Total vegetation cover soil protection
Region:NRM Riverina NSW   Date: June 2023

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
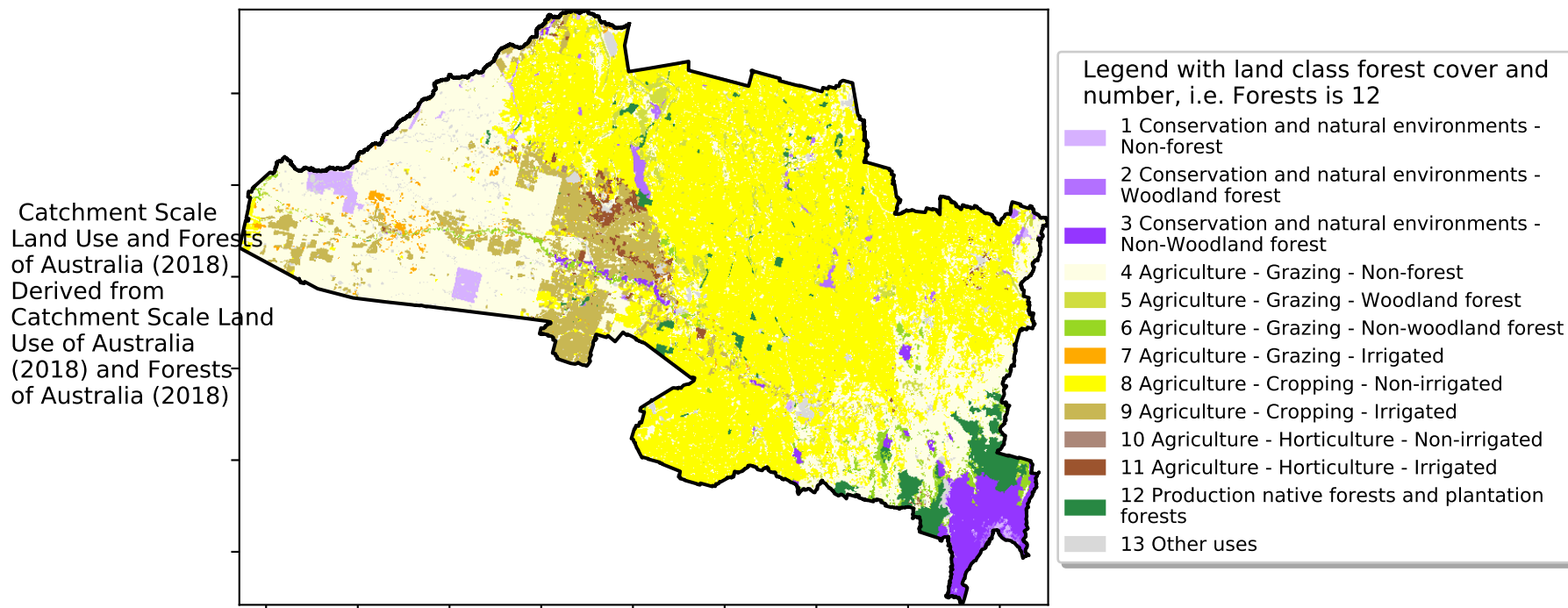
4. MODIS Fractional cover algorithm:

    https://doi.org/10.4225/08/5848a3f19a7b3

Vegetation Cover Jun 2023

Land use and forest cover

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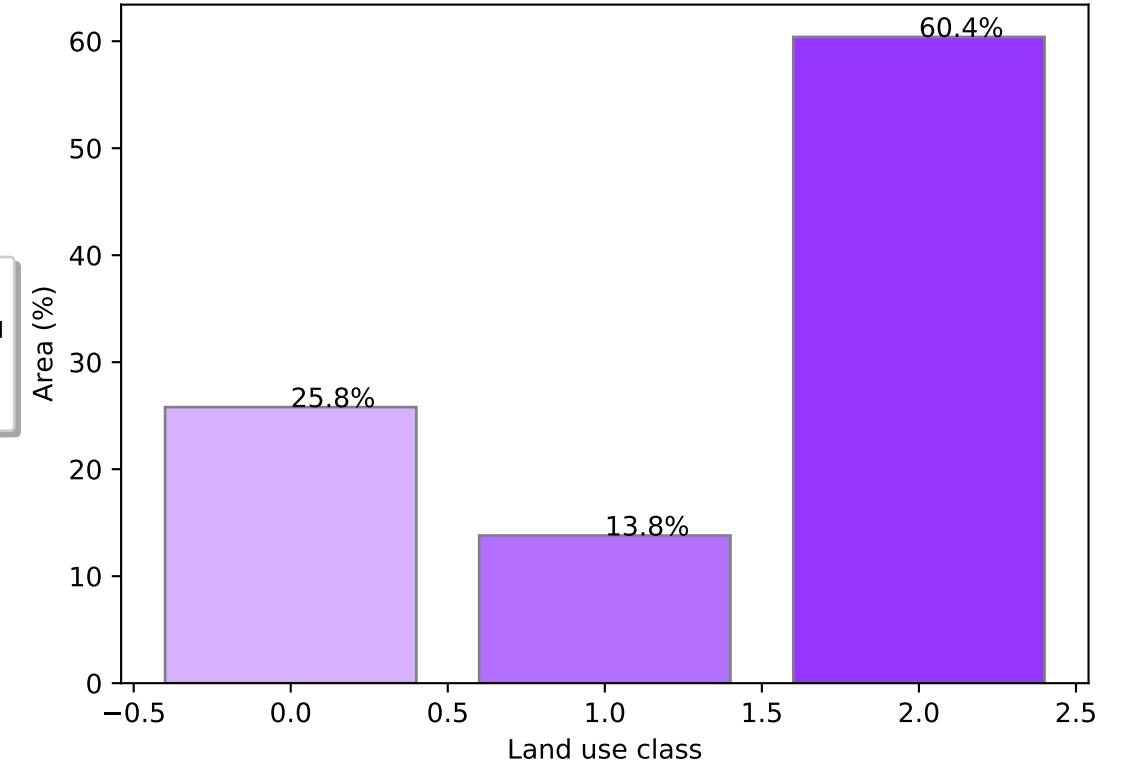of Australia (2018)
Derived from
Catchment Scale Land
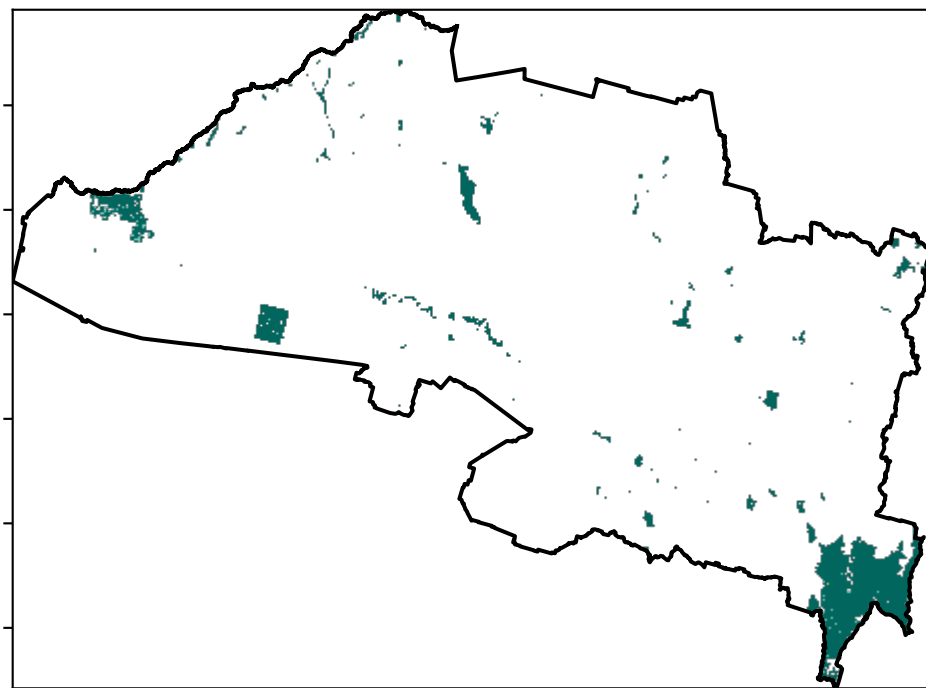Use of Australia
(2018) and Forests
of Australia (2018)

Legend with land class forest cover and number, i.e. Forests is 12
1 Conservation and natural environments - Non-forest
2 Conservation and natural environments - Woodland forest
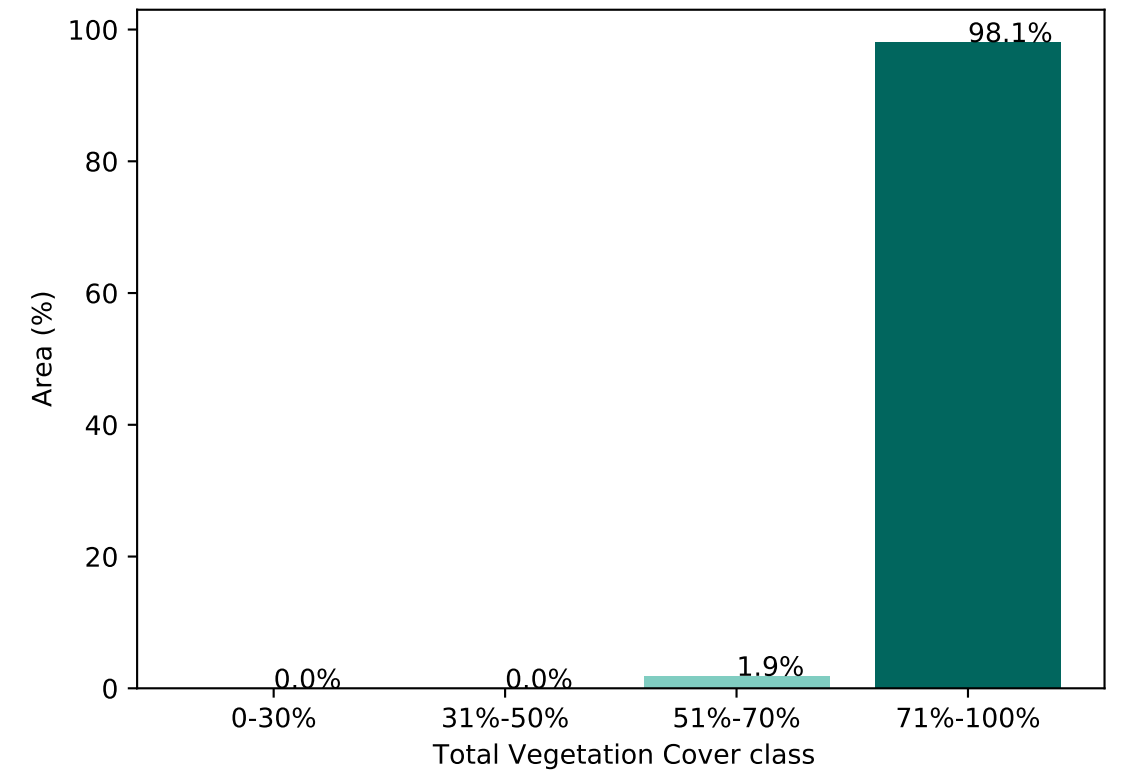3 Conservation and natural environments - Non-Woodland forest
4 Agriculture - Grazing - Non-forest
5 Agriculture - Grazing - Woodland forest
6 Agriculture - Grazing - Non-woodland forest
7 Agriculture - Grazing - Irrigated
8 Agriculture - Cropping - Non-irrigated
9 Agriculture - Cropping - Irrigated
10 Agriculture - Horticulture - Non-irrigated
11 Agriculture - Horticulture - Irrigated
12 Production native forests and plantation forests
13 Other uses

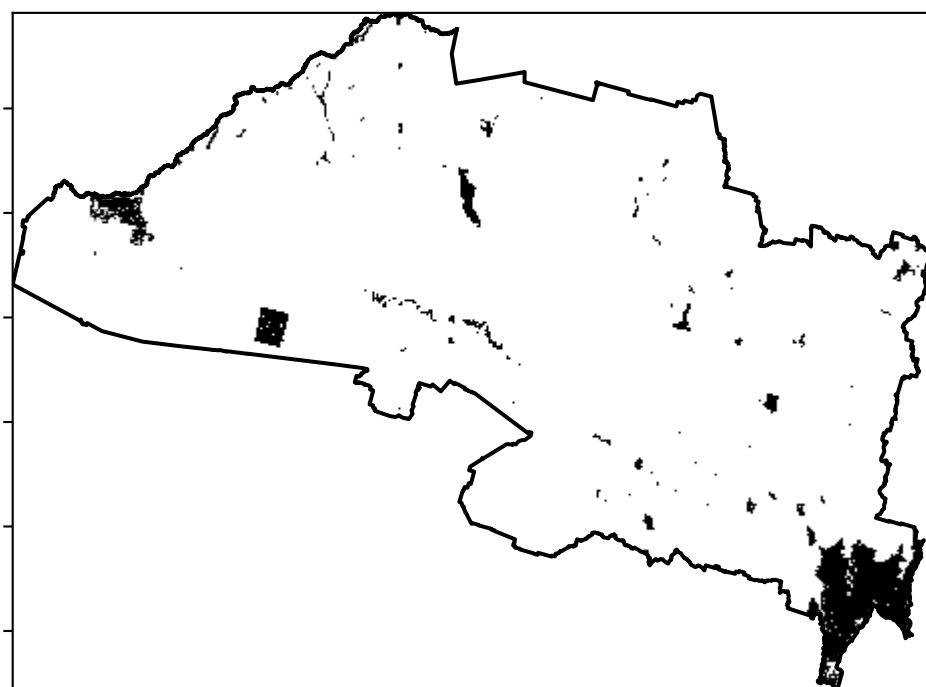**Proportion of each land class in area**

Total Vegetation Cover [%]

Proportion of vegetation cover class in area


% Area protected from water erosion (>70%)

Area not protected 8.3% of region (554,828 ha)
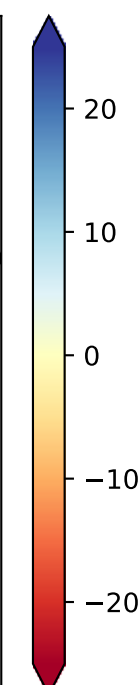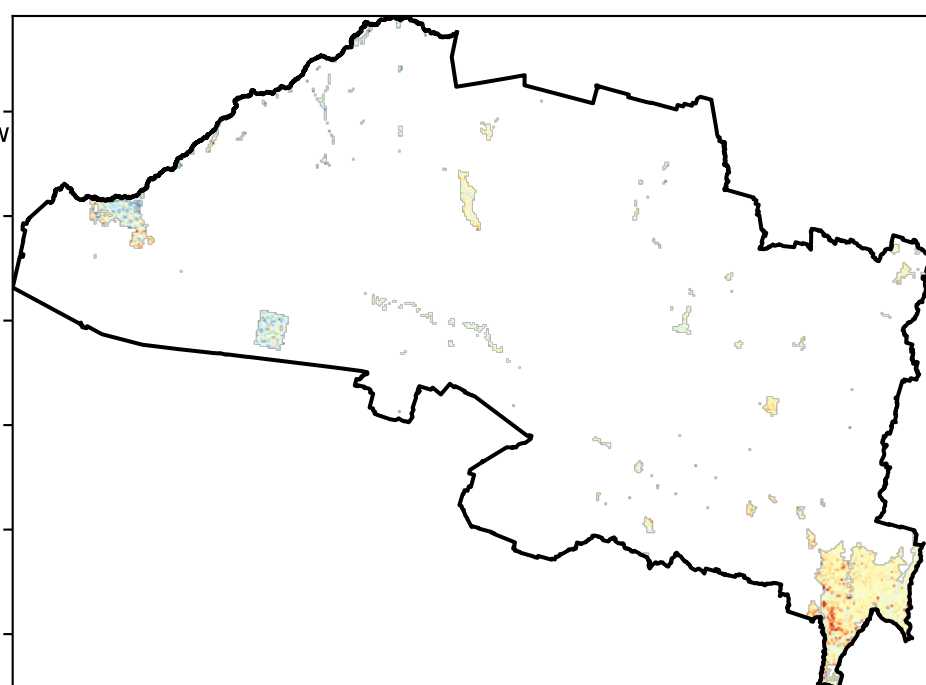
Area protected 91.7% of region (6,129,847 ha)

% Area protected from wind erosion (>50%)

Area not protected 0.0% of region (0 ha)

Area protected 100.0% of region (6,684,675 ha)

Total Vegetation Cover Anomaly [%]

Anomaly show how many percetage 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.

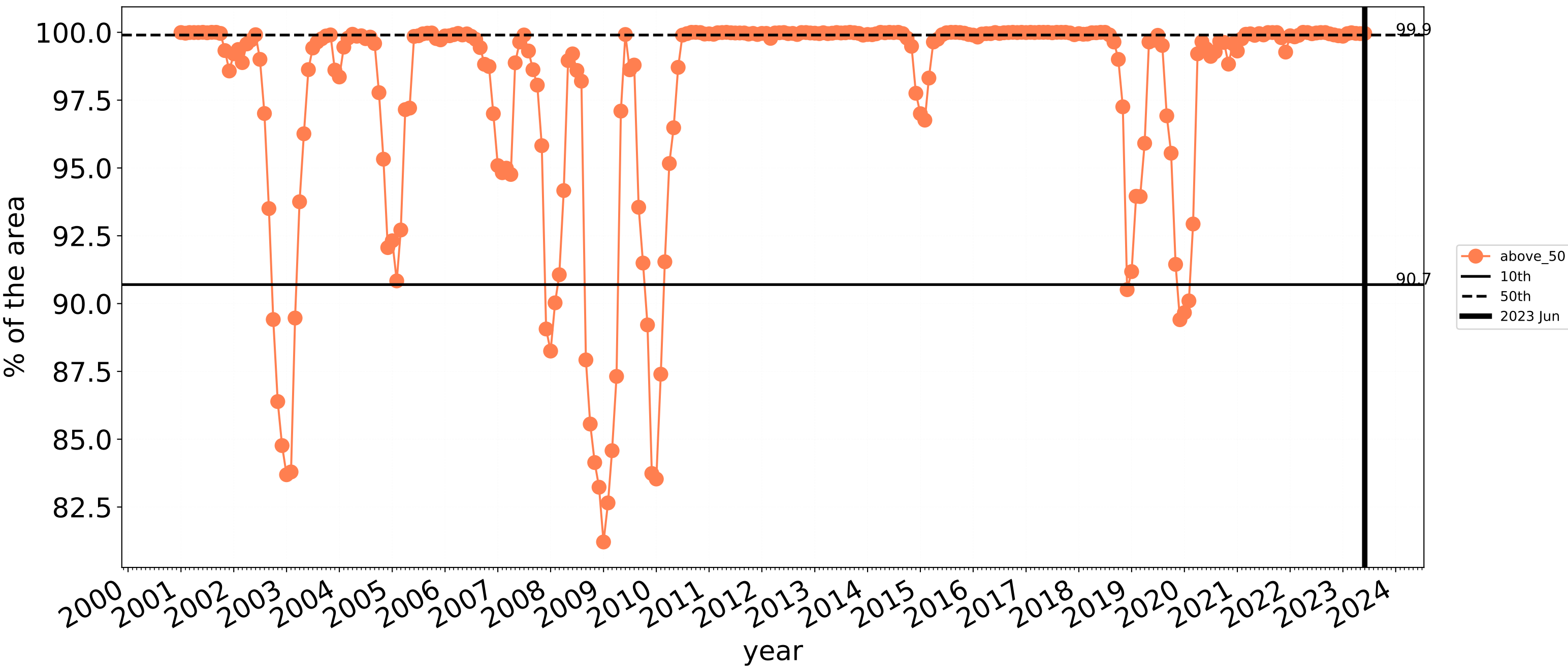**Total Vegetation Cover Decile [%]**

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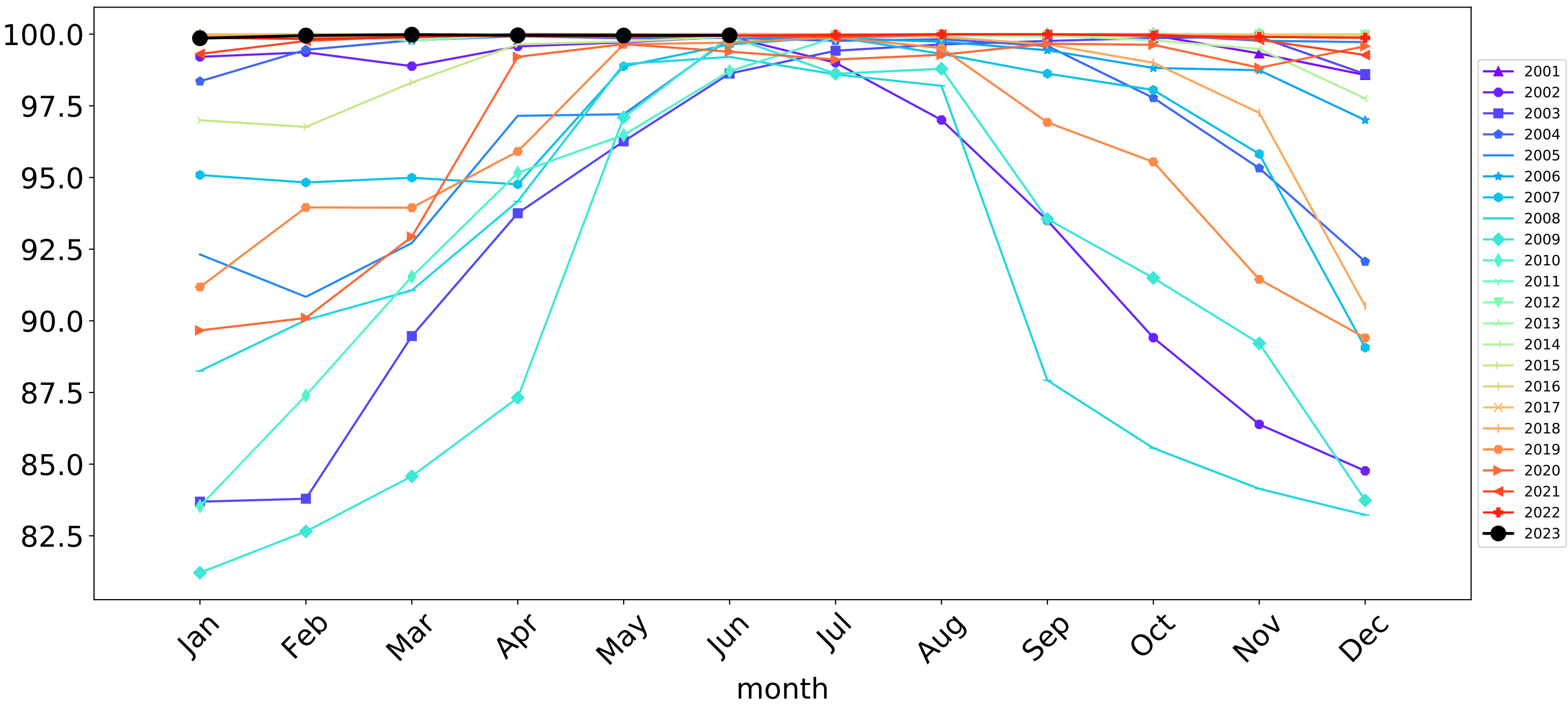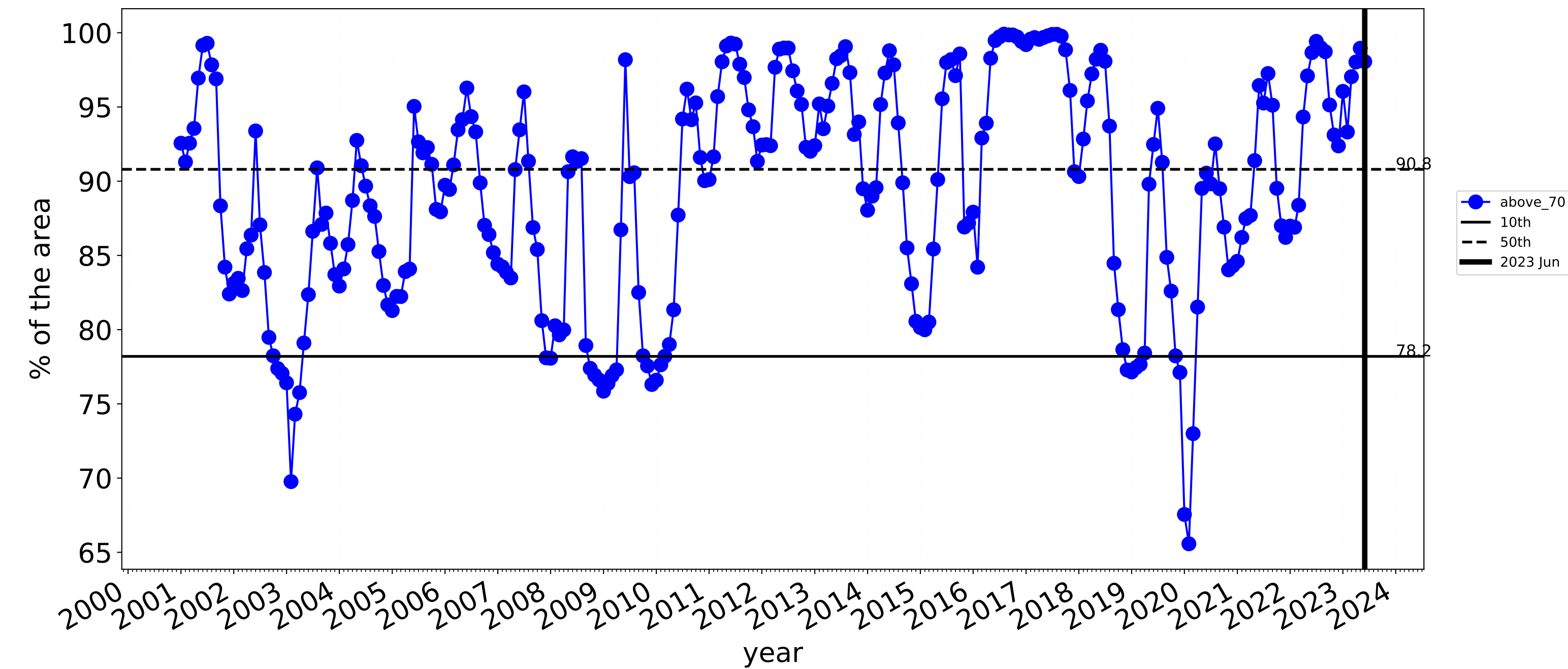
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

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%)

Monthly rainfall from 2001 to 2023

Rainfall: historical monthly

3

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)
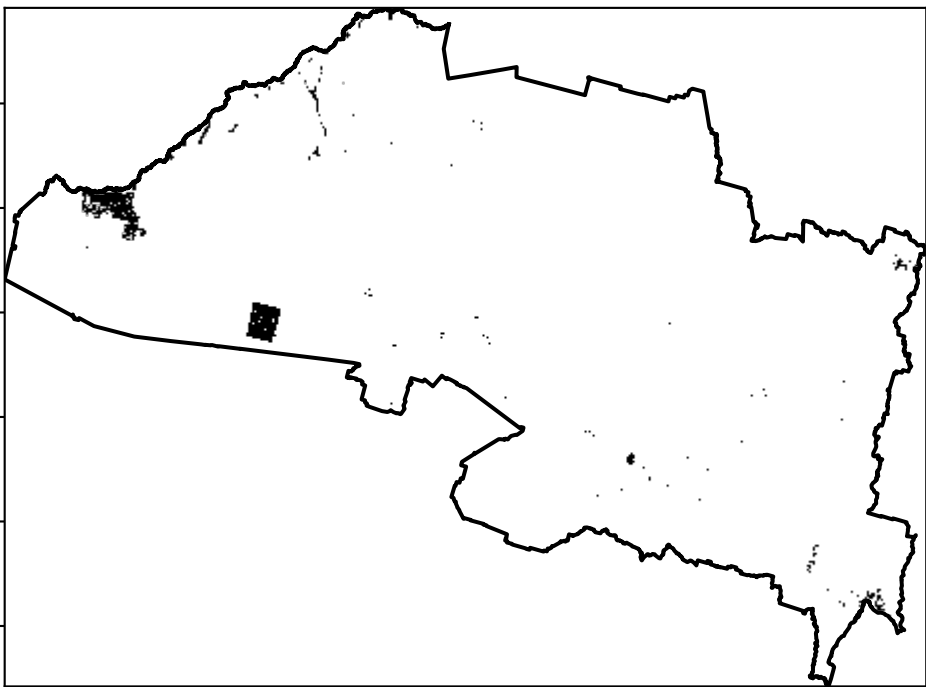
1 Conservation and natural environments - Non-forest

2 Conservation and natural environments - Woodland forest

3 Conservation and natural environments - Non-woodland forest

Proportion of each land class in area

25.8%
13.8%
60.4%

Area (%)

Land use class

Total Vegetation Cover [%]

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

Proportion of vegetation cover class in area

0.0%   0.0%   1.9%   98.1%

Area (%)

Total Vegetation Cover class

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

% Area protected from water erosion (>70%)

Area not protected
1.9% of region
(6,004 ha)

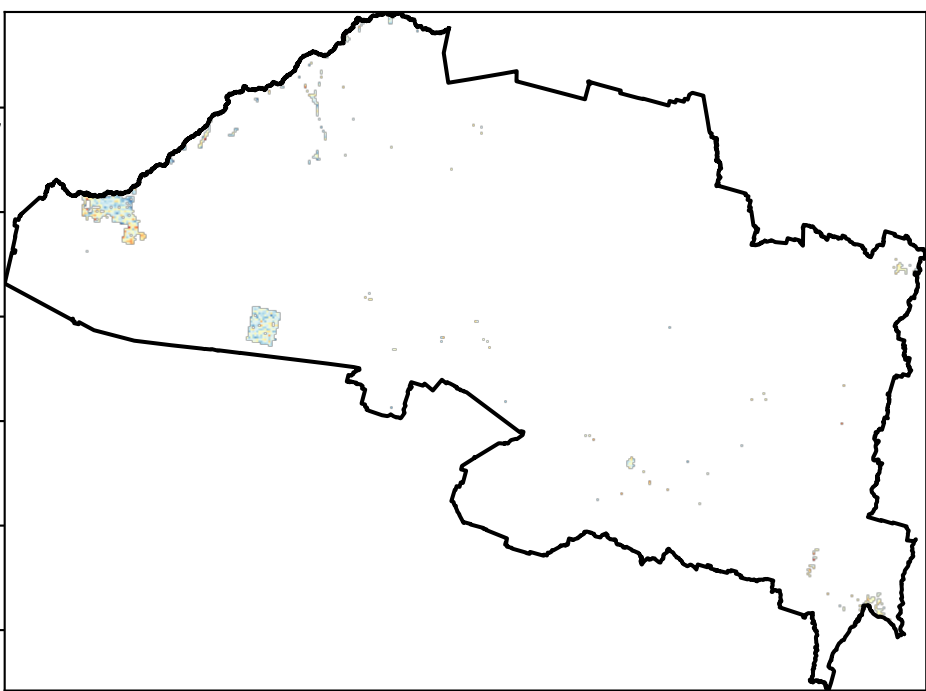Area protected
98.1% of region
(310,021 ha)

% Area protected from wind erosion (>50%)
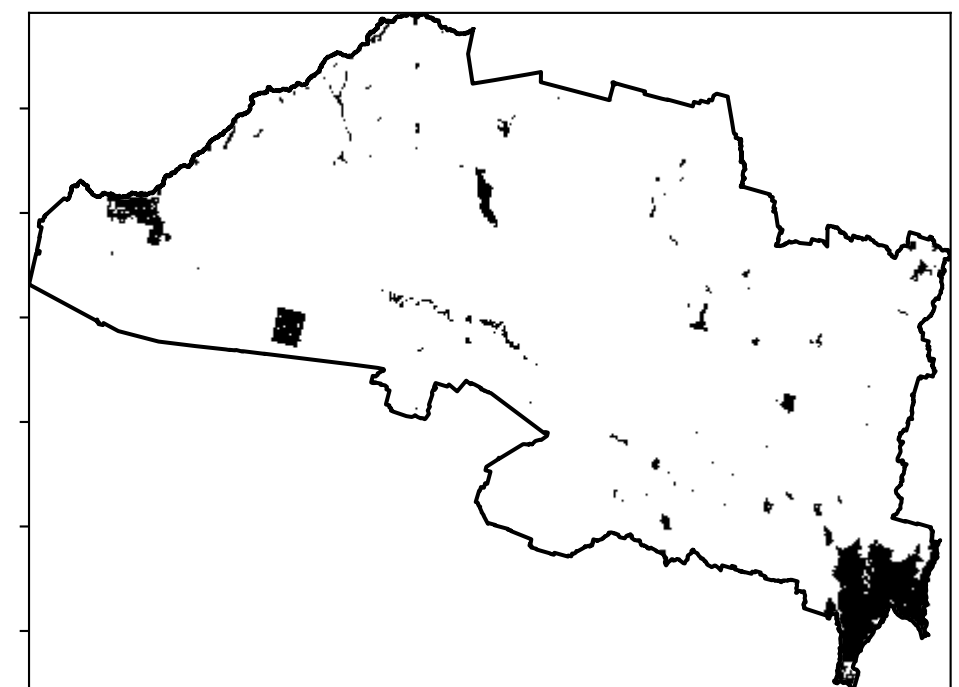
Area not protected
0.0% of region (0 ha)

Area protected
100.0% of region
(316,025 ha)

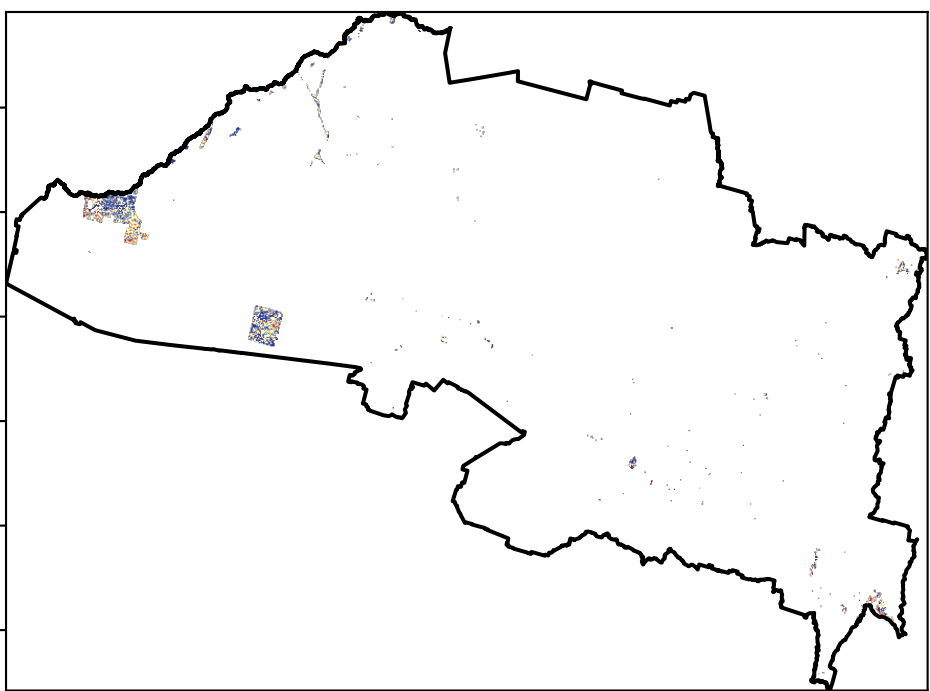## Total Vegetation Cover Anomaly [%]

Anomaly show how many percetage 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.

