Total vegetation cover soil protection
Region:LGA Uralla_(A) NSW Date: August 2024

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:

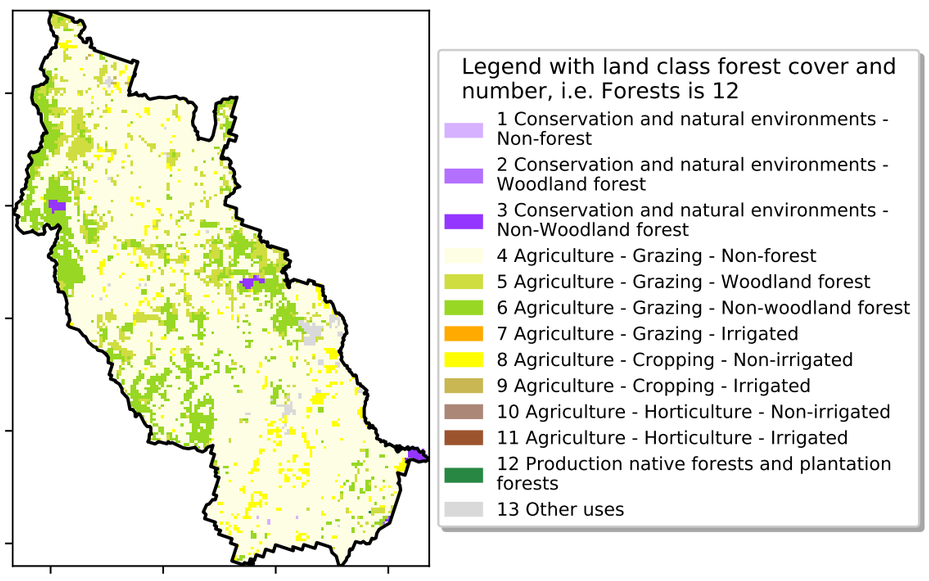
1. http://www.agriculture.gov.au/abares/aclump/land-use/alum-classification
2. http://www.agriculture.gov.au/abares/forestsaustralia/sofr/sofr-2018
3. https://www.dpi.nsw.gov.au/agriculture/pastures-and-rangelands/establishment-mgmt/production-management2/groundcover
4. MODIS Fractional cover algorithm:

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

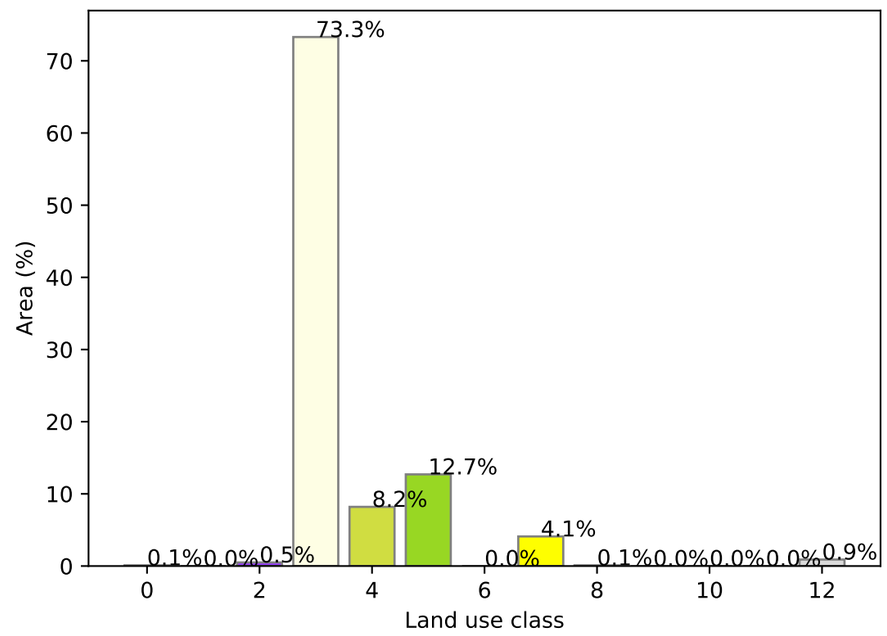
Vegetation Cover Aug 2024

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

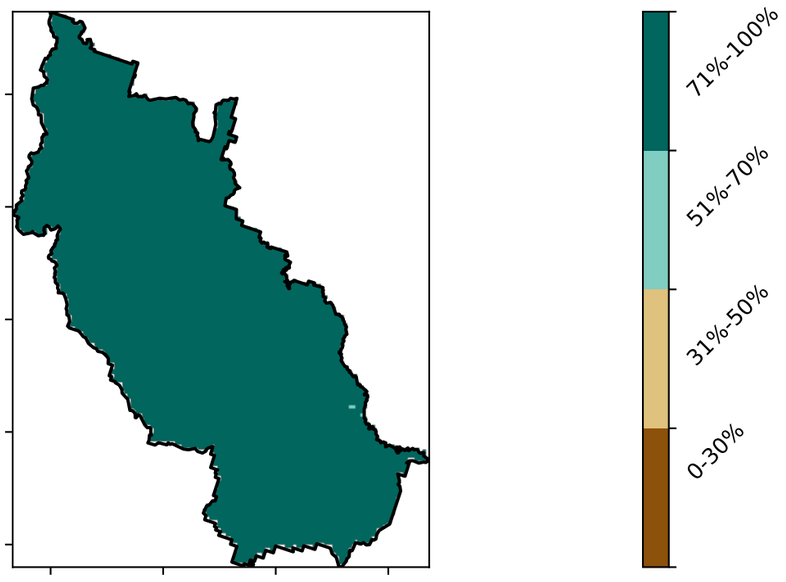
Land use and forest cover



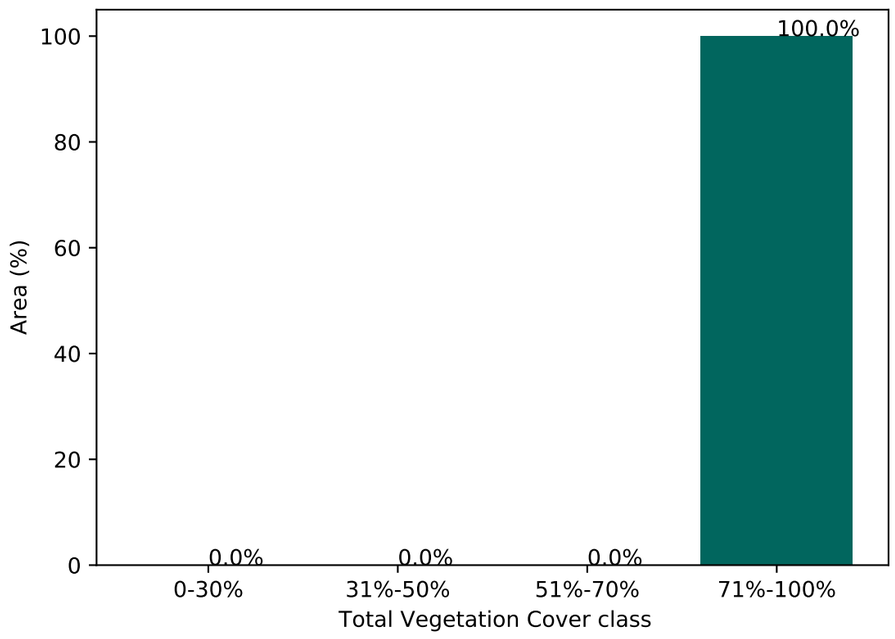
Proportion of each land class in area



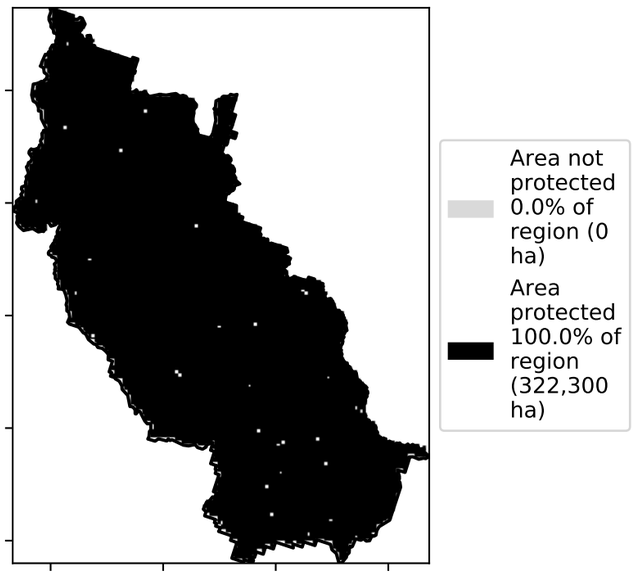
Total Vegetation Cover [%]



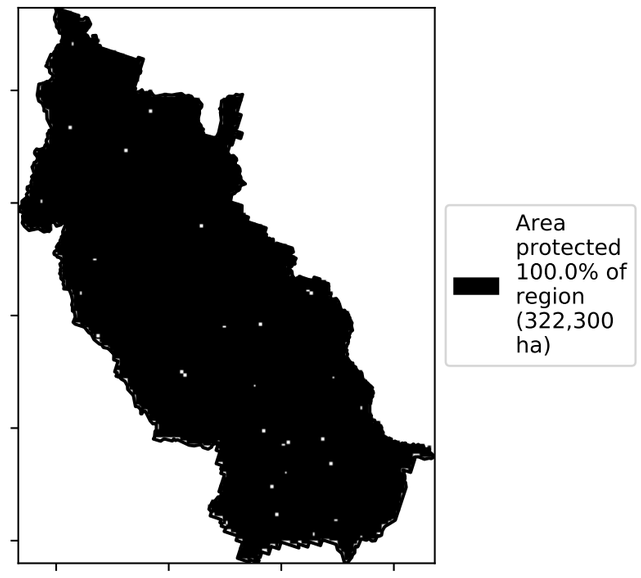
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

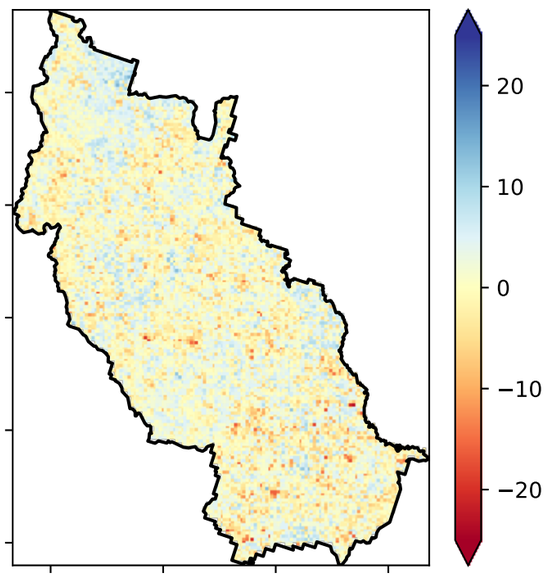


% Area protected from wind erosion (>50%)



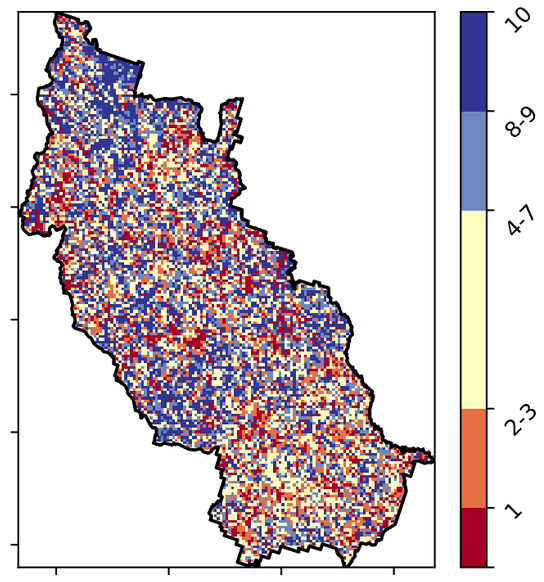
Total Vegetation Cover Anomaly [%]

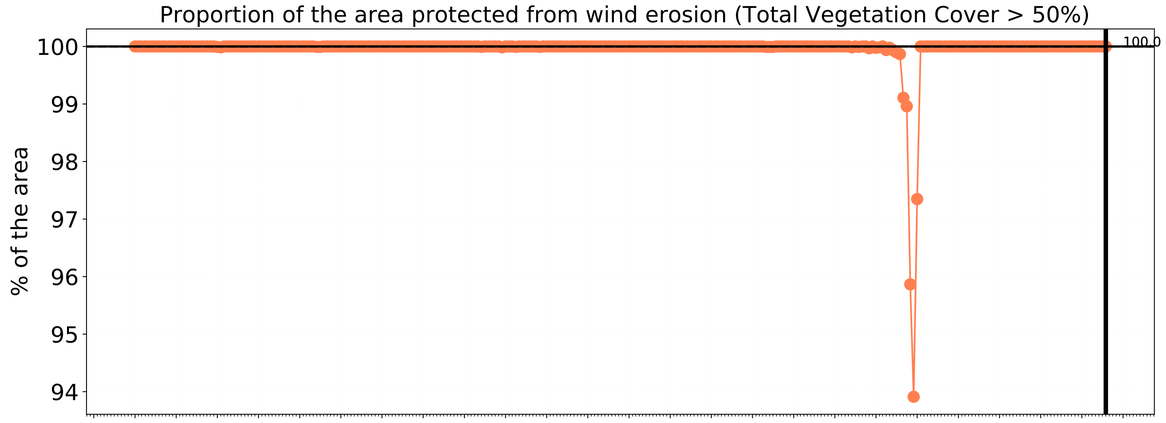
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

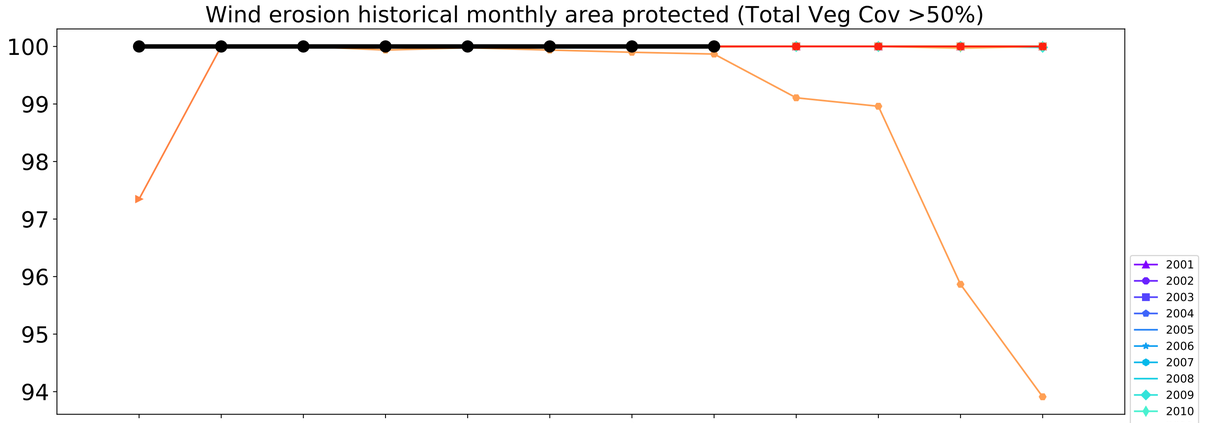


Total Vegetation Cover Decile [%]

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%)
% of the area
100.0
above_50
10th
50th
2024 Aug


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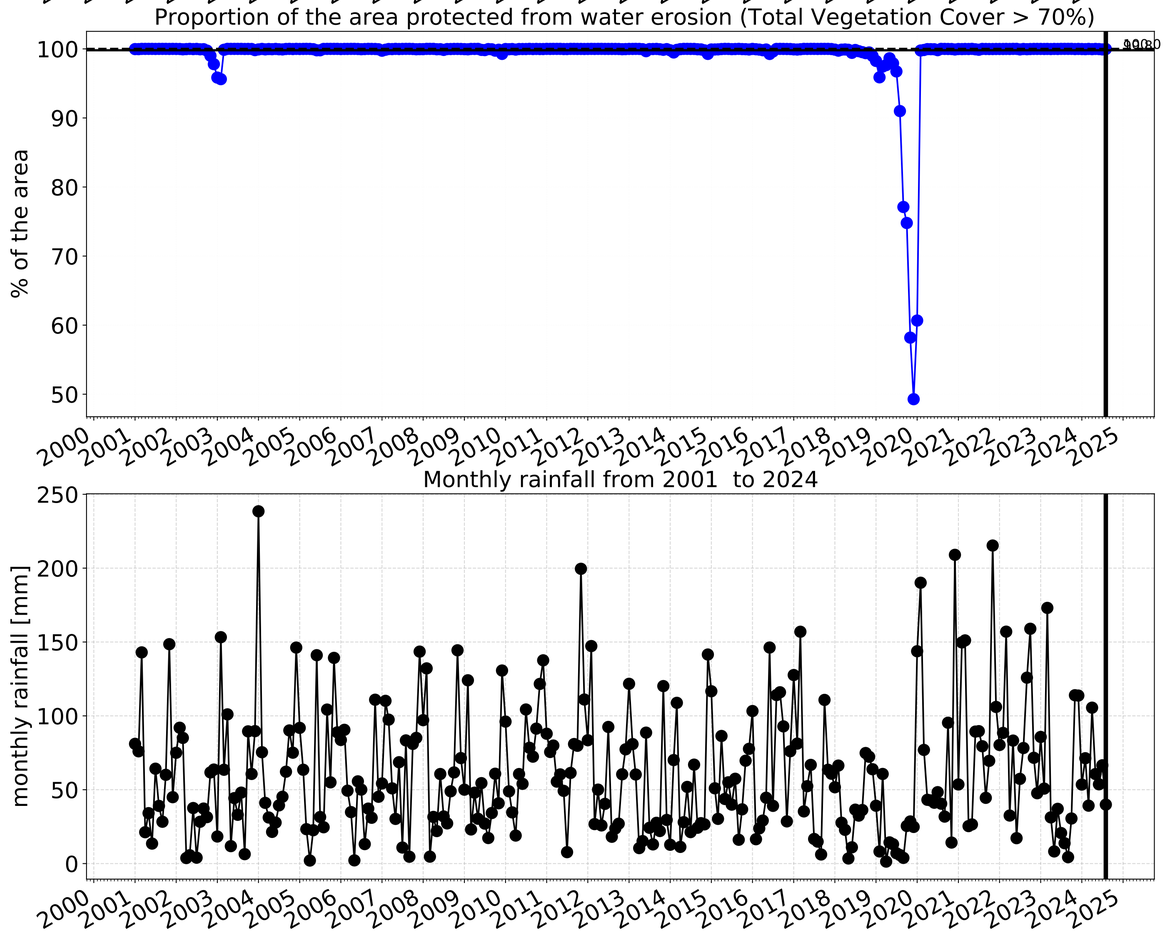
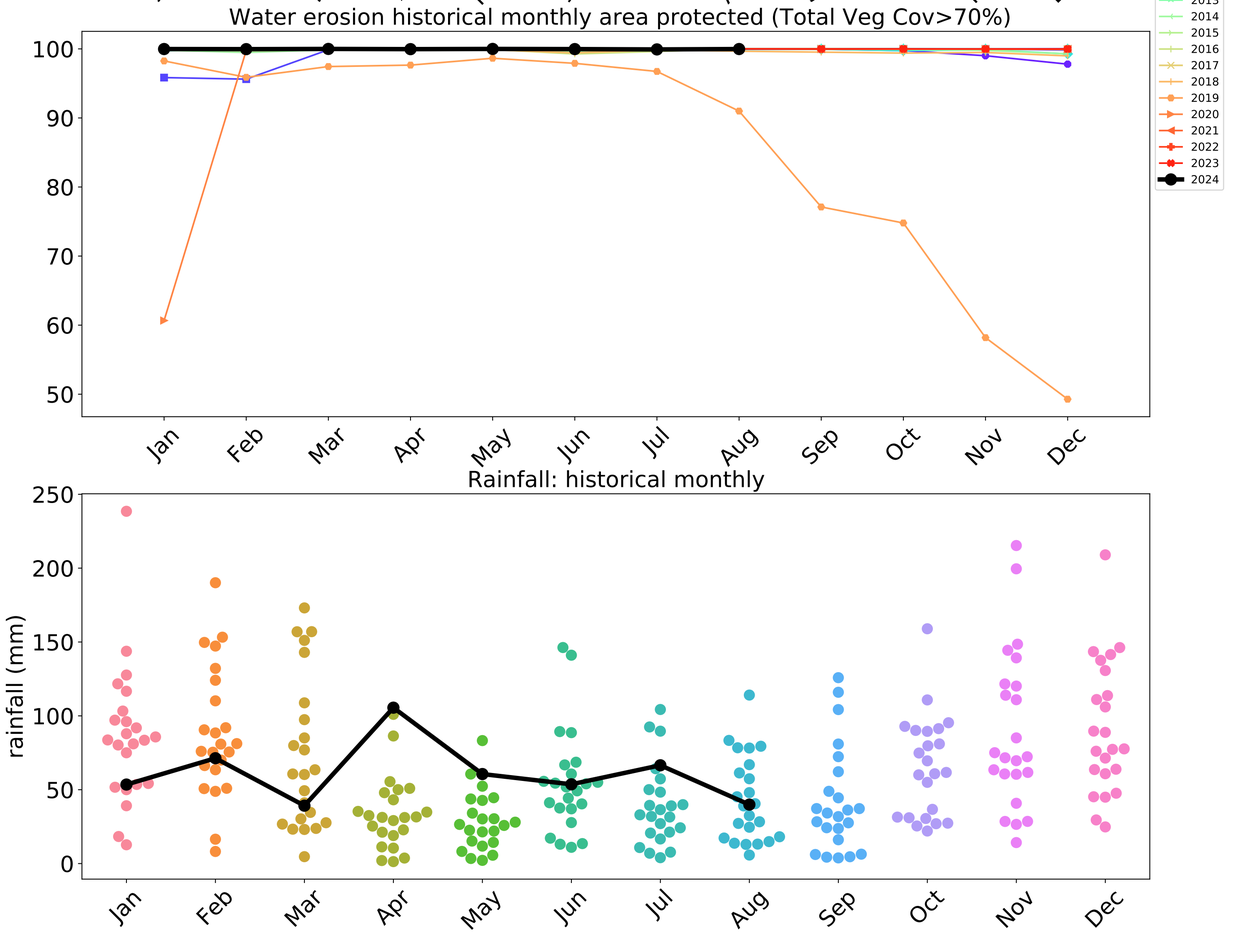

Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)
% of the area
100.0
above_70
10th
50th
2024 Aug
Monthly rainfall from 2001 to 2024
monthly rainfall [mm]


Water erosion historical monthly area protected (Total Veg Cov>70%)
Rainfall: historical monthly
rainfall (mm)
Jan
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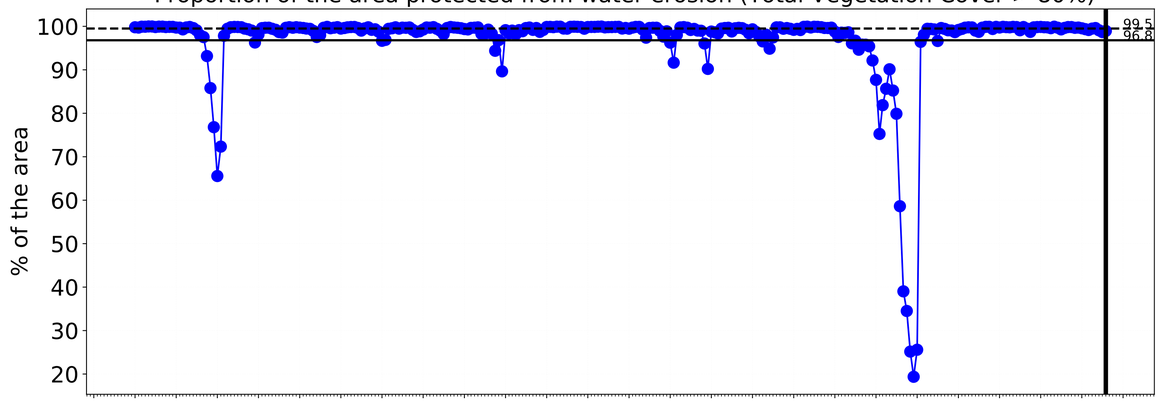
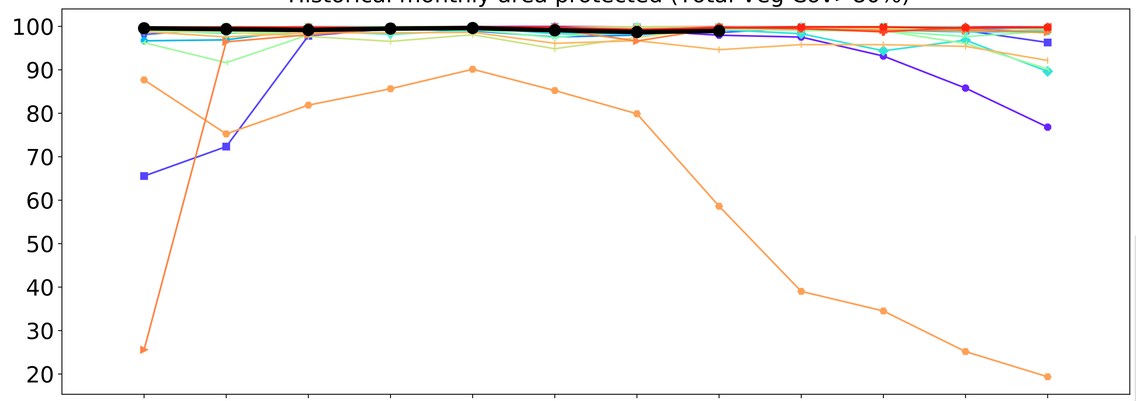

Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)
% of the area
99.5
96.8
above_80
10th
50th
2024 Aug


