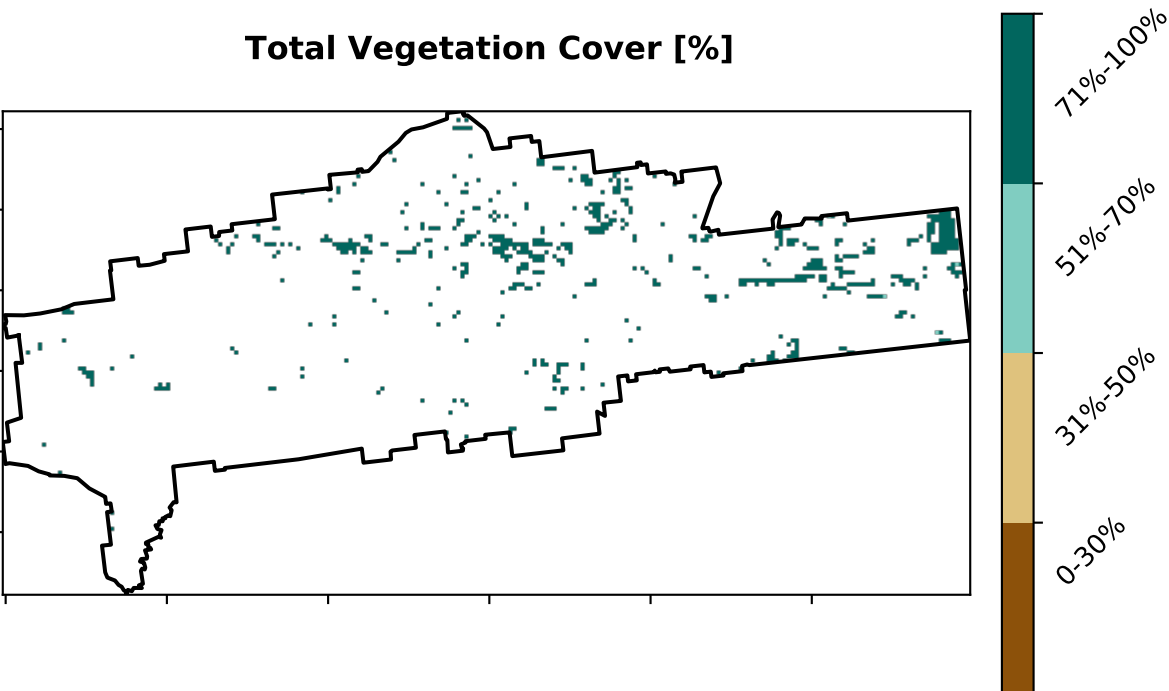


Conservation and natural environments non forest

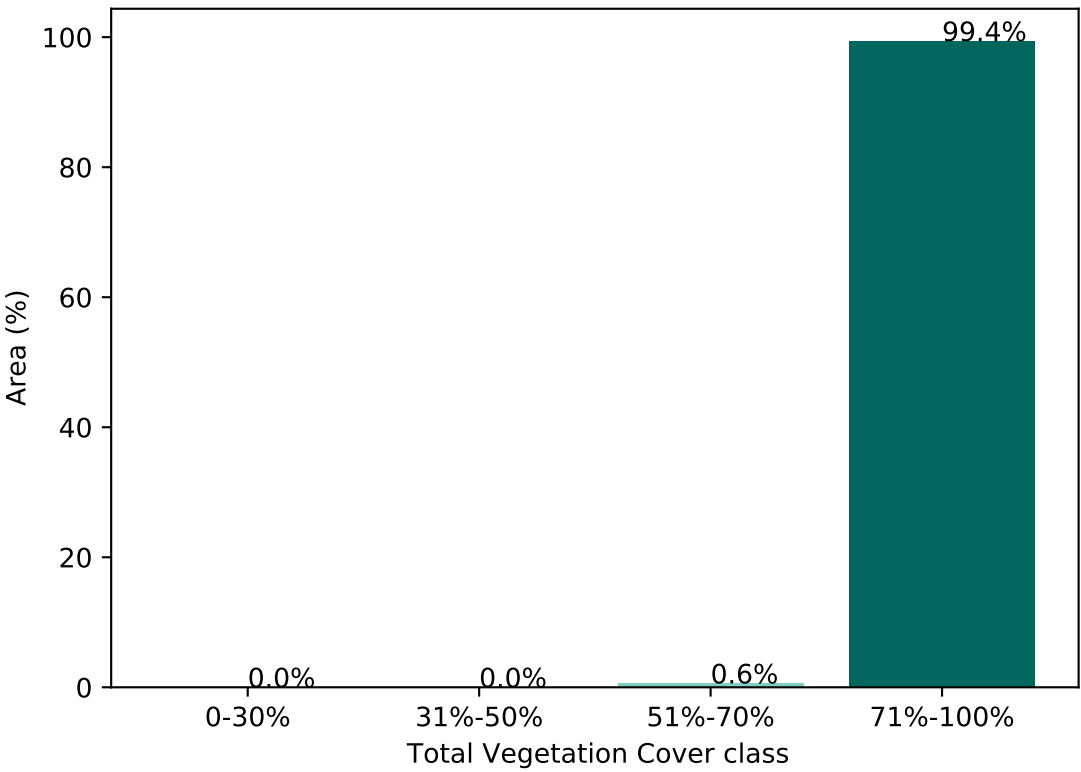
Land use and forest cover



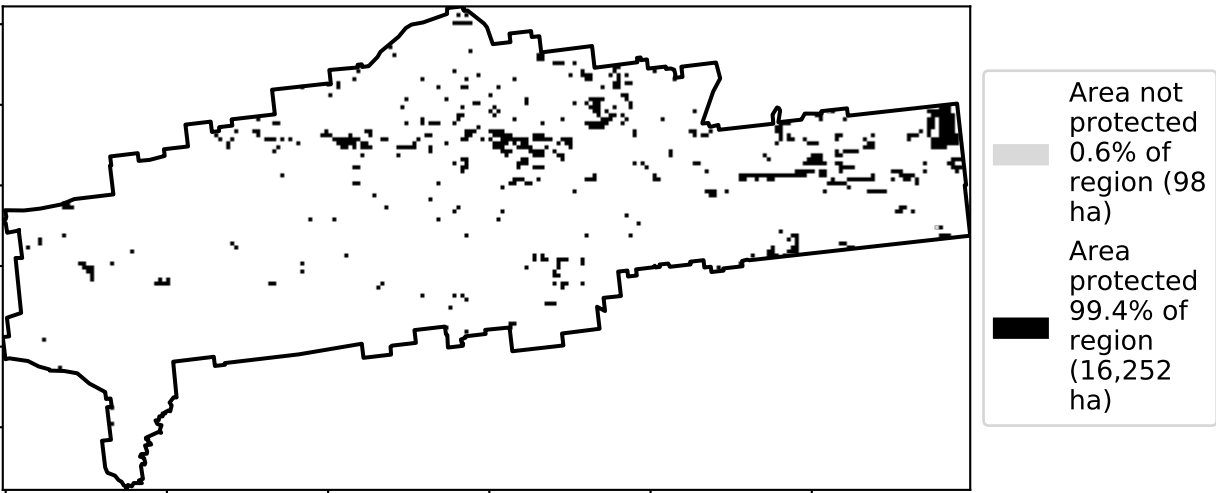
Total Vegetation Cover [%]



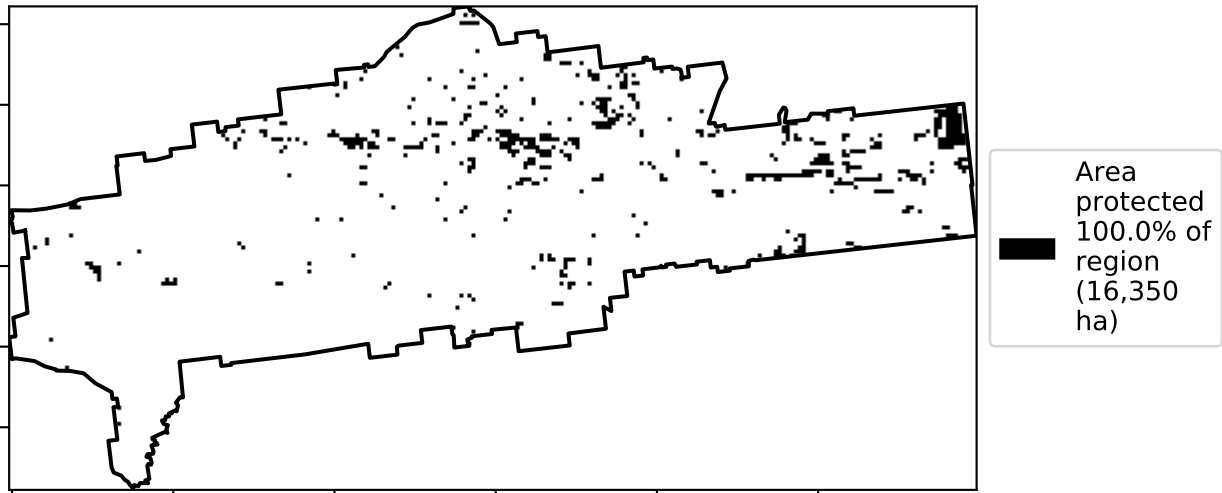
Proportion of vegetation cover class in area



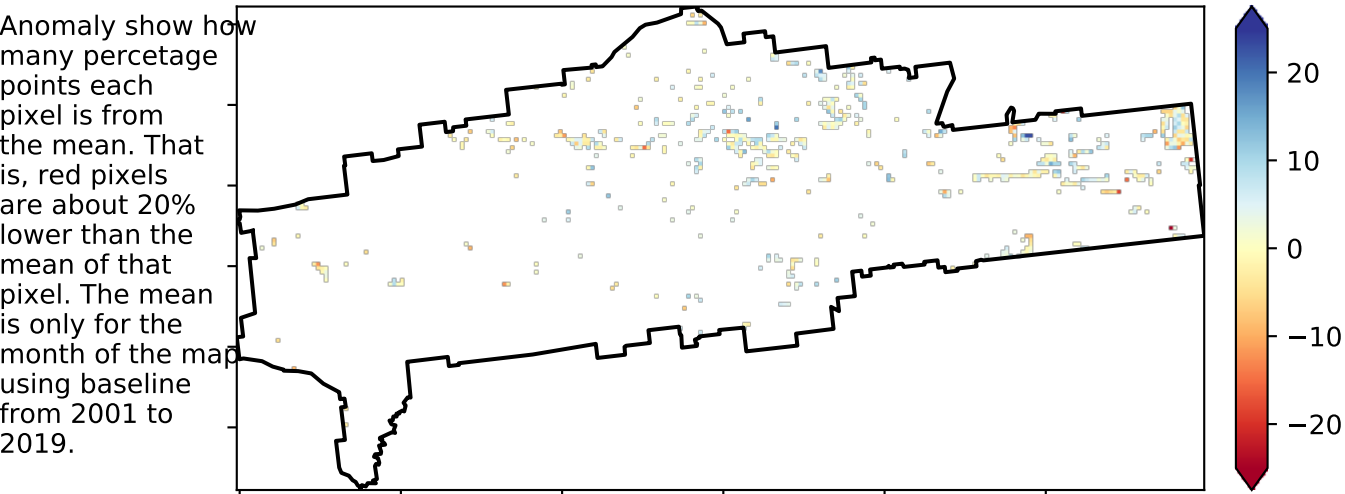
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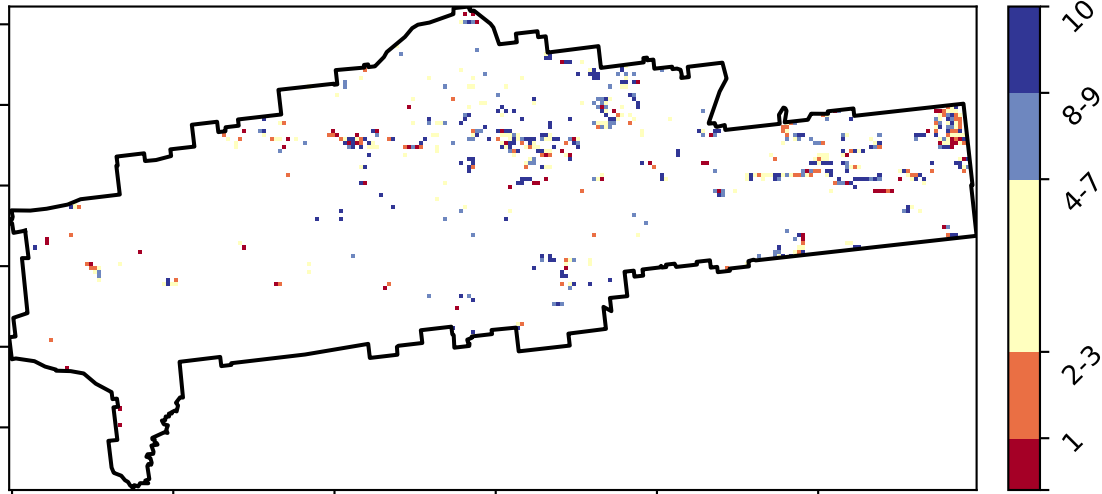


Total Vegetation Cover Anomaly [%]

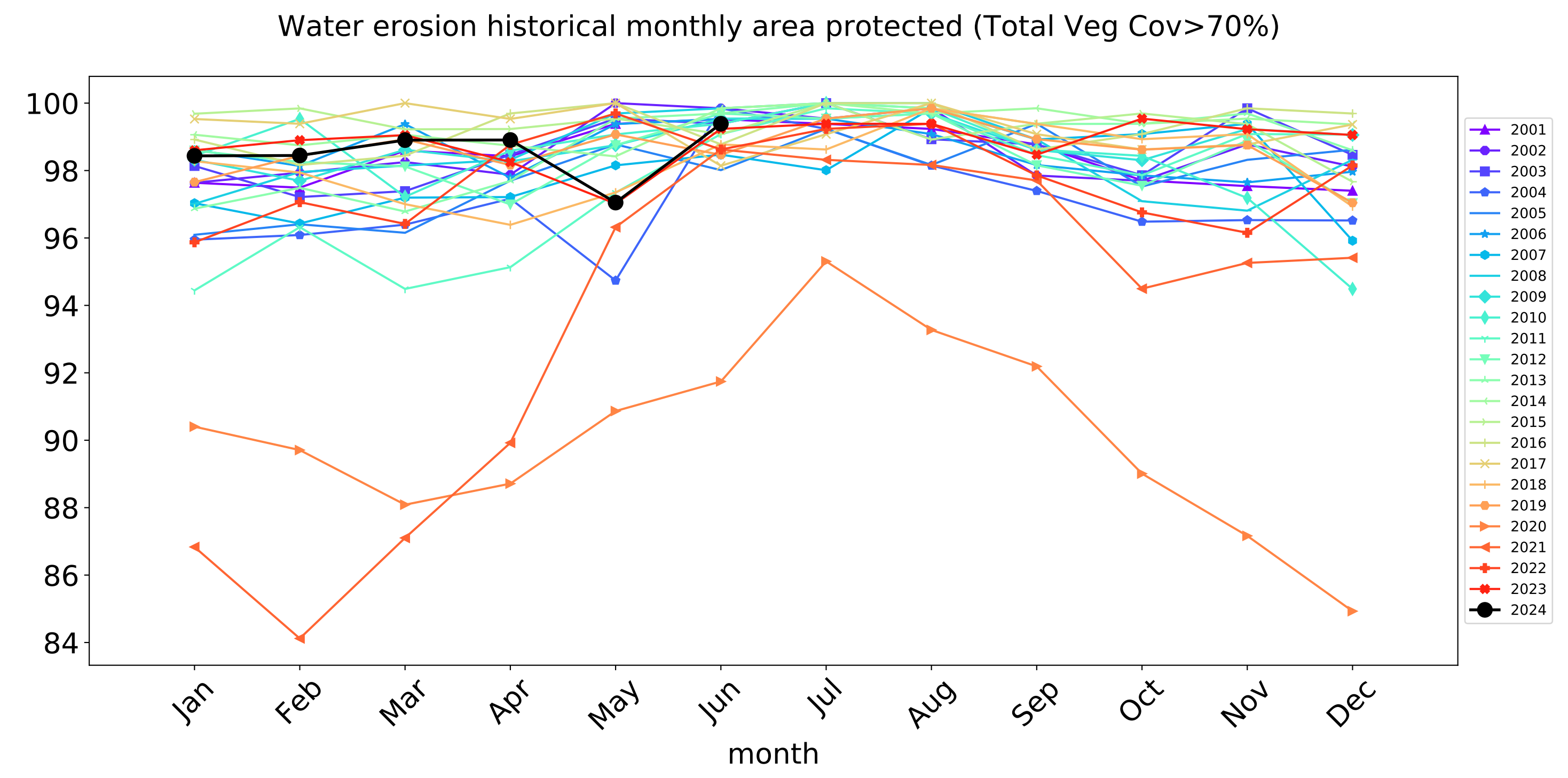
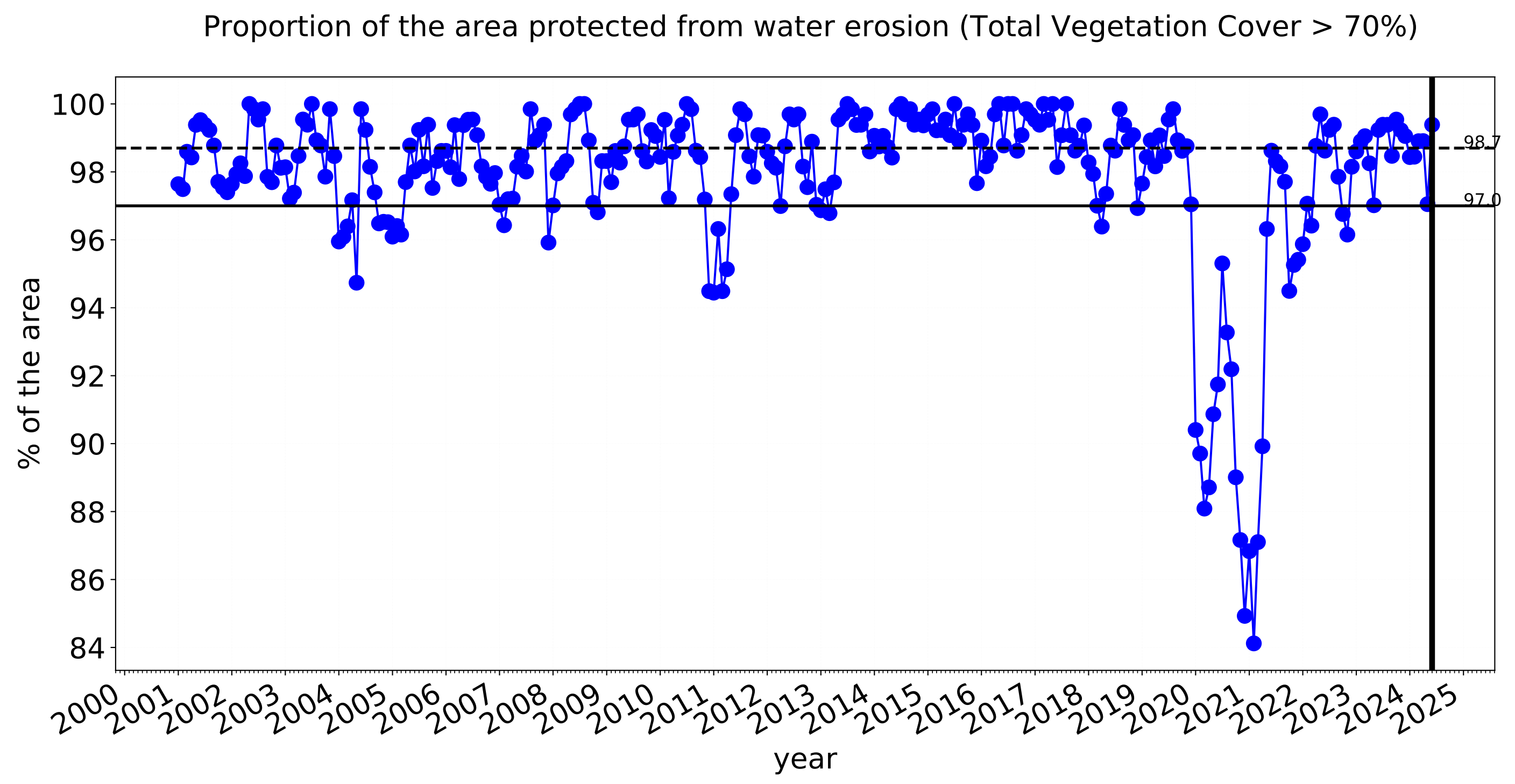
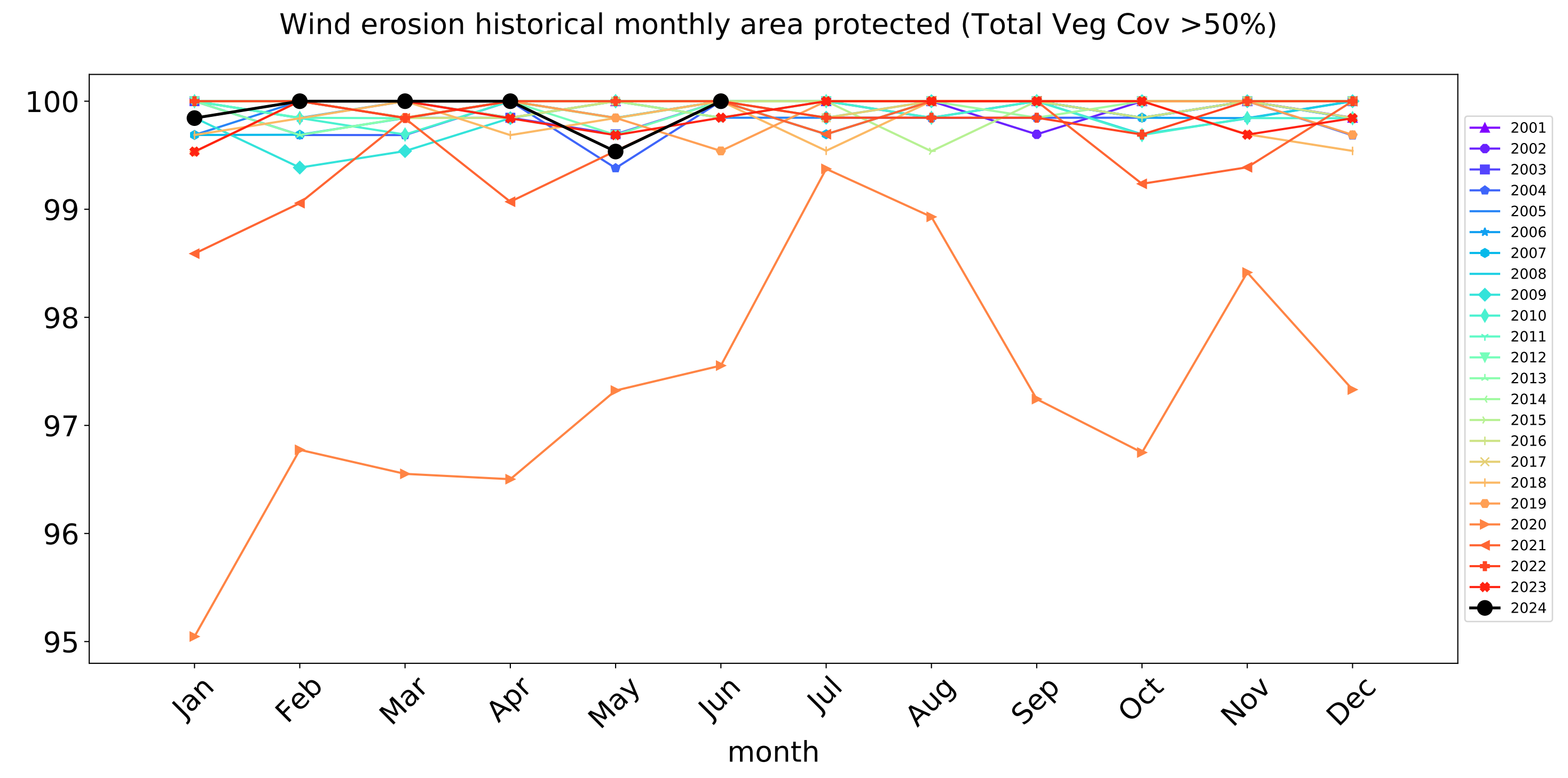
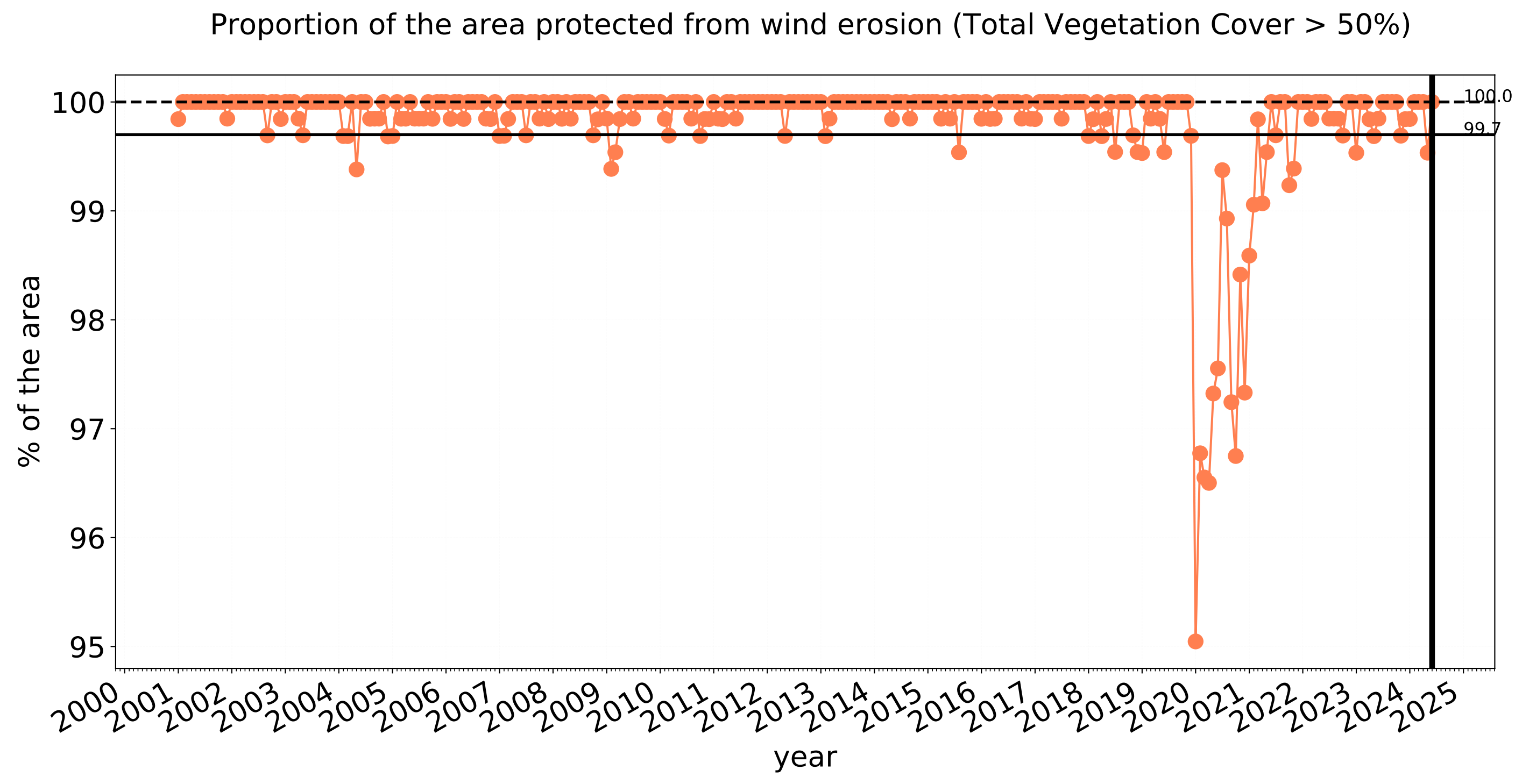


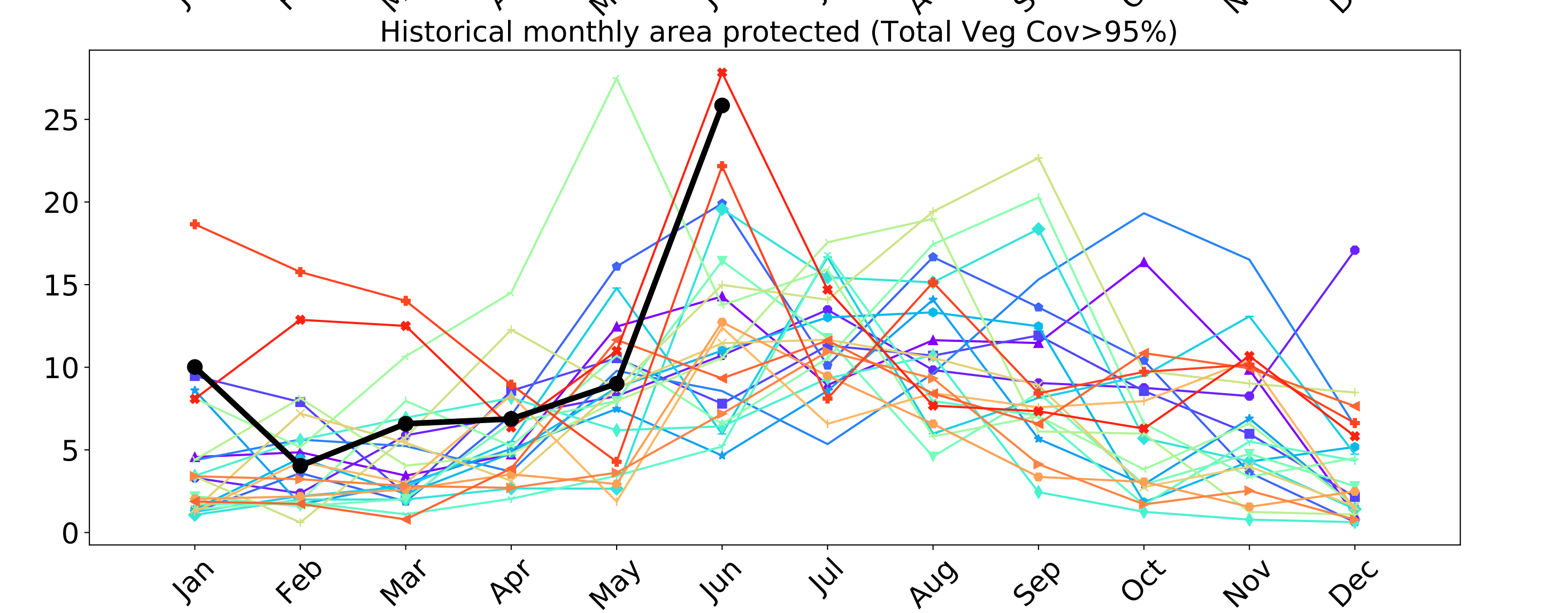
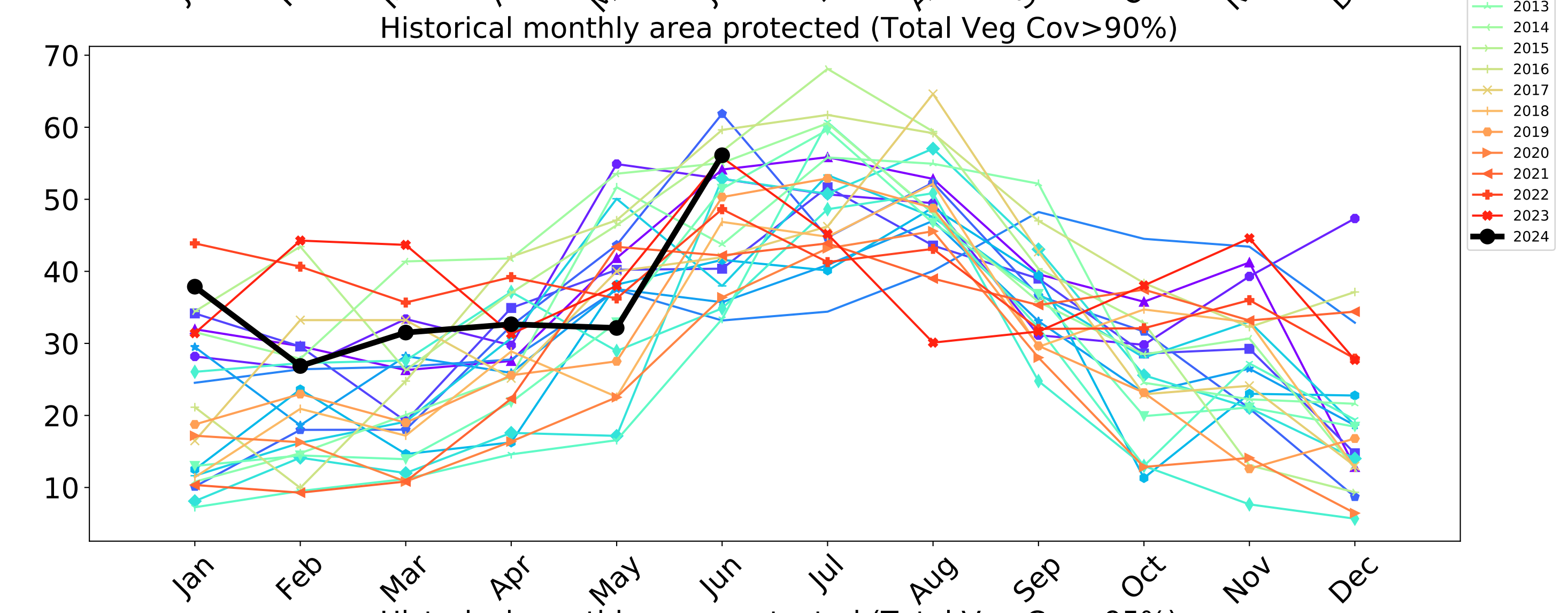
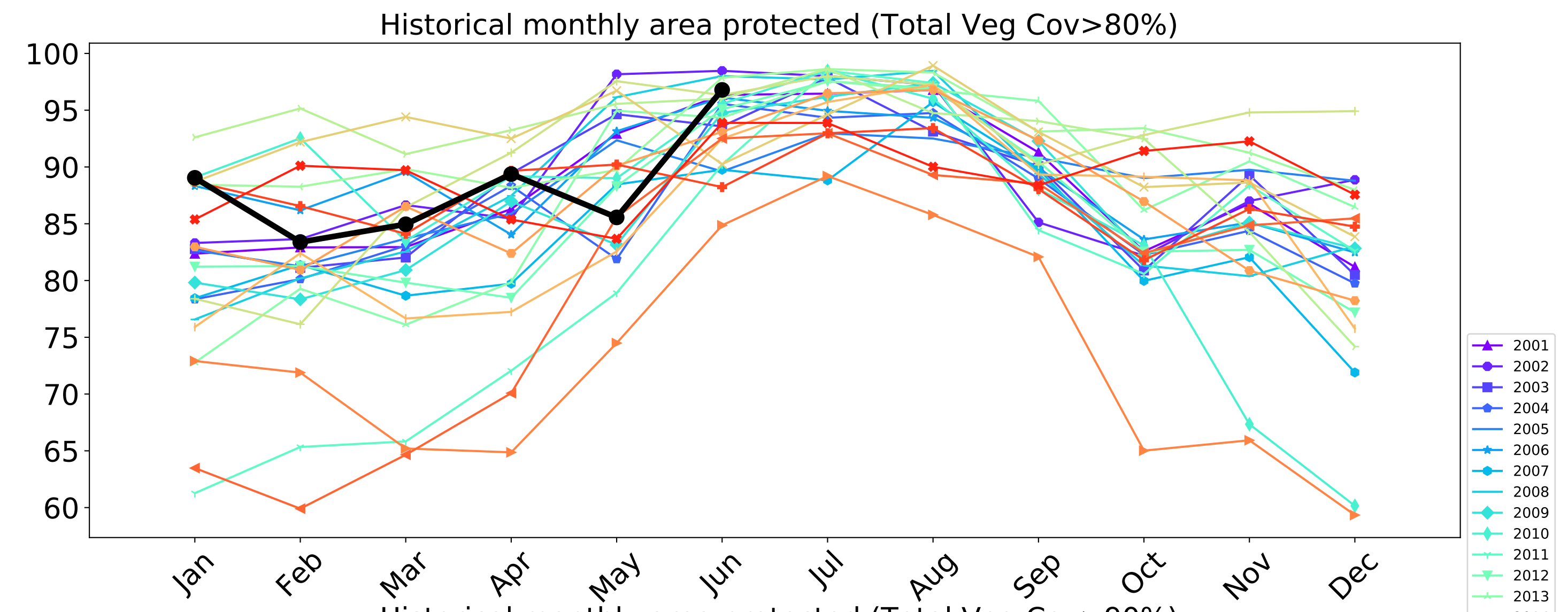
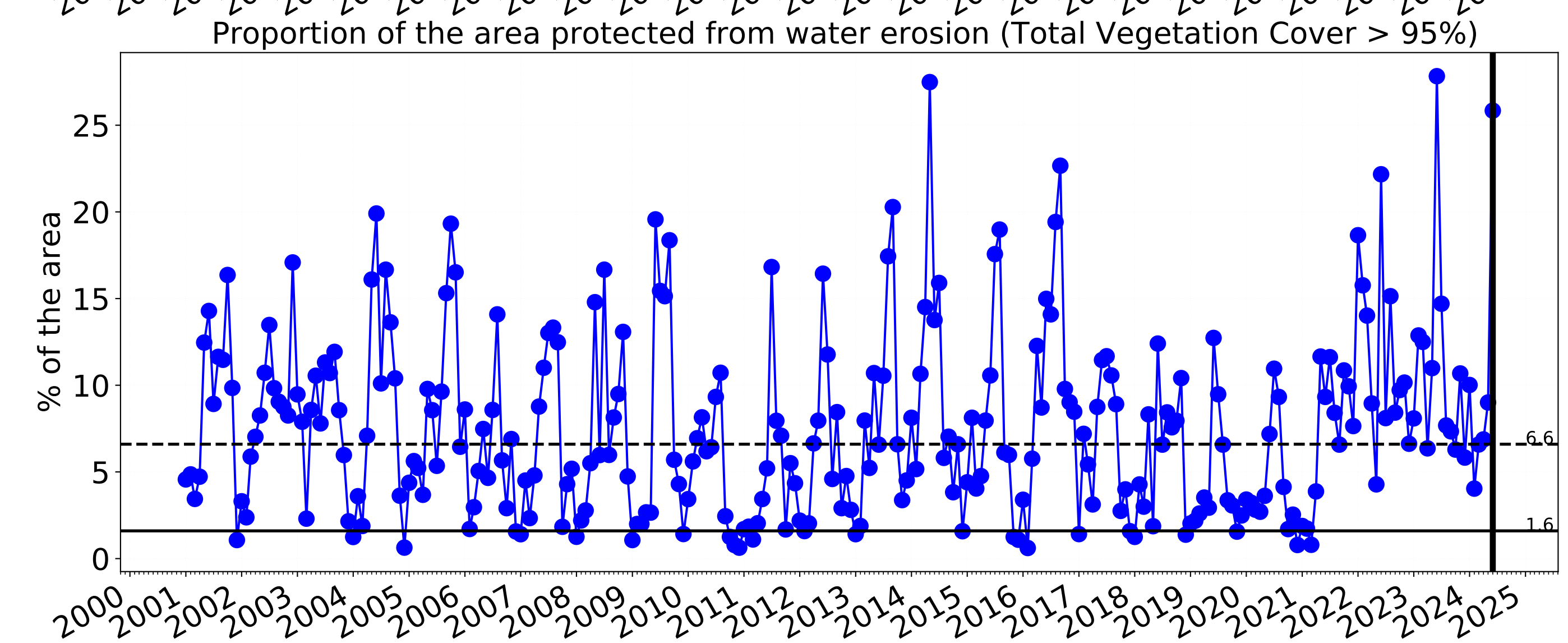
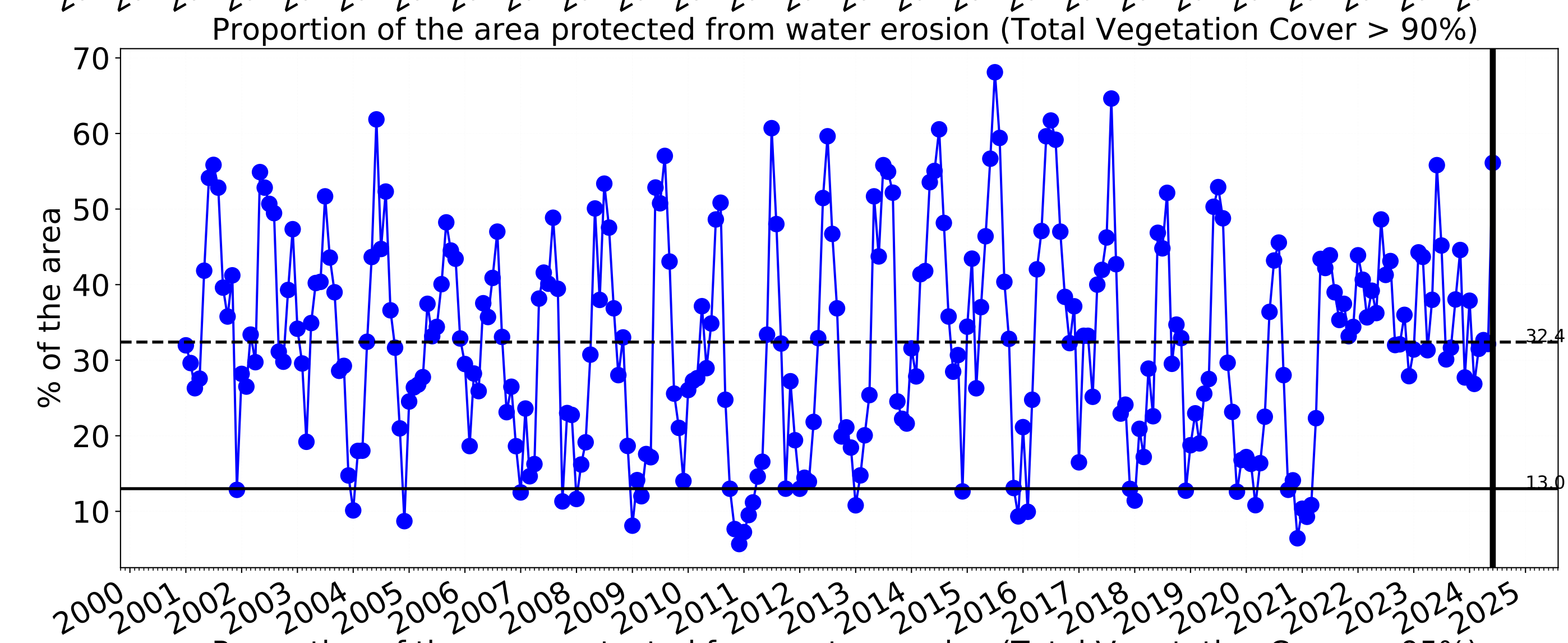
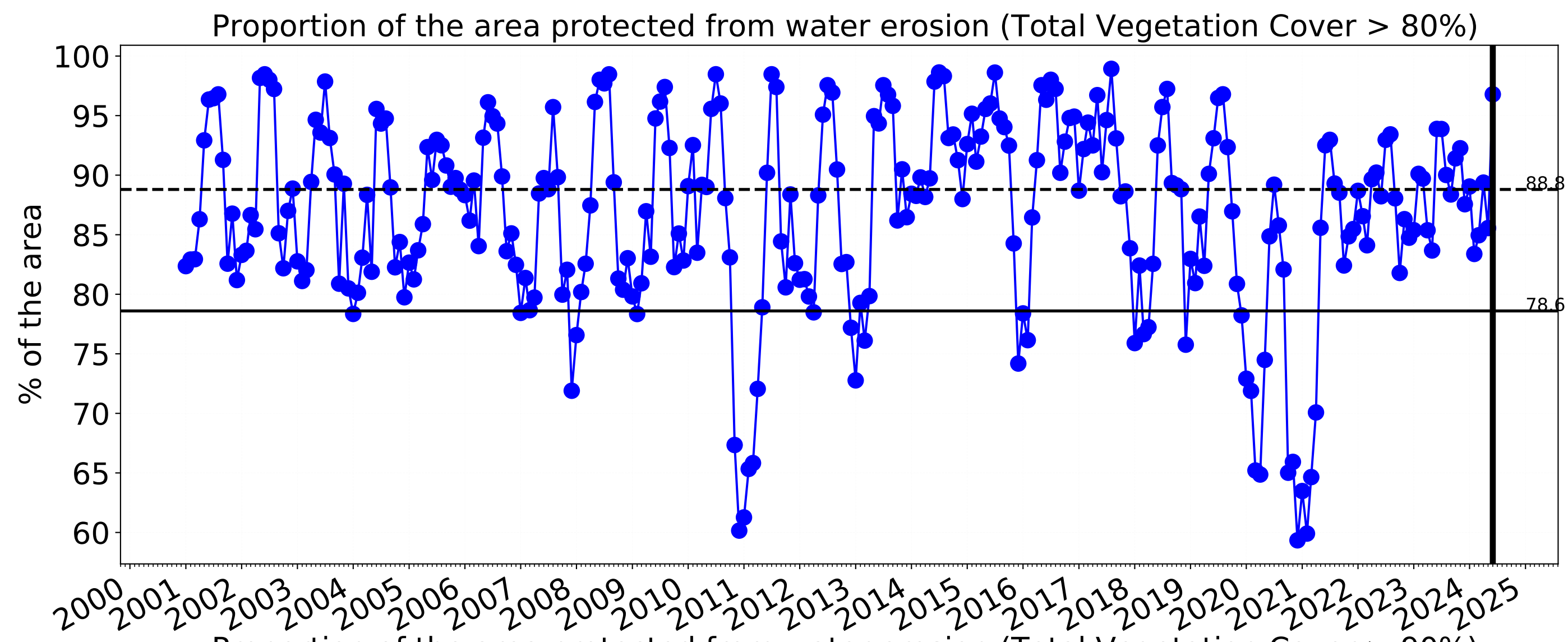
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Total Vegetation Cover Decile [%]



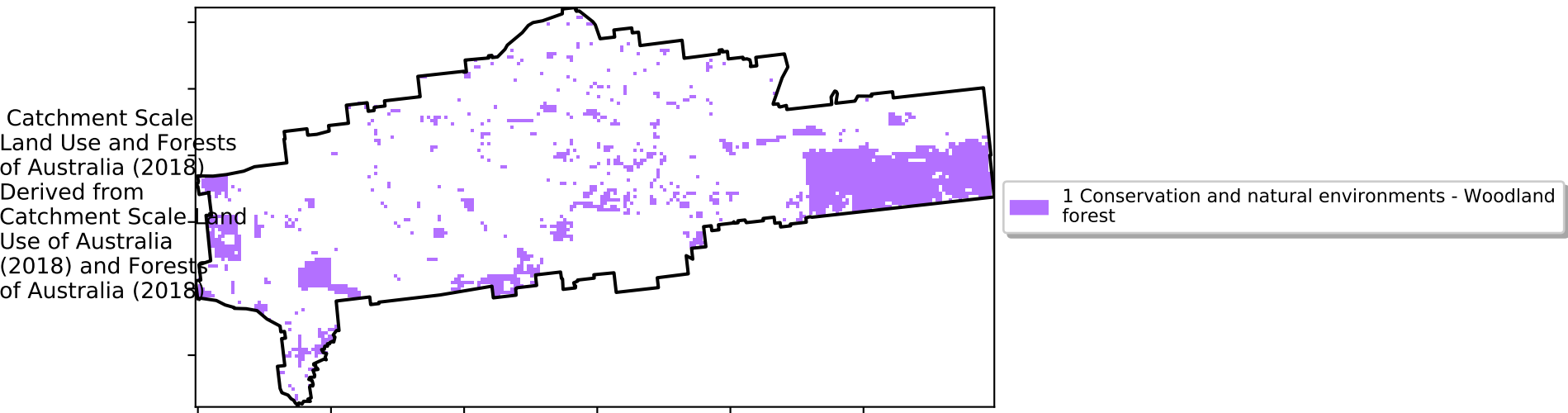
Conservation and natural environments non forest timeseries