10
8-9
4-7
2-3
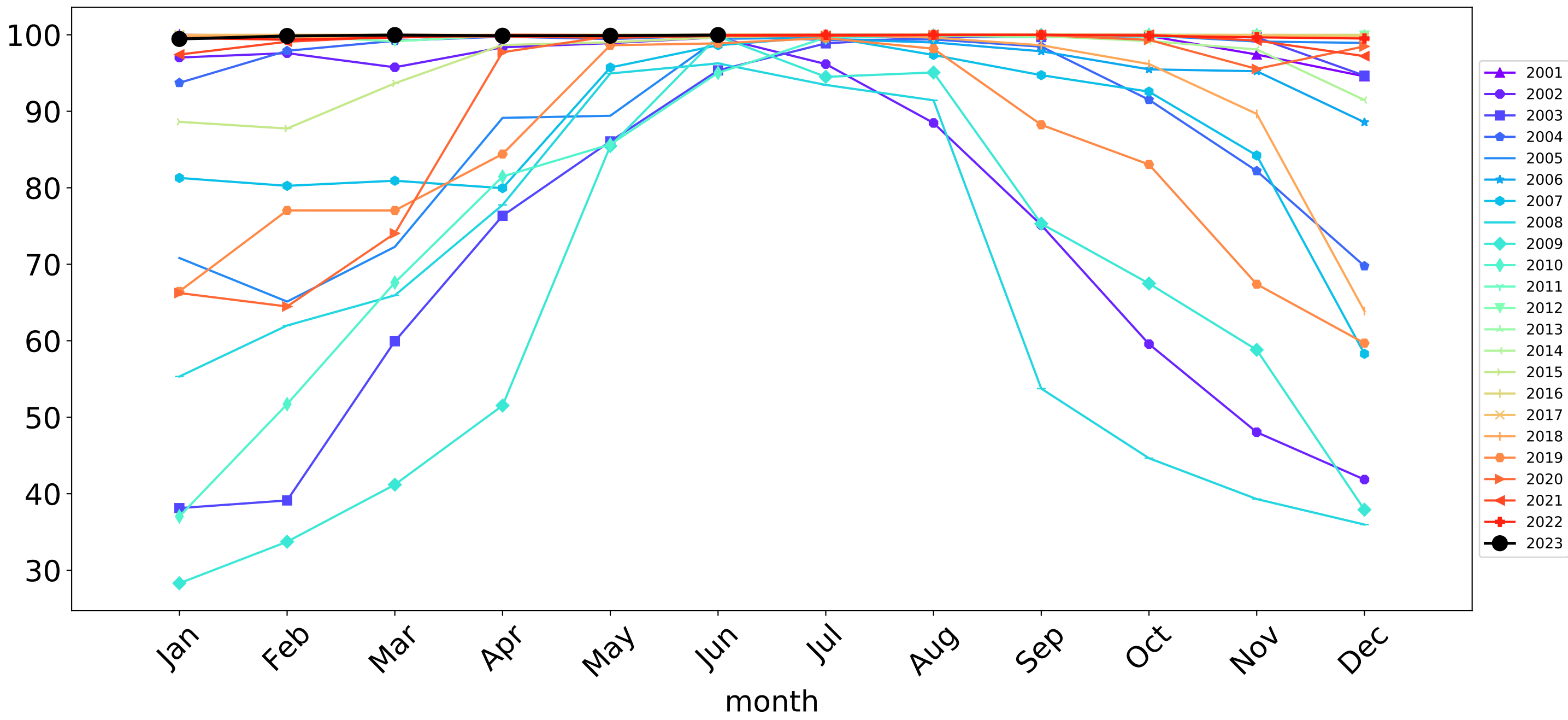1
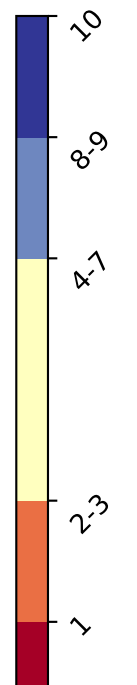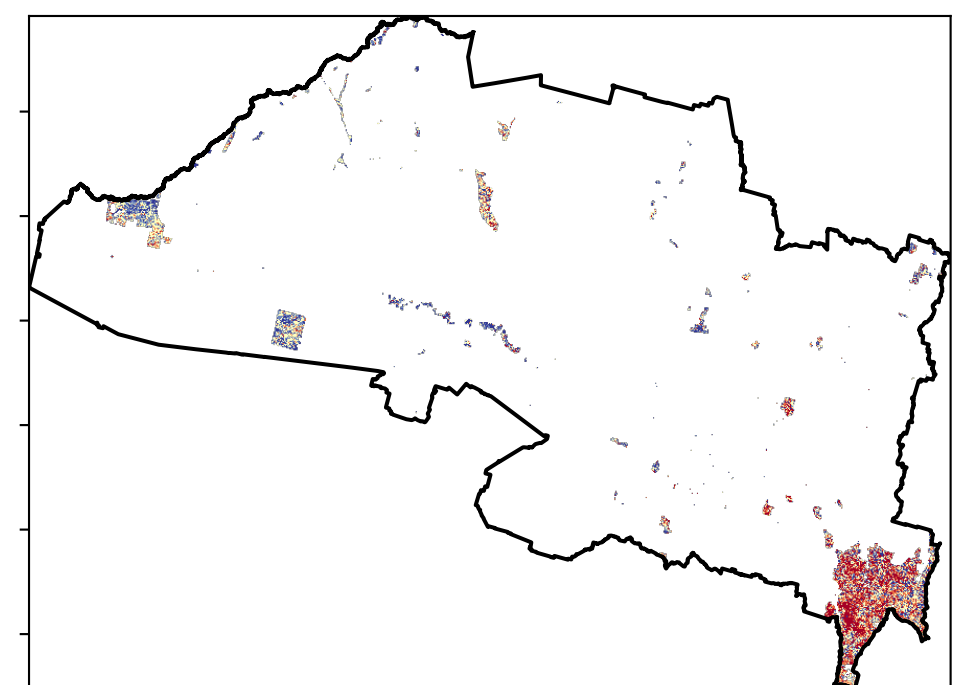
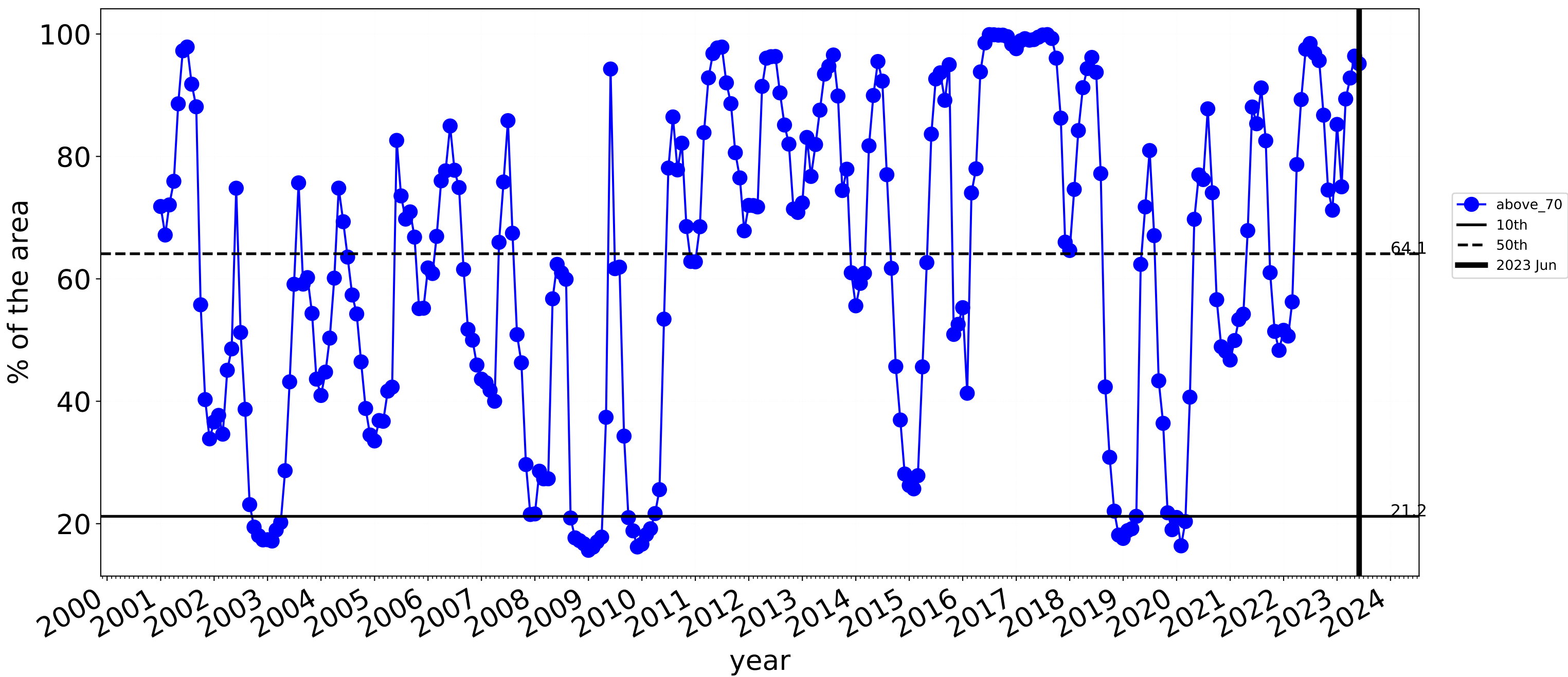# Conservation and natural environments timeseries

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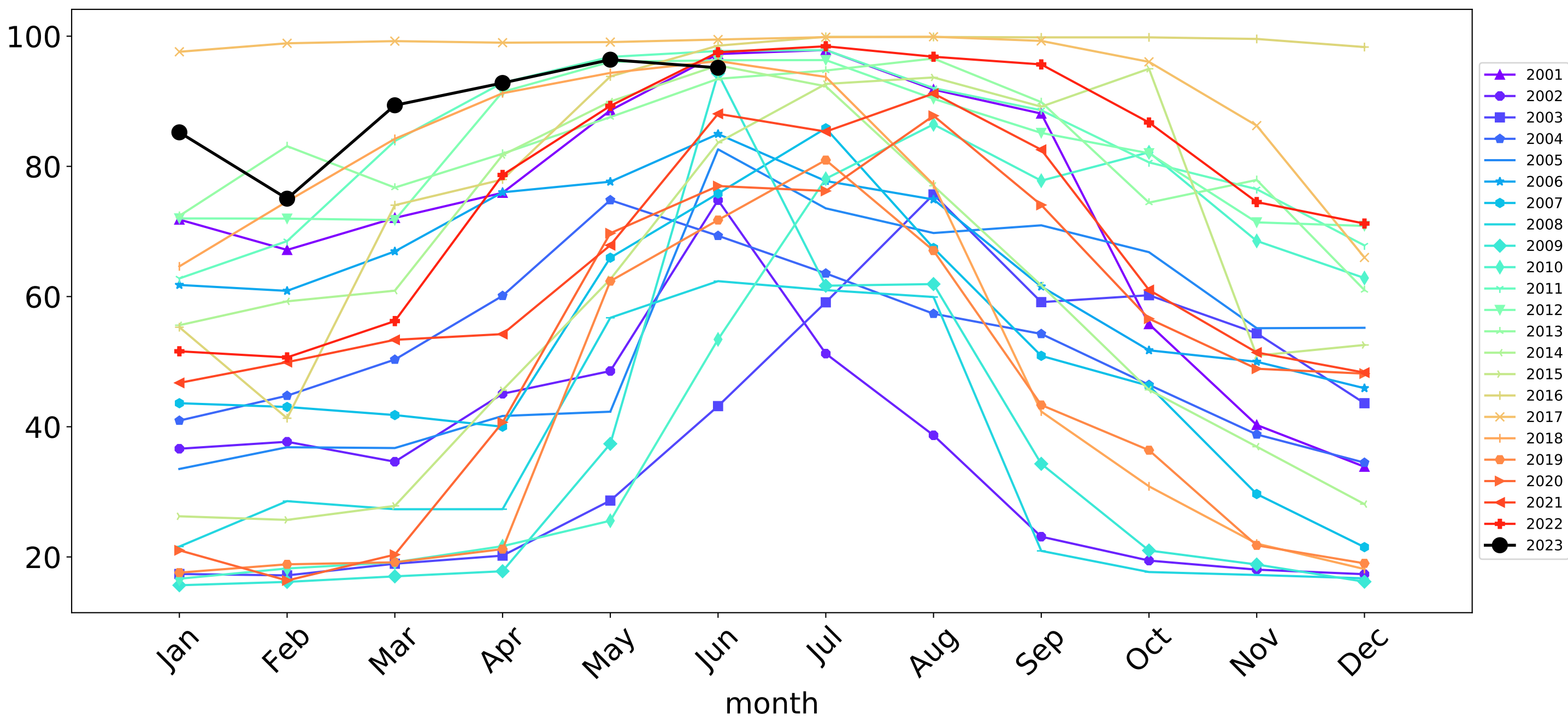

Wind erosion historical monthly area protected (Total Veg Cov >50%)

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

Water erosion historical monthly area protected (Total Veg Cov>70%)
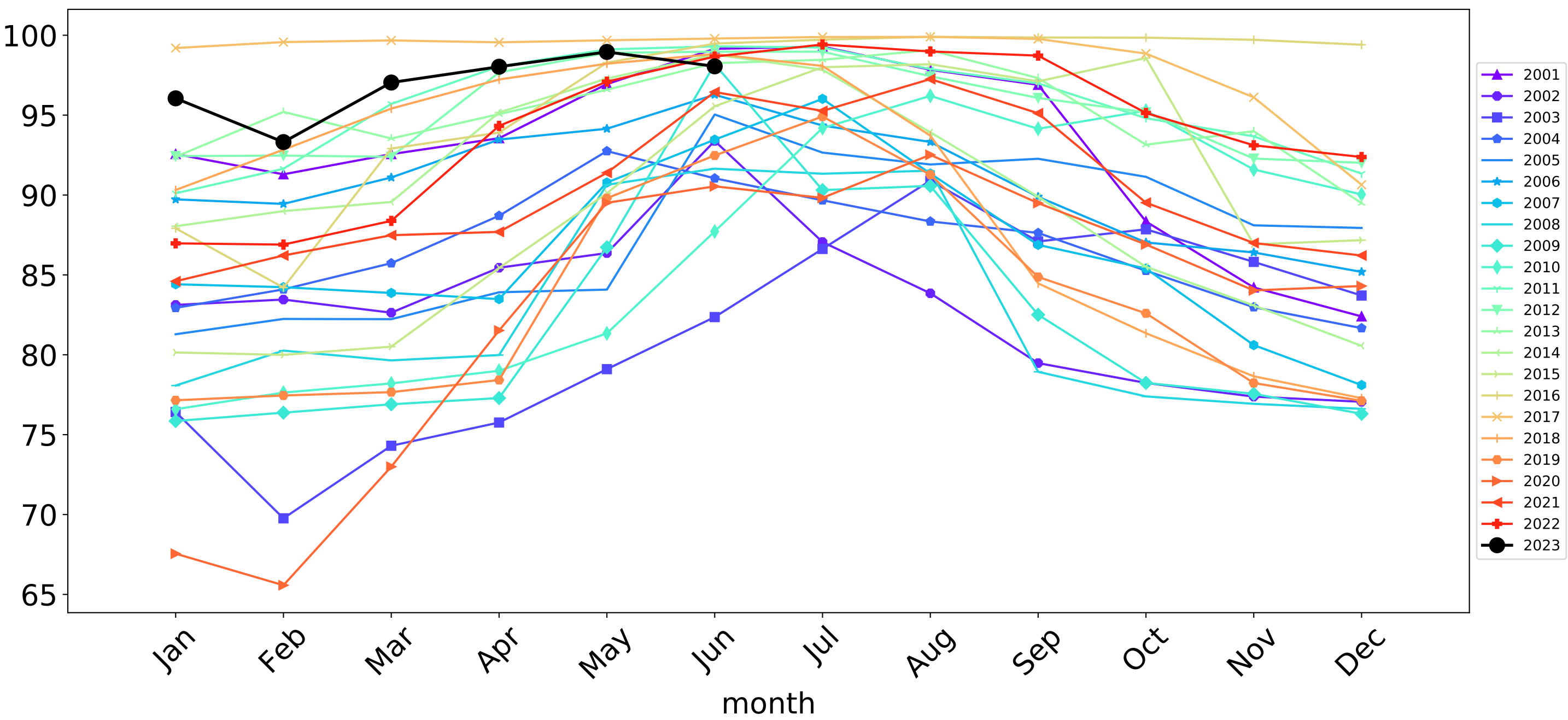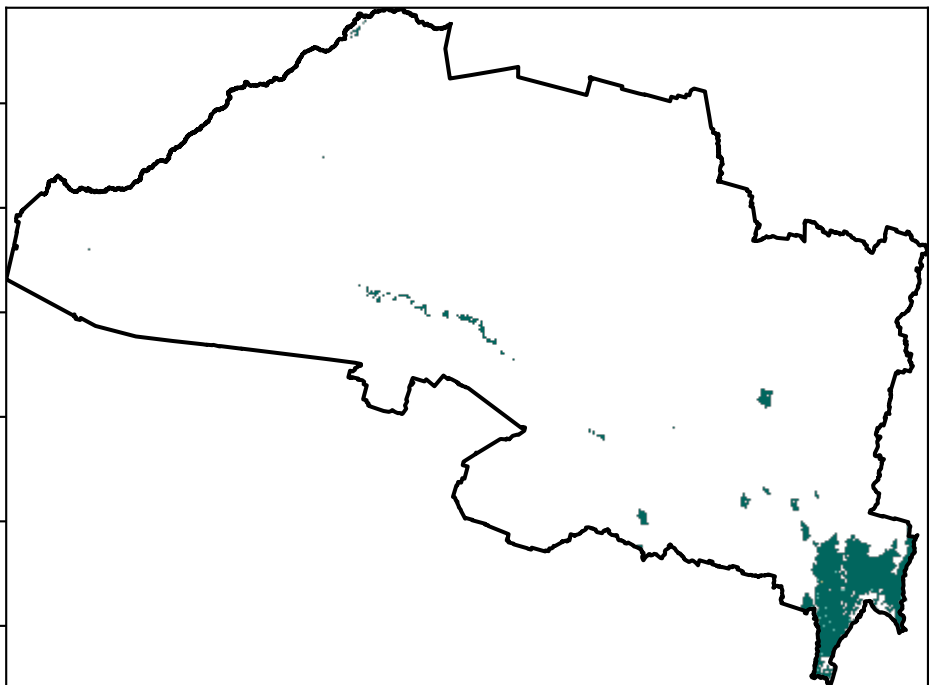
Conservation and natural environments non forest

Land use and forest cover

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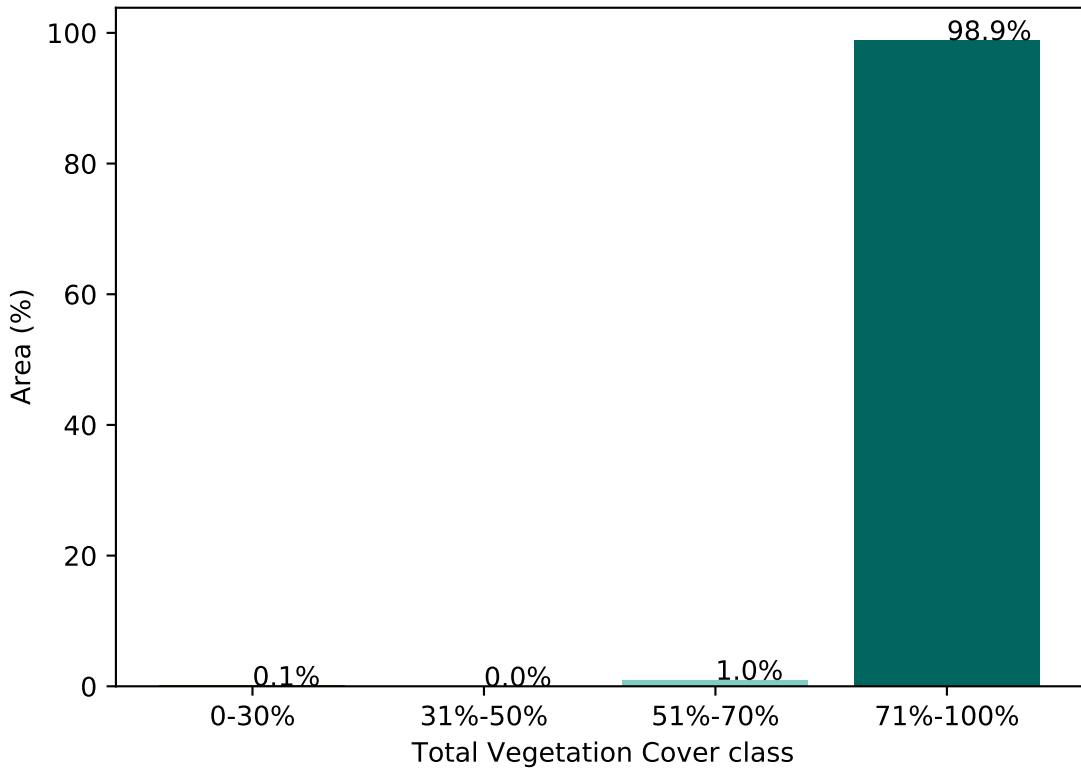
1 Conservation and natural environments - Non-forest

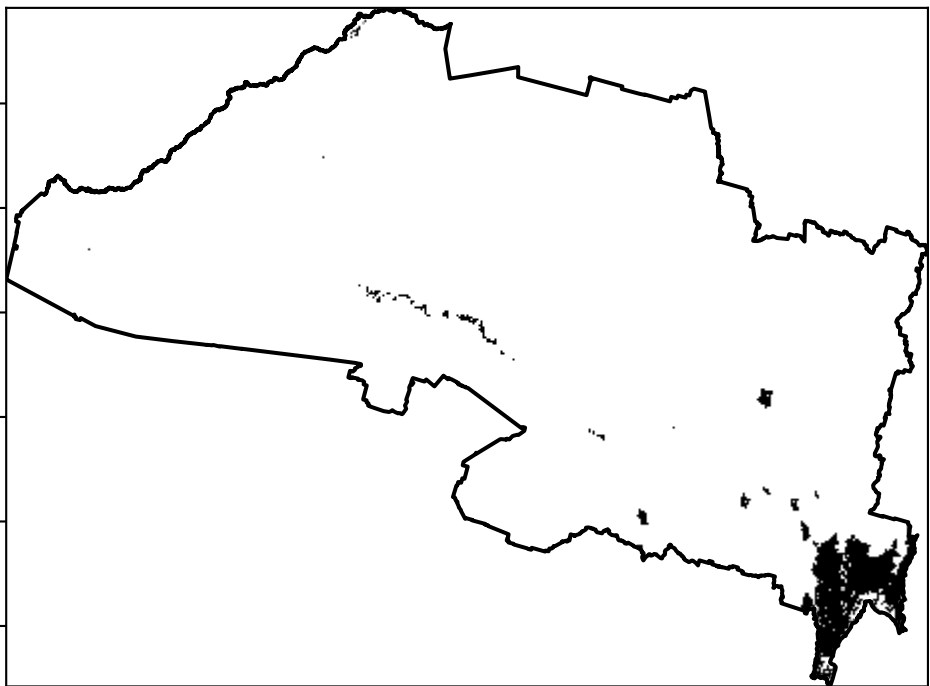### Total Vegetation Cover [%]
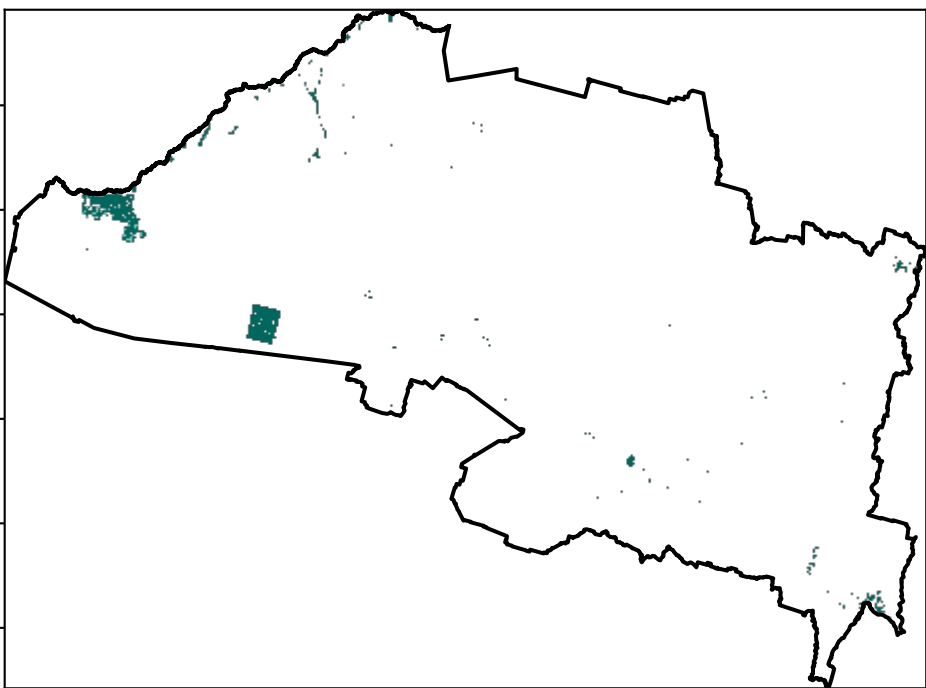
71%-100%

51%-70%

31%-50%

0-30%

Proportion of vegetation cover class in area

95.1%

0.1%   0.0%   4.8%

Area (%)

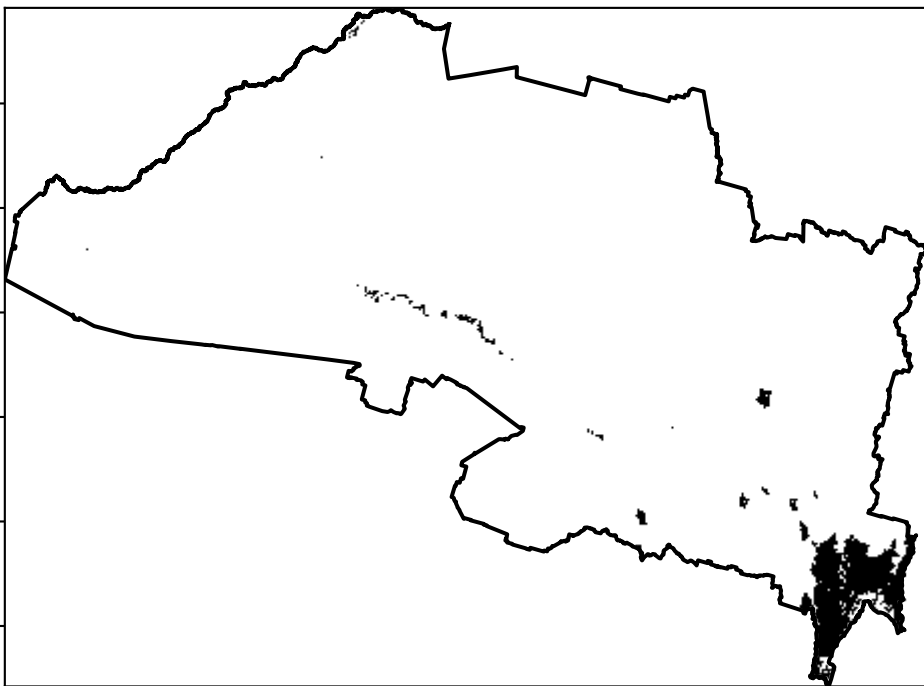Total Vegetation Cover class
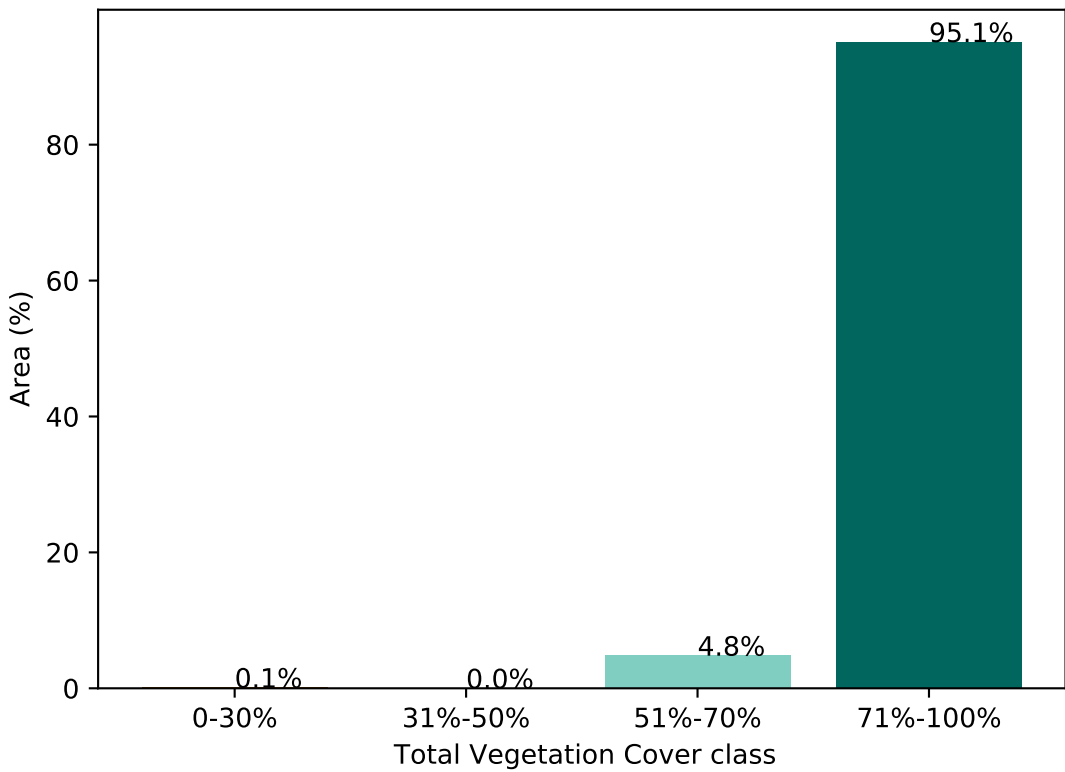
% Area protected from water erosion (>70%)

Area not protected 4.9% of region (4,039 ha)
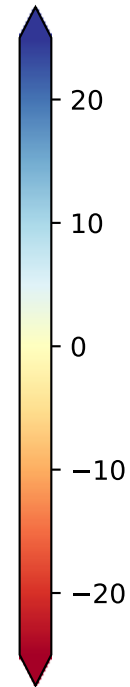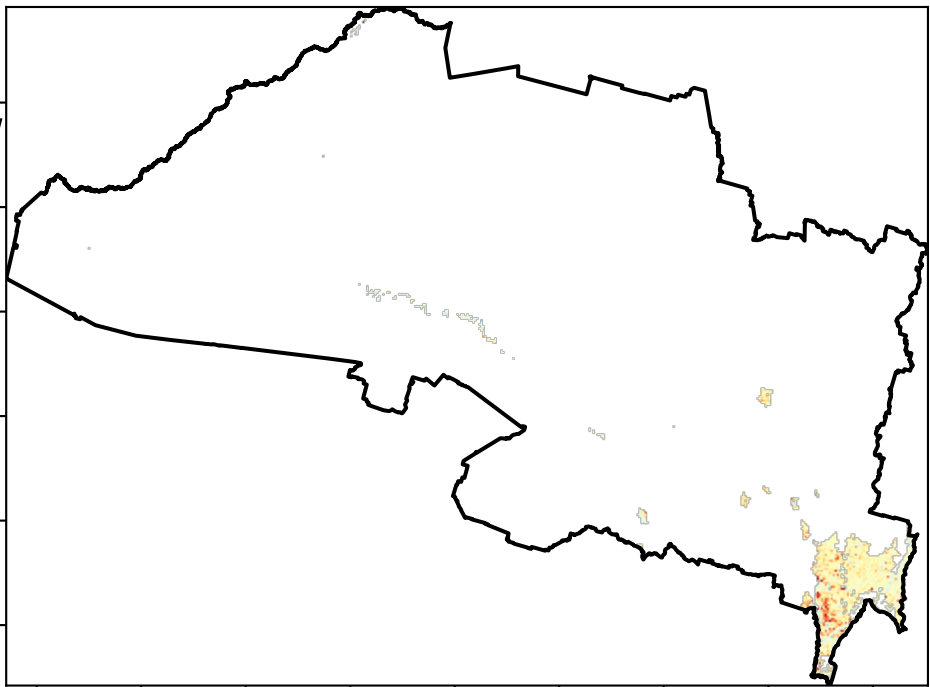
Area protected 95.1% of region (78,386 ha)

% Area protected from wind erosion (>50%)
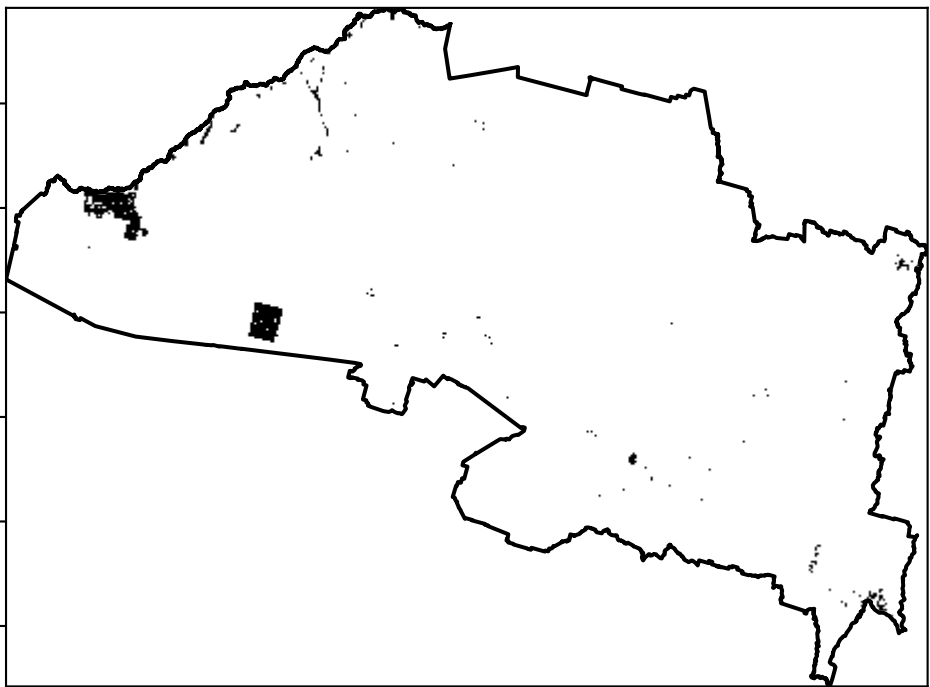
Area not protected 0.0% of region (0 ha)
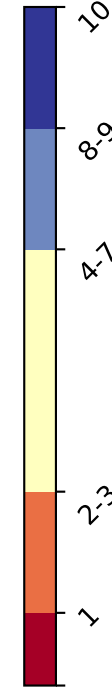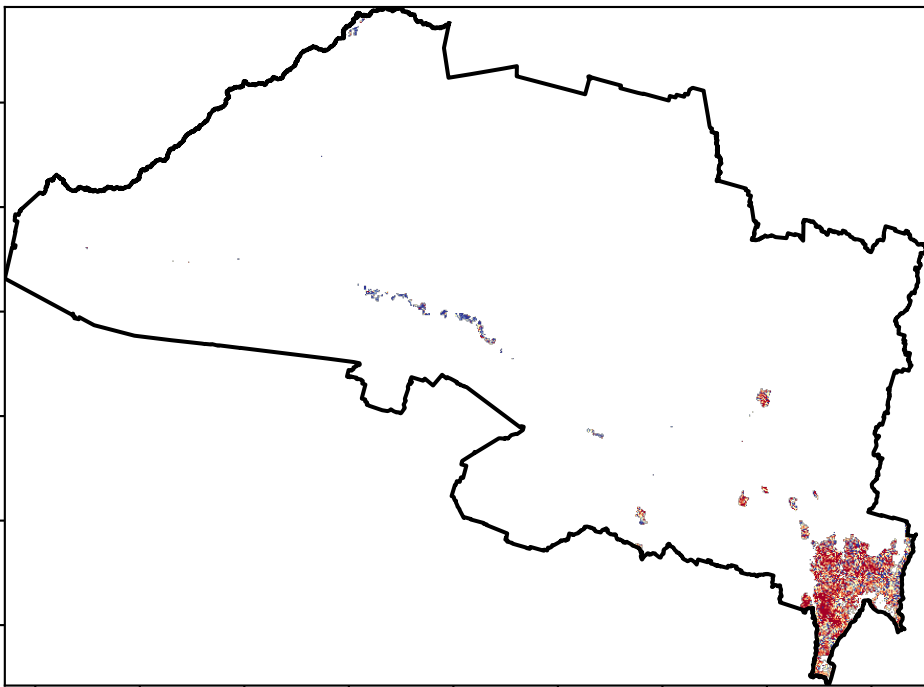
Area protected 100.0% of region (82,425 ha)

Total Vegetation Cover Anomaly [%]

Anomaly show how many percetage 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.

