

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:

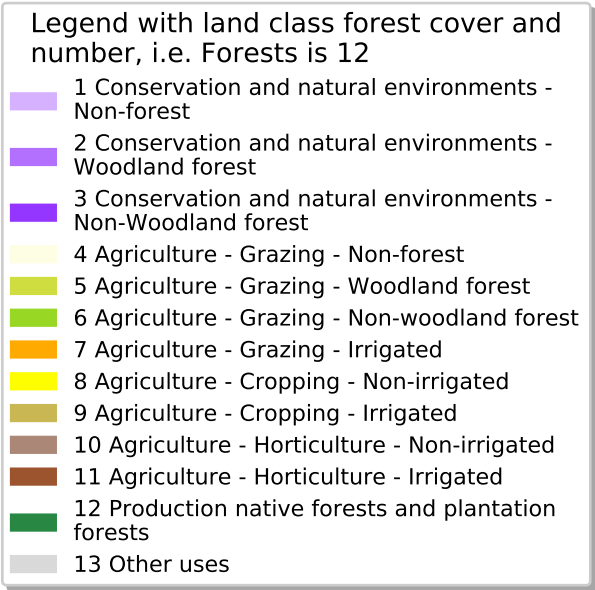
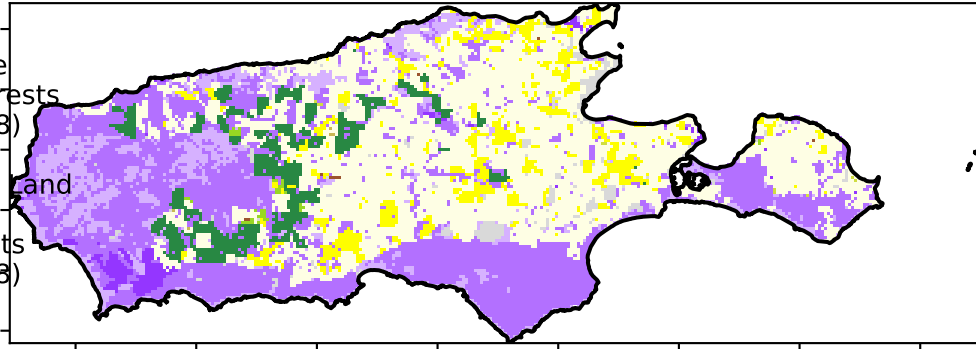
1. <http://www.agriculture.gov.au/abares/aclump/land-use/alum-classification>
2. <http://www.agriculture.gov.au/abares/forestsaustralia/sofr/sofr-2018>
3. <https://www.dpi.nsw.gov.au/agriculture/pastures-and-rangelands/establishment-mgmt/production-management2/groundcover>
4. MODIS Fractional cover algorithm:
<https://doi.org/10.4225/08/5848a3f19a7b3>



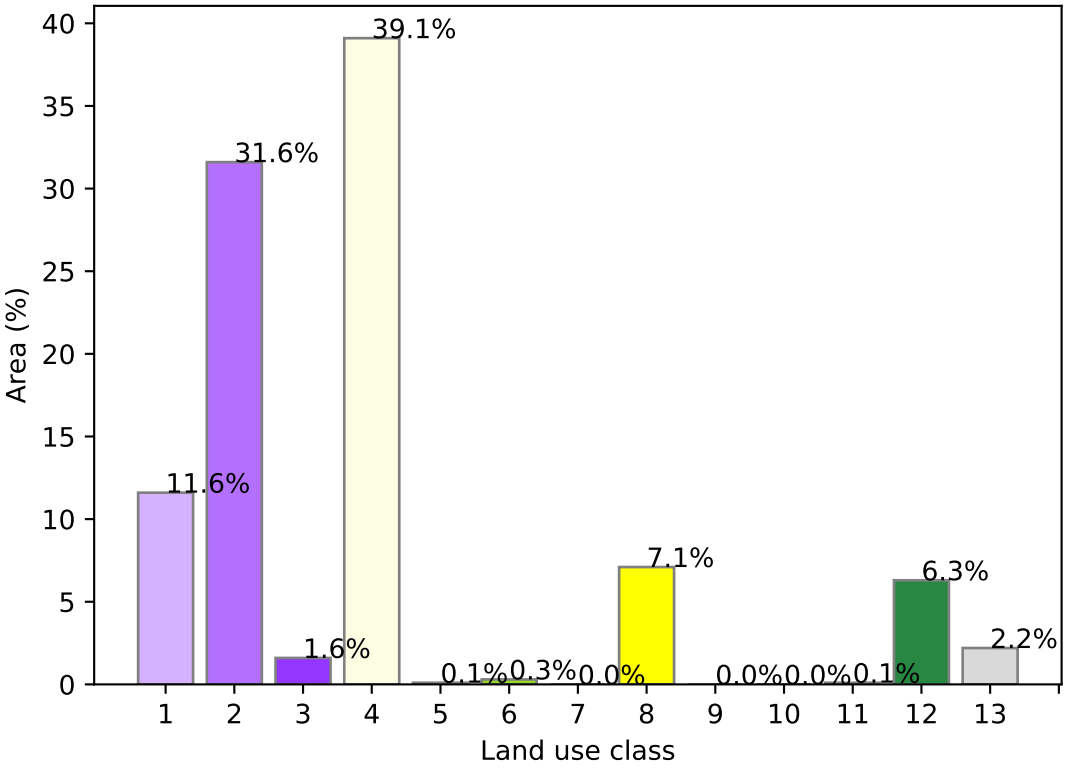
Vegetation Cover May 2021

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

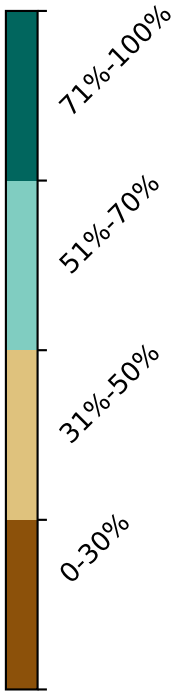
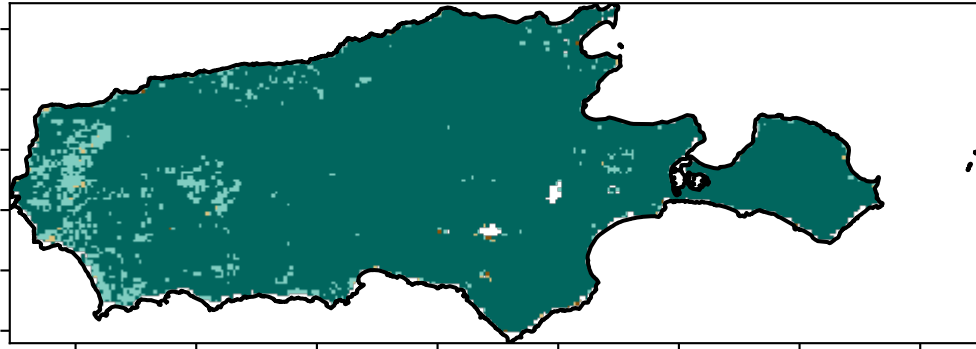
Land use and forest cover



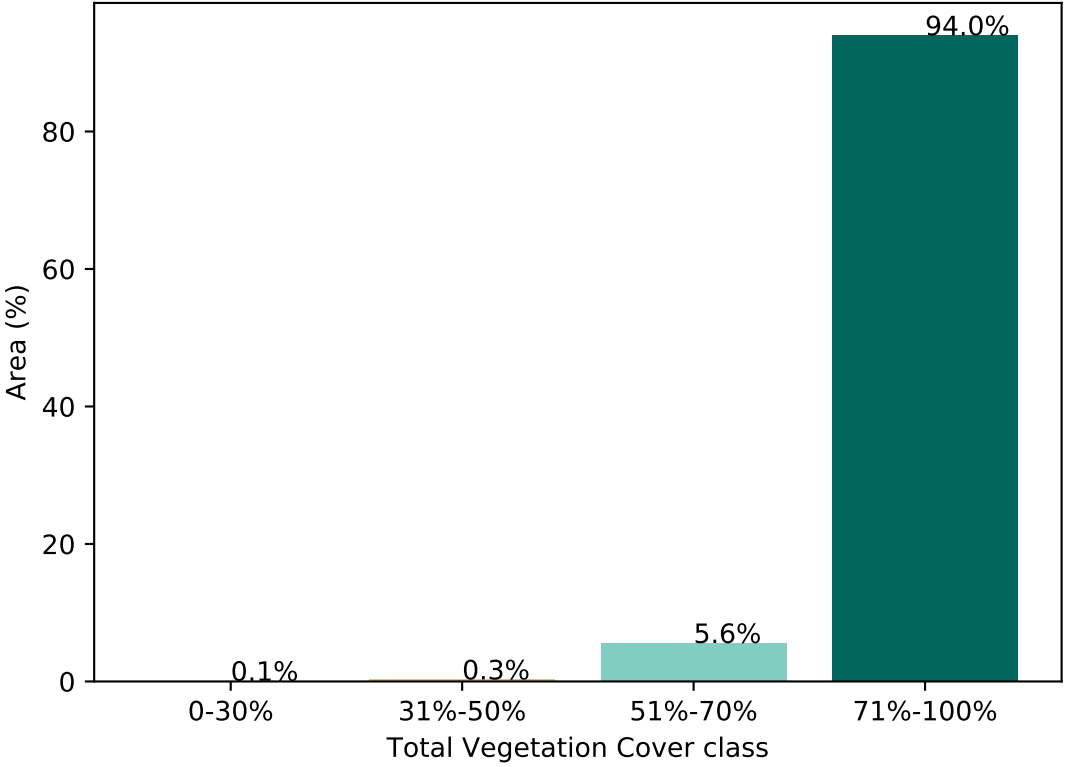
Proportion of each land class in area



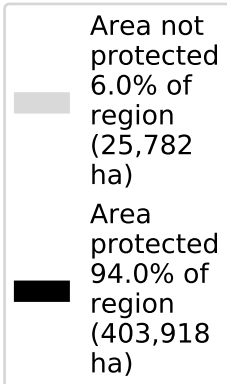
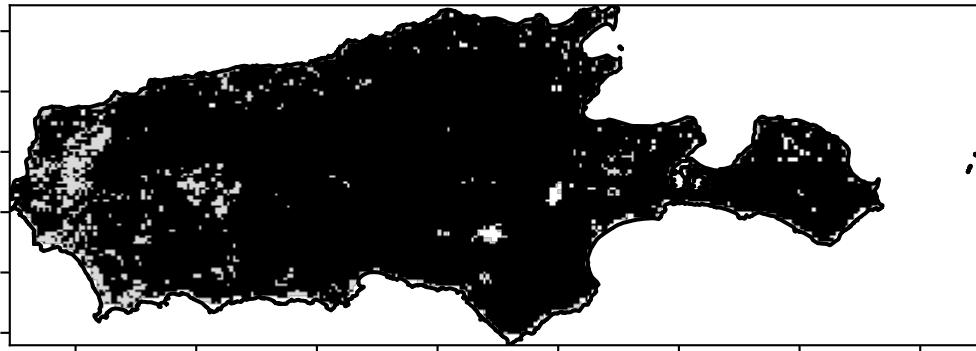
Total Vegetation Cover [%]



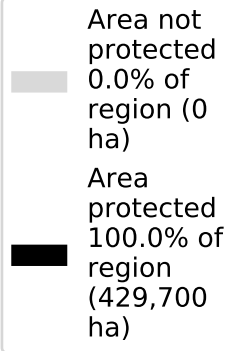
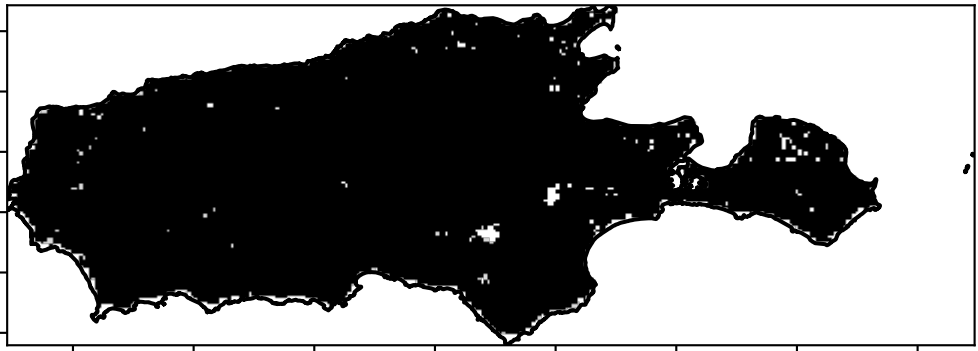
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

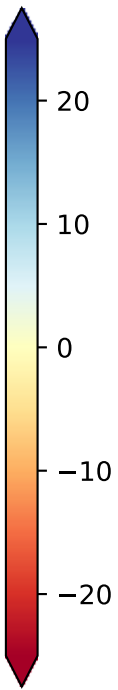
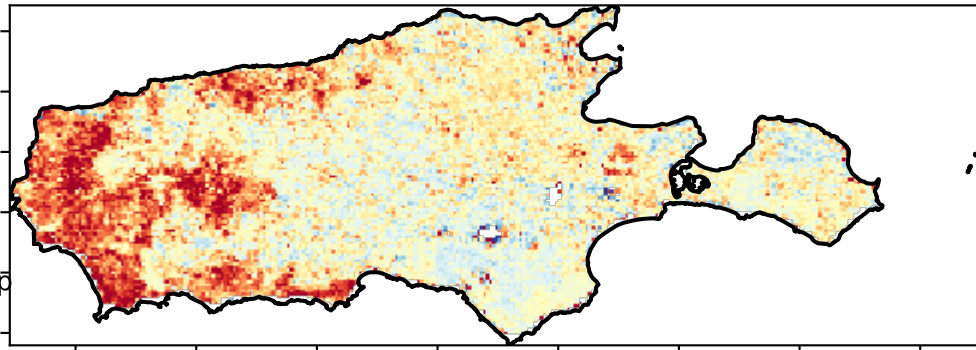


% Area protected from wind erosion (>50%)



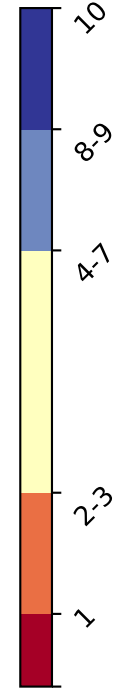
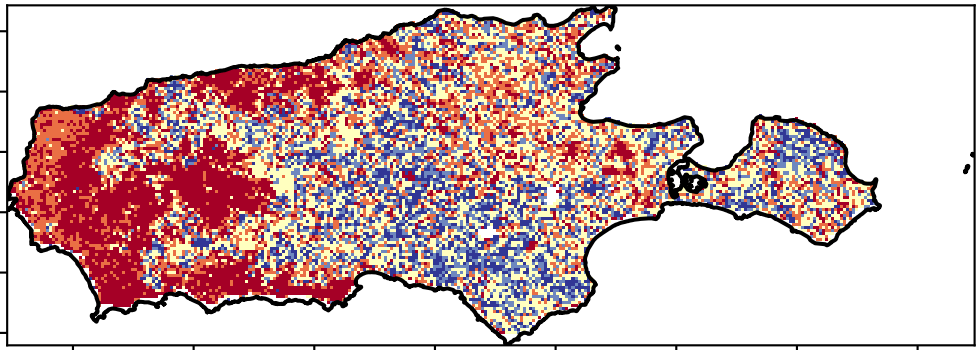
Anomaly show how many percentage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

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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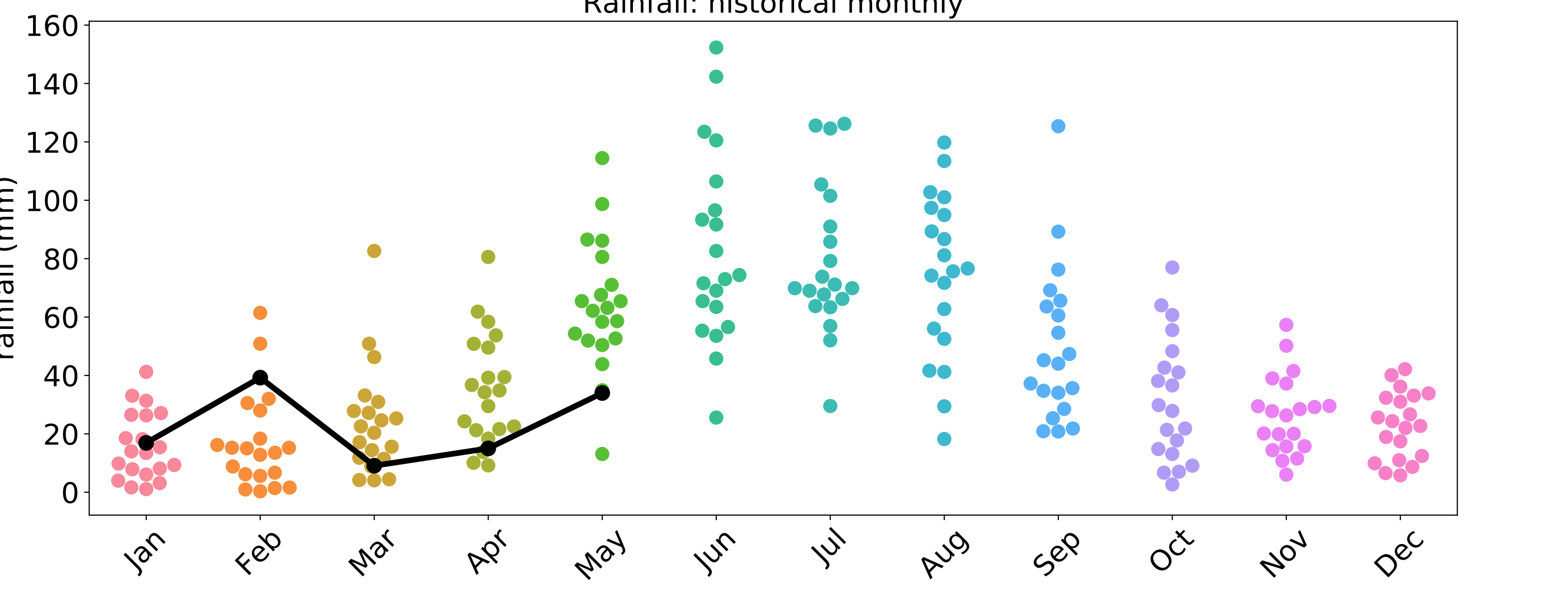
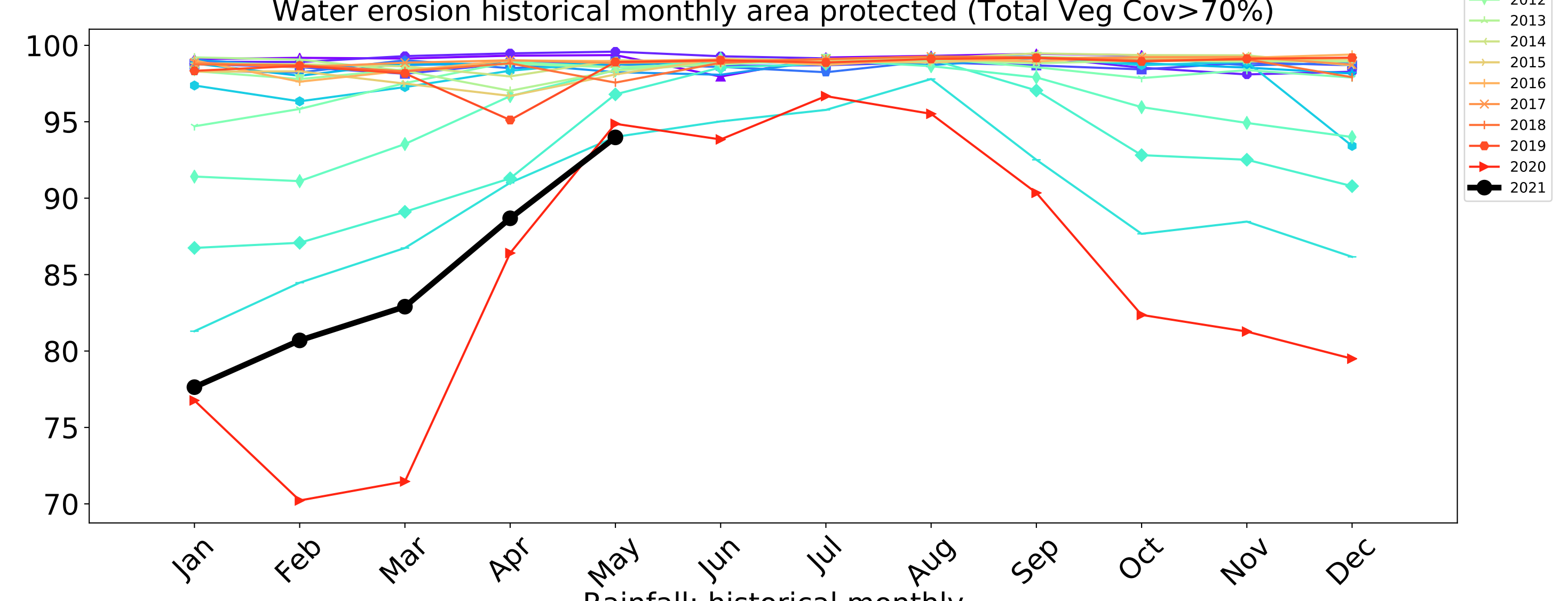
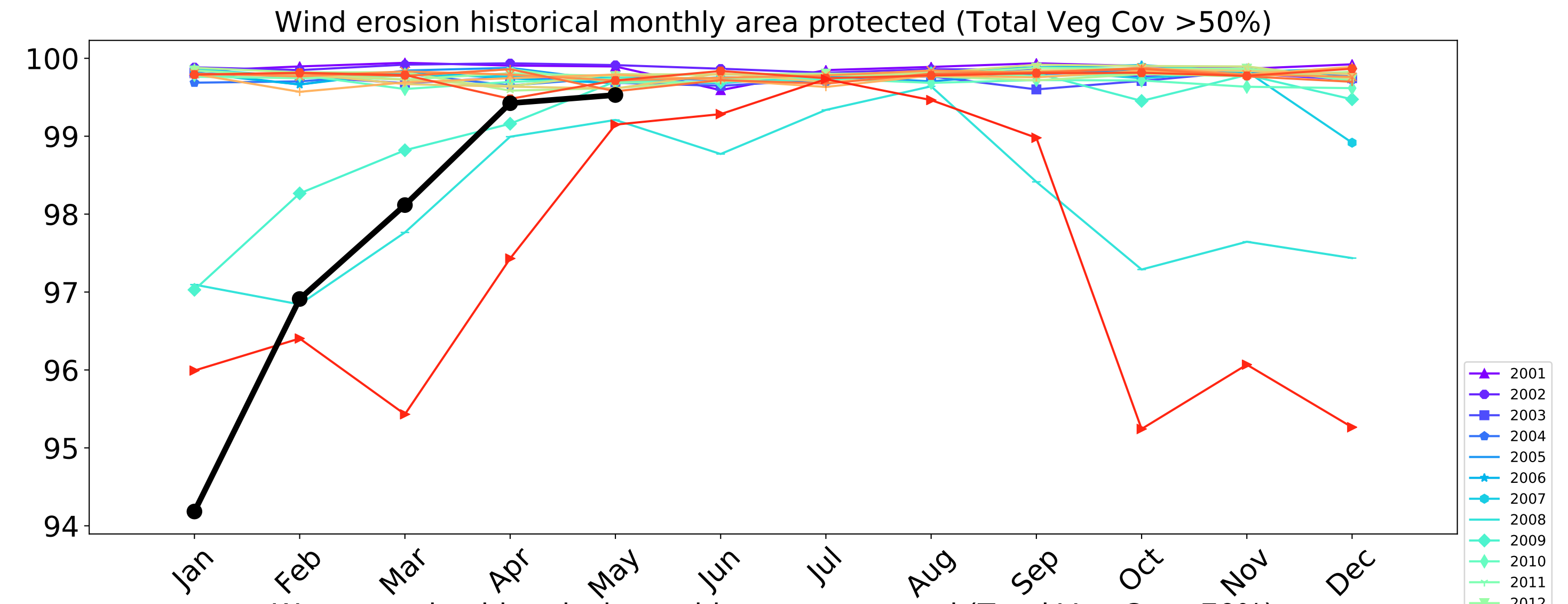
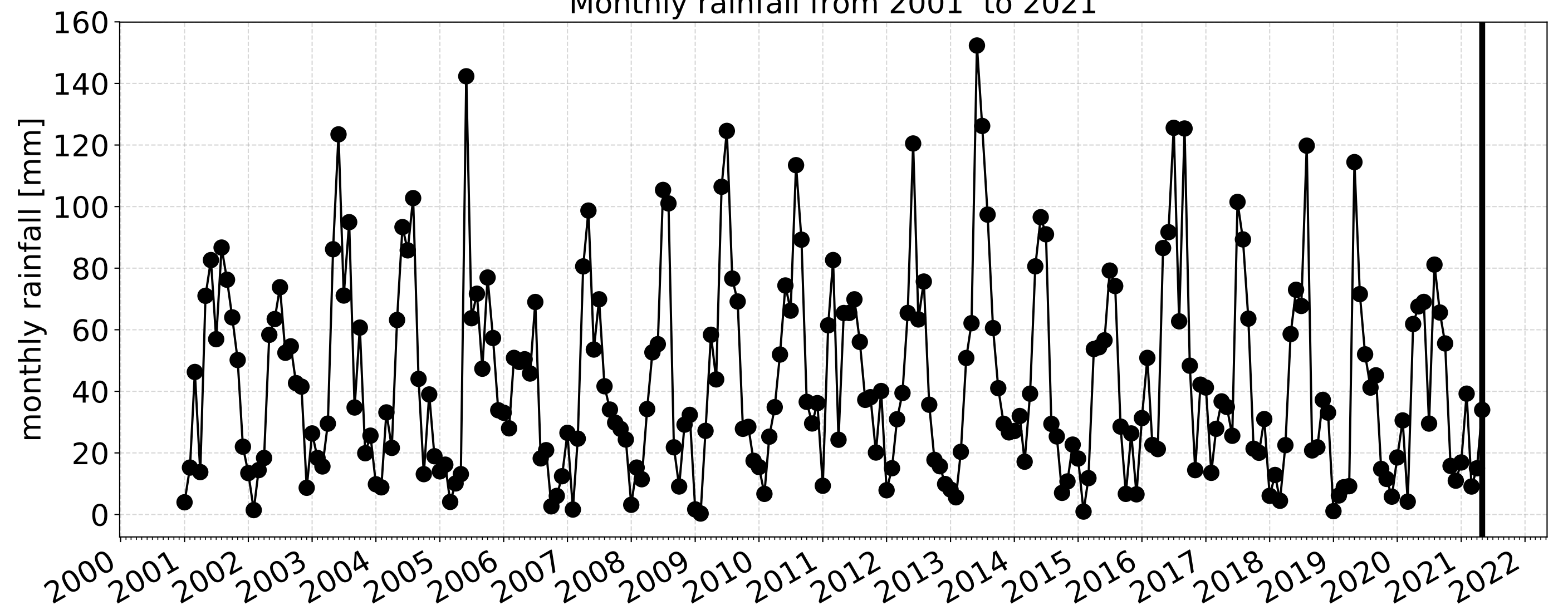
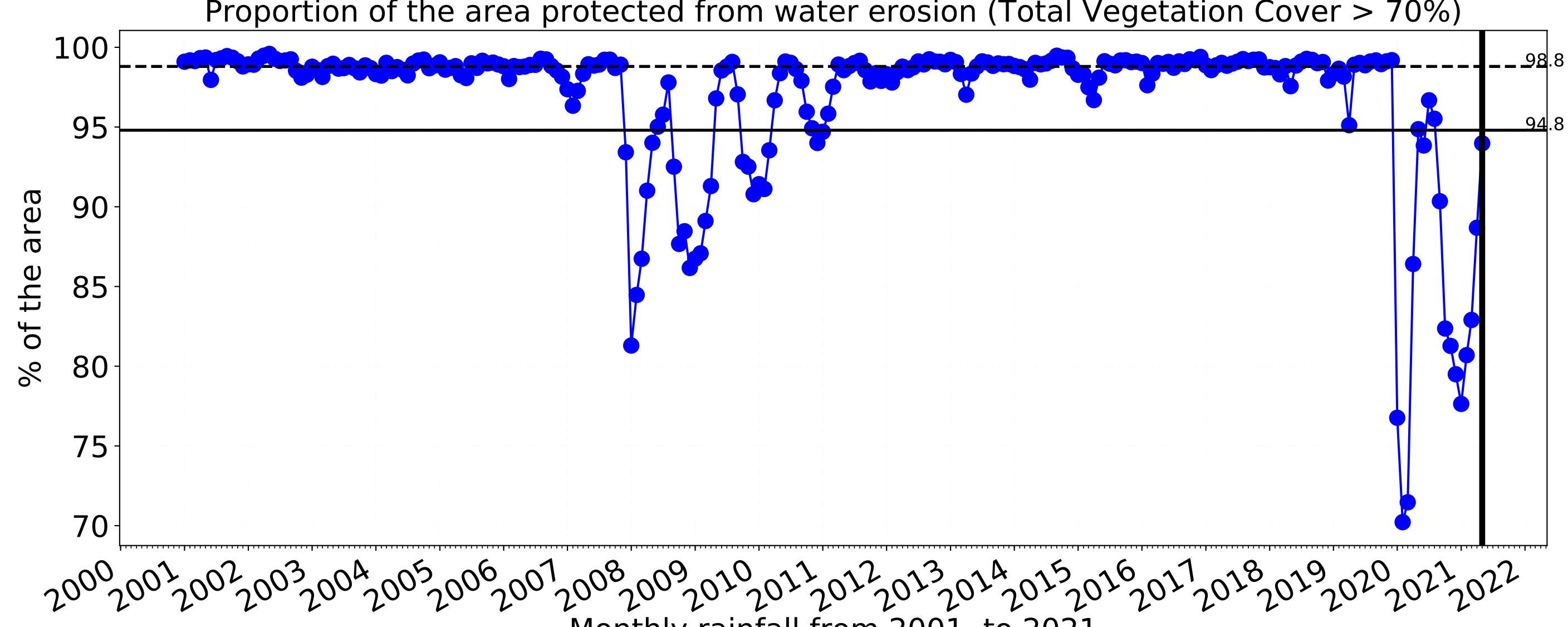
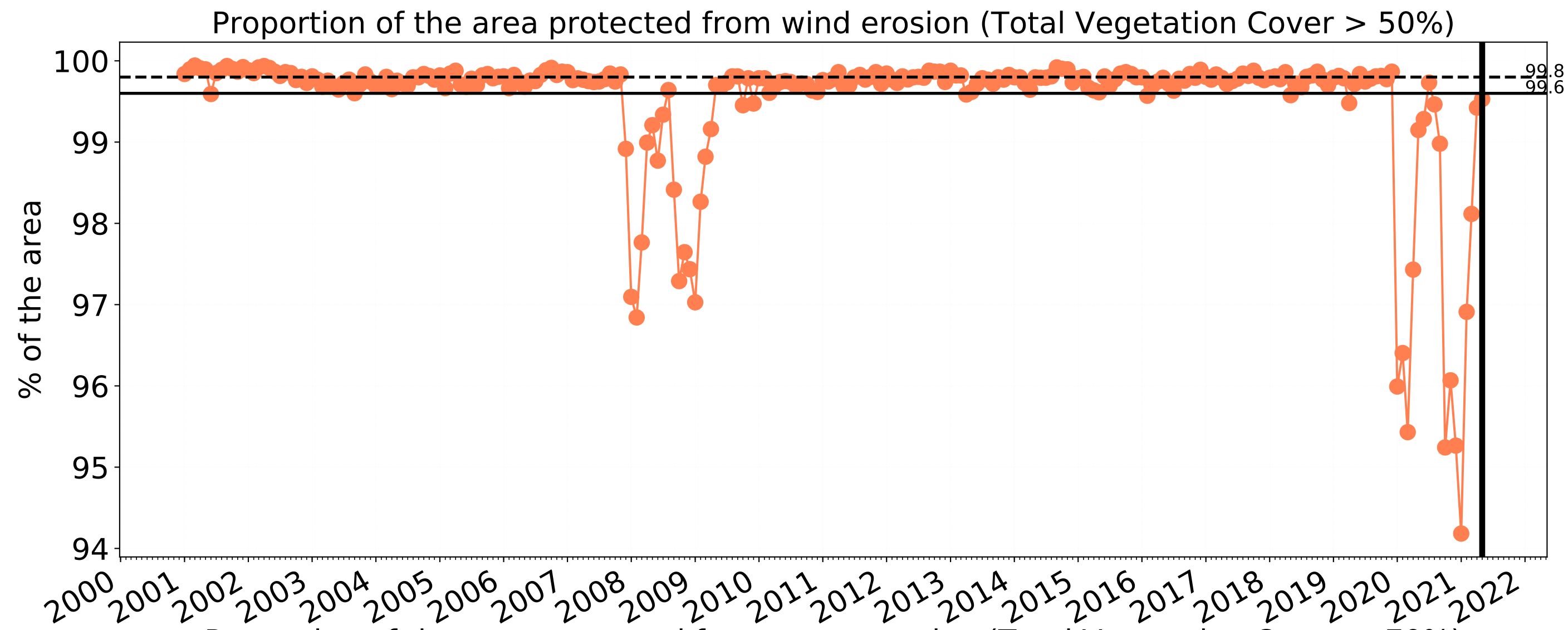
Ecosystem Research Infrastructure

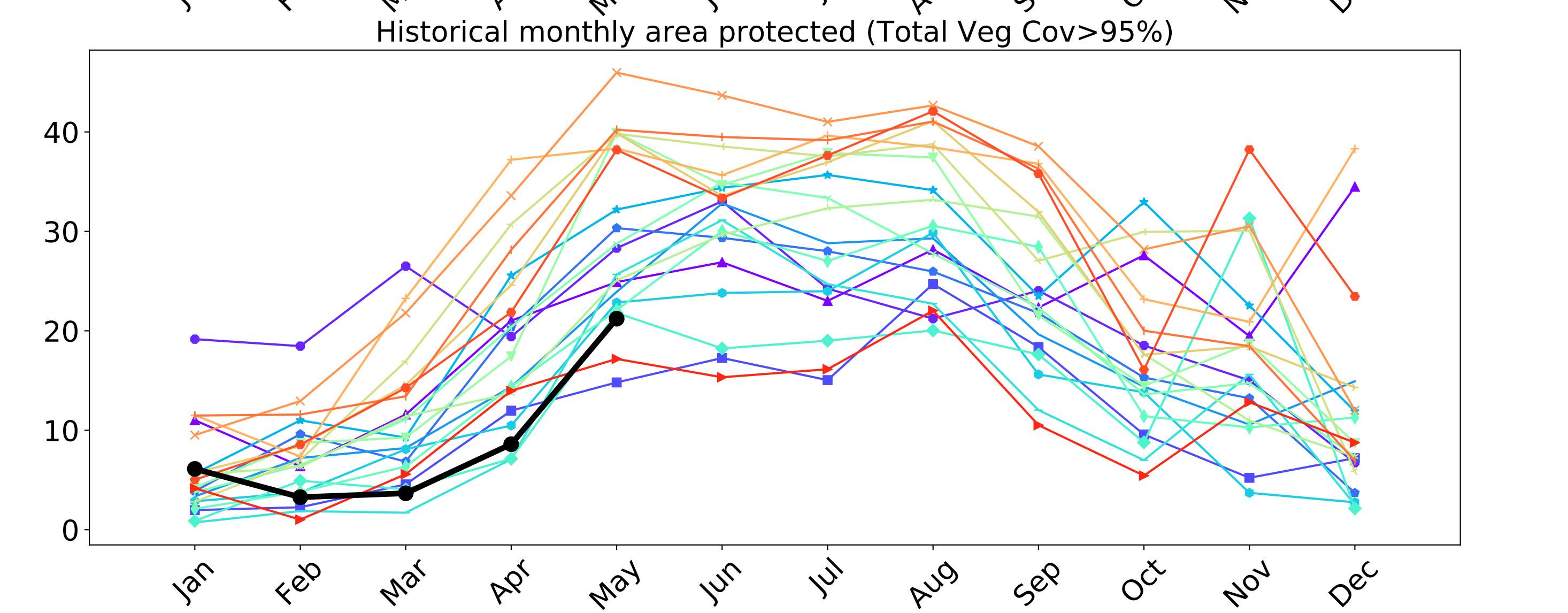
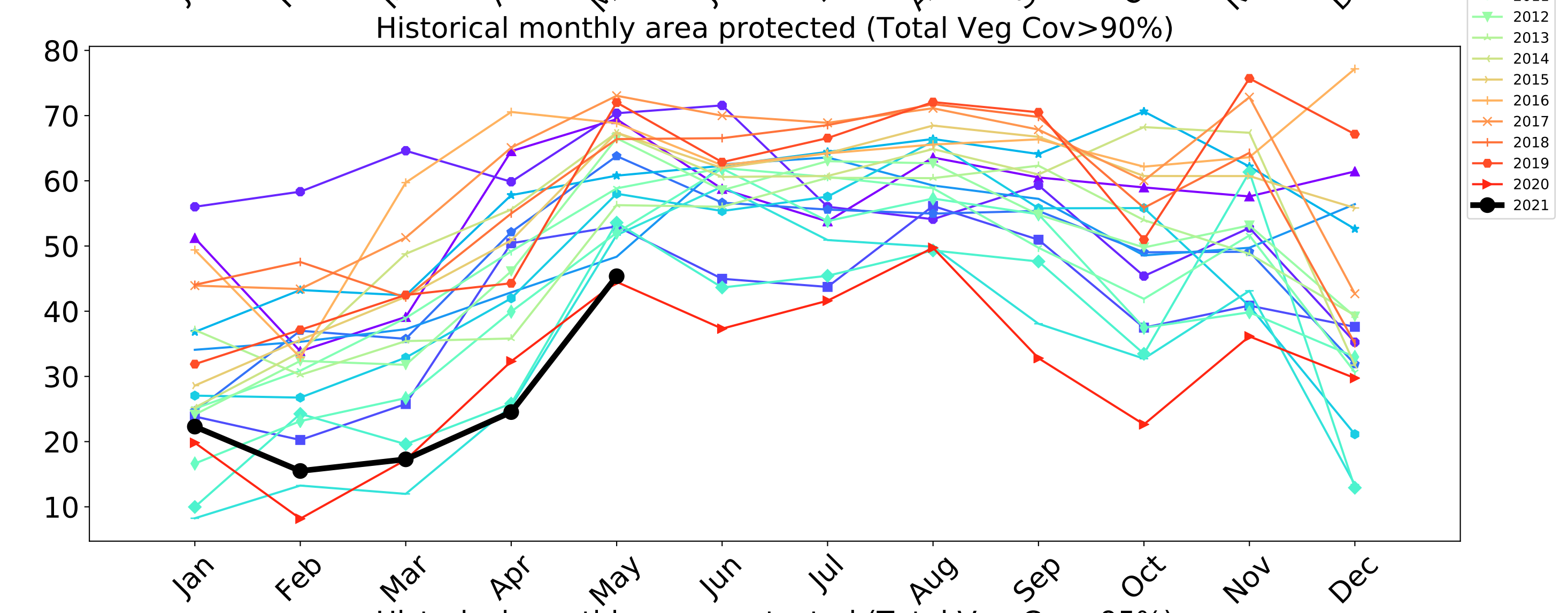
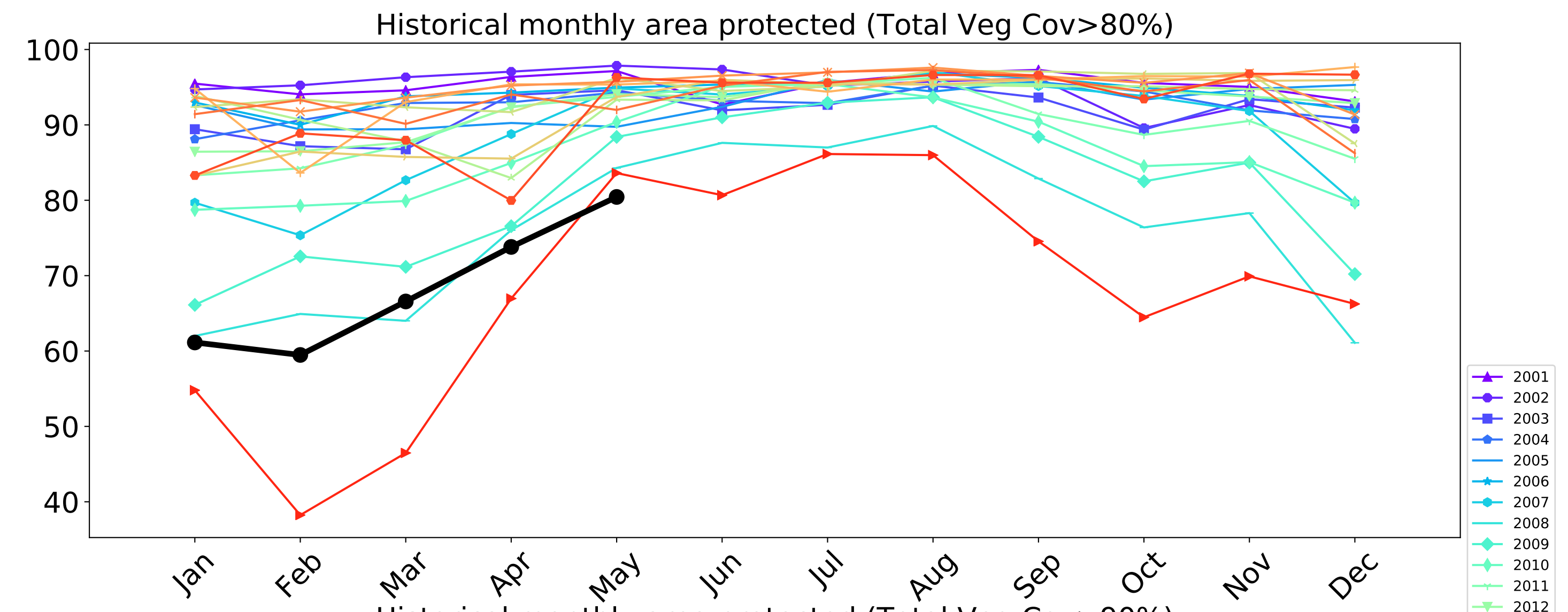
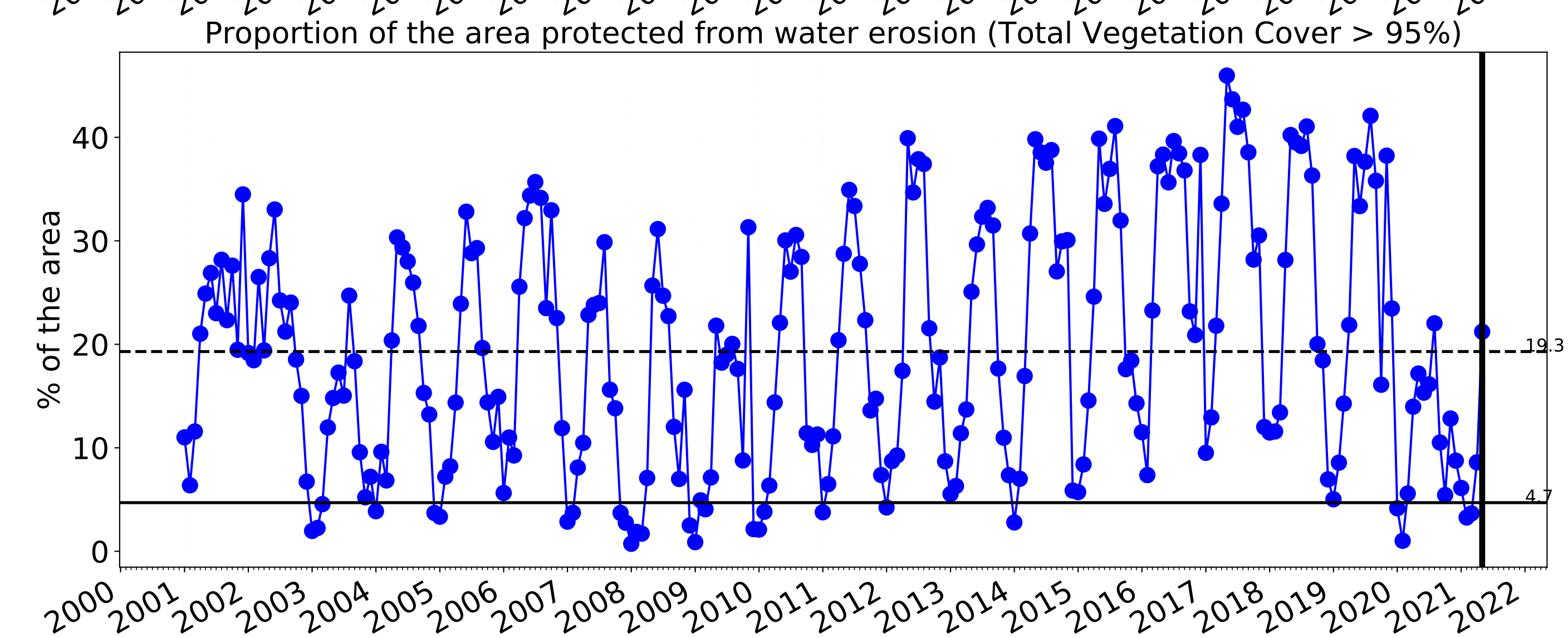
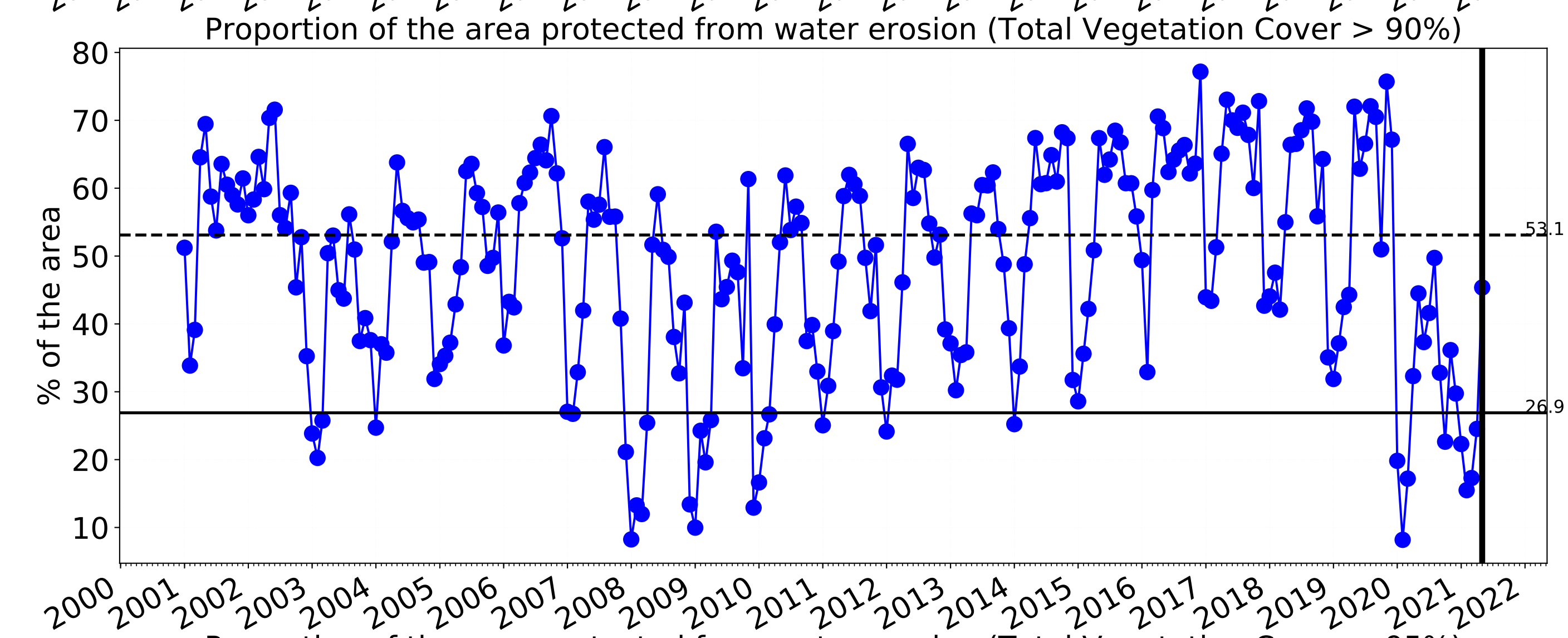
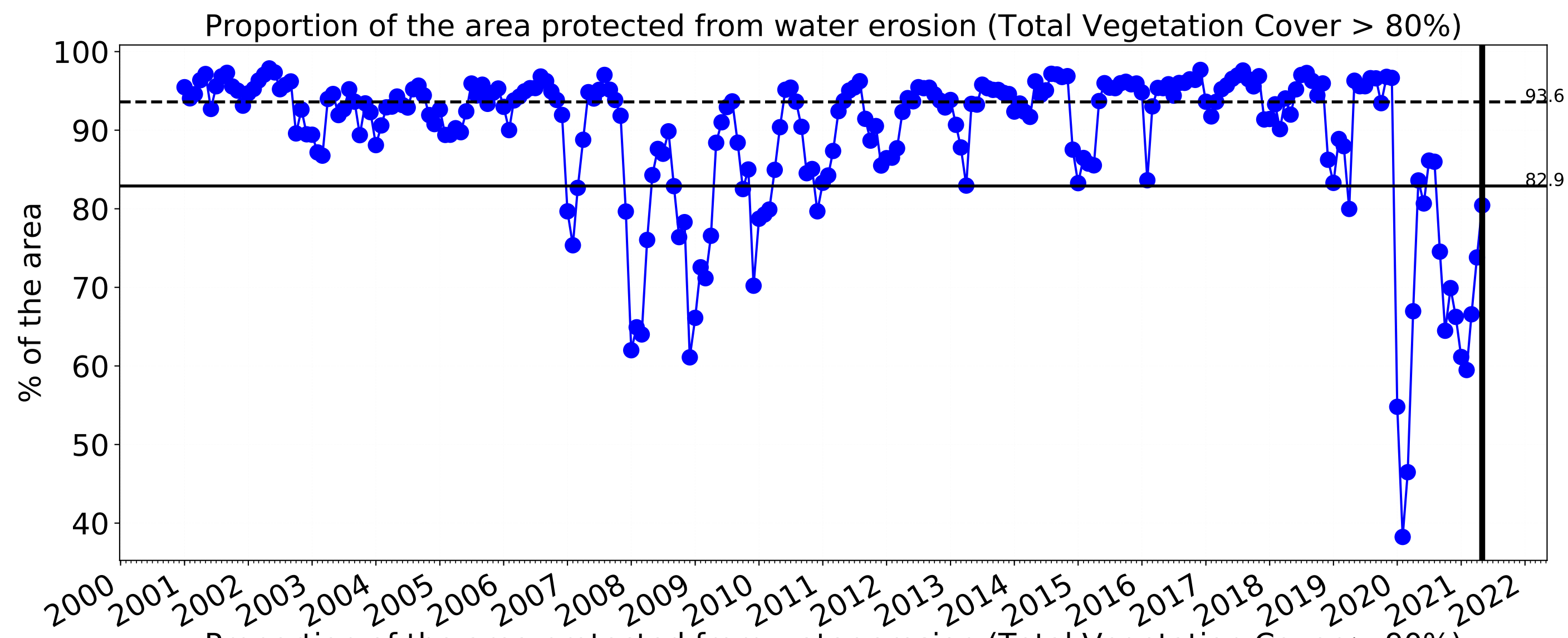


Australian Government

National Landcare Programme



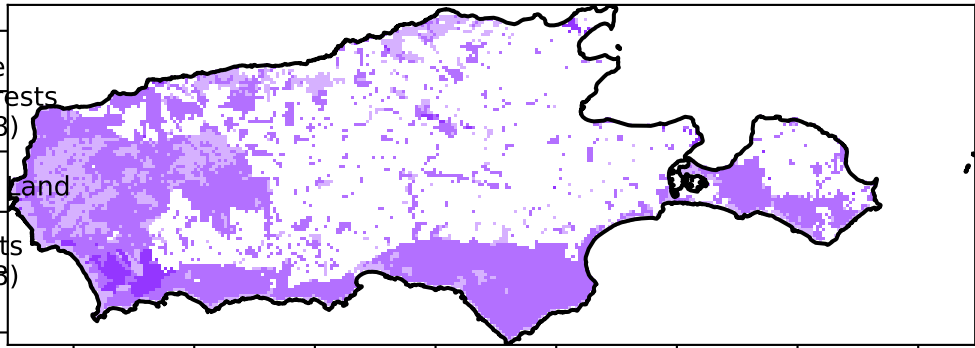




Conservation and natural environments

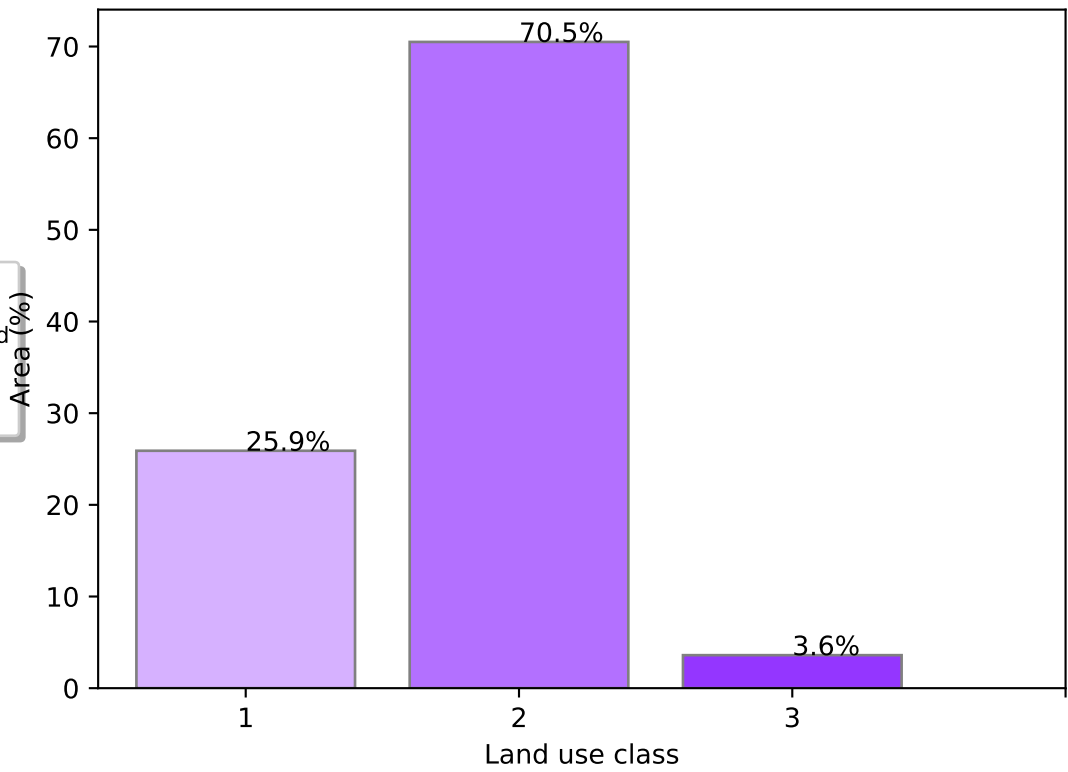
Catchment Scale
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Land use and forest cover

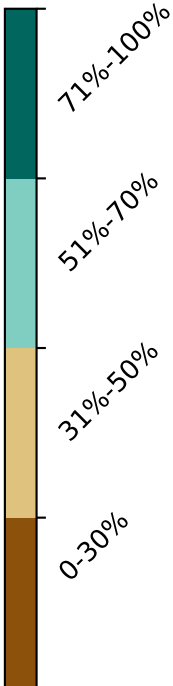
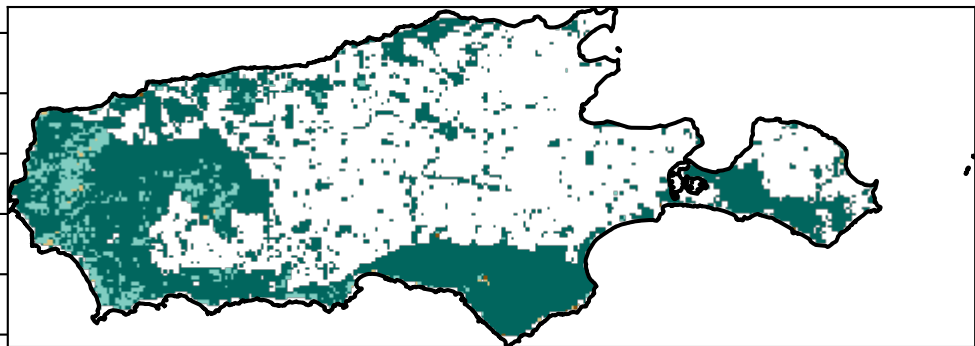


- 1 Conservation and natural environments - Non-forest
- 2 Conservation and natural environments - Woodland forest
- 3 Conservation and natural environments - Non-woodland forest

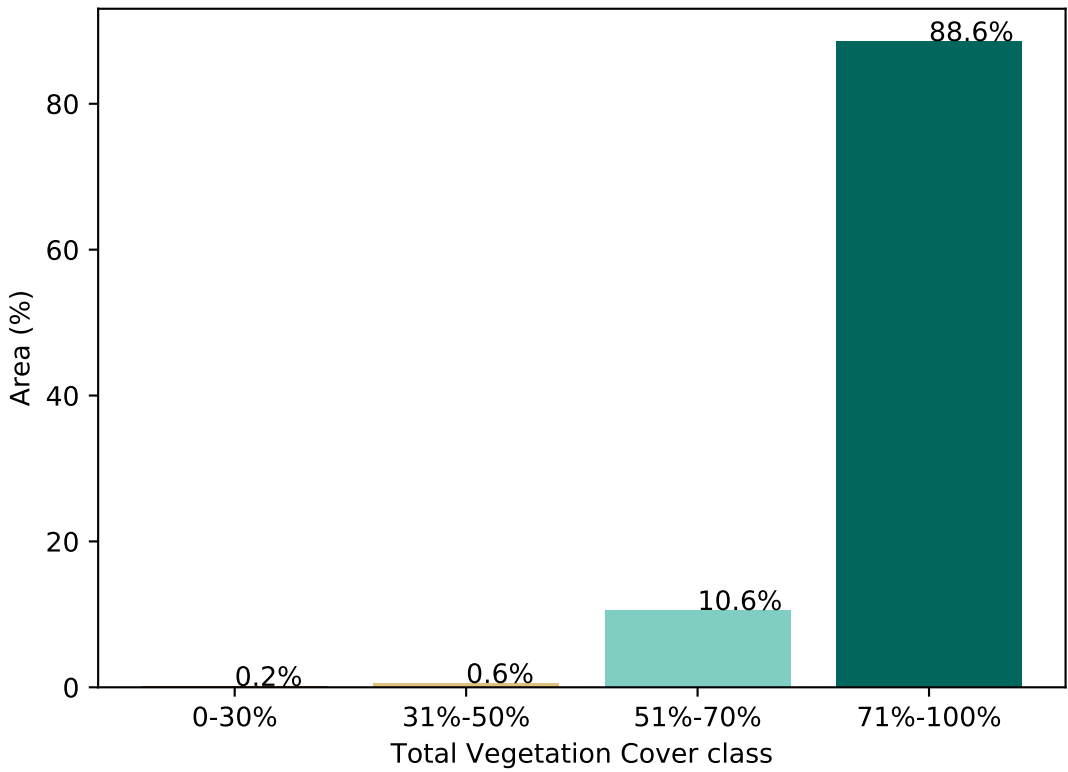
Proportion of each land class in area



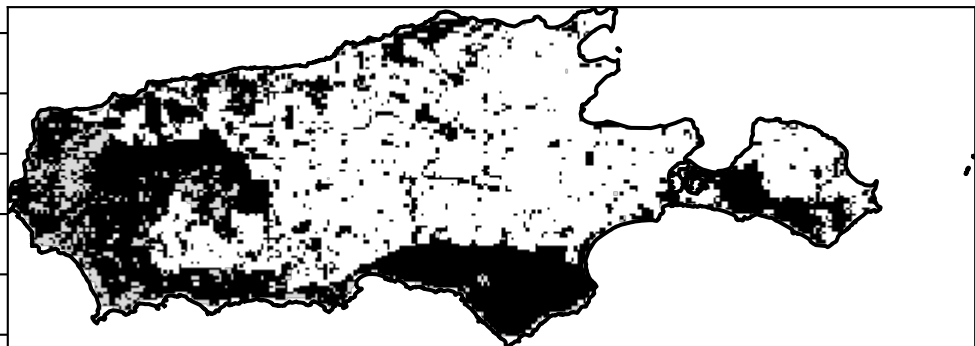
Total Vegetation Cover [%]



