[LGA Dundas_(S) (WA)] - total vegetation cover soil protection report [Sep 2019]

This report provides information about vegetation covering the soil surface for a region during a single month with comparison to previous years. The total vegetation cover indicates where soil is likely to be protected from wind (>=50% total vegetation cover) and water/hillslope (>=70% total vegetation cover) erosion. Results are shown for the whole region (polygon) and also separated by land use and forest cover class. This is because different land use / forest cover classes are likely to have different cover patterns and targets.
[Dundas_(S)]
The six maps and two graphs provide a report for the month with:
• Land use and forest cover information for the area:
    o Map: Land use and forest cover
    o Chart: Land use and forest cover area
• Total vegetation cover for this month:
    o Map: total vegetation cover classified into 4 classes
    o Chart: total vegetation cover percentage area classified into 4 classes
• Areas protected from erosion for the month:
    o Map: water erosion protection (>70% cover) percentage area and hectares
    o Map: wind erosion protection (>50% cover) percentage area and hectares
• Comparison with previous years:
    o Map: anomaly – compare this month to the average cover from the same month in previous years
    o Map: deciles – rank this month against the same month in previous years
• Time series from January 2001 to current:
    o Wind erosion protection time series: percentage of the area of the region with greater than 50% cover for each month since January 2001 (orange line): Horizontal lines are 10th (cover target) and 50th percentiles. Vertical line is month of report.
    o Water erosion protection time series: percentage of the area of the region with greater than 70% cover for each month since January 2001 (blue line): Horizontal lines are 10th (cover target) and 50th percentiles. Vertical line is month of report.
    o Rainfall: millimetres rainfall each month (black line). Vertical line is month of report.
• Time series for each month stacked by year
    o Same data as time series from January 2001 to current month, grouped by month. Black line is current year of data.
• Water erosion protection on higher slopes. As slope increases, more cover is required to control water erosion. The thresholds reported are:
    o the percentage area with pixels greater than 80% total clover
    o the percentage area with pixels greater than 90% total clover
    o the percentage area with pixels greater than 95% total clover

The following pages repeat the above sequence for each land use and forest cover class. For example
• All agricultural lands, that is grazing, cropping plus Horticulture (depending on what land use is present)
• Grazing lands by forest classes if present
• Cropping lands
• Irrigation lands
• Protected areas by forest classes if present

The following pages repeat the above sequence for each land use and forest cover class if 1% or more of area makes up a land use and forest cover class. Four land uses are reported: Conservation and natural environments, Agriculture, production native forests and plantation forests, and other. Agriculture is further divided into grazing, crops and horticulture are then divided into non-irrigated and irrigated. Land use is further divided by forest class if present: non-forest, woodland forest and non-woodland forest.
Explanatory notes:
This report has been generated using MODIS fractional vegetation cover information available in Rangelands and Pasture Productivity (RAPP) map tool. The report is based on an analysis of 500 metre pixel data on monthly time steps. Report uses baseline from January 2001 to September 2019 for each month to generate anomalies and deciles. Post September 2019 all similar months are used to calculate anomalies and deciles.

Acknowledgment of data:

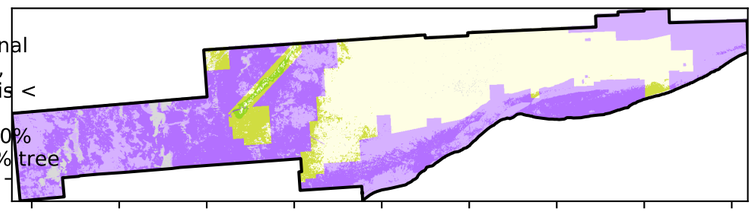
1. http://www.agriculture.gov.au/abares/aclump/land-use/alum-classification
2. http://www.agriculture.gov.au/abares/forestsaustralia/sofr/sofr-2018
3. https://www.dpi.nsw.gov.au/agriculture/pastures-and-rangelands/establishment-mgmt/production-management2/groundcover
4. MODIS Fractional cover algorithm:

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

Vegetation Cover Sep 2019

Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.

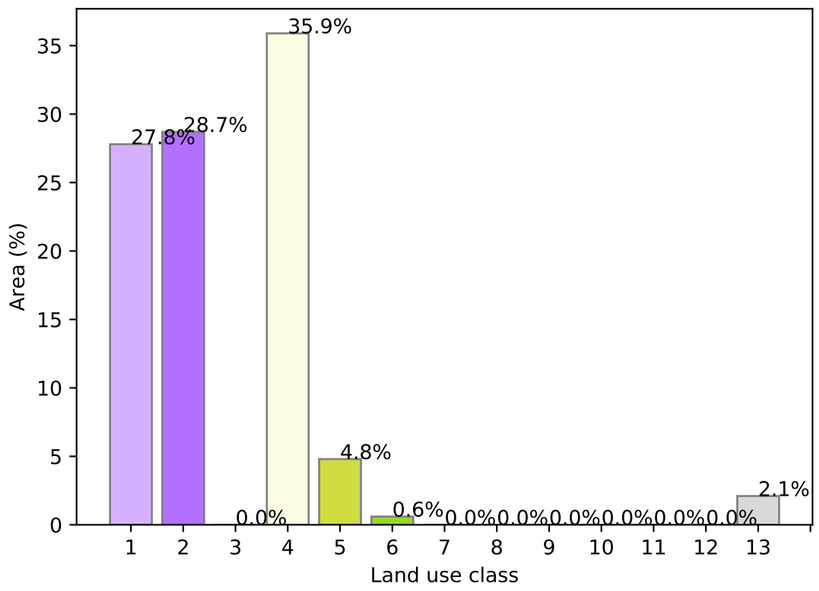
Land use and forest cover



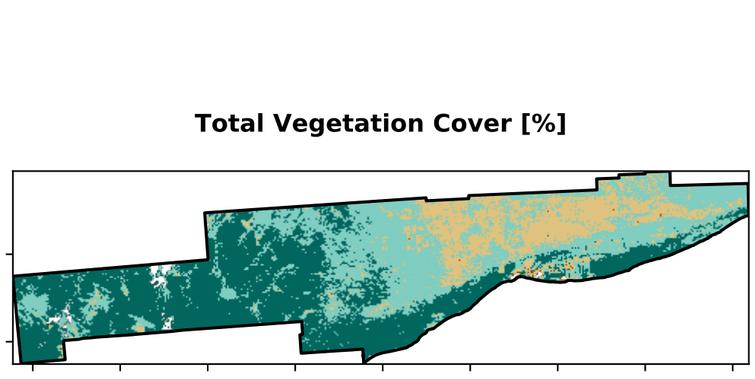
Legend with land class forest cover and number, i.e. Forests is 12

- 1 Conservation and natural environments - Non-forest
- 2 Conservation and natural environments - Woodland forest
- 3 Conservation and natural environments - Non-Woodland forest
- 4 Agriculture - Grazing - Non-forest
- 5 Agriculture - Grazing - Woodland forest
- 6 Agriculture - Grazing - Non-woodland forest
- 7 Agriculture - Grazing - Irrigated
- 8 Agriculture - Cropping - Non-irrigated
- 9 Agriculture - Cropping - Irrigated
- 10 Agriculture - Horticulture - Non-irrigated
- 11 Agriculture - Horticulture - Irrigated
- 12 Production native forests and plantation forests
- 13 Other uses

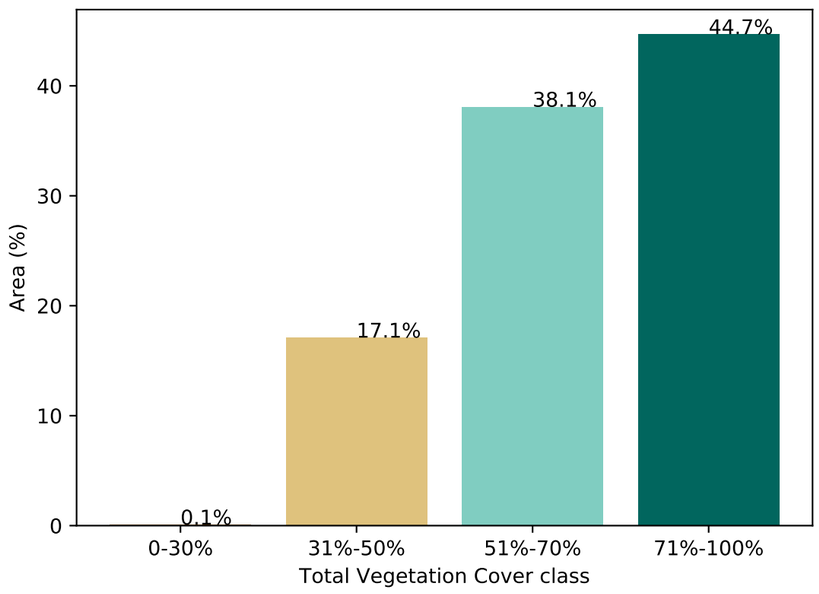
Proportion of each land class in area



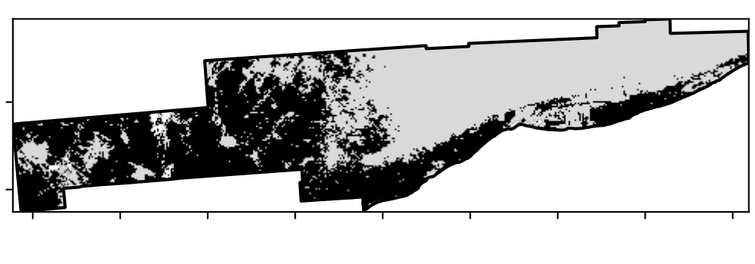
Total Vegetation Cover [%]



Proportion of vegetation cover class in area

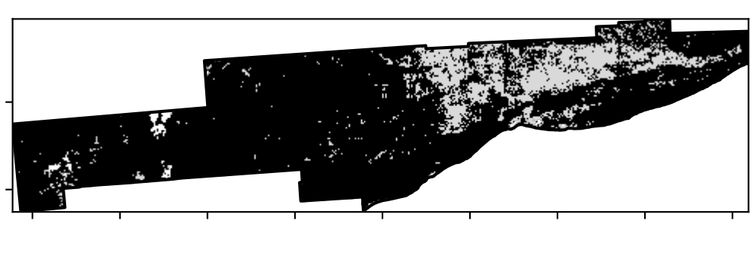


% Area protected from water erosion (>70%)



- Area not protected 55.3% of region (5,077,424 ha)
- Area protected 44.7% of region (4,104,175 ha)

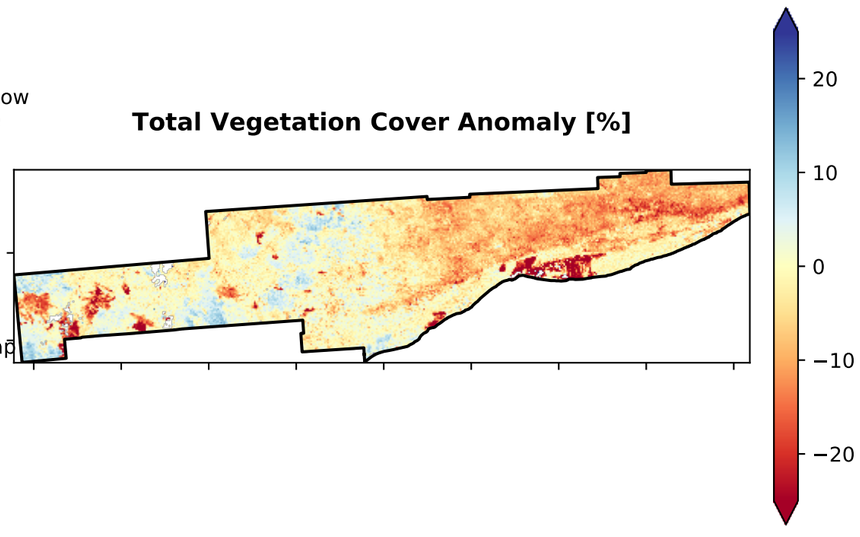
% Area protected from wind erosion (>50%)



- Area not protected 17.0% of region (1,560,872 ha)
- Area protected 83.0% of region (7,620,728 ha)

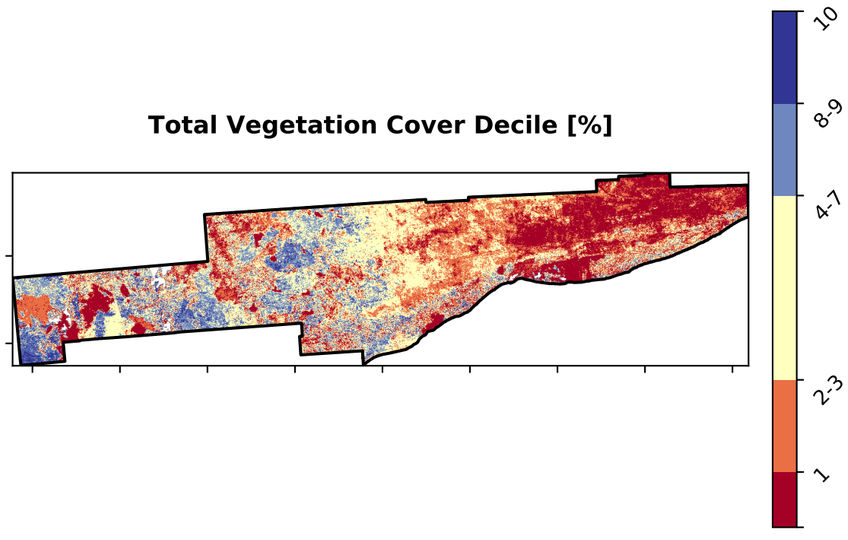
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

Total Vegetation Cover Anomaly [%]

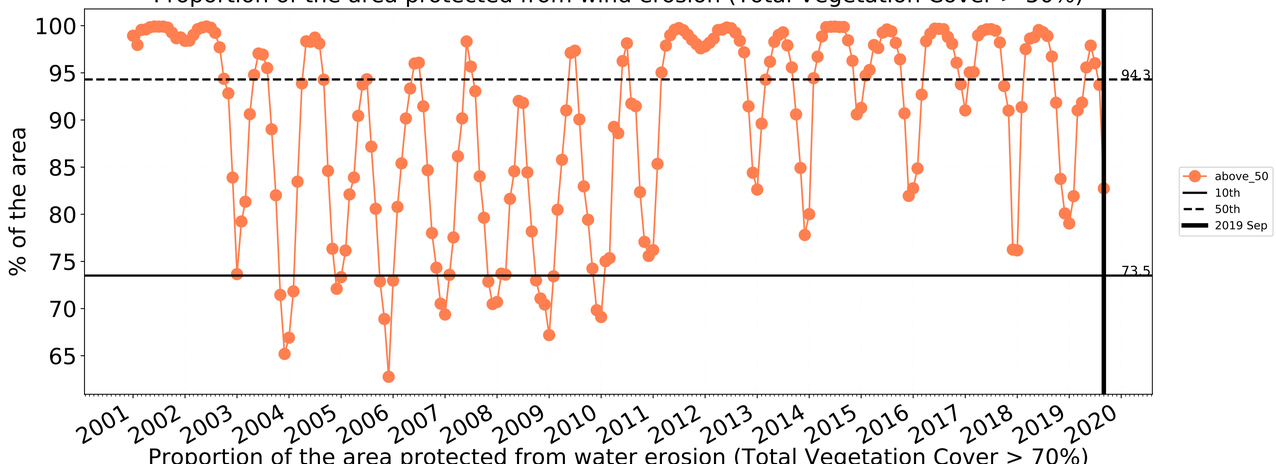


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

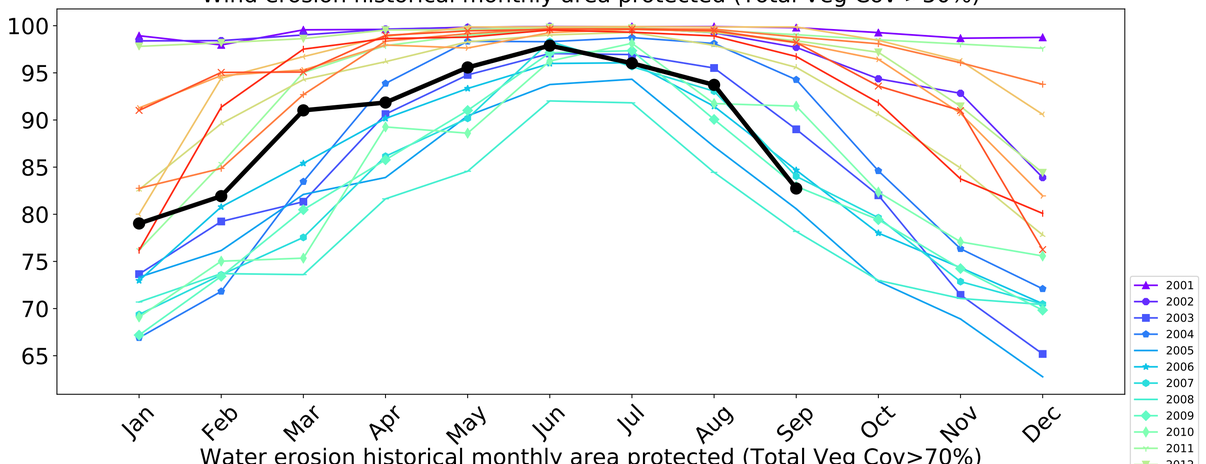
Total Vegetation Cover Decile [%]



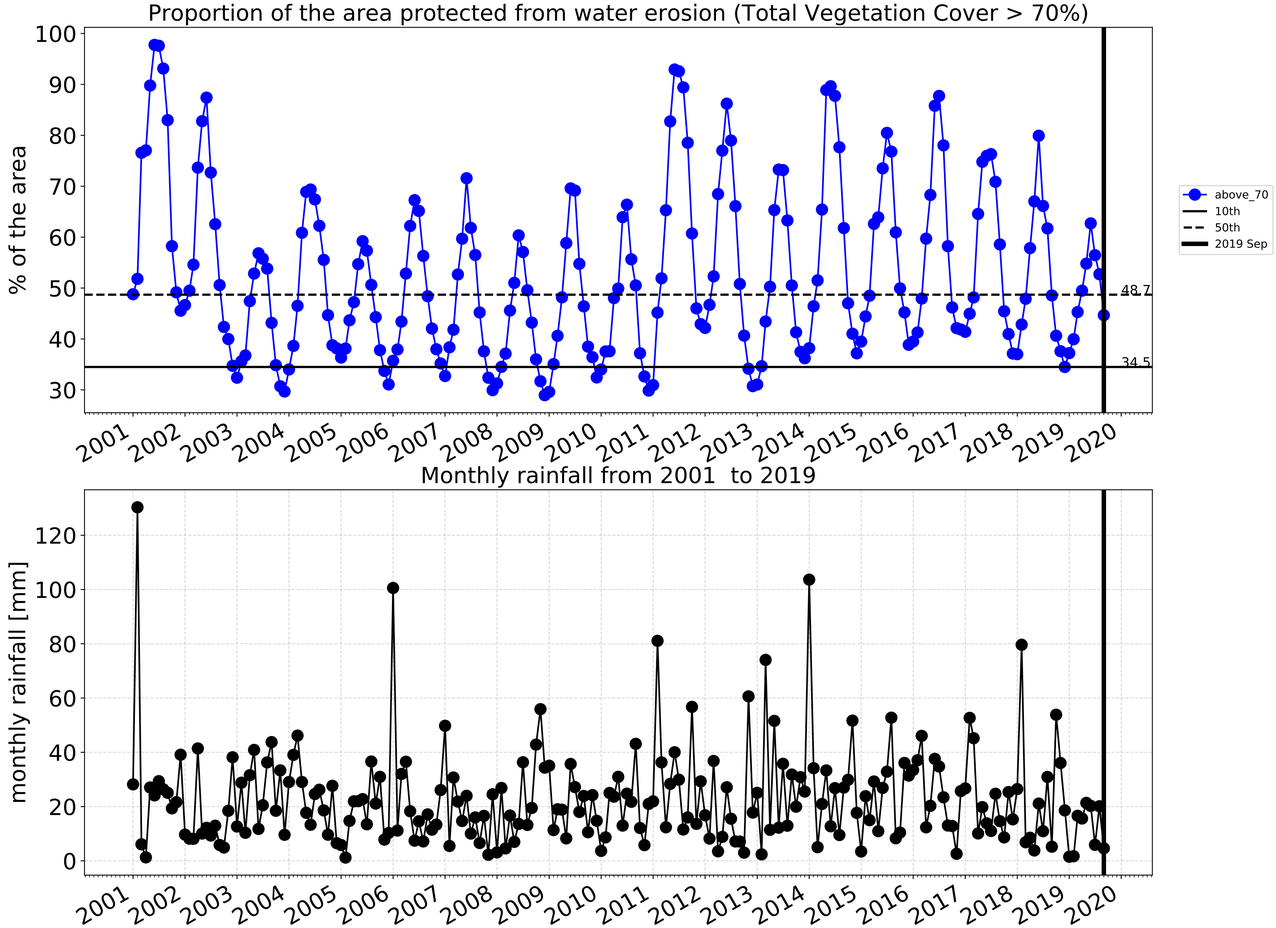
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