10

8-9

4-7

2-3

1

CSIRO

tern Ecosystem Research Infrastructure

Australian Government | National Landcare Programme

NSW GOVERNMENT

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%)

Conservation and natural environments Forest (non woodland)

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 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

98.9%

0.1%   0.0%   1.0%

Area (%)

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

Total Vegetation Cover class

% Area protected from water erosion (>70%)

Area not
protected
1.1% of
region
(2,091 ha)

Area
protected
98.9% of
region
(188,034
ha)

% Area protected from wind erosion (>50%)

Area not
protected
0.0% of
region (0
ha)

Area
protected
100.0% of
region
(190,125
ha)

Total Vegetation Cover Anomaly [%]

Anomaly show how
many percetage
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
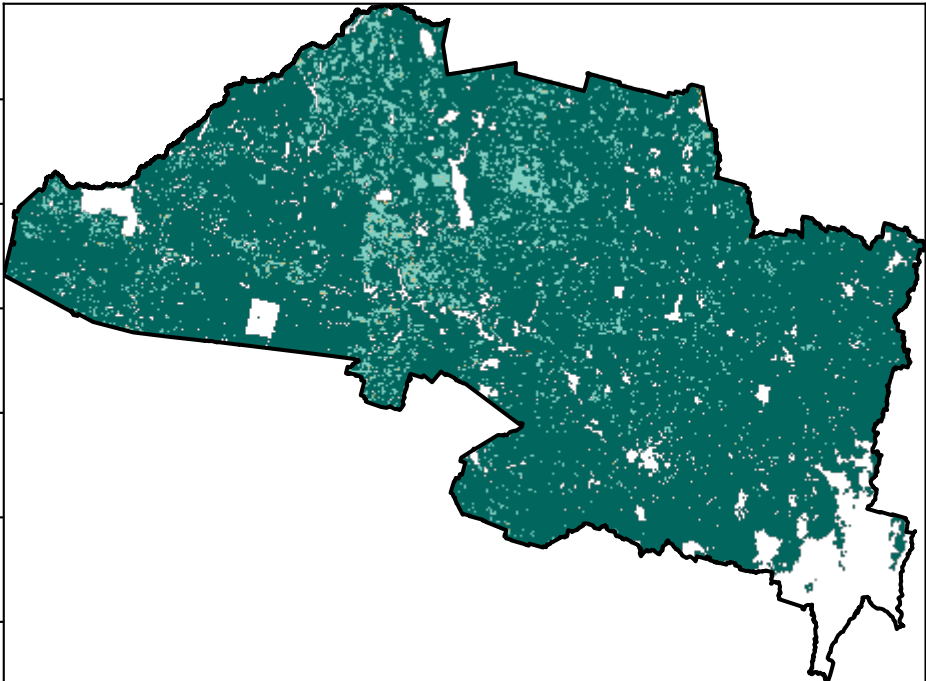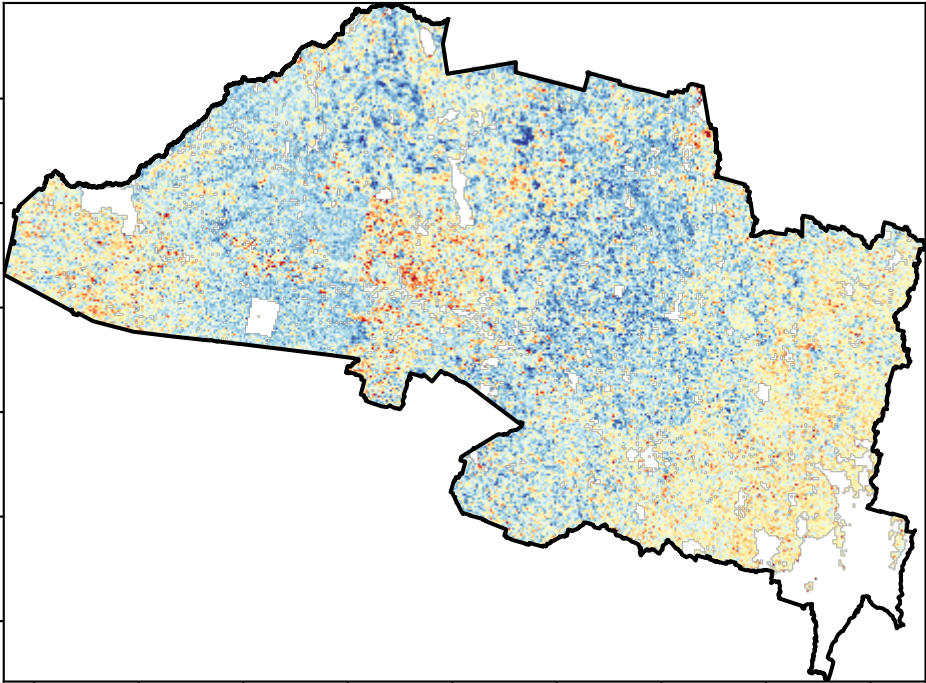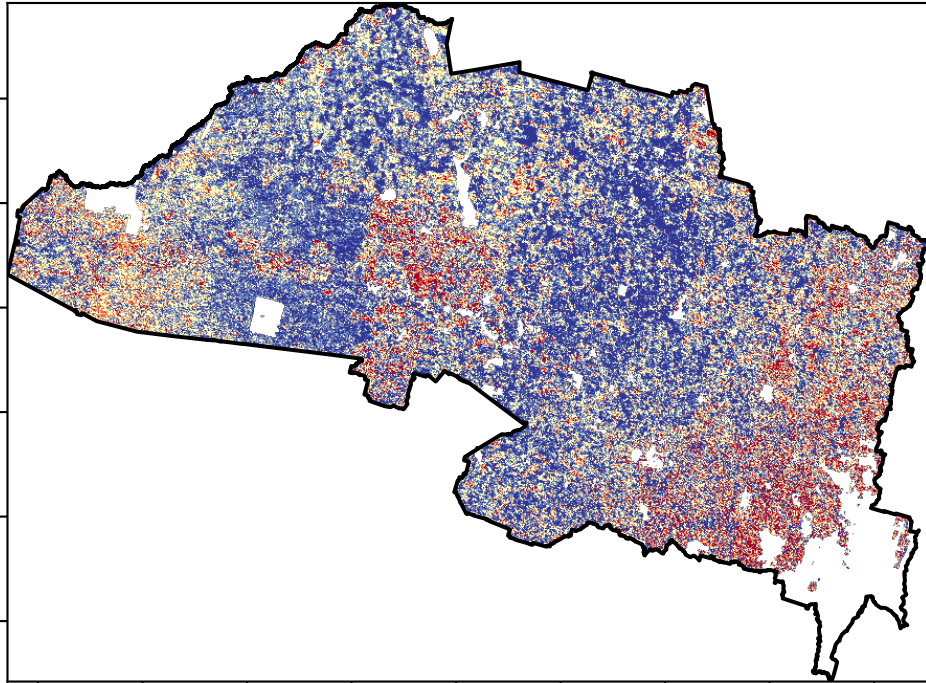2019.

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.

10

8-9

4-7

2-3

1

Conservation and natural environments Forest (non woodland) timeseries
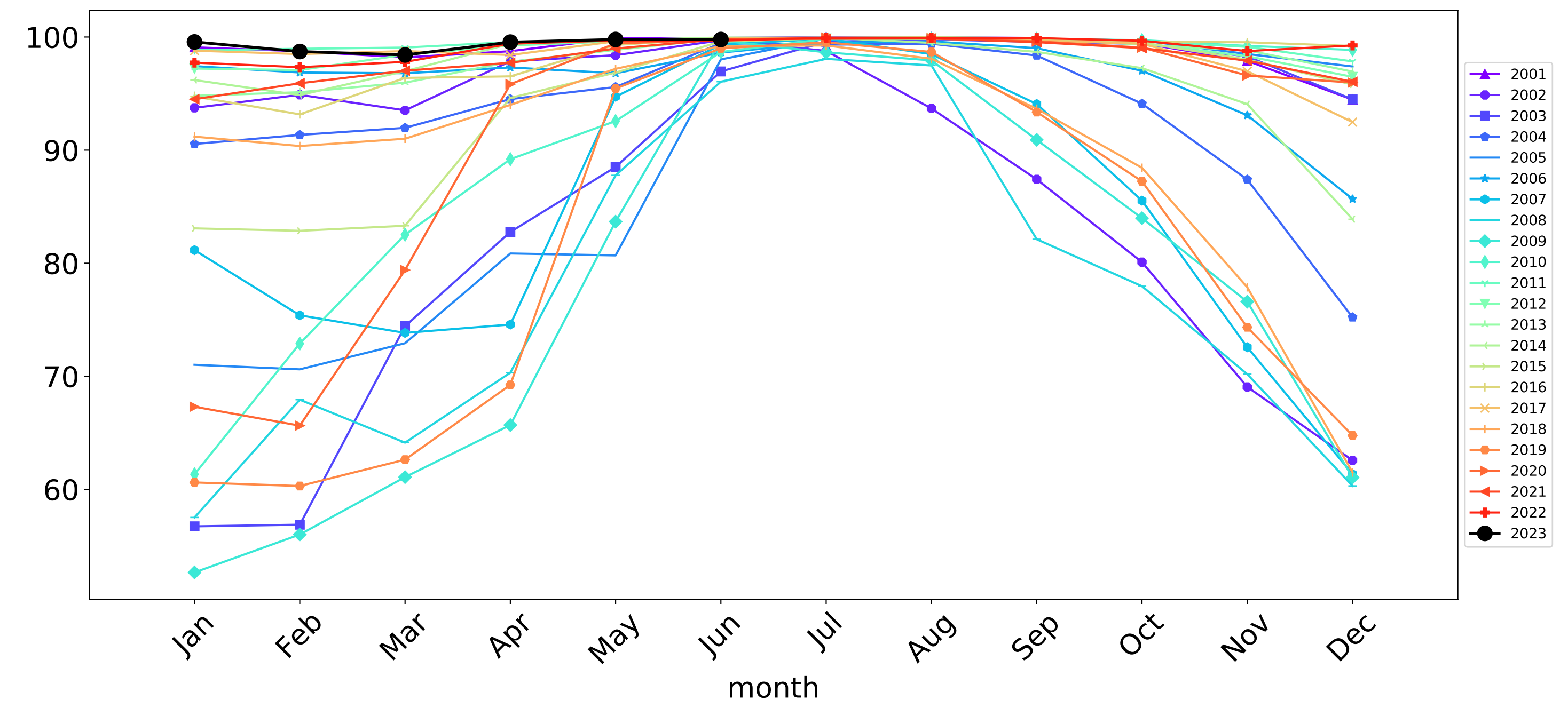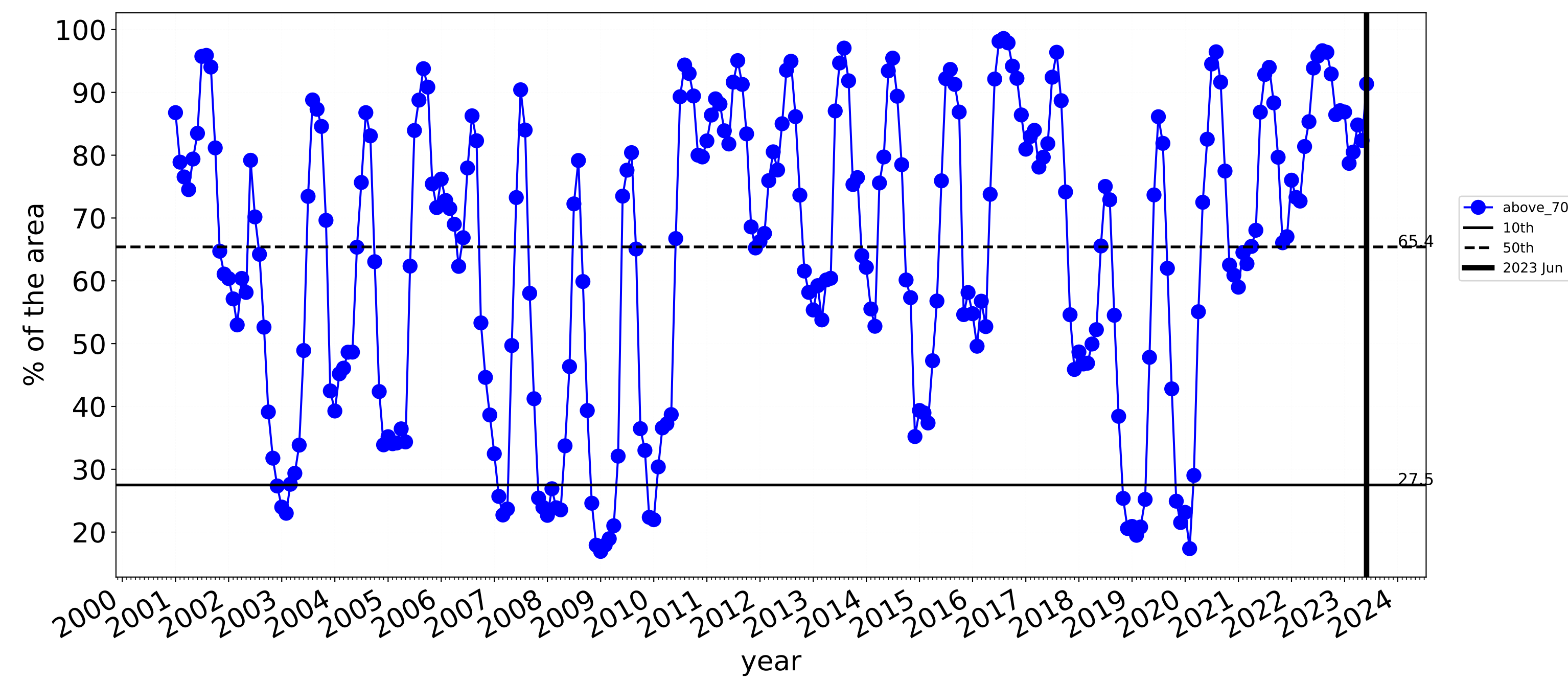

Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

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%)
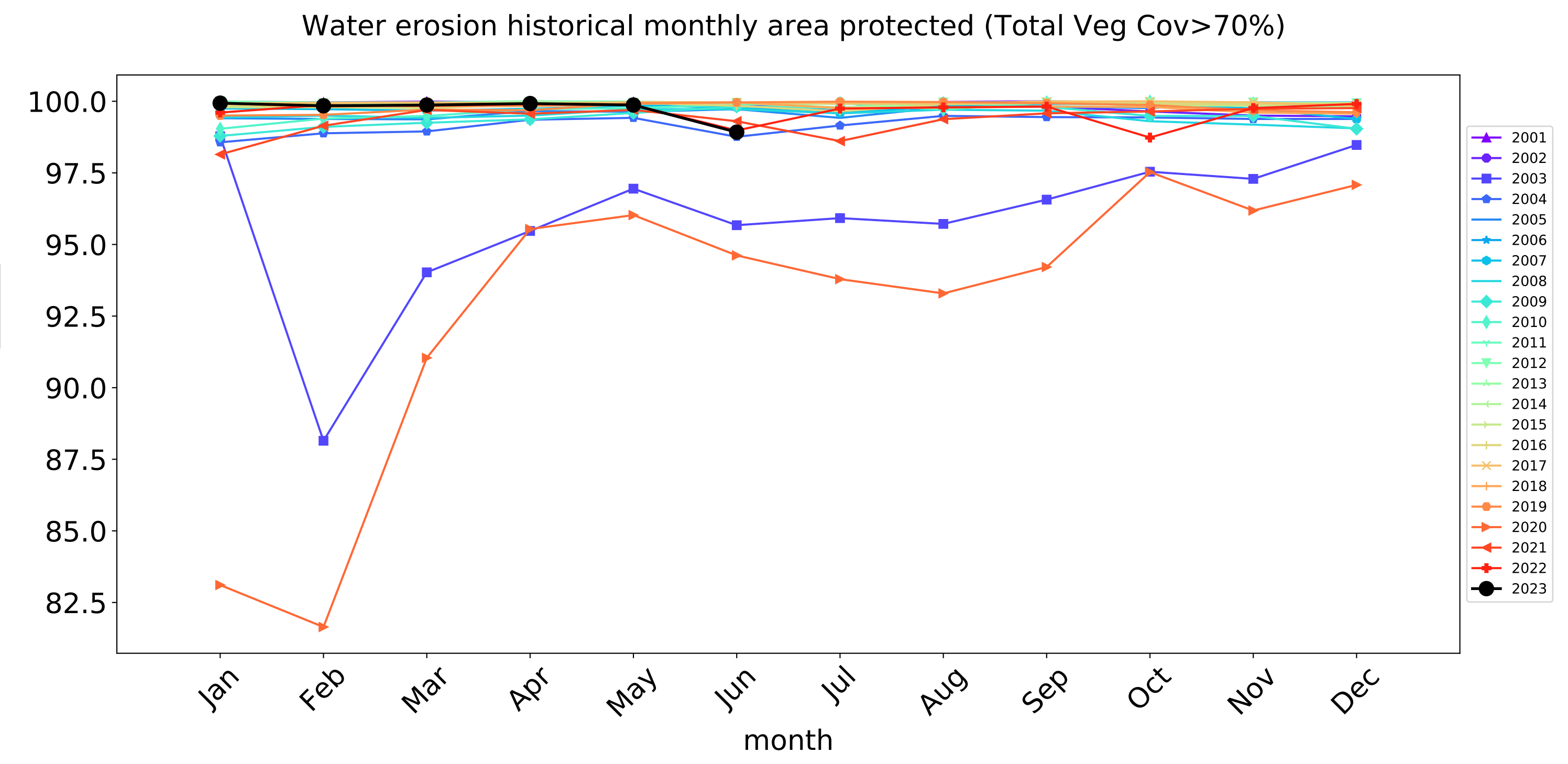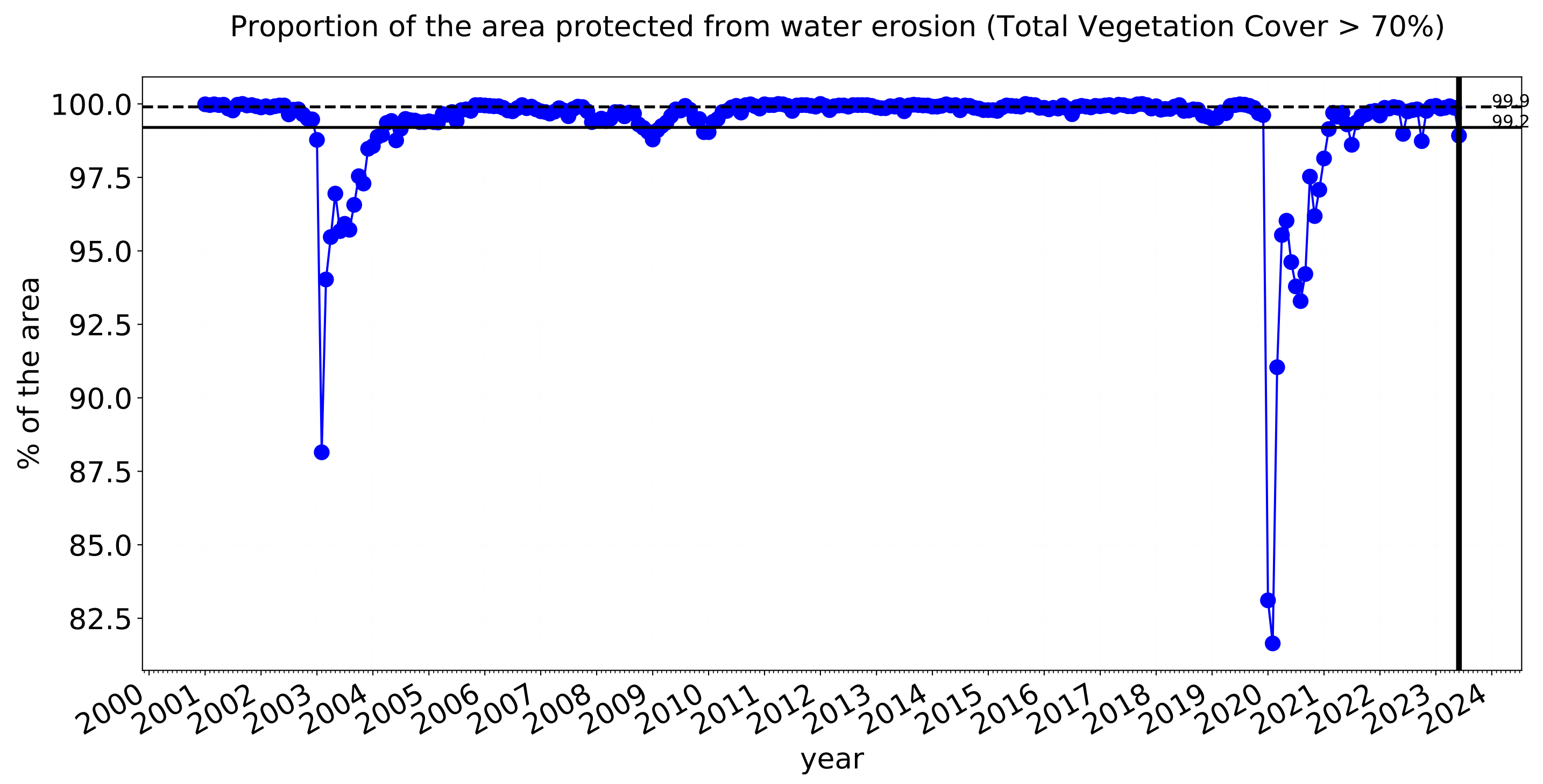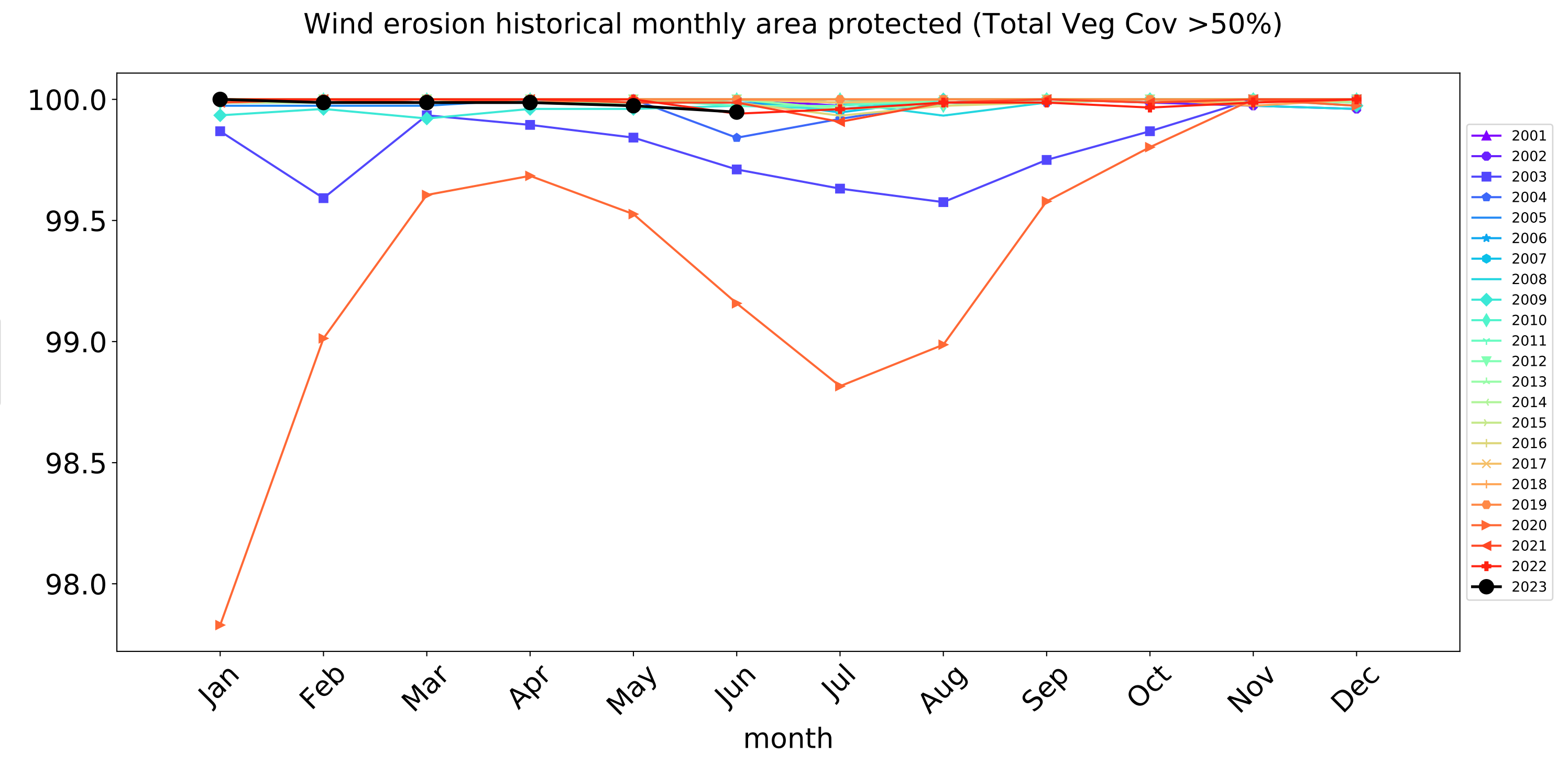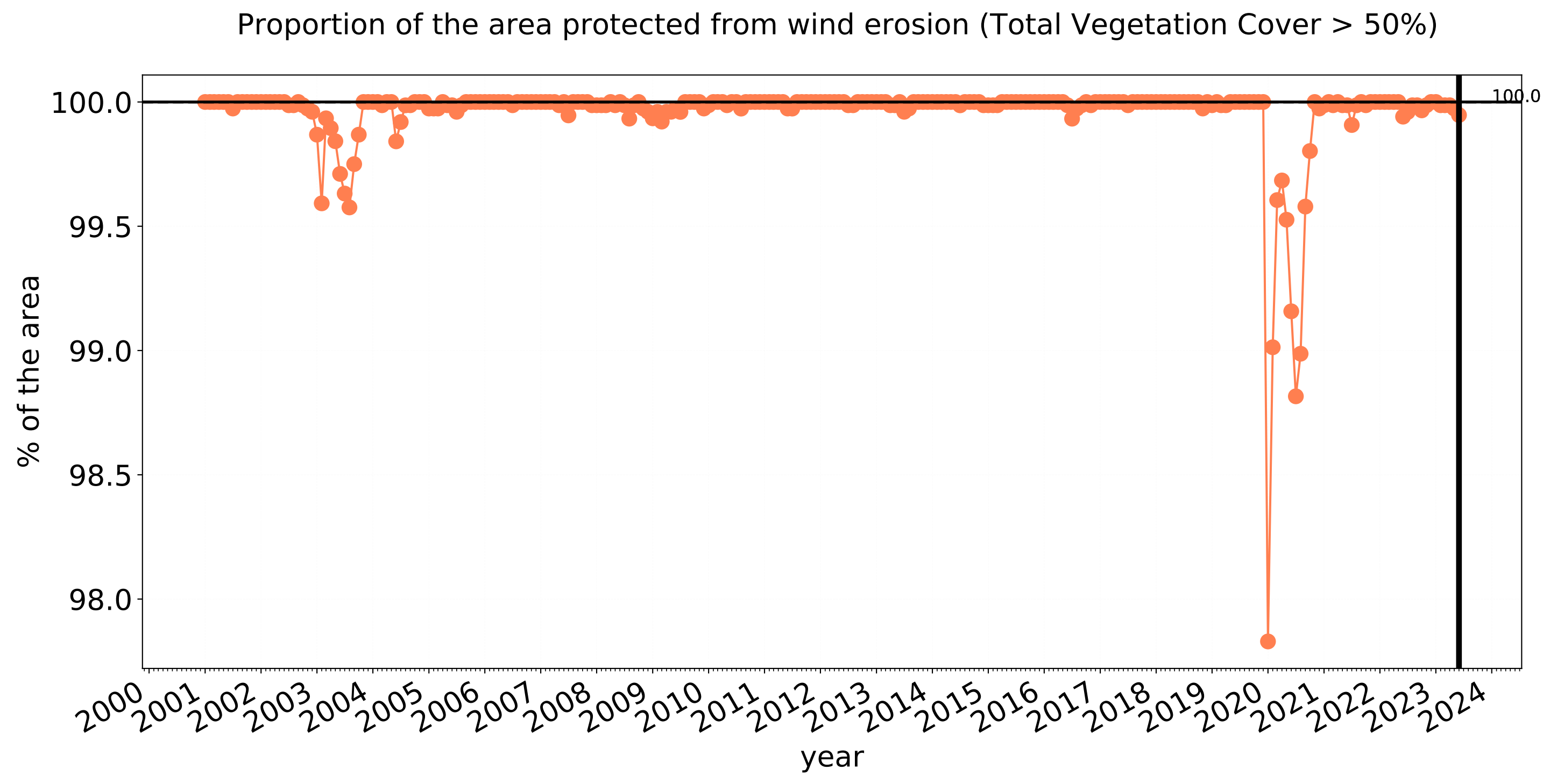
Agriculture

Land use and forest cover

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

Legend:
- 1 Agriculture - Grazing - Non forest
- 2 Agriculture - Grazing - Woodland forest
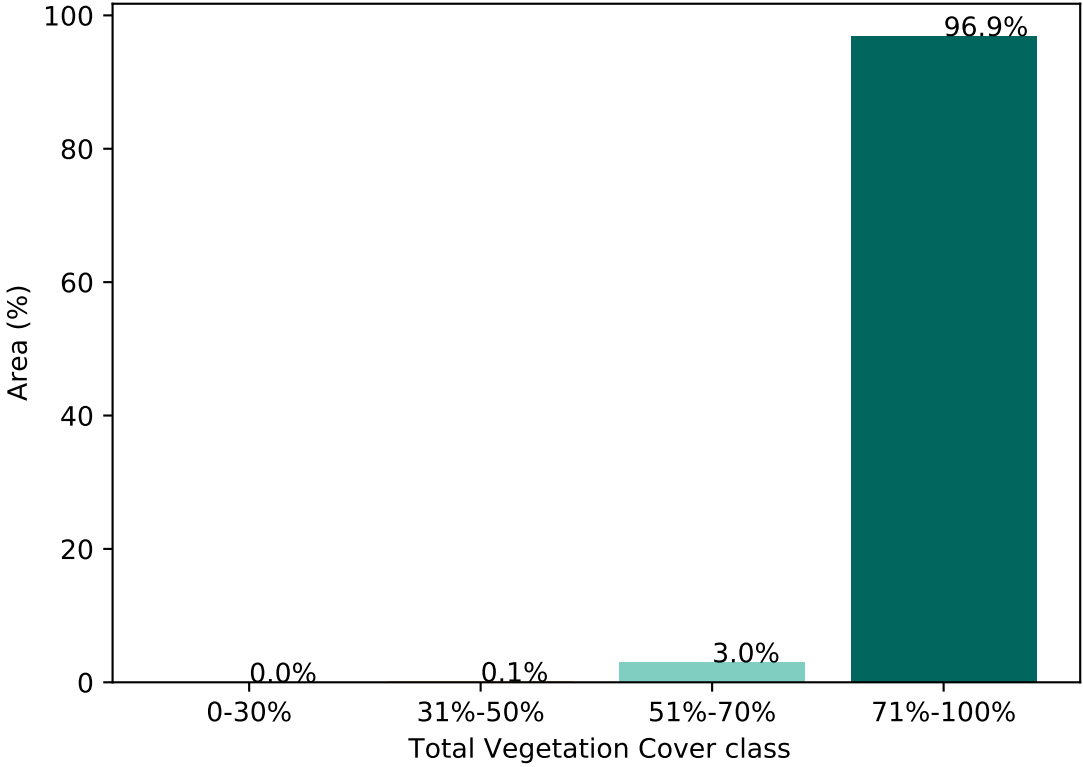- 3 Agriculture - Grazing - Non-woodland forest
- 4 Agriculture - Grazing - Irrigated
- 5 Agriculture - Cropping - Non-irrigated
- 6 Agriculture - Cropping - Irrigated
- 7 Agriculture - Horticulture - Non-irrigated
- 8 Agriculture - Horticulture - Irrigated

Proportion of each land class in area

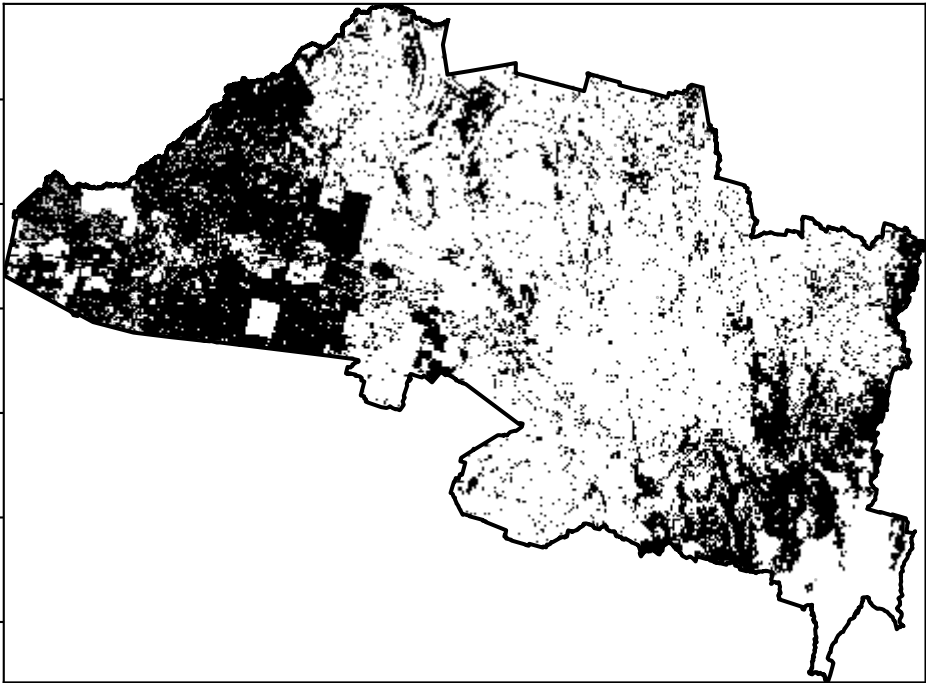## Total Vegetation Cover [%]