Proportion of vegetation cover class in area

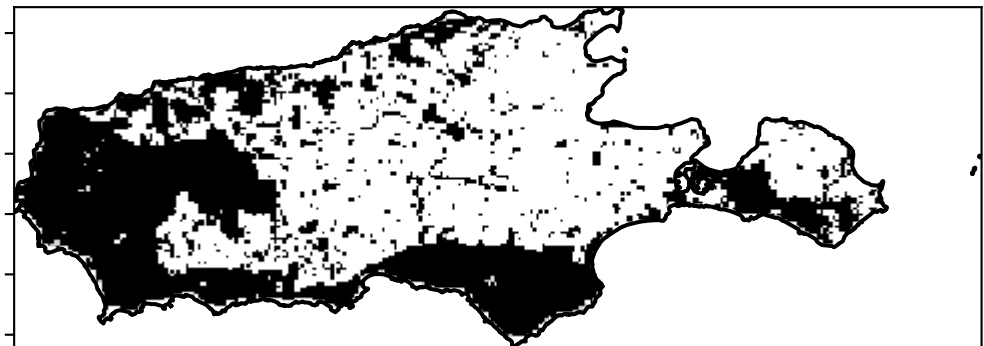


% Area protected from water erosion (>70%)



- Area not protected
11.4% of region
(21,688 ha)
- Area protected
88.6% of region
(168,561 ha)

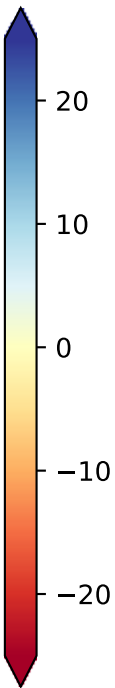
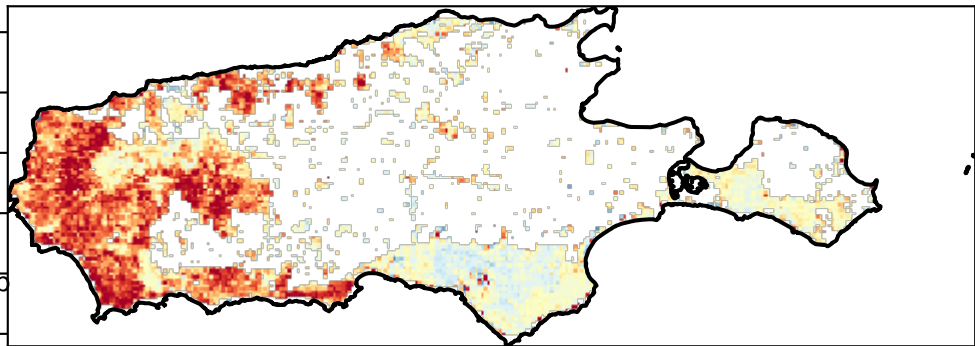
% Area protected from wind erosion (>50%)



- Area not protected
1.0% of region
(1,902 ha)
- Area protected
99.0% of region
(188,347 ha)

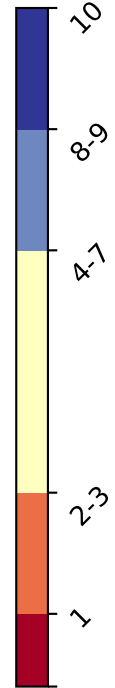
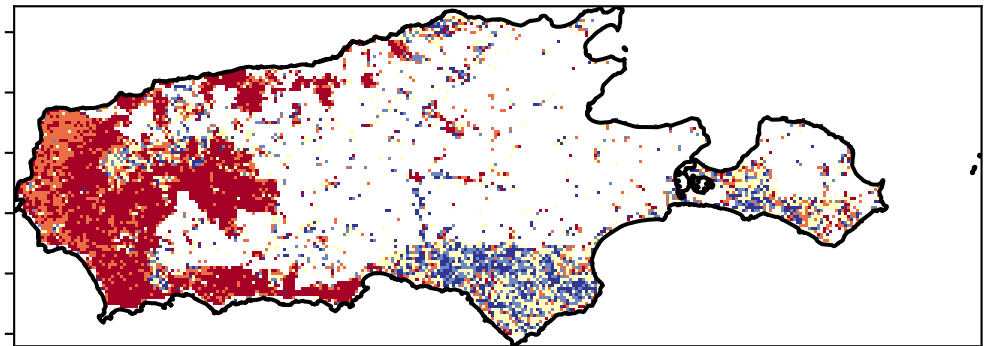
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Total Vegetation Cover Anomaly [%]



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the map using baseline
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Total Vegetation Cover Decile [%]



Ecosystem Research Infrastructure

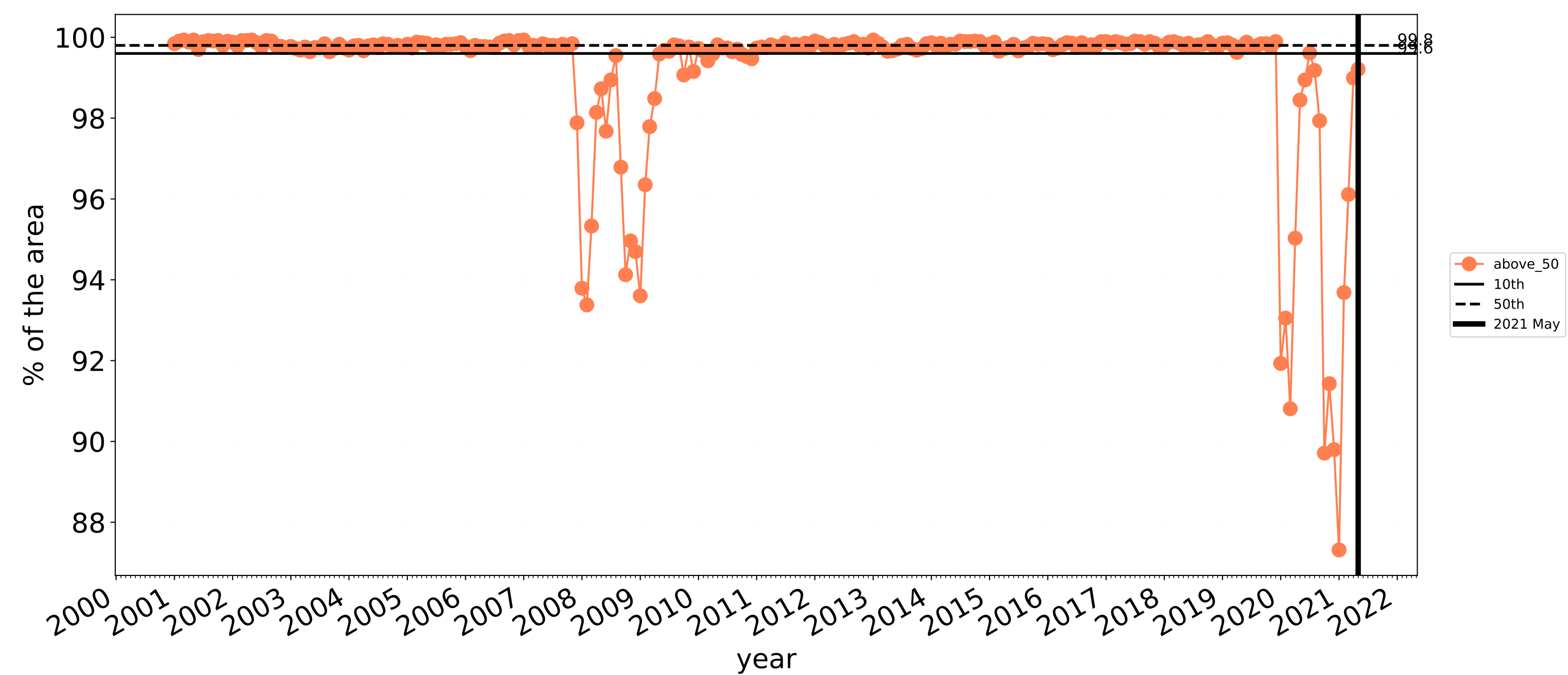


National
Landcare
Programme

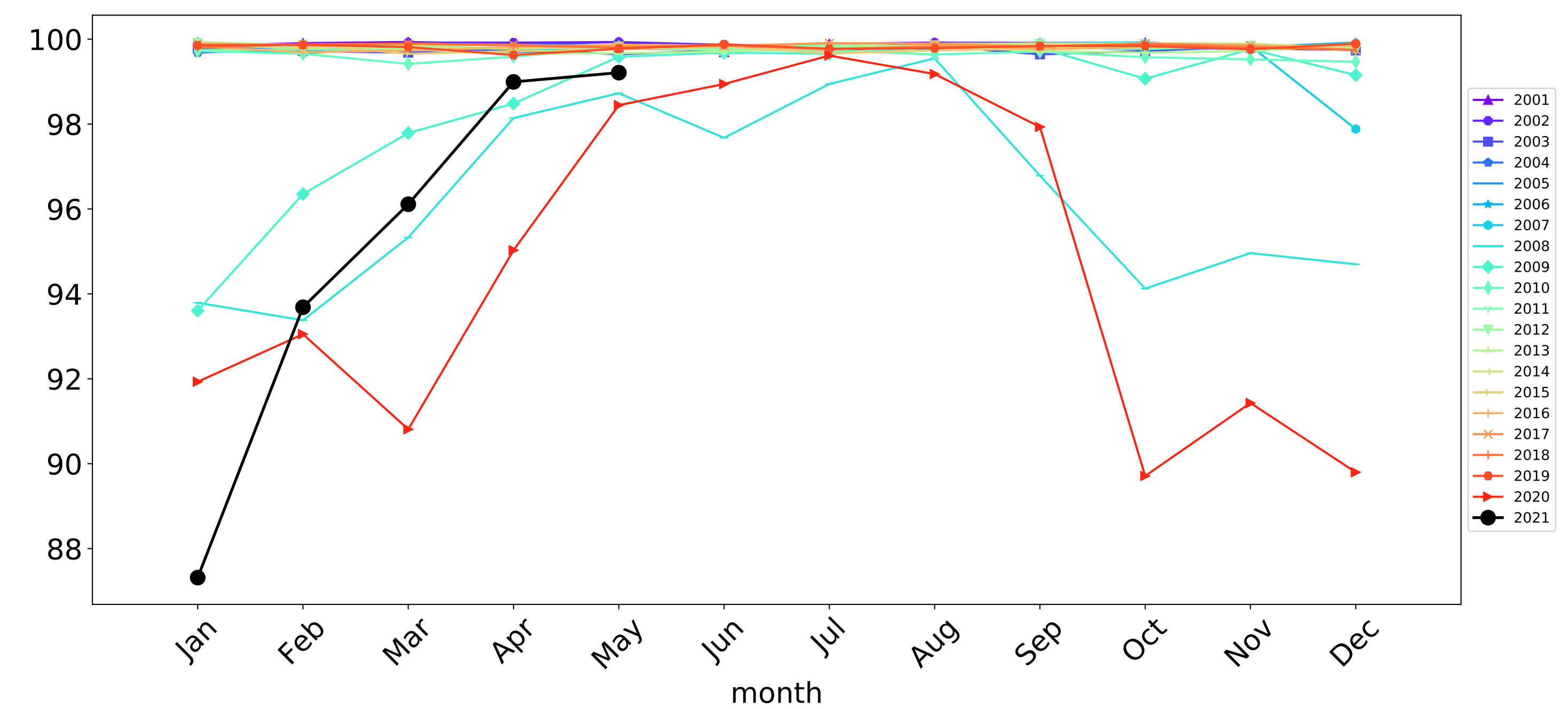


Conservation and natural environments timeseries

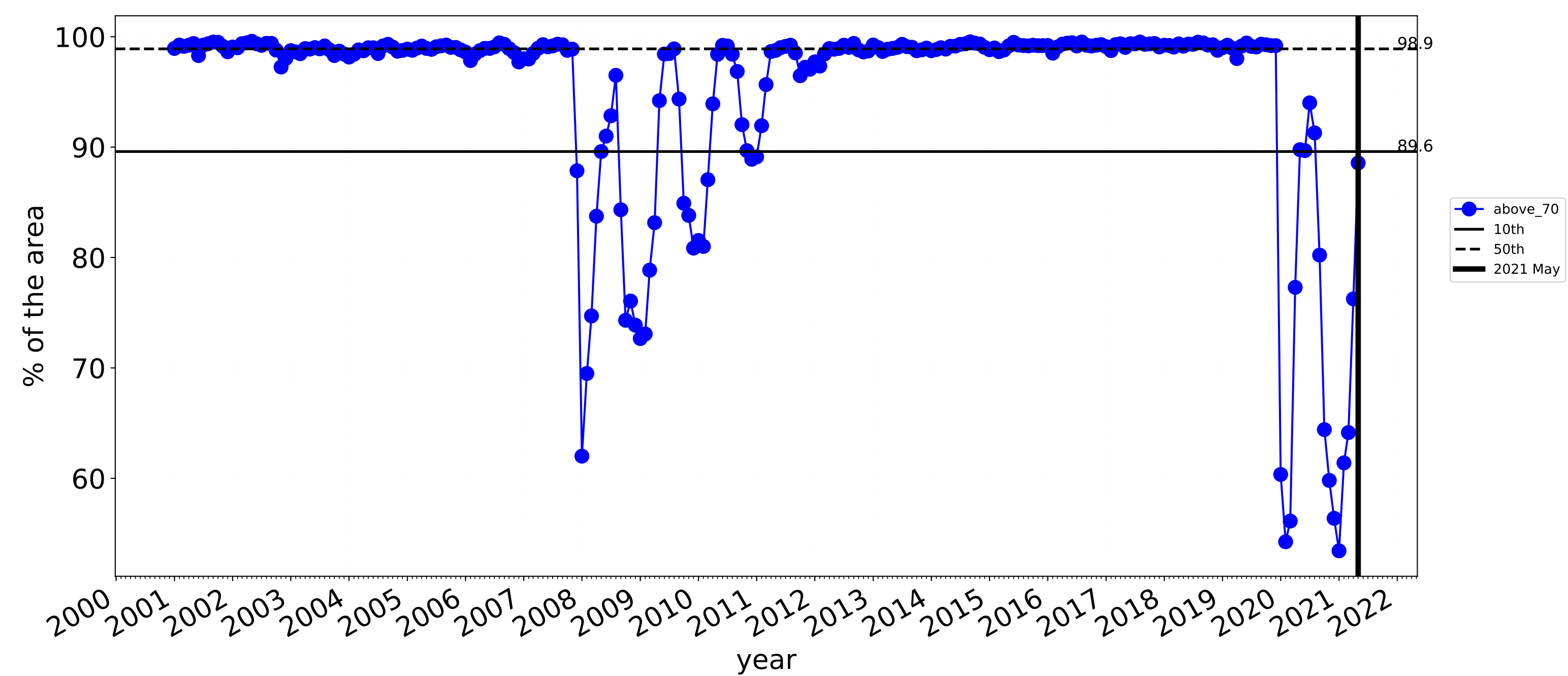
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



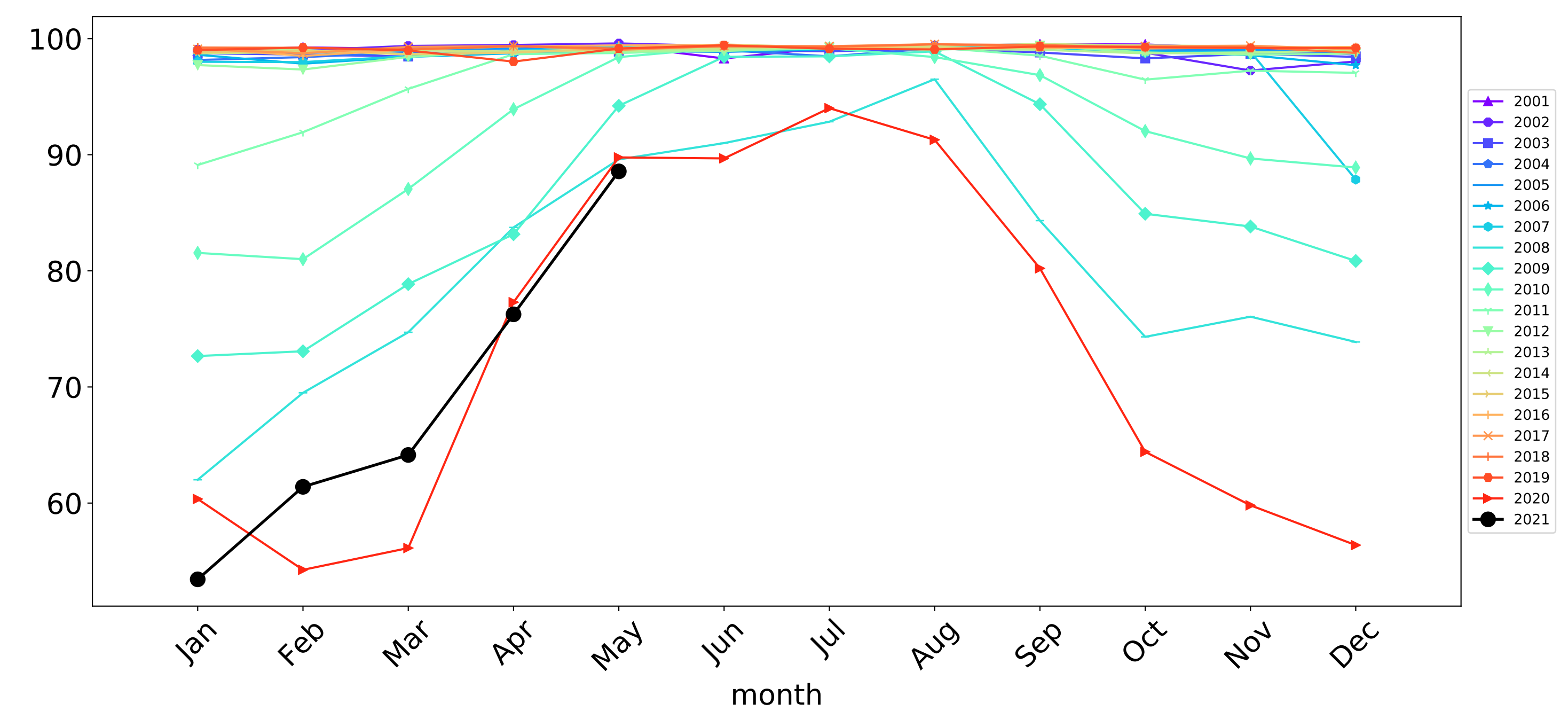
Wind erosion historical monthly area protected (Total Veg Cov >50%)

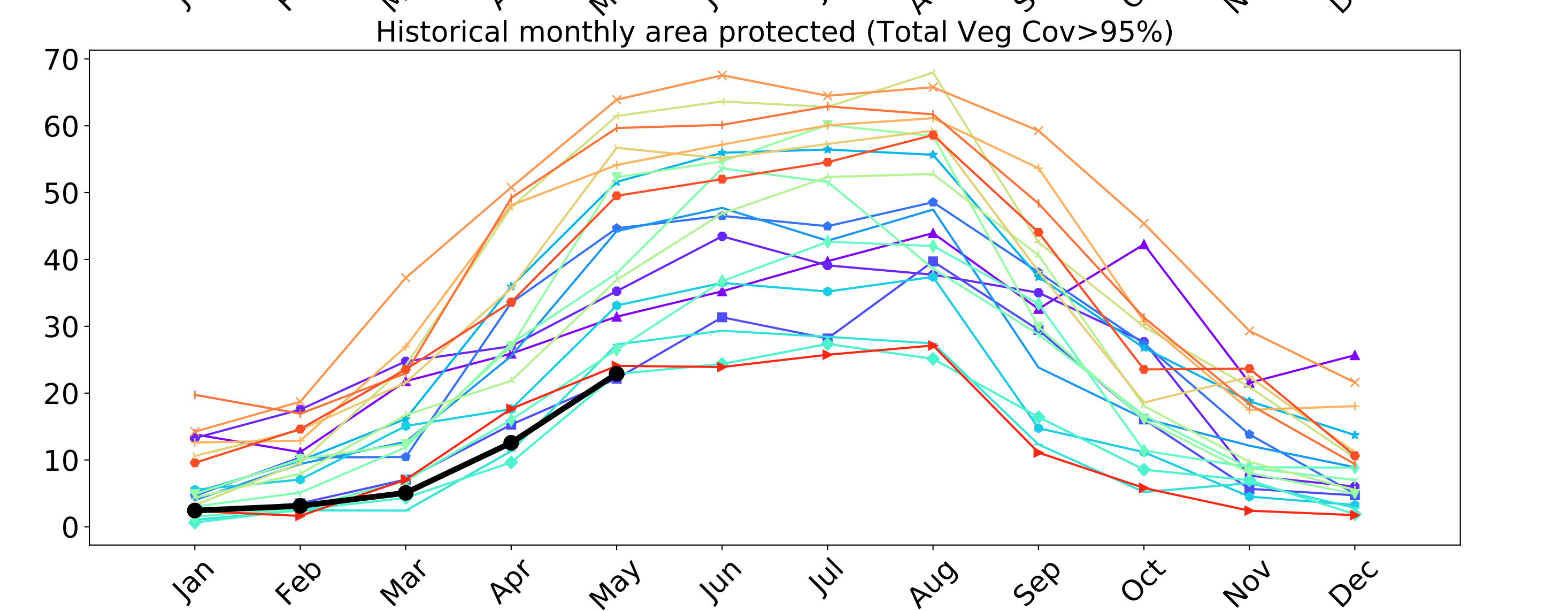
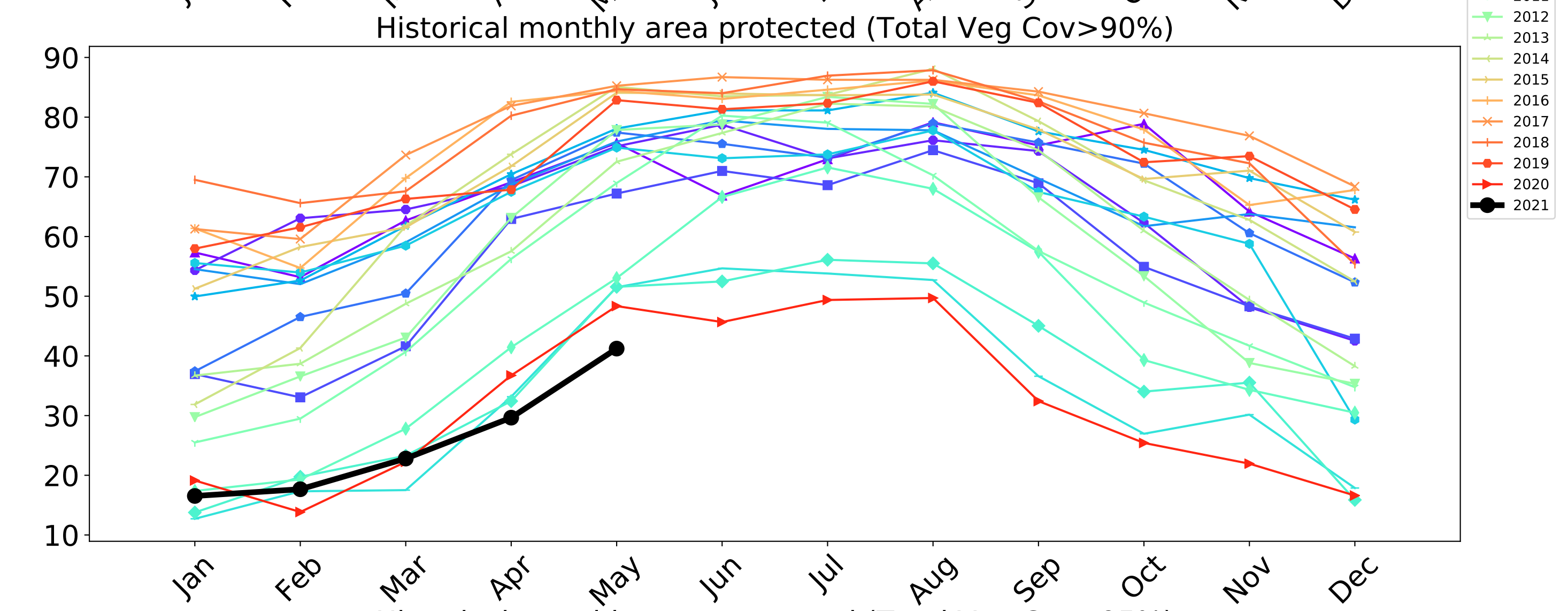
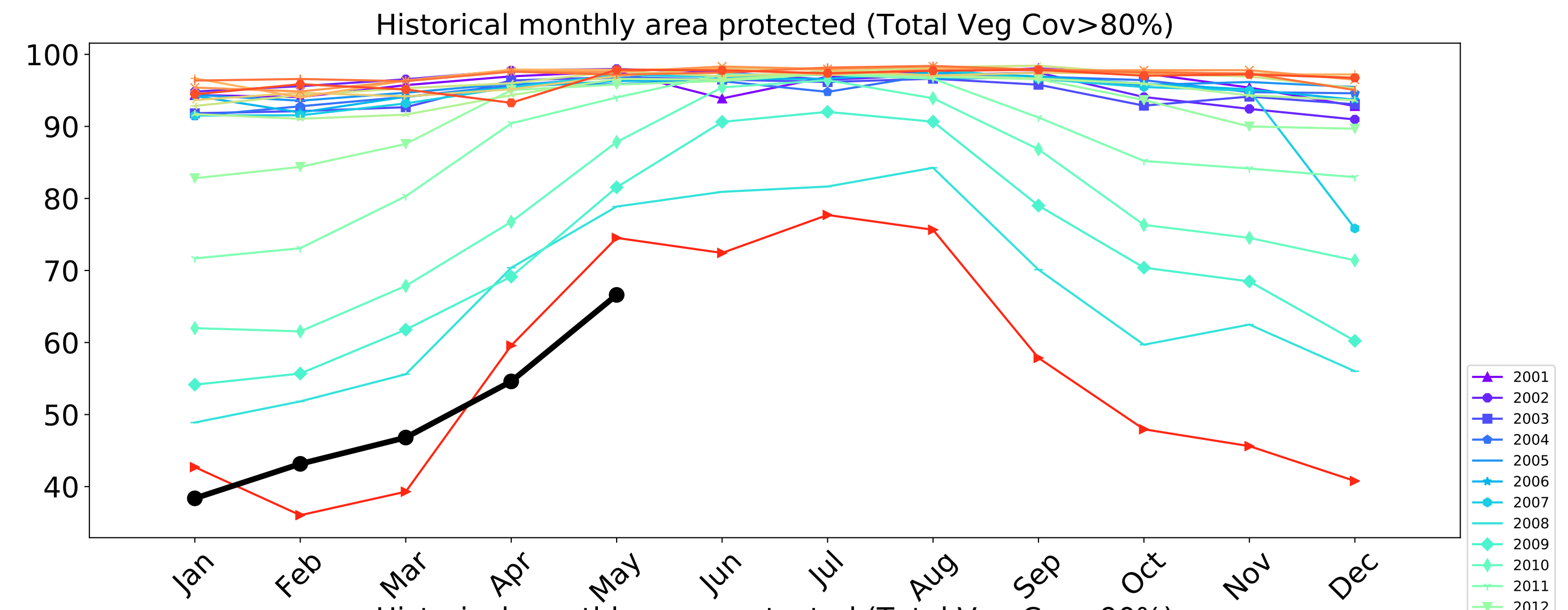
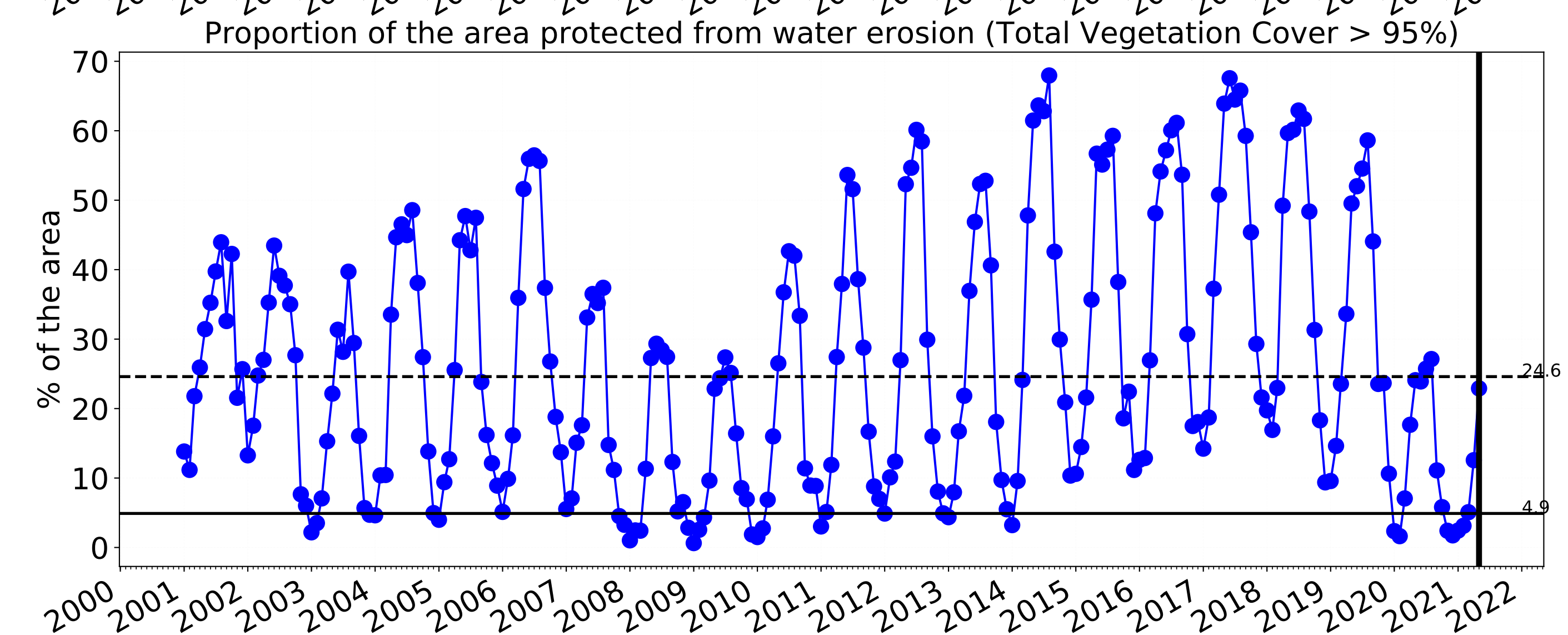
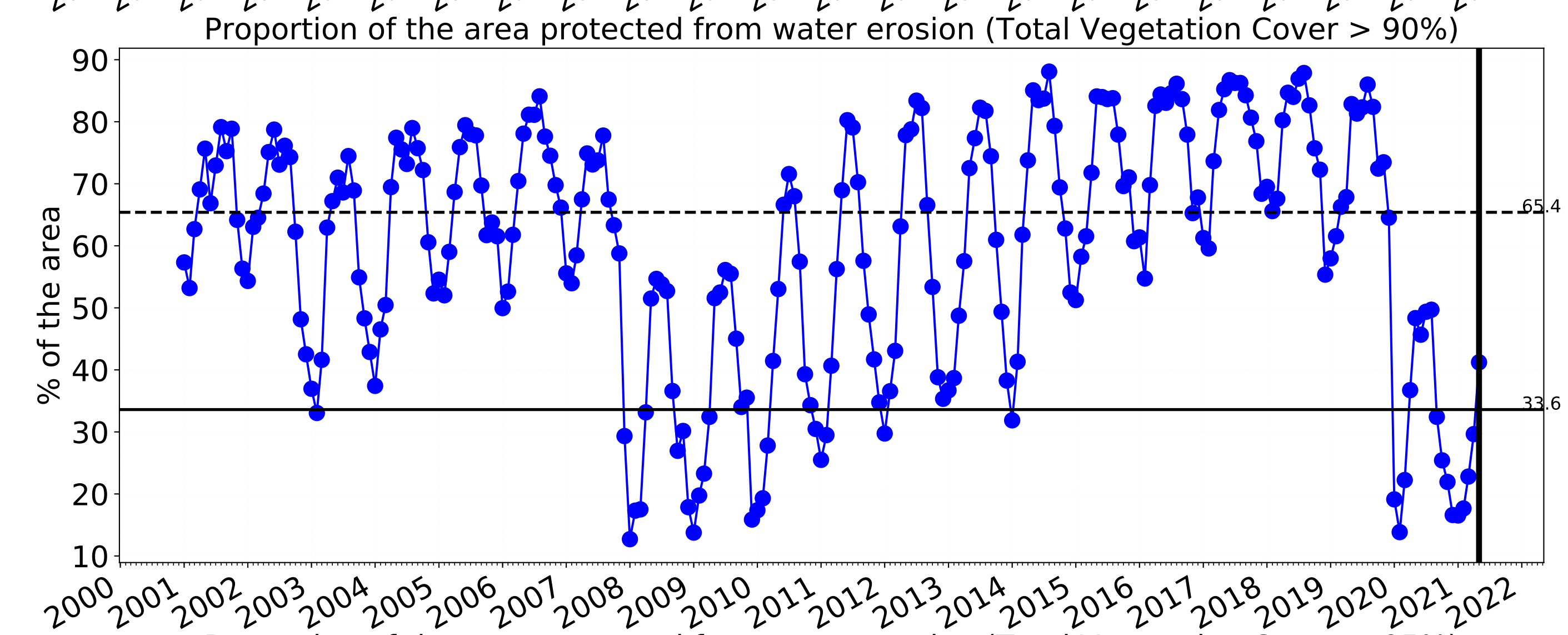
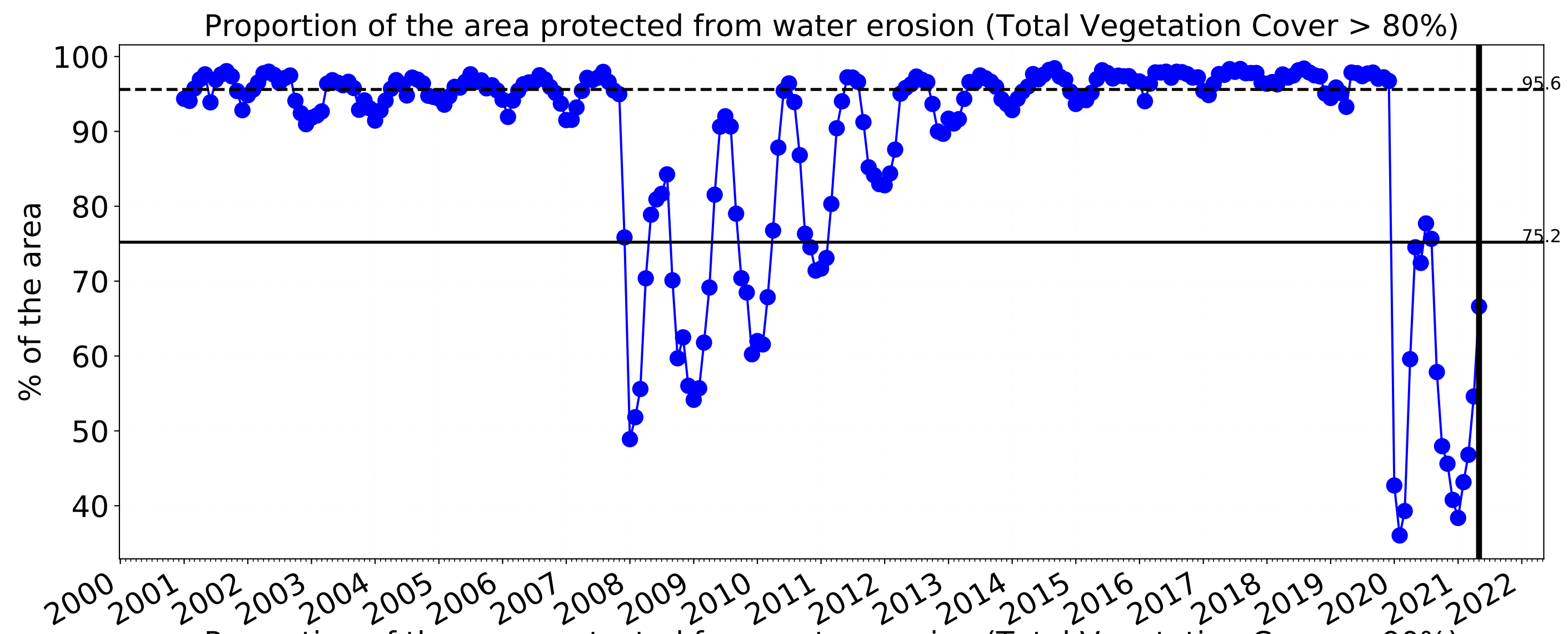


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

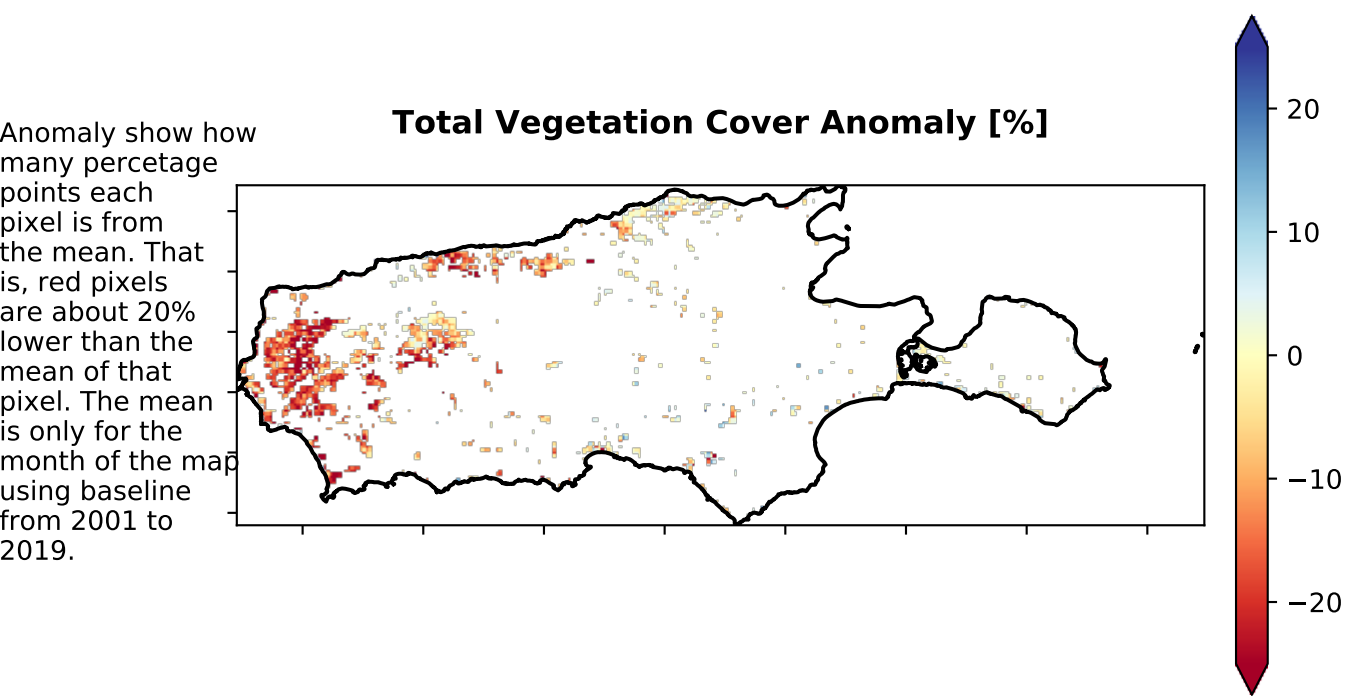
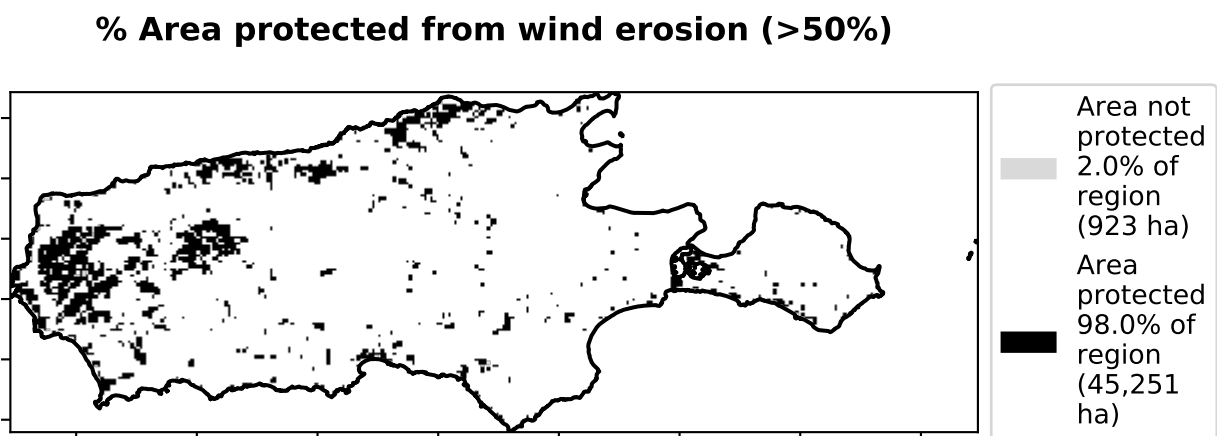
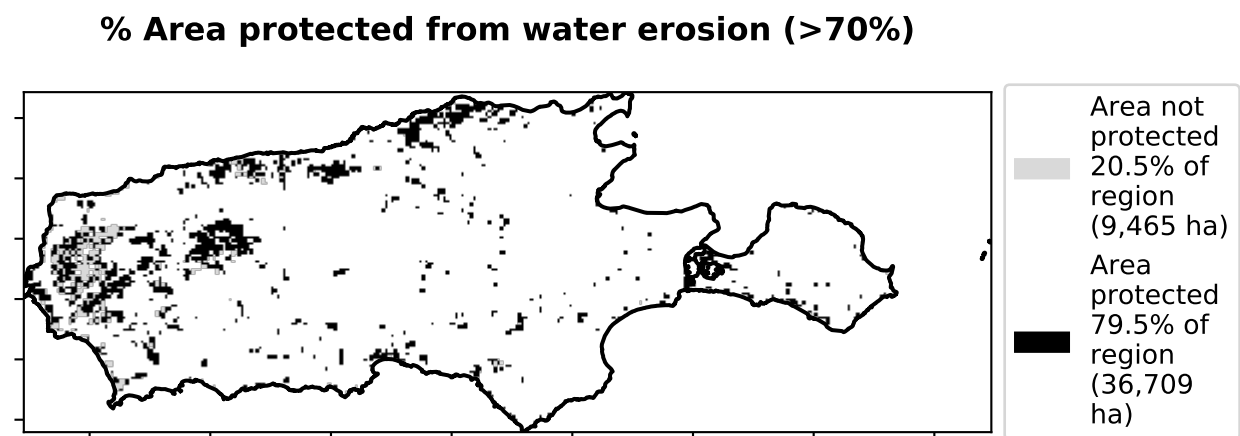
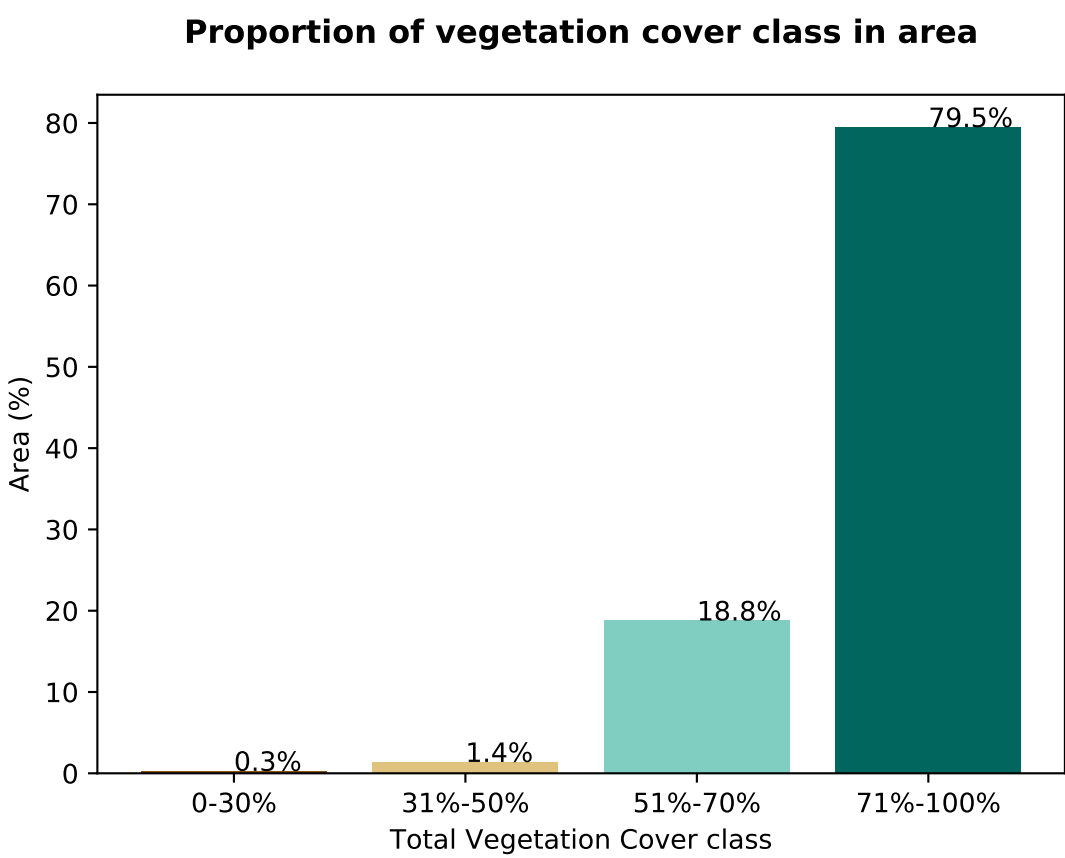
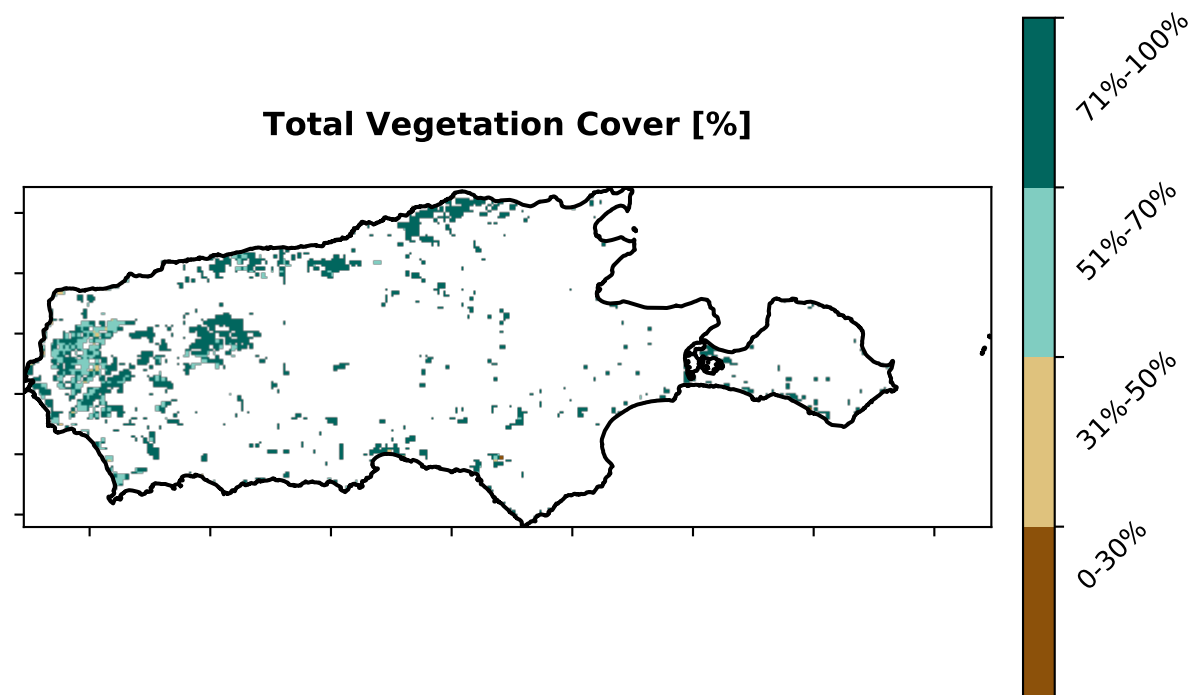
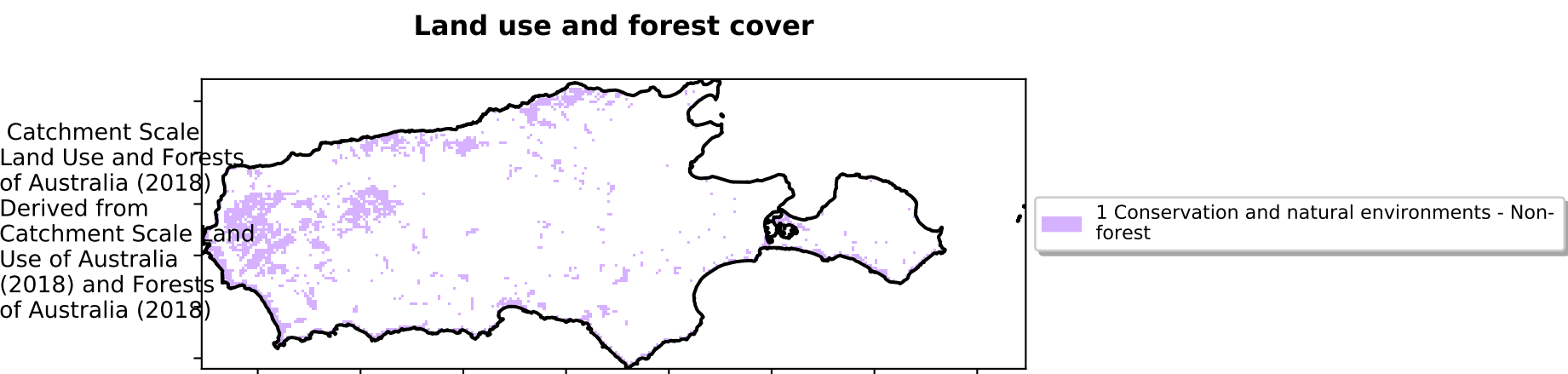


Water erosion historical monthly area protected (Total Veg Cov>70%)

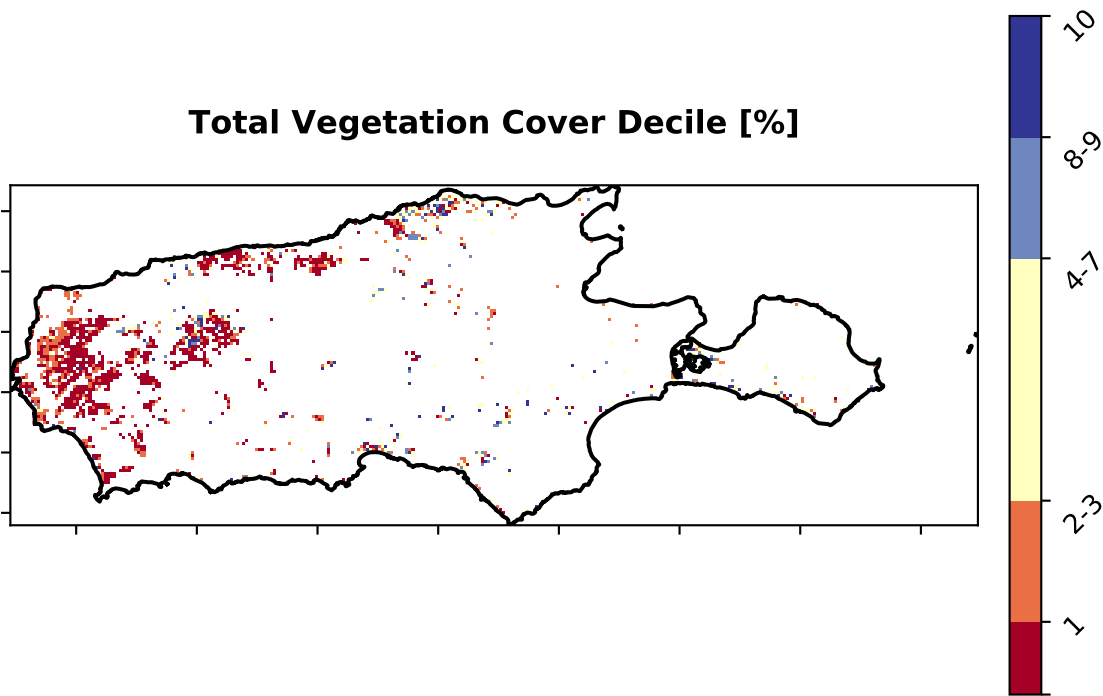




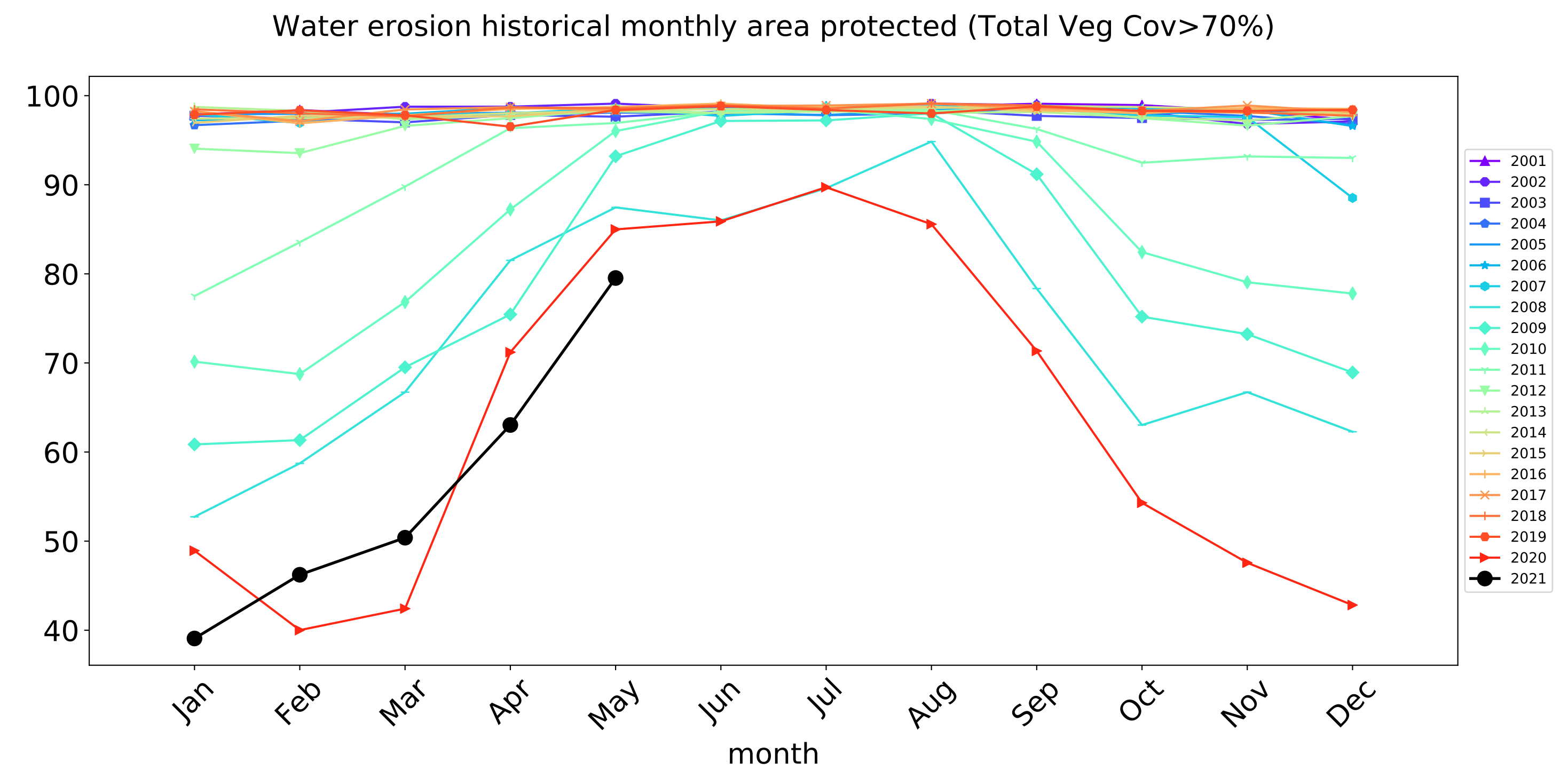
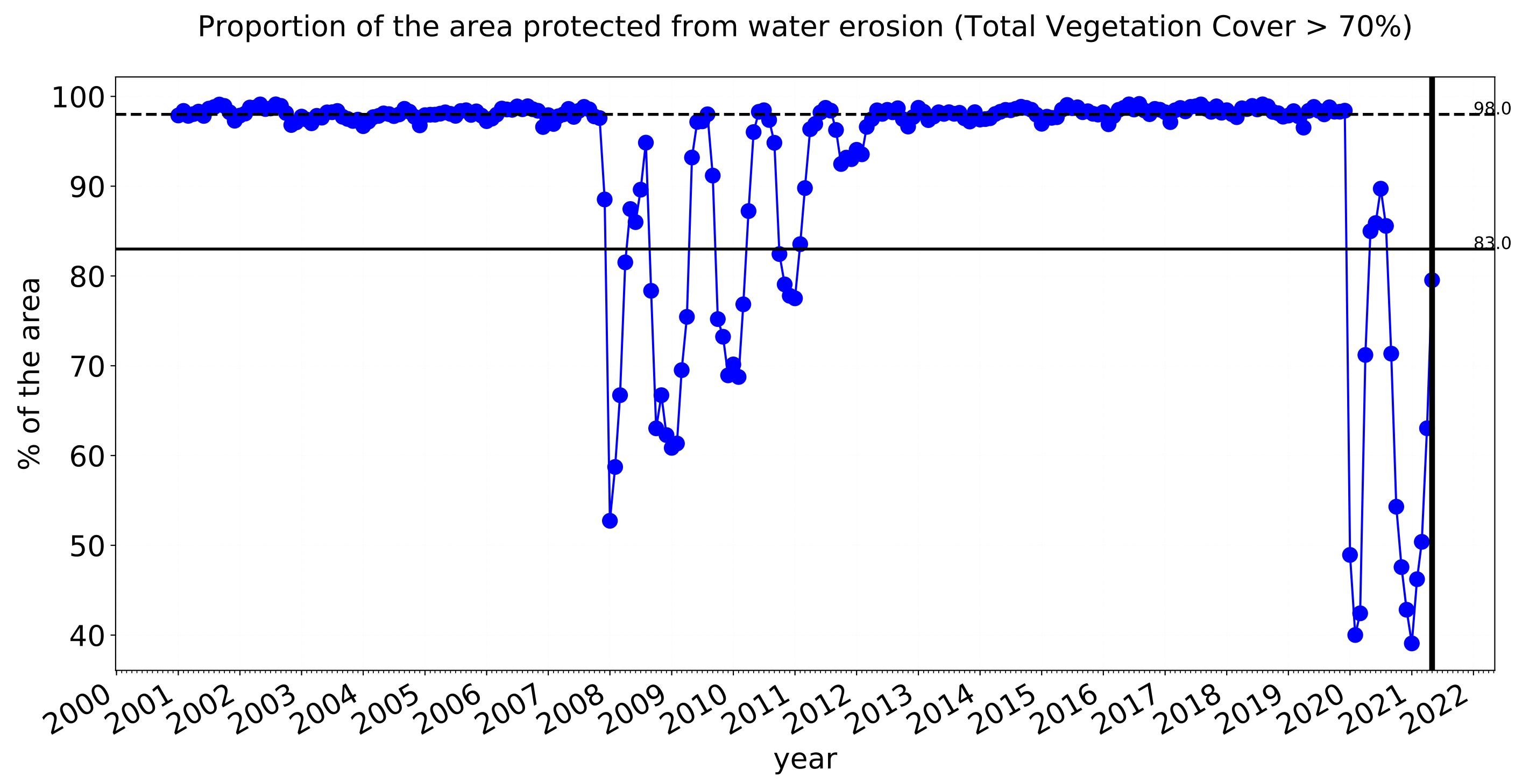
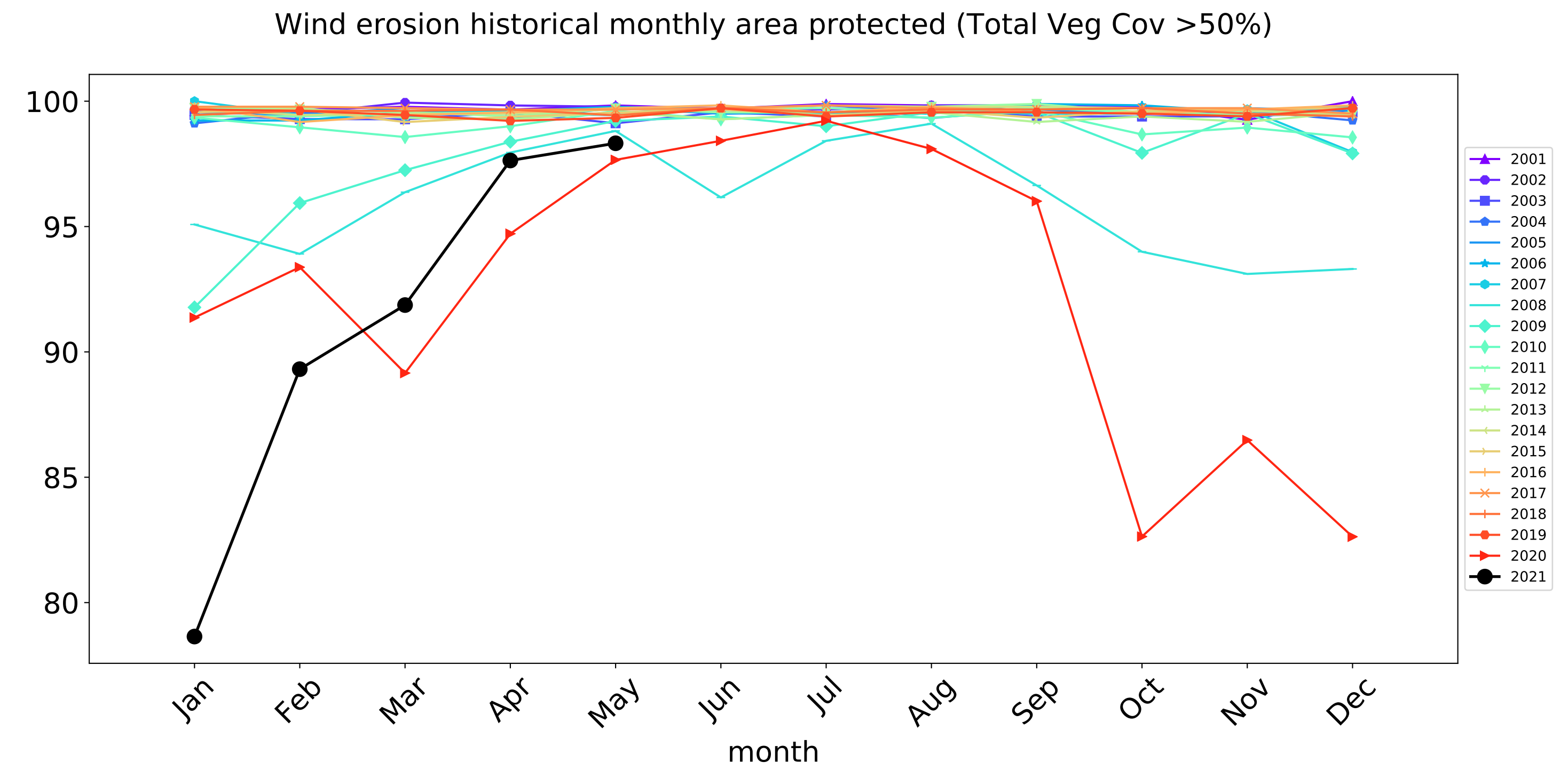
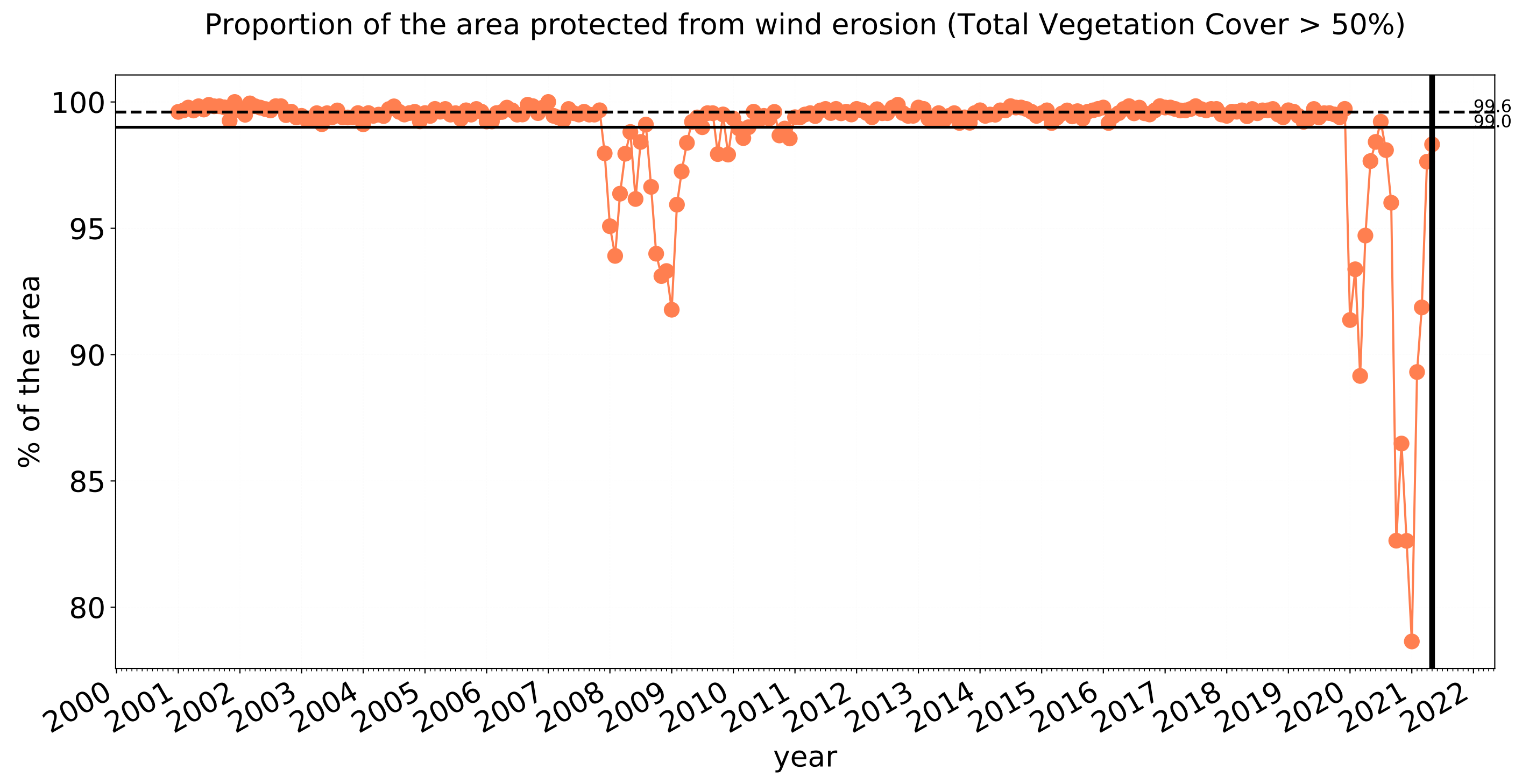
Conservation and natural environments non forest

