LGA Wingecarribee_(A) (NSW) - 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.

Wingecarribee_(A)

- 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:

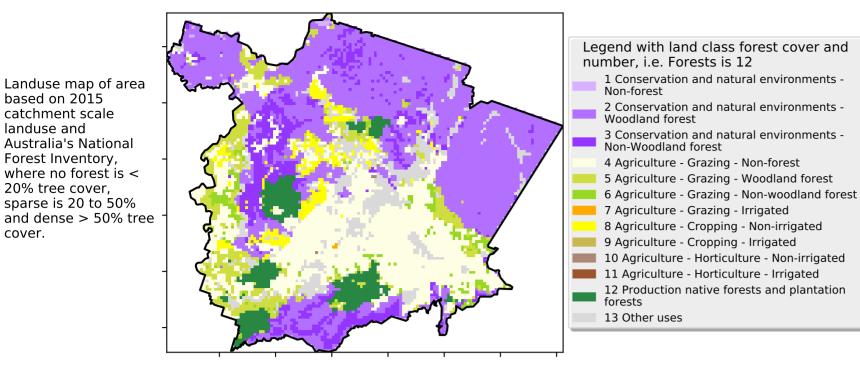
https://doi.org/10.4225/08/5848a3f19a7b3



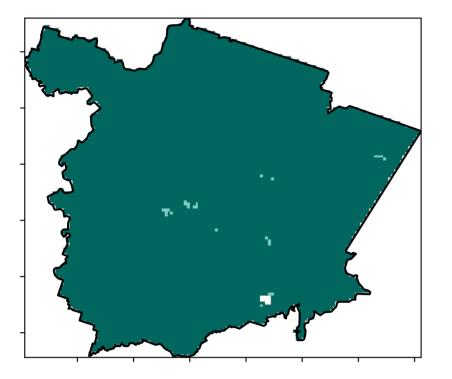
Vegetation Cover Aug 2019

Land use and forest cover

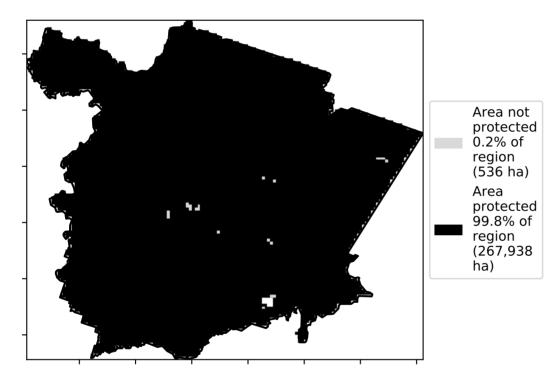
Proportion of each land class in area

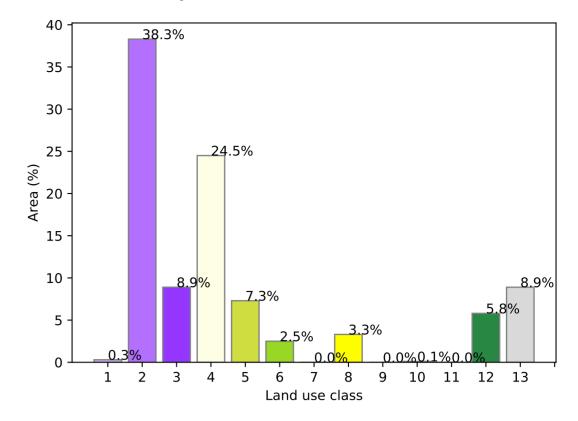


Total Vegetation Cover [%]

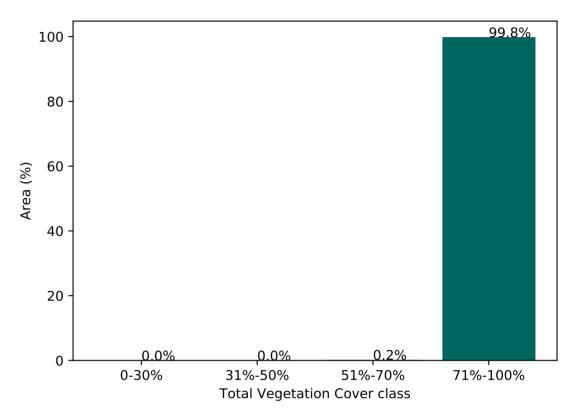


% Area protected from water erosion (>70%)





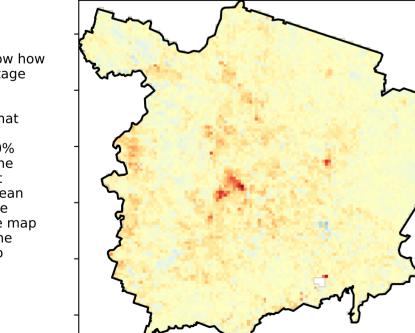
Proportion of vegetation cover class in area

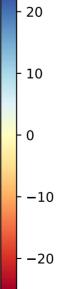


% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]