Legend: 71%-100%, 51%-70%, 31%-50%, 0-30%

## Proportion of vegetation cover class in area
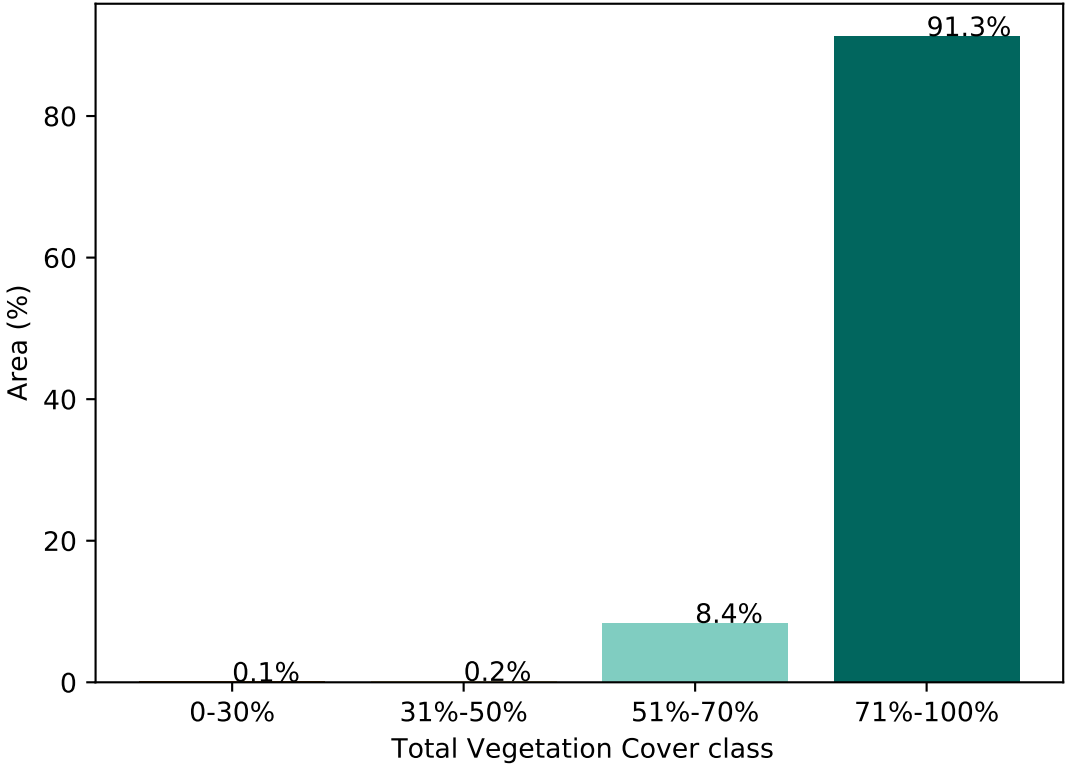
% Area protected from water erosion (>70%)

Area not protected 8.7% of region (527,701 ha)
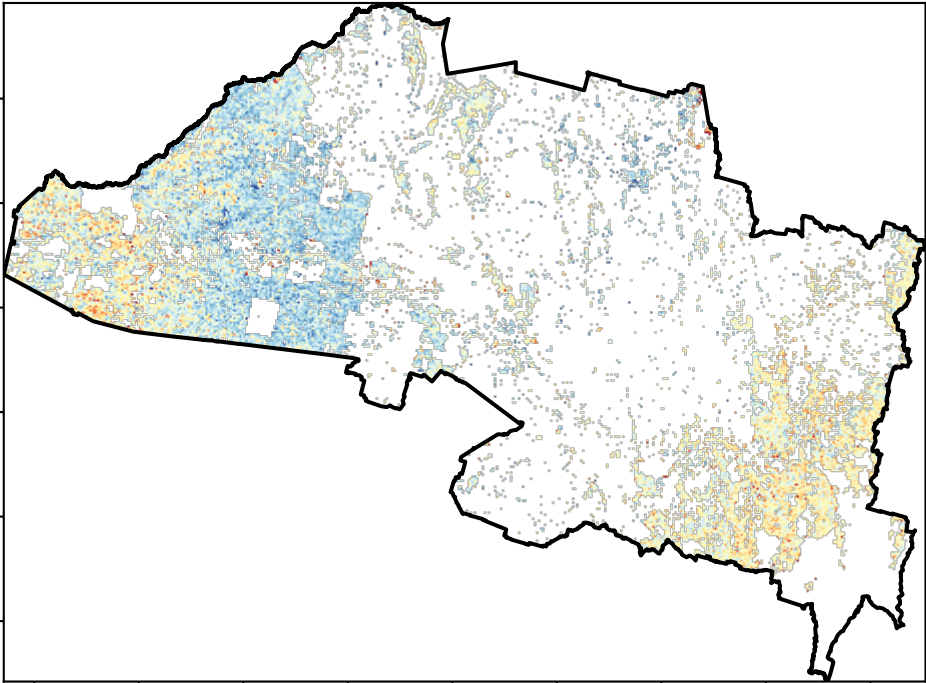
Area protected 91.3% of region (5,537,824 ha)

% Area protected from wind erosion (>50%)

Area not protected 0.0% of region (0 ha)
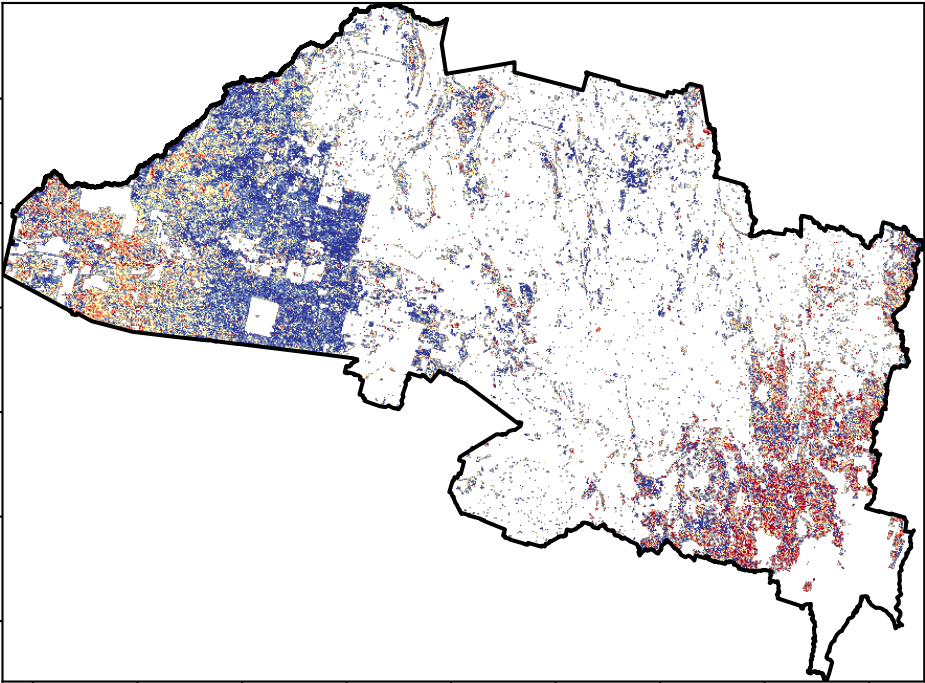
Area protected 100.0% of region (6,065,525 ha)

Total Vegetation Cover Anomaly [%]

Anomaly show how many percetage 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.

Legend: 10, 8-9, 4-7, 2-3, 1

Agriculture timeseries

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

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

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

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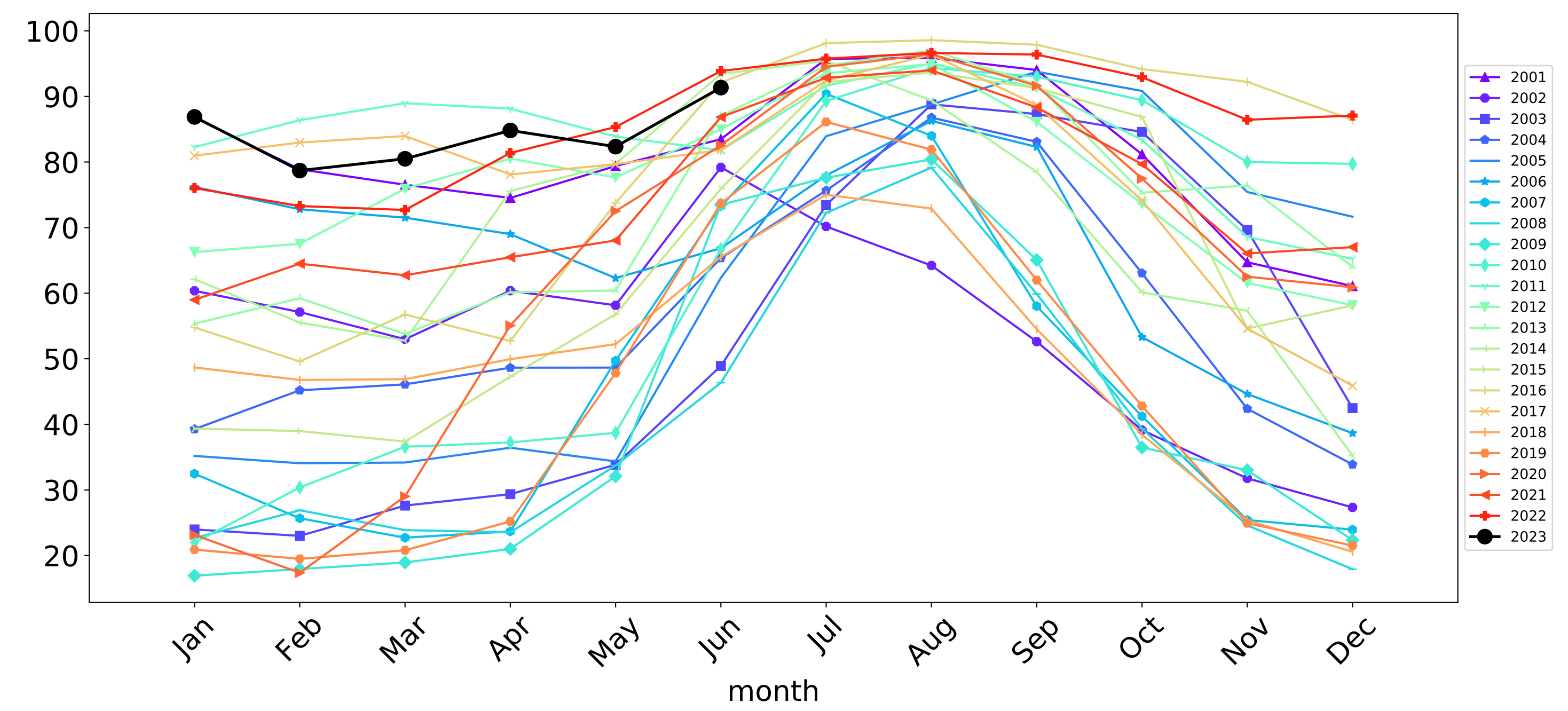
Grazing

Land use and forest cover

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

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

Proportion of each land class in area

Total Vegetation Cover [%]

- 71%-100%
- 51%-70%
- 31%-50%
- 0-30%
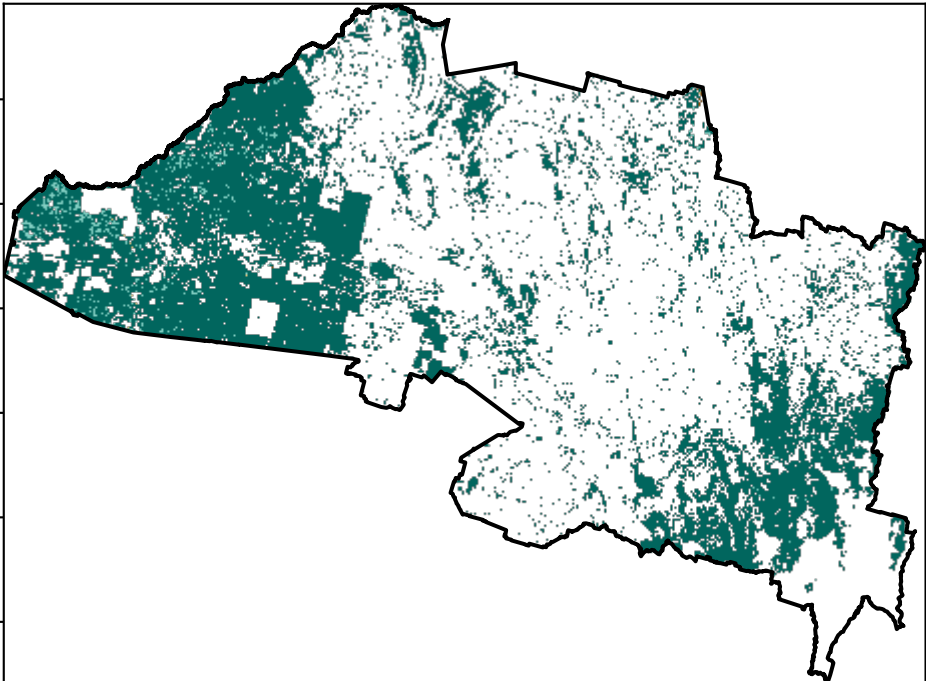
Proportion of vegetation cover class in area

% Area protected from water erosion (>70%)

Area not protected 3.1% of region (71,604 ha)

Area protected 96.9% of region (2,238,196 ha)

% Area protected from wind erosion (>50%)
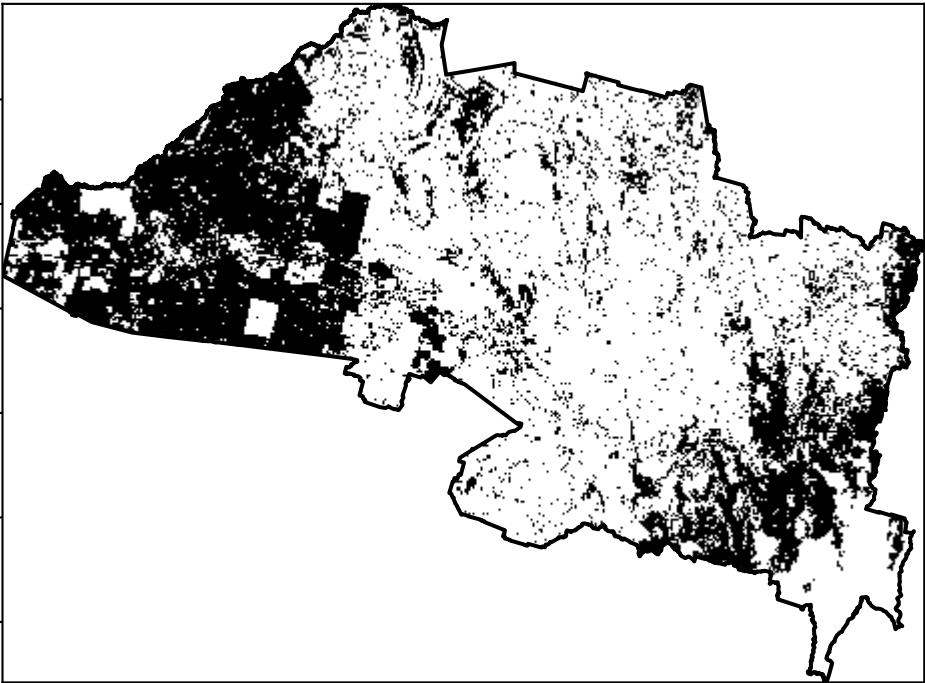
Area not protected 0.0% of region (0 ha)

Area protected 100.0% of region (2,309,800 ha)

Total Vegetation Cover Anomaly [%]

Anomaly show how many percetage 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.
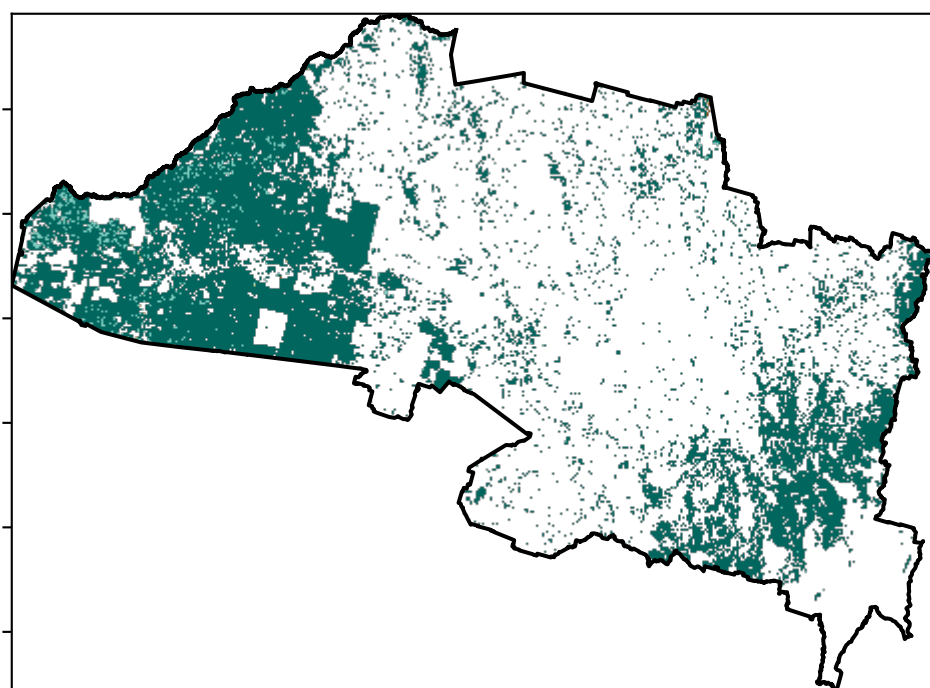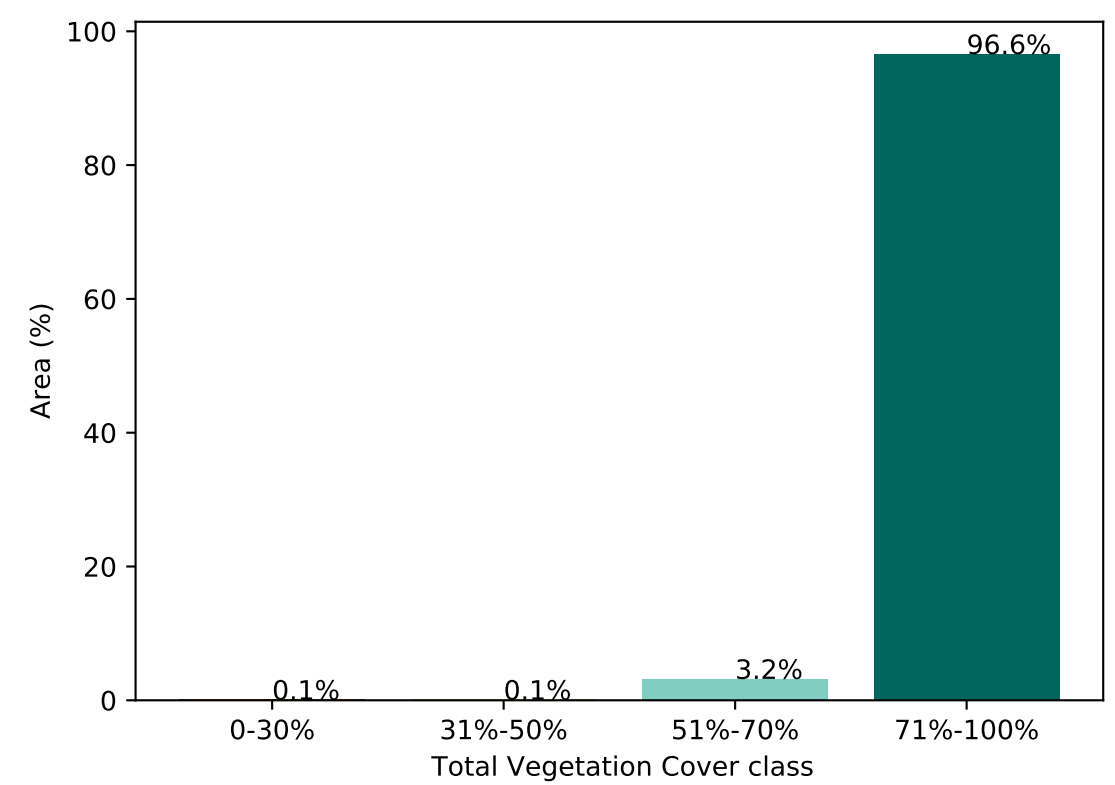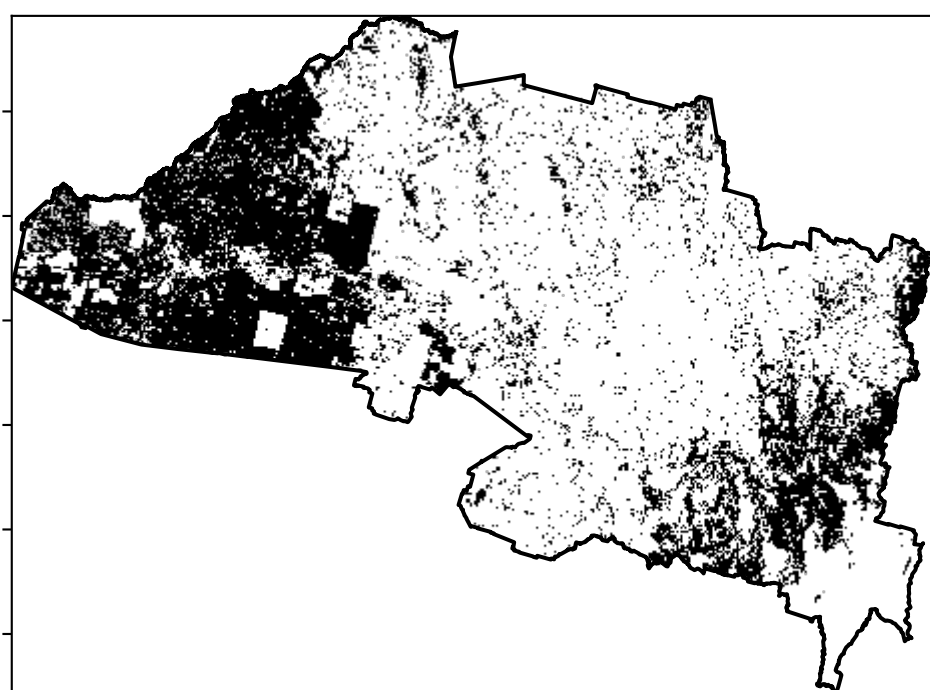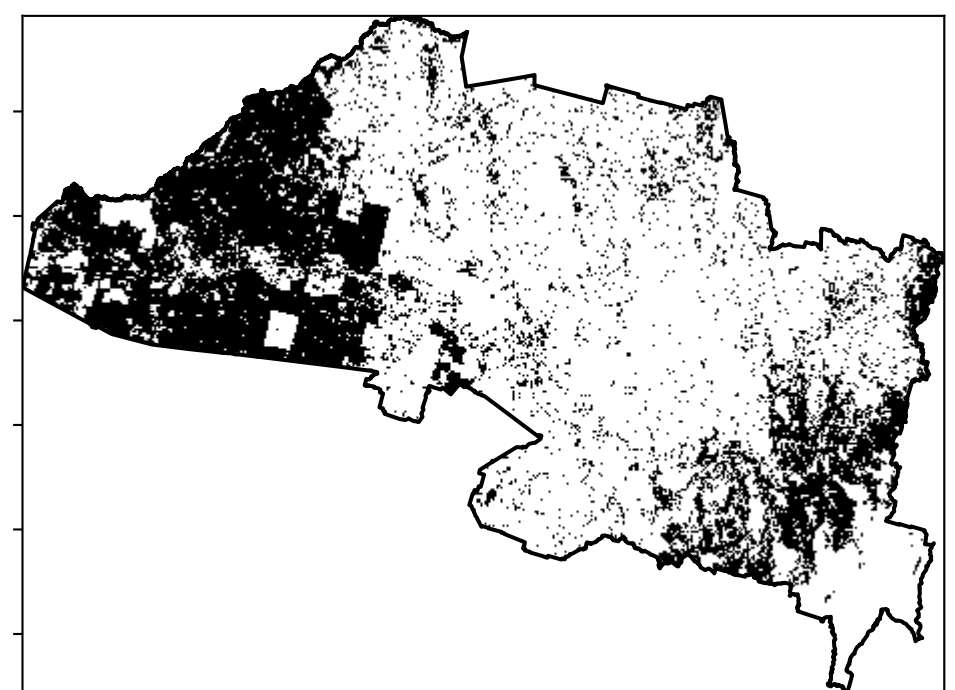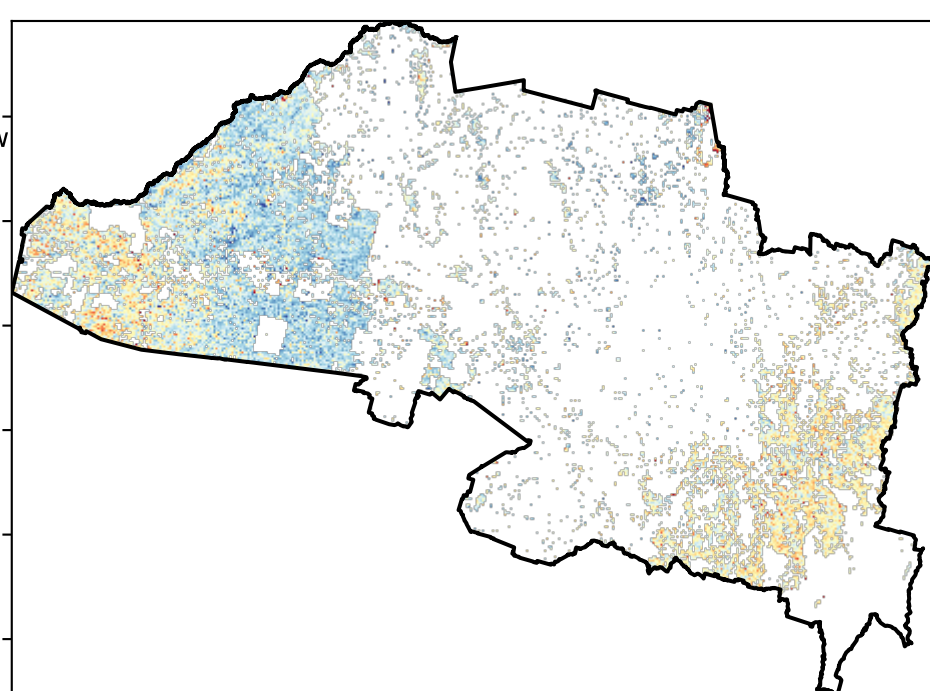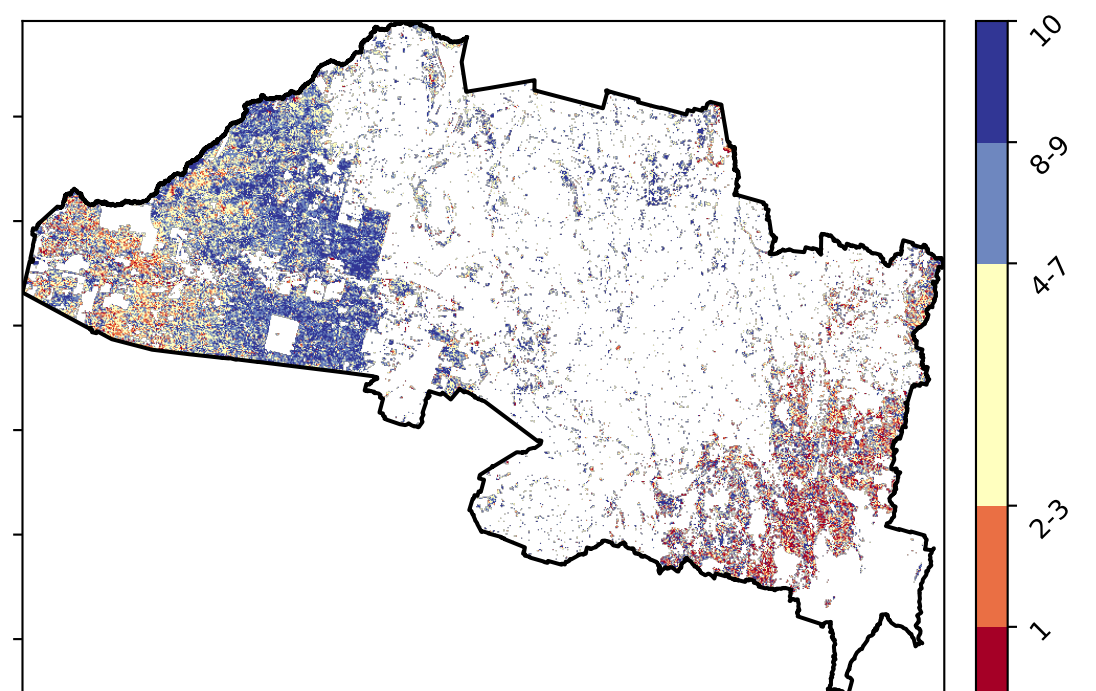
Total Vegetation Cover Decile [%]

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.

