LGA Banana_(S) (QLD) - 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.

Banana_(S)
• Context

o Map: Land use and forest cover

- o Chart: Land use and forest cover area
- Total vegetation cover for this month

 Map: vegetation cover classified into 4 classes
 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:

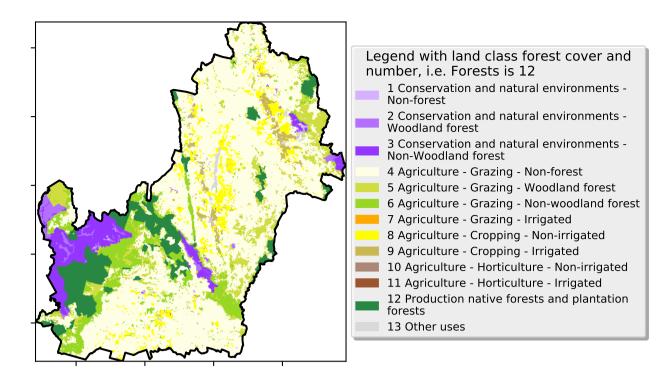
https://doi.org/10.4225/08/5848a3f19a7b3



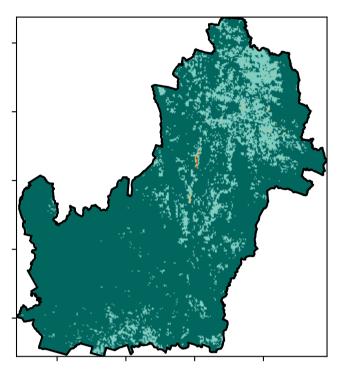
Vegetation Cover Aug 2019

Land use and forest cover

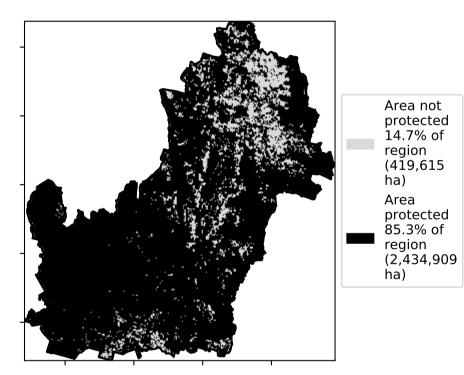
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



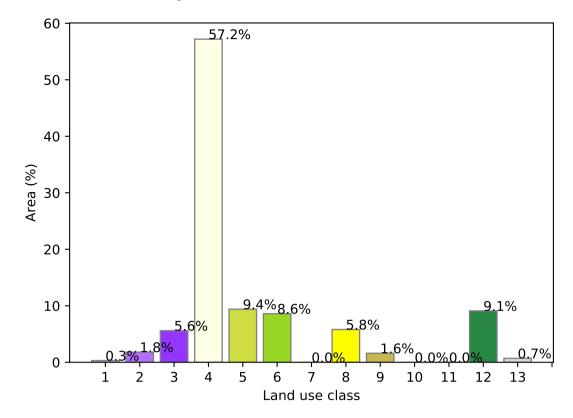
Total Vegetation Cover [%]



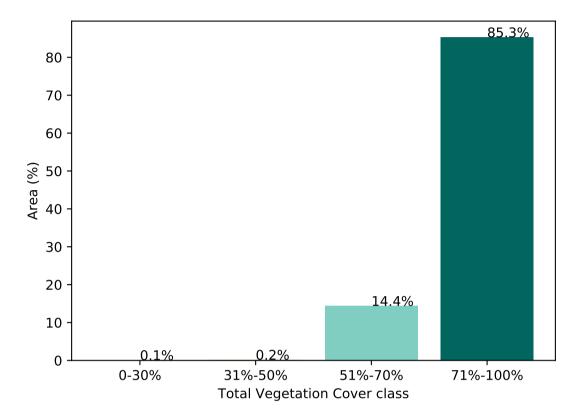
% Area protected from water erosion (>70%)



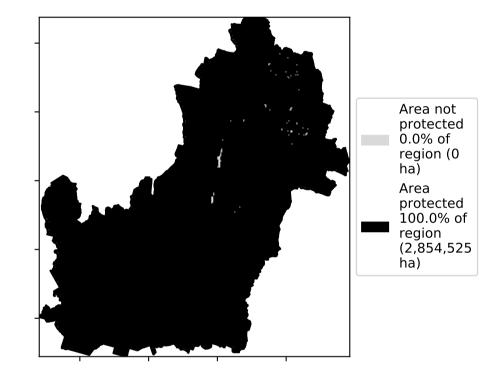
Proportion of each land class in area



Proportion of vegetation cover class in area



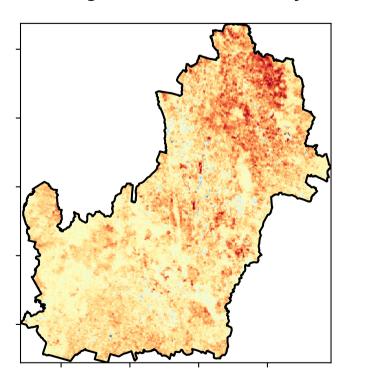
% Area protected from wind erosion (>50%)

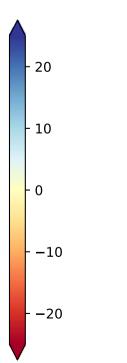


Total Vegetation Cover Anomaly [%]

Total Vegetation Cover Decile [%]

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.



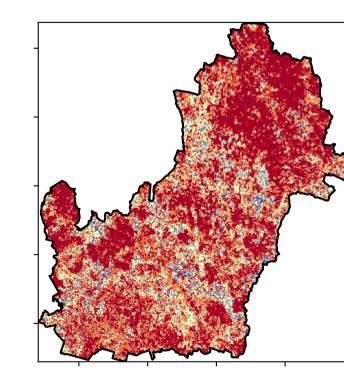


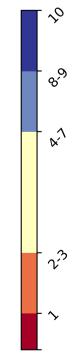
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Deciles show where the

record, from highest to lowest, for that month.

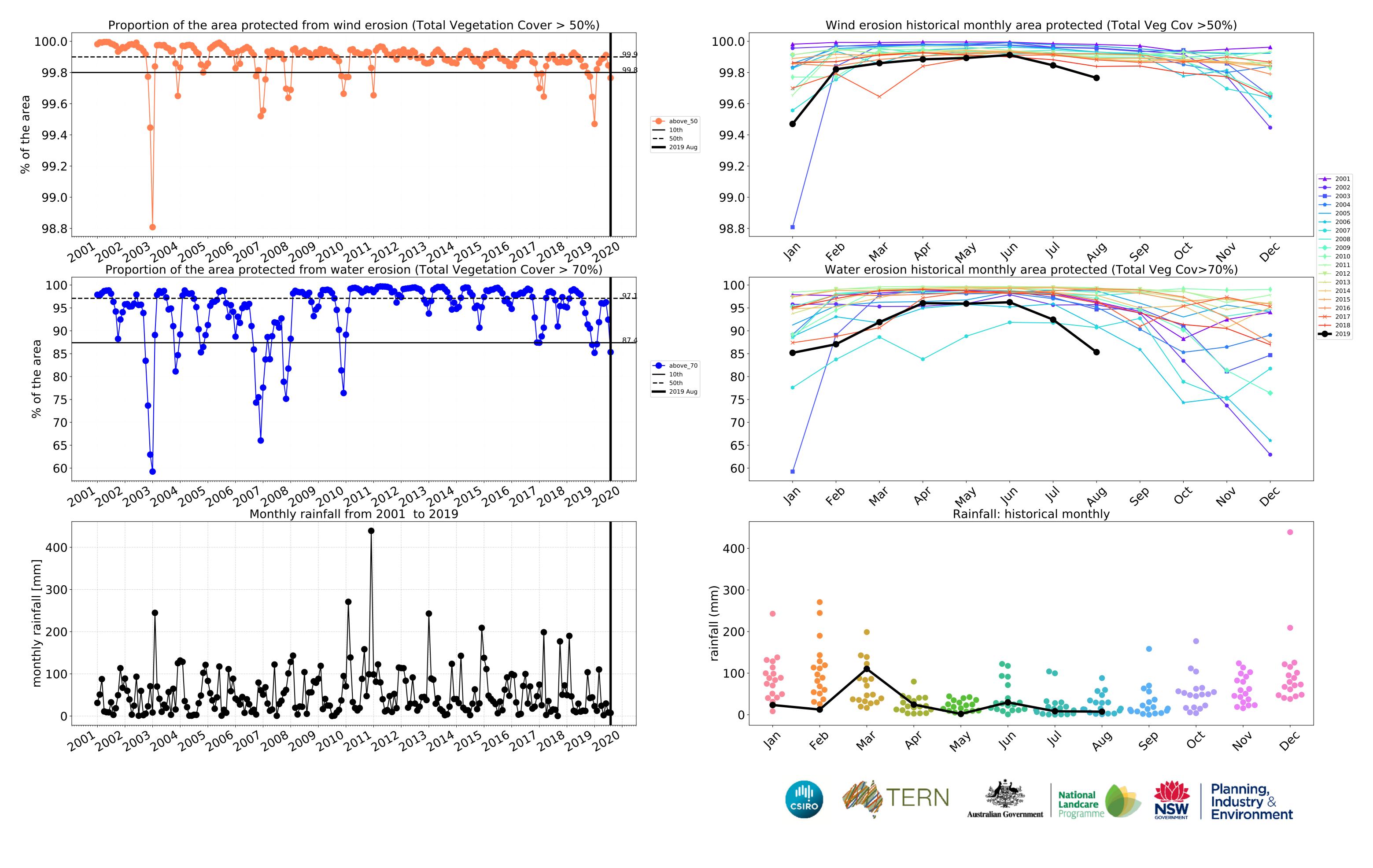
in the lowest 10% of records for that month of

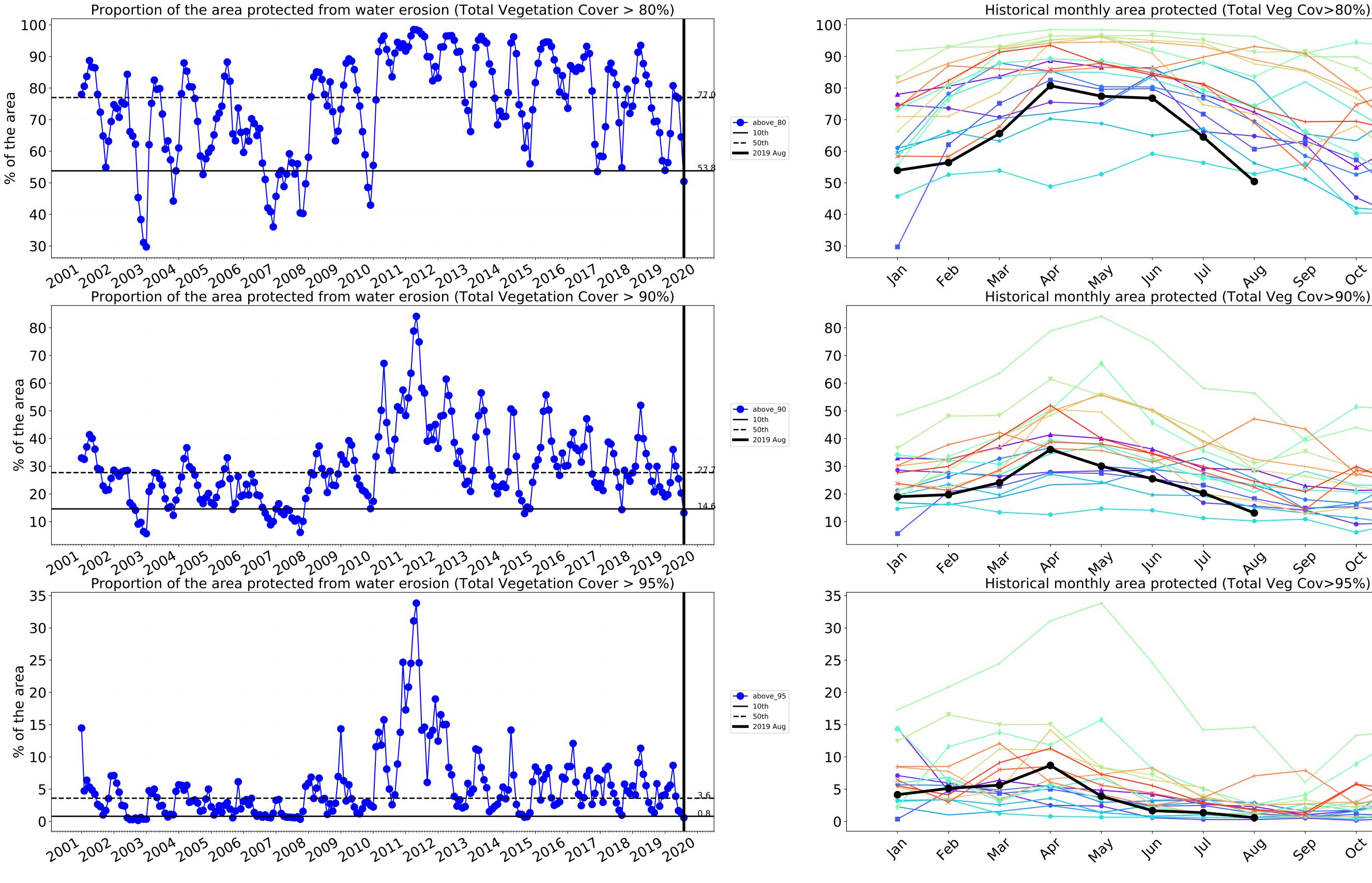
the map using baseline

from 2001 to 2019.

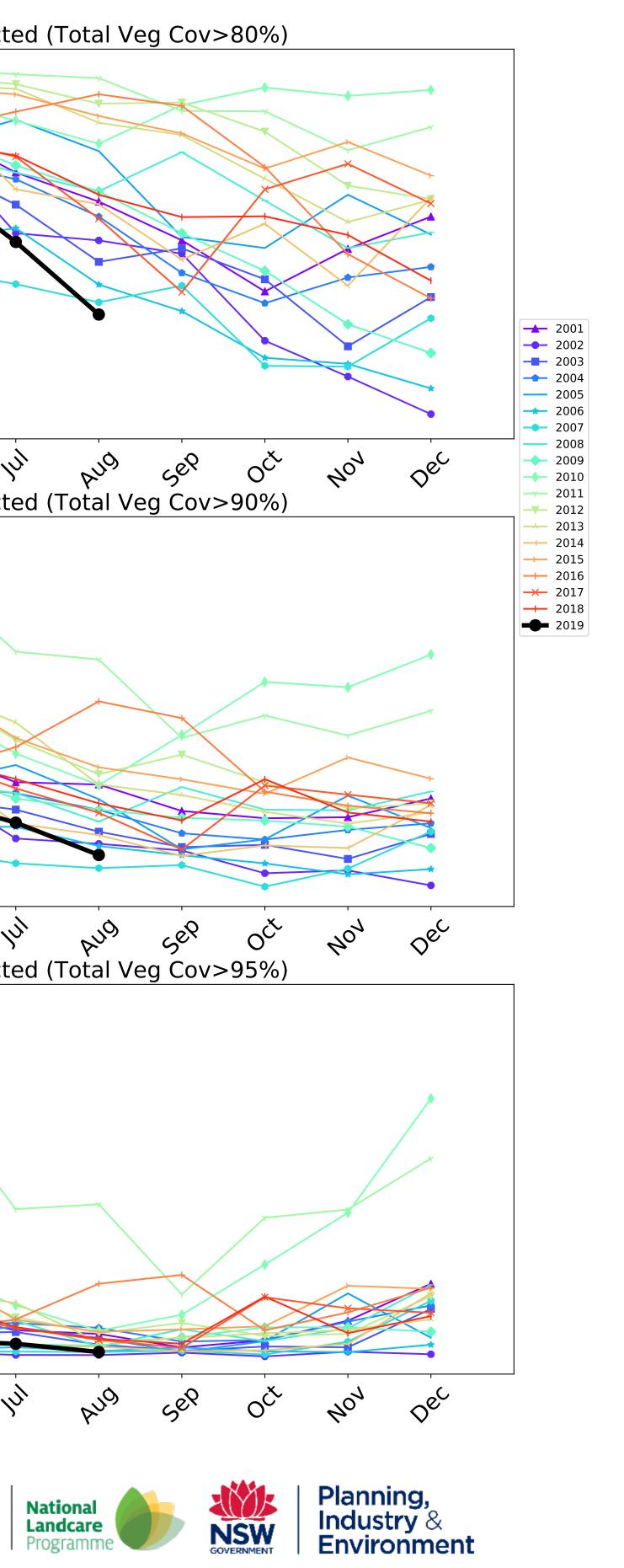
That is, red pixels are

pixel value lies in the



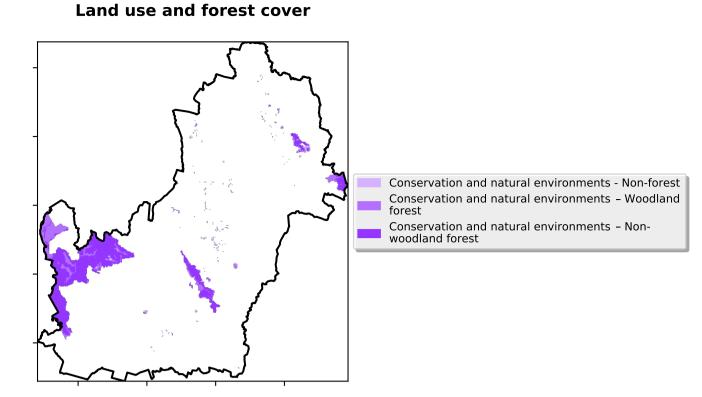




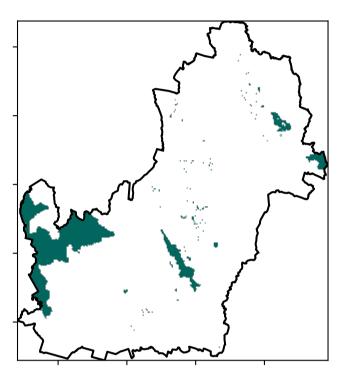


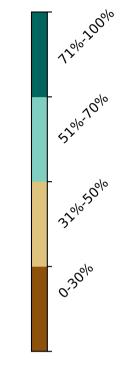
Conservation and natural environments

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.

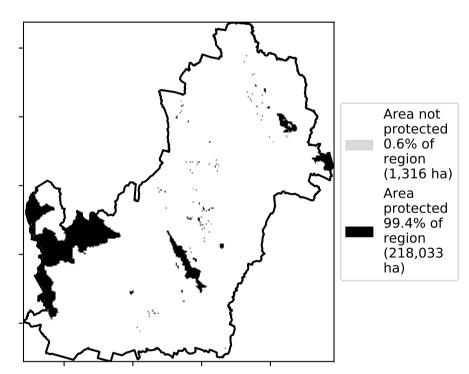


Total Vegetation Cover [%]

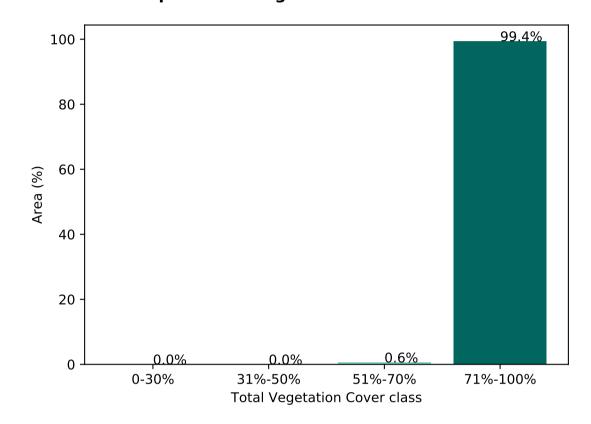




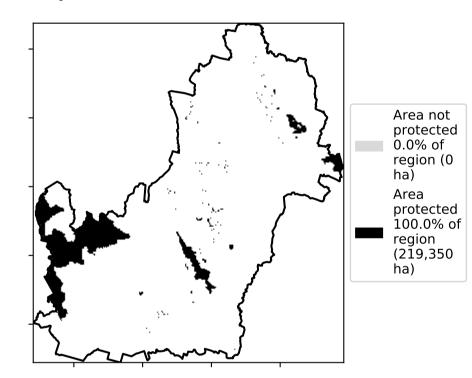
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area

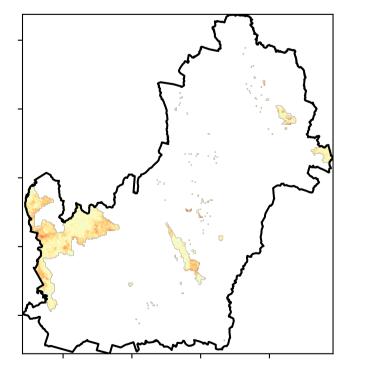


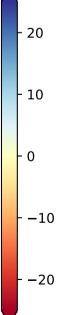
% Area protected from wind erosion (>50%)



Total Vegetation Cover 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.





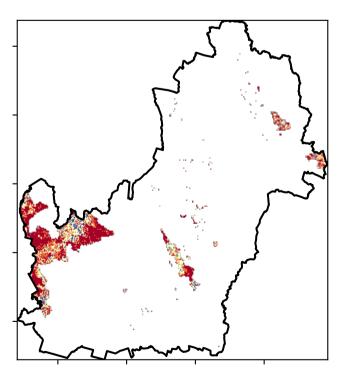
Total Vegetation Cover Decile [%]

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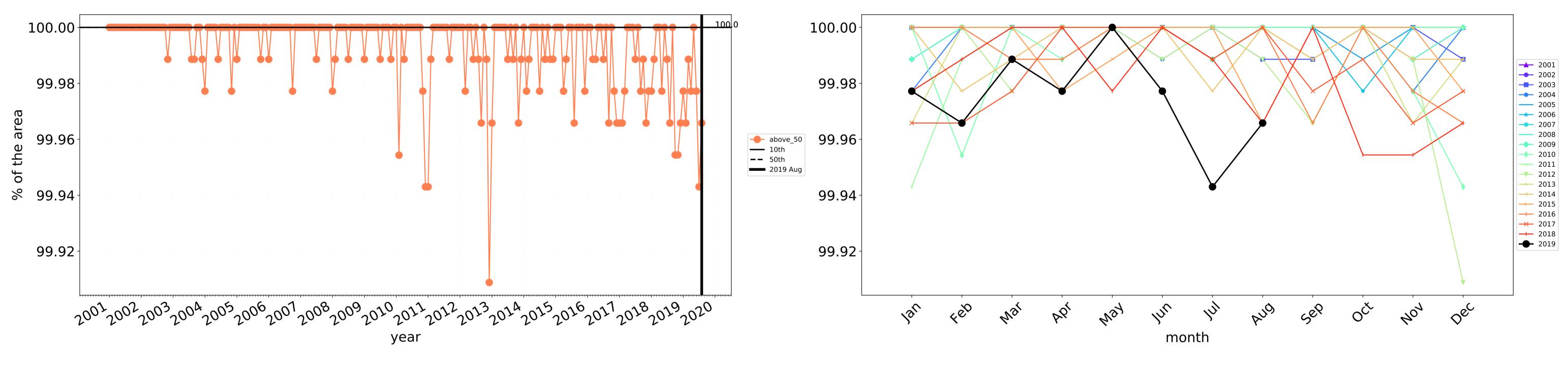


Deciles show where the pixel value lies in the

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

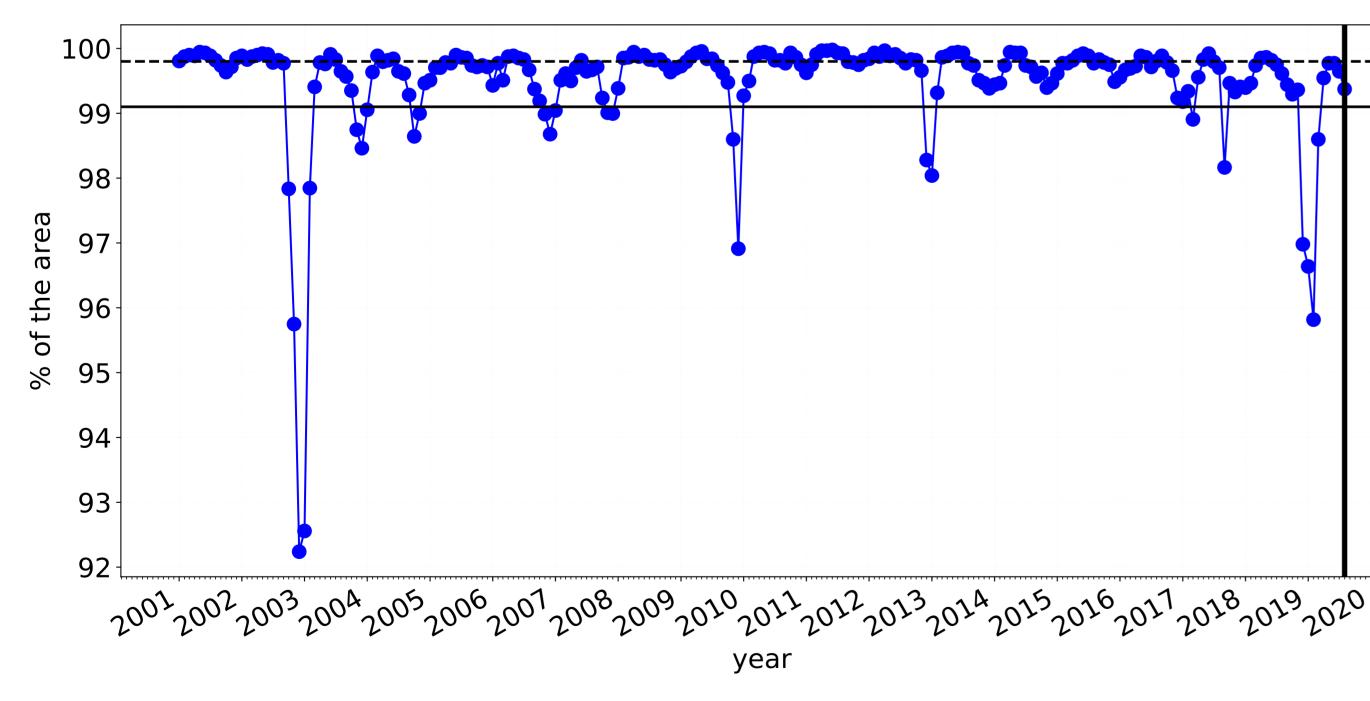
records for that month of

the map using baseline from 2001 to 2019.