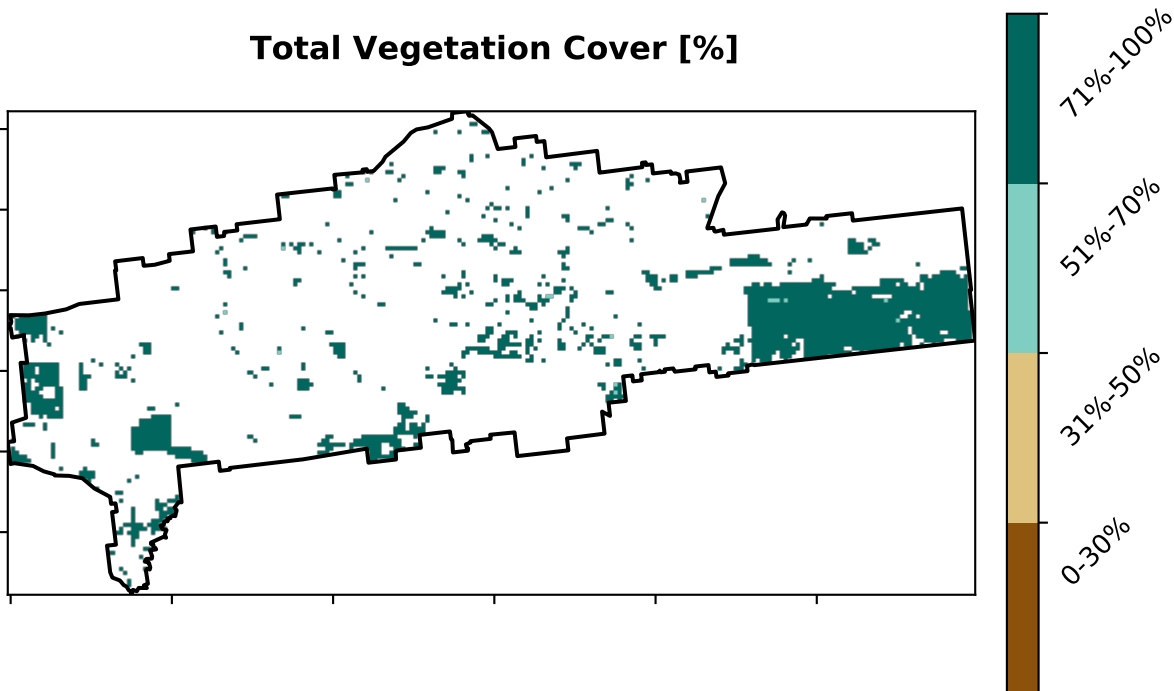


Conservation and natural environments Woodland forest

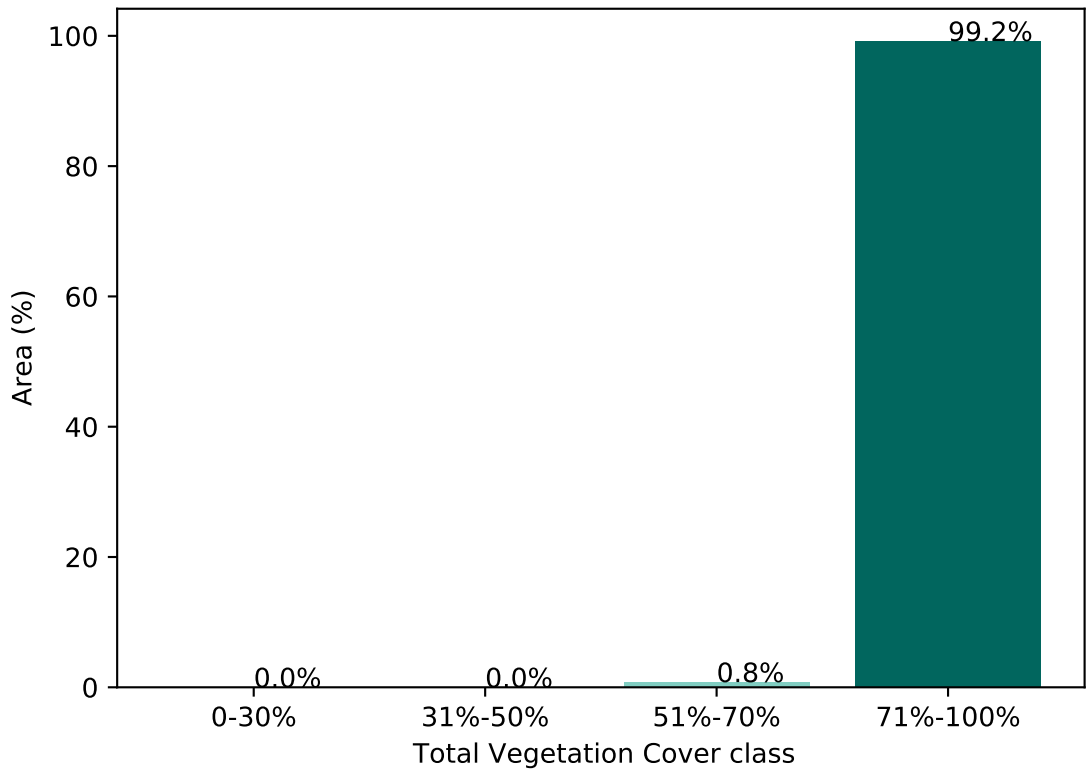
Land use and forest cover



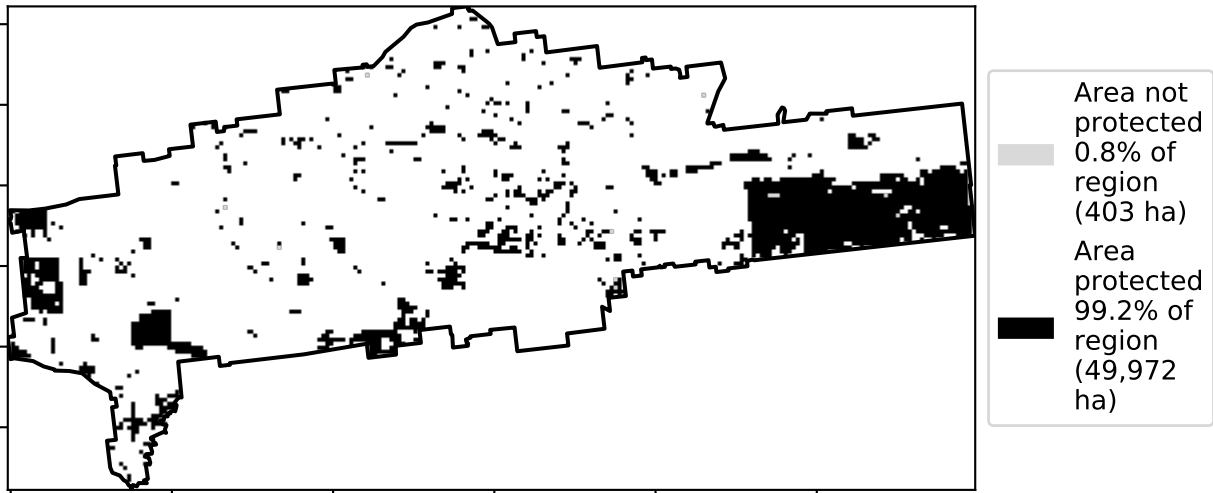
Total Vegetation Cover [%]



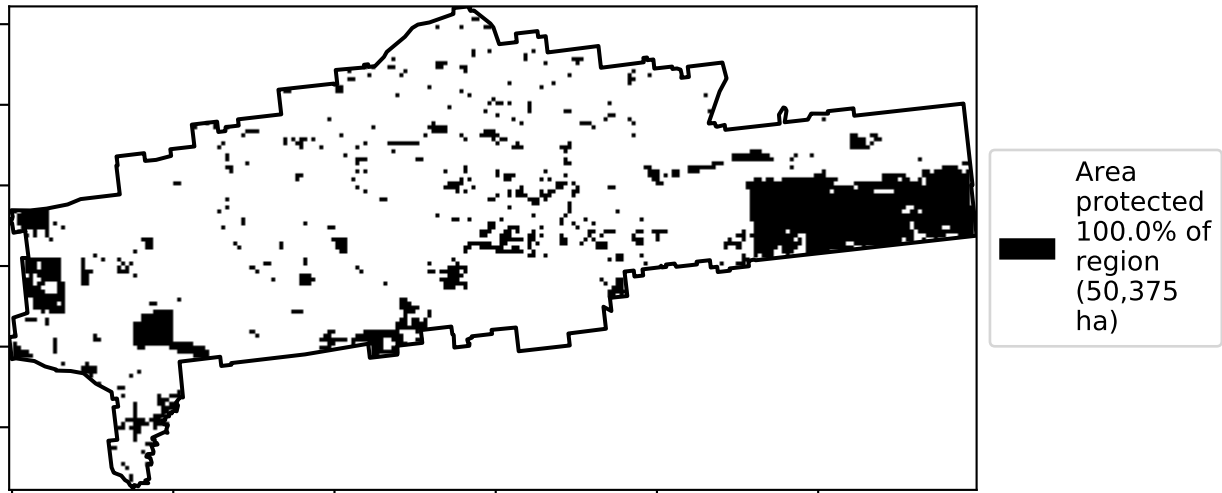
Proportion of vegetation cover class in area



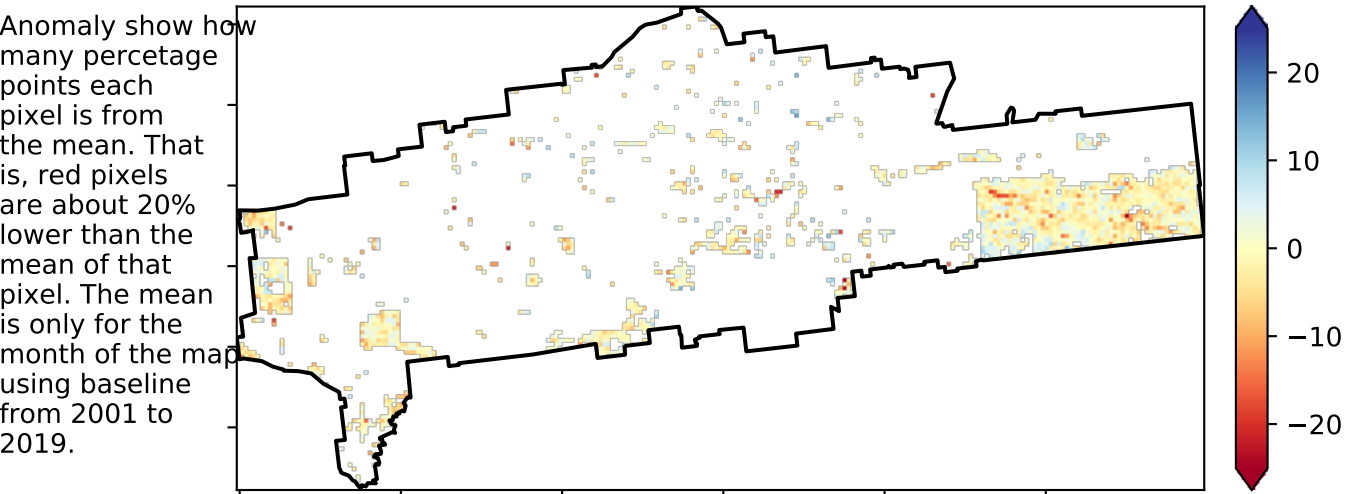
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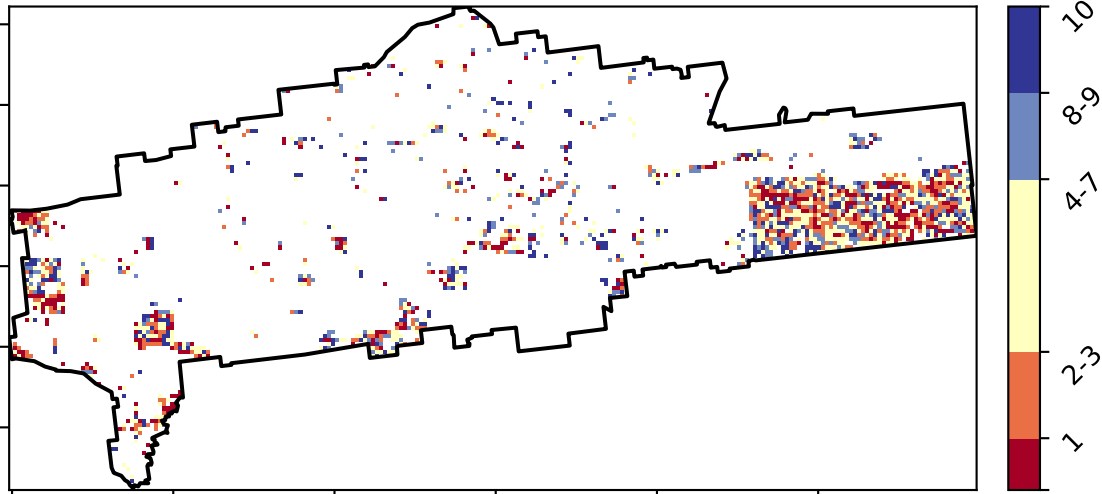


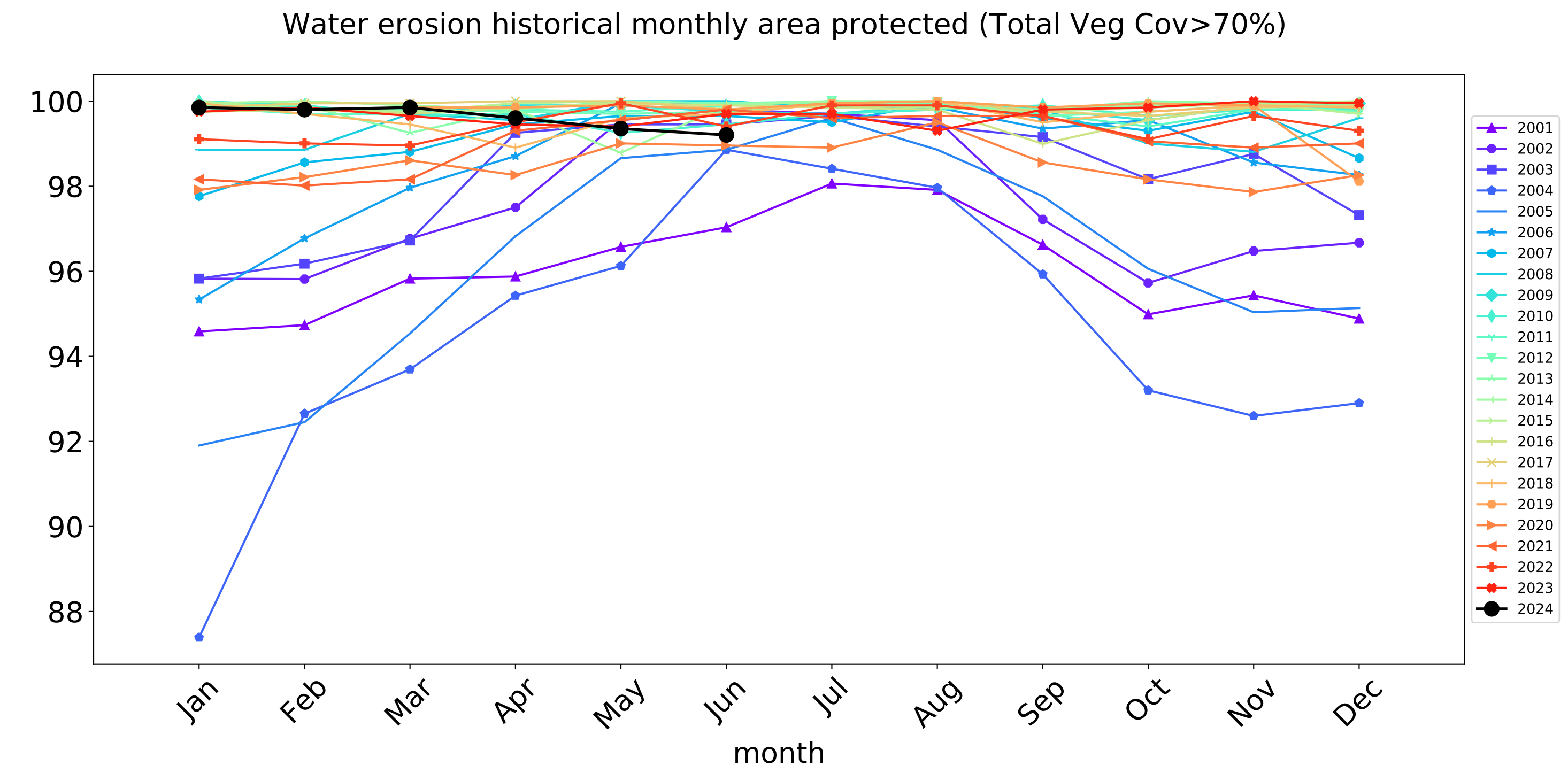
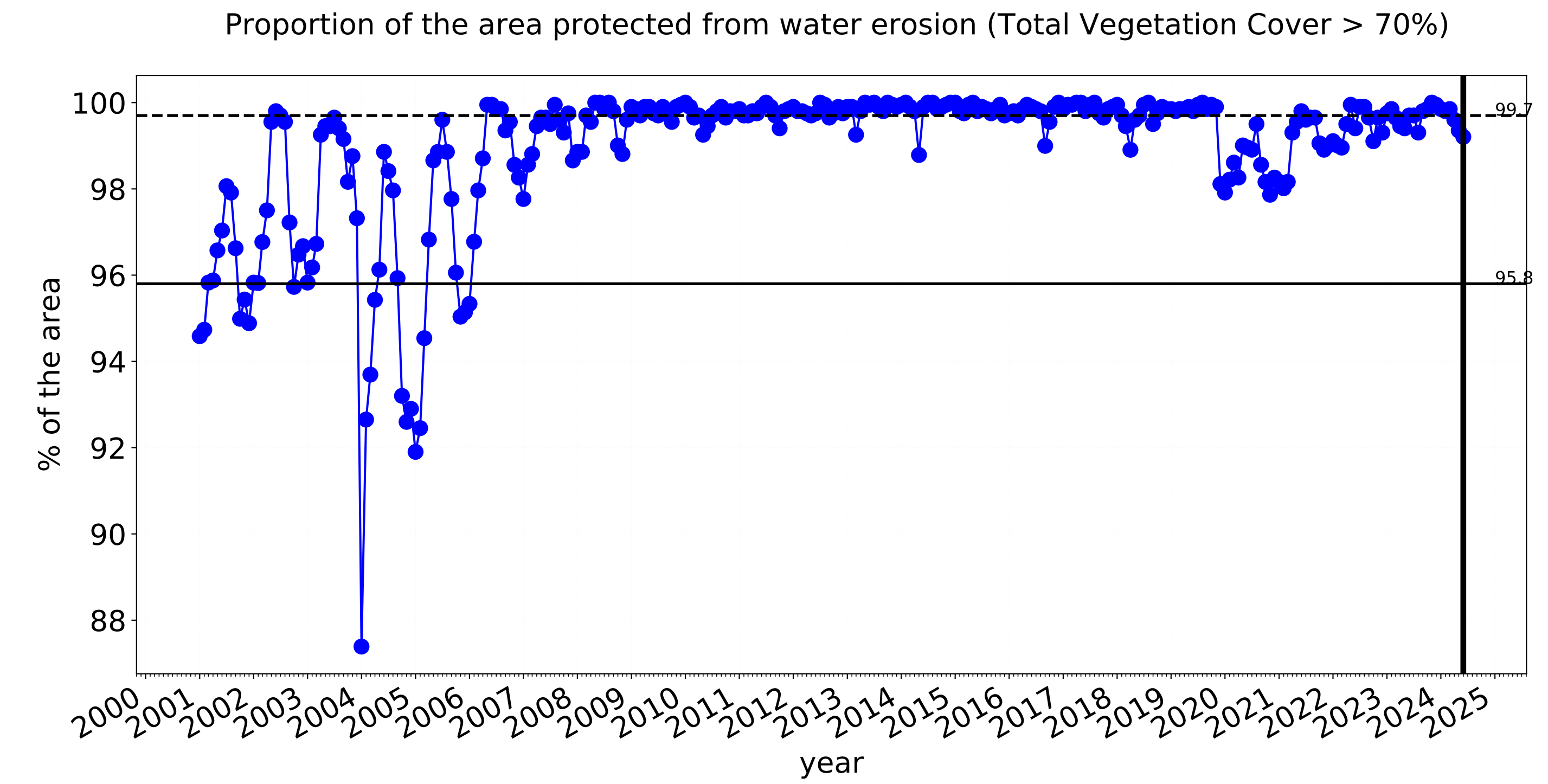
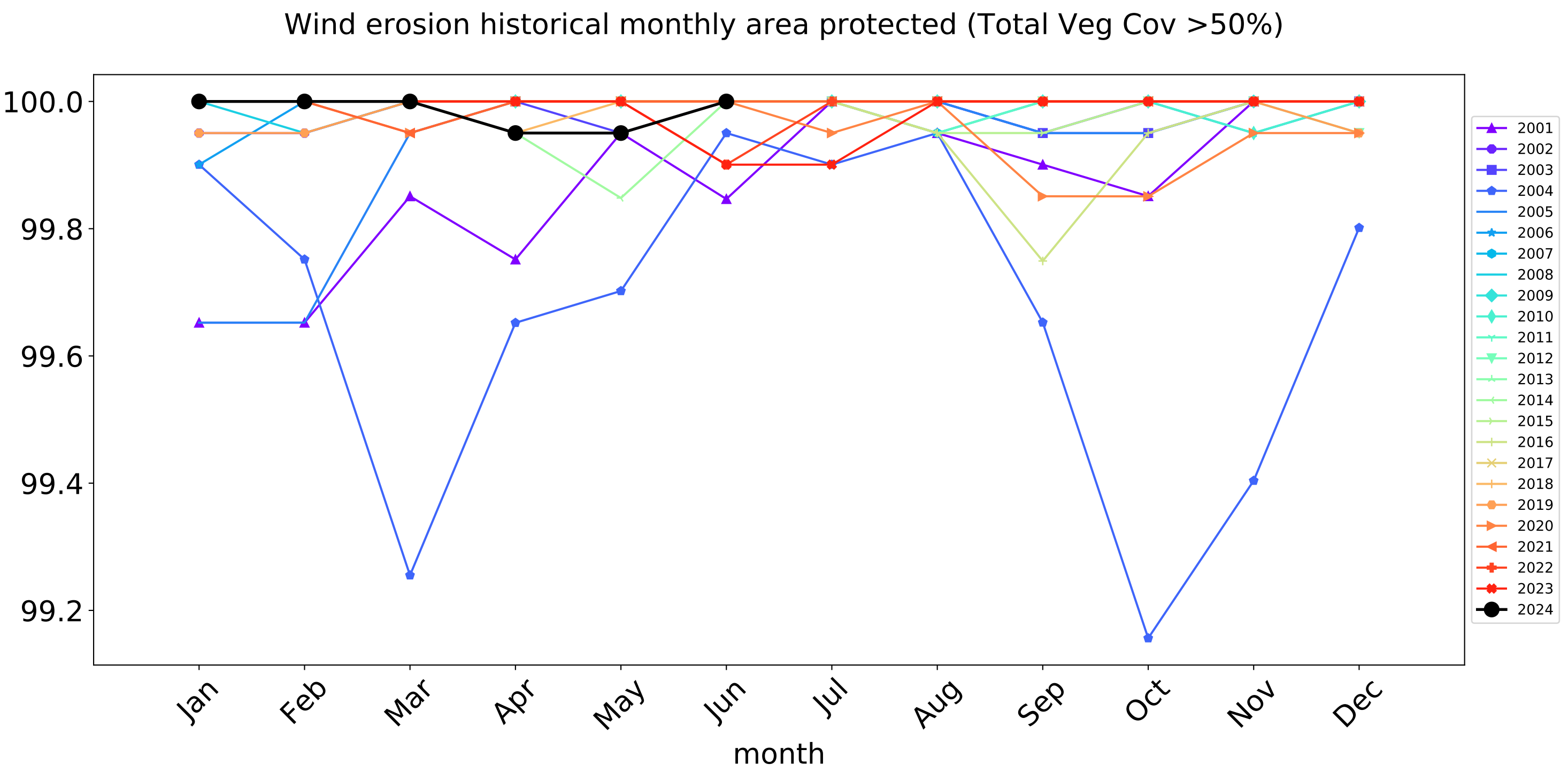
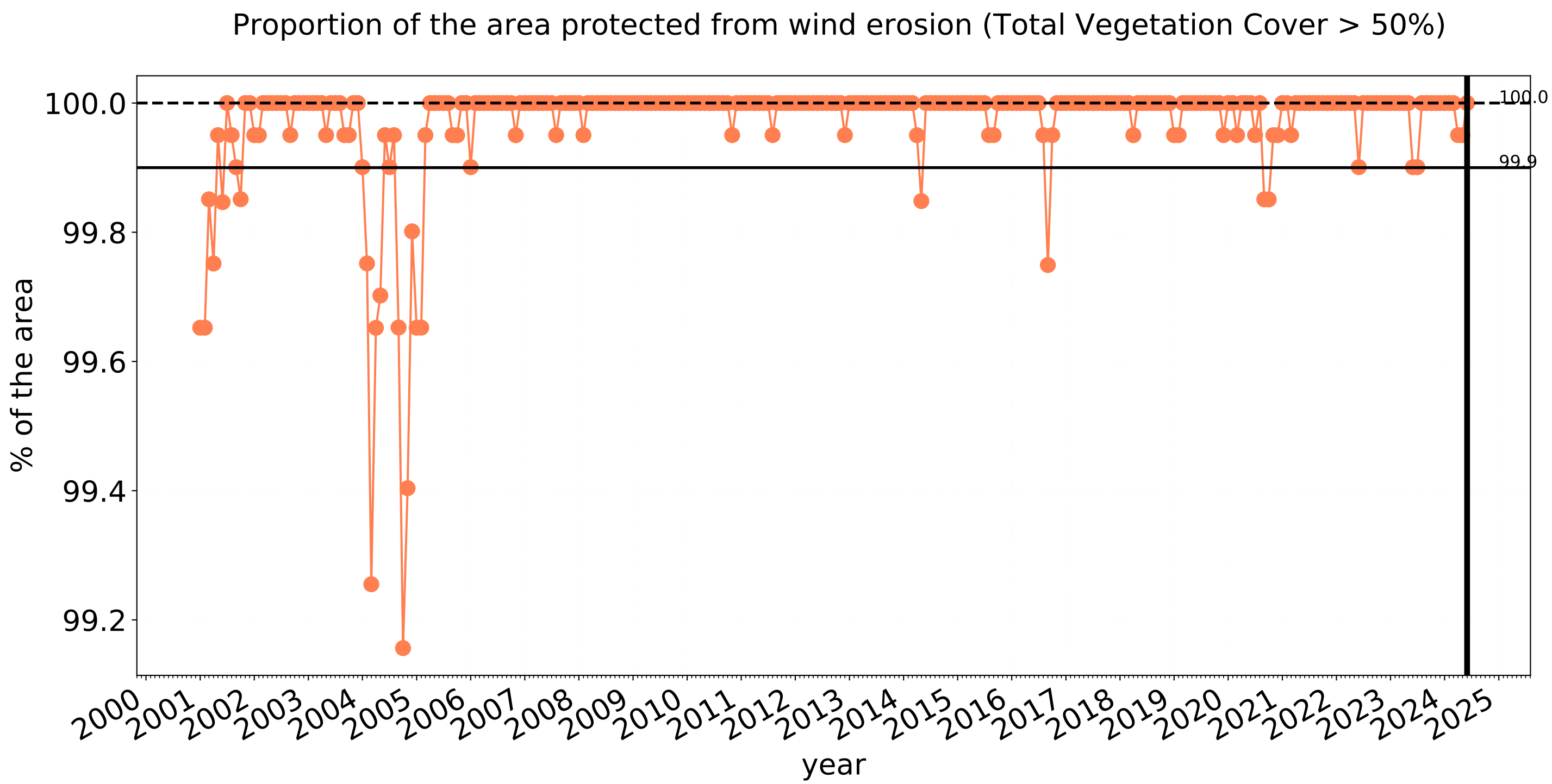
Total Vegetation Cover Anomaly [%]

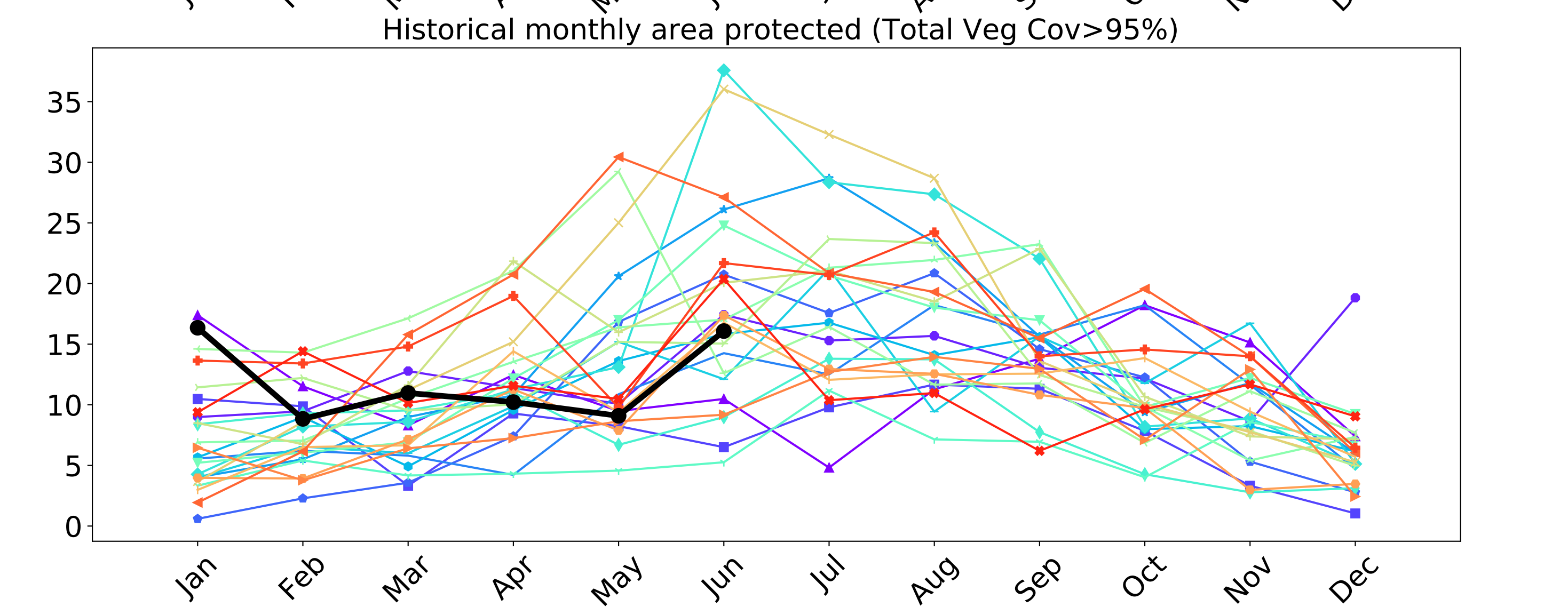
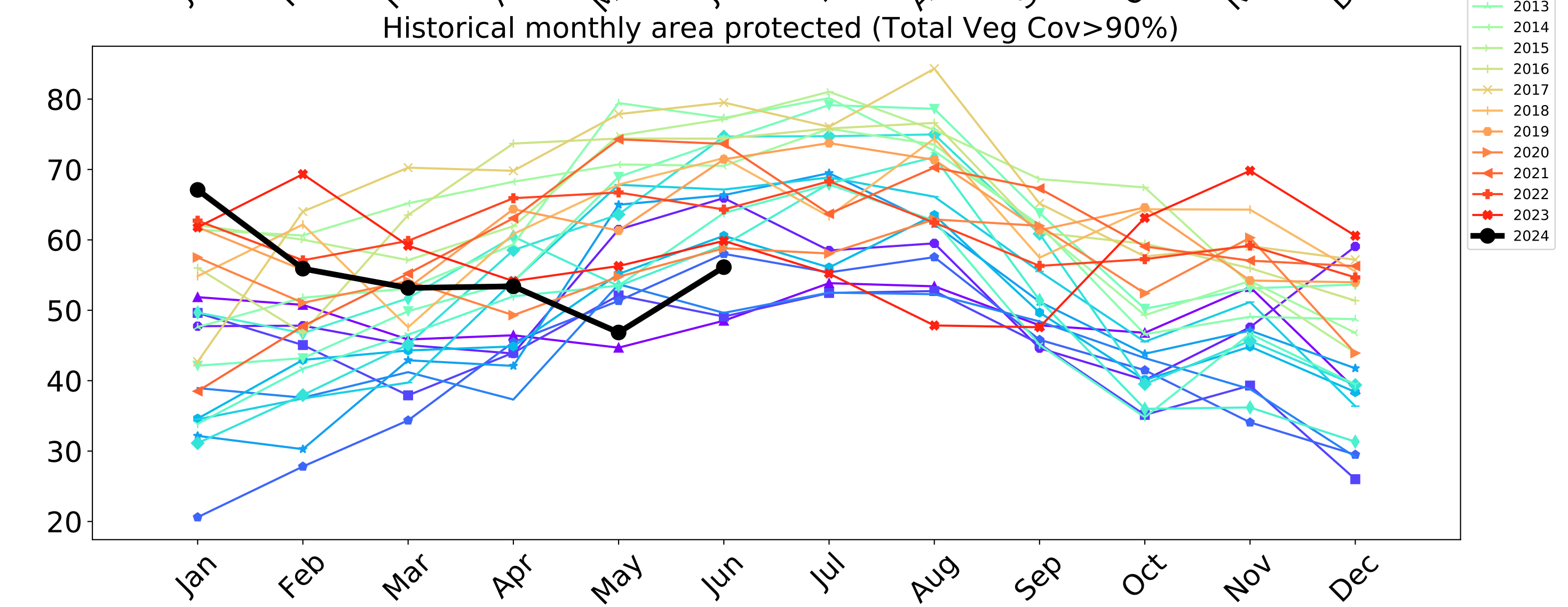
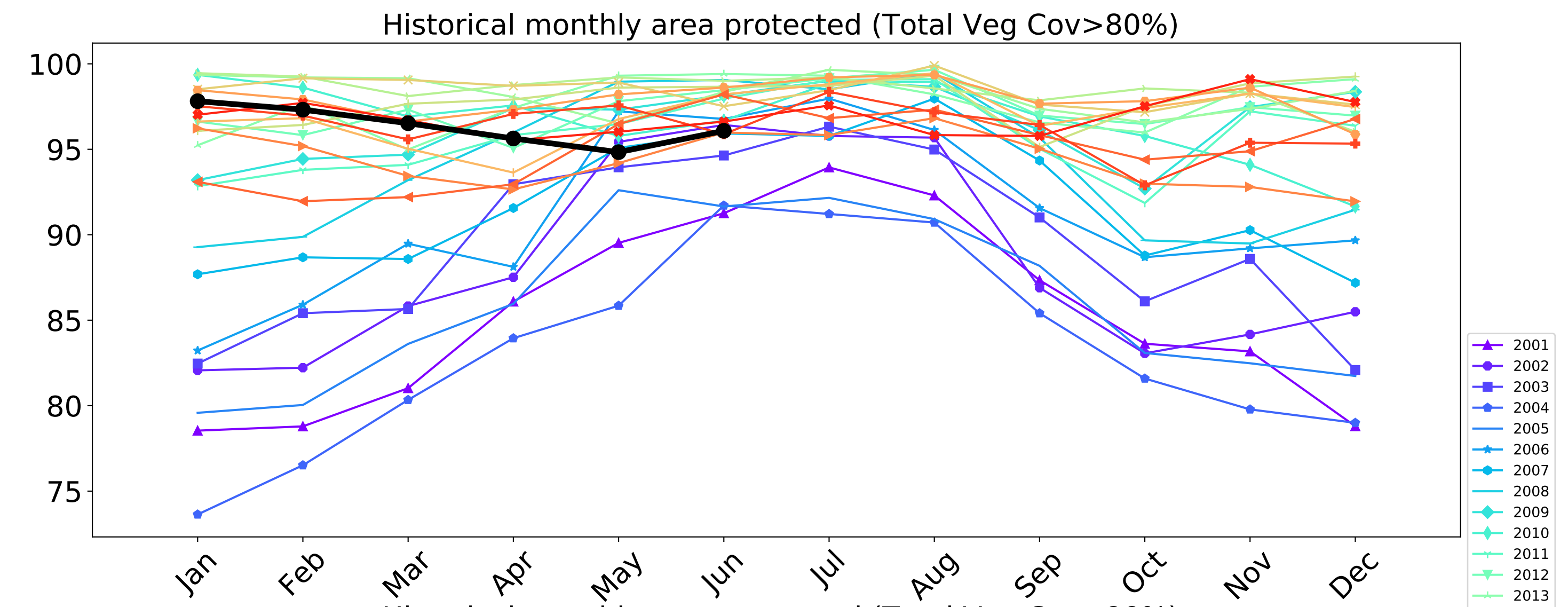
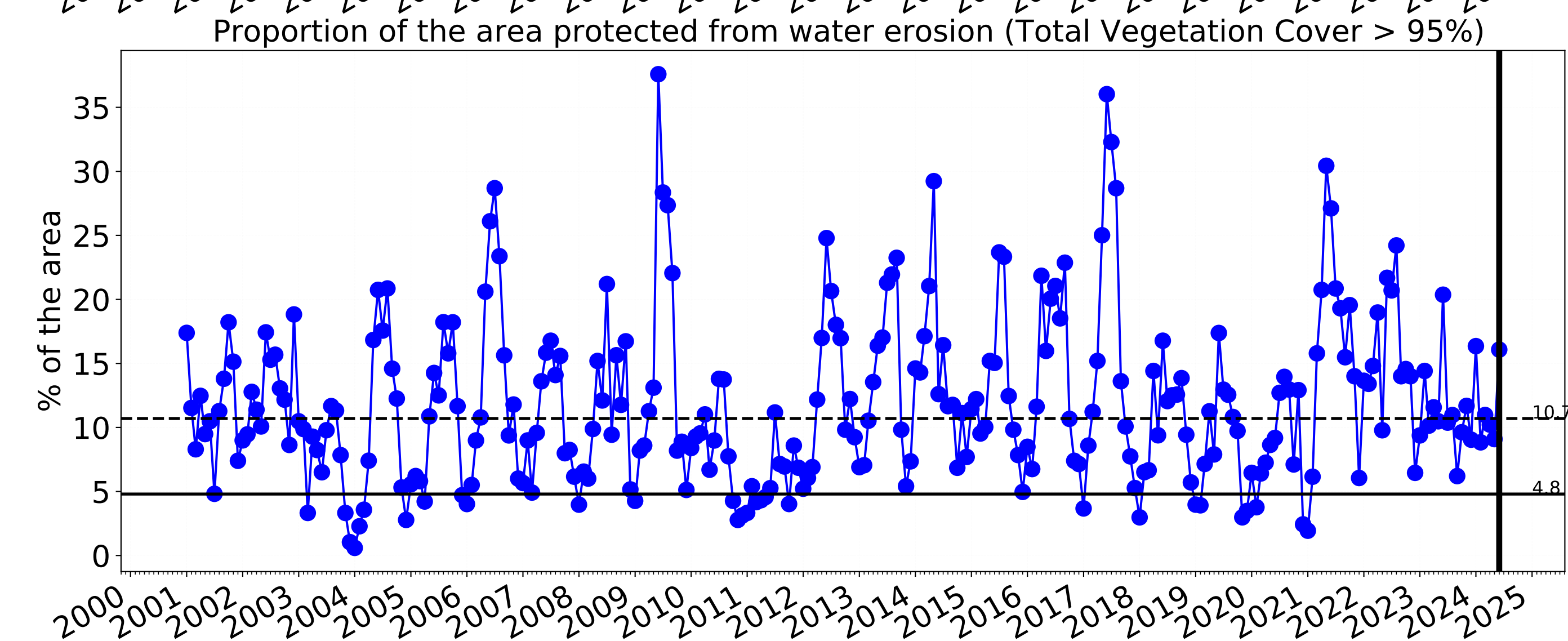
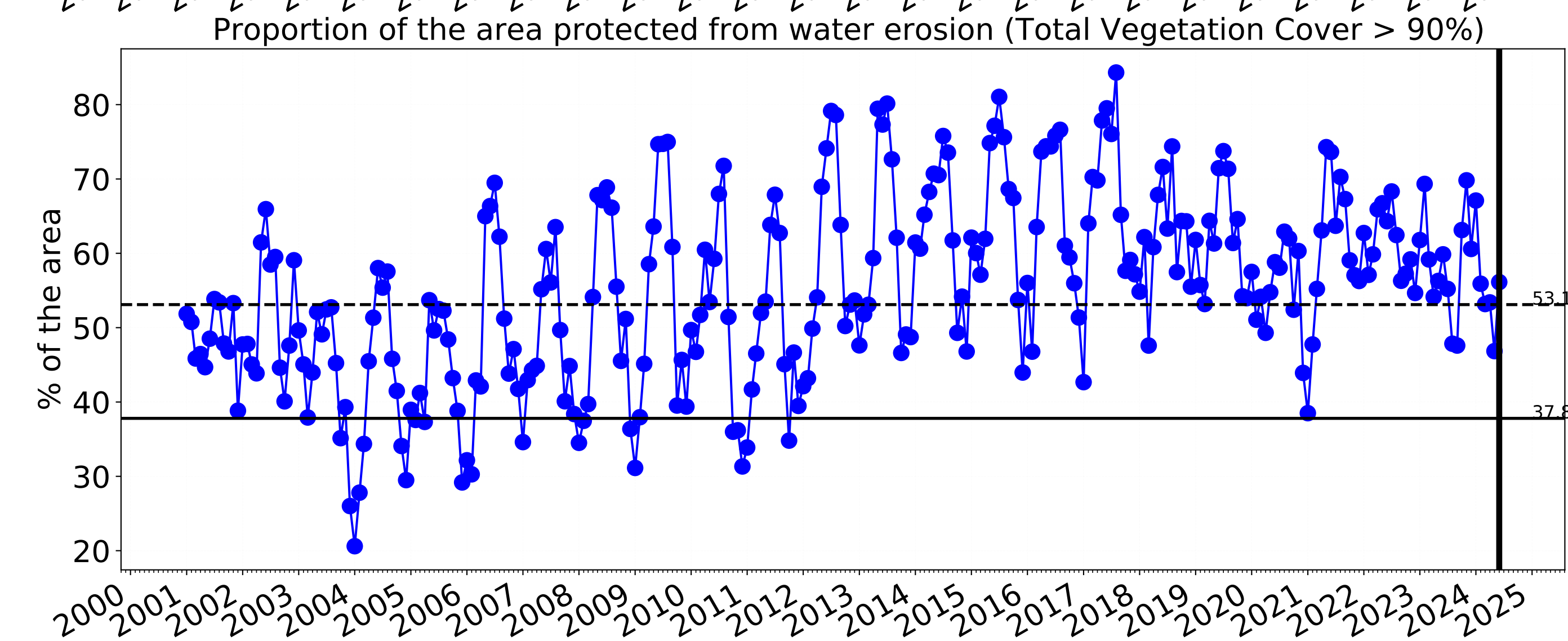
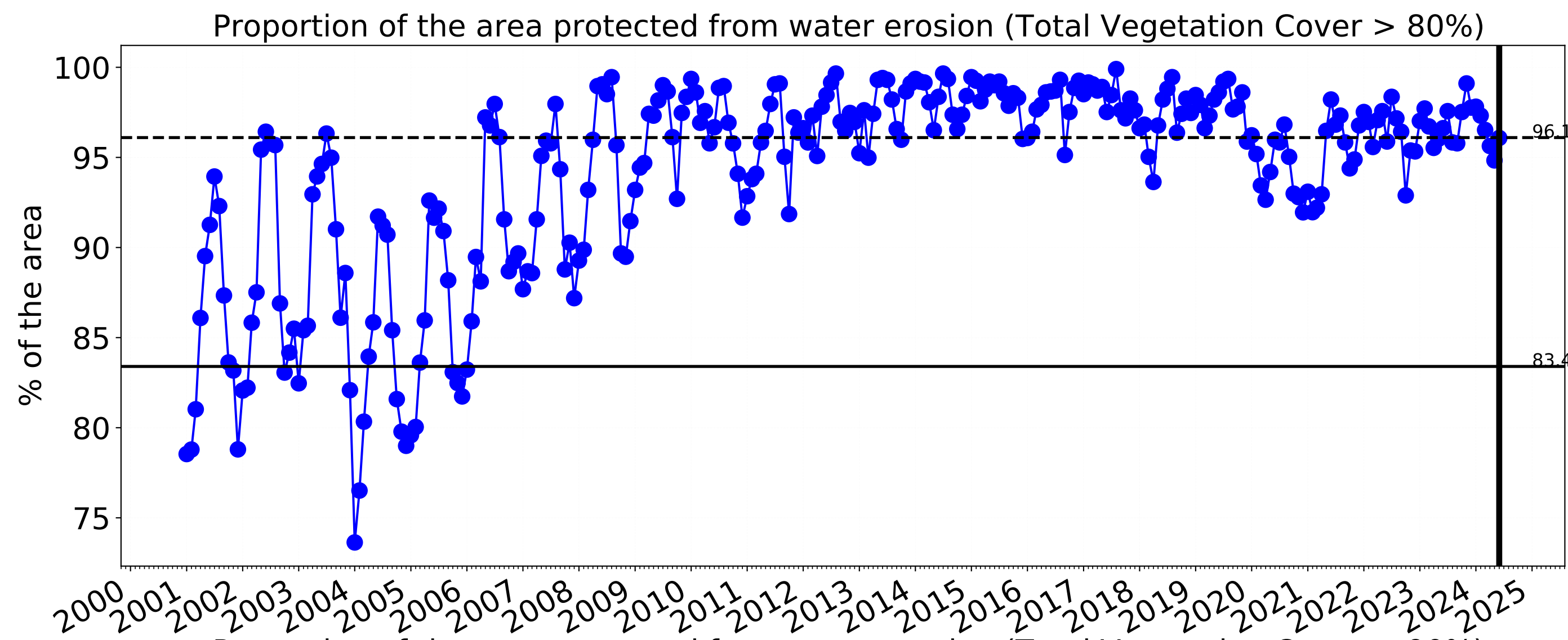


Total Vegetation Cover Decile [%]