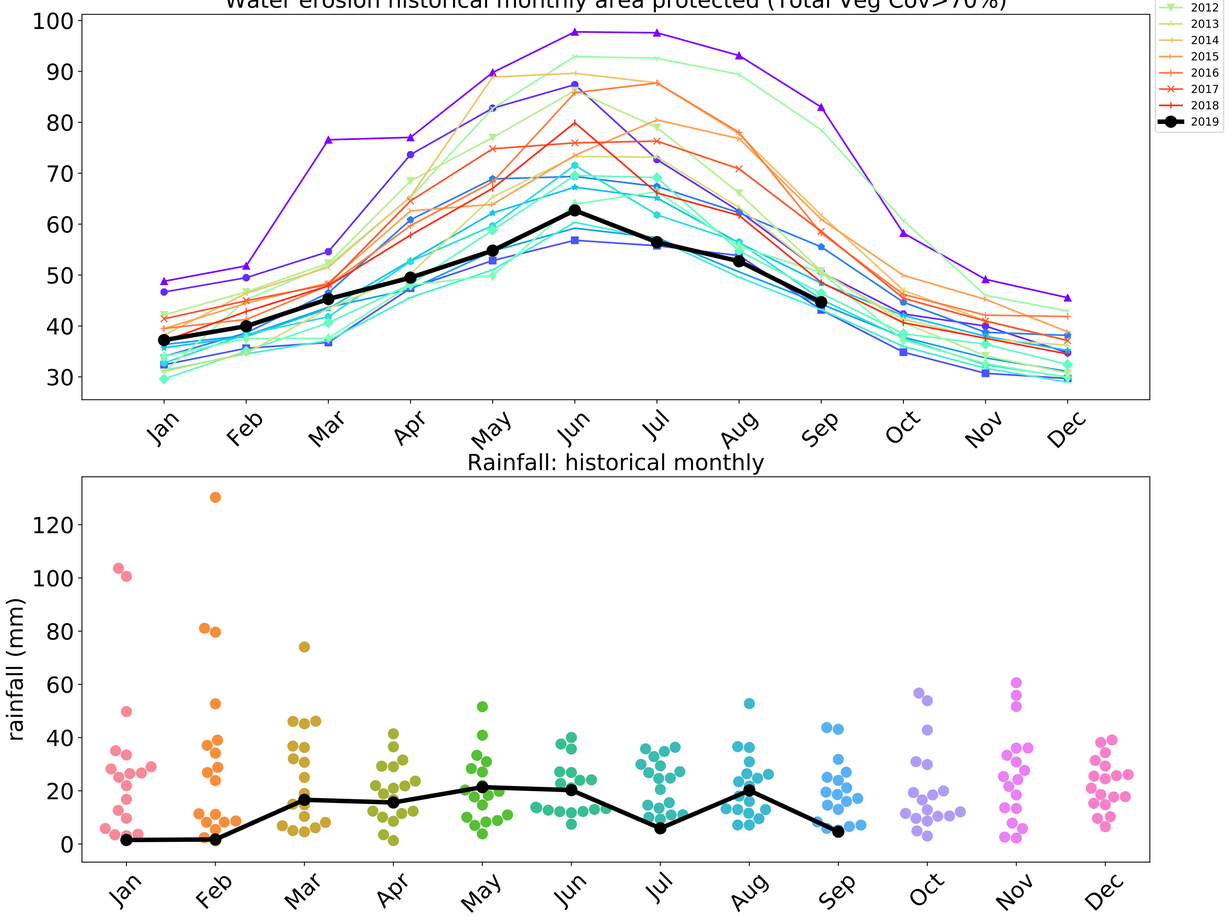
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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

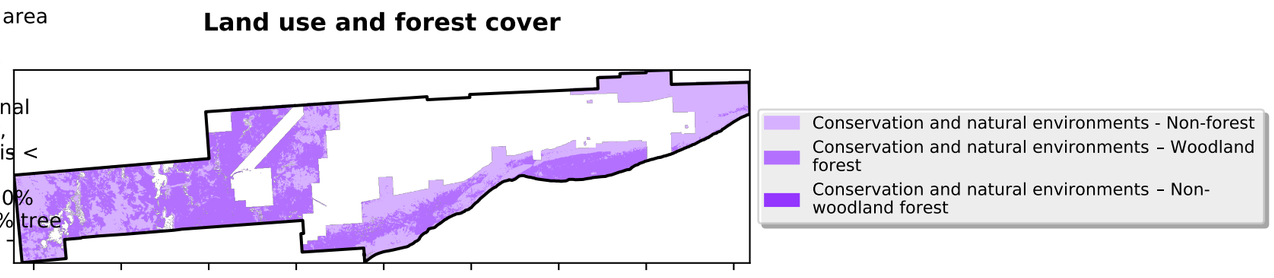


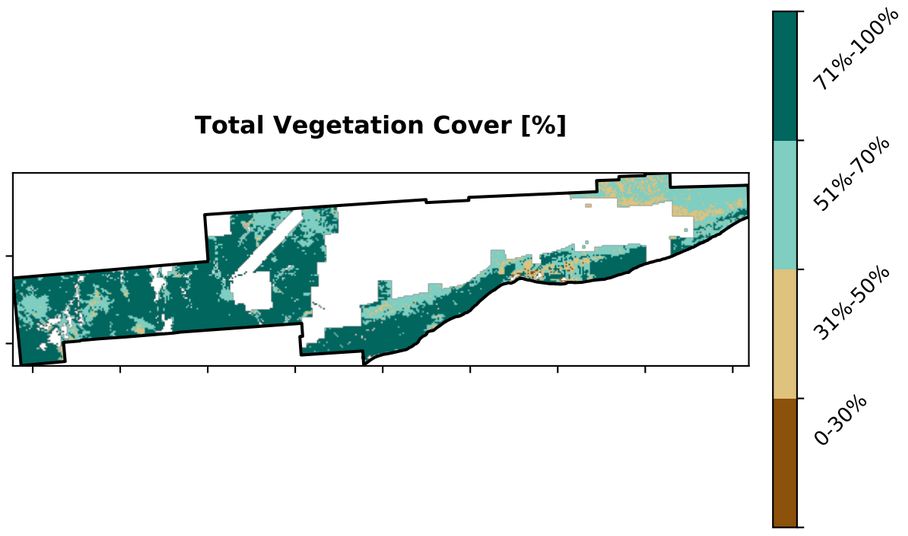
Monthly rainfall from 2001 to 2019

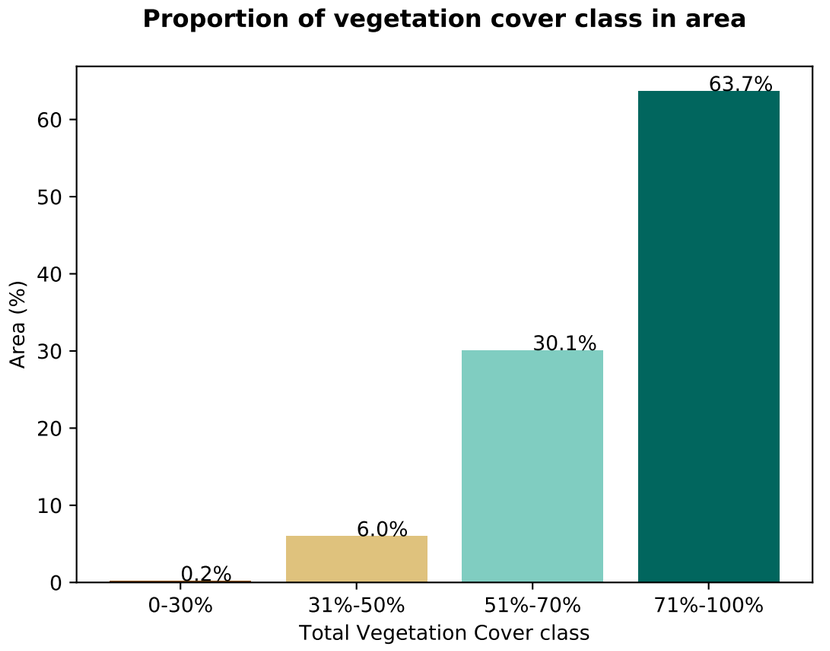
Rainfall: historical monthly

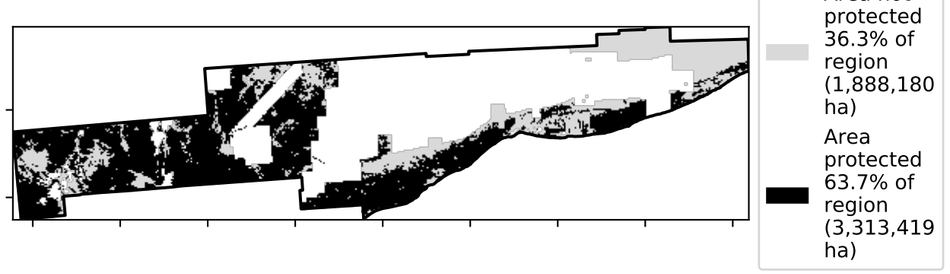
Conservation and natural environments

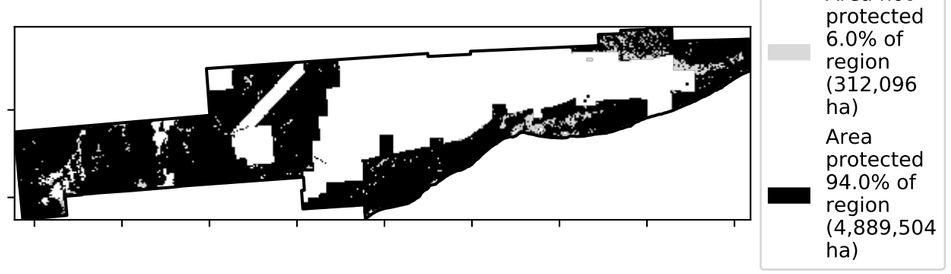
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



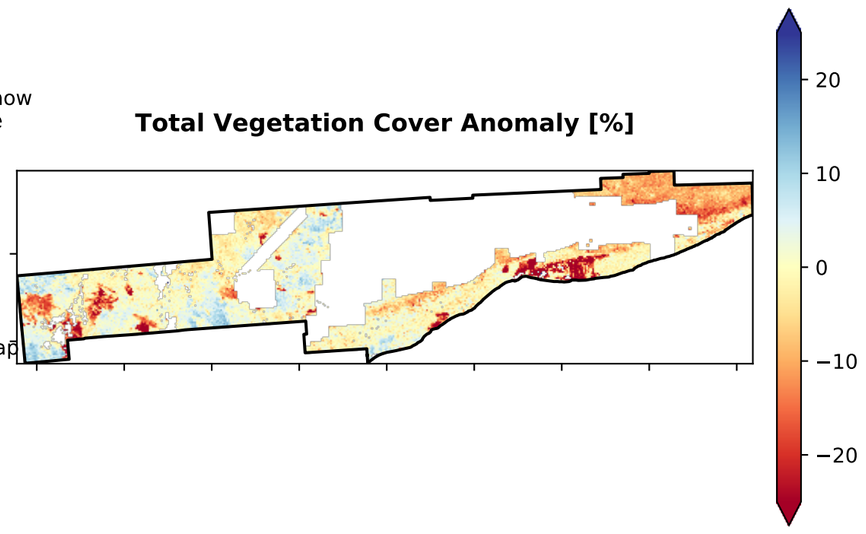




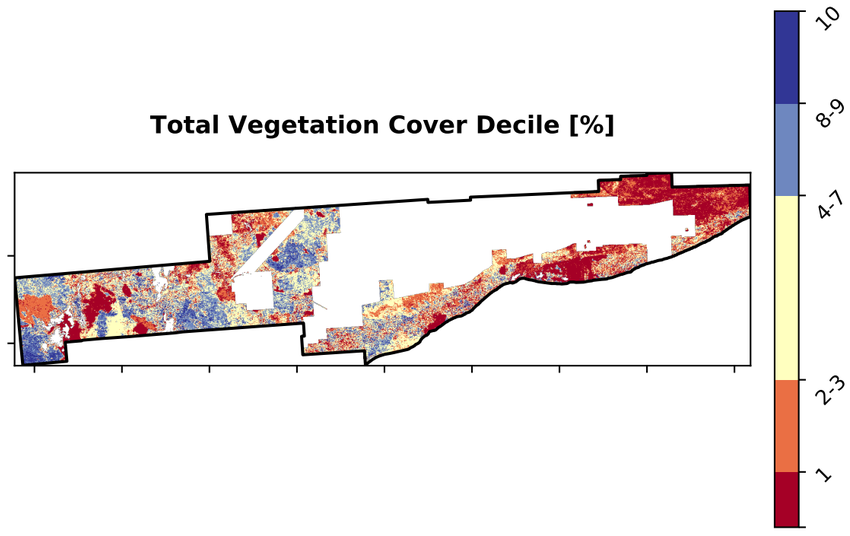




Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

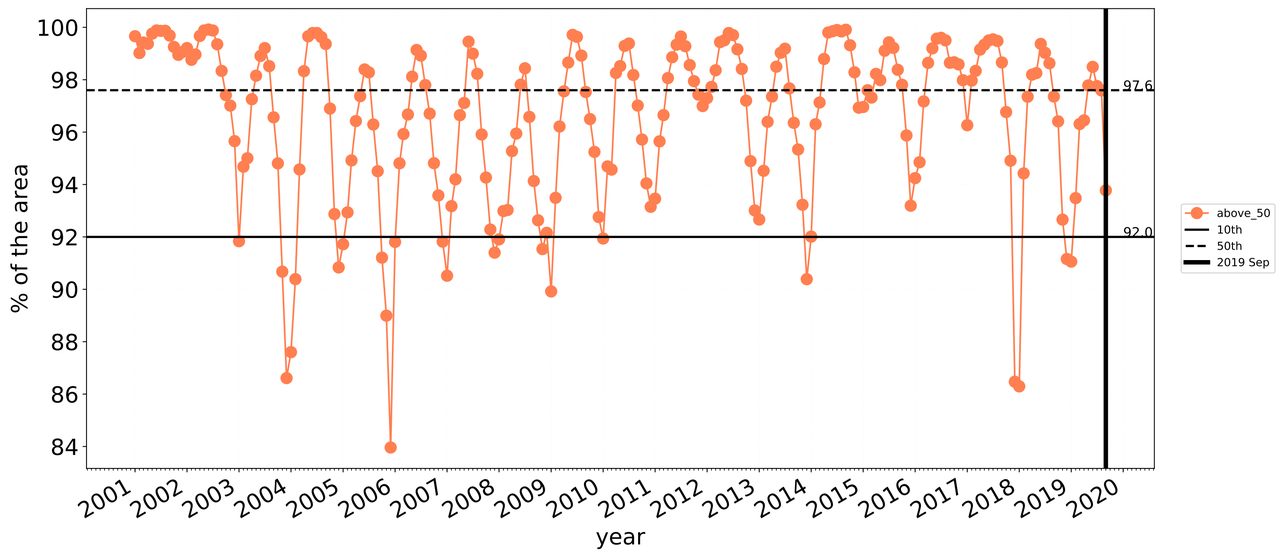


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

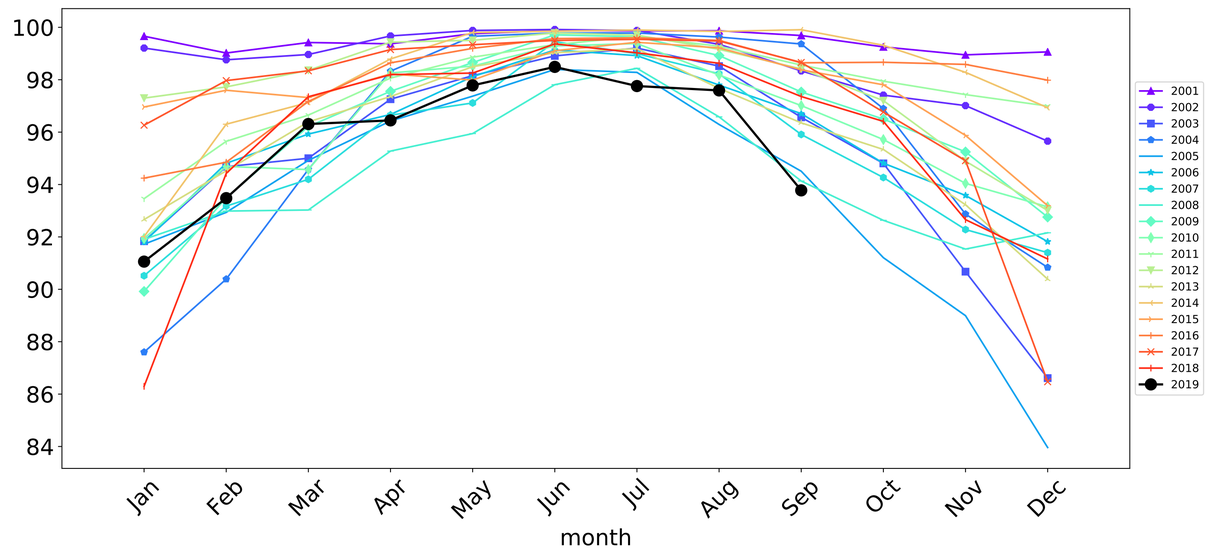


Conservation and natural environments timeseries

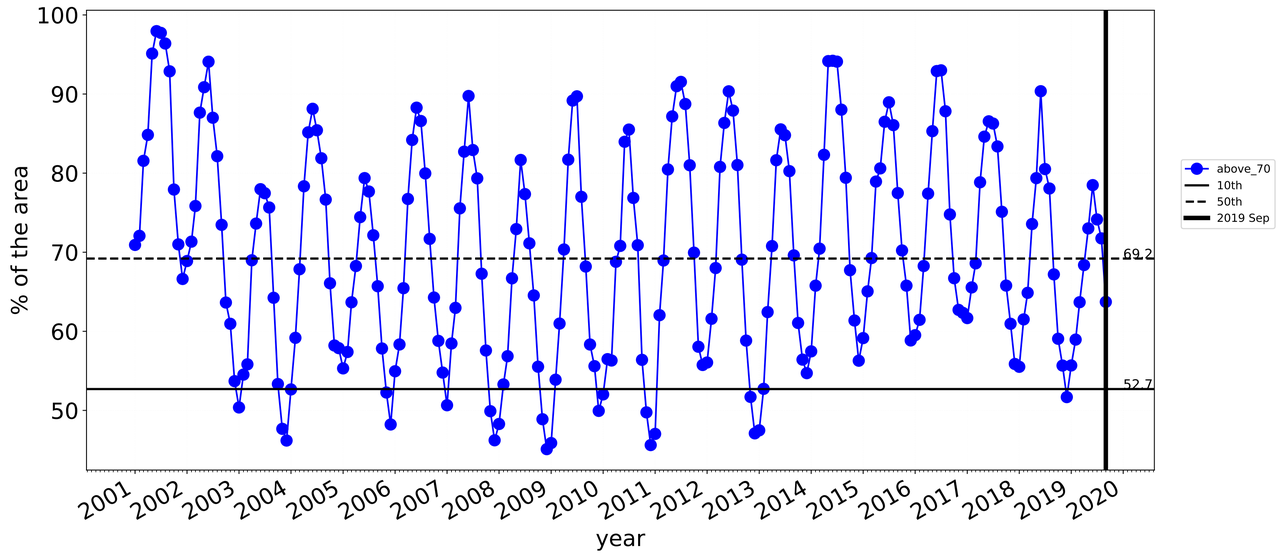
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



