

Total vegetation cover soil protection

Region:NRM Condamine QLD

Date: May 2008

This report describes vegetation protecting the soil surface from erosion during a chosen month compared to previous years. This report has been generated using MODIS fractional vegetation cover information available in Rangelands and Pasture Productivity (RAPP) map tool <https://map.geo-rapp.org/#australia>. The report is based on 500 metre pixel data on monthly time steps.

Land use forest cover:

Results can be shown for the whole region (polygon), and separated by land use and forest cover classes which are likely to show different cover patterns and targets. Land use is divided into four broad classes: Conservation and natural environments, Agriculture, production native forests and plantation forests (no report), and other (no report). Agriculture is divided into grazing, crops and horticulture which are sub-divided into non-irrigated and irrigated. If forest is present land use is further divided into: non-forest, woodland forest and non-woodland forest. The area of each land use and forest class are shown as a map and chart. The report content is repeated for each land use and forest cover class that covers at least 1% of the area of the chosen region.

Total vegetation Cover:

The total vegetation cover indicates where soil is likely to be protected from wind and or water hillslope erosion. Total vegetation cover for this month is shown on a map and chart classified into 4 classes.

- 71-100% High cover – protected from wind and usually water erosion (high rainfall, steep slopes, and erodible soils may need greater than 80, 90, 95 and up to 100% cover)
- 51-70% Moderate cover – protected from wind erosion
- 31-50% Low cover – not protected
- 0-30% Very Low cover – not protected

Erosion protection: Wind erosion 50% total vegetation cover

The vegetation cover threshold required to prevent soil erosion is usually 50% to reduce wind erosion, 70% or 80% to reduce water (hillslope) erosion depending on the steepness and rainfall. Areas protected from erosion for the month:

- Map: water erosion protection (>70% cover) percentage area and hectares.
- Map: wind erosion protection (>50% cover) percentage area and hectares.

Comparison with previous years:

- Map: anomaly comparing this month to the average cover from the same month in previous years.
- Map: deciles rank of month against the same month in previous years.

Anomalies and deciles until September 2019 are calculated comparing to the same months 2001 to 2019. Extra monthly data will be used to calculate anomalies and deciles post September 2019 as they become available.

Time series monthly from January 2001 to current:

Erosion protection

- Wind erosion protection time series: percentage of the area of the region with greater than 50% cover for each month (orange lines). Horizontal lines are 10th (cover target) and 50th percentiles.
- Water erosion protection time series: percentage of the area of the region with greater than 70% cover for each month (blue line). Horizontal lines are 10th (cover target) and 50th percentiles.

Rainfall

- Millimetres rainfall each month (black line).

Each time series is also stacked by year. The black line shows the current year of data.

Water erosion protection for higher rainfall and steeper slopes:

Water erosion protection on higher slopes. As slope increases, more cover is required to control water erosion. The thresholds reported are:

- the percentage area with pixels greater than 80% total cover.
- the percentage area with pixels greater than 90% total cover.
- the percentage area with pixels greater than 95% total cover.

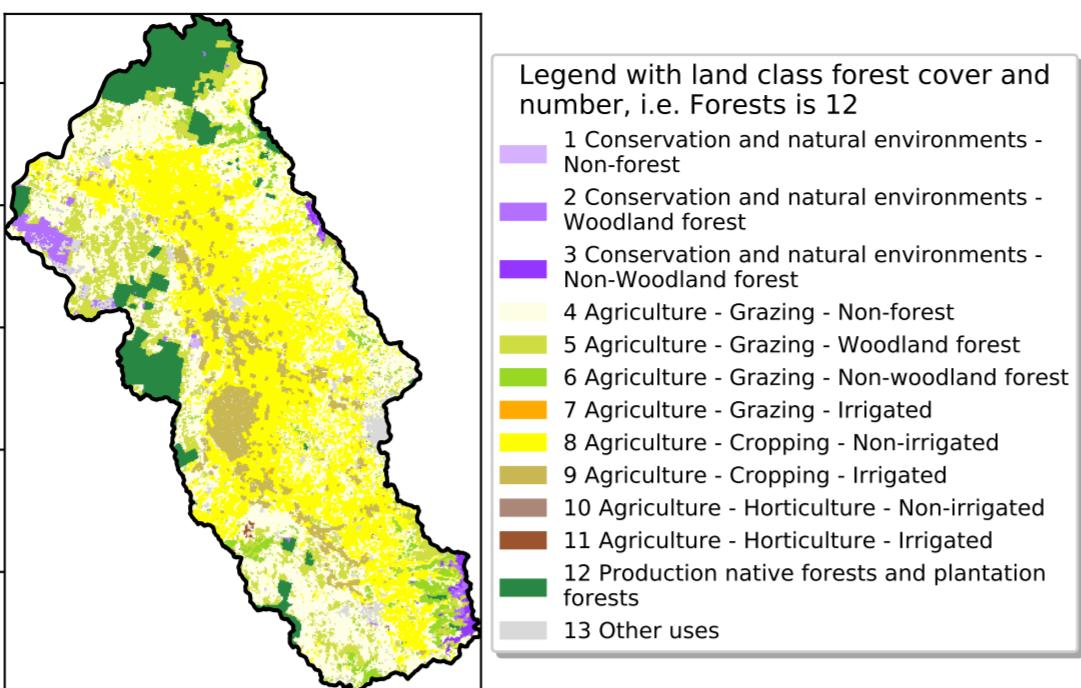
Acknowledgment of data:

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



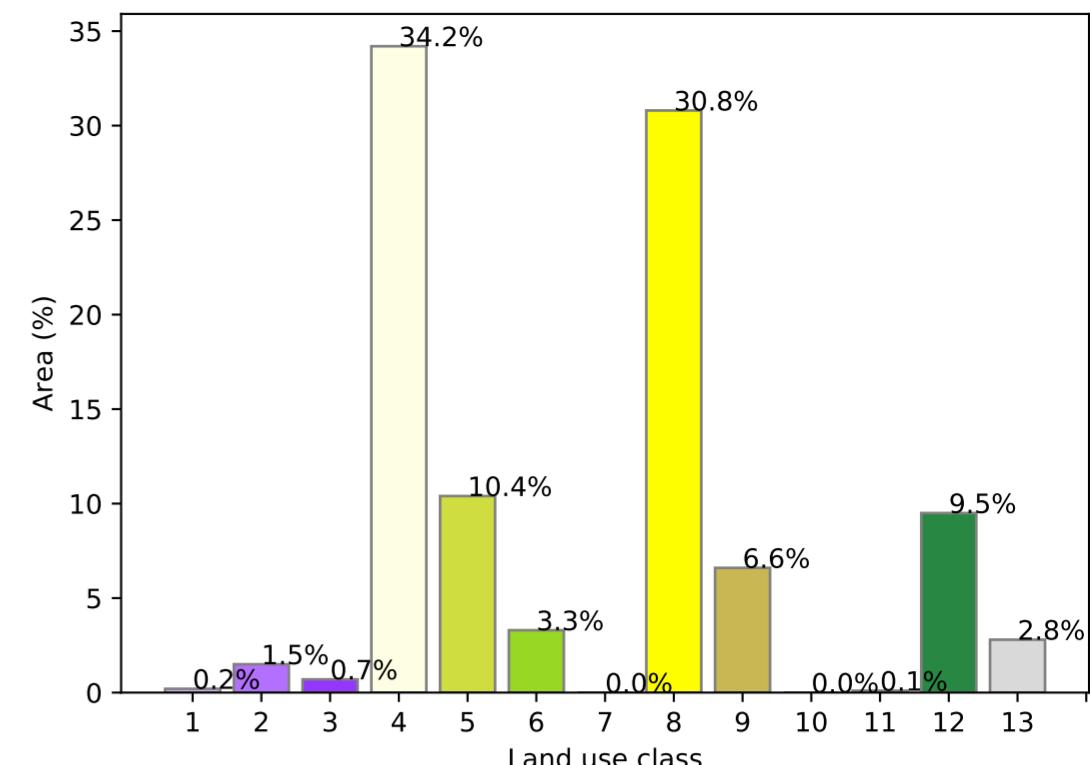
Vegetation Cover May 2008

Land use and forest cover

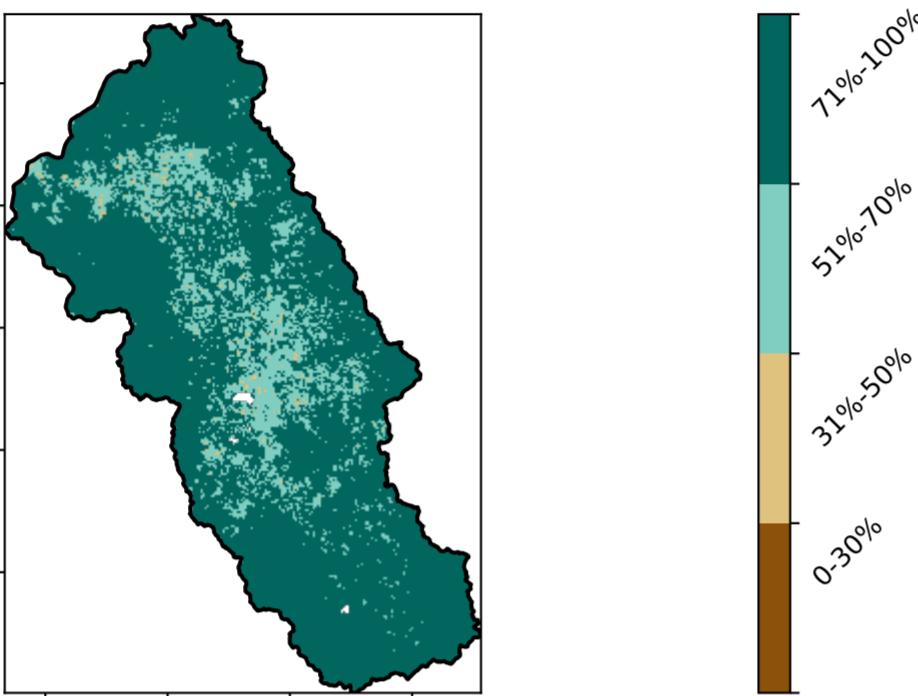


Catchment Scale
Land Use and Forests
of Australia (2018)
Derived from
Catchment Scale Land
Use of Australia
(2018) and Forests
of Australia (2018)

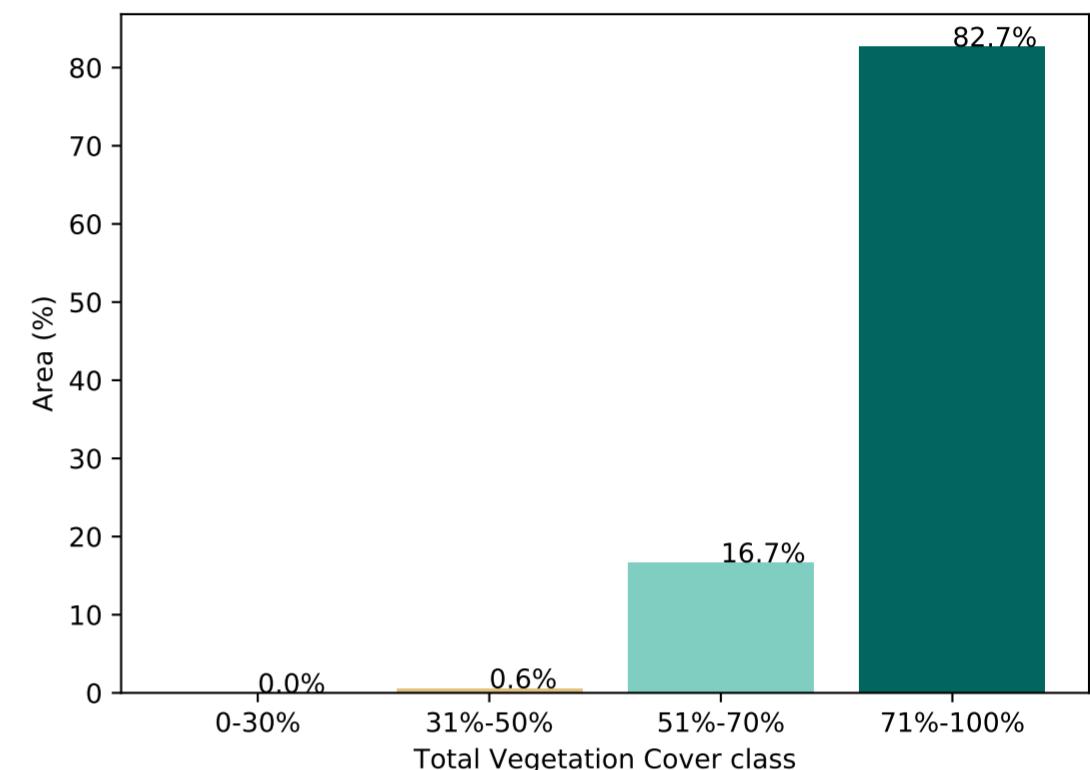
Proportion of each land class in area



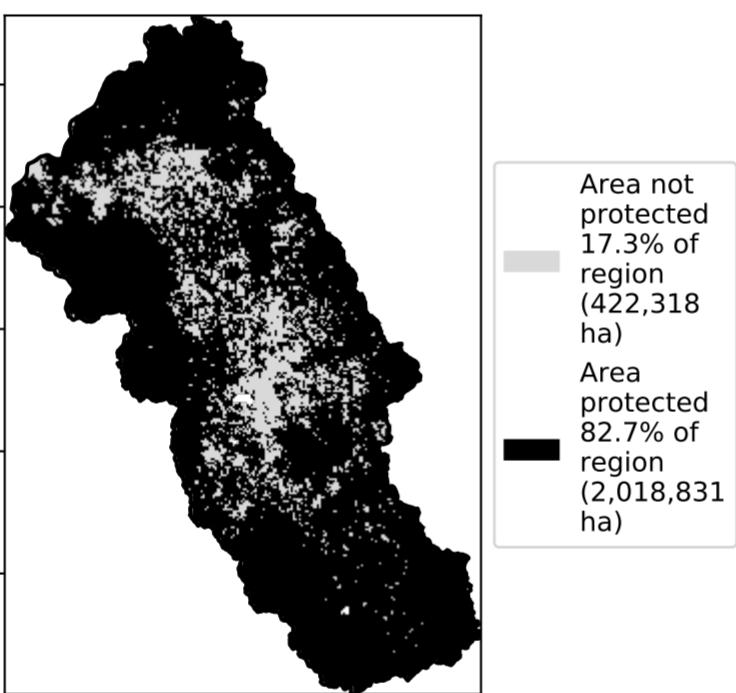
Total Vegetation Cover [%]



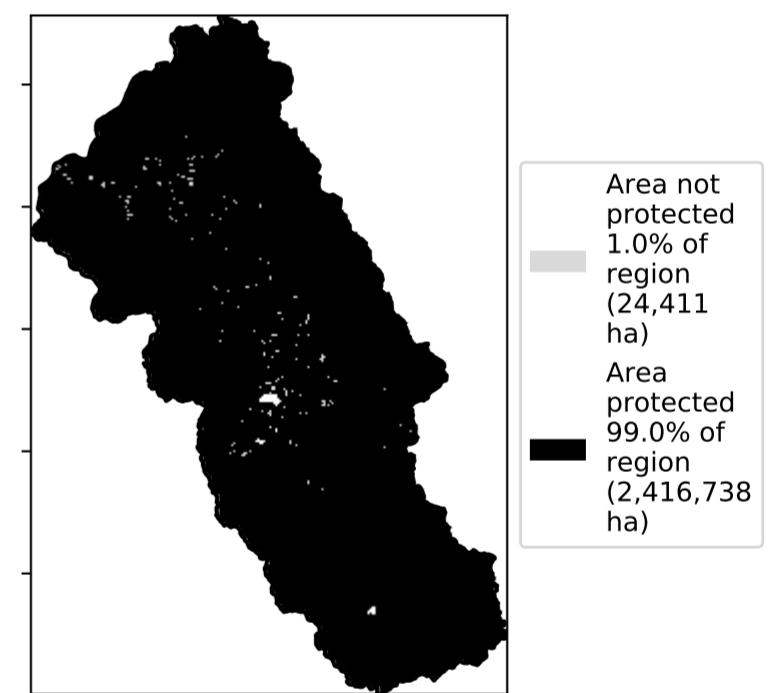
Proportion of vegetation cover class in area



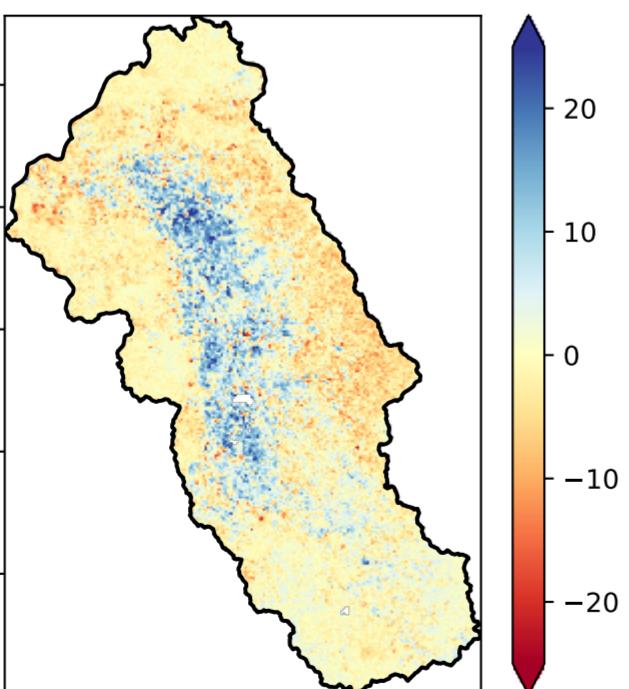
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

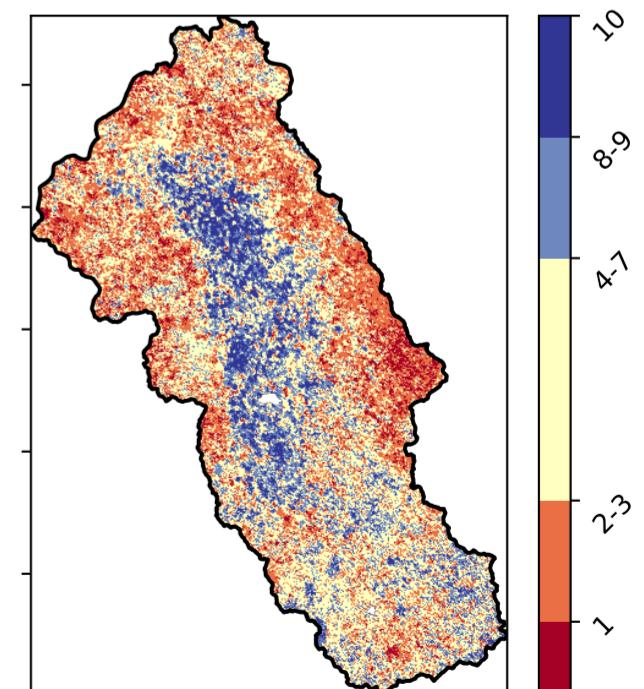


Total Vegetation Cover Anomaly [%]



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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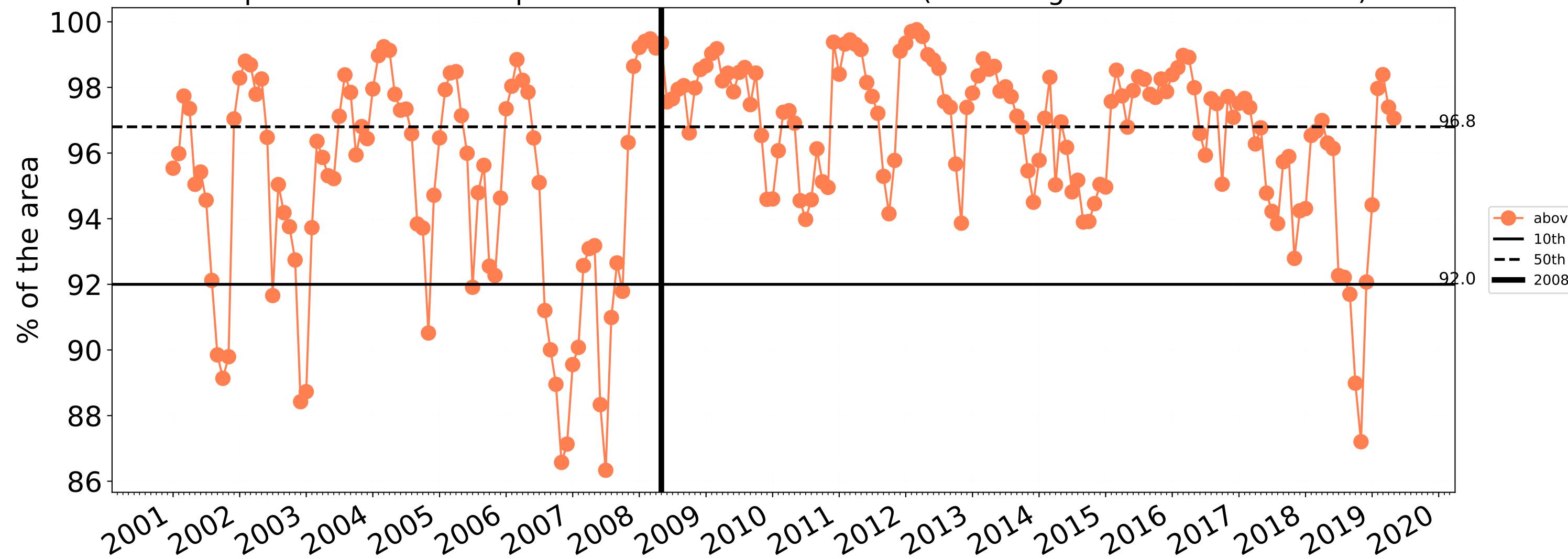


National
Landcare
Programme

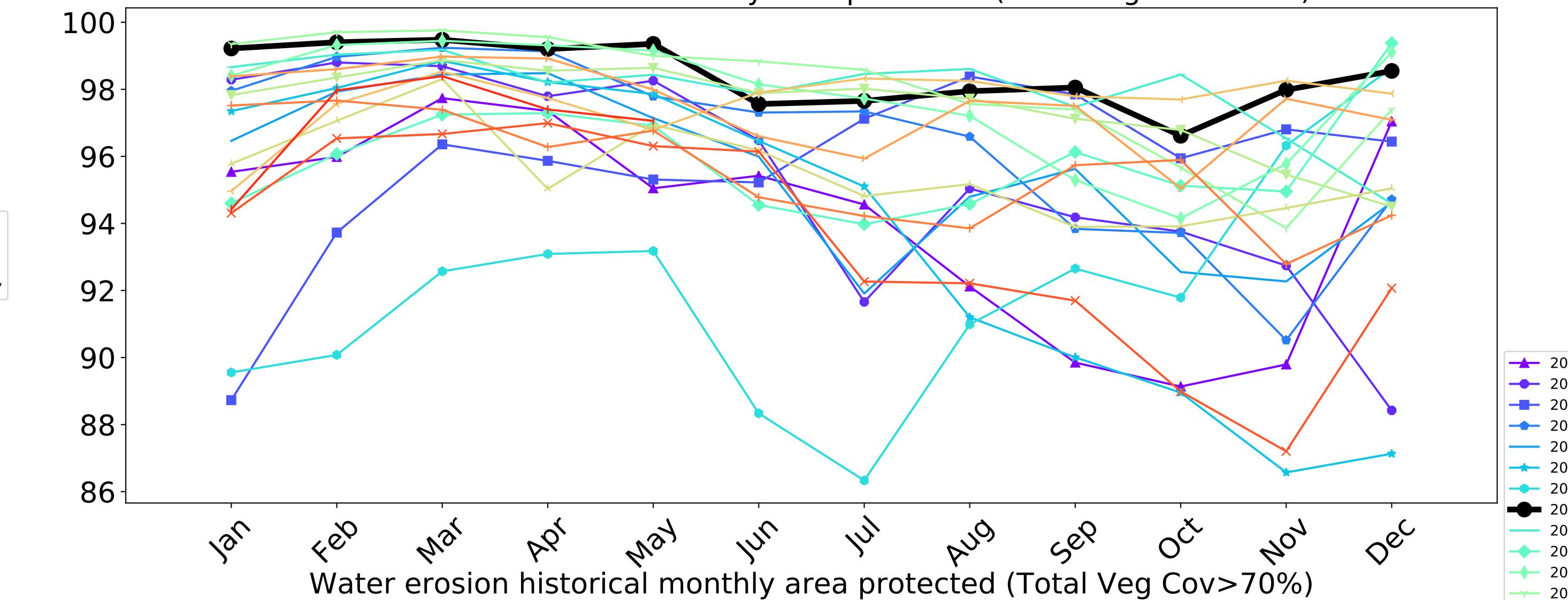


Planning,
Industry &
Environment

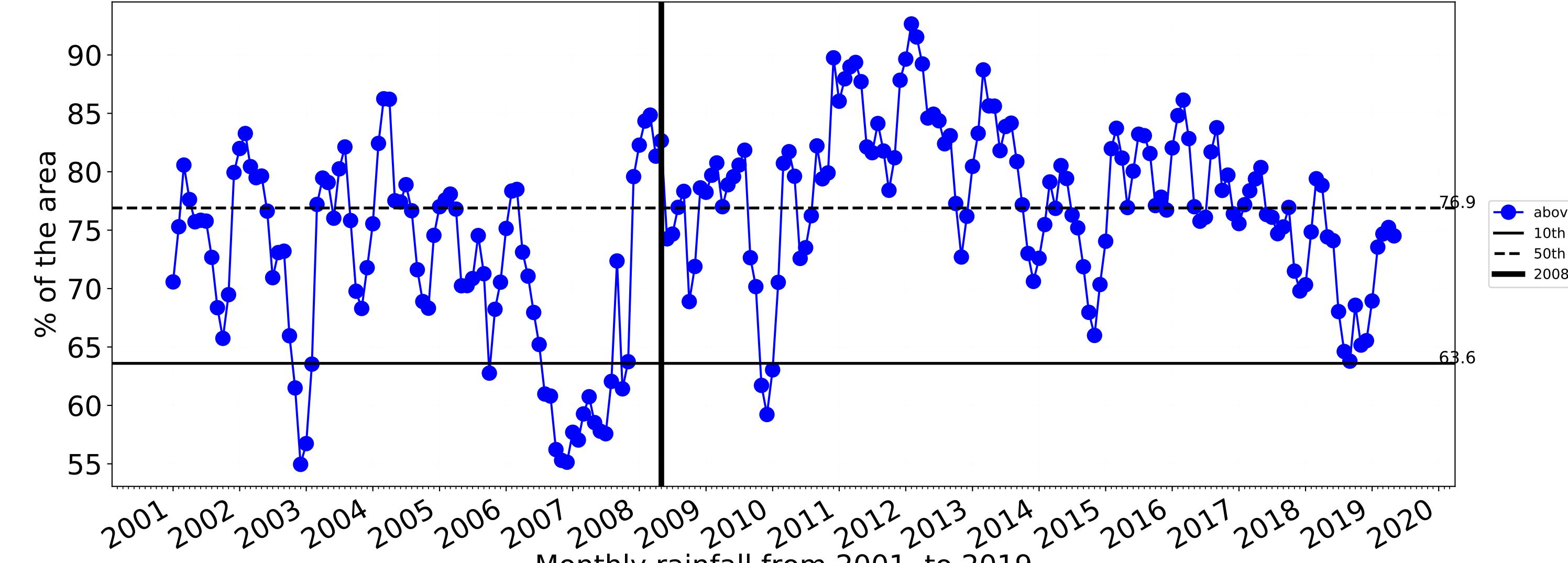
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



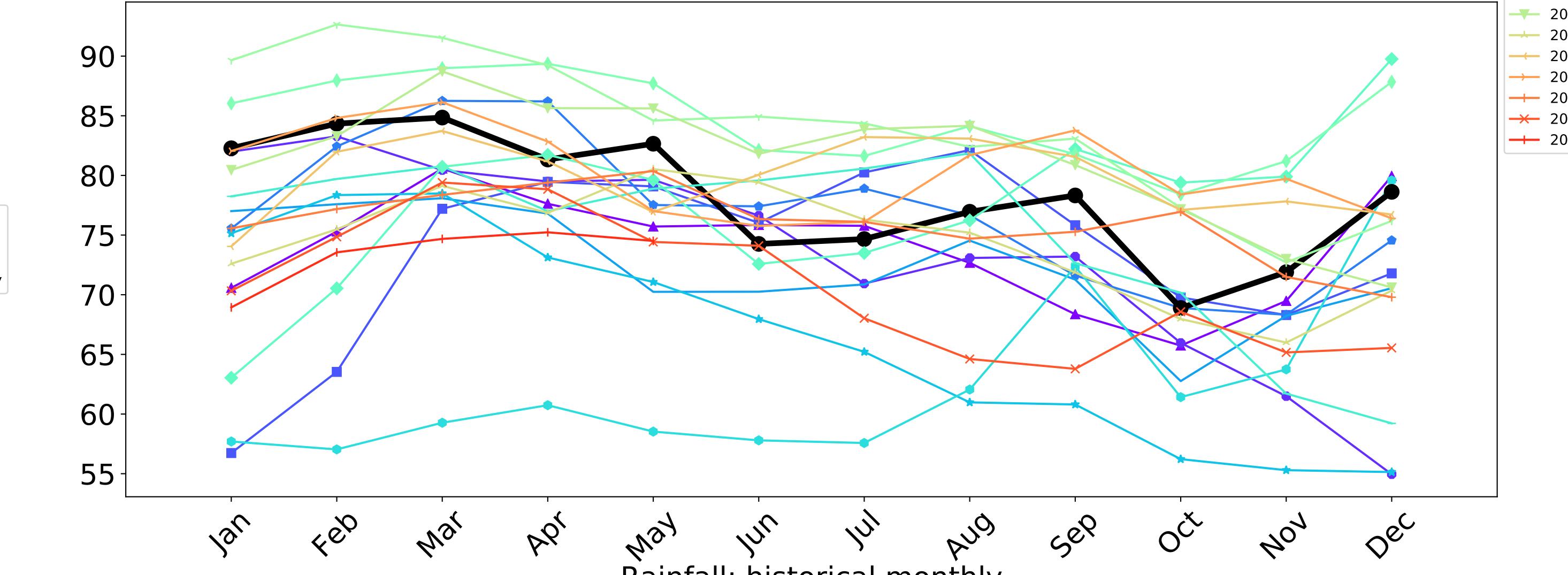
Wind erosion historical monthly area protected (Total Veg Cov >50%)



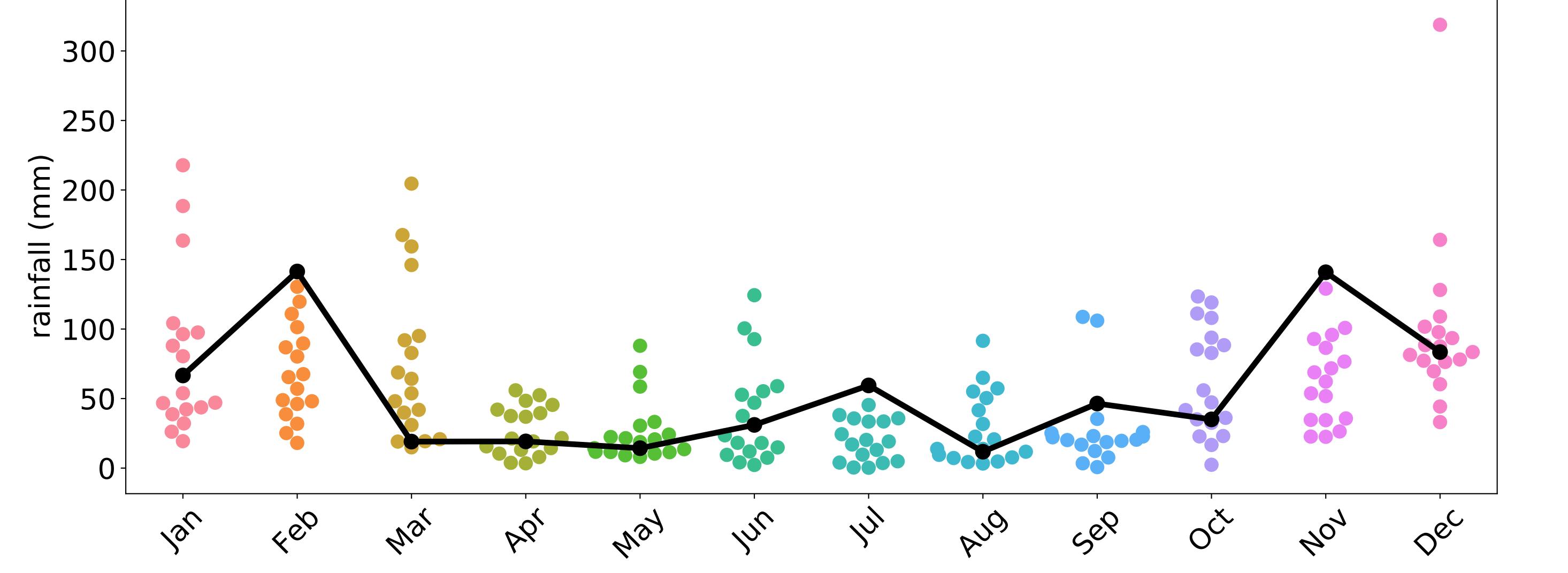
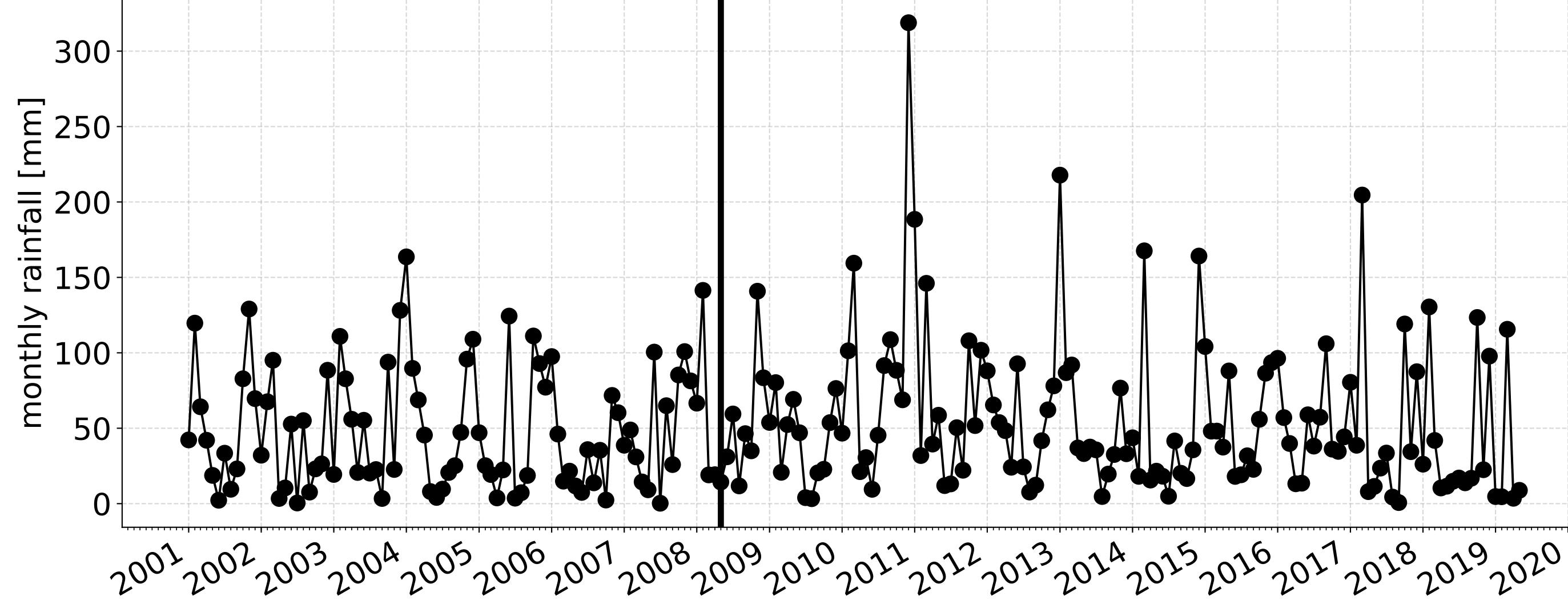
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