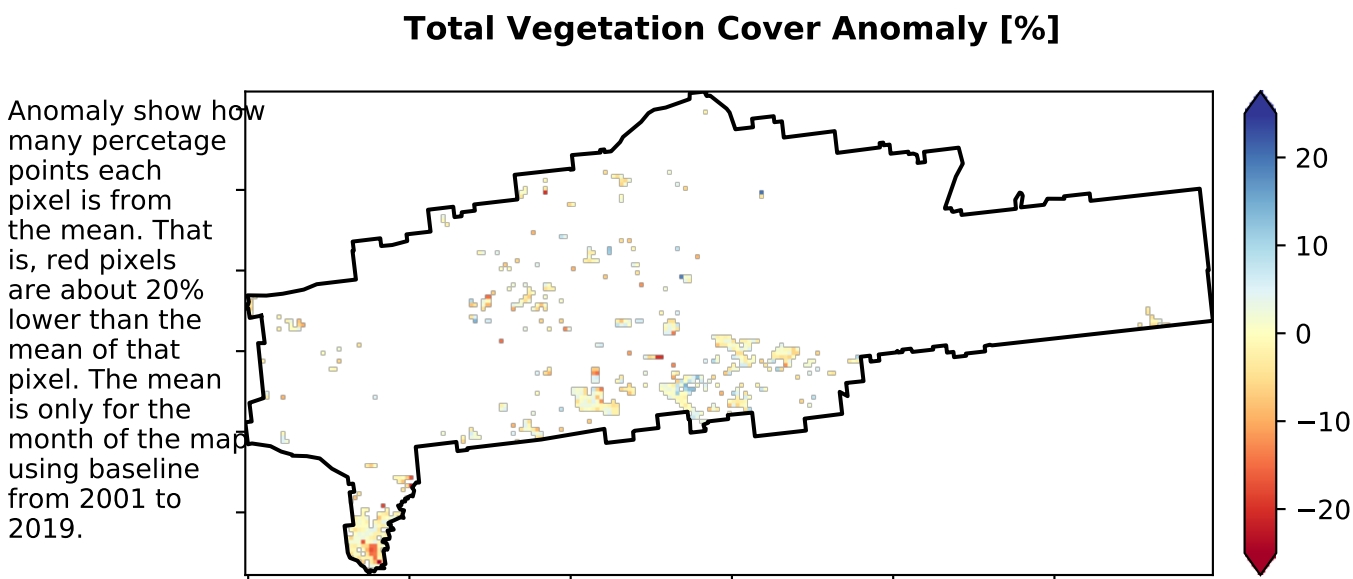
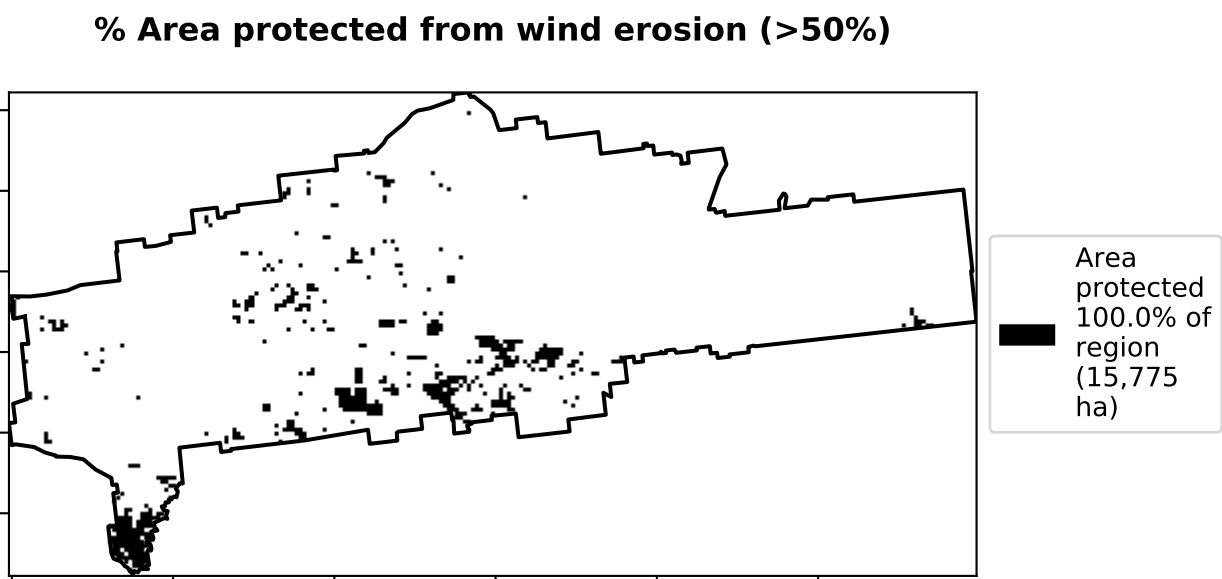
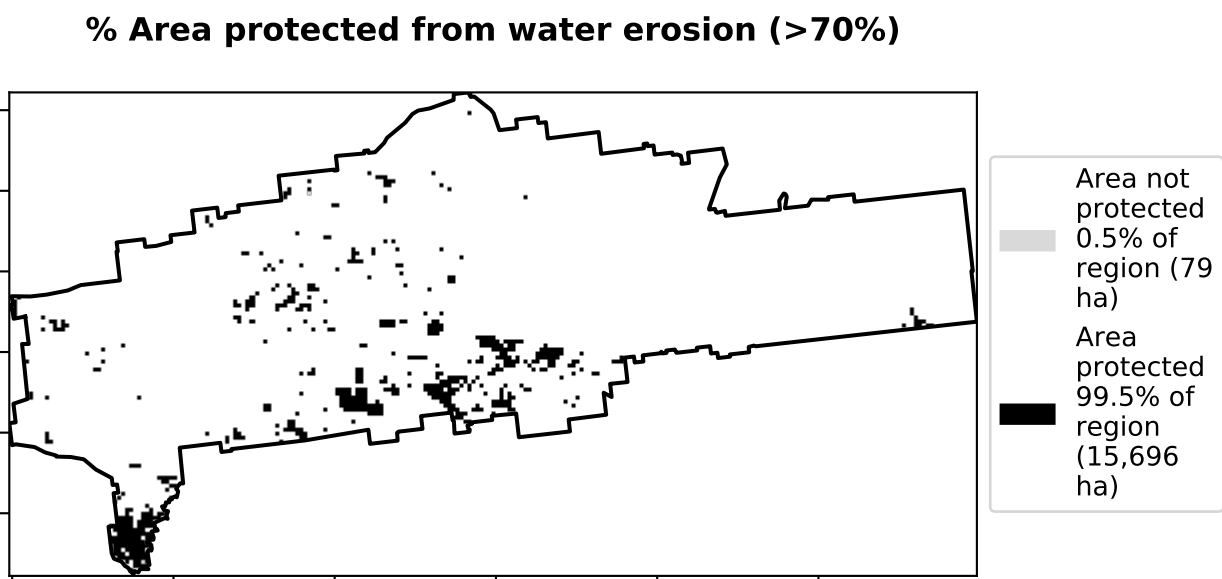
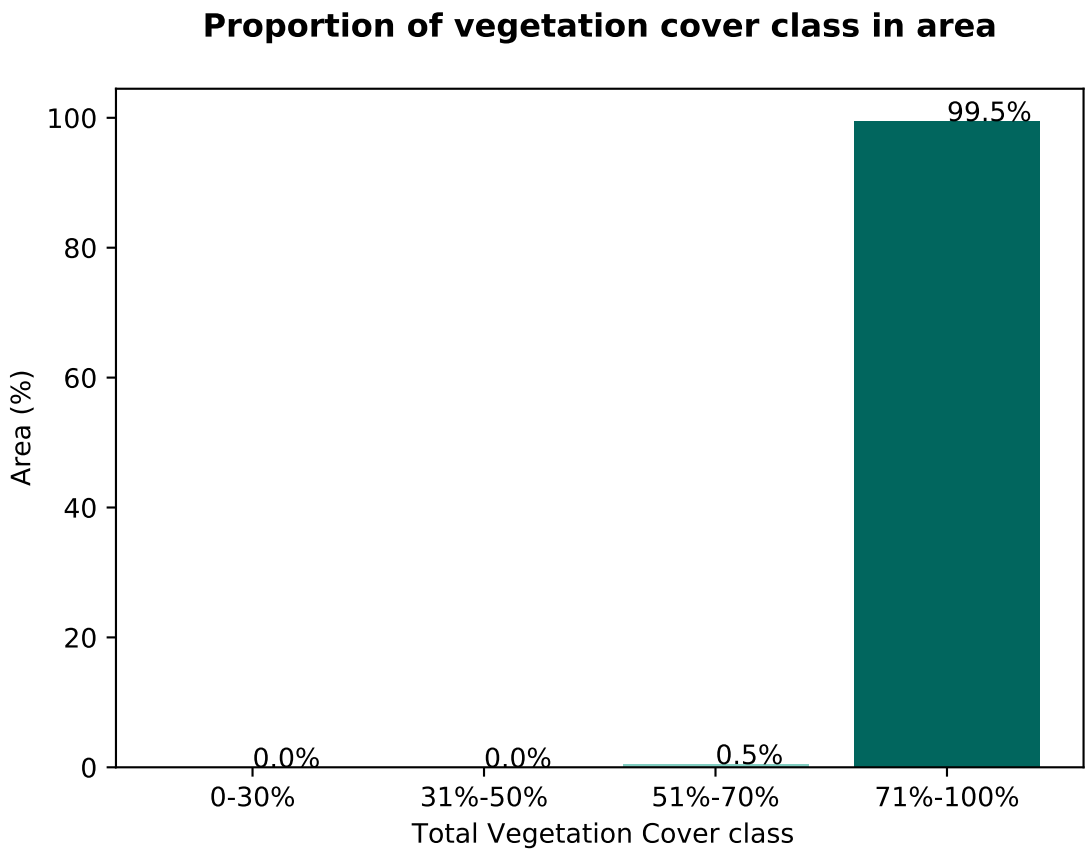
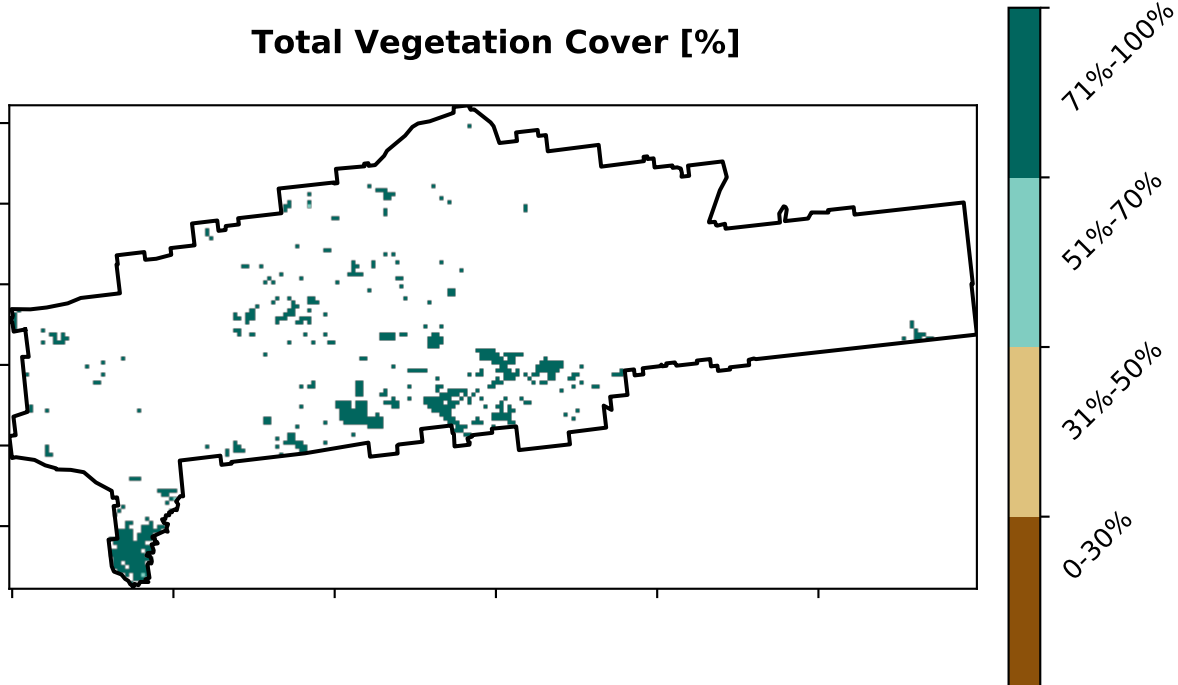
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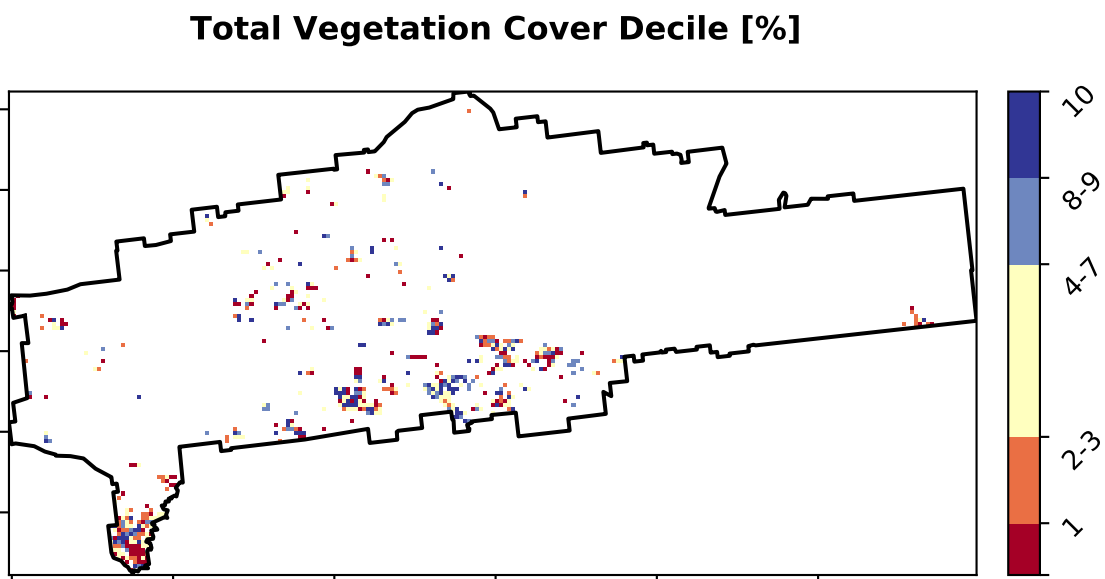




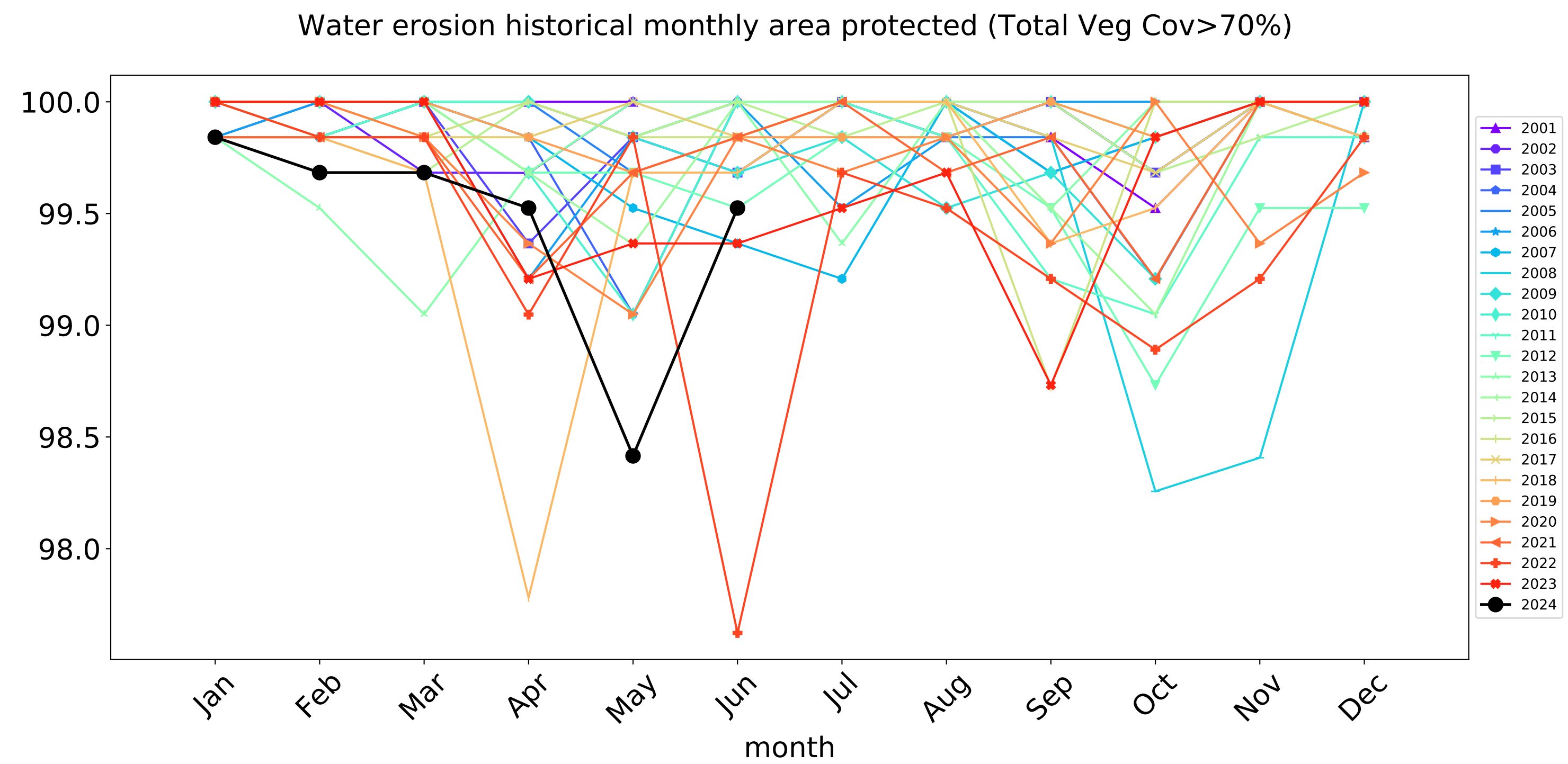
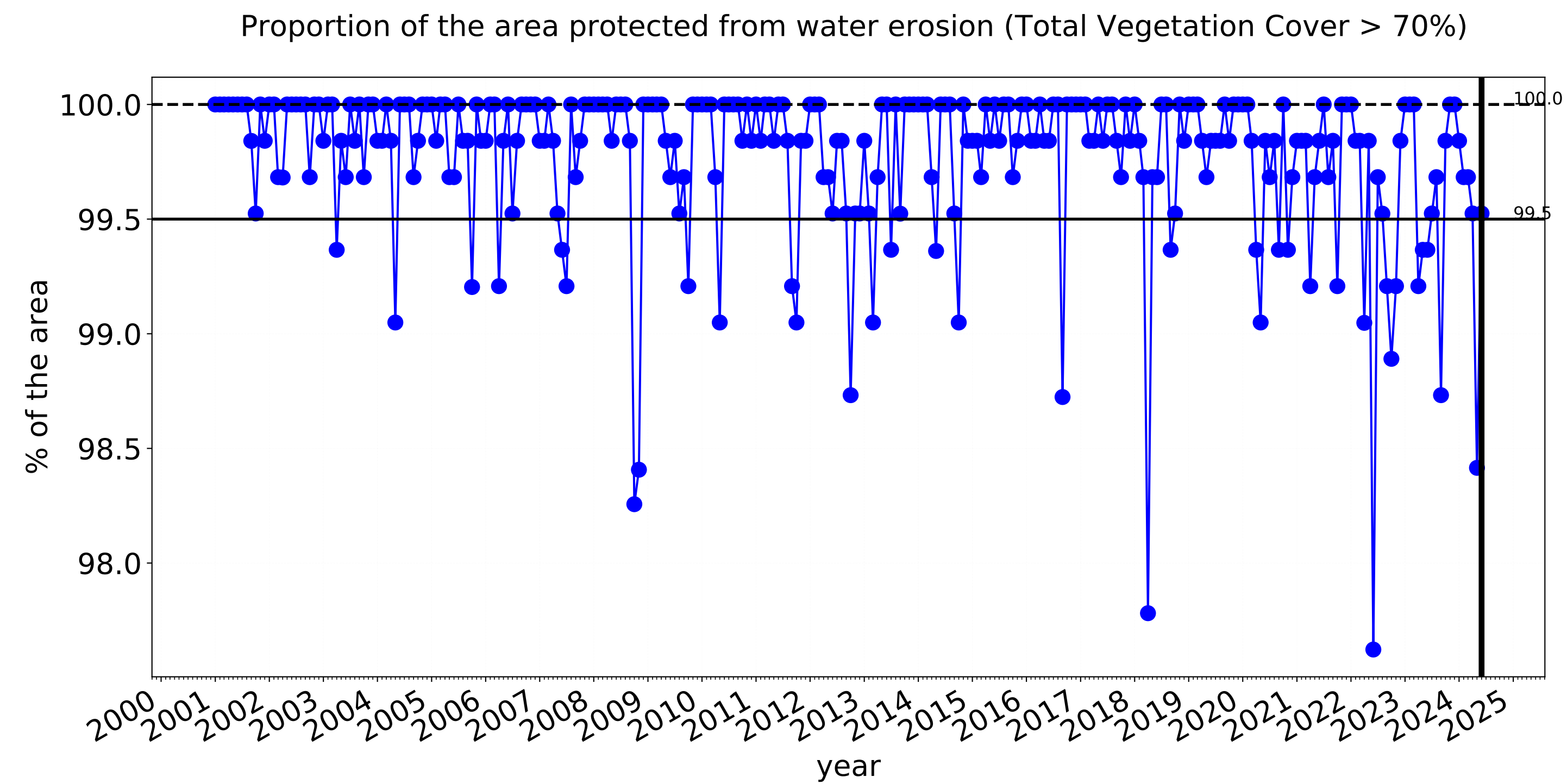
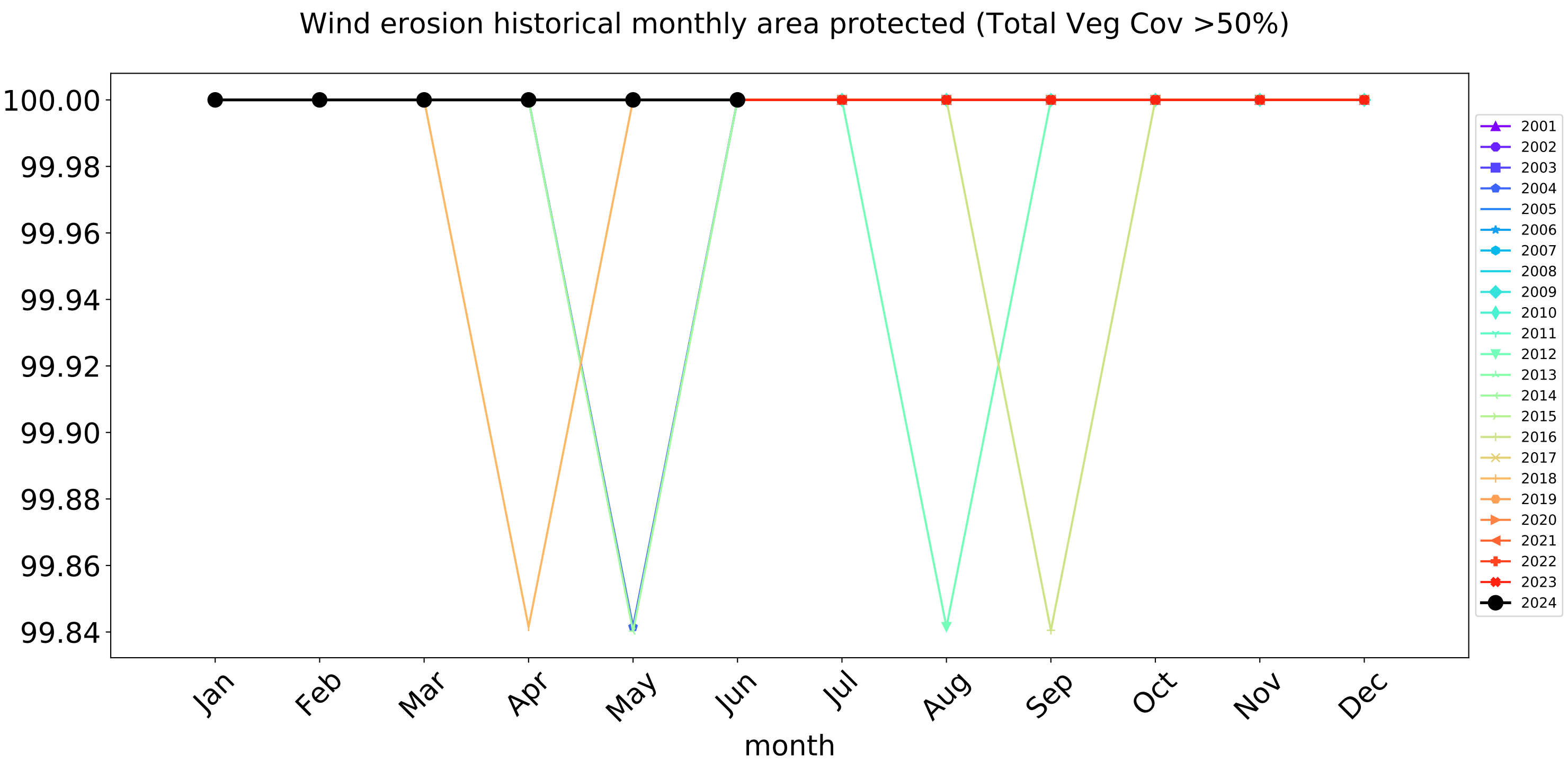
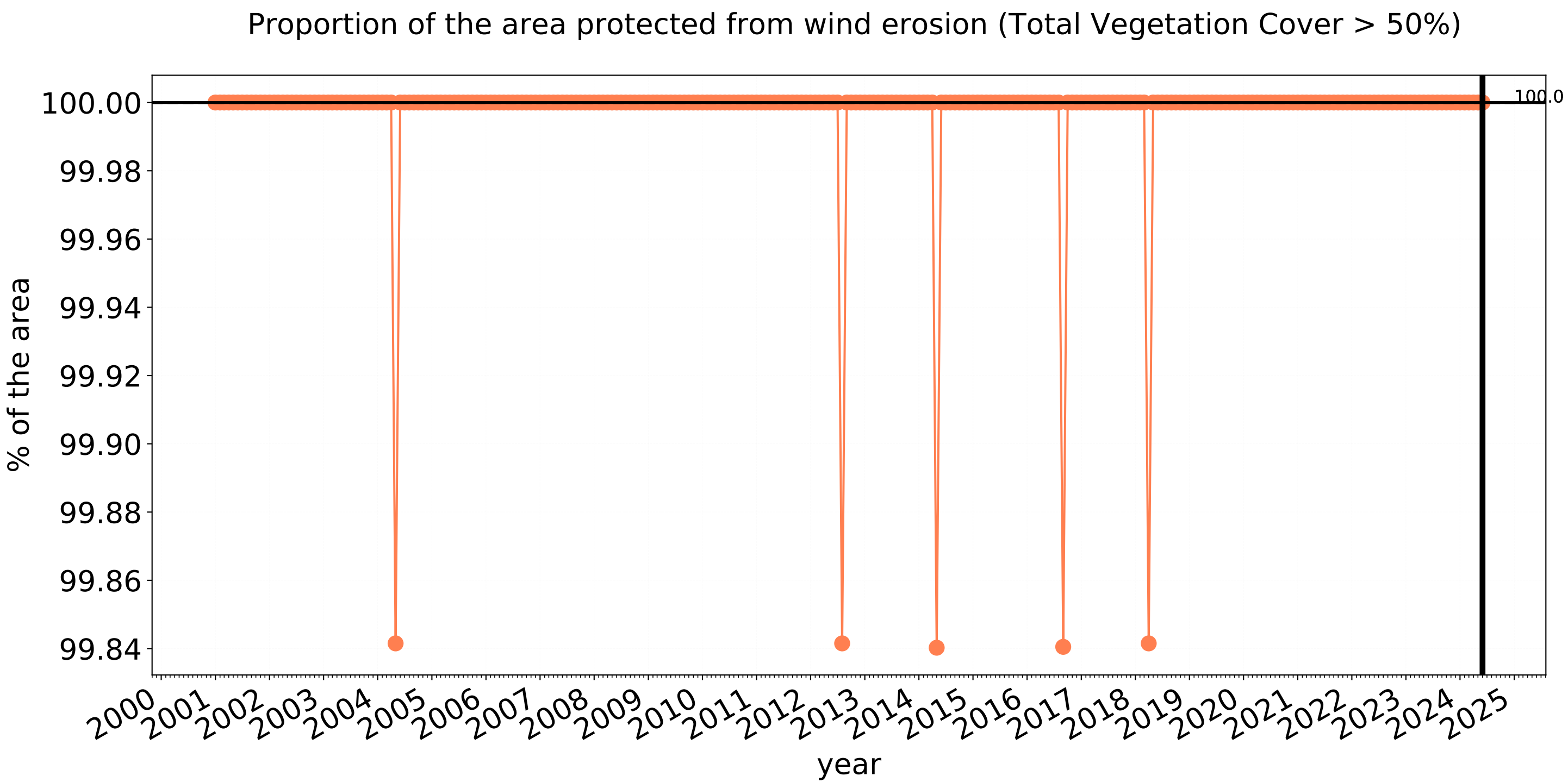
Conservation and natural environments Forest (non woodland)



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



Conservation and natural environments Forest (non woodland) timeseries

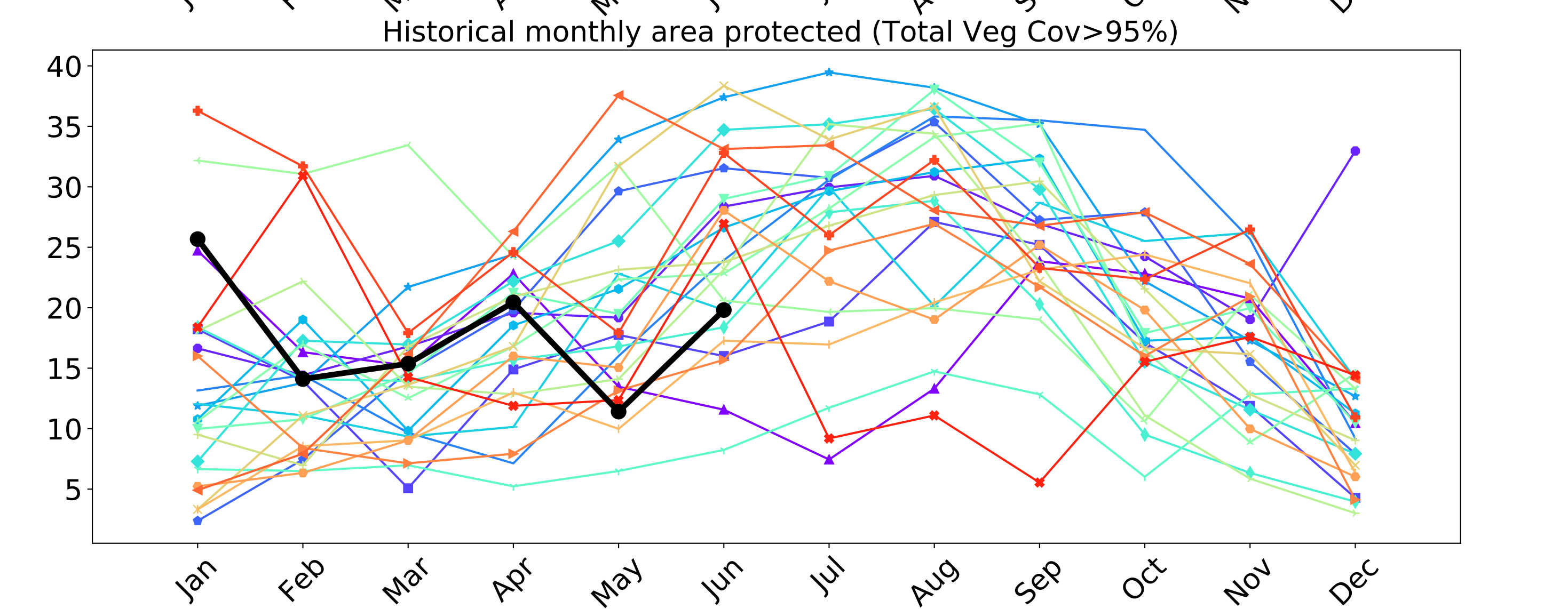
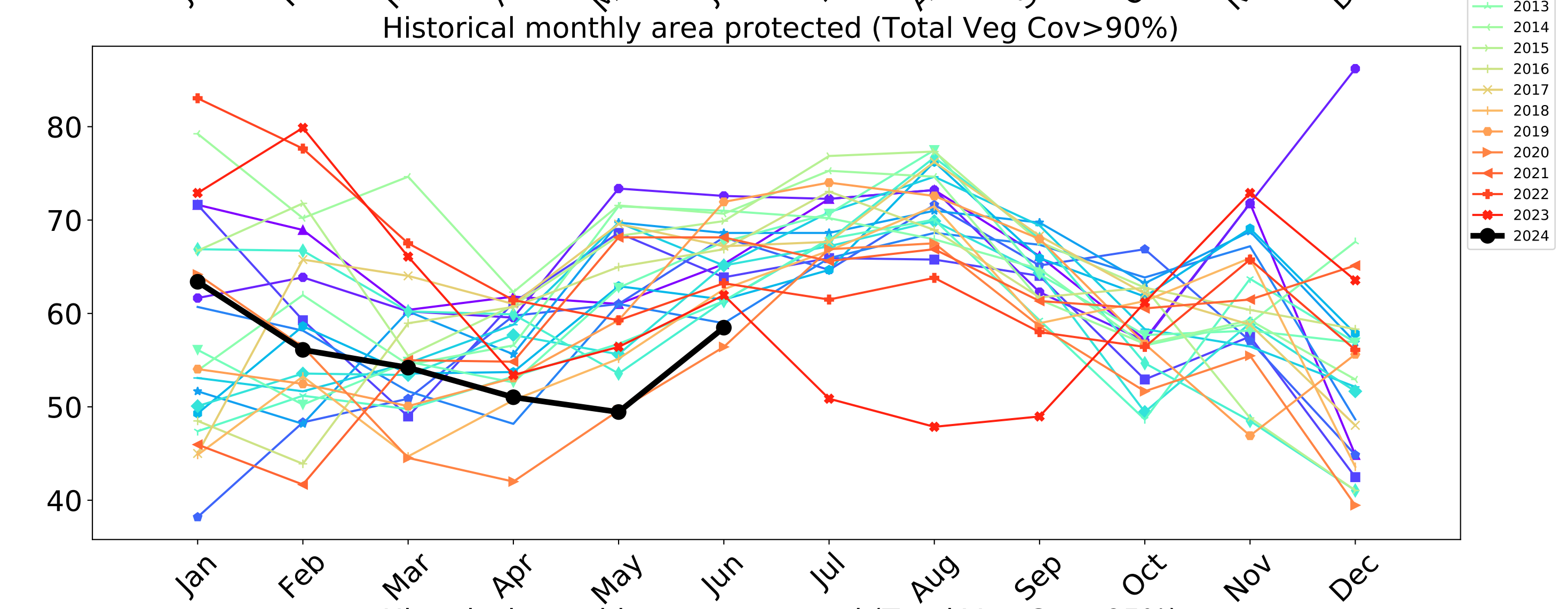
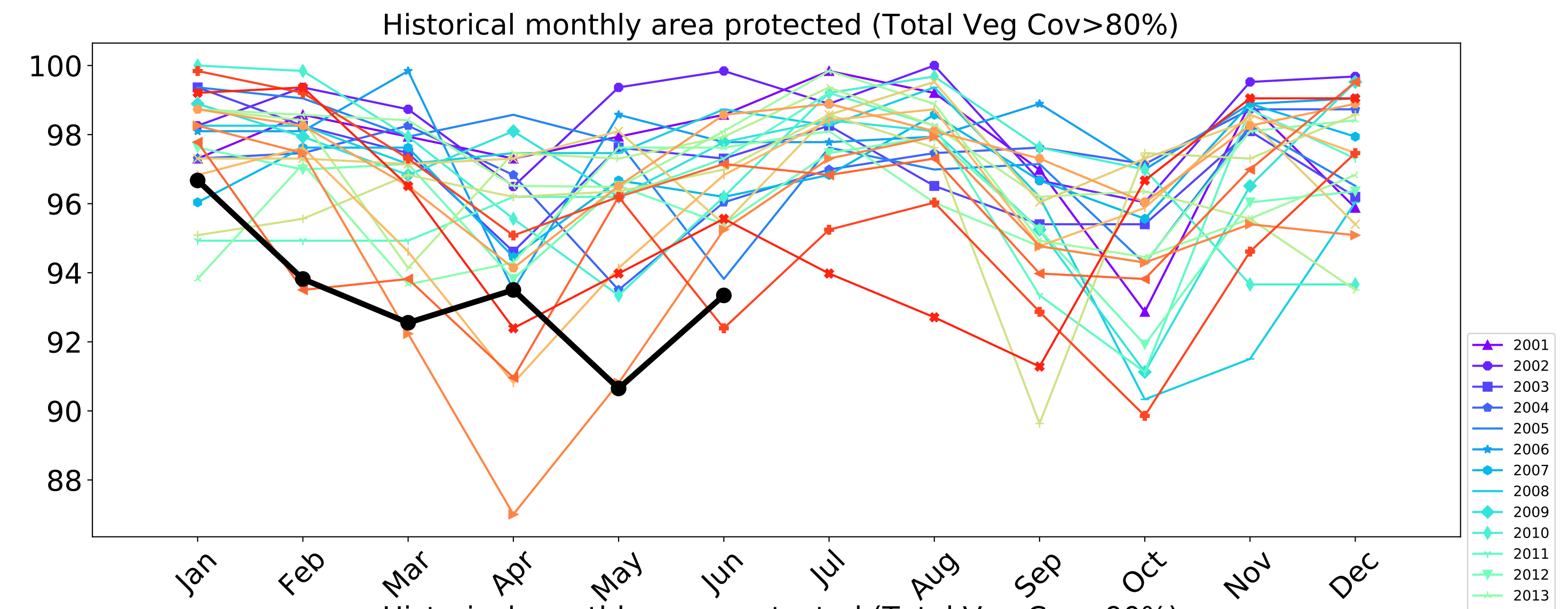
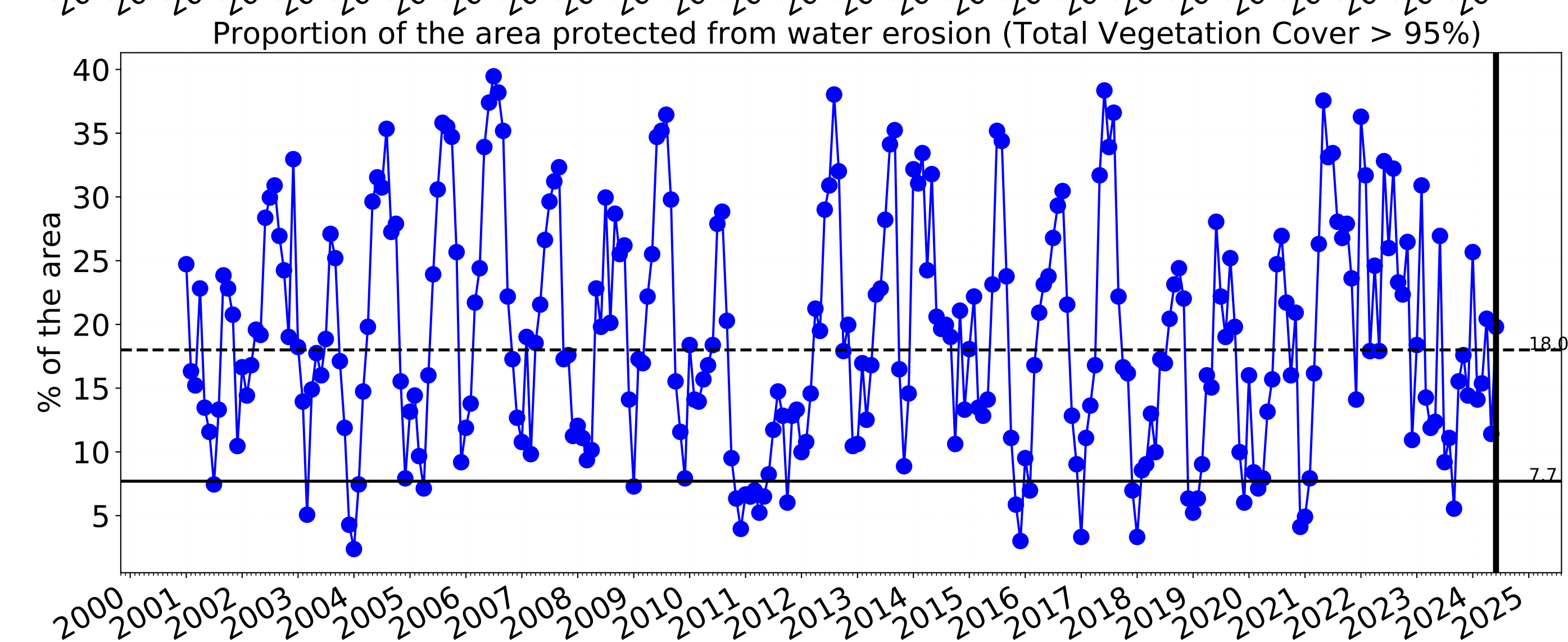
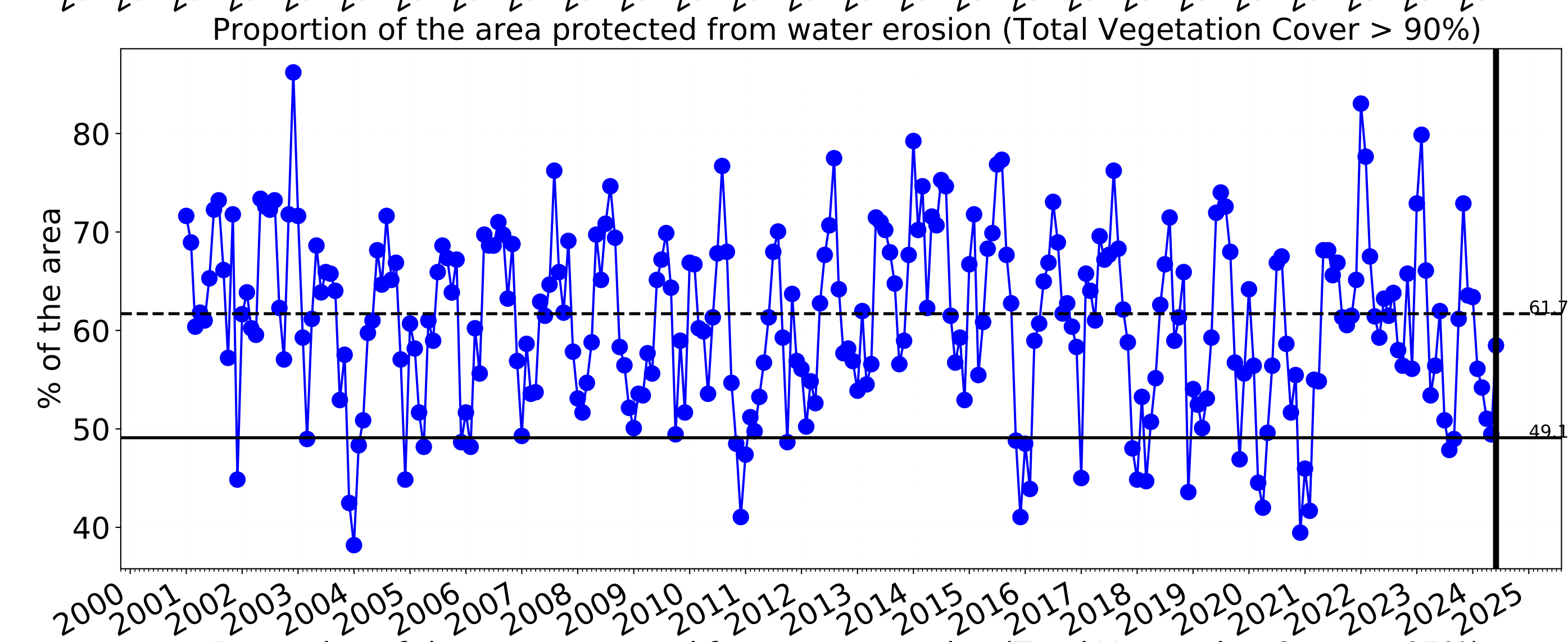
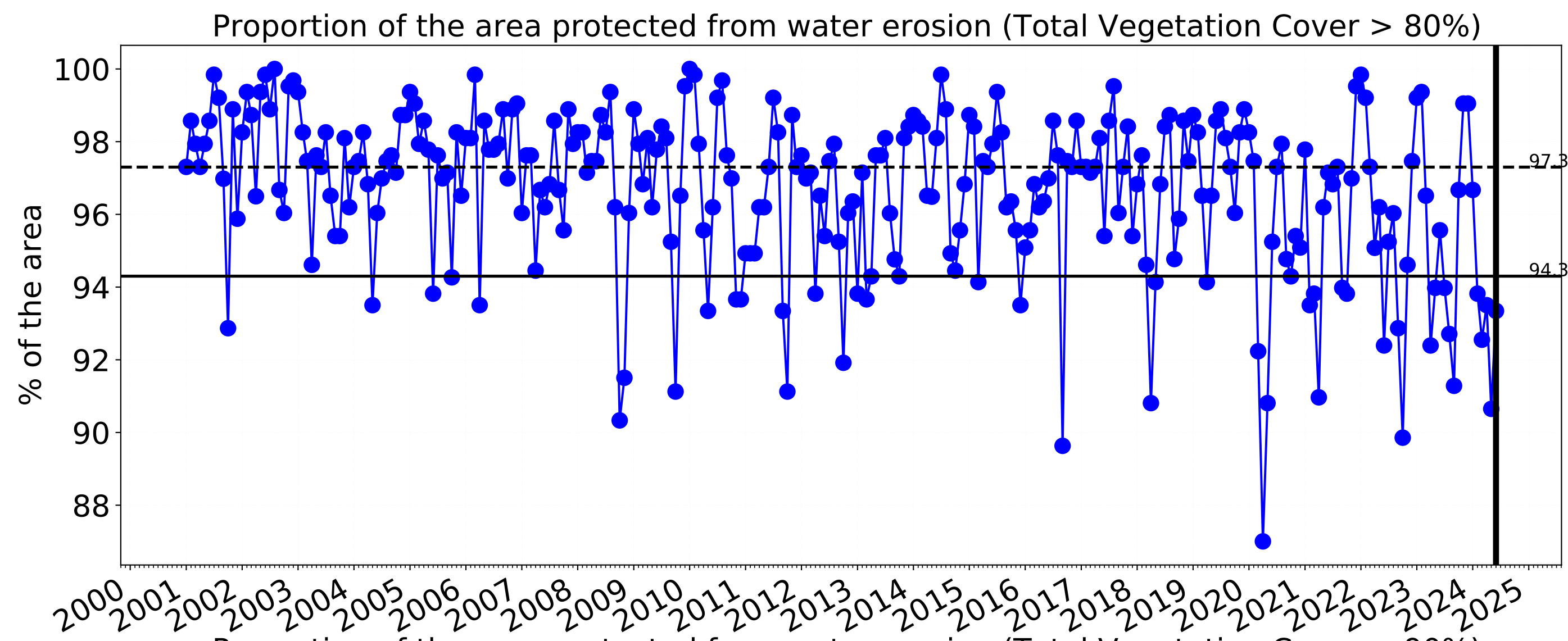


