LGA Albany_(C) (WA) - Vegetation cover soil protection report Aug 2019

This report provides information about vegetation covering the soil surface for a region during a single month with comparison to previous years. Vegetation cover indicates where soil is likely to be protected from wind and or water (hillslope) erosion. Results are shown for the whole region (polygon) and also separated by land use and tree cover. Different land uses are likely to have different cover patterns and targets. Reporting is most reliable with less than 20% tree cover.

Albany_(C)

- Context
  - o Map: Land use and forest cover
  - o Chart: Land use and forest cover area
- Total vegetation cover for this month
  - o Map: vegetation cover classified into 4 classes
  - o Chart: vegetation cover area classified into 4 classes
- Areas protected from erosion for the month
  - o Map: wind erosion protection (>50% cover)
  - o Map: water erosion protection (>70% cover)
- 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
  - o Wind erosion protection time series: percentage of the area of the region with greater than 50% cover for each month in the archive (orange lines)
  - o Water erosion protection time series: percentage of the area of the region with greater than 70% cover for each month of the archive (blue lines).
  - o Rainfall: millimetres rainfall each month (black lines)
- Time series stacked by year
  - o Wind erosion protection time series: percentage of the area of the region with greater than 50% cover for each month in the archive (orange lines) in case of 5th percentile is less than 80i
  - o Water erosion protection time series: percentage of the area of the region with greater than 70% cover for each month of the archive (blue lines). in case of 5th percentile is less than 80
- 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

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 pixels. Pixels with greater than or equal to 50% vegetation cover are generally considered to be protected from or have reduced soil loss by wind erosion, and pixels with greater than or equal to 70% vegetation cover are generally considered to also be protected from or have reduced soil loss from water (hillslope) erosion. Report used baseline from 2001 to 2019 for each month to generate anomalies and deciles. And it used threshold of 1% to create land use forest cover reports. Higher cover thresholds may be required for erosion protection in some regions. This report will be less applicable in areas with sparse forest (20-50% tree cover) or dense forest (> 50% tree cover). Therefore land use classes are divided by tree cover: 1) No forest is when there is less than 20% tree cover 2) Sparse forest, is when there is less than 20 to 50 % tree cover 3) Dense forest is greater than 50% tree cover

Acknowledgment of data:

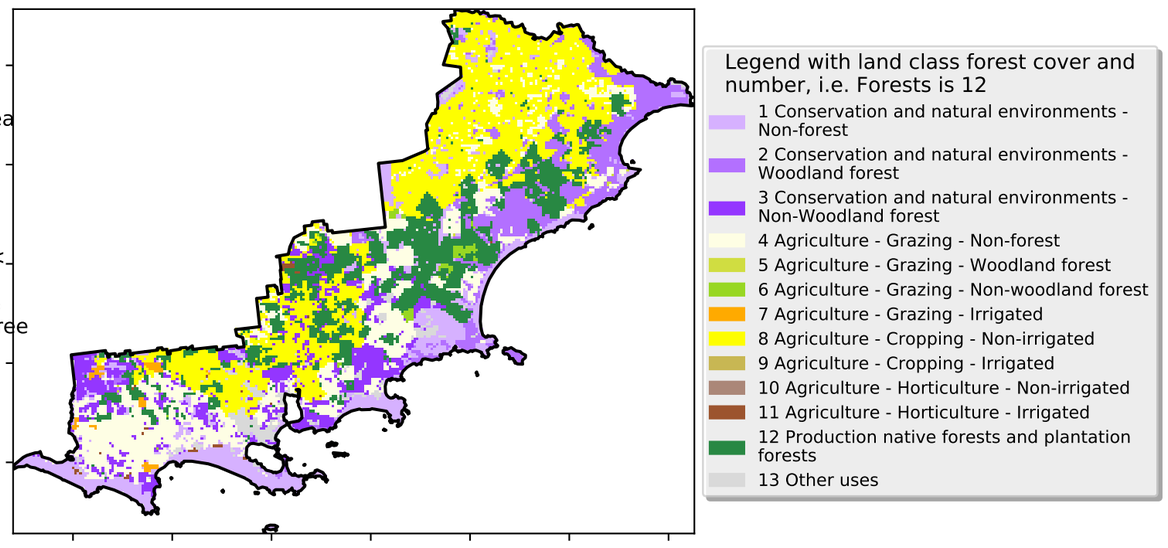
1. http://www.agriculture.gov.au/abares/aclump/land-use/alum-classification
2. http://www.agriculture.gov.au/abares/forestsaustralia/sofr/sofr-2018
3. https://www.dpi.nsw.gov.au/agriculture/pastures-and-rangelands/establishment-mgmt/production-management2/groundcover
4. MODIS Fractional cover algorithm:

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

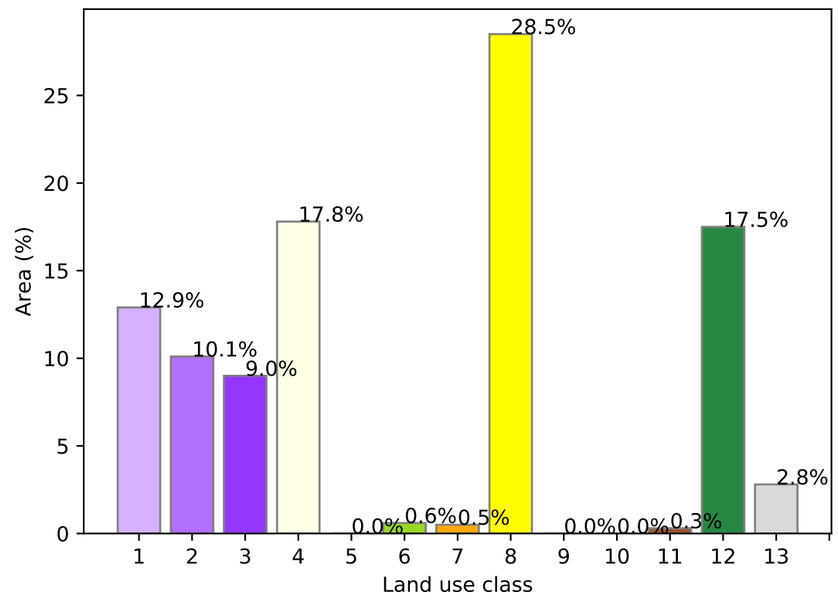
Vegetation Cover Aug 2019

Land use and forest cover

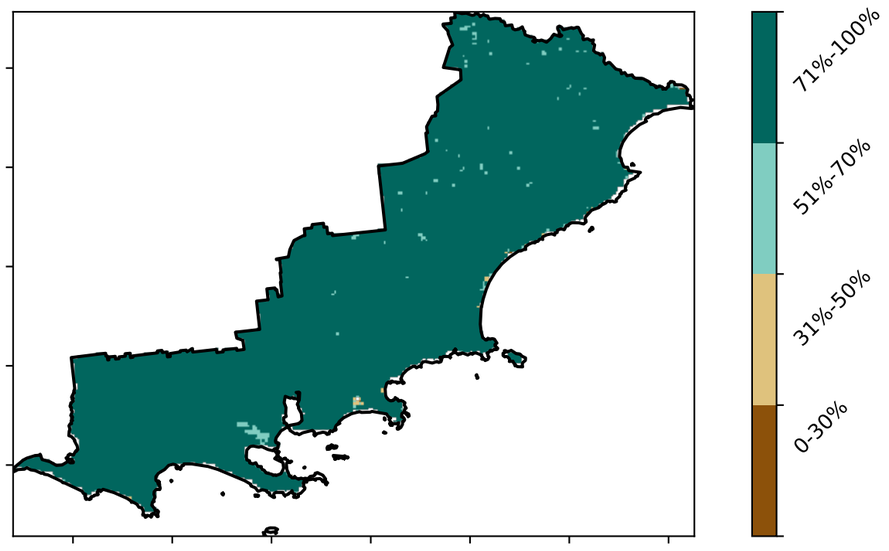
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is <_ 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



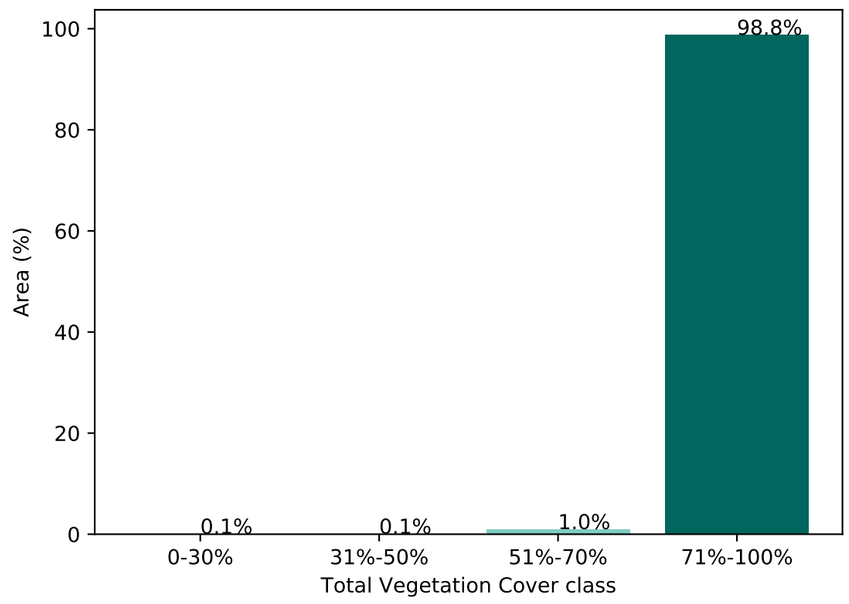
Proportion of each land class in area



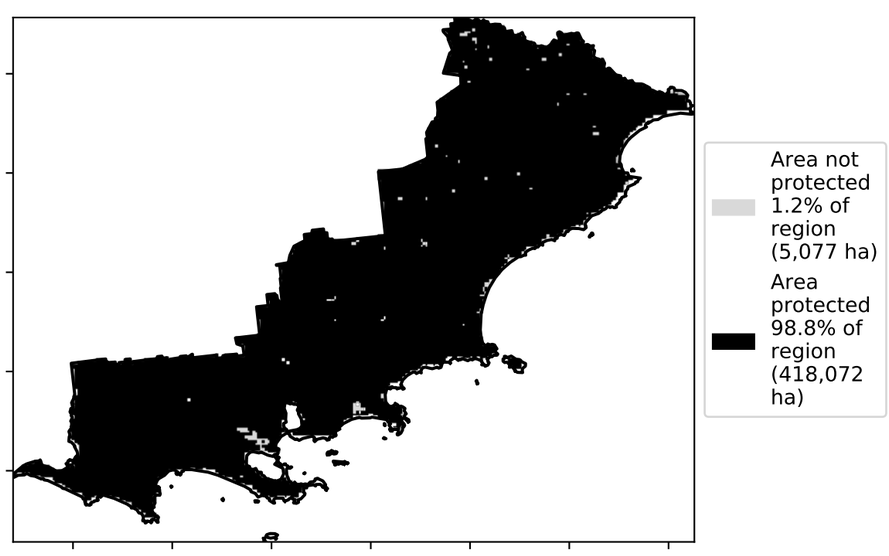
Total Vegetation Cover [%]



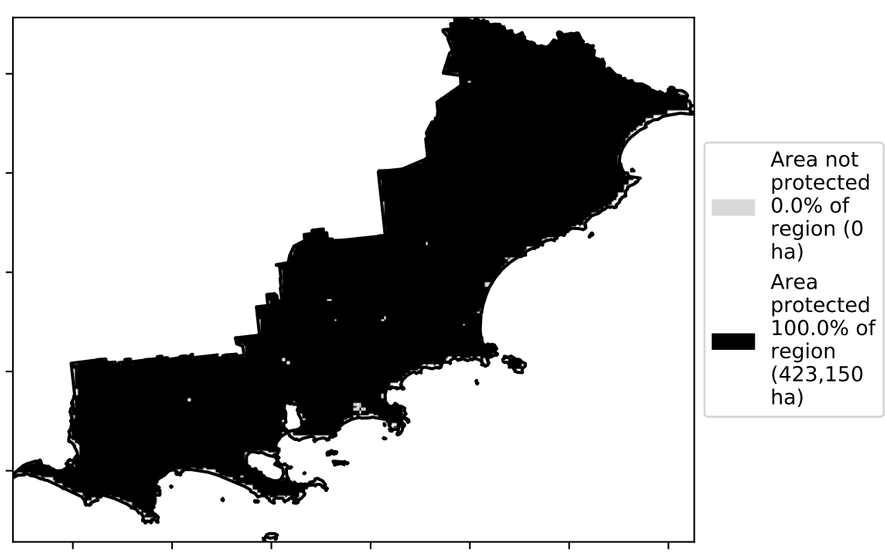
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

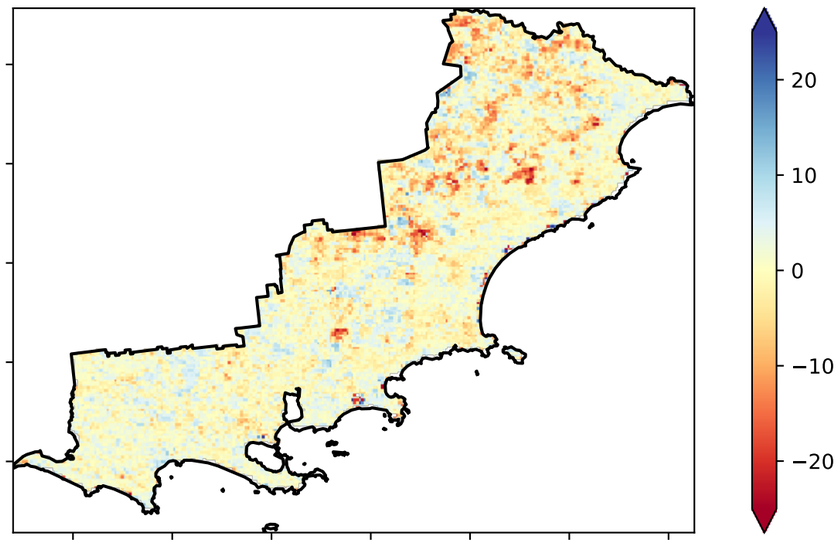


% Area protected from wind erosion (>50%)



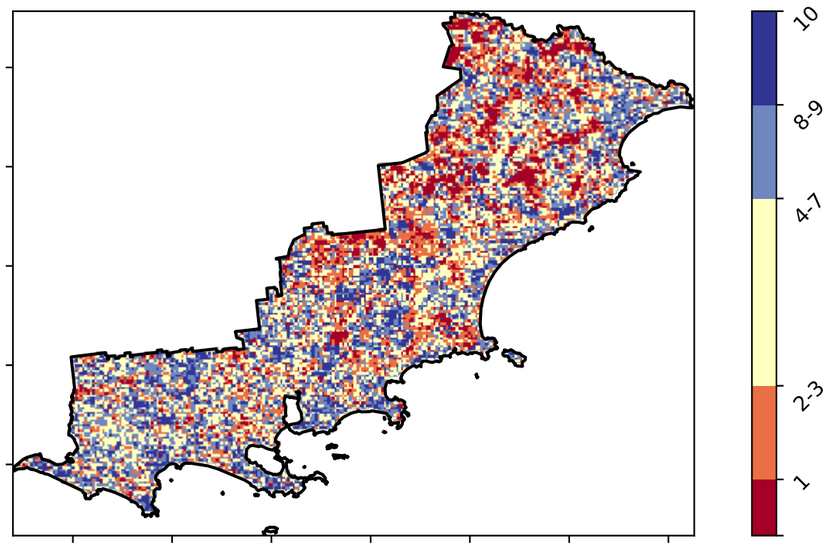
Total Vegetation Cover Anomaly [%]

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.

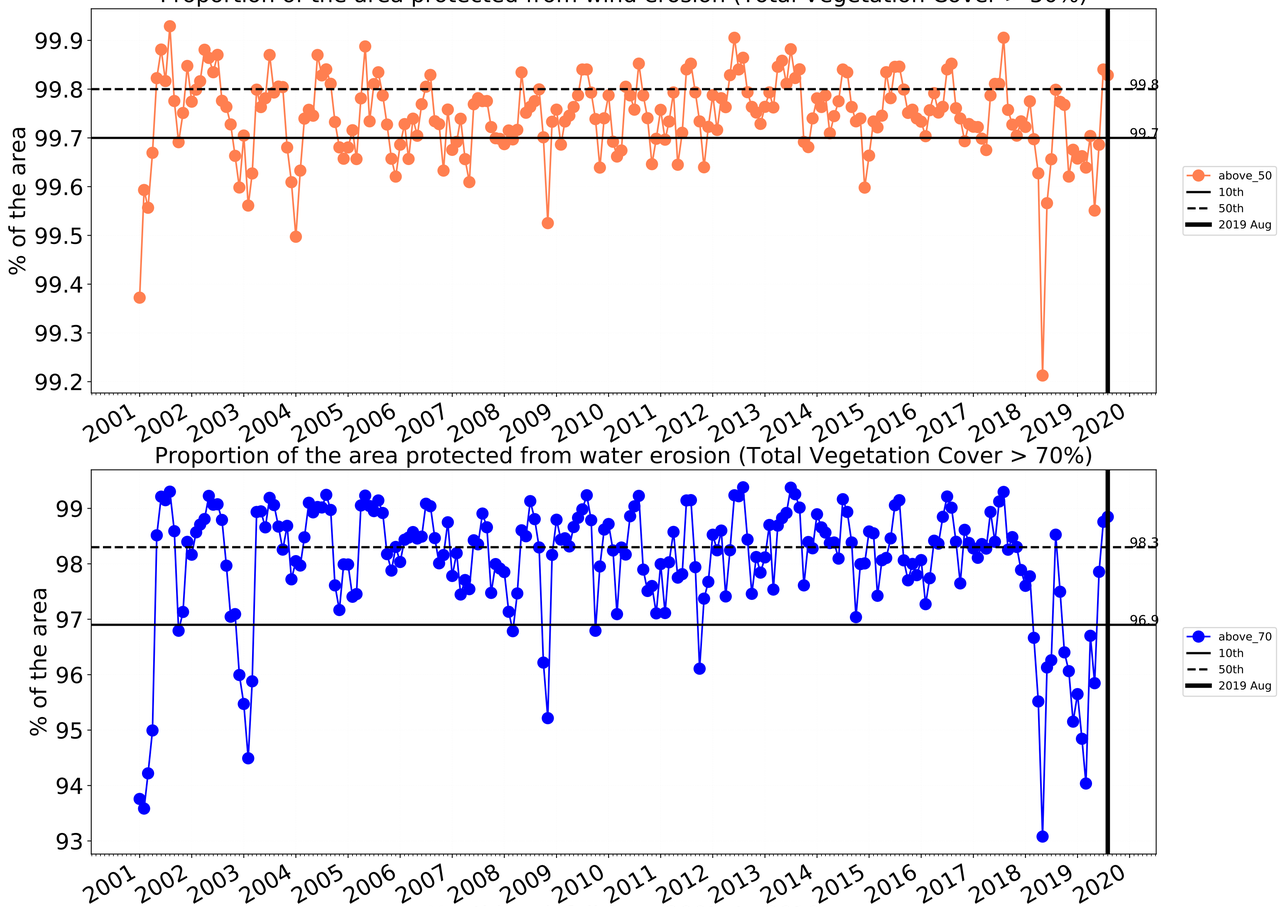


Total Vegetation Cover Decile [%]

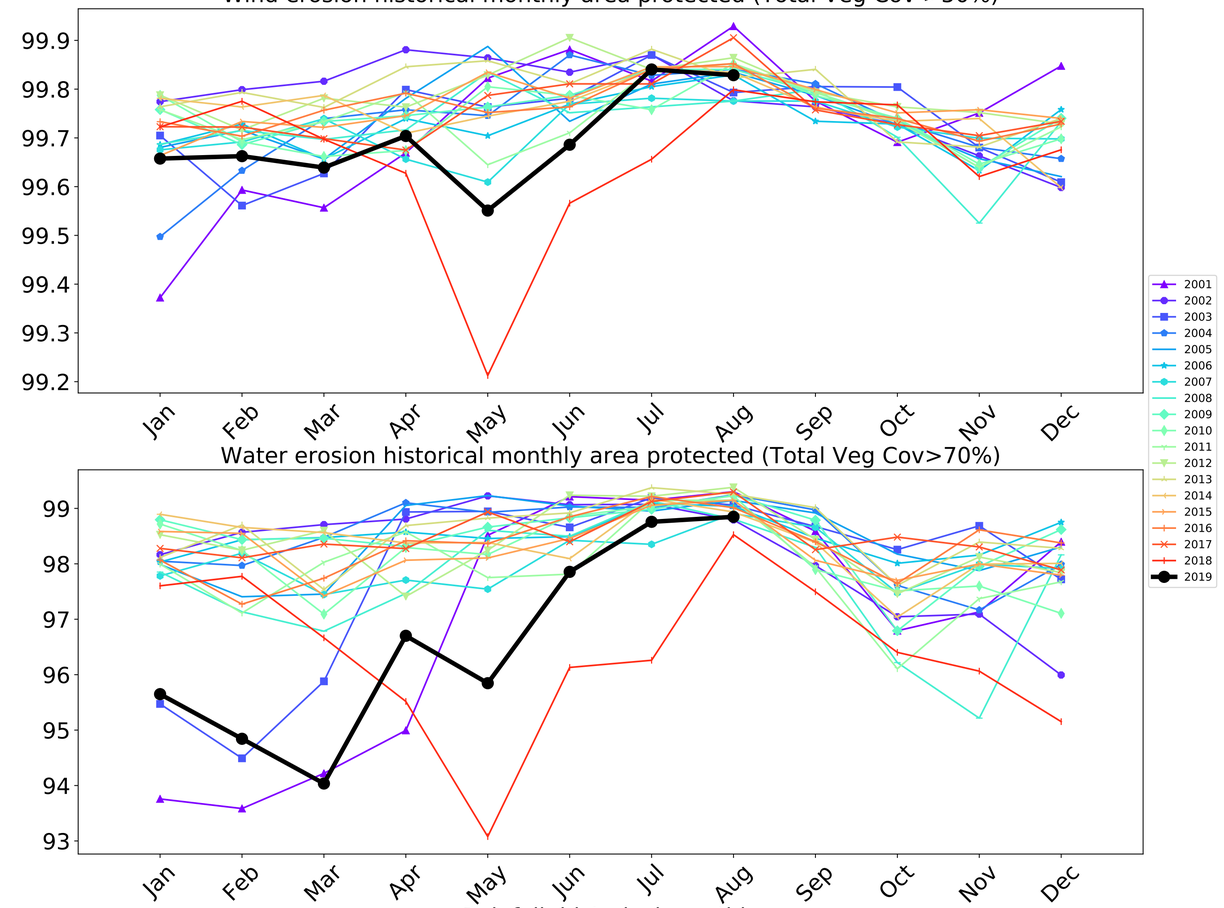
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.



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



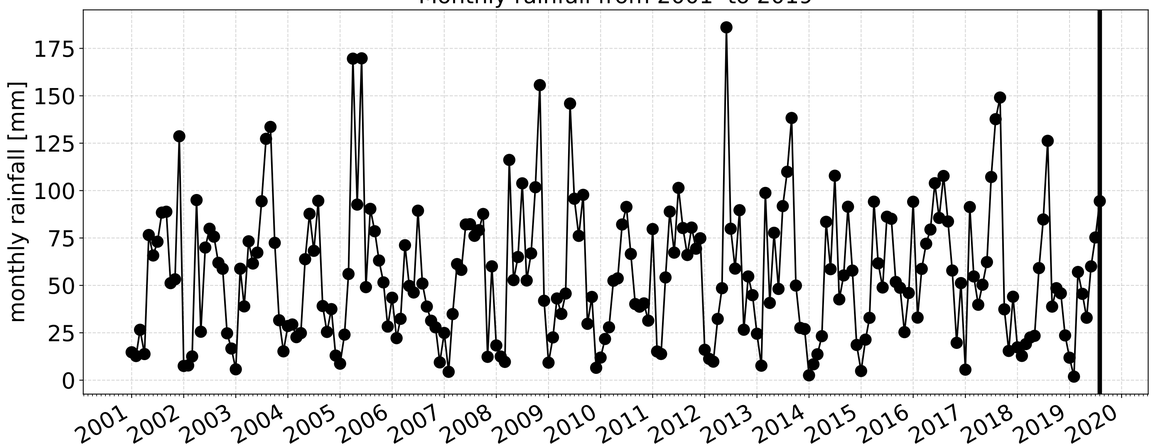
Wind erosion historical monthly area protected (Total Veg Cov >50%)



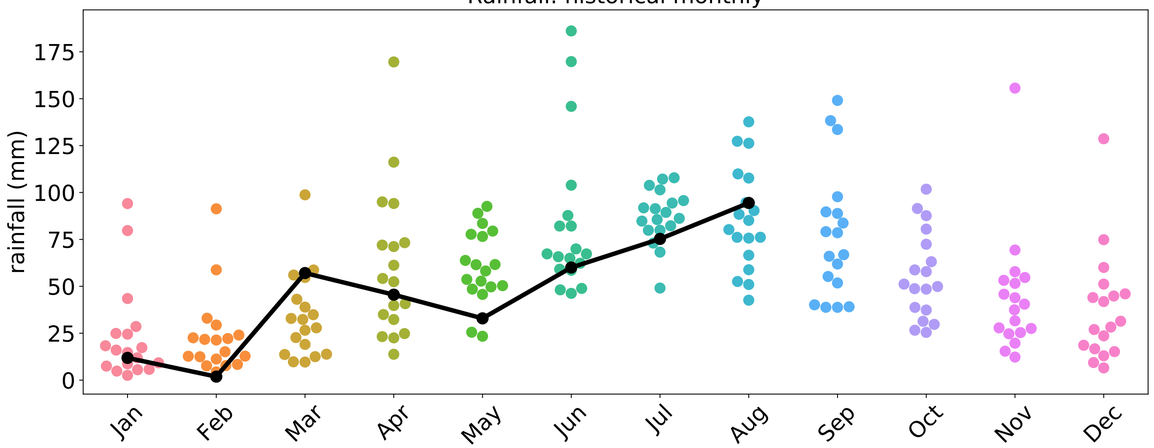
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

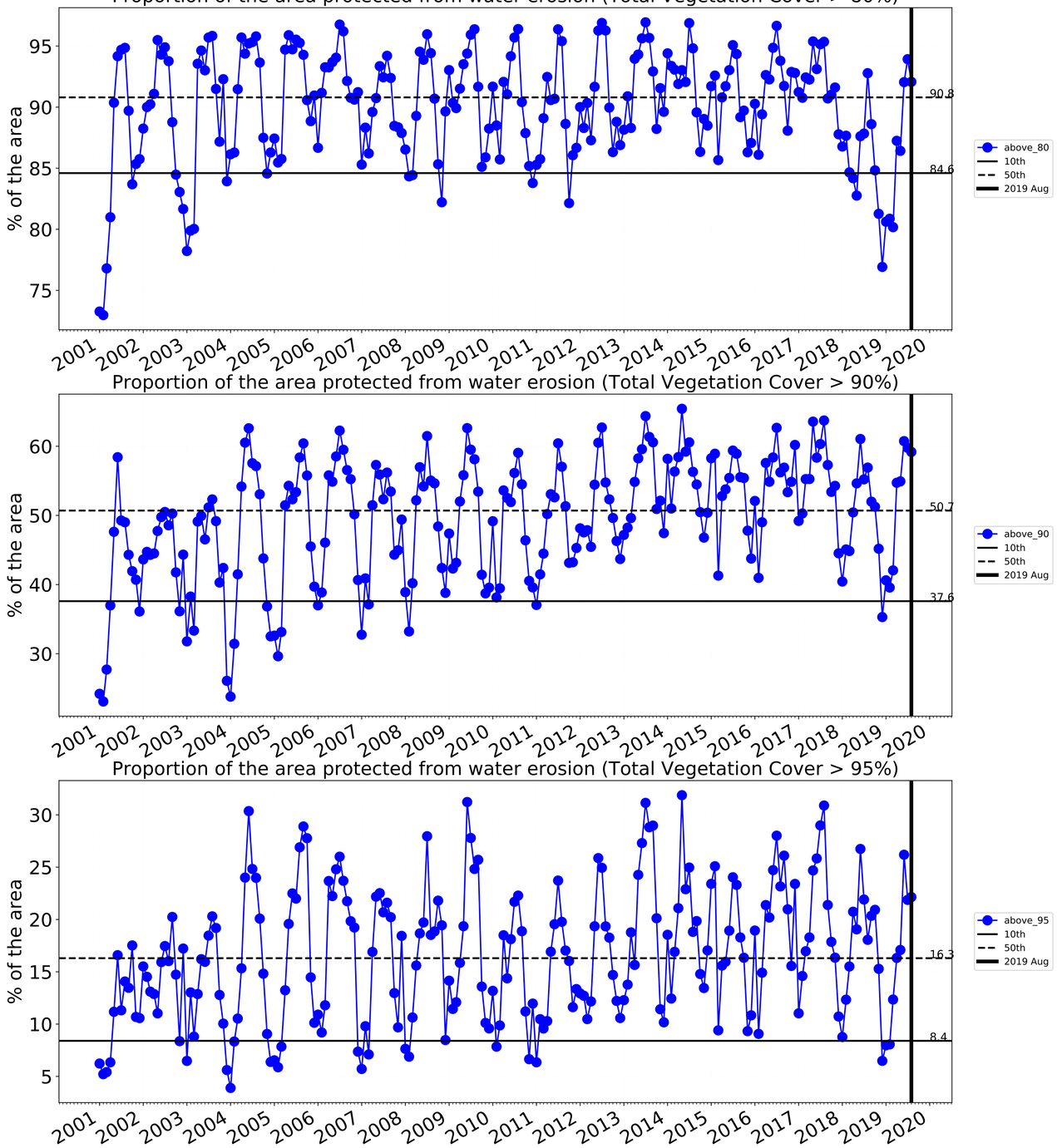
Water erosion historical monthly area protected (Total Veg Cov>70%)

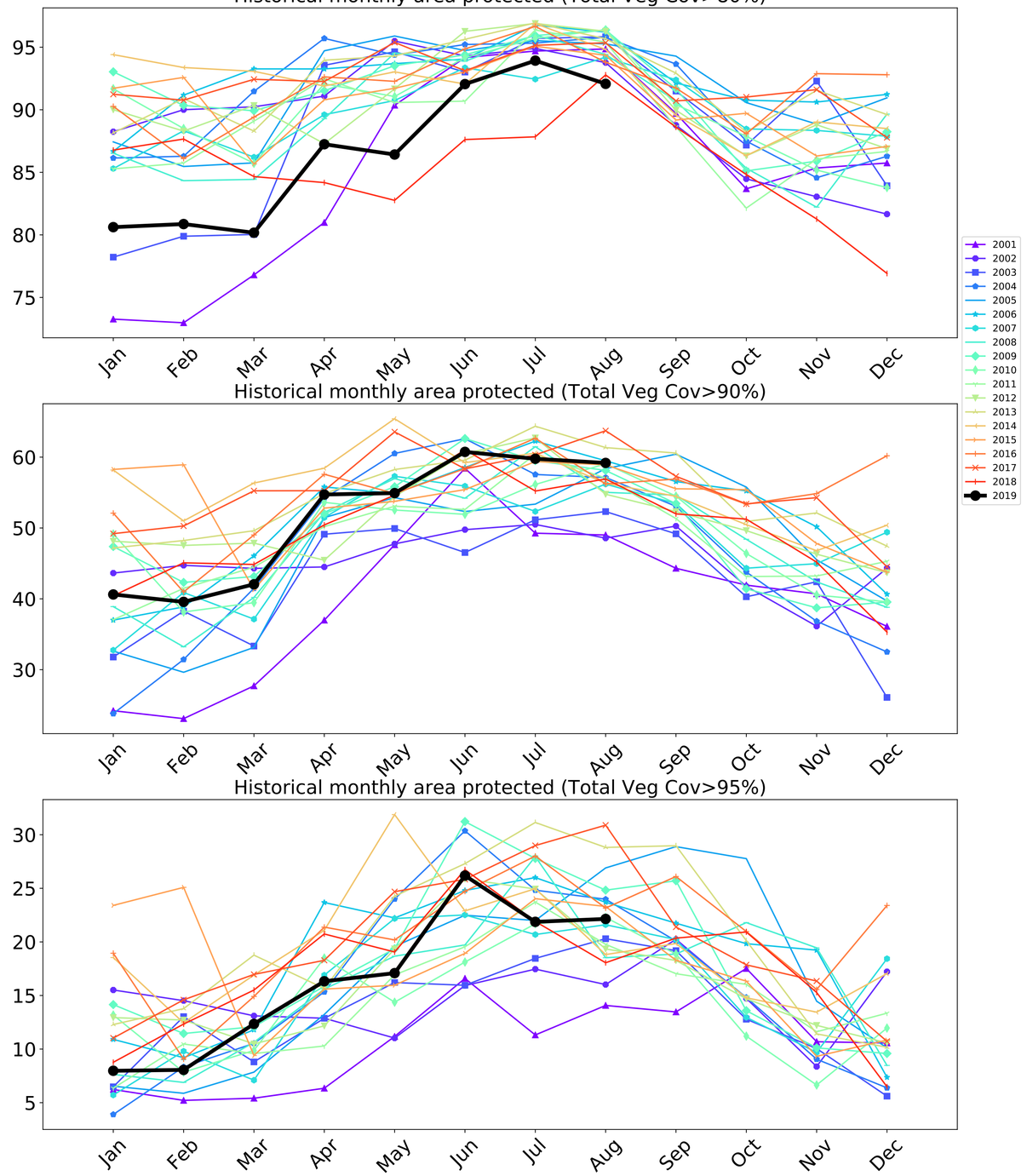
Monthly rainfall from 2001 to 2019



Rainfall: historical monthly



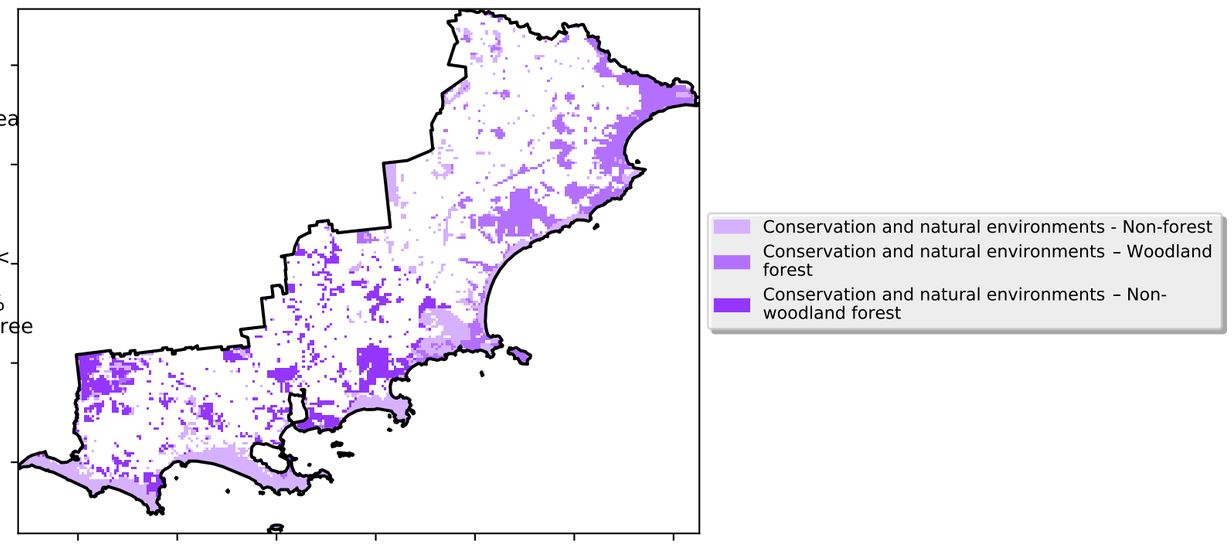

Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)
% of the area
90.8
84.6
above_80
10th
50th
2019 Aug
Proportion of the area protected from water erosion (Total Vegetation Cover > 90%)
% of the area
50.7
37.6
above_90
10th
50th
2019 Aug
Proportion of the area protected from water erosion (Total Vegetation Cover > 95%)
% of the area
16.3
8.4
above_95
10th
50th
2019 Aug


Historical monthly area protected (Total Veg Cov>80%)
Historical monthly area protected (Total Veg Cov>90%)
Historical monthly area protected (Total Veg Cov>95%)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019

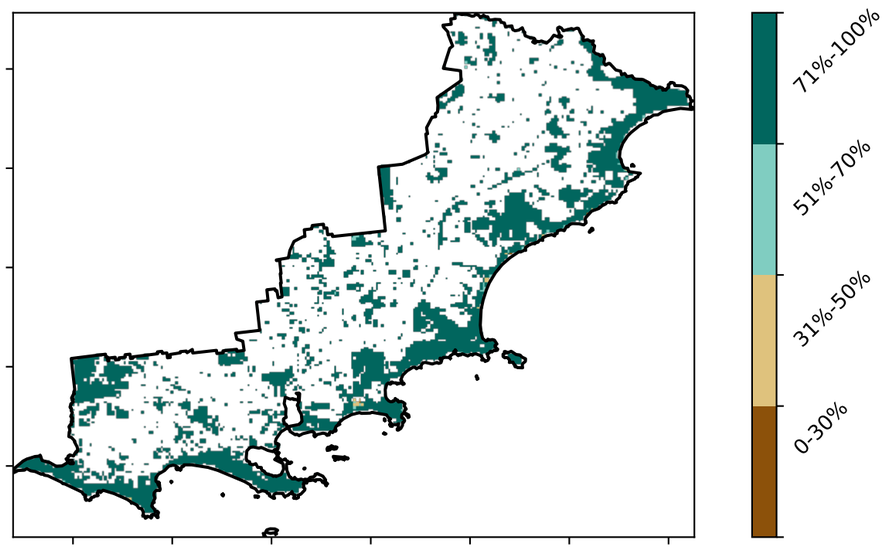
Conservation and natural environments

Land use and forest cover

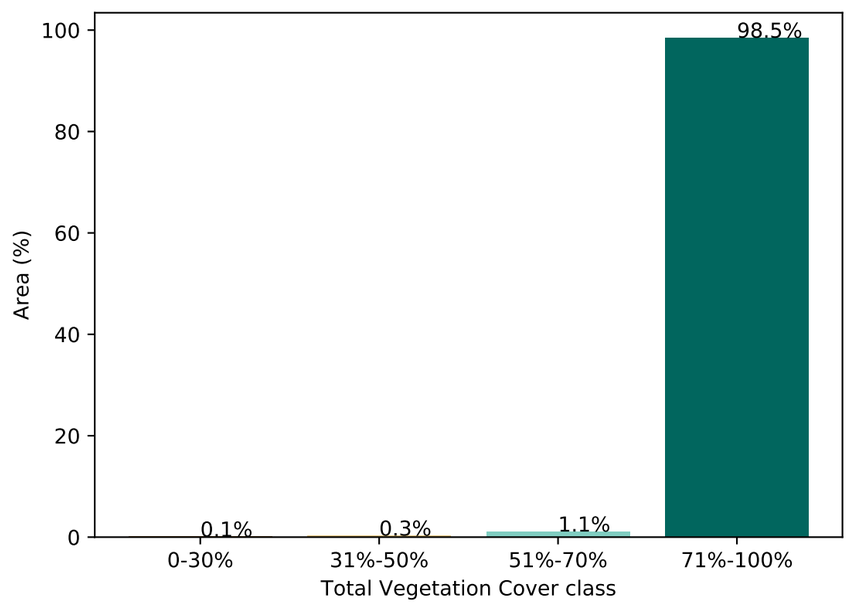
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is <_ 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