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

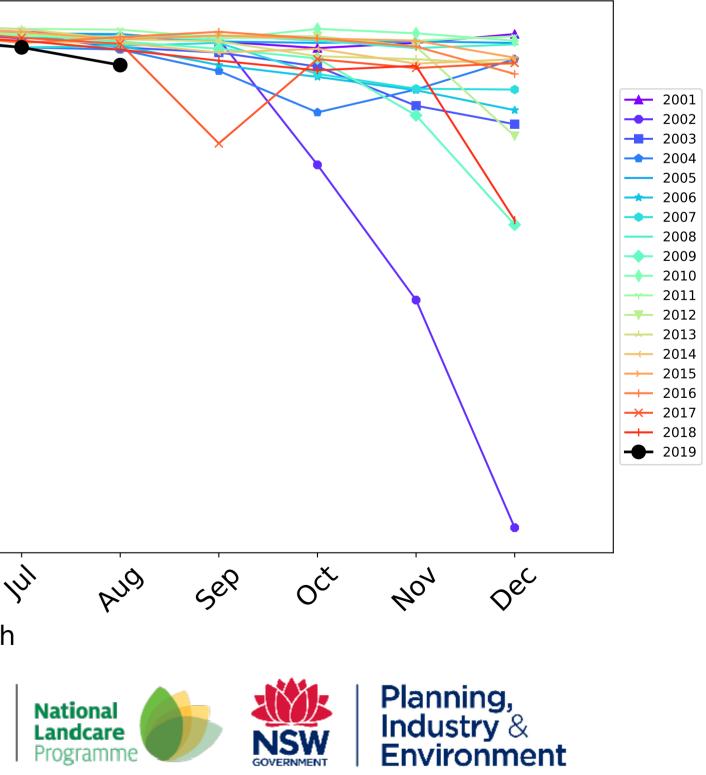
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

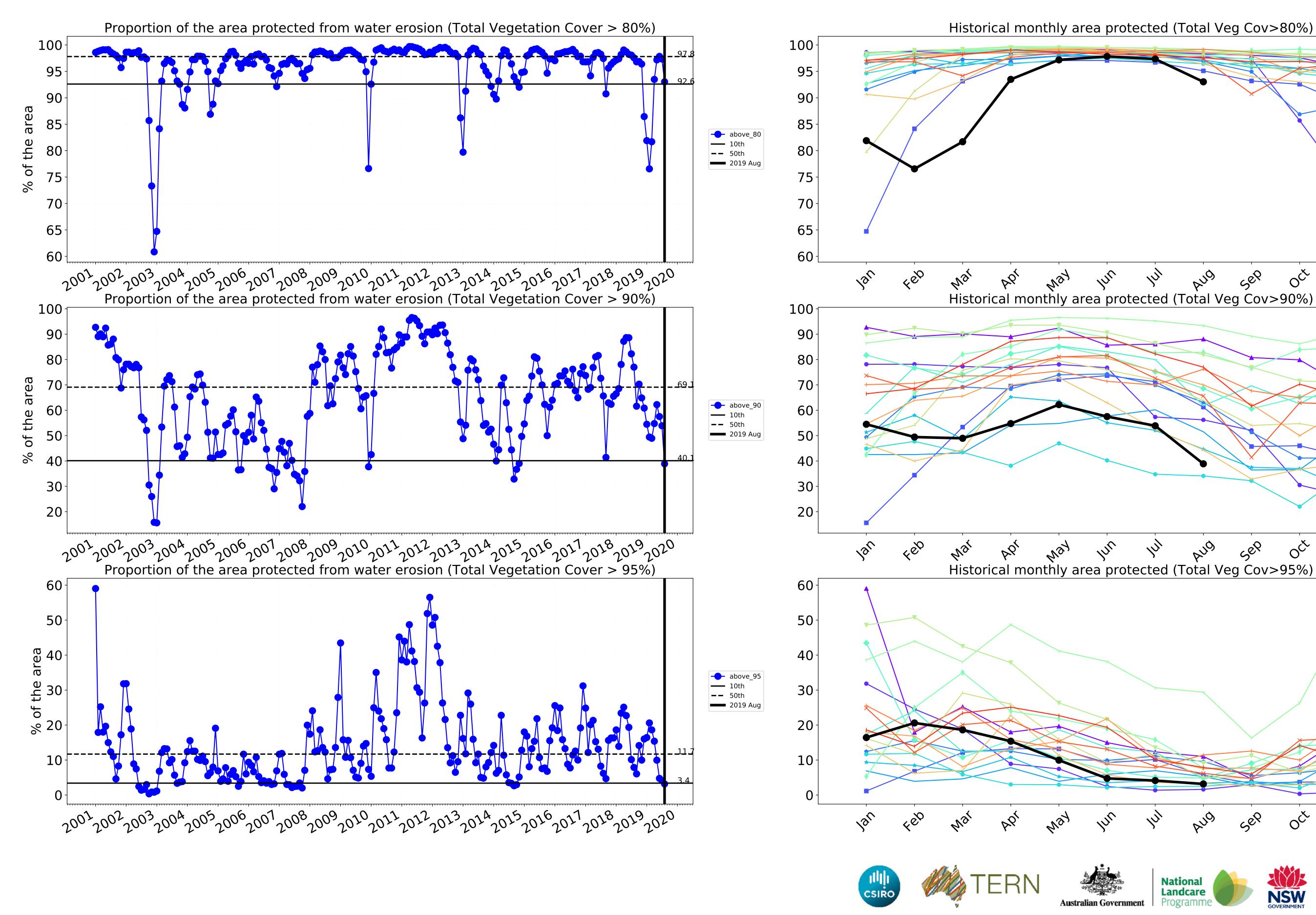


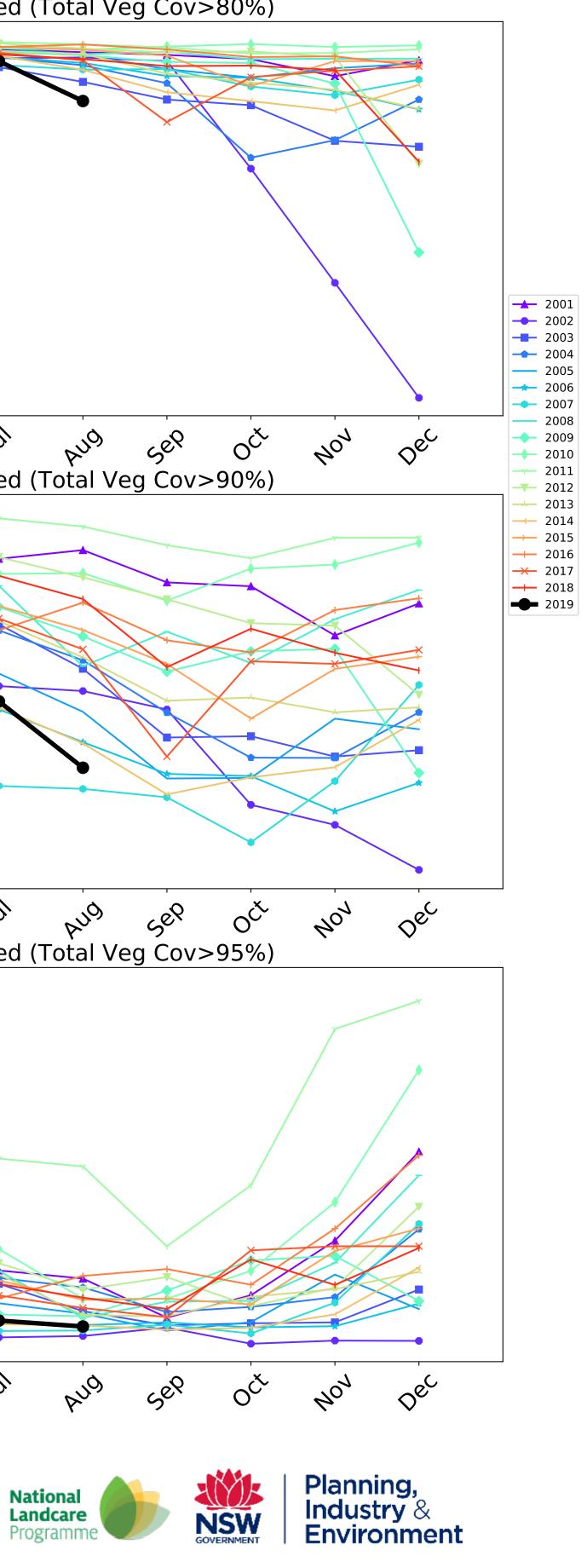
Wind erosion historical monthly area protected (Total Veg Cov >50%)

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

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

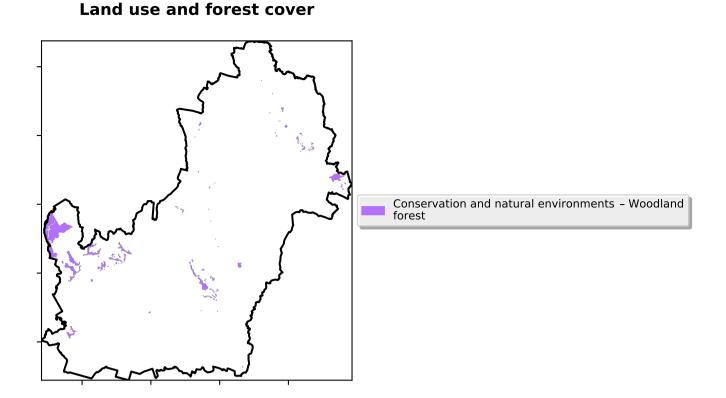




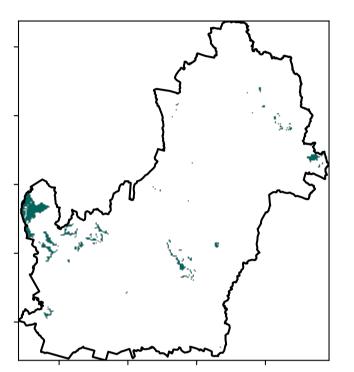


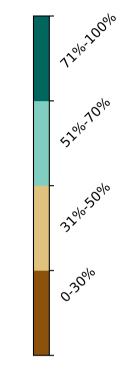
Conservation and natural environments Woodland forest

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.

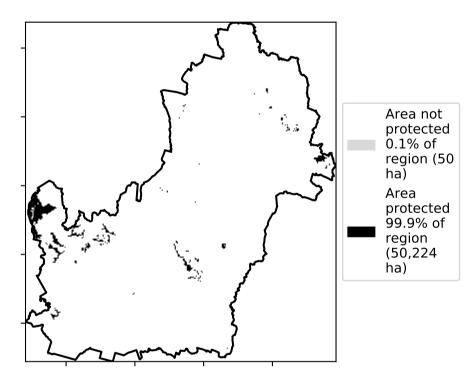


Total Vegetation Cover [%]

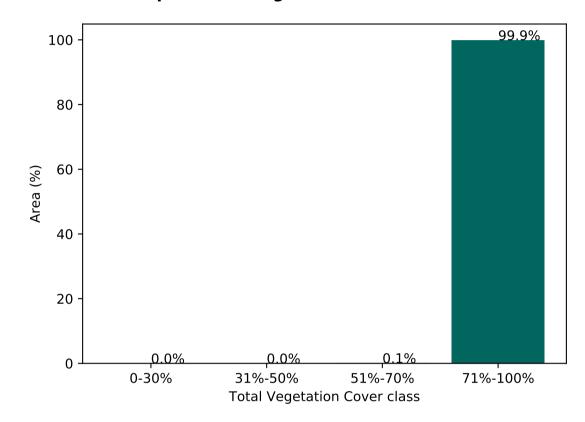




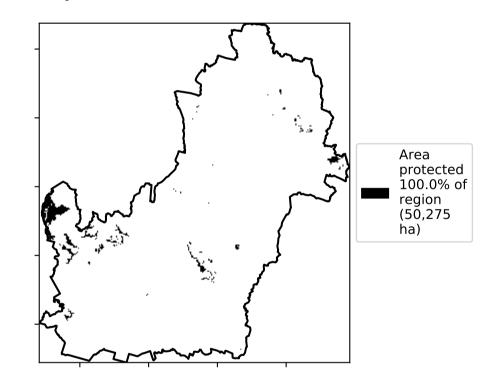
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



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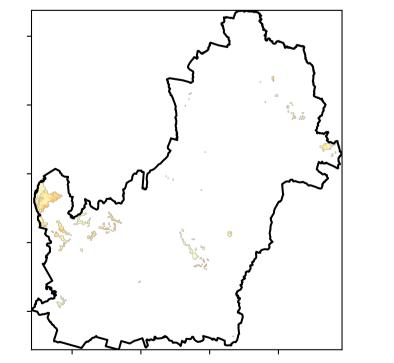
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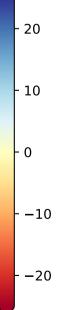
A-1

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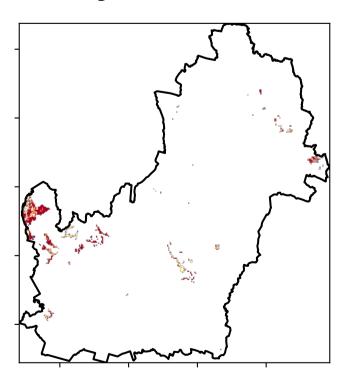
Total Vegetation Cover Anomaly [%]

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 using baseline from 2001 to 2019.





Total Vegetation Cover Decile [%]





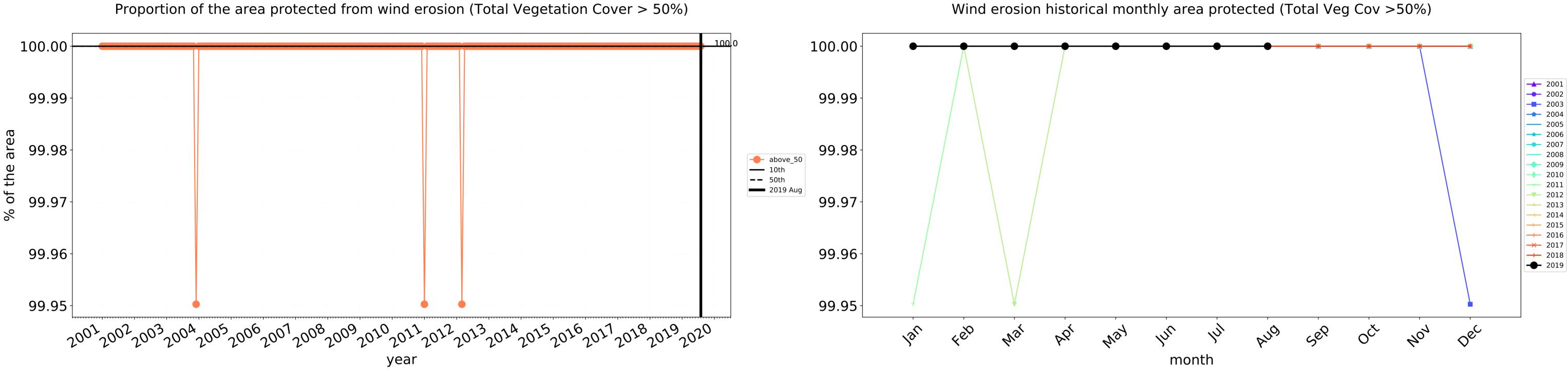
Deciles show where the pixel value lies in the

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

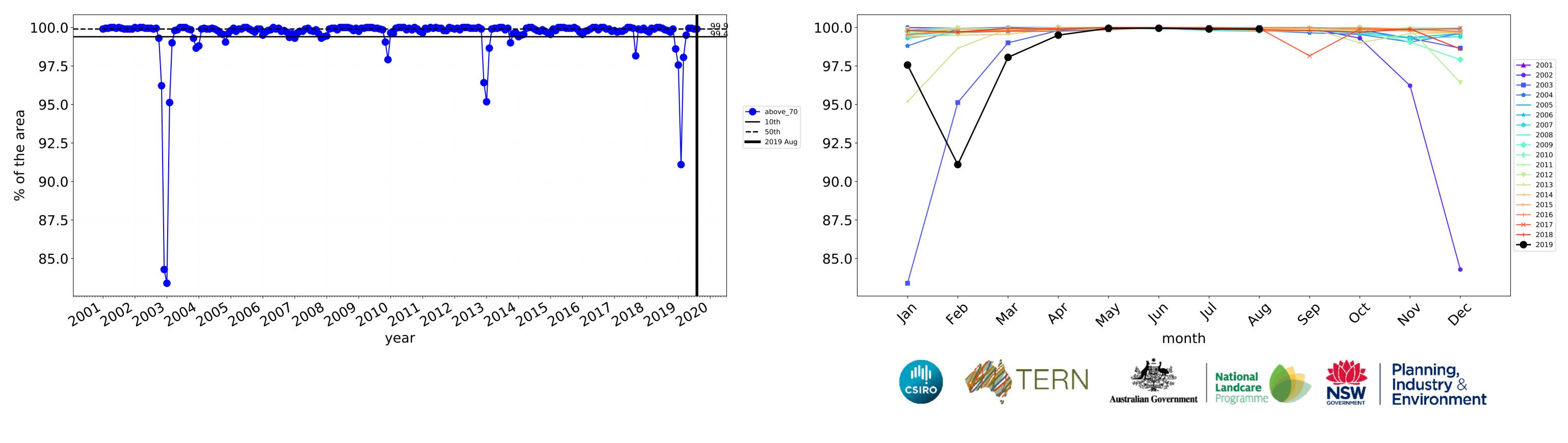
records for that month of

the map using baseline from 2001 to 2019.

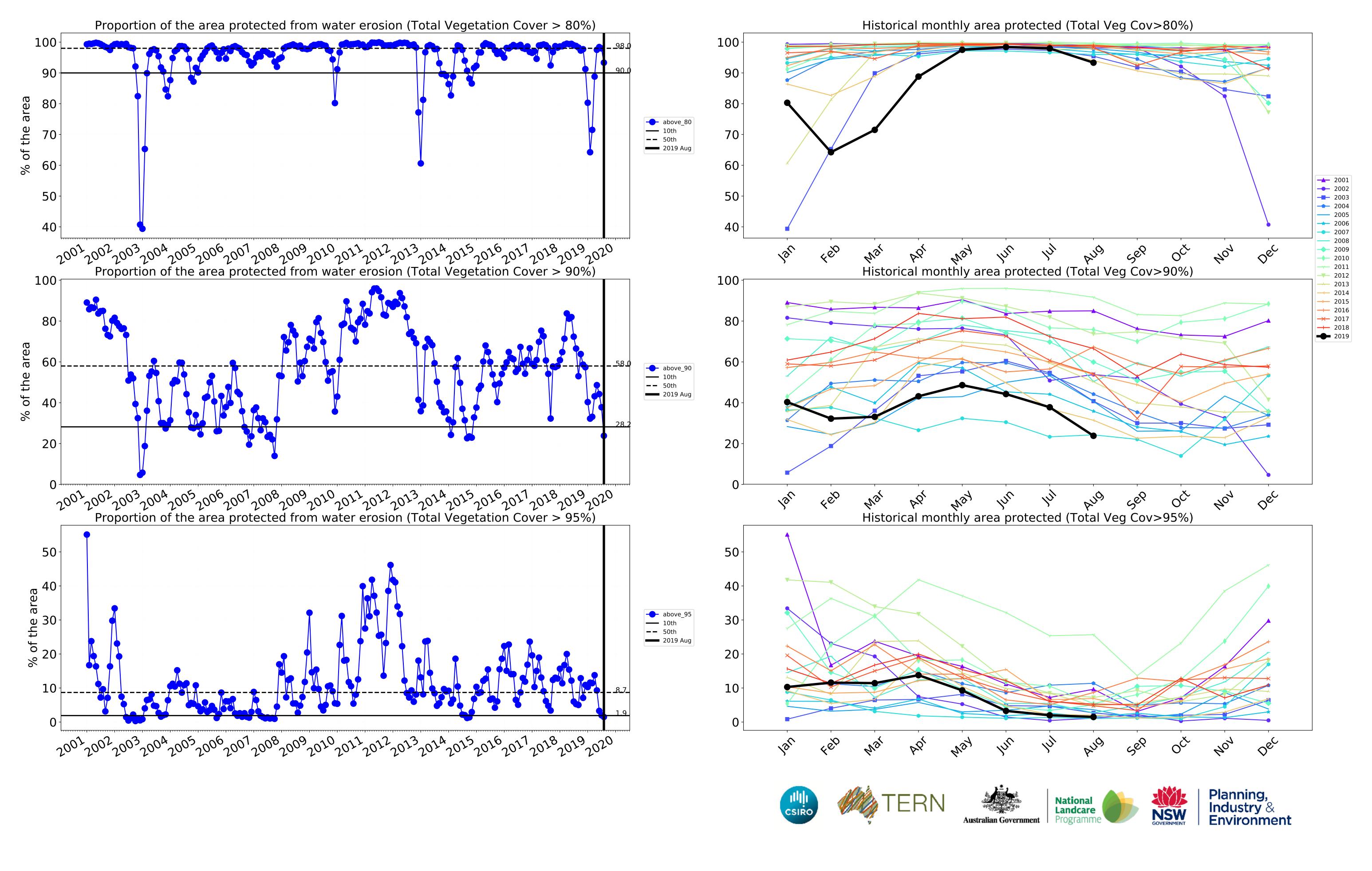
Conservation and natural environments Woodland forest timeseries



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)

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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52°10'10°10

· 32% 50%

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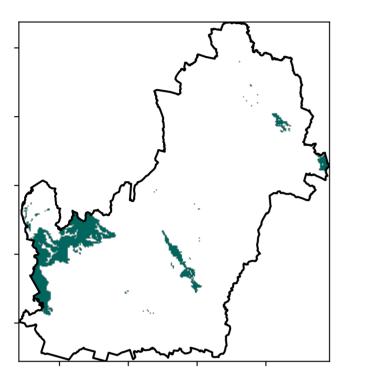
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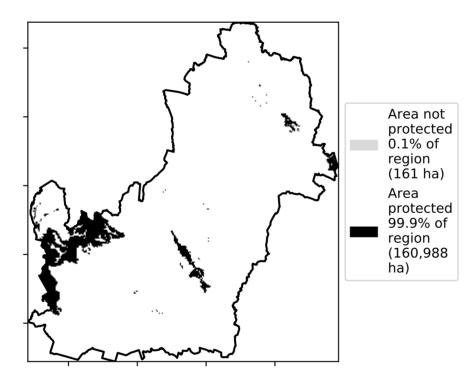
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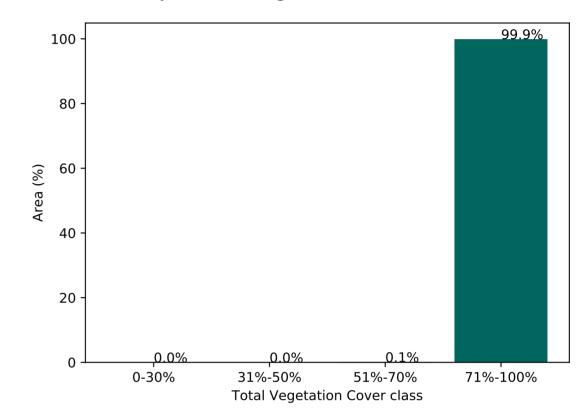
Total Vegetation Cover [%]



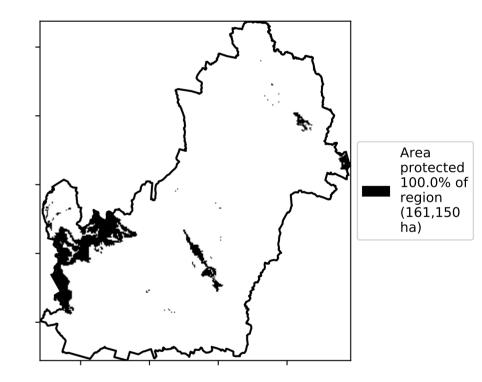
% Area protected from water erosion (>70%)







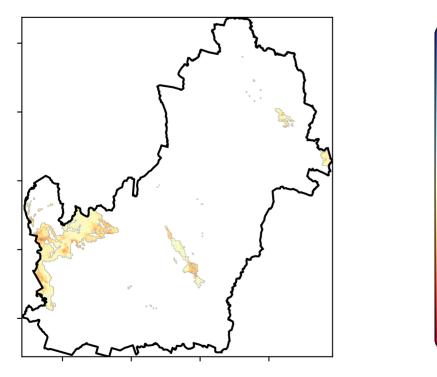
% Area protected from wind erosion (>50%)



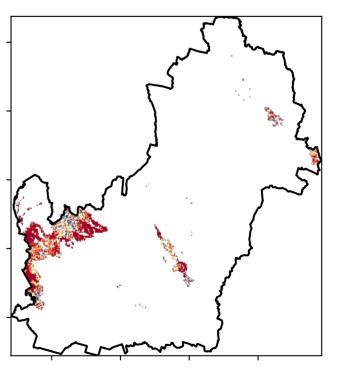
Land use and forest cover

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.