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

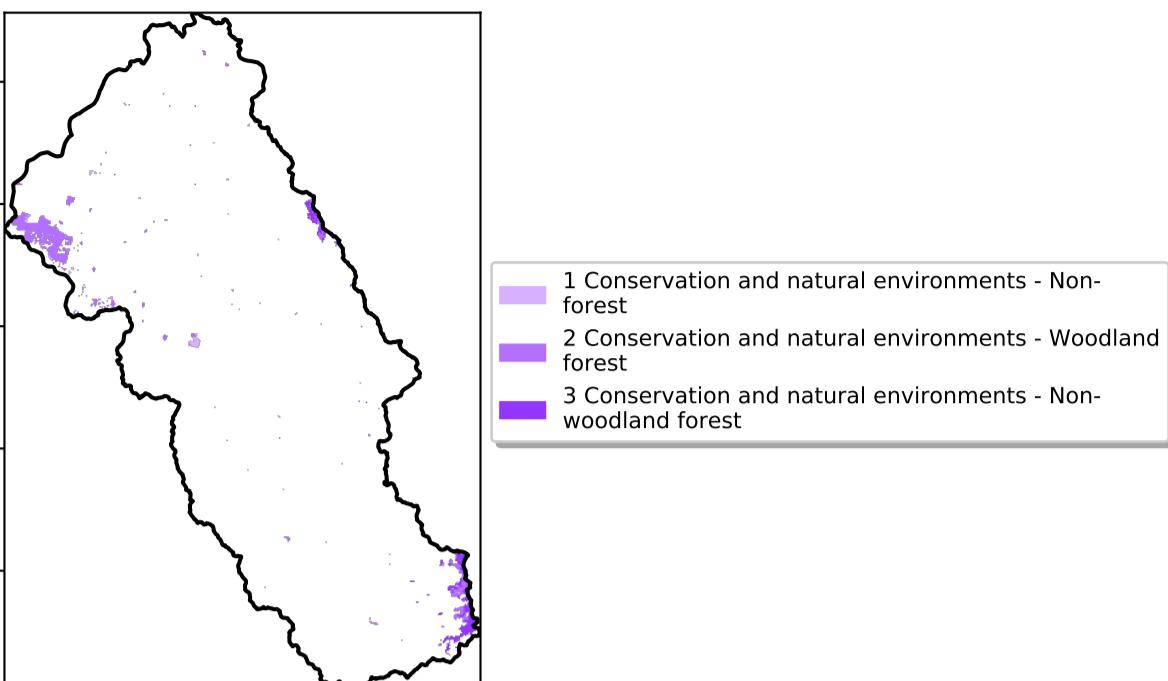


Monthly rainfall from 2001 to 2019

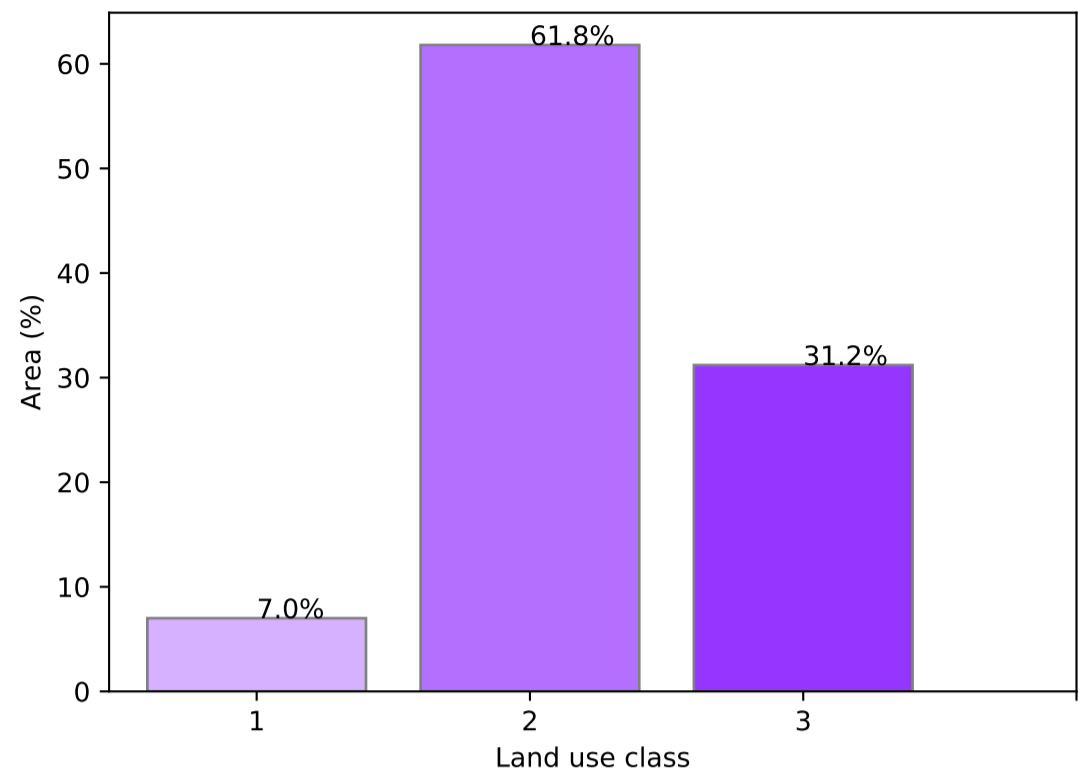


Conservation and natural environments

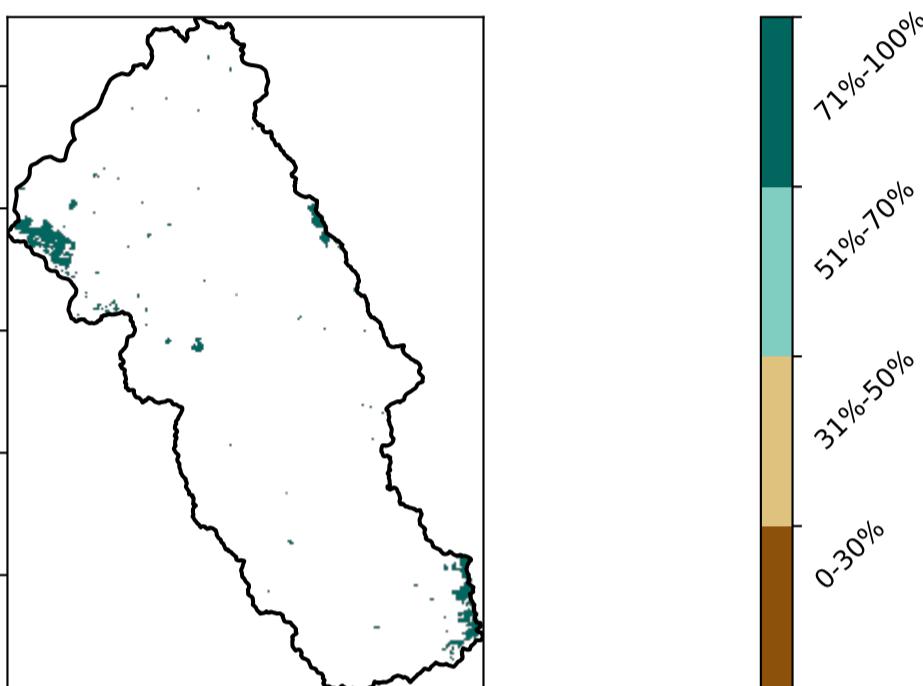
Land use and forest cover



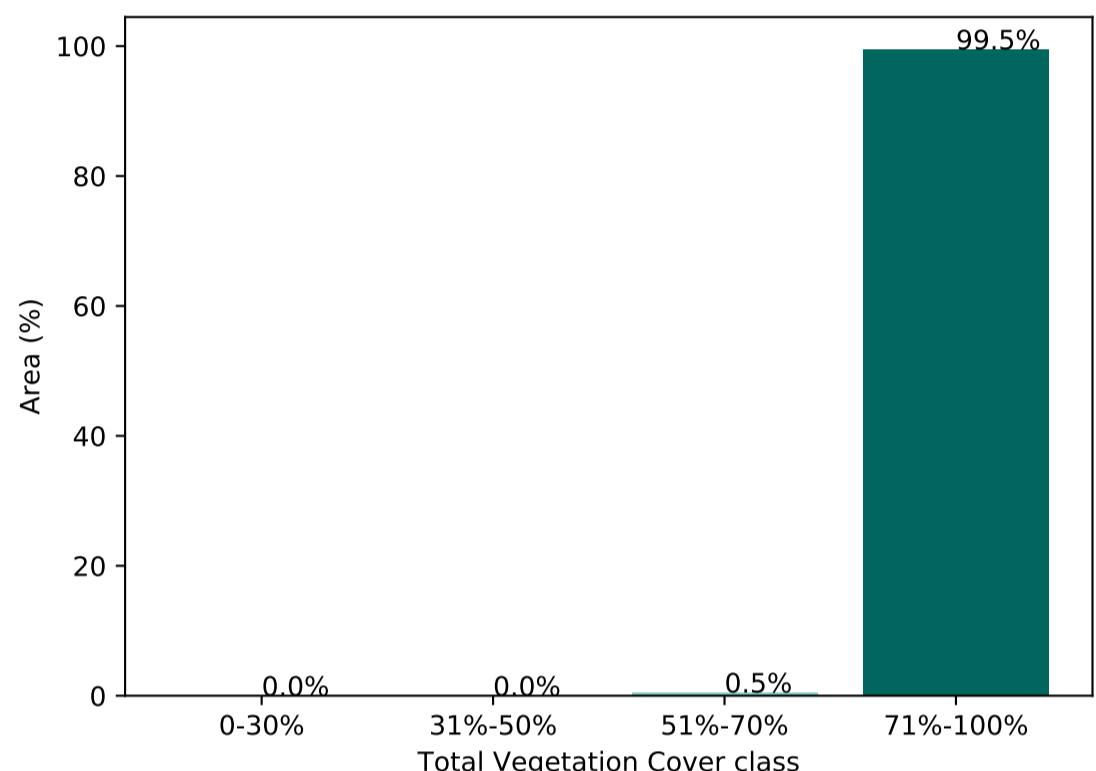
Proportion of each land class in area



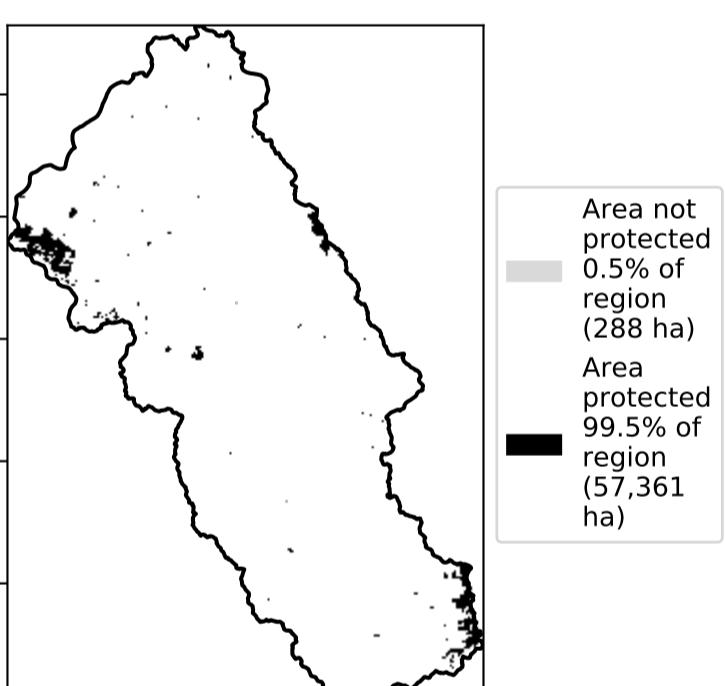
Total Vegetation Cover [%]



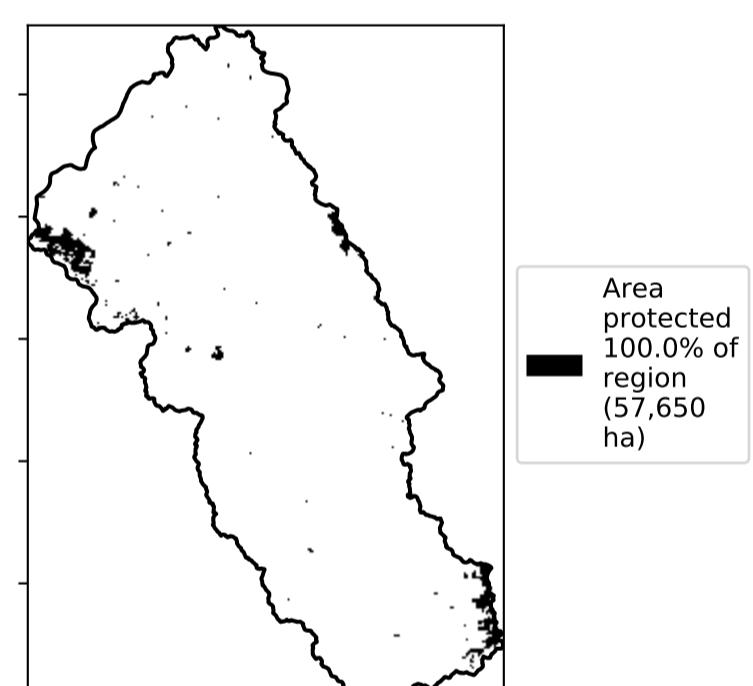
Proportion of vegetation cover class in area



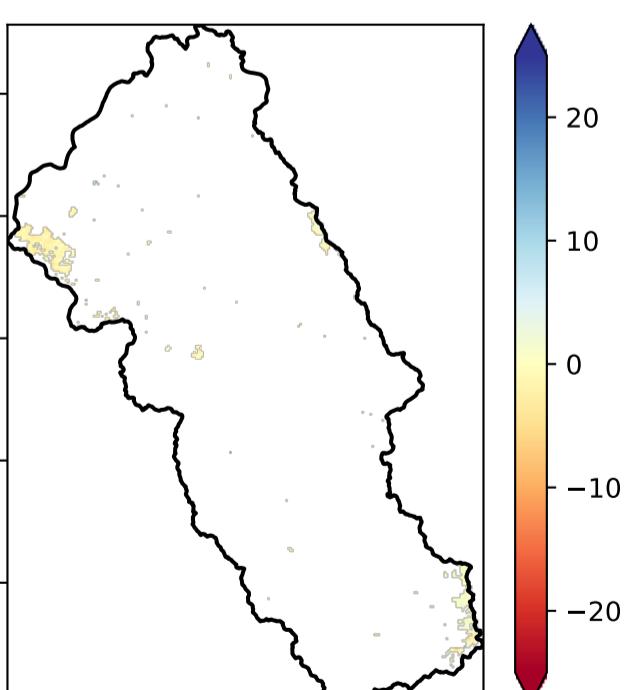
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

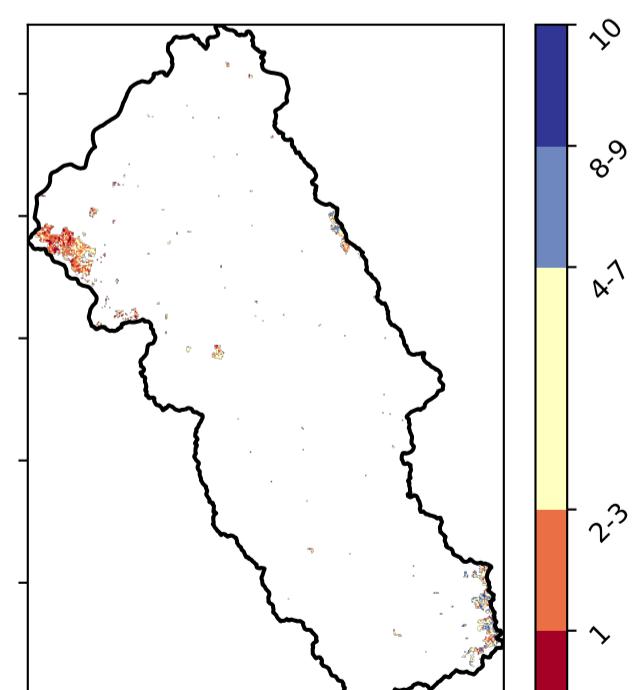


Total Vegetation Cover Anomaly [%]



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Total Vegetation Cover Decile [%]



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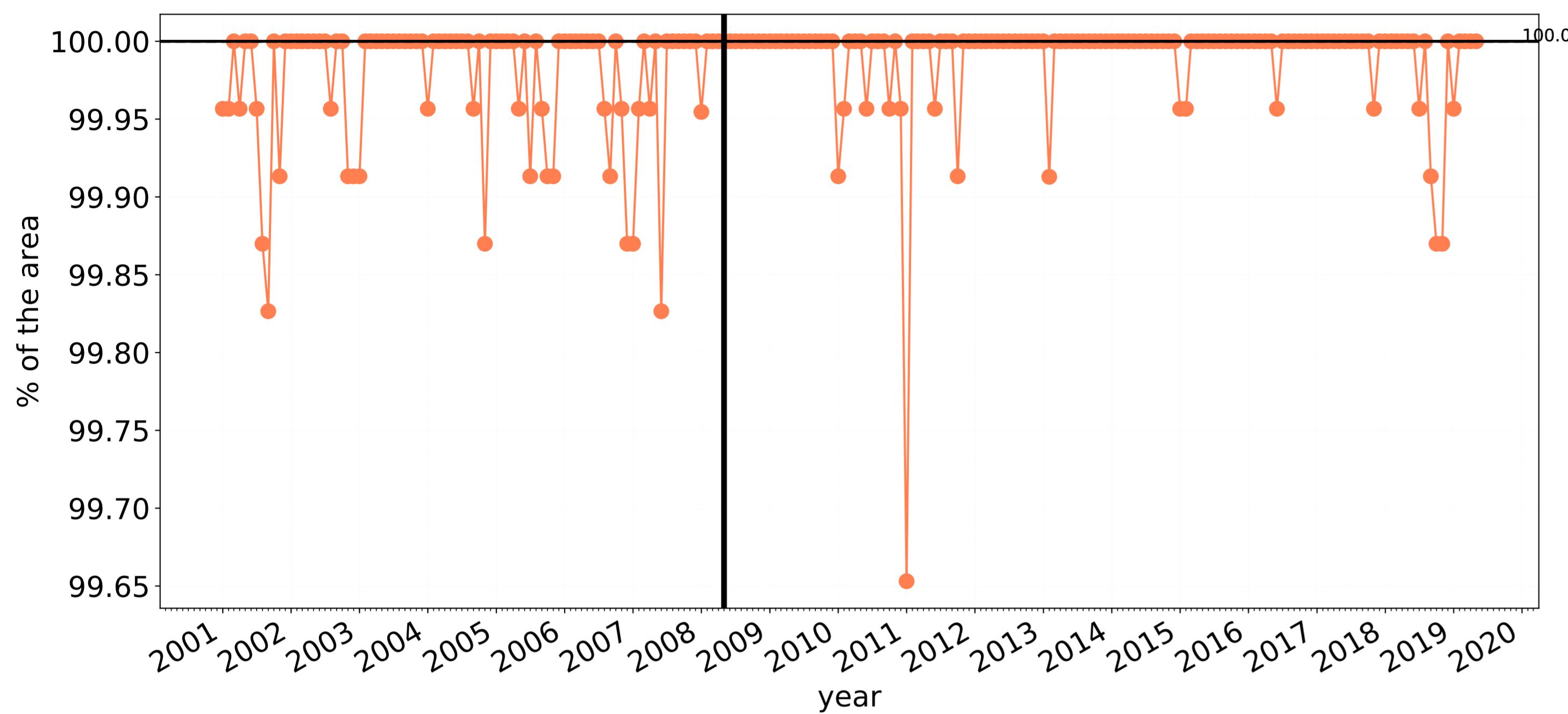
National Landcare Programme



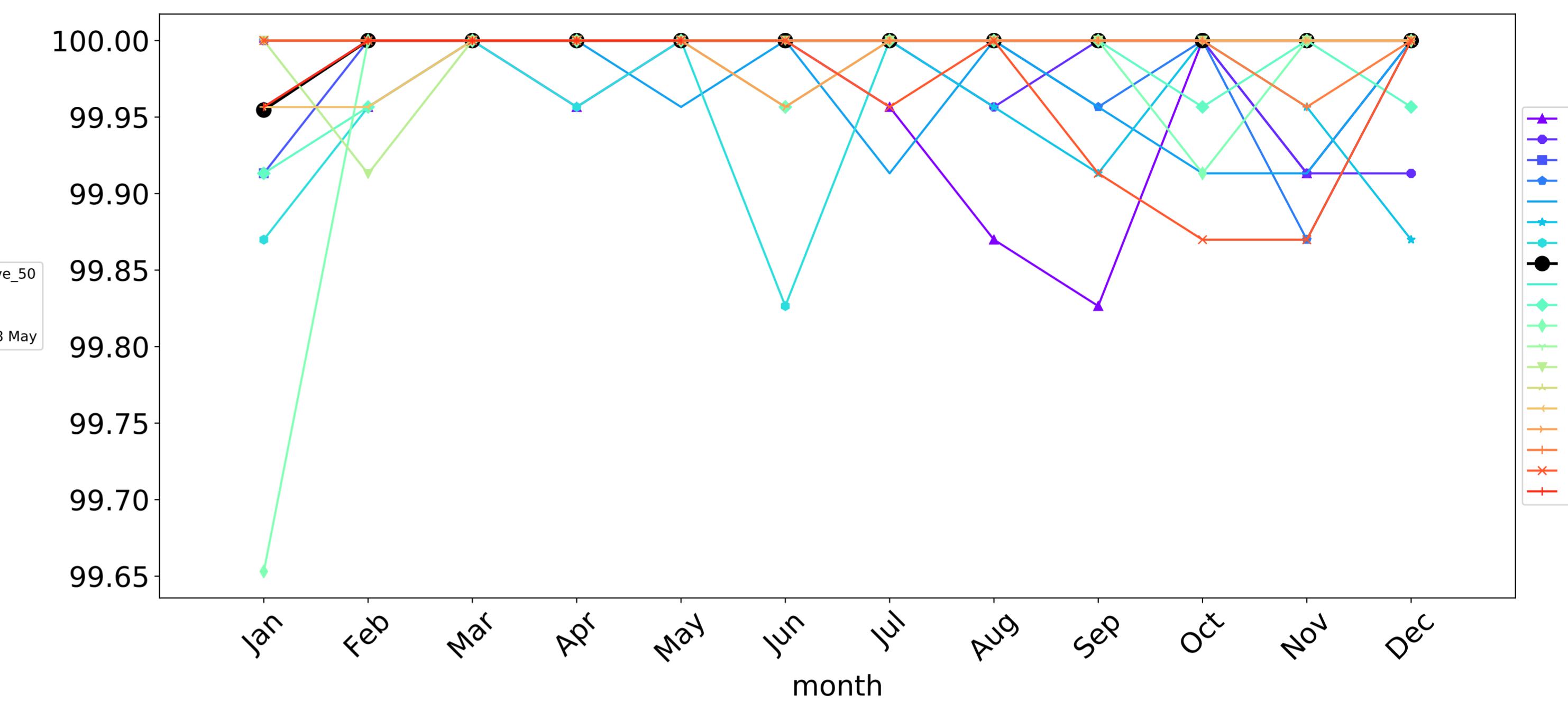
Planning, Industry & Environment

Conservation and natural environments timeseries

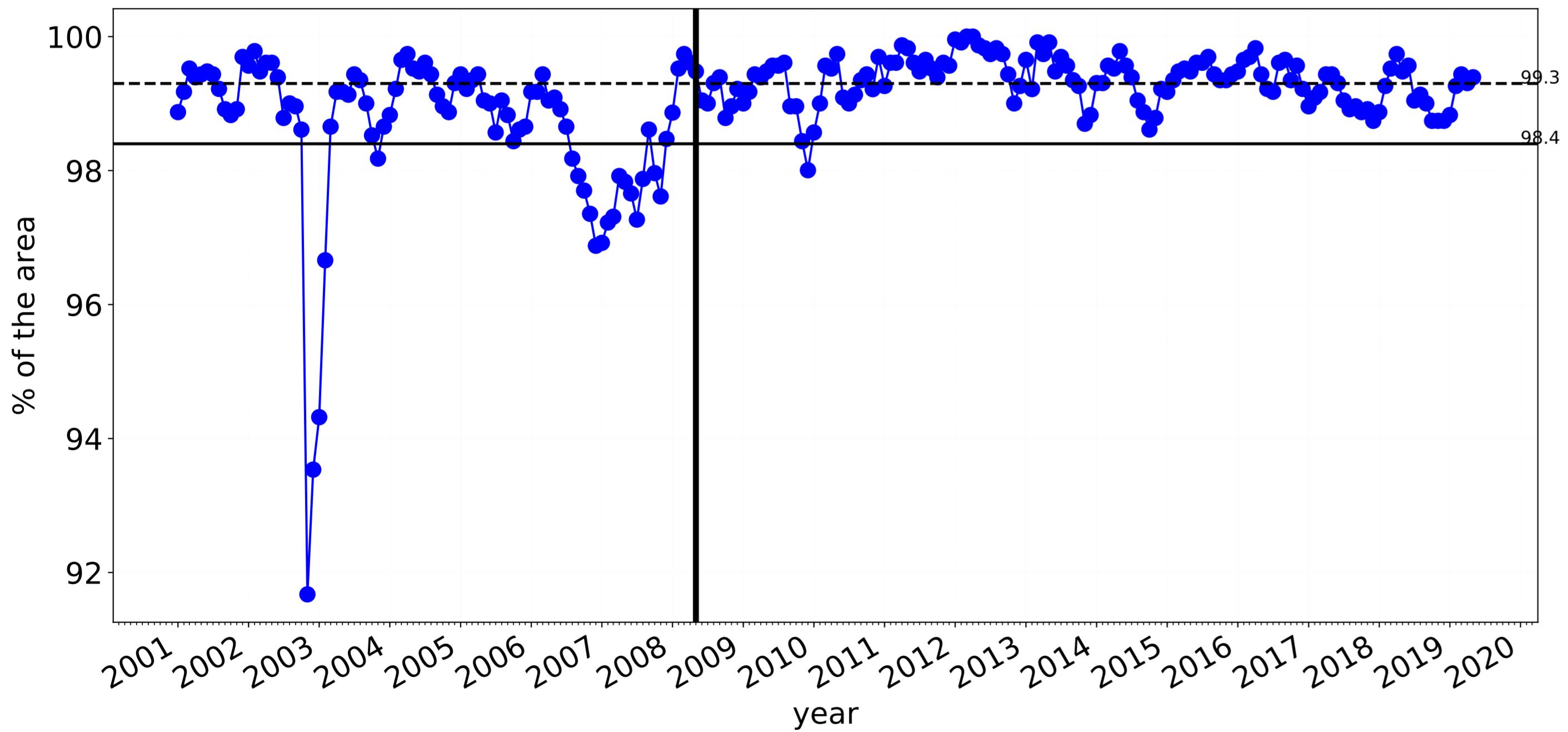
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



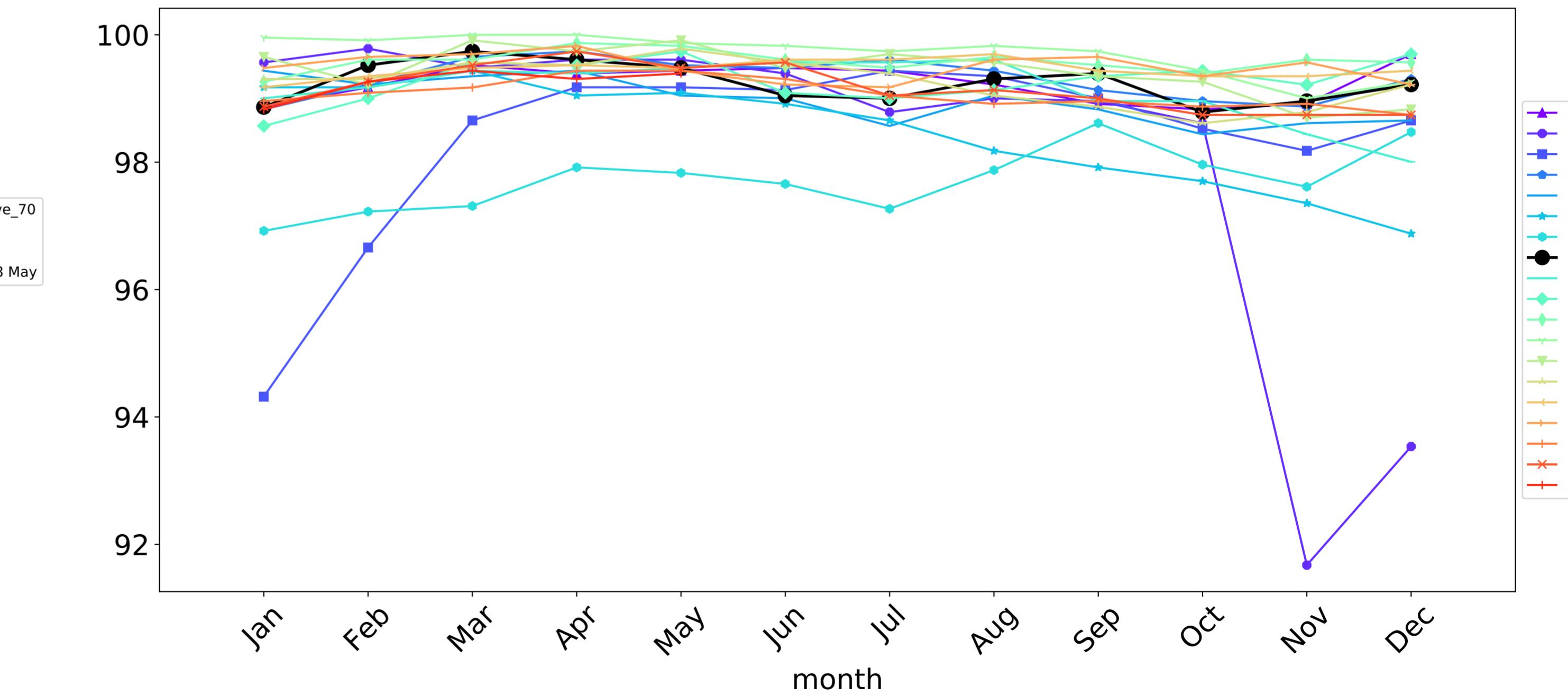
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



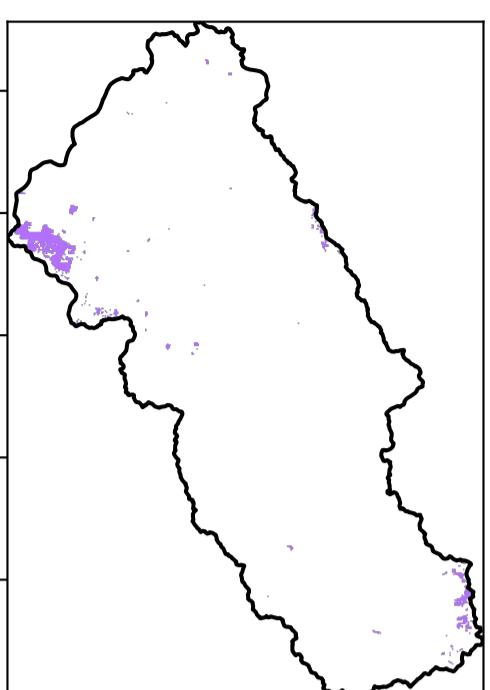
Water erosion historical monthly area protected (Total Veg Cov>70%)



Conservation and natural environments Woodland forest

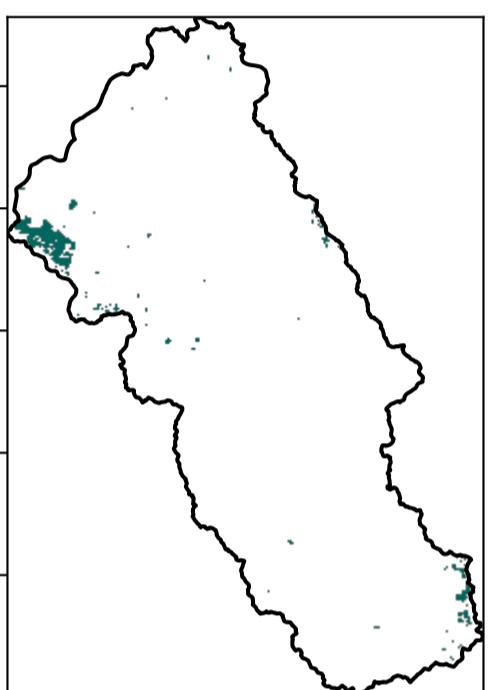
Land use and forest cover

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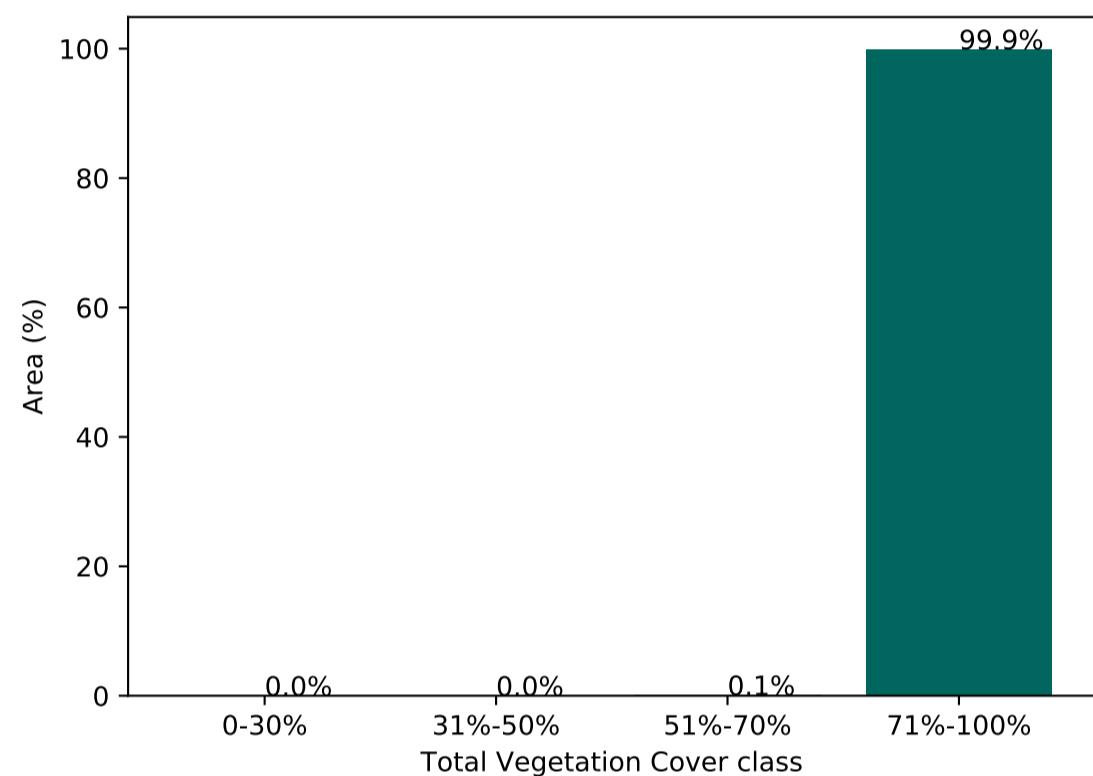
1 Conservation and natural environments - Woodland forest

Total Vegetation Cover [%]

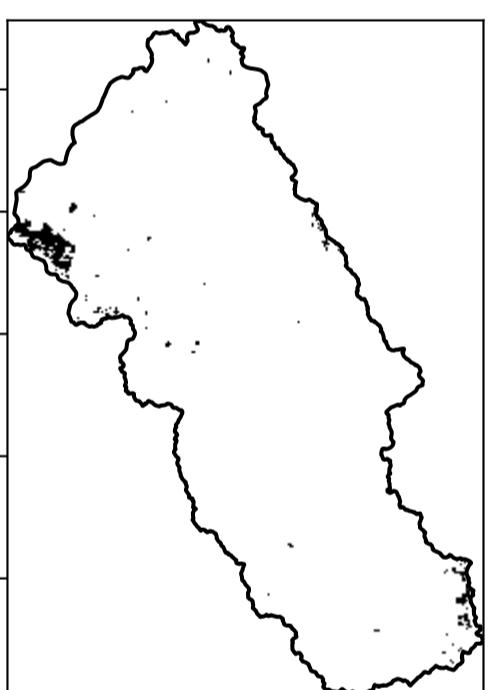


71%-100%
51%-70%
31%-50%
0-30%

Proportion of vegetation cover class in area

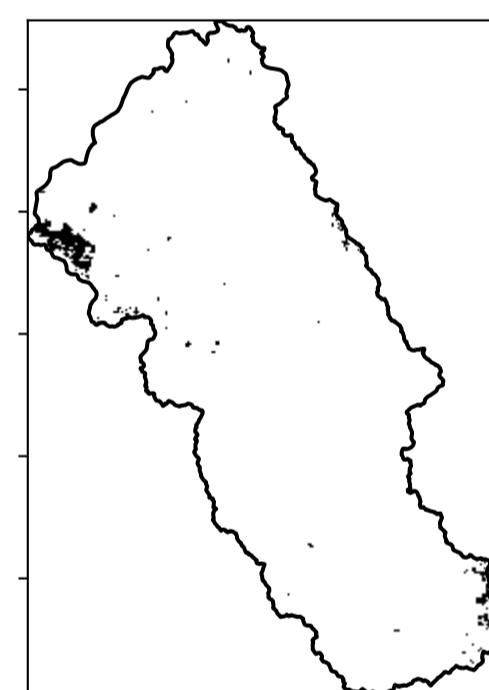


% Area protected from water erosion (>70%)



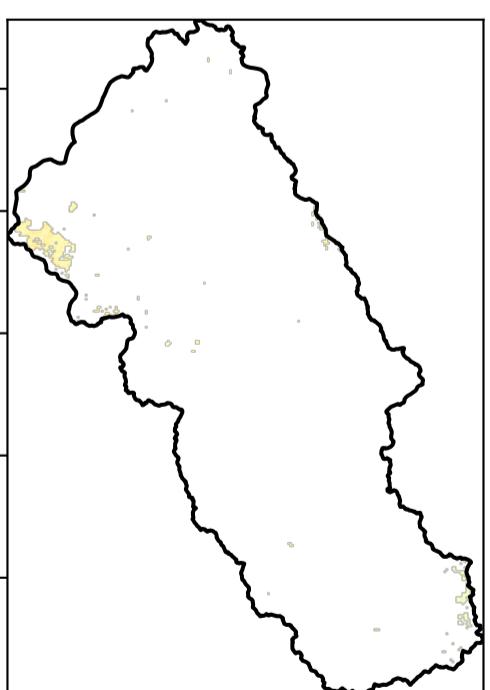
Area not protected
0.1% of region (35 ha)
Area protected
99.9% of region (35,589 ha)

% Area protected from wind erosion (>50%)



Area protected
100.0% of region (35,625 ha)

Total Vegetation Cover Anomaly [%]

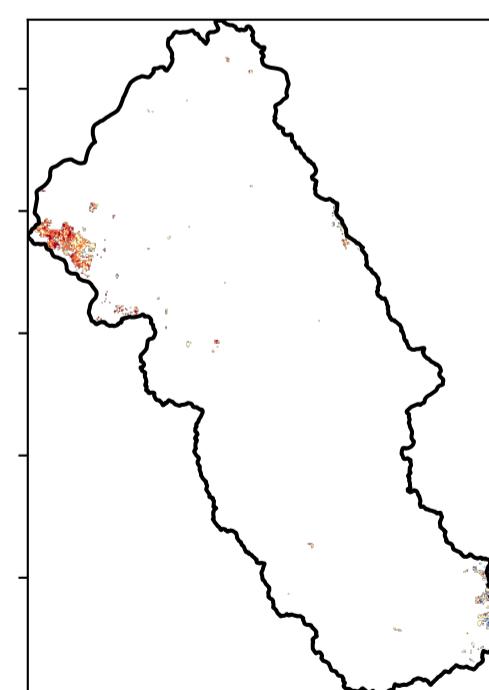


Anomaly shows how many percentage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