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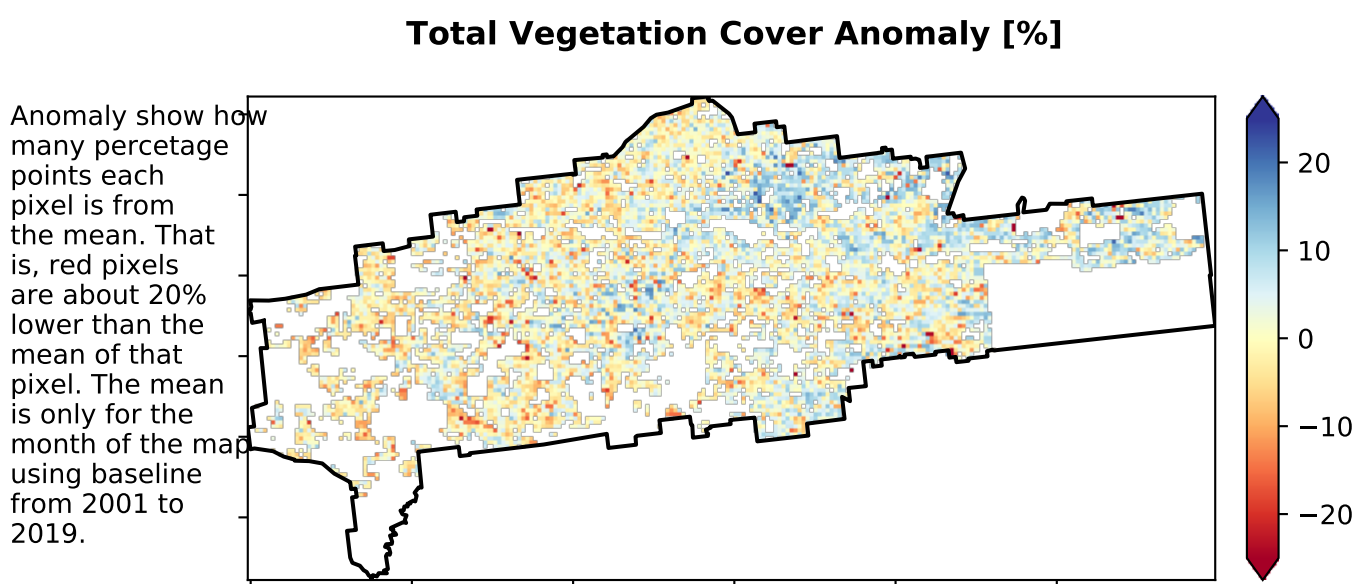
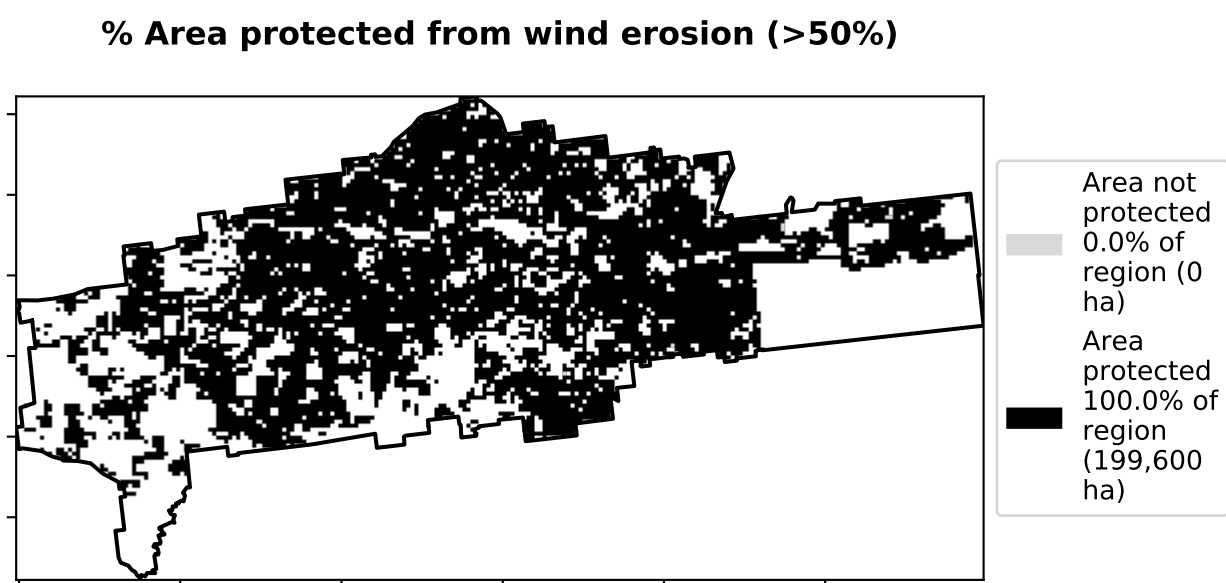
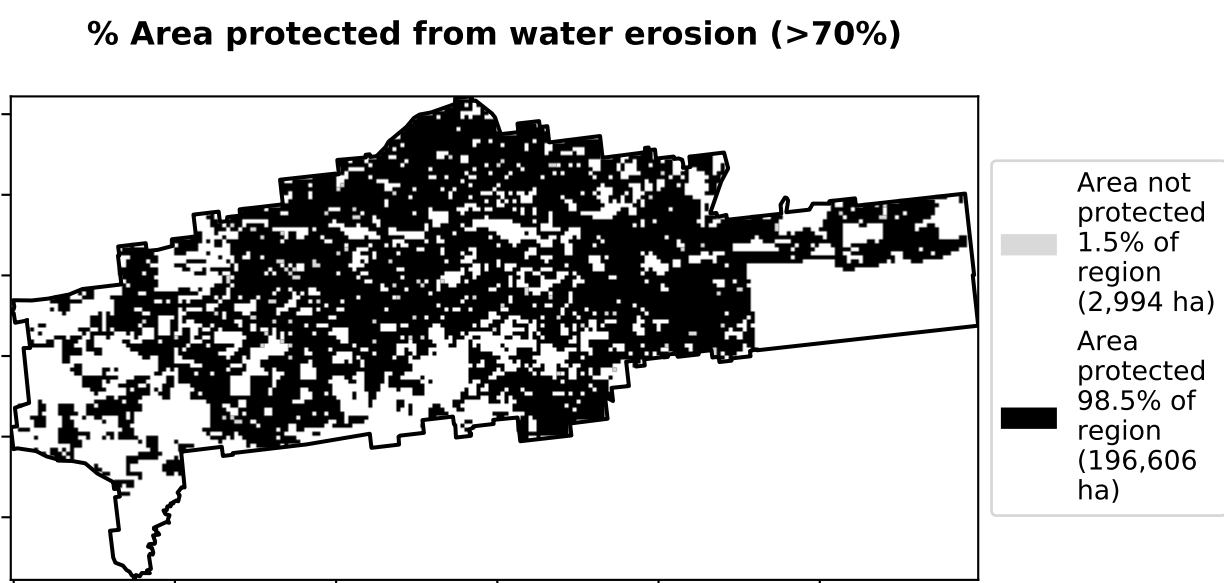
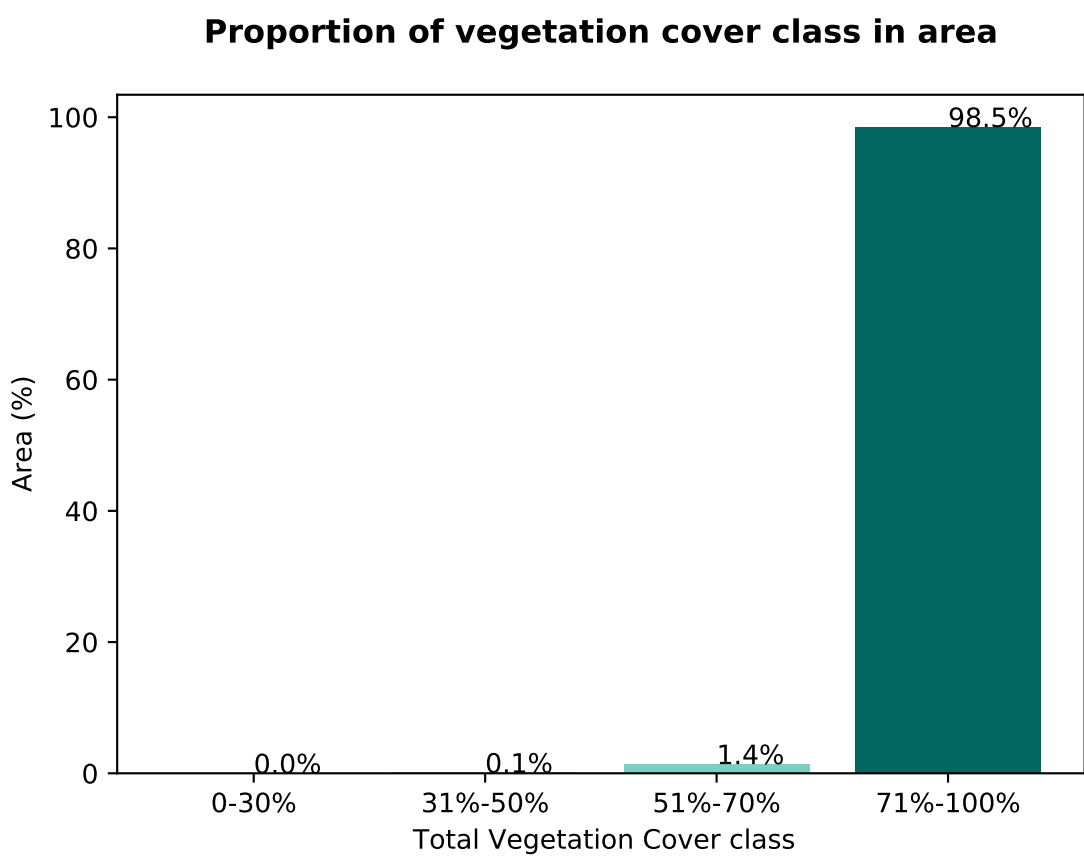
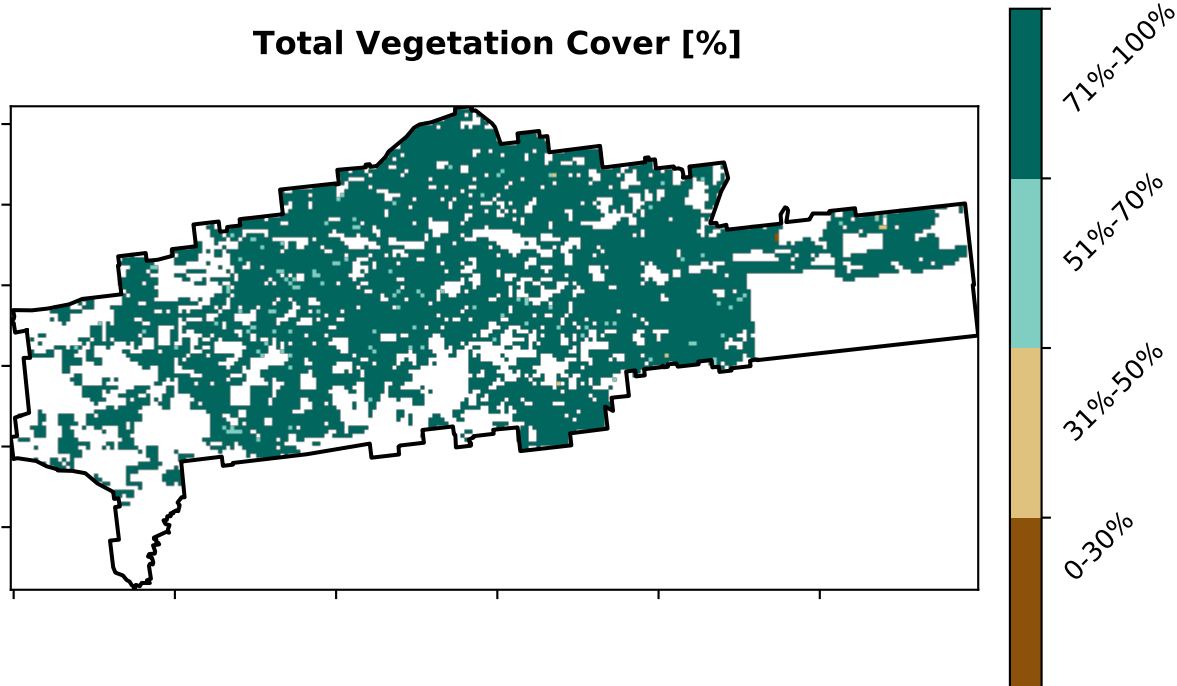
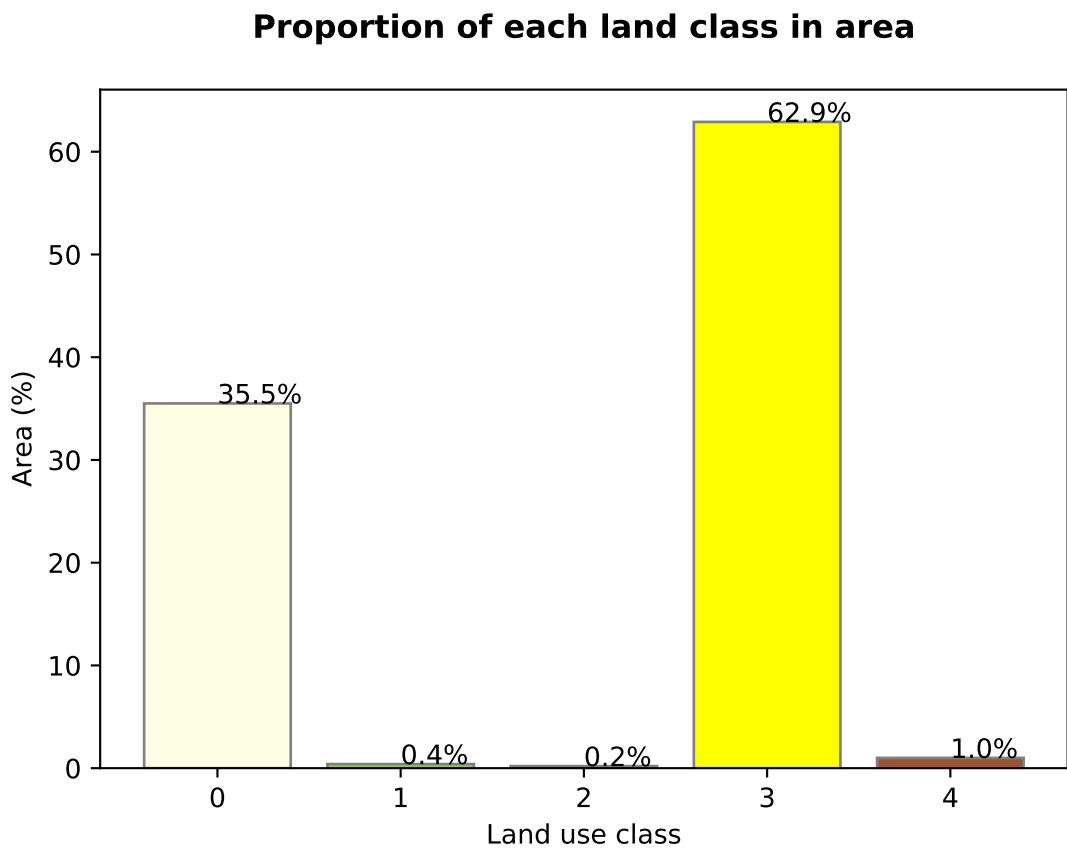
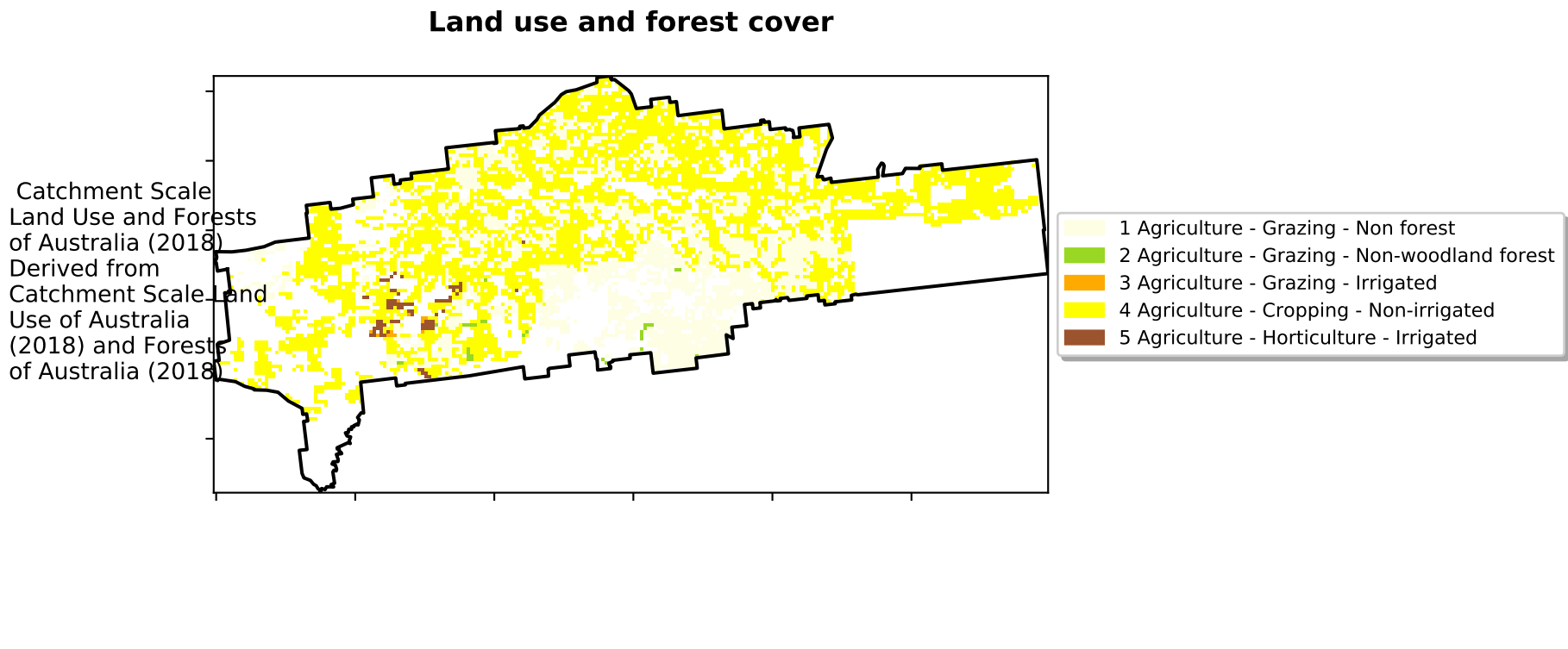


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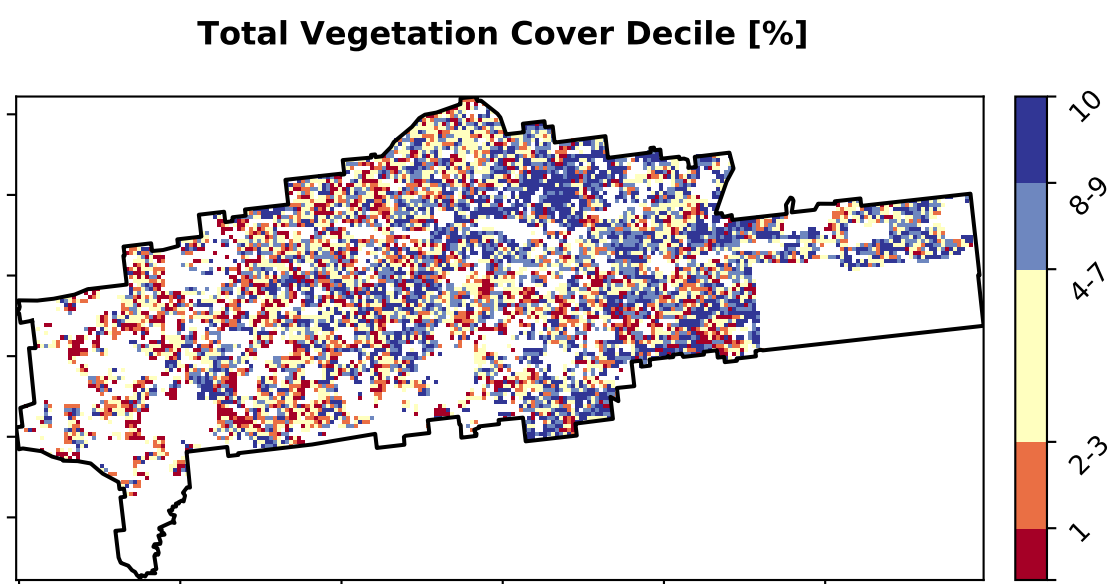




Agriculture



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.



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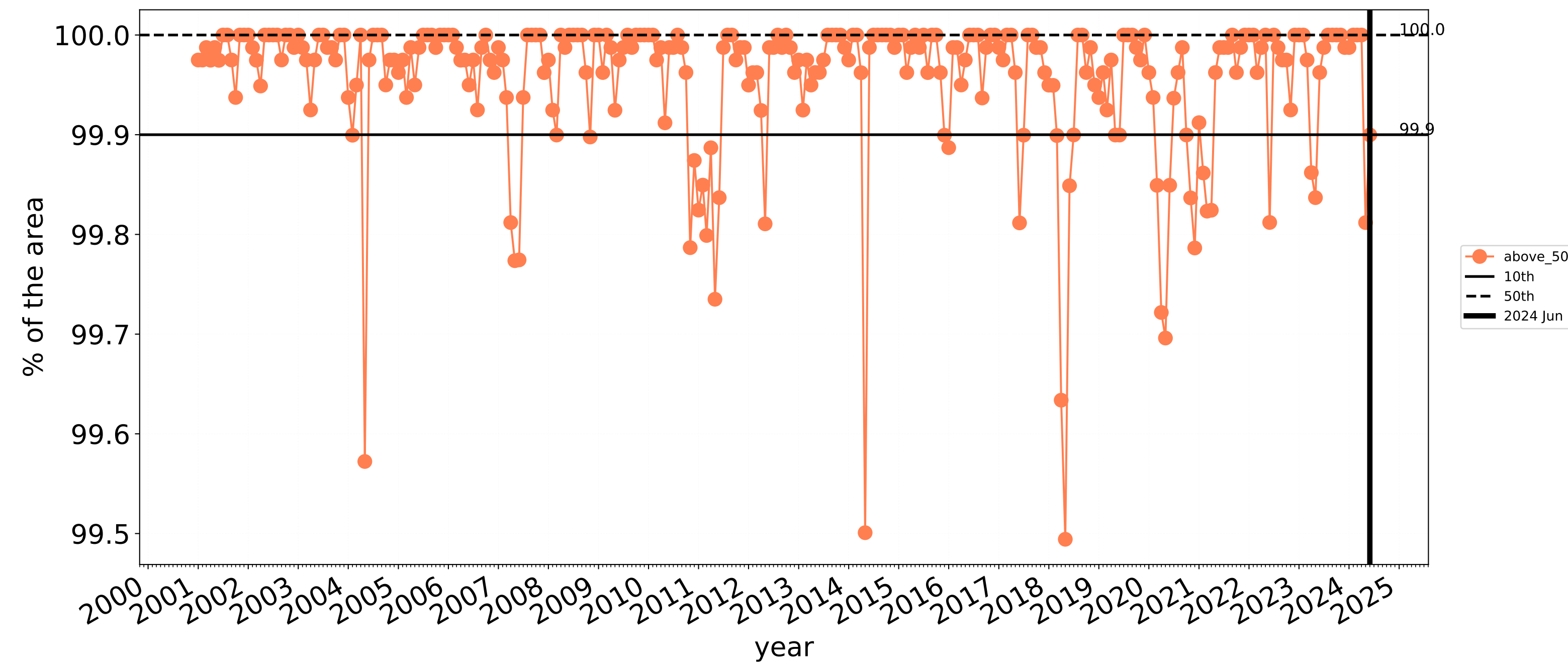


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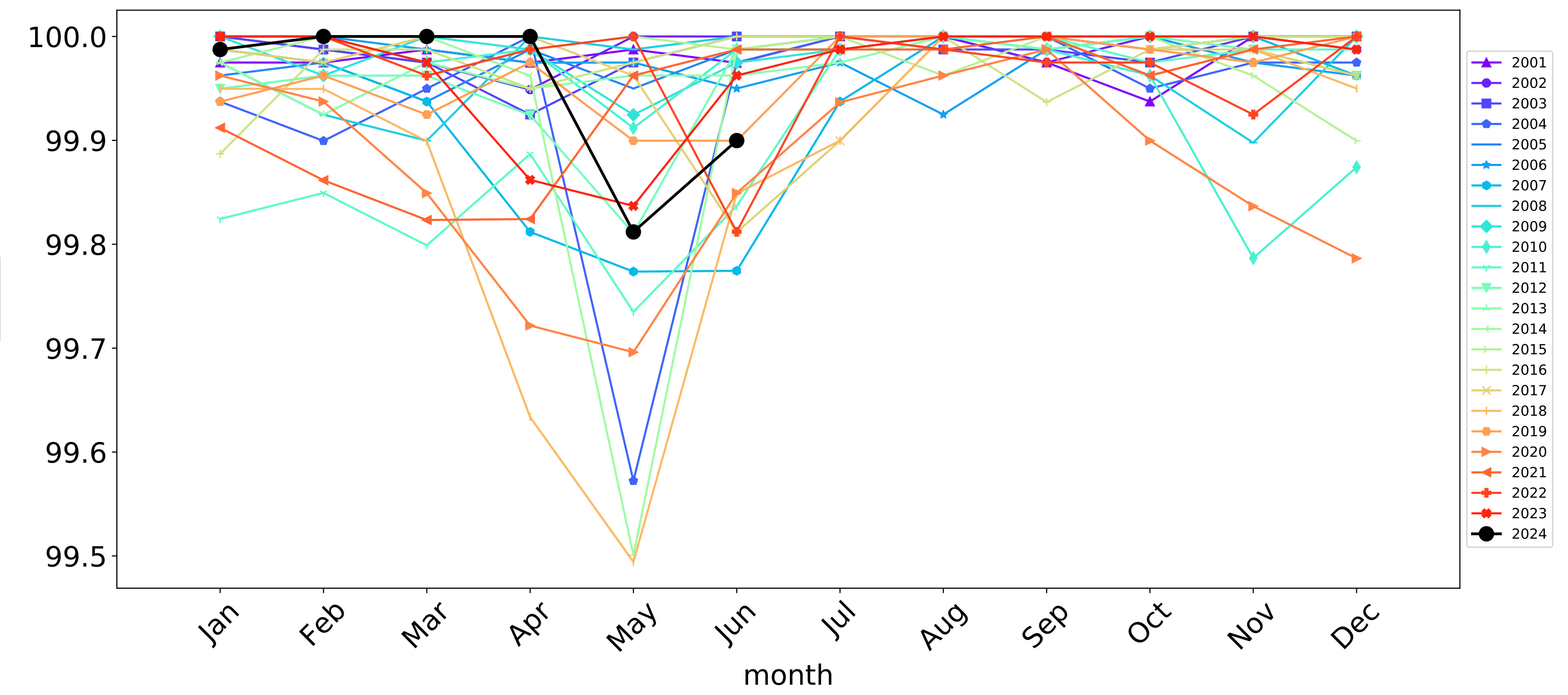


Agriculture timeseries

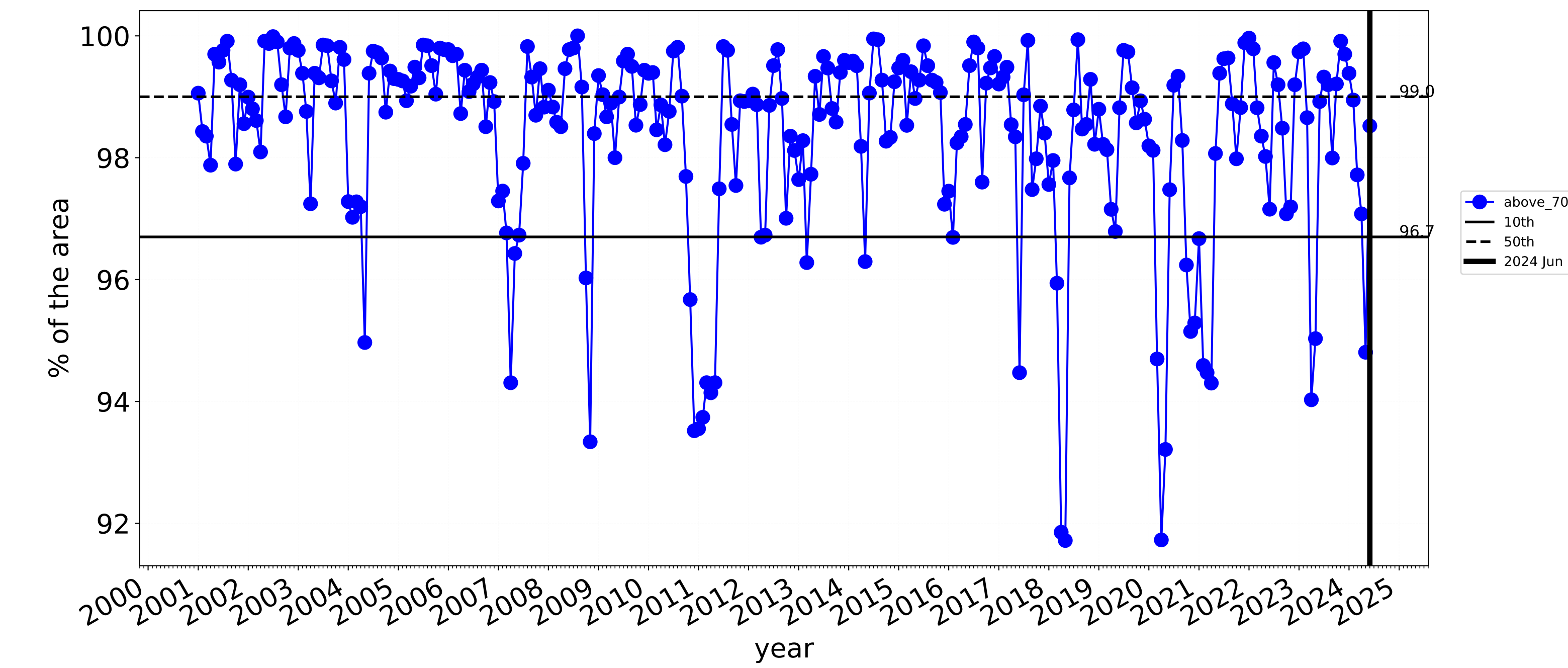
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



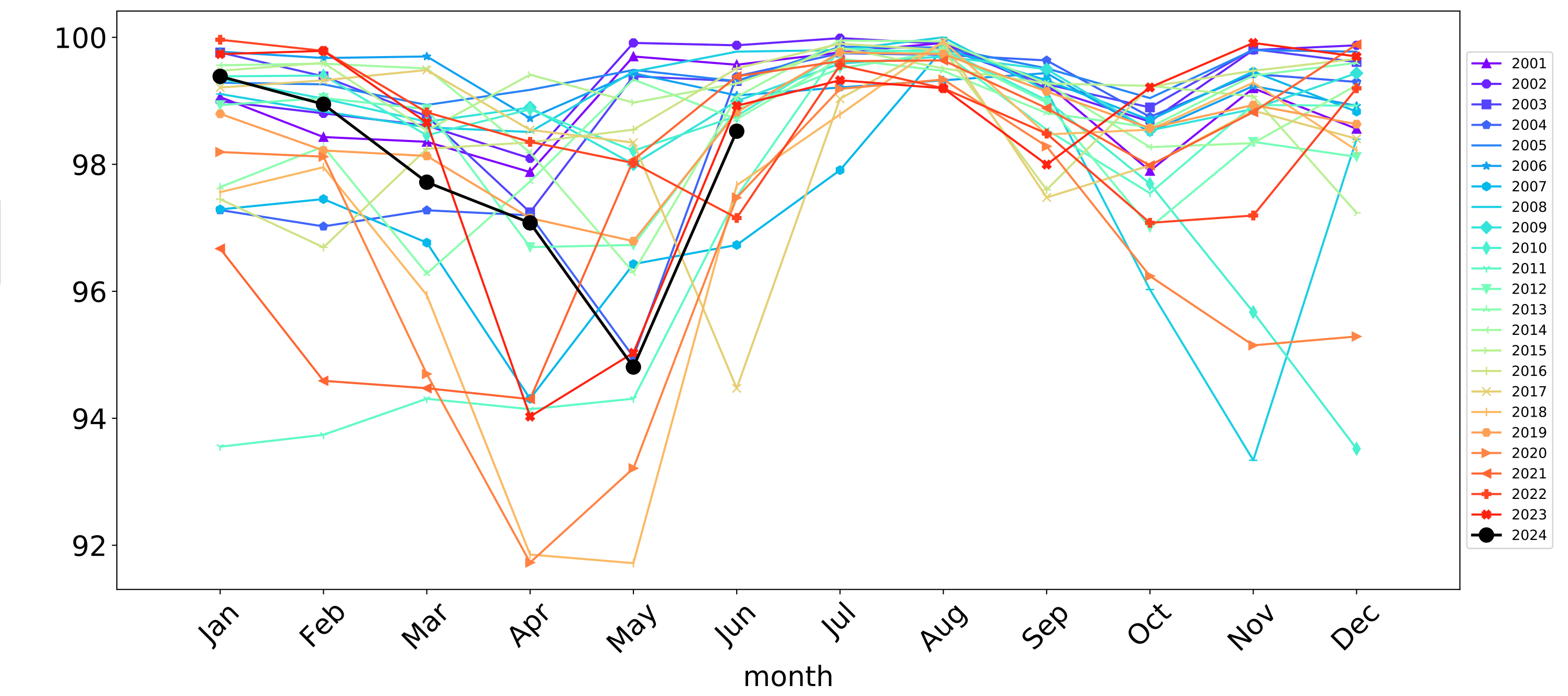
Wind erosion historical monthly area protected (Total Veg Cov >50%)

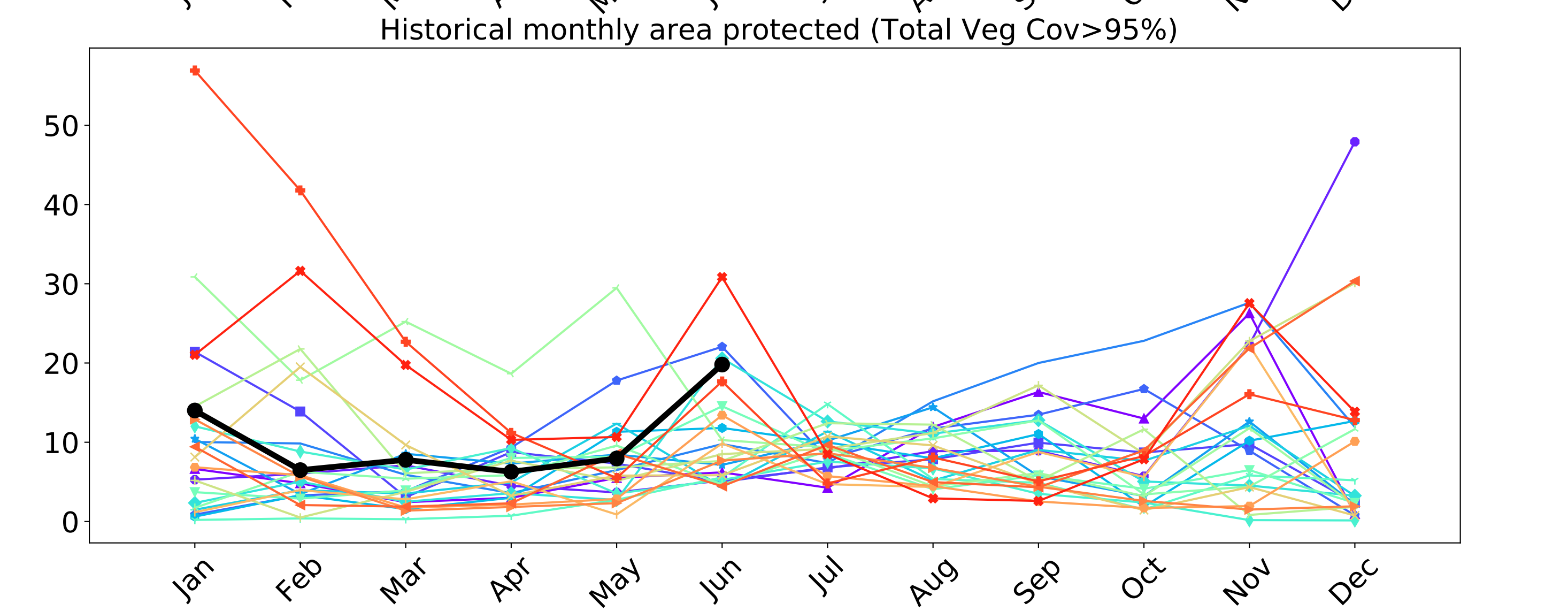
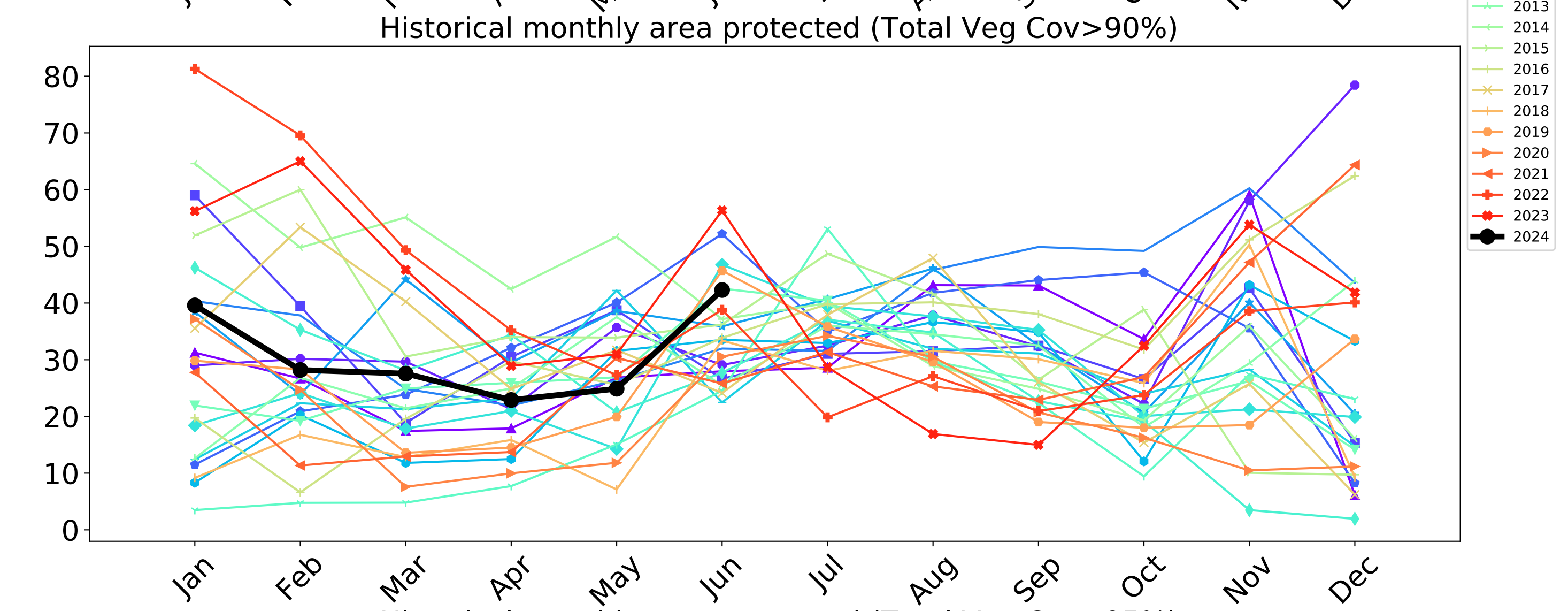
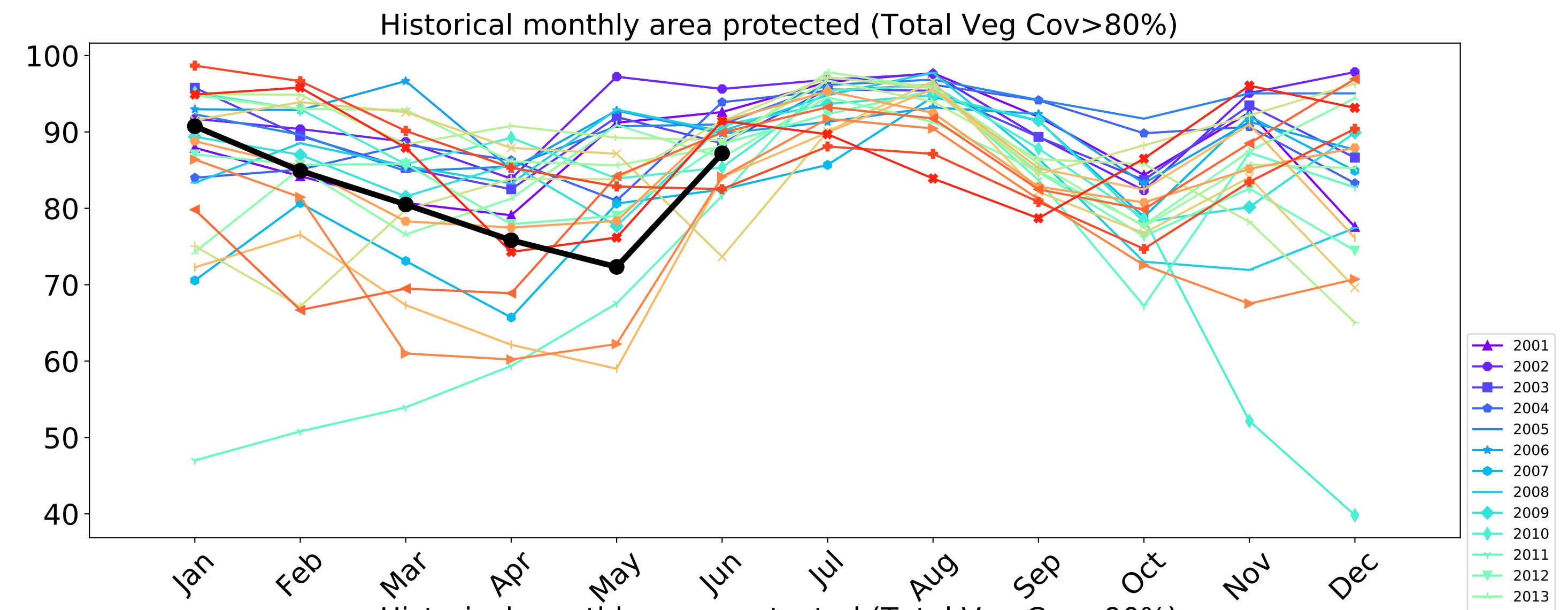
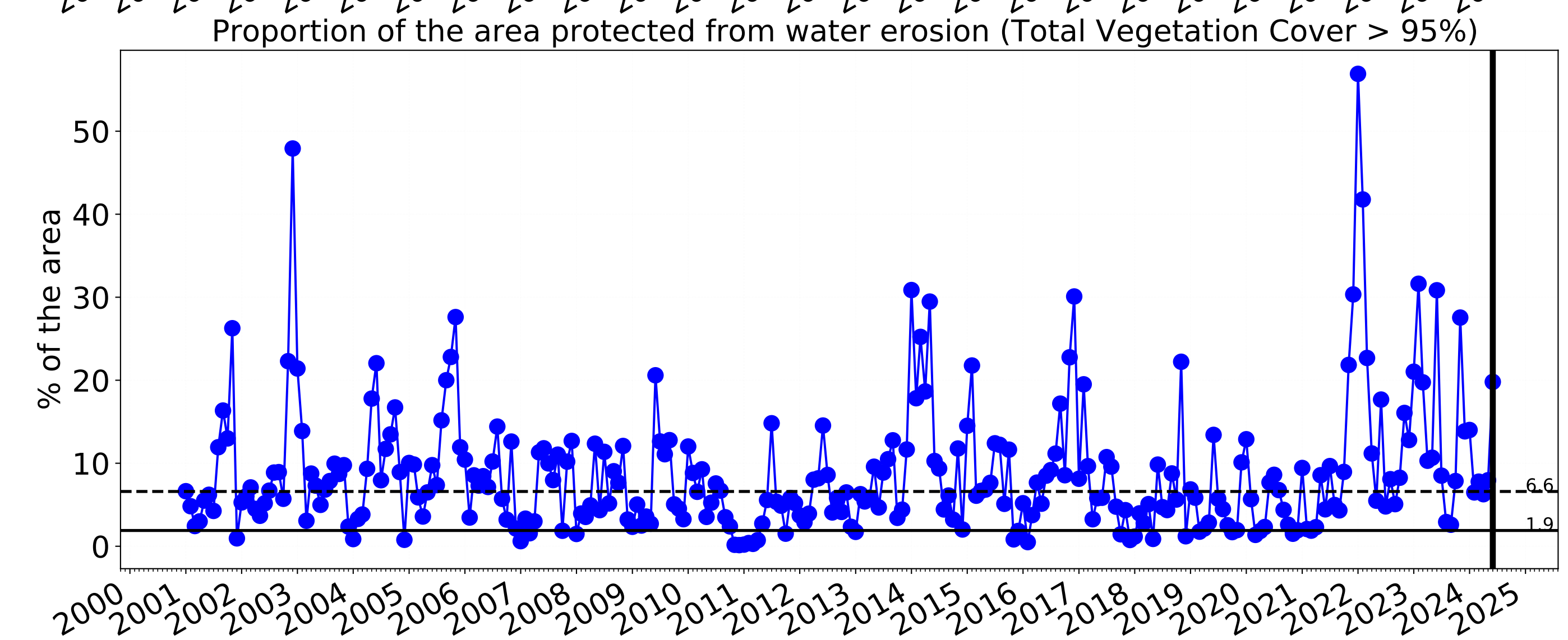
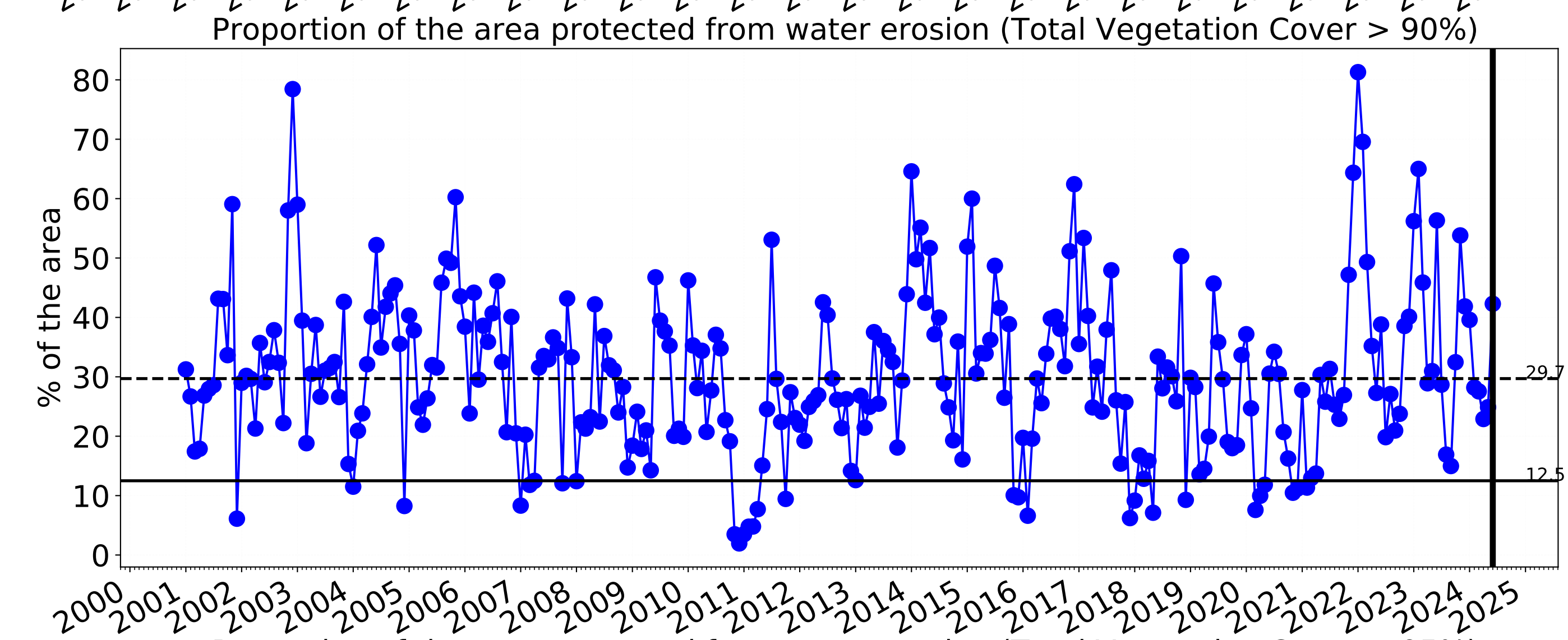
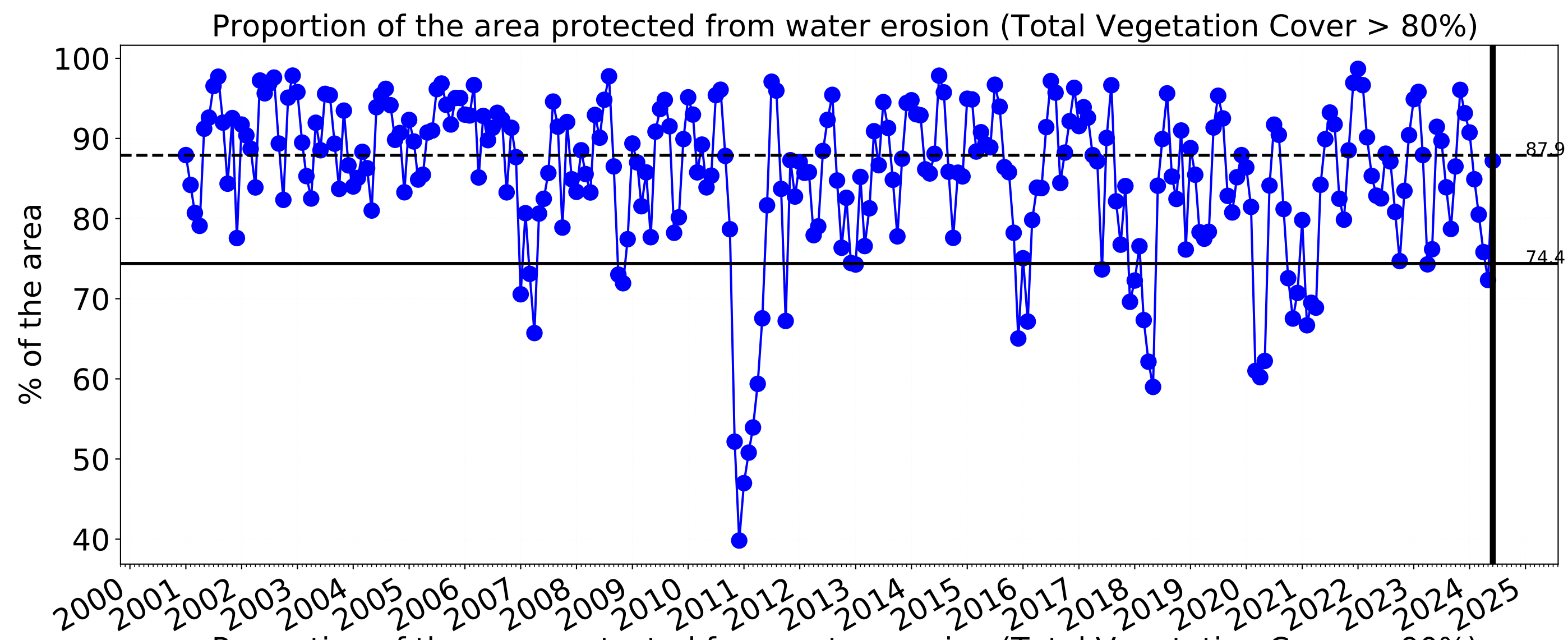