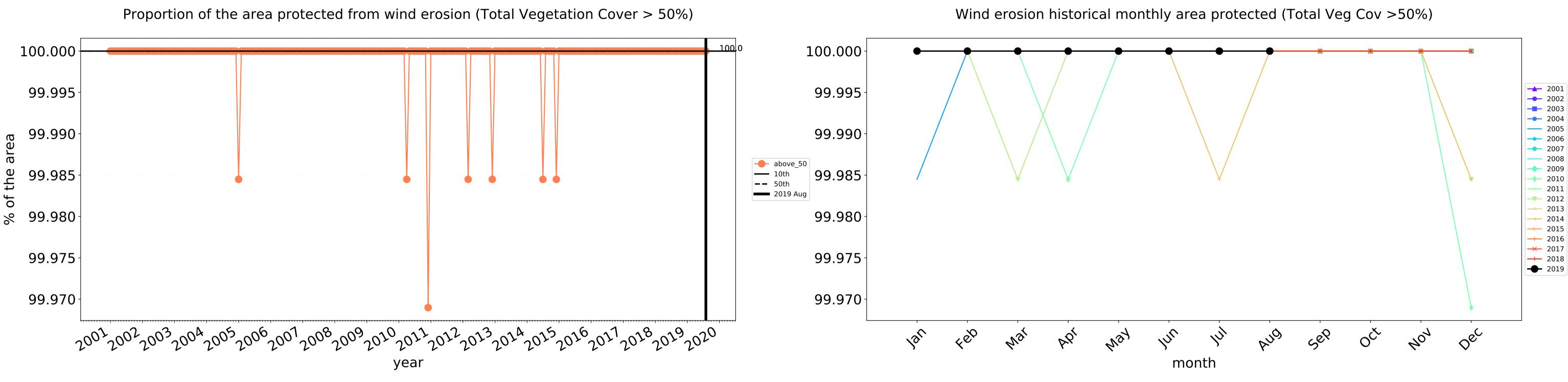
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019. **Total Vegetation Cover Decile [%]**



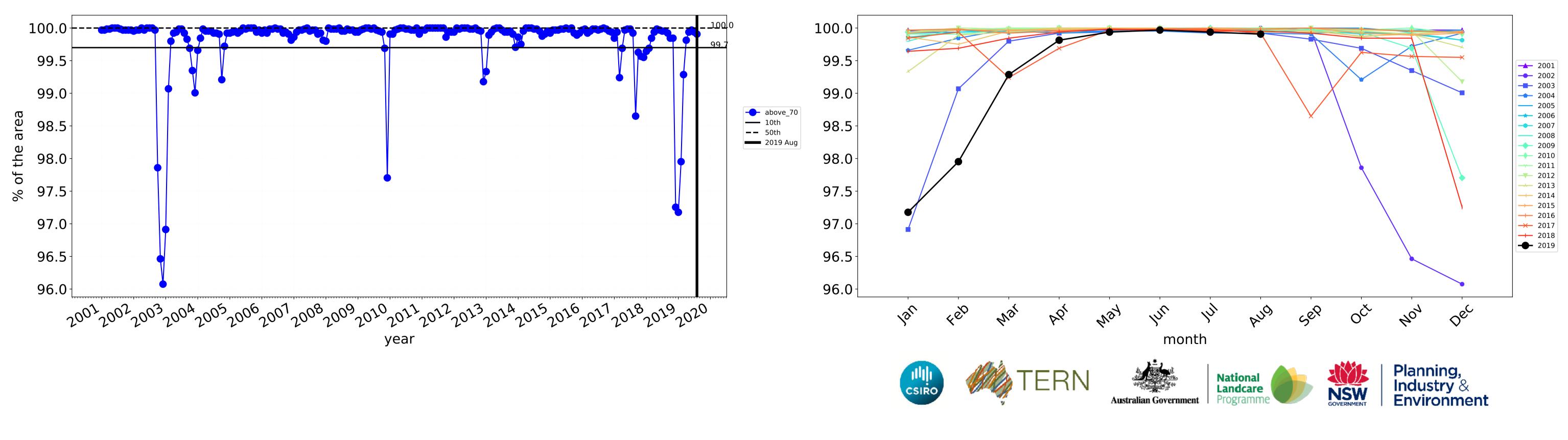




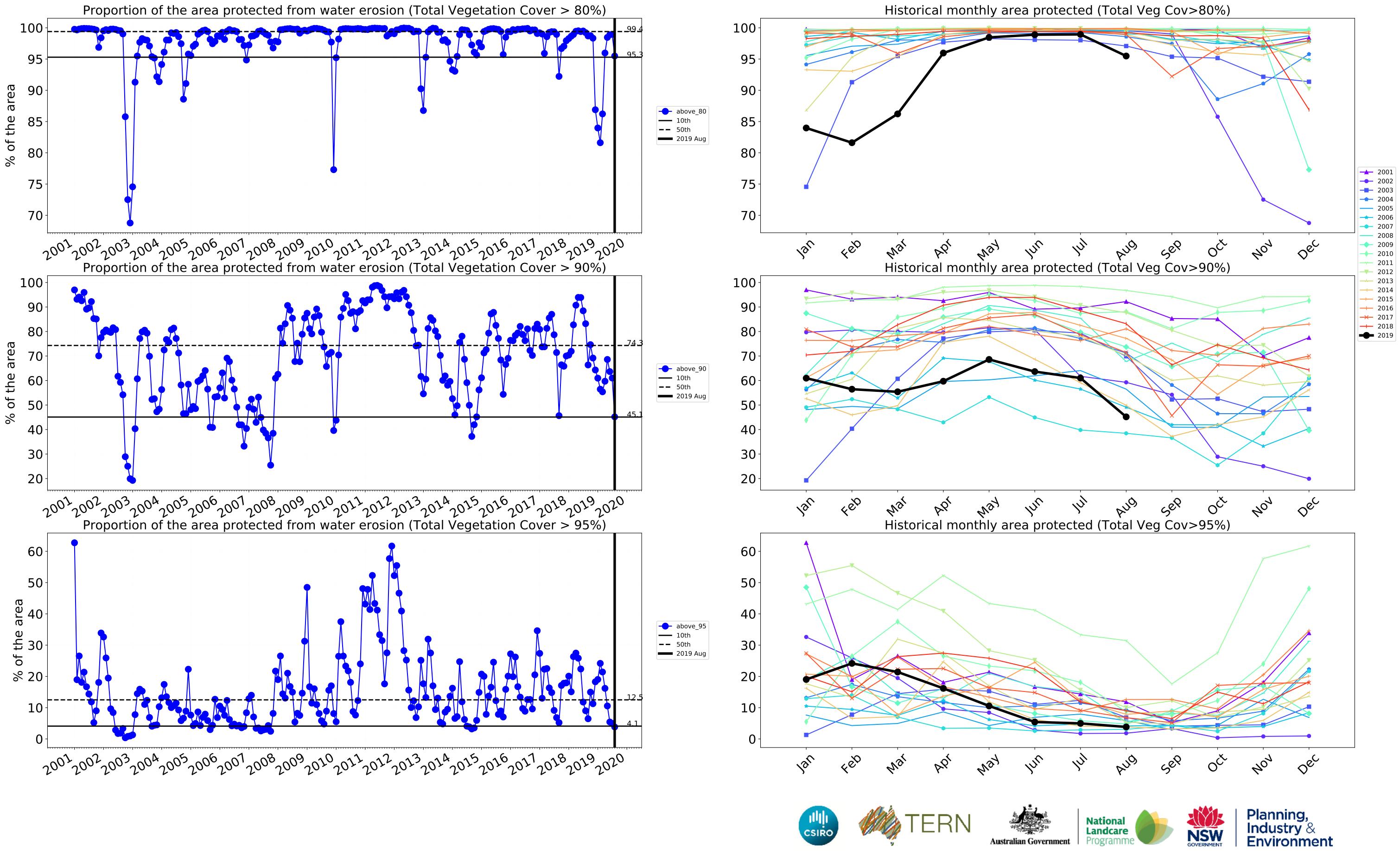




Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



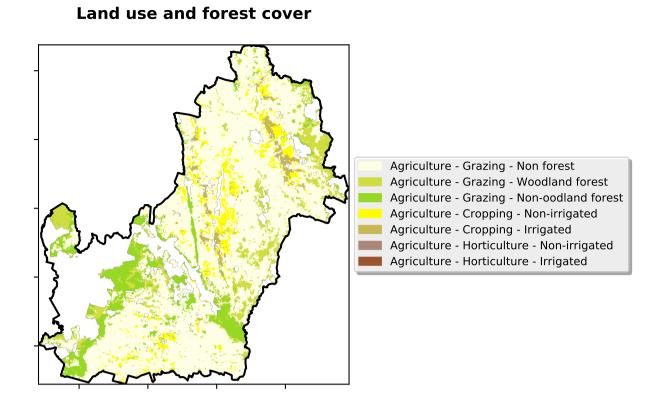




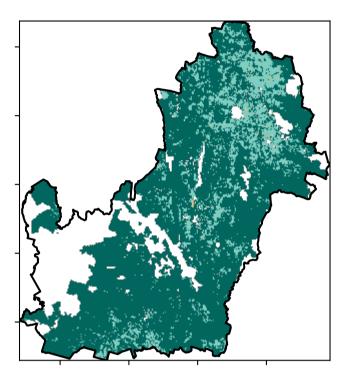


Agriculture

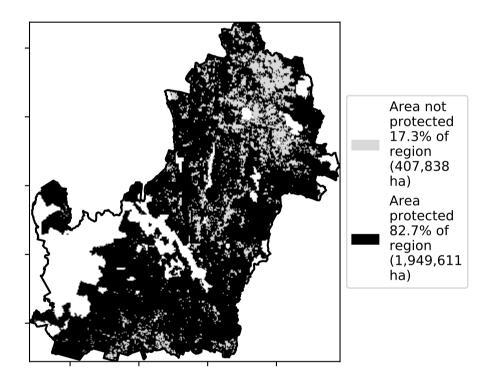
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.

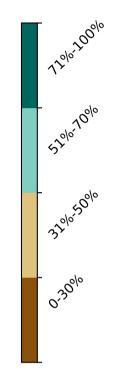


Total Vegetation Cover [%]

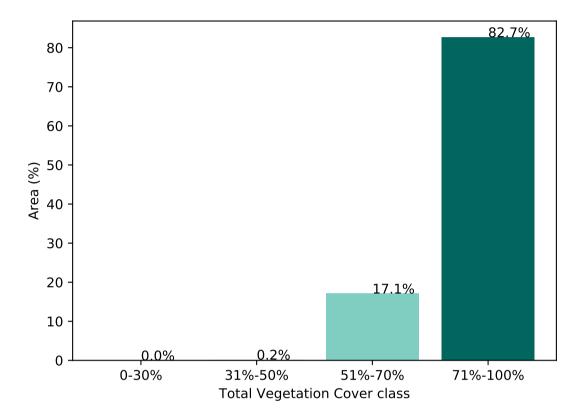


% Area protected from water erosion (>70%)

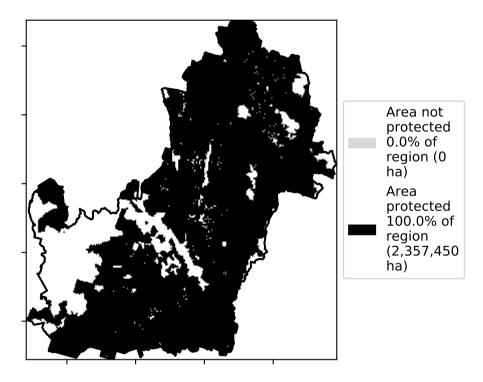




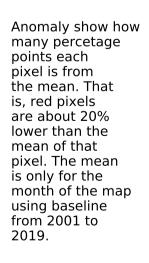
Proportion of vegetation cover class in area

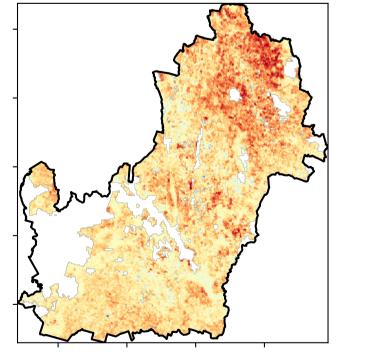


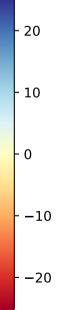
% Area protected from wind erosion (>50%)



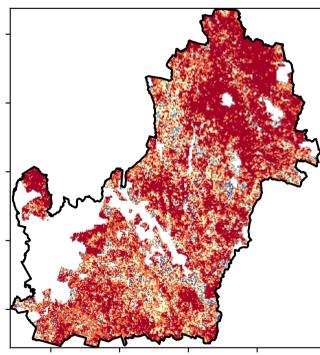
Total Vegetation Cover Anomaly [%]







Total Vegetation Cover Decile [%]





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Deciles show where the

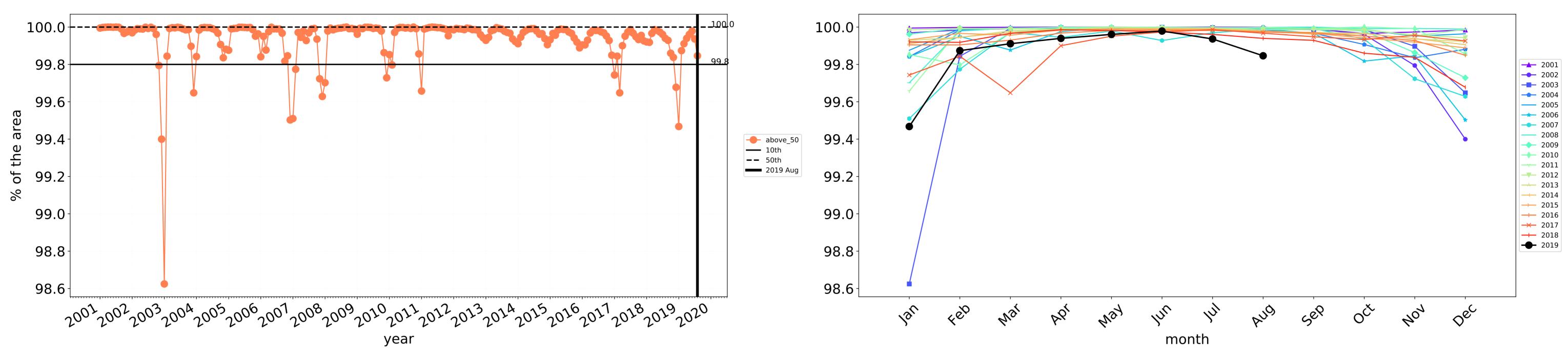
pixel value lies in the

record, from highest to lowest, for that month. That is, red pixels are

records for that month of

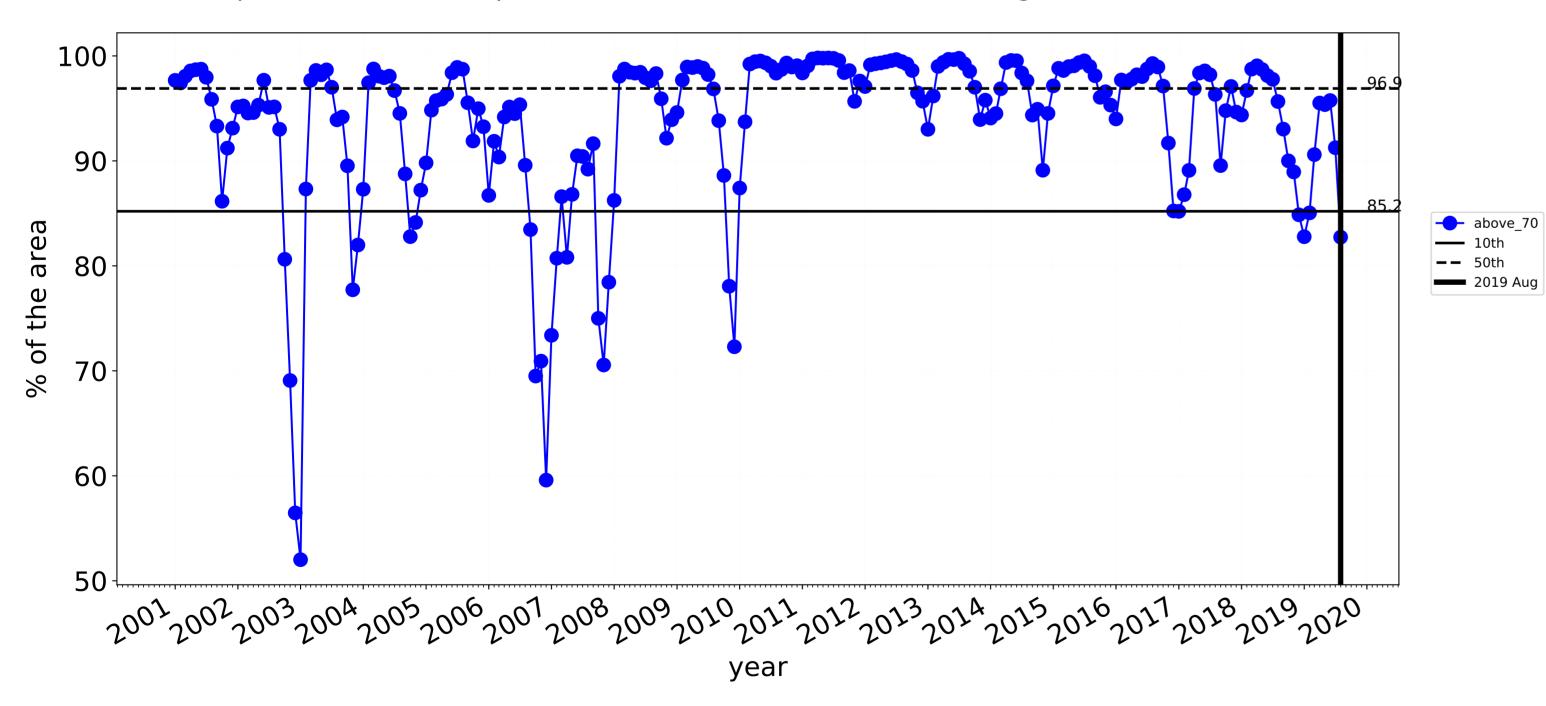
the map using baseline from 2001 to 2019.

in the lowest 10% of

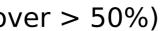


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

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

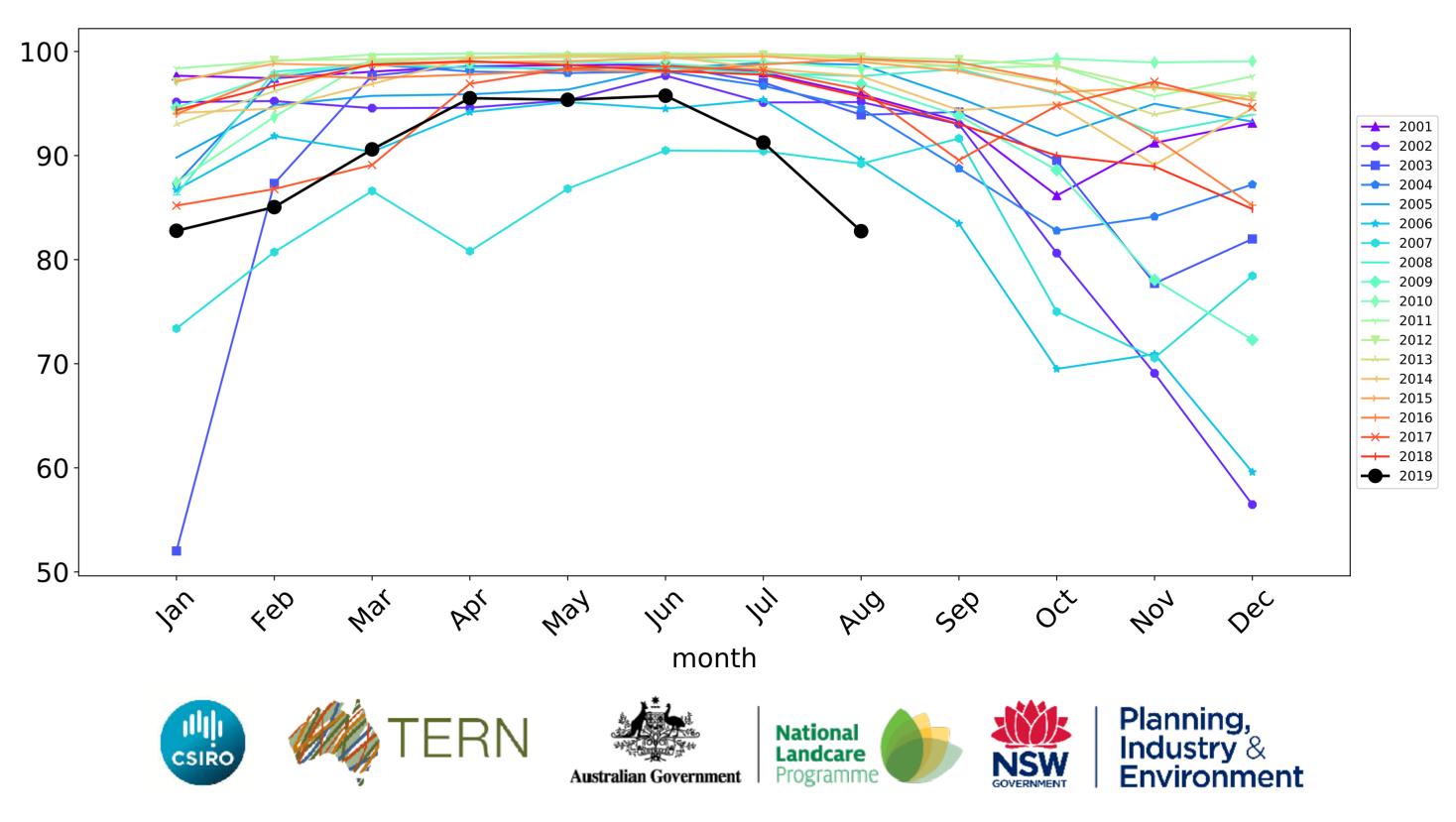


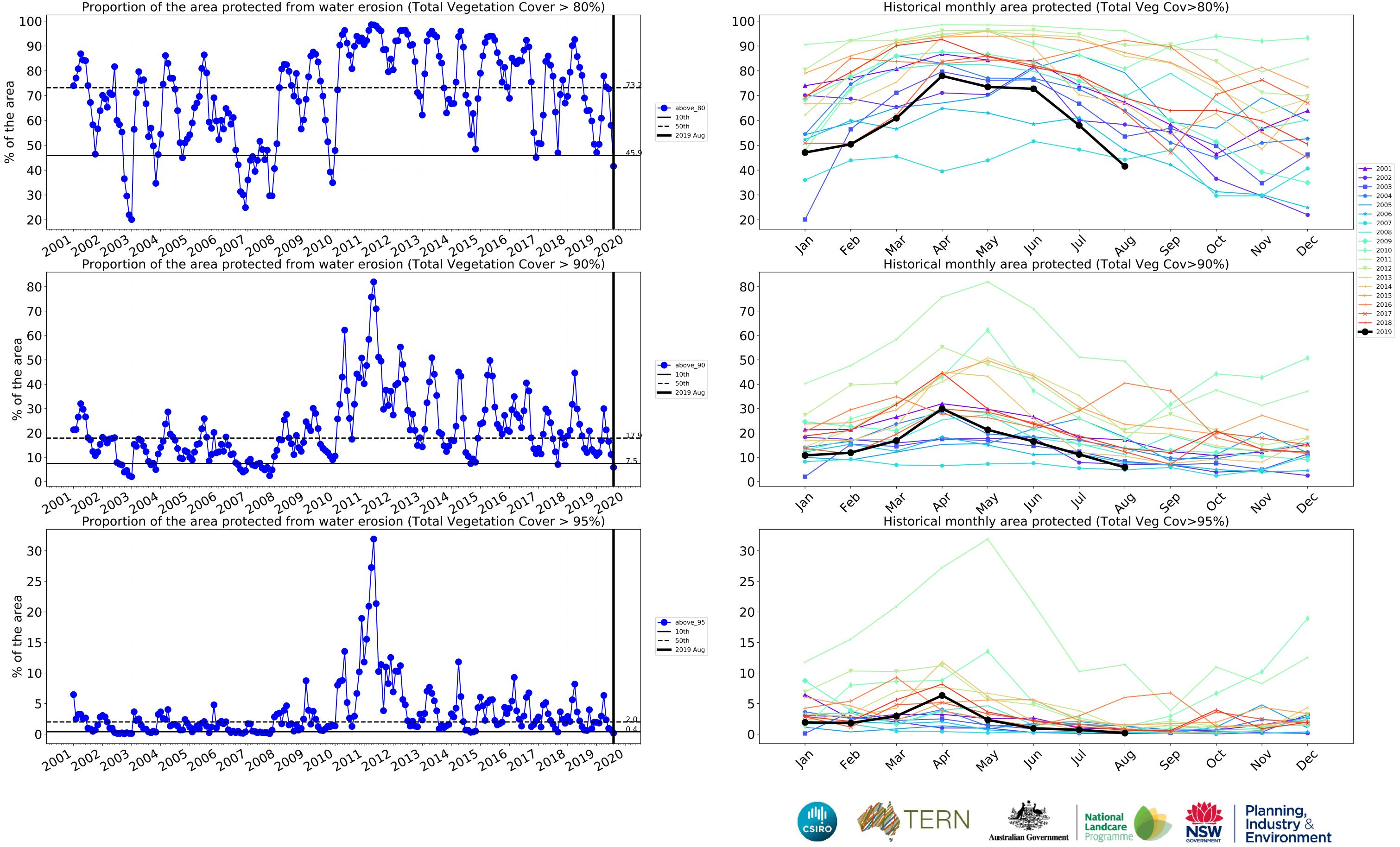
Agriculture timeseries



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

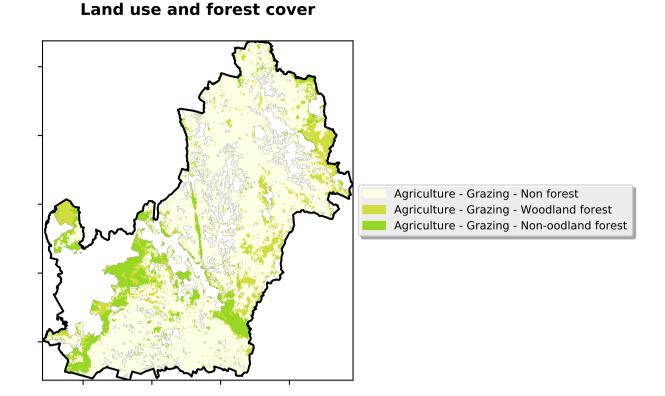
Water erosion historical monthly area protected (Total Veg Cov>70%)



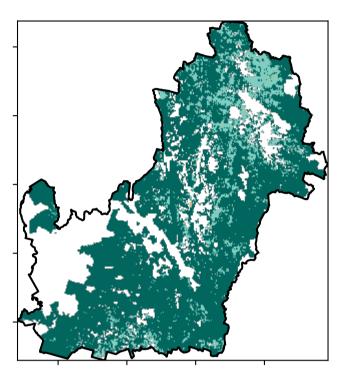


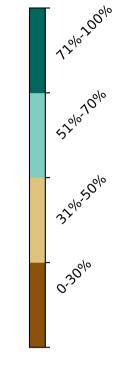
Grazing

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.