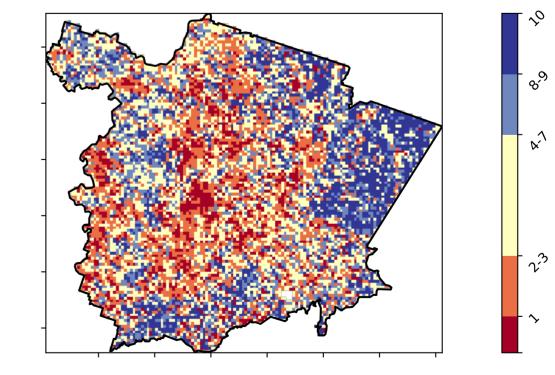
12%200%

· 52% 70%

3201050010

0-30%

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

records for that month of

the map using baseline

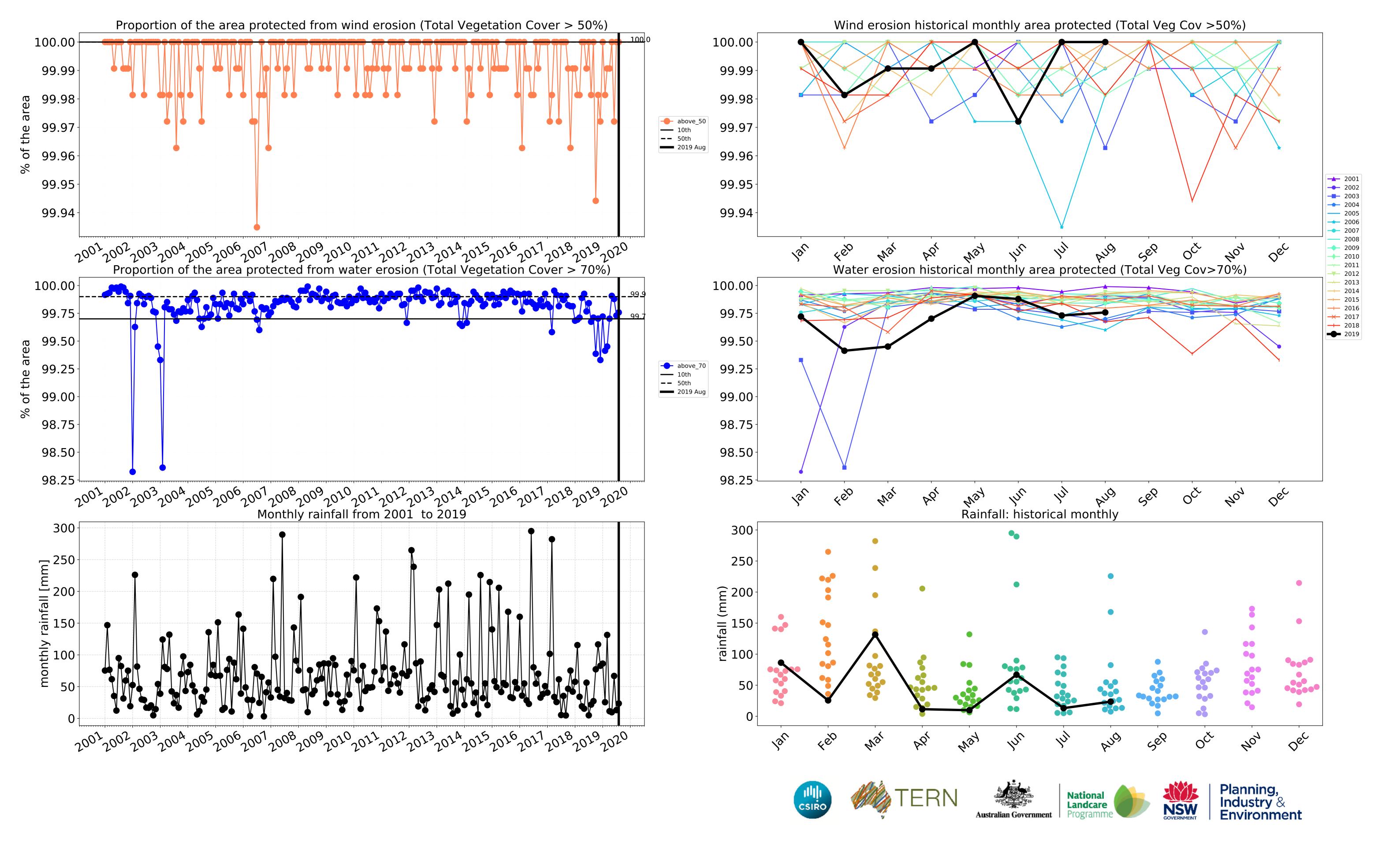
in the lowest 10% of

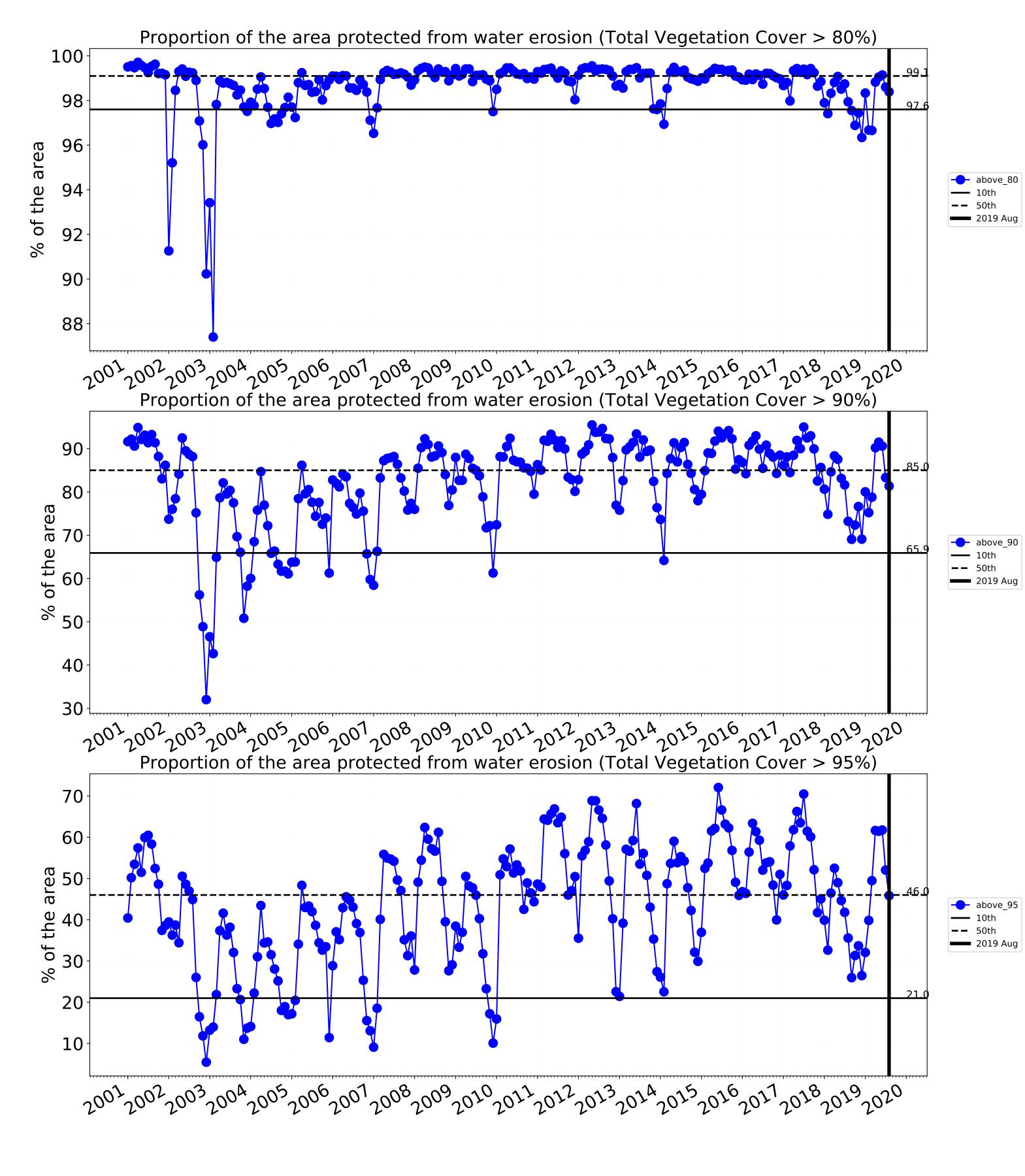
from 2001 to 2019.

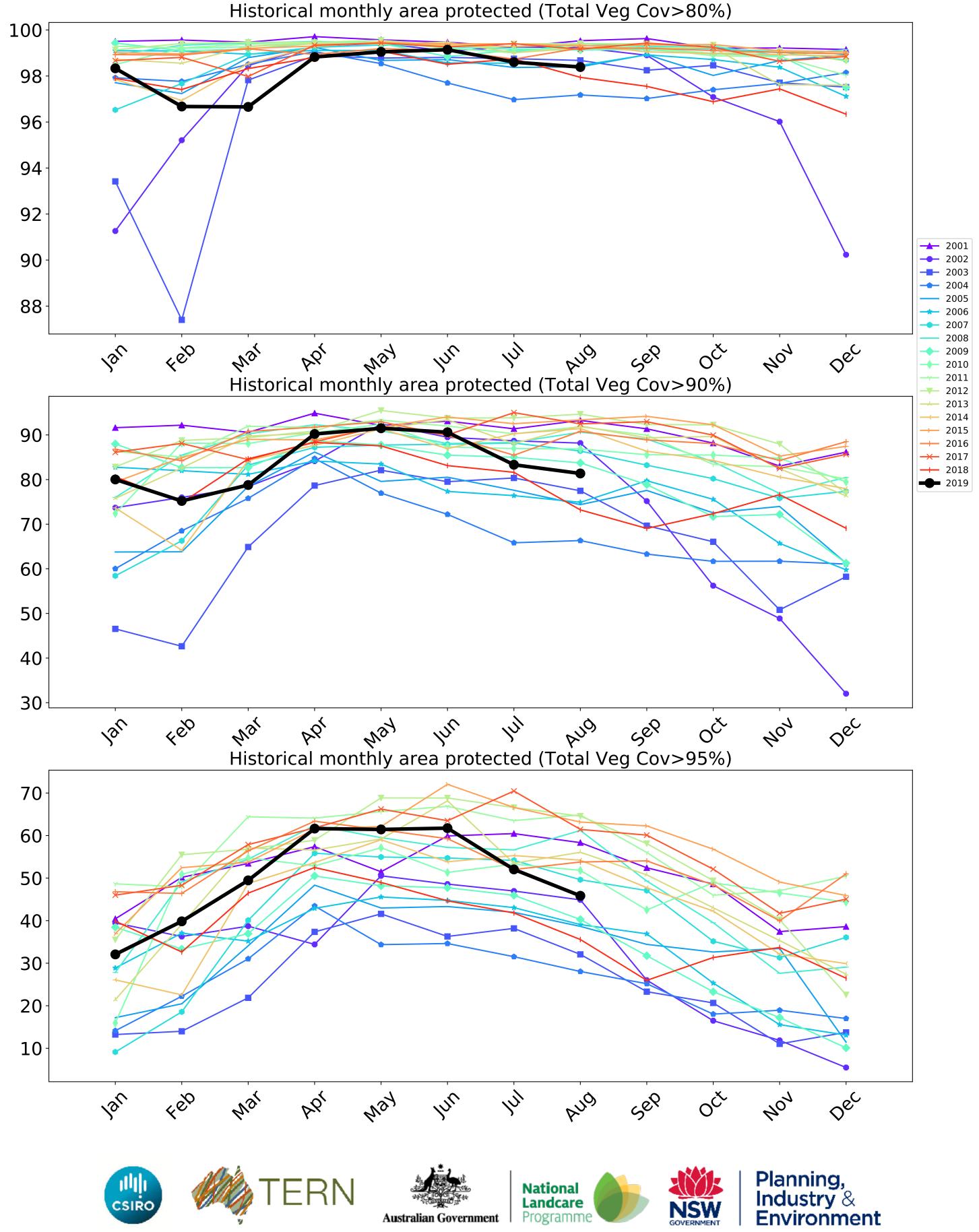
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

cover.





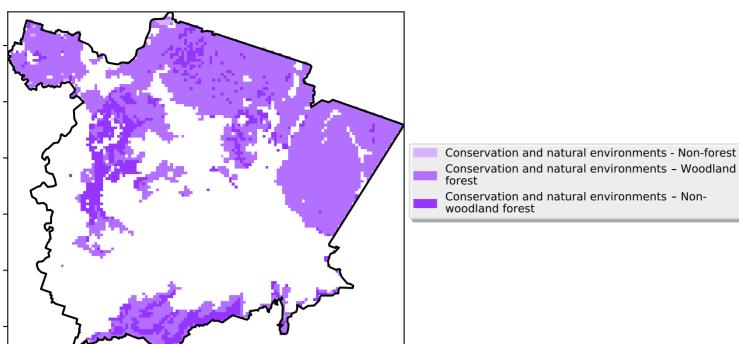






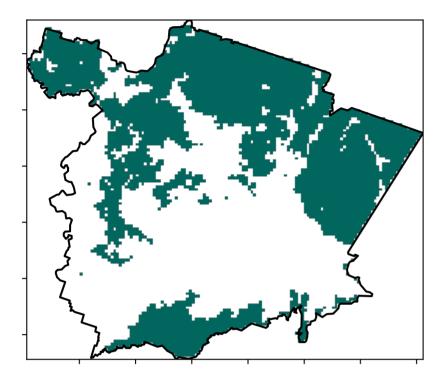
Conservation and natural environments

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.

