

Total vegetation cover soil protection

Region:LGA Busselton_(C) 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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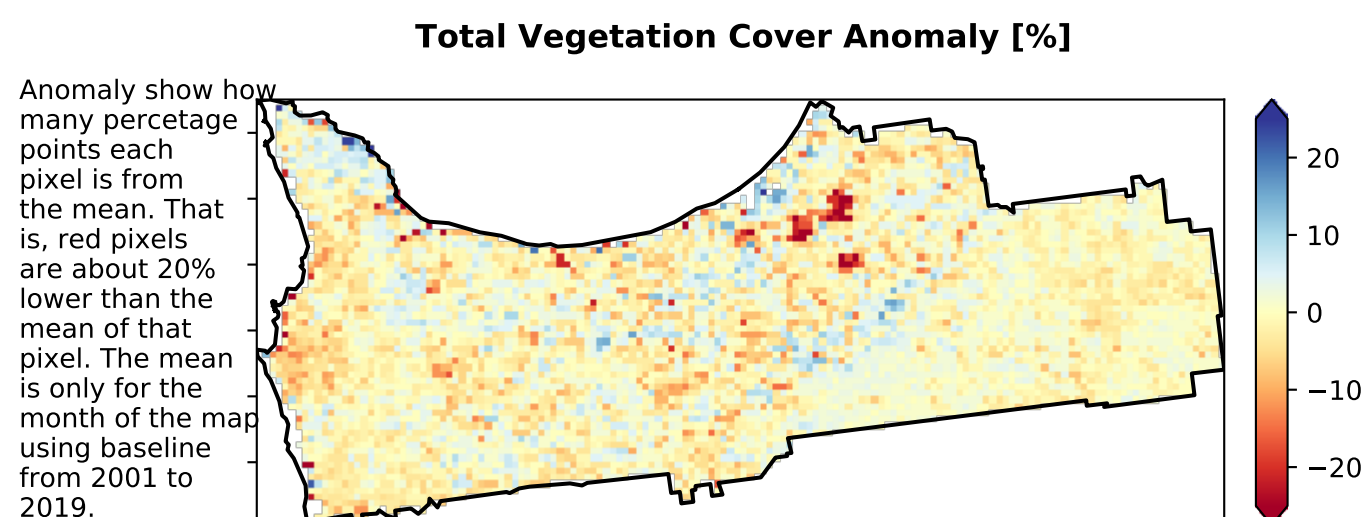
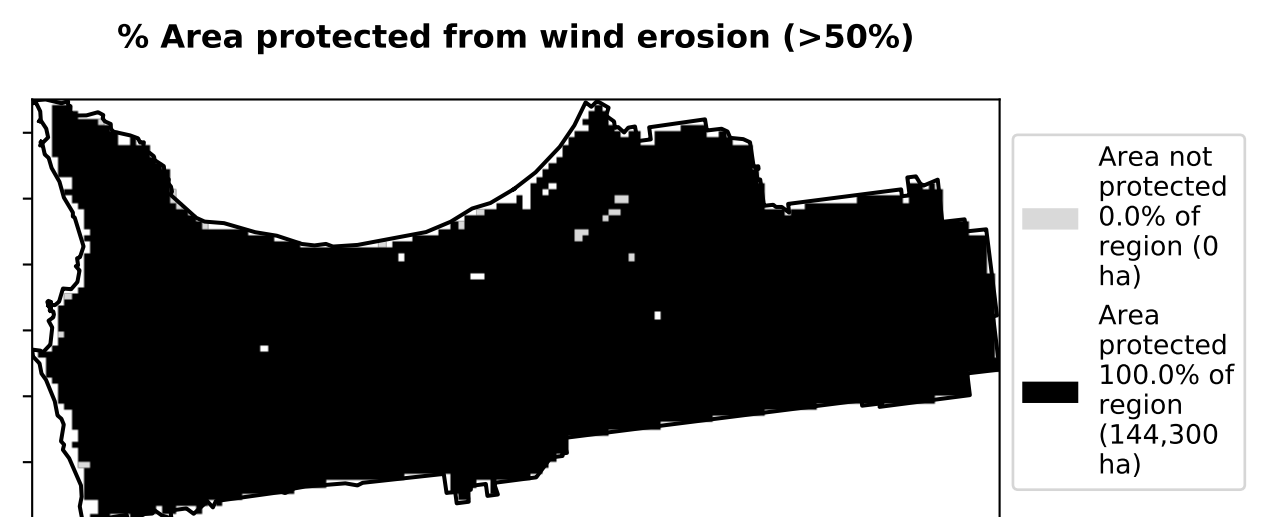
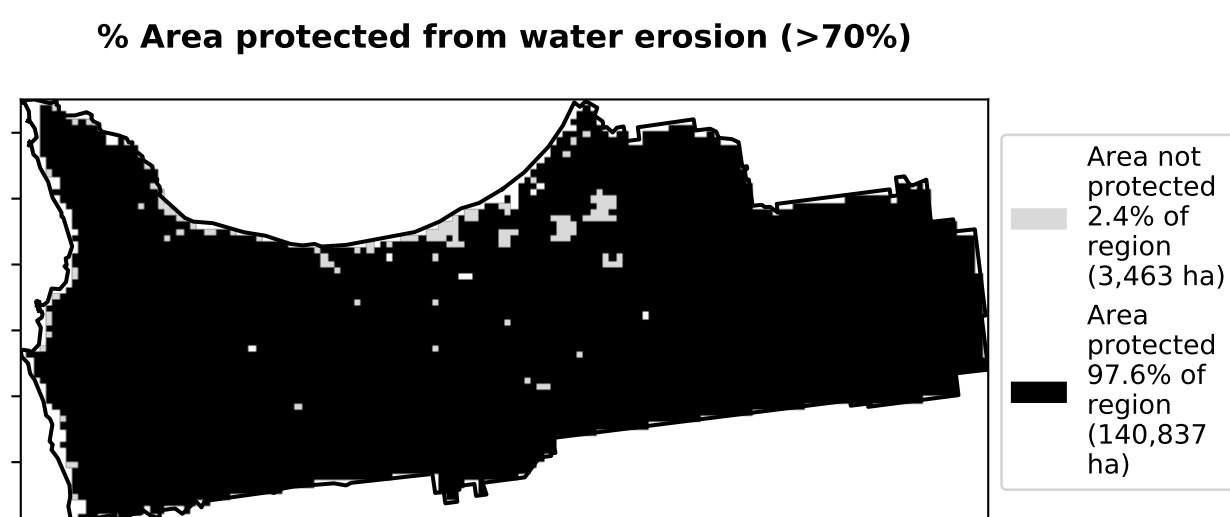
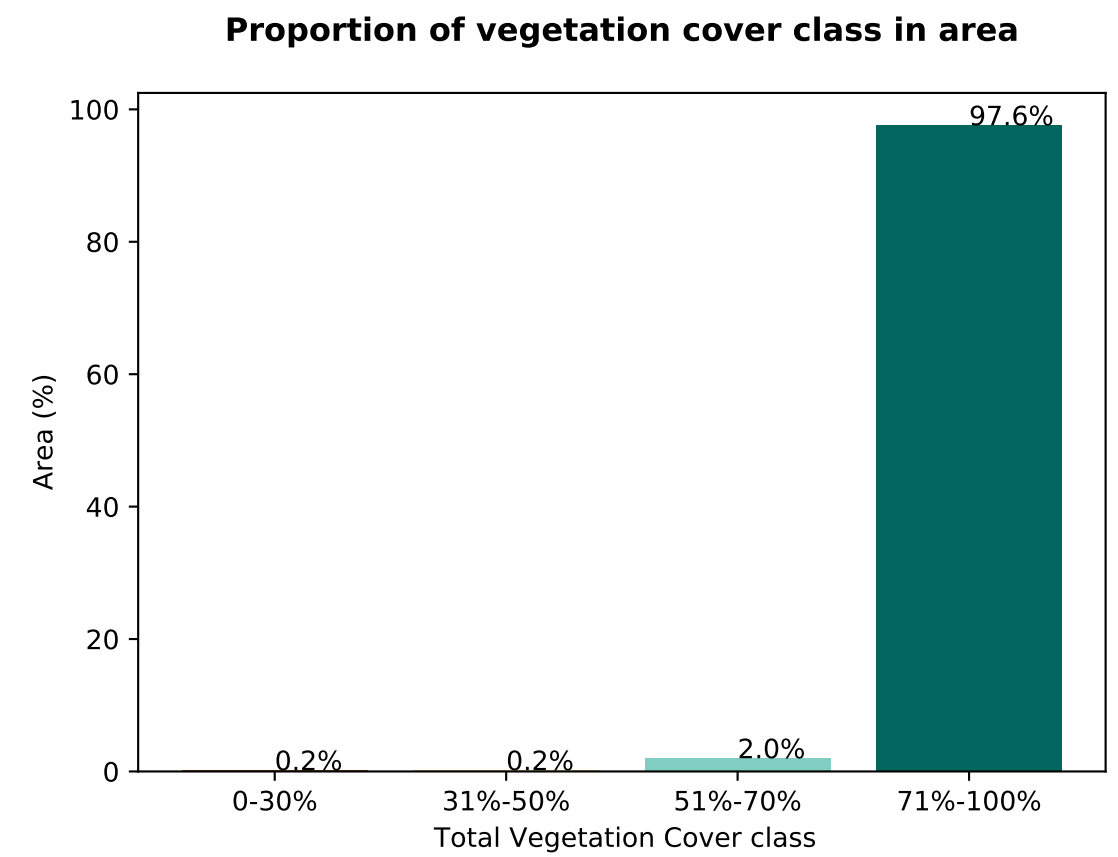
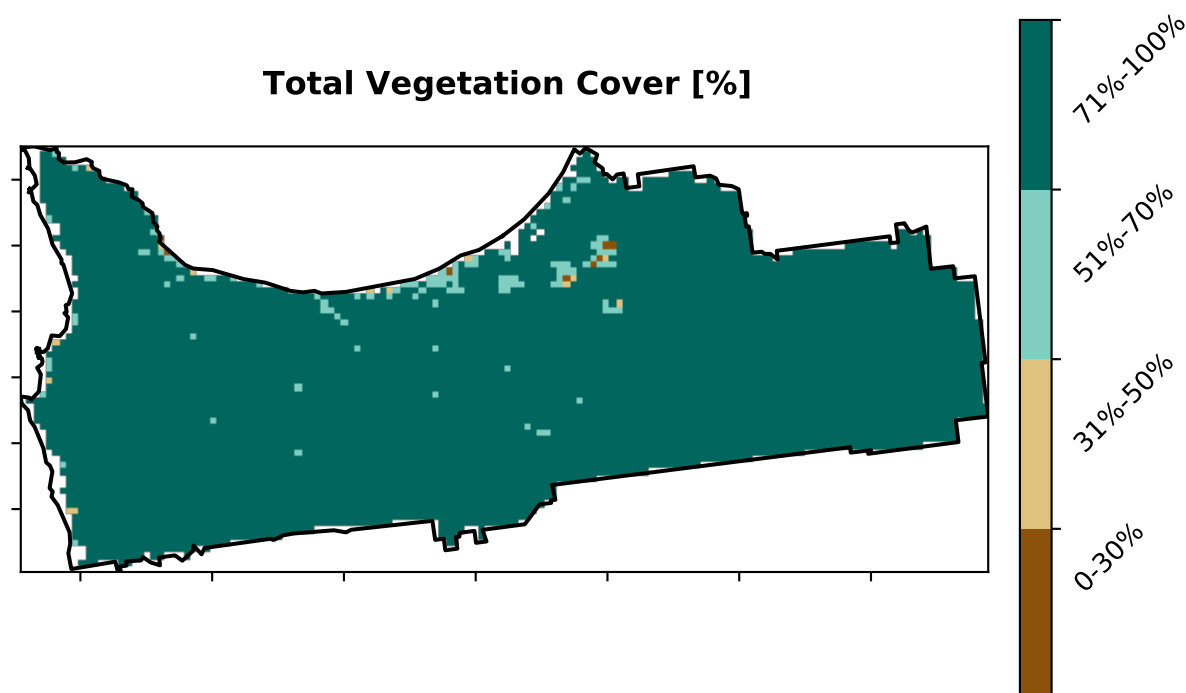
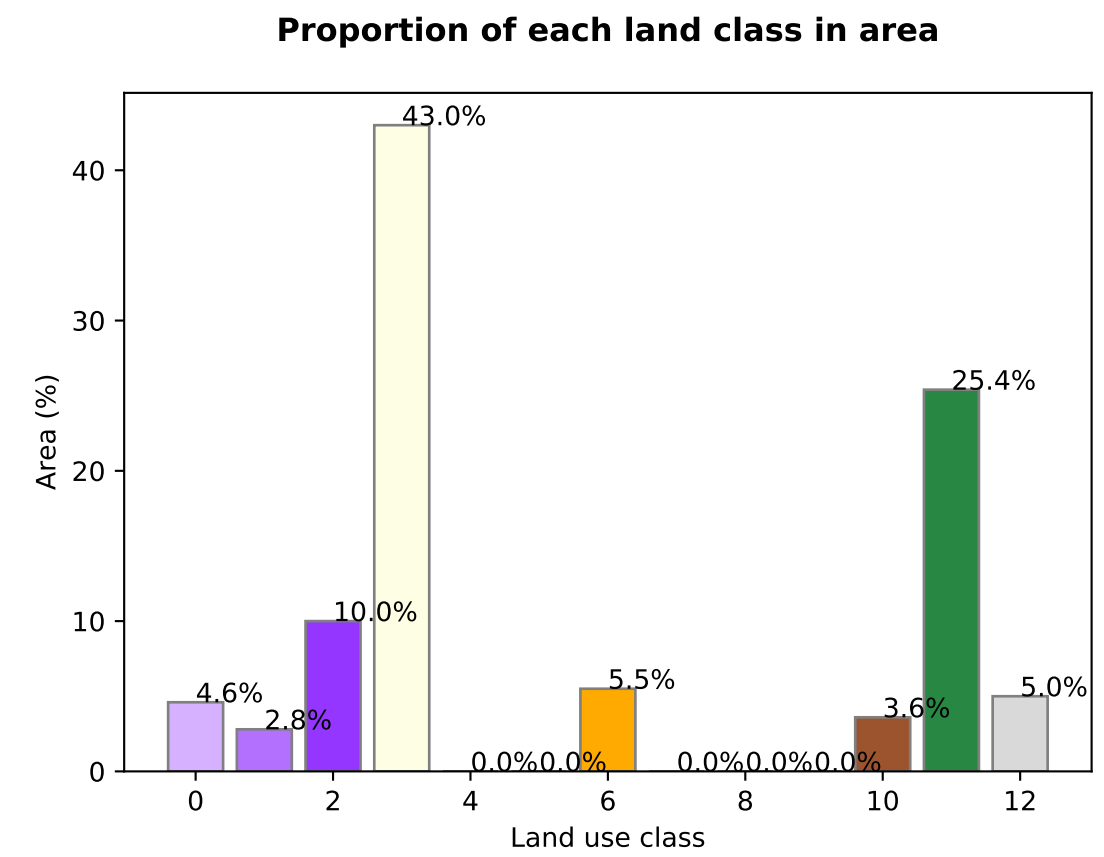
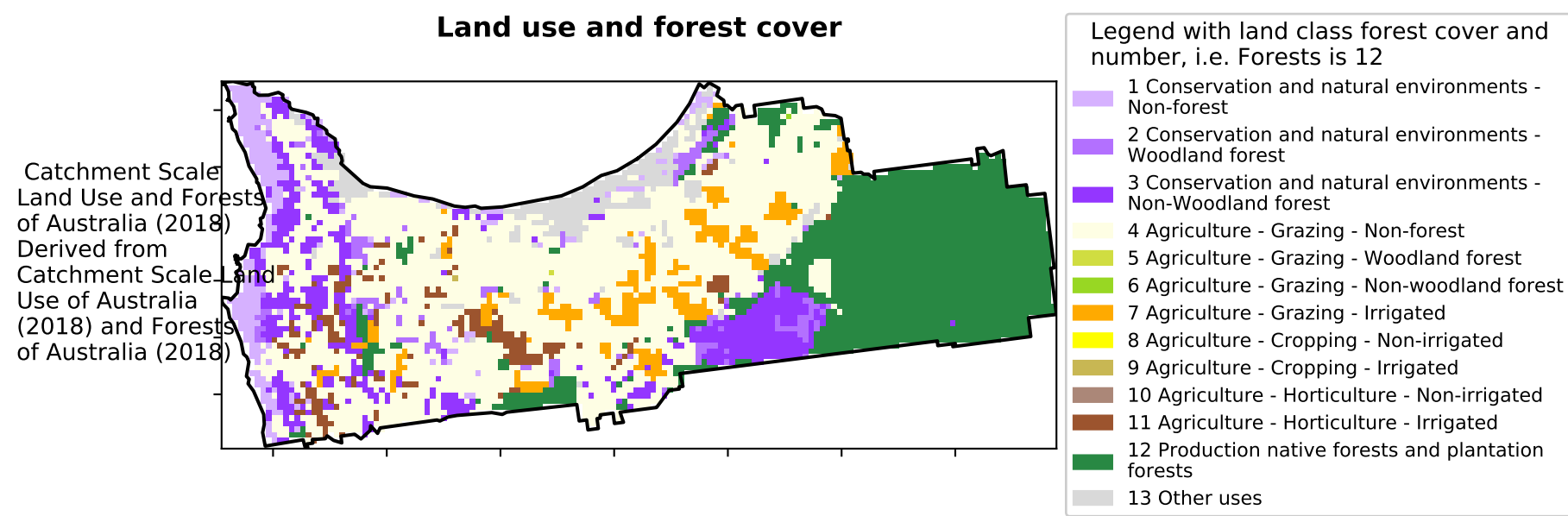
Ecosystem Research Infrastructure



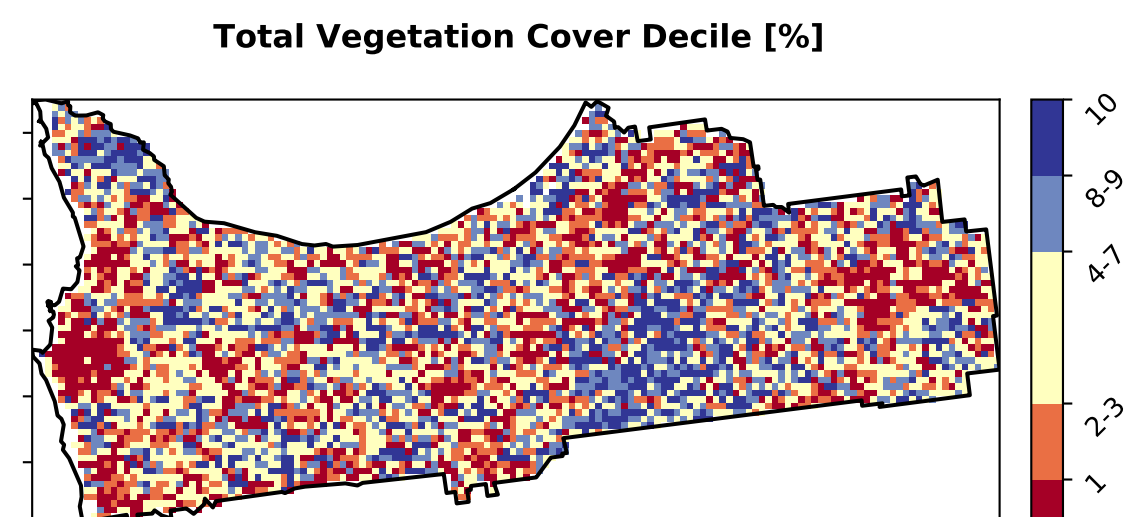
National
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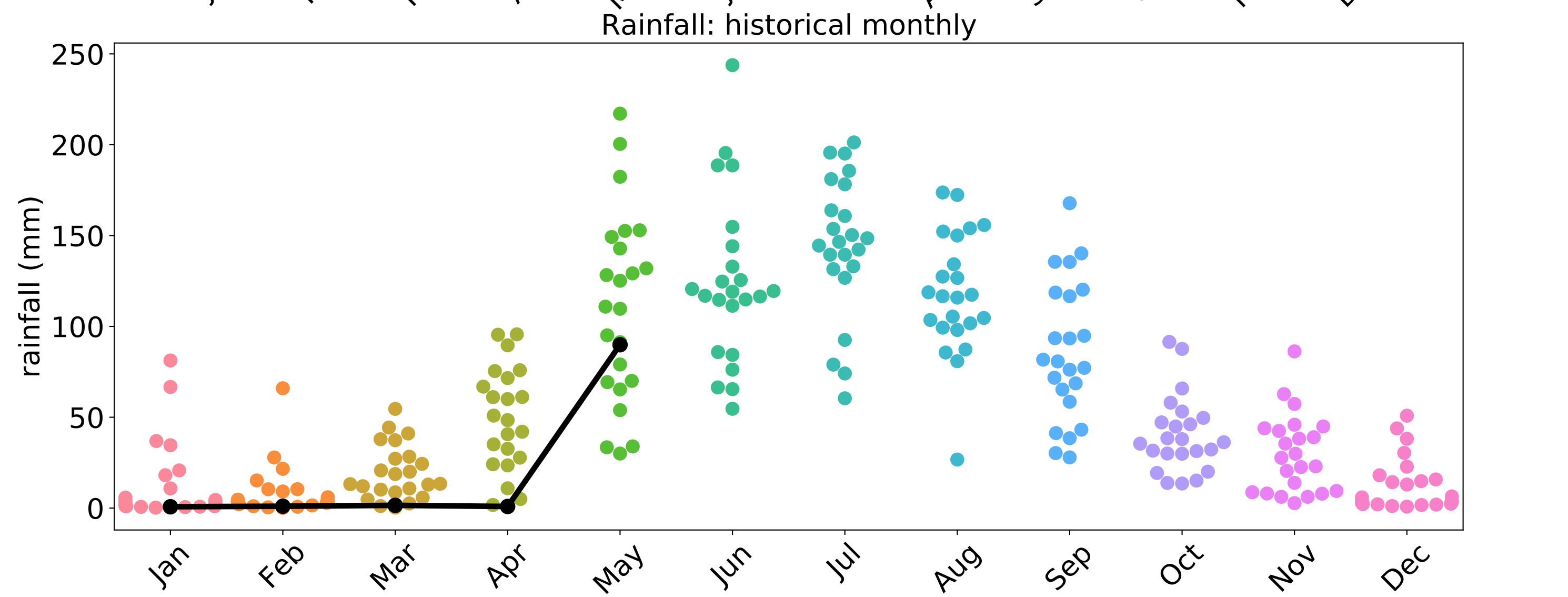
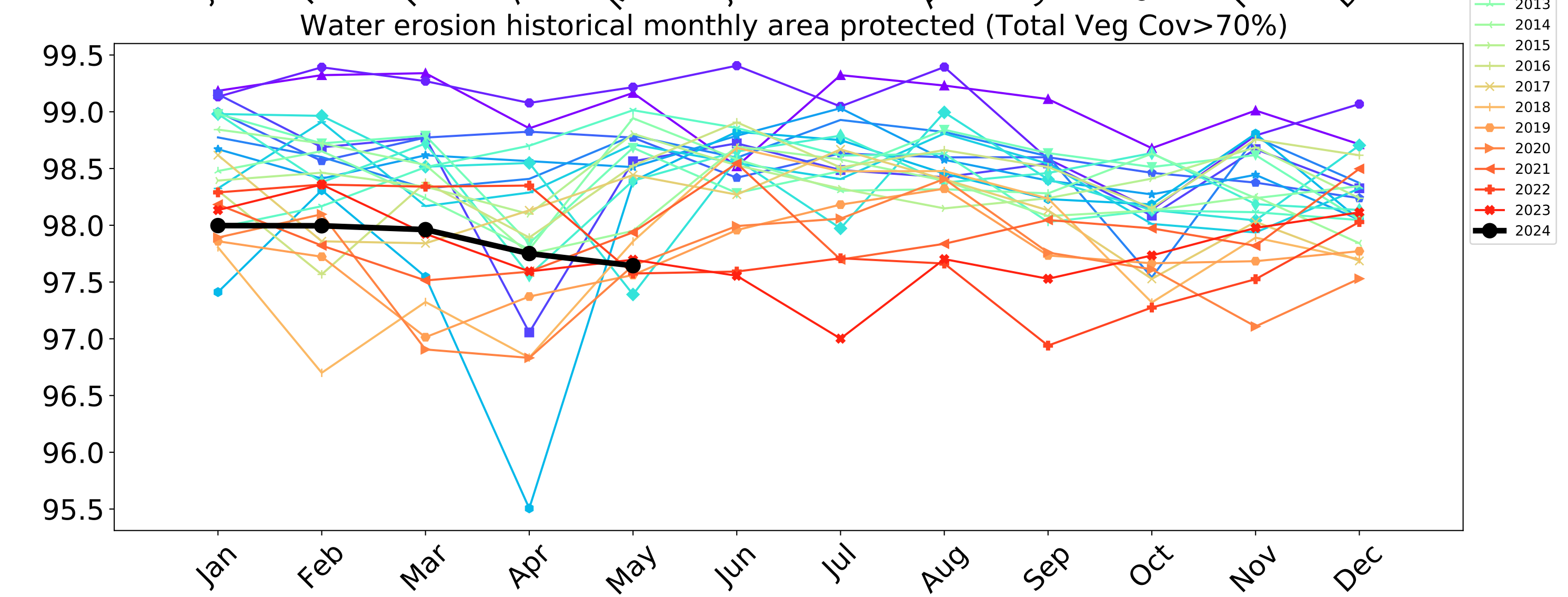
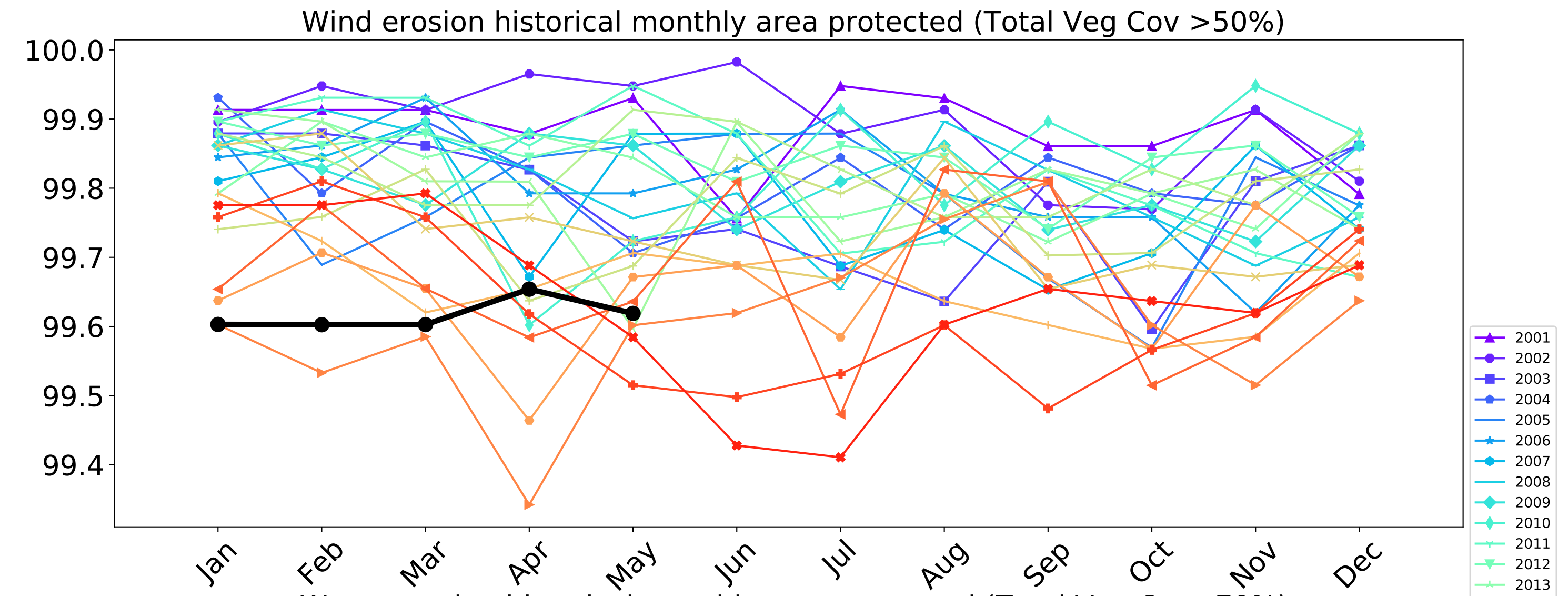
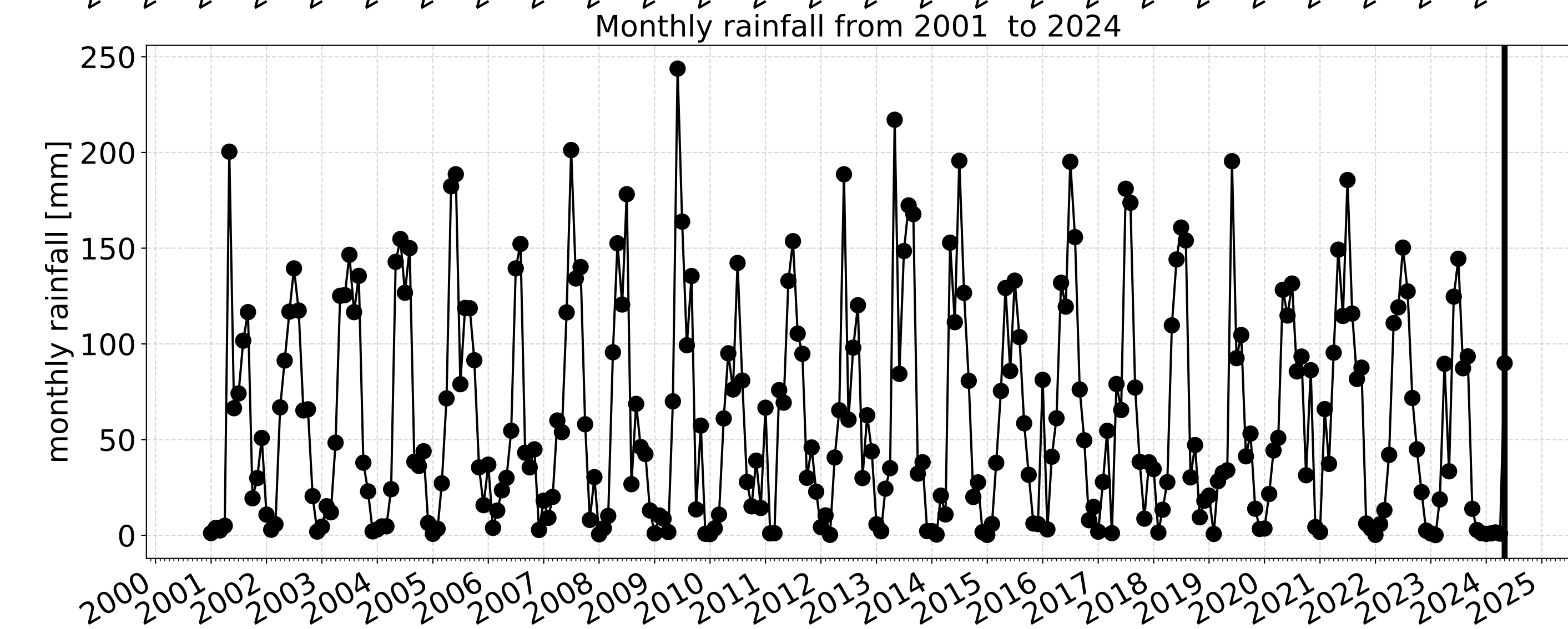
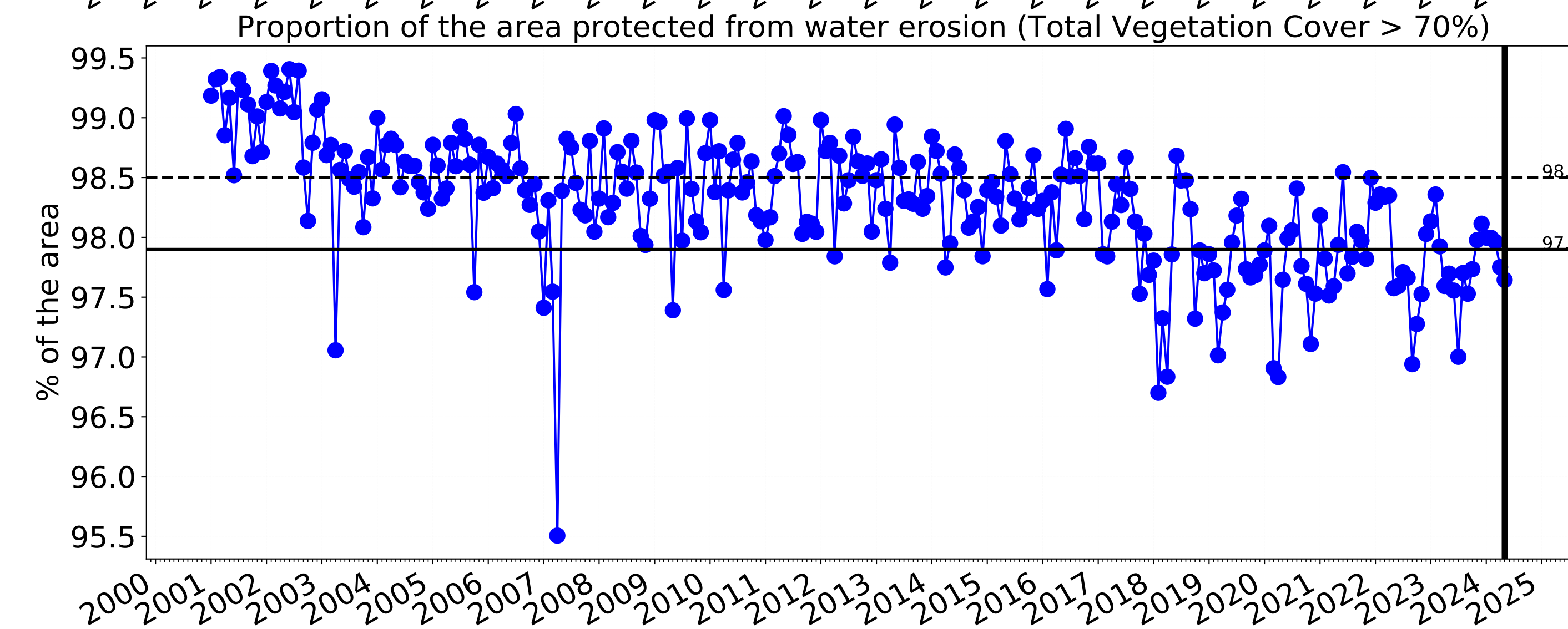
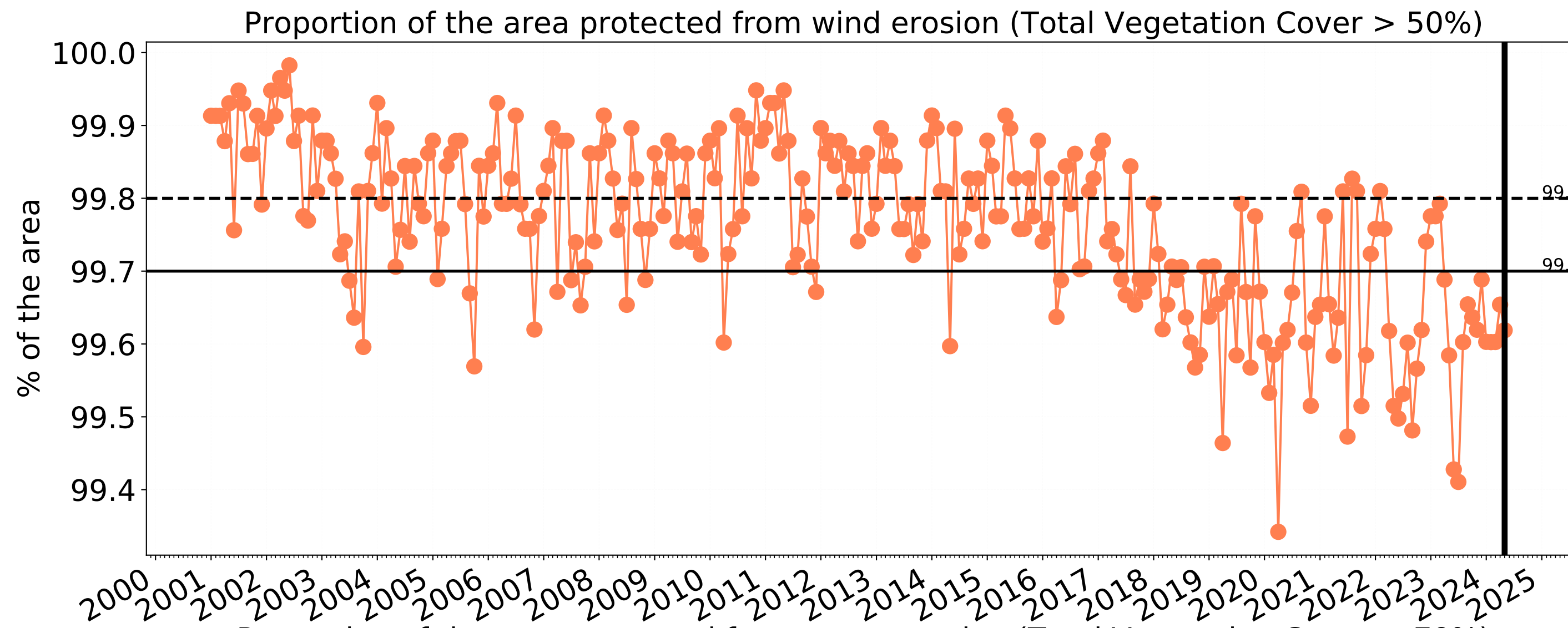


Vegetation Cover May 2024



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.



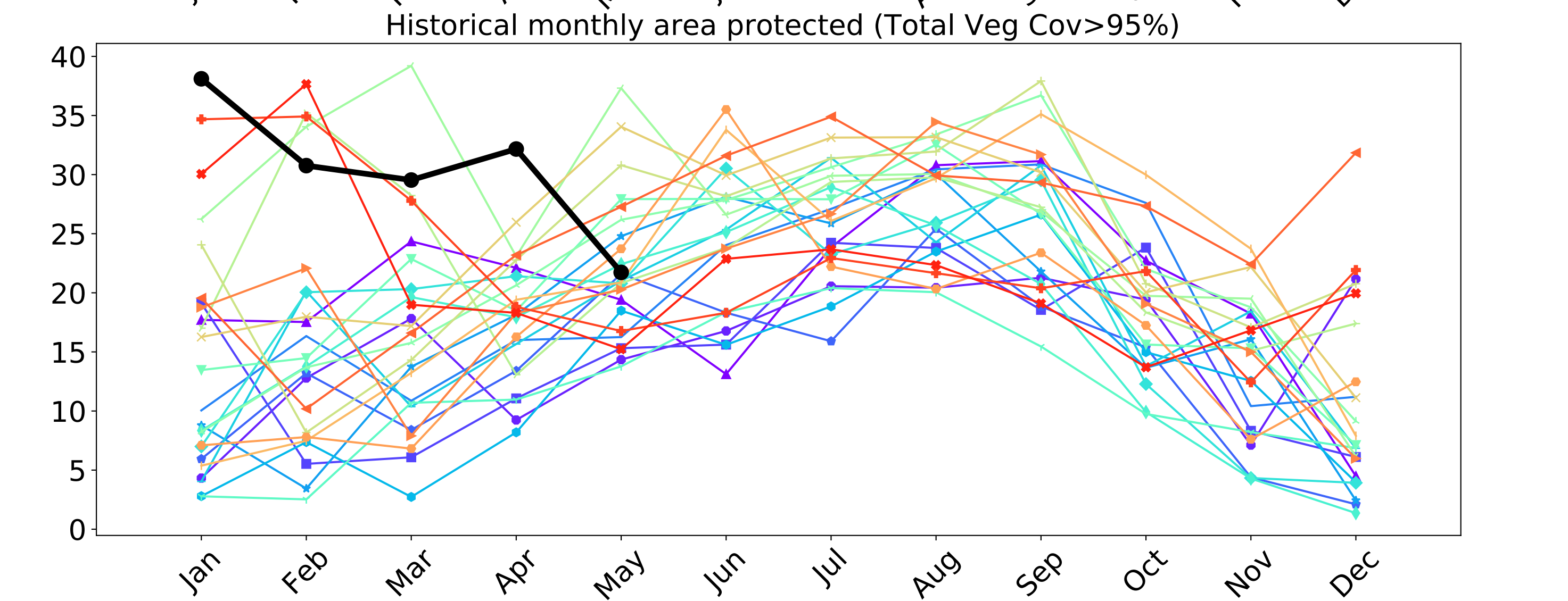
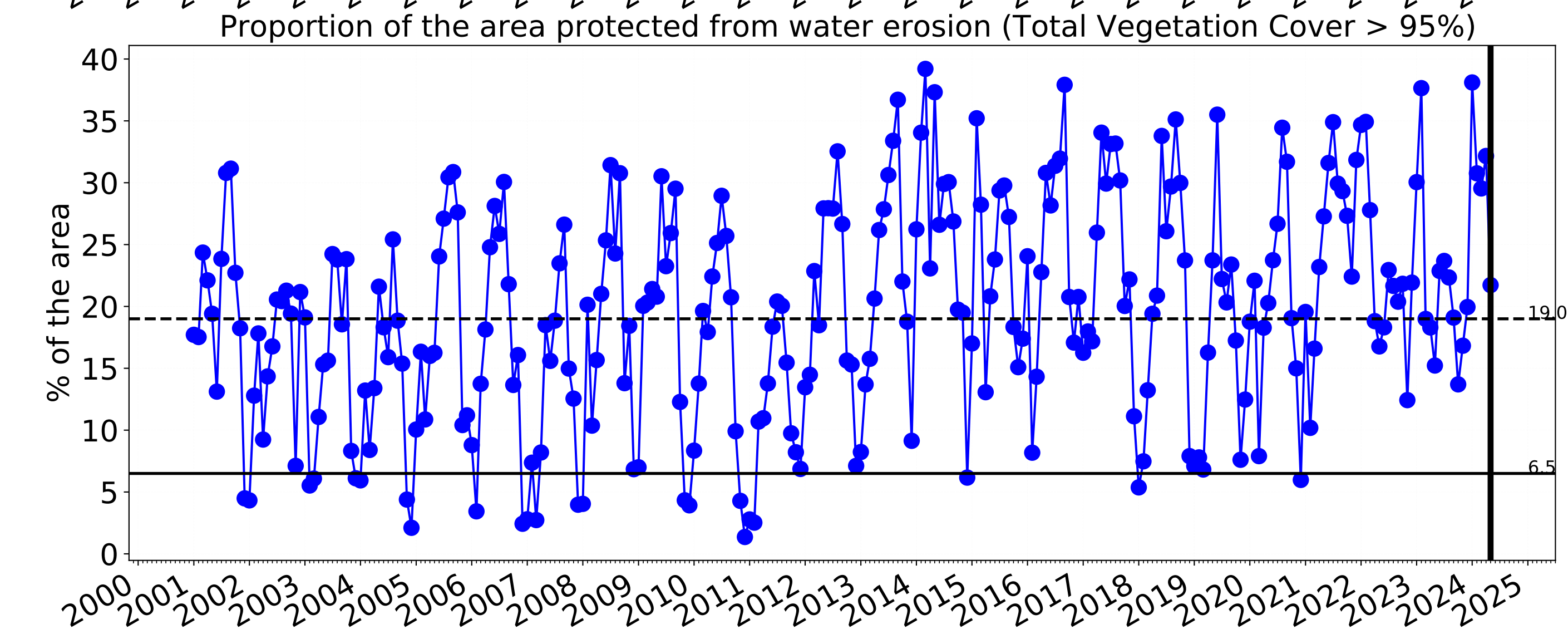
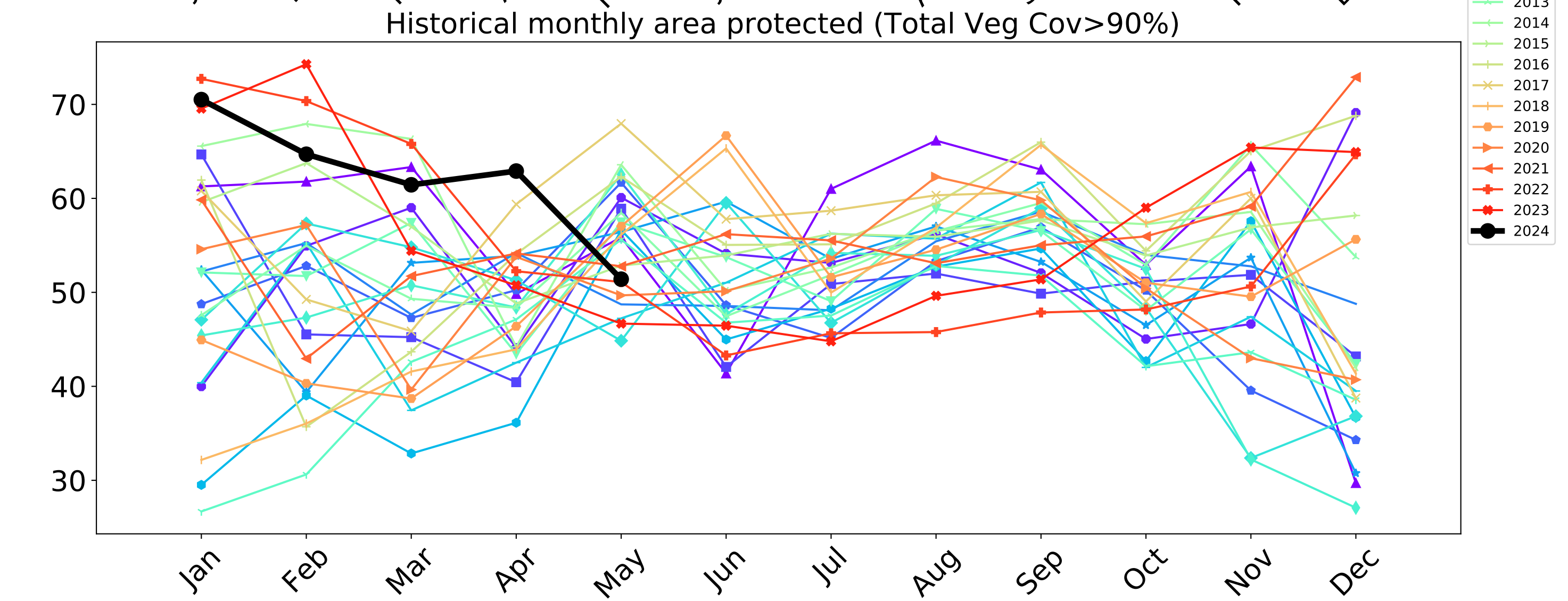
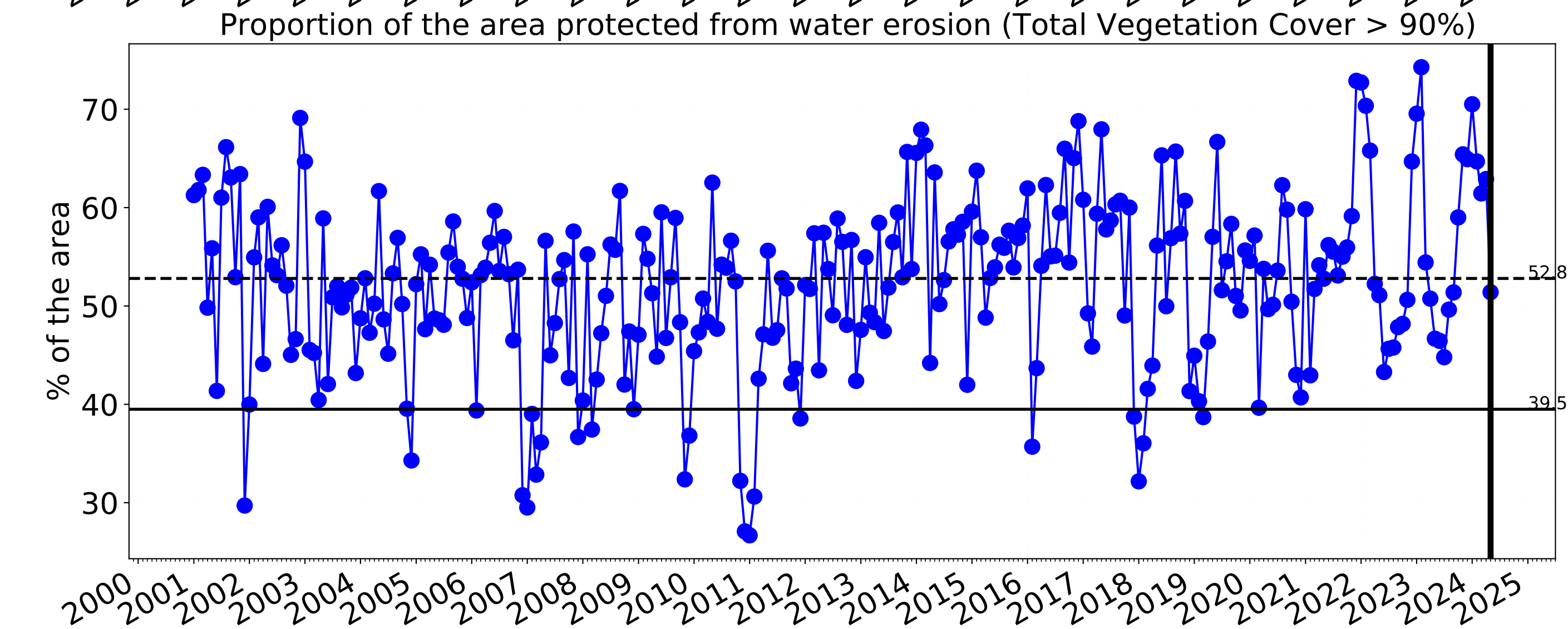
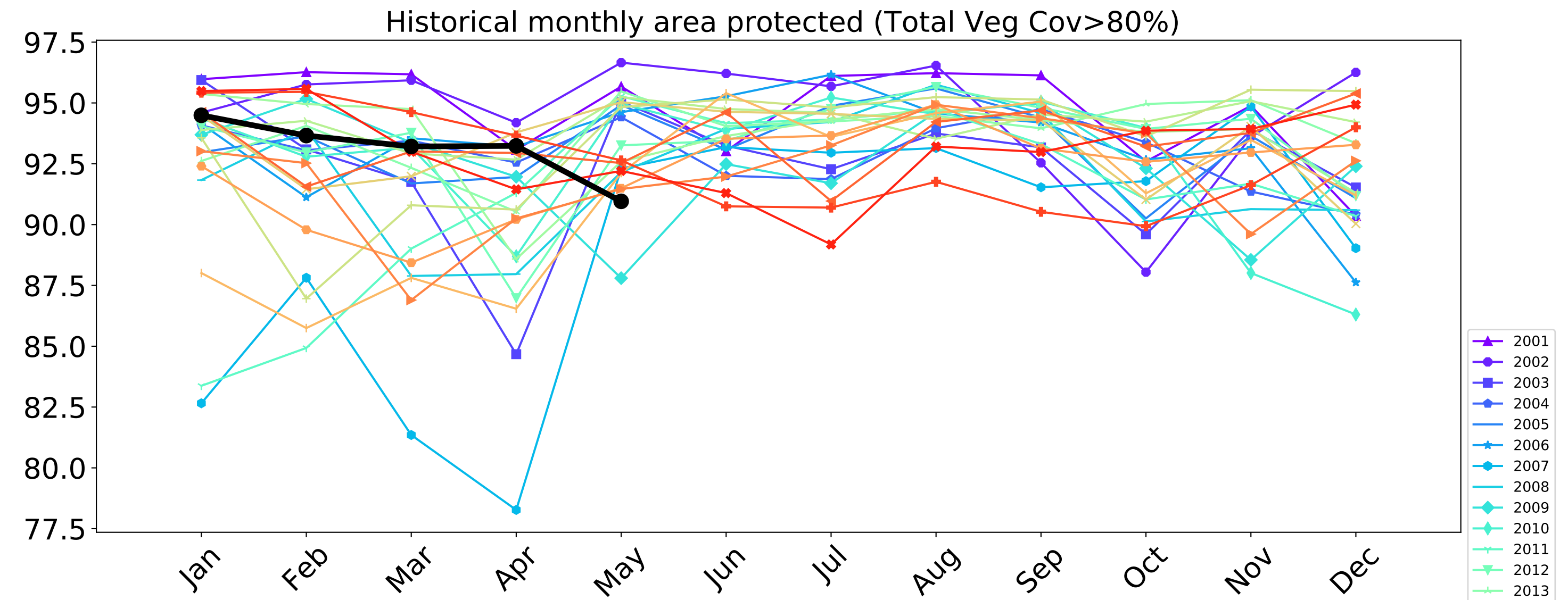
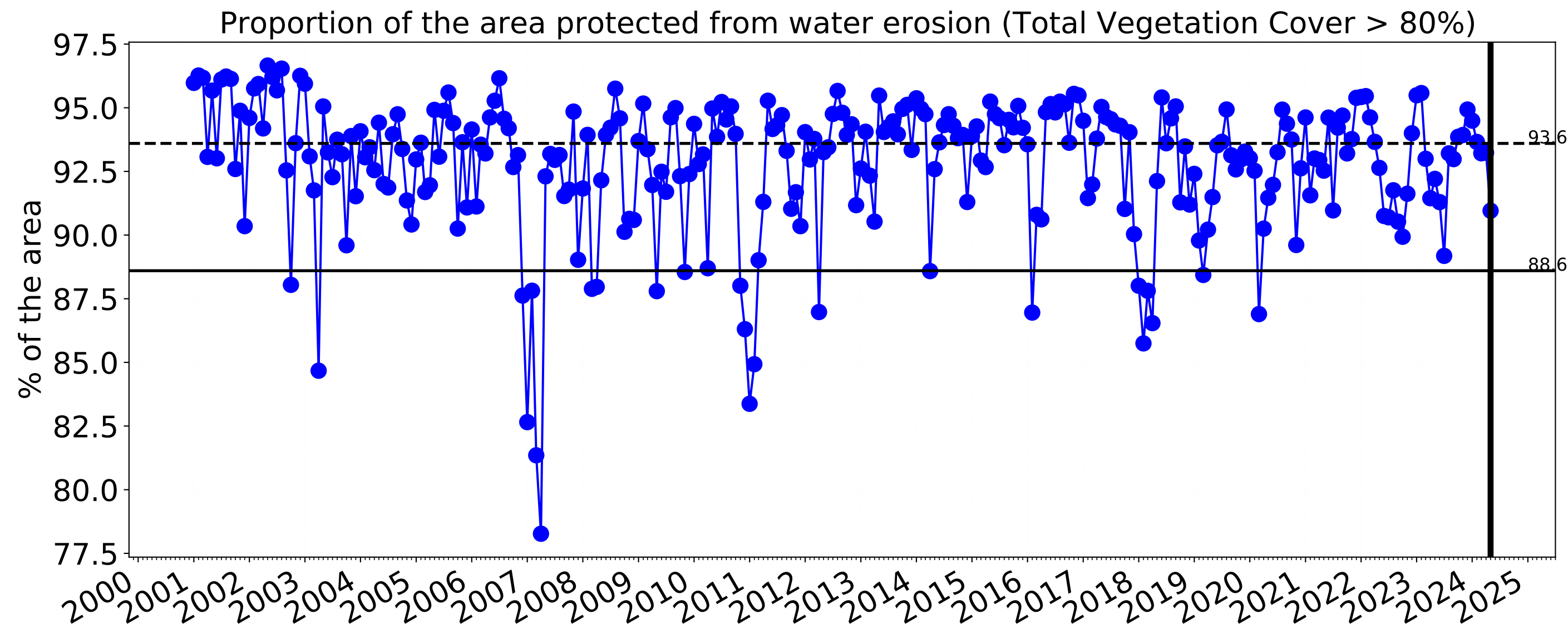


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Ecosystem Research Infrastructure



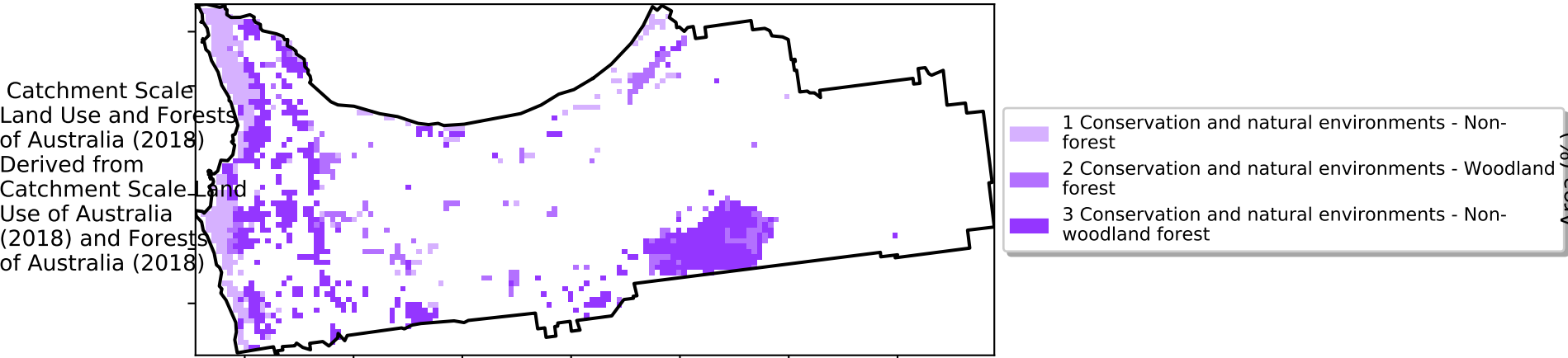
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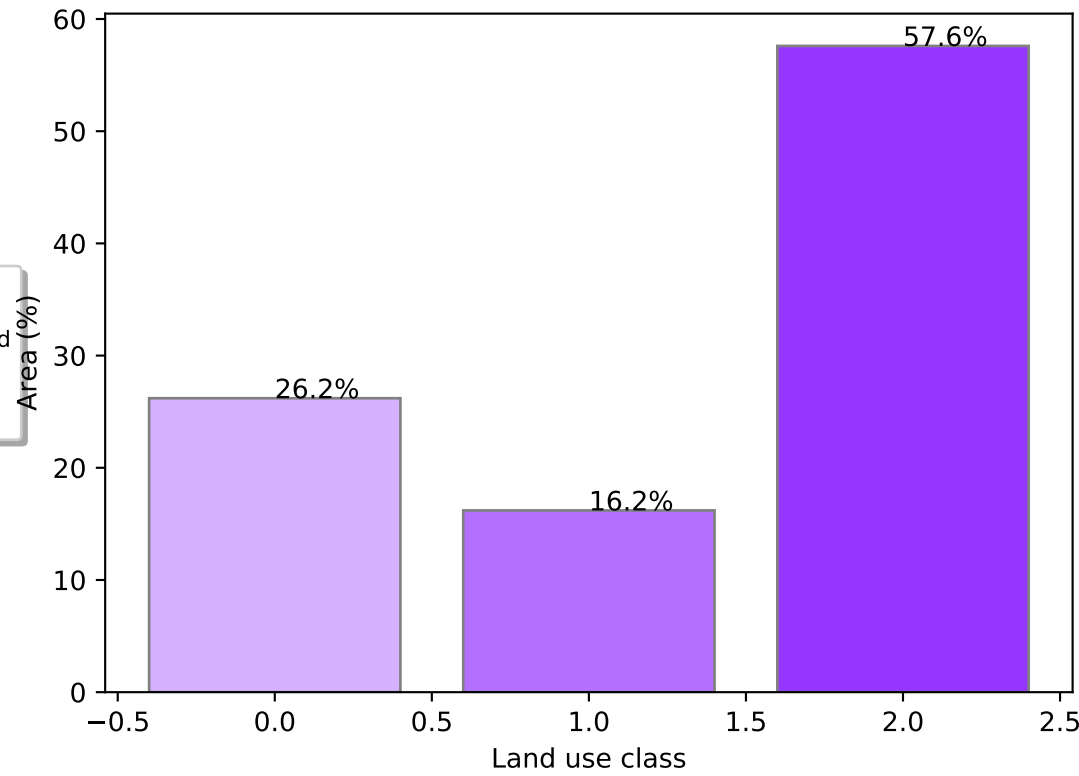