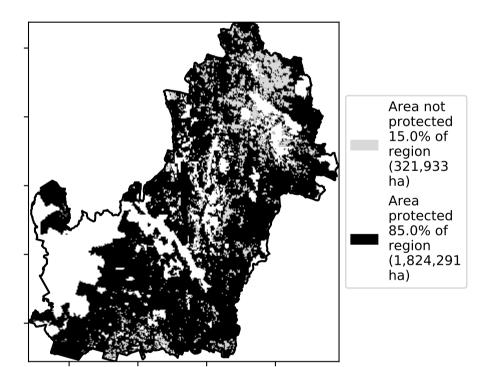


Total Vegetation Cover [%]

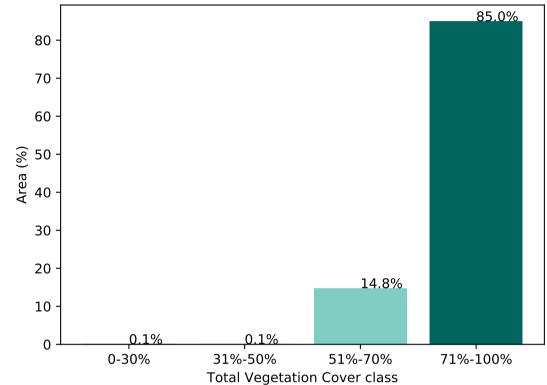




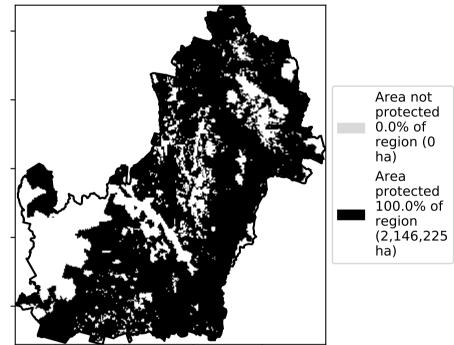
% Area protected from water erosion (>70%)



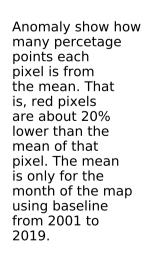


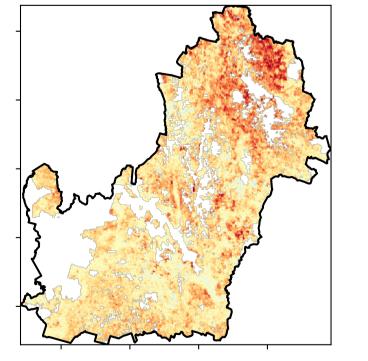


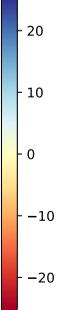
% Area protected from wind erosion (>50%)



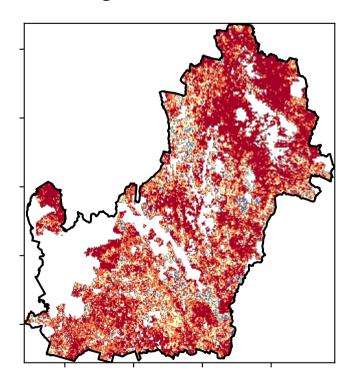
Total Vegetation Cover Anomaly [%]

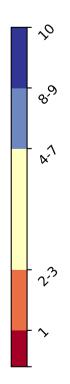






Total Vegetation Cover Decile [%]



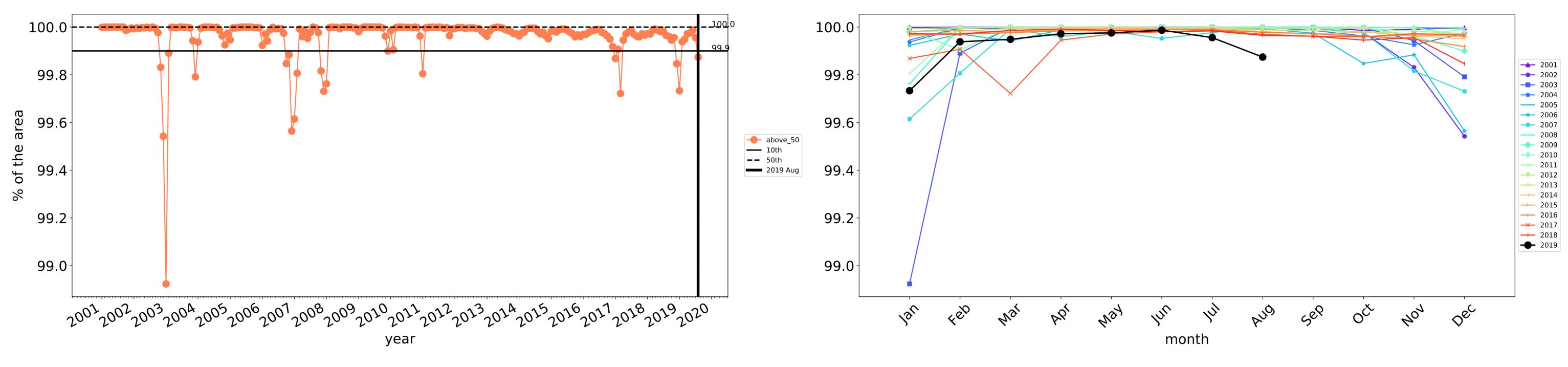




Deciles show where the pixel value lies in the

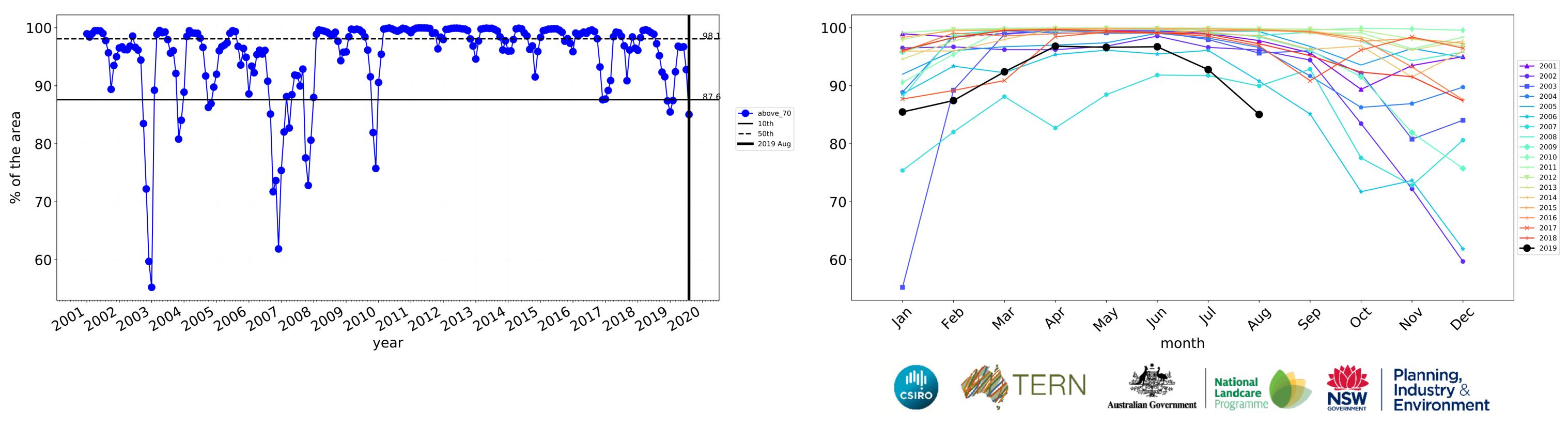
record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of

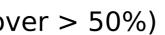
the map using baseline from 2001 to 2019.



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

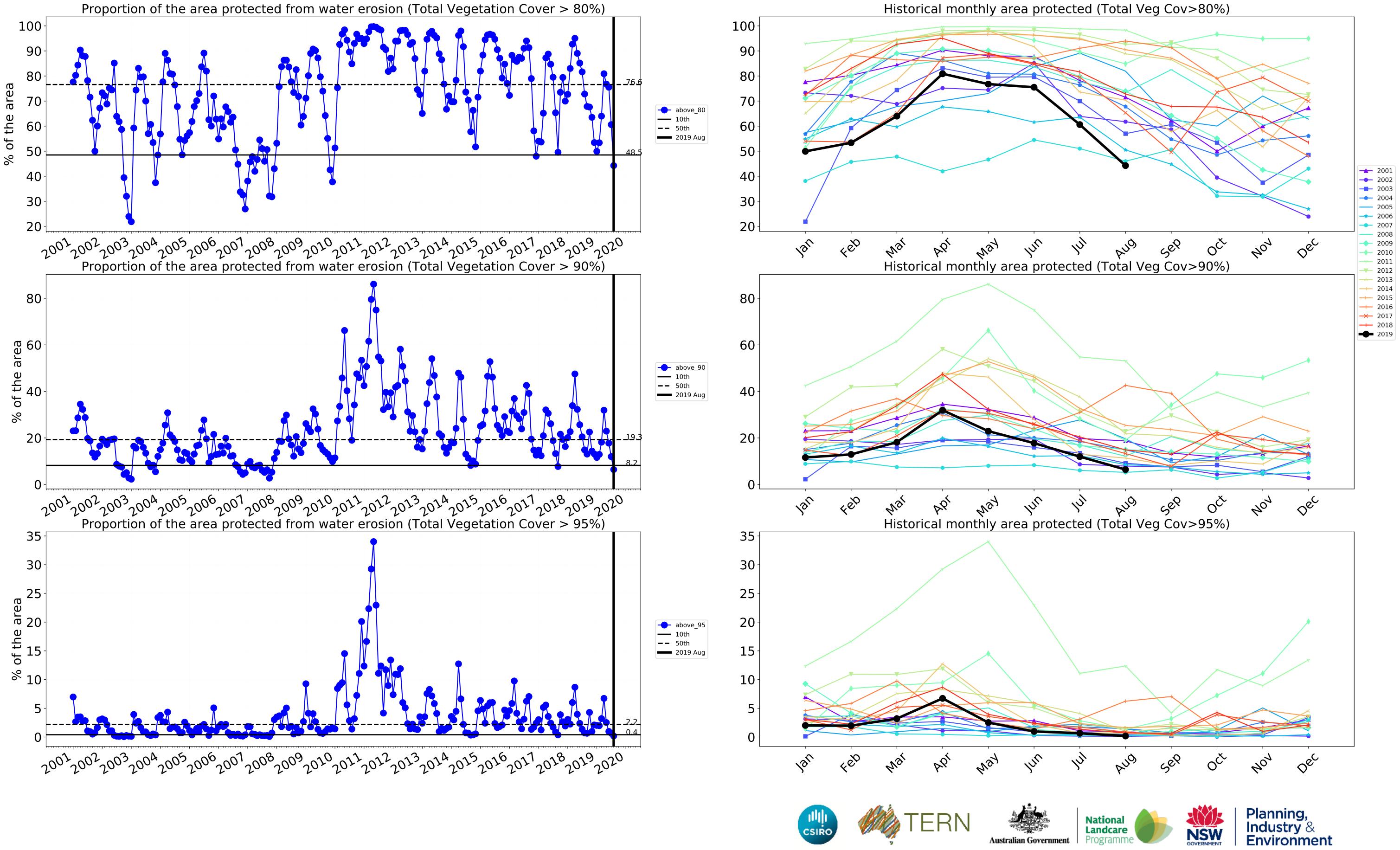
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)





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

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



Grazing non forest

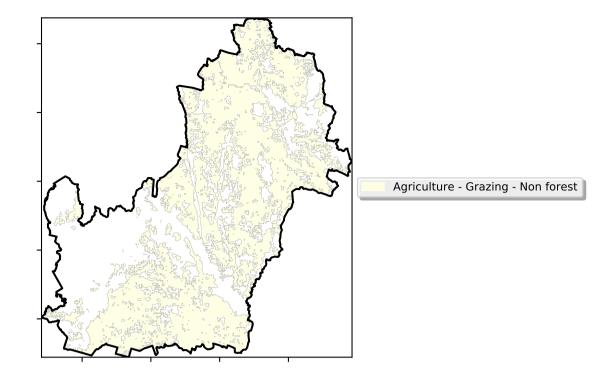
12%200%

· 52% 70%

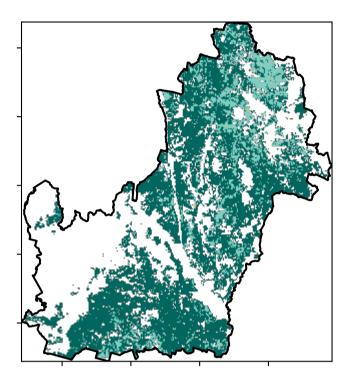
· 32°10'50°10

0.30%

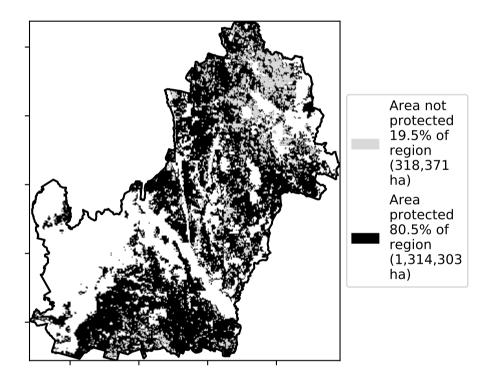
Land use and forest cover



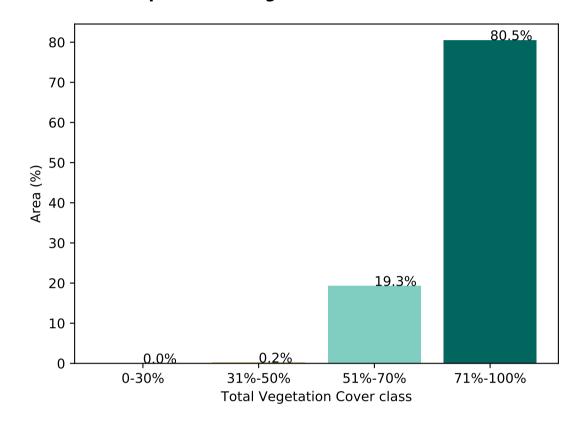
Total Vegetation Cover [%]



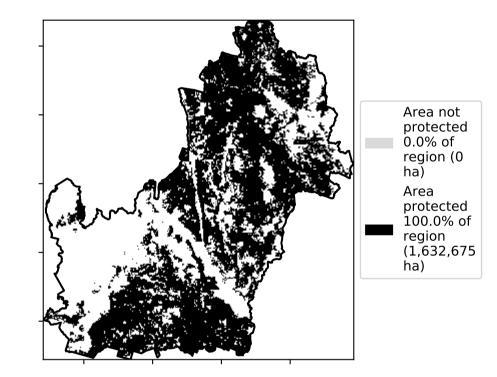




Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



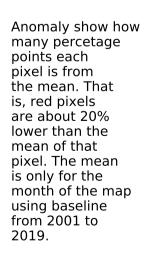
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Total Vegetation Cover Anomaly [%]



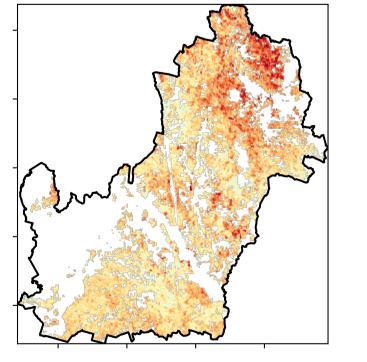
Landuse map of area based on 2015

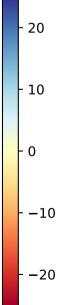
catchment scale landuse and

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

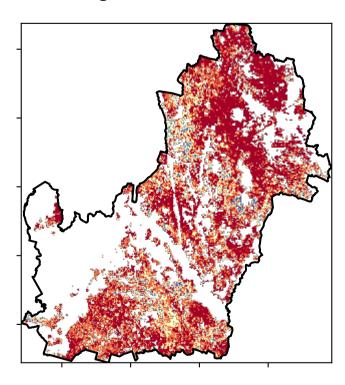
cover.

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





Total Vegetation Cover Decile [%]

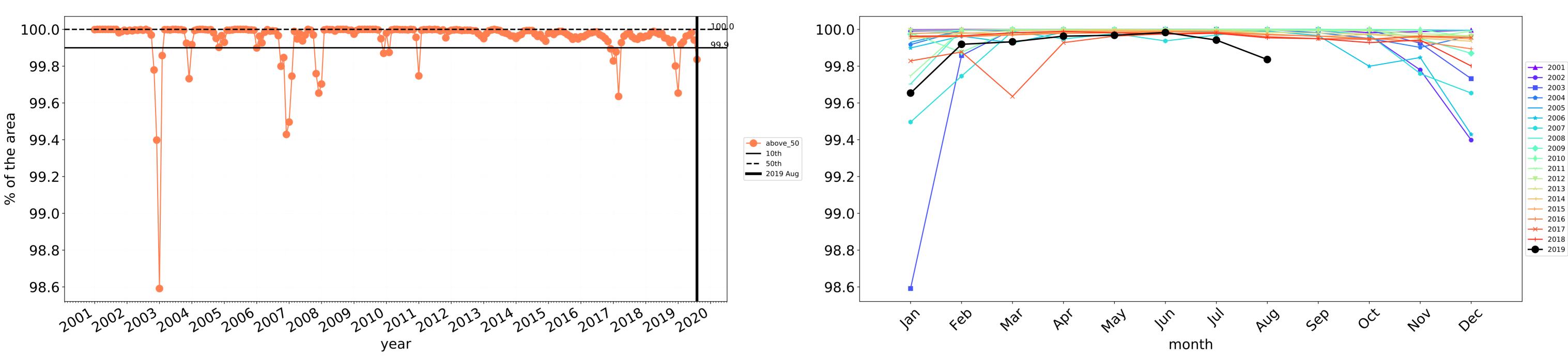




Deciles show where the pixel value lies in the

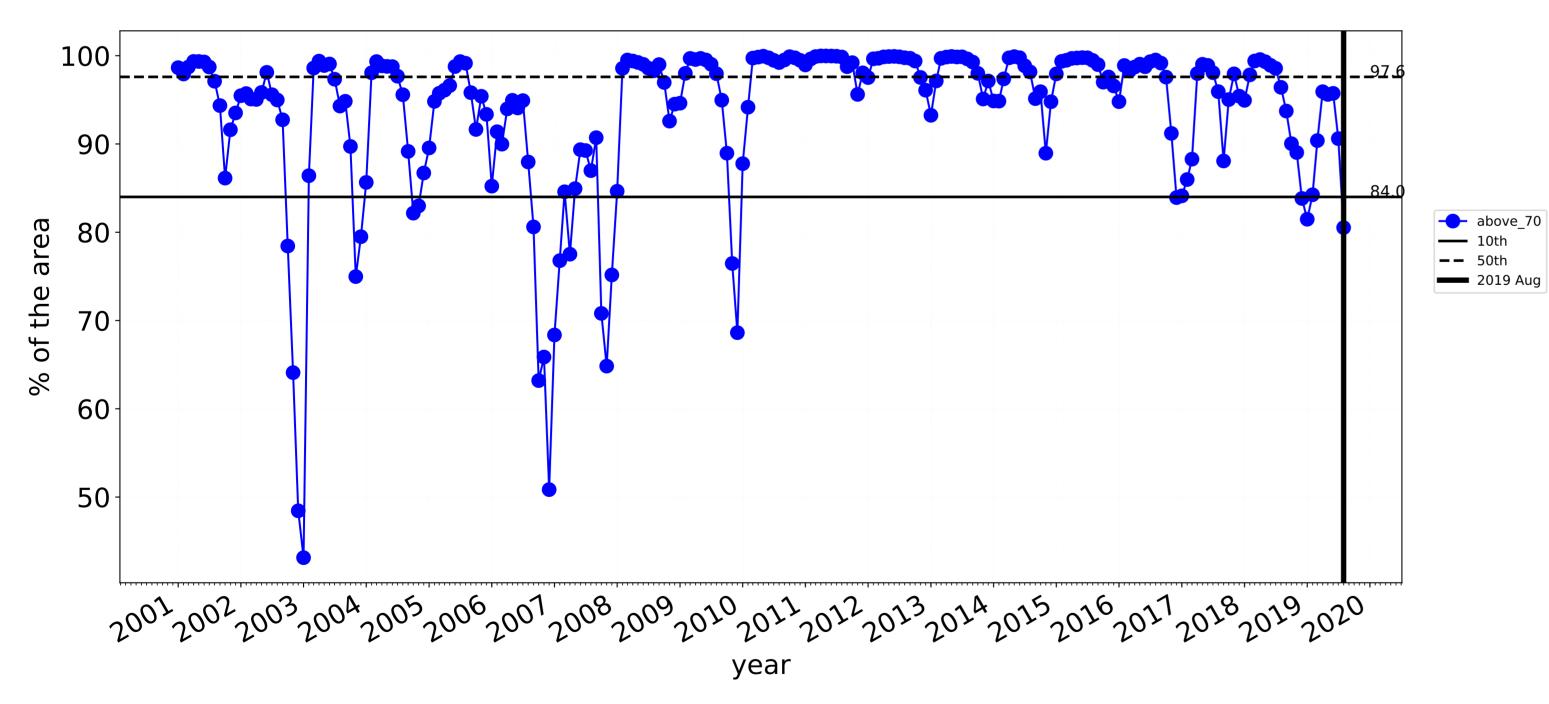
record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of

the map using baseline from 2001 to 2019.