Historical monthly area protected (Total Veg Cov>80%)
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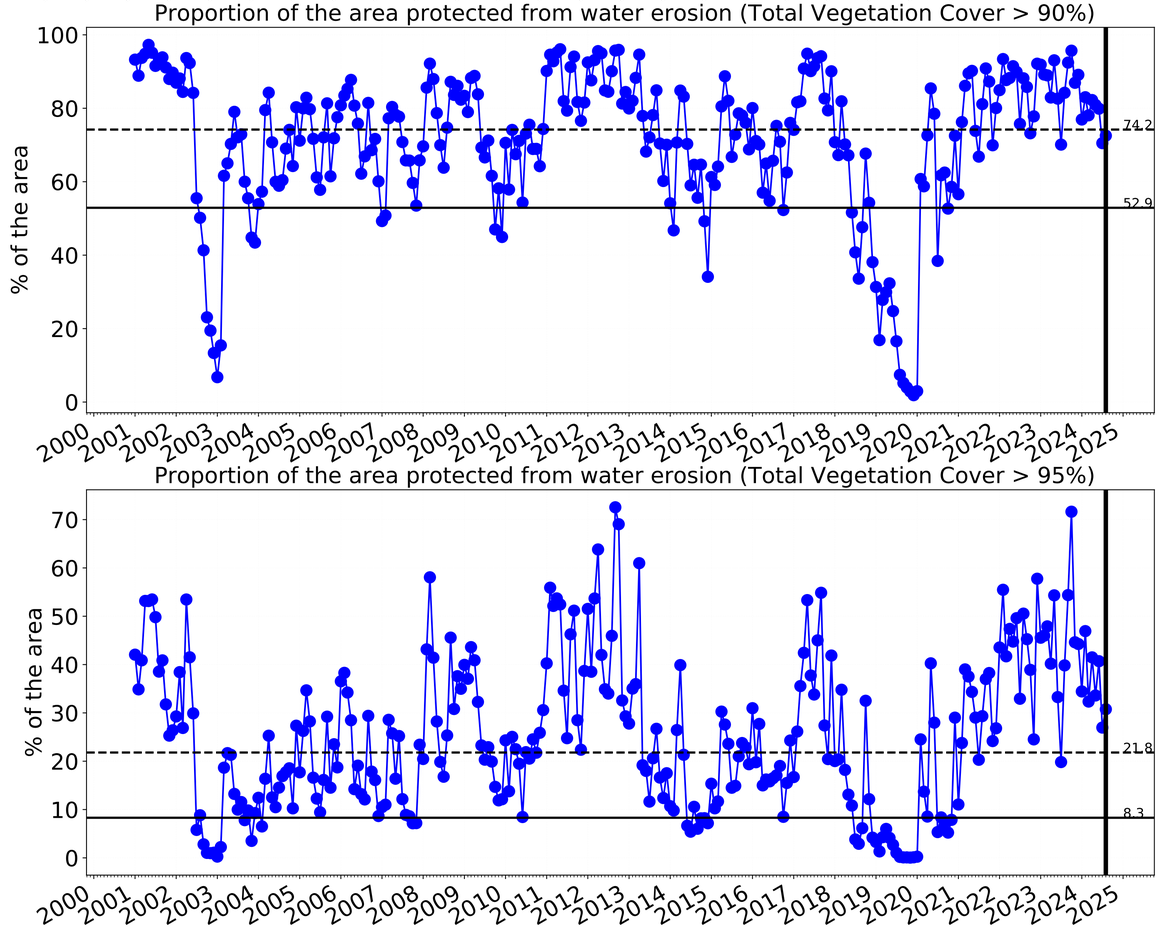
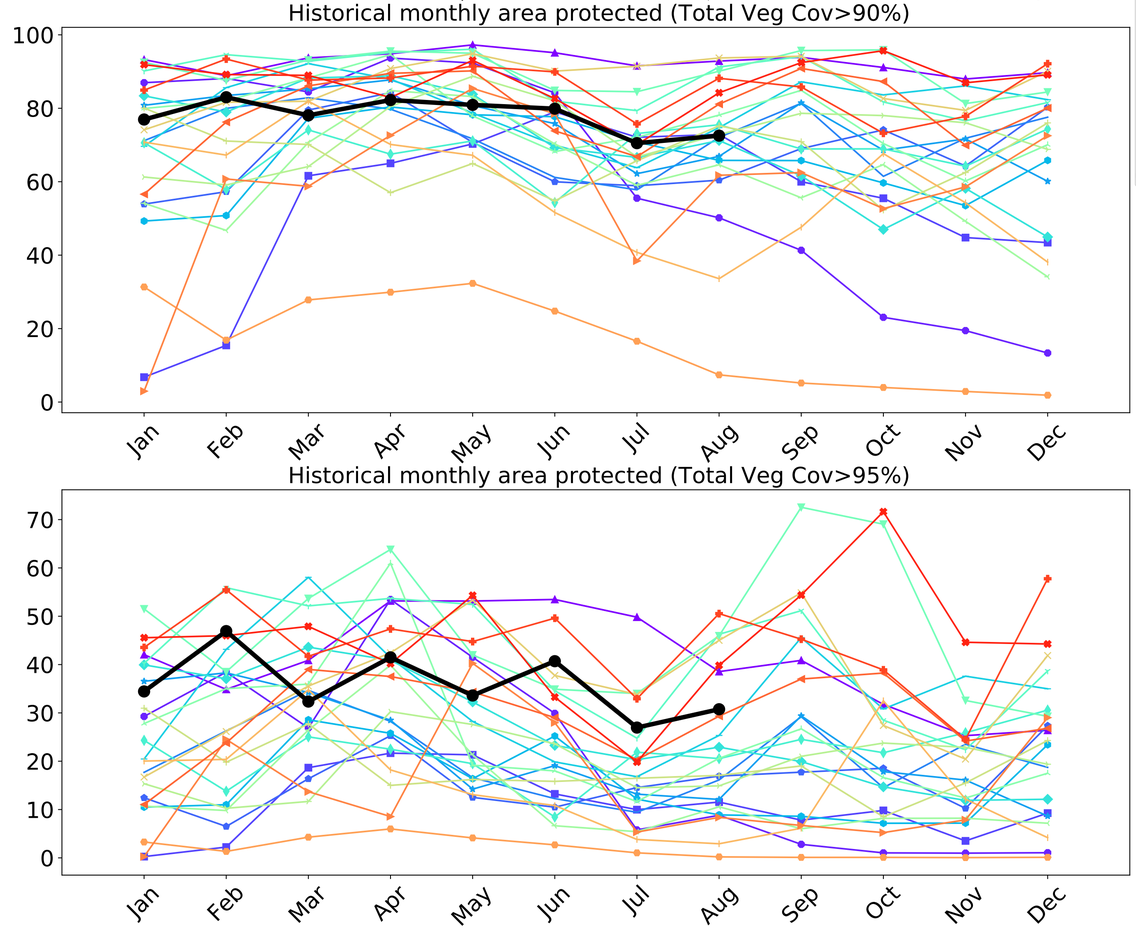

Proportion of the area protected from water erosion (Total Vegetation Cover > 90%)
% of the area
74.2
52.9
above_90
10th
50th
2024 Aug


Historical monthly area protected (Total Veg Cov>90%)
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Proportion of the area protected from water erosion (Total Vegetation Cover > 95%)
% of the area
21.8
8.3
above_95
10th
50th
2024 Aug

Historical monthly area protected (Total Veg Cov>95%)
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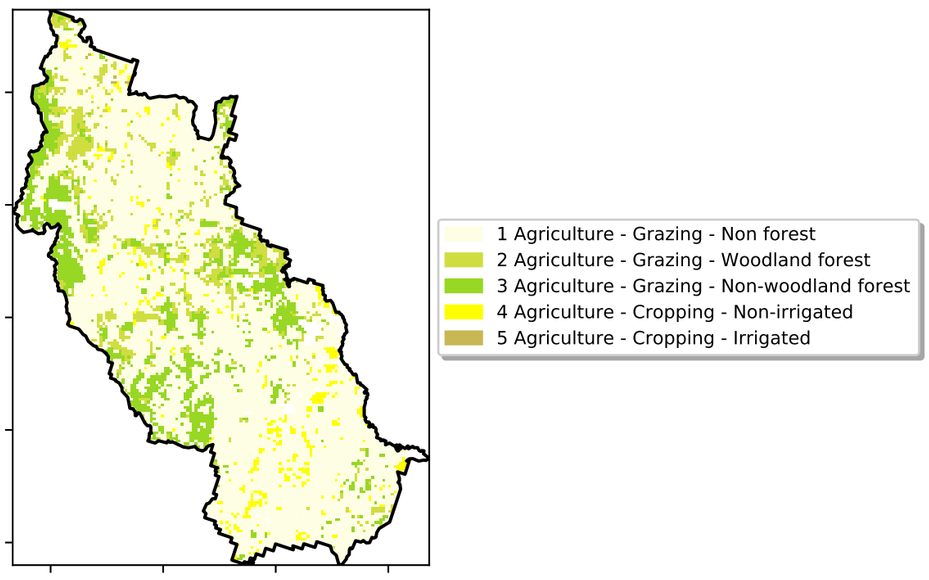
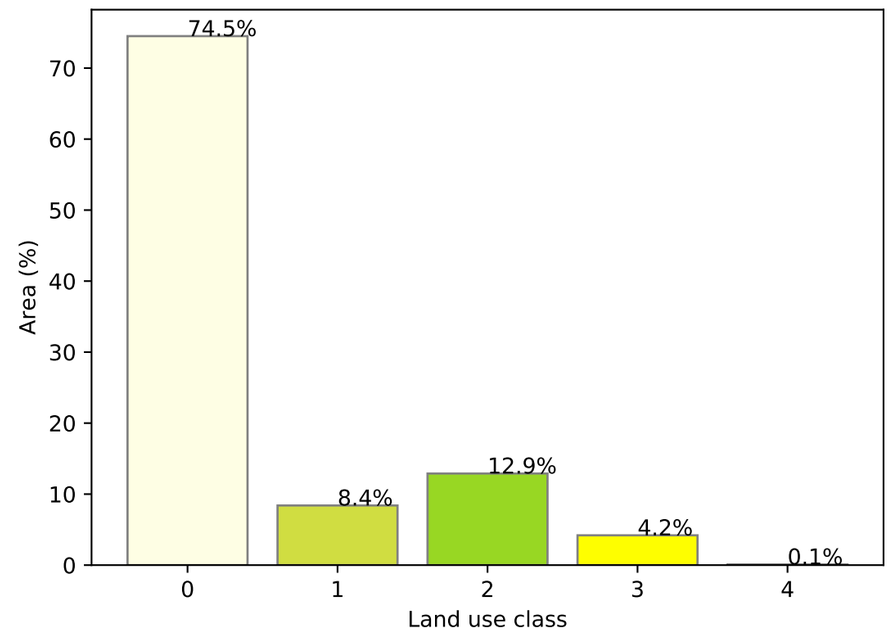
Agriculture

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

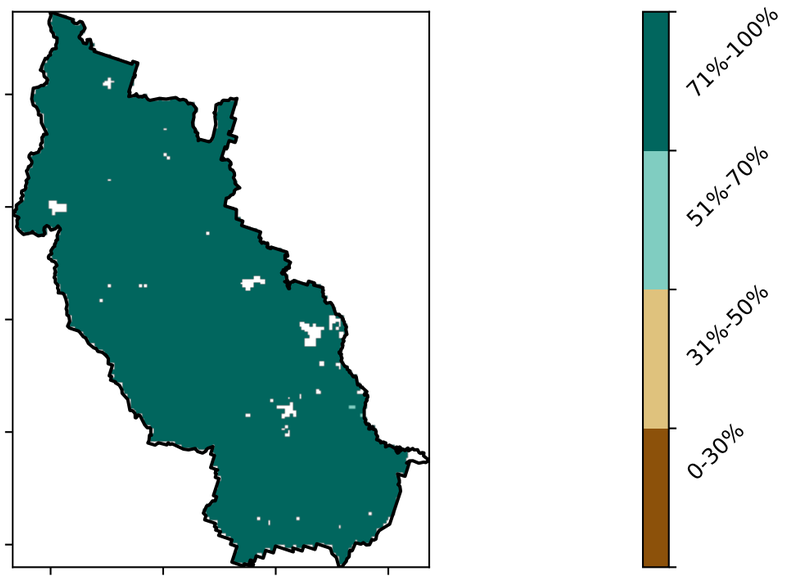
Land use and forest cover



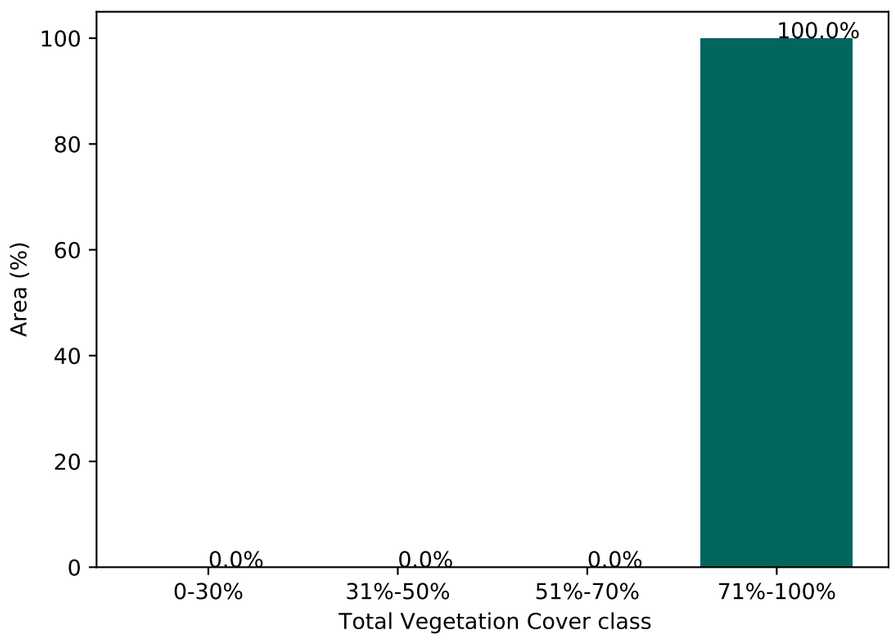
Proportion of each land class in area



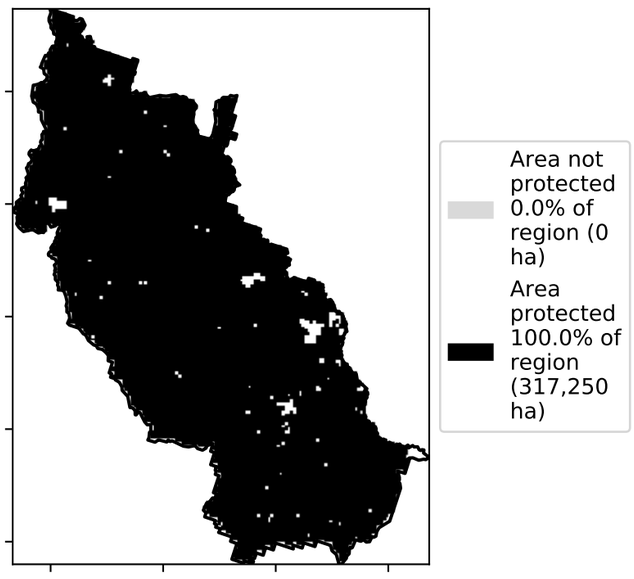
Total Vegetation Cover [%]



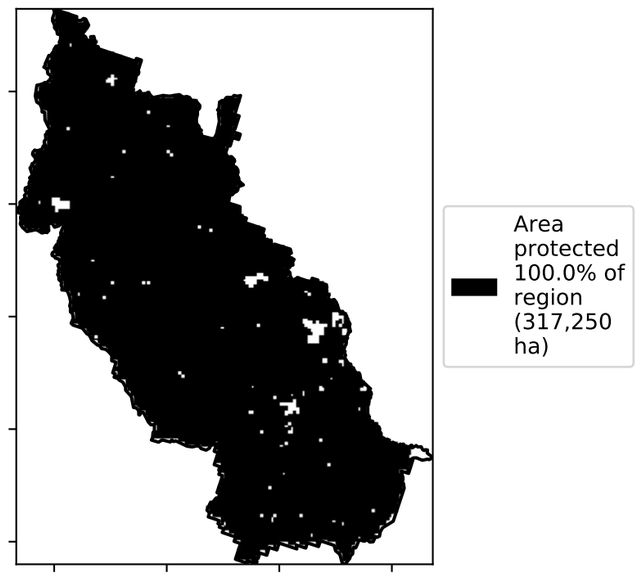
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

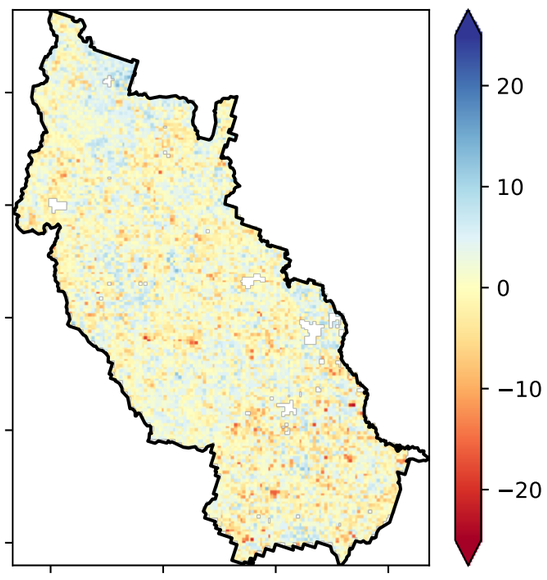


% Area protected from wind erosion (>50%)



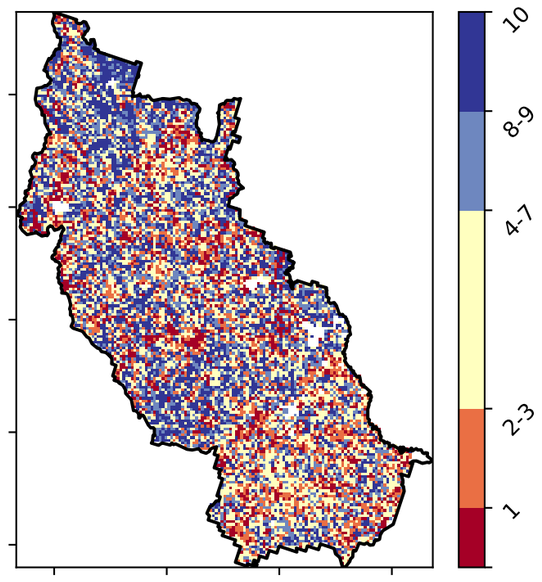
Total Vegetation Cover Anomaly [%]

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.



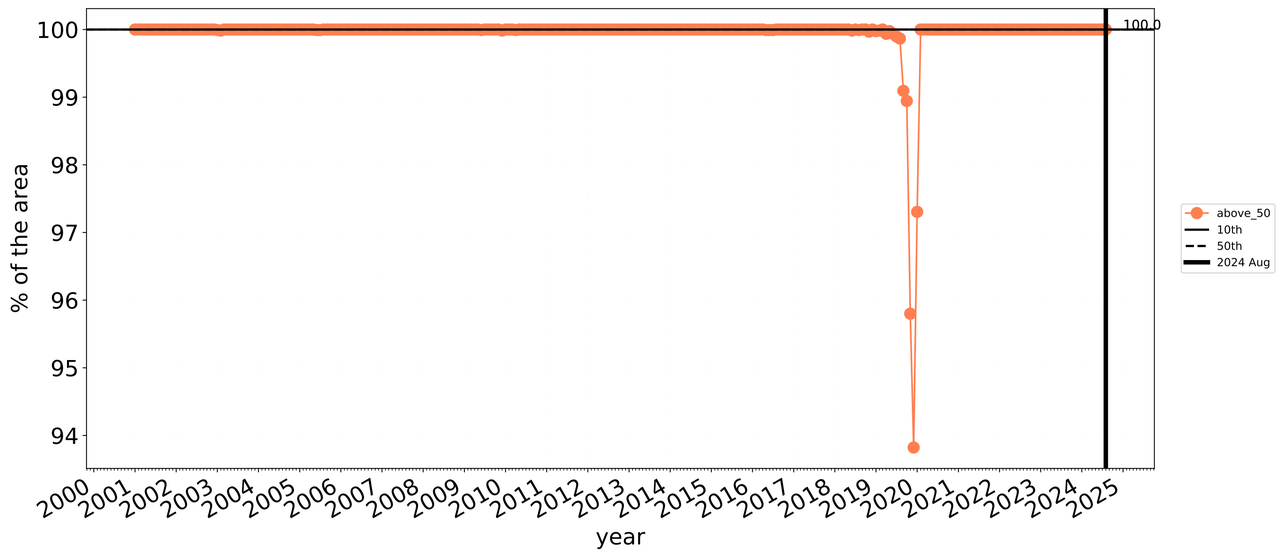
Total Vegetation Cover Decile [%]

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.

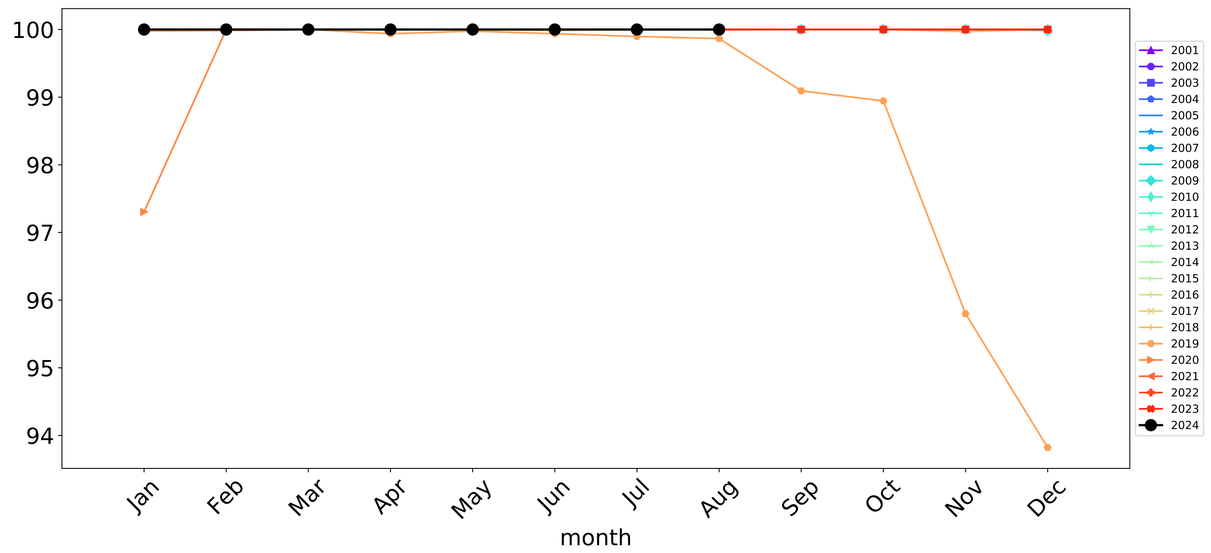


Agriculture timeseries

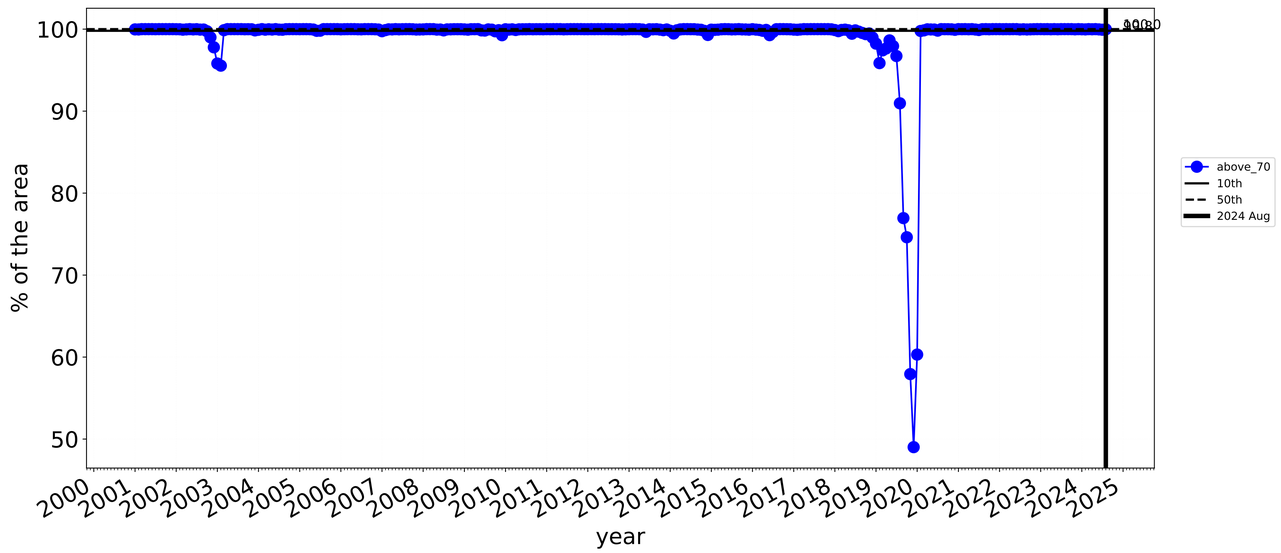
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



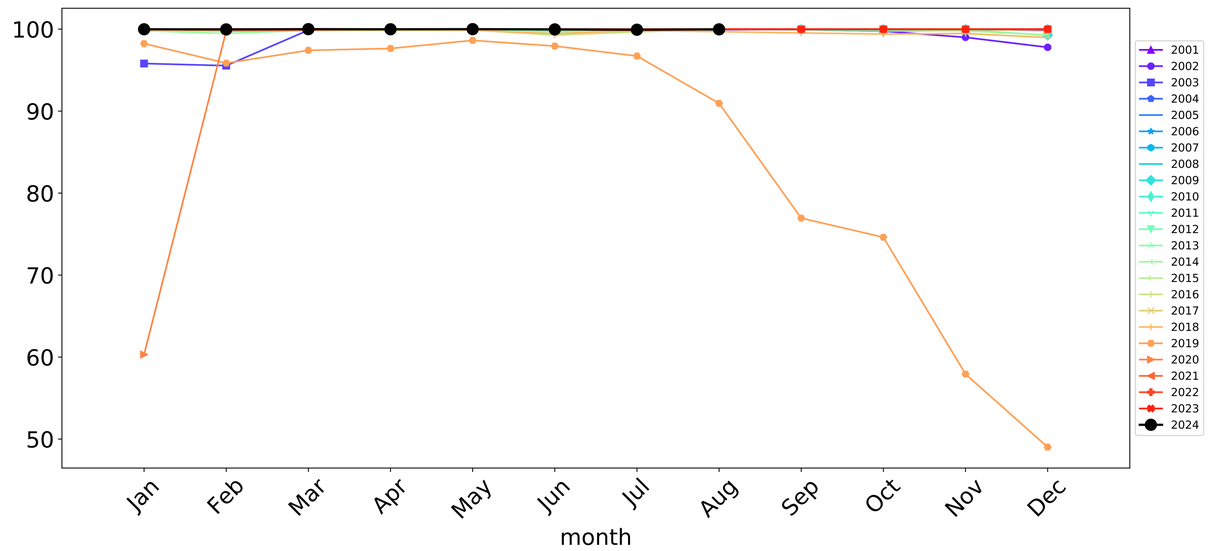
Wind erosion historical monthly area protected (Total Veg Cov >50%)

