

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:

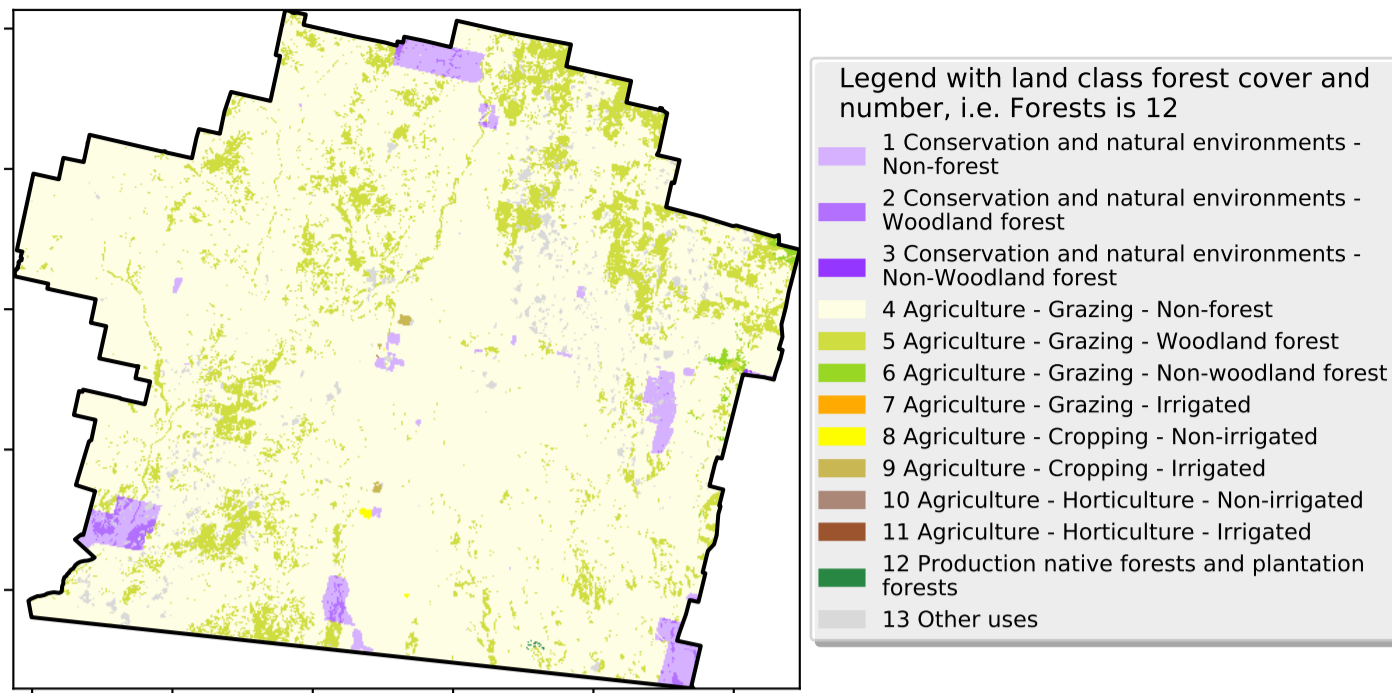
1. <http://www.agriculture.gov.au/abares/aclump/land-use/alum-classification>
2. <http://www.agriculture.gov.au/abares/forestsaustralia/sofr/sofr-2018>
3. <https://www.dpi.nsw.gov.au/agriculture/pastures-and-rangelands/establishment-mgmt/production-management2/groundcover>
4. MODIS Fractional cover algorithm: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



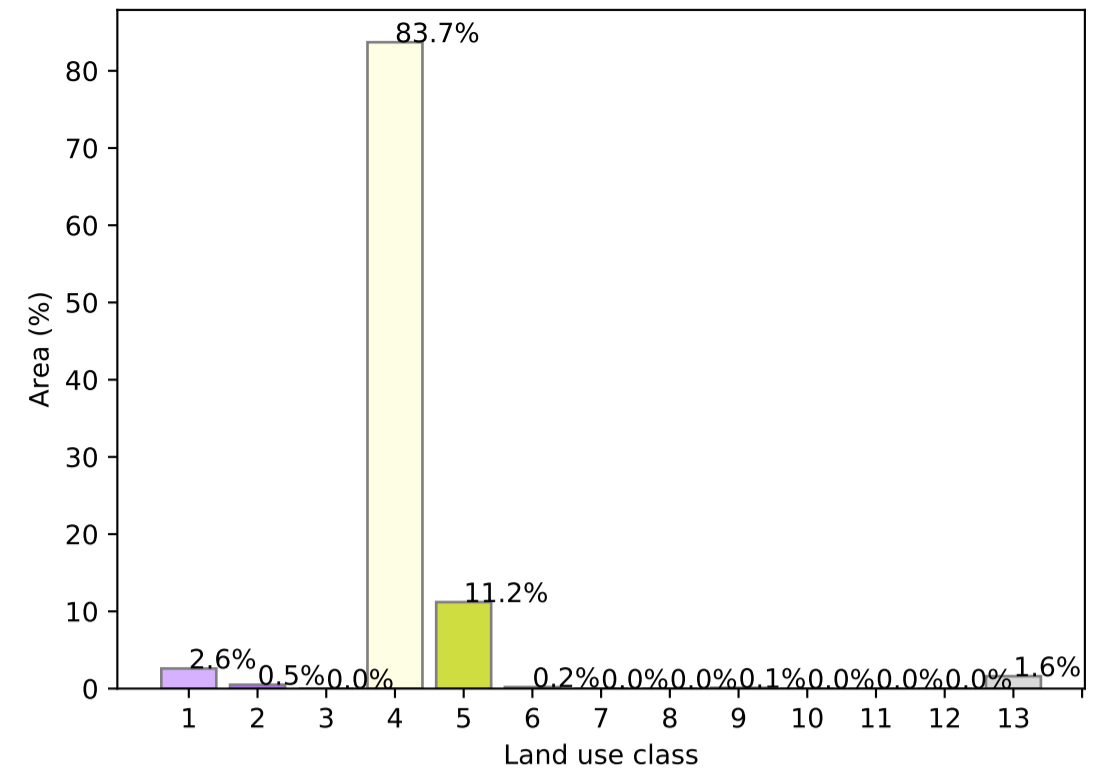
Vegetation Cover Oct 2019

Land use and forest cover

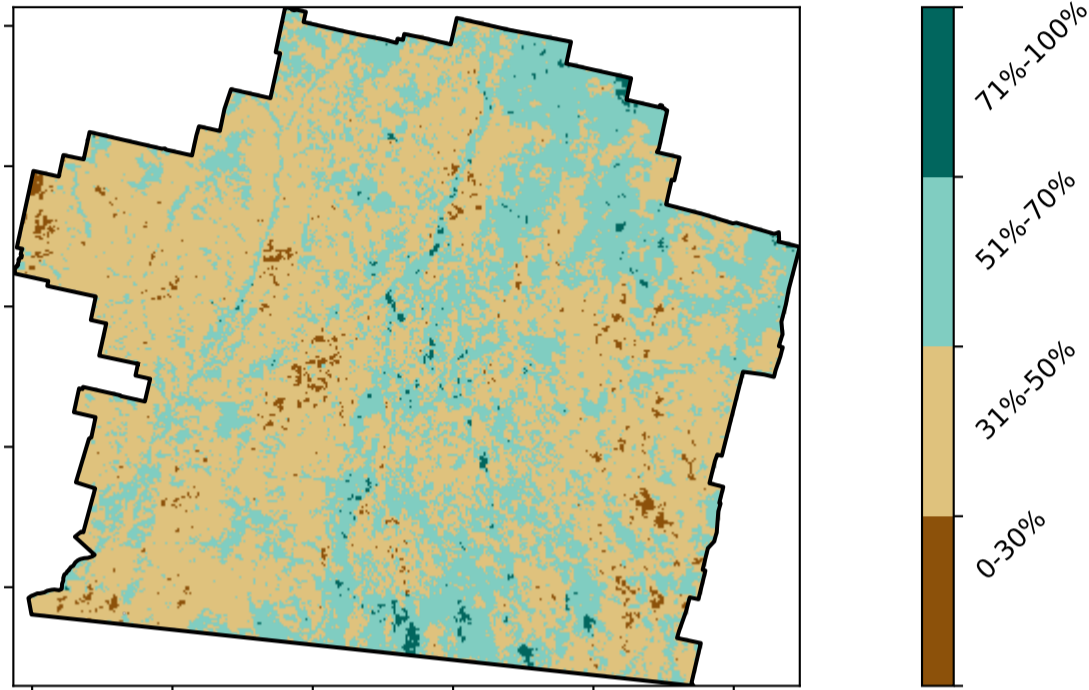
Catchment Scale
Land Use and Forests
of Australia (2018)
Derived from
Catchment Scale Land
Use of Australia
(2018) and Forests
of Australia (2018)



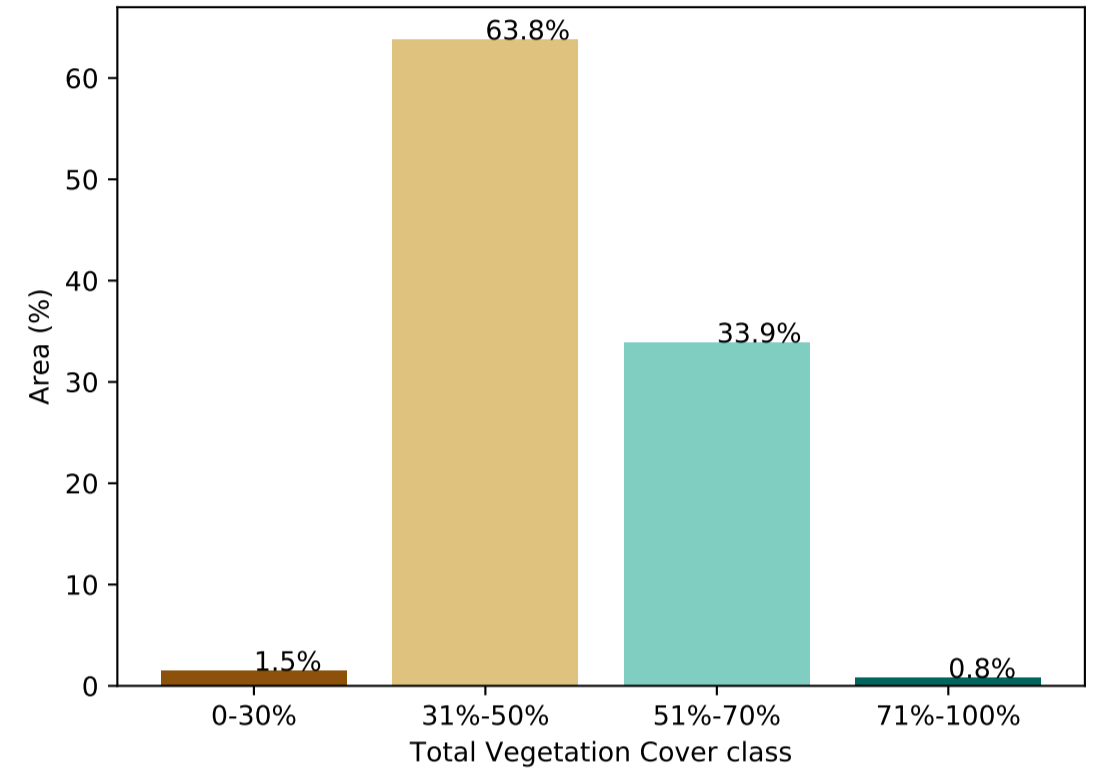
Proportion of each land class in area



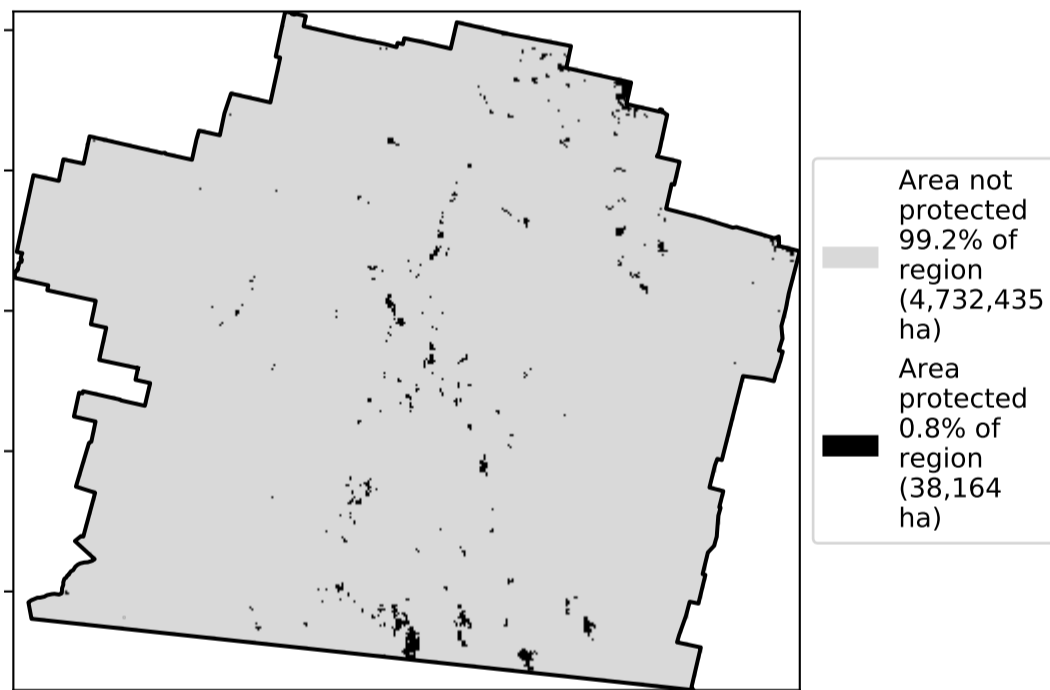
Total Vegetation Cover [%]



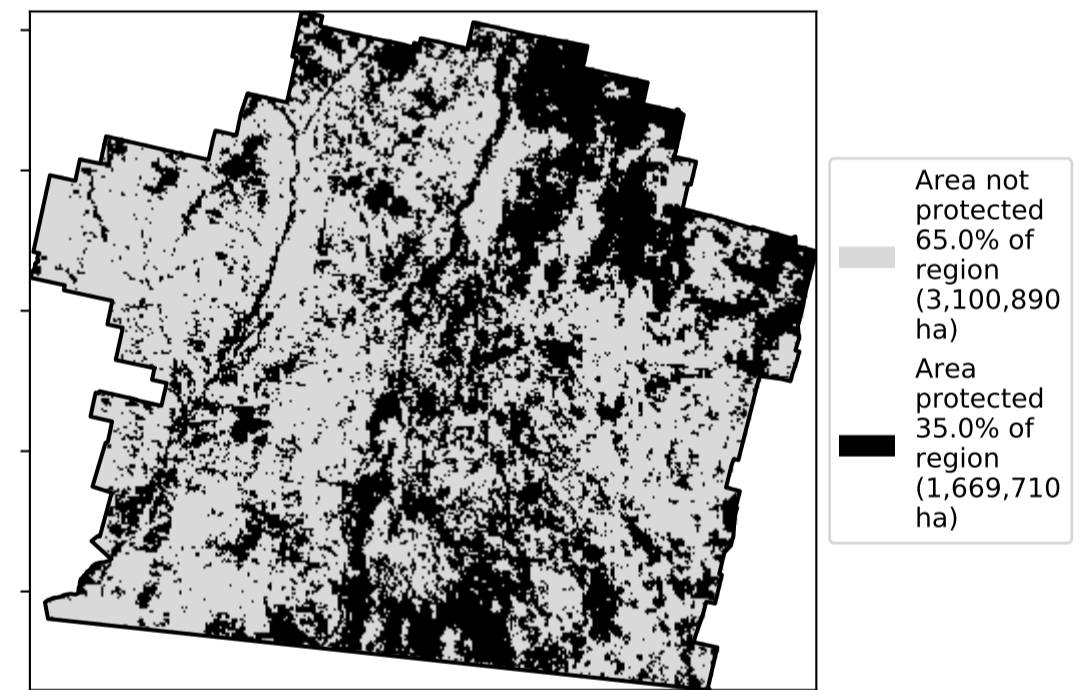
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

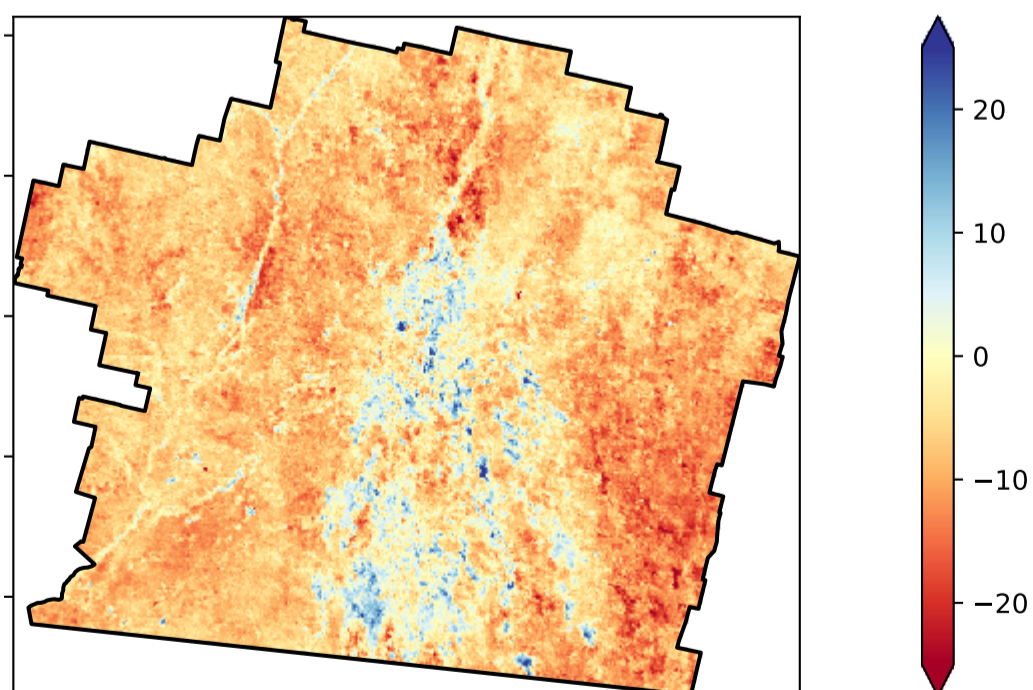


% Area protected from wind erosion (>50%)



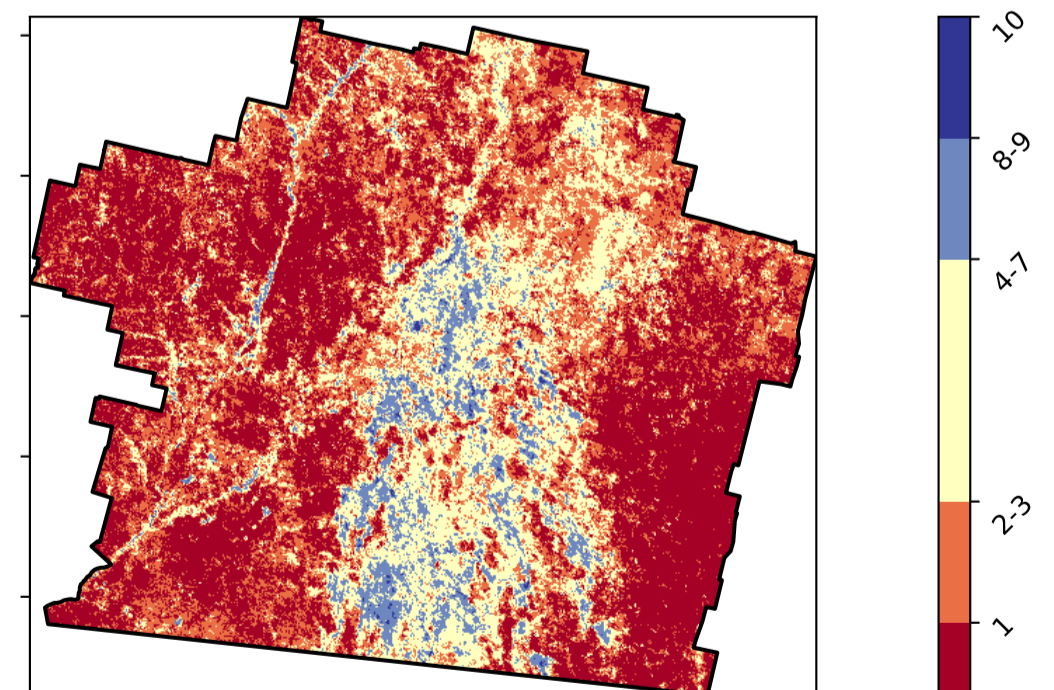
Total Vegetation Cover Anomaly [%]

