[LGA Banana_(S) (QLD)] - 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. [Banana (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:

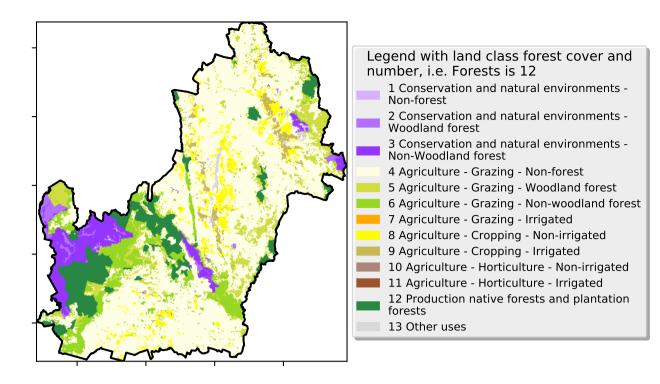
https://doi.org/10.4225/08/5848a3f19a7b3



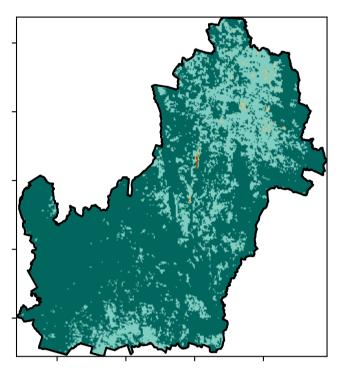
Vegetation Cover Sep 2019

Land use and forest cover

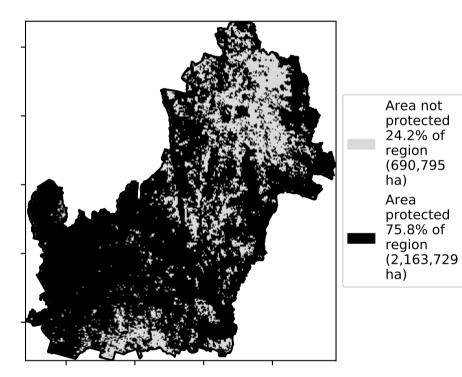
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is <20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



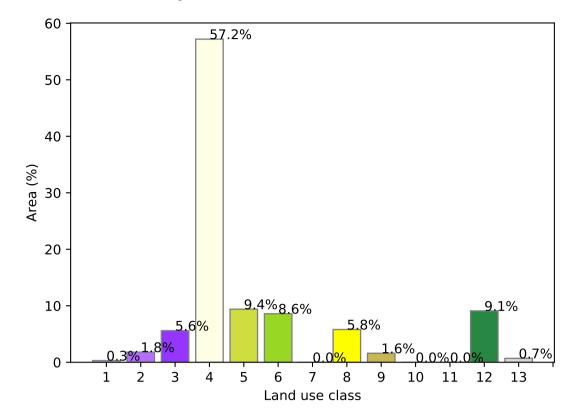
Total Vegetation Cover [%]



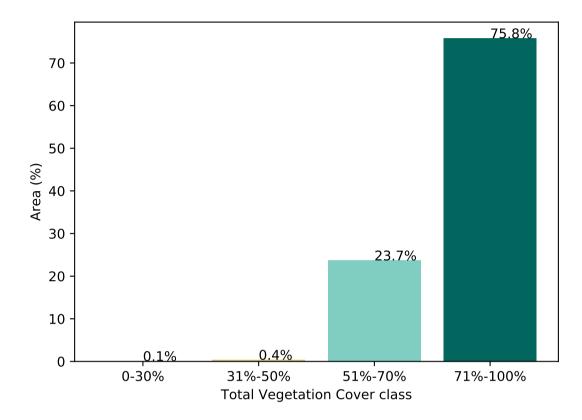
% Area protected from water erosion (>70%)



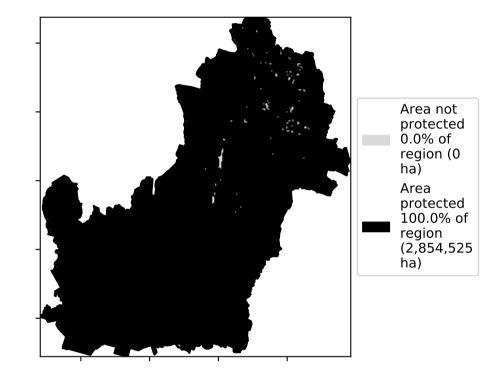
Proportion of each land class in area



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



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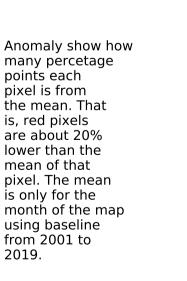
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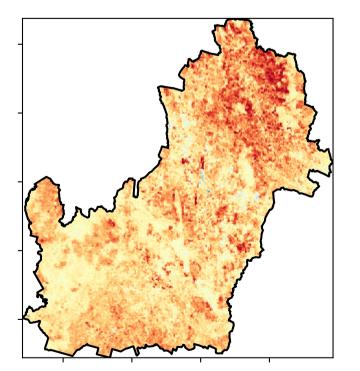
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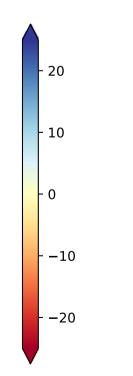
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Total Vegetation Cover Anomaly [%]

Total Vegetation Cover Decile [%]





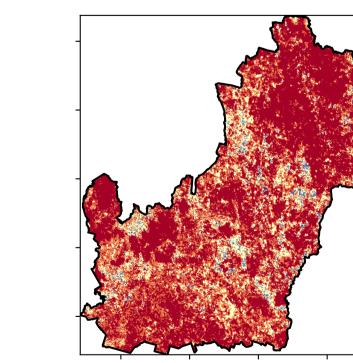


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Deciles show where the

record, from highest to lowest, for that month.

in the lowest 10% of records for that month of

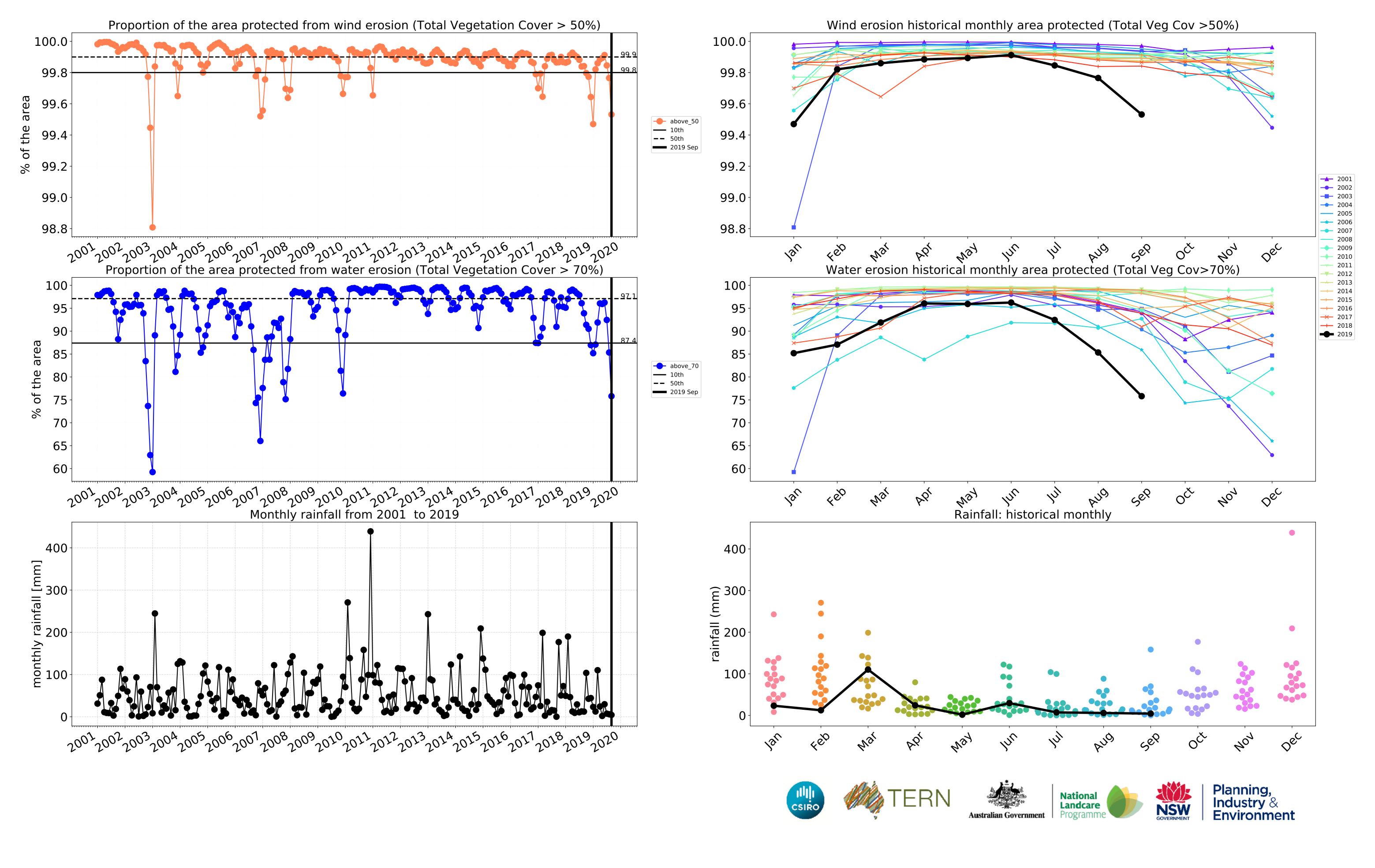
the map using baseline

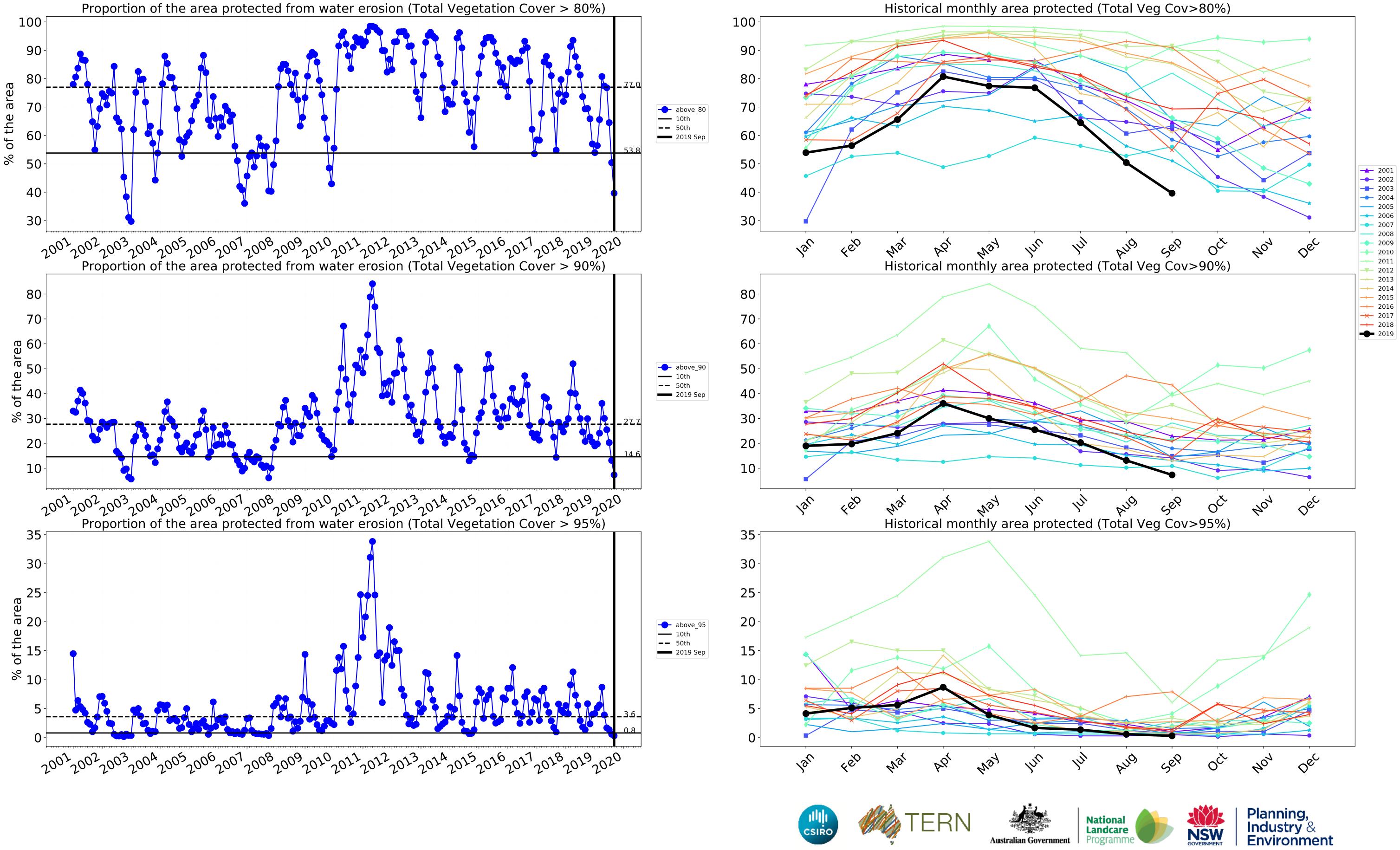
from 2001 to 2019.

That is, red pixels are

pixel value lies in the

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



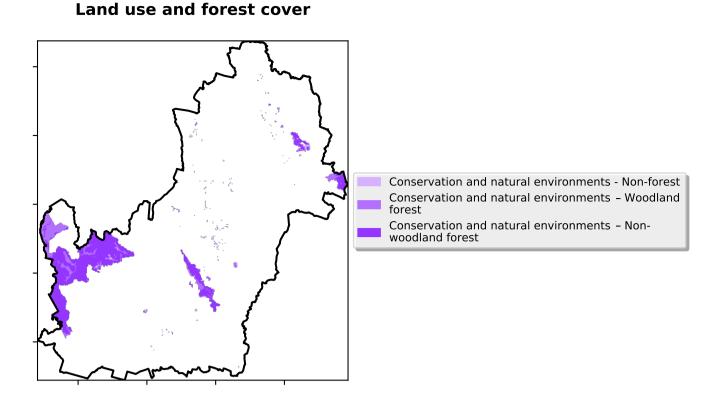




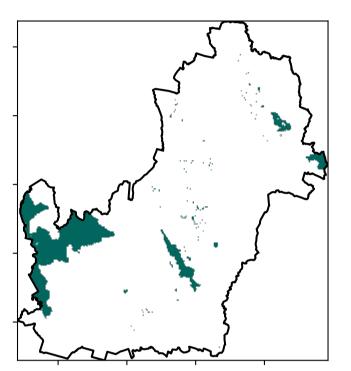
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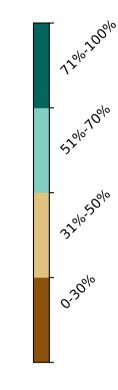
Conservation and natural environments

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.

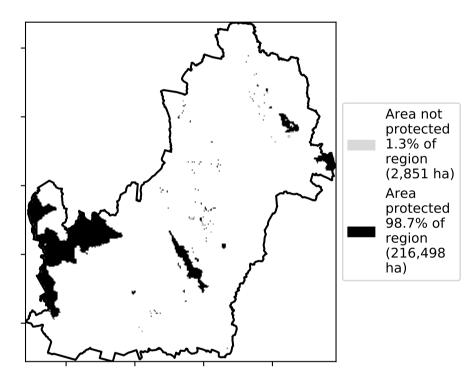


Total Vegetation Cover [%]

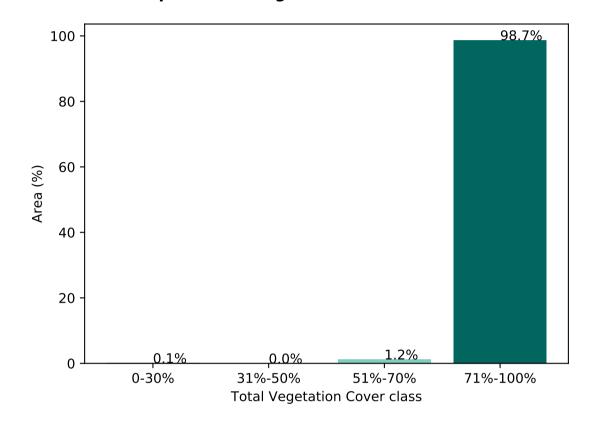




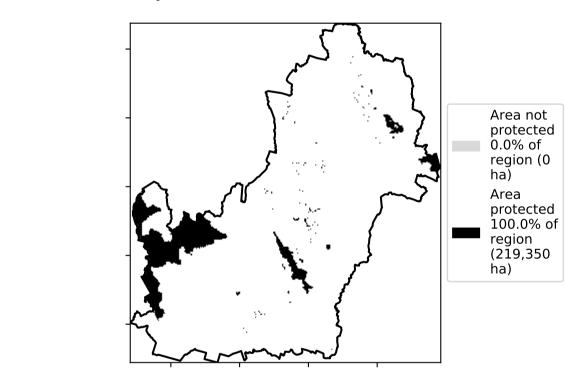
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



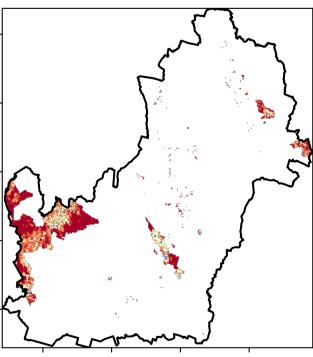
Total Vegetation Cover Decile [%]

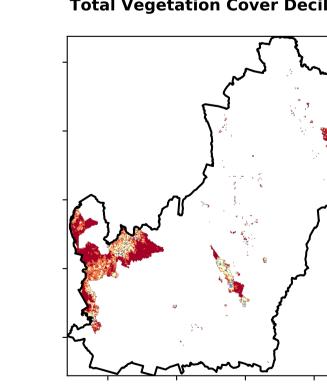
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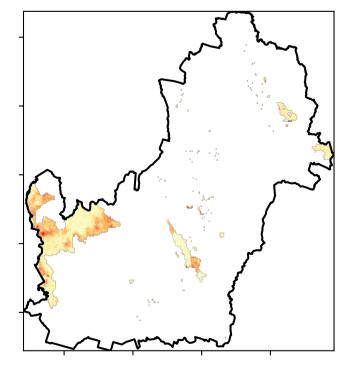
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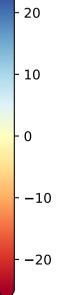




Total Vegetation Cover Anomaly [%]

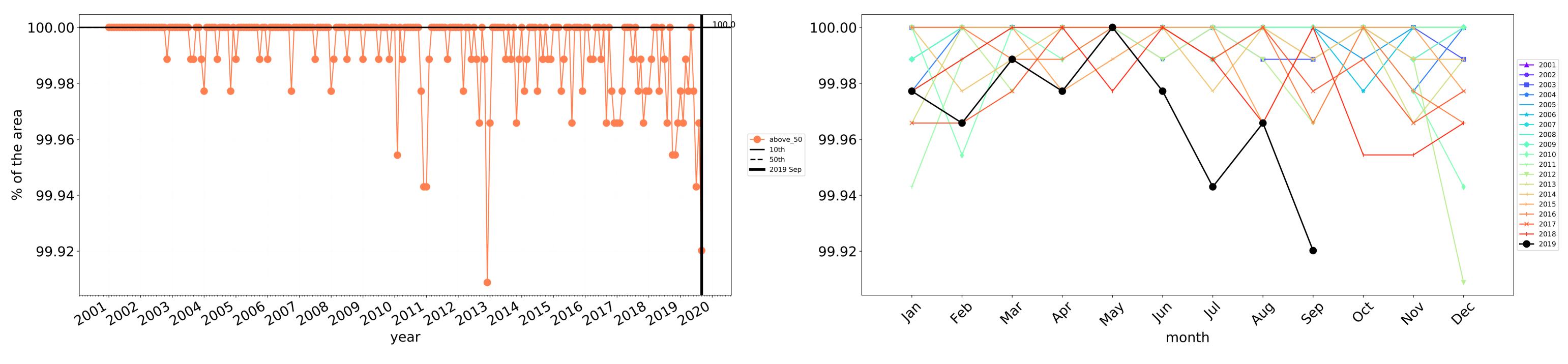
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map from 2001 to 2019.





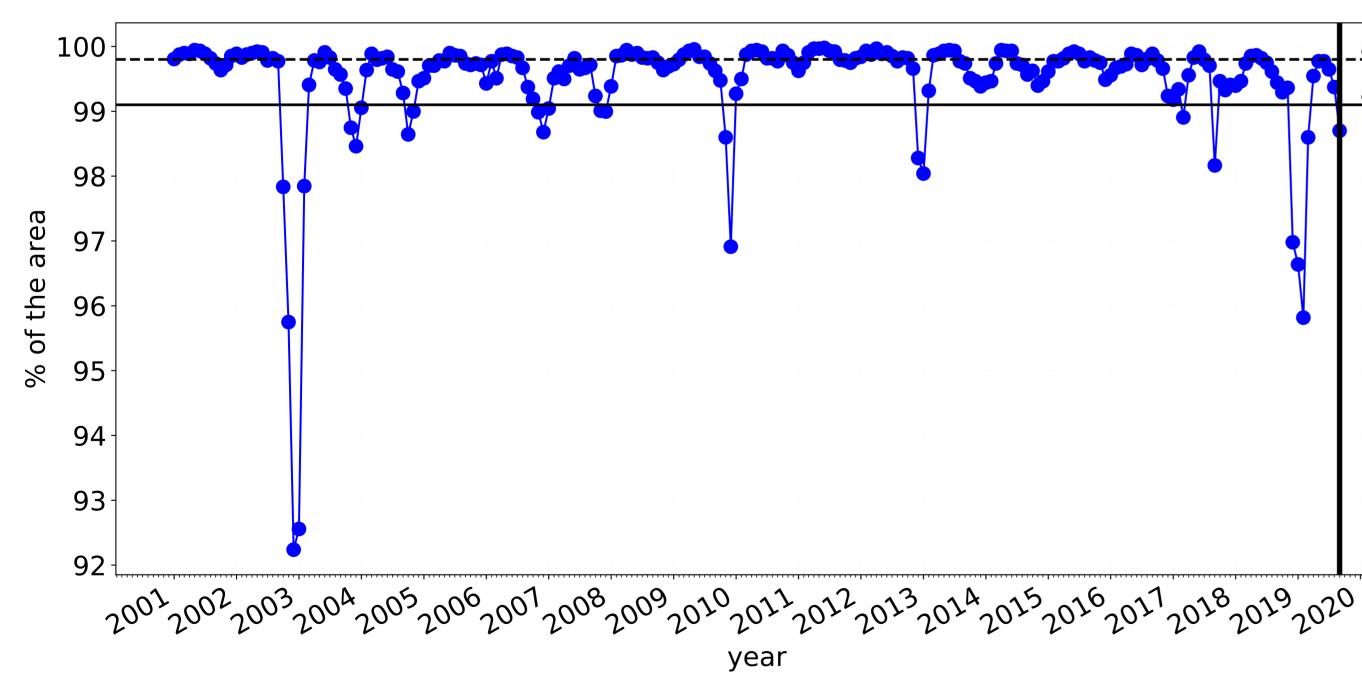
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.





