

Total vegetation cover soil protection

Region:NRM Fitzroy QLD

Date: January 2015

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 Jan 2015

Land use and forest cover

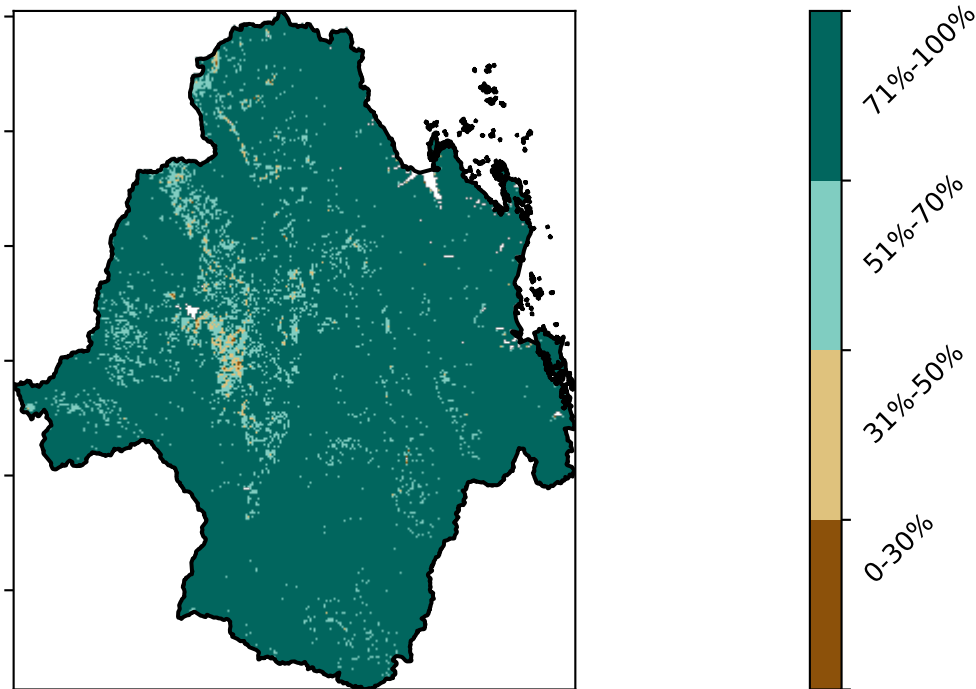


Catchment Scale
Land Use and Forests
of Australia (2018)
Derived from
Catchment Scale Land
Use of Australia
(2018) and Forests
of Australia (2018)

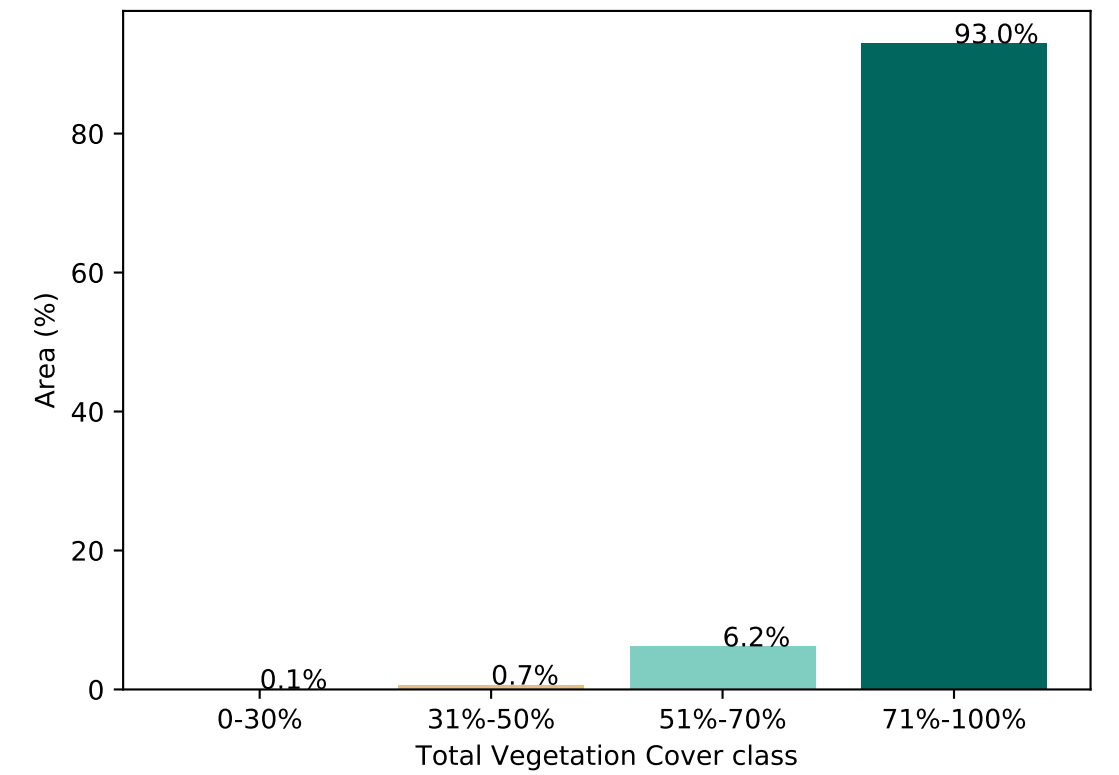
Proportion of each land class in area



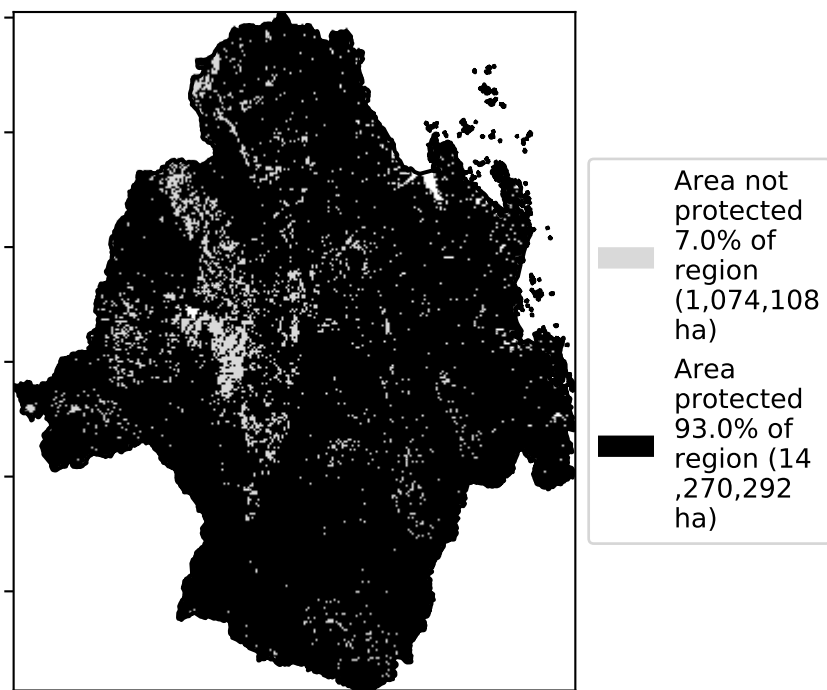
Total Vegetation Cover [%]



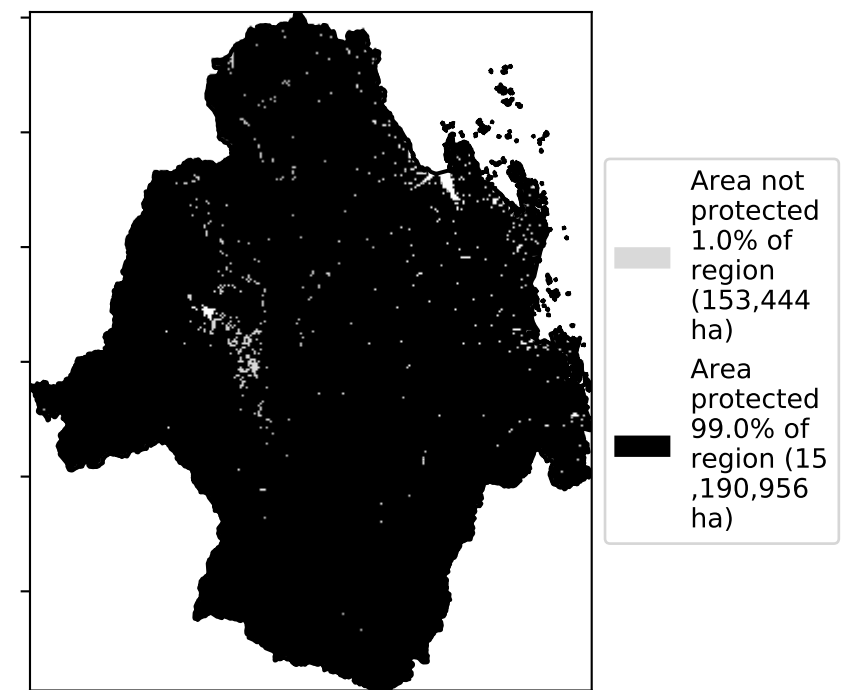
Proportion of vegetation cover class in area



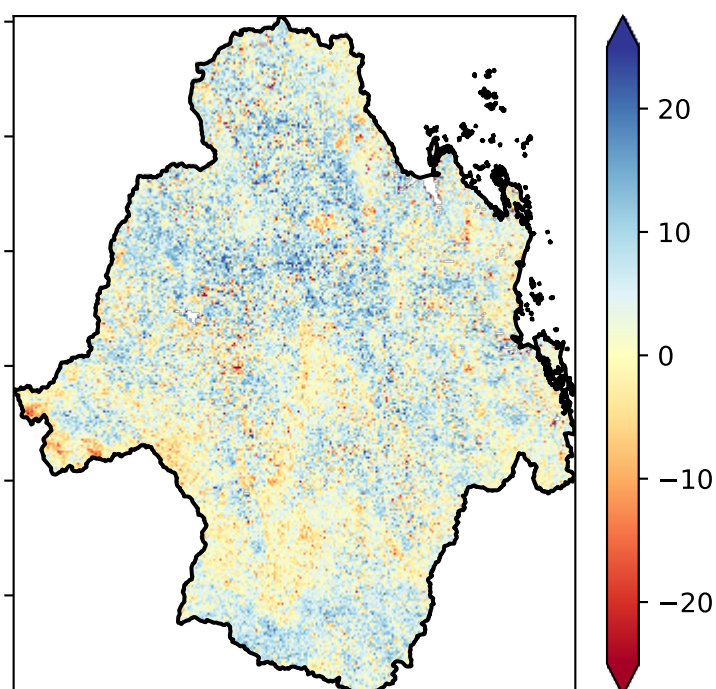
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)



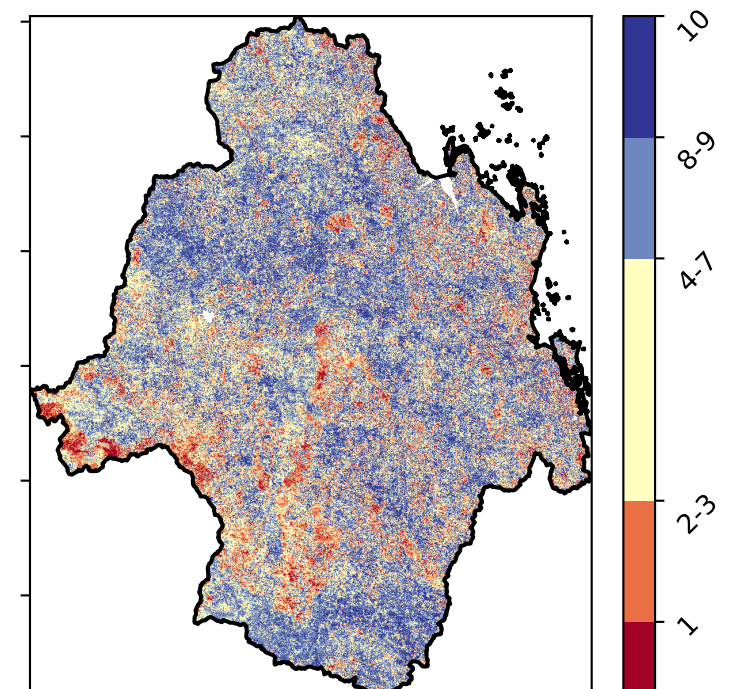
Total Vegetation Cover Anomaly [%]



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.

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Total Vegetation Cover Decile [%]



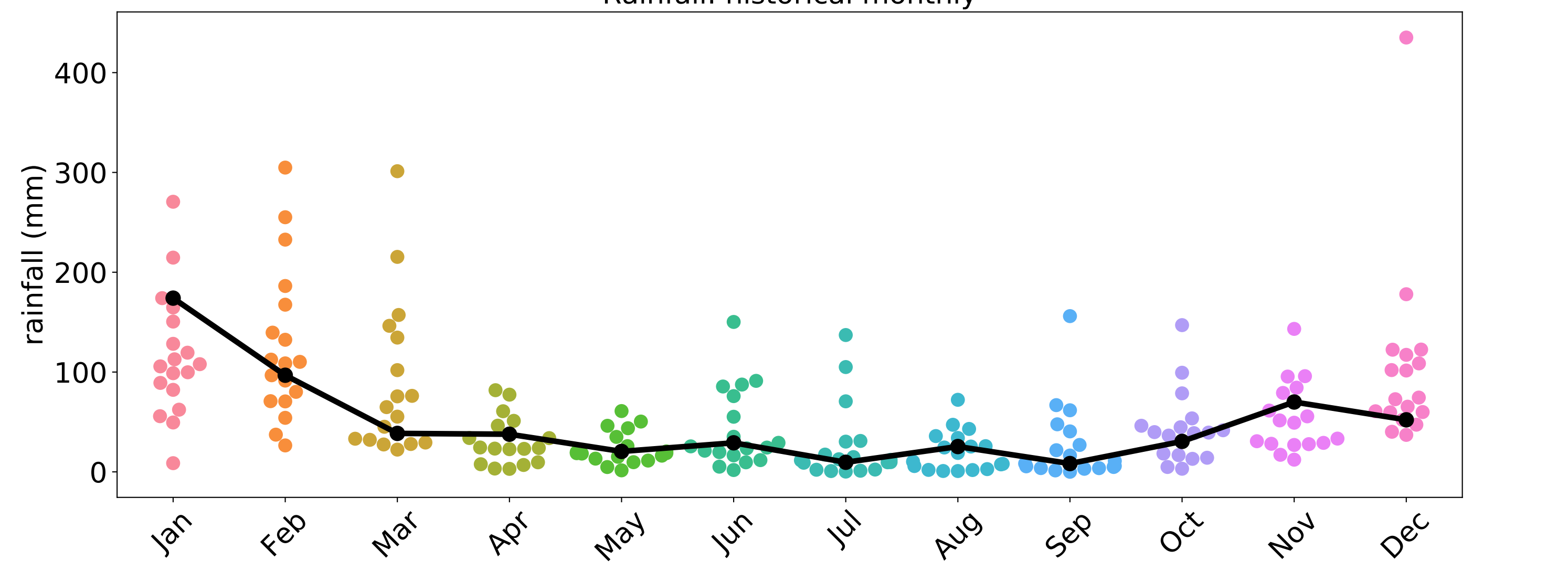
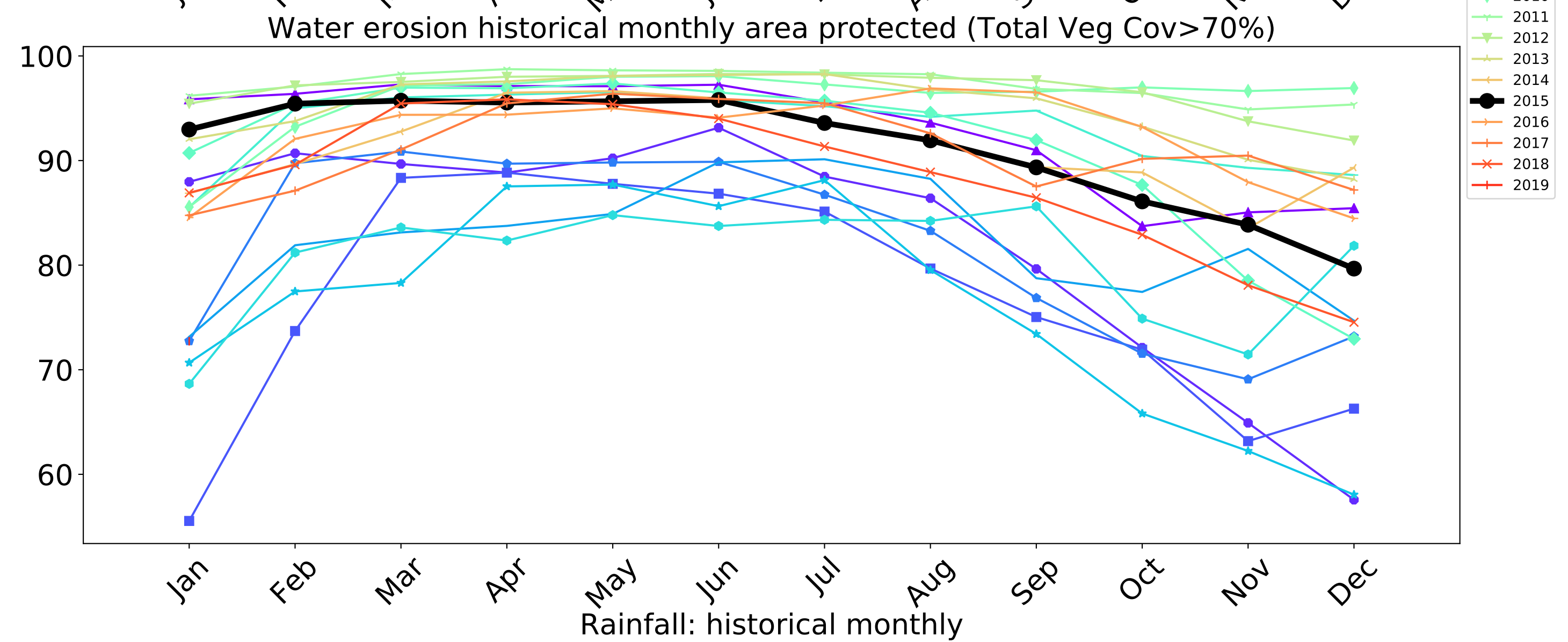
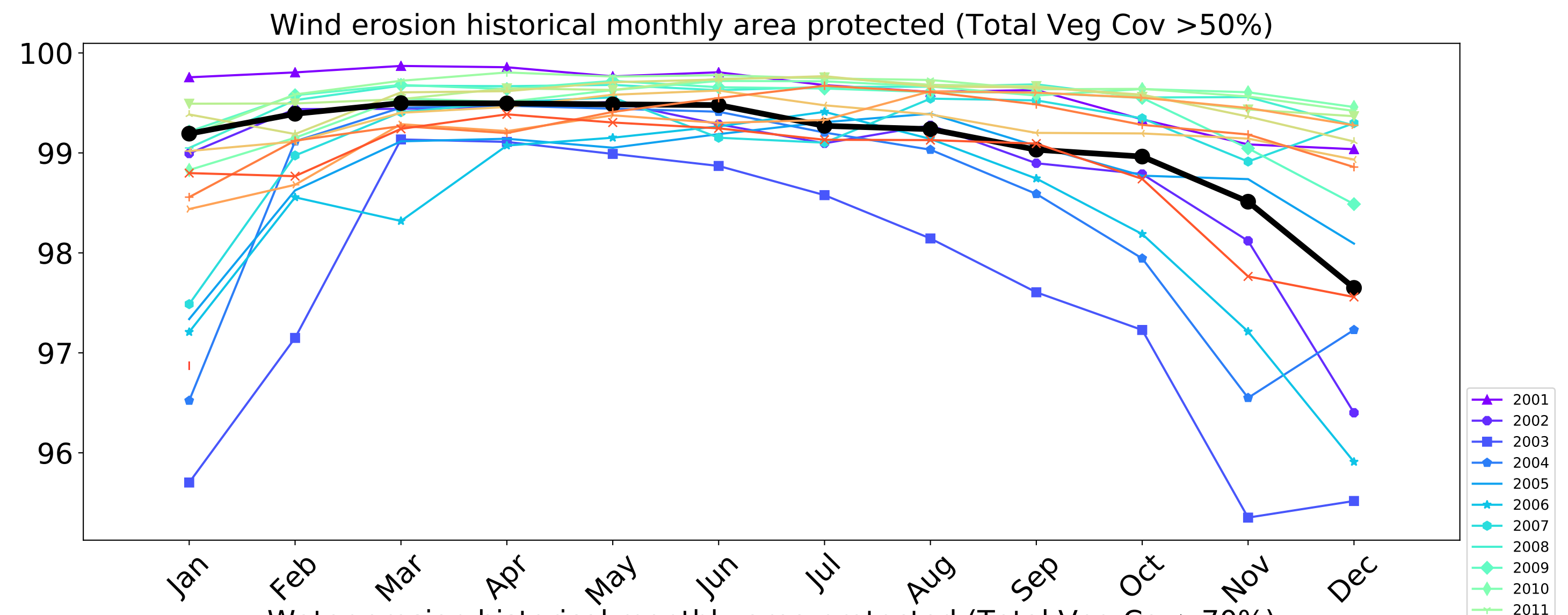
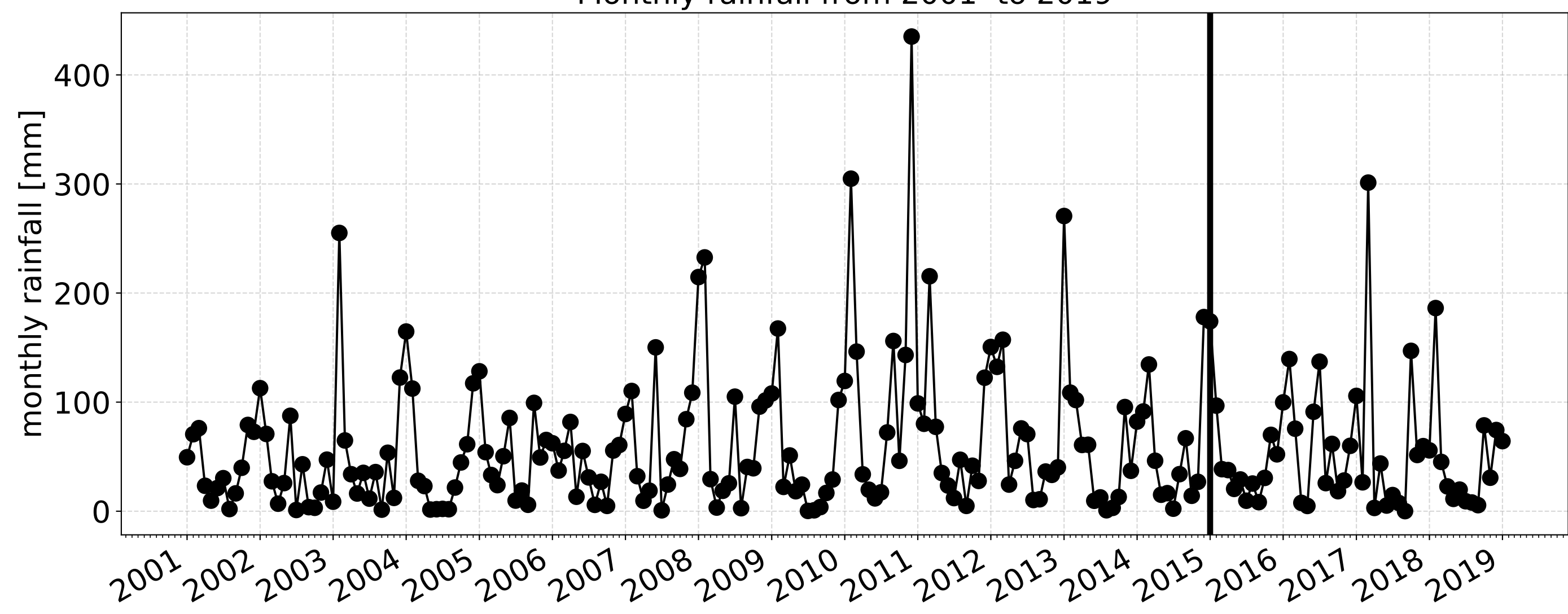
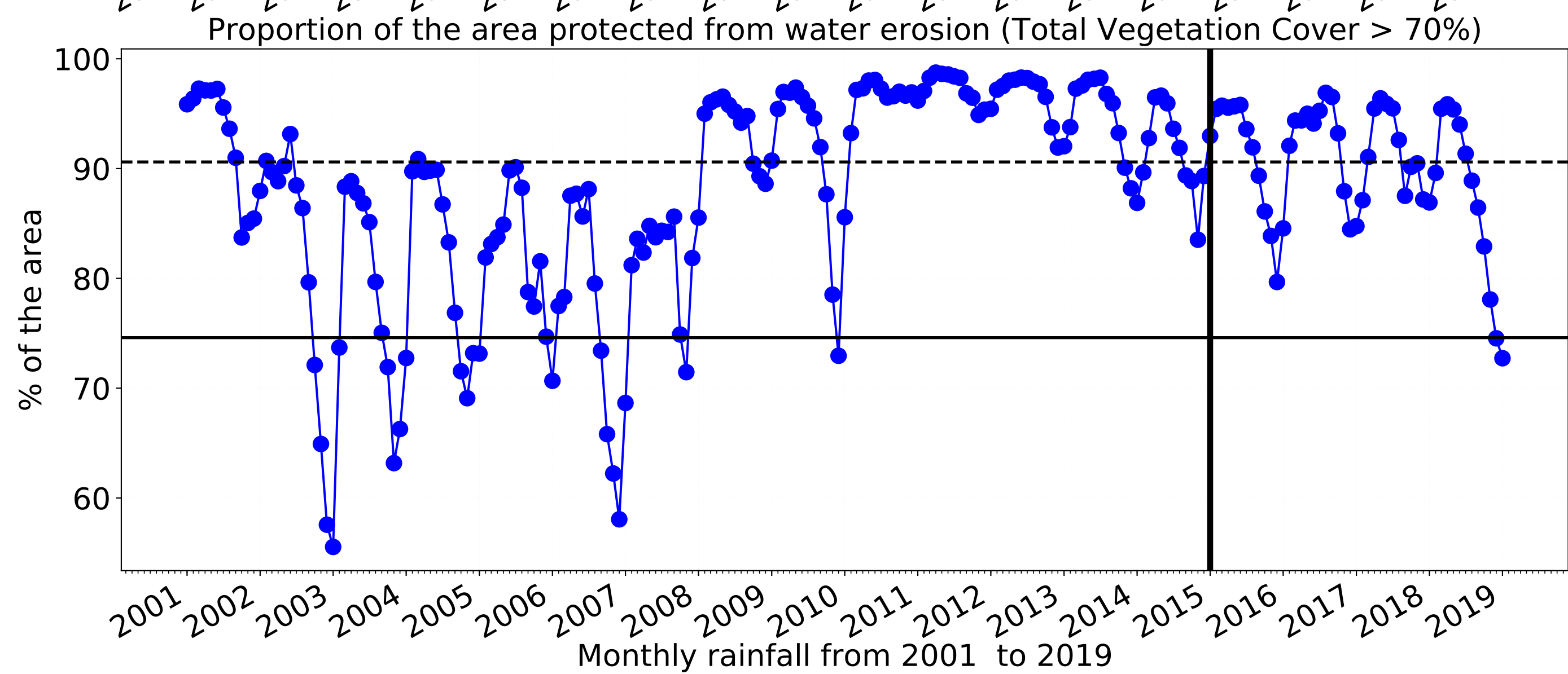
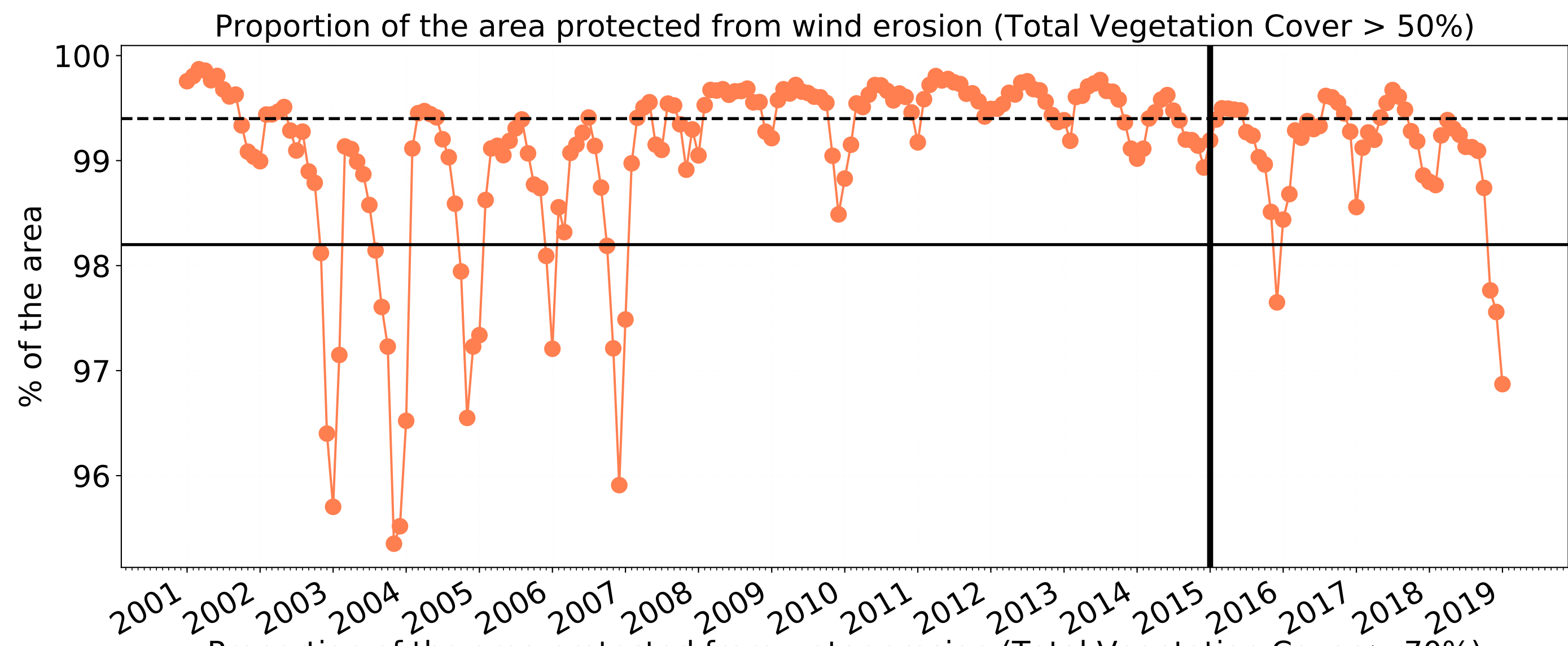
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National
Landcare
Programme



Planning,
Industry &
Environment



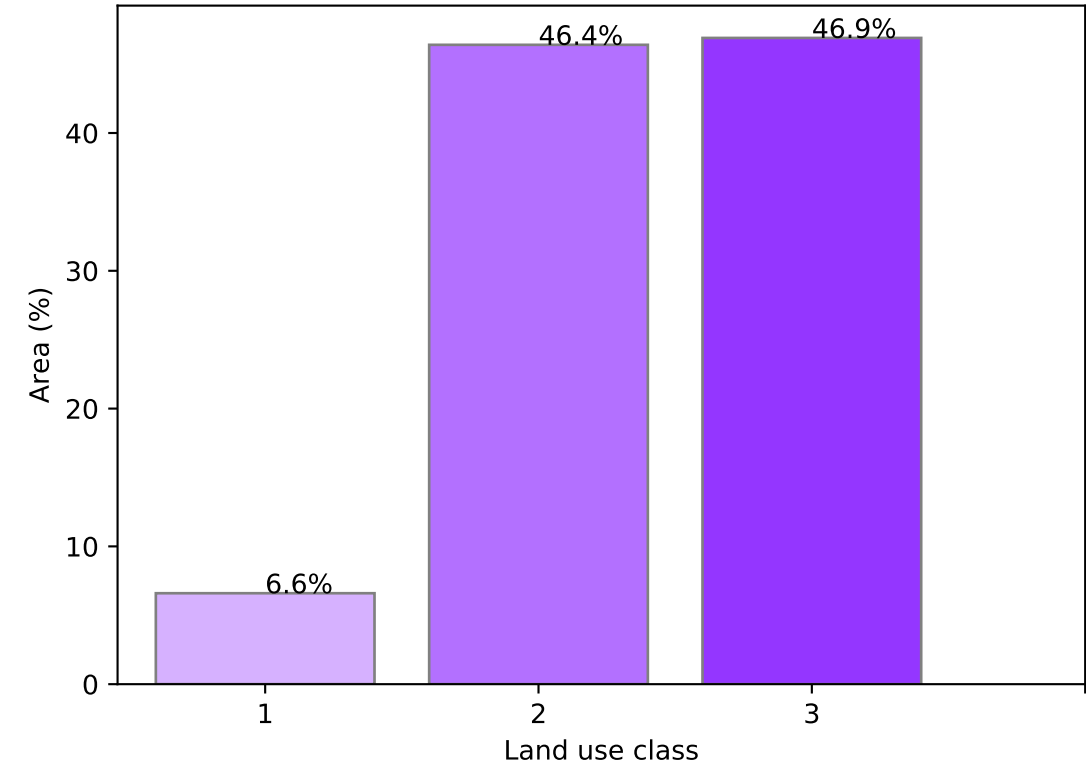
Conservation and natural environments

Land use and forest cover

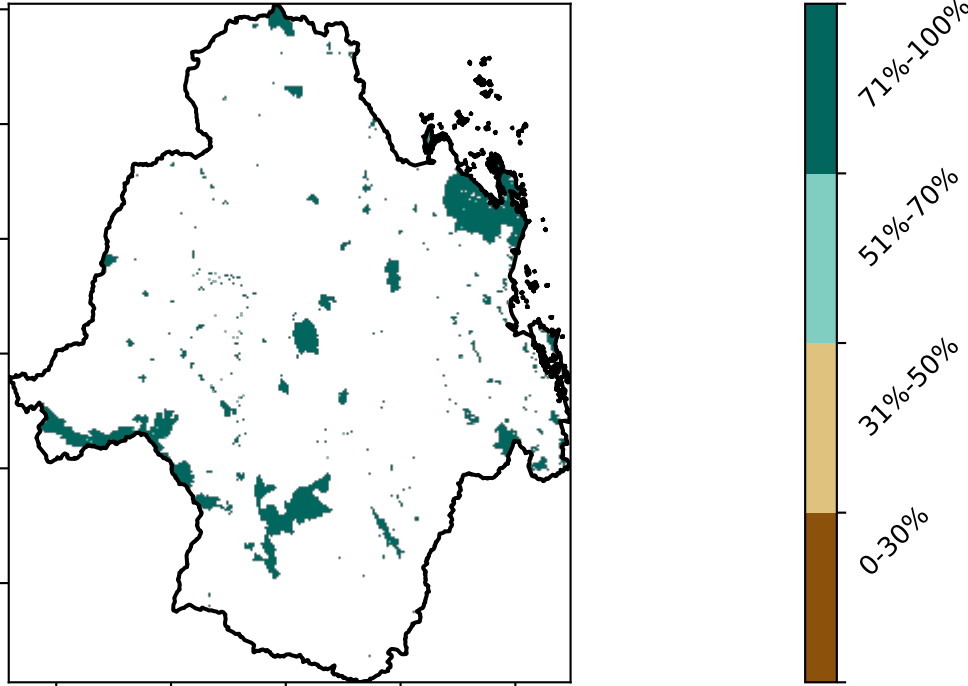
Catchment Scale Land Use and Forests of Australia (2018)
Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)