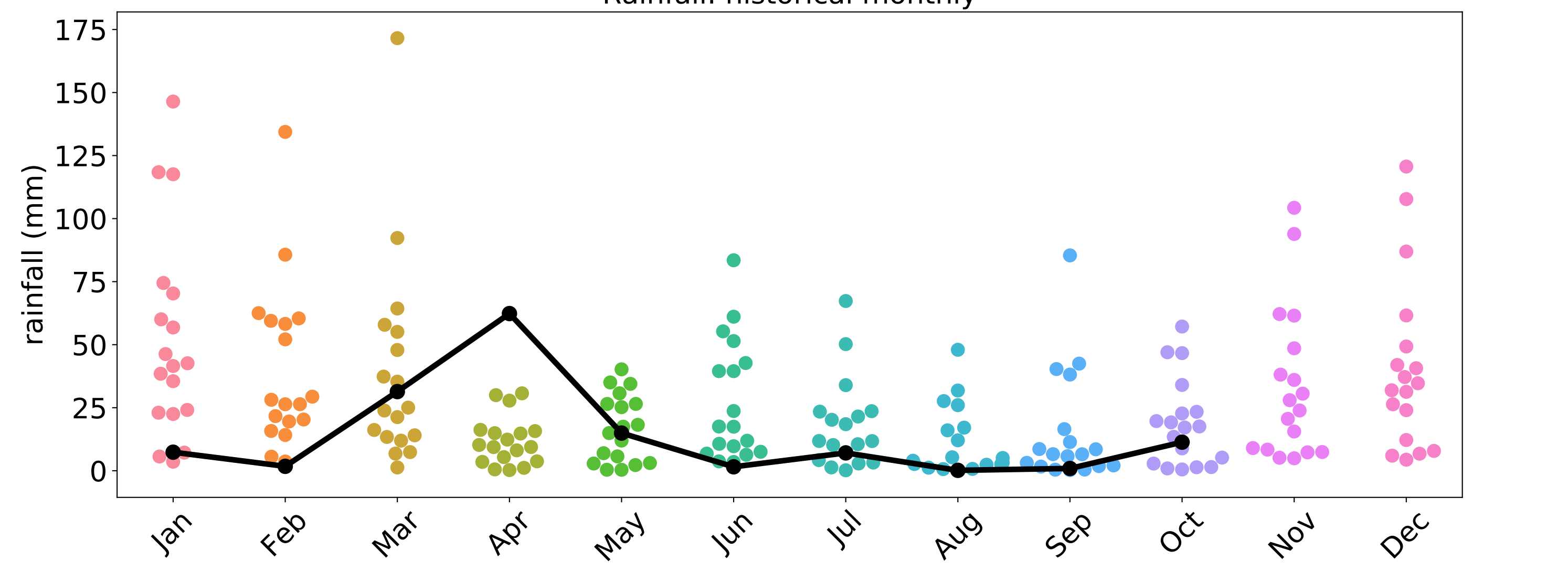
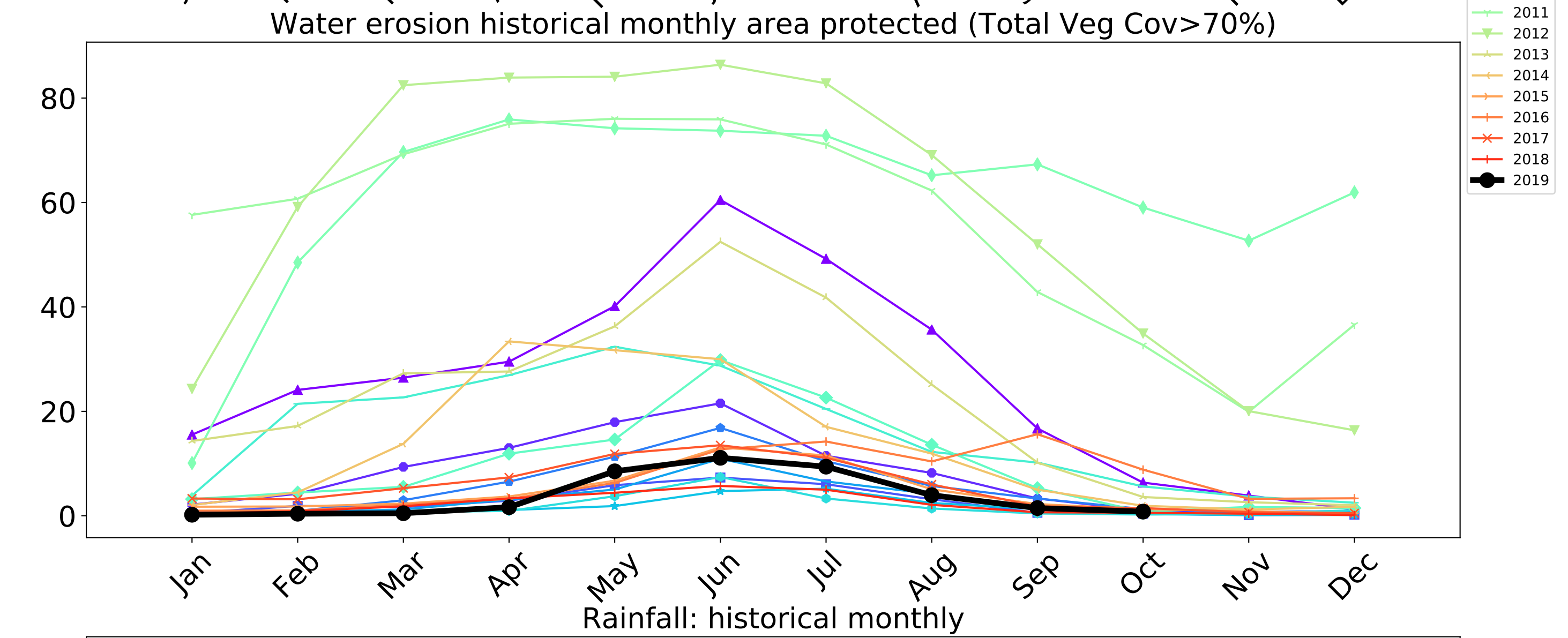
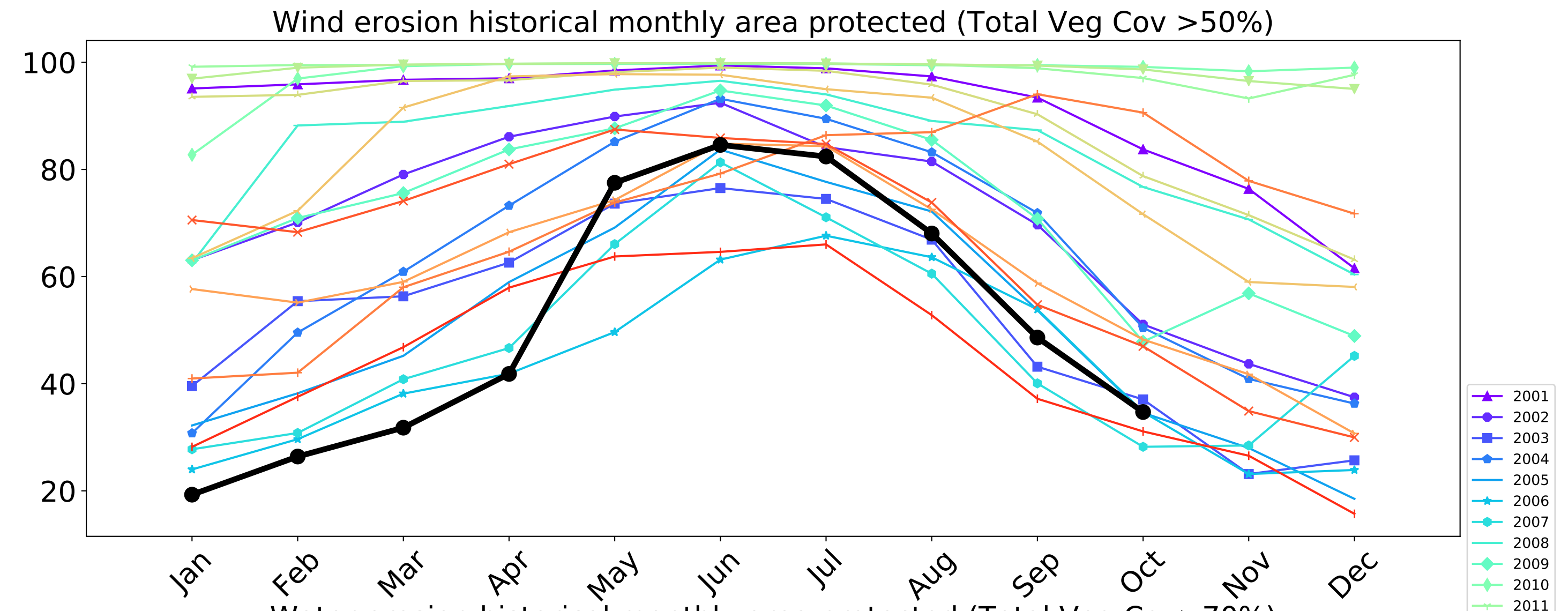
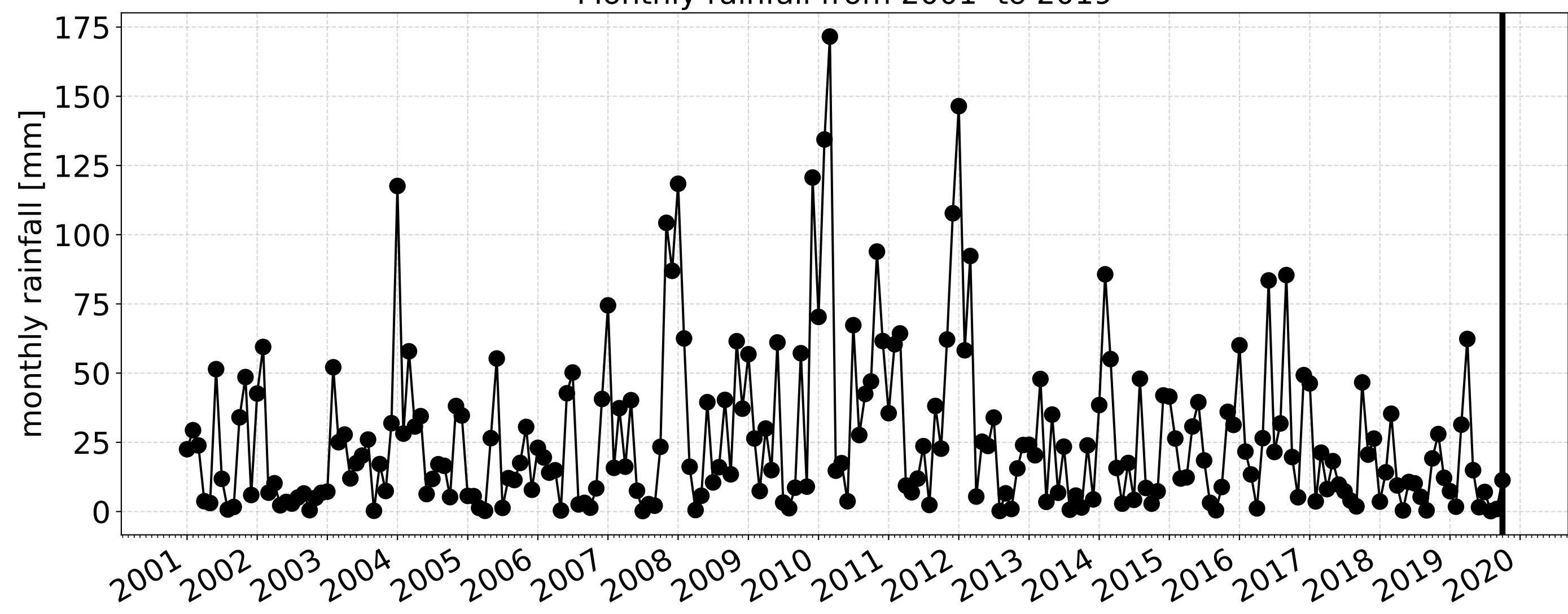
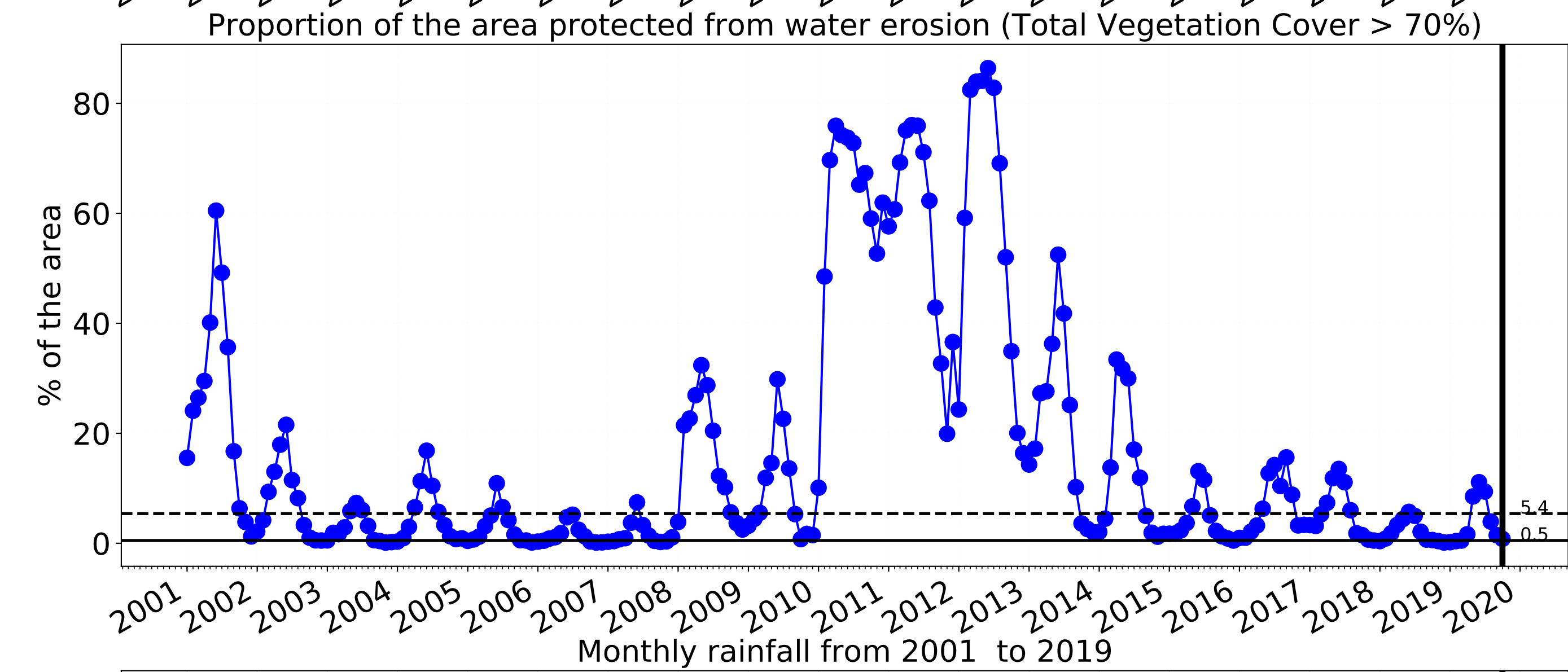
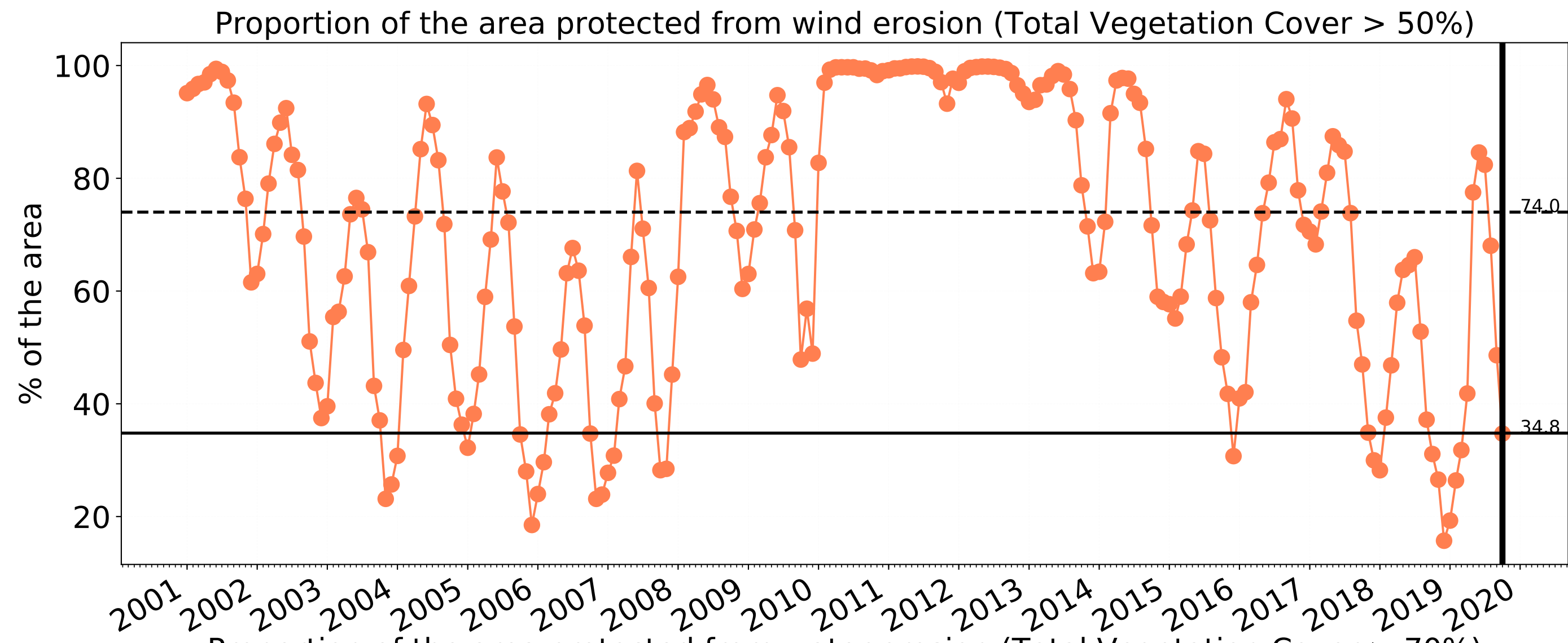
Anomaly show how many percentage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



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 [%]

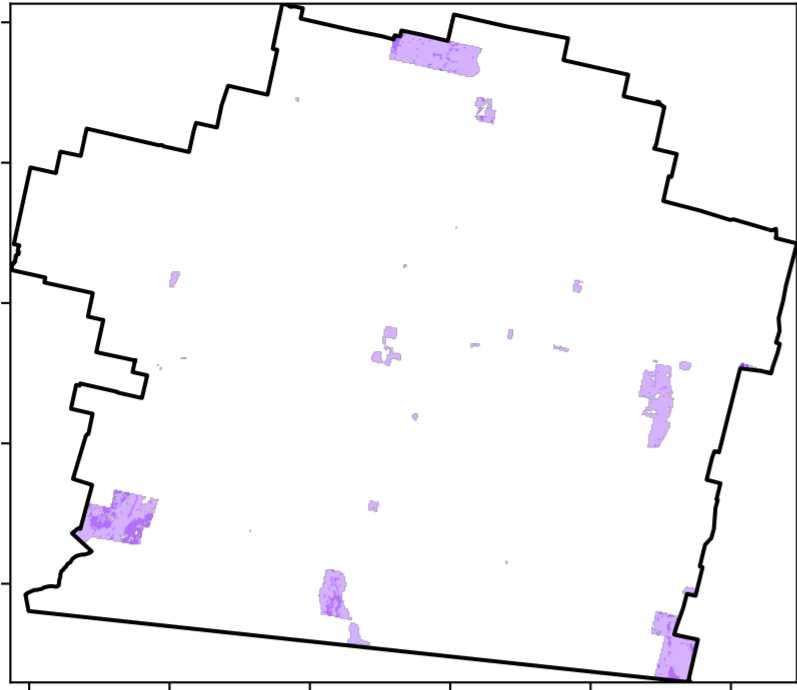




Conservation and natural environments

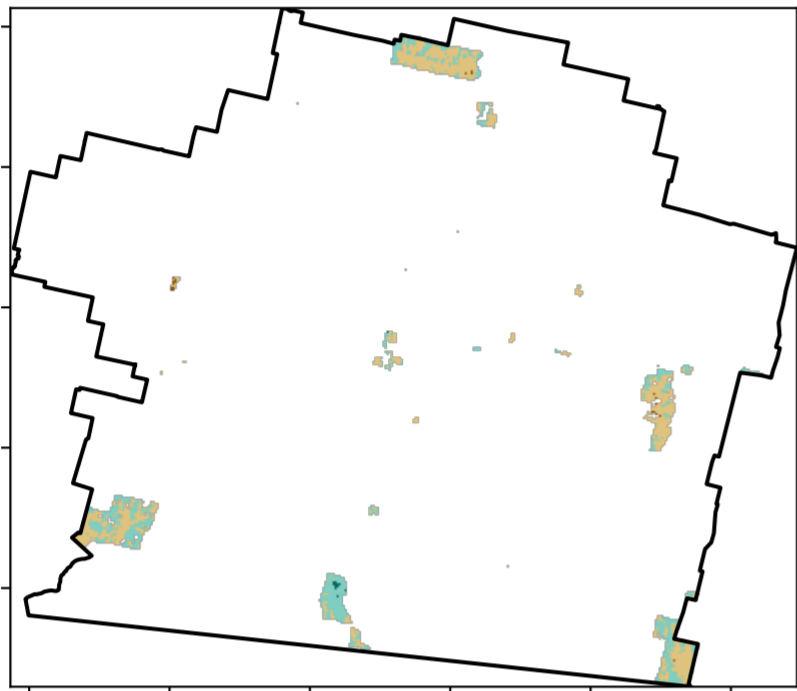
Land use and forest cover

Catchment Scale
Land Use and Forests
of Australia (2018)
Derived from
Catchment Scale Land
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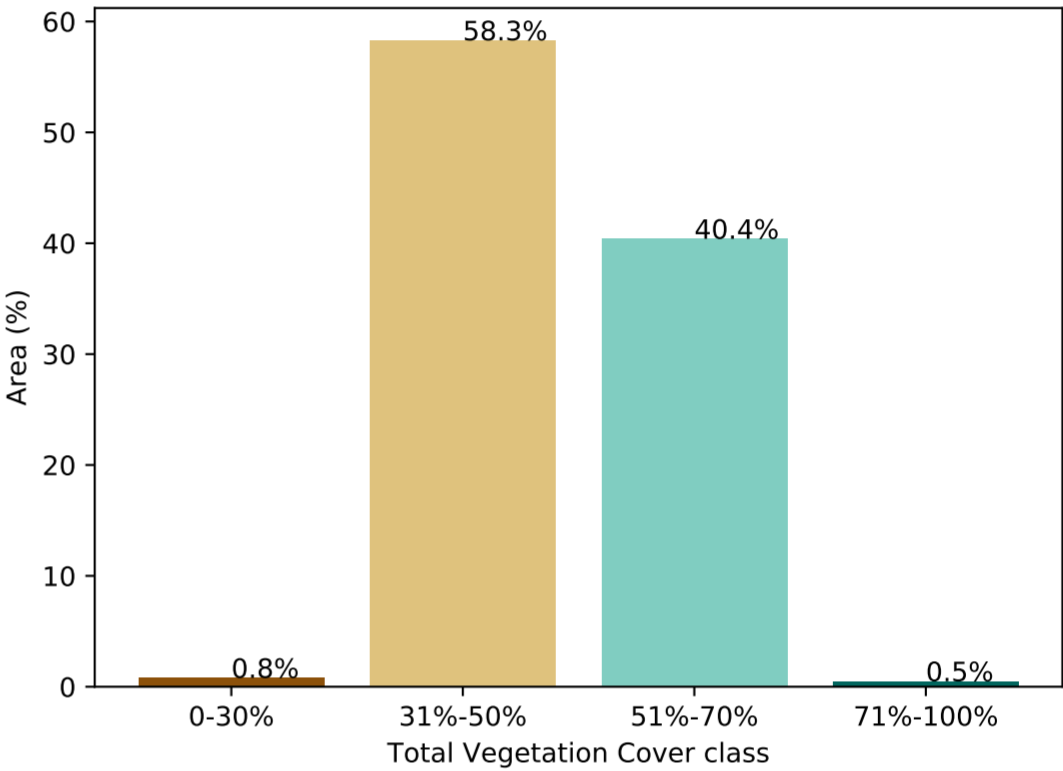
Conservation and natural environments - Non-forest
Conservation and natural environments - Woodland forest
Conservation and natural environments - Non-woodland forest

Total Vegetation Cover [%]



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

Proportion of vegetation cover class in area

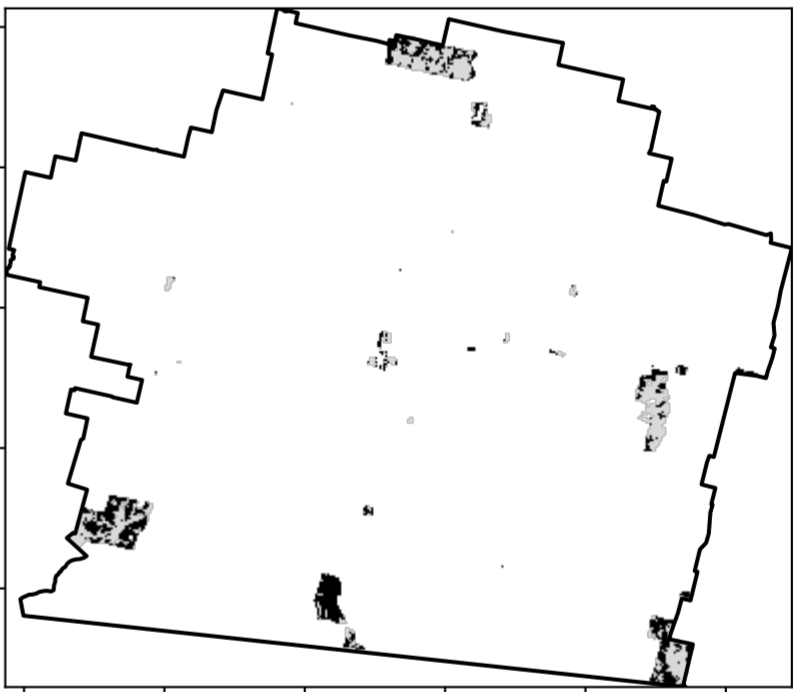


% Area protected from water erosion (>70%)



Area not protected
99.5% of region
(148,155 ha)
Area protected
0.5% of region
(744 ha)

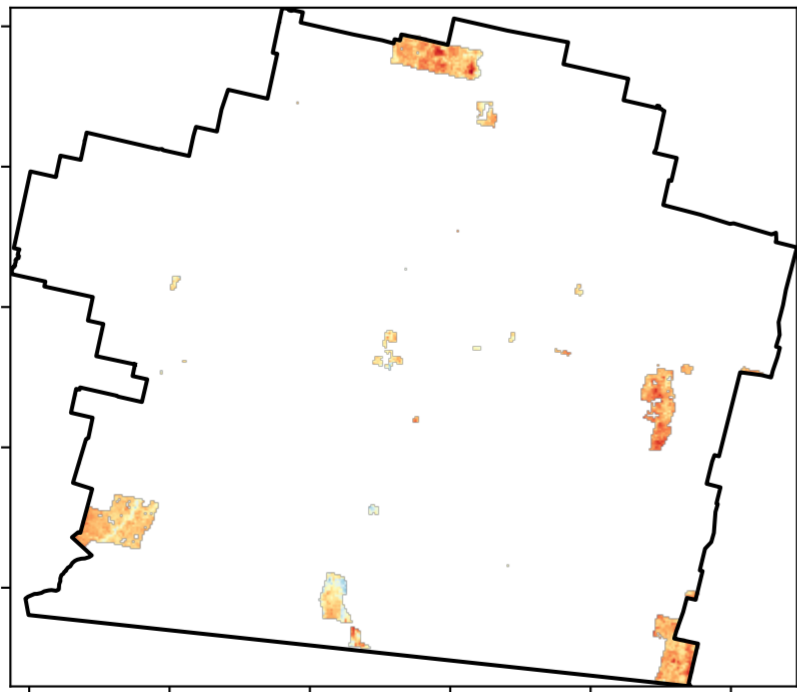
% Area protected from wind erosion (>50%)



Area not protected
59.0% of region
(87,851 ha)
Area protected
41.0% of region
(61,049 ha)

Total Vegetation Cover Anomaly [%]

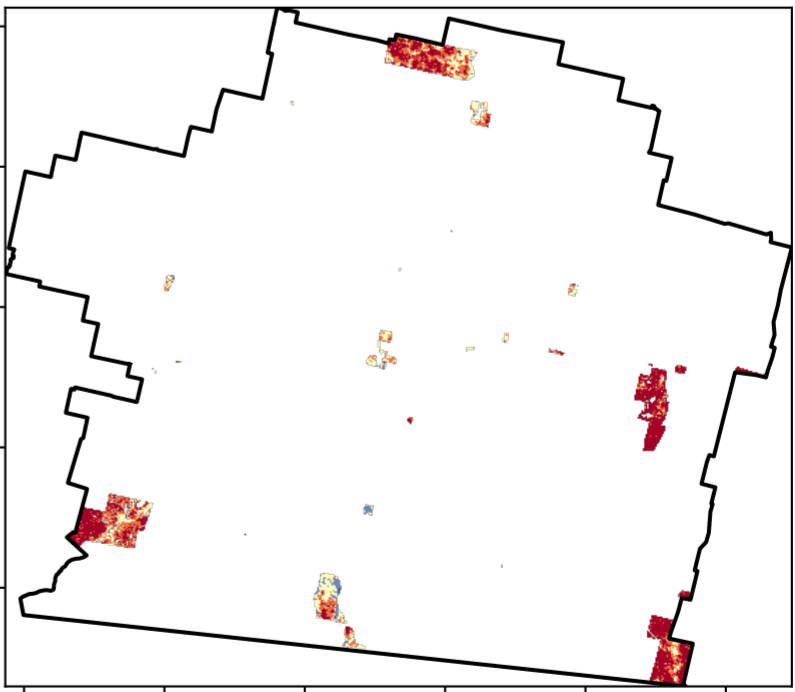
Anomaly show how many percentage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