20
10
0
-10
-20

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Total Vegetation Cover Decile [%]



10
8-9
4-7
2-3
1



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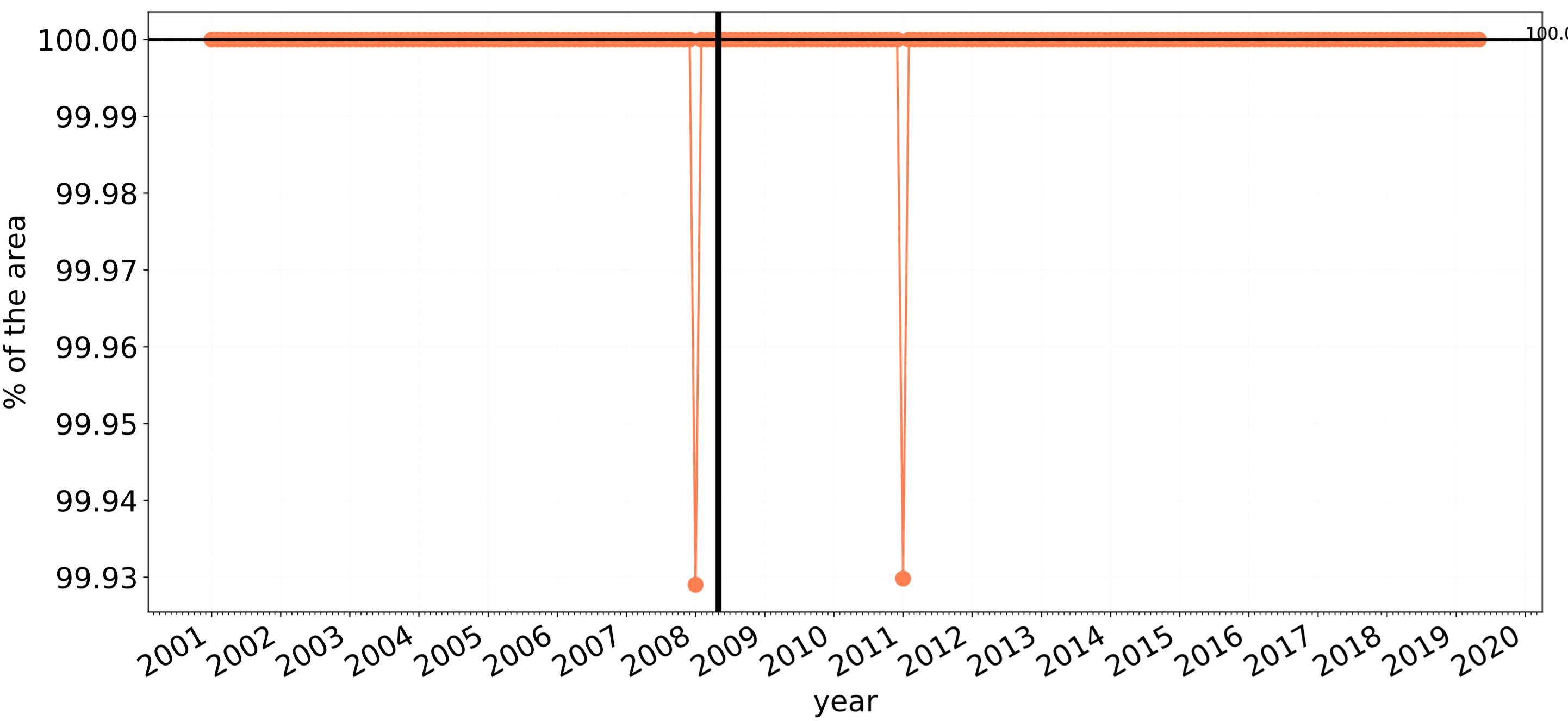
National
Landcare
Programme



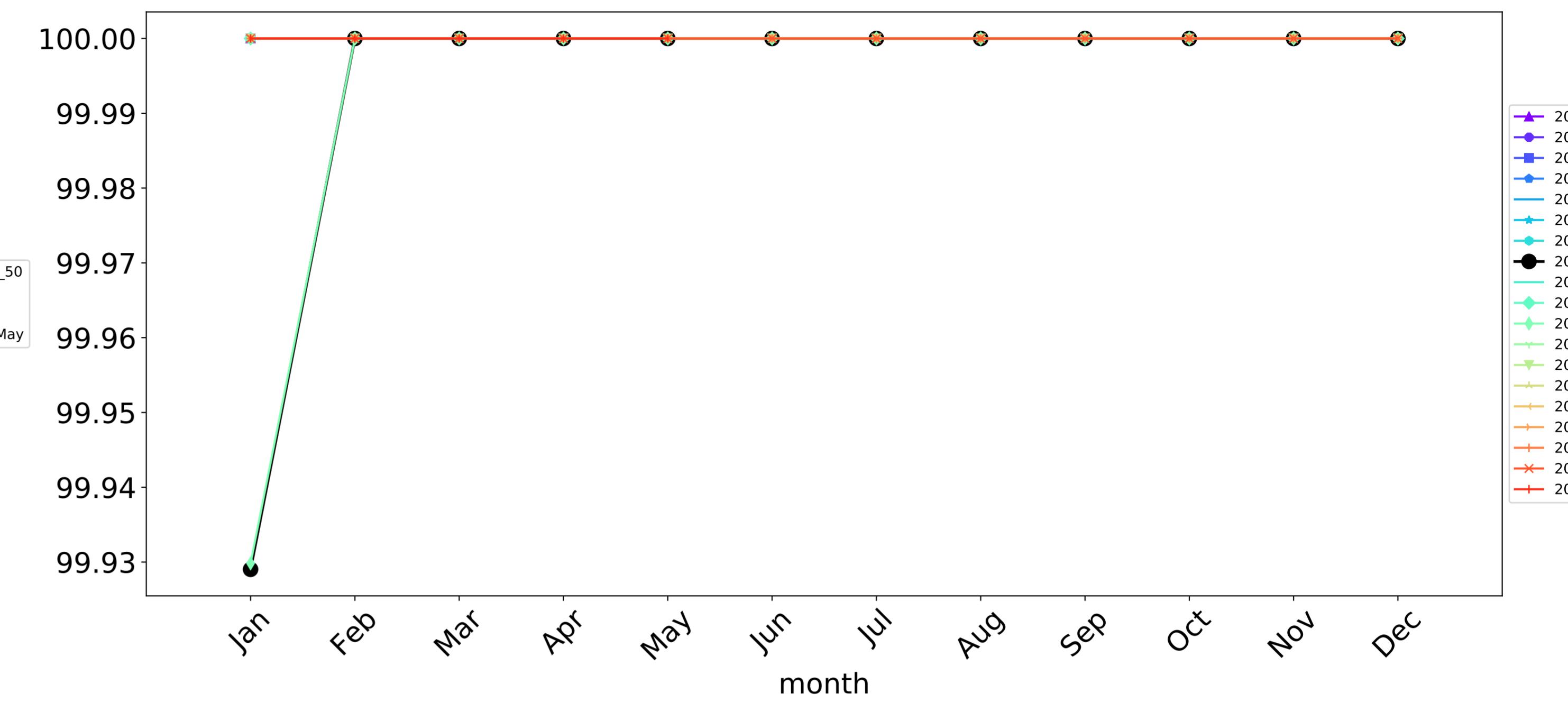
Planning,
Industry &
Environment

Conservation and natural environments Woodland forest timeseries

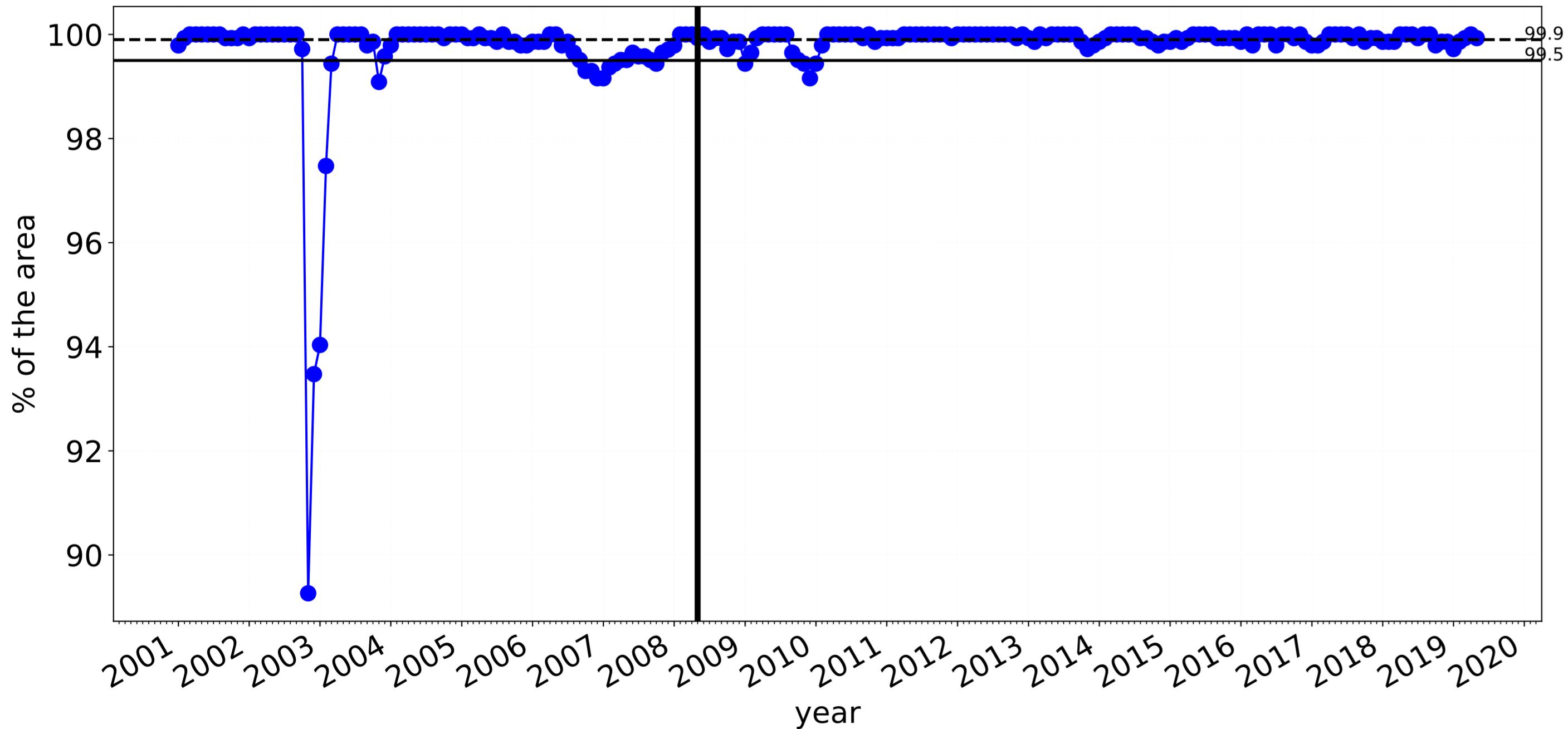
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



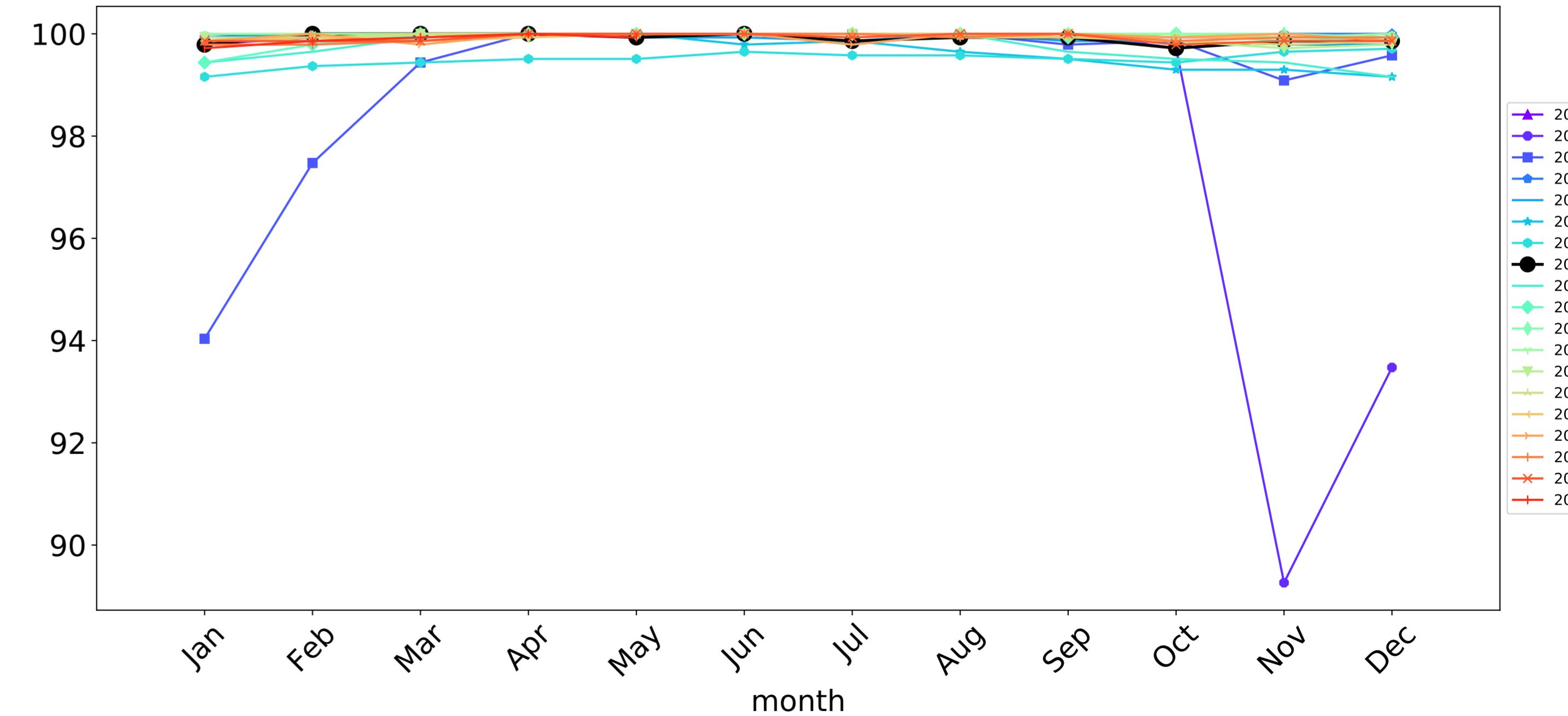
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



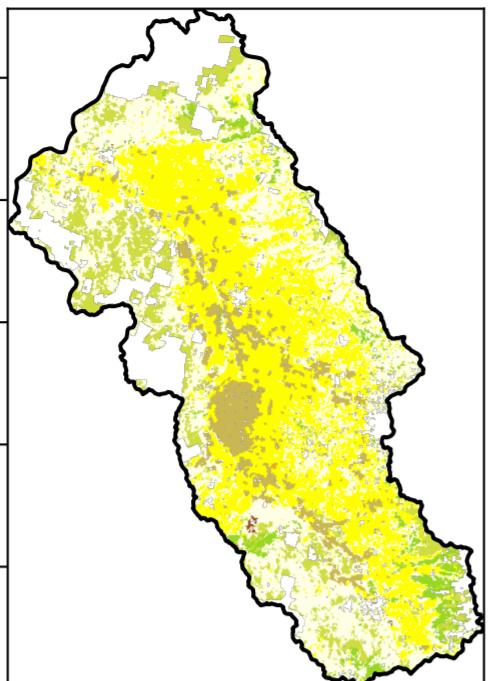
Water erosion historical monthly area protected (Total Veg Cov>70%)



Agriculture

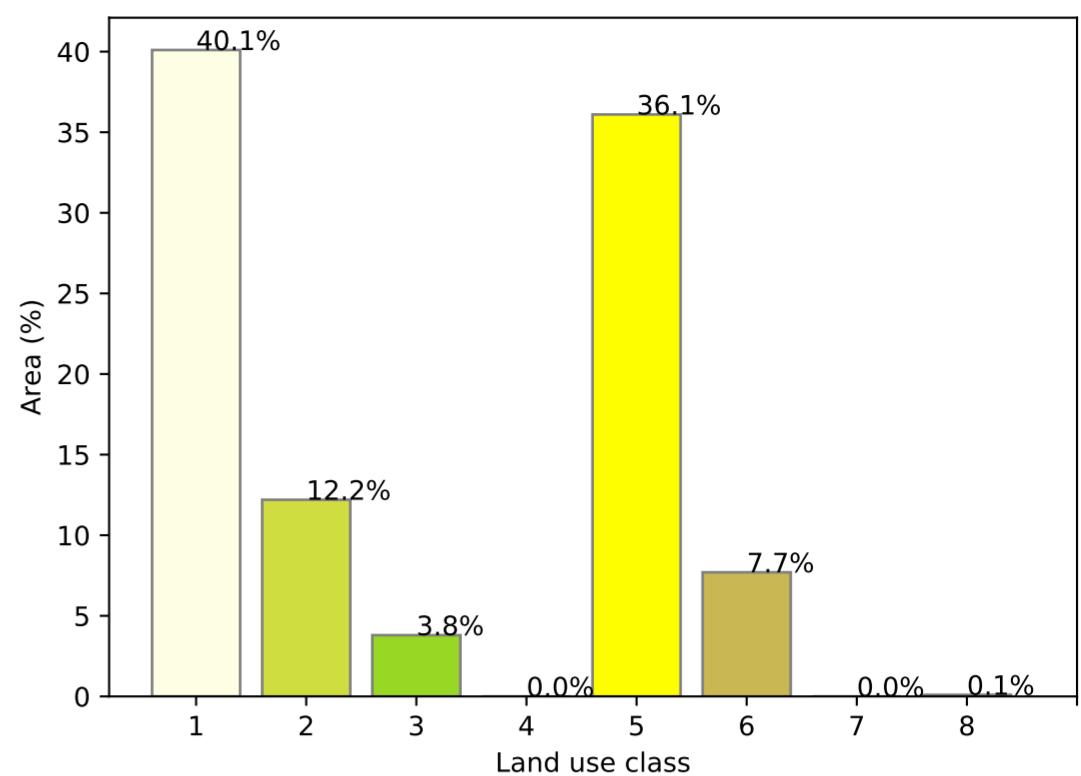
Land use and forest cover

Catchment Scale
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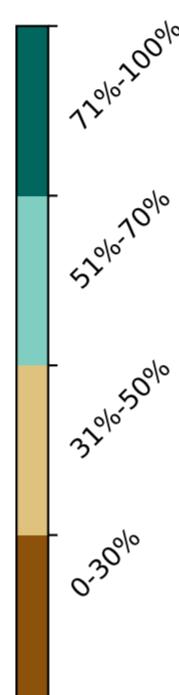
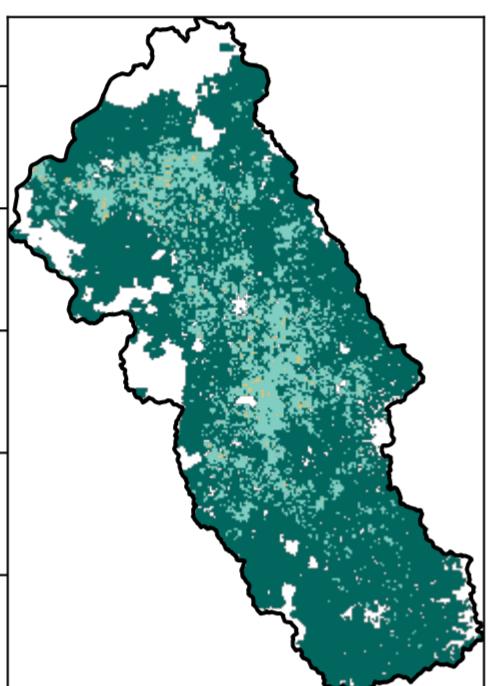


- 1 Agriculture - Grazing - Non forest
- 2 Agriculture - Grazing - Woodland forest
- 3 Agriculture - Grazing - Non-woodland forest
- 4 Agriculture - Grazing - Irrigated
- 5 Agriculture - Cropping - Non-irrigated
- 6 Agriculture - Cropping - Irrigated
- 7 Agriculture - Horticulture - Non-irrigated
- 8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

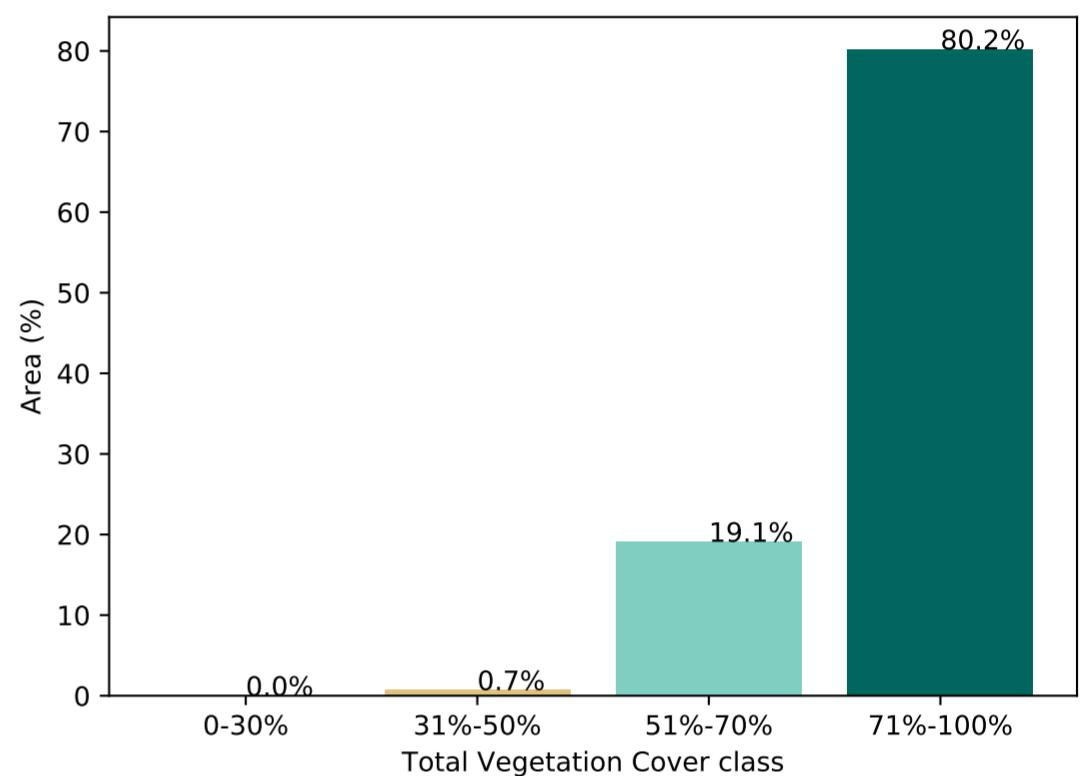
Proportion of each land class in area



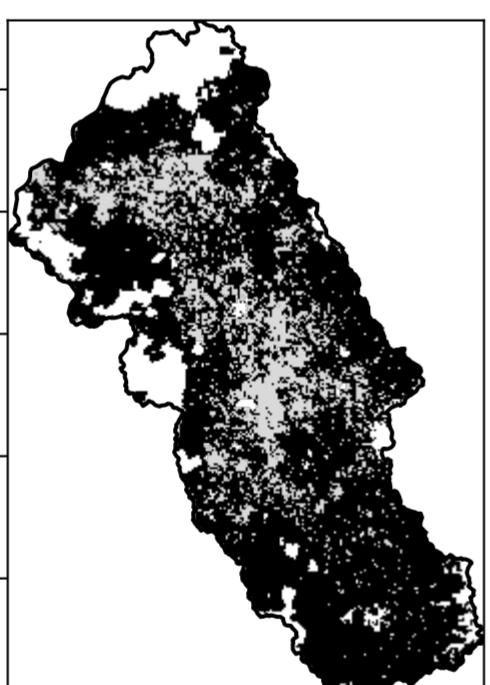
Total Vegetation Cover [%]



Proportion of vegetation cover class in area

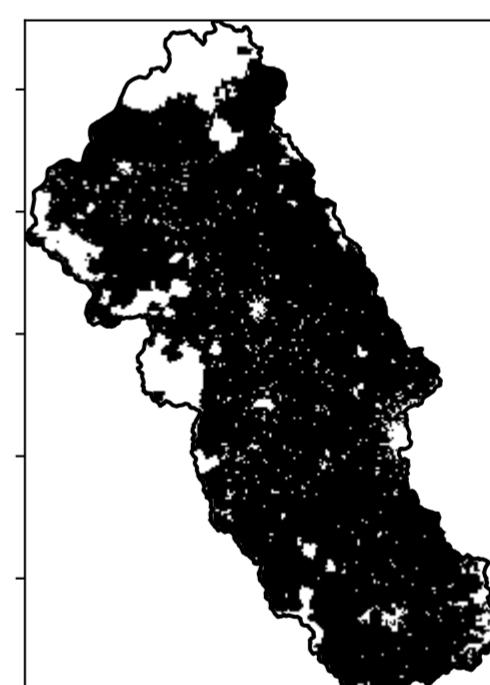


% Area protected from water erosion (>70%)



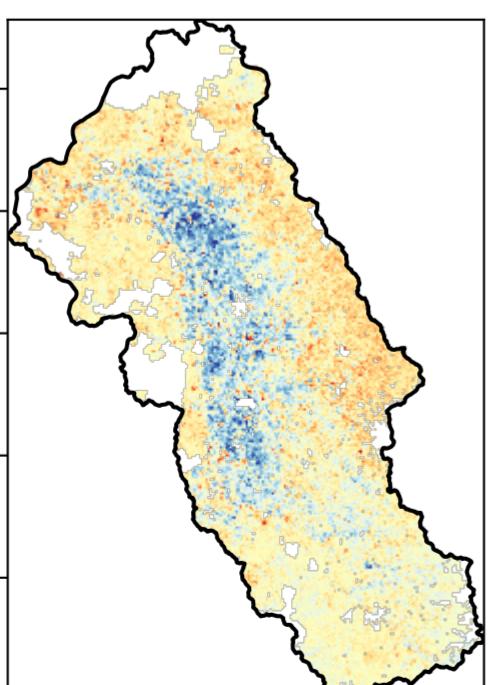
- Area not protected 19.8% of region (412,429 ha)
- Area protected 80.2% of region (1,670,545 ha)

% Area protected from wind erosion (>50%)

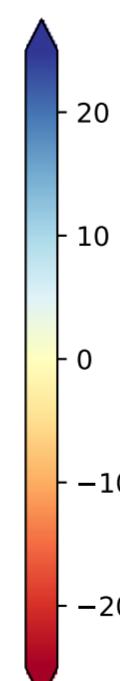


- Area not protected 1.0% of region (20,829 ha)
- Area protected 99.0% of region (2,062,145 ha)

Total Vegetation Cover Anomaly [%]

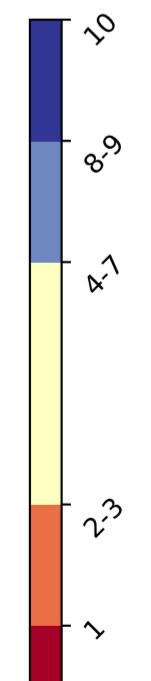
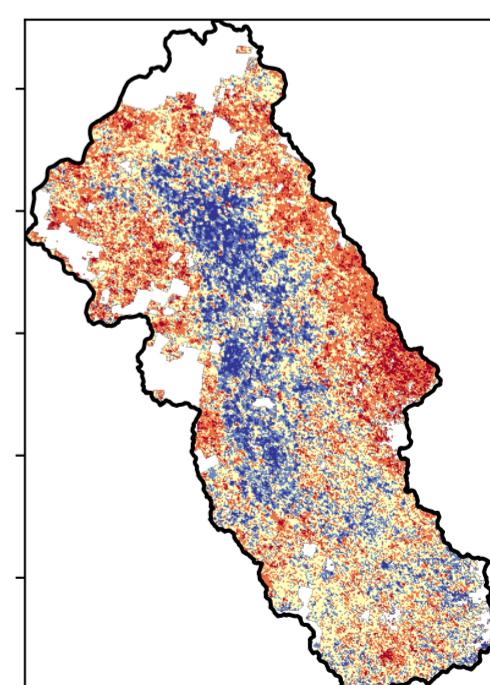


Anomaly shows how many percentage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



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Total Vegetation Cover Decile [%]



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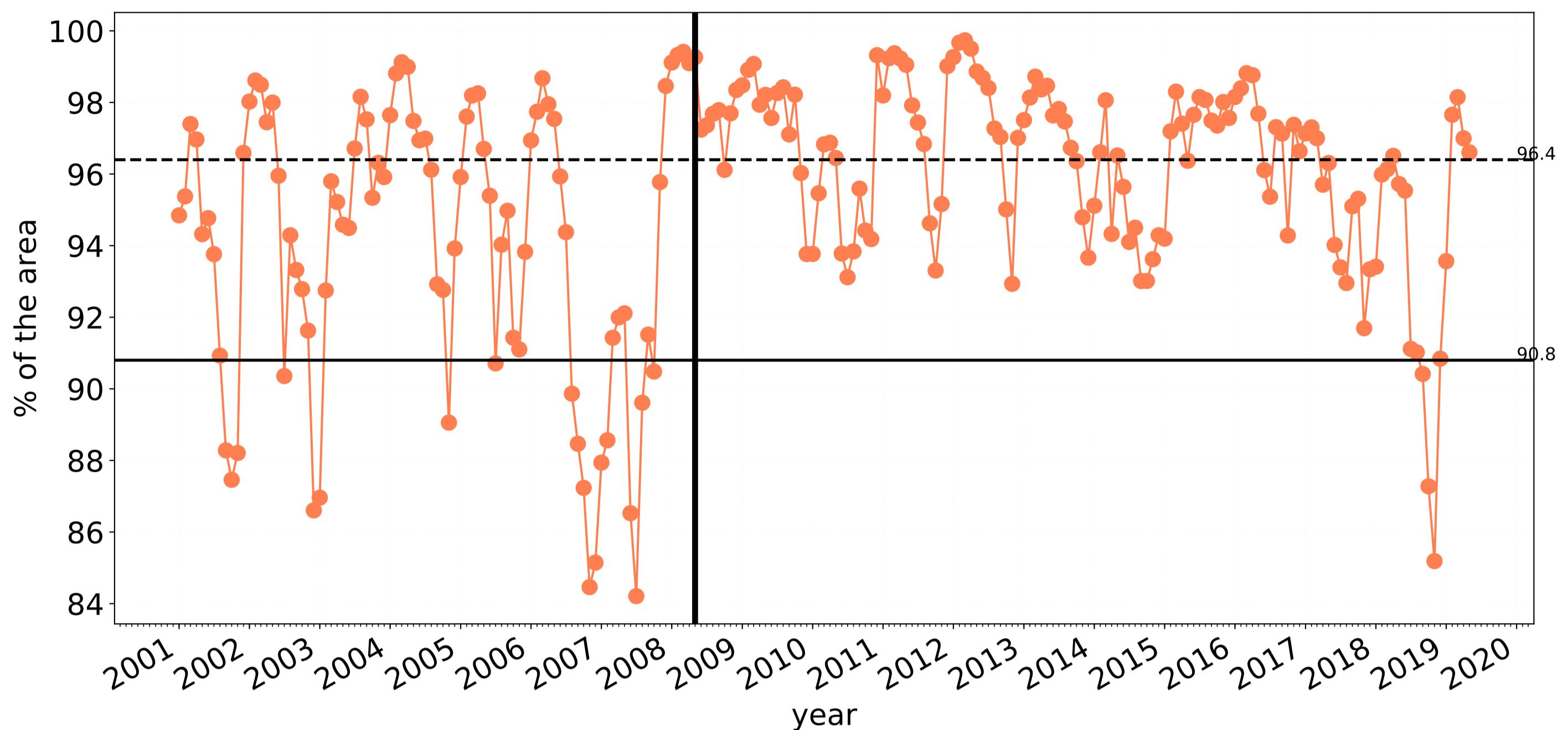
National
Landcare
Programme



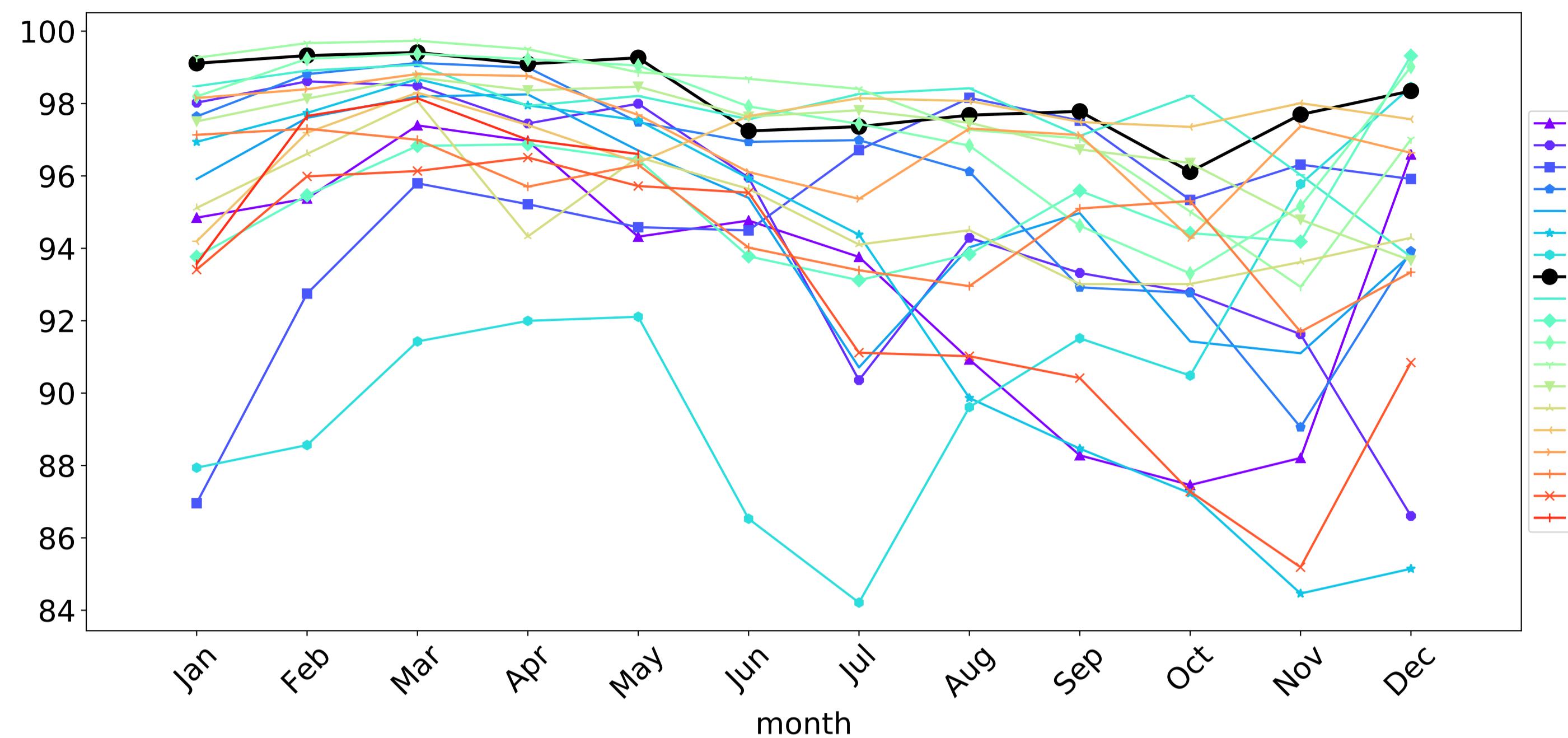
Planning,
Industry &
Environment

Agriculture timeseries

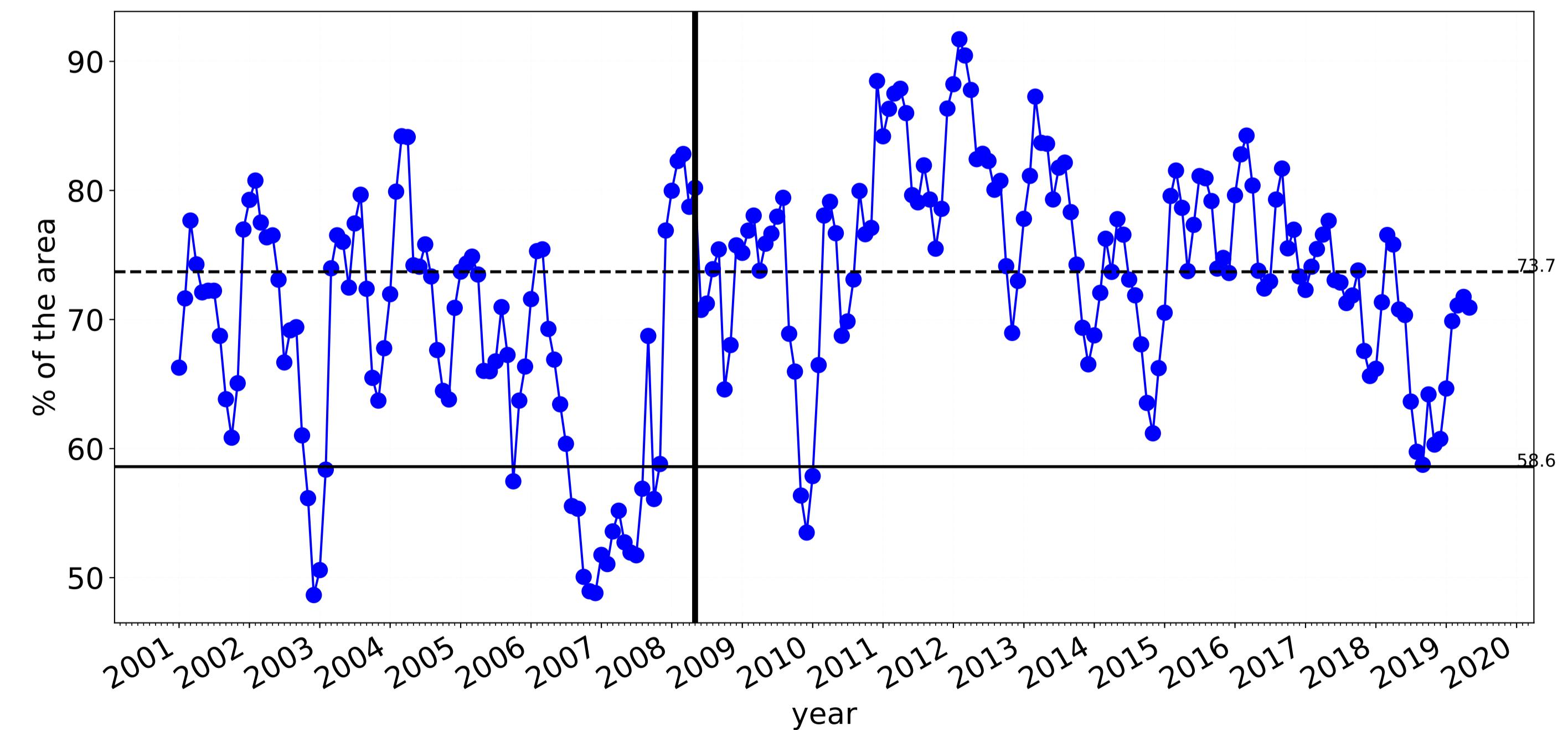
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