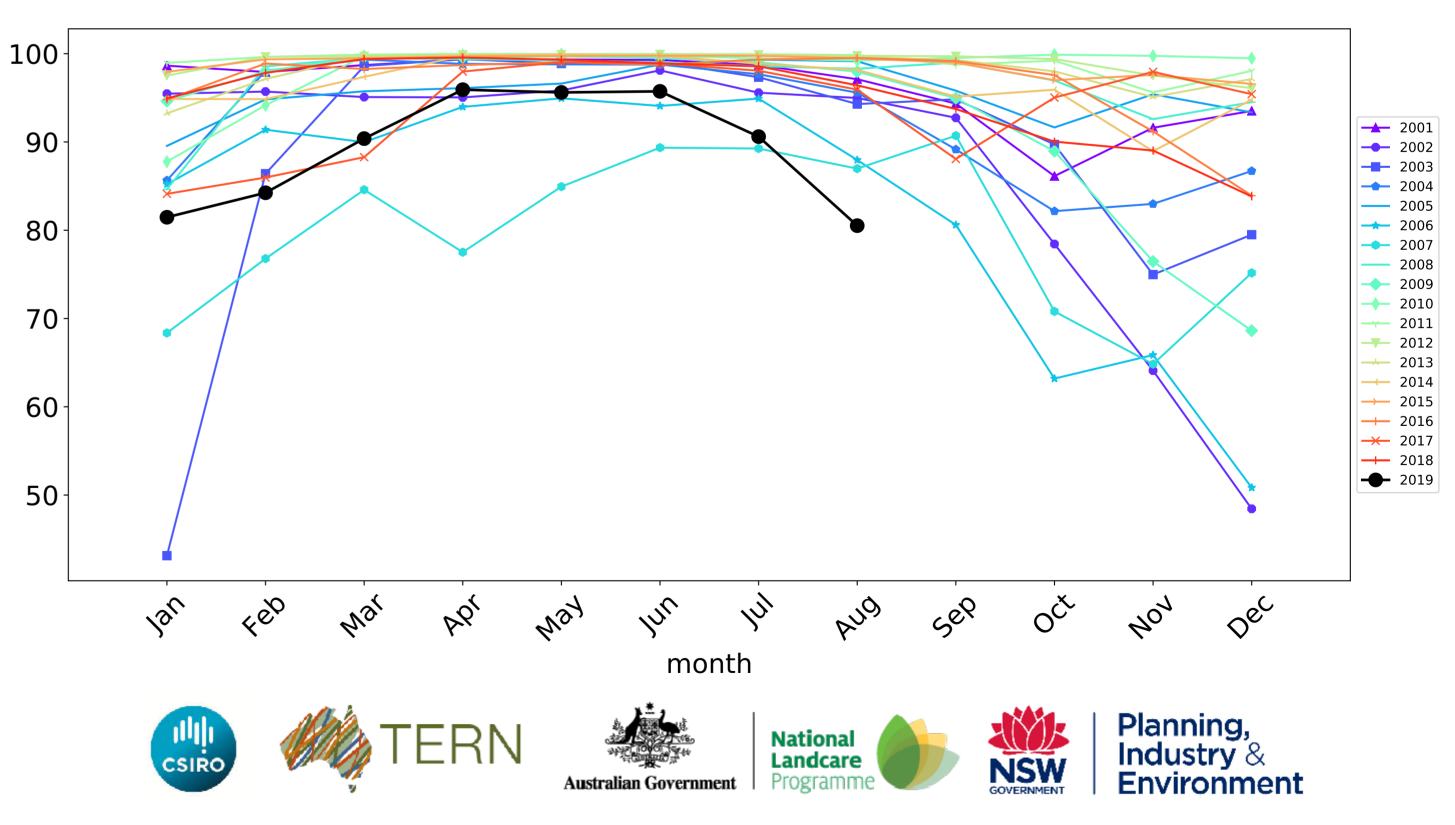
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

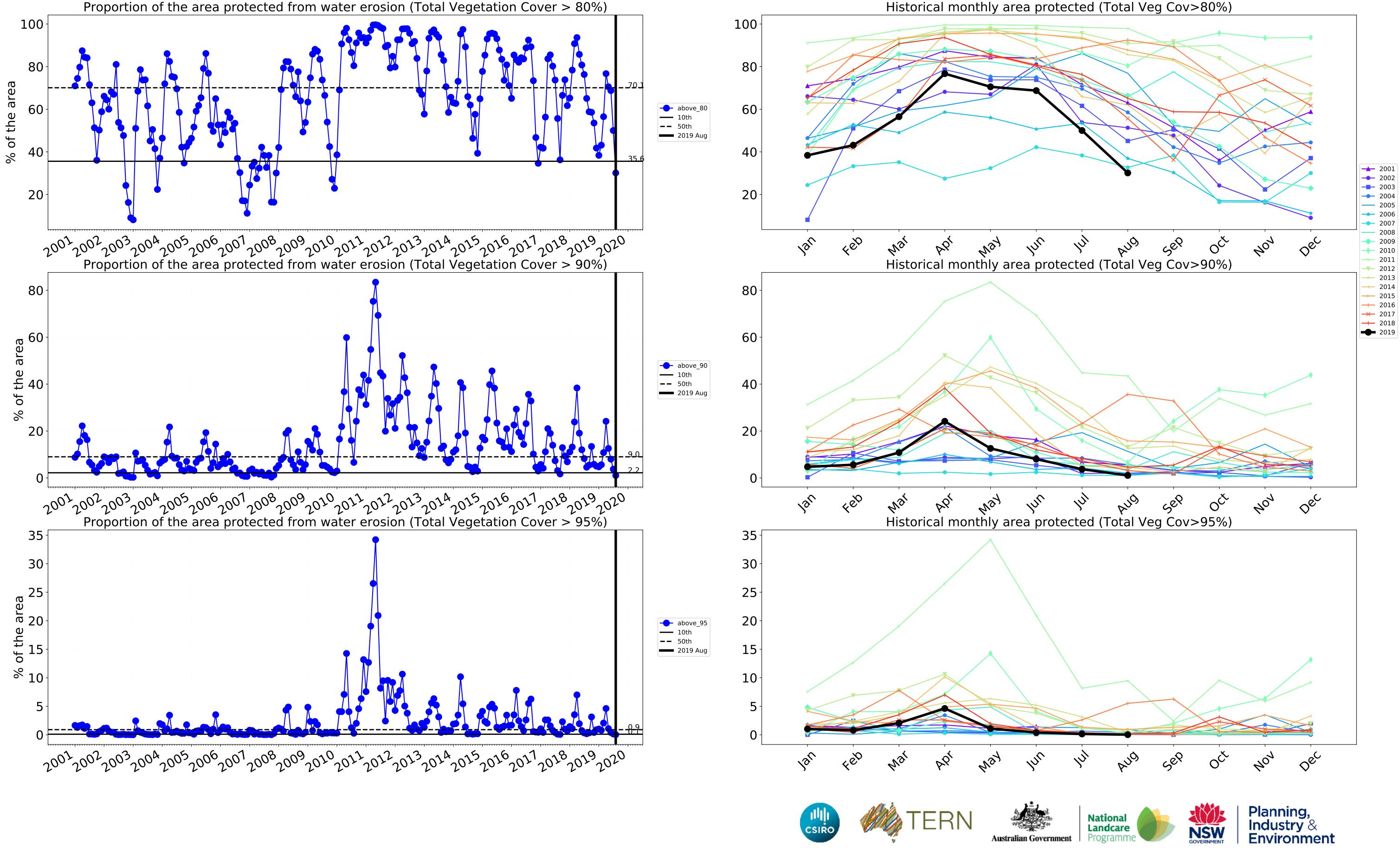
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



Grazing non forest timeseries

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





Grazing Woodland forest

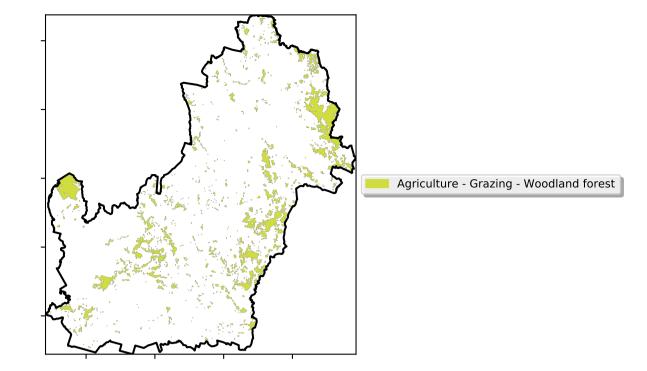
12%200%

· 52% 70%

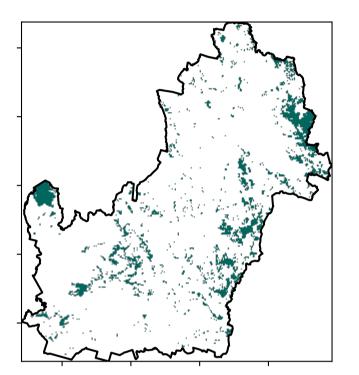
320050010

0.30%

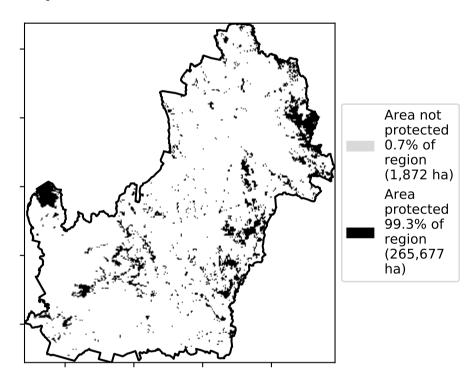
Land use and forest cover



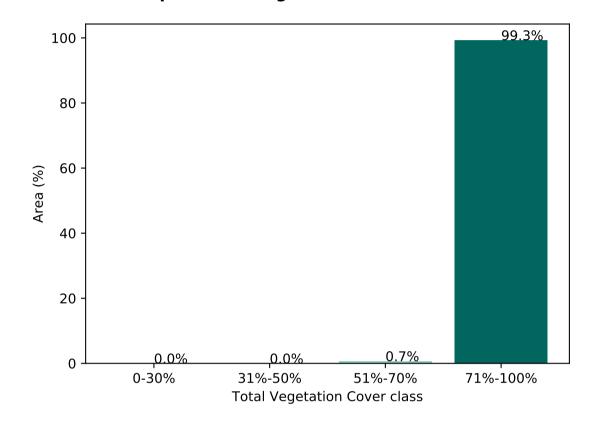
Total Vegetation Cover [%]



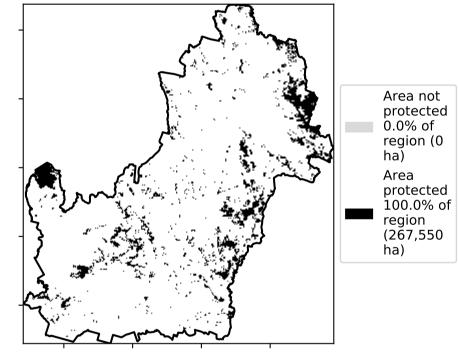
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



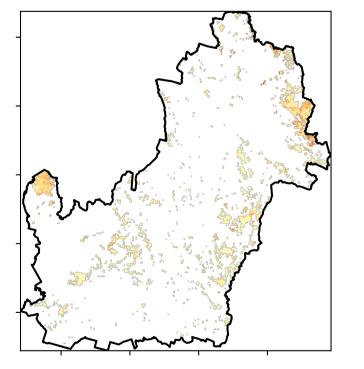
% Area protected from wind erosion (>50%)

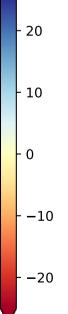


Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.

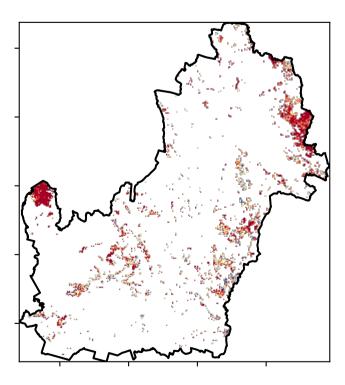
Total Vegetation Cover Anomaly [%]

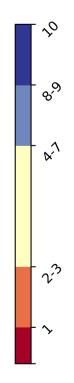
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.





Total Vegetation Cover Decile [%]

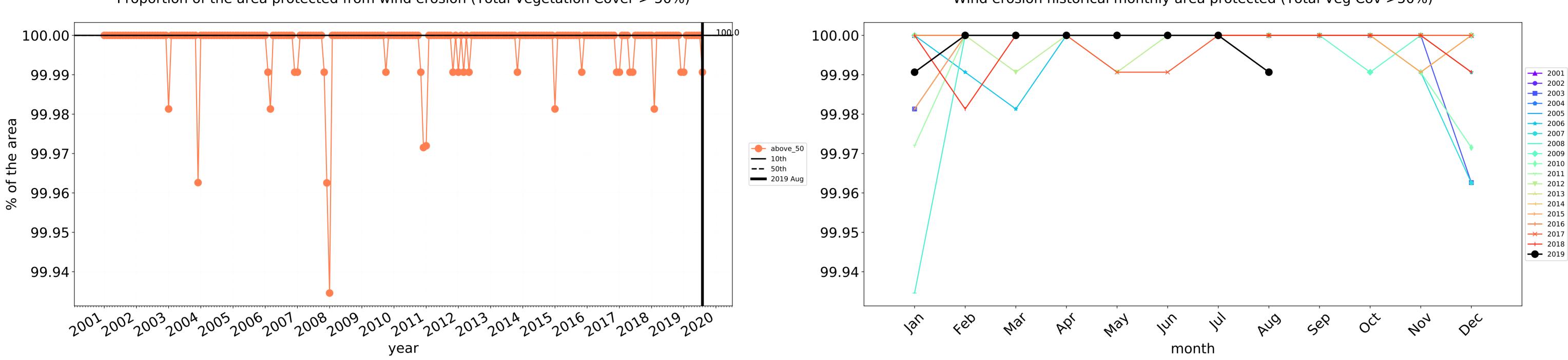






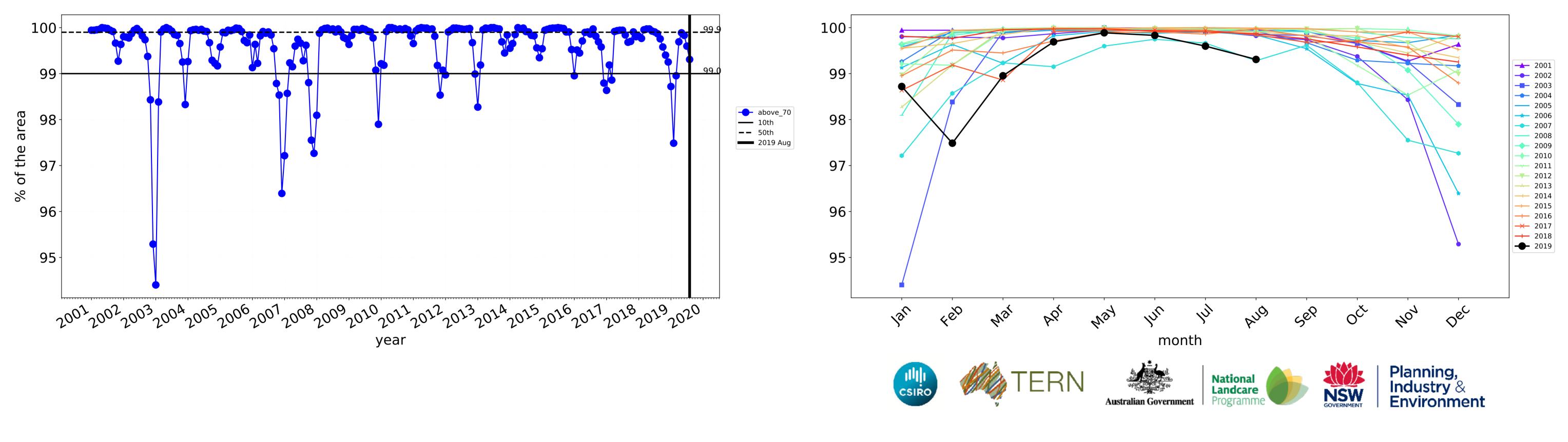
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline

the map using baseline from 2001 to 2019.



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

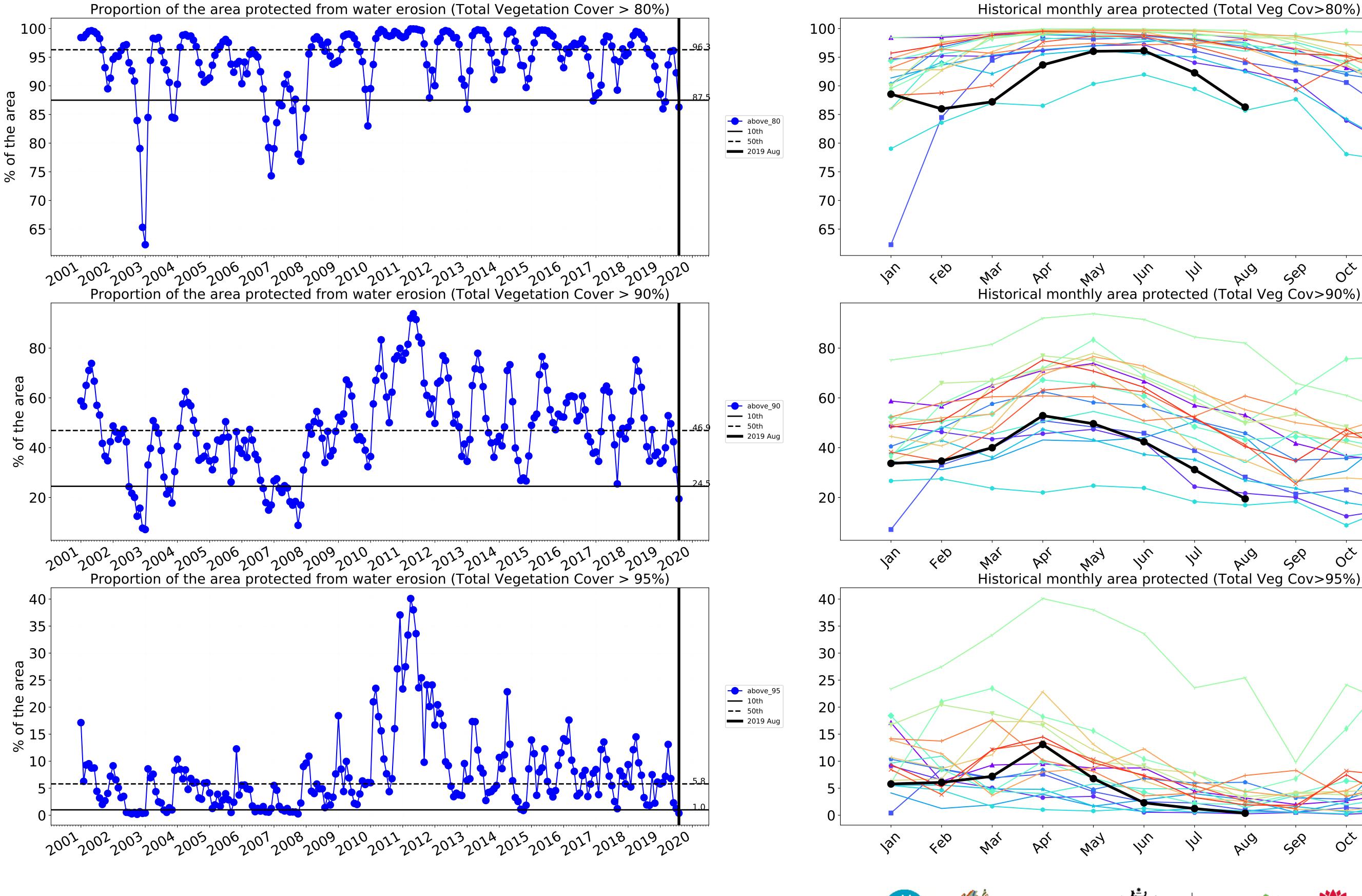
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



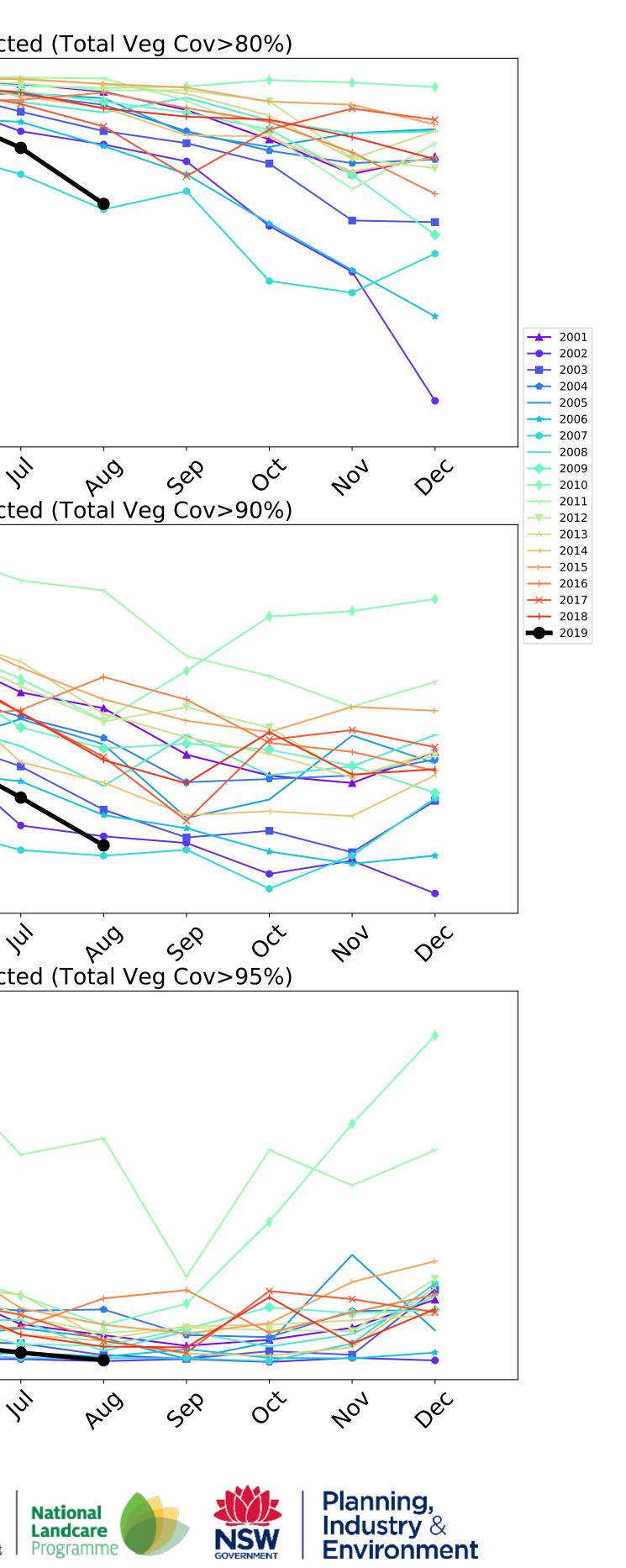
Water erosion historical monthly area protected (Total Veg Cov>70%)

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

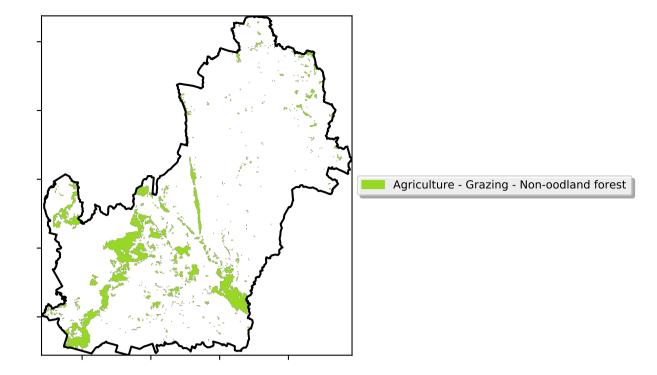




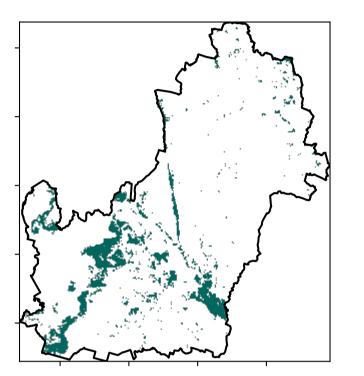


Grazing - Forest (non woodland)

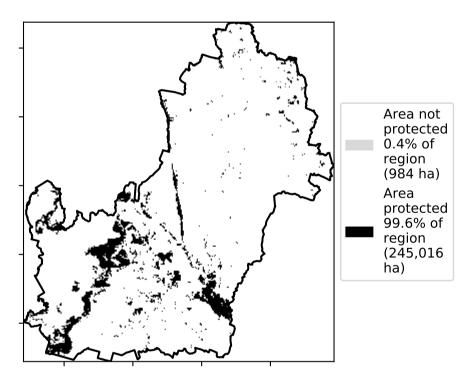
Land use and forest cover



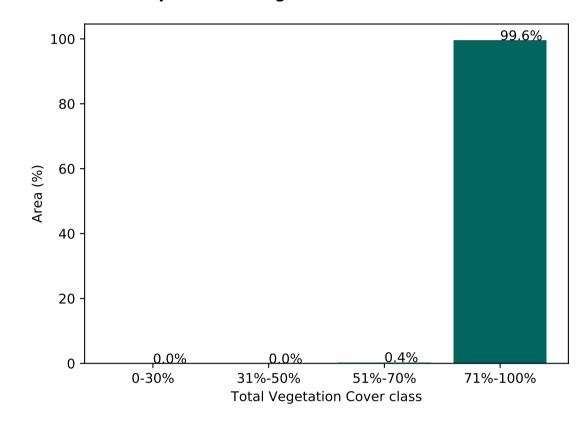
Total Vegetation Cover [%]



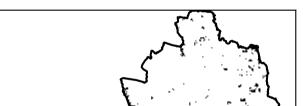


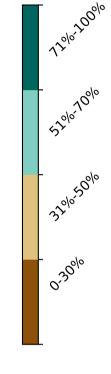


Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)

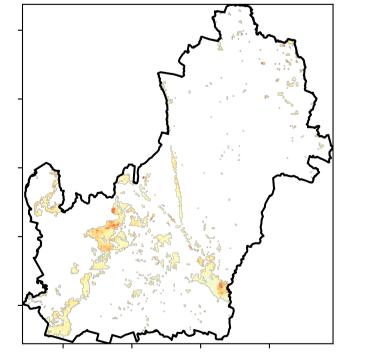


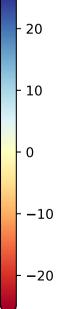


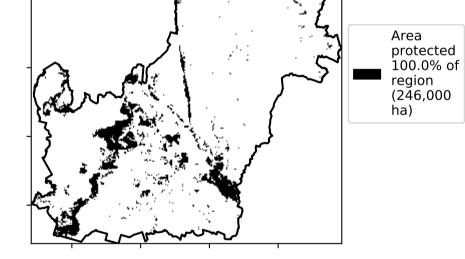
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.