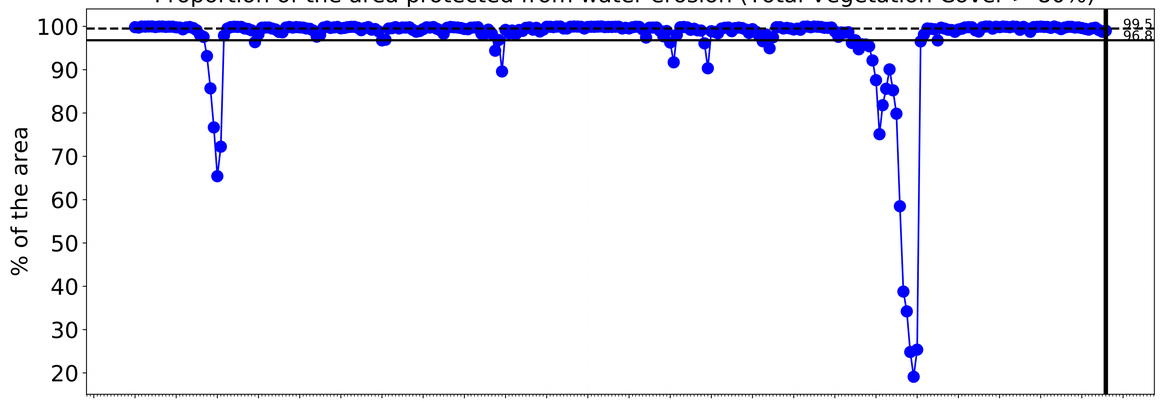


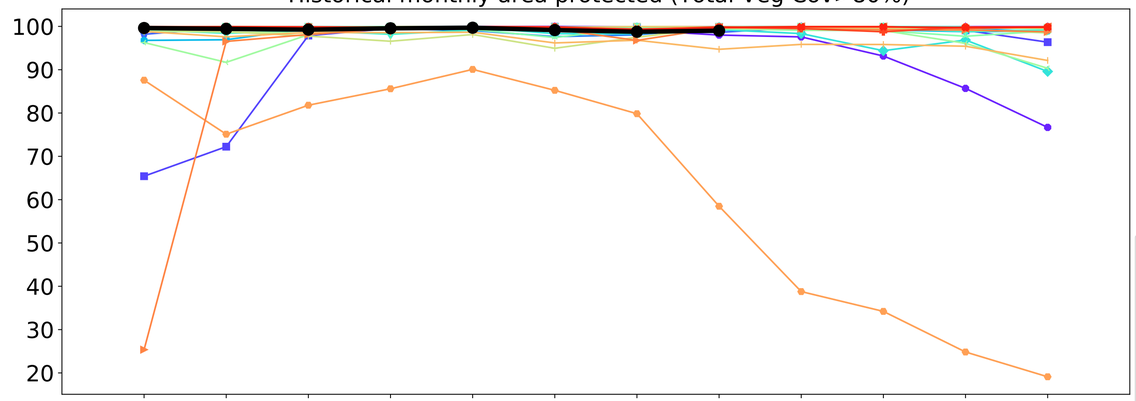
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



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




Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)
% of the area
99.5
96.8
above_80
10th
50th
2024 Aug


Historical monthly area protected (Total Veg Cov>80%)
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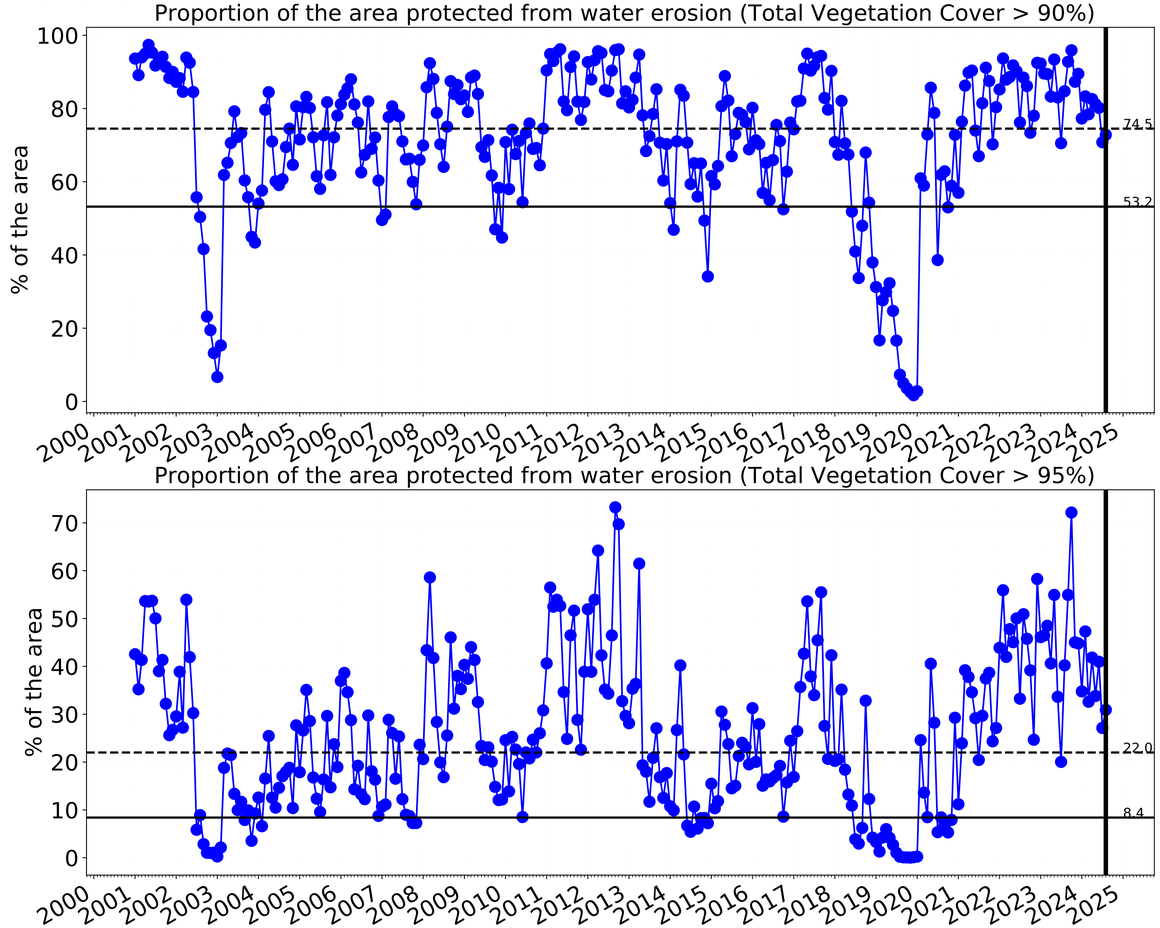
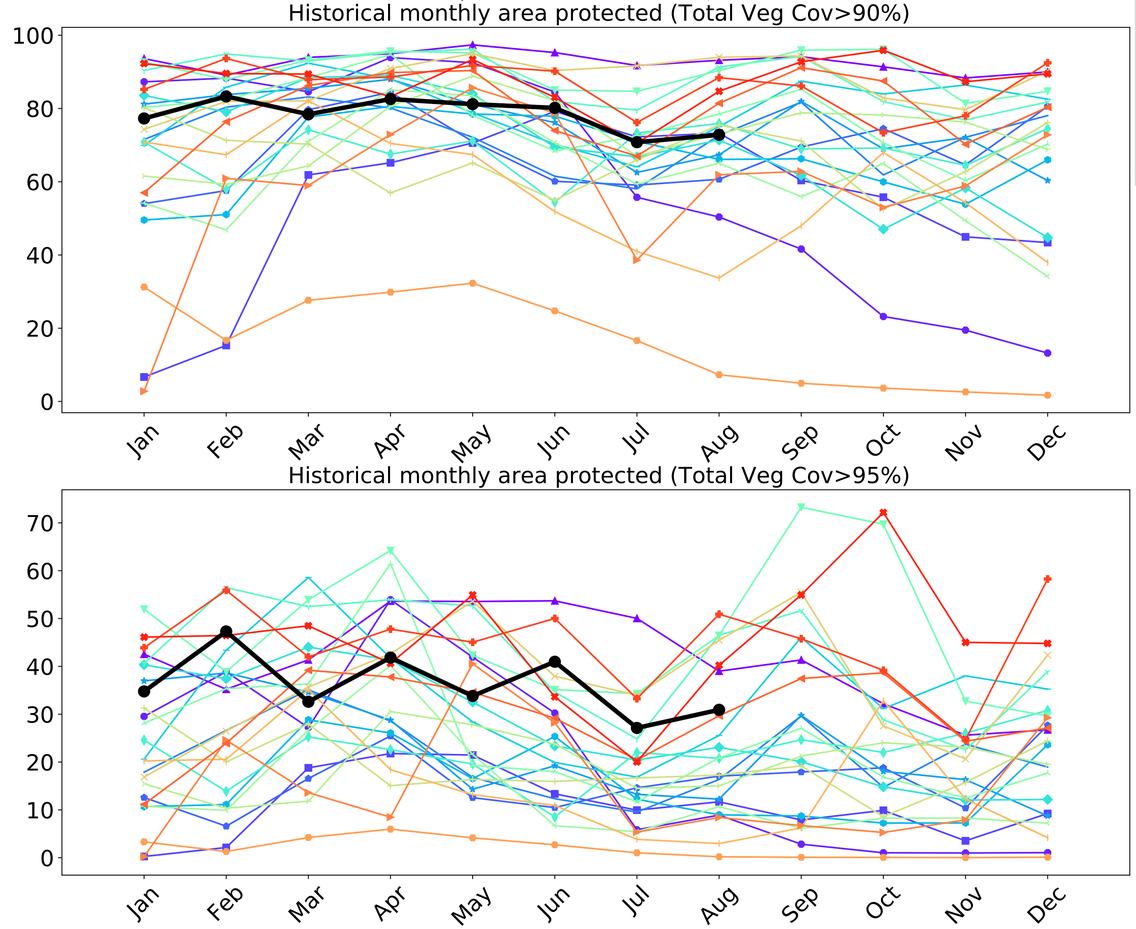

Proportion of the area protected from water erosion (Total Vegetation Cover > 90%)
% of the area
74.5
53.2
above_90
10th
50th
2024 Aug
Proportion of the area protected from water erosion (Total Vegetation Cover > 95%)
% of the area
22.0
8.4
above_95
10th
50th
2024 Aug


Historical monthly area protected (Total Veg Cov>90%)
Historical monthly area protected (Total Veg Cov>95%)
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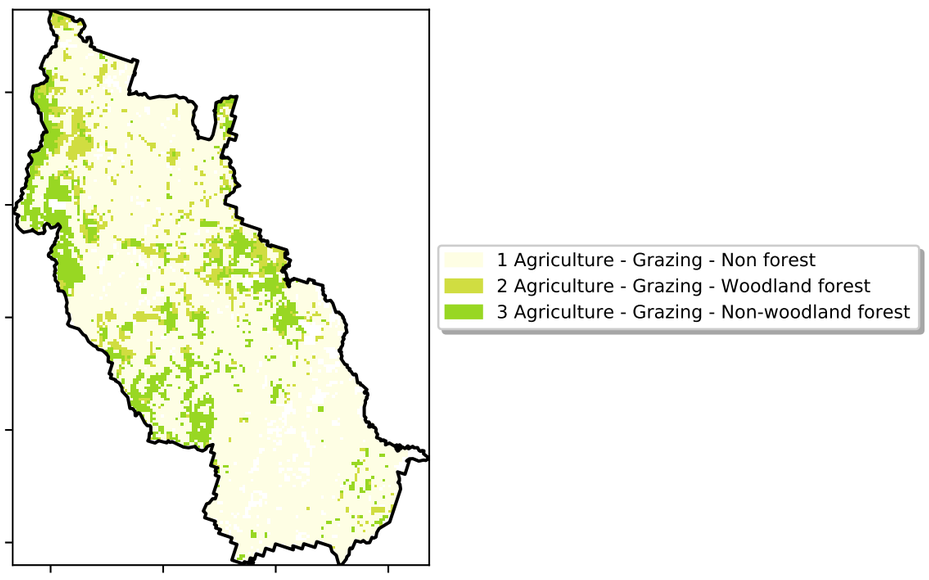
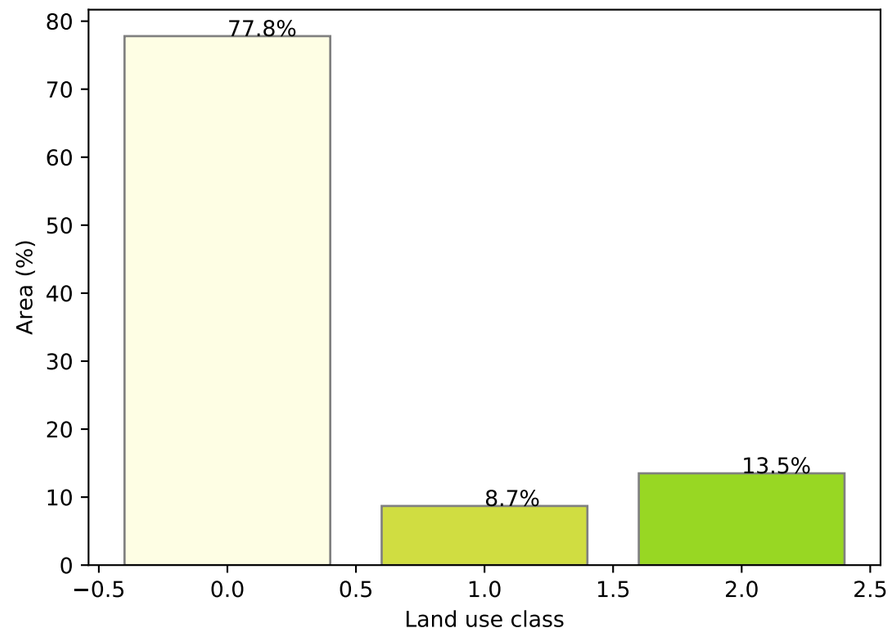
Grazing

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

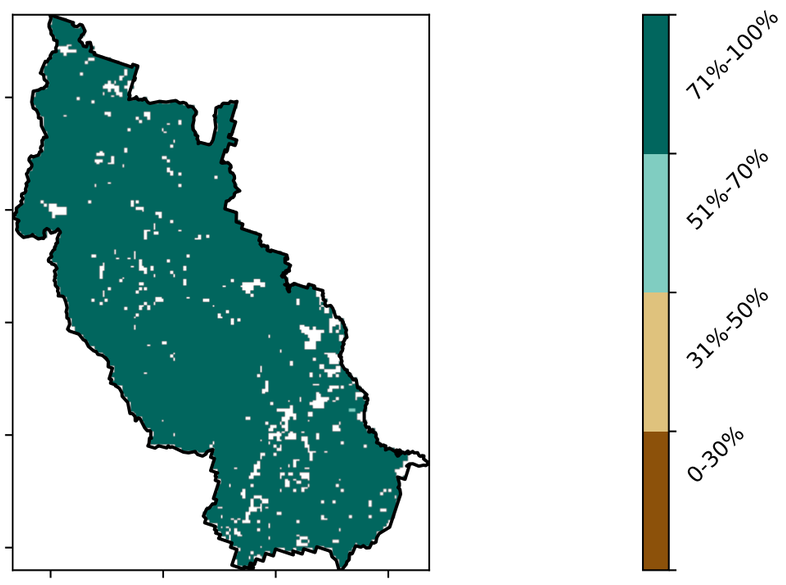
Land use and forest cover



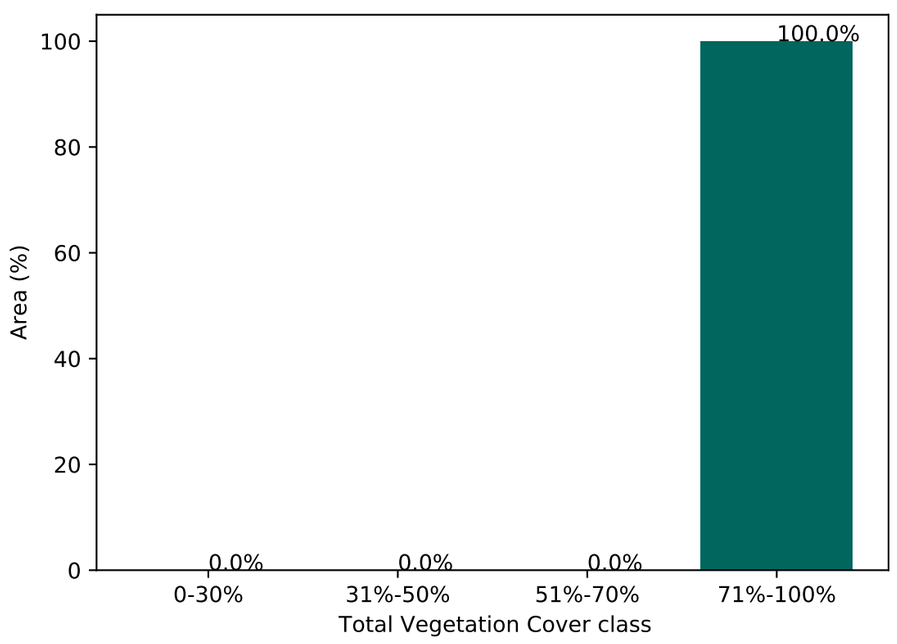
Proportion of each land class in area



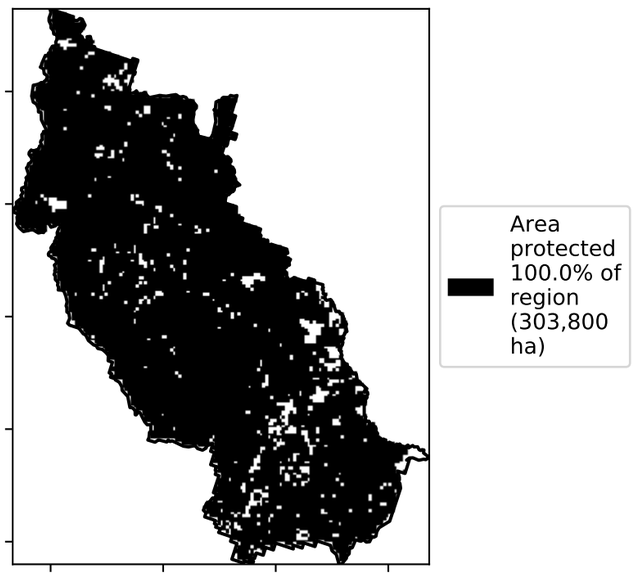
Total Vegetation Cover [%]



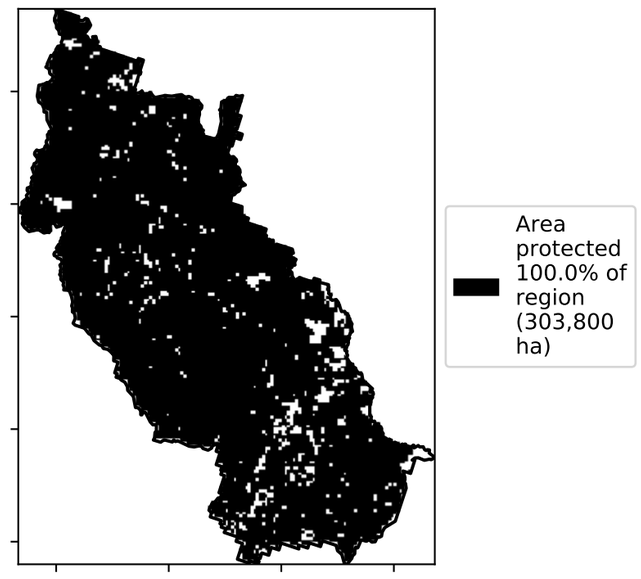
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

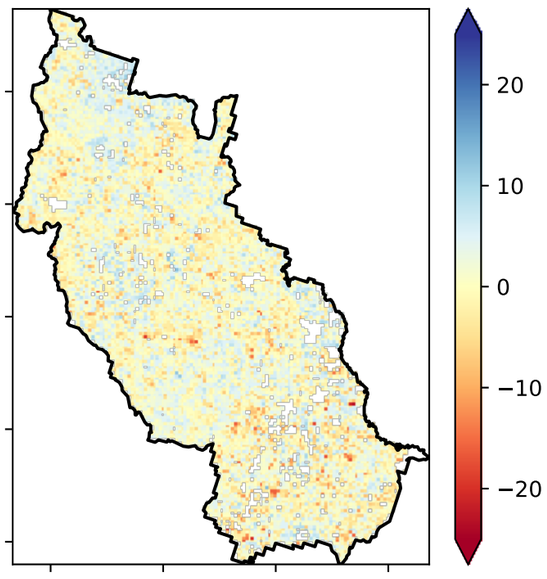


% Area protected from wind erosion (>50%)



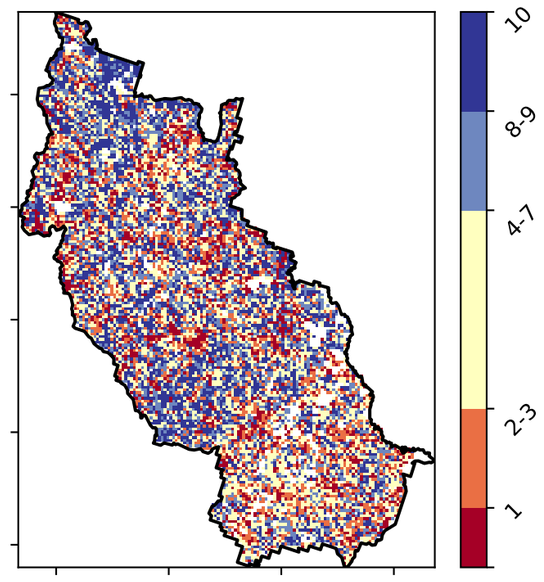
Total Vegetation Cover Anomaly [%]

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.

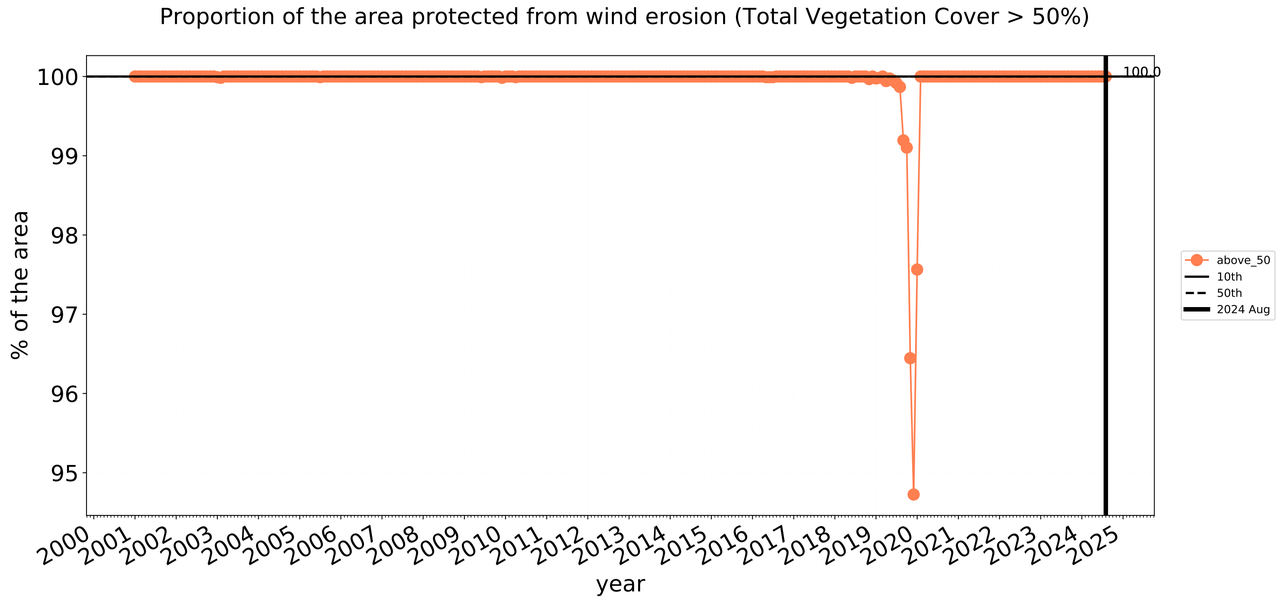


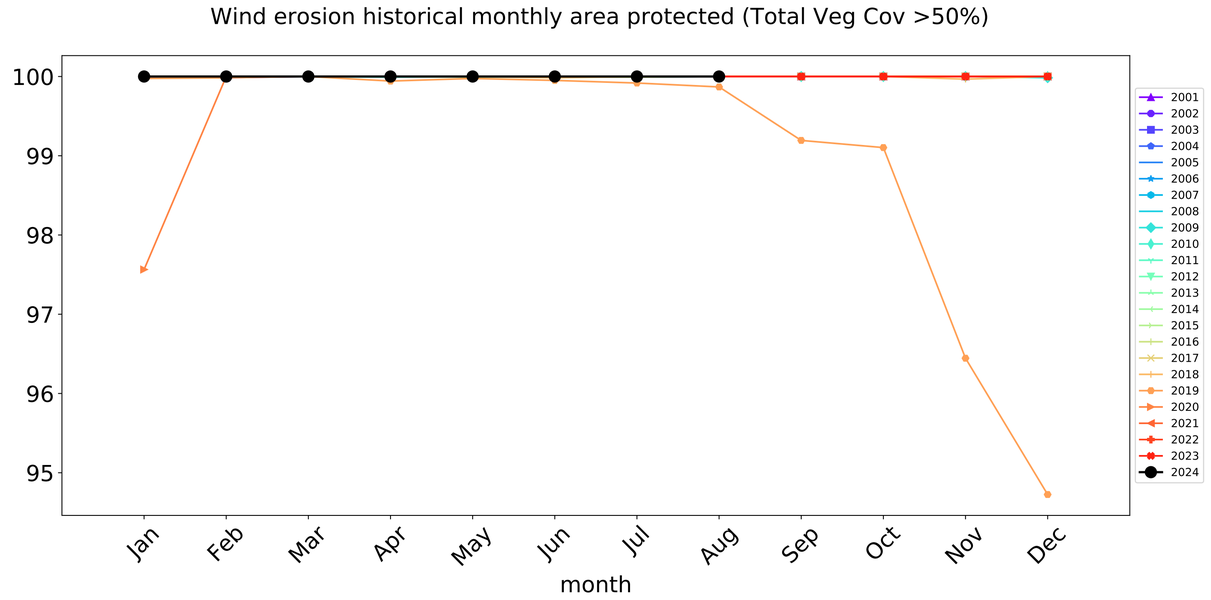
Total Vegetation Cover Decile [%]