Conservation and natural environments

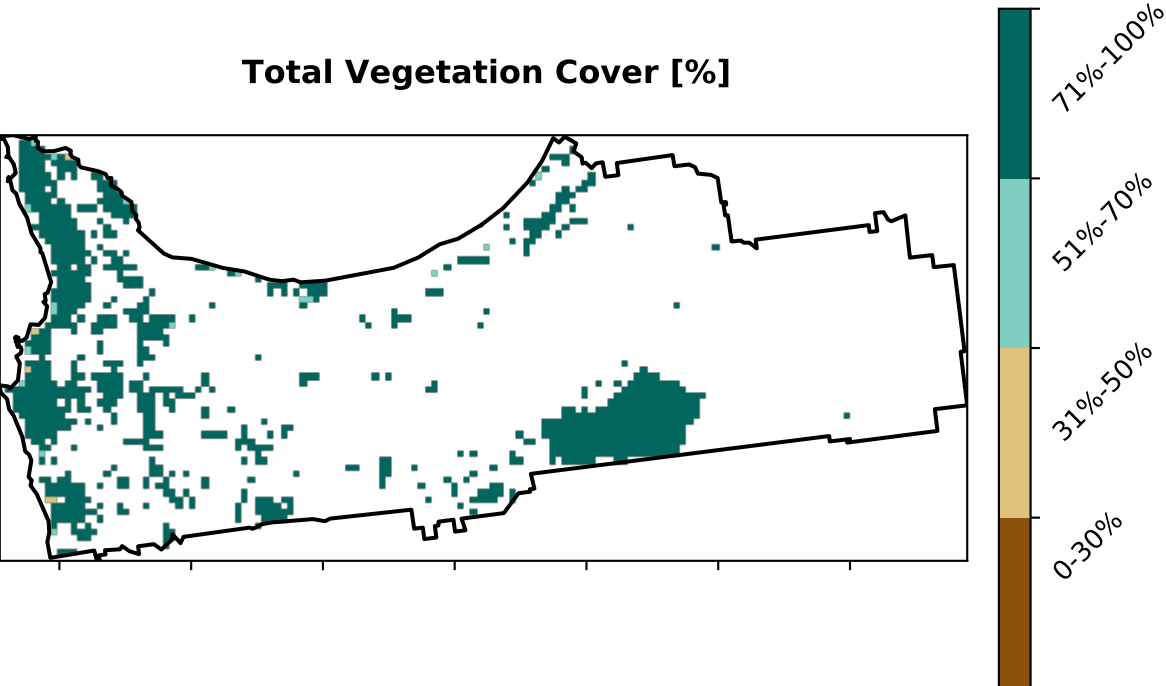
Land use and forest cover



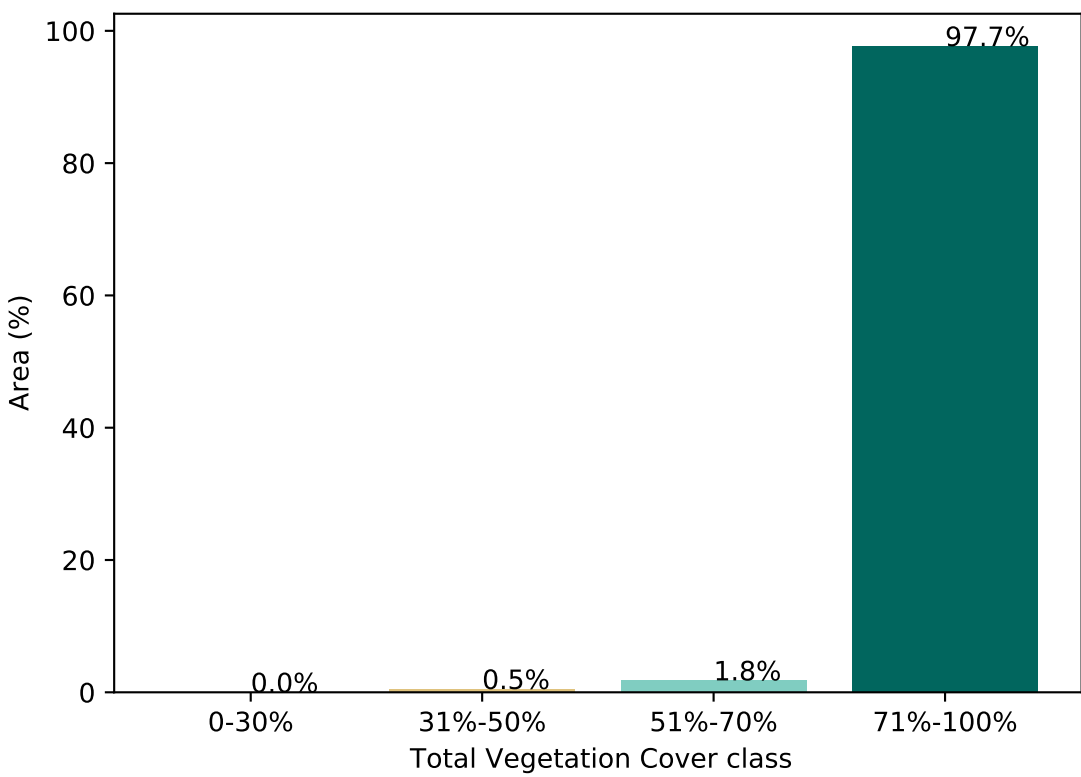
Proportion of each land class in area



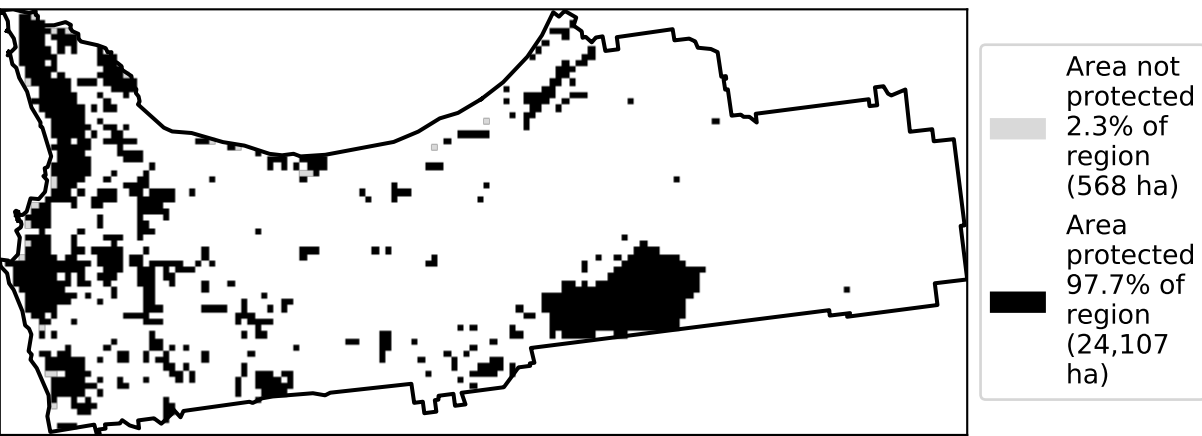
Total Vegetation Cover [%]



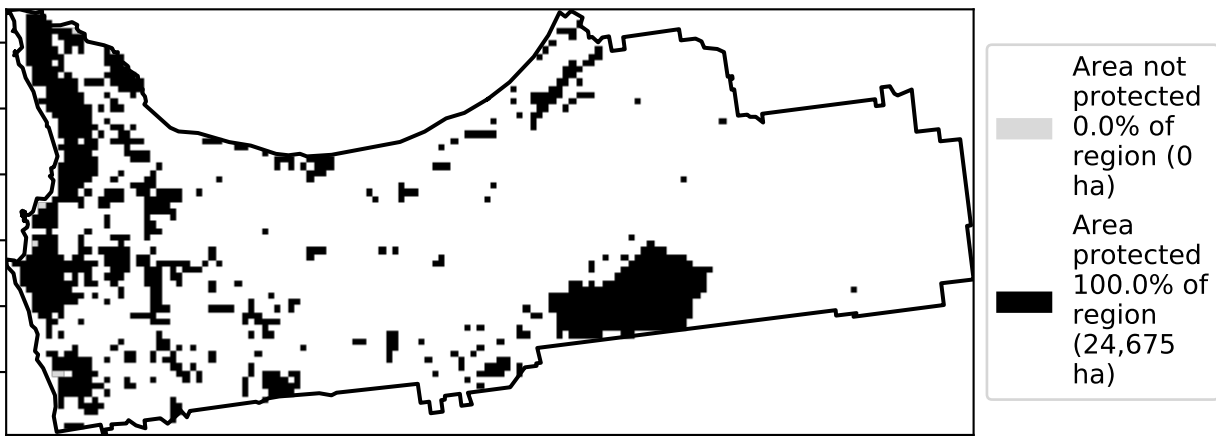
Proportion of vegetation cover class in area



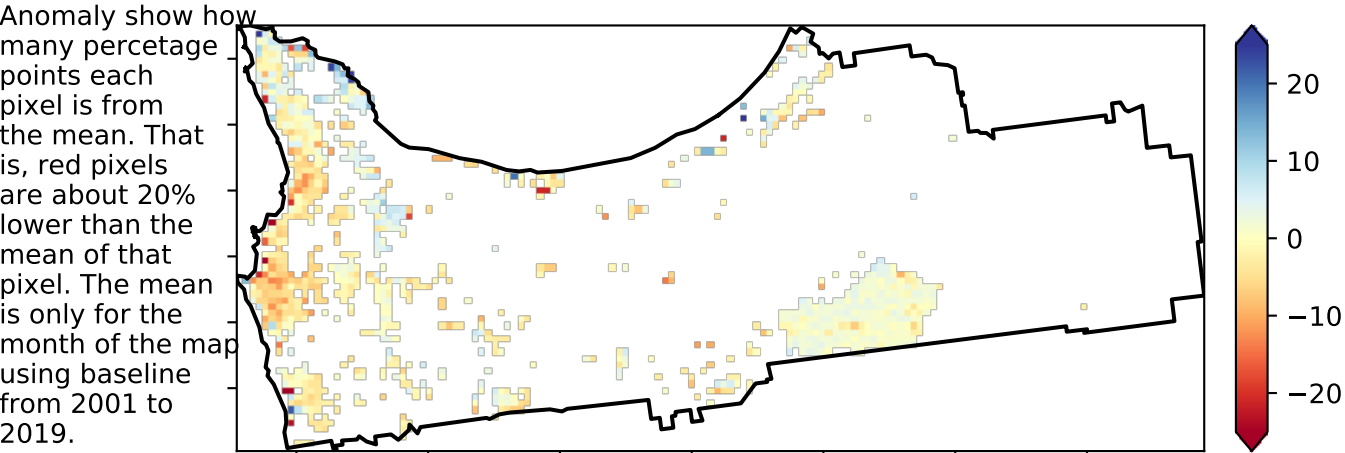
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

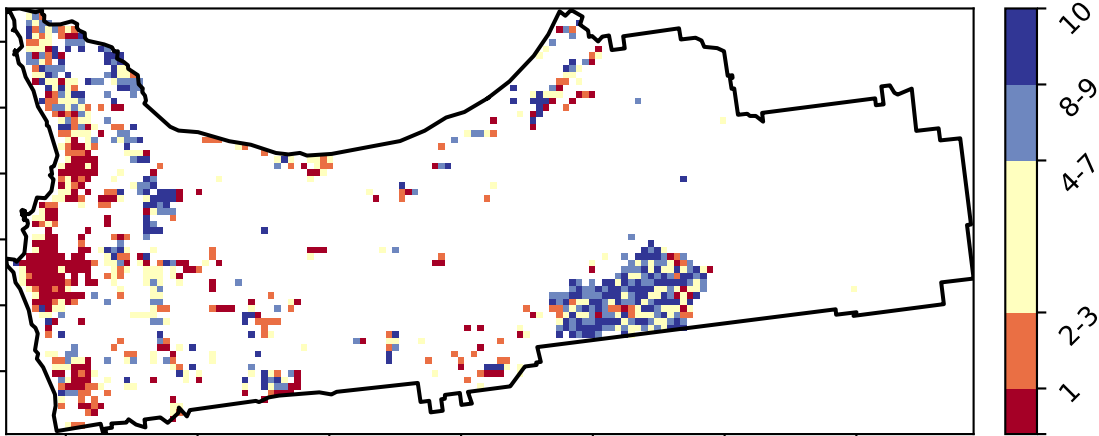


Total Vegetation Cover Anomaly [%]



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 [%]



Ecosystem Research Infrastructure

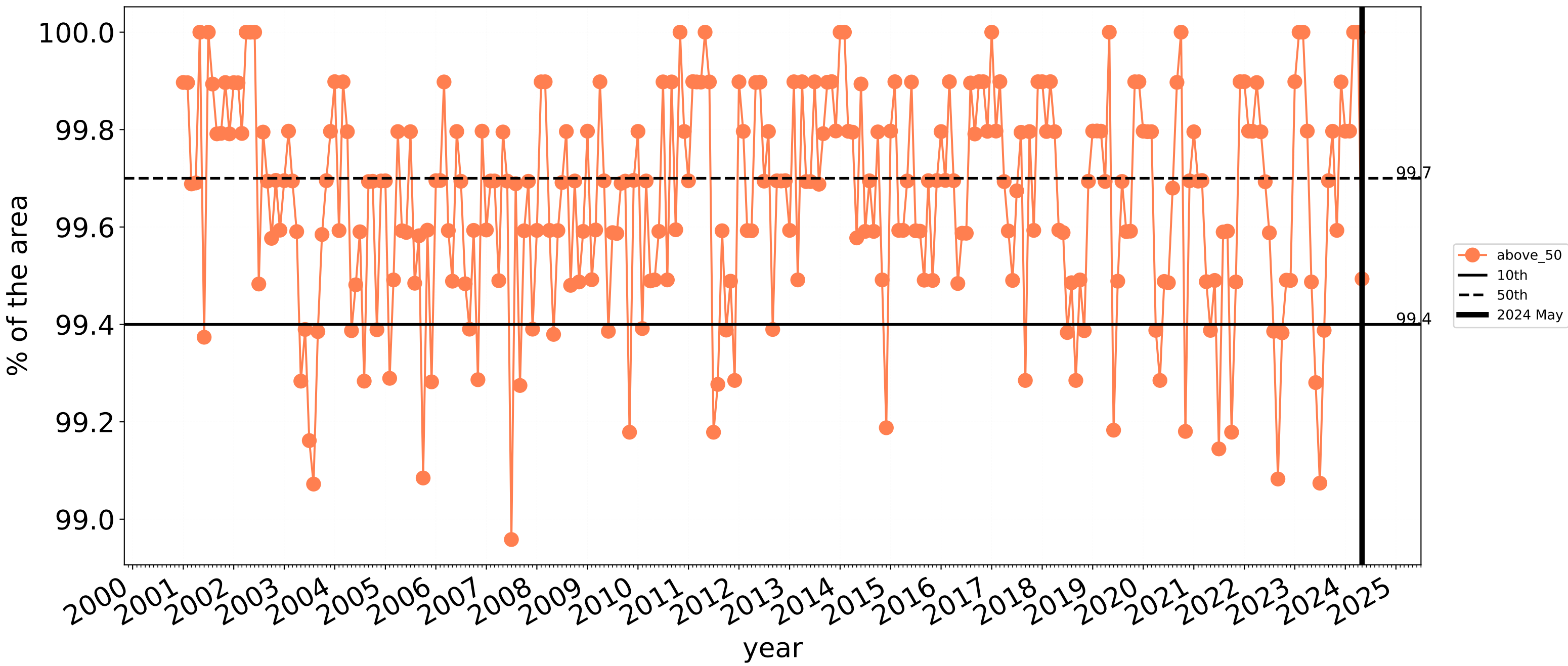


National Landcare Programme

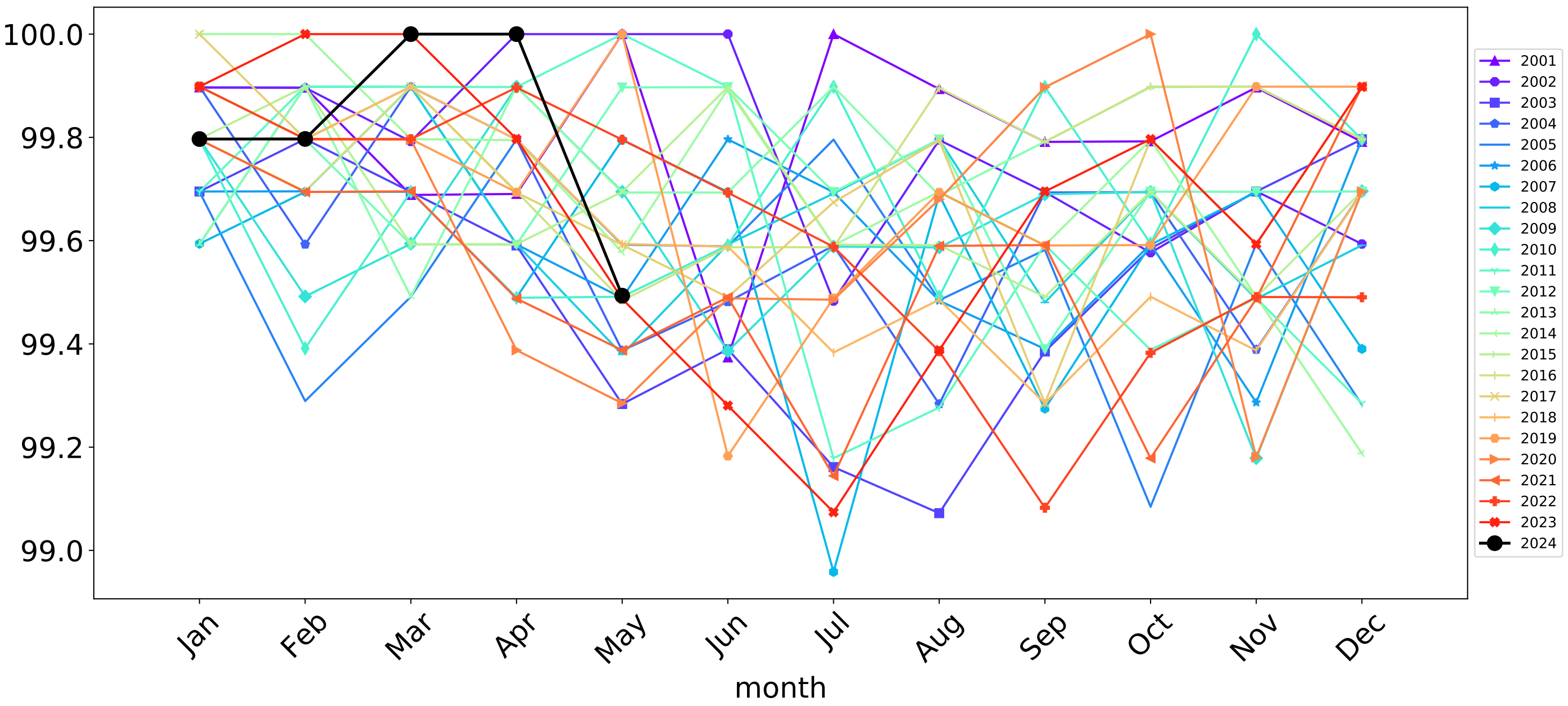


Conservation and natural environments timeseries

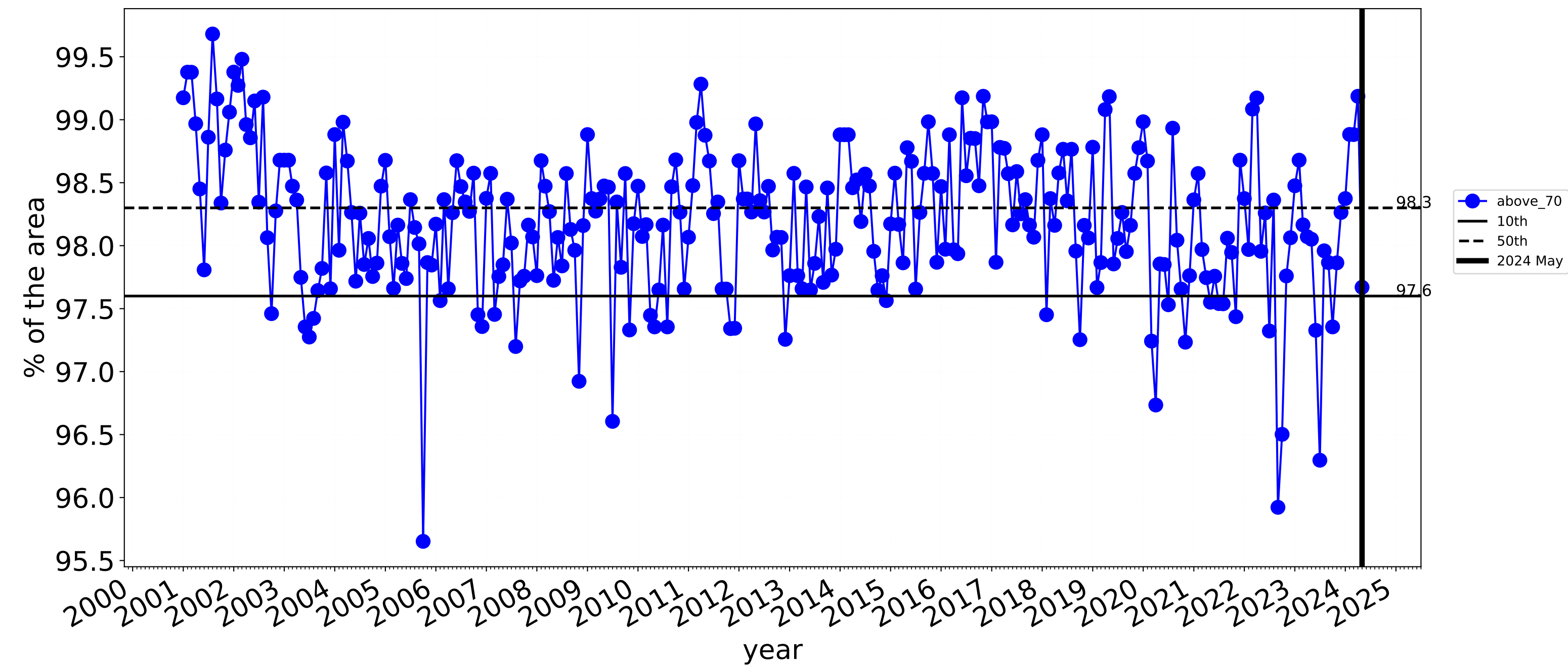
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



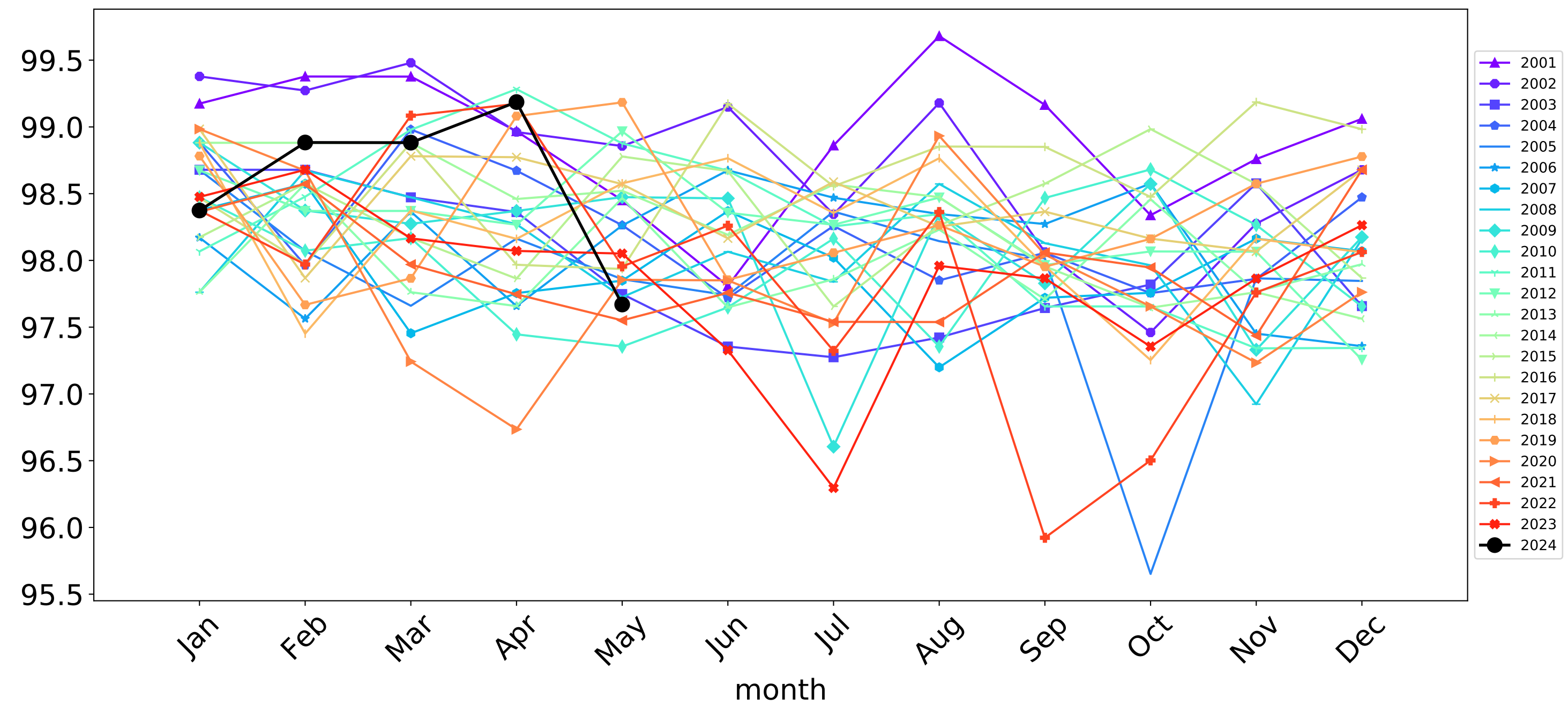
Wind erosion historical monthly area protected (Total Veg Cov > 50%)

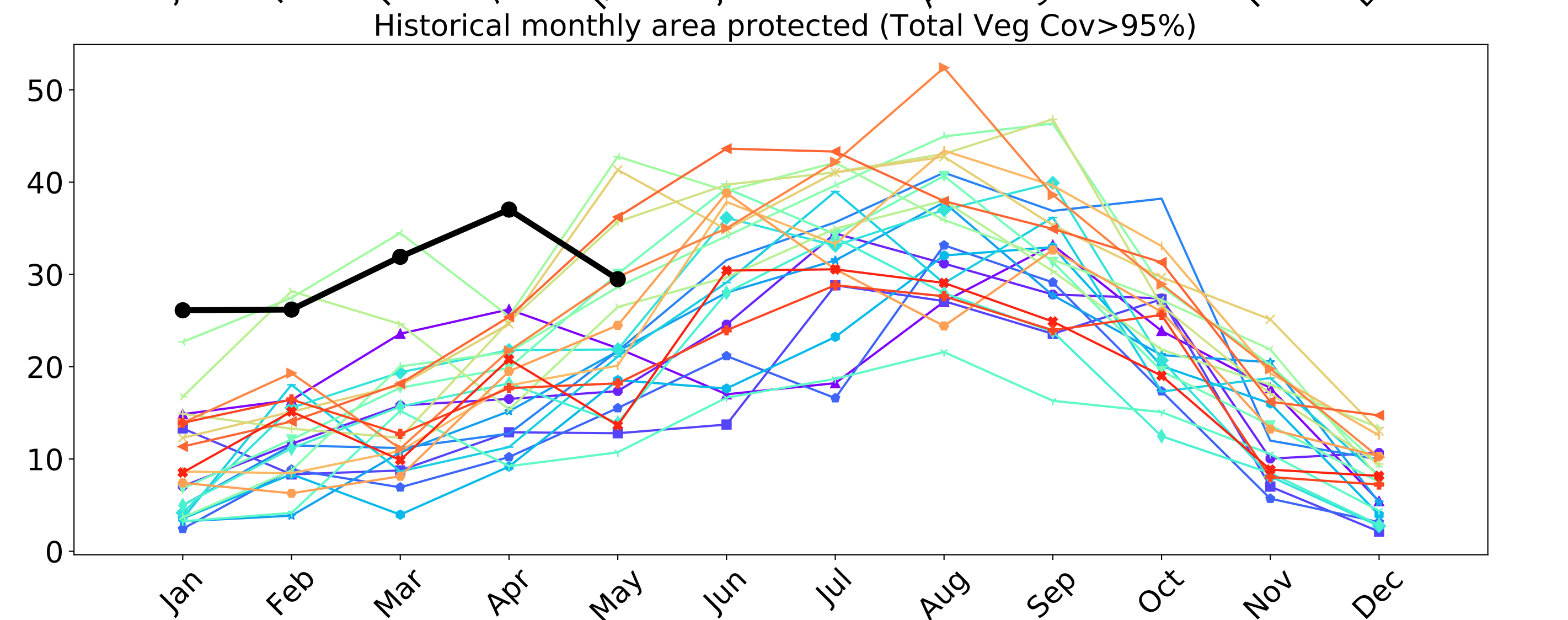
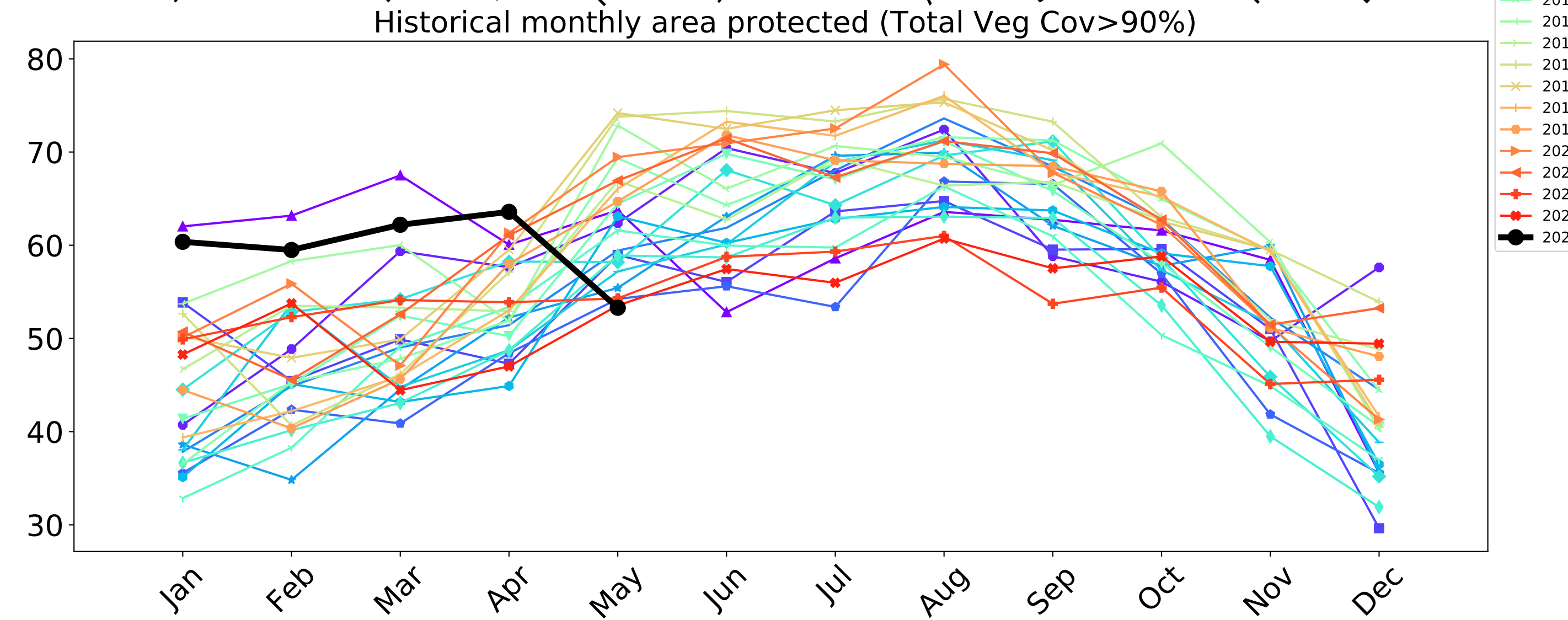
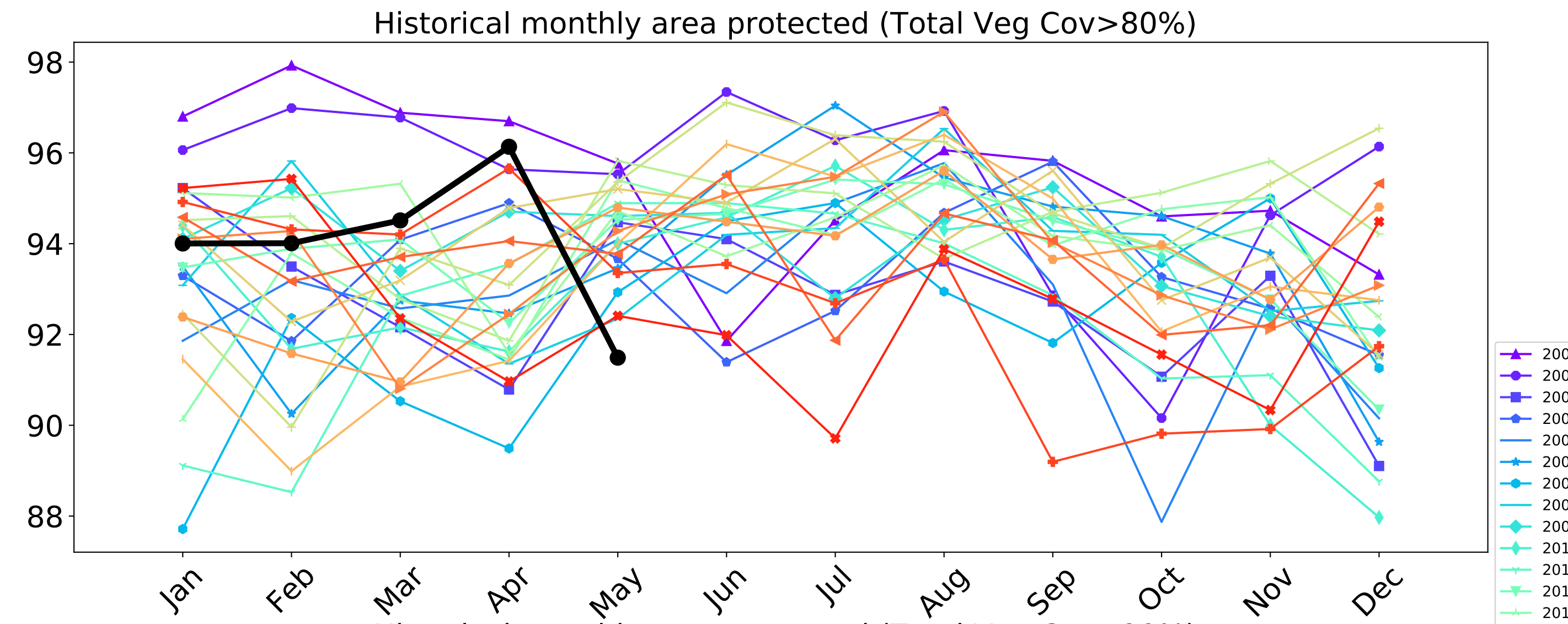
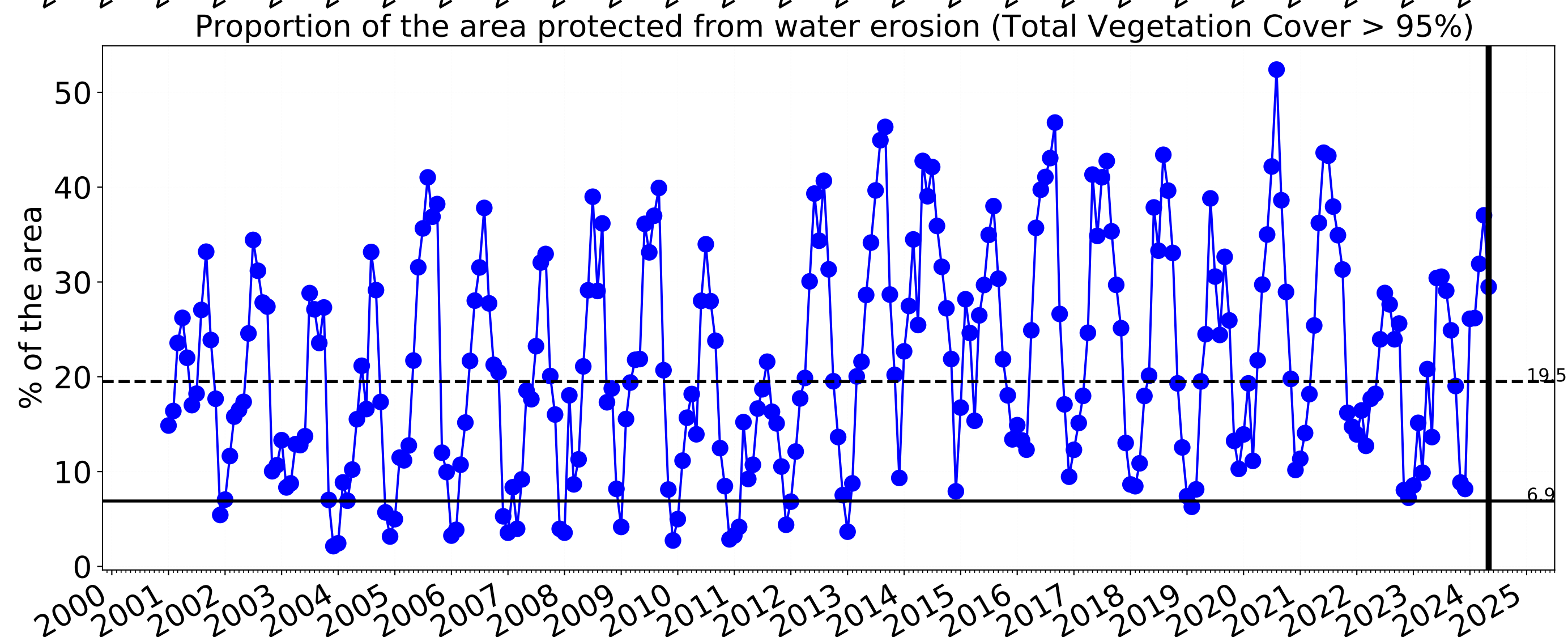
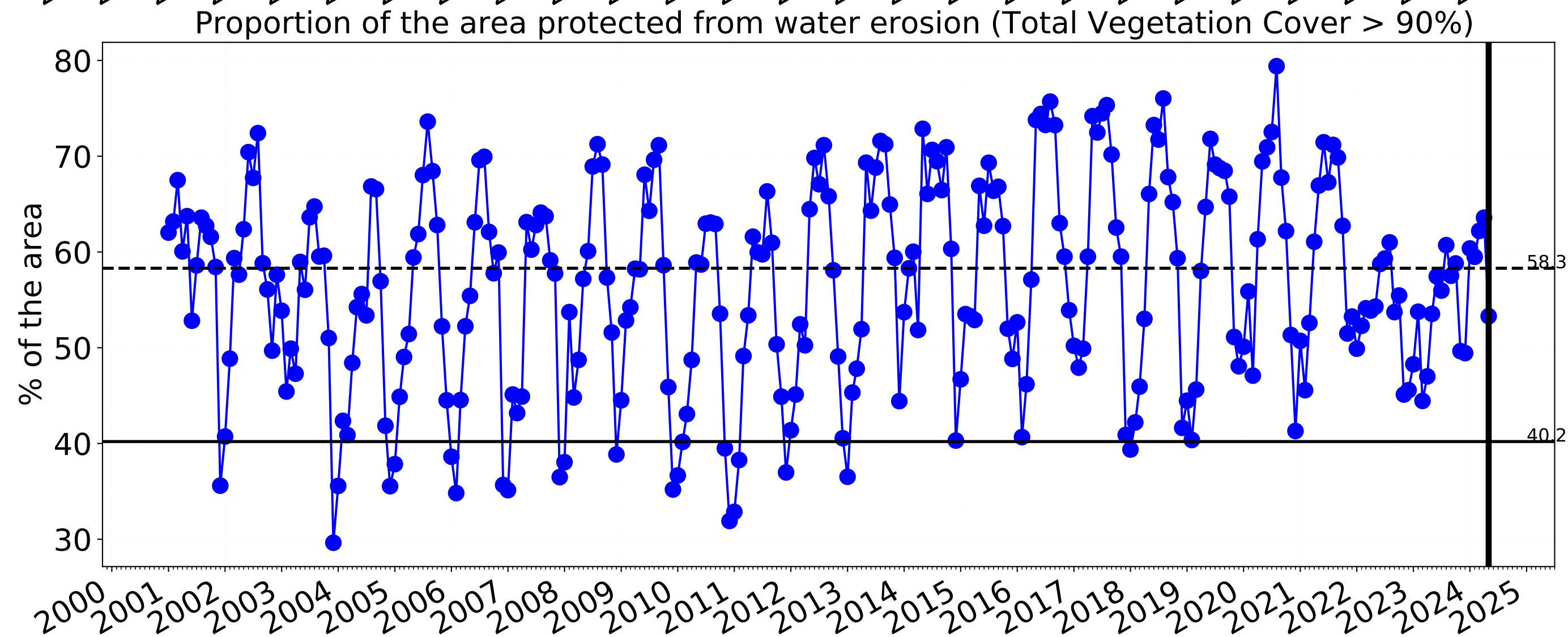
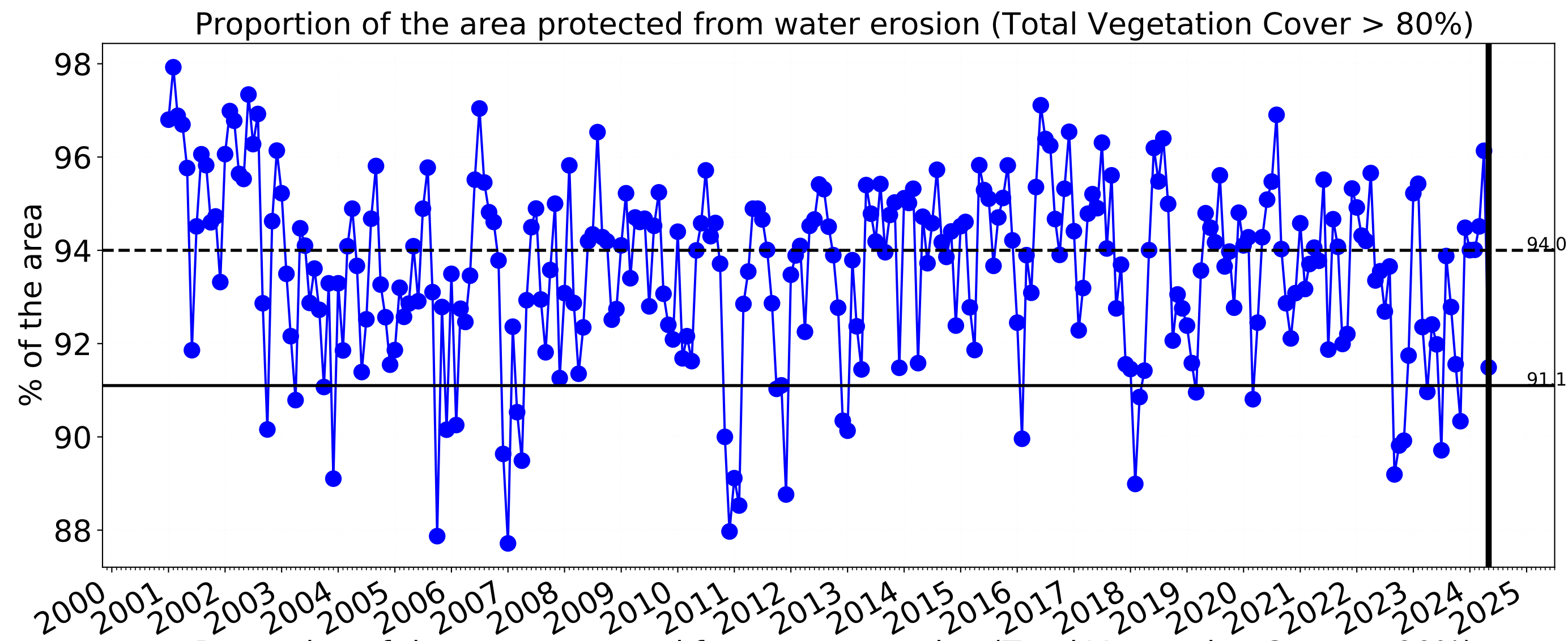


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



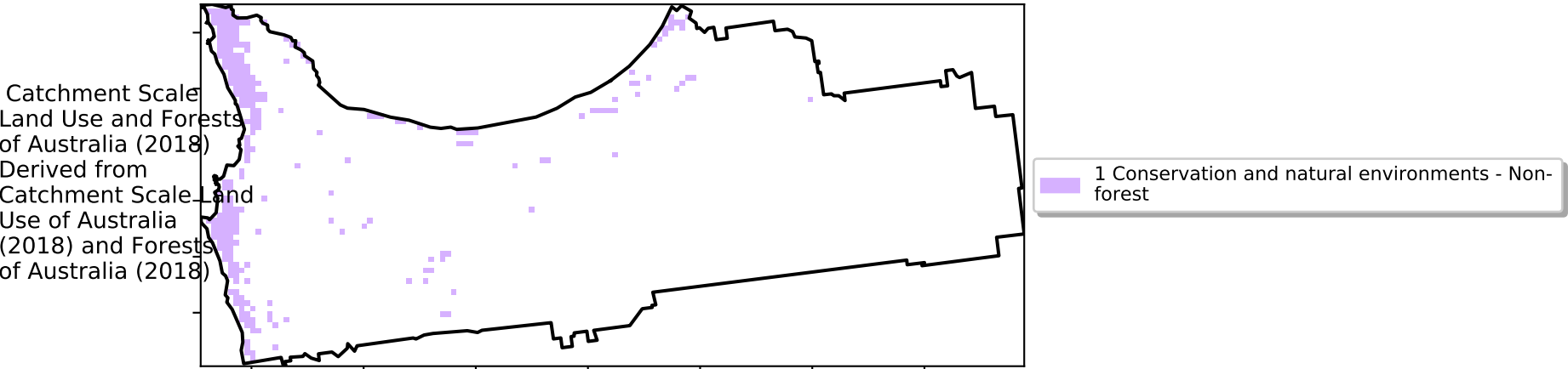
Water erosion historical monthly area protected (Total Veg Cov > 70%)



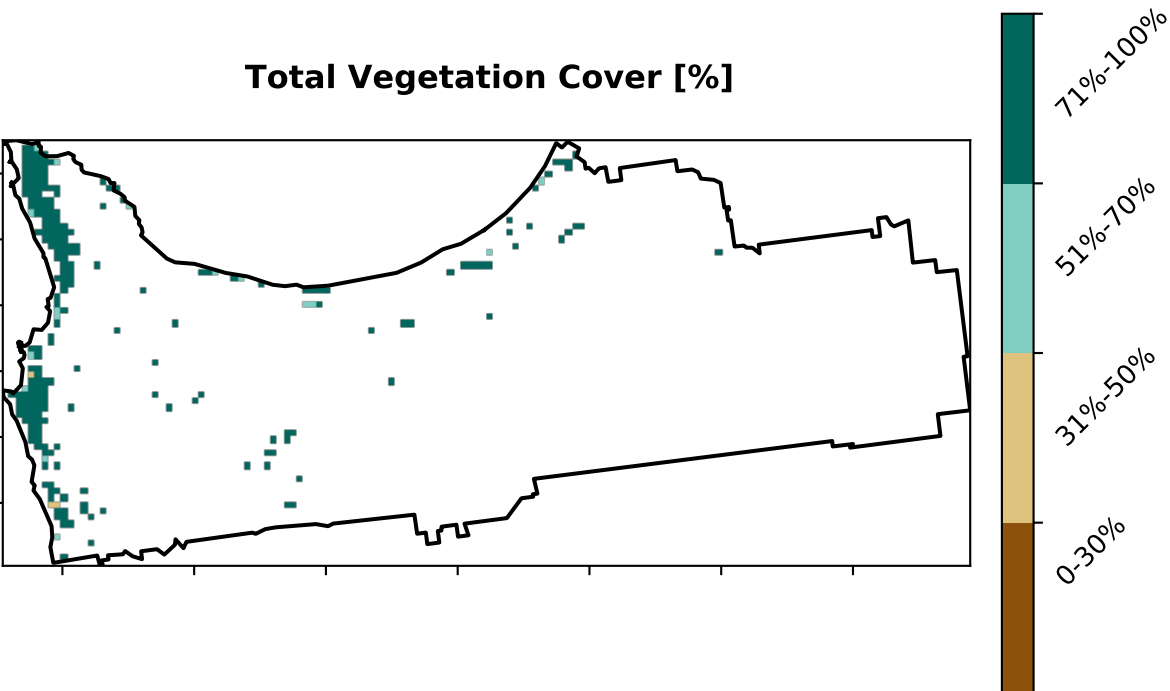


Conservation and natural environments non forest

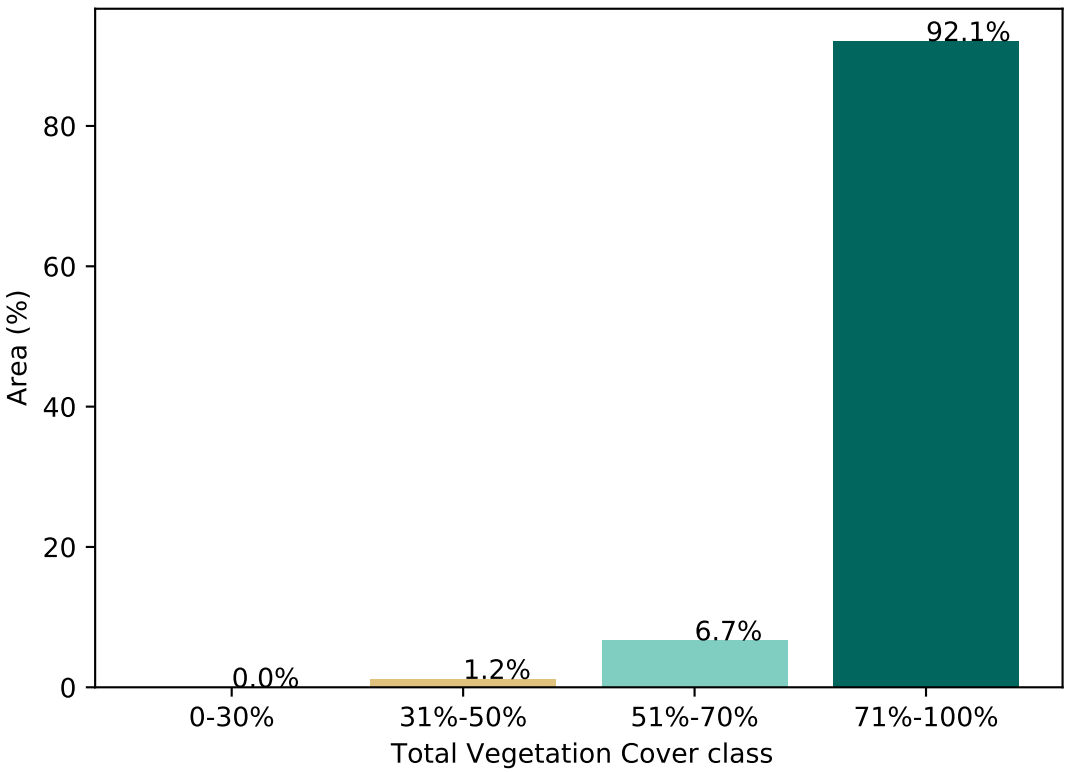
Land use and forest cover



Total Vegetation Cover [%]



Proportion of vegetation cover class in area



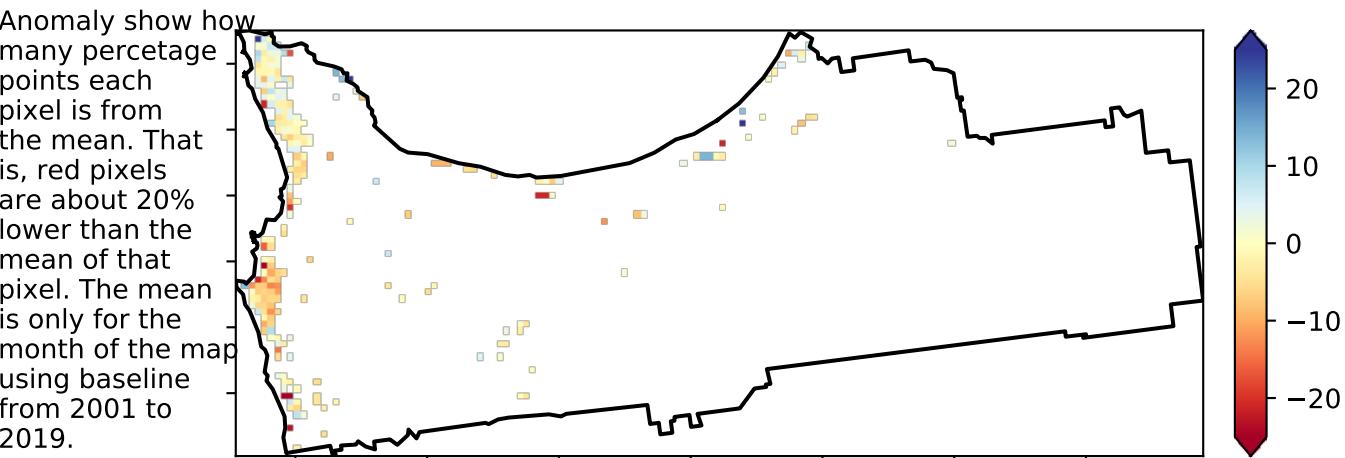
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

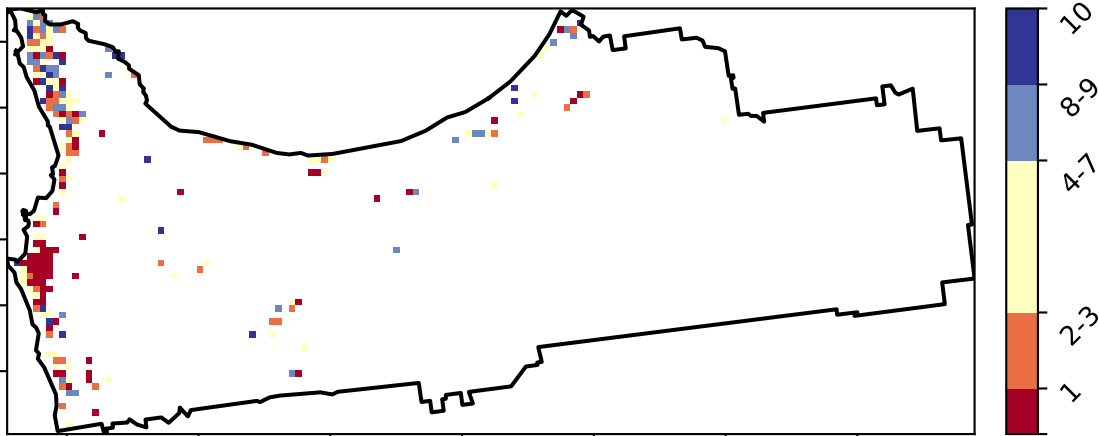


Total Vegetation Cover Anomaly [%]