20
10
0
-10
-20

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

Total Vegetation Cover Decile [%]

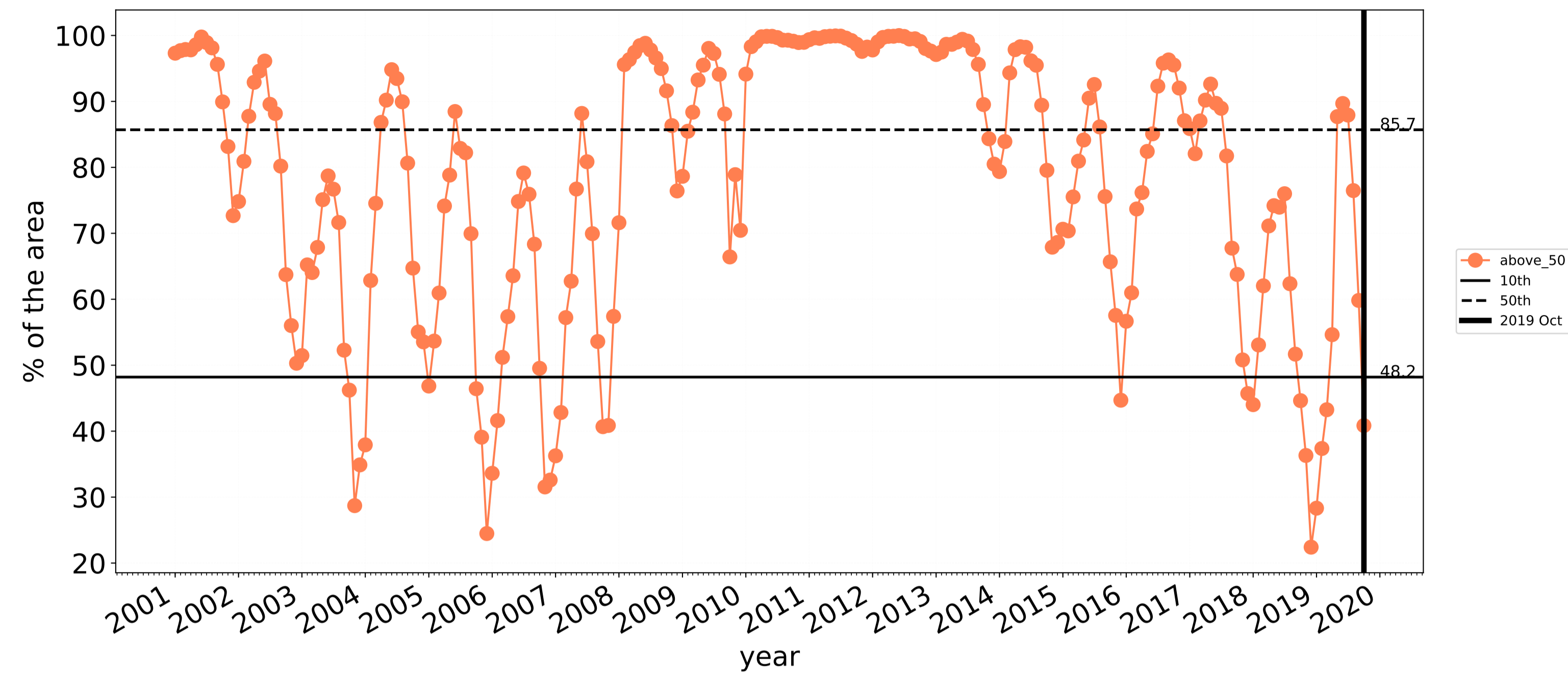


10
9
8
7
6
5
4
3
2
1

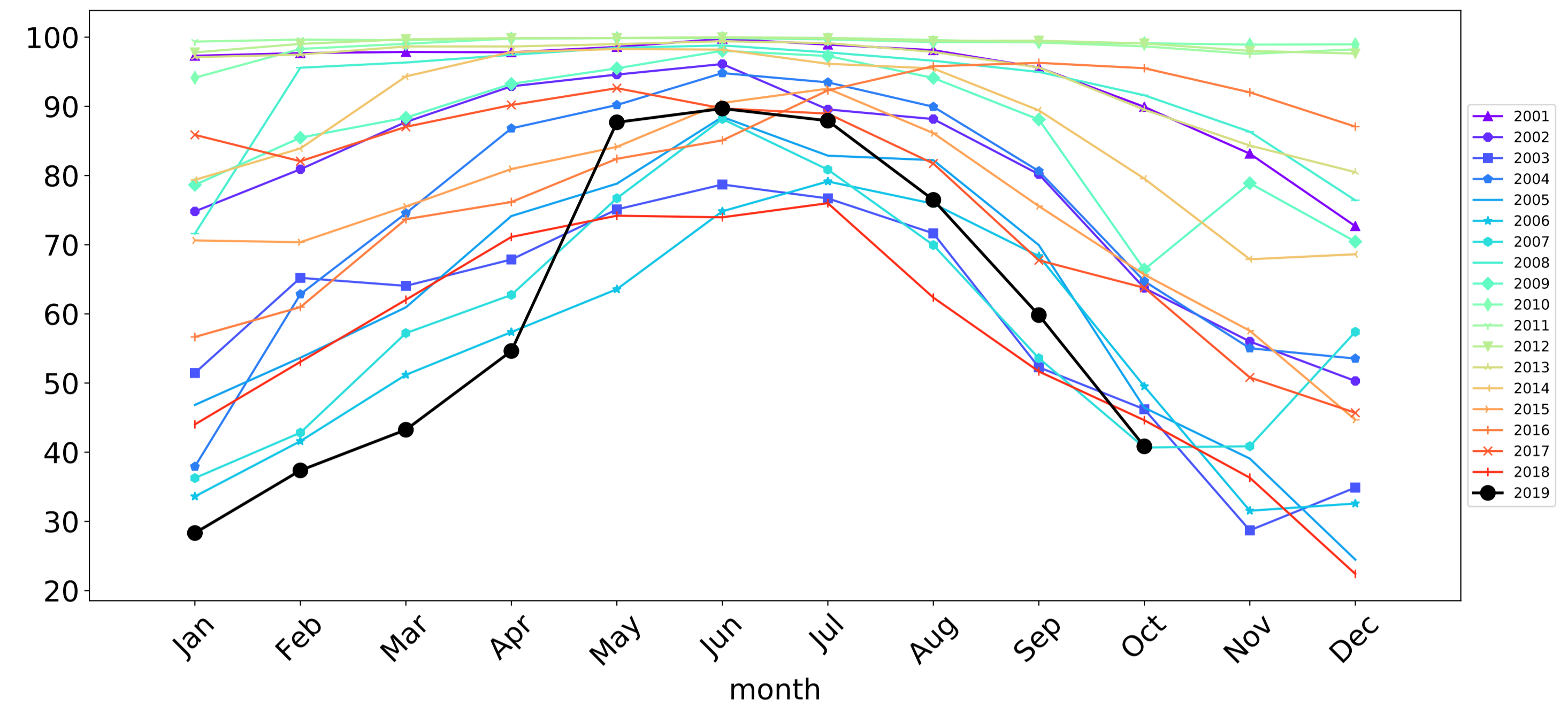


Conservation and natural environments timeseries

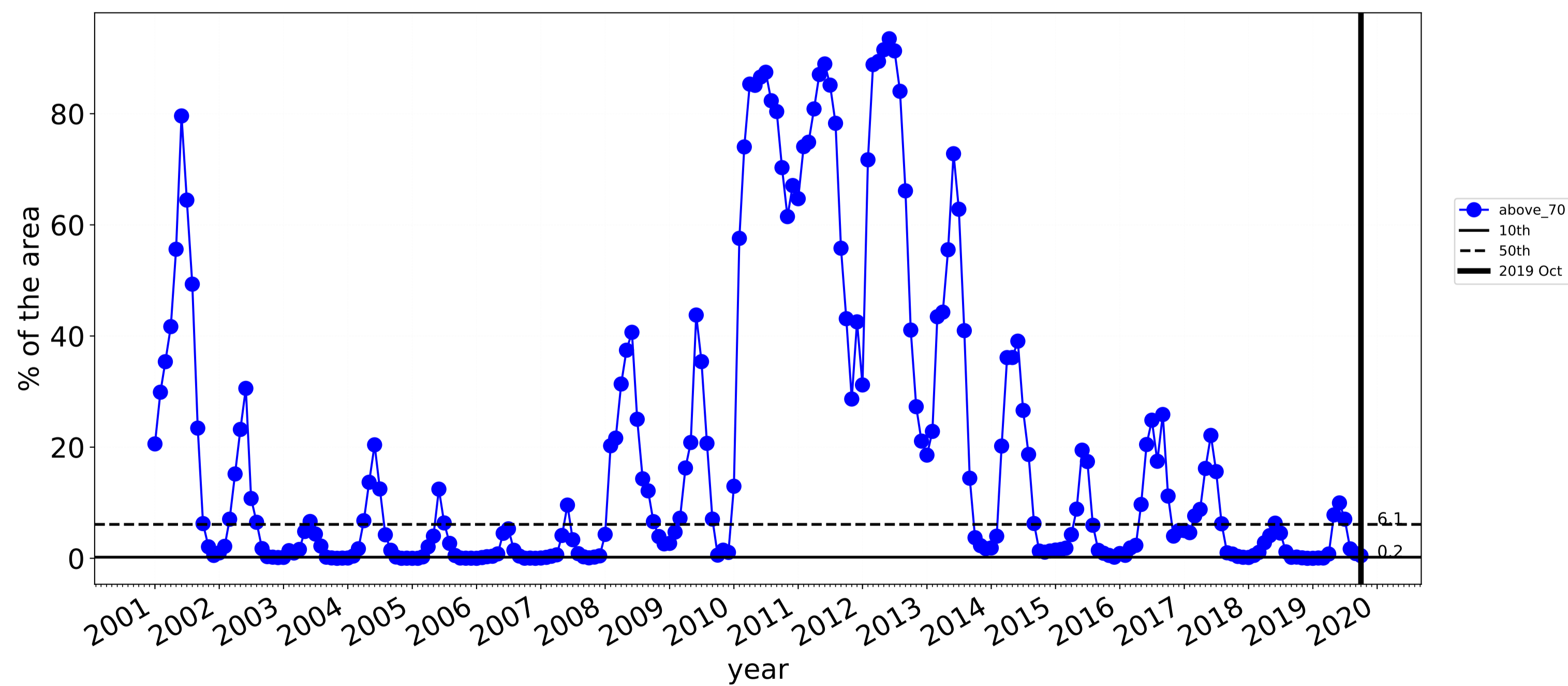
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



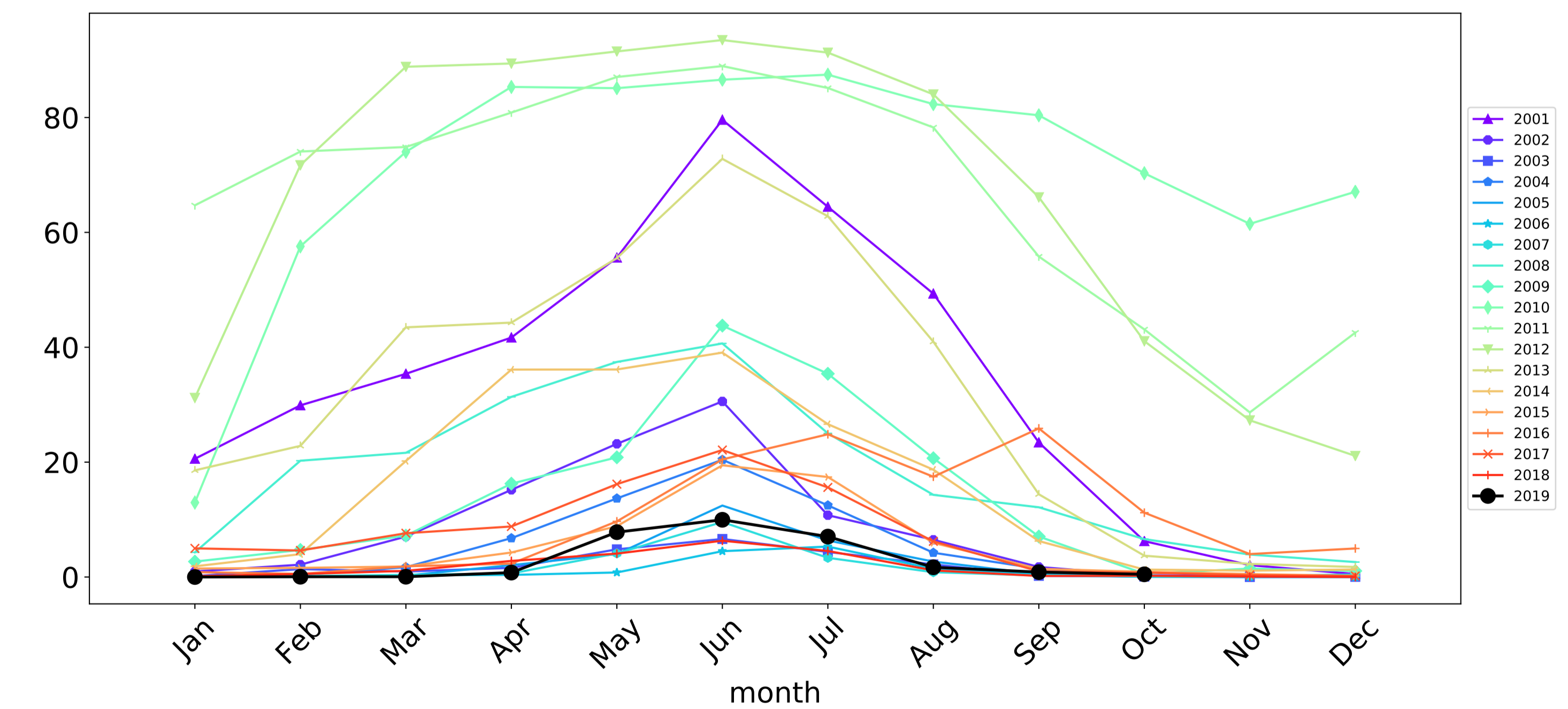
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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

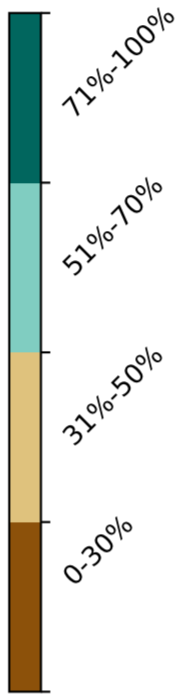
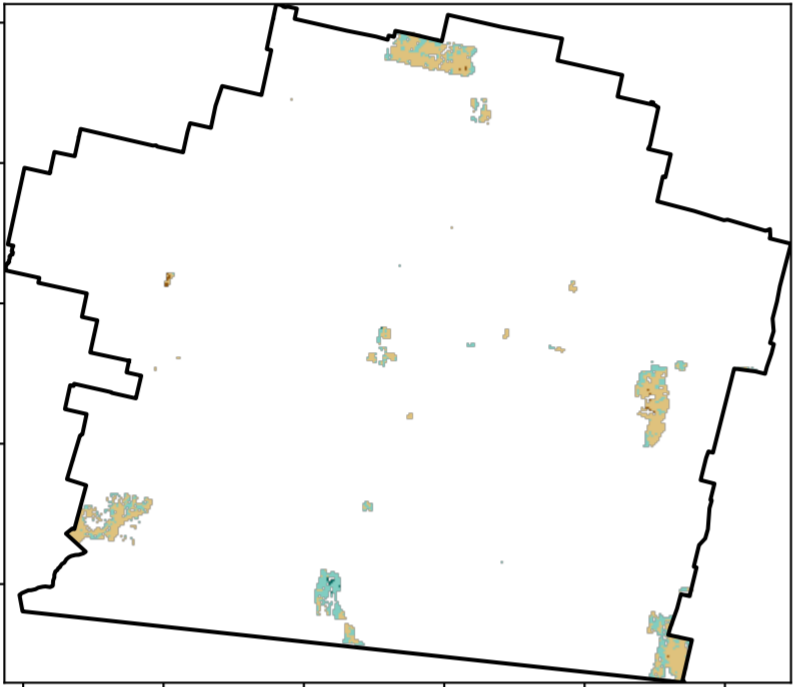
Land use and forest cover

Catchment Scale
Land Use and Forests
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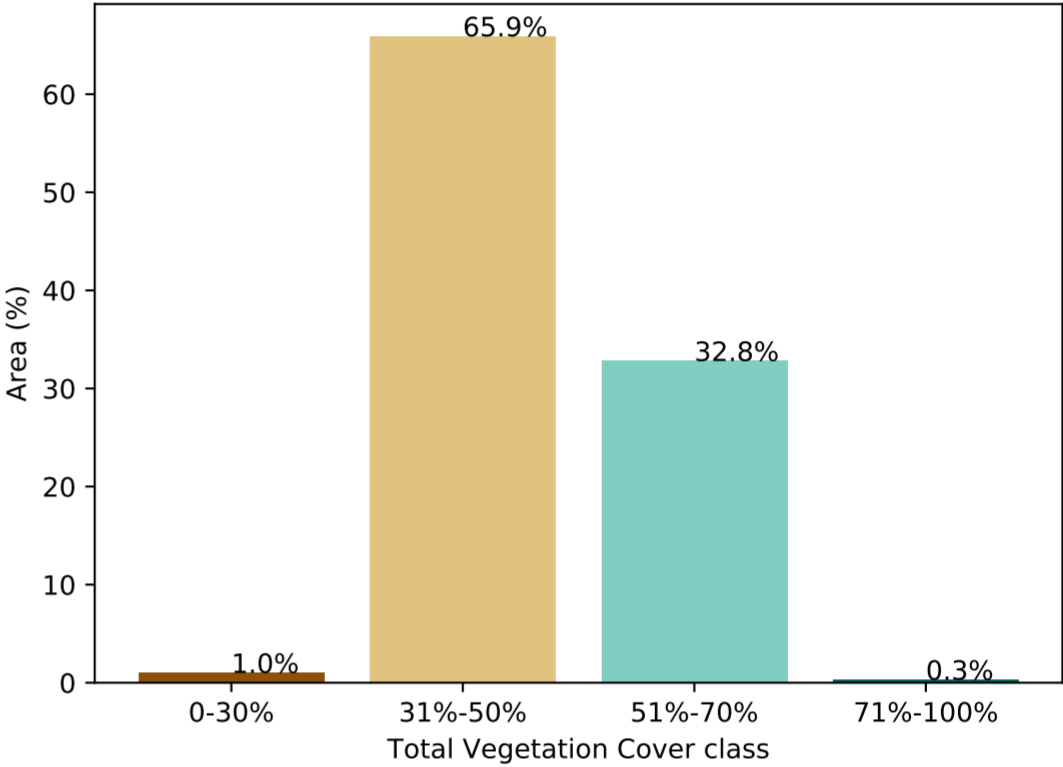


Conservation and natural environments - Non-forest

Total Vegetation Cover [%]



Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)



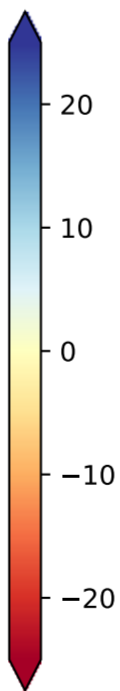
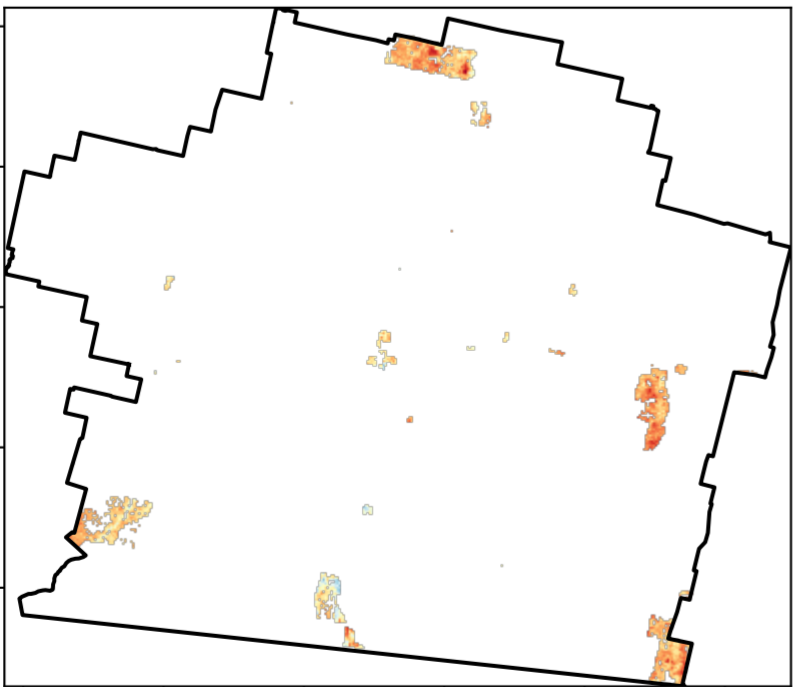
Area not protected
99.7% of region
(124,550
ha)
Area protected
0.3% of region
(374 ha)

% Area protected from wind erosion (>50%)



Area not protected
67.0% of region
(83,699
ha)
Area protected
33.0% of region
(41,225
ha)

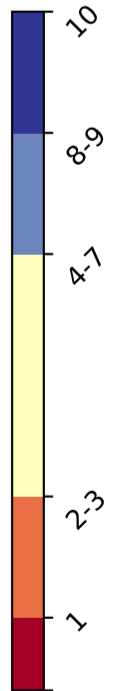
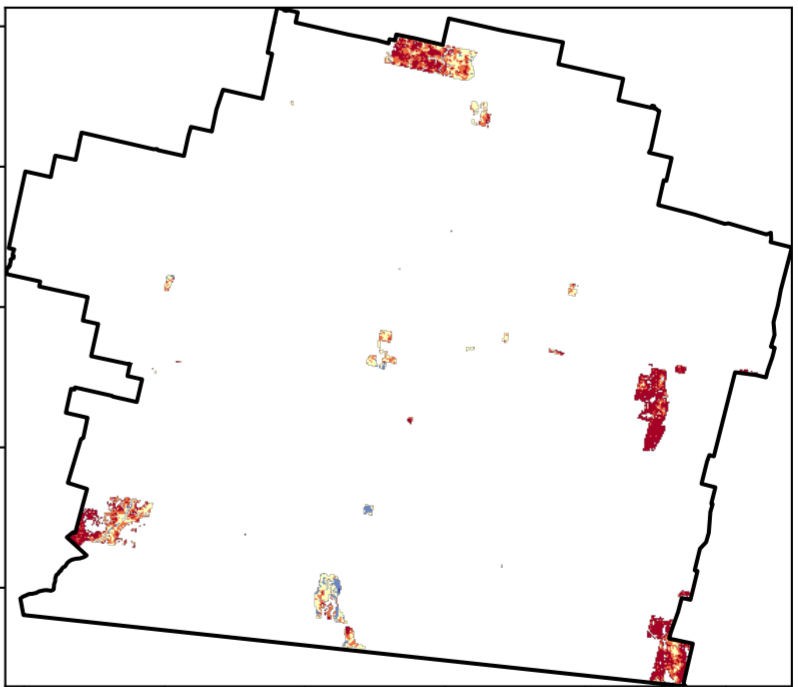
Total Vegetation Cover Anomaly [%]



Anomaly show how
many percentage
points each
pixel is from
the mean. That
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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
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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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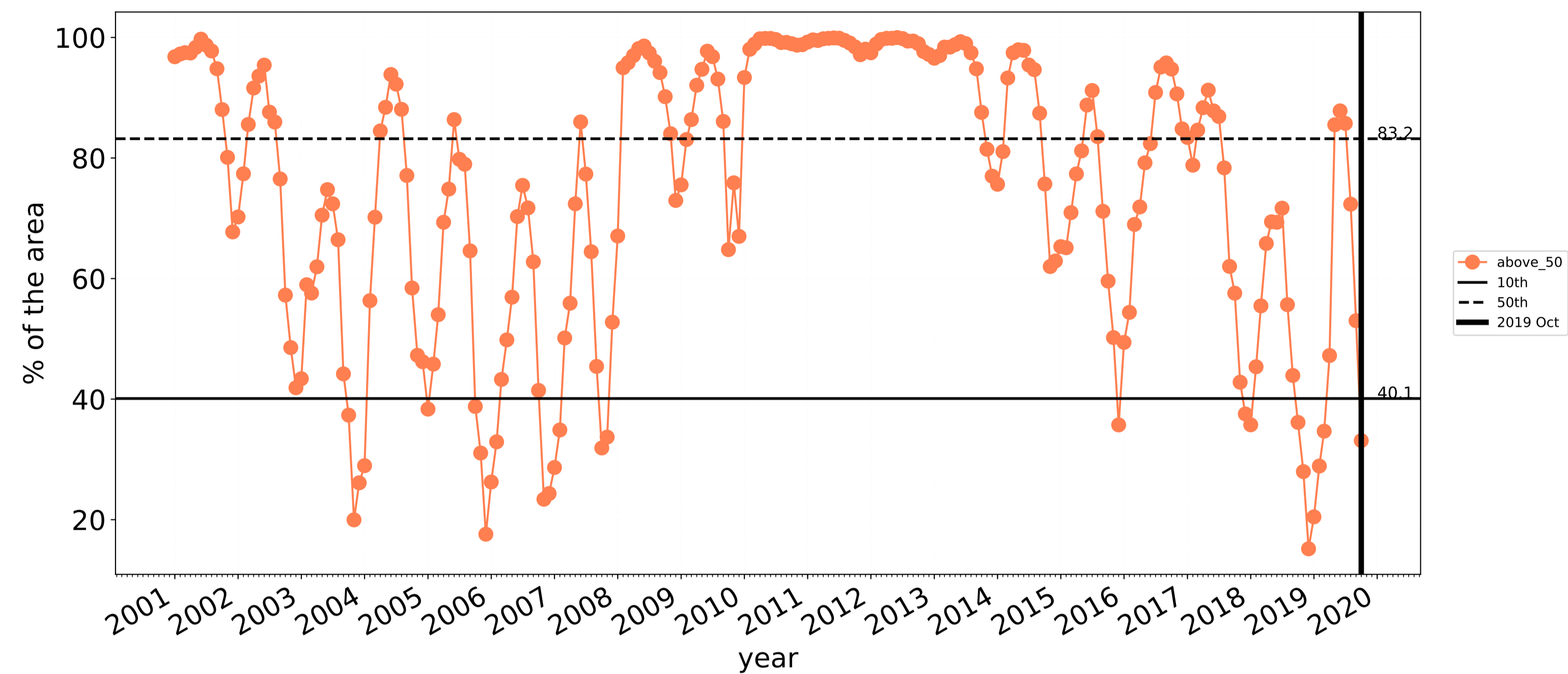
National
Landcare
Programme