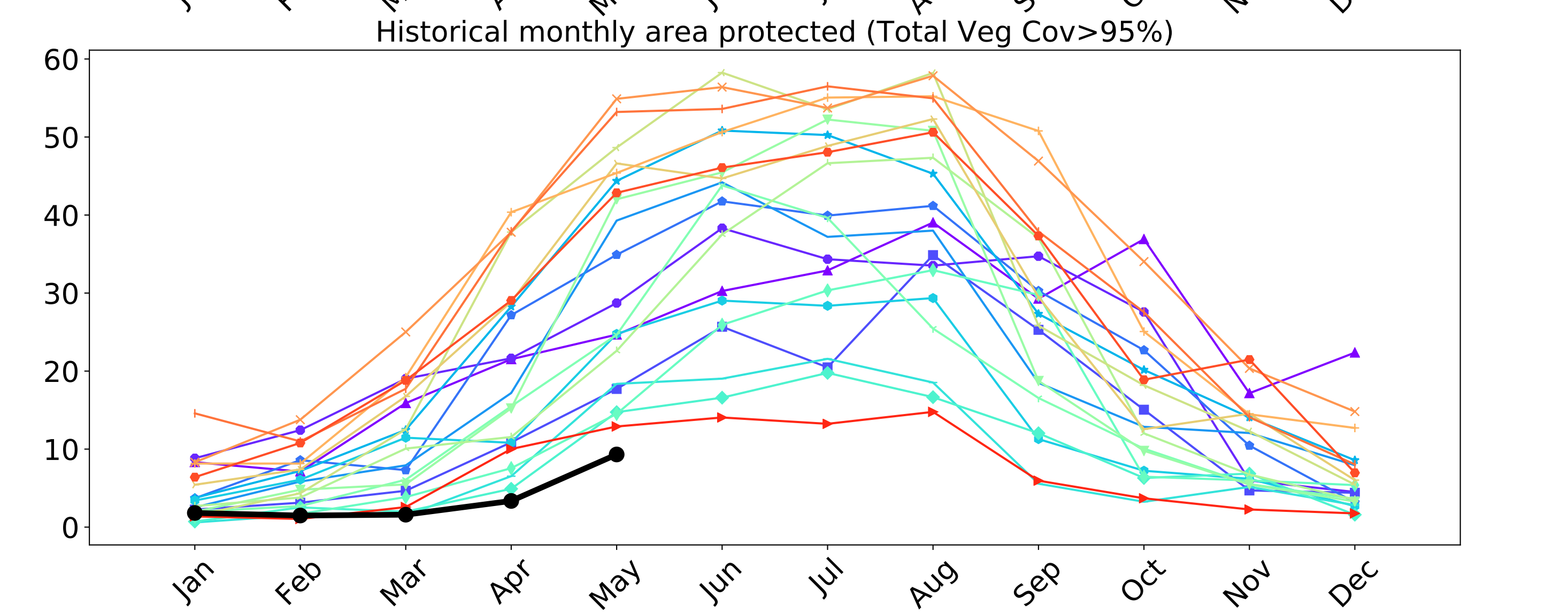
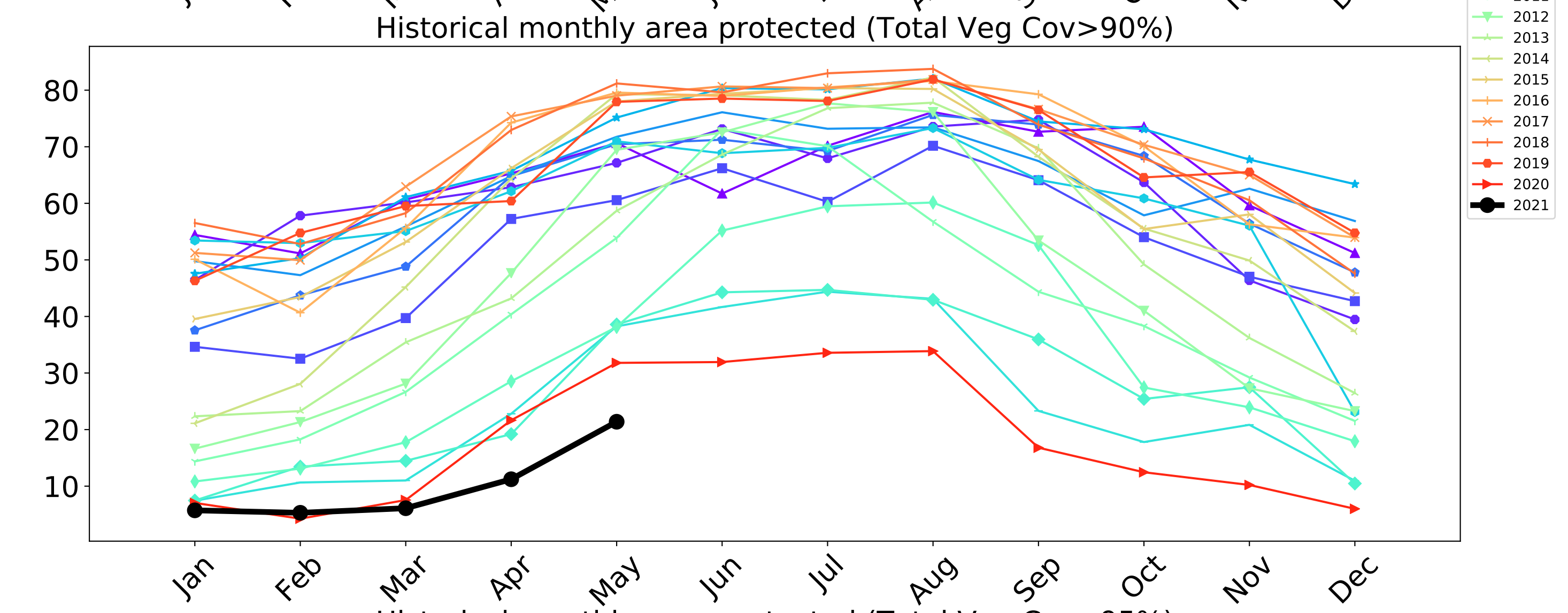
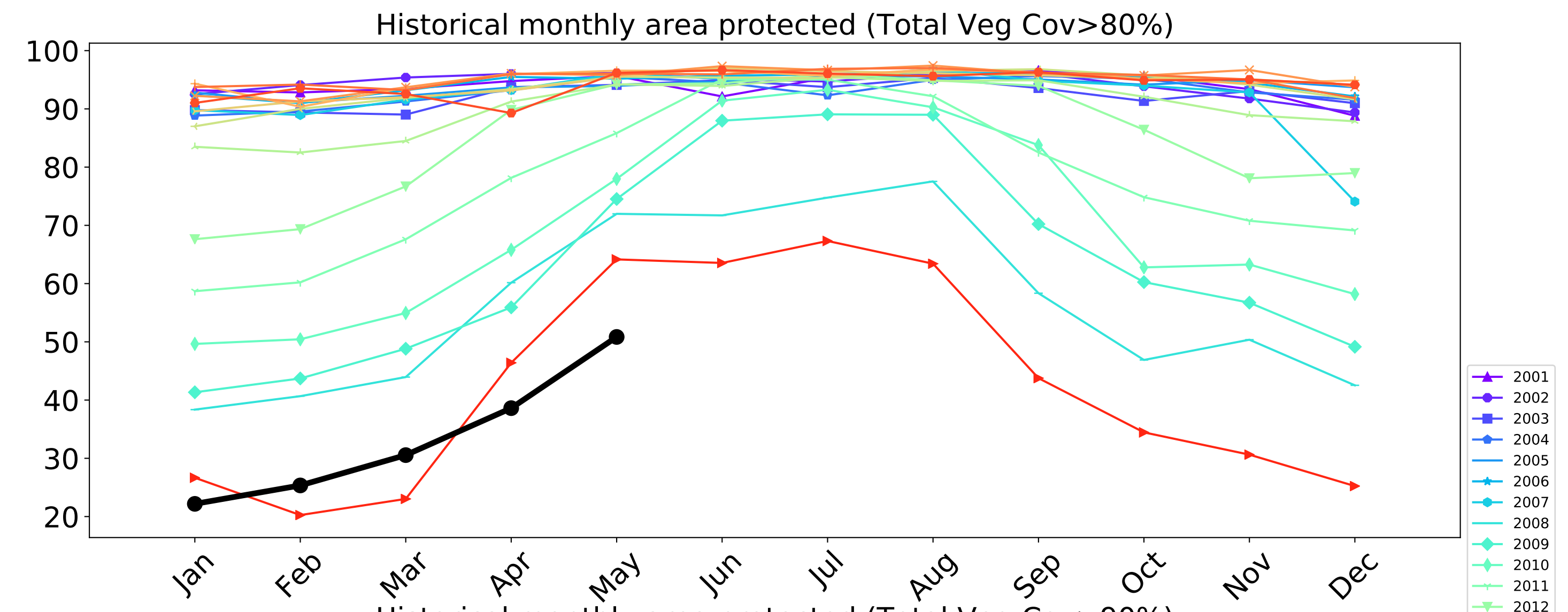
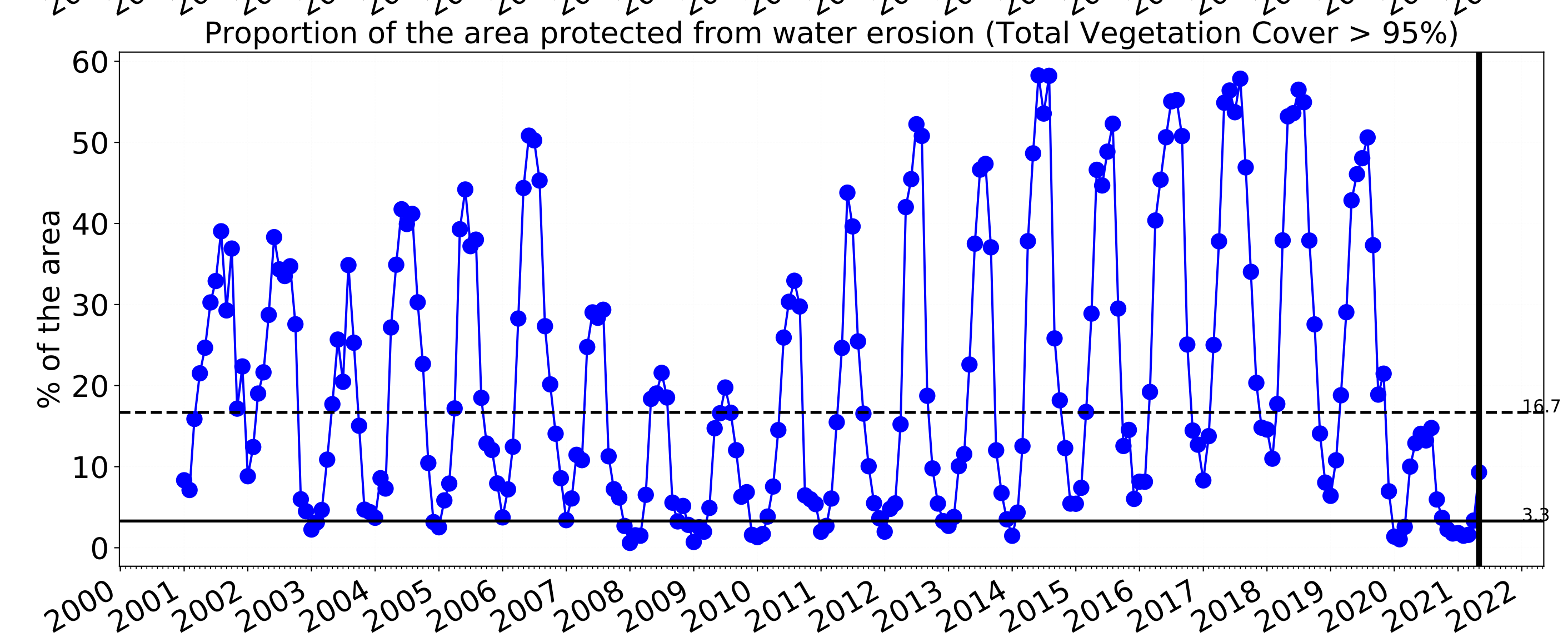
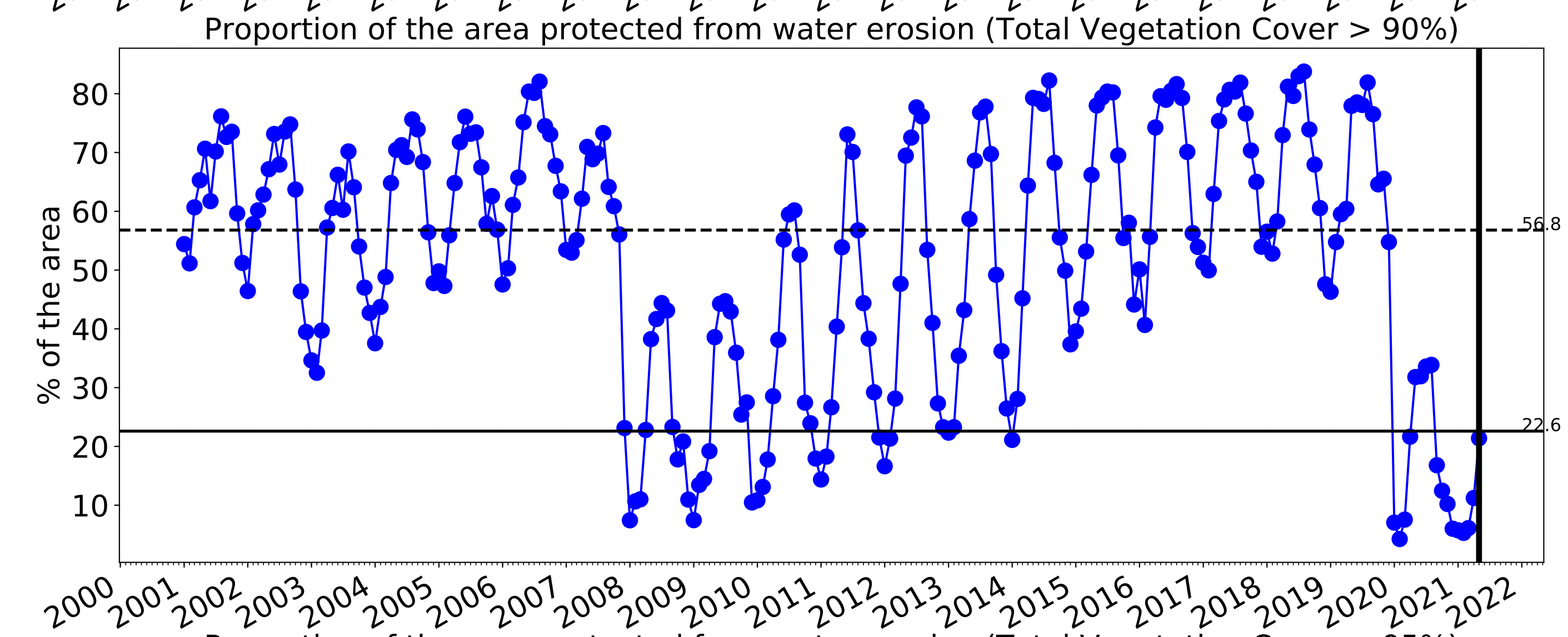
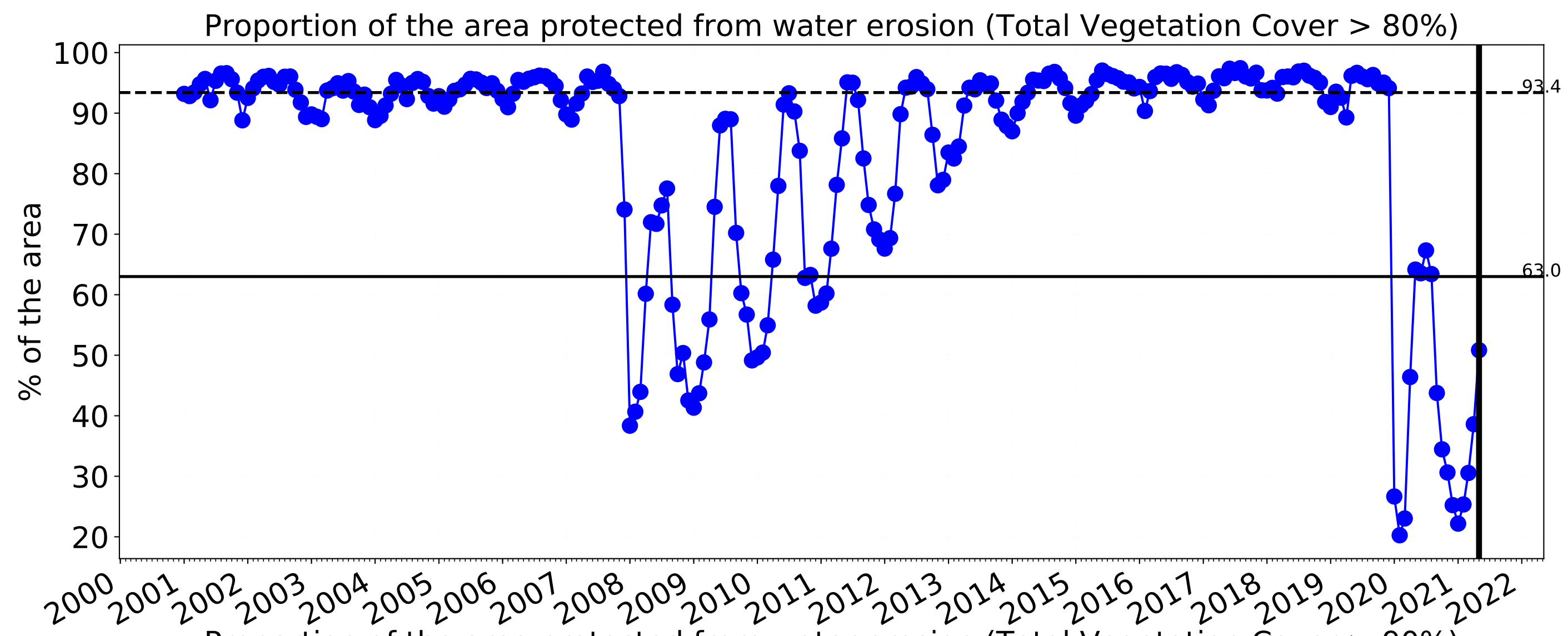


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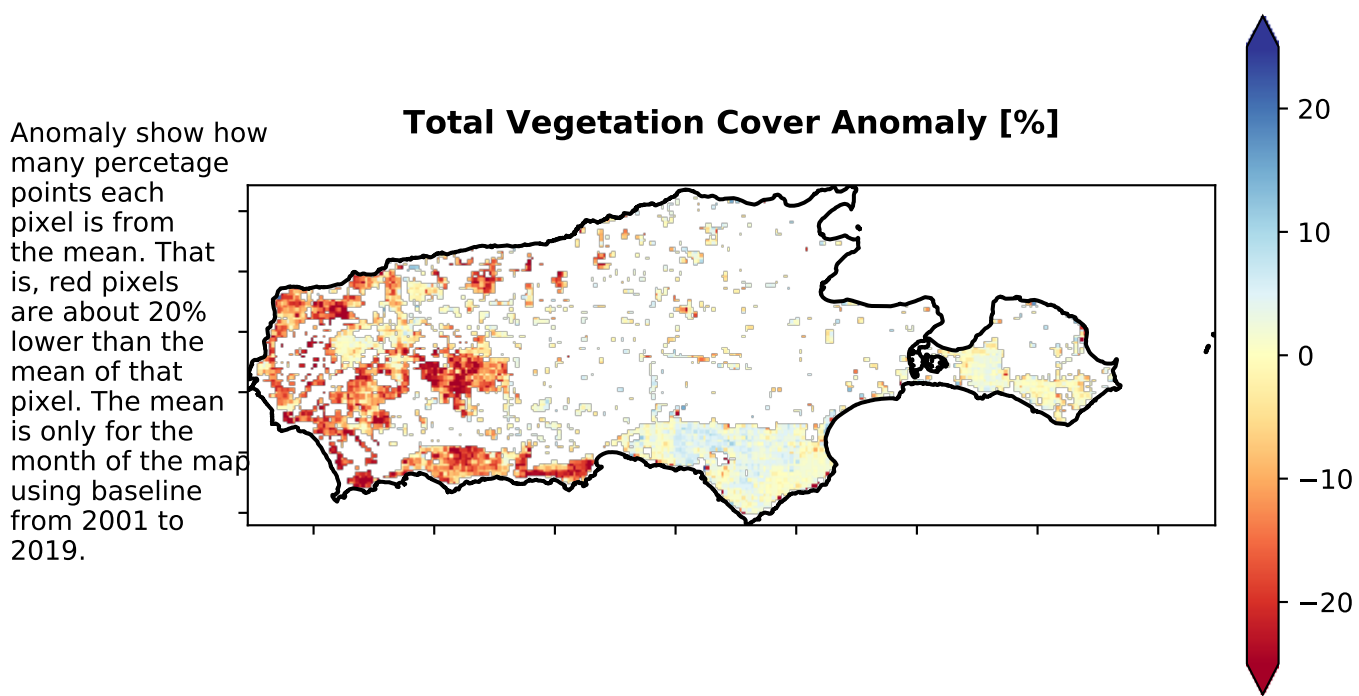
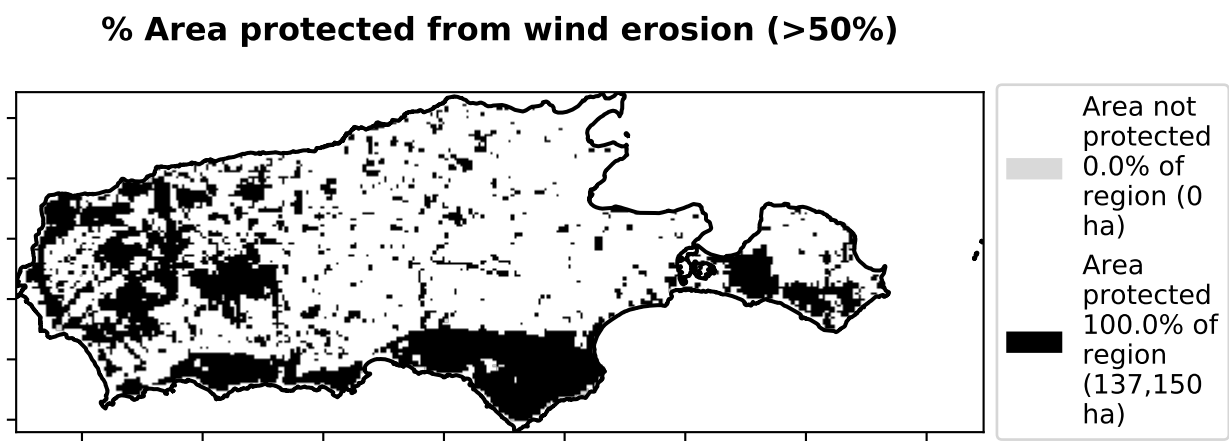
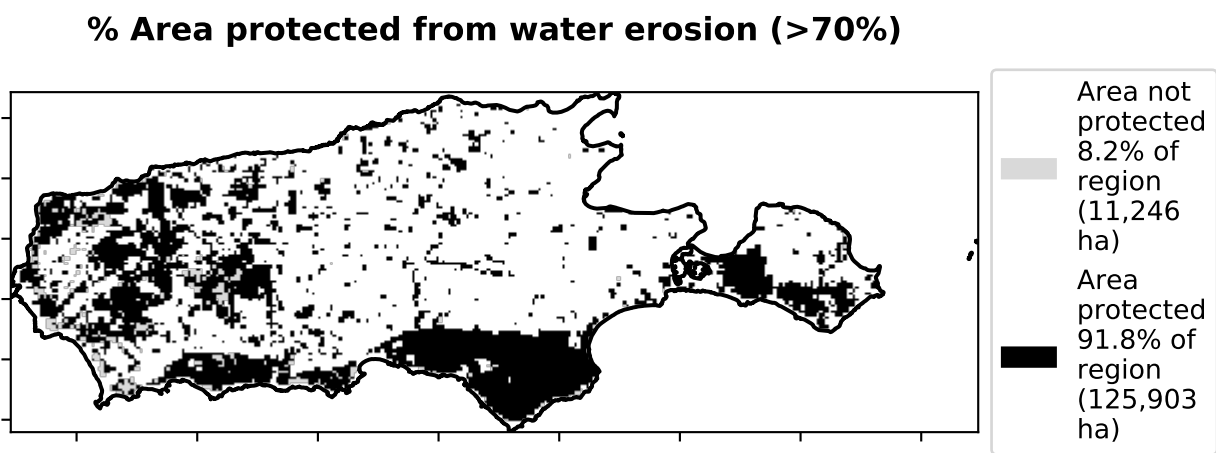
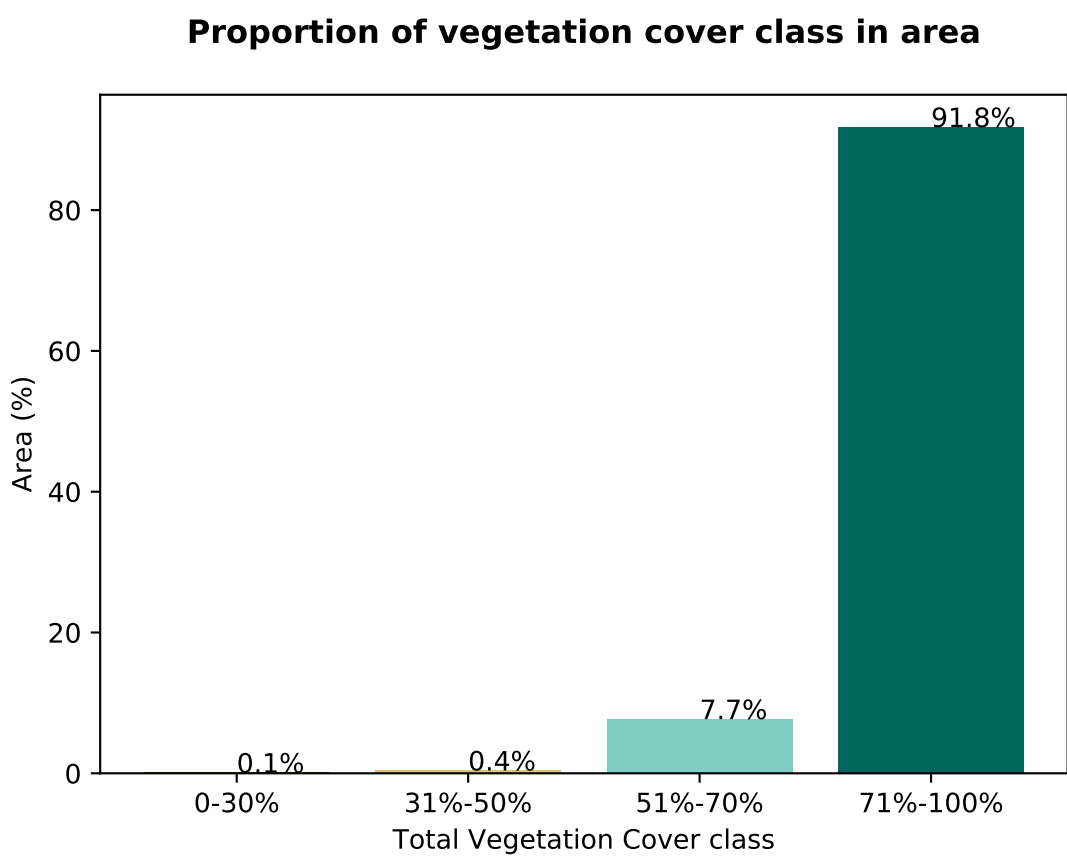
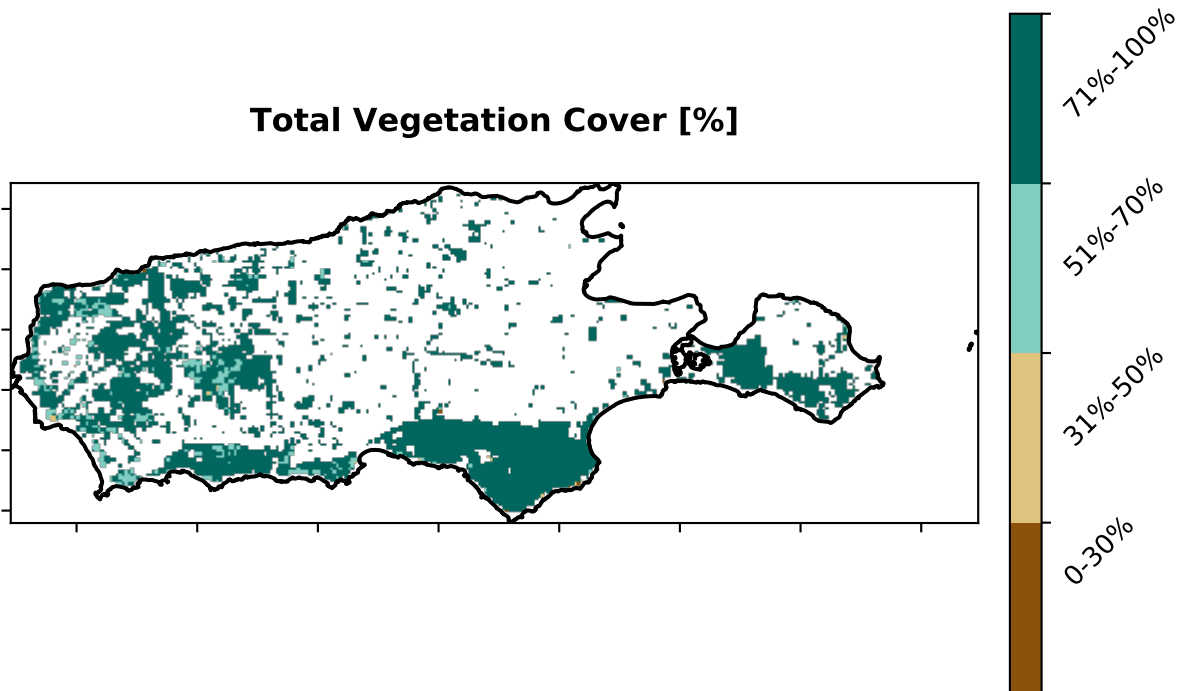
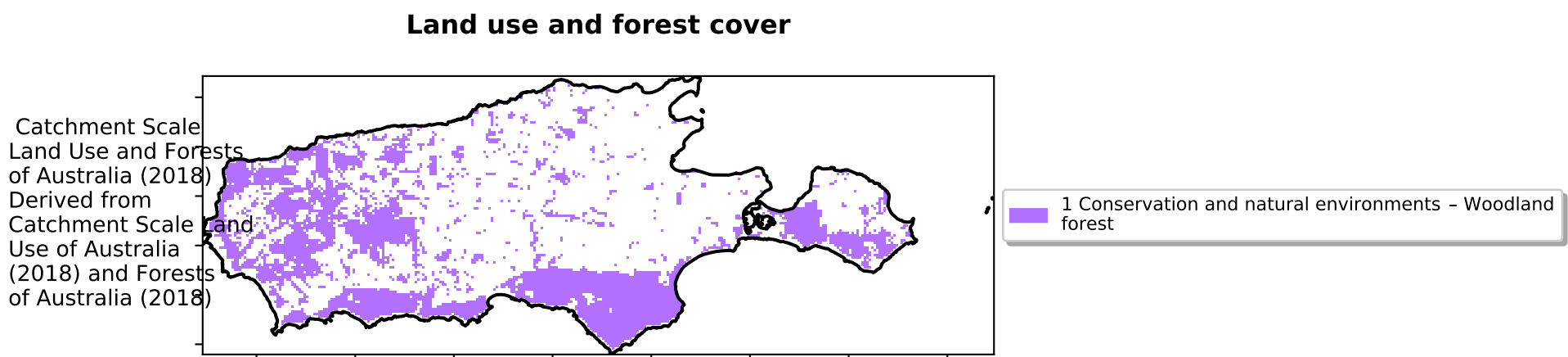


Conservation and natural environments non forest timeseries

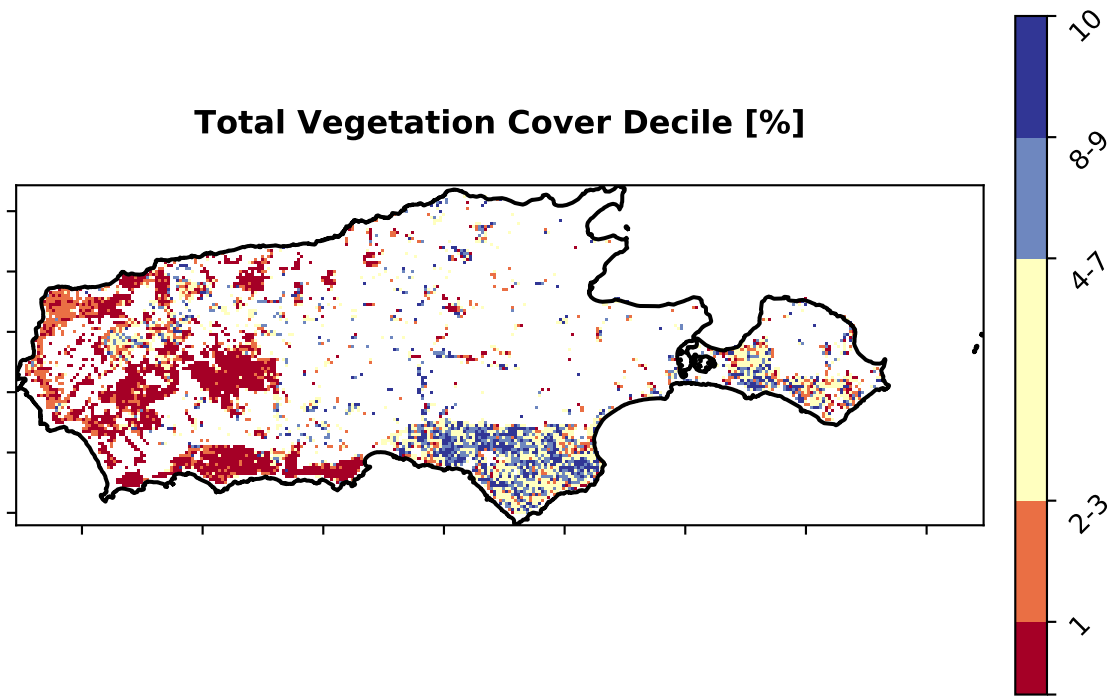


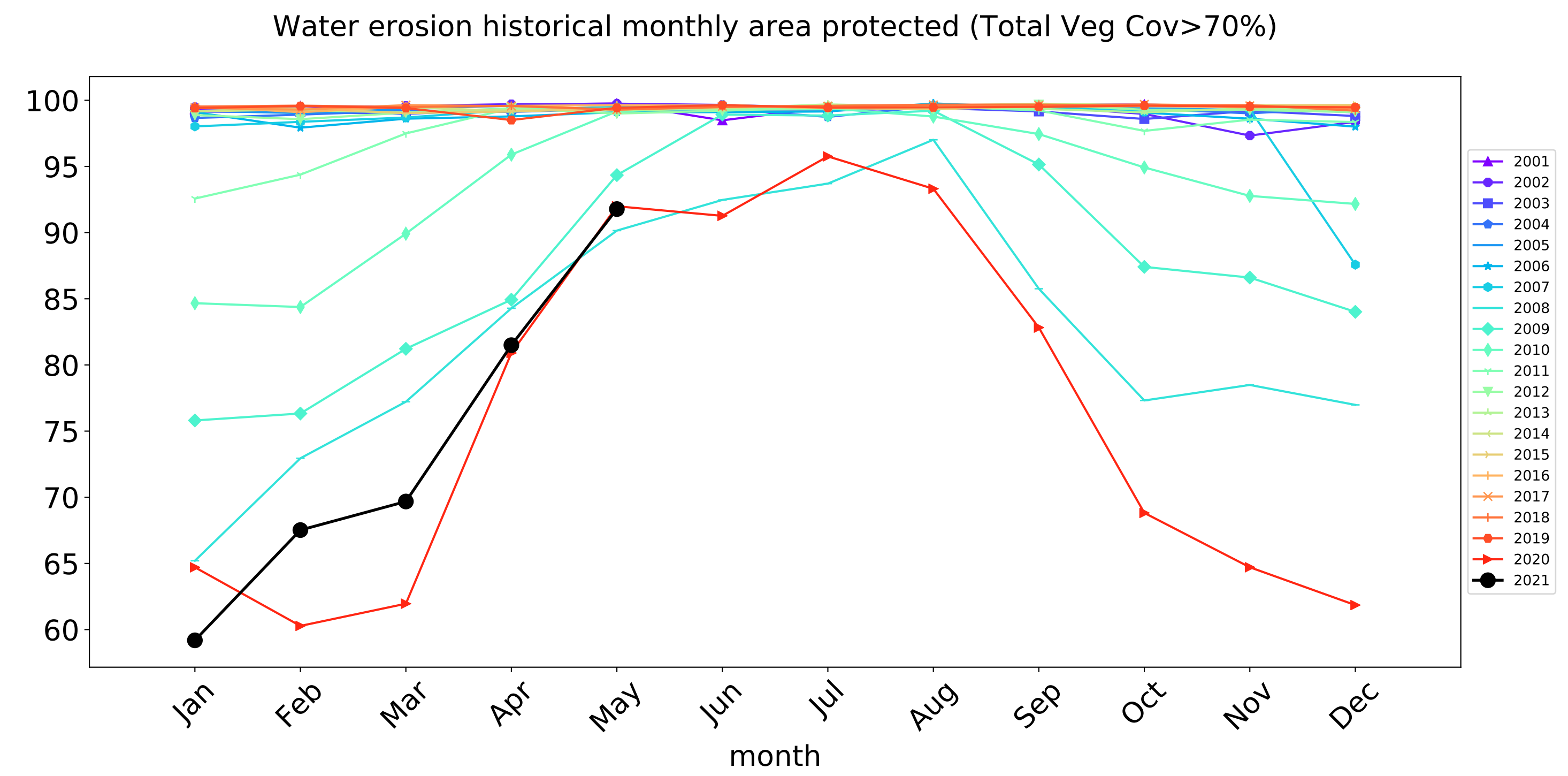
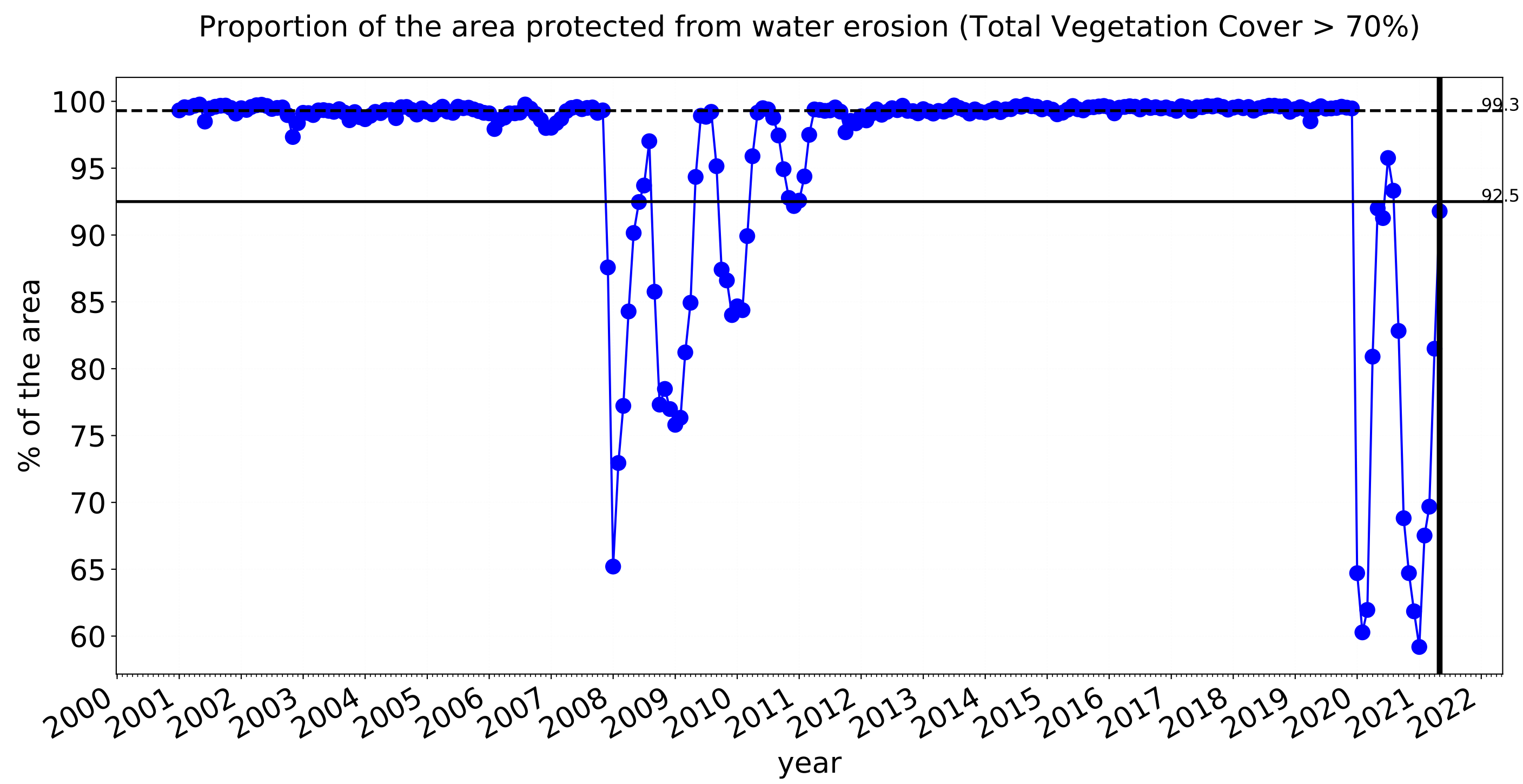
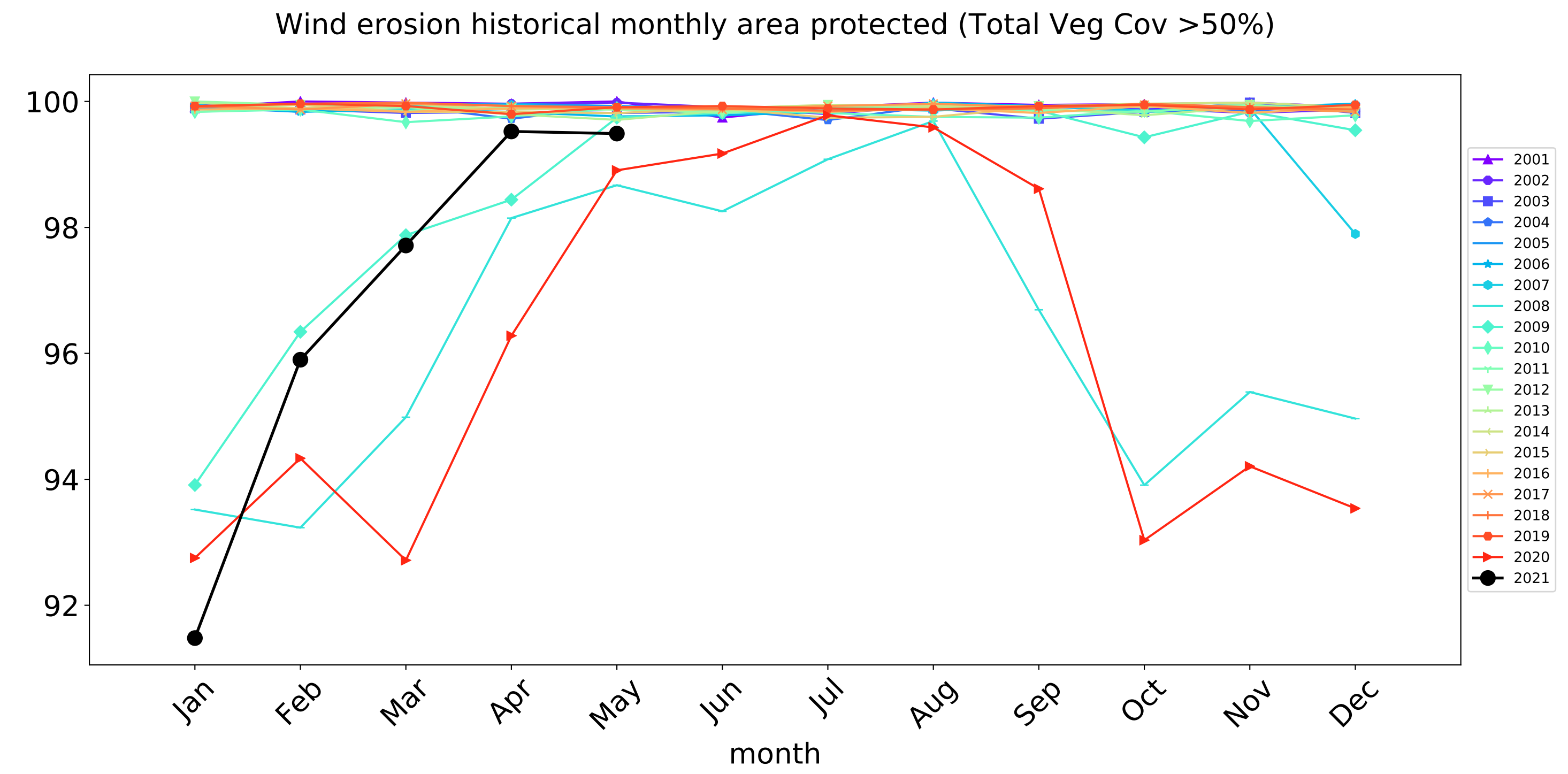
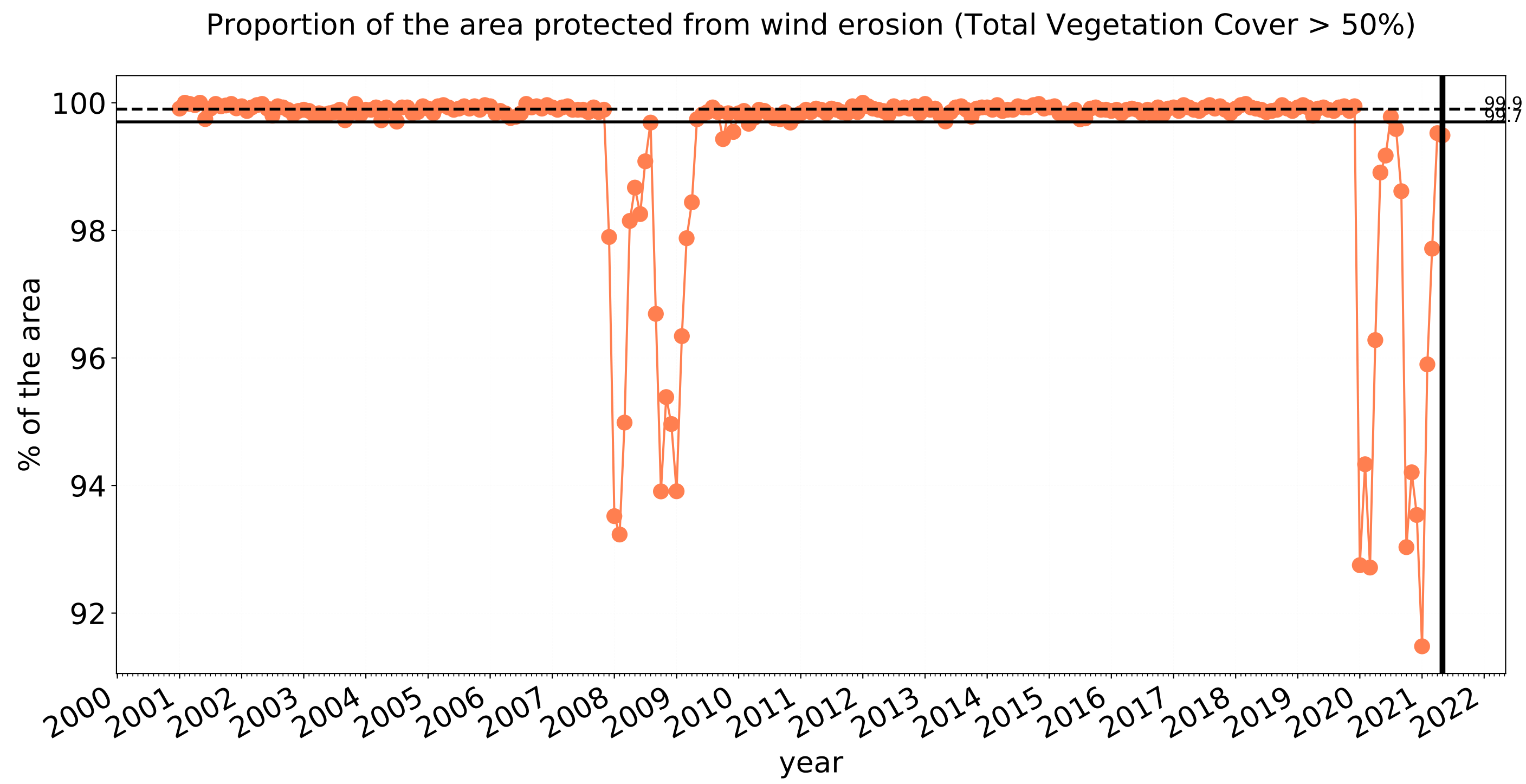