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

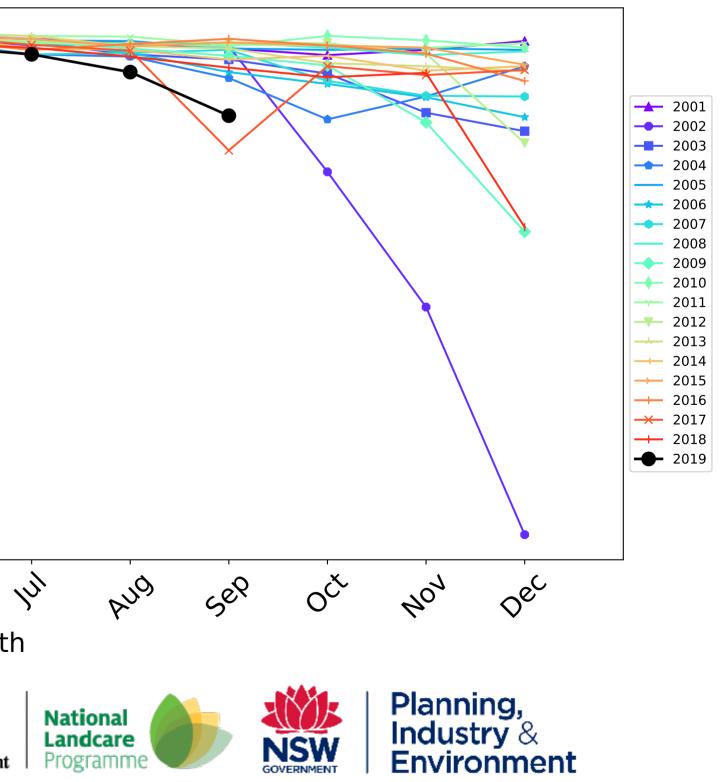
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

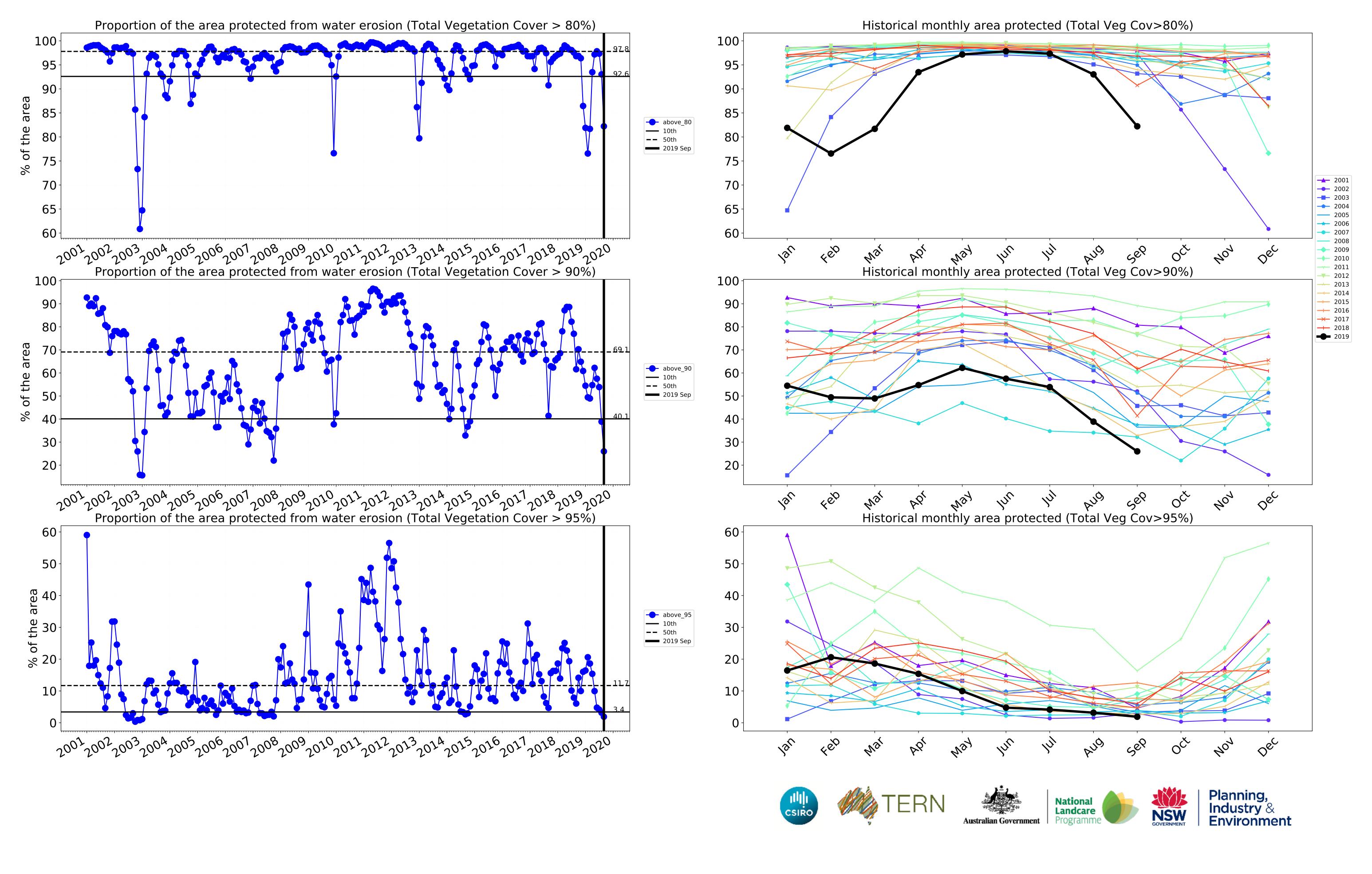


Wind erosion historical monthly area protected (Total Veg Cov >50%)

100 99 98 ---- above_70 **—** 10th 97 **——** 50th **——** 2019 Sep 96 95 94 93 92 4eb 1ar Inu way P.Q Way month ERN CSIRO Australian Government

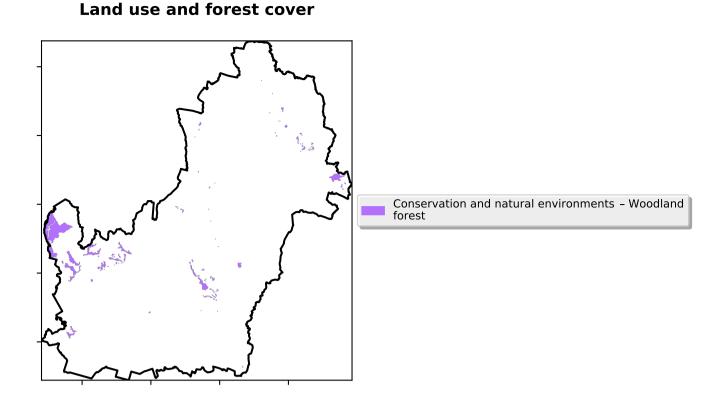
Water erosion historical monthly area protected (Total Veg Cov>70%)





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.



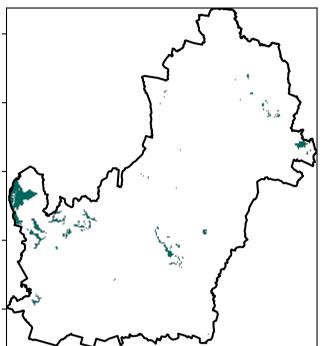
12%-100%

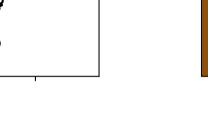
52% 70%

320050010

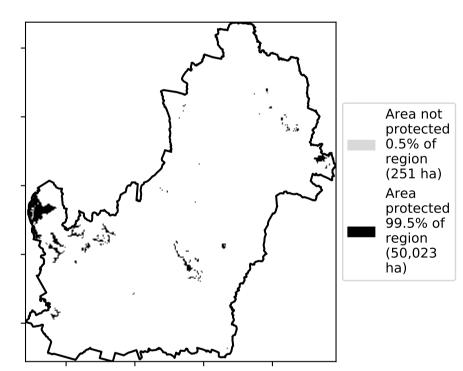
0.30%

Total Vegetation Cover [%]

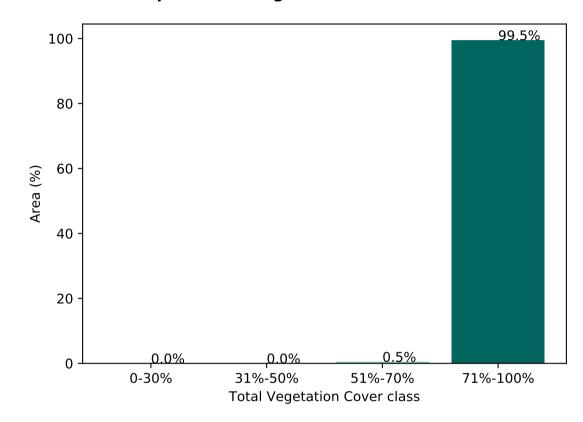




% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area

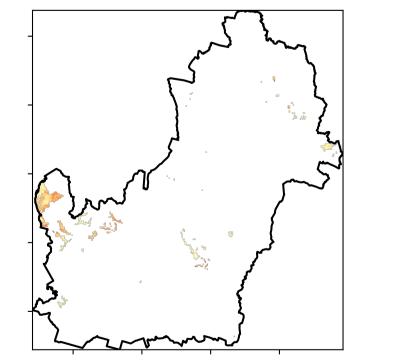


% Area protected from wind erosion (>50%)

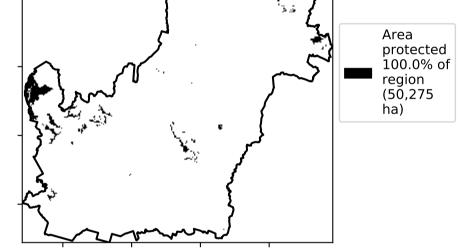


Total Vegetation Cover Anomaly [%]

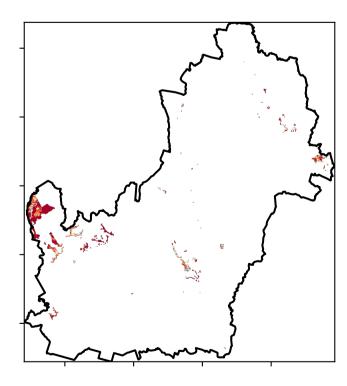
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

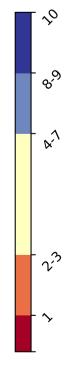






Total Vegetation Cover Decile [%]







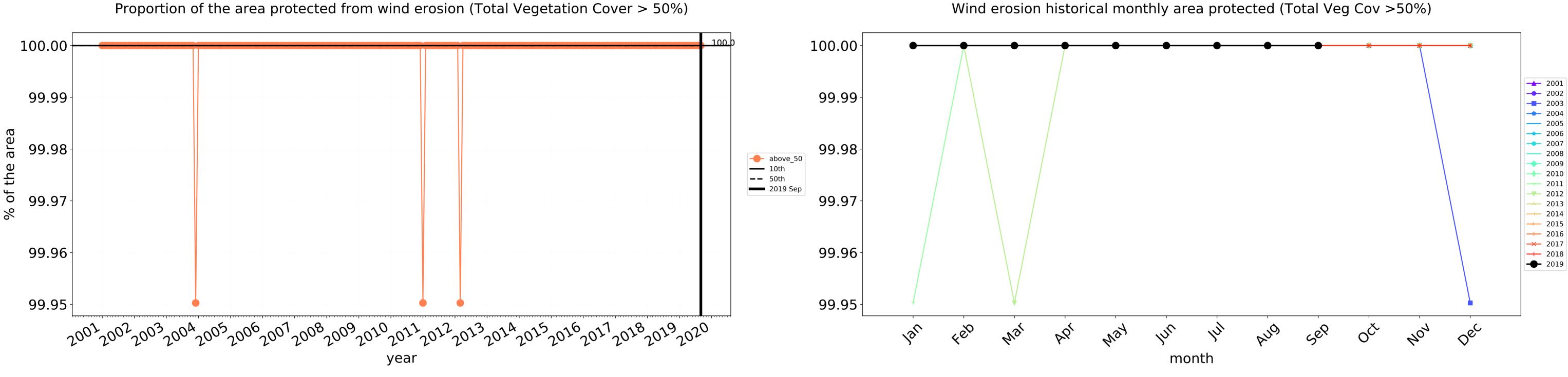
Deciles show where the pixel value lies in the

record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of

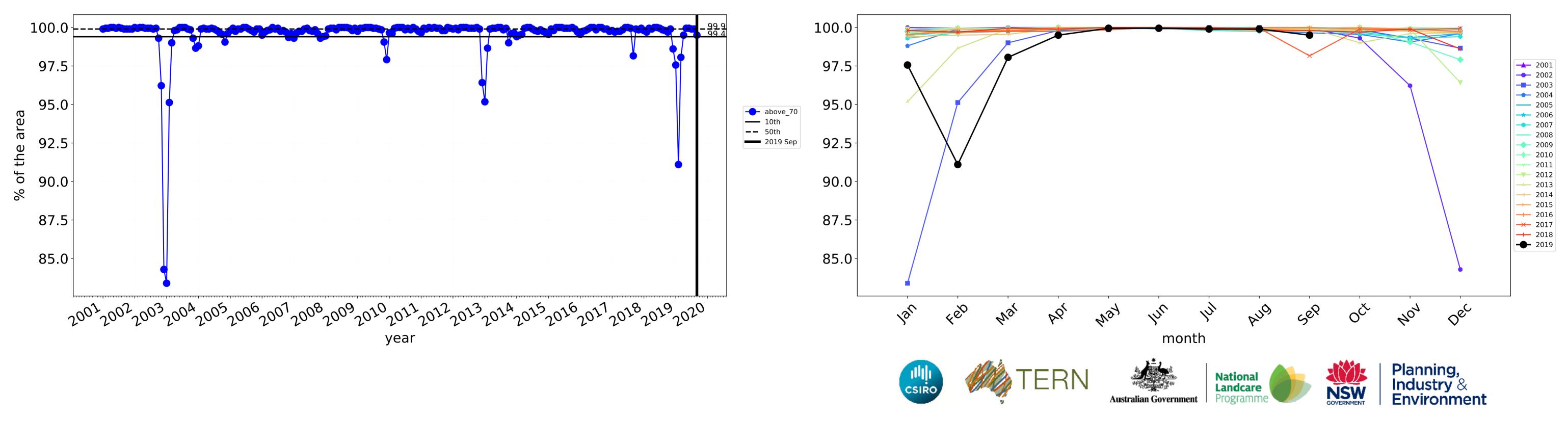
records for that month of

the map using baseline from 2001 to 2019.

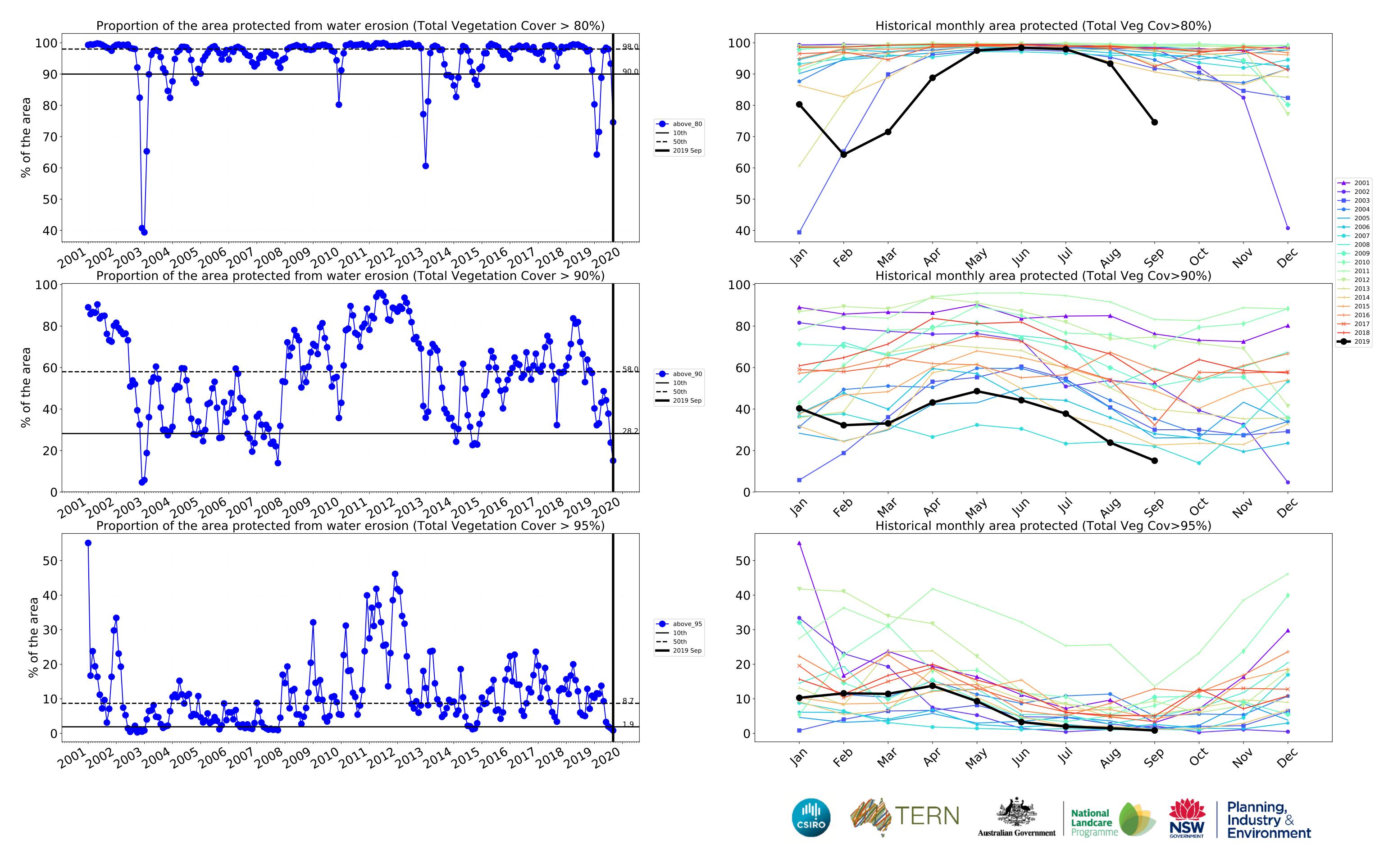
Conservation and natural environments Woodland forest timeseries



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



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



Conservation and natural environments Forest (non woodland)

Land use and forest cover

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.

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· 32% 50%

0.30%

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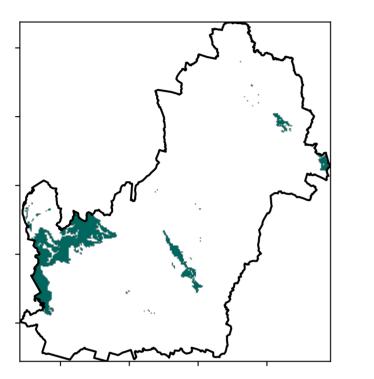
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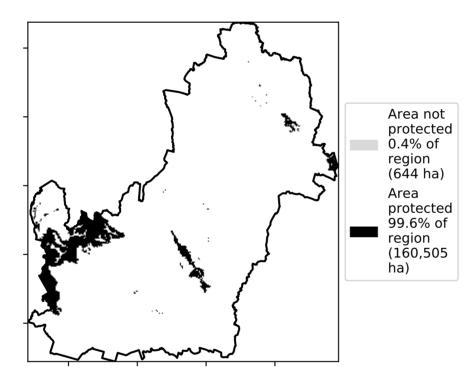
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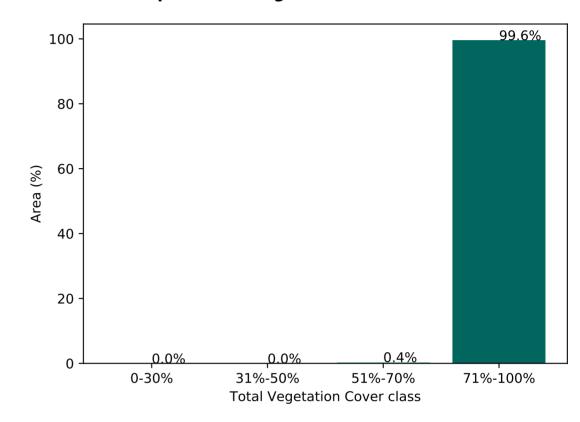
Total Vegetation Cover [%]



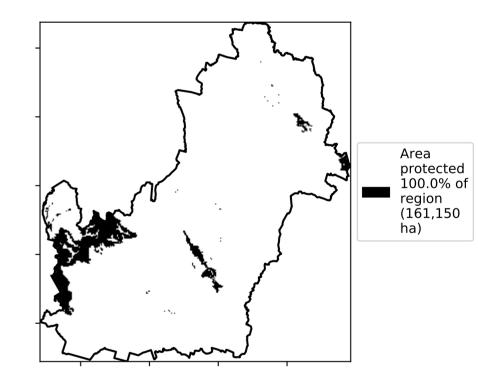
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area

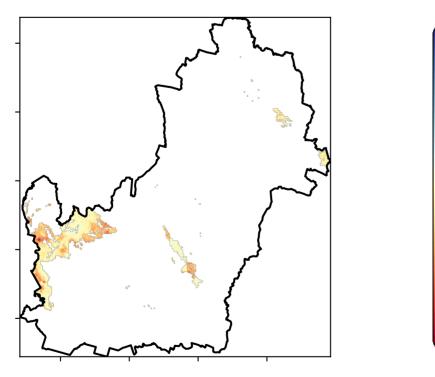


% Area protected from wind erosion (>50%)

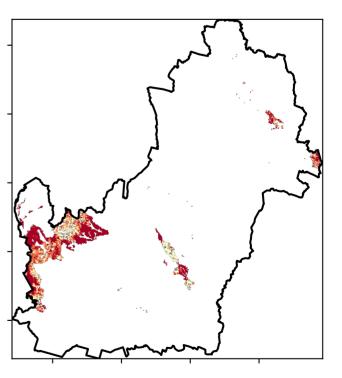


Total Vegetation Cover Anomaly [%]

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.



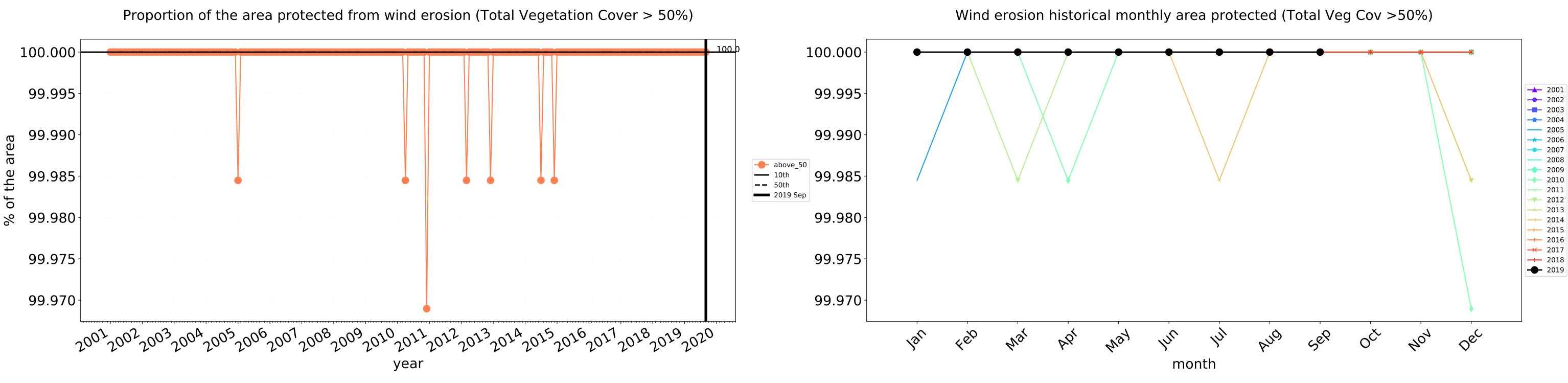
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019. **Total Vegetation Cover Decile [%]**