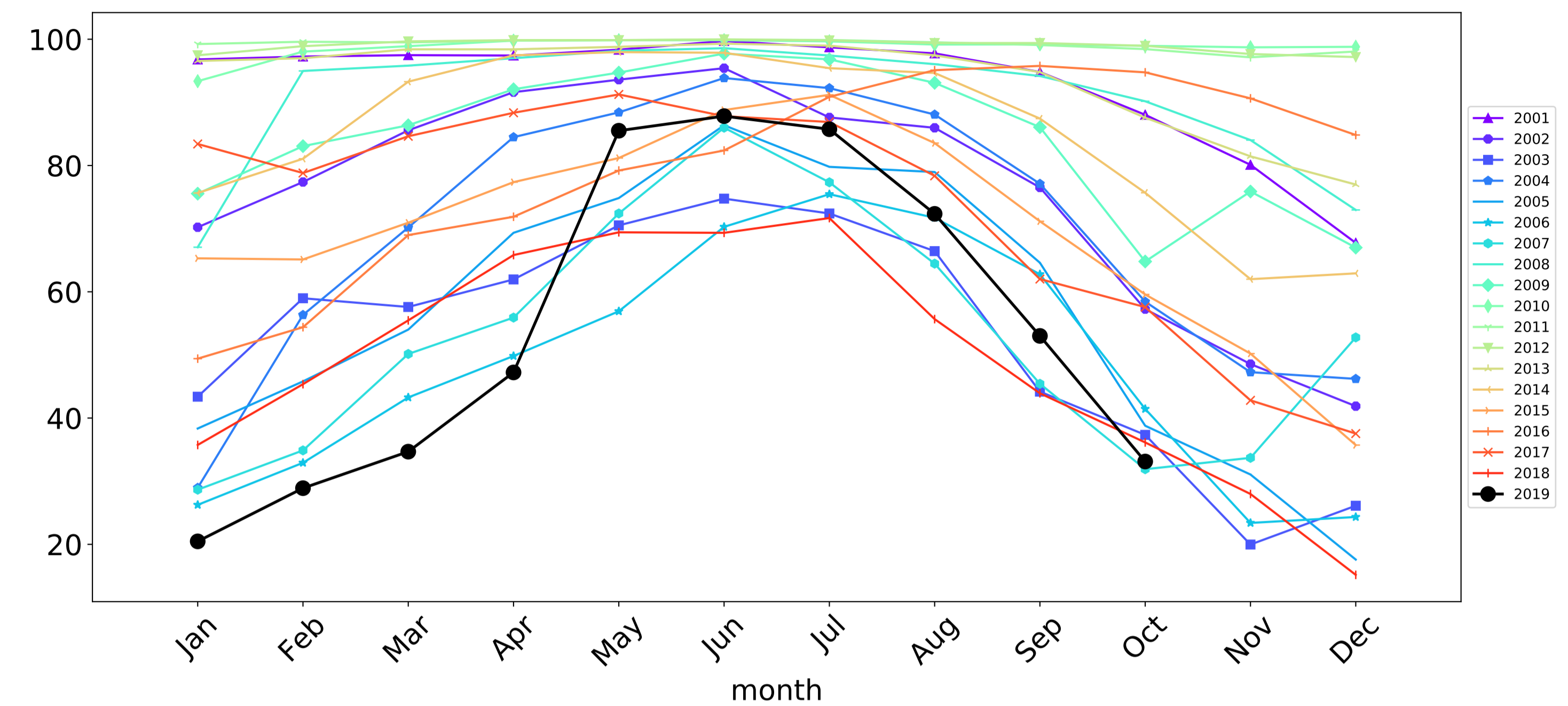
Planning,
Industry &
Environment

Conservation and natural environments non forest timeseries

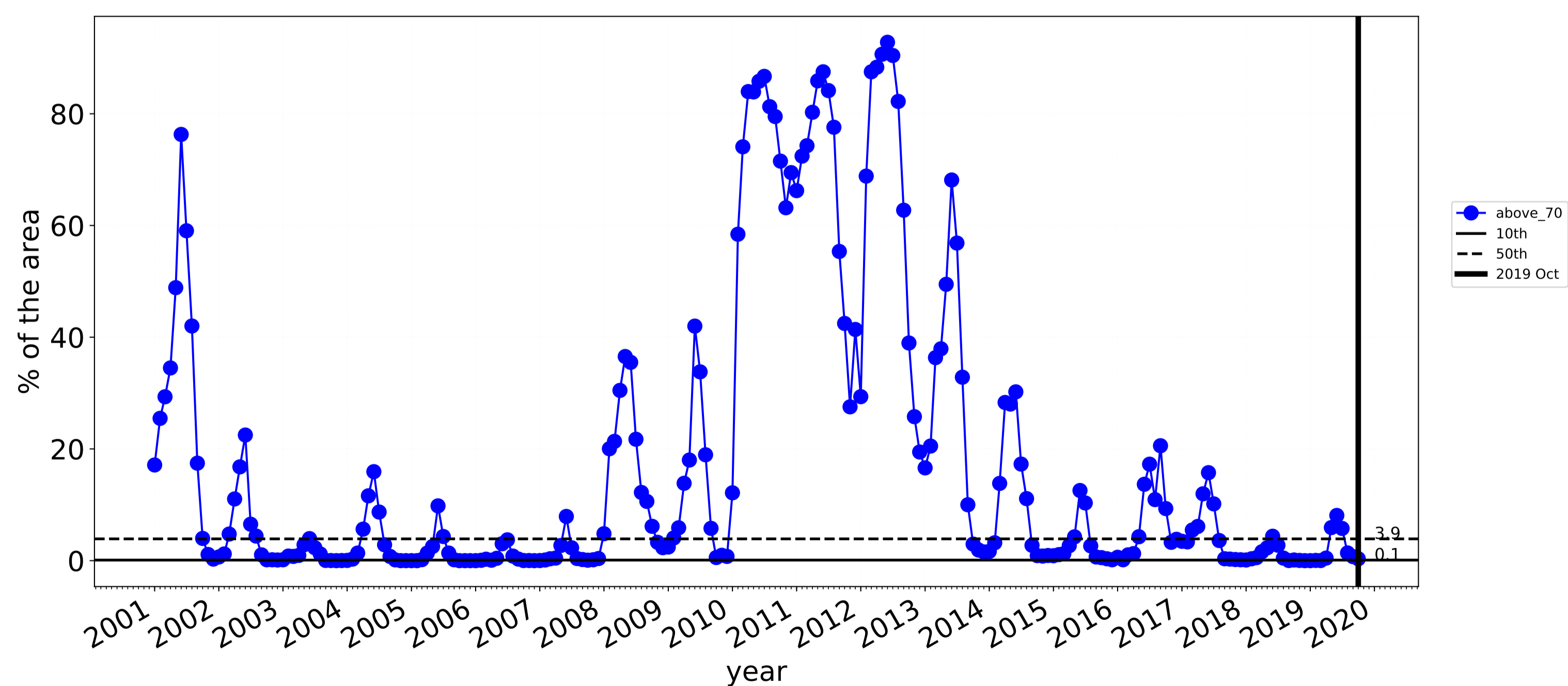
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



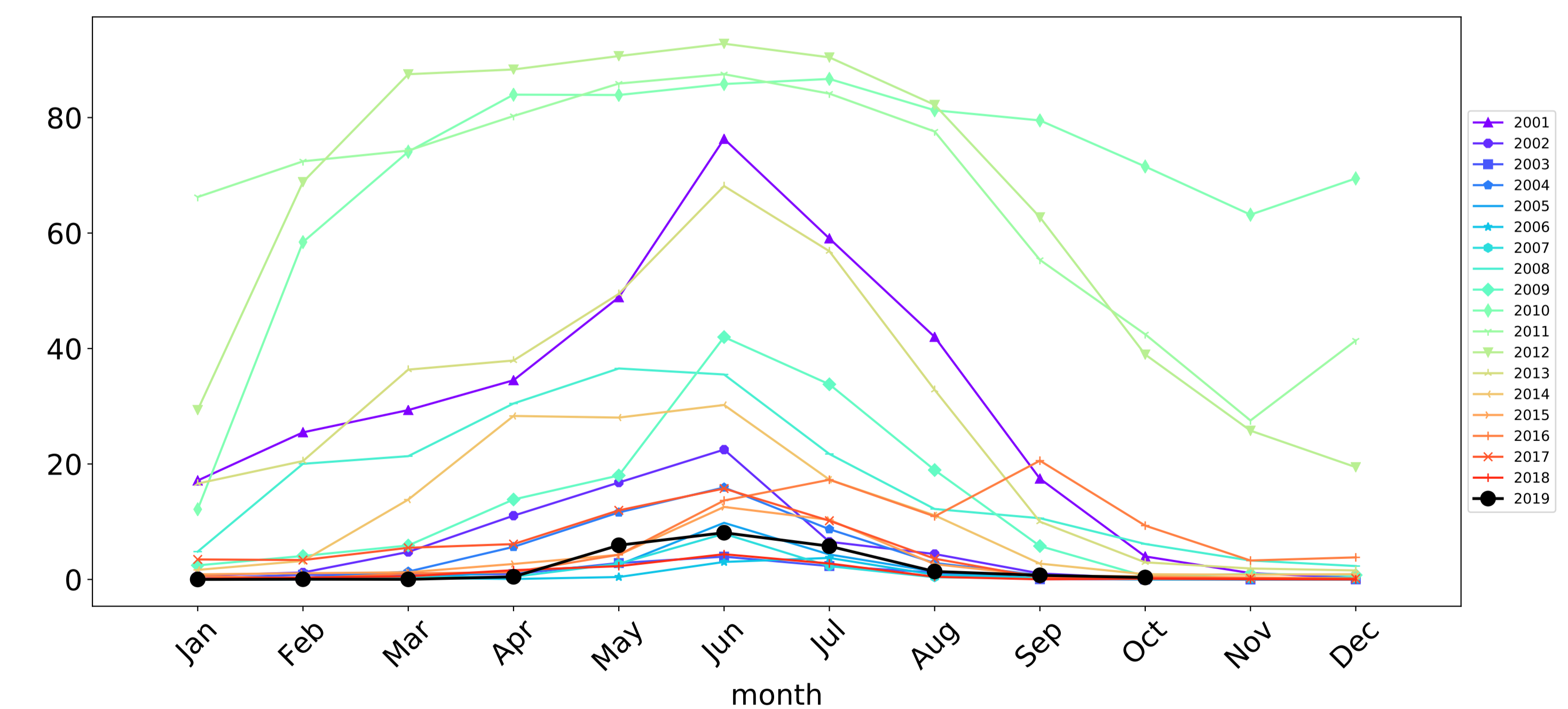
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



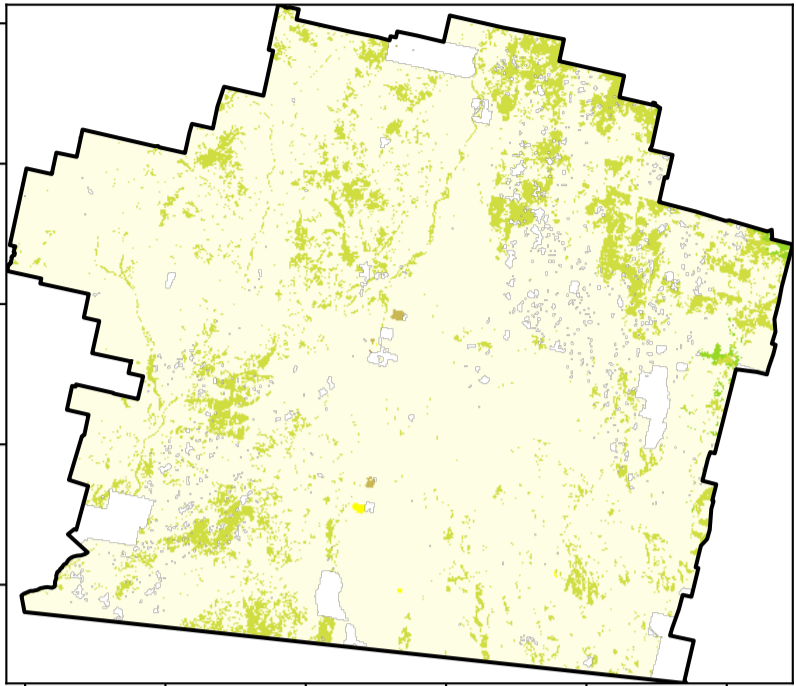
Water erosion historical monthly area protected (Total Veg Cov>70%)



Agriculture

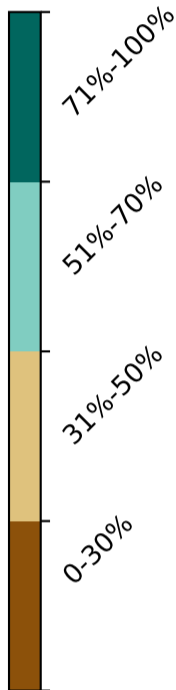
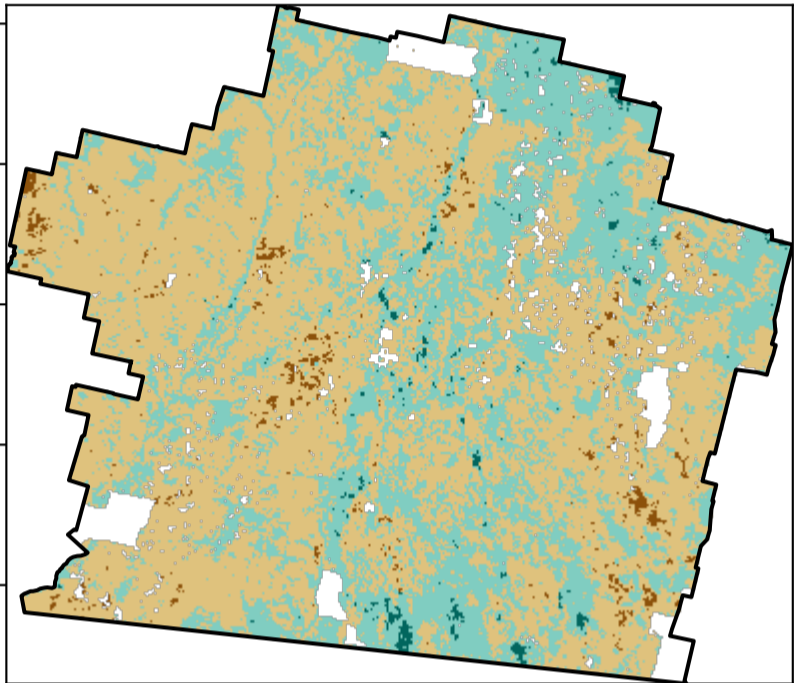
Land use and forest cover

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

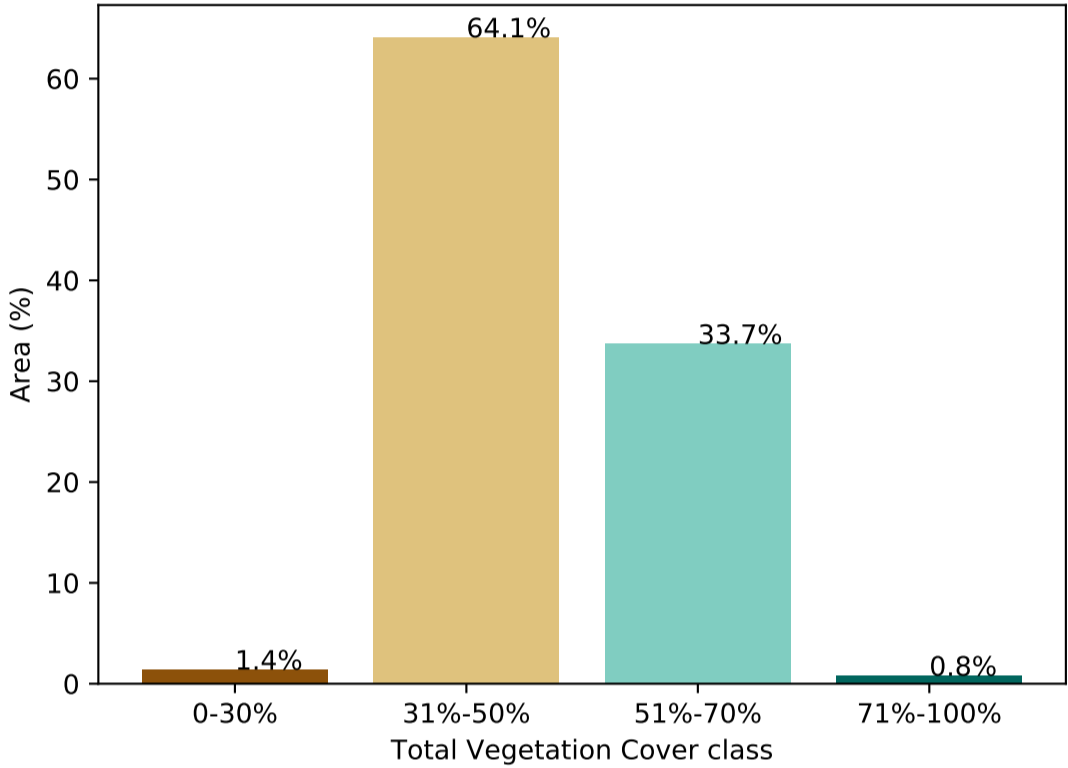


- Agriculture - Grazing - Non forest
- Agriculture - Grazing - Woodland forest
- Agriculture - Grazing - Non-oodland forest
- Agriculture - Cropping - Non-irrigated
- Agriculture - Cropping - Irrigated
- Agriculture - Horticulture - Irrigated

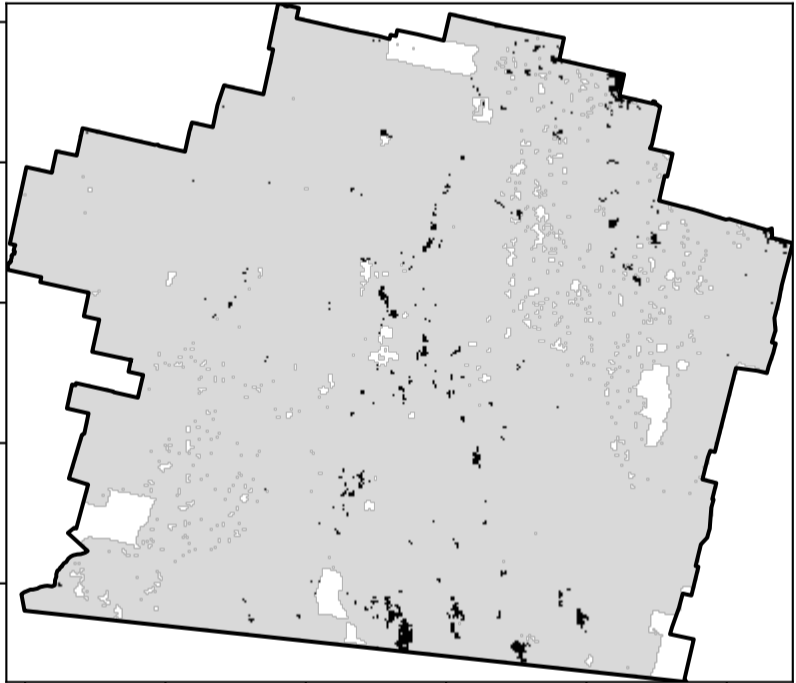
Total Vegetation Cover [%]



Proportion of vegetation cover class in area

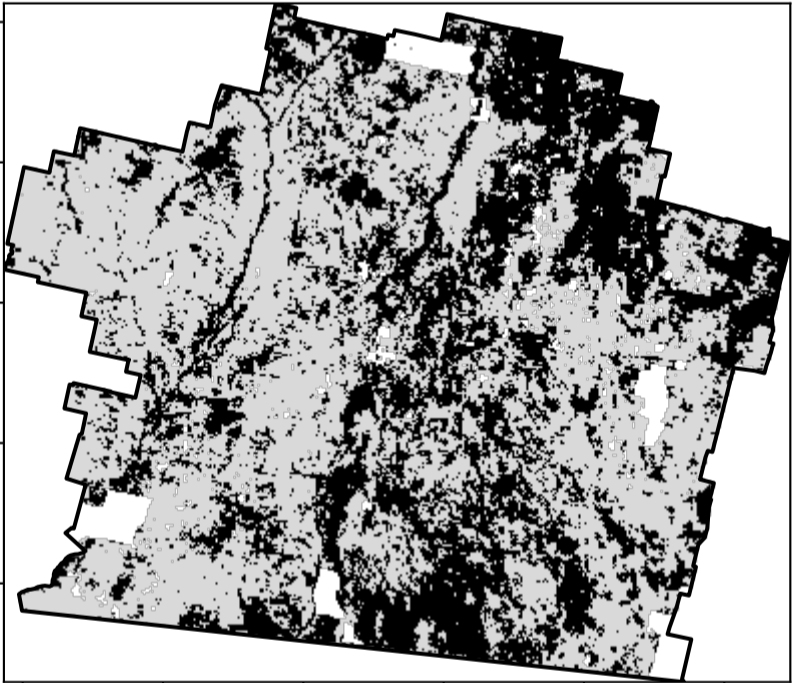


% Area protected from water erosion (>70%)



- Area not protected 99.2% of region (4,506,631 ha)
- Area protected 0.8% of region (36,343 ha)

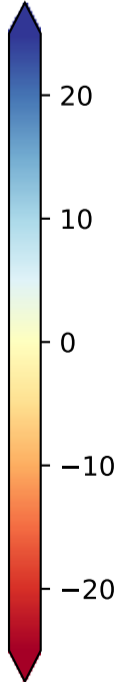
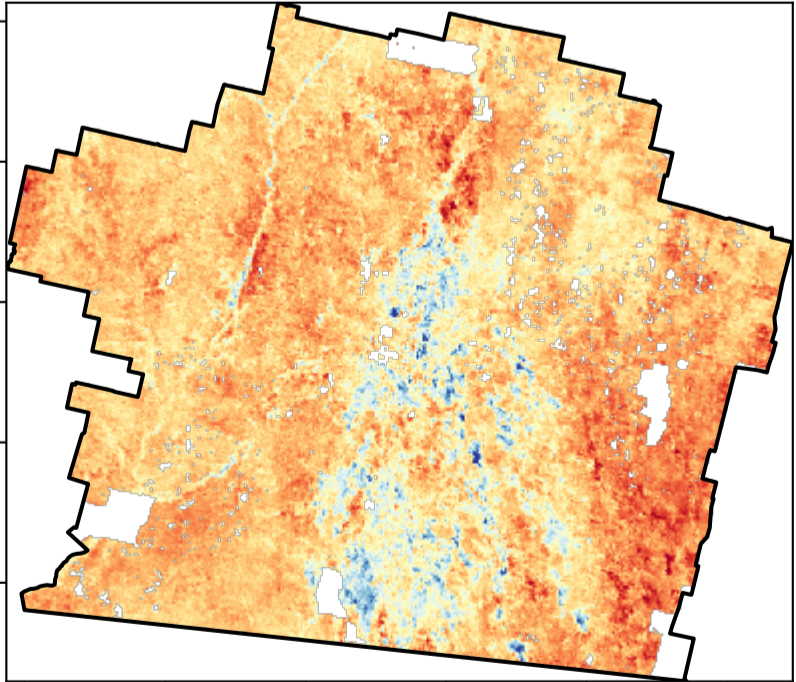
% Area protected from wind erosion (>50%)



- Area not protected 66.0% of region (2,998,363 ha)
- Area protected 34.0% of region (1,544,611 ha)

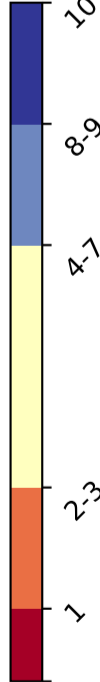
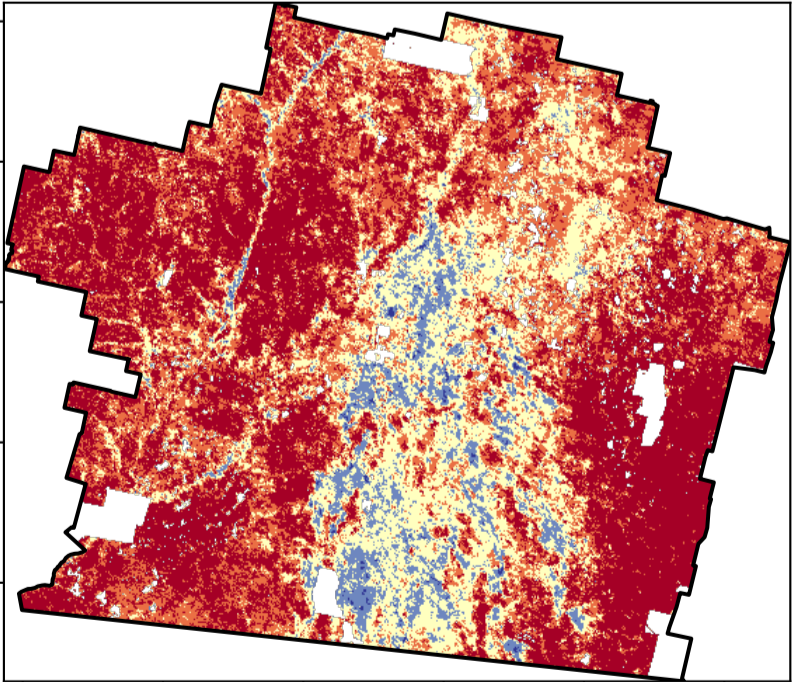
Total Vegetation Cover Anomaly [%]

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.