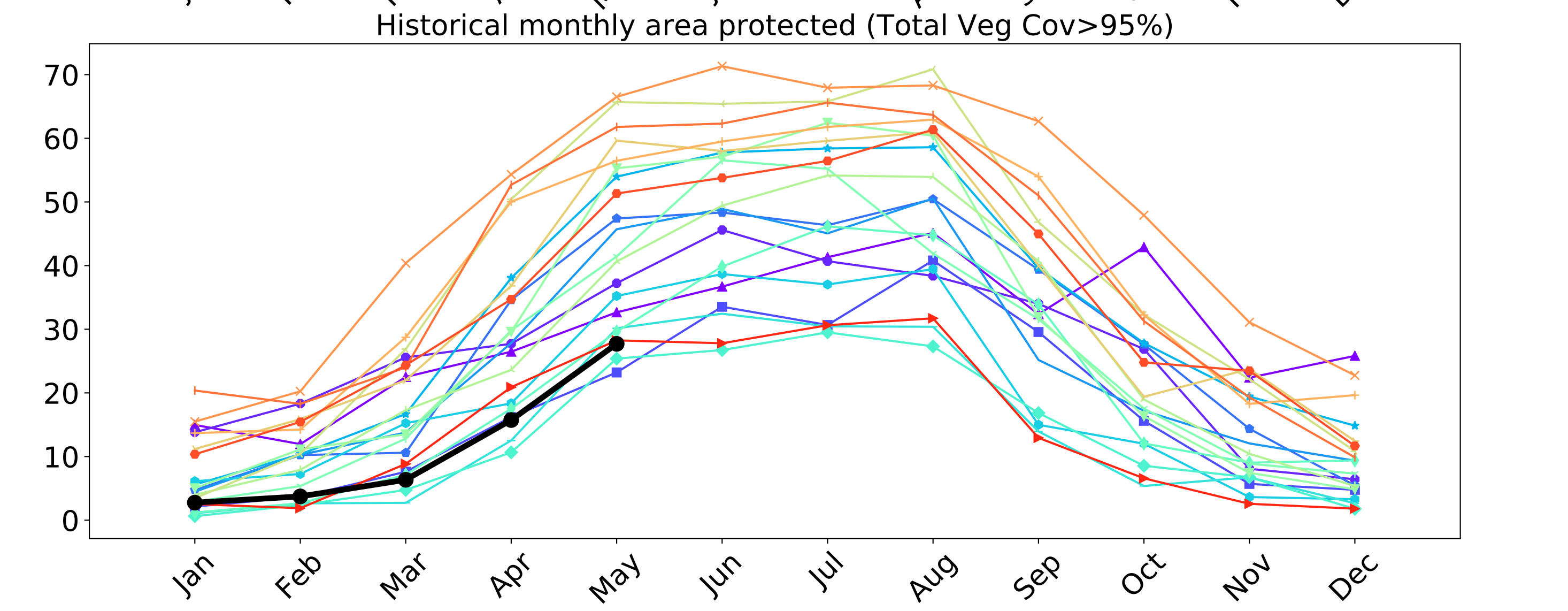
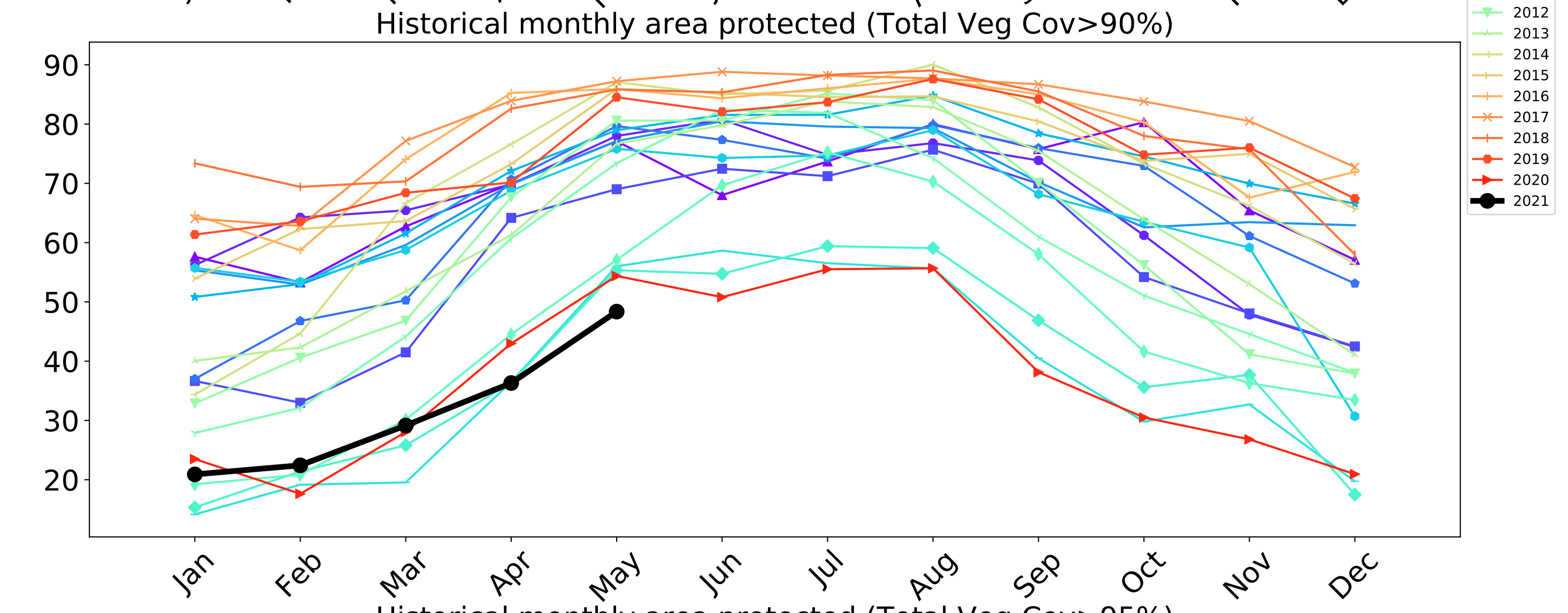
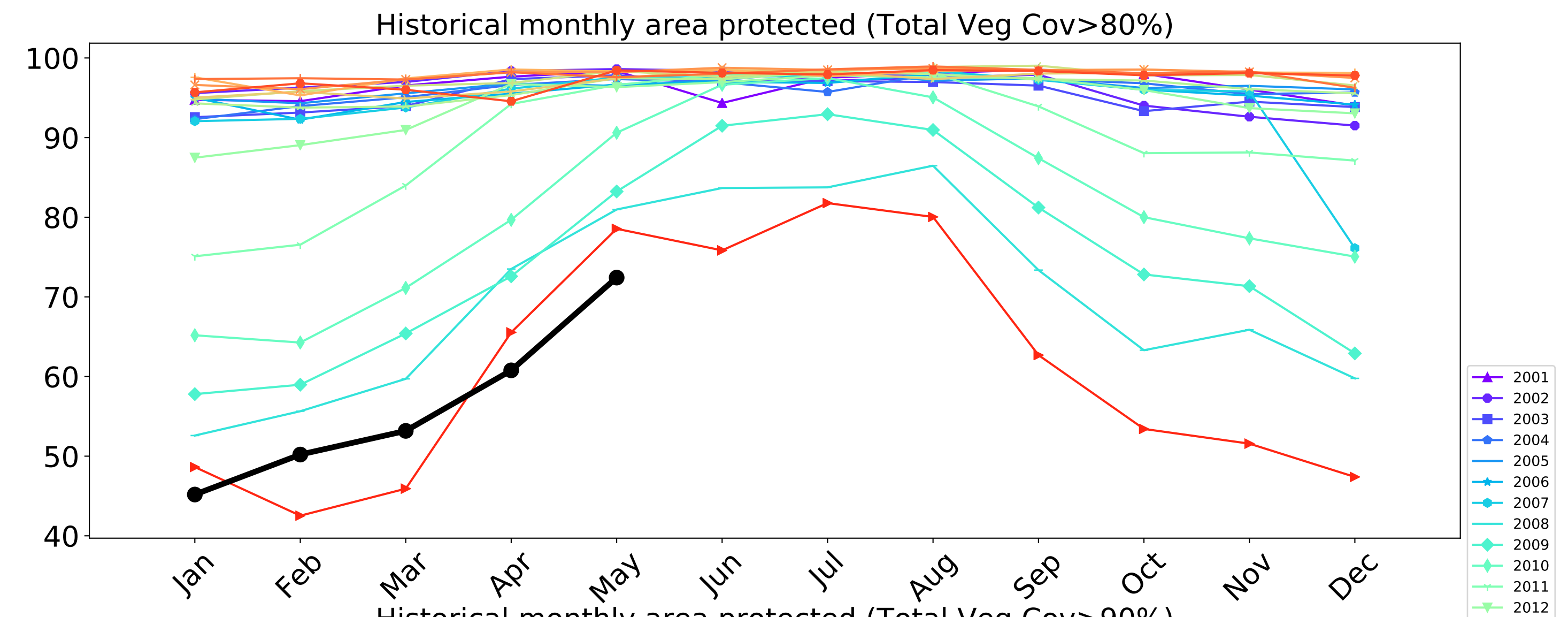
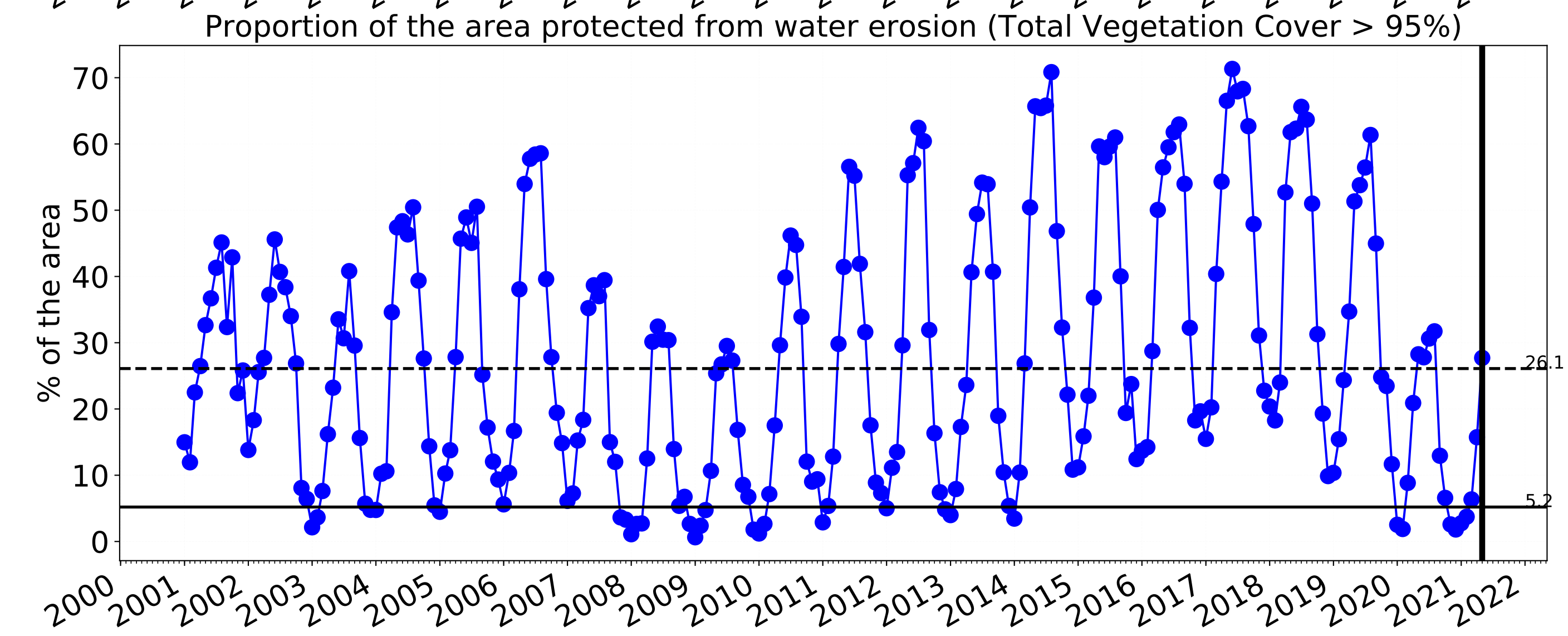
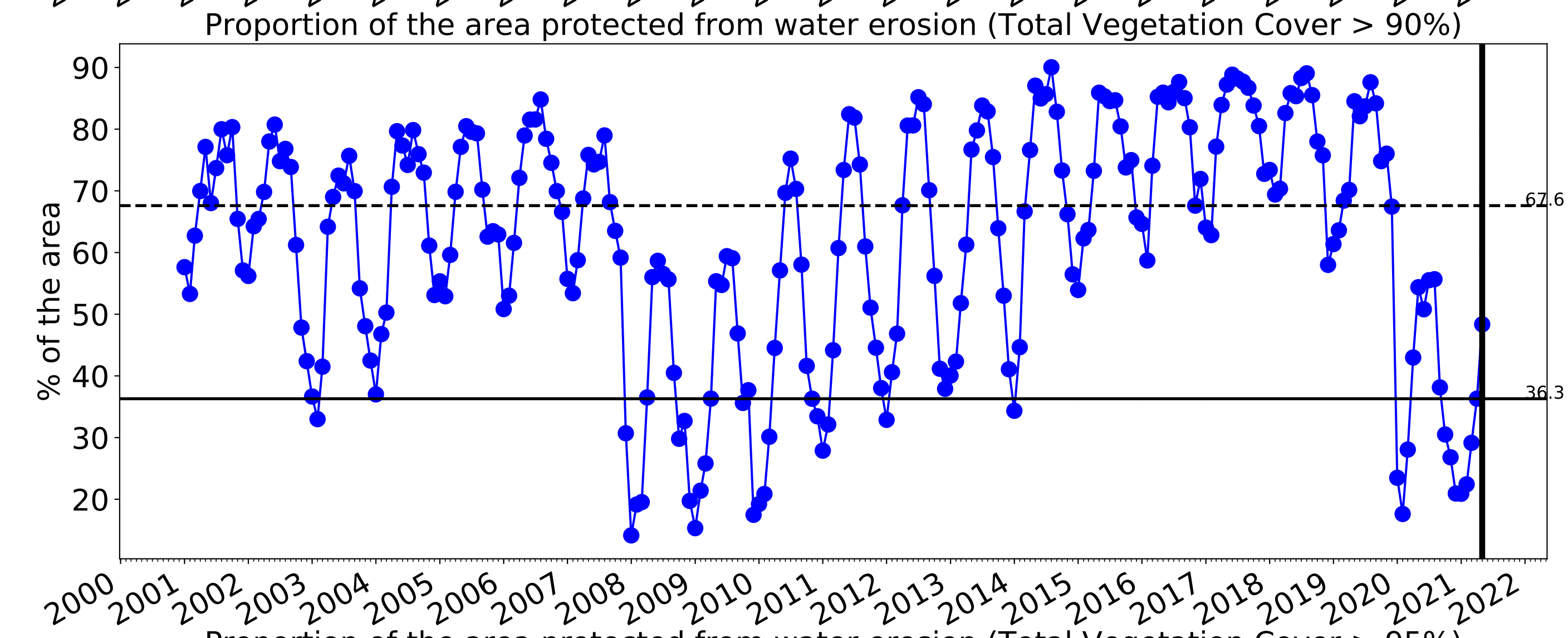
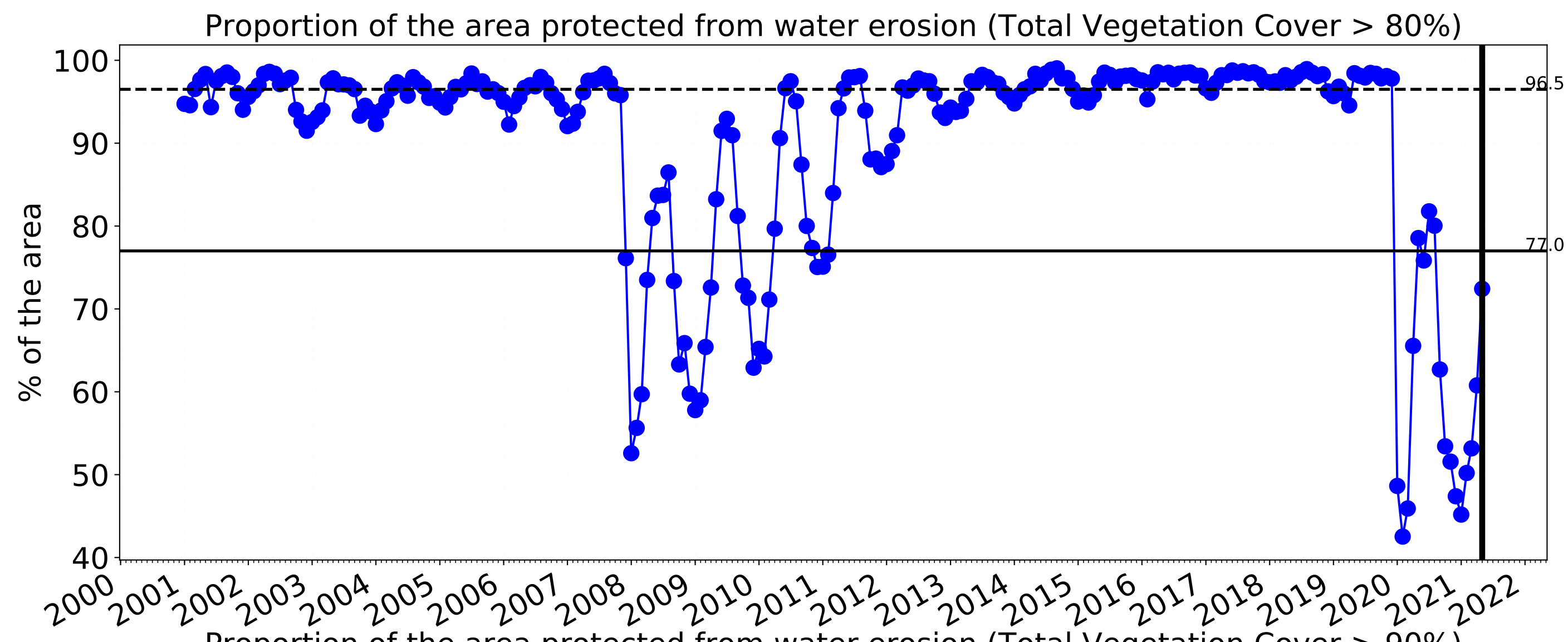
Conservation and natural environments Woodland forest



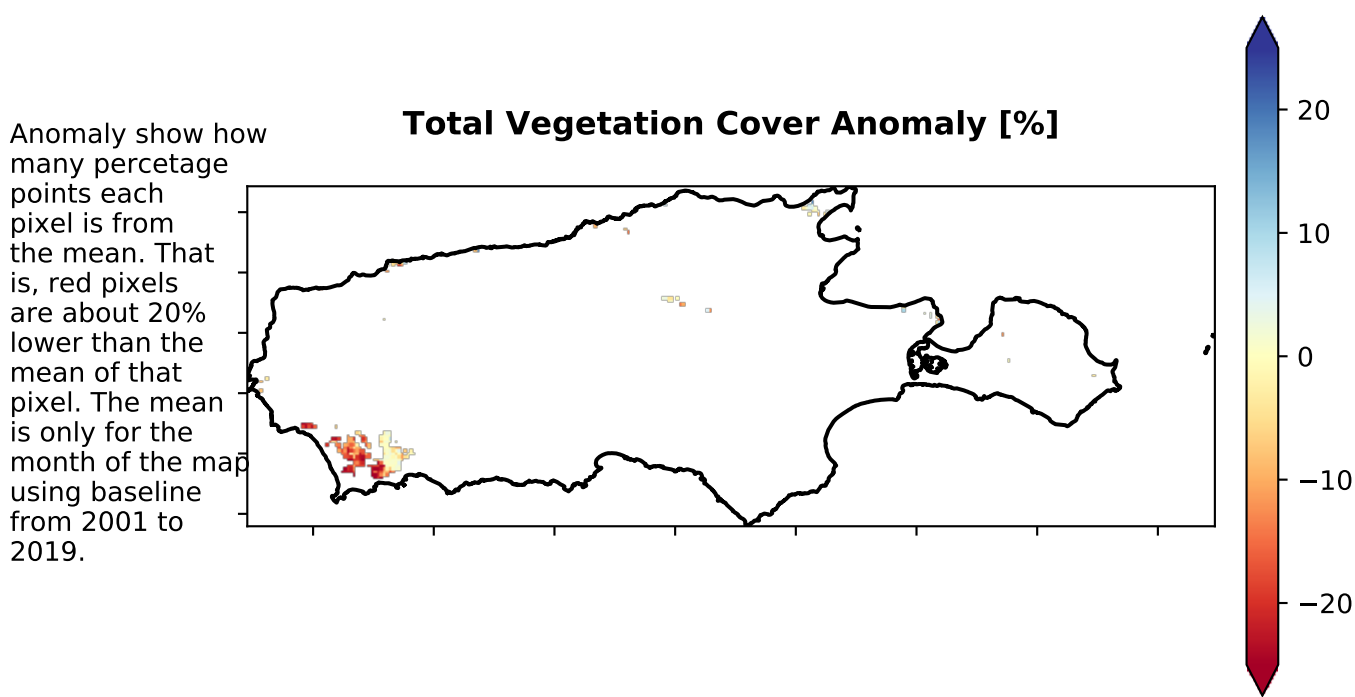
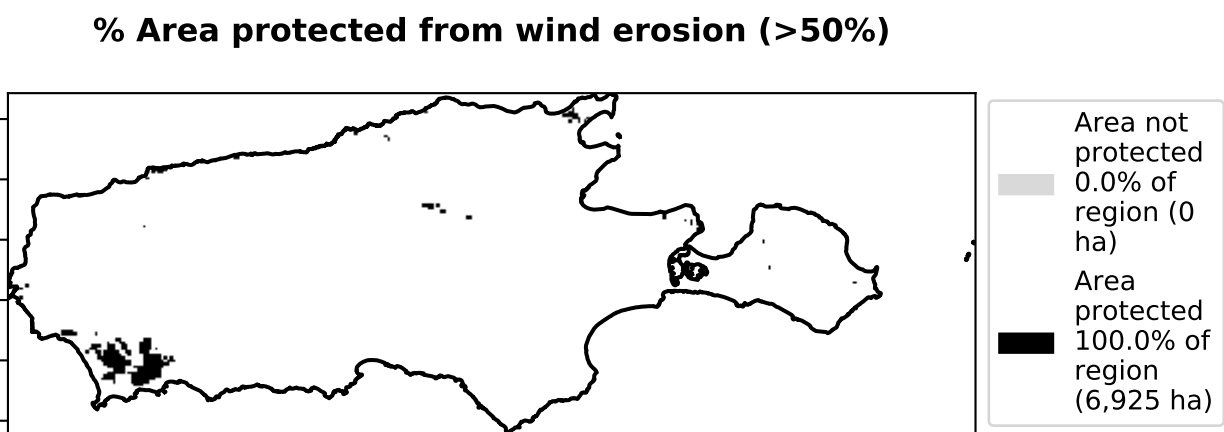
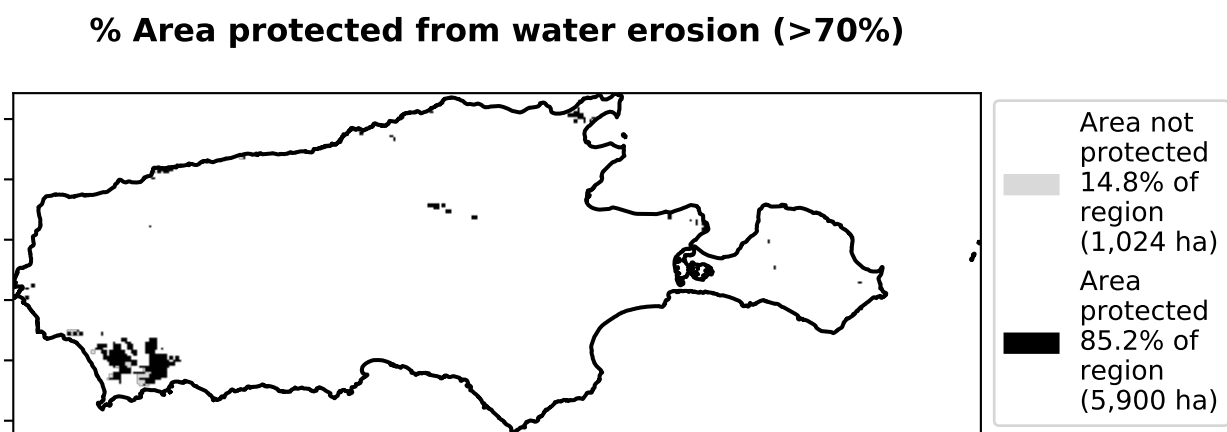
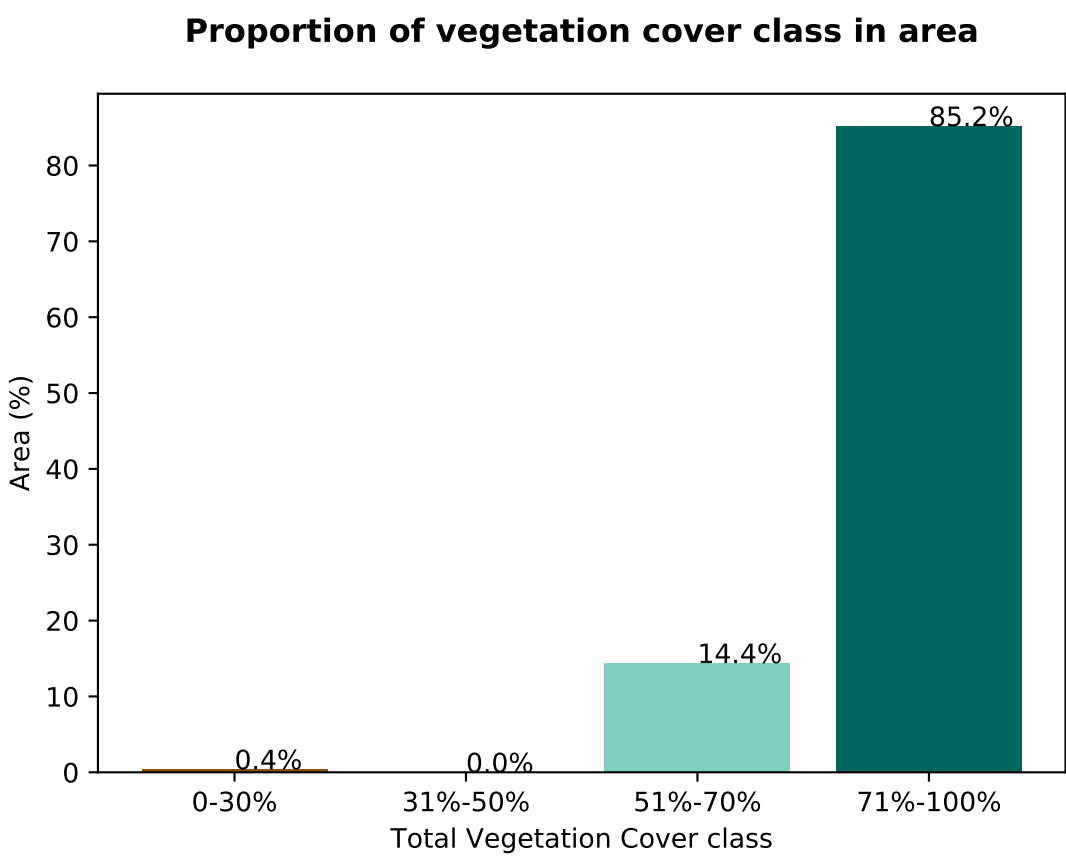
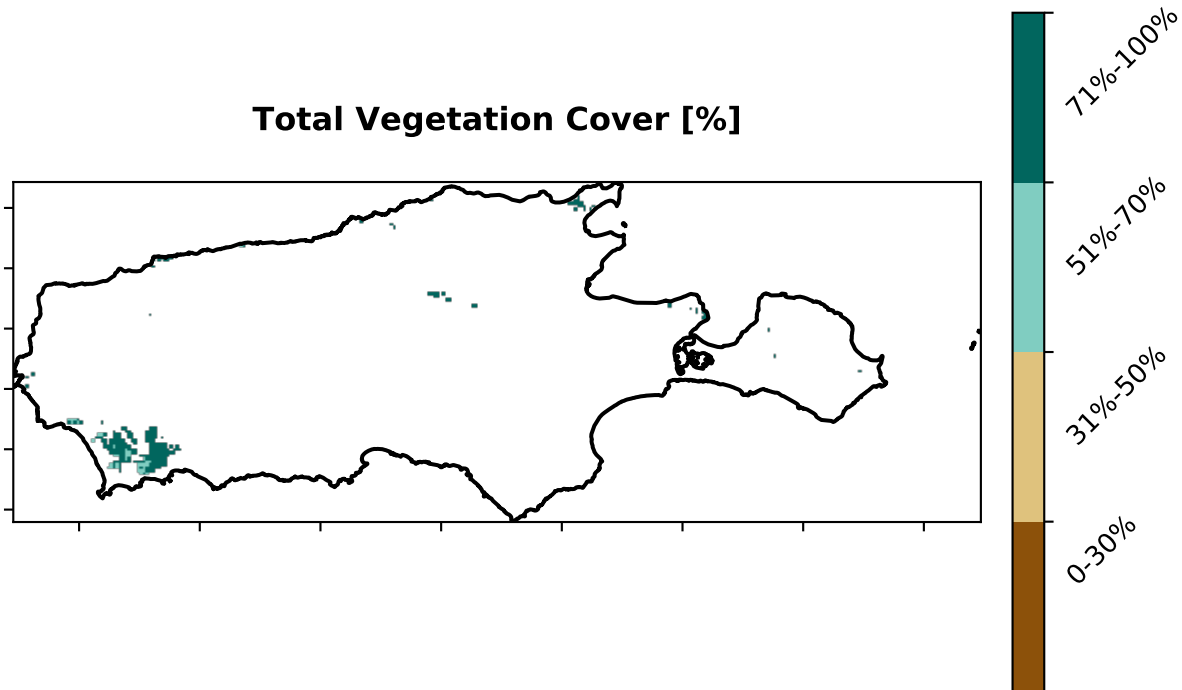
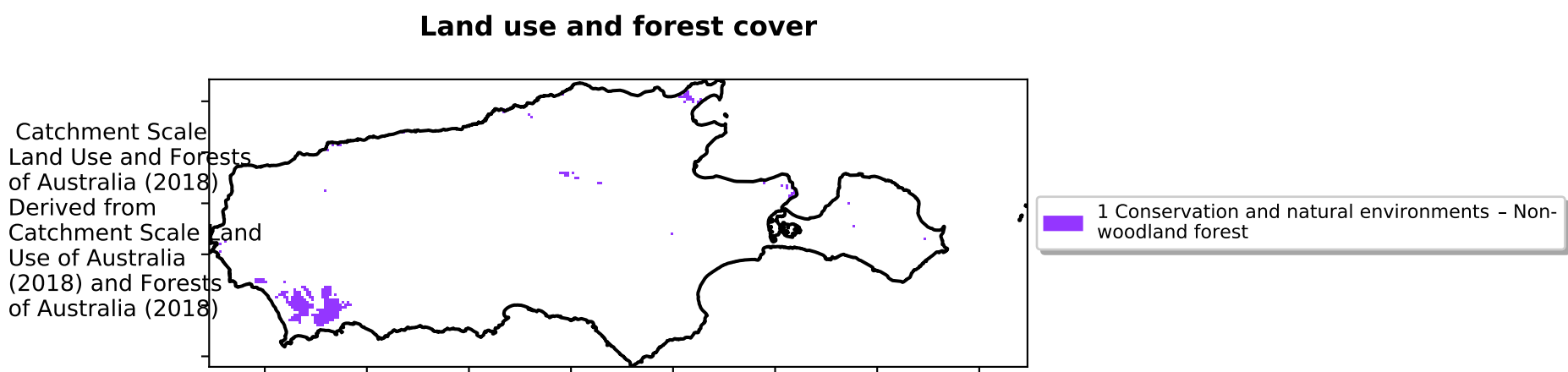
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.



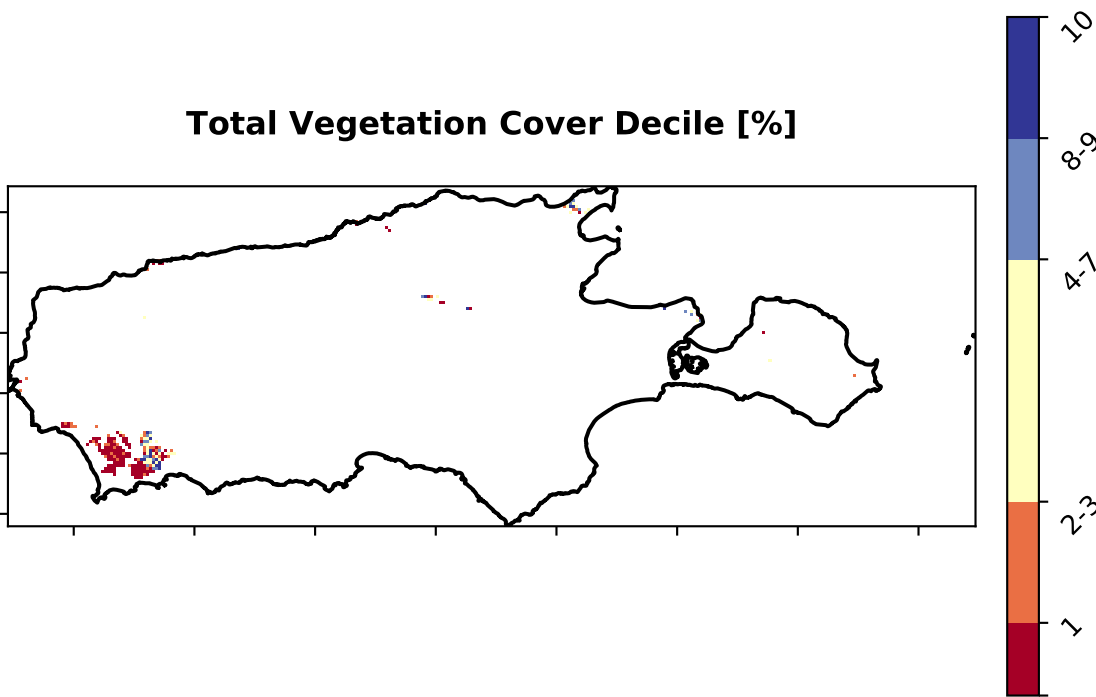




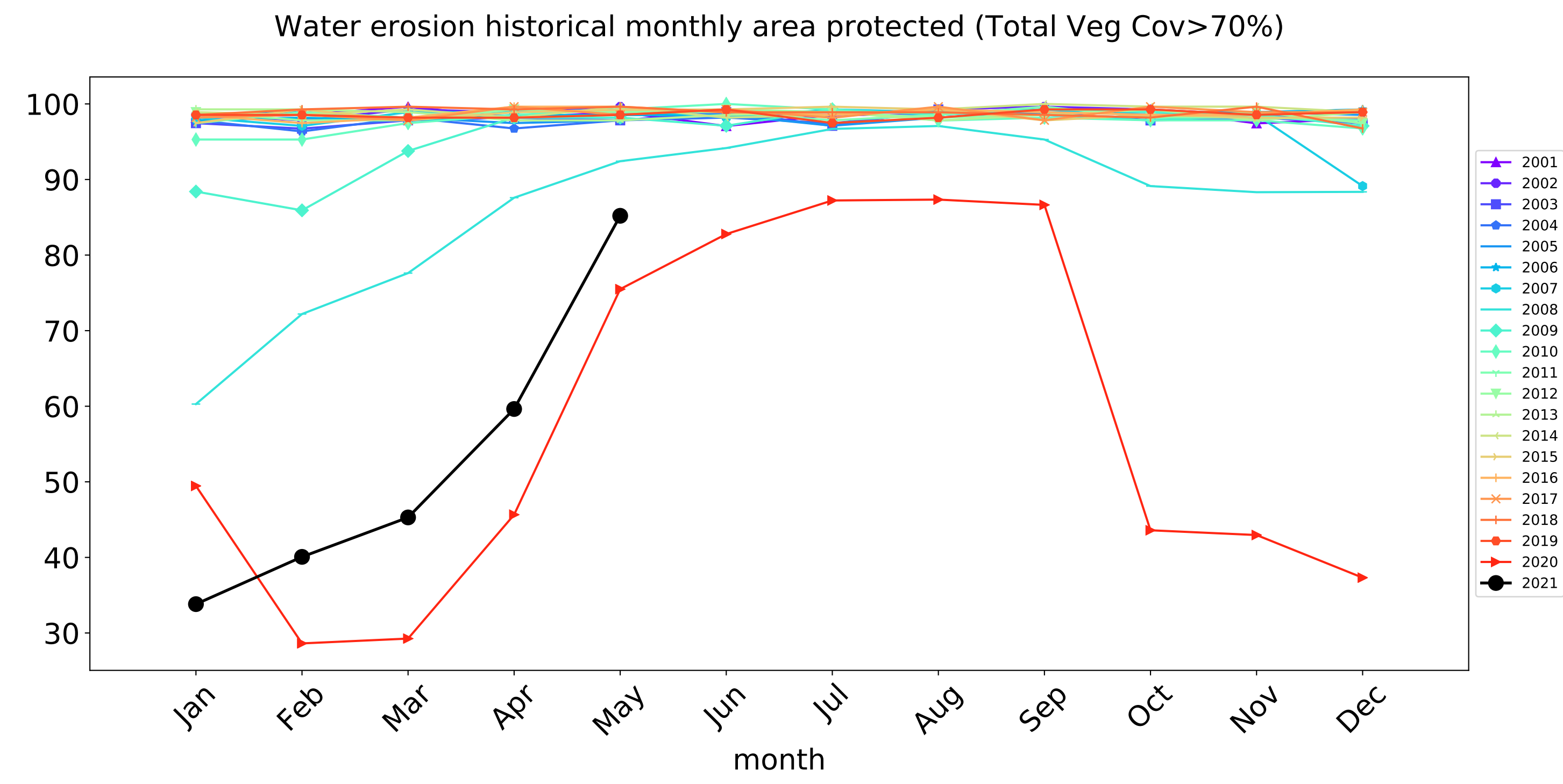
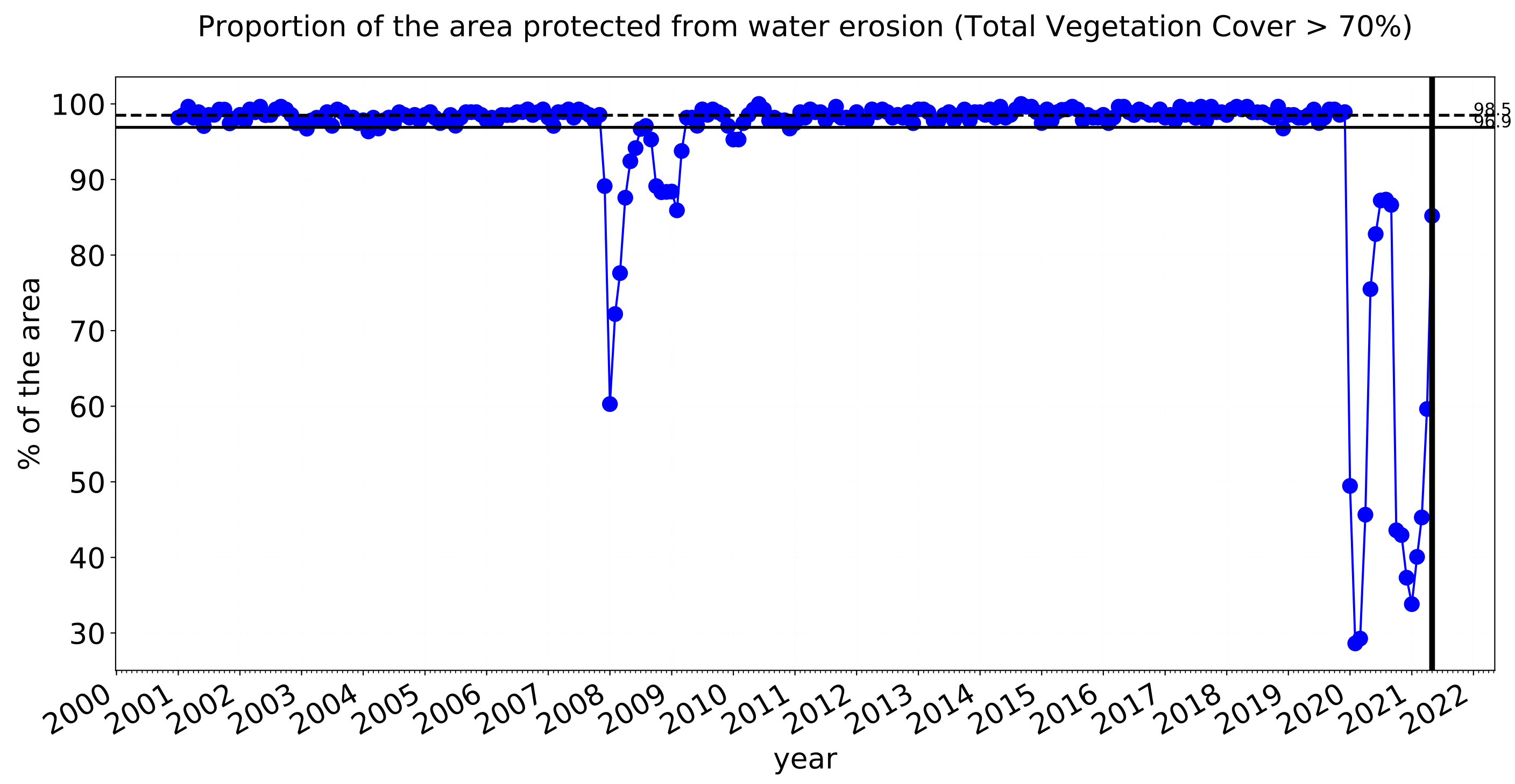
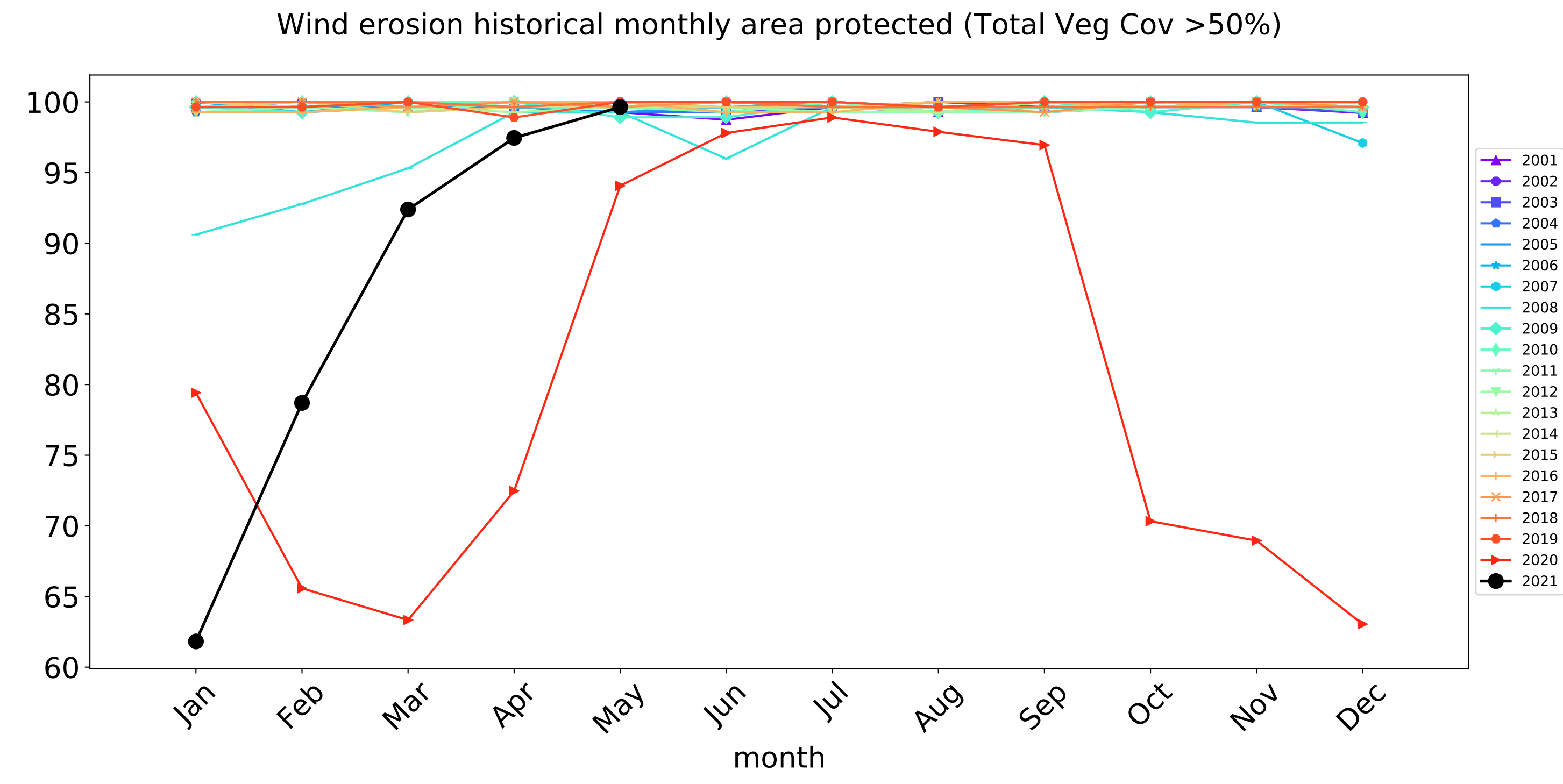
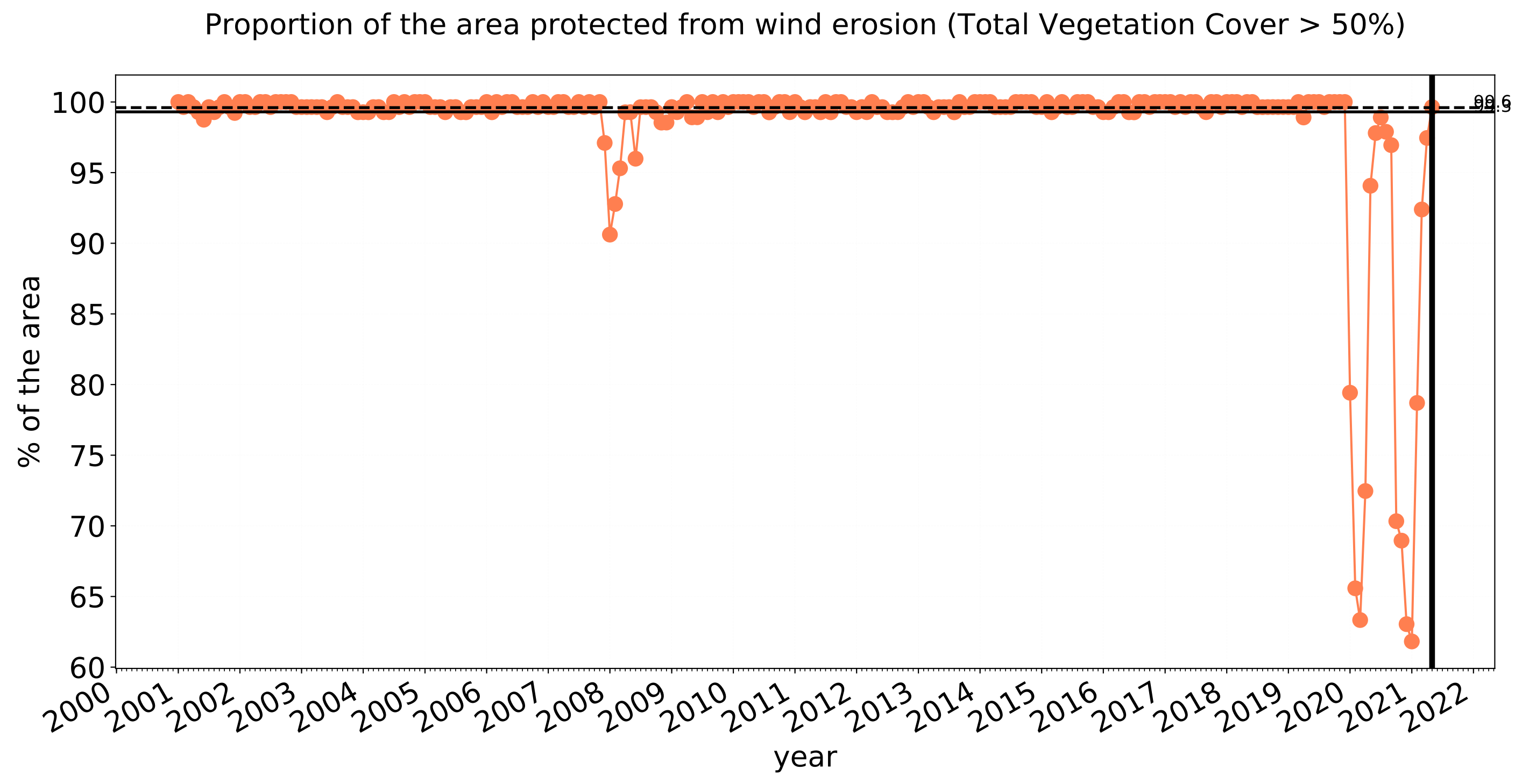
Conservation and natural environments Forest (non woodland)

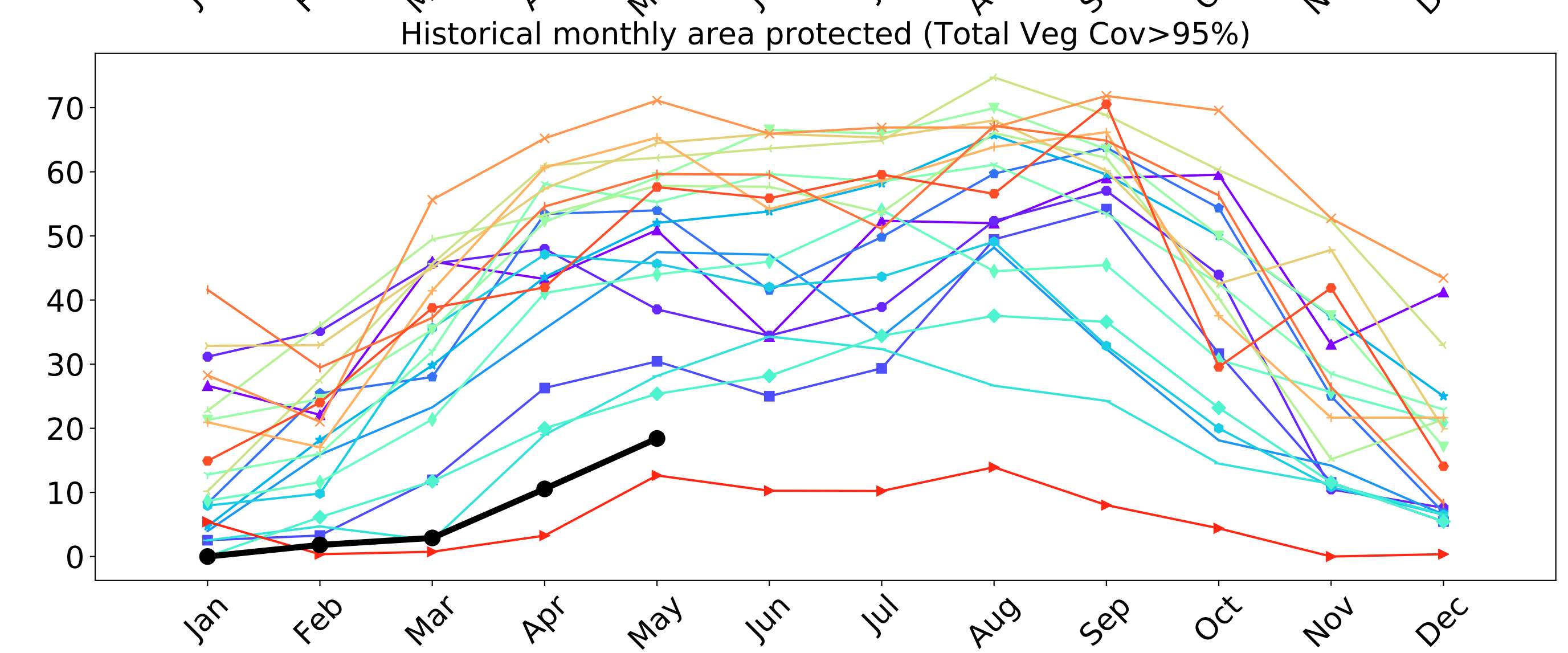
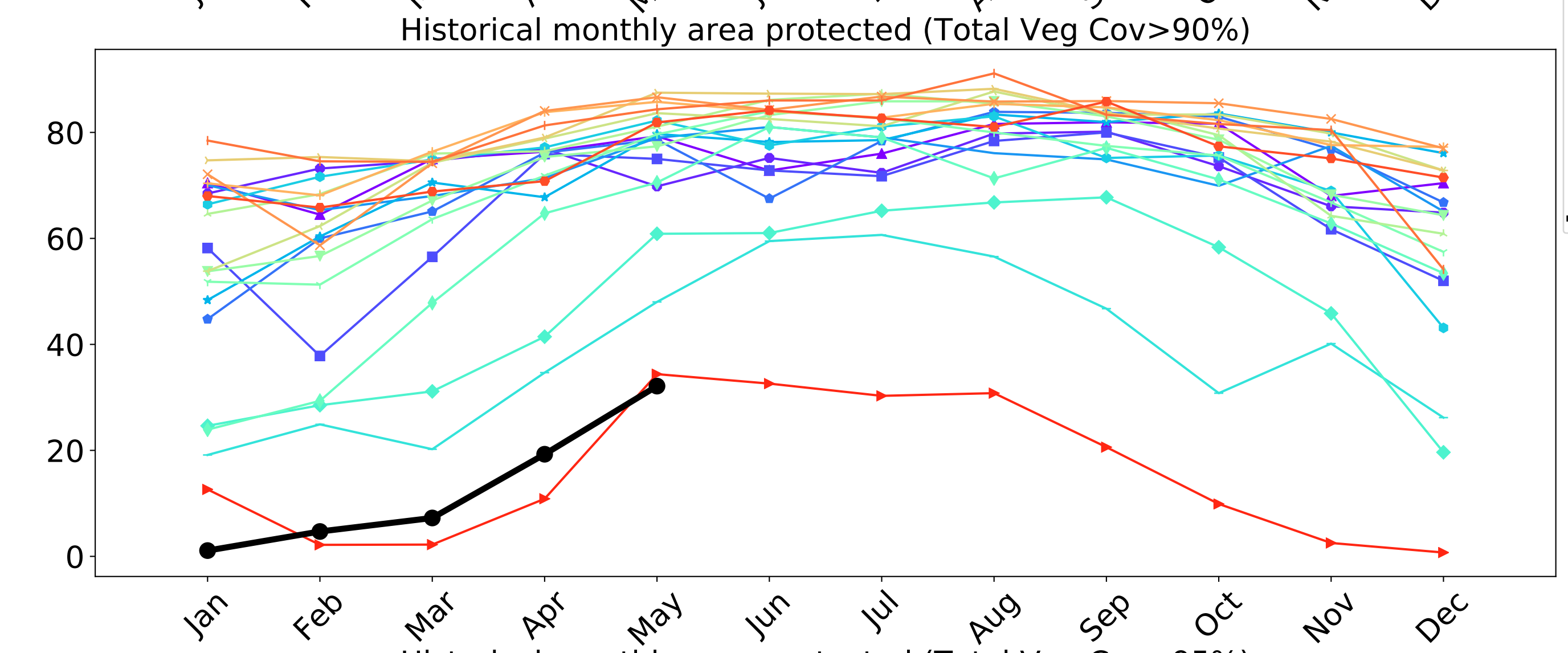
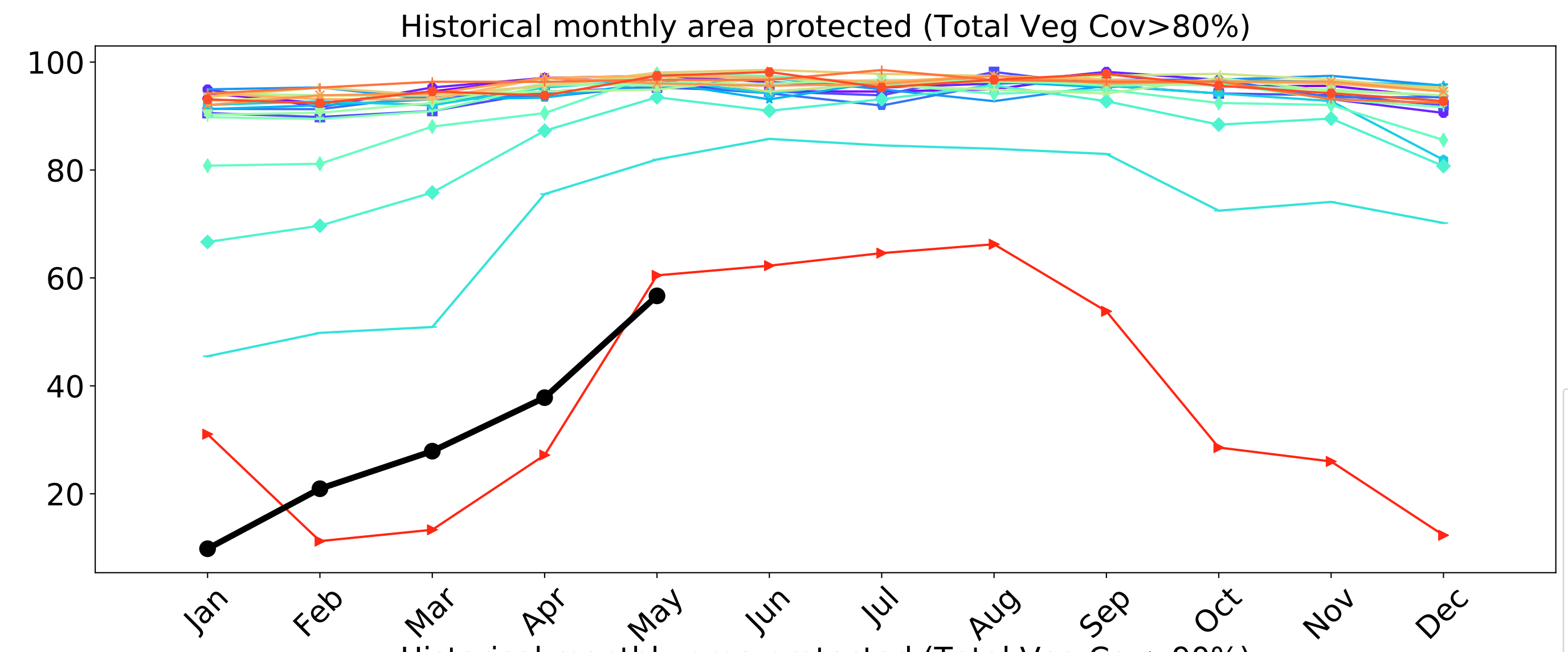
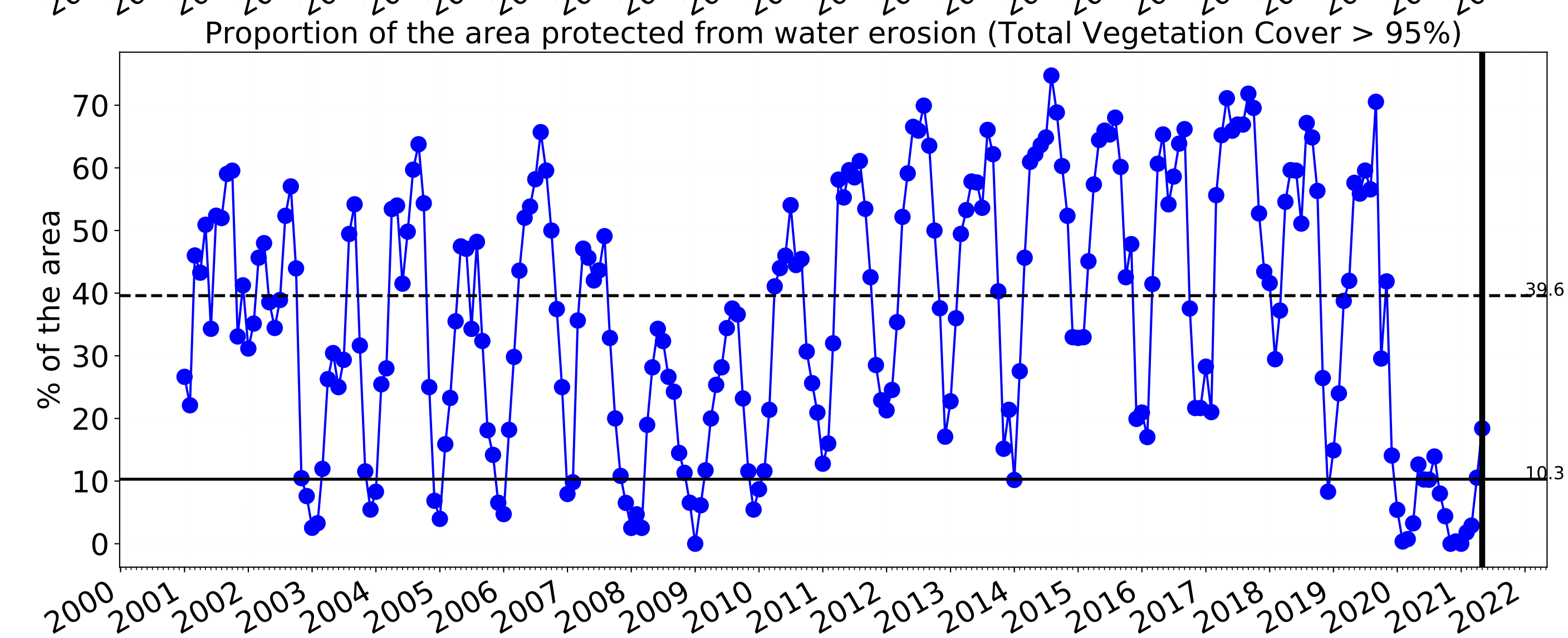
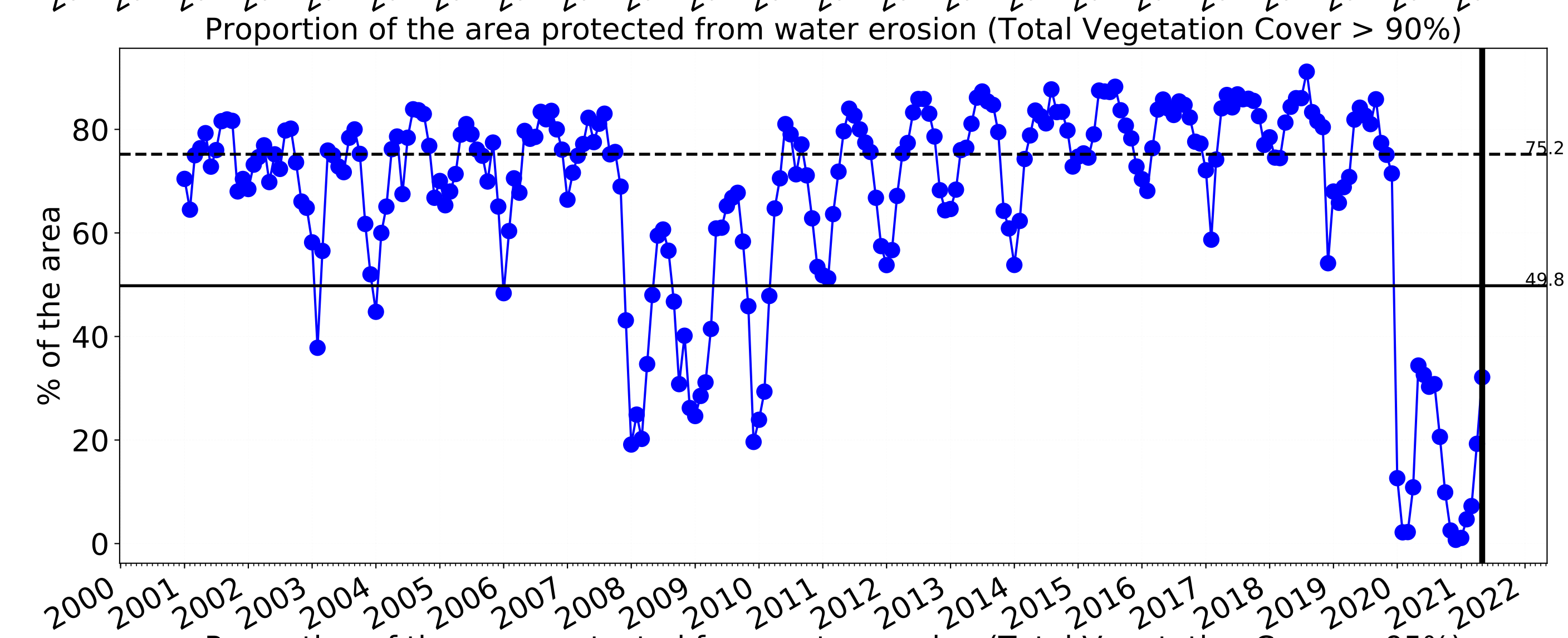
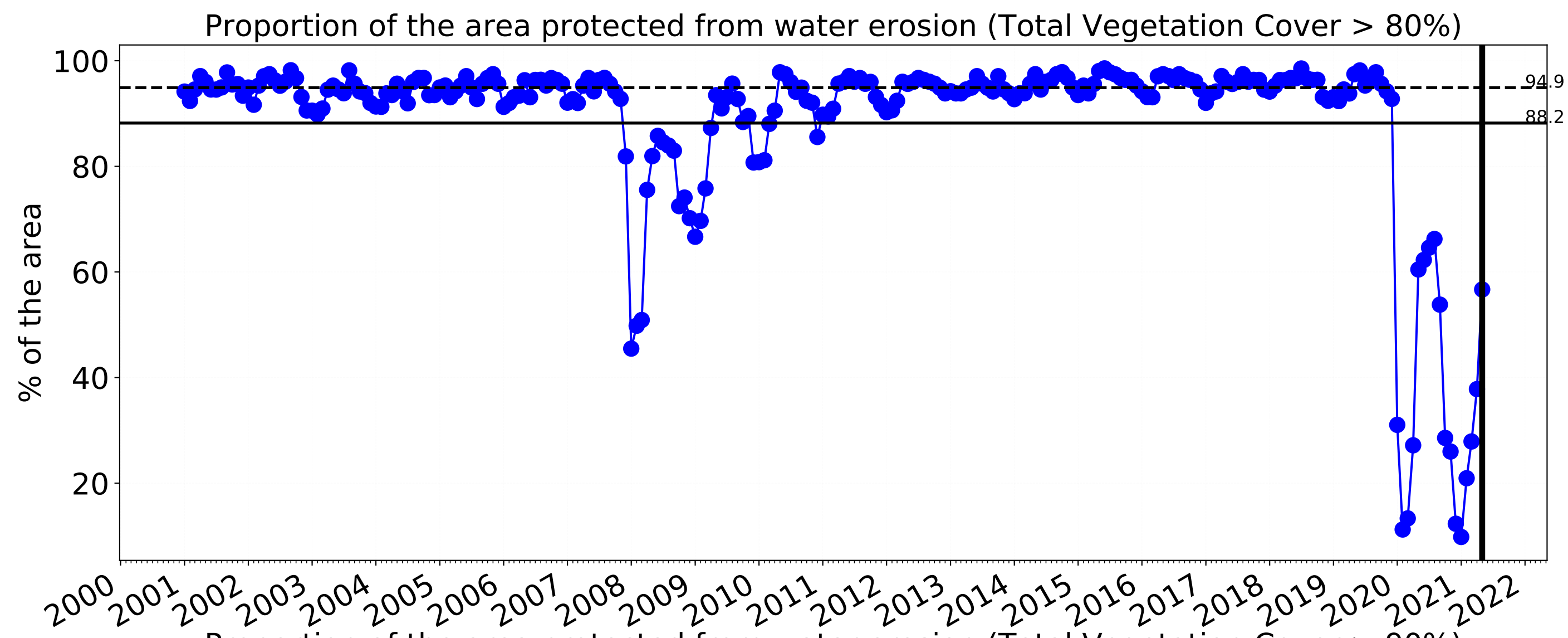