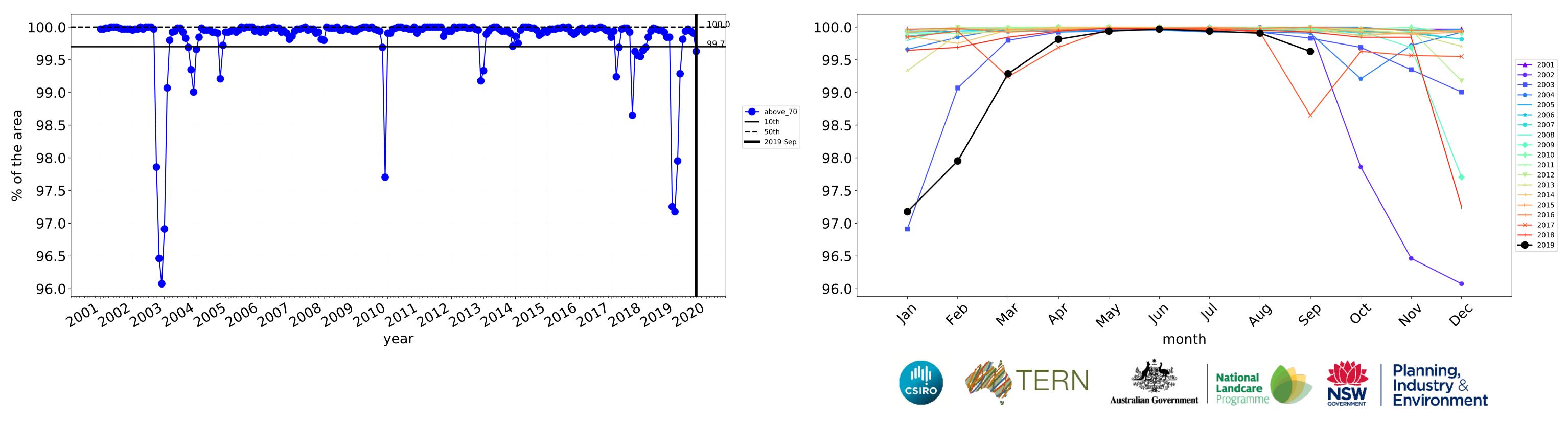




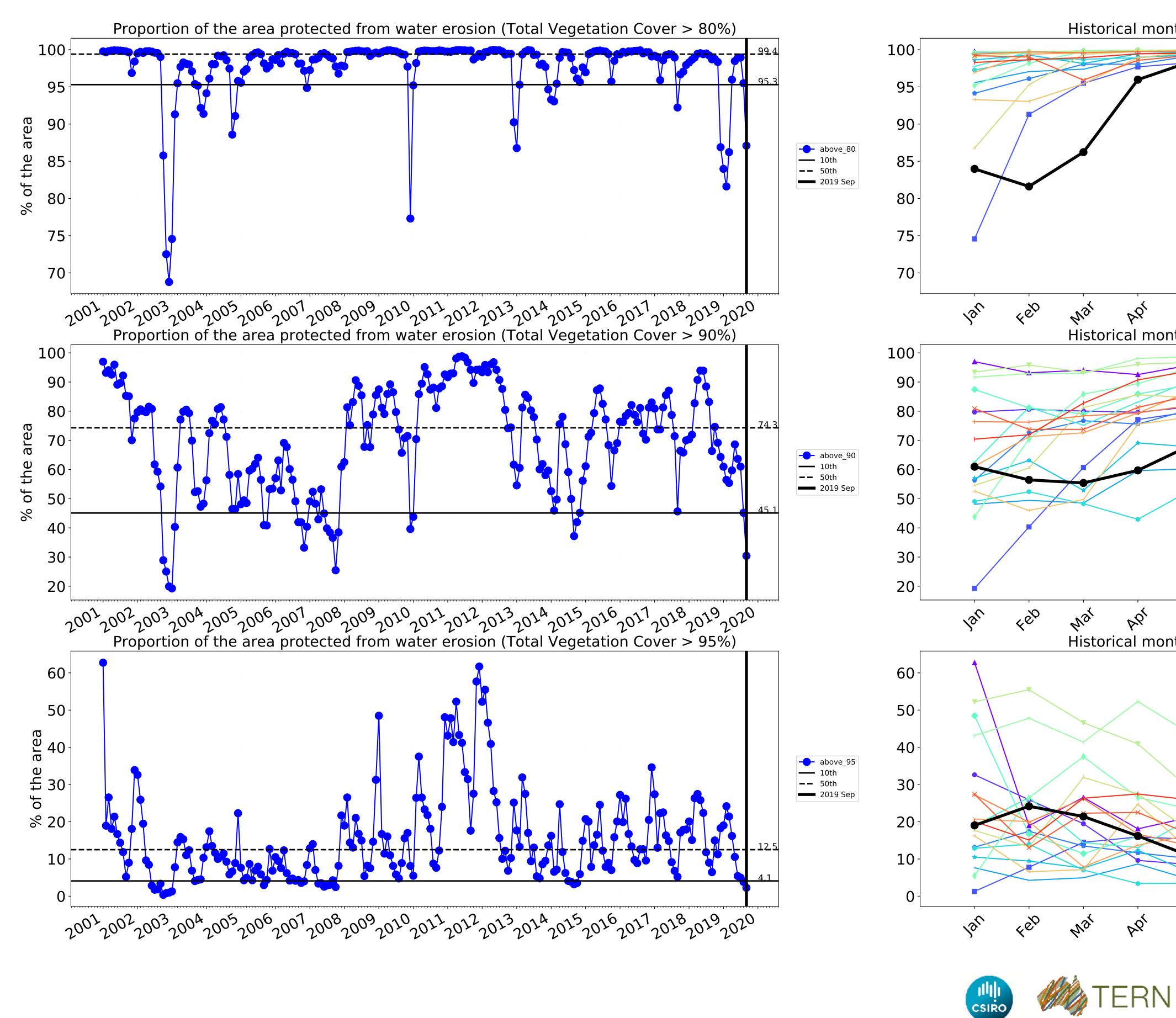


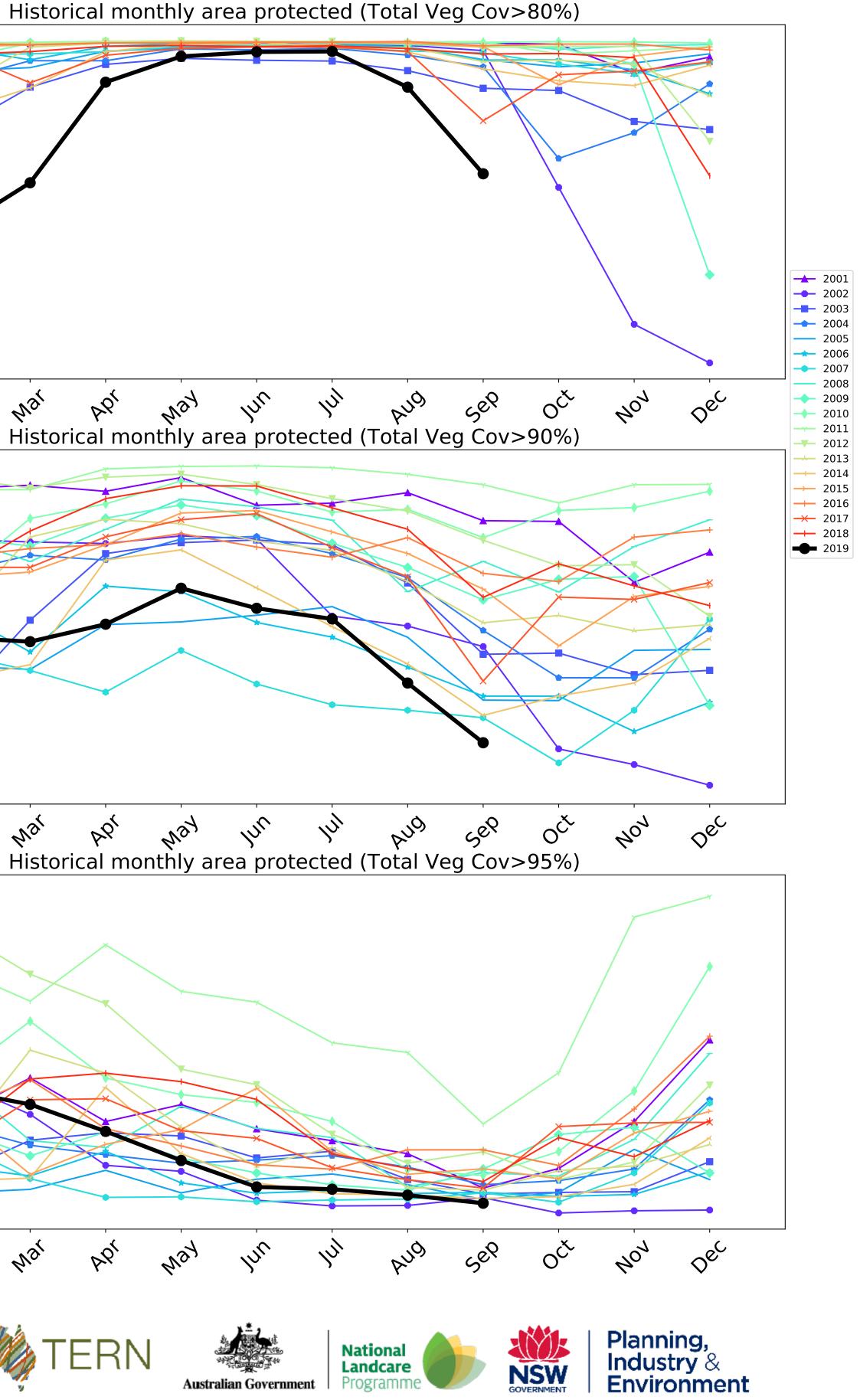


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



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

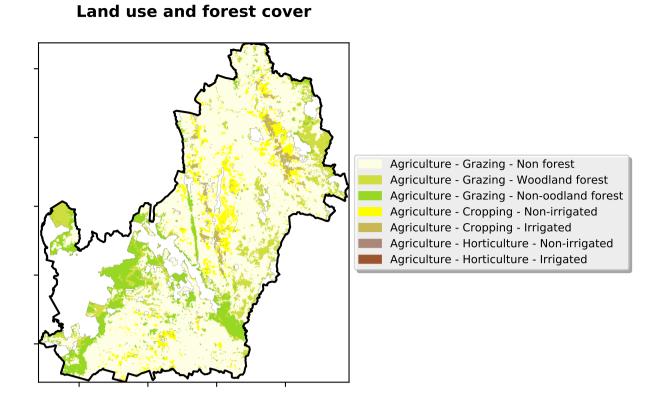




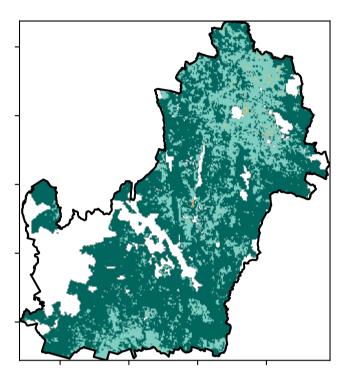
CSIRO

Agriculture

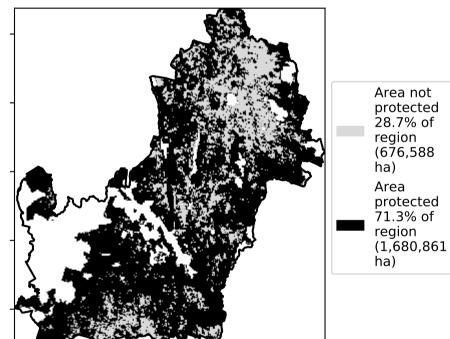
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.

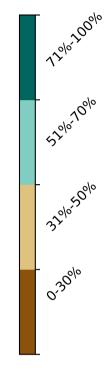


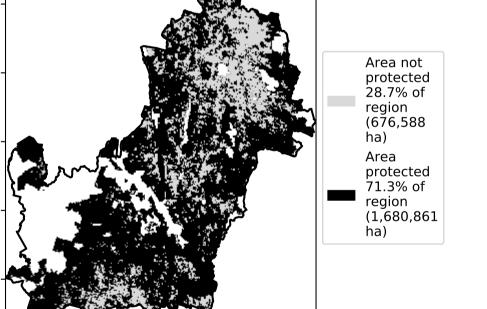
Total Vegetation Cover [%]



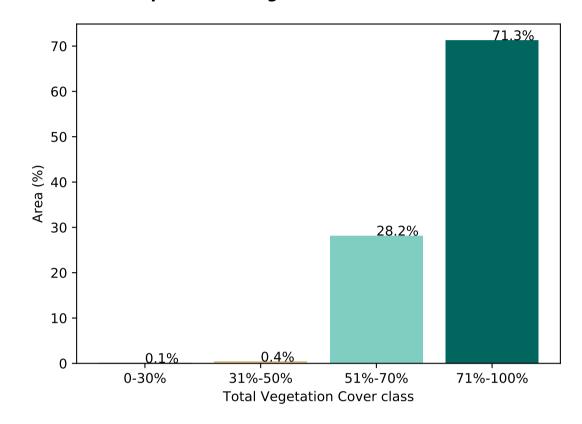
% Area protected from water erosion (>70%)



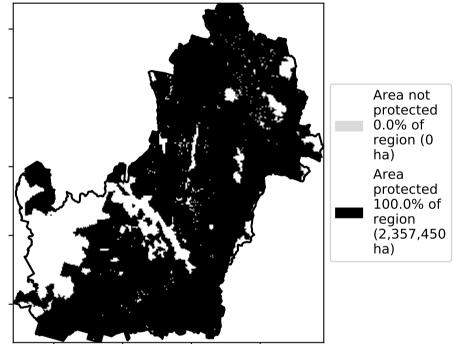




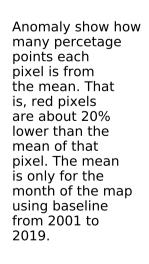
Proportion of vegetation cover class in area

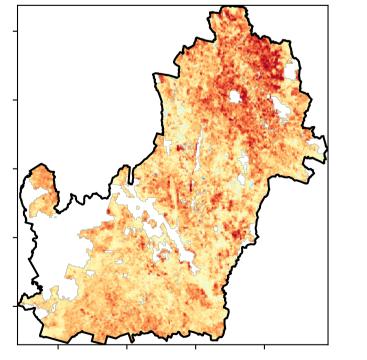


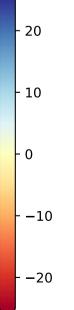
% Area protected from wind erosion (>50%)



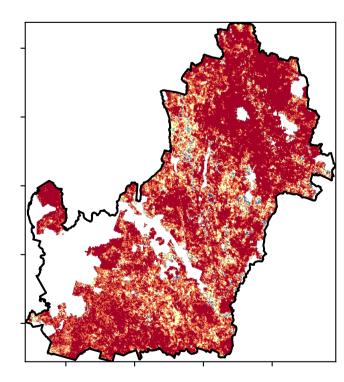
Total Vegetation Cover Anomaly [%]







Total Vegetation Cover Decile [%]



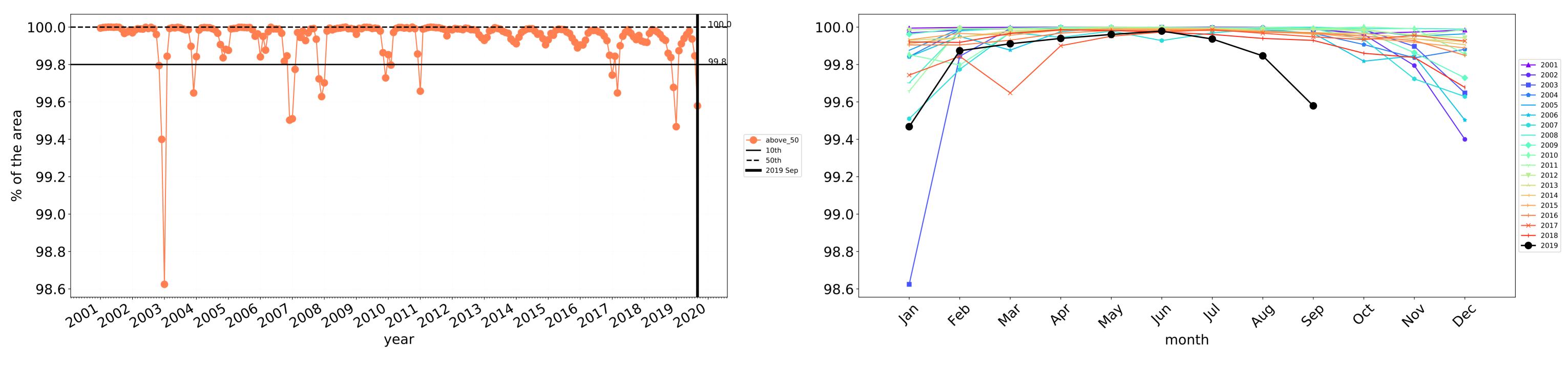
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Deciles show where the pixel value lies in the

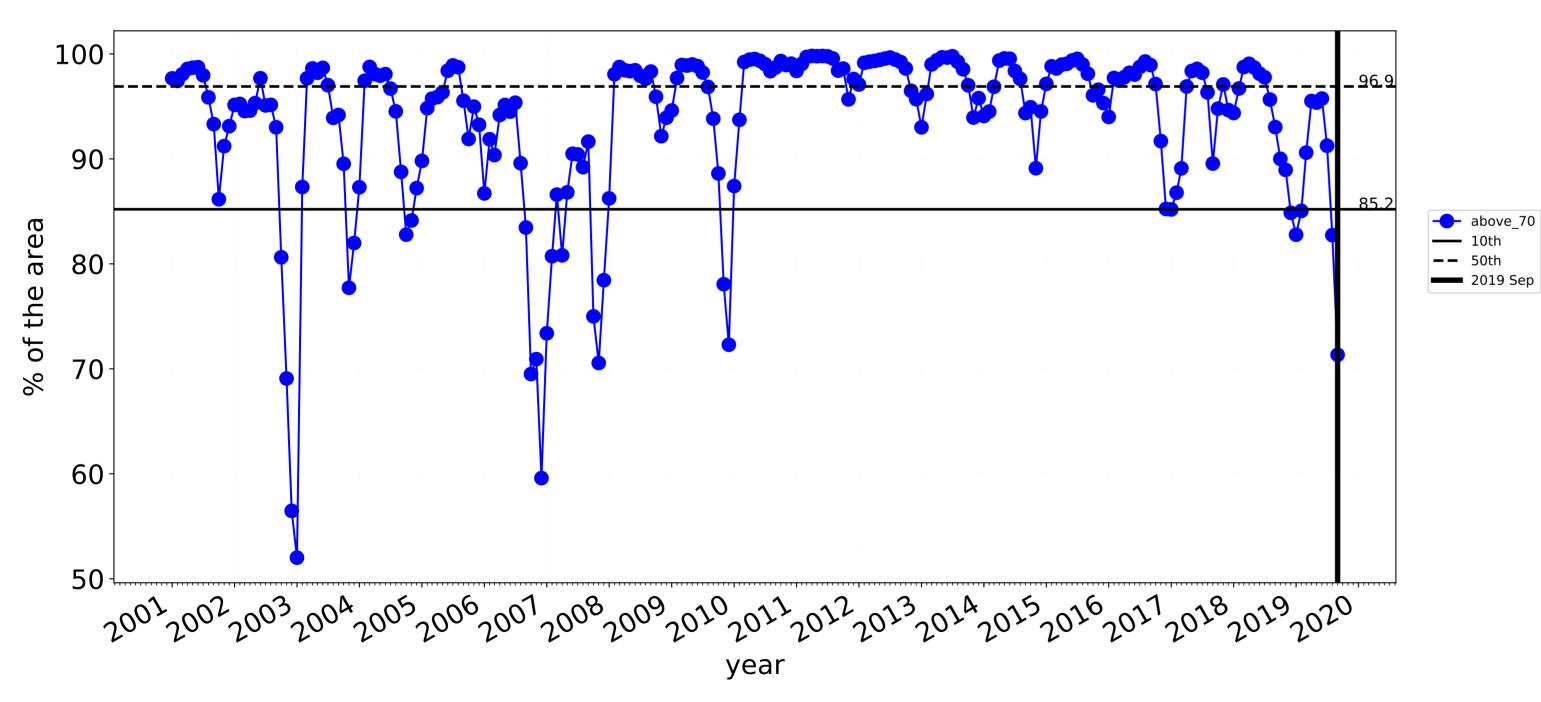
record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of

records for that month of the map using baseline from 2001 to 2019.

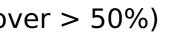


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

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

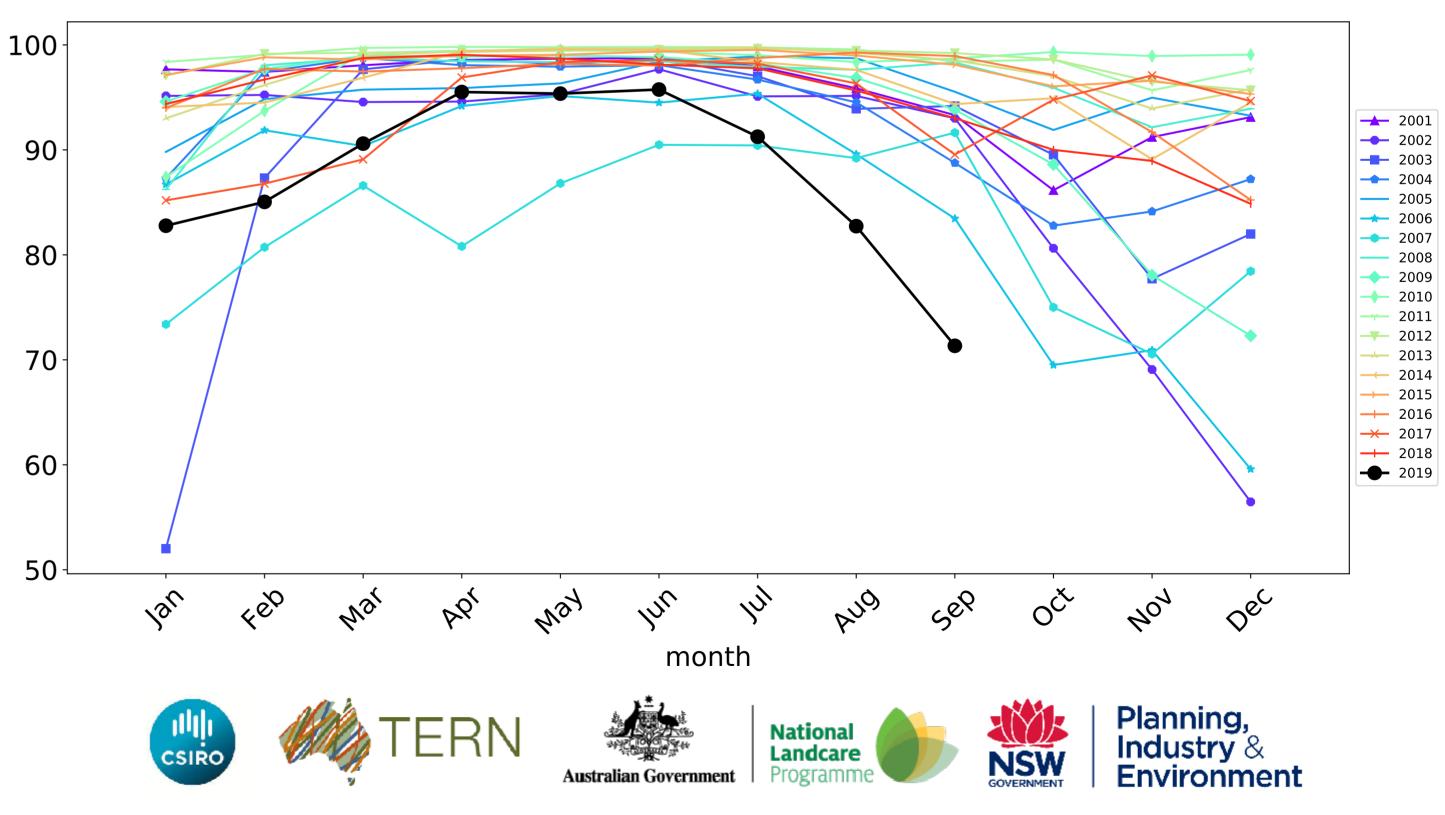


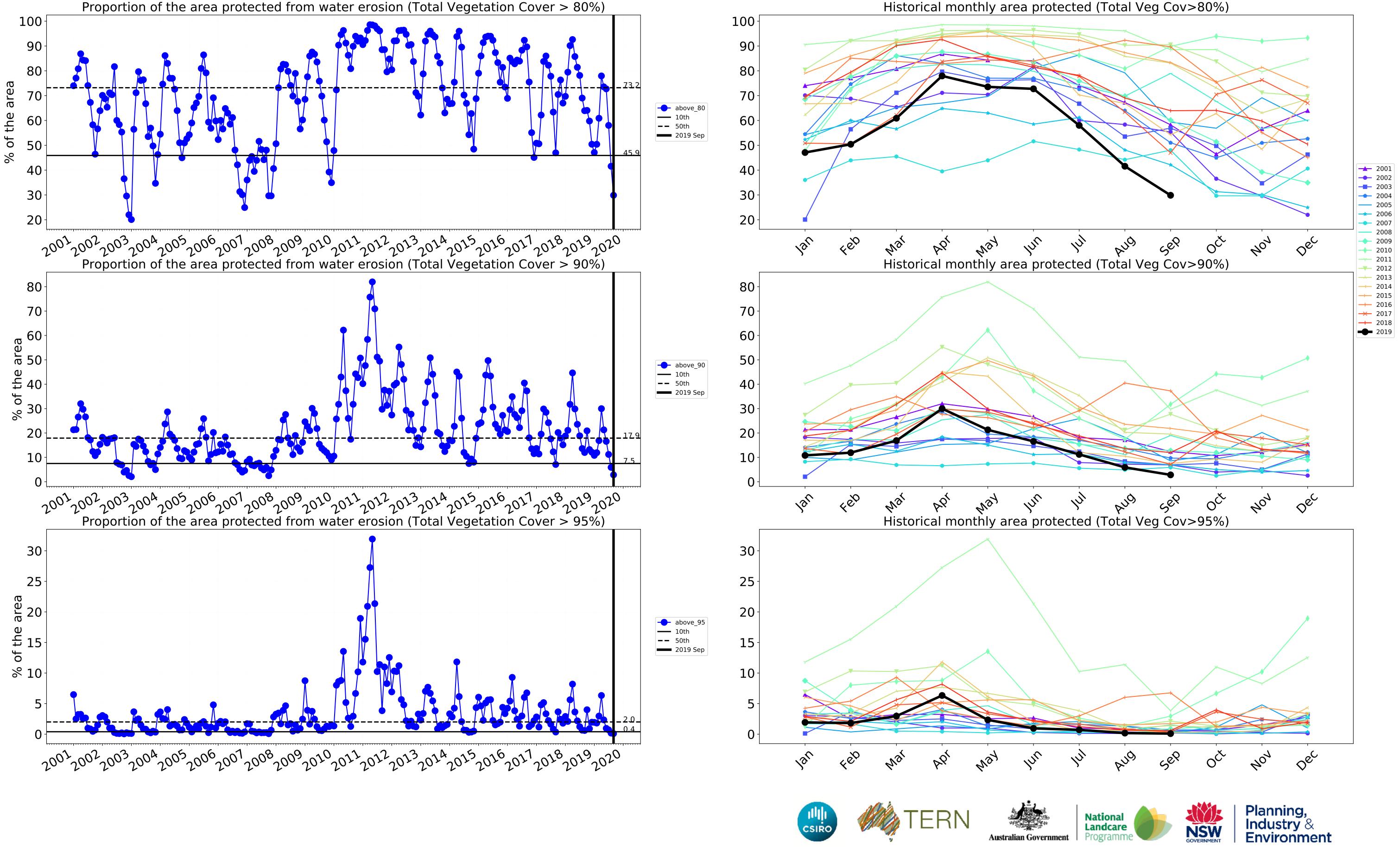
Agriculture timeseries



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

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

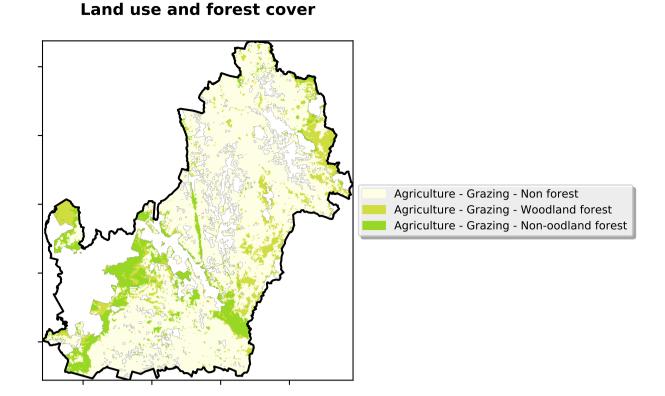




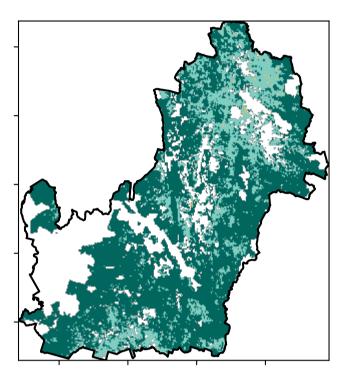
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Grazing

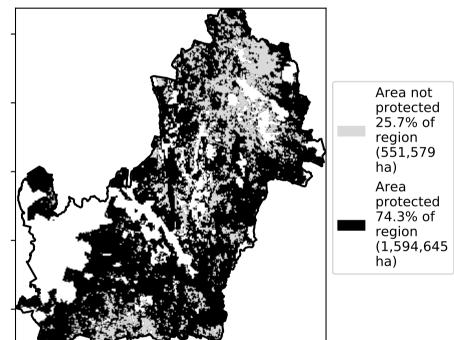
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.