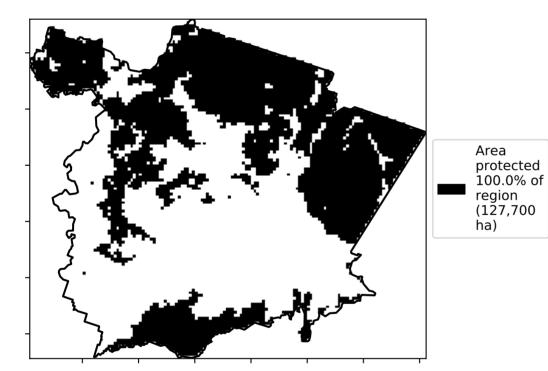


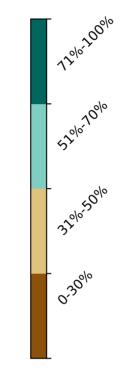
Total Vegetation Cover [%]

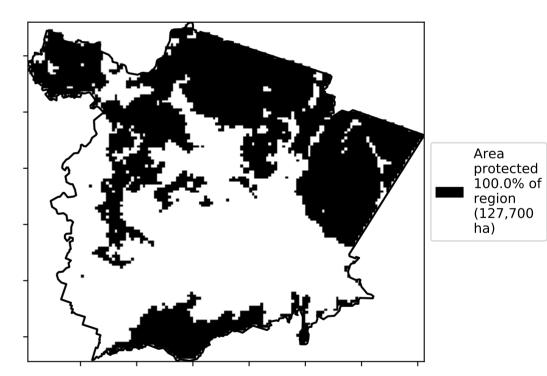
Land use and forest cover



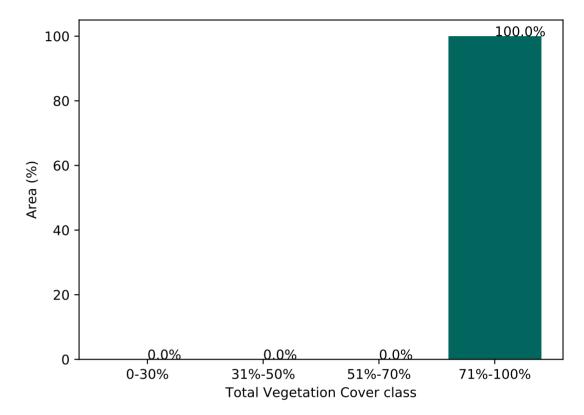
% Area protected from water erosion (>70%)





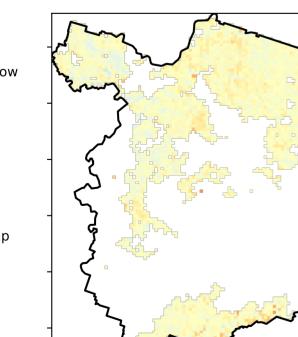


Proportion of vegetation cover class in area



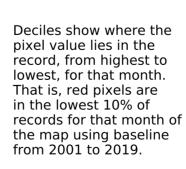
% Area protected from wind erosion (>50%)

Total Vegetation Cover Anomaly [%]



- 10 0 -10

- 20



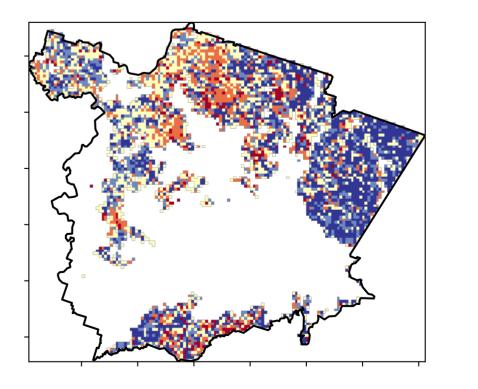
Total Vegetation Cover Decile [%]

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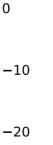
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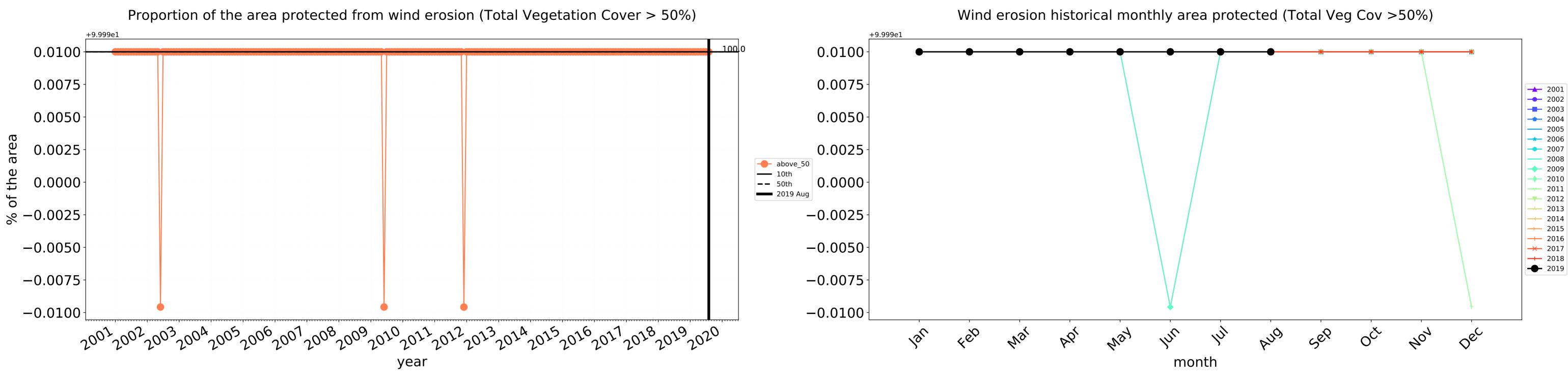
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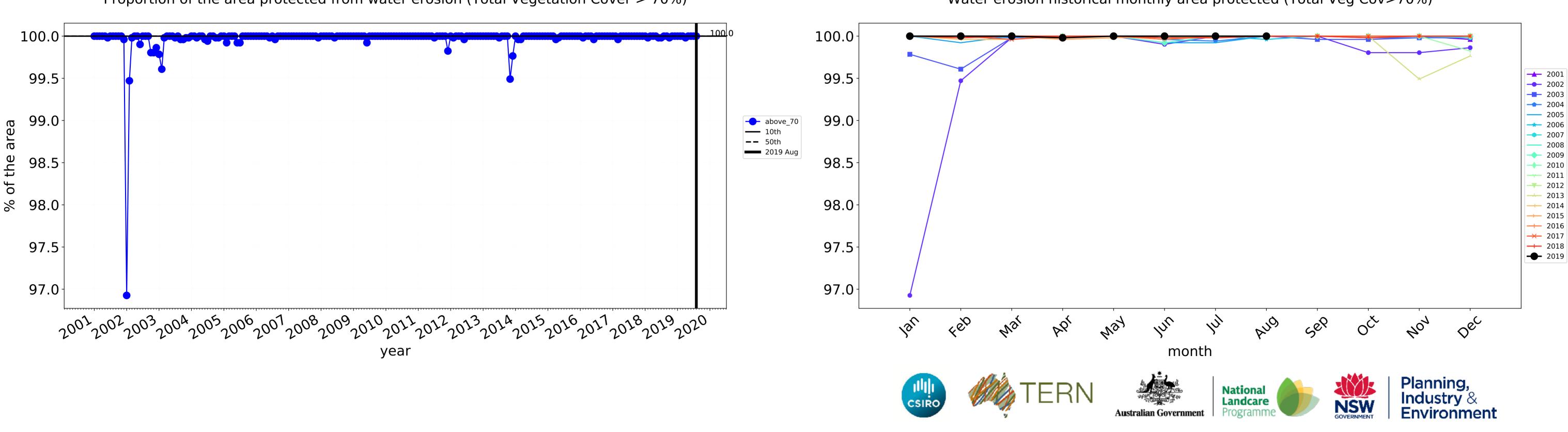




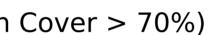
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map from 2001 to 2019.