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

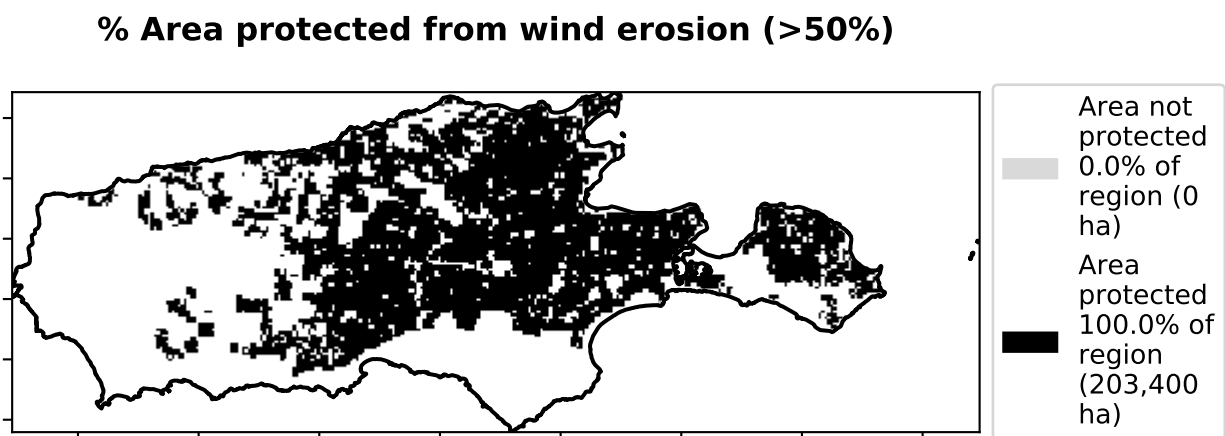
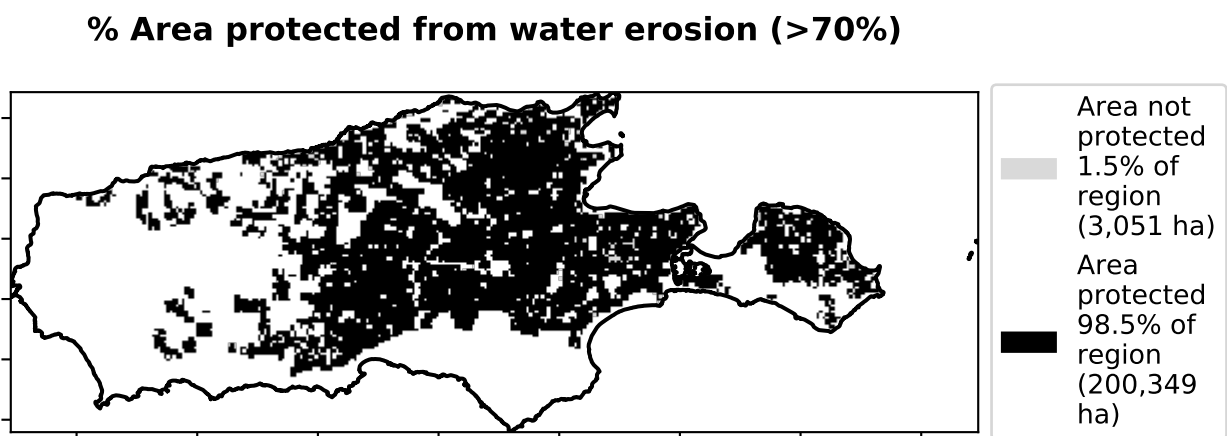
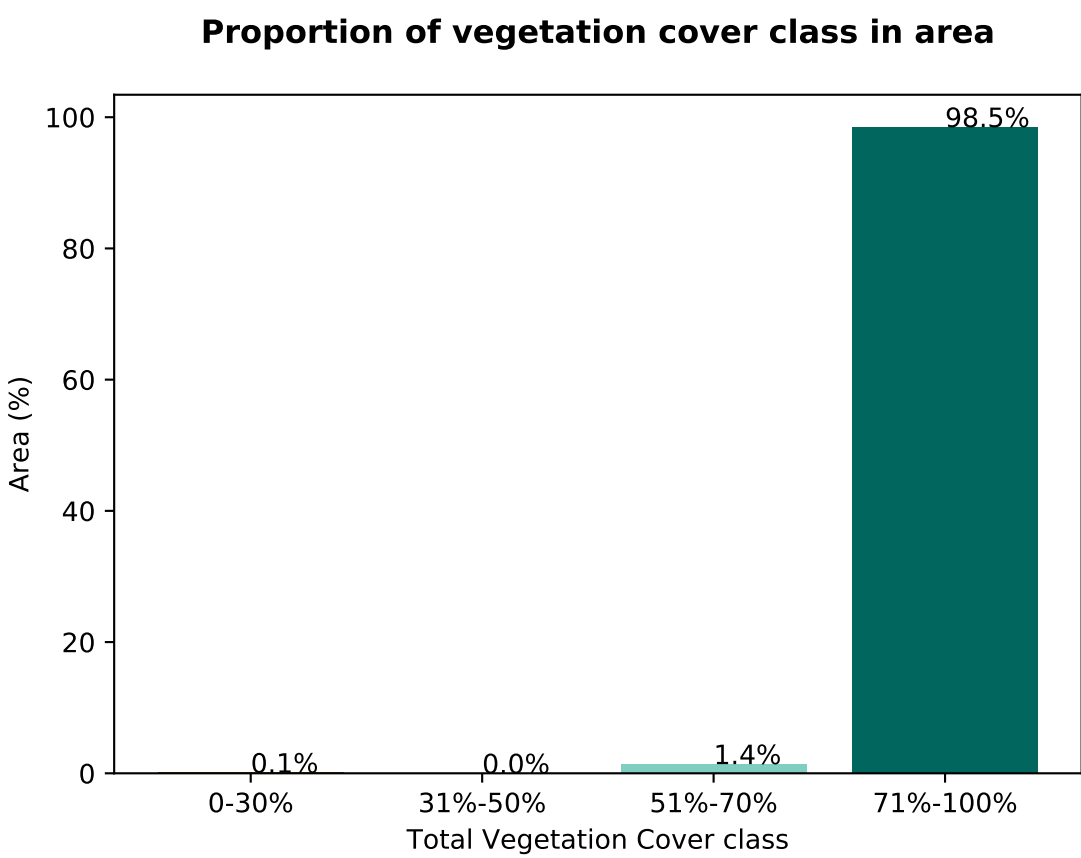
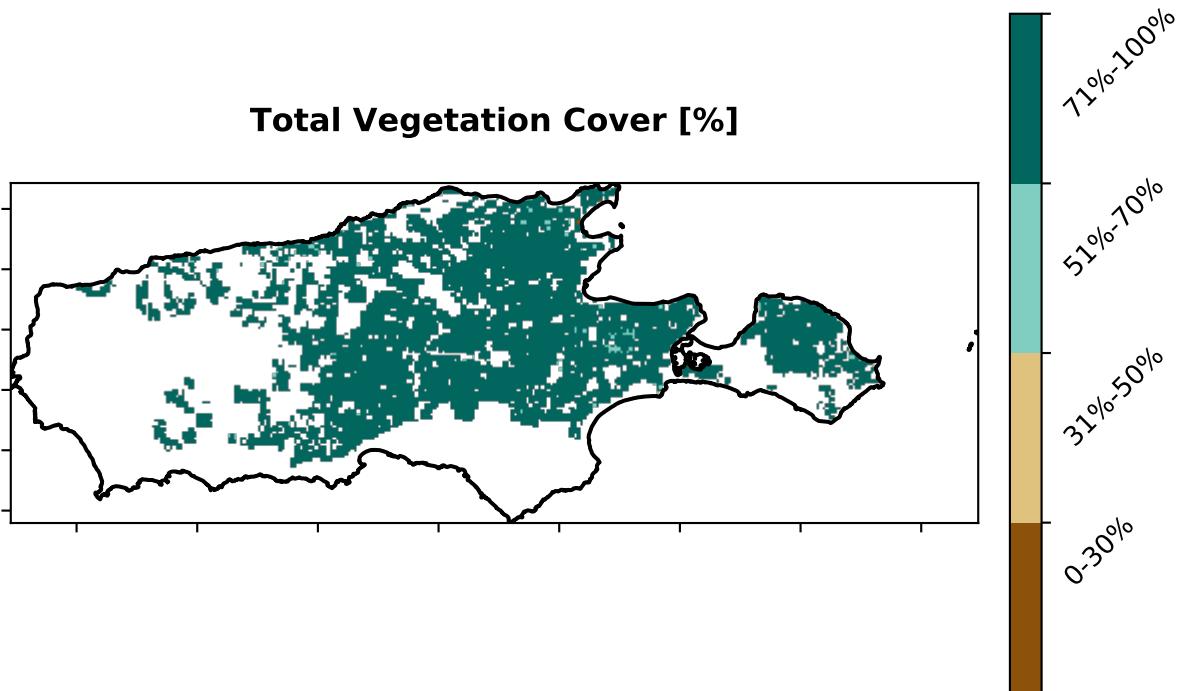
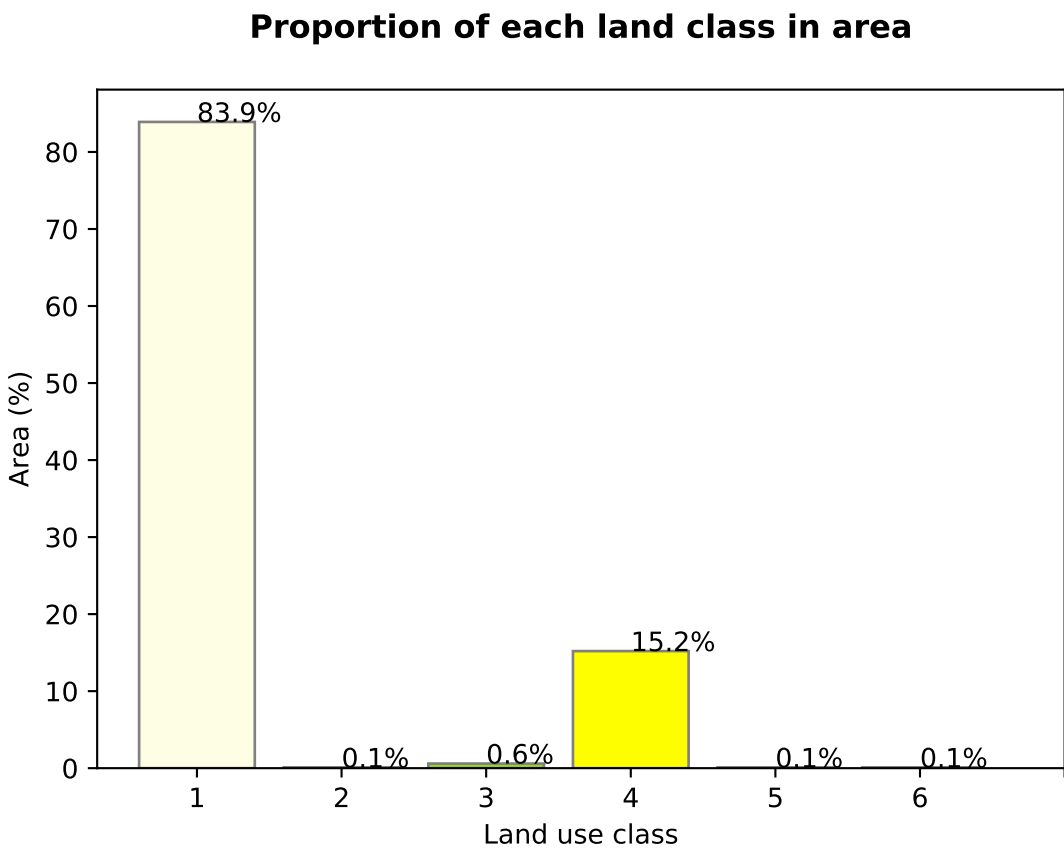
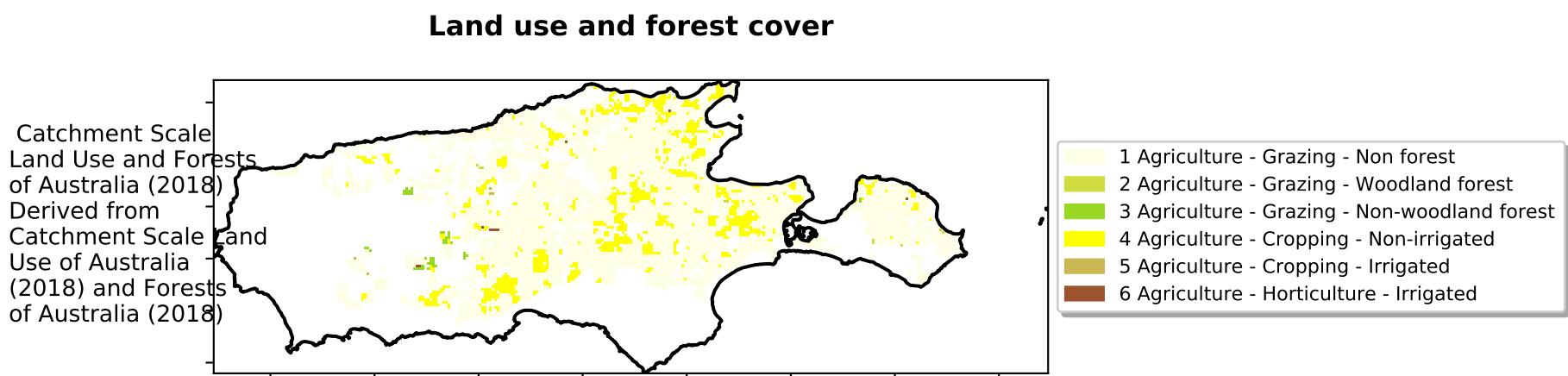


Conservation and natural environments Forest (non woodland) timeseries

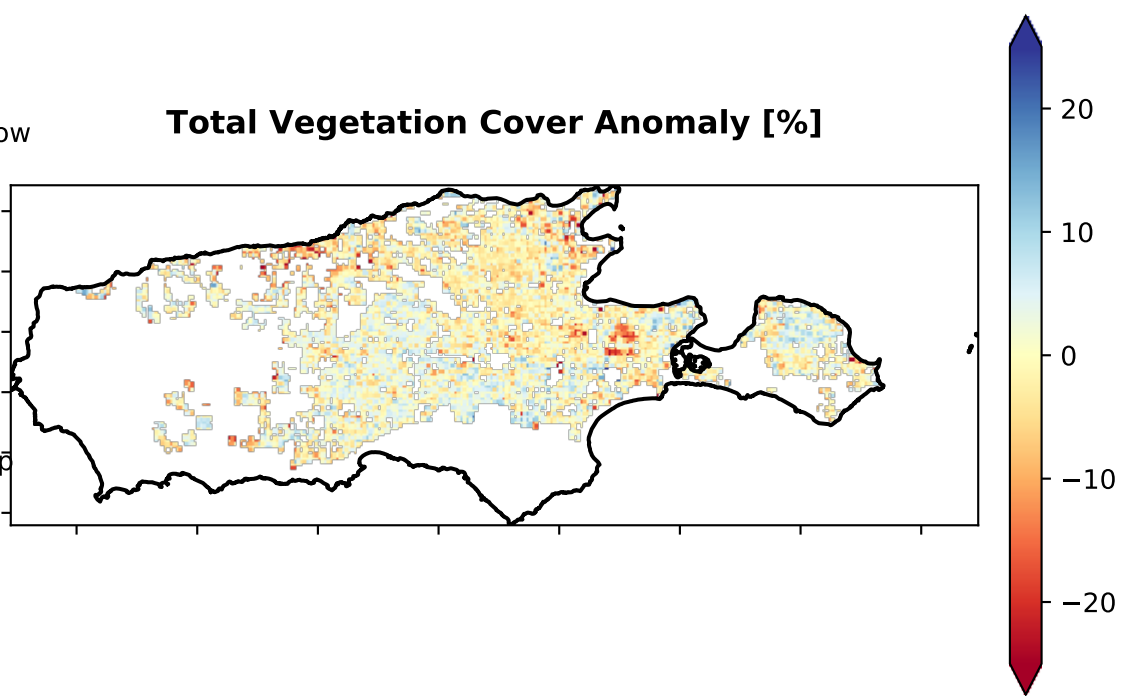




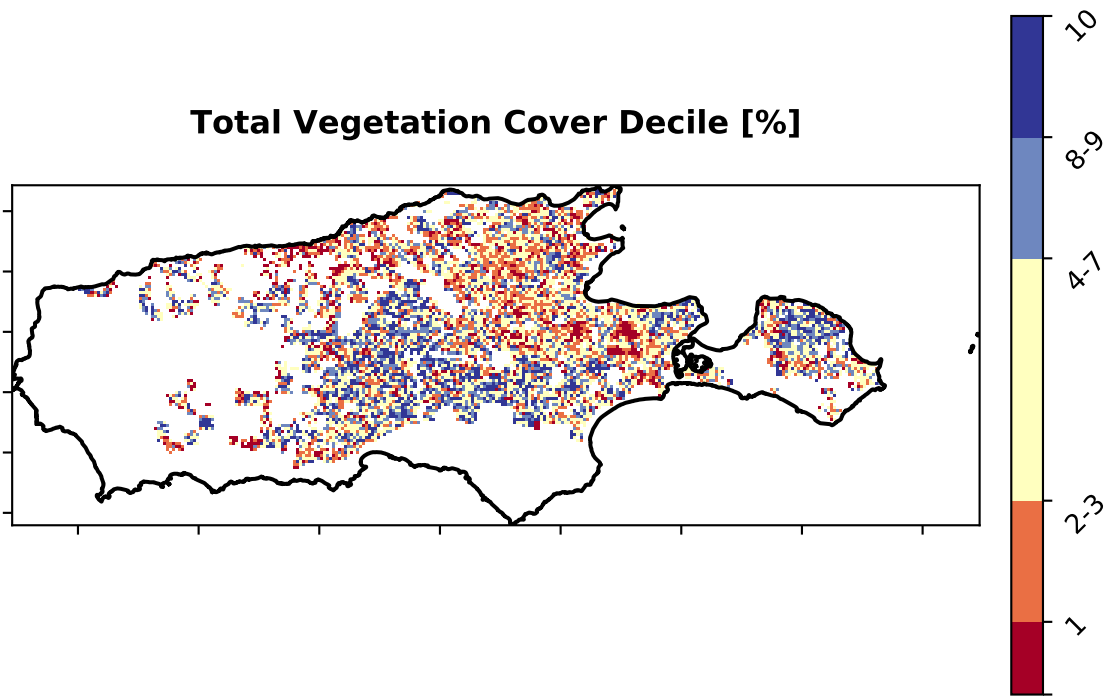
Agriculture



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.



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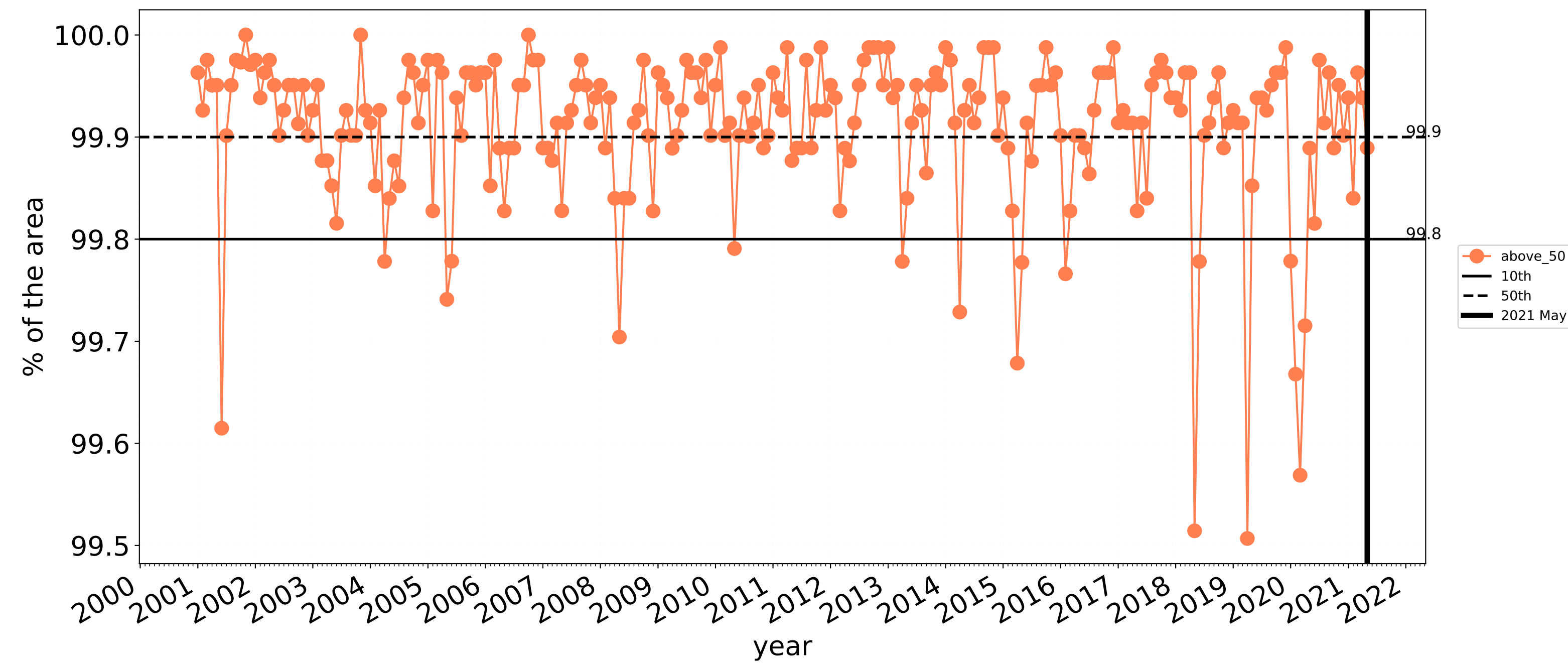


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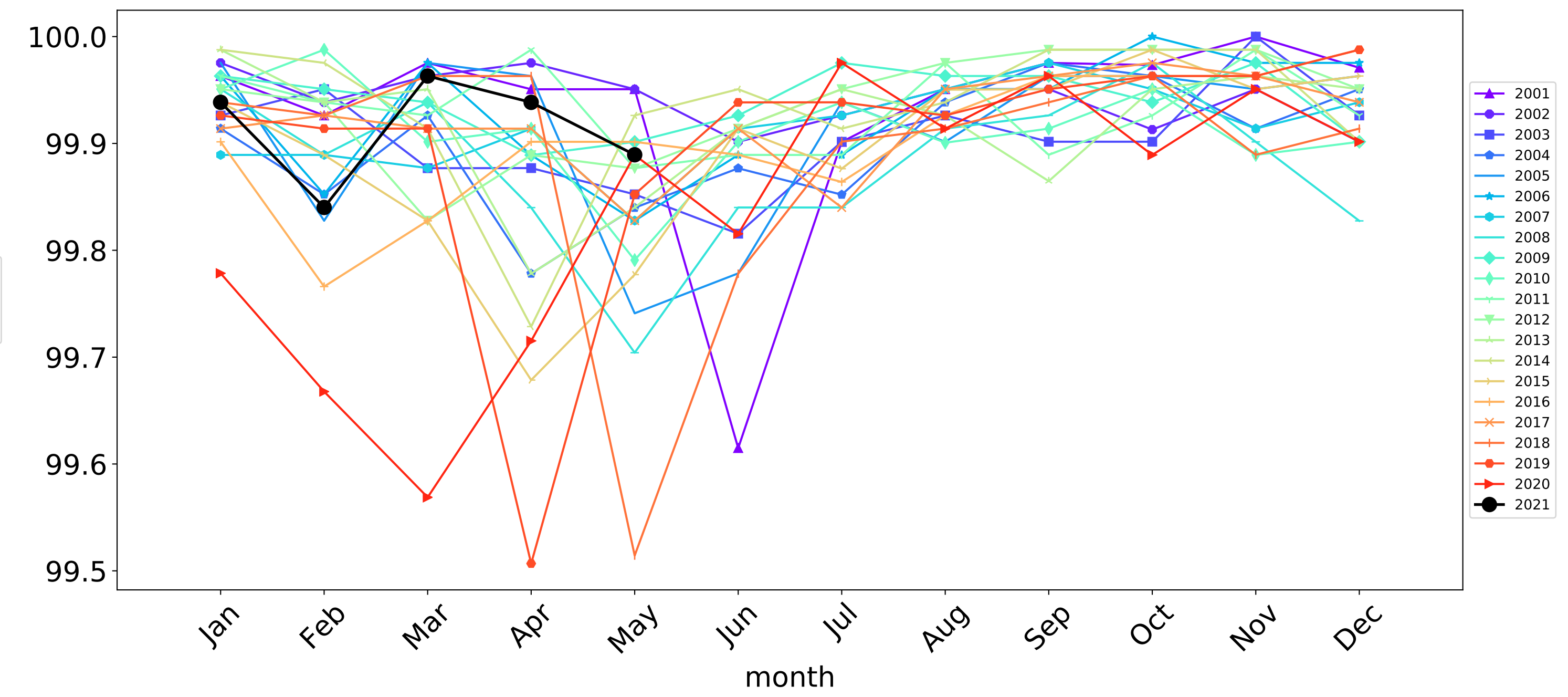


Agriculture timeseries

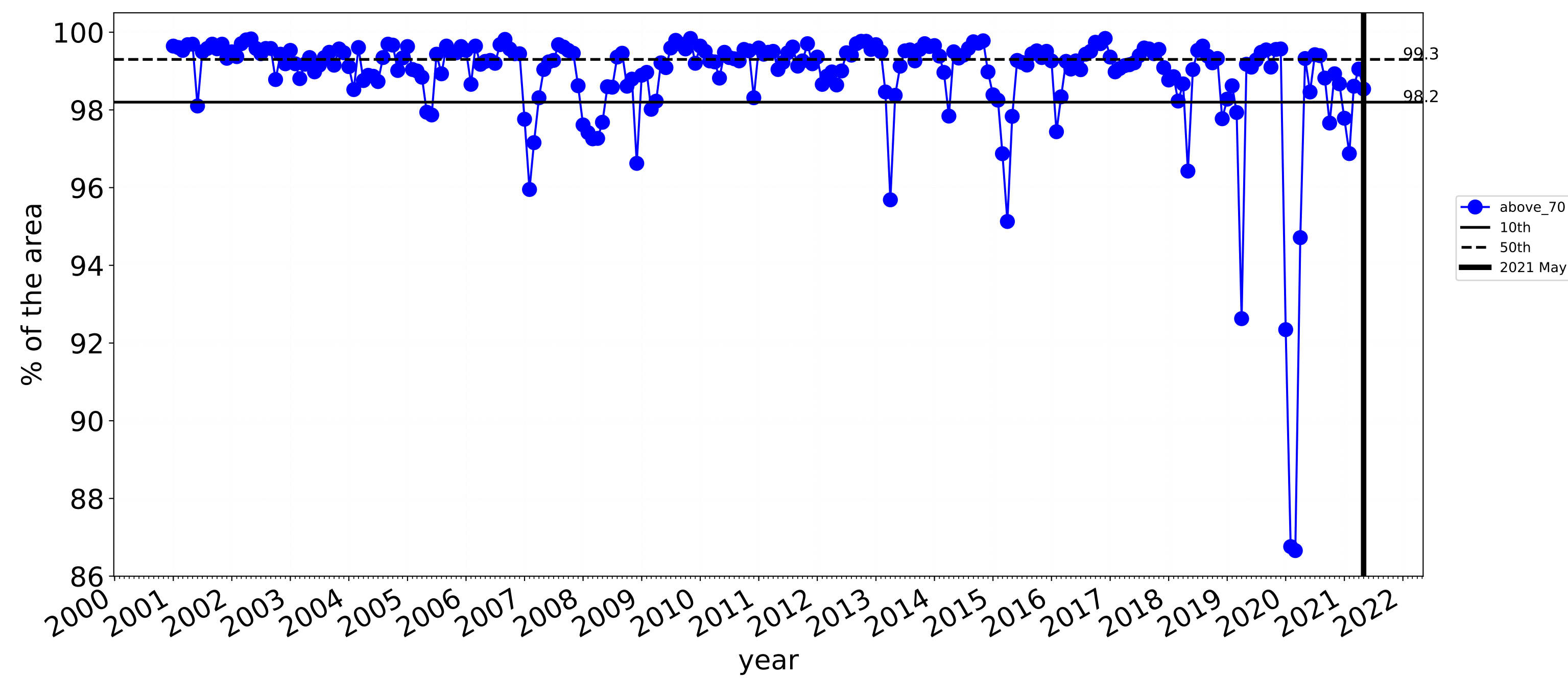
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



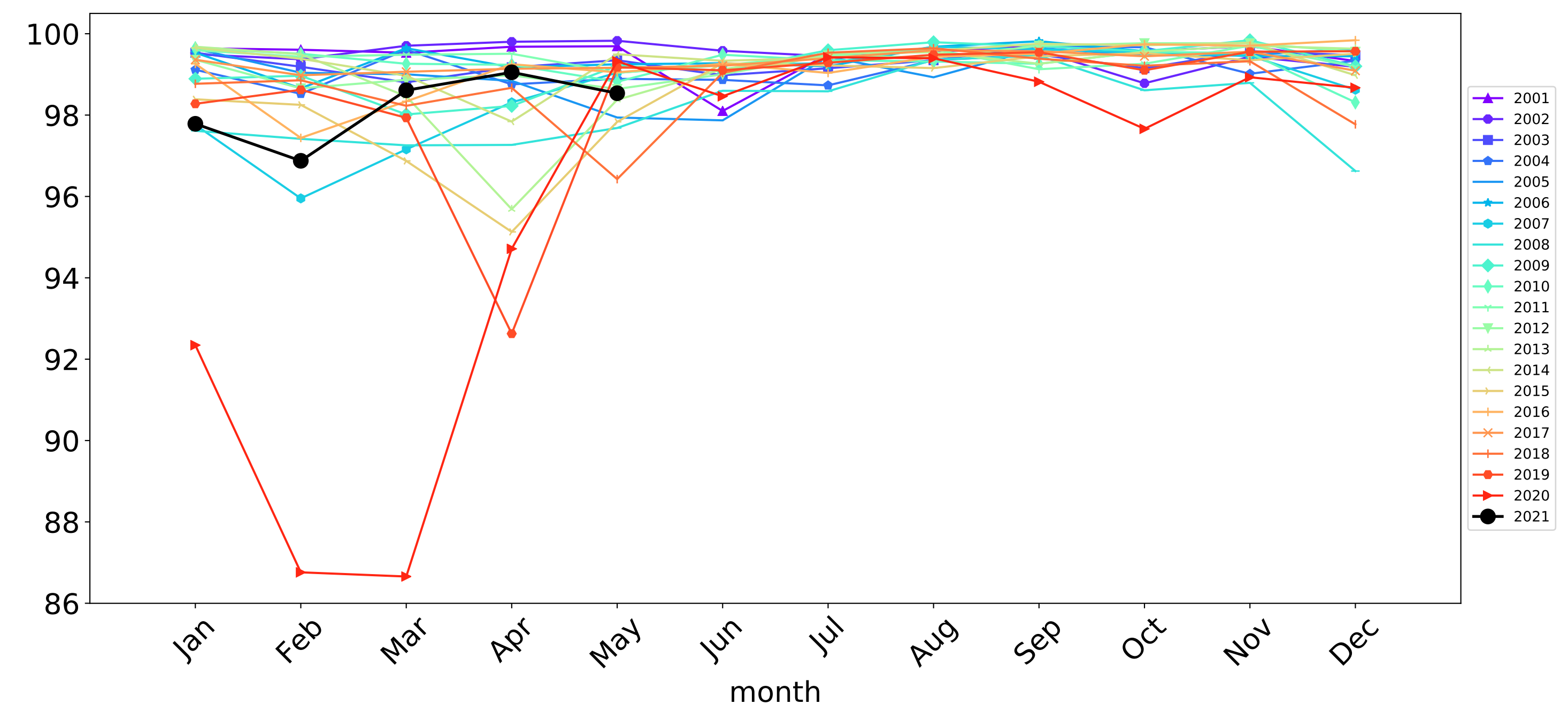
Wind erosion historical monthly area protected (Total Veg Cov >50%)

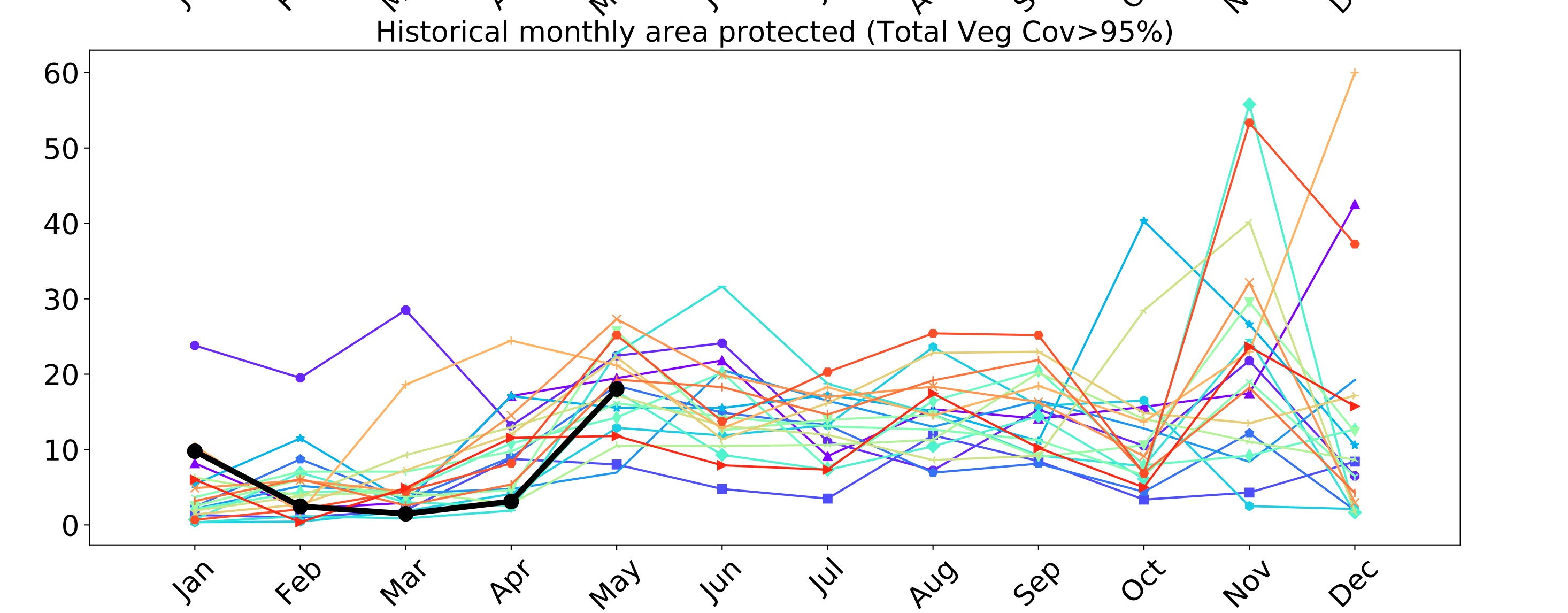
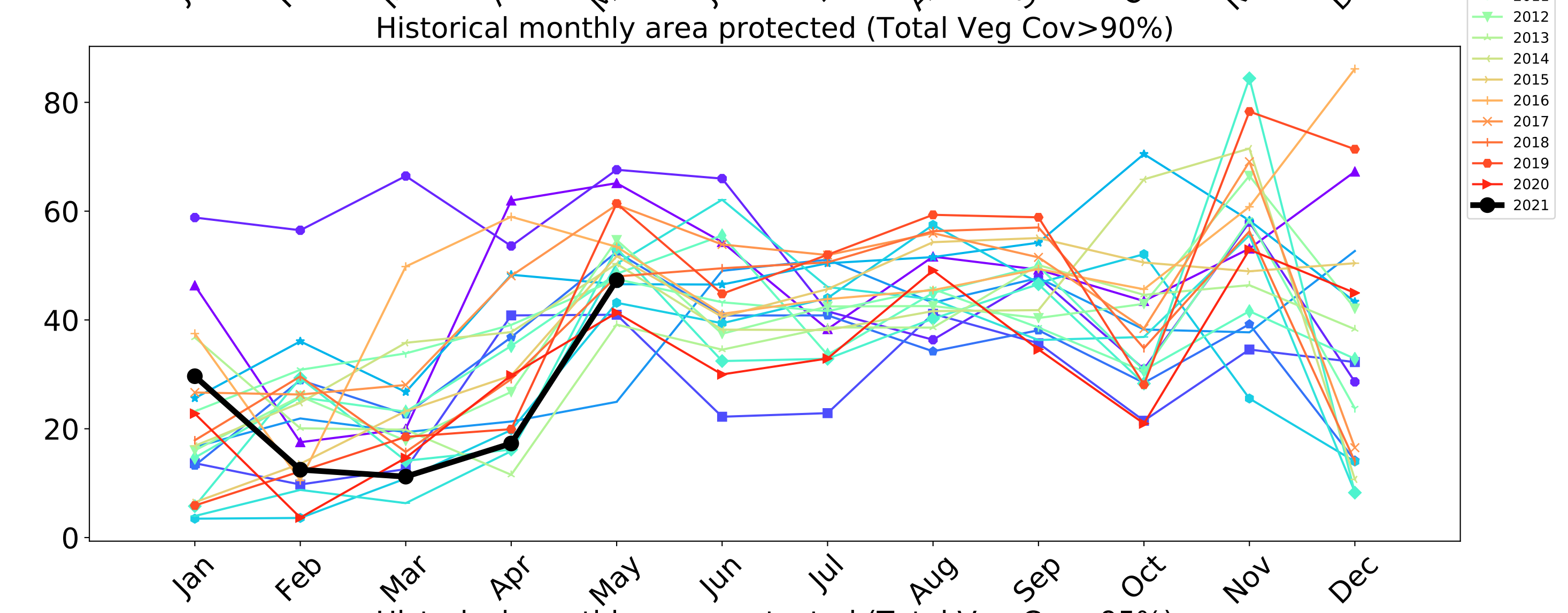
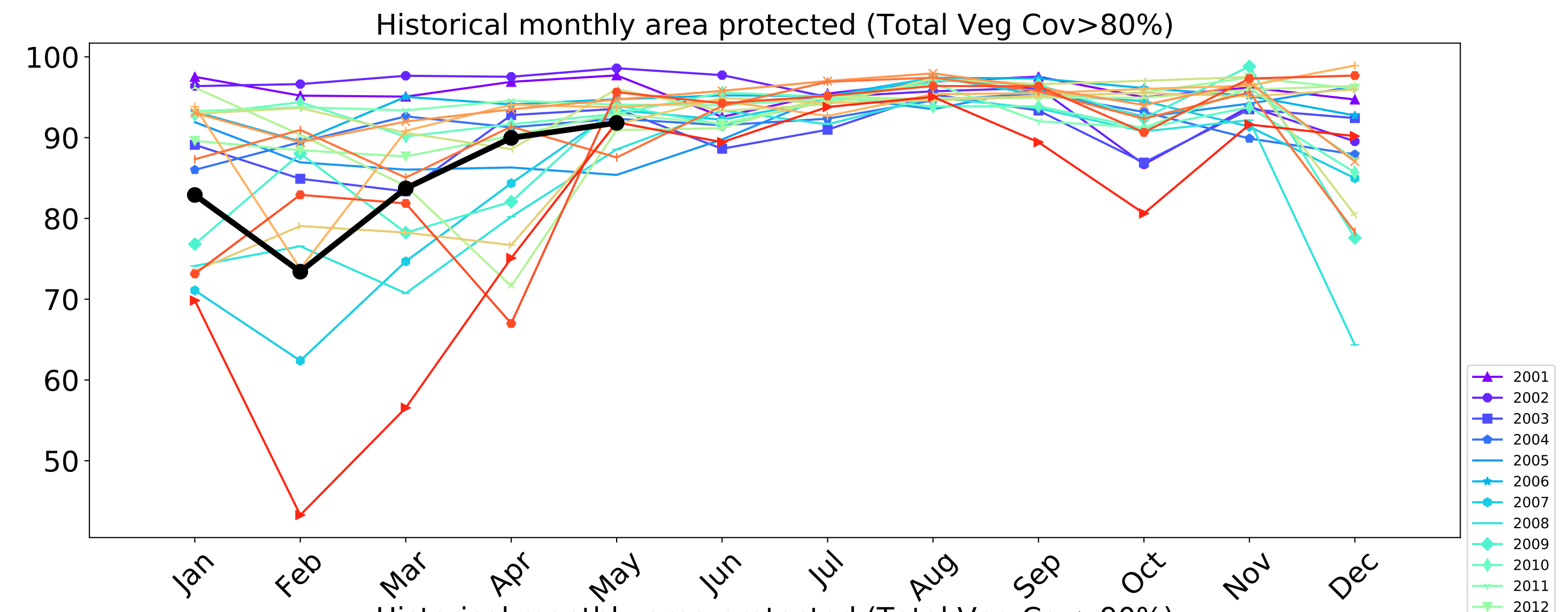
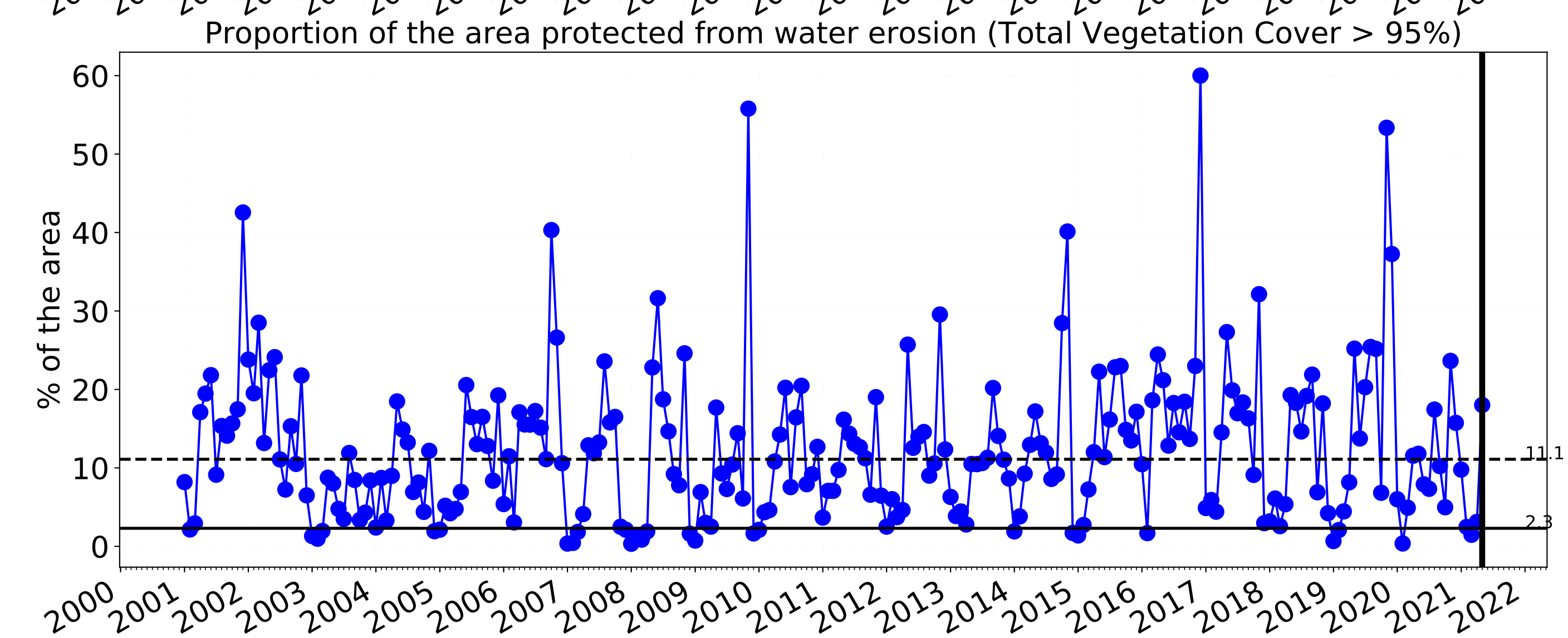
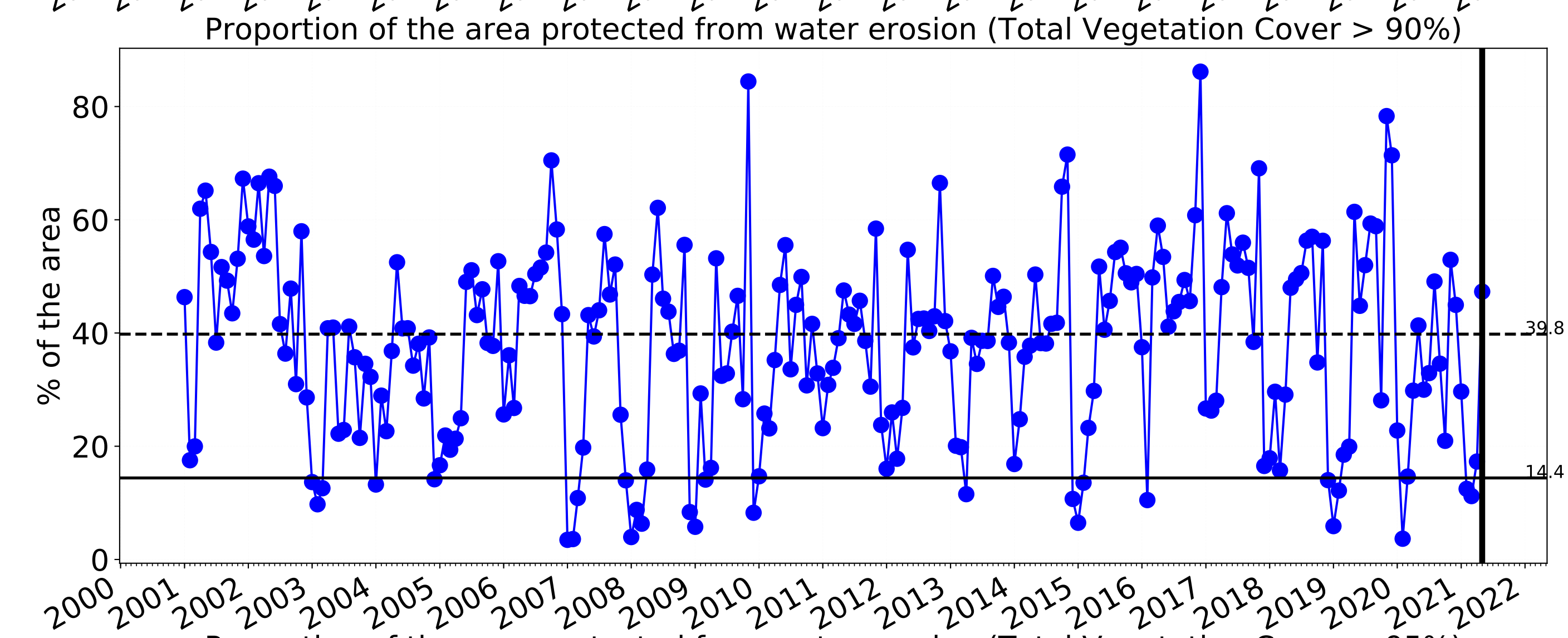
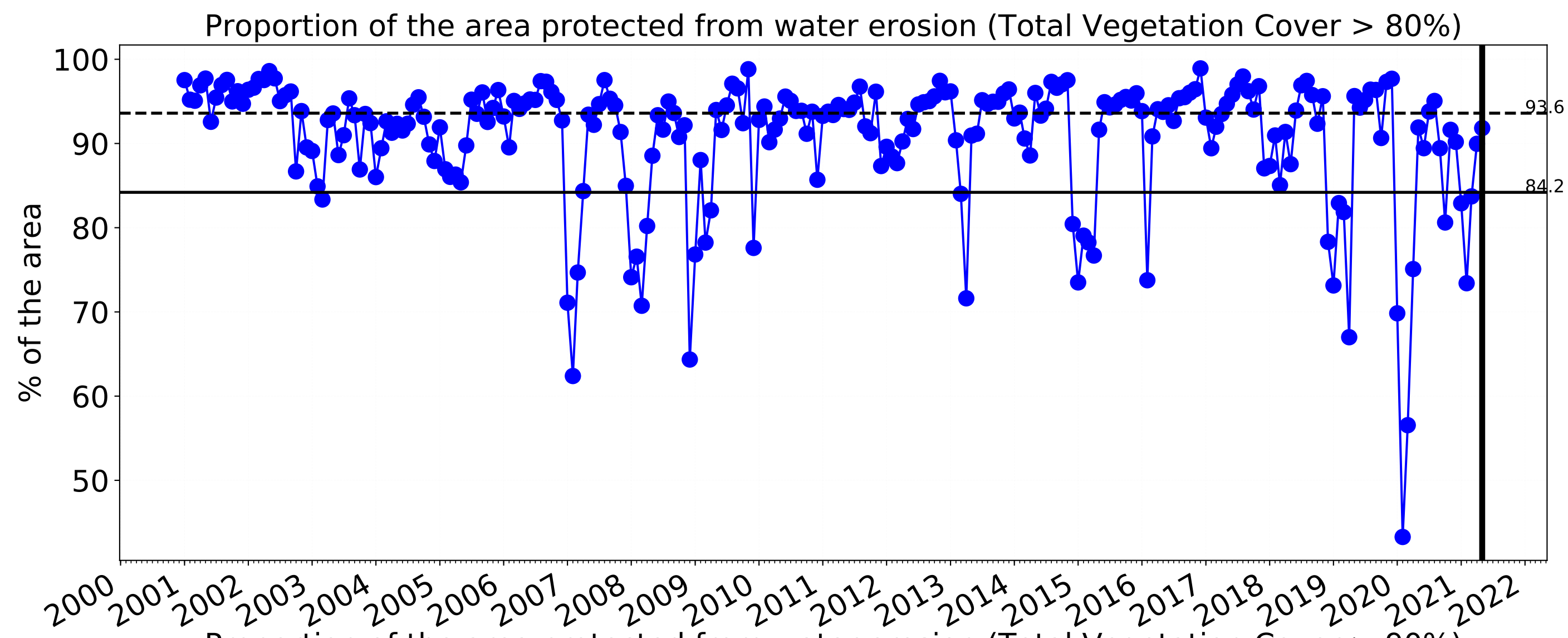


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



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





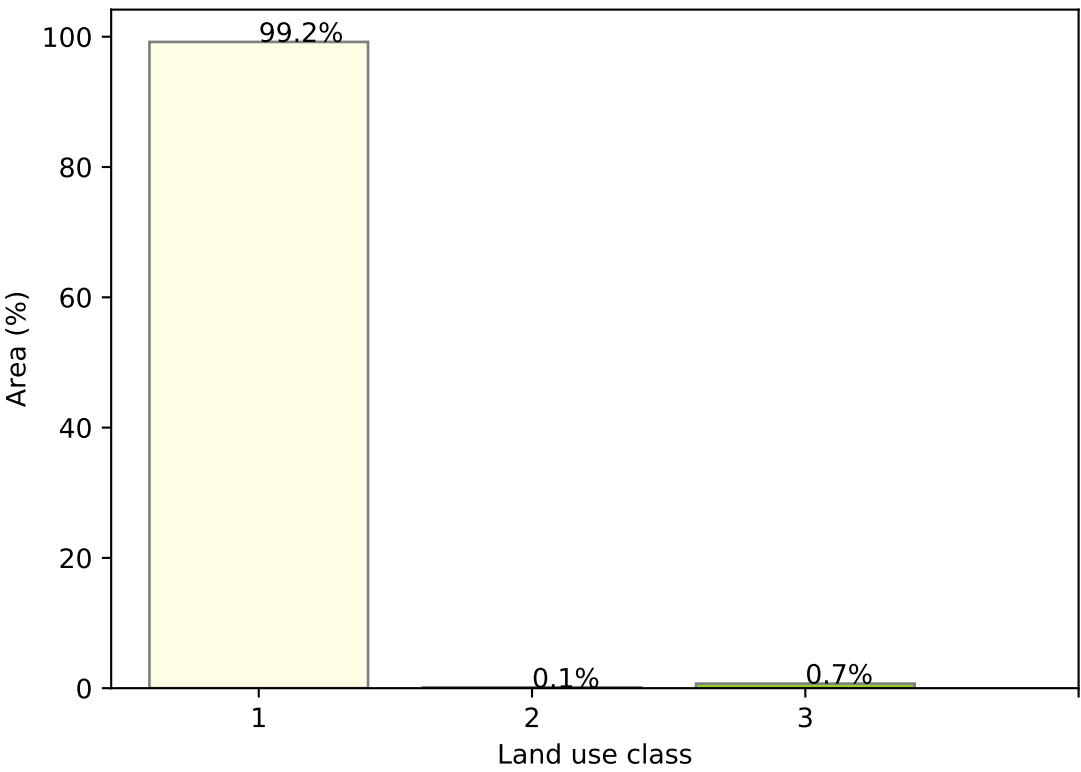
Grazing

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

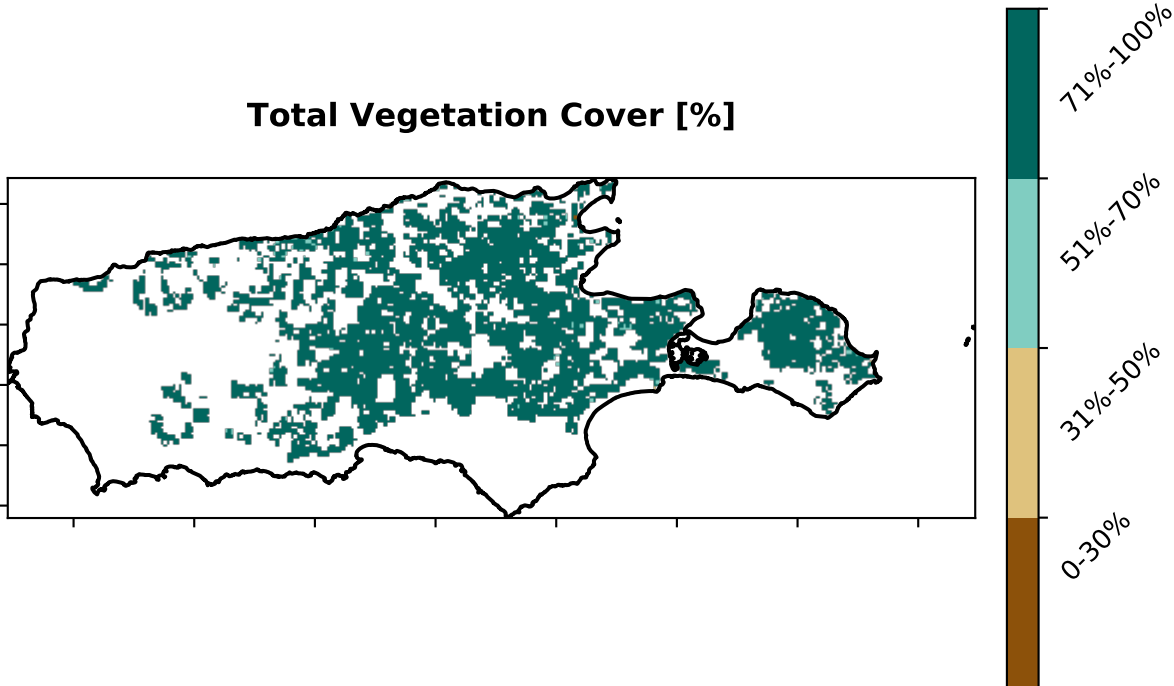
Land use and forest cover



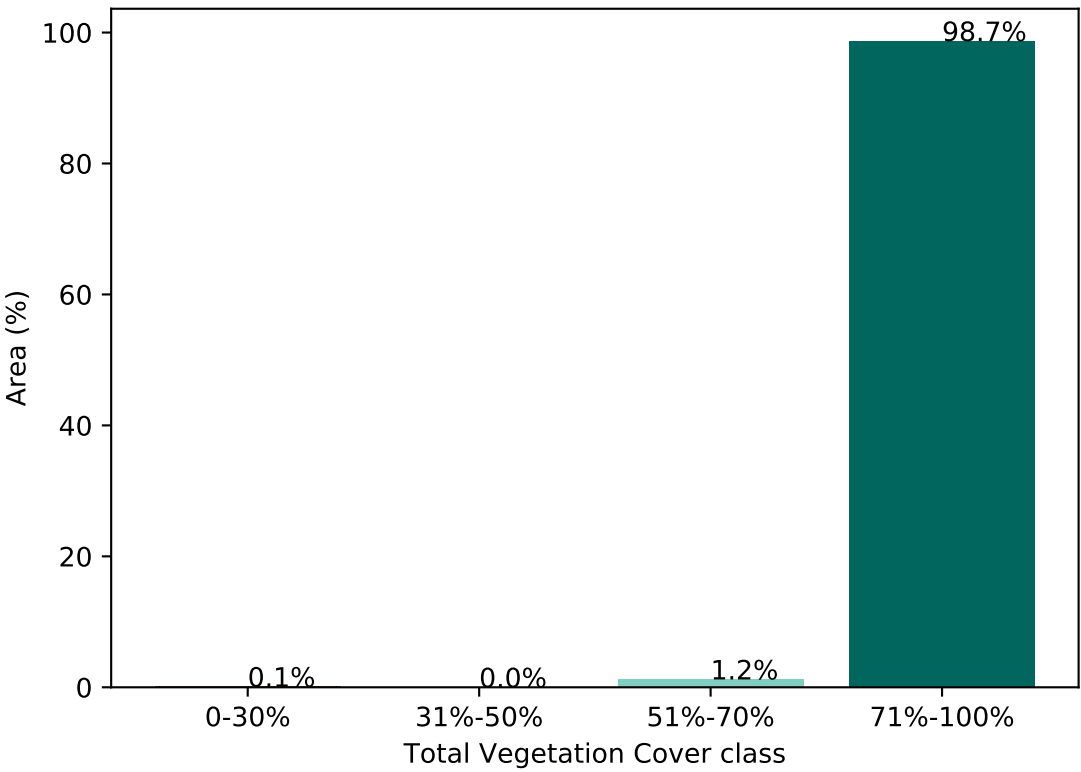
Proportion of each land class in area



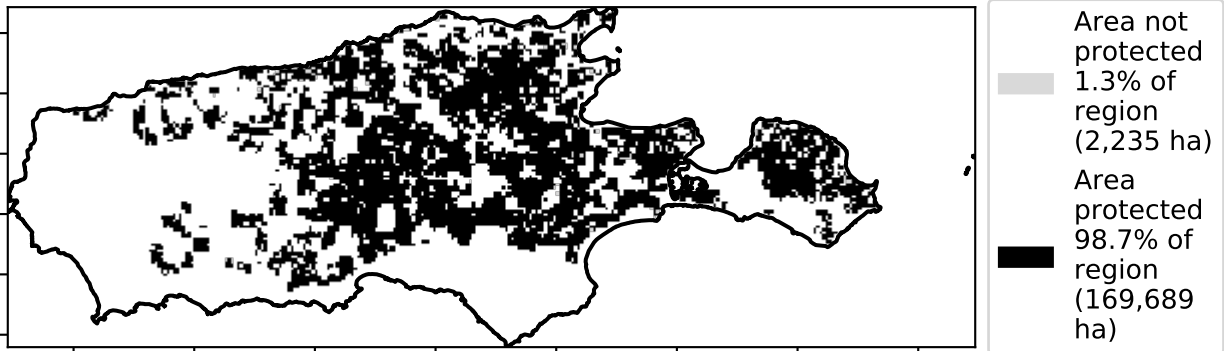
Total Vegetation Cover [%]