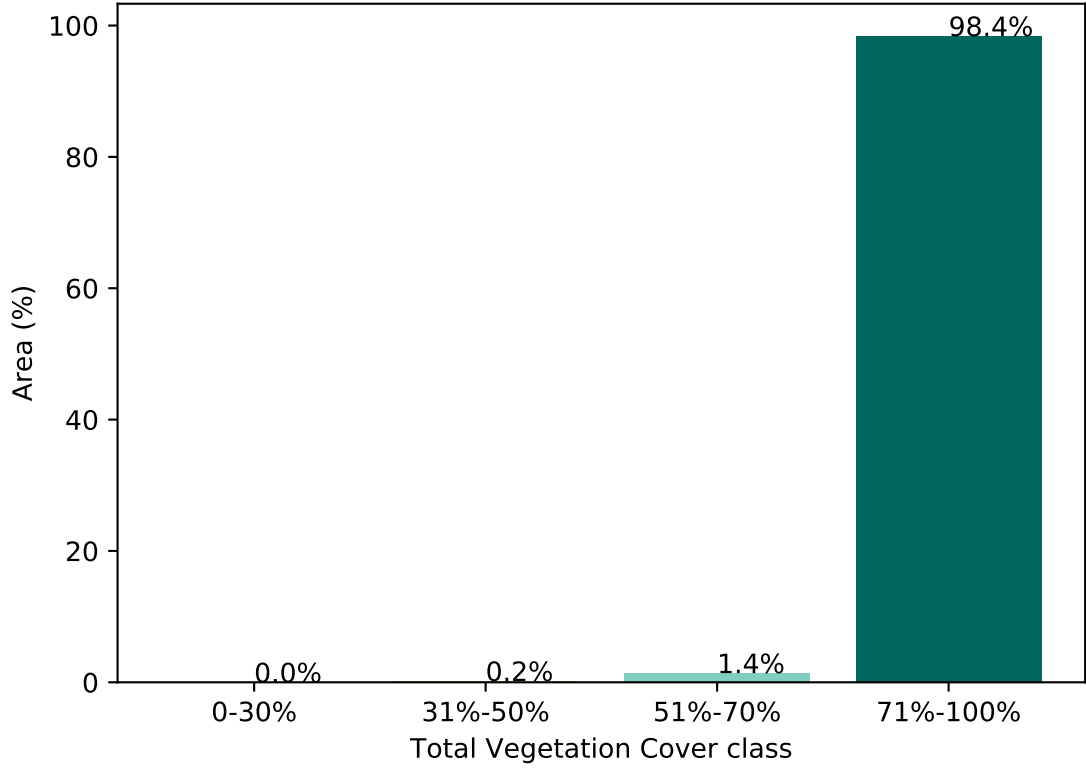
Proportion of each land class in area



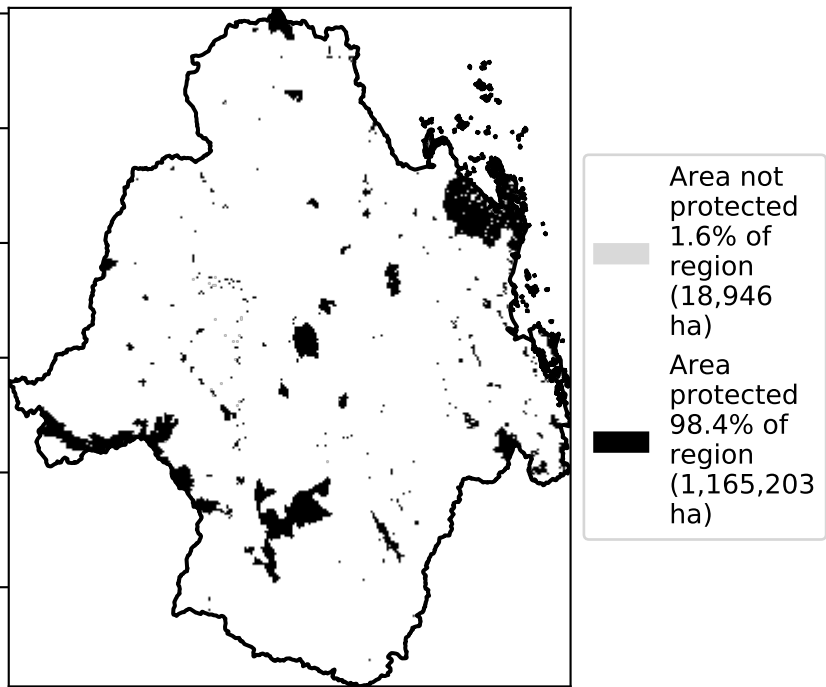
Total Vegetation Cover [%]



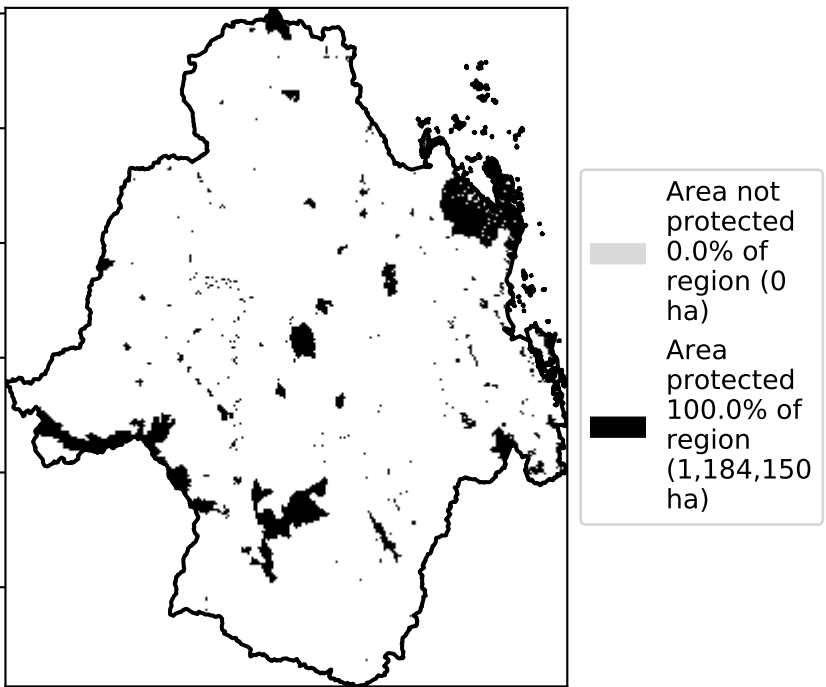
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

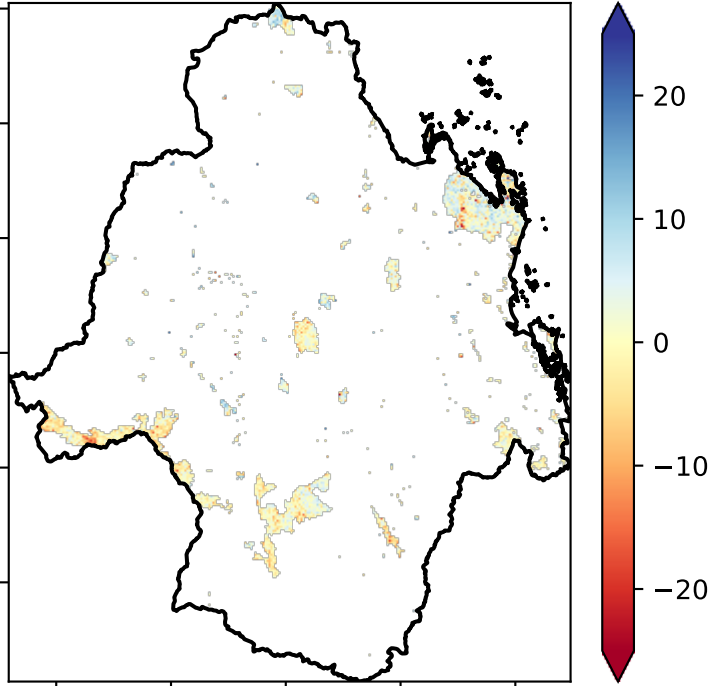


% Area protected from wind erosion (>50%)



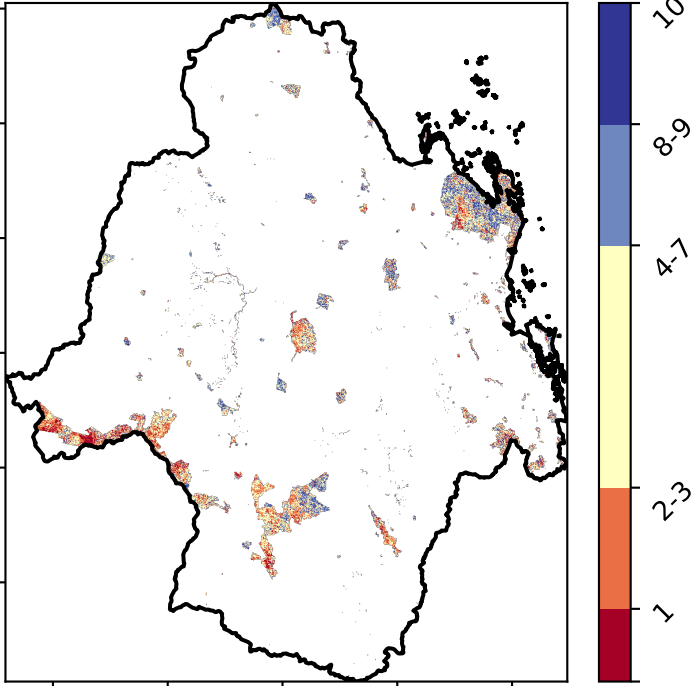
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Total Vegetation Cover Decile [%]



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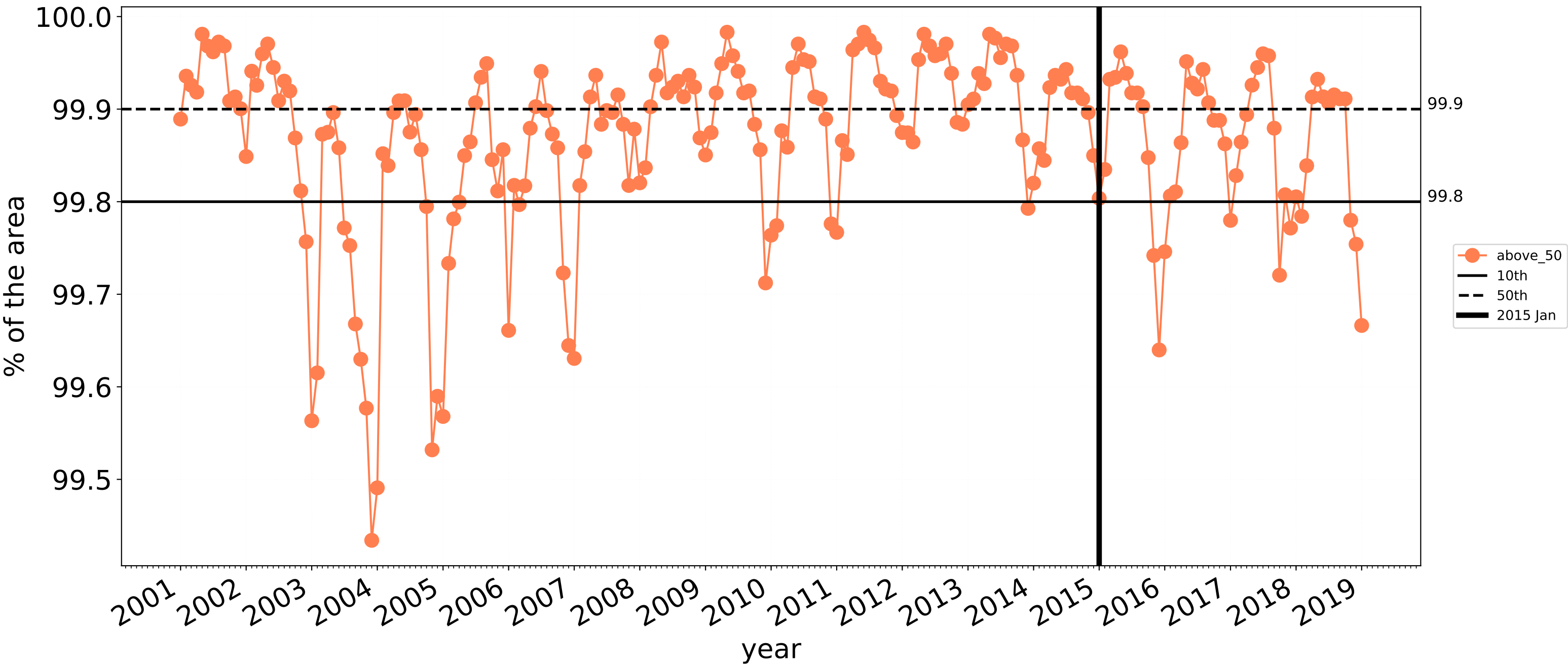
National Landcare Programme



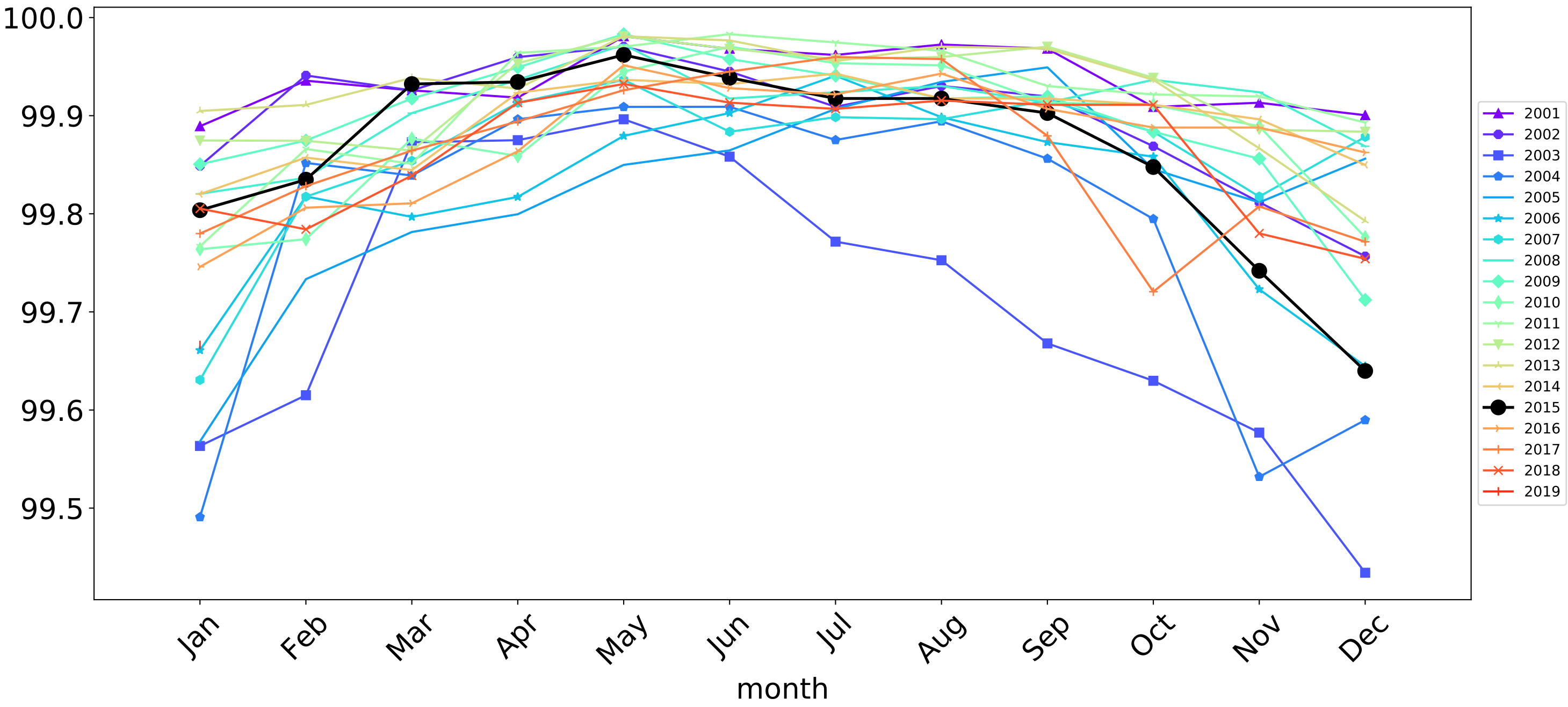
Planning, Industry & Environment

Conservation and natural environments timeseries

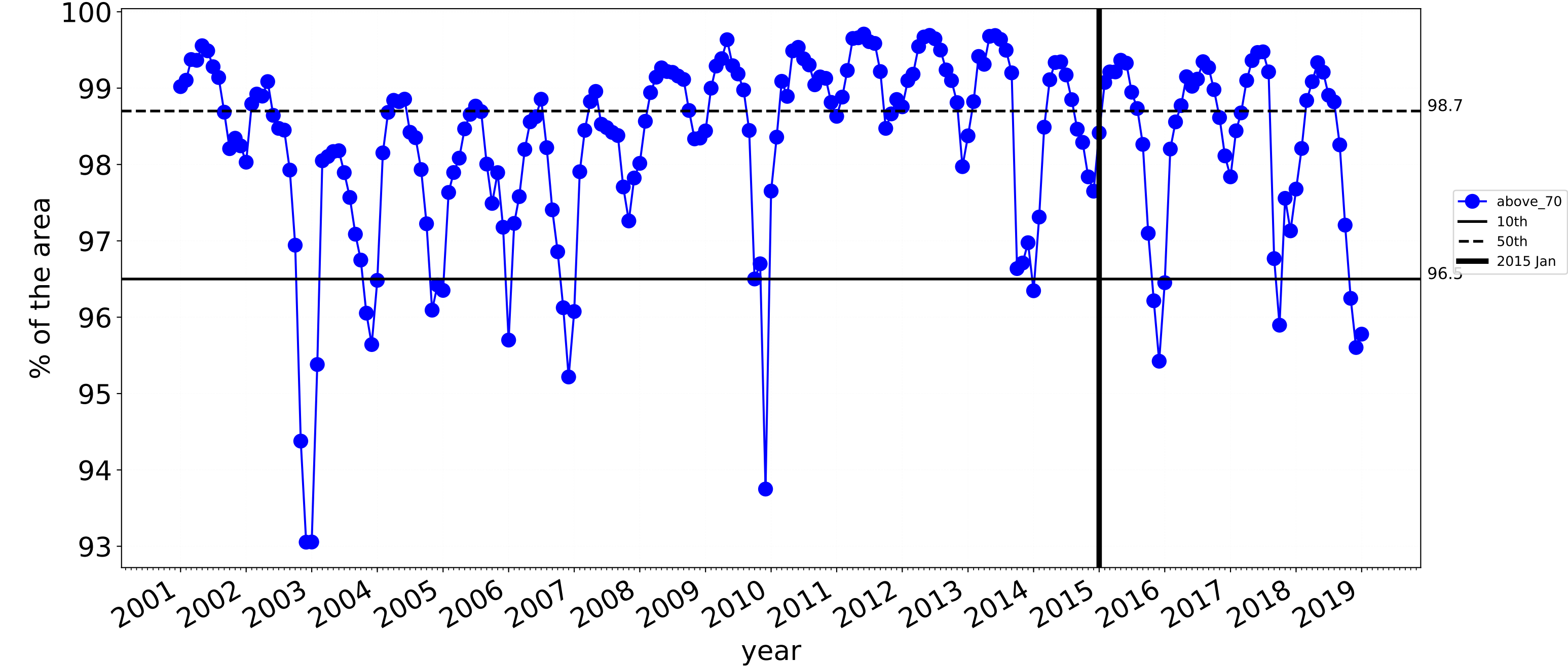
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



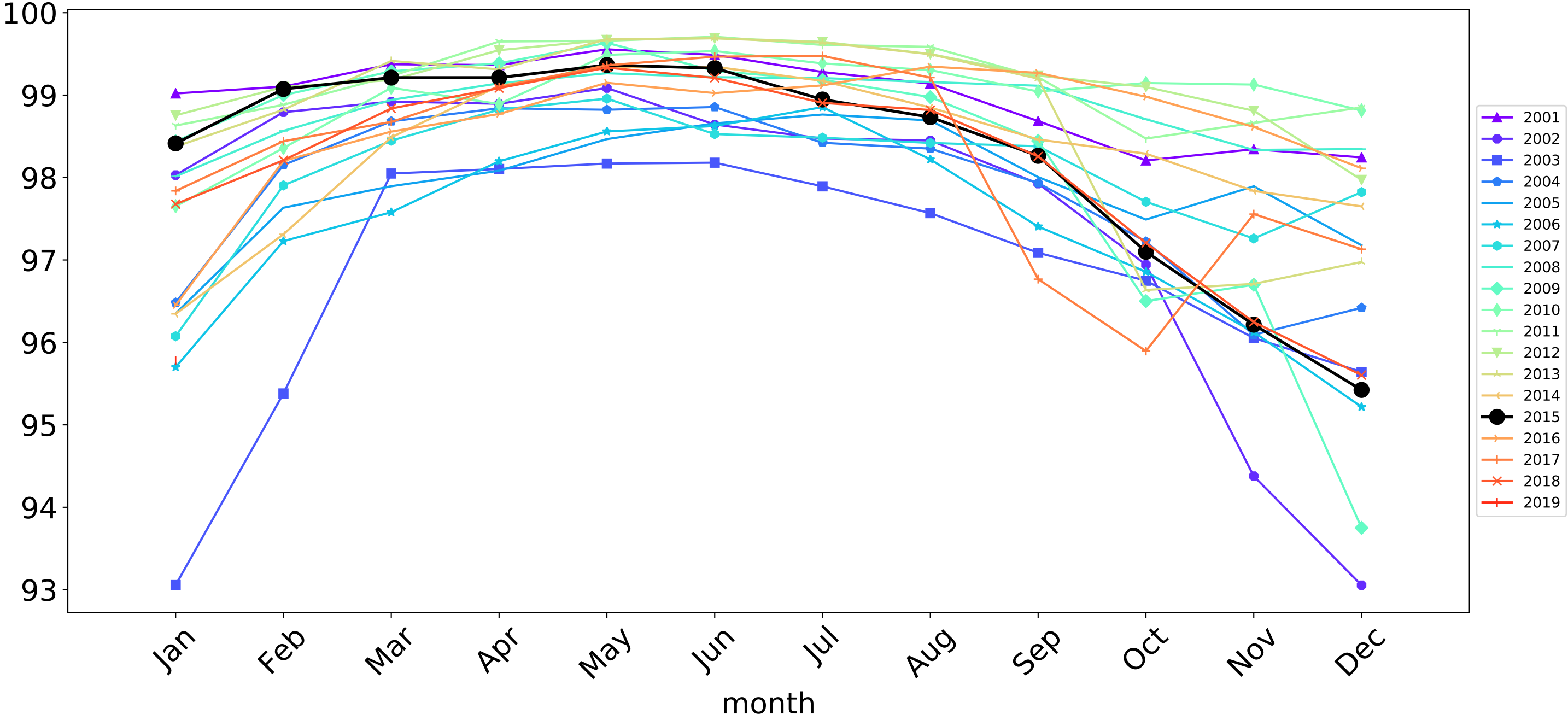
Wind erosion historical monthly area protected (Total Veg Cov > 50%)



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

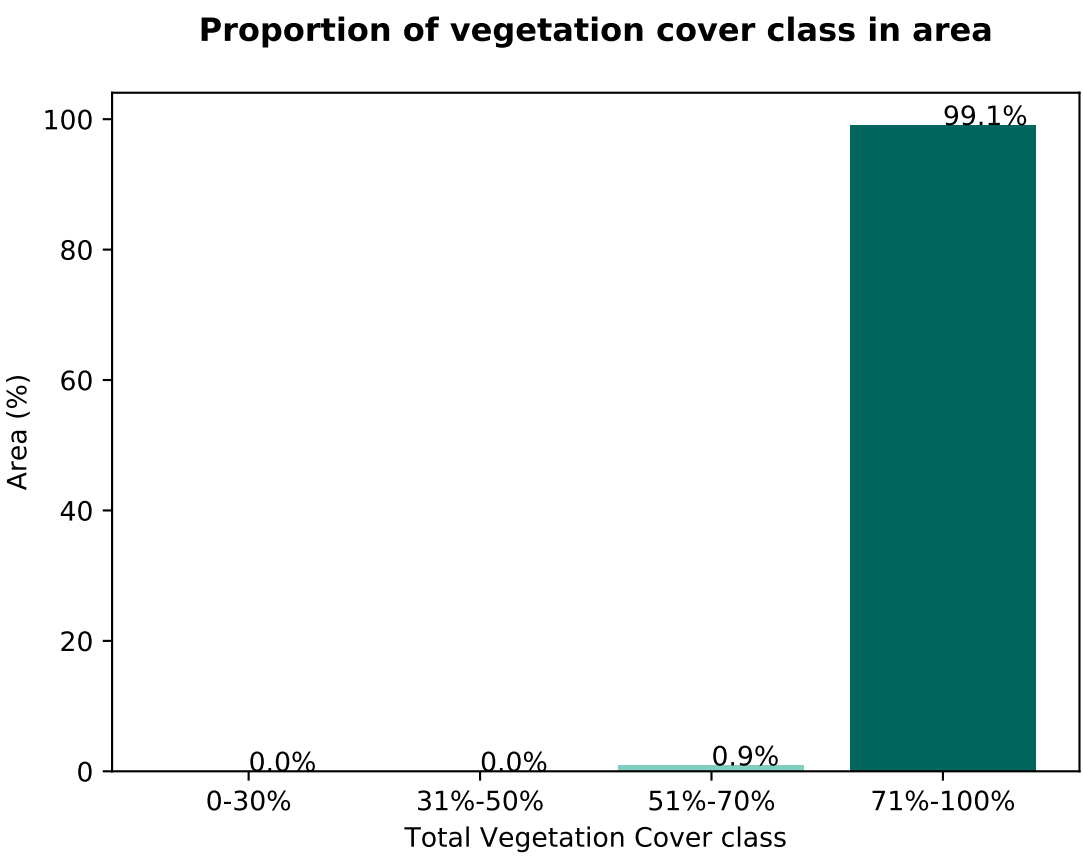
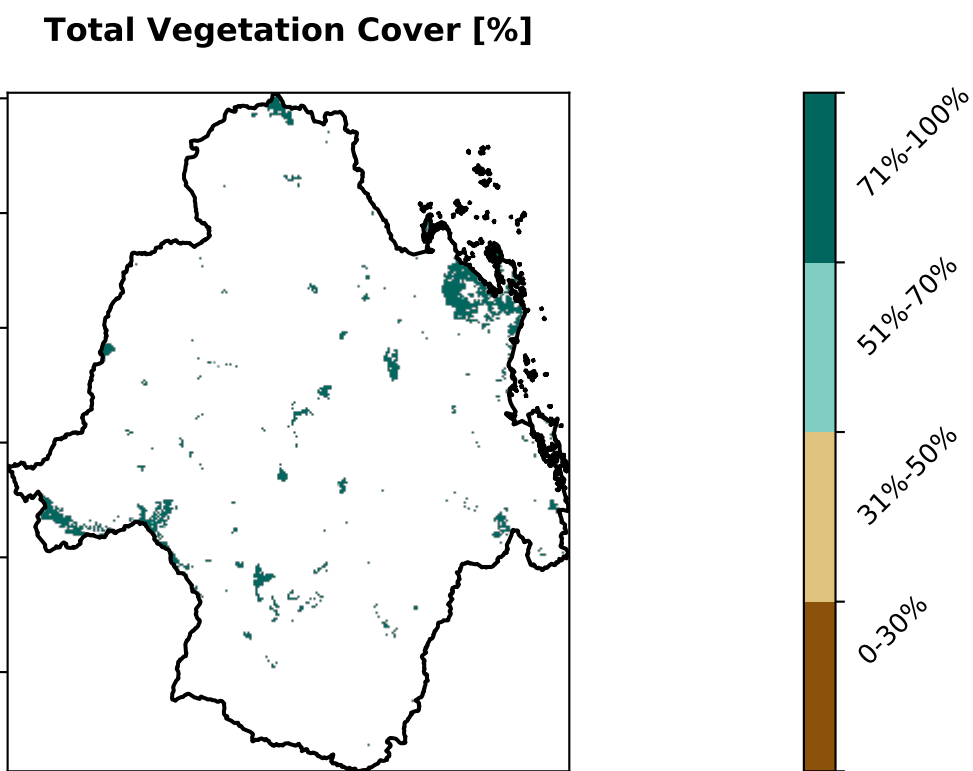


Water erosion historical monthly area protected (Total Veg Cov > 70%)

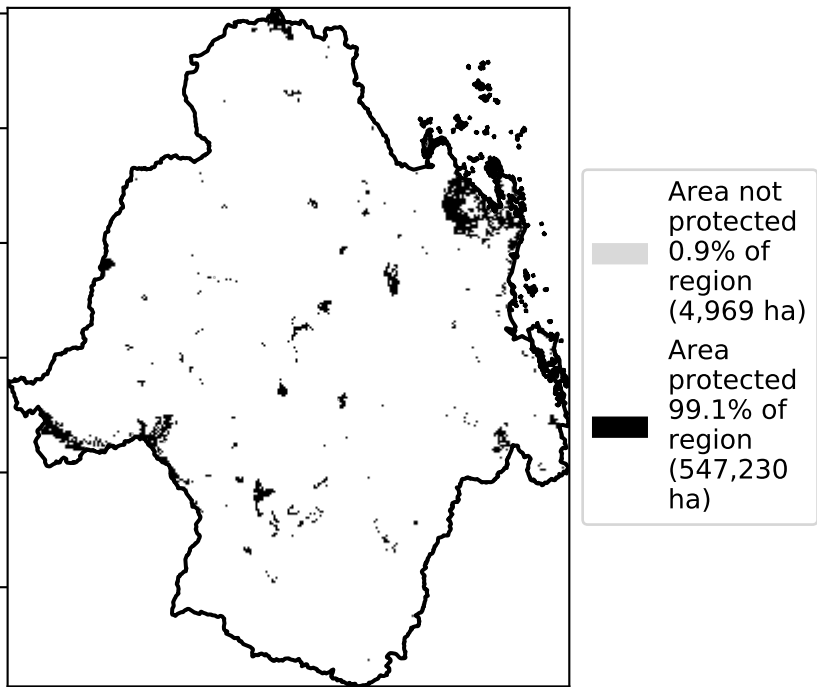


Conservation and natural environments Woodland forest

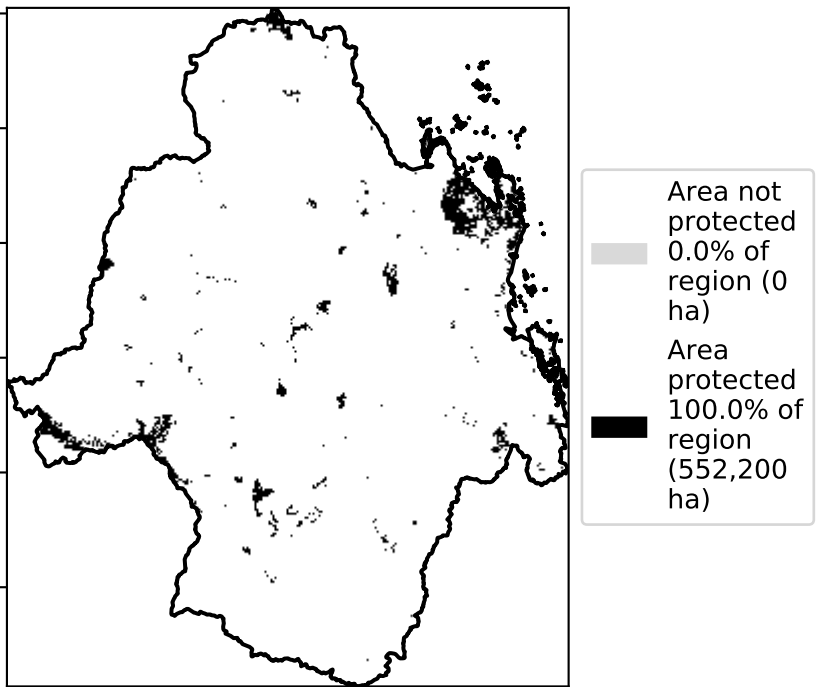
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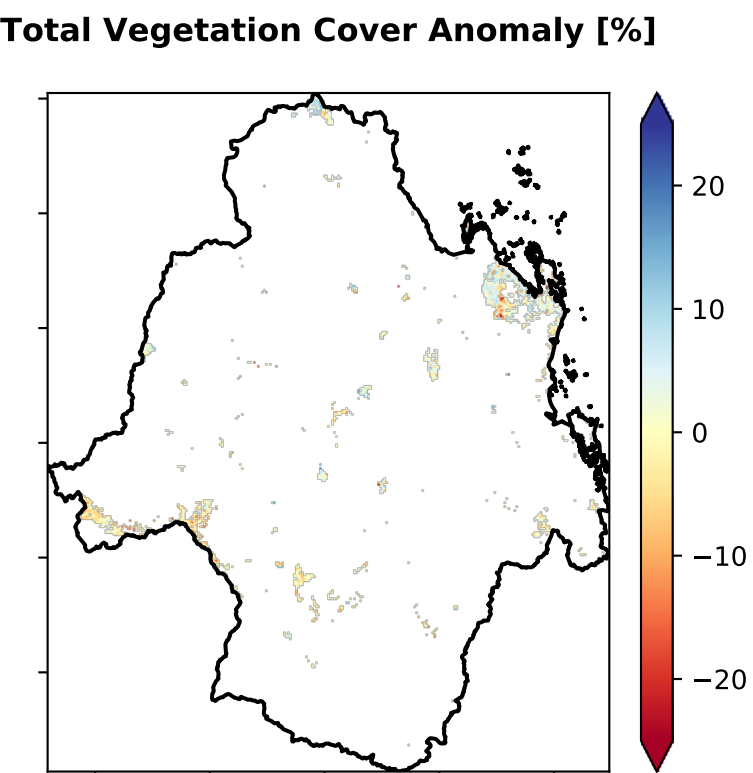
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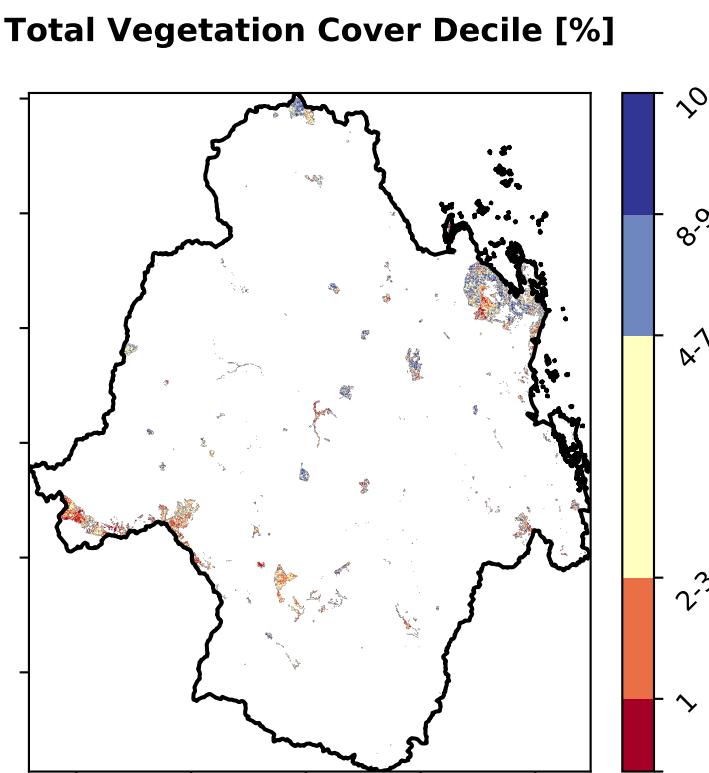
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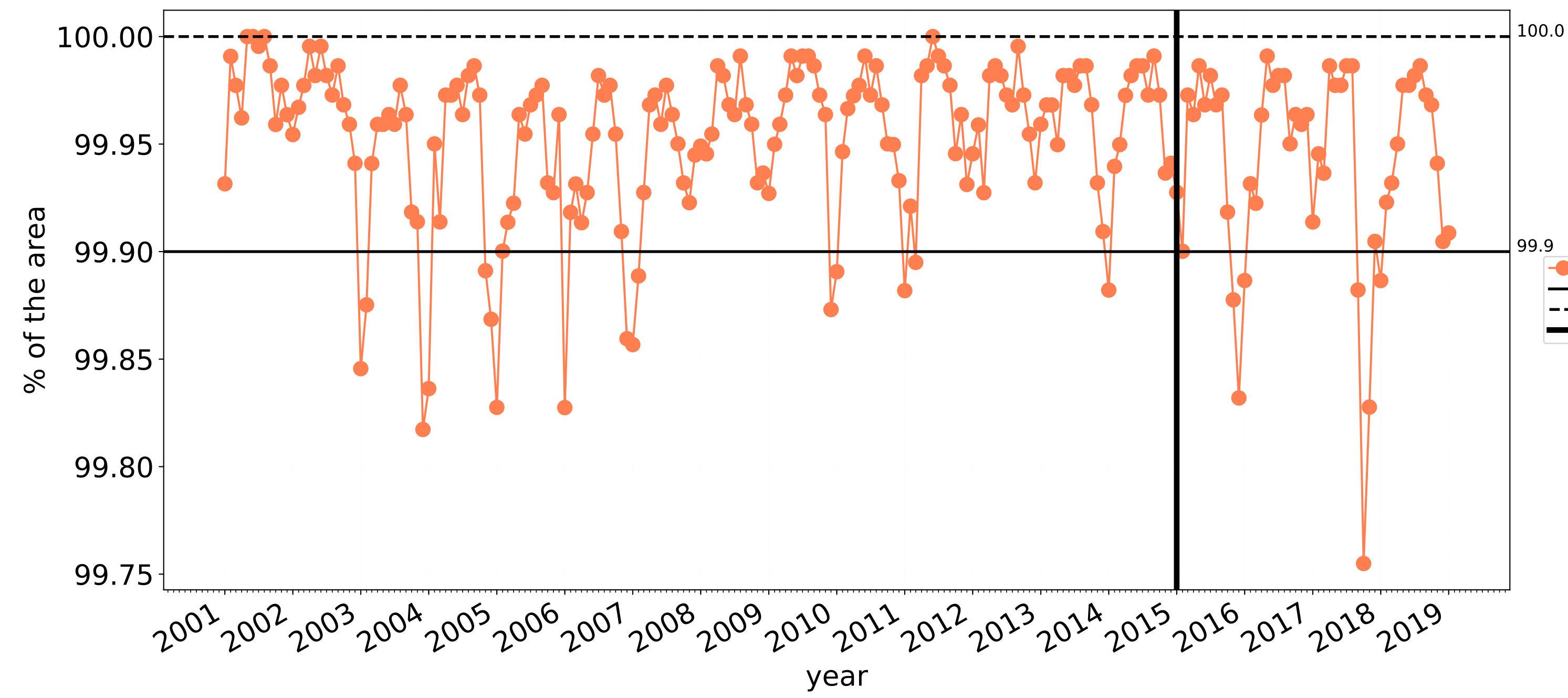
National
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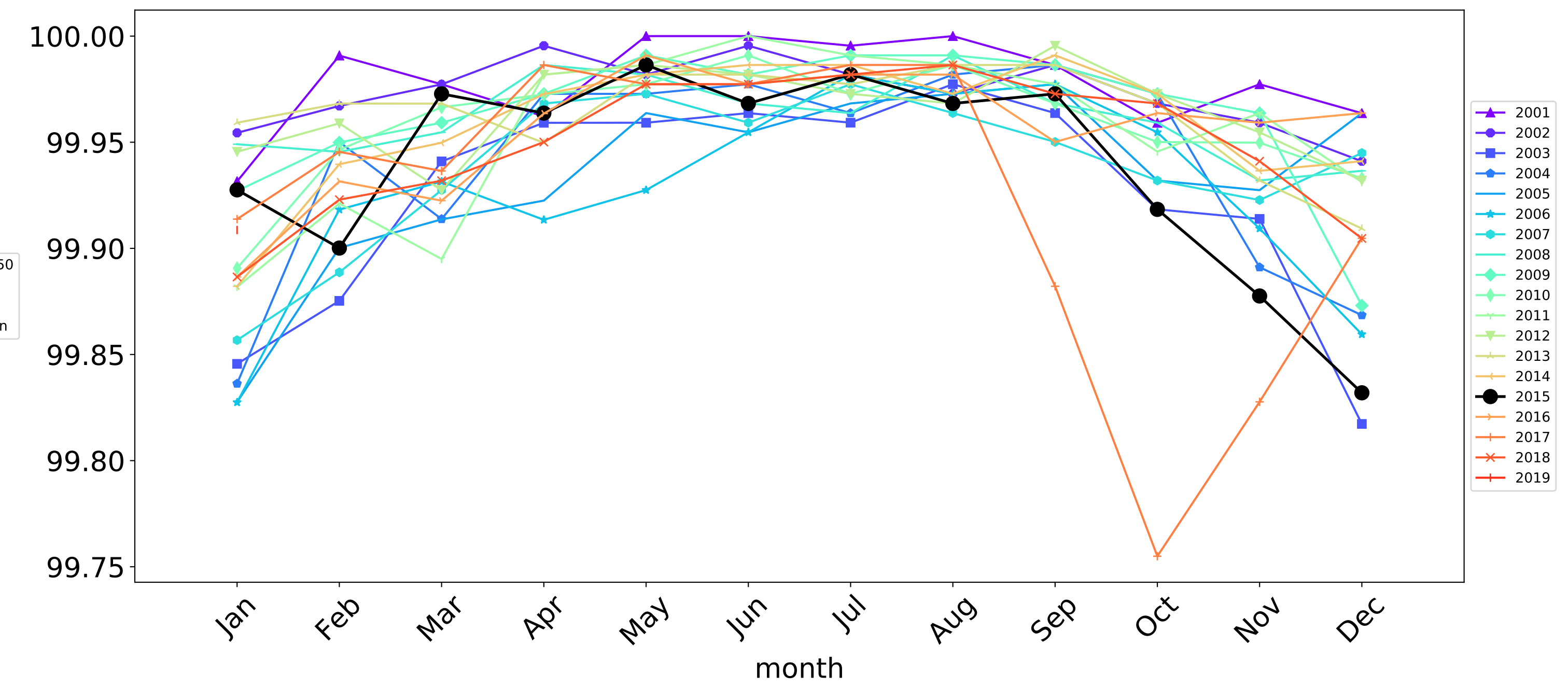
Planning,
Industry &
Environment