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.







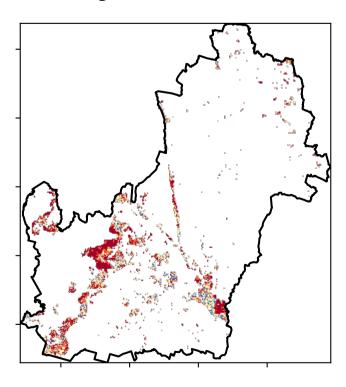
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Total Vegetation Cover Decile [%]

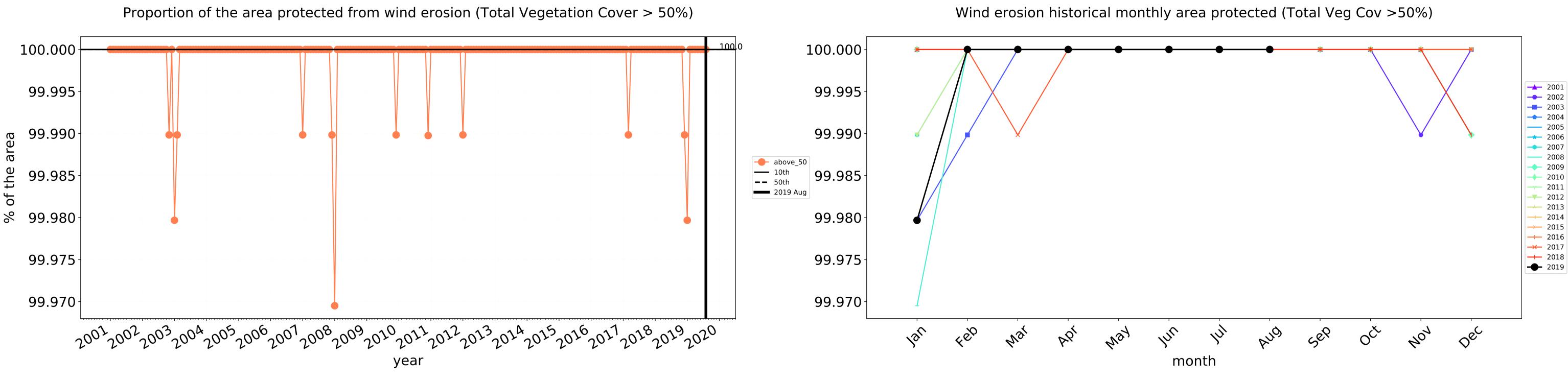




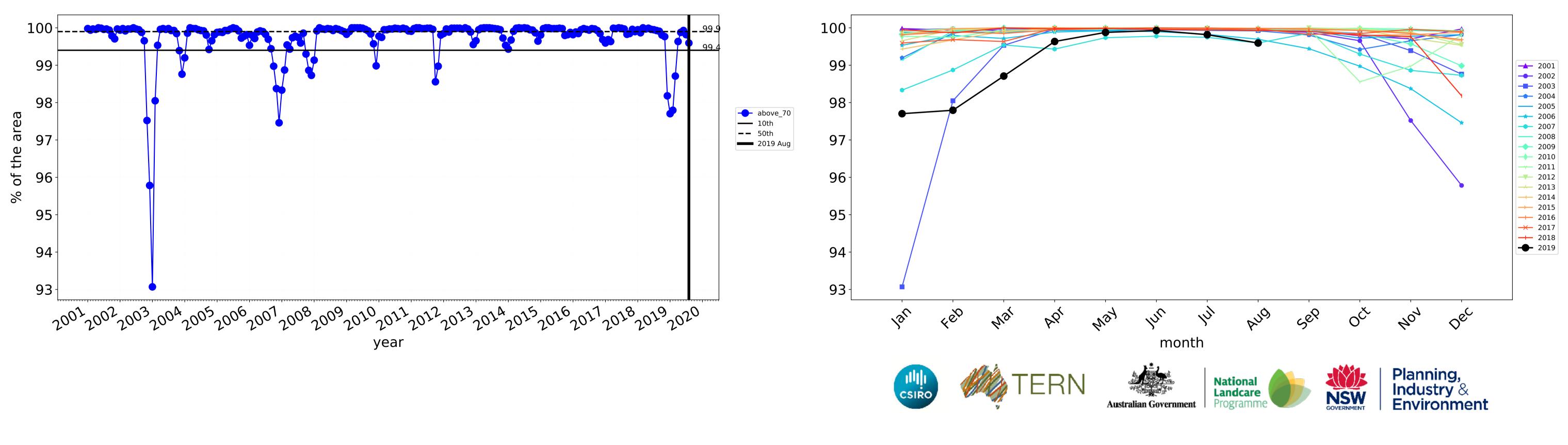
Deciles show where the pixel value lies in the

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.

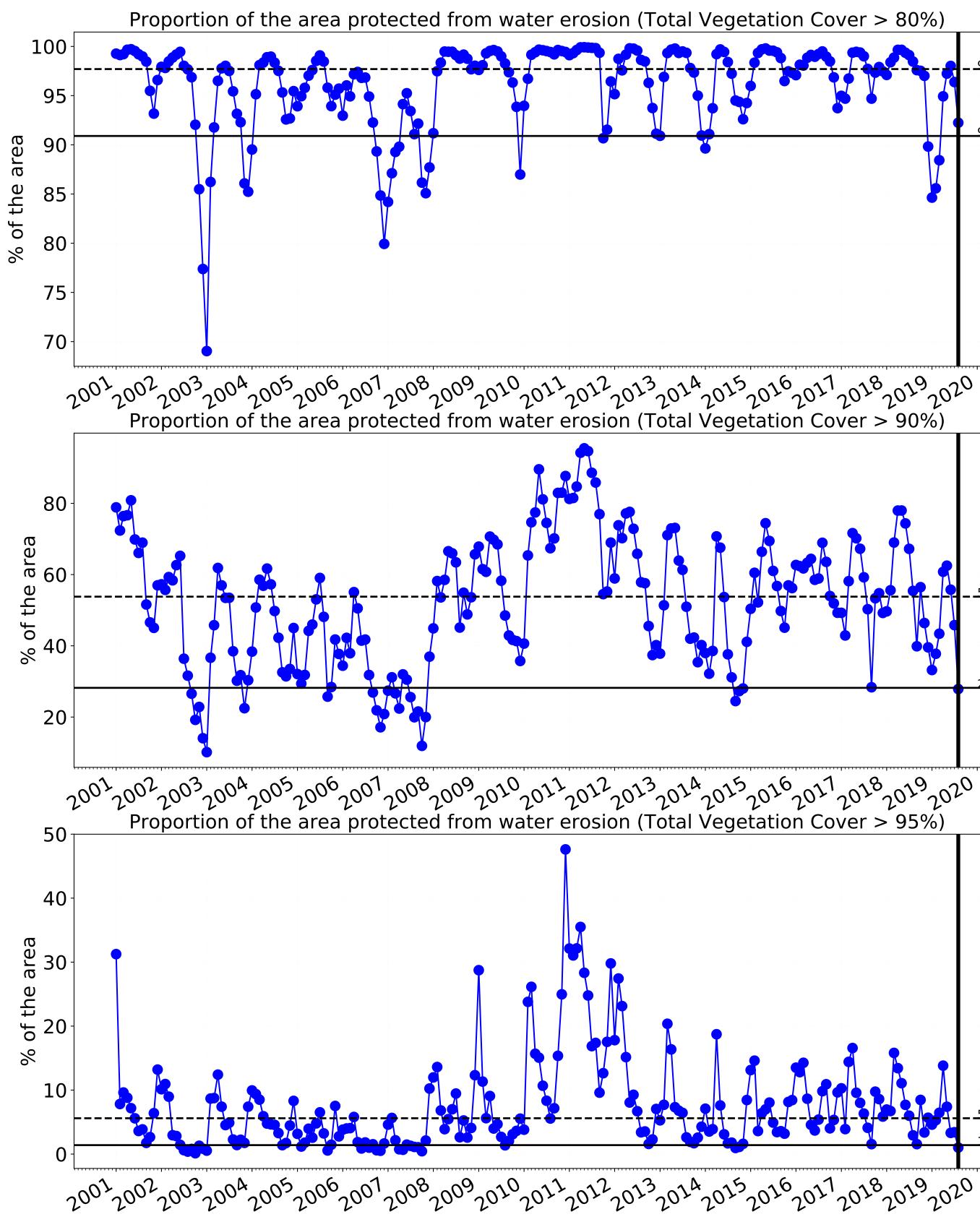


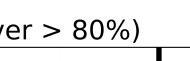
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

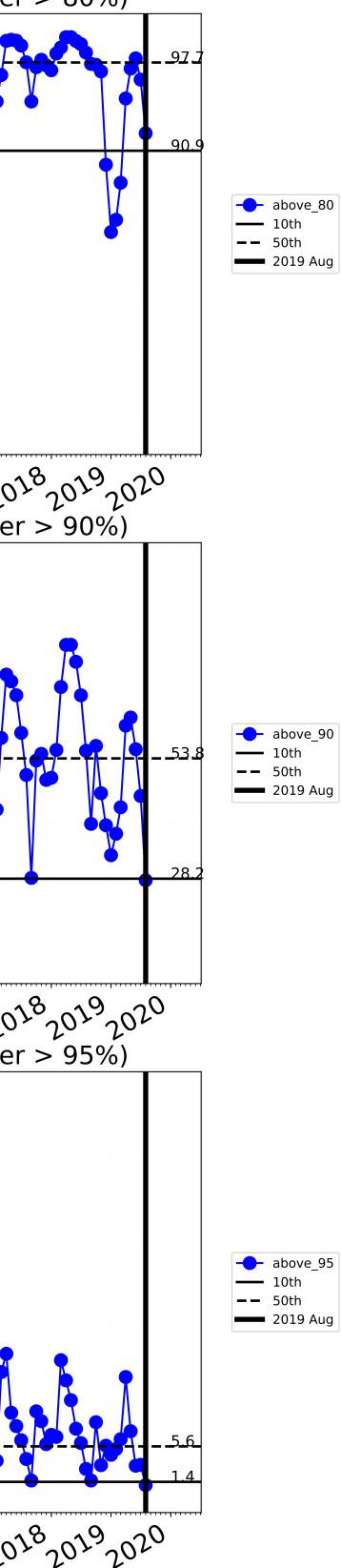


Grazing - Forest (non woodland) timeseries

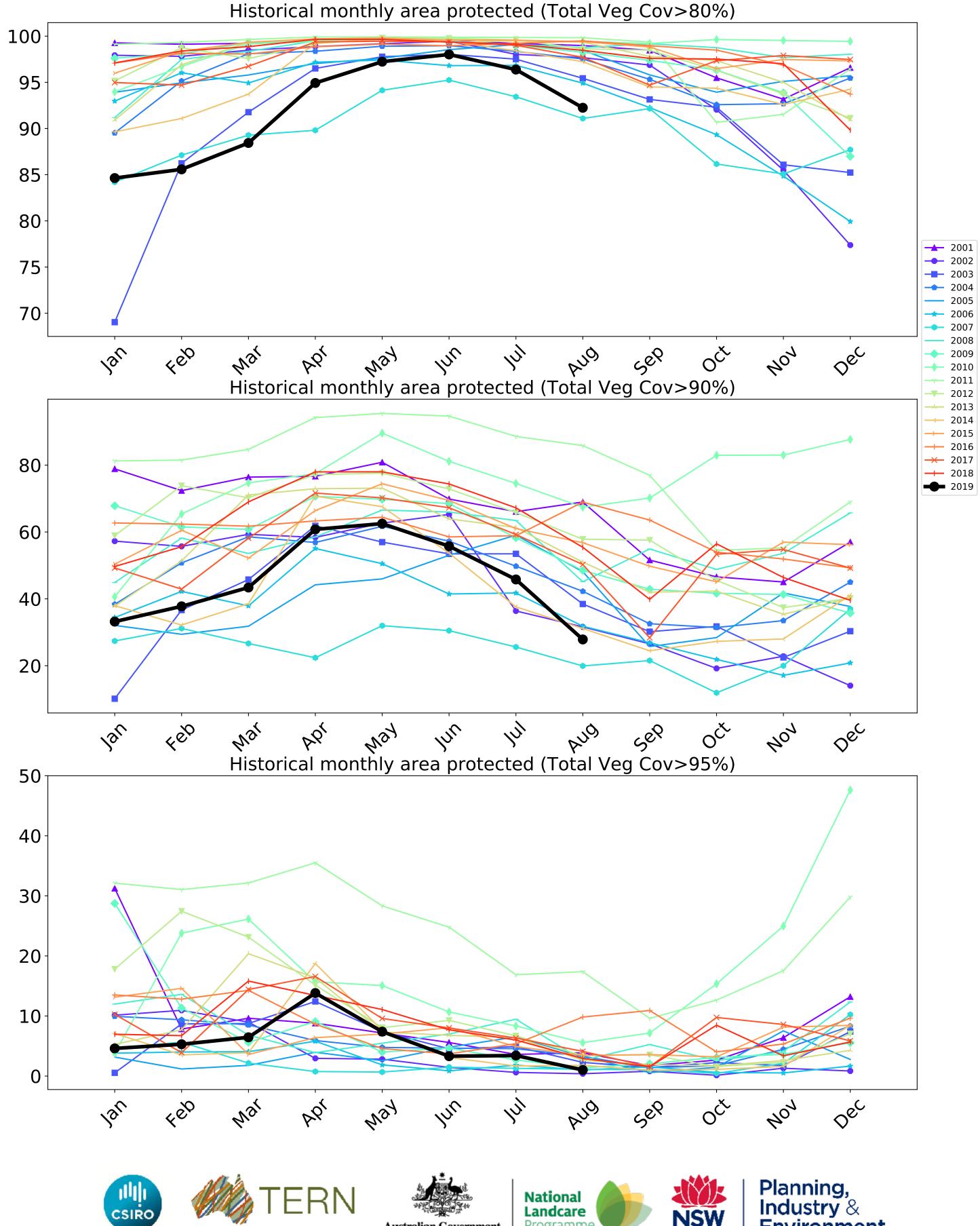








above_90



Australian Government

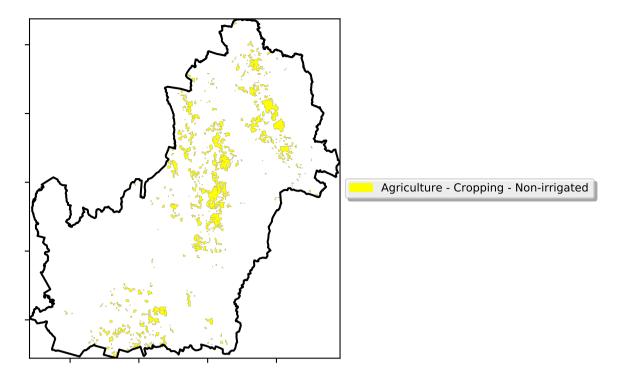
CSIRO



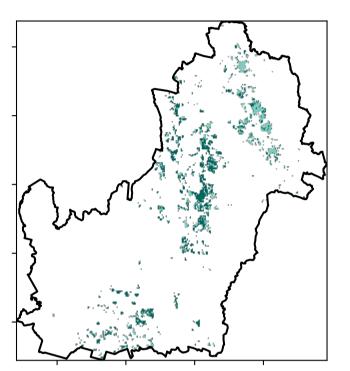
Cropping

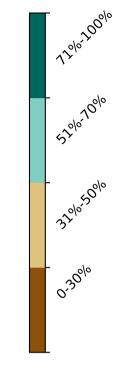
Land use and forest cover



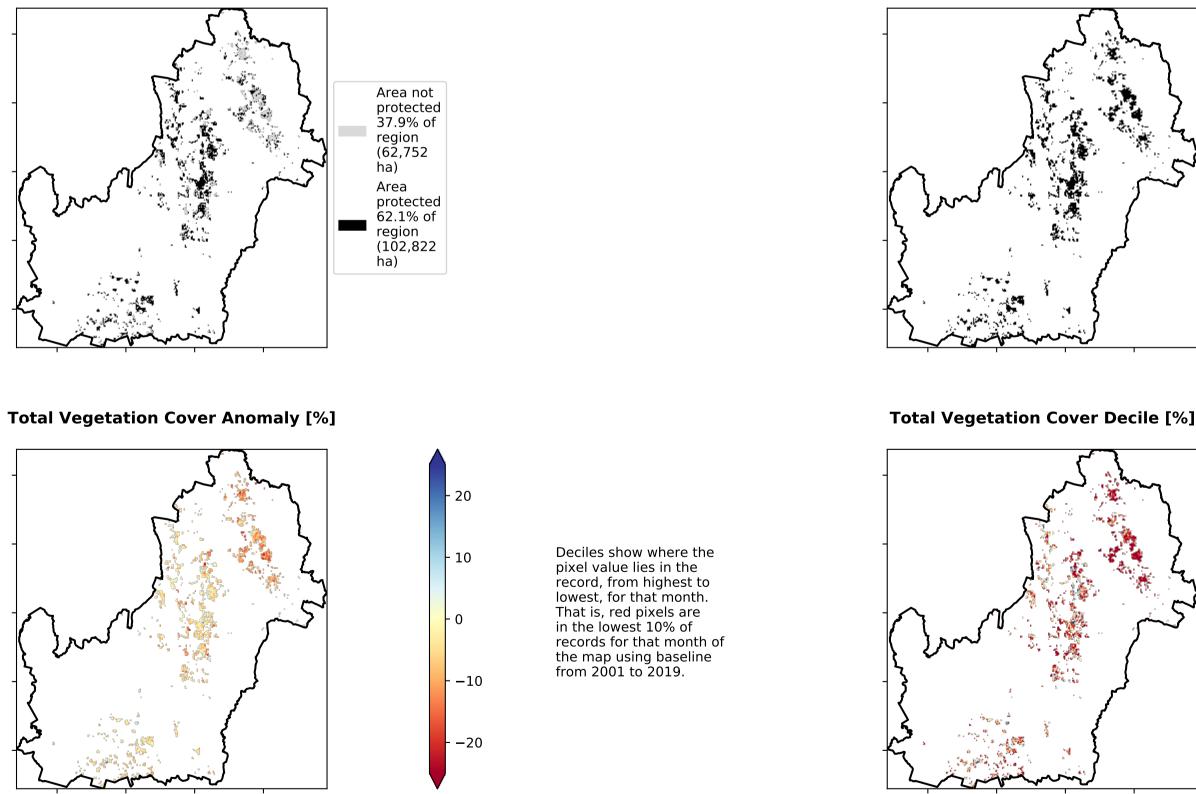


Total Vegetation Cover [%]

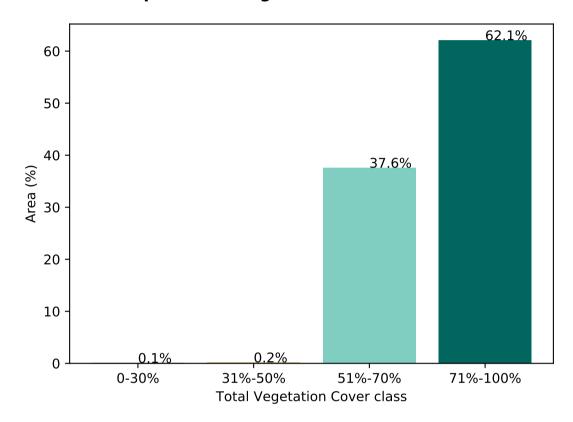




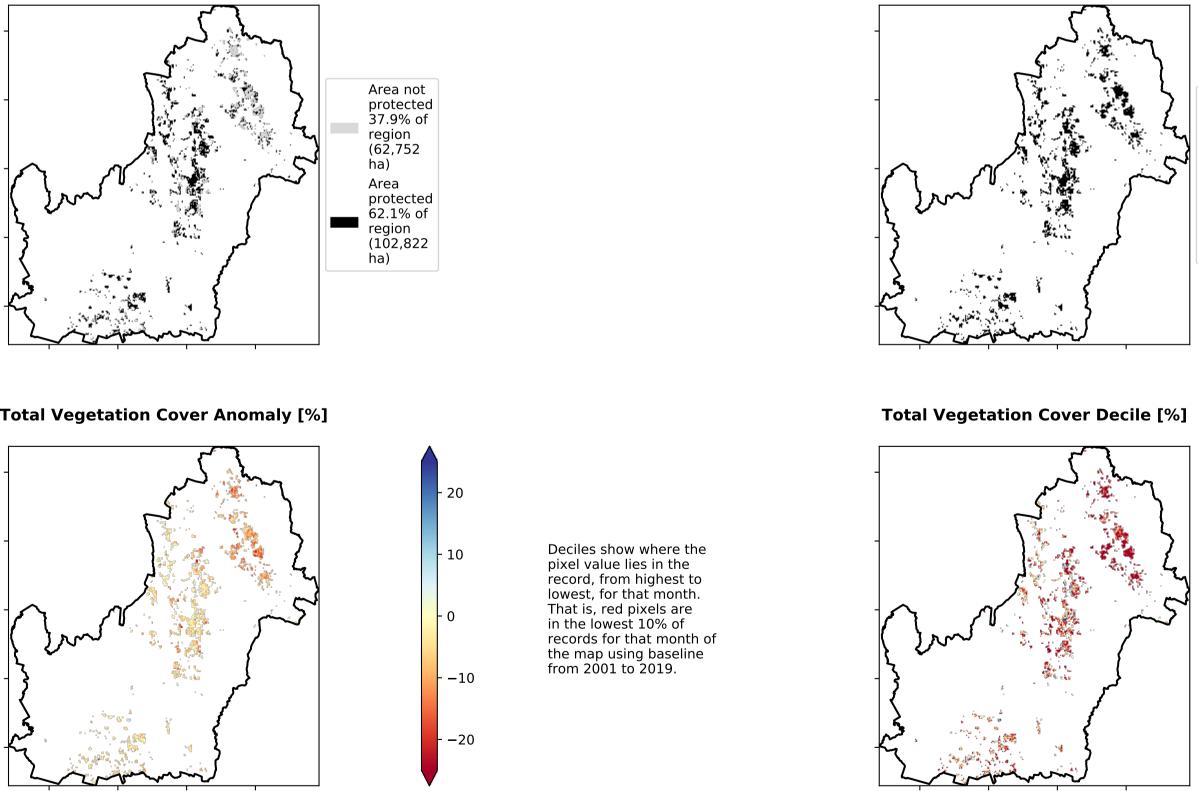
% Area protected from water erosion (>70%)

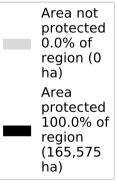


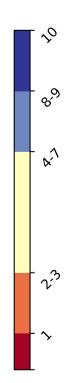
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)

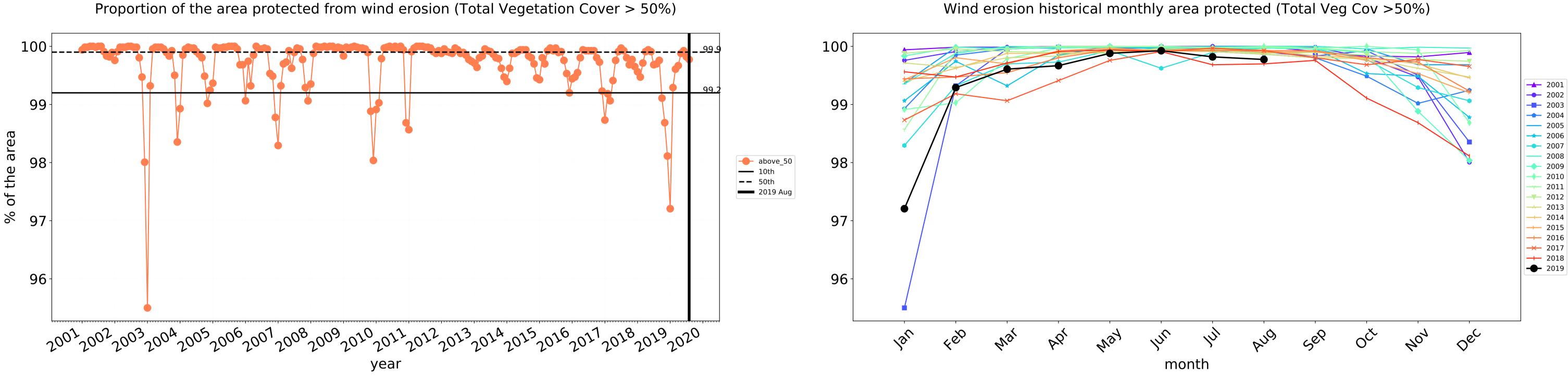




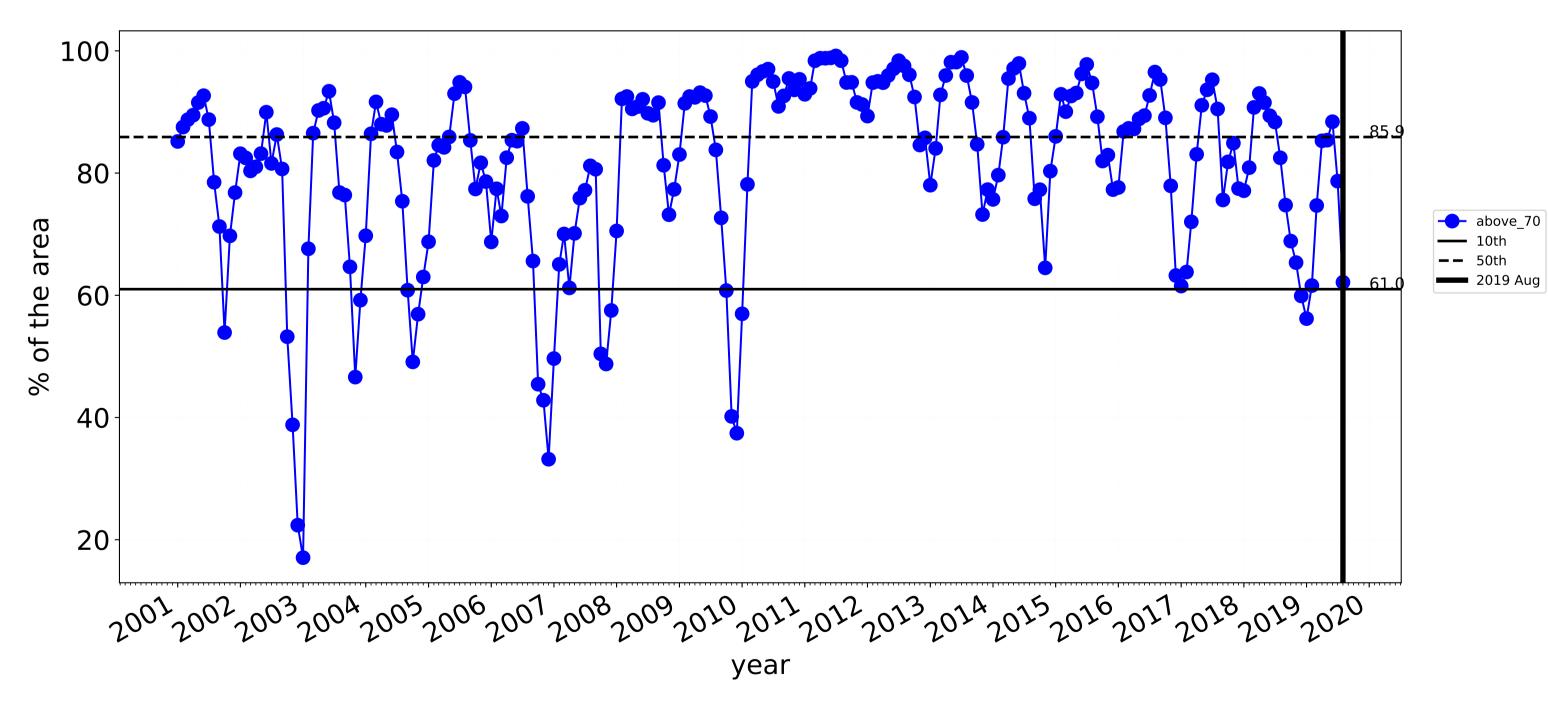


Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map from 2001 to 2019.