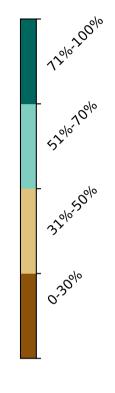


Total Vegetation Cover [%]



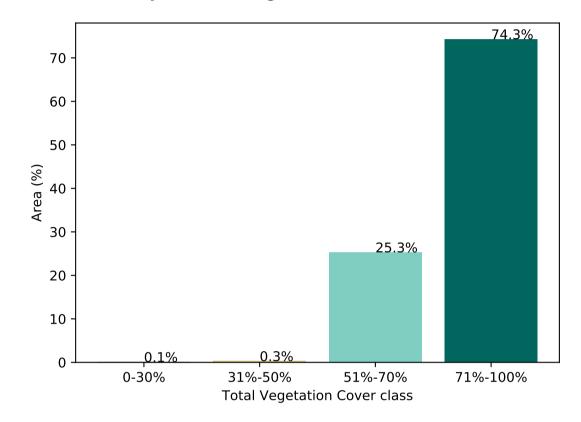




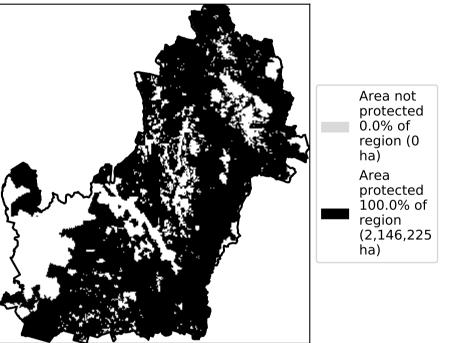




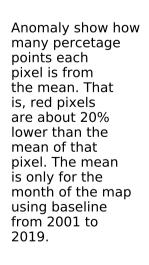
Proportion of vegetation cover class in area

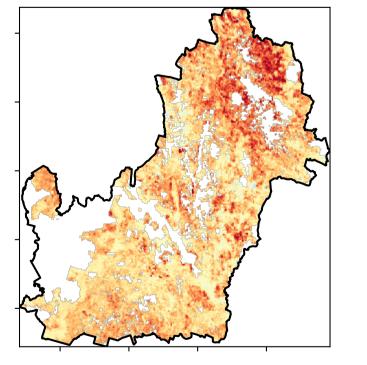


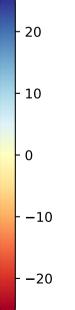
% Area protected from wind erosion (>50%)



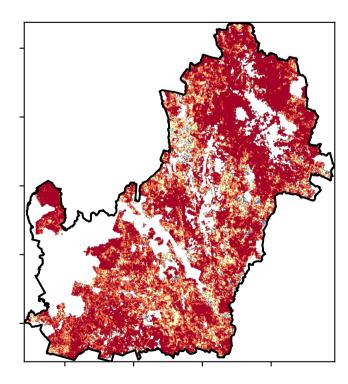
Total Vegetation Cover Anomaly [%]

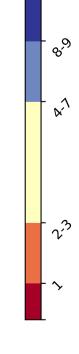






Total Vegetation Cover Decile [%]





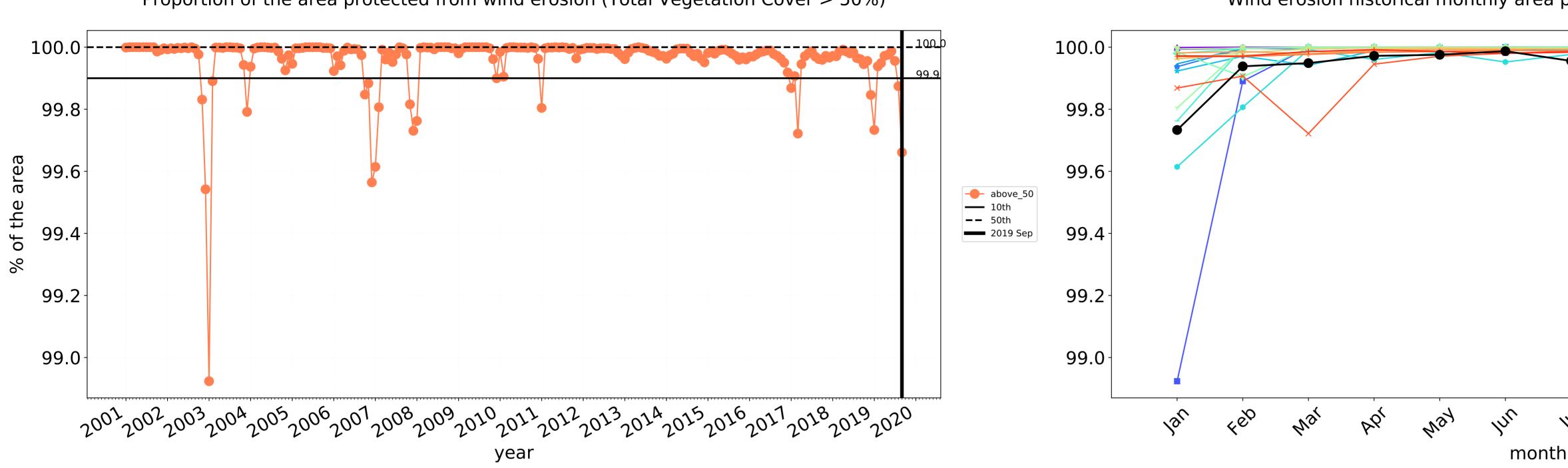
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Deciles show where the pixel value lies in the

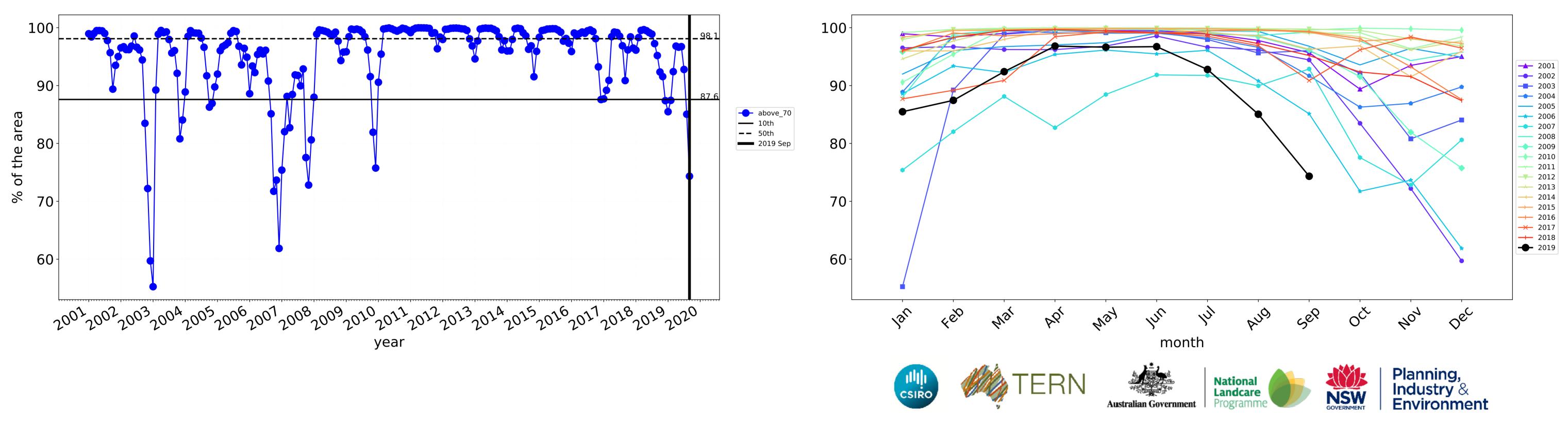
record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of

the map using baseline from 2001 to 2019.

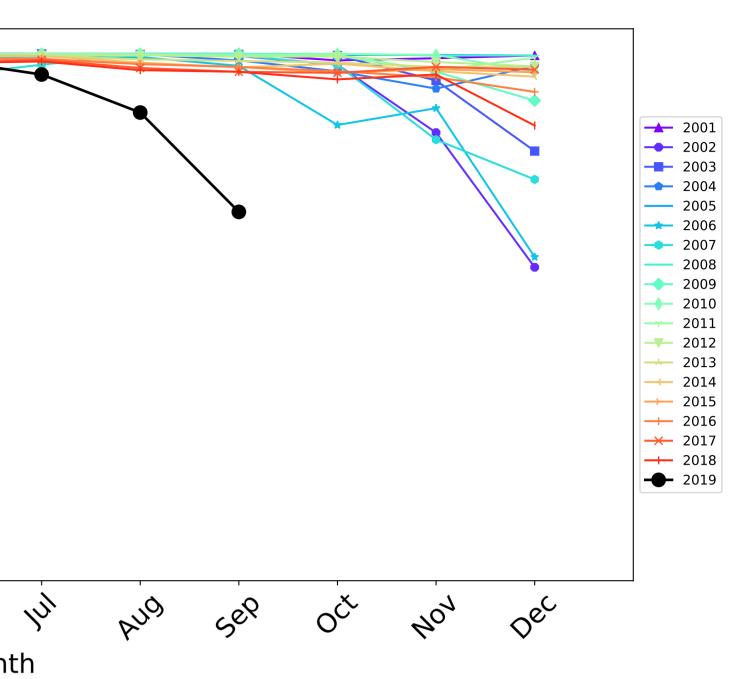


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

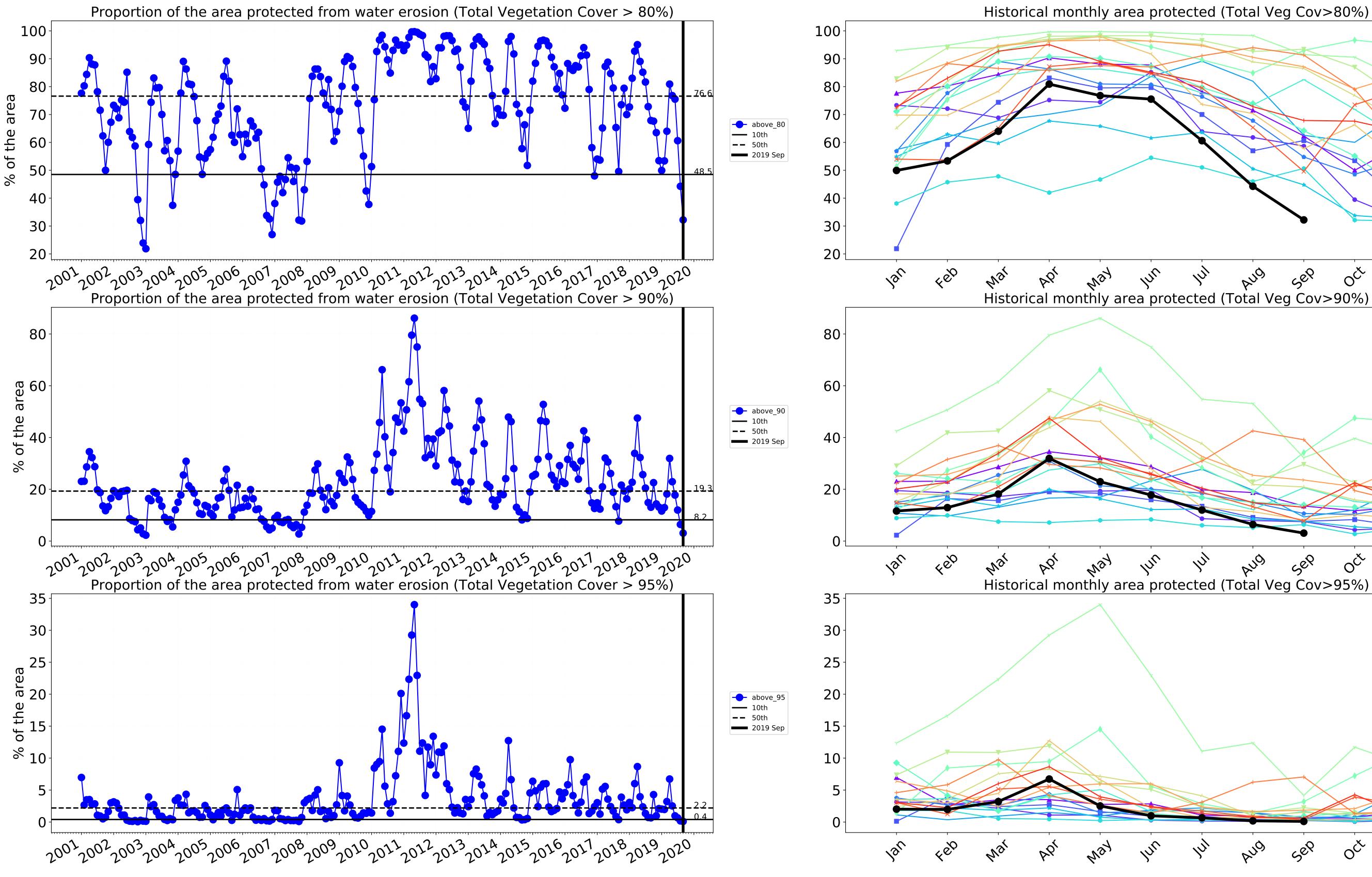
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



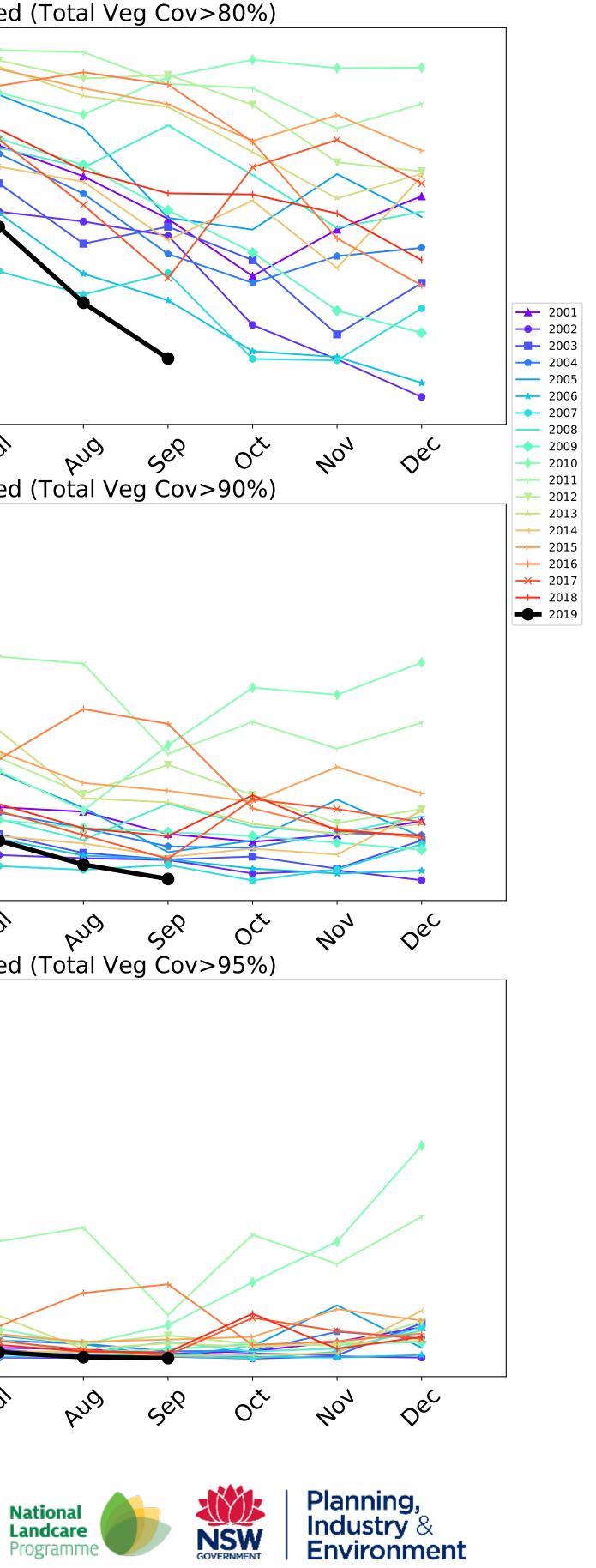
Wind erosion historical monthly area protected (Total Veg Cov >50%)



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







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Grazing non forest

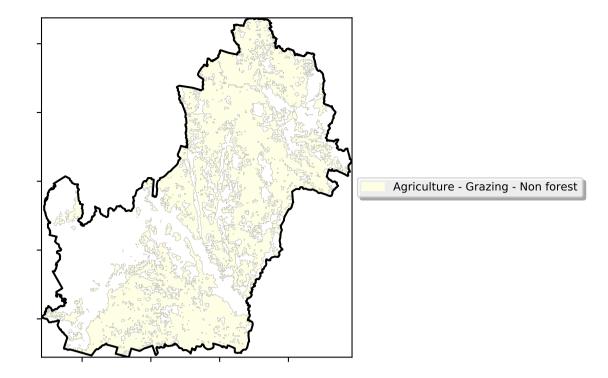
12%20091

· 52% 70%

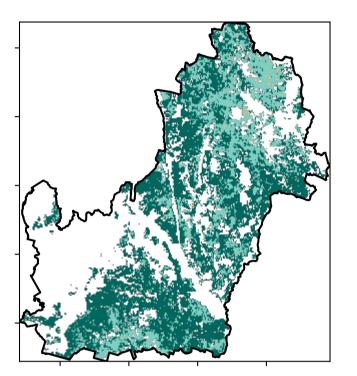
· 32°10'50°10

0.30%

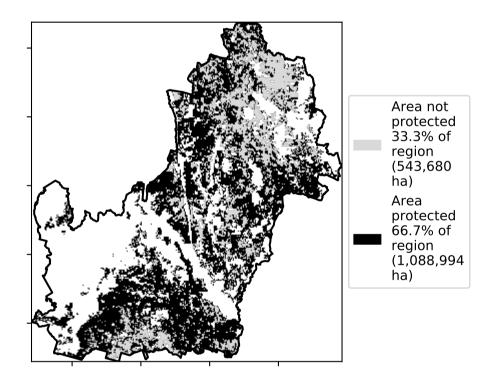
Land use and forest cover



Total Vegetation Cover [%]

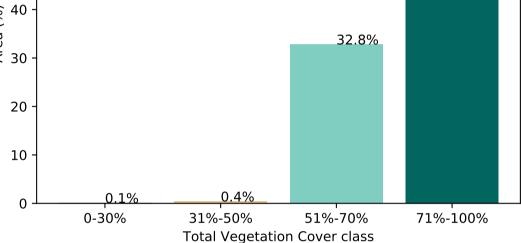




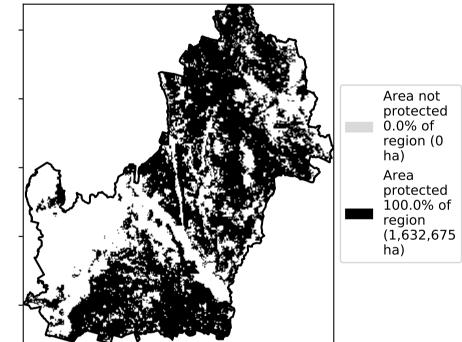


60 50 40 Area (%) 05 30 32.8%

70



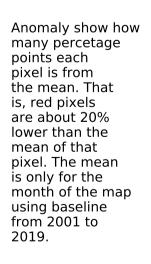
% Area protected from wind erosion (>50%)



Proportion of vegetation cover class in area

66.7%

Total Vegetation Cover Anomaly [%]



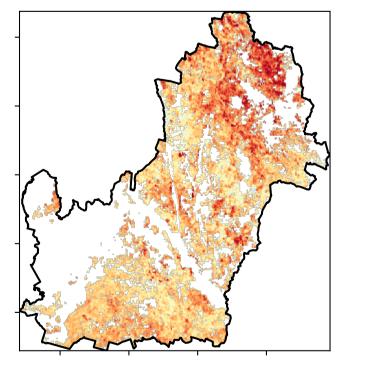
Landuse map of area based on 2015

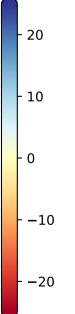
catchment scale landuse and

20% tree cover, sparse is 20 to 50% and dense > 50% tree

cover.