Conservation and natural environments Woodland forest timeseries

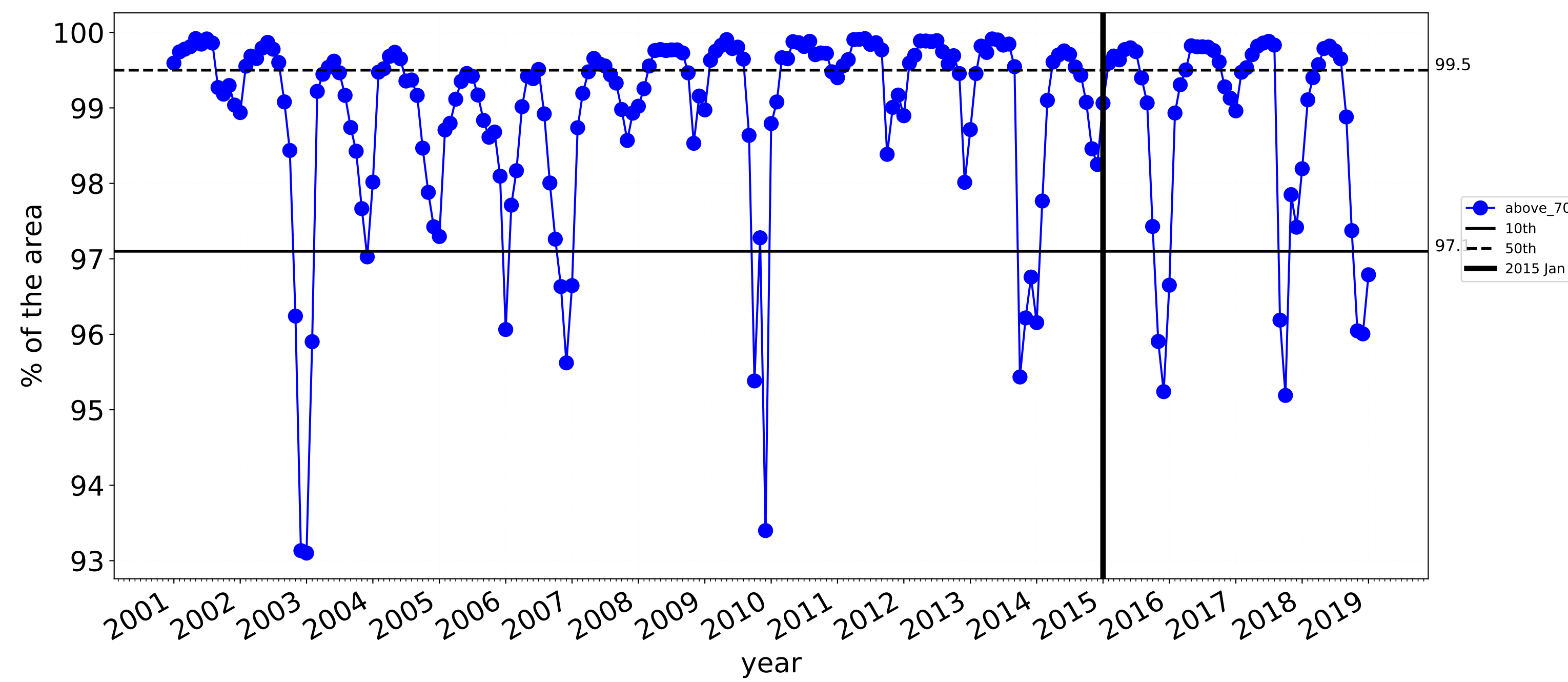
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



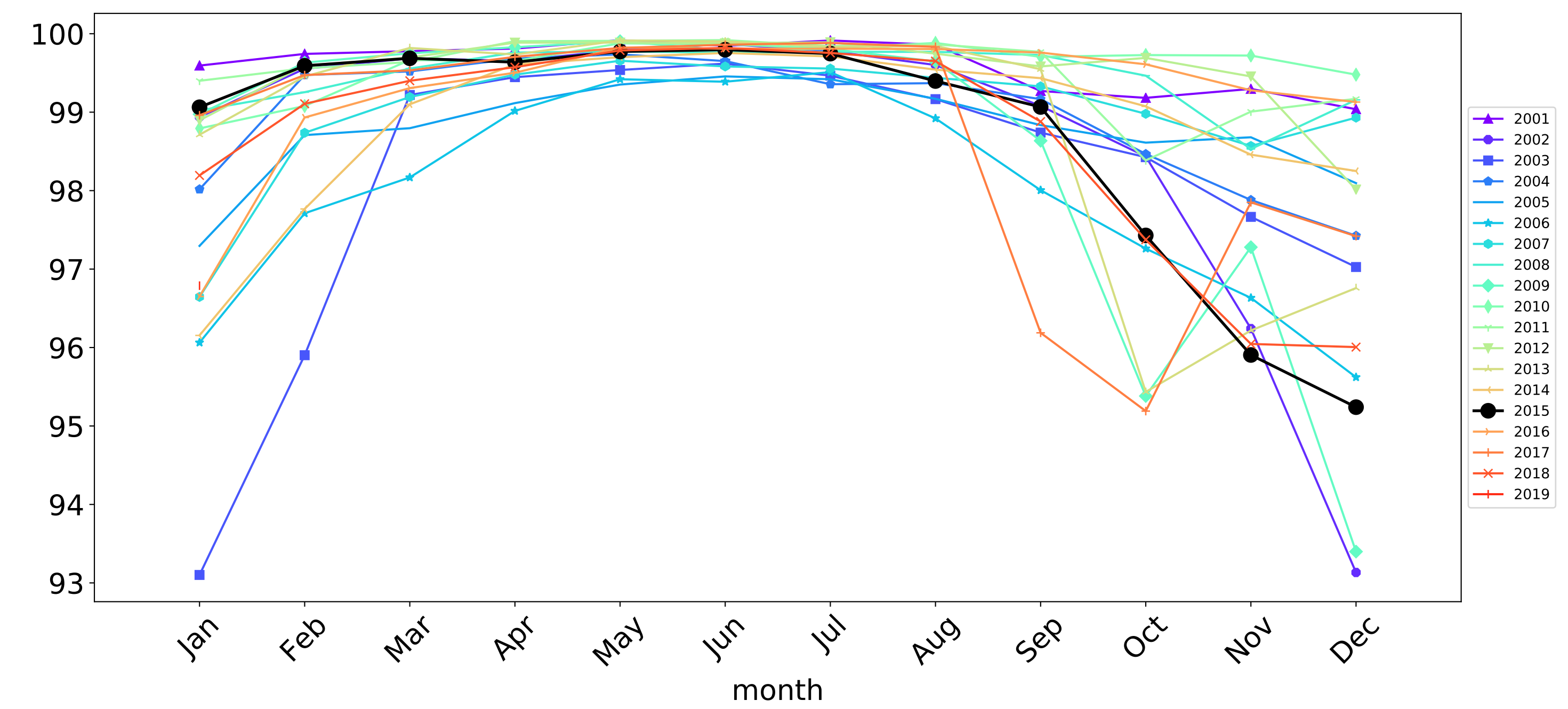
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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



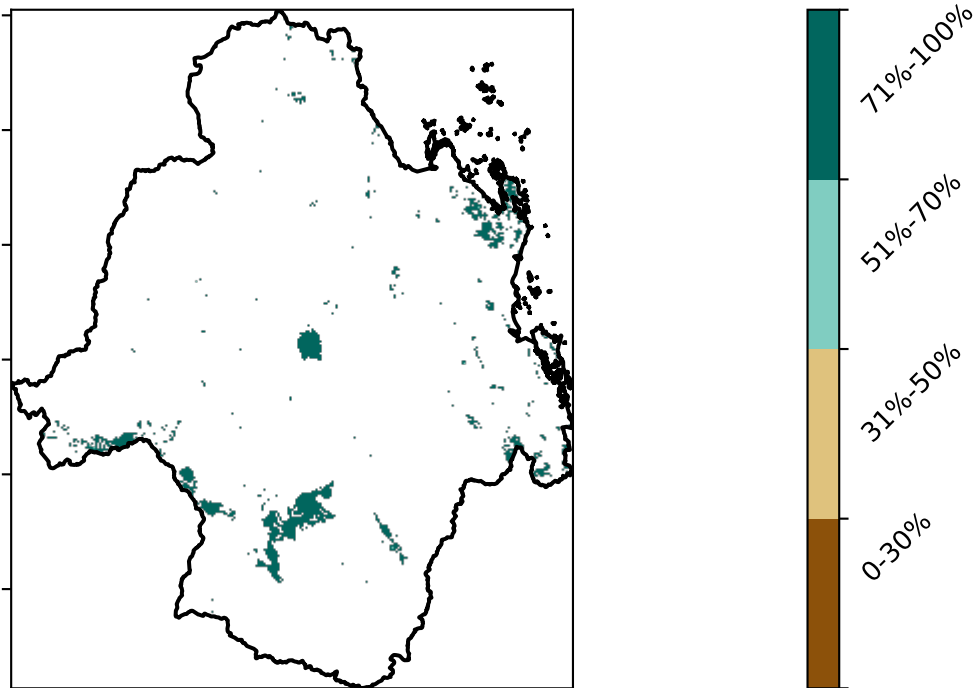
Conservation and natural environments Forest (non woodland)

Land use and forest cover

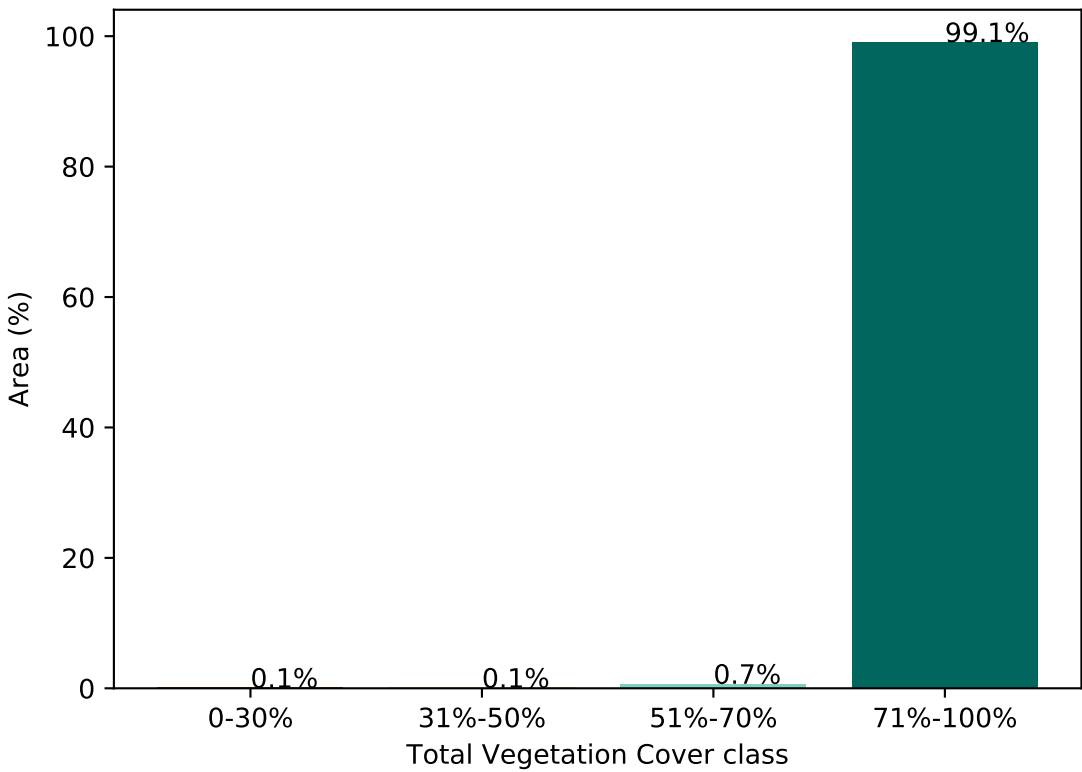
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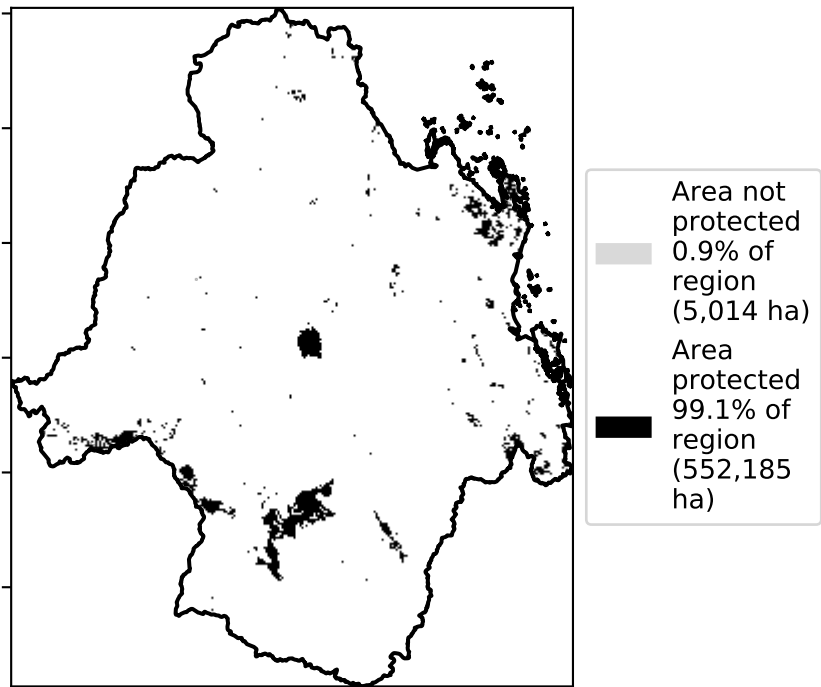
Total Vegetation Cover [%]



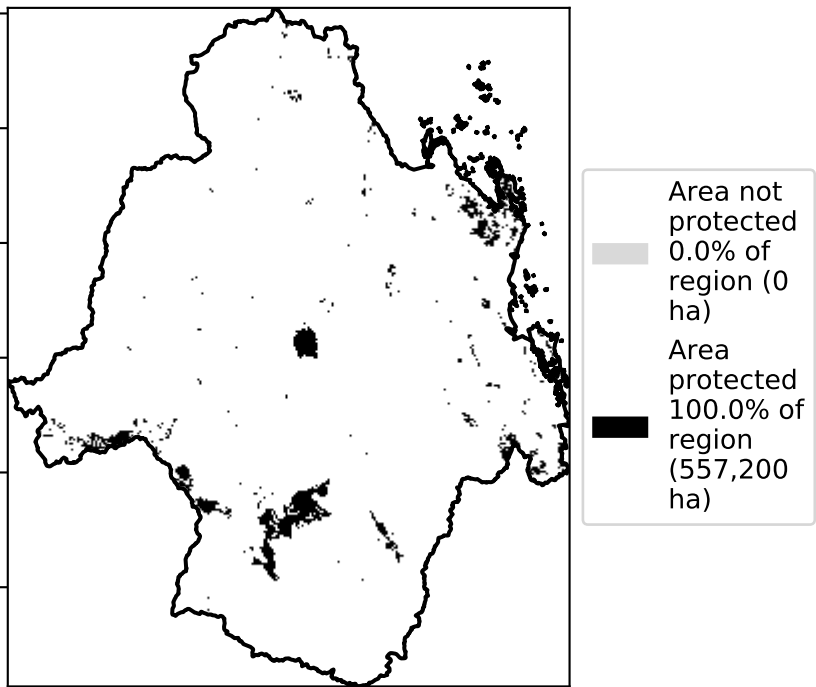
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

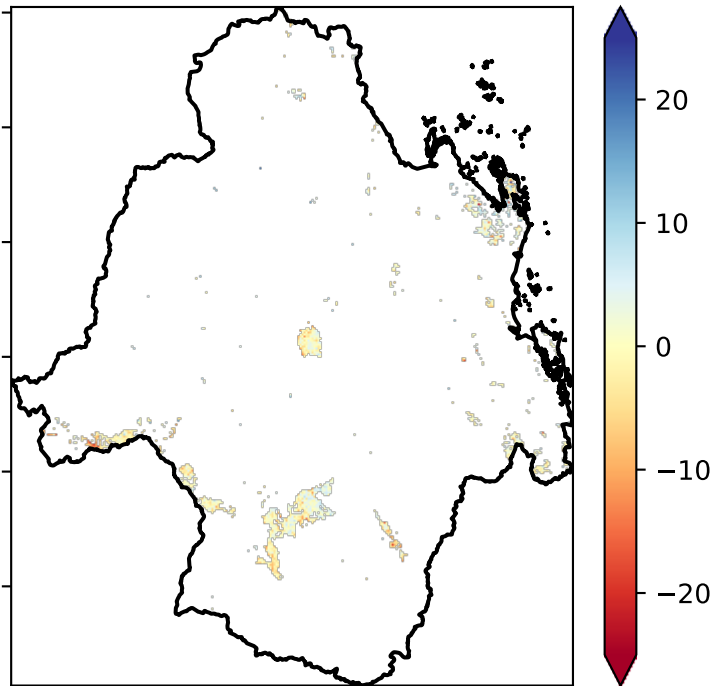


% Area protected from wind erosion (>50%)



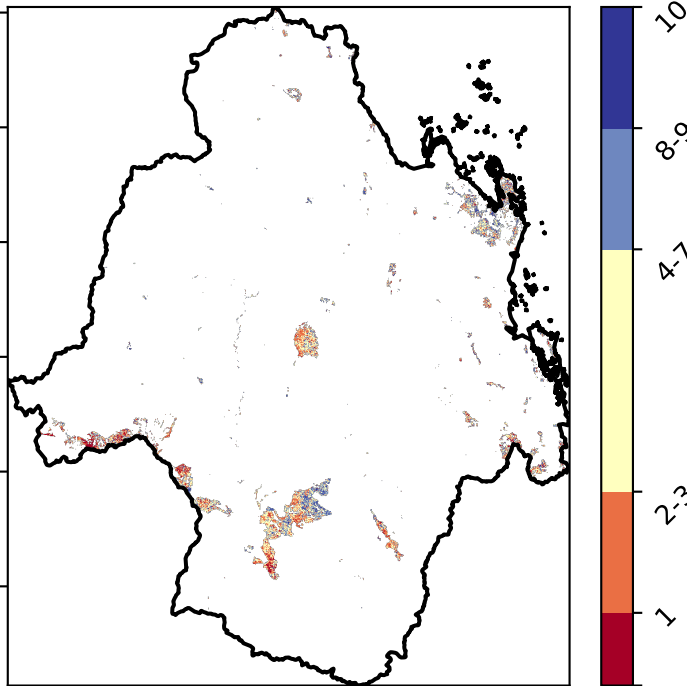
Total Vegetation Cover Anomaly [%]

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Total Vegetation Cover Decile [%]



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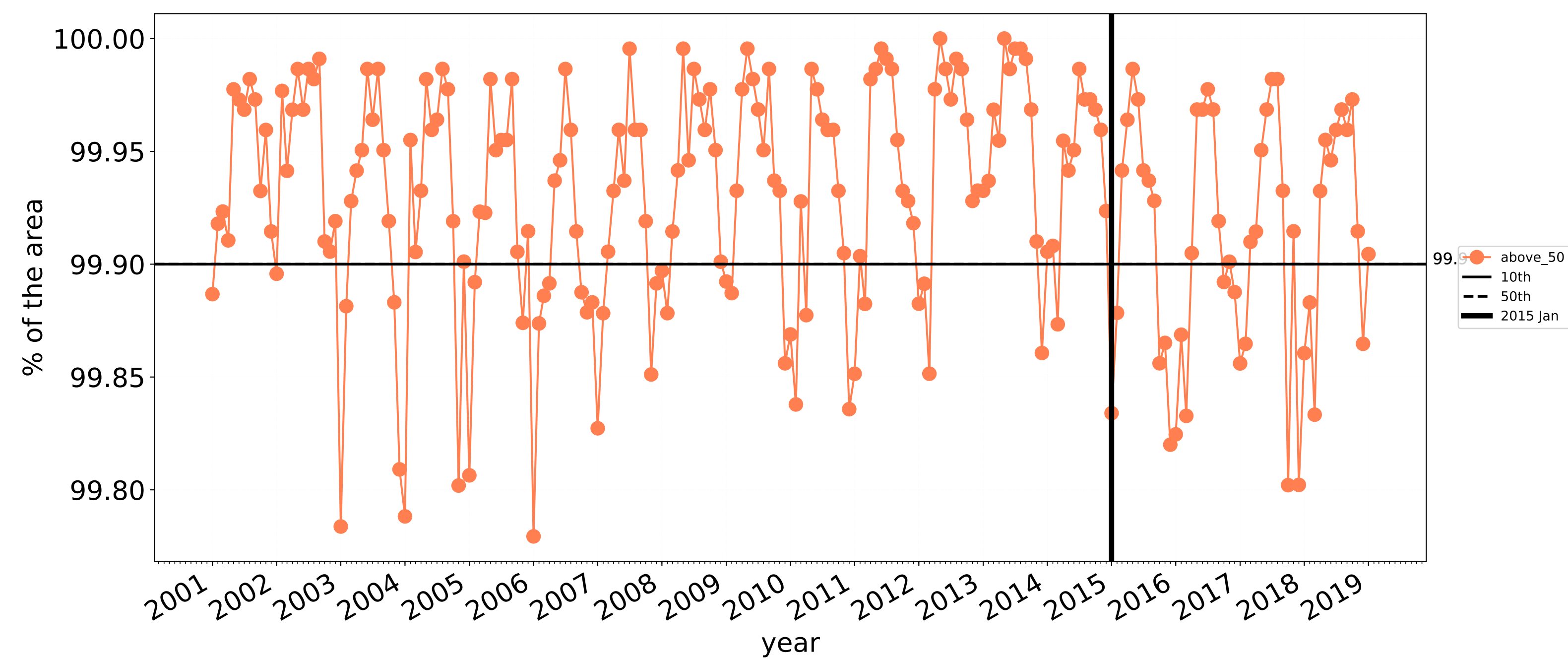
National Landcare Programme



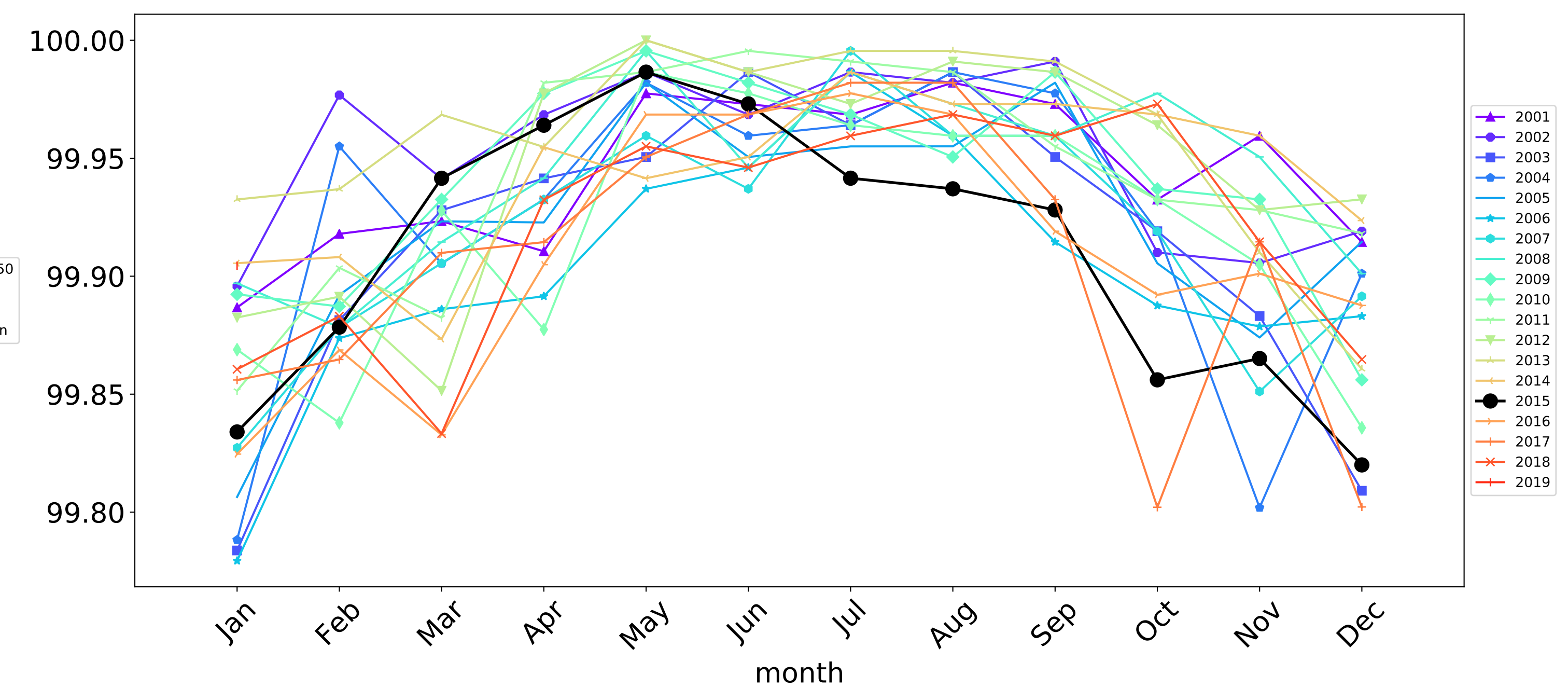
Planning, Industry & Environment

Conservation and natural environments Forest (non woodland) timeseries

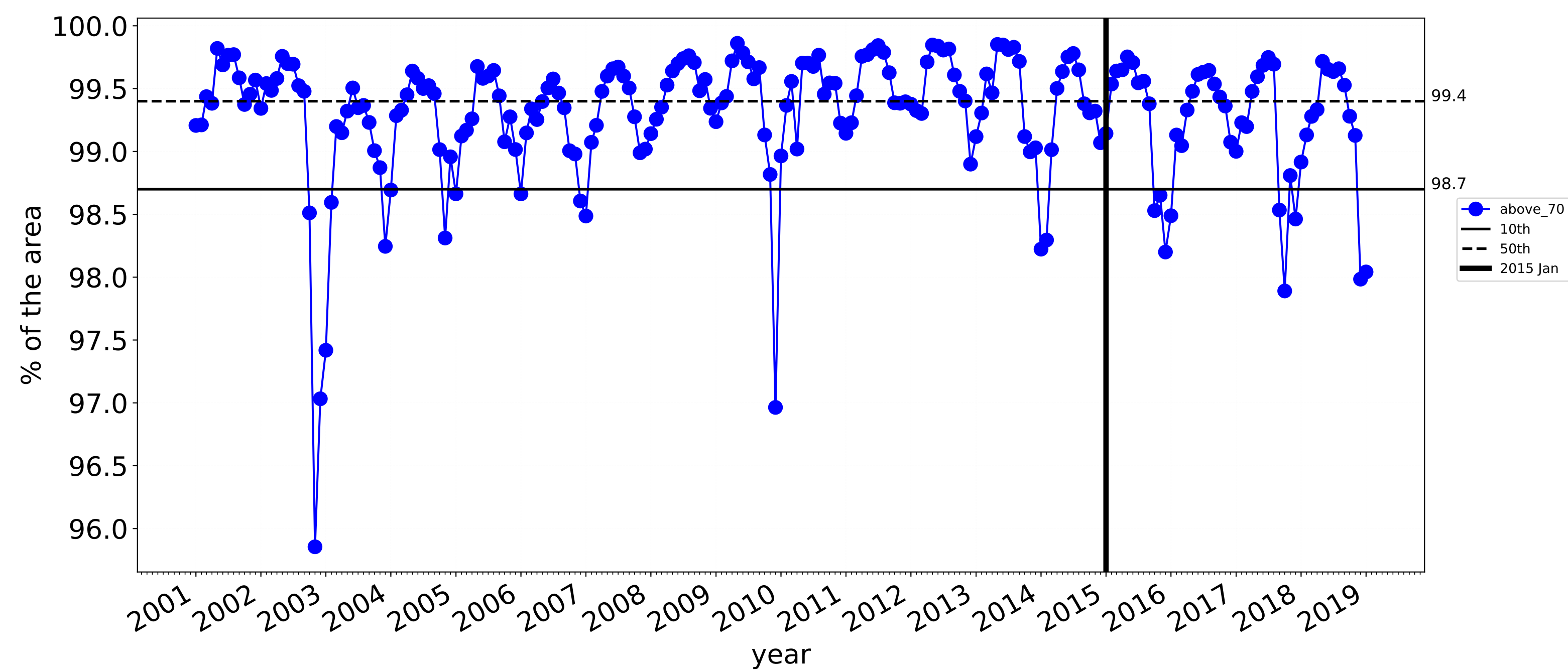
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



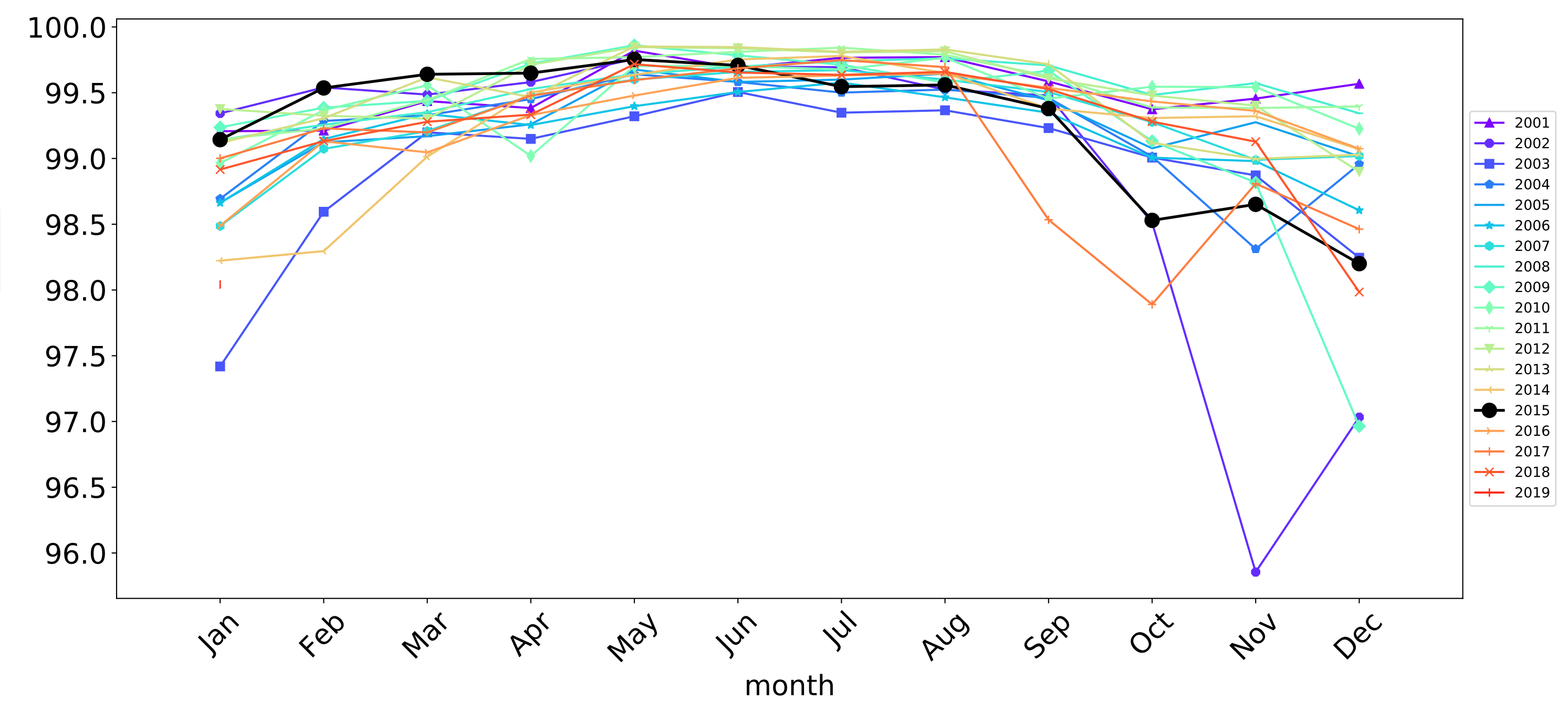
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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