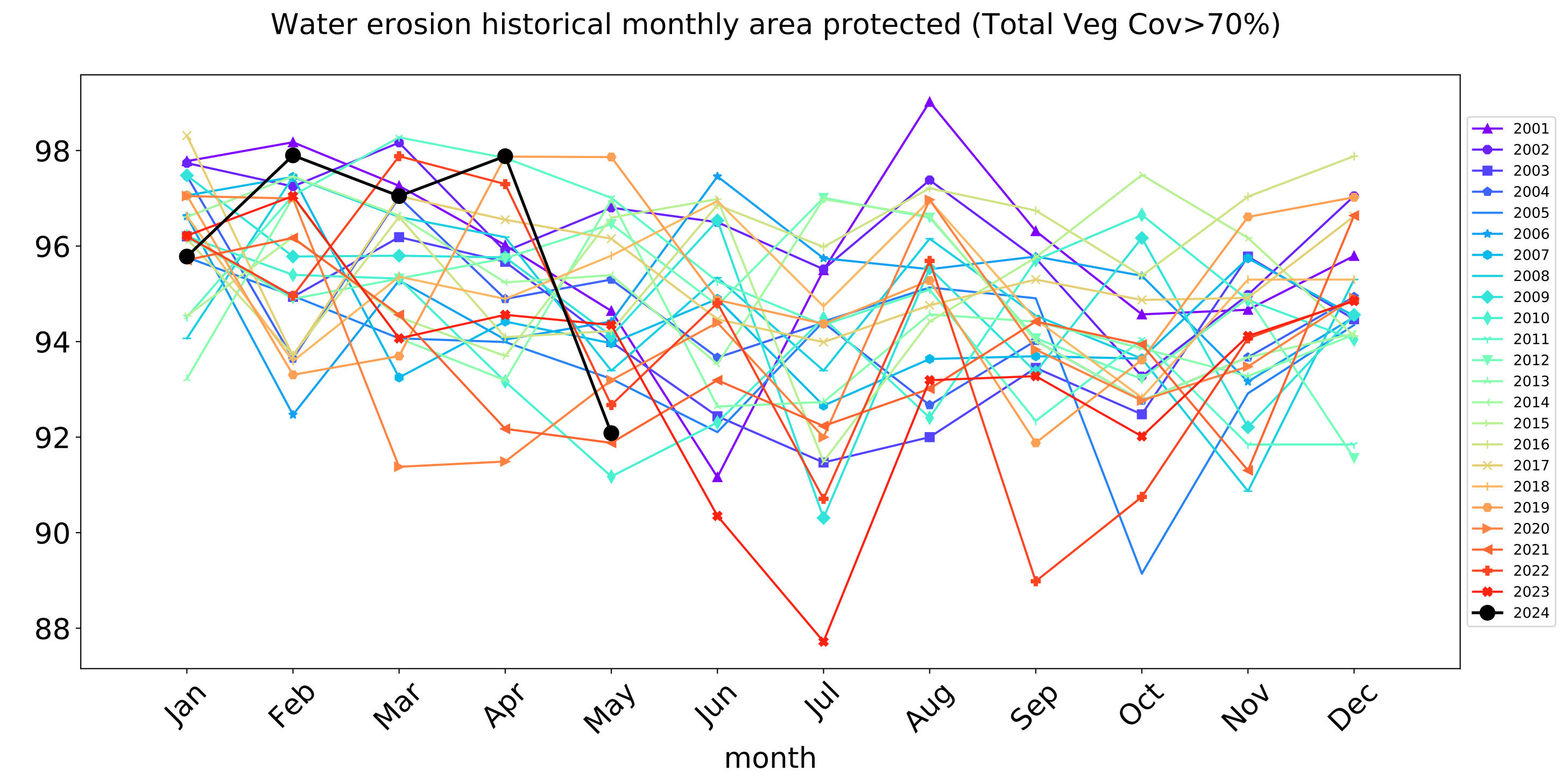
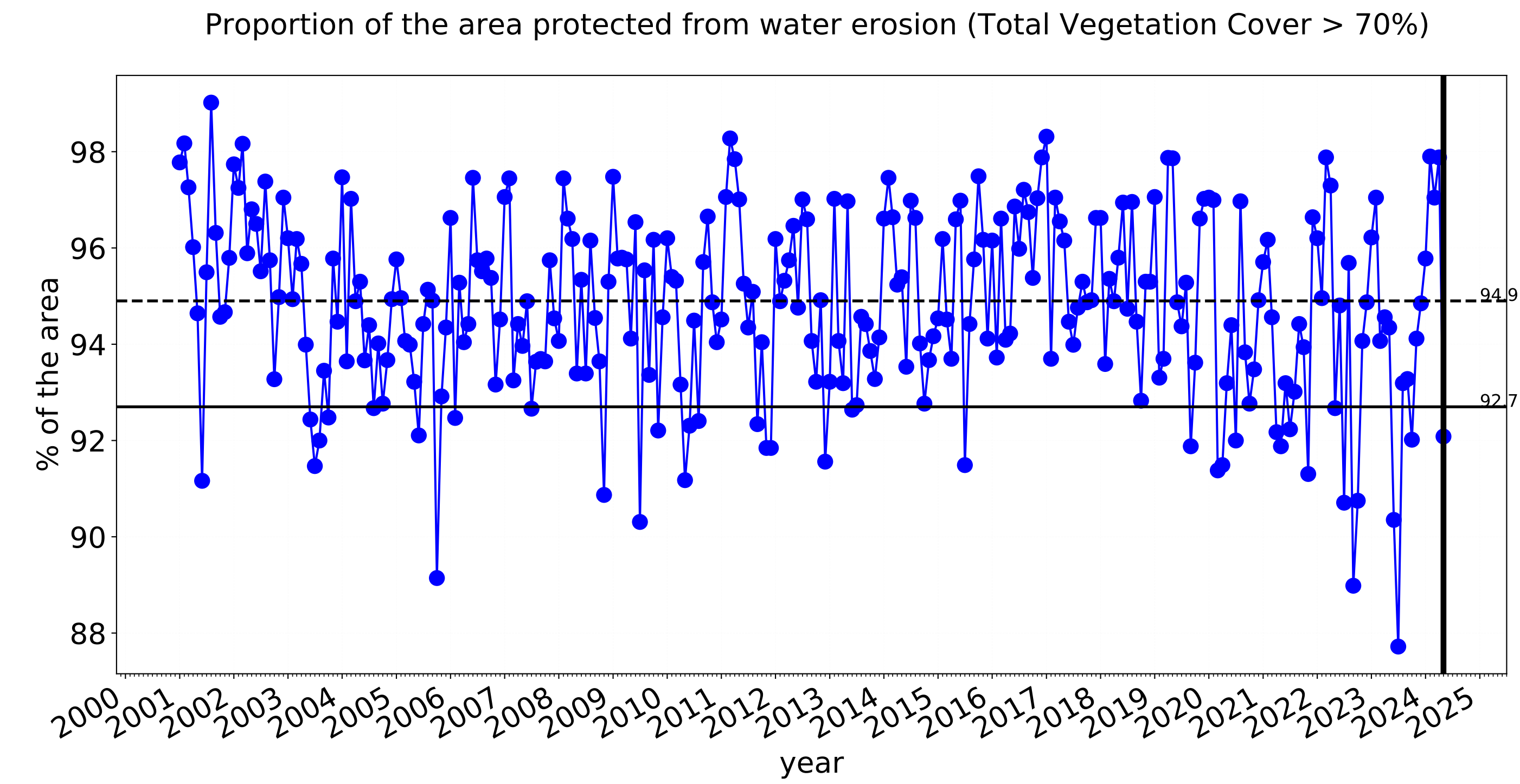
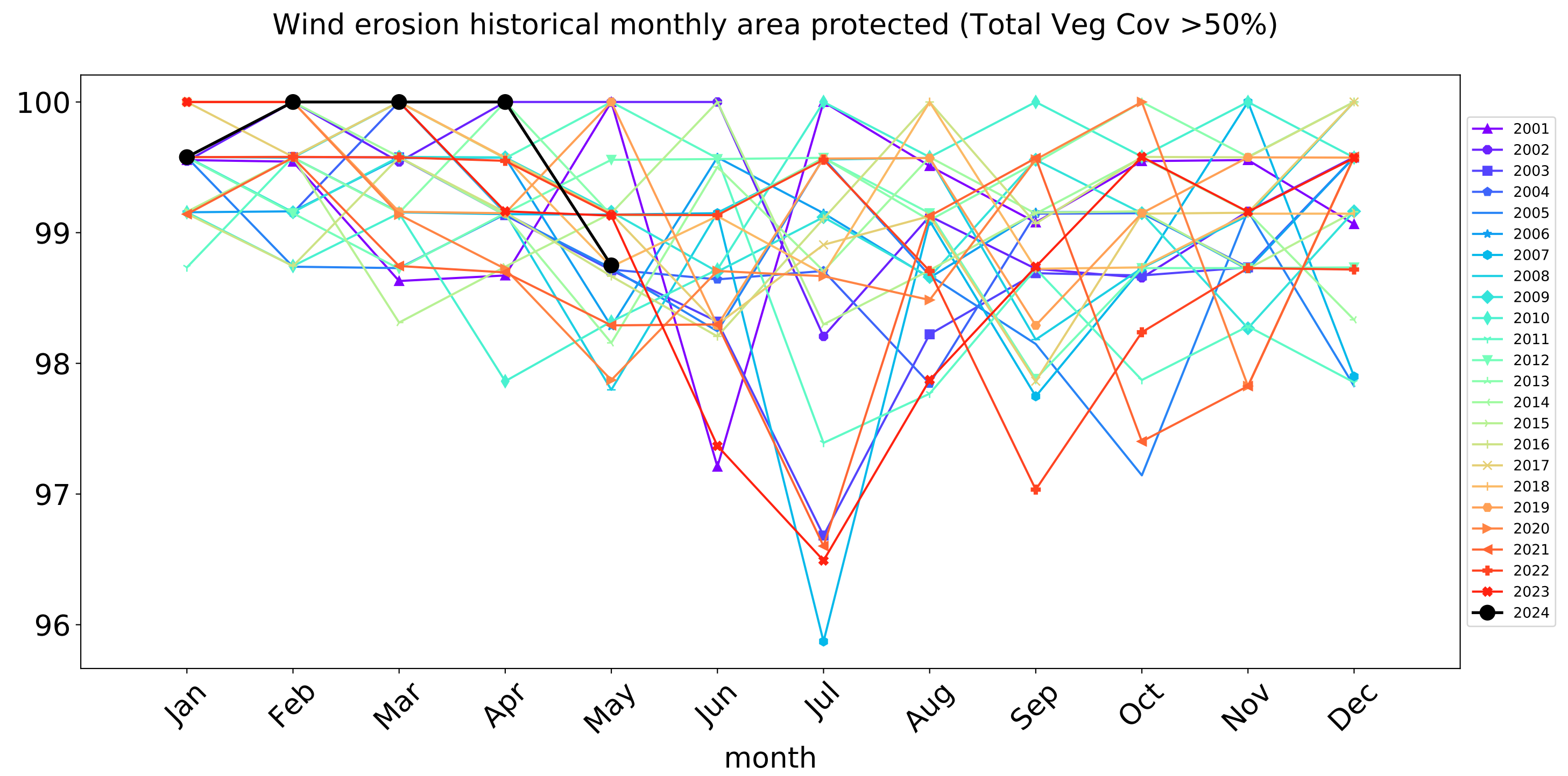
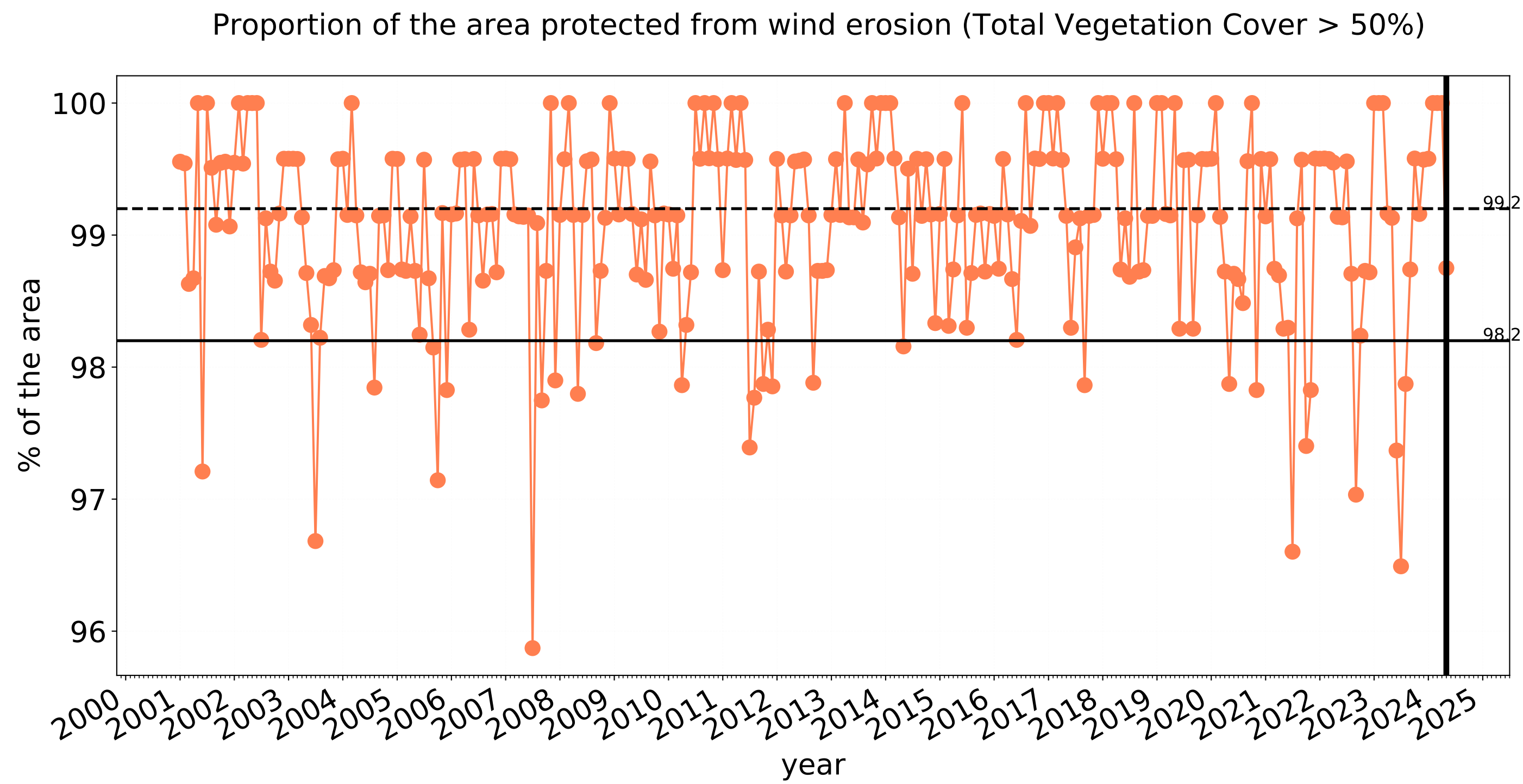


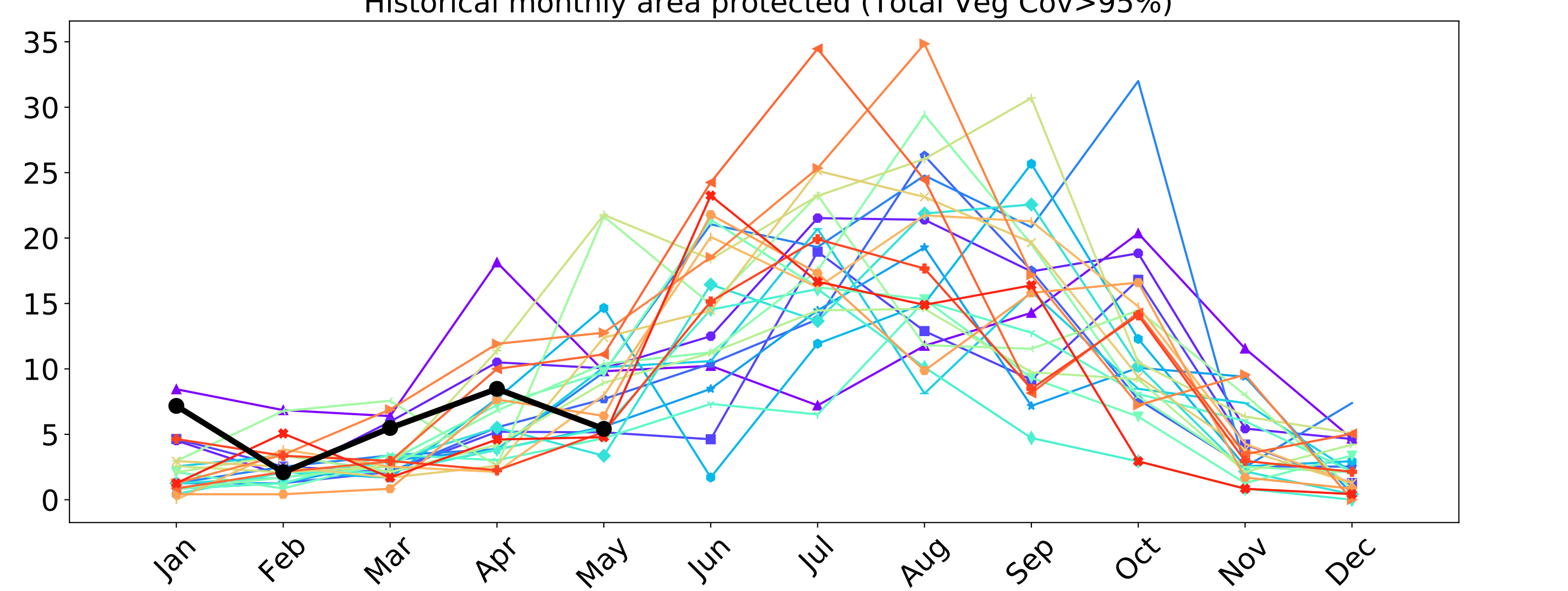
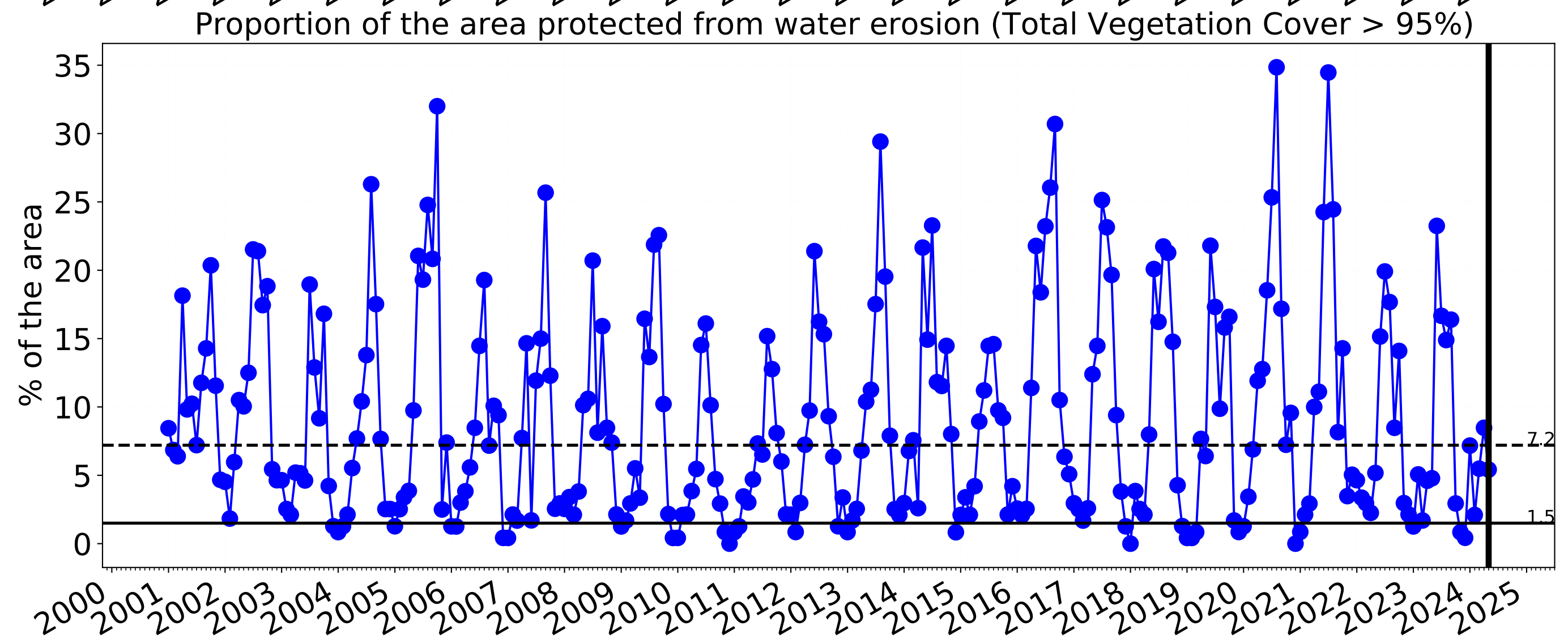
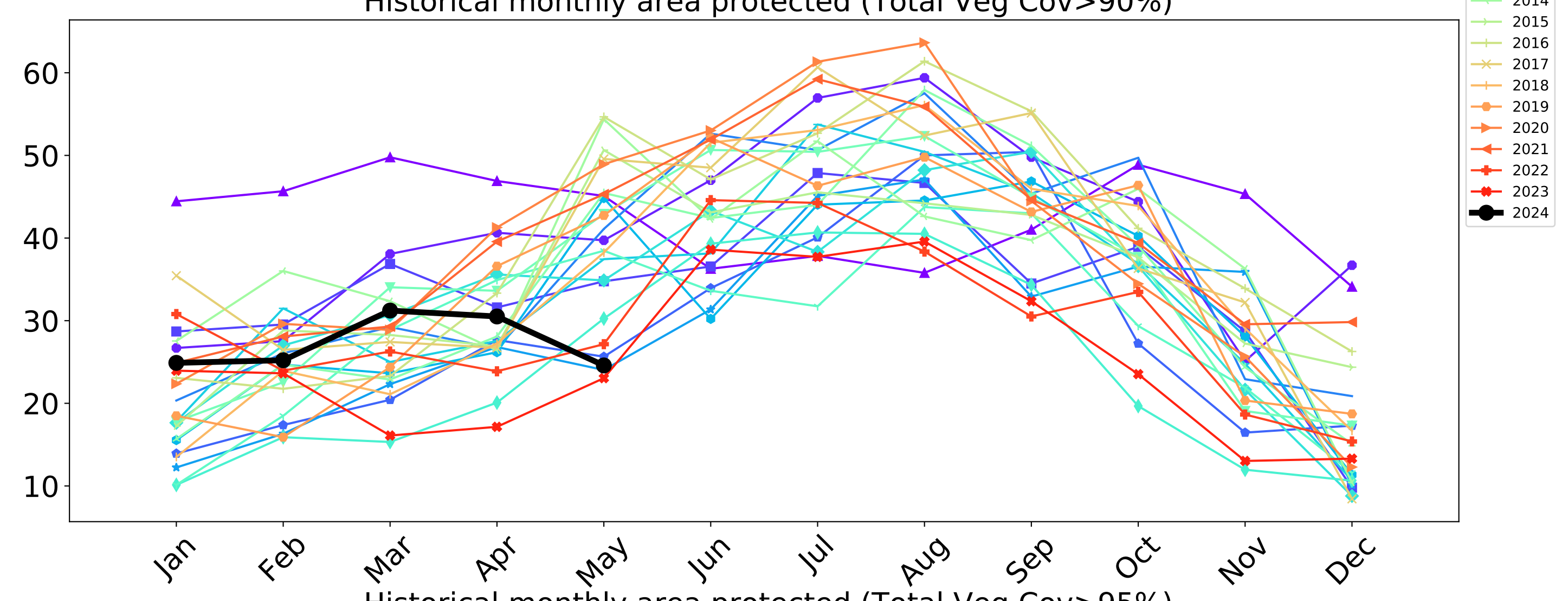
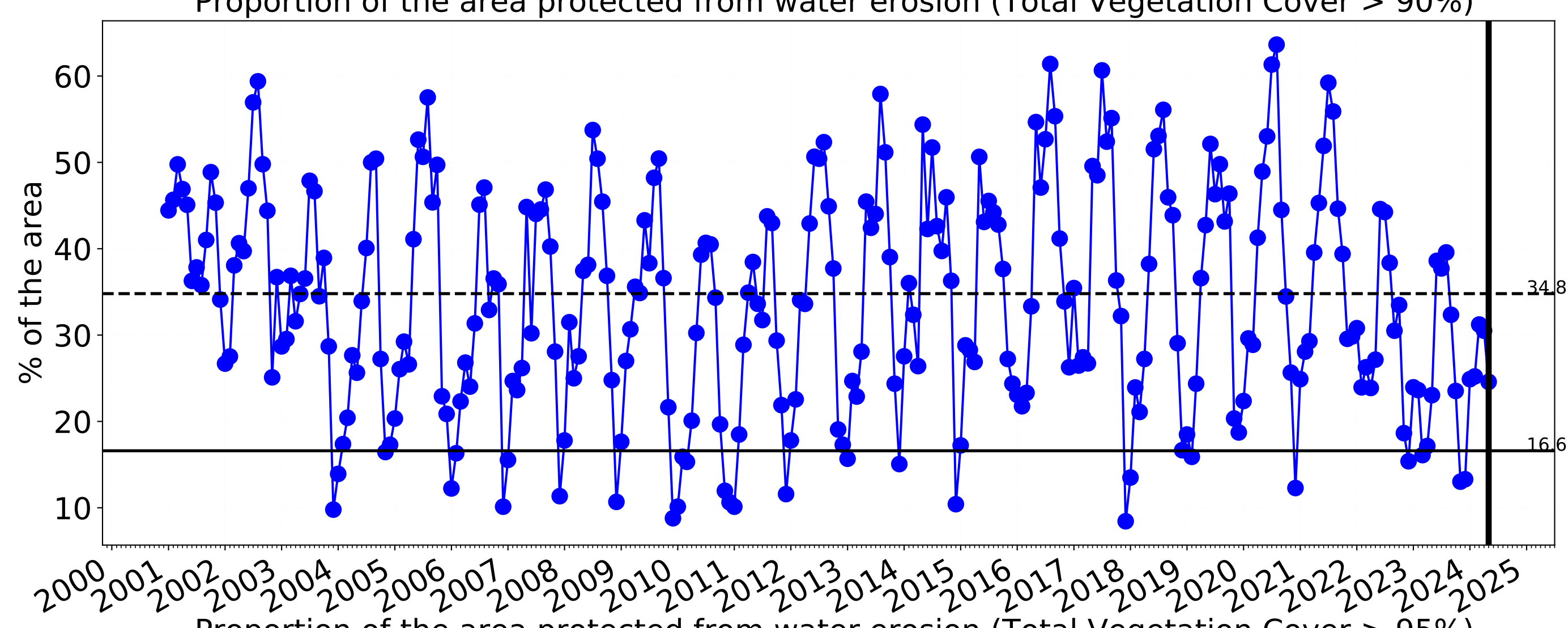
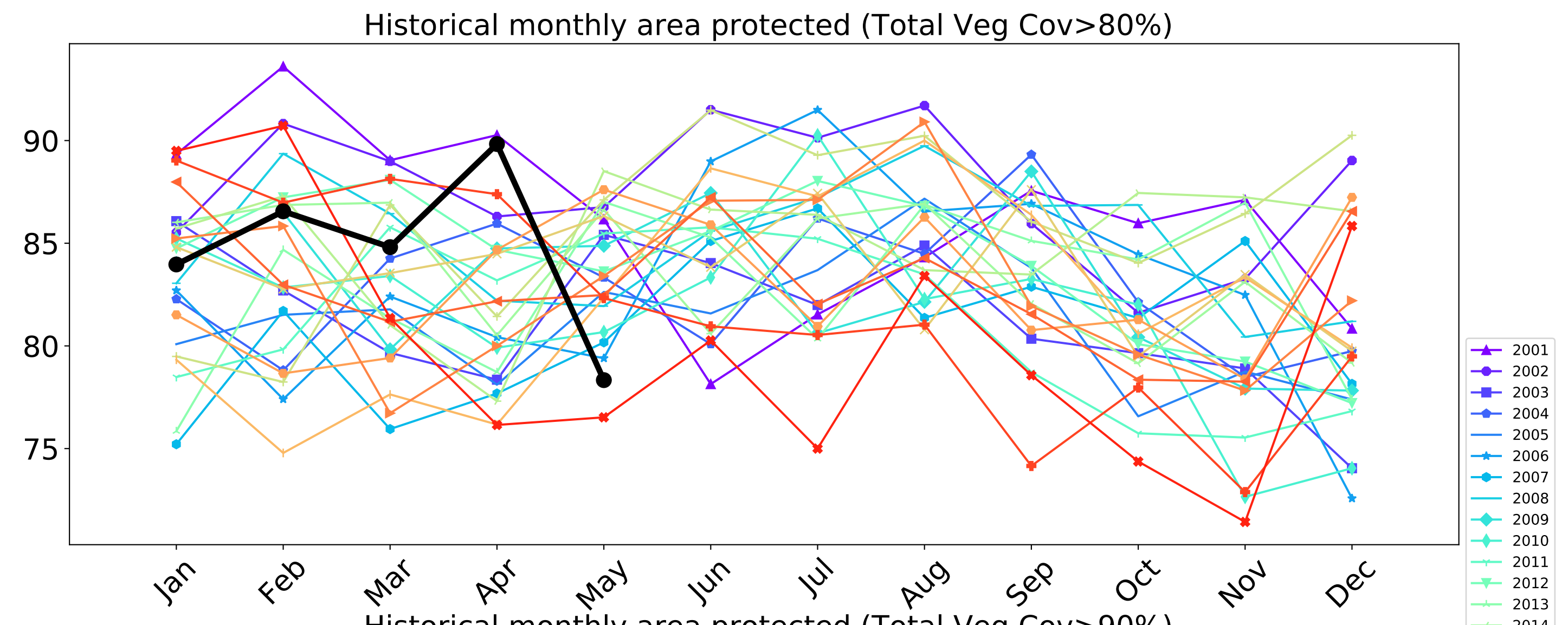
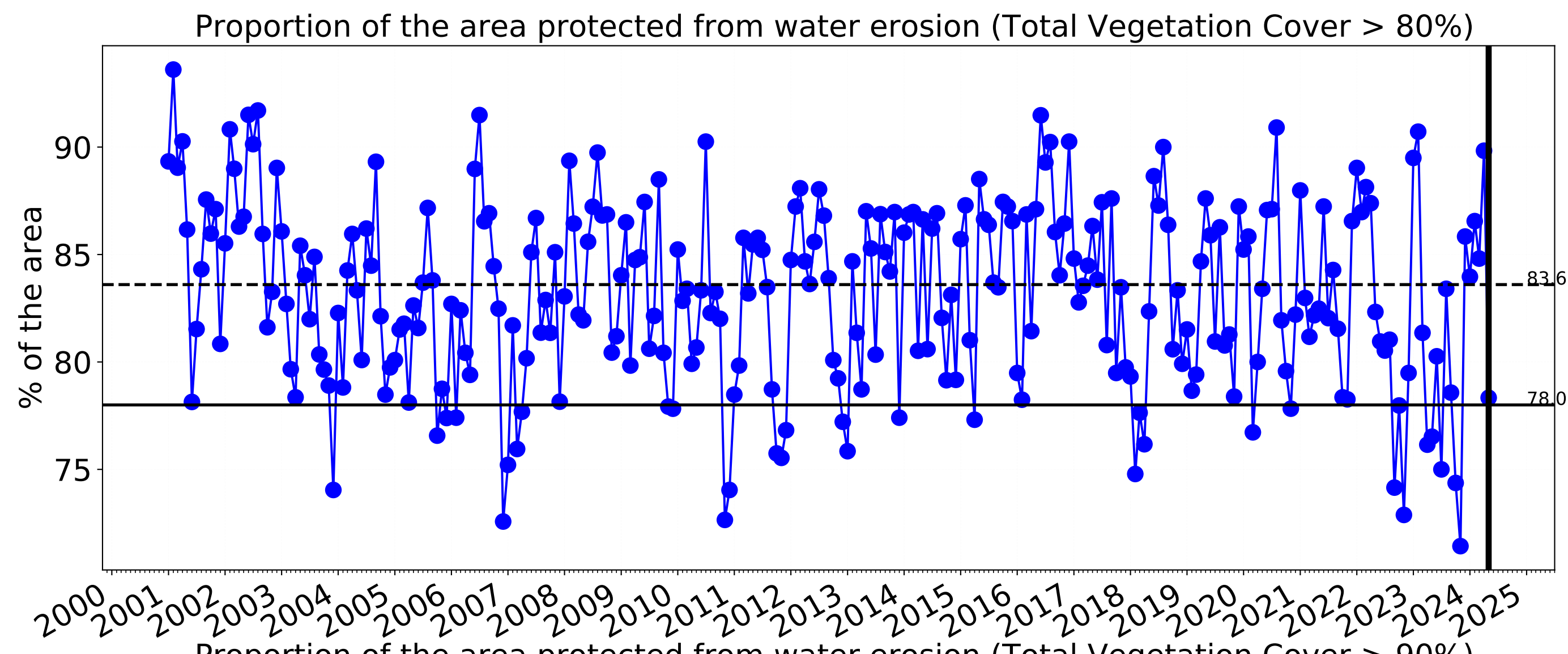
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Total Vegetation Cover Decile [%]



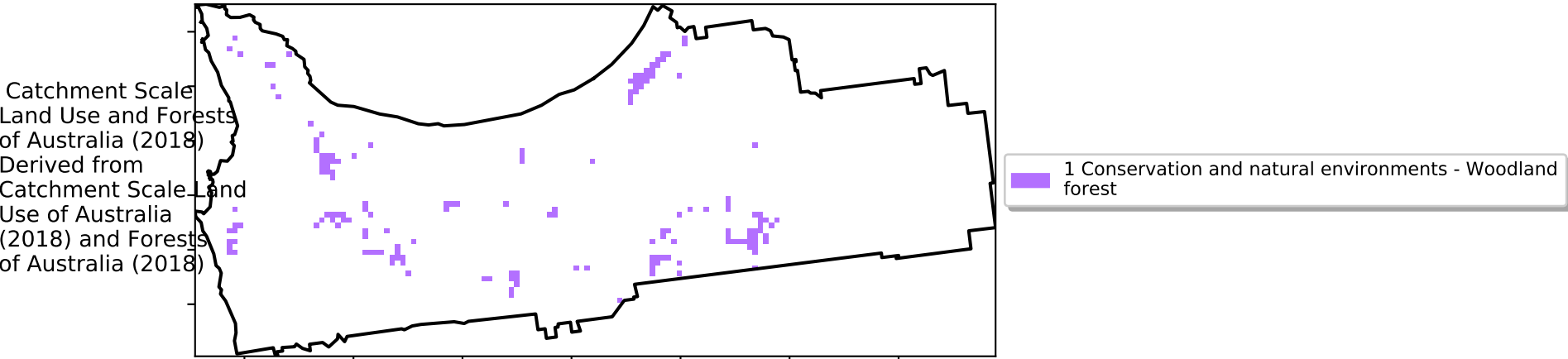
Conservation and natural environments non forest timeseries



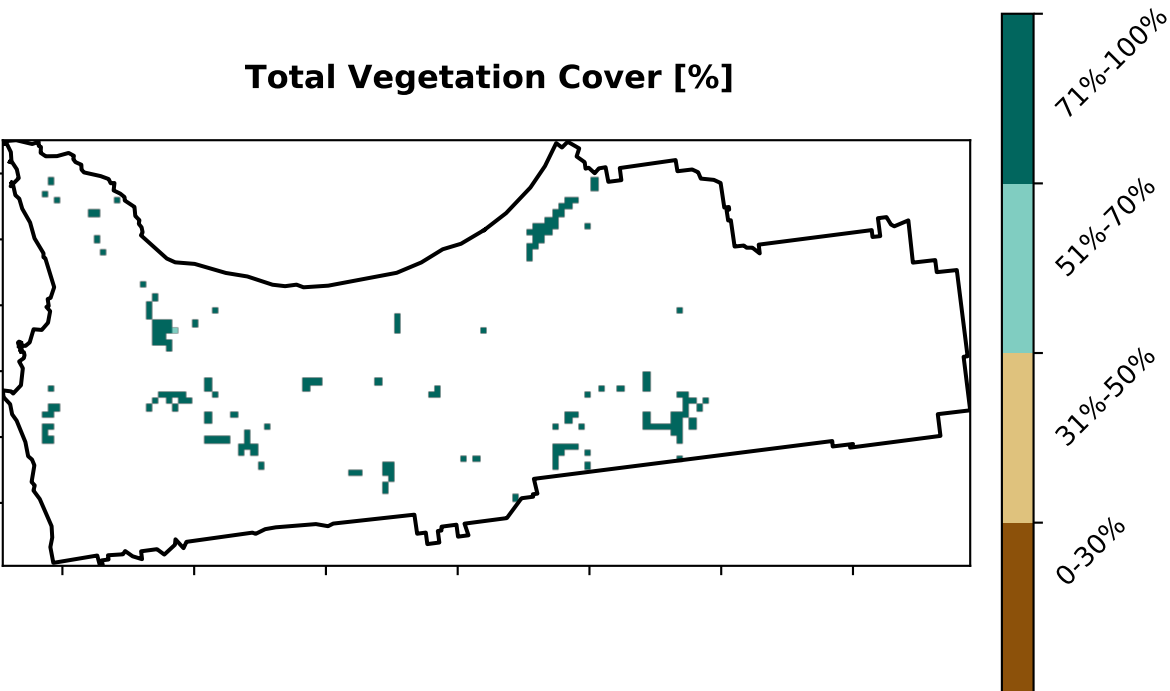


Conservation and natural environments Woodland forest

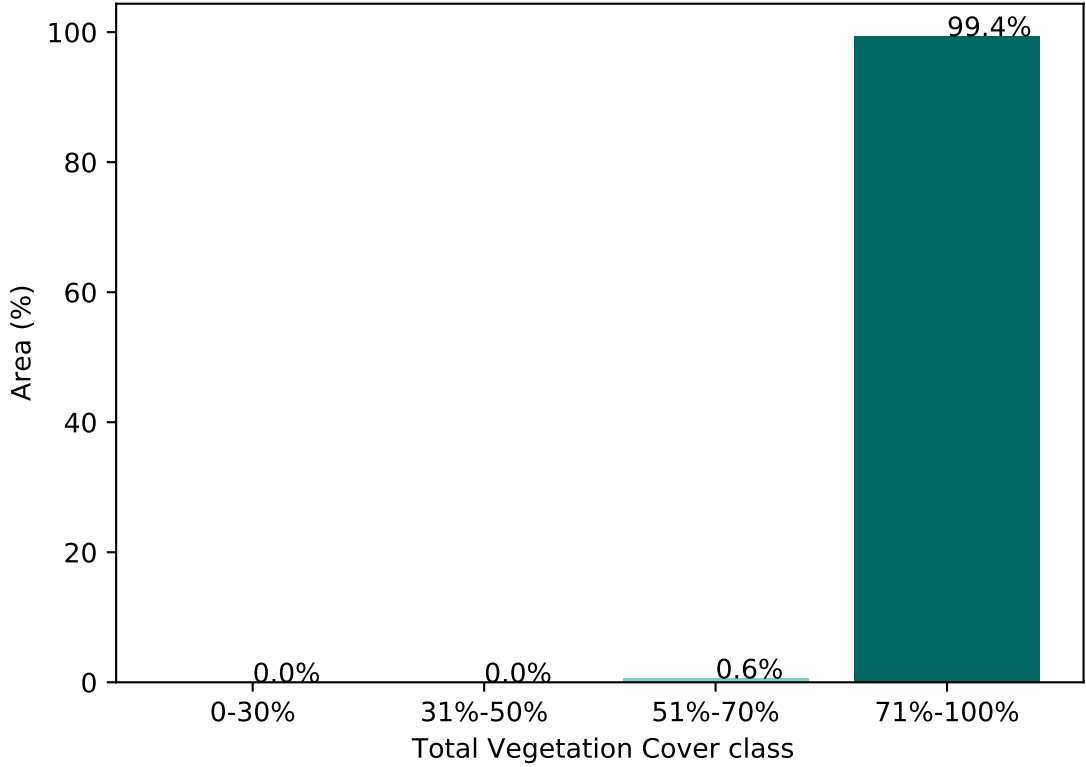
Land use and forest cover



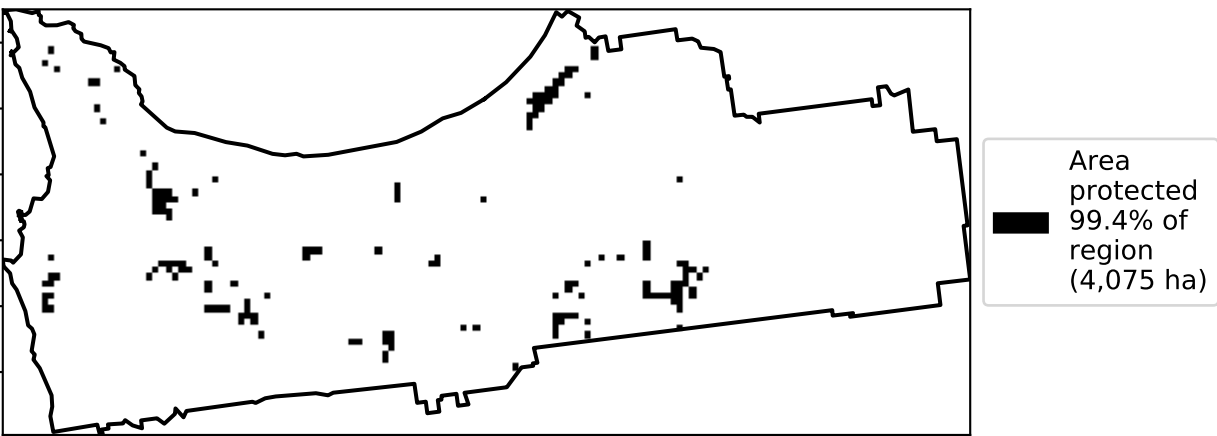
Total Vegetation Cover [%]



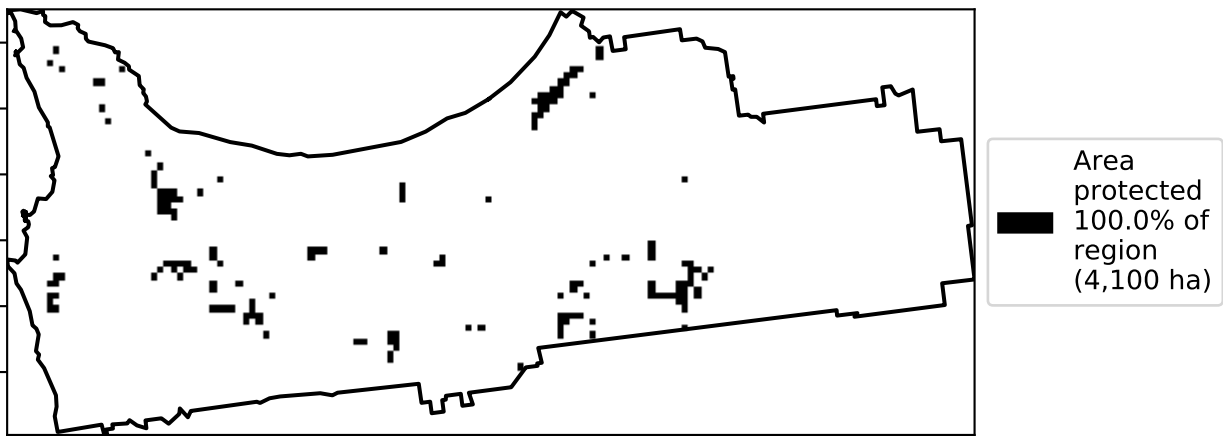
Proportion of vegetation cover class in area



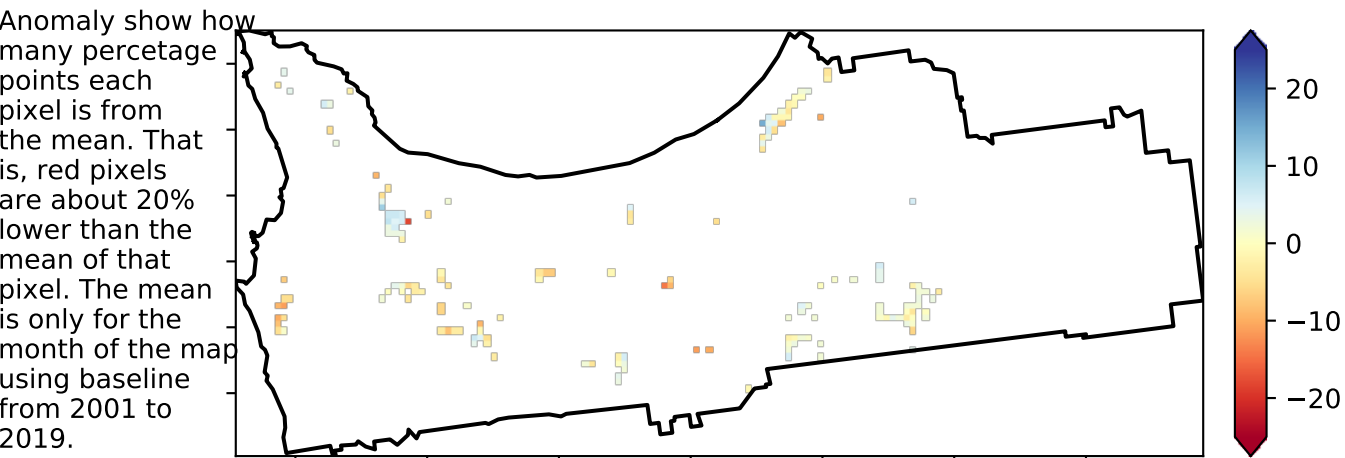
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

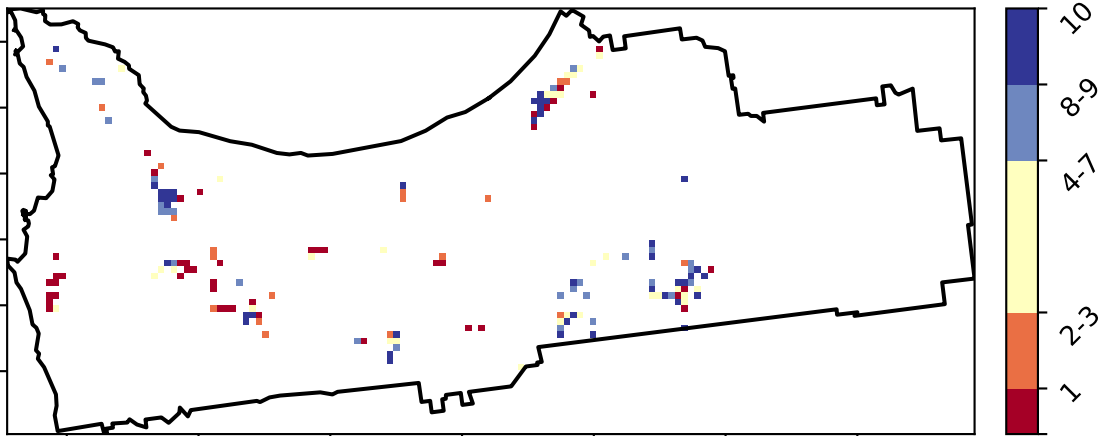


Total Vegetation Cover Anomaly [%]

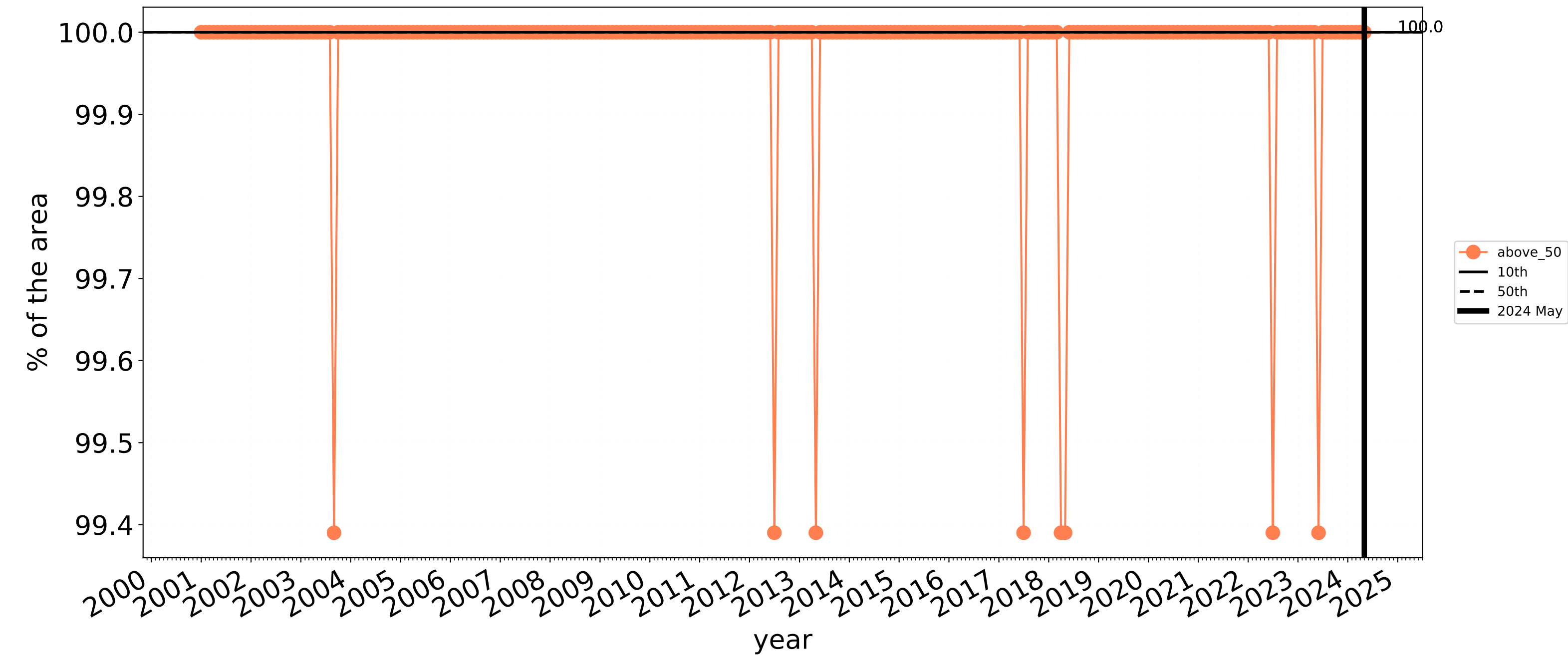


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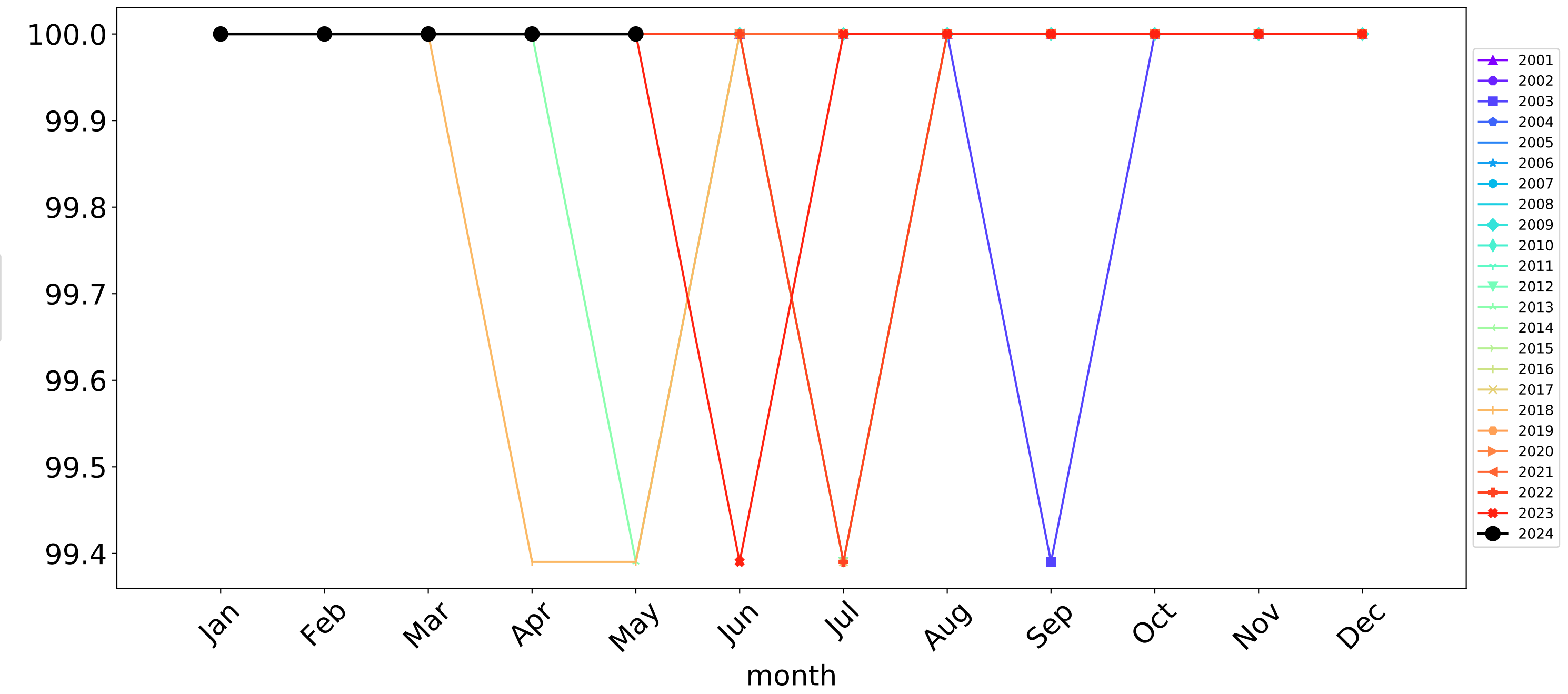
Total Vegetation Cover Decile [%]



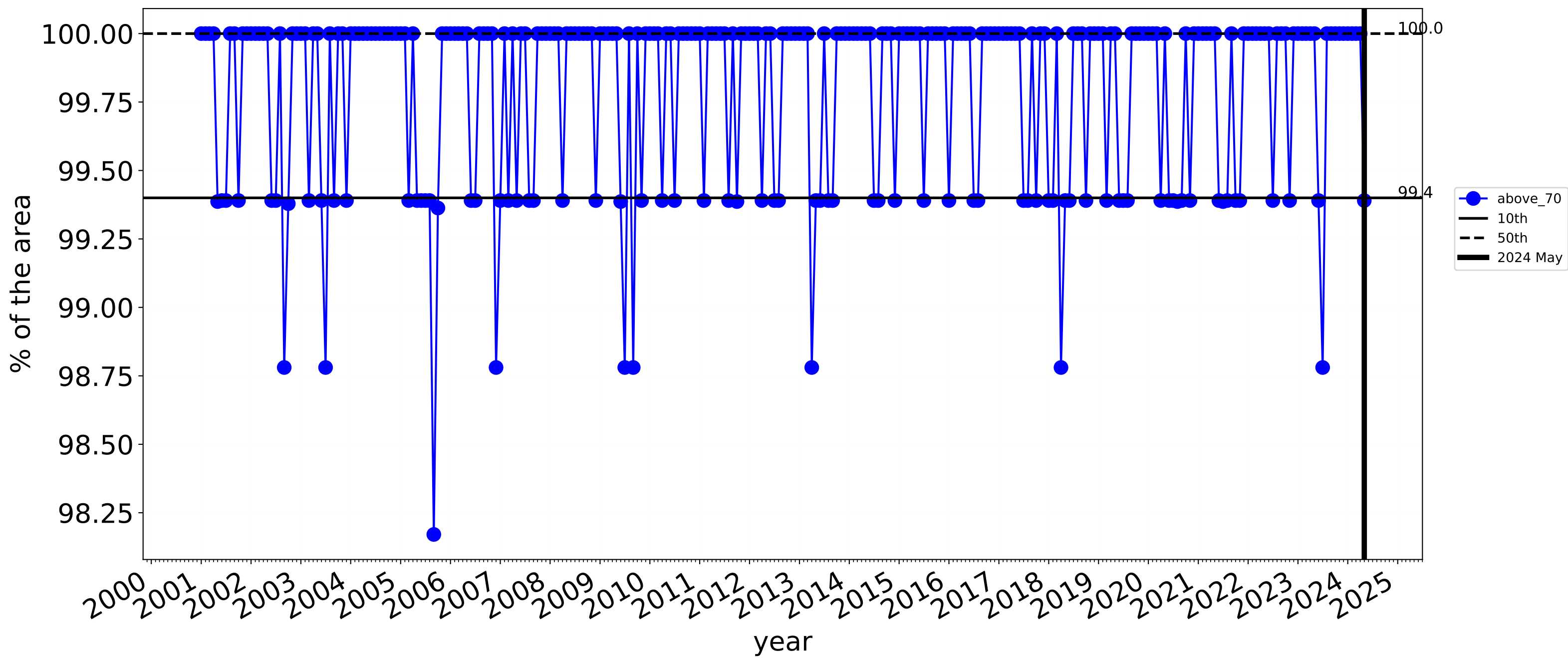
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



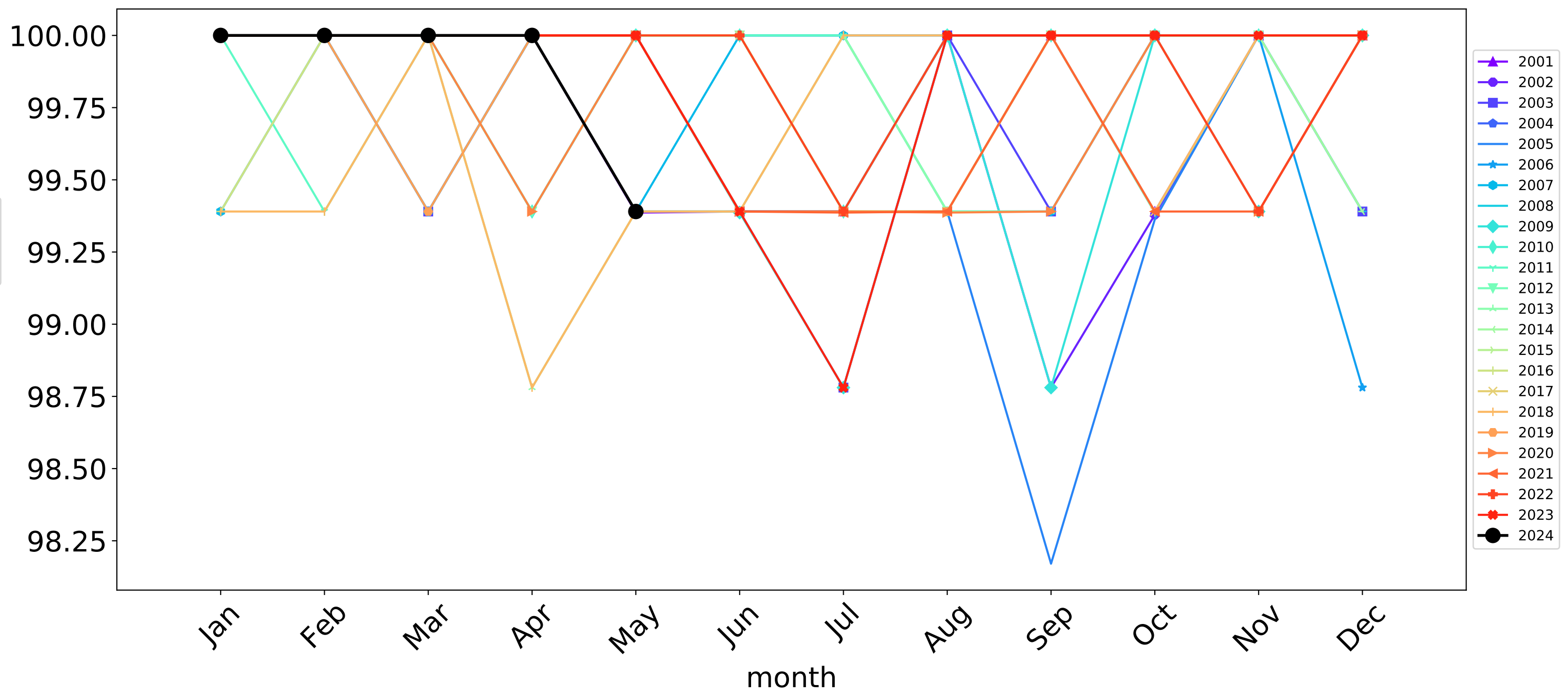
Wind erosion historical monthly area protected (Total Veg Cov >50%)