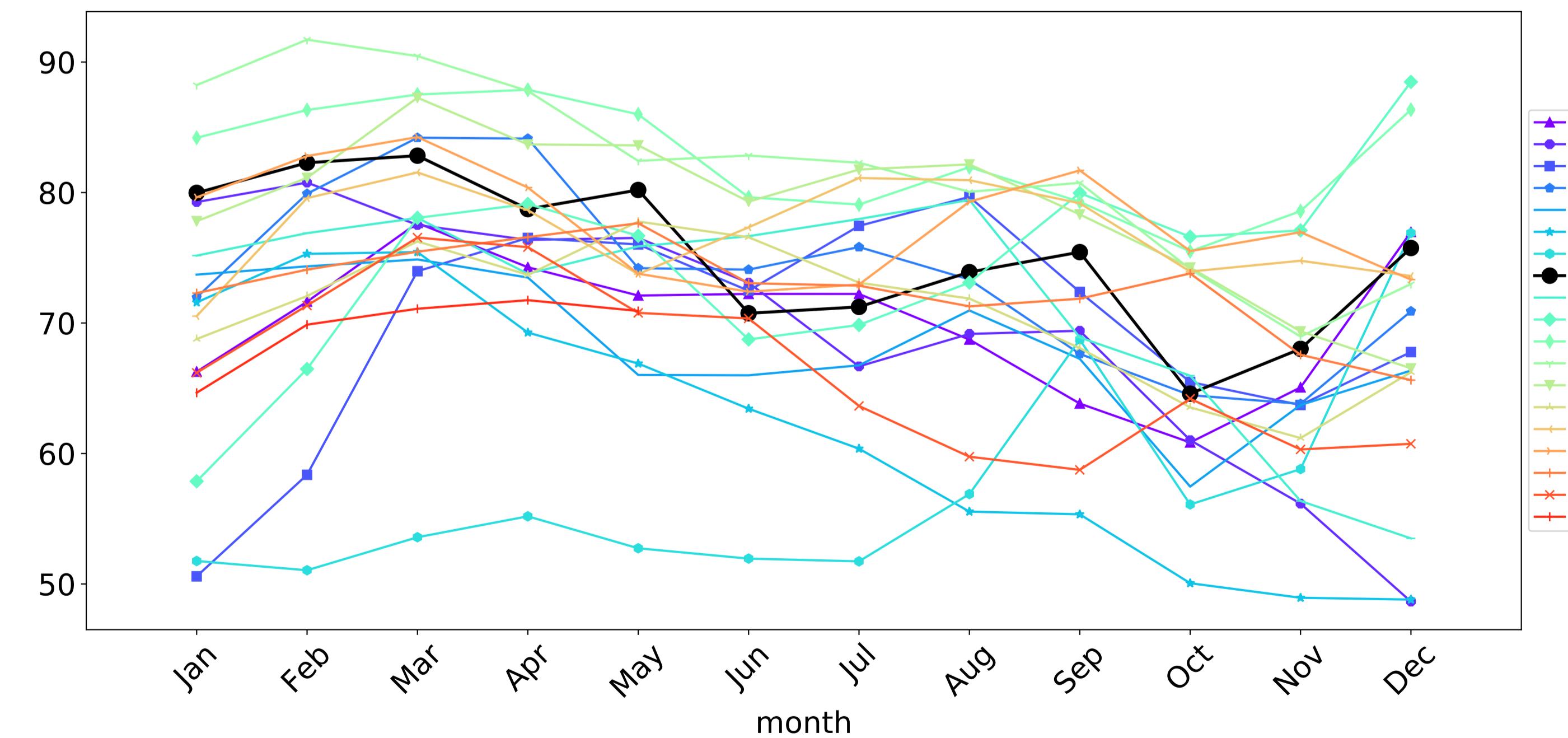
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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

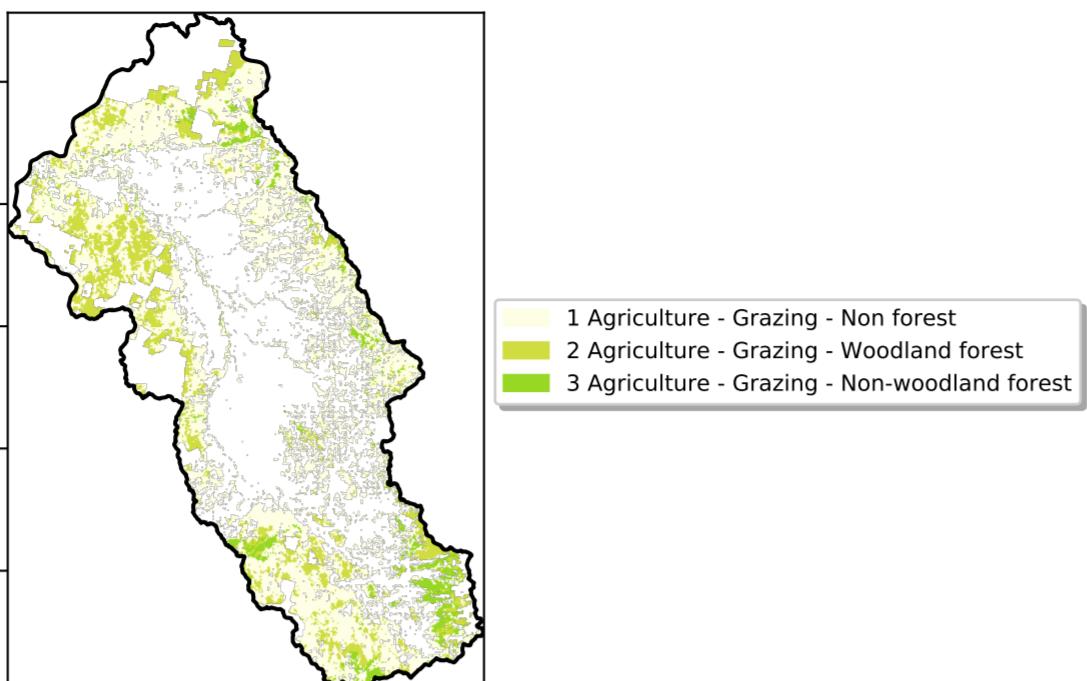


Water erosion historical monthly area protected (Total Veg Cov>70%)

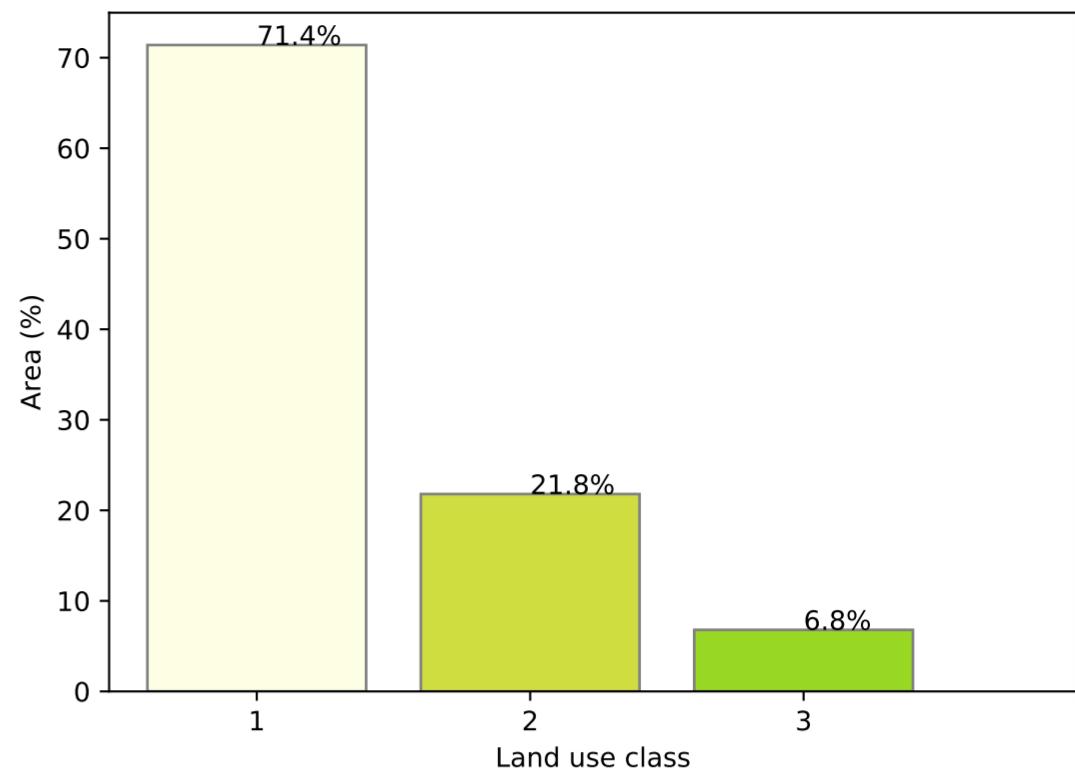


Grazing

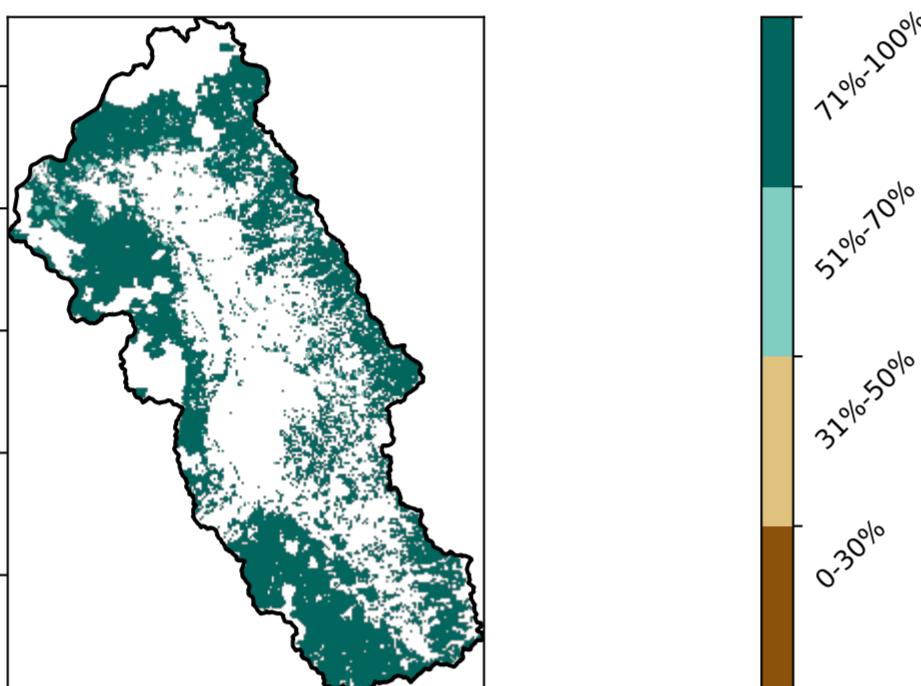
Land use and forest cover



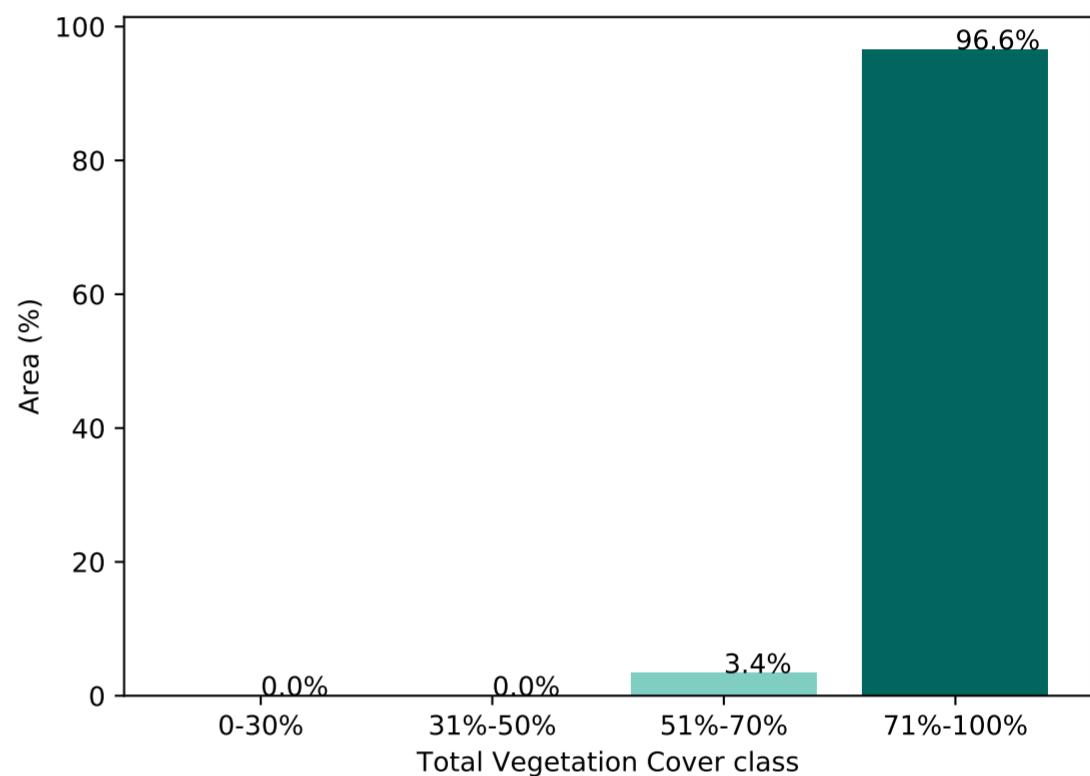
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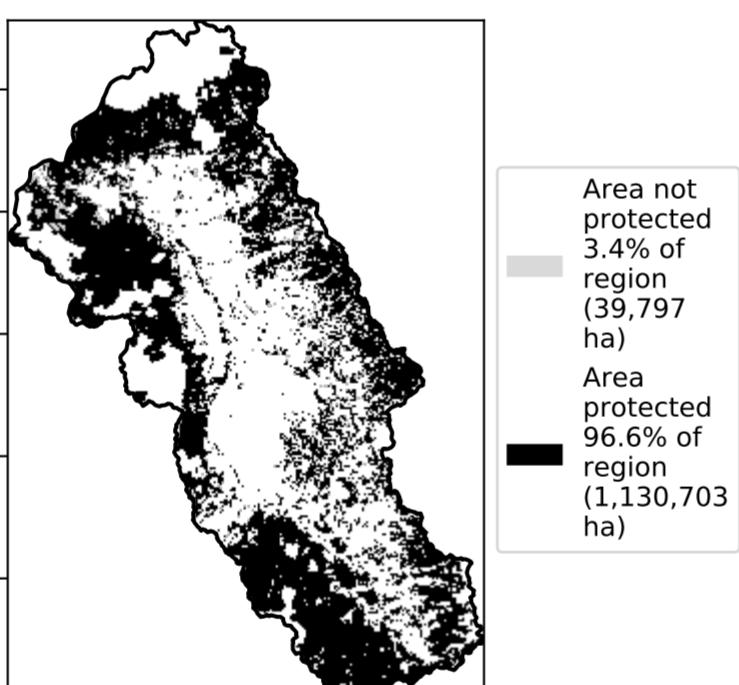
Total Vegetation Cover [%]



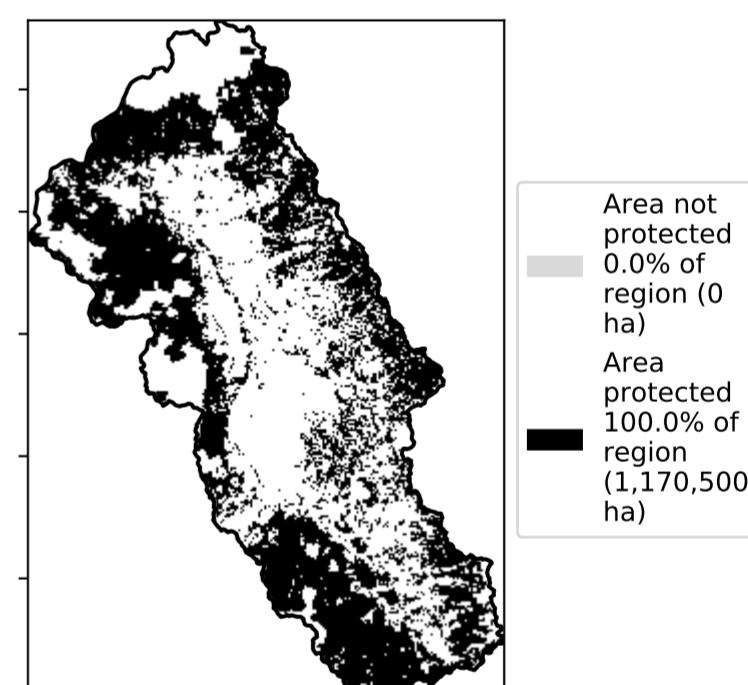
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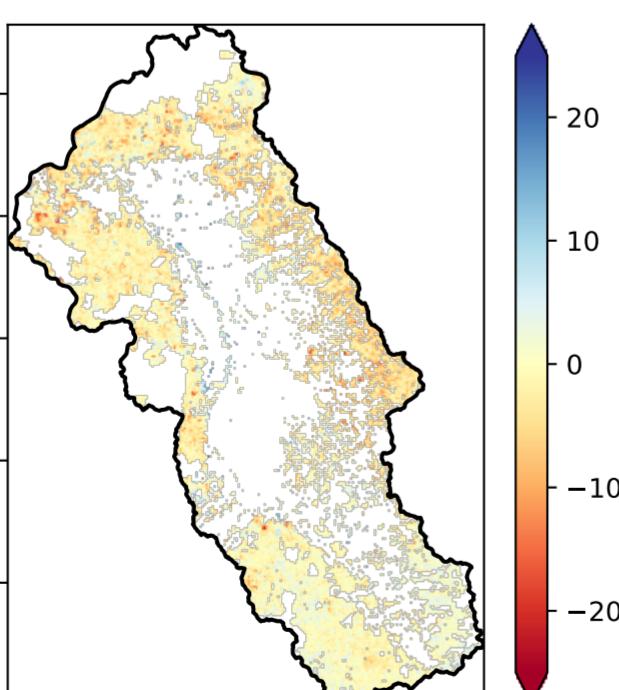
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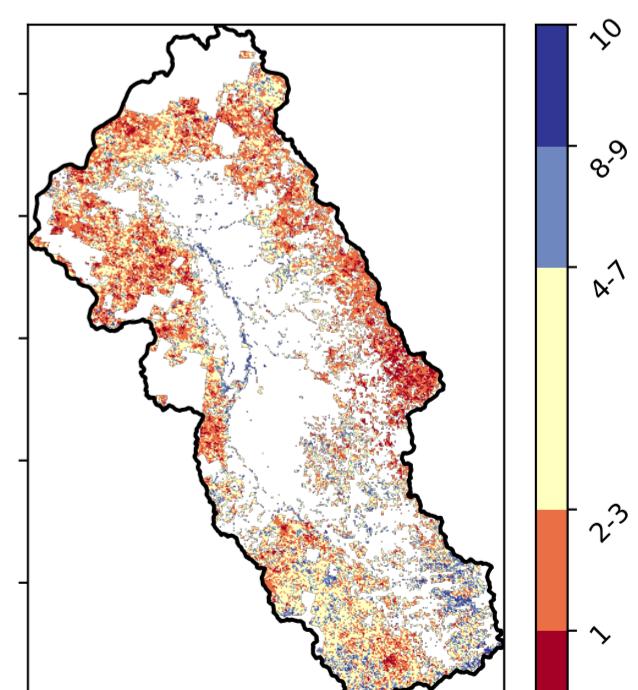


Total Vegetation Cover Anomaly [%]



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Total Vegetation Cover Decile [%]



CSIRO
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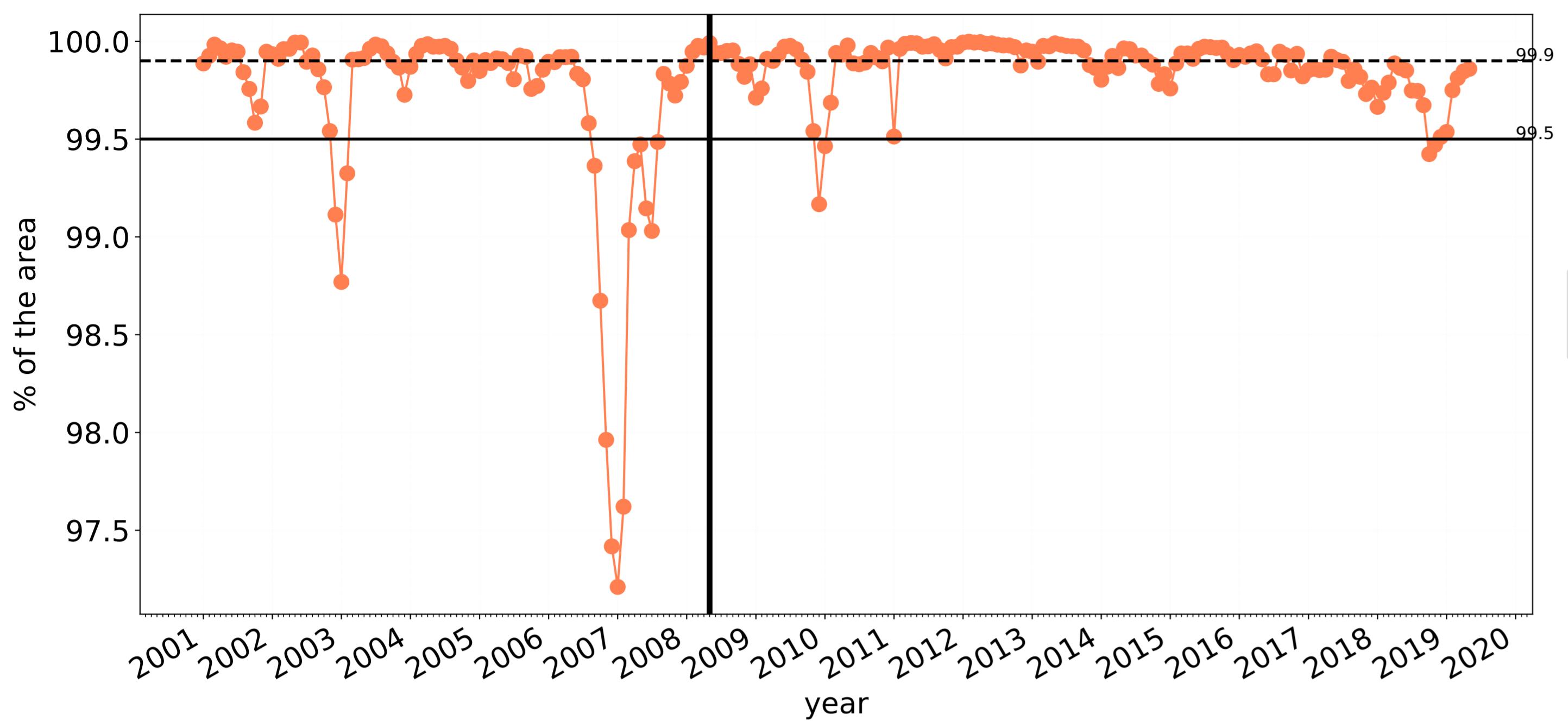
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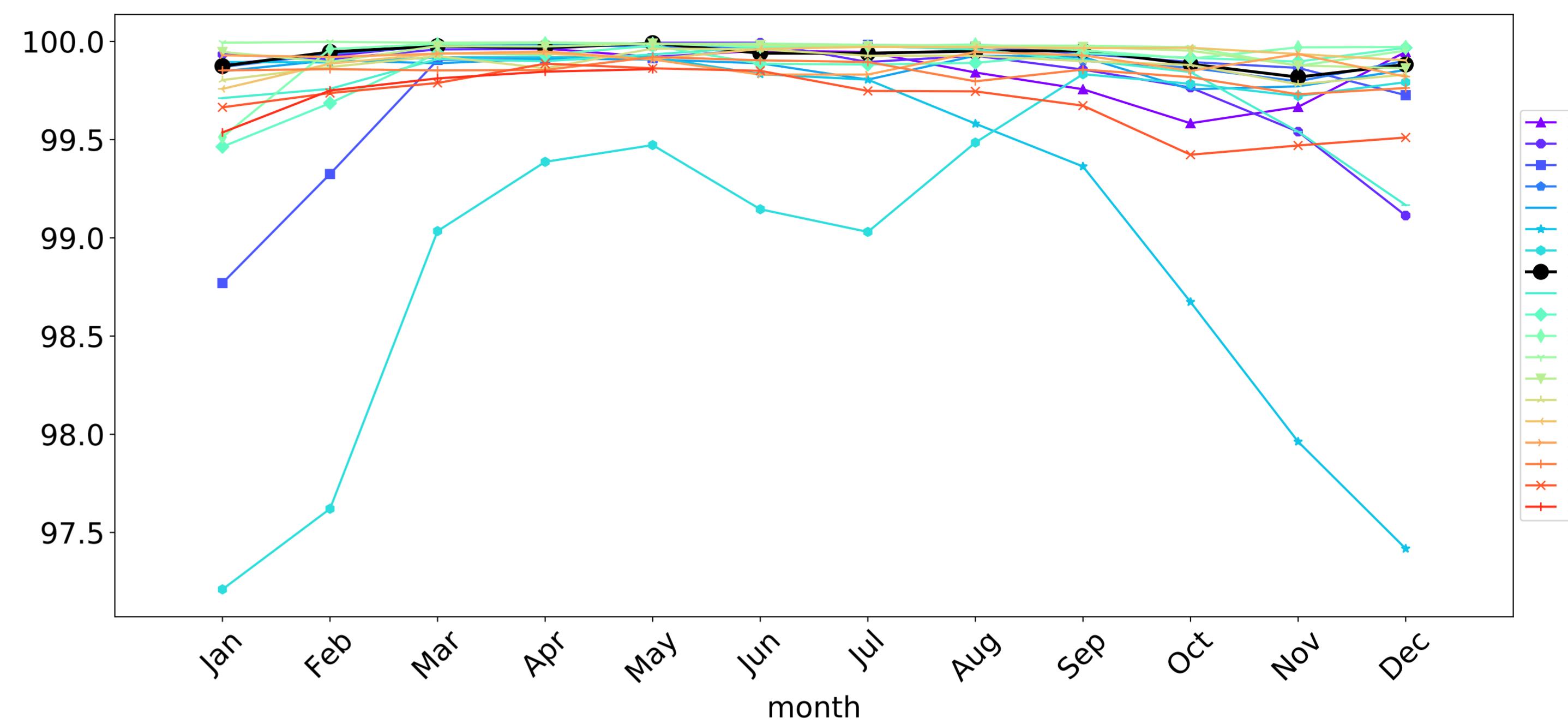
Planning,
Industry &
Environment

Grazing timeseries

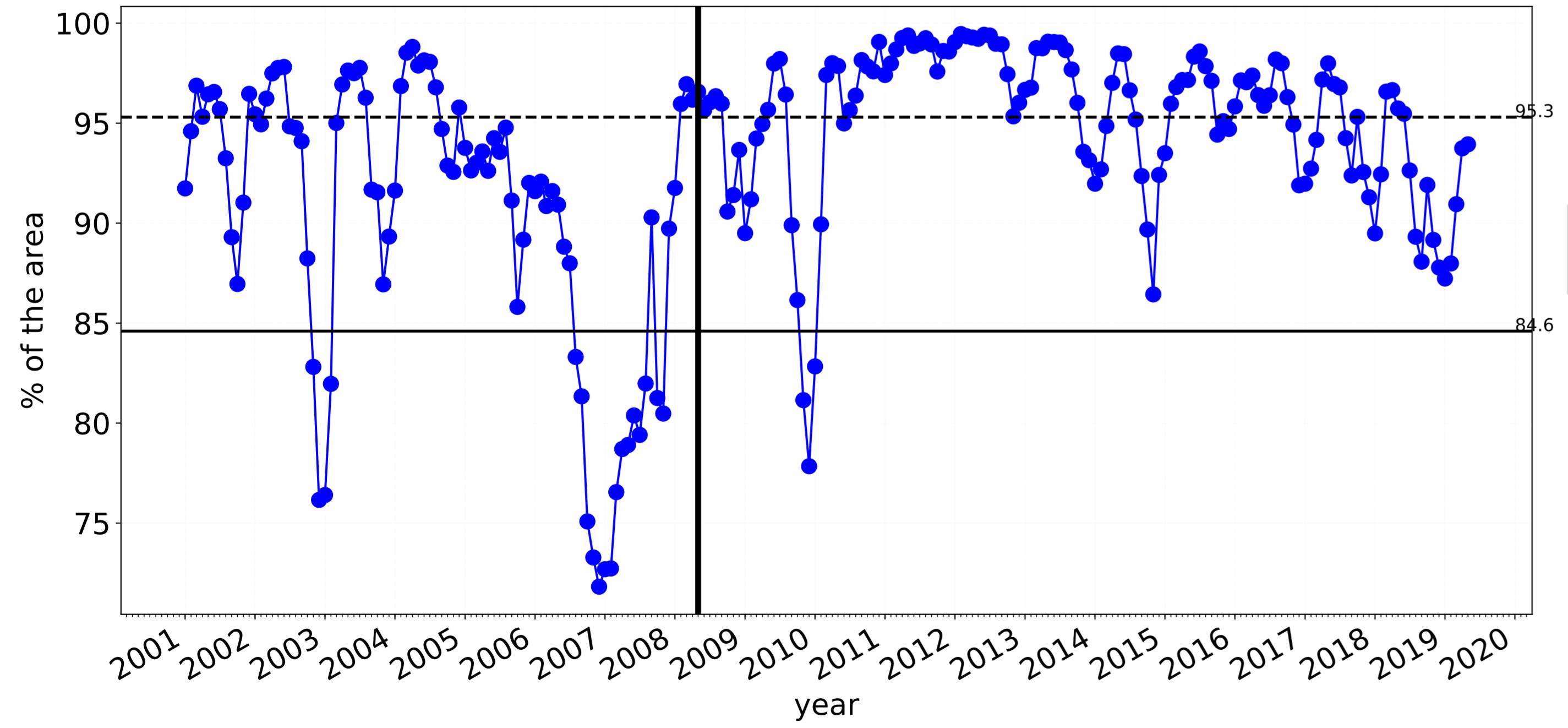
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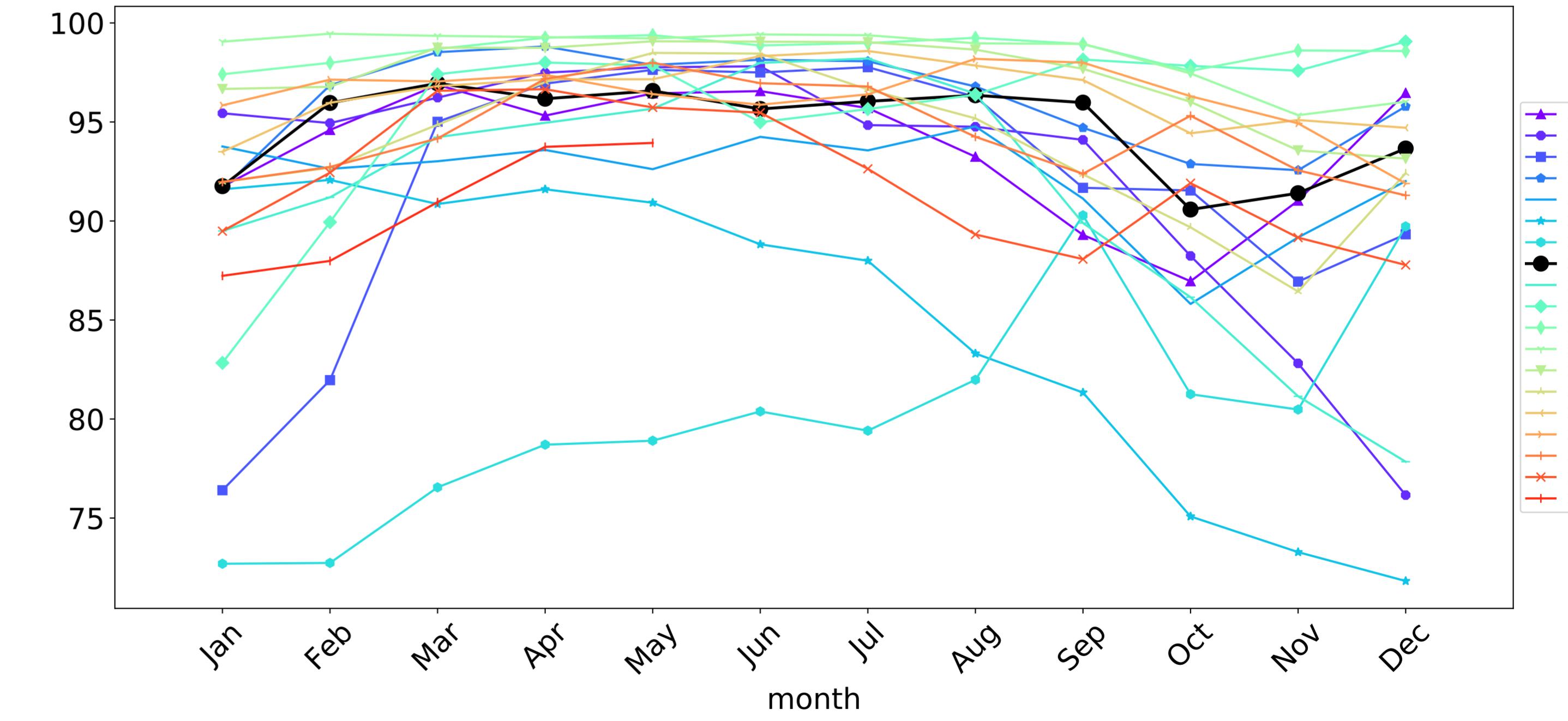
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



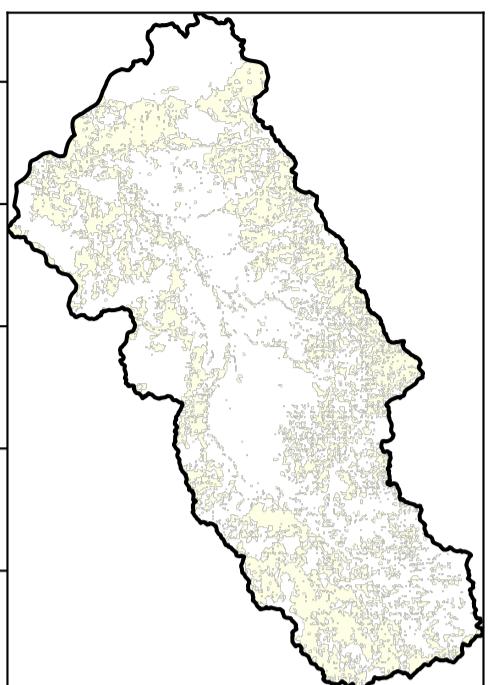
Water erosion historical monthly area protected (Total Veg Cov>70%)