Agriculture

Land use and forest cover



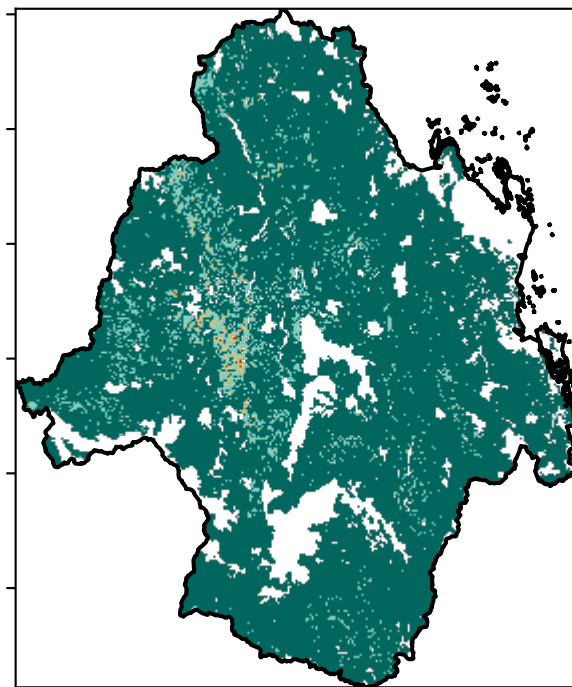
Catchment Scale
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- 1 Agriculture - Grazing - Non forest
- 2 Agriculture - Grazing - Woodland forest
- 3 Agriculture - Grazing - Non-woodland forest
- 4 Agriculture - Cropping - Non-irrigated
- 5 Agriculture - Cropping - Irrigated
- 6 Agriculture - Horticulture - Non-irrigated
- 7 Agriculture - Horticulture - Irrigated

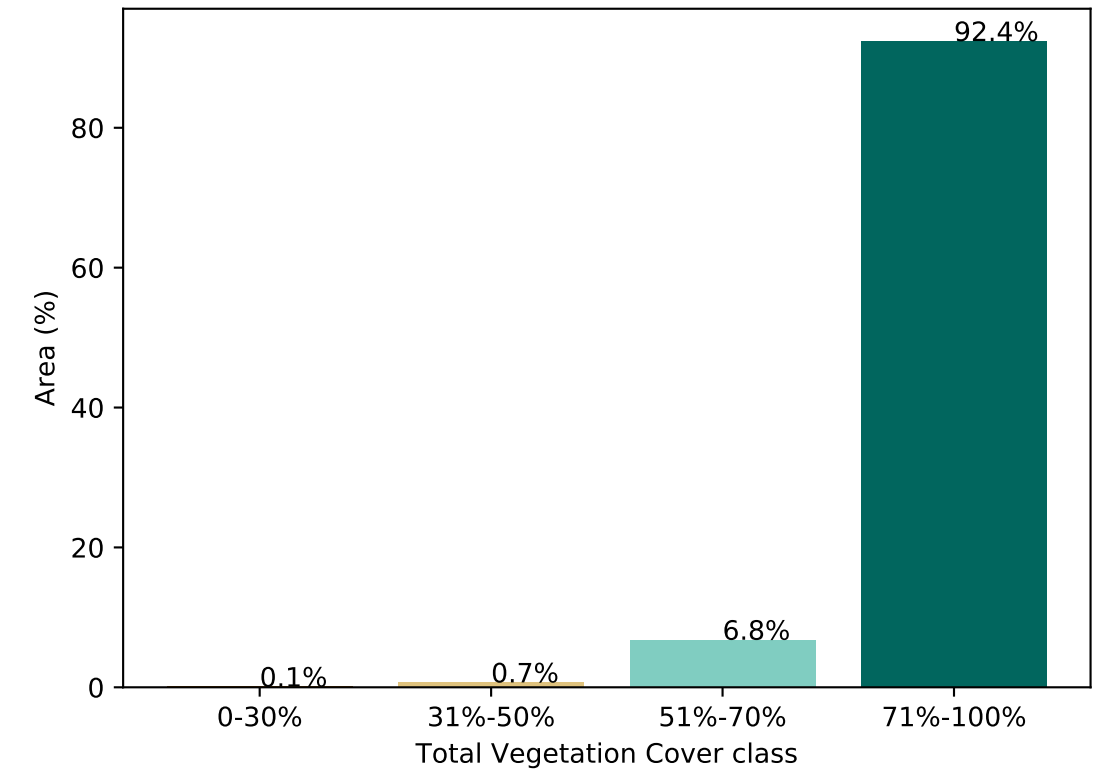
Proportion of each land class in area



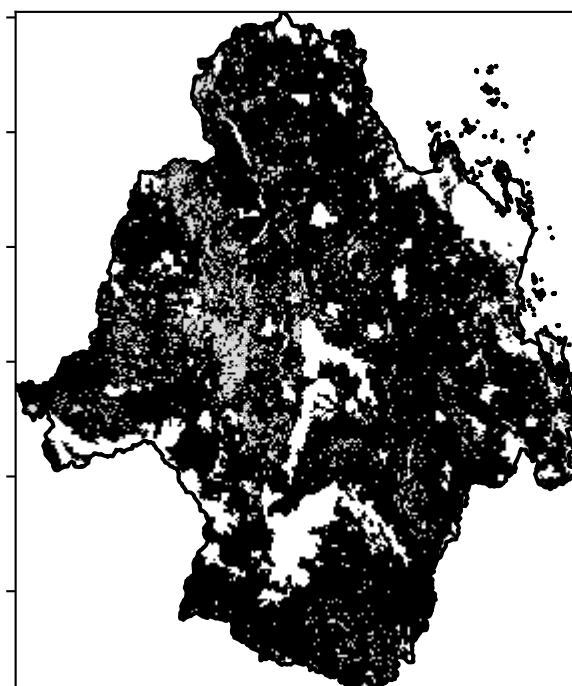
Total Vegetation Cover [%]



Proportion of vegetation cover class in area

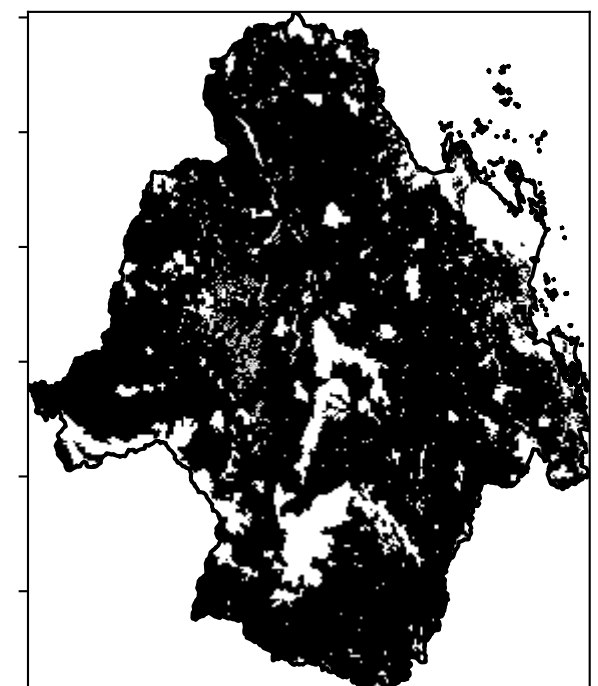


% Area protected from water erosion (>70%)



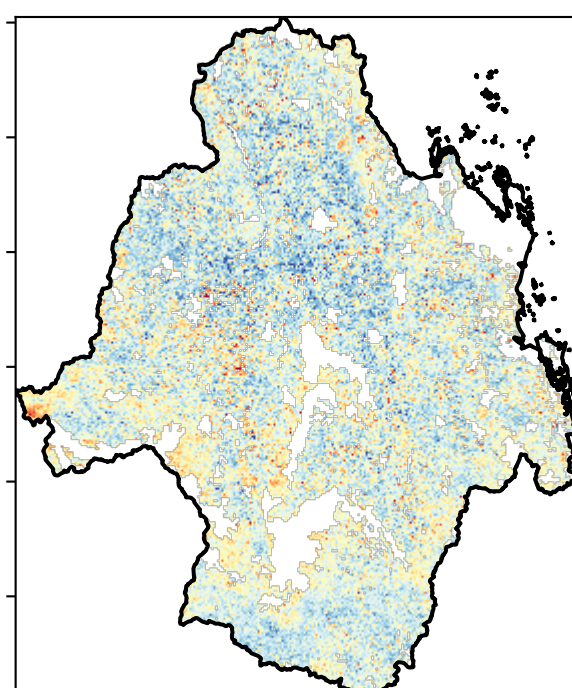
- Area not protected
7.6% of
region
(995,552
ha)
- Area protected
92.4% of
region (12
,103,822
ha)

% Area protected from wind erosion (>50%)



- Area not protected
1.0% of
region
(130,993
ha)
- Area protected
99.0% of
region (12
,968,381
ha)

Total Vegetation Cover Anomaly [%]

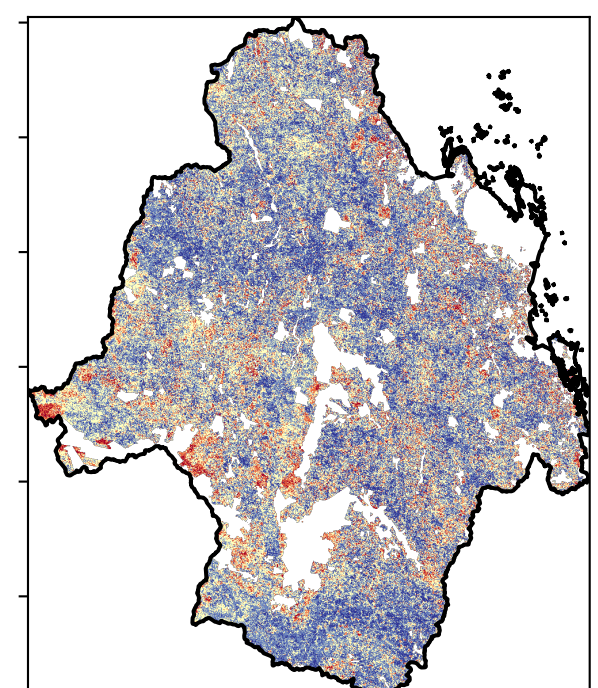


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Total Vegetation Cover Decile [%]



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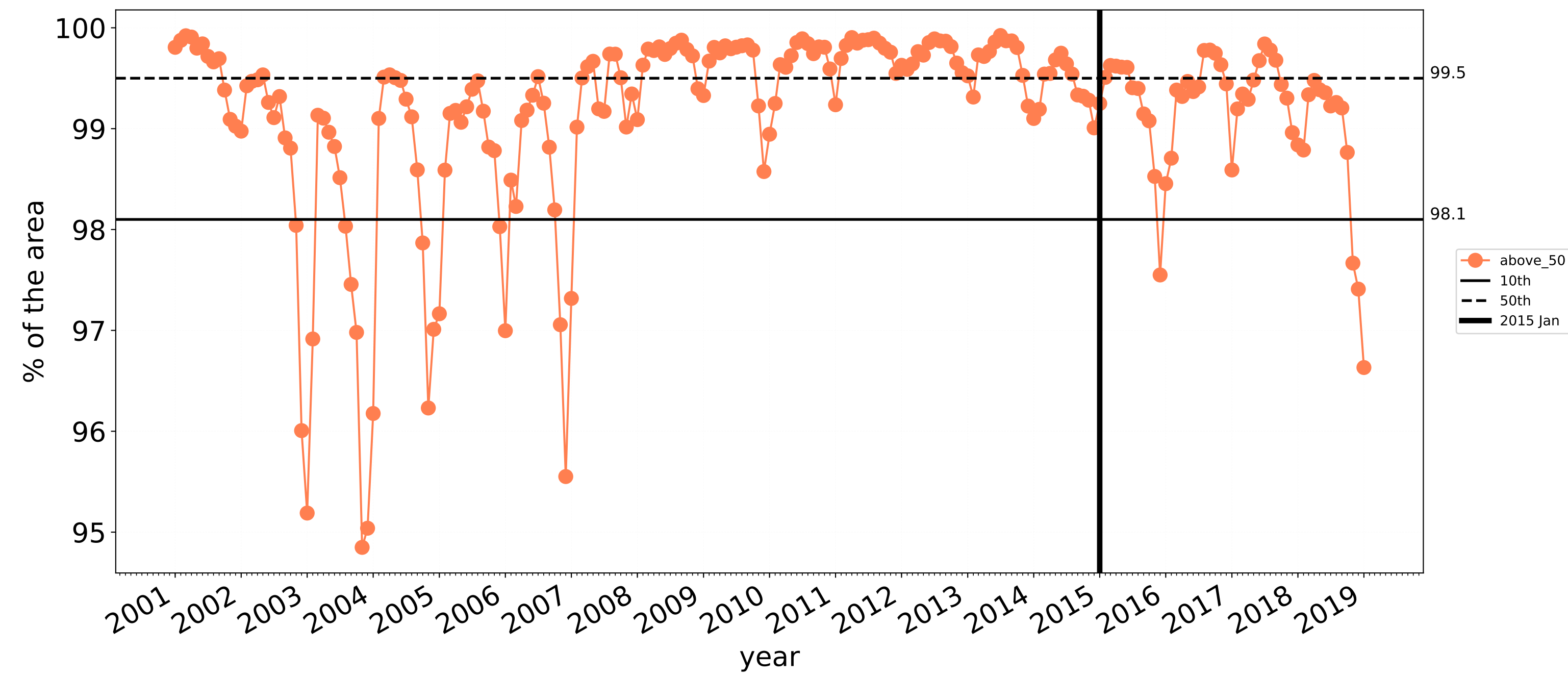
National
Landcare
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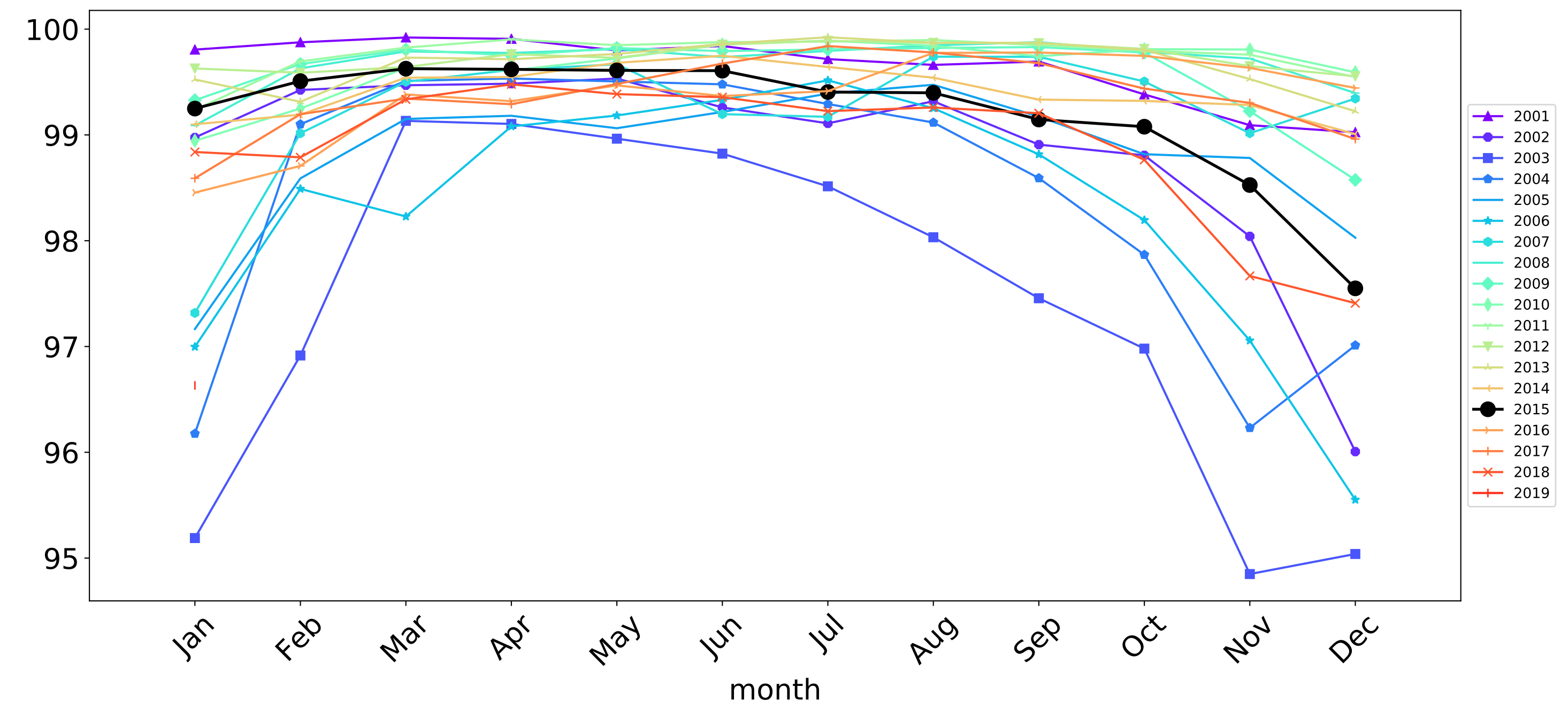
Planning,
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Agriculture timeseries

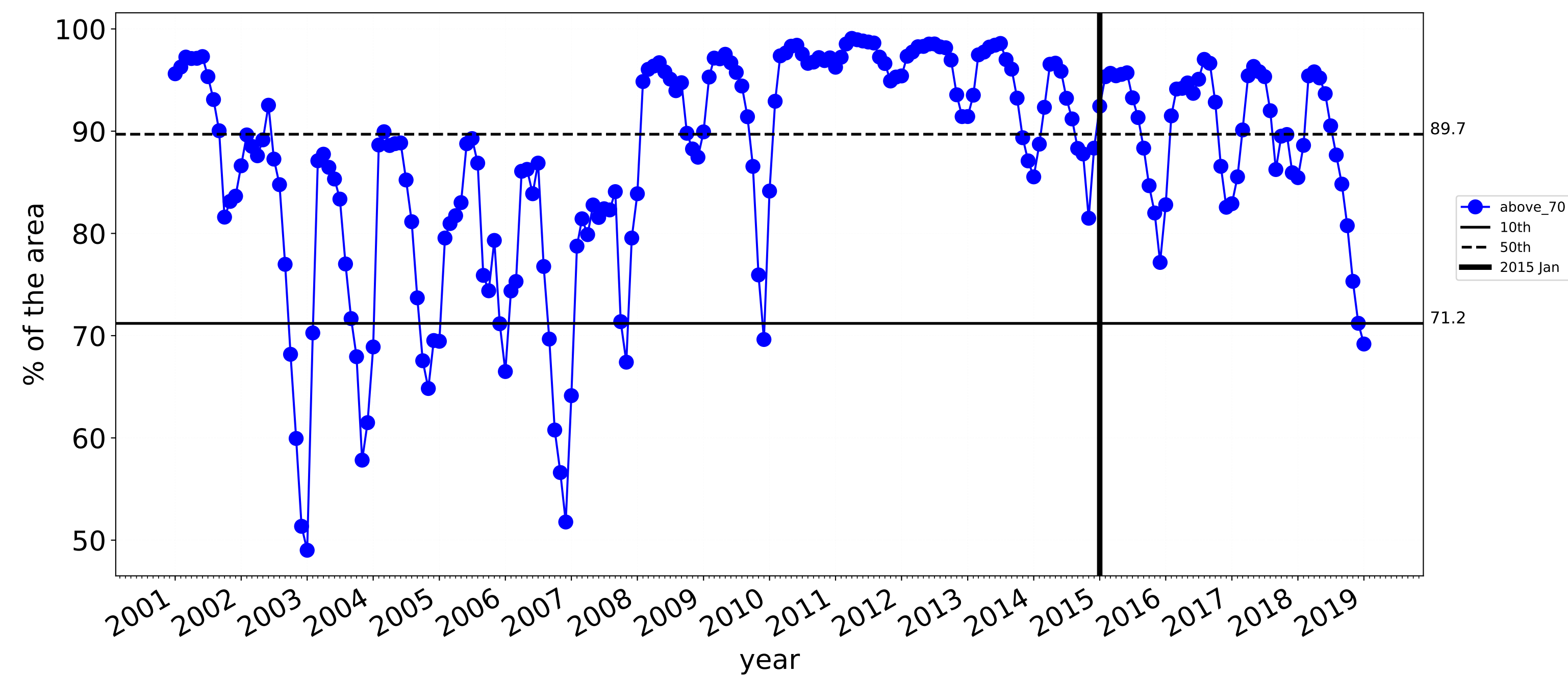
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



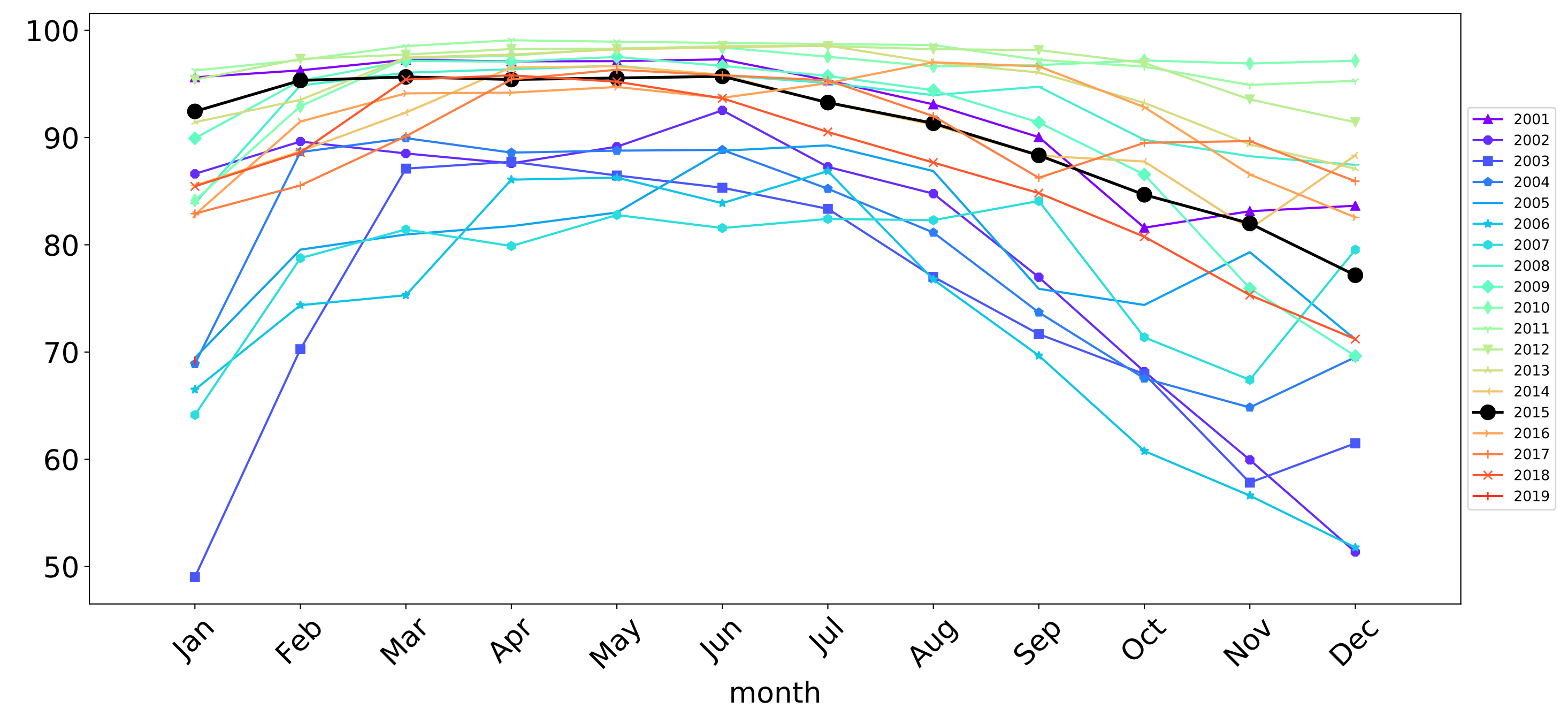
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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



Grazing

Land use and forest cover

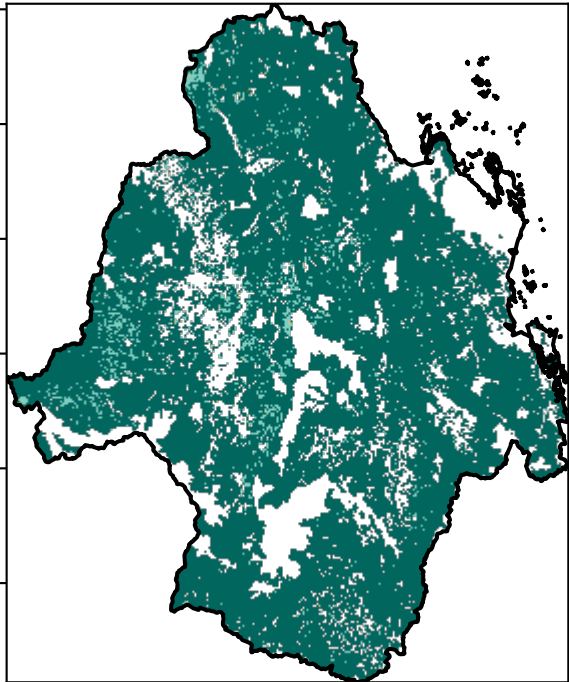
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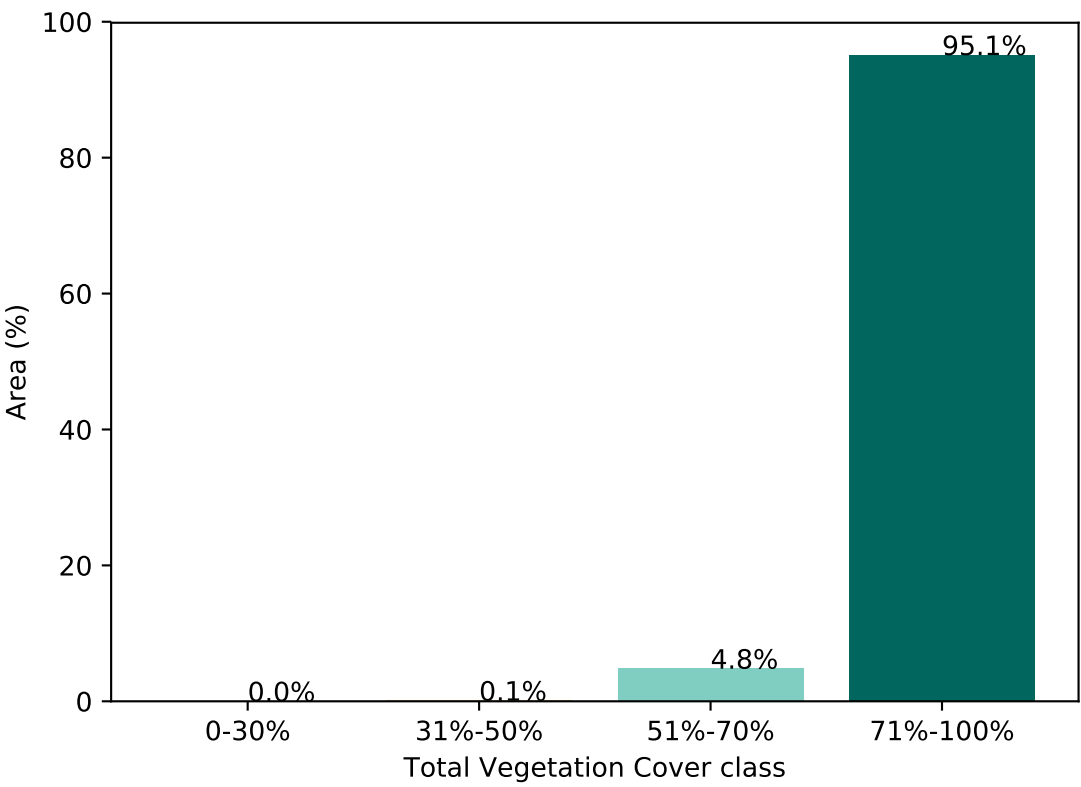
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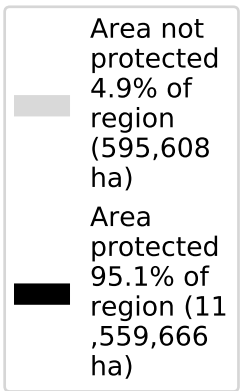
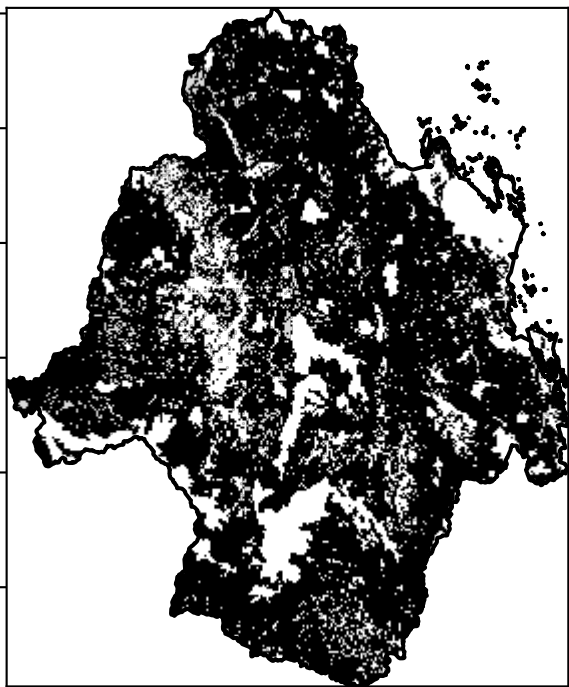
Total Vegetation Cover [%]



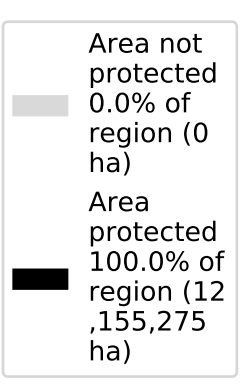
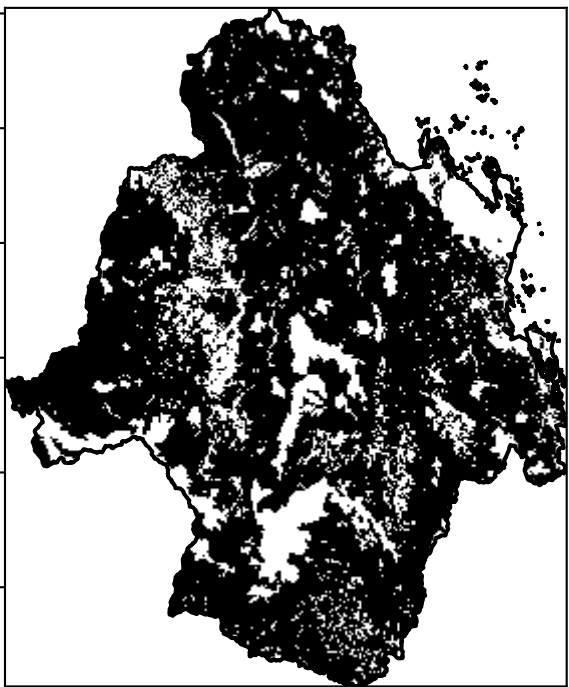
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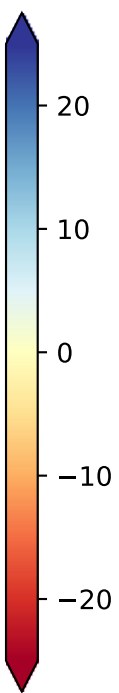
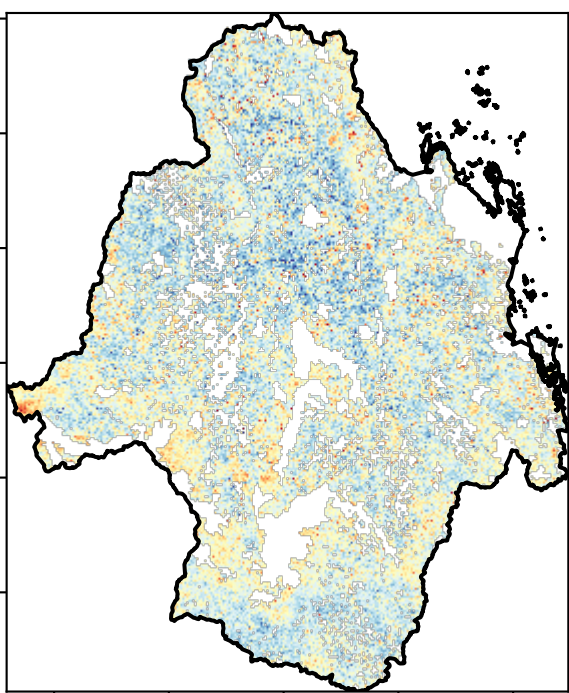


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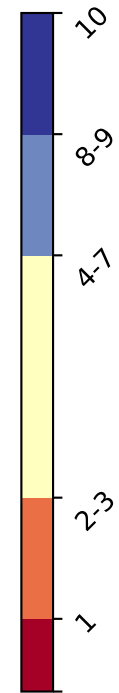
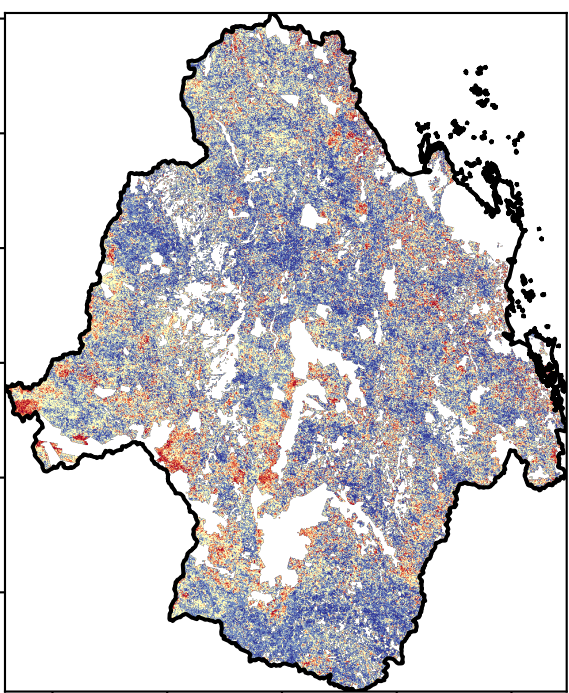
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Total Vegetation Cover Decile [%]