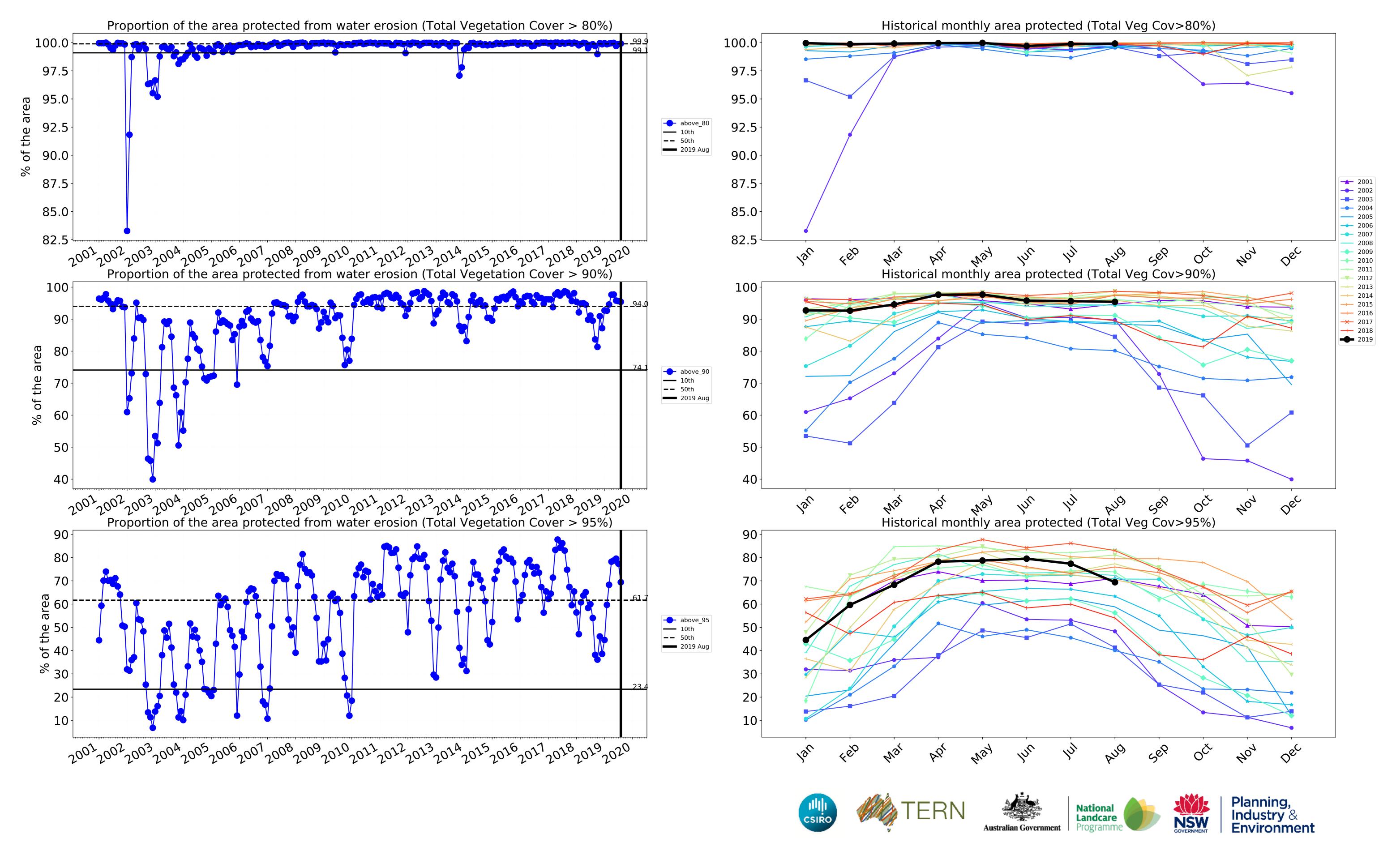




Conservation and natural environments timeseries



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

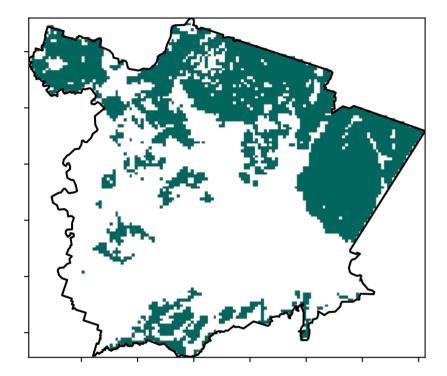


Conservation and natural environments Woodland forest

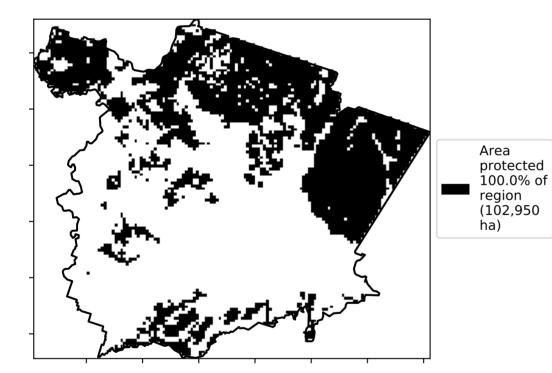
Landuse map of area based on 2015 catchment scale Australia's National Forest Inventory, where no forest is < Conservation and natural environments - Woodland 20% tree cover, forest sparse is 20 to 50% and dense > 50% tree

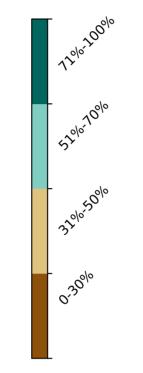
Total Vegetation Cover [%]

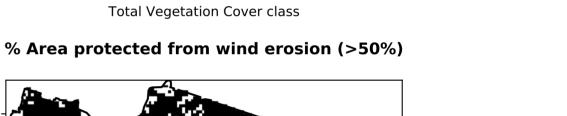
Land use and forest cover



% Area protected from water erosion (>70%)







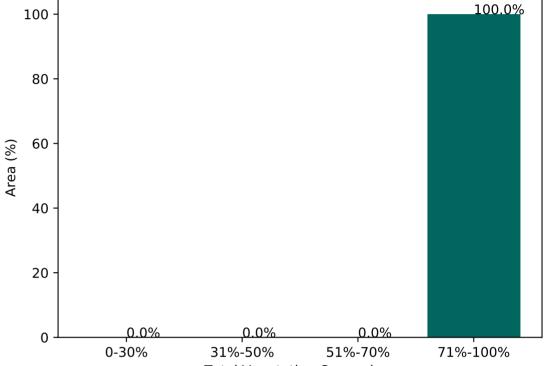
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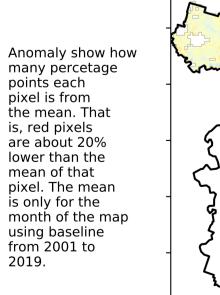
A.1

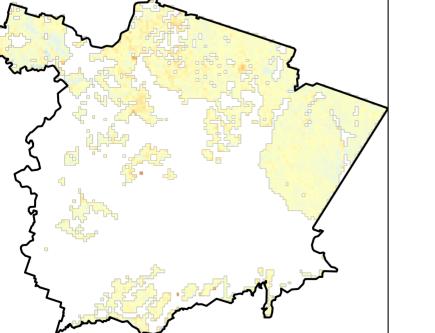
2?3

Proportion of vegetation cover class in area



Total Vegetation Cover Anomaly [%]



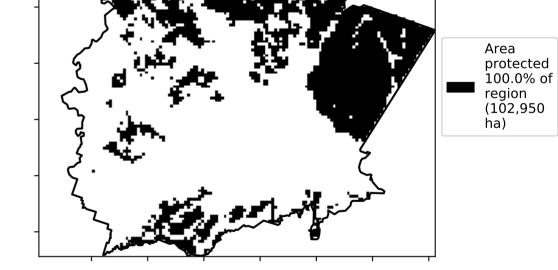


- 10 0 -10

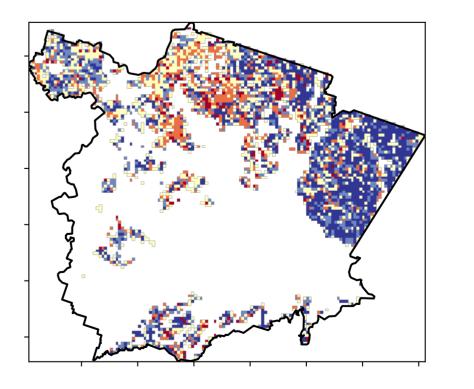
-20

- 20

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 [%]





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.