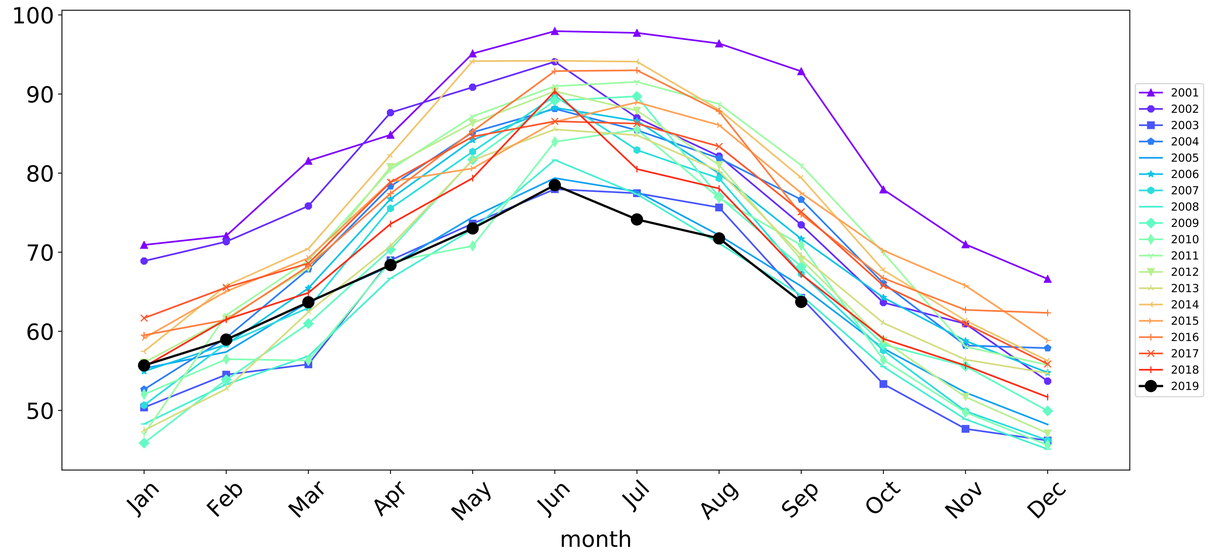
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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

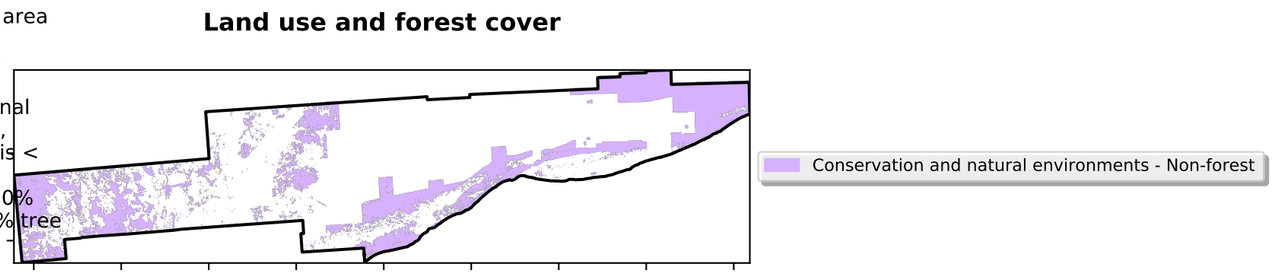


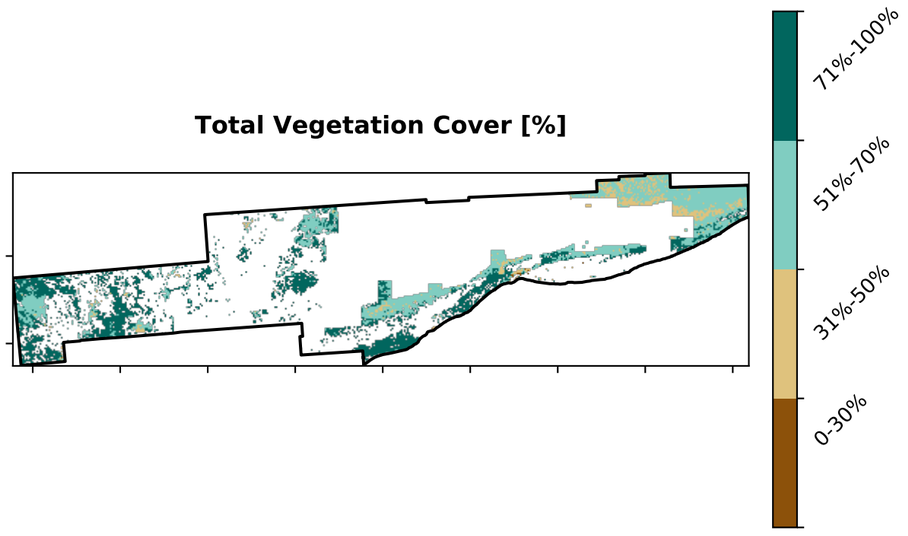
Water erosion historical monthly area protected (Total Veg Cov>70%)

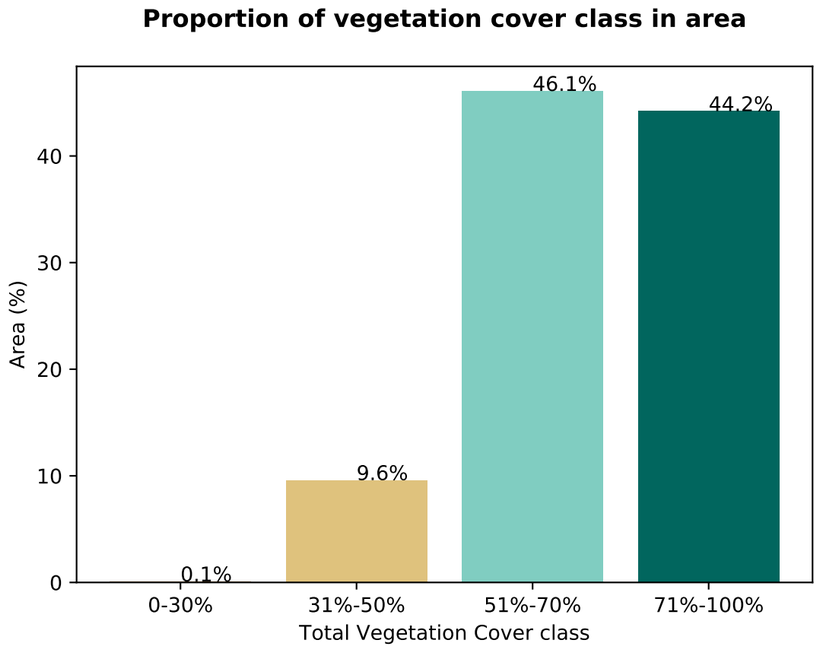


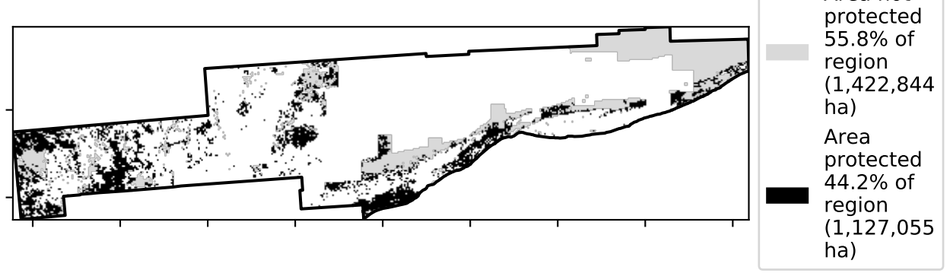
Conservation and natural environments non forest

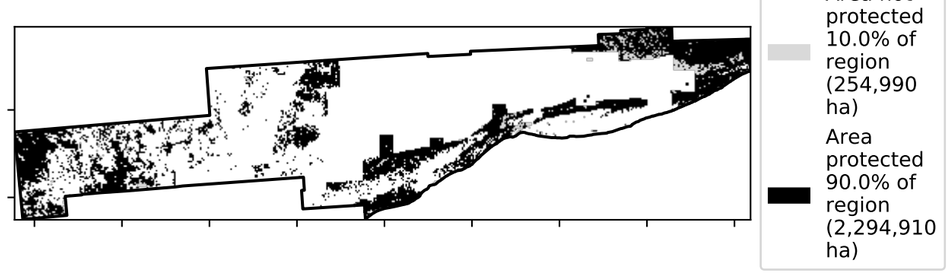
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



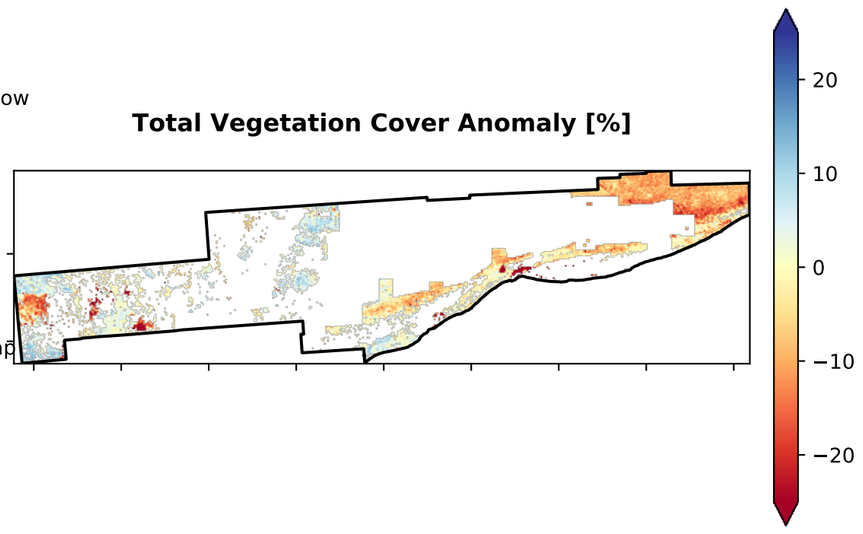




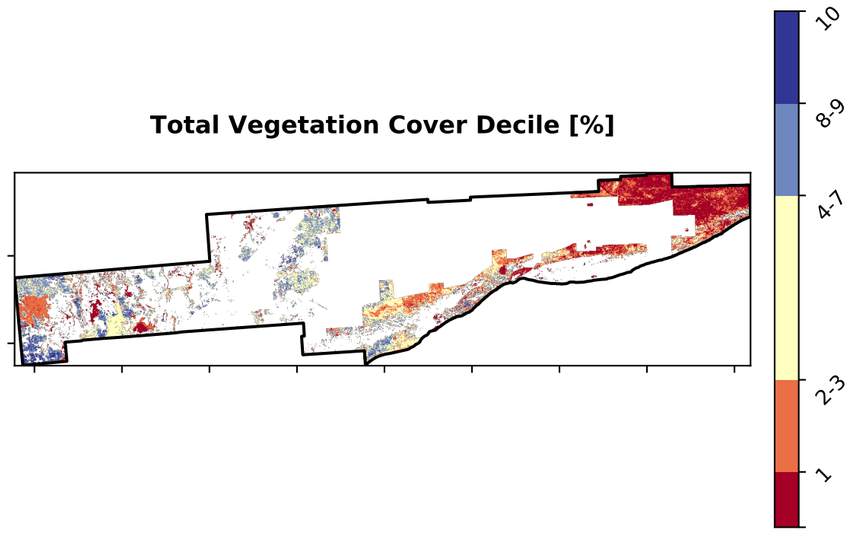




Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

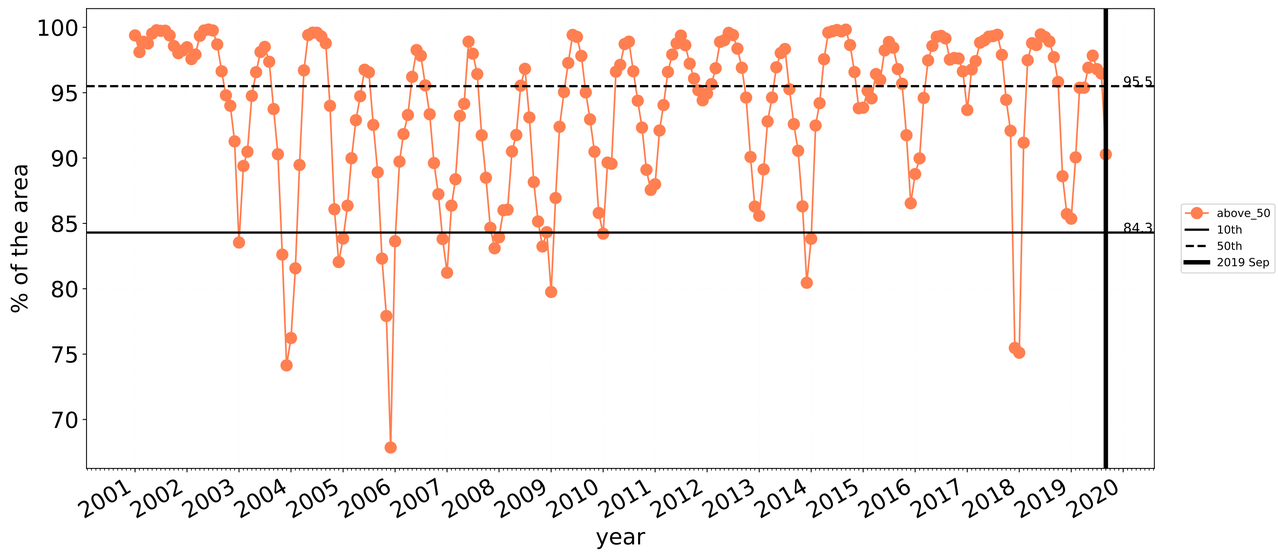


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

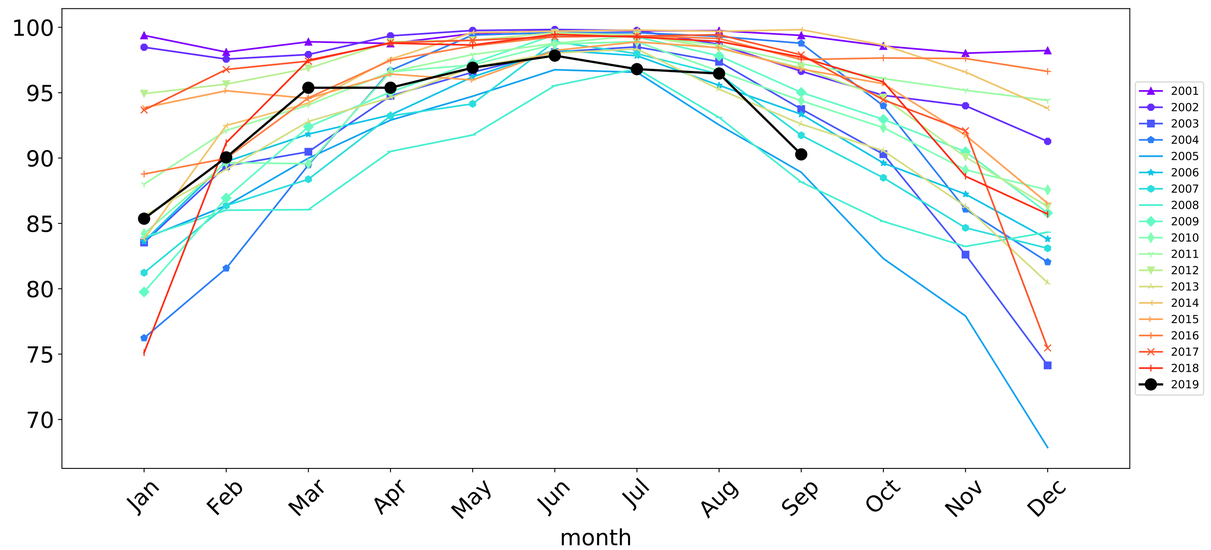


Conservation and natural environments non forest timeseries

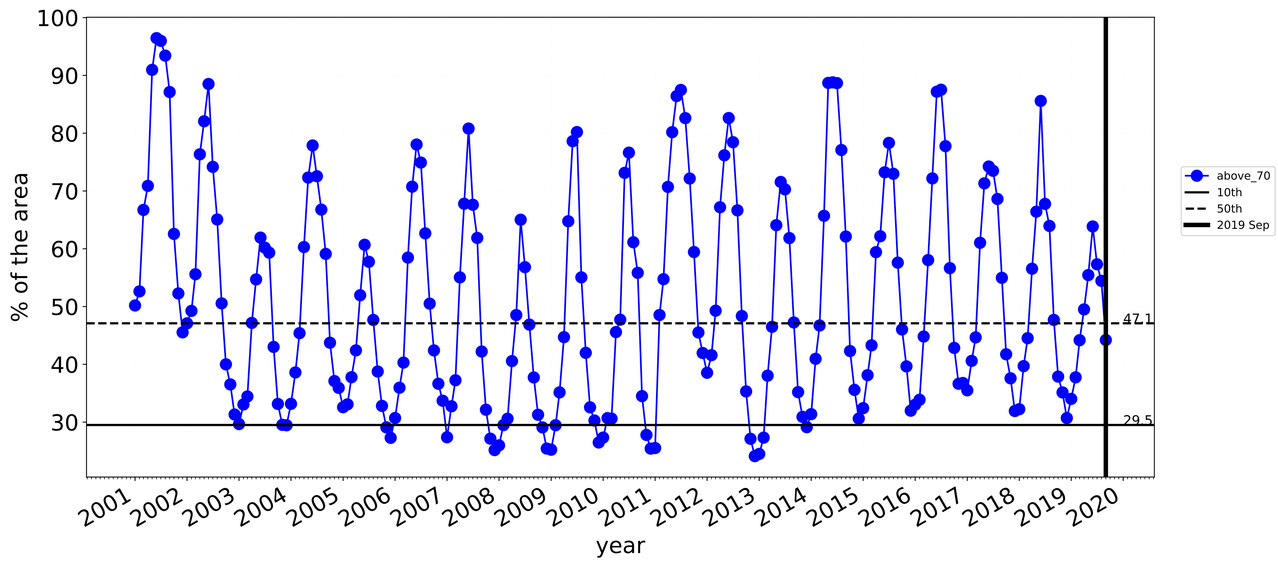
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