Grazing non forest

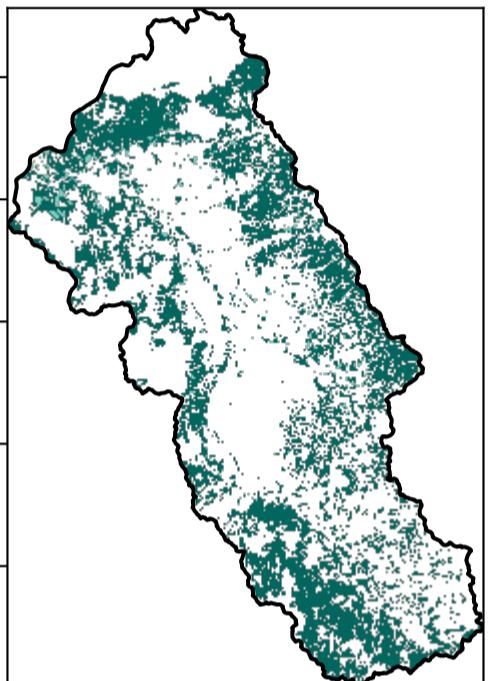
Land use and forest cover

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



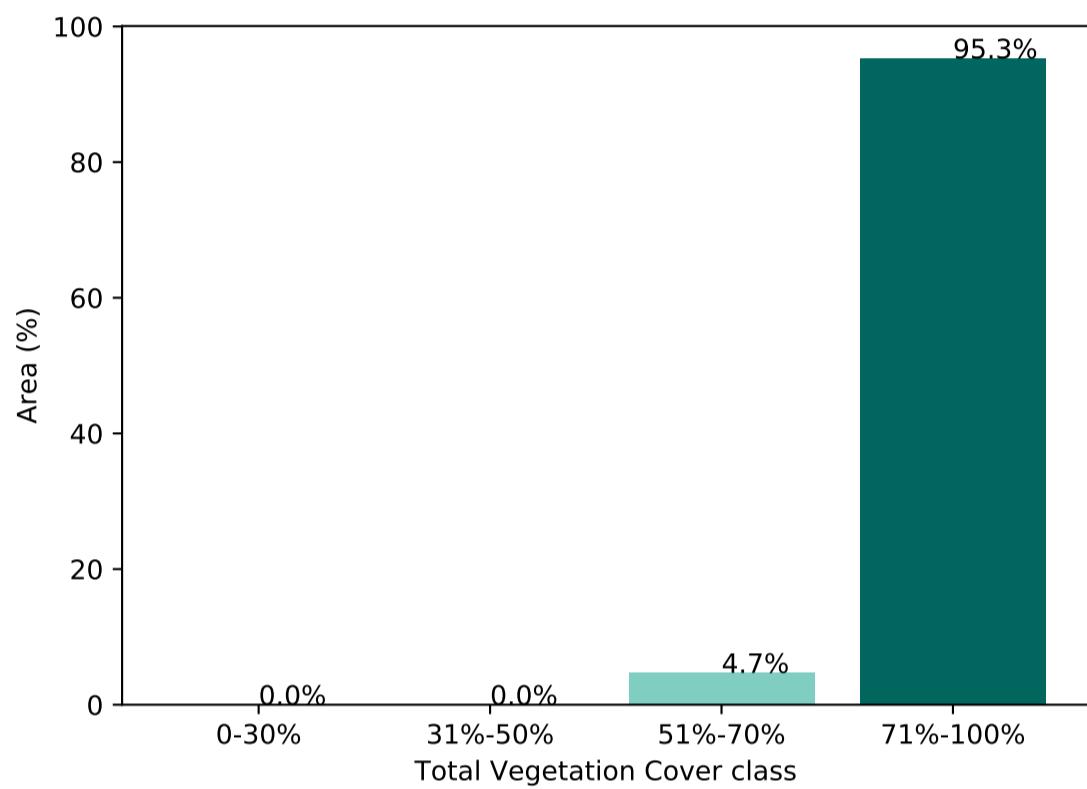
1 Agriculture - Grazing - Non forest

Total Vegetation Cover [%]

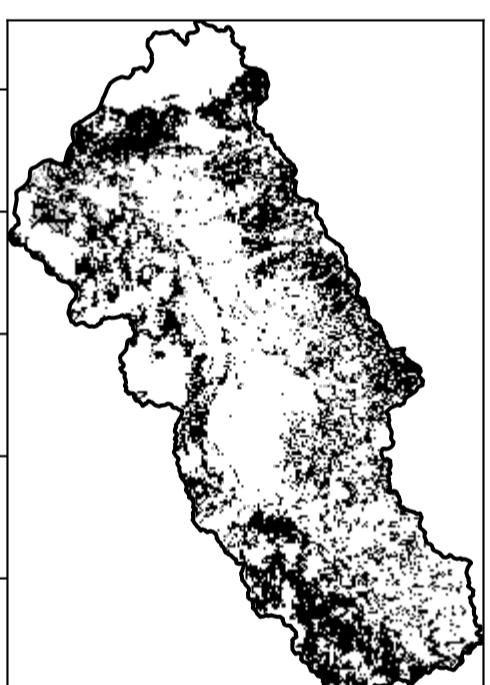


71-100%
51-70%
31-50%
0-30%

Proportion of vegetation cover class in area

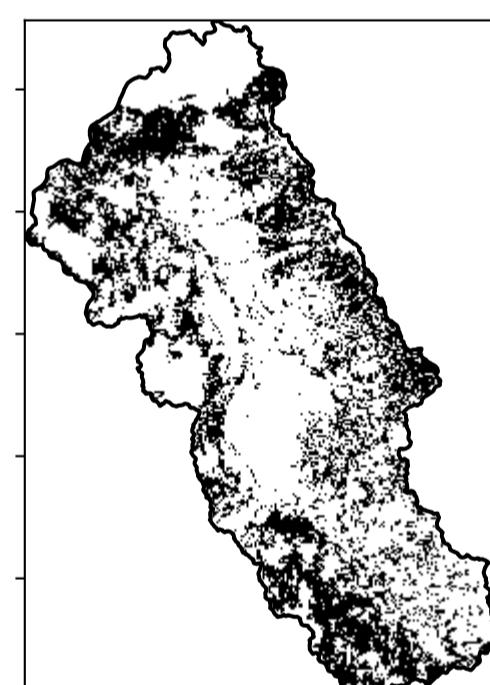


% Area protected from water erosion (>70%)



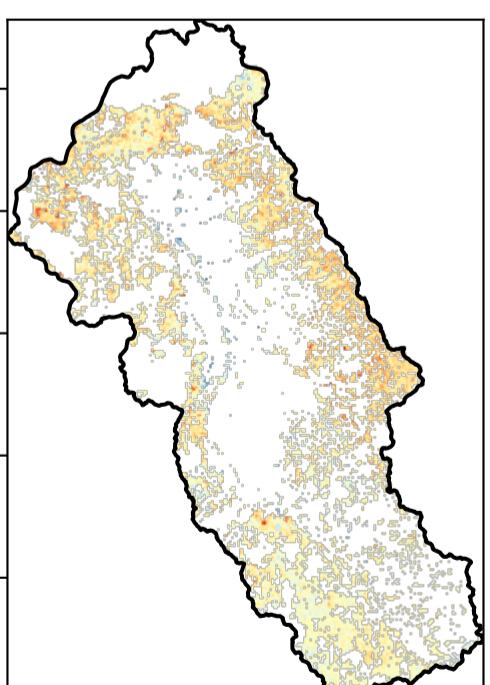
Area not protected
4.7% of region
(39,282 ha)
Area protected
95.3% of region
(796,517 ha)

% Area protected from wind erosion (>50%)



Area not protected
0.0% of region (0 ha)
Area protected
100.0% of region
(835,800 ha)

Total Vegetation Cover Anomaly [%]

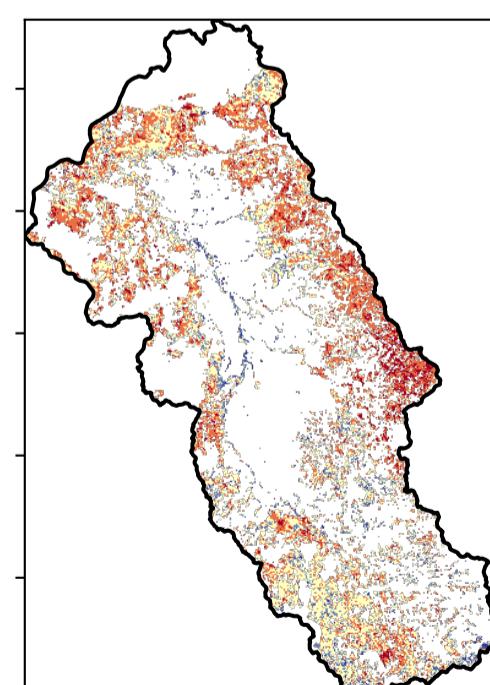


20
10
0
-10
-20

Anomaly shows 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 [%]



10
9
8
7
6
5
4
3
2
1



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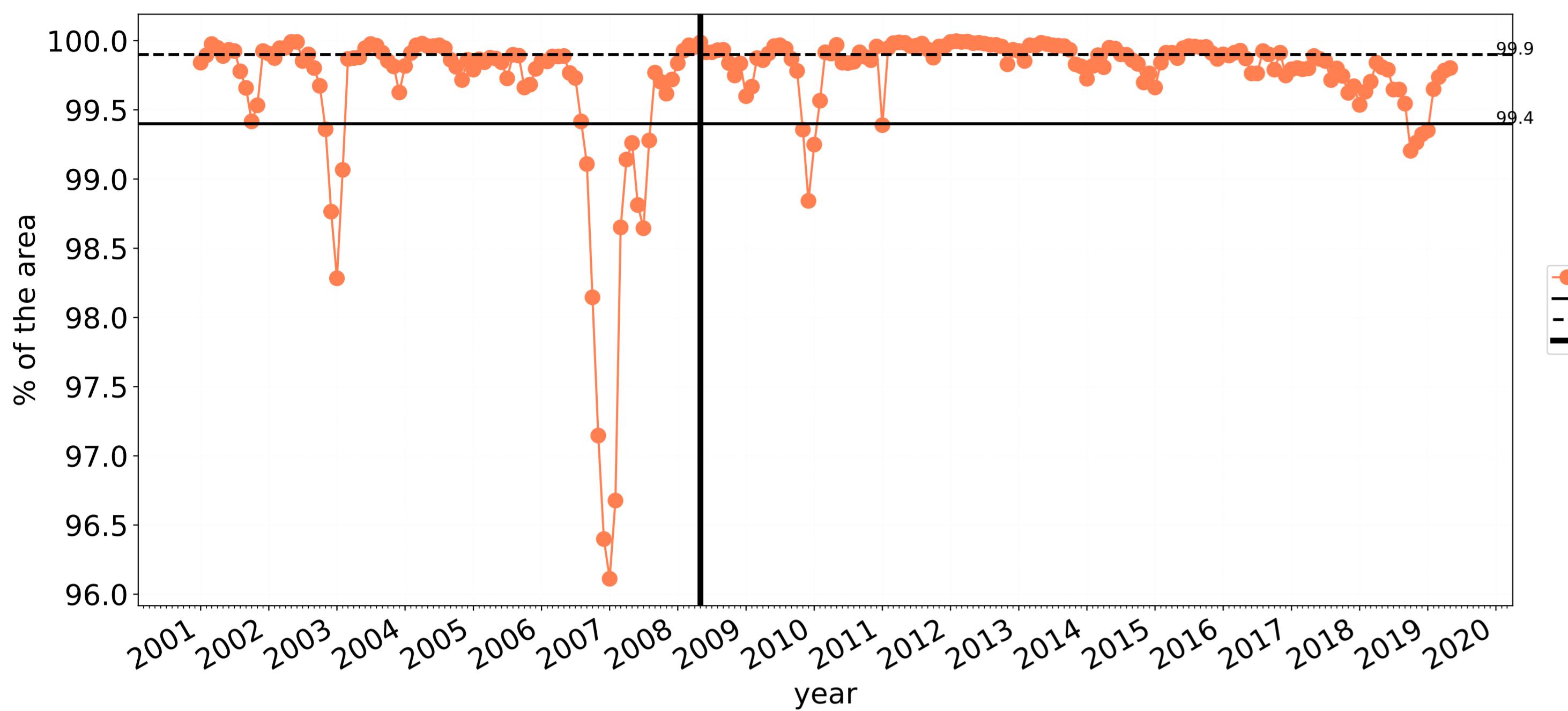
National
Landcare
Programme



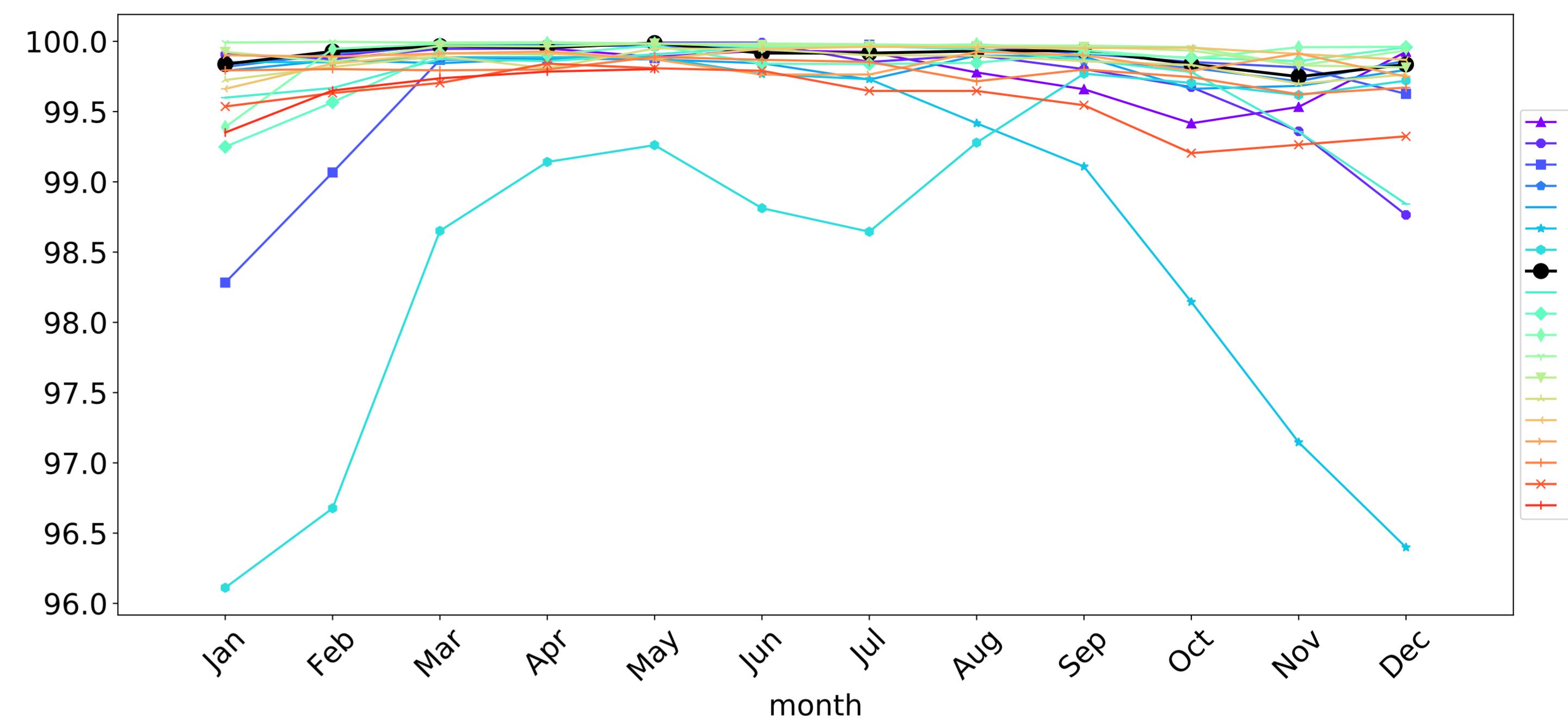
Planning,
Industry &
Environment

Grazing non forest timeseries

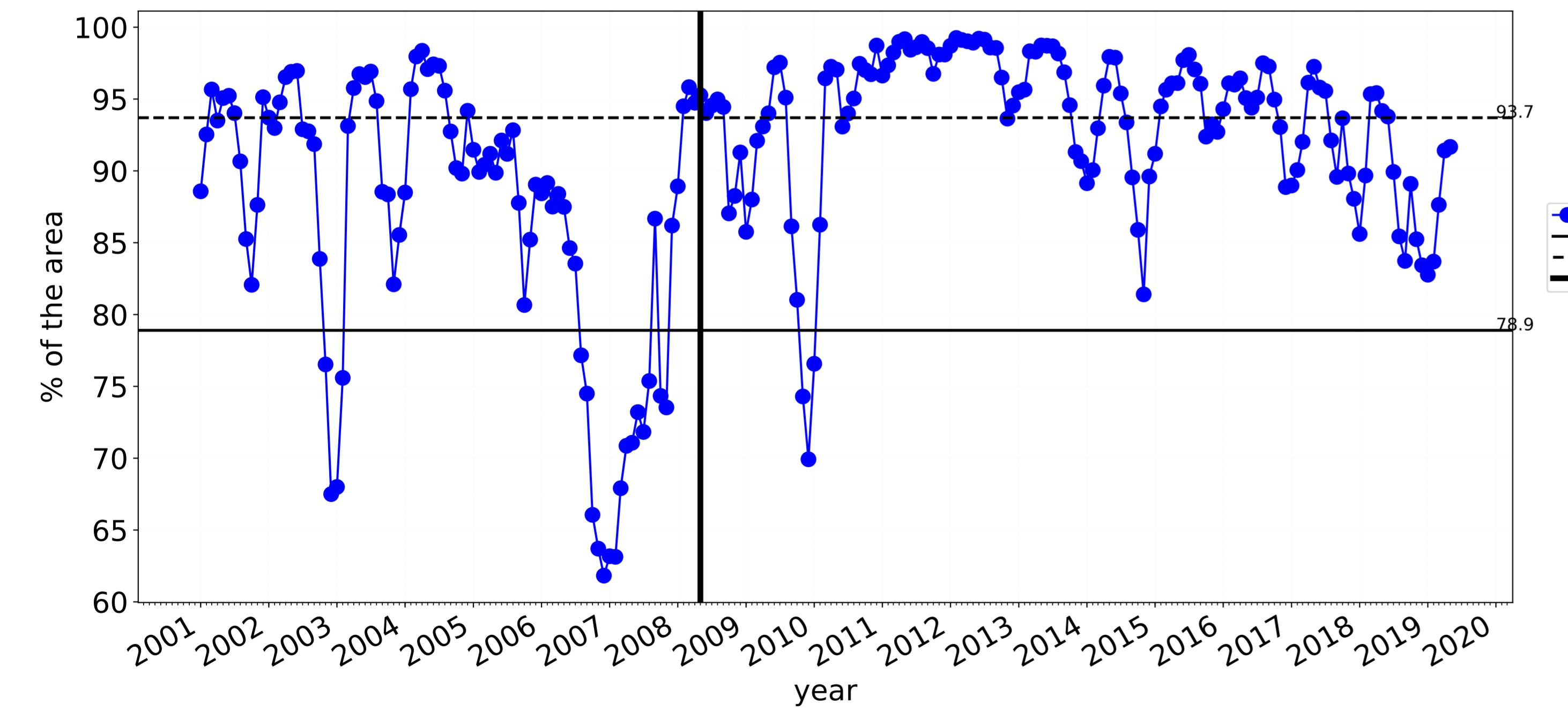
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



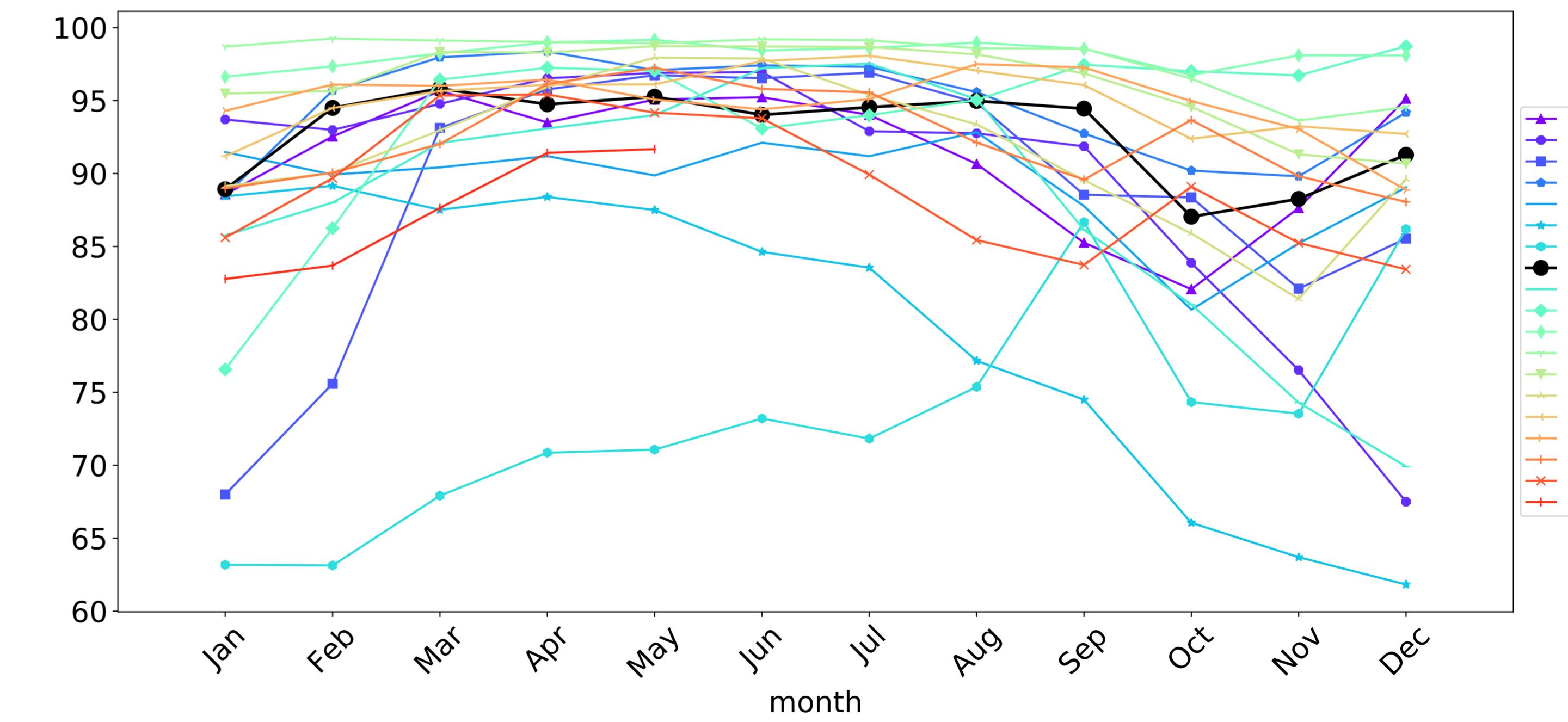
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



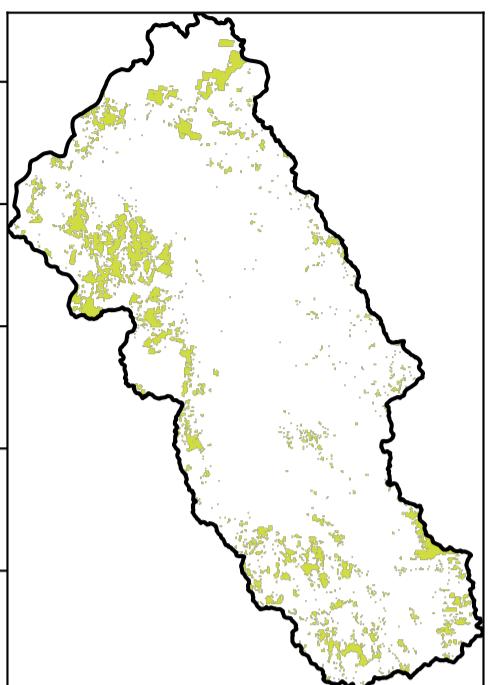
Water erosion historical monthly area protected (Total Veg Cov>70%)



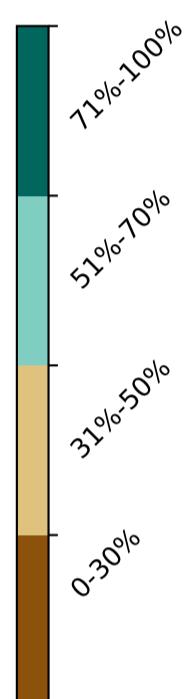
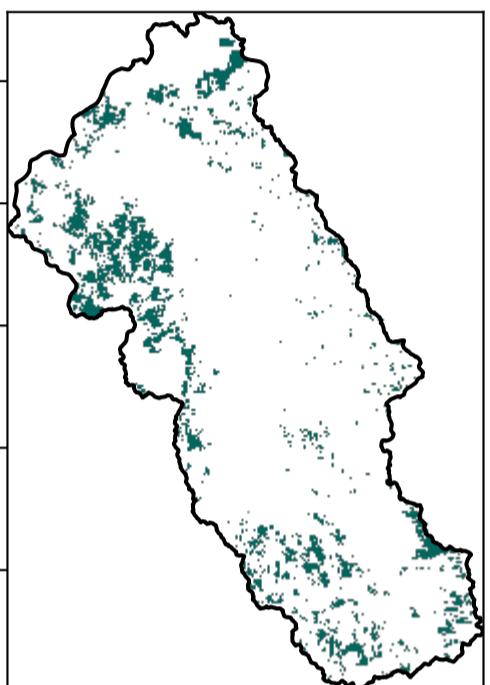
Grazing Woodland forest

Land use and forest cover

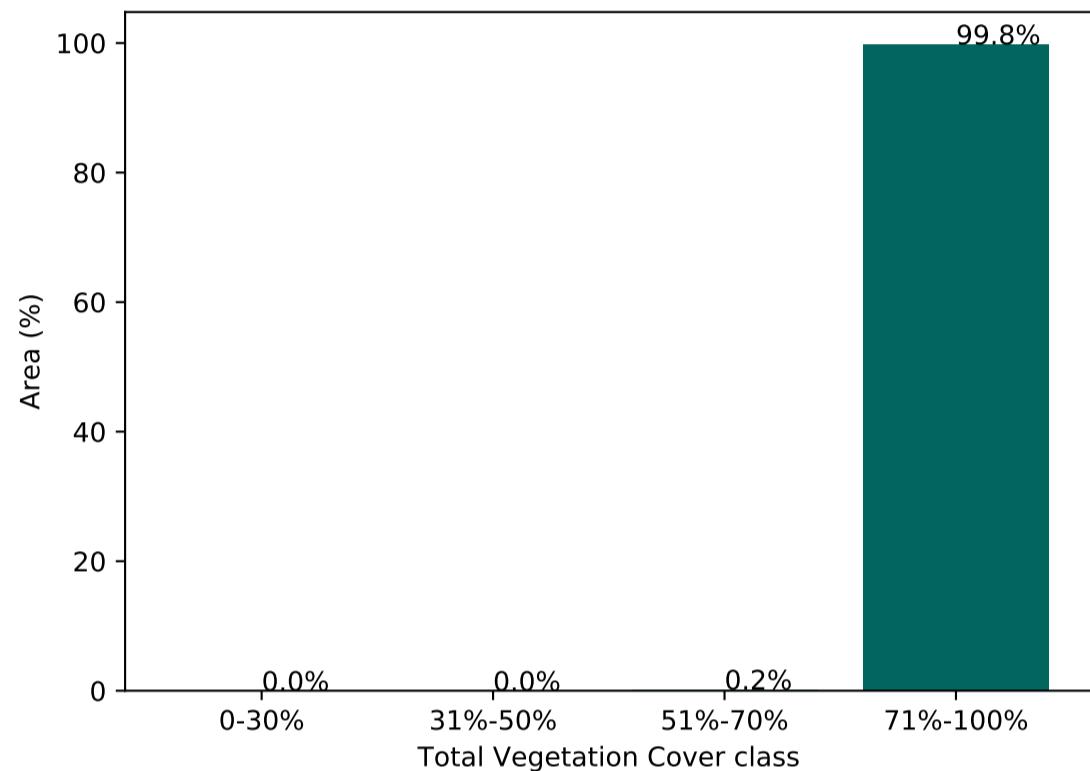
Catchment Scale
Land Use and Forests
of Australia (2018)
Derived from
Catchment Scale Land
Use of Australia
(2018) and Forests
of Australia (2018)



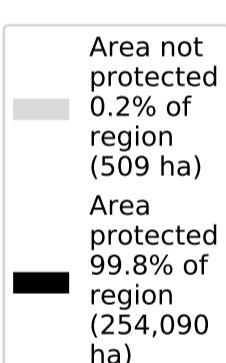
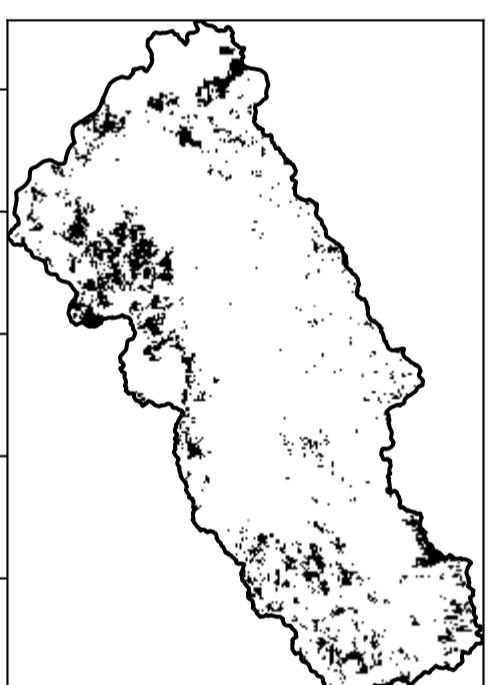
Total Vegetation Cover [%]



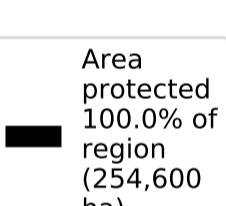
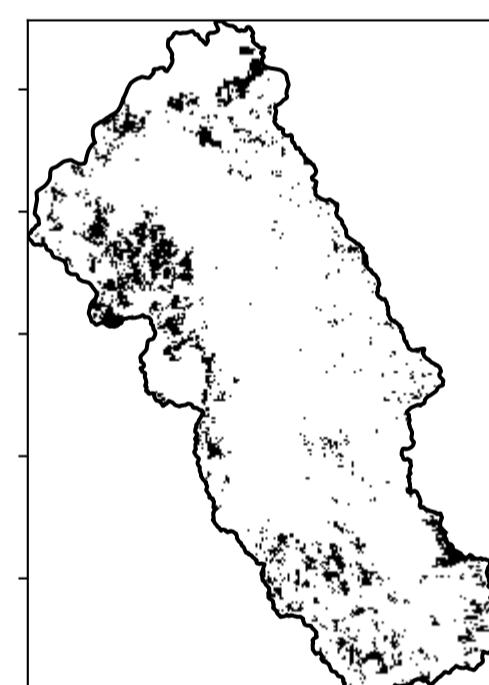
Proportion of vegetation cover class in area



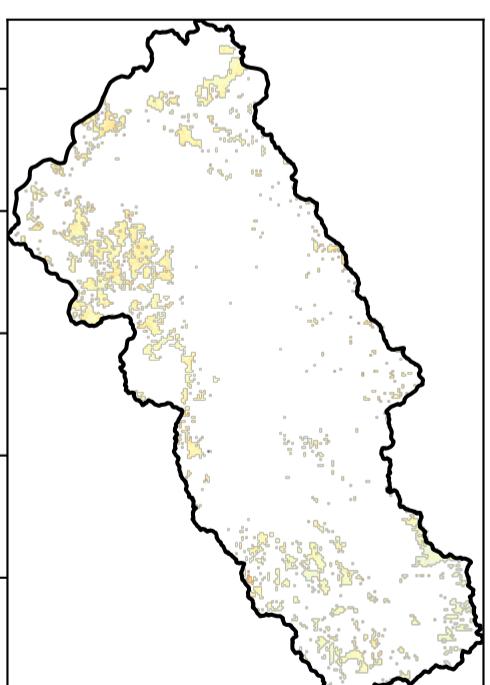
% Area protected from water erosion (>70%)



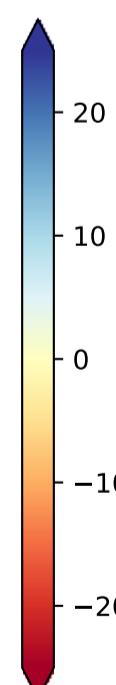
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]

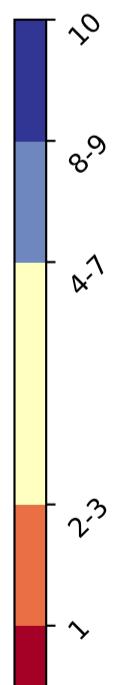
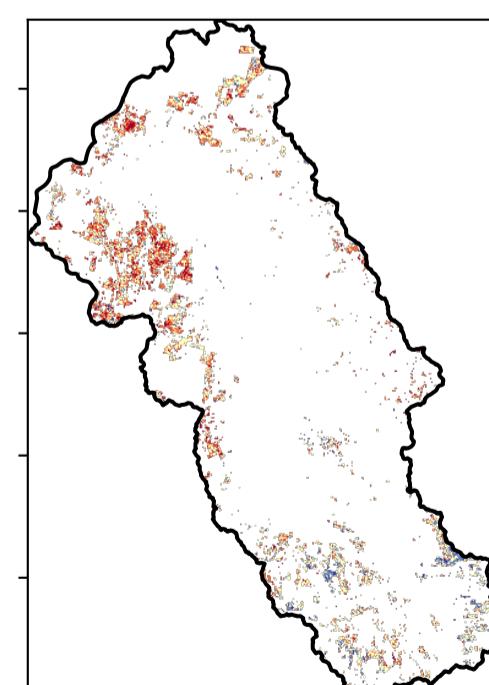


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Total Vegetation Cover Decile [%]



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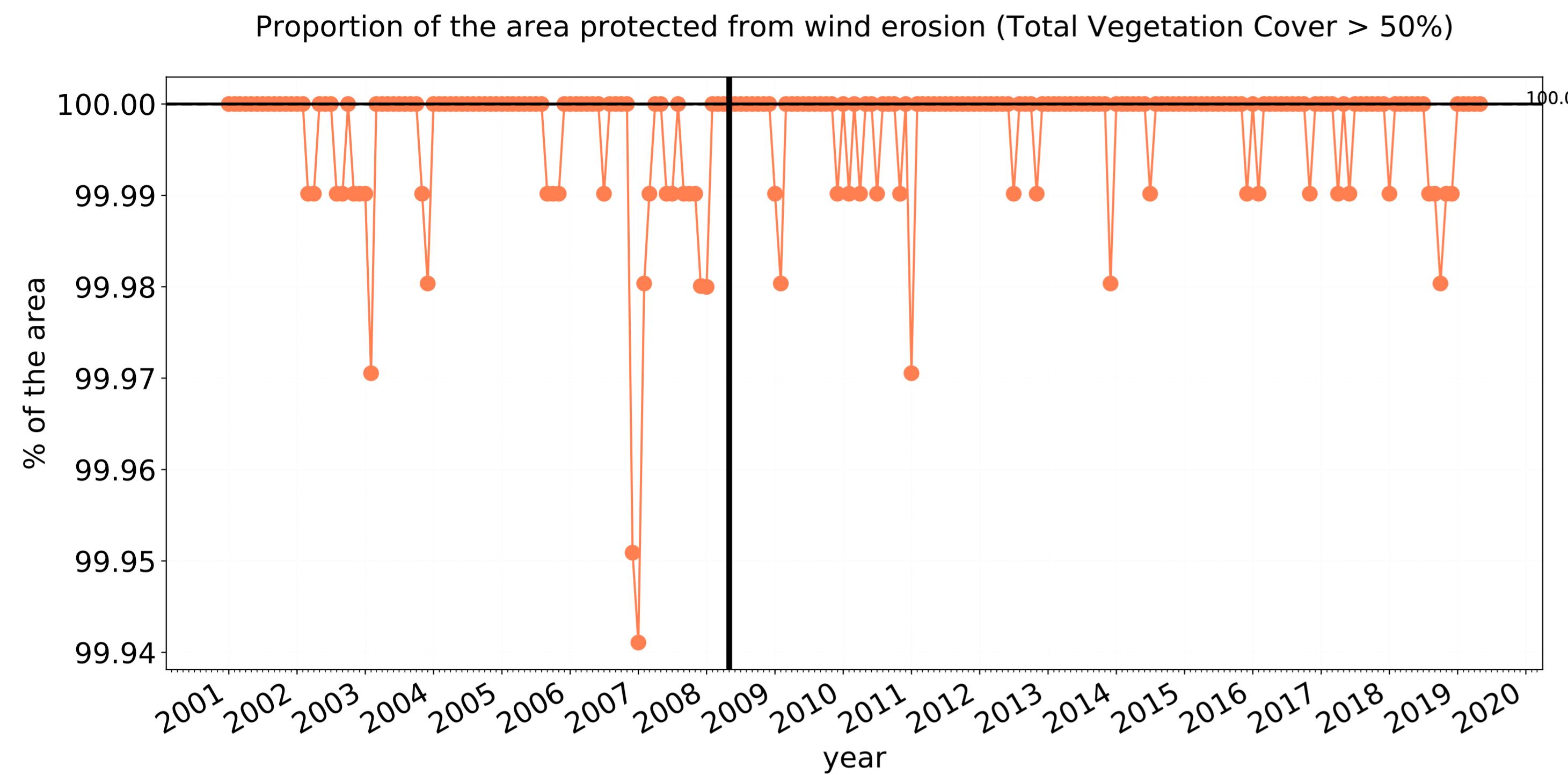