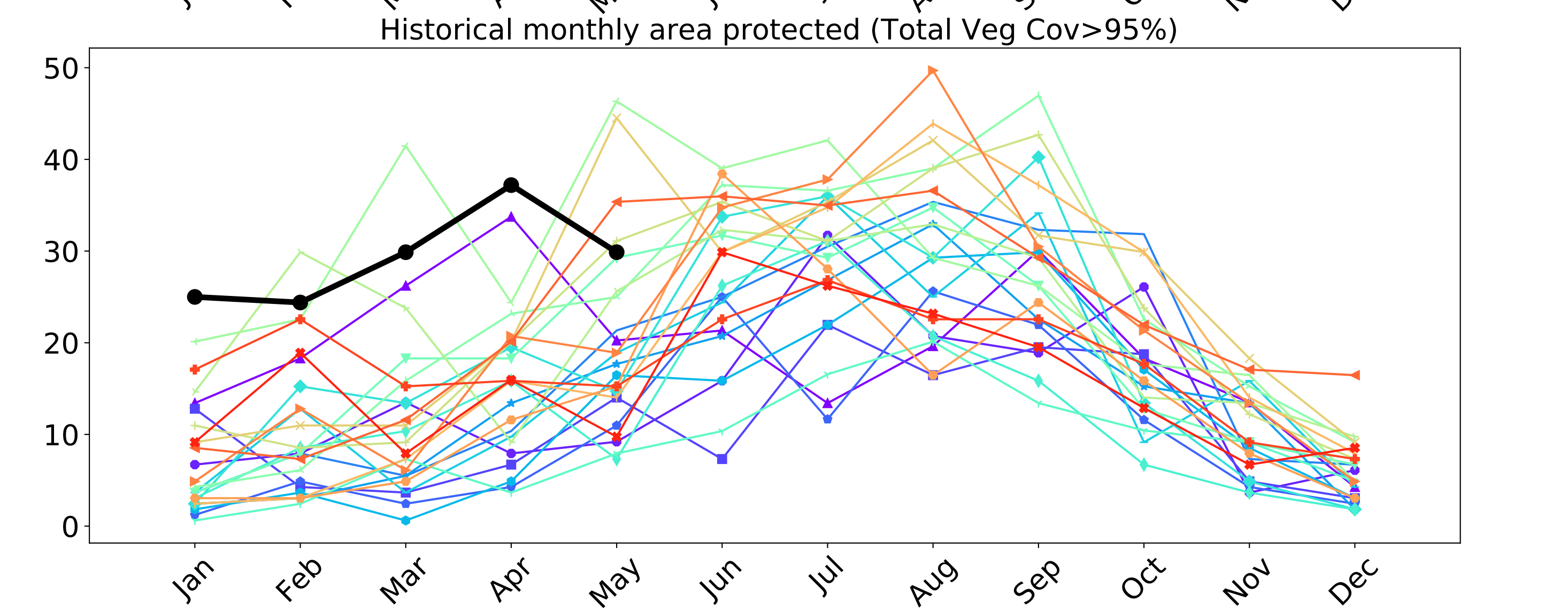
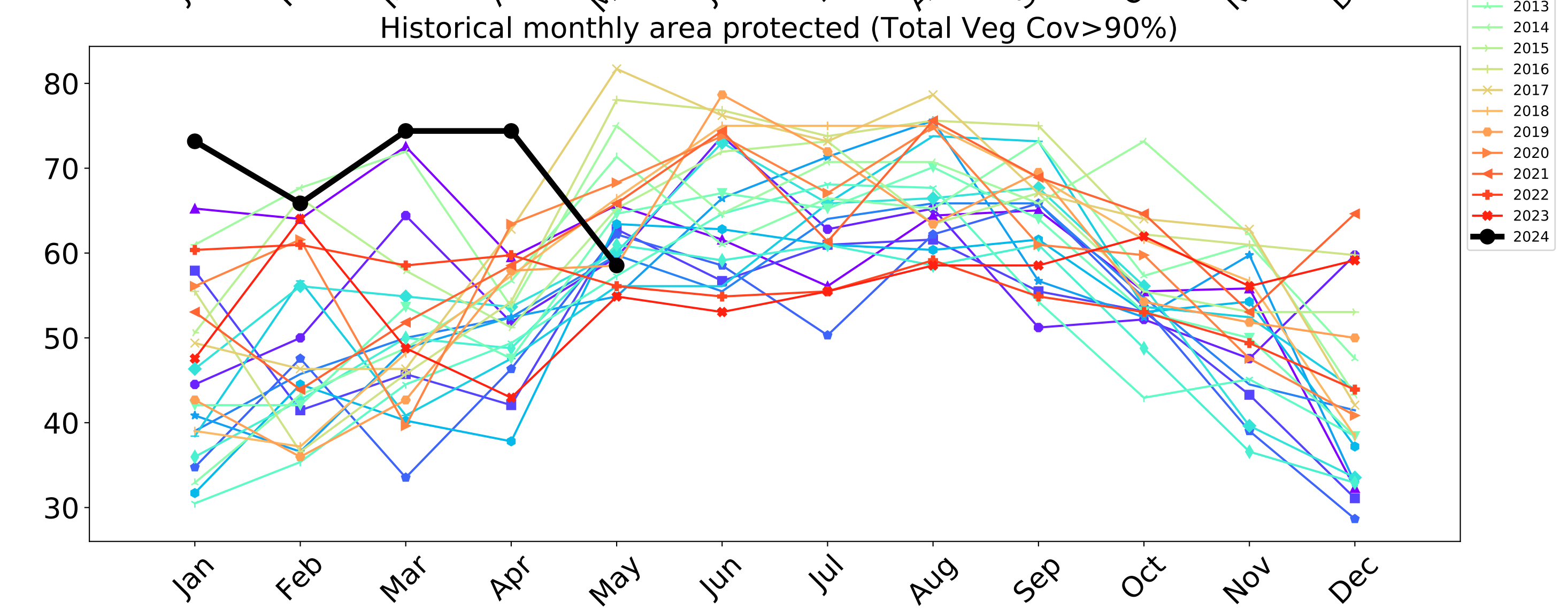
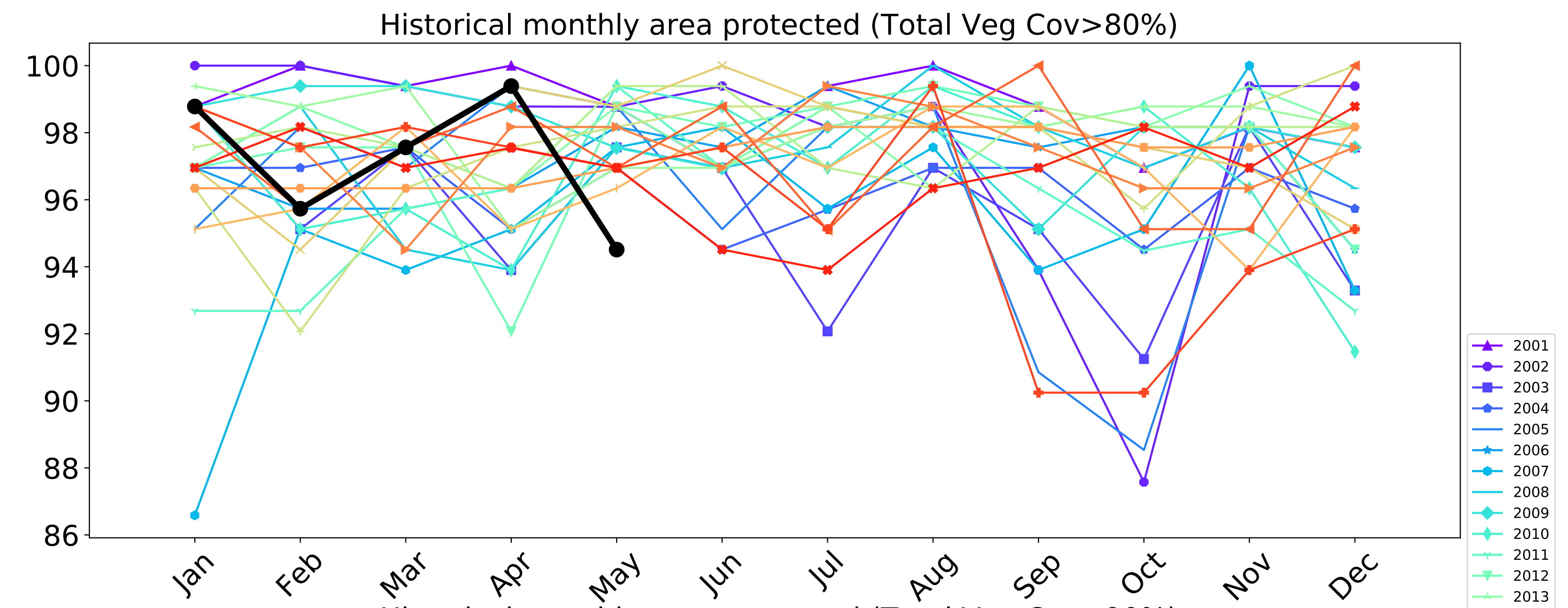
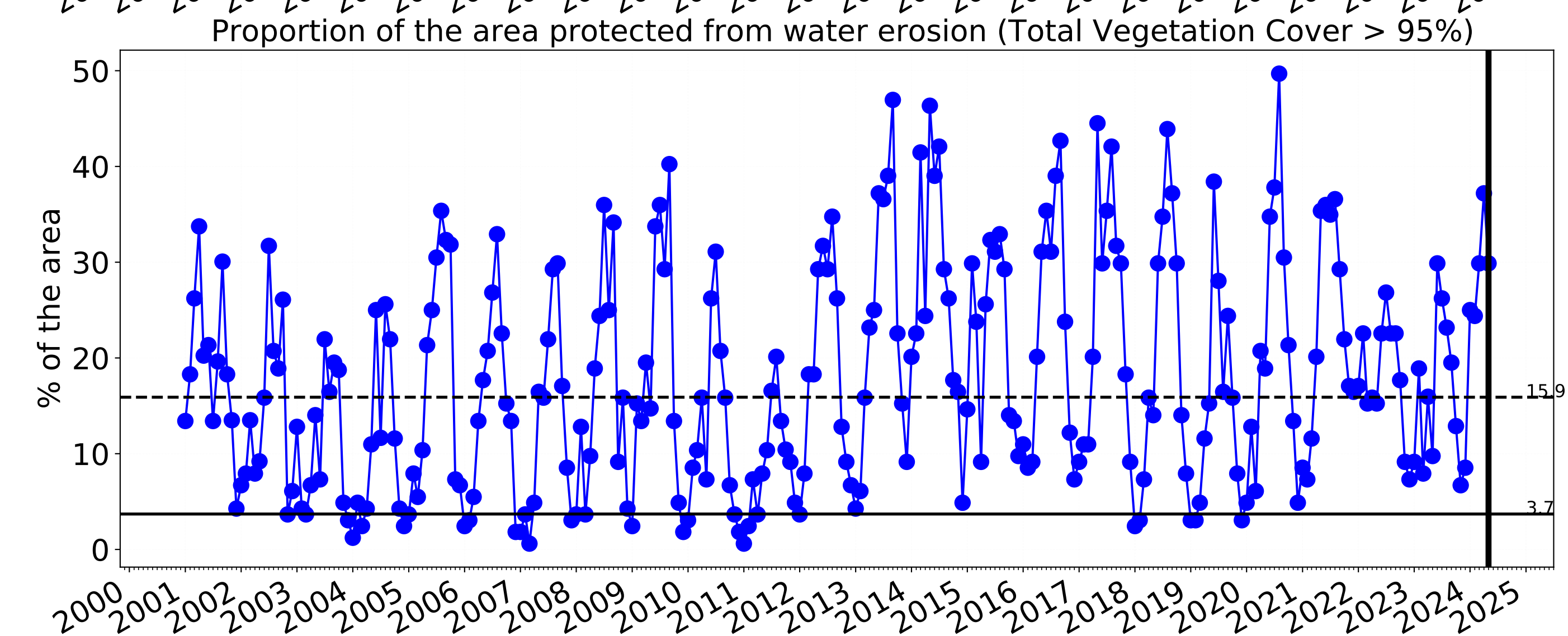
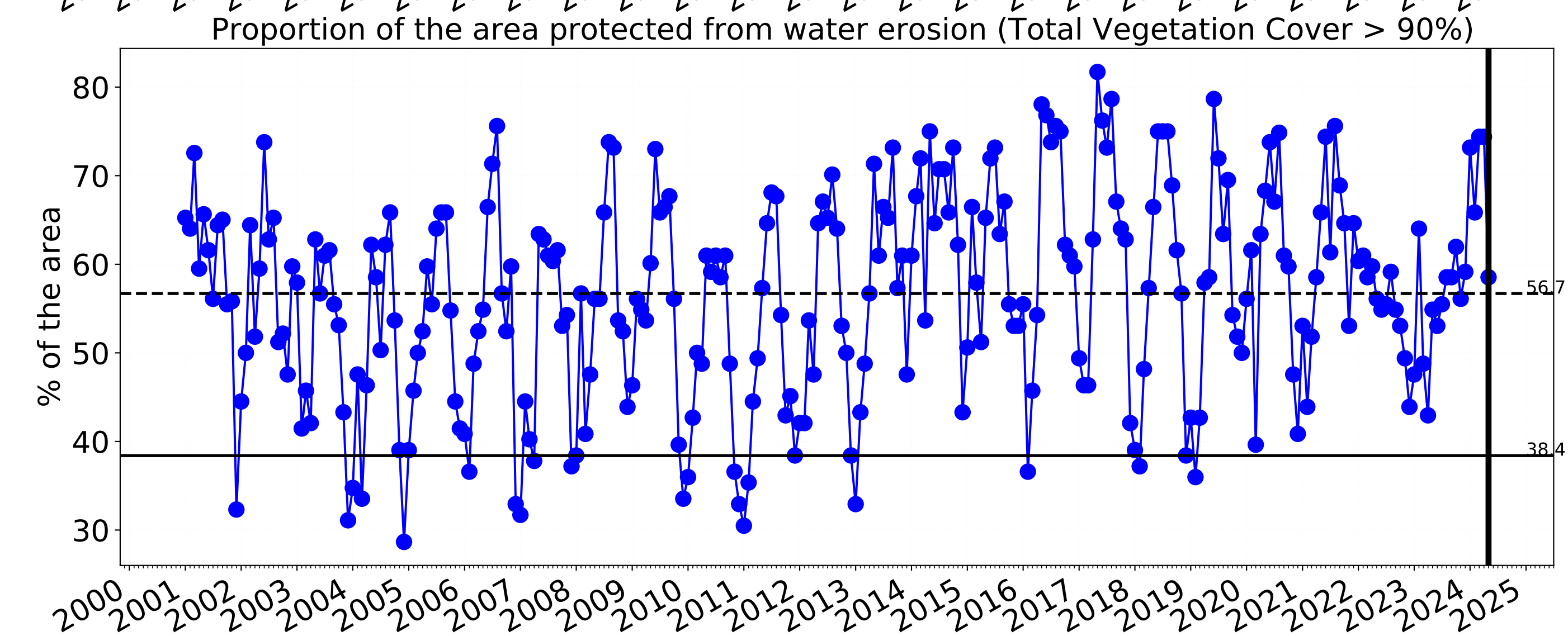
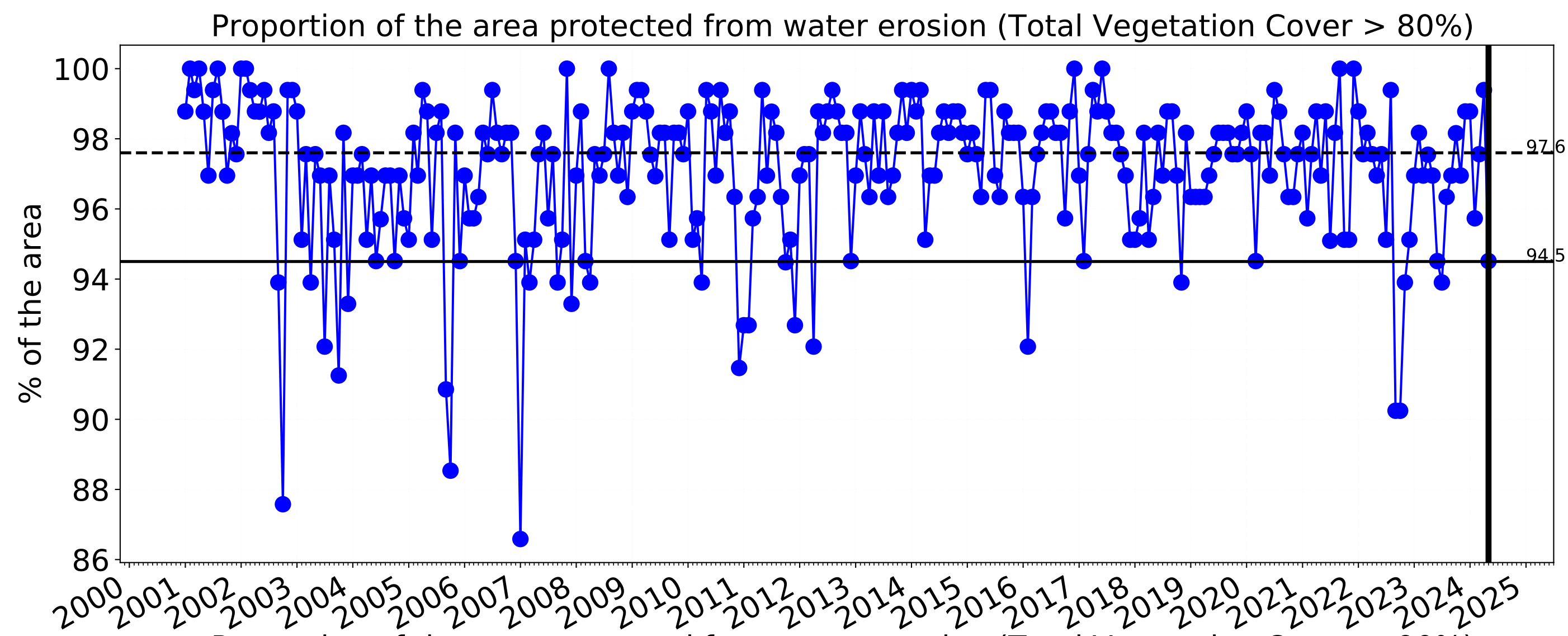


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



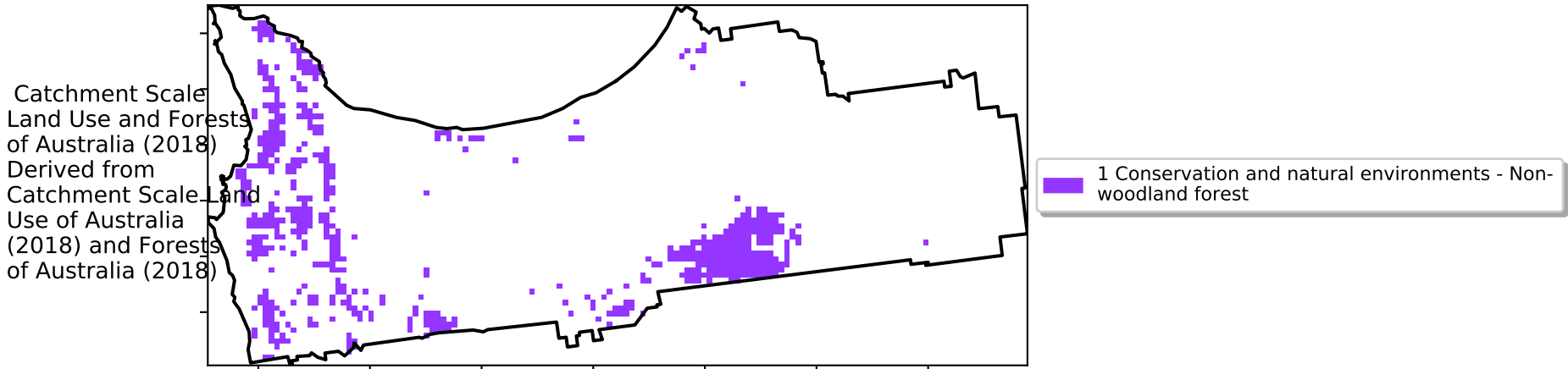
Water erosion historical monthly area protected (Total Veg Cov>70%)



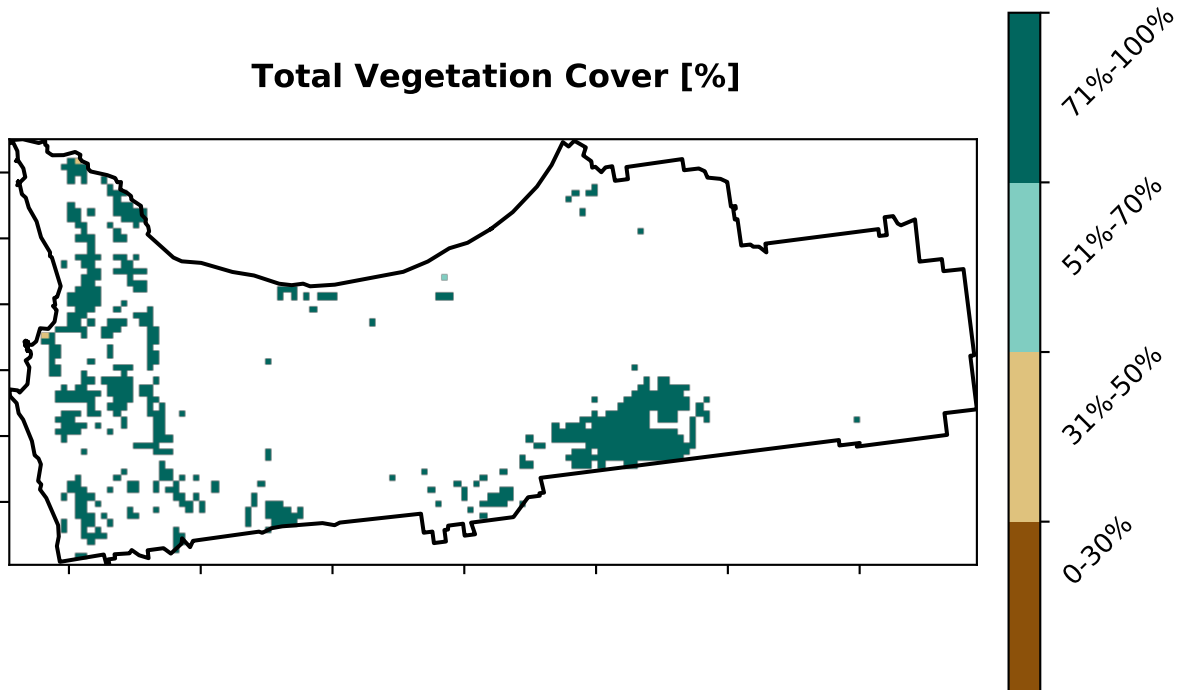


Conservation and natural environments Forest (non woodland)

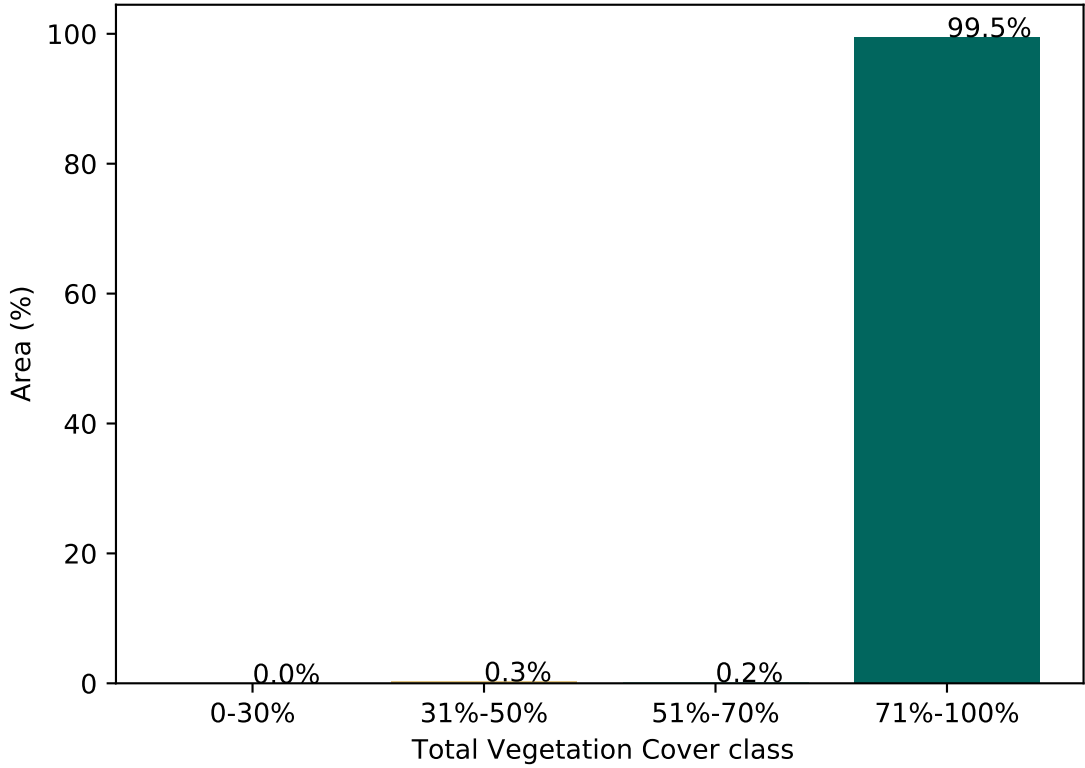
Land use and forest cover



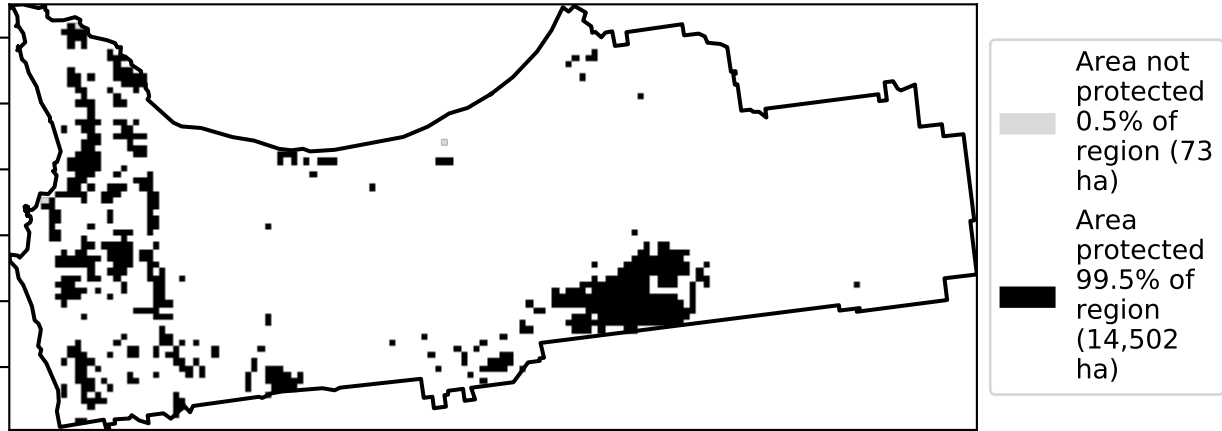
Total Vegetation Cover [%]



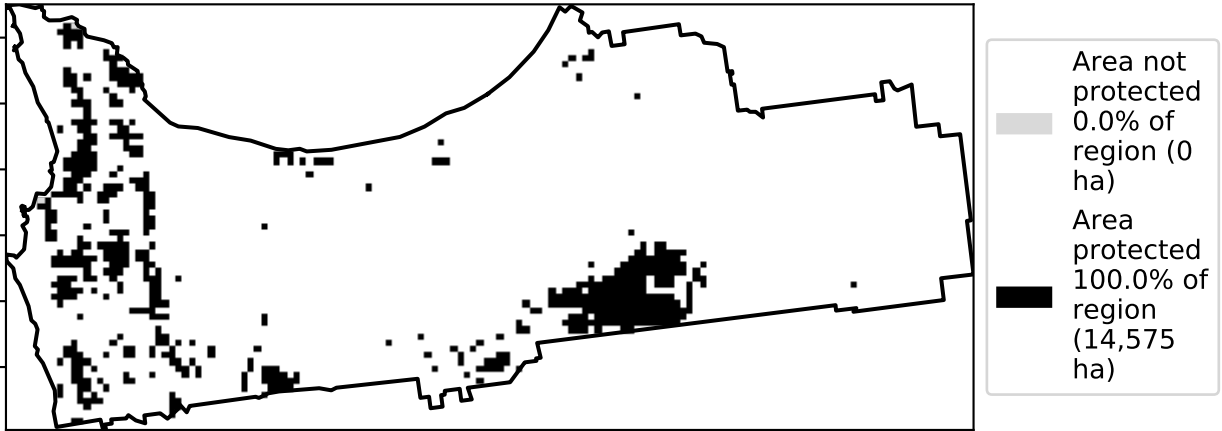
Proportion of vegetation cover class in area



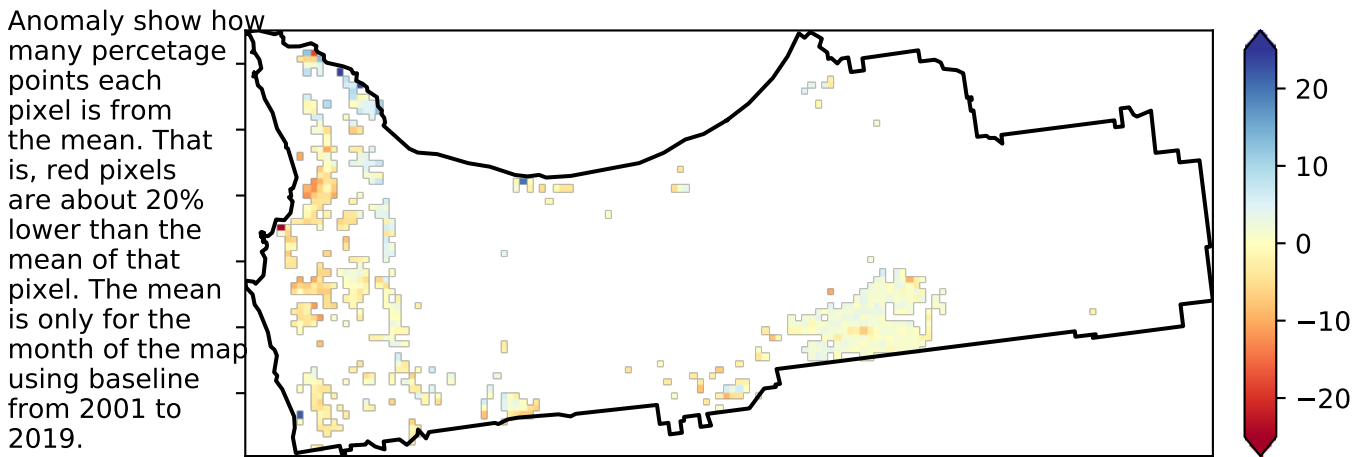
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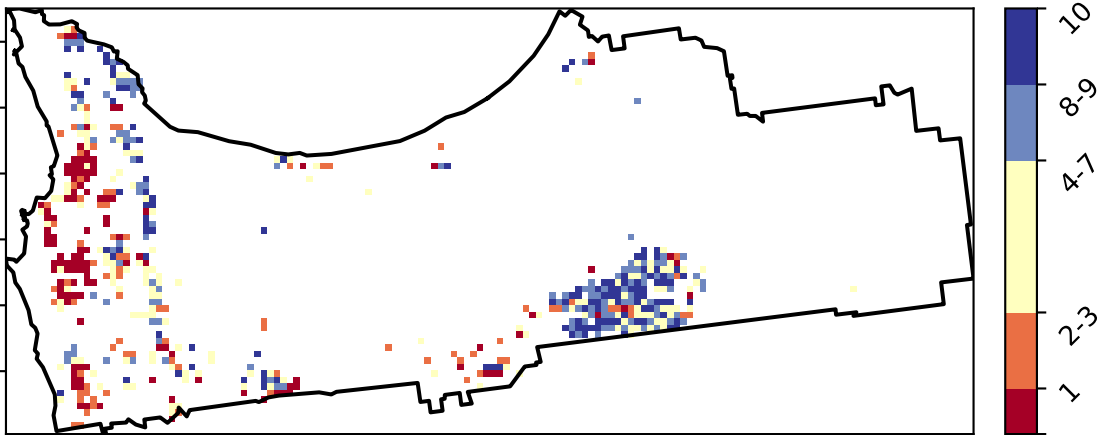


Total Vegetation Cover Anomaly [%]

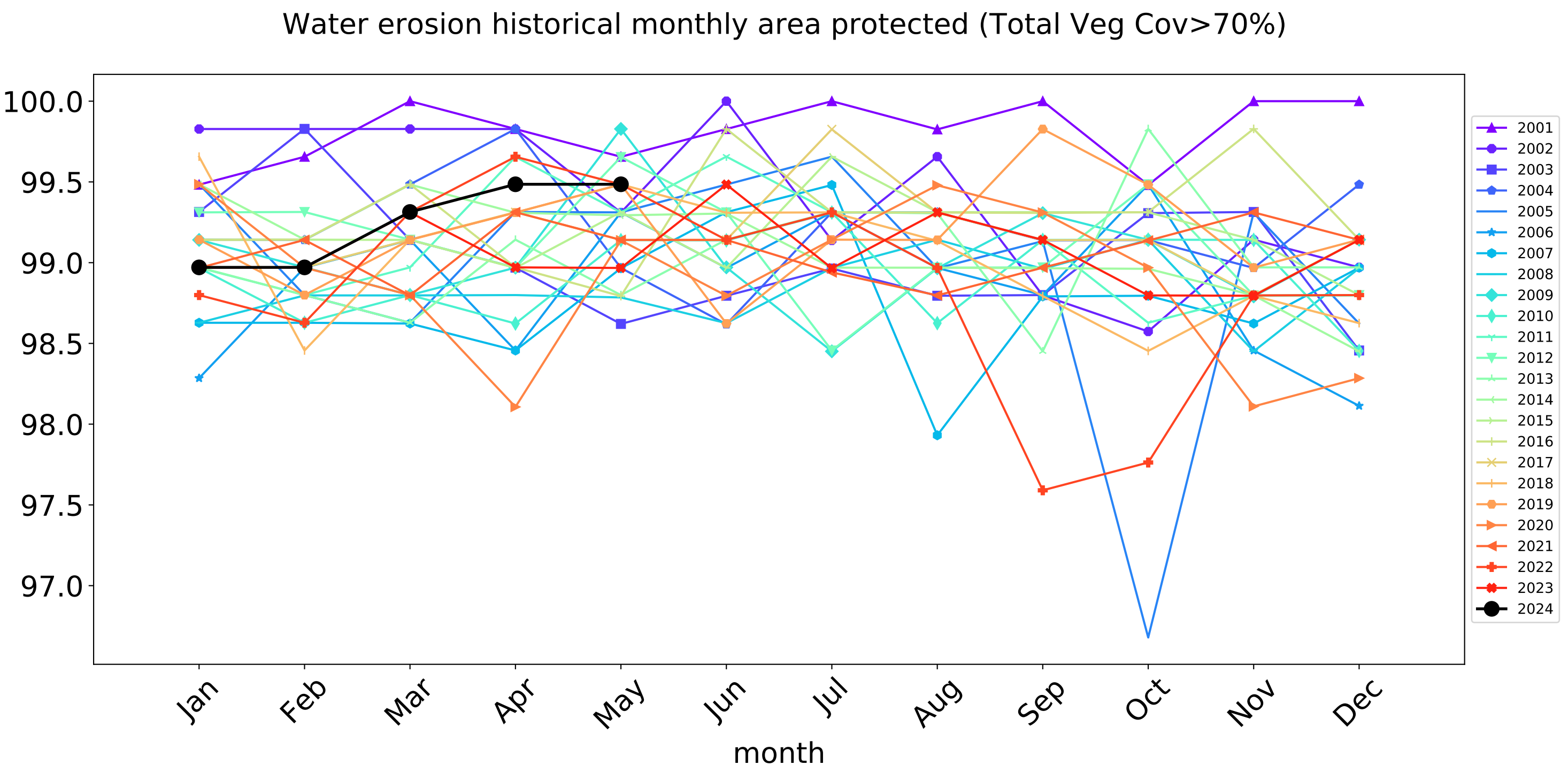
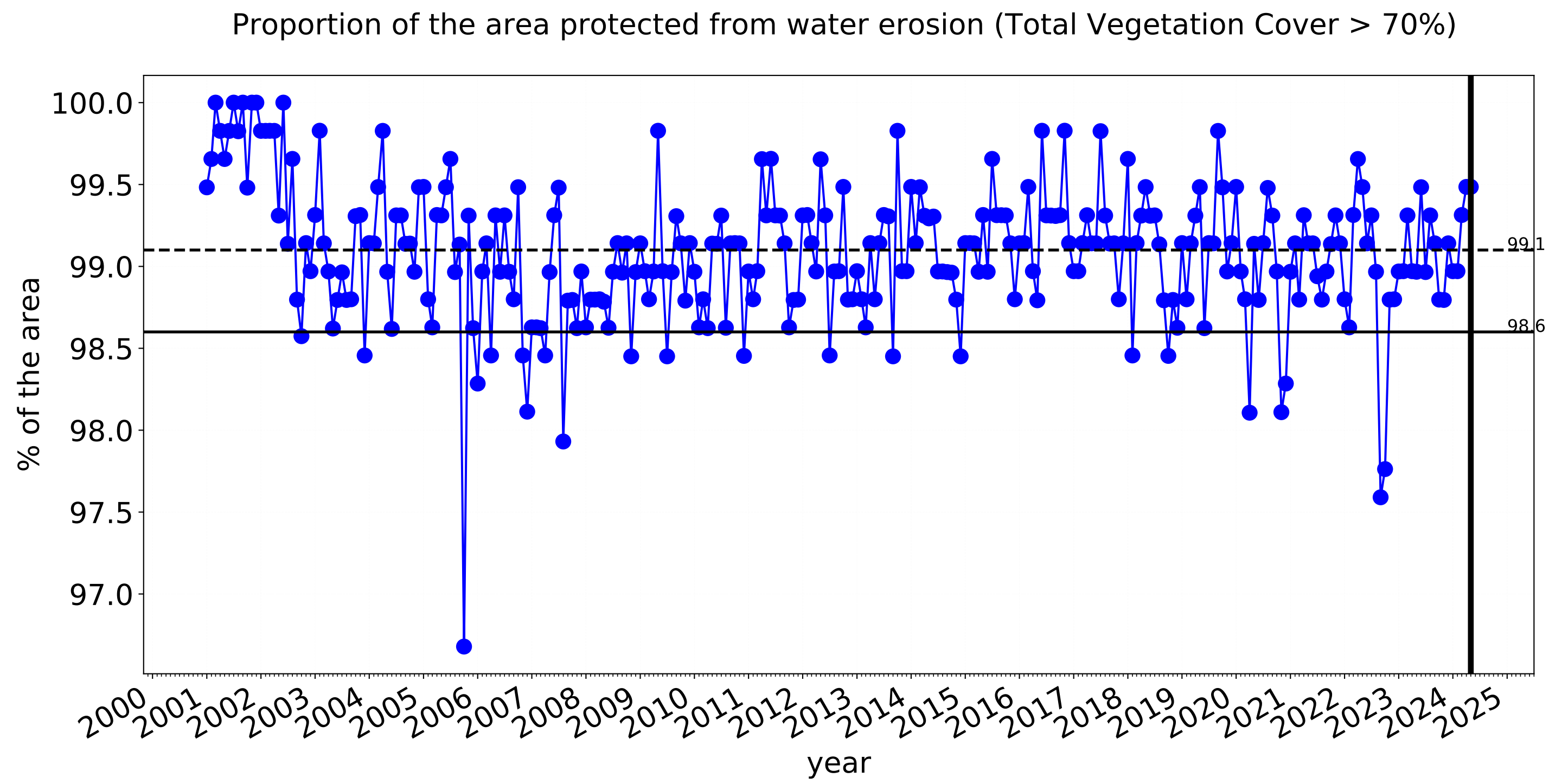
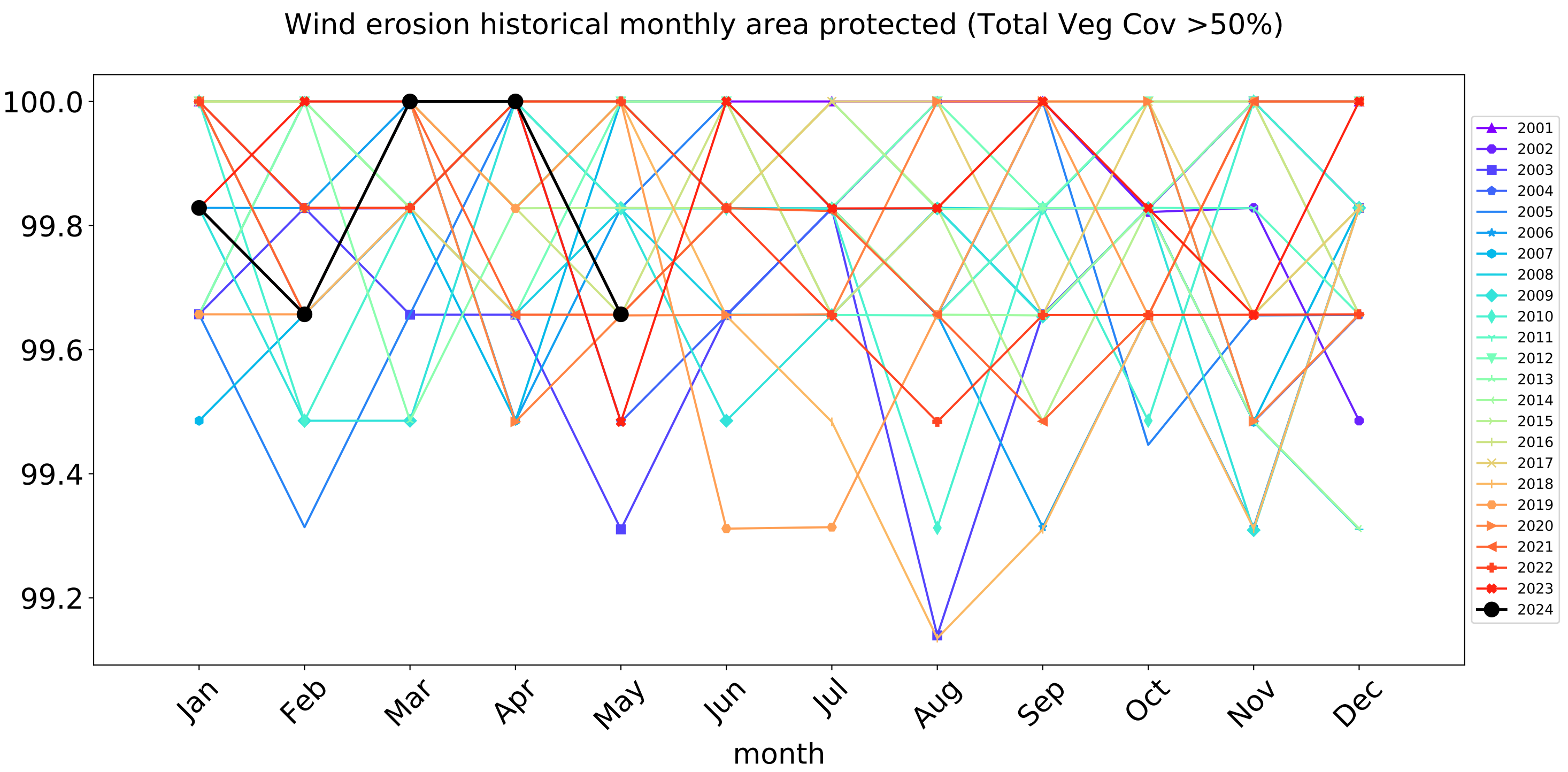
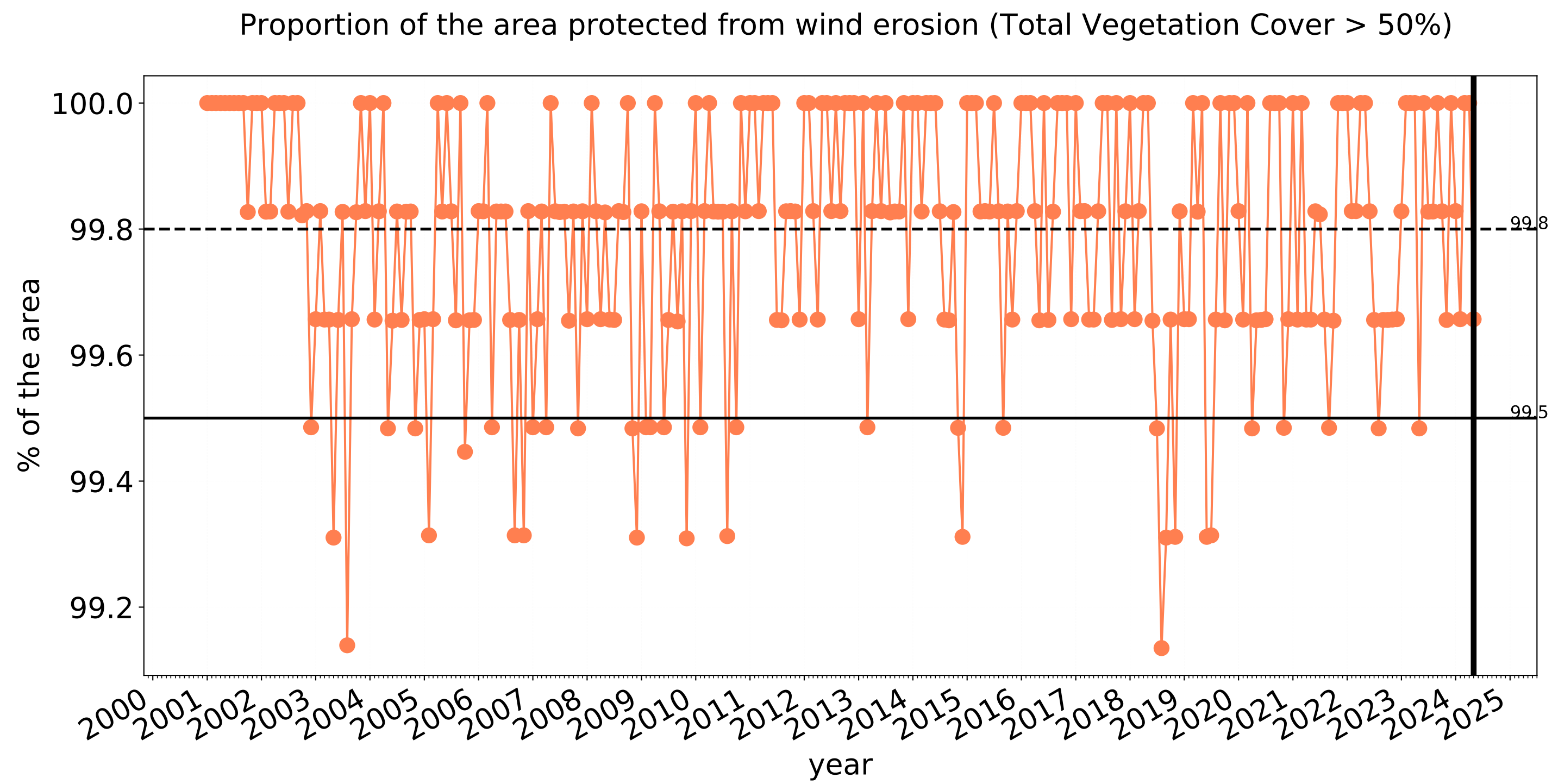


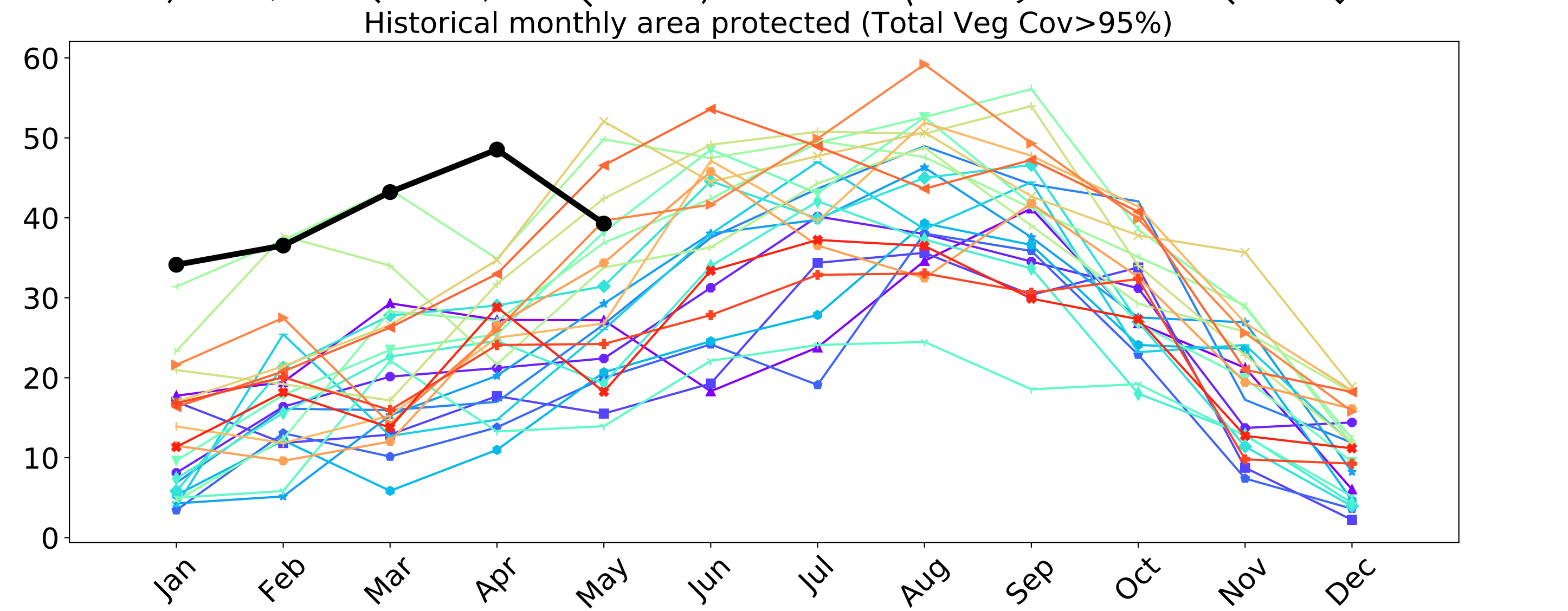
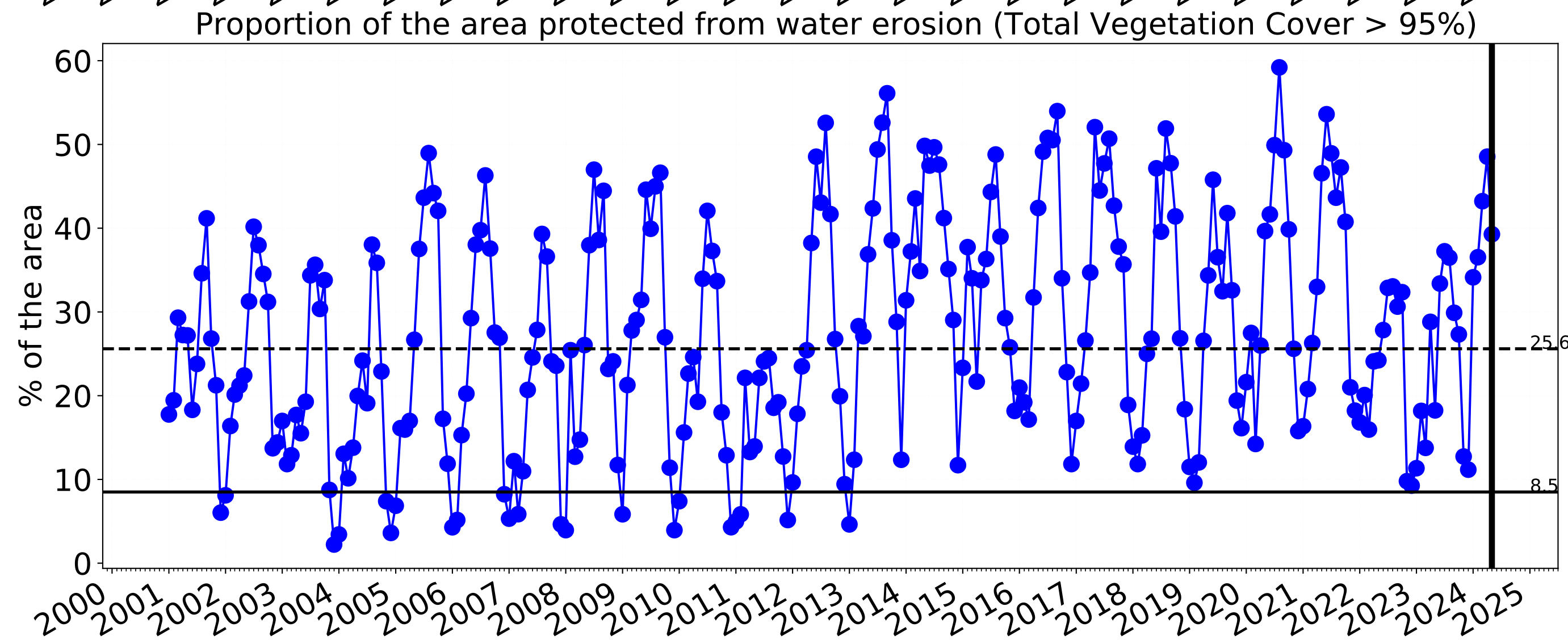
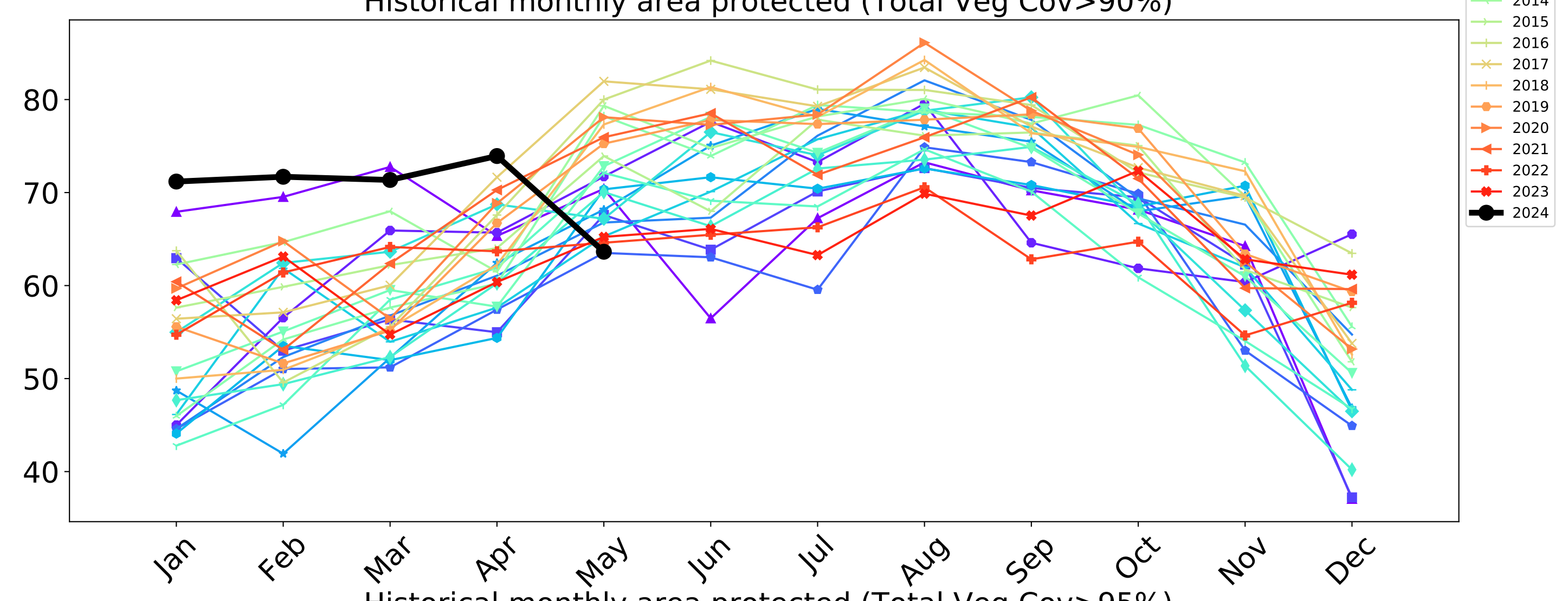
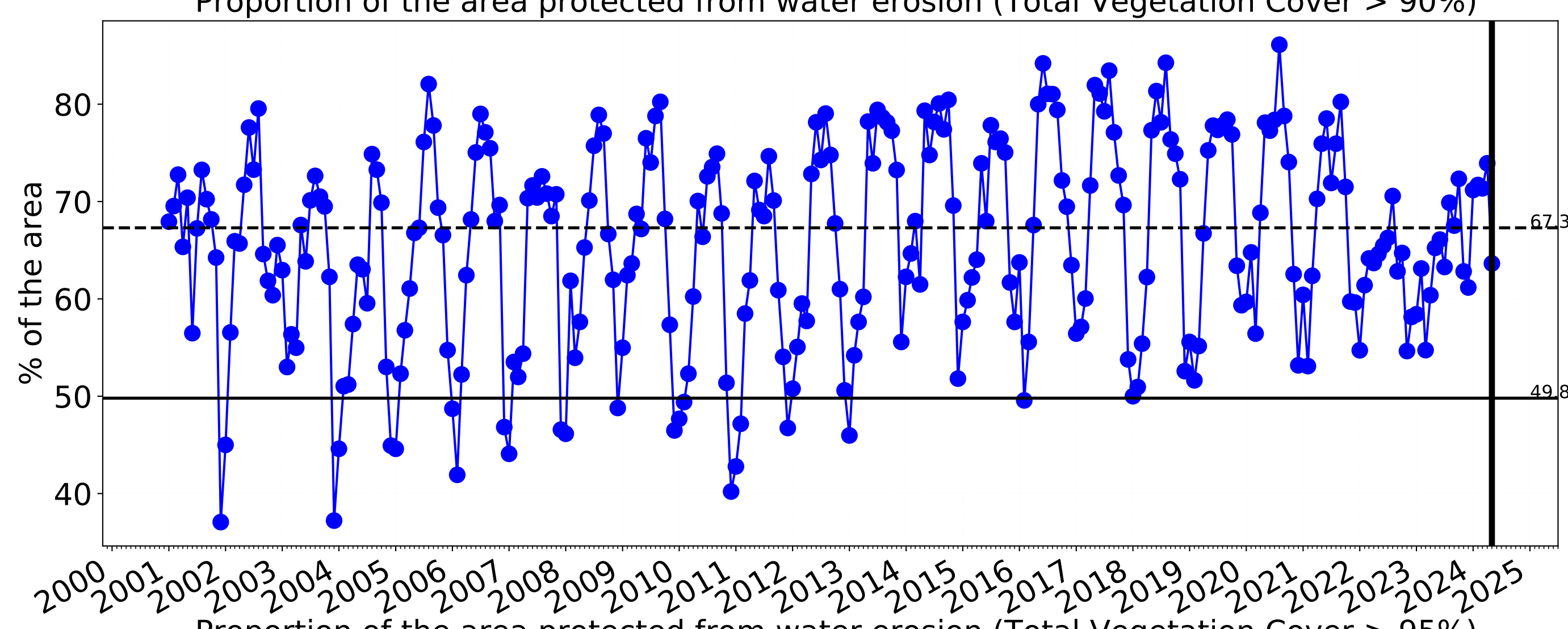
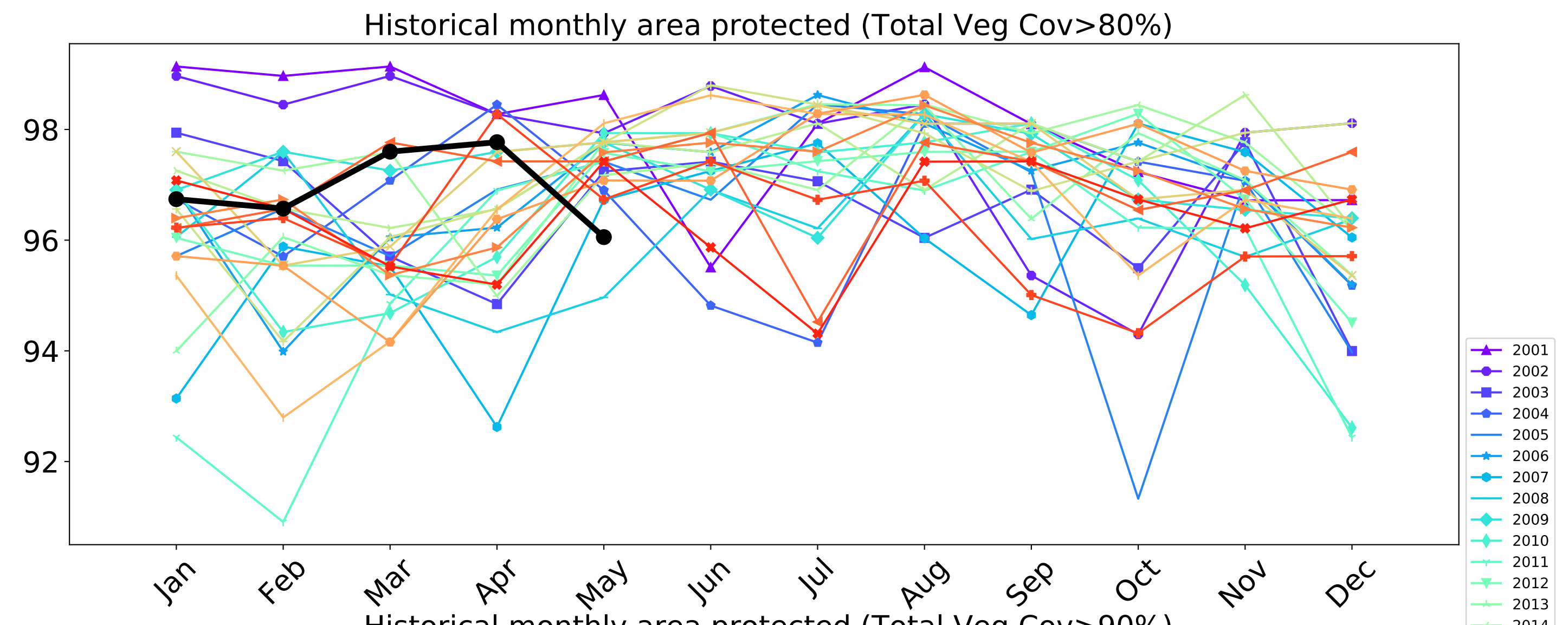
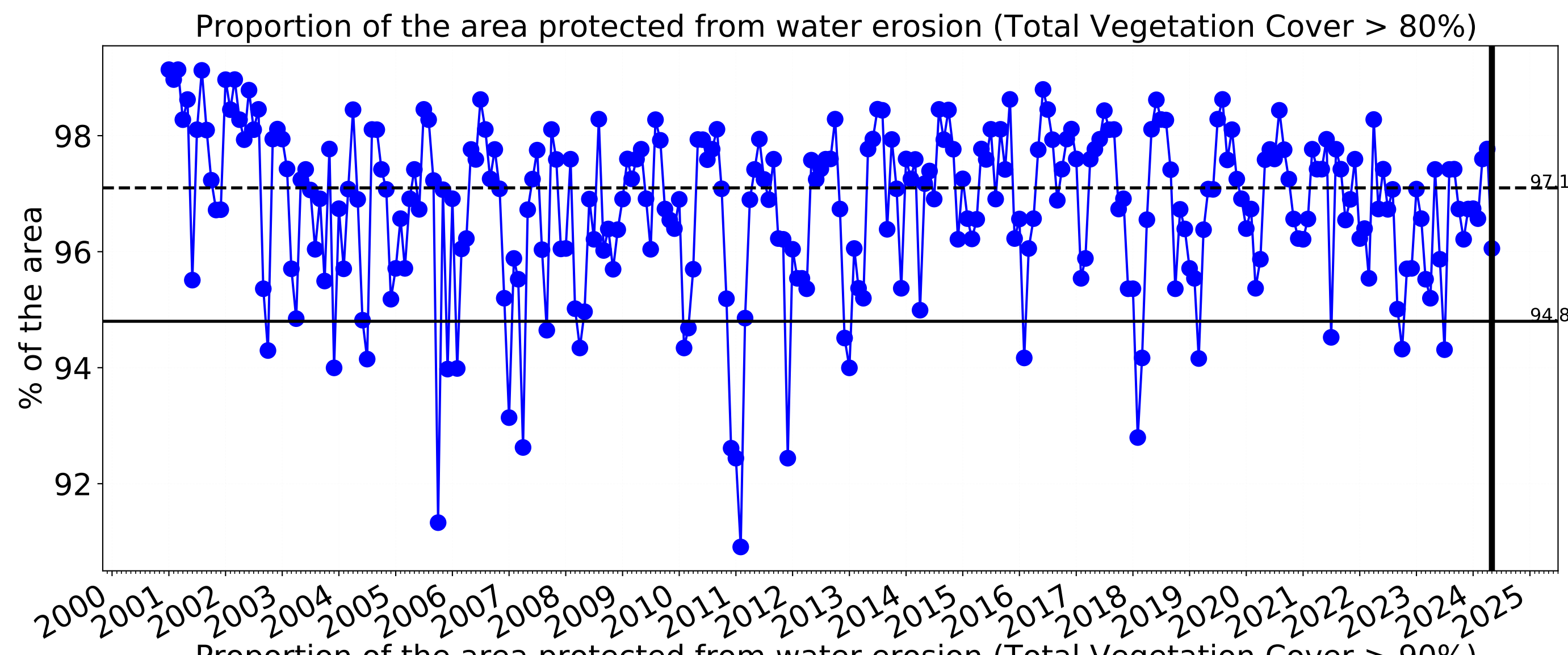
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Total Vegetation Cover Decile [%]