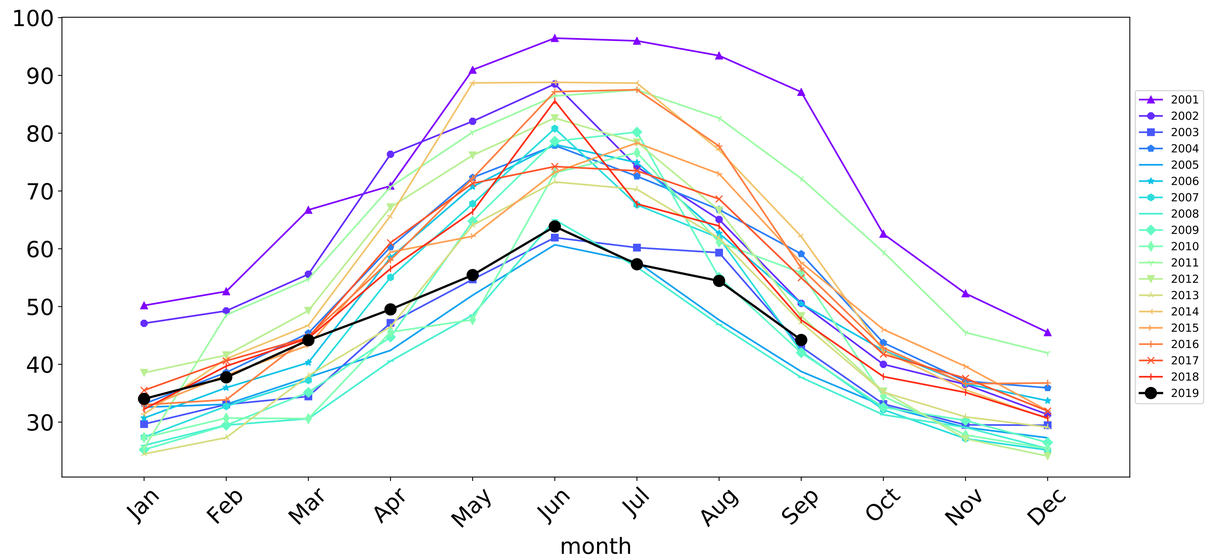
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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

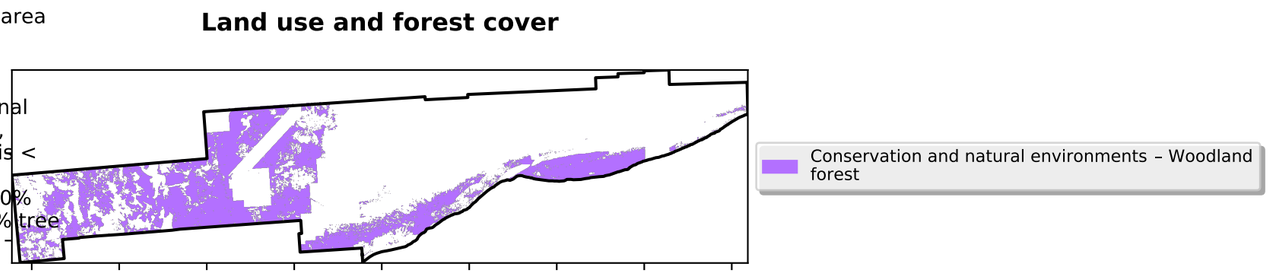


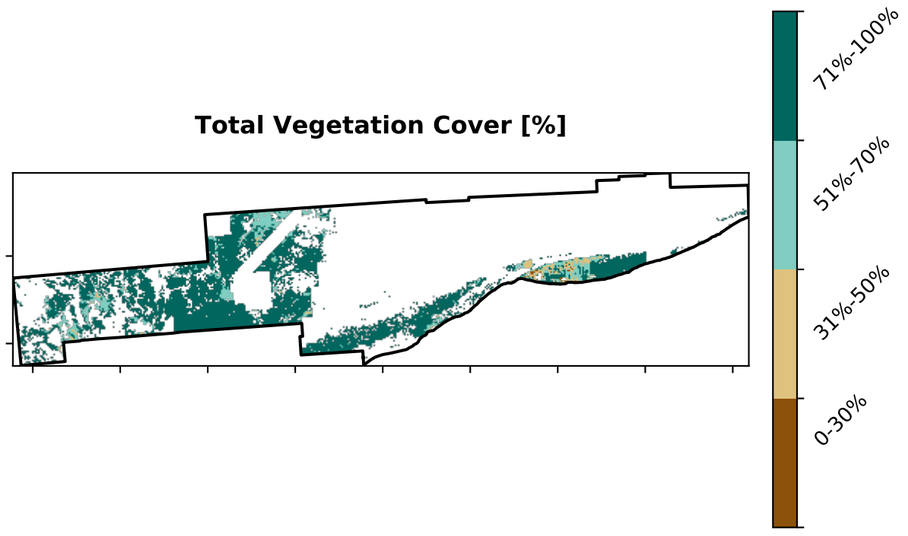
Water erosion historical monthly area protected (Total Veg Cov>70%)

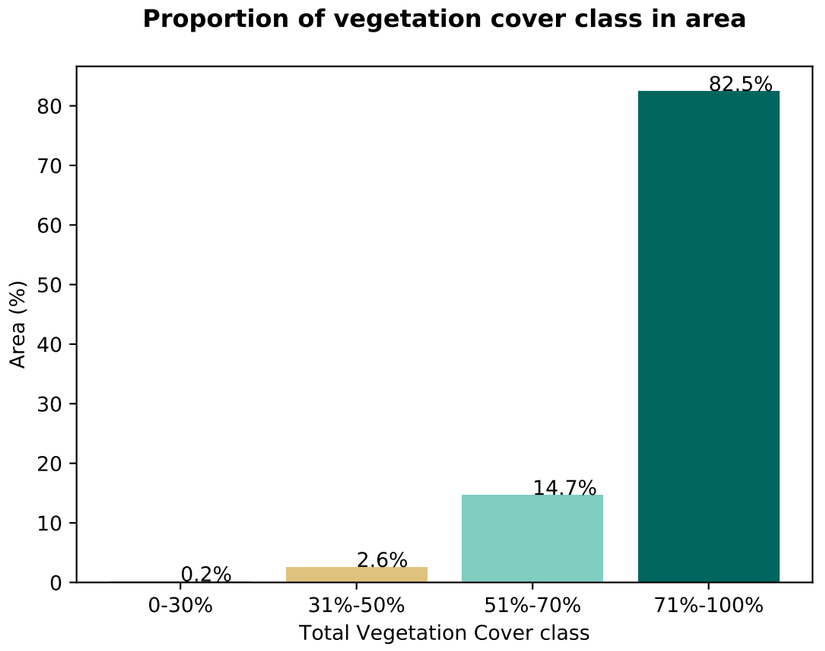


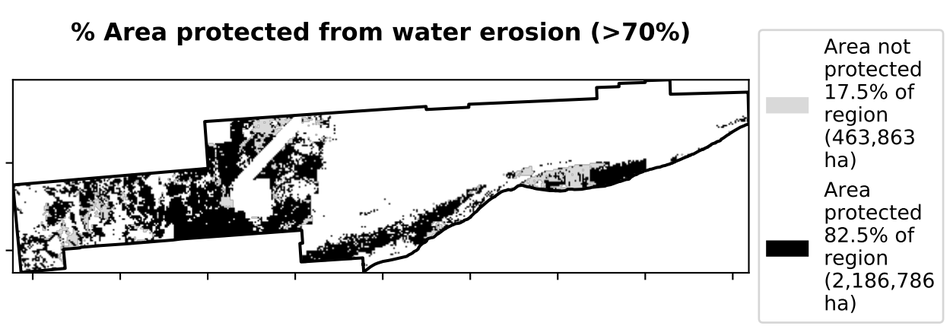
Conservation and natural environments Woodland forest

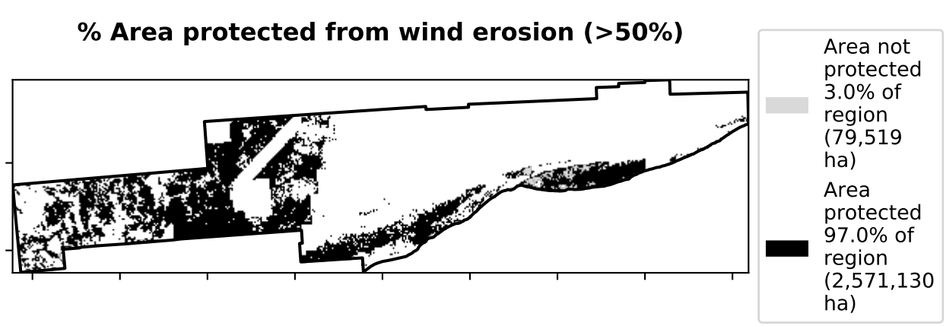
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



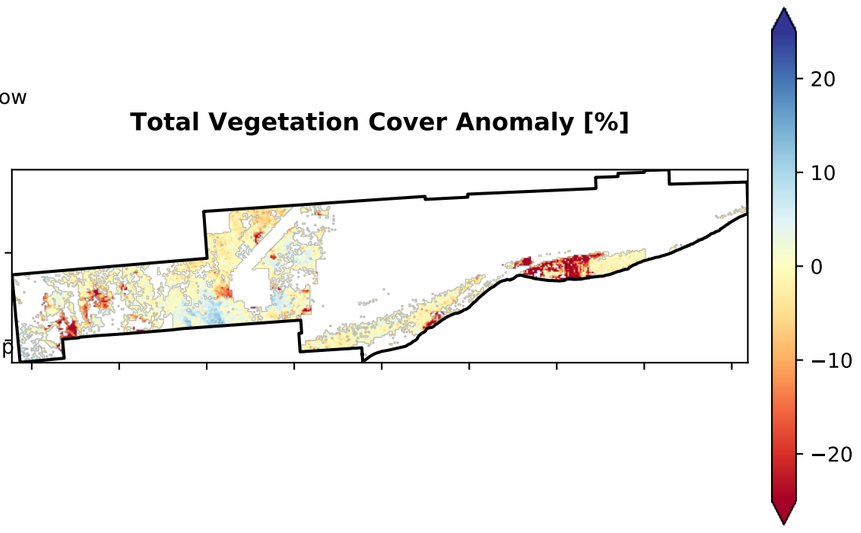




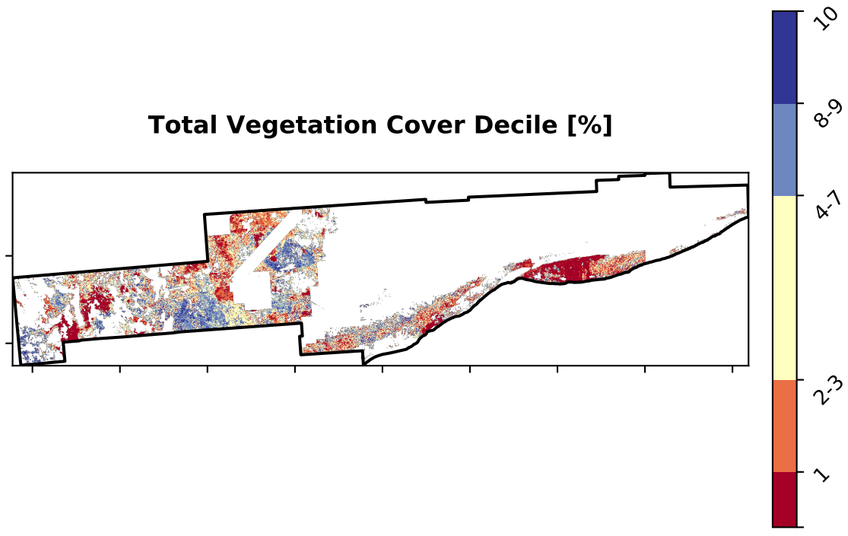




Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

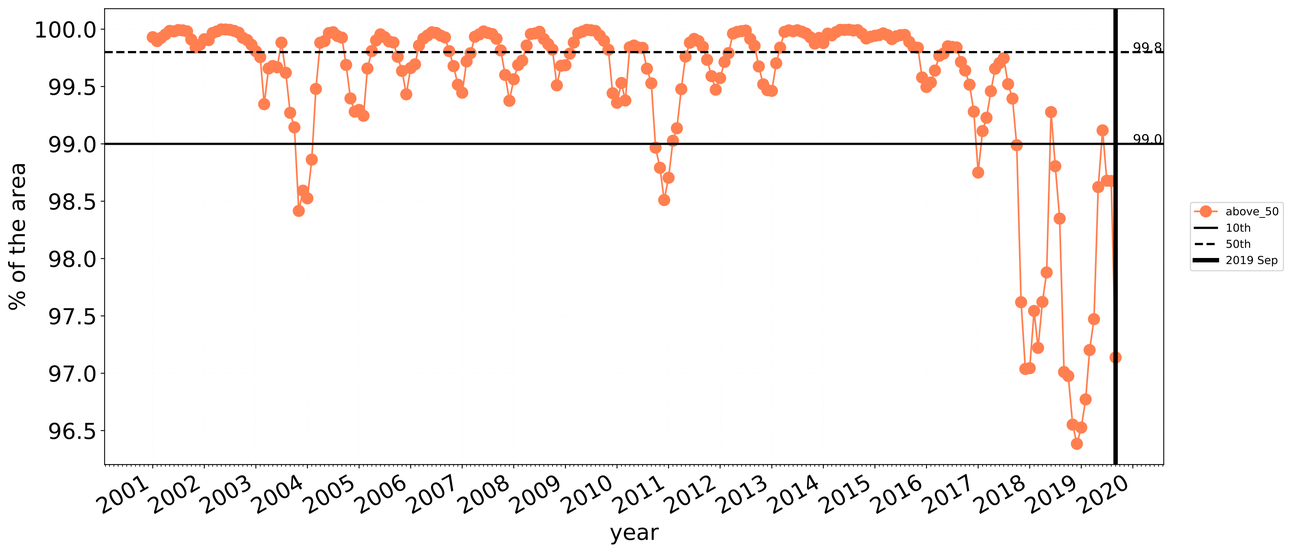


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

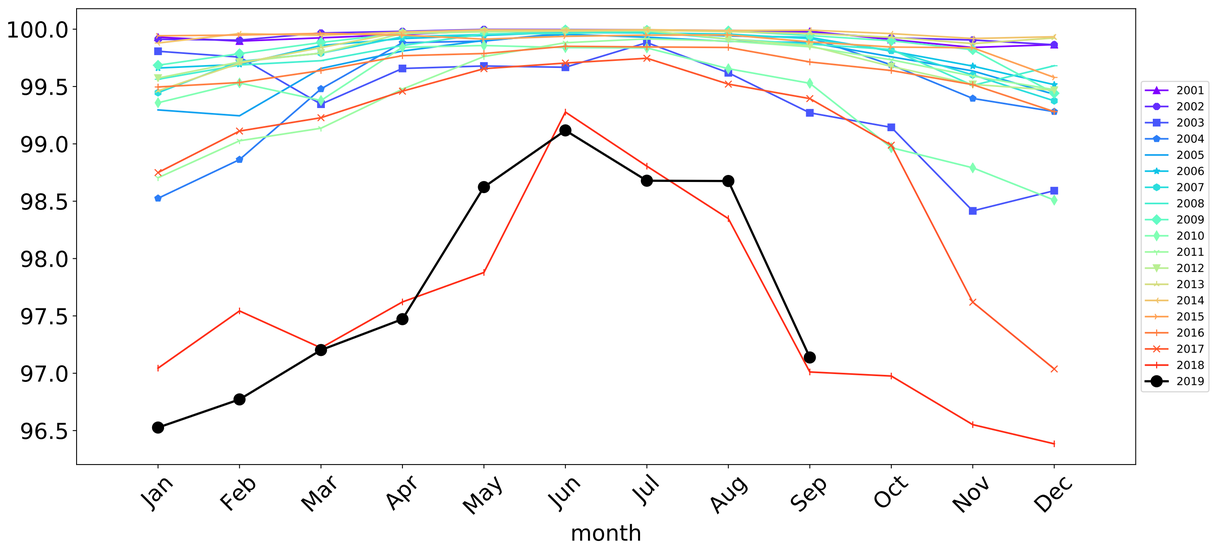


Conservation and natural environments Woodland forest timeseries

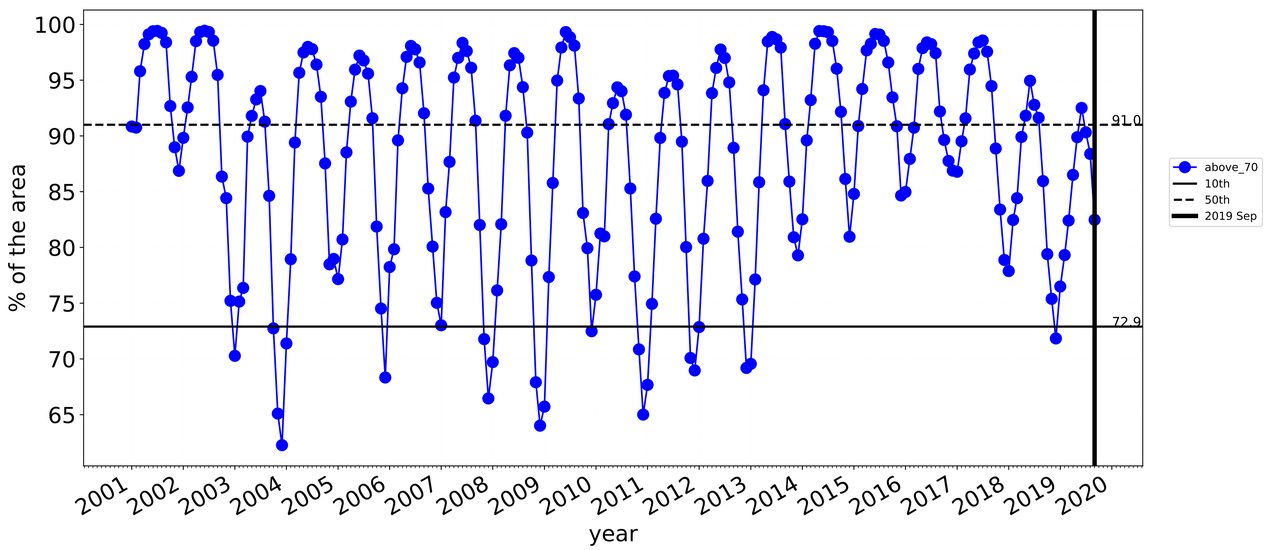
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