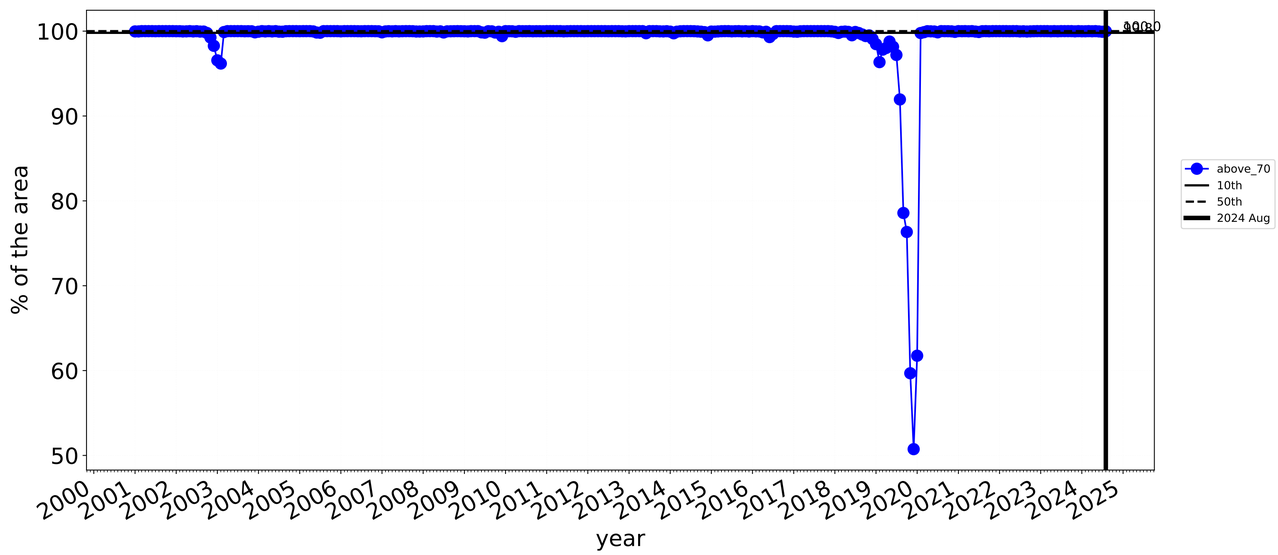
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

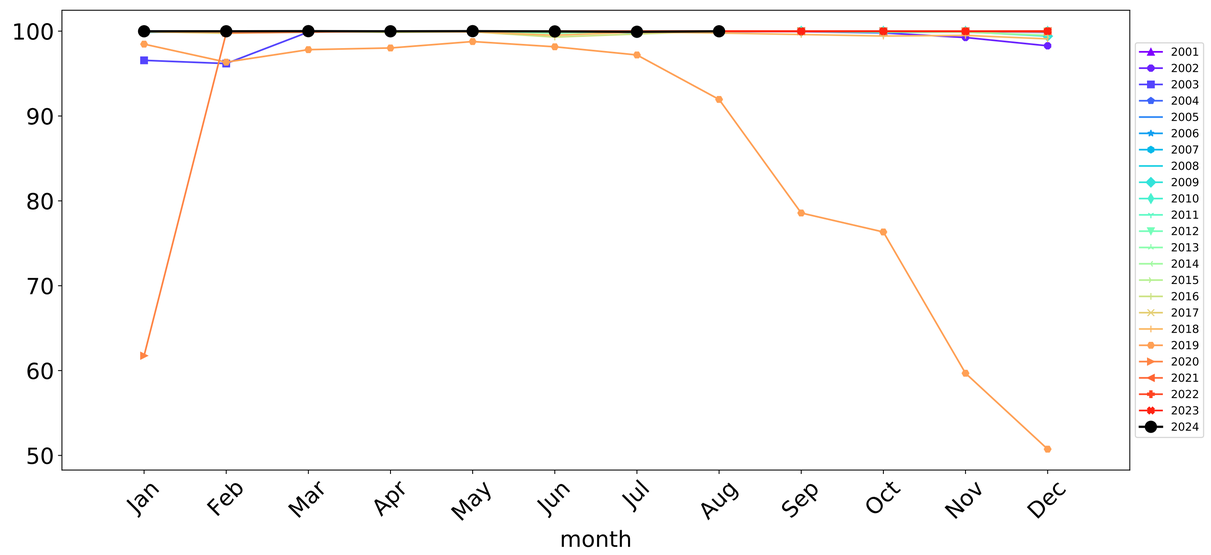


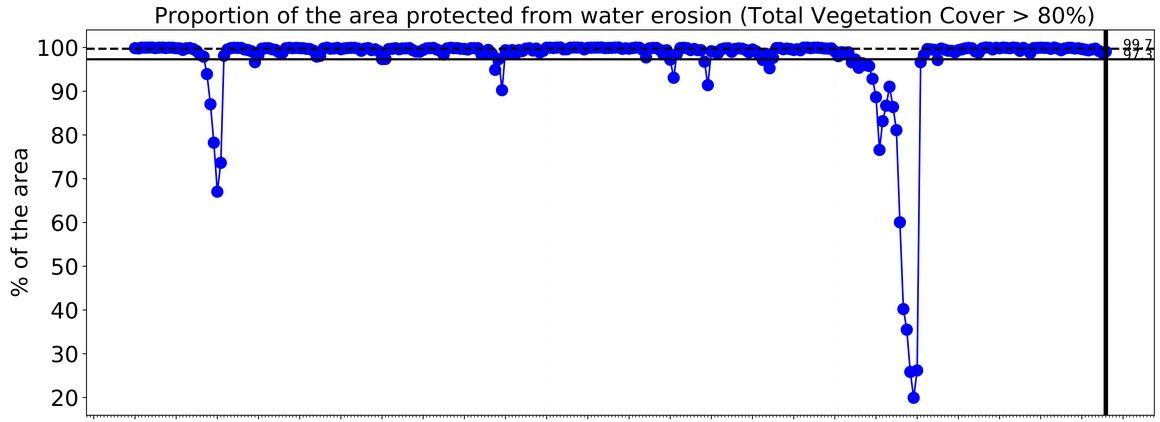
Grazing timeseries

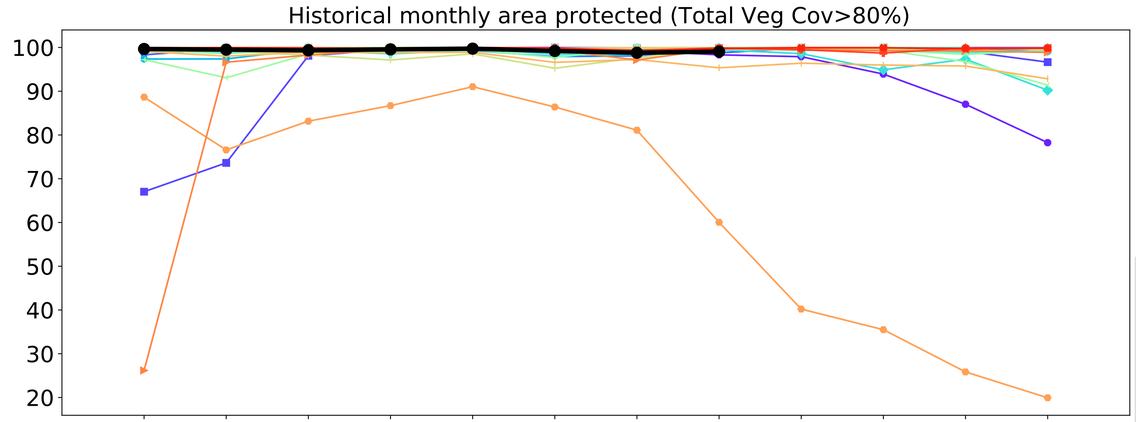









Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)
% of the area
99.7
97.3
above_80
10th
50th
2024 Aug


Historical monthly area protected (Total Veg Cov>80%)
Jan
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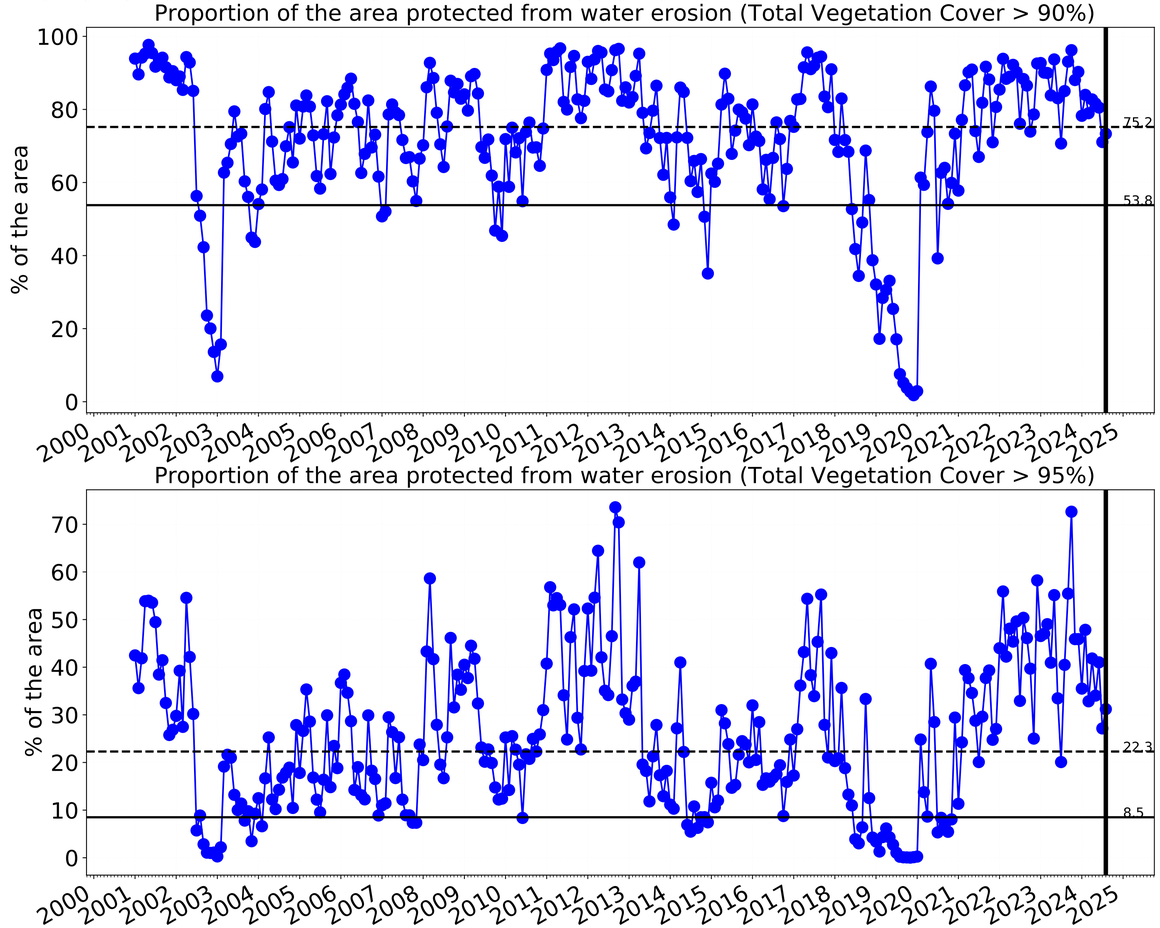
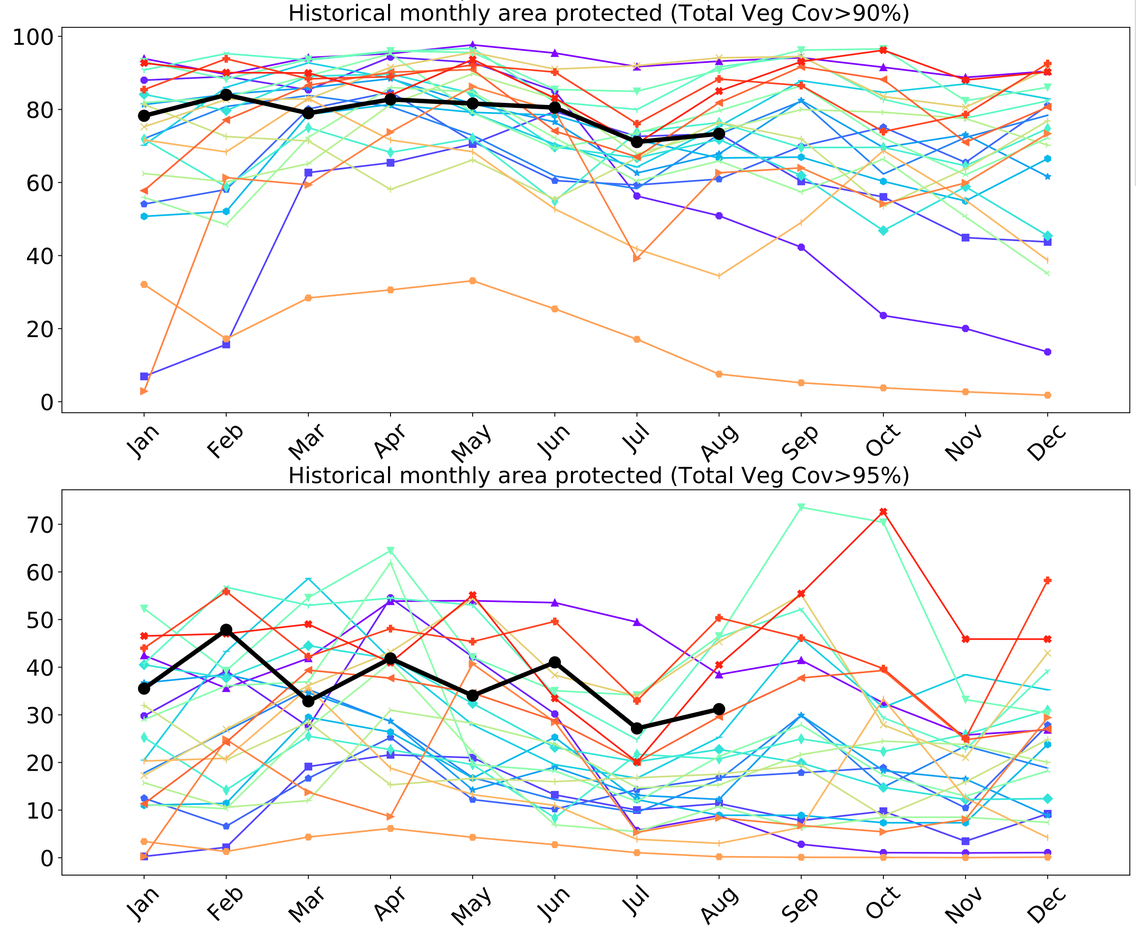

Proportion of the area protected from water erosion (Total Vegetation Cover > 90%)
% of the area
75.2
53.8
above_90
10th
50th
2024 Aug
Proportion of the area protected from water erosion (Total Vegetation Cover > 95%)
% of the area
22.3
8.5
above_95
10th
50th
2024 Aug


Historical monthly area protected (Total Veg Cov>90%)
Historical monthly area protected (Total Veg Cov>95%)
Jan
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Nov
Dec
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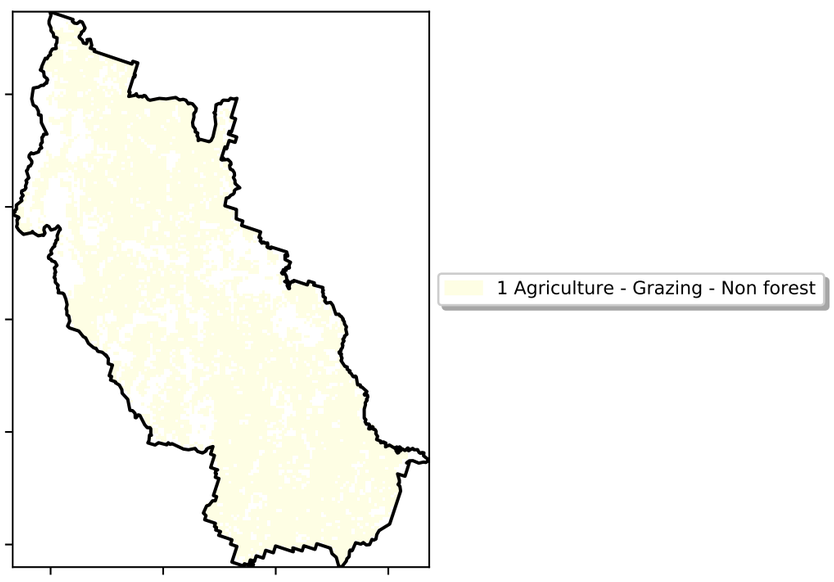
2023
2024

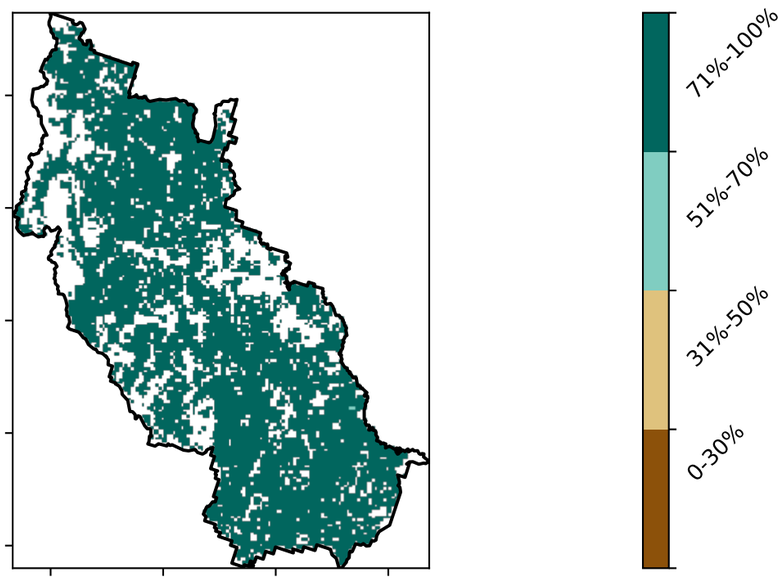
Grazing non forest

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

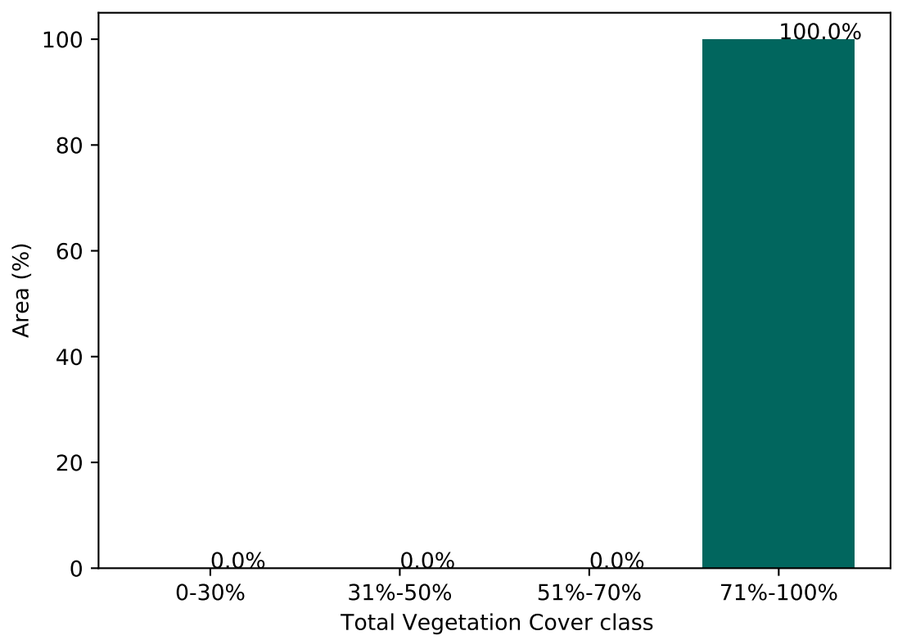
Land use and forest cover



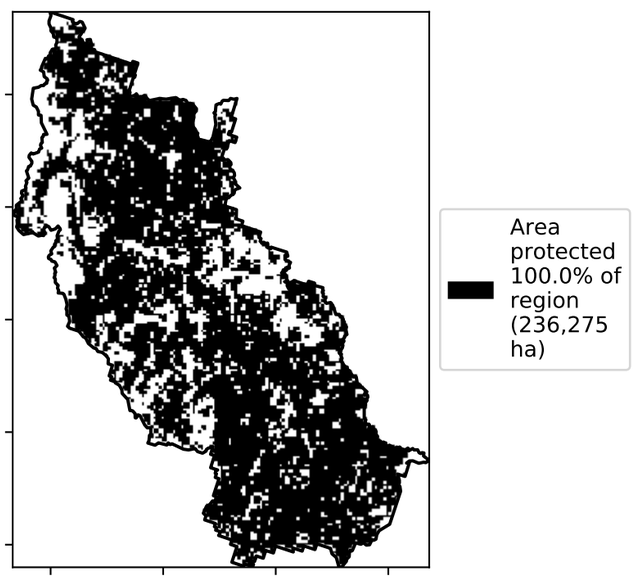
Total Vegetation Cover [%]



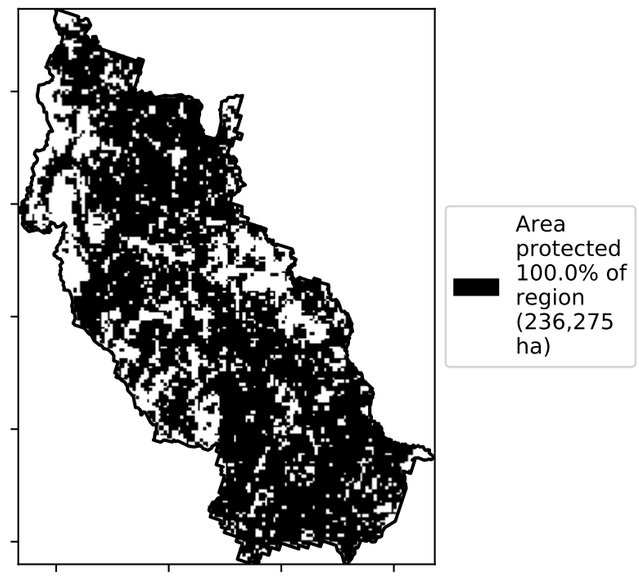
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

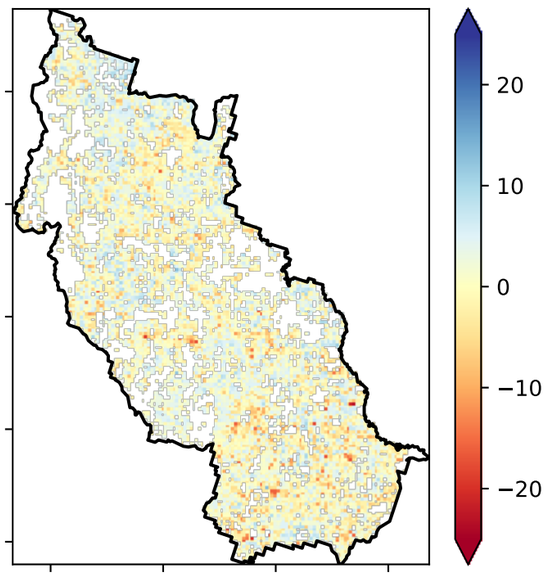


% Area protected from wind erosion (>50%)



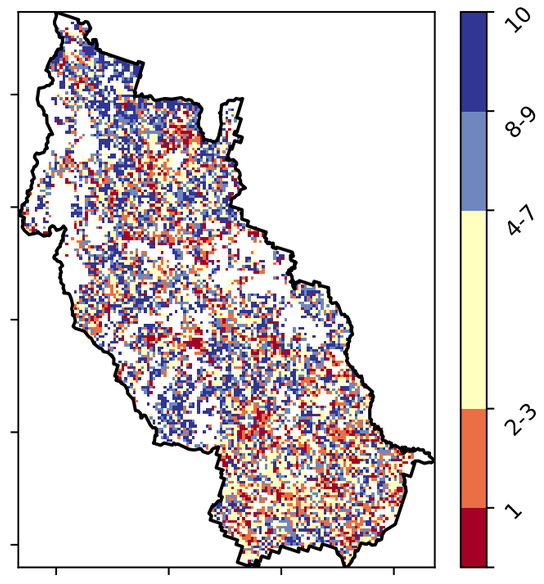
Total Vegetation Cover Anomaly [%]

Anomaly show how many 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.



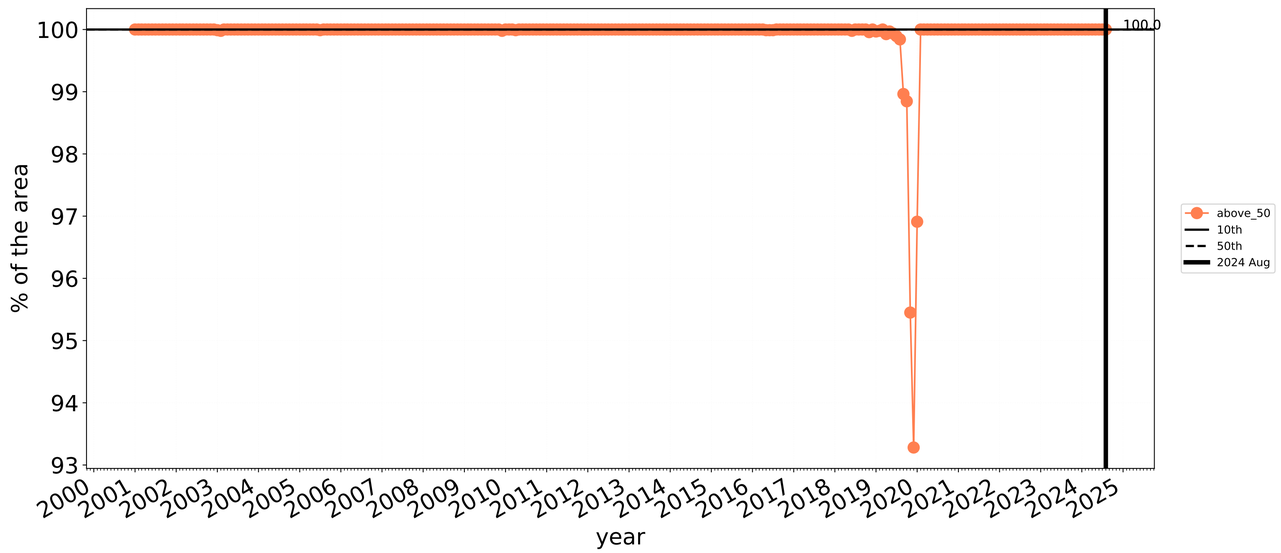
Total Vegetation Cover Decile [%]

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.