Conservation and natural environments Forest (non woodland) timeseries

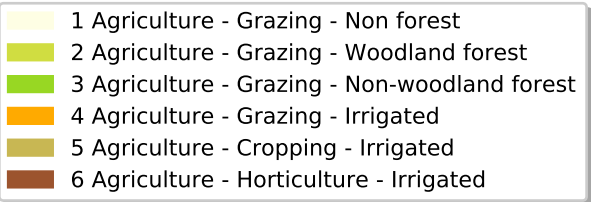
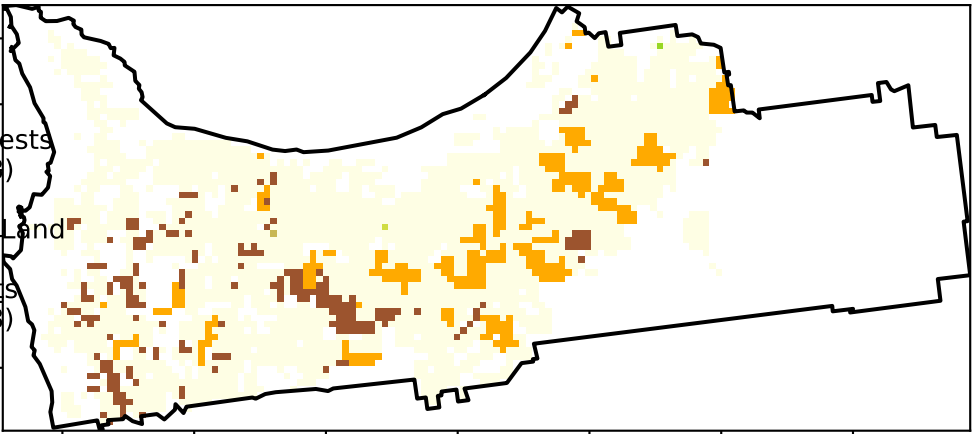




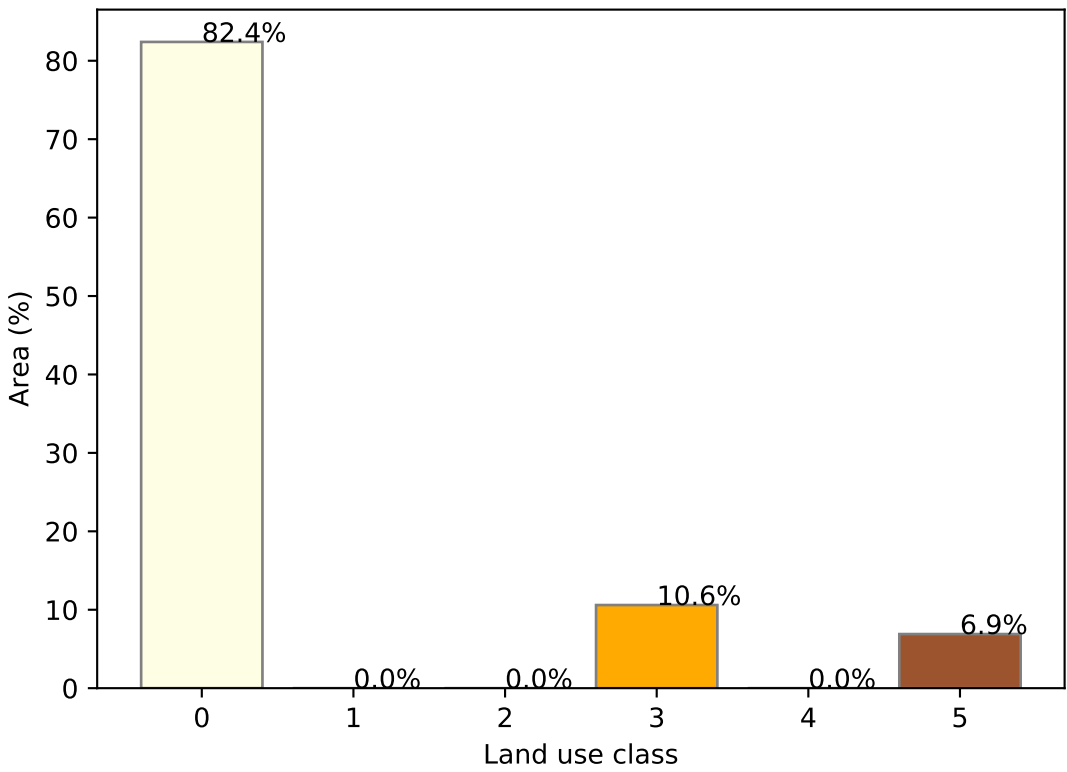
Agriculture

Land use and forest cover

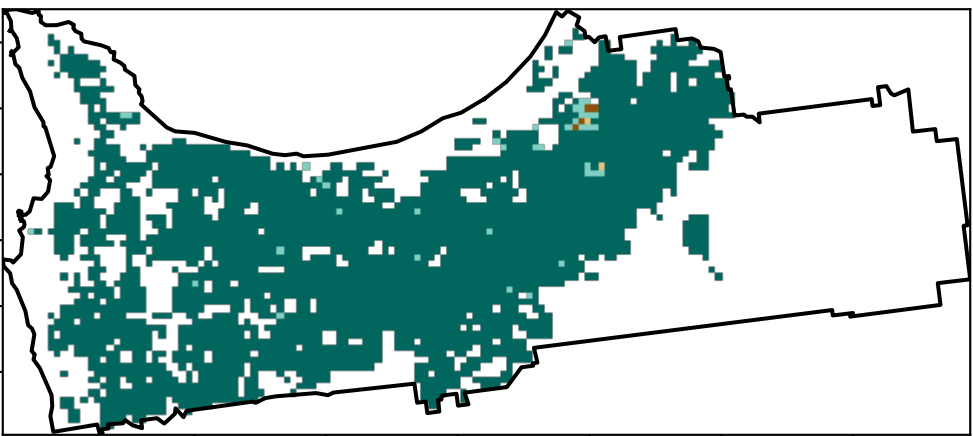
Catchment Scale
Land Use and Forests
of Australia (2018)
Derived from
Catchment Scale Land
Use of Australia
(2018) and Forests
of Australia (2018)



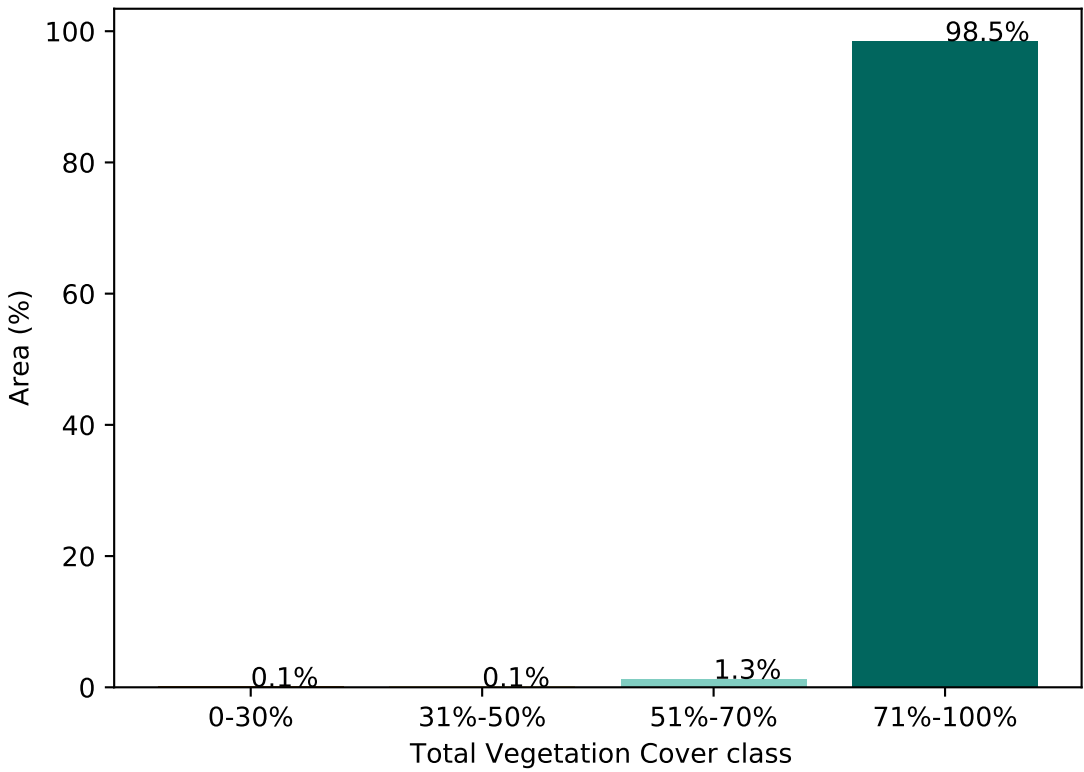
Proportion of each land class in area



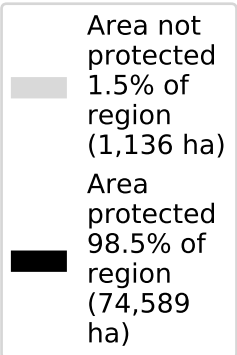
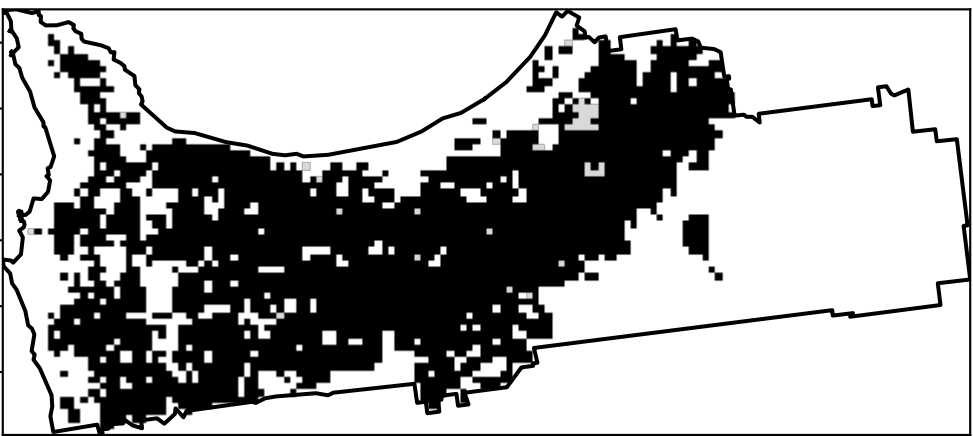
Total Vegetation Cover [%]



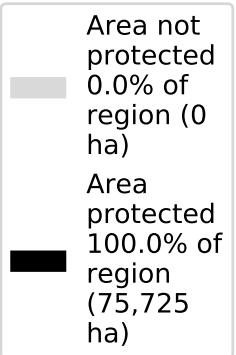
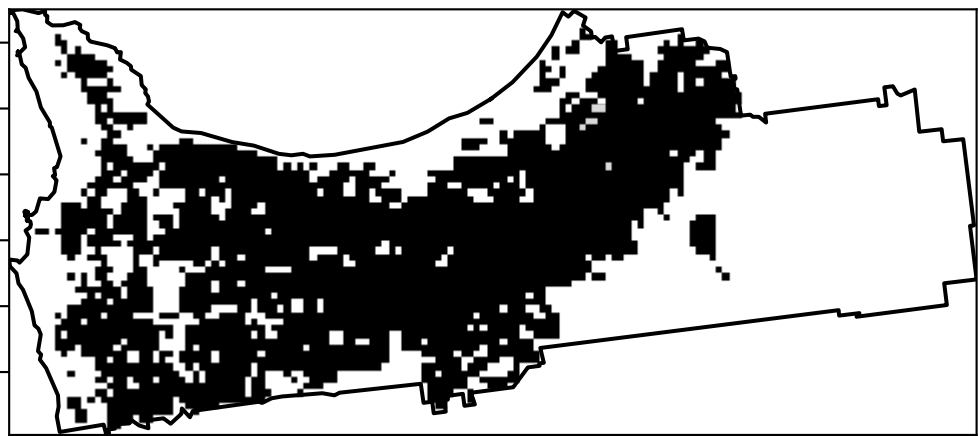
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

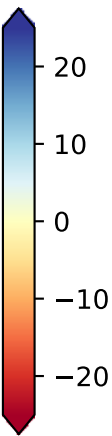
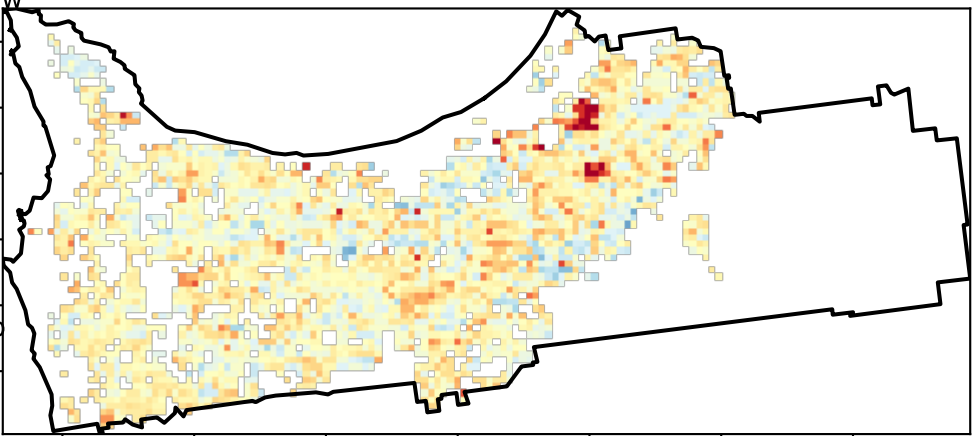


% Area protected from wind erosion (>50%)



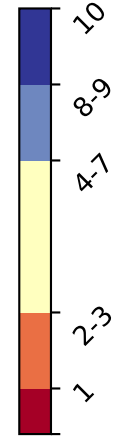
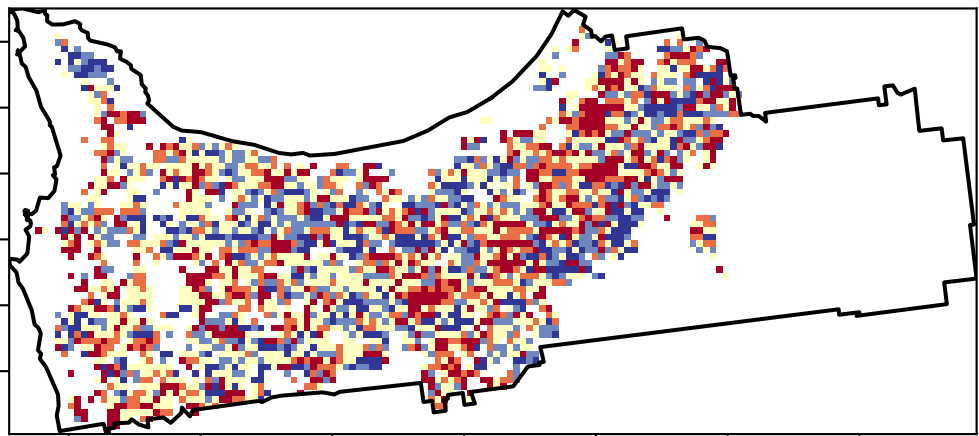
Total Vegetation Cover Anomaly [%]

Anomaly 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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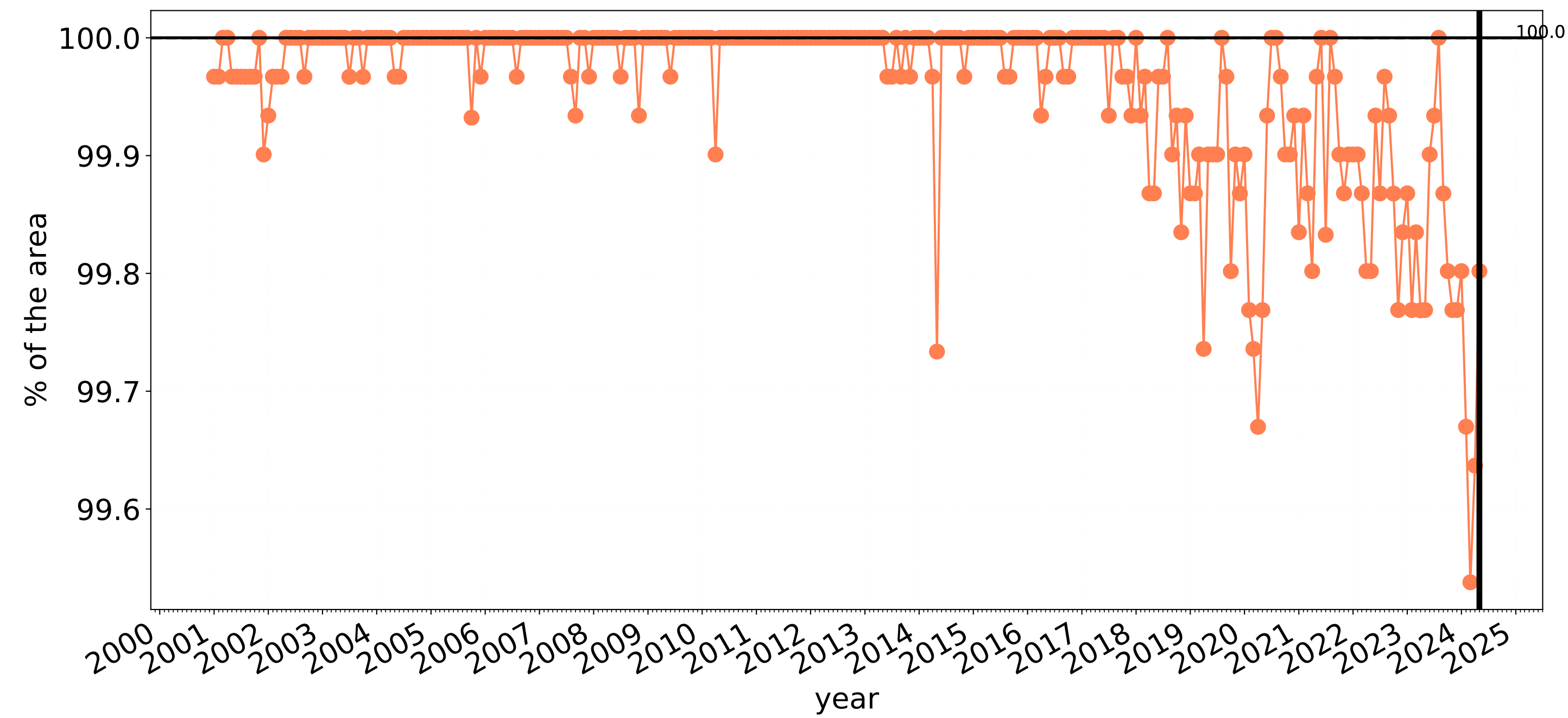
Australian Government

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Programme

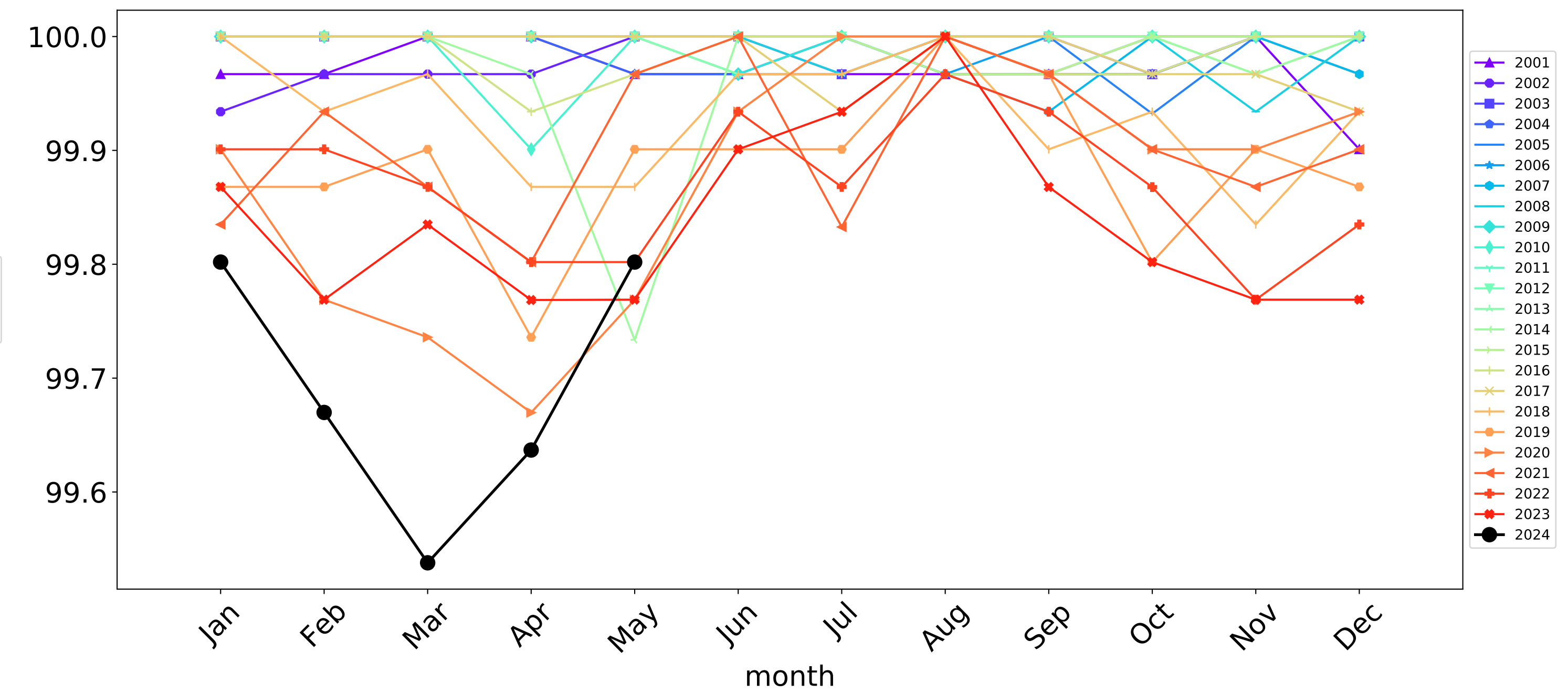


Agriculture timeseries

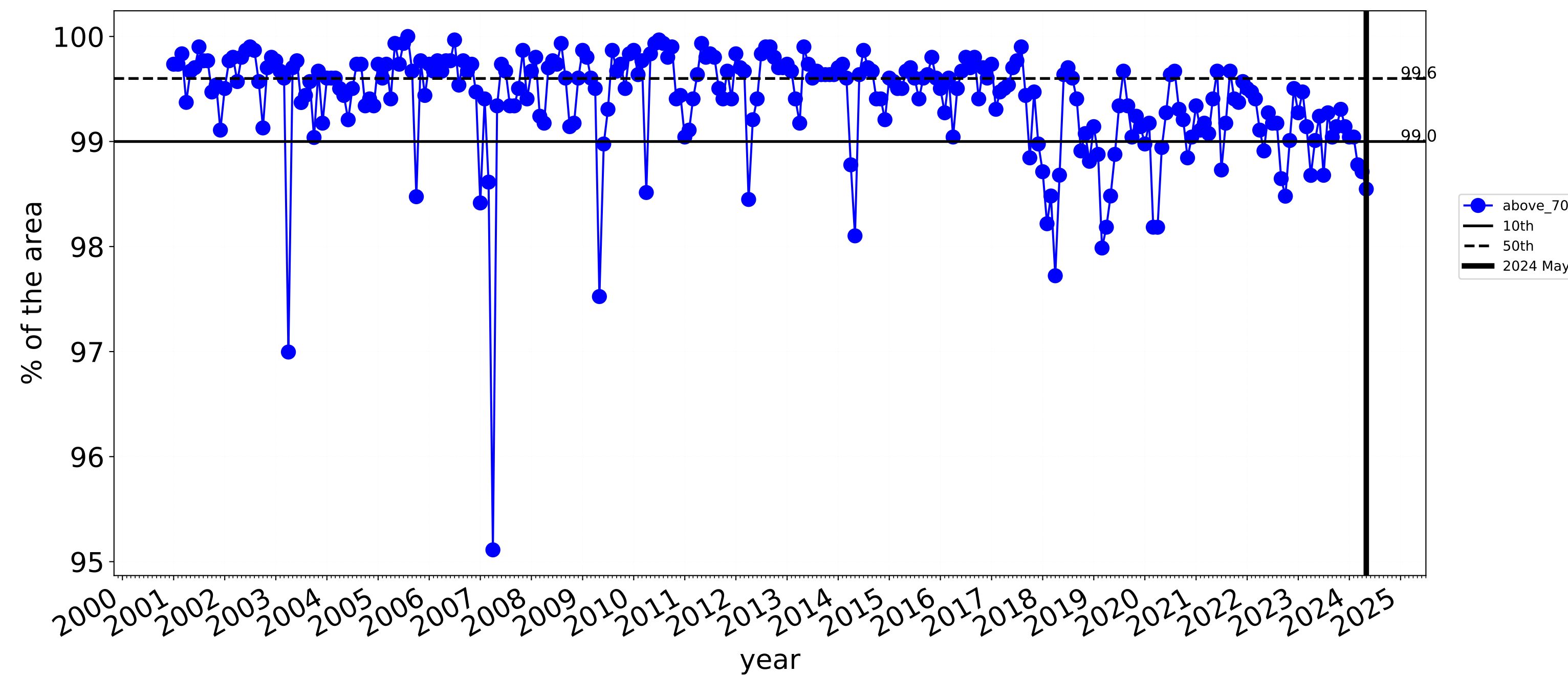
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



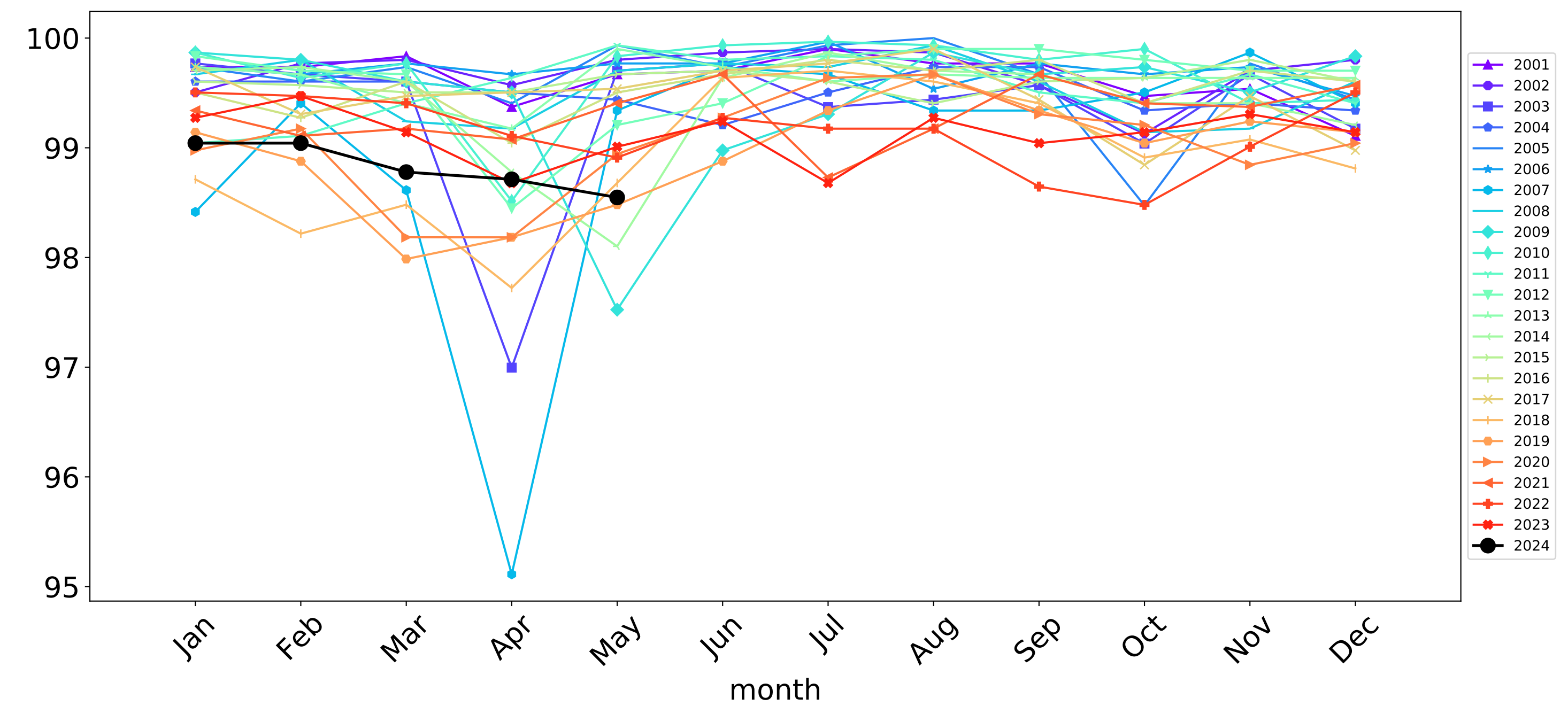
Wind erosion historical monthly area protected (Total Veg Cov >50%)

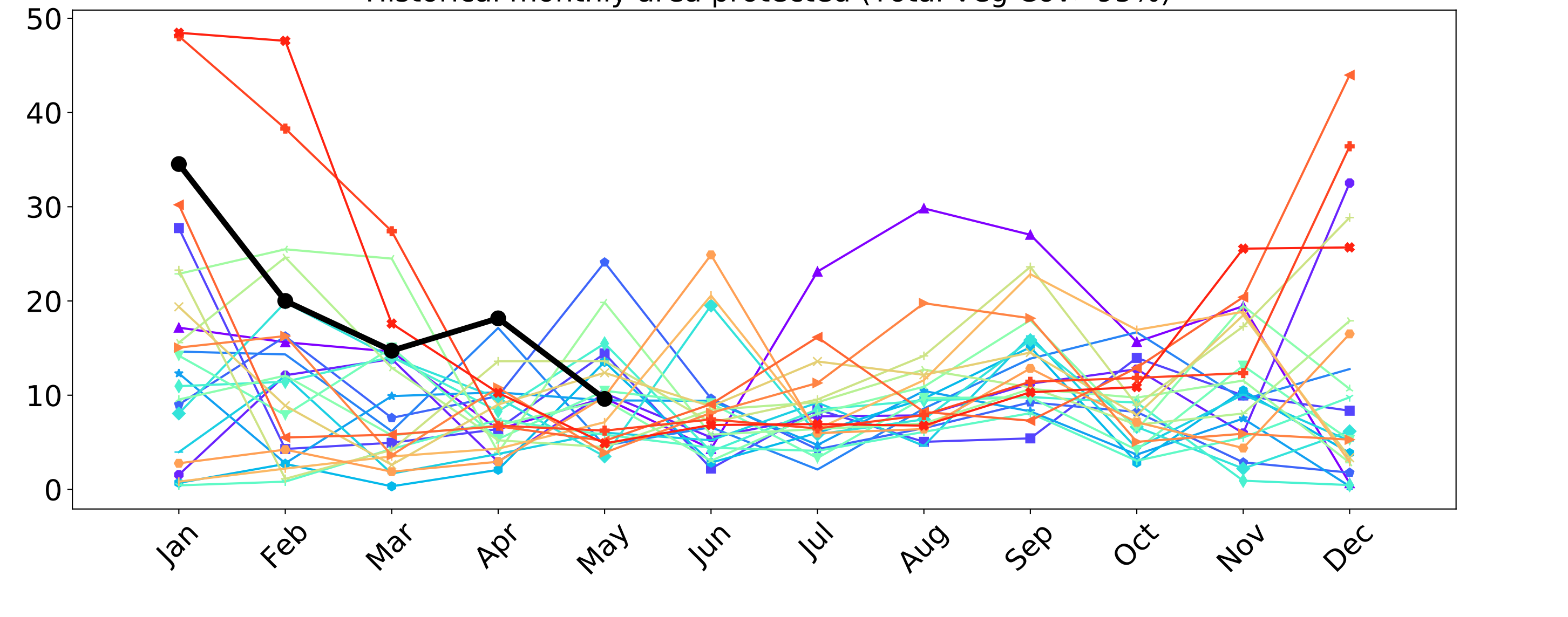
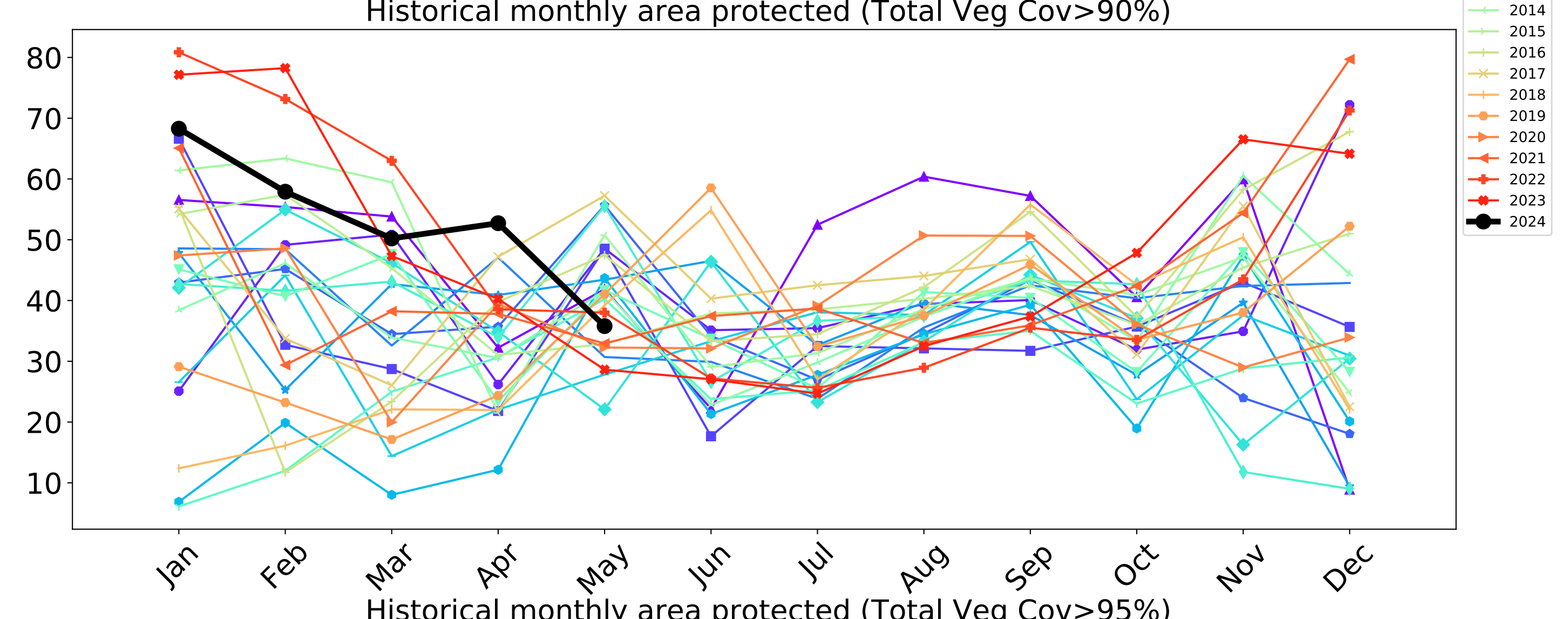
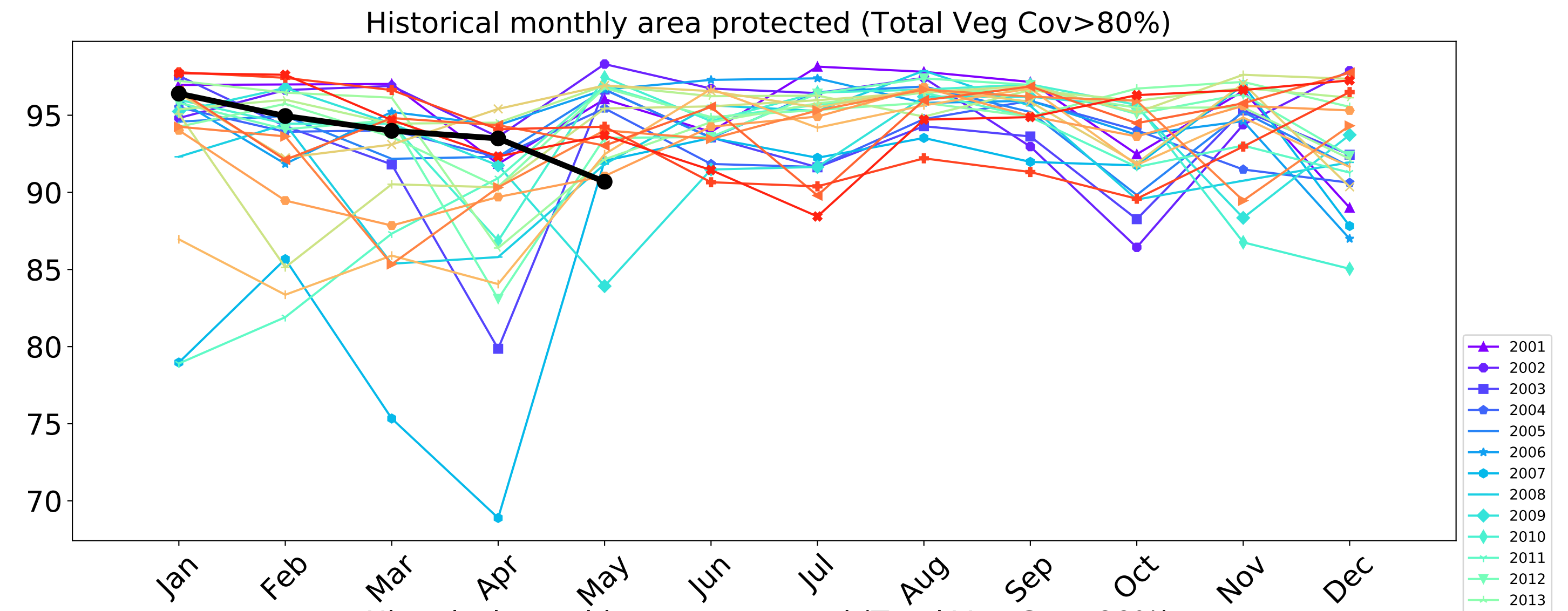
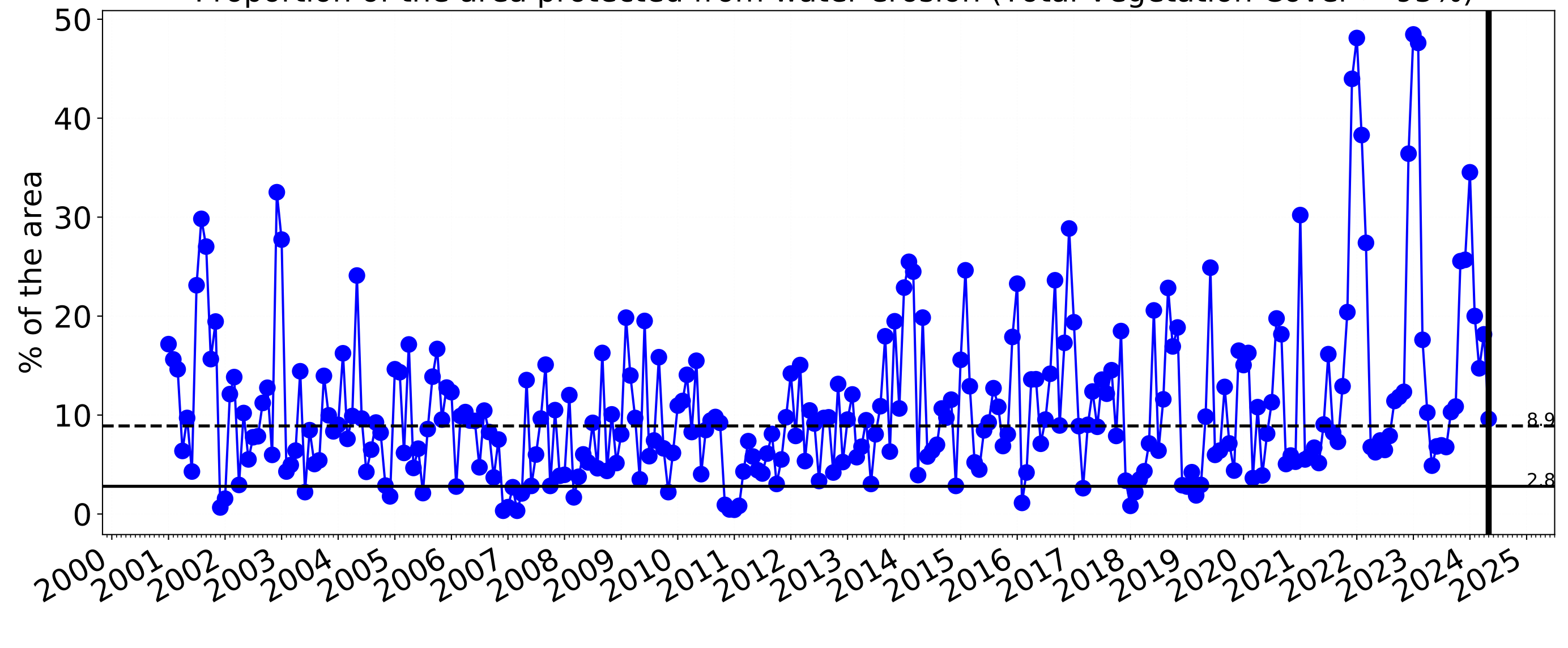
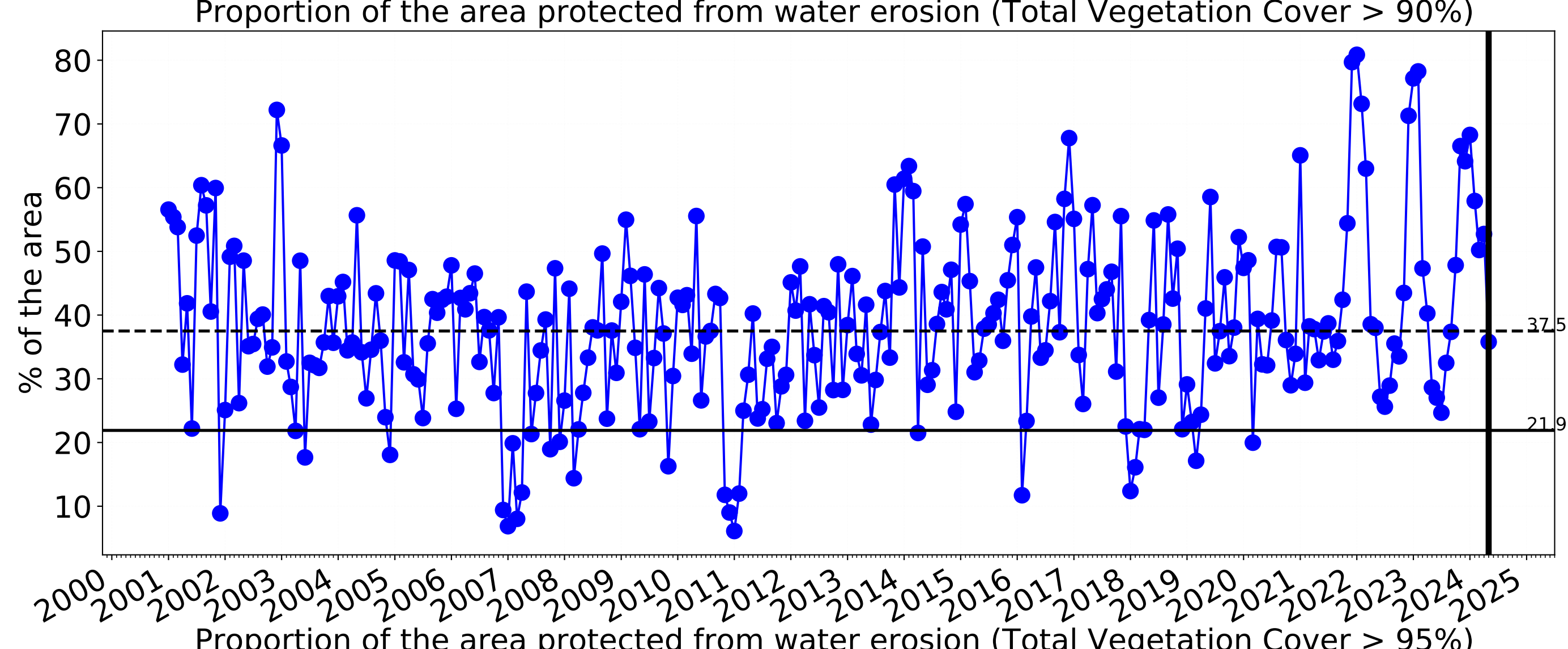
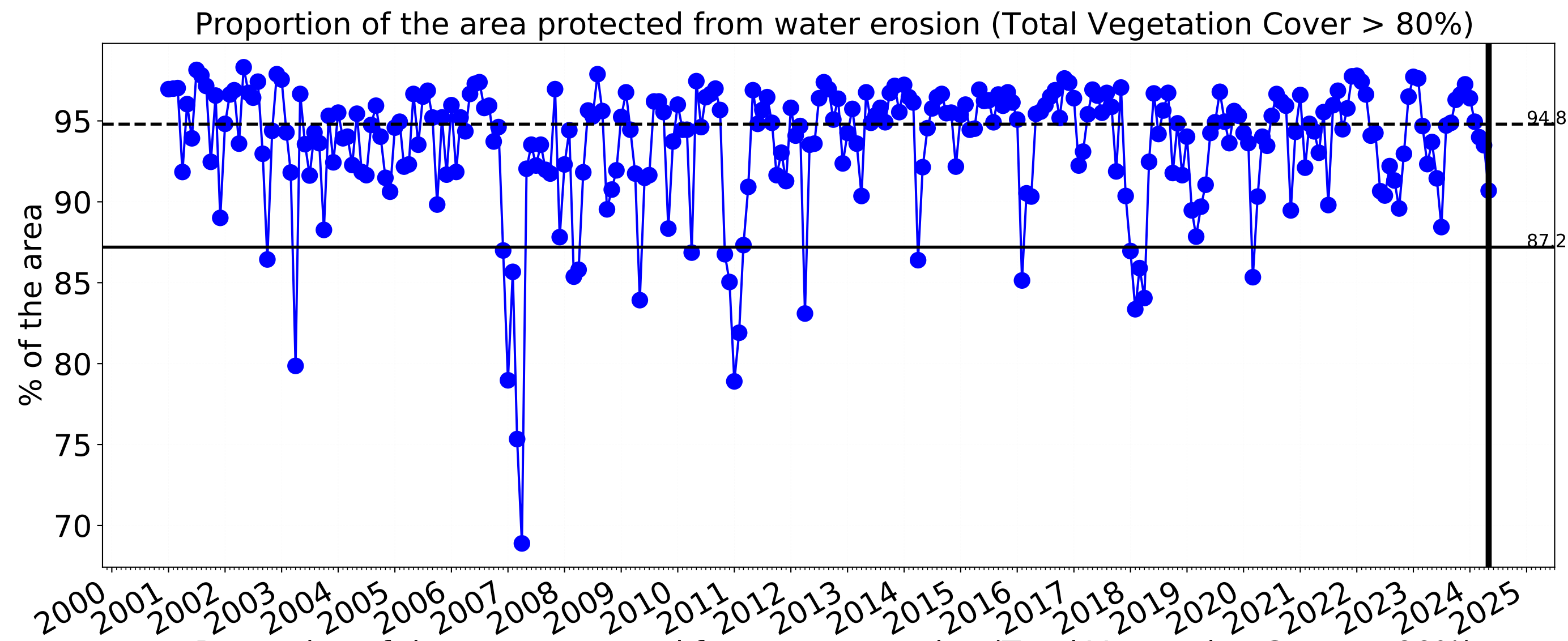


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



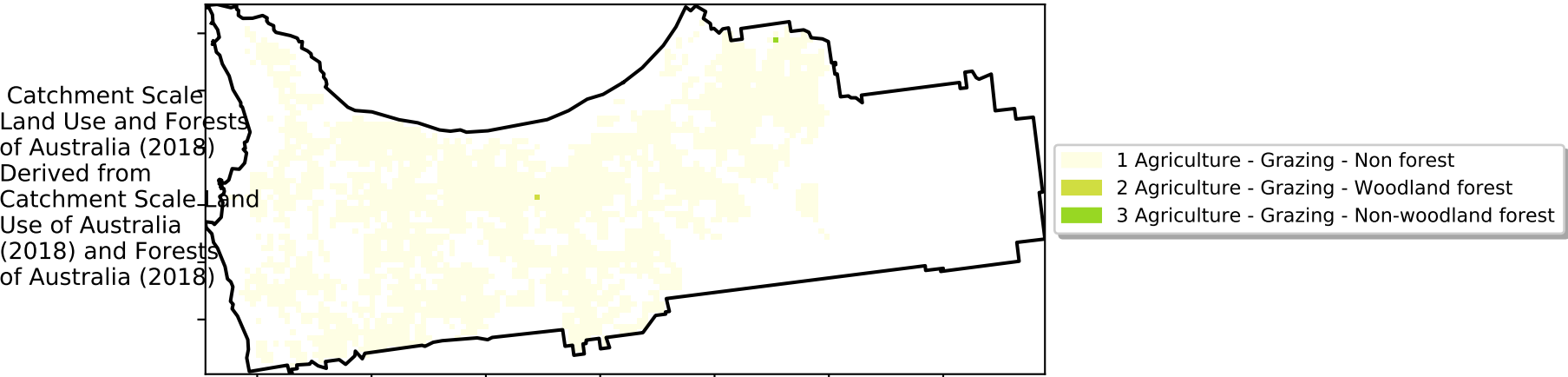
Water erosion historical monthly area protected (Total Veg Cov>70%)



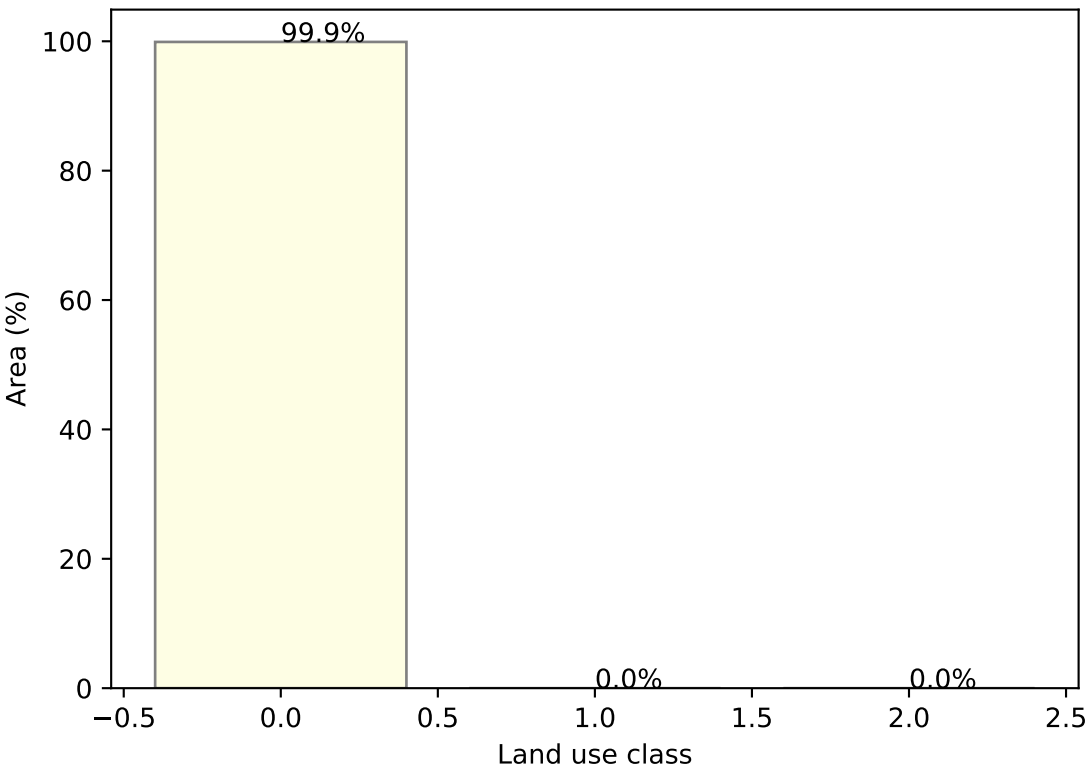


Grazing

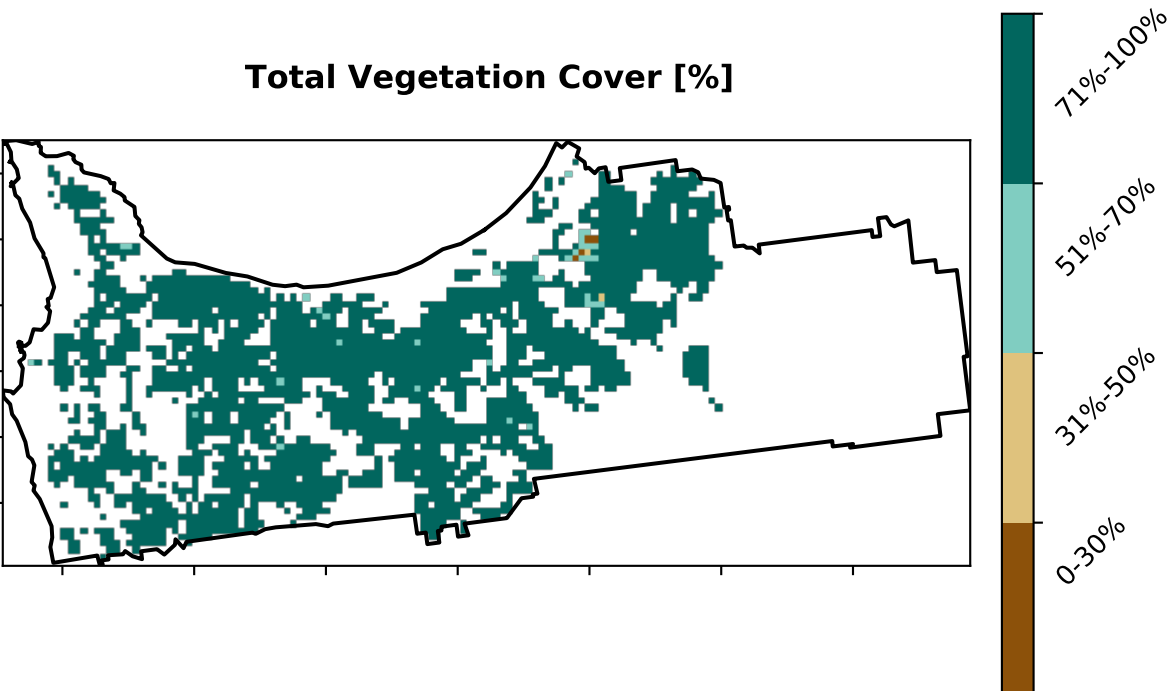
Land use and forest cover



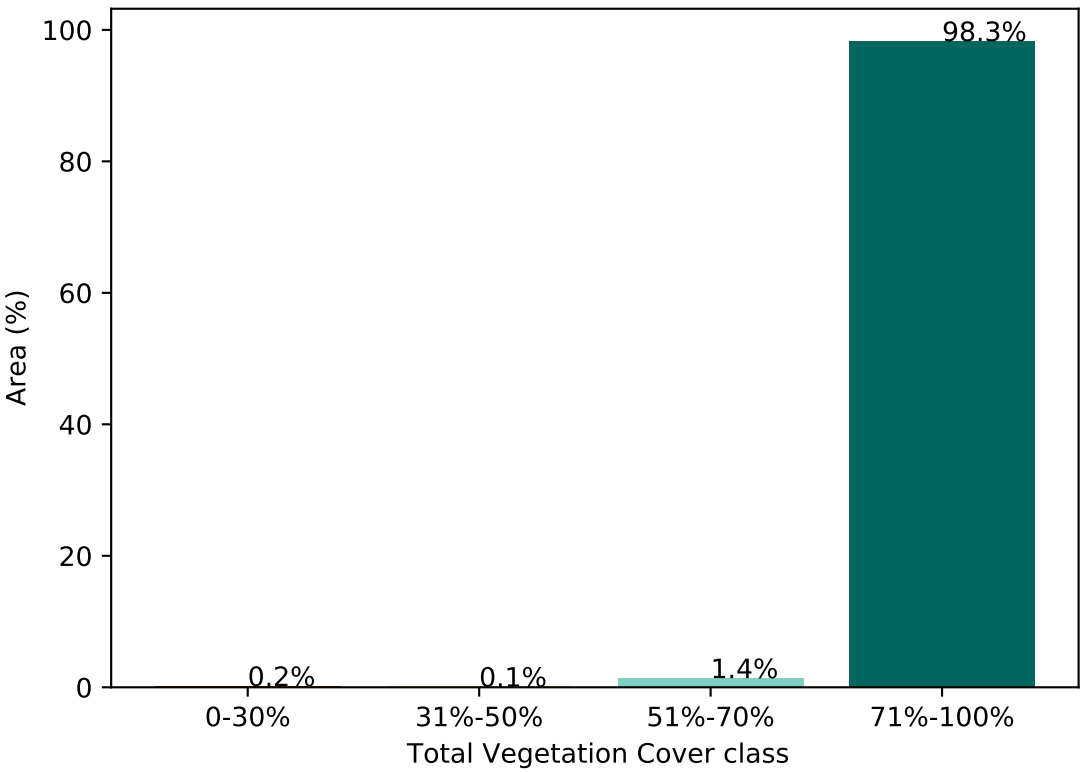
Proportion of each land class in area



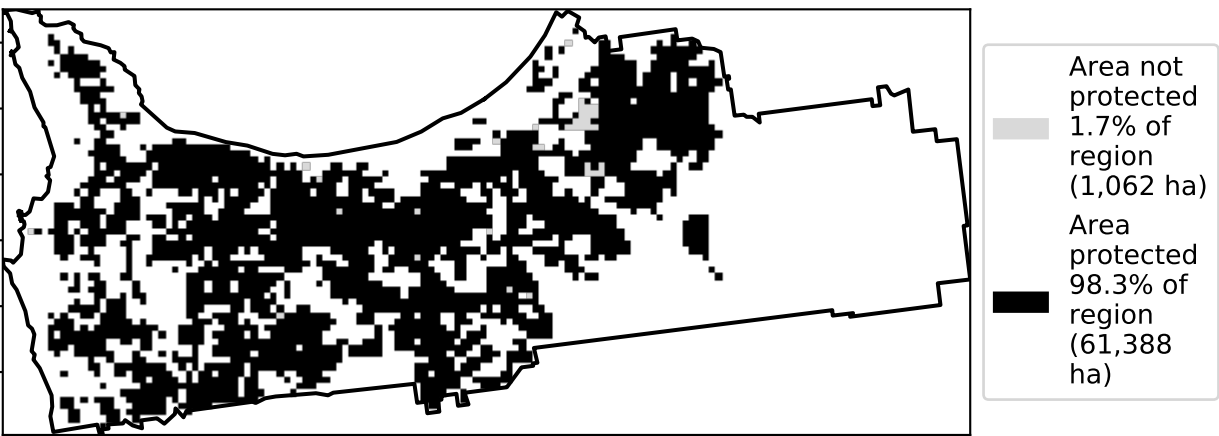
Total Vegetation Cover [%]