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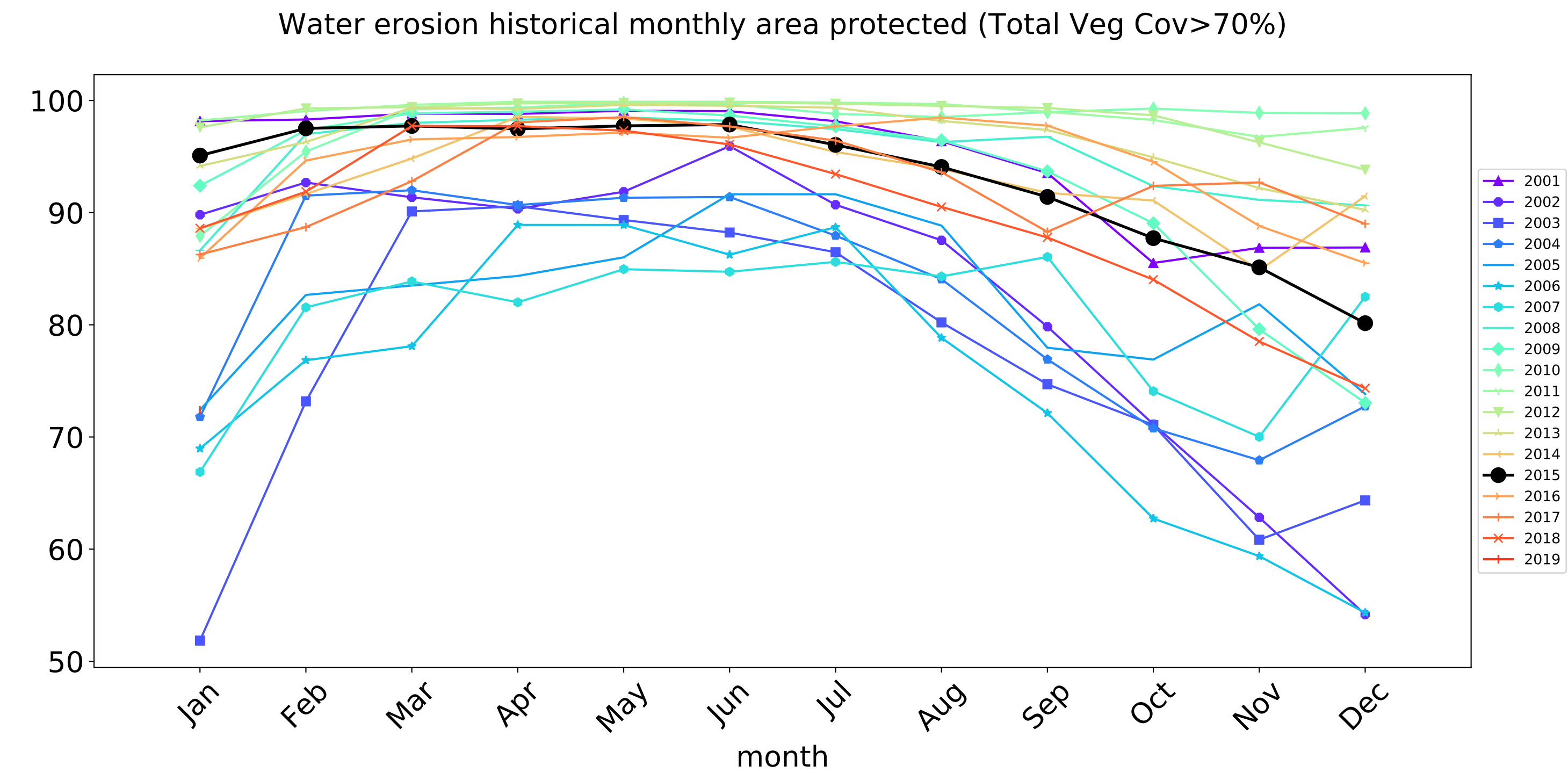
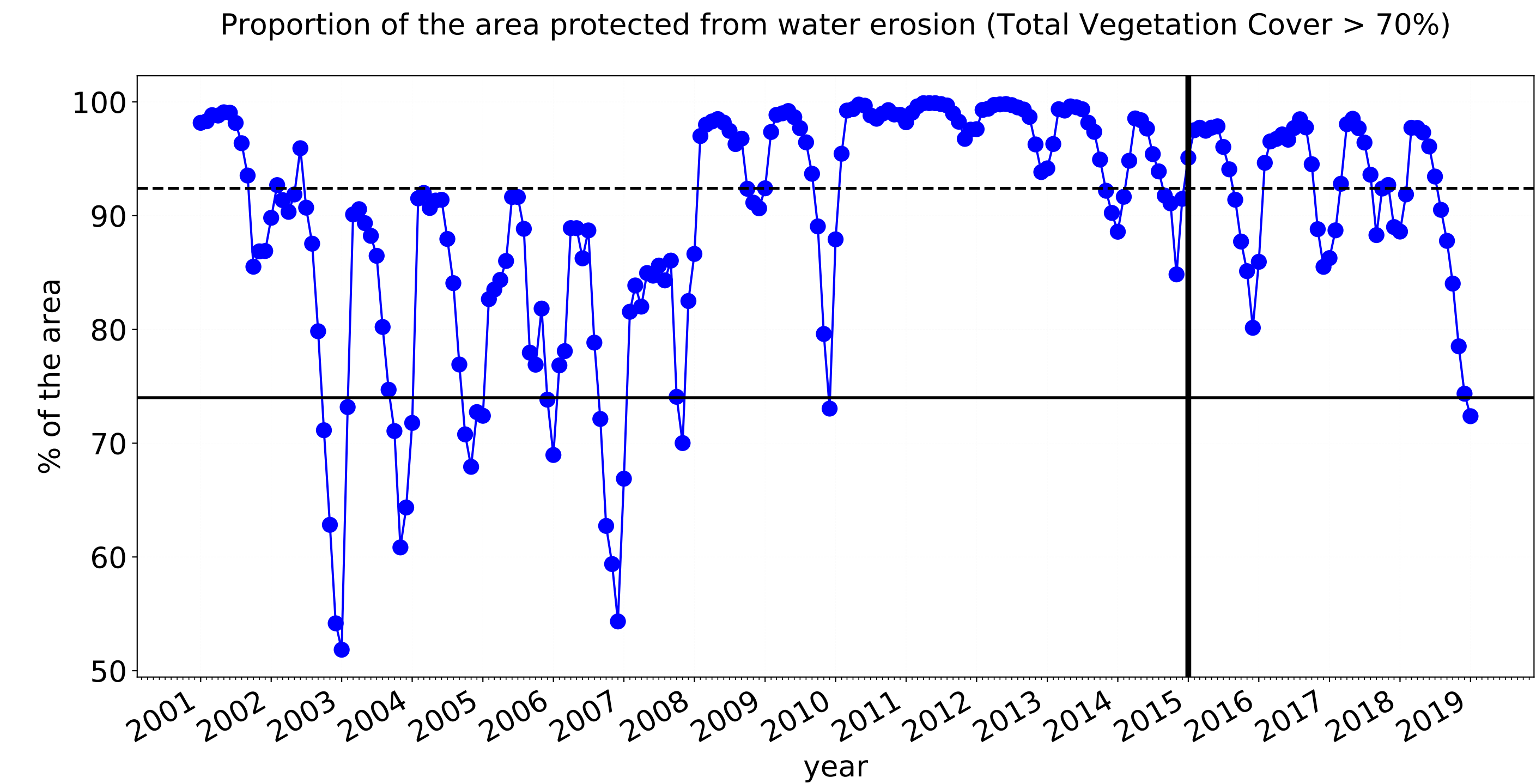
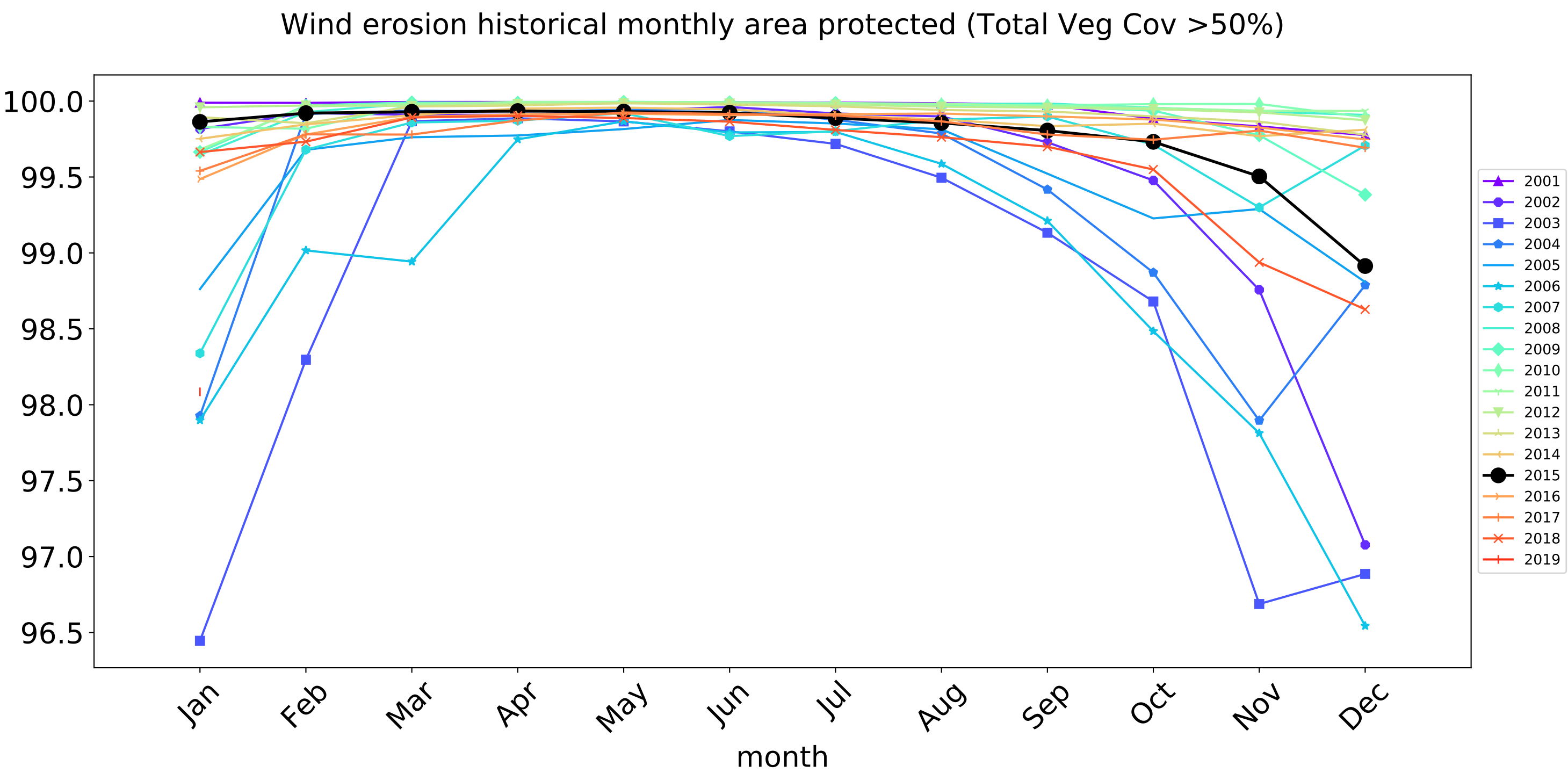
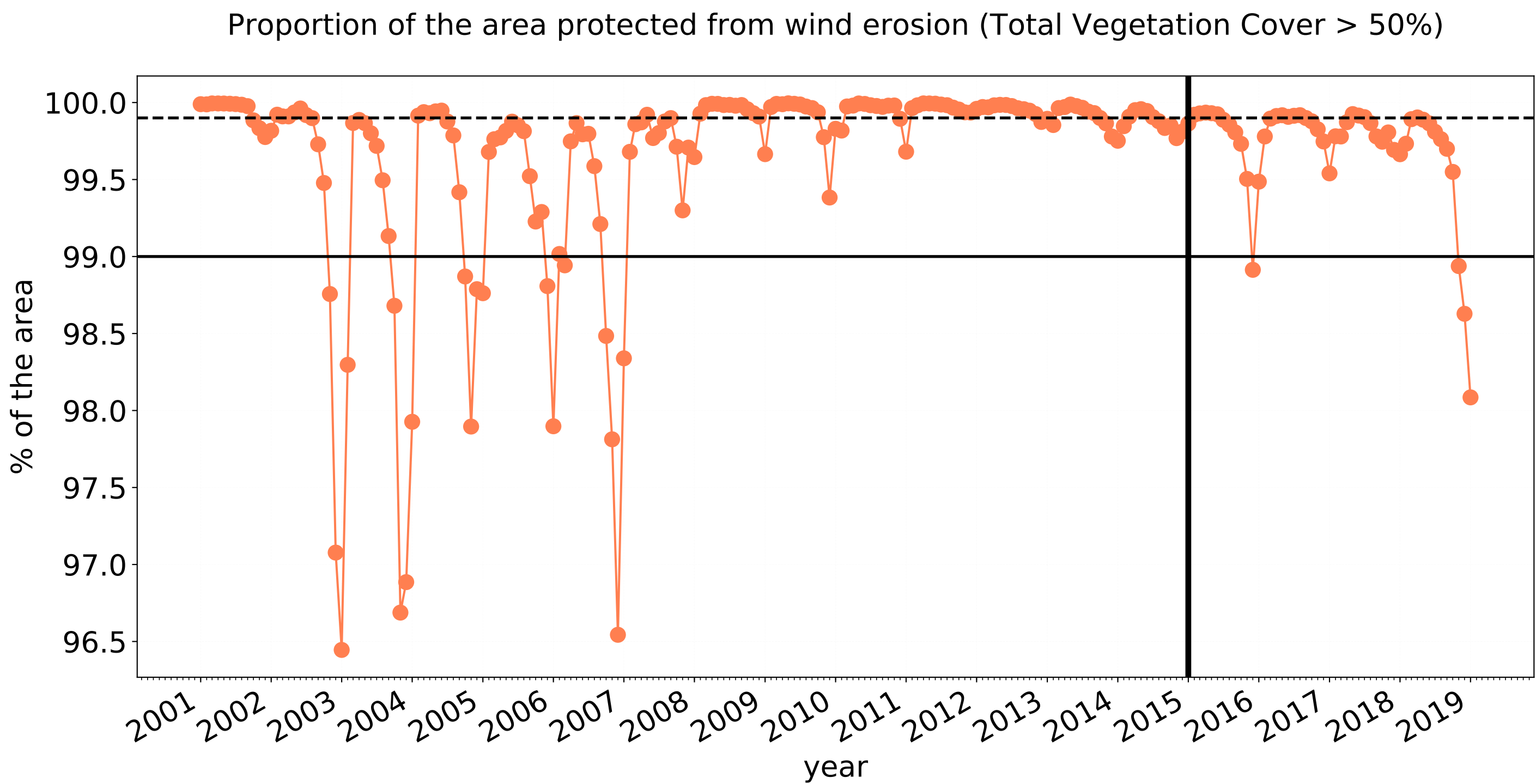


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Planning,
Industry &
Environment

Grazing timeseries



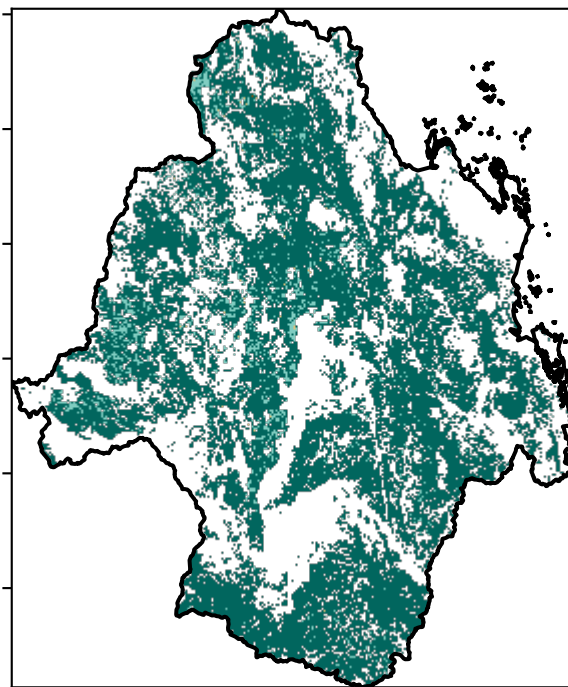
Grazing non forest

Land use and forest cover

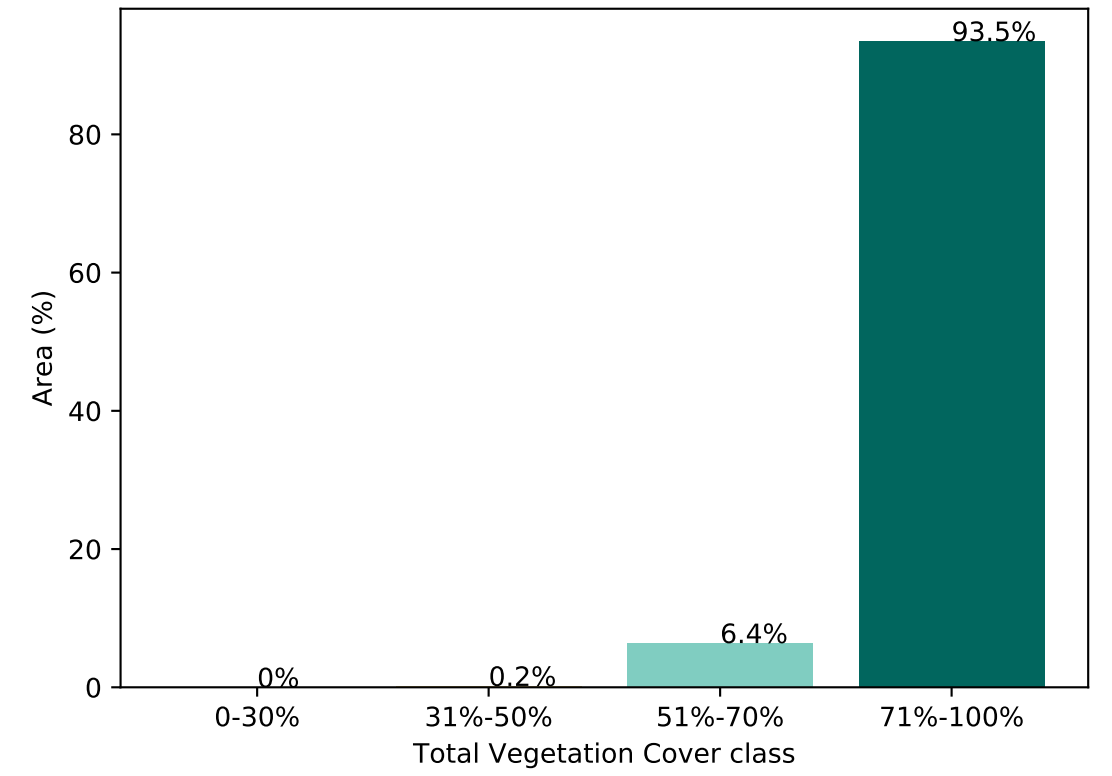


Catchment Scale
Land Use and Forests
of Australia (2018)
Derived from
Catchment Scale Land
Use of Australia
(2018) and Forests
of Australia (2018)

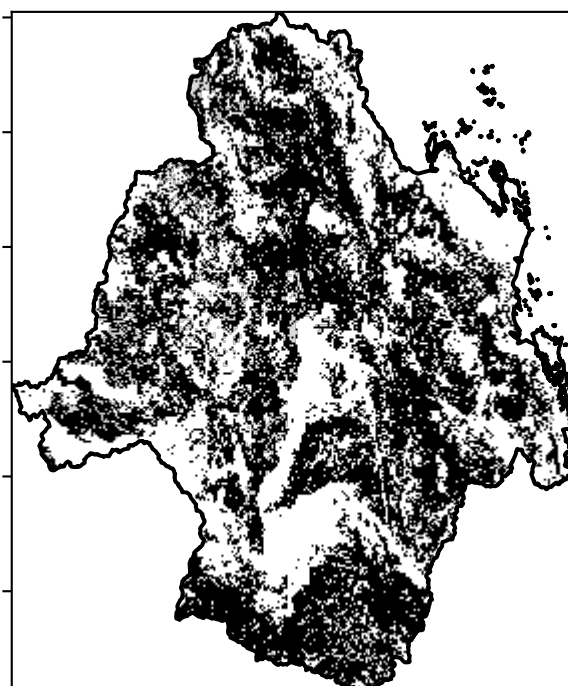
Total Vegetation Cover [%]



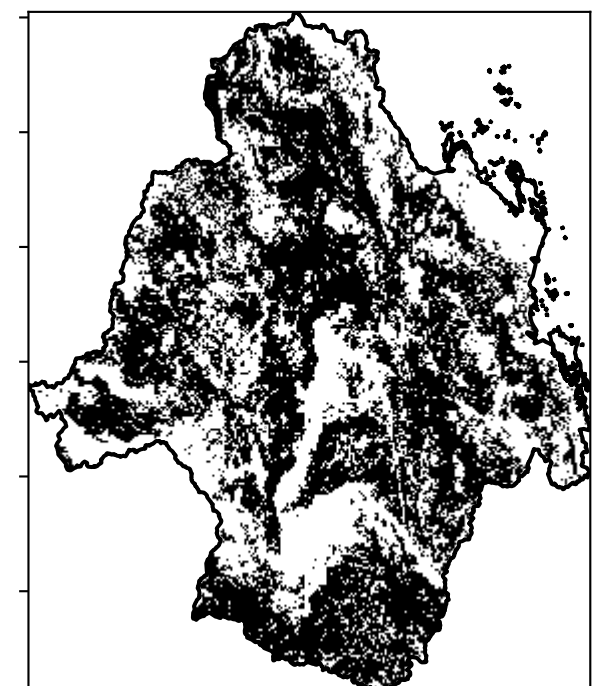
Proportion of vegetation cover class in area



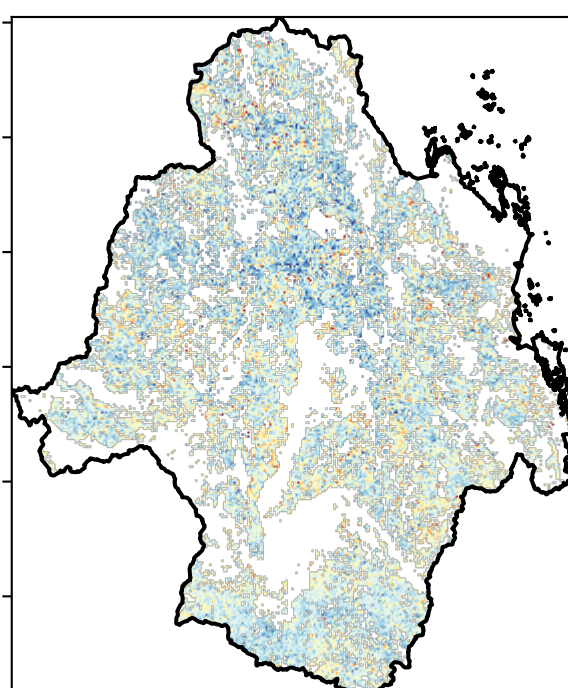
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)



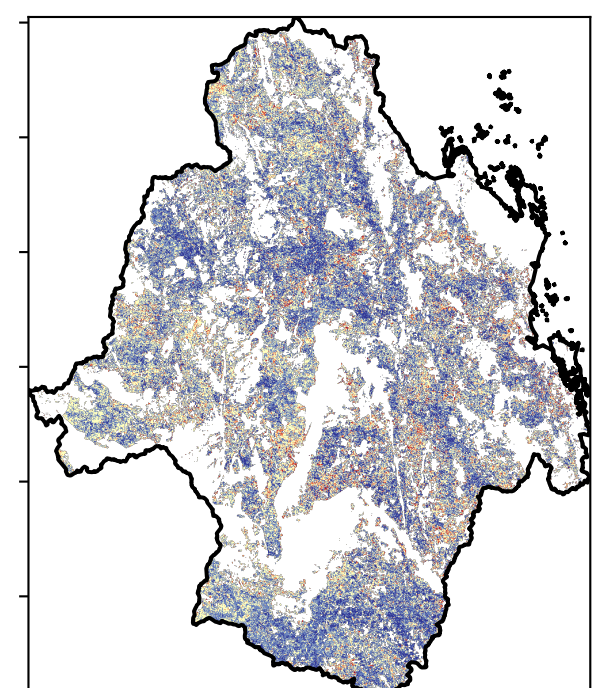
Total Vegetation Cover Anomaly [%]



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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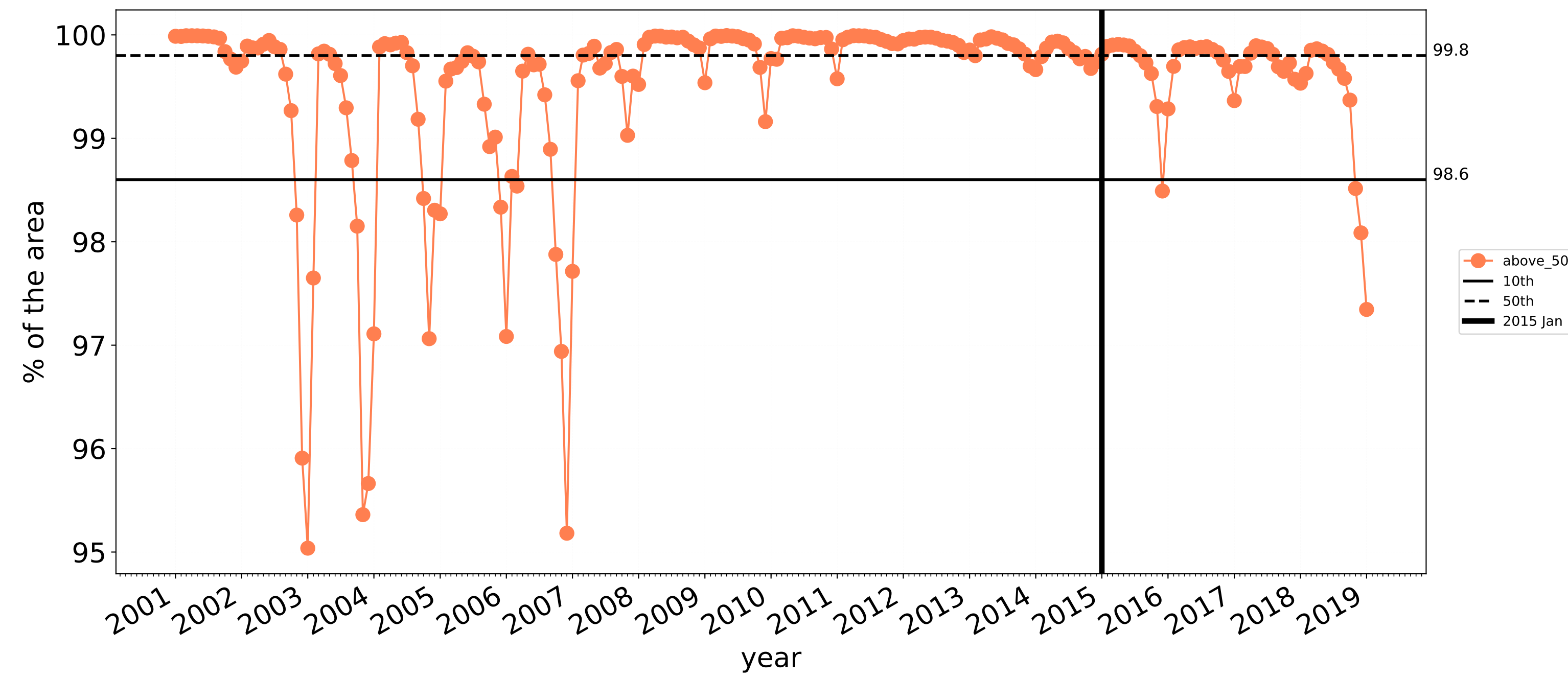
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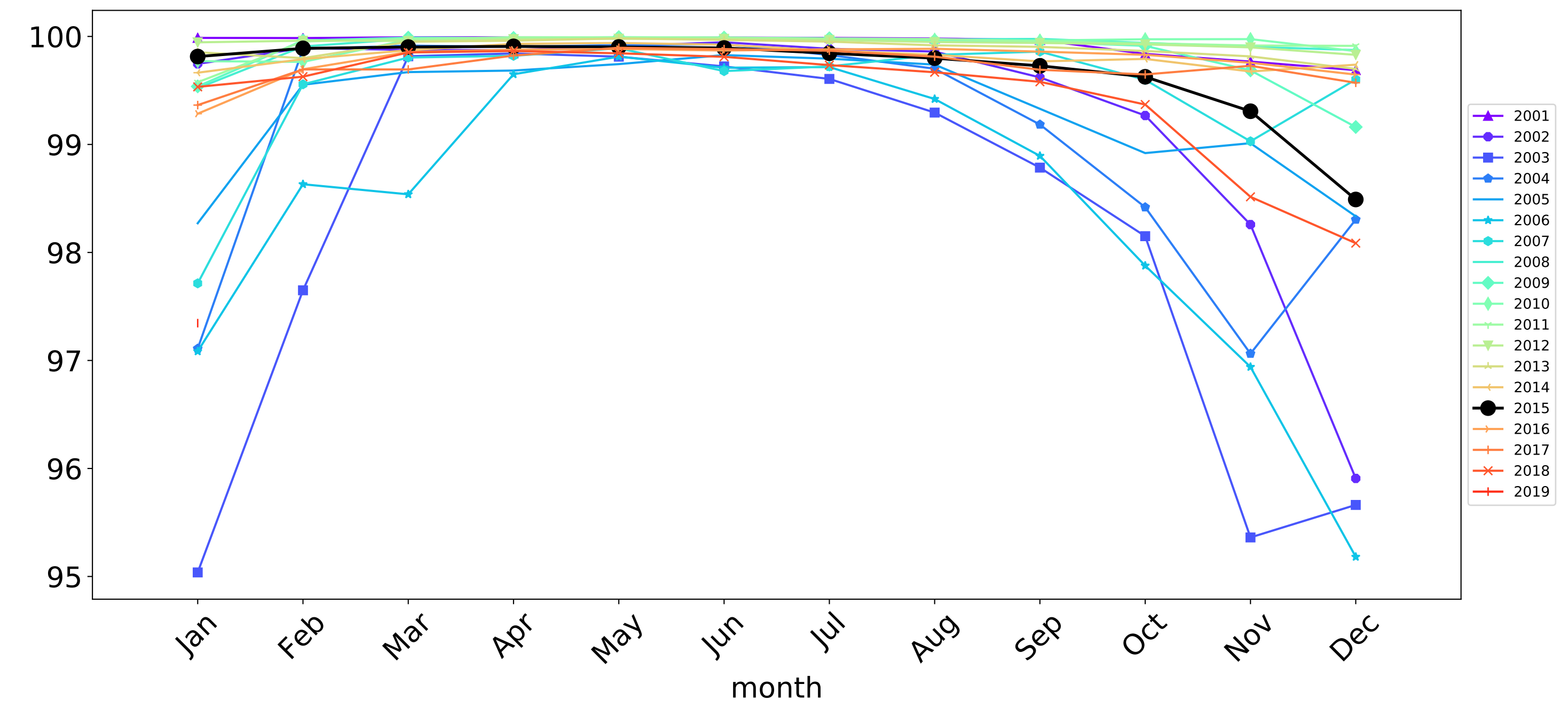
Planning,
Industry &
Environment

Grazing non forest timeseries

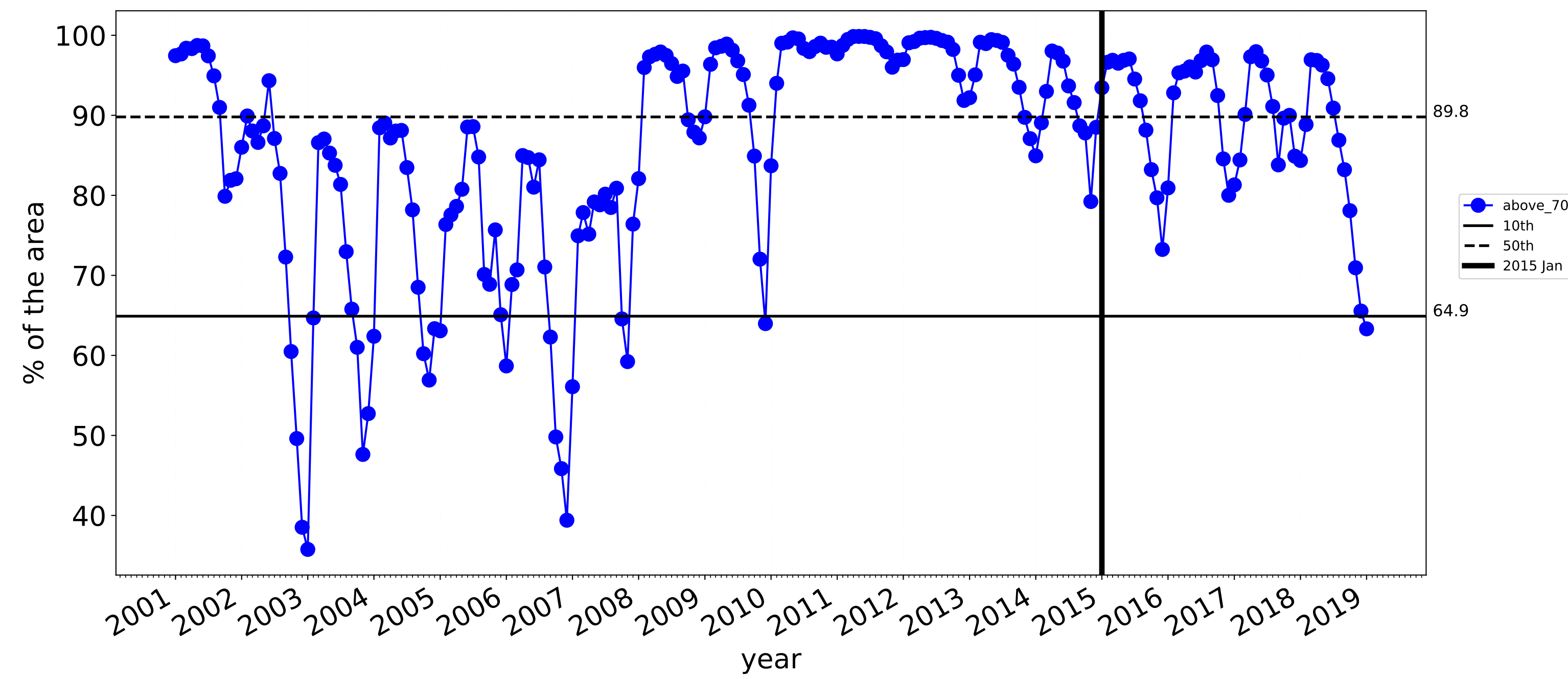
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



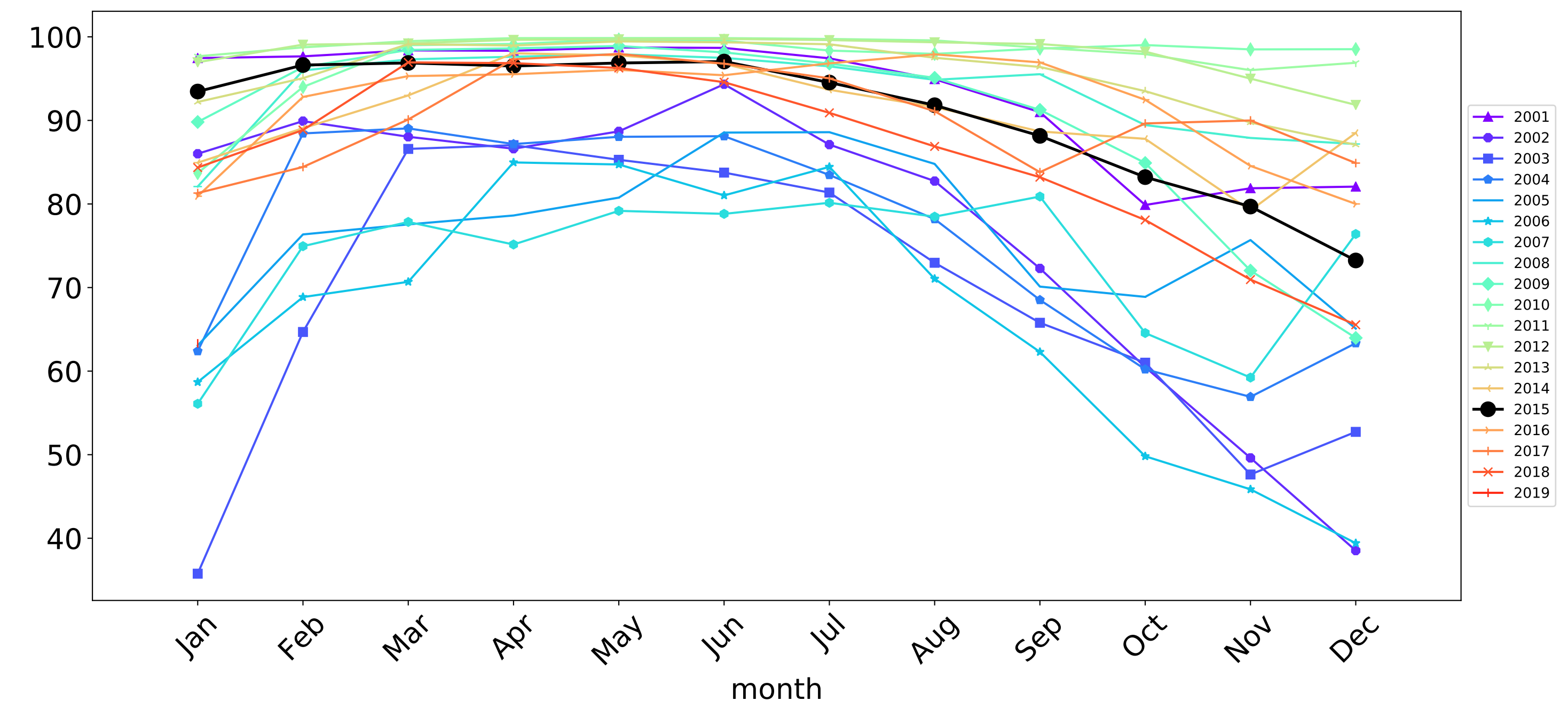
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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