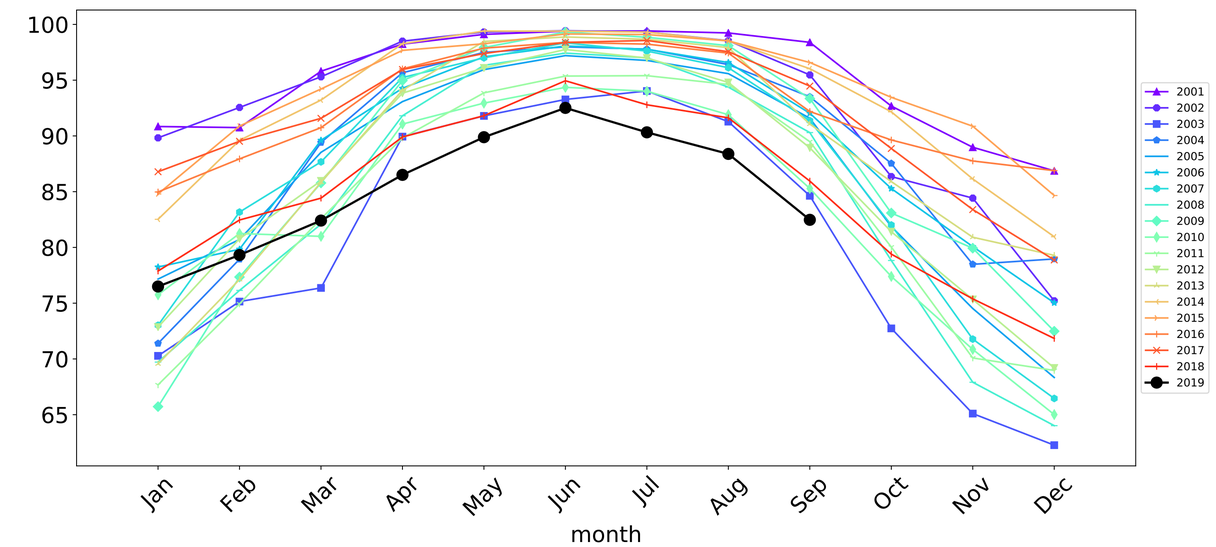
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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

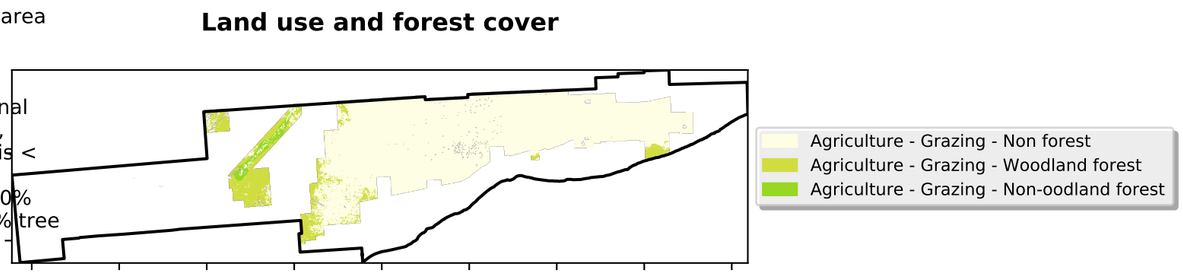


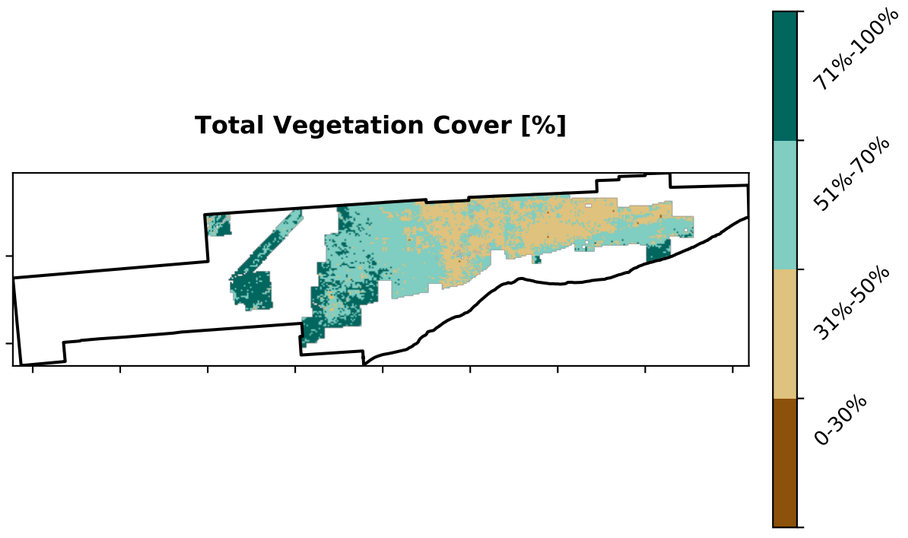
Water erosion historical monthly area protected (Total Veg Cov>70%)

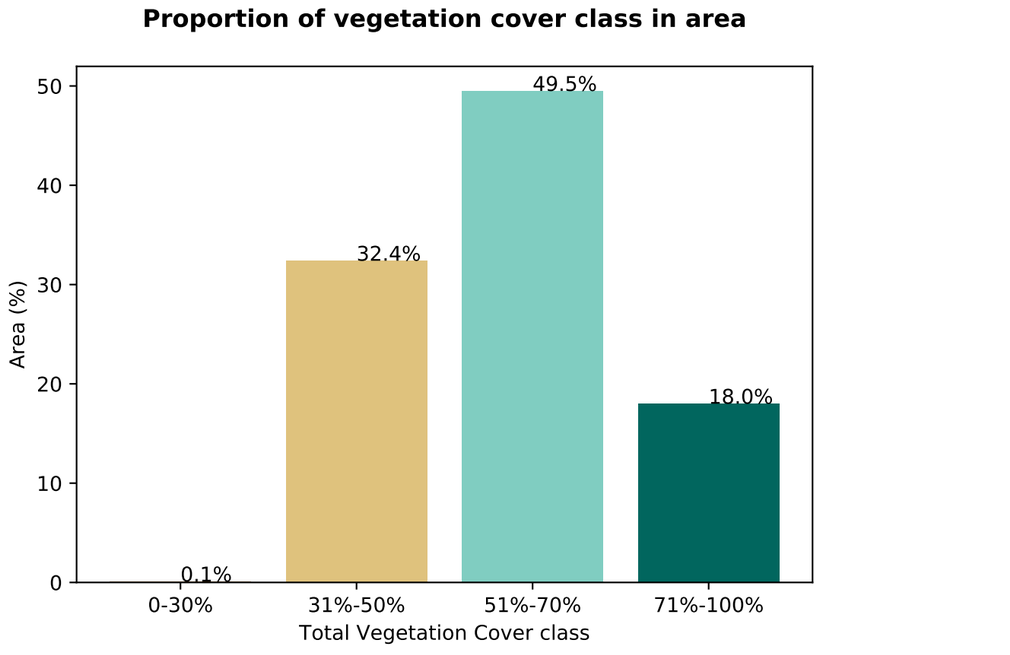


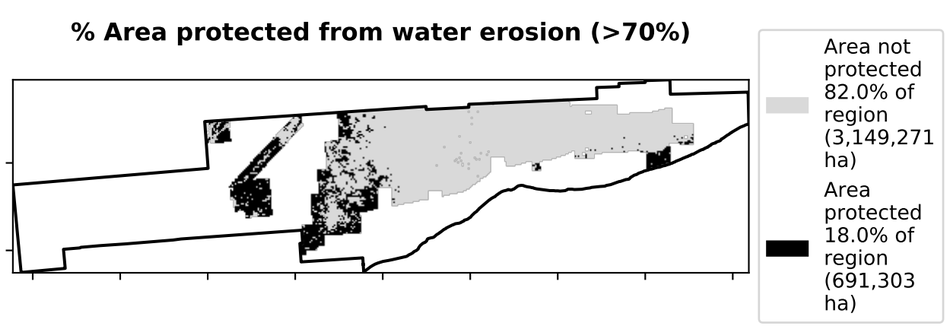
Agriculture

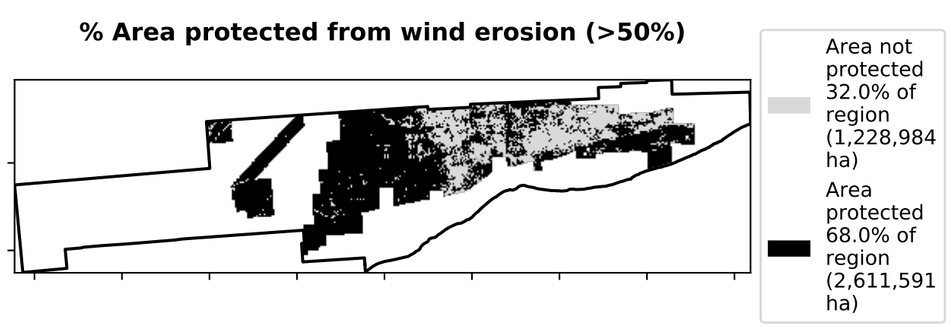
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



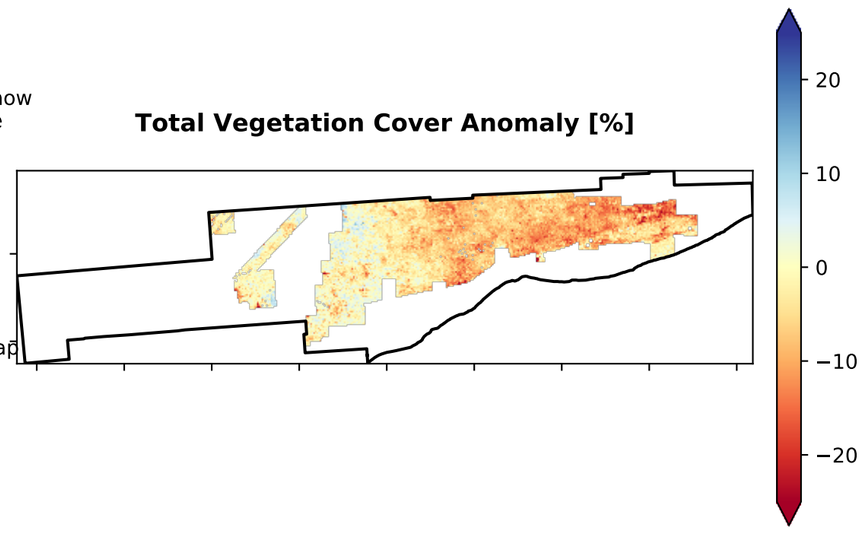




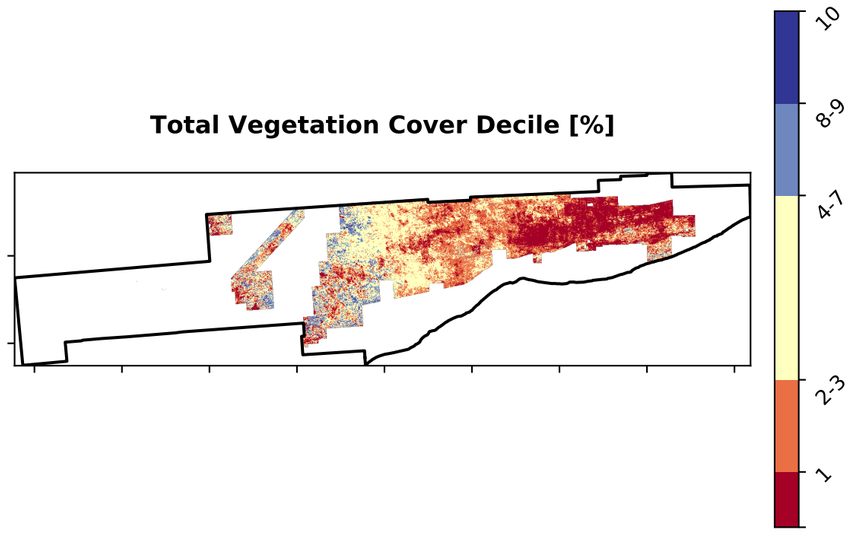




Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

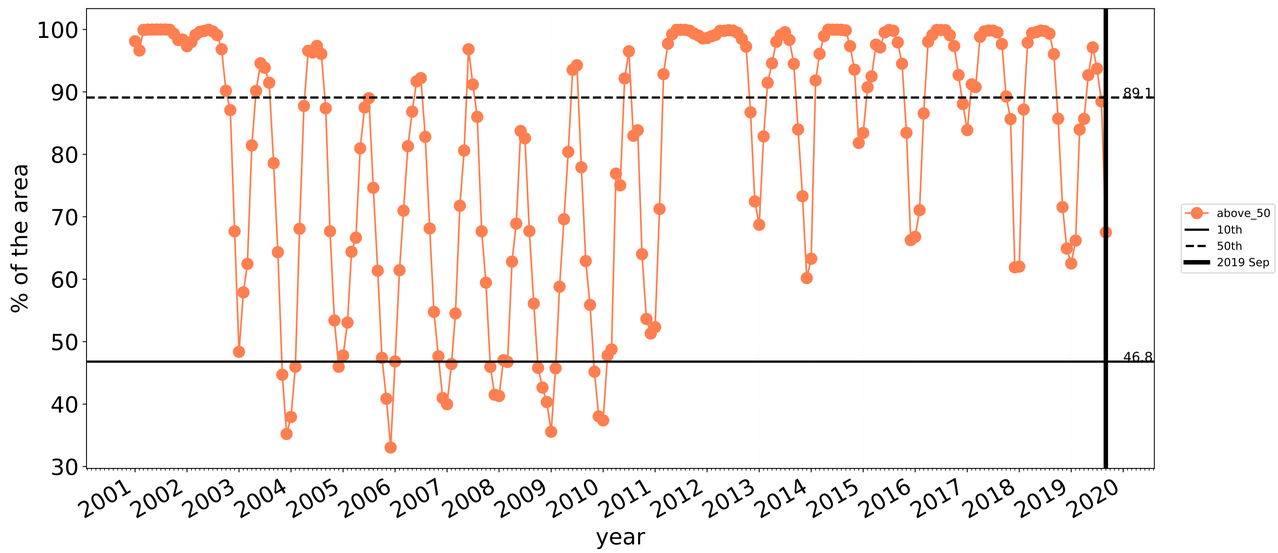


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

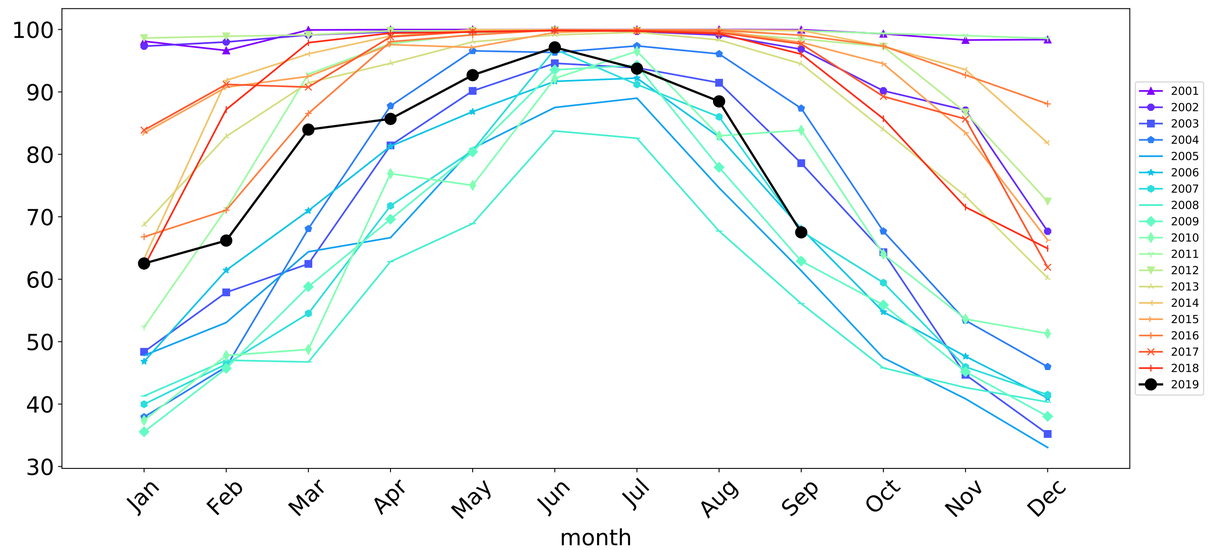


Agriculture timeseries

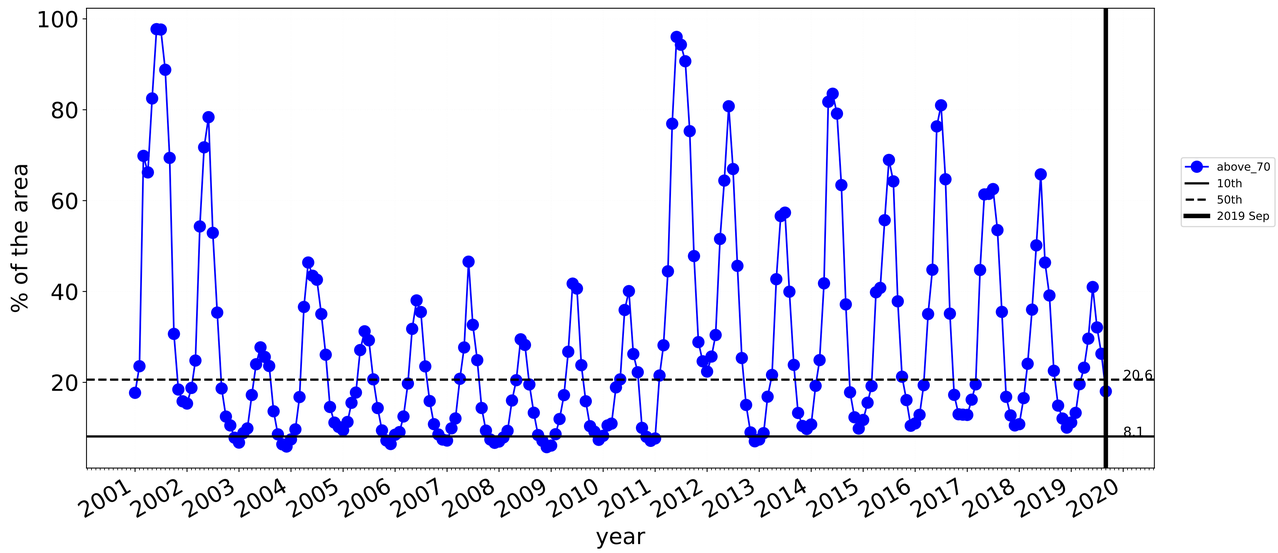
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