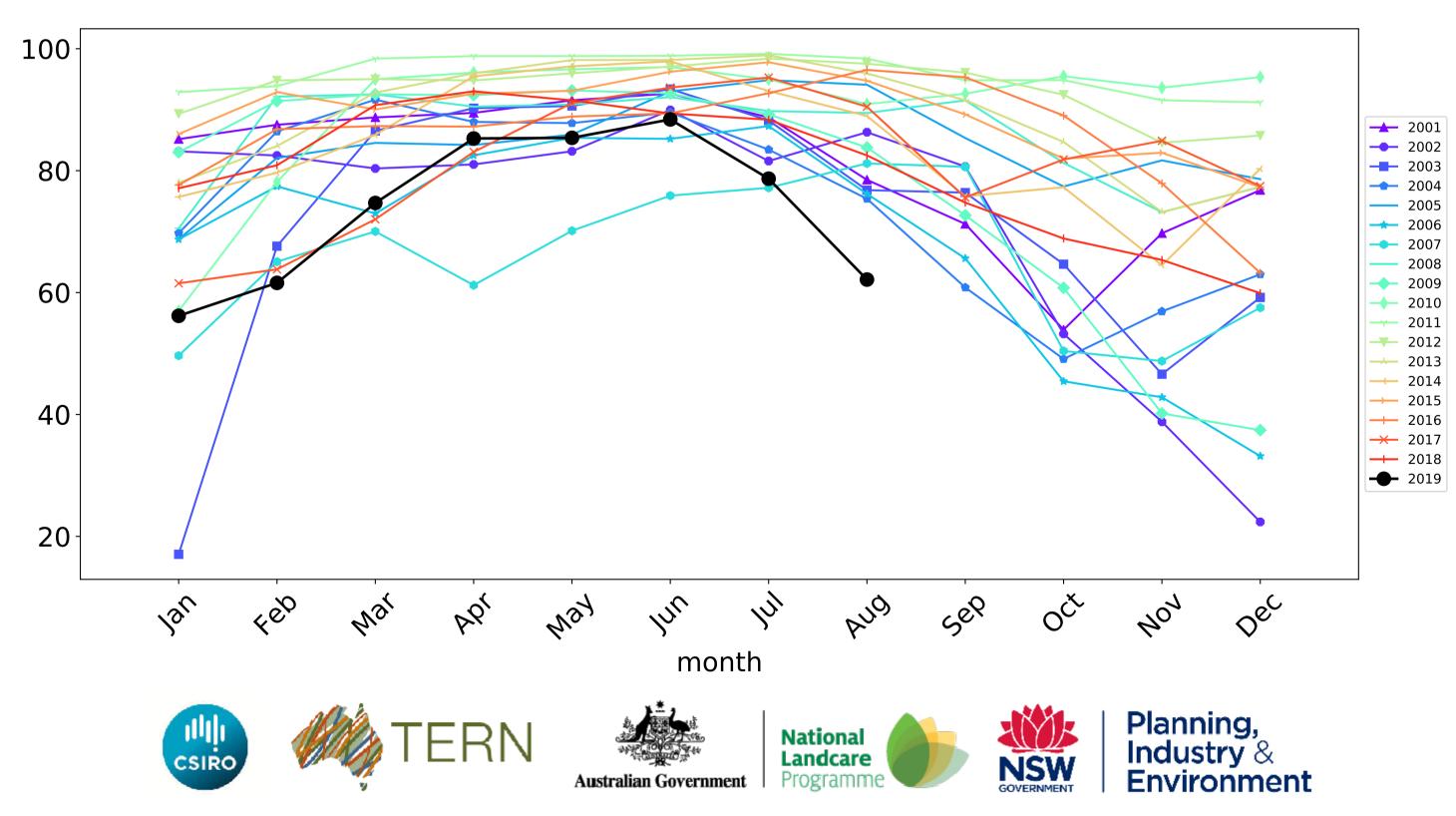


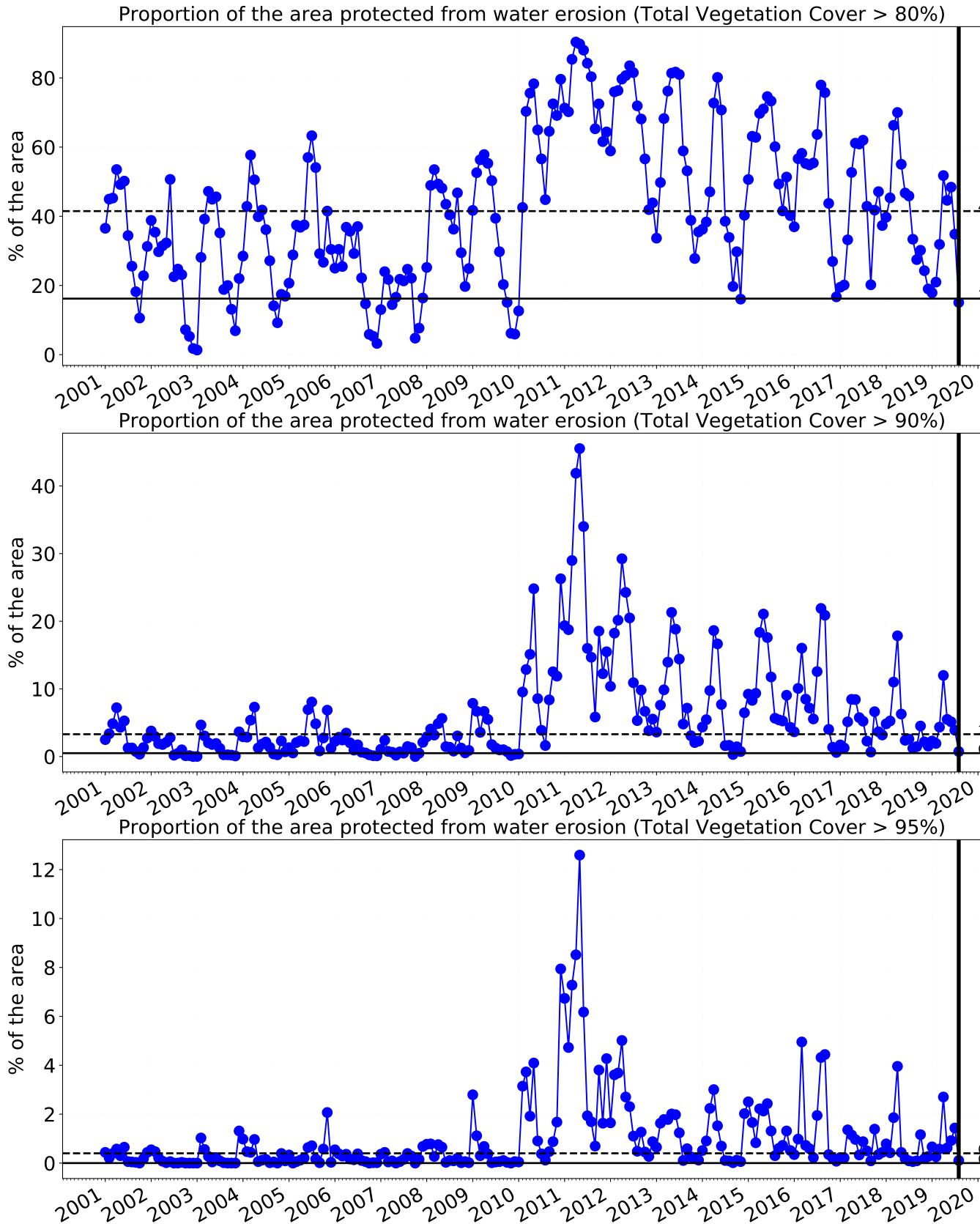


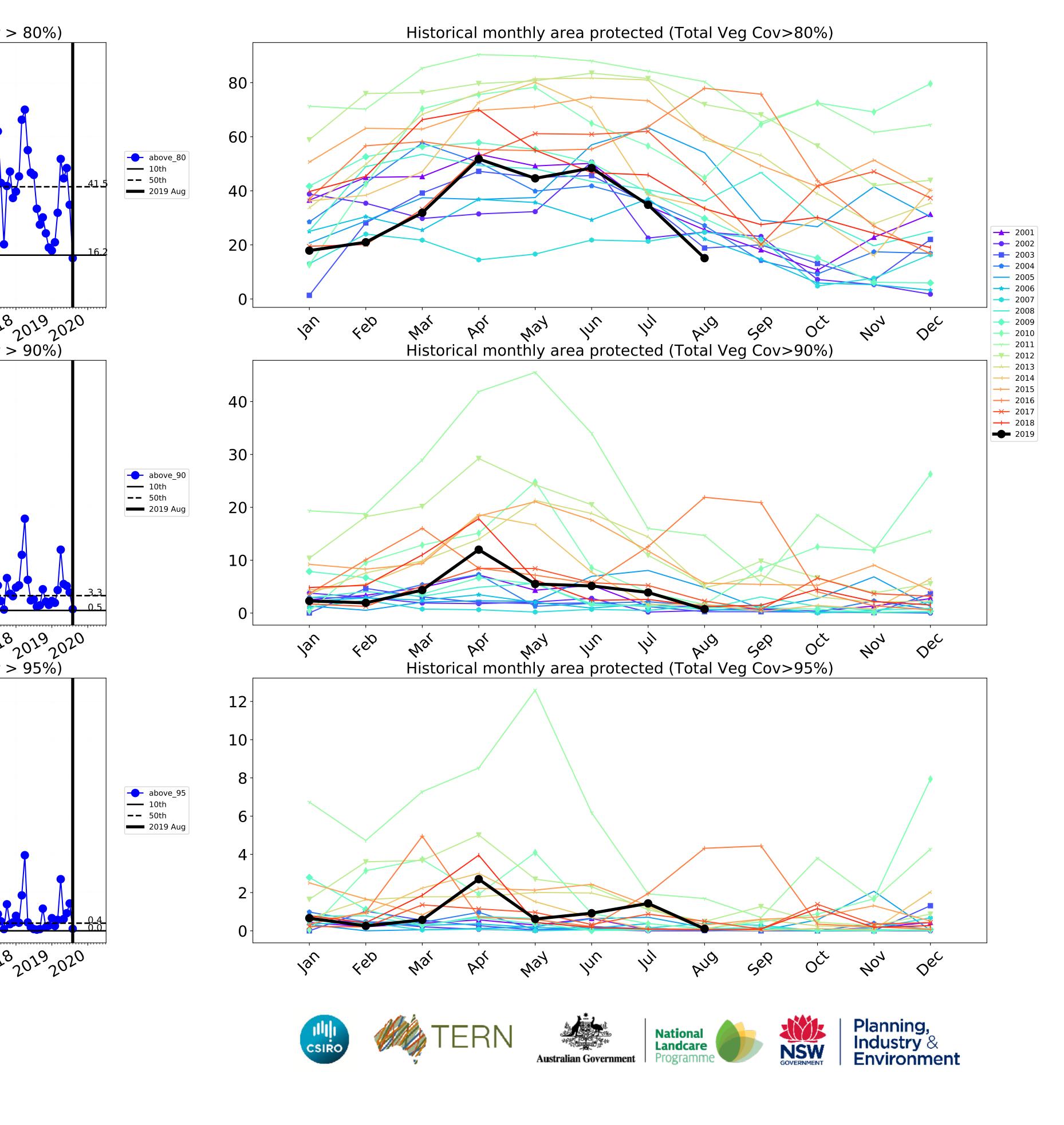


Cropping timeseries

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

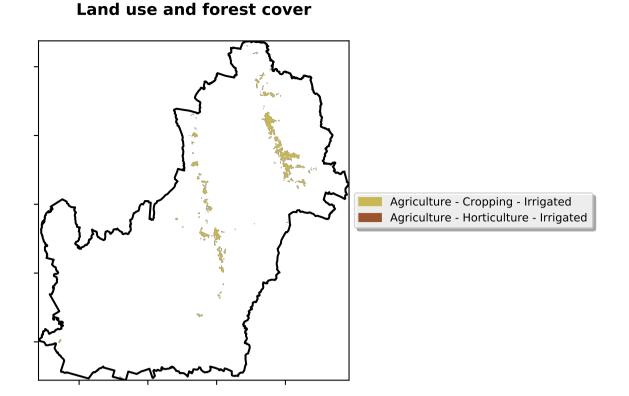




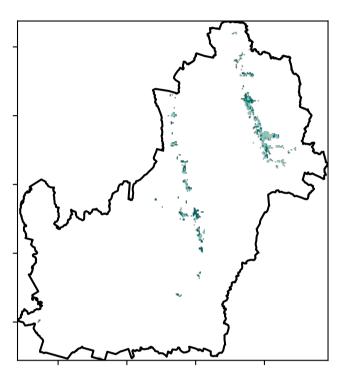


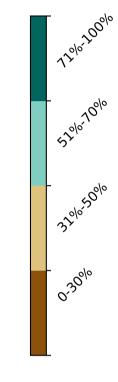
Irrigation

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.

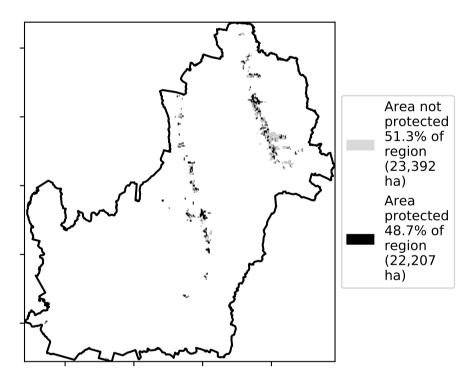


Total Vegetation Cover [%]

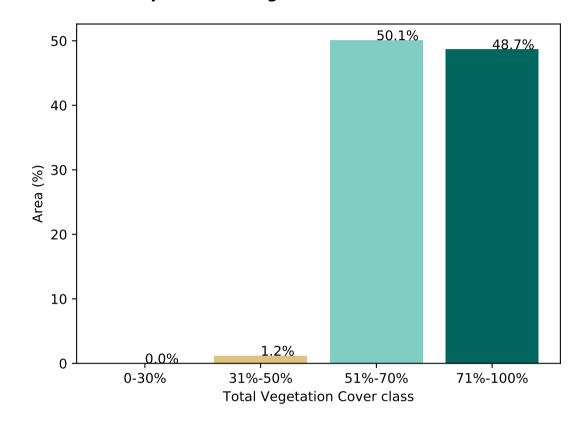




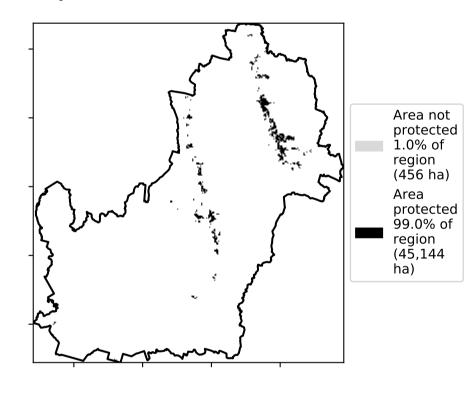
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



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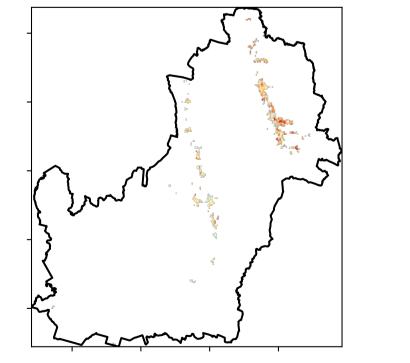
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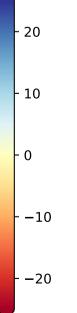
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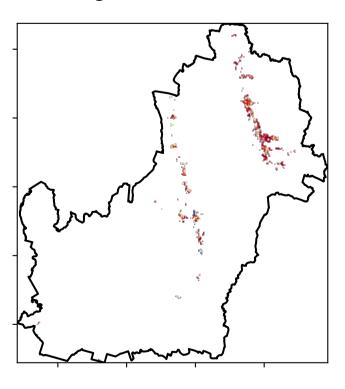
Total Vegetation Cover Anomaly [%]

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 using baseline from 2001 to 2019.





Total Vegetation Cover Decile [%]

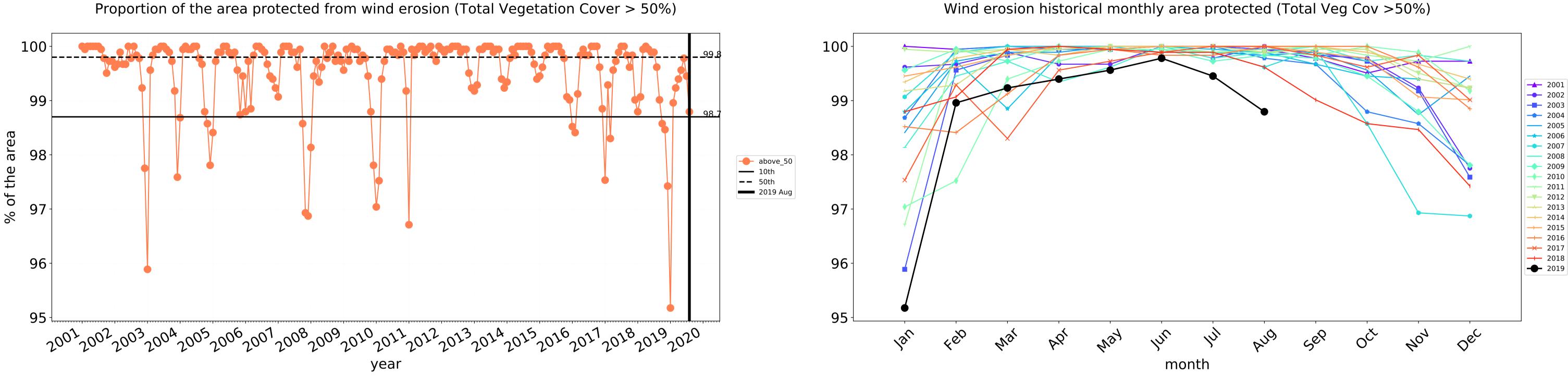




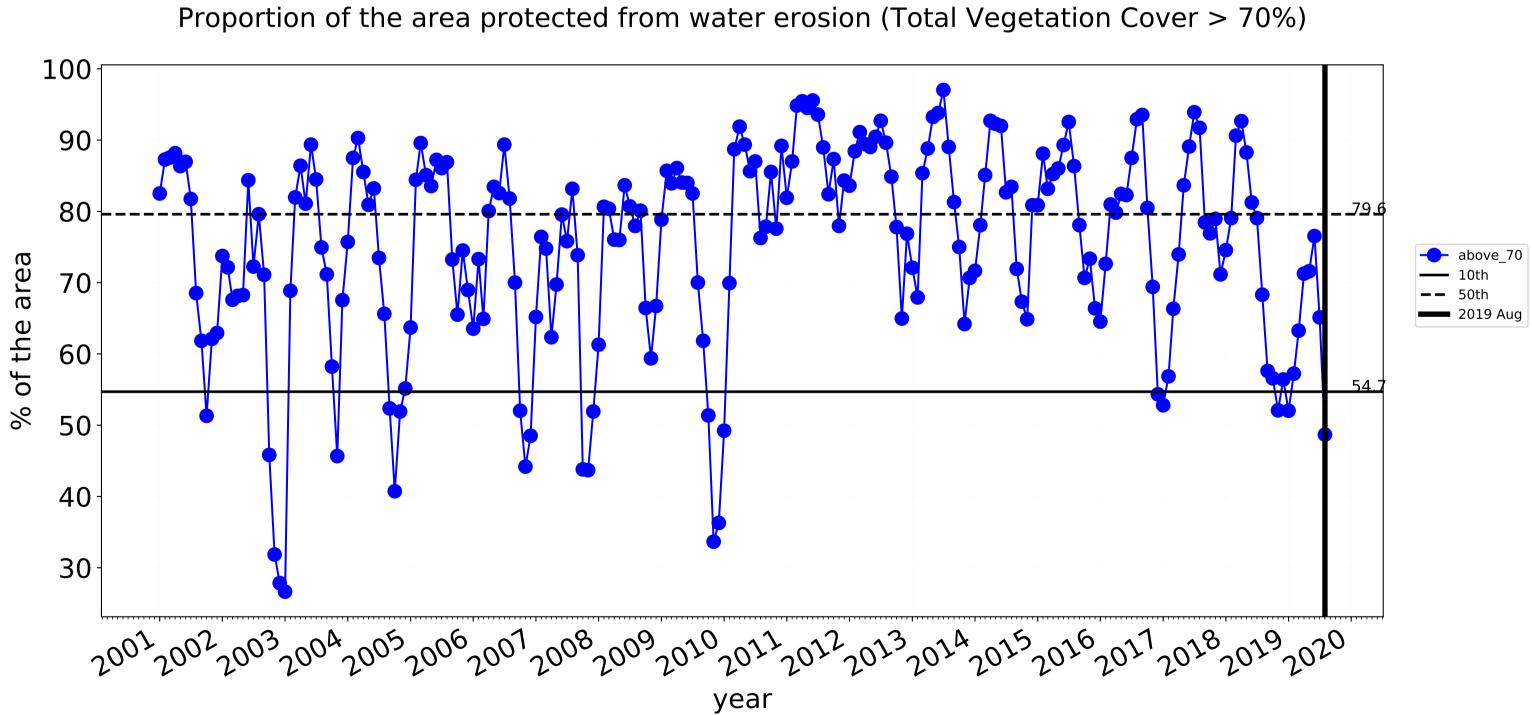
Deciles show where the pixel value lies in the

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

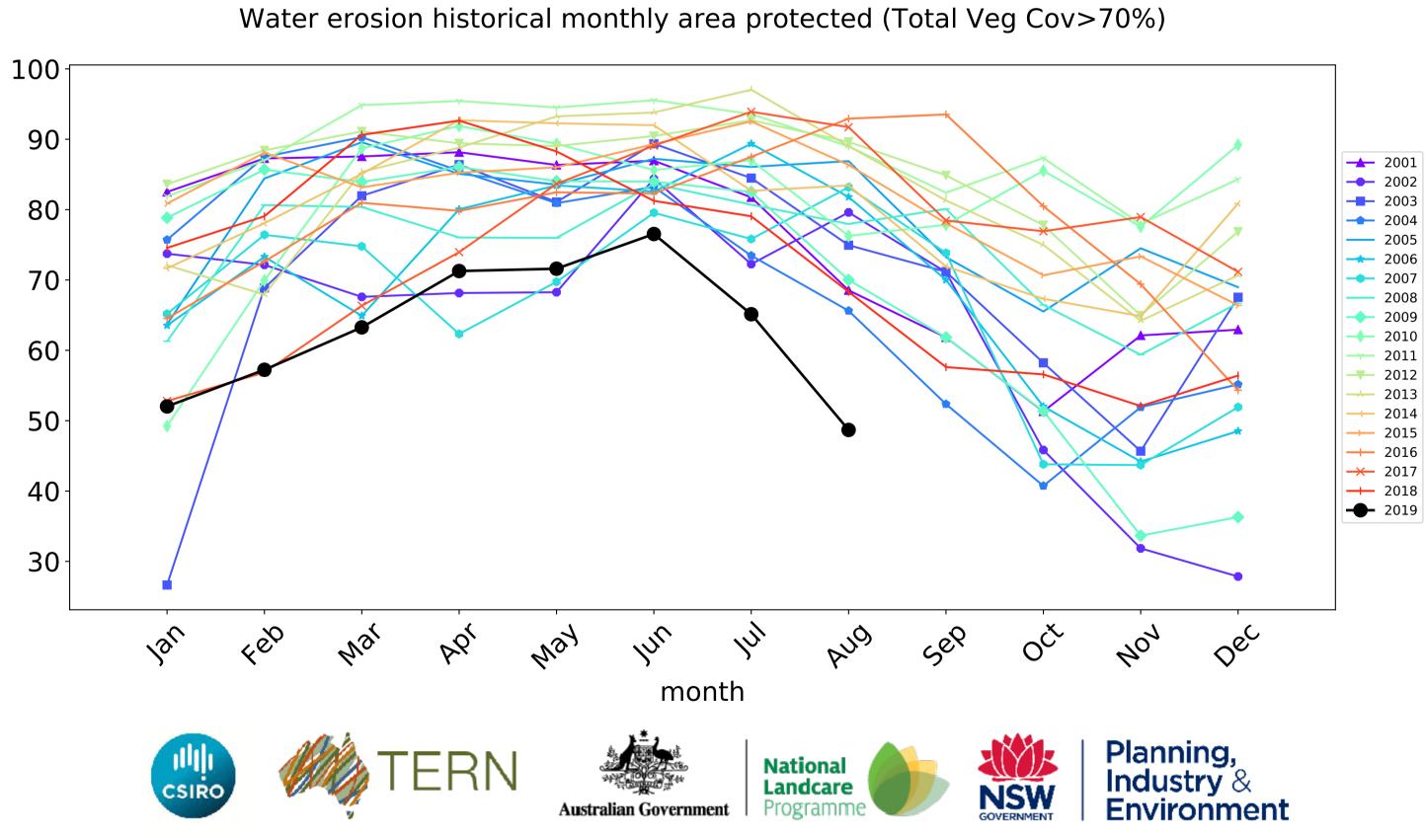
records for that month of the map using baseline from 2001 to 2019.