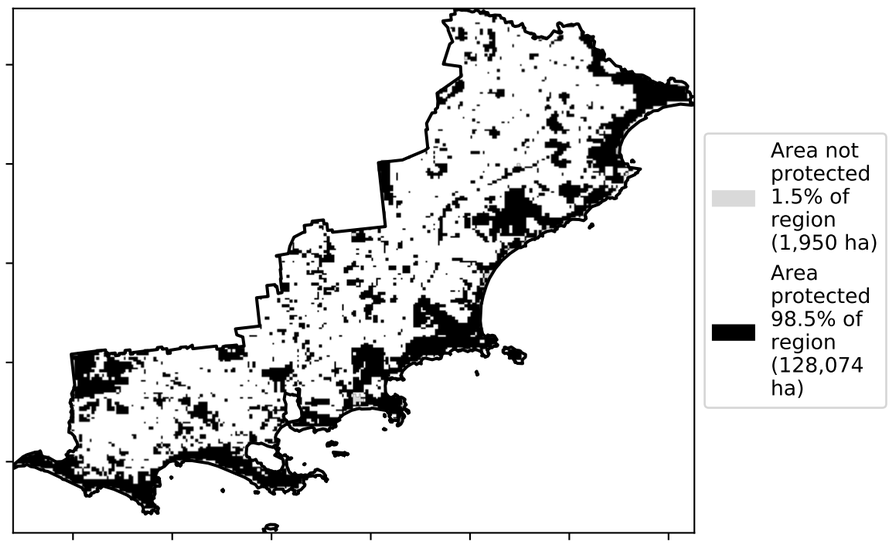
Total Vegetation Cover [%]



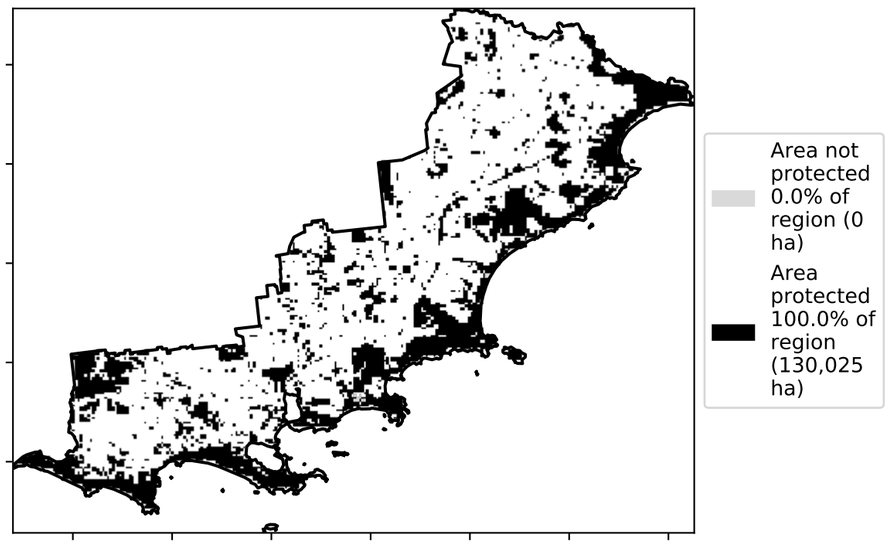
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]

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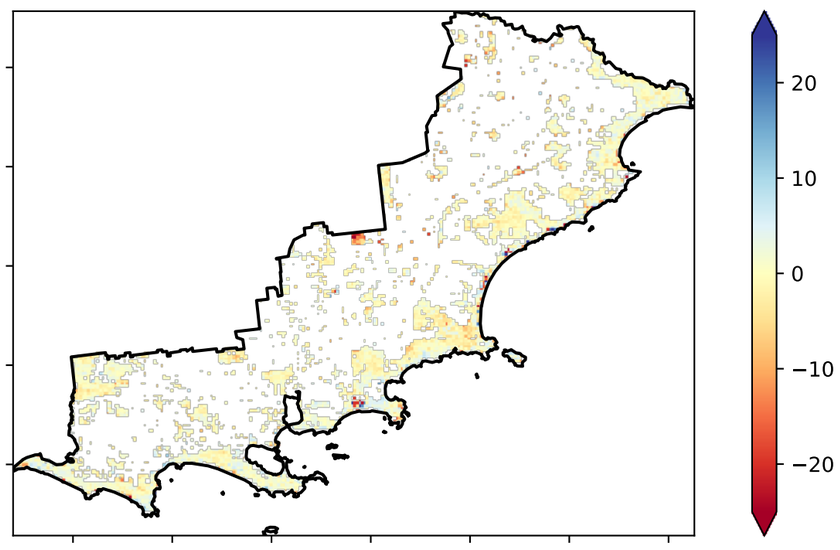

Total Vegetation Cover Decile [%]

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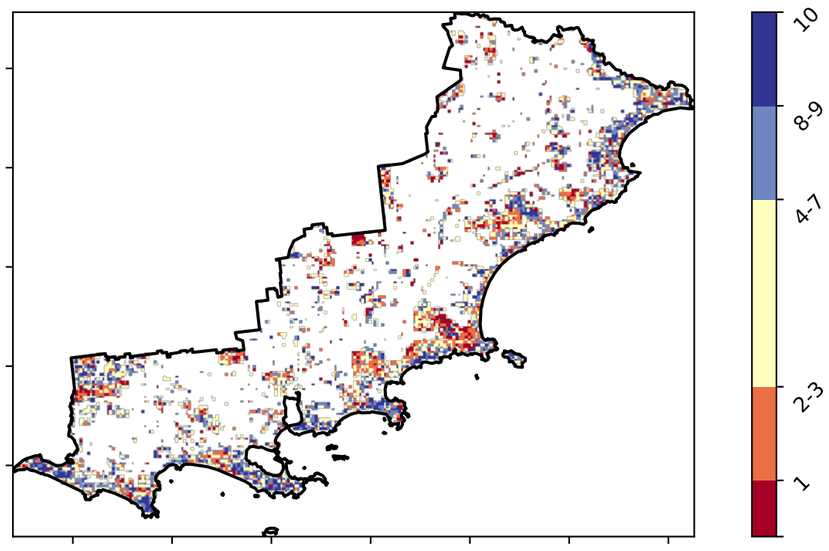
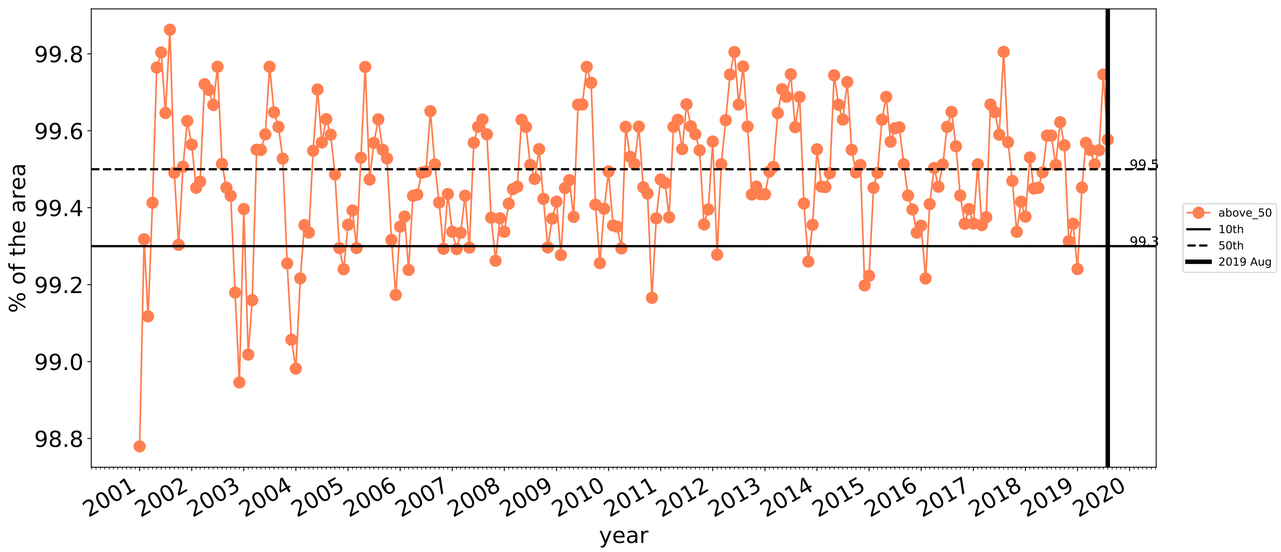
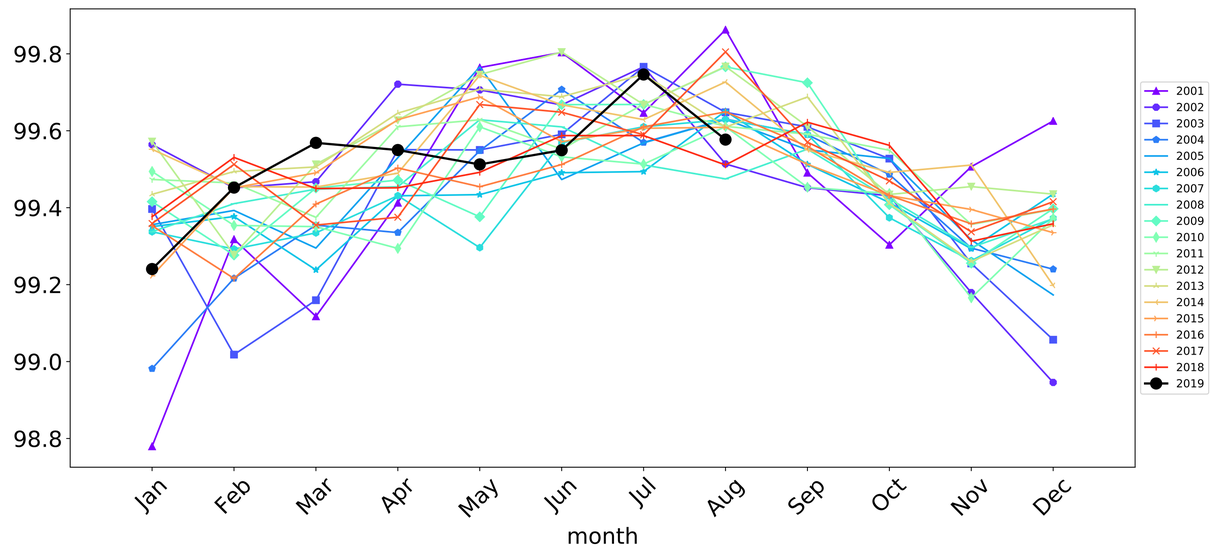


Conservation and natural environments timeseries

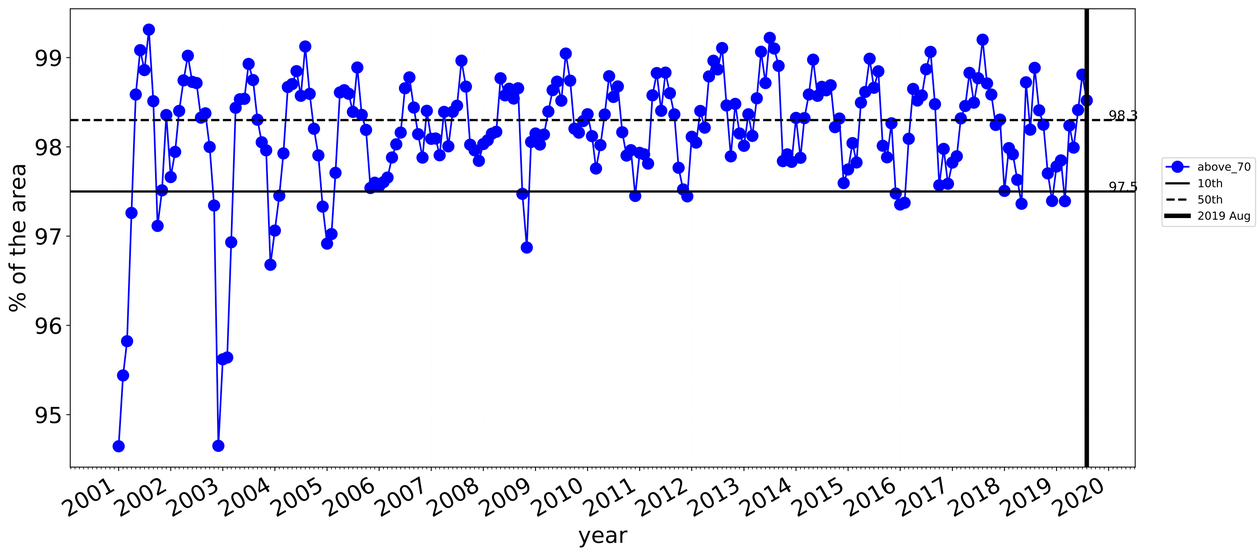
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



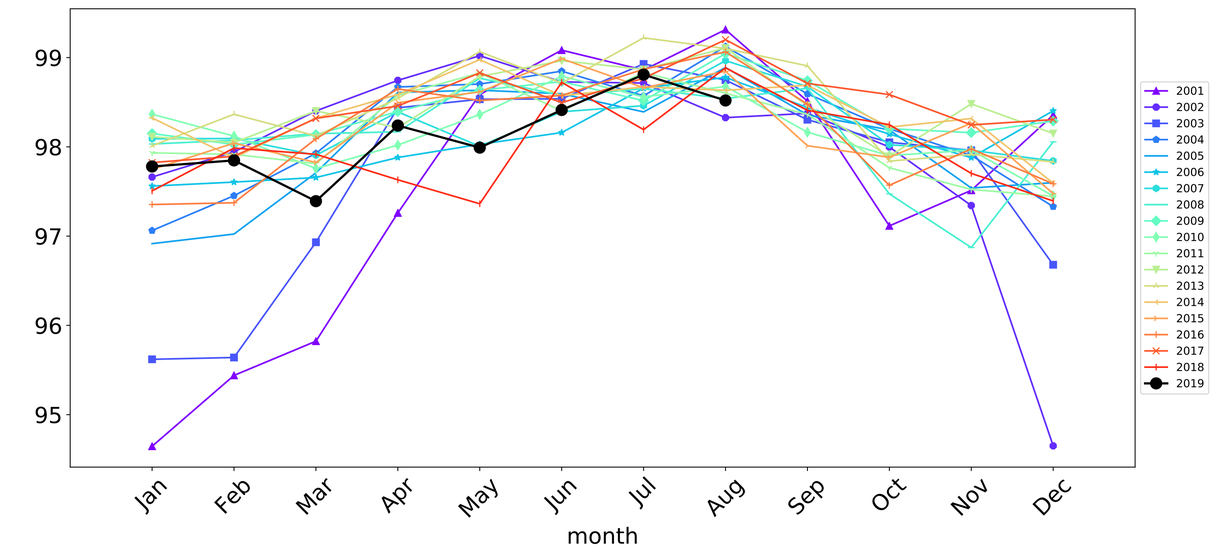
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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

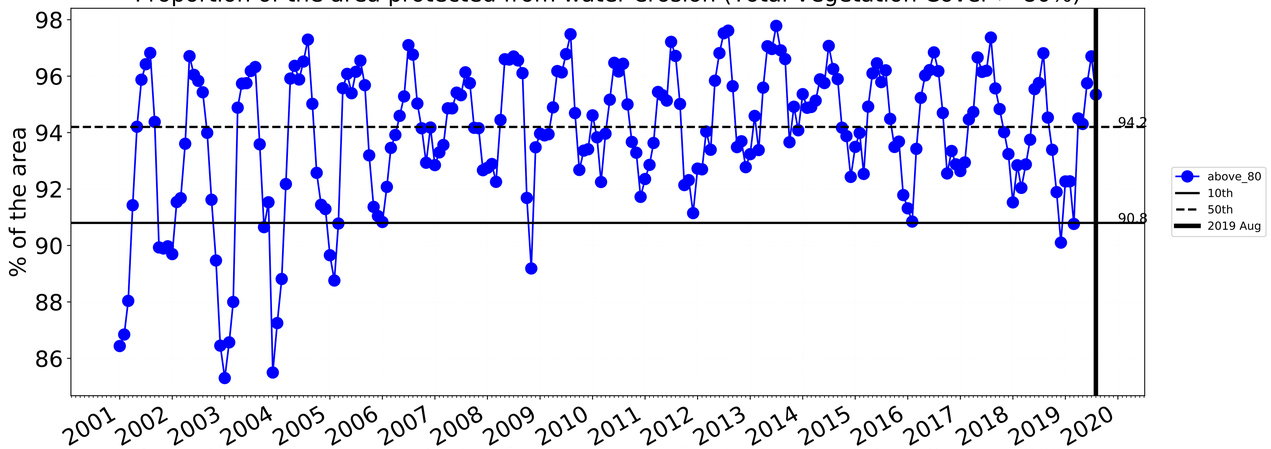


Water erosion historical monthly area protected (Total Veg Cov>70%)

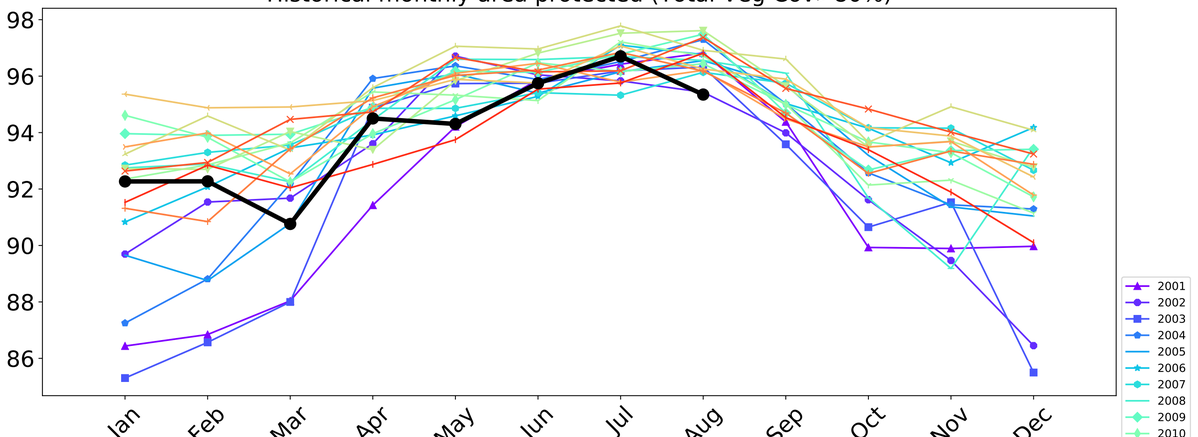


CSIRO TERN Australian Government National Landcare Programme NSW GOVERNMENT Planning, Industry & Environment

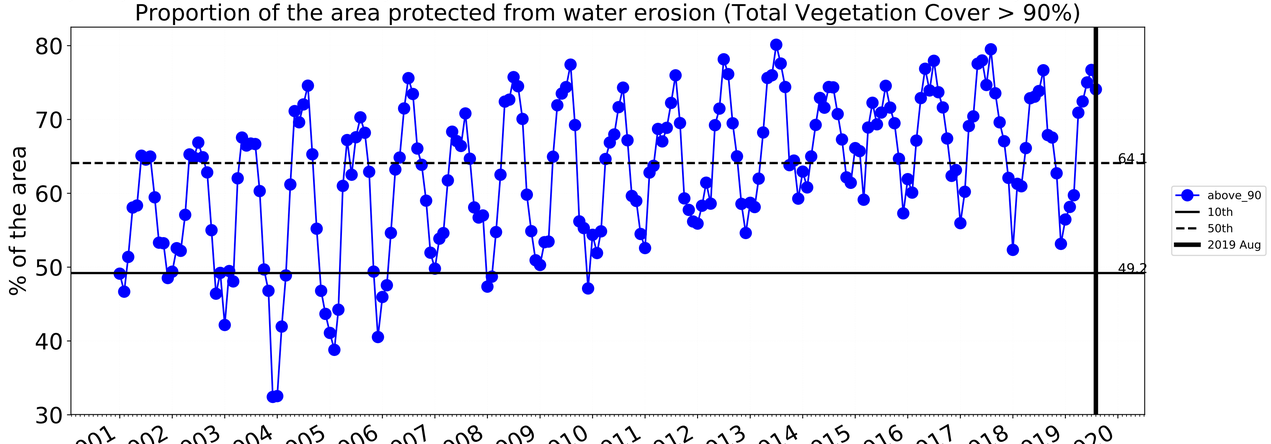
Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)



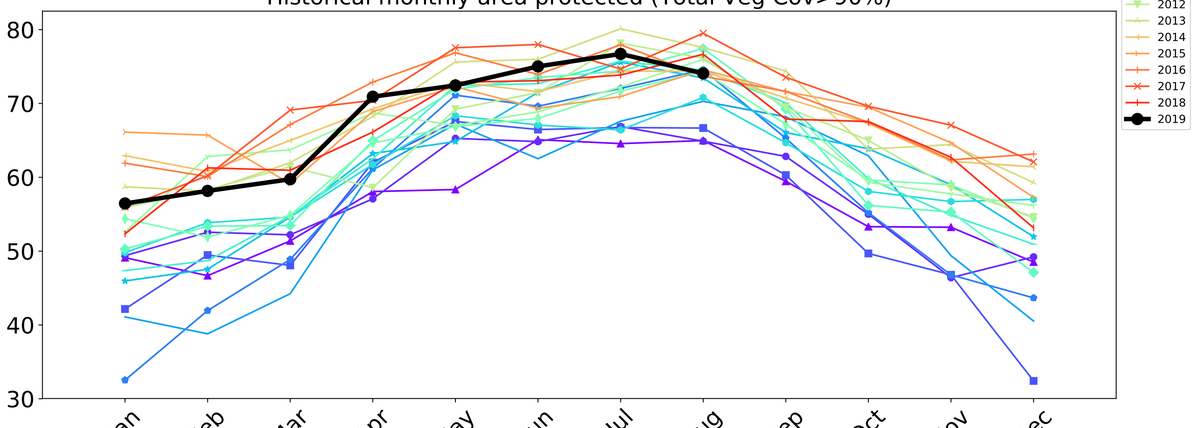
Historical monthly area protected (Total Veg Cov>80%)



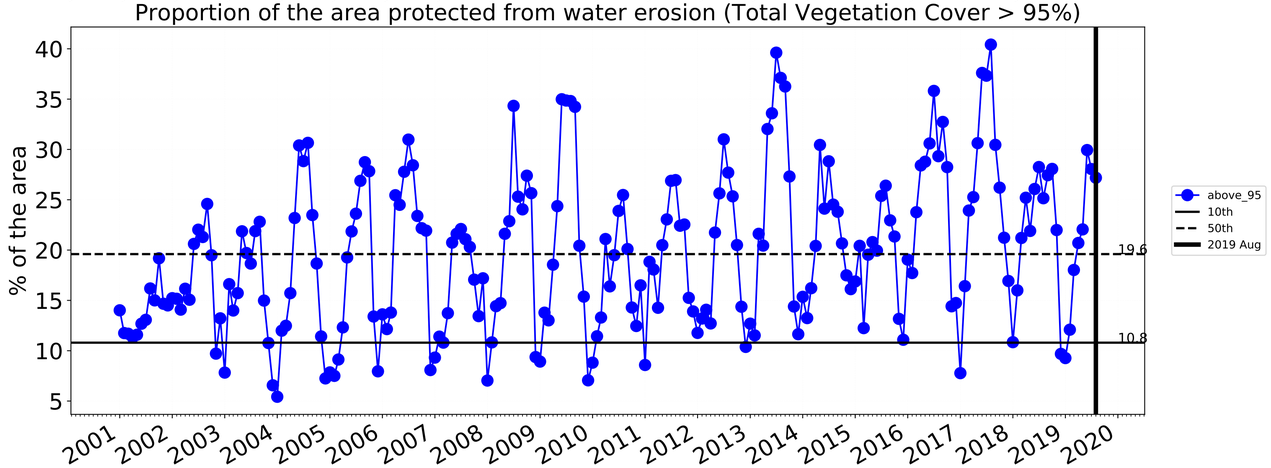
Proportion of the area protected from water erosion (Total Vegetation Cover > 90%)



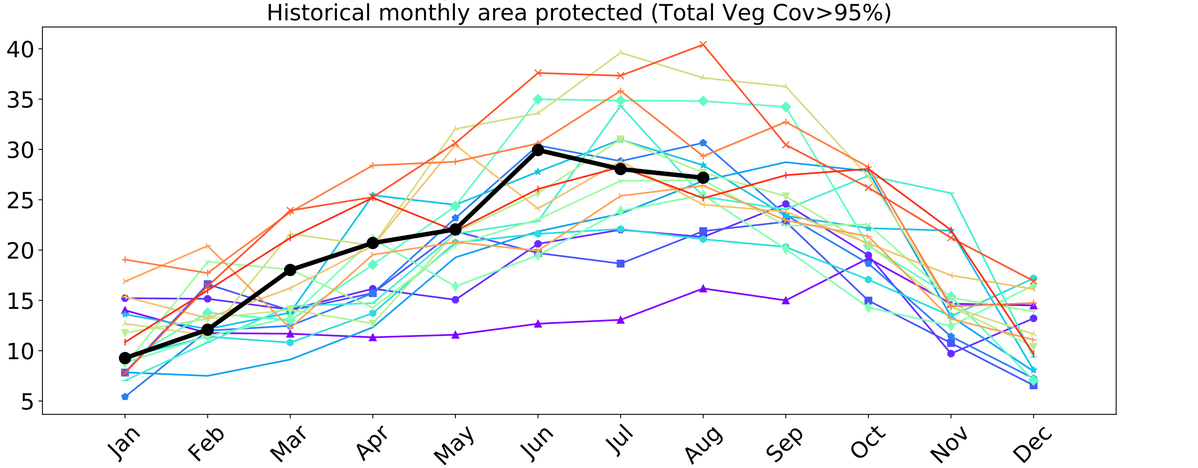
Historical monthly area protected (Total Veg Cov>90%)



Proportion of the area protected from water erosion (Total Vegetation Cover > 95%)



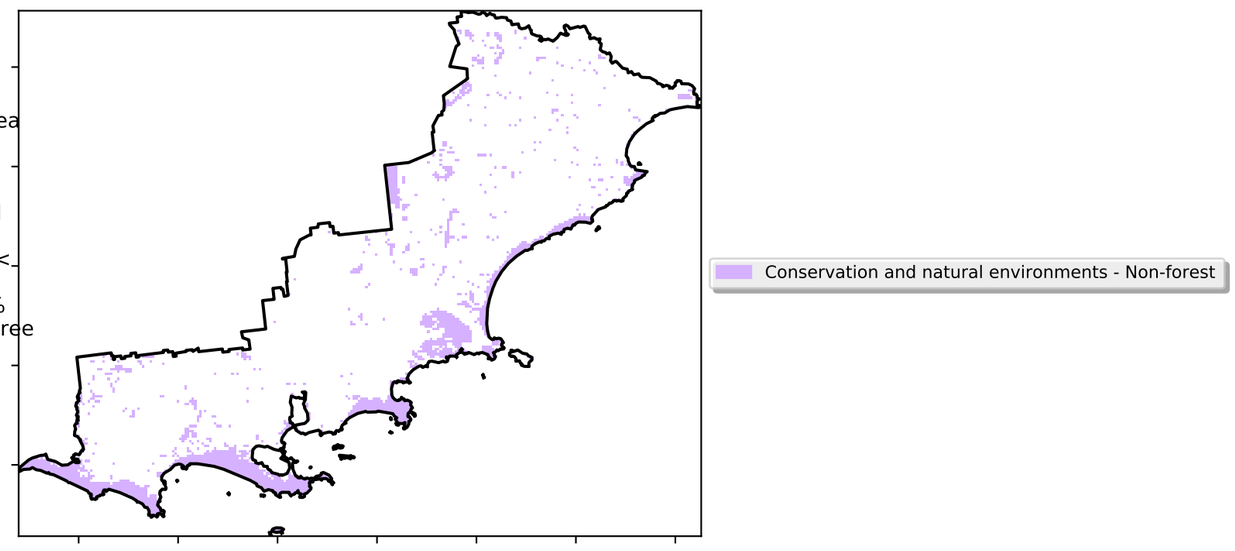
Historical monthly area protected (Total Veg Cov>95%)



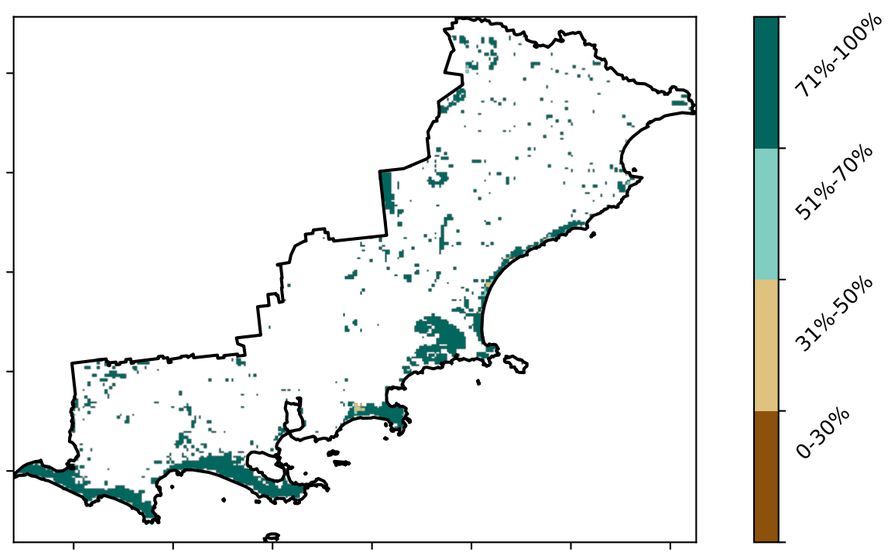
Conservation and natural environments non forest

Land use and forest cover

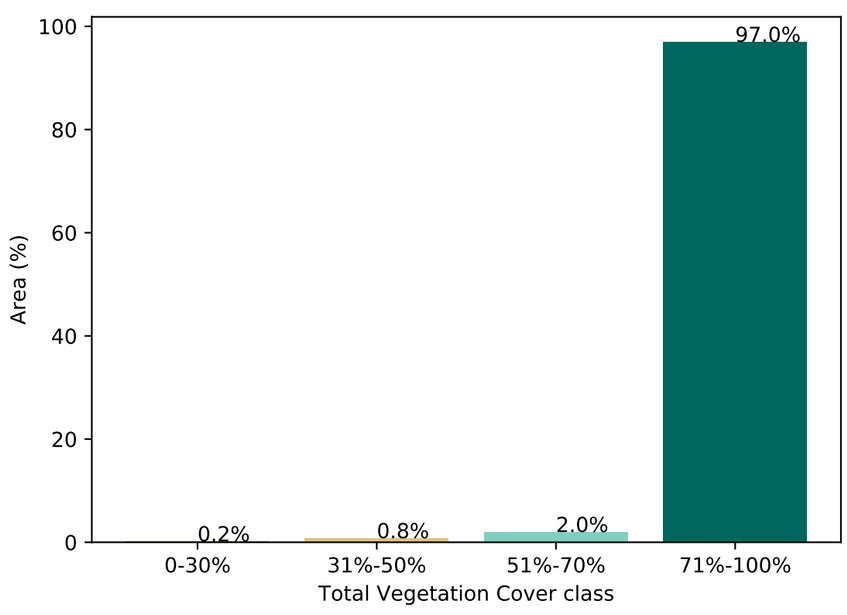
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is <_ 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



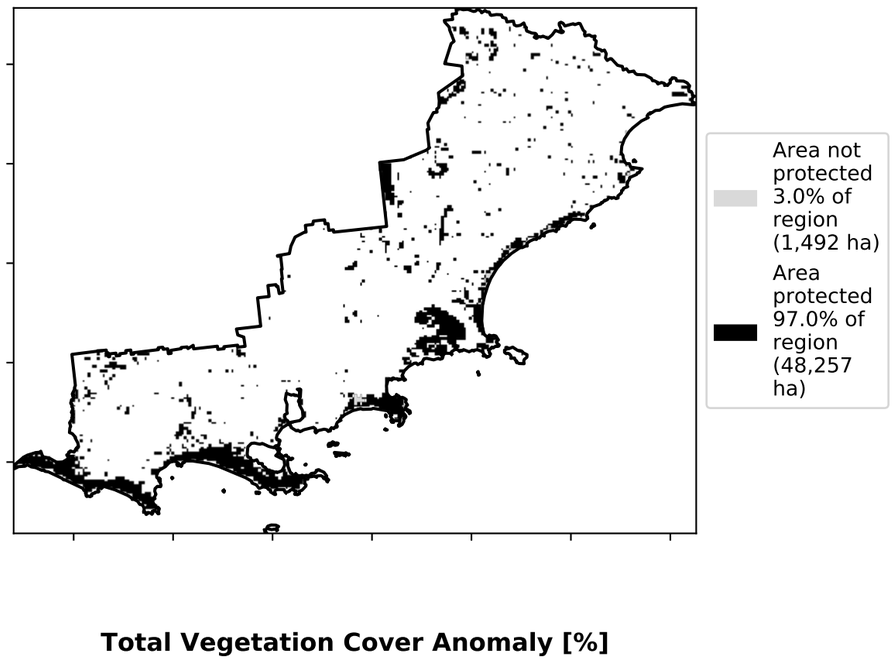
Total Vegetation Cover [%]



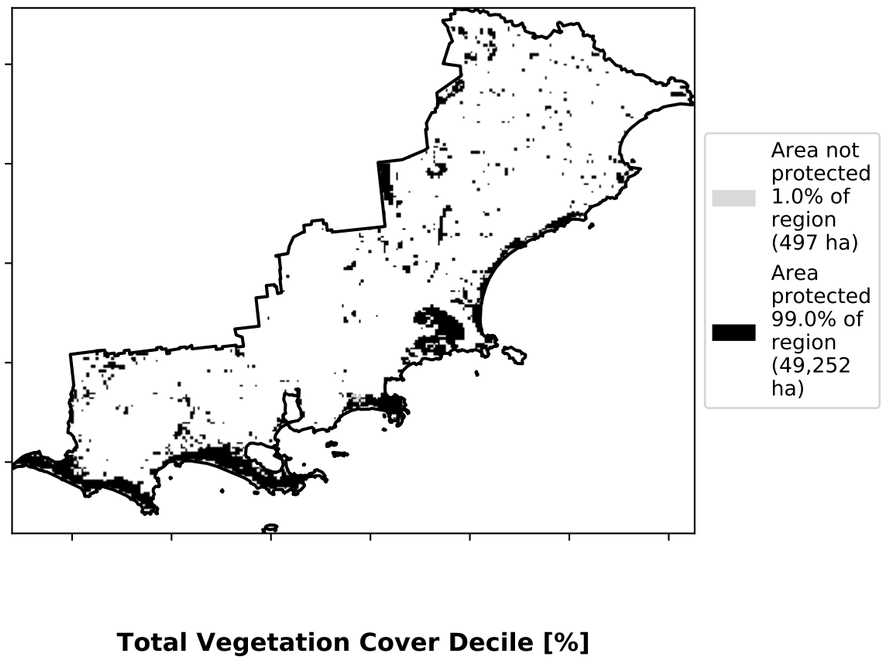
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

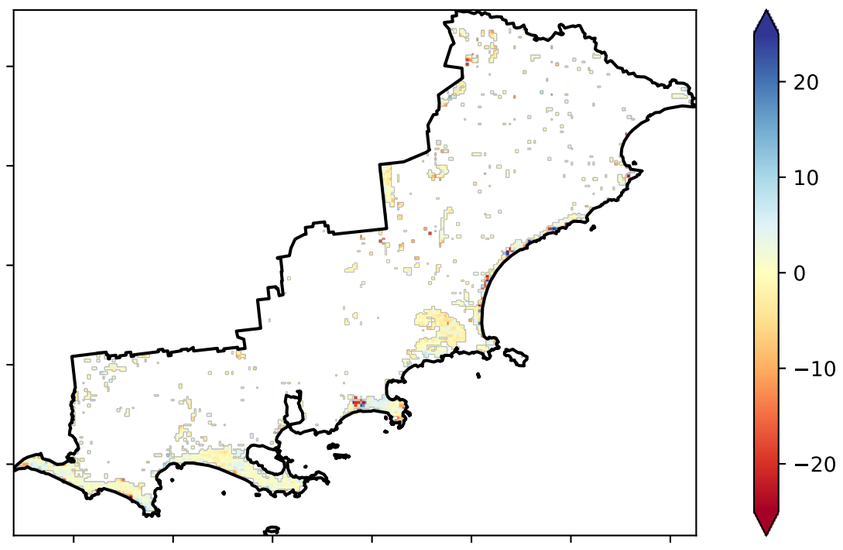


% Area protected from wind erosion (>50%)



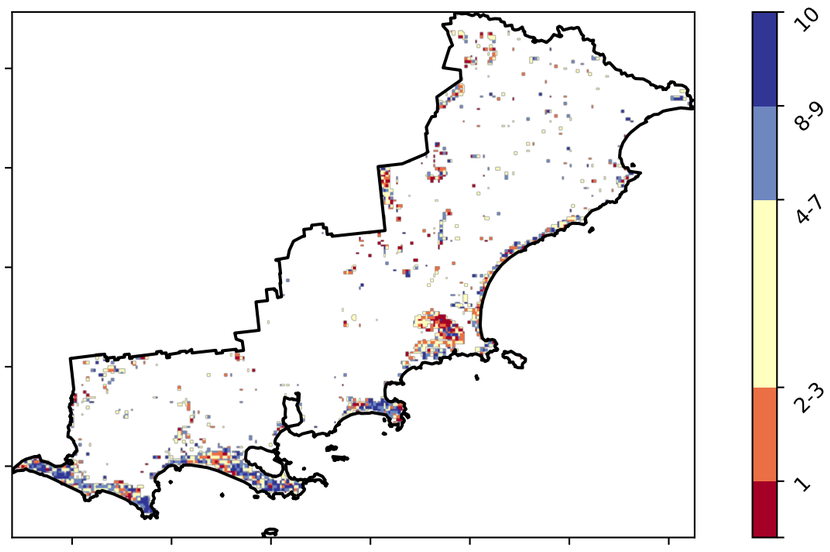
Total Vegetation Cover Anomaly [%]

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.