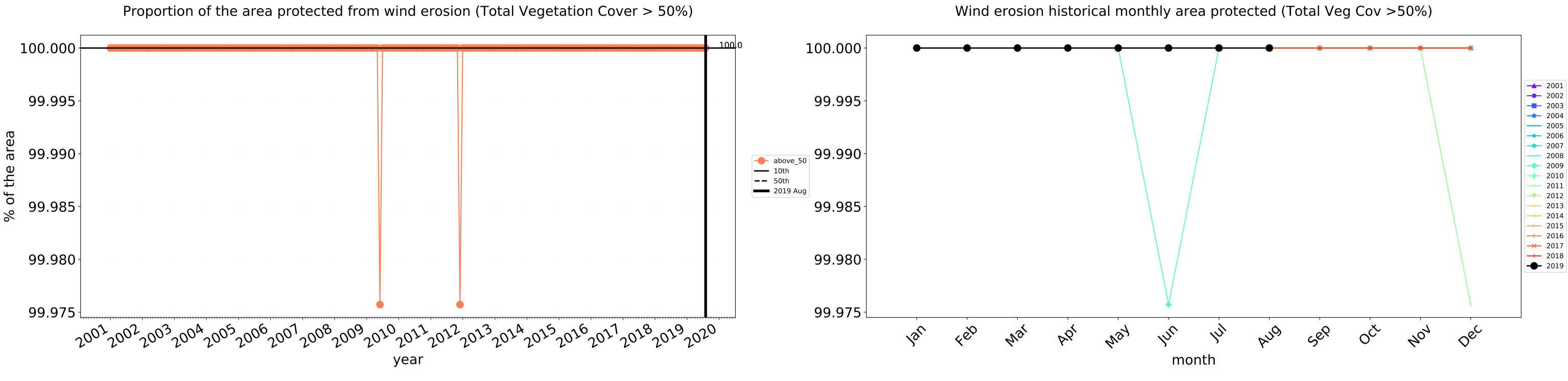
landuse and

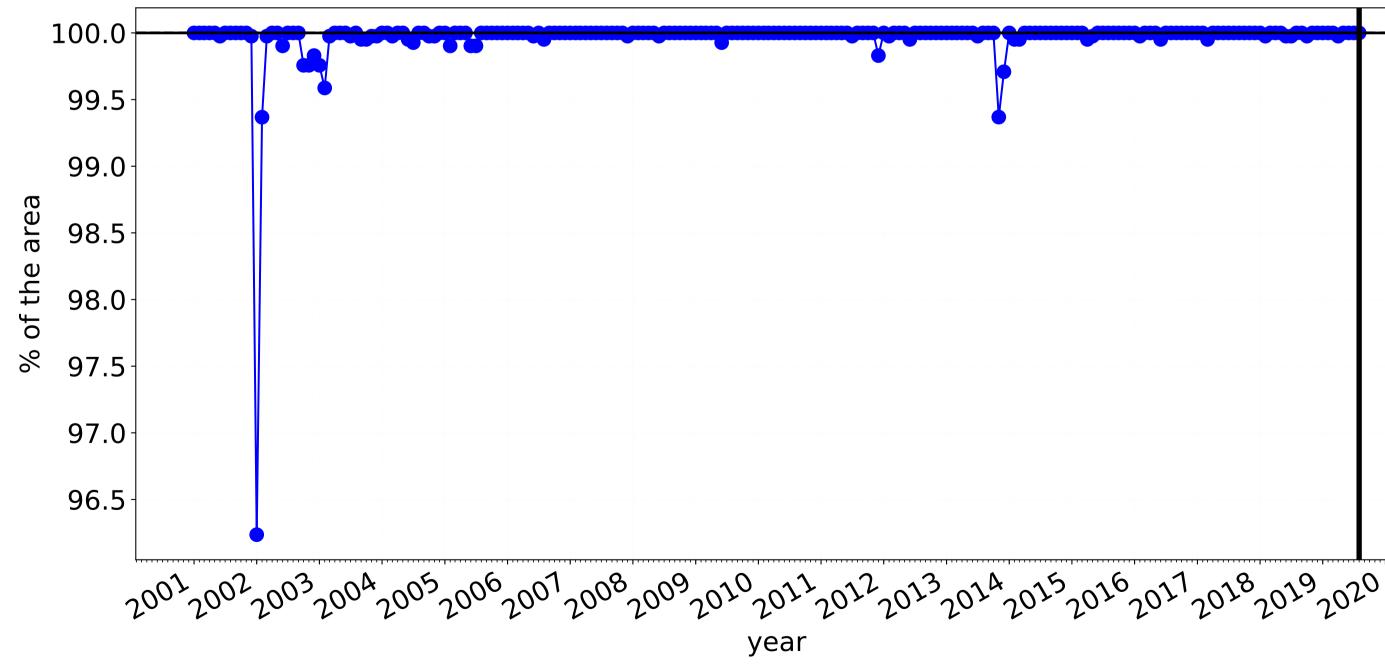
cover.



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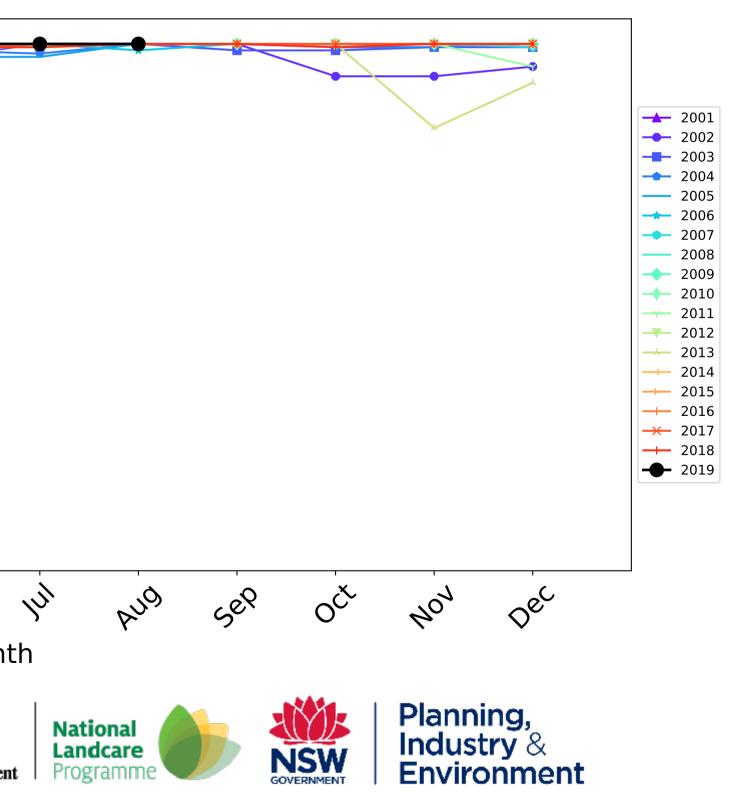
Conservation and natural environments Woodland forest timeseries