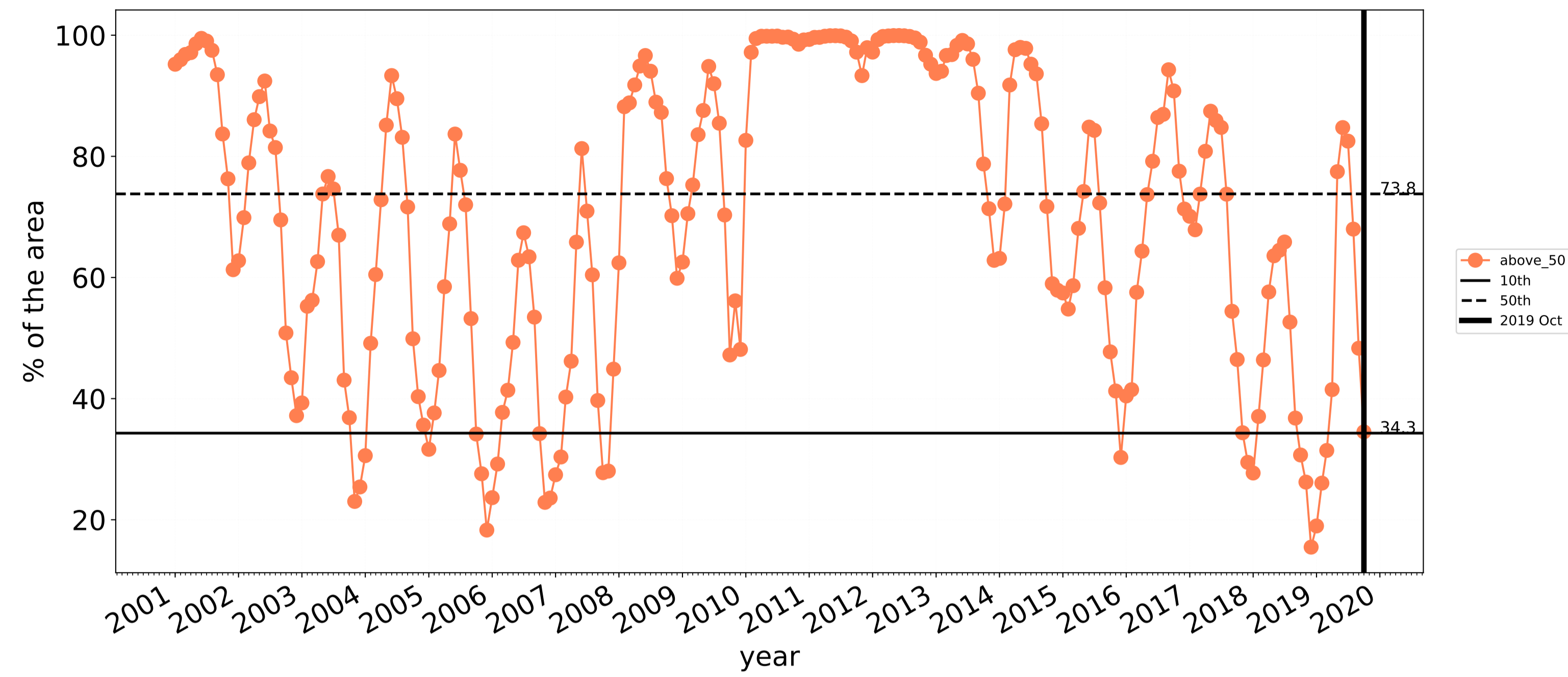
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Total Vegetation Cover Decile [%]

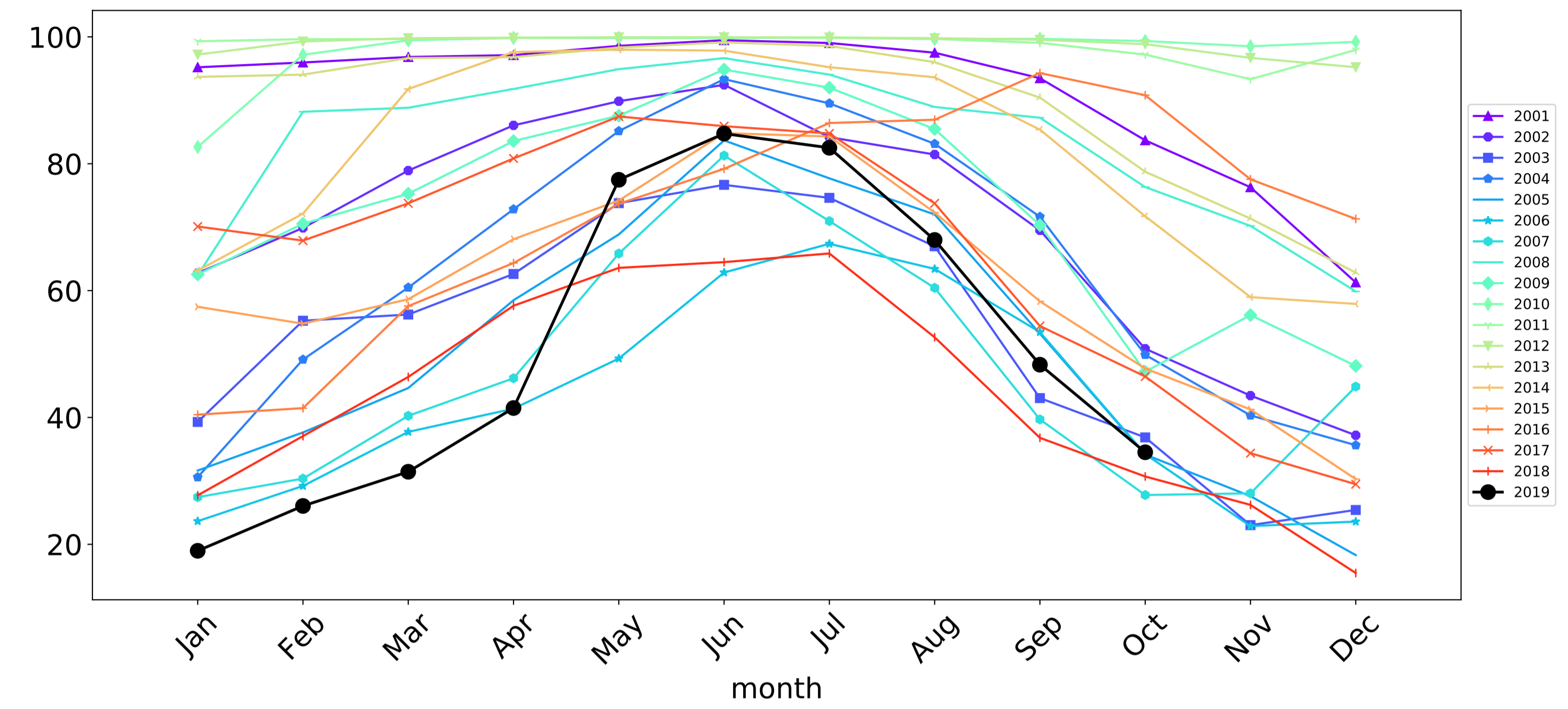


Agriculture timeseries

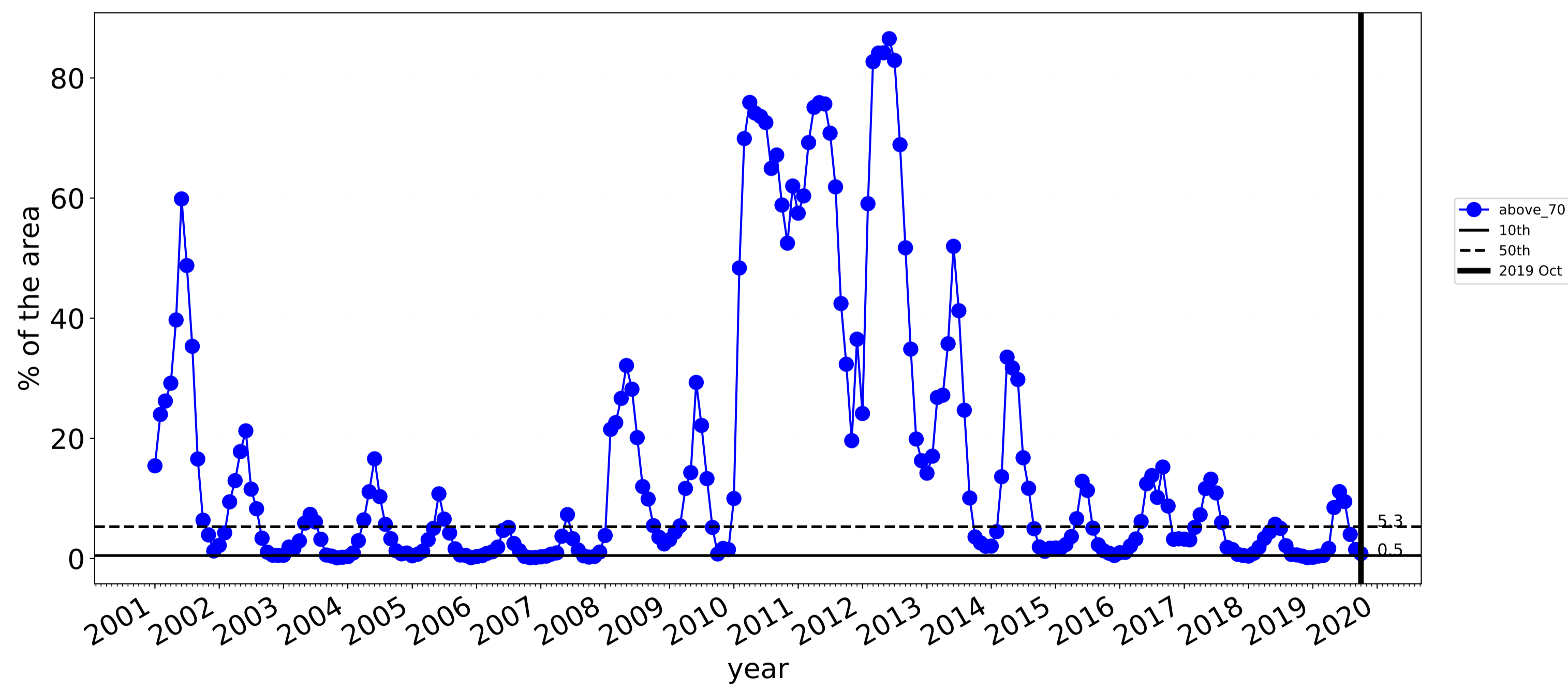
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



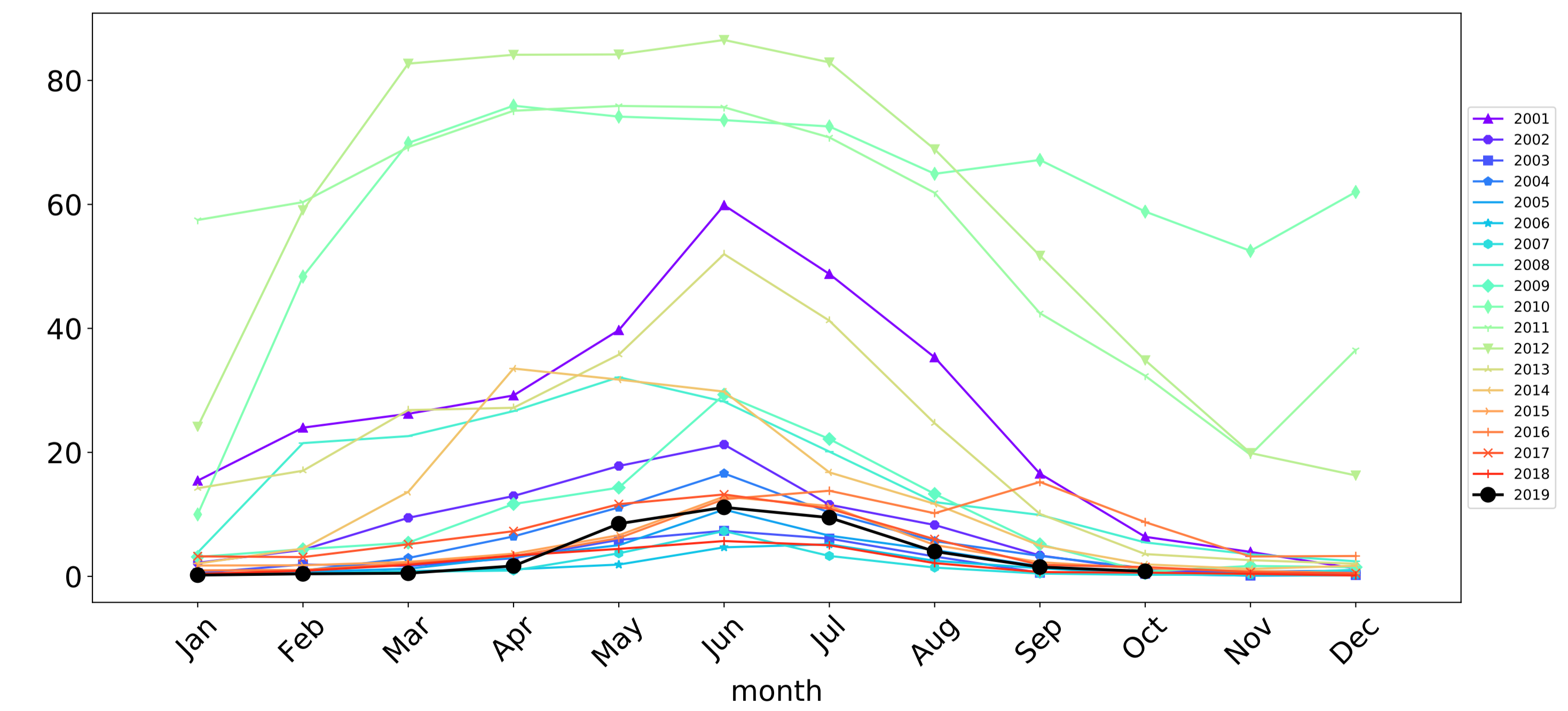
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



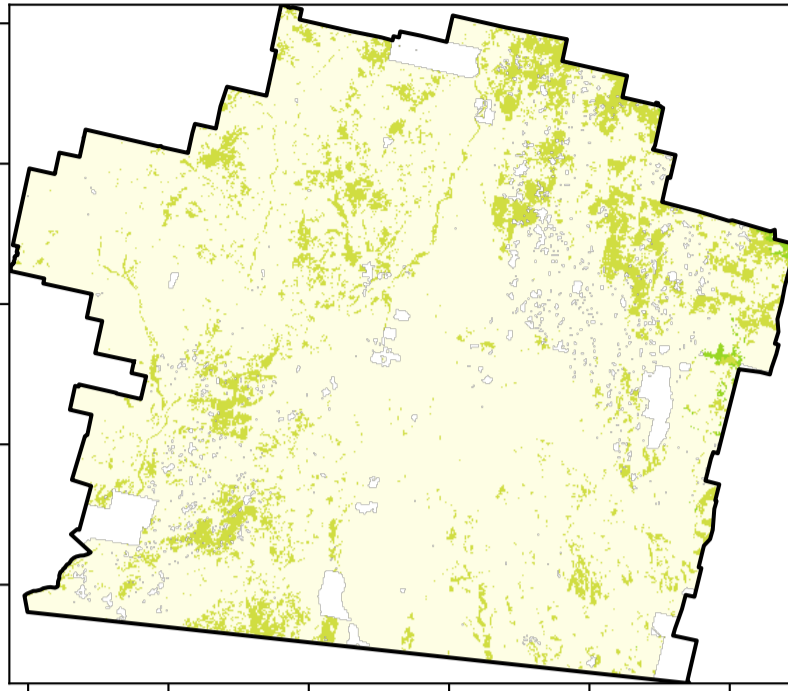
Water erosion historical monthly area protected (Total Veg Cov>70%)



Grazing

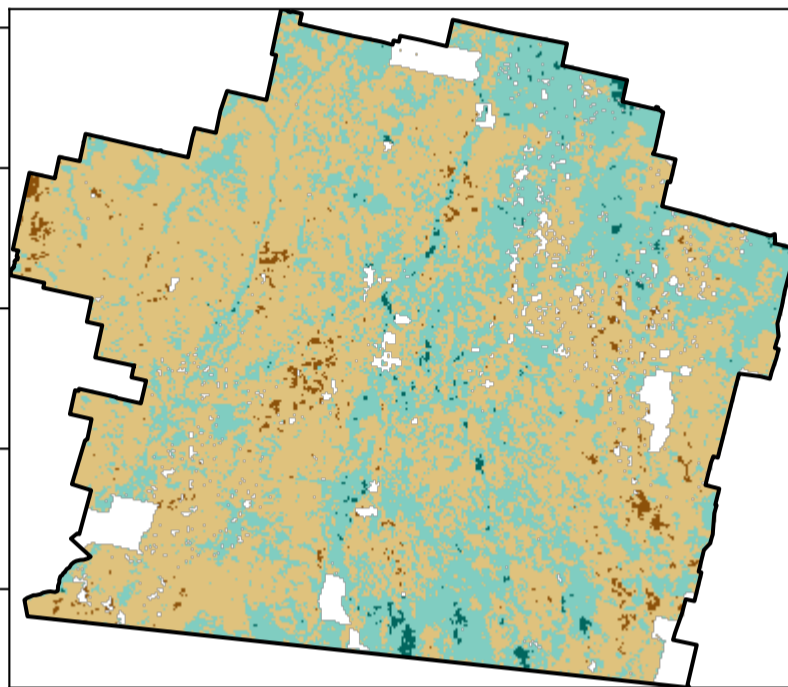
Land use and forest cover

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

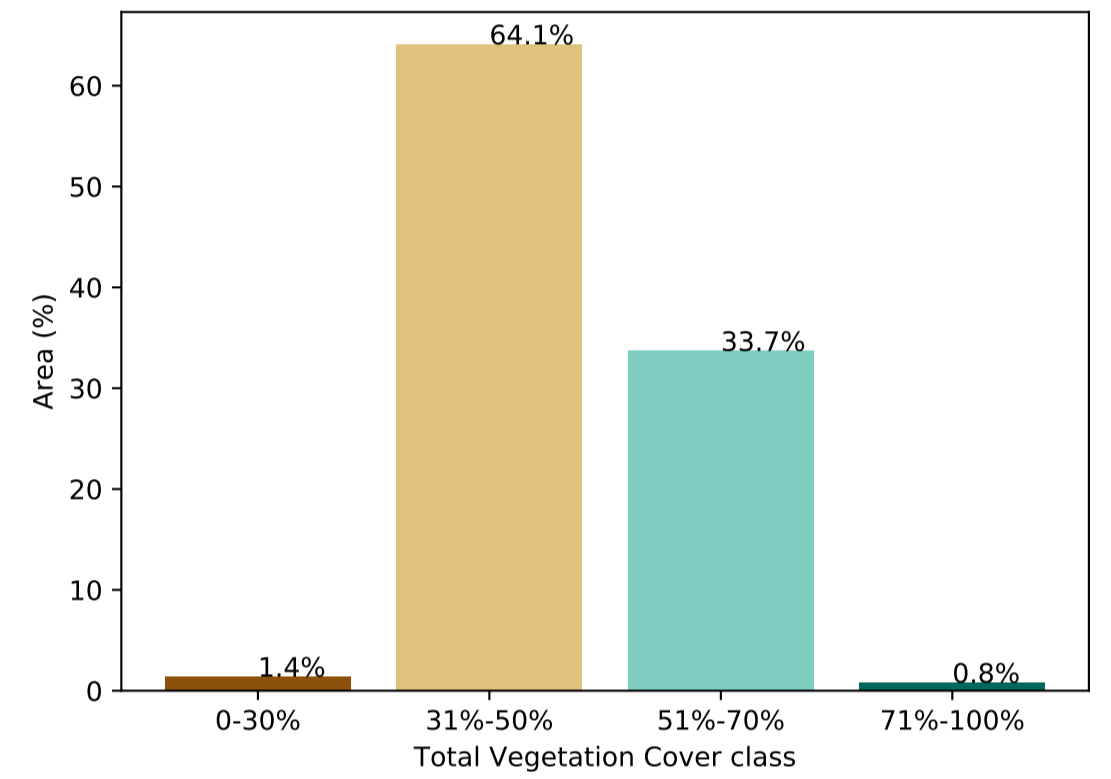


Agriculture - Grazing - Non forest
Agriculture - Grazing - Woodland forest
Agriculture - Grazing - Non-oodland forest

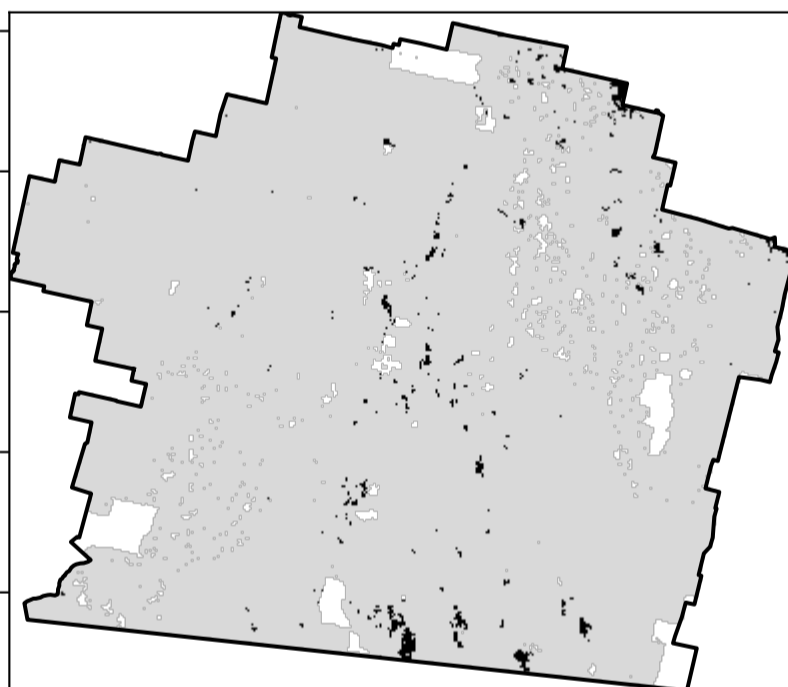
Total Vegetation Cover [%]



Proportion of vegetation cover class in area

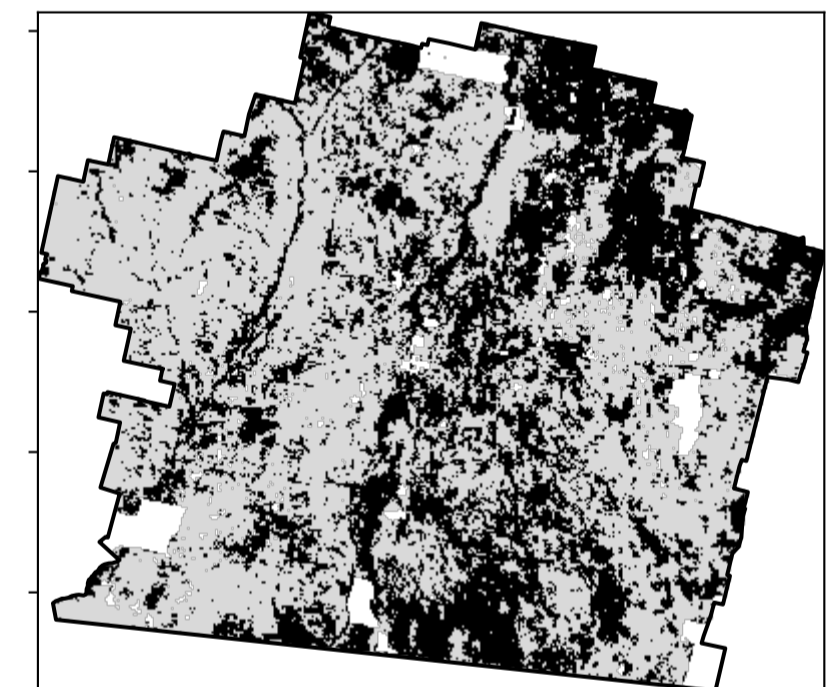


% Area protected from water erosion (>70%)