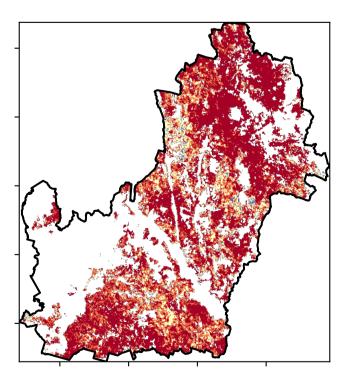
Australia's National Forest Inventory, where no forest is <

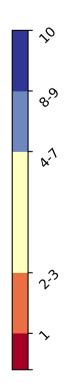




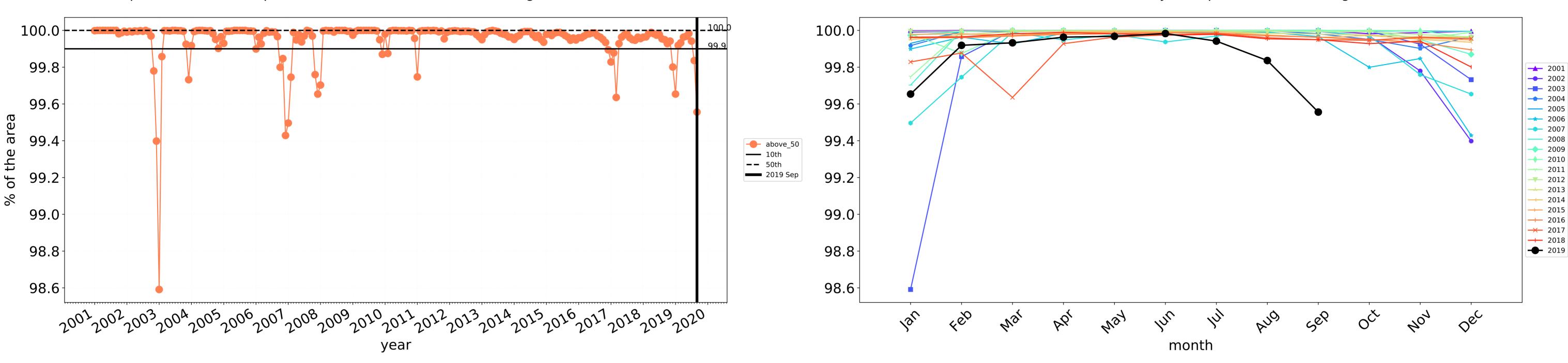


Total Vegetation Cover Decile [%]



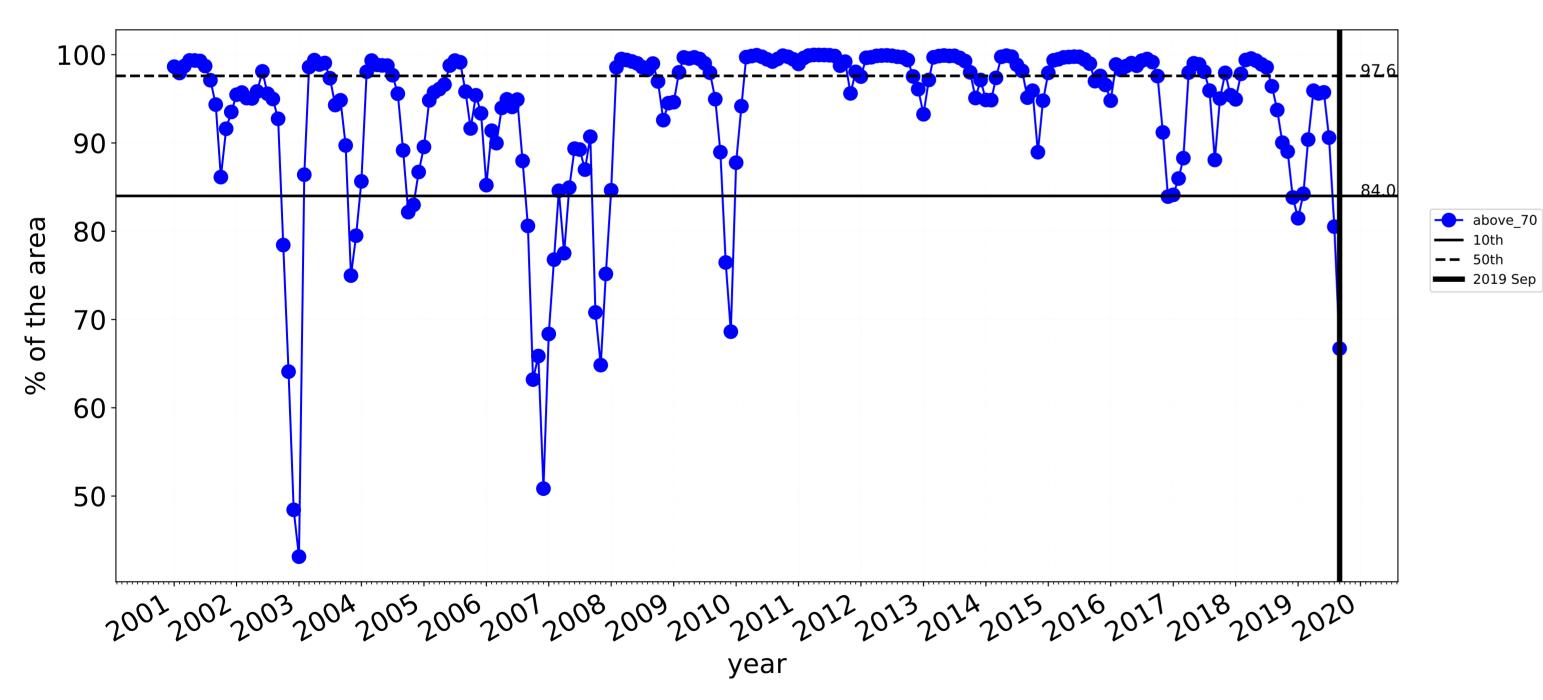






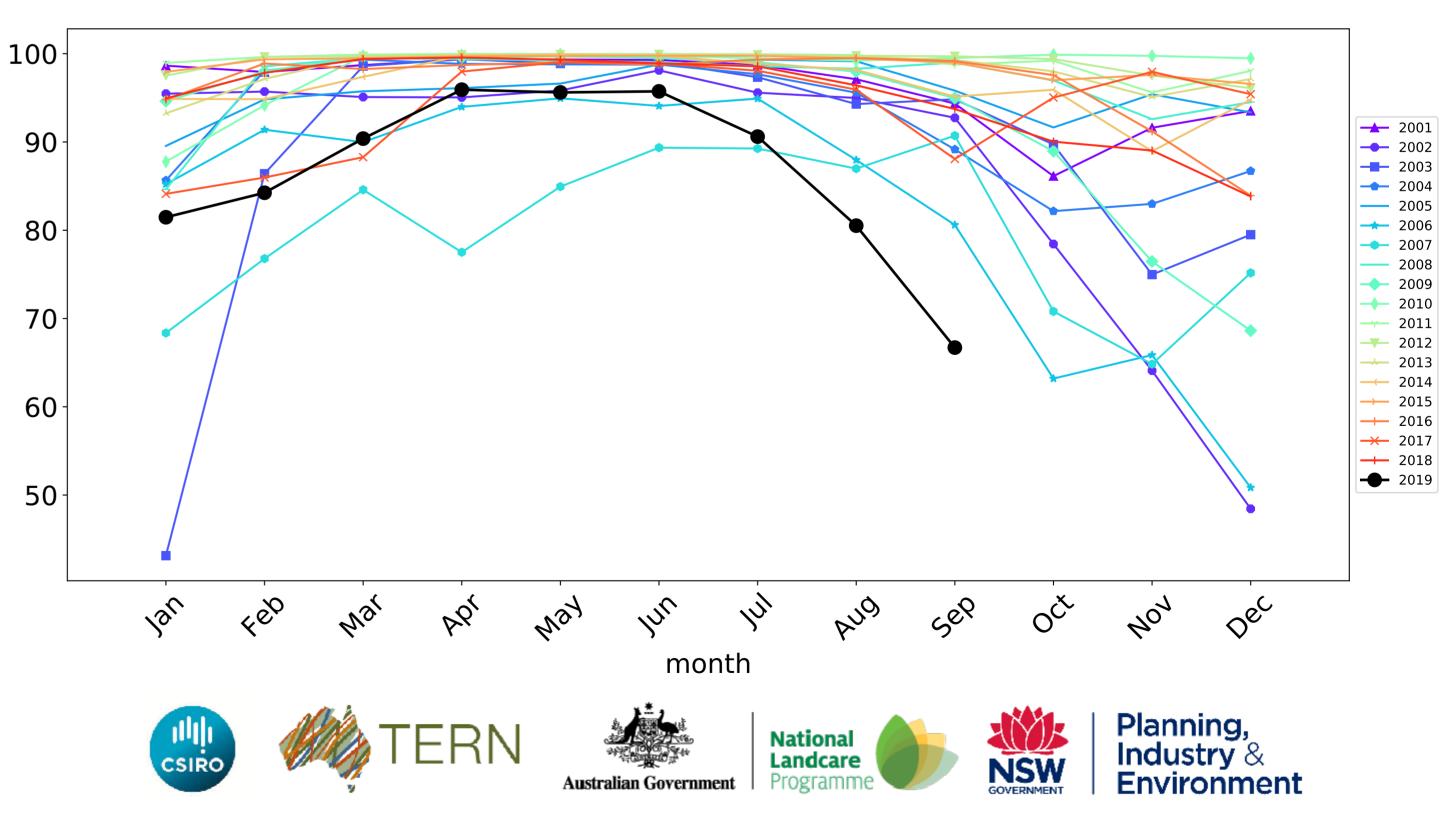
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

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

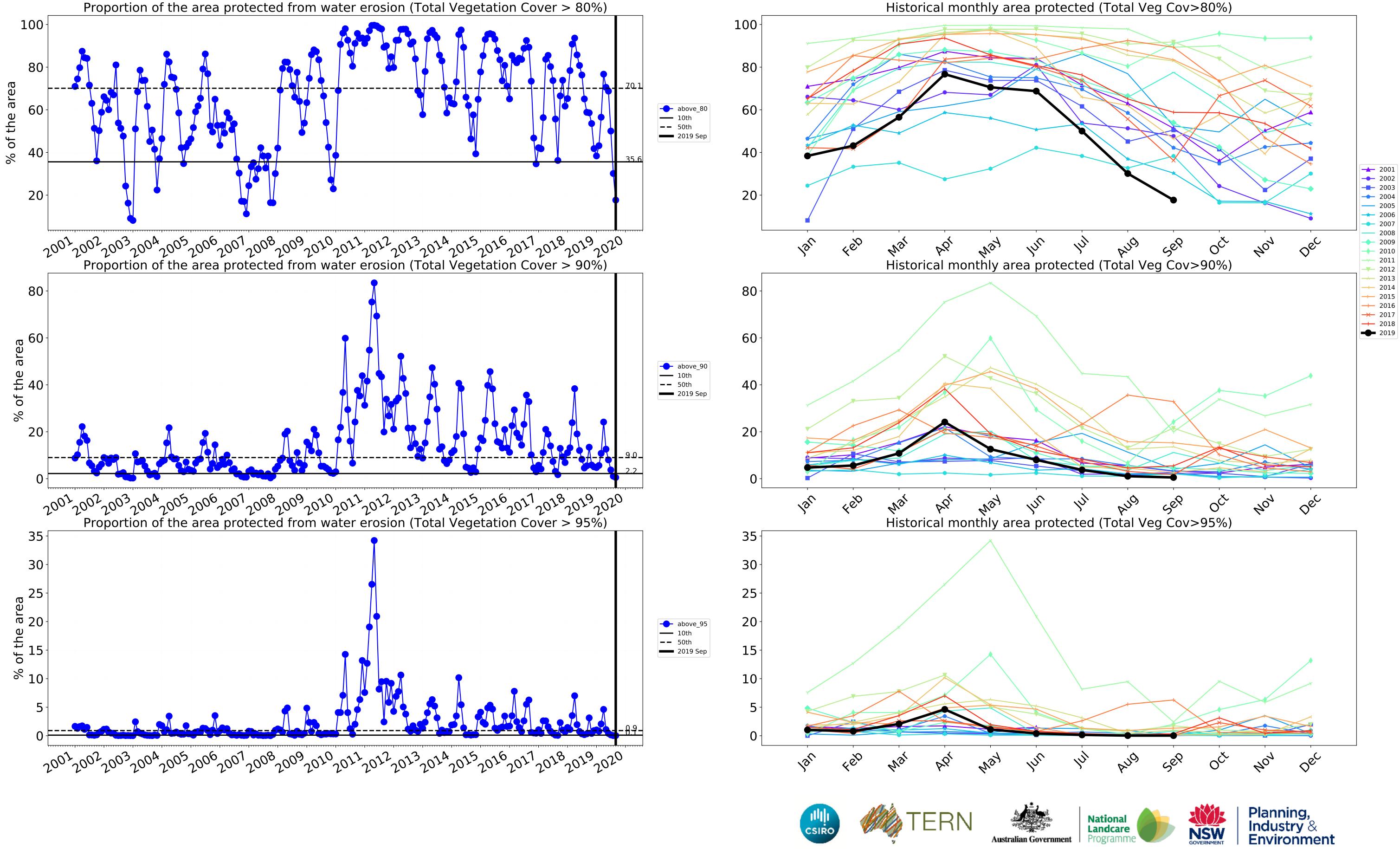


Grazing non forest timeseries

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



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



Grazing Woodland forest

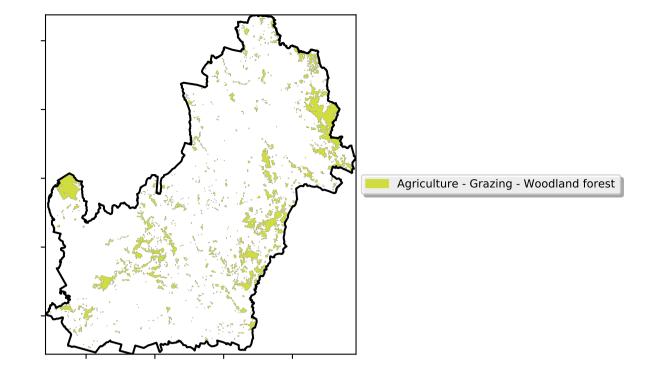
12/07/001

· 52°1070010

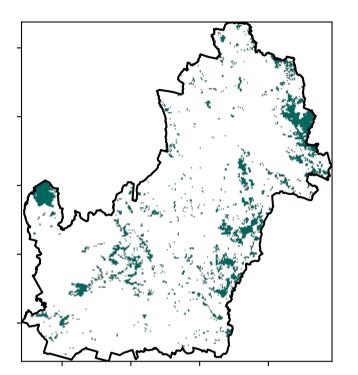
3201050010

0.30%

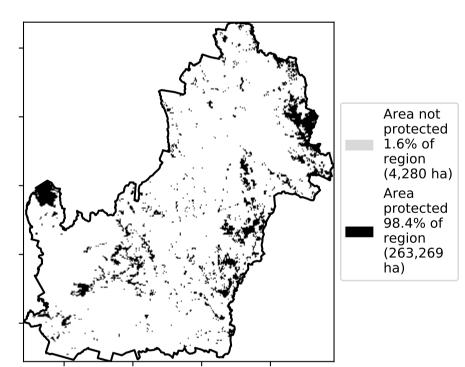
Land use and forest cover



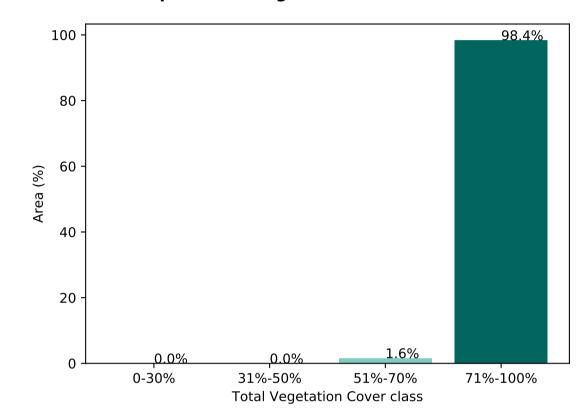
Total Vegetation Cover [%]



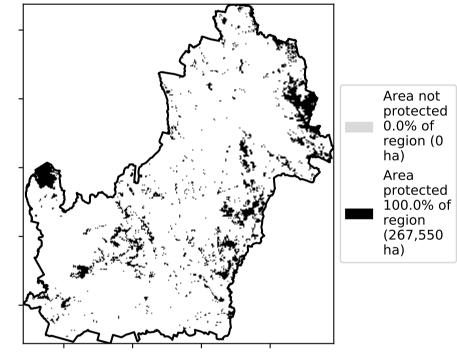




Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)

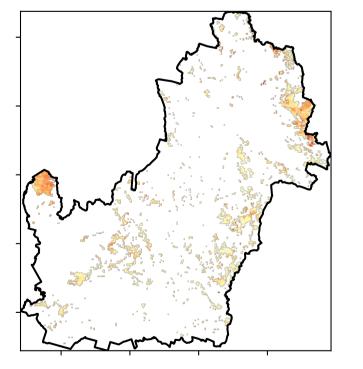


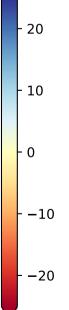


Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.

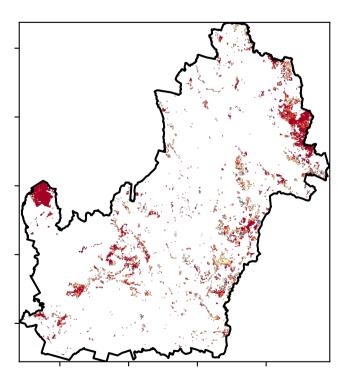
Total Vegetation Cover Anomaly [%]

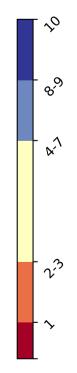
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.





Total Vegetation Cover Decile [%]

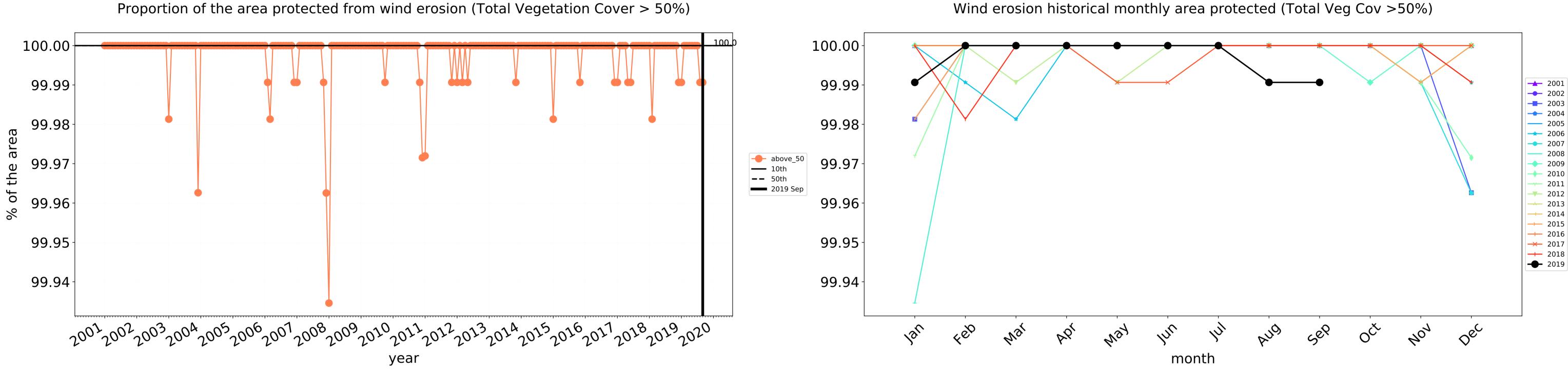






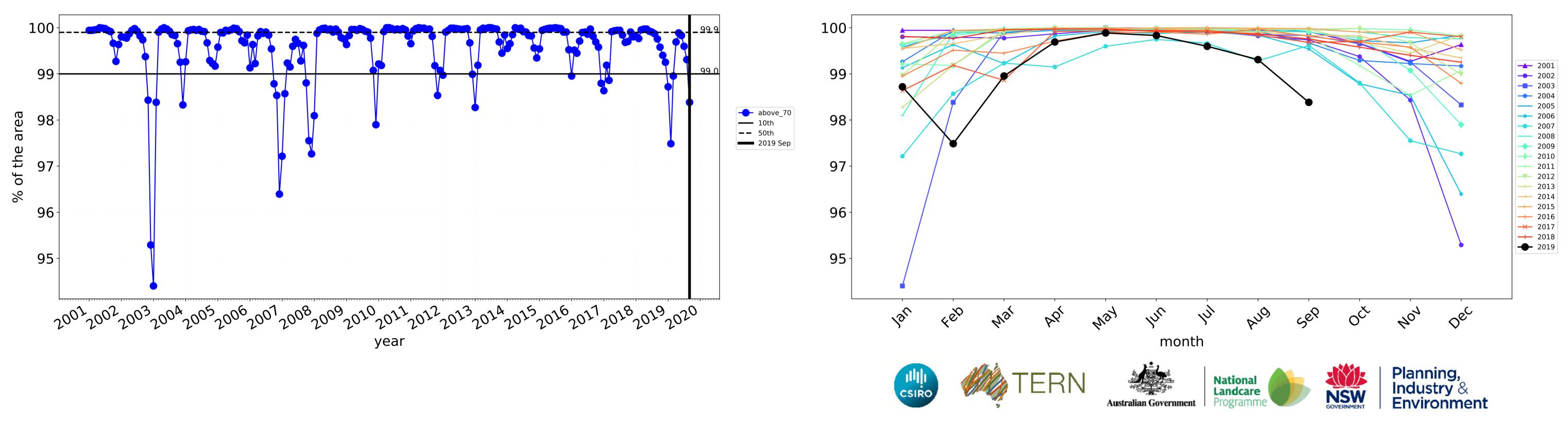
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline

the map using baseline from 2001 to 2019.

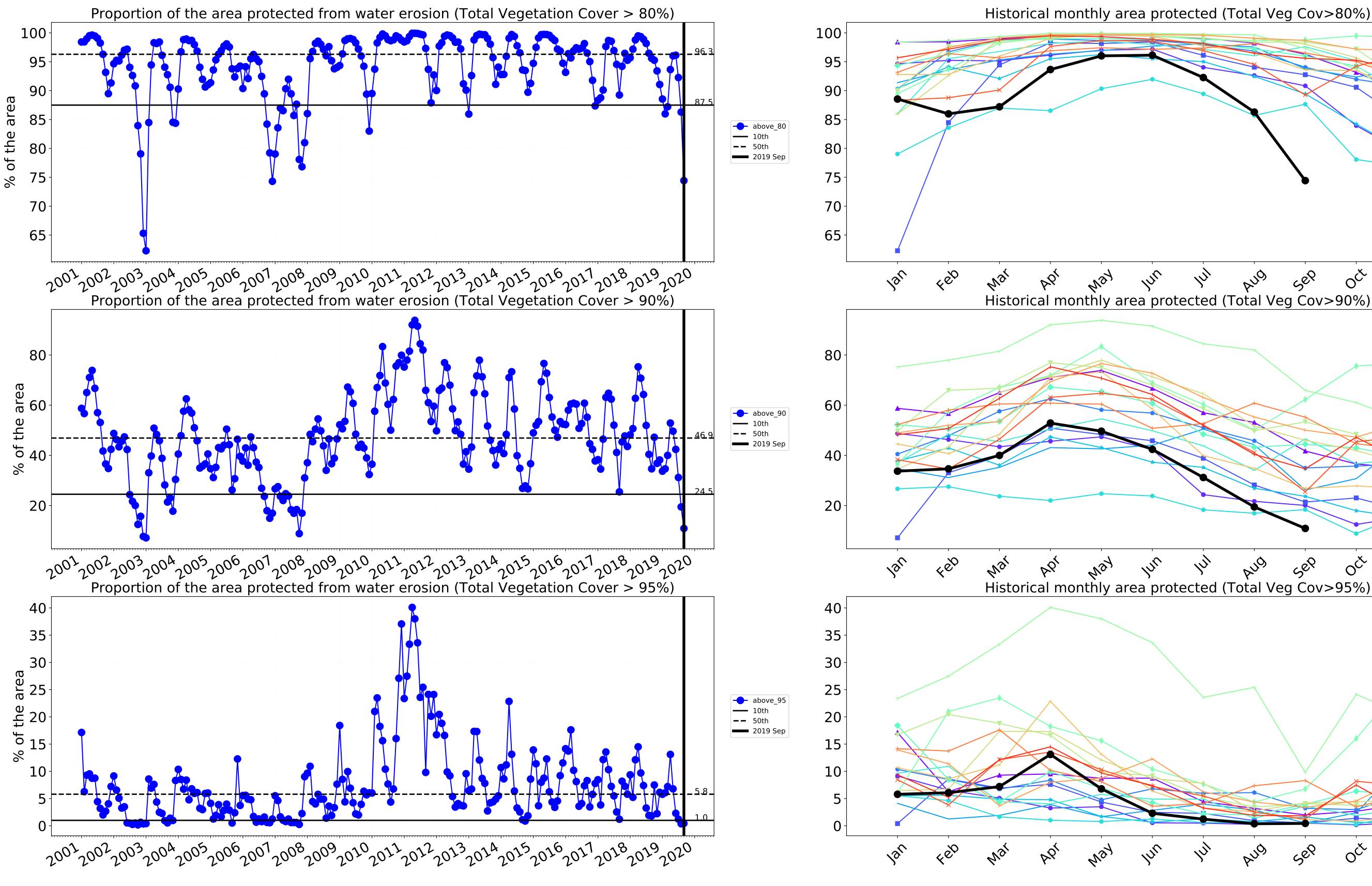


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

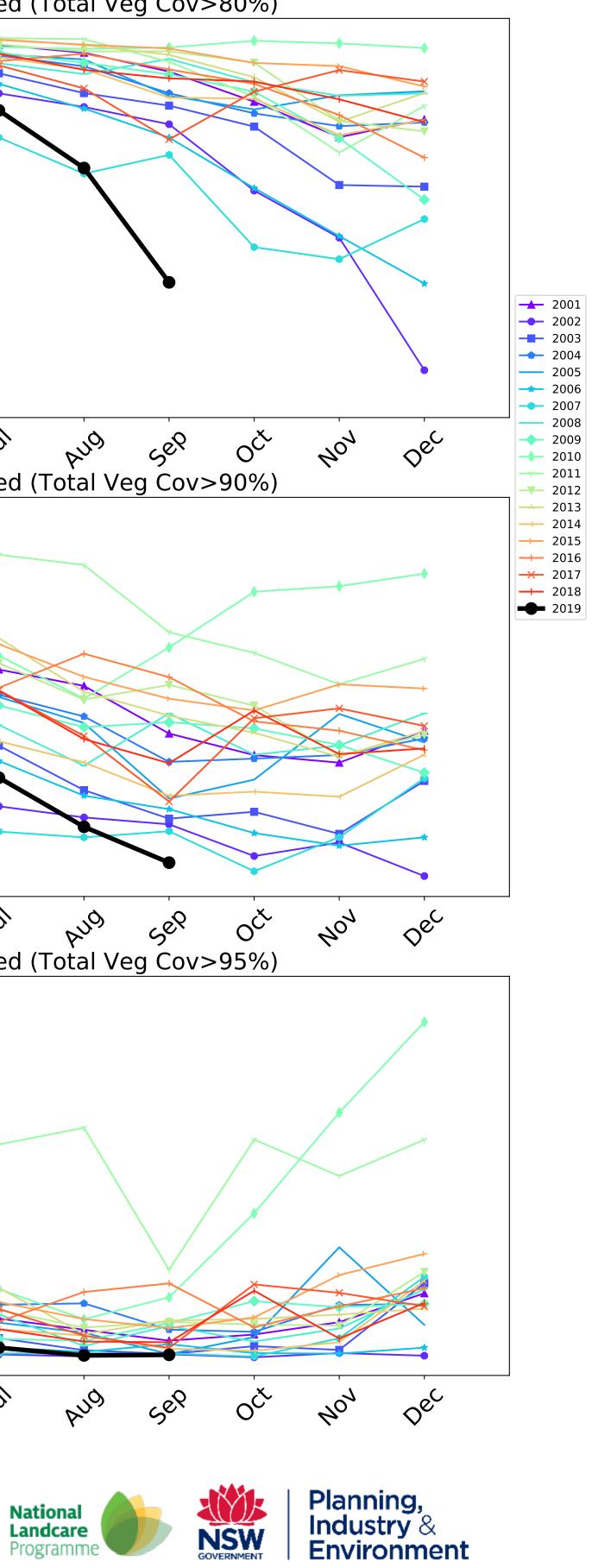
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



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







1/2)

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Grazing - Forest (non woodland)

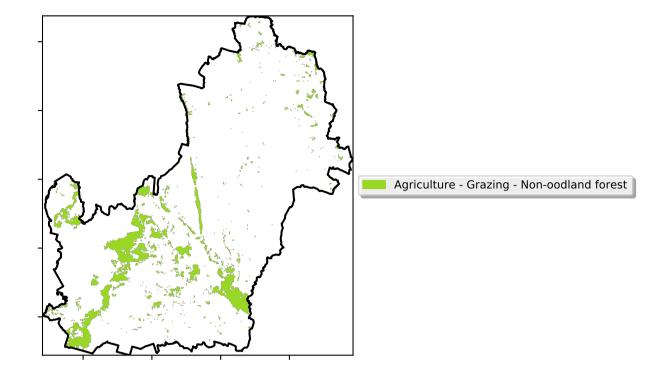
12%100%

· 52°10'10°10

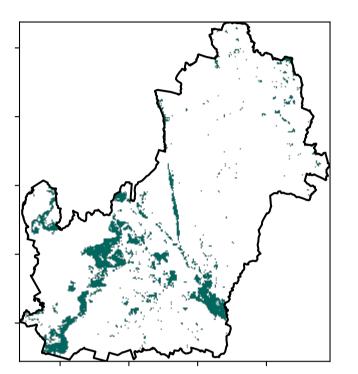
32°1050°10

0.30%

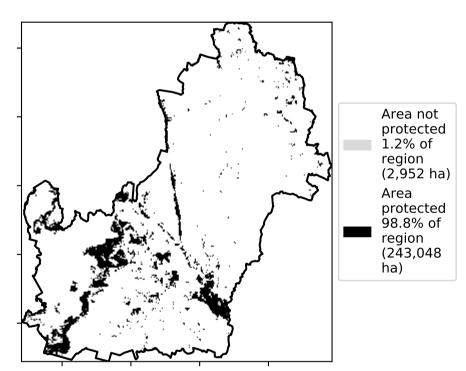
Land use and forest cover



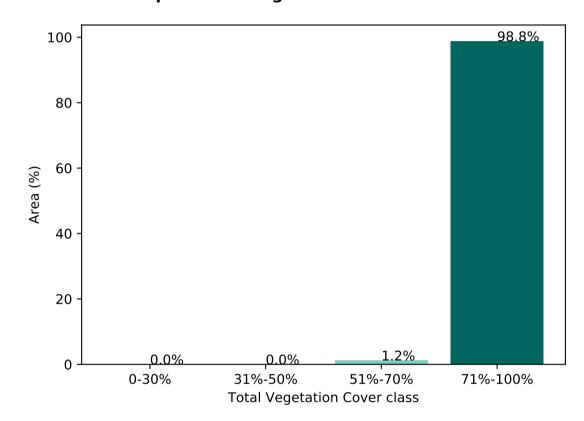
Total Vegetation Cover [%]



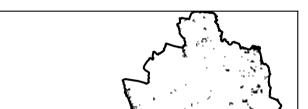




Proportion of vegetation cover class in area



% 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.