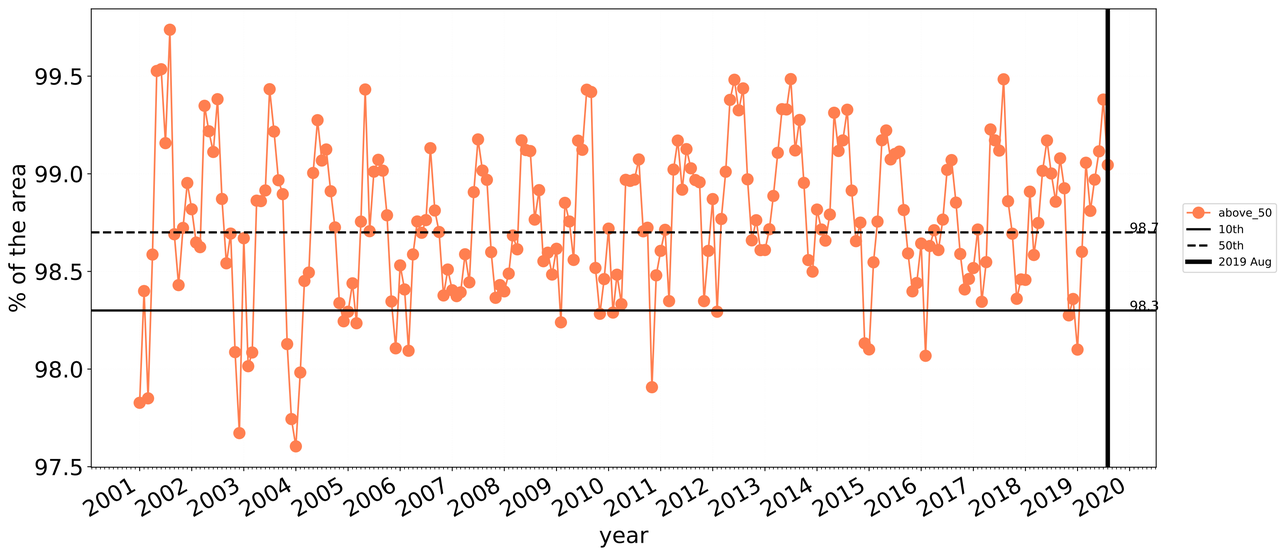
Total Vegetation Cover Decile [%]

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.

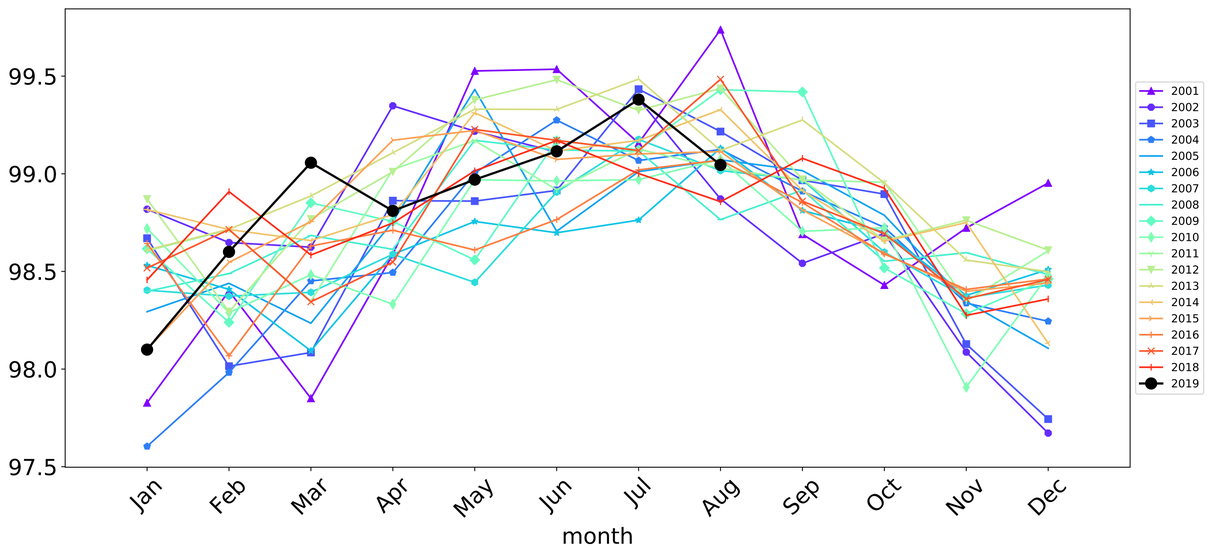


Conservation and natural environments non forest timeseries

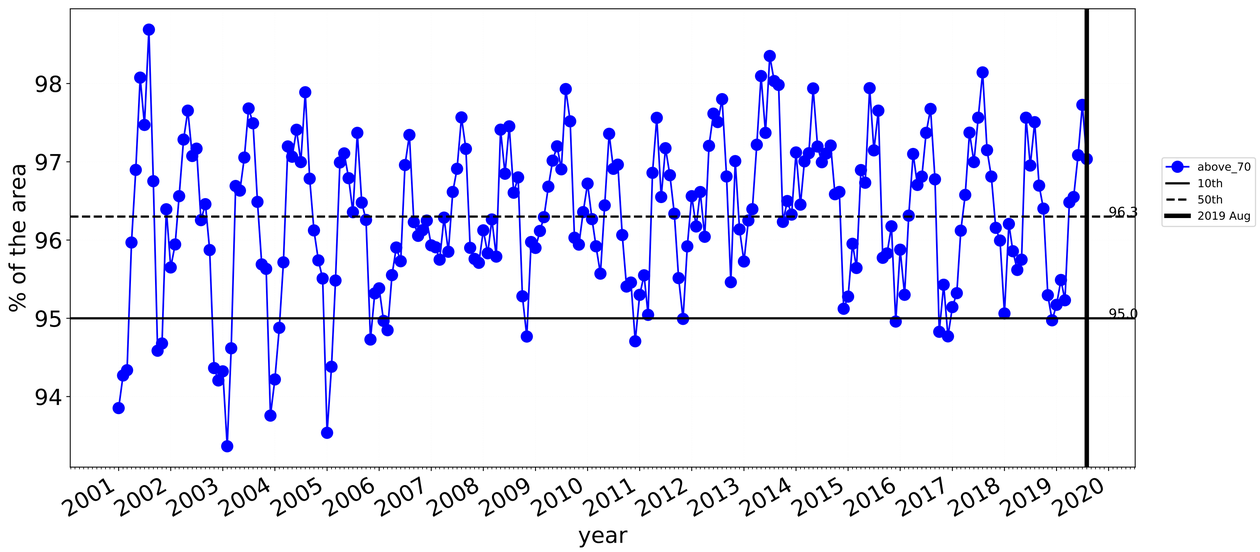
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



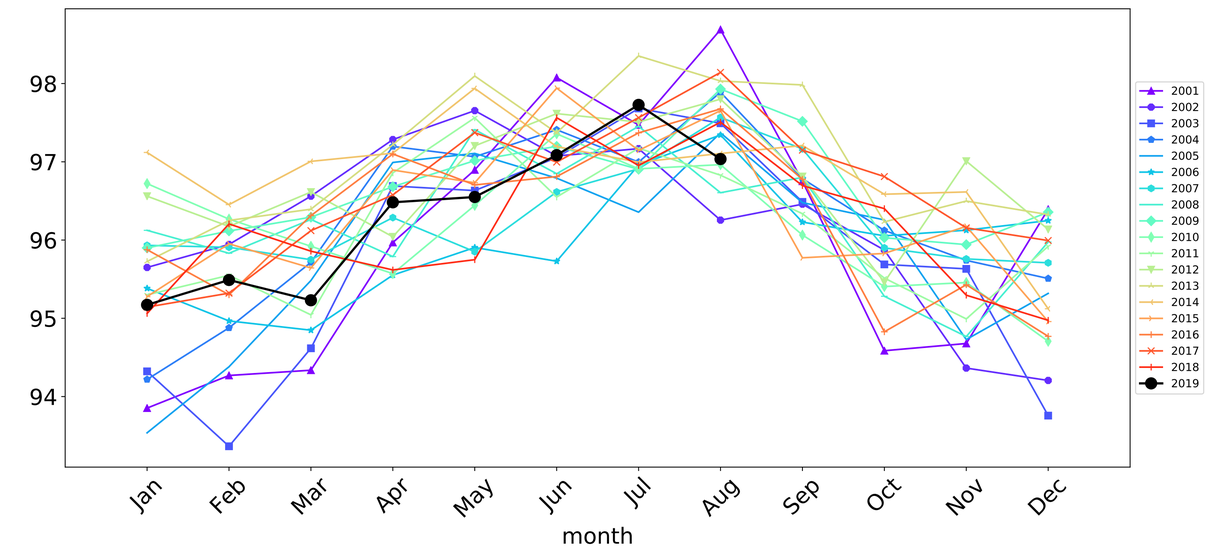
Wind erosion historical monthly area protected (Total Veg Cov >50%)

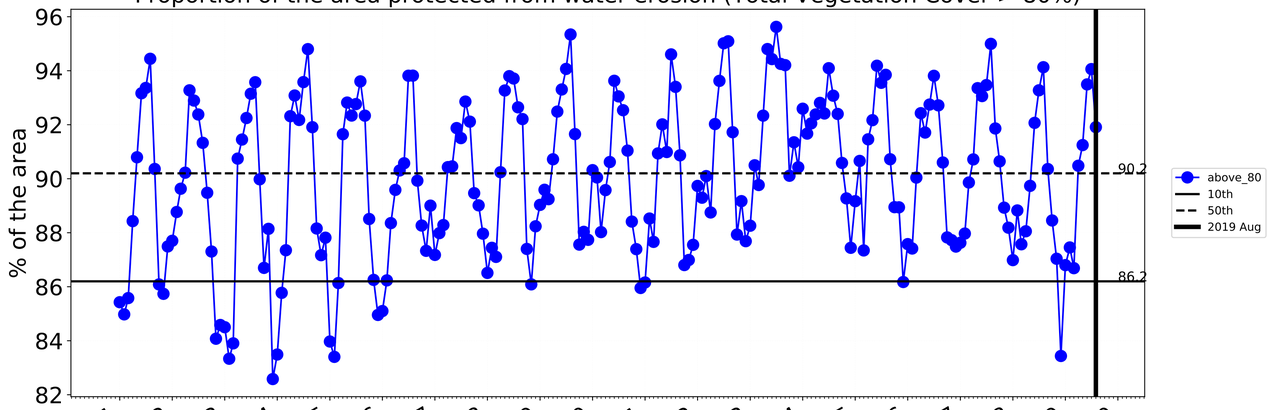


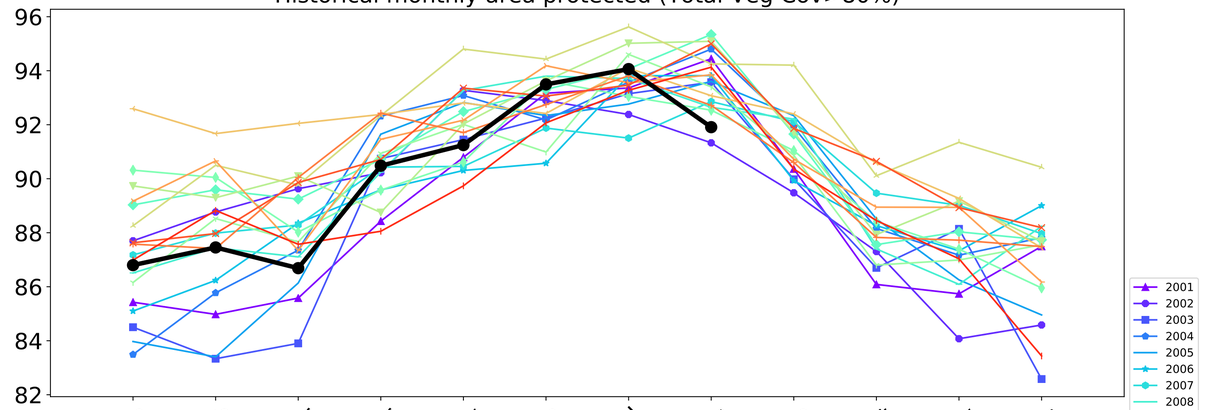
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

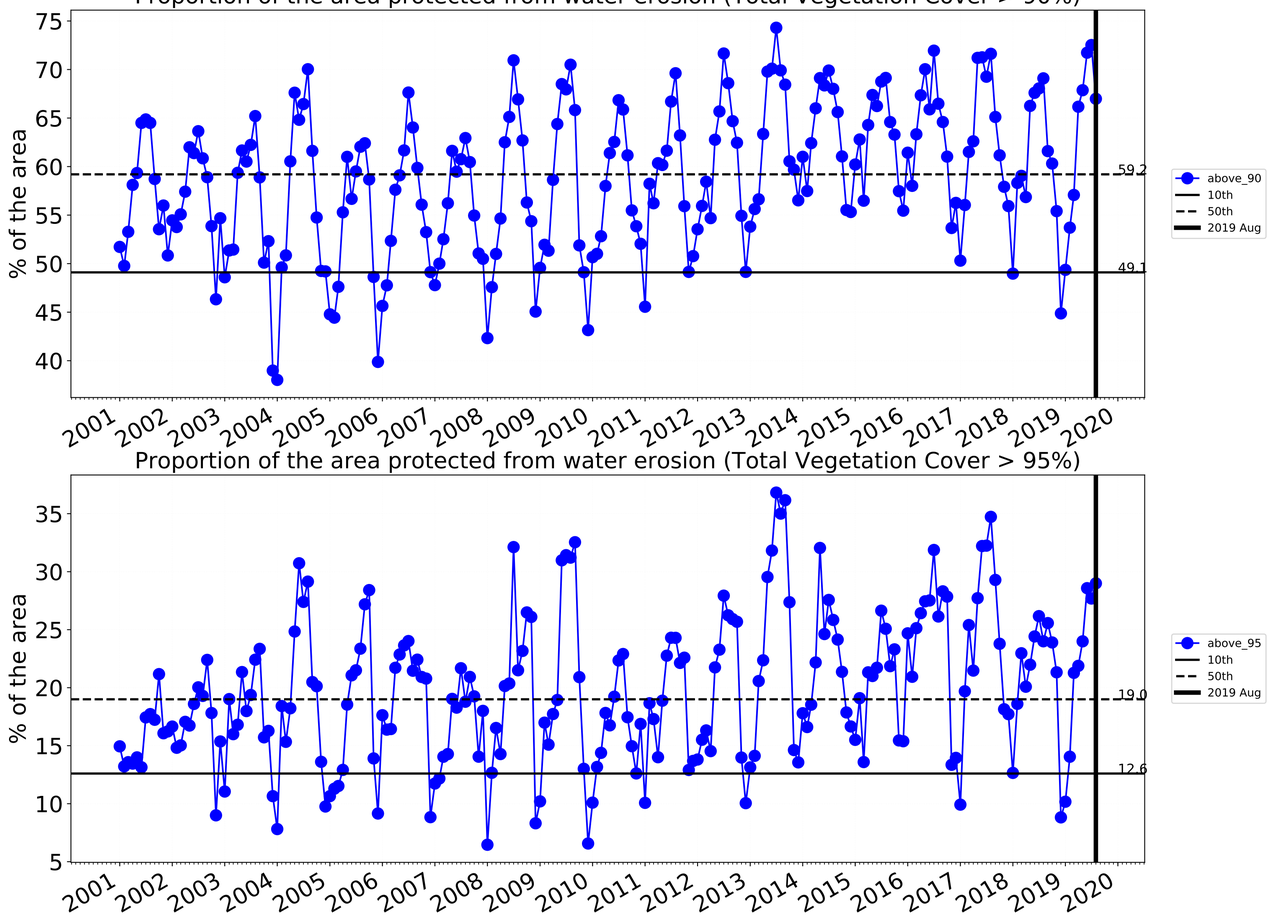


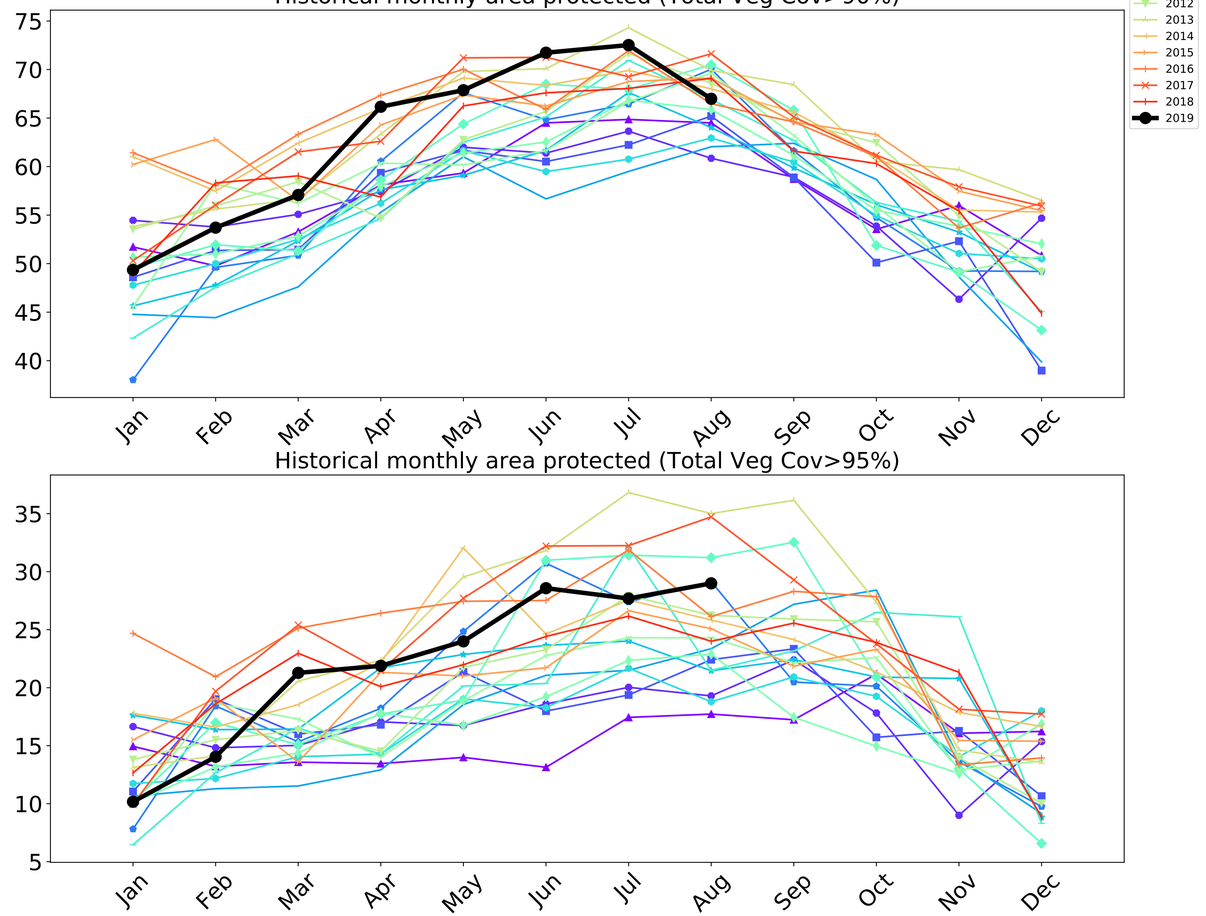
Water erosion historical monthly area protected (Total Veg Cov>70%)




Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)
% of the area
96
94
92
90
88
86
84
82
90.2
86.2
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
above_80
10th
50th
2019 Aug


Historical monthly area protected (Total Veg Cov>80%)
96
94
92
90
88
86
84
82
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019

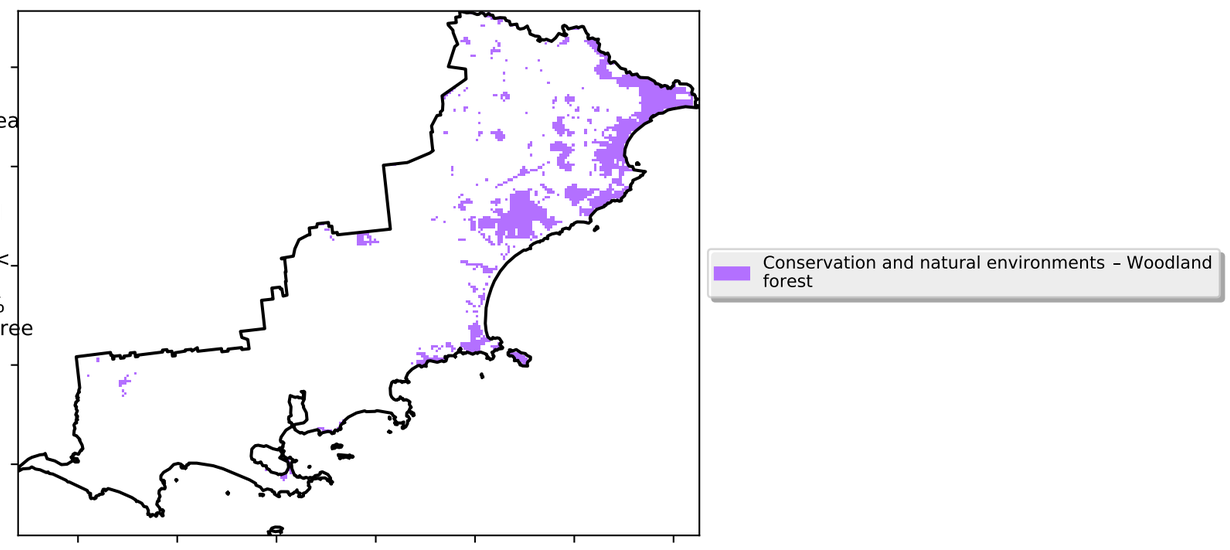

Proportion of the area protected from water erosion (Total Vegetation Cover > 90%)
% of the area
75
70
65
60
55
50
45
40
59.2
49.1
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
above_90
10th
50th
2019 Aug
Proportion of the area protected from water erosion (Total Vegetation Cover > 95%)
% of the area
35
30
25
20
15
10
5
19.0
12.6
above_95
10th
50th
2019 Aug


Historical monthly area protected (Total Veg Cov>90%)
75
70
65
60
55
50
45
40
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Historical monthly area protected (Total Veg Cov>95%)
35
30
25
20
15
10
5
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019

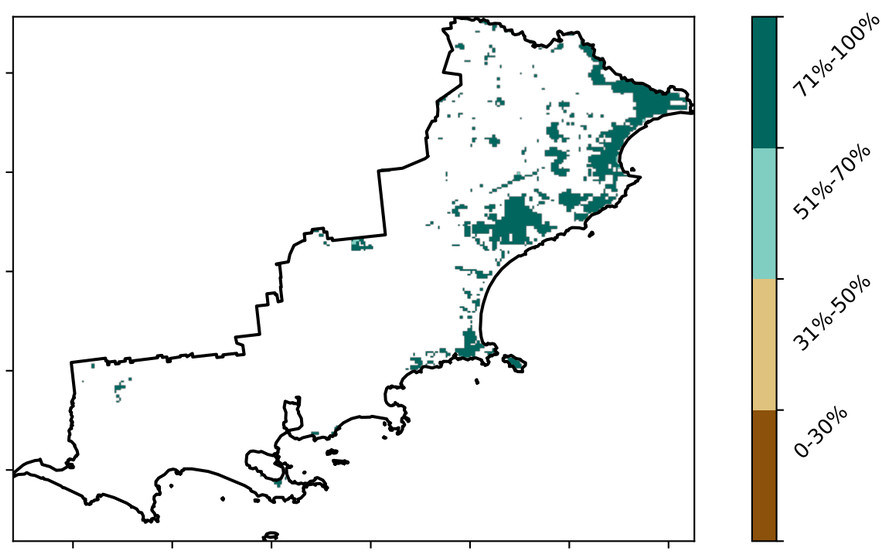
Conservation and natural environments Woodland forest

Land use and forest cover

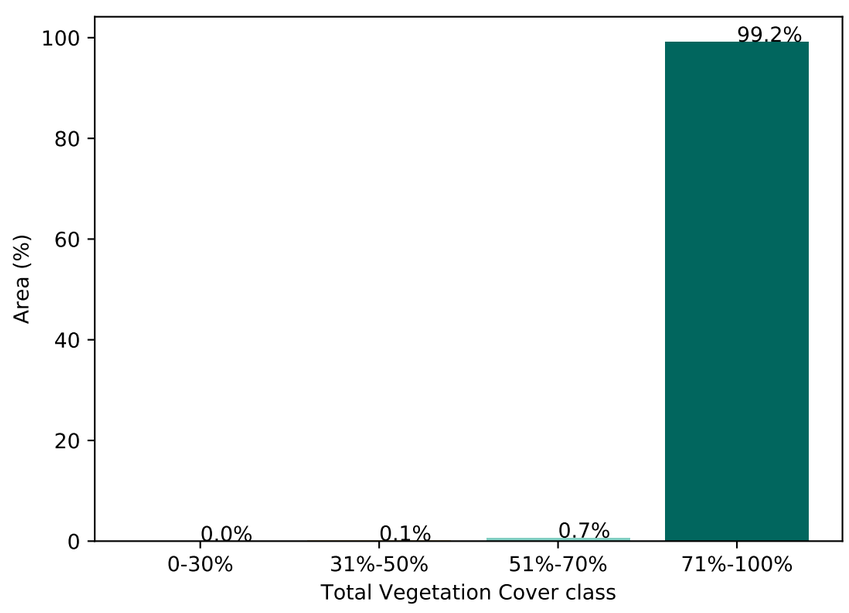
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is <_ 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



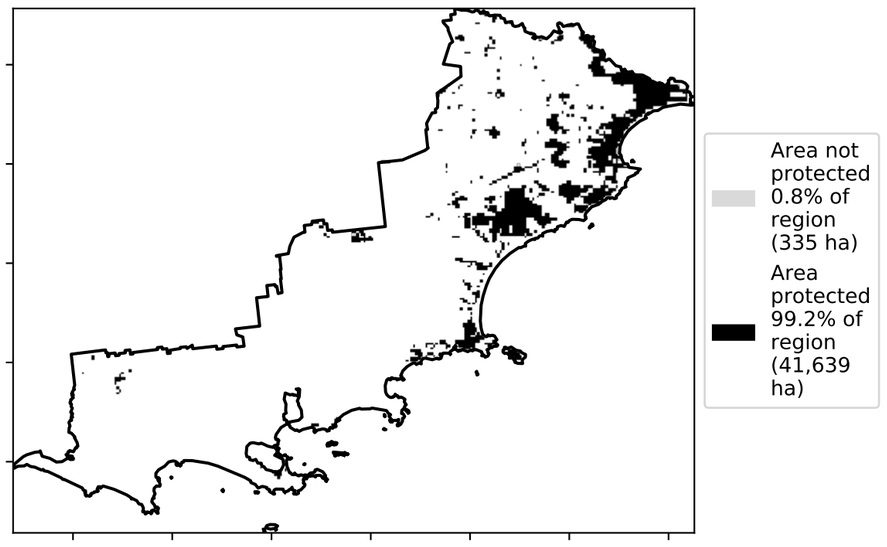
Total Vegetation Cover [%]



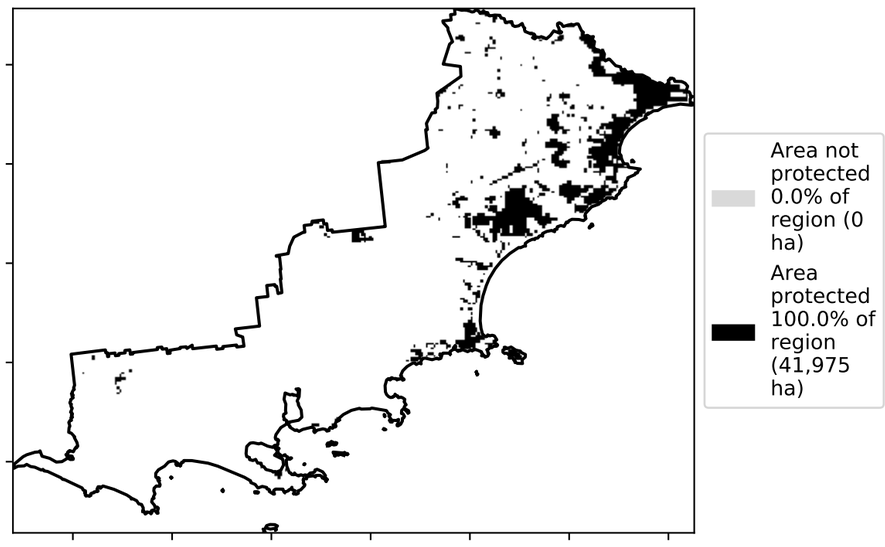
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

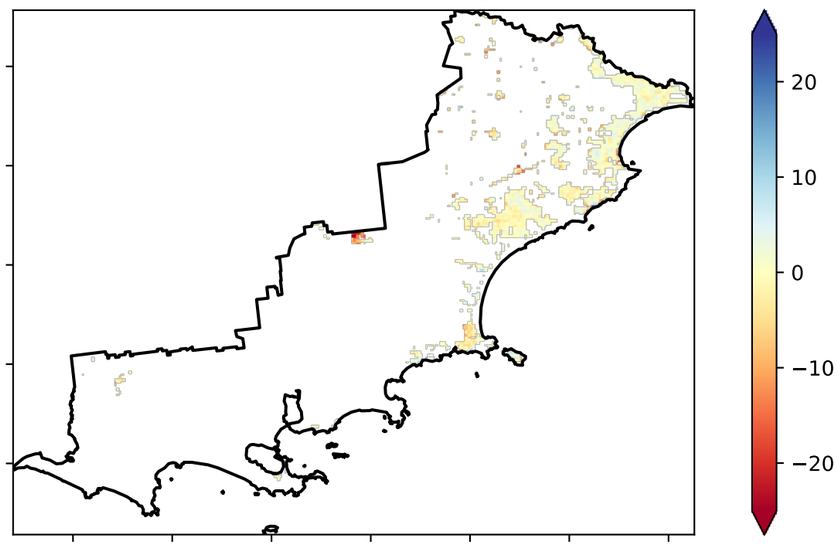


% Area protected from wind erosion (>50%)



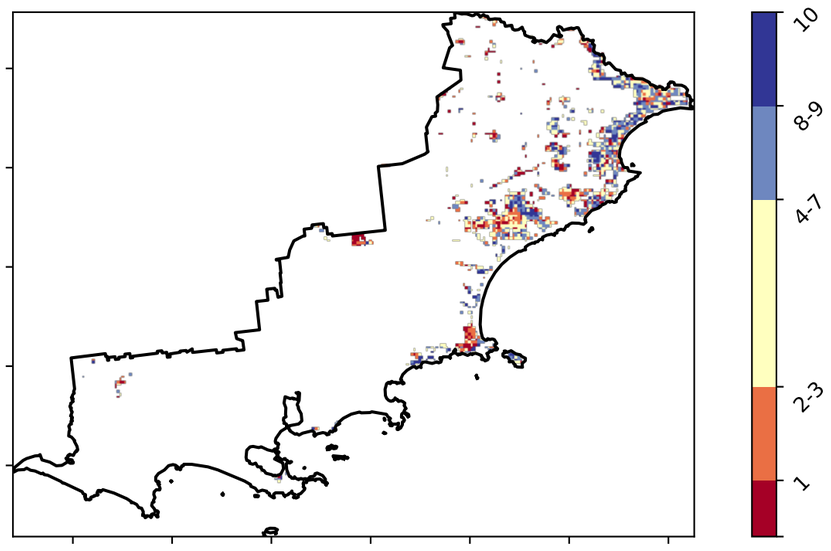
Total Vegetation Cover Anomaly [%]

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.



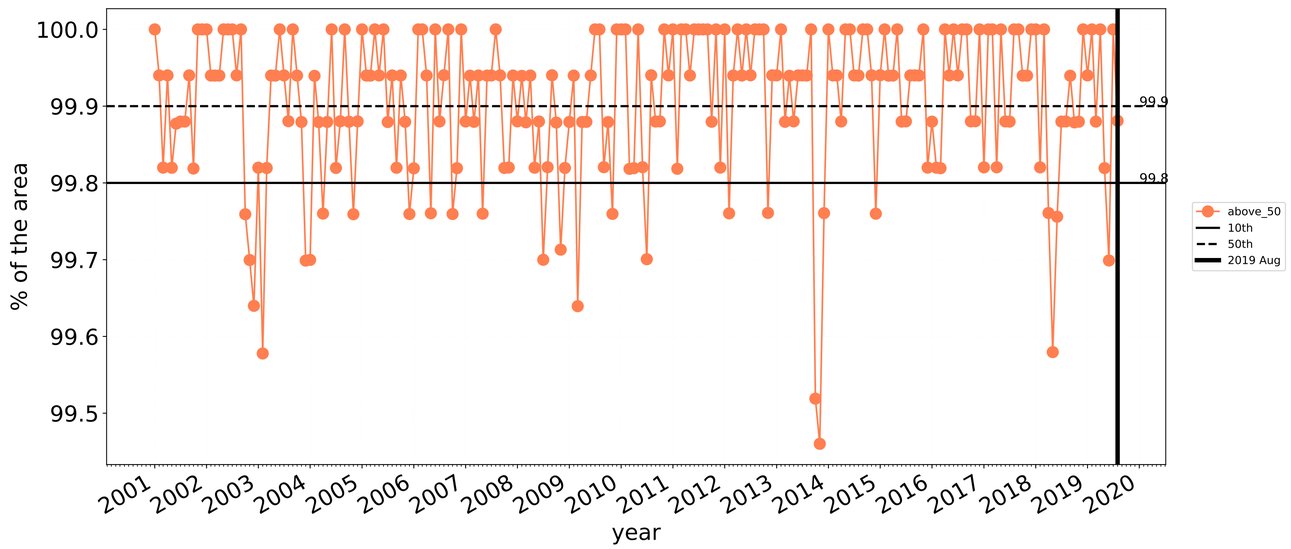
Total Vegetation Cover Decile [%]

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.

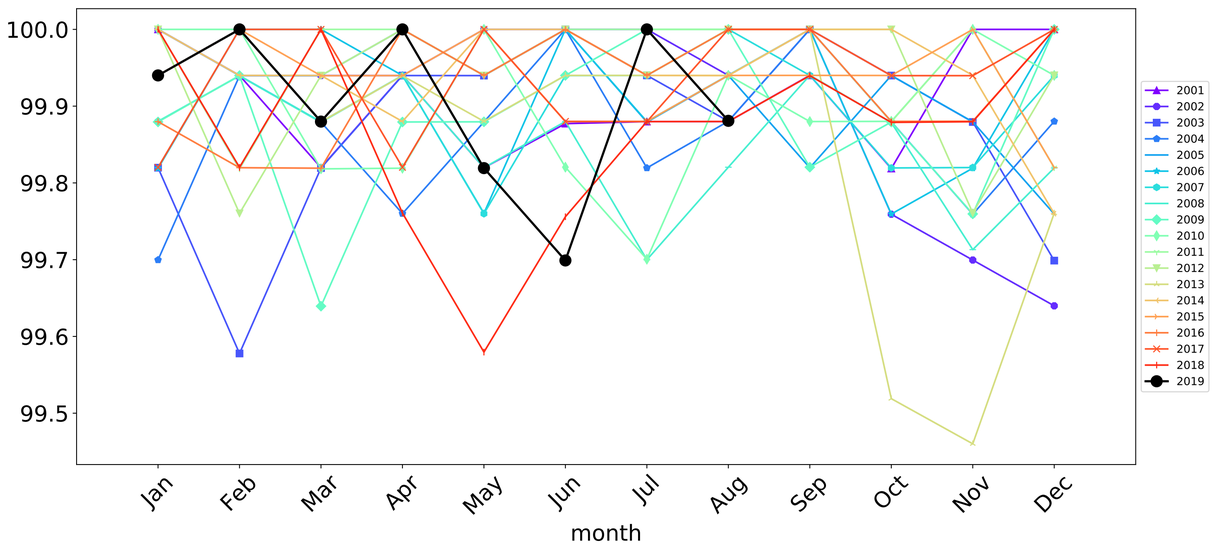


Conservation and natural environments Woodland forest timeseries

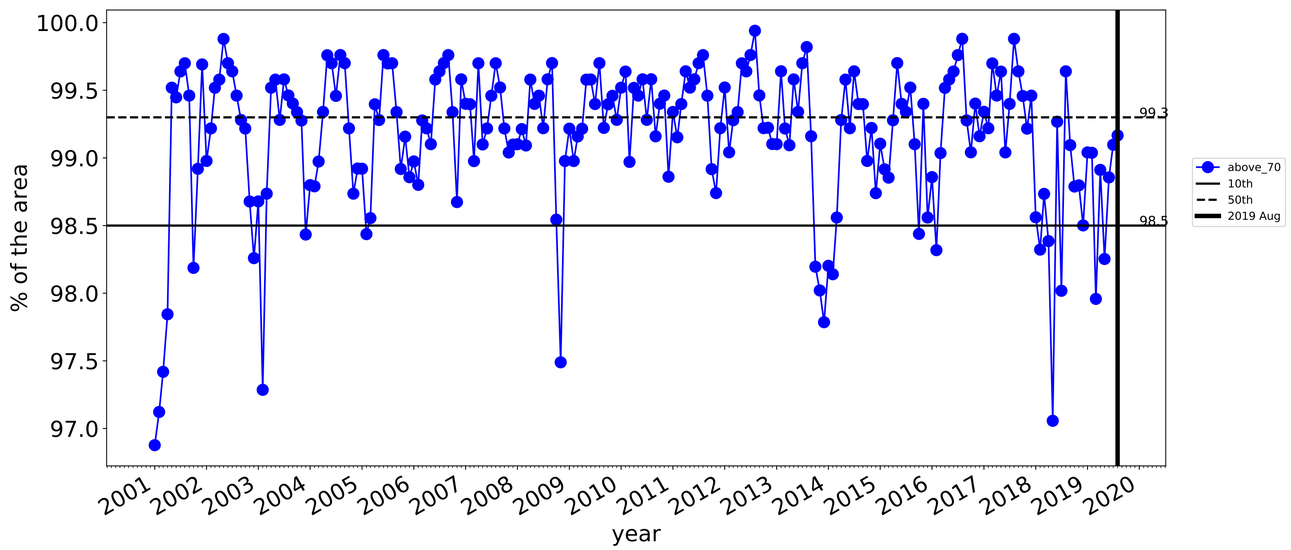
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



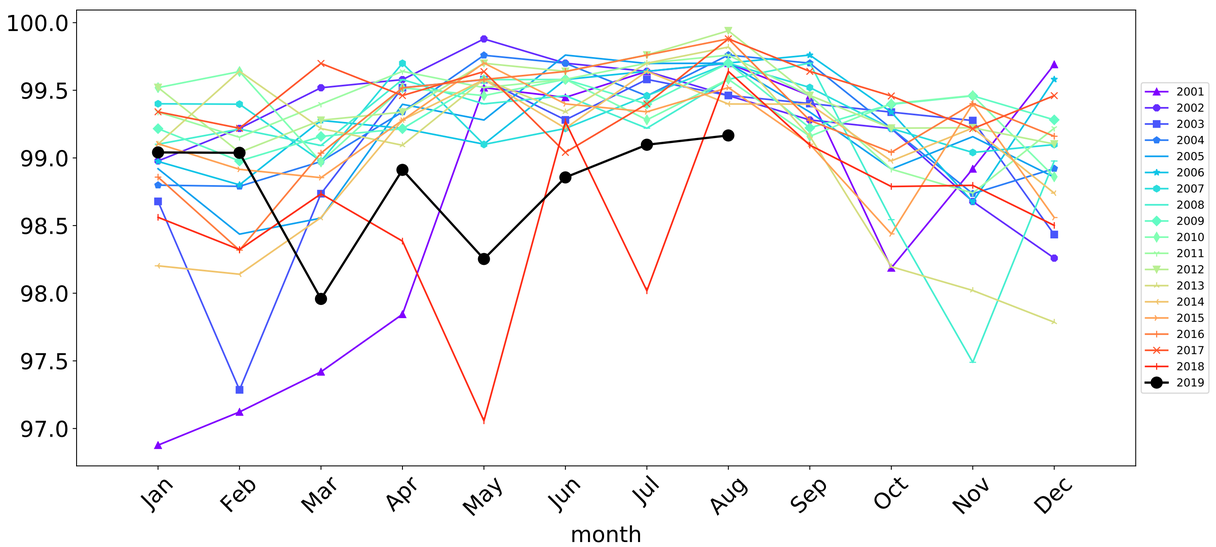
Wind erosion historical monthly area protected (Total Veg Cov >50%)