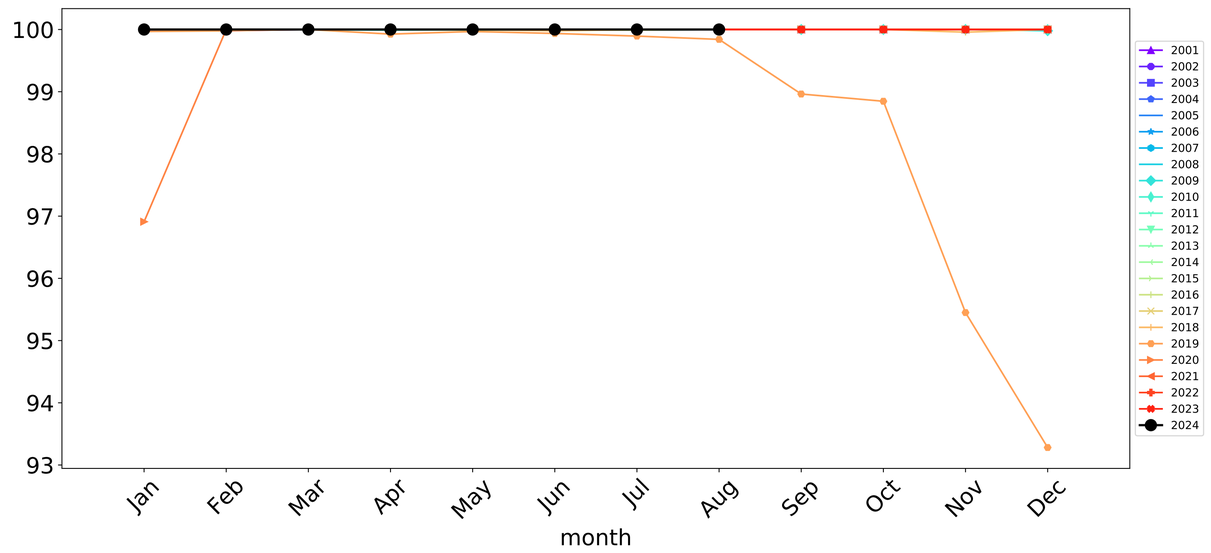


Grazing non forest timeseries

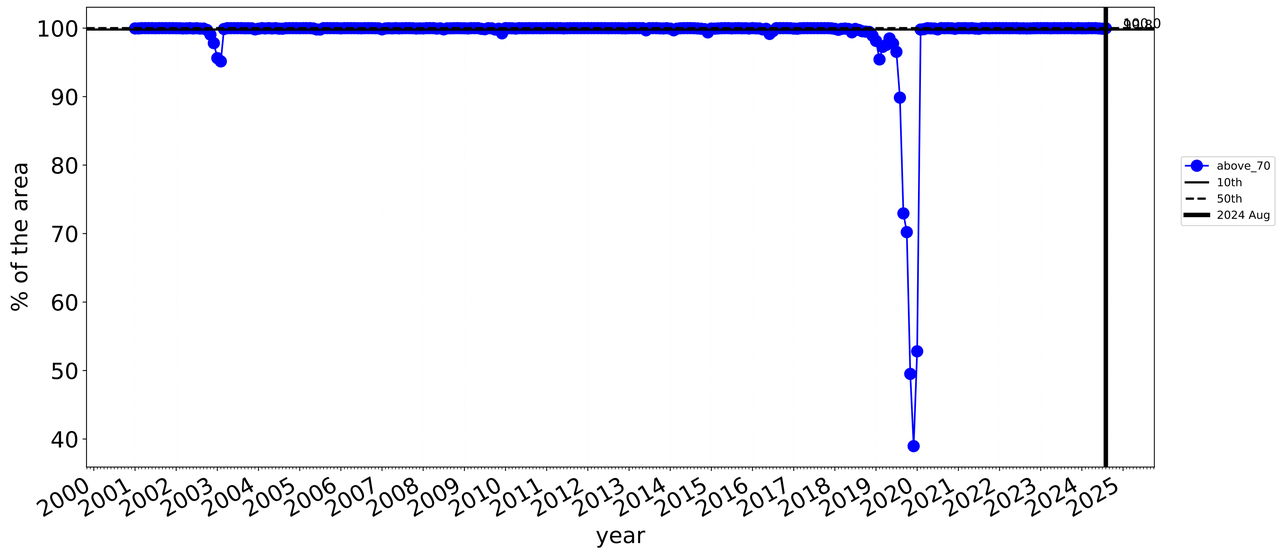
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



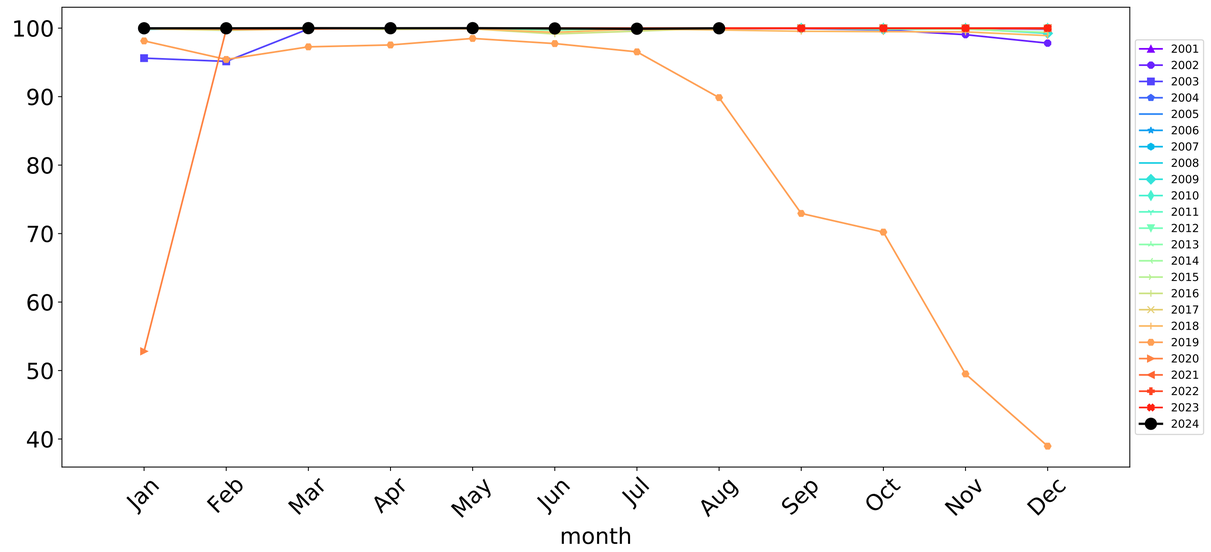
Wind erosion historical monthly area protected (Total Veg Cov >50%)

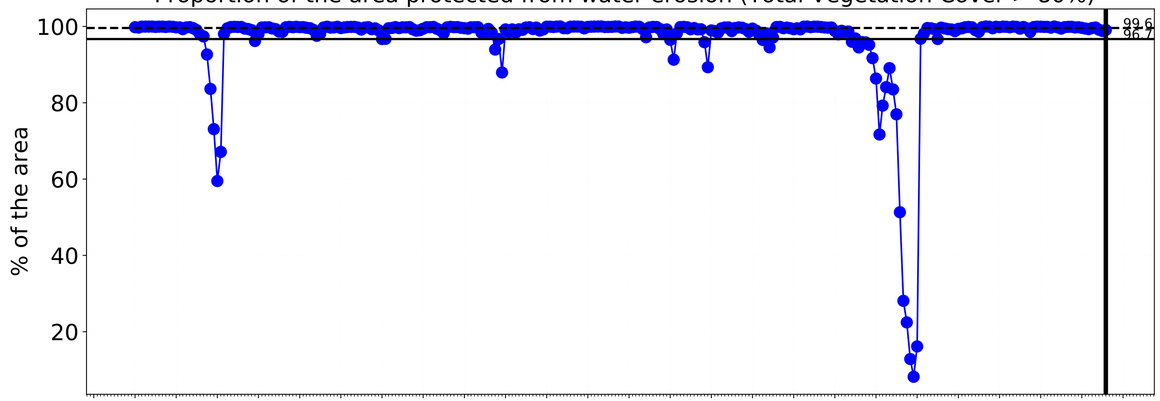


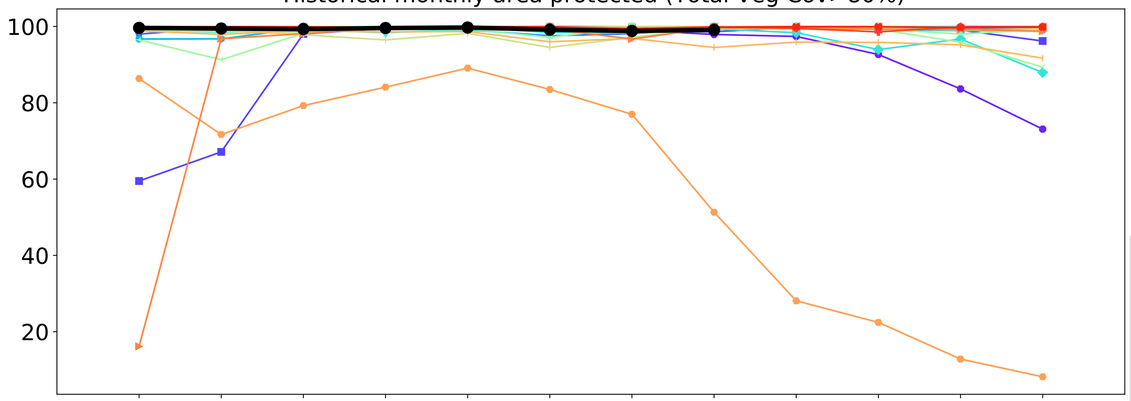
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



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




Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)
% of the area
99.6
96.7
above_80
10th
50th
2024 Aug


Historical monthly area protected (Total Veg Cov>80%)
Jan
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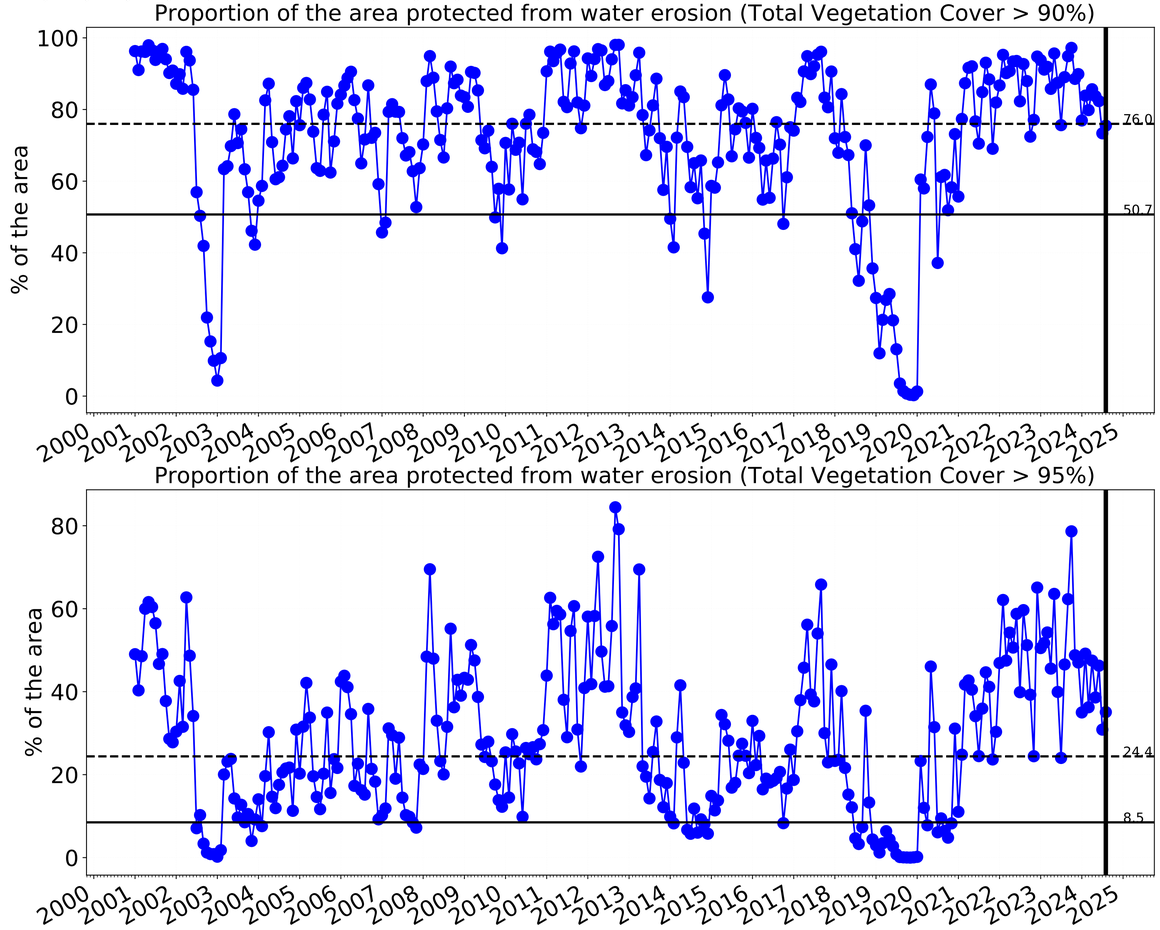
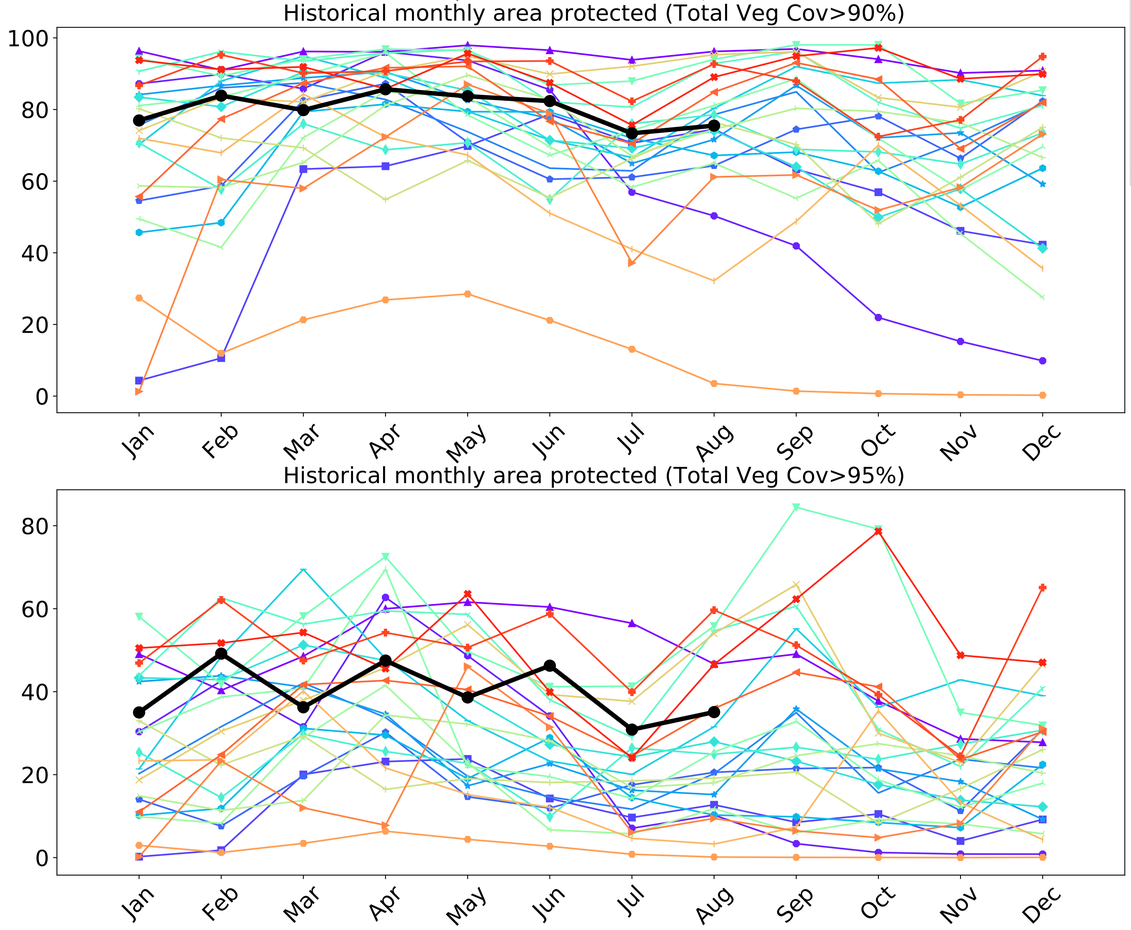

Proportion of the area protected from water erosion (Total Vegetation Cover > 90%)
% of the area
76.0
50.7
above_90
10th
50th
2024 Aug
Proportion of the area protected from water erosion (Total Vegetation Cover > 95%)
% of the area
24.4
8.5
above_95
10th
50th
2024 Aug


Historical monthly area protected (Total Veg Cov>90%)
Historical monthly area protected (Total Veg Cov>95%)
Jan
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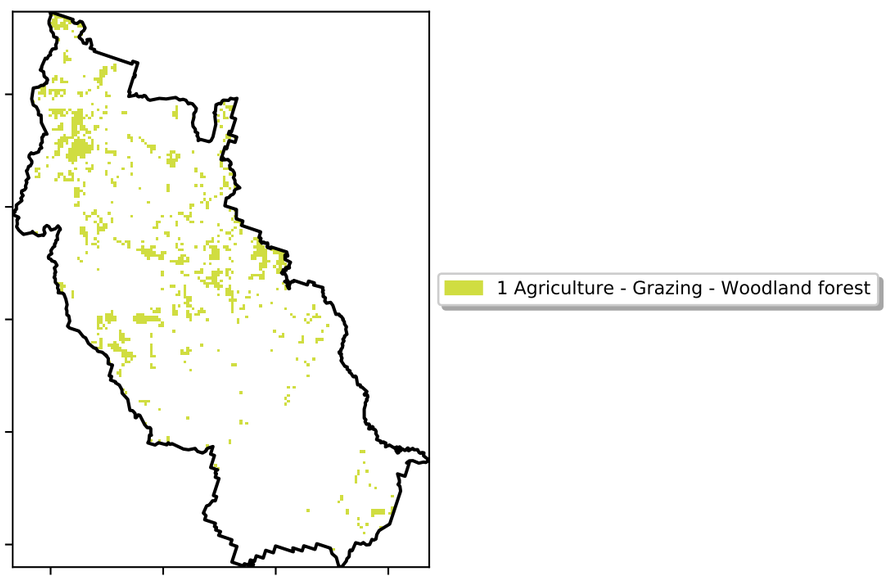
2024

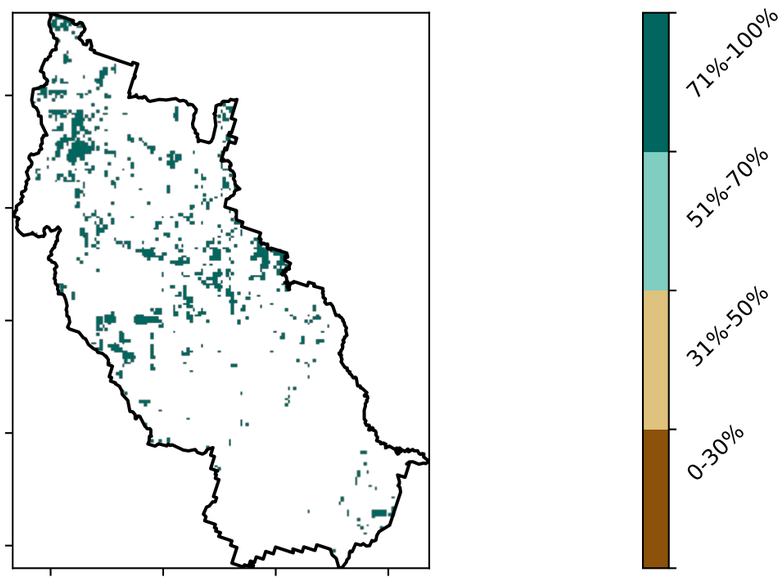
Grazing Woodland forest

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

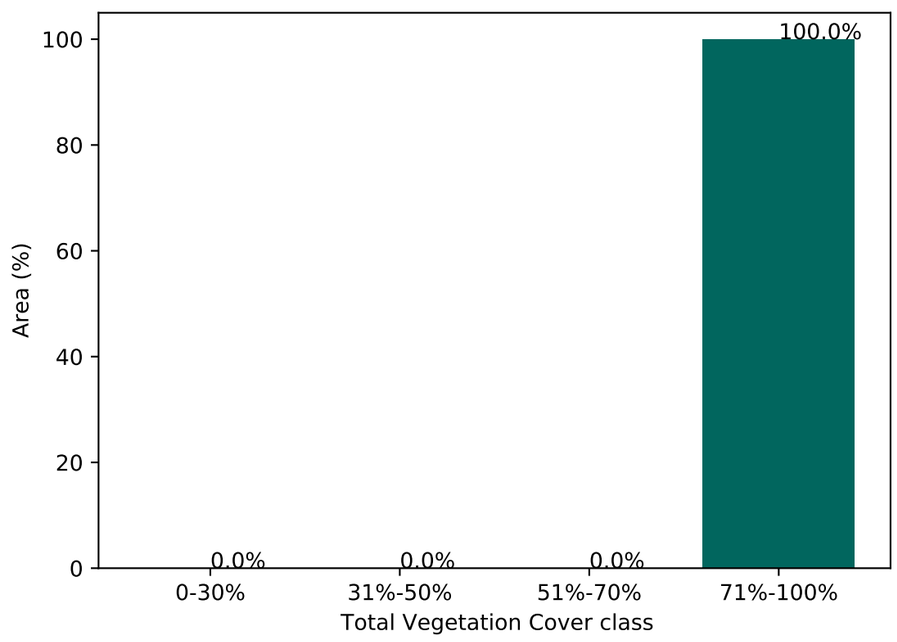
Land use and forest cover



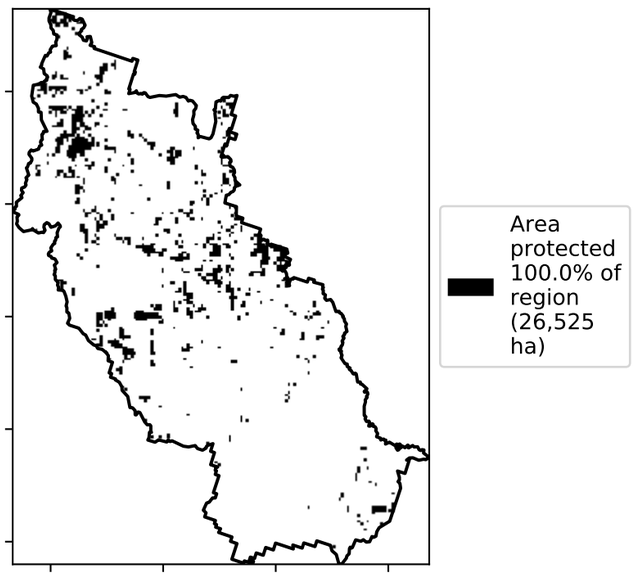
Total Vegetation Cover [%]



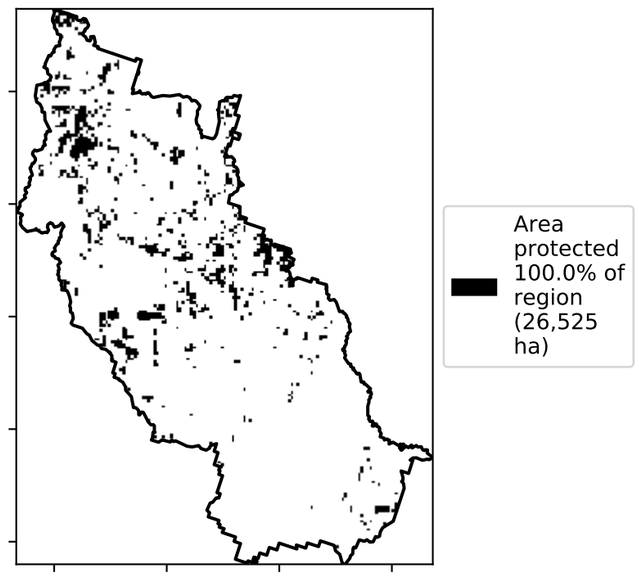
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

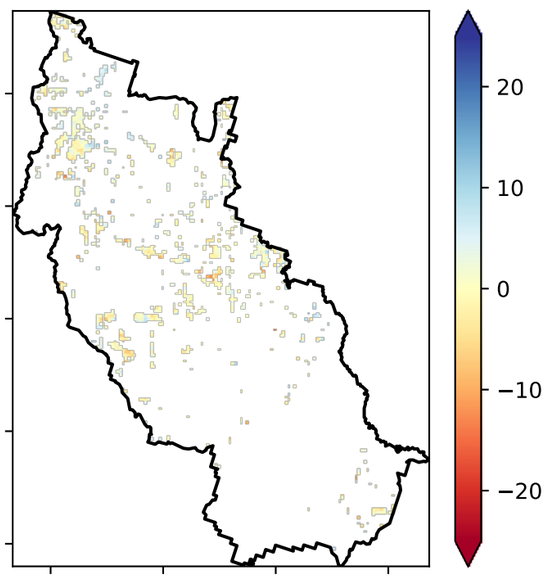


% Area protected from wind erosion (>50%)



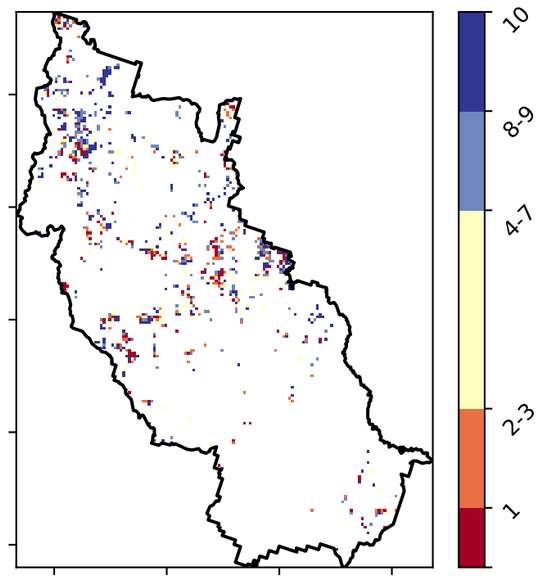
Total Vegetation Cover Anomaly [%]

Anomaly show how many 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.