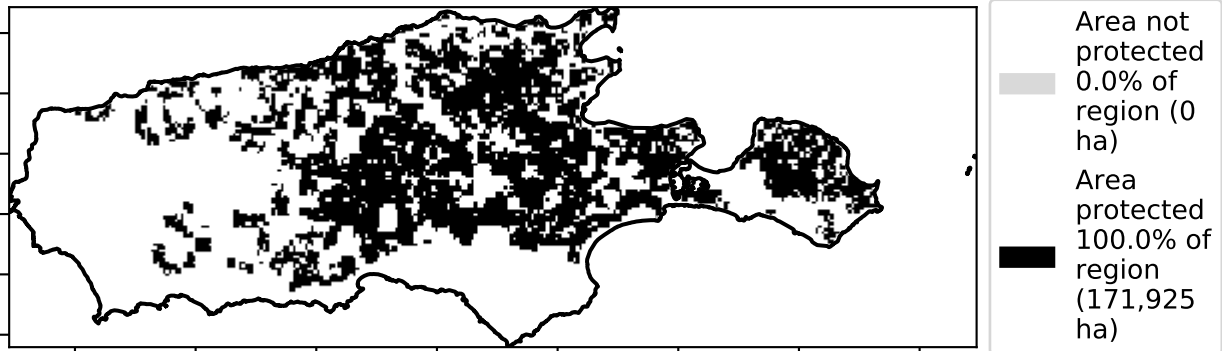
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

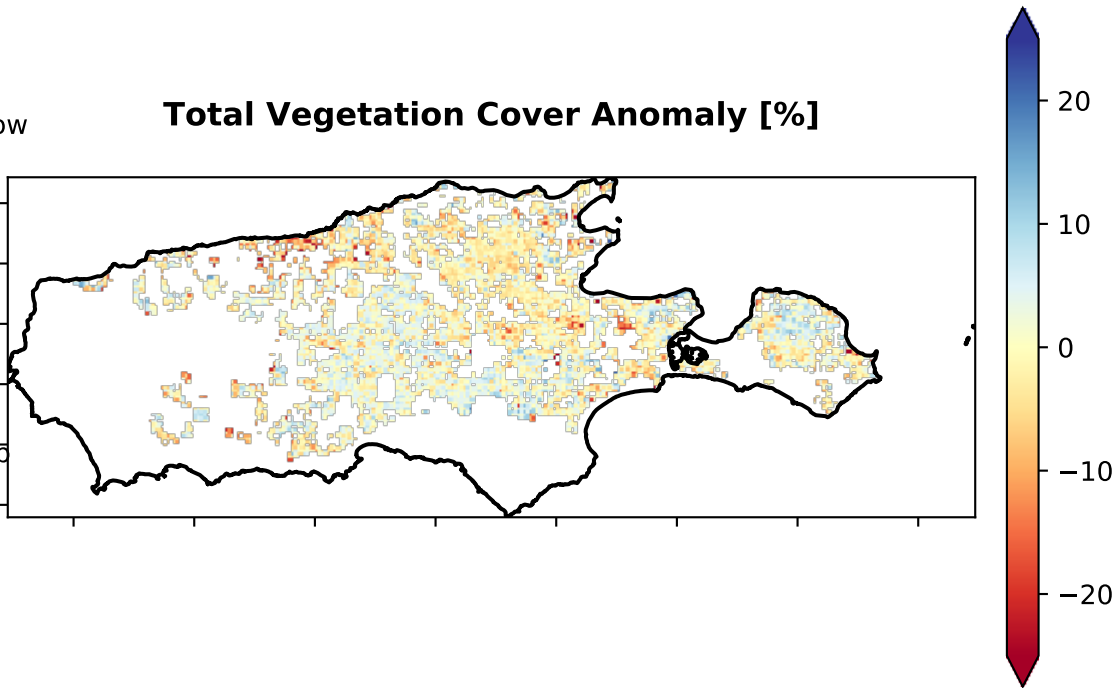


% Area protected from wind erosion (>50%)



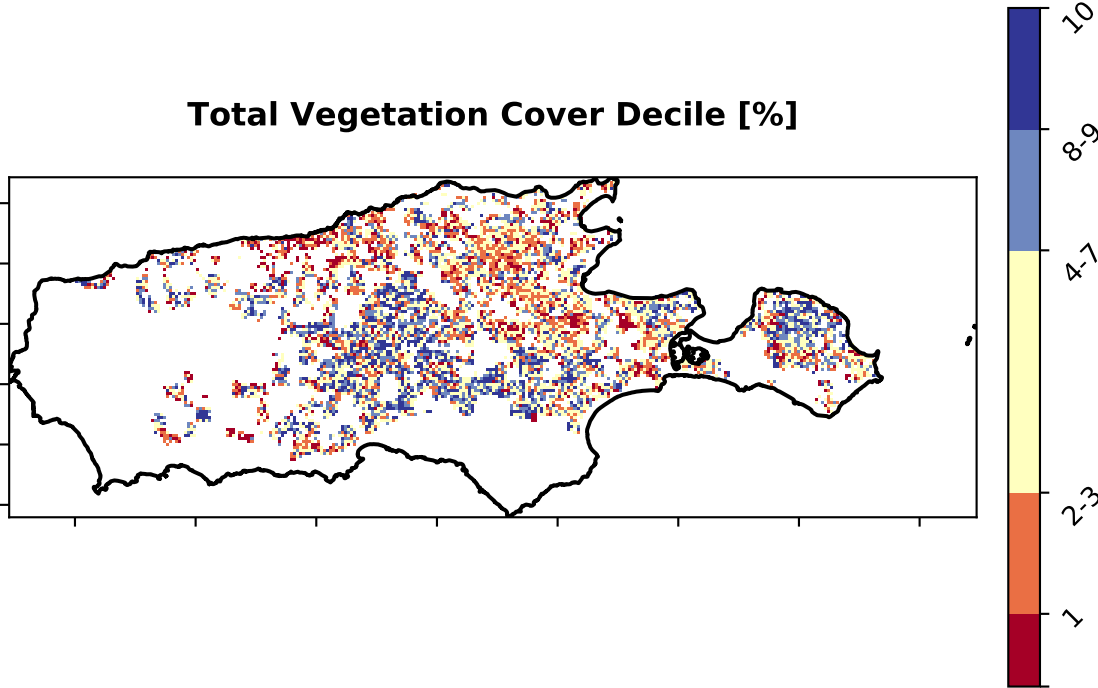
Anomaly show how many percentage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

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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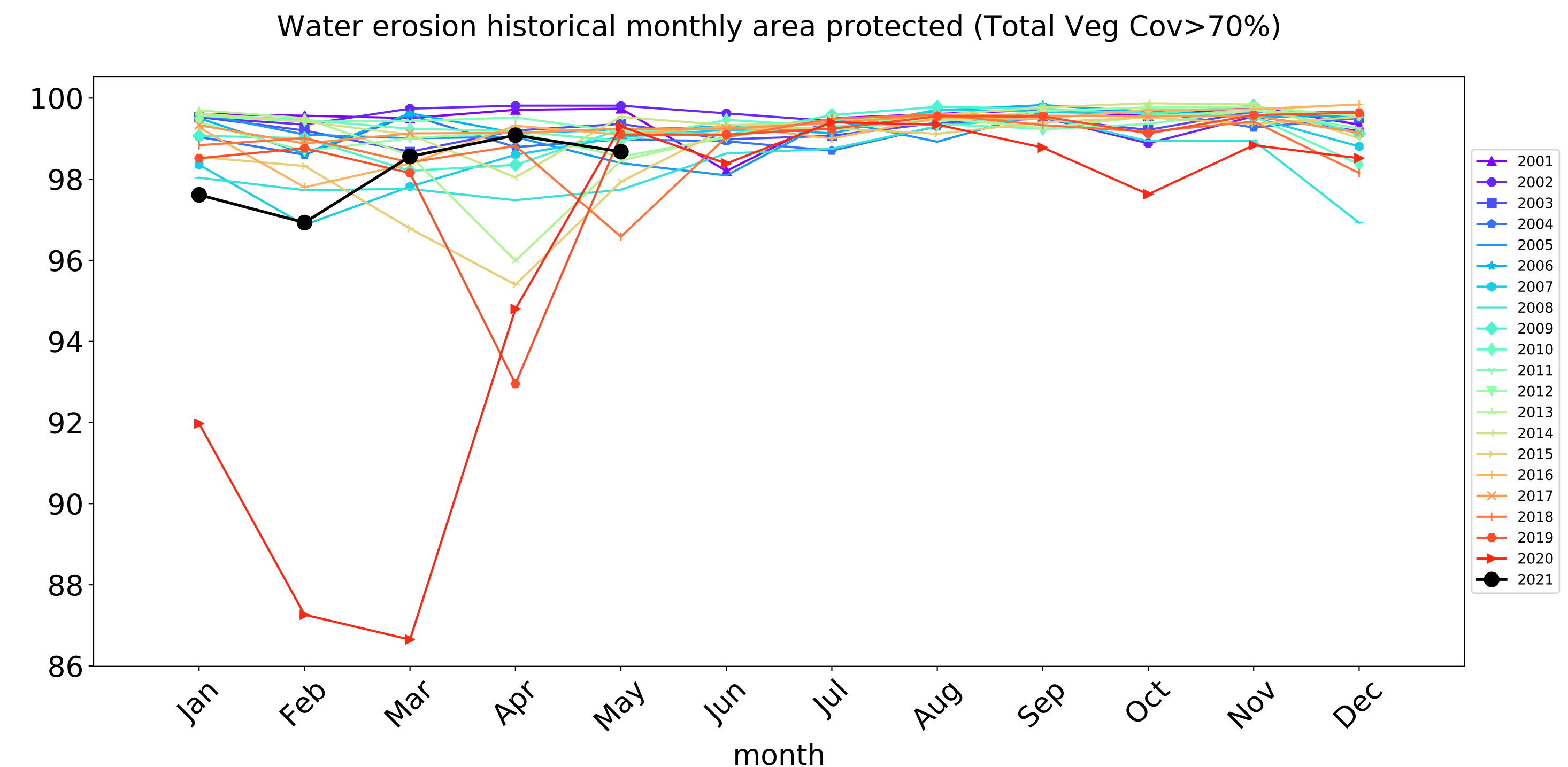
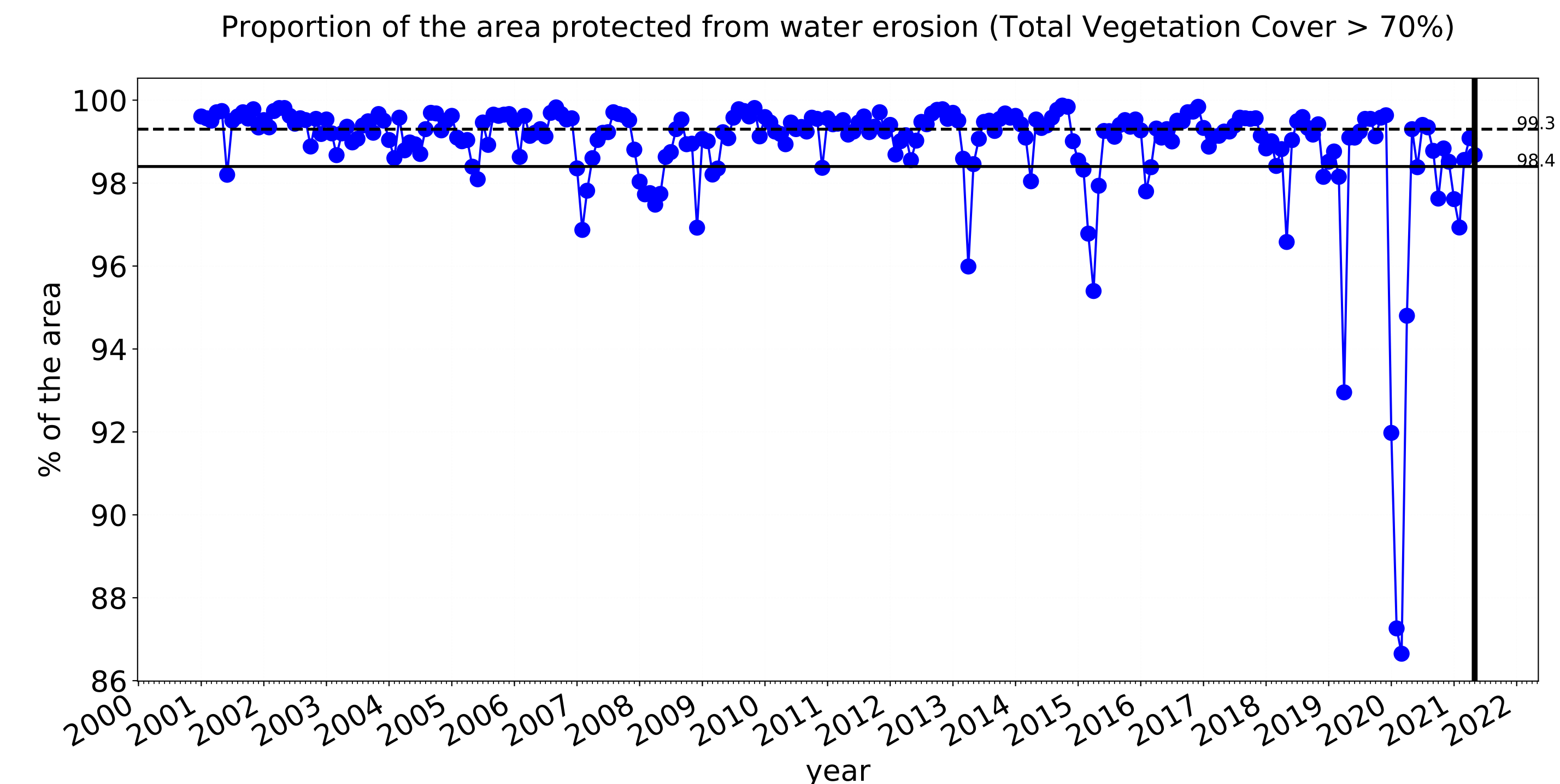
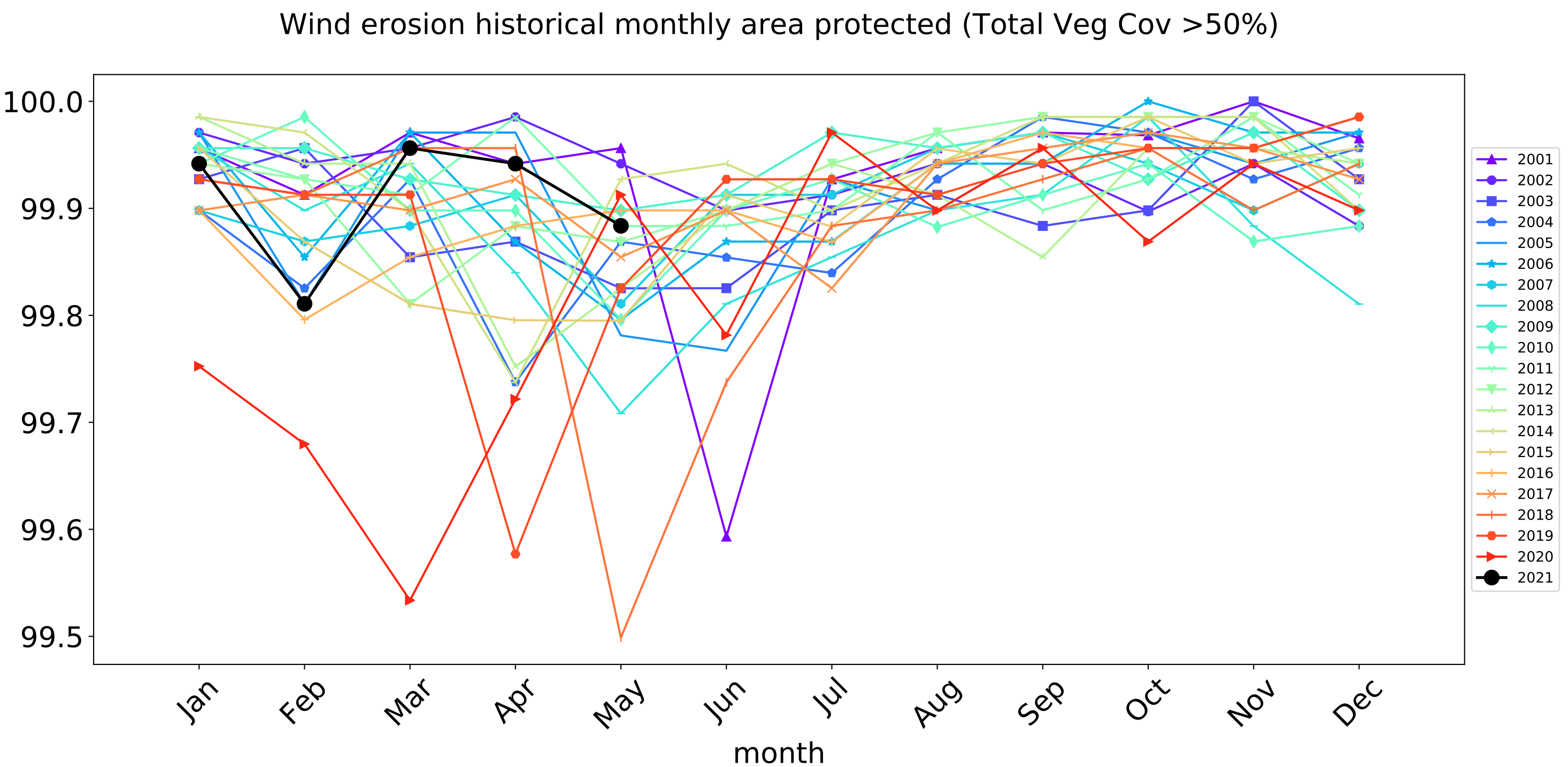
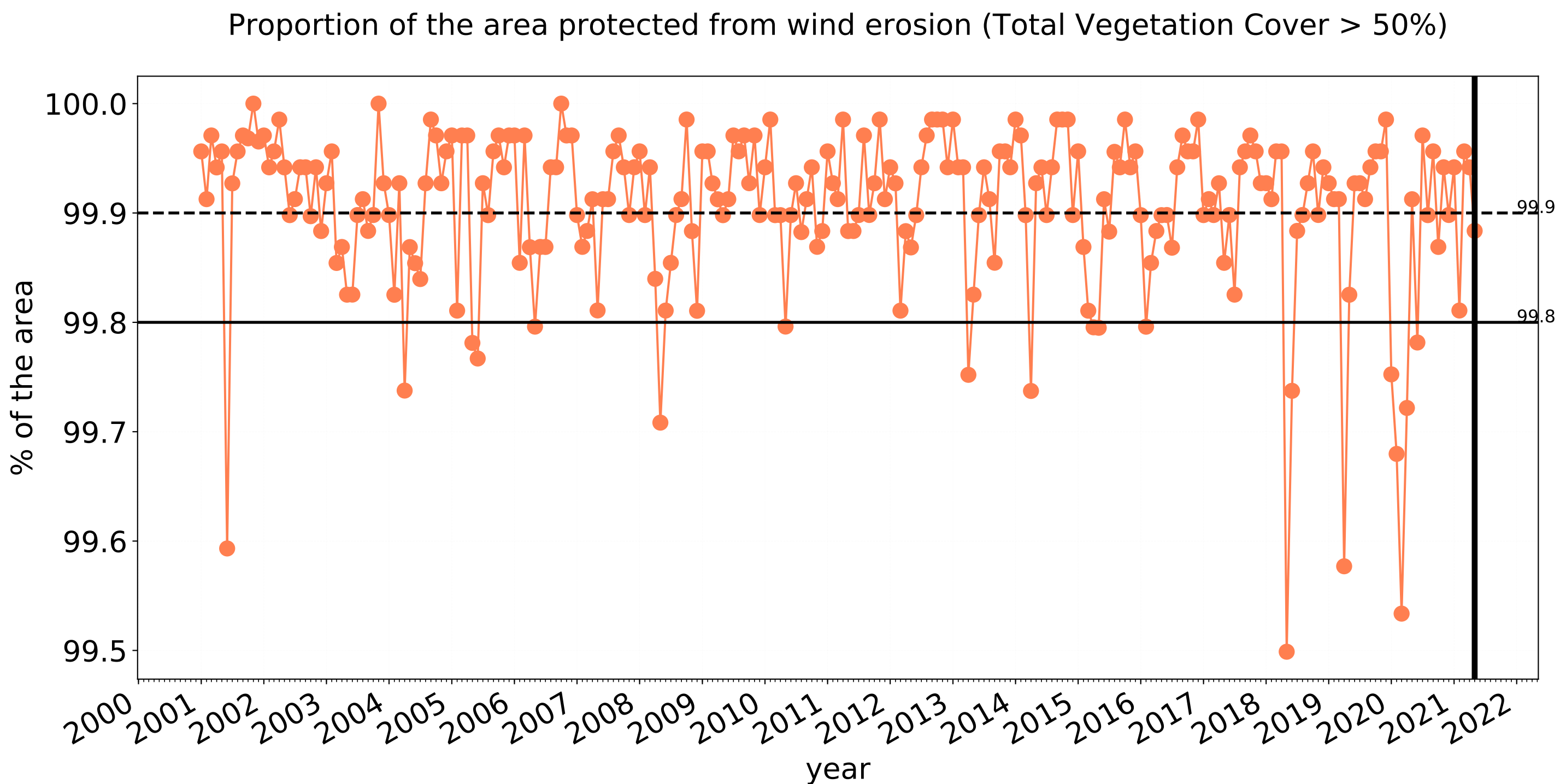


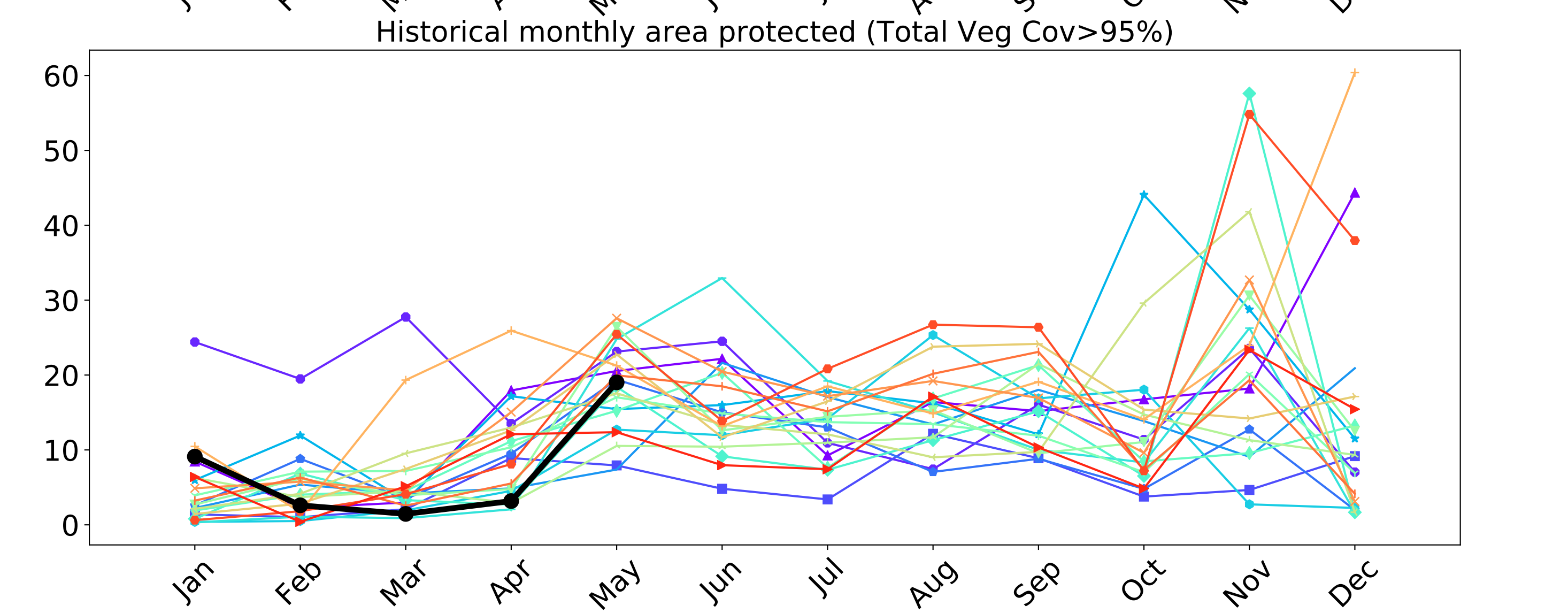
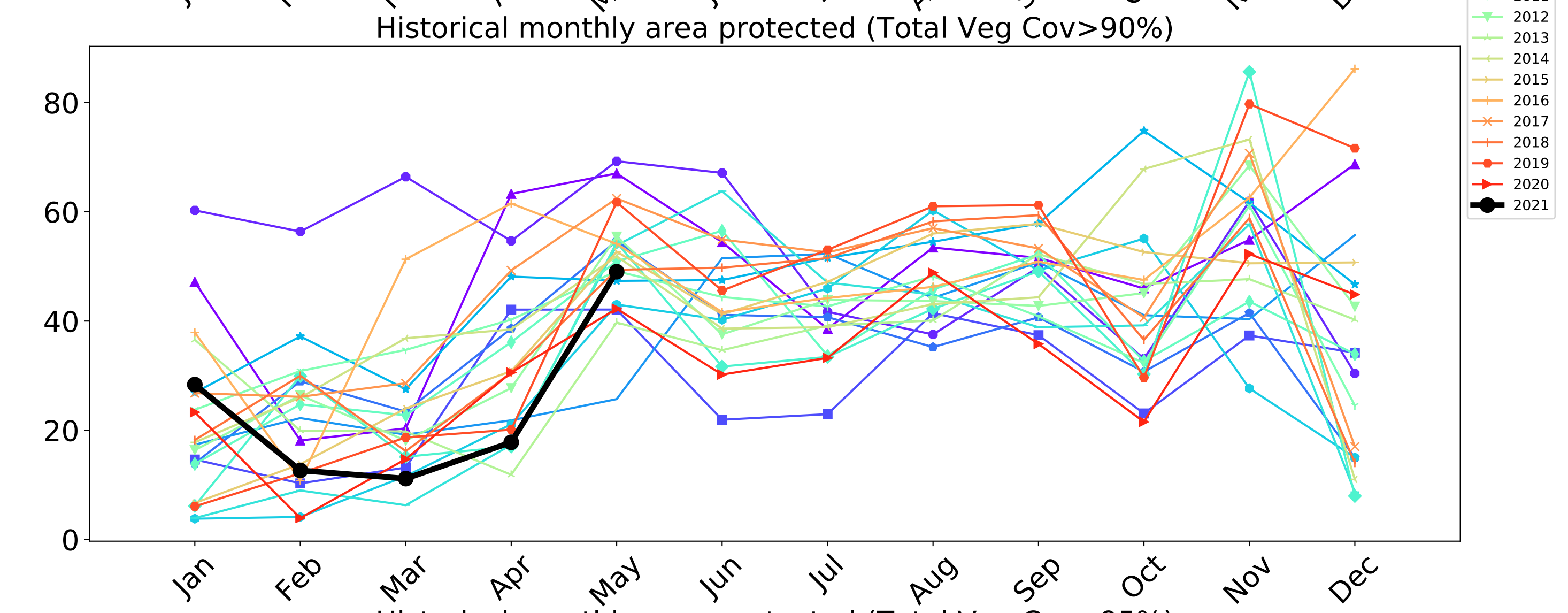
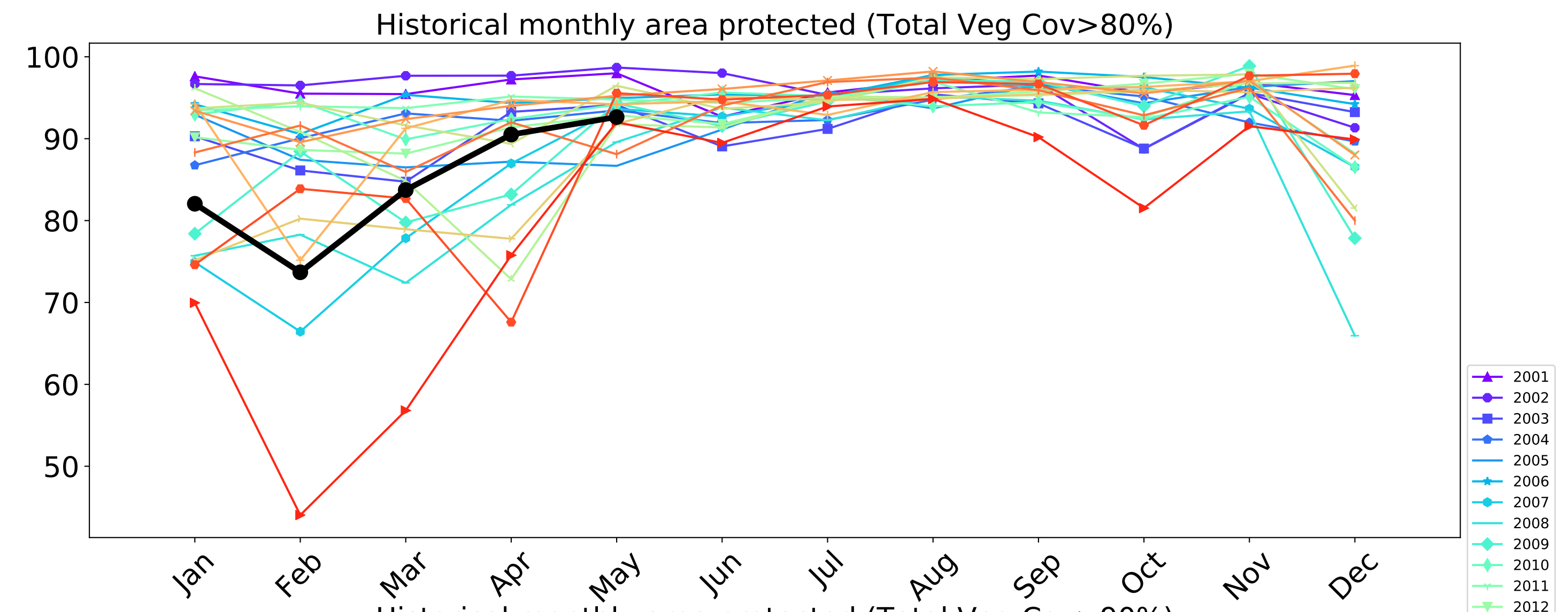
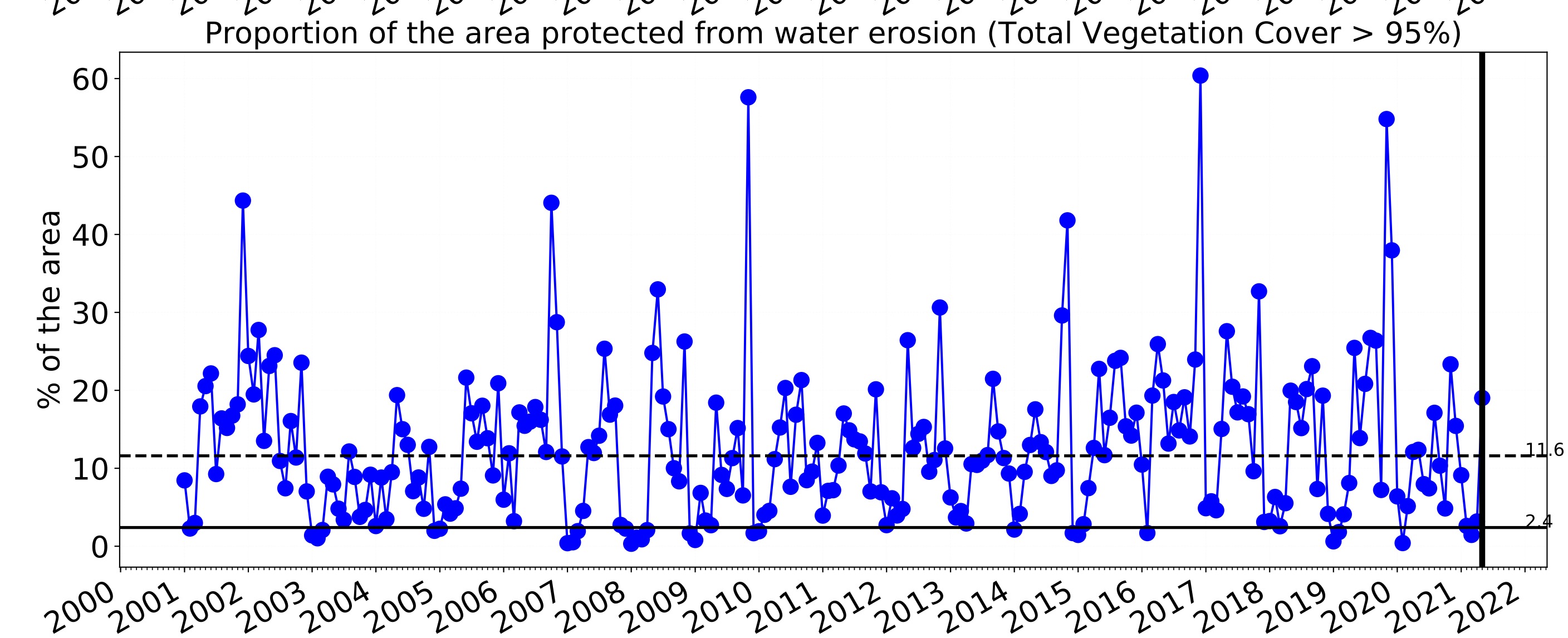
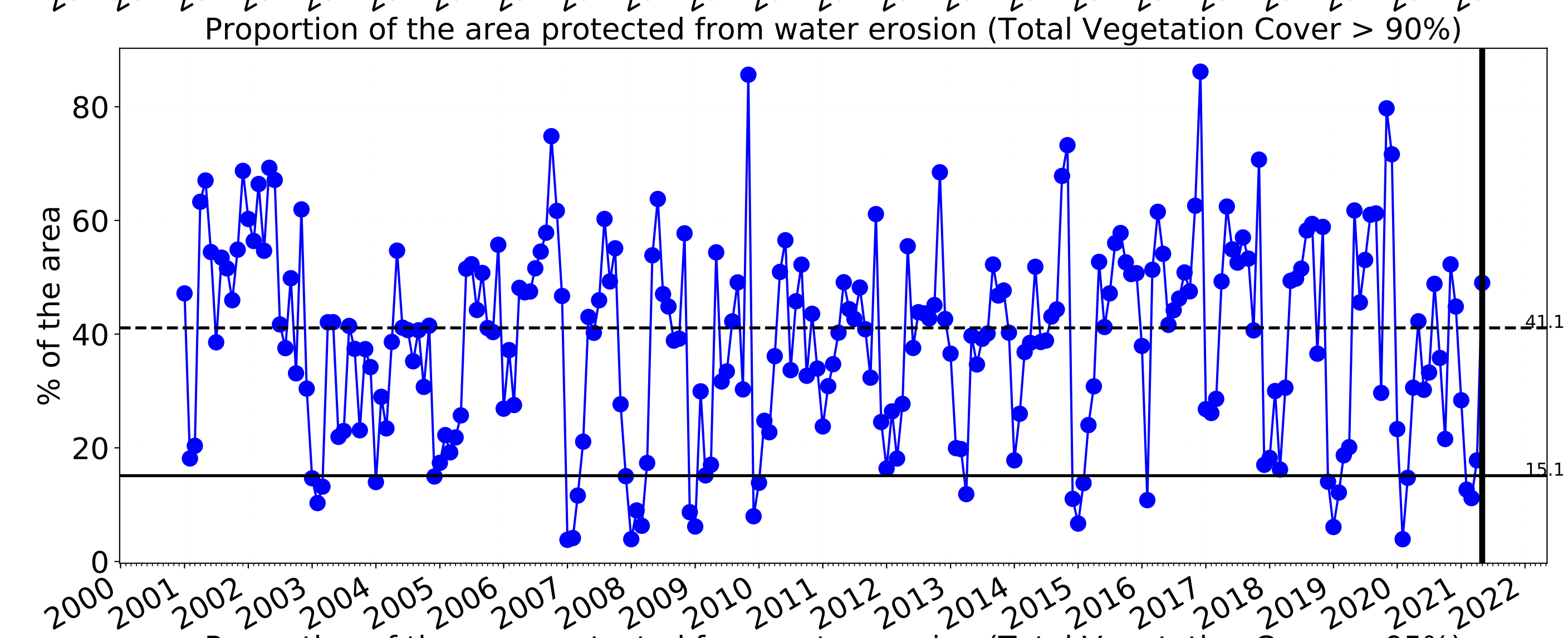
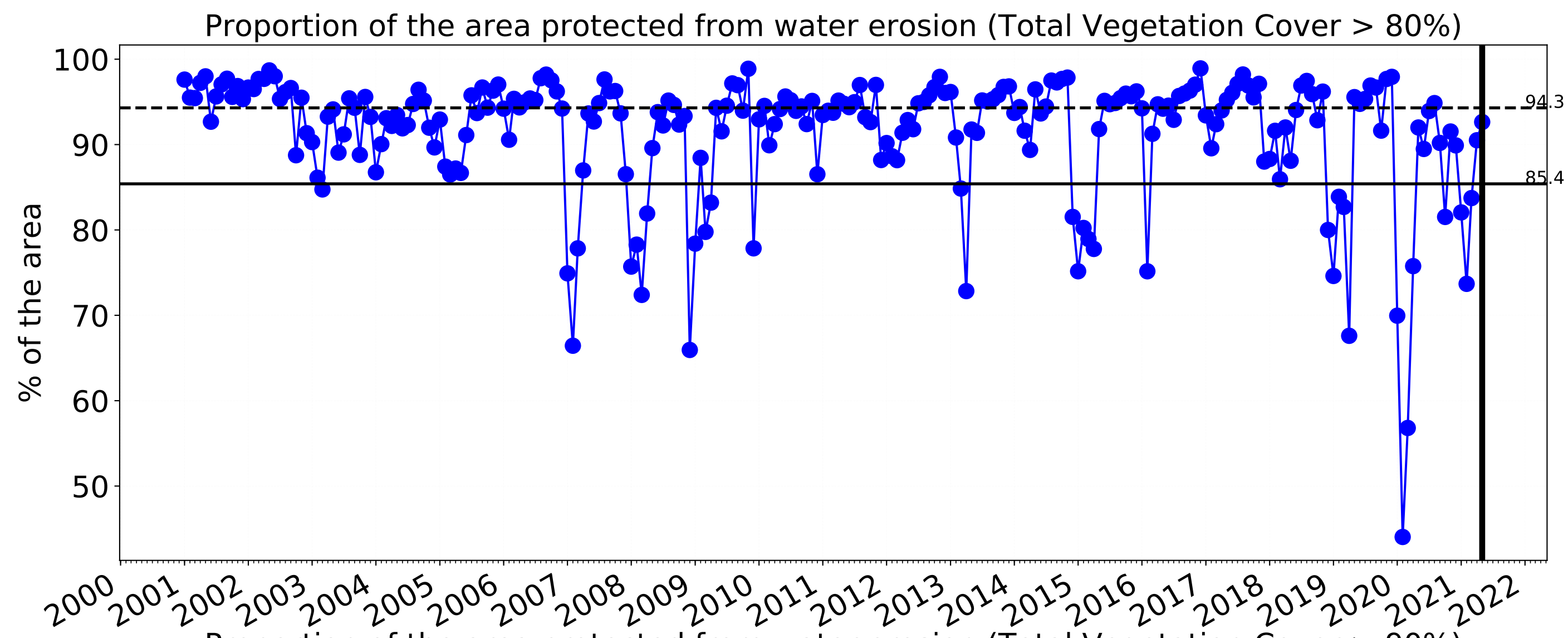
Australian Government

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Grazing timeseries

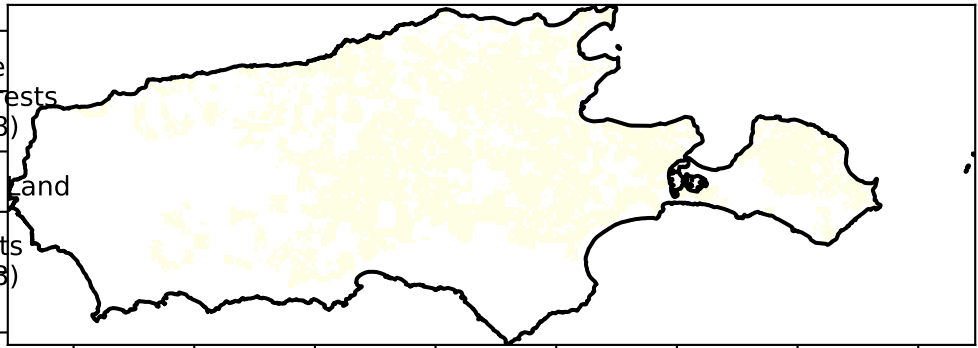




Grazing non forest

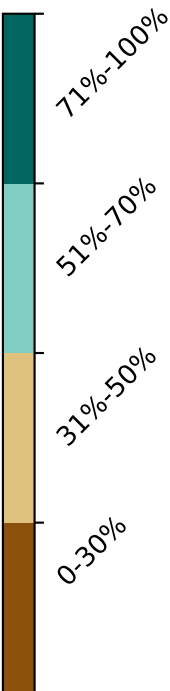
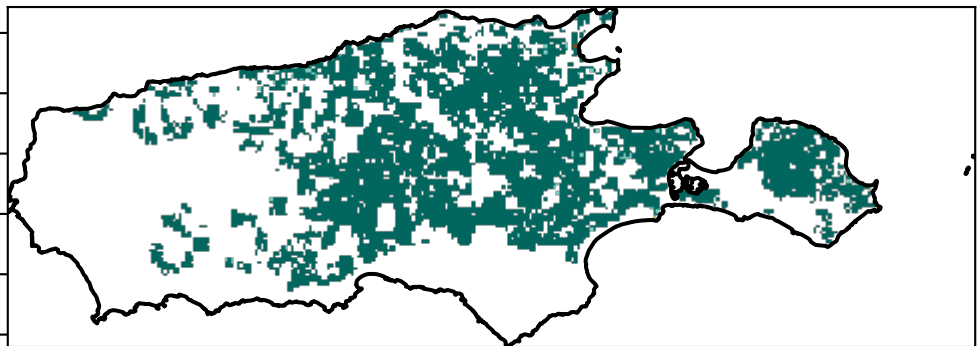
Land use and forest cover

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

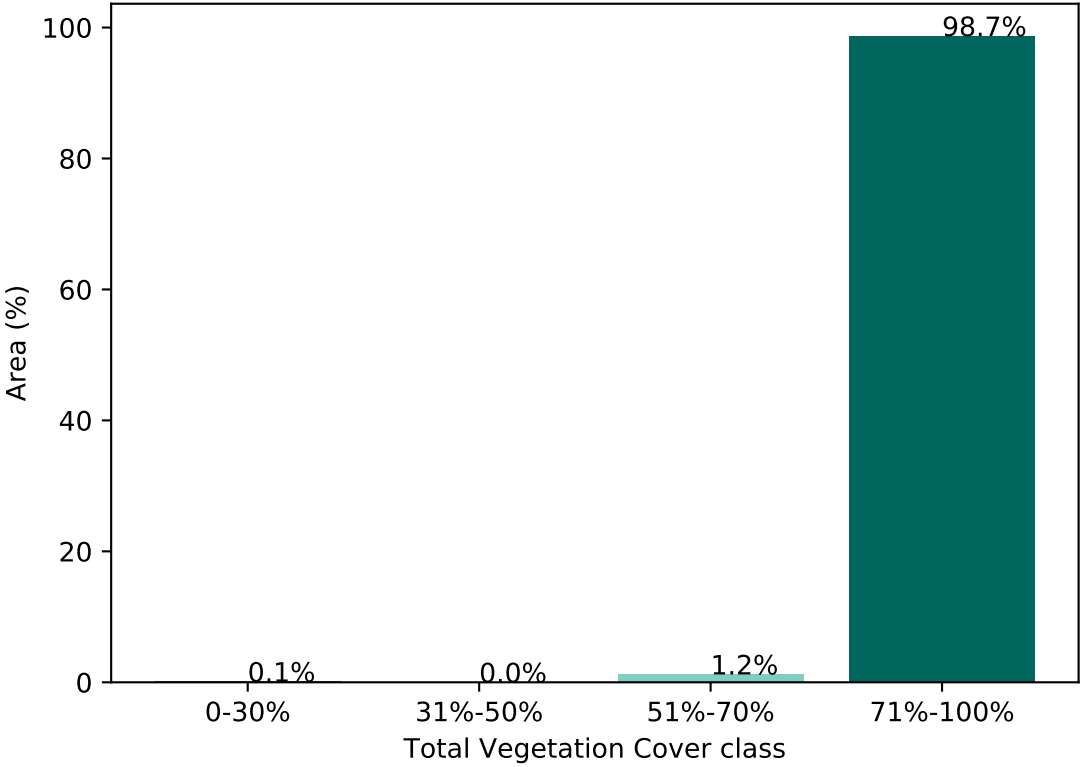


1 Agriculture - Grazing - Non forest

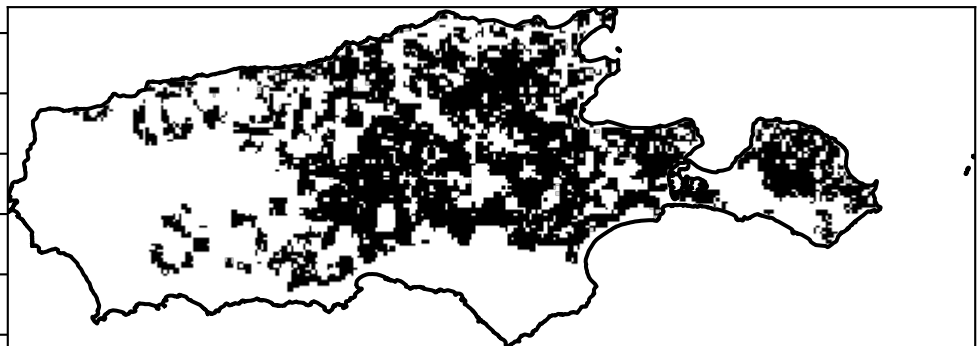
Total Vegetation Cover [%]



Proportion of vegetation cover class in area

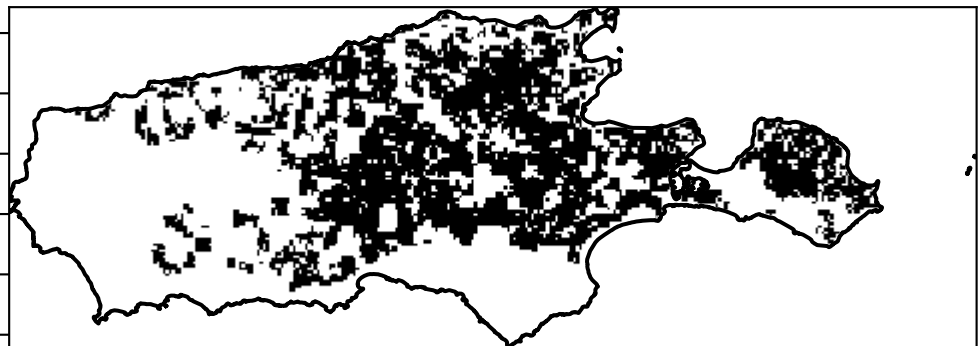


% Area protected from water erosion (>70%)



Area not protected
1.3% of region
(2,216 ha)
Area protected
98.7% of region
(168,308 ha)

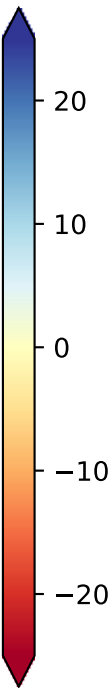
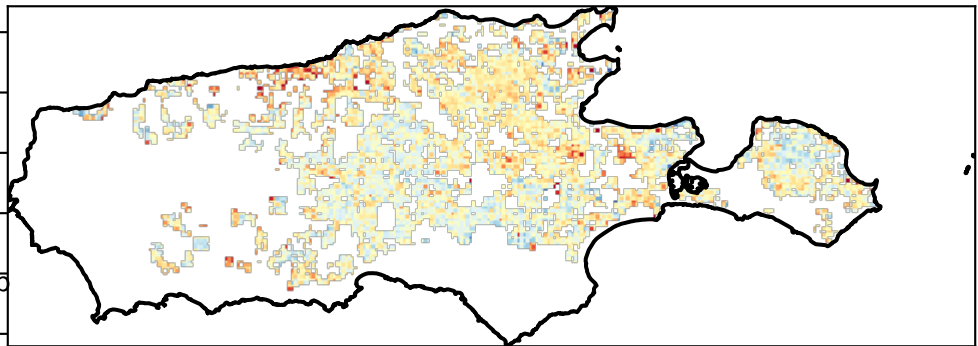
% Area protected from wind erosion (>50%)



Area not protected
0.0% of region (0 ha)
Area protected
100.0% of region
(170,525 ha)

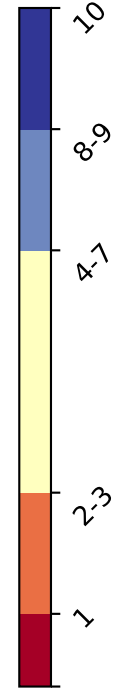
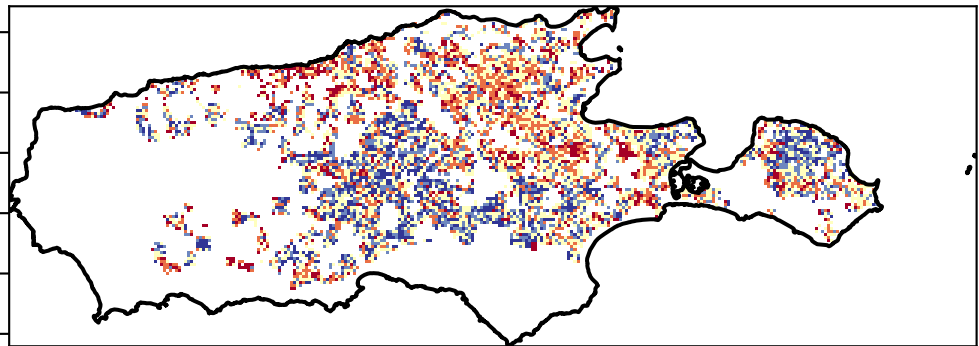
Total Vegetation Cover Anomaly [%]

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



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

Total Vegetation Cover Decile [%]