- 10
- 8-9
- 4-7
- 2-3
- 1

Grazing 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%)
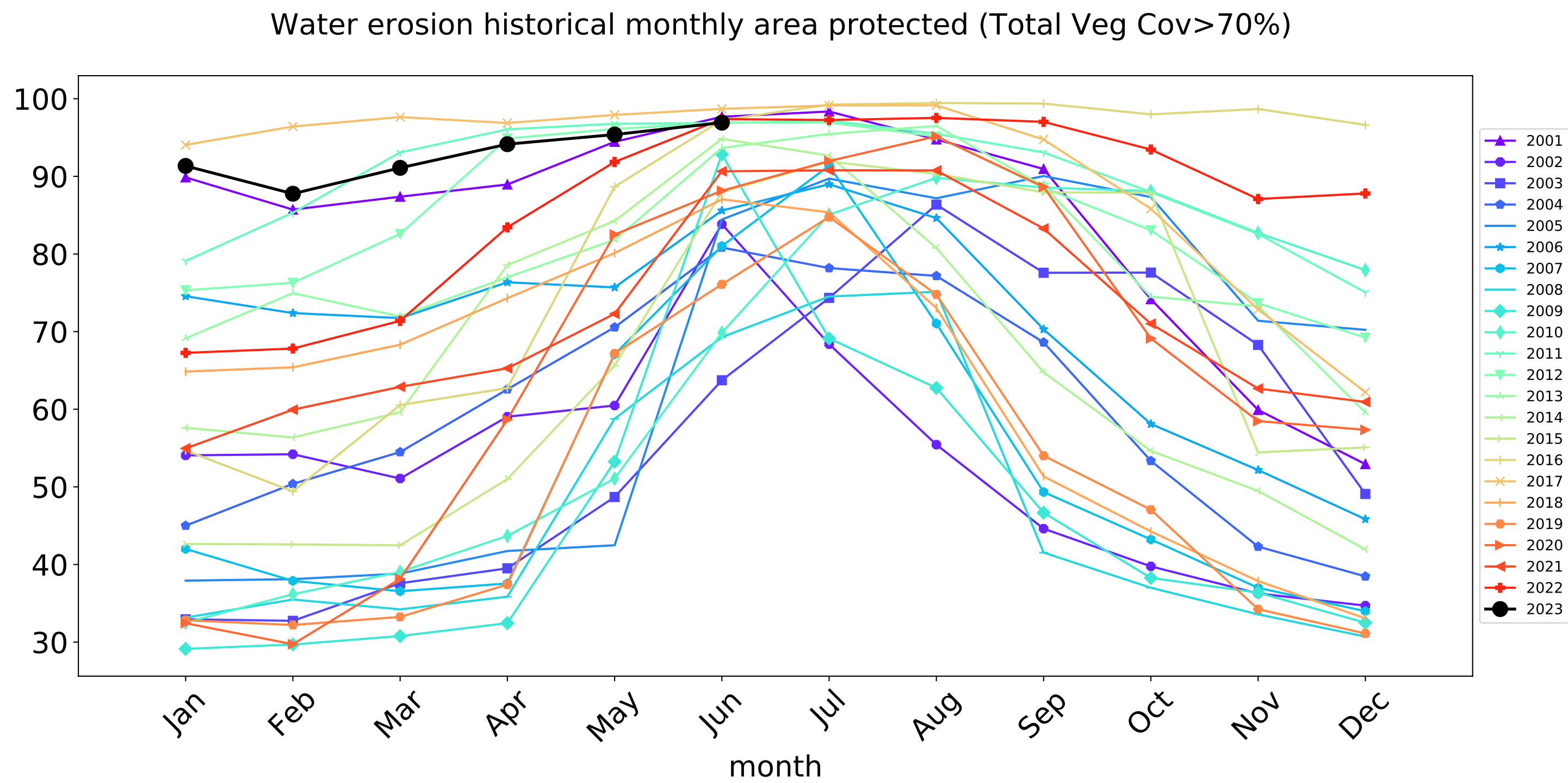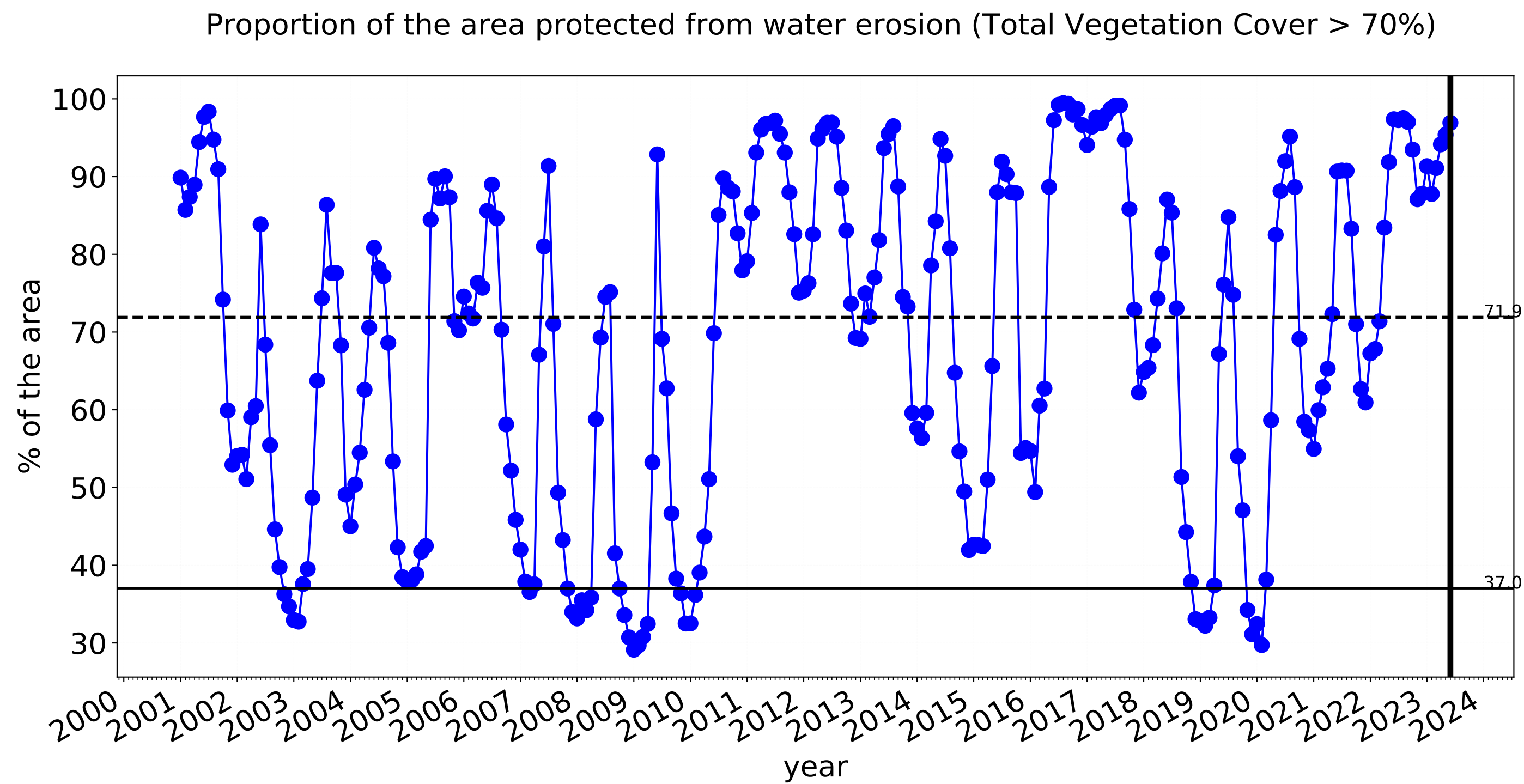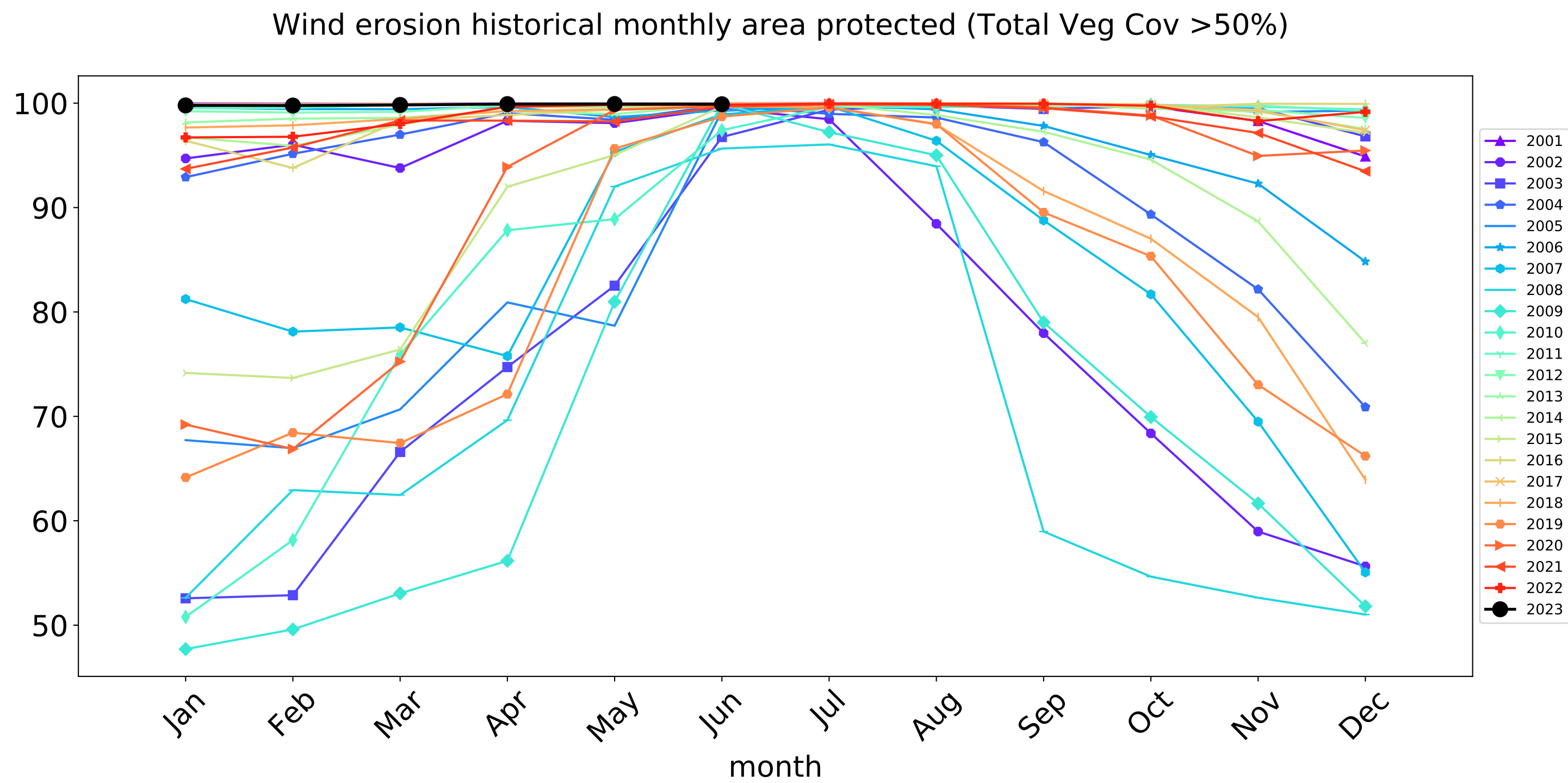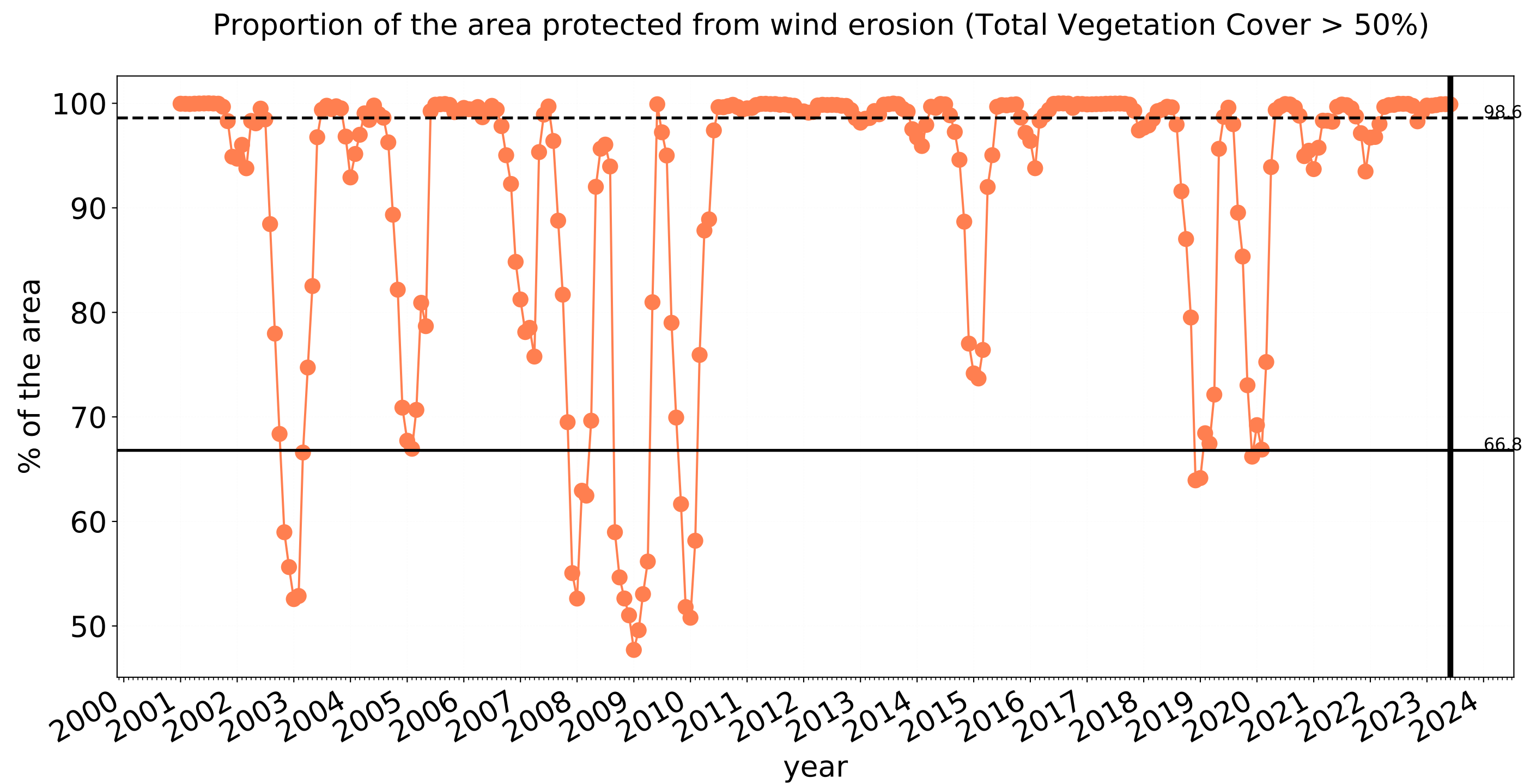
Grazing non forest

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 [%]

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

Proportion of vegetation cover class in area

Area (%)

100
80
60
40
20
0

0.1%   0.1%   3.2%   96.6%

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

Total Vegetation Cover class

% Area protected from water erosion (>70%)

Area not protected 3.4% of region (70,204 ha)

Area protected 96.6% of region (1,994,621 ha)

% Area protected from wind erosion (>50%)

Area not protected 0.0% of region (0 ha)

Area protected 100.0% of region (2,064,825 ha)

Total Vegetation Cover Anomaly [%]

Anomaly show how many percetage 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

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.

10
8-9
4-7
2-3
1

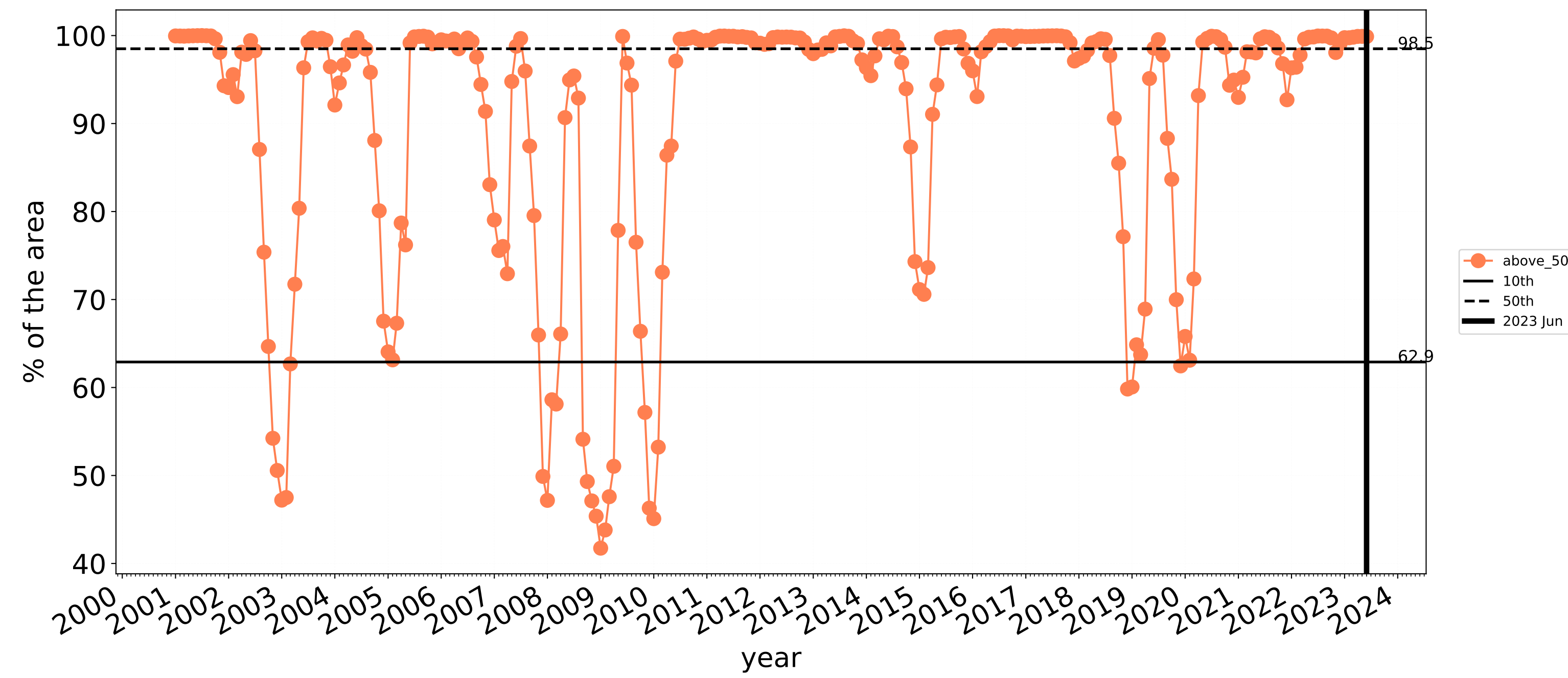CSIRO   tern Ecosystem Research Infrastructure   Australian Government   National Landcare Programme   NSW GOVERNMENT
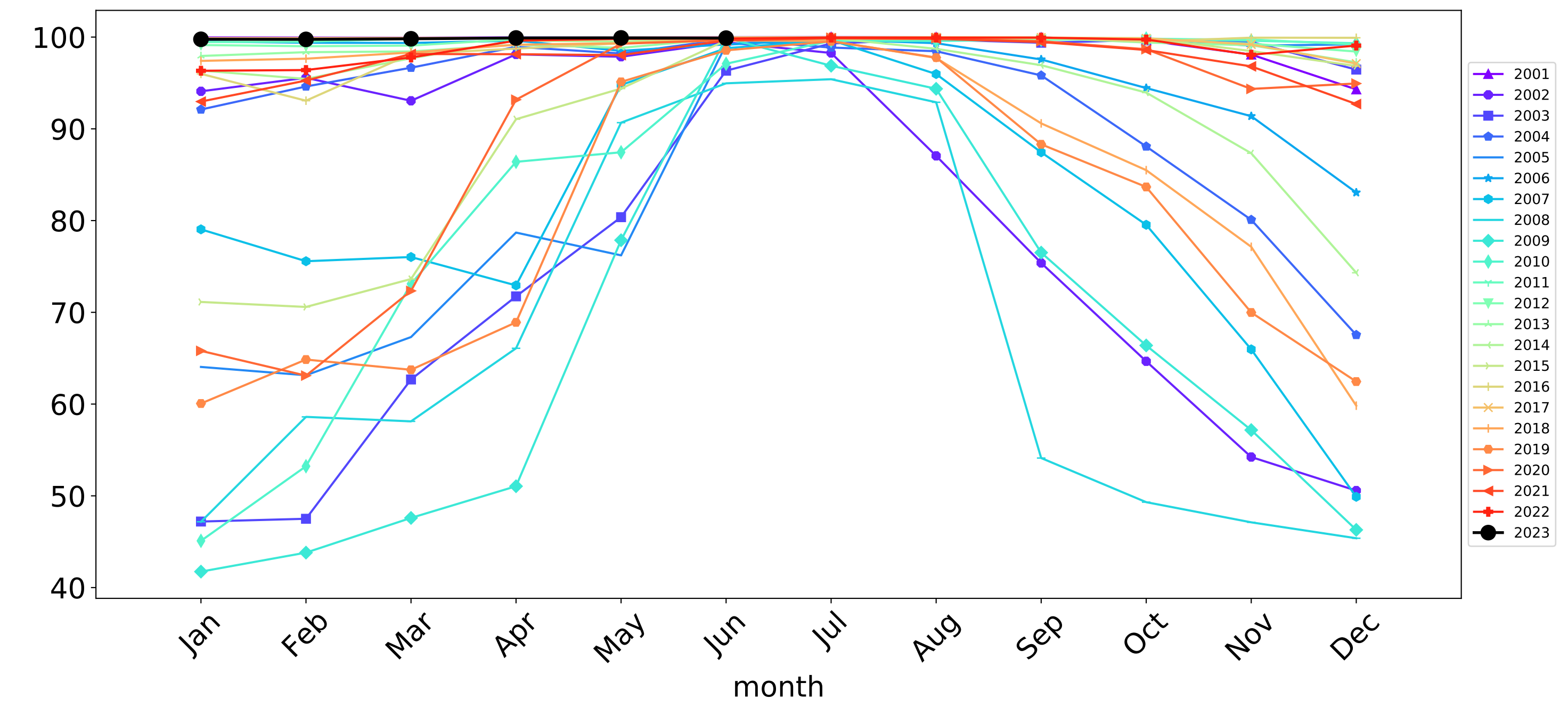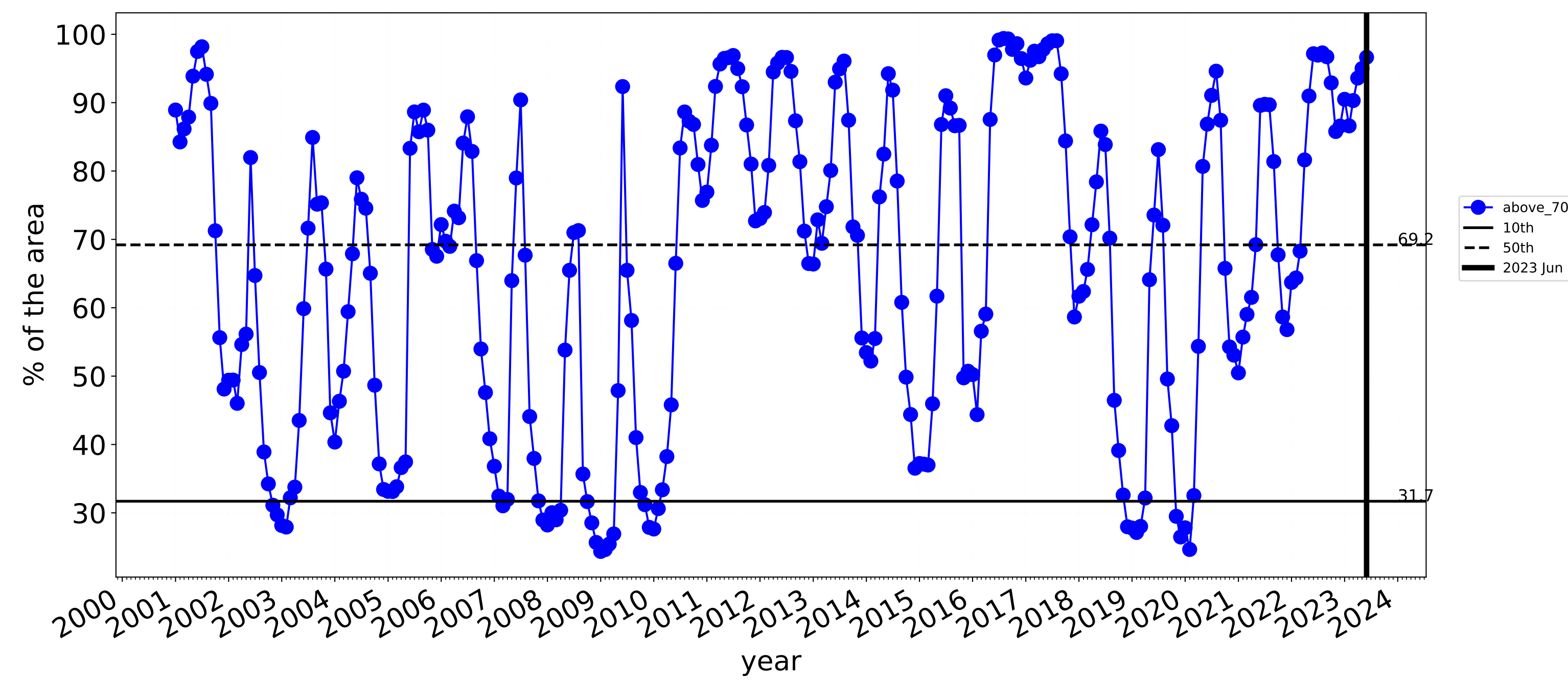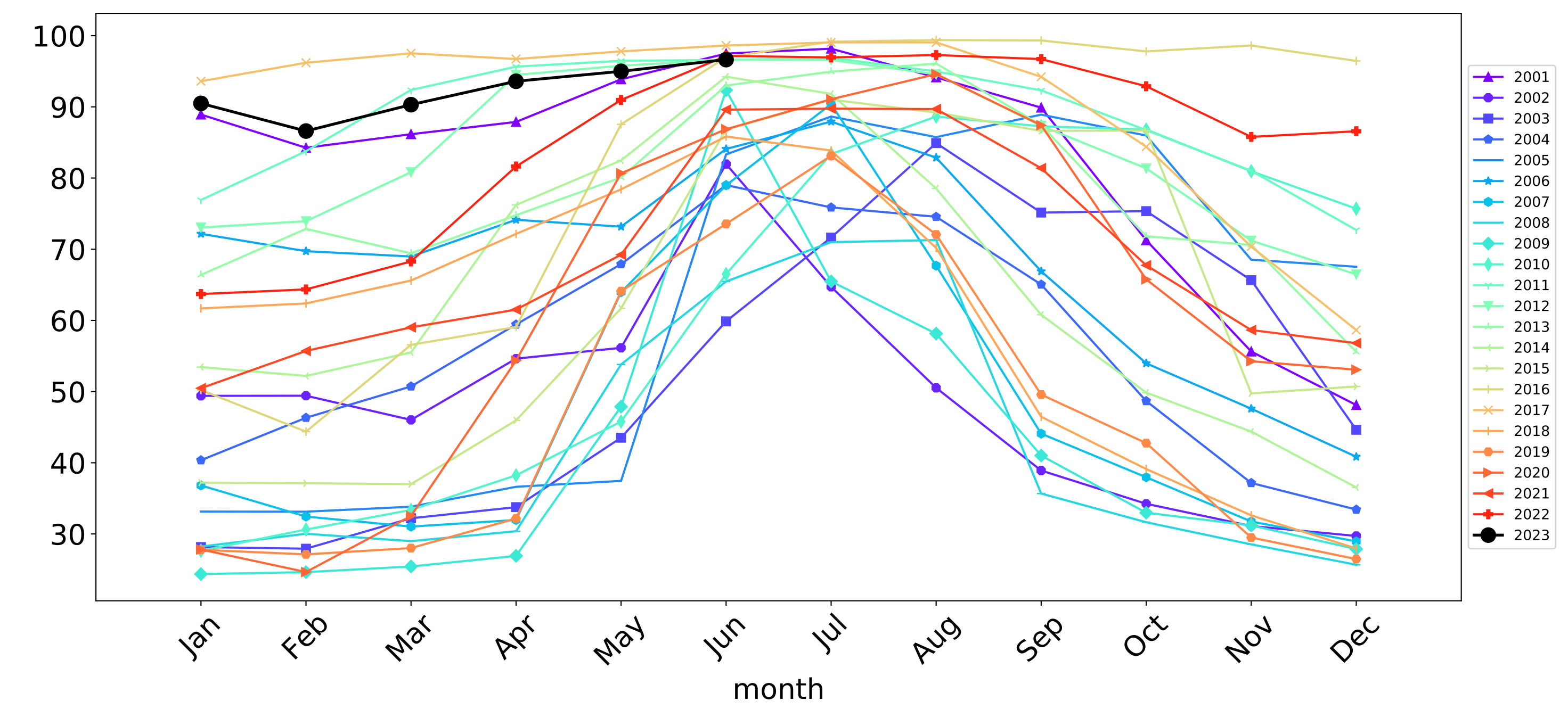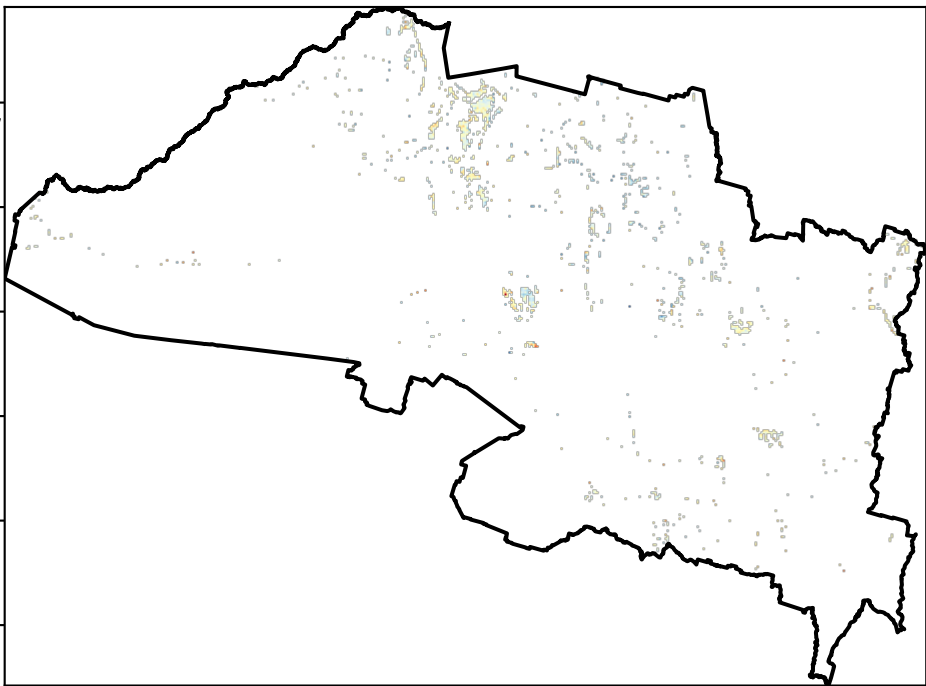
14

Grazing non forest timeseries

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

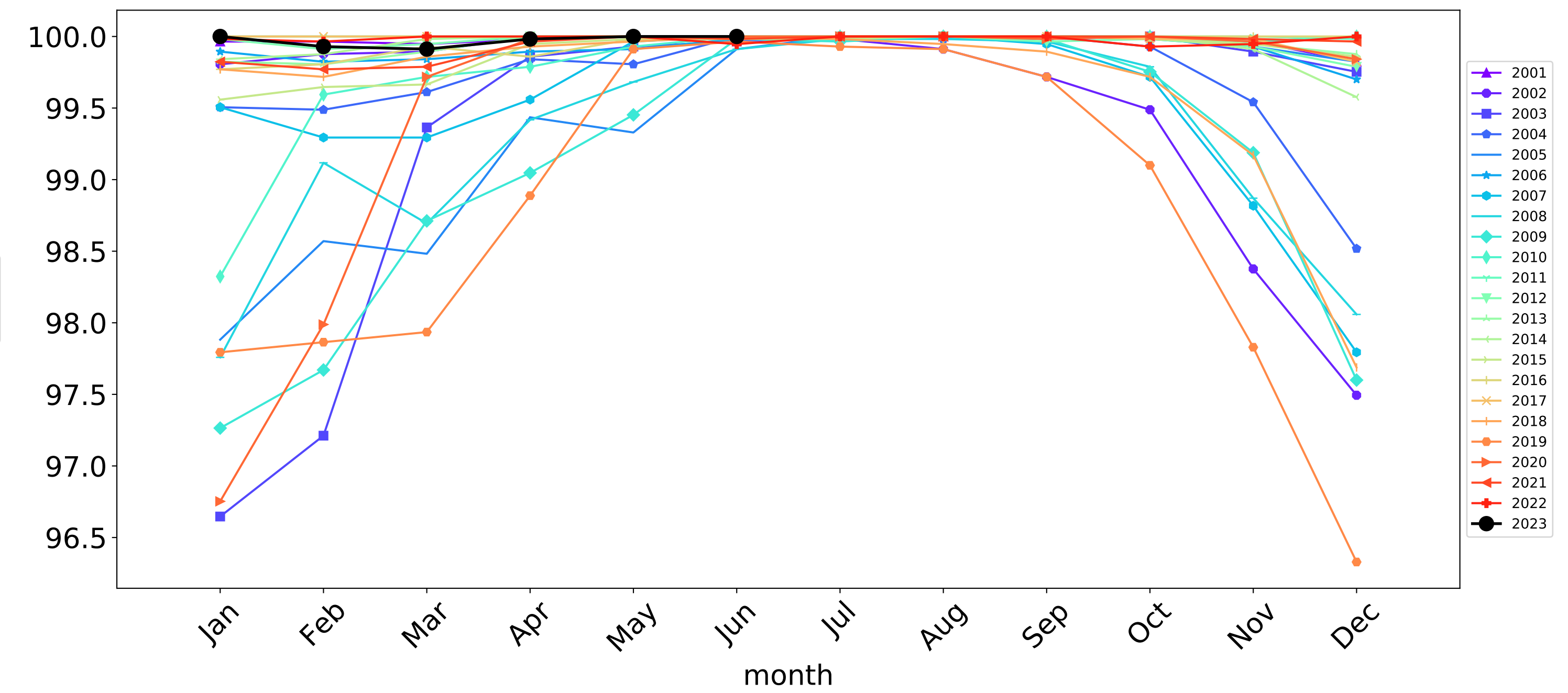Wind erosion historical monthly area protected (Total Veg Cov >50%)

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)

■ 1 Agriculture - Grazing - Woodland forest

Total Vegetation Cover [%]

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

Proportion of vegetation cover class in area

0.0%   0.0%   1.0%   99.0%
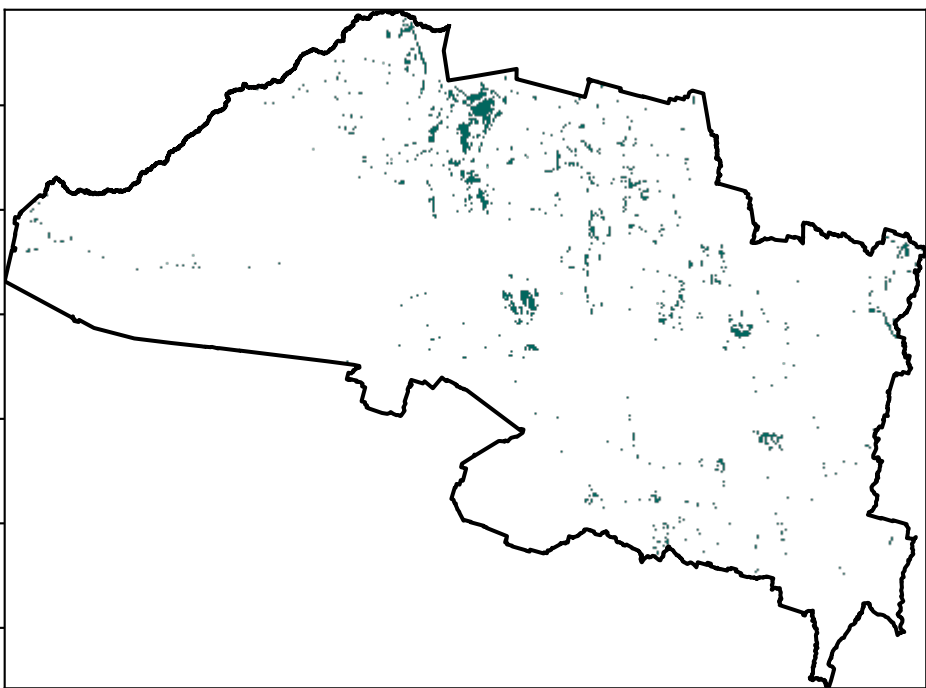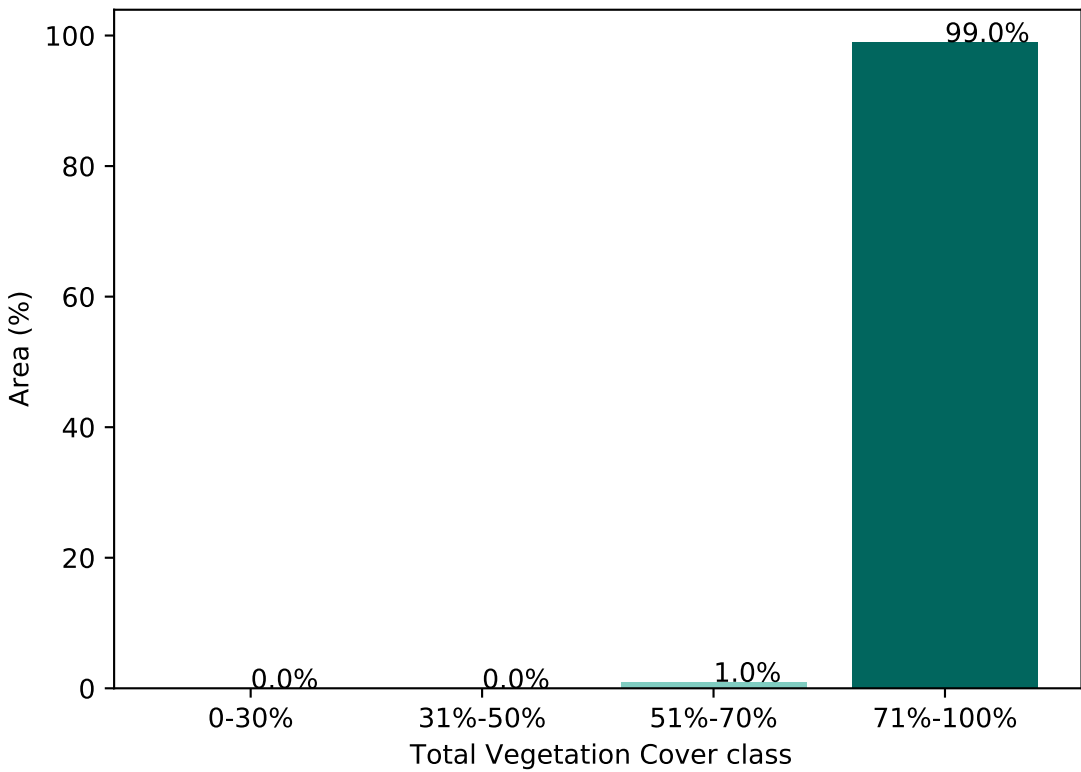
% Area protected from water erosion (>70%)
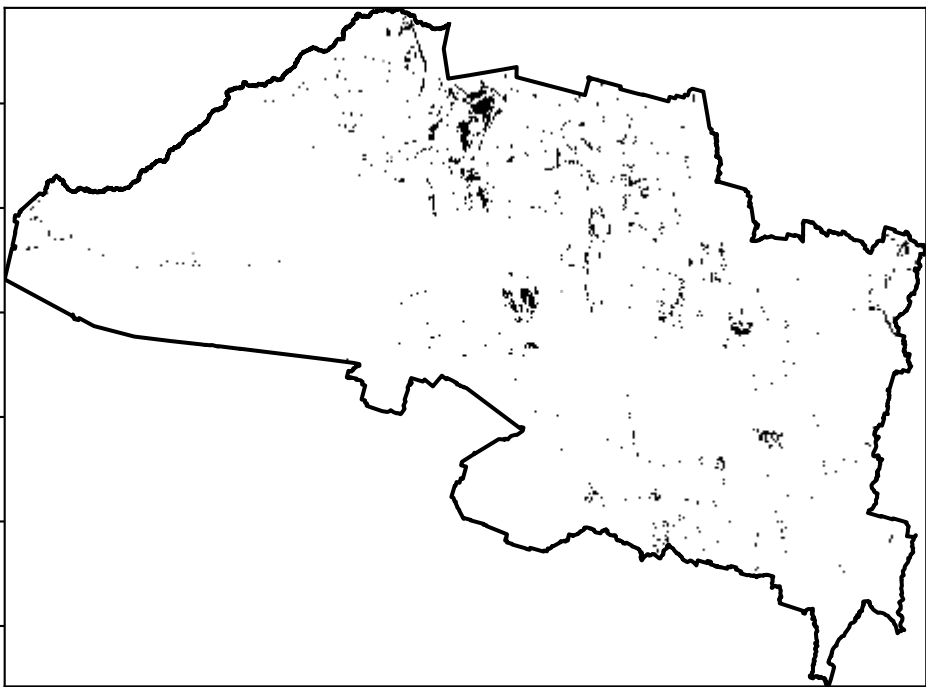
Area not protected 1.0% of region (1,416 ha)

Area protected 99.0% of region (140,234 ha)

% Area protected from wind erosion (>50%)
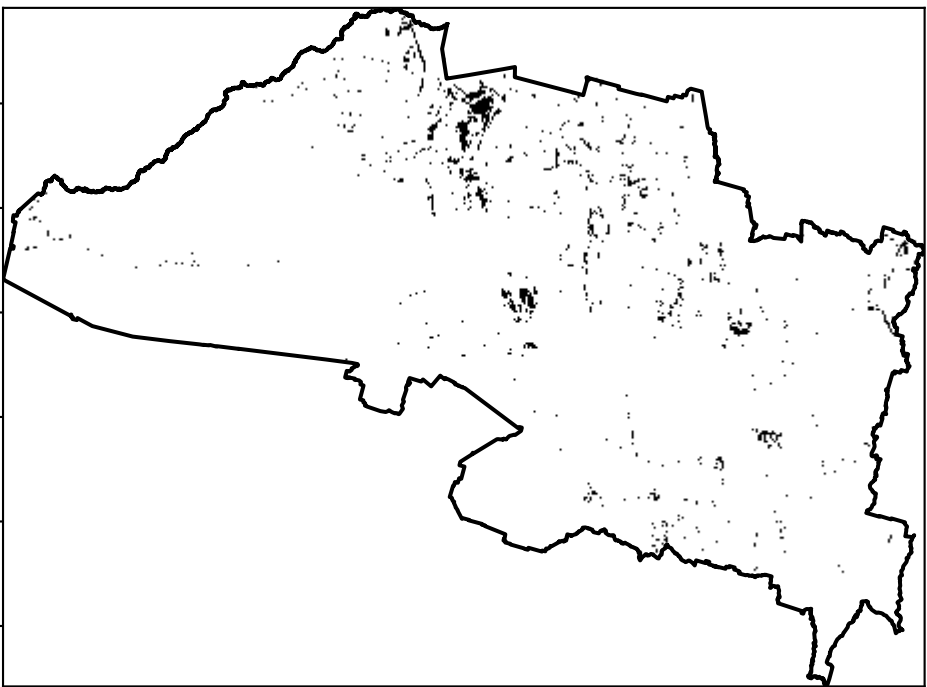
Area protected 100.0% of region (141,650 ha)

Total Vegetation Cover Anomaly [%]

Anomaly show how many percetage 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.