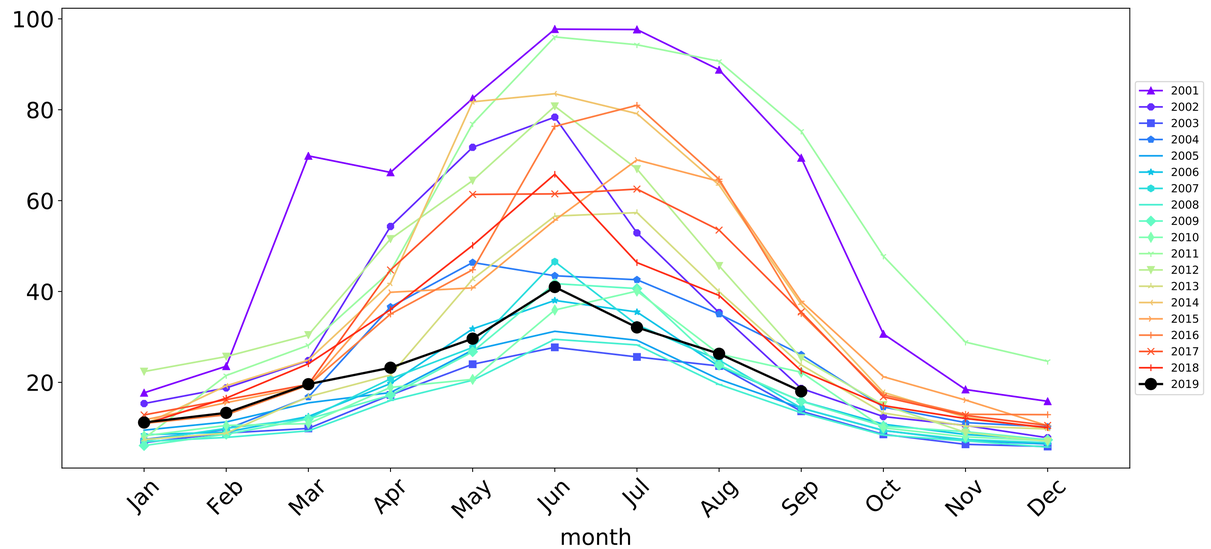
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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

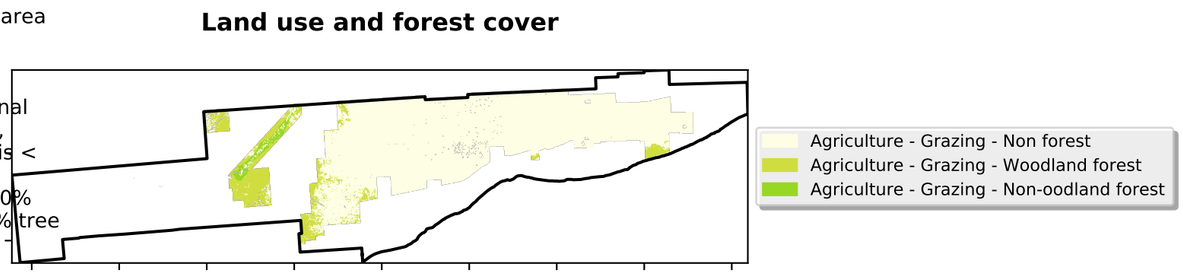


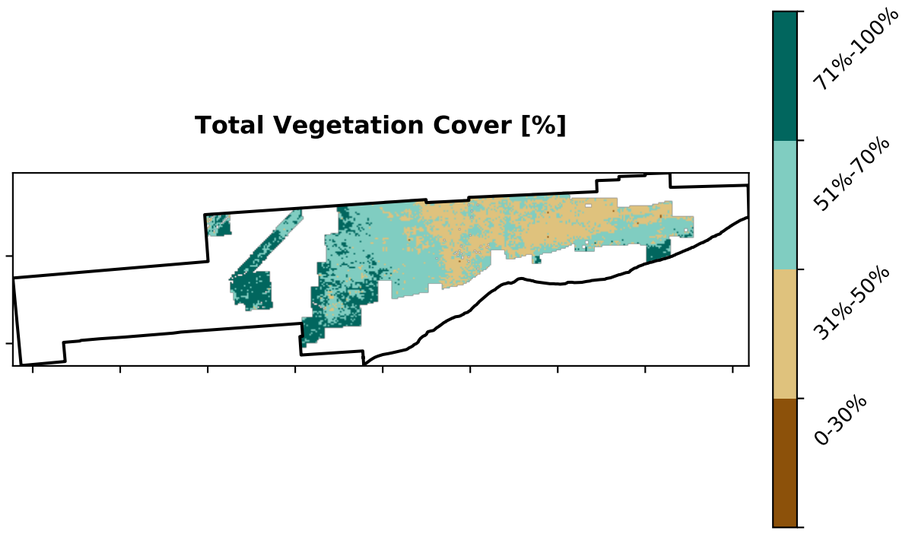
Water erosion historical monthly area protected (Total Veg Cov>70%)

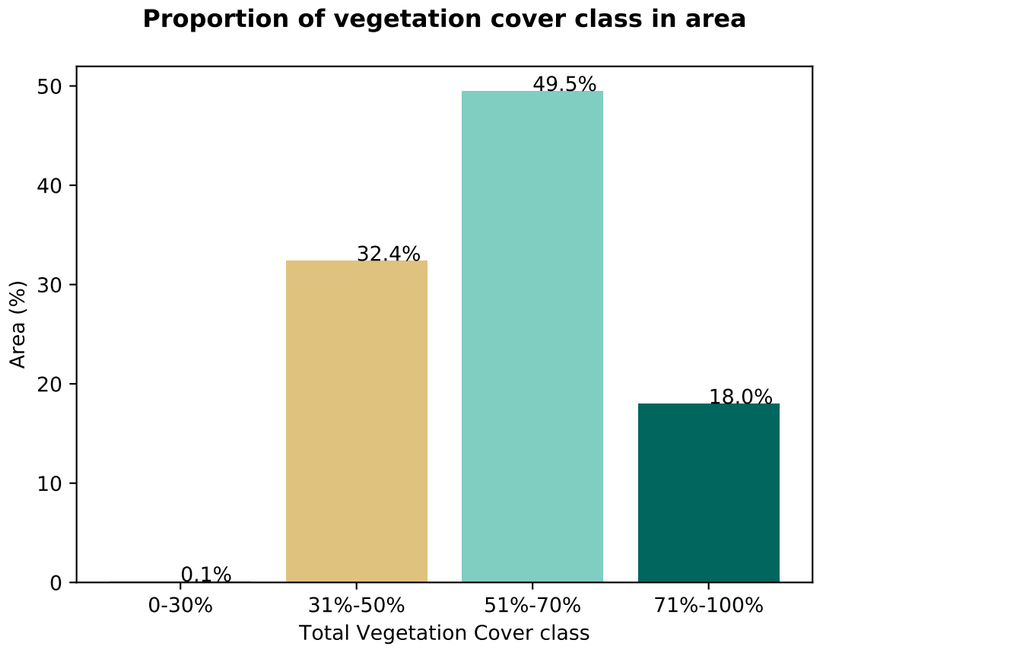


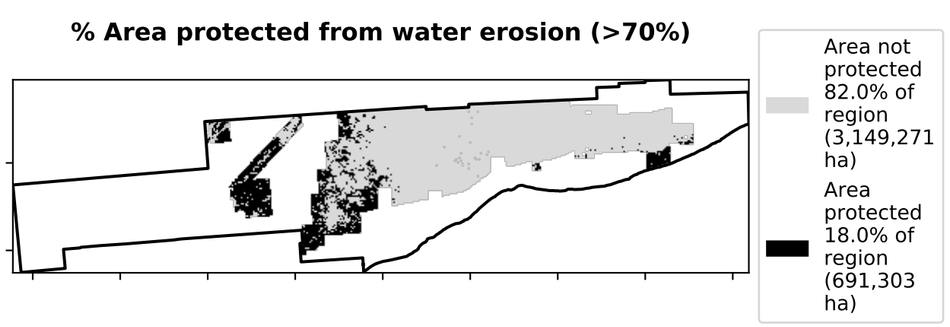
Grazing

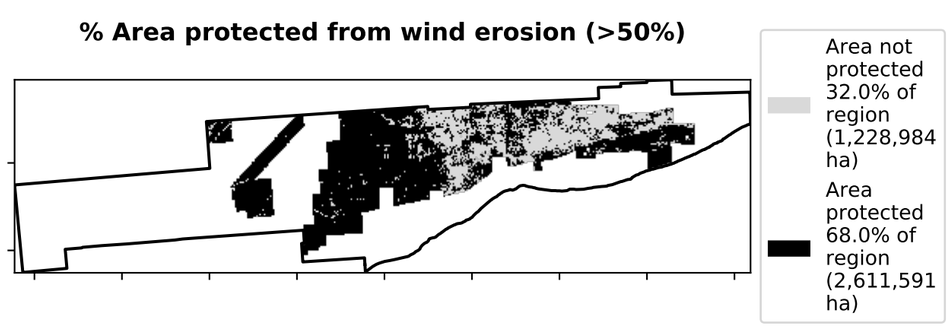
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



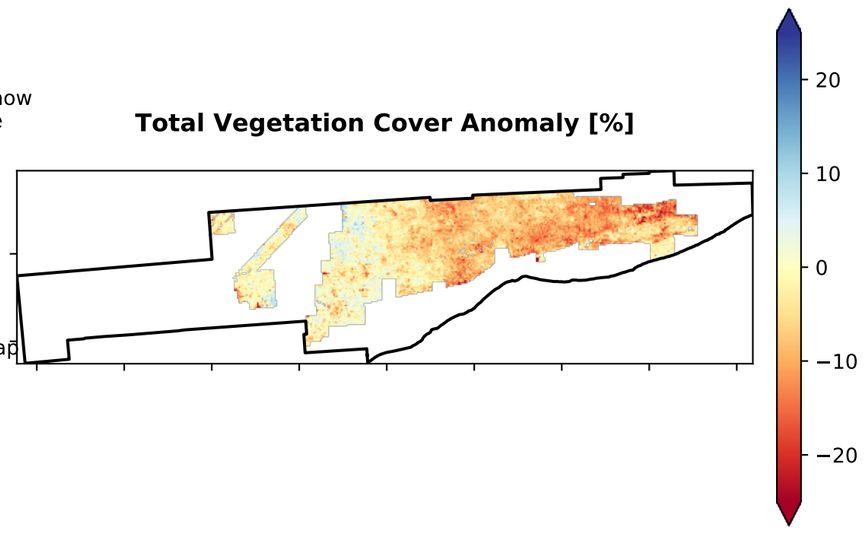




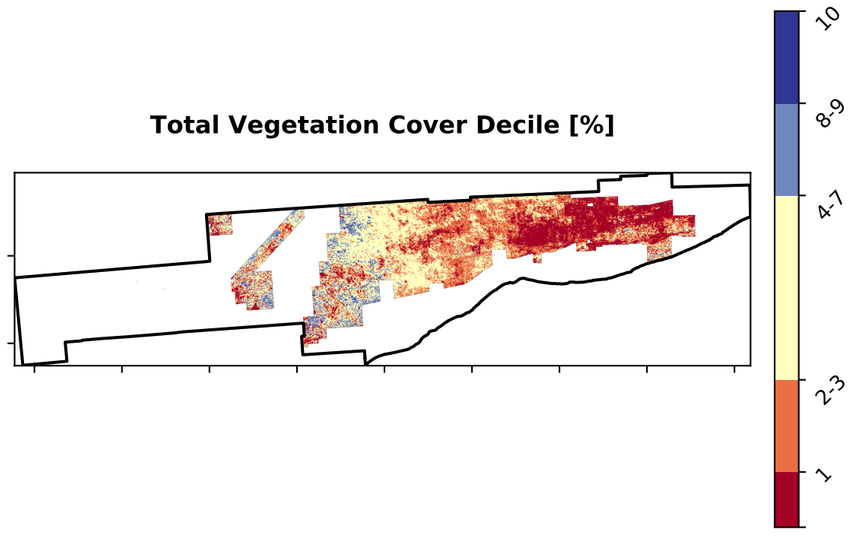




Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

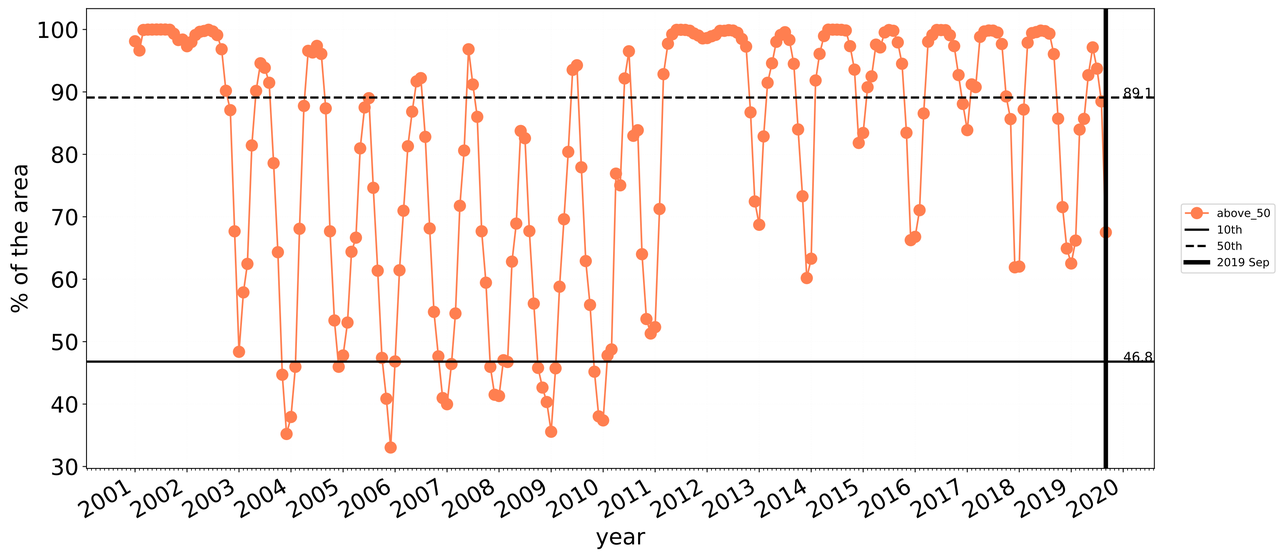


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

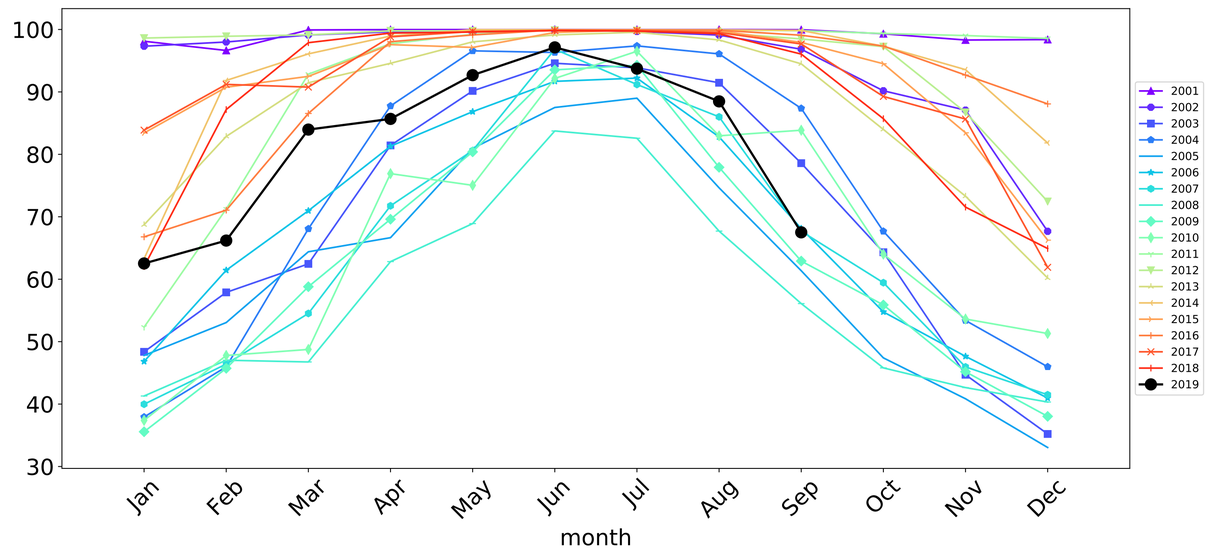


Grazing timeseries

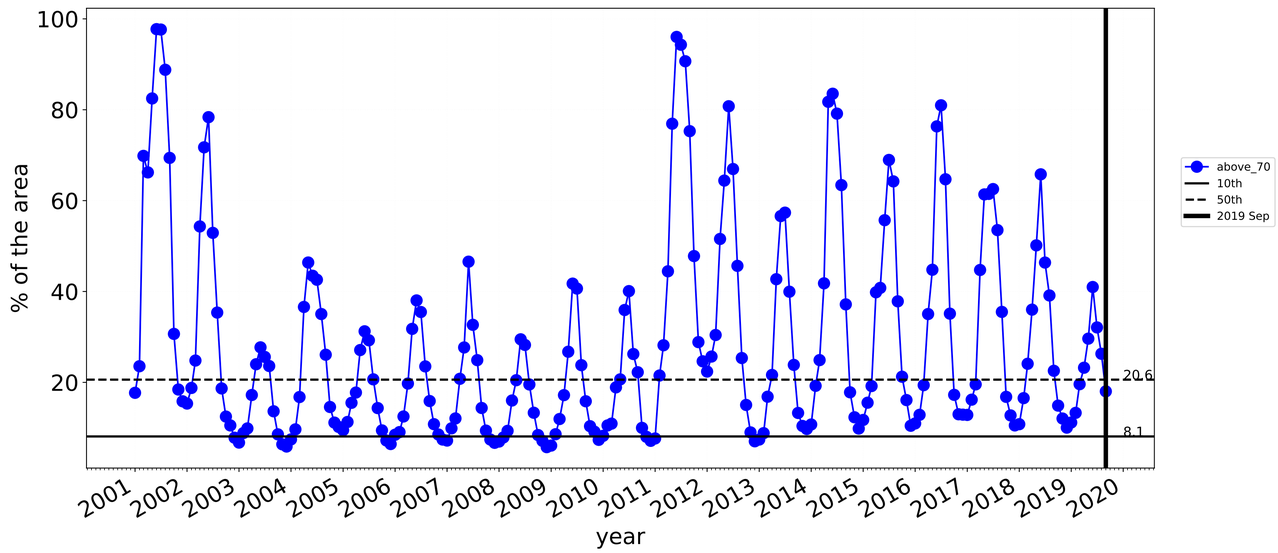
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



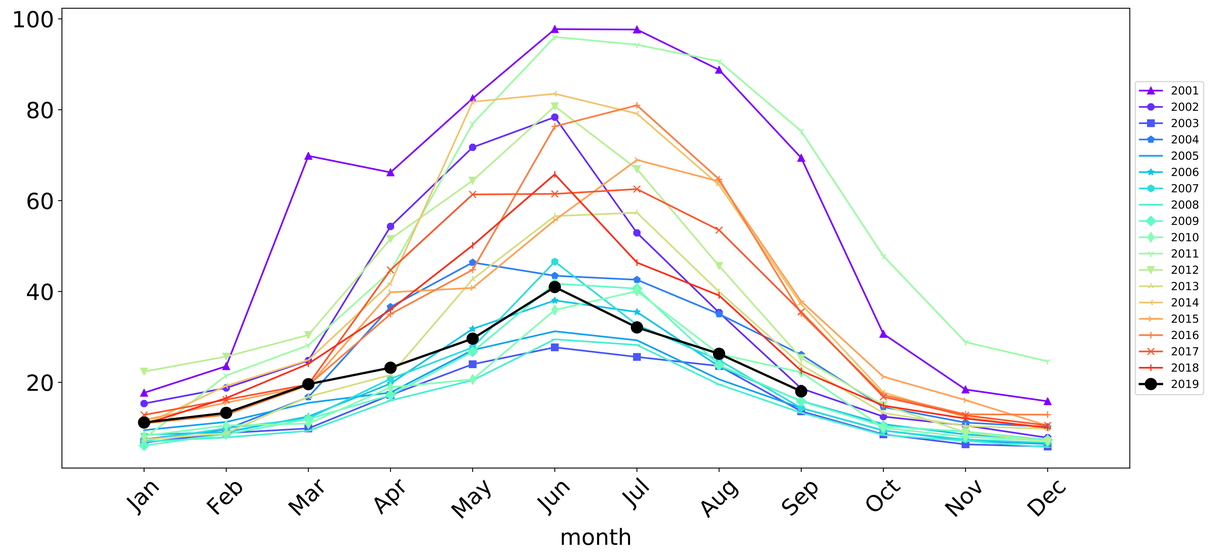
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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