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



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





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)

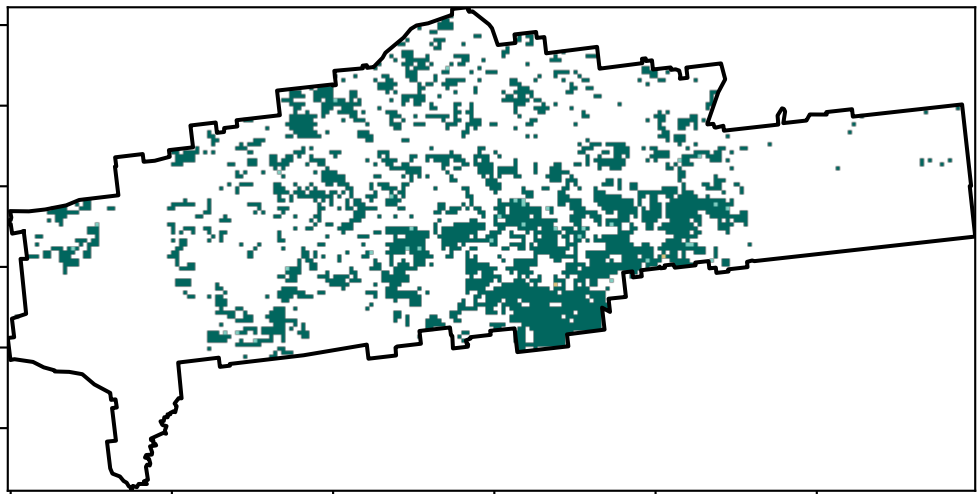


- 1 Agriculture - Grazing - Non forest
- 2 Agriculture - Grazing - Non-woodland forest

Proportion of each land class in area

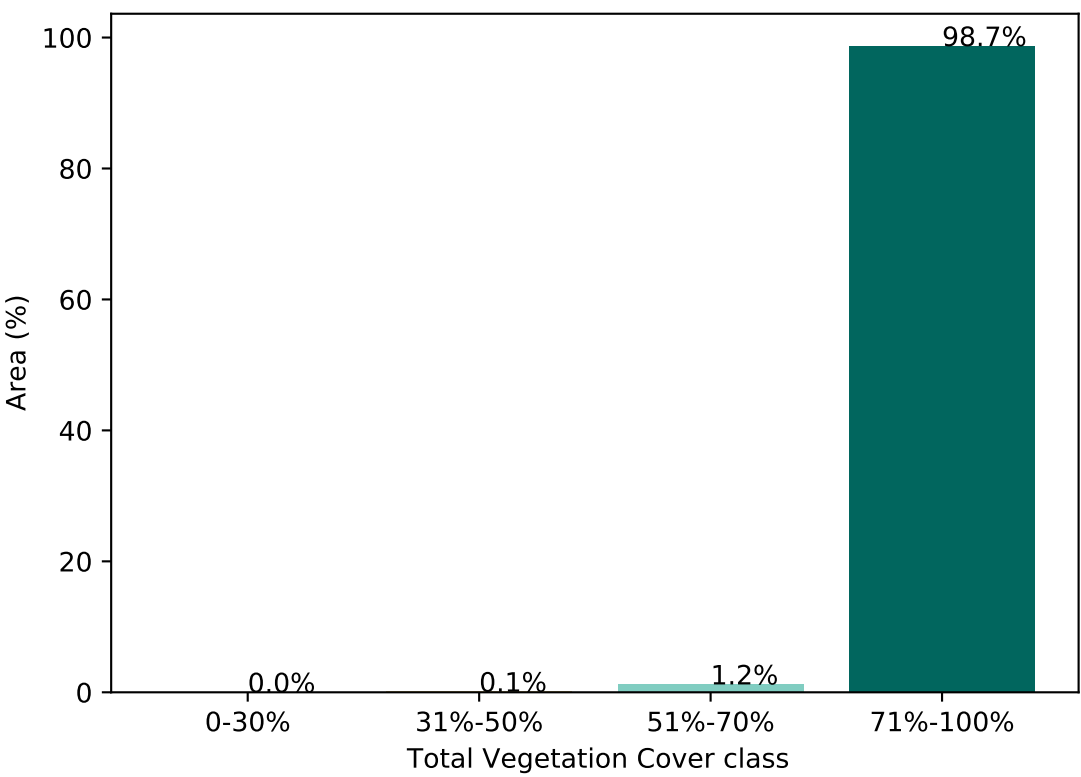


Total Vegetation Cover [%]

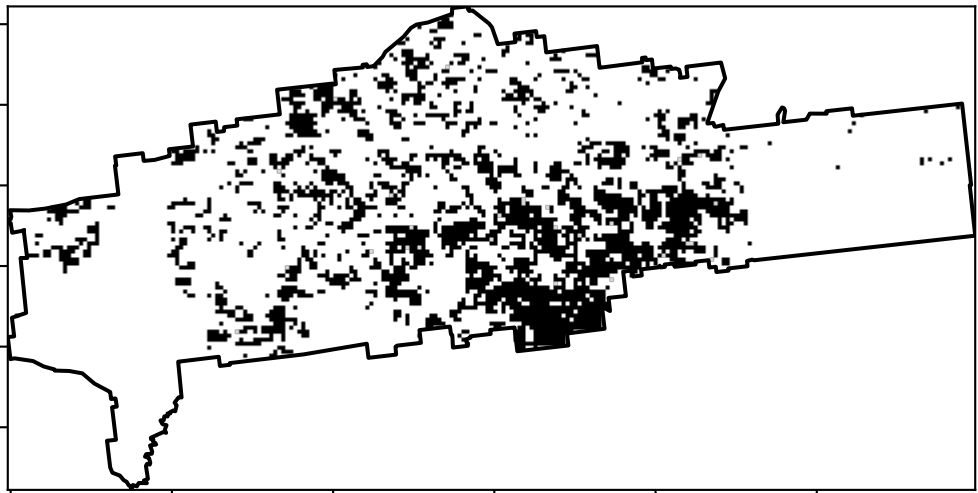


- 71%-100%
- 51%-70%
- 31%-50%
- 0-30%

Proportion of vegetation cover class in area

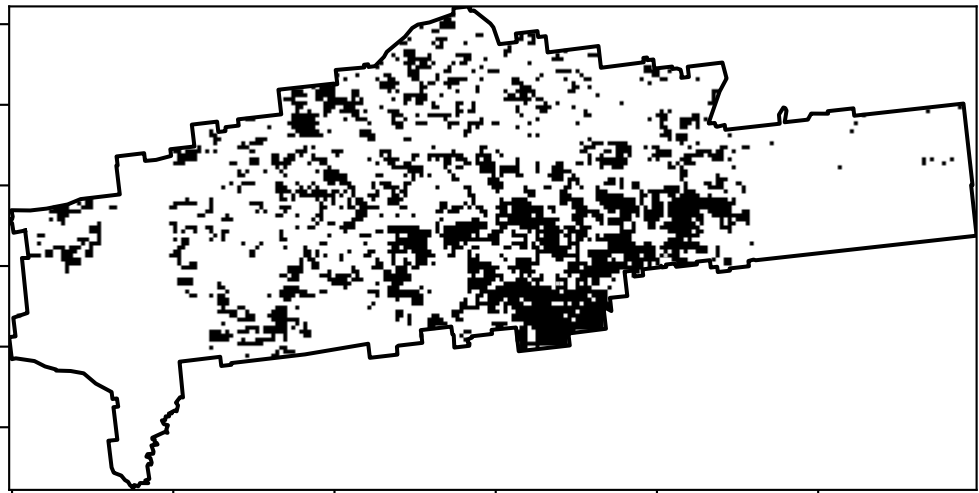


% Area protected from water erosion (>70%)



- Area not protected
1.3% of region
(933 ha)
- Area protected
98.7% of region
(70,867 ha)

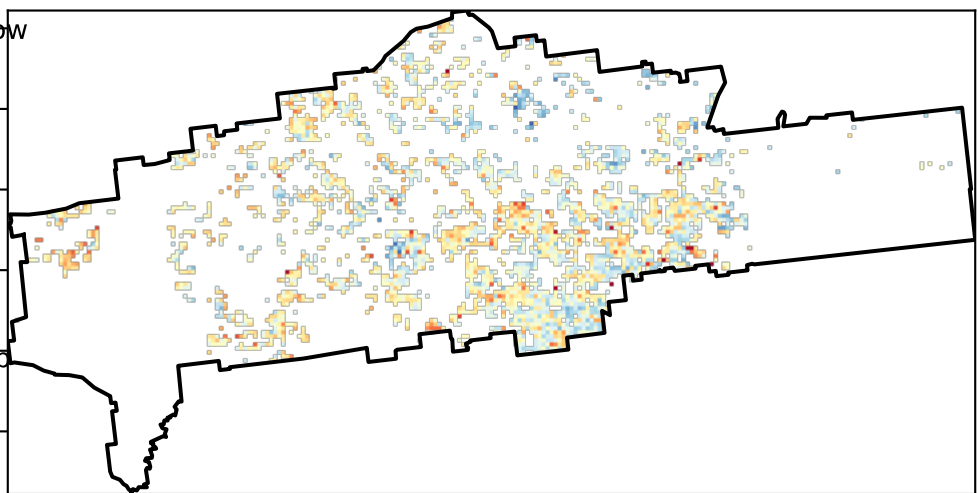
% Area protected from wind erosion (>50%)



- Area not protected
0.0% of region (0 ha)
- Area protected
100.0% of region
(71,800 ha)

Total Vegetation Cover Anomaly [%]

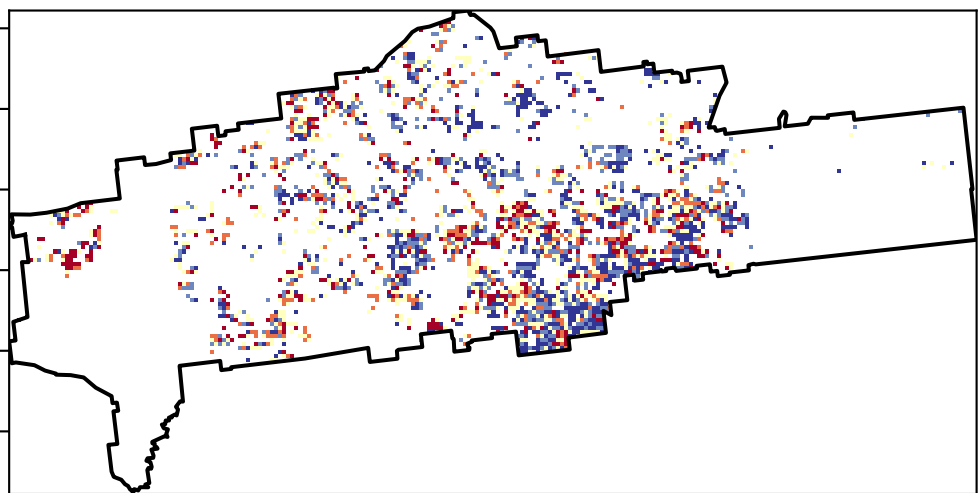
Anomaly show how many percentage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



- 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



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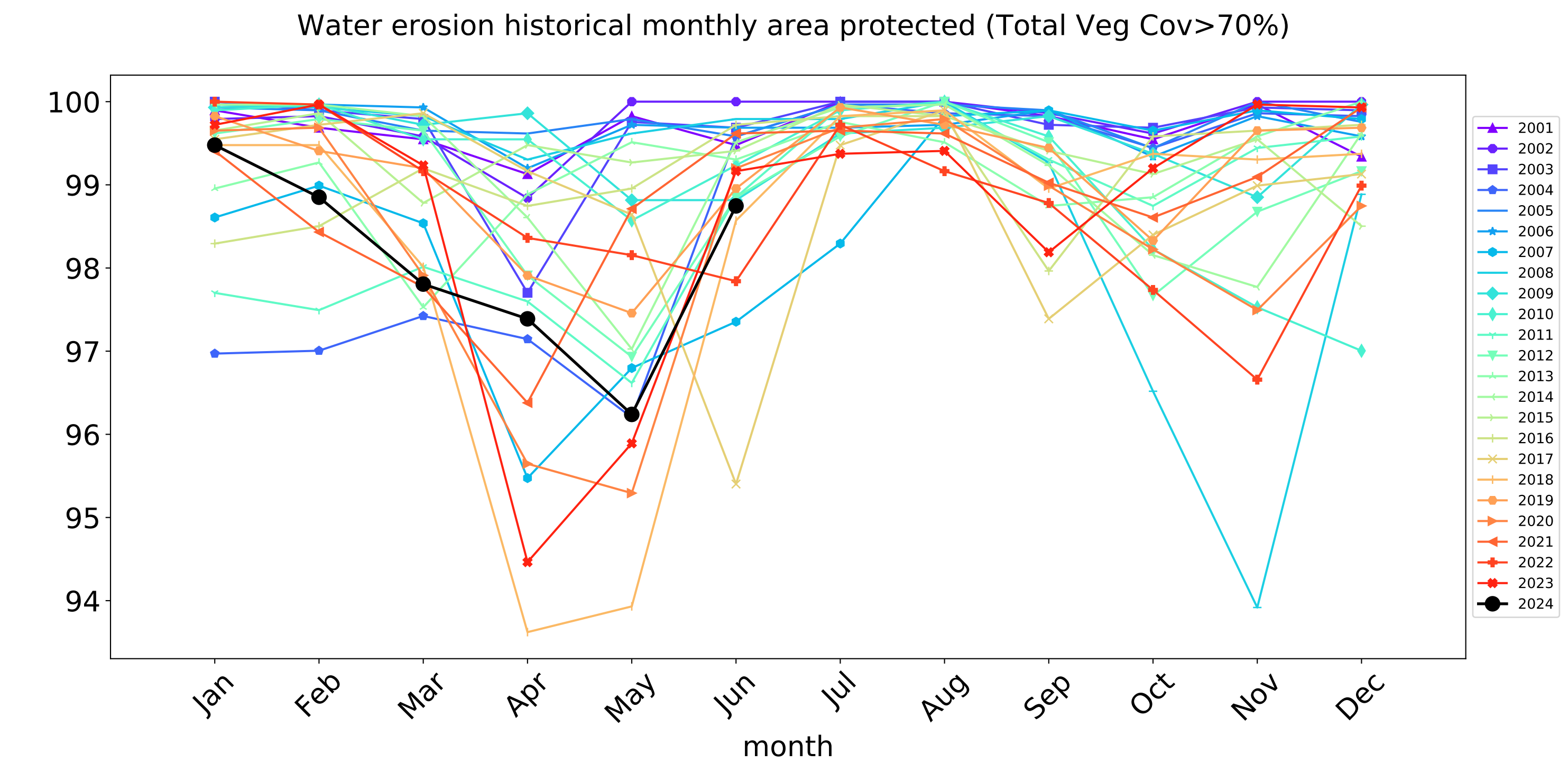
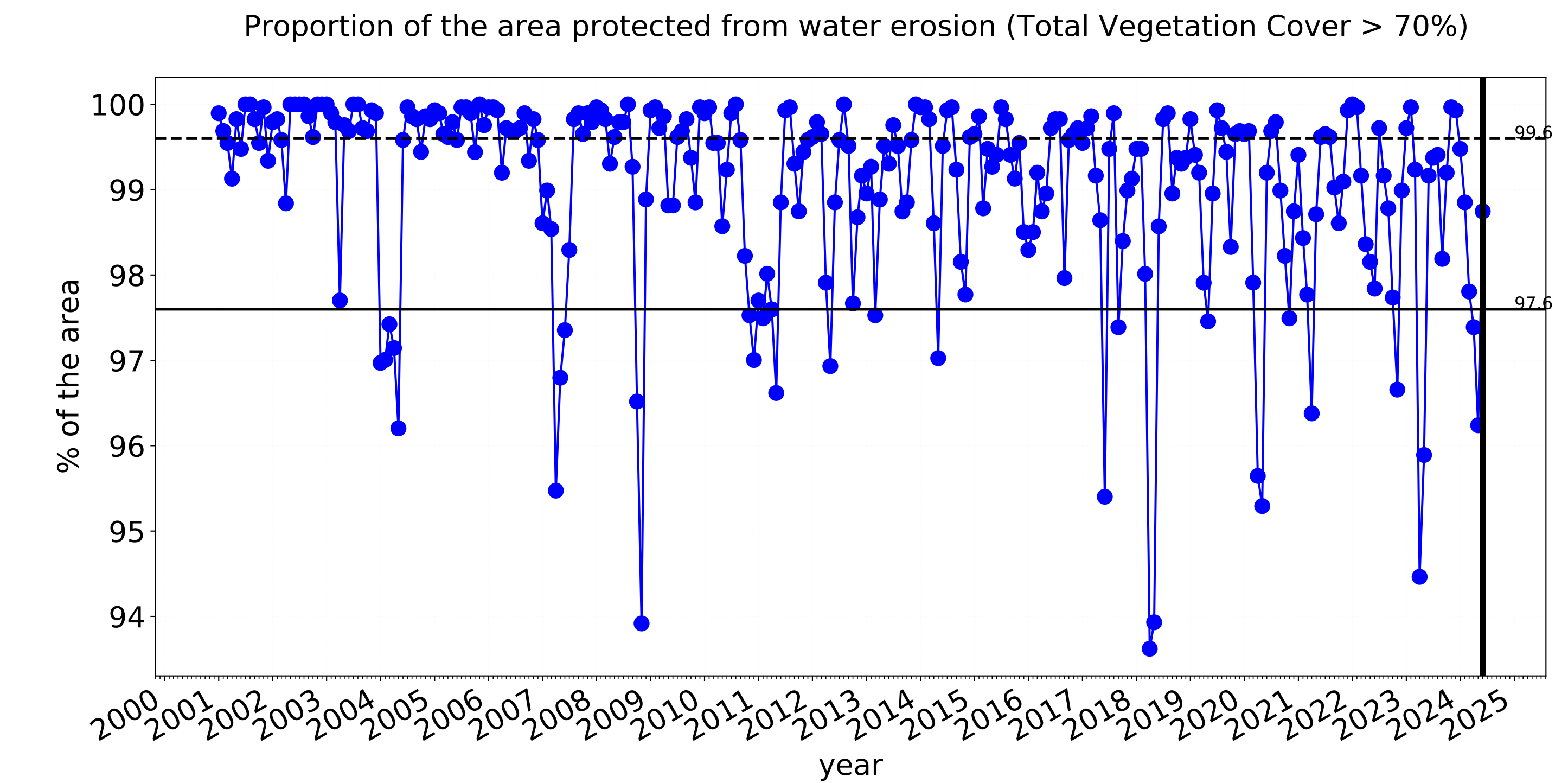
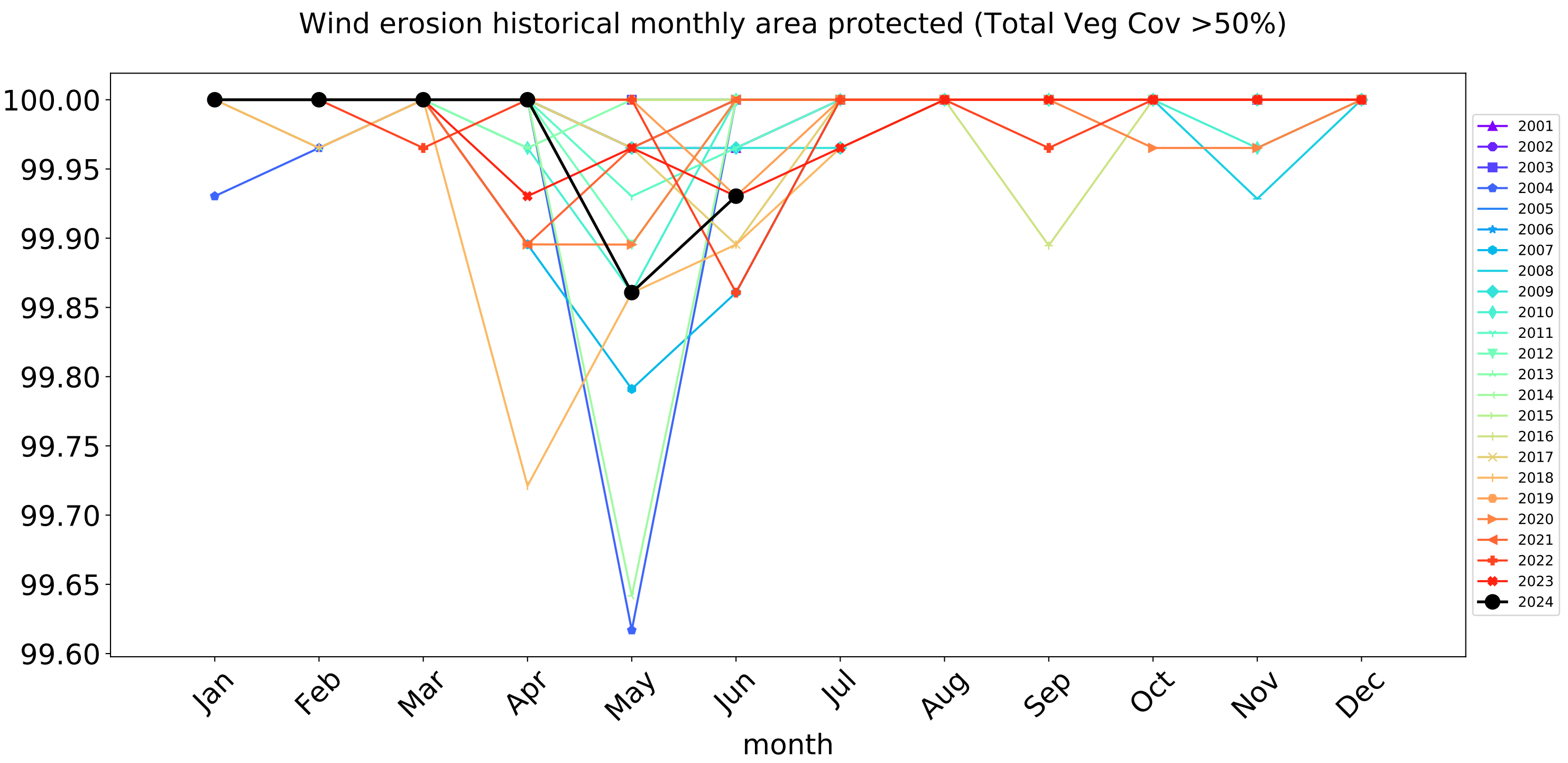
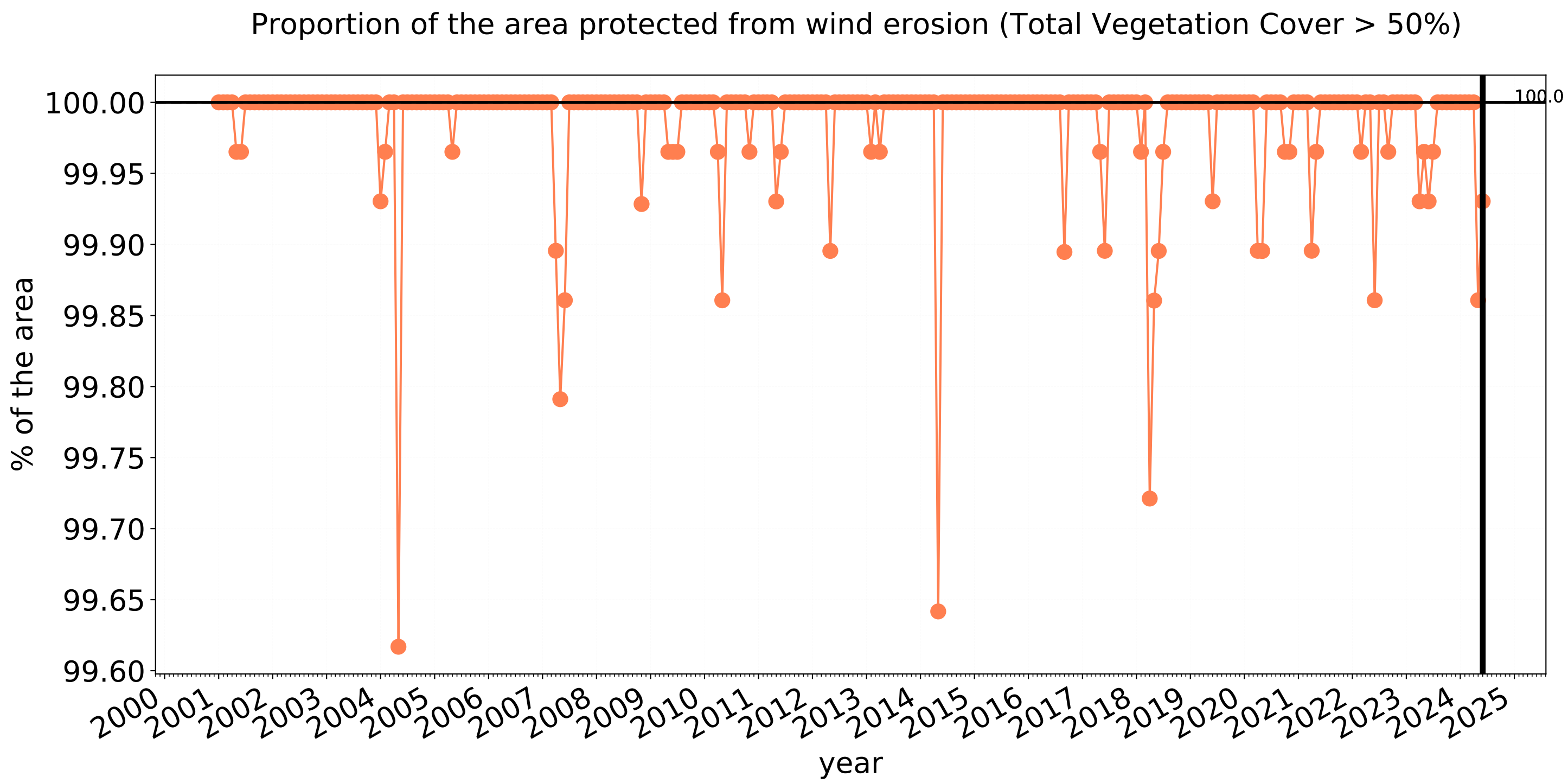


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Grazing timeseries

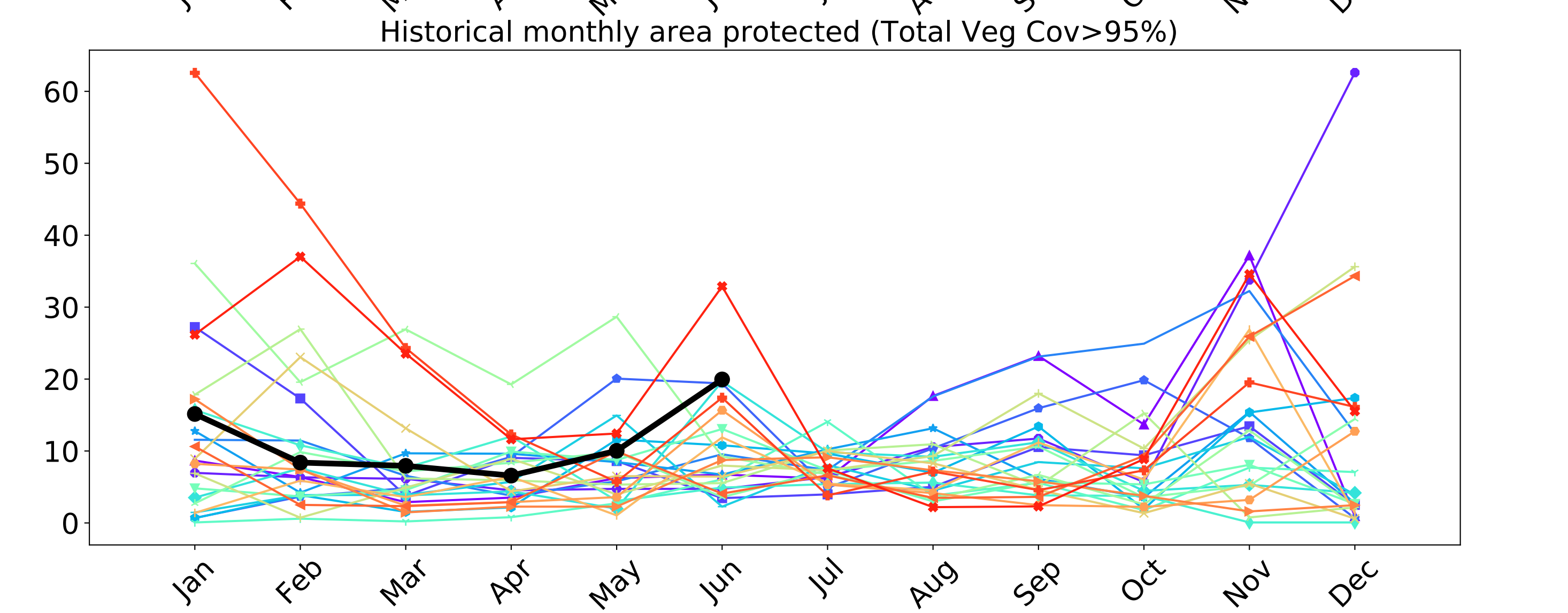
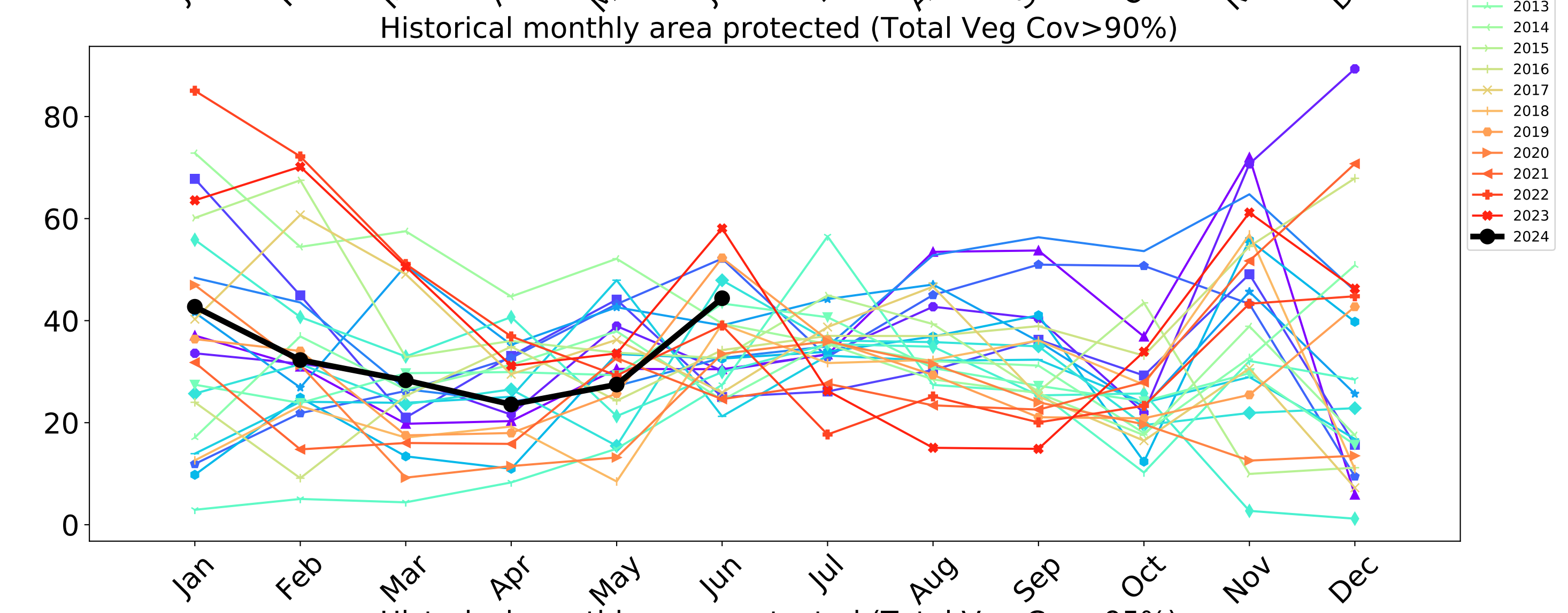
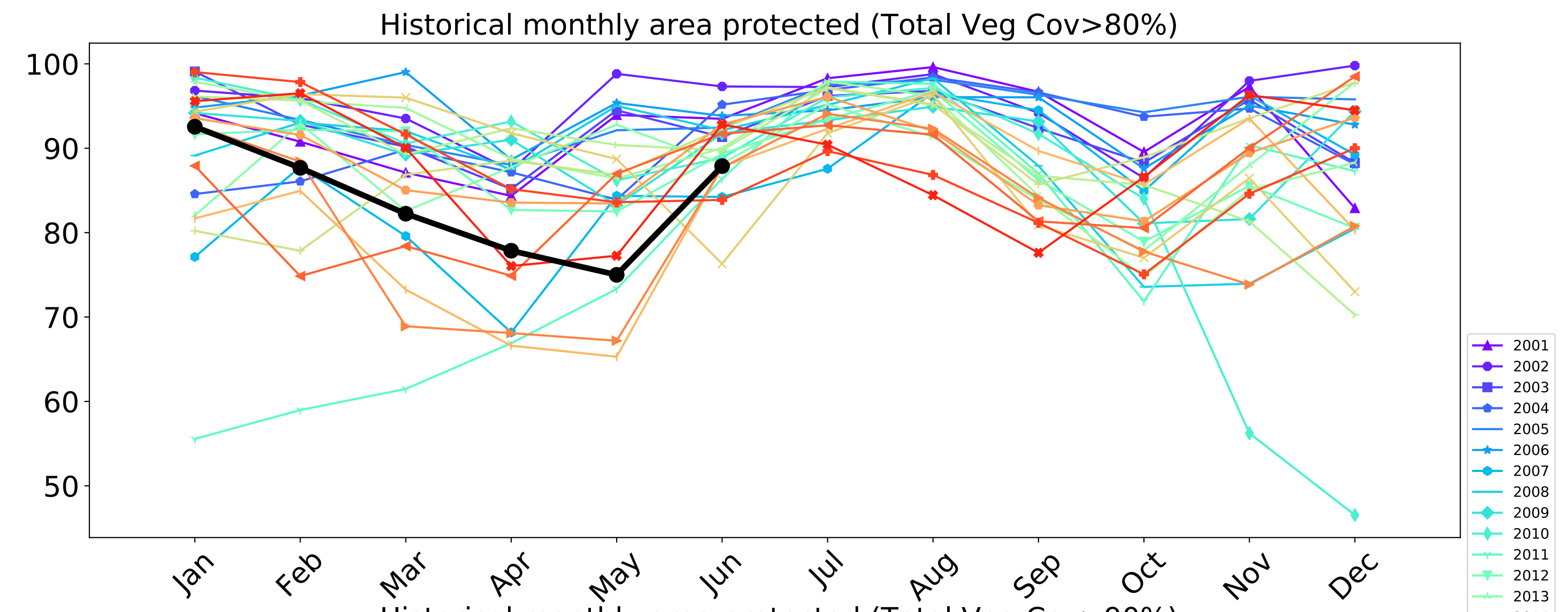
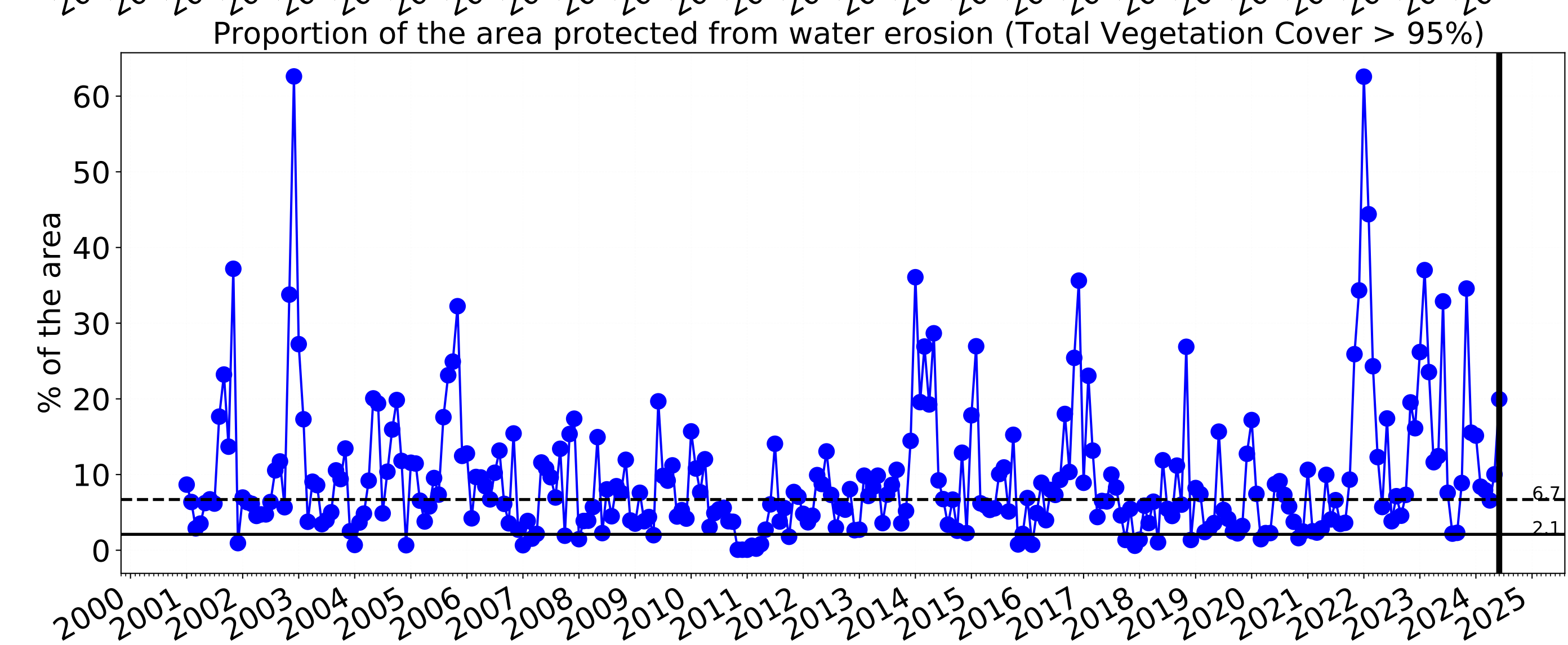
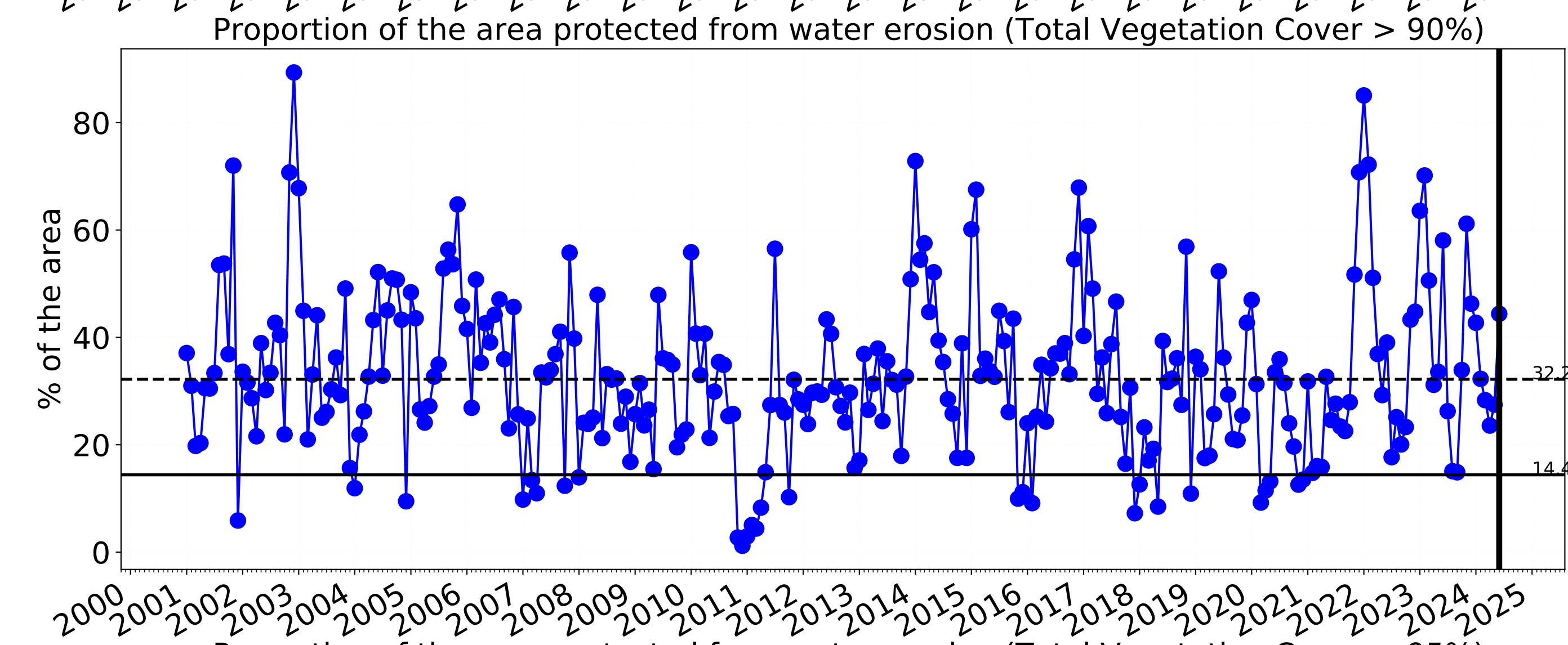
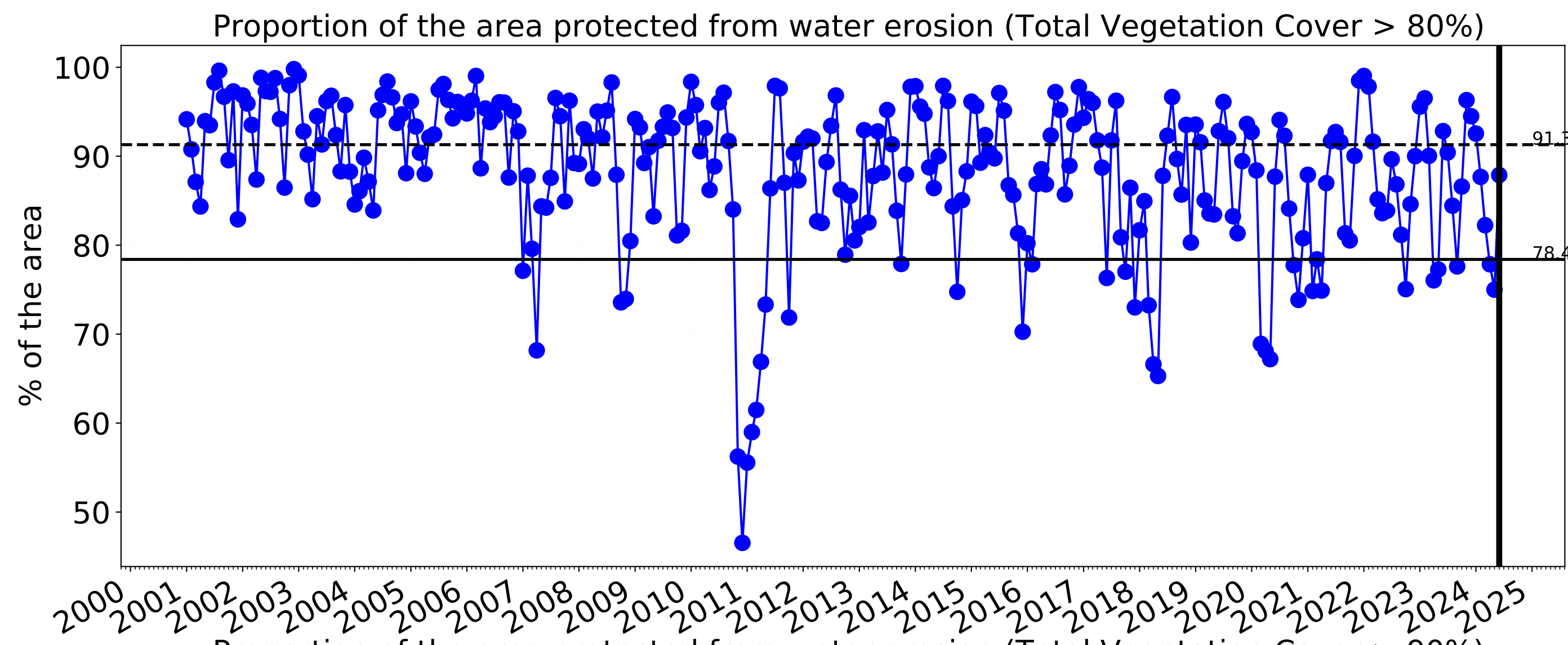