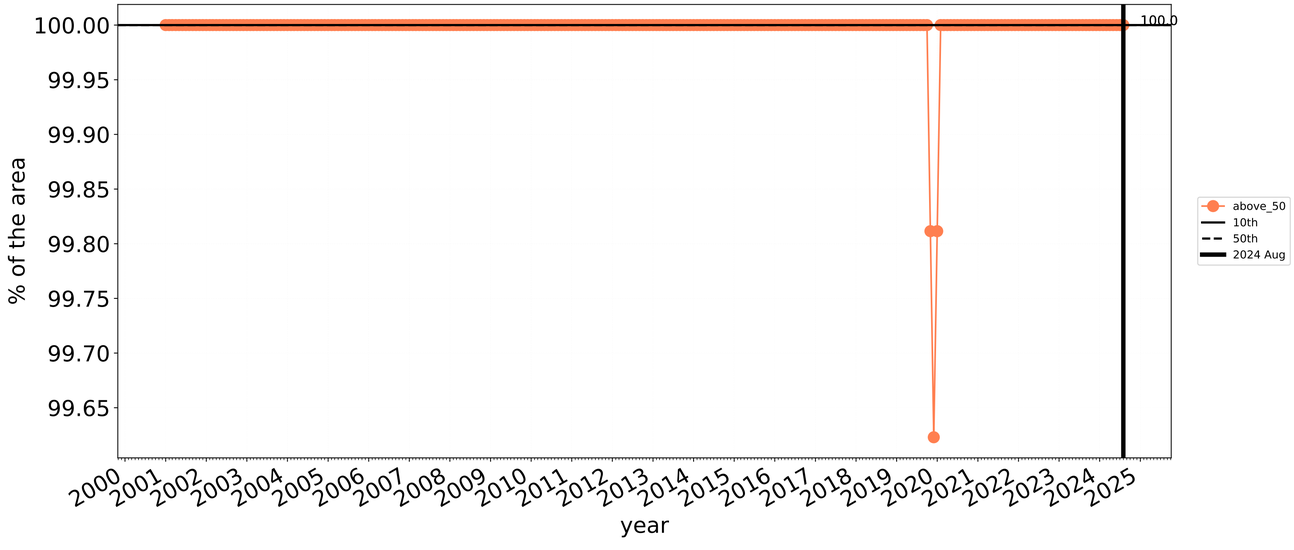
Total Vegetation Cover Decile [%]

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.

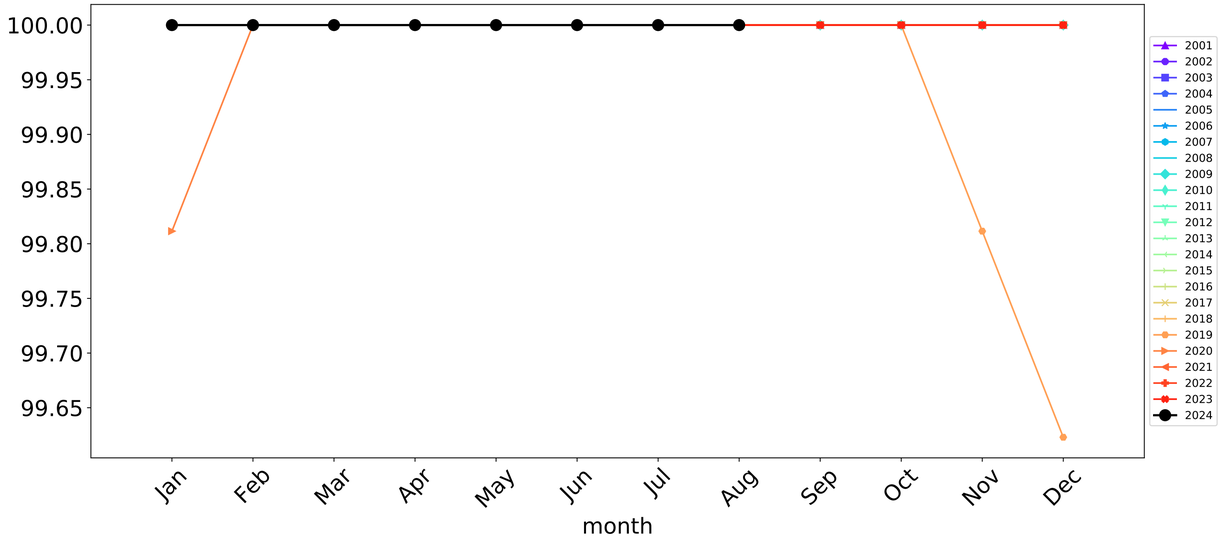


Grazing Woodland forest timeseries

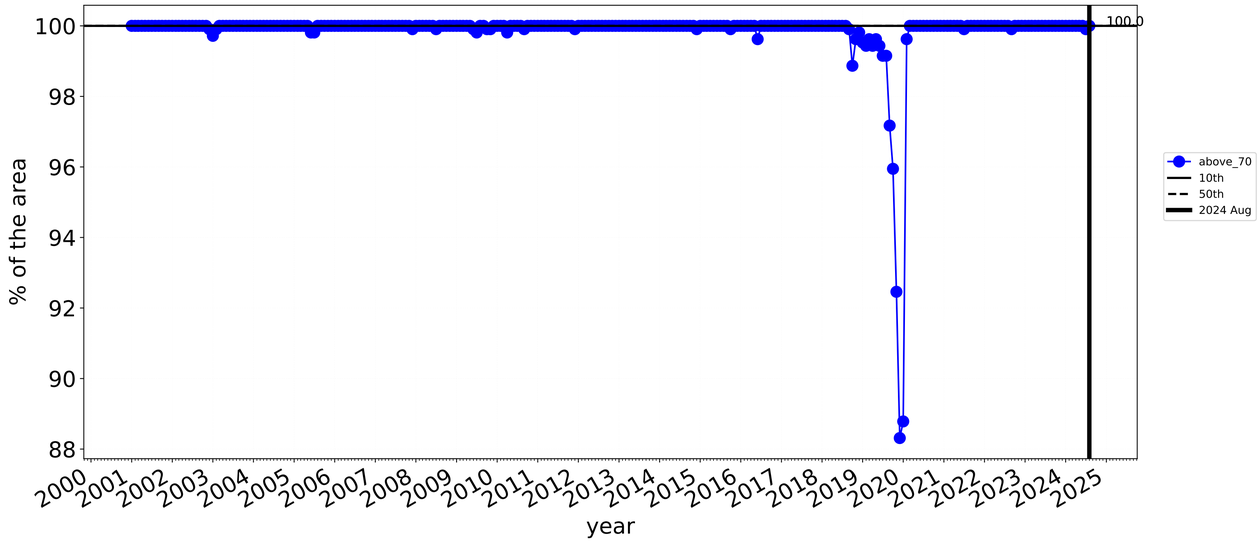
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



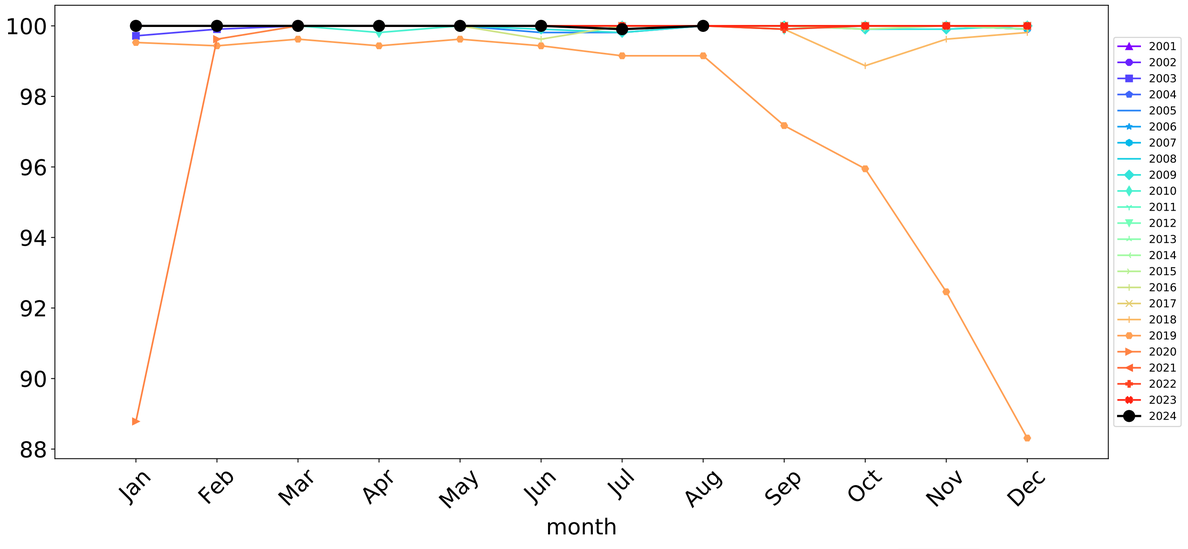
Wind erosion historical monthly area protected (Total Veg Cov >50%)

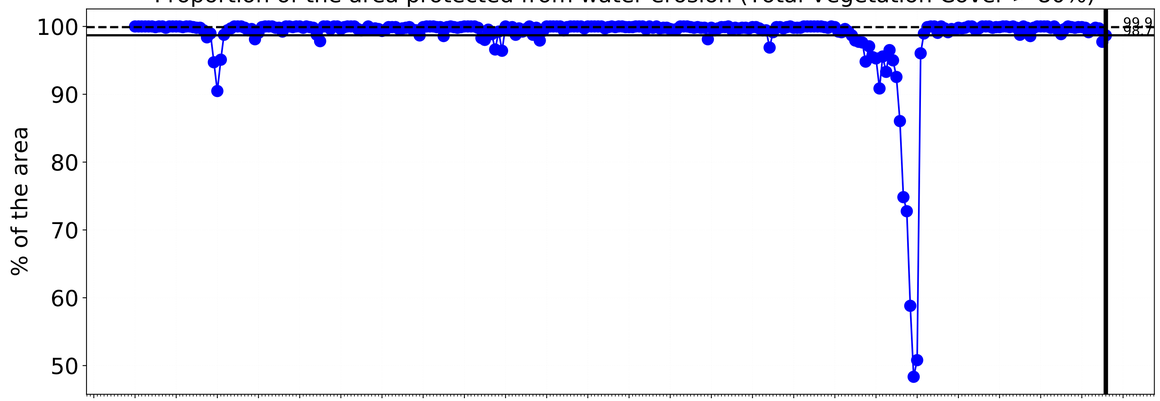


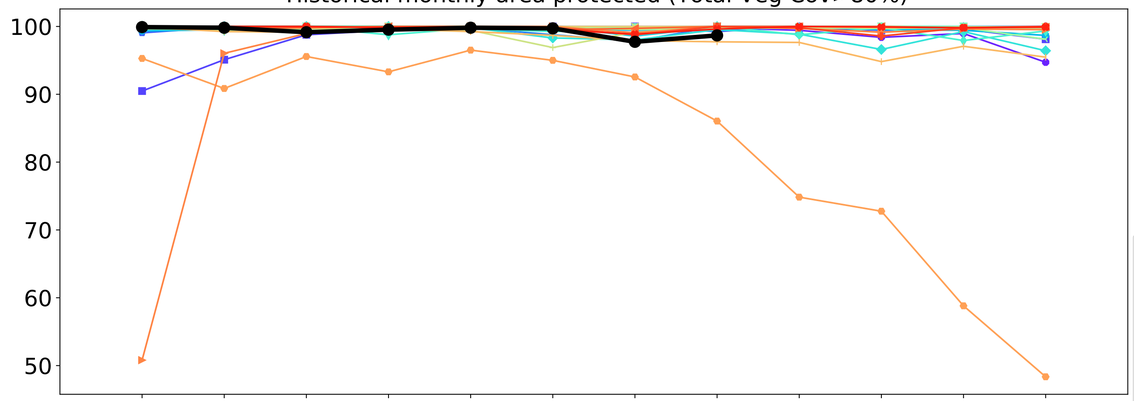
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



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




Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)
% of the area
99.9
98.7
above_80
10th
50th
2024 Aug


Historical monthly area protected (Total Veg Cov>80%)
Jan
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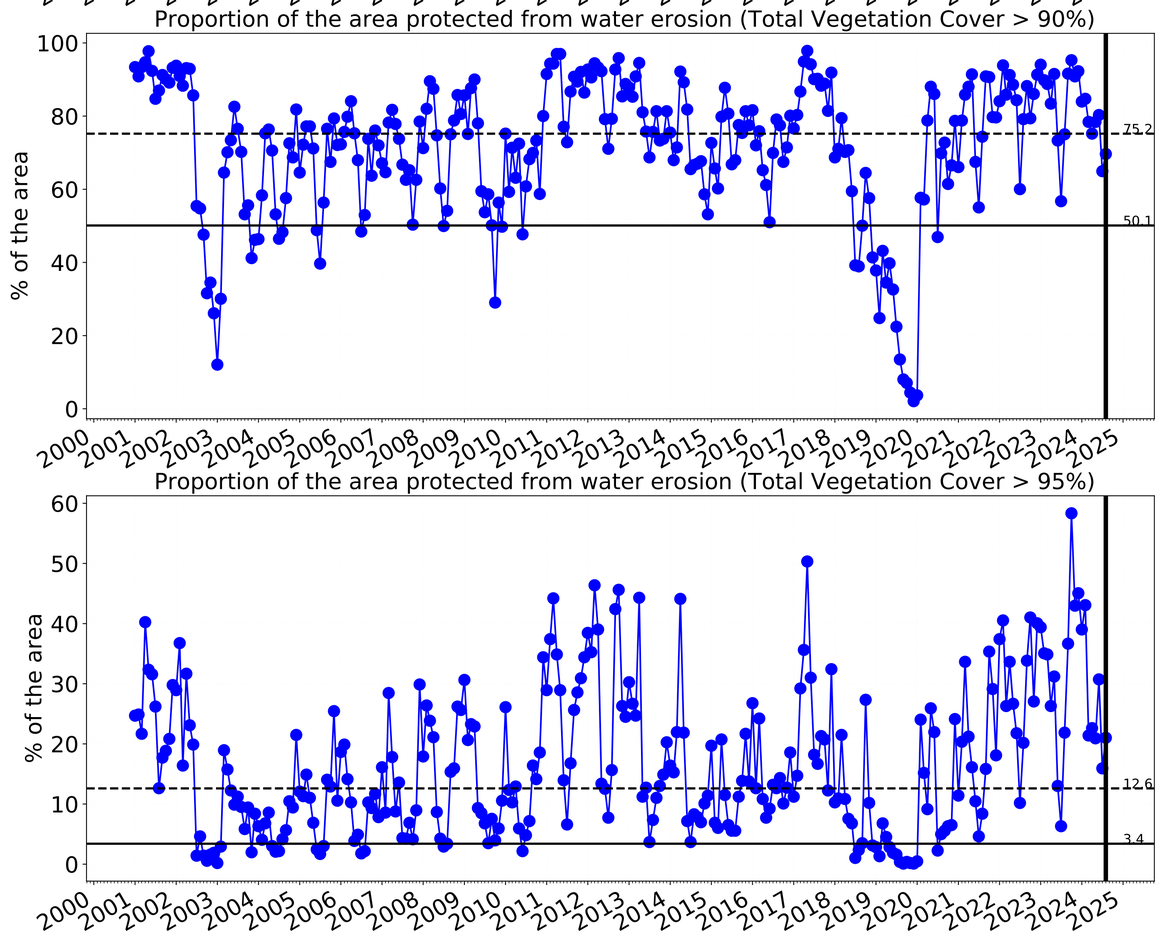
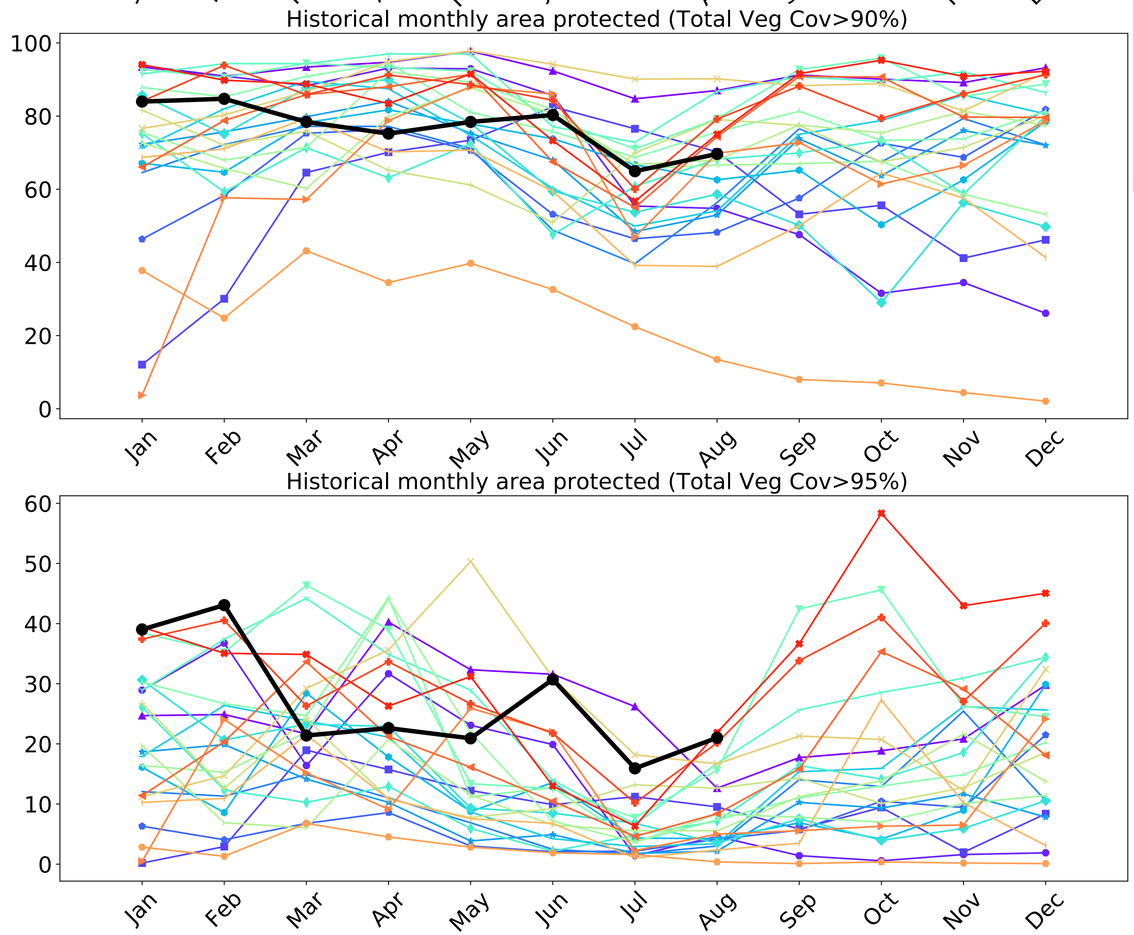

Proportion of the area protected from water erosion (Total Vegetation Cover > 90%)
% of the area
75.2
50.1
above_90
10th
50th
2024 Aug
Proportion of the area protected from water erosion (Total Vegetation Cover > 95%)
% of the area
12.6
3.4
above_95
10th
50th
2024 Aug


Historical monthly area protected (Total Veg Cov>90%)
Historical monthly area protected (Total Veg Cov>95%)
Jan
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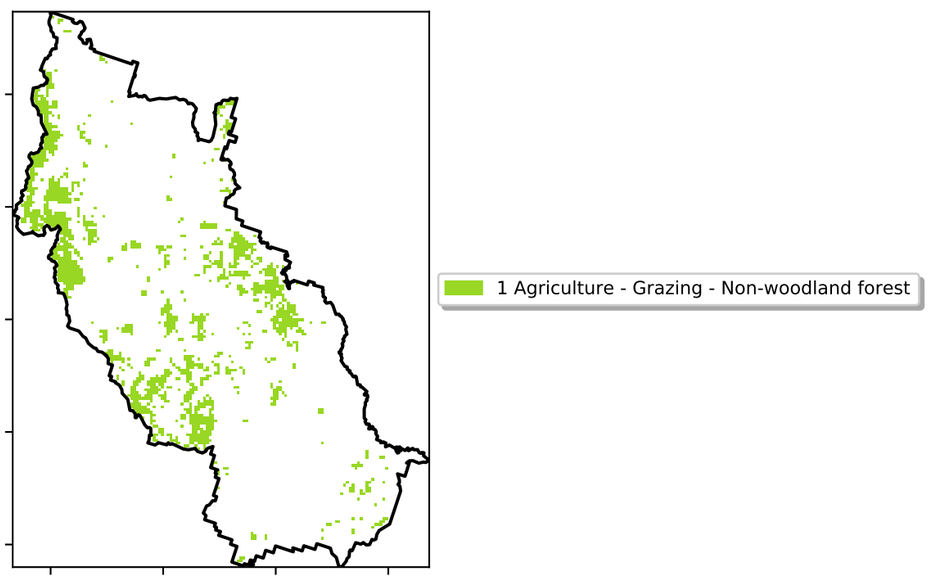
Nov
Dec

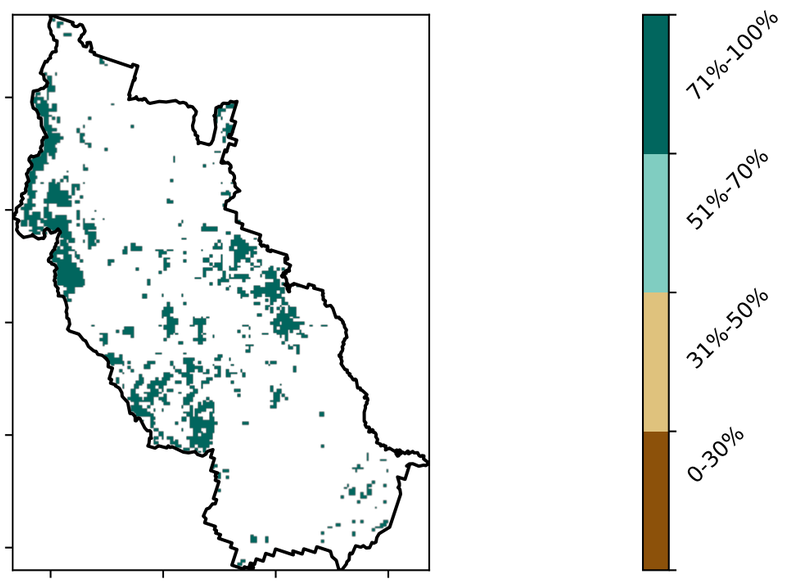
Grazing - Forest (non woodland)

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

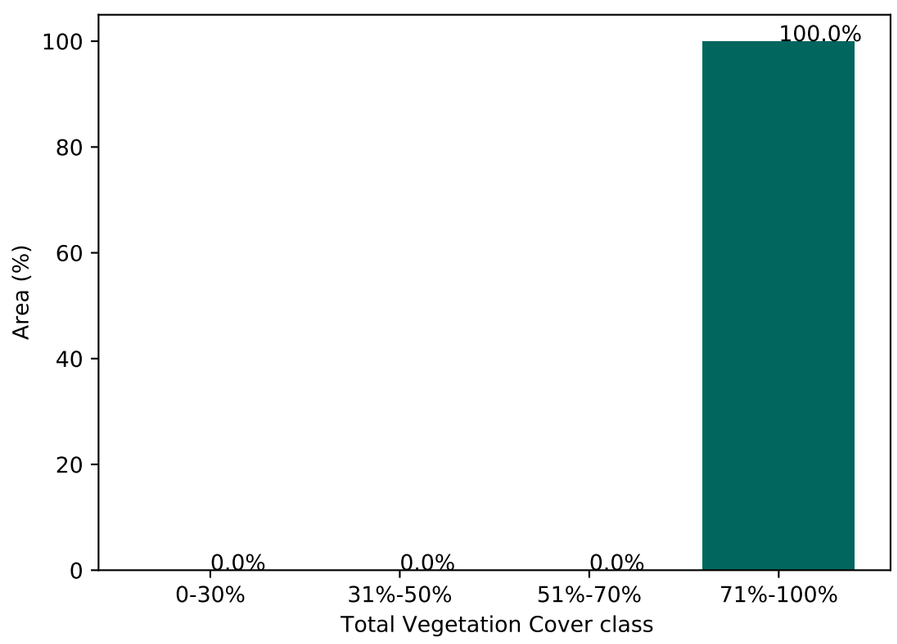
Land use and forest cover



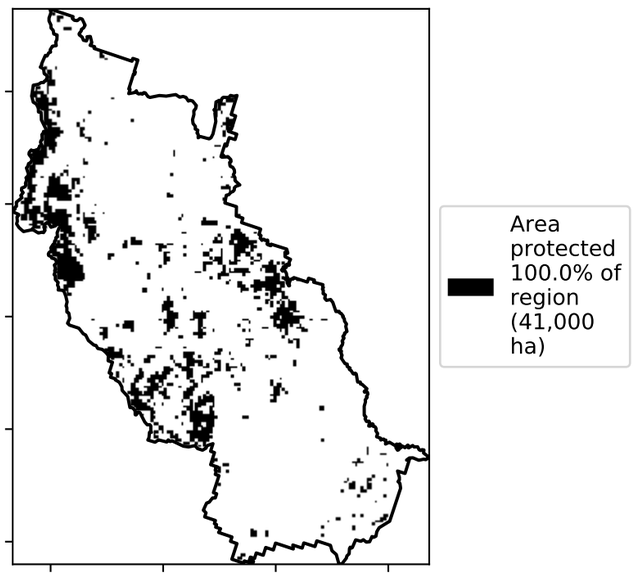
Total Vegetation Cover [%]



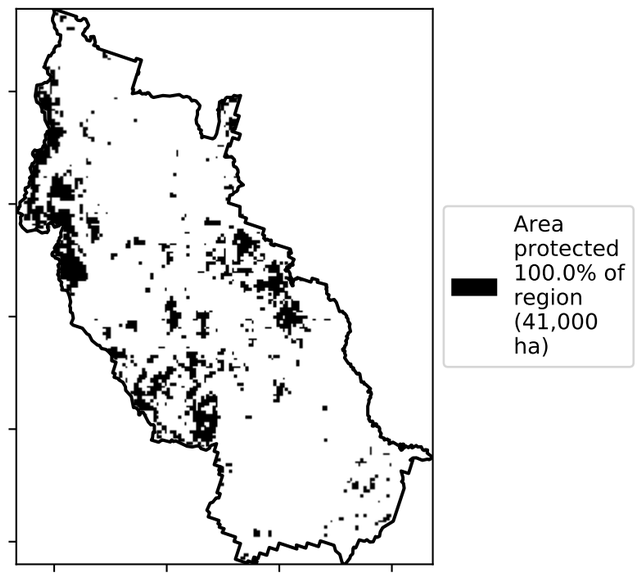
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

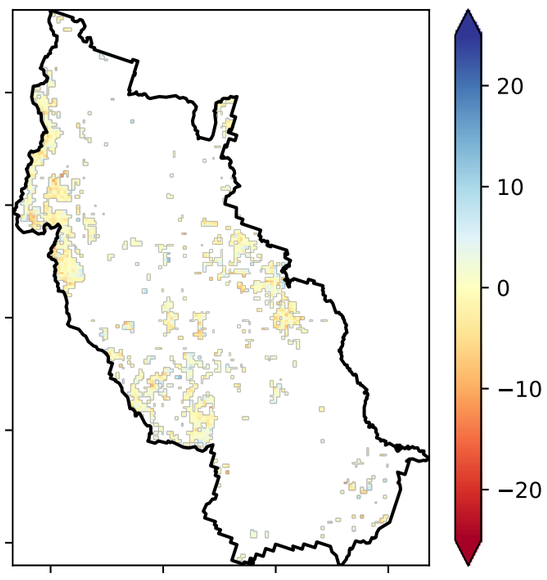


% Area protected from wind erosion (>50%)



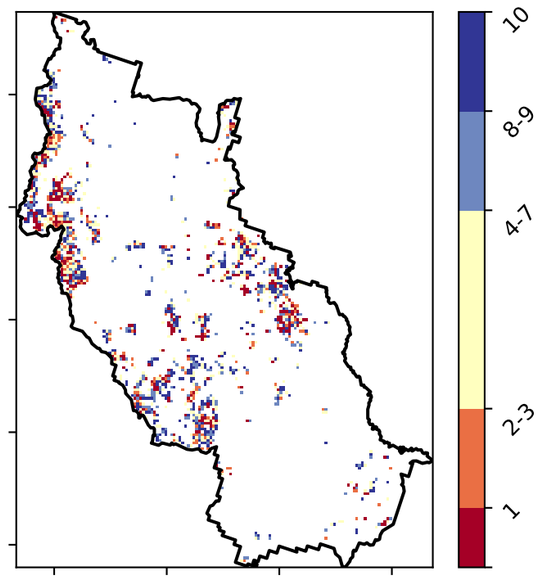
Total Vegetation Cover Anomaly [%]

Anomaly show how many 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.