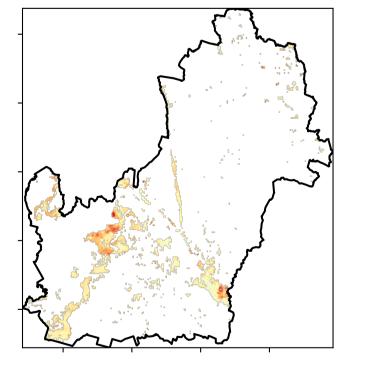
Landuse map of area based on 2015

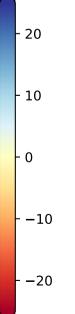
catchment scale landuse and

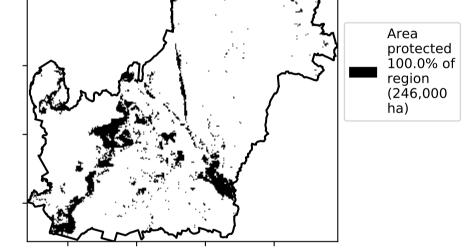
20% tree cover, sparse is 20 to 50% and dense > 50% tree

cover.

Australia's National Forest Inventory, where no forest is <







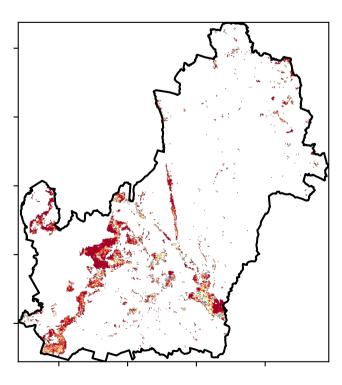
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Total Vegetation Cover Decile [%]

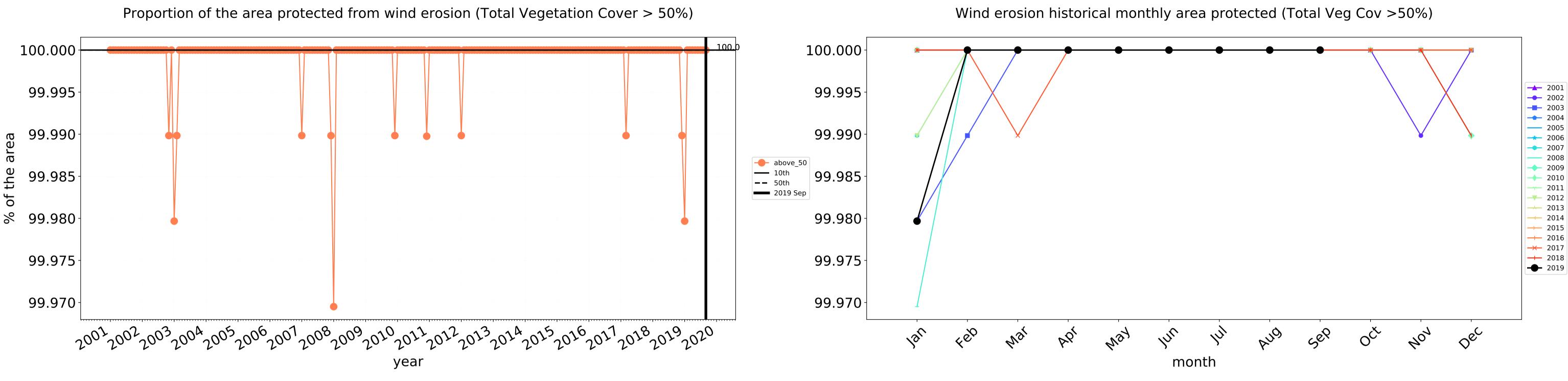




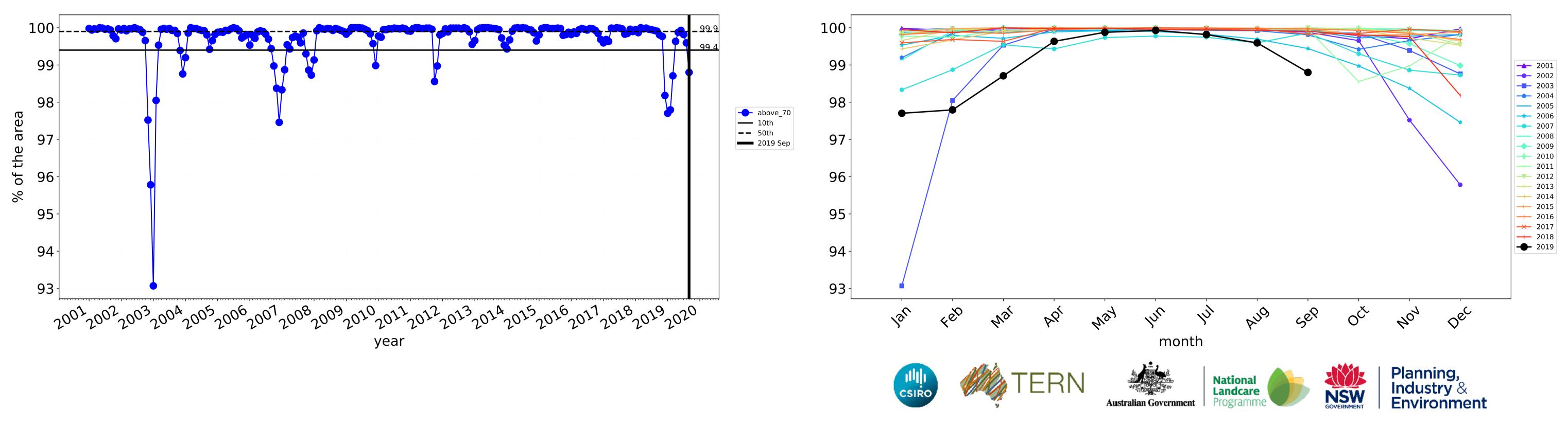
Deciles show where the pixel value lies in the

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.

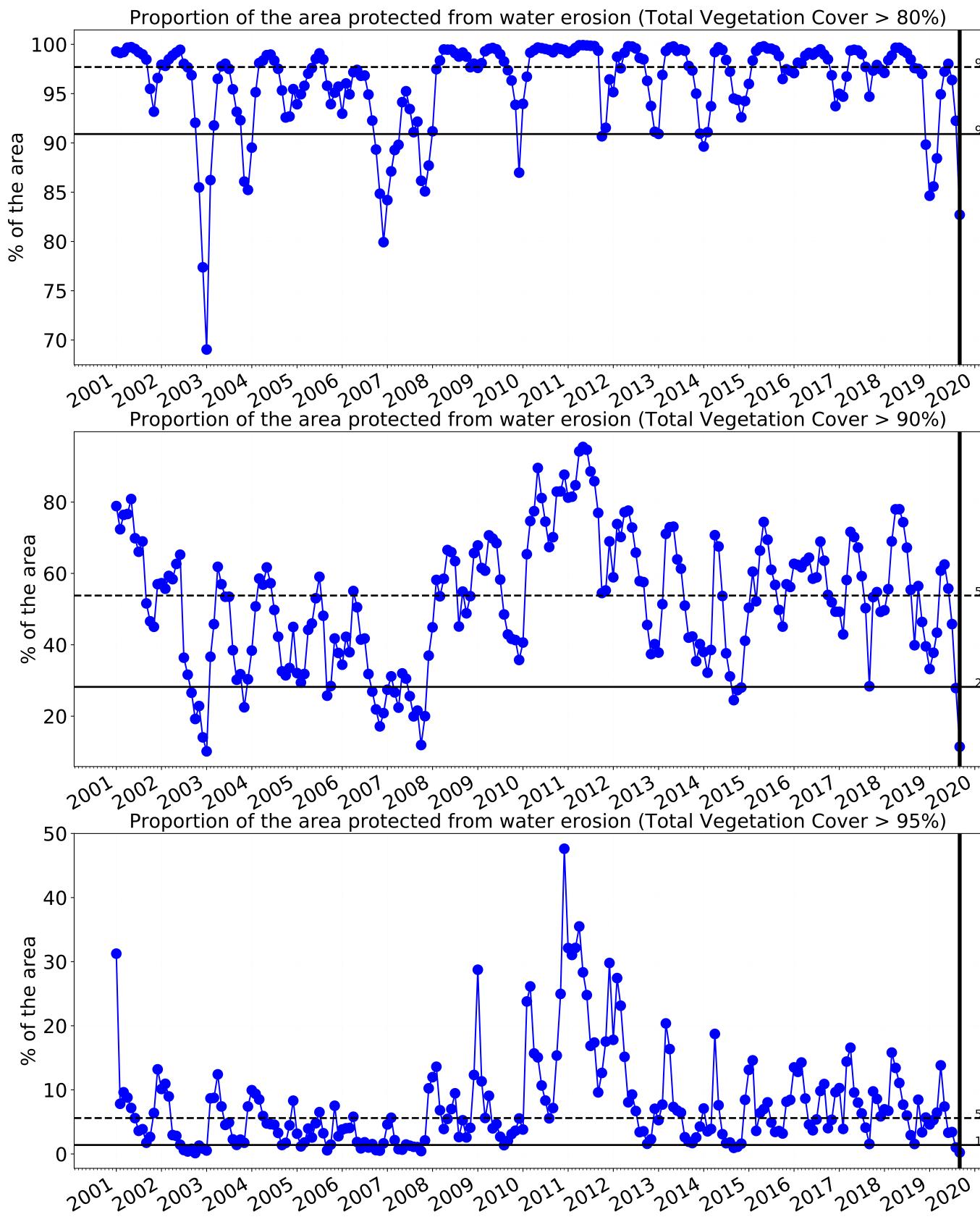


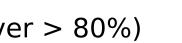
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

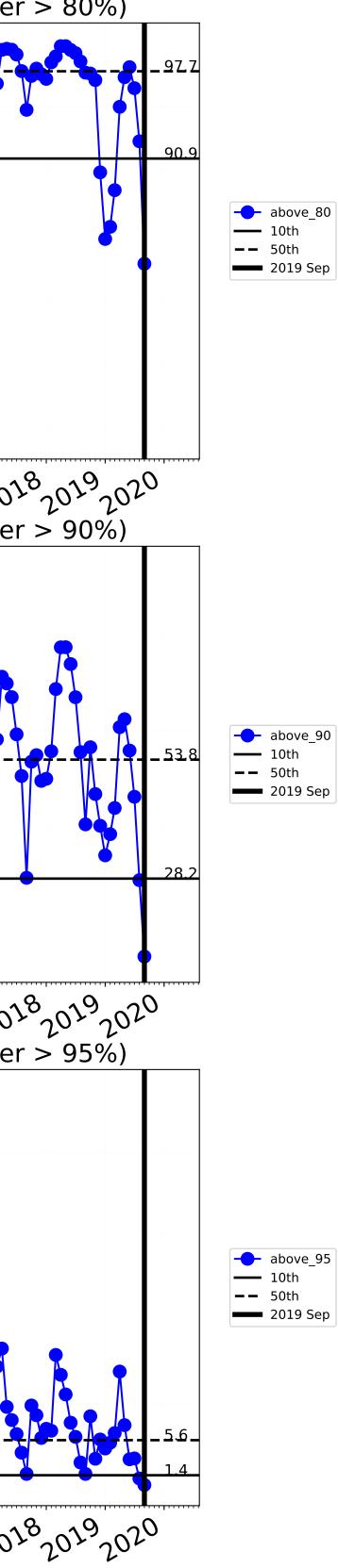


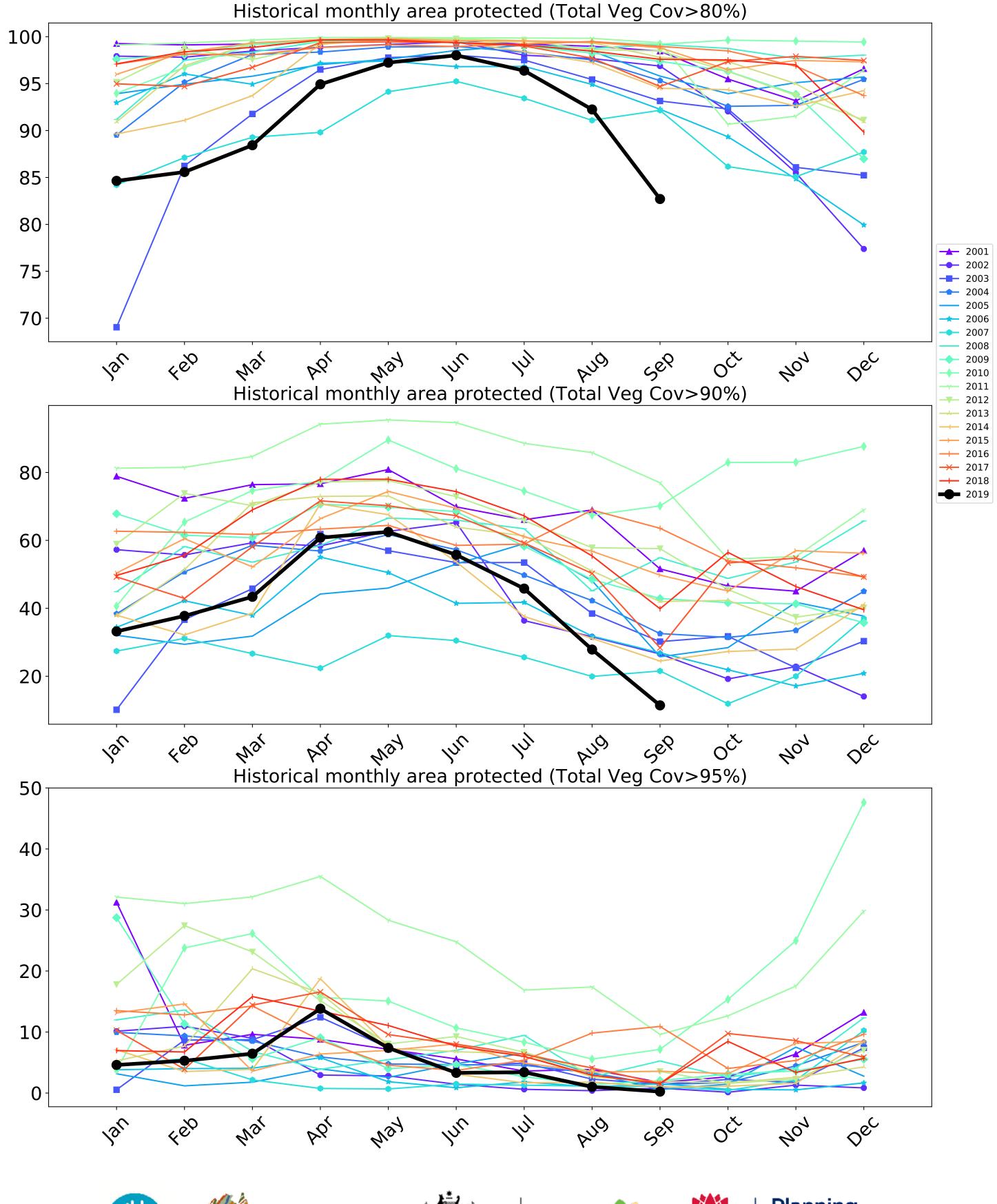
Grazing - Forest (non woodland) timeseries











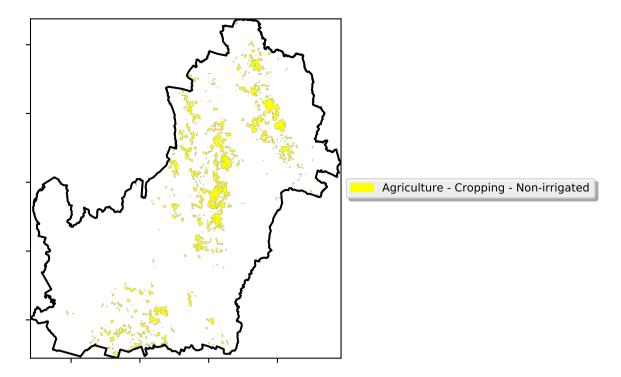




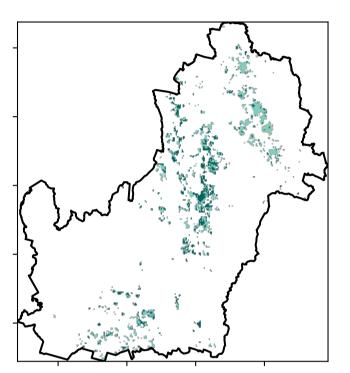
Cropping

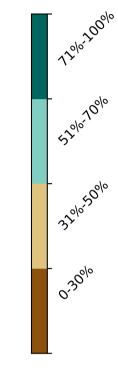
Land use and forest cover



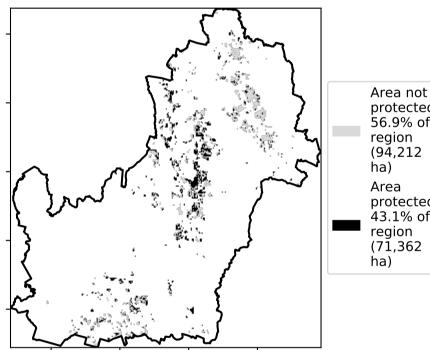


Total Vegetation Cover [%]

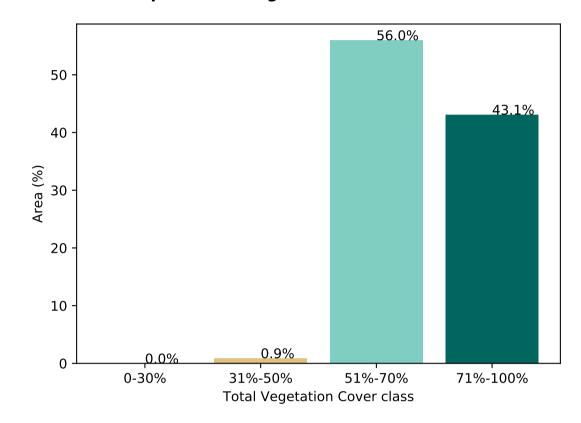




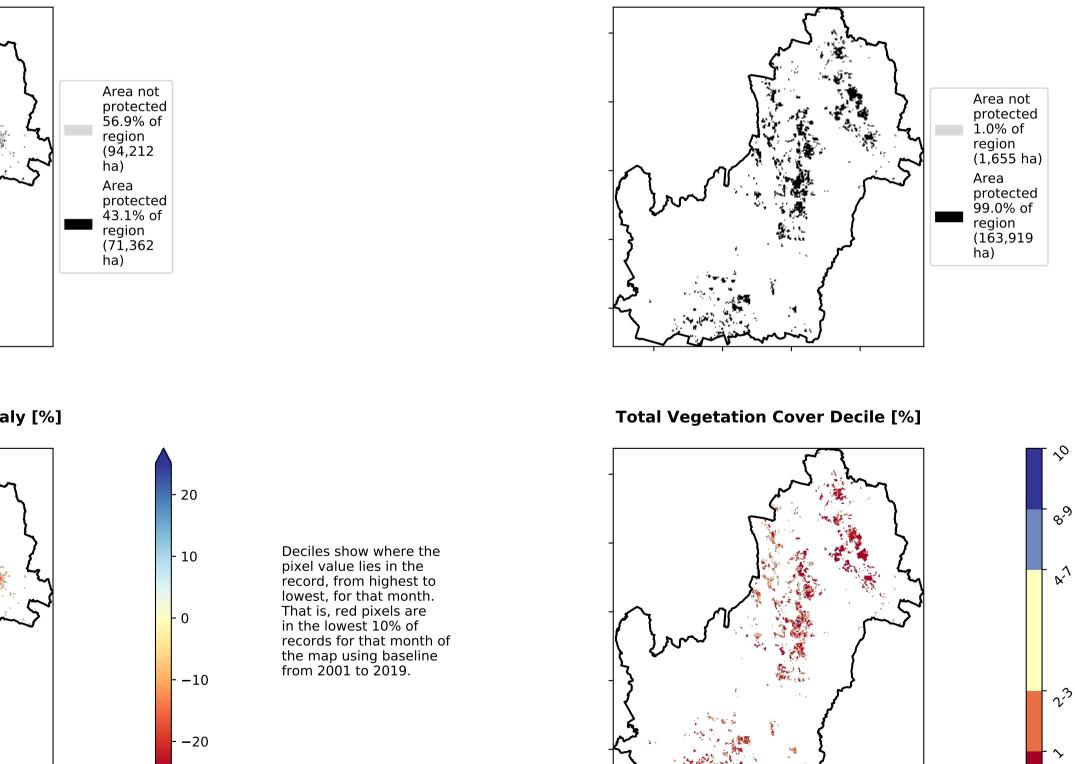
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area

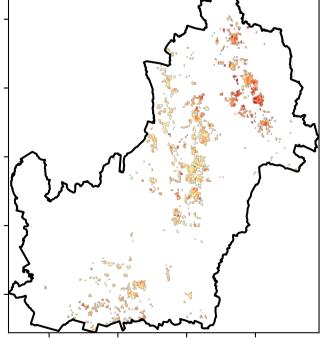


% Area protected from wind erosion (>50%)



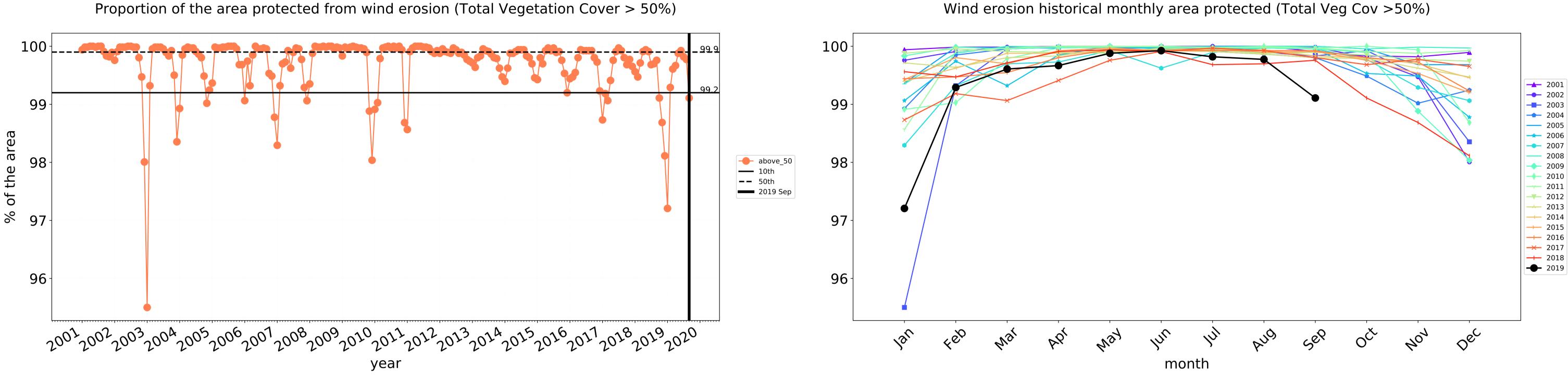
Total Vegetation Cover Anomaly [%]

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.