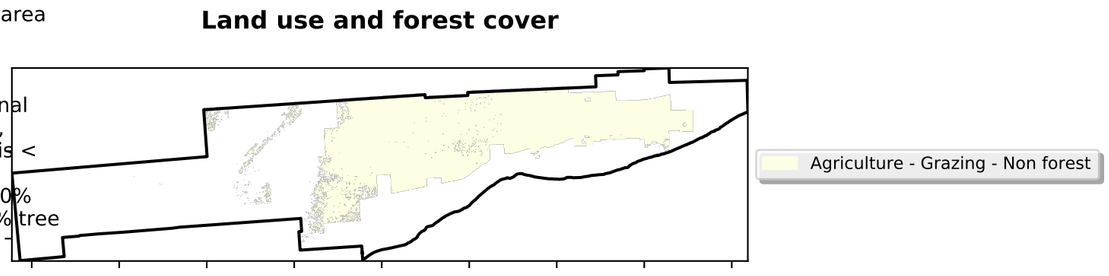


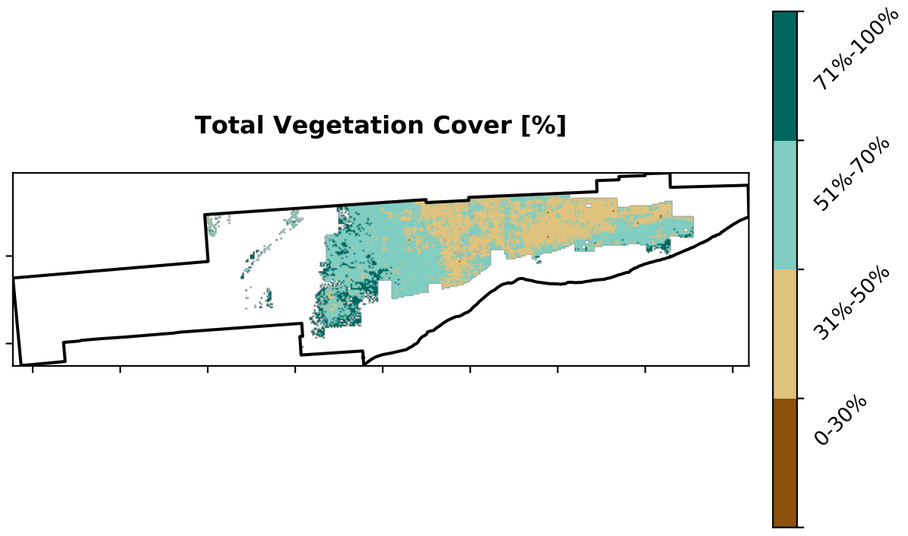
Water erosion historical monthly area protected (Total Veg Cov>70%)

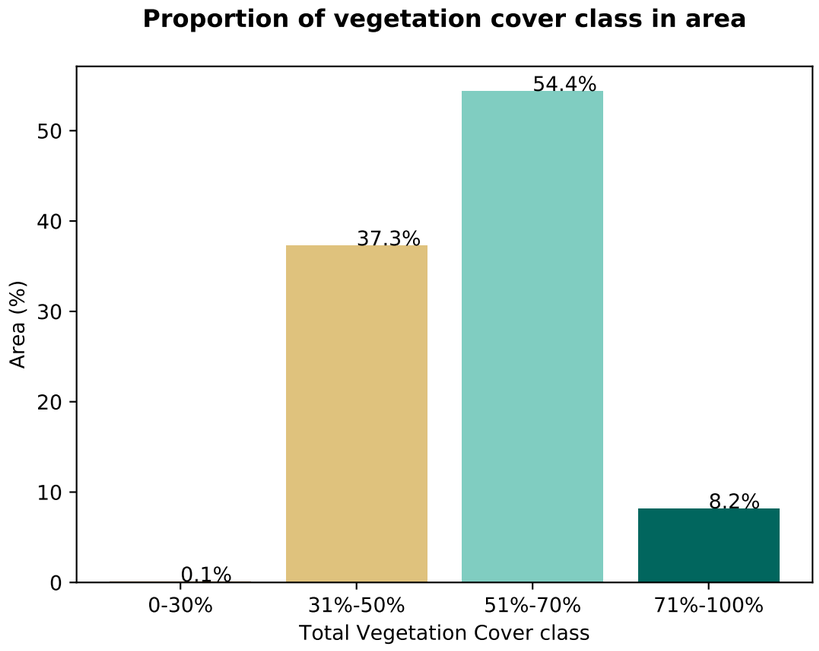


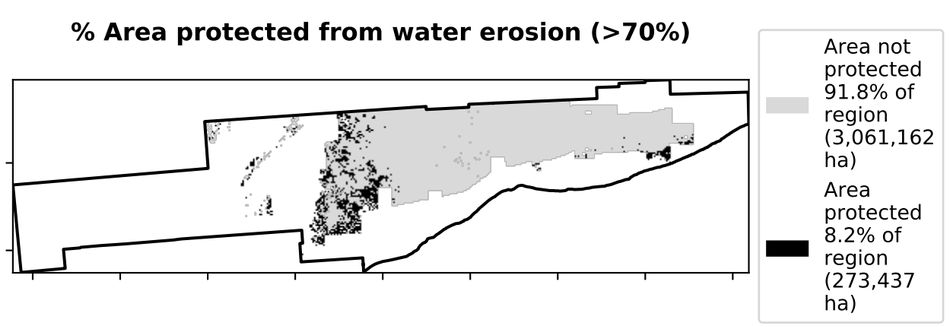
Grazing non forest

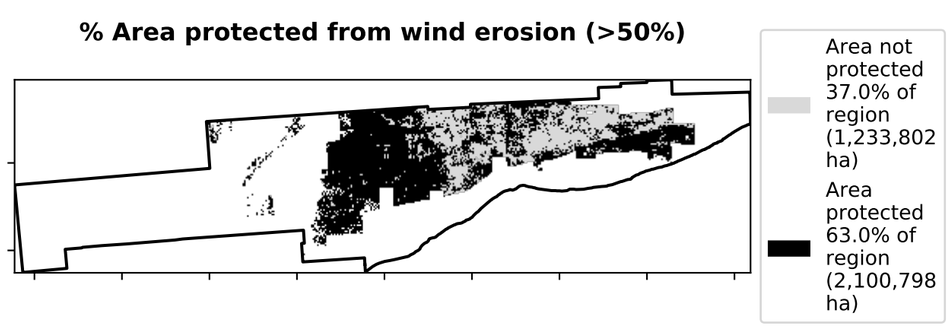
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



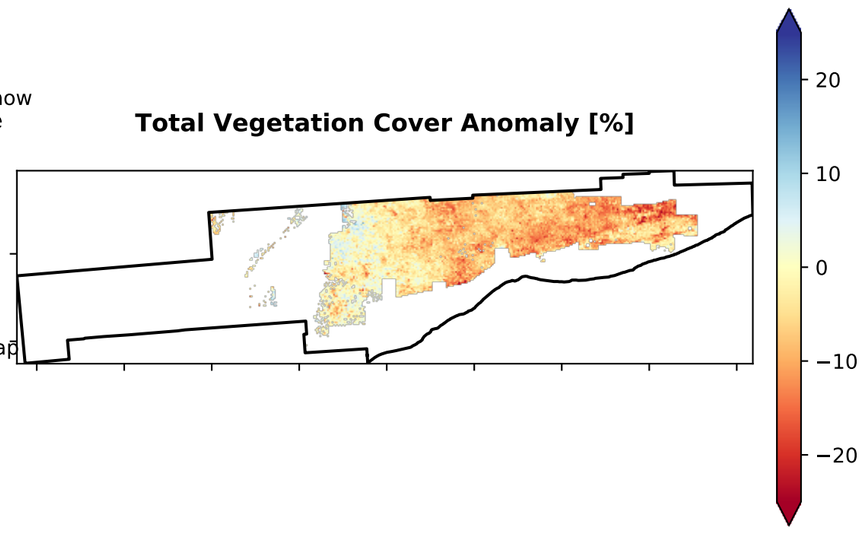




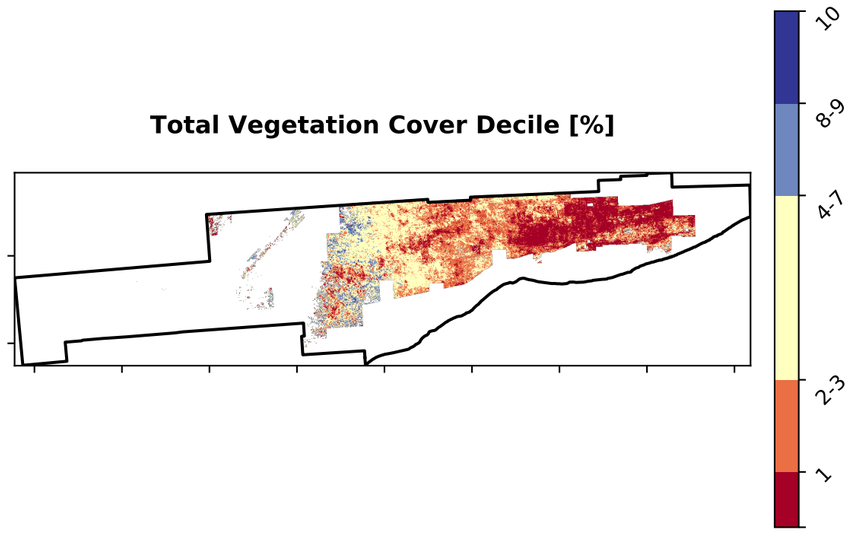




Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

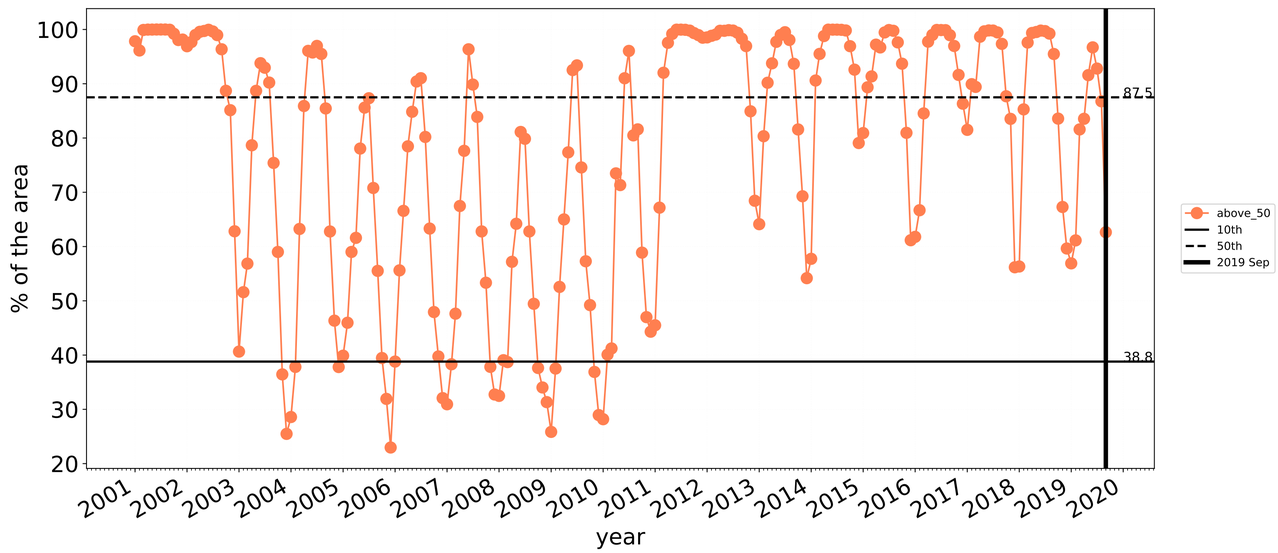


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

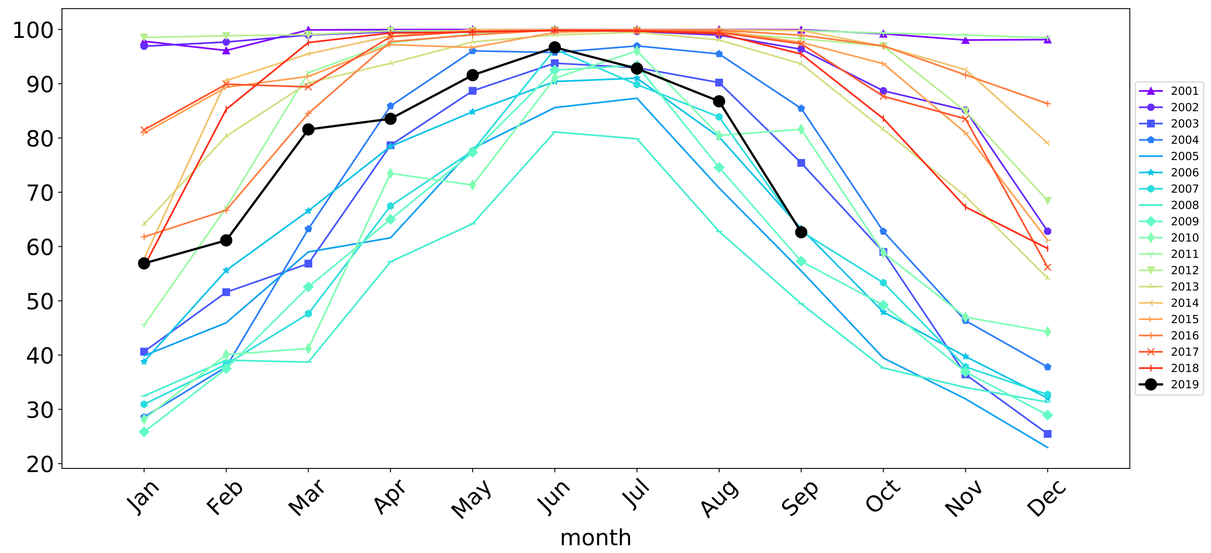


Grazing non forest timeseries

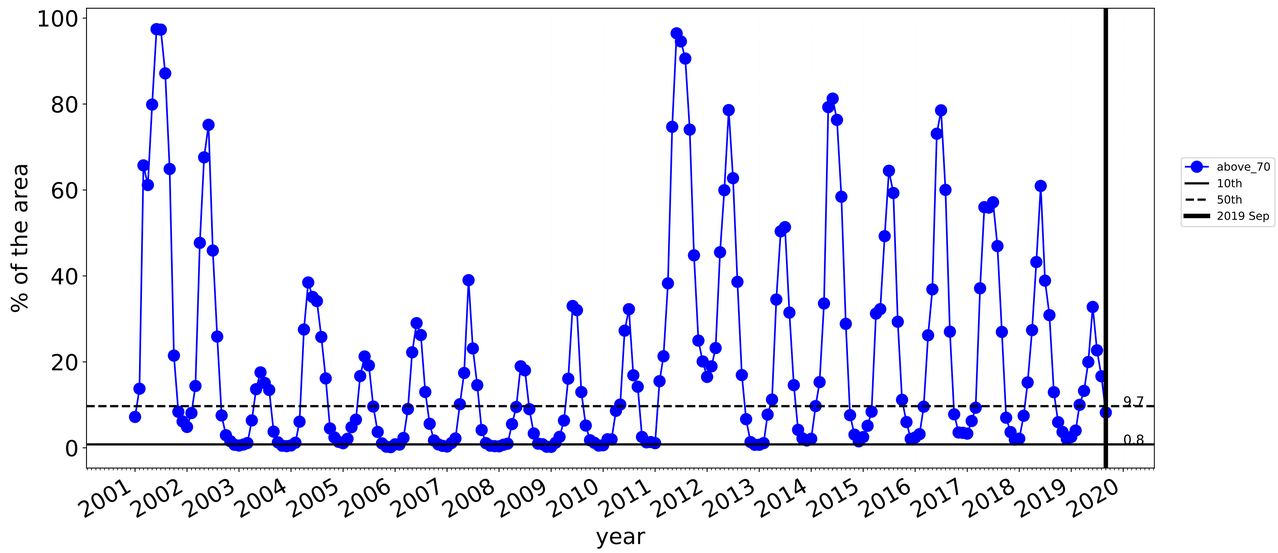
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



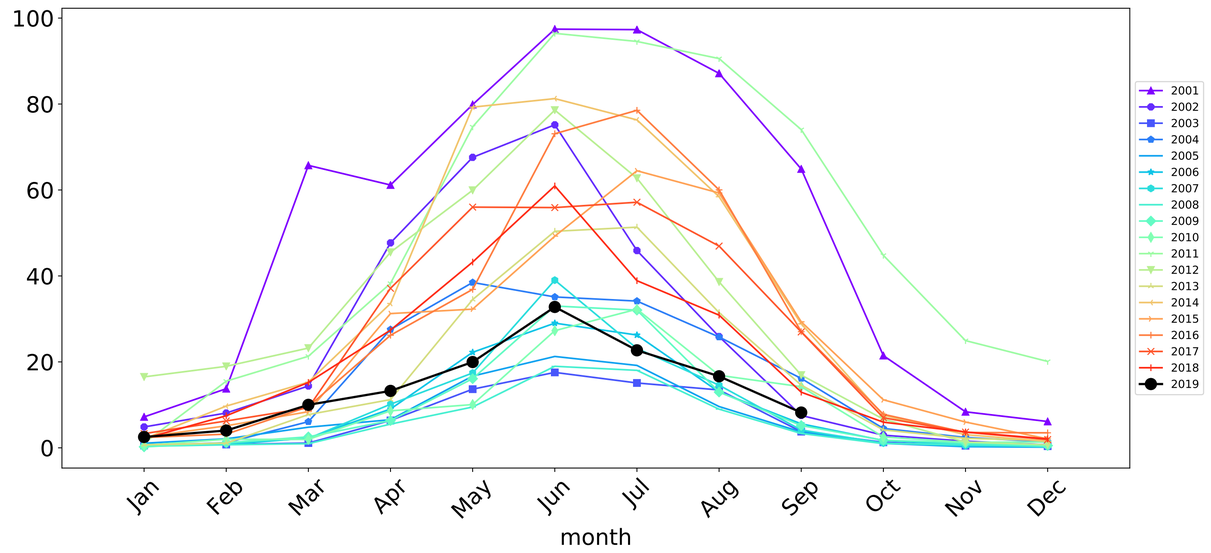
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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