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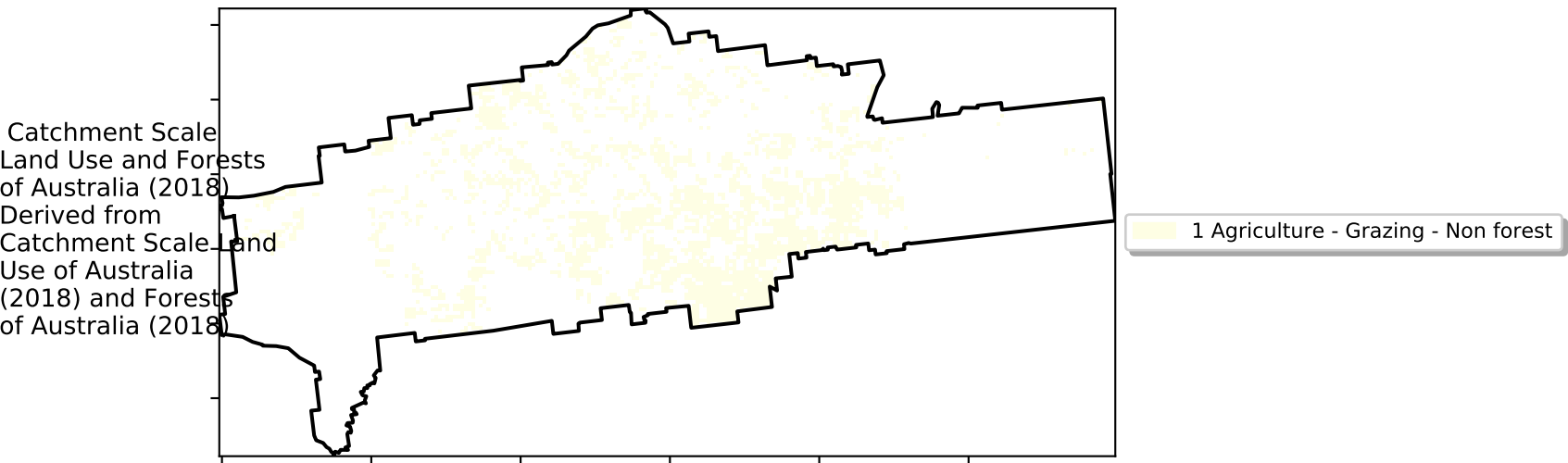
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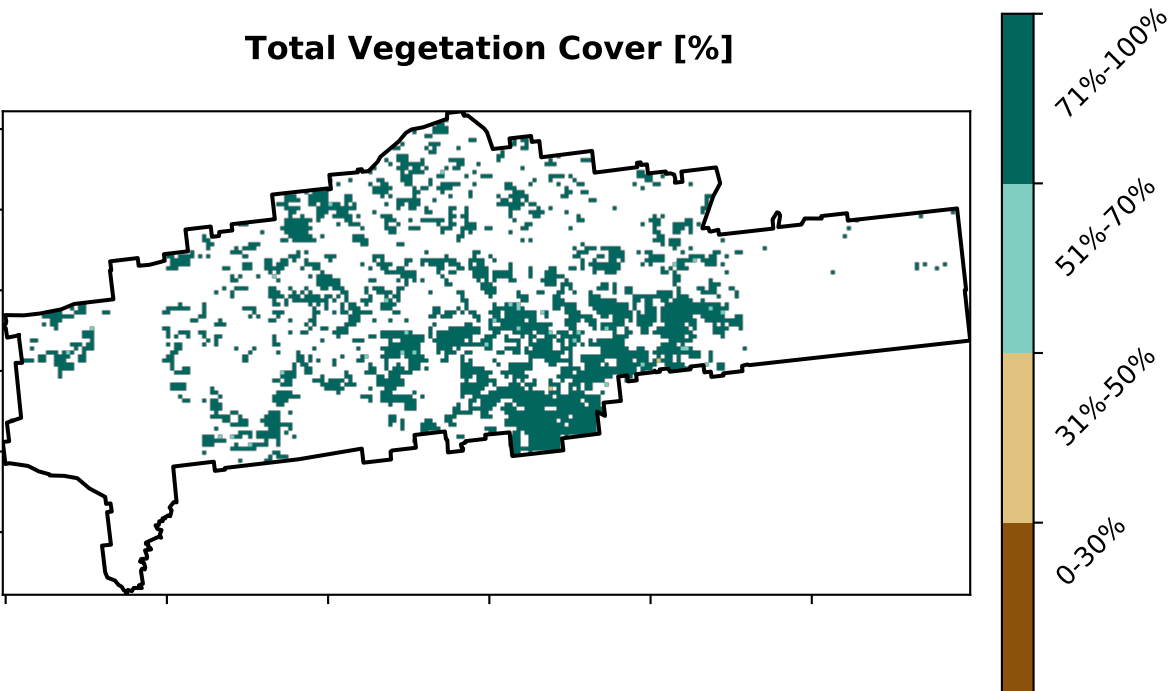


Grazing non forest

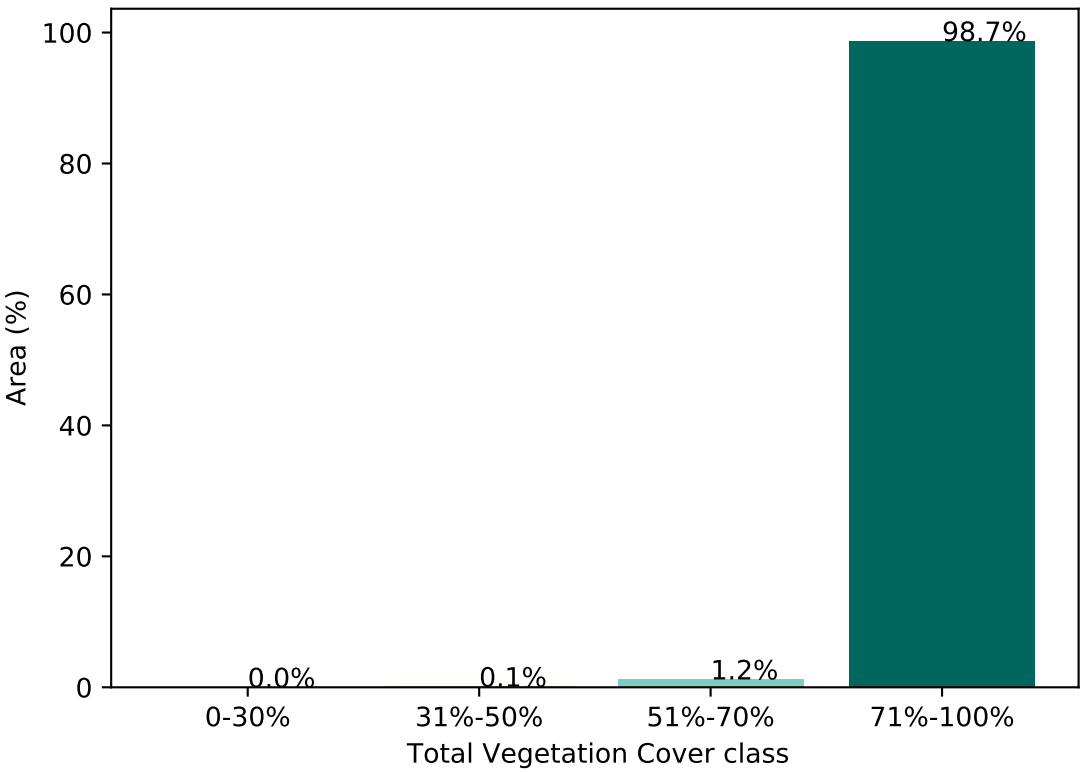
Land use and forest cover



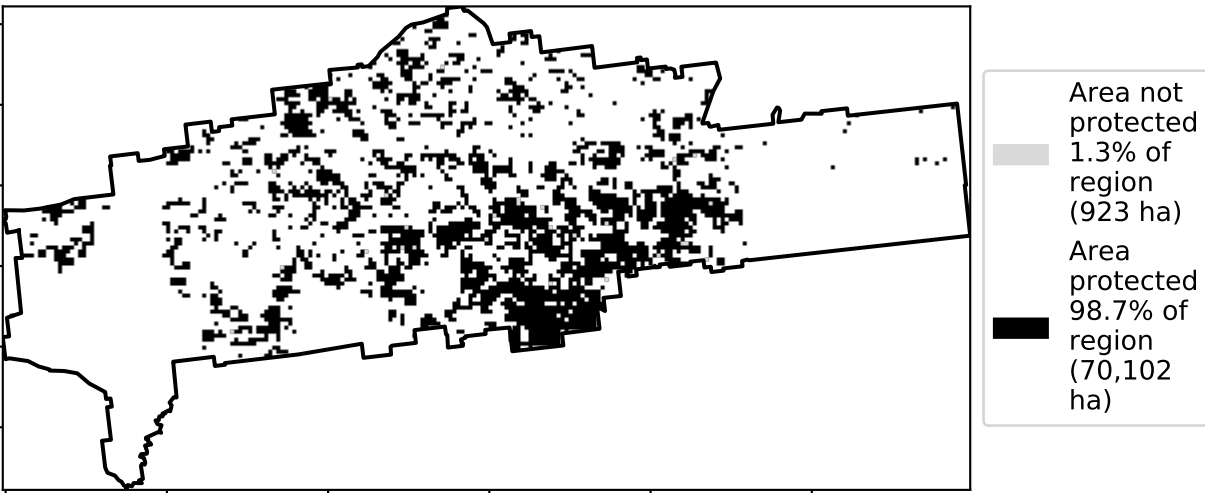
Total Vegetation Cover [%]



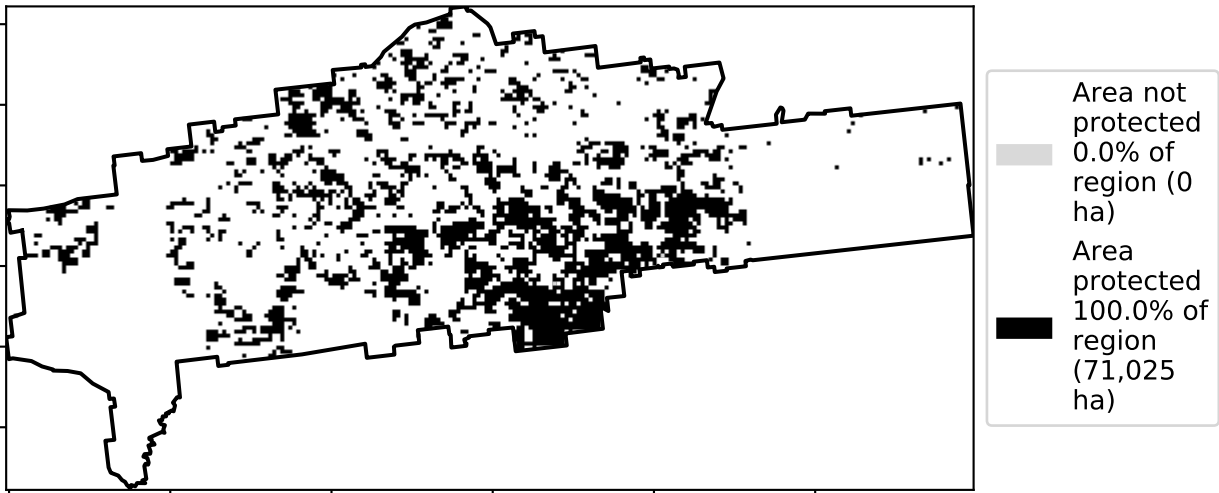
Proportion of vegetation cover class in area



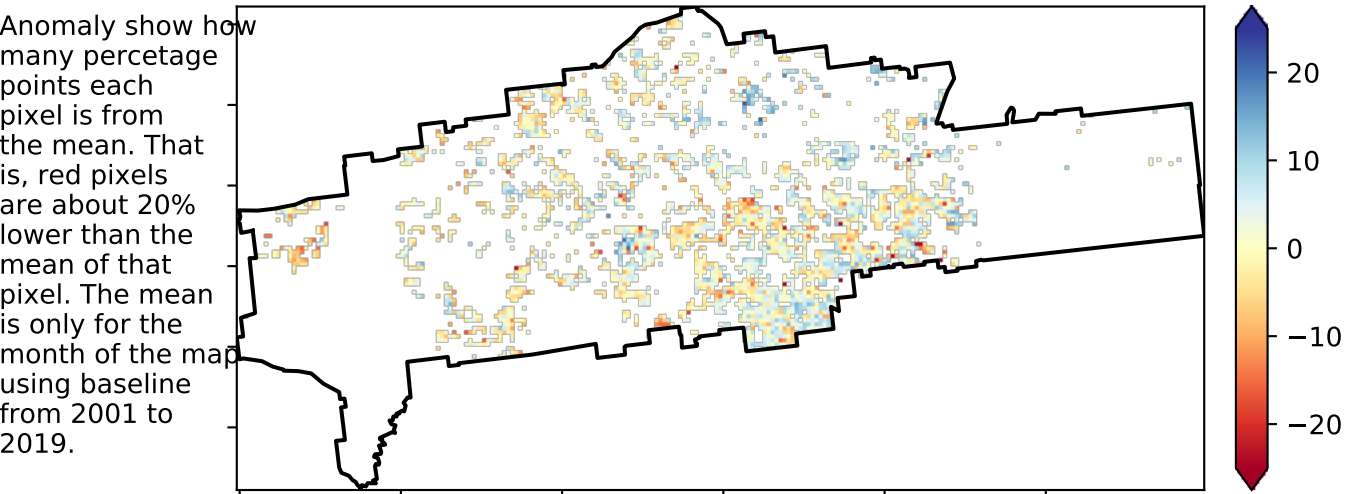
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

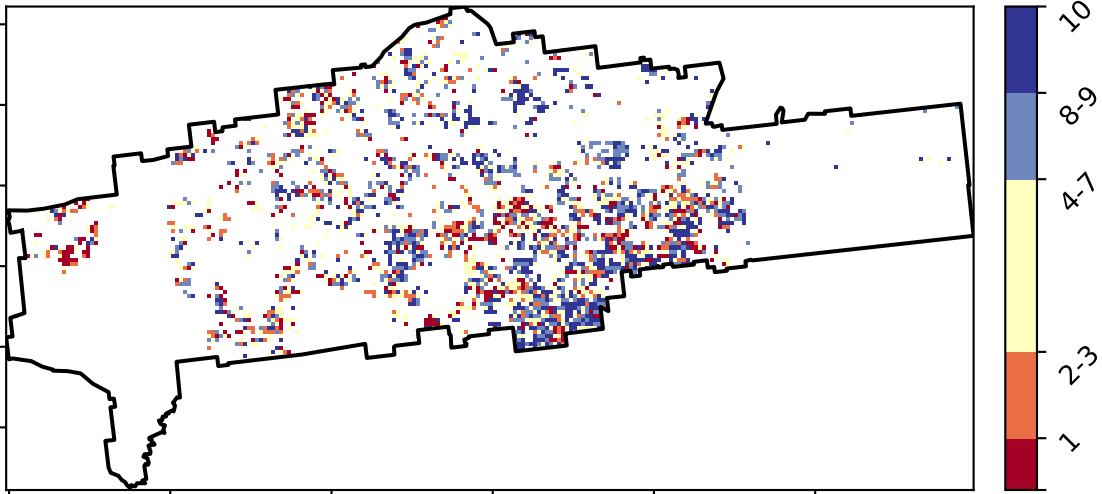


Total Vegetation Cover Anomaly [%]

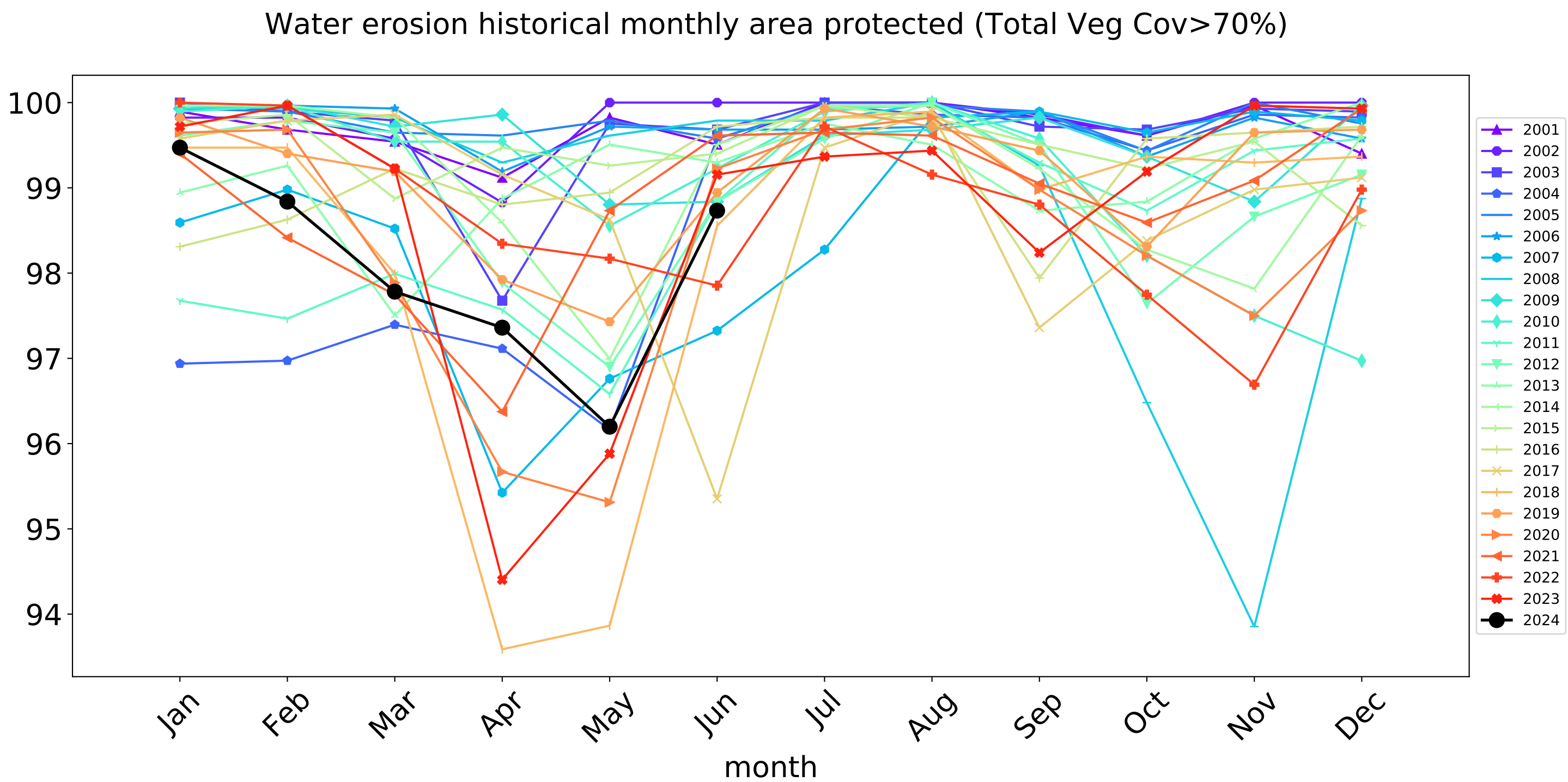
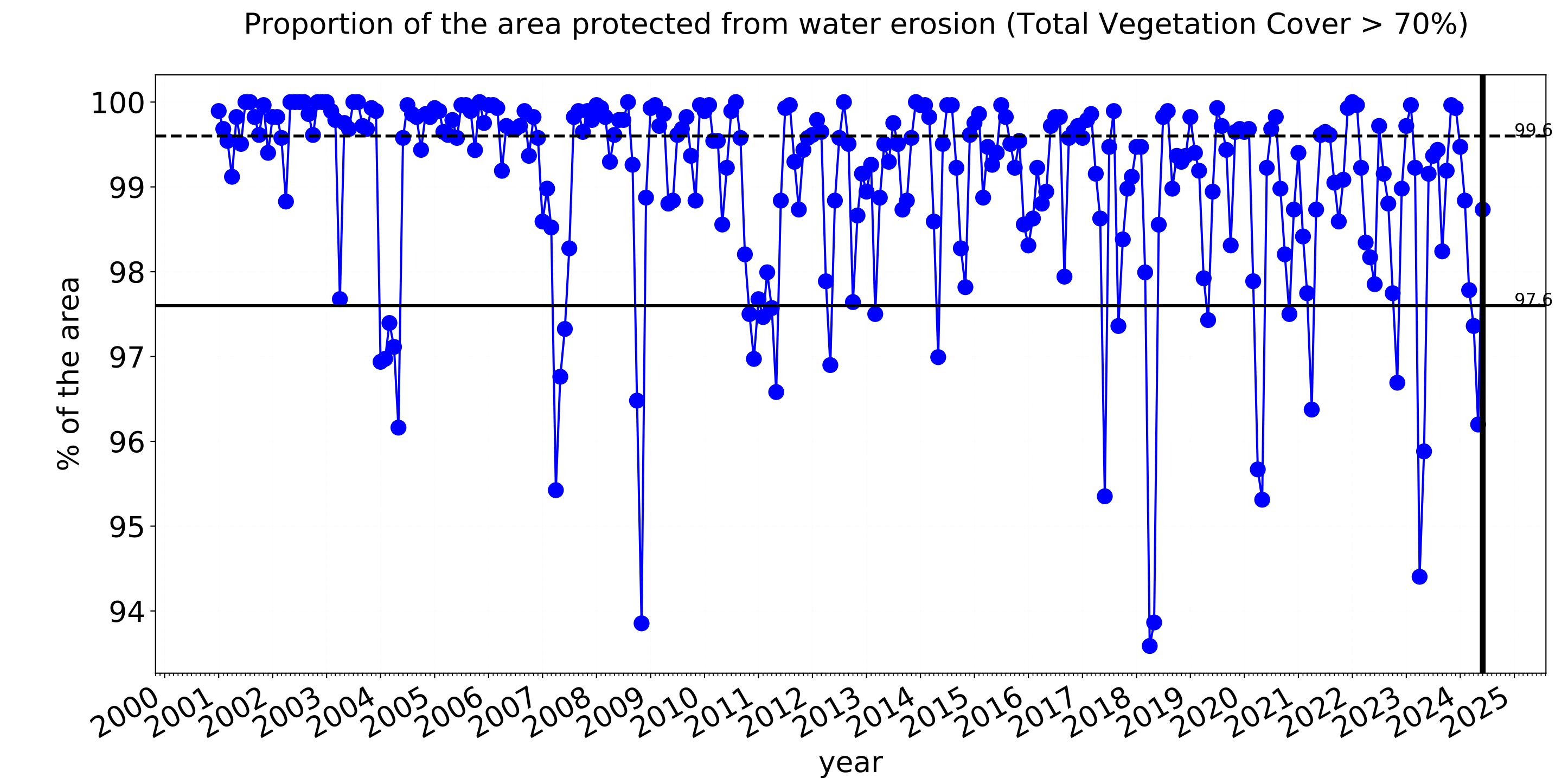
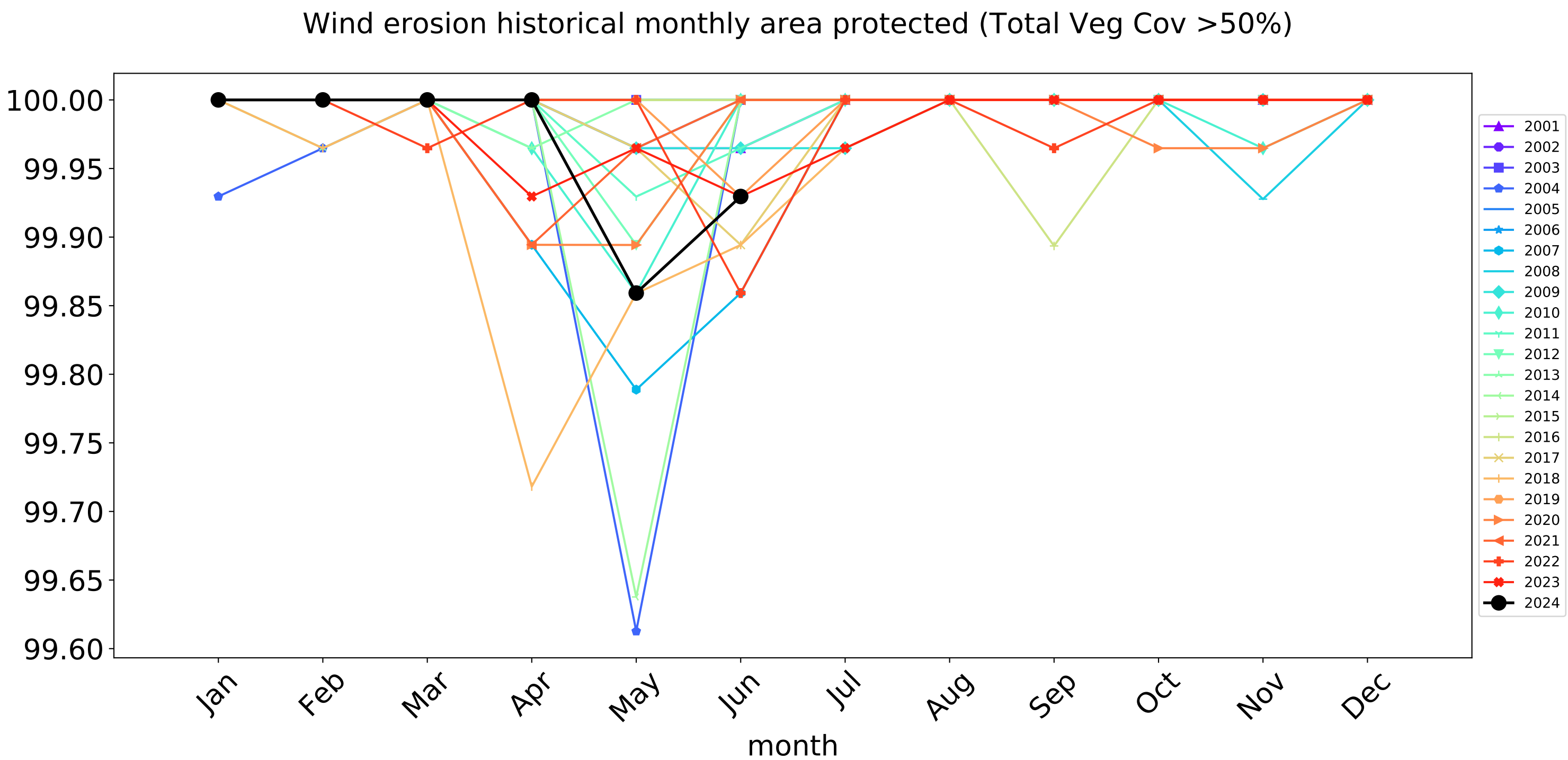
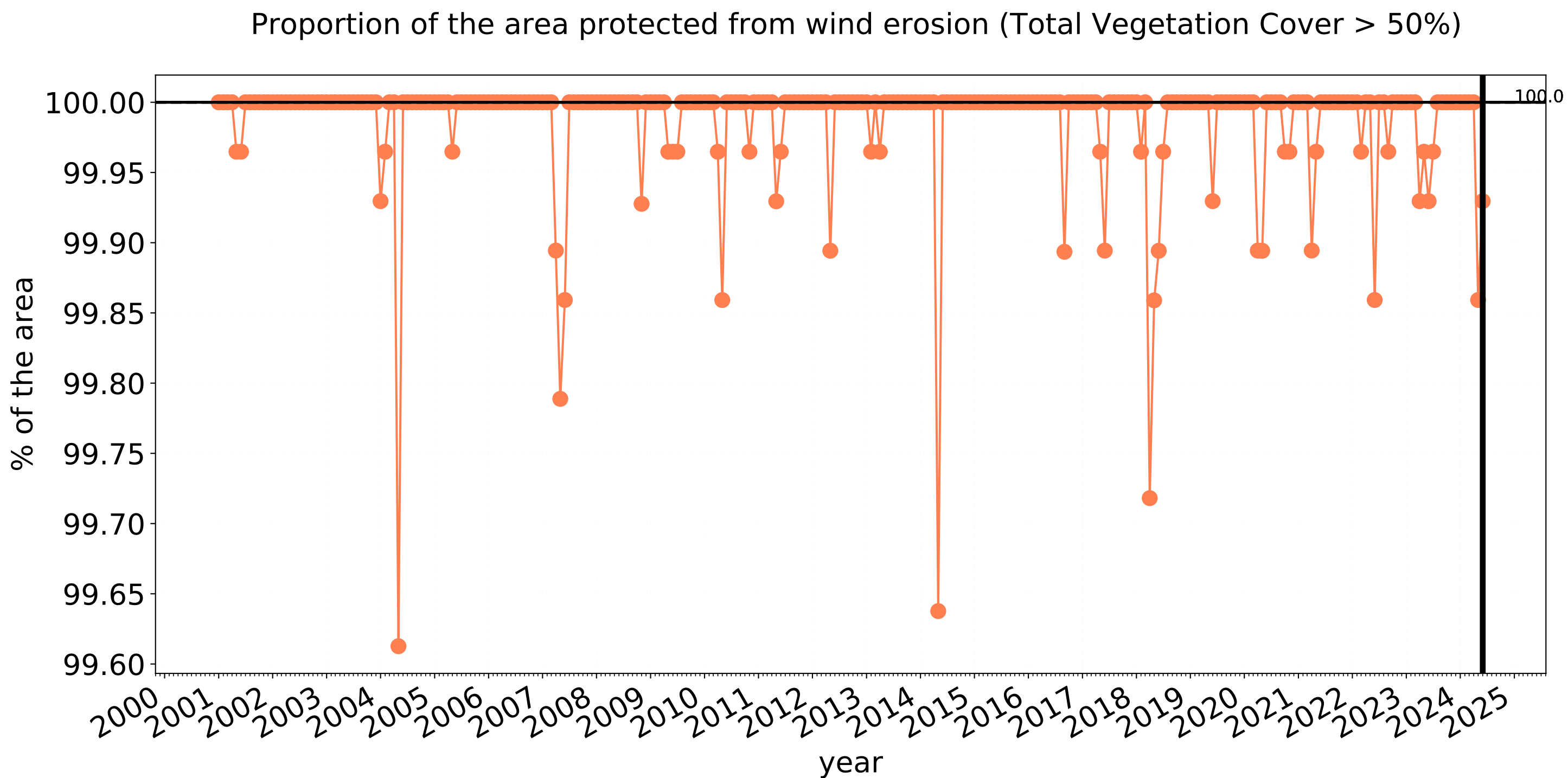


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Total Vegetation Cover Decile [%]



Grazing non forest timeseries

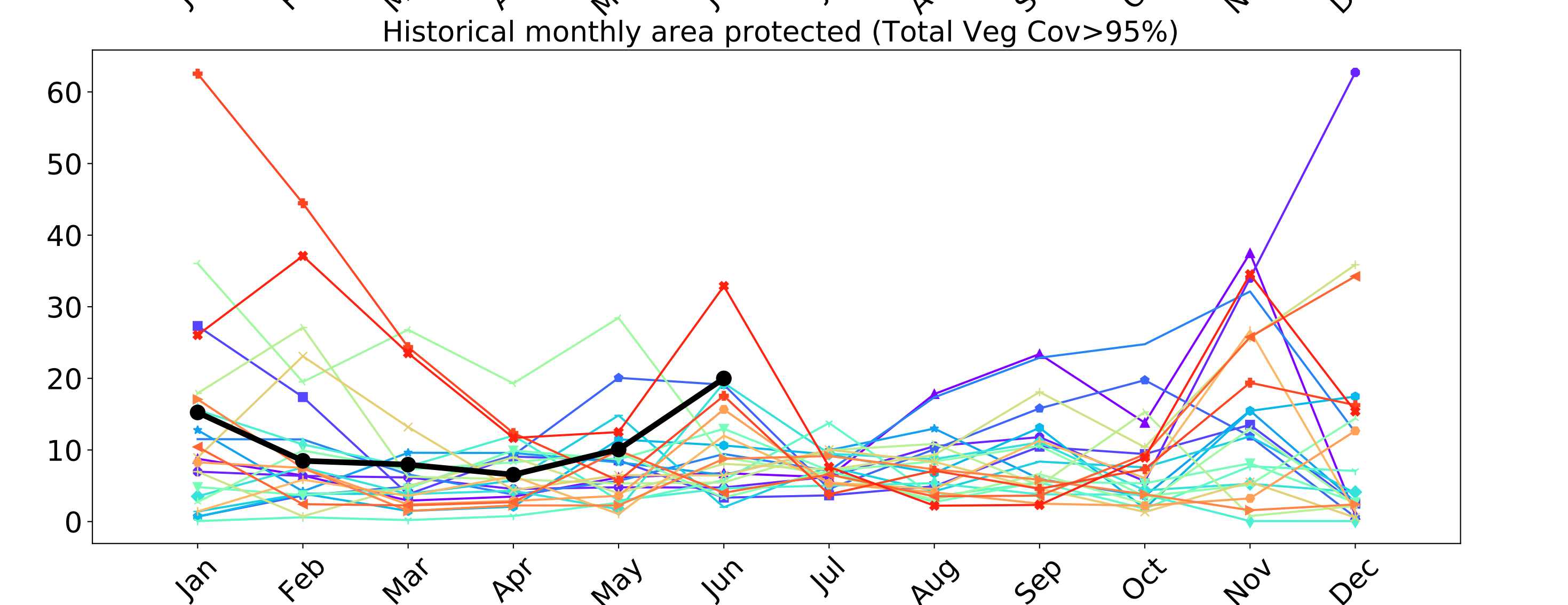
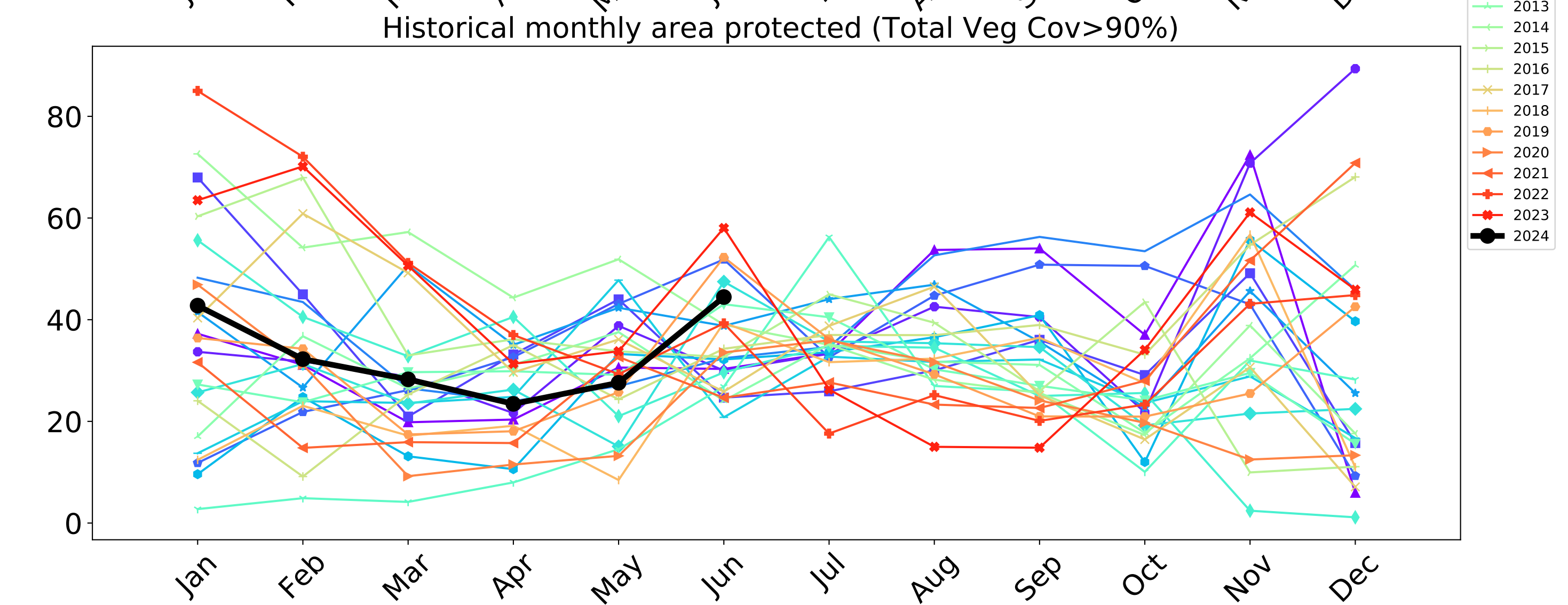
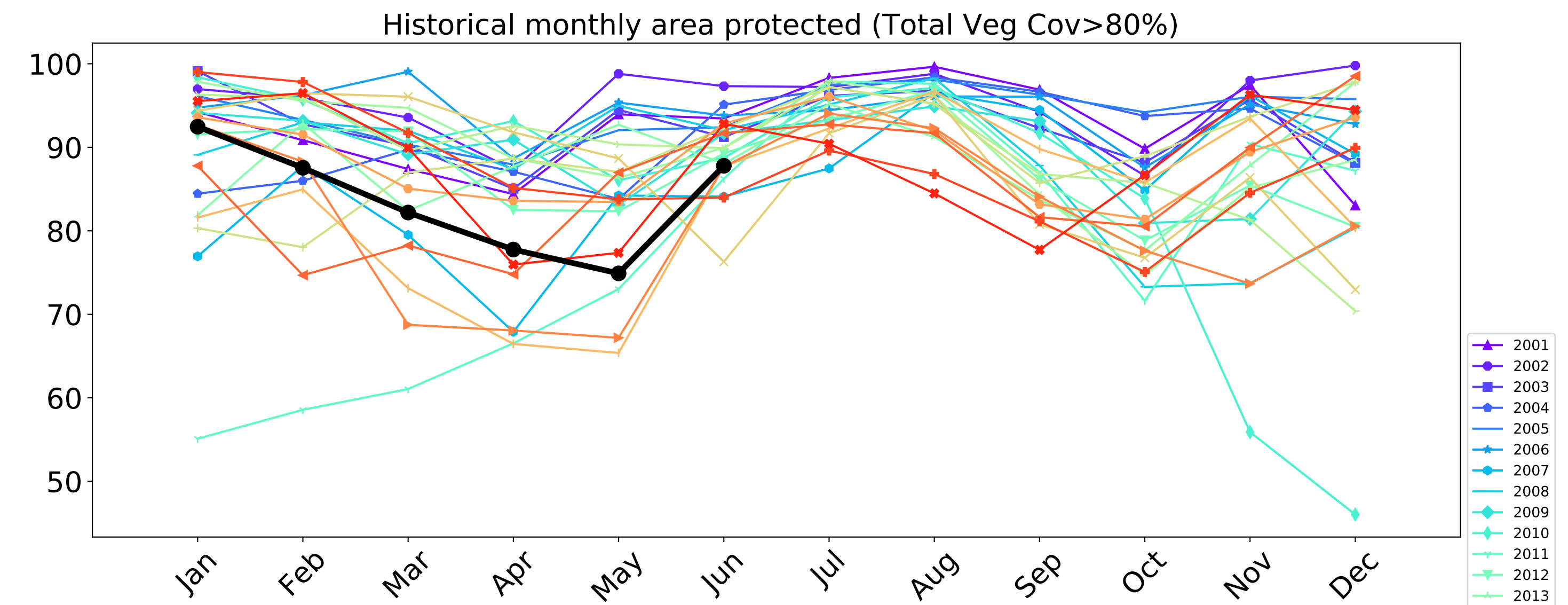
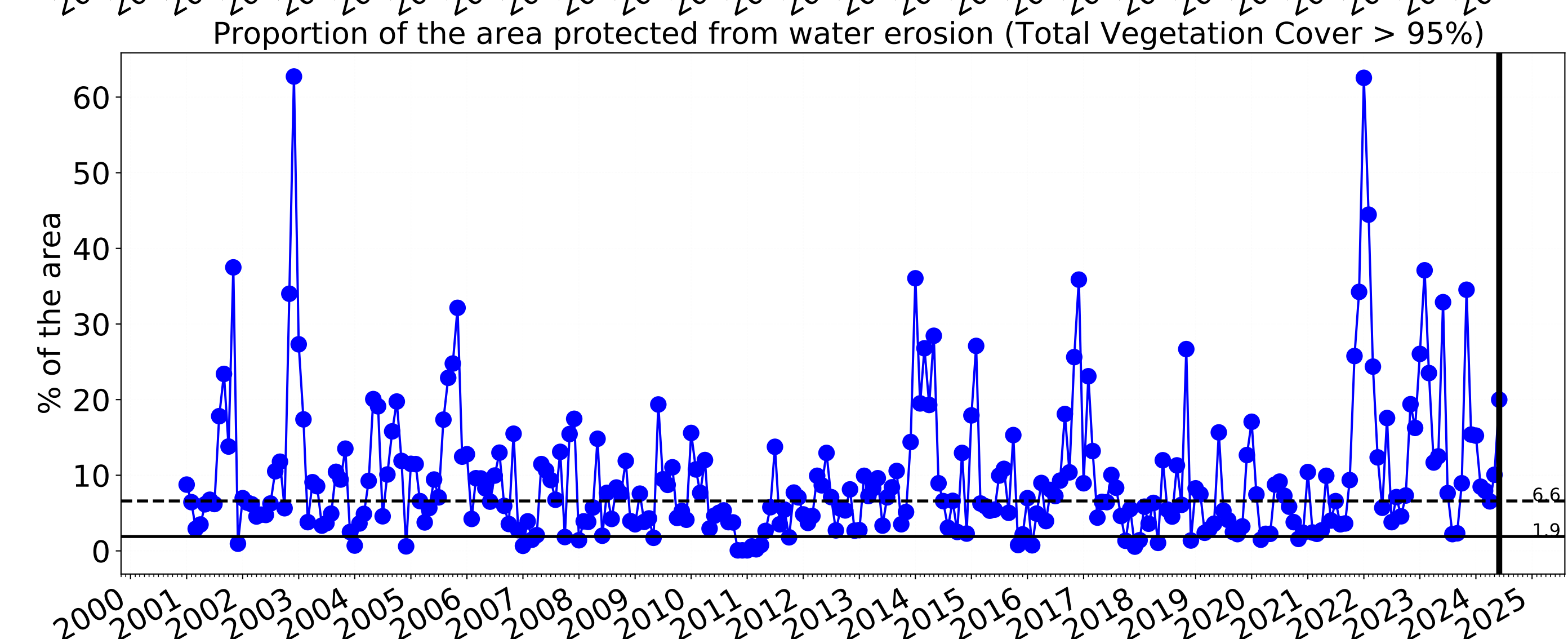
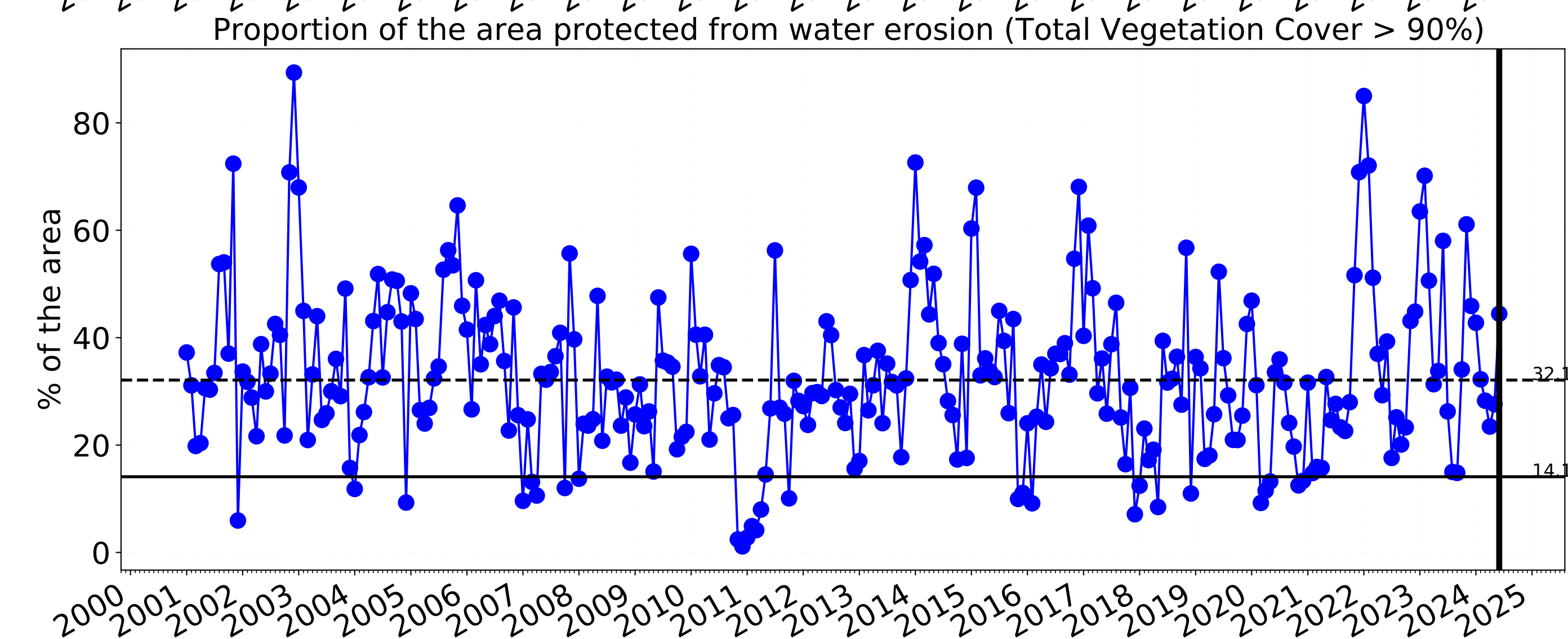
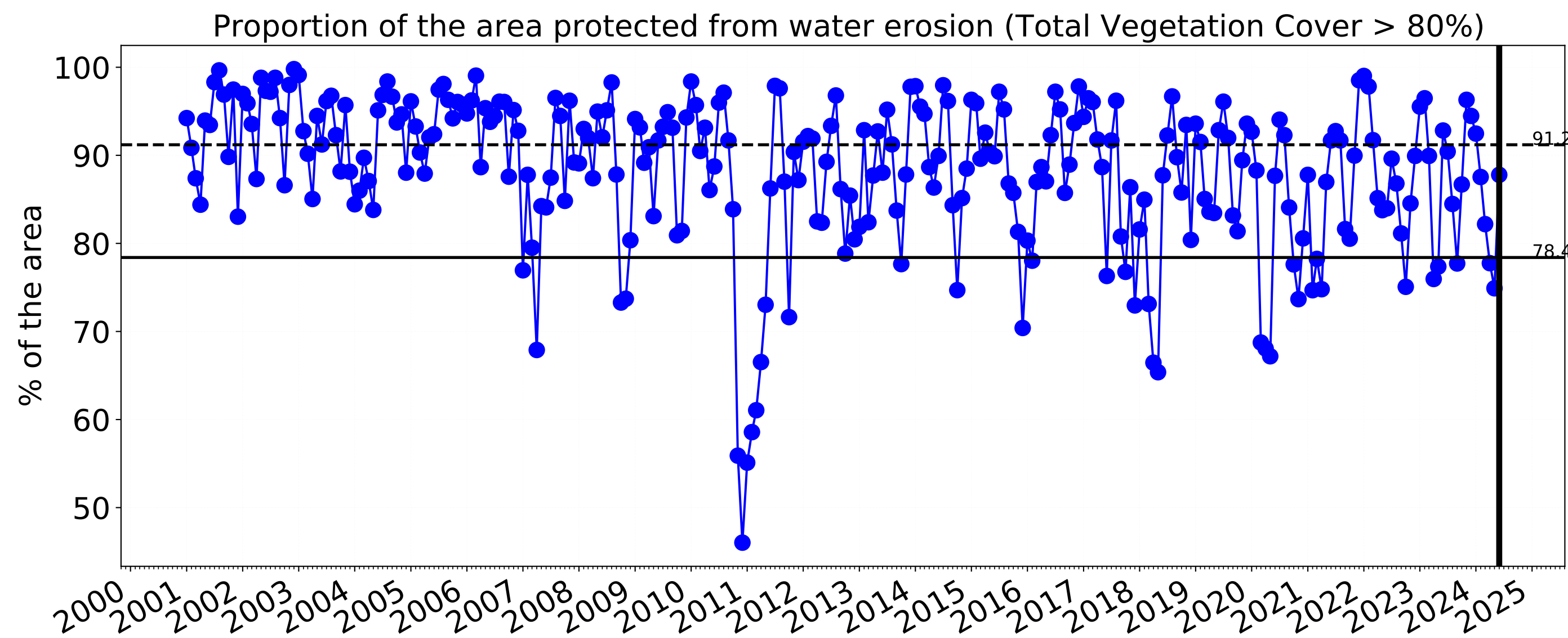