CSIRO





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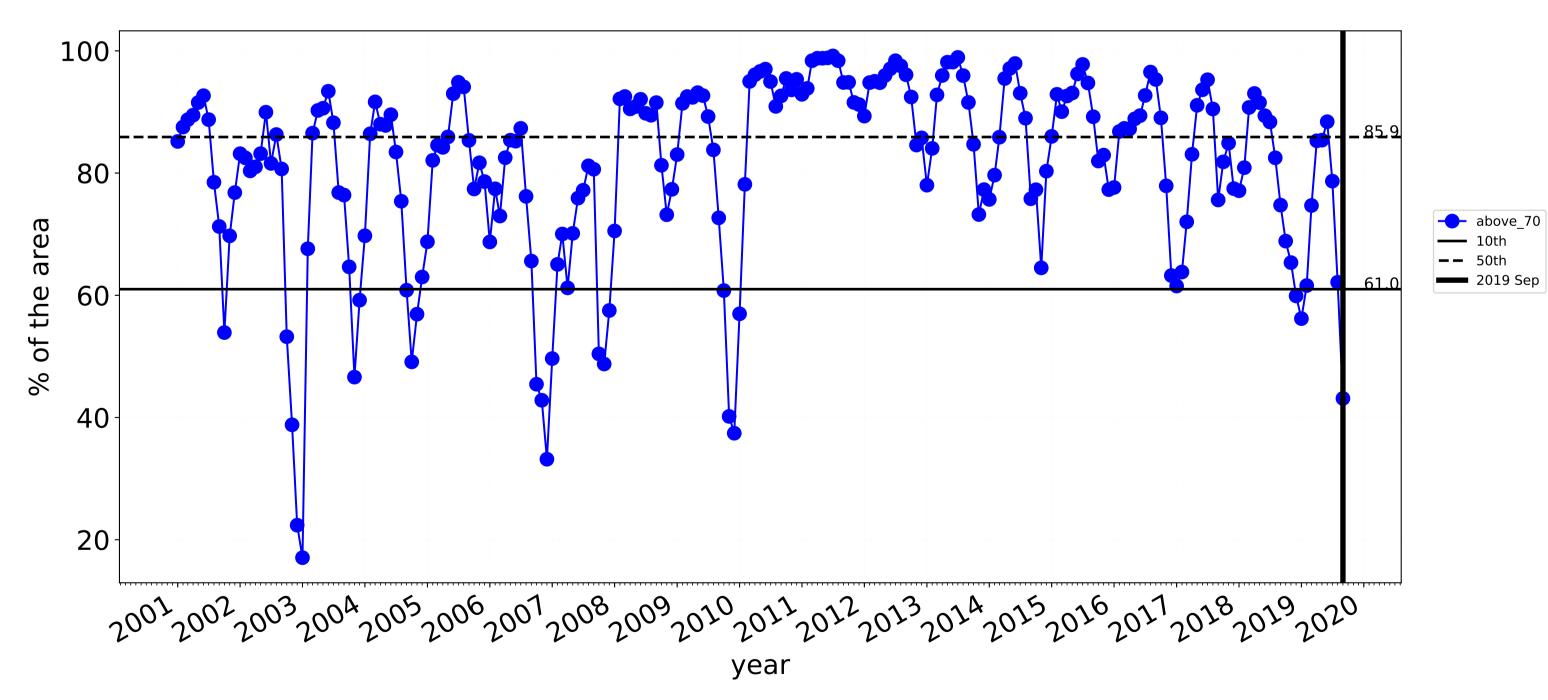
CSIRO

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





Cropping timeseries

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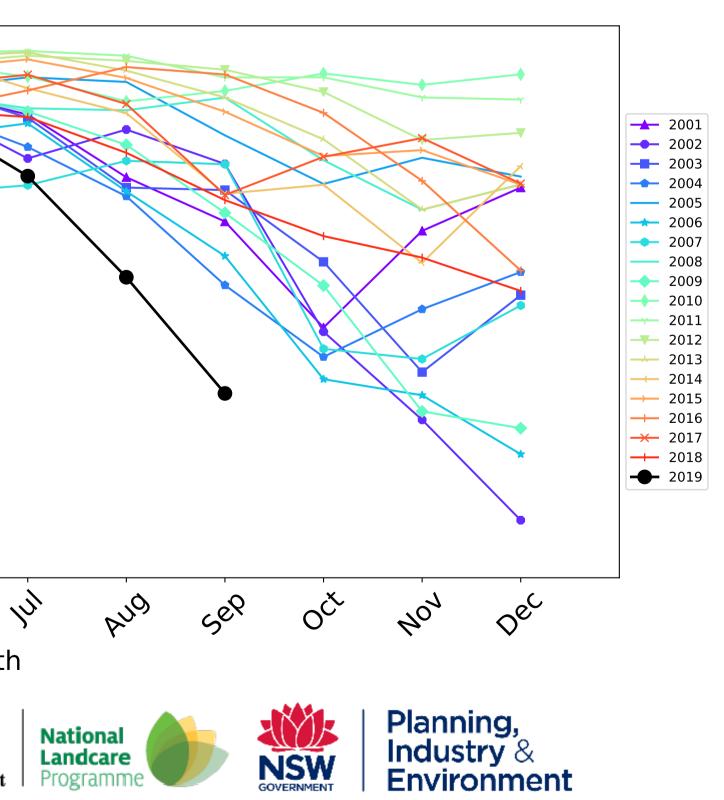
way

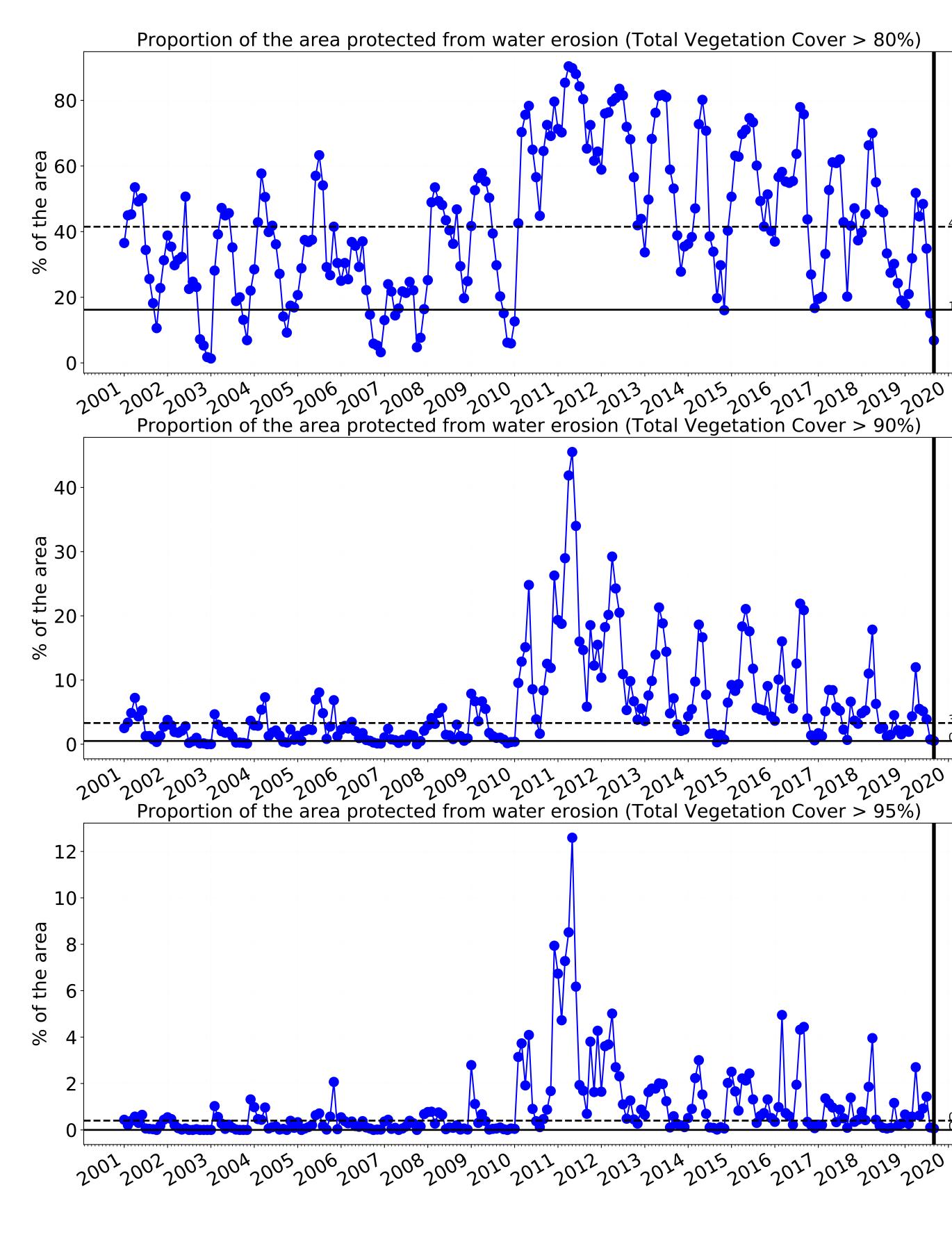
In

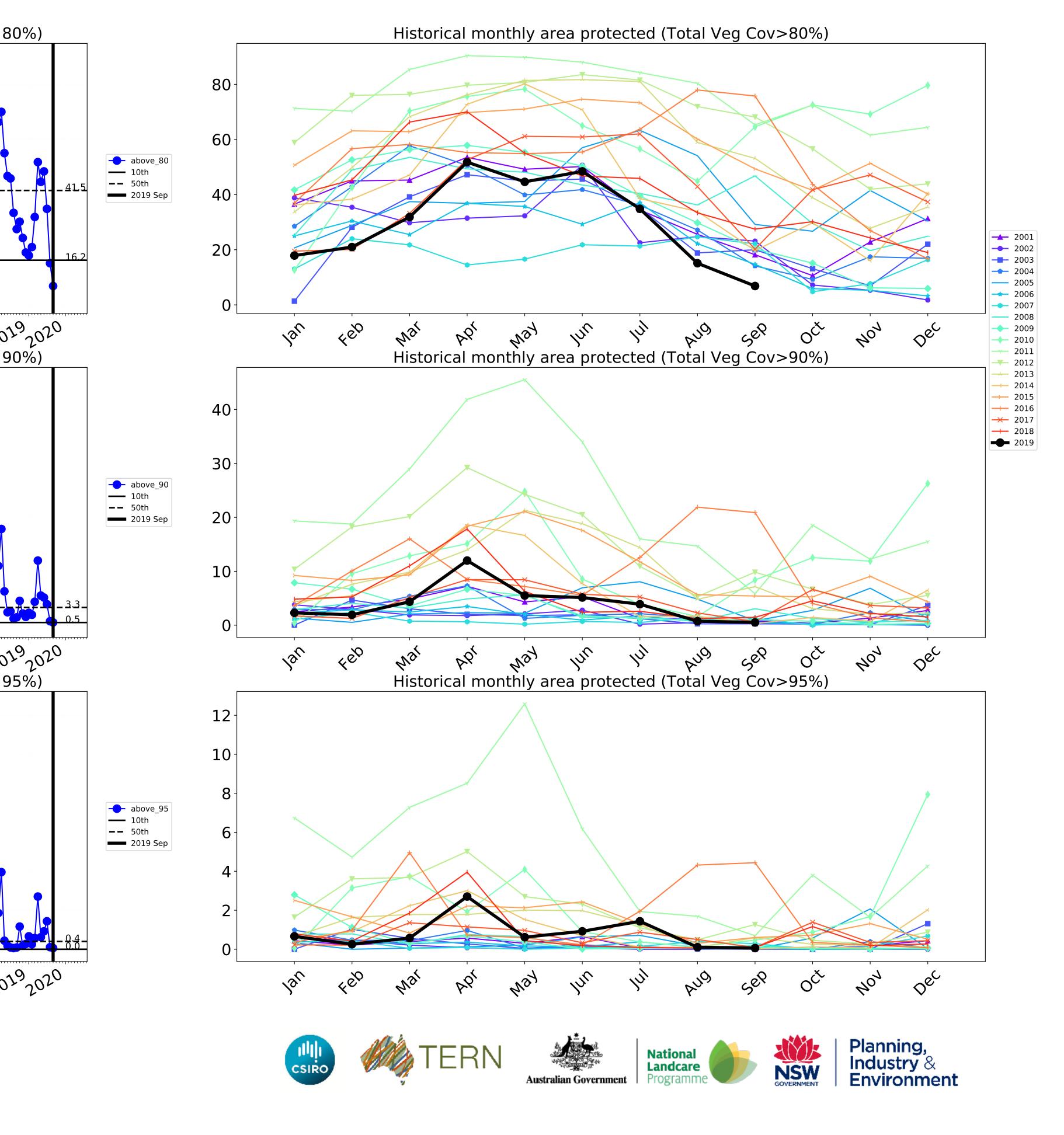
Australian Government

month

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

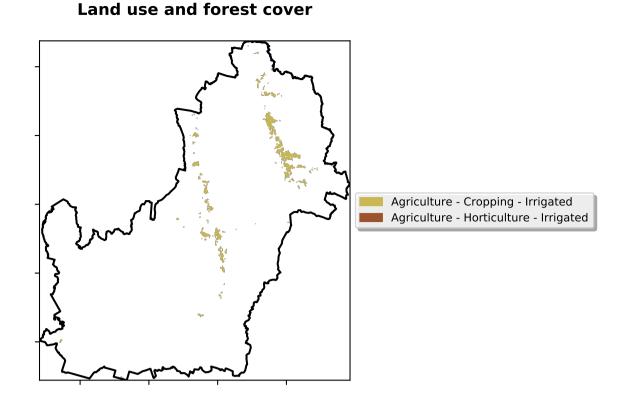




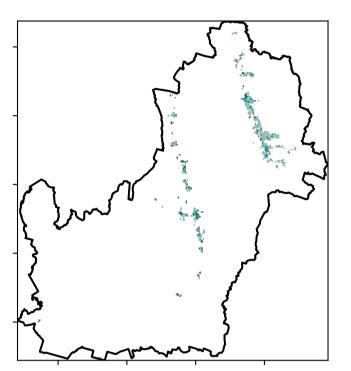


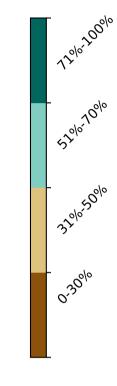
Irrigation

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.

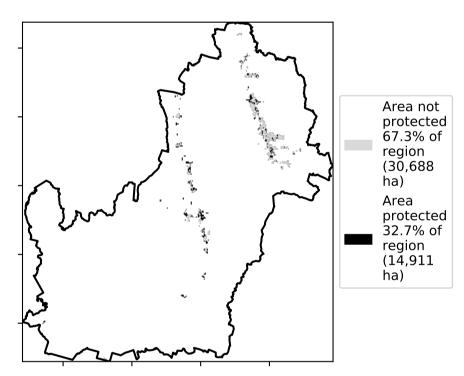


Total Vegetation Cover [%]

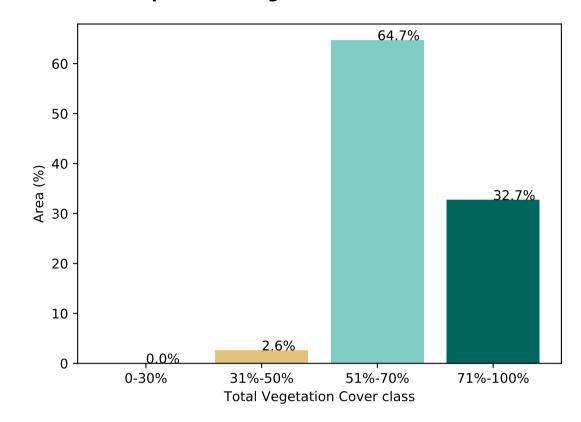




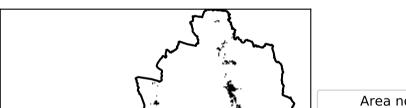
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area

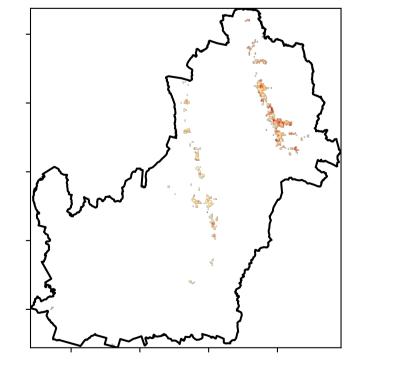


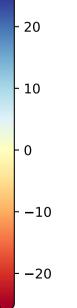
% Area protected from wind erosion (>50%)

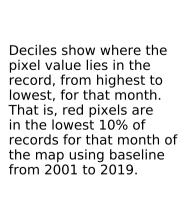


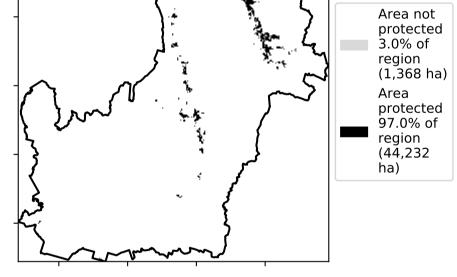
Total Vegetation Cover Anomaly [%]

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.









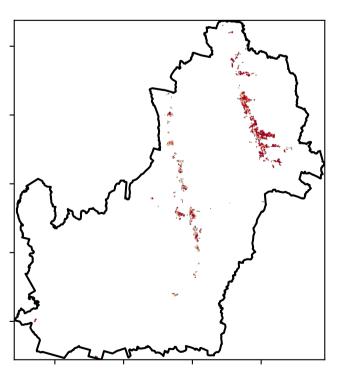
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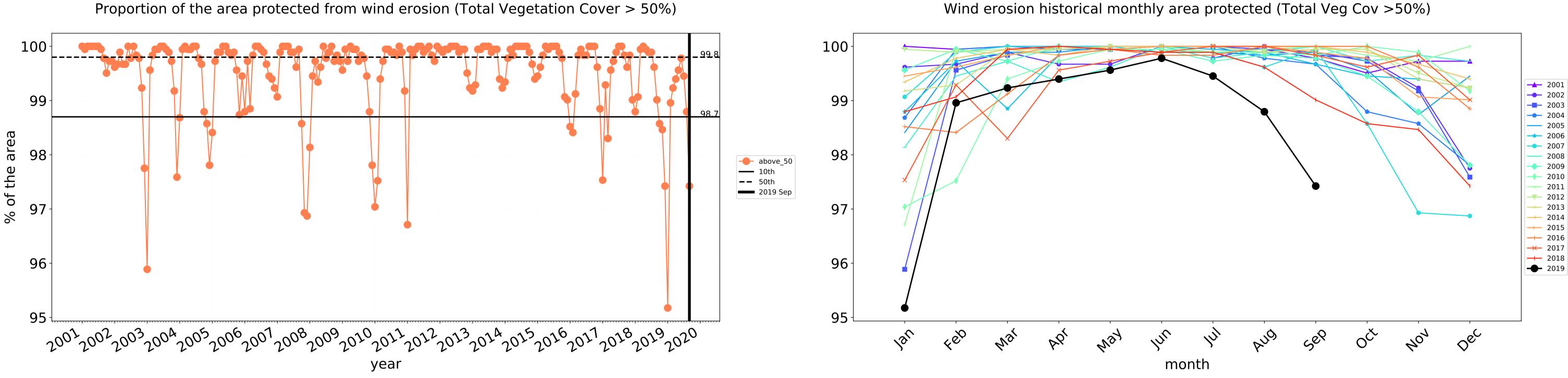
A-1

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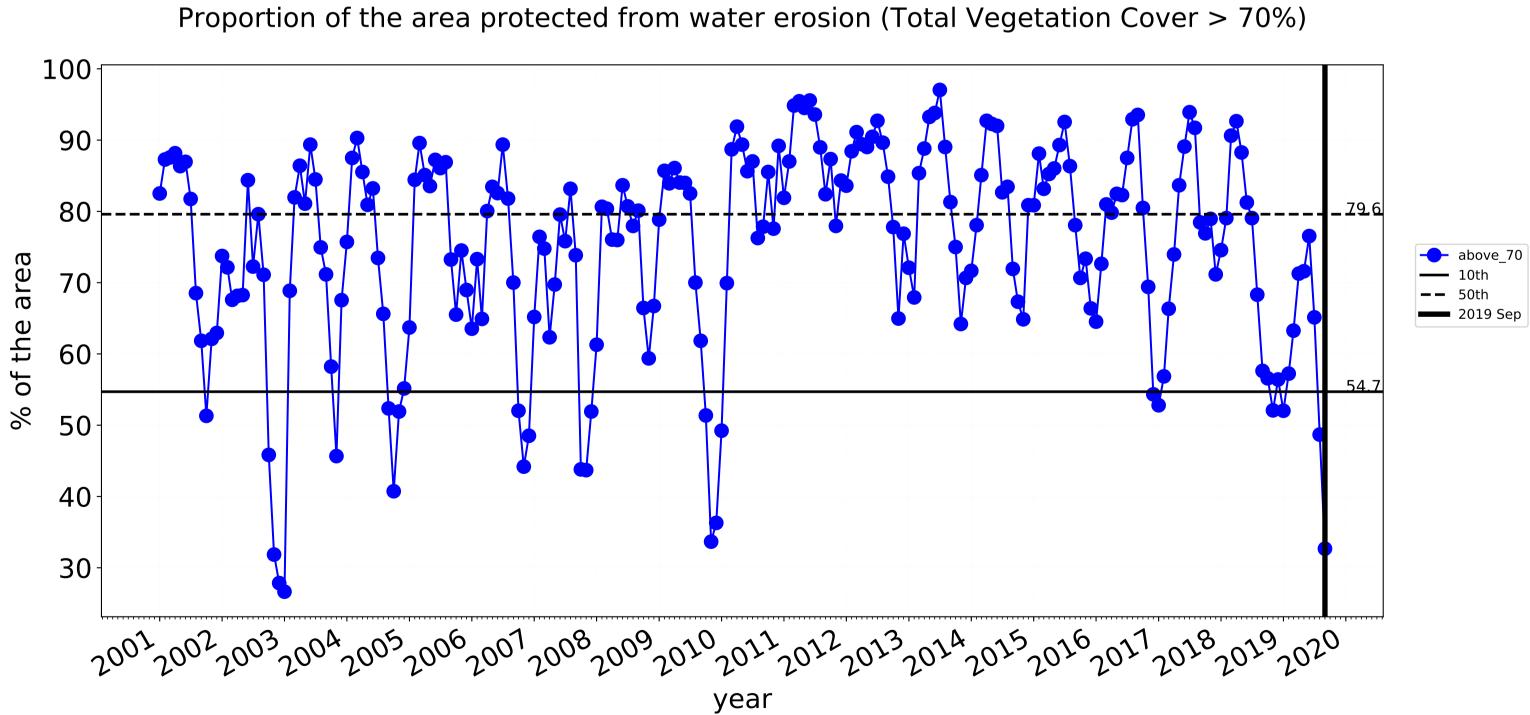
Total Vegetation Cover Decile [%]