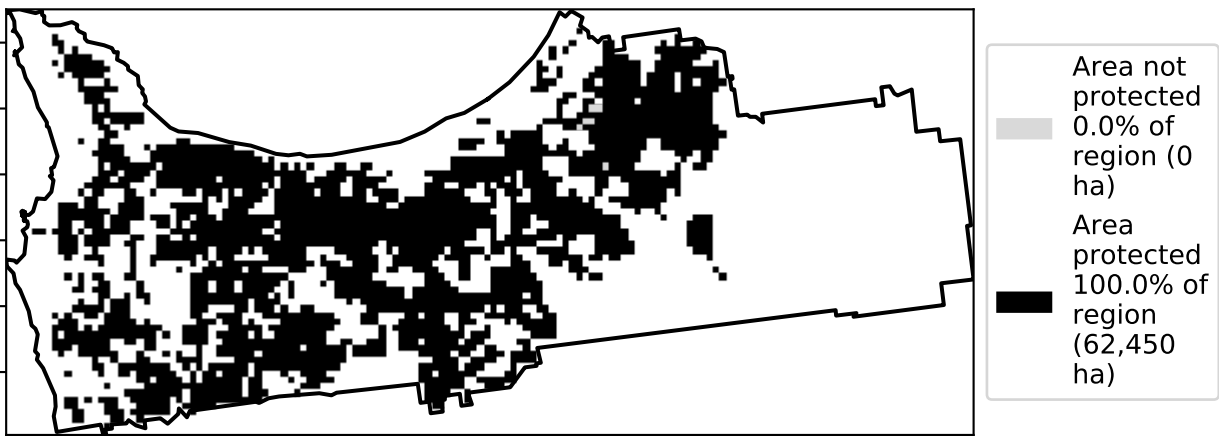
Proportion of vegetation cover class in area



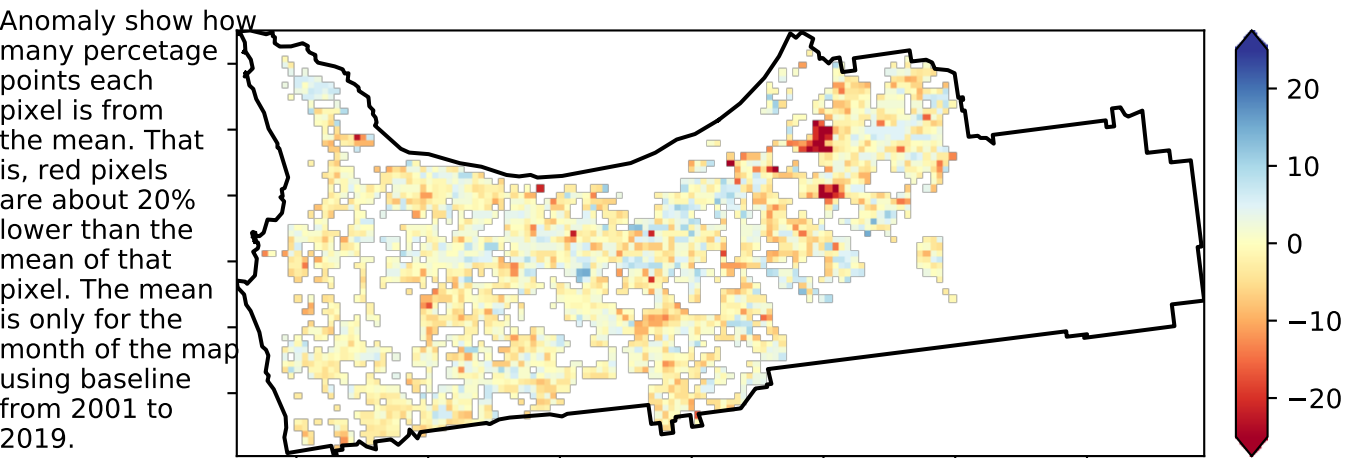
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

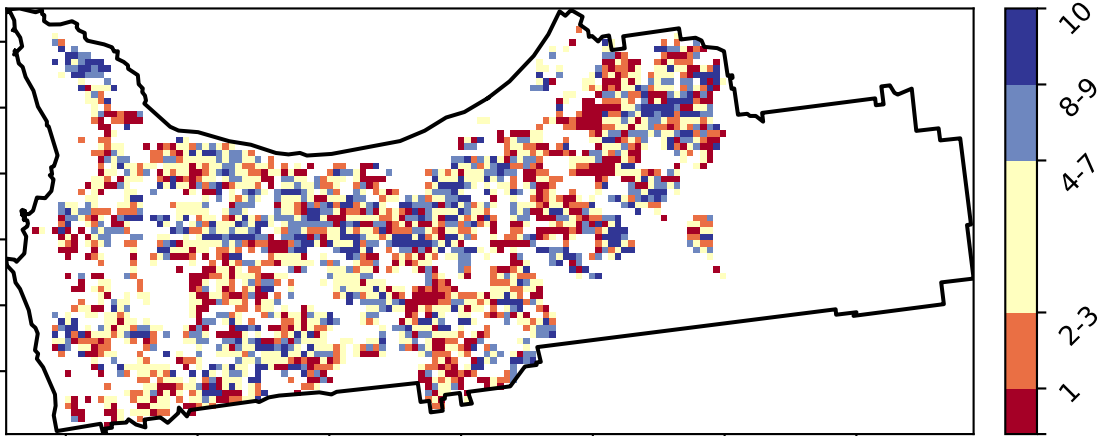


Total Vegetation Cover Anomaly [%]



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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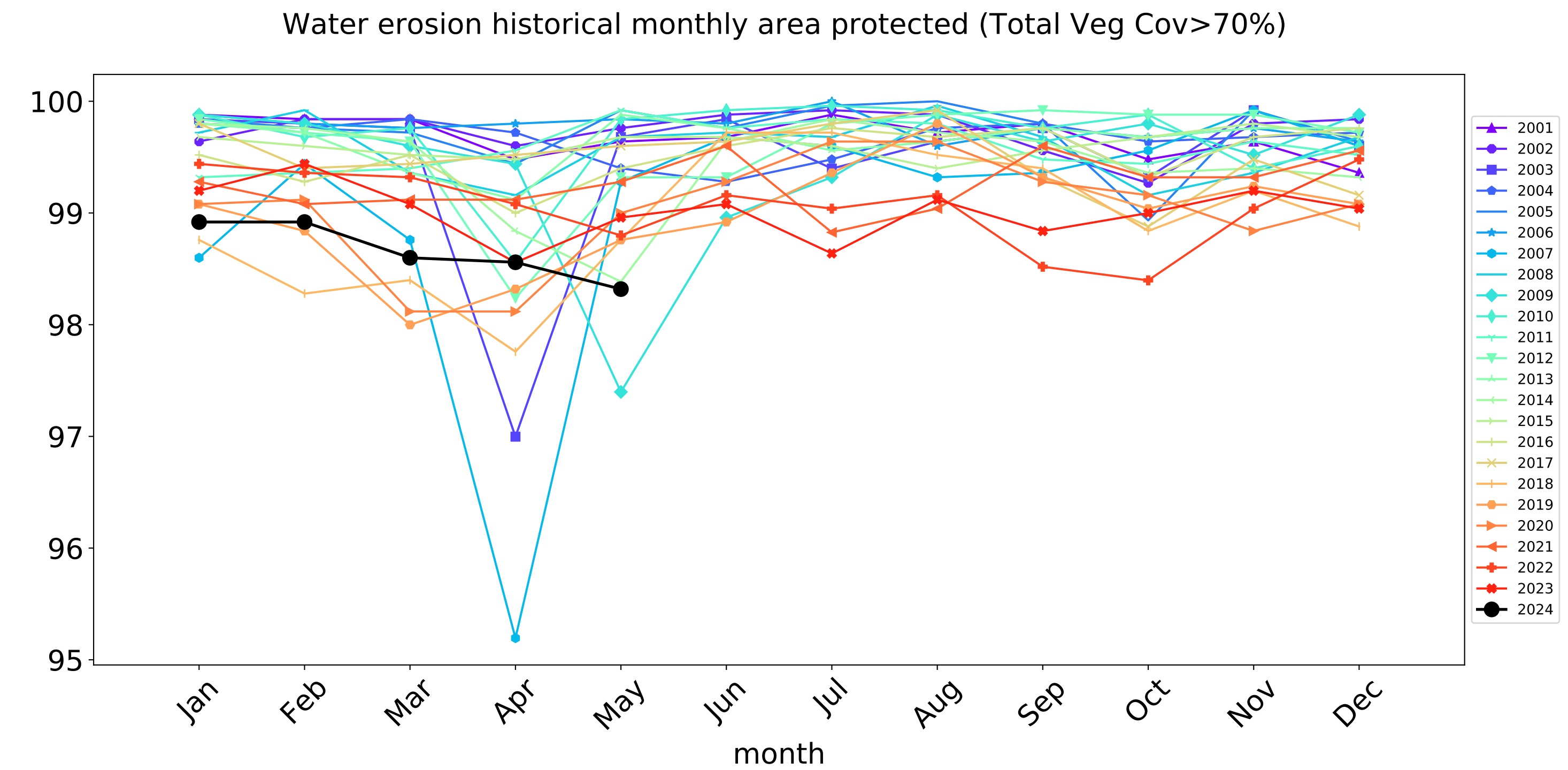
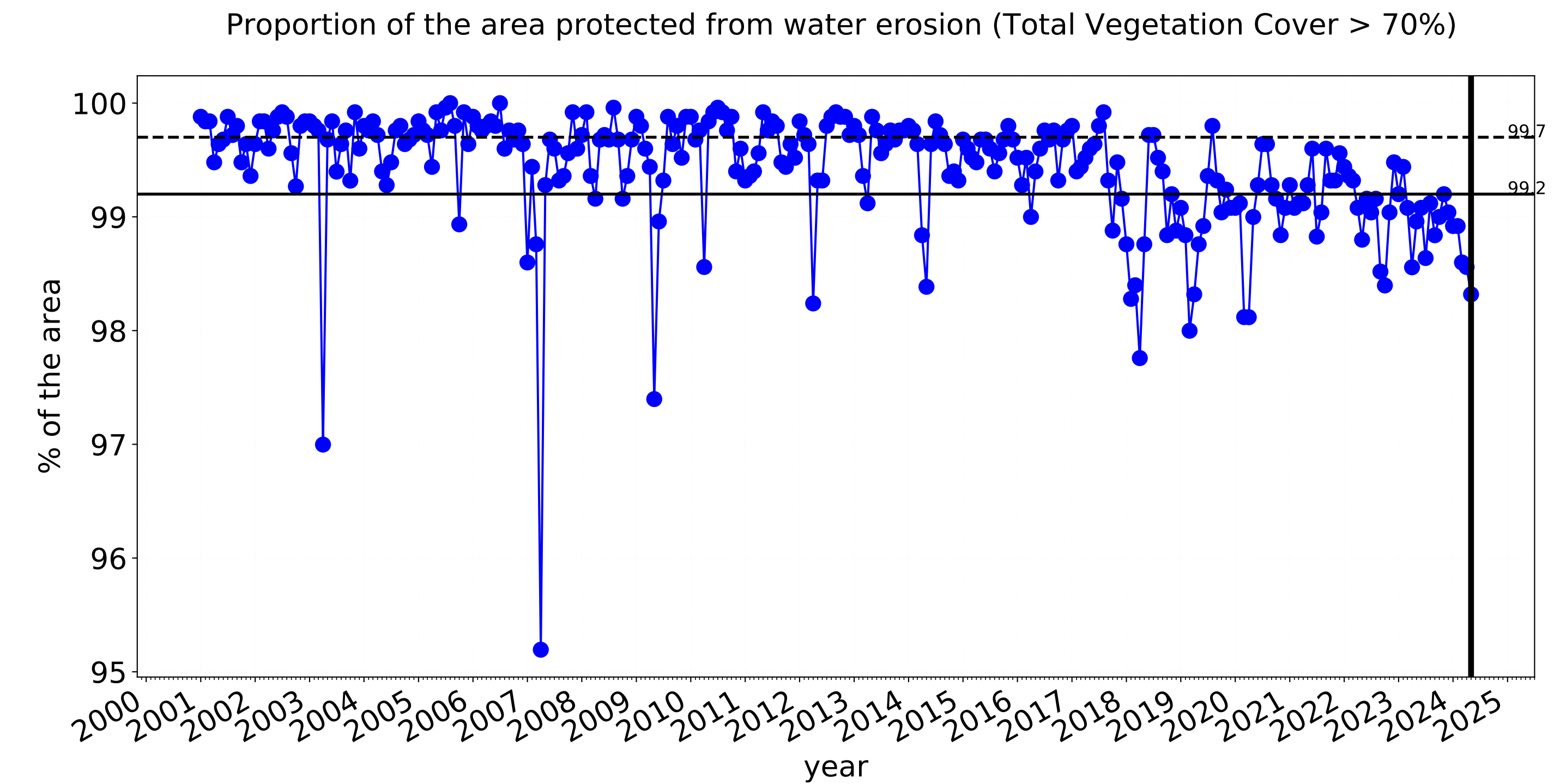
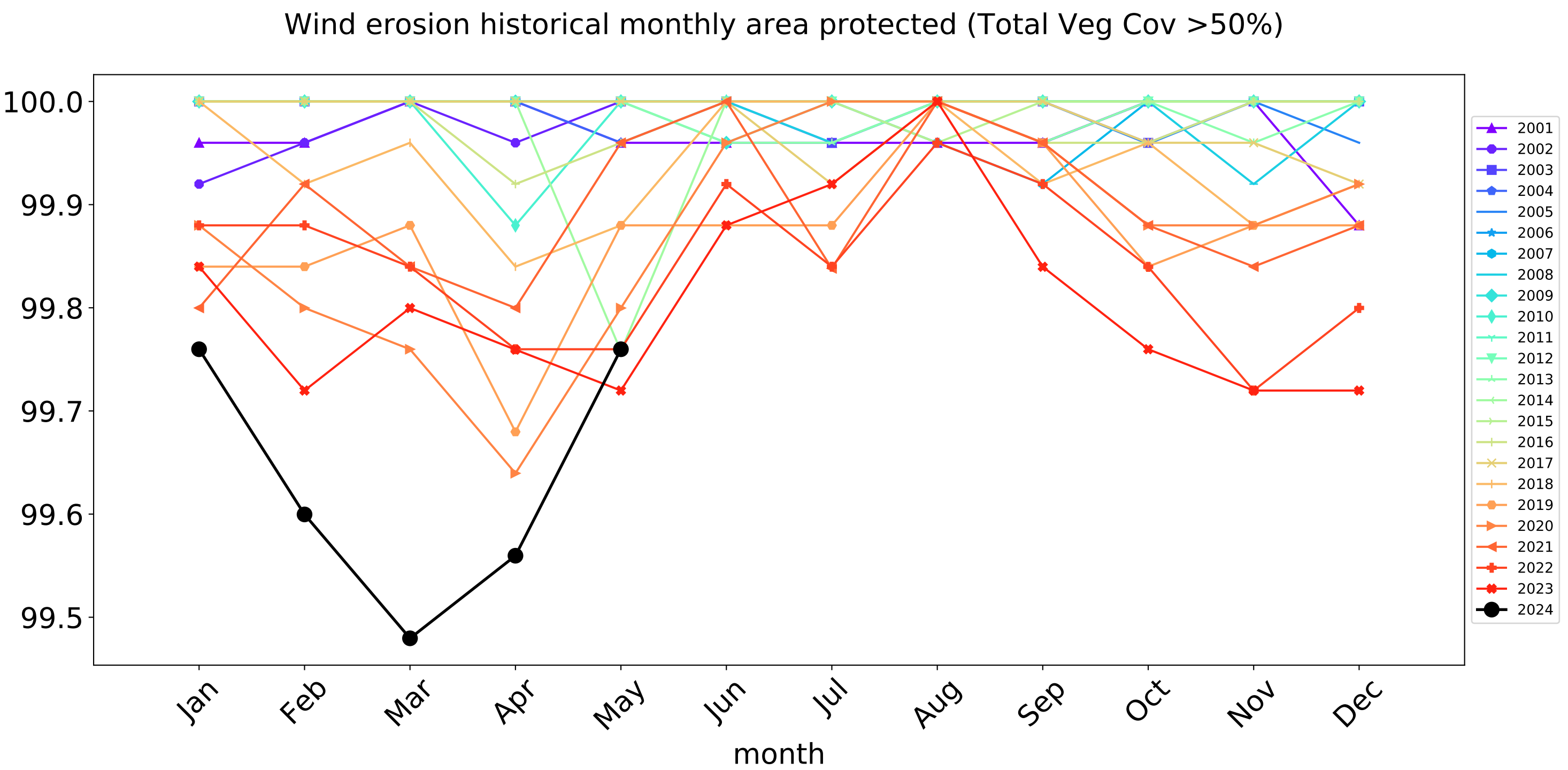
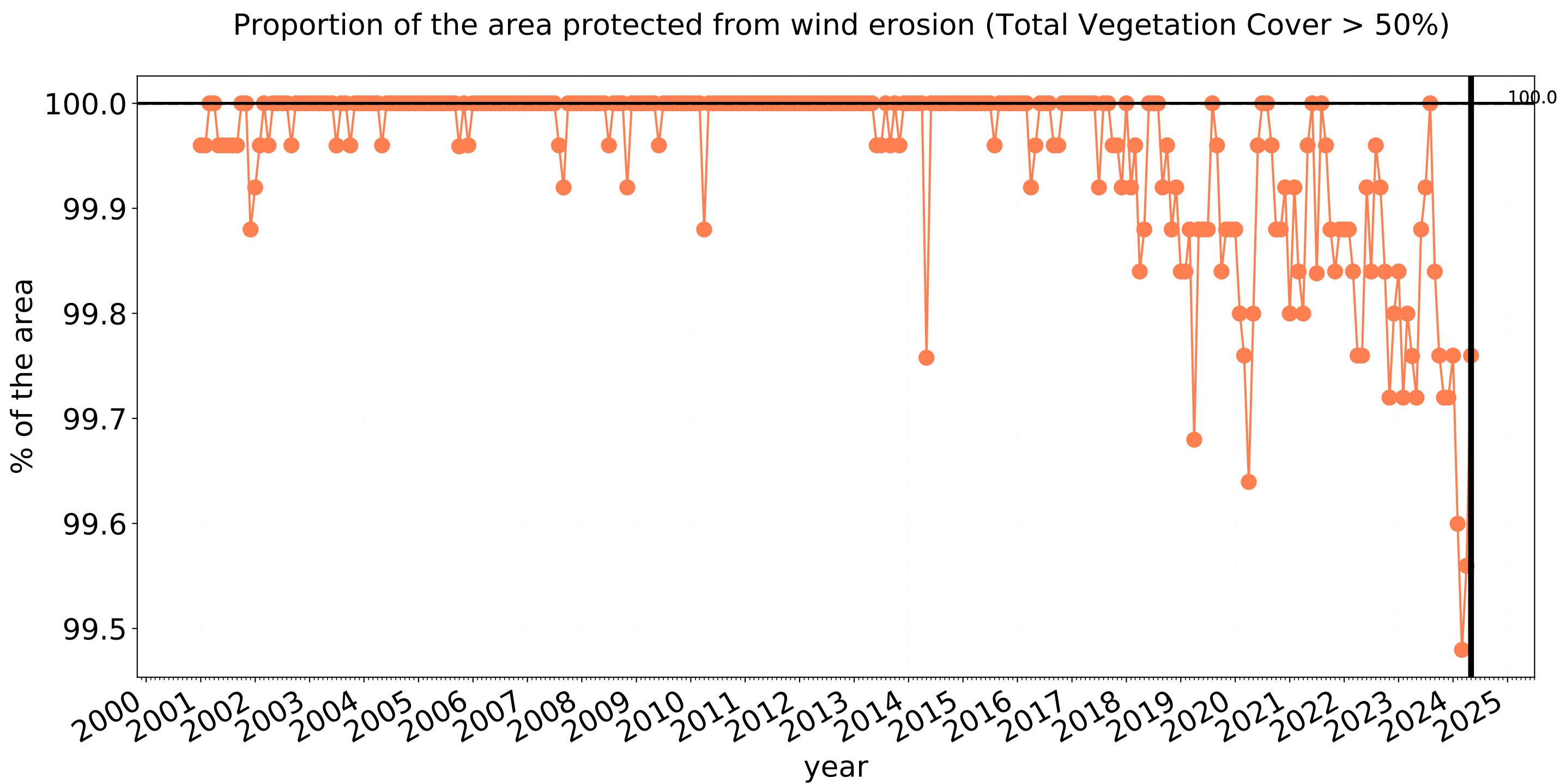


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Grazing timeseries

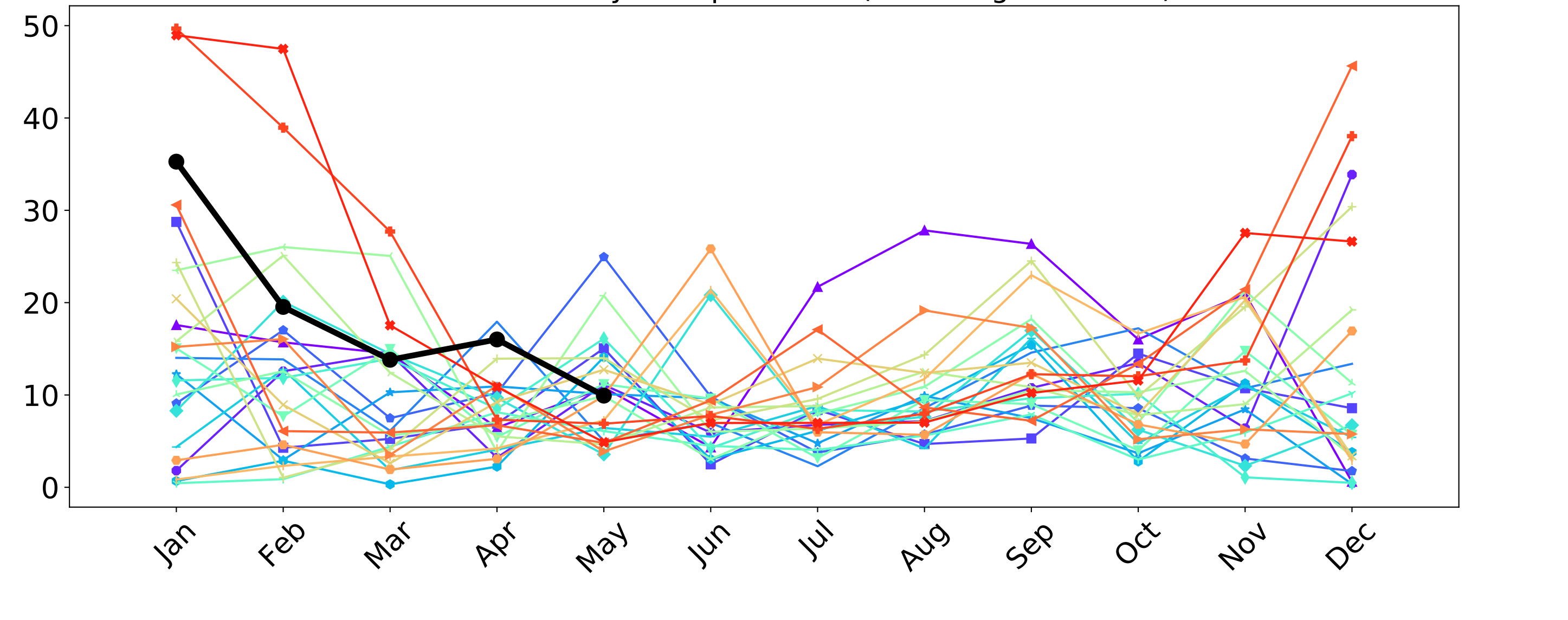
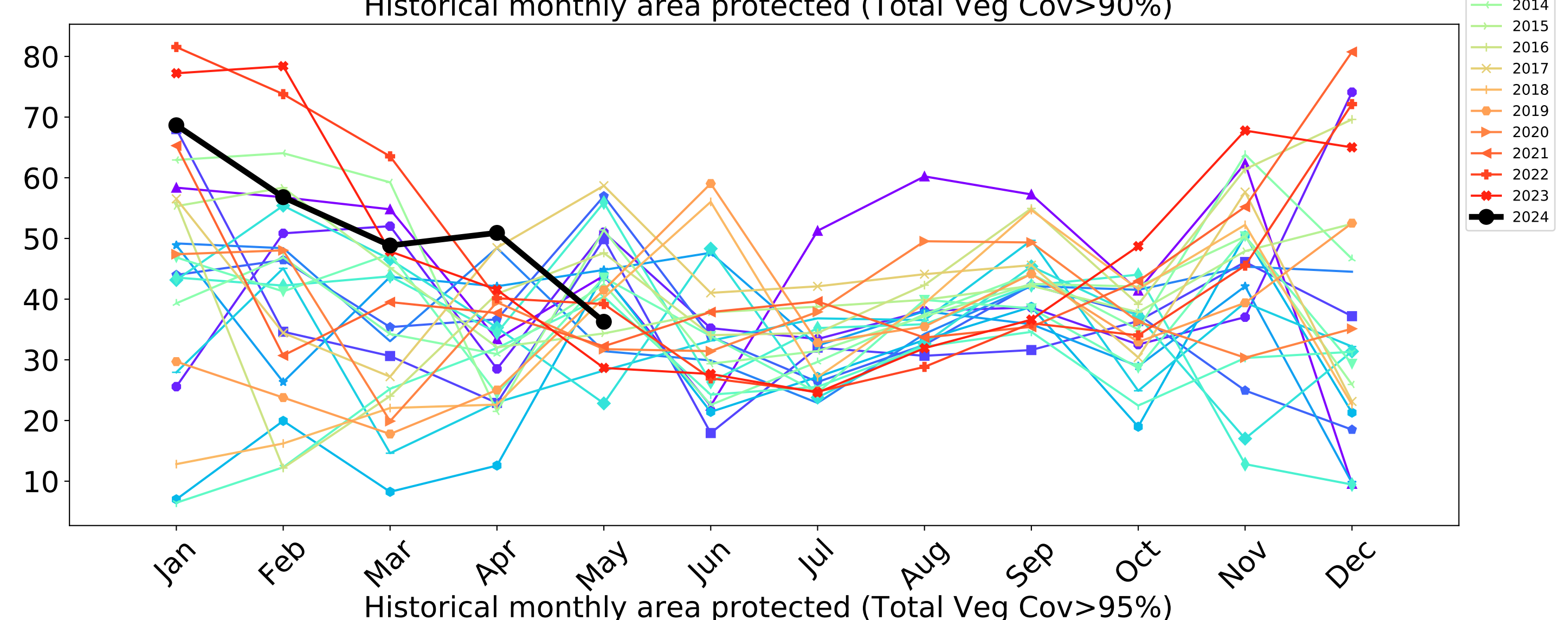
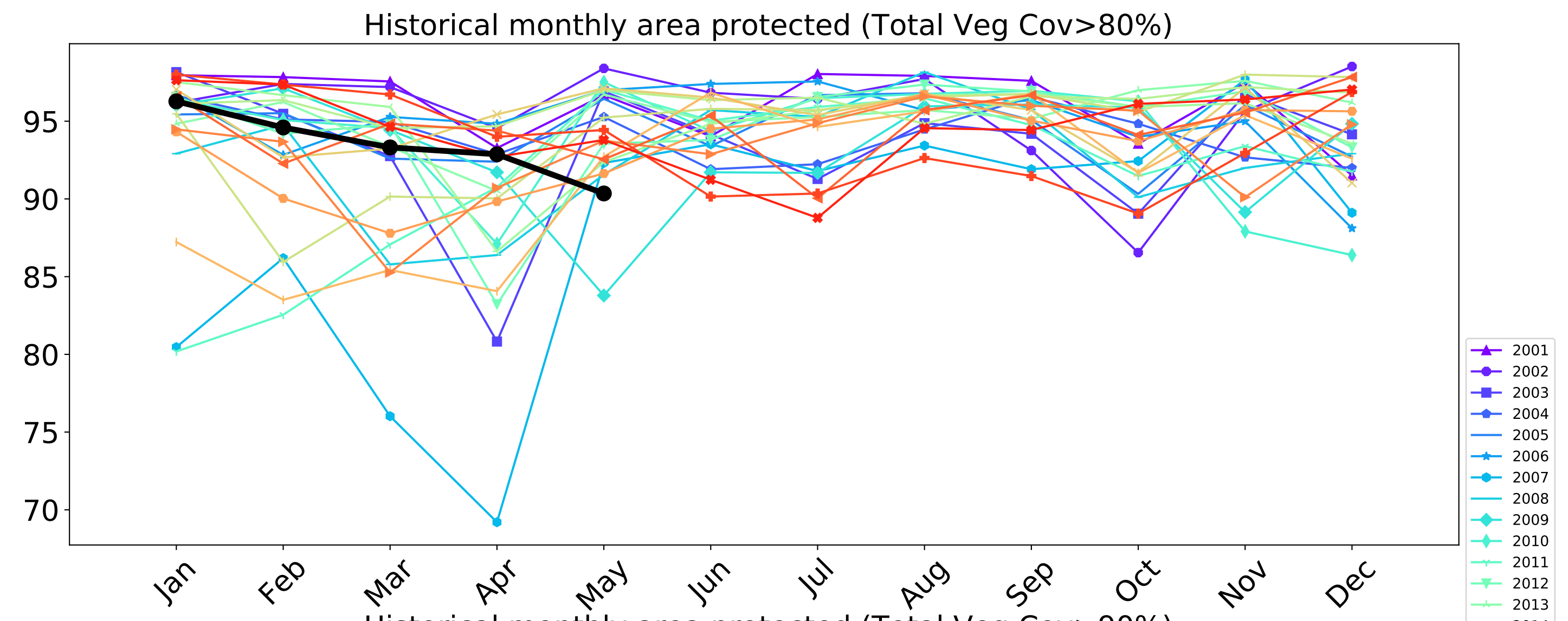
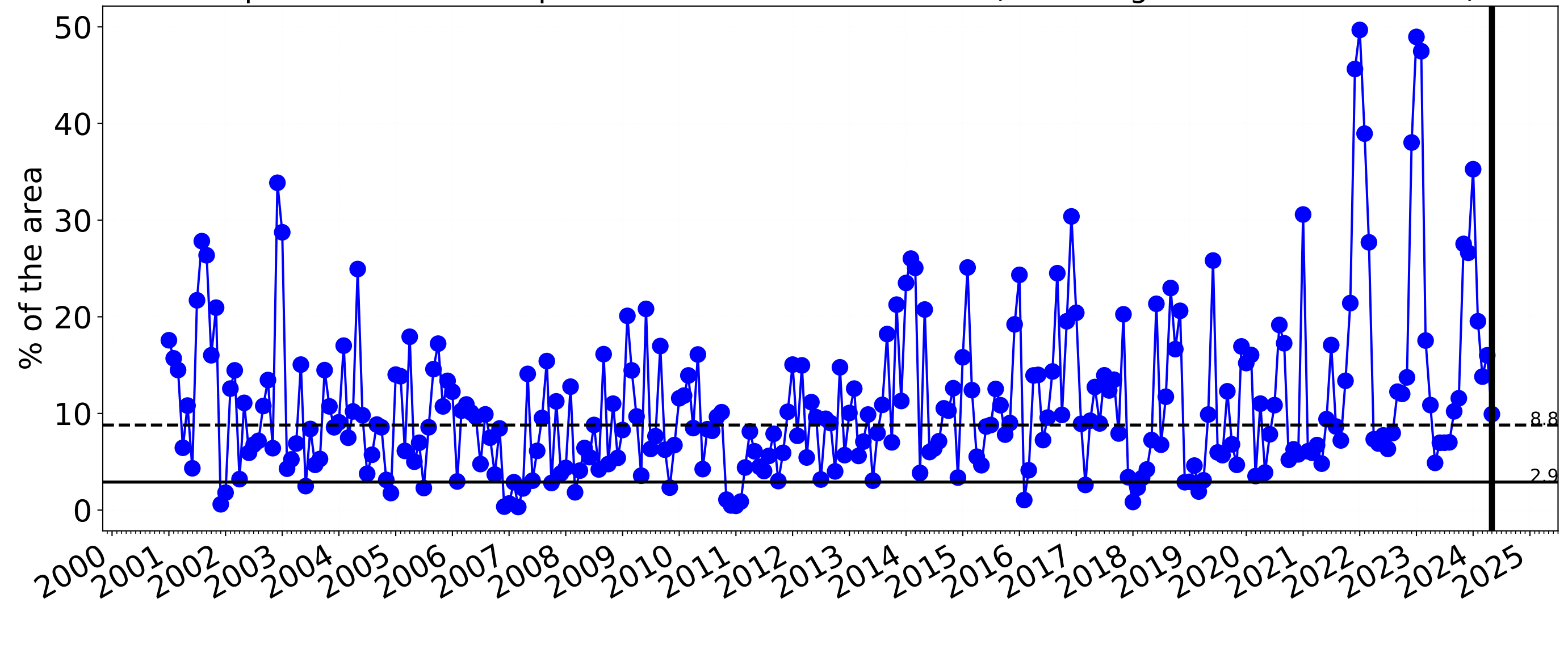
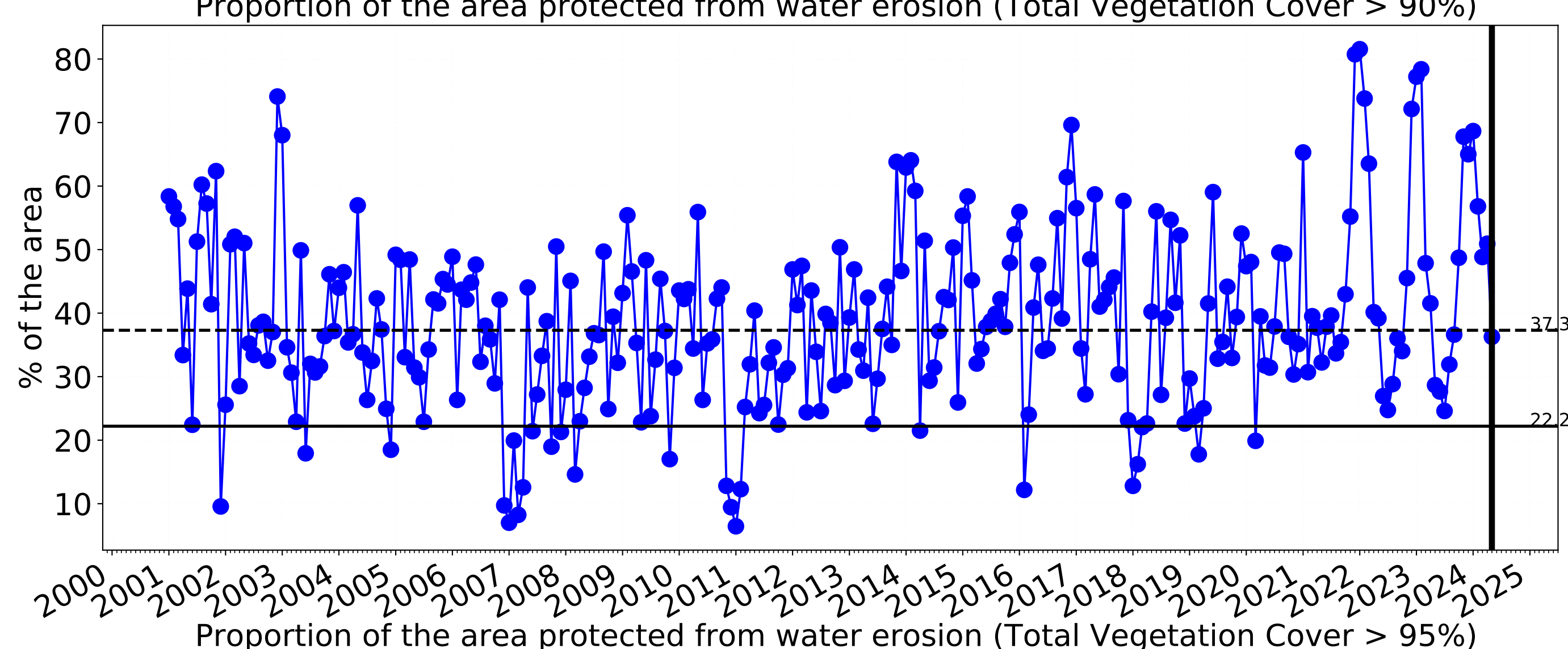
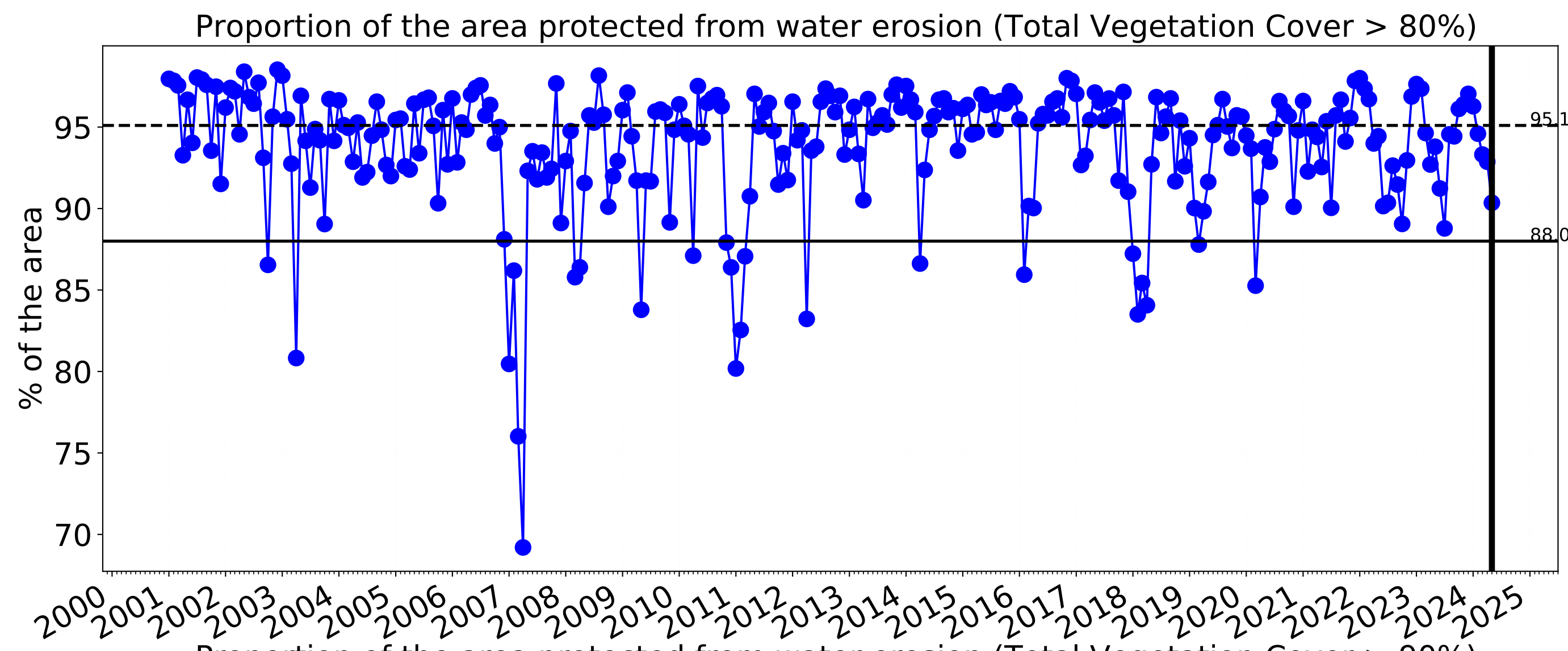


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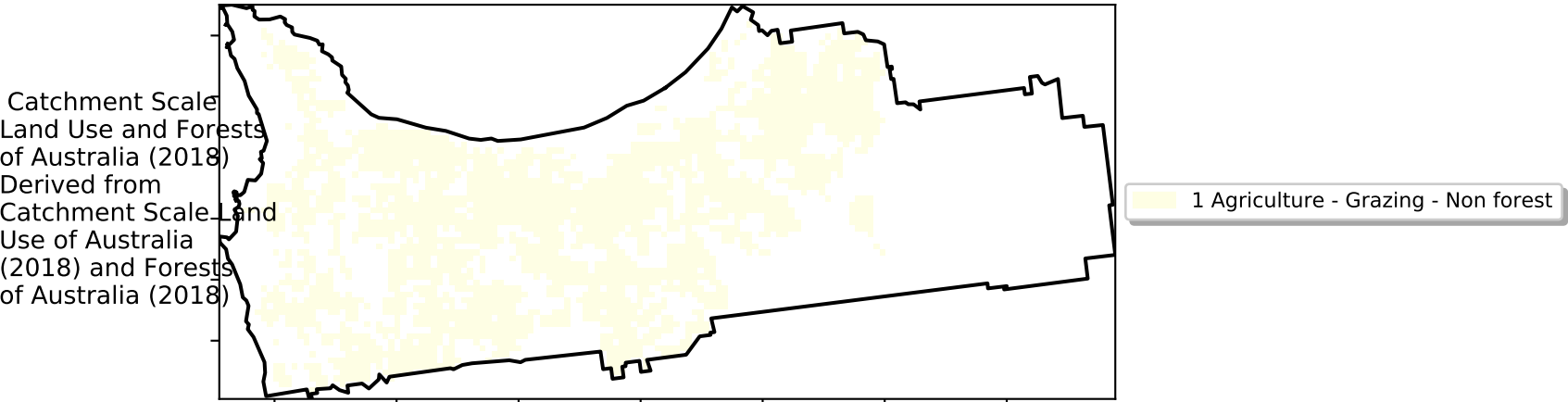
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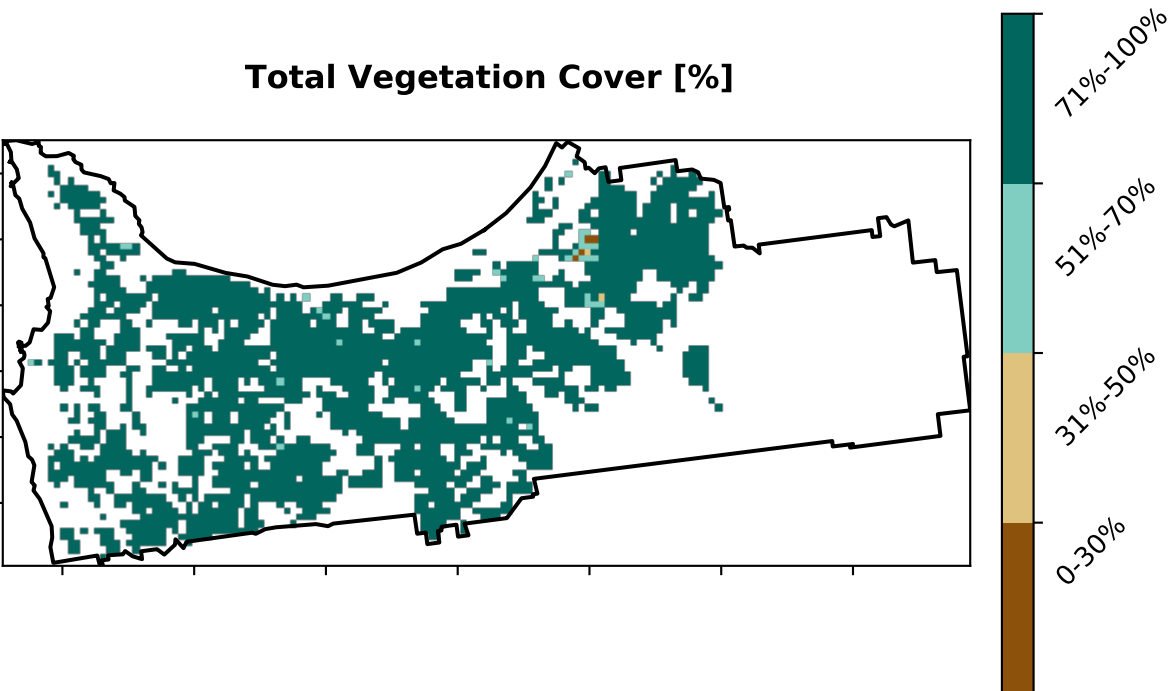


Grazing non forest

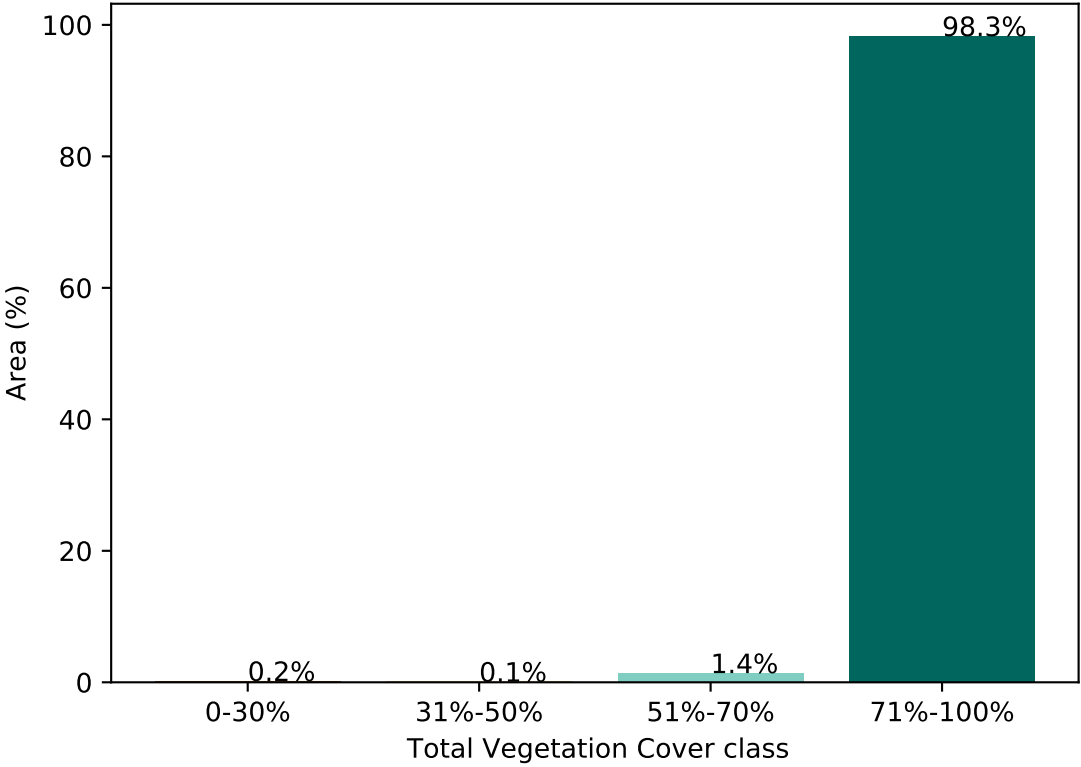
Land use and forest cover



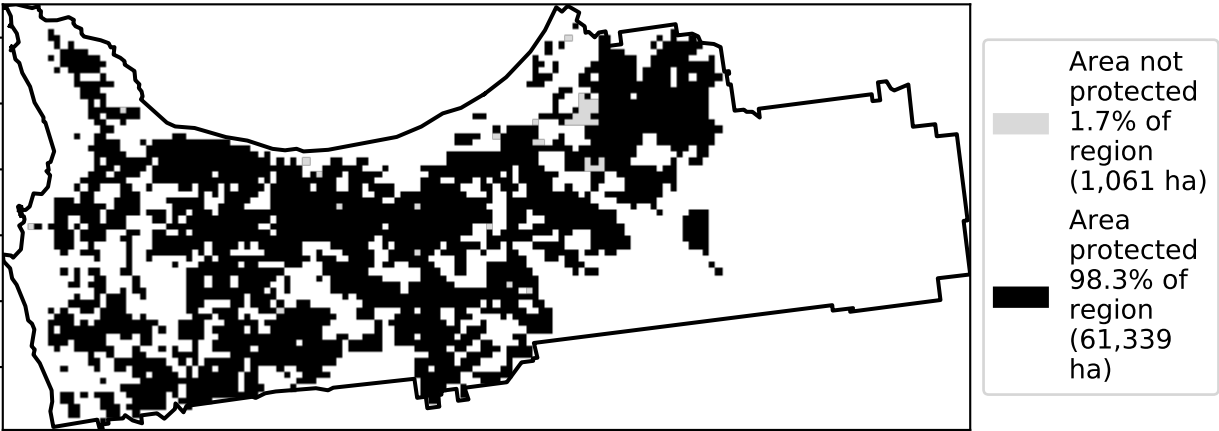
Total Vegetation Cover [%]



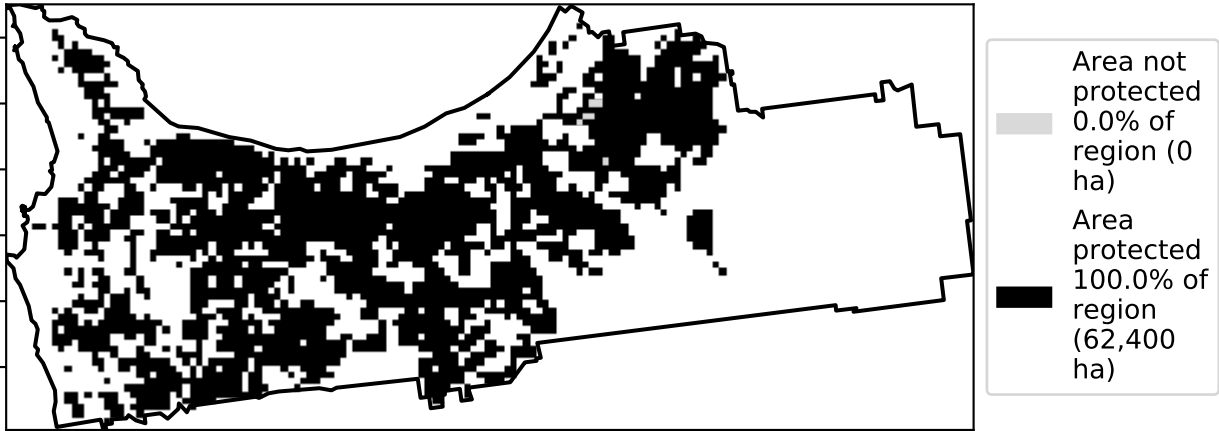
Proportion of vegetation cover class in area



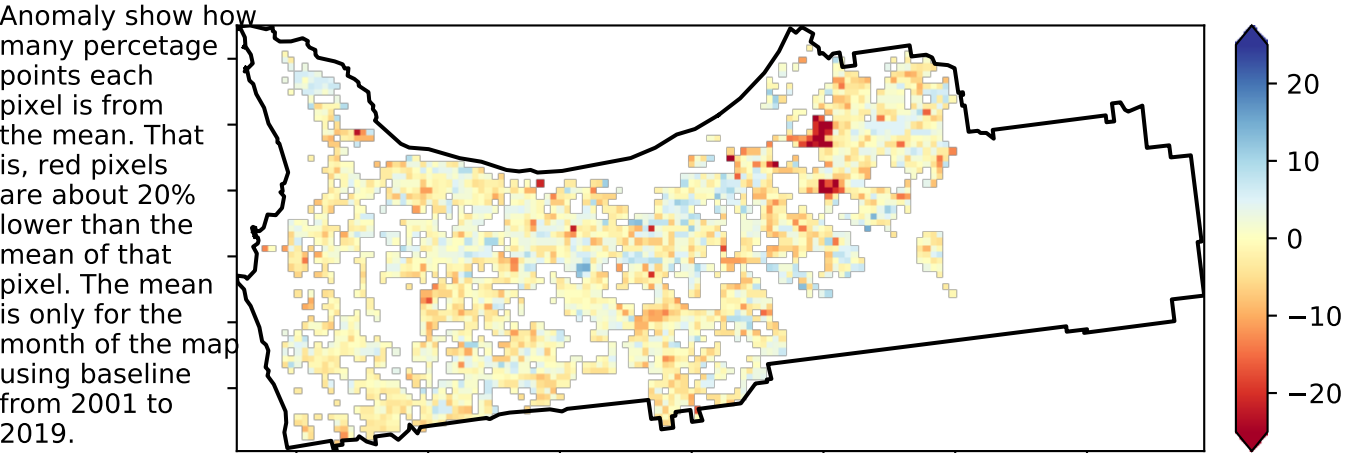
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

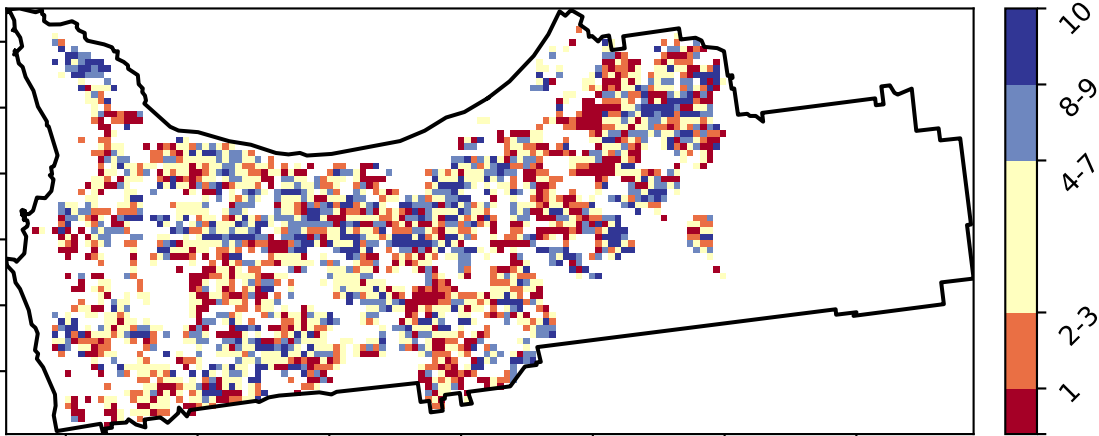


Total Vegetation Cover Anomaly [%]