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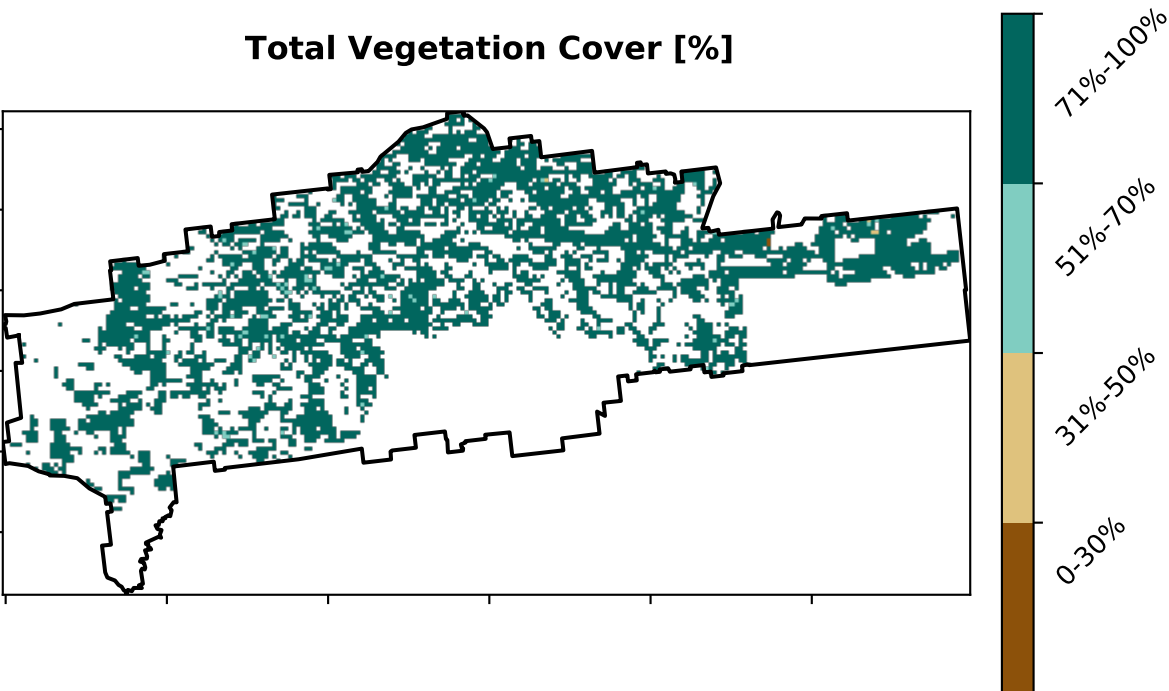


Cropping

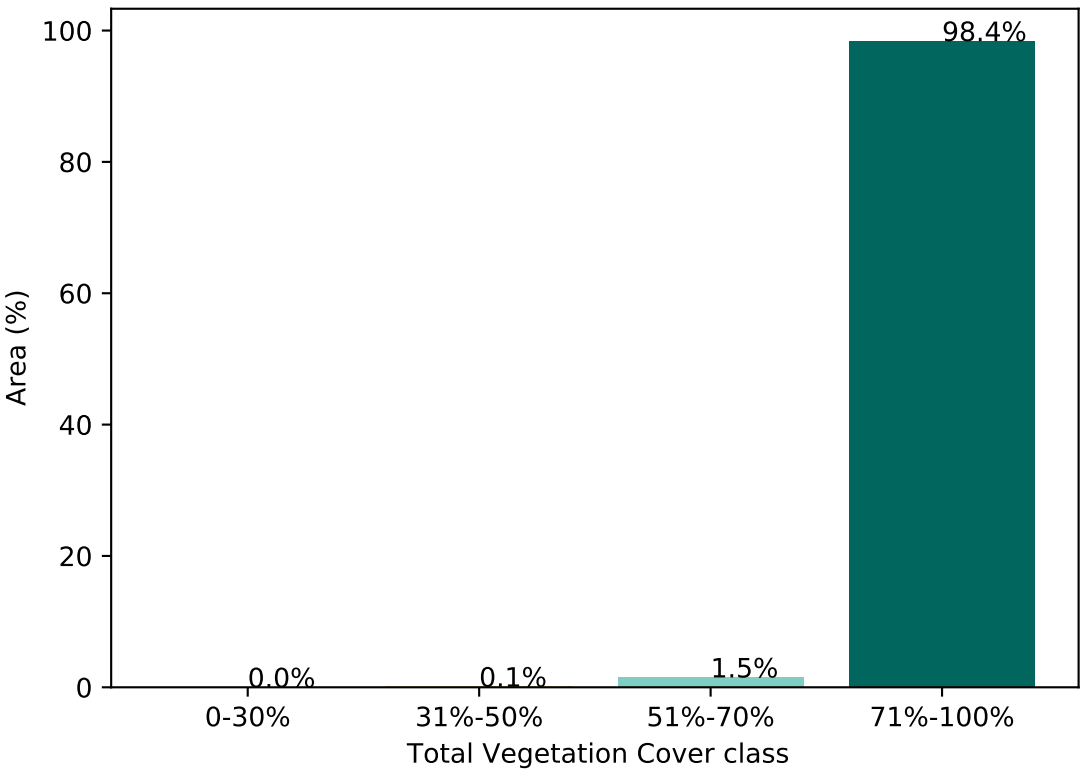
Land use and forest cover



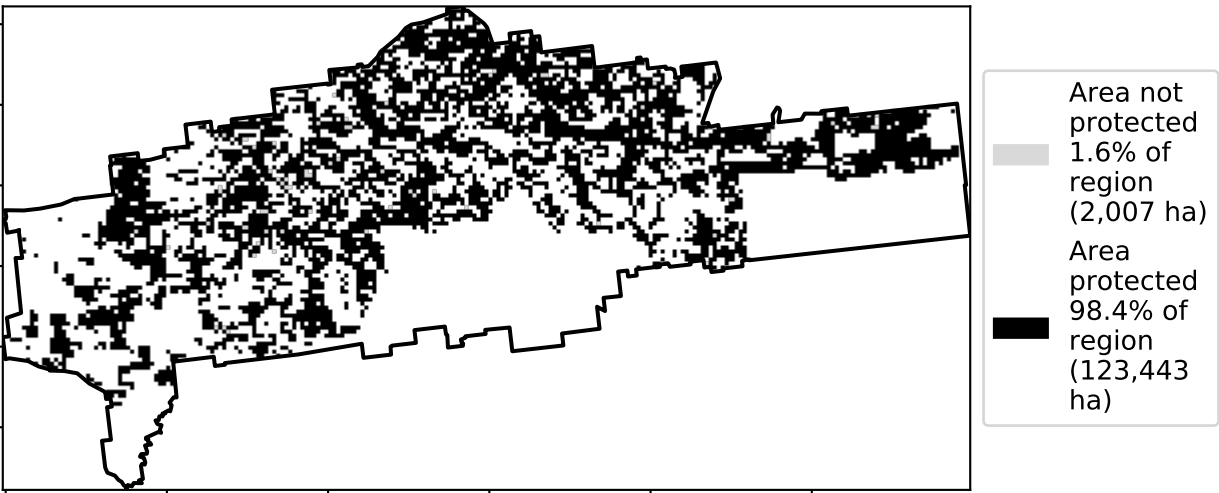
Total Vegetation Cover [%]



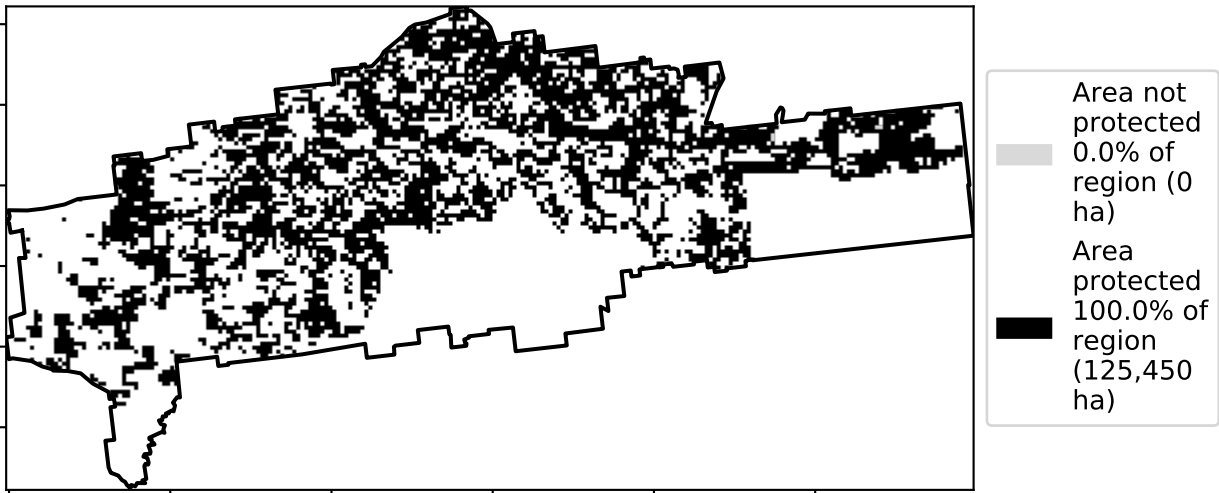
Proportion of vegetation cover class in area



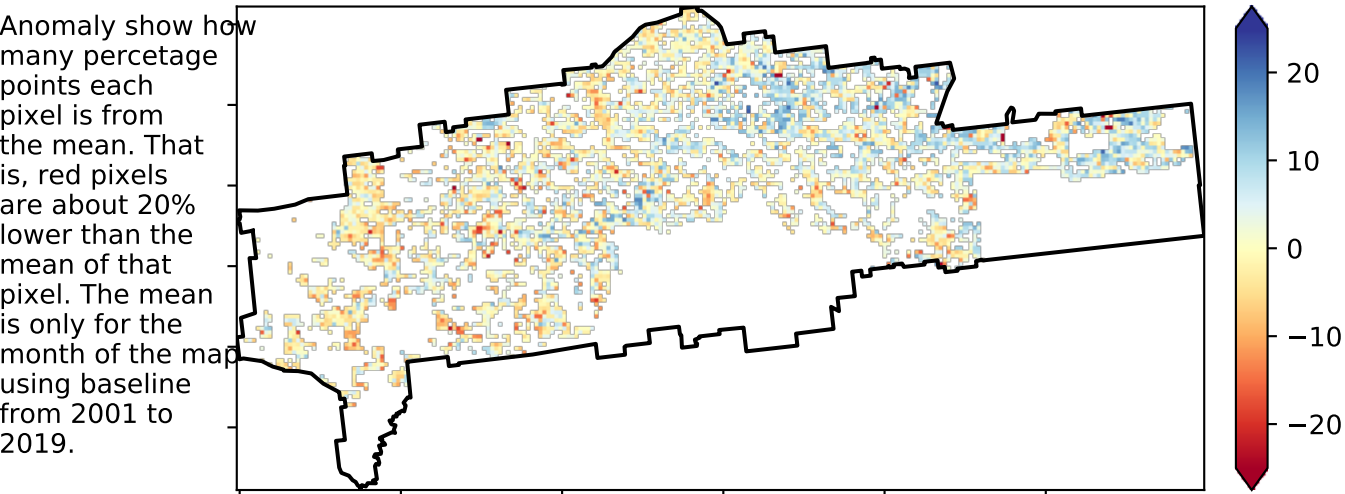
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

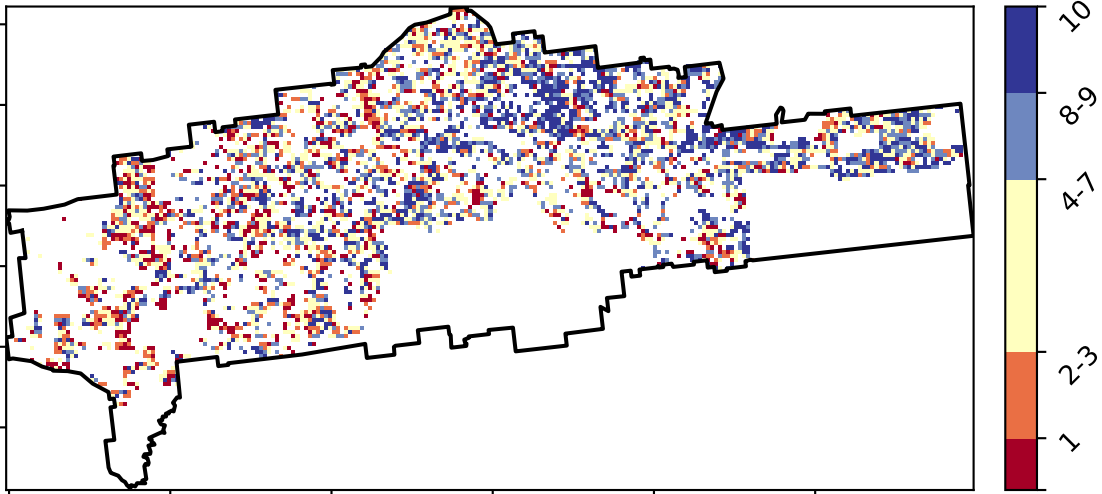


Total Vegetation Cover Anomaly [%]



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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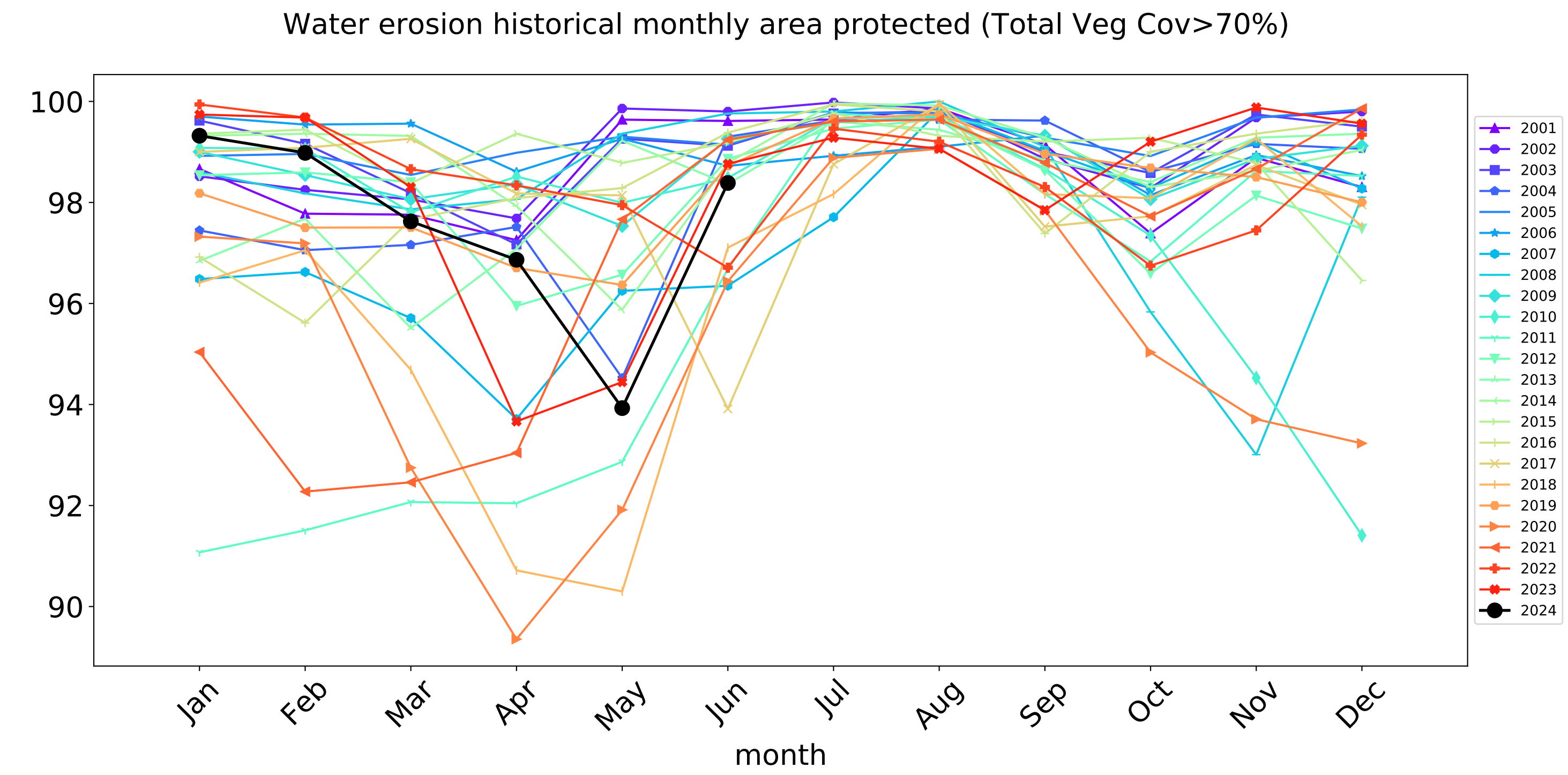
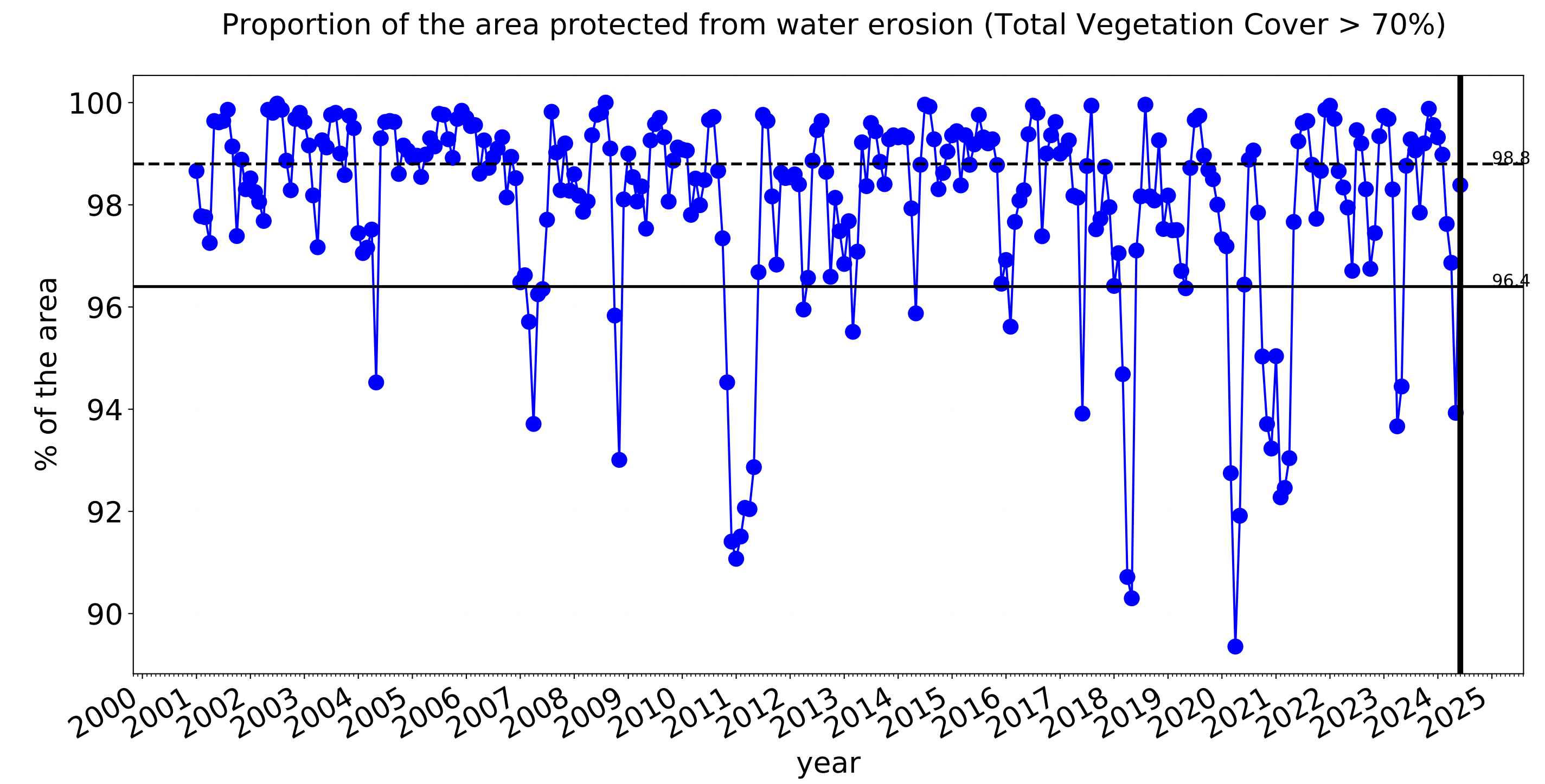
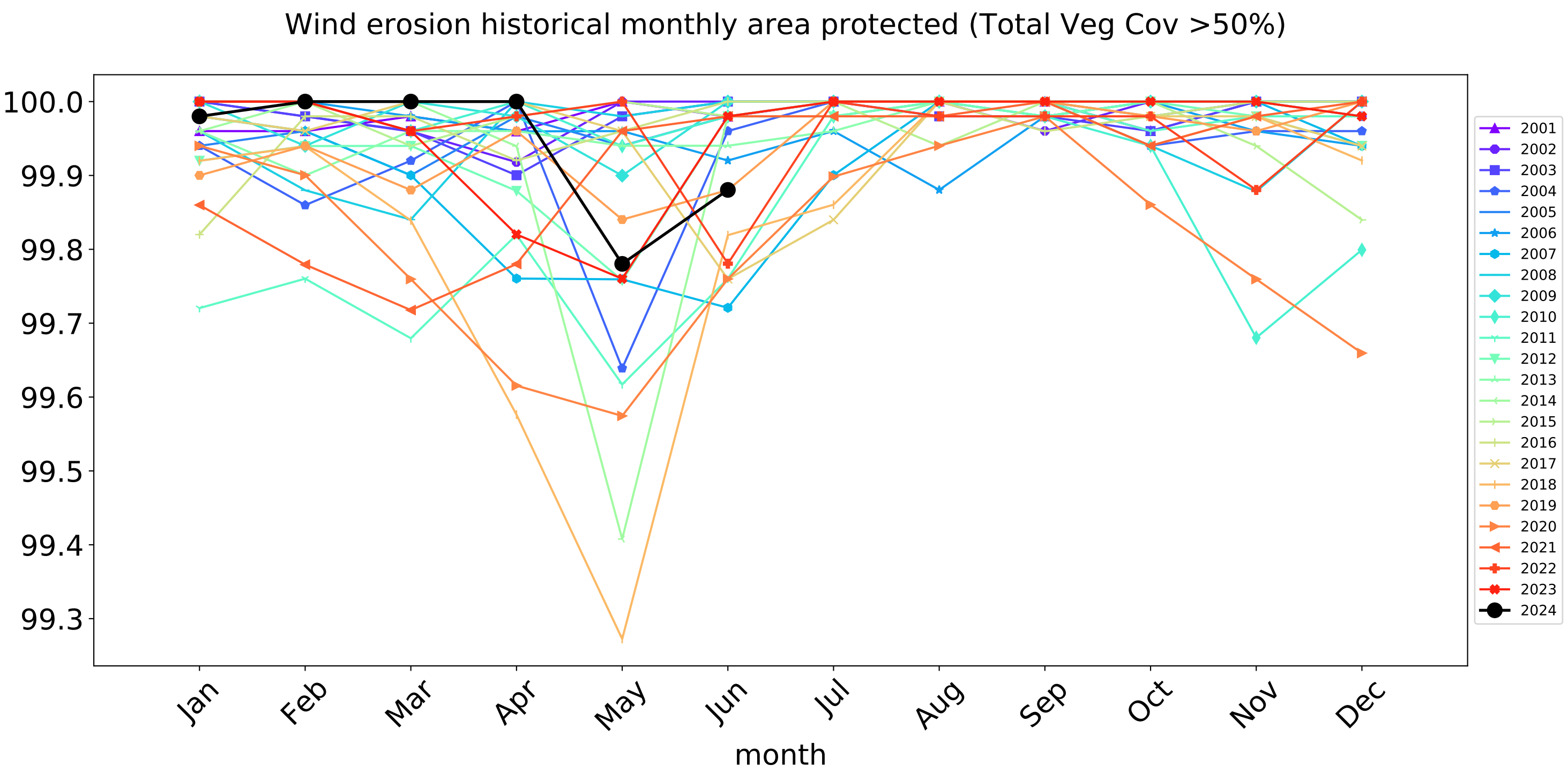
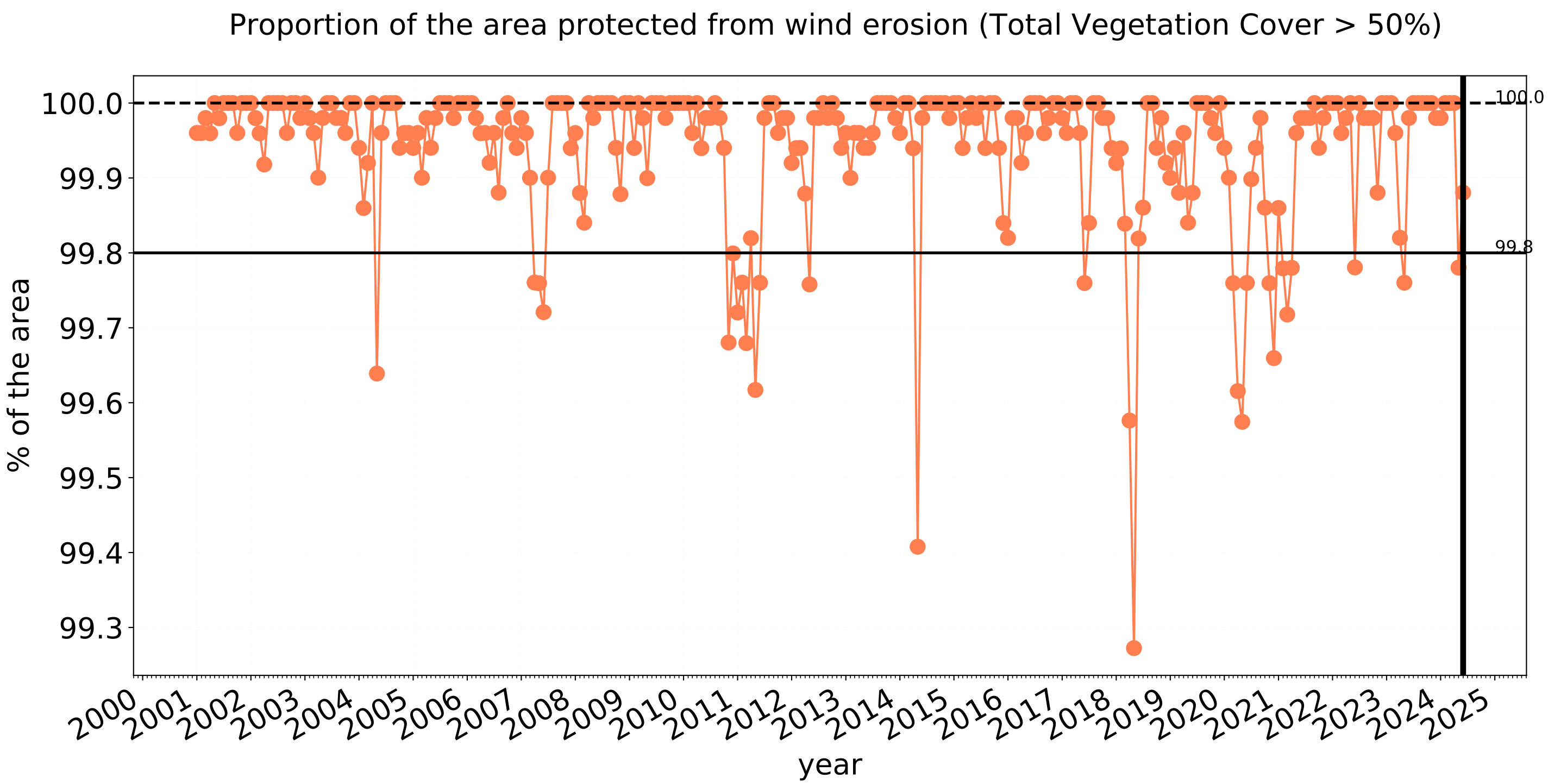


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Cropping timeseries



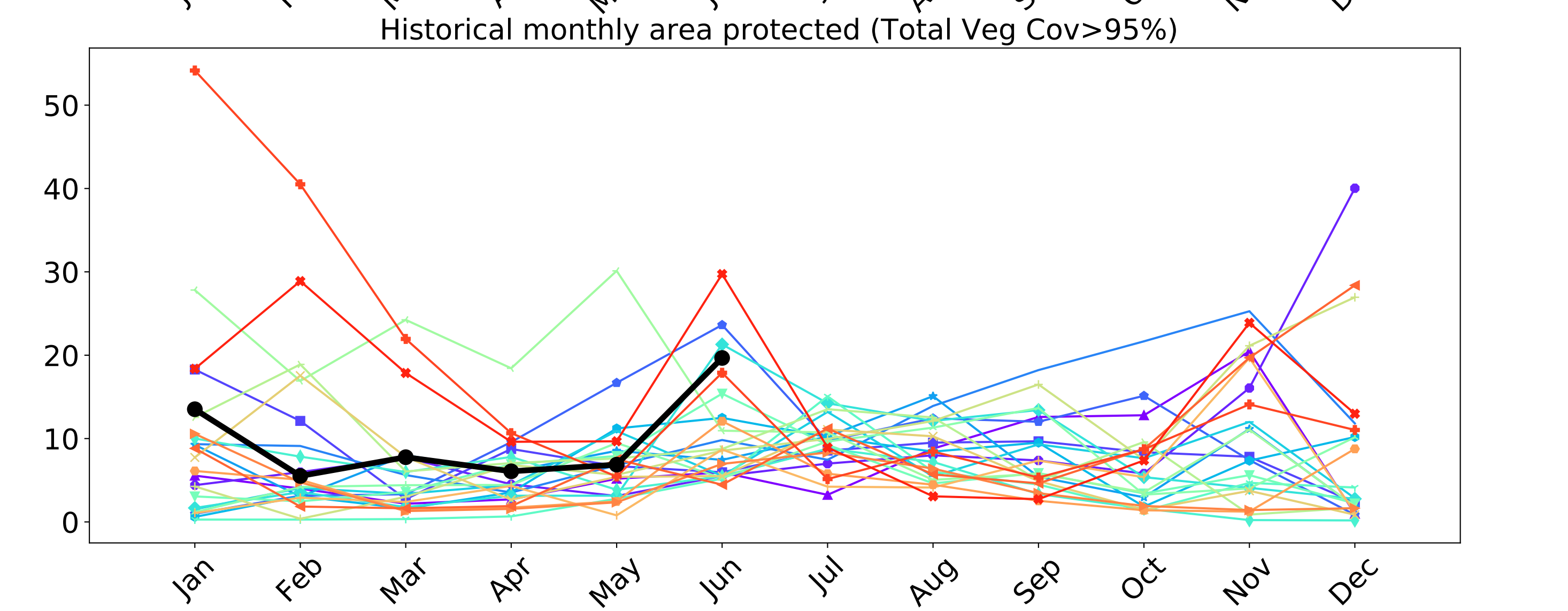
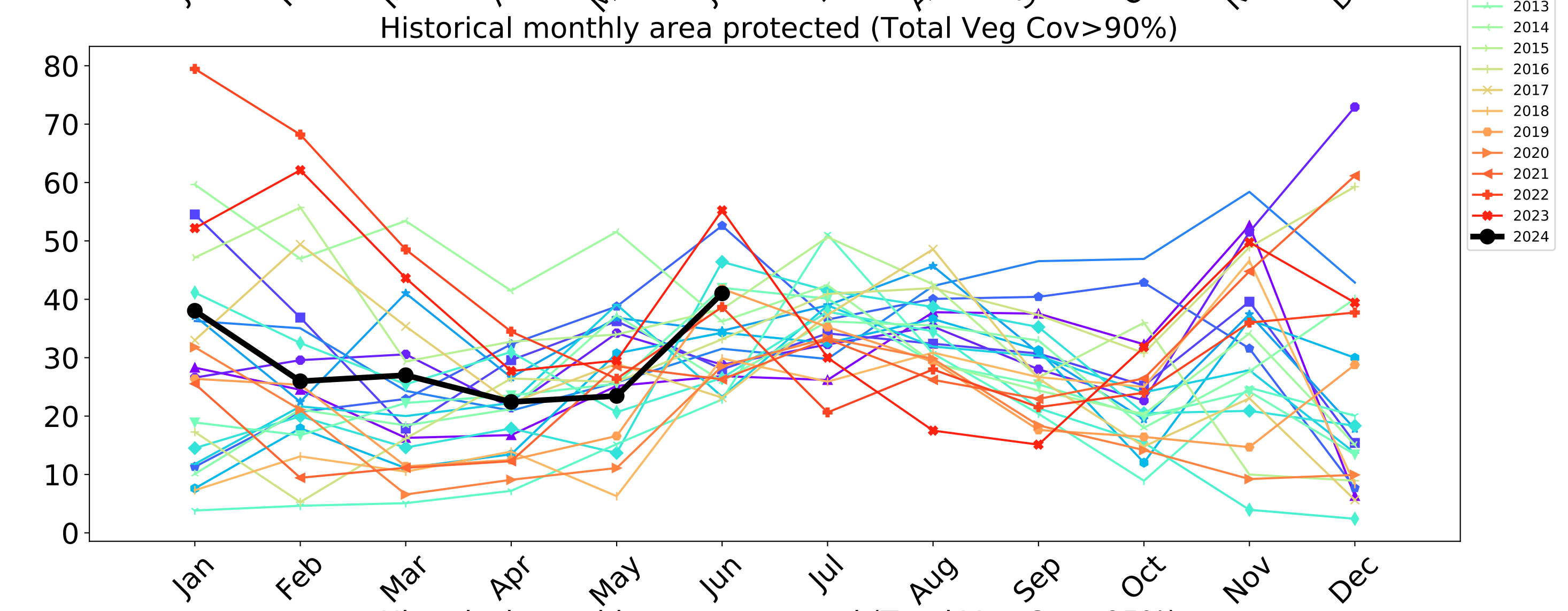
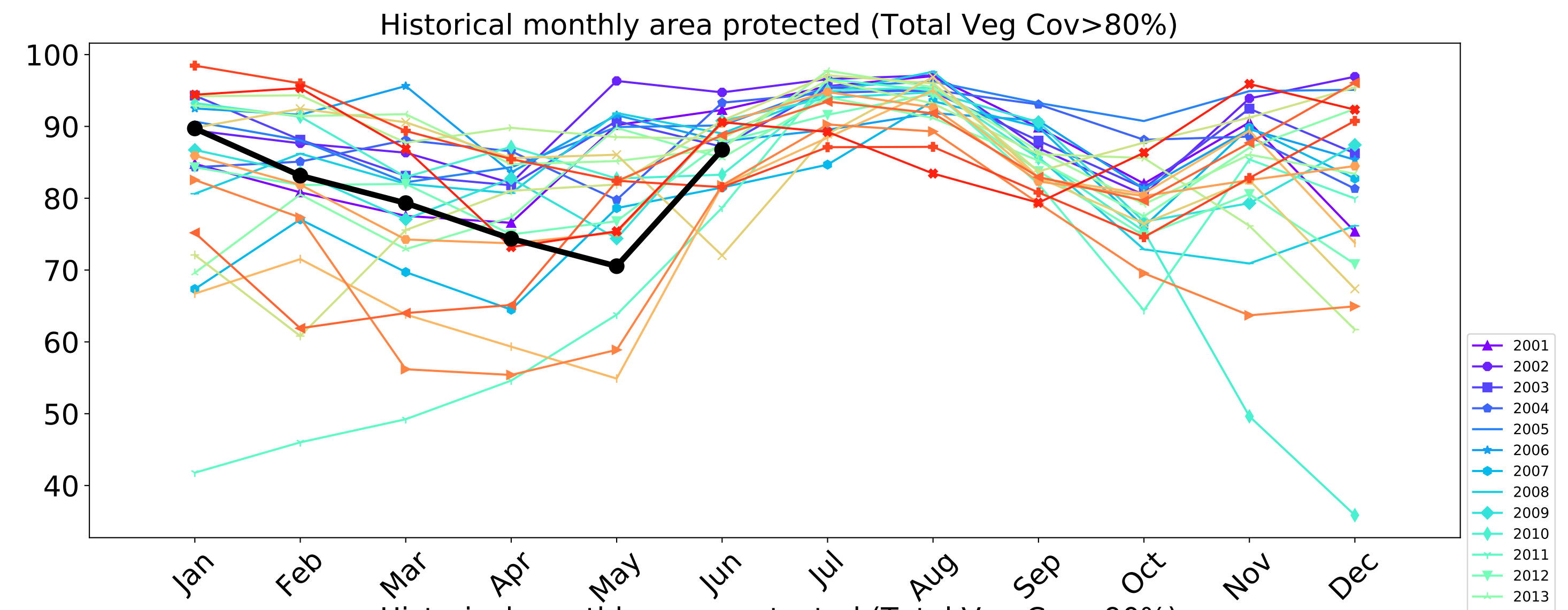
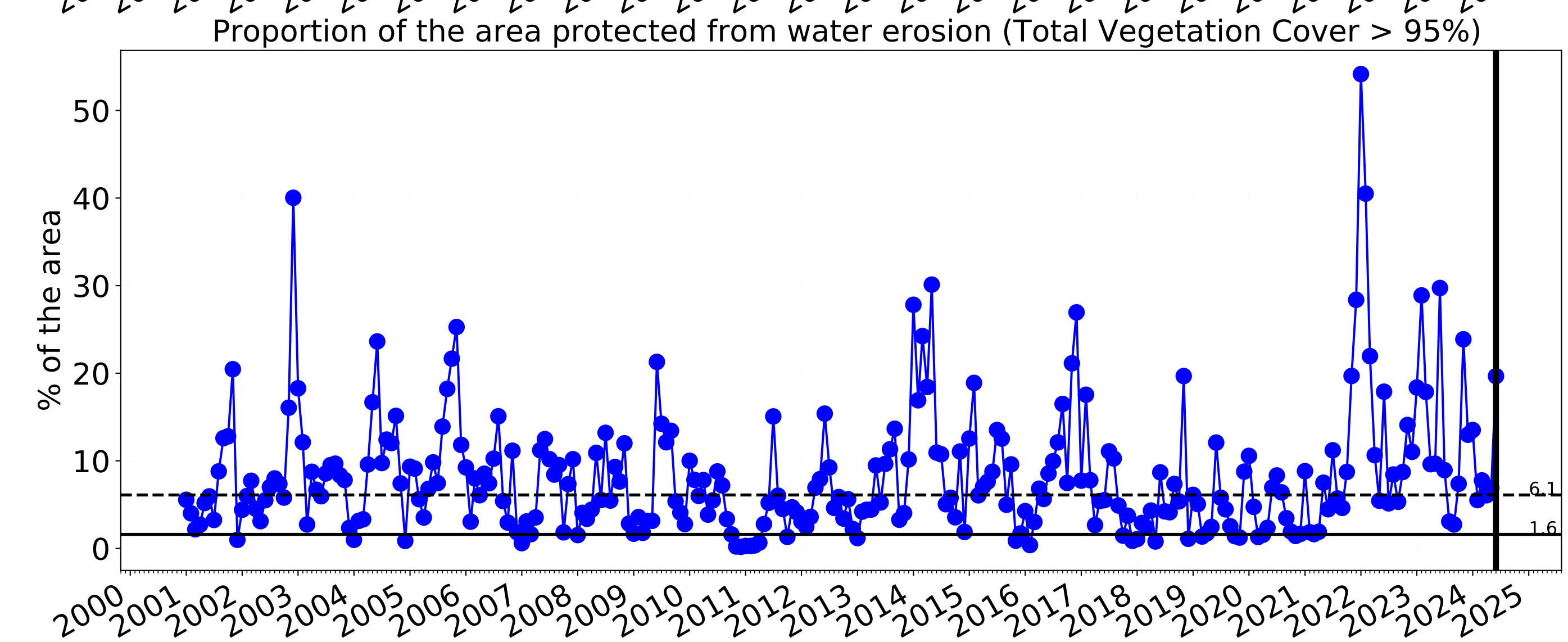
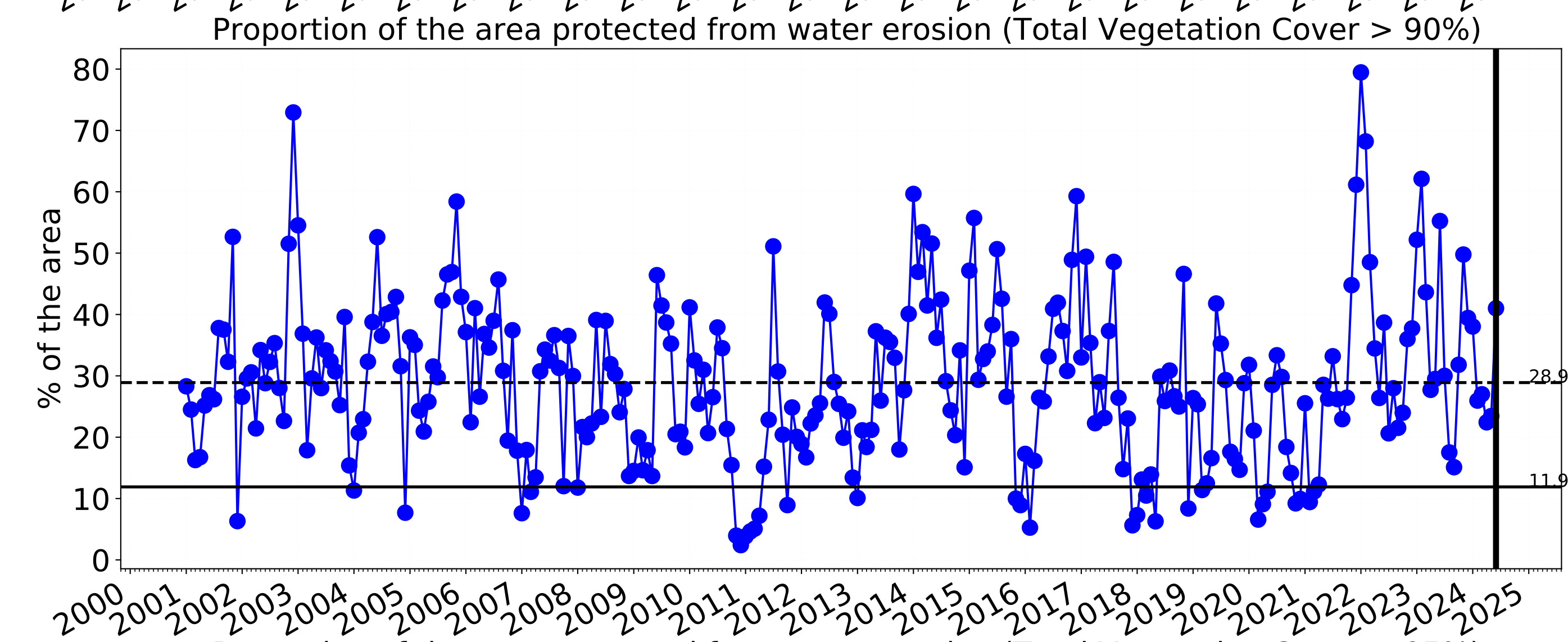
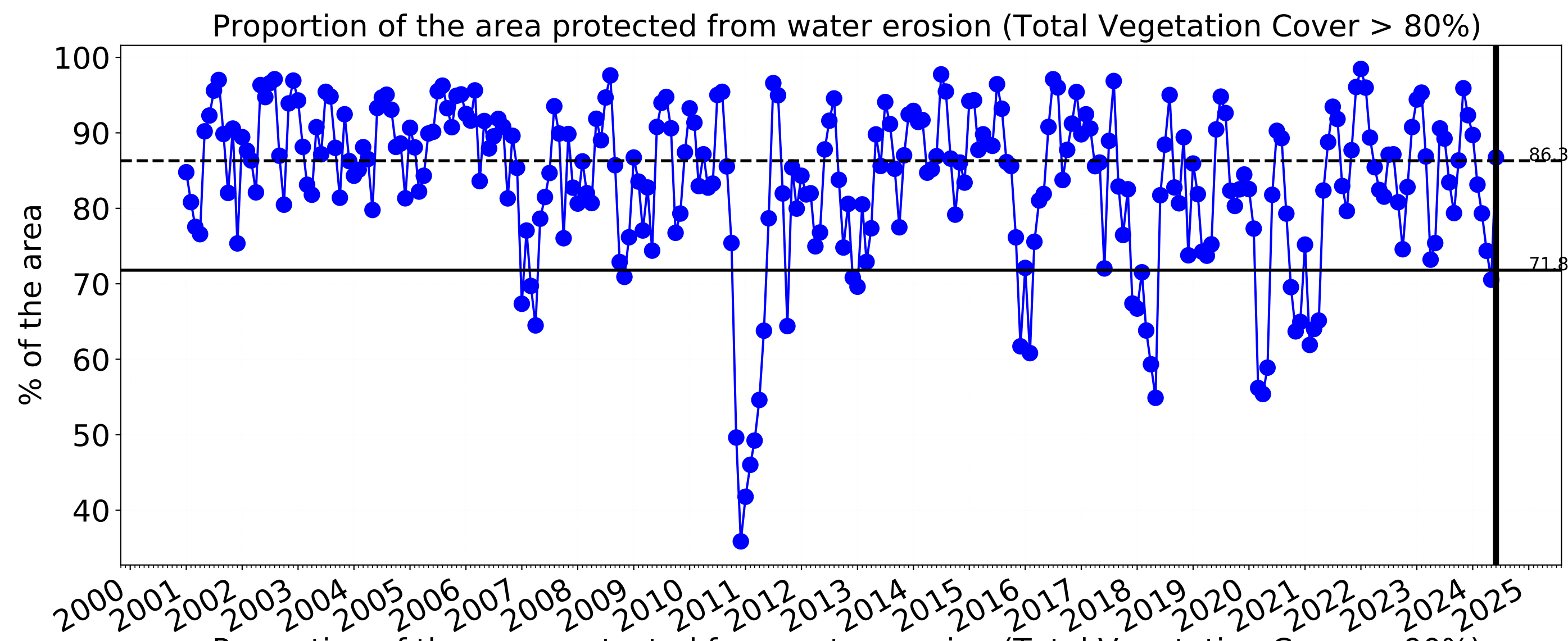
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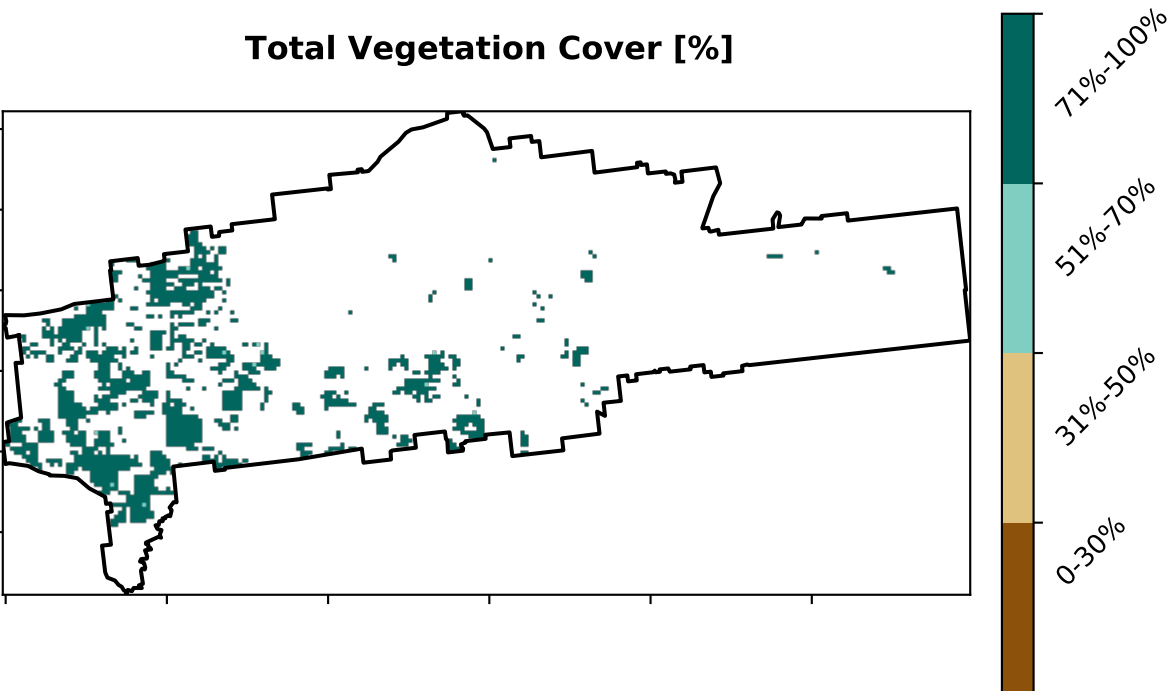