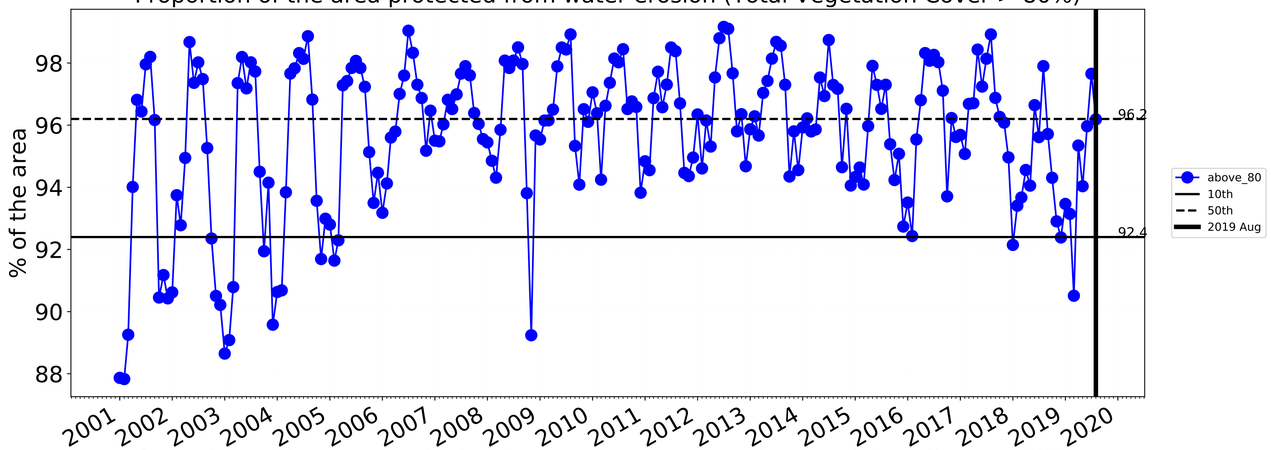
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



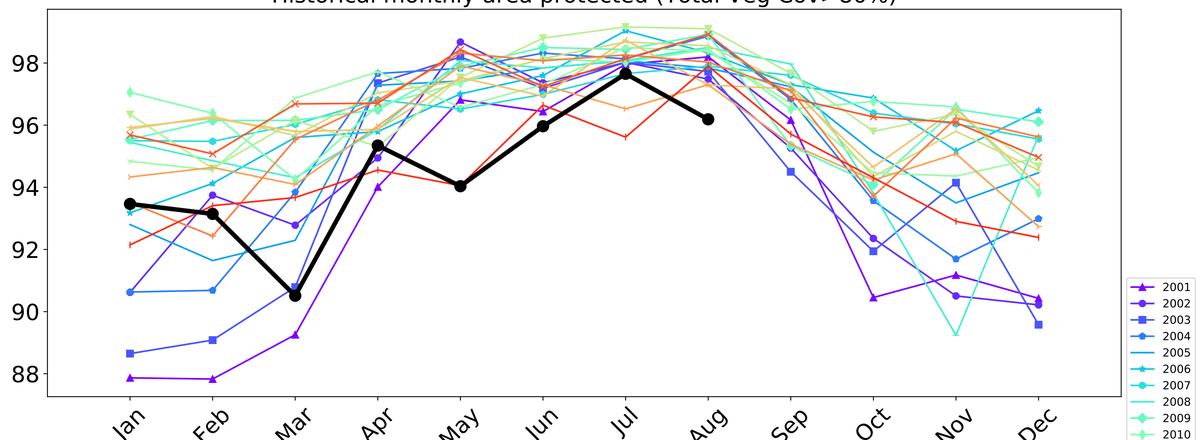
Water erosion historical monthly area protected (Total Veg Cov>70%)



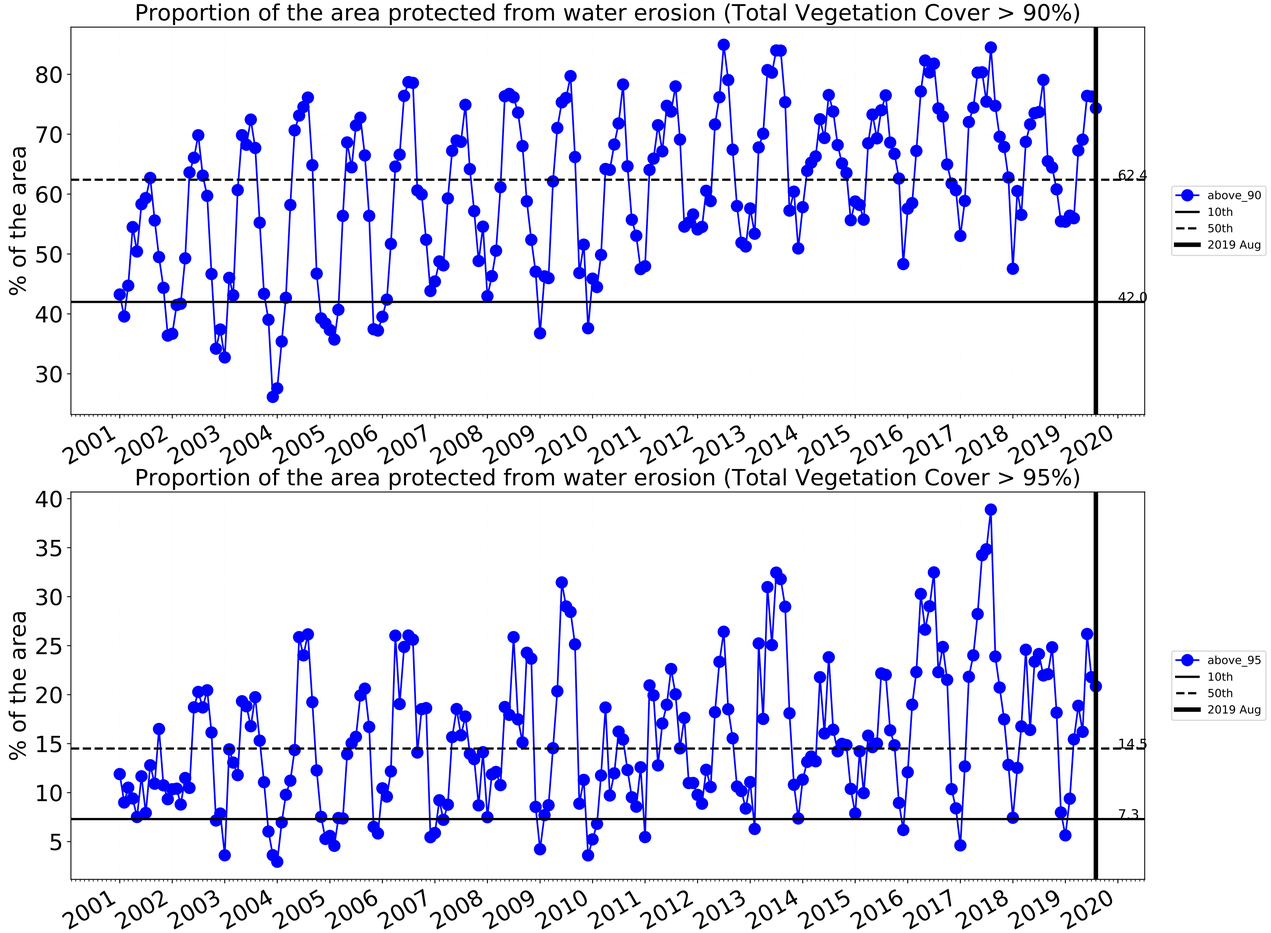
Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)



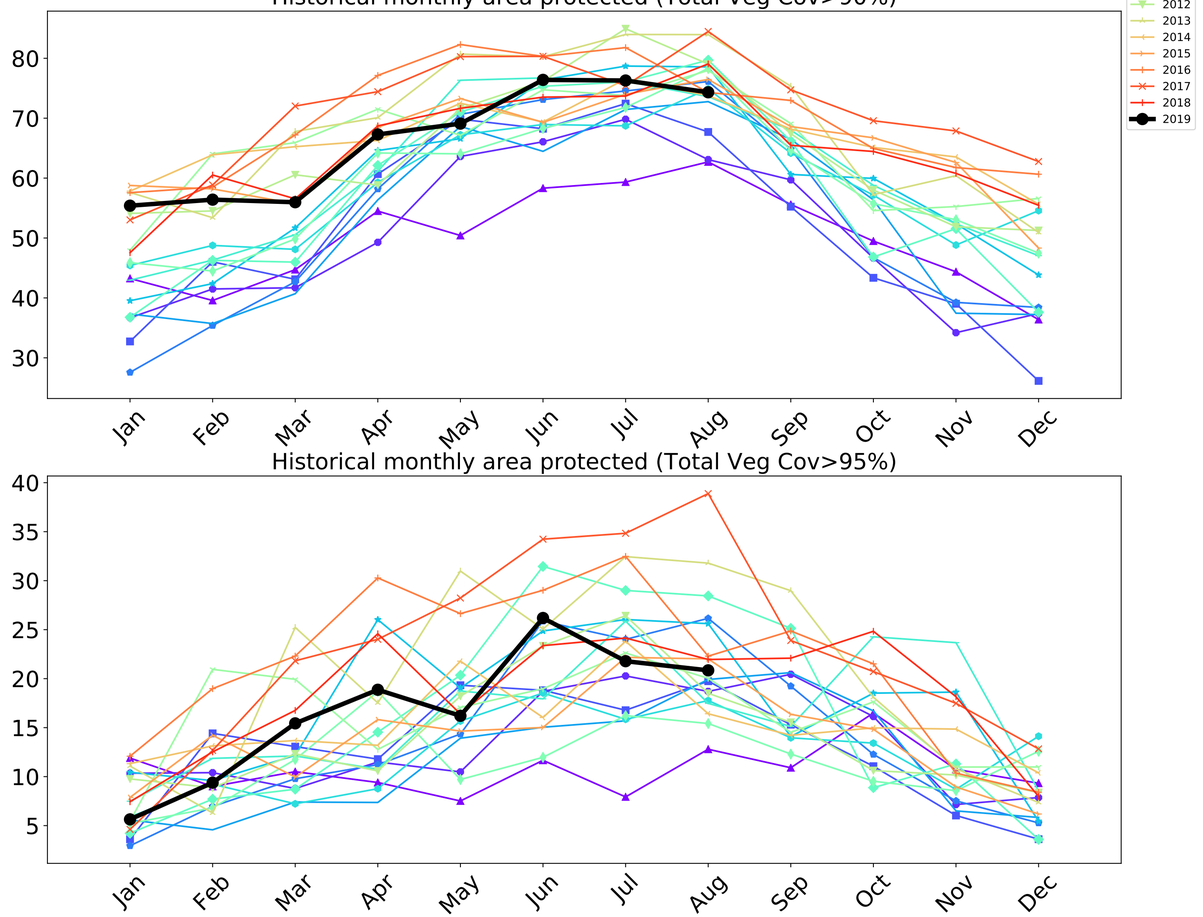
Historical monthly area protected (Total Veg Cov>80%)



Proportion of the area protected from water erosion (Total Vegetation Cover > 90%)



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



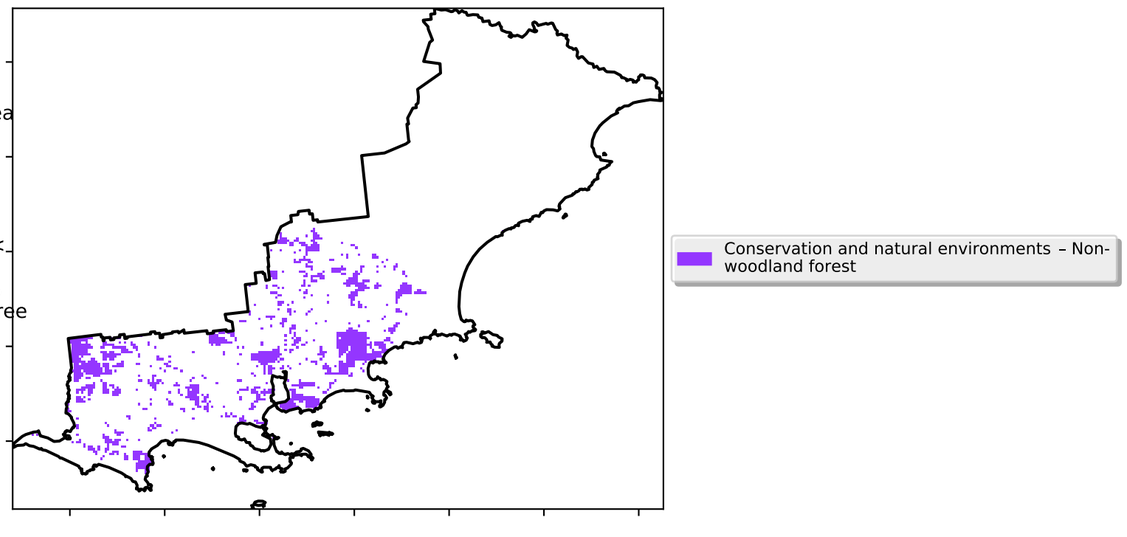
Proportion of the area protected from water erosion (Total Vegetation Cover > 95%)

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

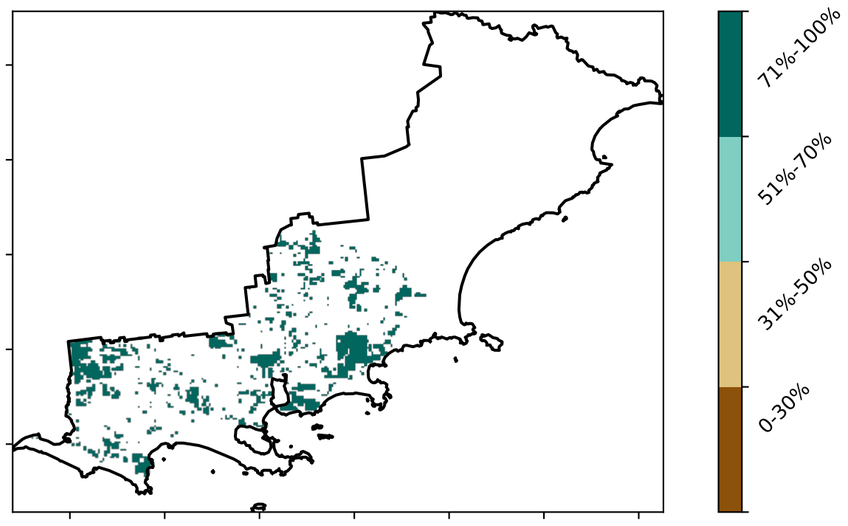
Conservation and natural environments Forest (non woodland)

Land use and forest cover

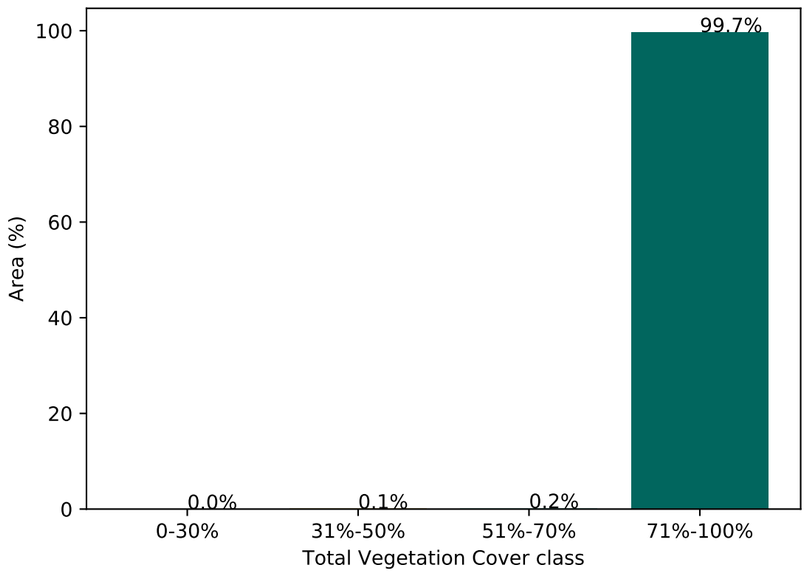
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is <20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



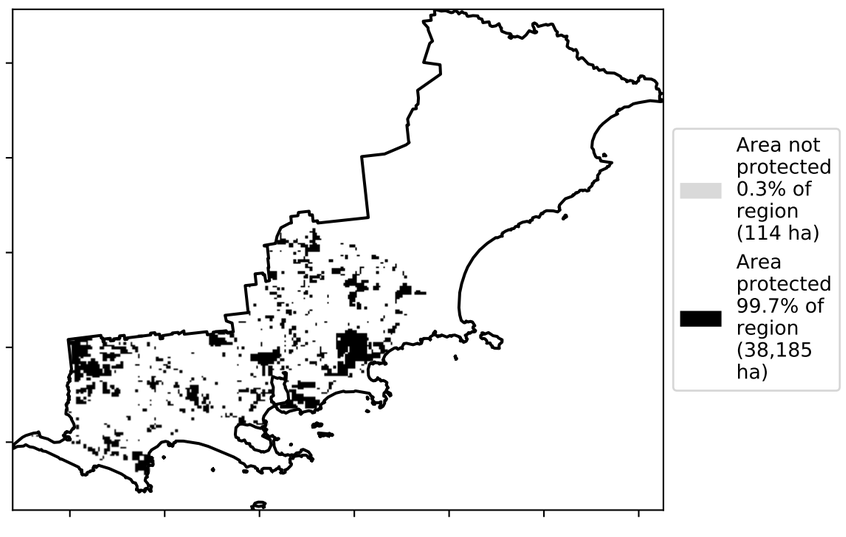
Total Vegetation Cover [%]



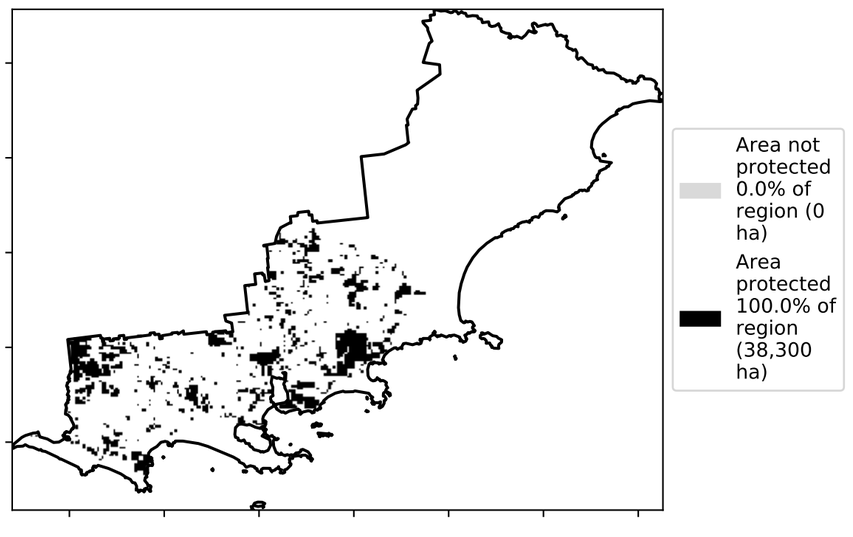
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

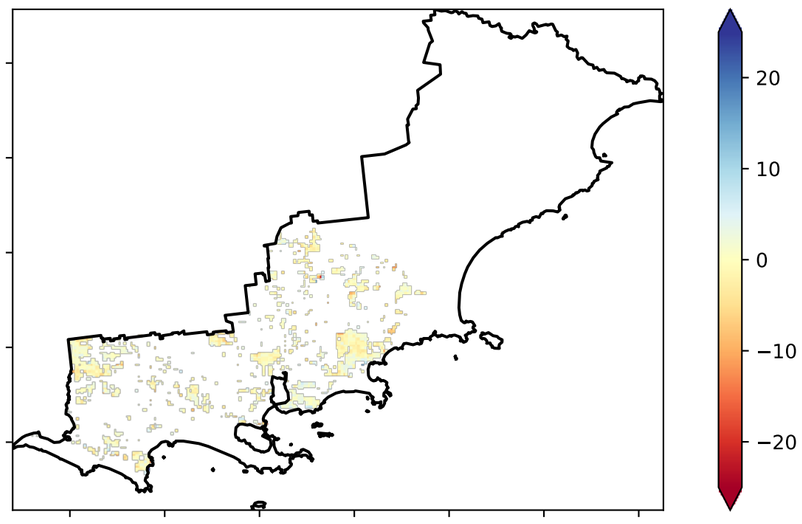


% Area protected from wind erosion (>50%)



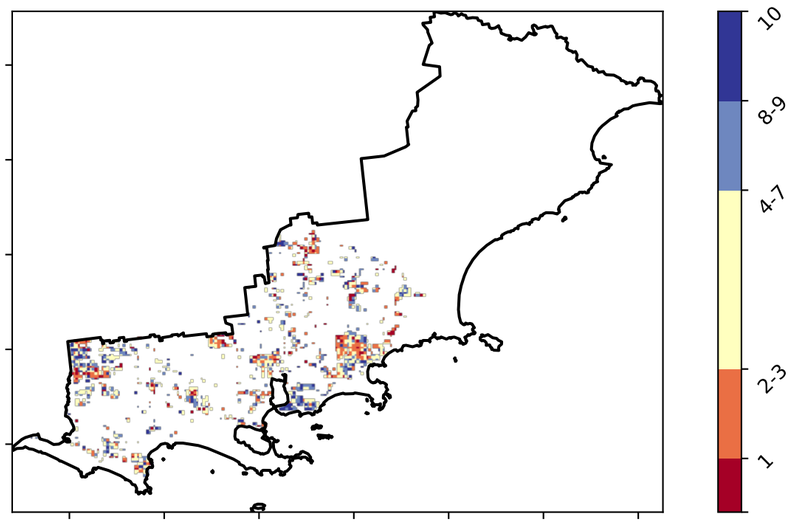
Total Vegetation Cover Anomaly [%]

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.



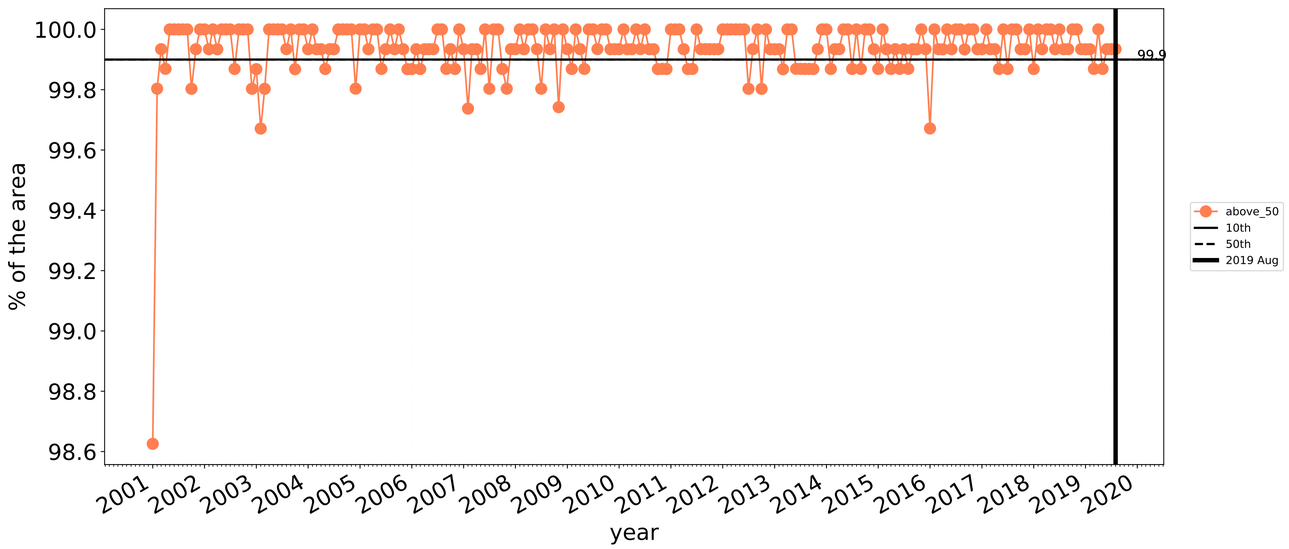
Total Vegetation Cover Decile [%]

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.

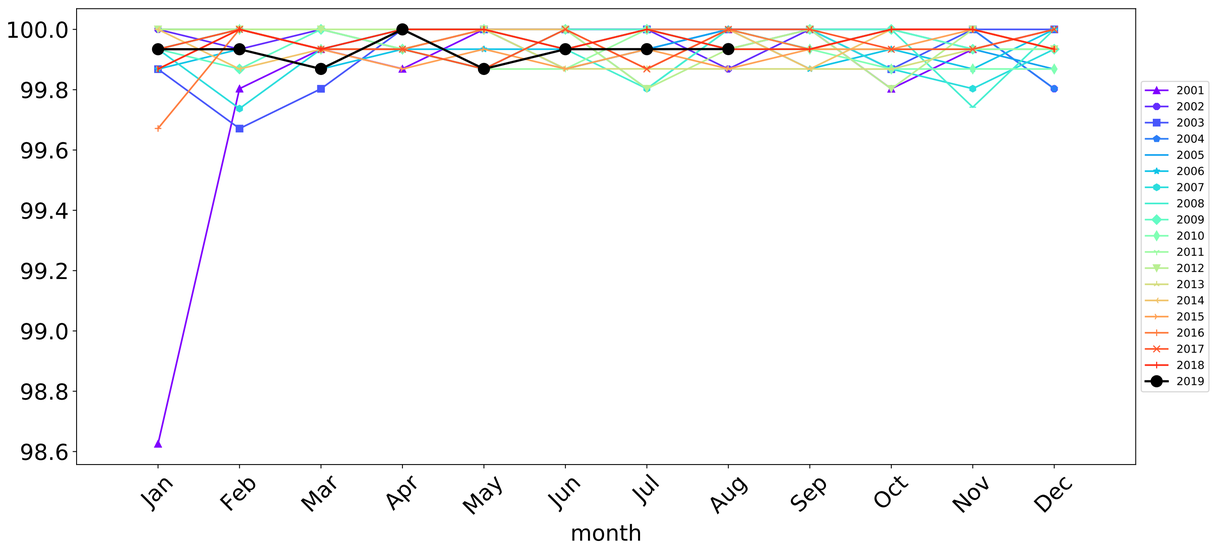


Conservation and natural environments Forest (non woodland) timeseries

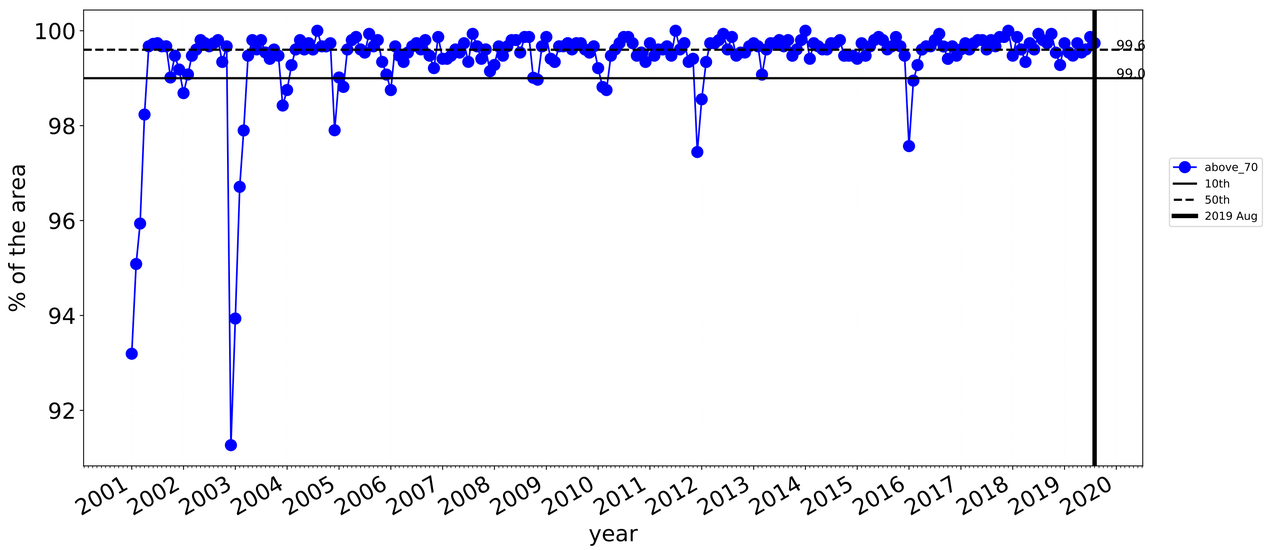
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



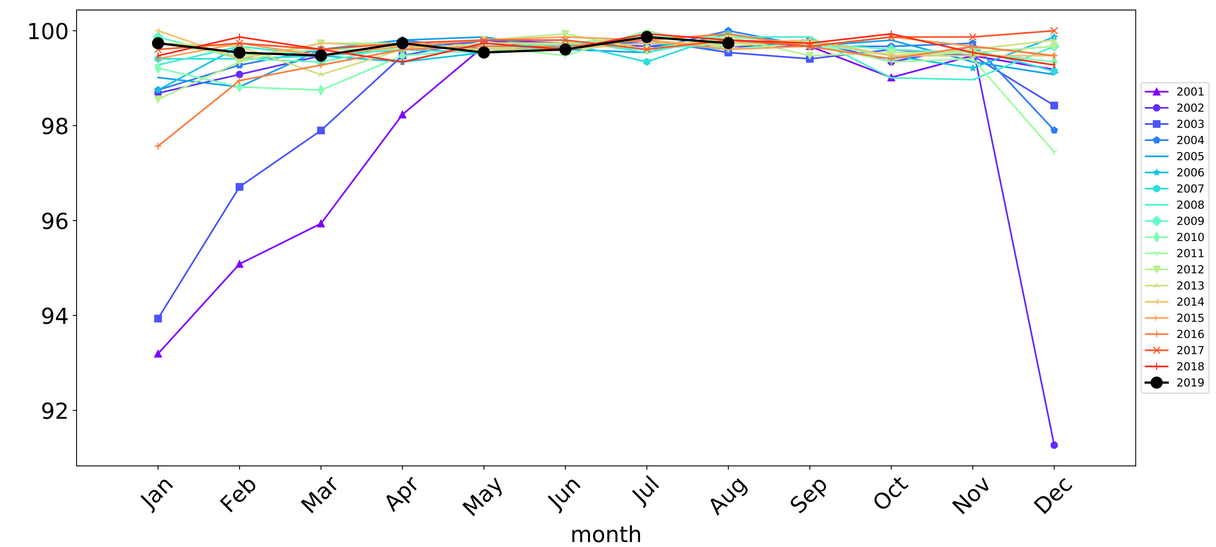
Wind erosion historical monthly area protected (Total Veg Cov >50%)

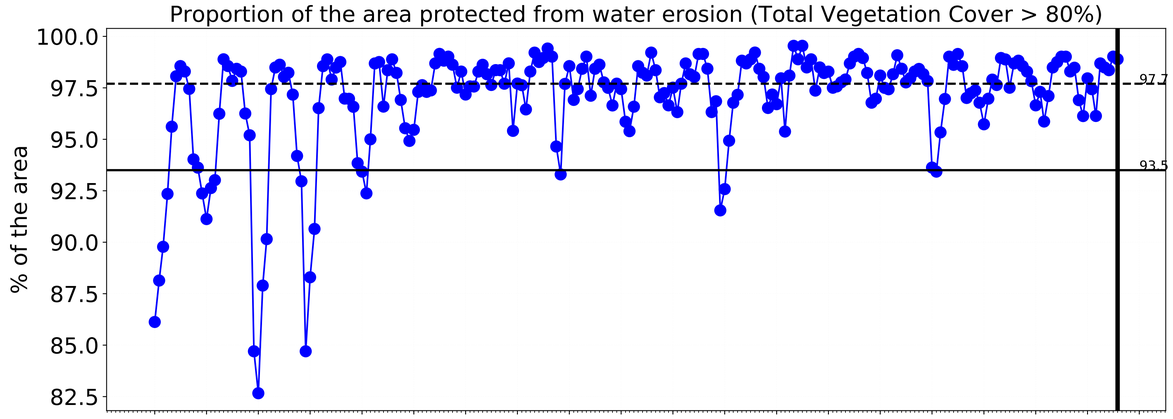


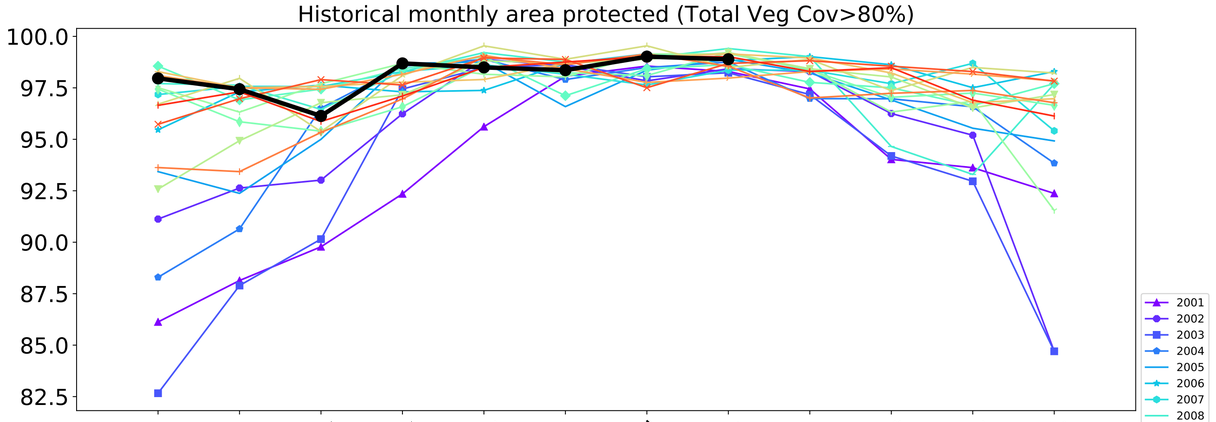
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

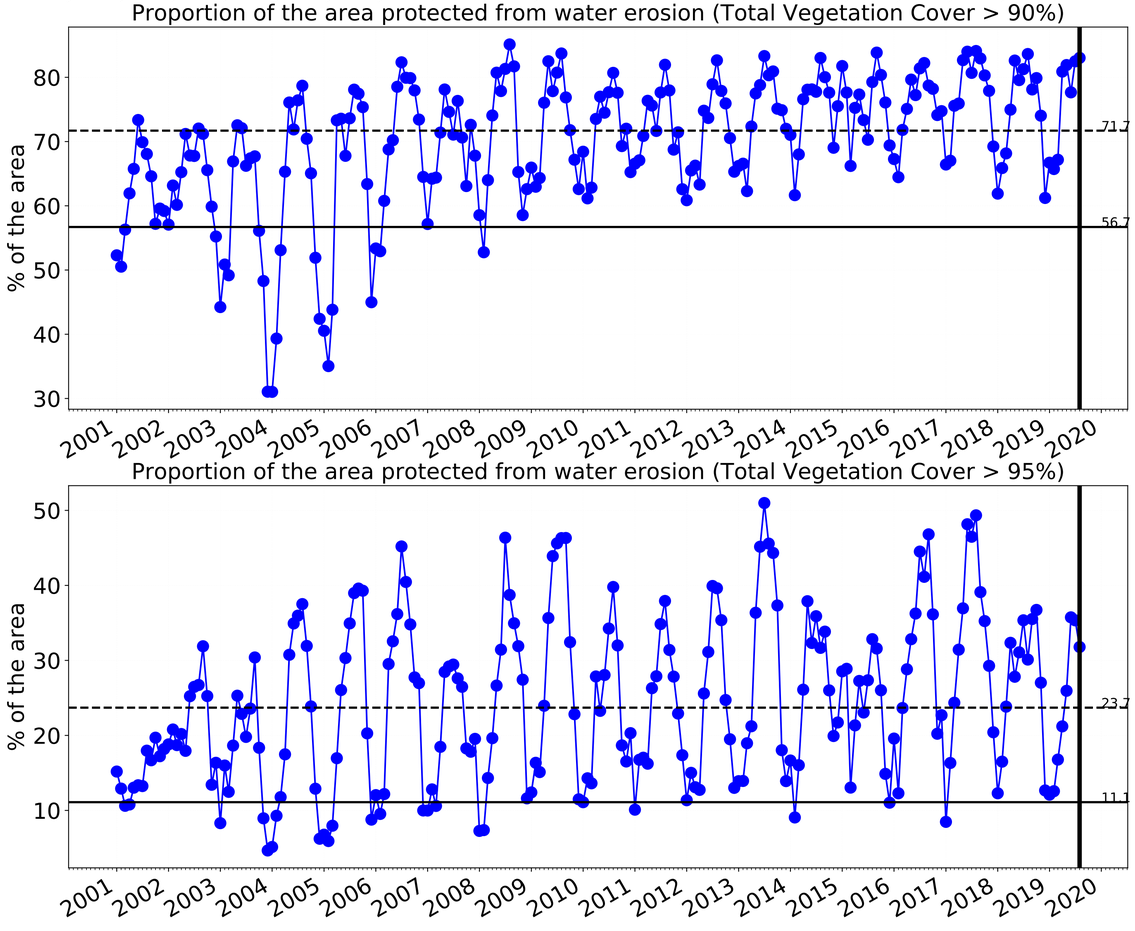


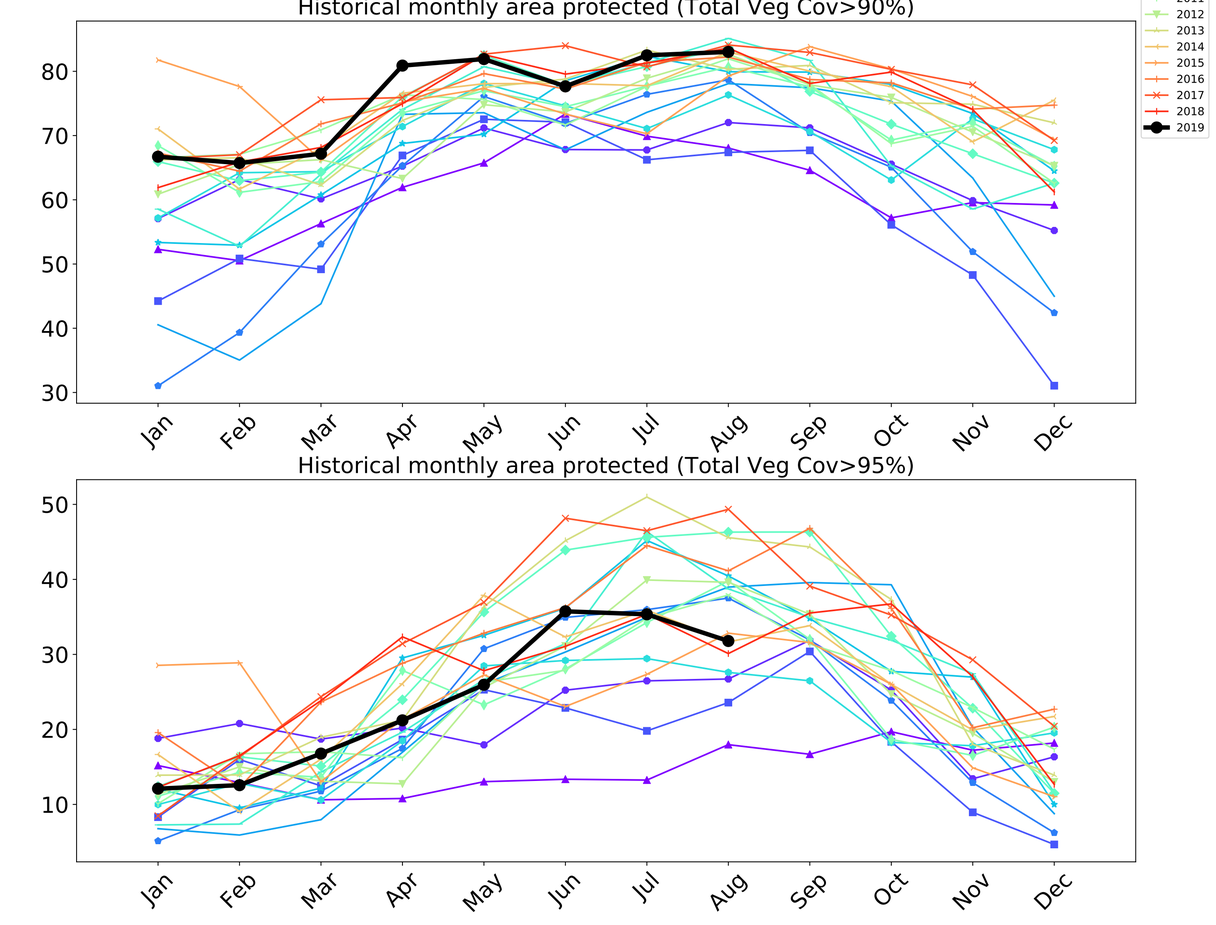
Water erosion historical monthly area protected (Total Veg Cov>70%)




Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)
% of the area
97.7
93.5
above_80
10th
50th
2019 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
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019

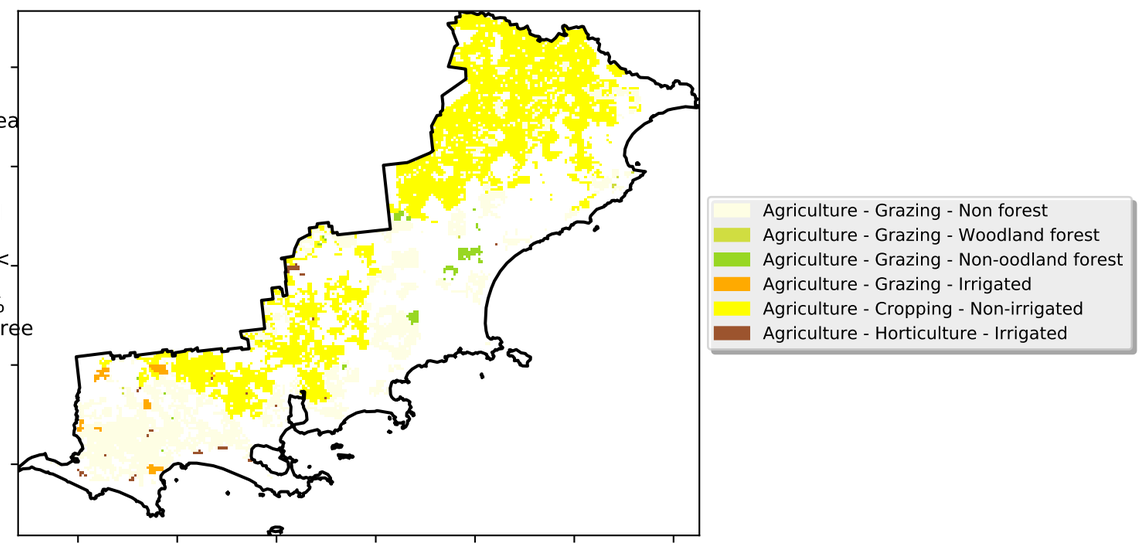

Proportion of the area protected from water erosion (Total Vegetation Cover > 90%)
% of the area
71.7
56.7
above_90
10th
50th
2019 Aug
Proportion of the area protected from water erosion (Total Vegetation Cover > 95%)
% of the area
23.7
11.1
above_95
10th
50th
2019 Aug


Historical monthly area protected (Total Veg Cov>90%)
Historical monthly area protected (Total Veg Cov>95%)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019

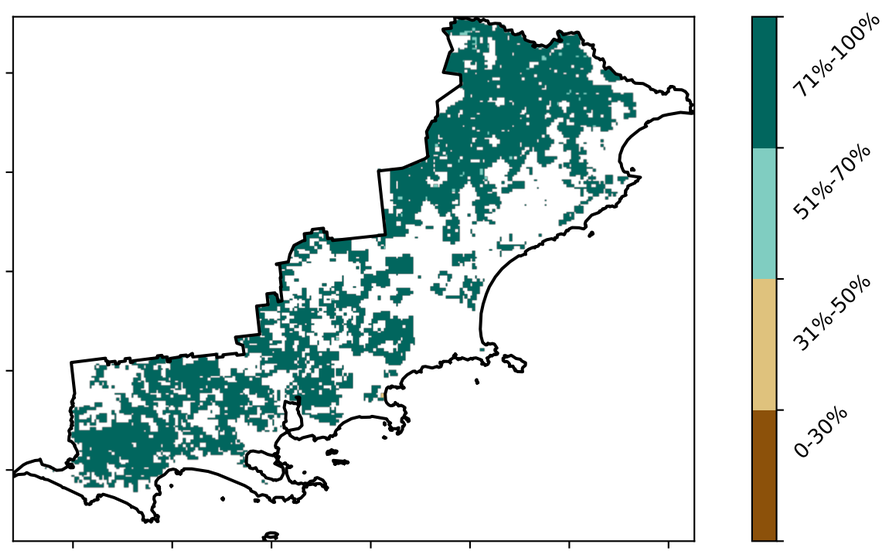
Agriculture

Land use and forest cover

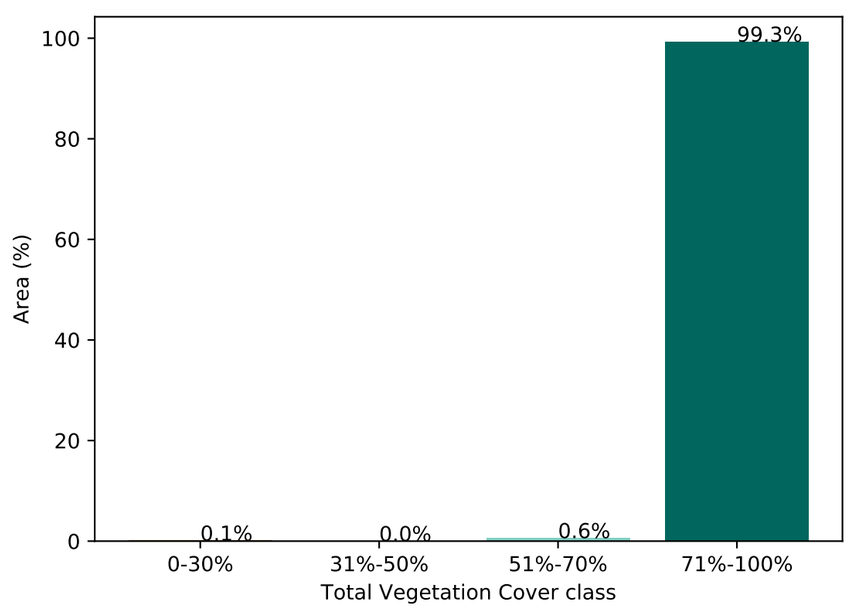
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is <_ 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



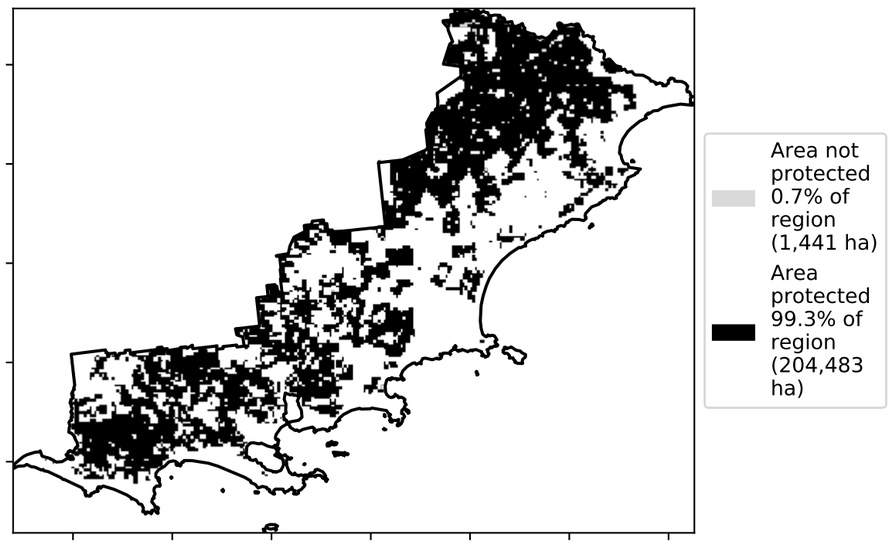
Total Vegetation Cover [%]



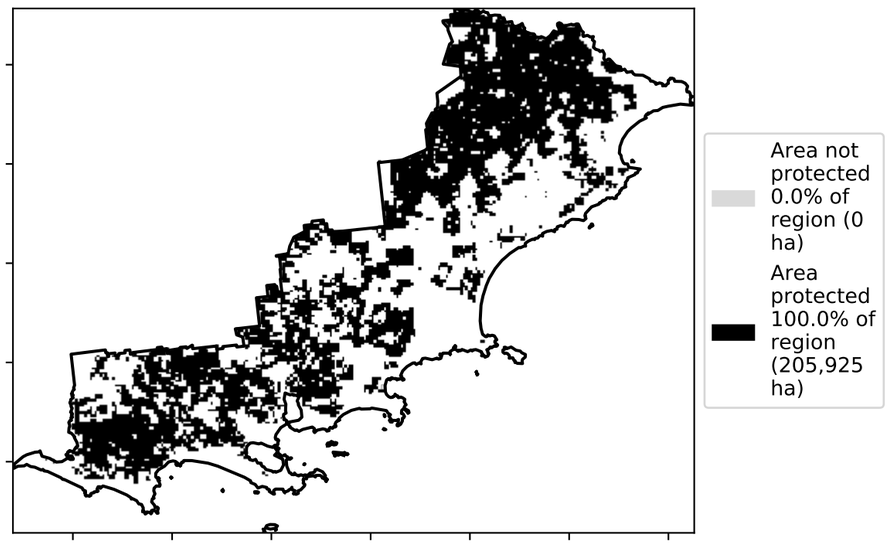
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

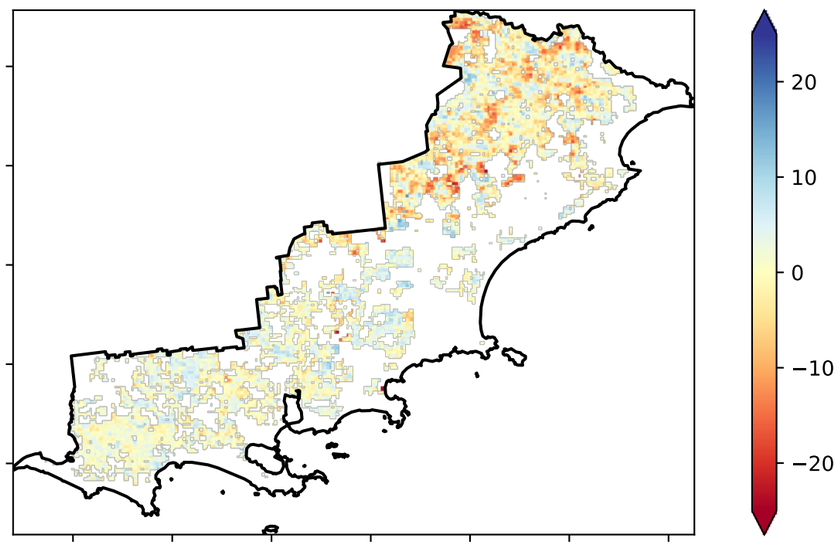


% Area protected from wind erosion (>50%)



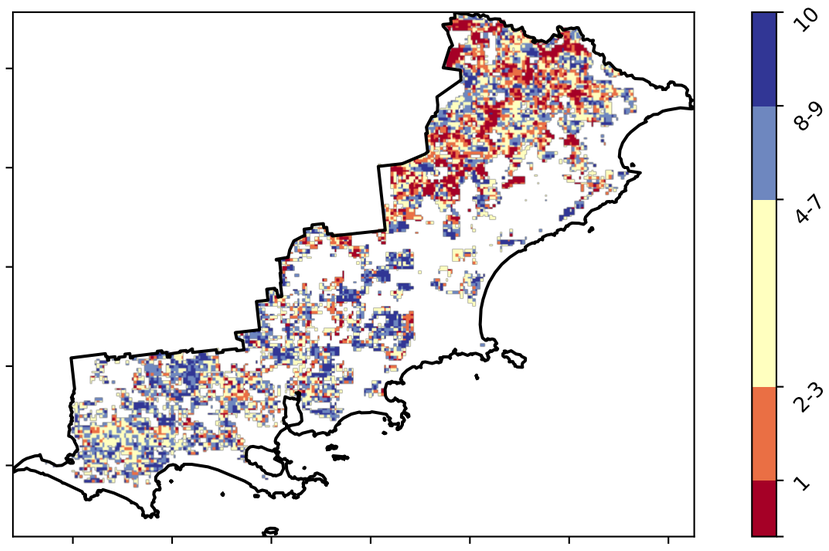
Total Vegetation Cover Anomaly [%]

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.



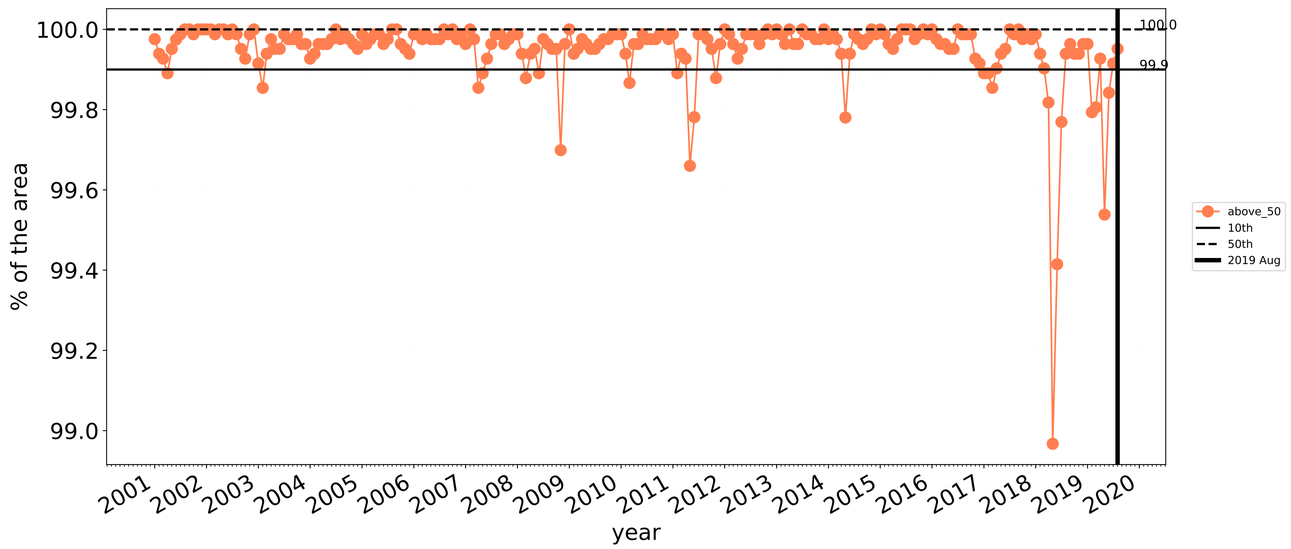
Total Vegetation Cover Decile [%]

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.

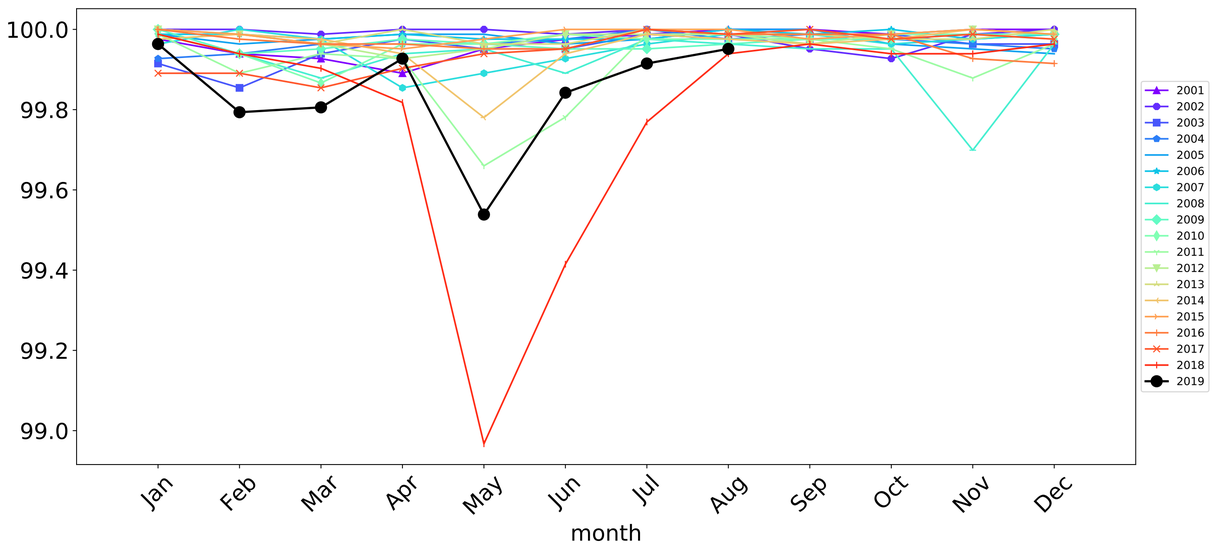


Agriculture timeseries

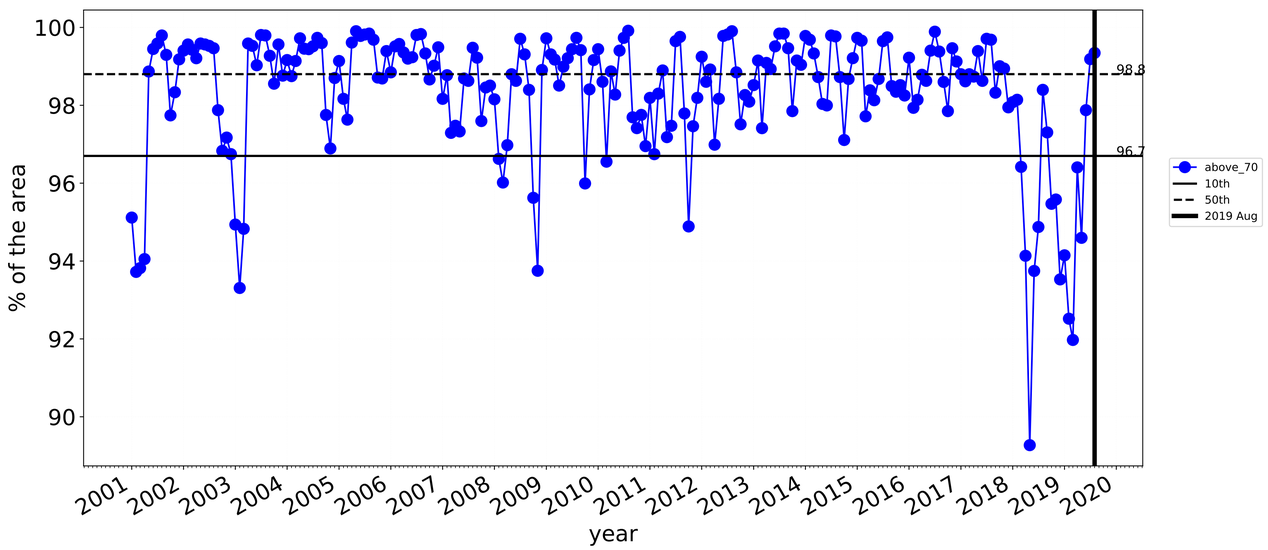
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



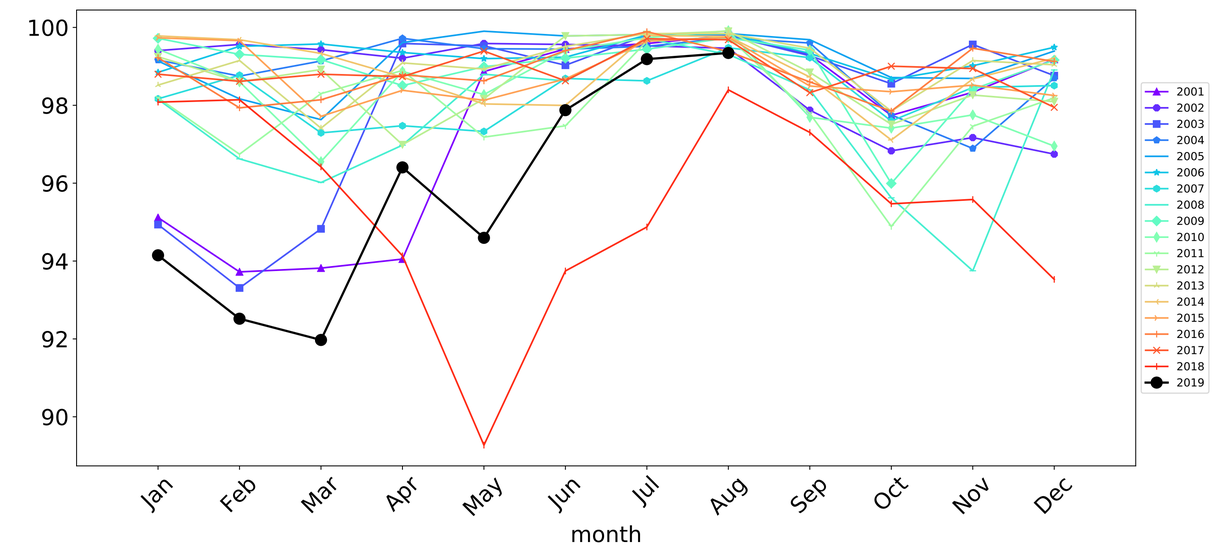
Wind erosion historical monthly area protected (Total Veg Cov >50%)

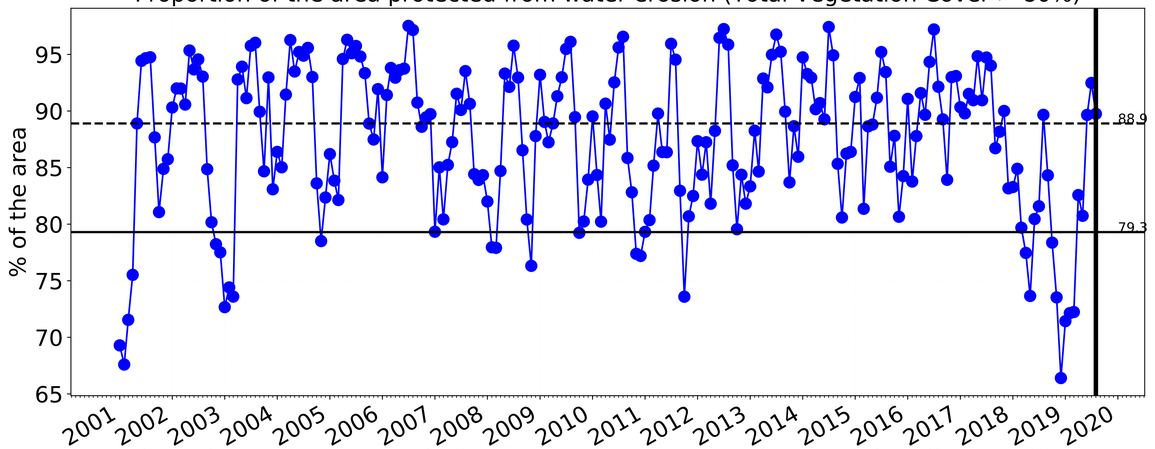


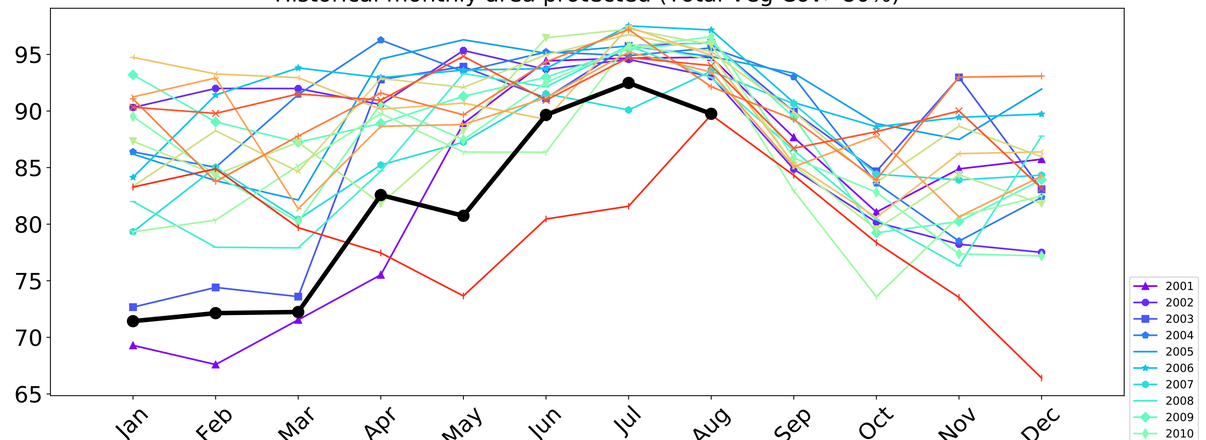
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



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
88.9
79.3
above_80
10th
50th
2019 Aug


Historical monthly area protected (Total Veg Cov>80%)
Jan
Feb
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Oct
Nov
Dec
2001
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2003
2004
2005
2006
2007
2008
2009
2010
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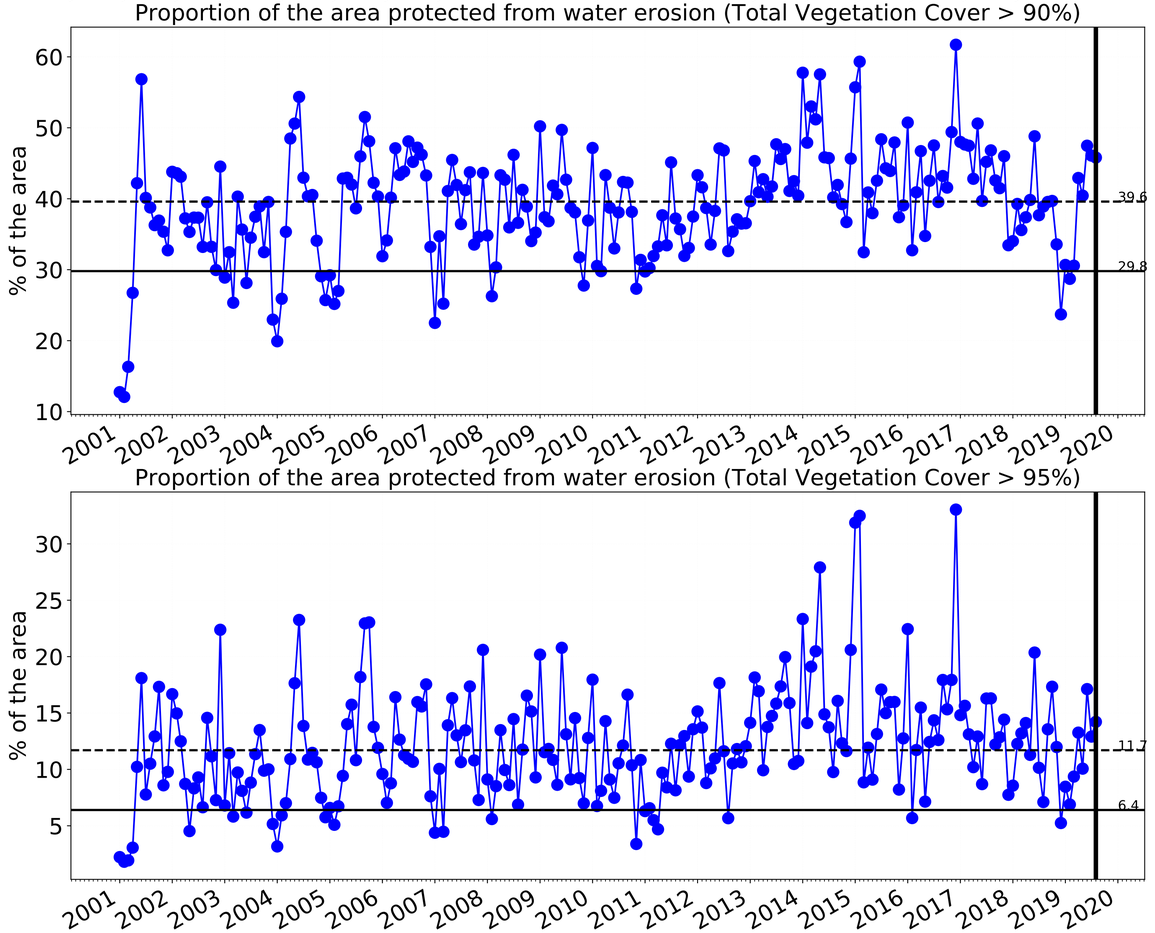
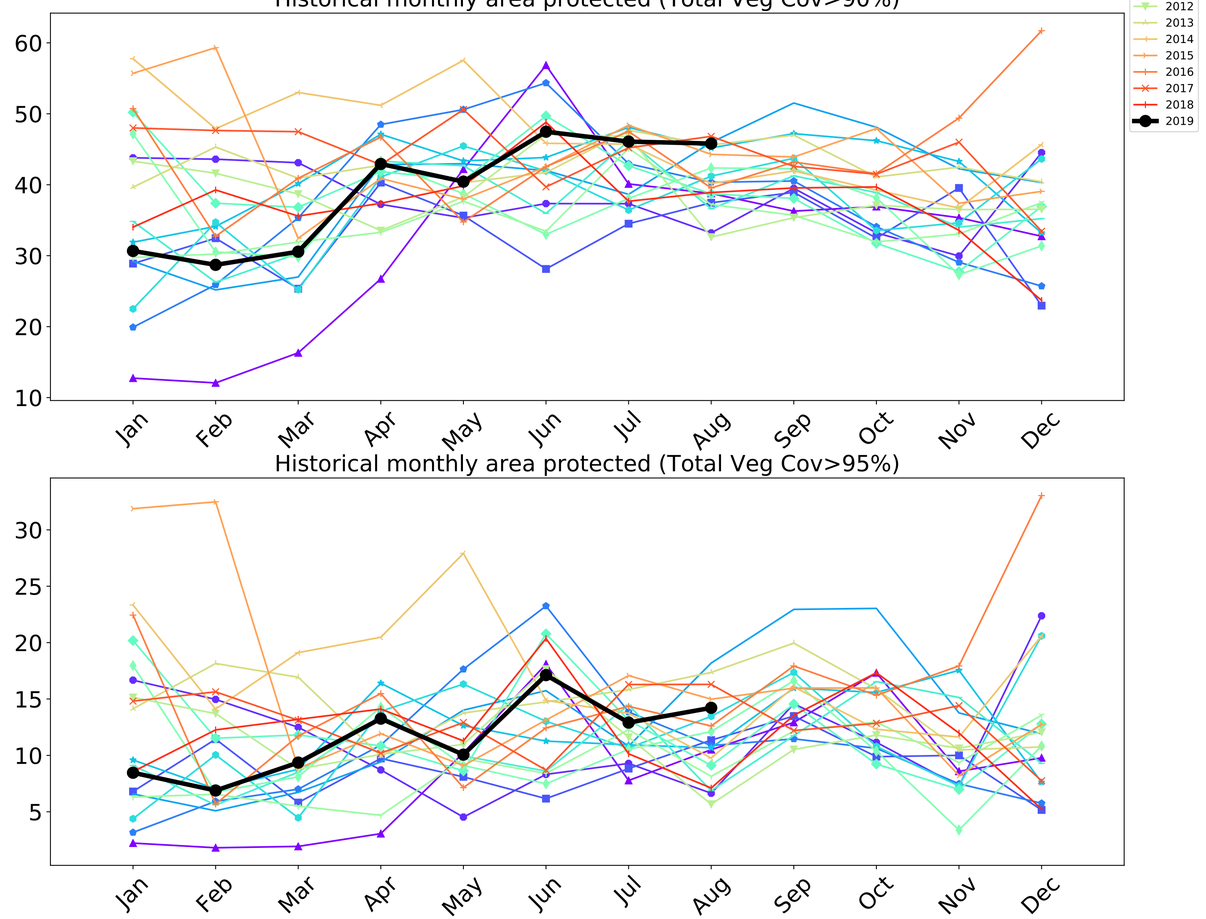
2012
2013
2014
2015
2016
2017
2018
2019


Proportion of the area protected from water erosion (Total Vegetation Cover > 90%)
% of the area
39.6
29.8
above_90
10th
50th
2019 Aug
Proportion of the area protected from water erosion (Total Vegetation Cover > 95%)
% of the area
11.7
6.4
above_95
10th
50th
2019 Aug


Historical monthly area protected (Total Veg Cov>90%)
Historical monthly area protected (Total Veg Cov>95%)
Jan
Feb
Mar
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Jun
Jul
Aug
Sep
Oct
Nov
Dec
2001
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2007
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2009
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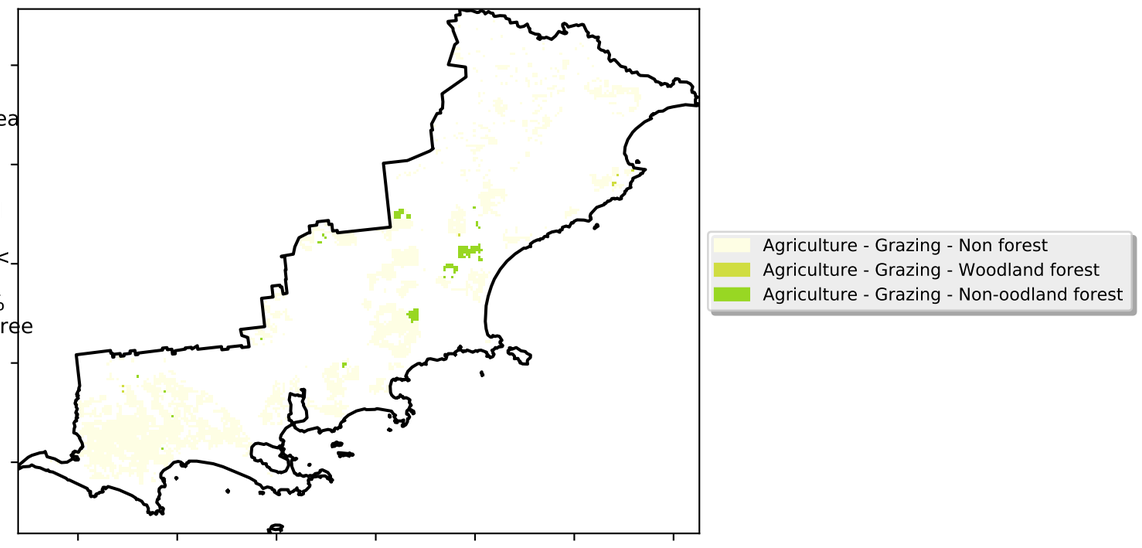
2016
2017
2018
2019

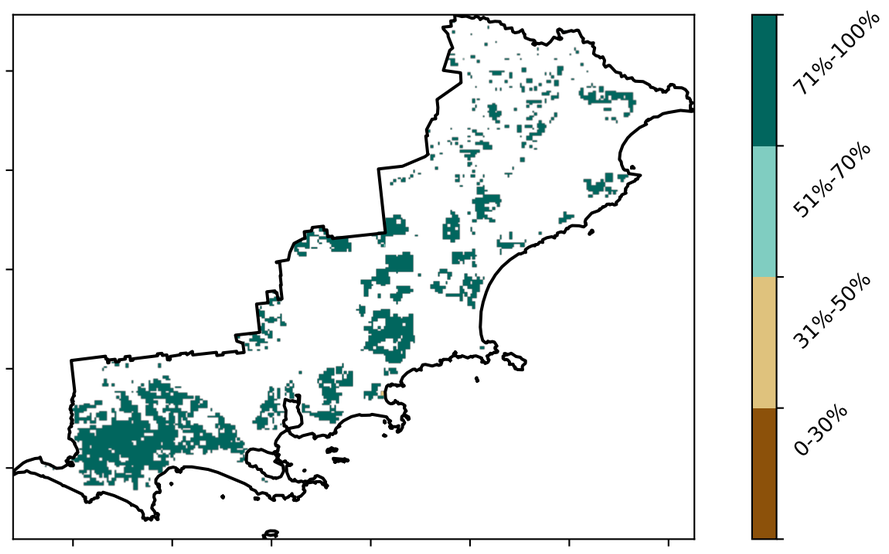
Grazing

Land use and forest cover

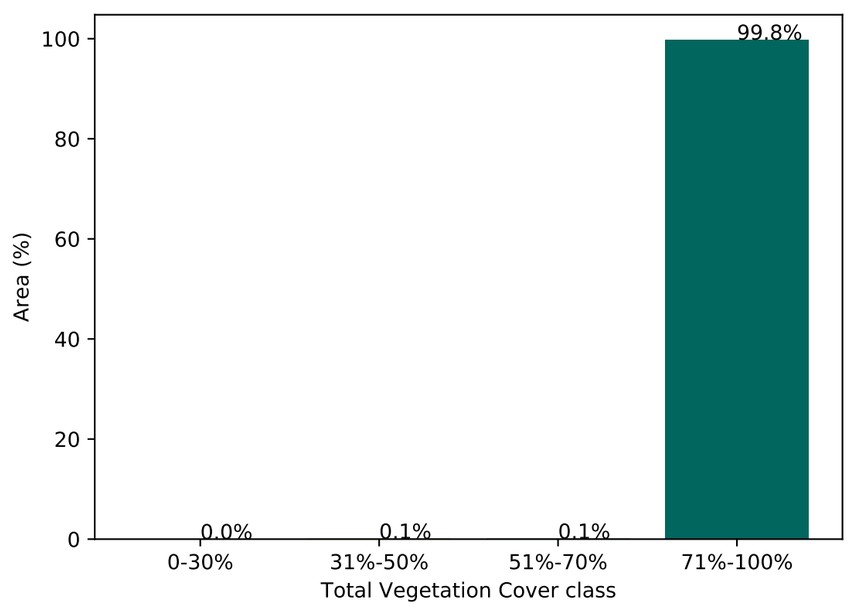


Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is <_ 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.