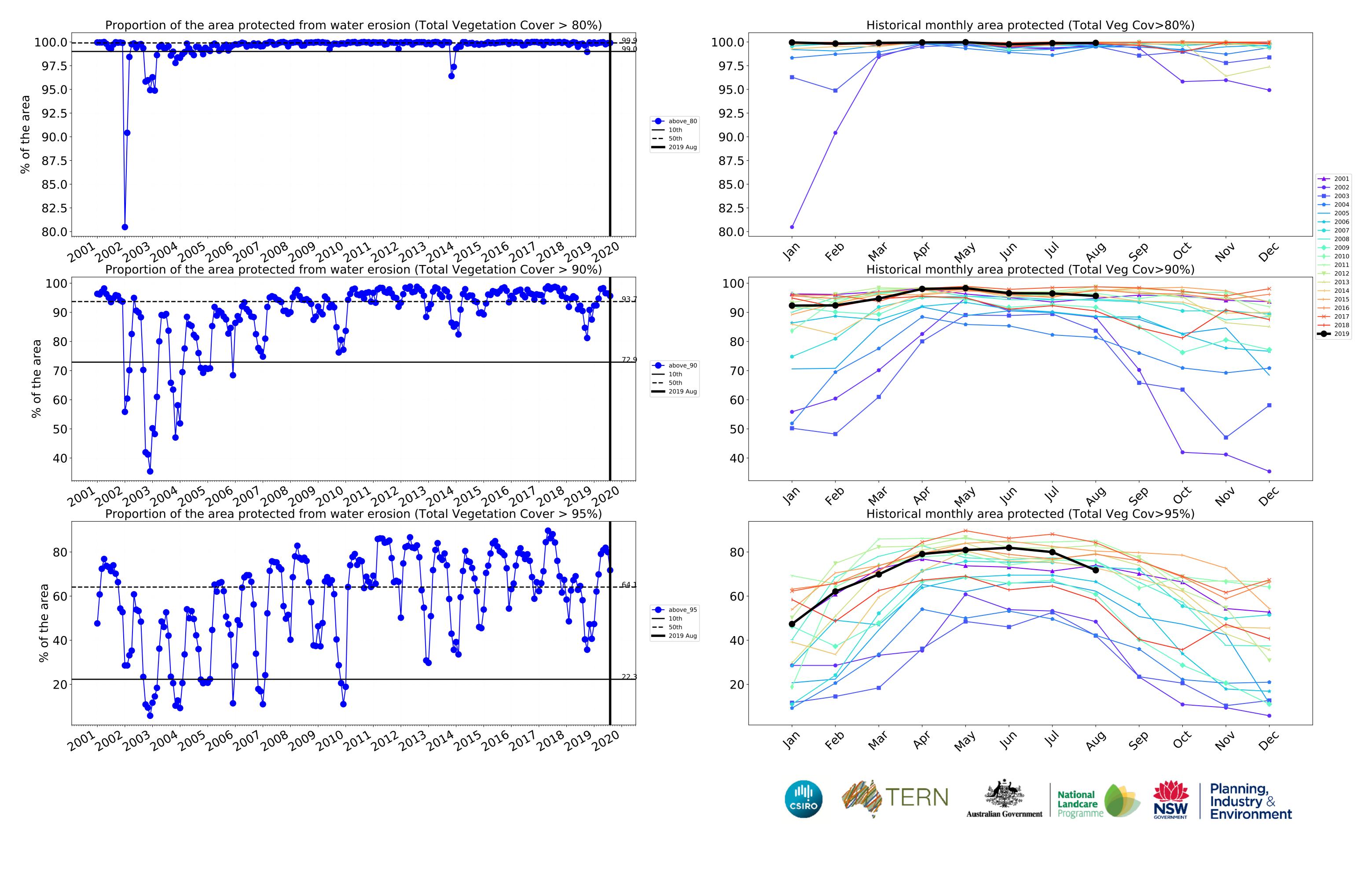




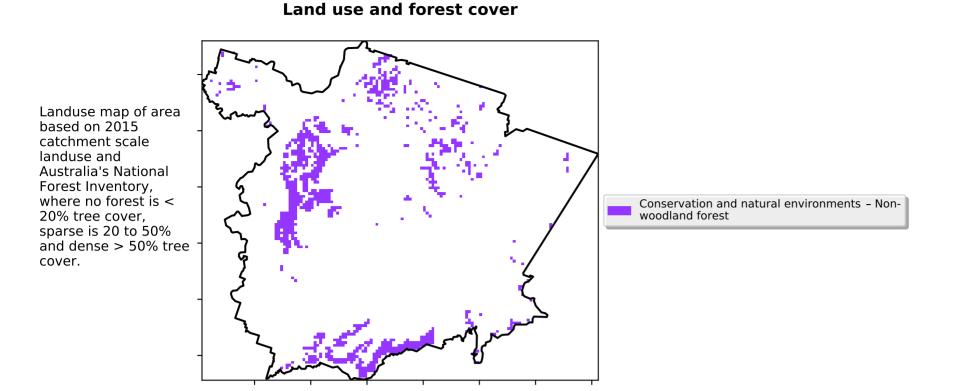
1000 100.0 99.5 99.0 ---- above_70 **——** 10th 98.5 **——** 50th 98.0 97.5 97.0 96.5 lar 4eb In way War PQ month TERN (COR) Australian Government

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

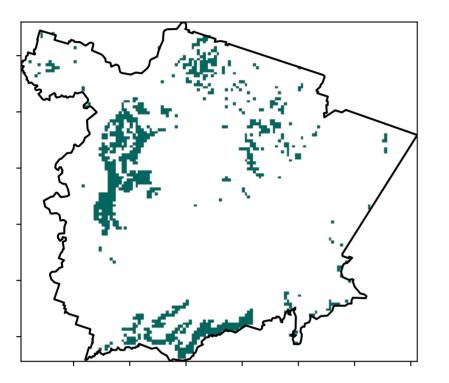




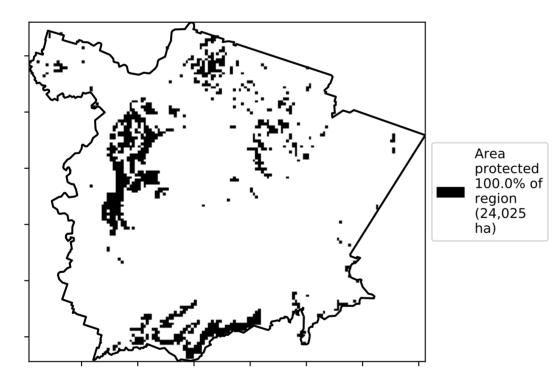
Conservation and natural environments Forest (non woodland)



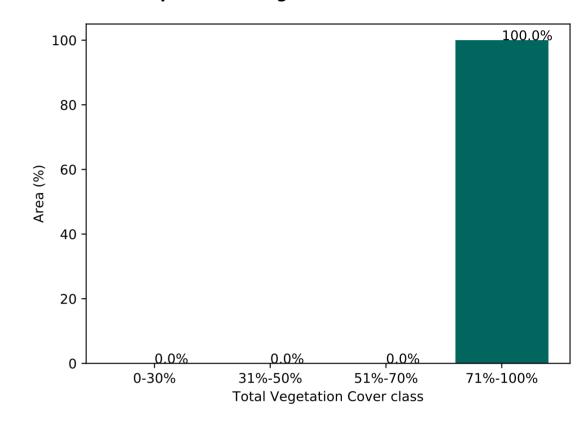
Total Vegetation Cover [%]



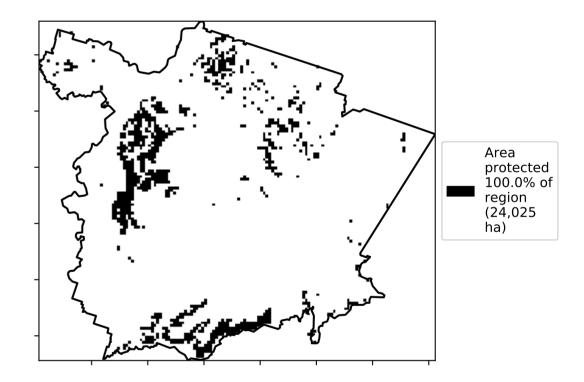
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



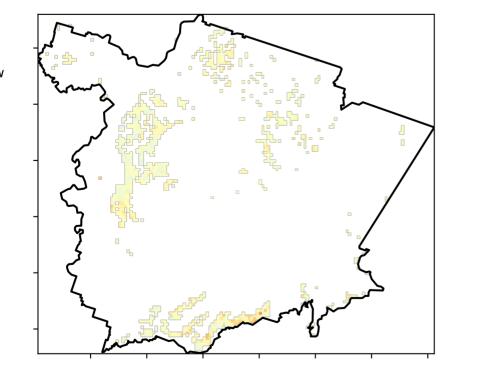
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2^{?5}

Total Vegetation Cover Anomaly [%]



- 20 - 10 - 0 - -10 - -20

Deciles show where 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.

pixel value lies in the

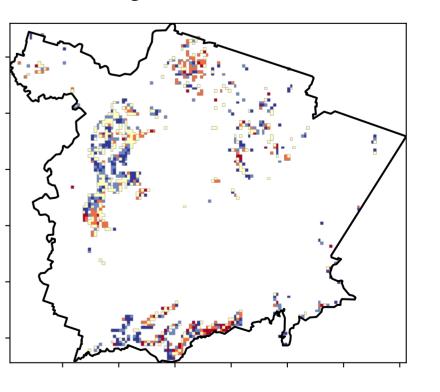
12º0010000

52°10'10°10

· 32°10'50010

0.30%

Total Vegetation Cover Decile [%]

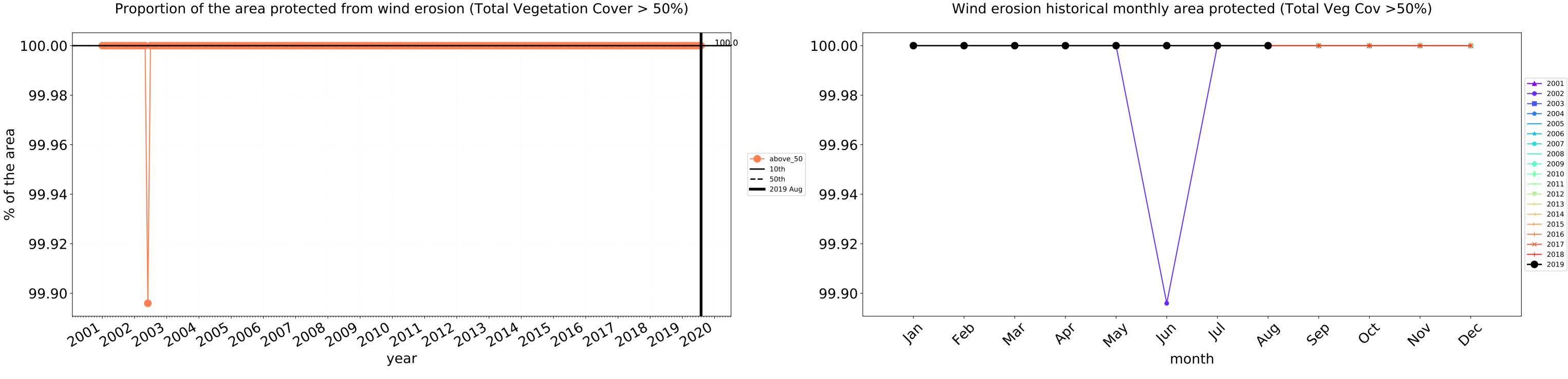




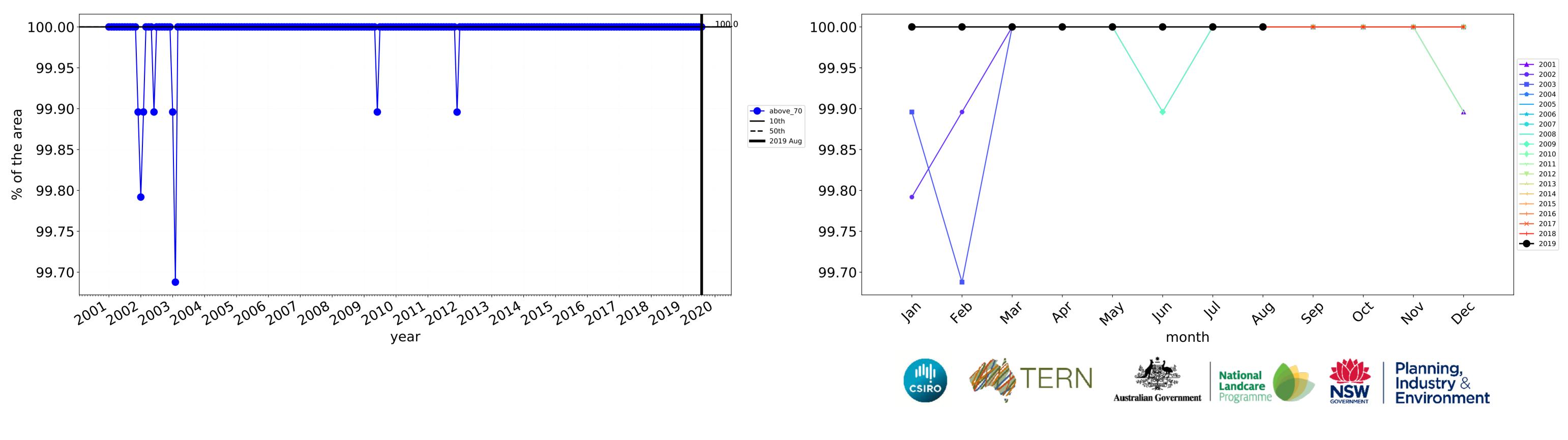


Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.