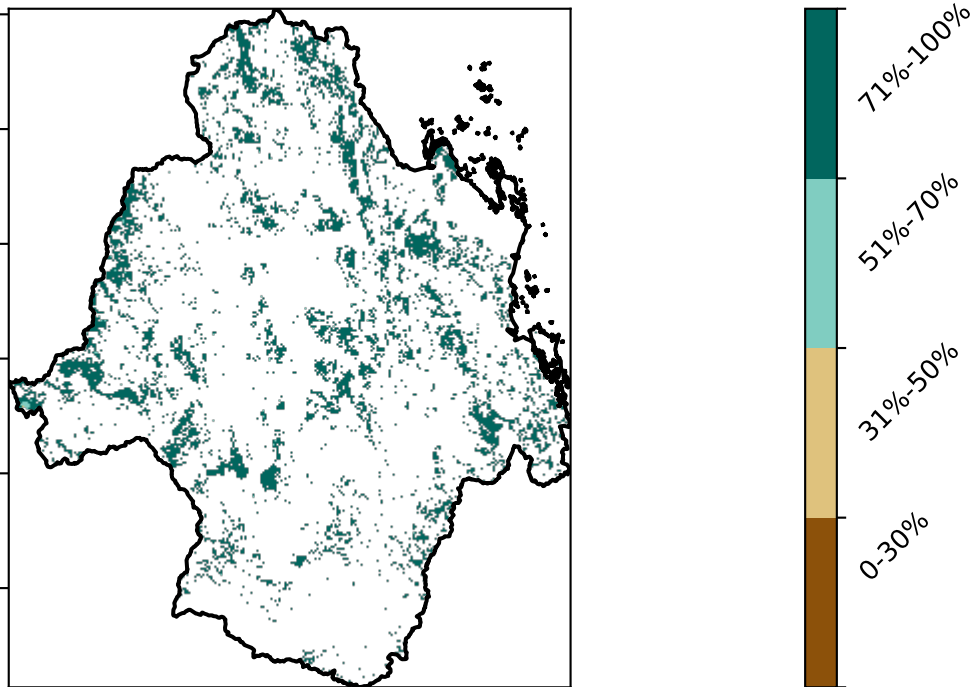


Grazing Woodland forest

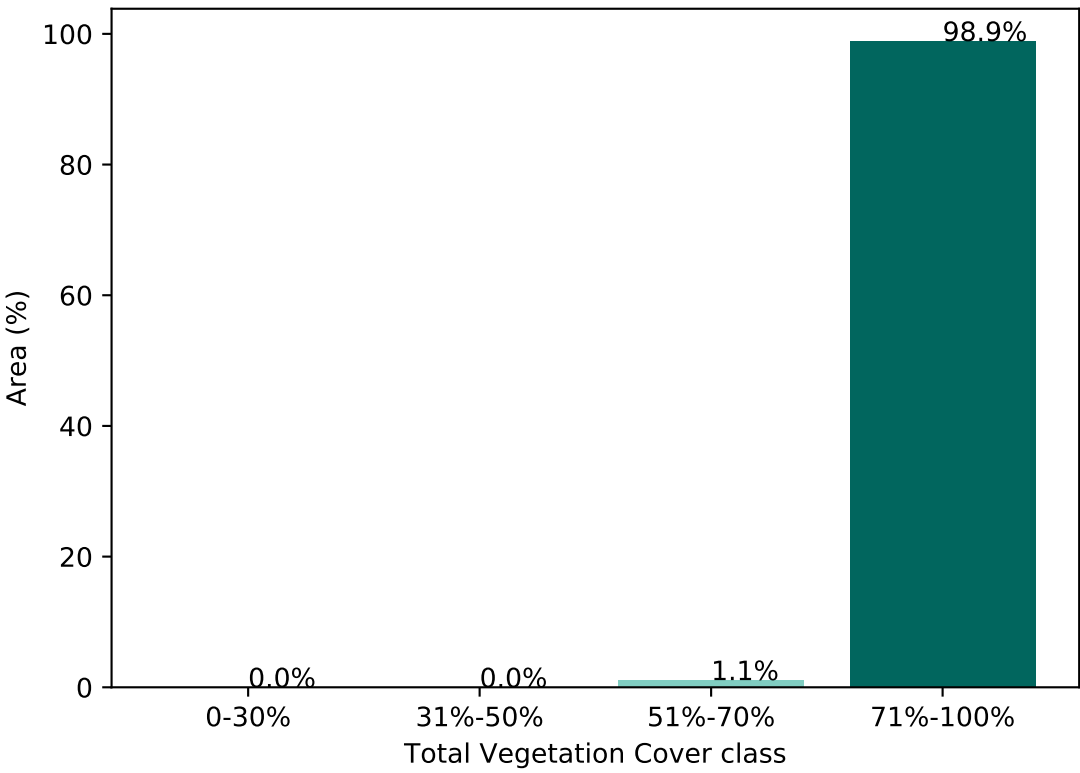
Land use and forest cover



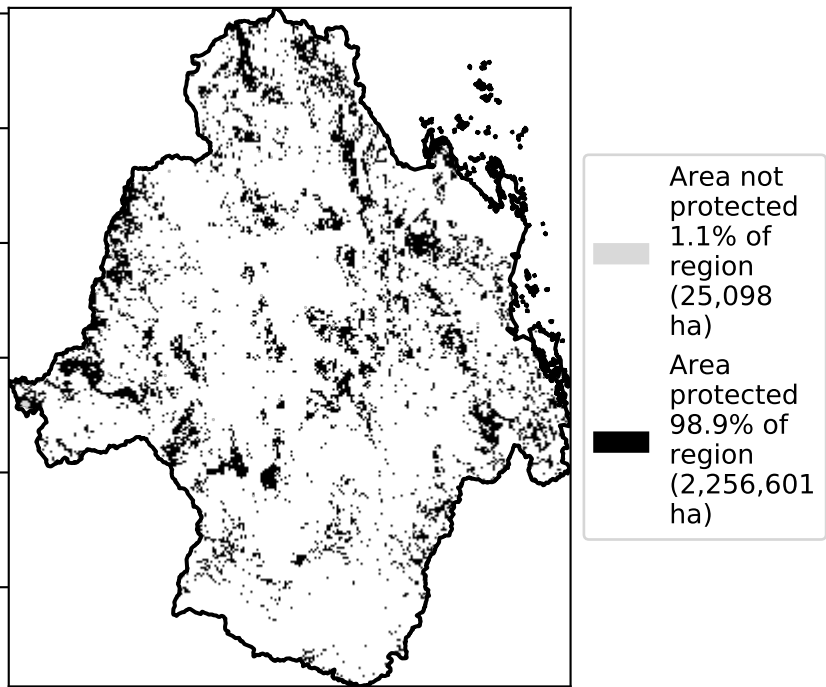
Total Vegetation Cover [%]



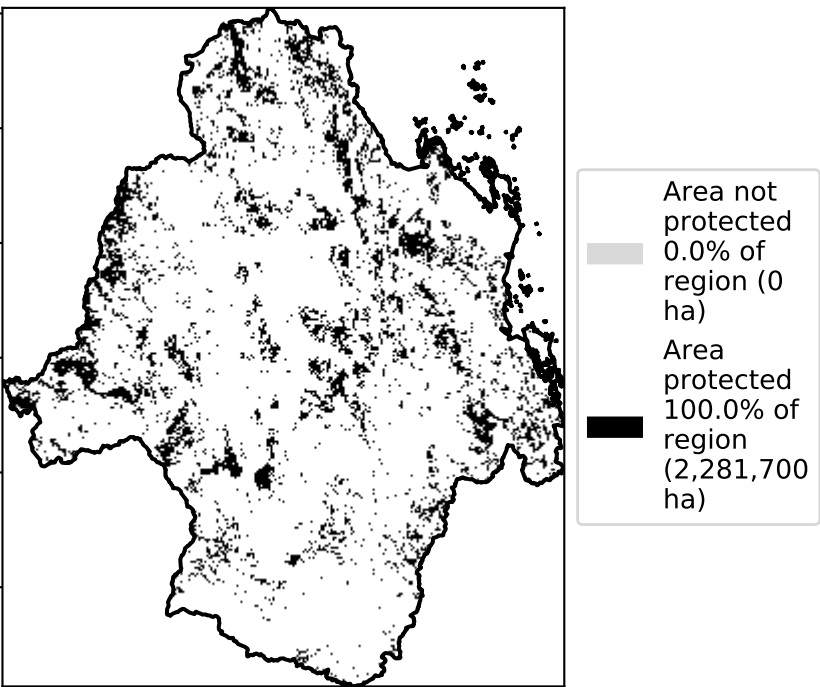
Proportion of vegetation cover class in area



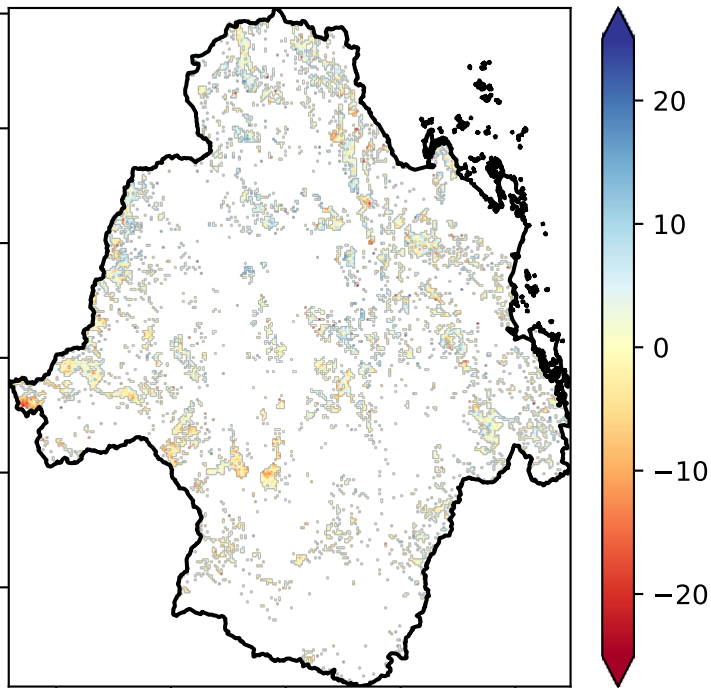
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

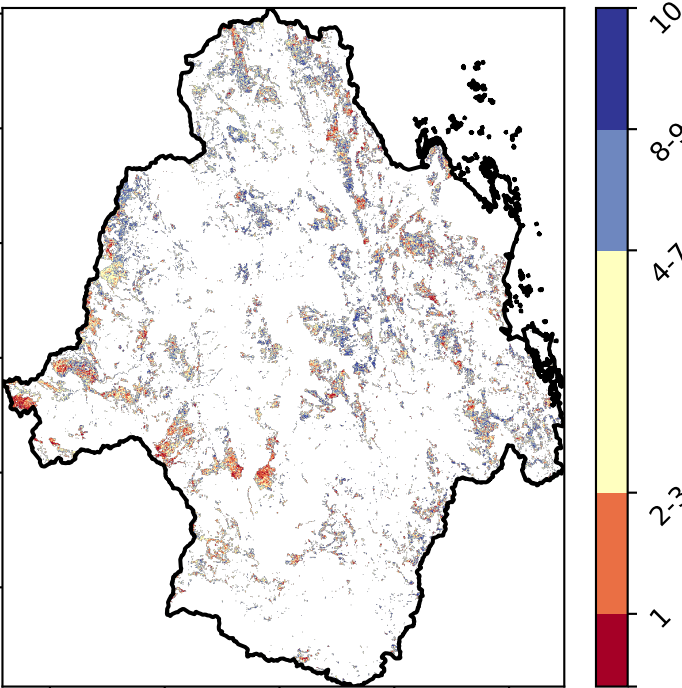


Total Vegetation Cover Anomaly [%]



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.

Total Vegetation Cover Decile [%]



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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Australian Government

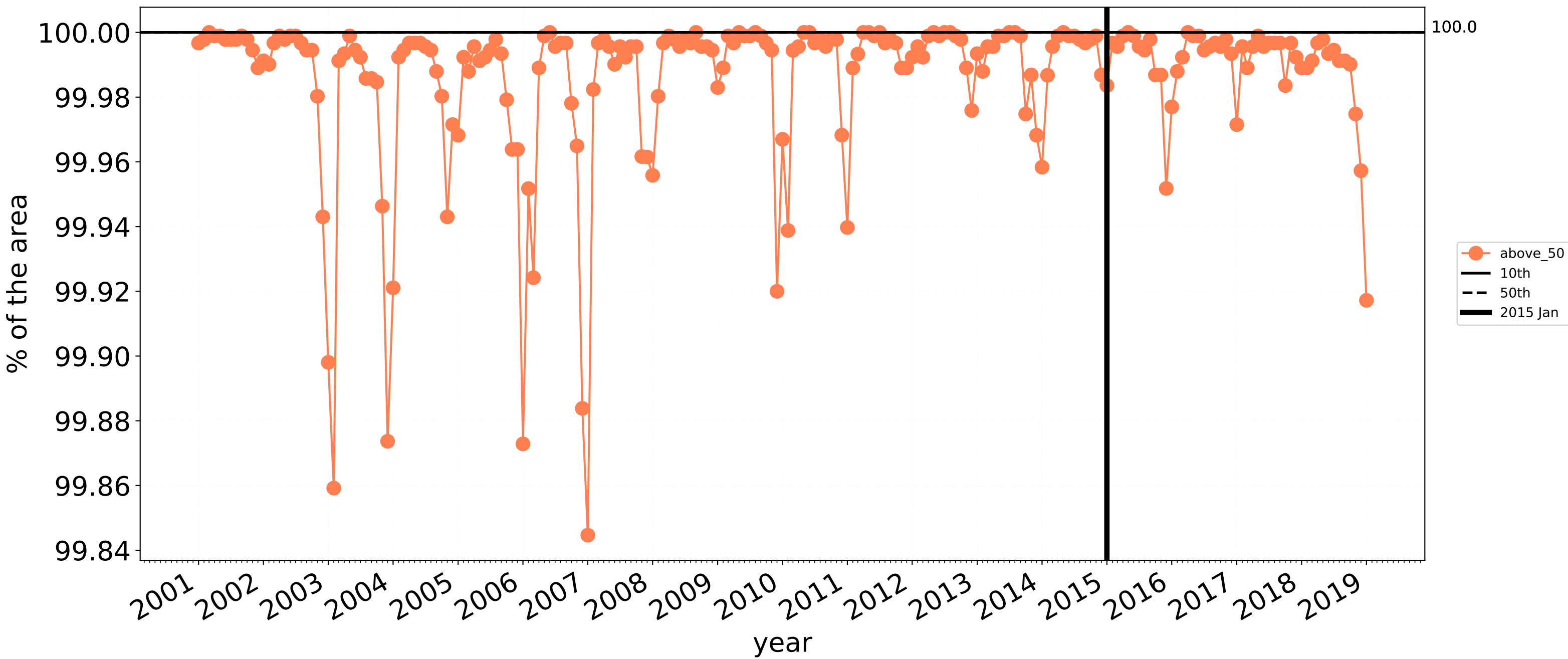
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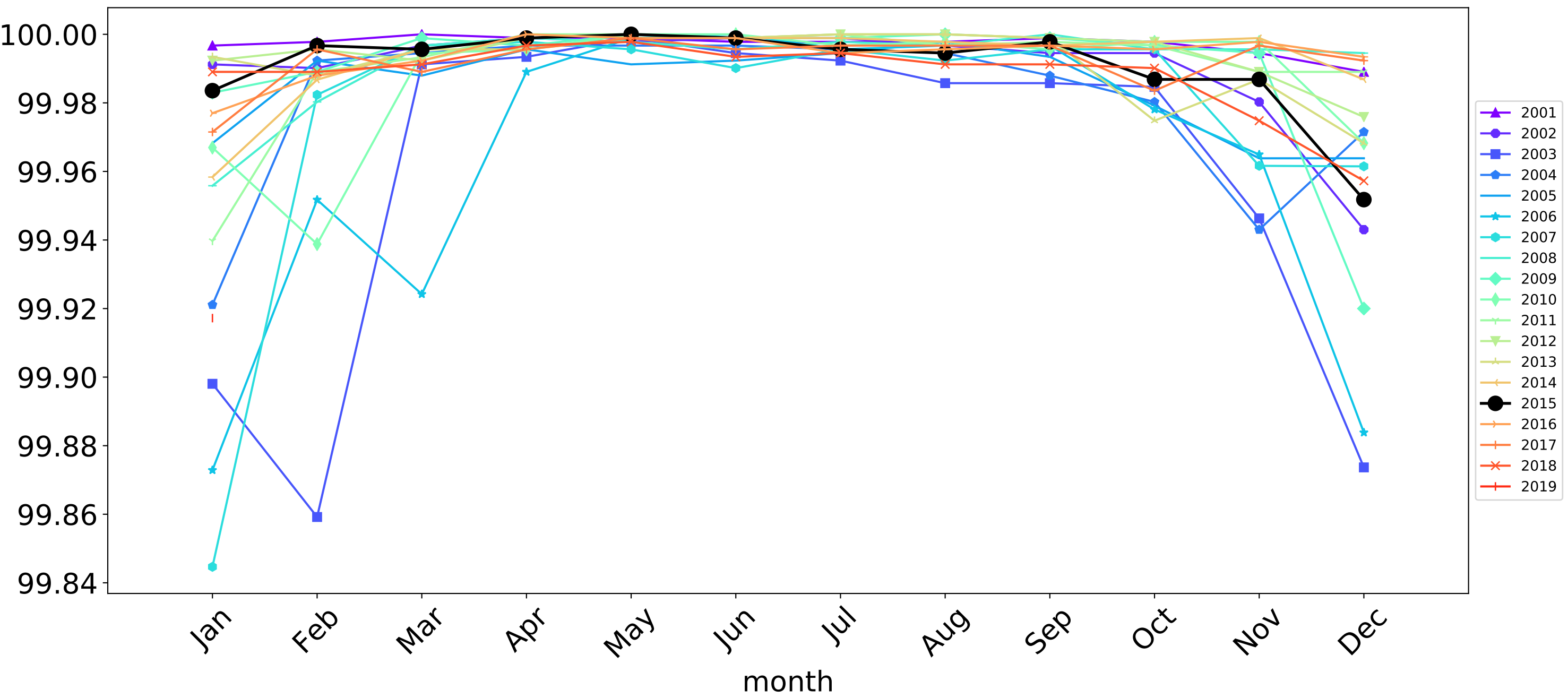
Planning,
Industry &
Environment

Grazing Woodland forest timeseries

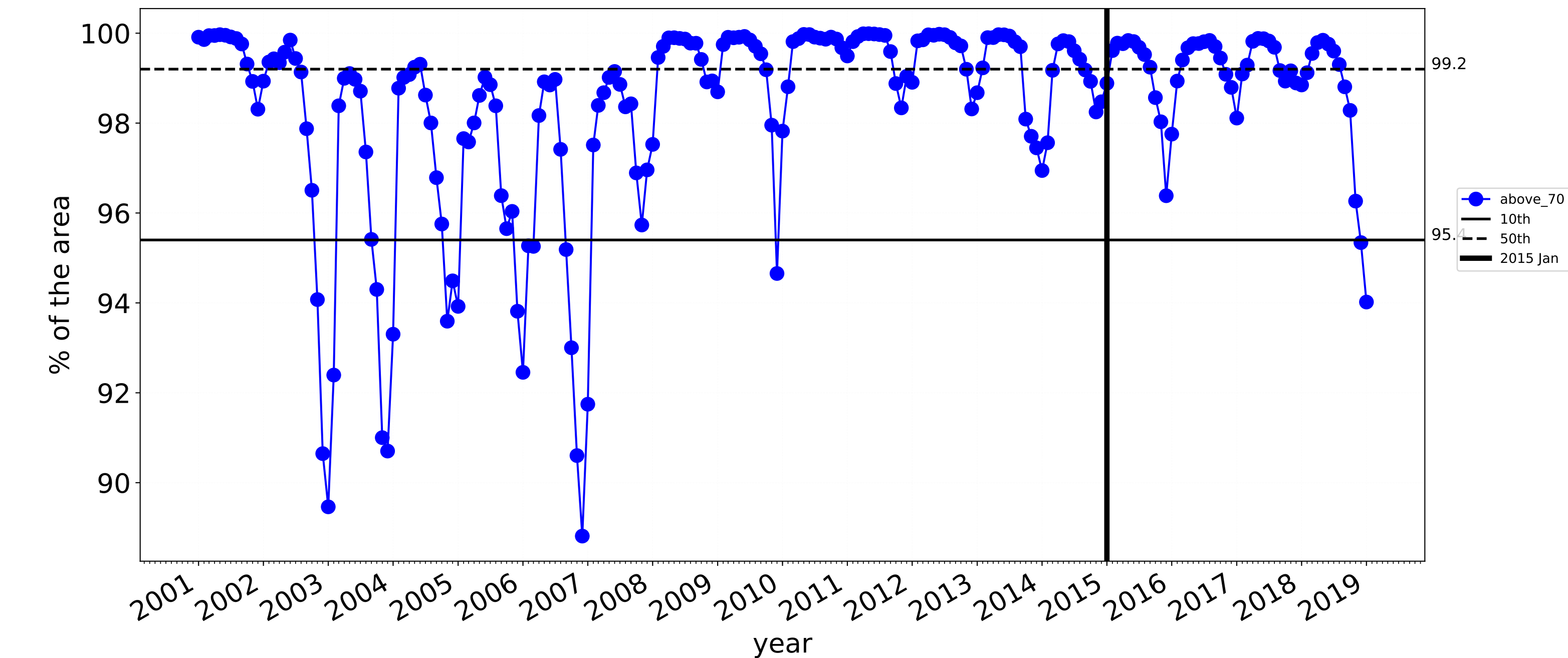
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



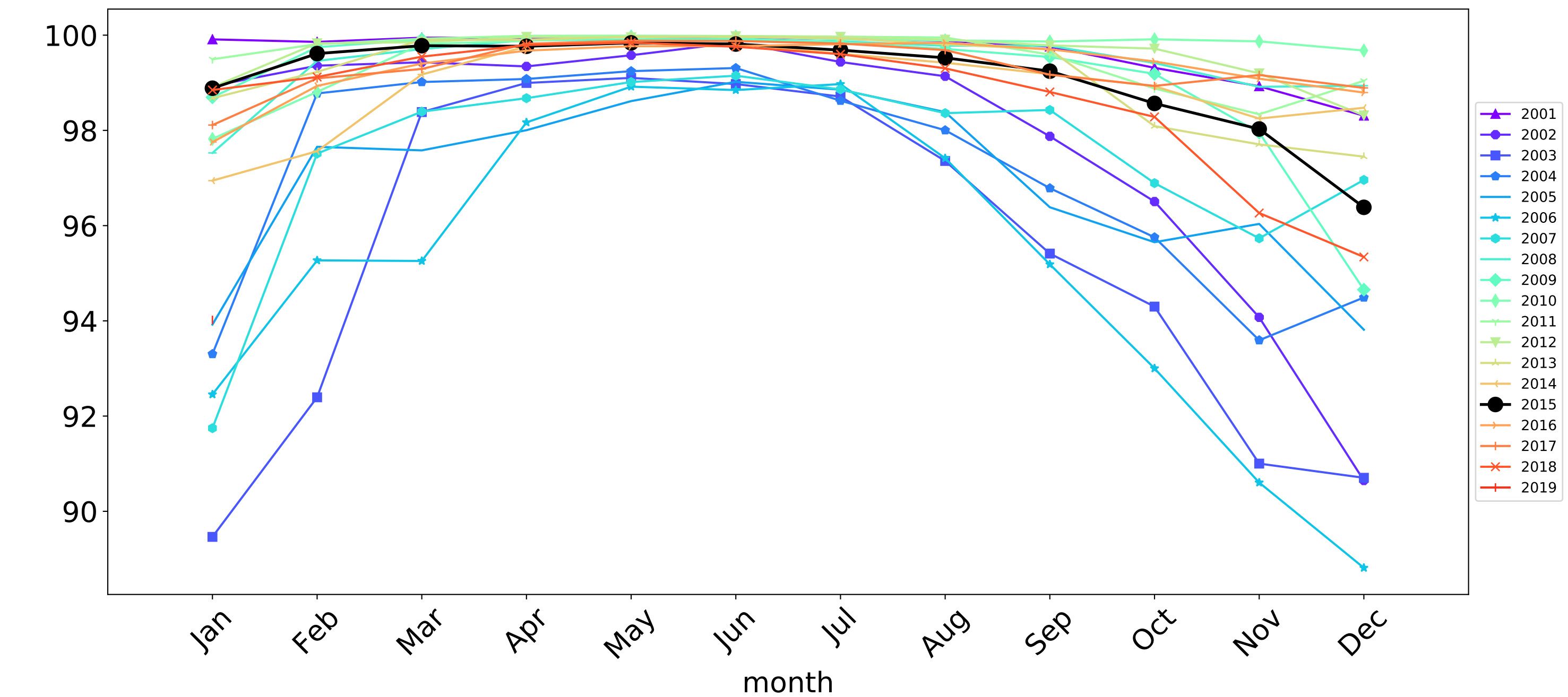
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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

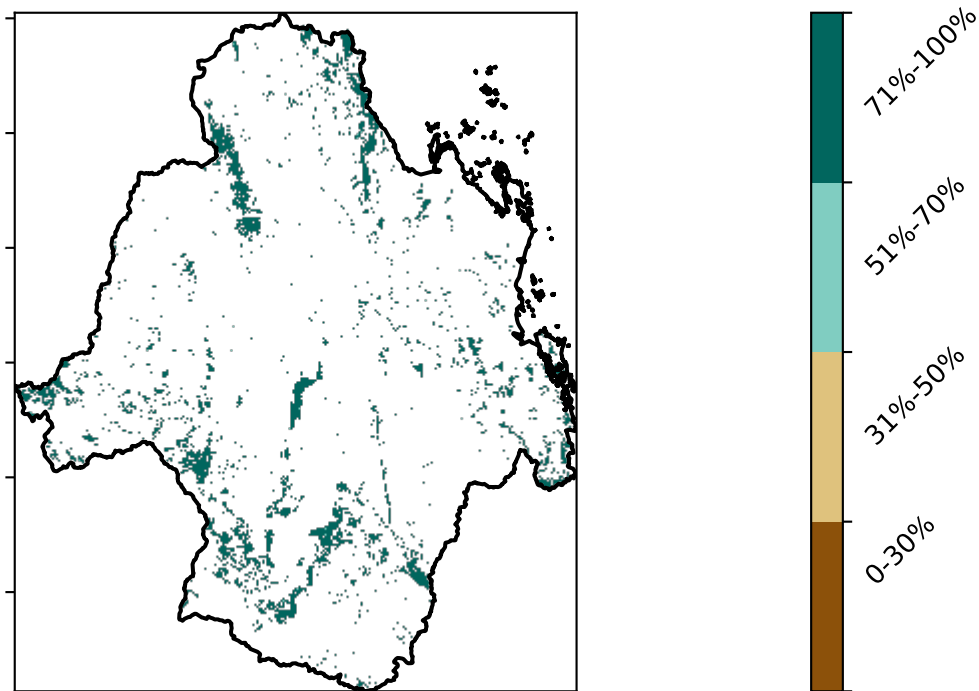


Grazing - Forest (non woodland)

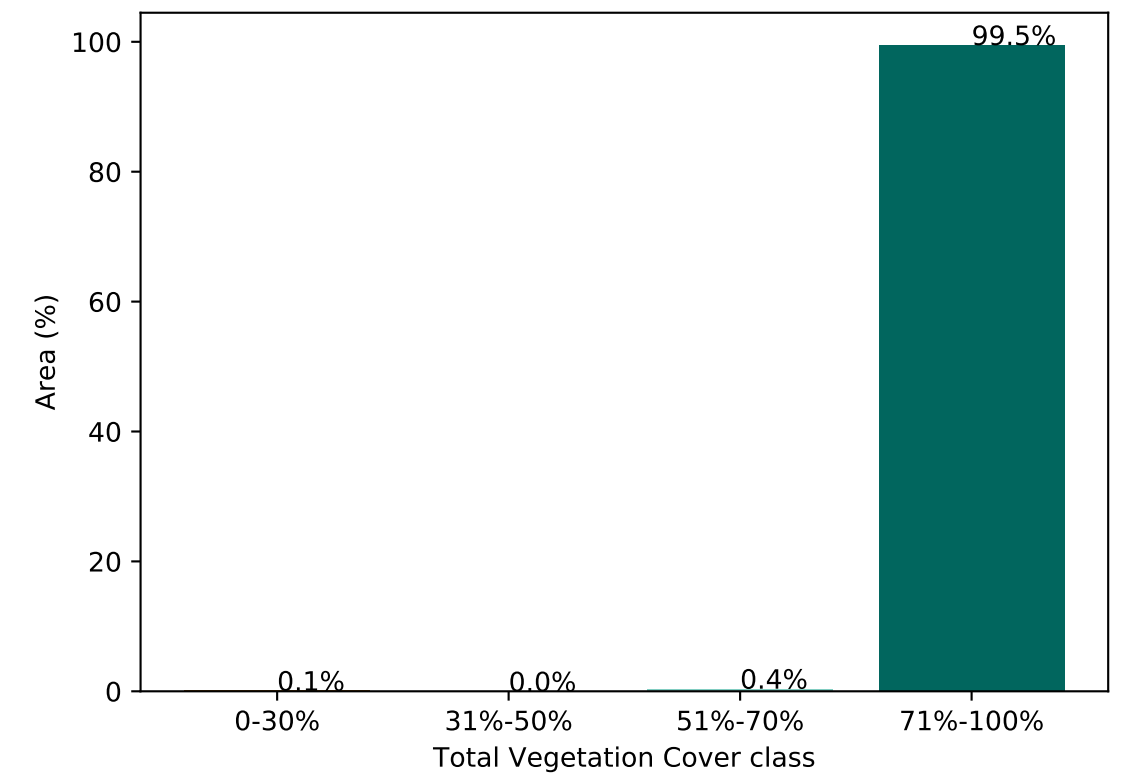
Land use and forest cover



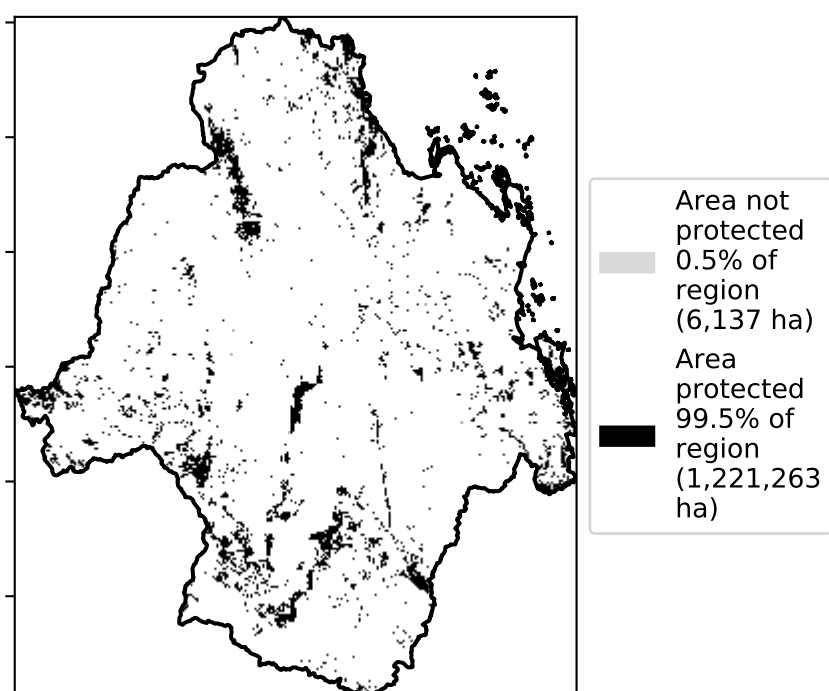
Total Vegetation Cover [%]



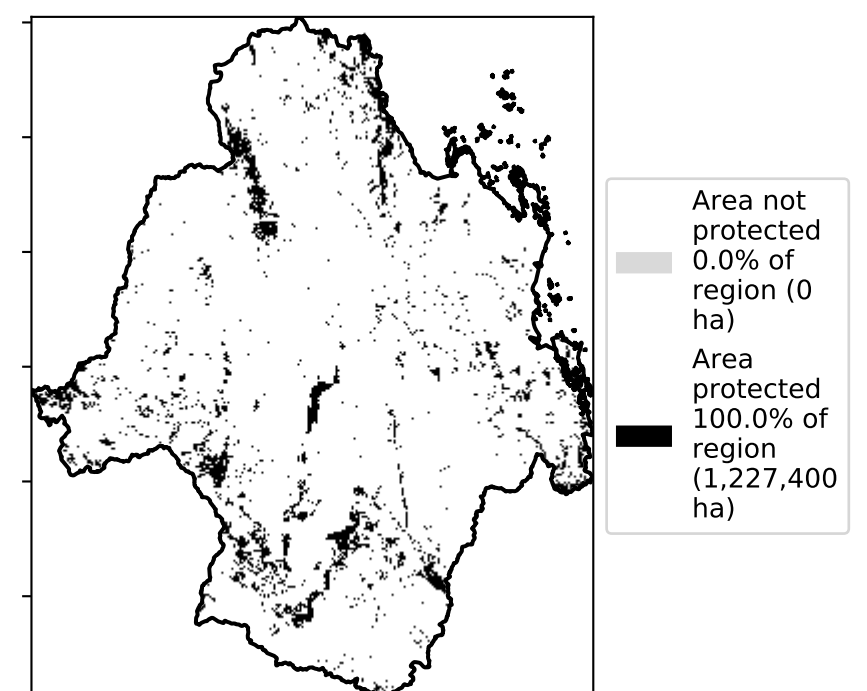
Proportion of vegetation cover class in area



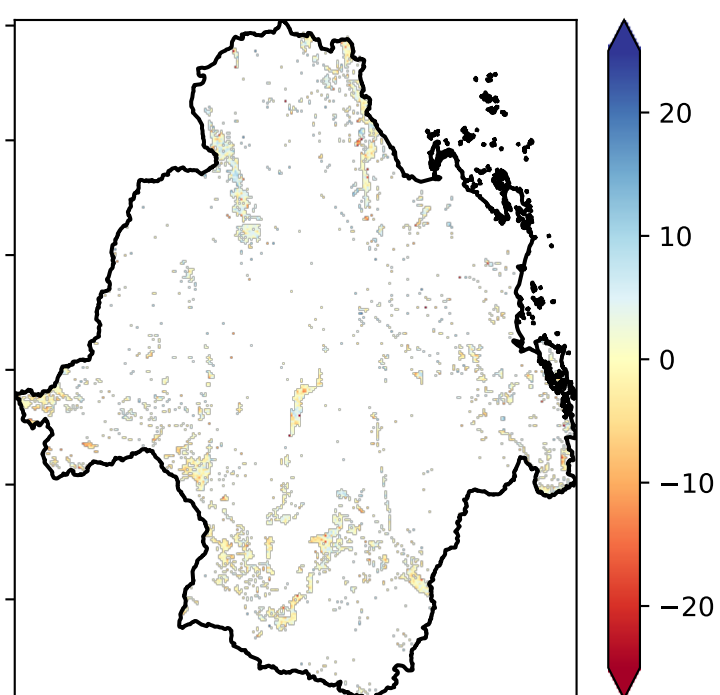
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