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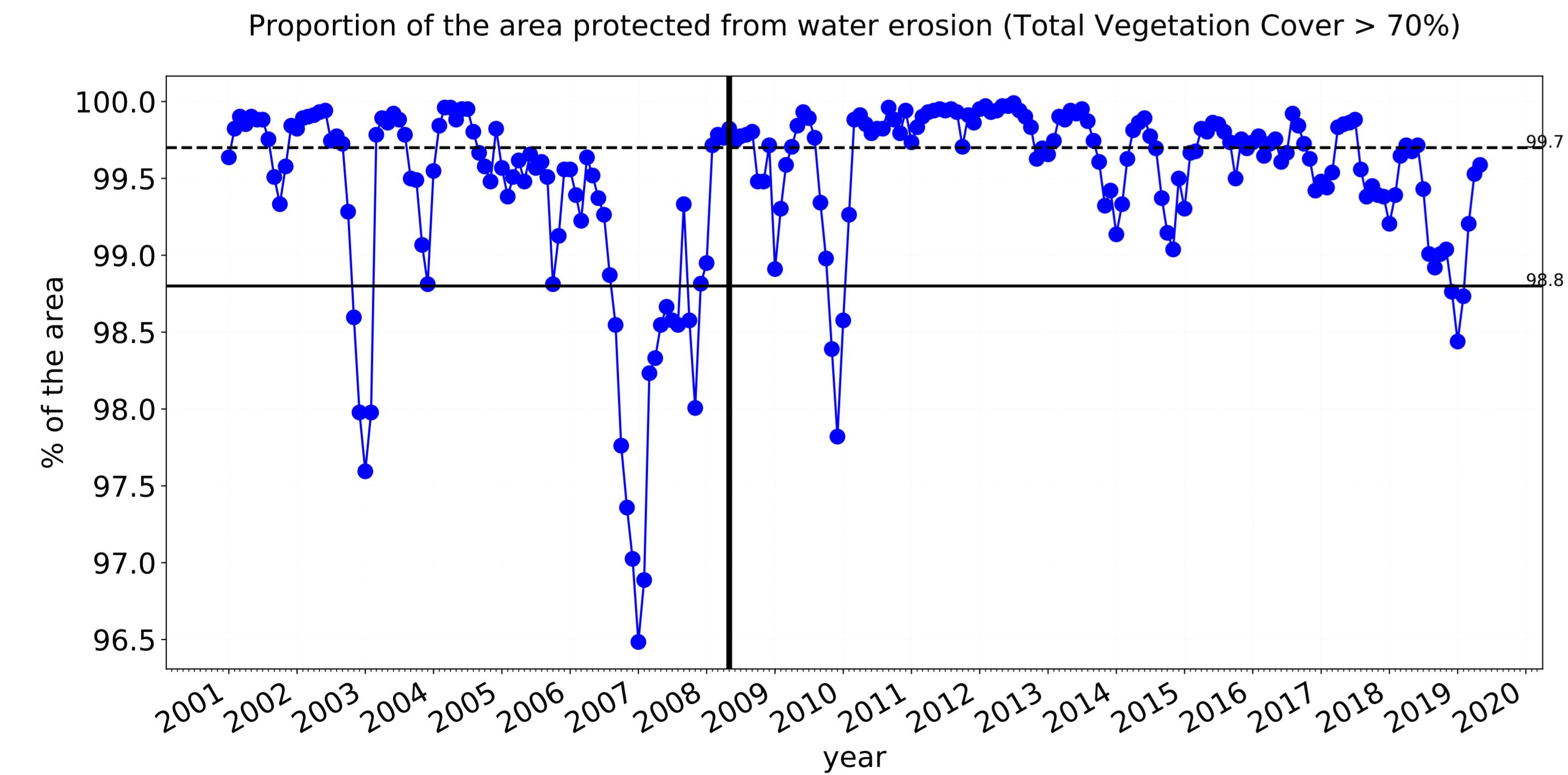
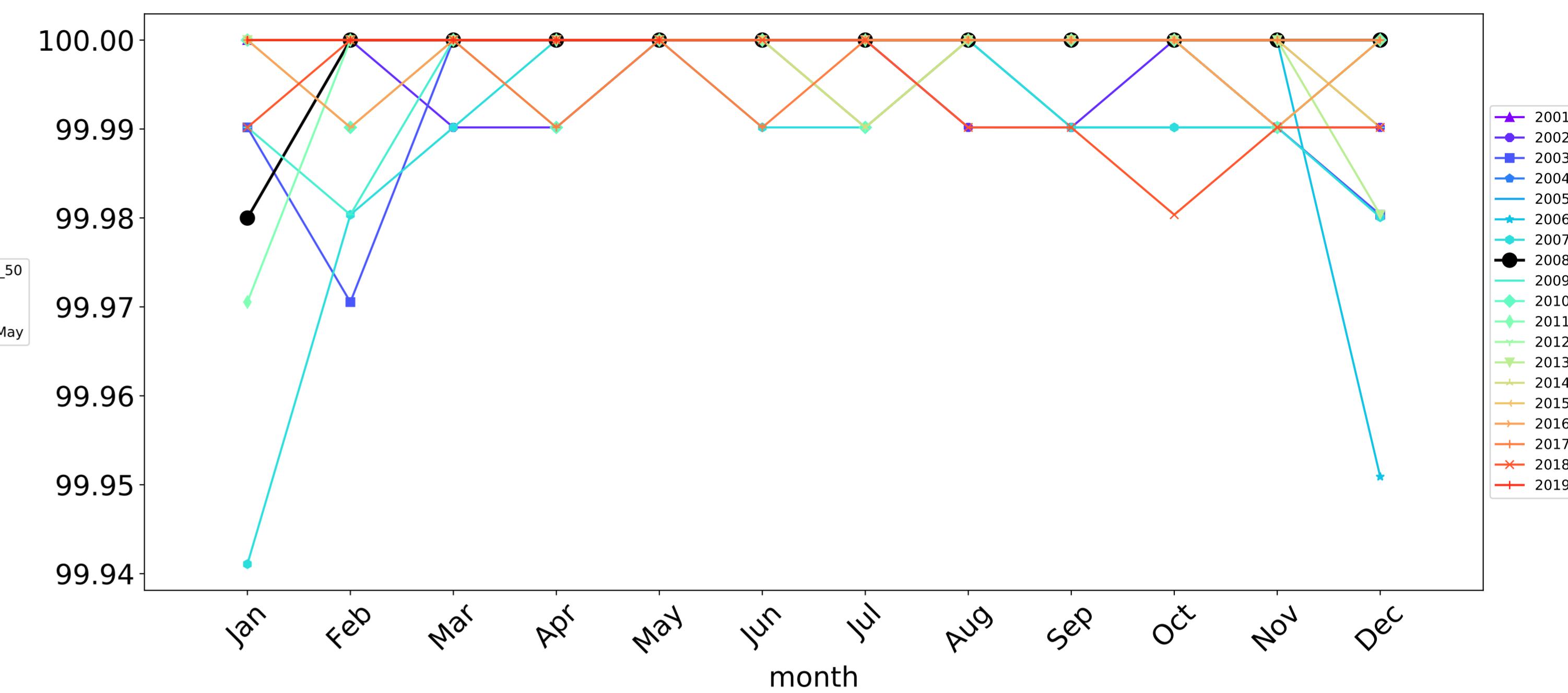


Planning,
Industry &
Environment

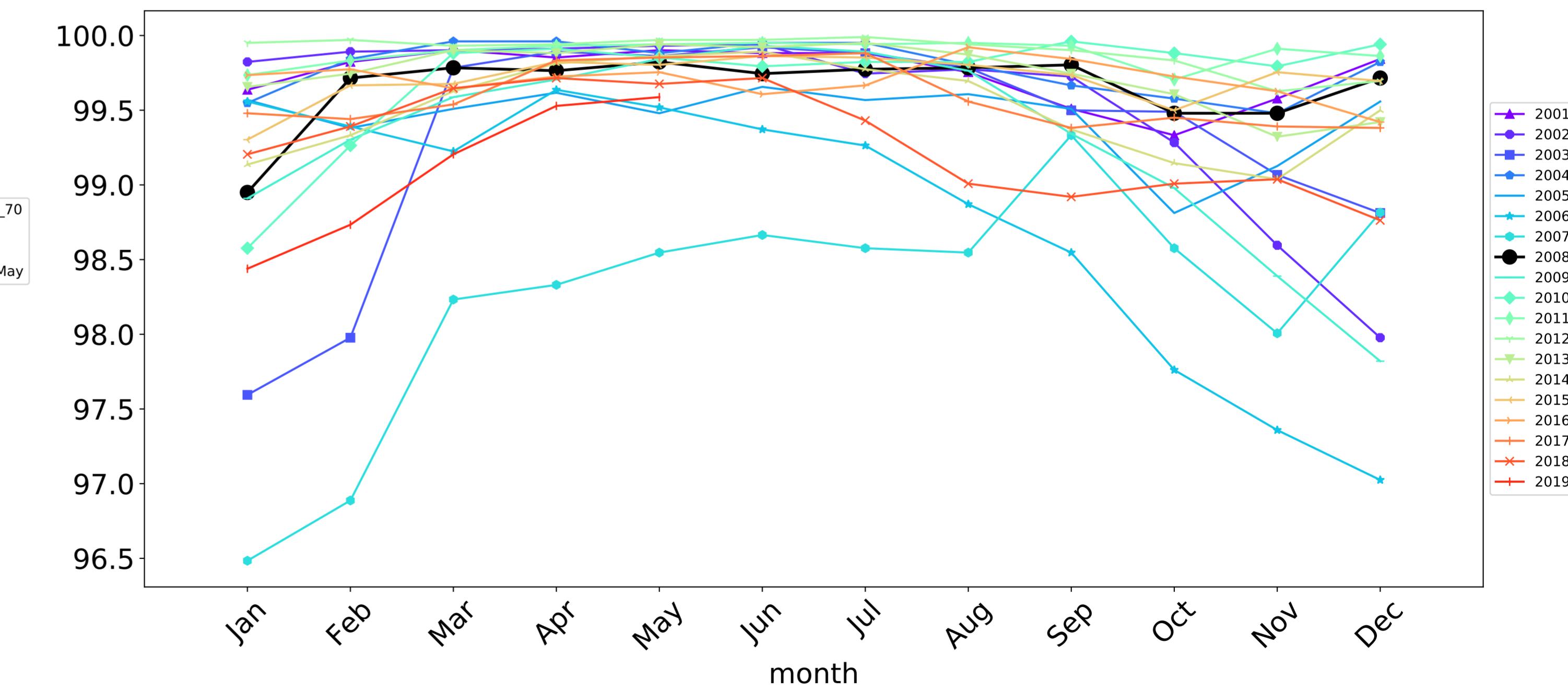
Grazing Woodland forest timeseries



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



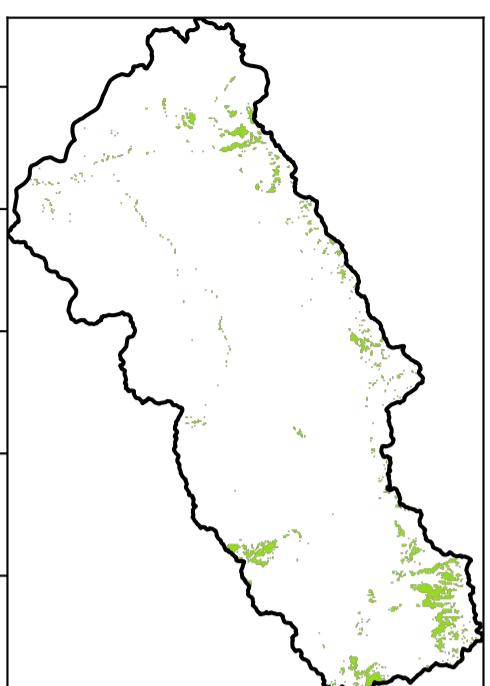
Water erosion historical monthly area protected (Total Veg Cov >70%)



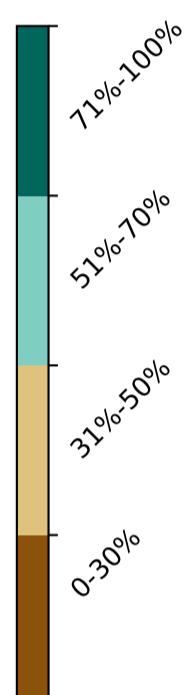
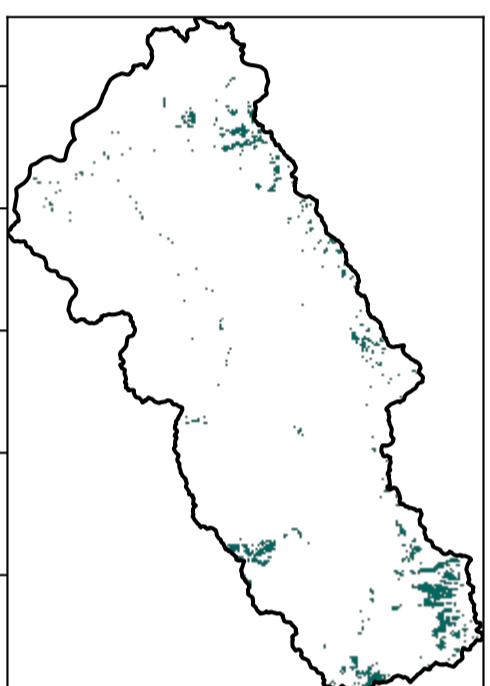
Grazing - Forest (non woodland)

Land use and forest cover

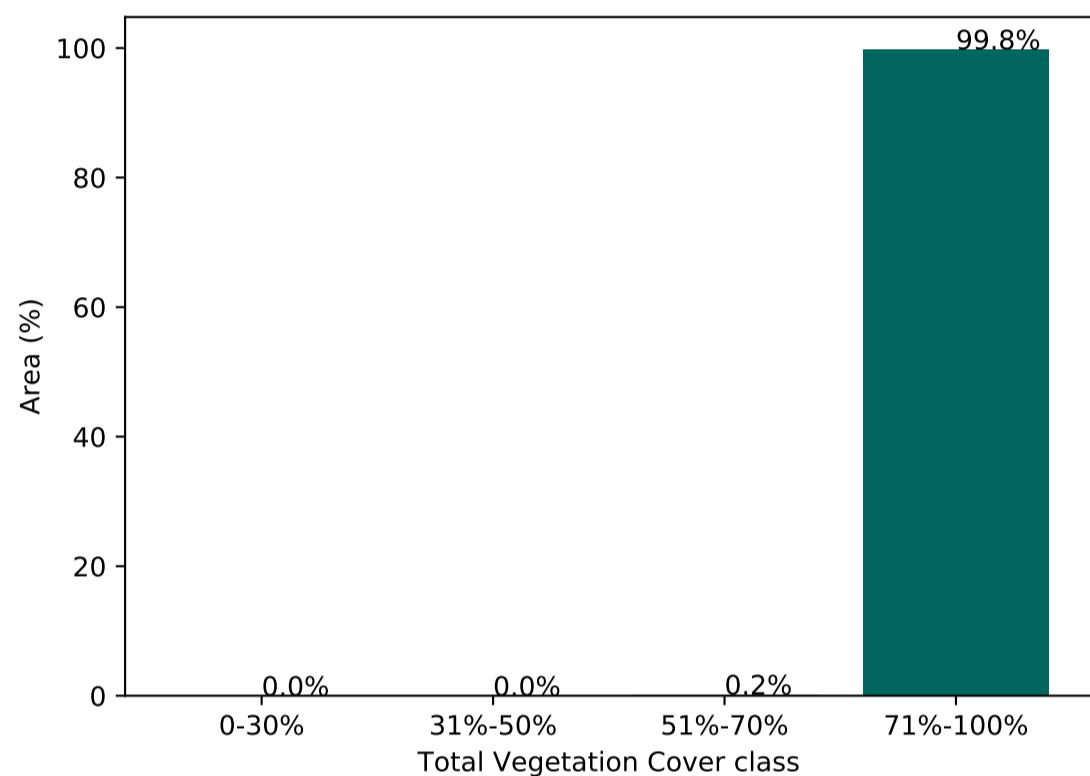
Catchment Scale
Land Use and Forests
of Australia (2018)
Derived from
Catchment Scale Land
Use of Australia
(2018) and Forests
of Australia (2018)



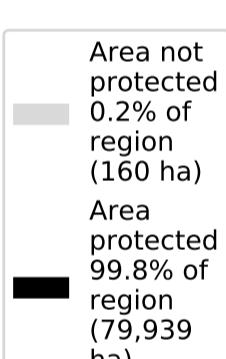
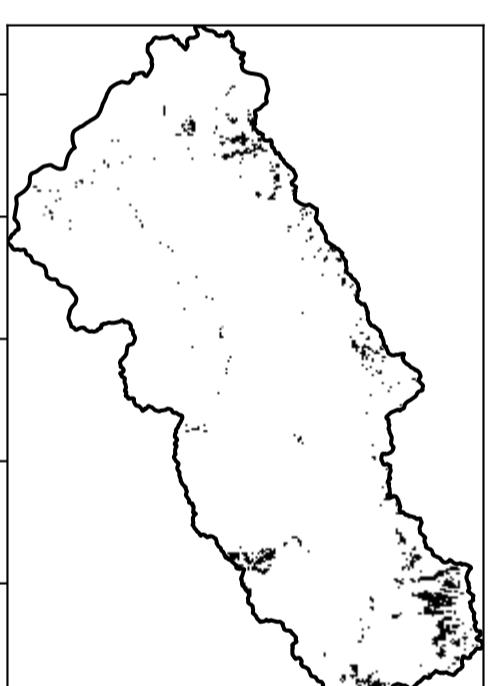
Total Vegetation Cover [%]



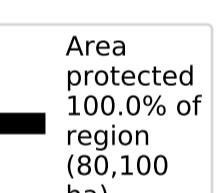
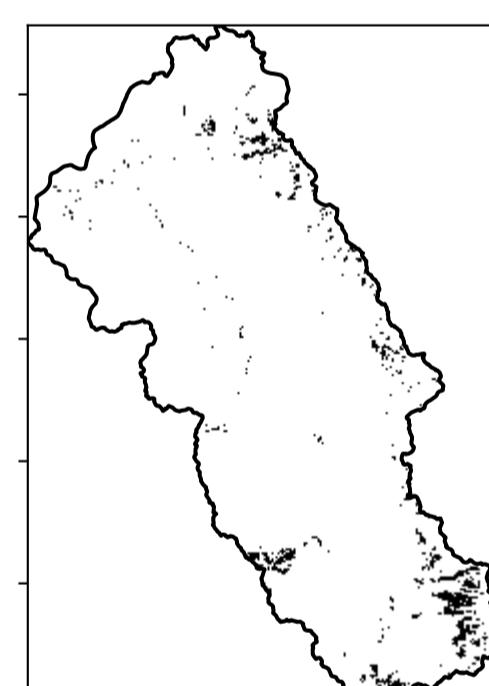
Proportion of vegetation cover class in area



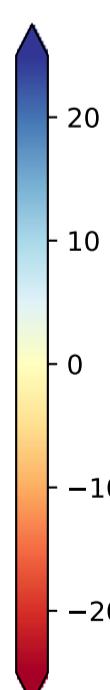
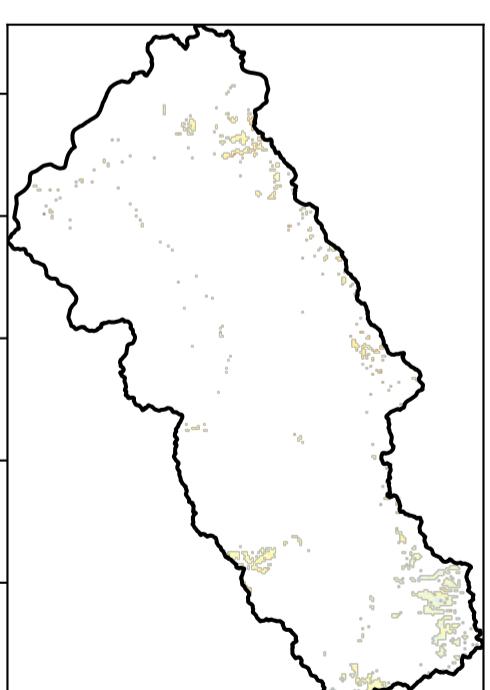
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)



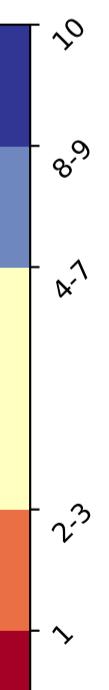
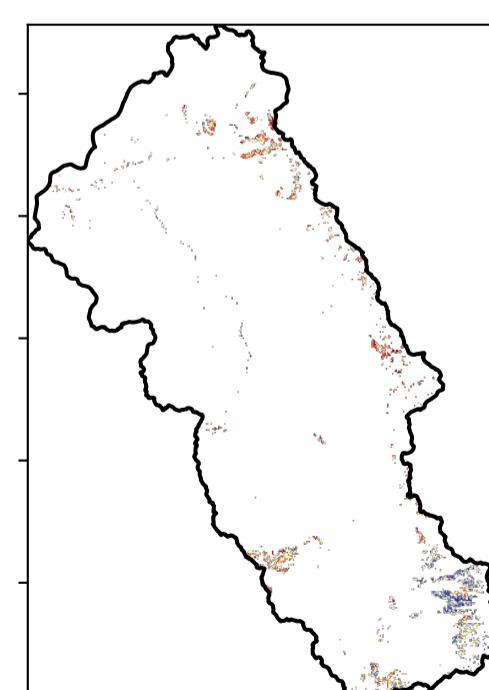
Total Vegetation Cover Anomaly [%]



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Total Vegetation Cover Decile [%]



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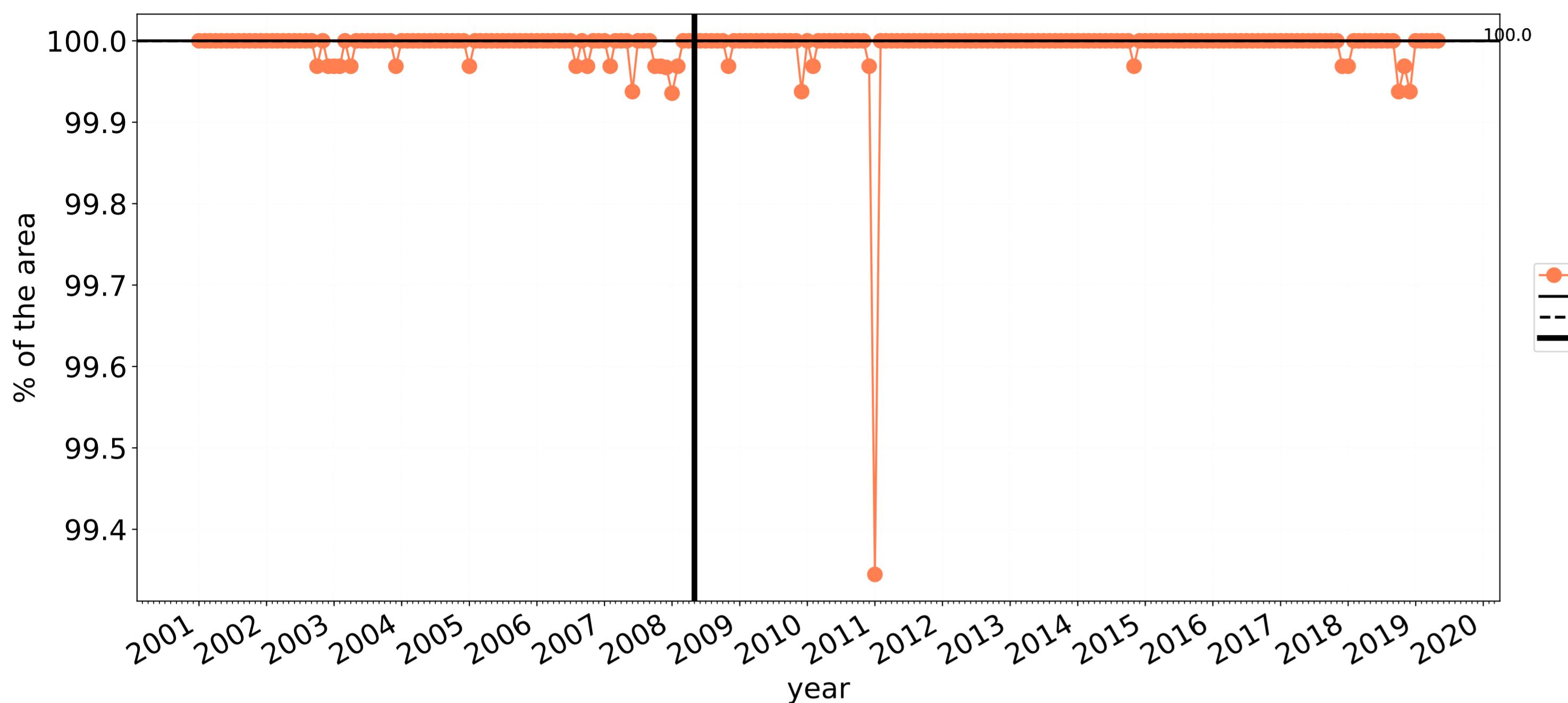
National
Landcare
Programme



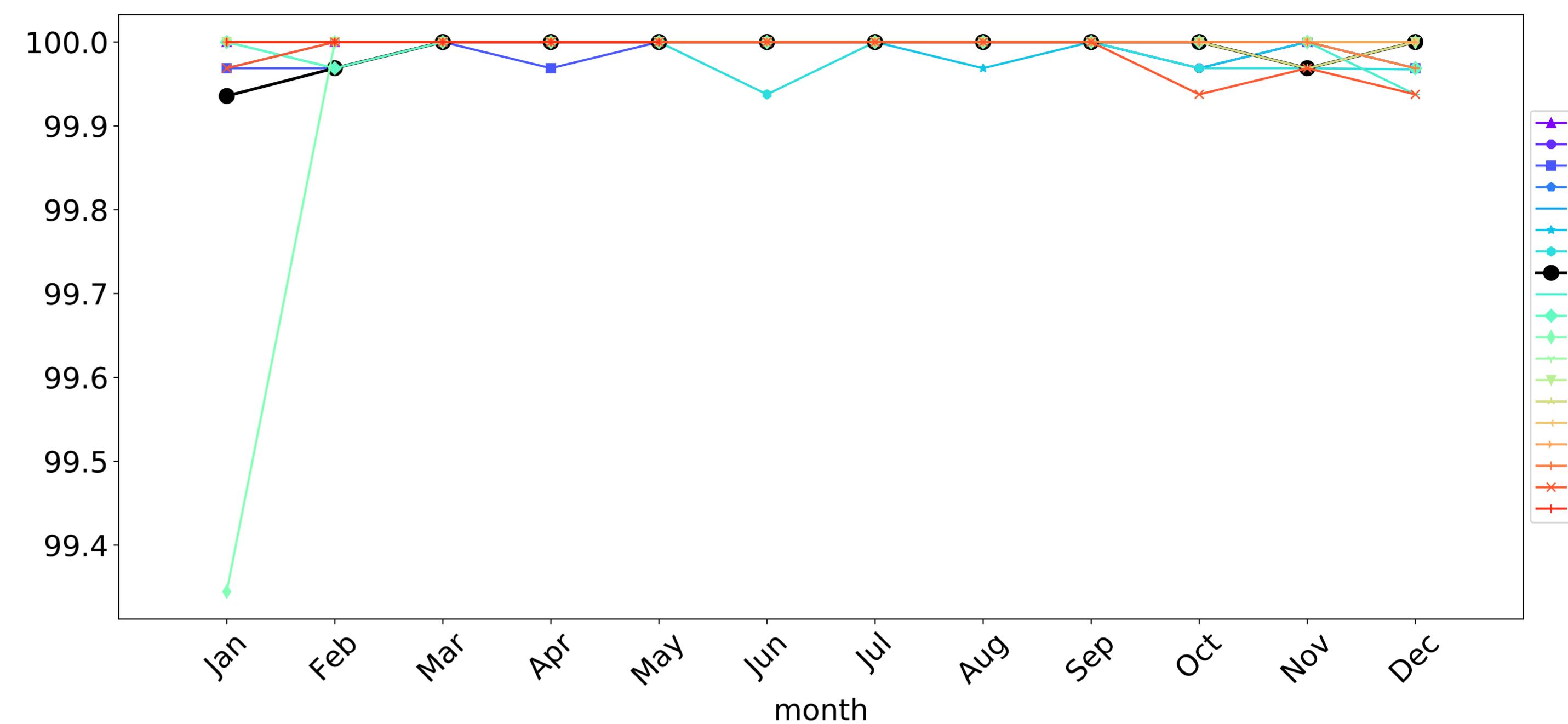
Planning,
Industry &
Environment

Grazing - Forest (non woodland) timeseries

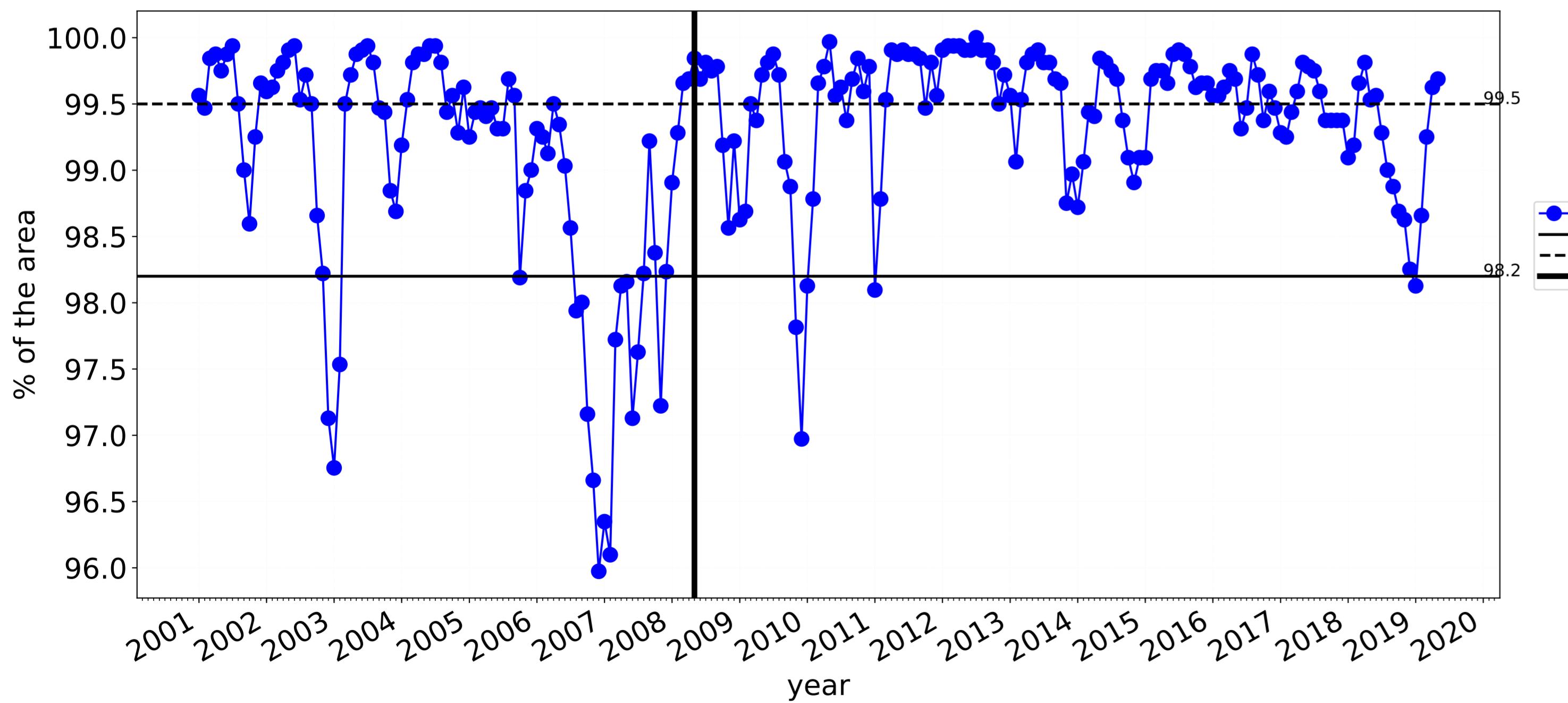
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



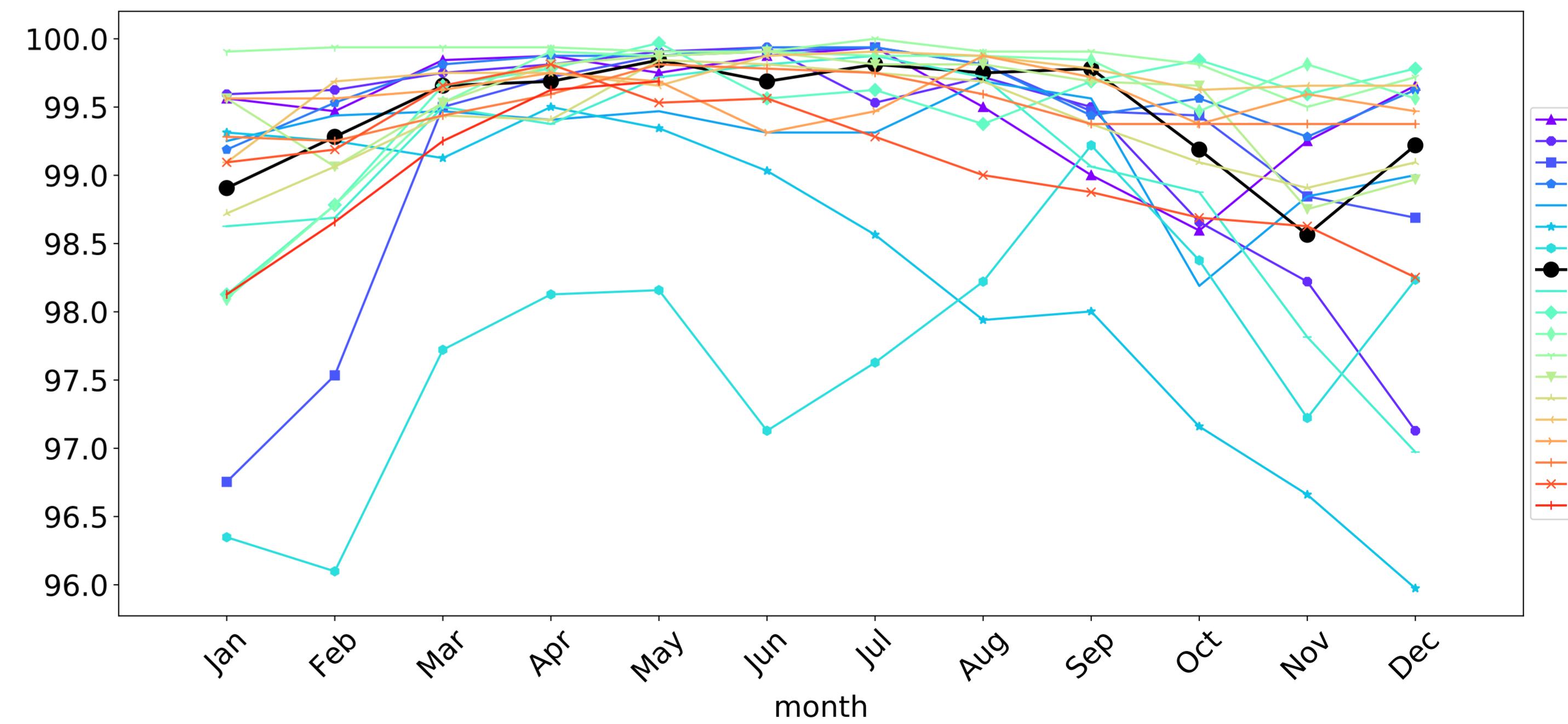
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



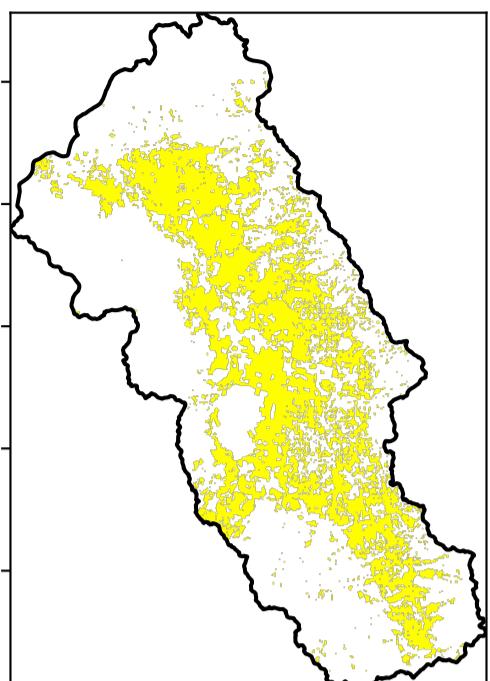
Water erosion historical monthly area protected (Total Veg Cov>70%)



Cropping

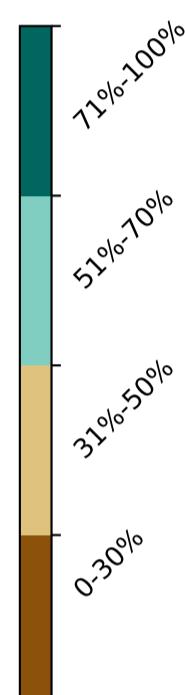
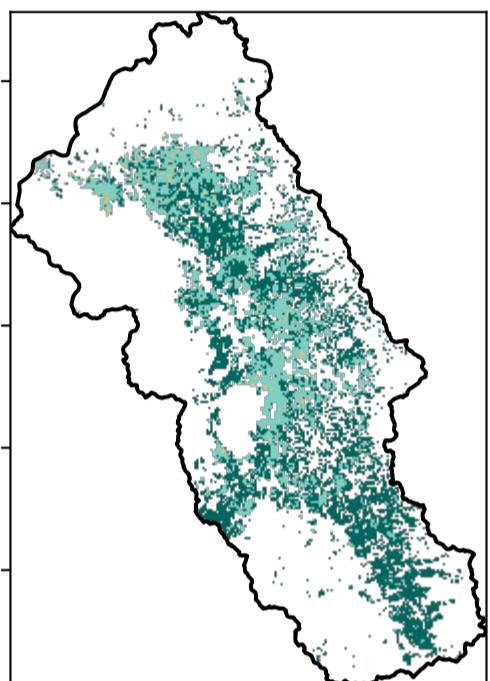
Land use and forest cover