Area not protected
99.2% of region
(4,502,415 ha)
Area protected
0.8% of region
(36,309 ha)

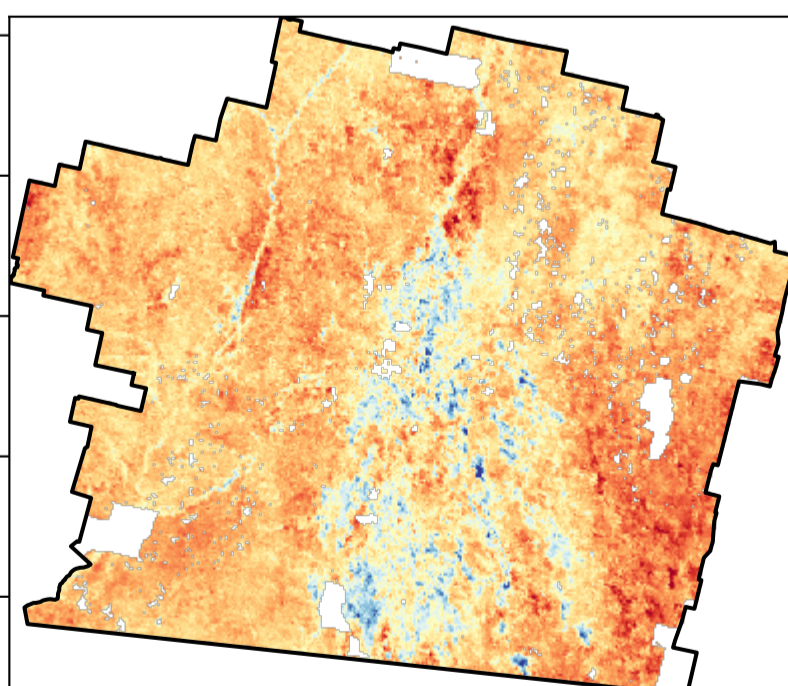
% Area protected from wind erosion (>50%)



Area not protected
66.0% of region
(2,995,558 ha)
Area protected
34.0% of region
(1,543,166 ha)

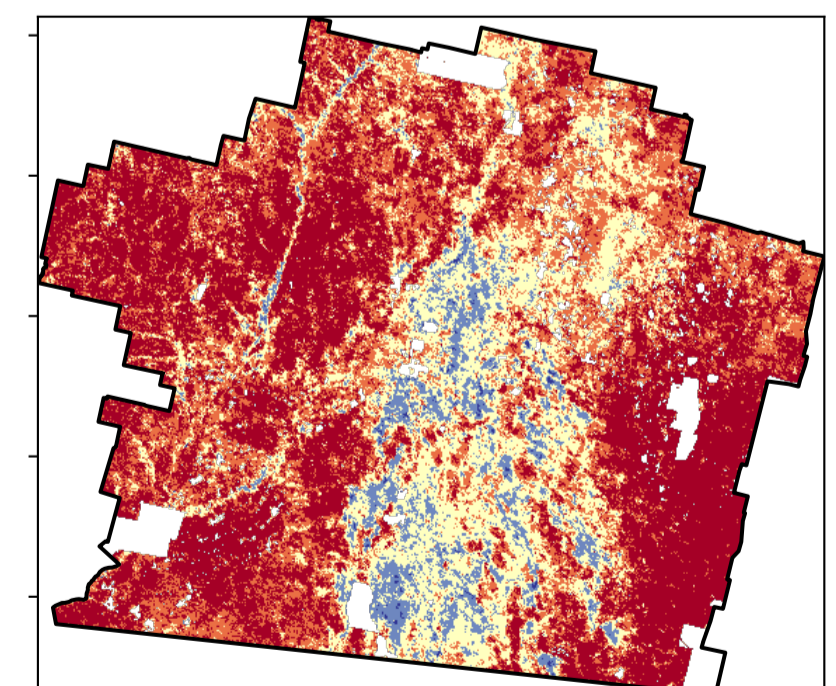
Total Vegetation Cover Anomaly [%]

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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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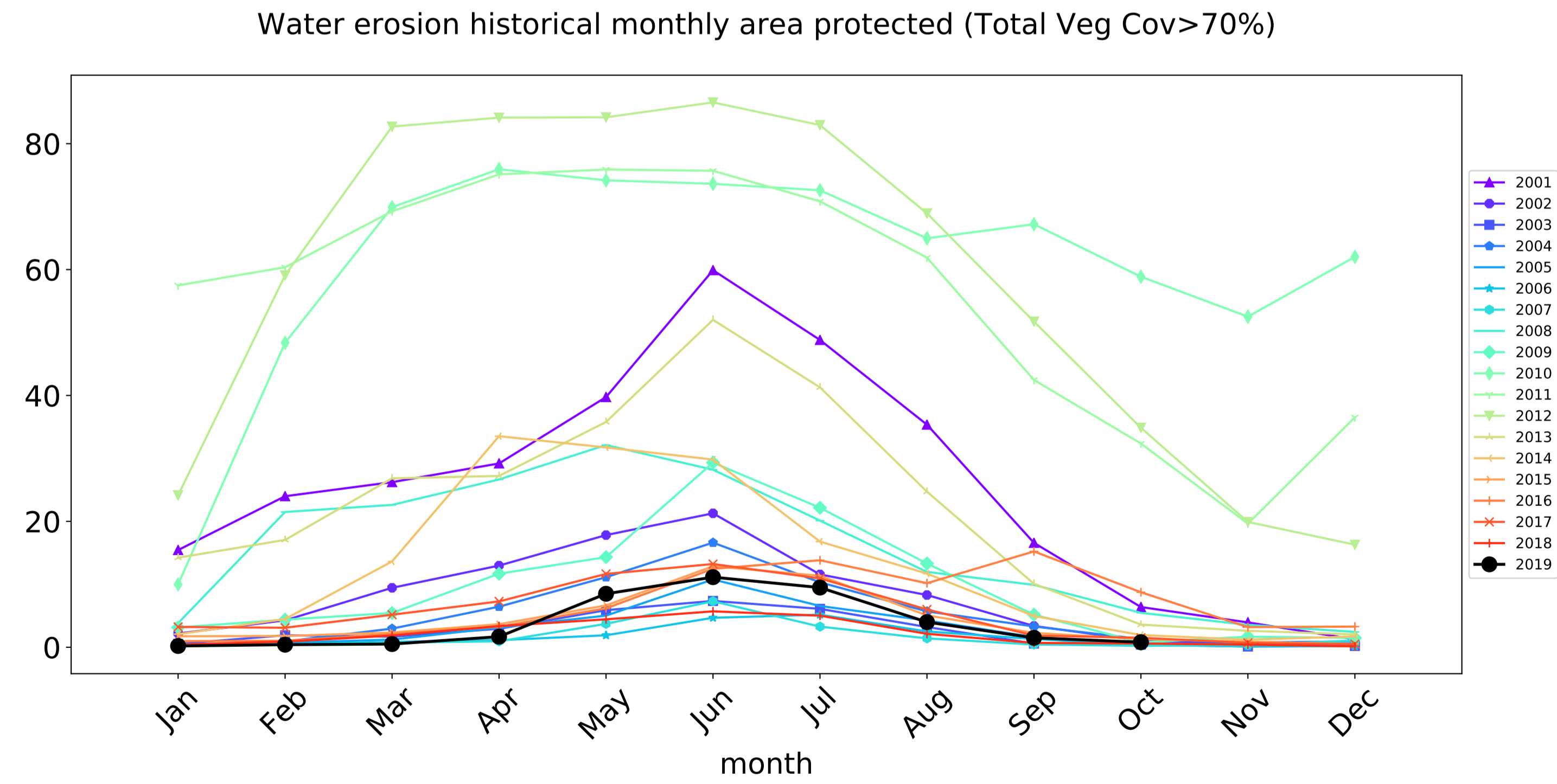
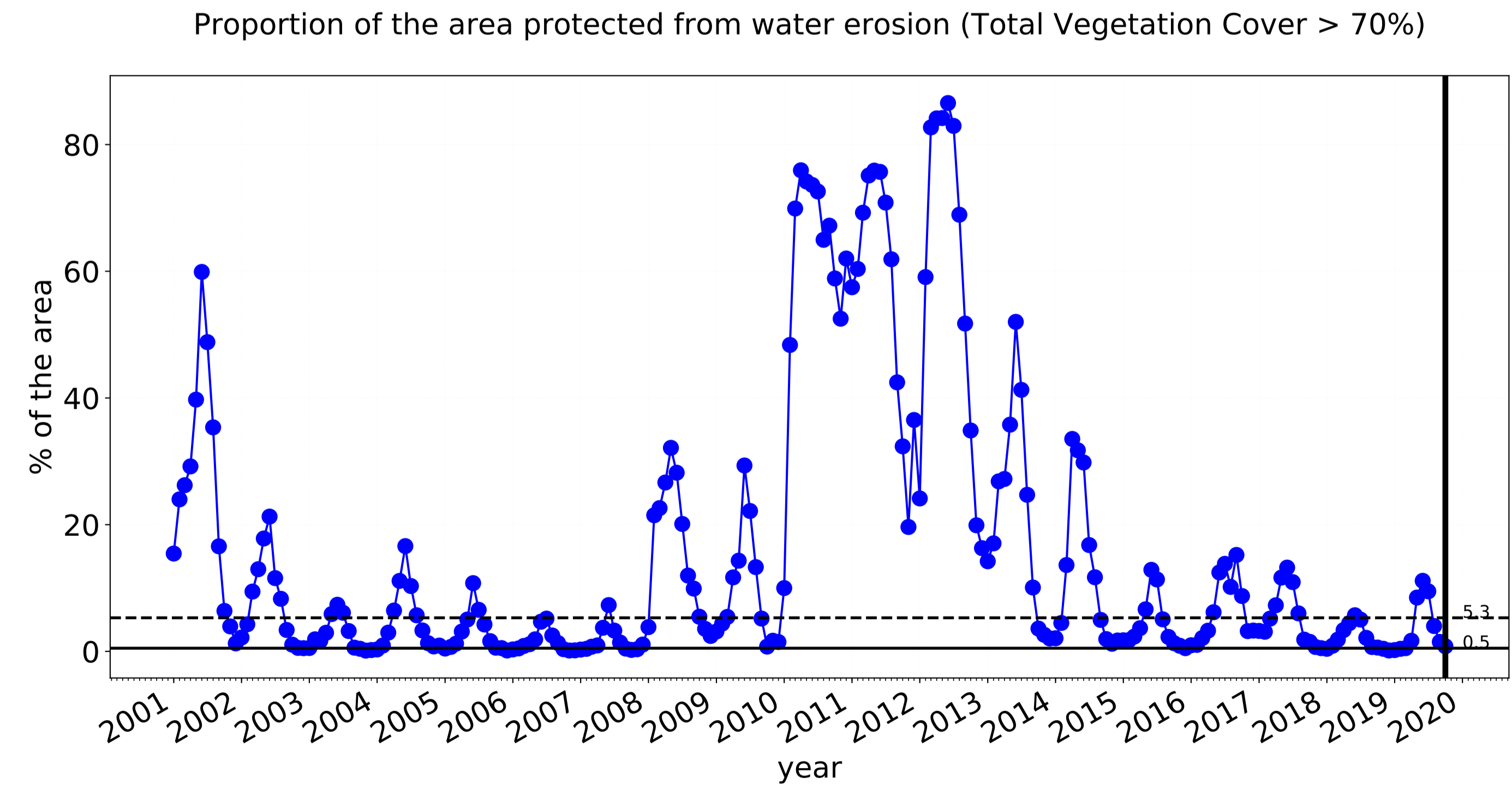
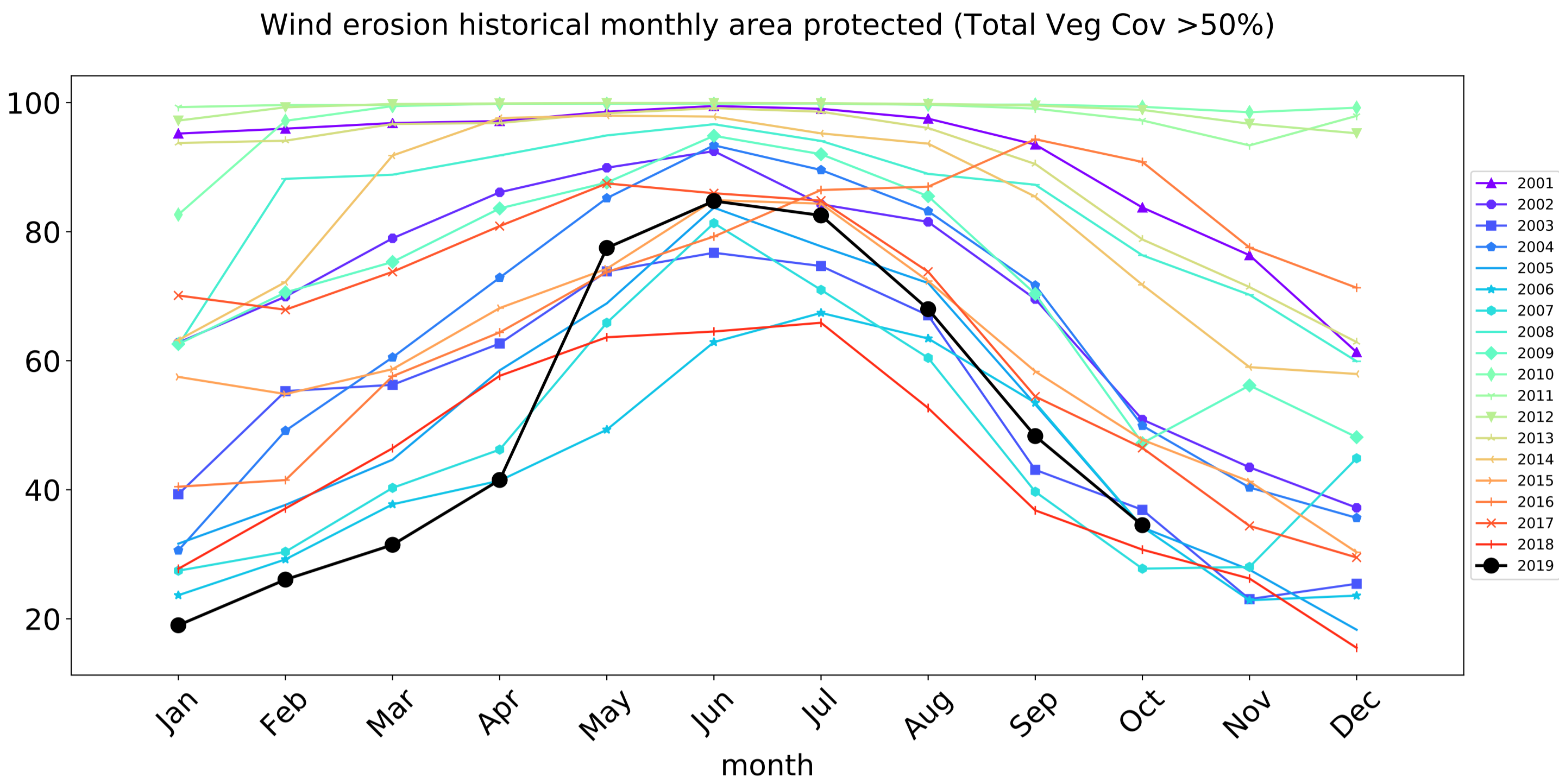
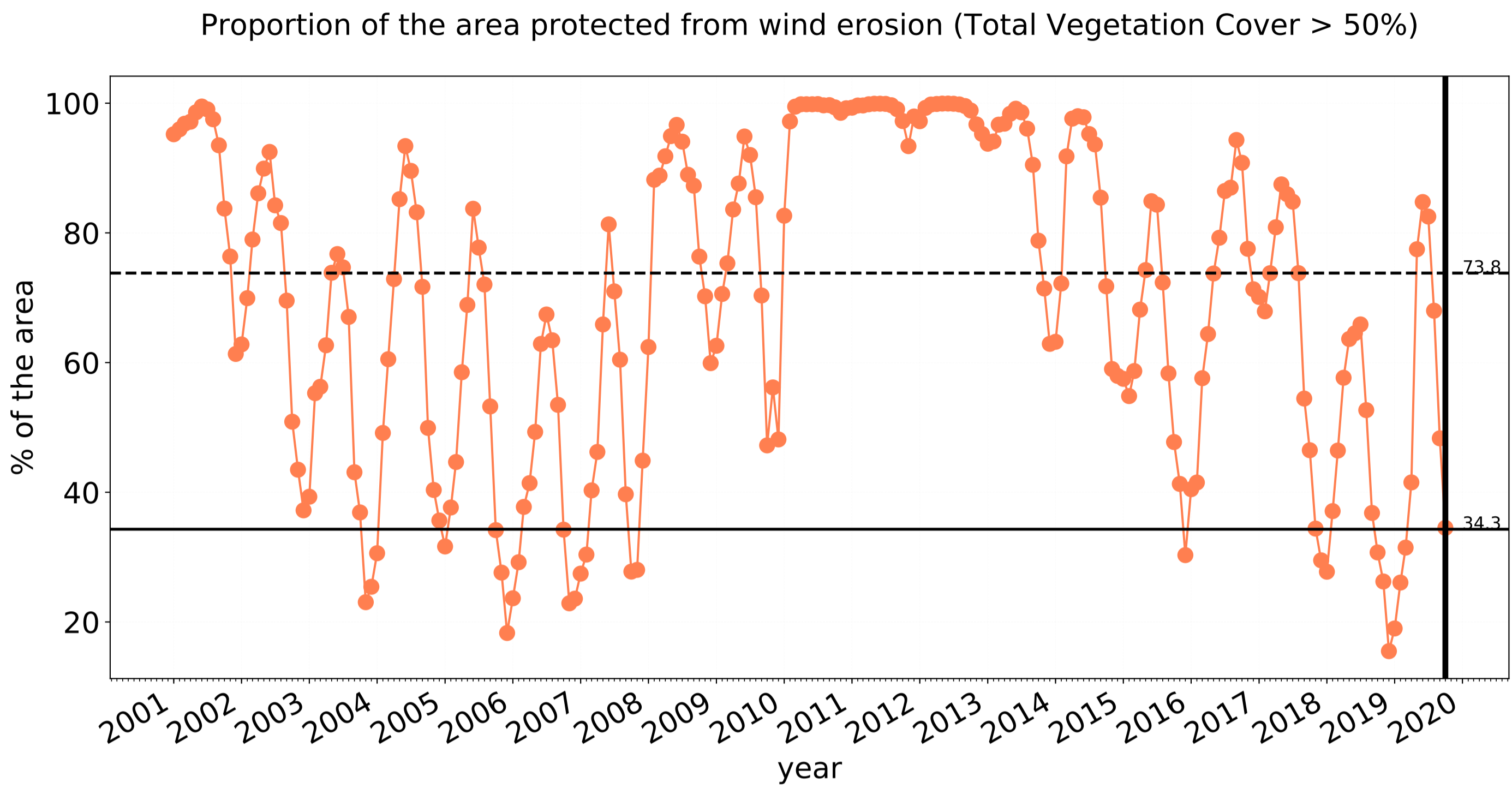


National Landcare Programme



Planning, Industry & Environment

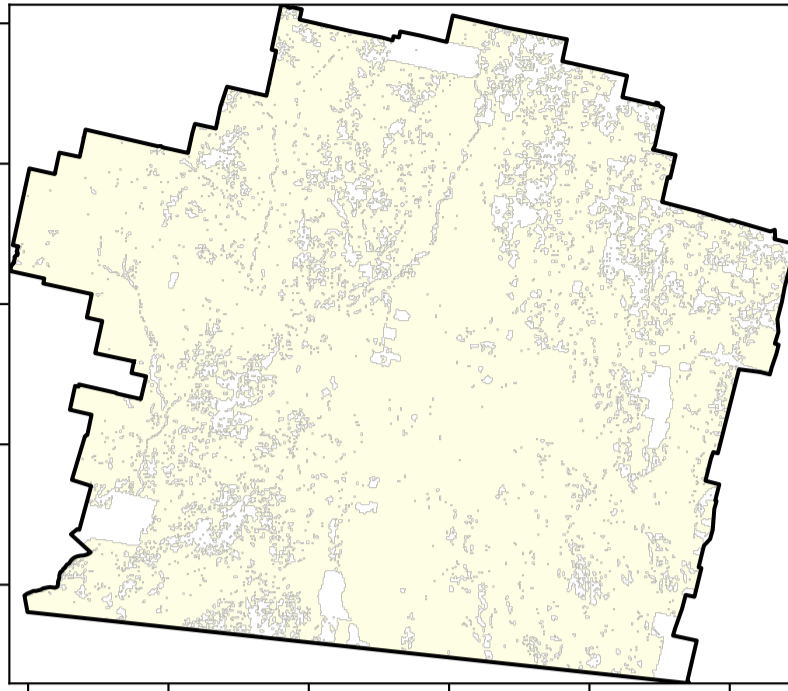
Grazing timeseries



Grazing non forest

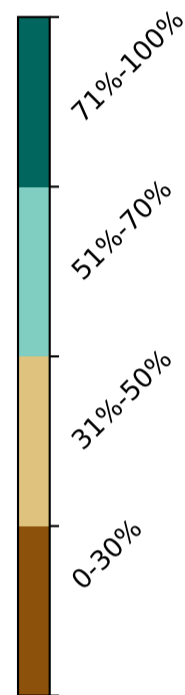
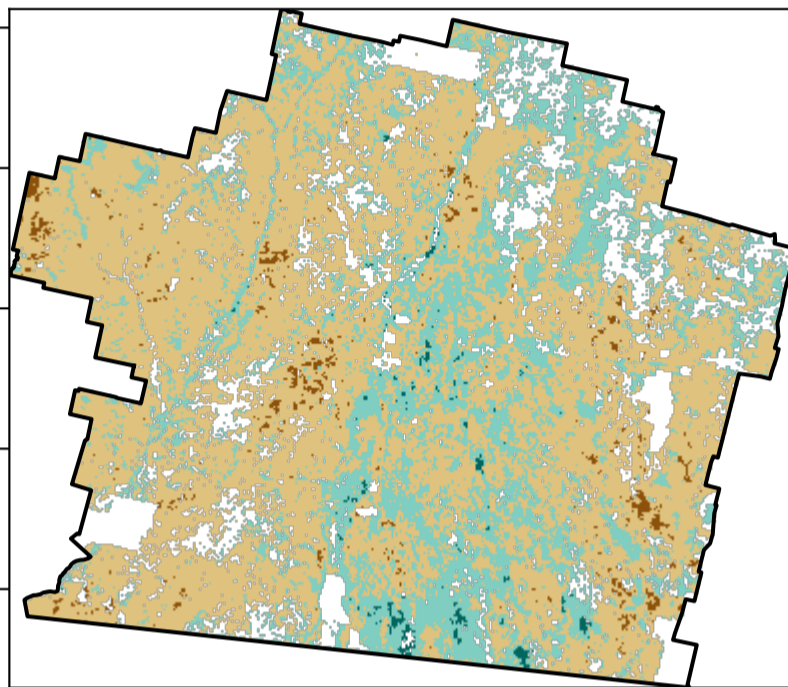
Land use and forest cover