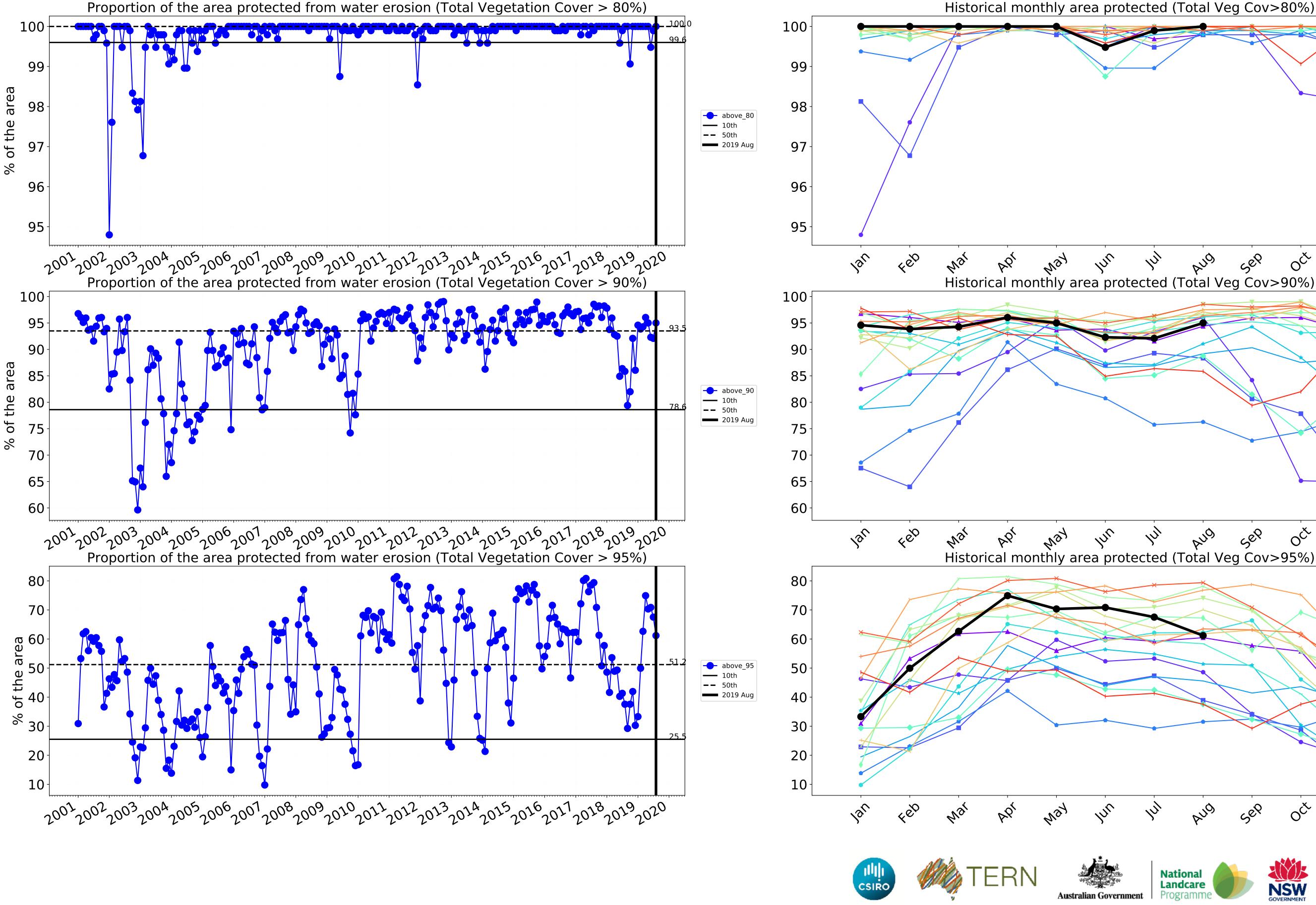
Conservation and natural environments Forest (non woodland) timeseries

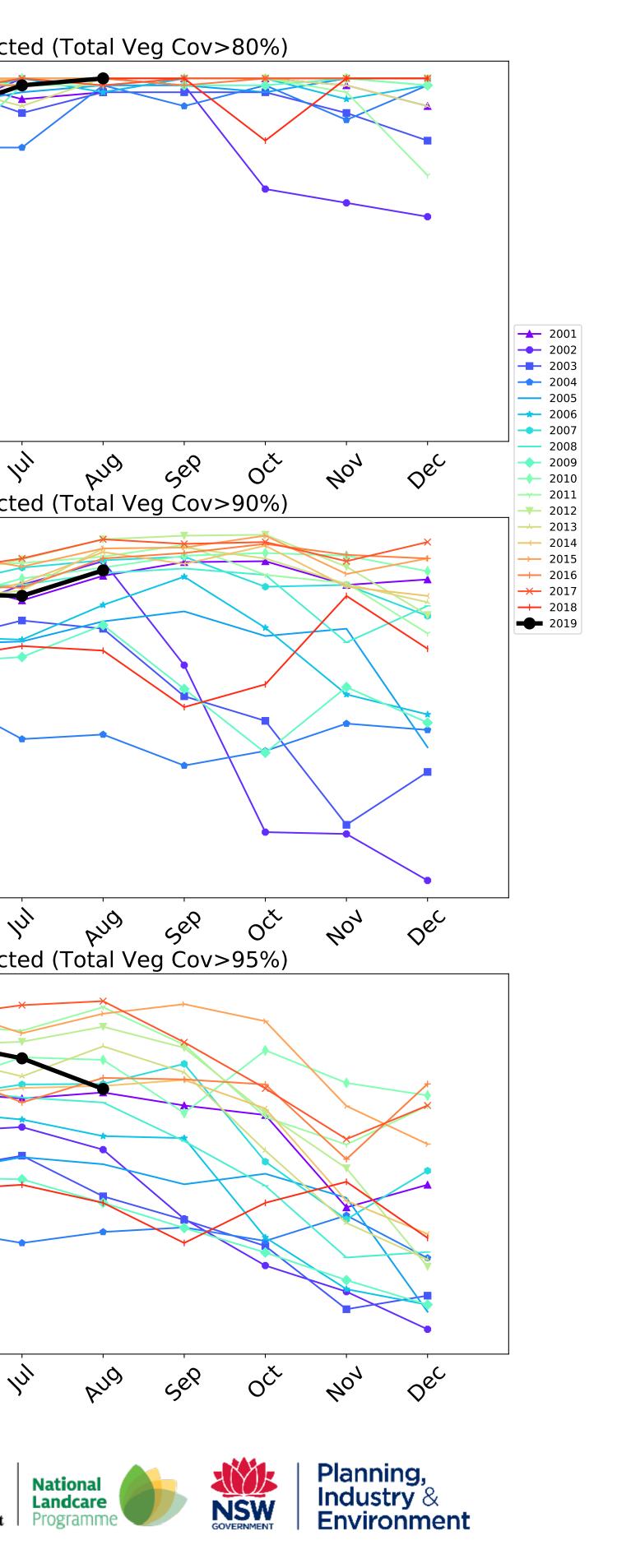


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



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

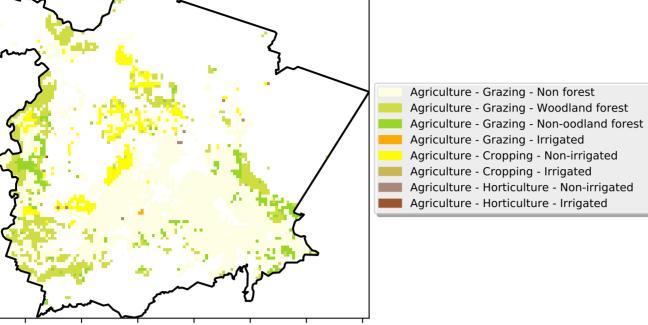




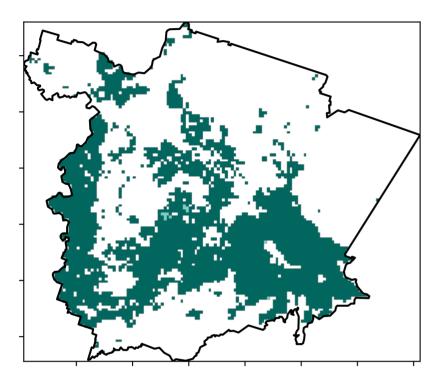
Agriculture

Land use and forest cover

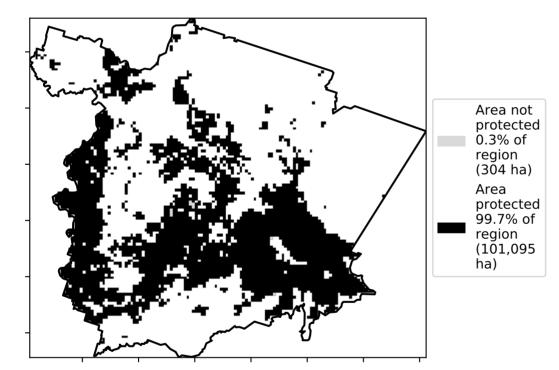
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