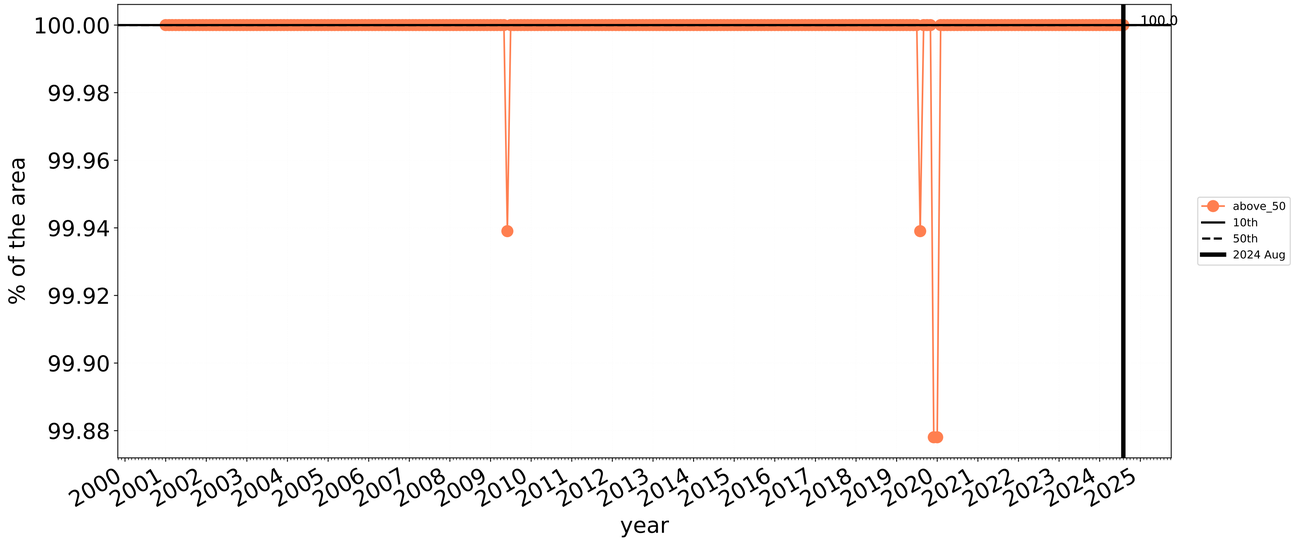
Total Vegetation Cover Decile [%]

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.

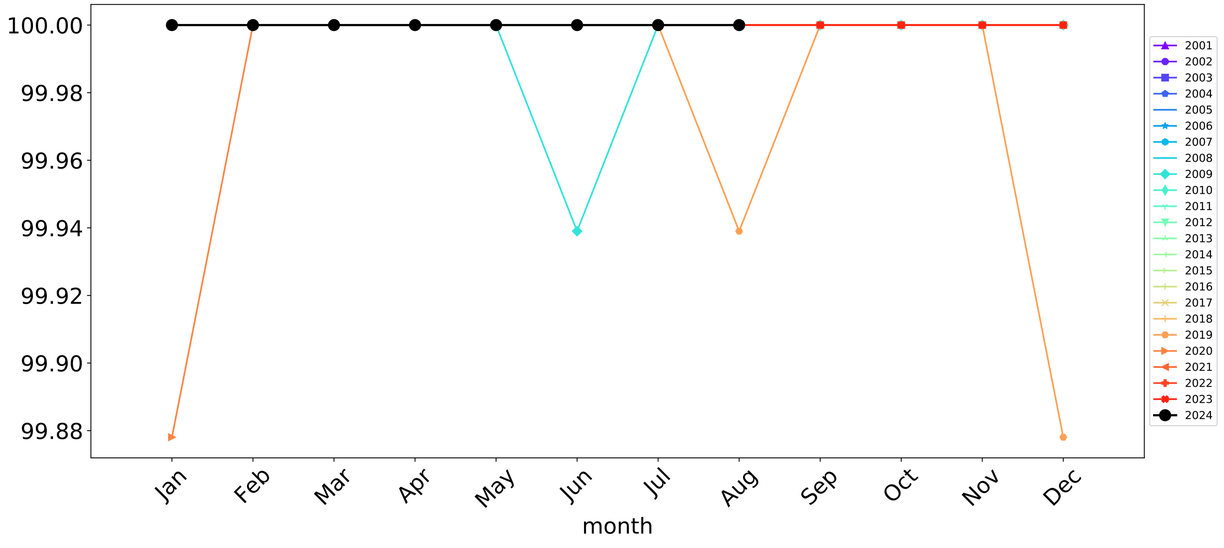


Grazing - Forest (non woodland) timeseries

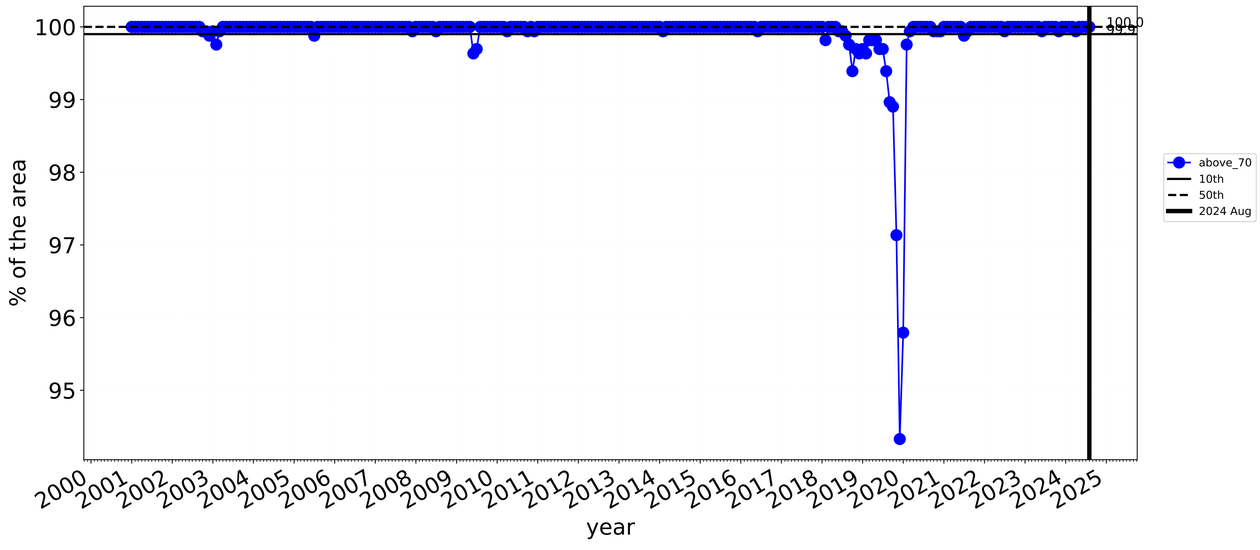
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



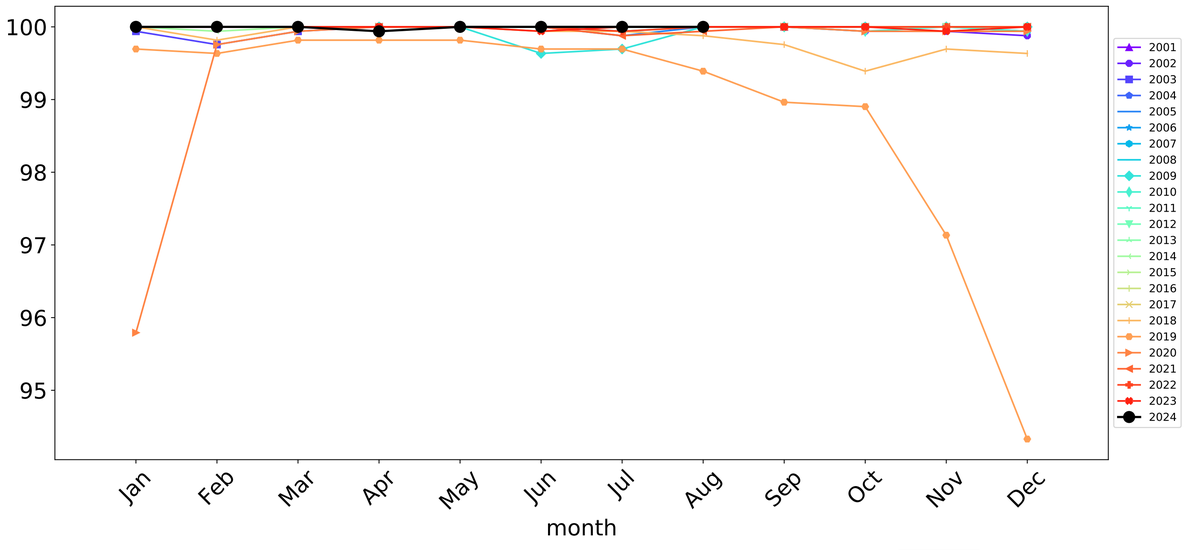
Wind erosion historical monthly area protected (Total Veg Cov >50%)

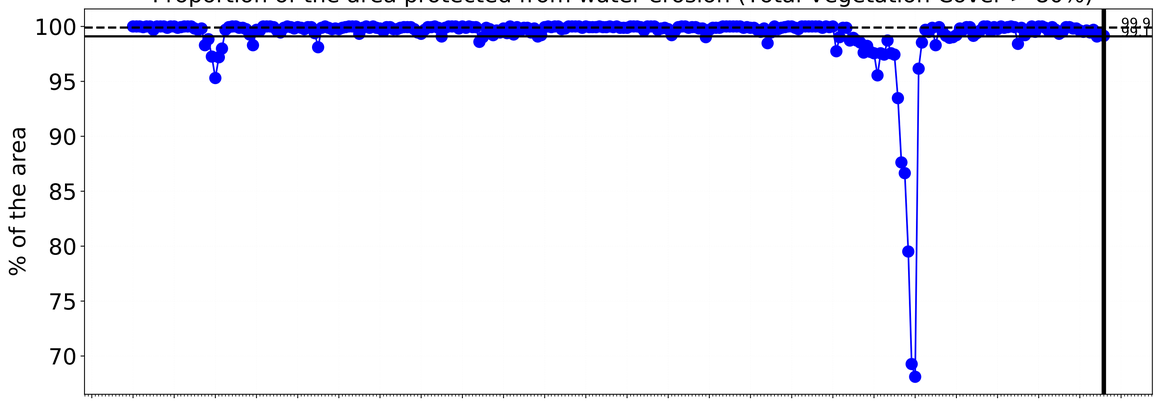


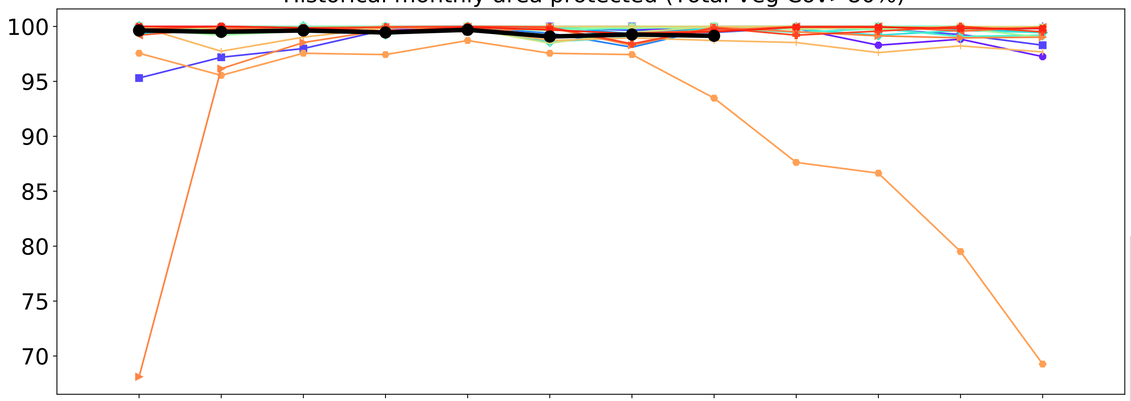
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



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




Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)
% of the area
99.9
99.1
above_80
10th
50th
2024 Aug


Historical monthly area protected (Total Veg Cov>80%)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2001
2002
2003
2004
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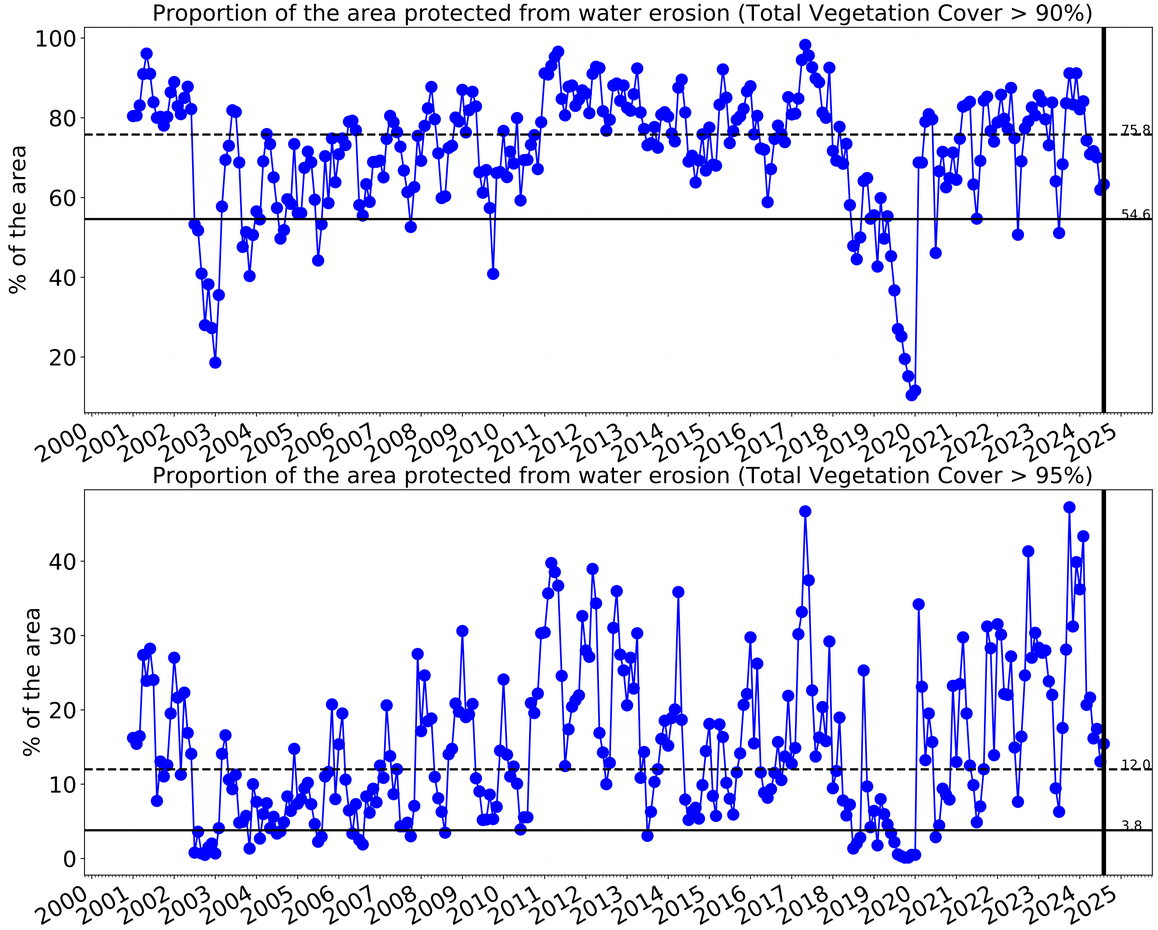
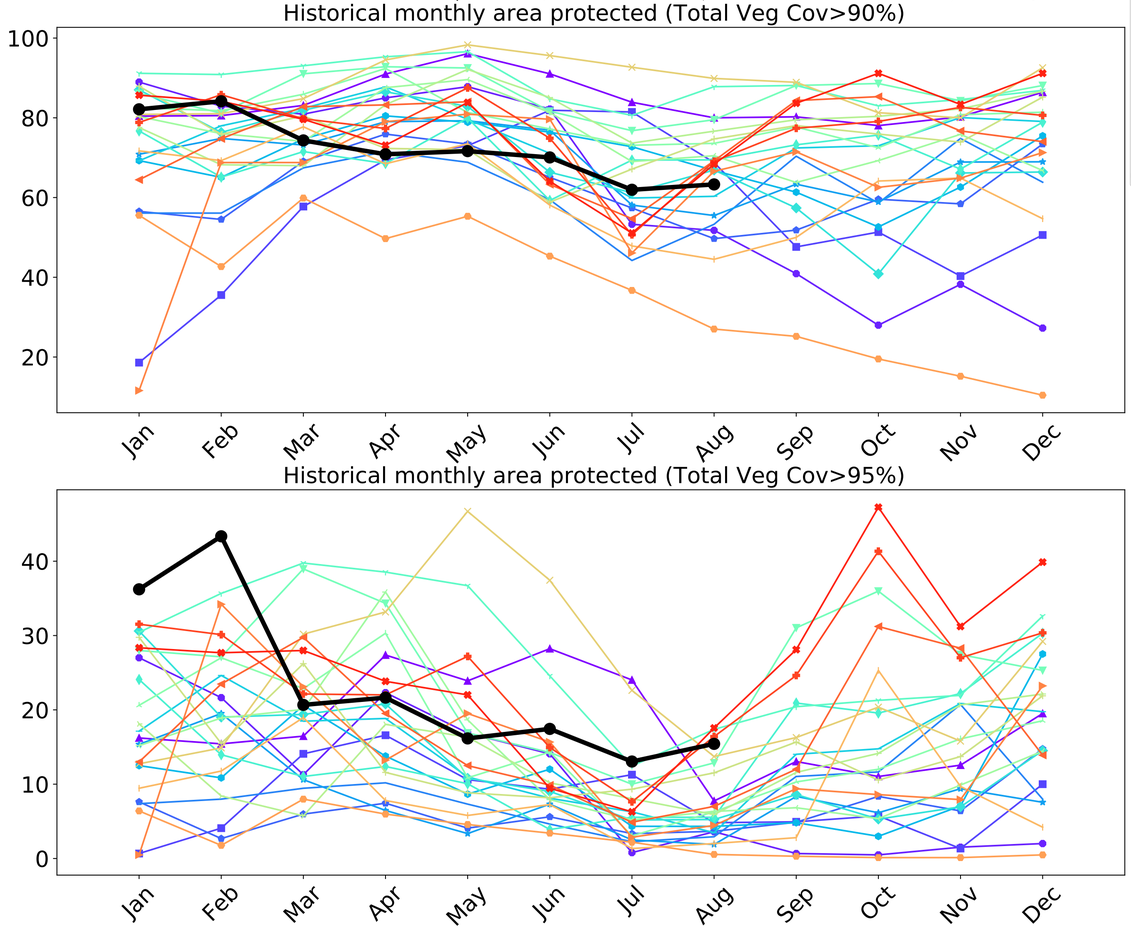
2022
2023
2024


Proportion of the area protected from water erosion (Total Vegetation Cover > 90%)
% of the area
75.8
54.6
above_90
10th
50th
2024 Aug


Historical monthly area protected (Total Veg Cov>90%)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2001
2002
2003
2004
2005
2006
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2019
2020
2021
2022
2023
2024

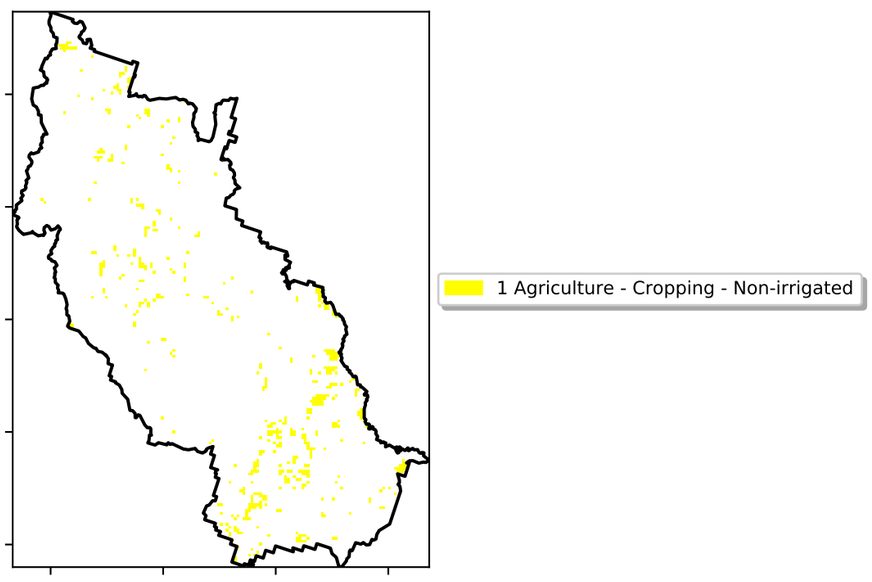
Proportion of the area protected from water erosion (Total Vegetation Cover > 95%)
% of the area
12.0
3.8
above_95
10th
50th
2024 Aug

Historical monthly area protected (Total Veg Cov>95%)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