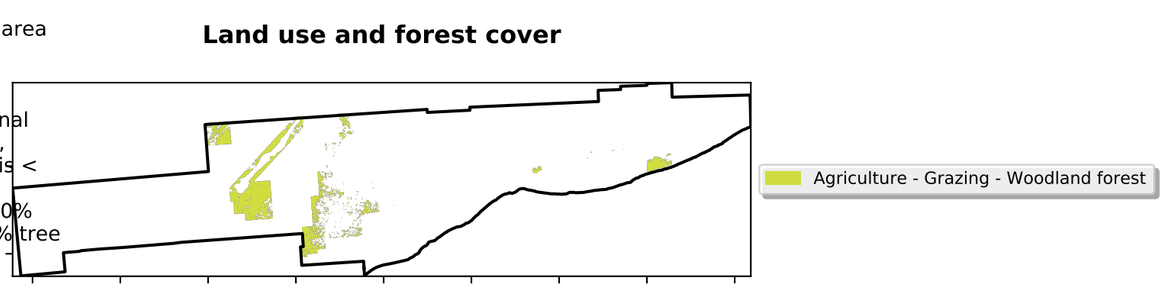


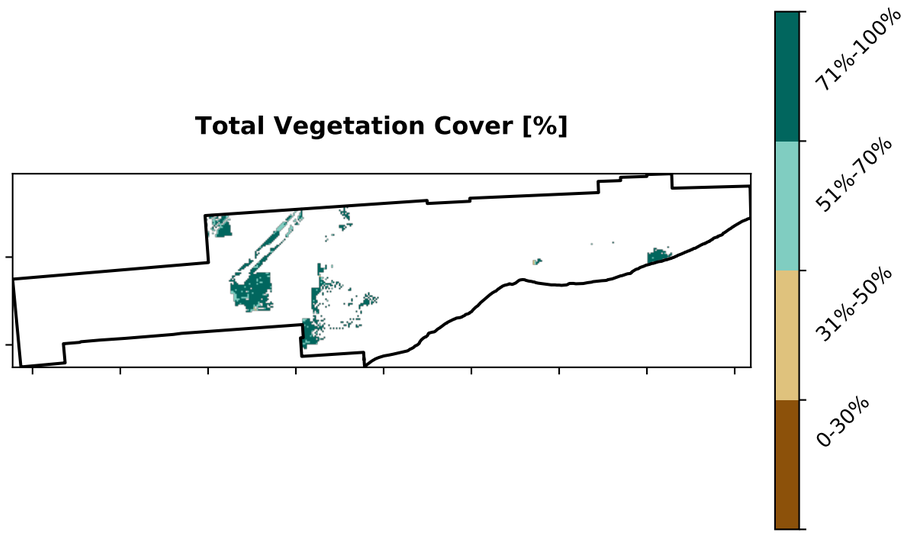
Water erosion historical monthly area protected (Total Veg Cov>70%)

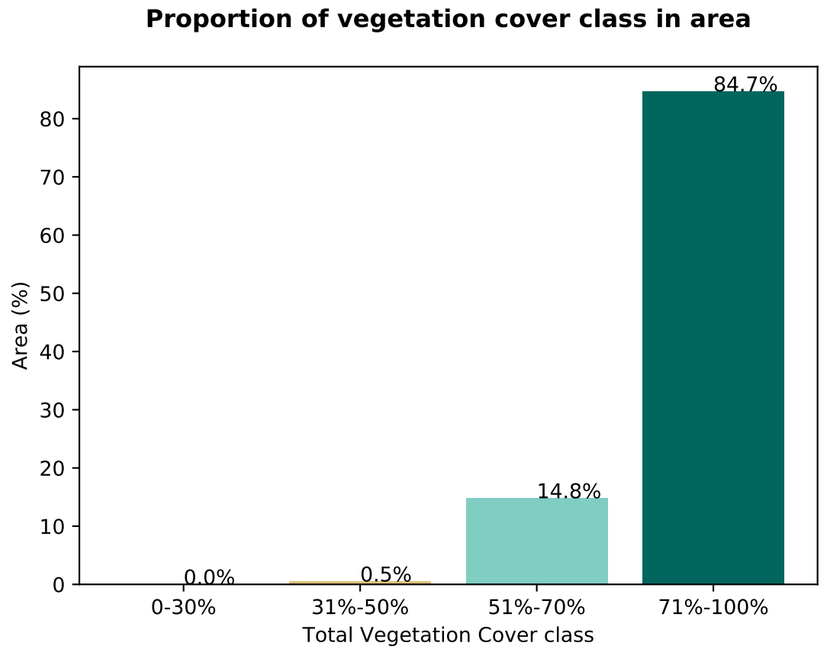


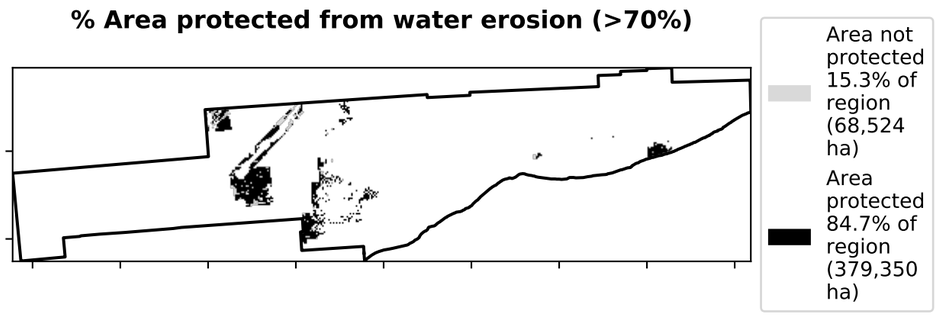
Grazing Woodland forest

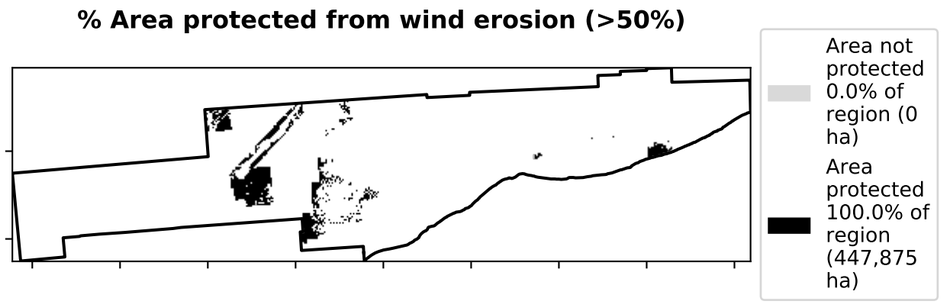
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



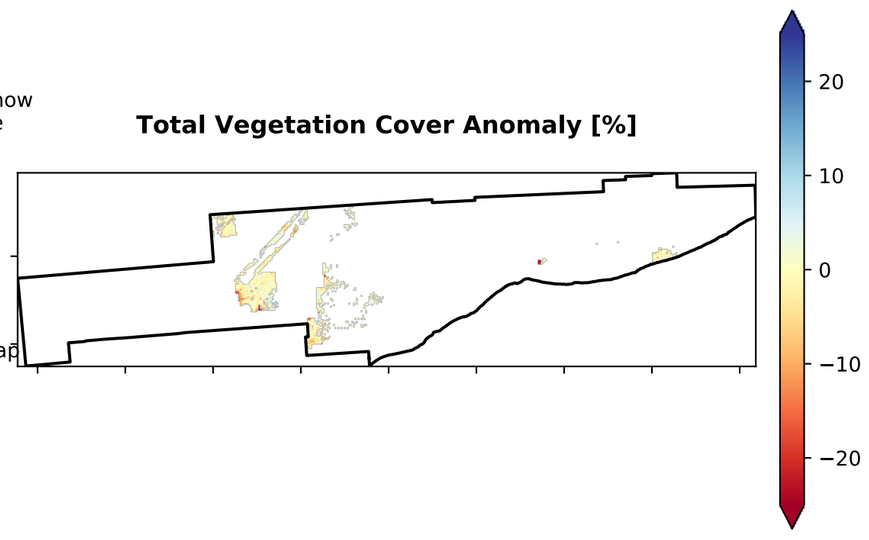




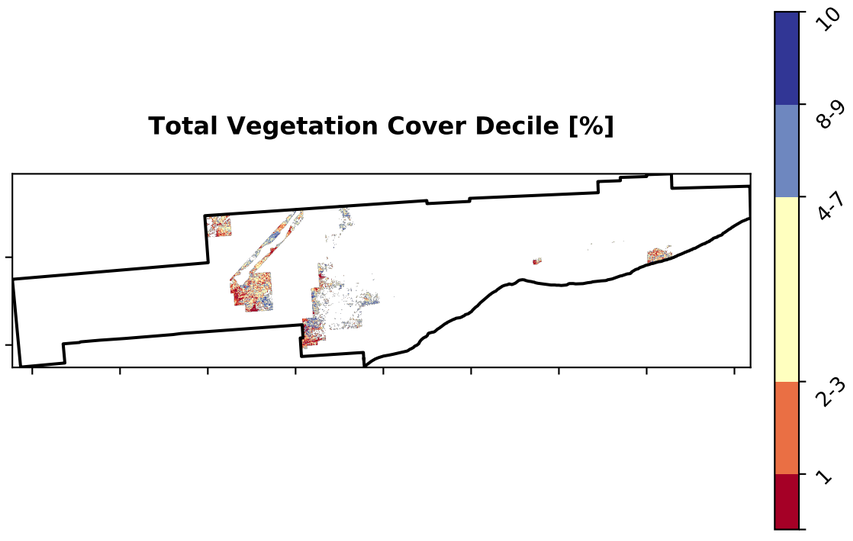




Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

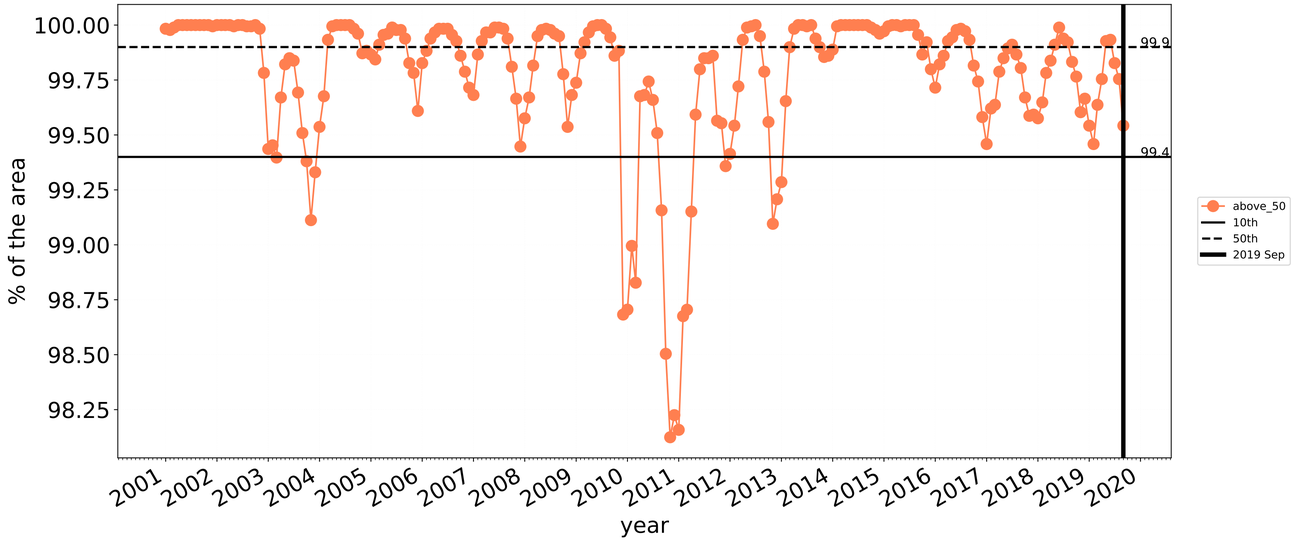


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

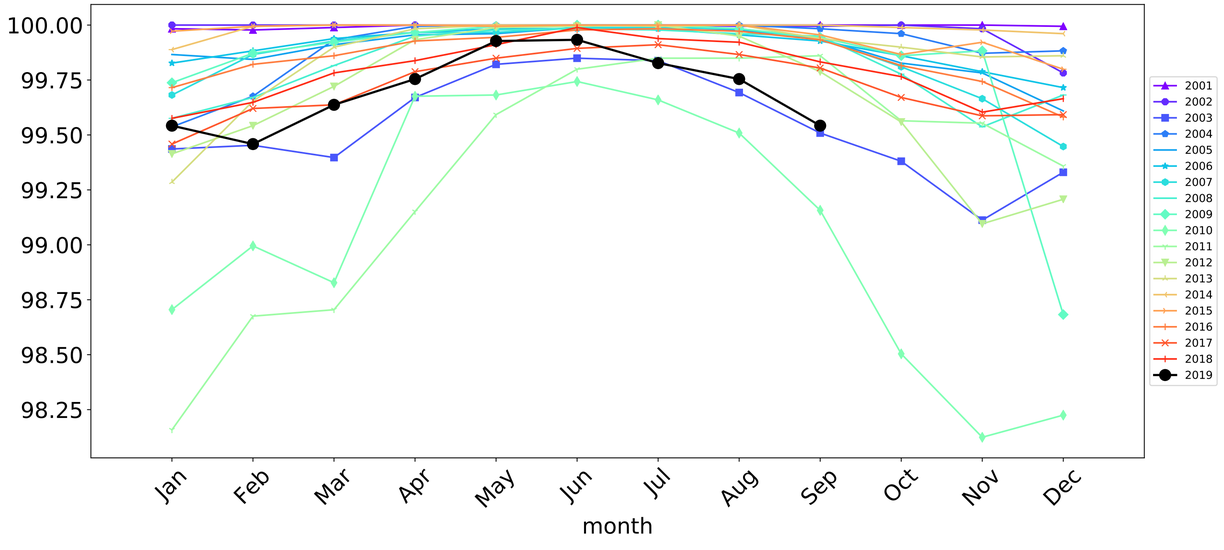


Grazing Woodland forest timeseries

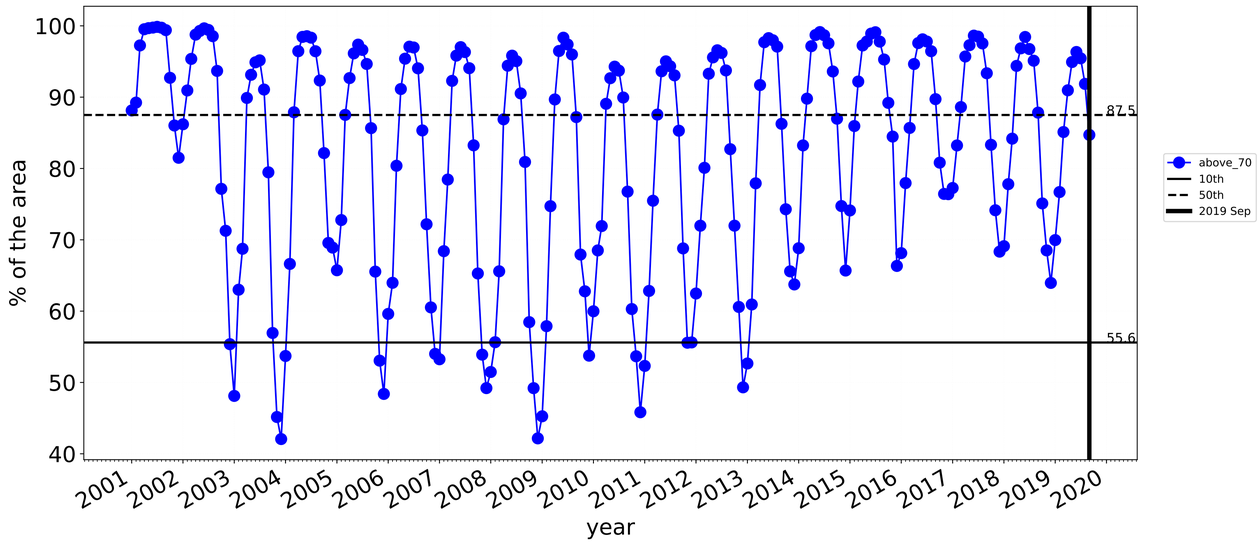
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



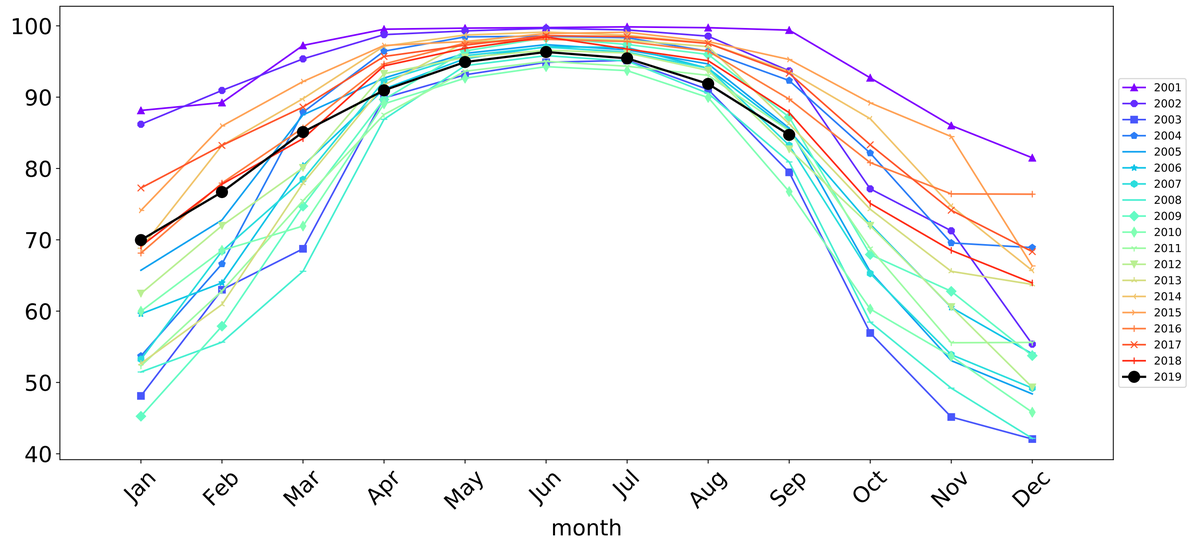
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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



Dundas_(S) (9,181,600 ha and no data 100,681 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	9,181,600	99.8% 9,166,150	82.7% 7,596,500	44.7% 4,101,300	13.9% 1,273,675	1.0% 88,350	0.8% 70,300
Conservation and natural environments	5,187,604	99.8% 5,175,810	93.8% 4,864,774	63.7% 3,305,581	21.4% 1,112,049	0.5% 27,874	0.3% 16,754
Conservation and natural environments non forest	2,552,484	99.8% 2,548,580	90.3% 2,304,408	44.2% 1,128,467	12.3% 314,593	0.8% 19,244	0.6% 15,891
Conservation and natural environments Woodland forest	2,635,119	99.7% 2,627,240	97.1% 2,559,688	82.5% 2,173,340	30.2% 795,585	0.3% 8,673	0.0% 919
Agriculture	3,792,000	99.9% 3,788,841	67.5% 2,559,883	18.0% 683,469	2.2% 82,888	0.0% 320	0.0% 0
Grazing	3,792,000	99.9% 3,788,841	67.5% 2,559,883	18.0% 683,469	2.2% 82,888	0.0% 320	0.0% 0
Grazing non forest	3,296,194	99.9% 3,293,031	62.6% 2,064,717	8.2% 270,671	0.2% 5,238	0.0% 0	0.0% 0
Grazing Woodland forest	440,716	100.0% 440,716	99.5% 438,699	84.7% 373,336	15.5% 68,340	0.0% 147	0.0% 0