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

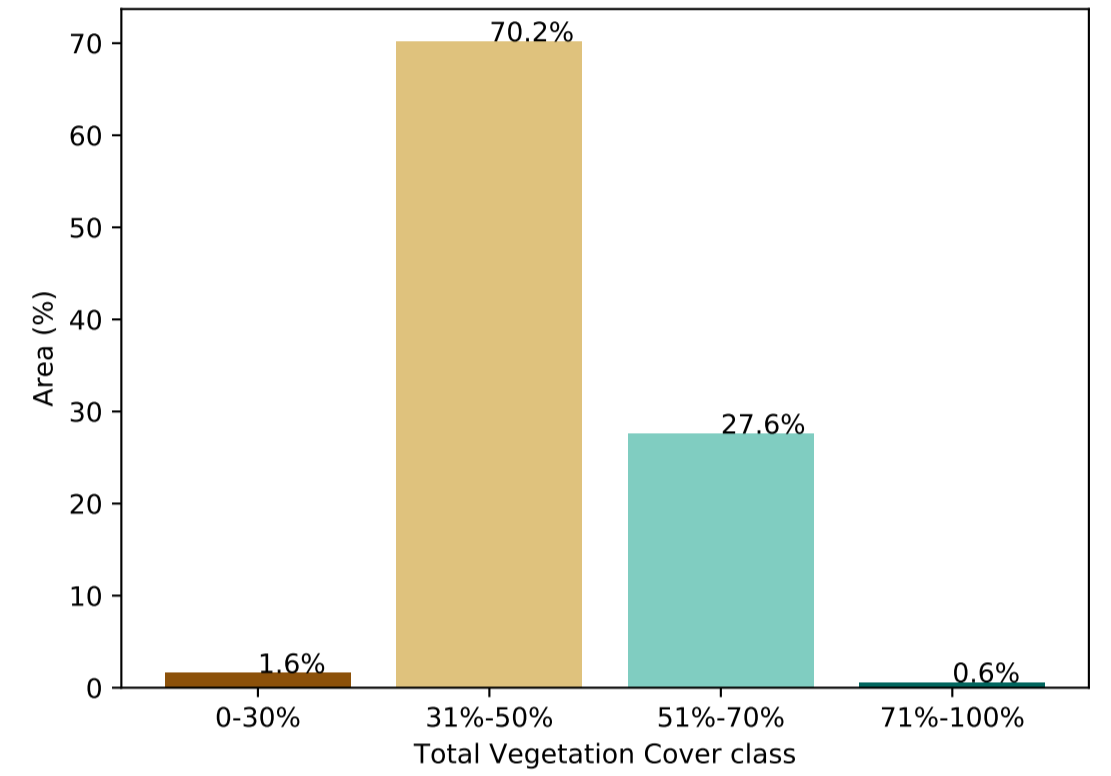


Agriculture - Grazing - Non forest

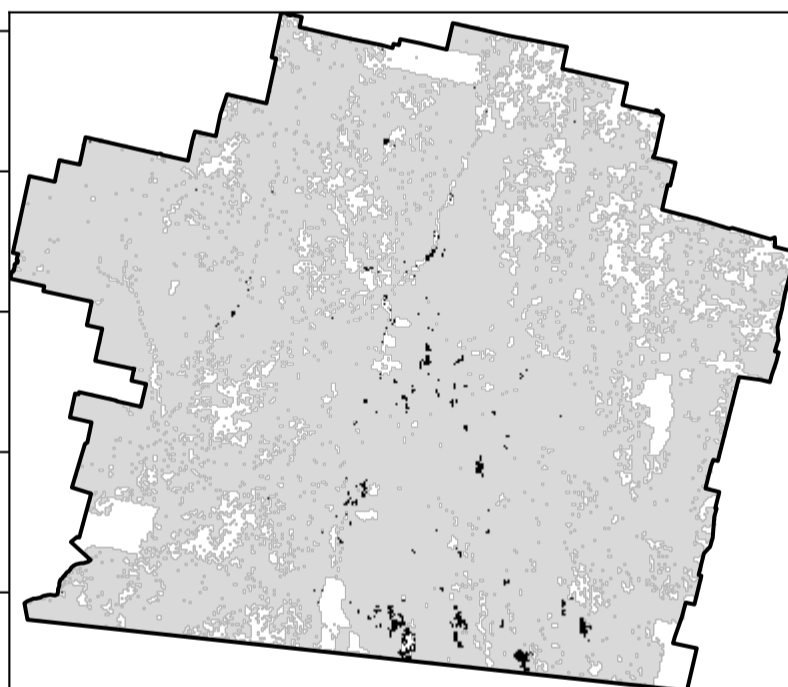
Total Vegetation Cover [%]



Proportion of vegetation cover class in area

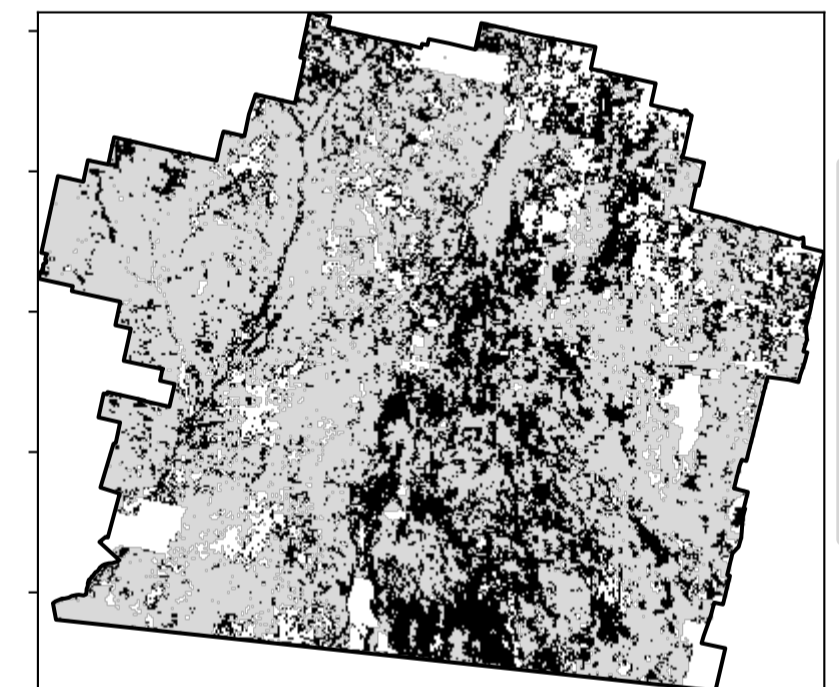


% Area protected from water erosion (>70%)



Area not protected
99.4% of
region
(3,969,240
ha)
Area protected
0.6% of
region
(23,959
ha)

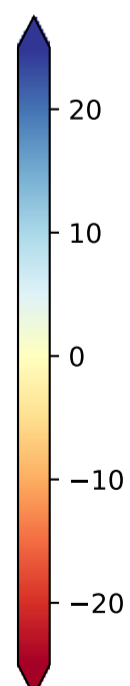
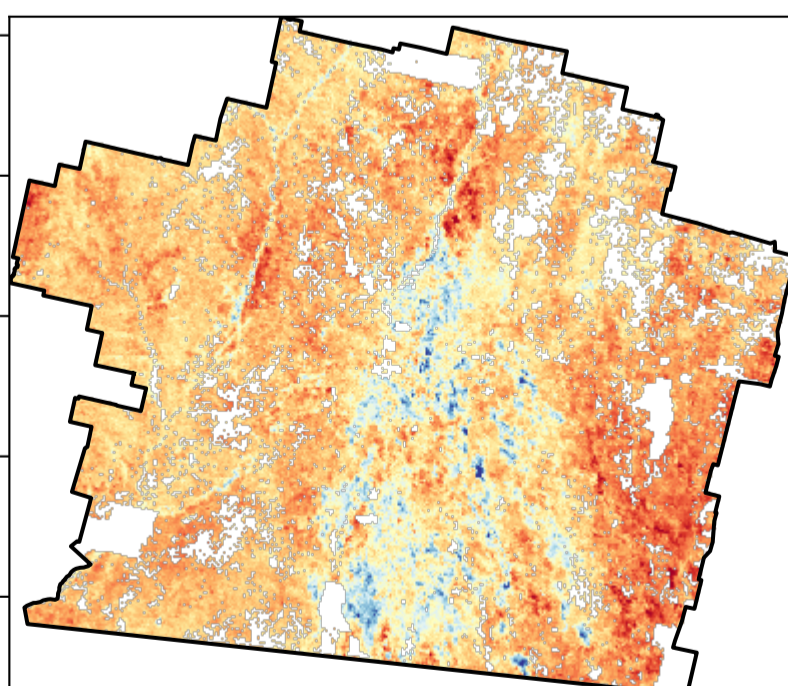
% Area protected from wind erosion (>50%)



Area not protected
72.0% of
region
(2,875,104
ha)
Area protected
28.0% of
region
(1,118,096
ha)

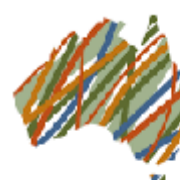
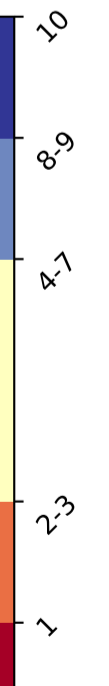
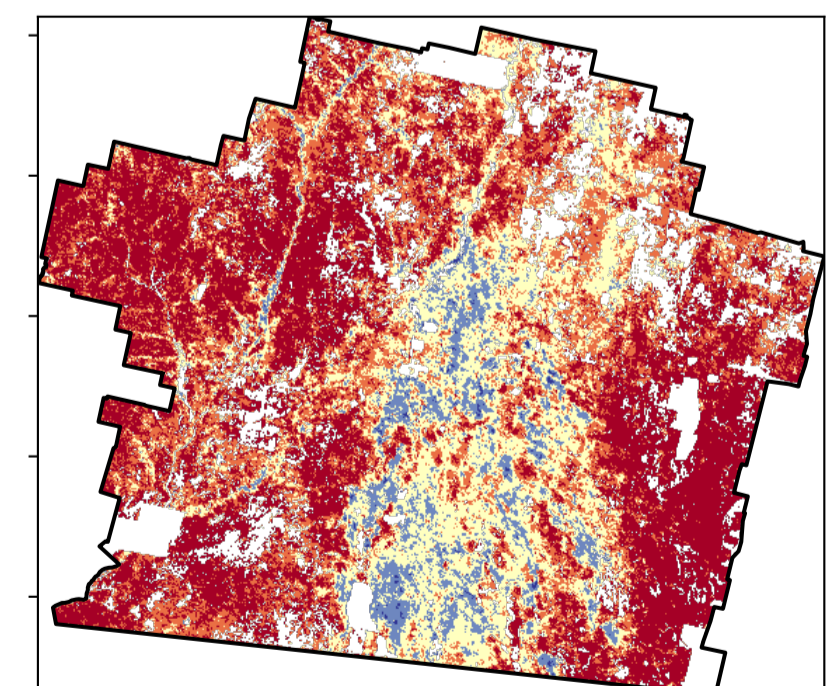
Total Vegetation Cover Anomaly [%]

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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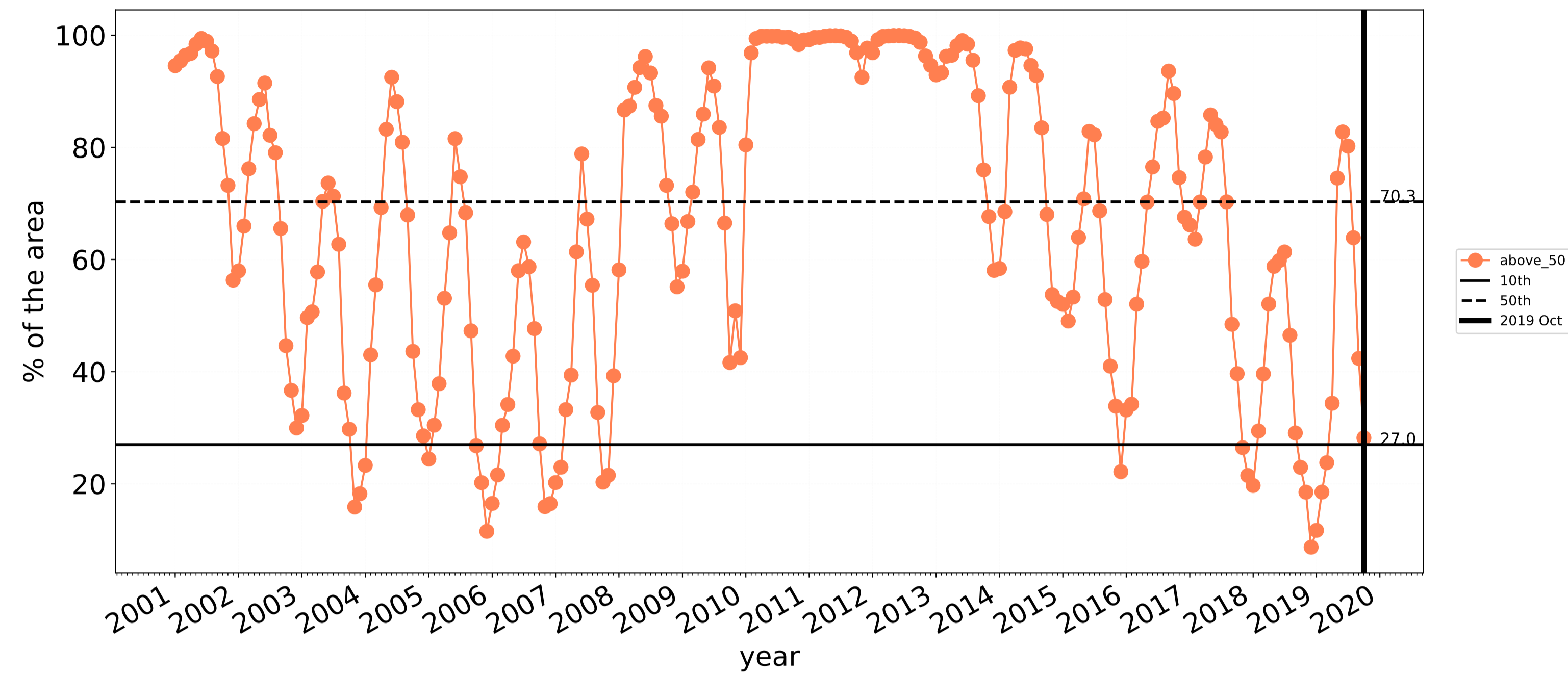
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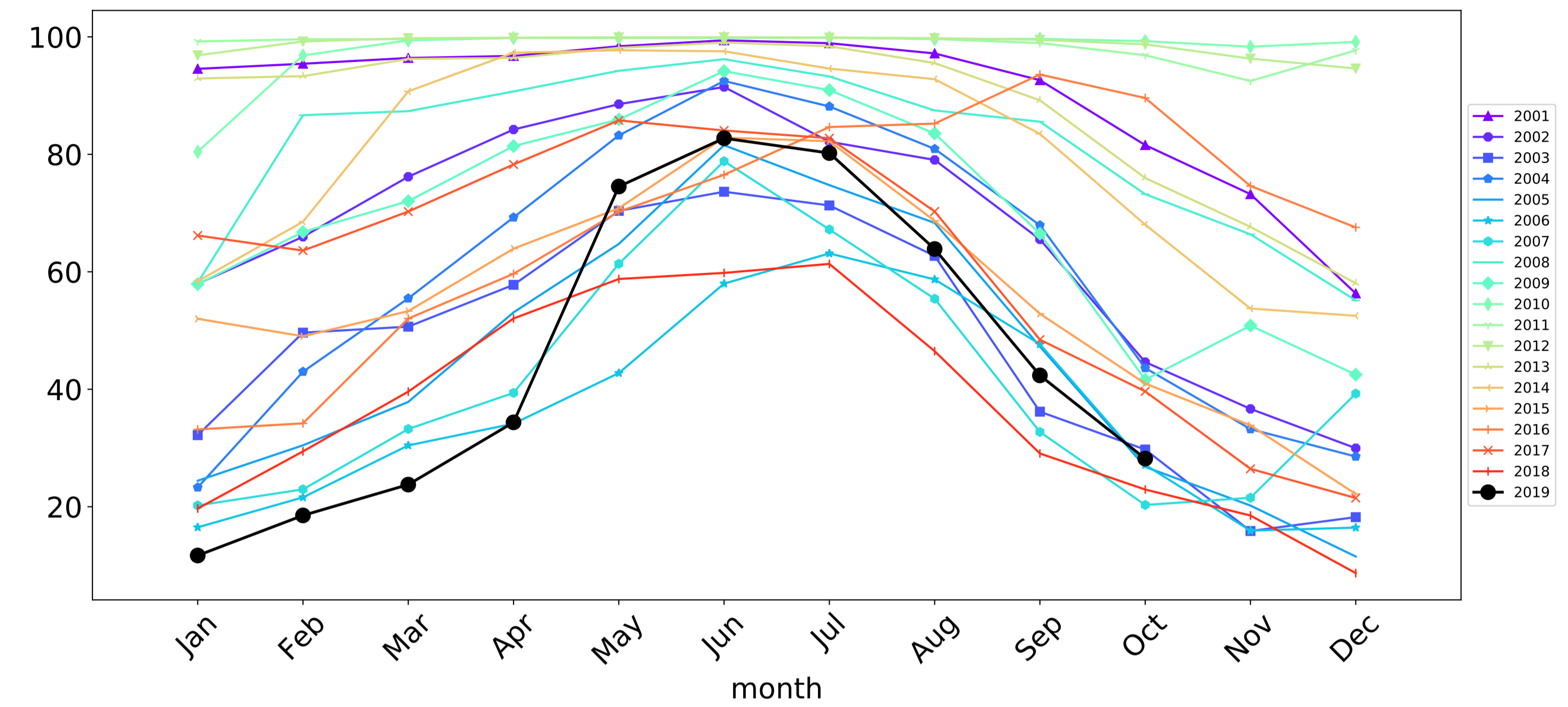
Planning,
Industry &
Environment

Grazing non forest timeseries

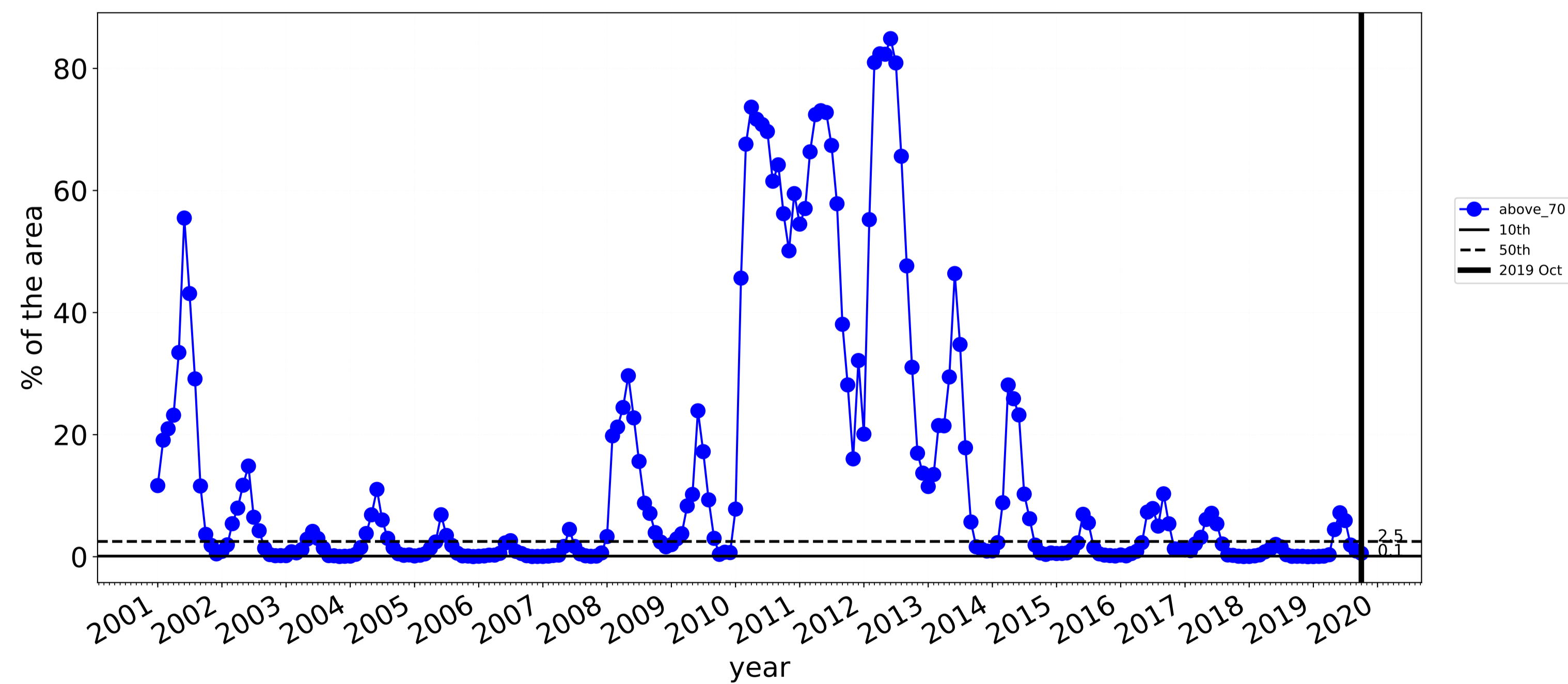
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



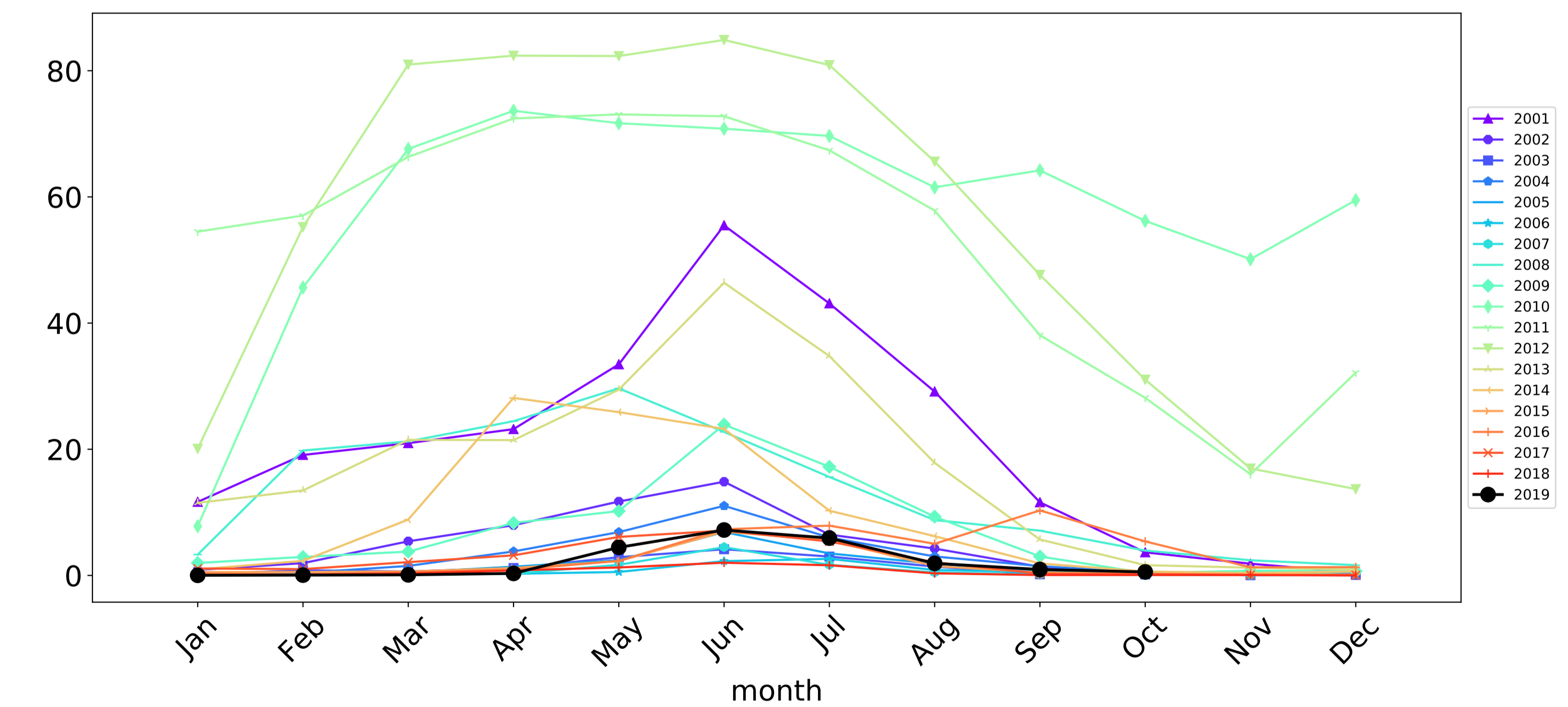
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



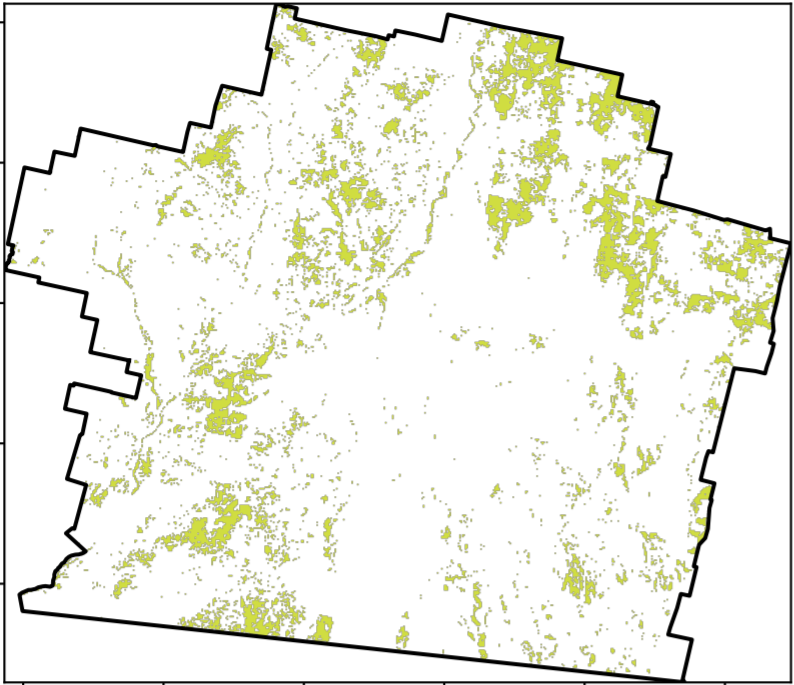
Water erosion historical monthly area protected (Total Veg Cov>70%)