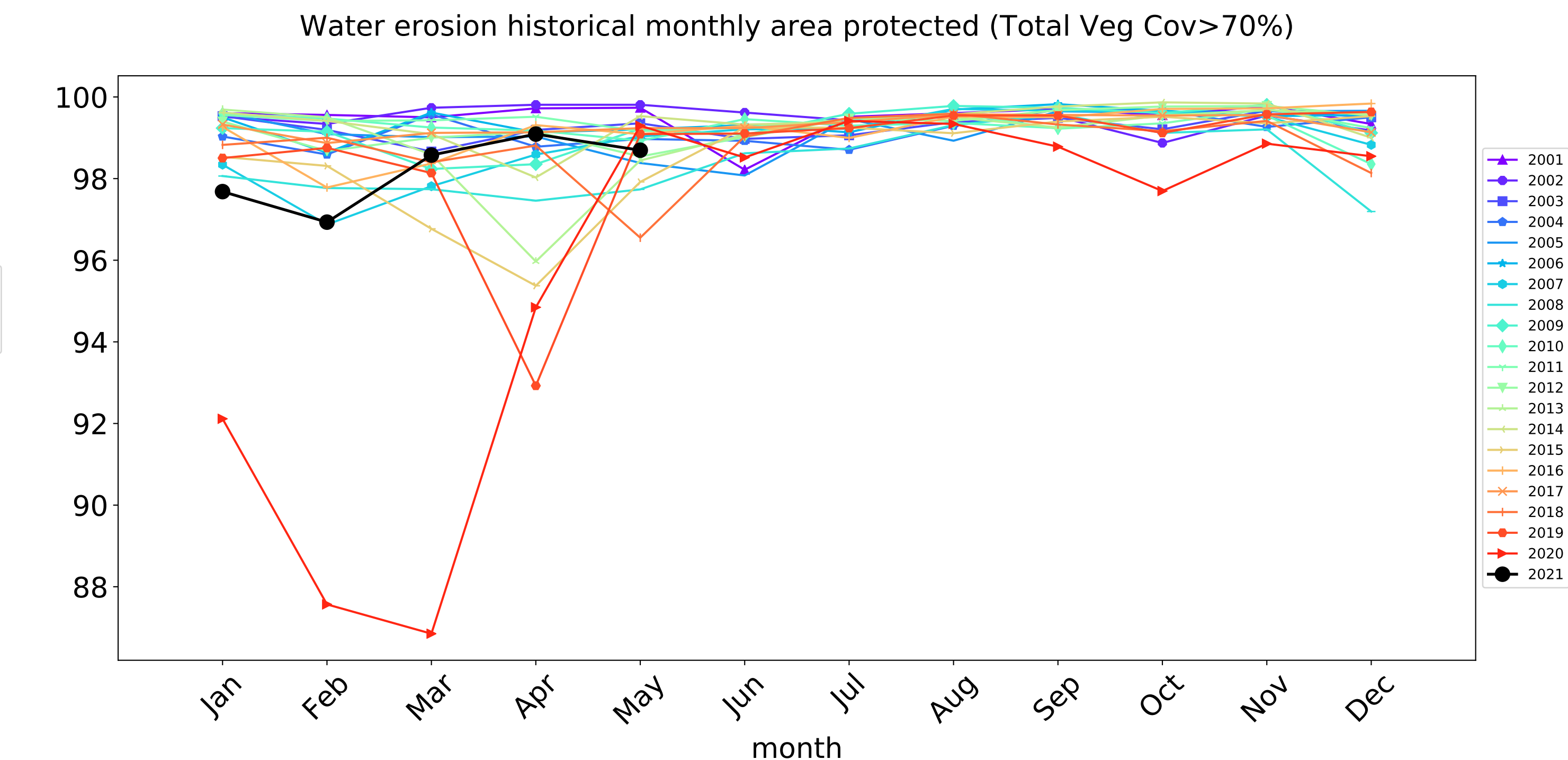
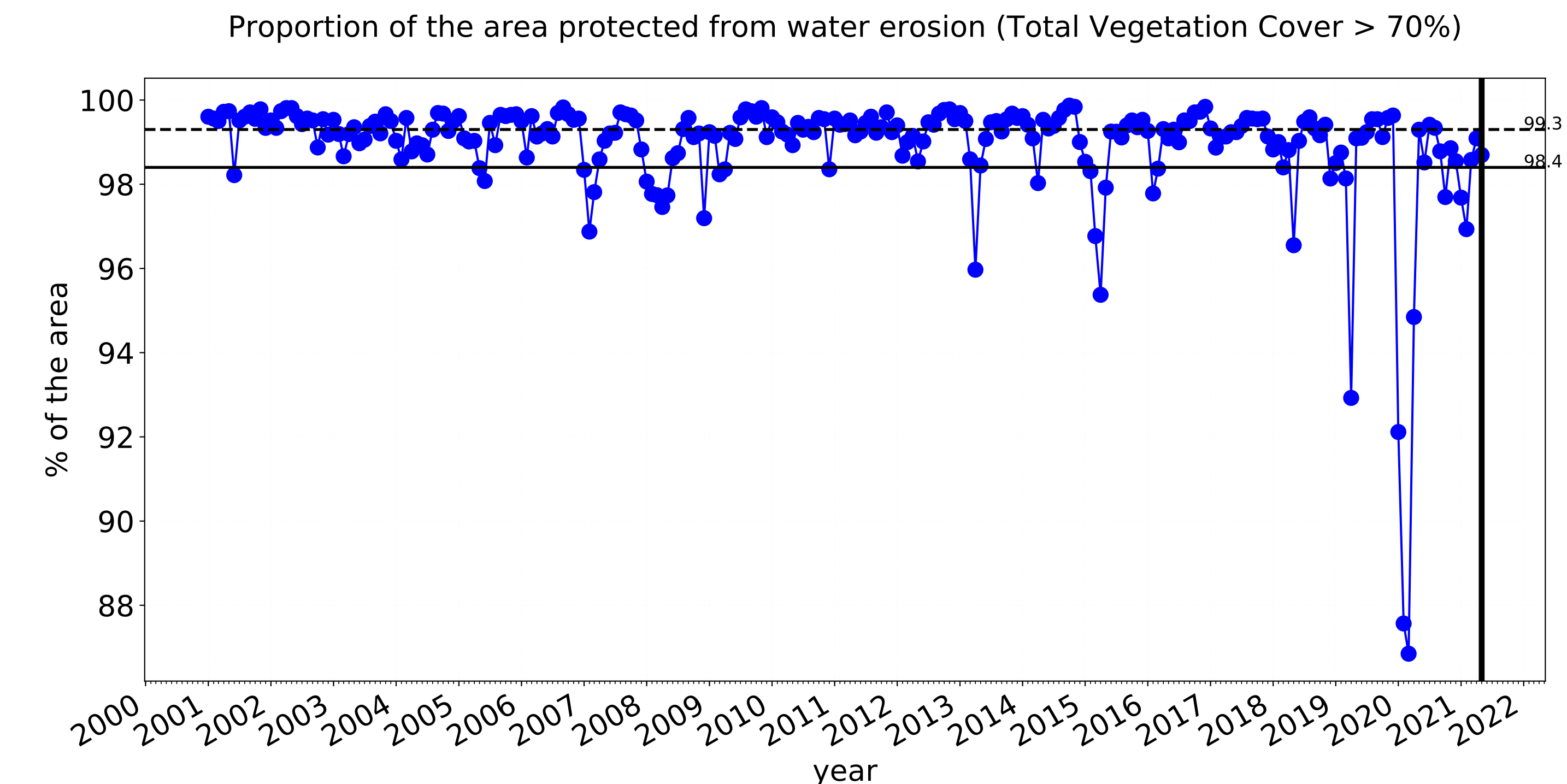
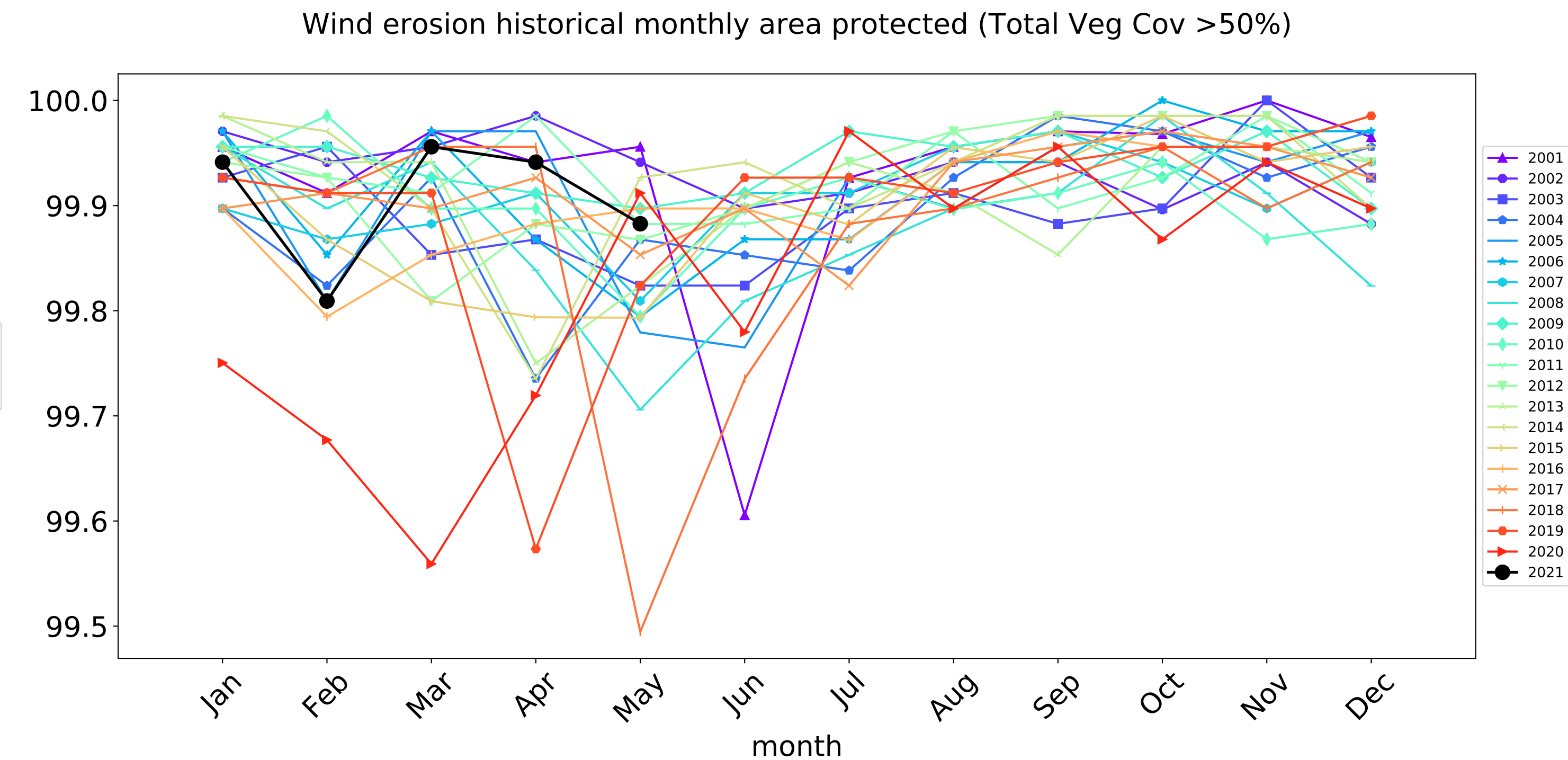
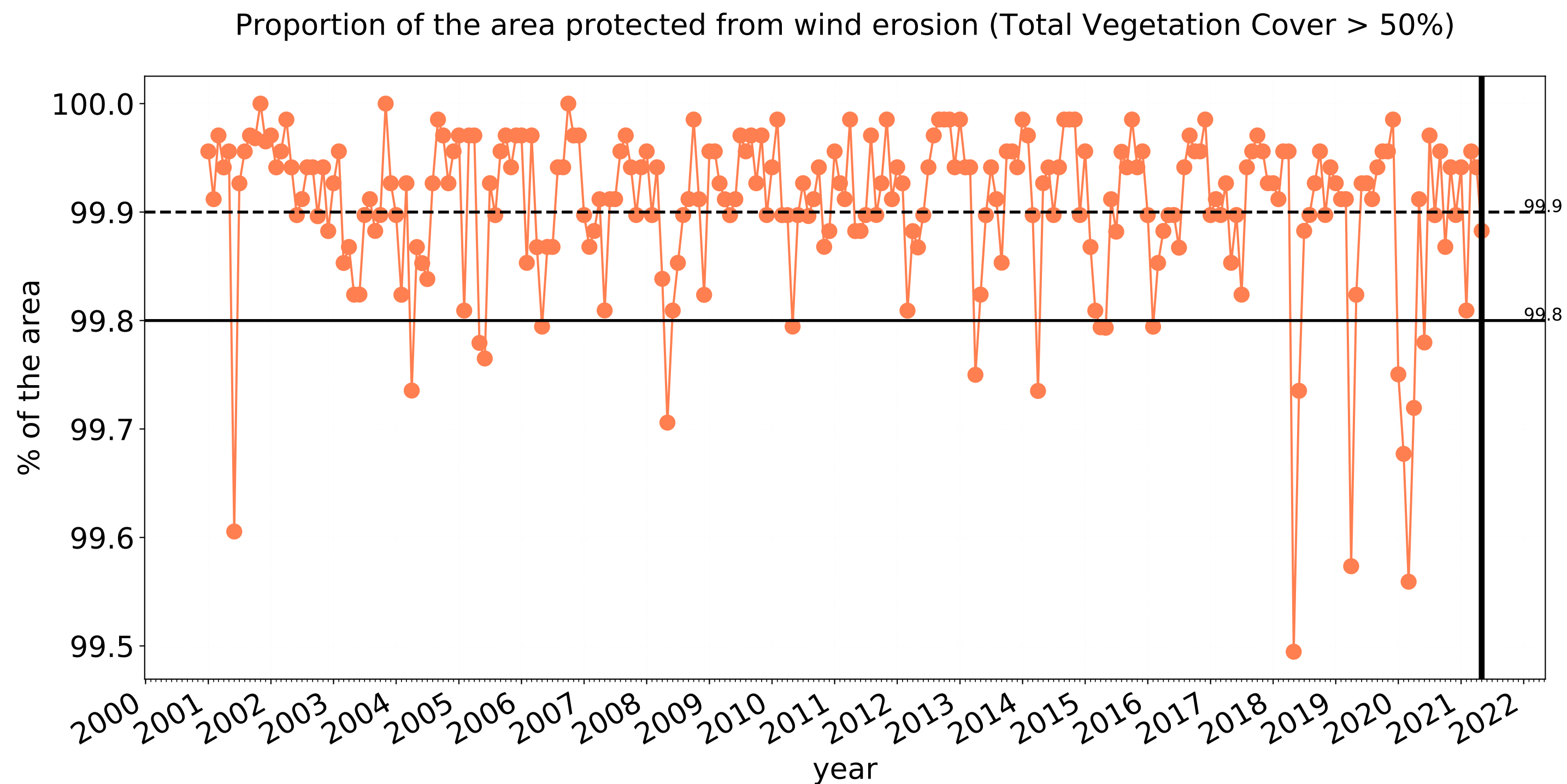
Ecosystem Research Infrastructure

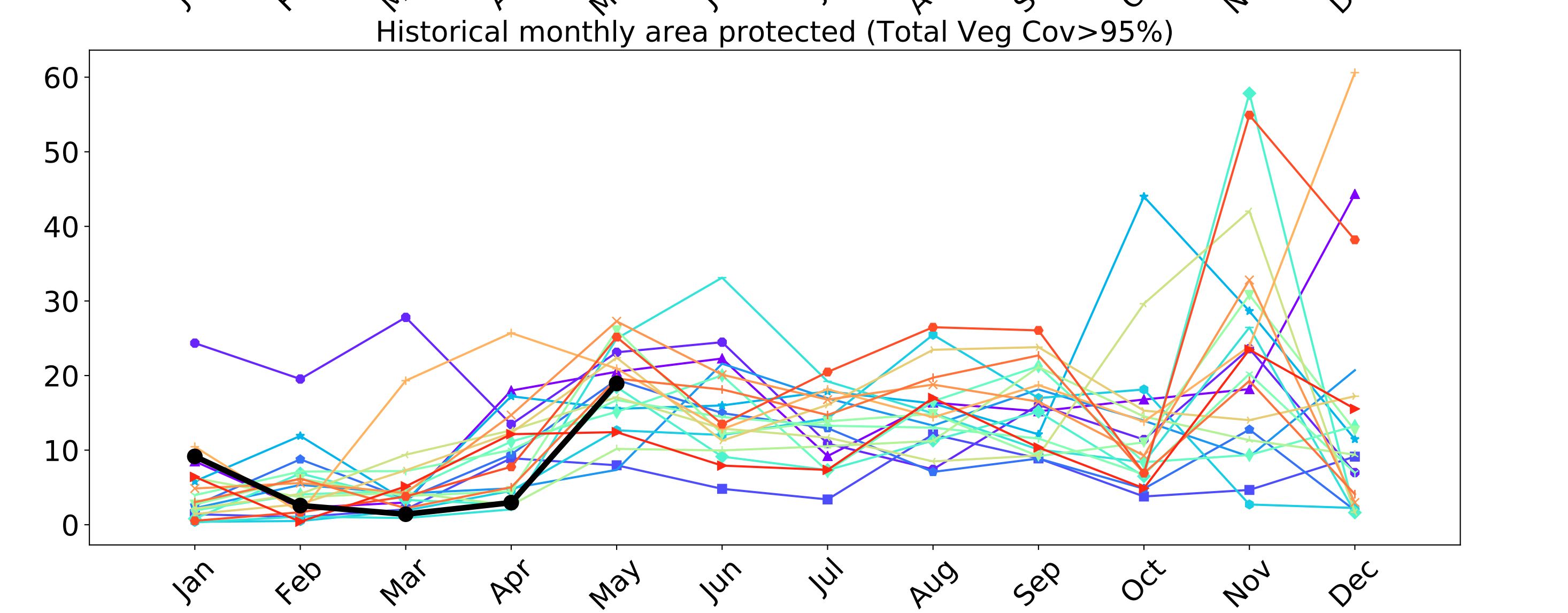
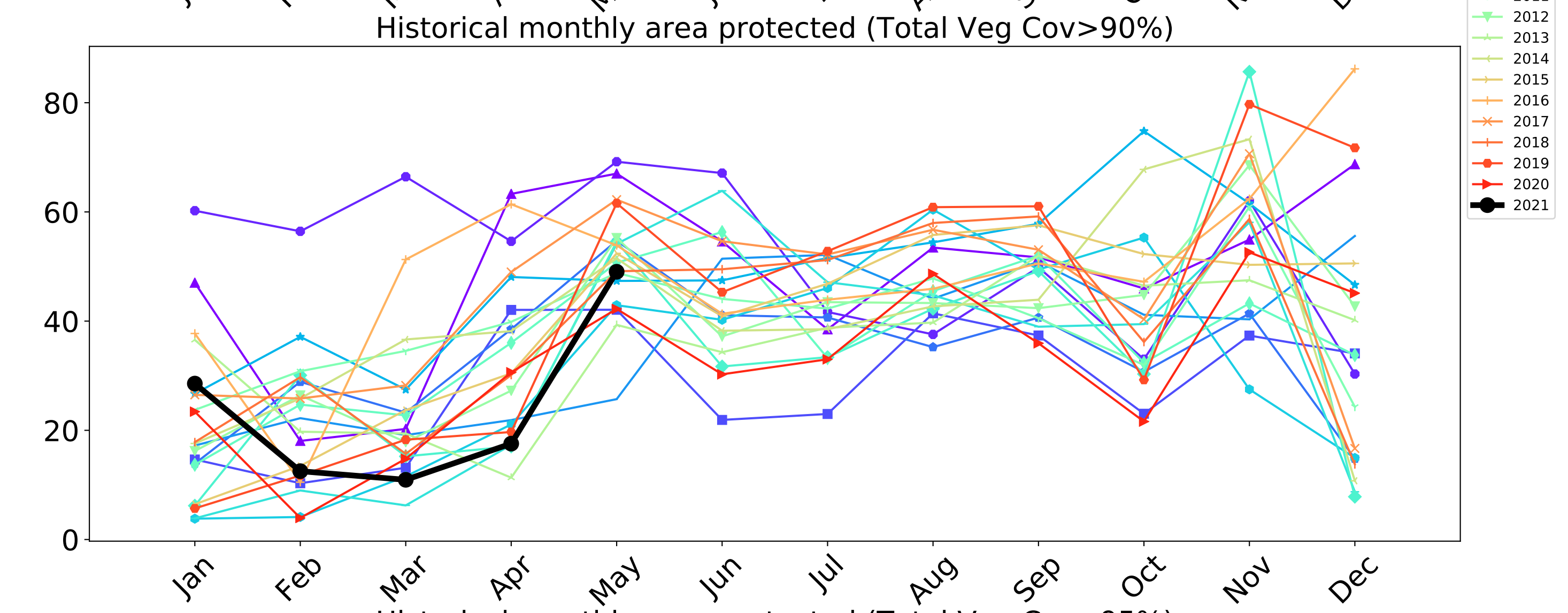
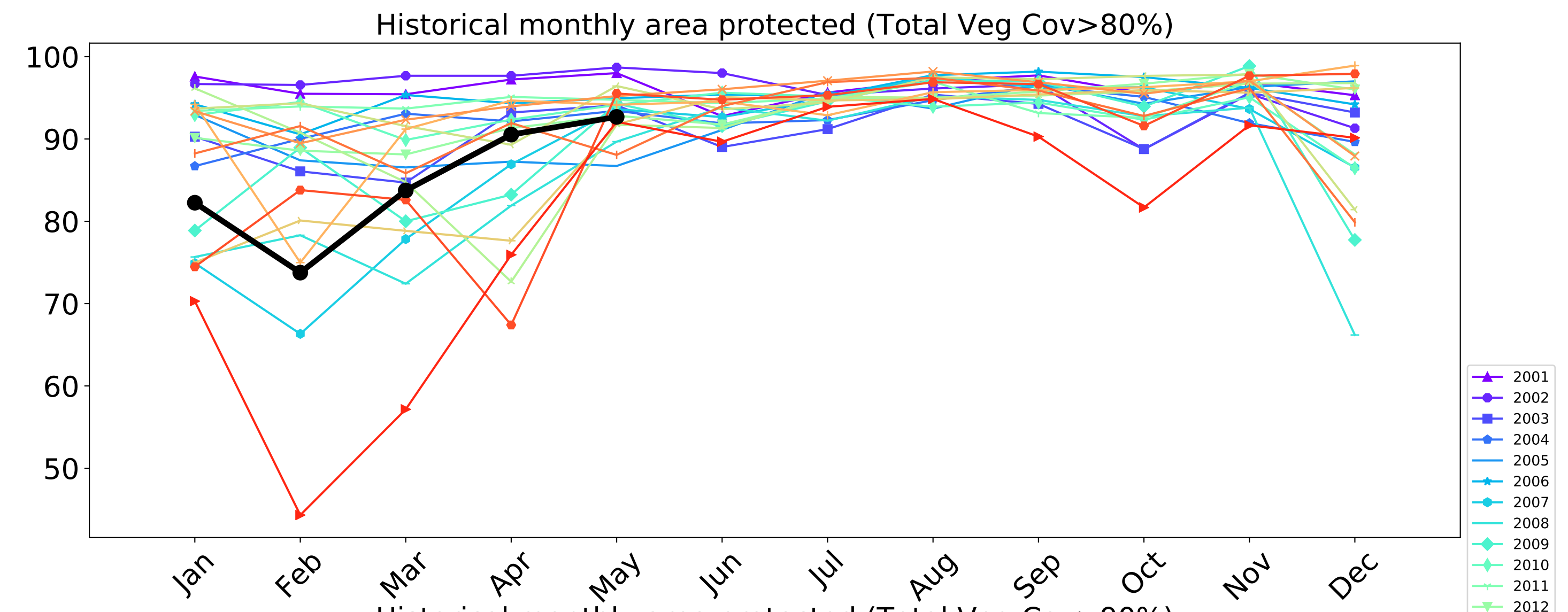
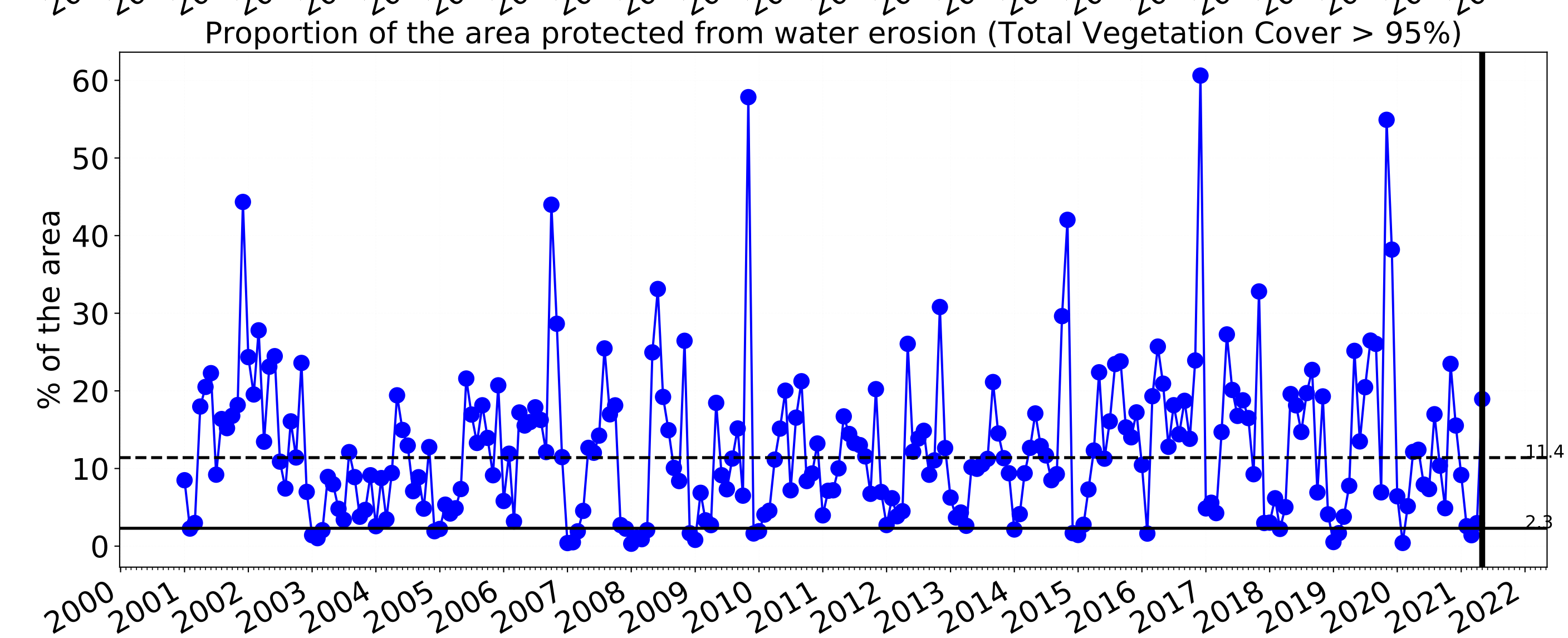
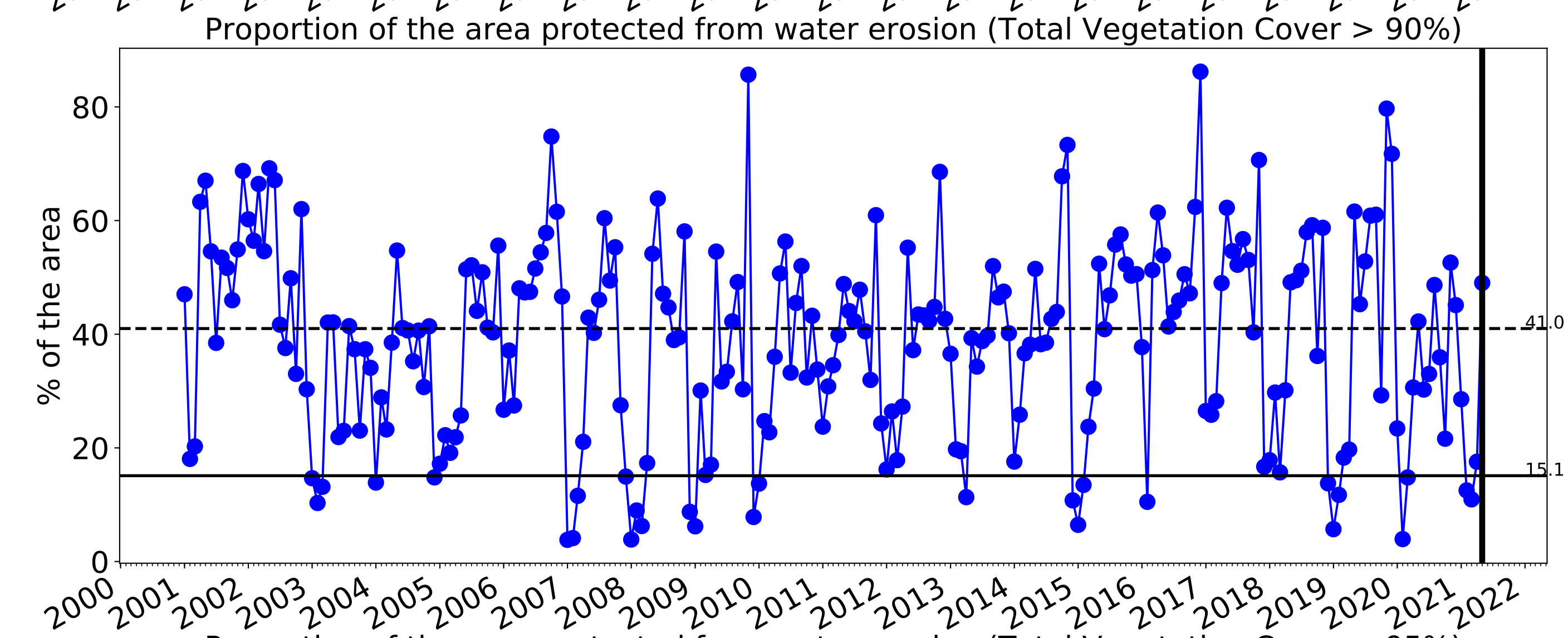
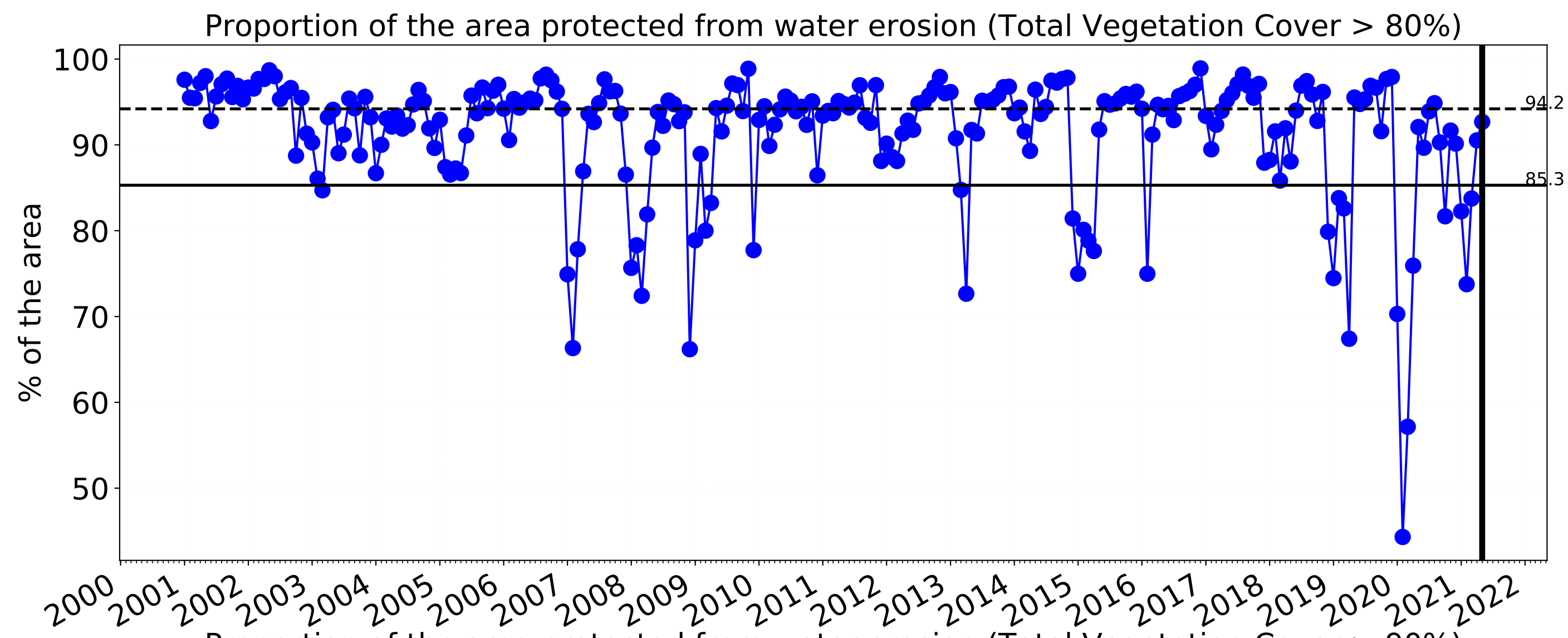


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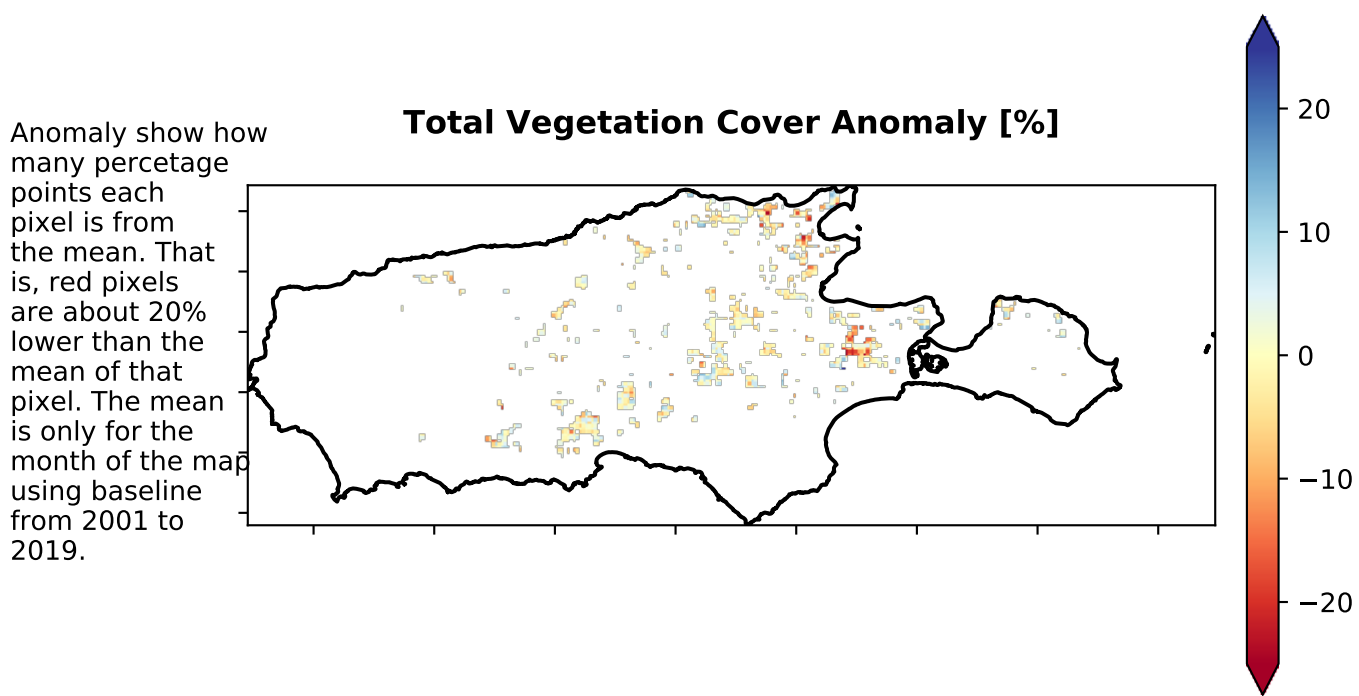
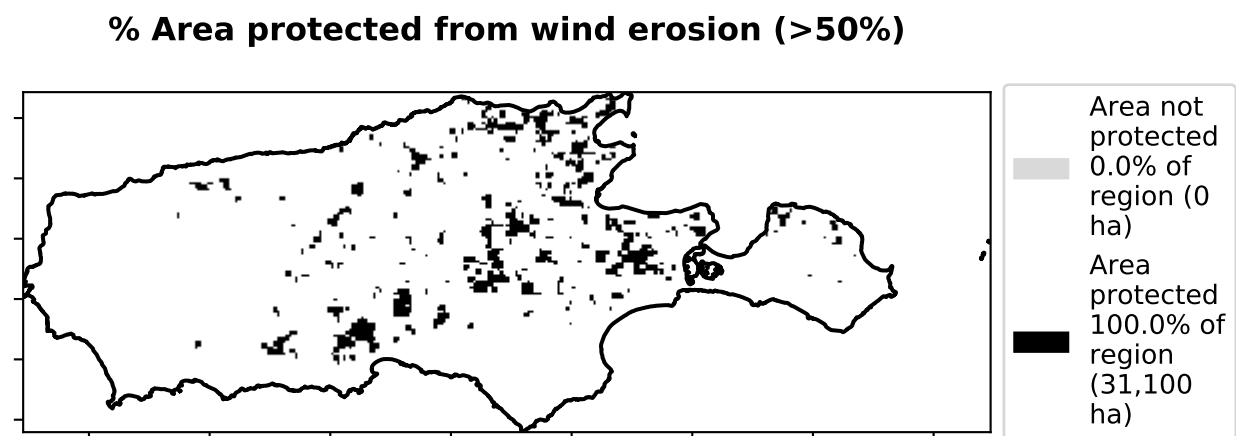
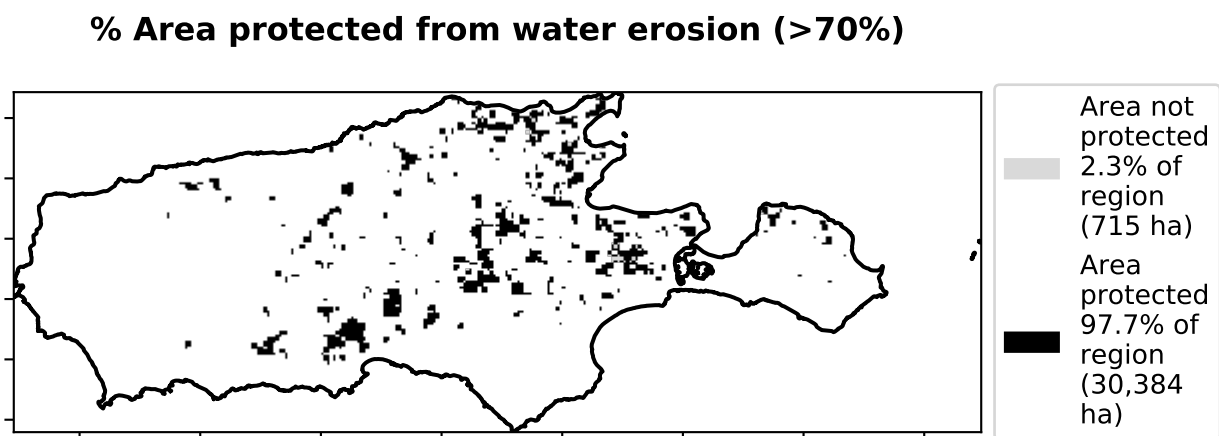
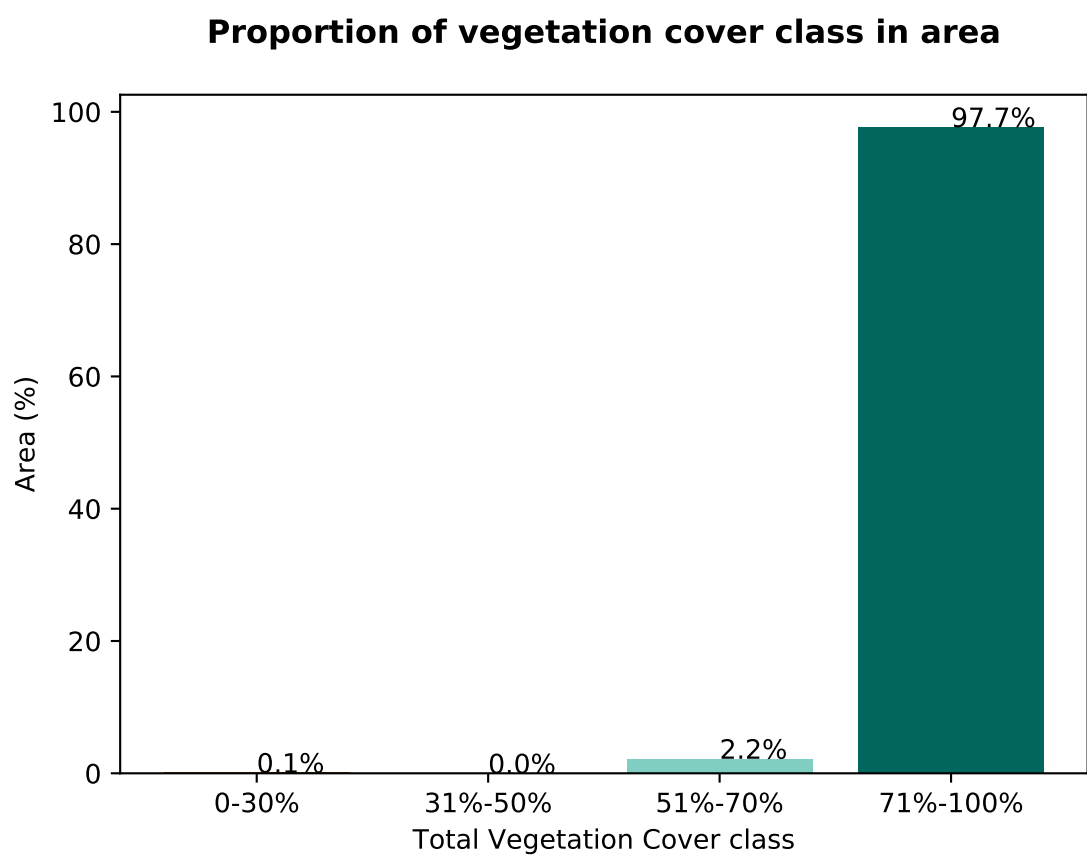
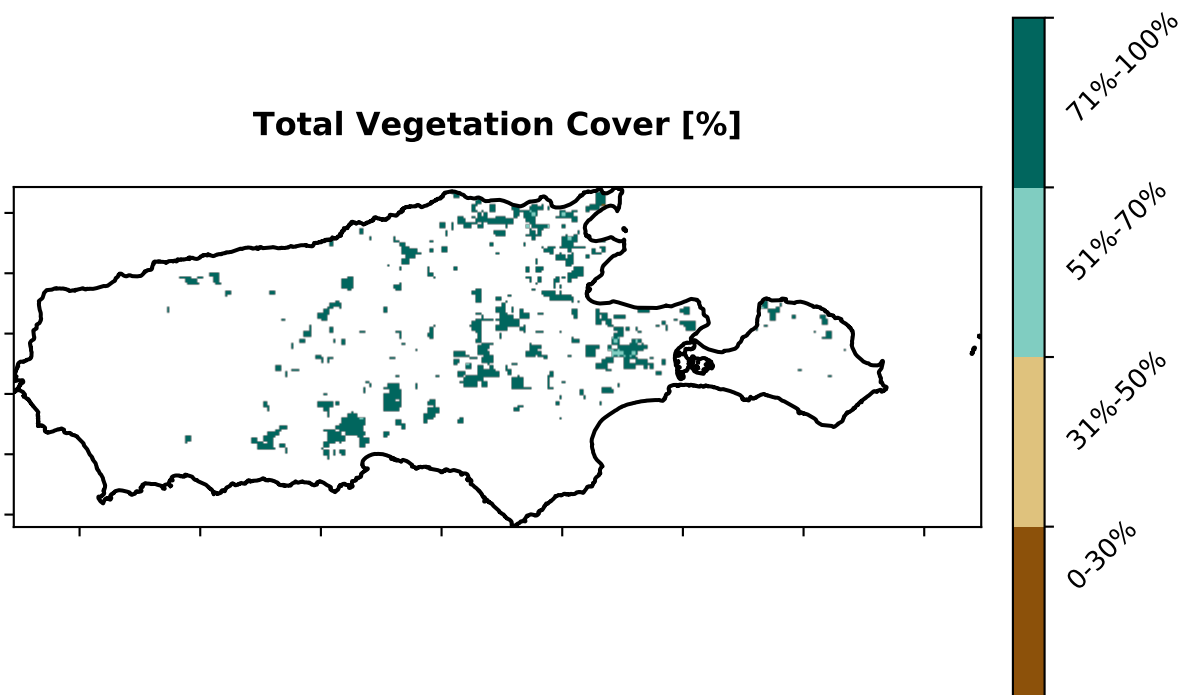
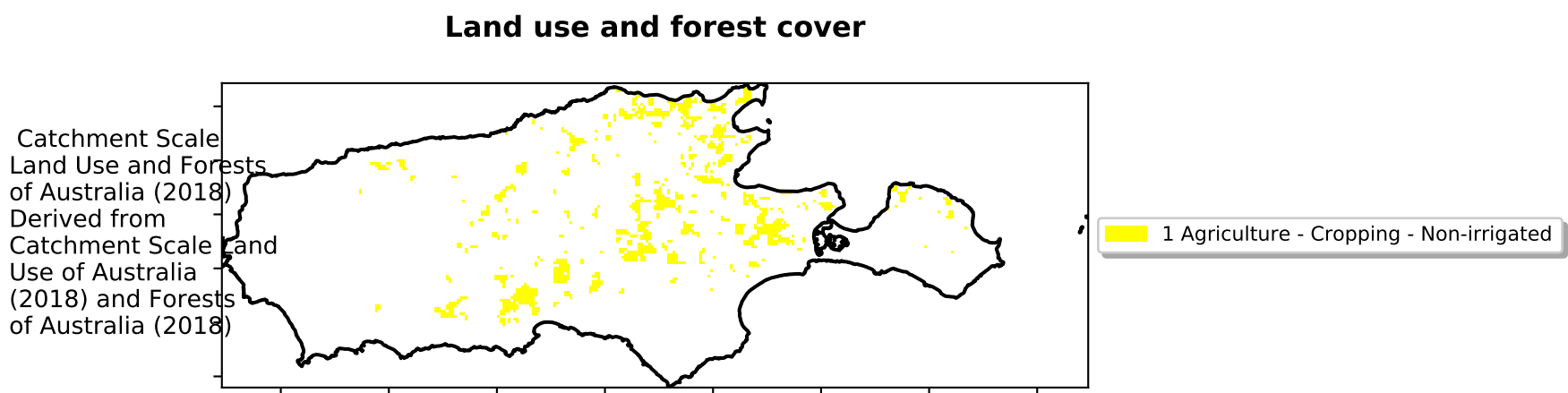


Grazing non forest timeseries

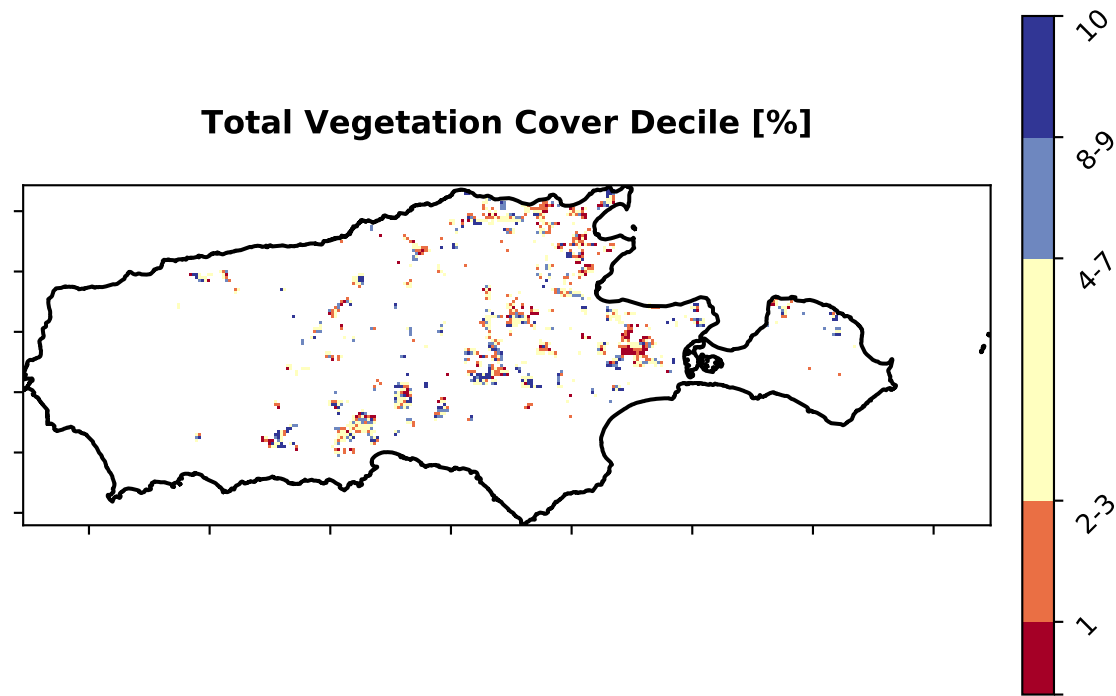




Cropping



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.



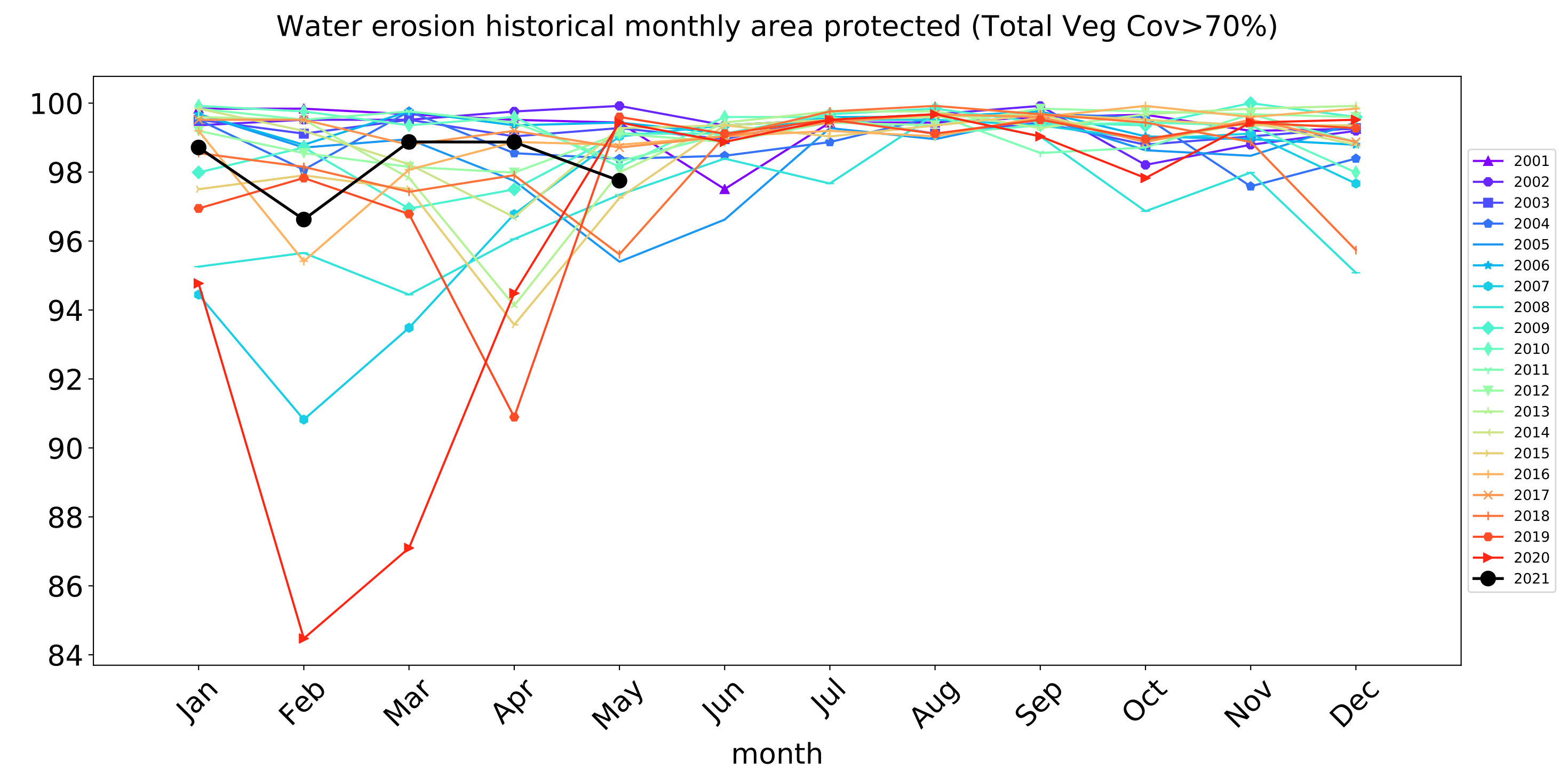
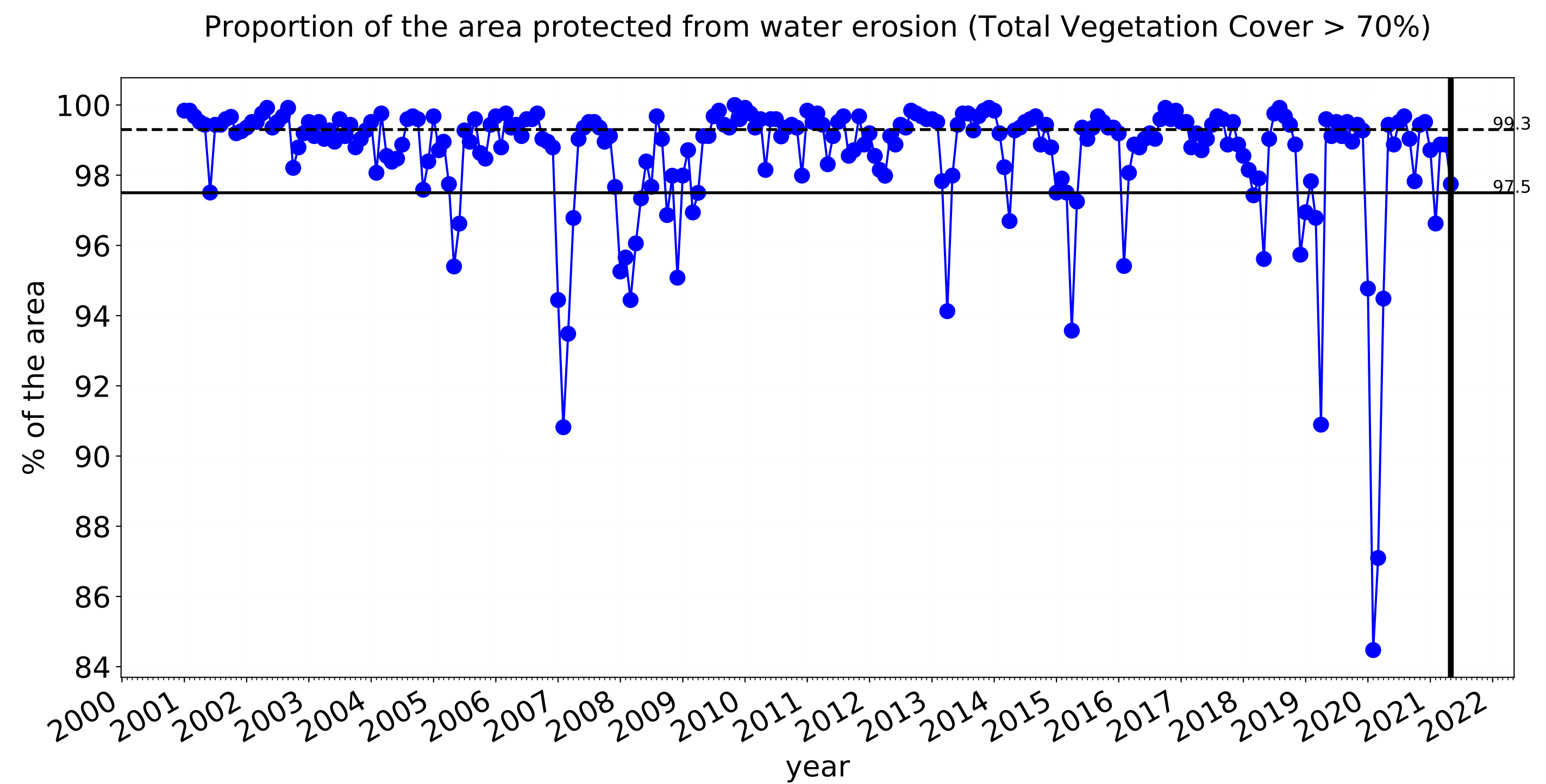
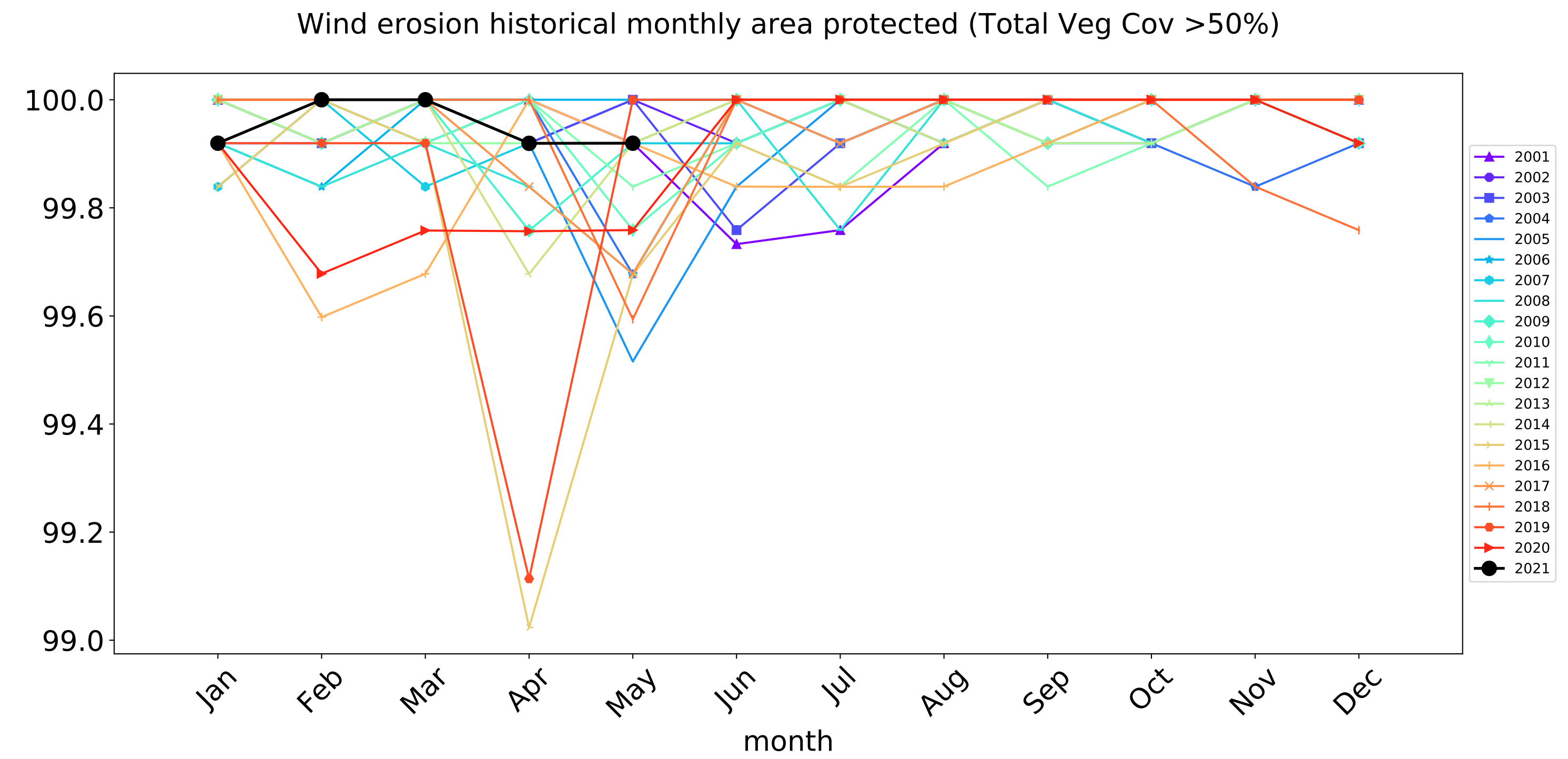
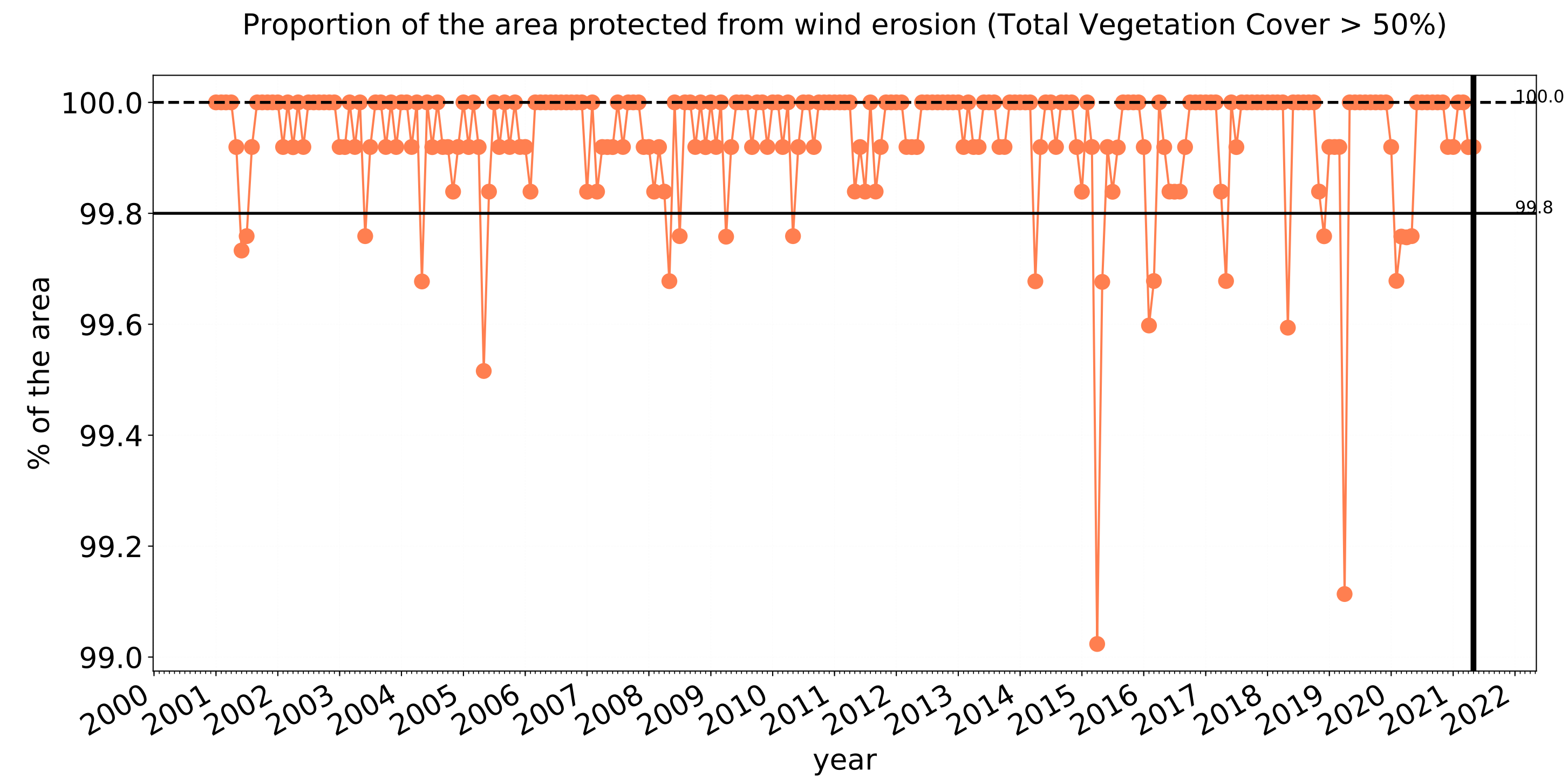
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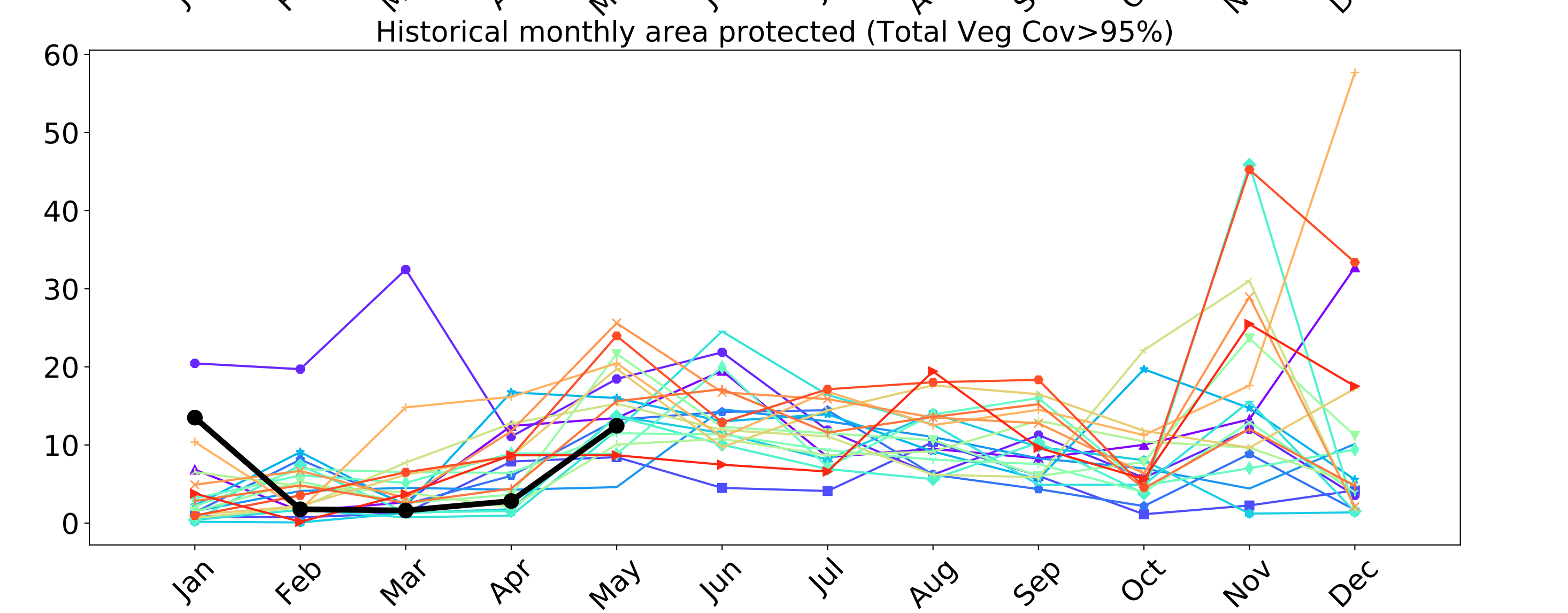
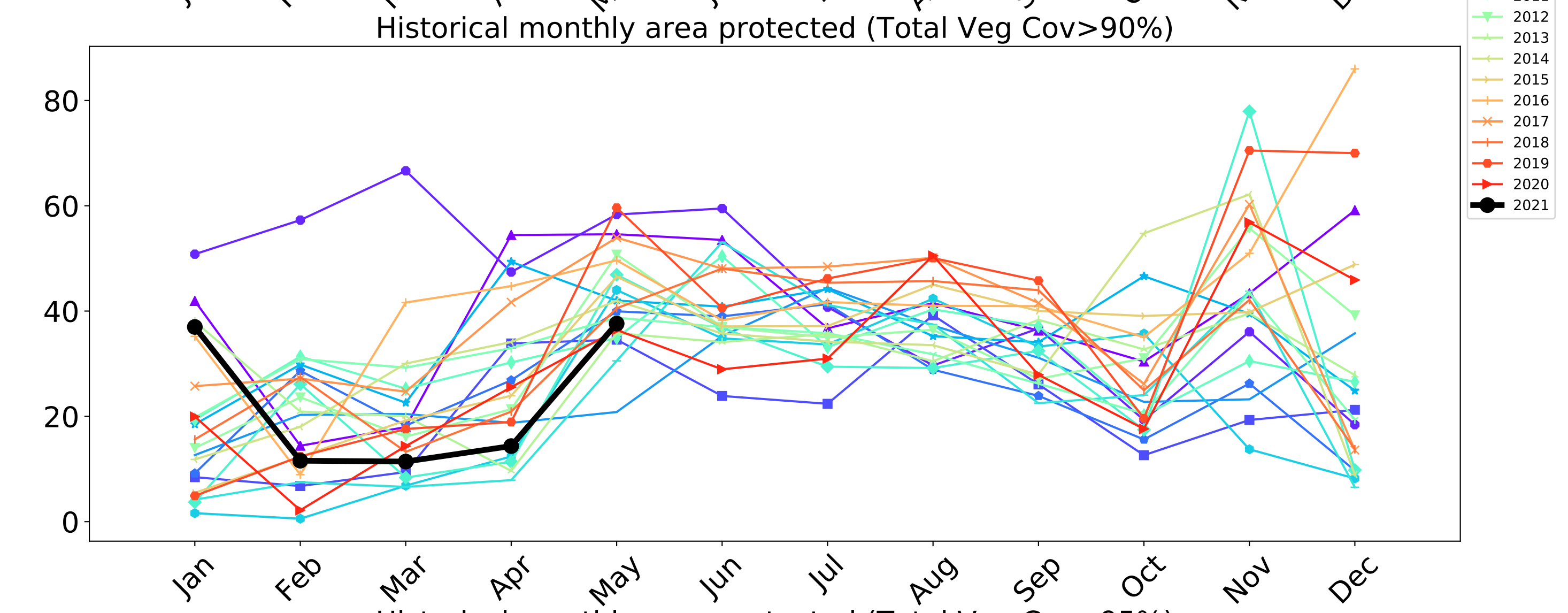
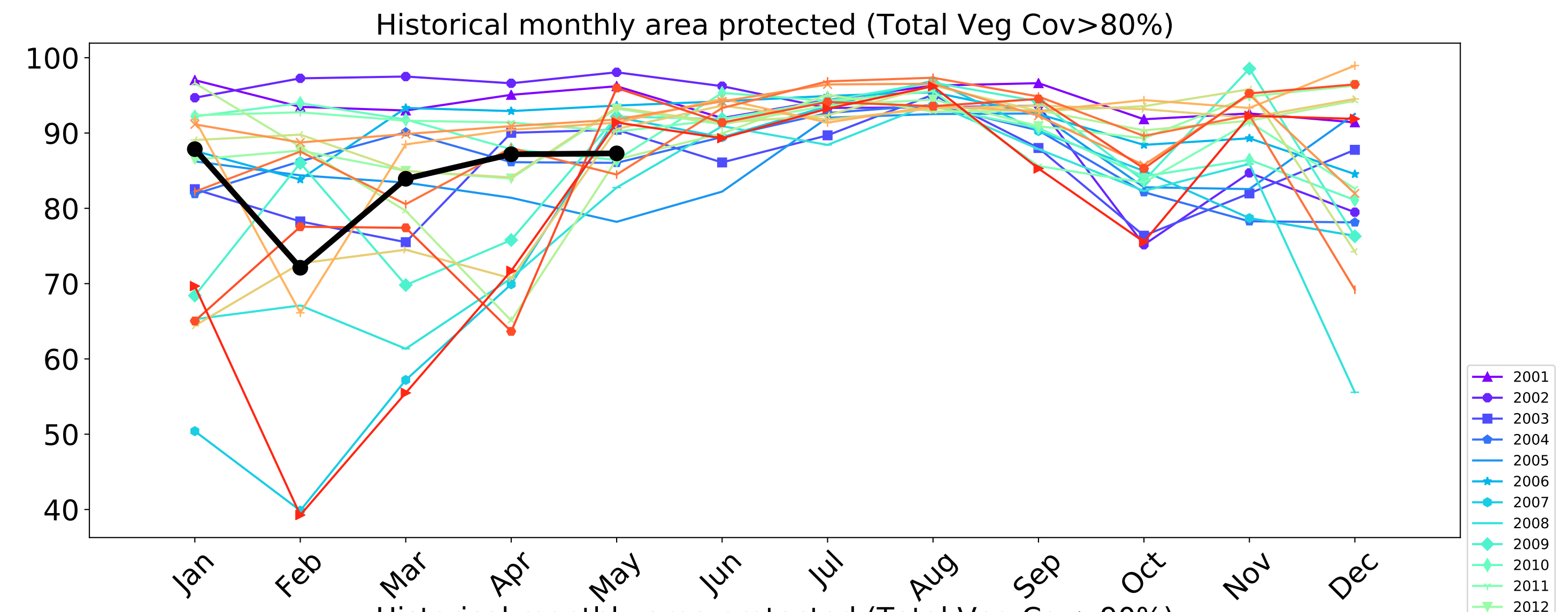
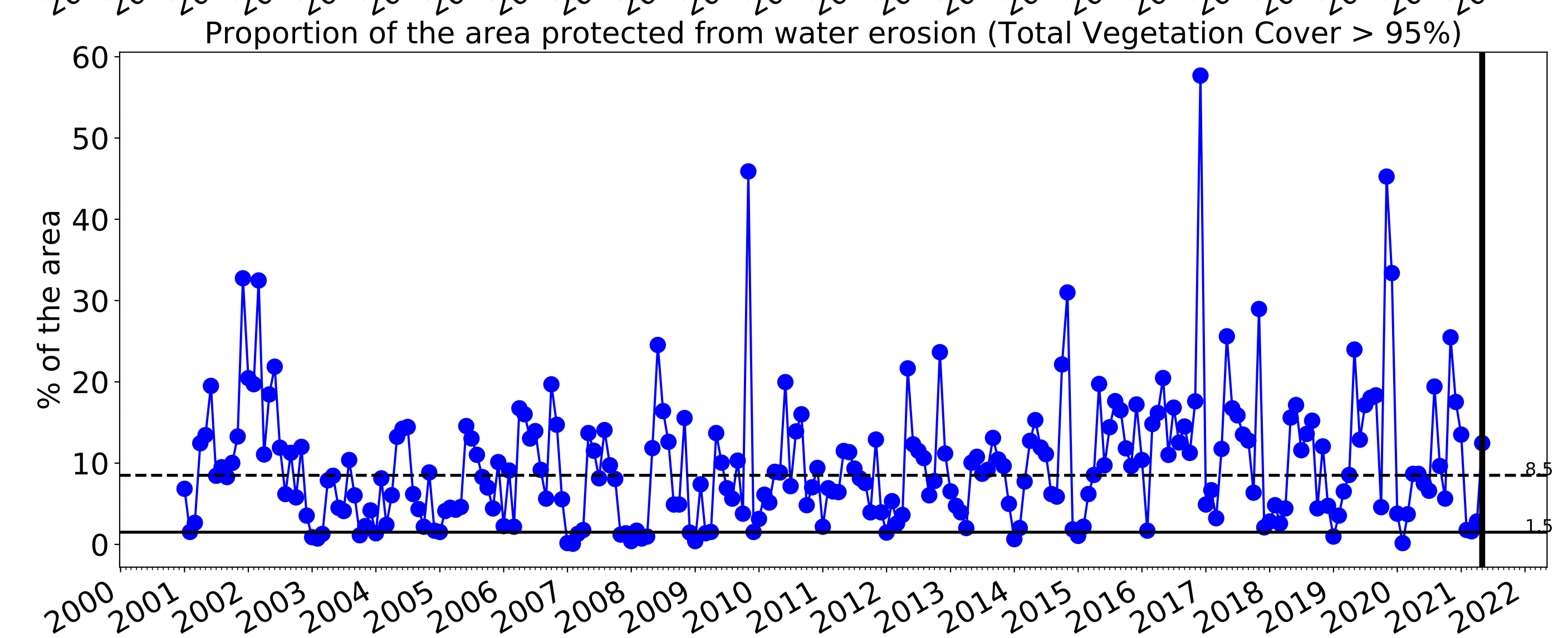
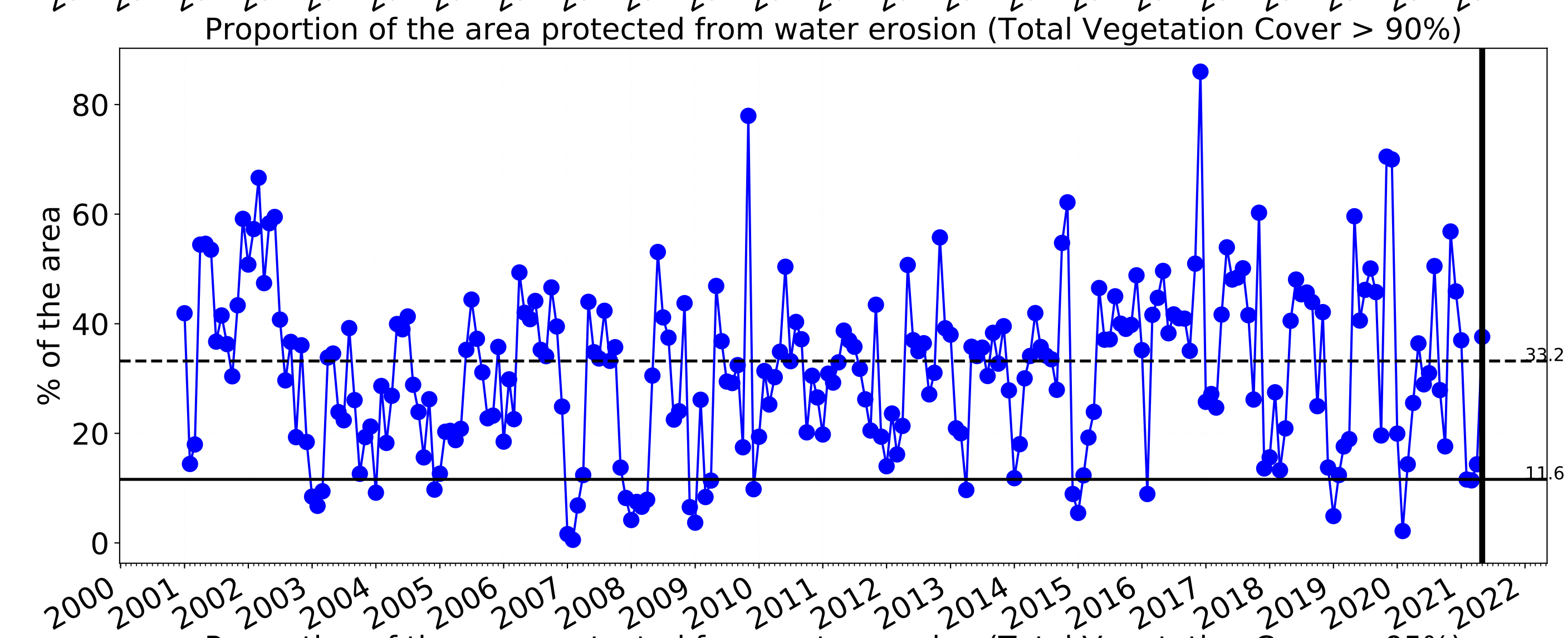
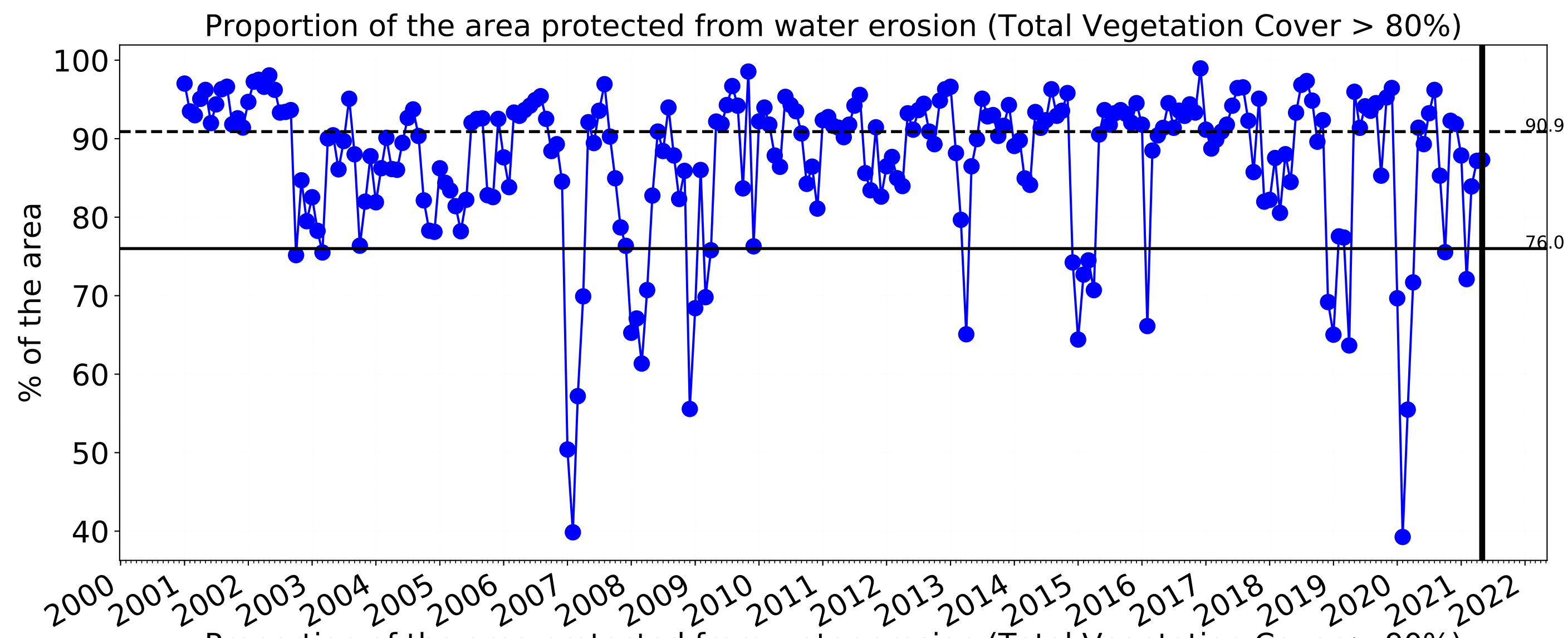