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

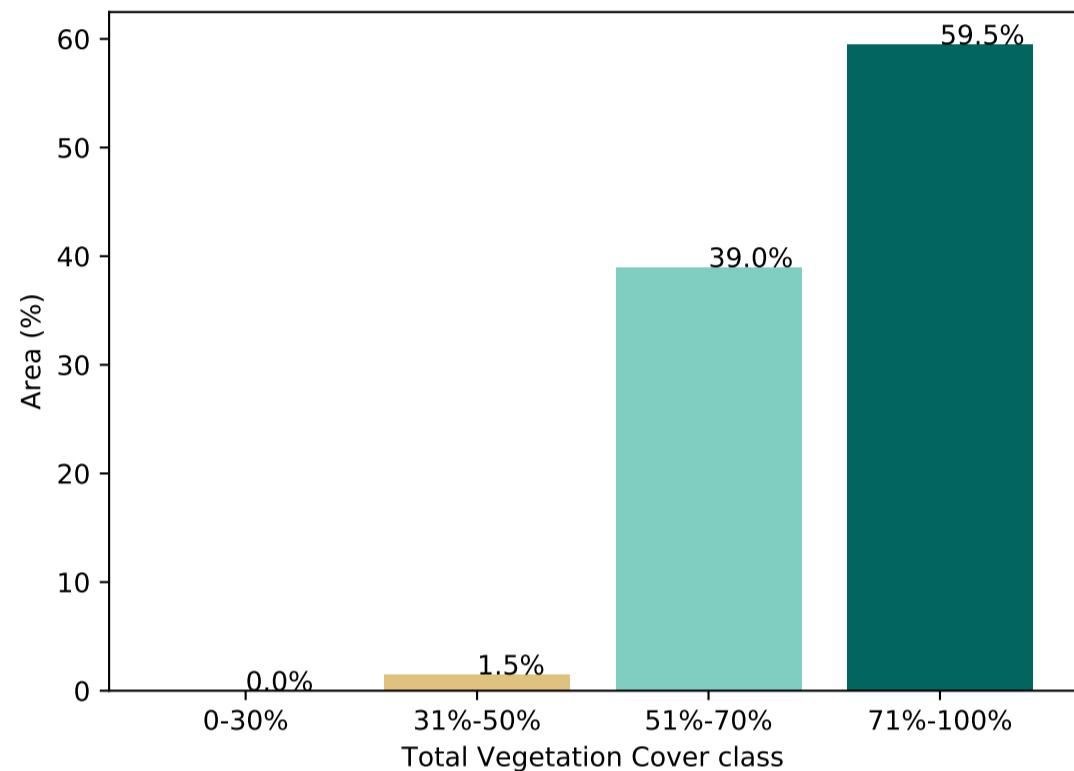


1 Agriculture - Cropping - Non-irrigated

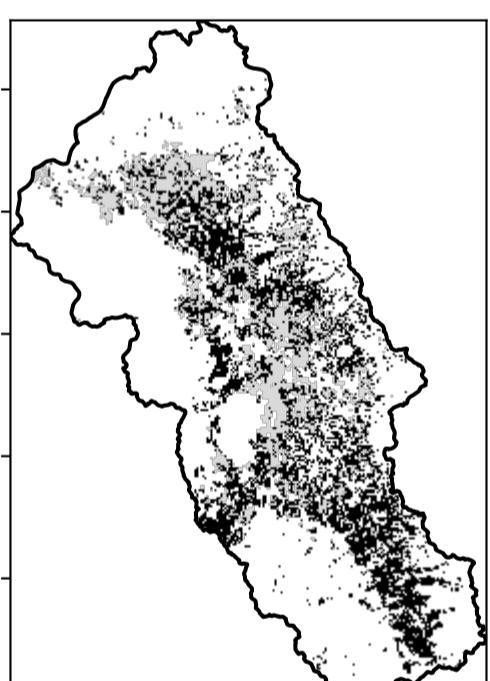
Total Vegetation Cover [%]



Proportion of vegetation cover class in area

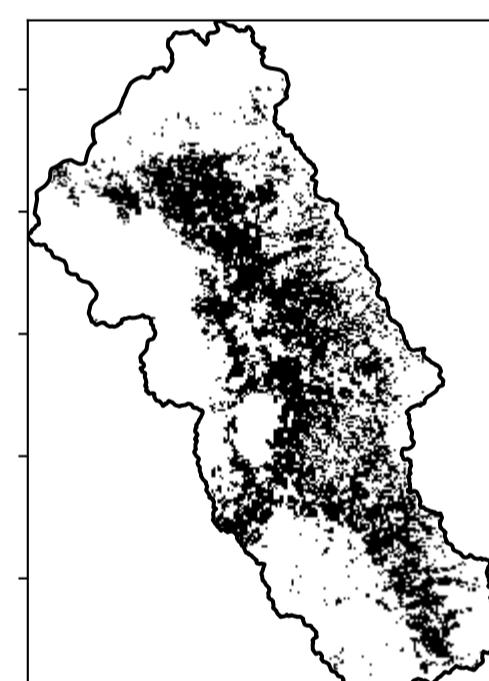


% Area protected from water erosion (>70%)



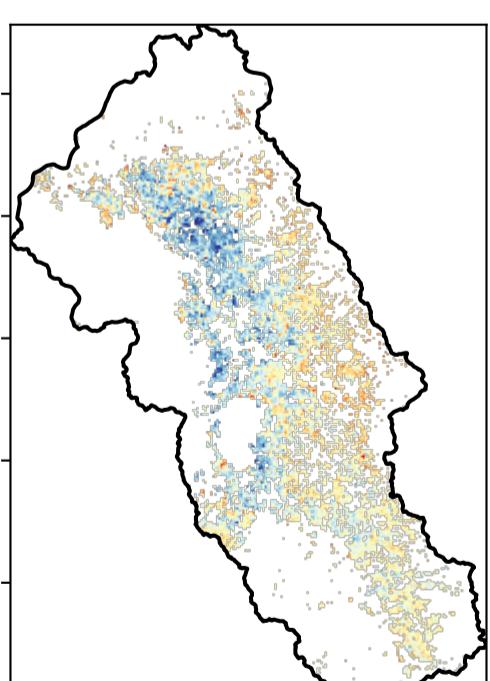
Area not protected 40.5% of region (304,701 ha)
Area protected 59.5% of region (447,648 ha)

% Area protected from wind erosion (>50%)

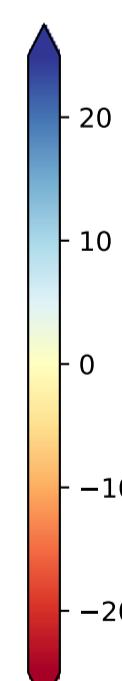


Area not protected 2.0% of region (15,047 ha)
Area protected 98.0% of region (737,303 ha)

Total Vegetation Cover Anomaly [%]

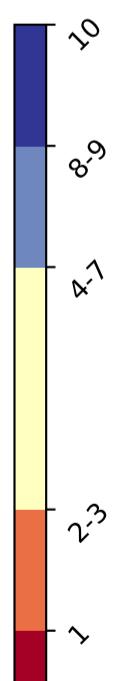
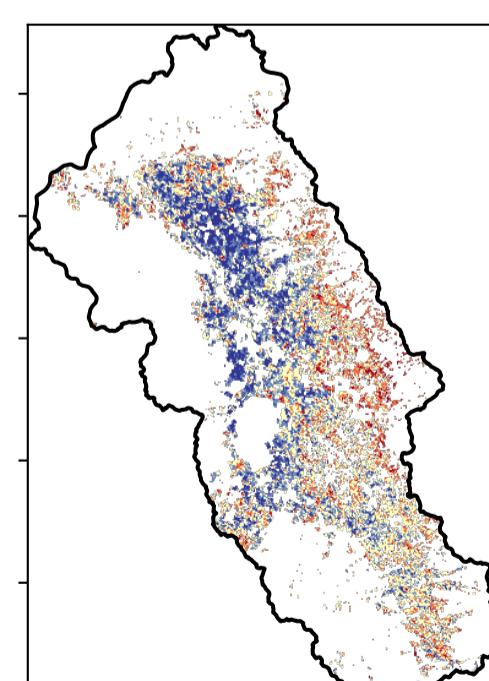


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Total Vegetation Cover Decile [%]



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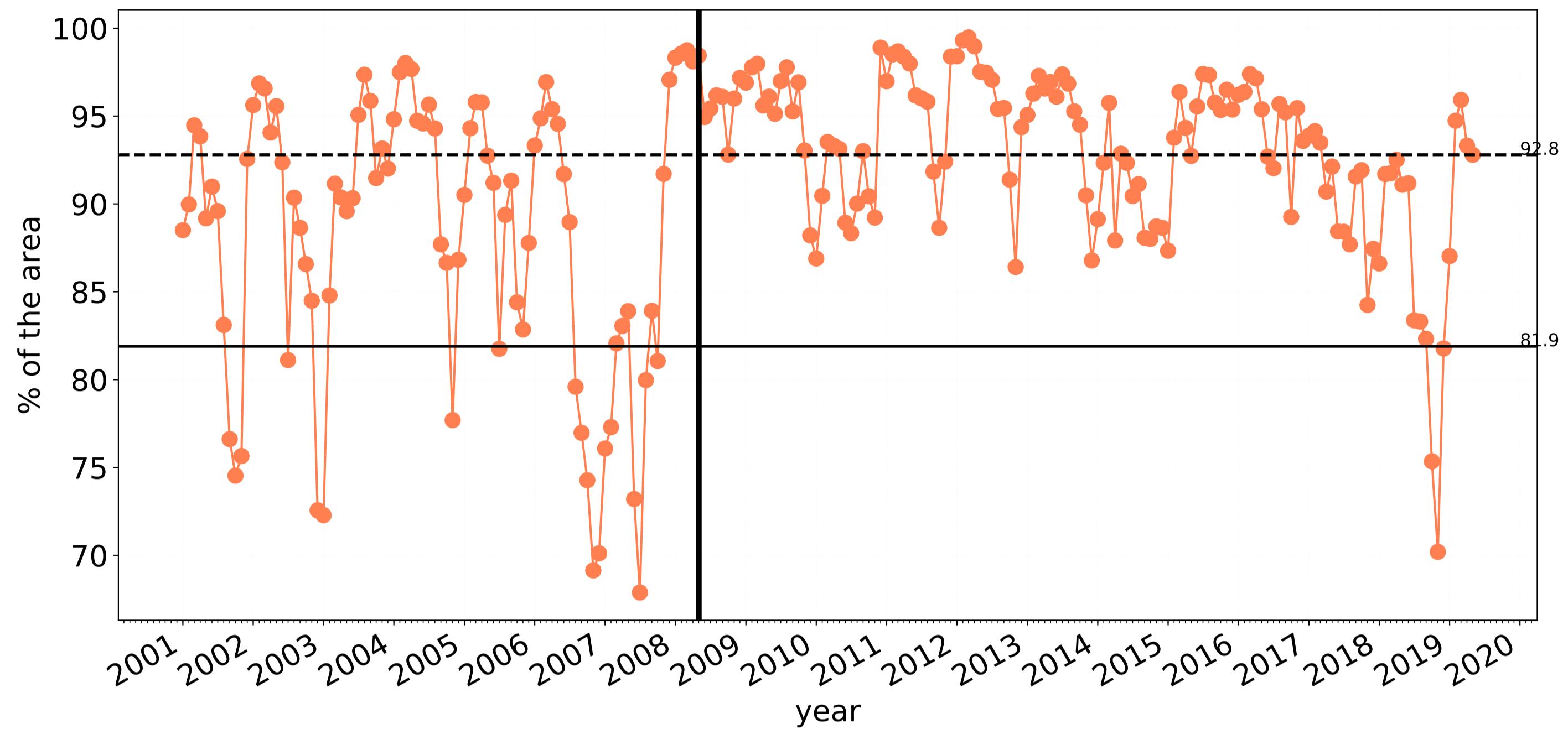
National
Landcare
Programme



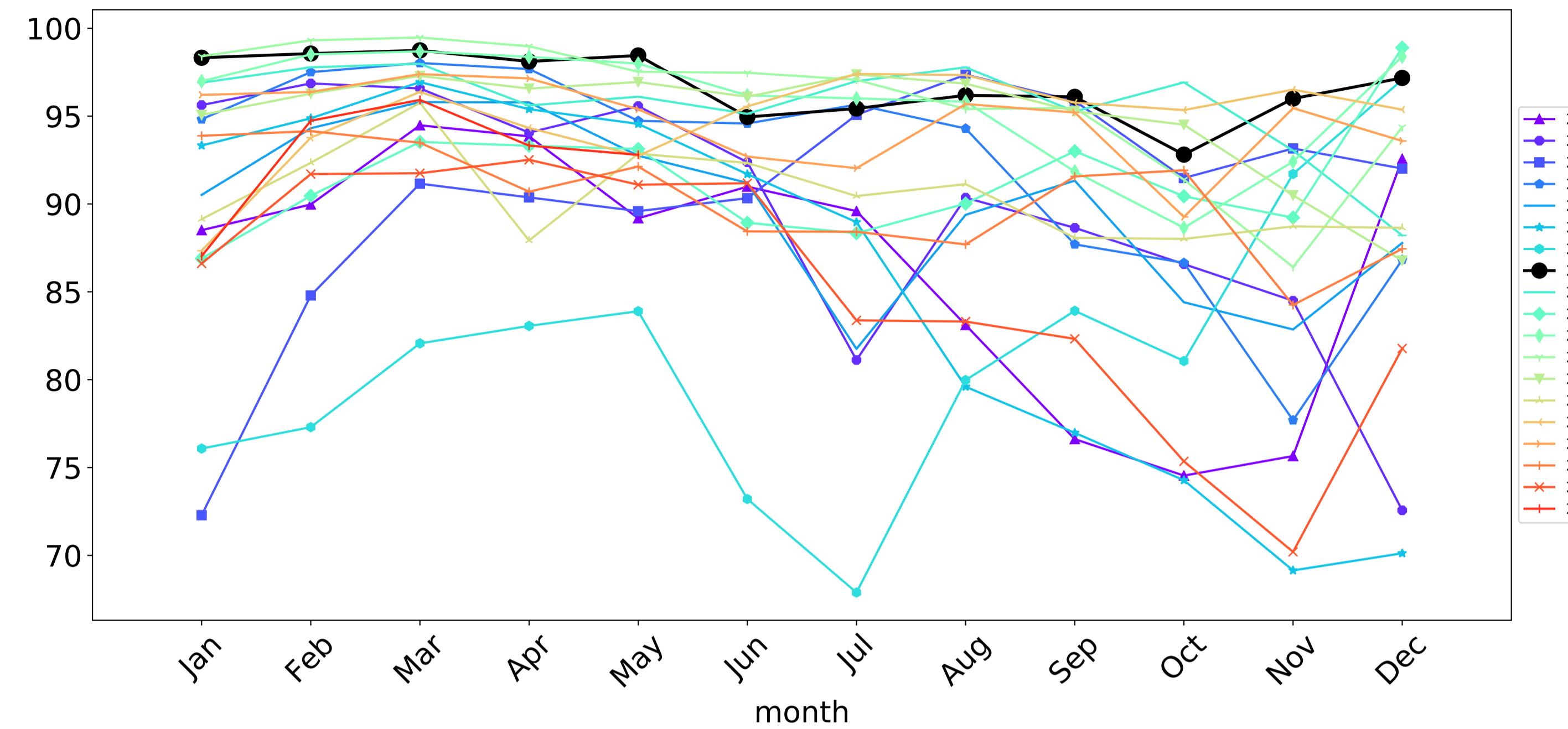
Planning,
Industry &
Environment

Cropping timeseries

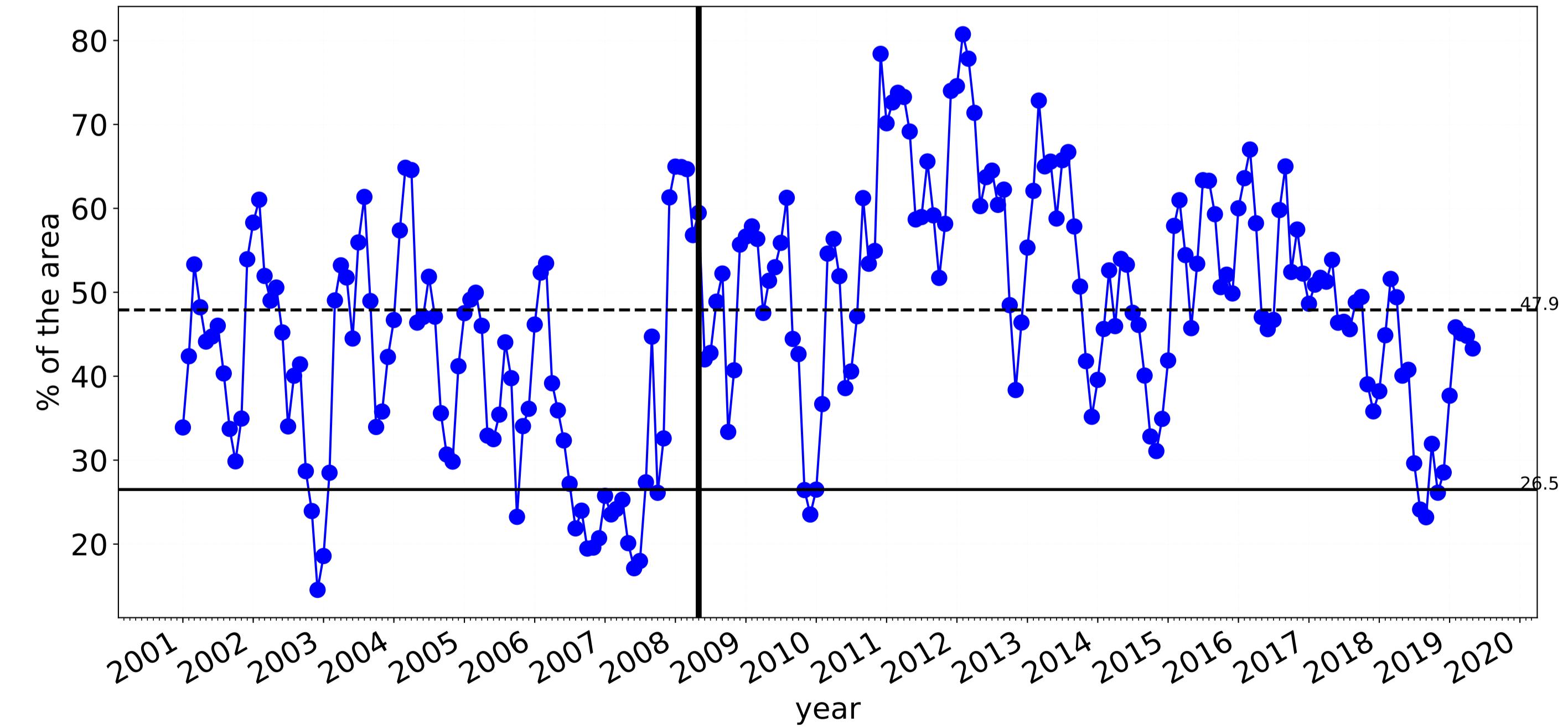
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



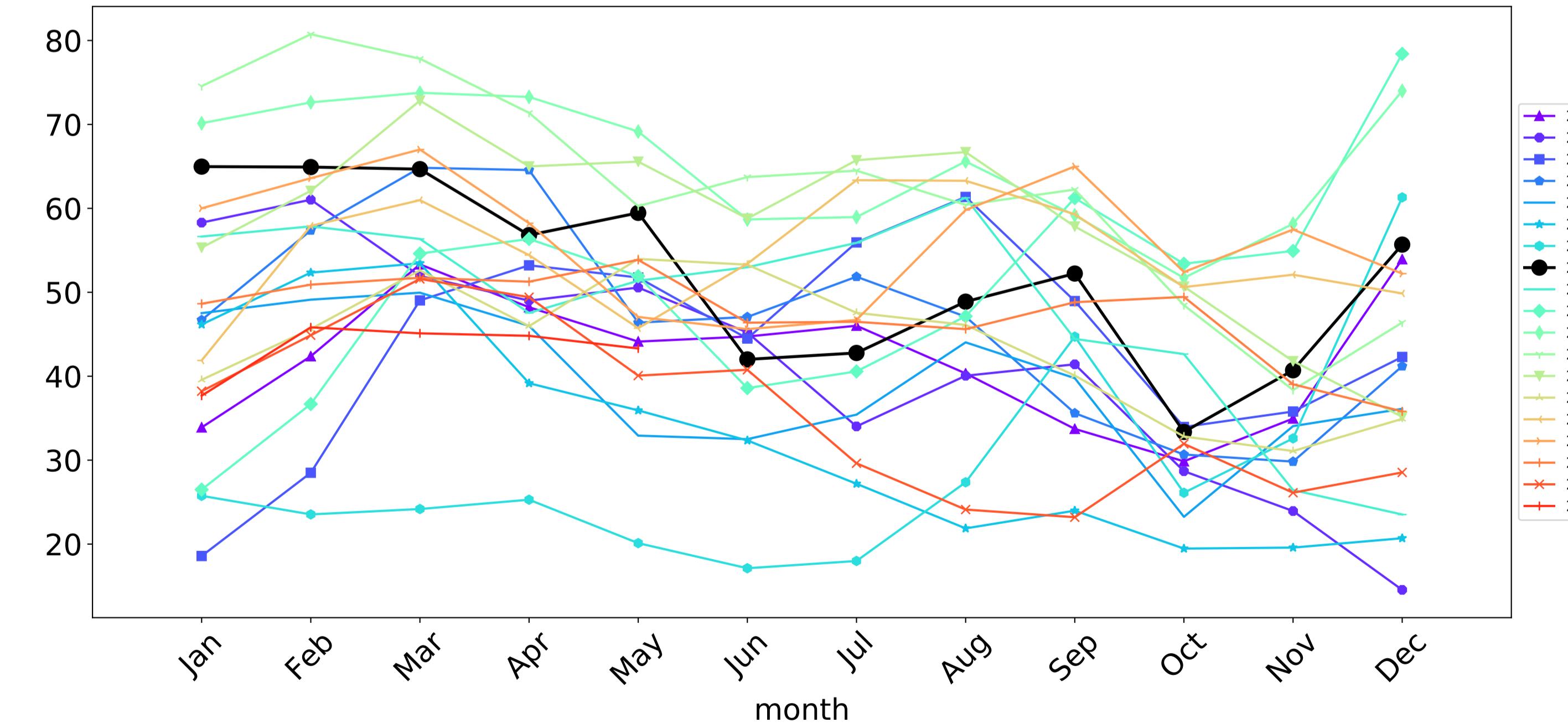
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



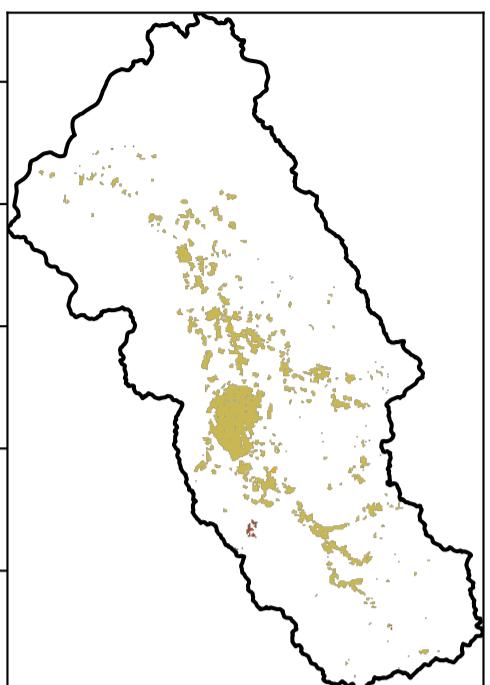
Water erosion historical monthly area protected (Total Veg Cov>70%)



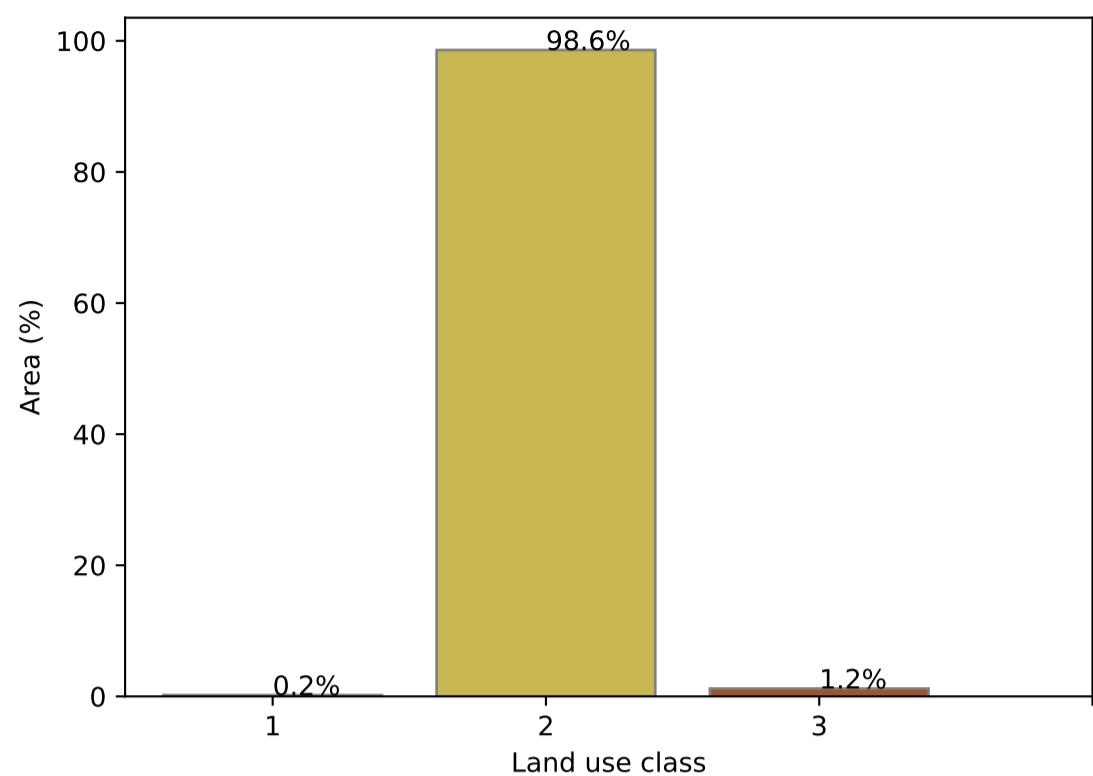
Irrigation

Land use and forest cover

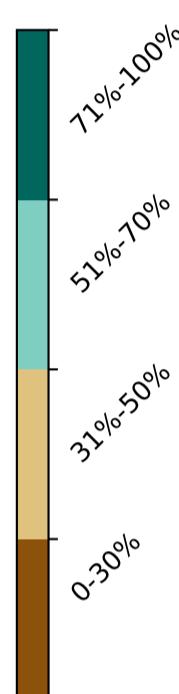
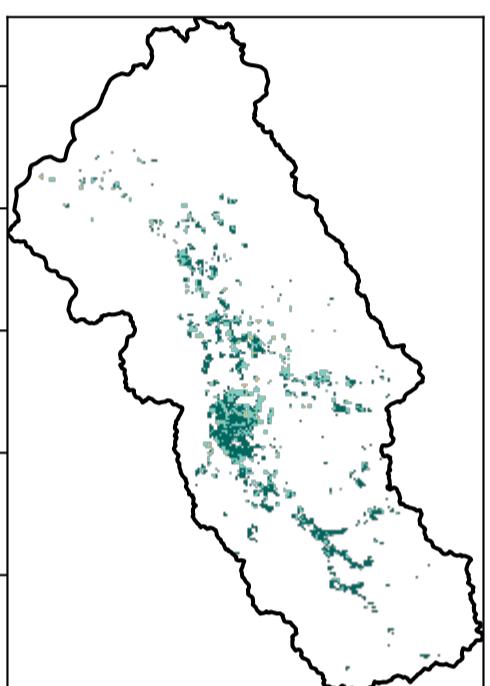
Catchment Scale
Land Use and Forests
of Australia (2018)
Derived from
Catchment Scale Land
Use of Australia
(2018) and Forests
of Australia (2018)



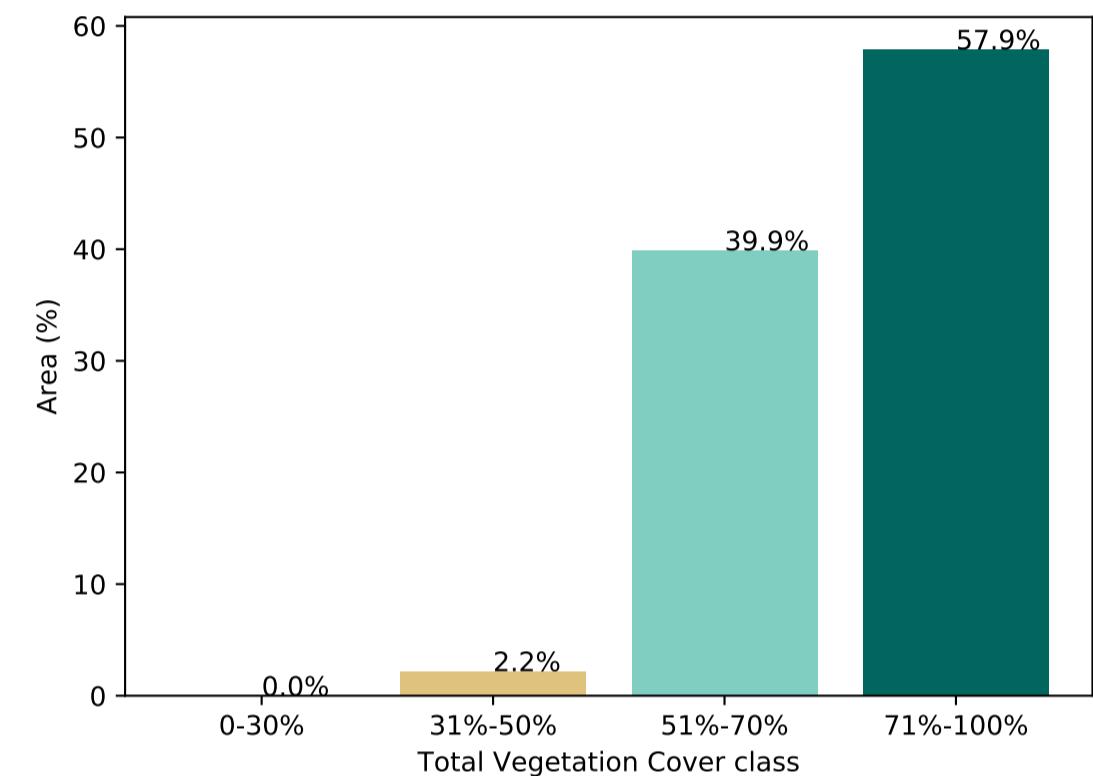
Proportion of each land class in area



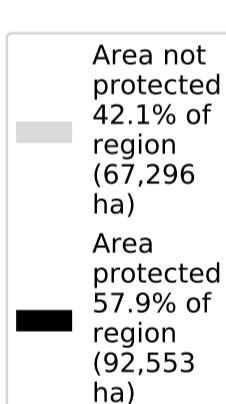
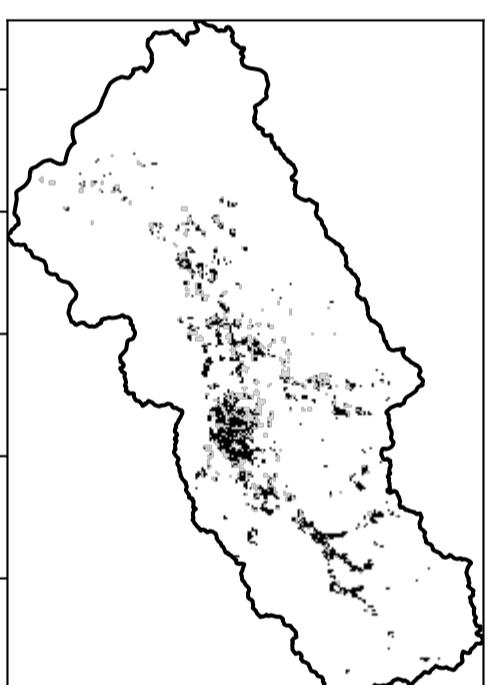
Total Vegetation Cover [%]



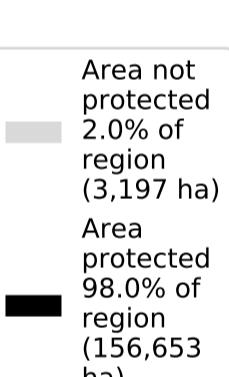
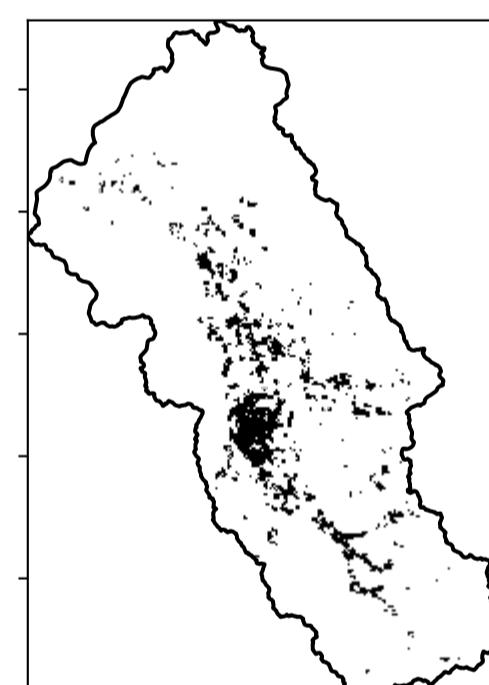
Proportion of vegetation cover class in area



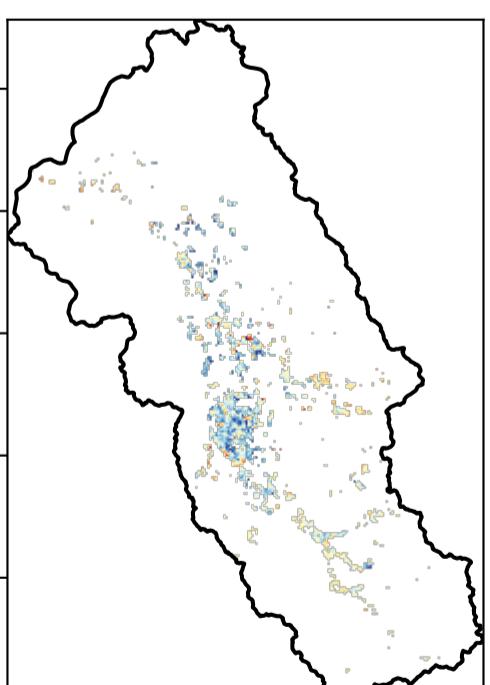
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)



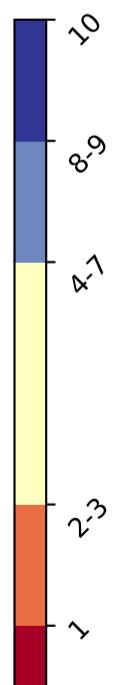
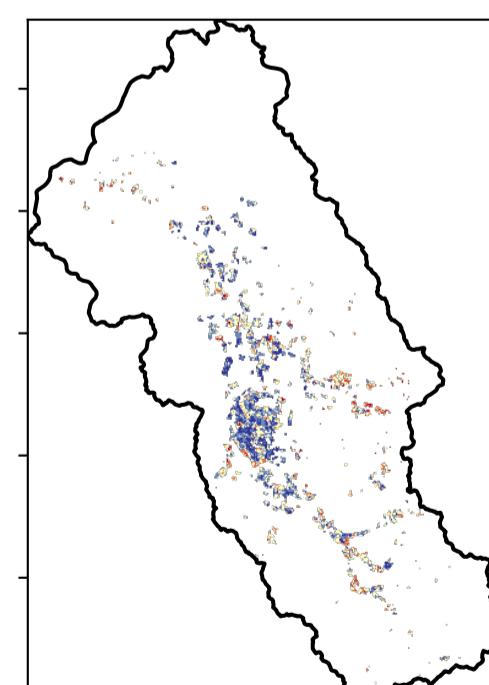
Total Vegetation Cover Anomaly [%]



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Total Vegetation Cover Decile [%]



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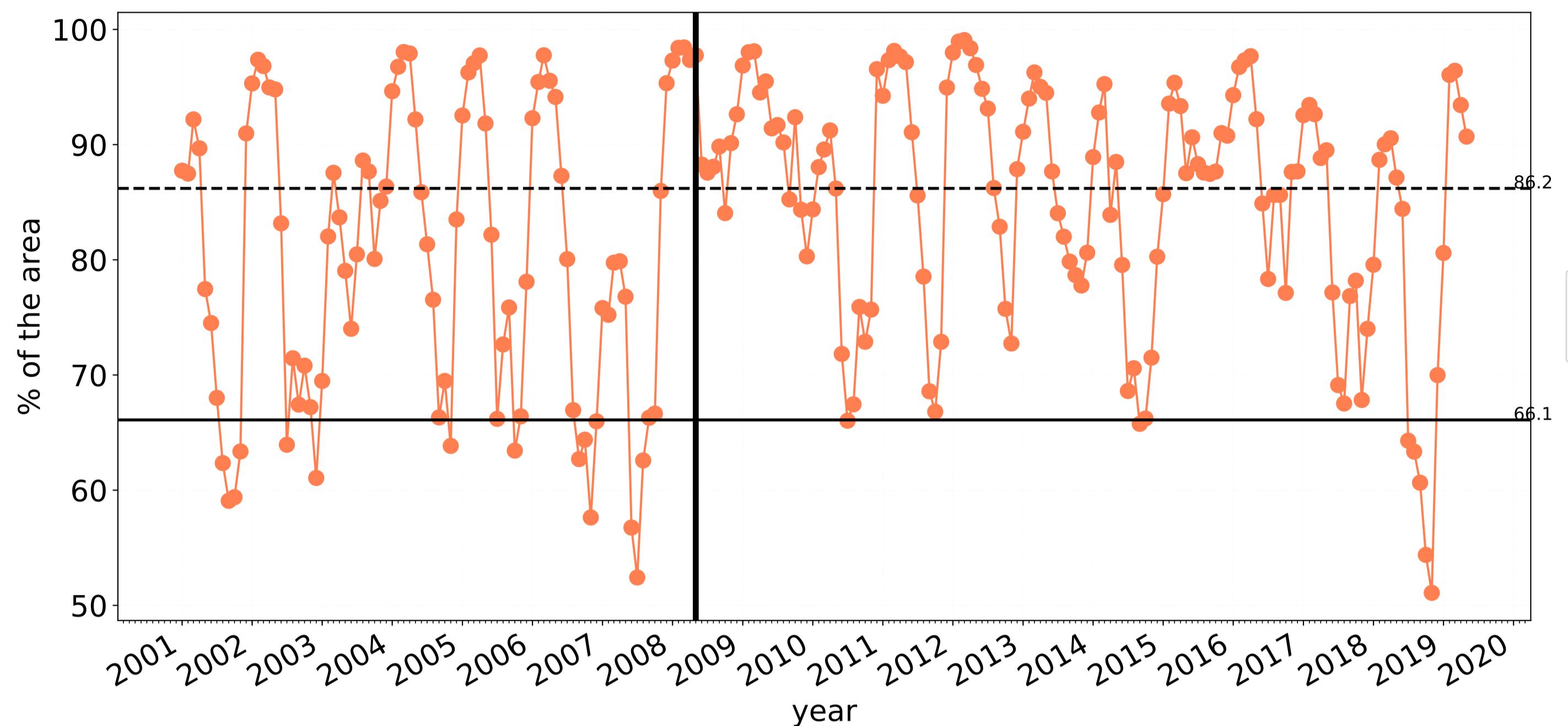
National
Landcare
Programme