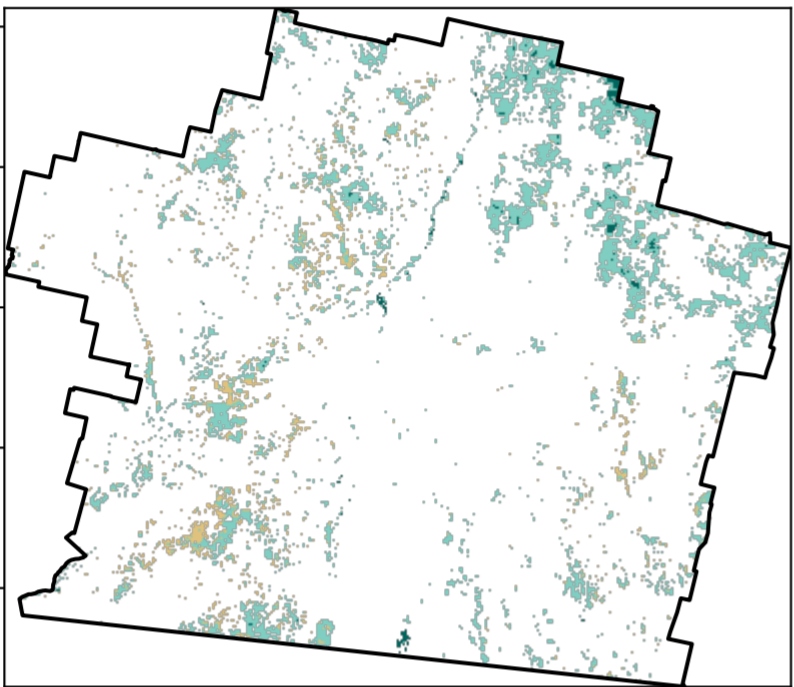
Grazing Woodland forest

Land use and forest cover

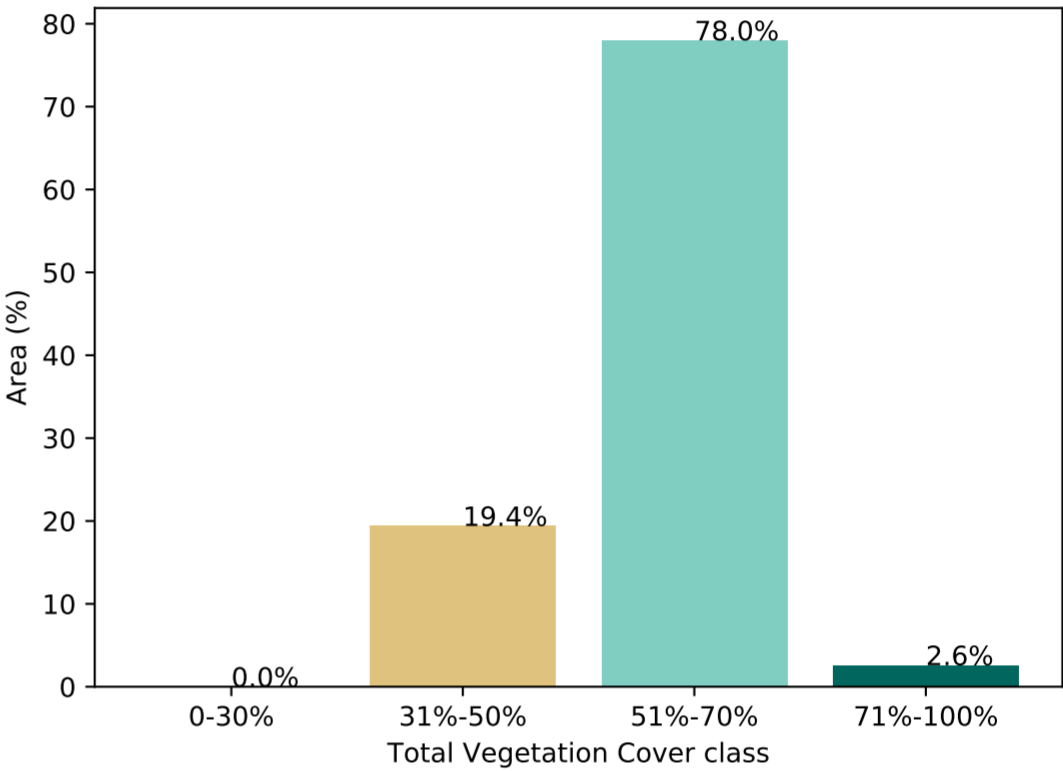
Catchment Scale
Land Use and Forests
of Australia (2018)
Derived from
Catchment Scale Land
Use of Australia
(2018) and Forests
of Australia (2018)



Total Vegetation Cover [%]



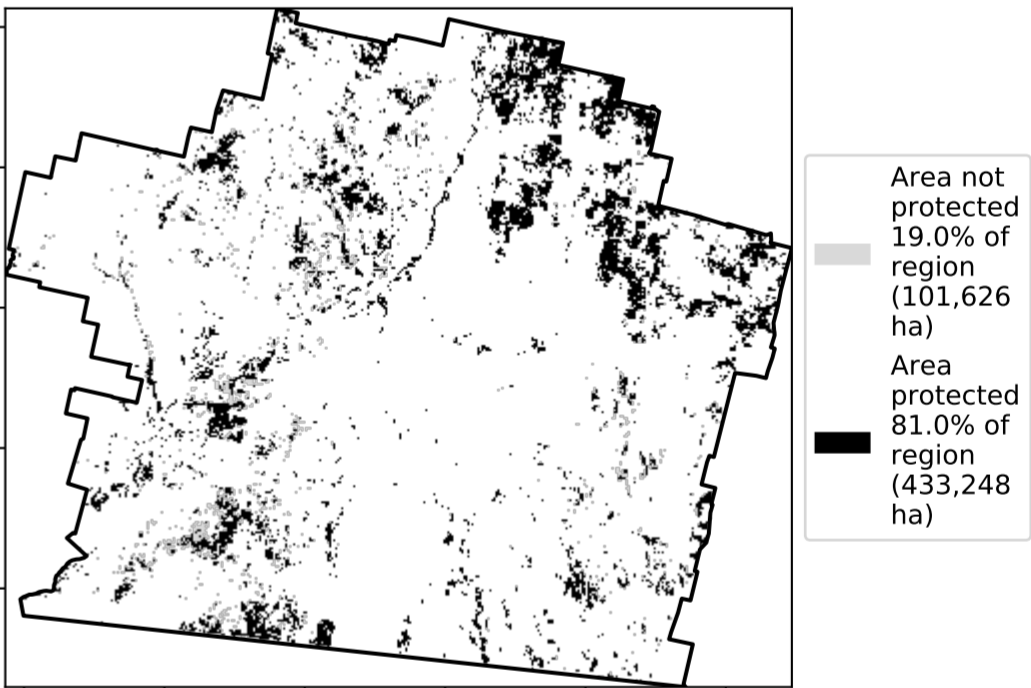
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

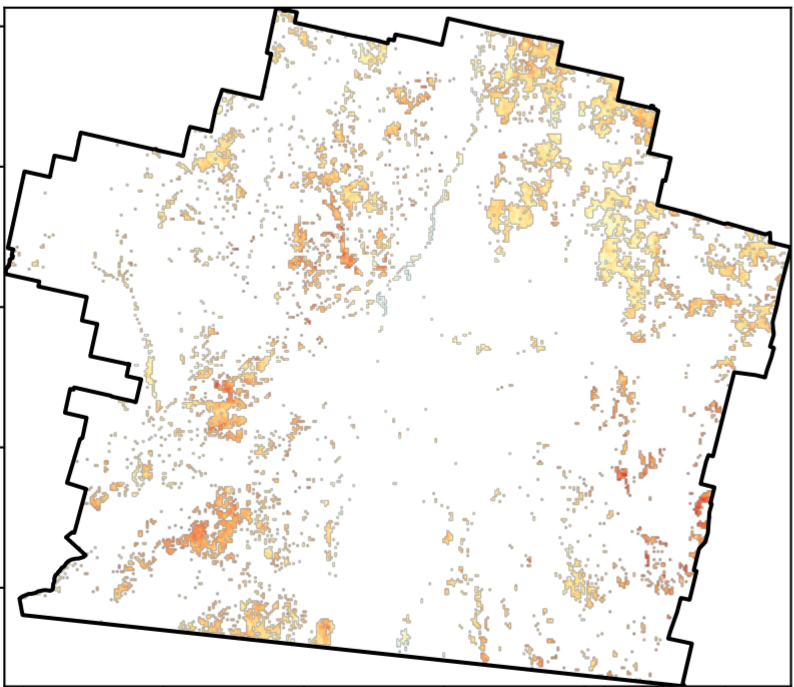


% Area protected from wind erosion (>50%)



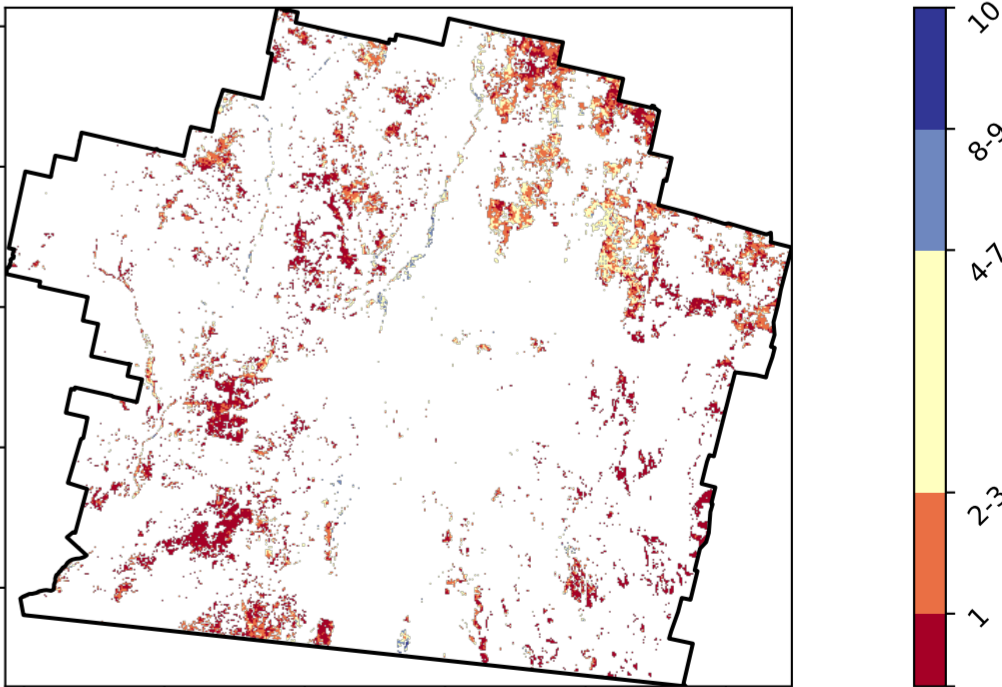
Total Vegetation Cover Anomaly [%]

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
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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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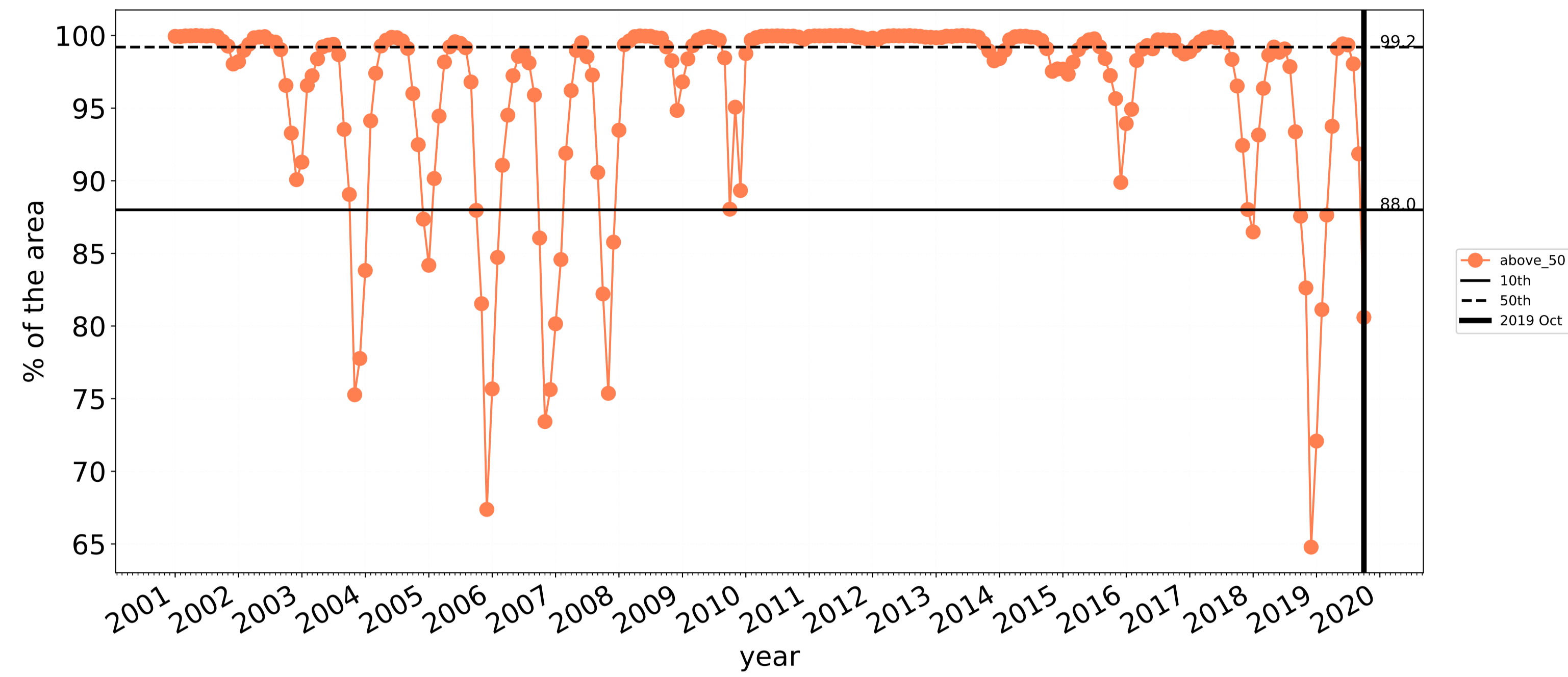
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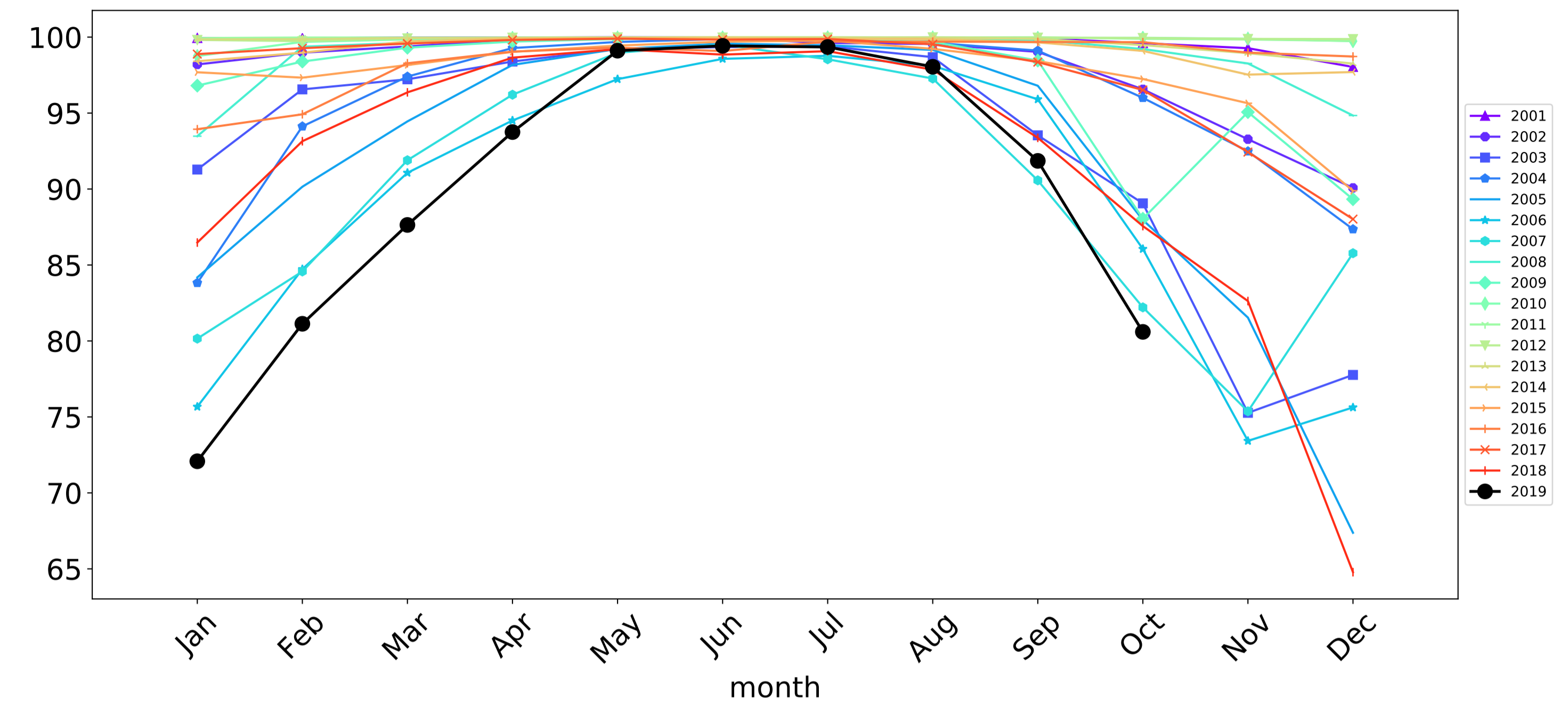
Planning,
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Environment

Grazing Woodland forest timeseries

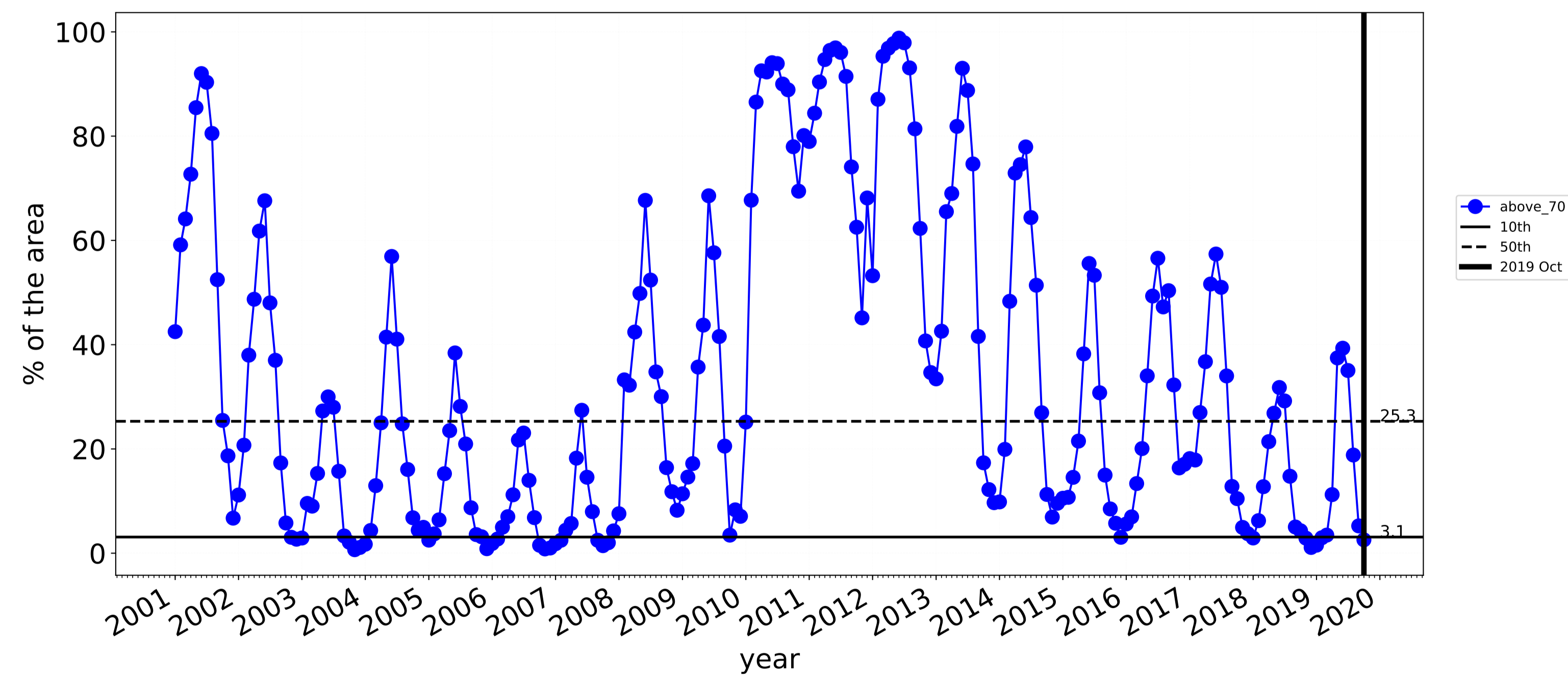
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



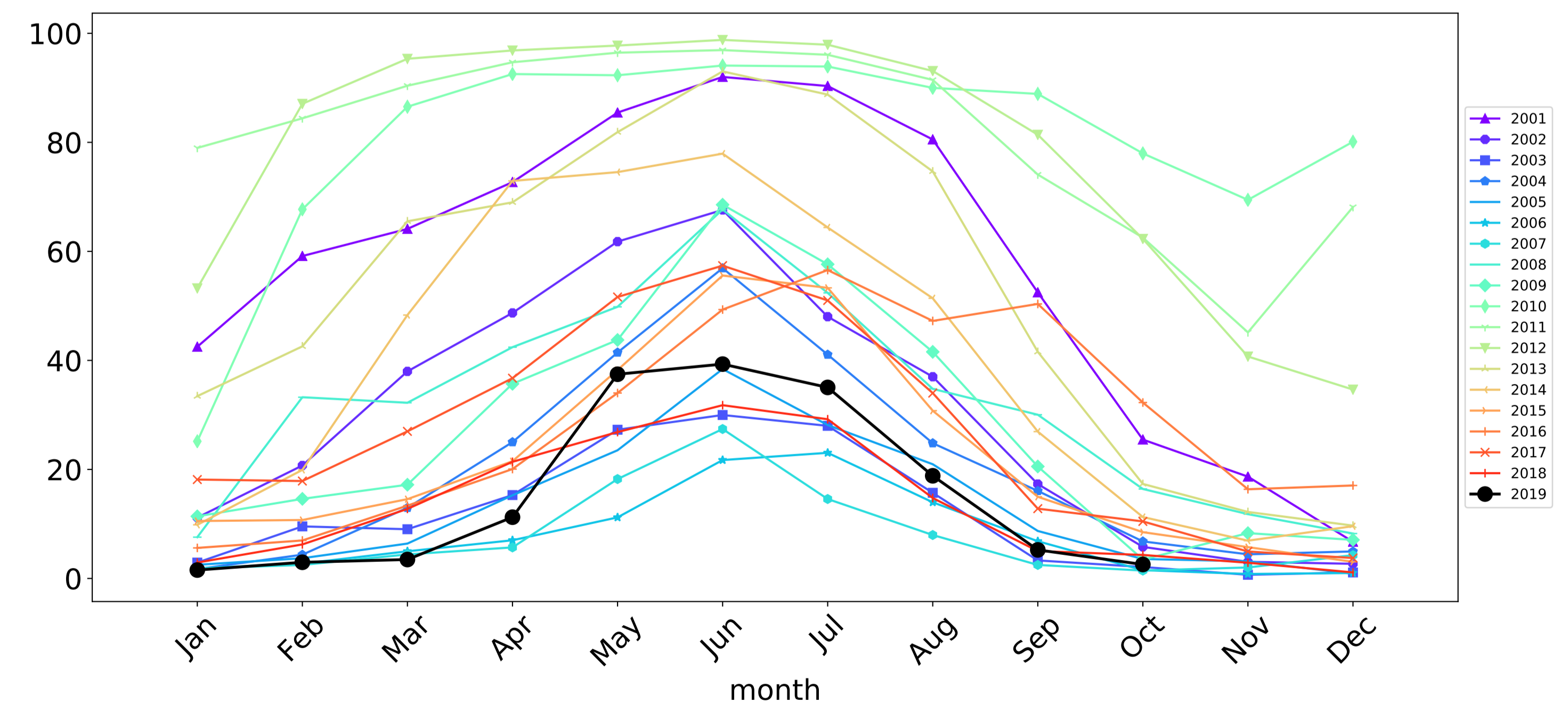
Wind erosion historical monthly area protected (Total Veg Cov > 50%)



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



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



Paroo_(S) (total 4,770,600 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	4,770,600	98.5% 4,698,900	34.7% 1,656,125	0.8% 37,900	0.1% 4,725	0.0% 525	0.0% 100
Conservation and natural environments	148,900	99.2% 147,675	40.8% 60,825	0.5% 700	0.0% 0	0.0% 0	0.0% 0
Conservation and natural environments non forest	124,925	99.0% 123,700	33.1% 41,375	0.3% 425	0.0% 0	0.0% 0	0.0% 0
Agriculture	4,542,975	98.6% 4,478,400	34.5% 1,568,025	0.8% 37,025	0.1% 4,725	0.0% 525	0.0% 100
Grazing	4,538,725	98.6% 4,474,500	34.5% 1,566,350	0.8% 36,550	0.1% 4,650	0.0% 525	0.0% 100
Grazing non forest	3,993,200	98.4% 3,928,975	28.2% 1,125,675	0.6% 22,150	0.1% 3,875	0.0% 425	0.0% 100
Grazing Woodland forest	534,875	100.0% 534,875	80.6% 431,100	2.6% 13,725	0.1% 775	0.0% 100	0.0% 0



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