10
8-9
4-7
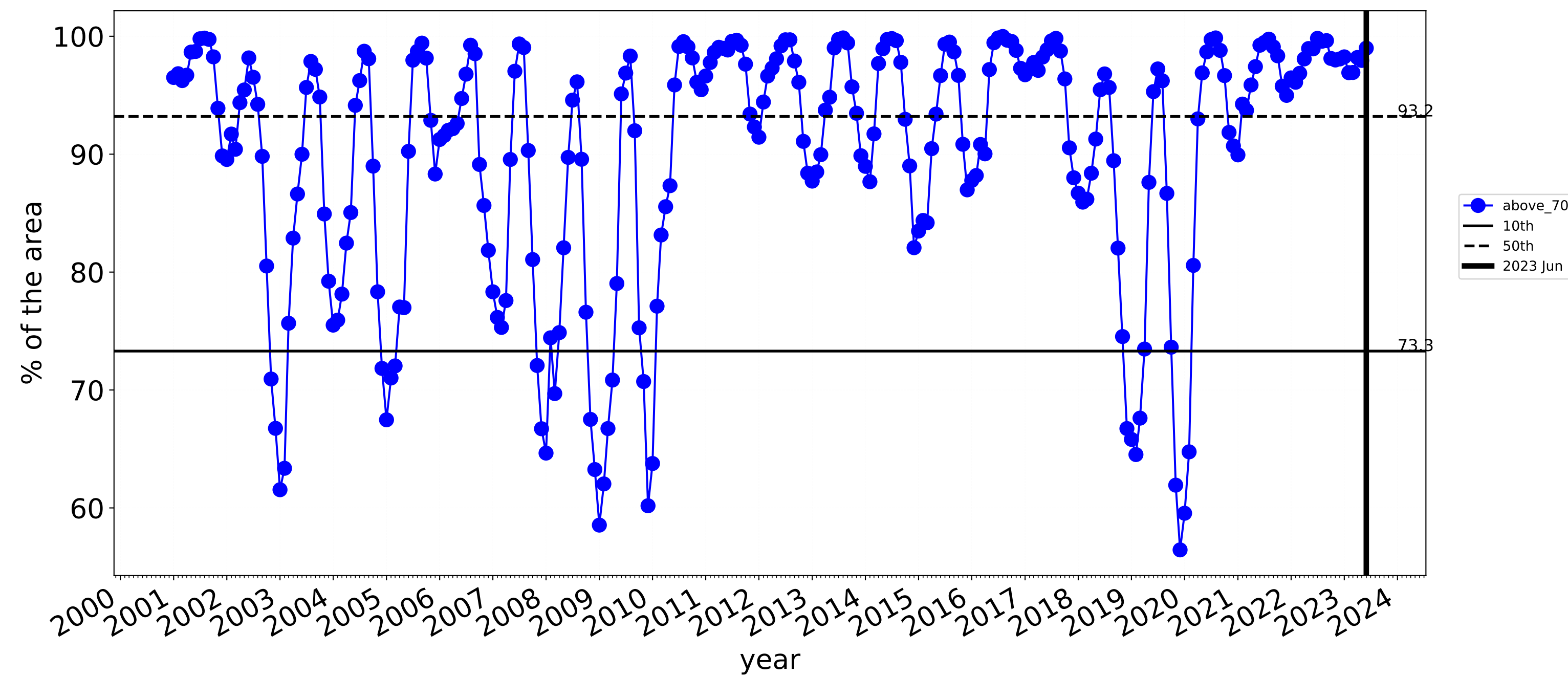2-3
1

Grazing Woodland forest timeseries

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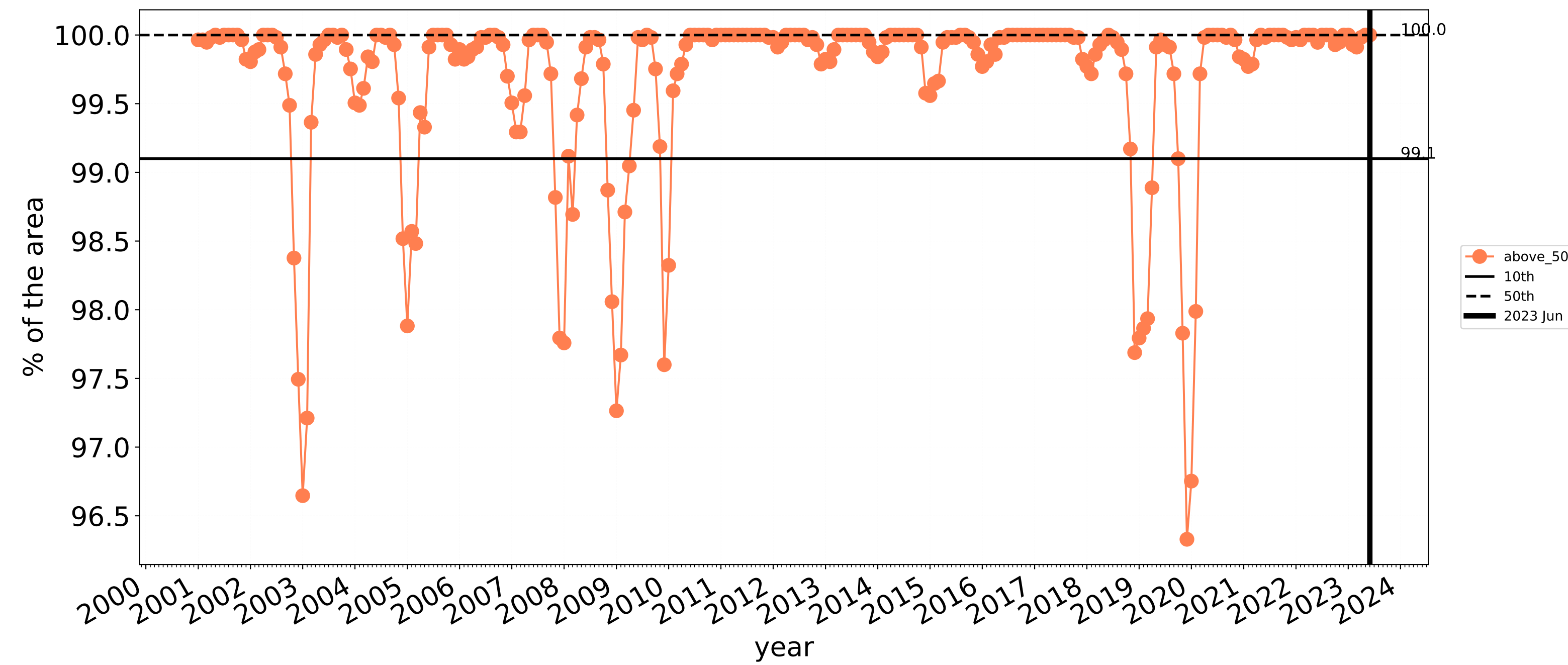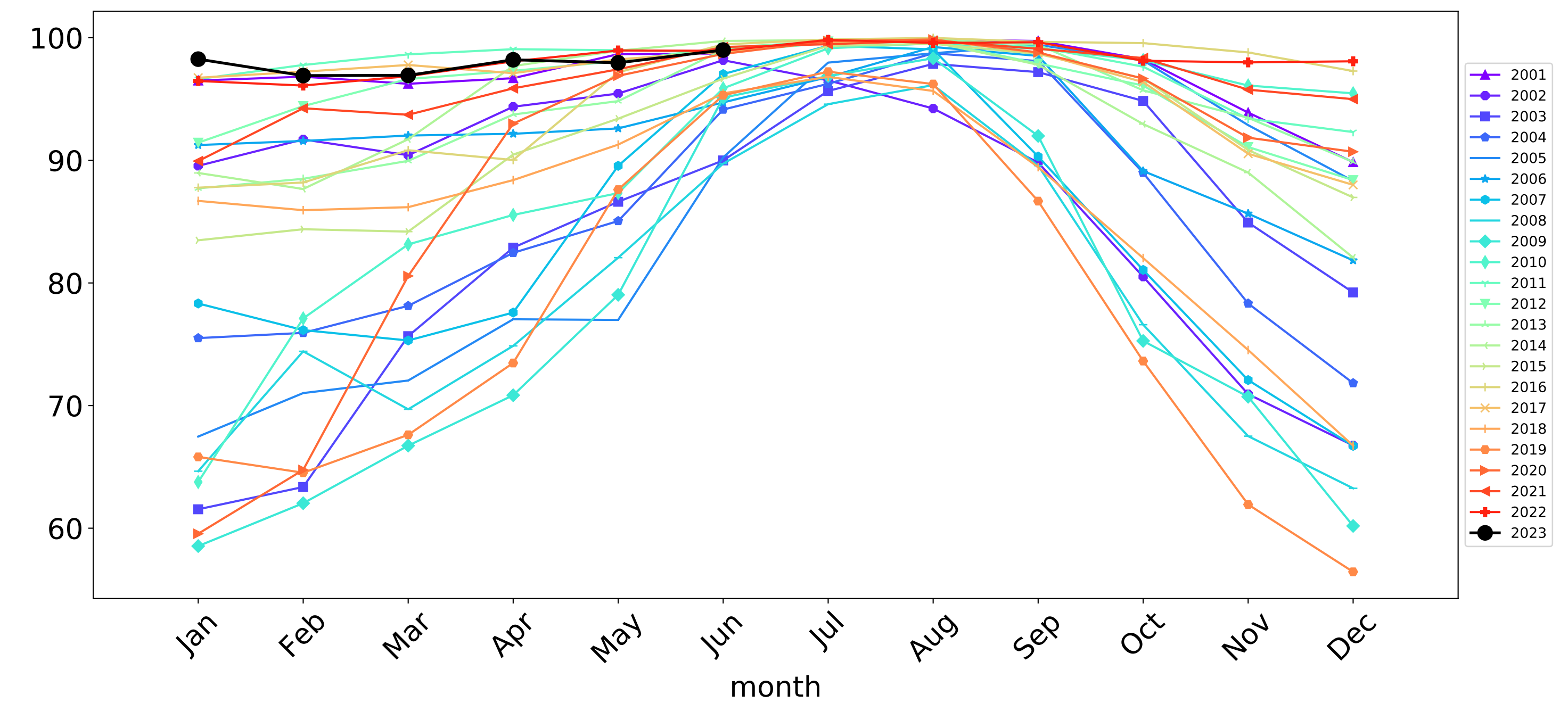

Wind erosion historical monthly area protected (Total Veg Cov >50%)

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

Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)
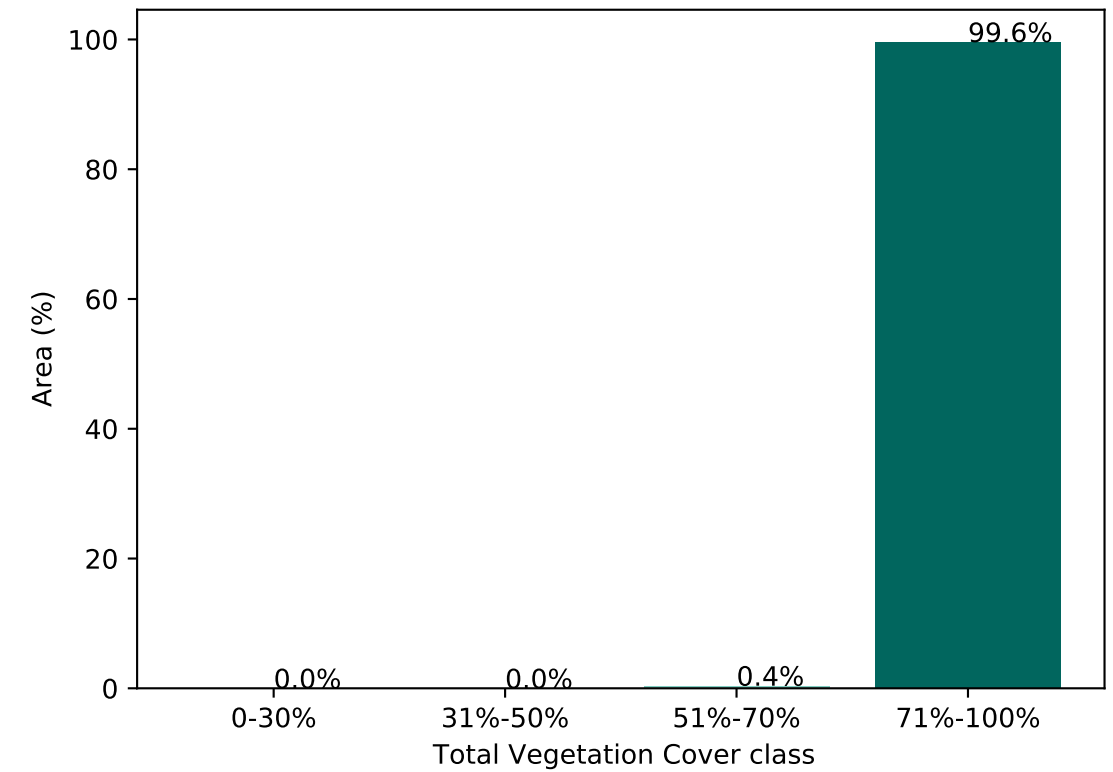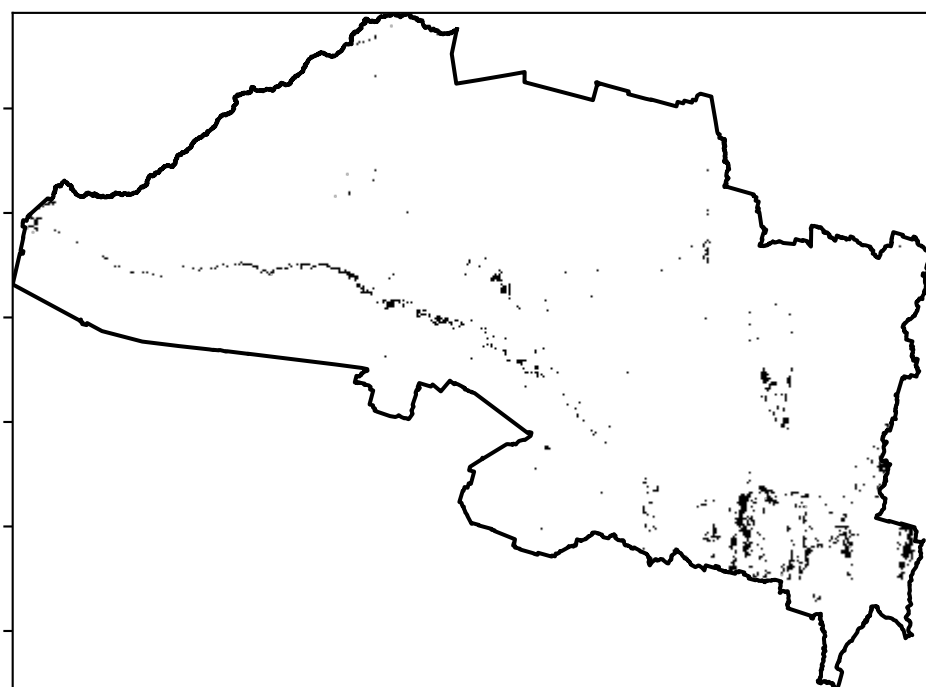
1 Agriculture - Grazing - Non-woodland forest

Total Vegetation Cover [%]

71%-100%
51%-70%
31%-50%
0-30%
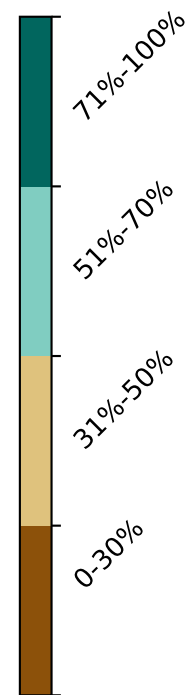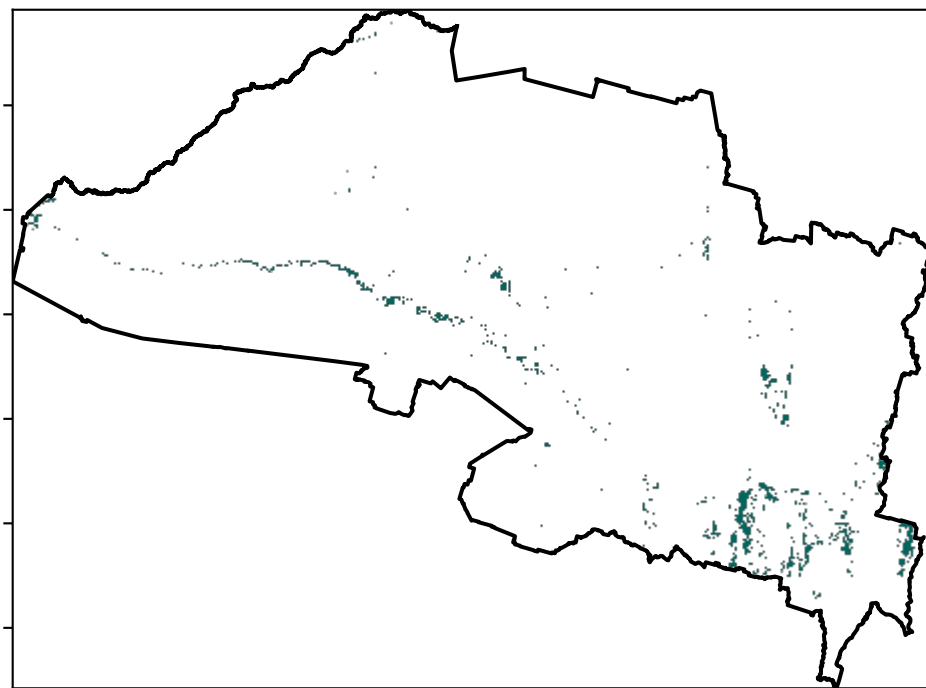
Proportion of vegetation cover class in area

% Area protected from water erosion (>70%)

Area not protected 0.4% of region (413 ha)

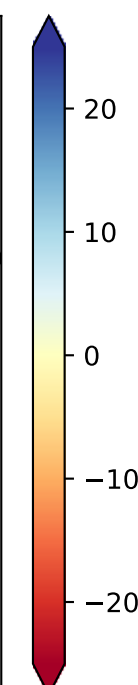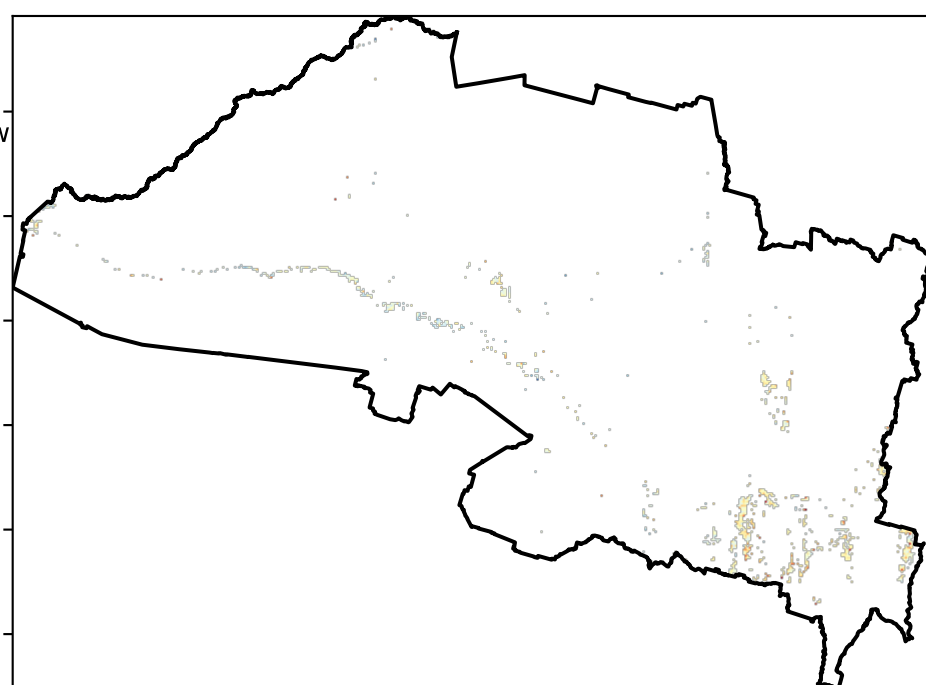Area protected 99.6% of region (102,912 ha)

% Area protected from wind erosion (>50%)
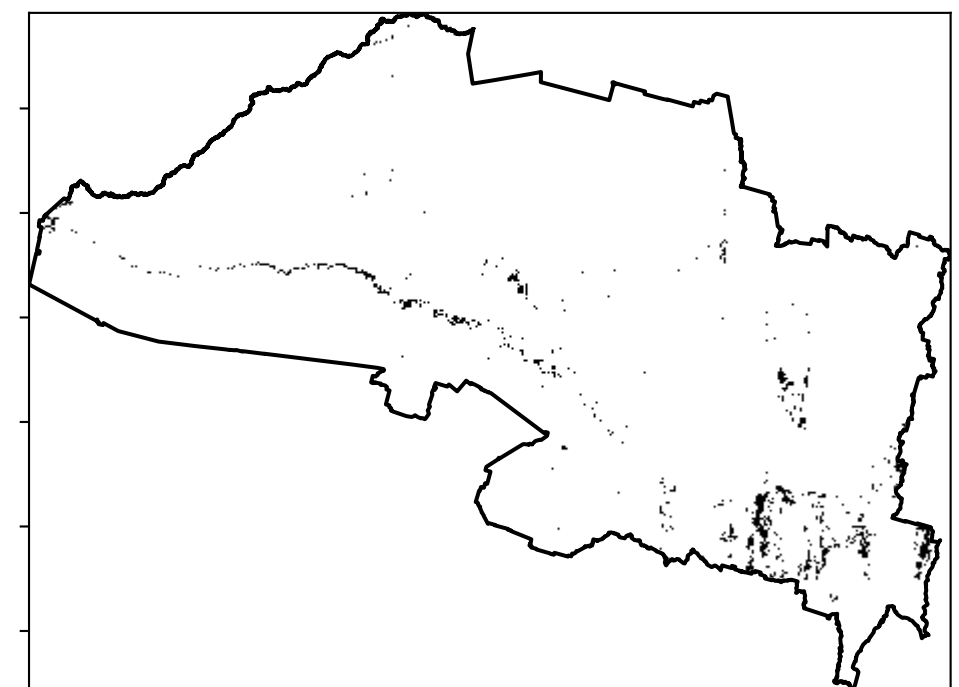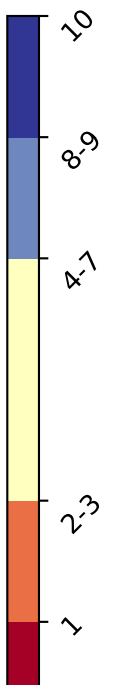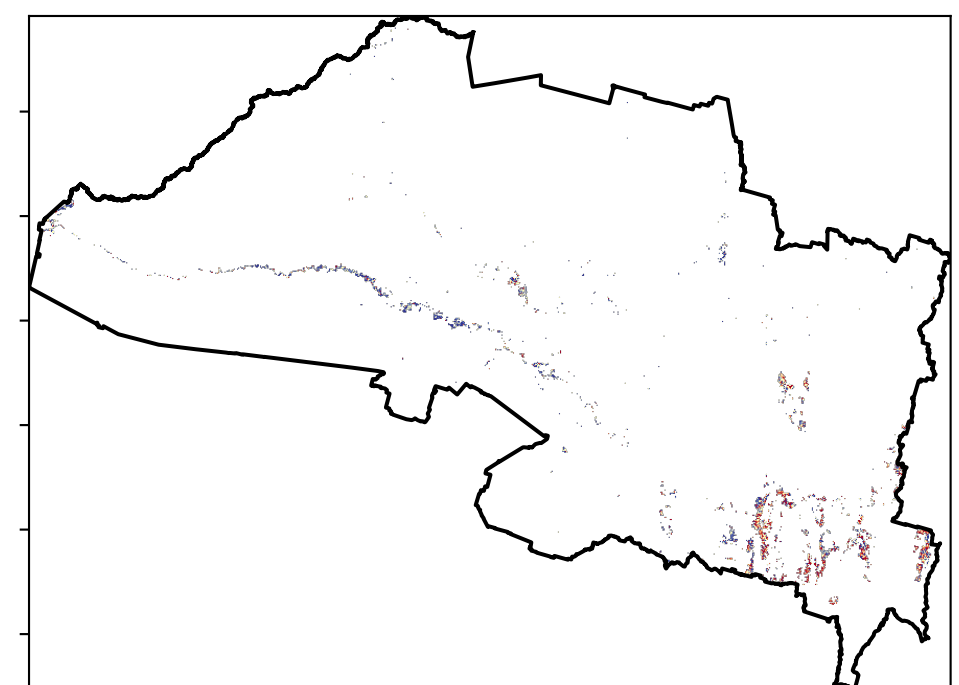

Area protected 100.0% of region (103,325 ha)

Total Vegetation Cover Anomaly [%]

Anomaly show how many percetage 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.
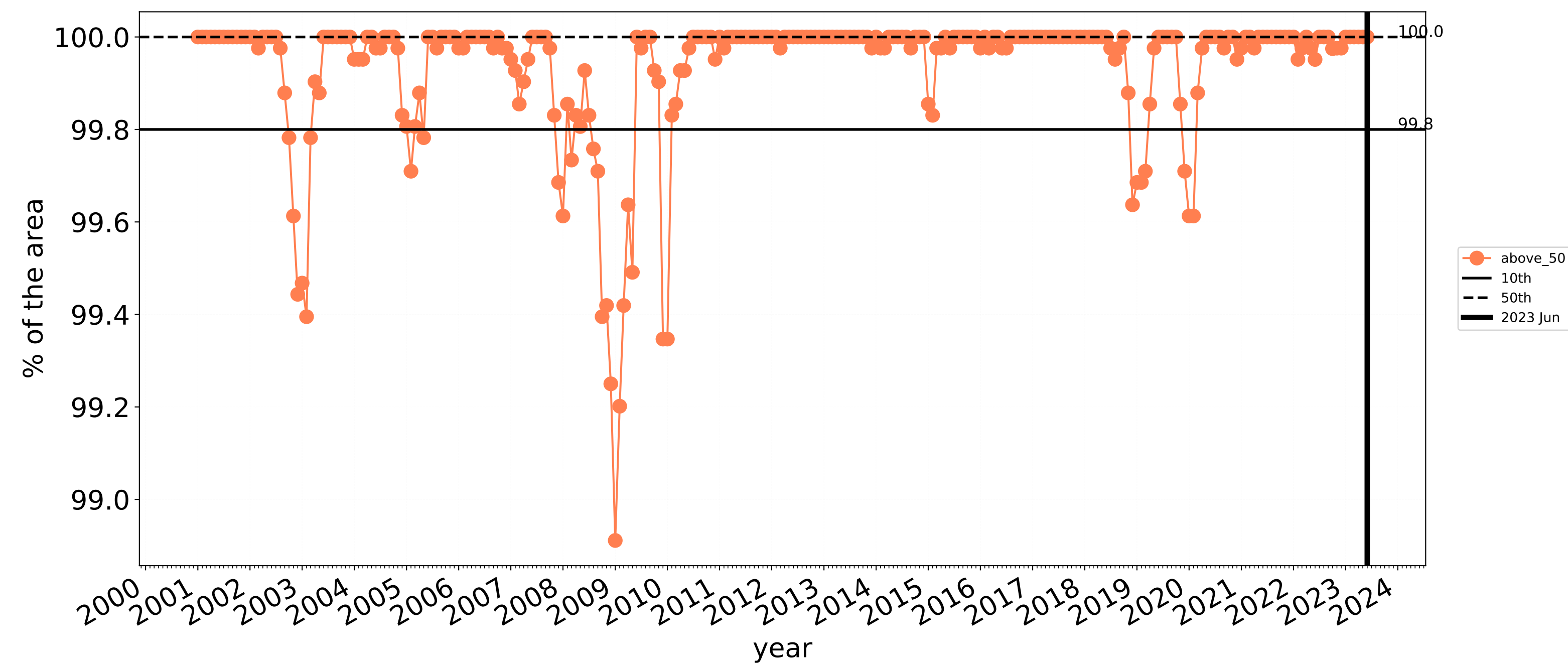
Total Vegetation Cover Decile [%]

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.
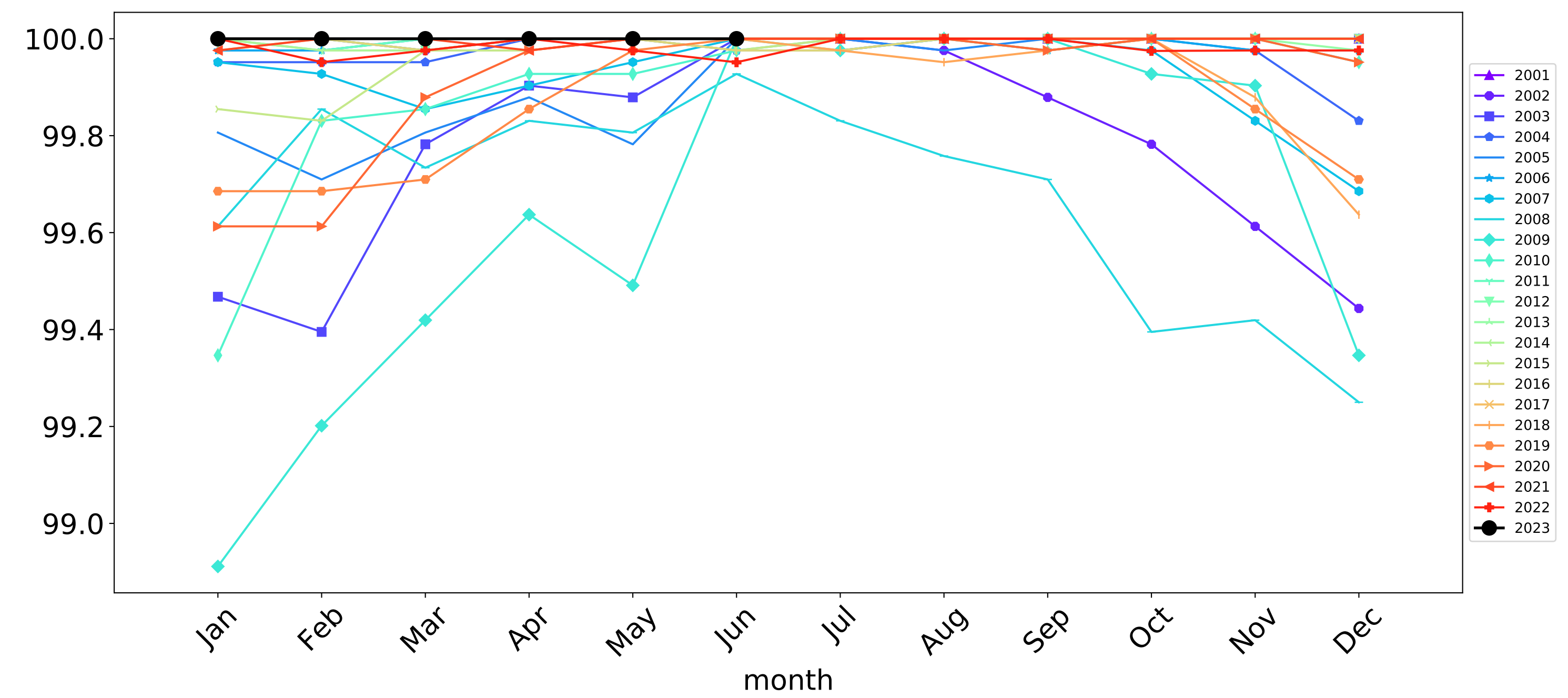
10
8-9
4-7
2-3
1
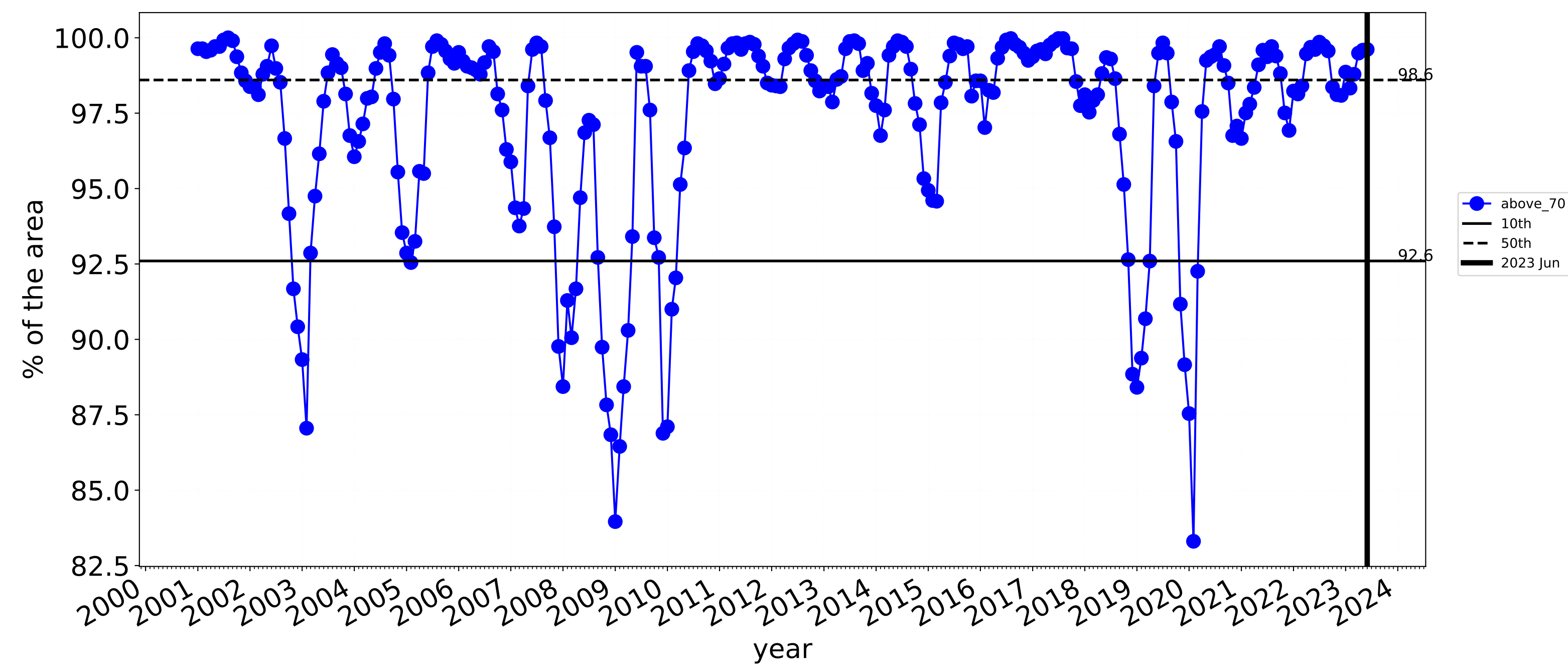
Grazing - Forest (non woodland) timeseries