Production native forests and plantation forests

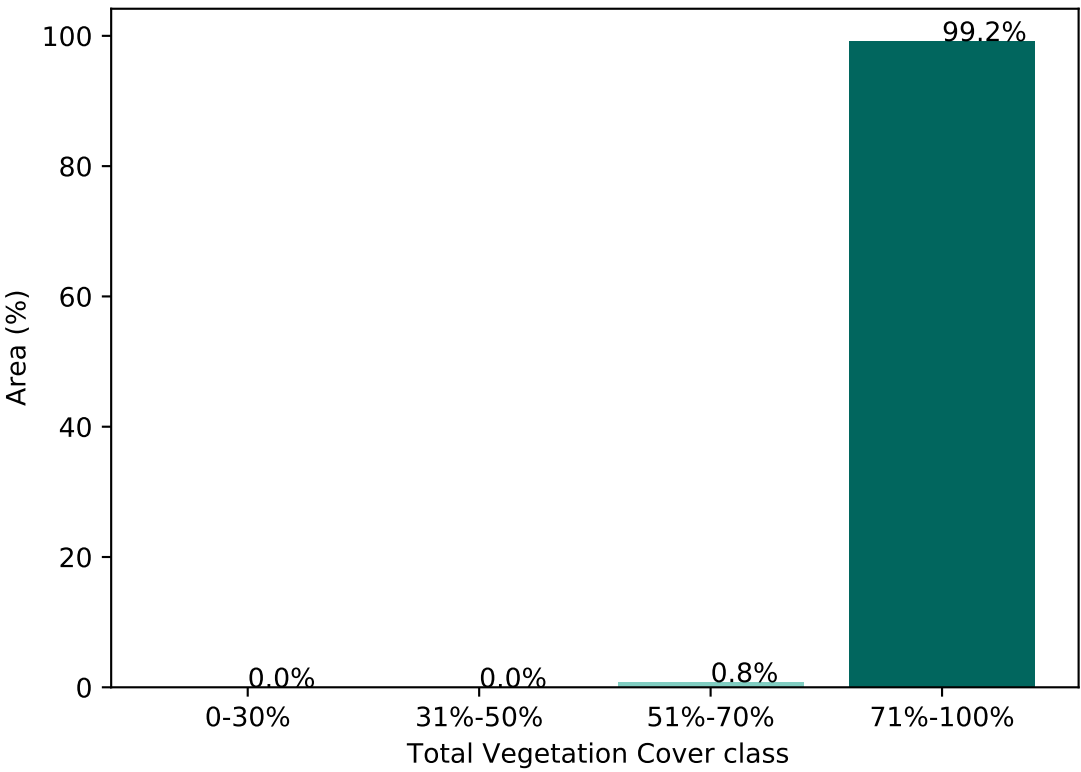
Land use and forest cover



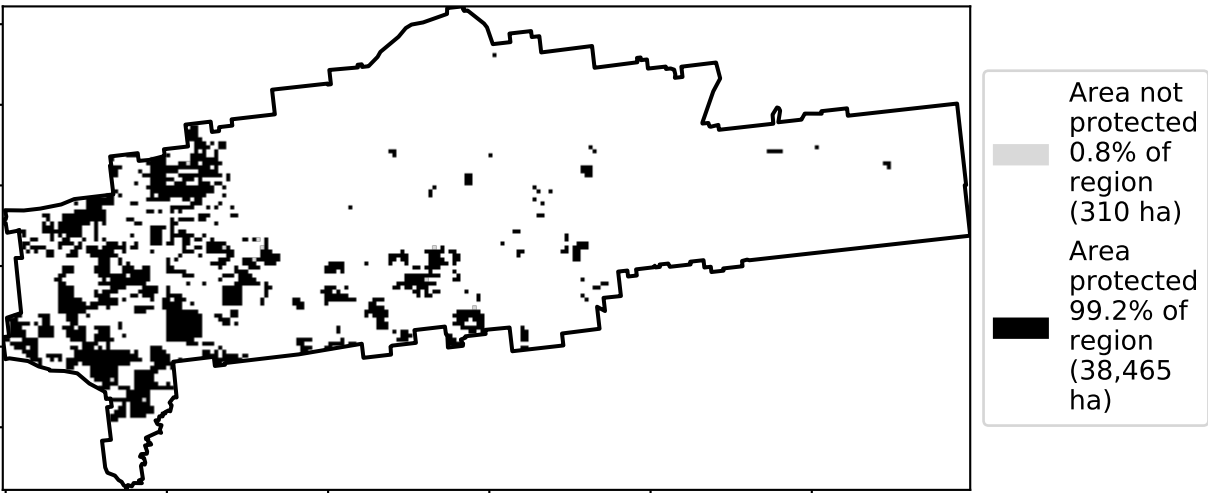
Total Vegetation Cover [%]



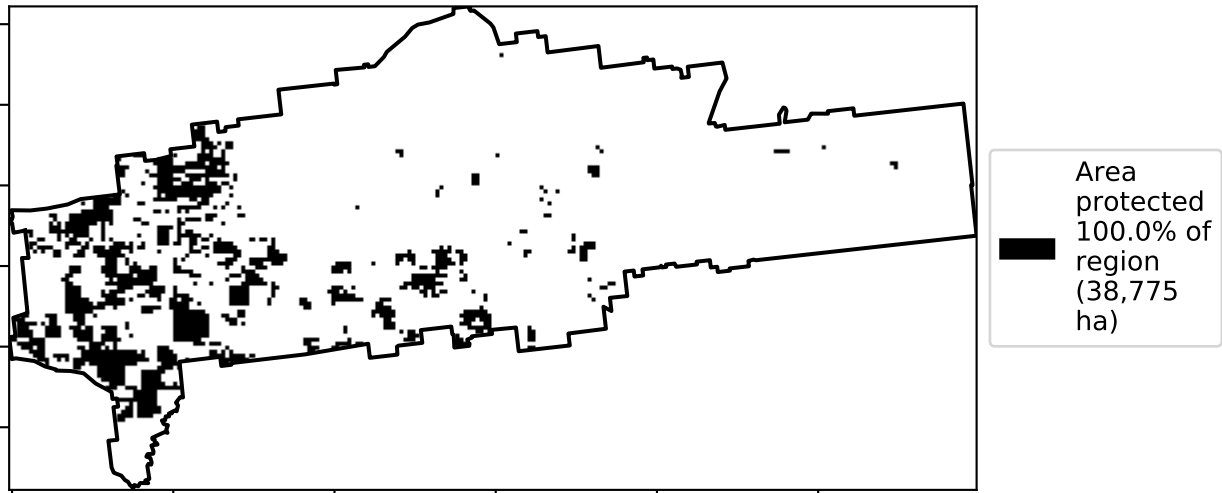
Proportion of vegetation cover class in area



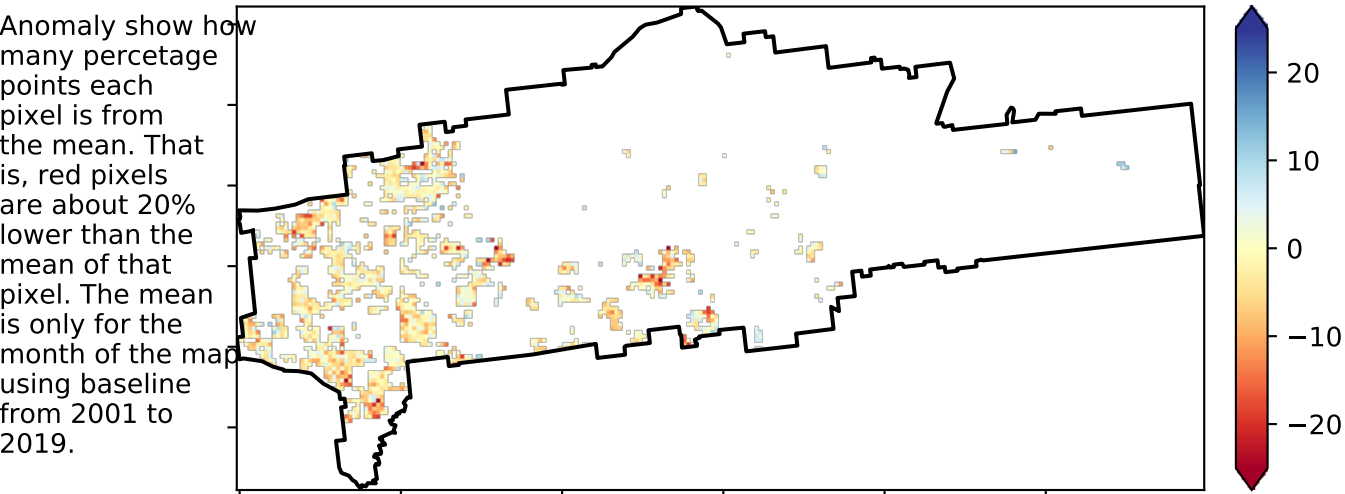
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

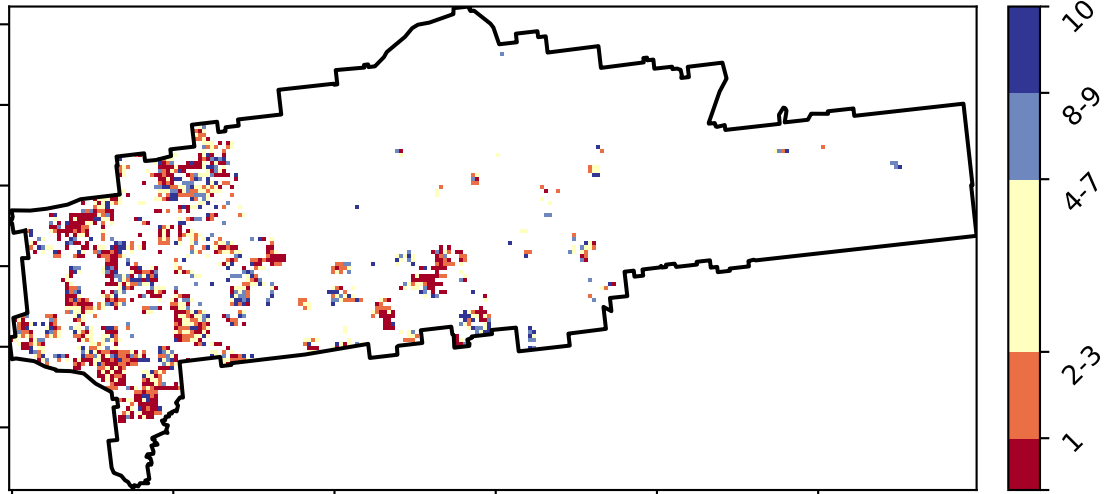


Total Vegetation Cover Anomaly [%]



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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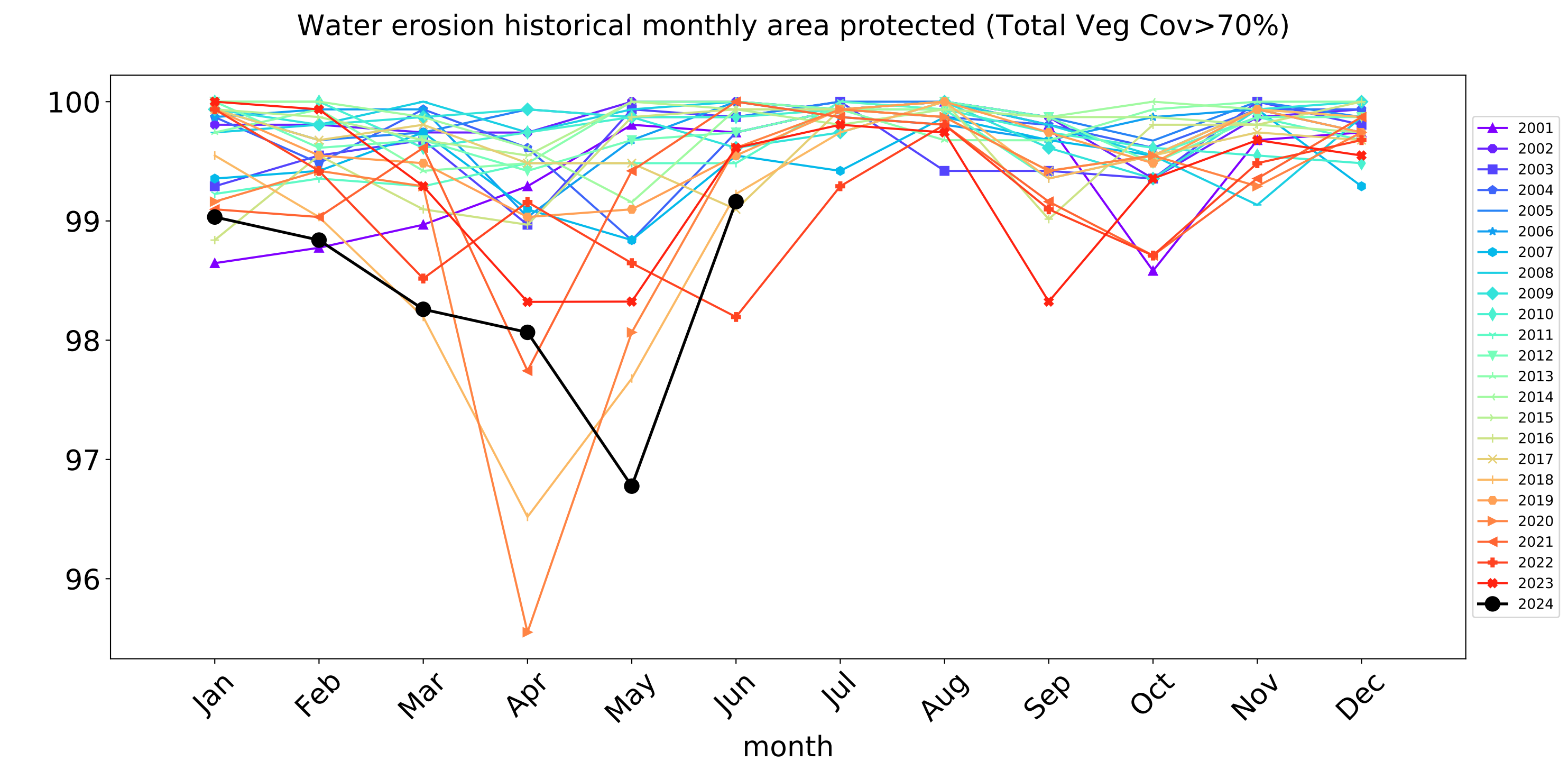
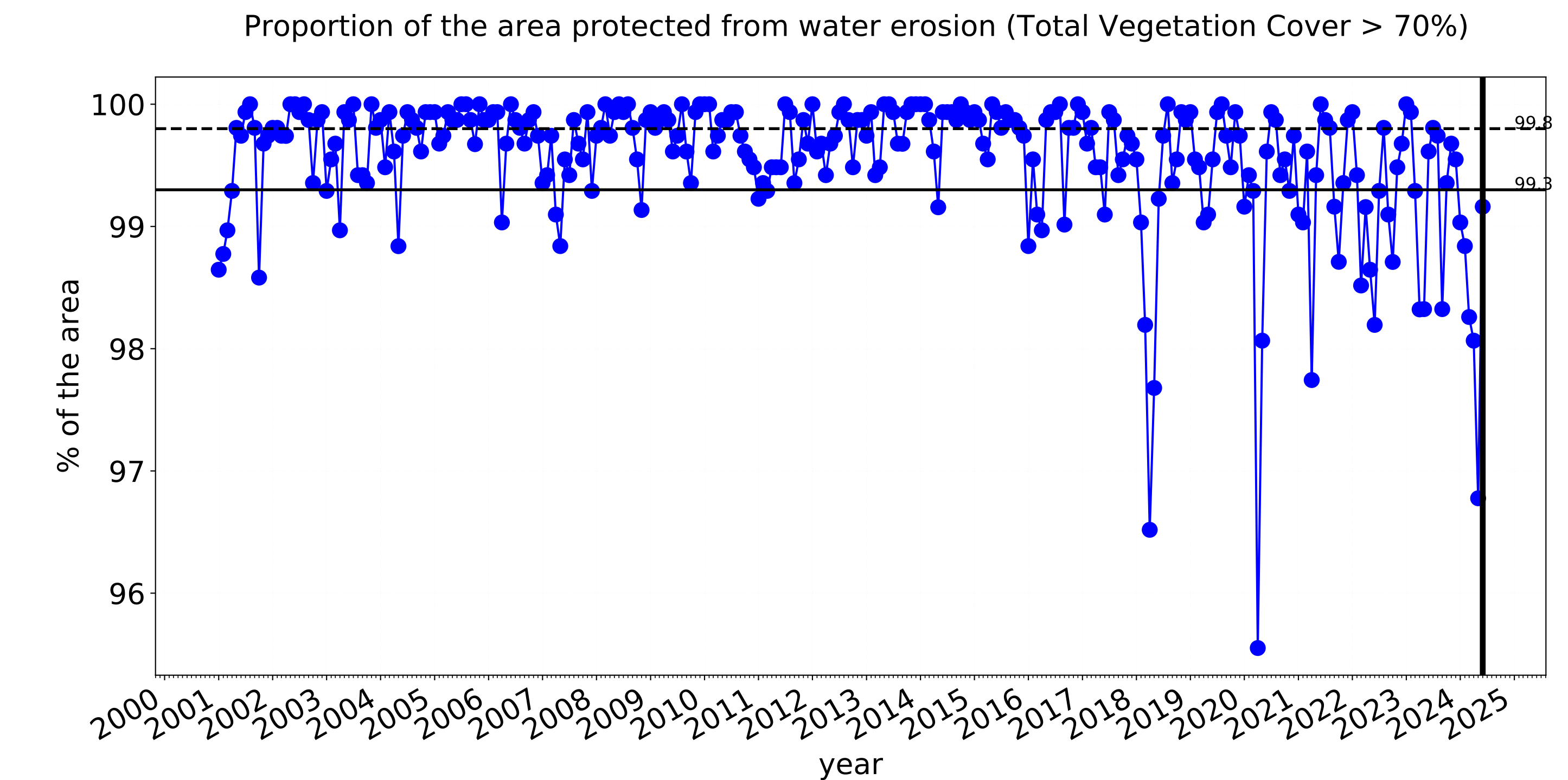
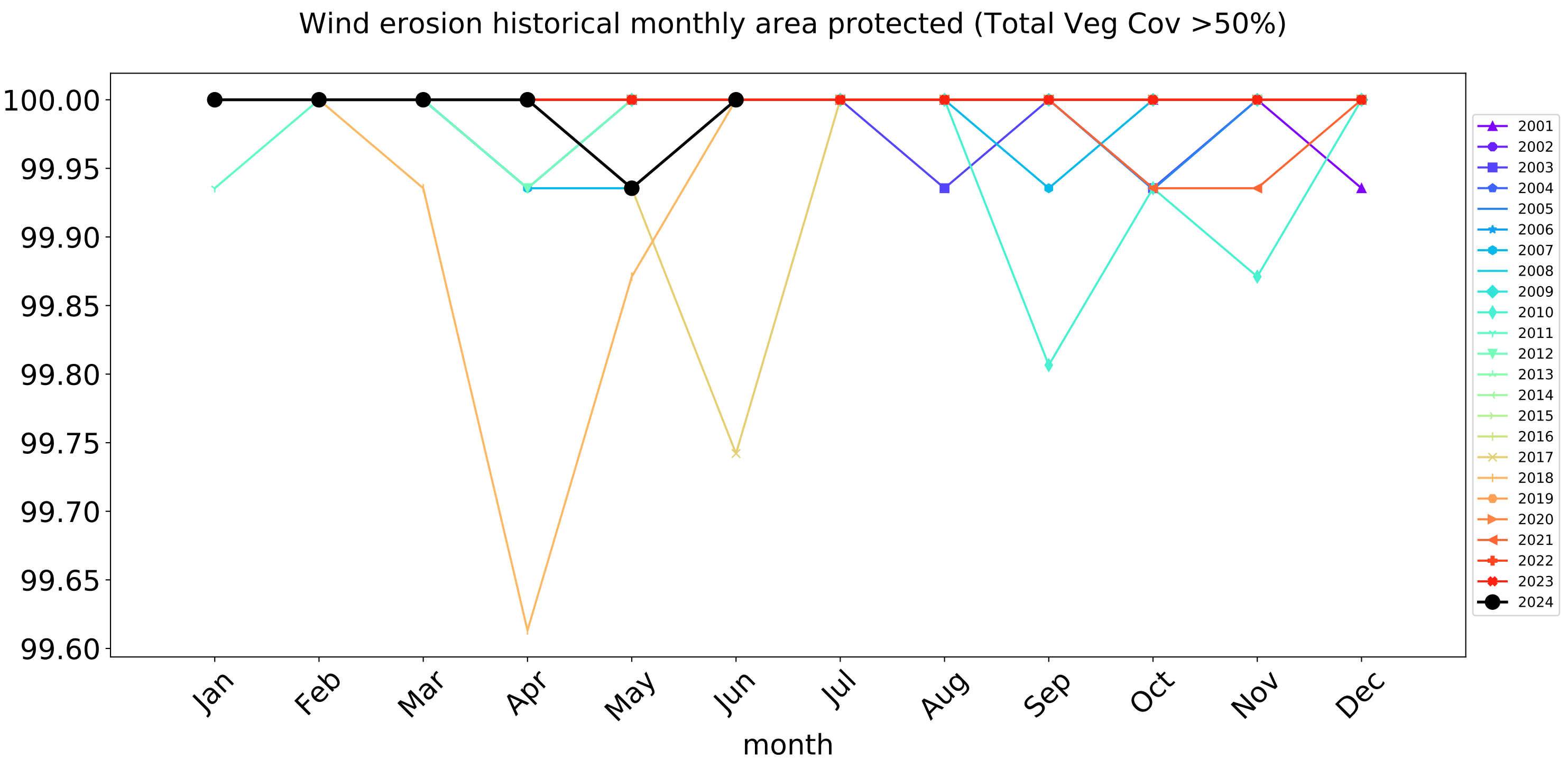
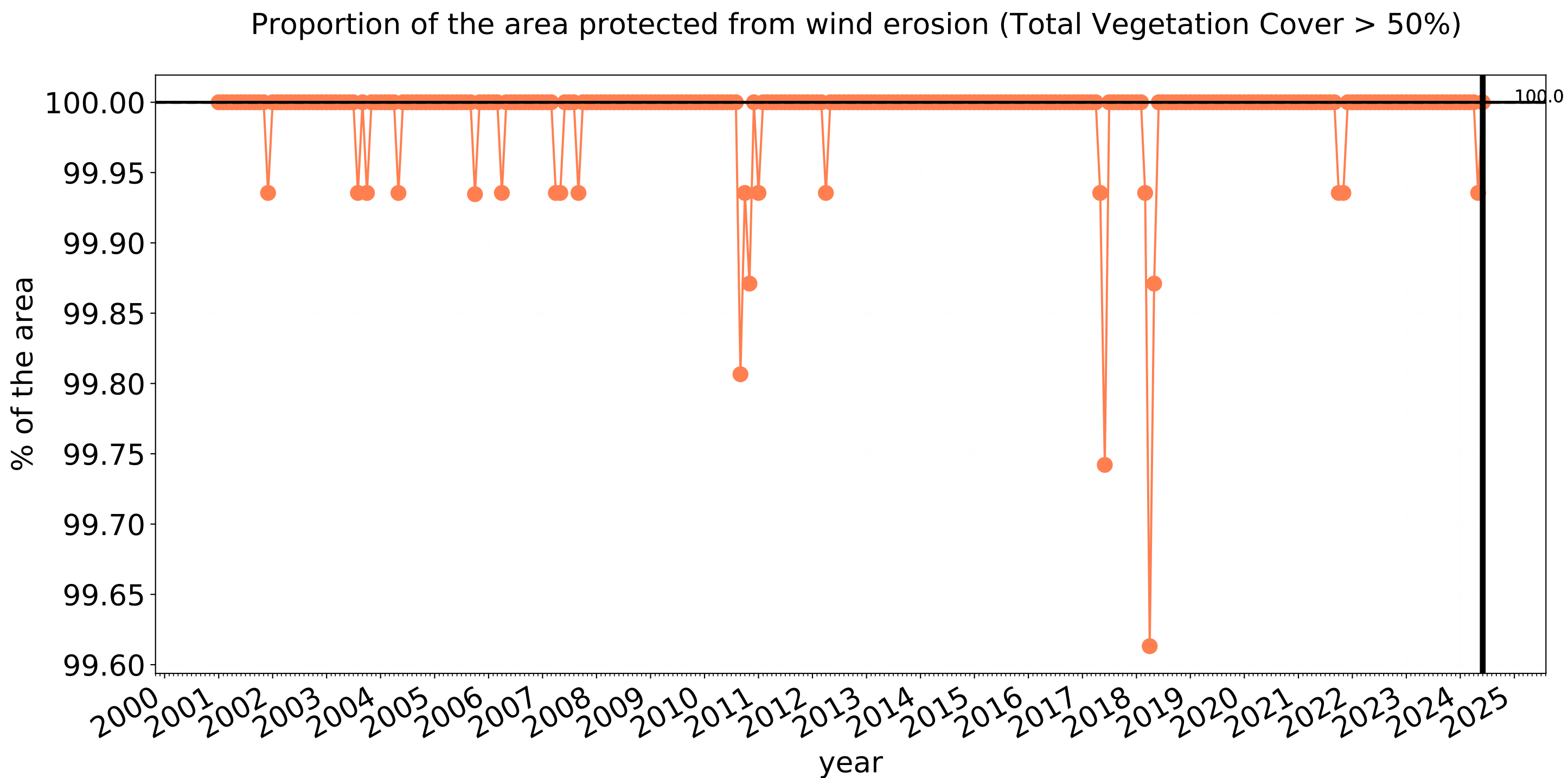


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Production native forests and plantation forests timeseries

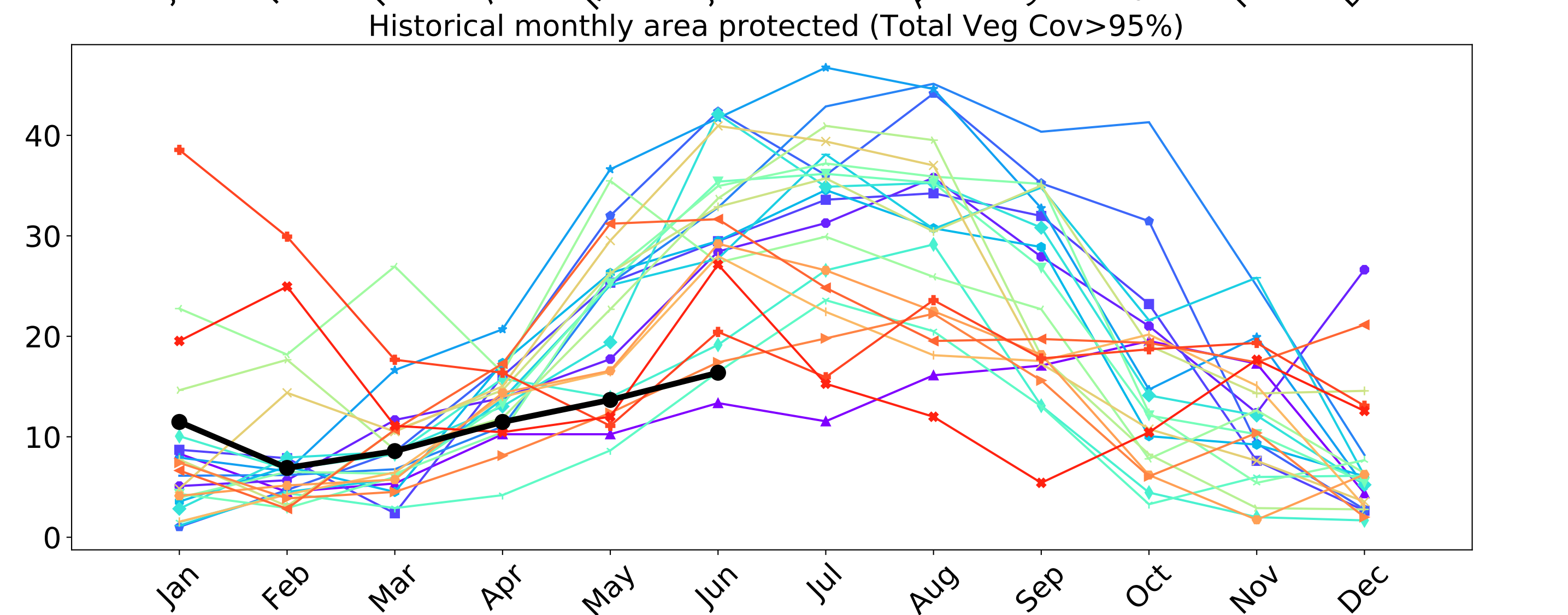
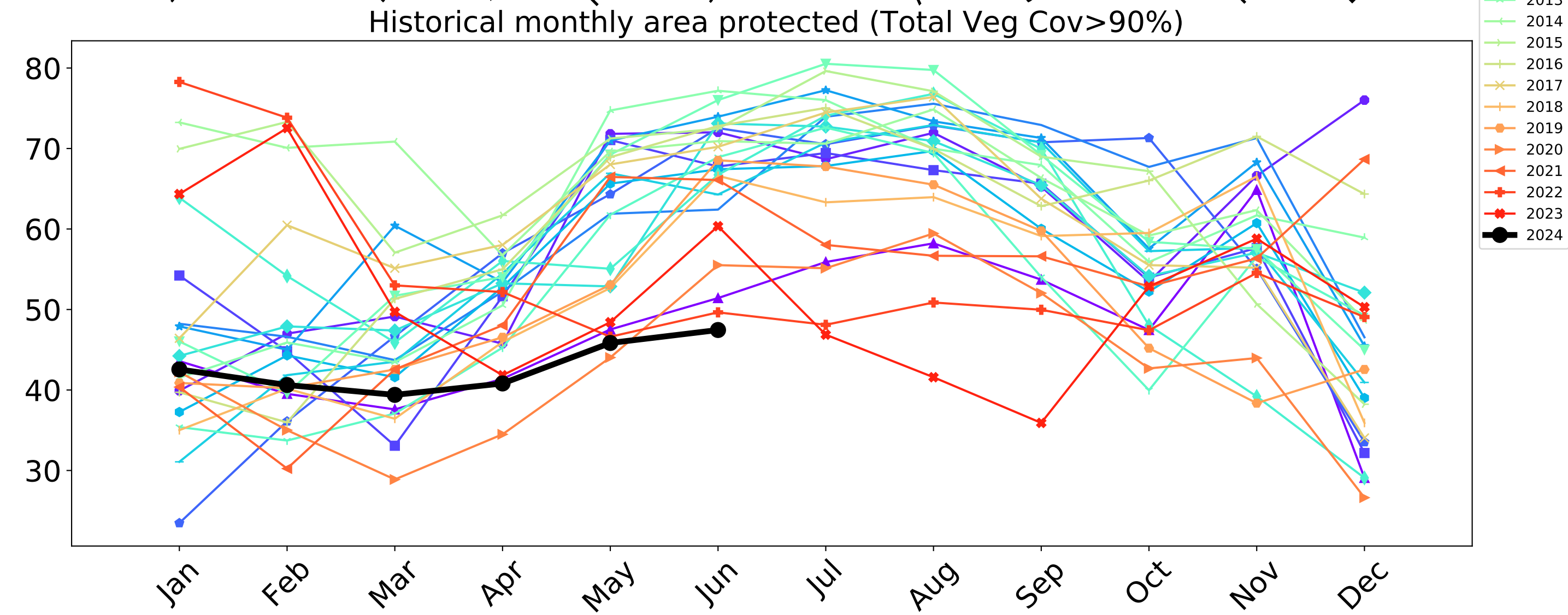
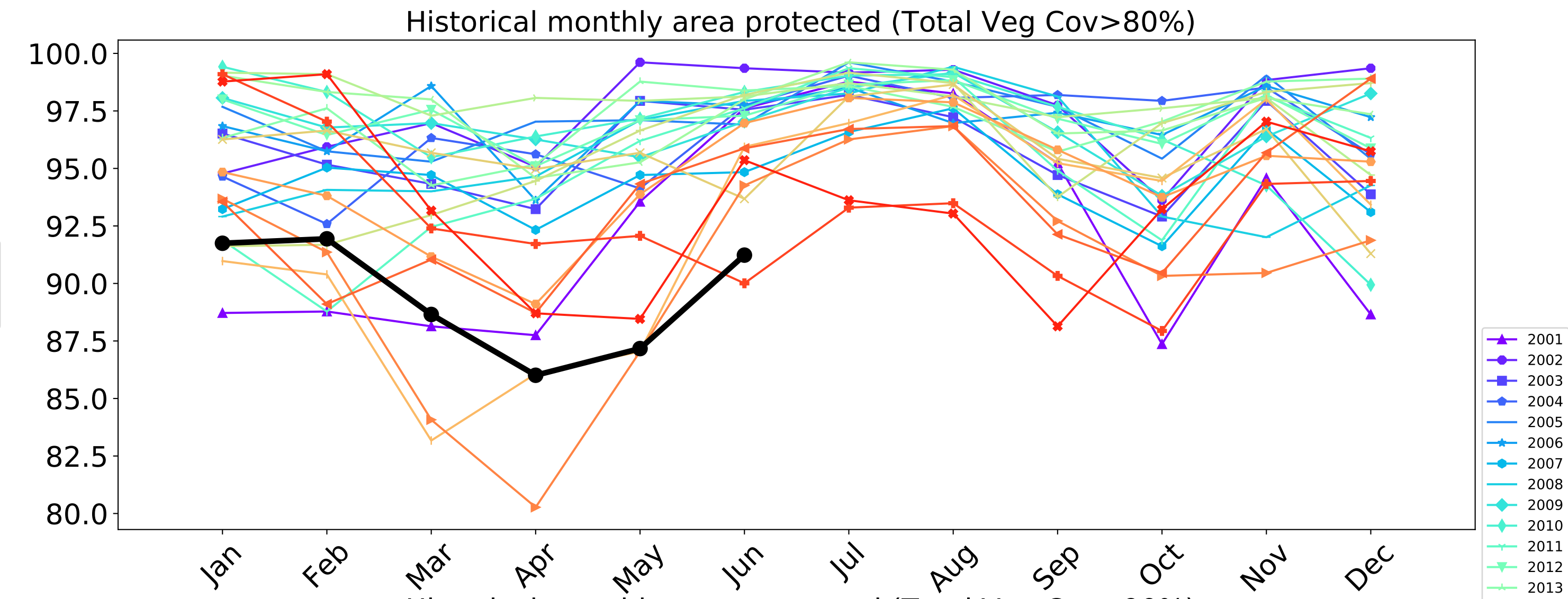
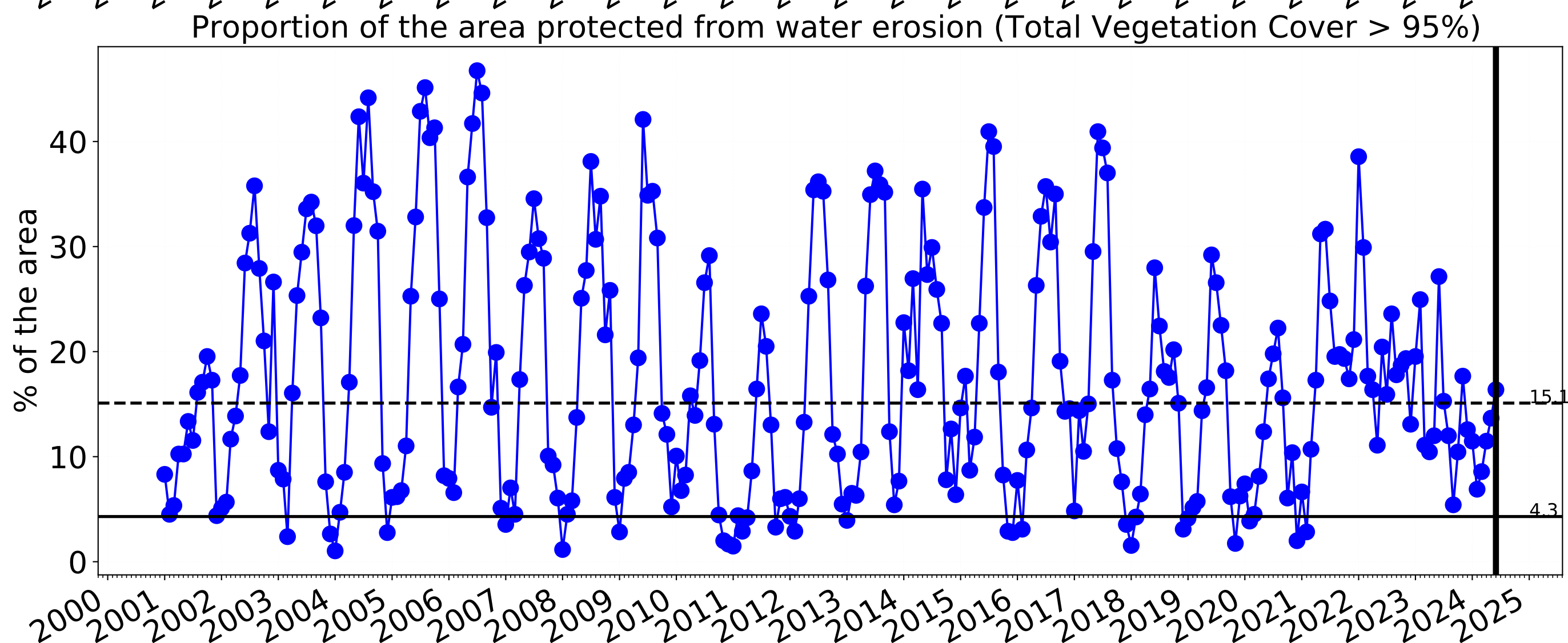
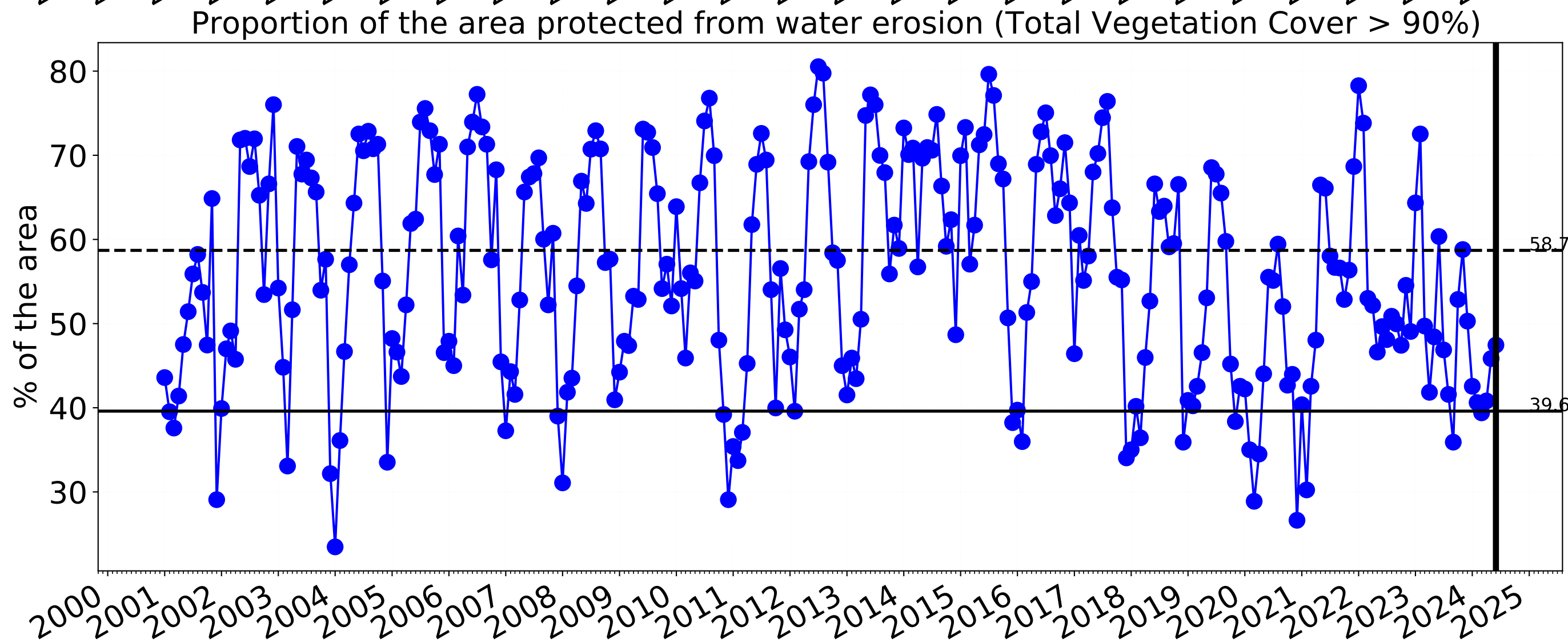
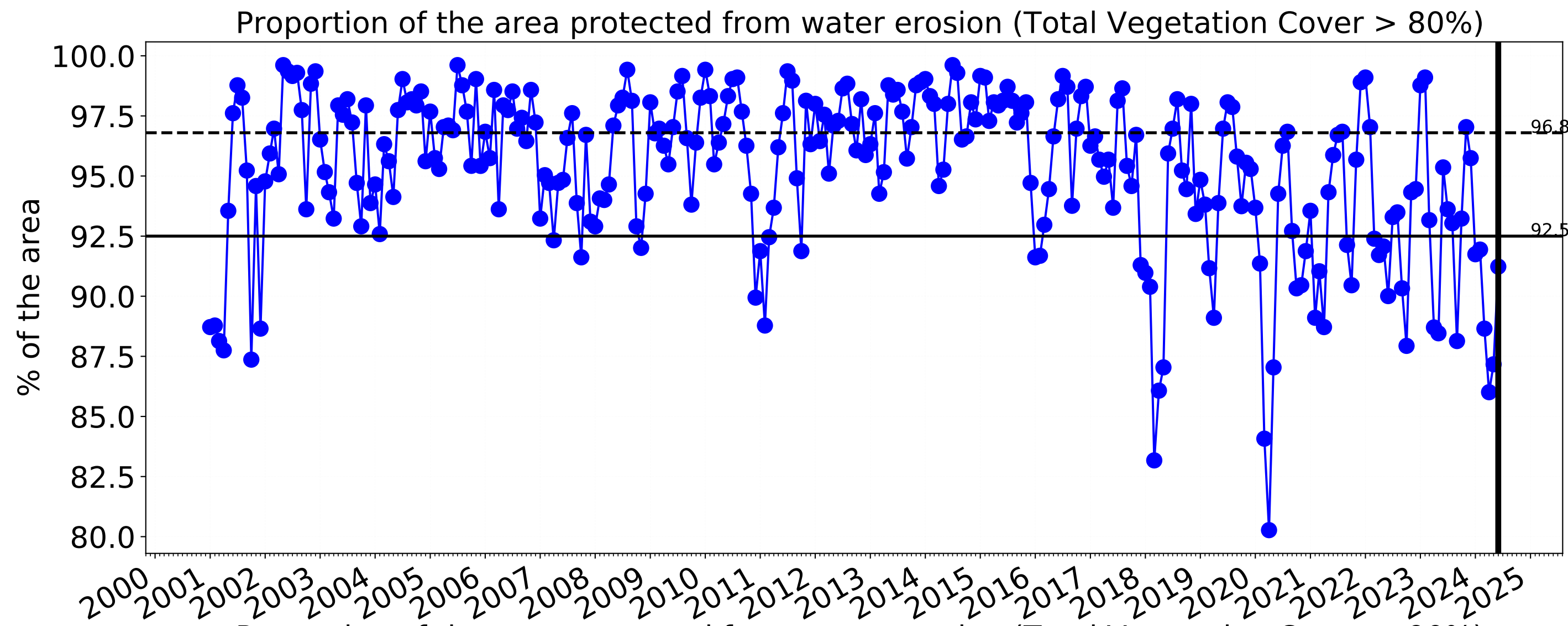


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Cranbrook_(S) (325,775 ha and no data 1,942 ha) Percentage area and hectares protected with TVC threshold 30,50,70,80,90 and 95%

Land use and forest cover Class	area(ha)	above_30	above_50	above_70	above_80	above_90	above_95
Entire region	325,775	100.0% 325,700	99.9% 325,500	98.7% 321,575	89.8% 292,475	46.7% 152,150	19.3% 62,925
Conservation and natural environments	82,500	100.0% 82,500	100.0% 82,500	99.3% 81,925	95.7% 78,950	56.6% 46,675	18.7% 15,450
Conservation and natural environments non forest	16,350	100.0% 16,350	100.0% 16,350	99.4% 16,250	96.8% 15,825	56.1% 9,175	25.8% 4,225
Conservation and natural environments Woodland forest	50,375	100.0% 50,375	100.0% 50,375	99.2% 49,975	96.1% 48,400	56.1% 28,275	16.1% 8,100
Conservation and natural environments Forest (non woodland)	15,775	100.0% 15,775	100.0% 15,775	99.5% 15,700	93.3% 14,725	58.5% 9,225	19.8% 3,125
Agriculture	199,600	100.0% 199,550	99.9% 199,400	98.5% 196,650	87.2% 174,050	42.3% 84,425	19.8% 39,525
Grazing	71,800	100.0% 71,800	99.9% 71,750	98.7% 70,900	87.9% 63,100	44.4% 31,875	20.0% 14,325
Grazing non forest	71,025	100.0% 71,025	99.9% 70,975	98.7% 70,125	87.8% 62,350	44.5% 31,575	20.0% 14,200
Cropping	125,450	100.0% 125,400	99.9% 125,300	98.4% 123,425	86.7% 108,825	41.0% 51,450	19.7% 24,675
Production native forests and plantation forests	38,775	100.0% 38,775	100.0% 38,775	99.2% 38,450	91.2% 35,375	47.5% 18,400	16.4% 6,350