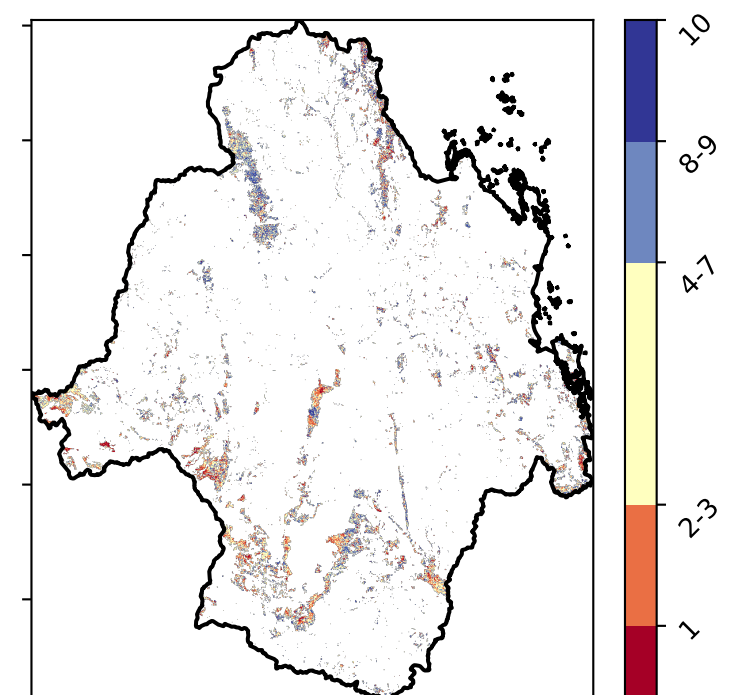


Total Vegetation Cover Anomaly [%]



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 Decile [%]



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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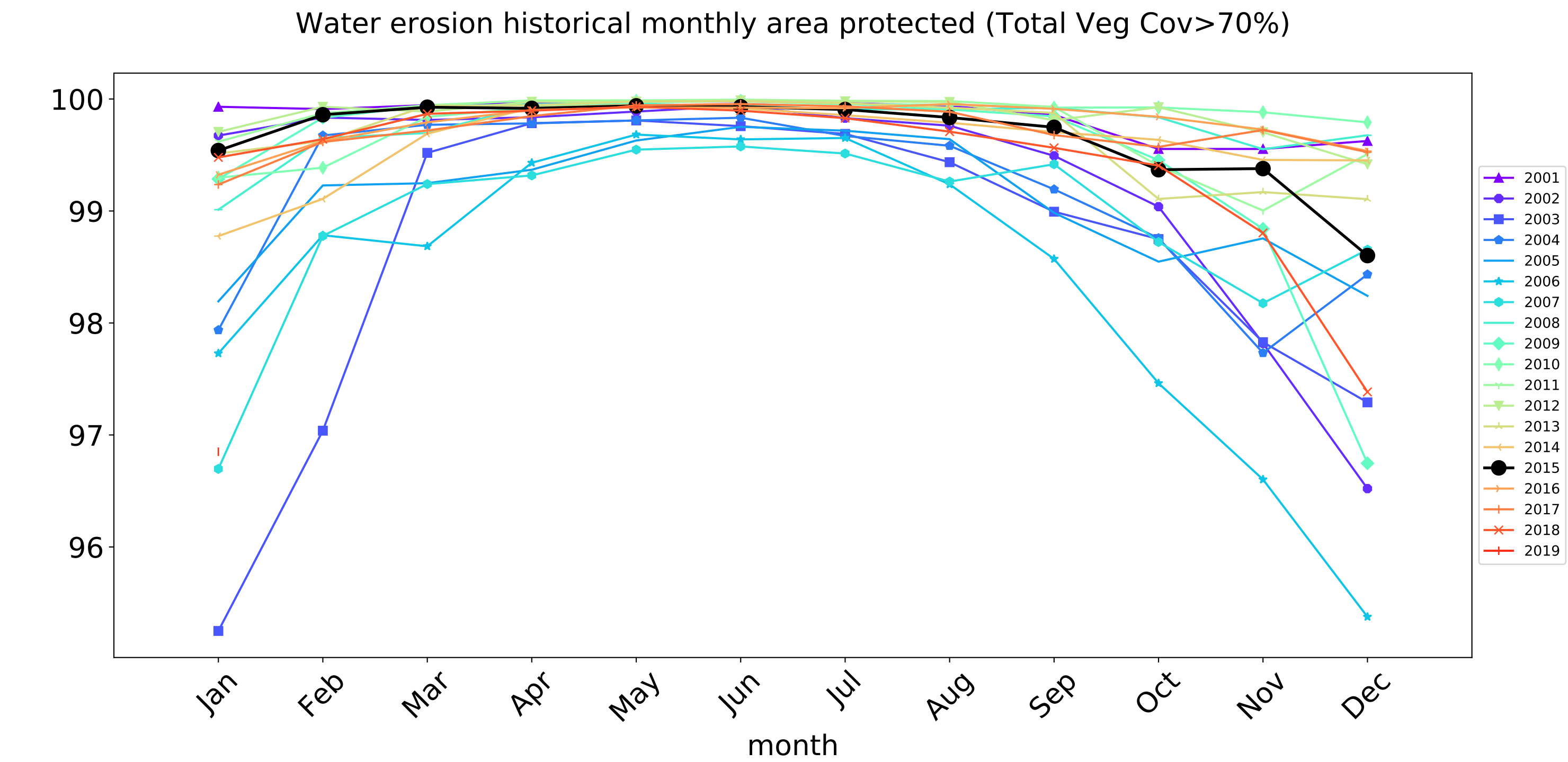
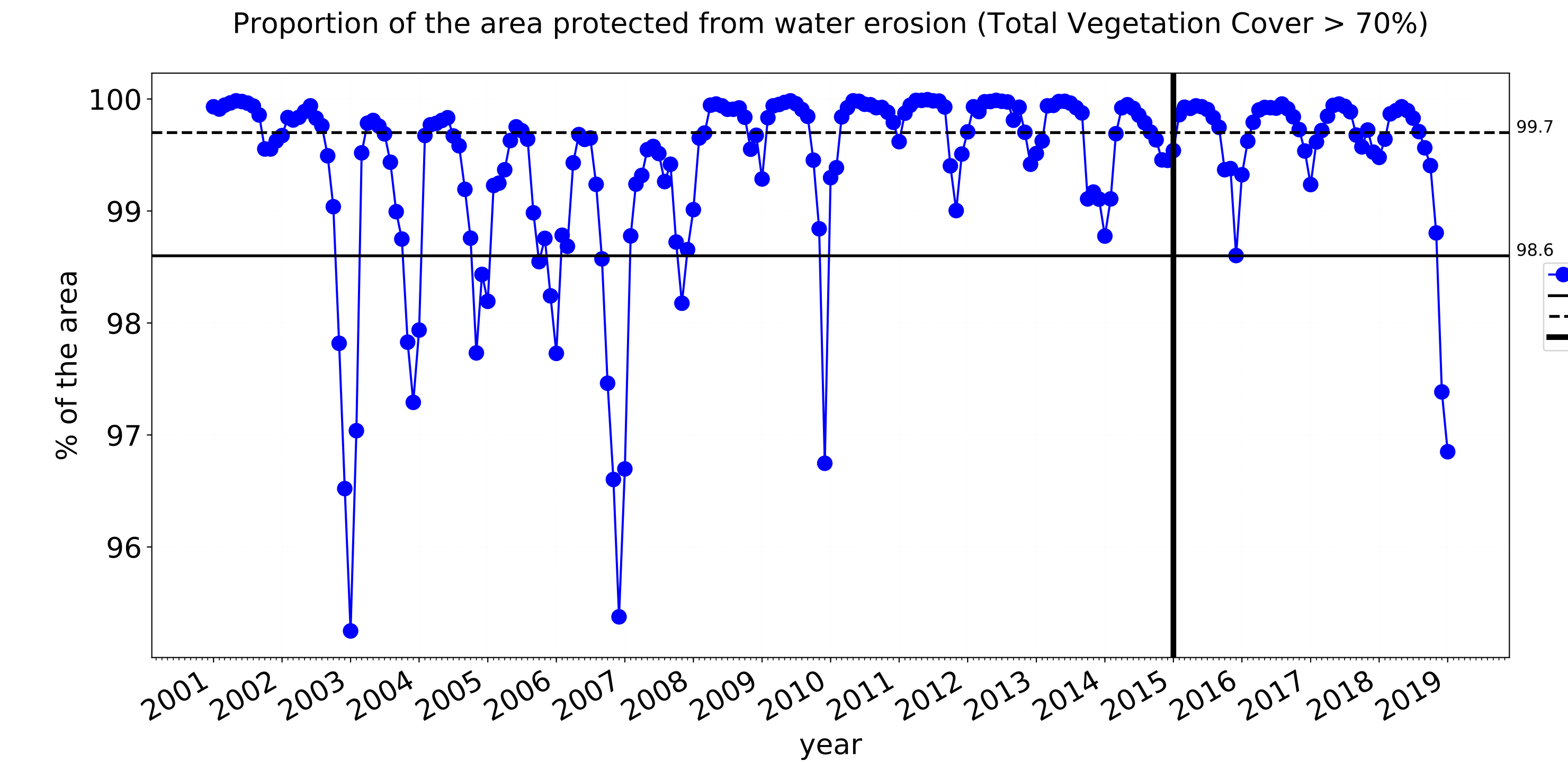
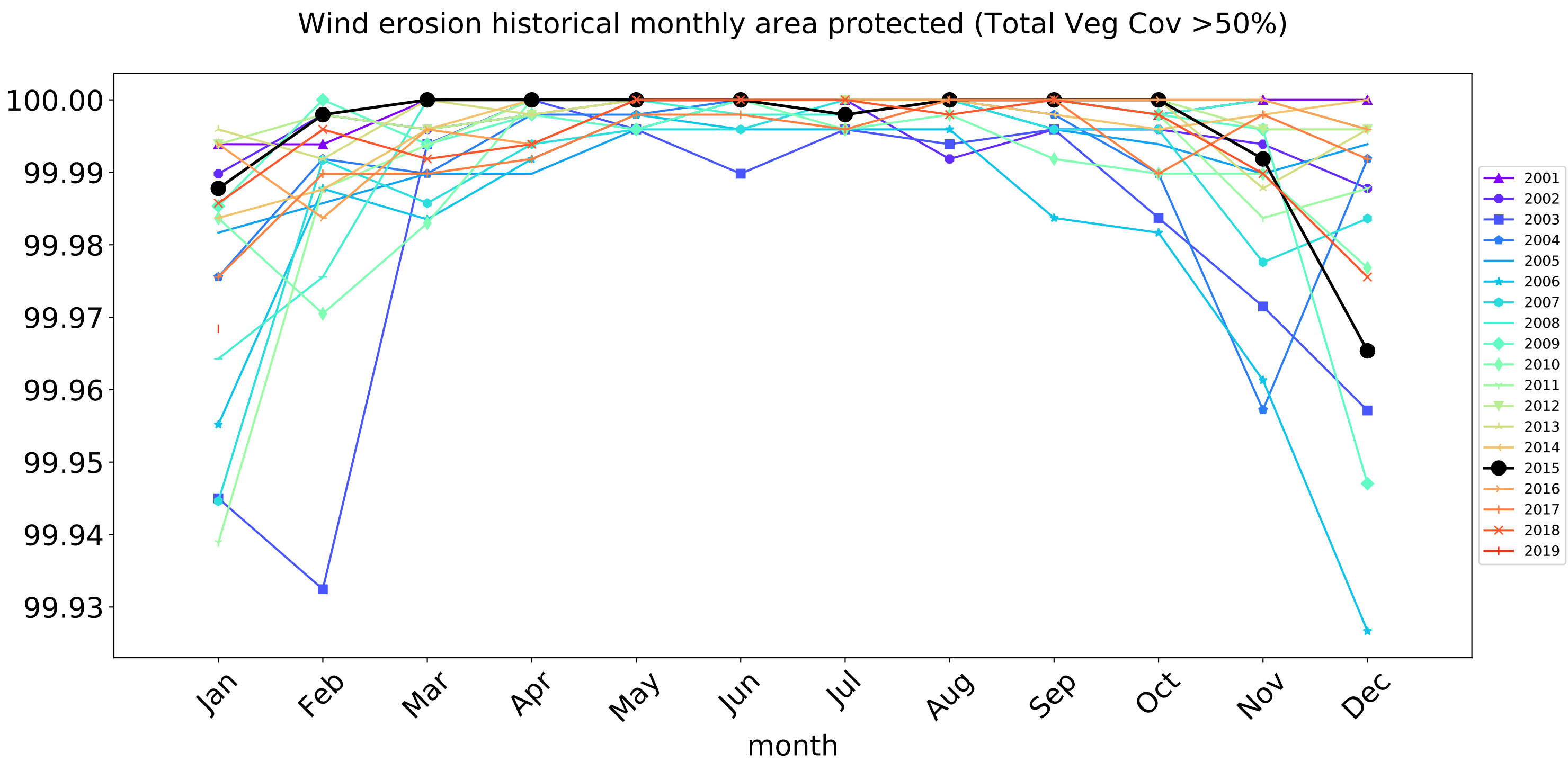
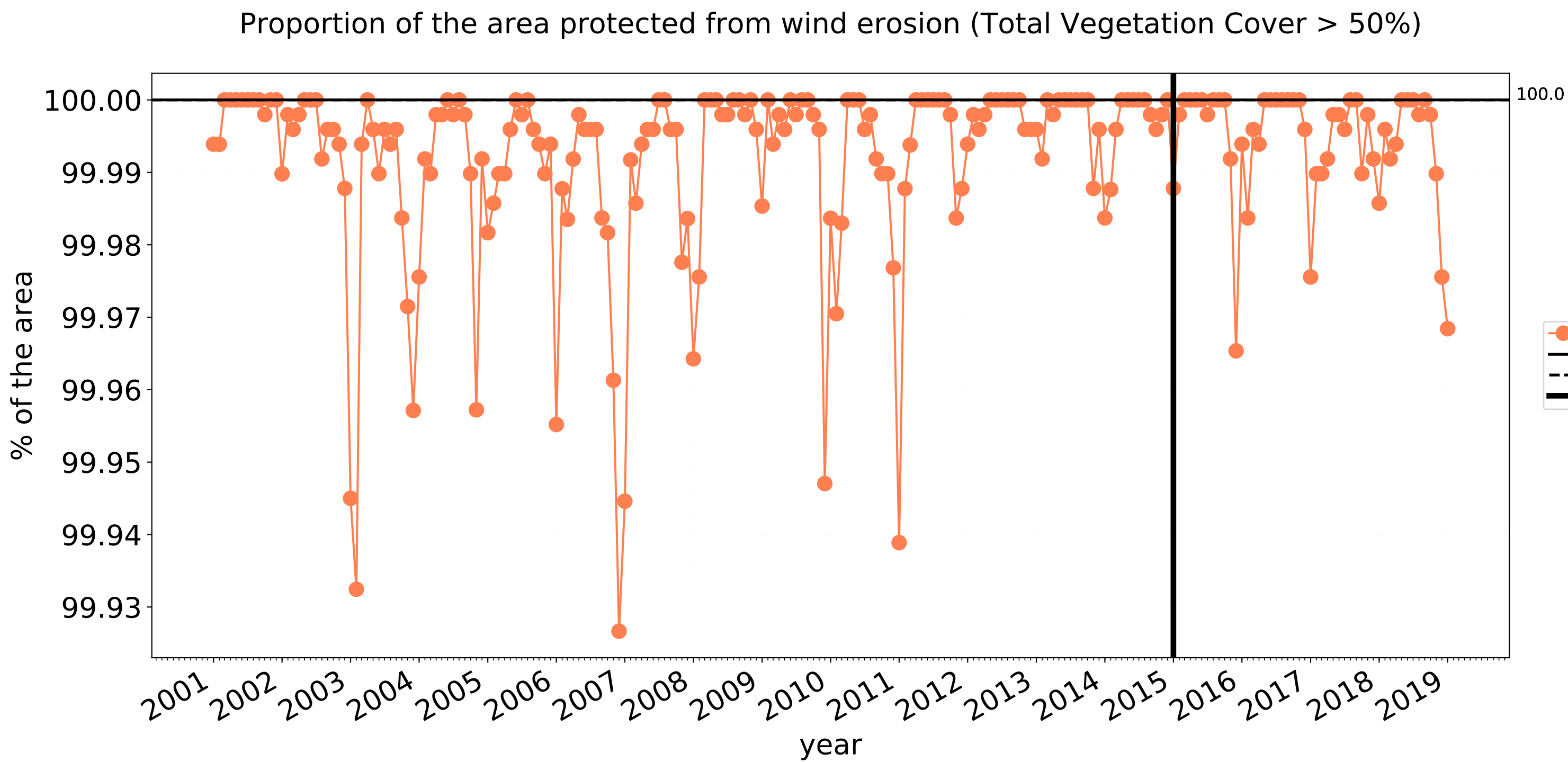


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Grazing - Forest (non woodland) timeseries



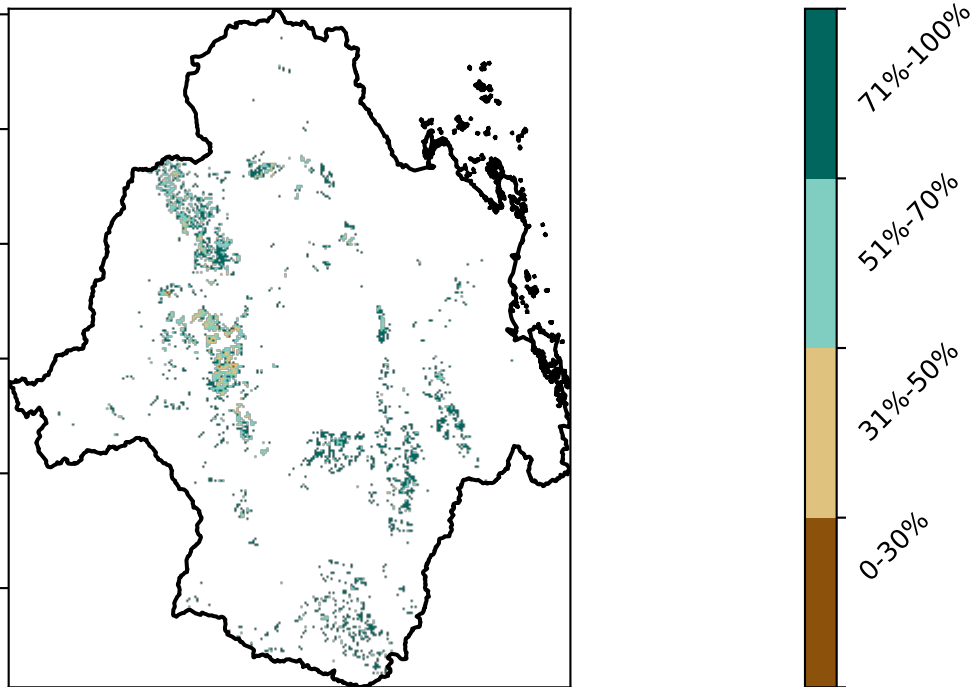
Cropping

Land use and forest cover

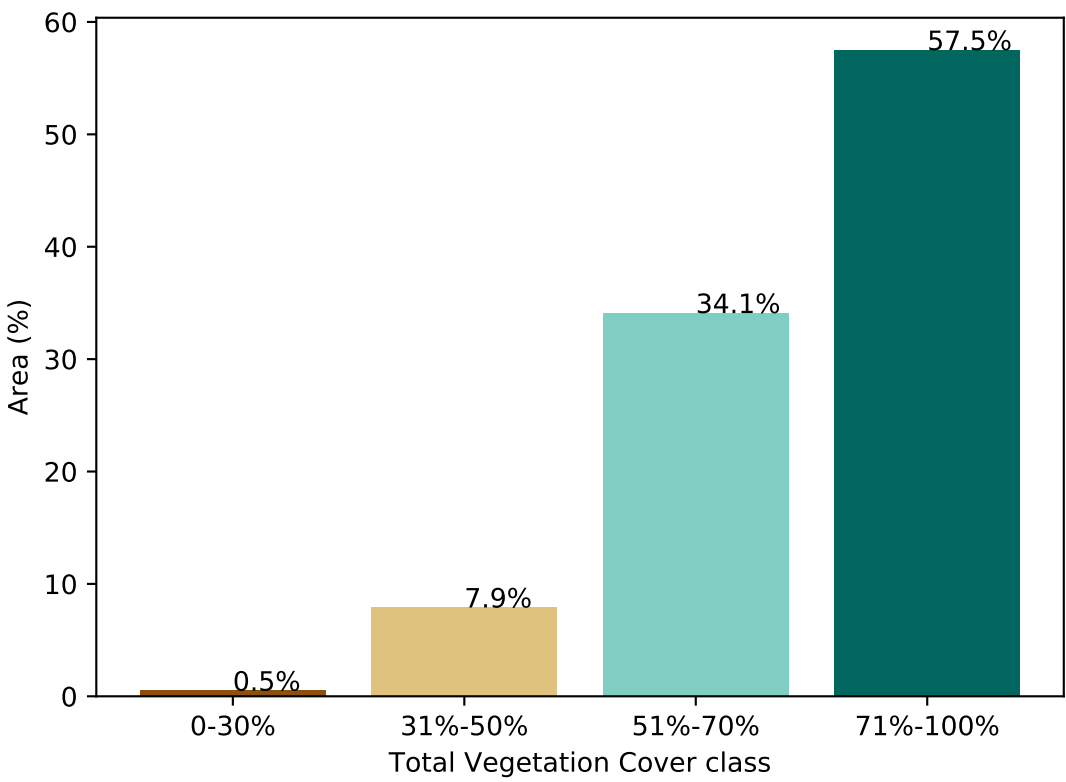
Catchment Scale
Land Use and Forests
of Australia (2018)
Derived from
Catchment Scale Land
Use of Australia
(2018) and Forests
of Australia (2018)



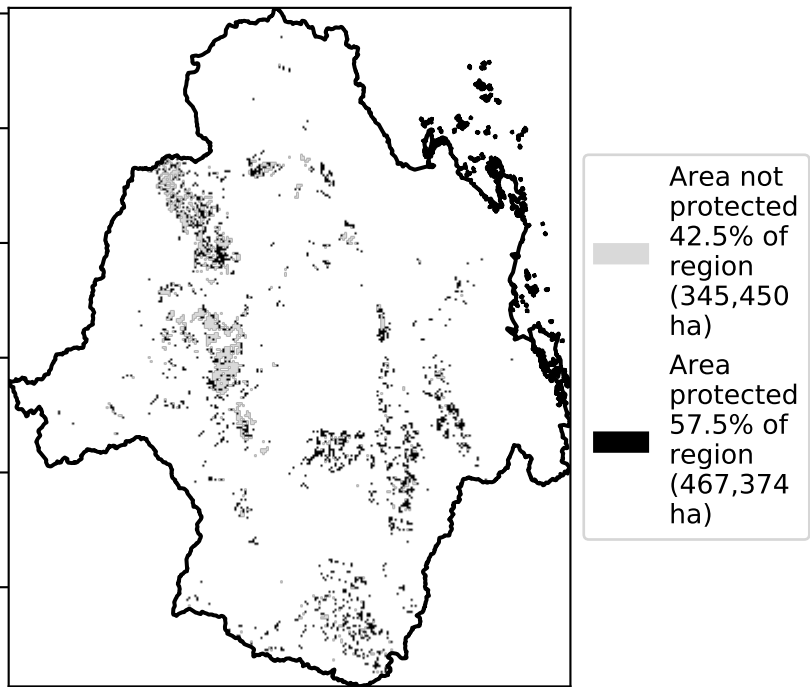
Total Vegetation Cover [%]



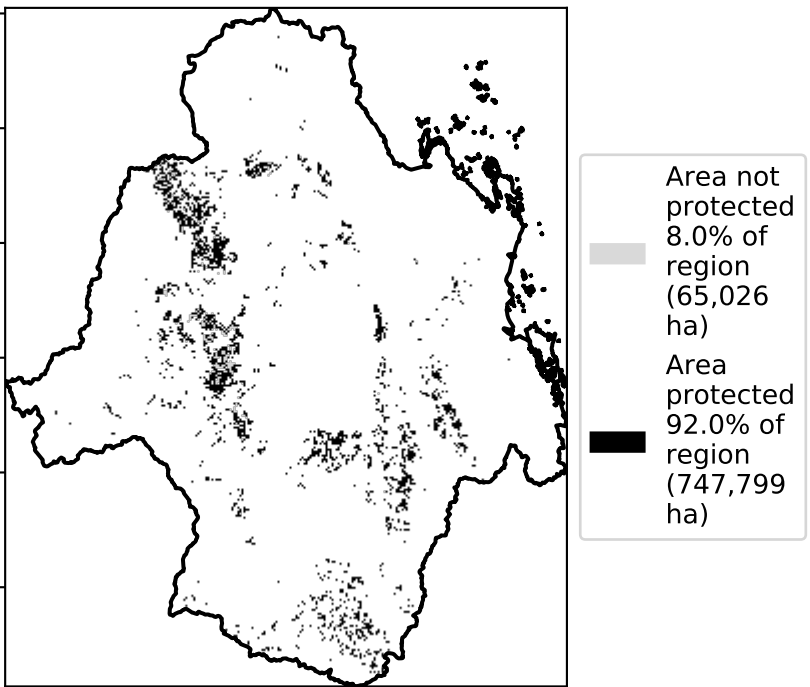
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

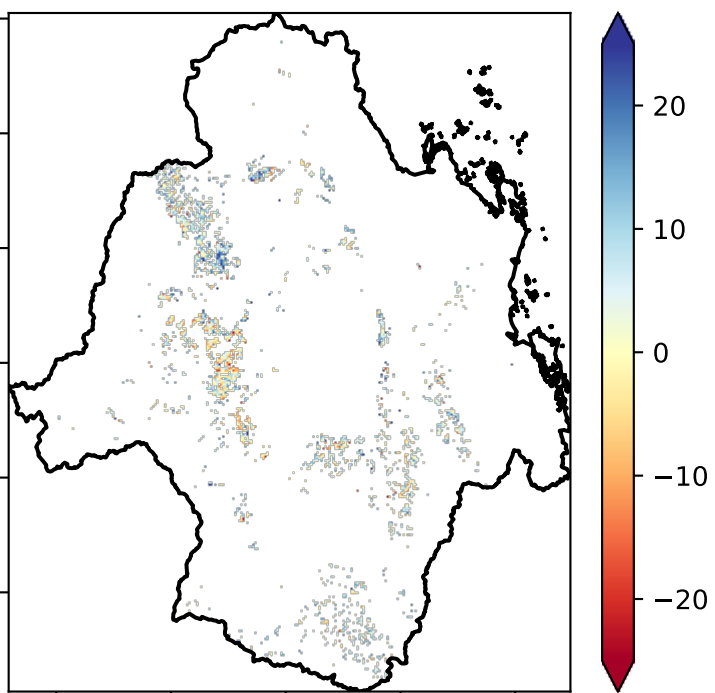


% Area protected from wind erosion (>50%)



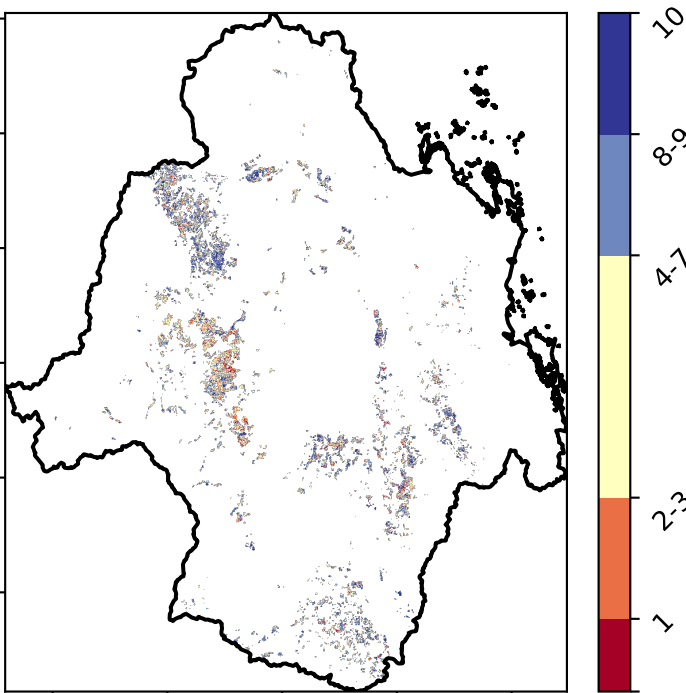
Total Vegetation Cover Anomaly [%]

Anomaly 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 Decile [%]