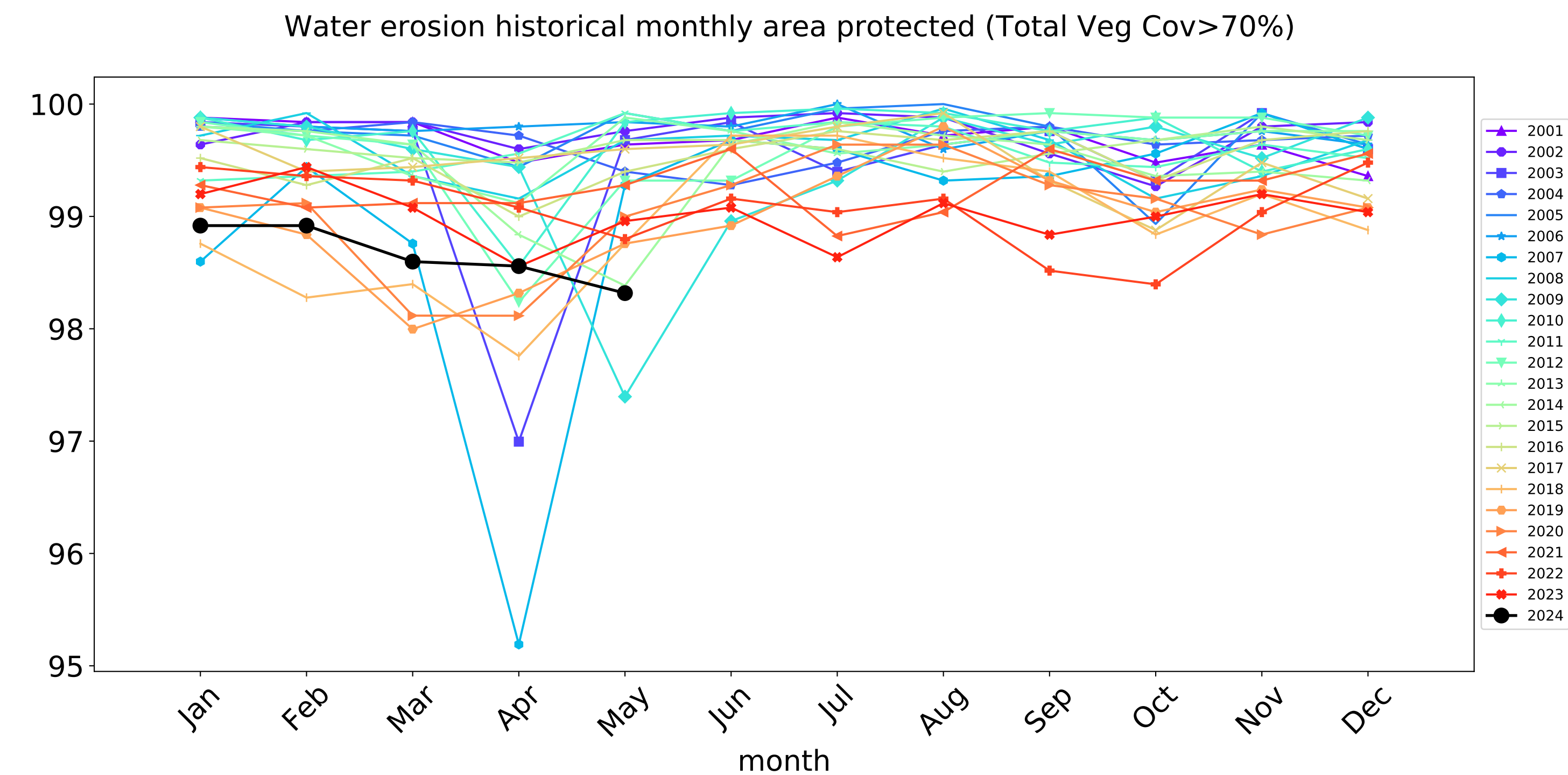
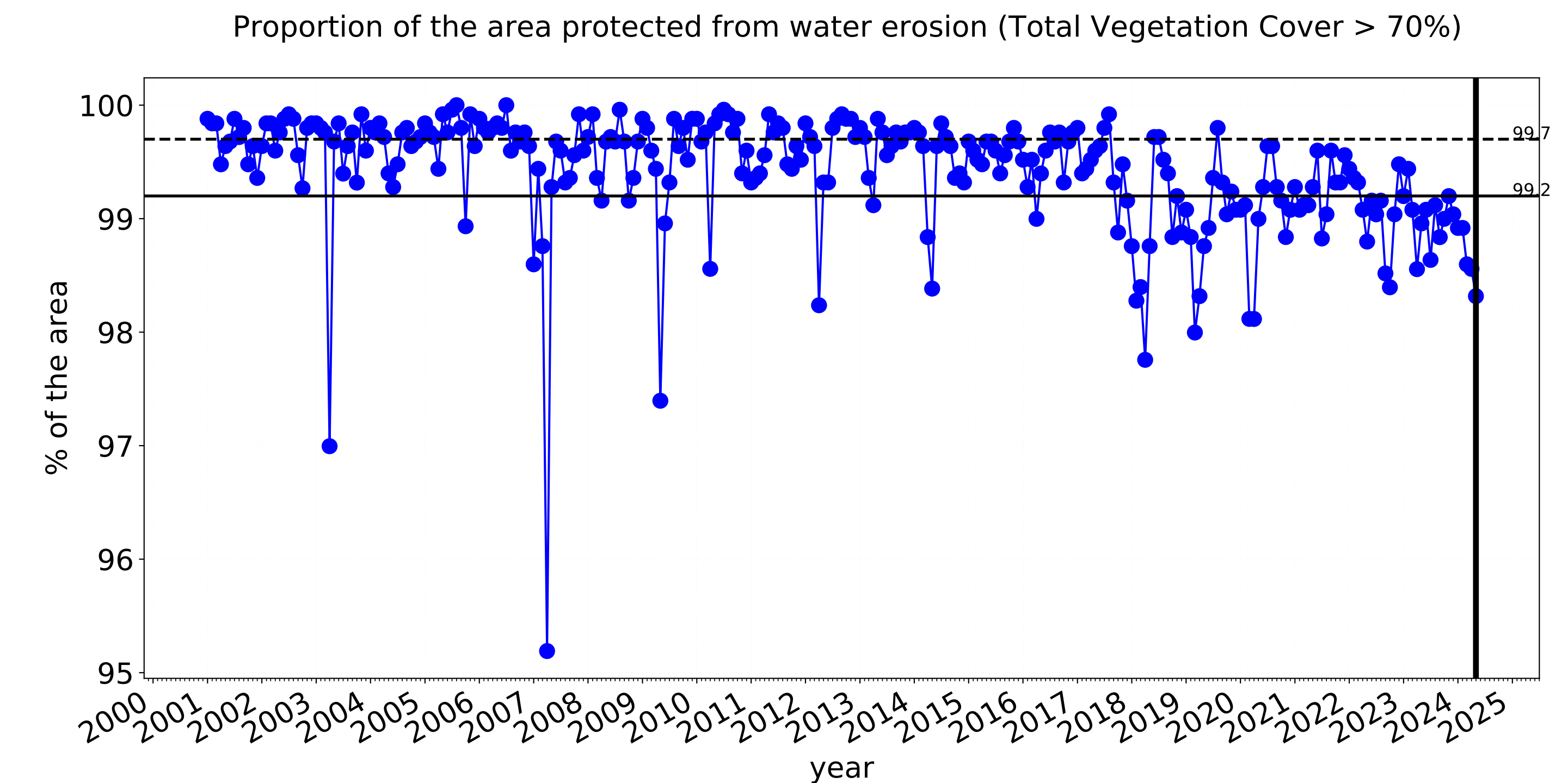
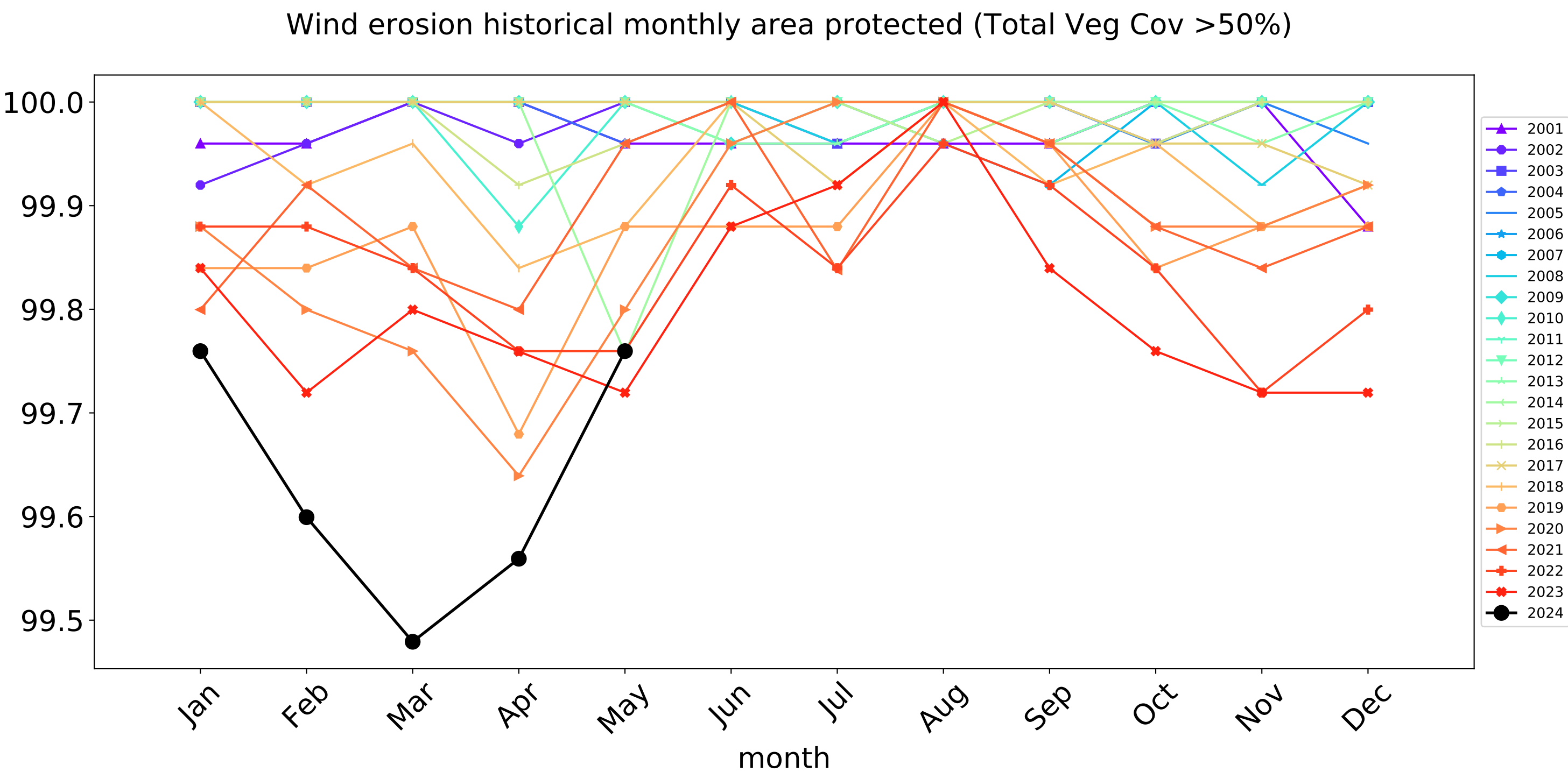
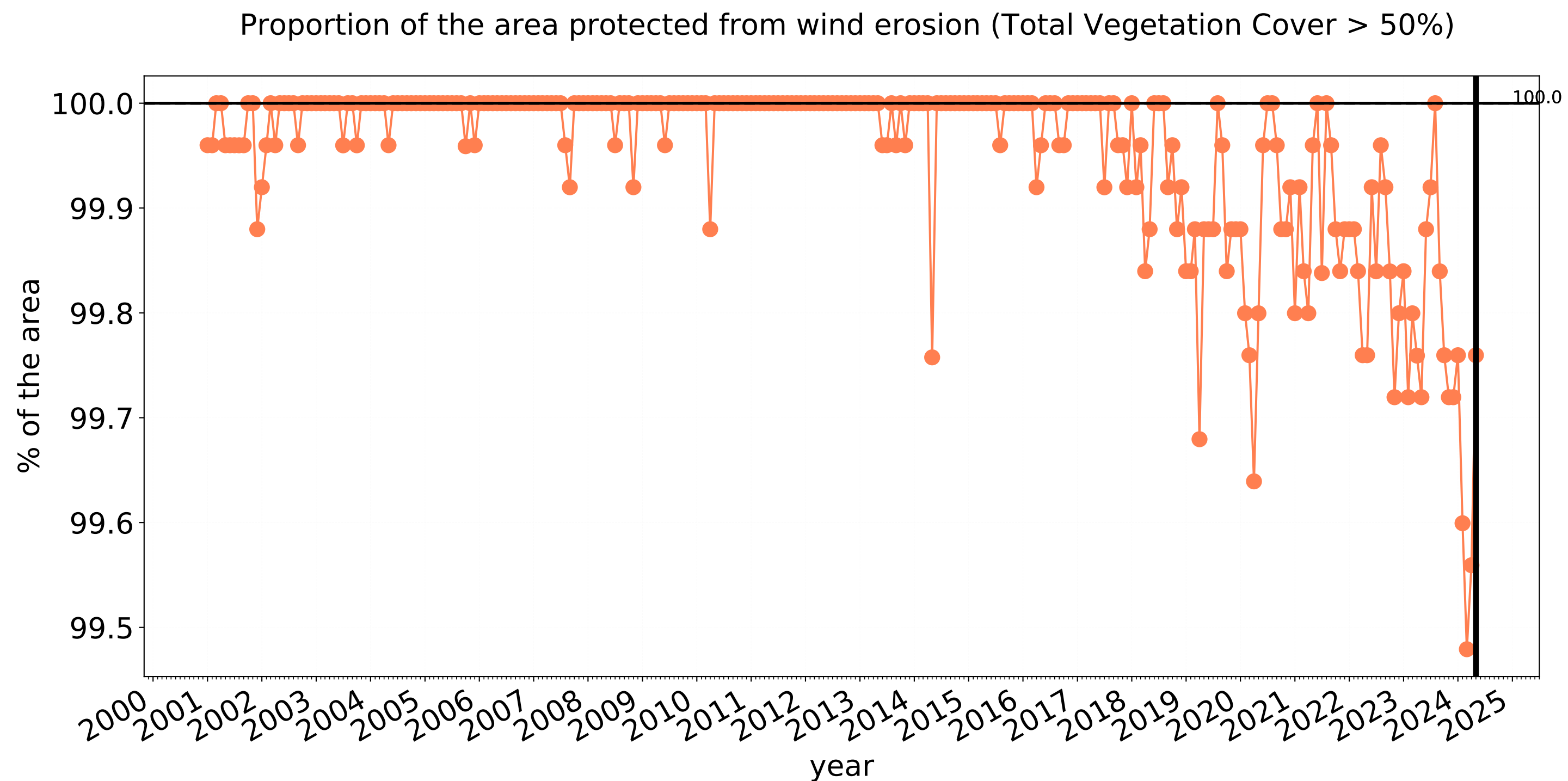


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Total Vegetation Cover Decile [%]



Grazing non forest timeseries

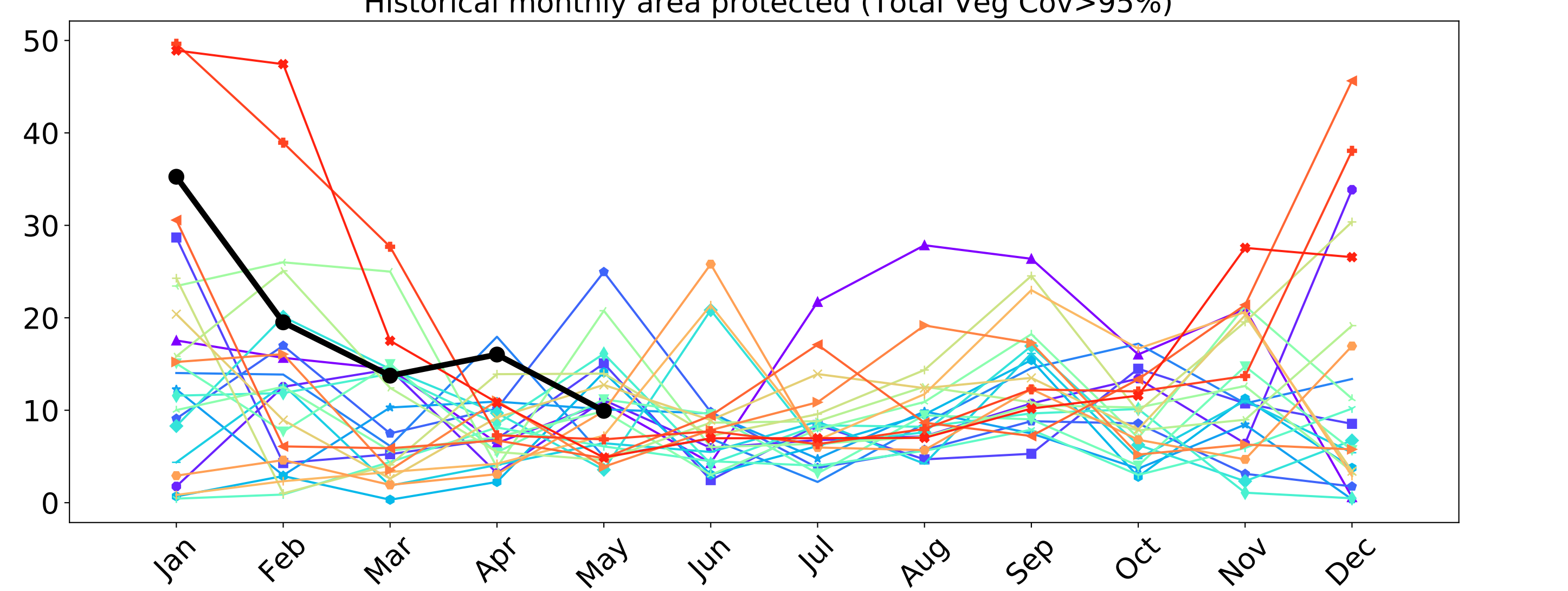
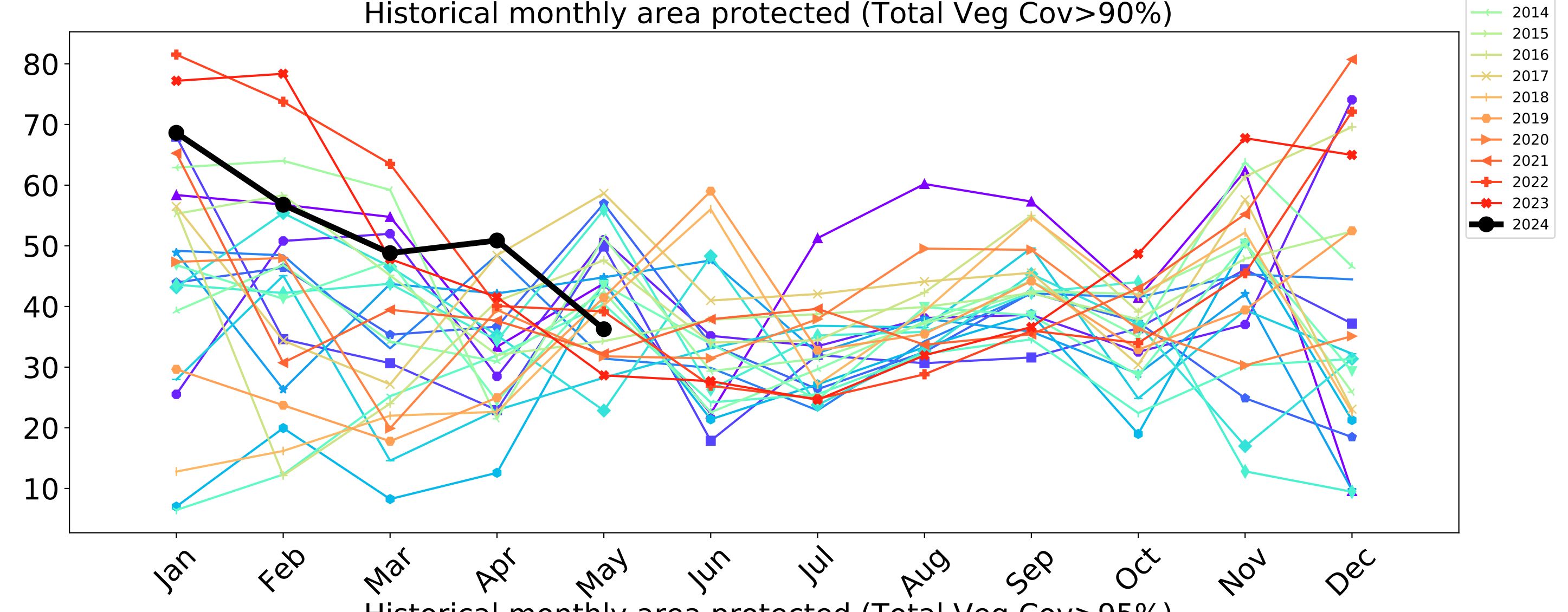
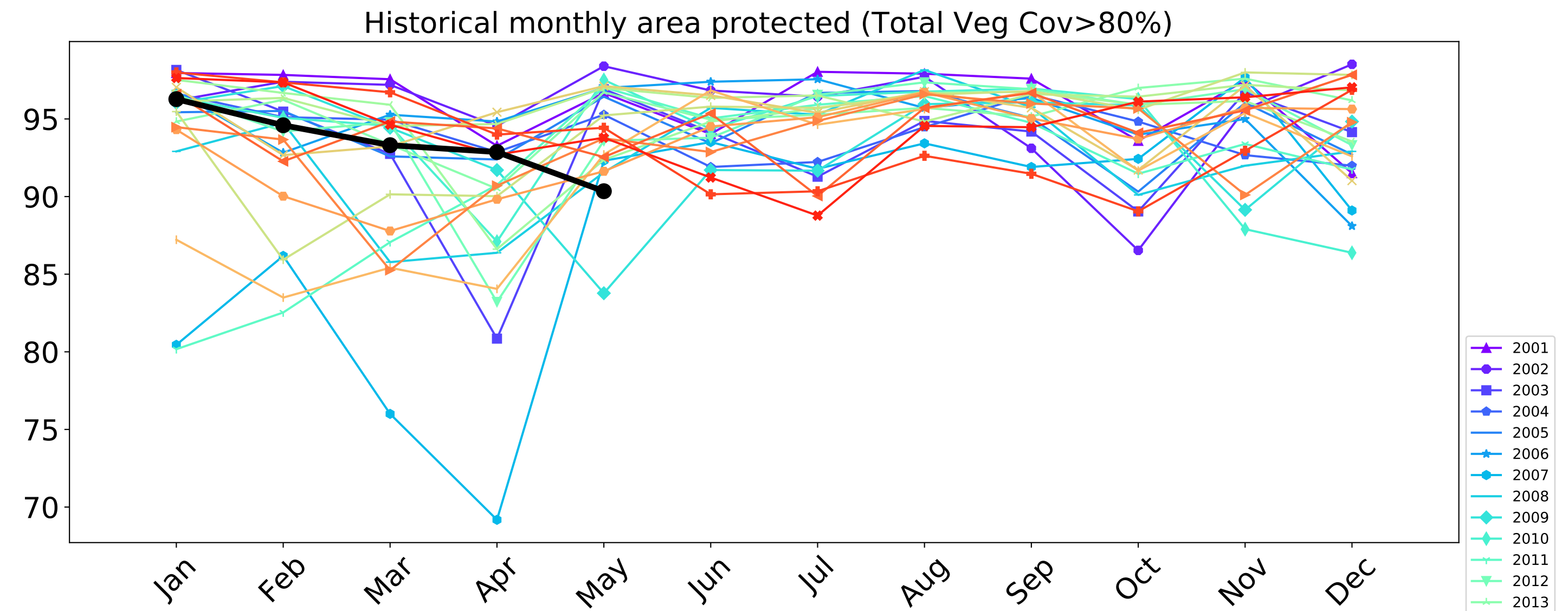
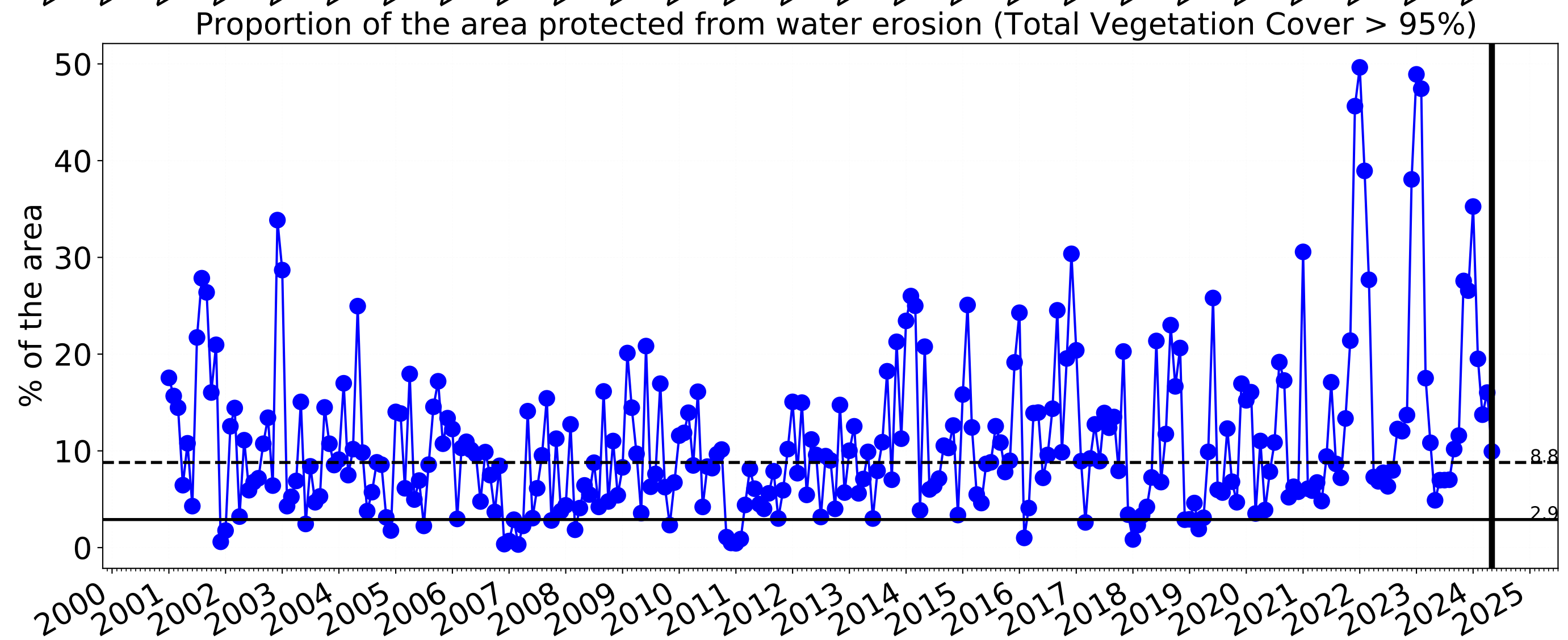
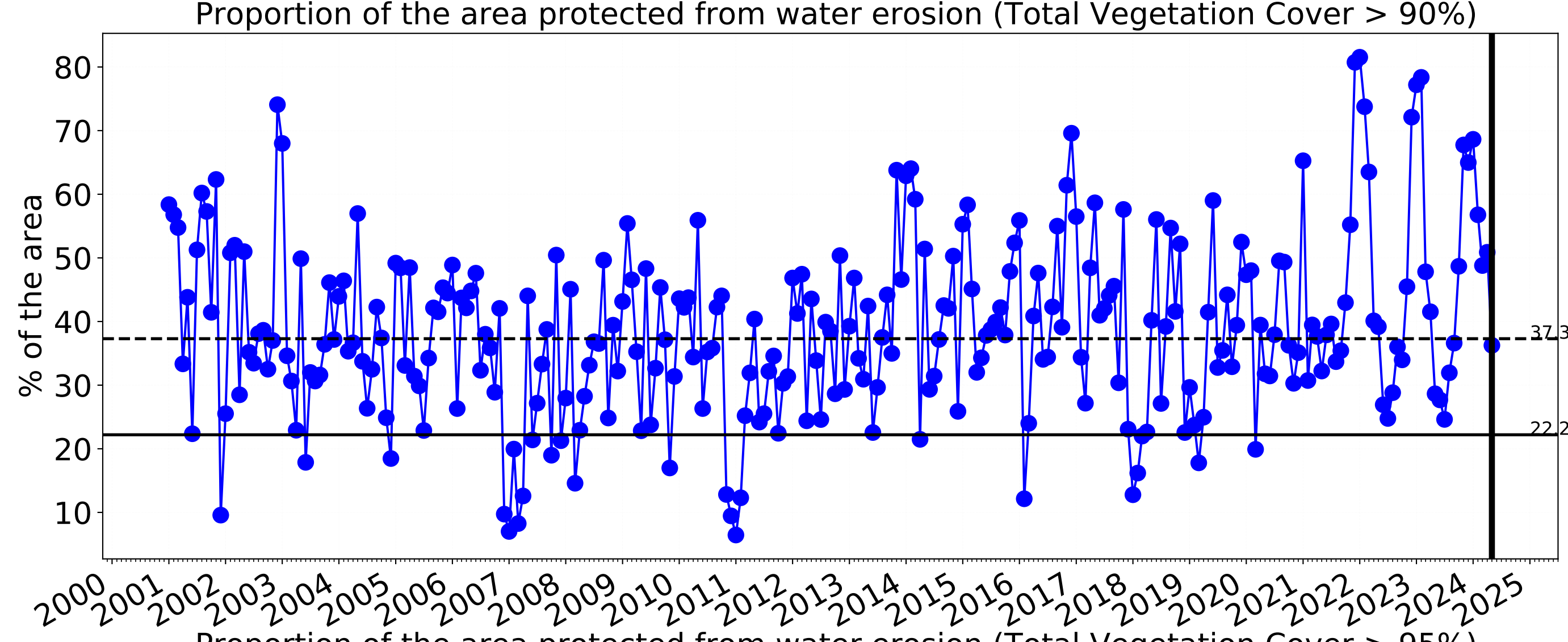
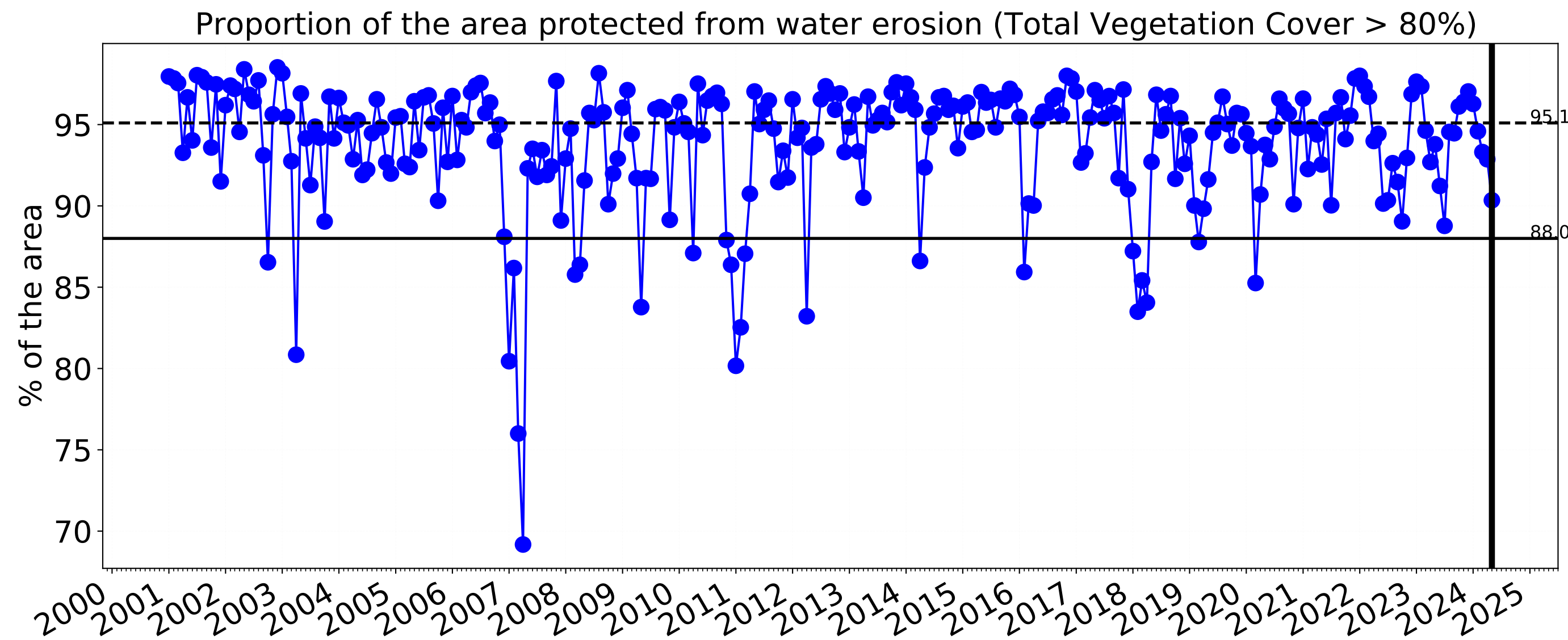


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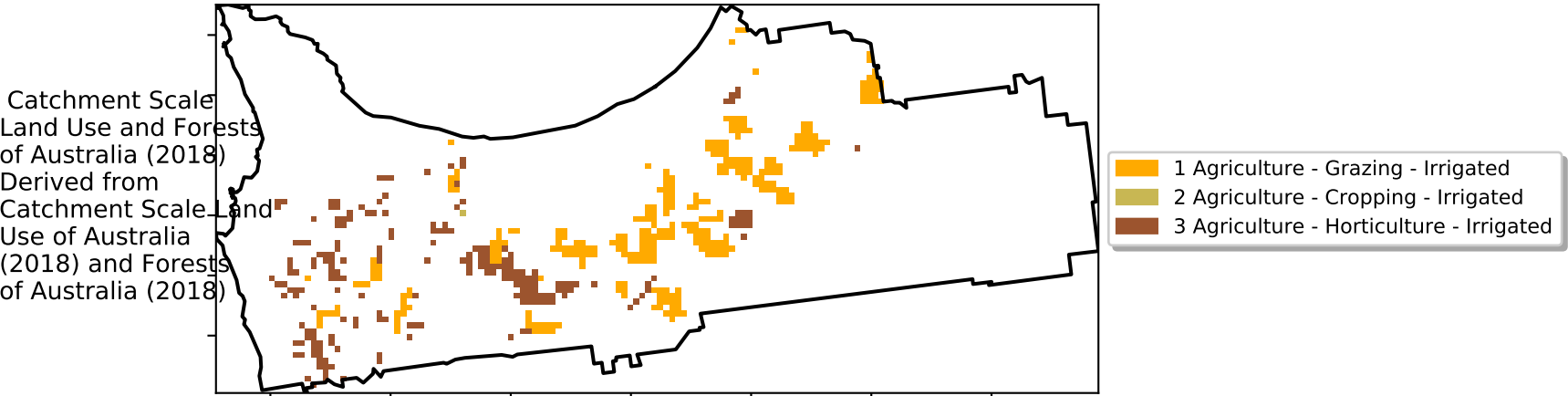
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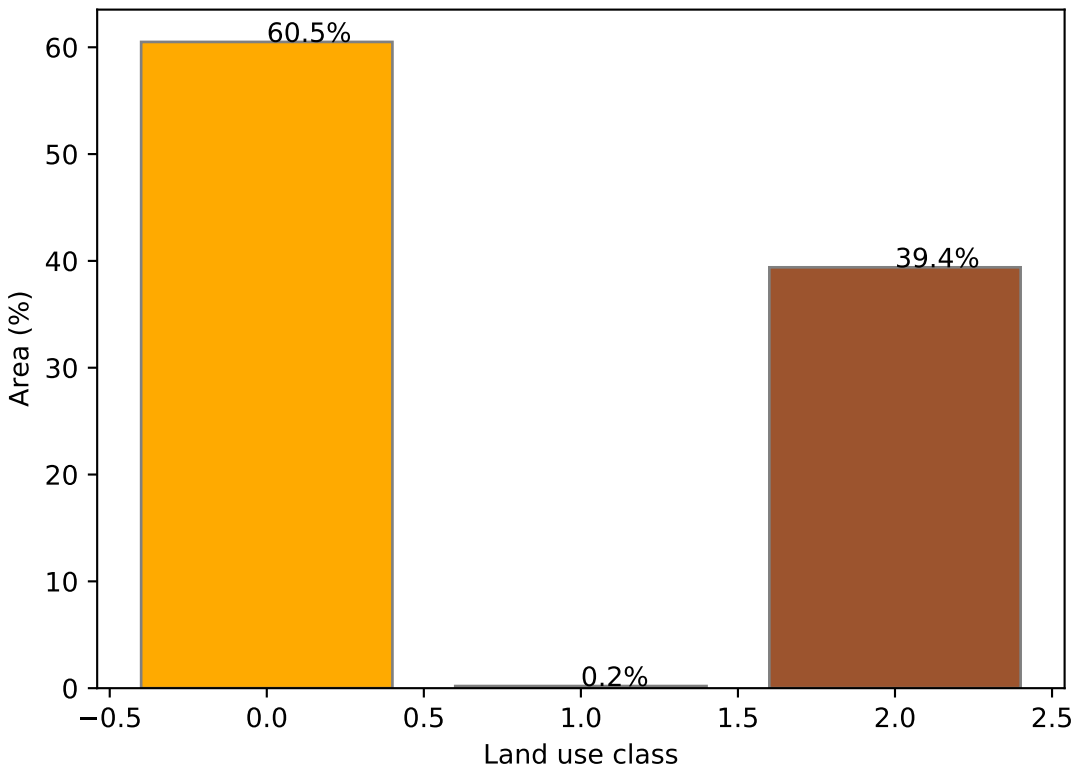


Irrigation

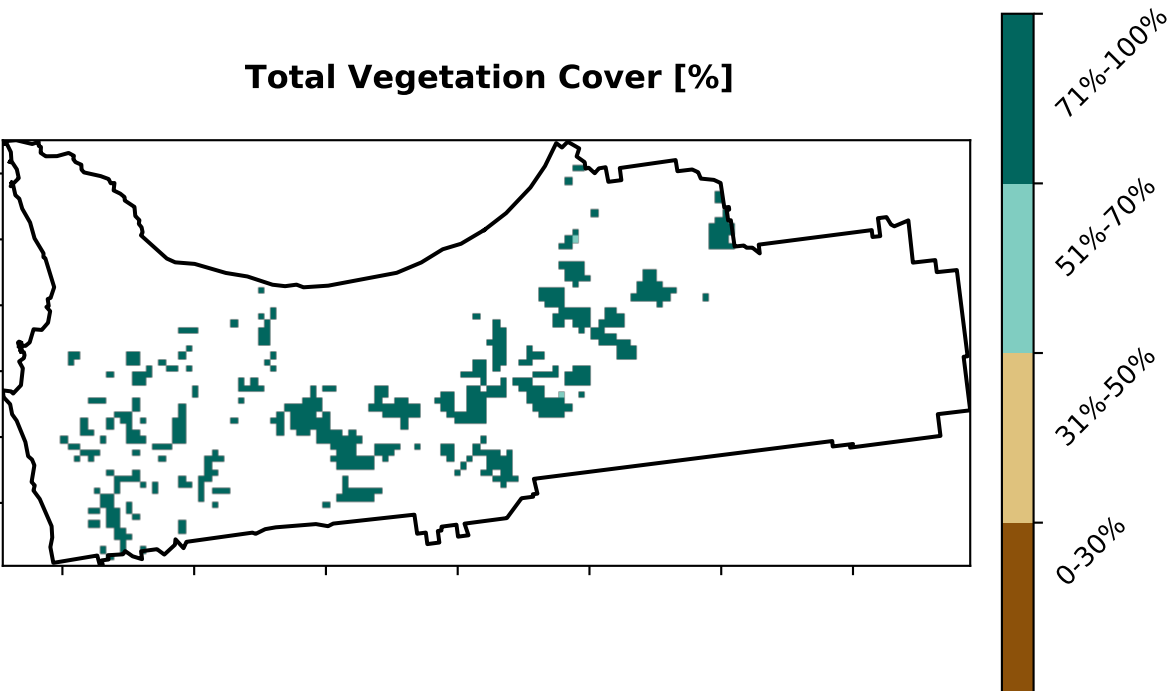
Land use and forest cover



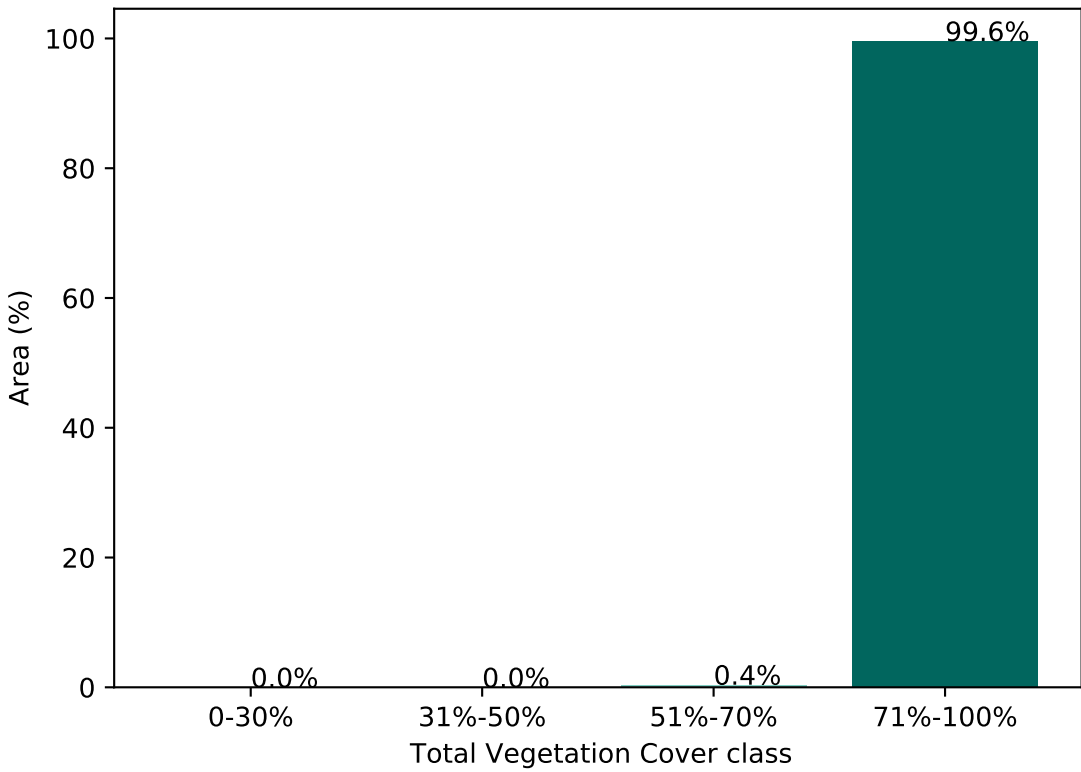
Proportion of each land class in area



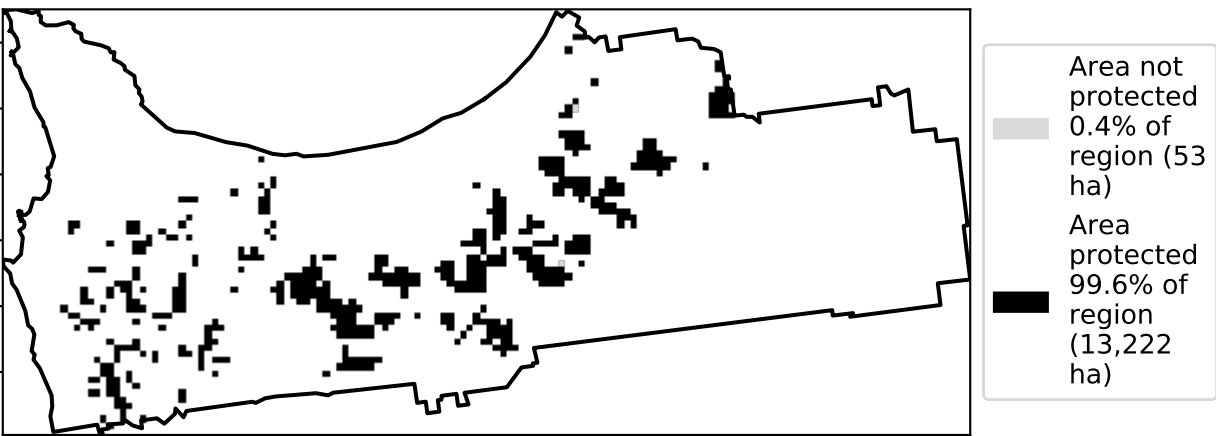
Total Vegetation Cover [%]



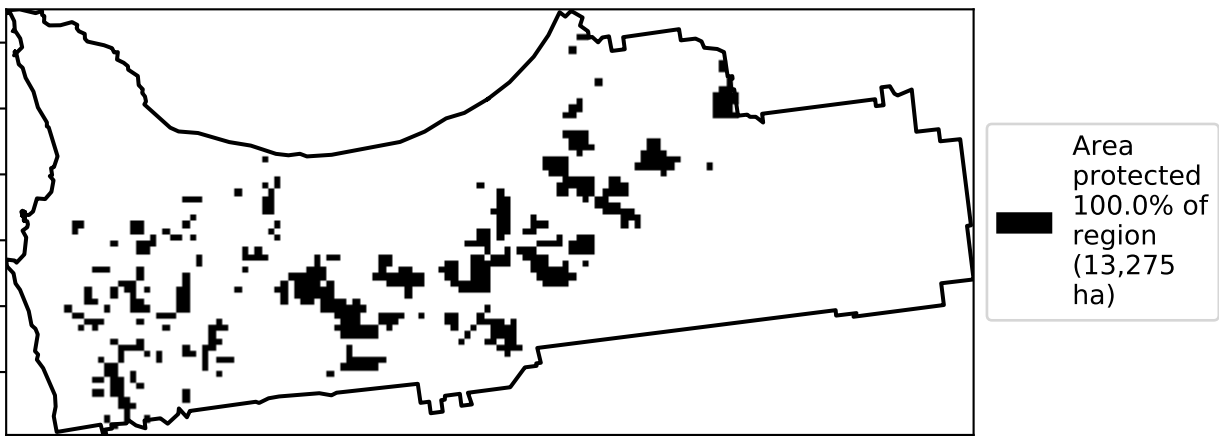
Proportion of vegetation cover class in area



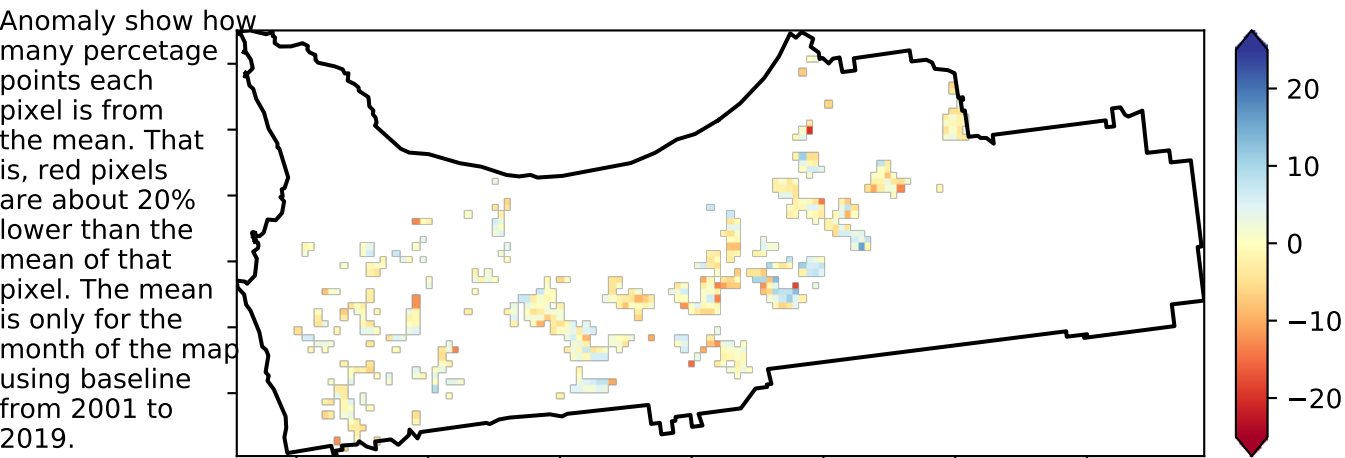
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

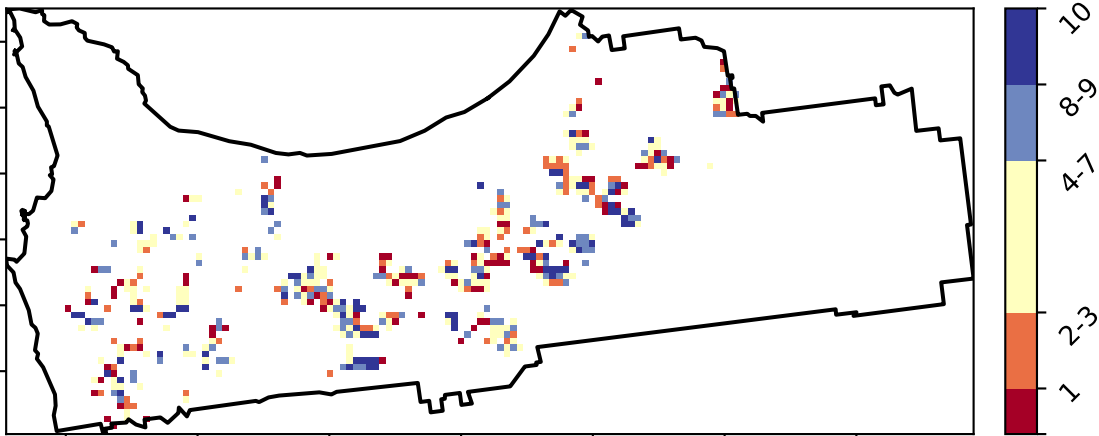


Total Vegetation Cover Anomaly [%]



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

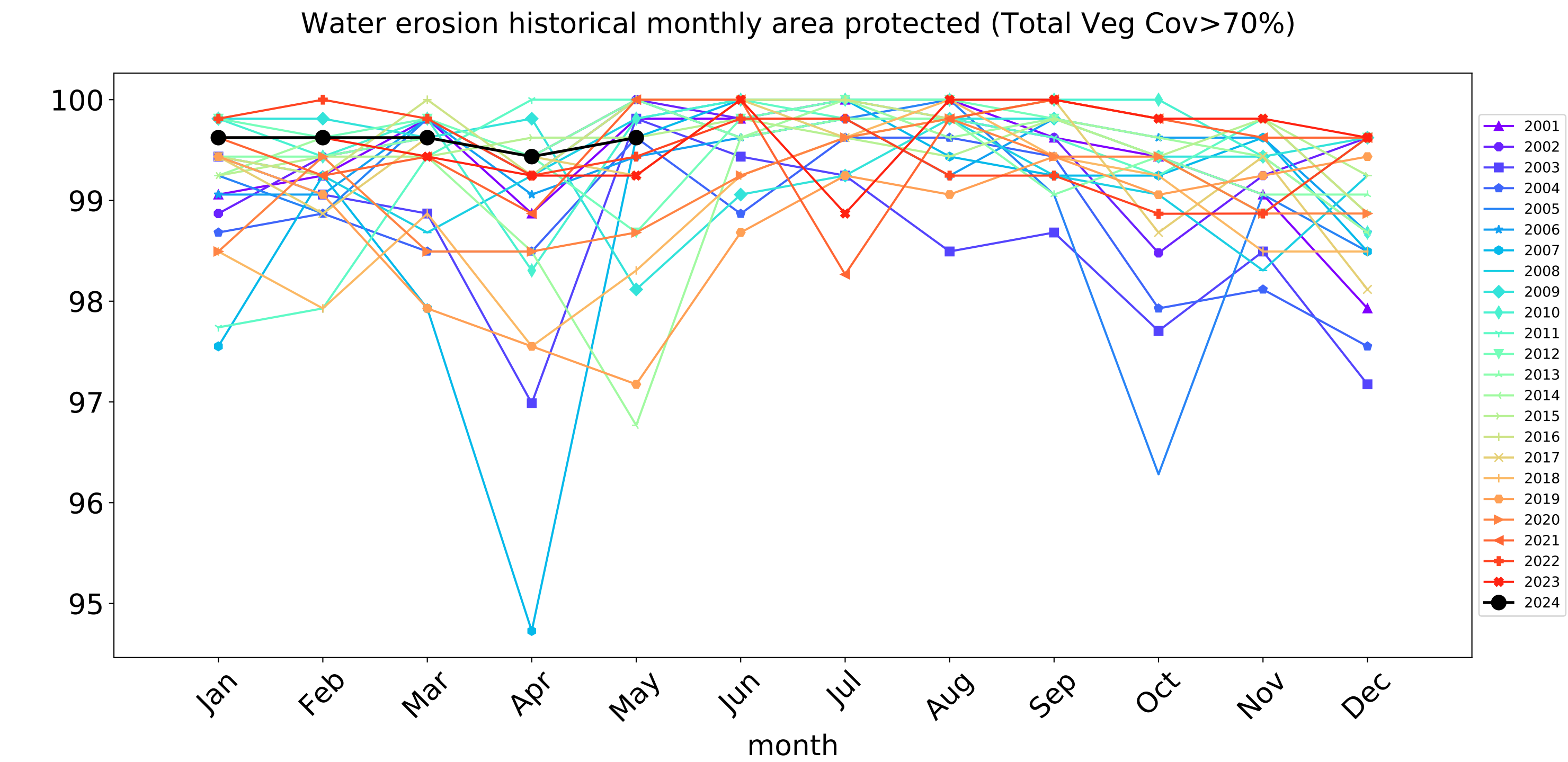
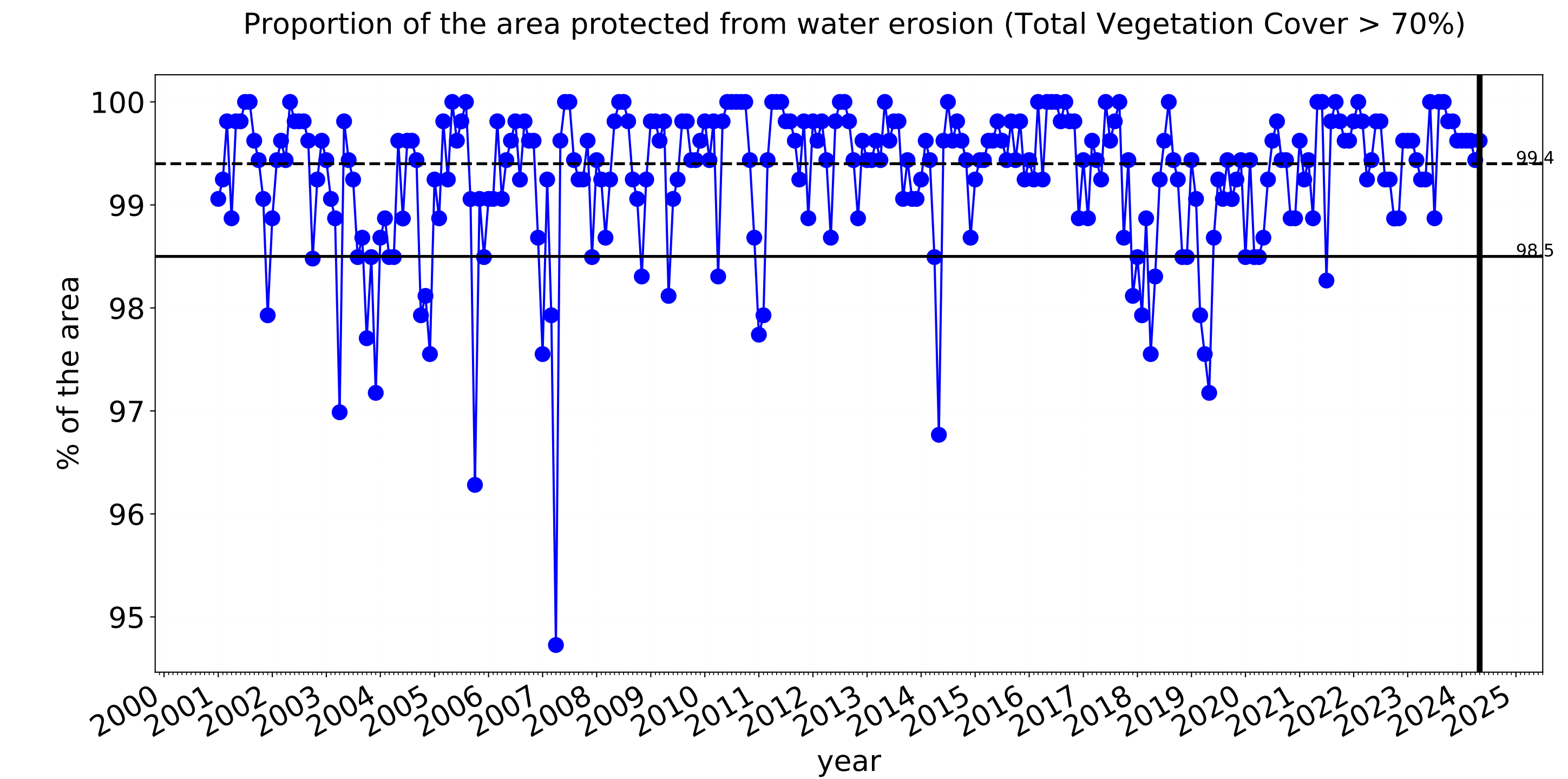
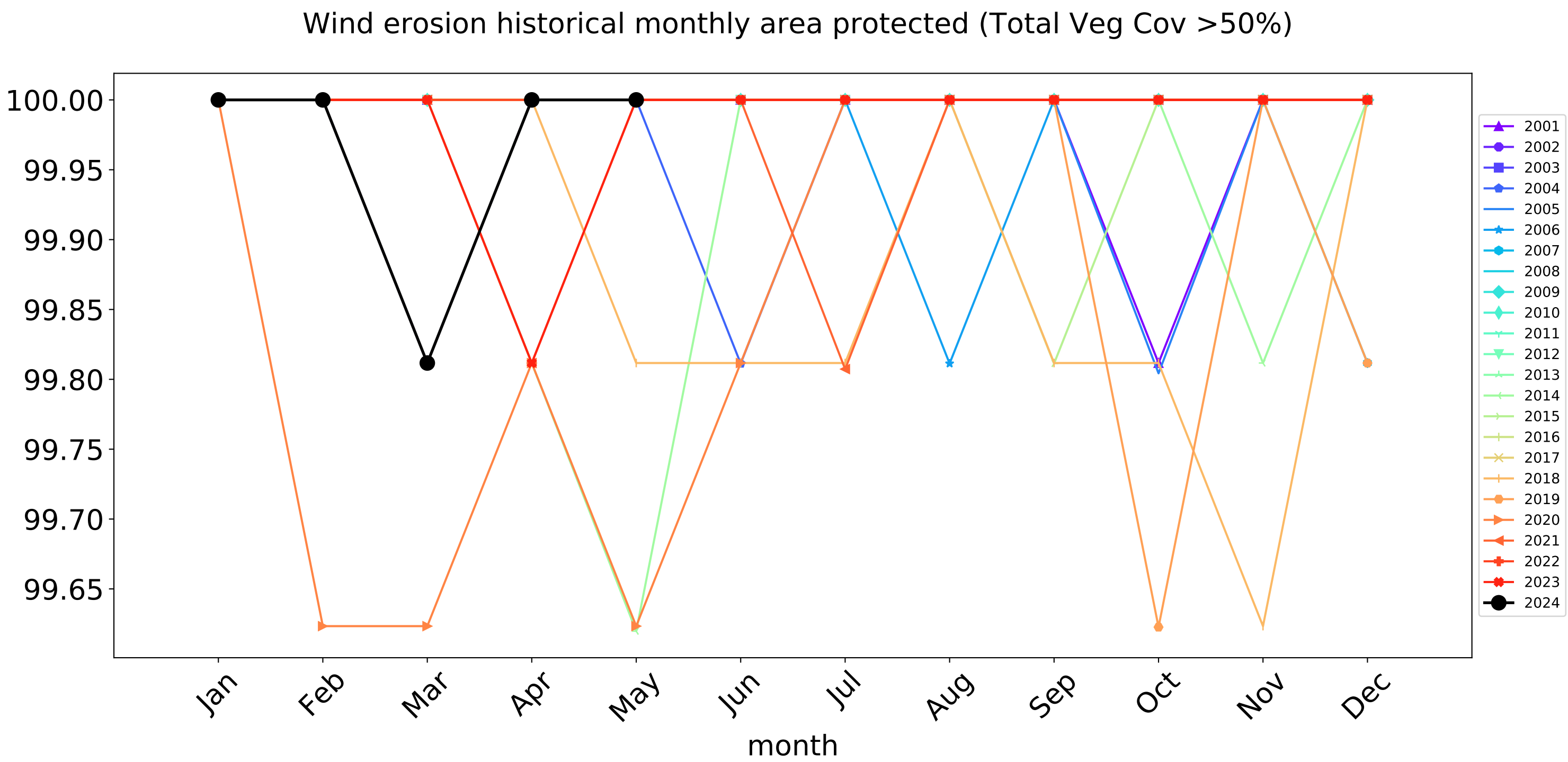
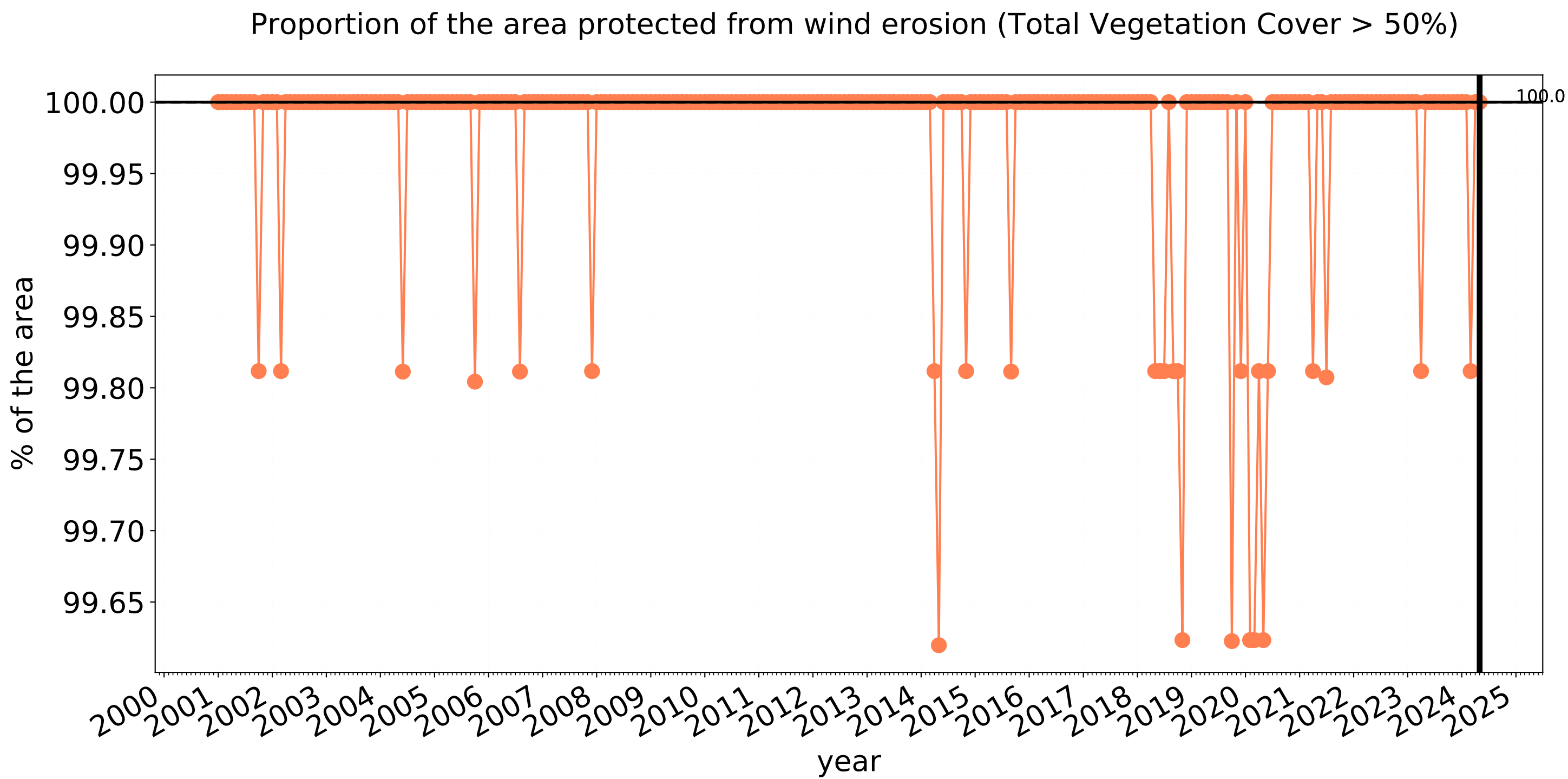