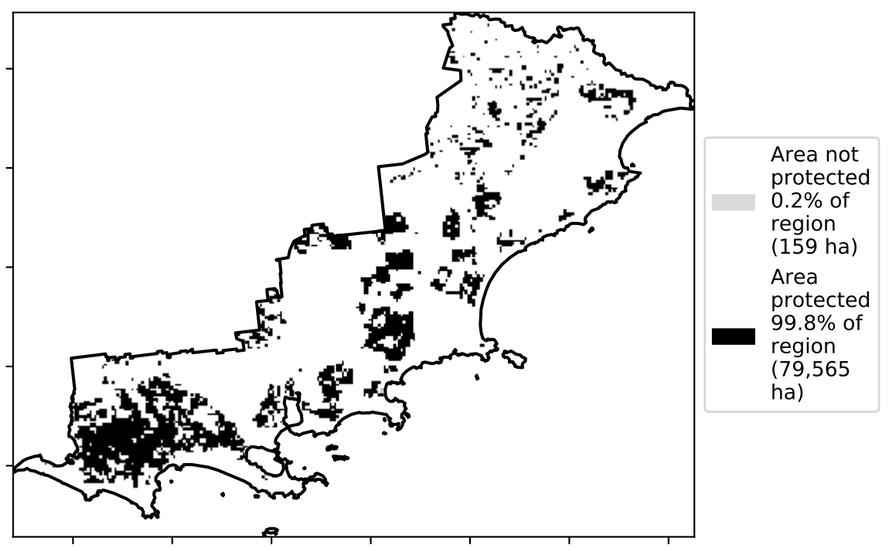
Total Vegetation Cover [%]



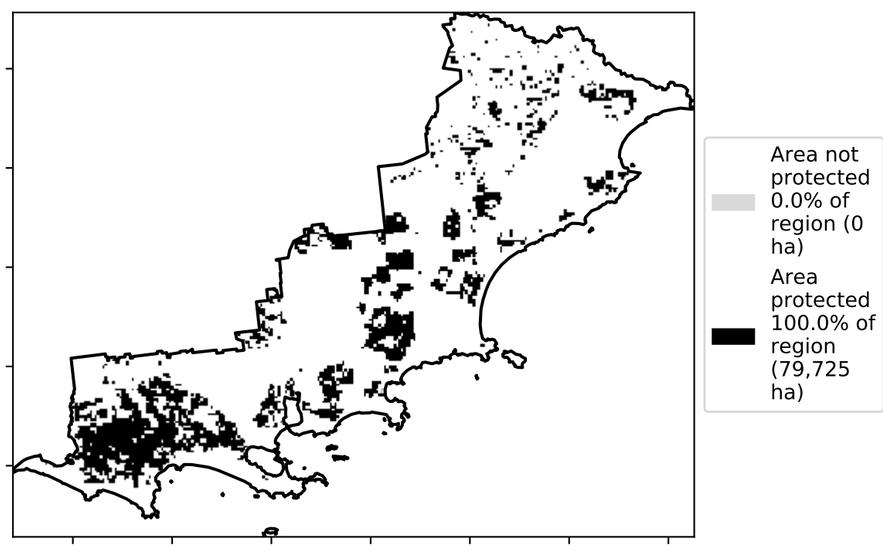
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

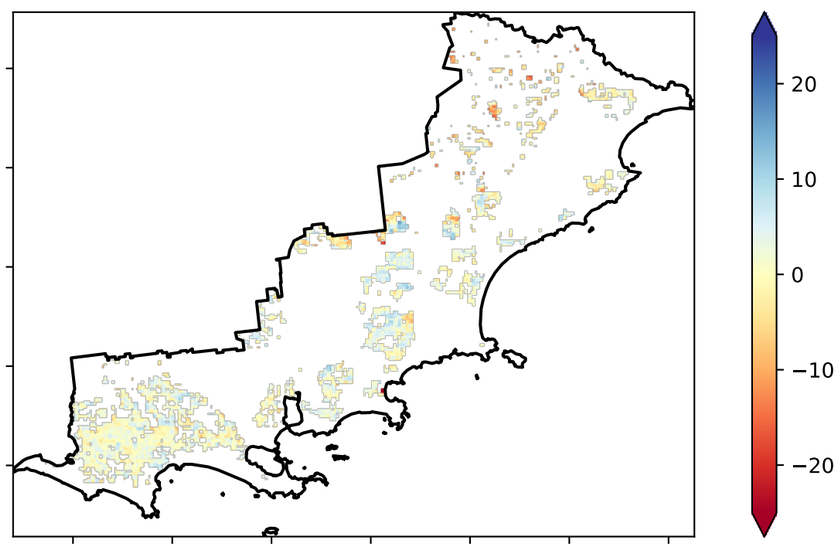


% Area protected from wind erosion (>50%)



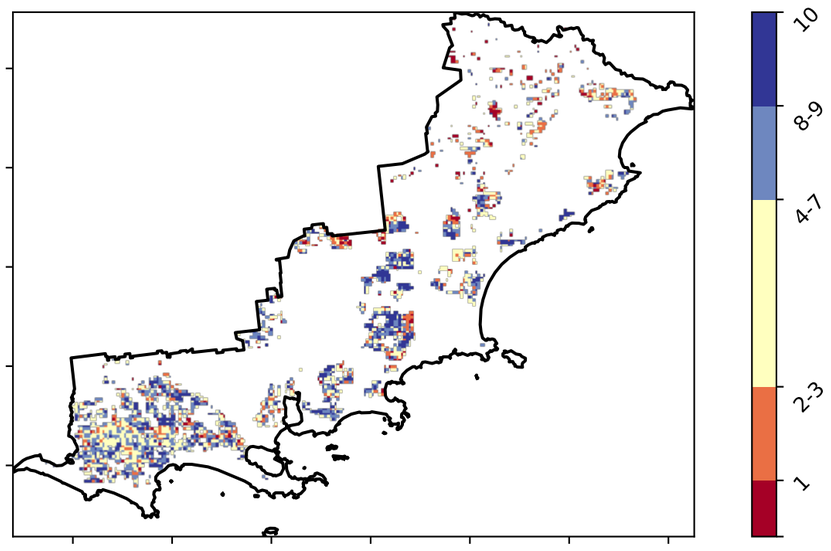
Total Vegetation Cover Anomaly [%]

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.



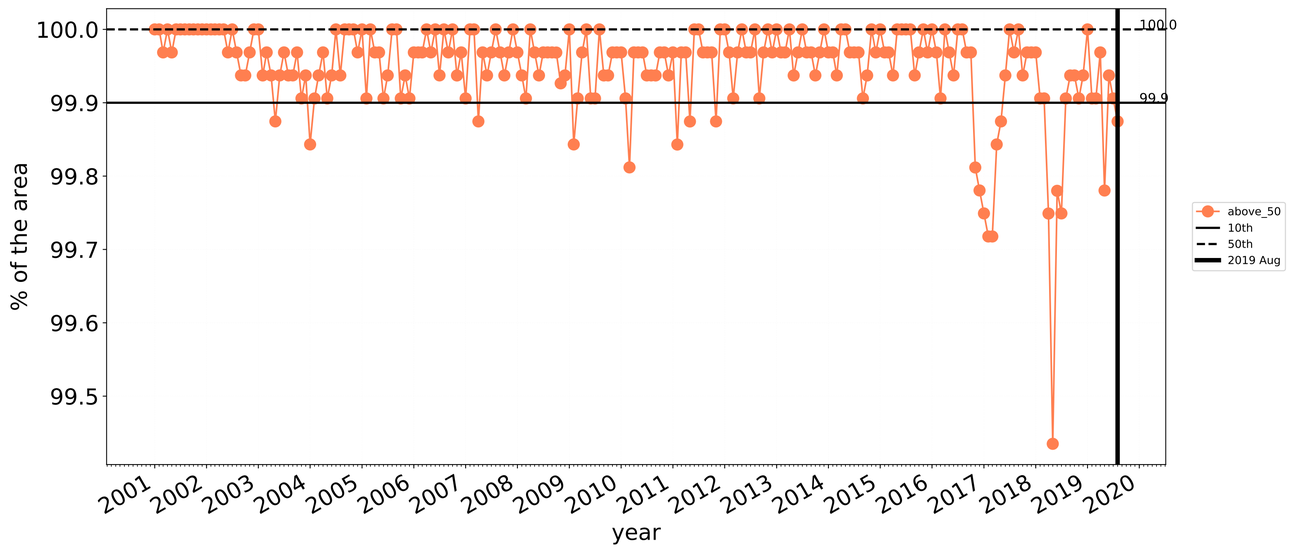
Total Vegetation Cover Decile [%]

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.

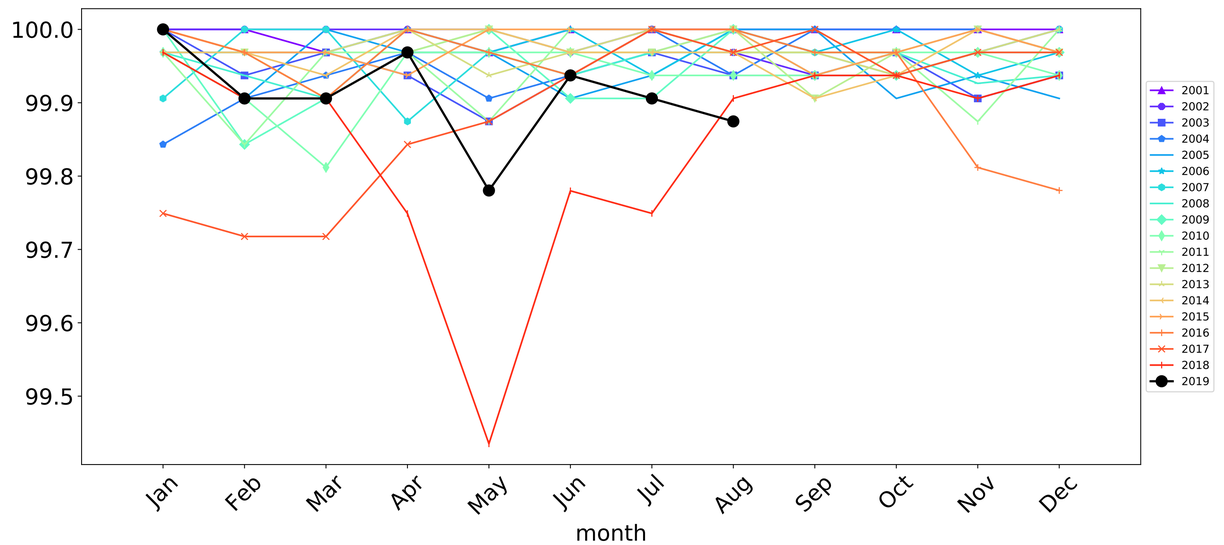


Grazing timeseries

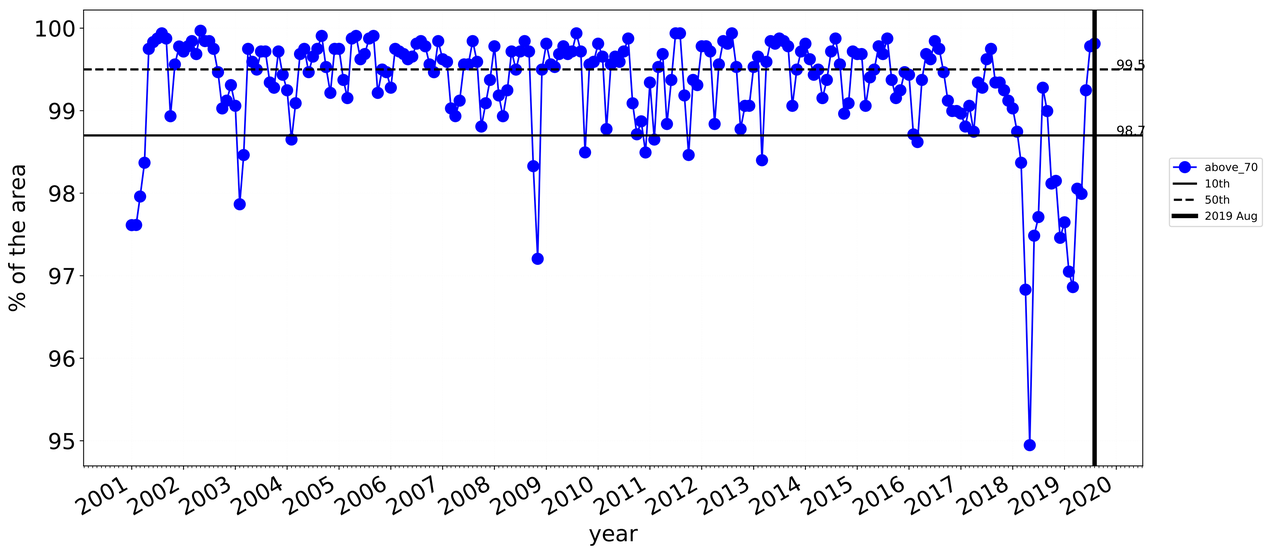
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



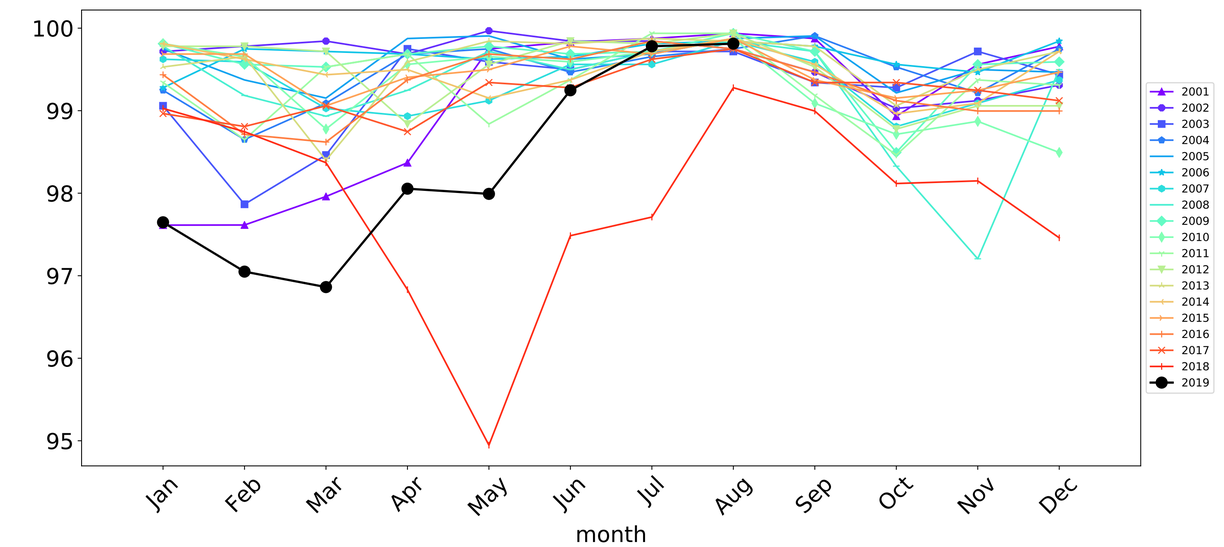
Wind erosion historical monthly area protected (Total Veg Cov >50%)



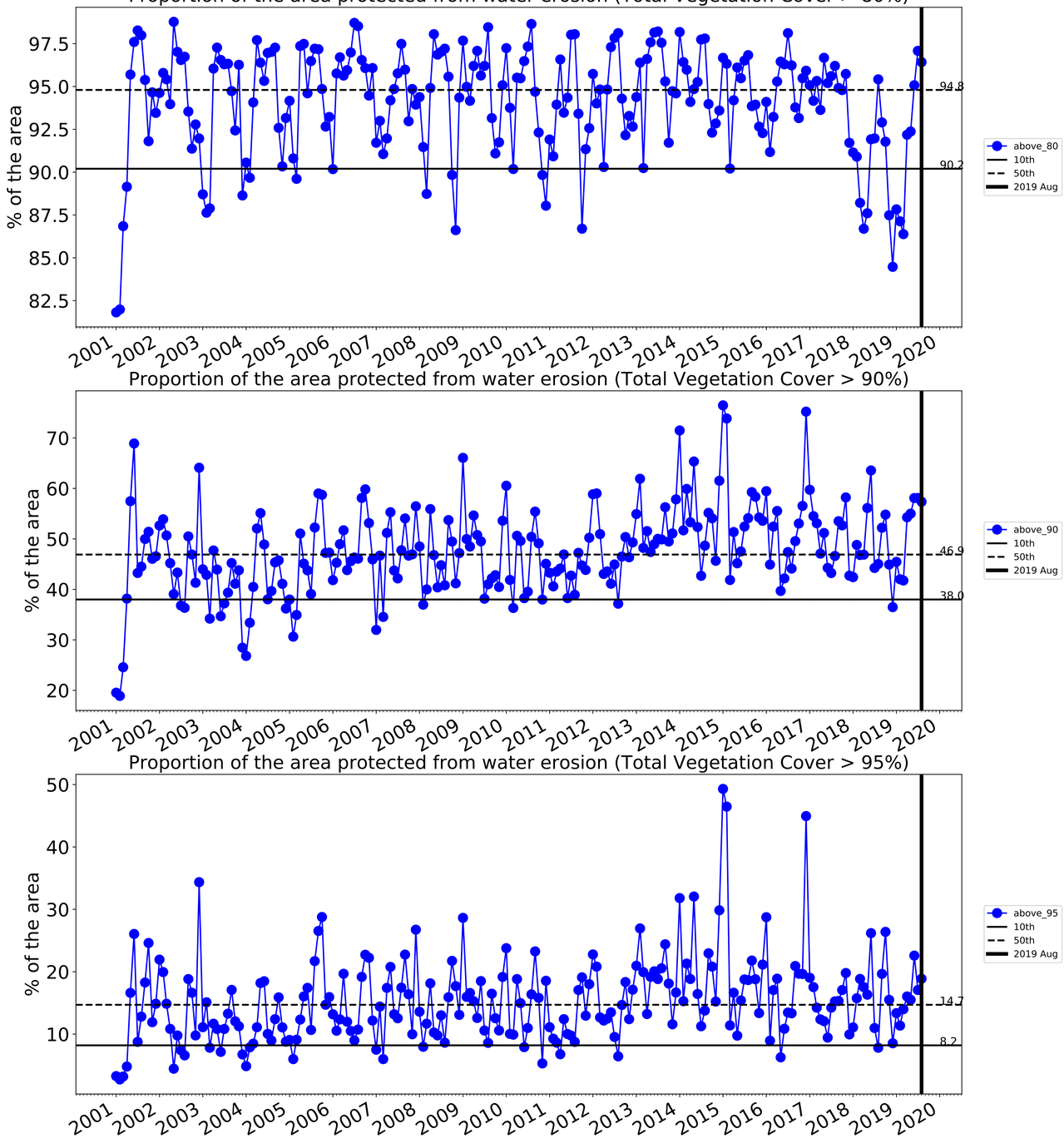
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

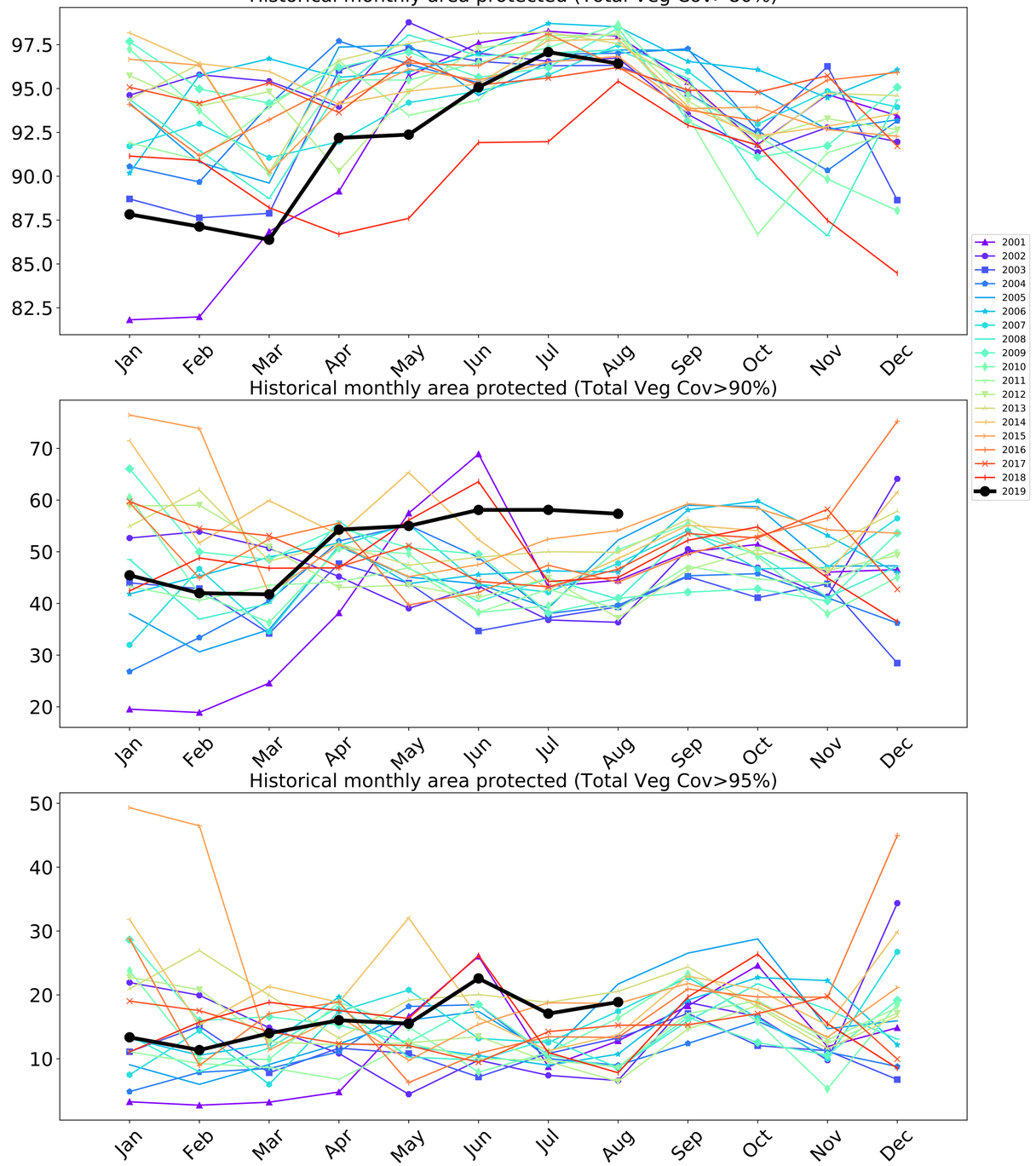


Water erosion historical monthly area protected (Total Veg Cov>70%)



CSIRO TERN Australian Government National Landcare Programme NSW GOVERNMENT Planning, Industry & Environment


Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)
% of the area
94.8
90.2
above_80
10th
50th
2019 Aug


Historical monthly area protected (Total Veg Cov>80%)
Jan
Feb
Mar
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May
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Nov
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2001
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2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019

Proportion of the area protected from water erosion (Total Vegetation Cover > 90%)
% of the area
46.9
38.0
above_90
10th
50th
2019 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
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019

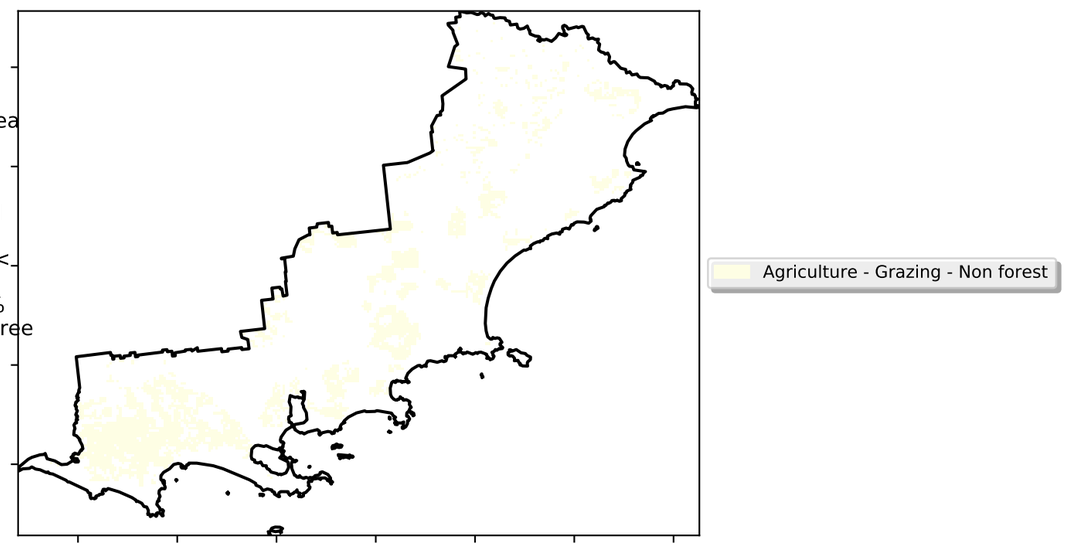
Proportion of the area protected from water erosion (Total Vegetation Cover > 95%)
% of the area
14.7
8.2
above_95
10th
50th
2019 Aug

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

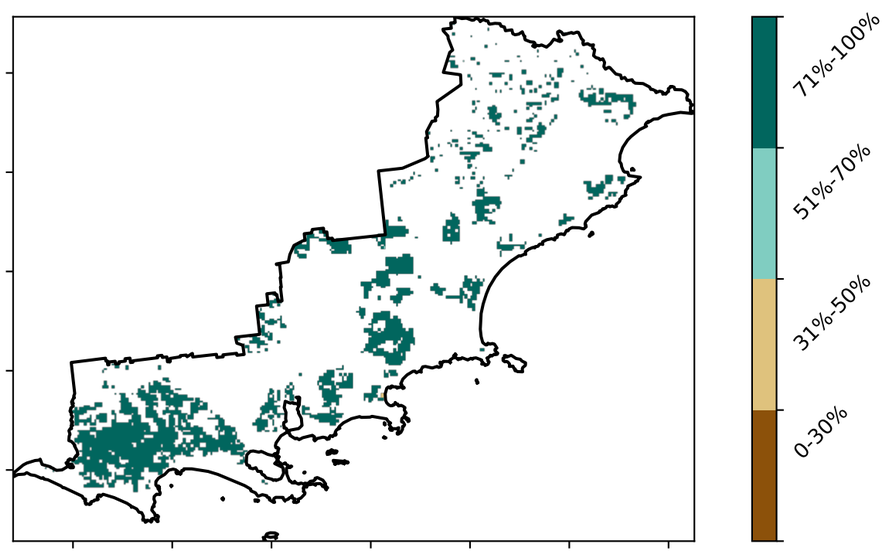
Grazing non forest

Land use and forest cover

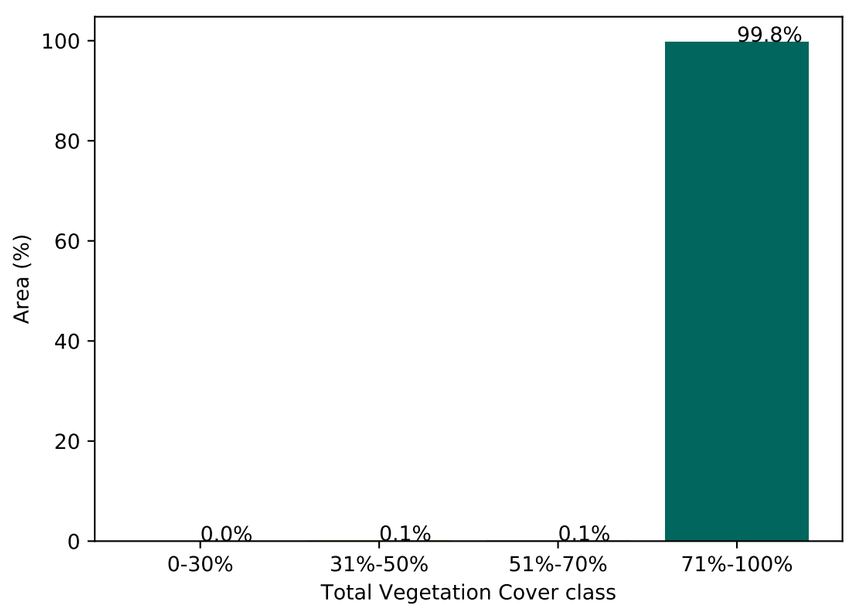
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is <_ 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



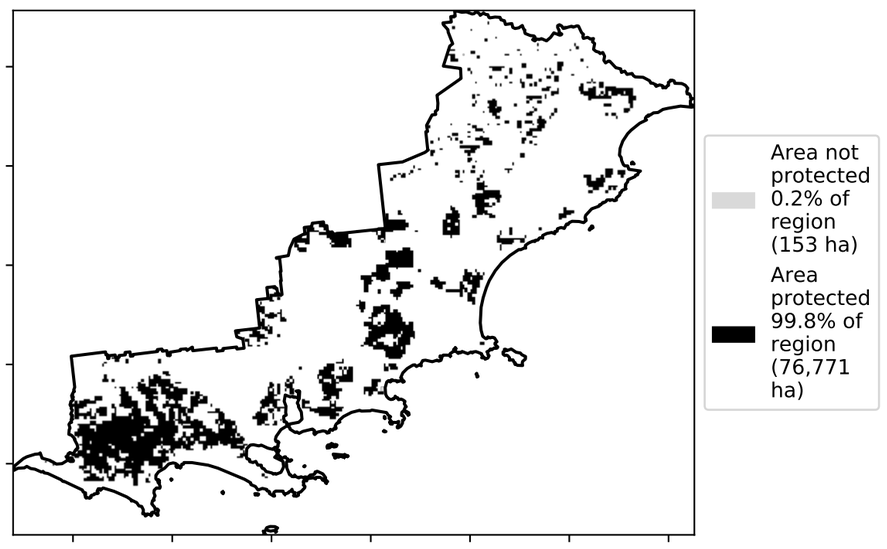
Total Vegetation Cover [%]



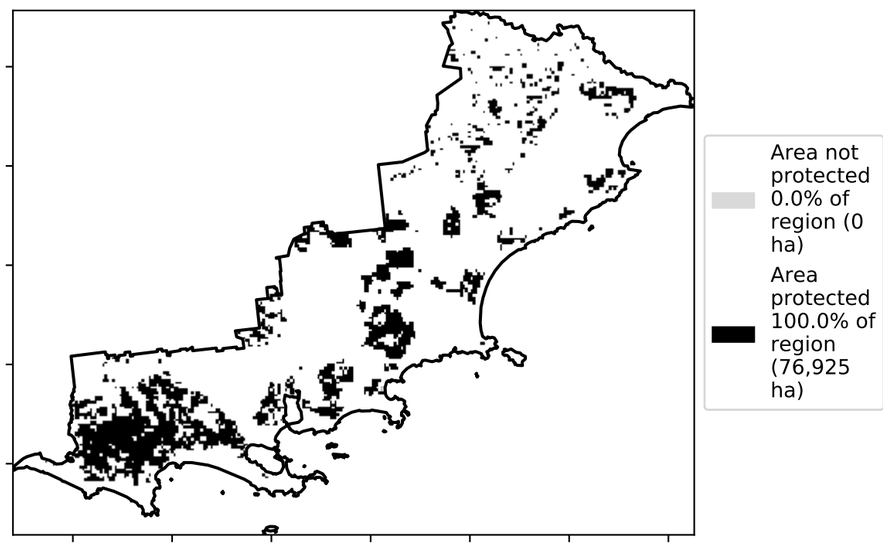
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

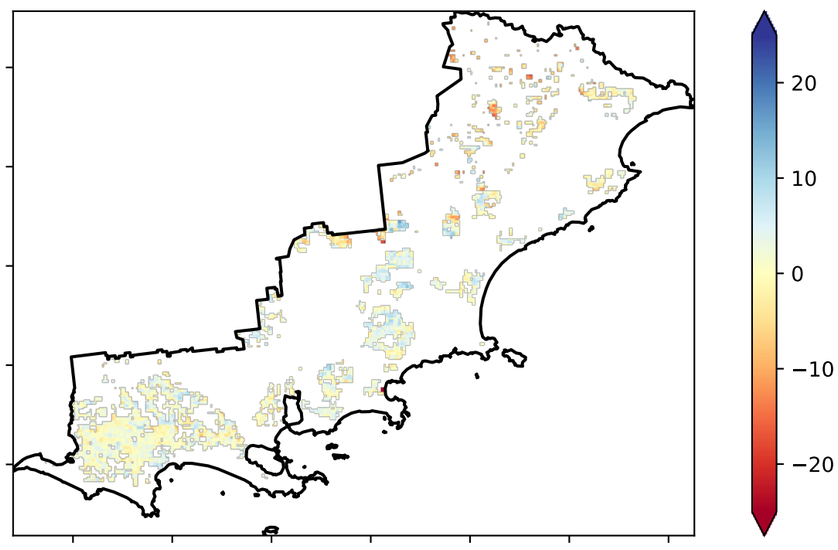


% Area protected from wind erosion (>50%)



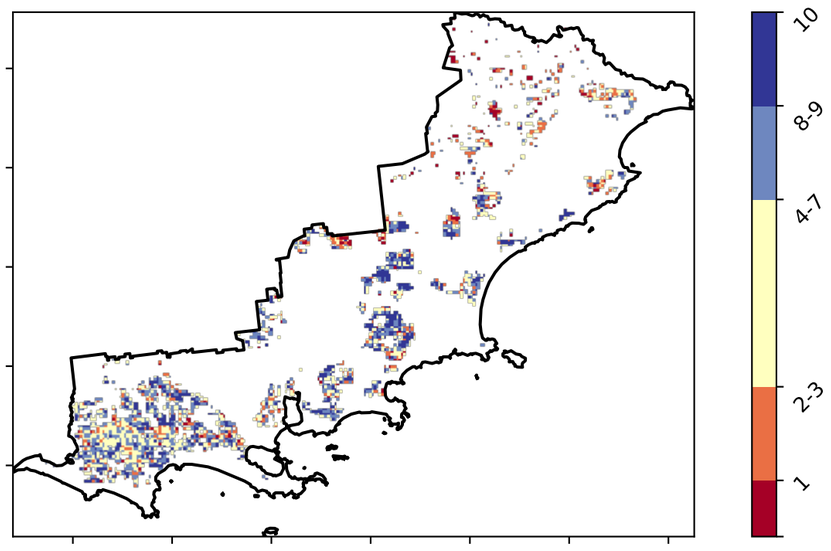
Total Vegetation Cover Anomaly [%]

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.



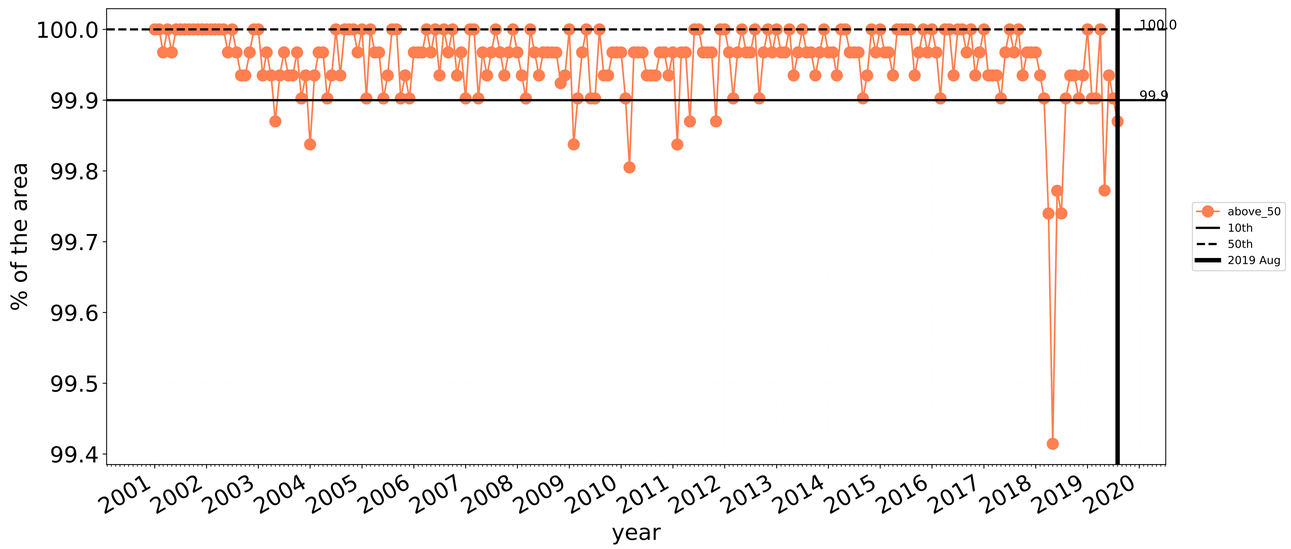
Total Vegetation Cover Decile [%]

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.