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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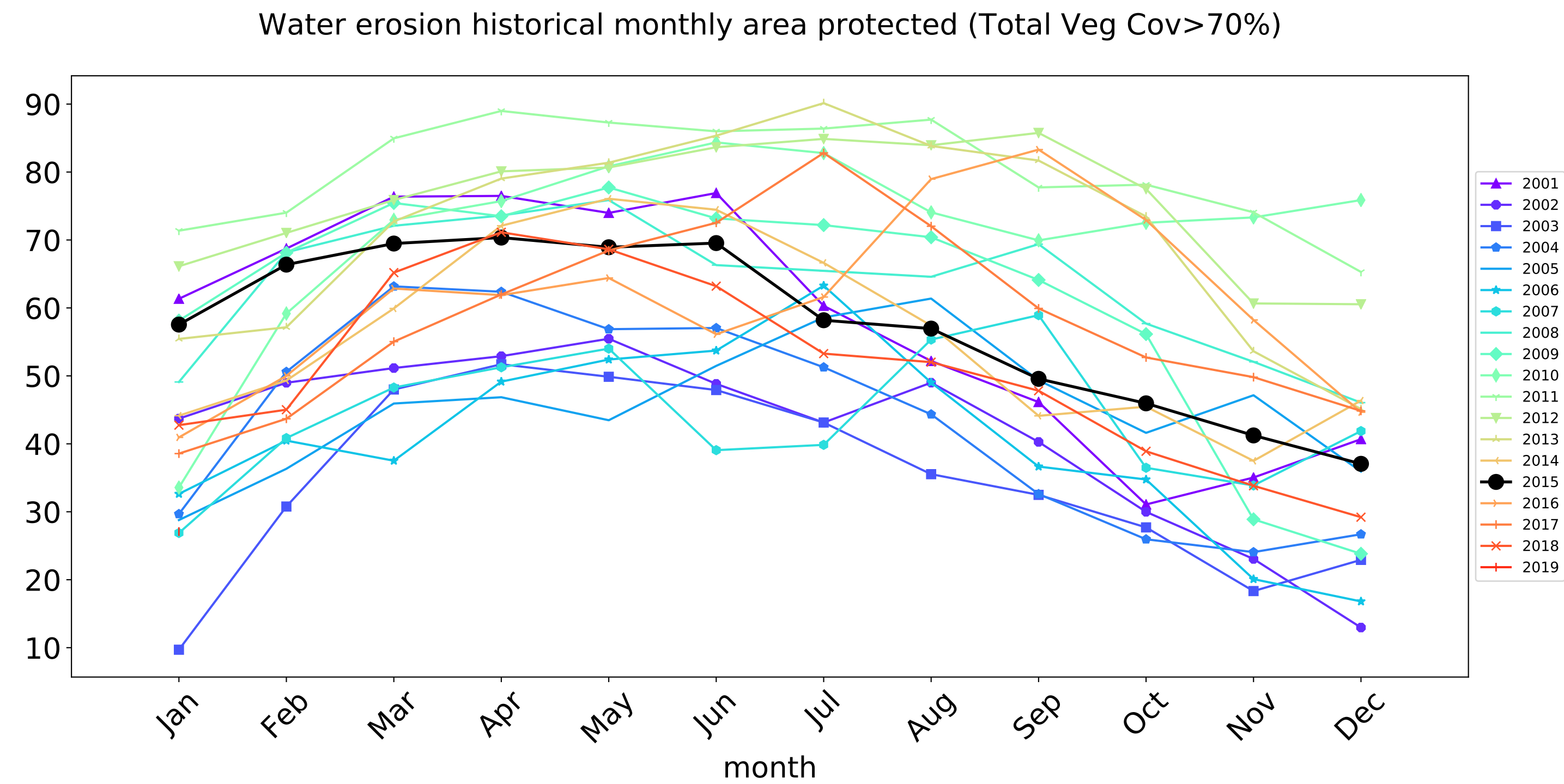
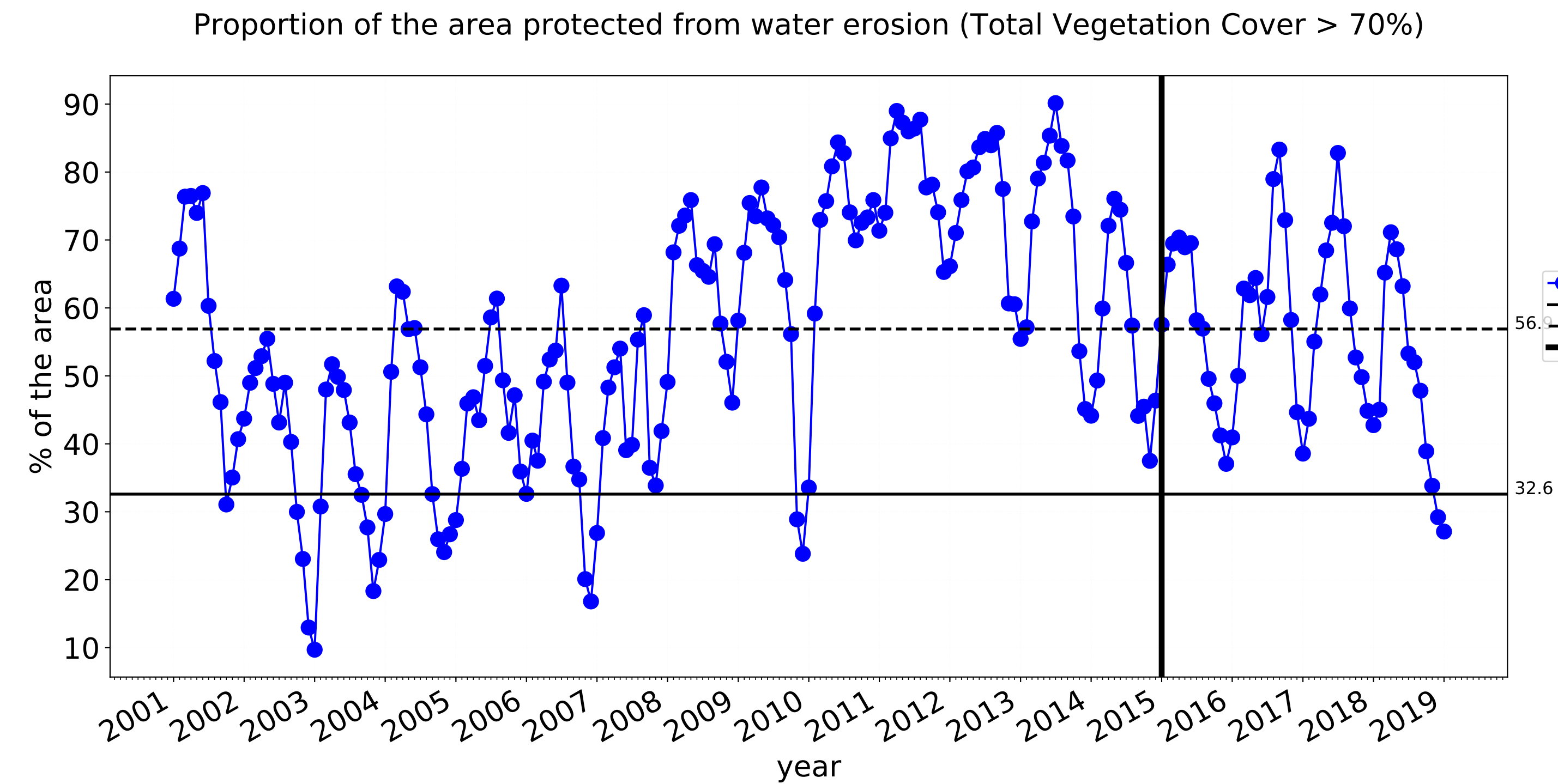
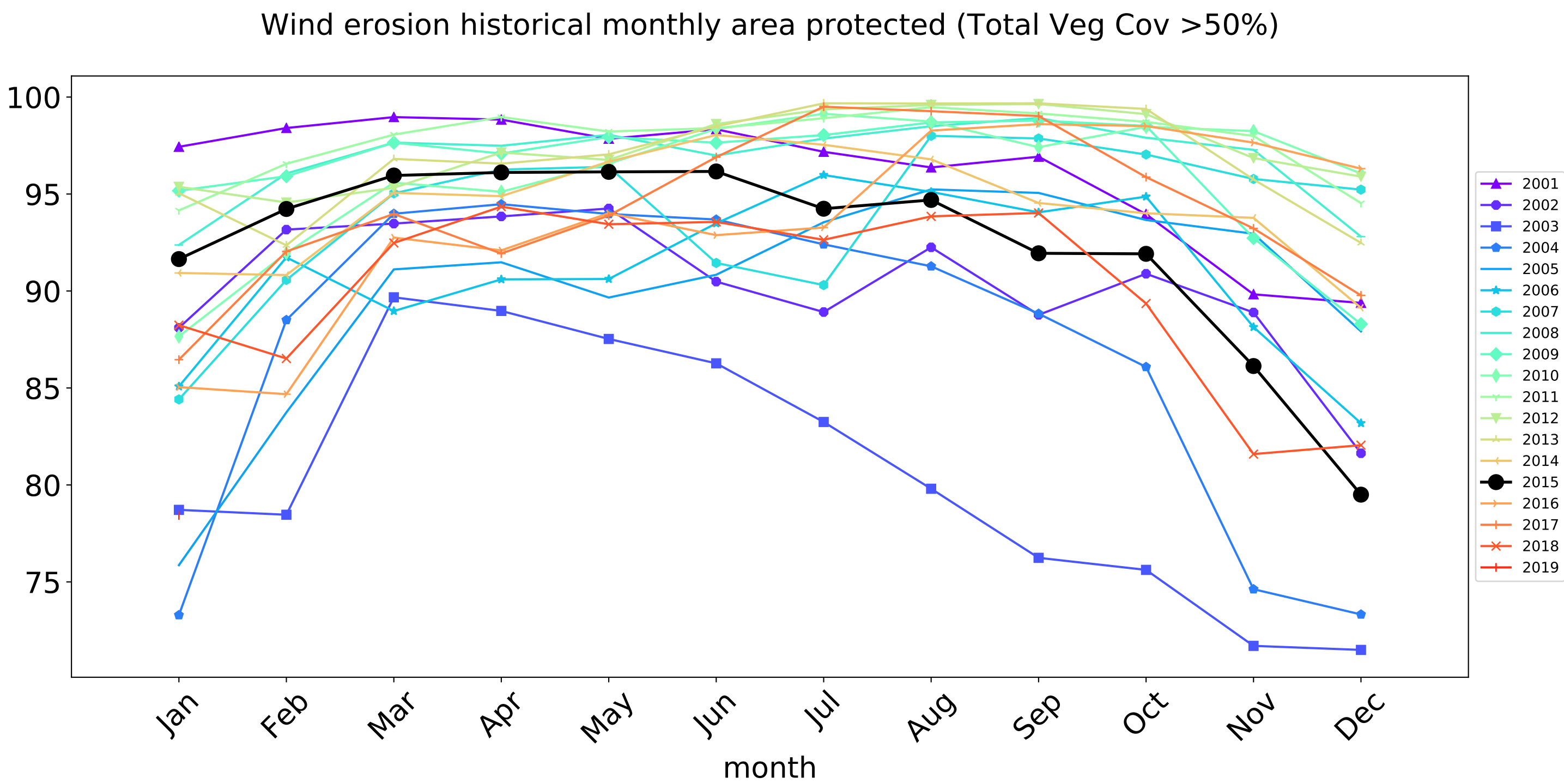
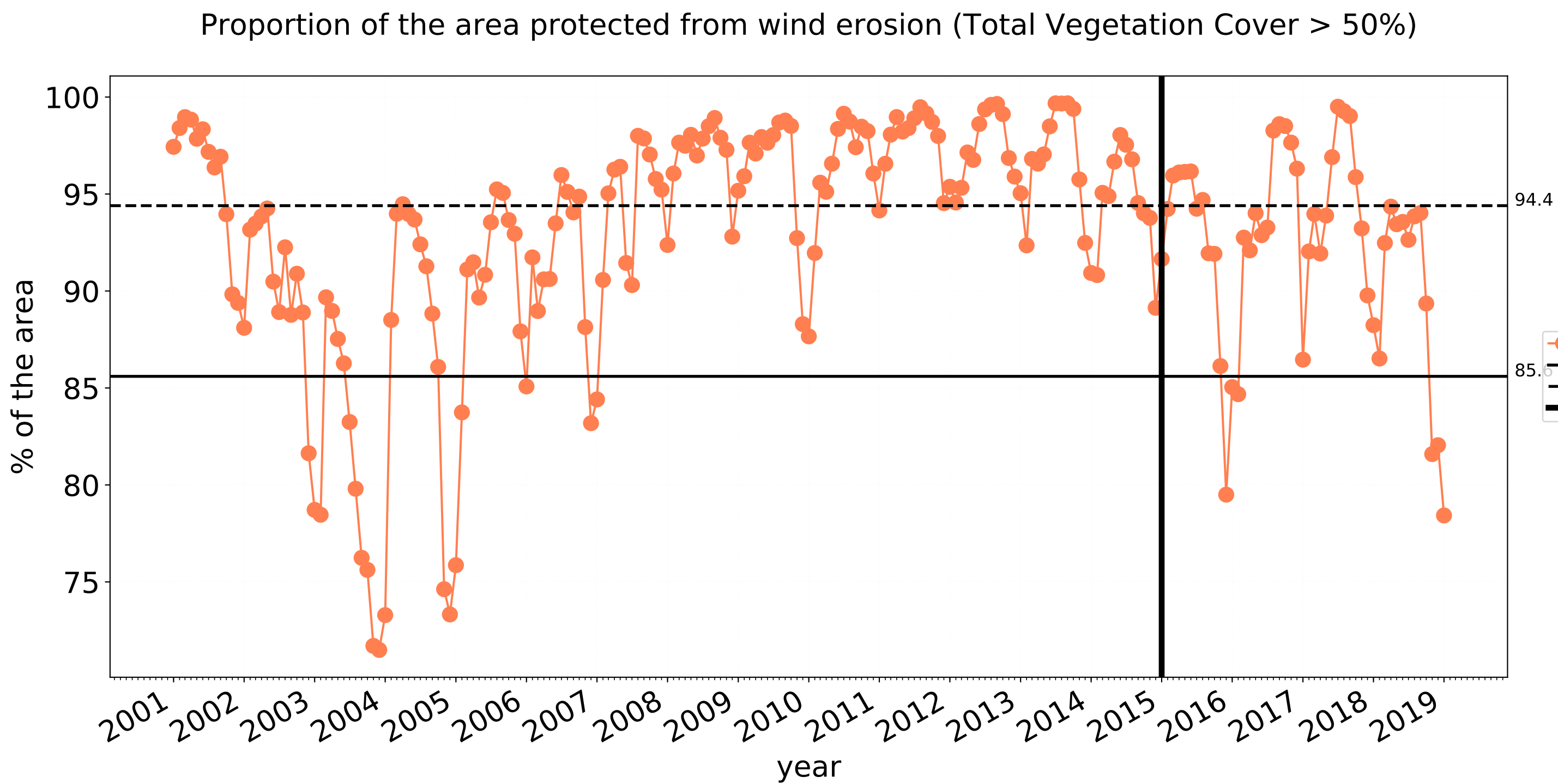


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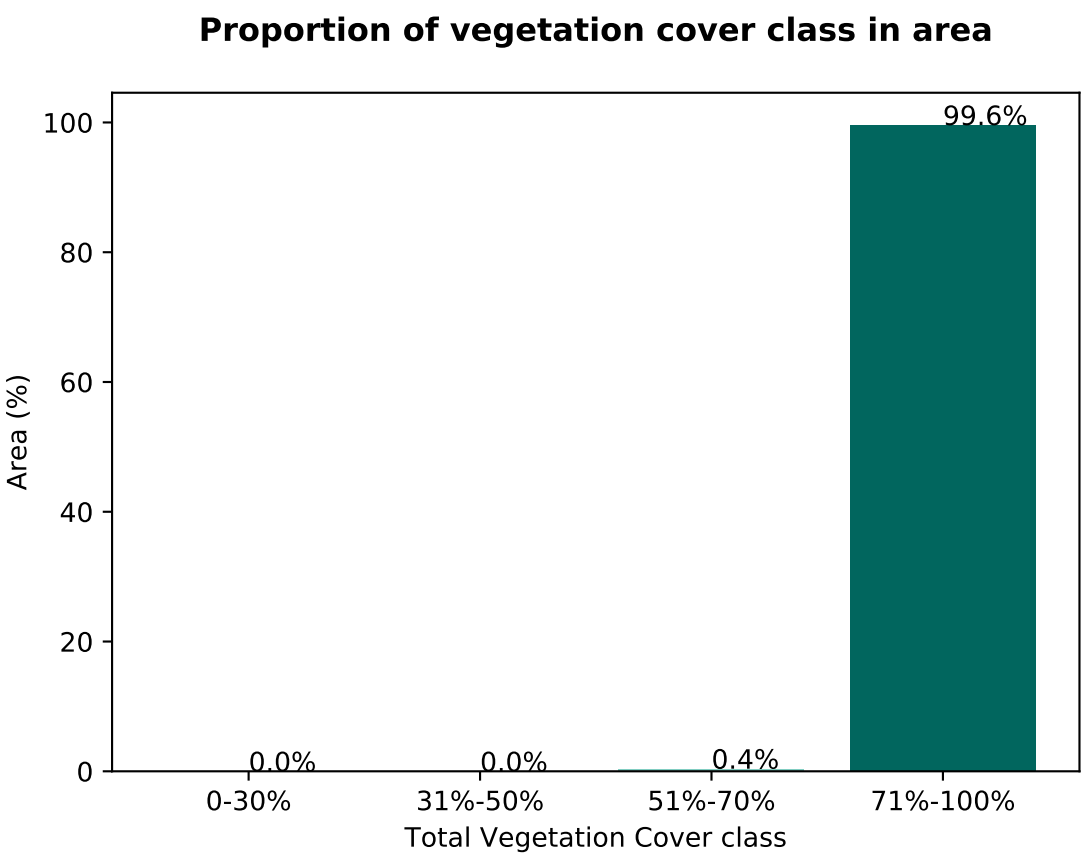
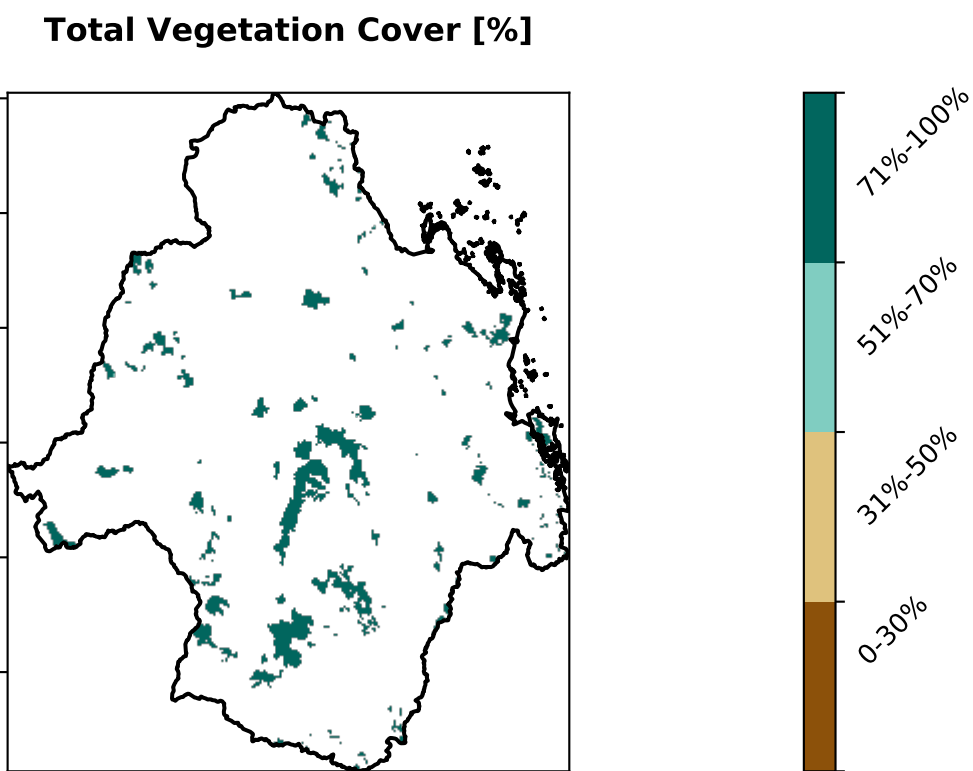
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Environment

Cropping timeseries

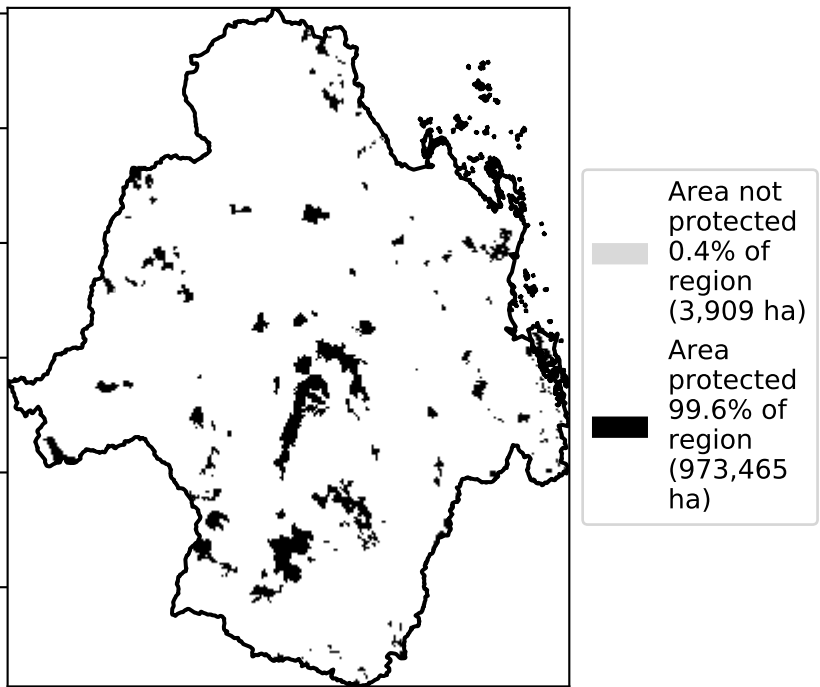


Production native forests and plantation forests

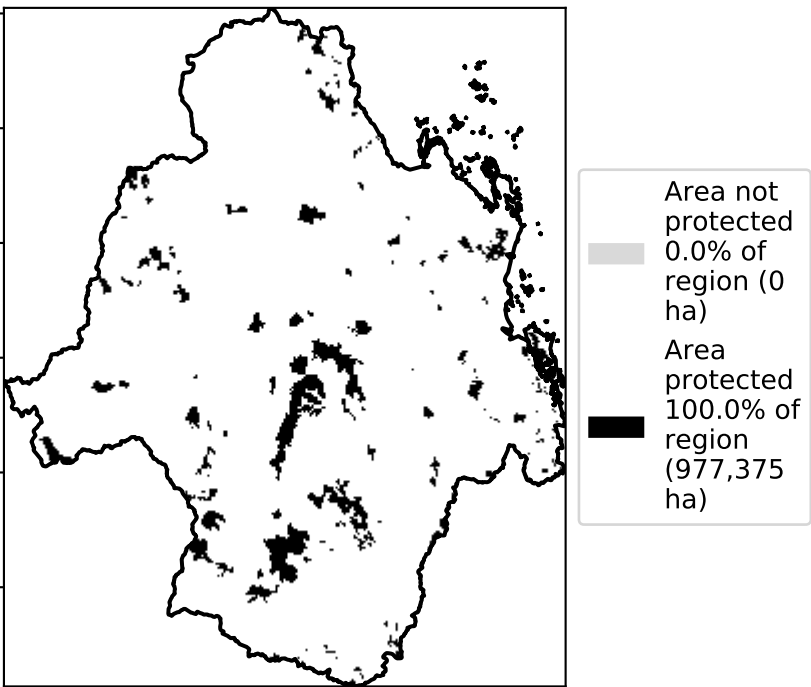
Catchment Scale
Land Use and Forests
of Australia (2018)
Derived from
Catchment Scale Land
Use of Australia
(2018) and Forests
of Australia (2018)



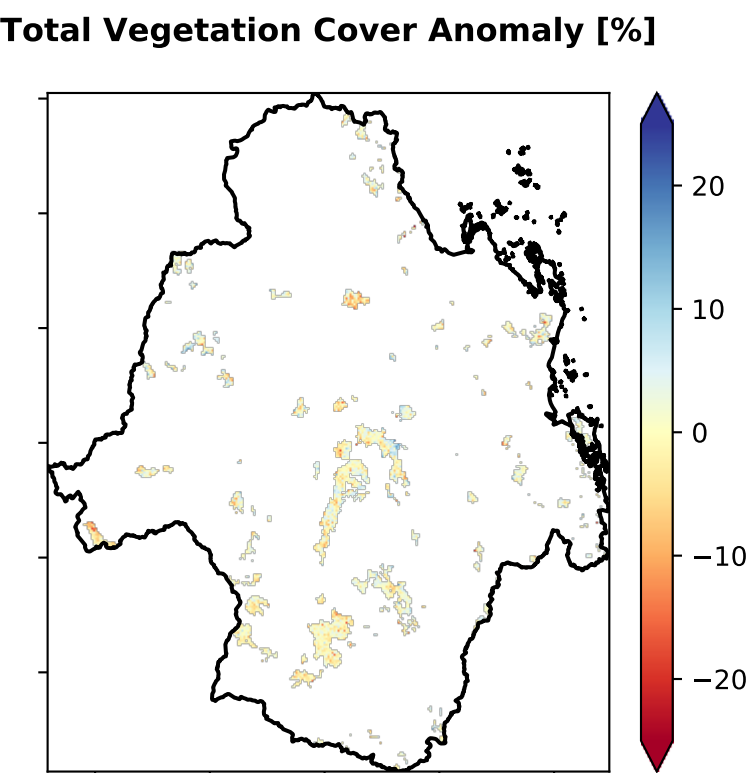
% Area protected from water erosion (>70%)



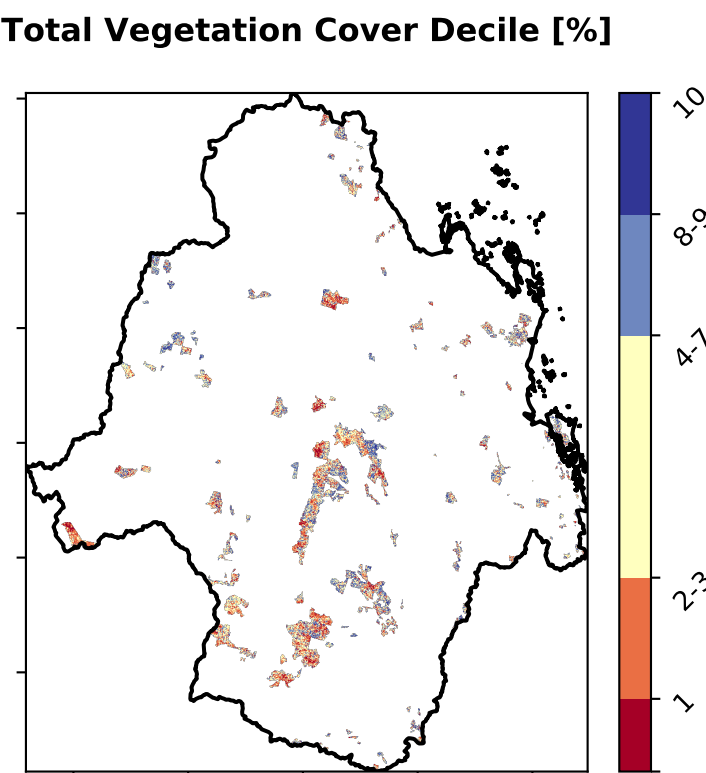
% Area protected from wind erosion (>50%)



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.



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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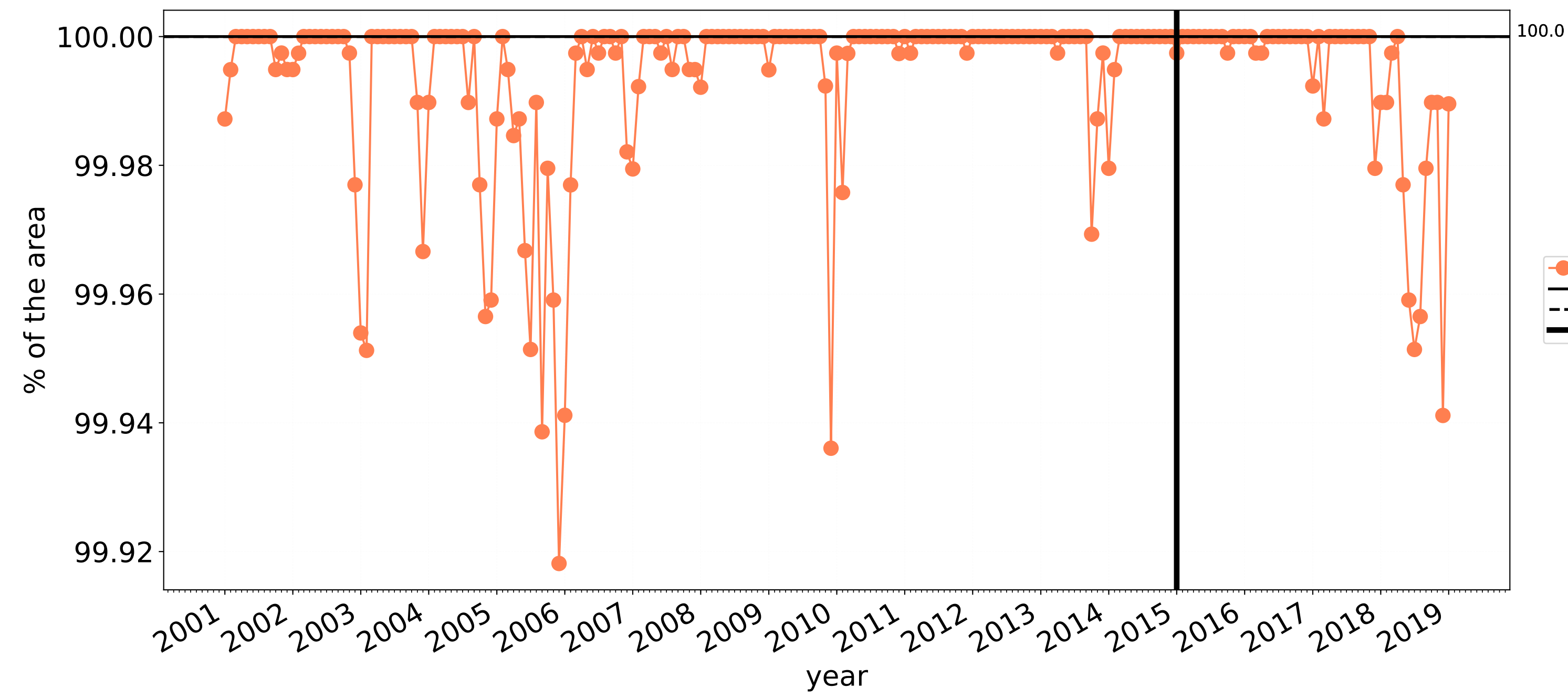
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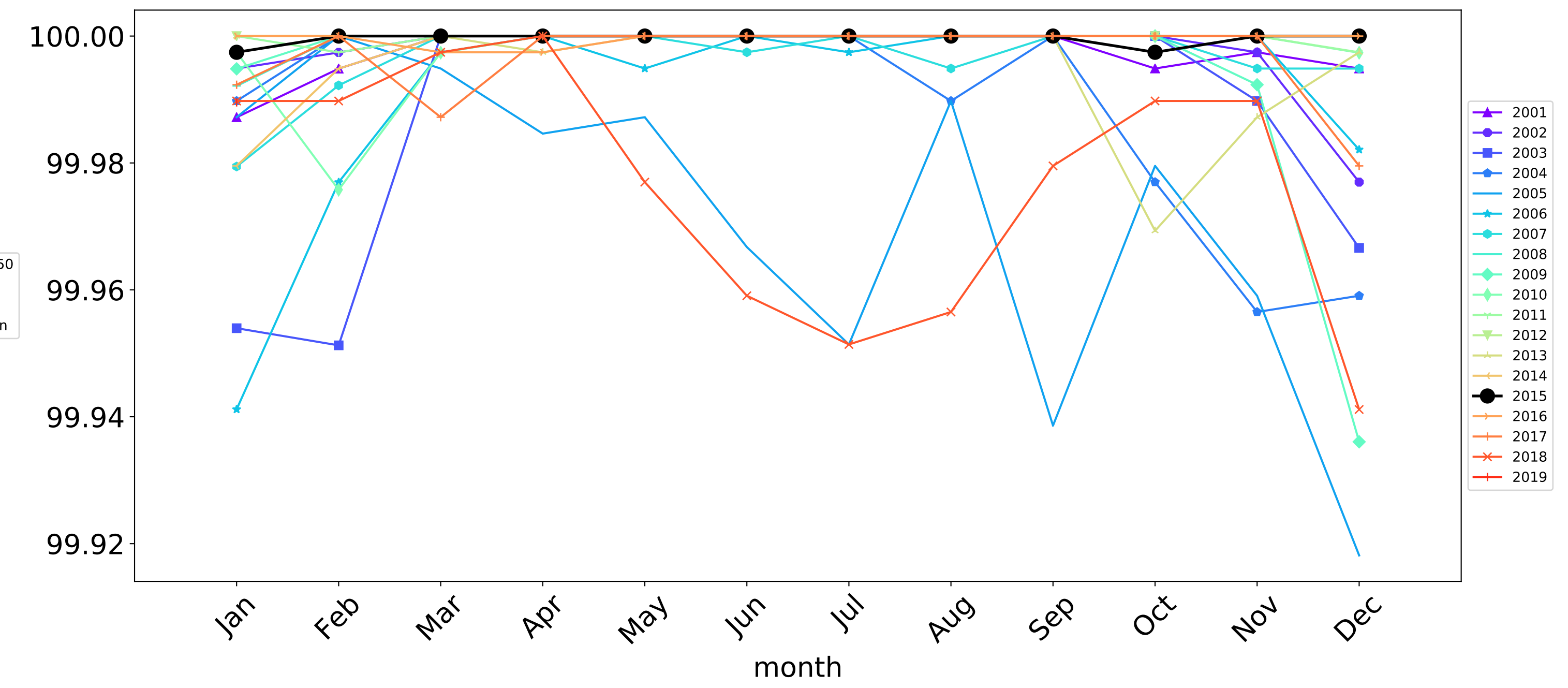
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Production native forests and plantation forests timeseries

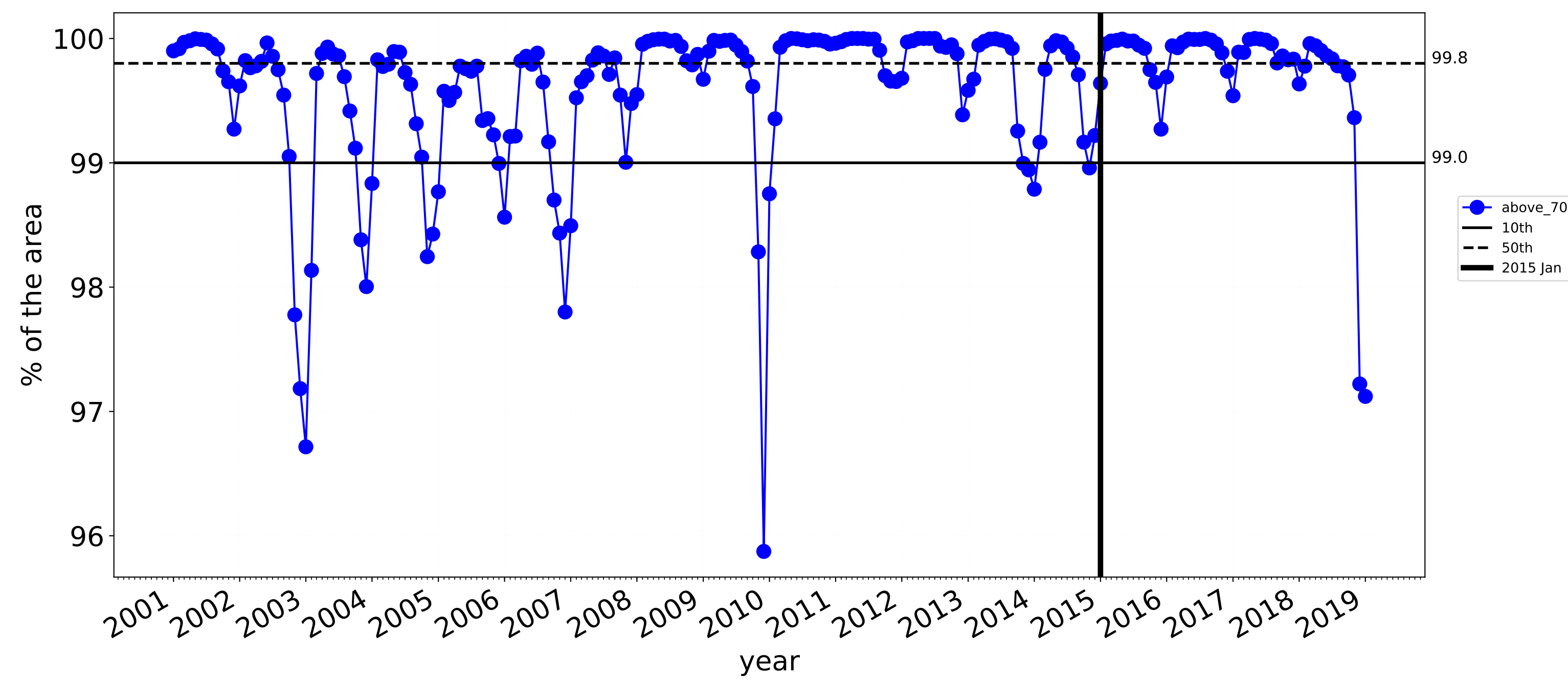
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



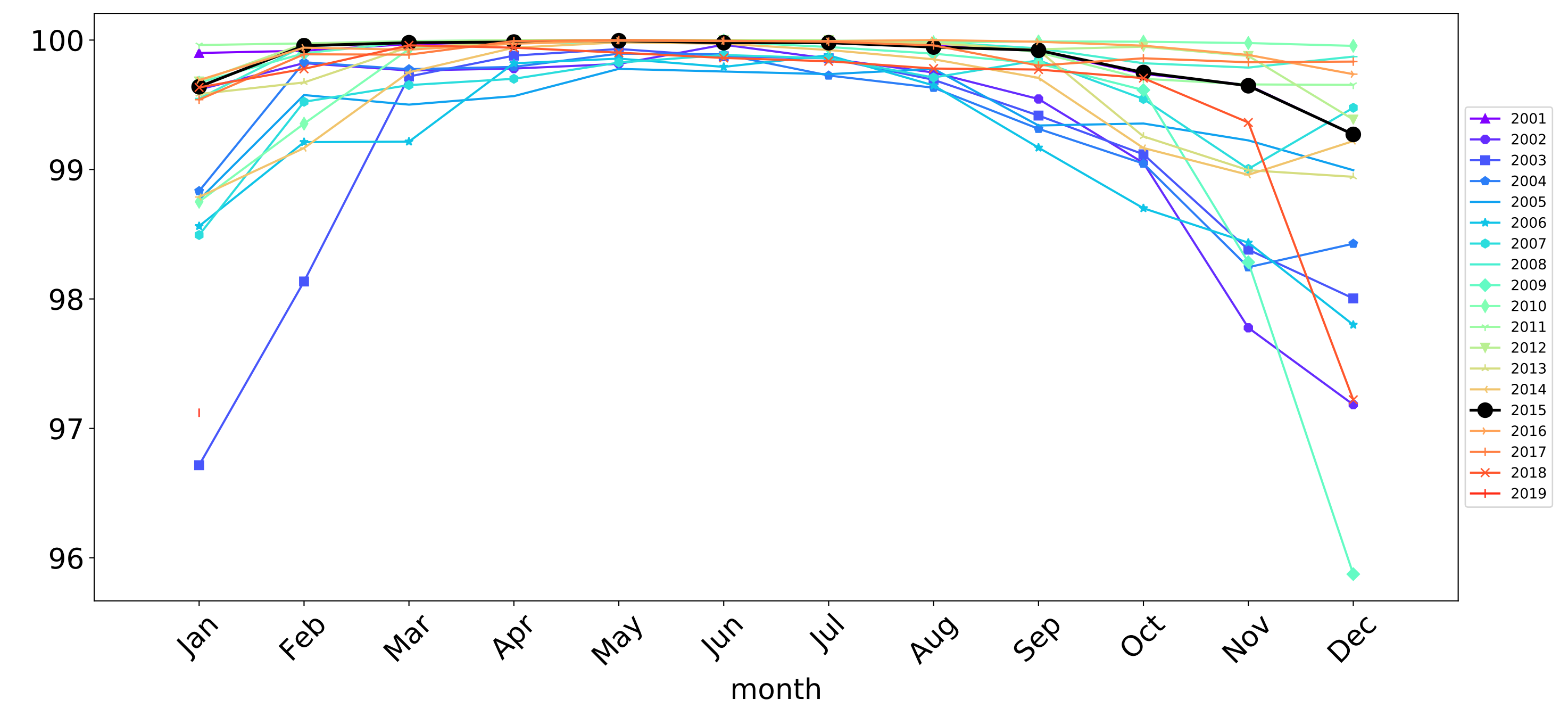
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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



Fitzroy (15,344,400 ha and no data 366,814 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	15,344,400	99.9% 15,332,246	99.2% 15,220,511	93.0% 14,265,301	73.8% 11,329,084	31.8% 4,876,762	12.9% 1,985,426
Conservation and natural environments	1,184,150	100.0% 1,183,725	99.8% 1,181,825	98.4% 1,165,375	91.4% 1,082,775	56.4% 668,250	26.8% 317,425
Conservation and natural environments Woodland forest	552,200	100.0% 552,050	99.9% 551,800	99.1% 547,025	91.2% 503,750	53.9% 297,725	29.3% 161,650
Conservation and natural environments Forest (non woodland)	557,200	100.0% 557,100	99.8% 556,275	99.1% 552,425	95.0% 529,075	62.6% 348,650	26.0% 144,975
Agriculture	13,099,375	99.9% 13,092,125	99.2% 13,001,025	92.4% 12,108,750	71.1% 9,308,050	27.4% 3,585,400	10.8% 1,414,175
Grazing	12,155,275	100.0% 12,154,275	99.9% 12,138,650	95.1% 11,558,500	74.3% 9,036,000	29.0% 3,530,325	11.5% 1,393,875
Grazing non forest	8,646,175	100.0% 8,645,225	99.8% 8,630,075	93.5% 8,080,475	67.5% 5,837,300	20.7% 1,791,625	7.9% 680,525
Grazing Woodland forest	2,281,700	100.0% 2,281,650	100.0% 2,281,325	98.9% 2,256,275	89.6% 2,043,900	47.0% 1,072,650	19.6% 447,375
Grazing - Forest (non woodland)	1,227,400	100.0% 1,227,400	100.0% 1,227,250	99.5% 1,221,750	94.1% 1,154,800	54.3% 666,050	21.7% 265,975
Cropping	812,825	99.5% 808,750	91.6% 744,925	57.5% 467,775	27.4% 223,075	4.6% 37,325	1.3% 10,550
Production native forests and plantation forests	977,375	100.0% 977,375	100.0% 977,350	99.6% 973,850	95.4% 932,850	60.2% 588,650	21.9% 214,500



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