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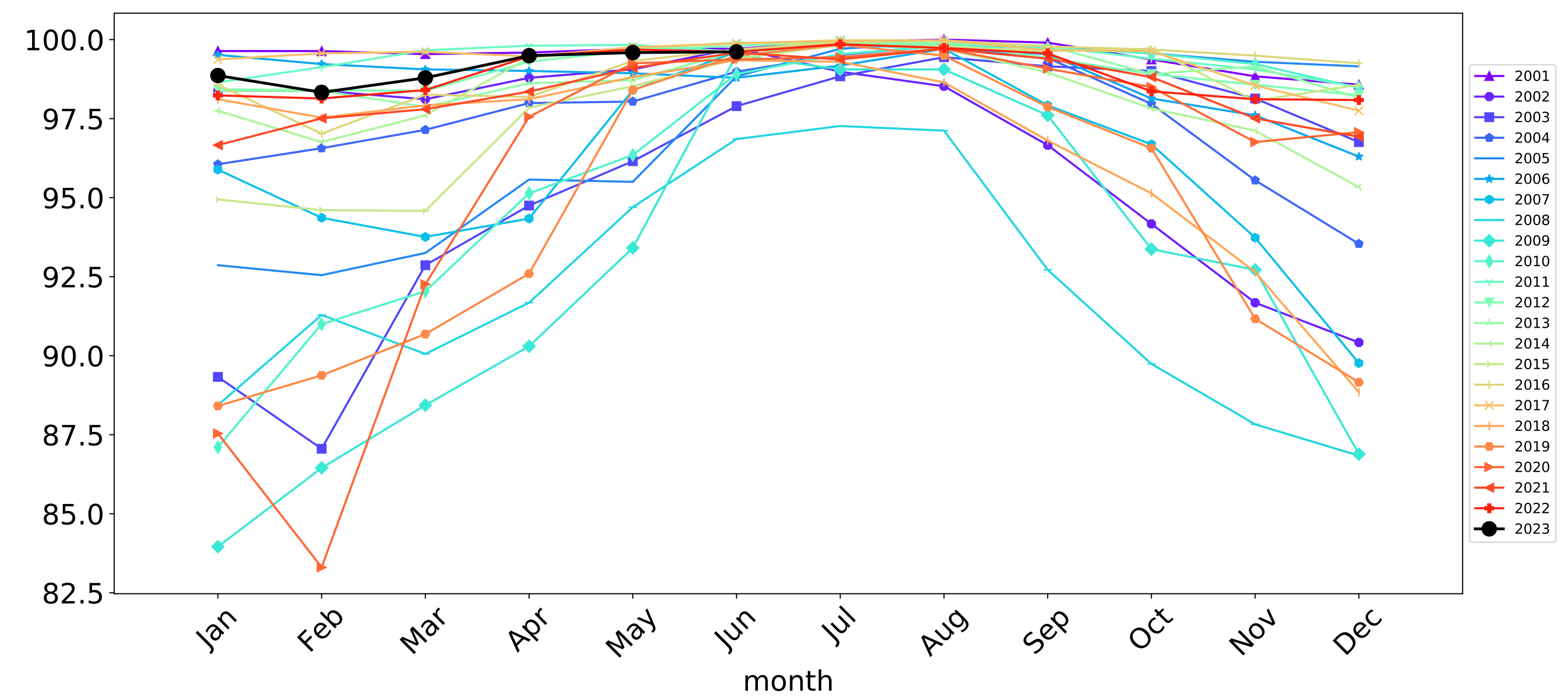

Wind erosion historical monthly area protected (Total Veg Cov >50%)

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

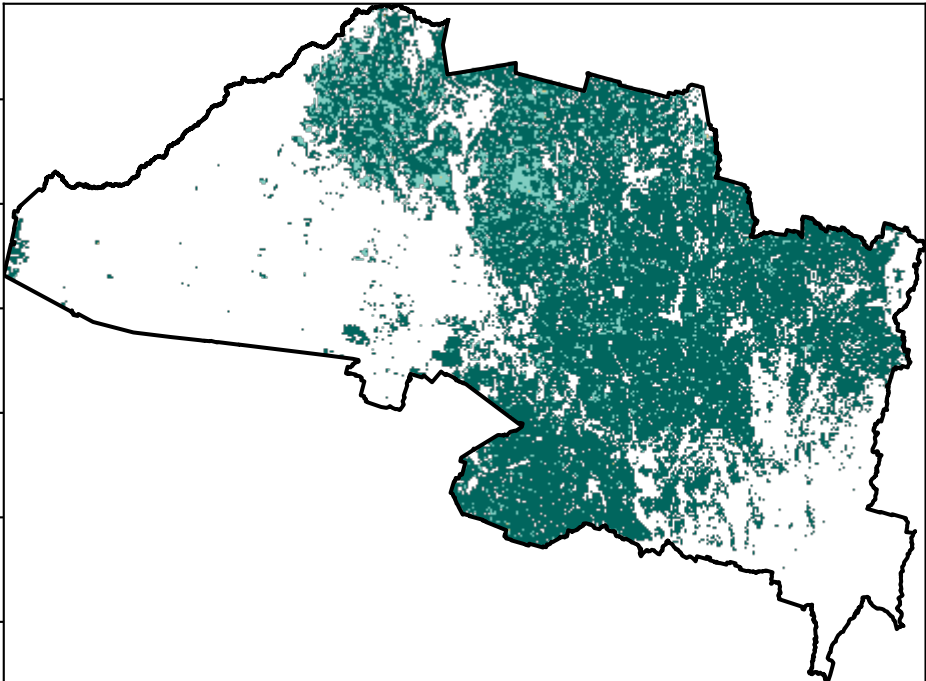### Water erosion historical monthly area protected (Total Veg Cov>70%)

Cropping

Land use and forest cover

1 Agriculture - Cropping - Non-irrigated

Total Vegetation Cover [%]

71%-100%

51%-70%

31%-50%

0-30%

Proportion of vegetation cover class in area

Area (%)

90.2%

9.7%

0.0%   0.1%

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

Total Vegetation Cover class
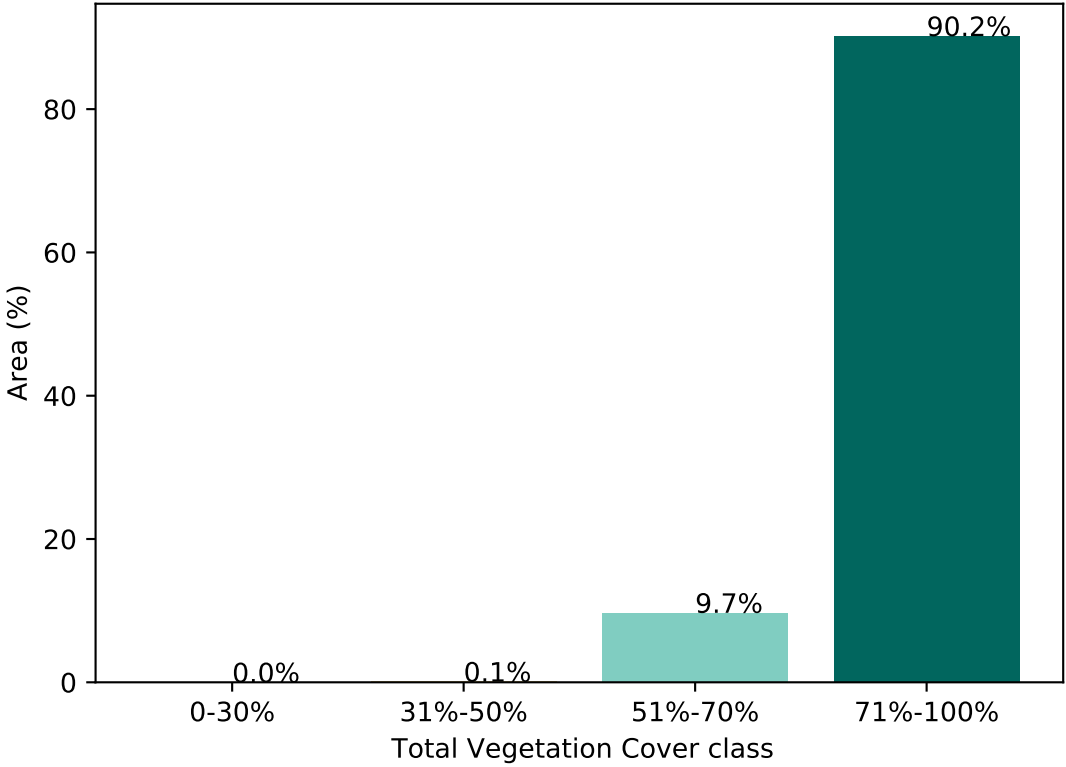
% Area protected from water erosion (>70%)
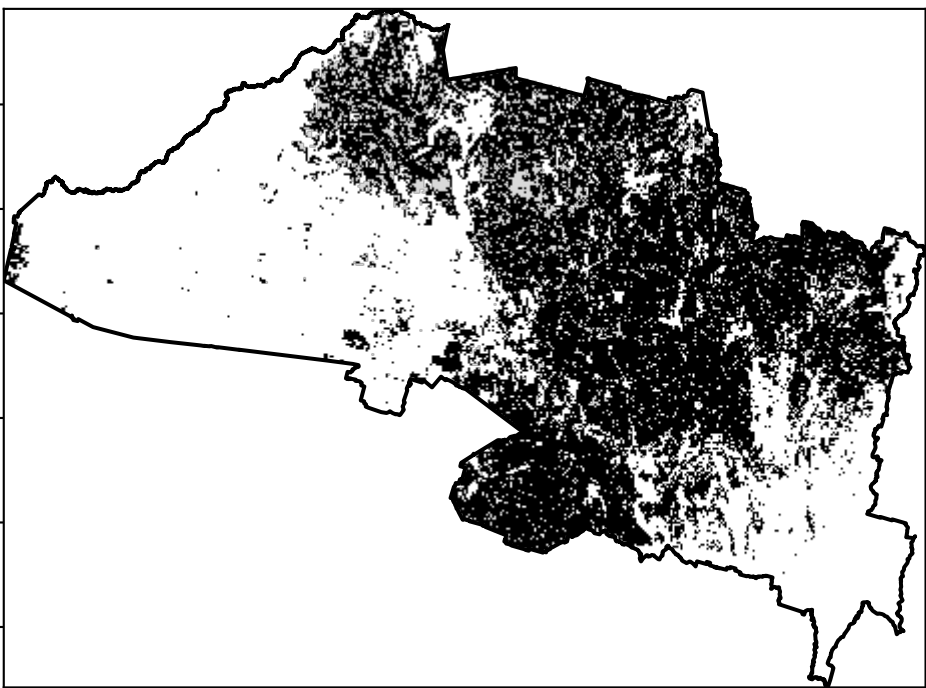
Area not protected 9.8% of region (312,248 ha)

Area protected 90.2% of region (2,873,952 ha)

% Area protected from wind erosion (>50%)
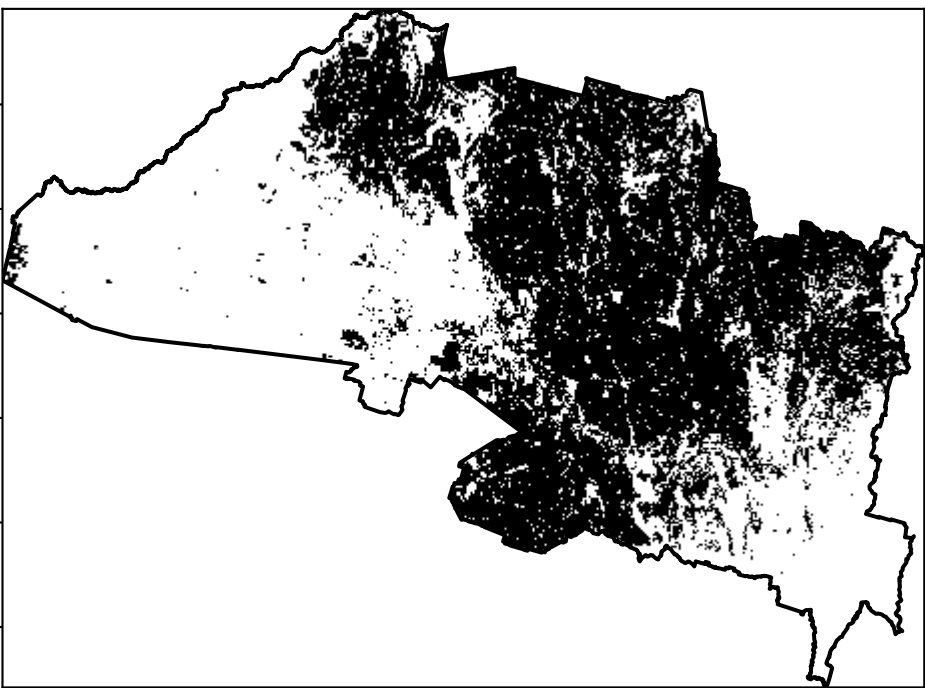
Area not protected 0.0% of region (0 ha)

Area protected 100.0% of region (3,186,200 ha)

Total Vegetation Cover Anomaly [%]

Anomaly show how many percetage 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.

10

8-9

4-7

2-3

1

CSIRO

tern
Ecosystem Research Infrastructure

Australian Government

National Landcare Programme

NSW GOVERNMENT

Cropping 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%)
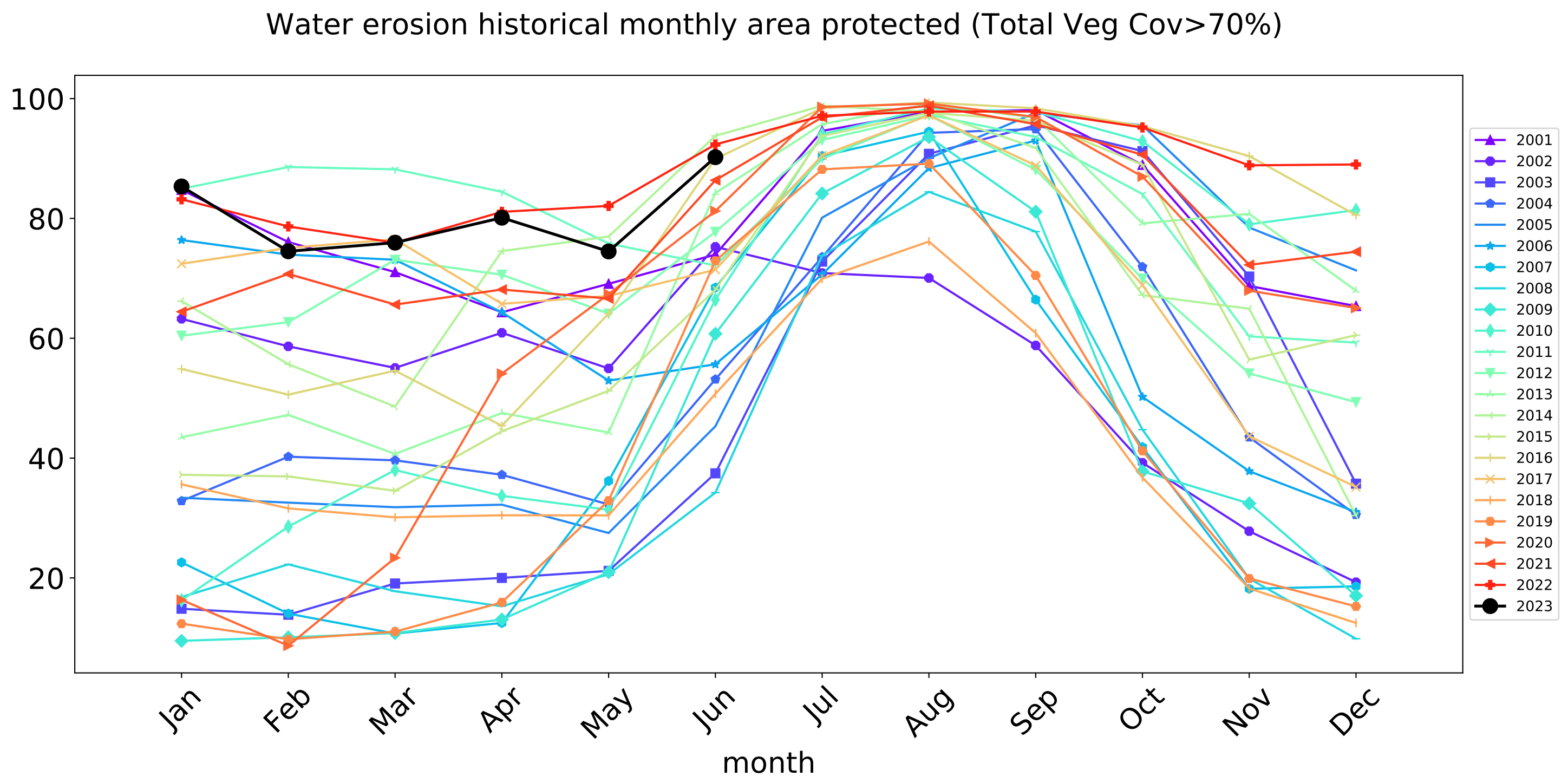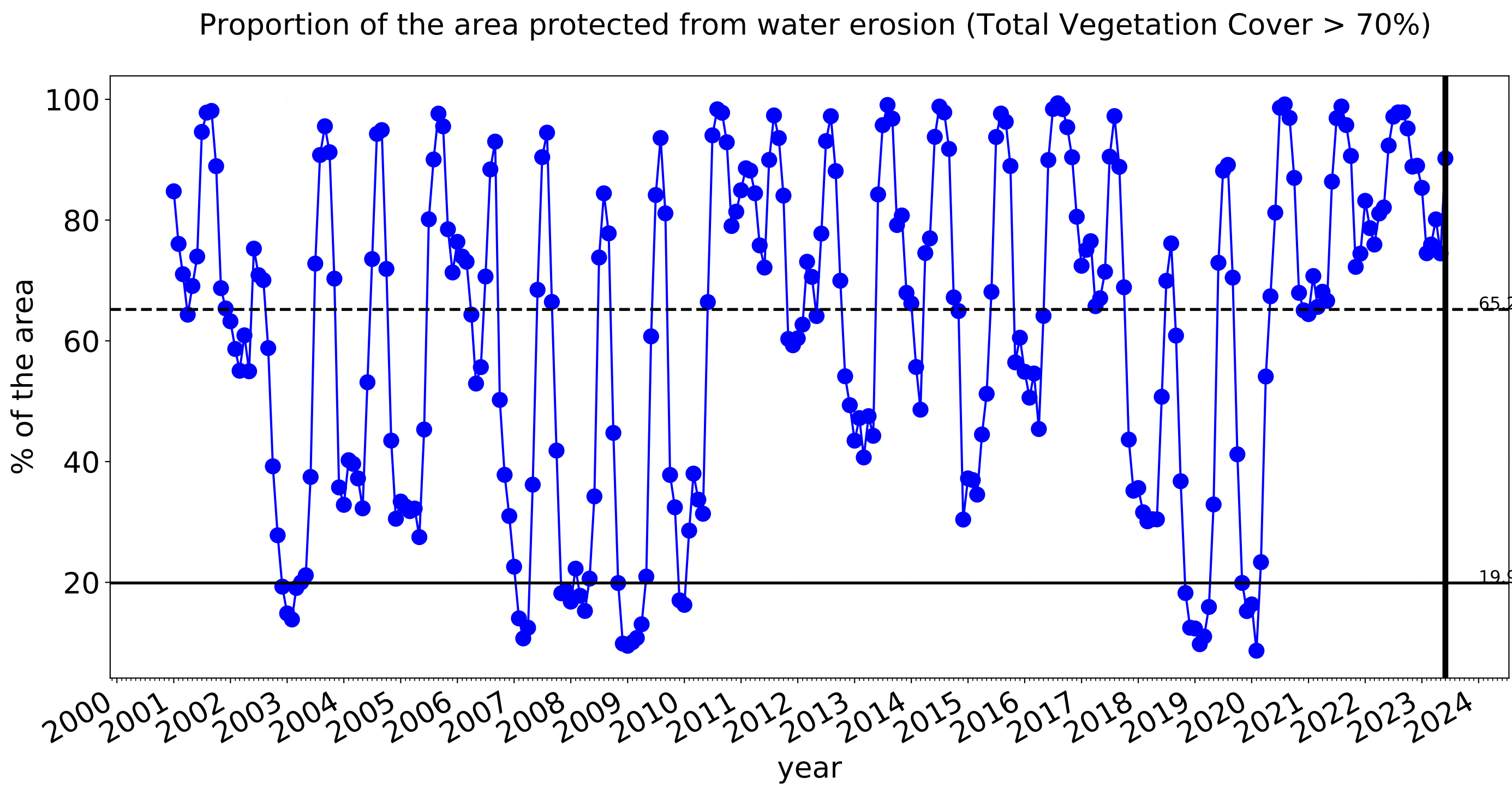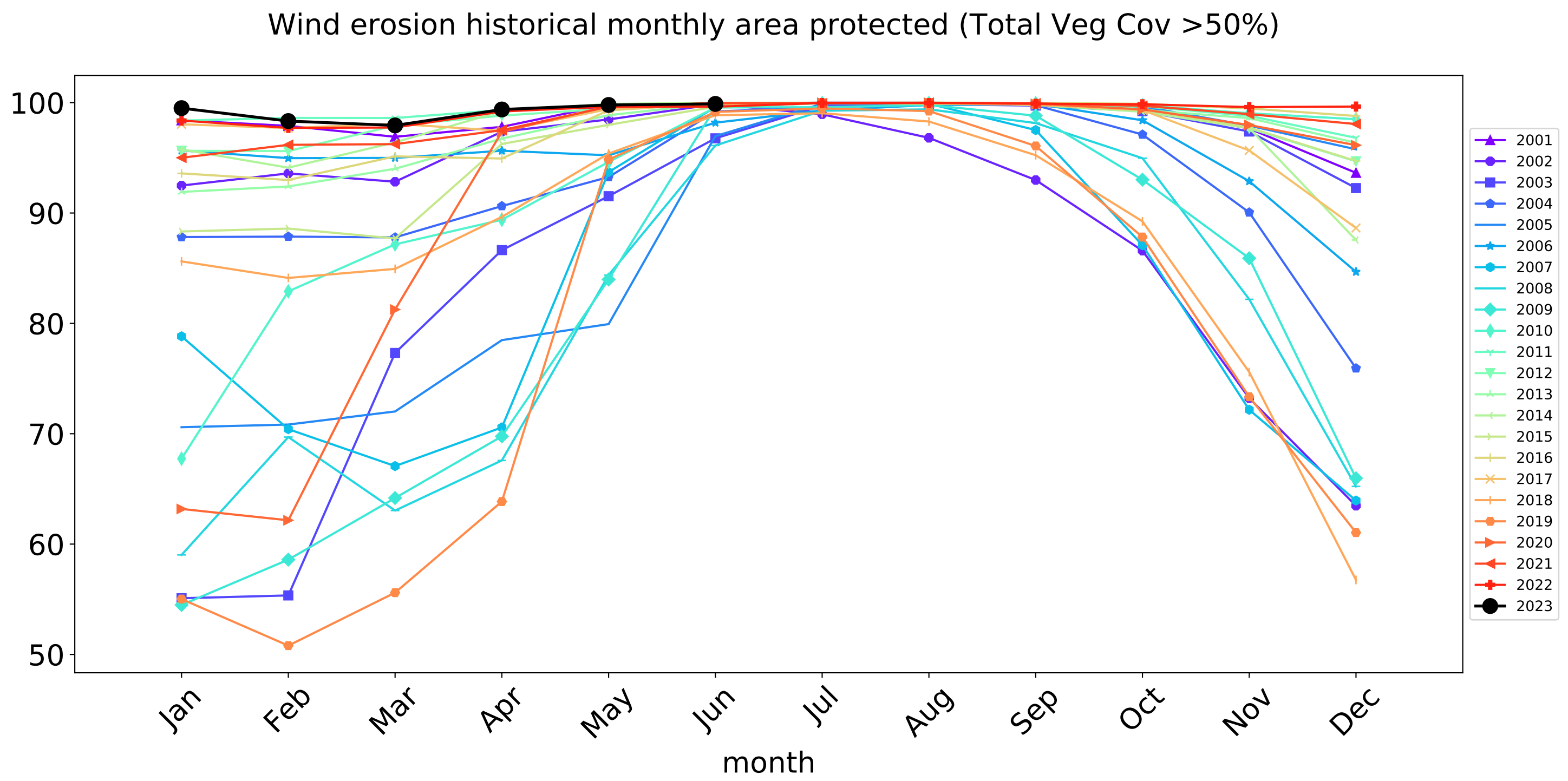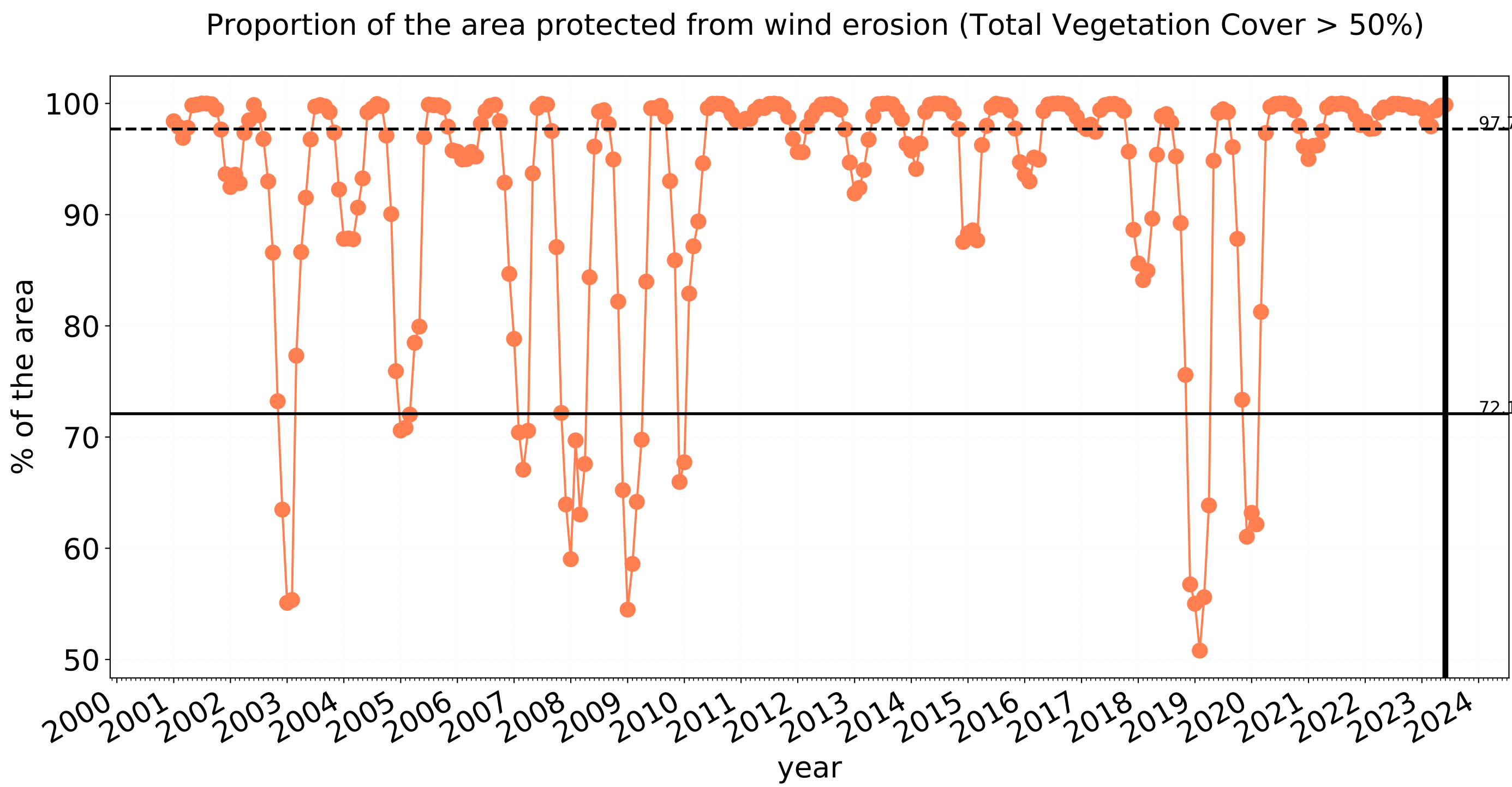
Irrigation

Land use and forest cover

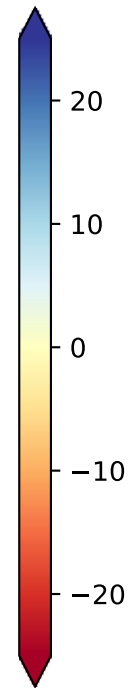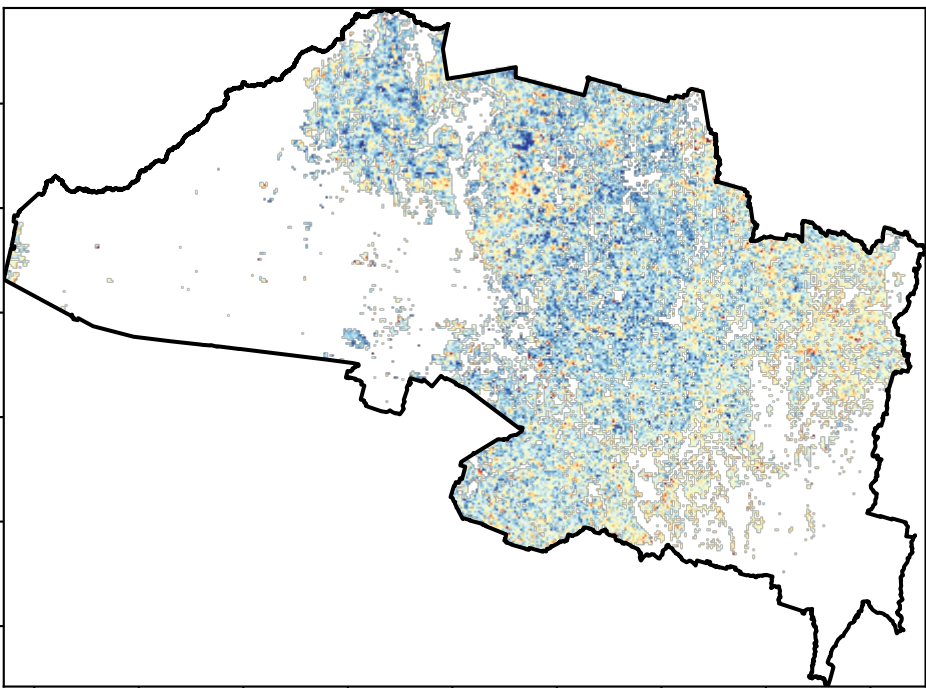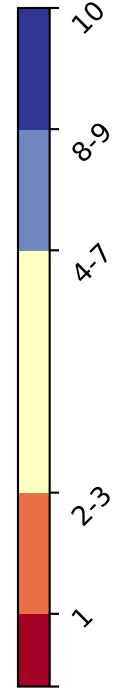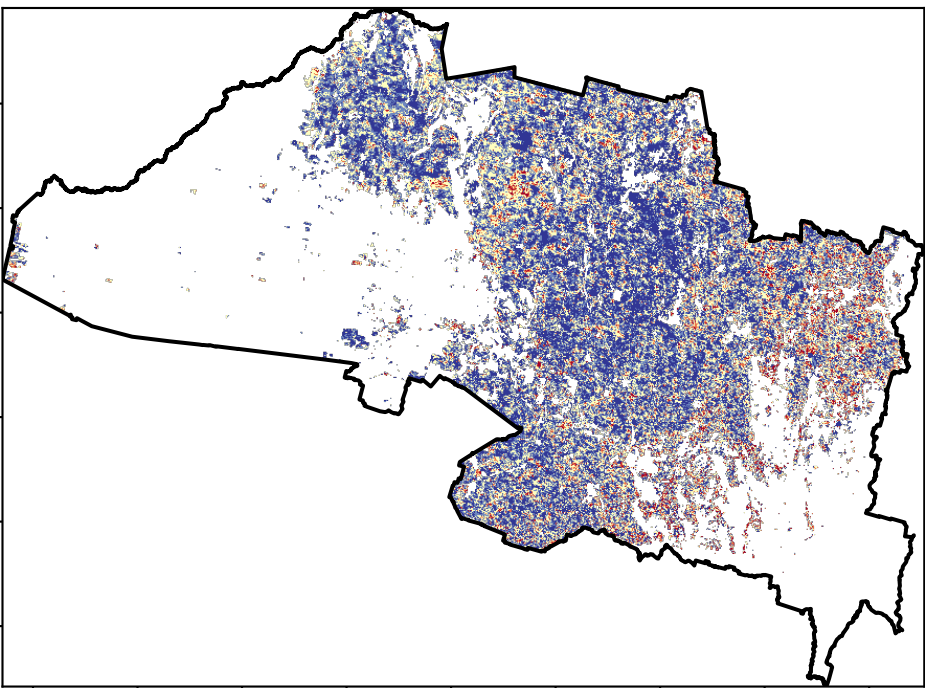Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