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Irrigation timeseries

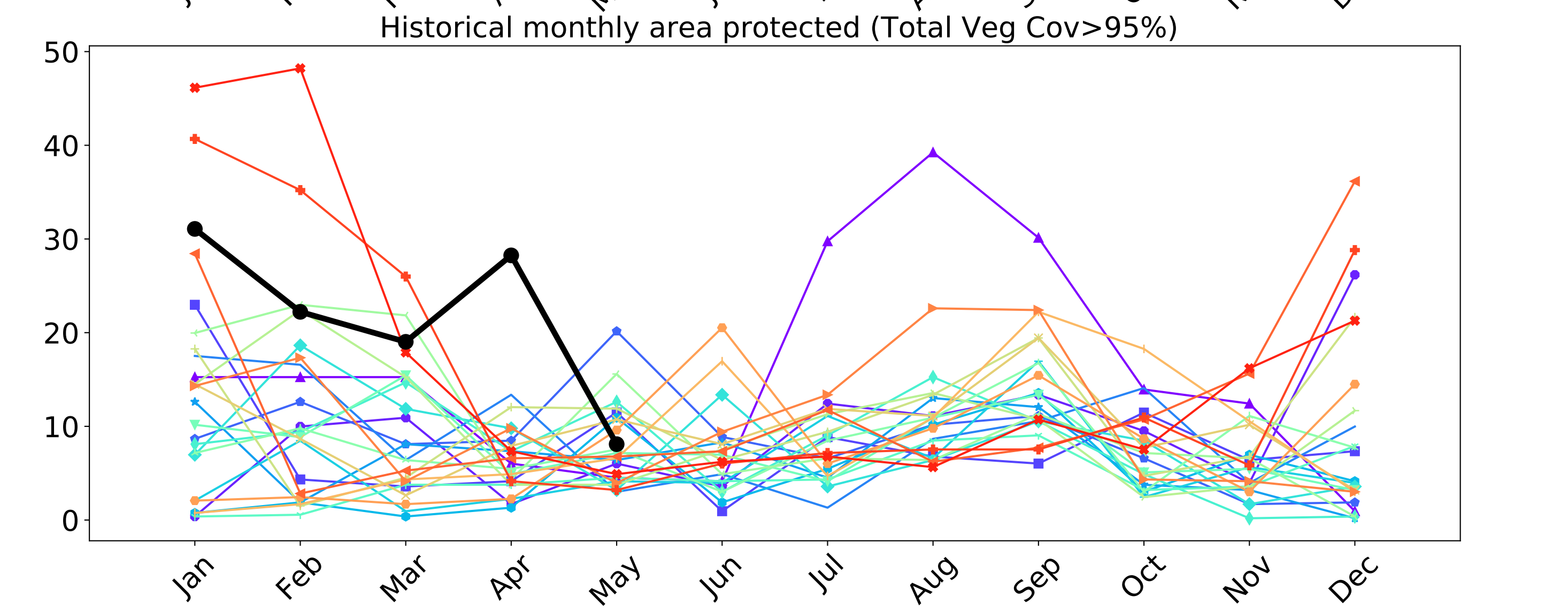
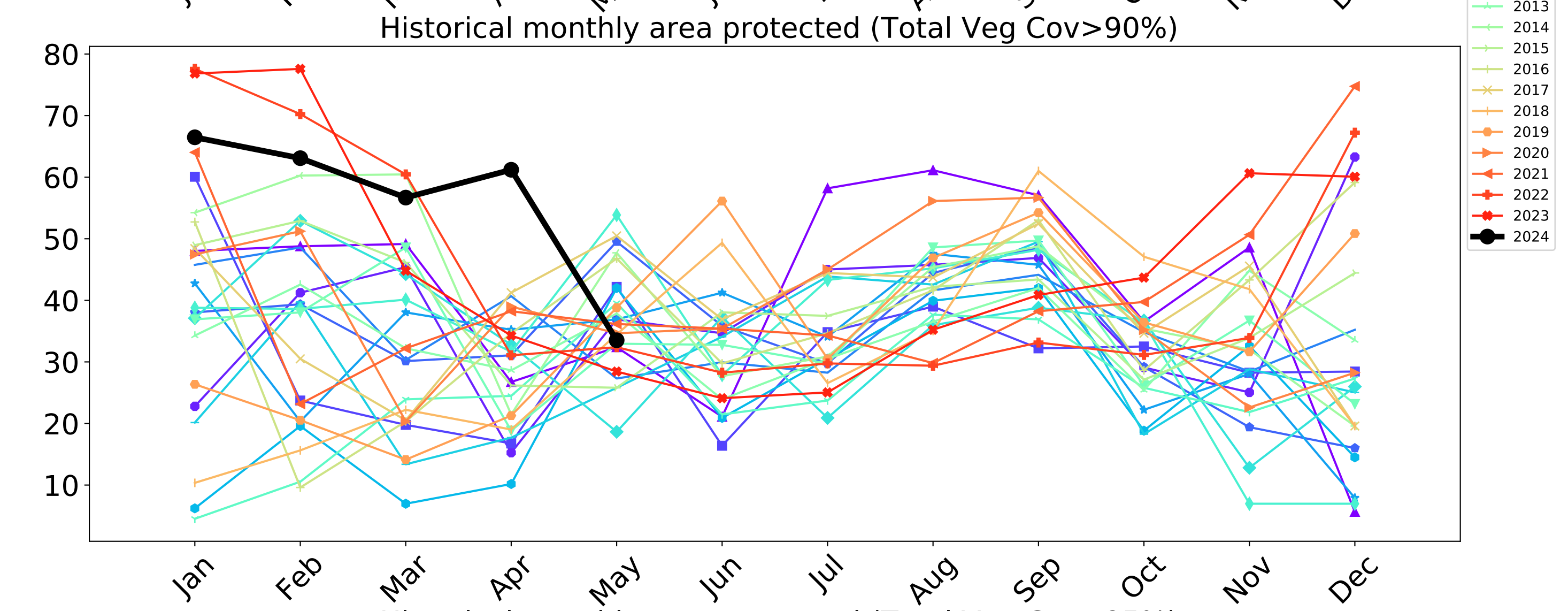
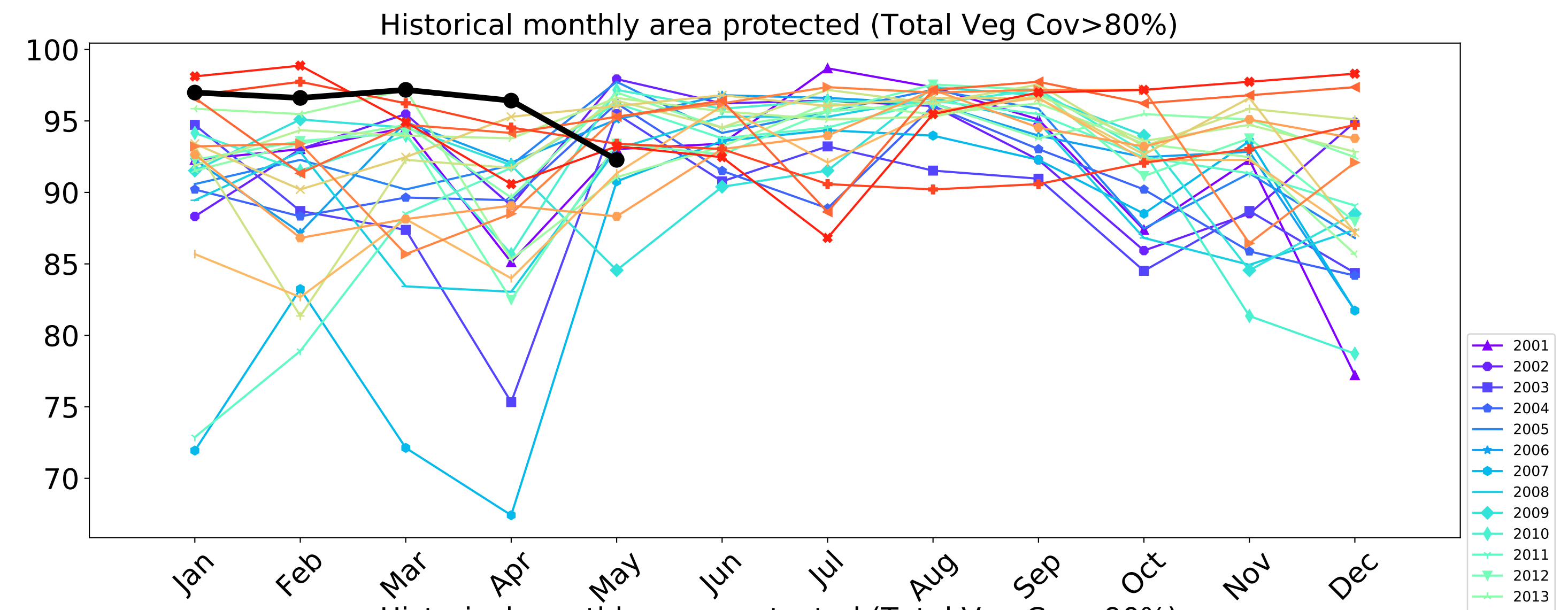
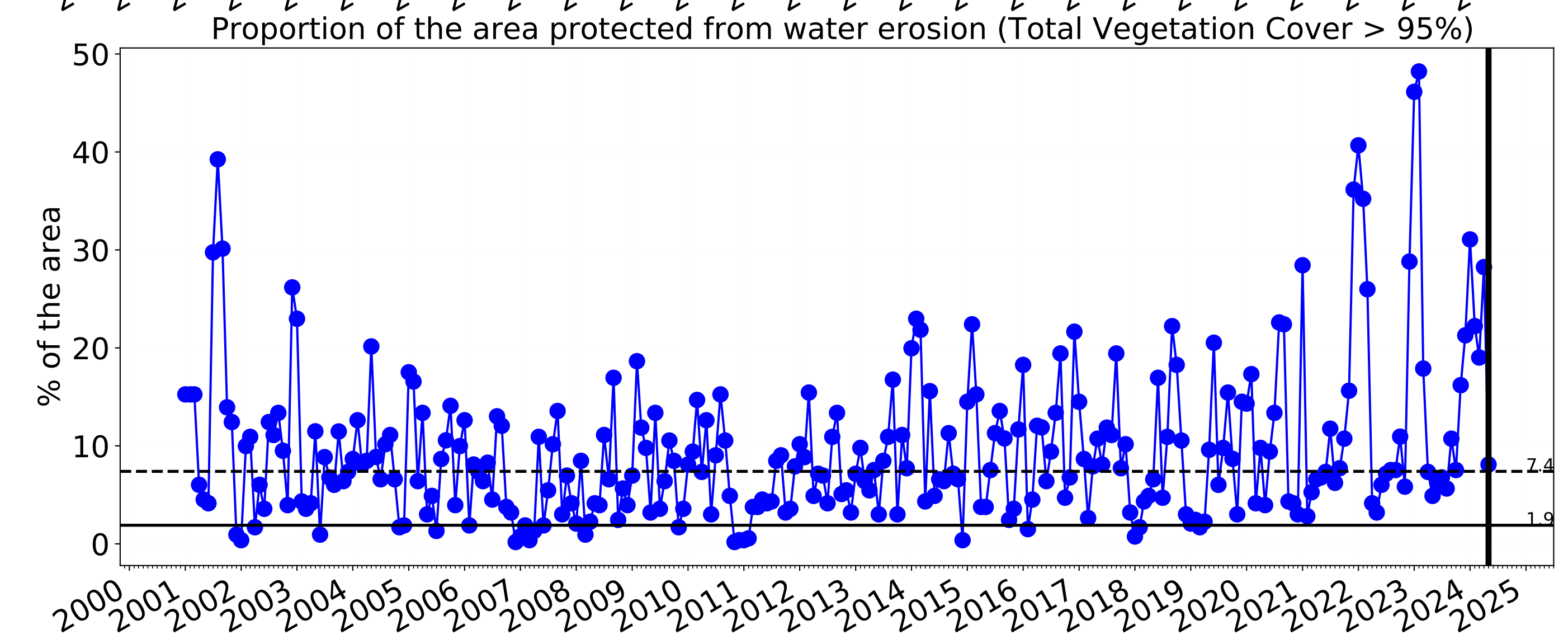
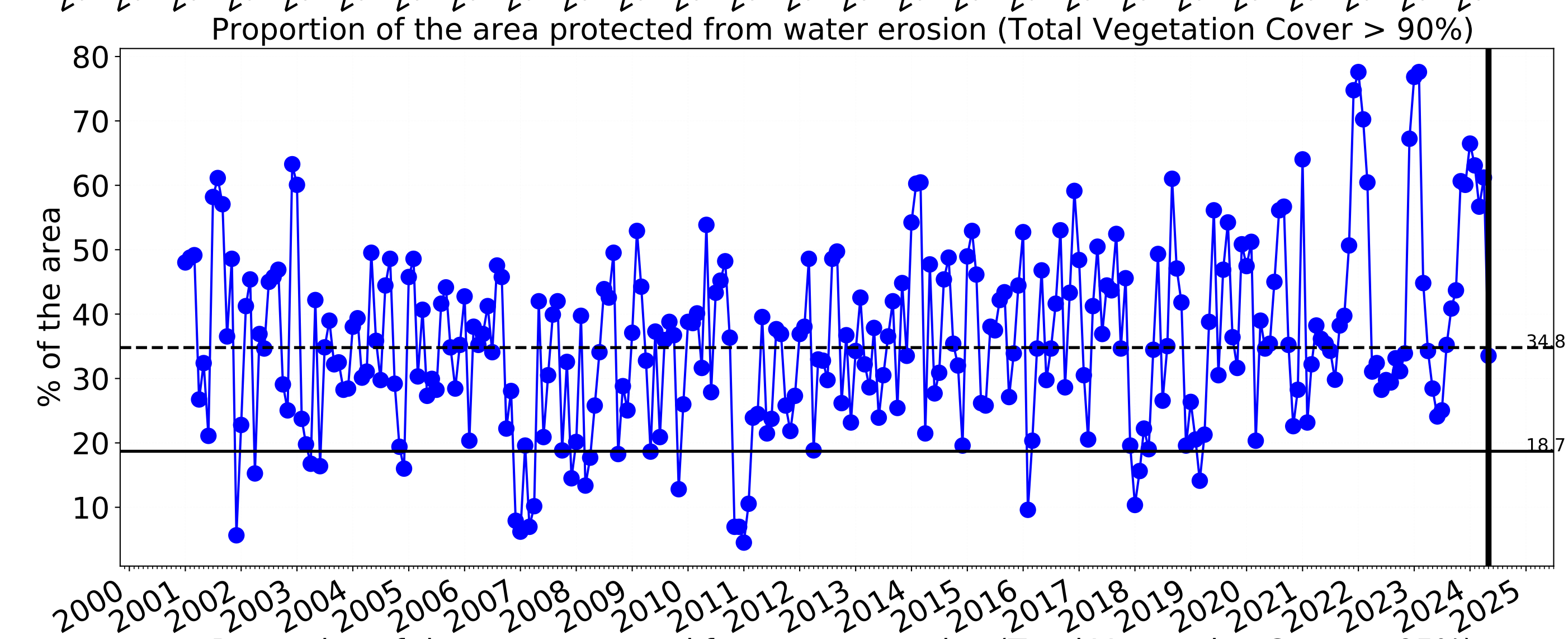
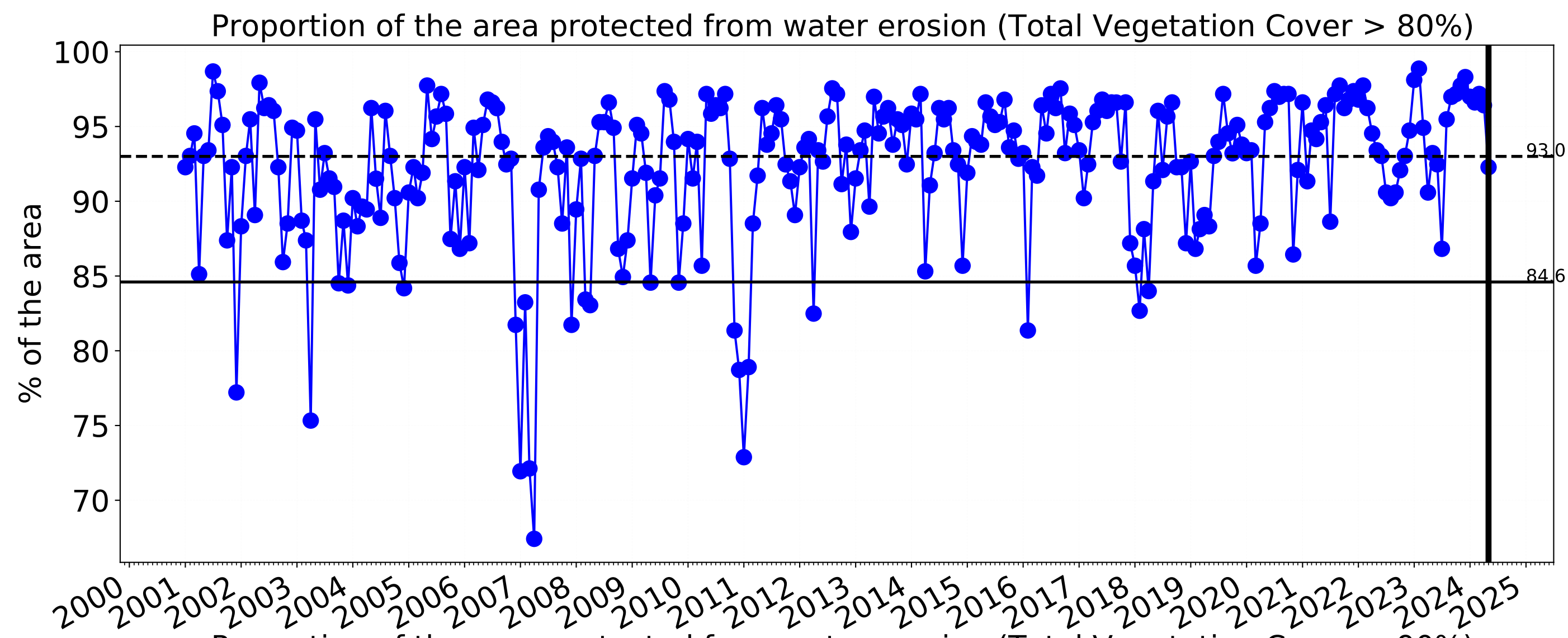


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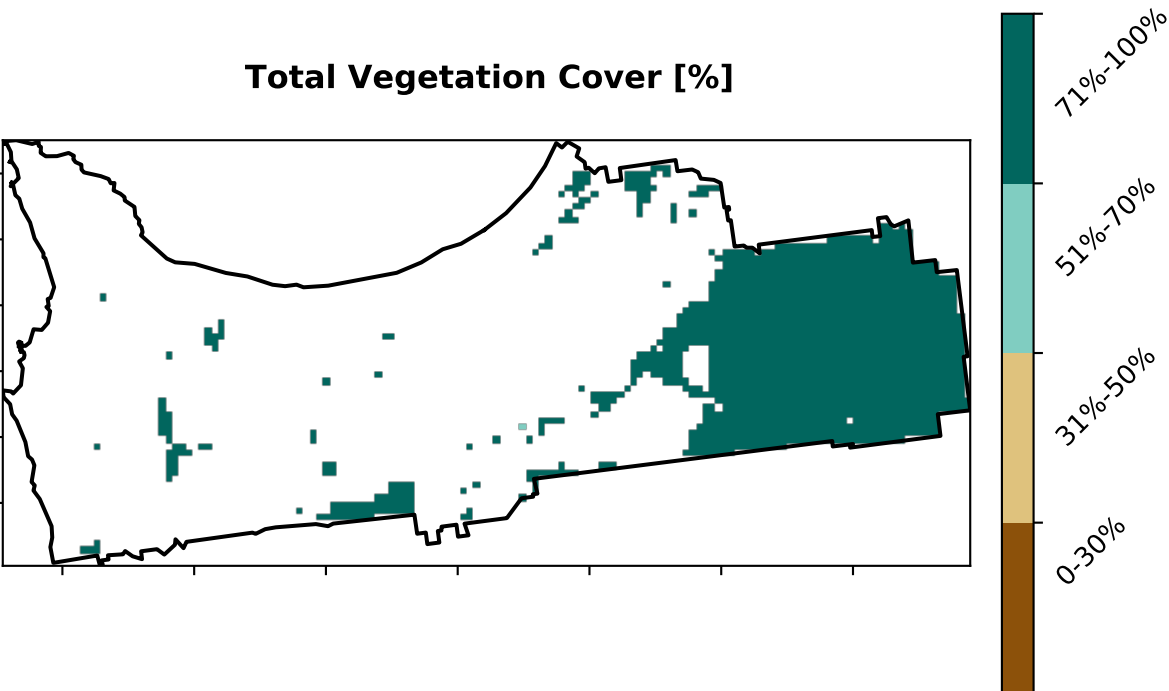


Production native forests and plantation forests

Land use and forest cover



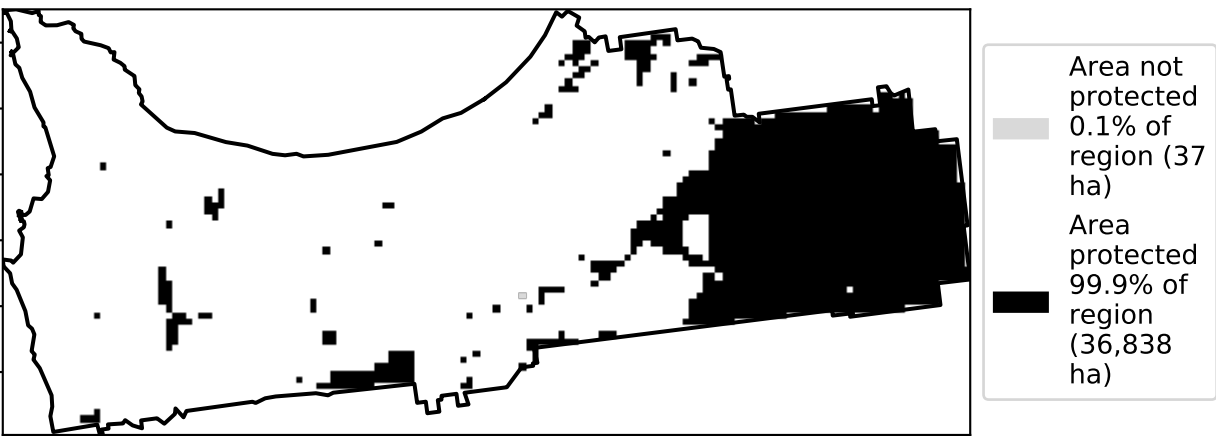
Total Vegetation Cover [%]



Proportion of vegetation cover class in area



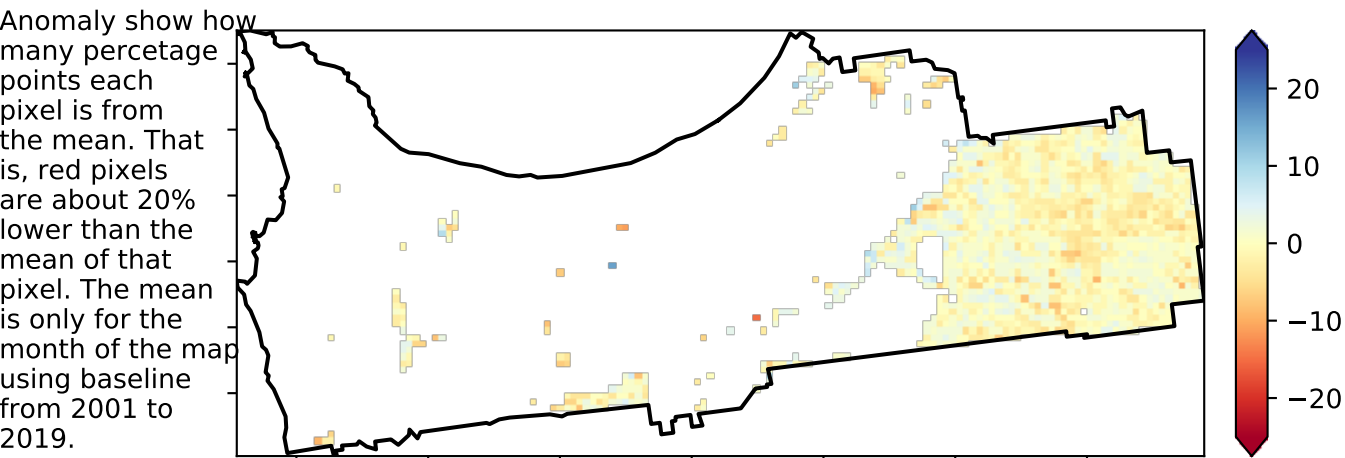
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

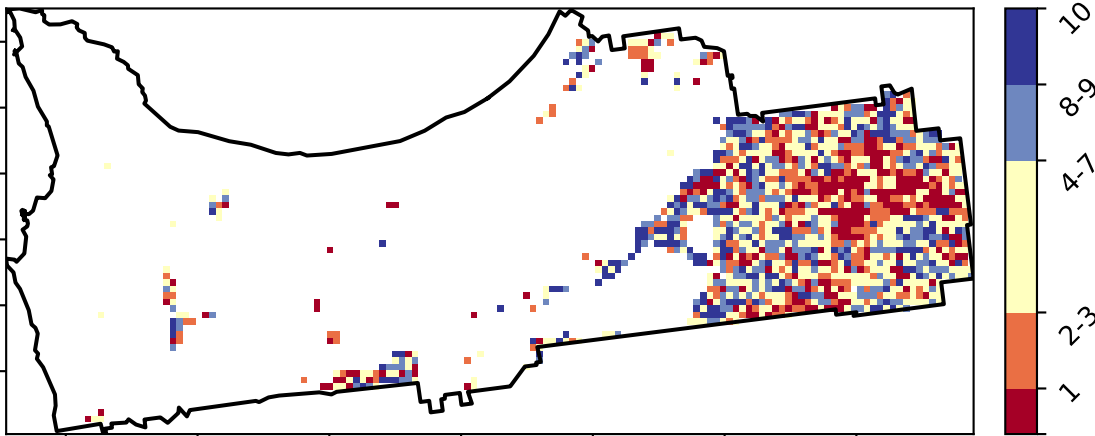


Total Vegetation Cover Anomaly [%]

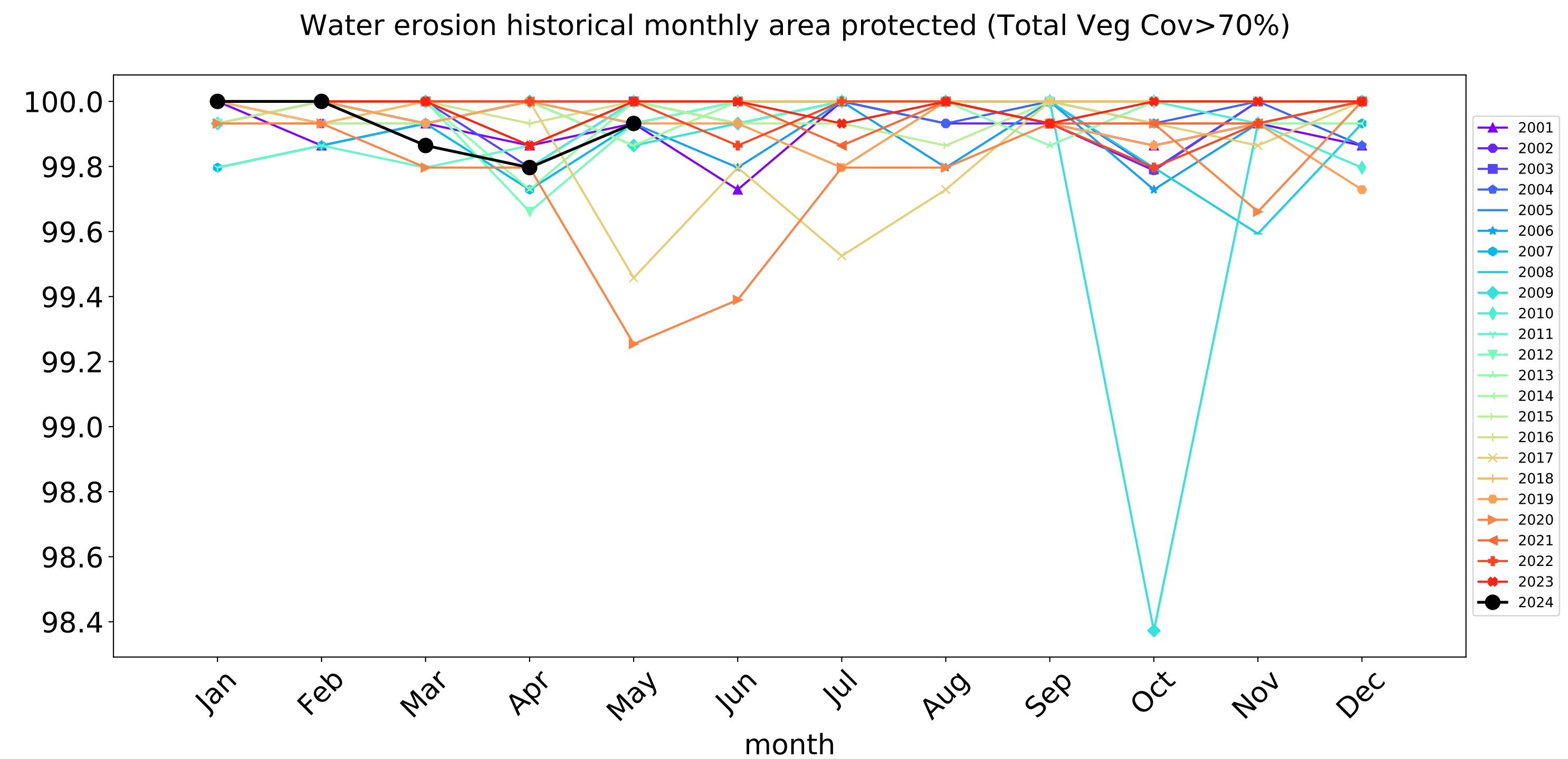
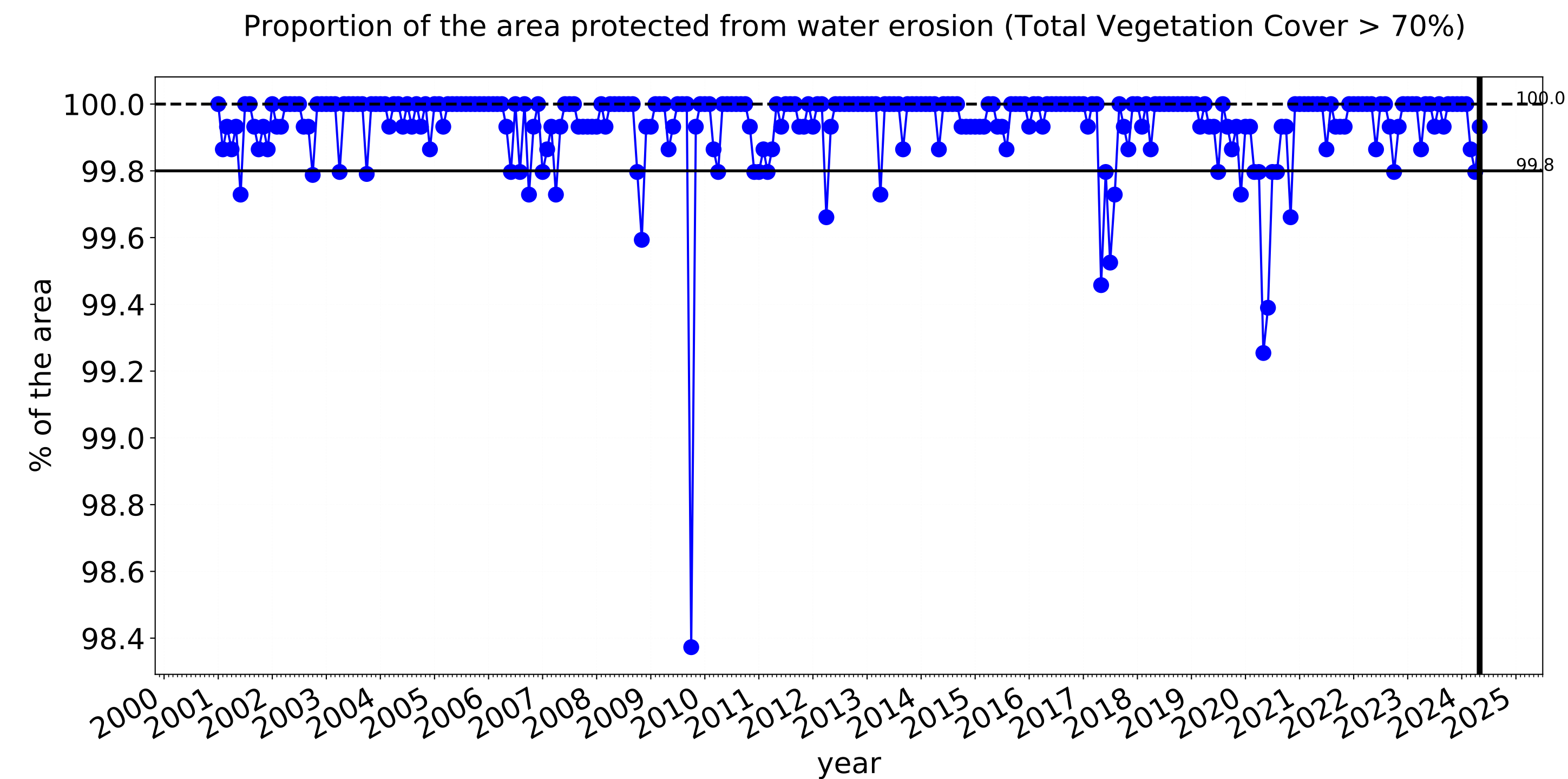
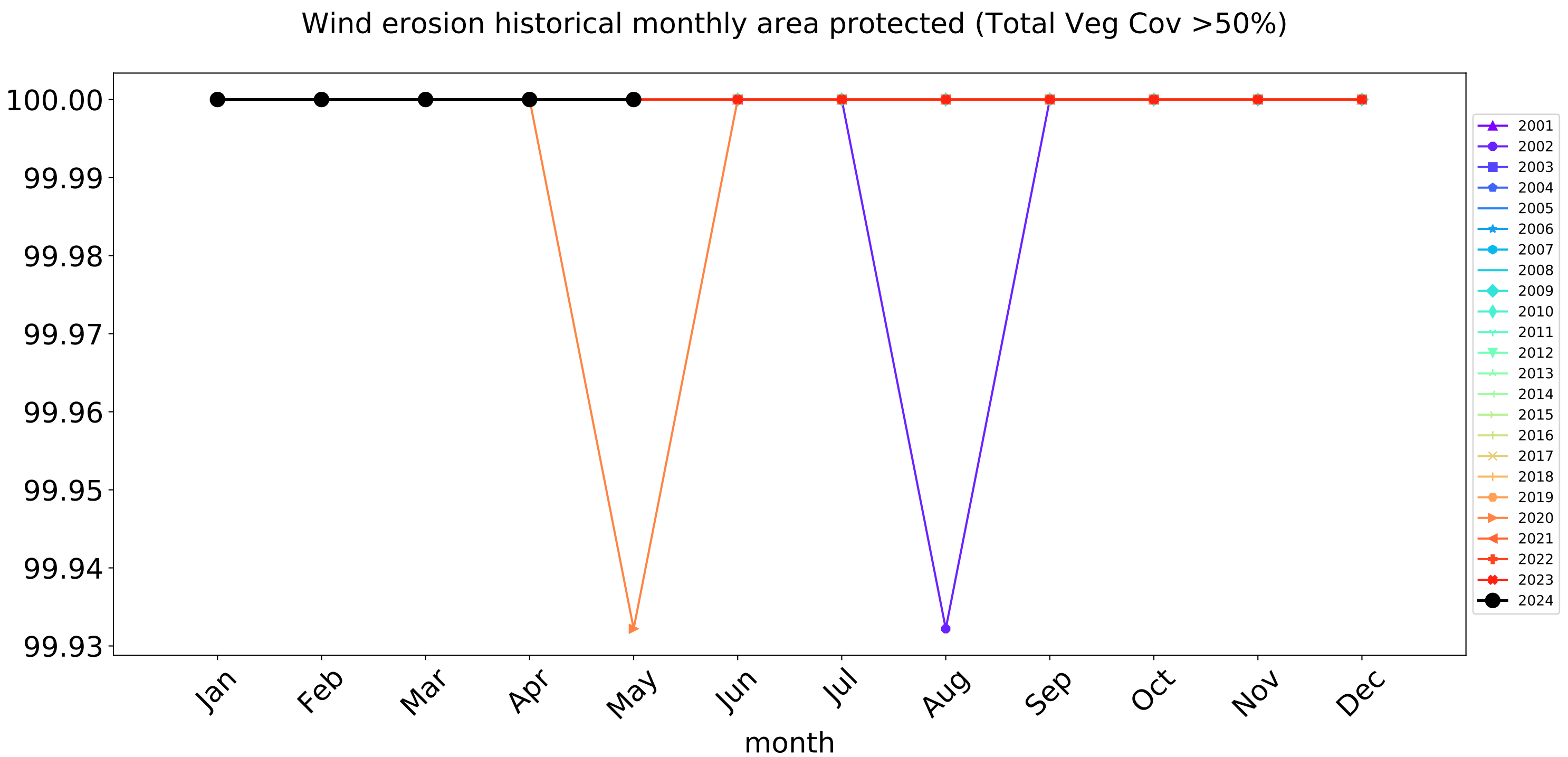
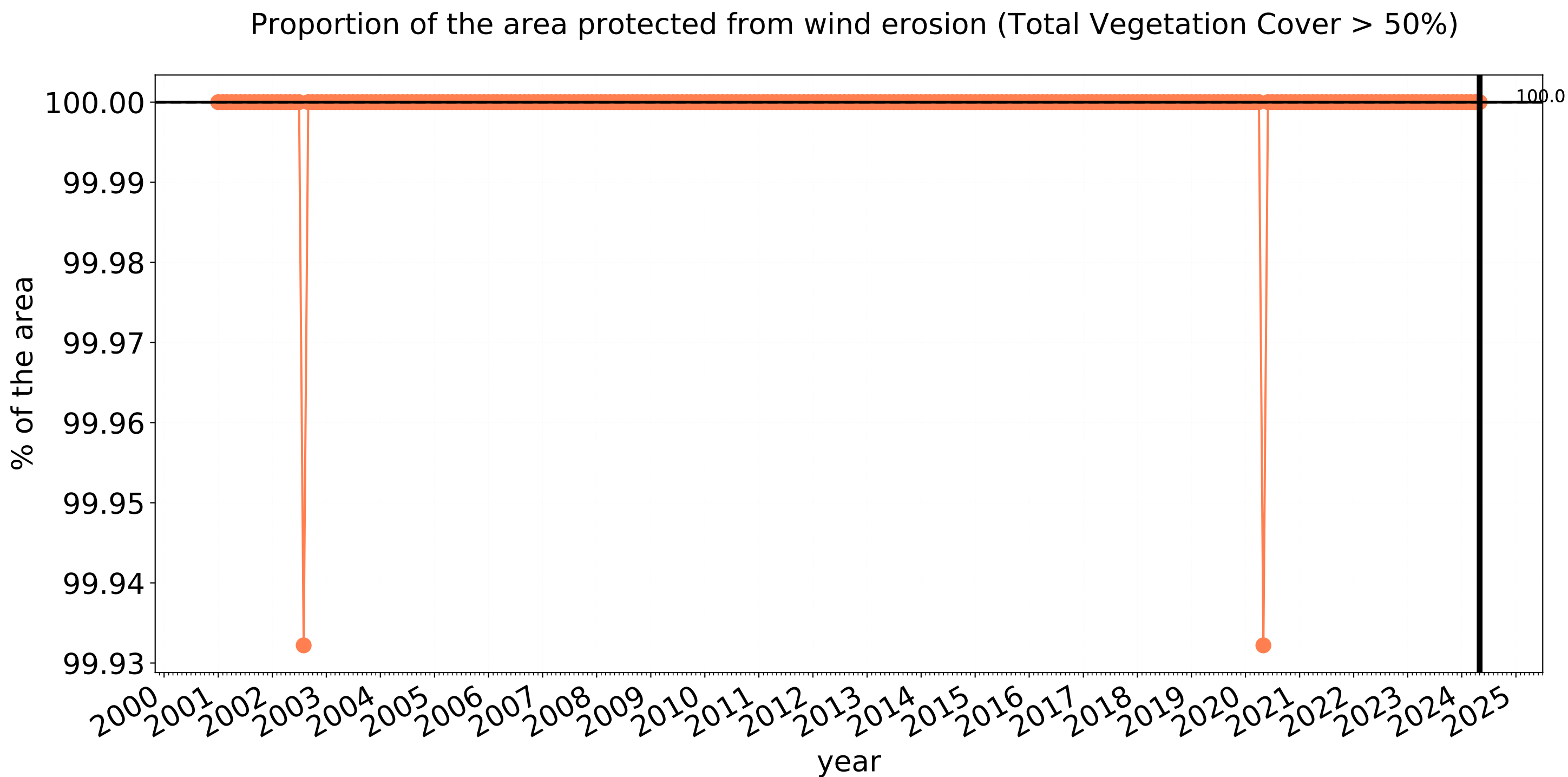


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Total Vegetation Cover Decile [%]



Production native forests and plantation forests timeseries

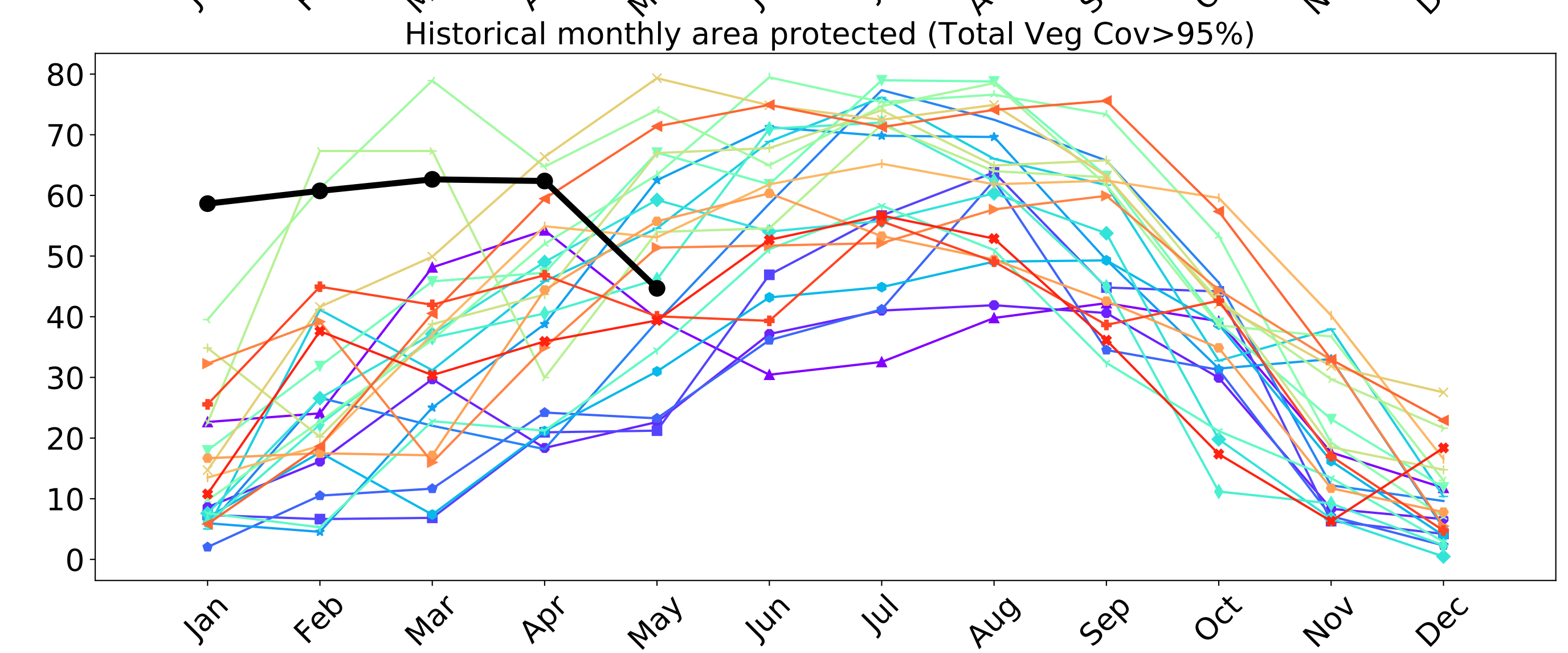
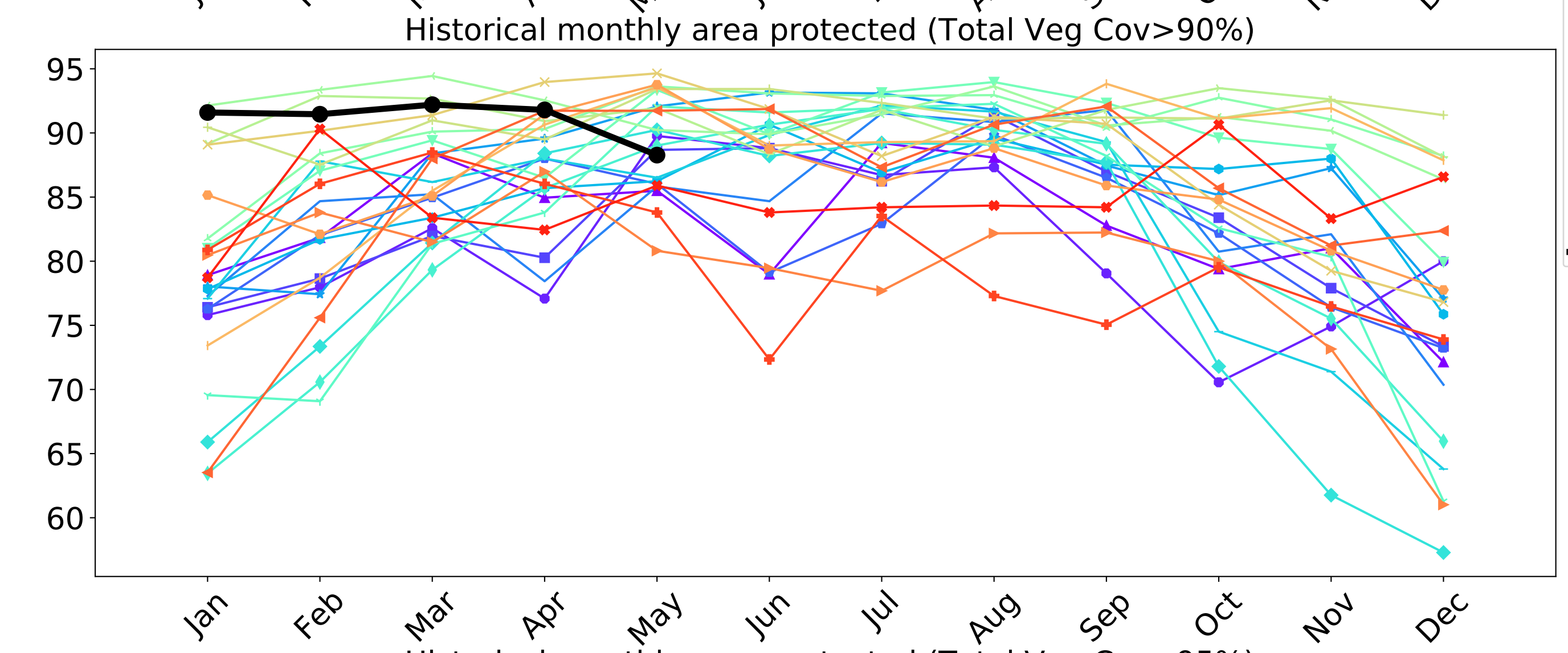
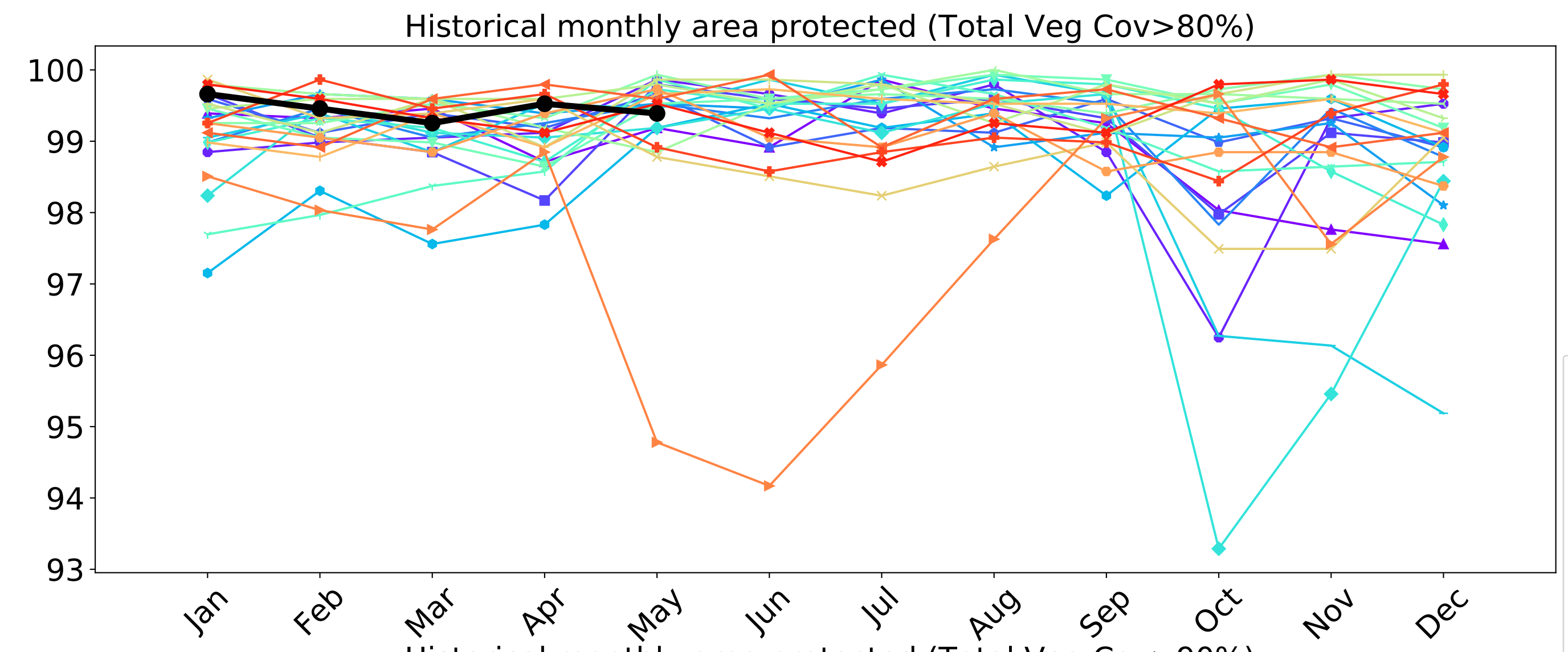
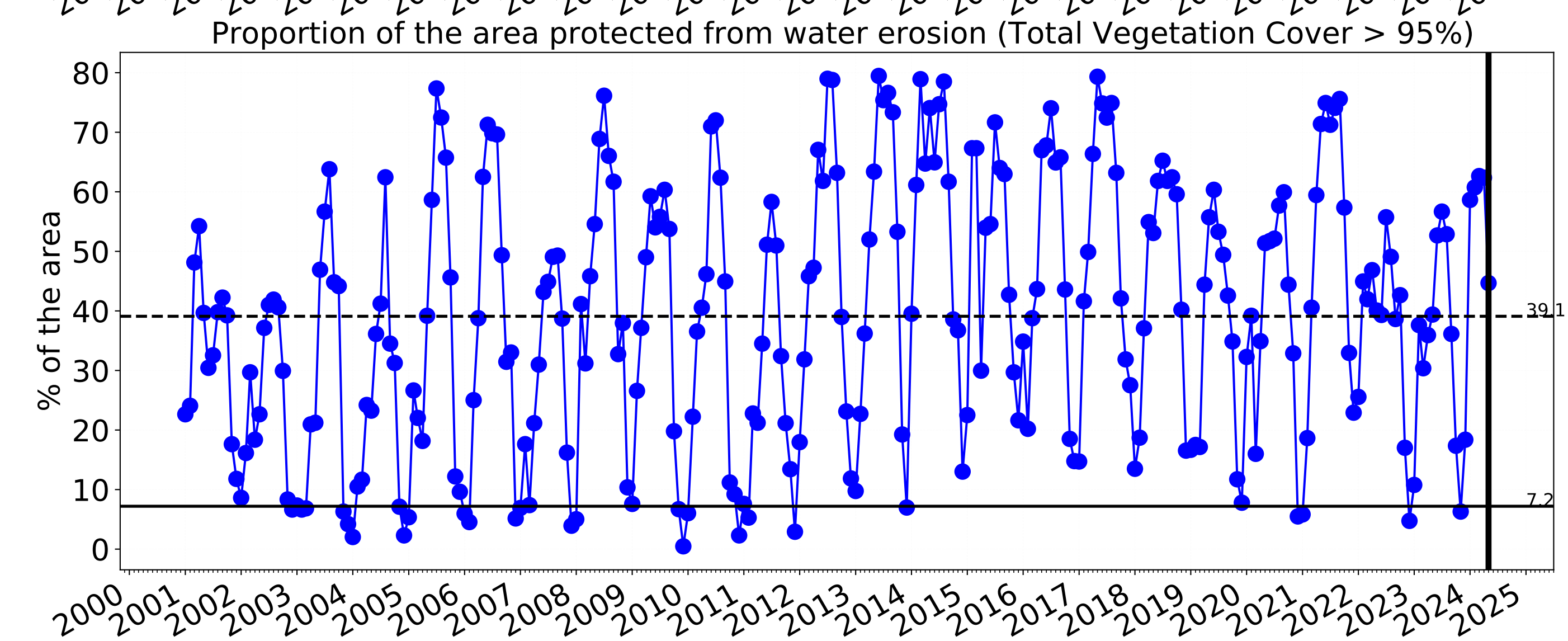
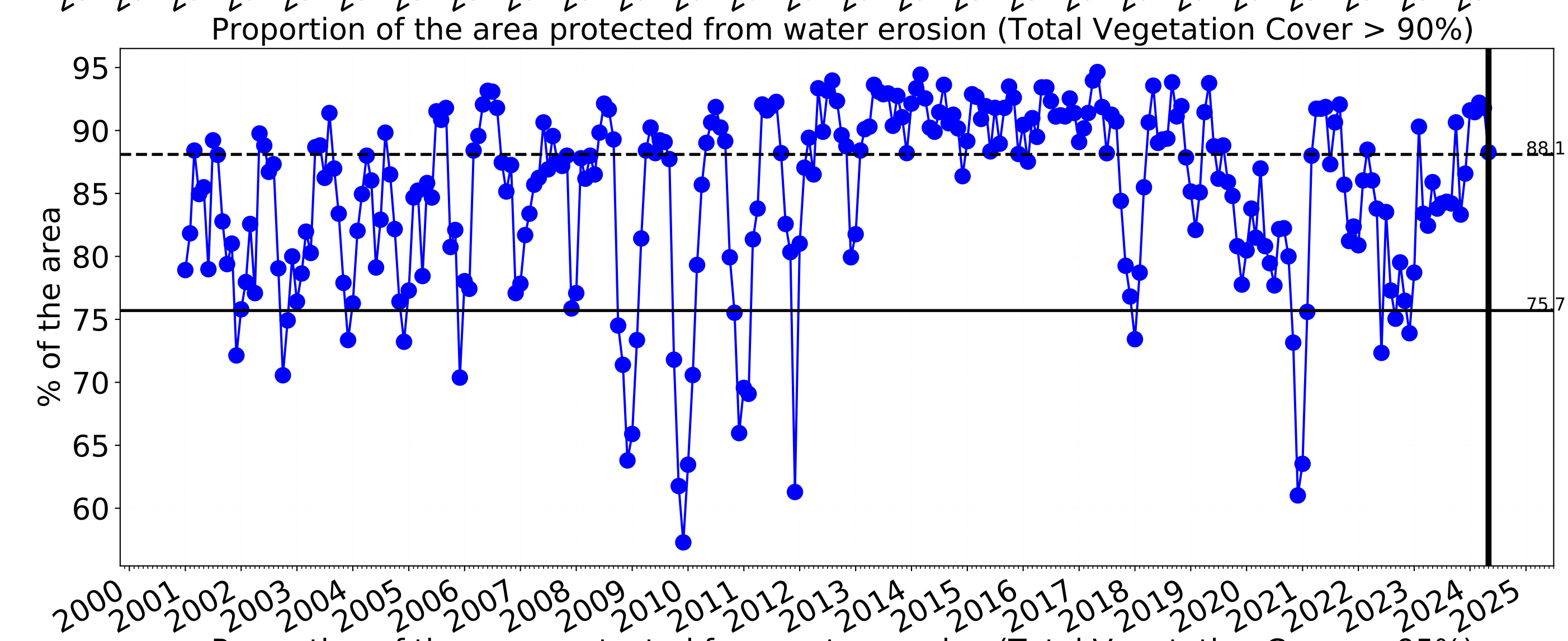
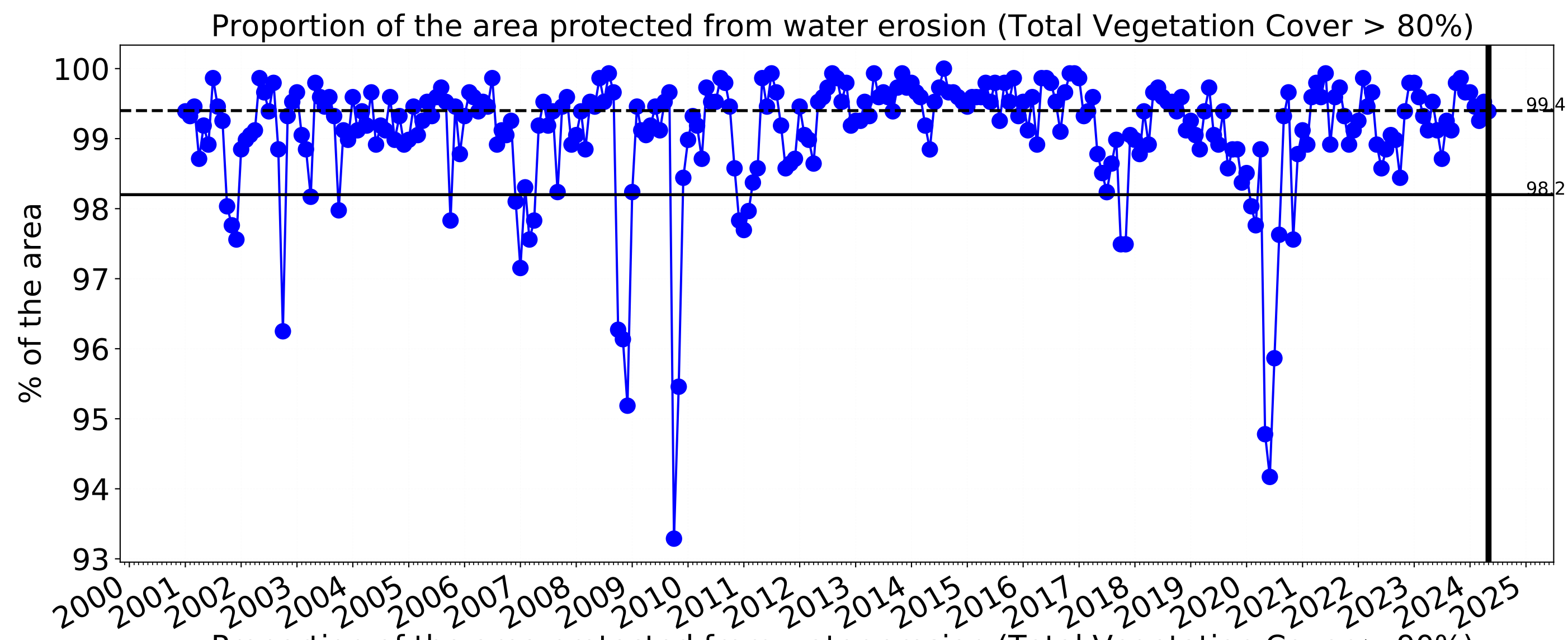


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Busselton_(C) (144,300 ha and no data 1,010 ha) Percentage area and hectares protected with TVC threshold 30,50,70,80,90 and 95%

Land use and forest cover Class	area(ha)	above_30	above_50	above_70	above_80	above_90	above_95
Entire region	144,300	99.9% 144,100	99.6% 143,750	97.6% 140,900	91.0% 131,250	51.4% 74,175	21.7% 31,350
Conservation and natural environments	24,675	100.0% 24,675	99.5% 24,550	97.7% 24,100	91.5% 22,575	53.3% 13,150	29.5% 7,275
Conservation and natural environments non forest	6,000	100.0% 6,000	98.8% 5,925	92.1% 5,525	78.3% 4,700	24.6% 1,475	5.4% 325
Conservation and natural environments Woodland forest	4,100	100.0% 4,100	100.0% 4,100	99.4% 4,075	94.5% 3,875	58.5% 2,400	29.9% 1,225
Conservation and natural environments Forest (non woodland)	14,575	100.0% 14,575	99.7% 14,525	99.5% 14,500	96.1% 14,000	63.6% 9,275	39.3% 5,725
Agriculture	75,725	99.9% 75,625	99.8% 75,575	98.5% 74,625	90.7% 68,675	35.8% 27,100	9.6% 7,275
Grazing	62,450	99.8% 62,350	99.8% 62,300	98.3% 61,400	90.4% 56,425	36.3% 22,650	9.9% 6,200
Grazing non forest	62,400	99.8% 62,300	99.8% 62,250	98.3% 61,350	90.3% 56,375	36.3% 22,625	9.9% 6,200
Irrigation	13,275	100.0% 13,275	100.0% 13,275	99.6% 13,225	92.3% 12,250	33.5% 4,450	8.1% 1,075
Production native forests and plantation forests	36,875	100.0% 36,875	100.0% 36,875	99.9% 36,850	99.4% 36,650	88.3% 32,550	44.7% 16,475