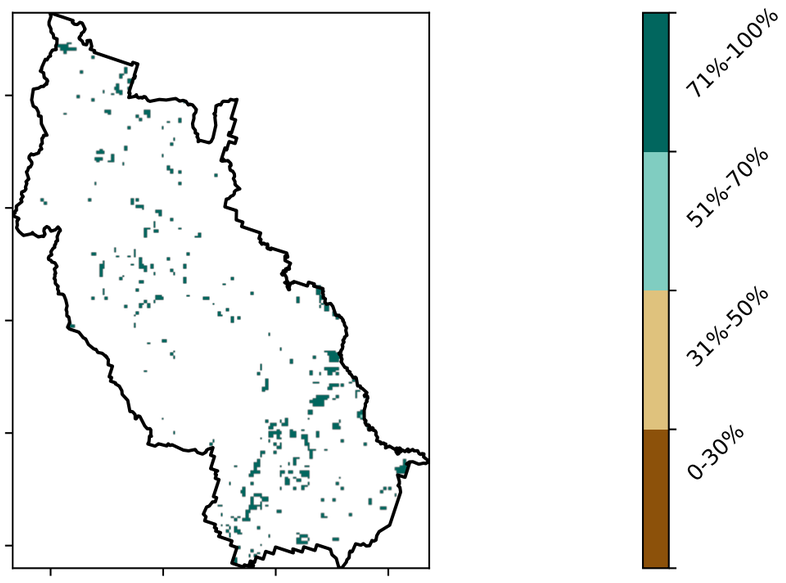
Cropping

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

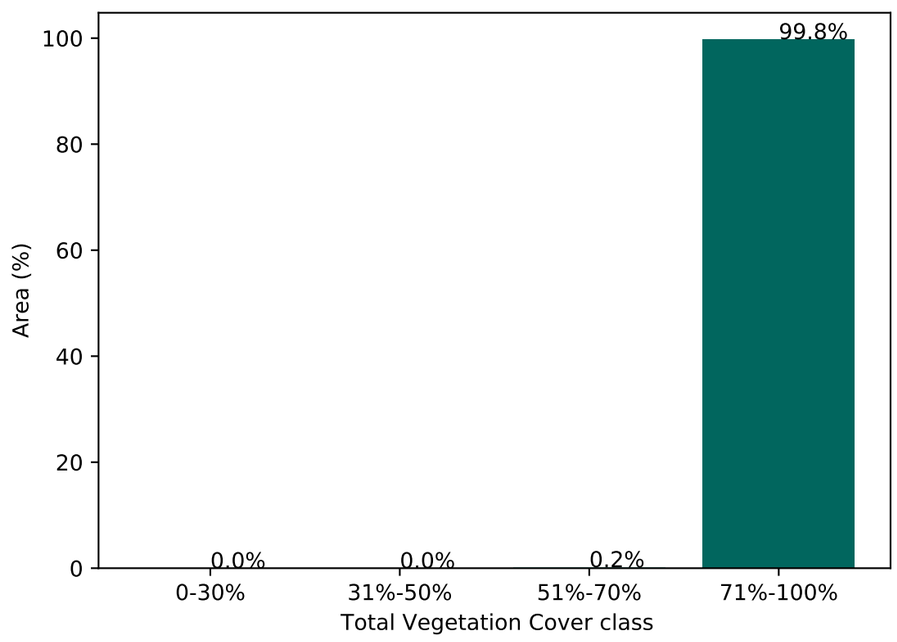
Land use and forest cover



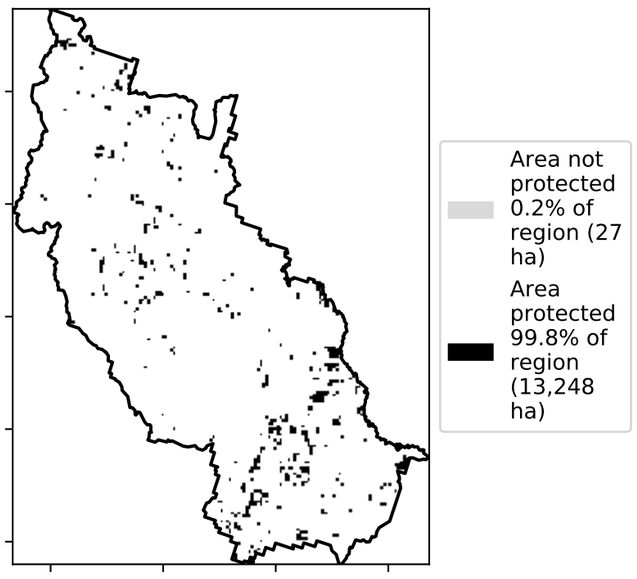
Total Vegetation Cover [%]



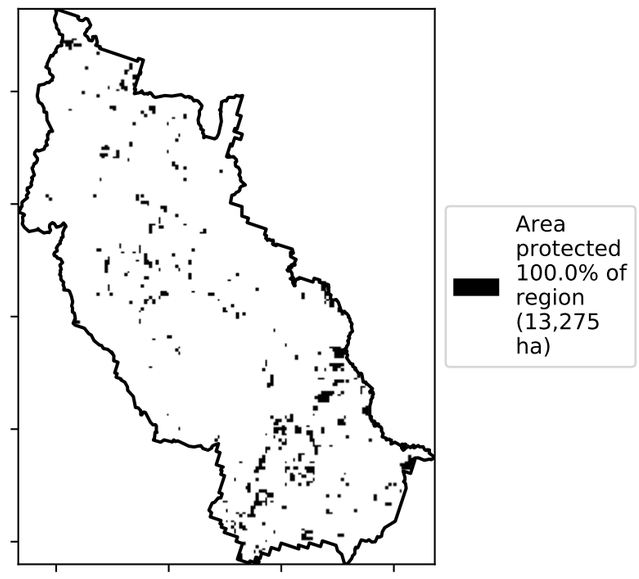
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

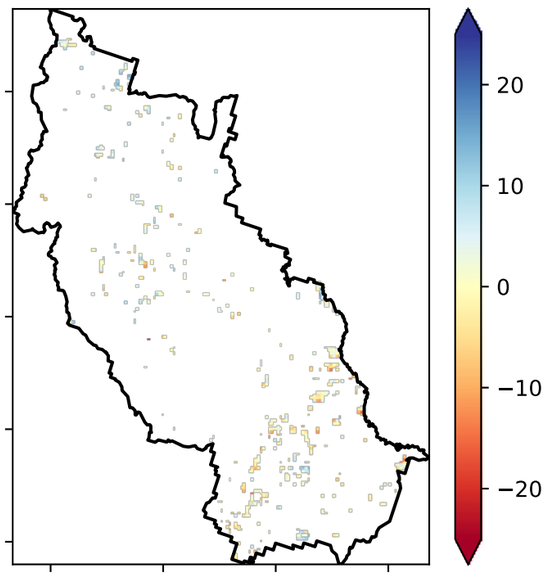


% Area protected from wind erosion (>50%)



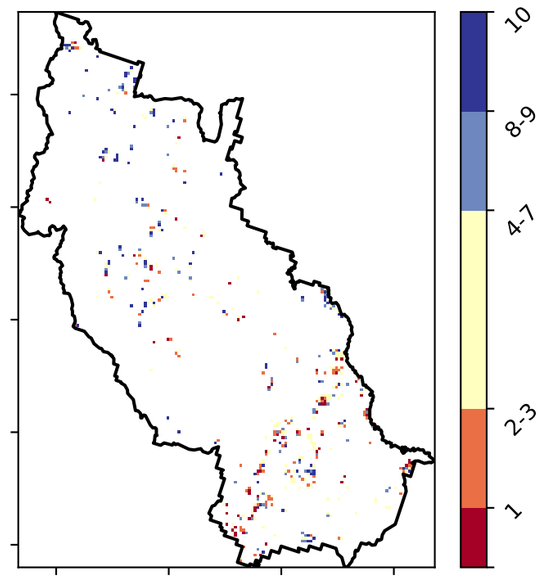
Total Vegetation Cover Anomaly [%]

Anomaly show how many 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.



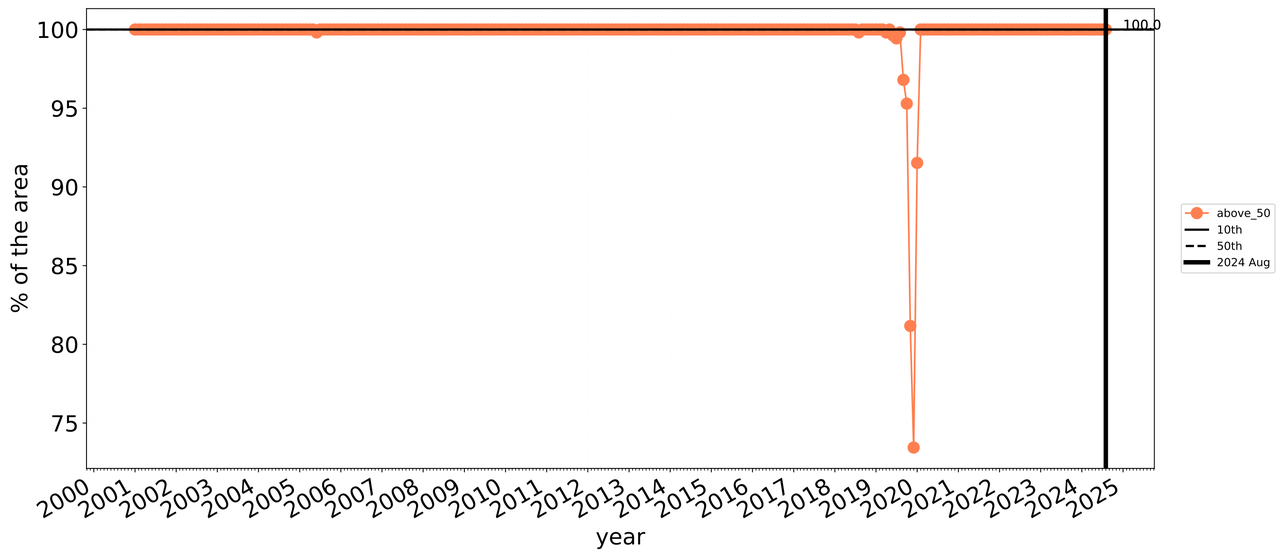
Total Vegetation Cover Decile [%]

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.

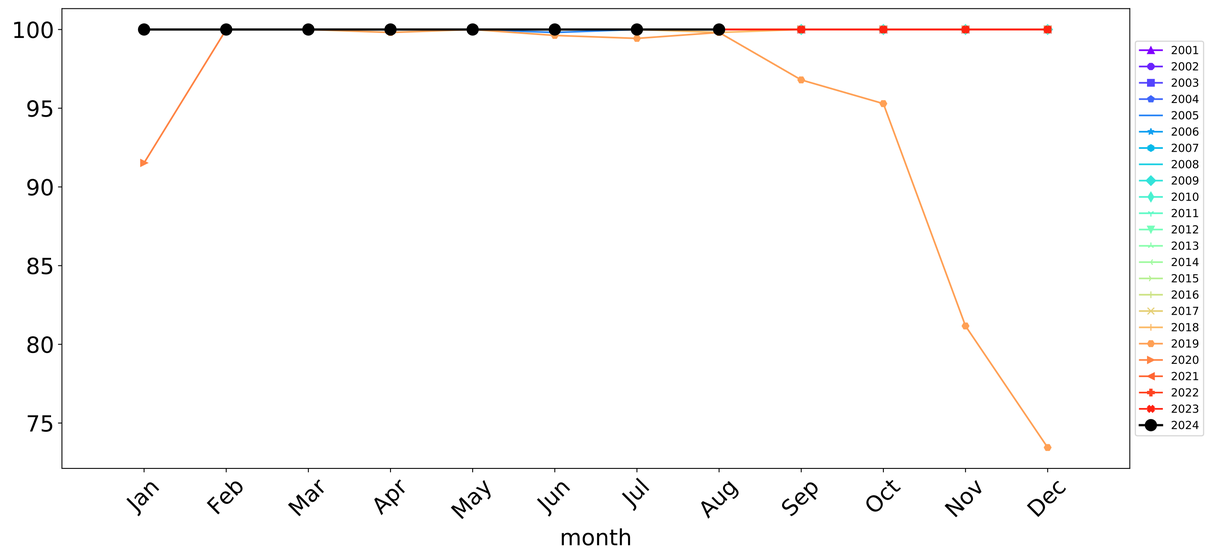


Cropping timeseries

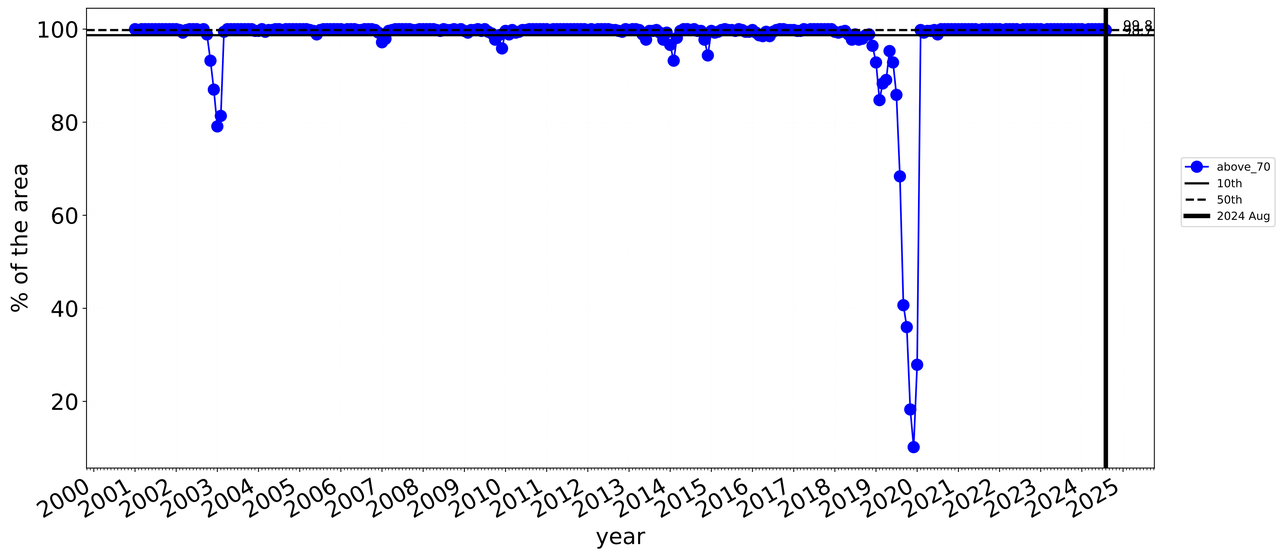
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



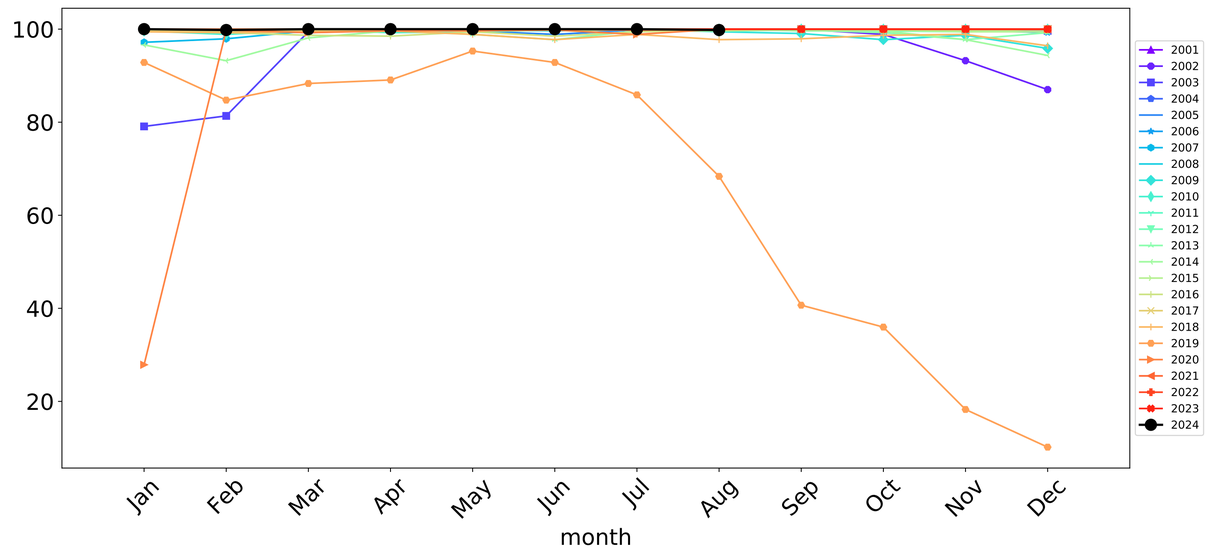
Wind erosion historical monthly area protected (Total Veg Cov >50%)

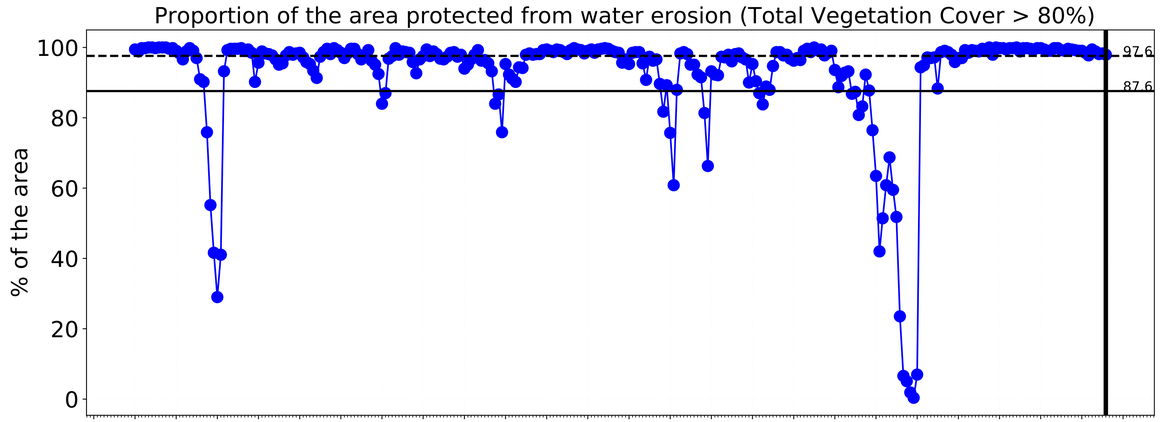


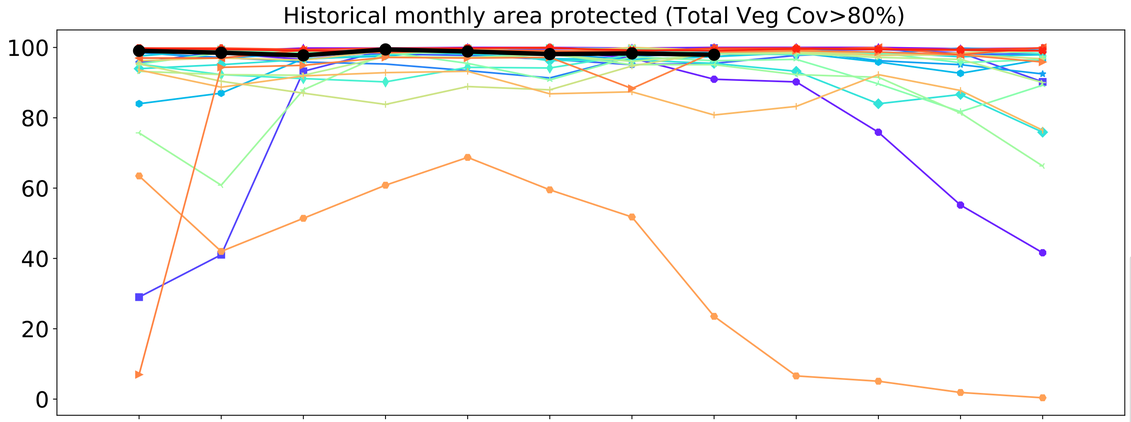
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



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




Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)
% of the area
97.6
87.6
above_80
10th
50th
2024 Aug


Historical monthly area protected (Total Veg Cov>80%)
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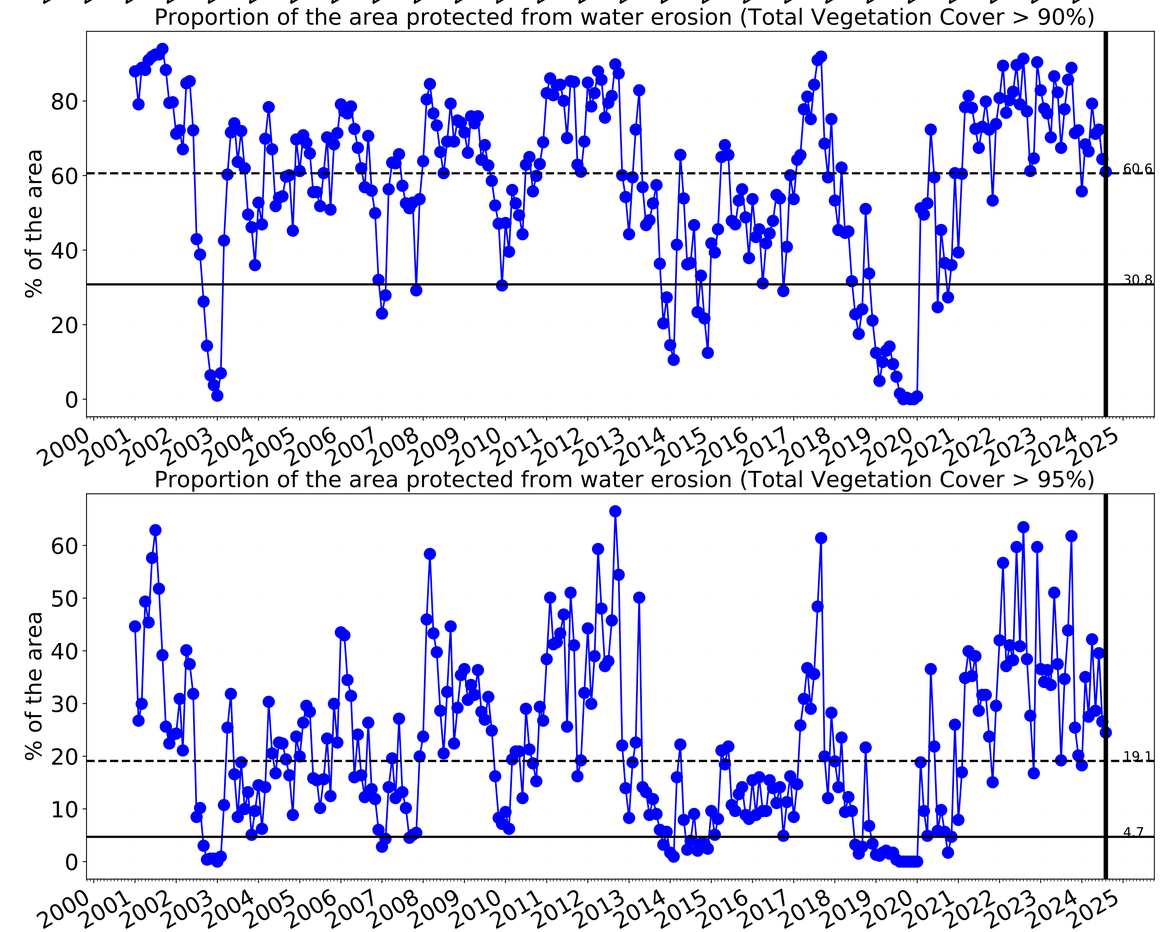
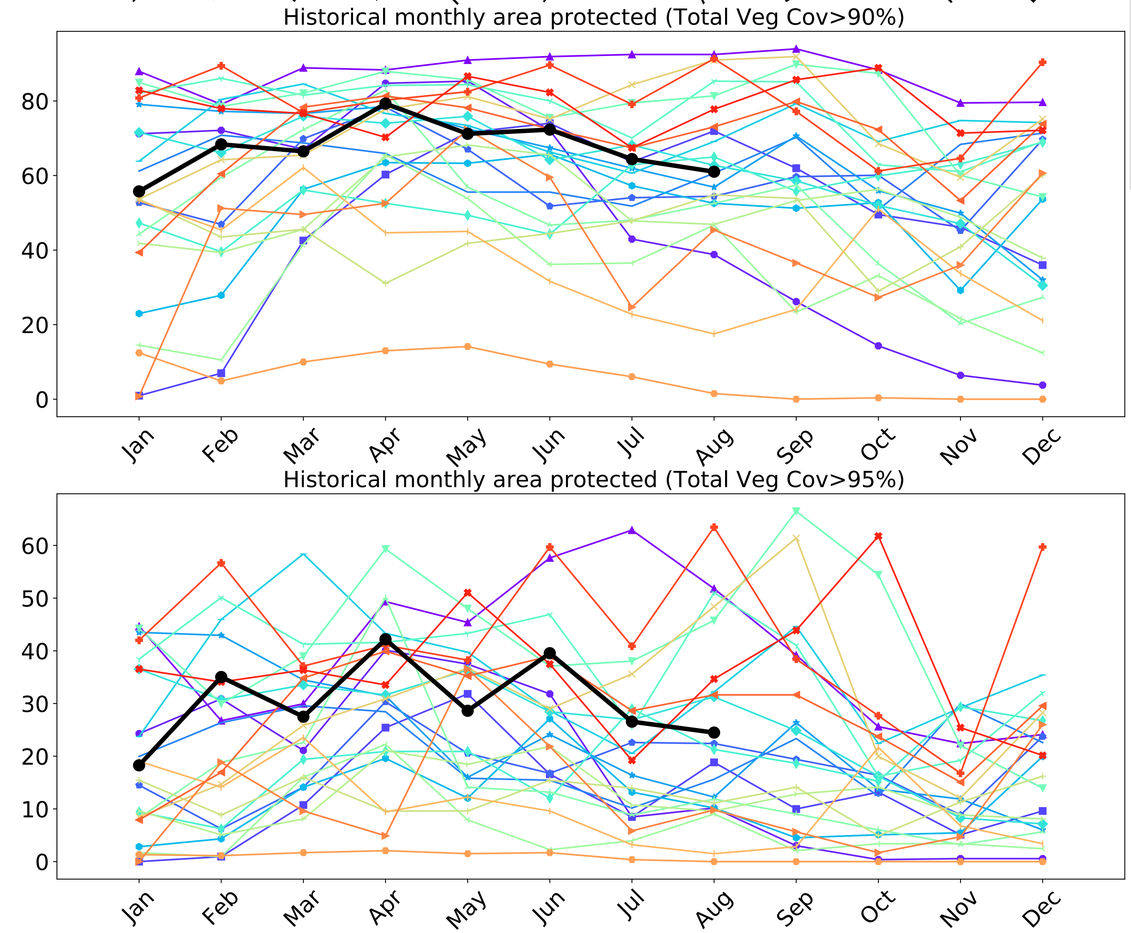

Proportion of the area protected from water erosion (Total Vegetation Cover > 90%)
% of the area
60.6
30.8
above_90
10th
50th
2024 Aug
Proportion of the area protected from water erosion (Total Vegetation Cover > 95%)
% of the area
19.1
4.7
above_95
10th
50th
2024 Aug


Historical monthly area protected (Total Veg Cov>90%)
Historical monthly area protected (Total Veg Cov>95%)
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2024

Uralla_(A) (322,300 ha and no data 244 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	322,300	100.0% 322,300	100.0% 322,300	100.0% 322,225	99.0% 318,925	72.5% 233,800	30.8% 99,125
Agriculture	317,250	100.0% 317,250	100.0% 317,250	100.0% 317,175	99.0% 314,125	72.8% 231,000	30.9% 98,100
Grazing	303,800	100.0% 303,800	100.0% 303,800	100.0% 303,750	99.1% 300,950	73.3% 222,800	31.2% 94,775
Grazing non forest	236,275	100.0% 236,275	100.0% 236,275	100.0% 236,225	99.1% 234,125	75.5% 178,375	35.1% 82,875
Grazing Woodland forest	26,525	100.0% 26,525	100.0% 26,525	100.0% 26,525	98.7% 26,175	69.7% 18,475	21.0% 5,575
Grazing - Forest (non woodland)	41,000	100.0% 41,000	100.0% 41,000	100.0% 41,000	99.1% 40,650	63.3% 25,950	15.4% 6,325
Cropping	13,275	100.0% 13,275	100.0% 13,275	99.8% 13,250	97.9% 13,000	61.0% 8,100	24.5% 3,250