1 Agriculture - Grazing - Irrigated
2 Agriculture - Cropping - Irrigated
3 Agriculture - Horticulture - Irrigated

Proportion of each land class in area

Total Vegetation Cover [%]

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

Proportion of vegetation cover class in area

% Area protected from water erosion (>70%)

Area not protected 25.0% of region (141,925 ha)

Area protected 75.0% of region (425,775 ha)

% Area protected from wind erosion (>50%)

Area not protected 1.0% of region (5,677 ha)

Area protected 99.0% of region (562,023 ha)

Total Vegetation Cover Anomaly [%]

Anomaly show how many percetage 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 [%]

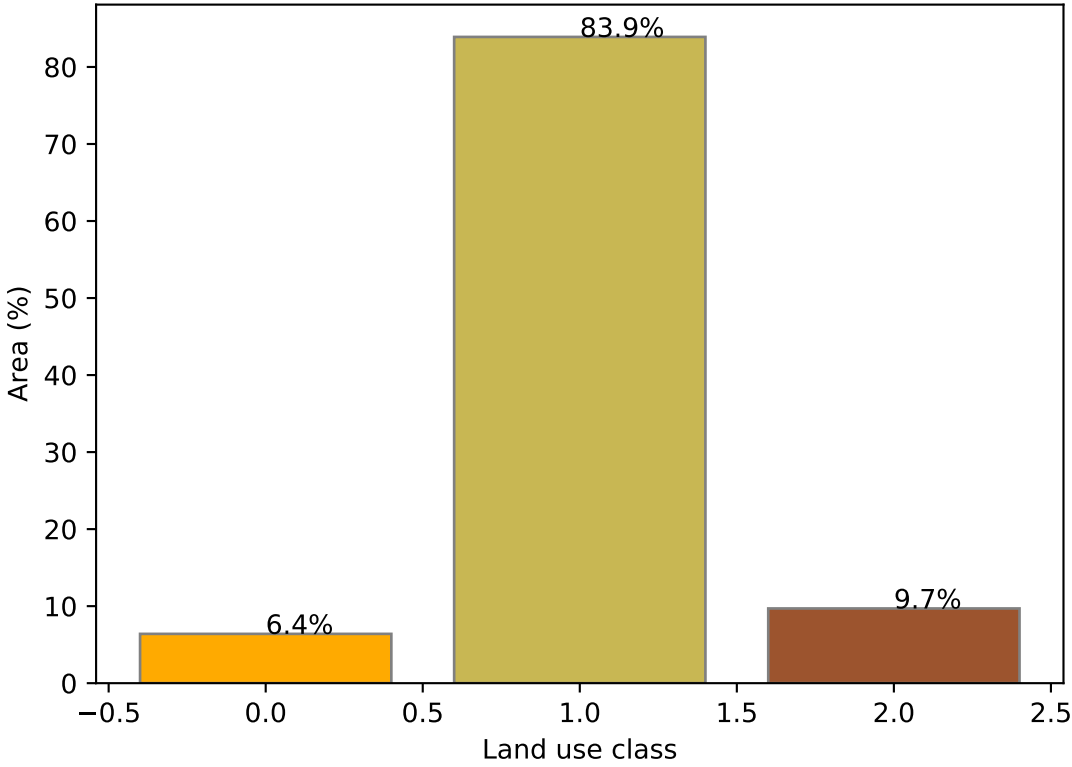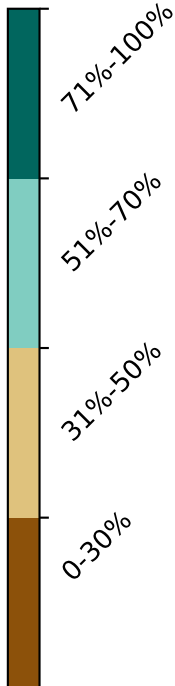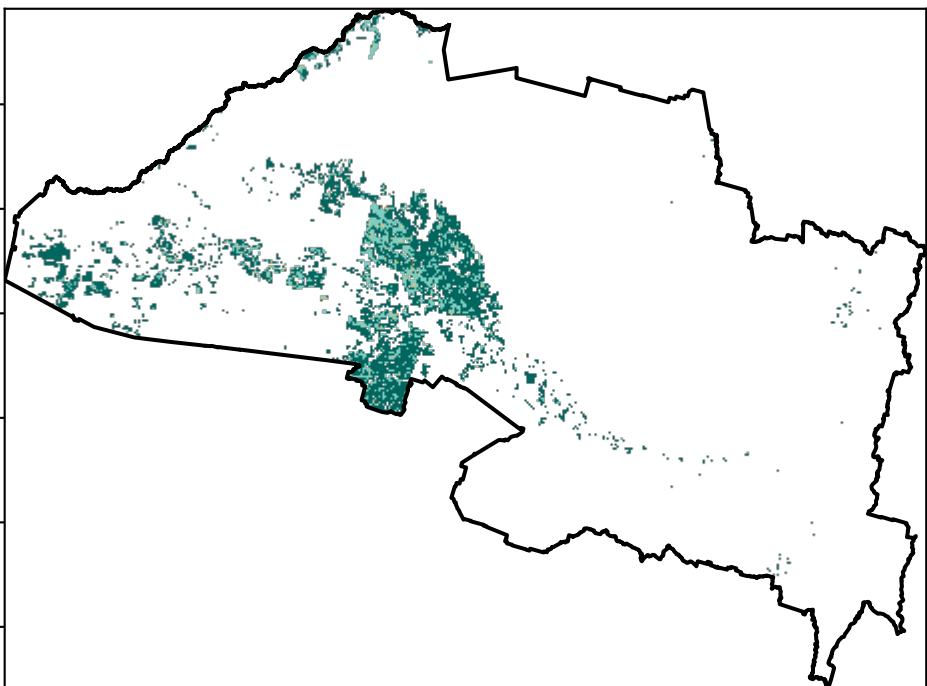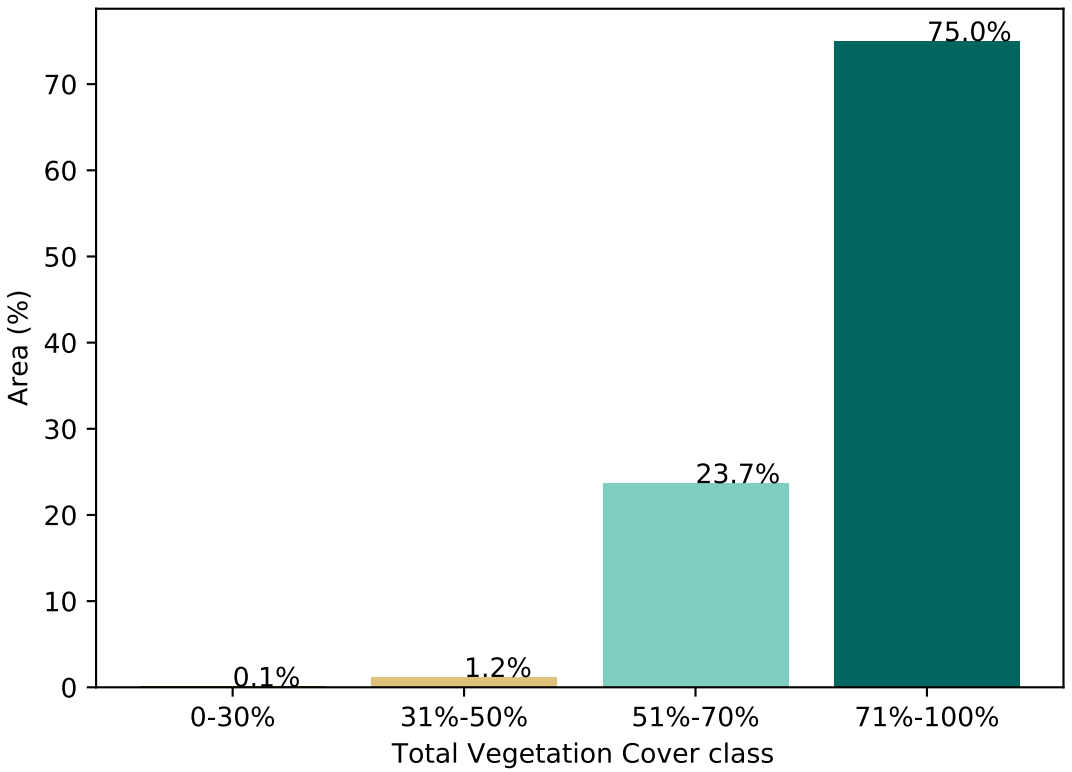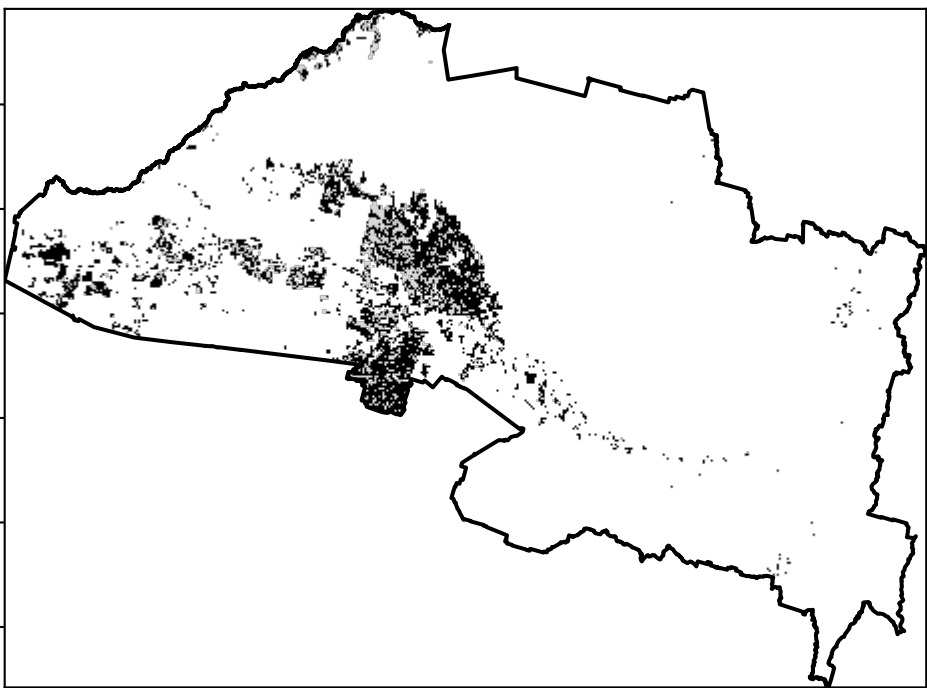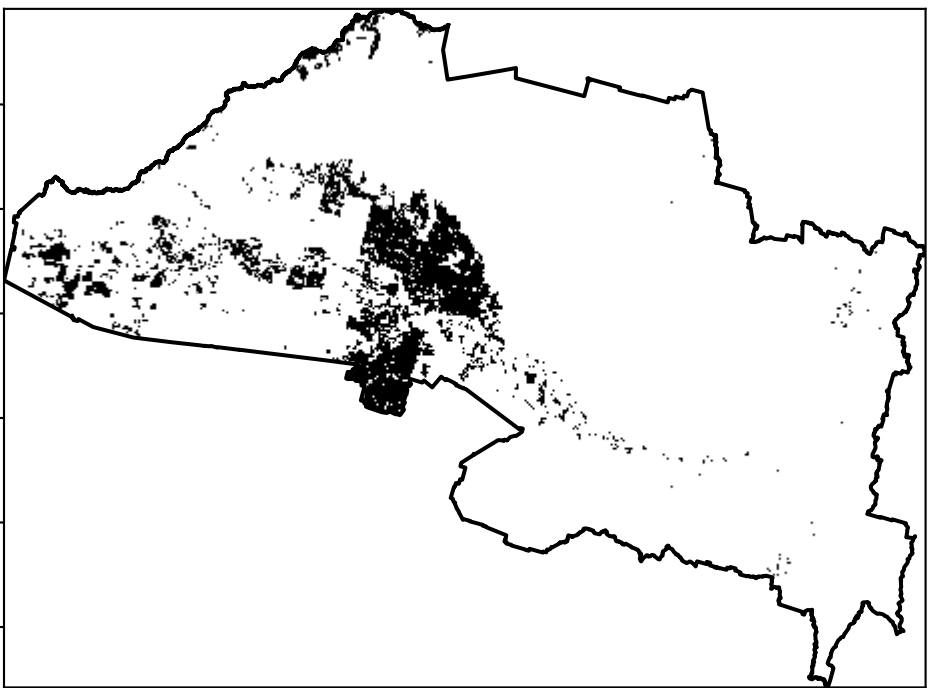Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

10
8-9
4-7
2-3
1

Irrigation 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%)

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 [%]

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

Proportion of vegetation cover class in area

% Area protected from water erosion (>70%)

Area not protected 0.7% of region (1,208 ha)

Area protected 99.3% of region (171,292 ha)

% Area protected from wind erosion (>50%)

Area not protected 0.0% of region (0 ha)
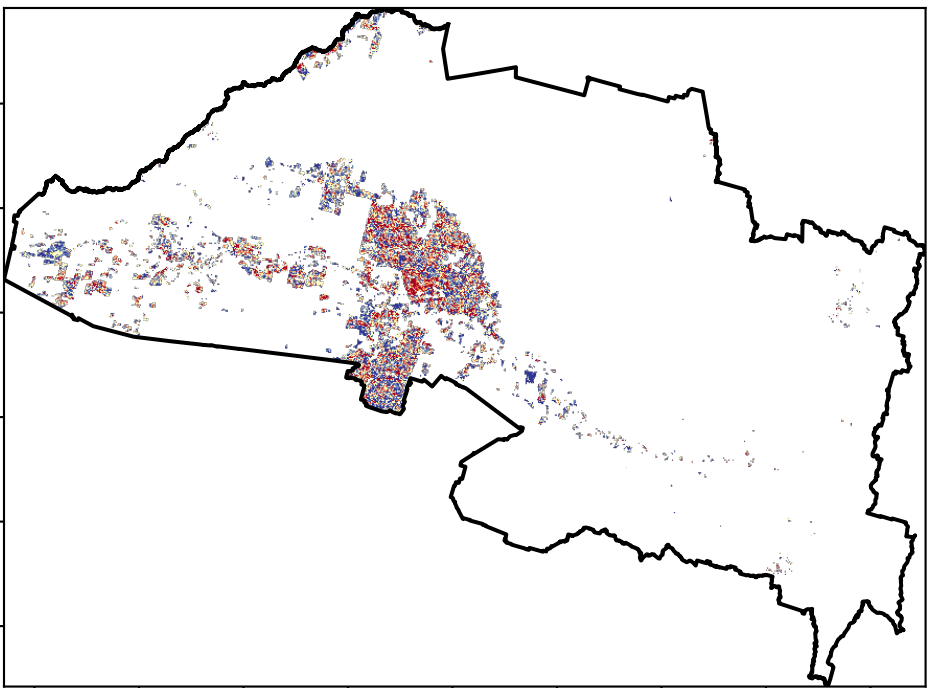
Area protected 100.0% of region (172,500 ha)

Total Vegetation Cover Anomaly [%]

Anomaly show how many percetage 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.
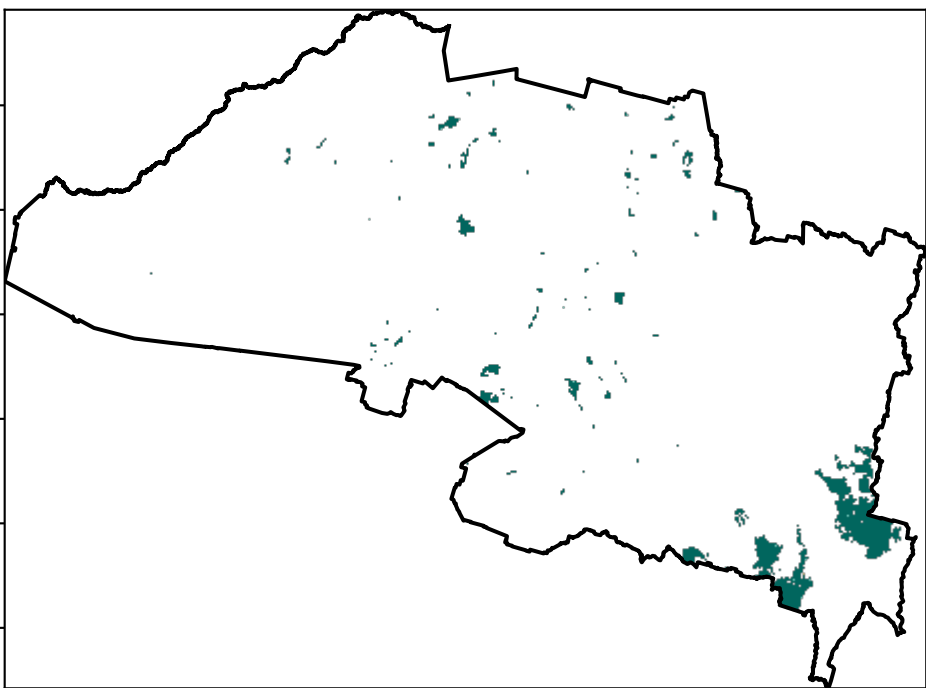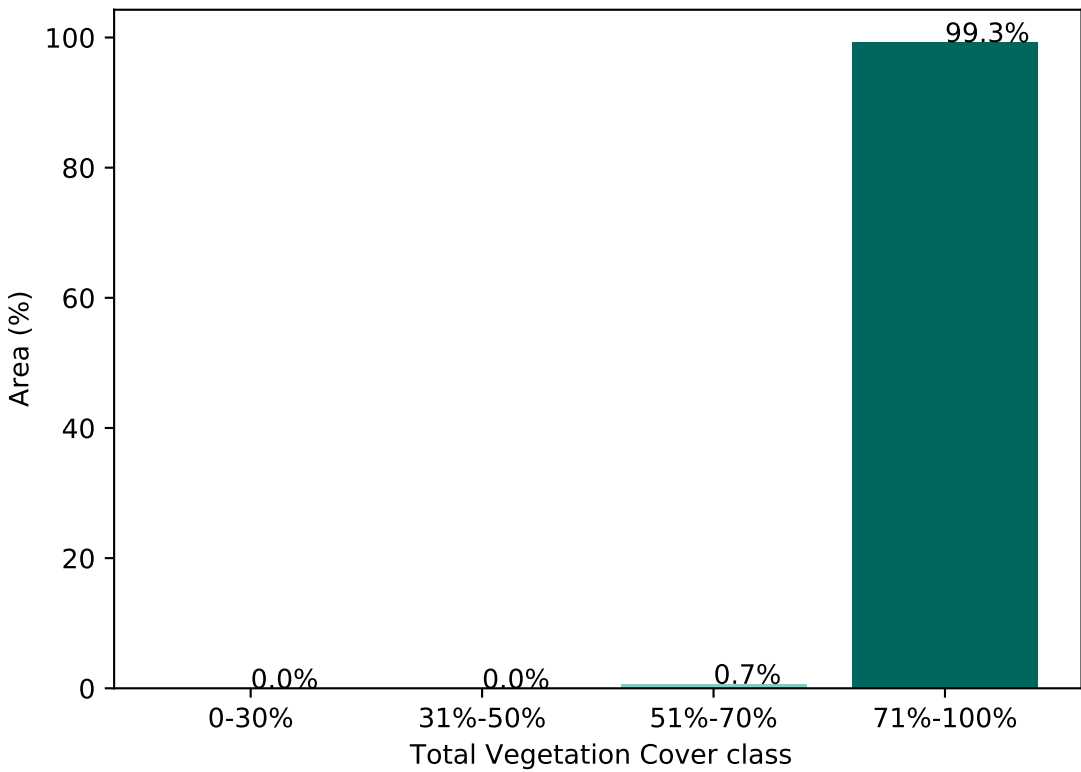
Total Vegetation Cover Decile [%]

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.

- 10
- 8-9
- 4-7
- 2-3
- 1

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%)

Riverina (6,684,675 ha and no data 23,660 ha) Percentage area and hectares protected with TVC threshold 30,50,70,80,90 and 95%
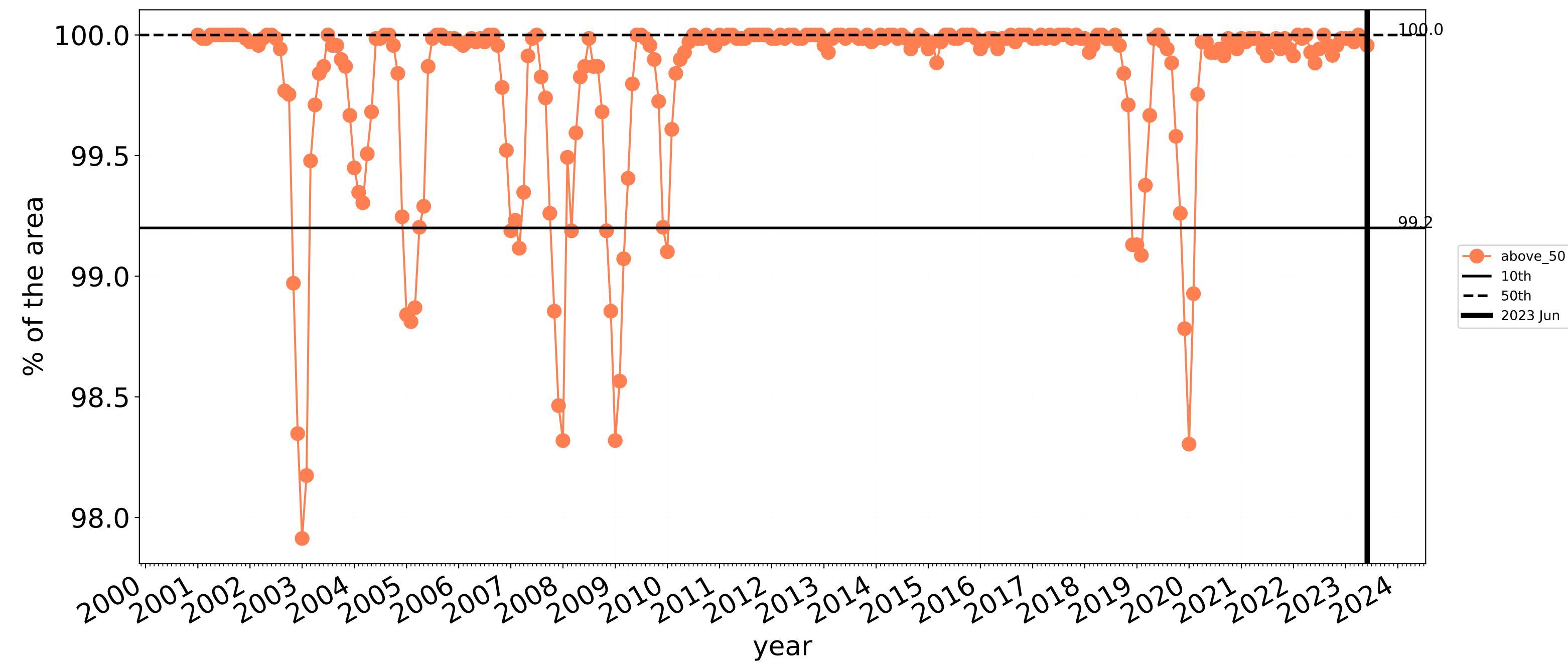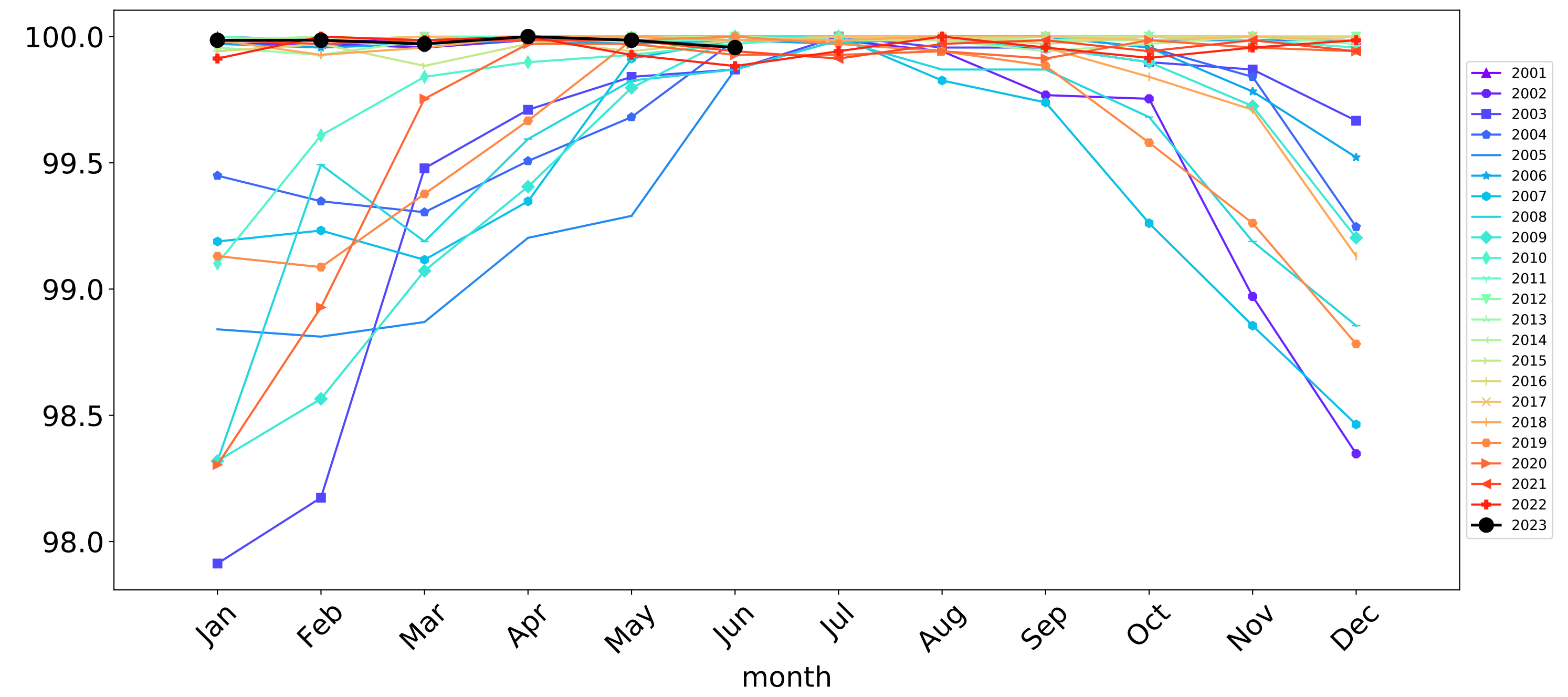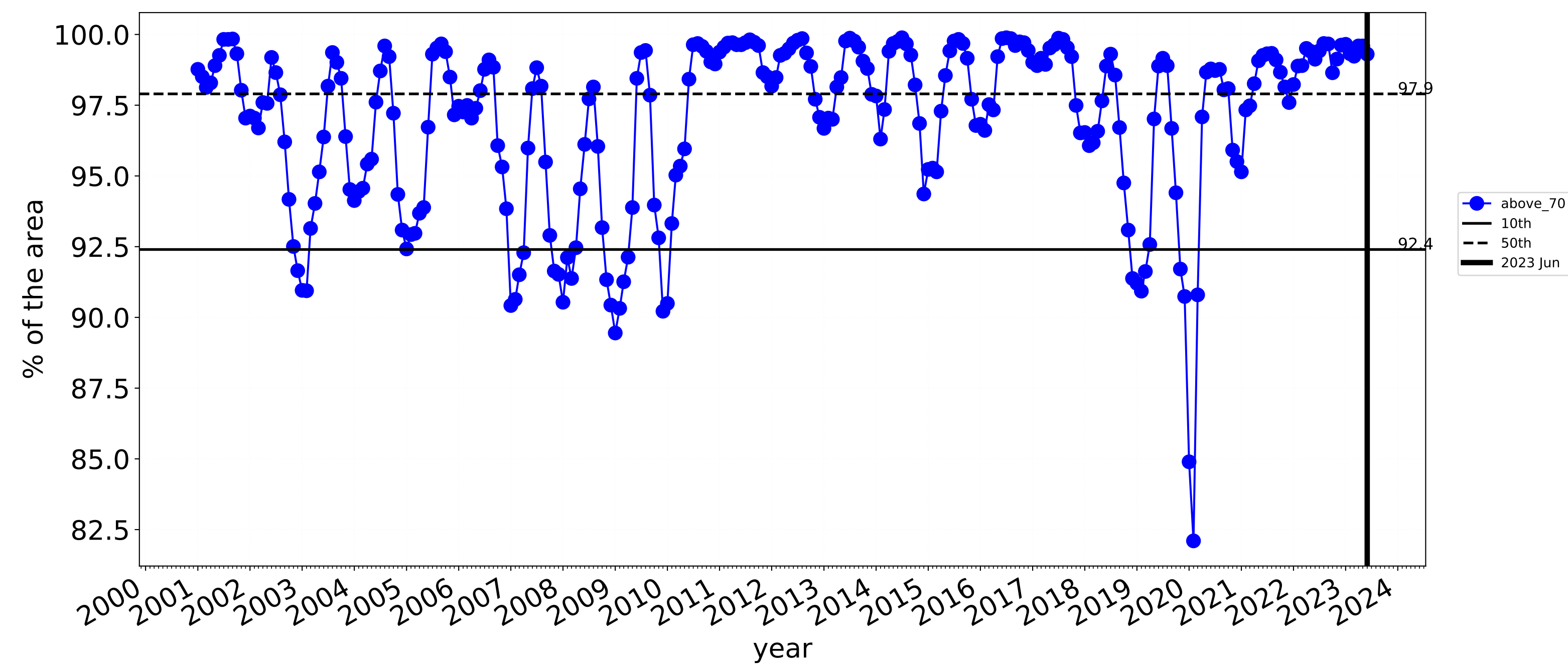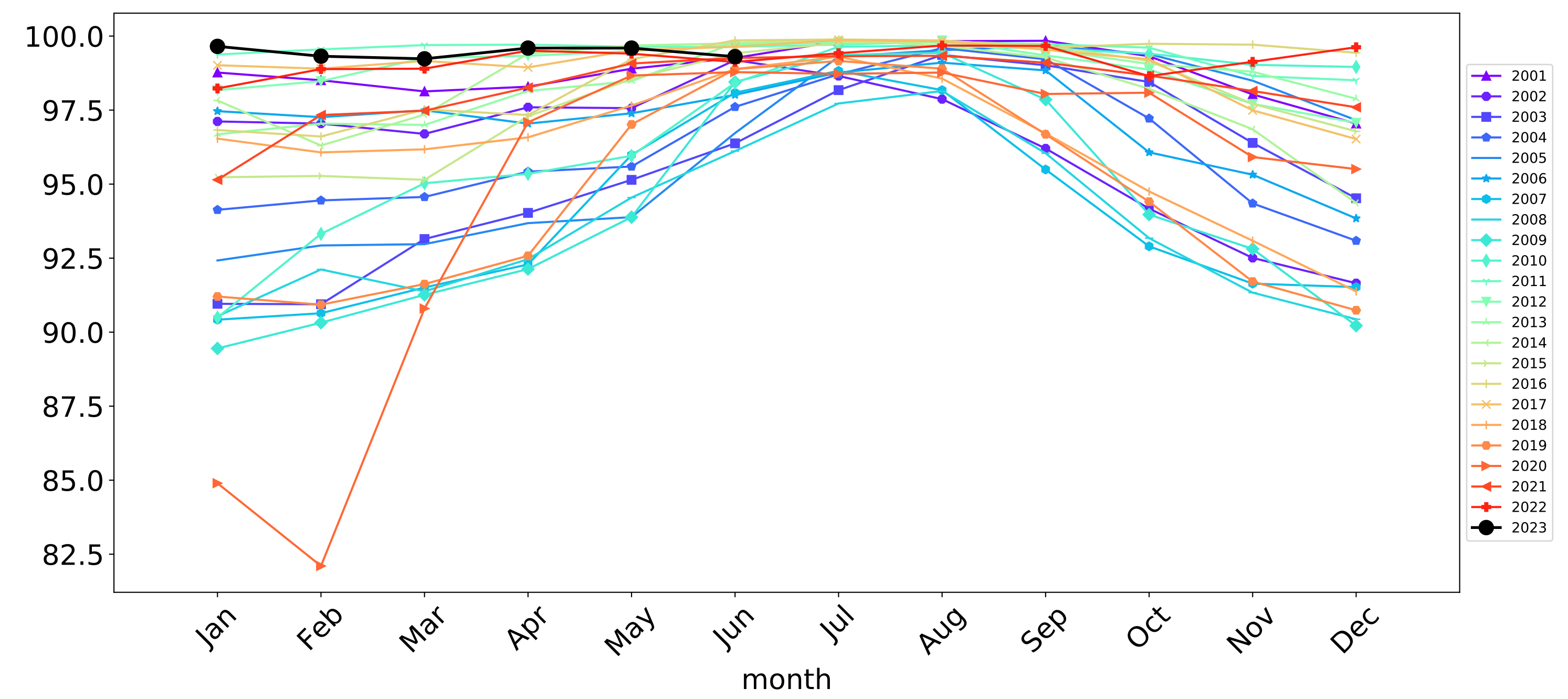
Land use and forest cover Class	area(ha)	above_30	above_50	above_70	above_80	above_90	above_95
Entire region	6,684,675	99.9% 6,681,000	99.7% 6,665,625	91.7% 6,131,075	68.4% 4,573,250	24.0% 1,602,900	8.0% 532,575
Conservation and natural environments	316,025	100.0% 315,975	100.0% 315,900	98.1% 309,875	88.3% 278,950	61.0% 192,825	29.4% 92,925
Conservation and natural environments non forest	82,425	100.0% 82,400	100.0% 82,400	95.1% 78,425	68.8% 56,700	25.1% 20,675	10.0% 8,225
Conservation and natural environments Forest (non woodland)	190,125	100.0% 190,100	99.9% 190,025	98.9% 188,075	94.8% 180,150	76.4% 145,300	39.1% 74,300
Agriculture	6,065,525	100.0% 6,063,850	99.8% 6,052,200	91.3% 5,540,625	66.8% 4,051,750	21.0% 1,272,975	6.1% 368,150
Grazing	2,309,800	100.0% 2,308,975	99.9% 2,307,450	96.9% 2,238,550	80.5% 1,860,250	31.3% 723,775	9.9% 228,950
Grazing non forest	2,064,825	100.0% 2,064,000	99.9% 2,062,475	96.6% 1,995,400	79.0% 1,631,300	28.6% 590,225	8.6% 177,375
Grazing Woodland forest	141,650	100.0% 141,650	100.0% 141,650	99.0% 140,225	91.8% 130,000	47.4% 67,100	14.2% 20,175
Grazing - Forest (non woodland)	103,325	100.0% 103,325	100.0% 103,325	99.6% 102,925	95.8% 98,950	64.3% 66,450	30.4% 31,400
Cropping	3,186,200	100.0% 3,185,700	99.9% 3,182,600	90.2% 2,874,475	61.4% 1,955,650	15.7% 499,675	4.0% 126,625
Irrigation	567,700	99.9% 567,350	98.7% 560,325	75.0% 425,875	41.4% 234,750	8.7% 49,425	2.2% 12,575
Production native forests and plantation forests	172,500	100.0% 172,475	100.0% 172,425	99.3% 171,300	95.3% 164,350	66.9% 115,475	37.9% 65,450