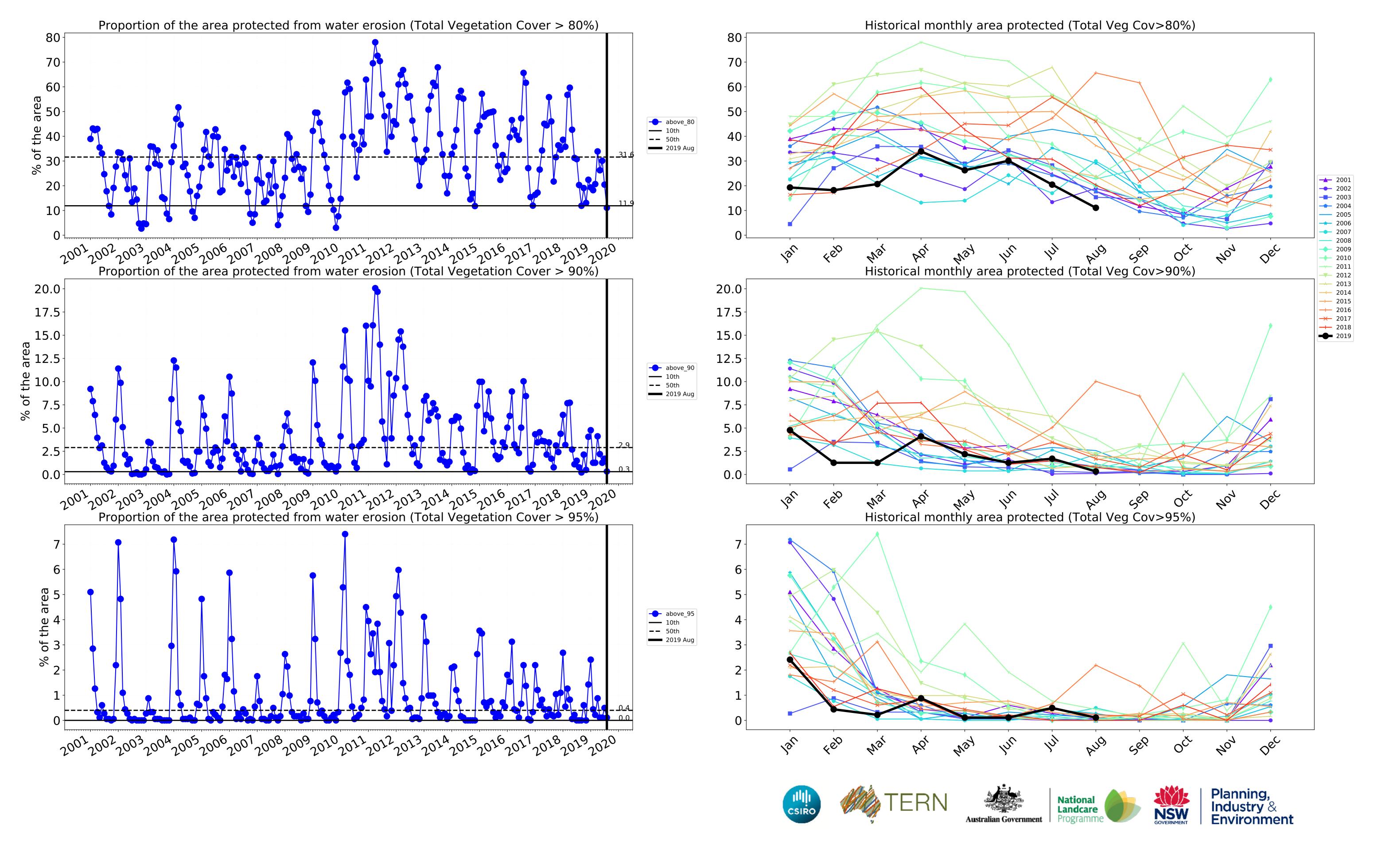


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



Irrigation timeseries

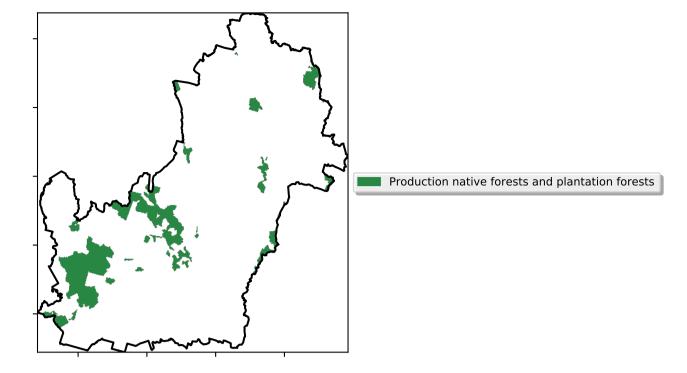




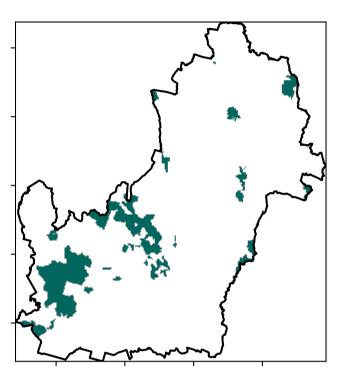
Production native forests and plantation forests

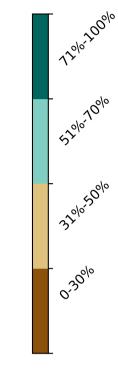
Land use and forest cover

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.

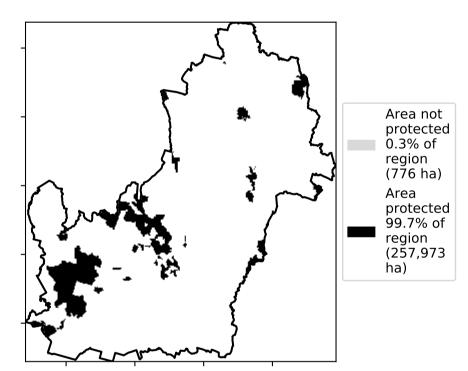


Total Vegetation Cover [%]

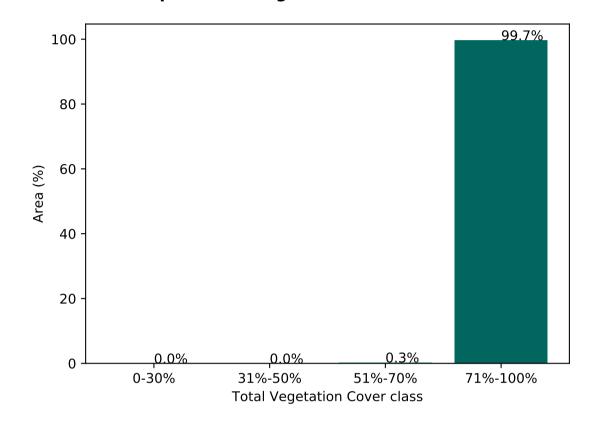




% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area

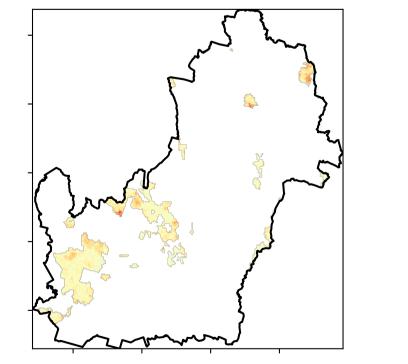


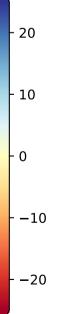
% Area protected from wind erosion (>50%)

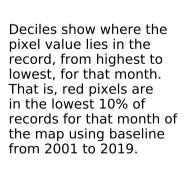


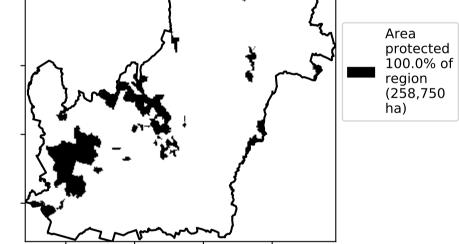
Total Vegetation Cover Anomaly [%]

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.

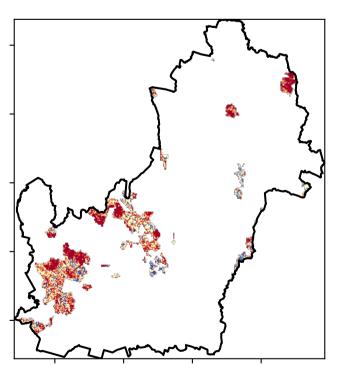






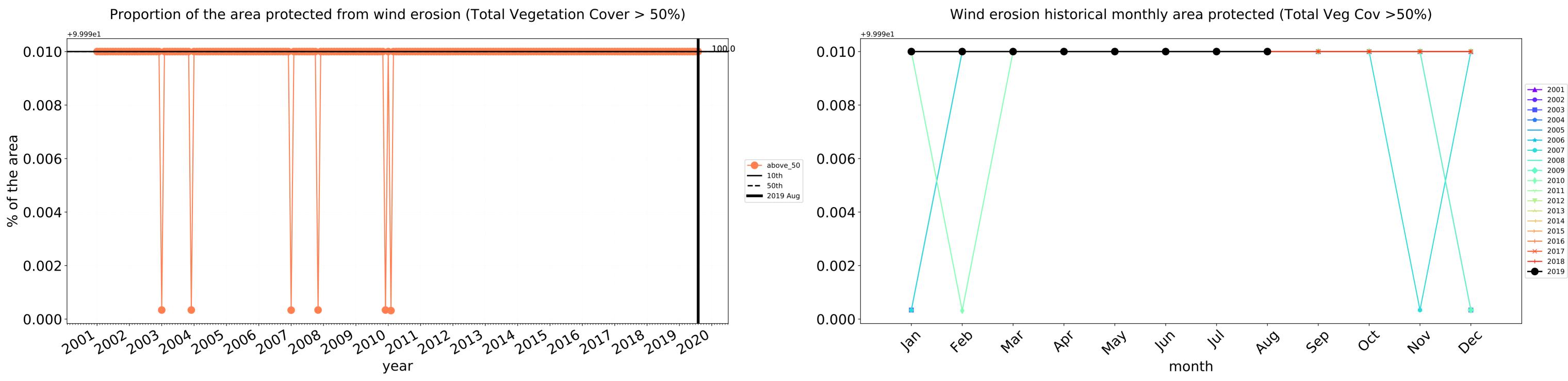


Total Vegetation Cover Decile [%]

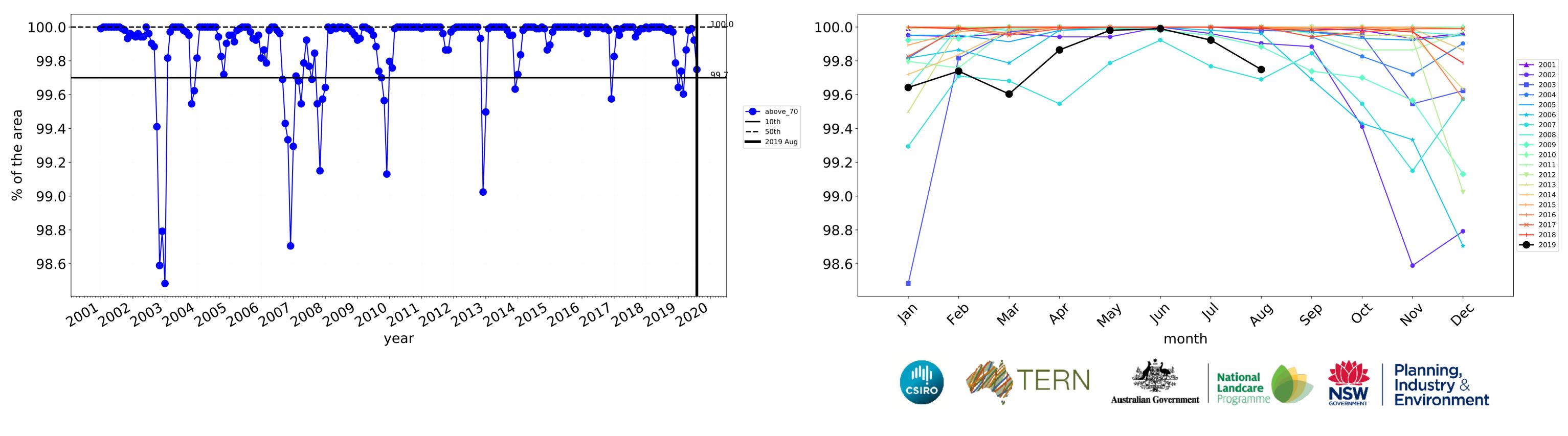




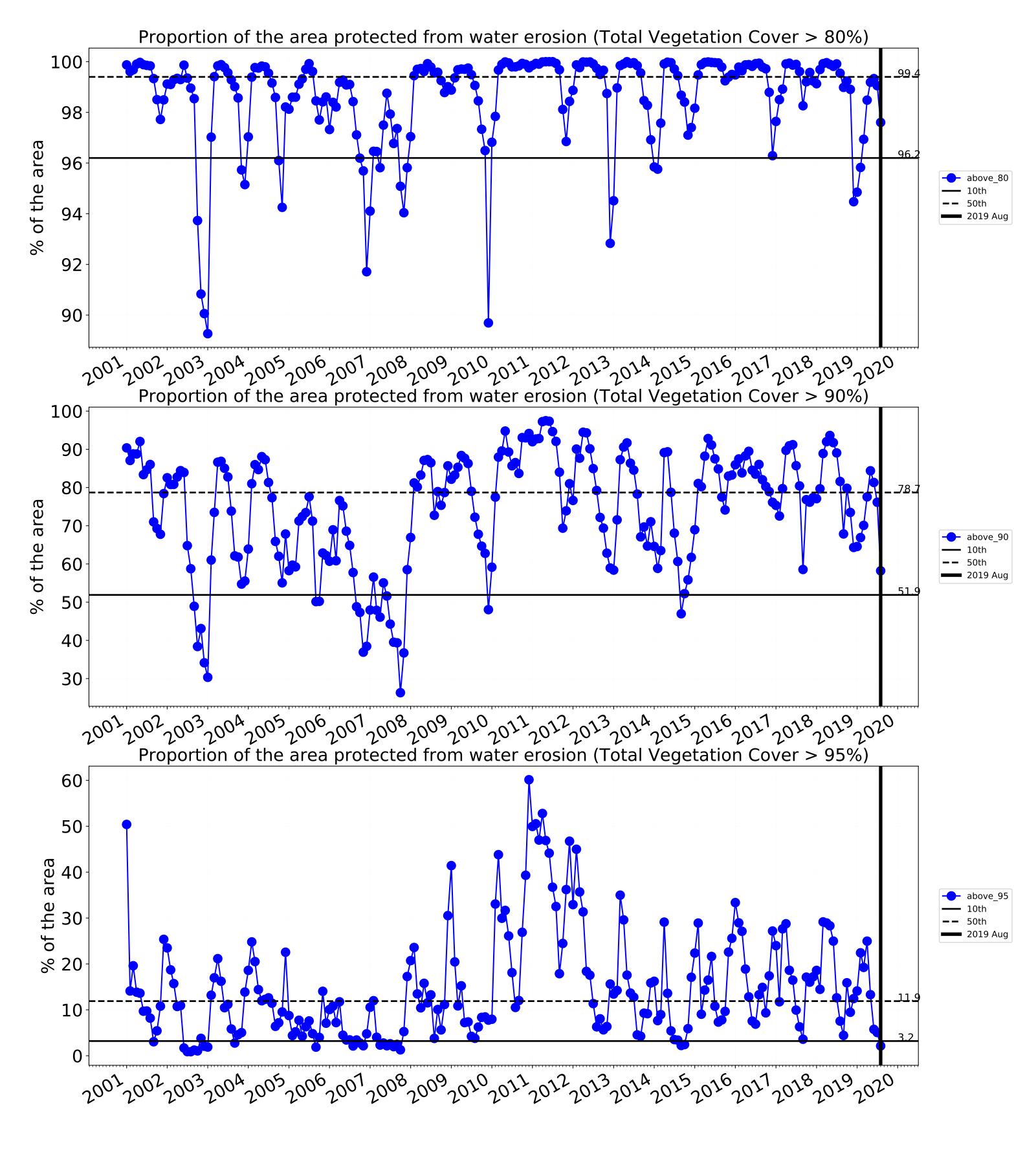


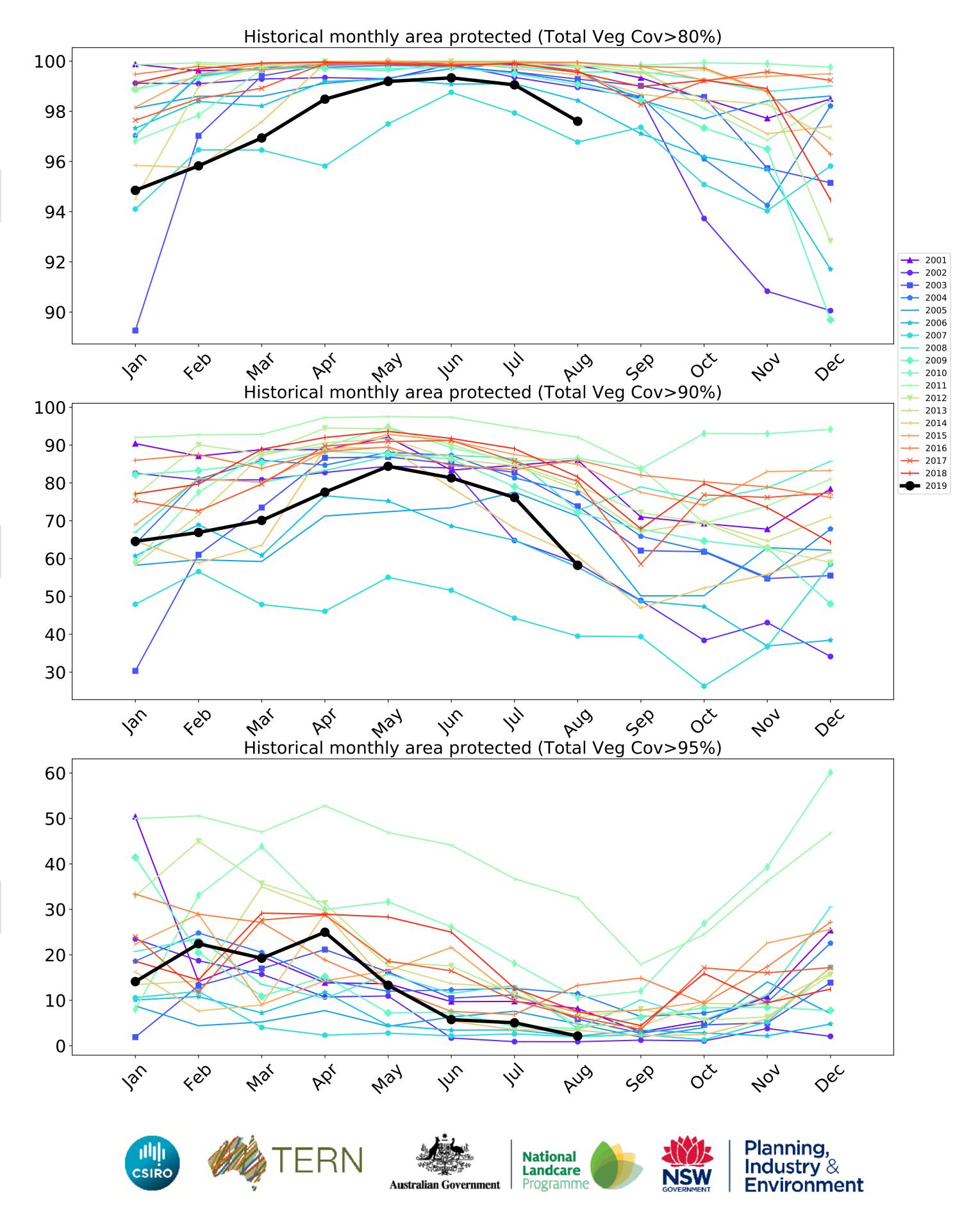


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



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





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	100.0% 2,853,575	99.8% 2,847,825	85.3% 2,436,050	50.4% 1,439,200	13.1% 375,175	0.6% 16,600
Conservation and natural environments	219,798	100.0% 219,773	100.0% 219,723	99.4% 218,420	93.0% 204,467	38.9% 85,449	3.2% 6,964
Conservation and natural environments Woodland forest	51,381	100.0% 51,381	100.0% 51,381	99.9% 51,330	93.3% 47,957	23.8% 12,238	1.5% 766
Conservation and natural environments Forest (non woodland)	159,853	100.0% 159,853	100.0% 159,853	99.9% 159,704	95.5% 152,636	45.2% 72,214	3.8% 6,125
Agriculture	2,357,837	100.0% 2,357,837	99.8% 2,354,212	82.7% 1,950,770	41.6% 980,011	5.9% 139,122	0.2% 4,125
Grazing	2,146,602	100.0% 2,146,602	99.9% 2,143,902	85.0% 1,825,646	44.3% 949,942	6.4% 137,749	0.2% 3,900
Grazing non forest	1,632,788	100.0% 1,632,788	99.8% 1,630,113	80.5% 1,314,716	30.1% 492,009	1.0% 17,126	0.0% 400
Grazing Woodland forest	268,325	100.0% 268,325	100.0% 268,300	99.3% 266,469	86.3% 231,544	19.5% 52,200	0.4% 1,002
Grazing - Forest (non woodland)	245,489	100.0% 245,489	100.0% 245,489	99.6% 244,491	92.2% 226,453	27.9% 68,407	1.0% 2,494
Cropping	165,562	100.0% 165,562	99.8% 165,187	62.1% 102,867	15.1% 24,998	0.7% 1,224	0.1% 174
Irrigation	45,672	100.0% 45,672	98.8% 45,121	48.7% 22,235	11.1% 5,058	0.3% 150	0.1% 50
Production native forests and plantation forests	259,761	100.0% 259,761	100.0% 259,761	99.7% 259,109	97.6% 253,537	58.2% 151,213	2.1% 5,546