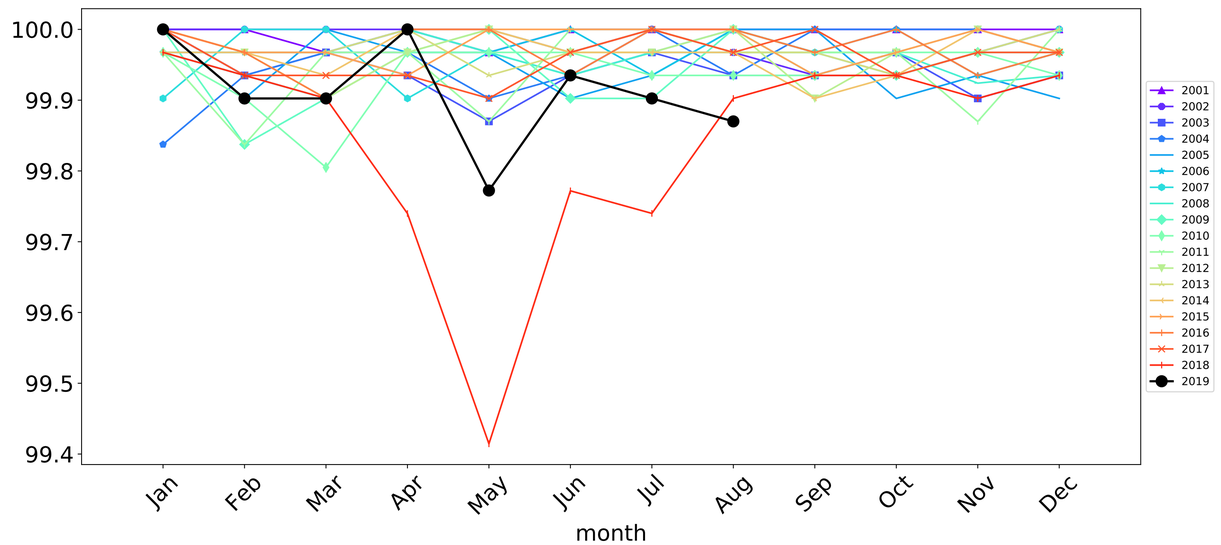


Grazing non forest timeseries

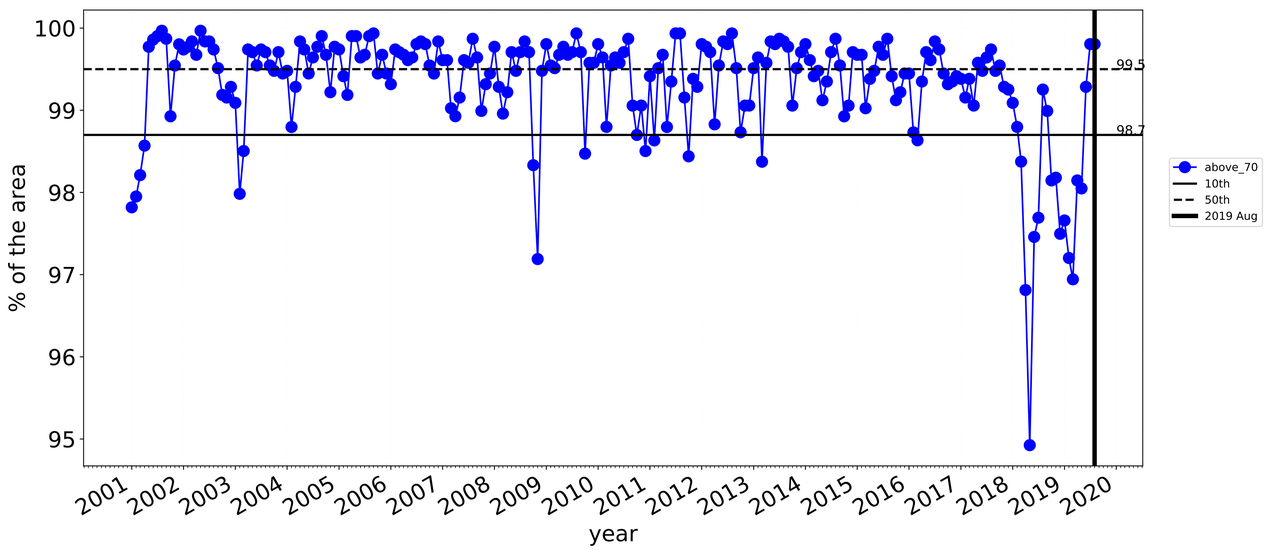
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



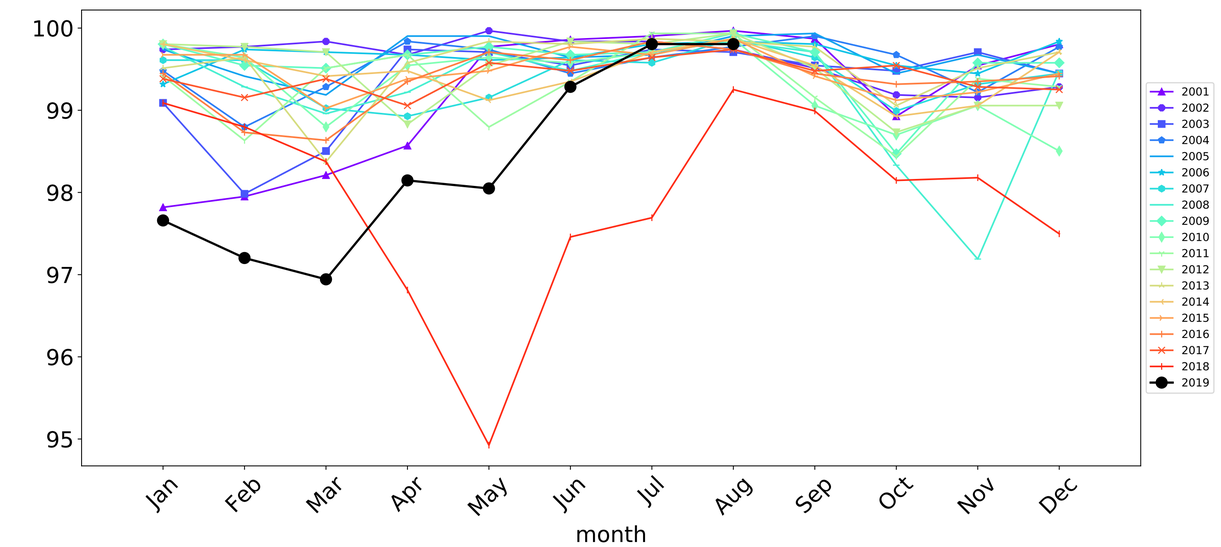
Wind erosion historical monthly area protected (Total Veg Cov >50%)

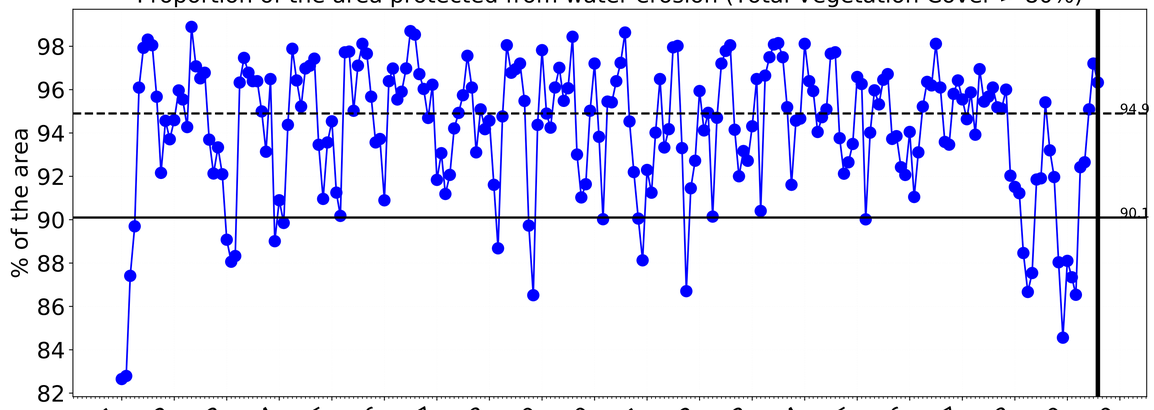


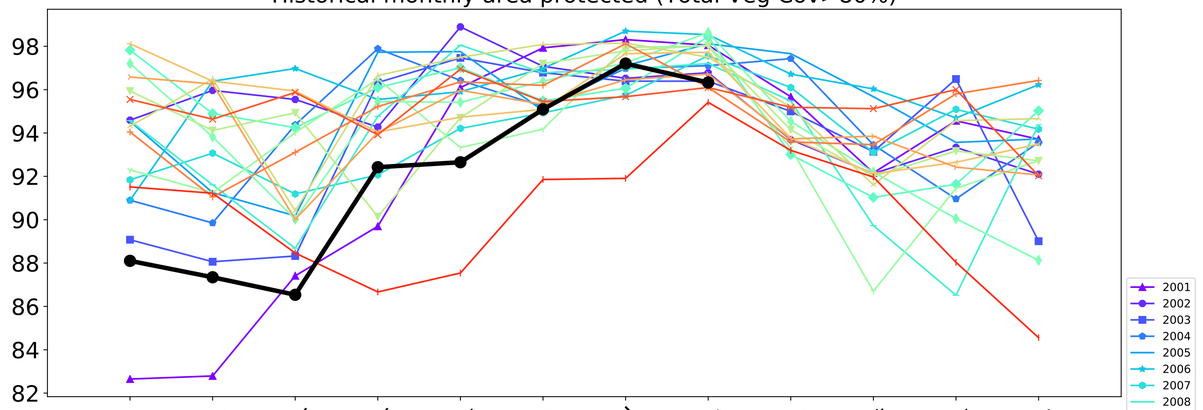
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



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
94.9
90.1
above_80
10th
50th
2019 Aug


Historical monthly area protected (Total Veg Cov>80%)
Jan
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2005
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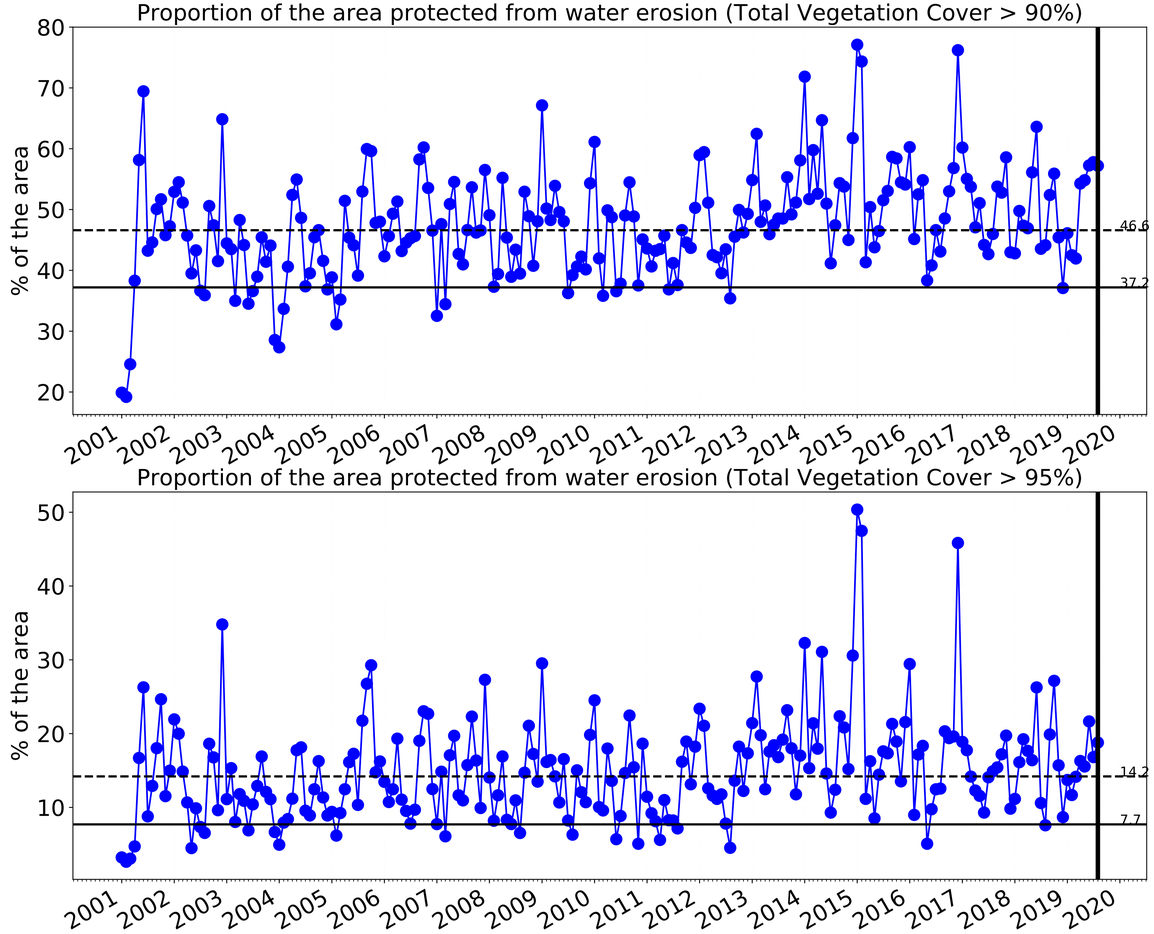
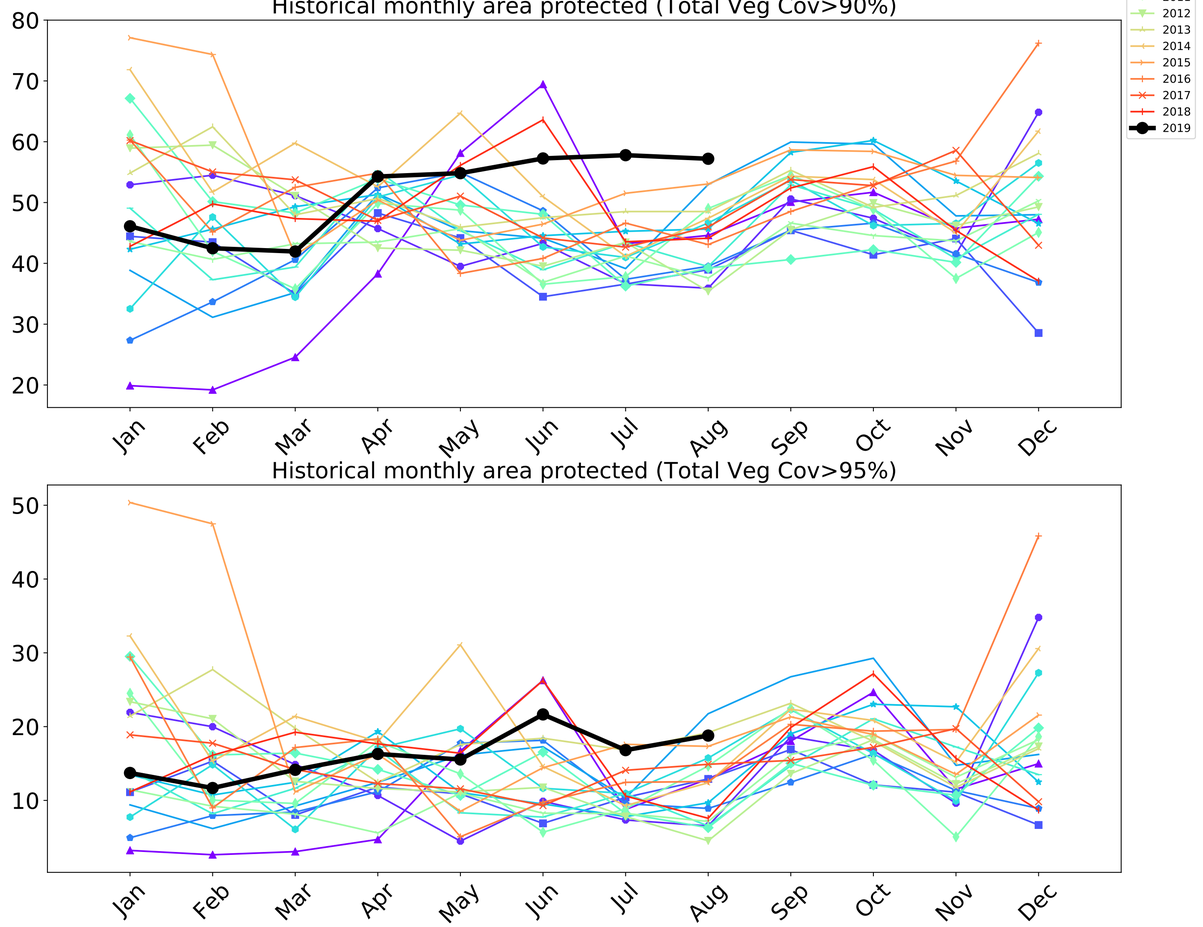

Proportion of the area protected from water erosion (Total Vegetation Cover > 90%)
% of the area
46.6
37.2
above_90
10th
50th
2019 Aug
Proportion of the area protected from water erosion (Total Vegetation Cover > 95%)
% of the area
14.2
7.7
above_95
10th
50th
2019 Aug


Historical monthly area protected (Total Veg Cov>90%)
Historical monthly area protected (Total Veg Cov>95%)
Jan
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Nov
Dec
2001
2002
2003
2004
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2013
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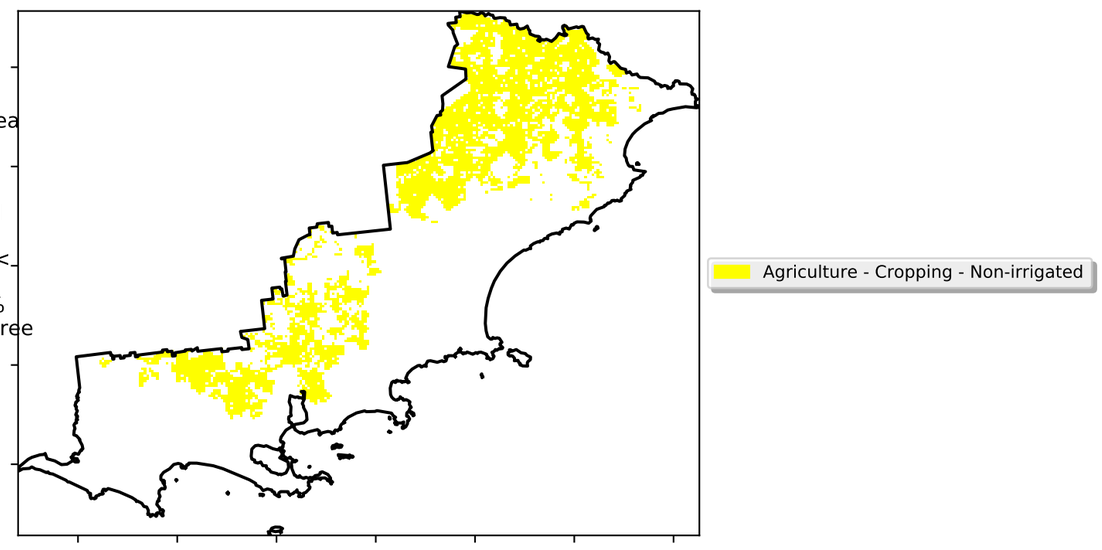
2015
2016
2017
2018
2019

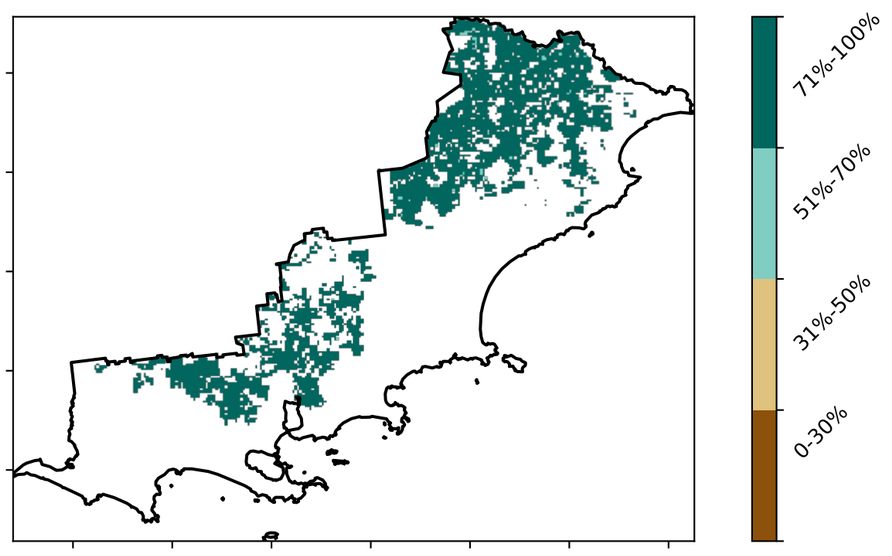
Cropping

Land use and forest cover

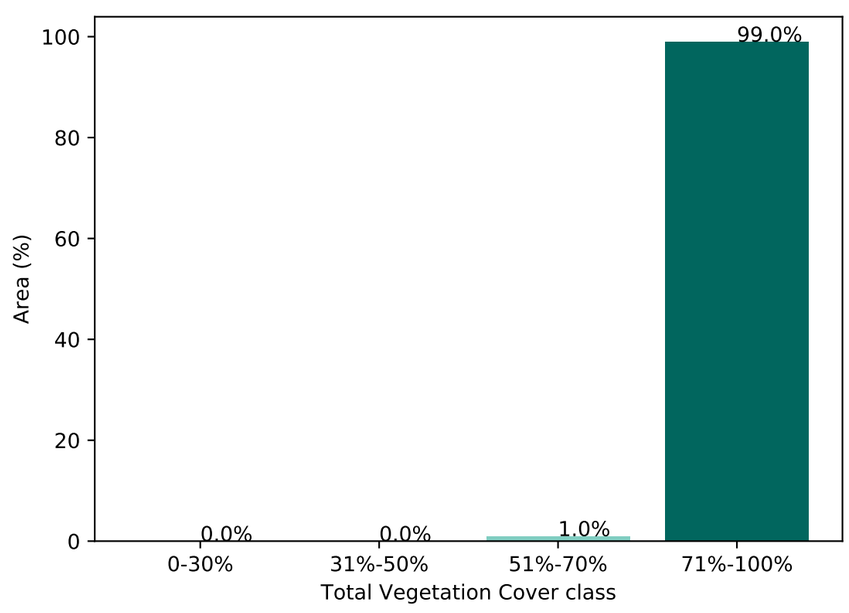


Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is <_ 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.

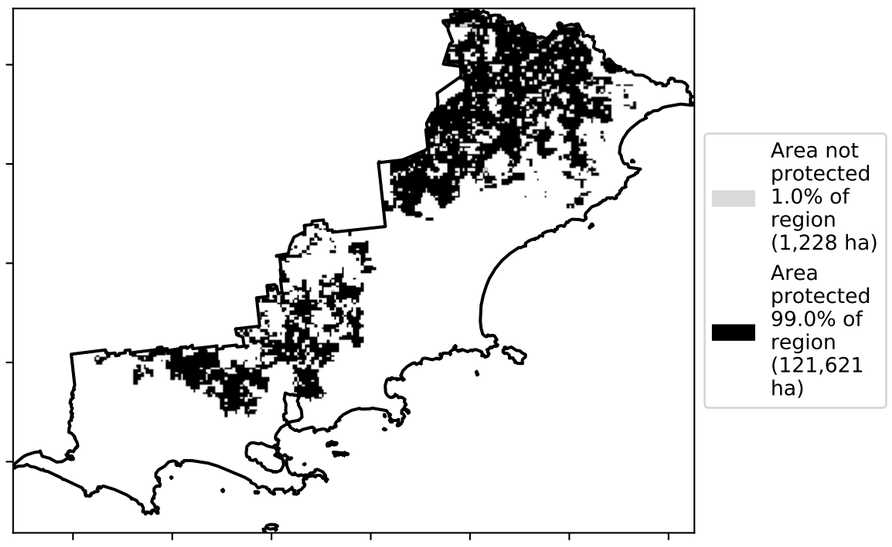
Total Vegetation Cover [%]



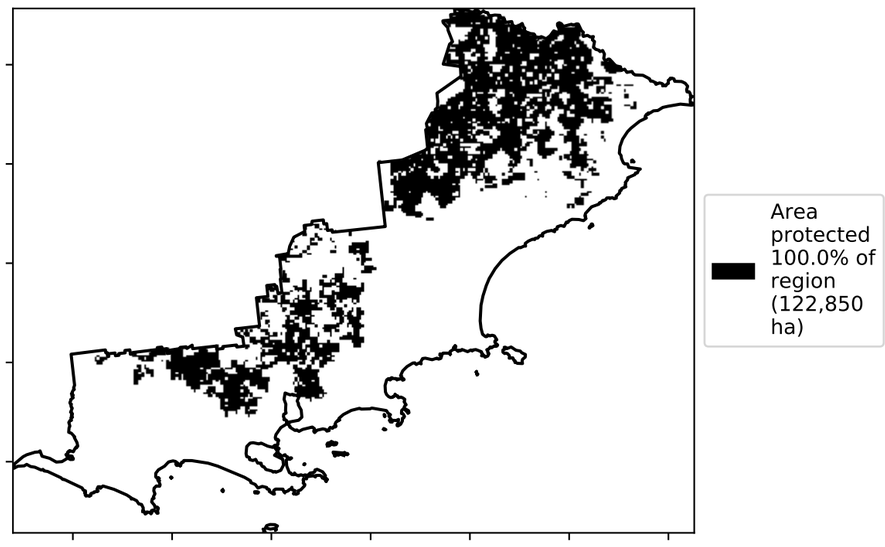
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

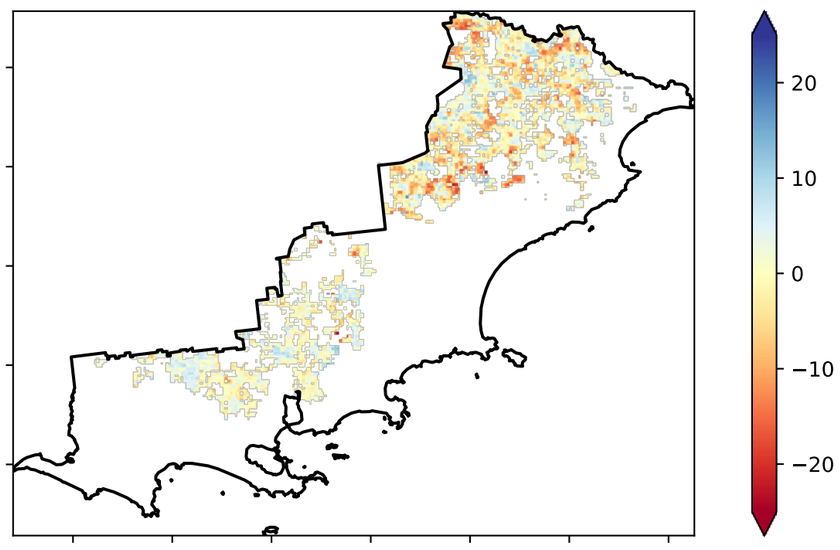


% Area protected from wind erosion (>50%)



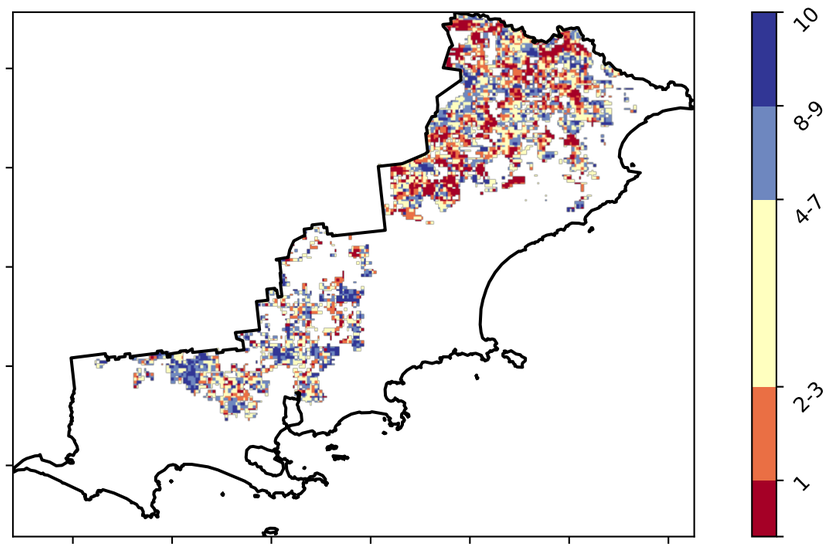
Total Vegetation Cover Anomaly [%]

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.



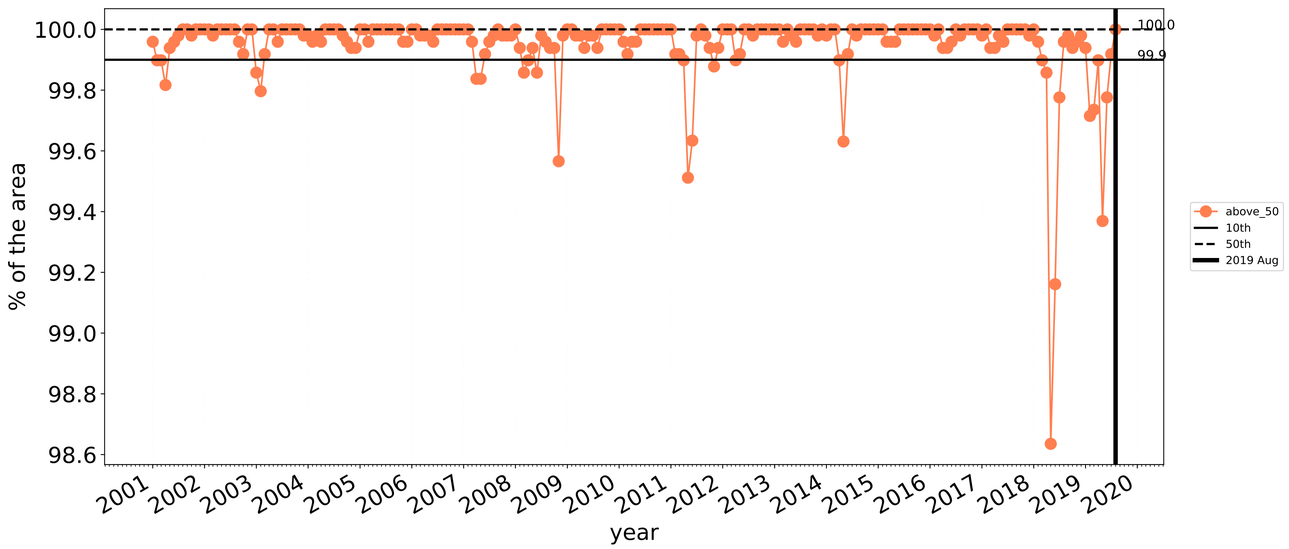
Total Vegetation Cover Decile [%]

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.

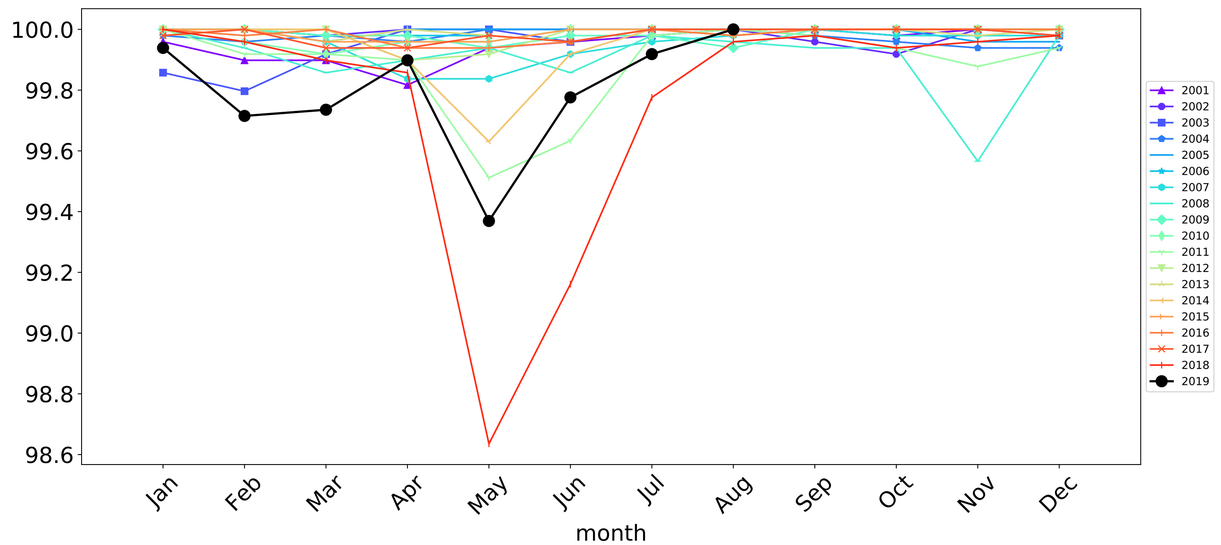


Cropping timeseries

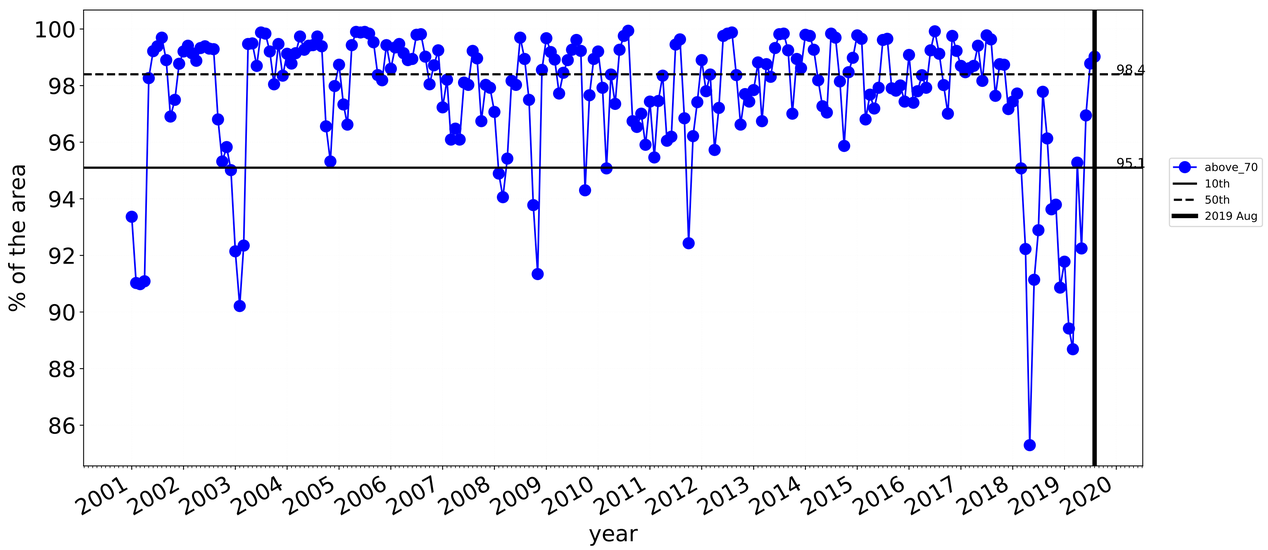
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



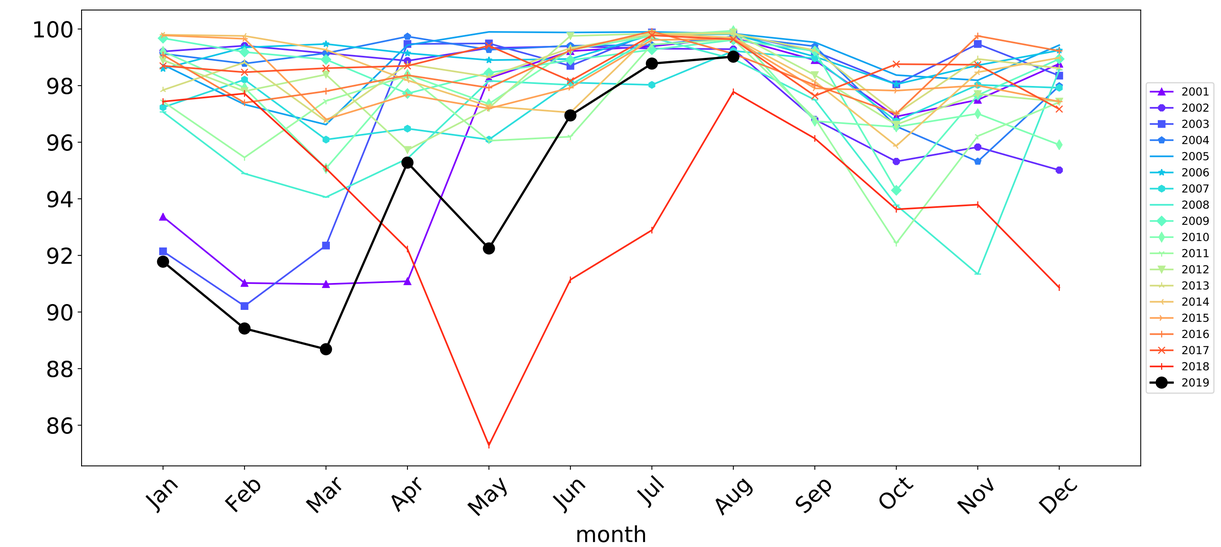
Wind erosion historical monthly area protected (Total Veg Cov >50%)



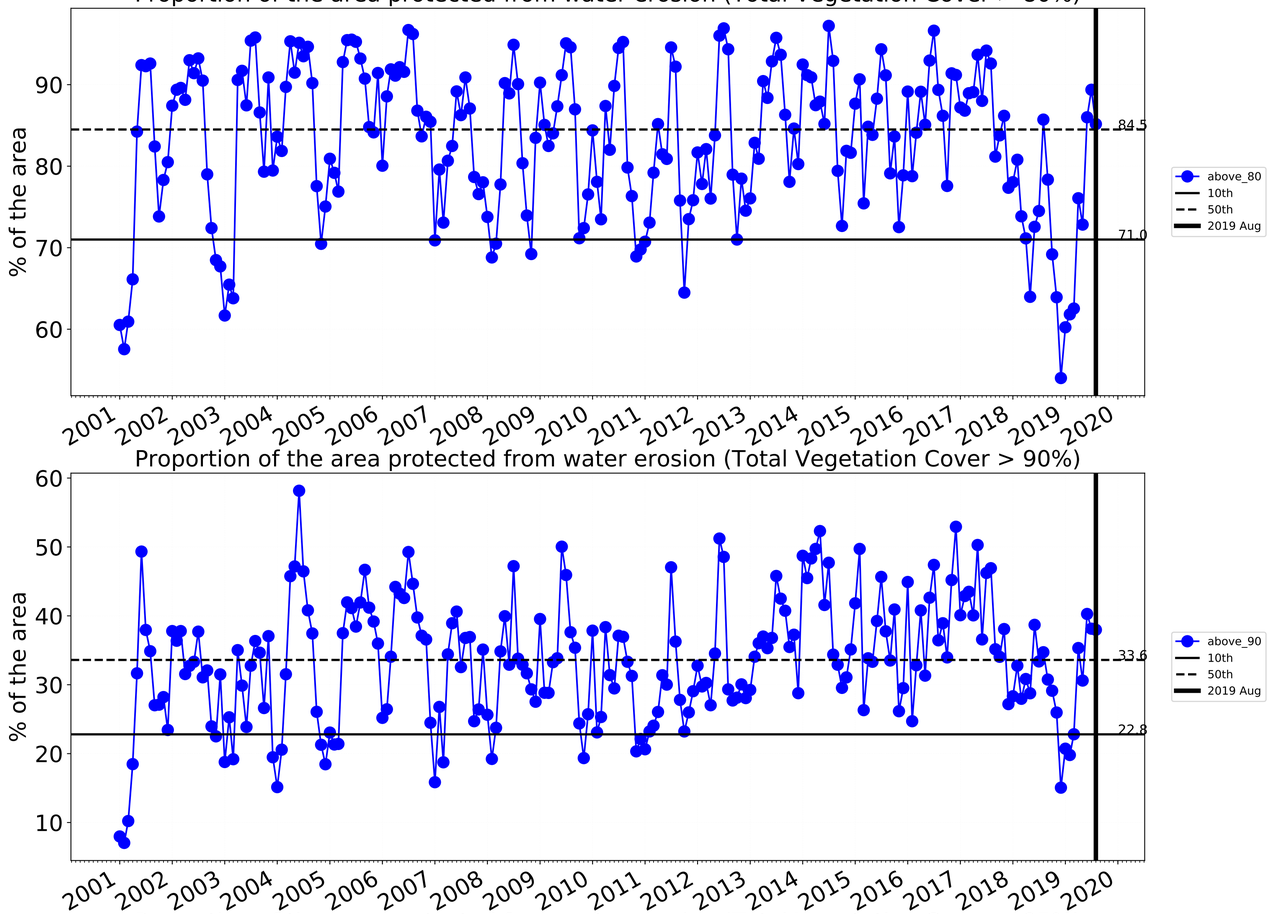
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