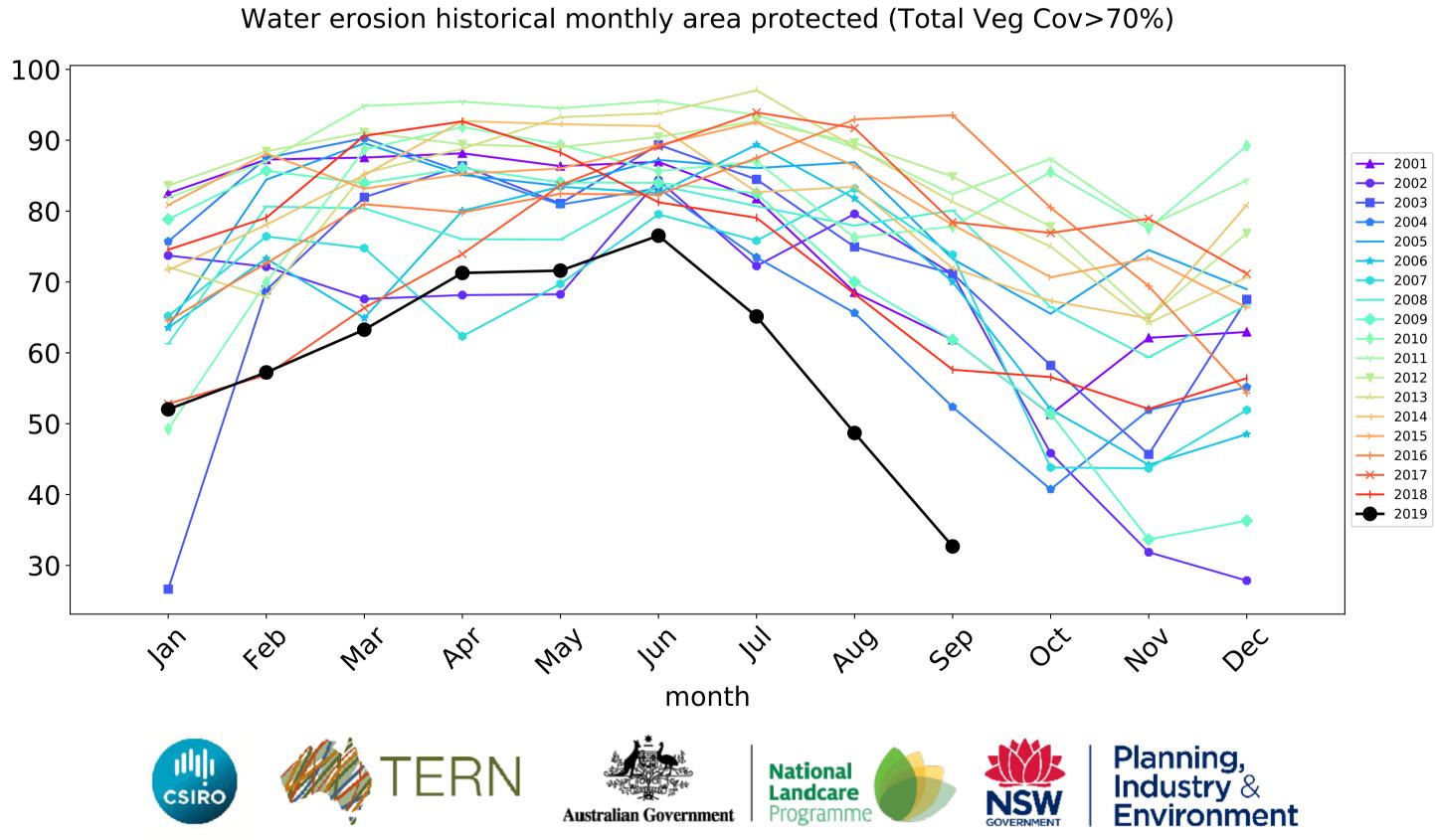


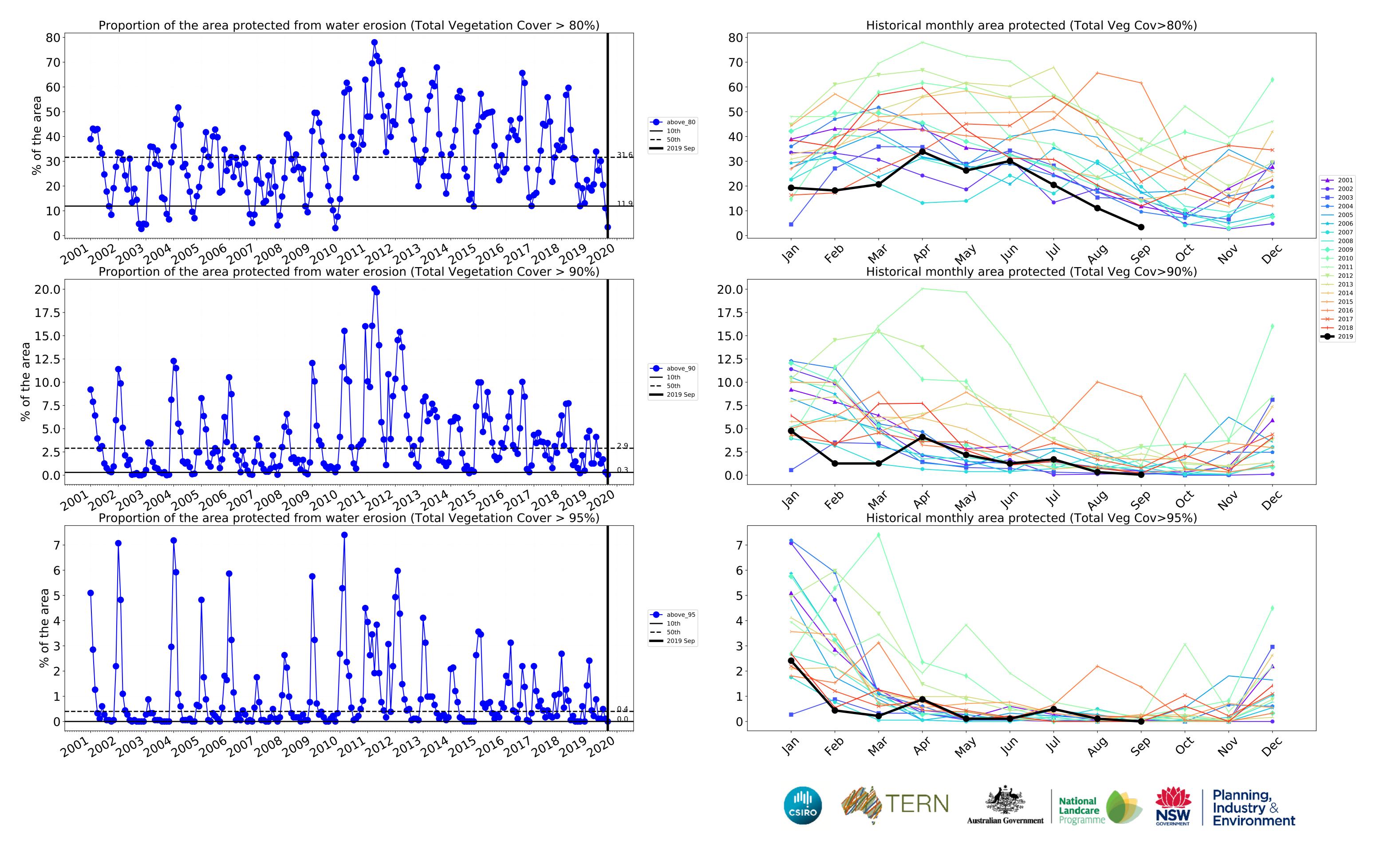


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



Irrigation timeseries

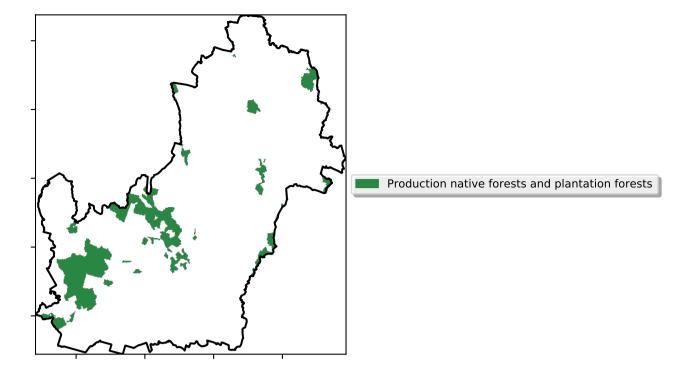




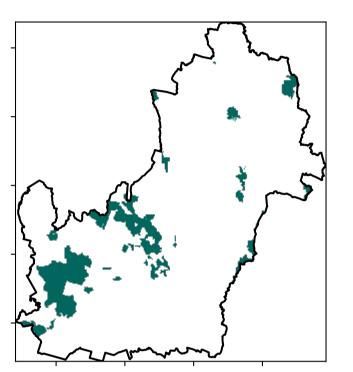
Production native forests and plantation forests

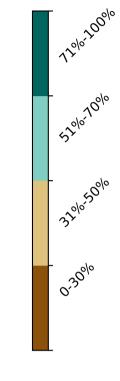
Land use and forest cover

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.

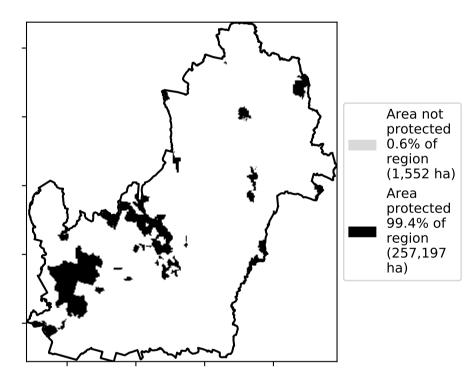


Total Vegetation Cover [%]

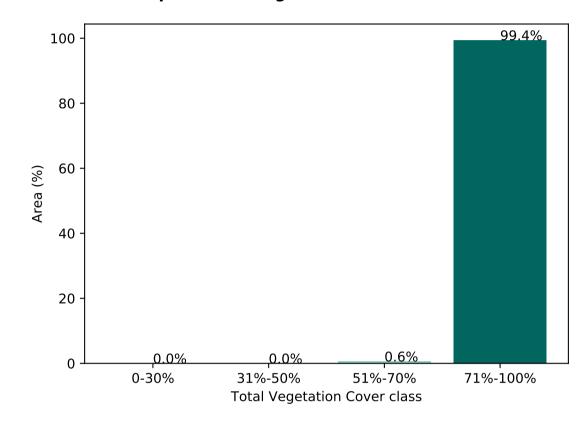




% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area

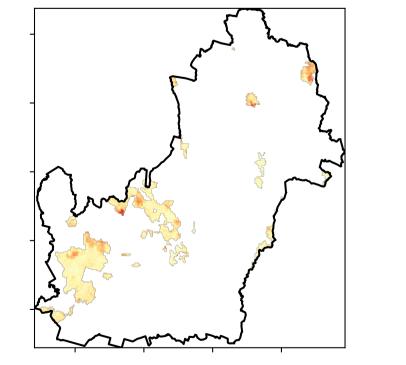


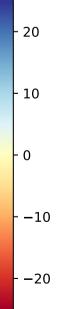
% Area protected from wind erosion (>50%)

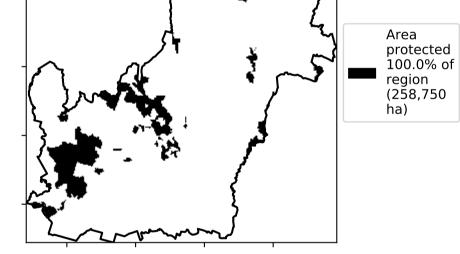


Total Vegetation Cover Anomaly [%]

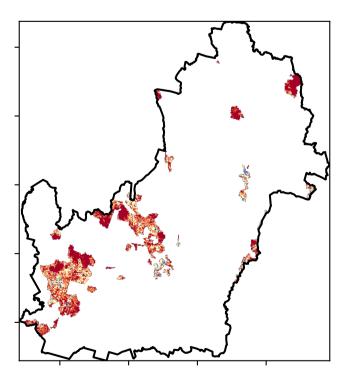
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

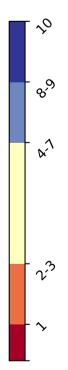






Total Vegetation Cover Decile [%]





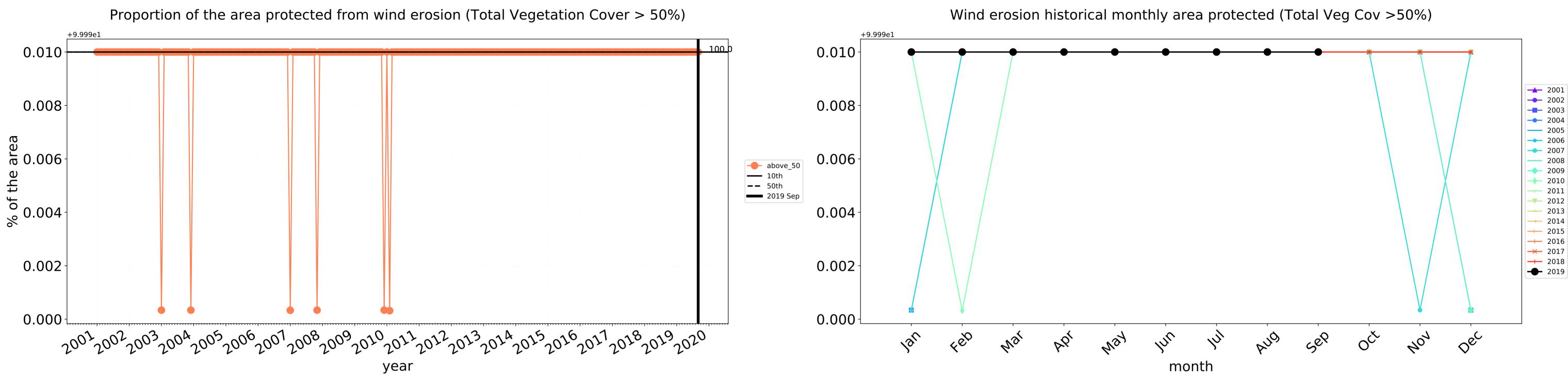


Deciles show where the pixel value lies in the

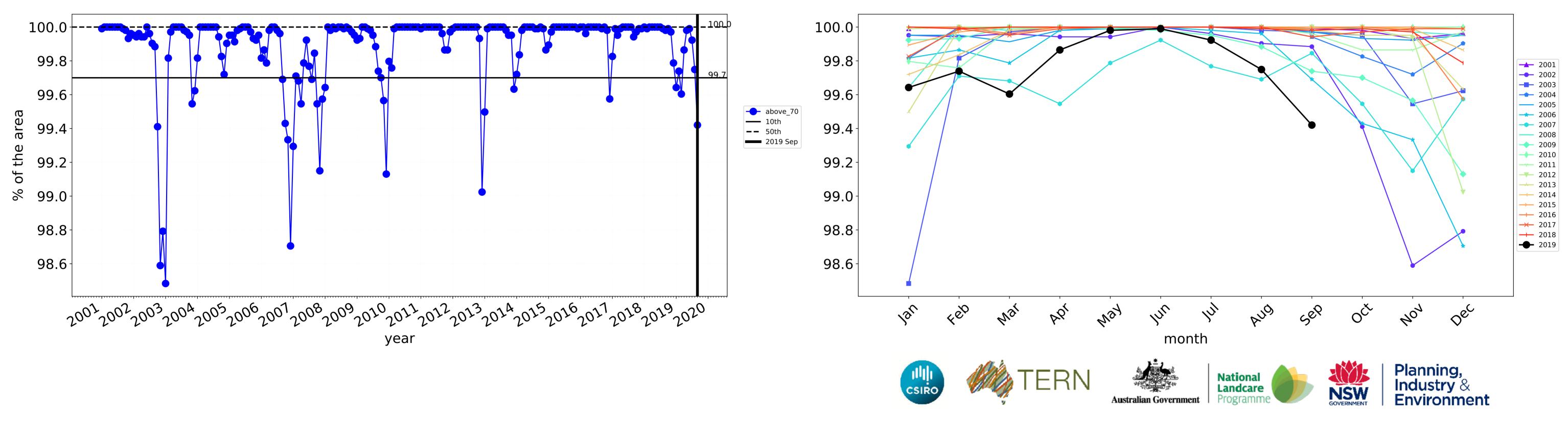
record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of

records for that month of

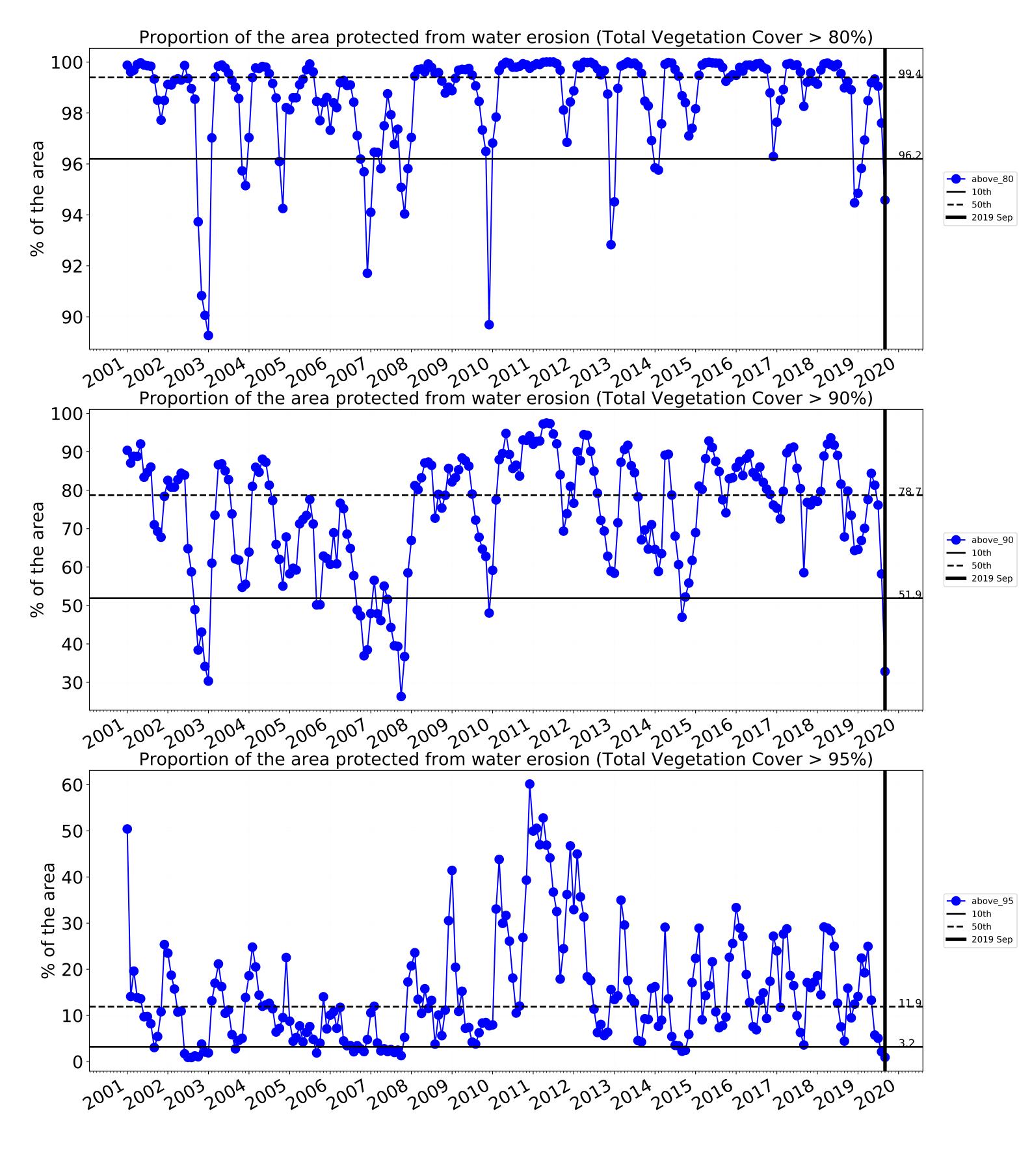
the map using baseline from 2001 to 2019.



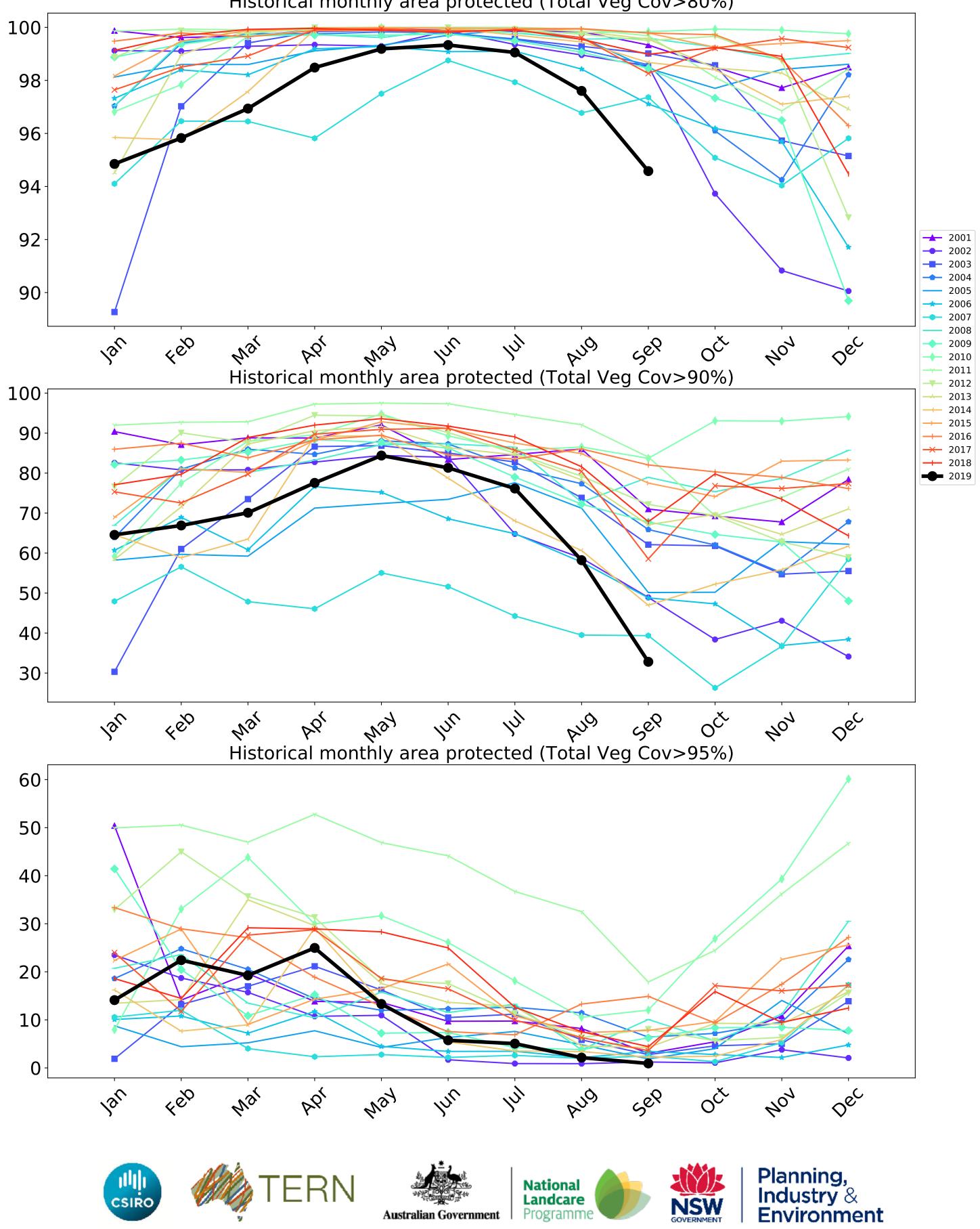
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



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



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





Banana_(S) (2,854,525 ha and no data 498 ha) Percentage area and hectares protected with TVC threshold 30,50,70,80,90 and 95%

Land use and forest cover Class	area(ha)	above_30	above_50	above_70	above_80	above_90	above_95
Entire region	2,854,525	99.9% 2,853,025	99.5% 2,841,150	75.8% 2,163,925	39.6% 1,131,100	7.3% 208,725	0.3% 8,750
Conservation and natural environments	219,798	100.0% 219,723	99.9% 219,623	98.7% 216,942	82.2% 180,718	26.0% 57,116	1.9% 4,158
Conservation and natural environments Woodland forest	51,381	100.0% 51,381	100.0% 51,381	99.5% 51,125	74.6% 38,325	15.1% 7,767	0.8% 434
Conservation and natural environments Forest (non woodland)	159,853	100.0% 159,853	100.0% 159,853	99.6% 159,258	87.1% 139,220	30.4% 48,630	2.3% 3,620
Agriculture	2,357,837	100.0% 2,357,762	99.6% 2,347,911	71.3% 1,682,001	29.9% 704,115	2.8% 66,735	0.1% 2,200
Grazing	2,146,602	100.0% 2,146,527	99.7% 2,139,326	74.3% 1,595,655	32.2% 691,246	3.1% 65,861	0.1% 2,100
Grazing non forest	1,632,788	100.0% 1,632,713	99.6% 1,625,537	66.7% 1,089,175	17.7% 288,570	0.5% 8,600	0.0% 350
Grazing Woodland forest	268,325	100.0% 268,325	100.0% 268,300	98.4% 263,987	74.4% 199,702	10.9% 29,209	0.4% 1,178
Grazing - Forest (non woodland)	245,489	100.0% 245,489	100.0% 245,489	98.8% 242,545	82.7% 203,027	11.4% 28,066	0.2% 573
Cropping	165,562	100.0% 165,562	99.1% 164,087	43.1% 71,394	6.8% 11,324	$0.5\%\ 849$	0.1% 99
Irrigation	45,672	100.0% 45,672	97.4% 44,495	32.7% 14,923	3.4% 1,552	0.1% 25	0.0%
Production native forests and plantation forests	259,761	100.0% 259,761	100.0% 259,761	99.4% 258,255	94.6% 245,681	32.8% 85,257	0.9% 2,409