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Cropping timeseries

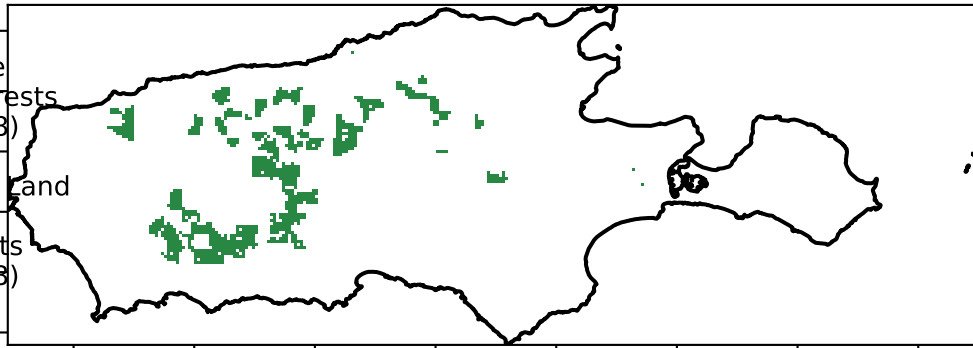




Production native forests and plantation forests

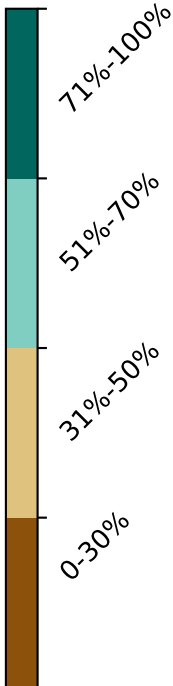
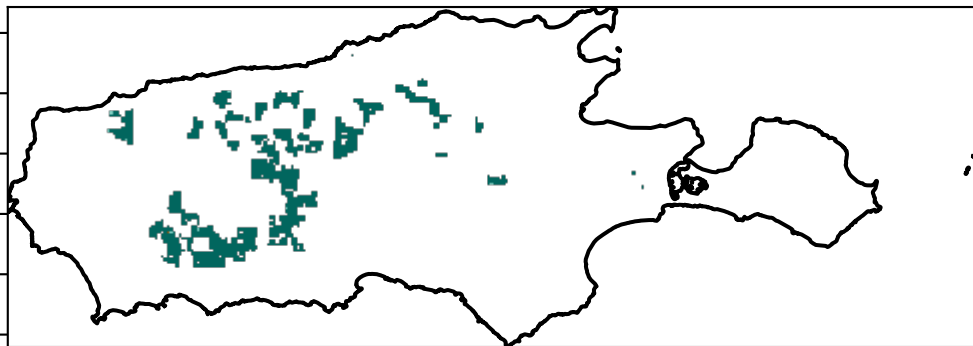
Land use and forest cover

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

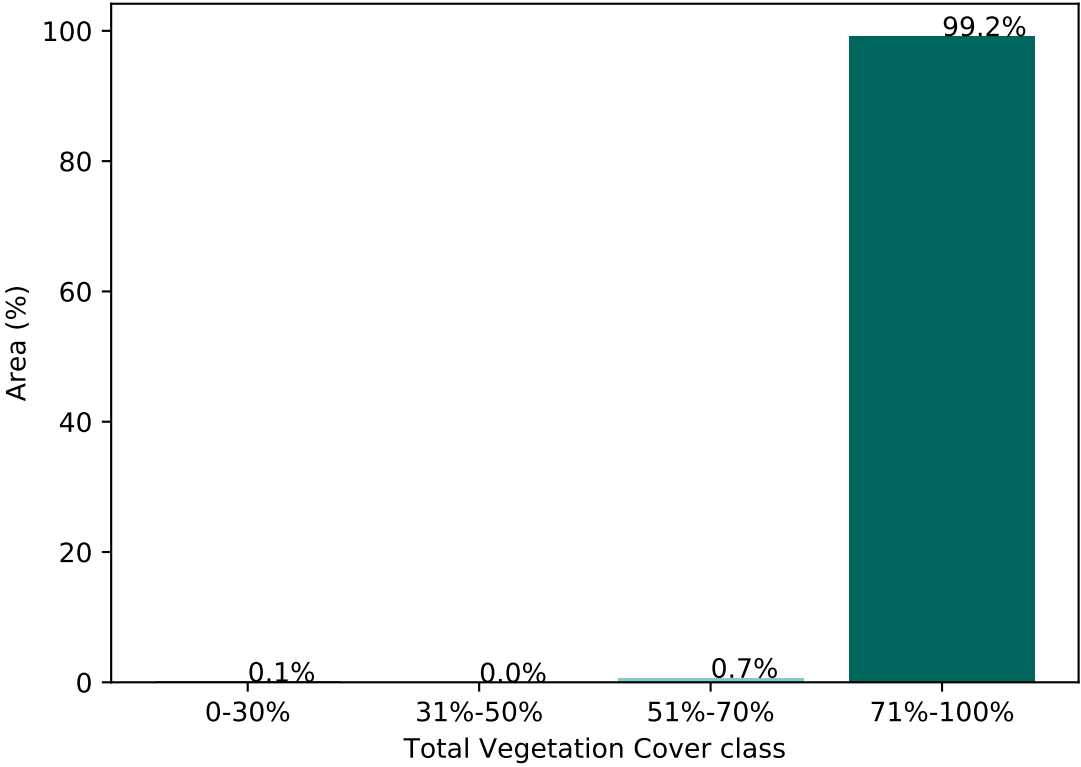


1 Production native forests and plantation forests

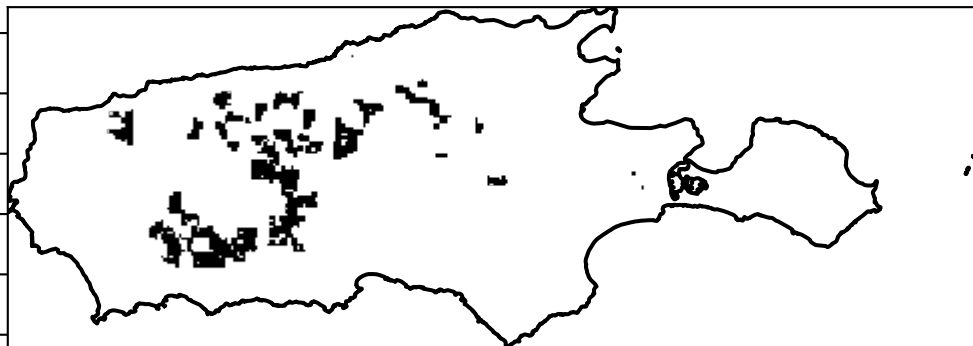
Total Vegetation Cover [%]



Proportion of vegetation cover class in area

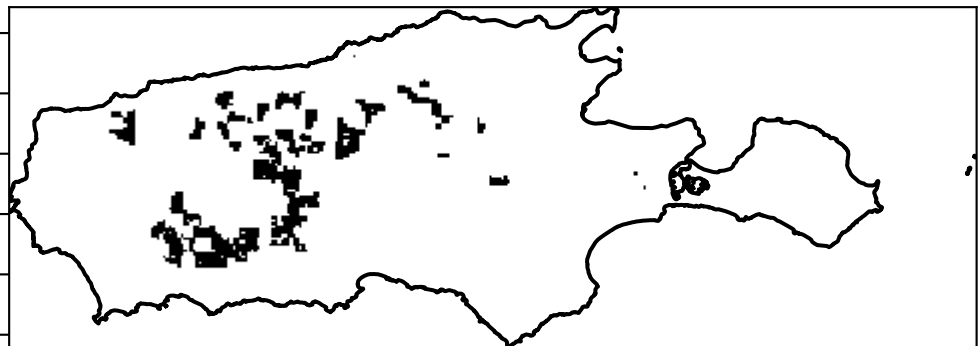


% Area protected from water erosion (>70%)



Area not protected
0.8% of region
(222 ha)
Area protected
99.2% of region
(27,528 ha)

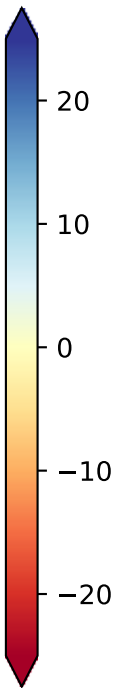
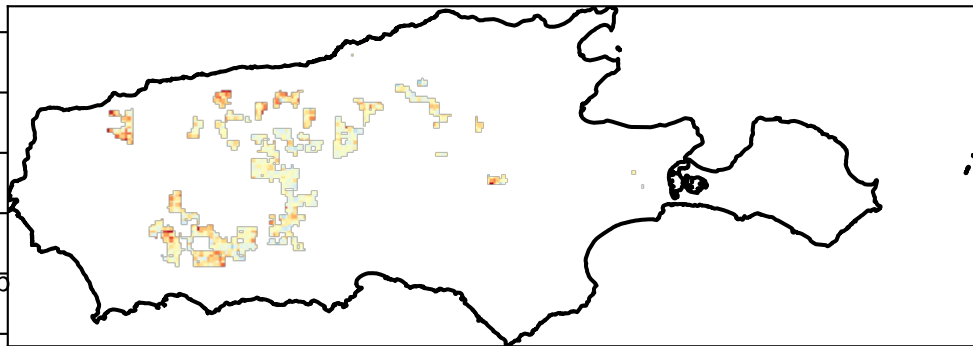
% Area protected from wind erosion (>50%)



Area not protected
0.0% of region (0 ha)
Area protected
100.0% of region
(27,750 ha)

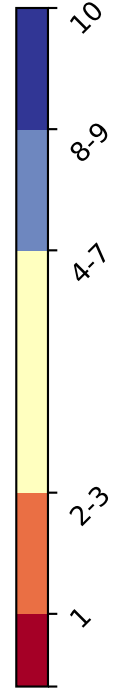
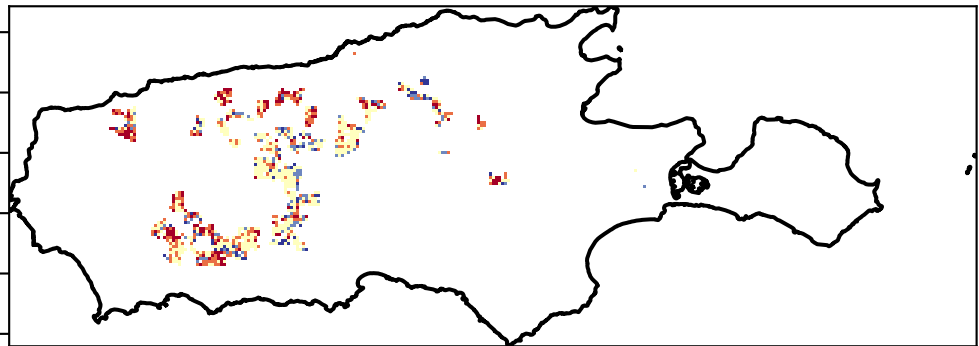
Total Vegetation Cover Anomaly [%]

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



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

Total Vegetation Cover Decile [%]



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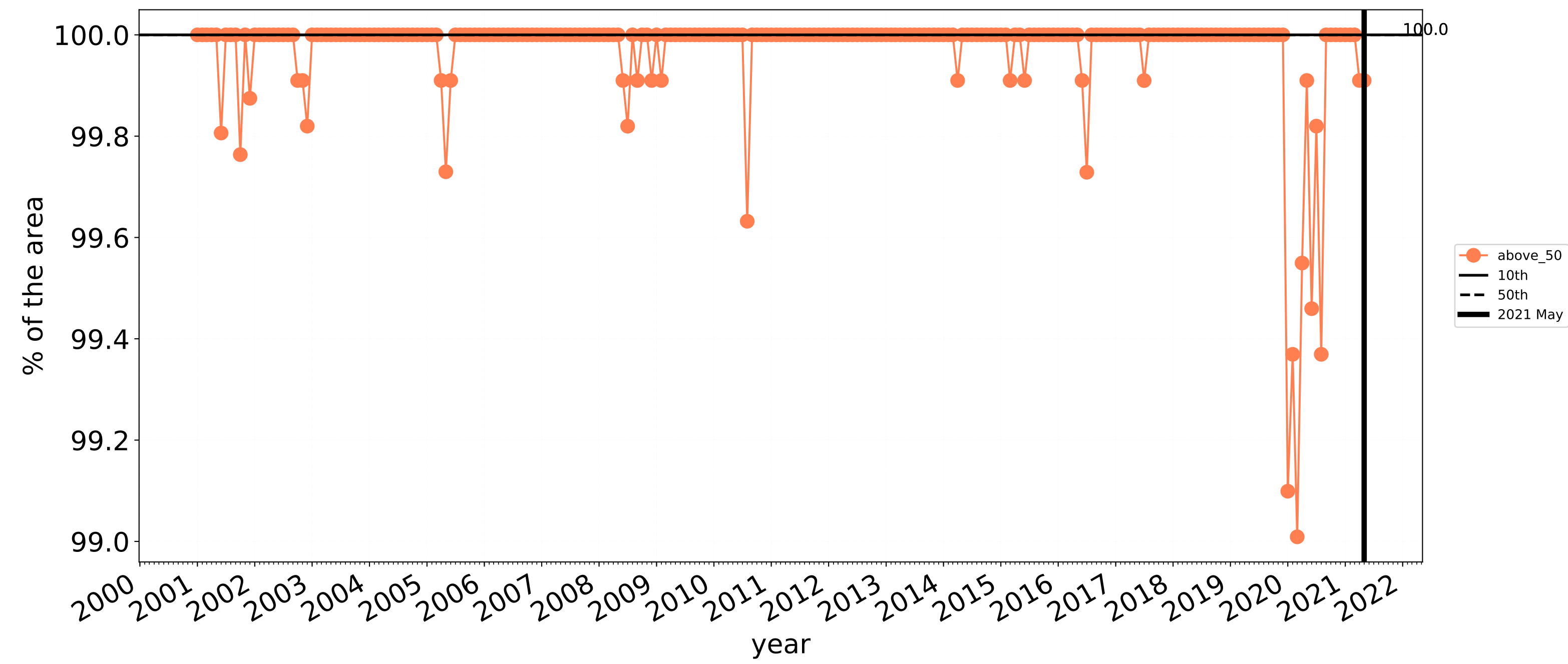
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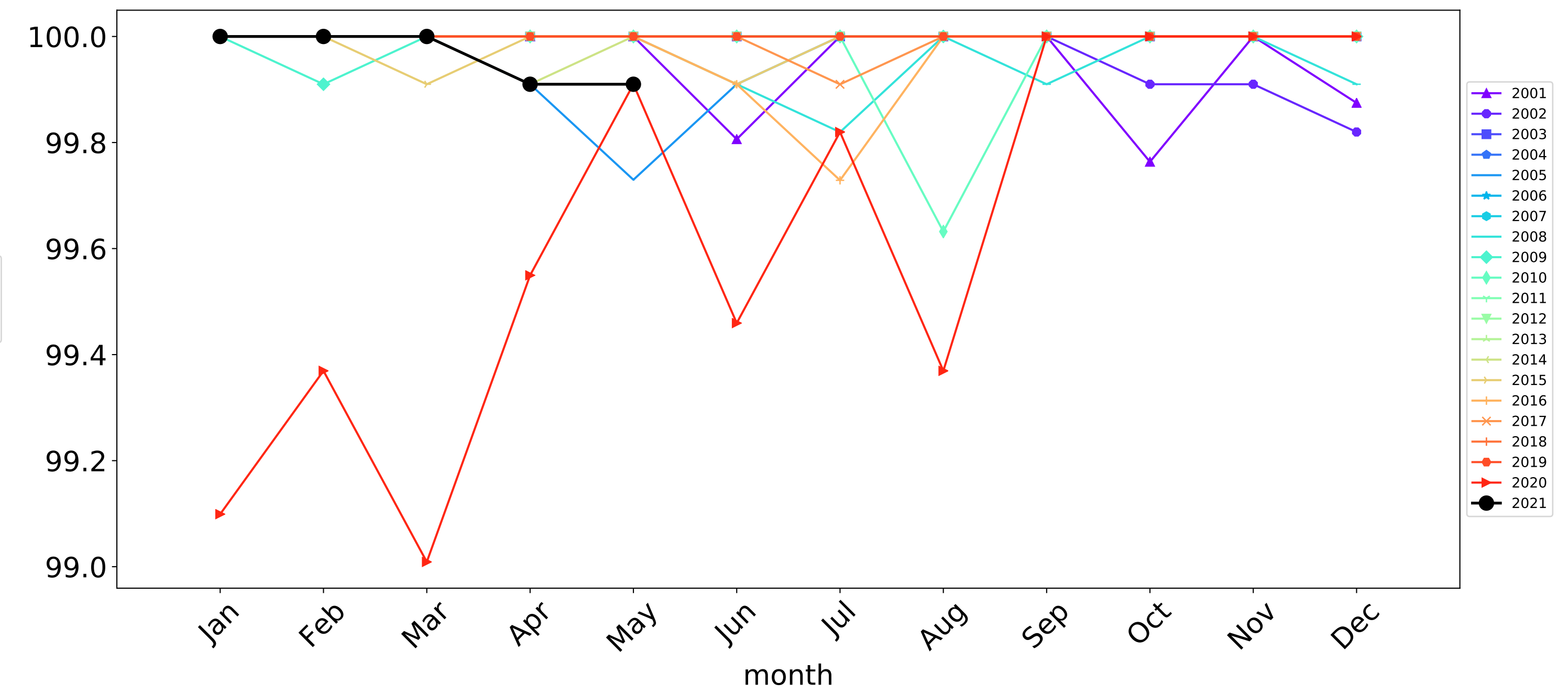


Production native forests and plantation forests timeseries

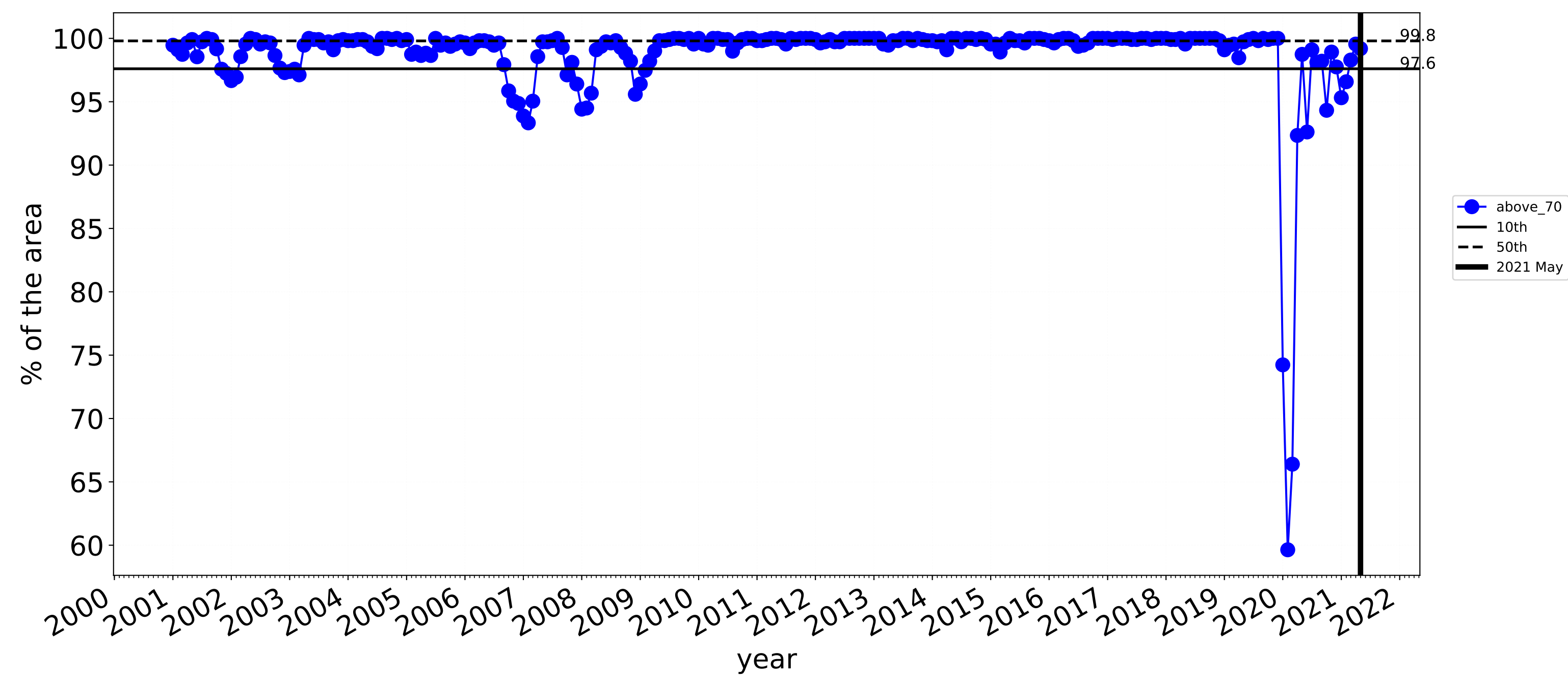
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



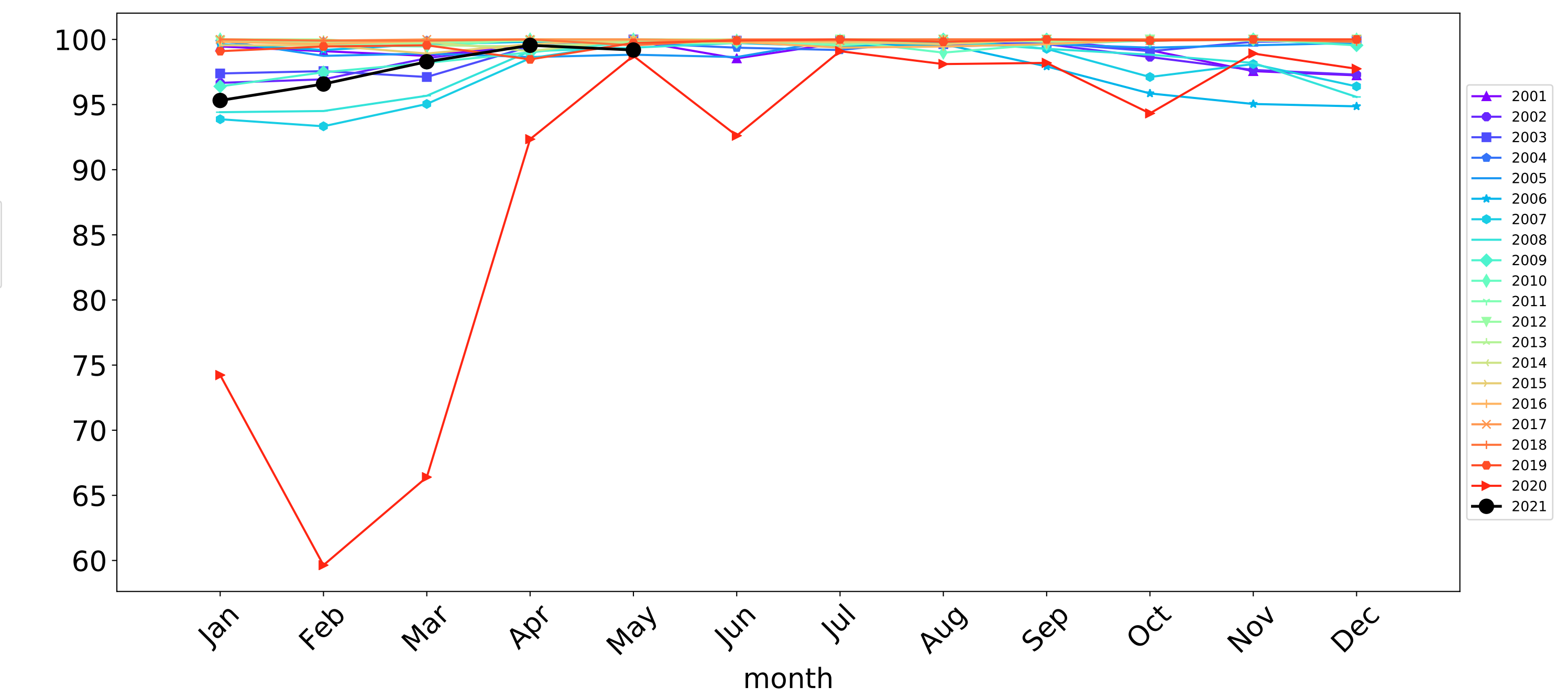
Wind erosion historical monthly area protected (Total Veg Cov >50%)

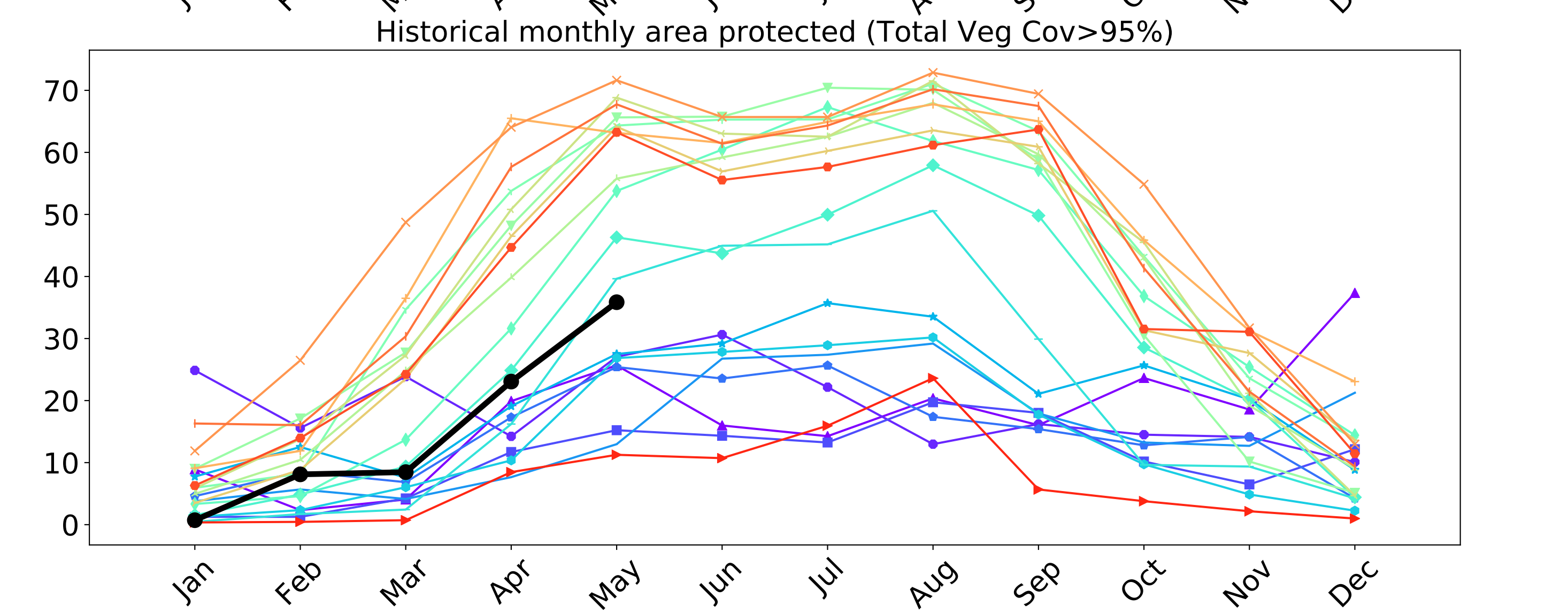
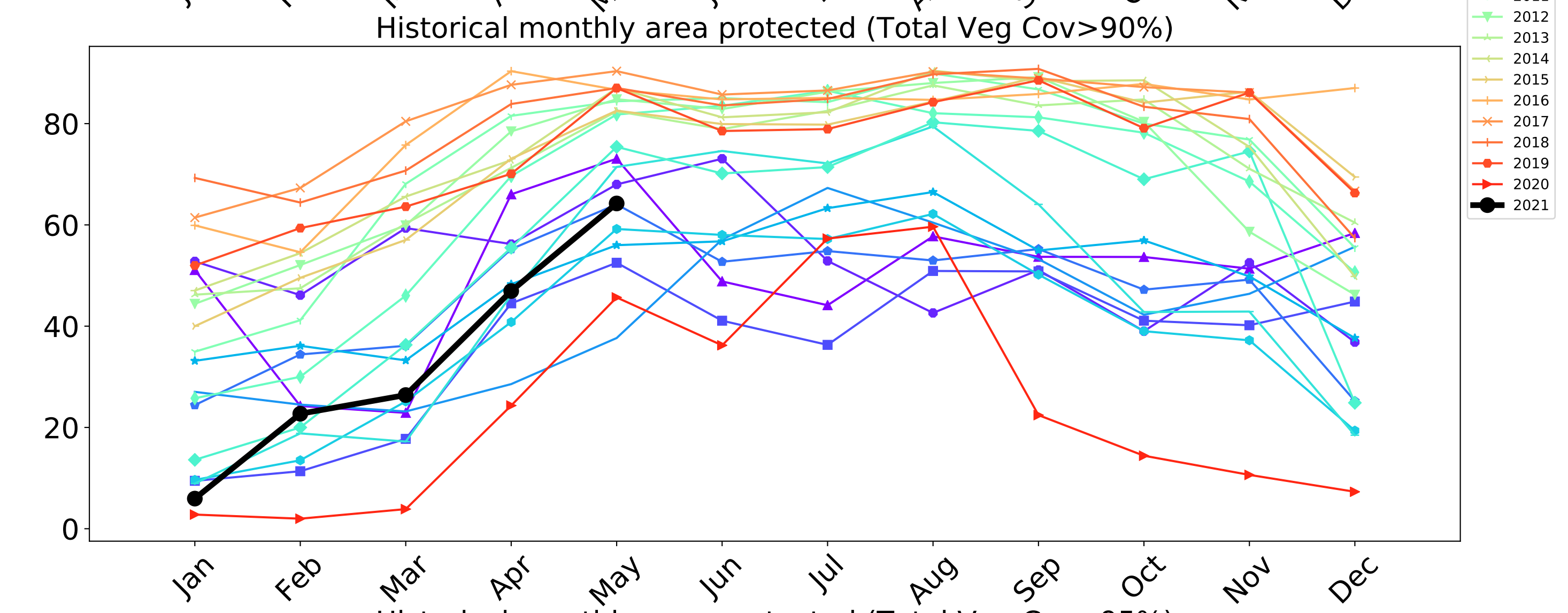
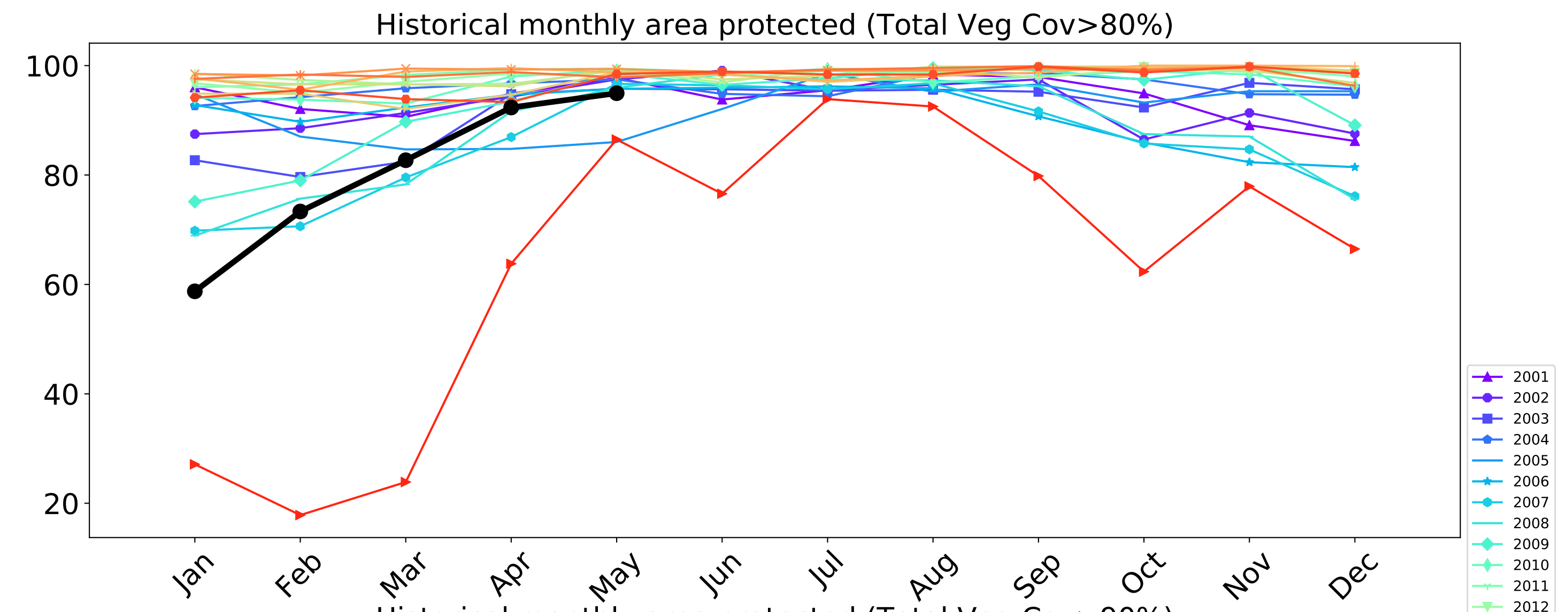
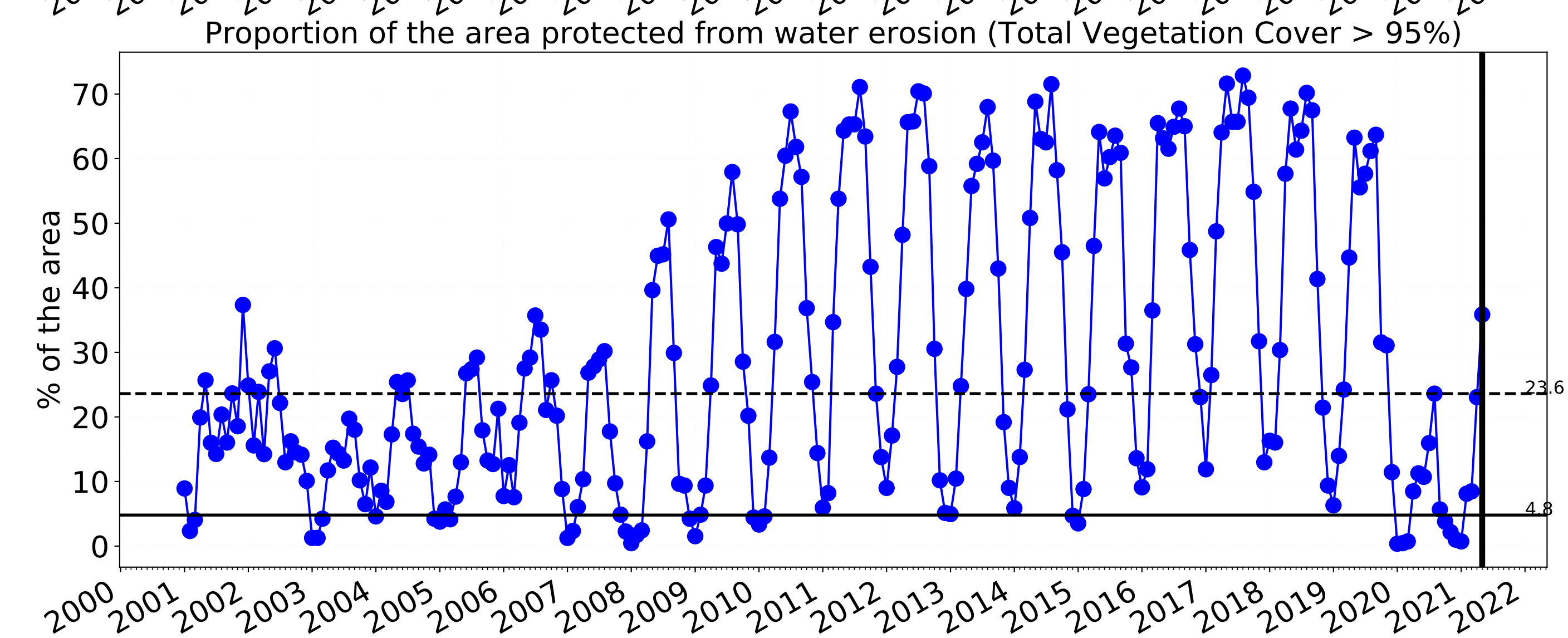
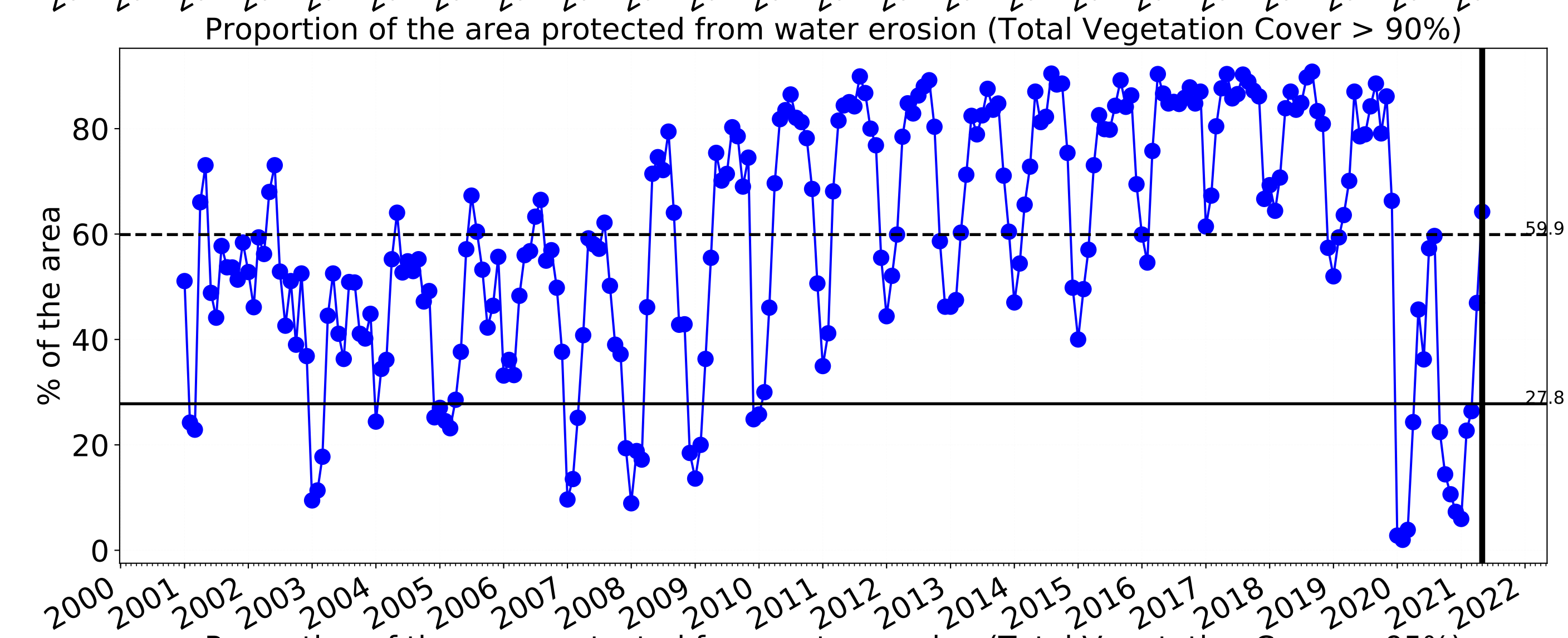
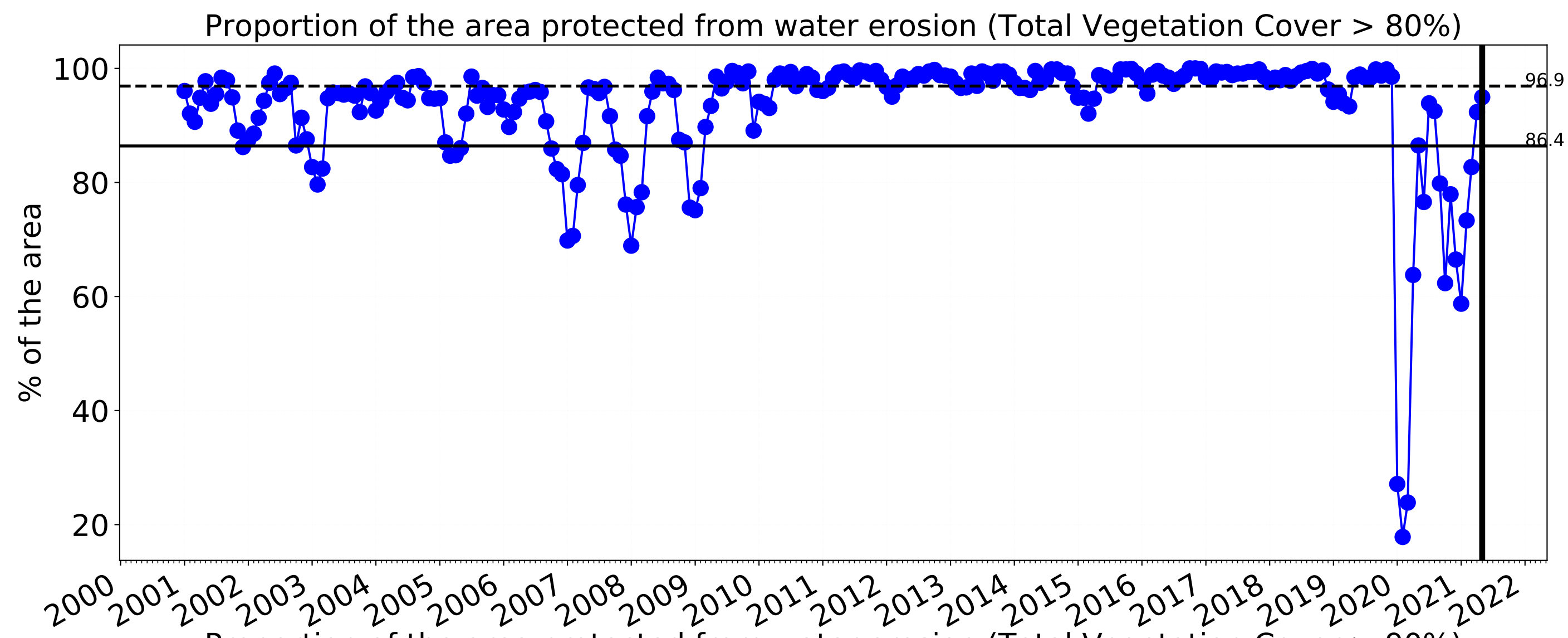


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



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





Kangaroo Island (429,700 ha and no data 10,364 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	429,700	99.9% 429,100	99.5% 427,675	94.0% 403,825	80.4% 345,650	45.4% 194,925	21.2% 91,175
Conservation and natural environments	190,250	99.8% 189,900	99.2% 188,750	88.6% 168,500	66.6% 126,725	41.2% 78,425	22.9% 43,575
Conservation and natural environments non forest	46,175	99.7% 46,050	98.3% 45,400	79.5% 36,725	50.8% 23,475	21.4% 9,875	9.3% 4,300
Conservation and natural environments Woodland forest	137,150	99.9% 136,950	99.5% 136,450	91.8% 125,875	72.4% 99,325	48.4% 66,325	27.7% 38,000
Conservation and natural environments Forest (non woodland)	6,925	99.6% 6,900	99.6% 6,900	85.2% 5,900	56.7% 3,925	32.1% 2,225	18.4% 1,275
Agriculture	203,400	99.9% 203,250	99.9% 203,175	98.5% 200,425	91.8% 186,775	47.3% 96,225	18.0% 36,650
Grazing	171,925	99.9% 171,800	99.9% 171,725	98.7% 169,650	92.6% 159,275	49.0% 84,300	19.0% 32,700
Grazing non forest	170,525	99.9% 170,400	99.9% 170,325	98.7% 168,300	92.7% 158,050	49.0% 83,625	18.9% 32,300
Cropping	31,100	99.9% 31,075	99.9% 31,075	97.7% 30,400	87.3% 27,150	37.6% 11,700	12.5% 3,875
Production native forests and plantation forests	27,750	99.9% 27,725	99.9% 27,725	99.2% 27,525	95.0% 26,350	64.2% 17,825	35.9% 9,950