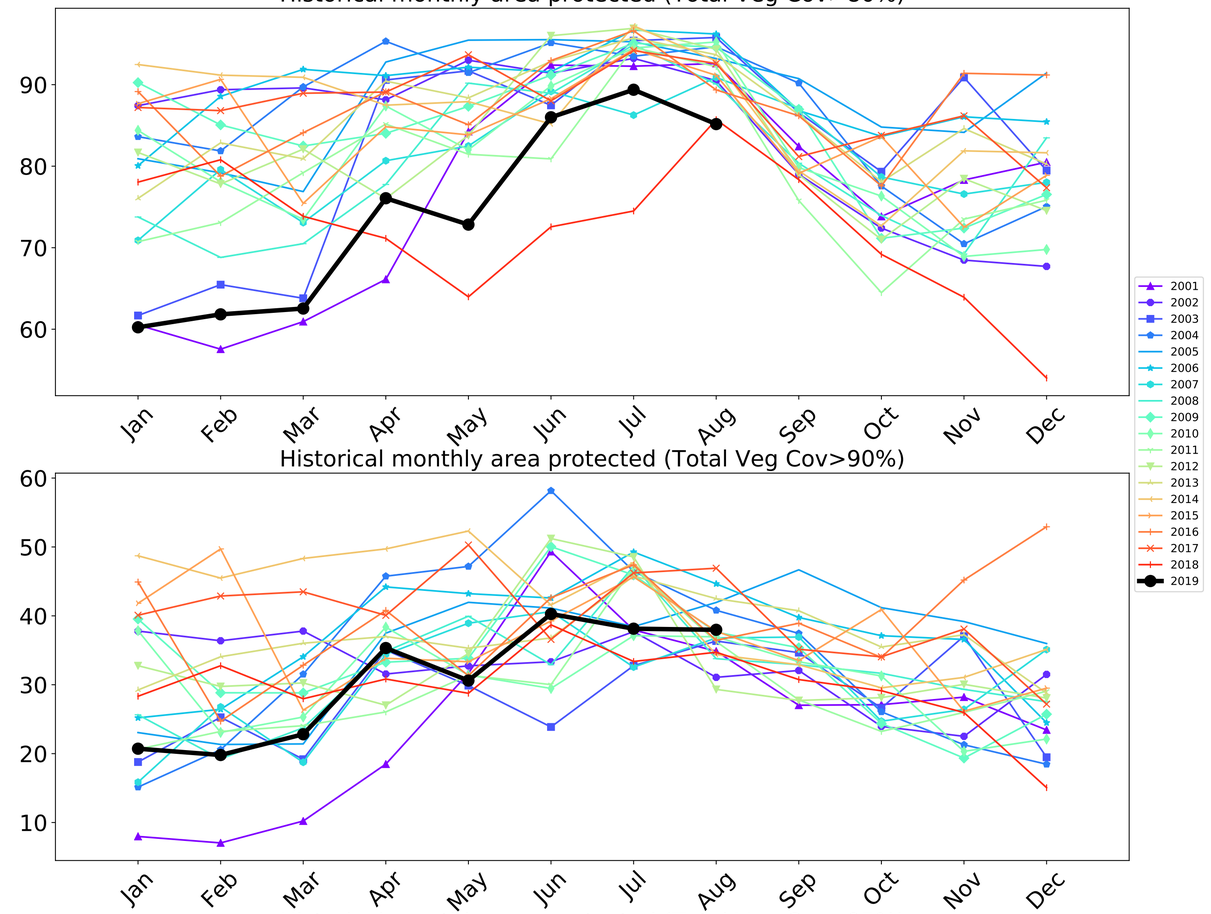
Water erosion historical monthly area protected (Total Veg Cov>70%)



Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)

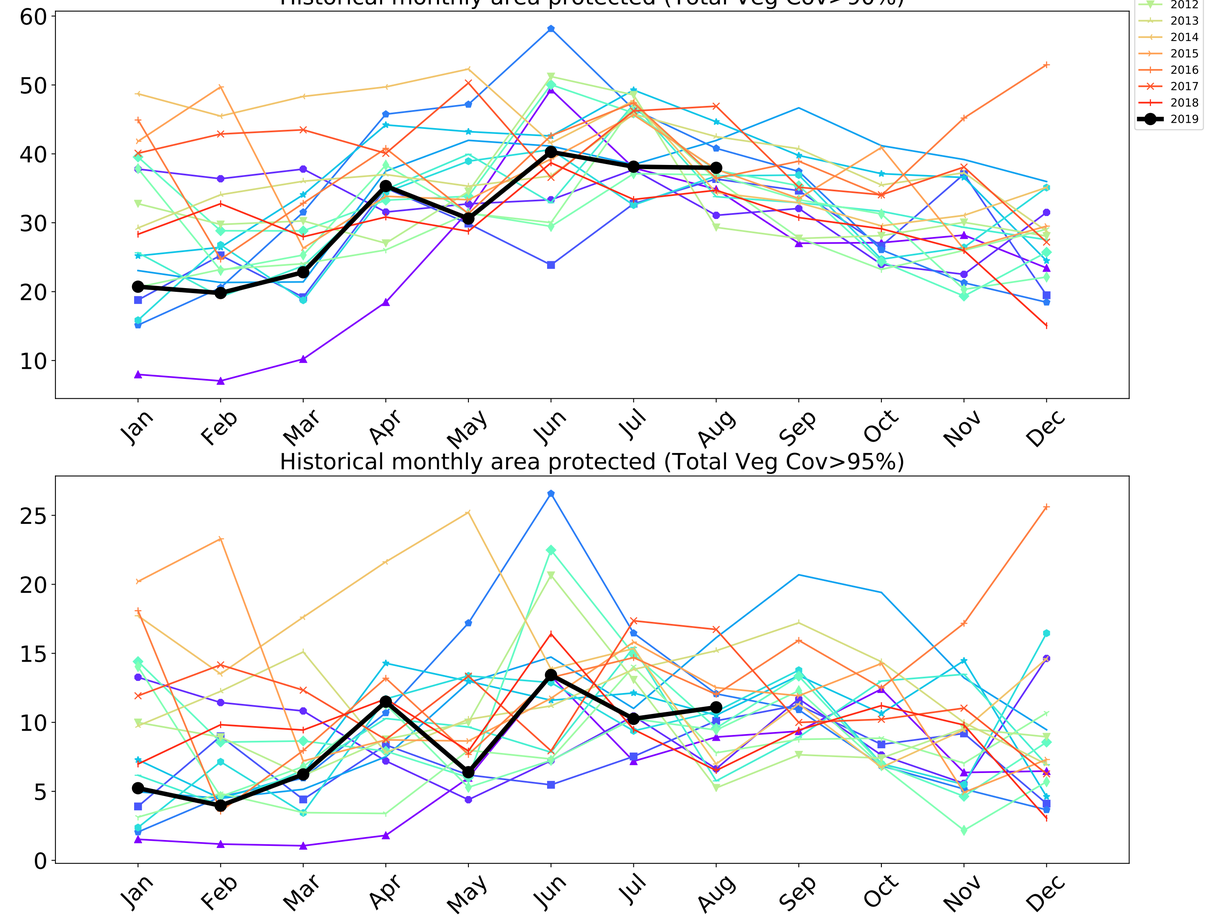


Historical monthly area protected (Total Veg Cov>80%)



Proportion of the area protected from water erosion (Total Vegetation Cover > 90%)

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

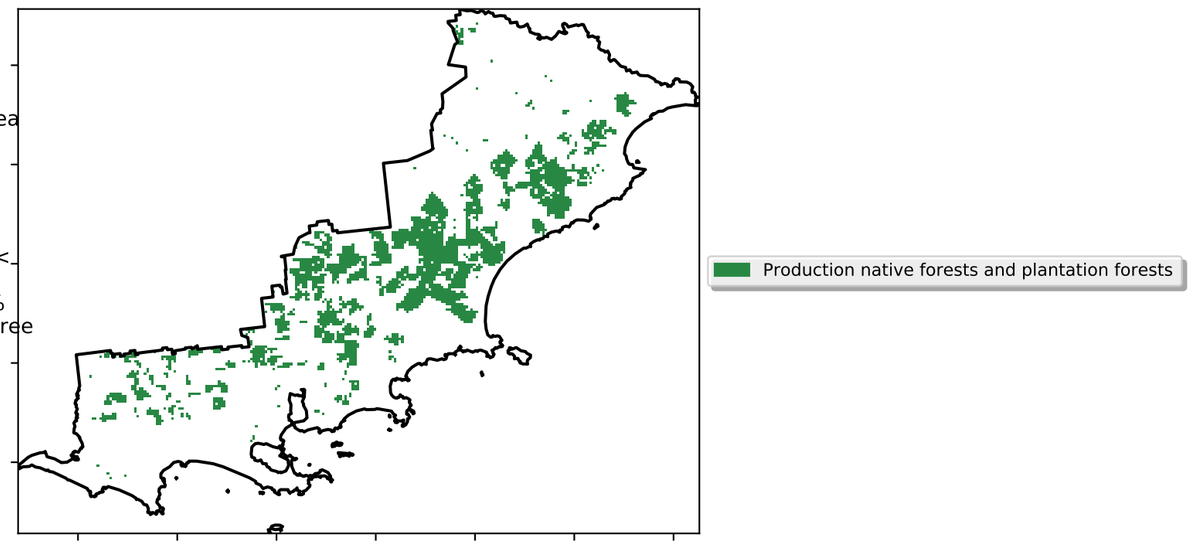


Proportion of the area protected from water erosion (Total Vegetation Cover > 95%)

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

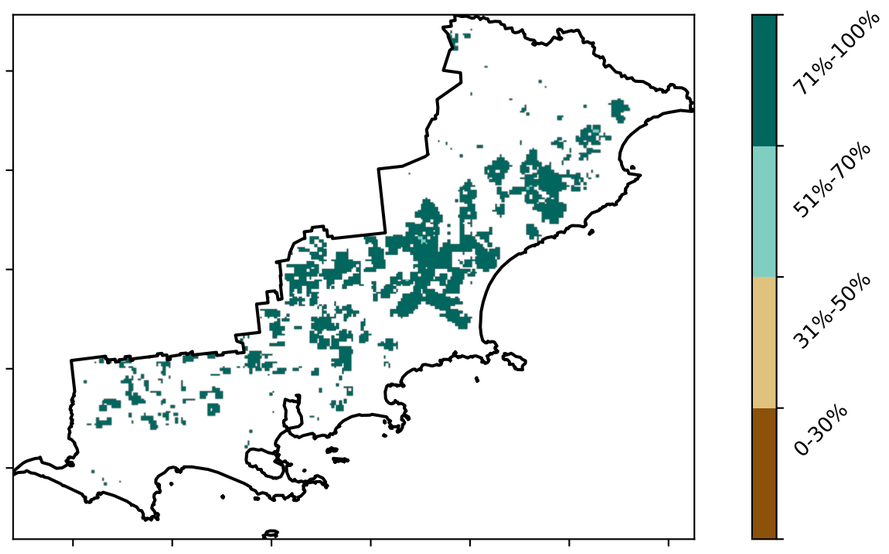
Production native forests and plantation forests

Land use and forest cover

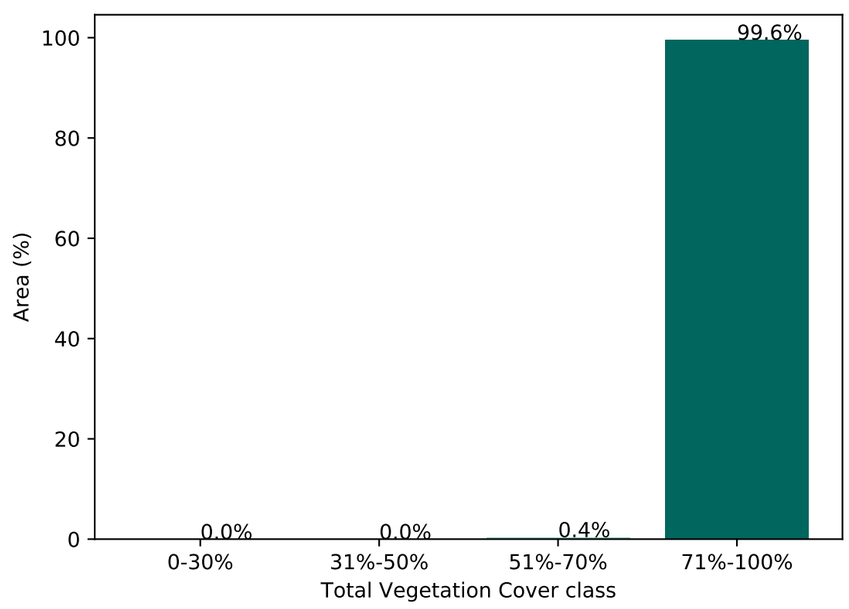


Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is <_ 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.

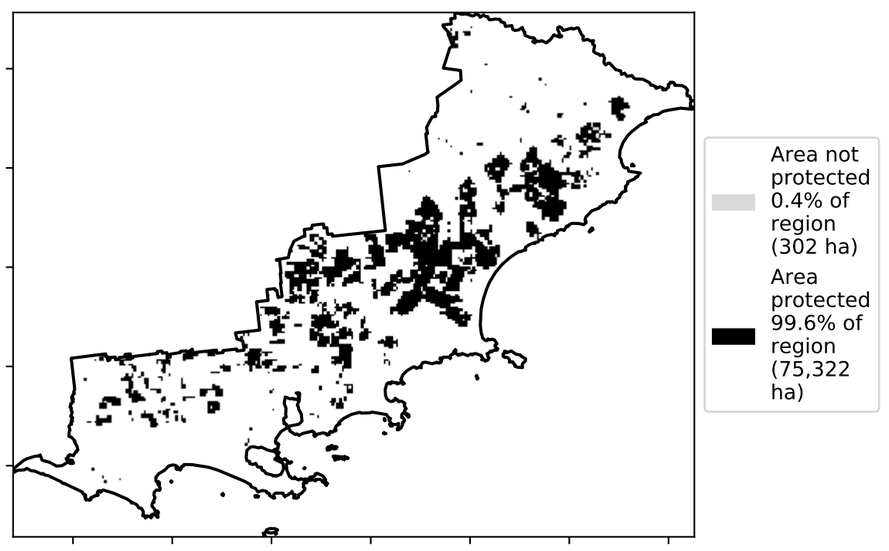
Total Vegetation Cover [%]



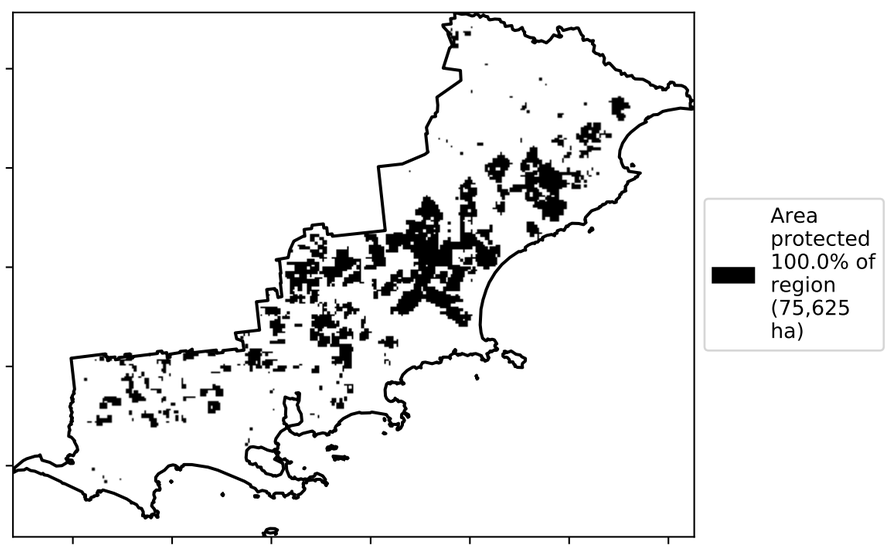
Proportion of vegetation cover class in area



% Area protected from water erosion (>70%)

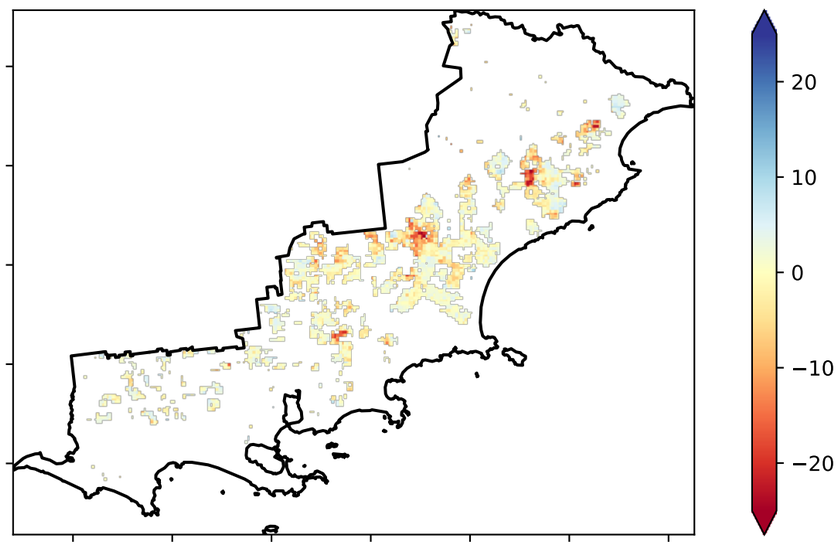


% Area protected from wind erosion (>50%)



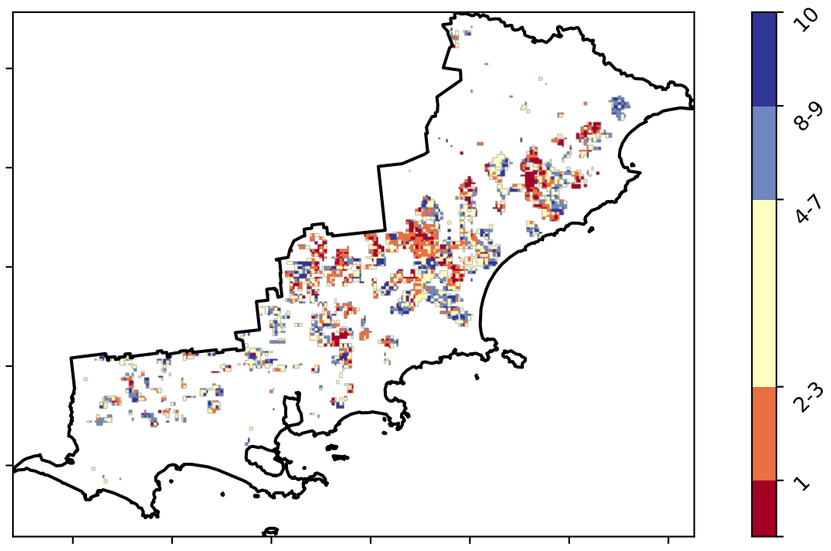
Total Vegetation Cover Anomaly [%]

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.



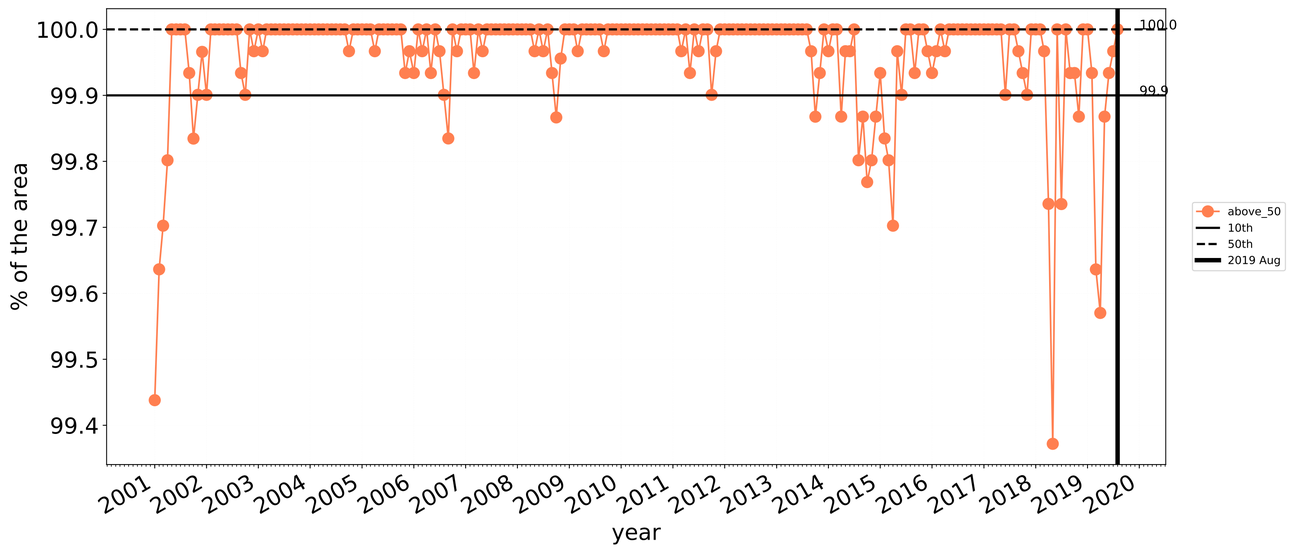
Total Vegetation Cover Decile [%]

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.

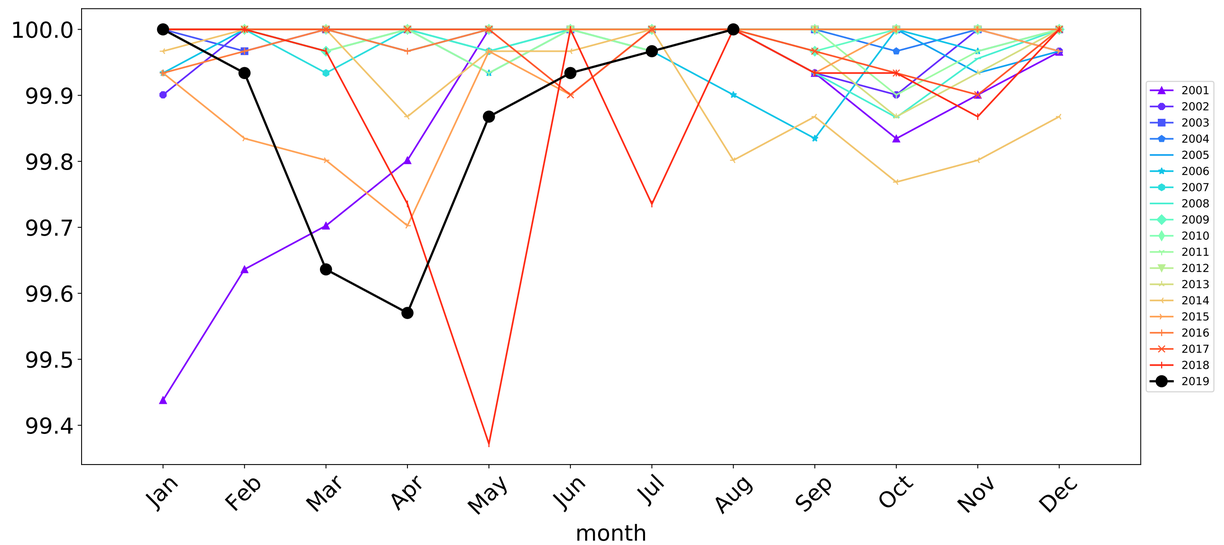


Production native forests and plantation forests timeseries

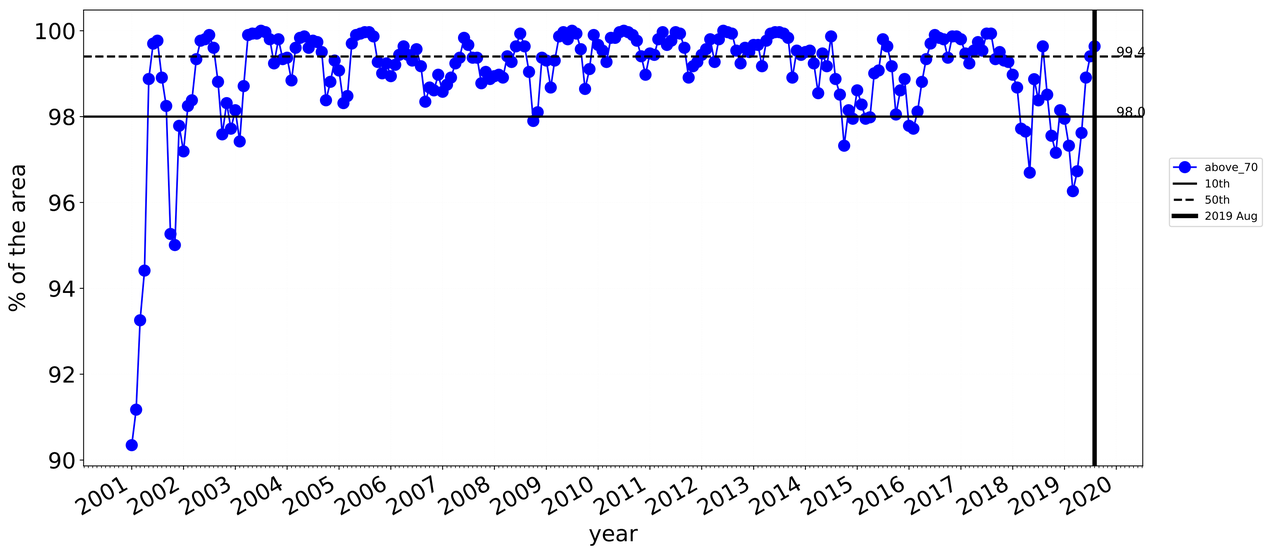
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



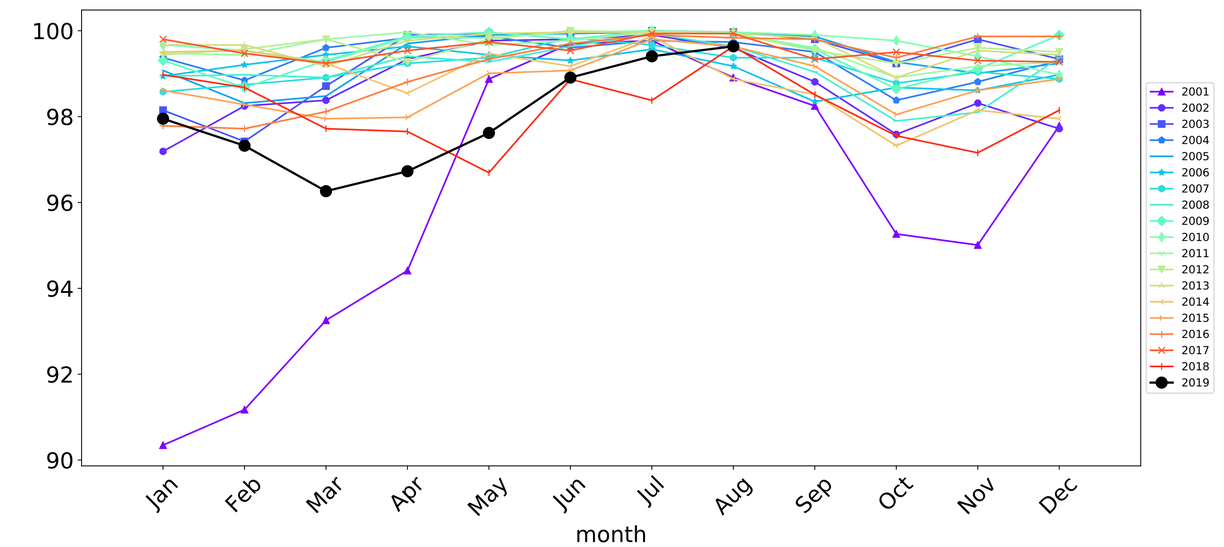
Wind erosion historical monthly area protected (Total Veg Cov >50%)



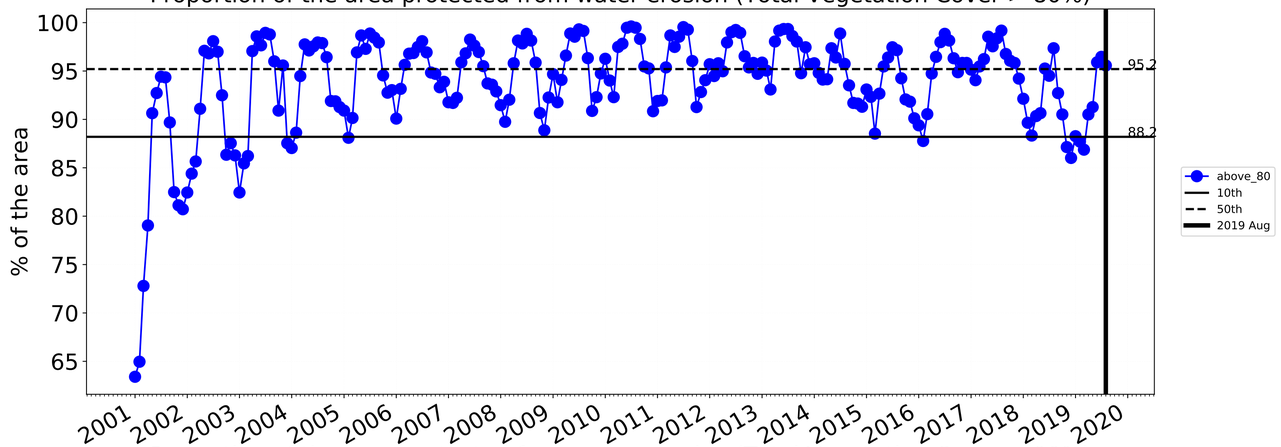
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



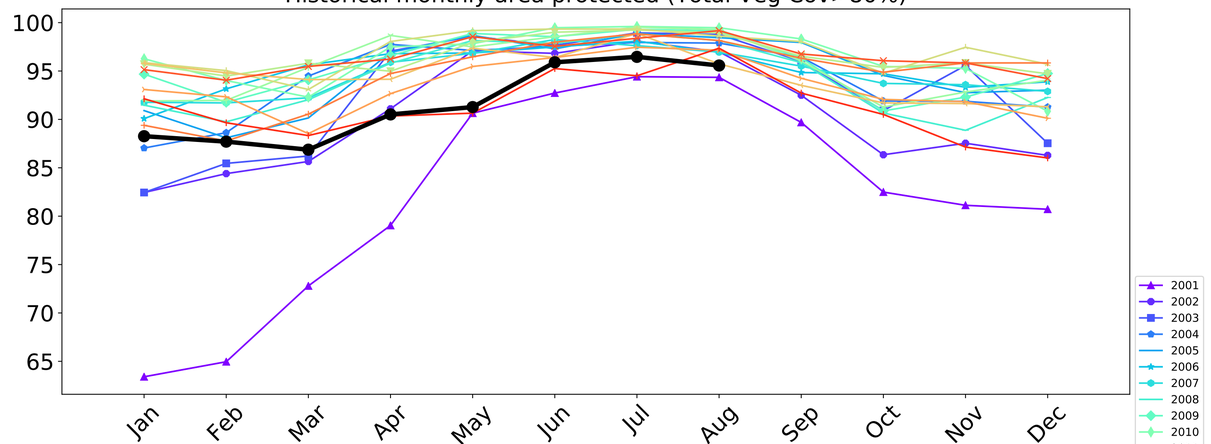
Water erosion historical monthly area protected (Total Veg Cov>70%)



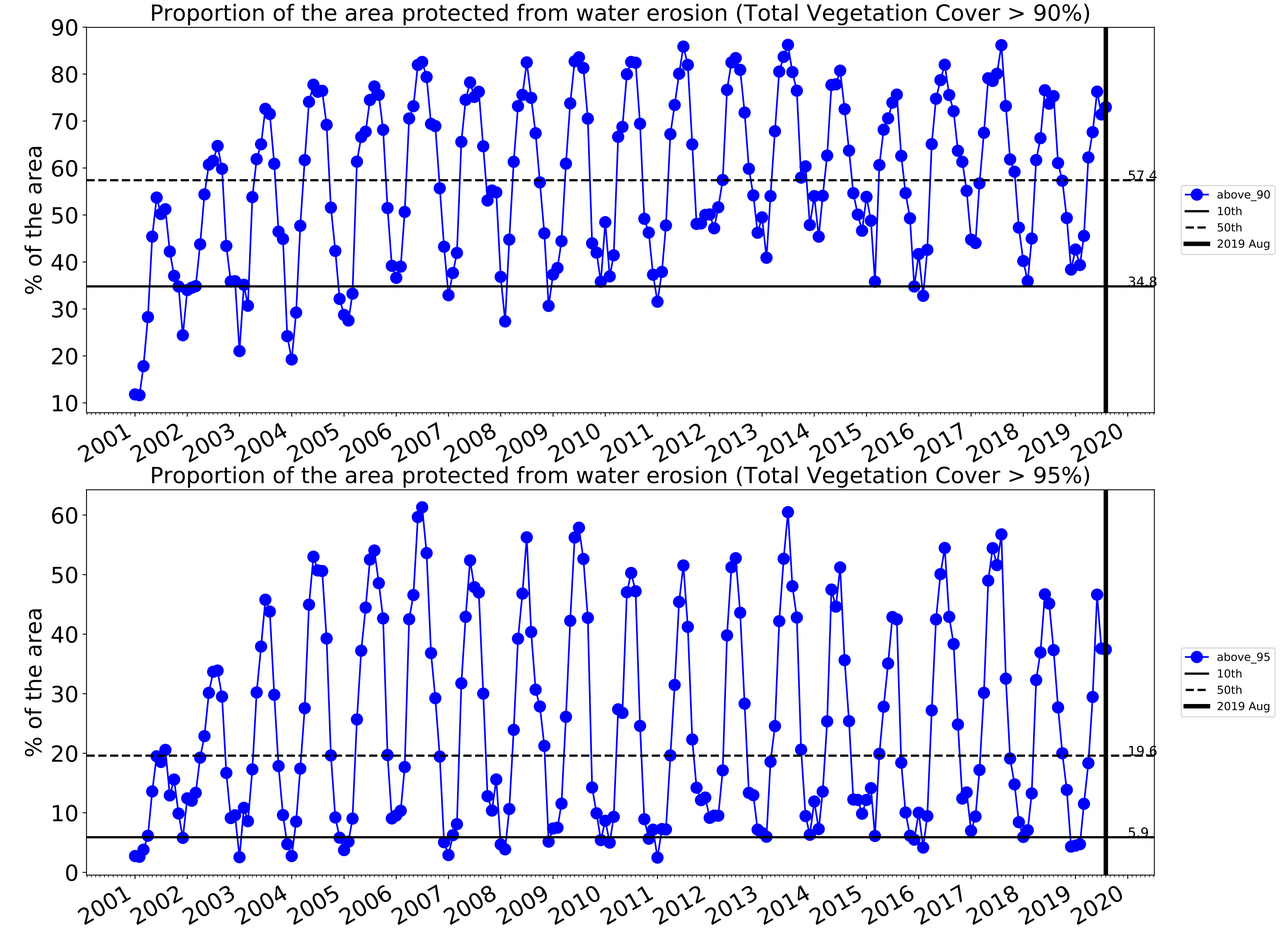
Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)



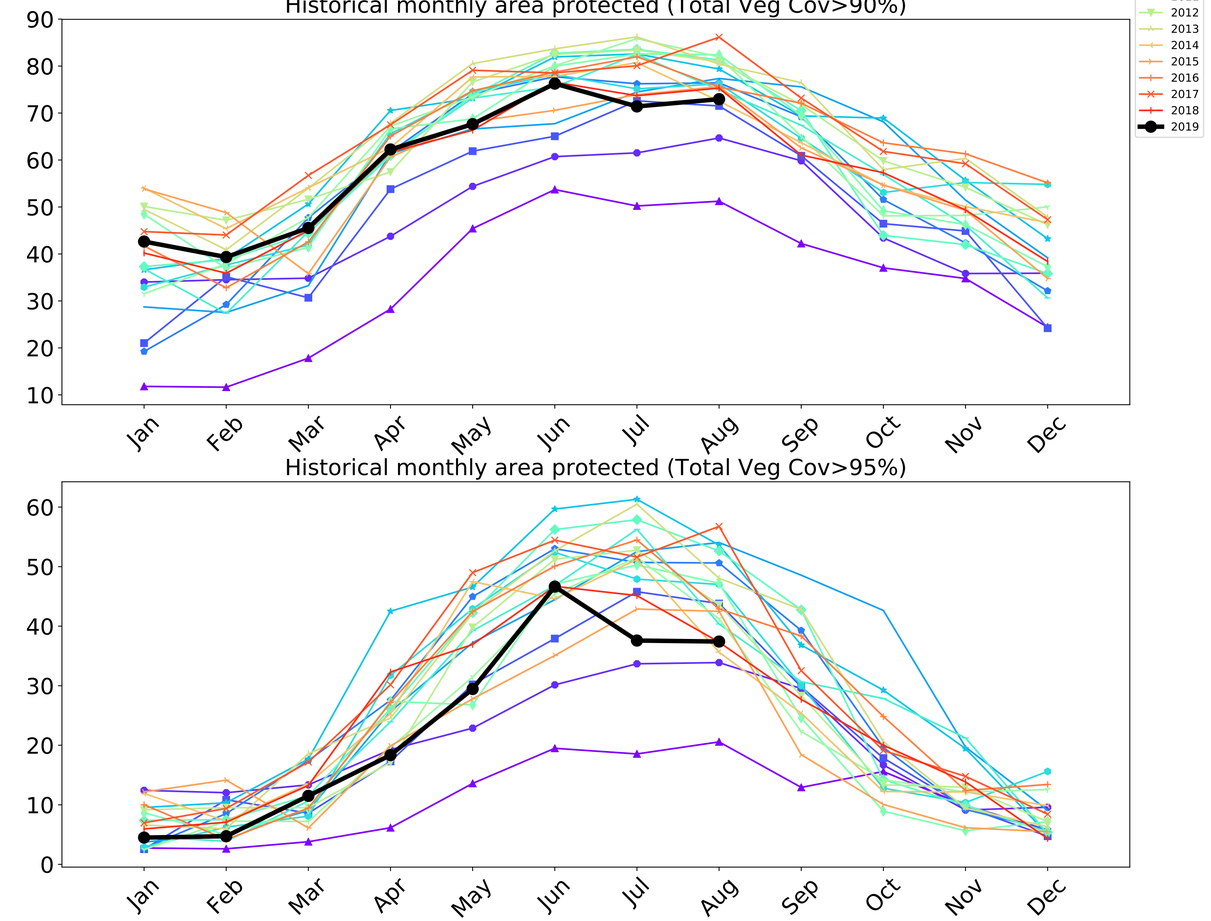
Historical monthly area protected (Total Veg Cov>80%)



Proportion of the area protected from water erosion (Total Vegetation Cover > 90%)



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



Proportion of the area protected from water erosion (Total Vegetation Cover > 95%)

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

Albany_(C) (423,150 ha and no data 8,206 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	423,150	100.0% 422,975	99.8% 422,425	98.8% 418,275	92.1% 389,600	59.2% 250,425	22.1% 93,700
Conservation and natural environments	135,408	99.9% 135,303	99.6% 134,835	98.5% 133,403	95.3% 129,107	74.1% 100,312	27.2% 36,813
Conservation and natural environments non forest	54,586	99.8% 54,504	99.0% 54,065	97.0% 52,967	91.9% 50,170	67.0% 36,564	29.0% 15,827
Conservation and natural environments Woodland forest	42,738	99.9% 42,712	99.9% 42,687	99.2% 42,381	96.2% 41,109	74.3% 31,767	20.8% 8,909
Conservation and natural environments Forest (non woodland)	38,083	100.0% 38,083	99.9% 38,058	99.7% 37,984	98.9% 37,660	83.0% 31,620	31.8% 12,106
Agriculture	203,112	100.0% 203,087	100.0% 203,013	99.3% 201,780	89.8% 182,300	45.8% 93,036	14.2% 28,875
Grazing	77,859	100.0% 77,835	99.9% 77,761	99.8% 77,713	96.4% 75,076	57.4% 44,655	18.9% 14,697
Grazing non forest	75,320	100.0% 75,296	99.9% 75,222	99.8% 75,173	96.3% 72,554	57.2% 43,082	18.8% 14,148
Cropping	120,597	100.0% 120,597	100.0% 120,597	99.0% 119,419	85.2% 102,706	38.0% 45,794	11.1% 13,375
Production native forests and plantation forests	74,051	100.0% 74,051	100.0% 74,051	99.6% 73,781	95.6% 70,770	73.0% 54,026	37.4% 27,711