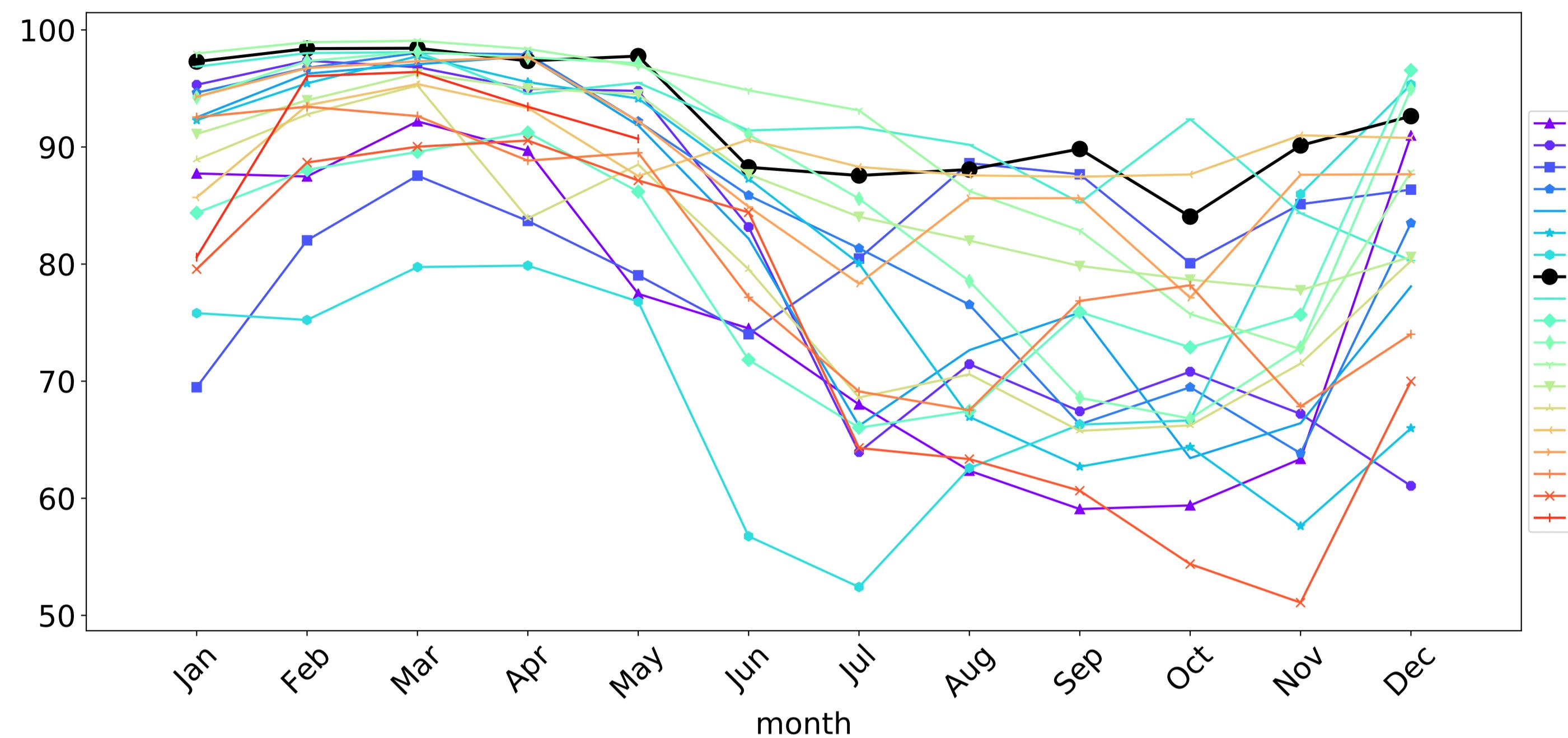
Planning,
Industry &
Environment

Irrigation timeseries

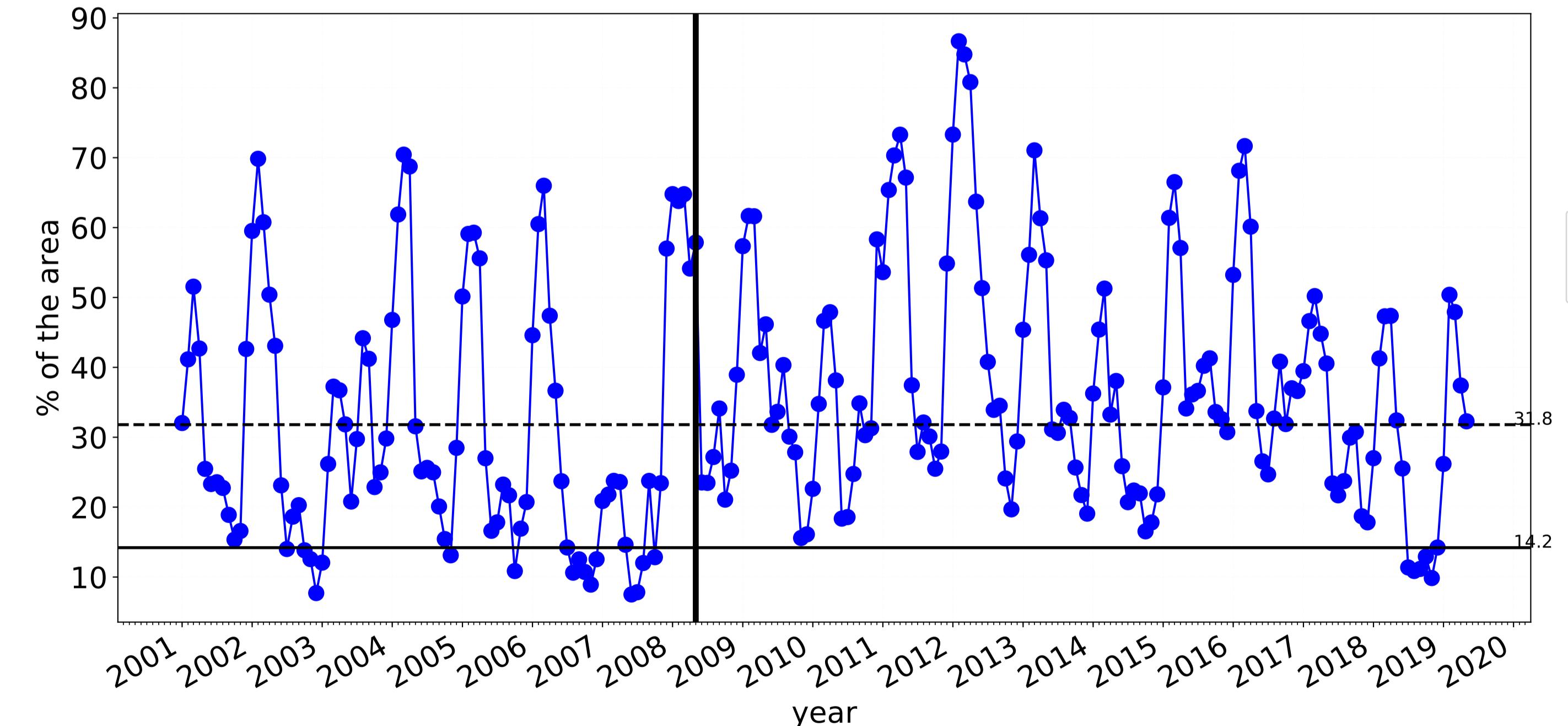
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



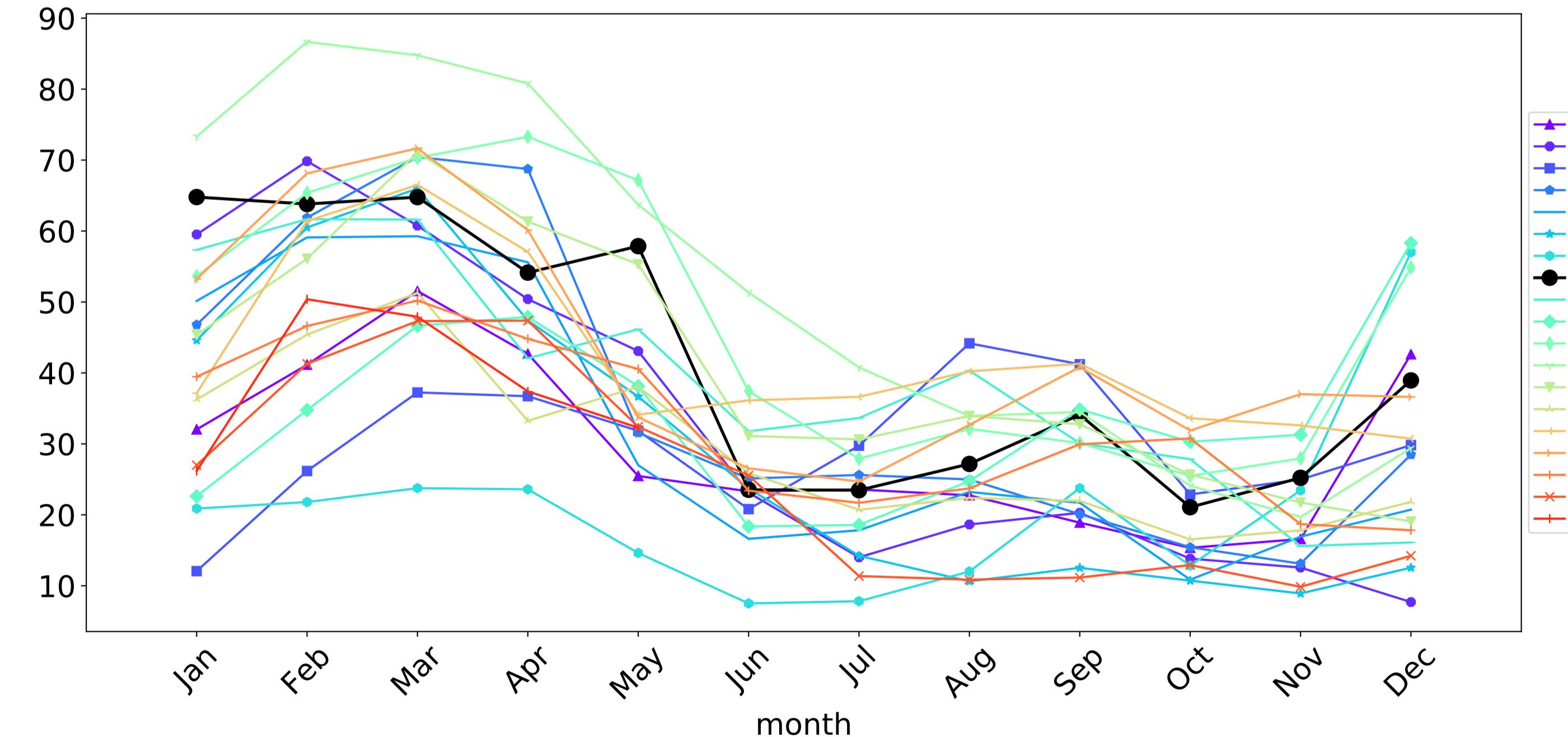
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



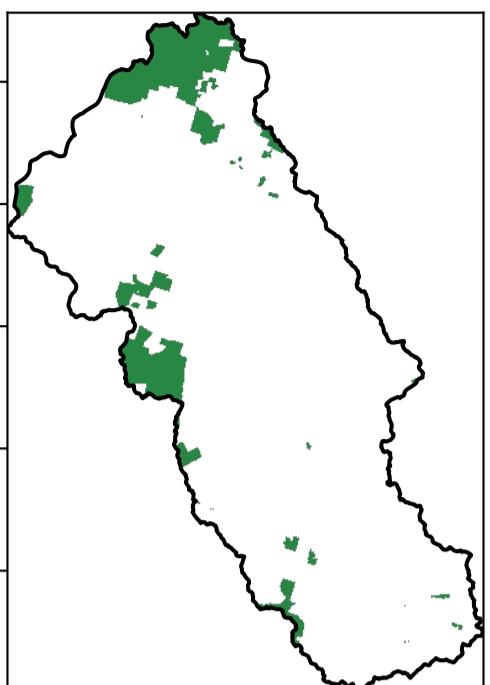
Water erosion historical monthly area protected (Total Veg Cov>70%)



Production native forests and plantation forests

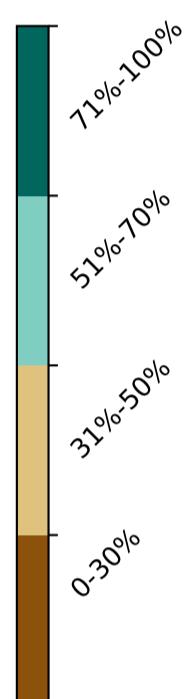
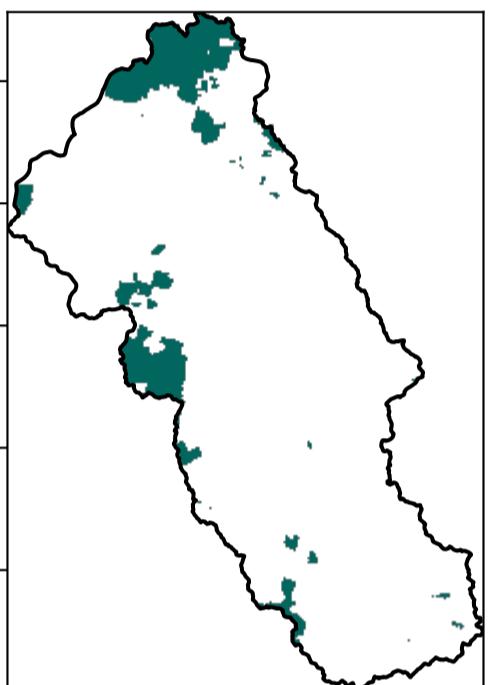
Land use and forest cover

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

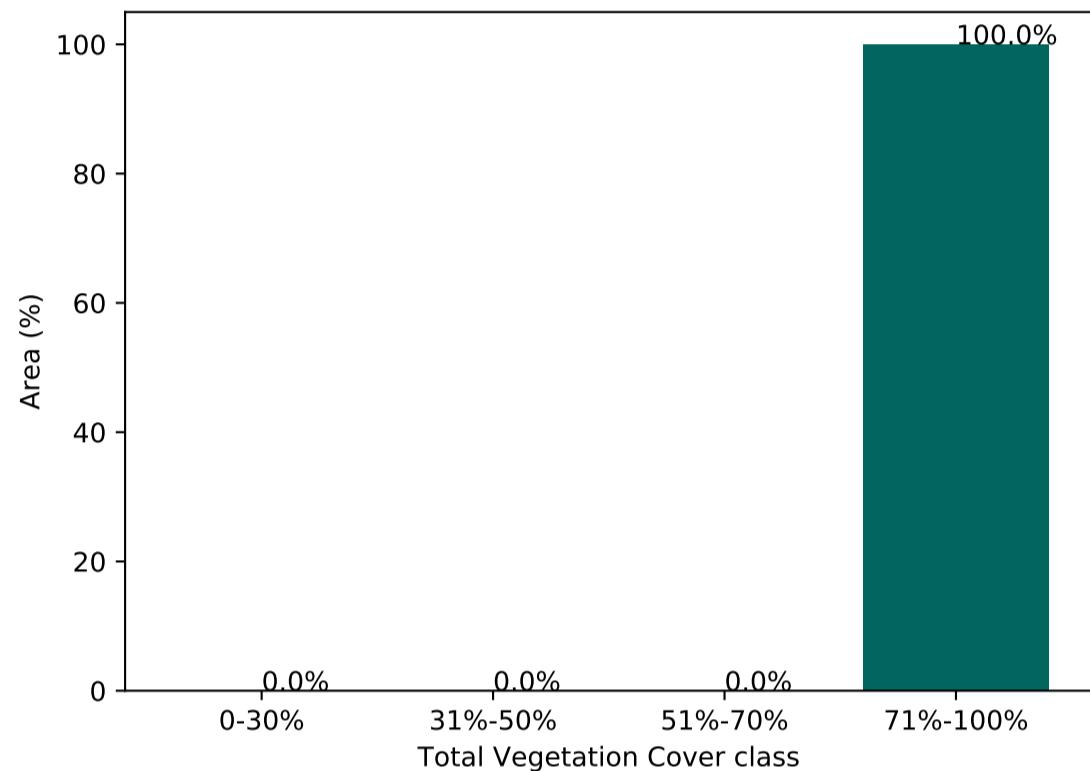


1 Production native forests and plantation forests

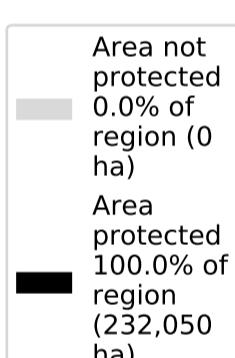
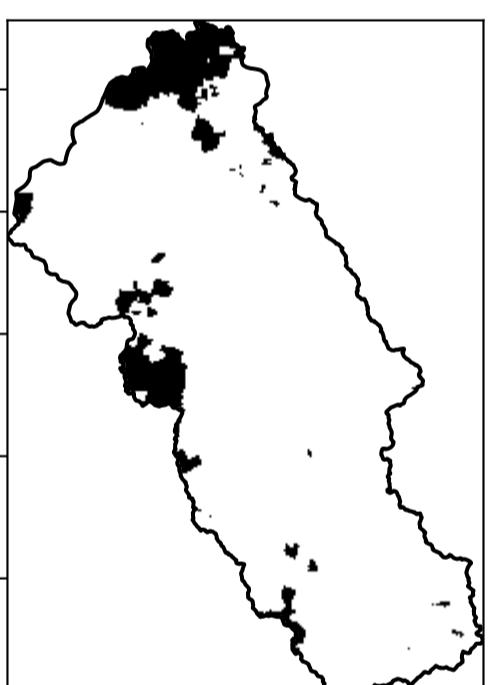
Total Vegetation Cover [%]



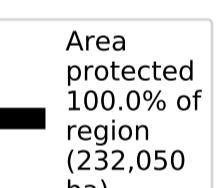
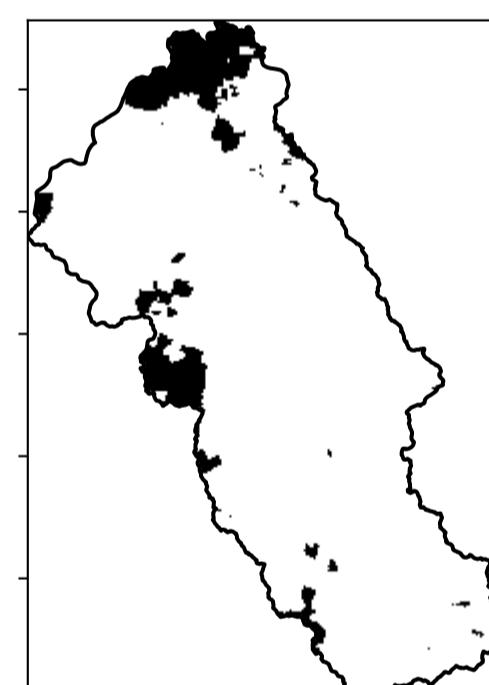
Proportion of vegetation cover class in area



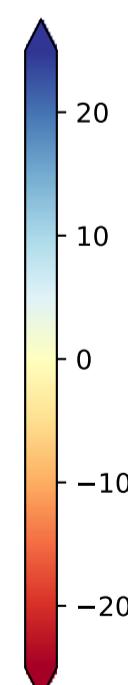
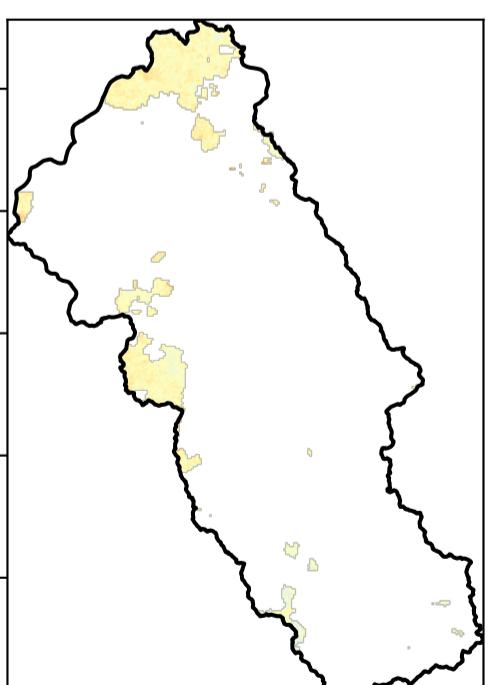
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)



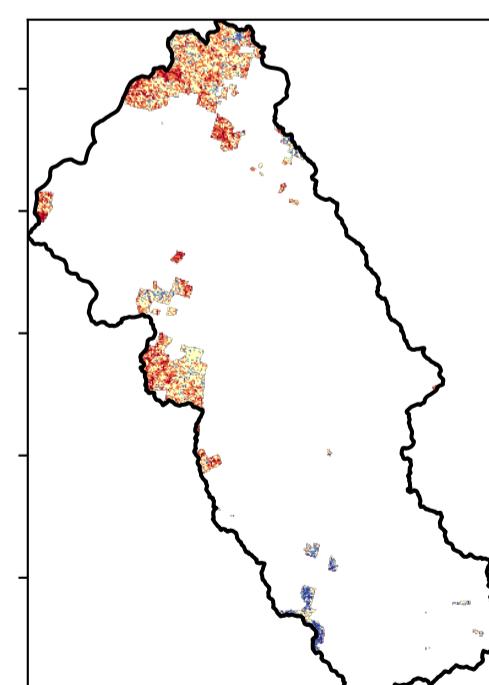
Total Vegetation Cover Anomaly [%]



Anomaly shows 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 [%]



TERN



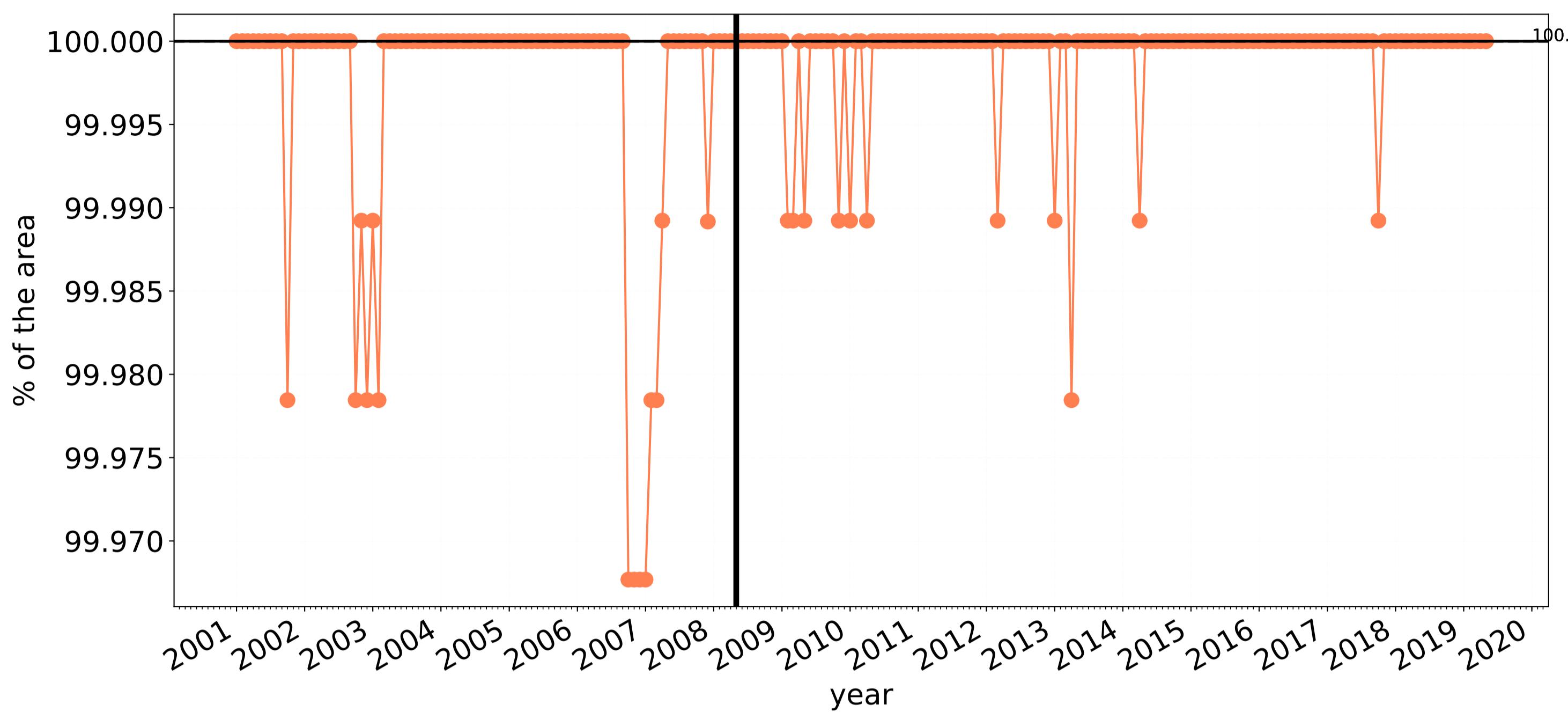
National
Landcare
Programme



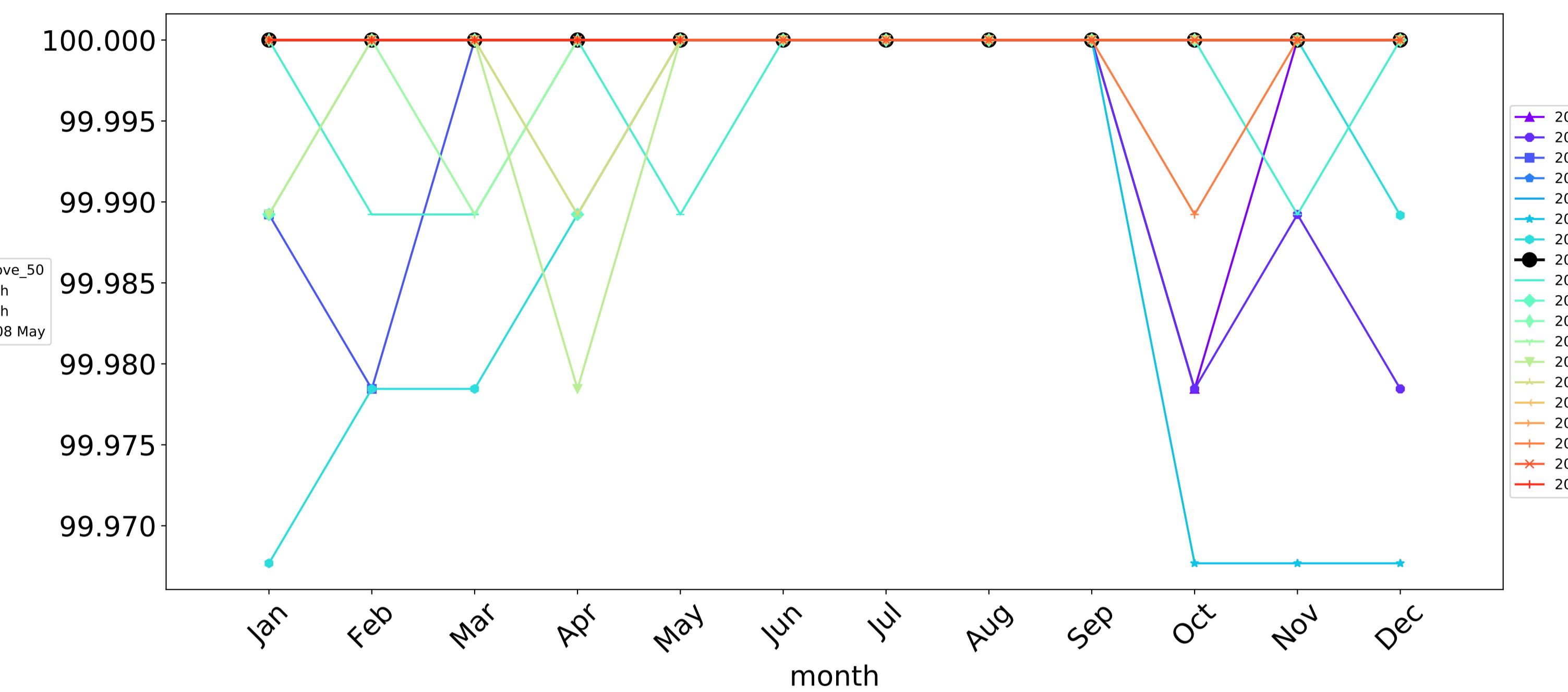
Planning,
Industry &
Environment

Production native forests and plantation forests timeseries

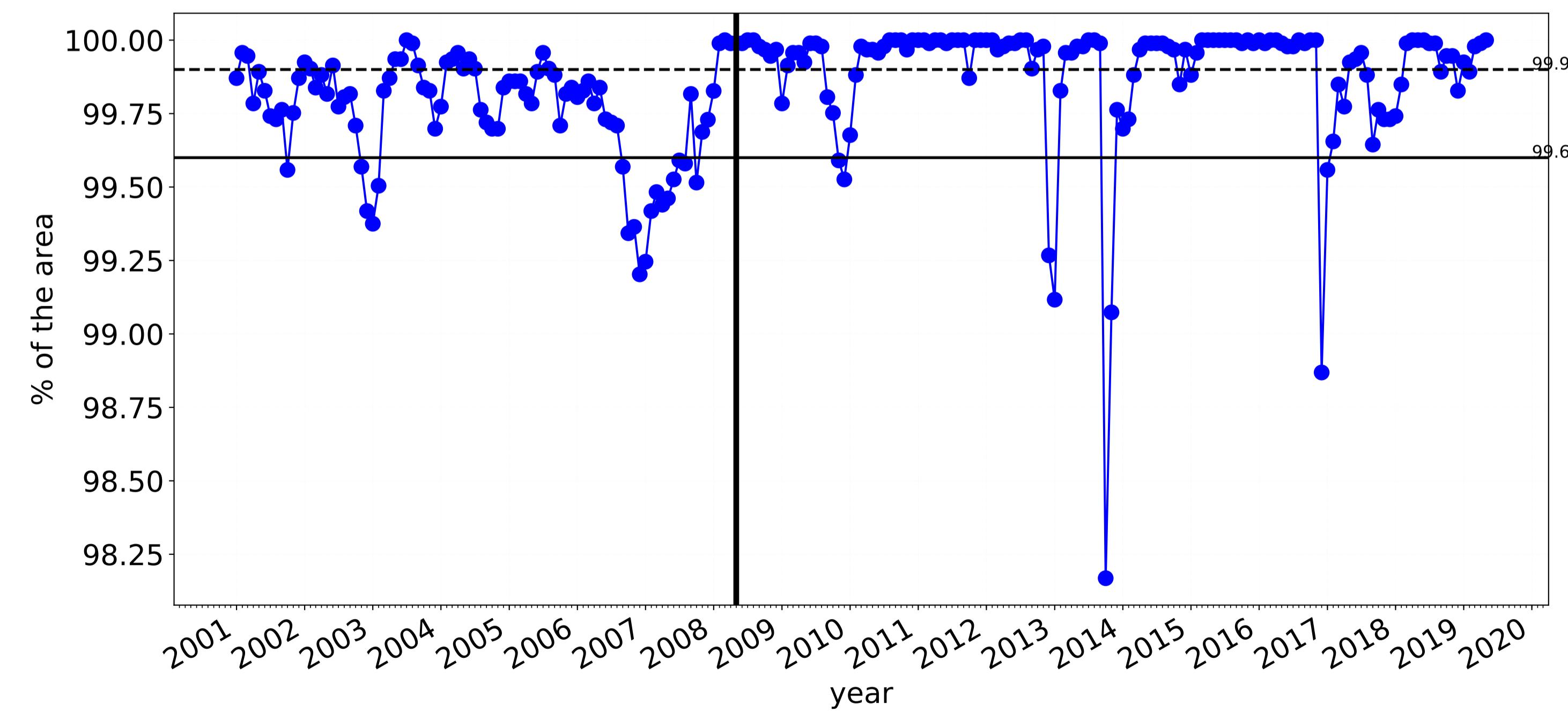
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



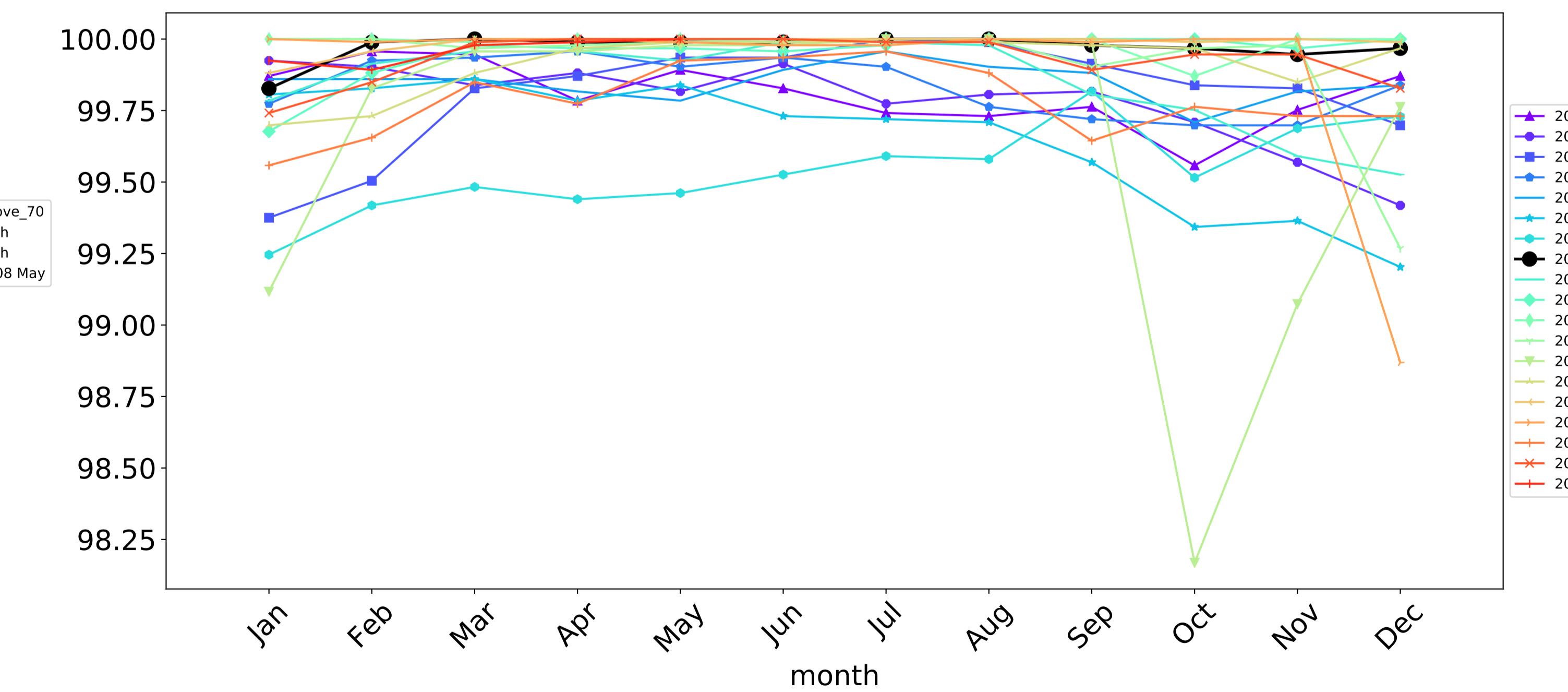
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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



Condamine (2,441,150 ha and no data 4,462 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	2,441,150	100.0% 2,441,024	99.4% 2,425,421	82.7% 2,017,717	56.1% 1,369,616	23.8% 581,913	4.7% 114,347
Conservation and natural environments	57,650	100.0% 57,650	100.0% 57,650	99.5% 57,350	97.9% 56,425	57.8% 33,350	30.1% 17,375
Conservation and natural environments Woodland forest	35,625	100.0% 35,625	100.0% 35,625	99.9% 35,600	99.1% 35,300	46.9% 16,700	17.8% 6,350
Agriculture	2,082,975	100.0% 2,082,925	99.3% 2,067,650	80.2% 1,670,500	50.2% 1,045,600	17.0% 353,250	3.7% 77,200
Grazing	1,170,500	100.0% 1,170,500	100.0% 1,170,400	96.6% 1,130,350	76.9% 899,900	29.1% 340,950	6.4% 75,475
Grazing non forest	835,800	100.0% 835,800	100.0% 835,700	95.3% 796,225	69.0% 576,600	18.6% 155,825	3.7% 31,050
Grazing Woodland forest	254,600	100.0% 254,600	100.0% 254,600	99.8% 254,150	96.8% 246,475	51.1% 130,175	9.6% 24,350
Grazing - Forest (non woodland)	80,100	100.0% 80,100	100.0% 80,100	99.8% 79,975	95.9% 76,825	68.6% 54,950	25.1% 20,075
Cropping	752,350	100.0% 752,325	98.5% 740,700	59.5% 447,375	16.2% 122,125	1.3% 9,975	0.1% 1,050
Irrigation	159,850	100.0% 159,825	97.8% 156,275	57.9% 92,500	14.7% 23,425	1.4% 2,275	0.4% 675
Production native forests and plantation forests	232,050	100.0% 232,050	100.0% 232,050	100.0% 232,025	99.5% 230,925	81.5% 189,150	8.1% 18,900