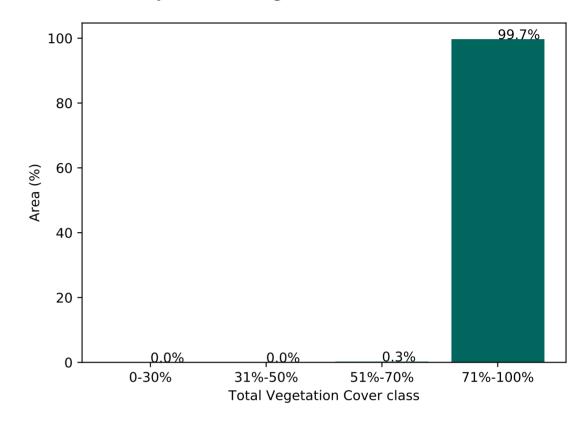
Total Vegetation Cover [%]



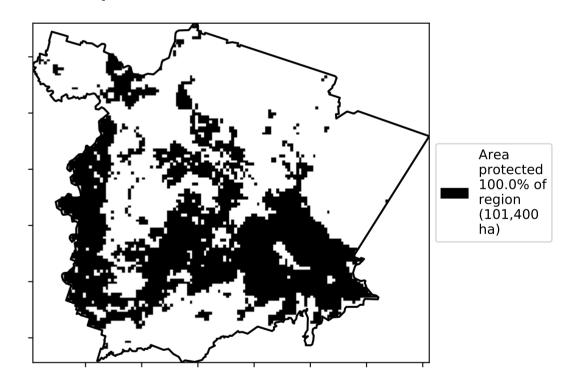
% Area protected from water erosion (>70%)







% Area protected from wind erosion (>50%)



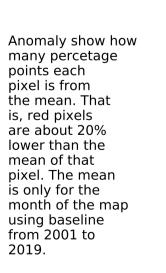
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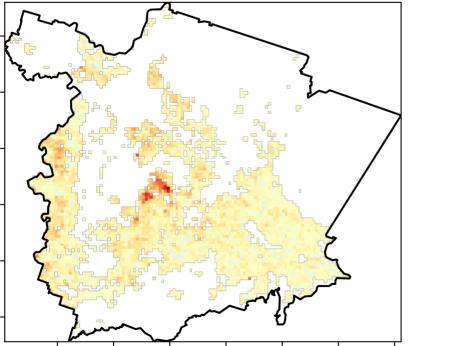
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Total Vegetation Cover Anomaly [%]





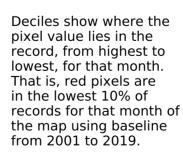


120/0-2000/0

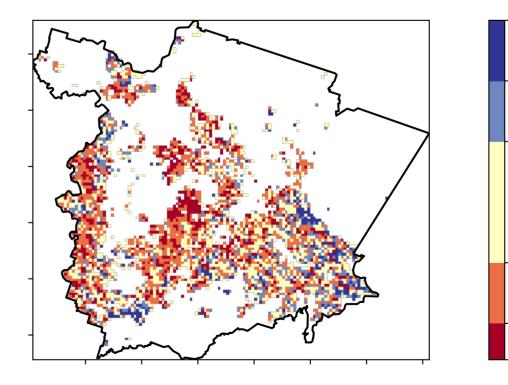
52°10010

32005000

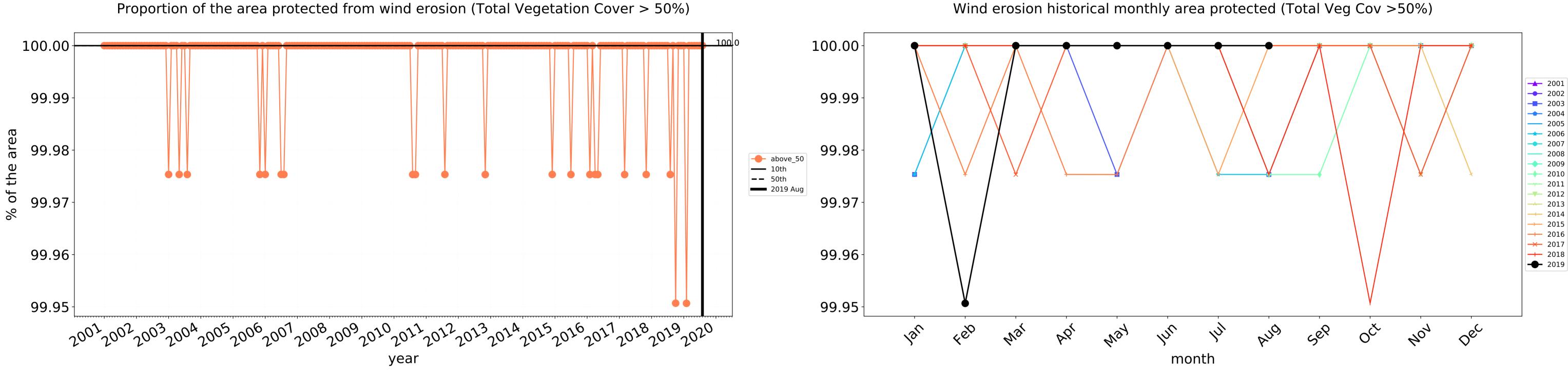
0.30%

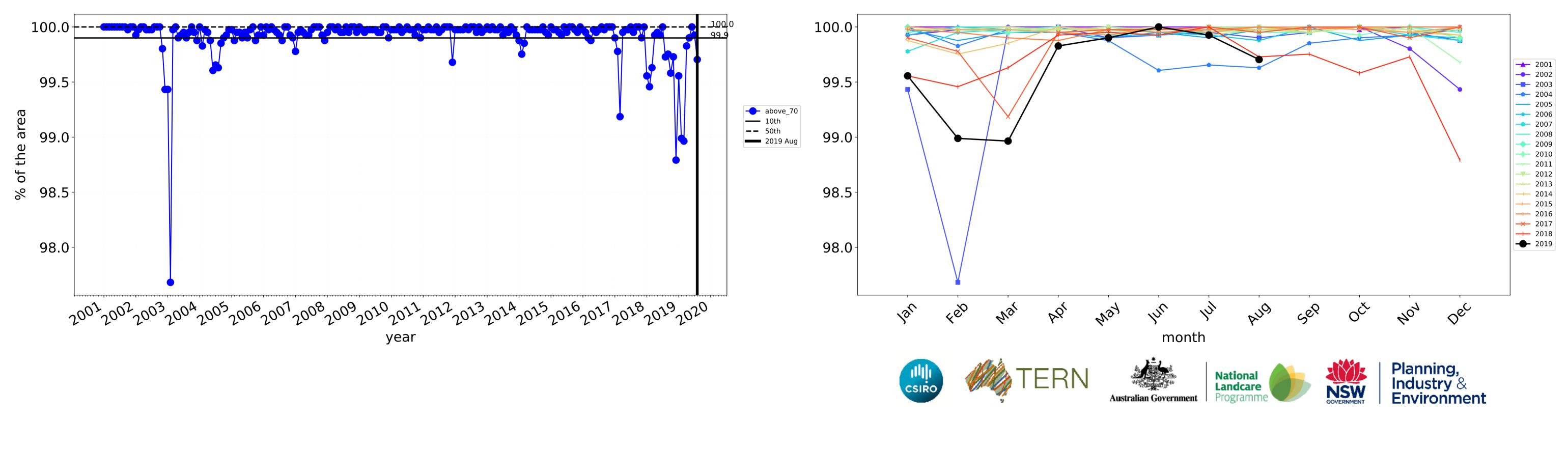


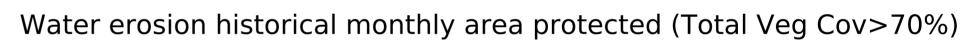
Total Vegetation Cover Decile [%]

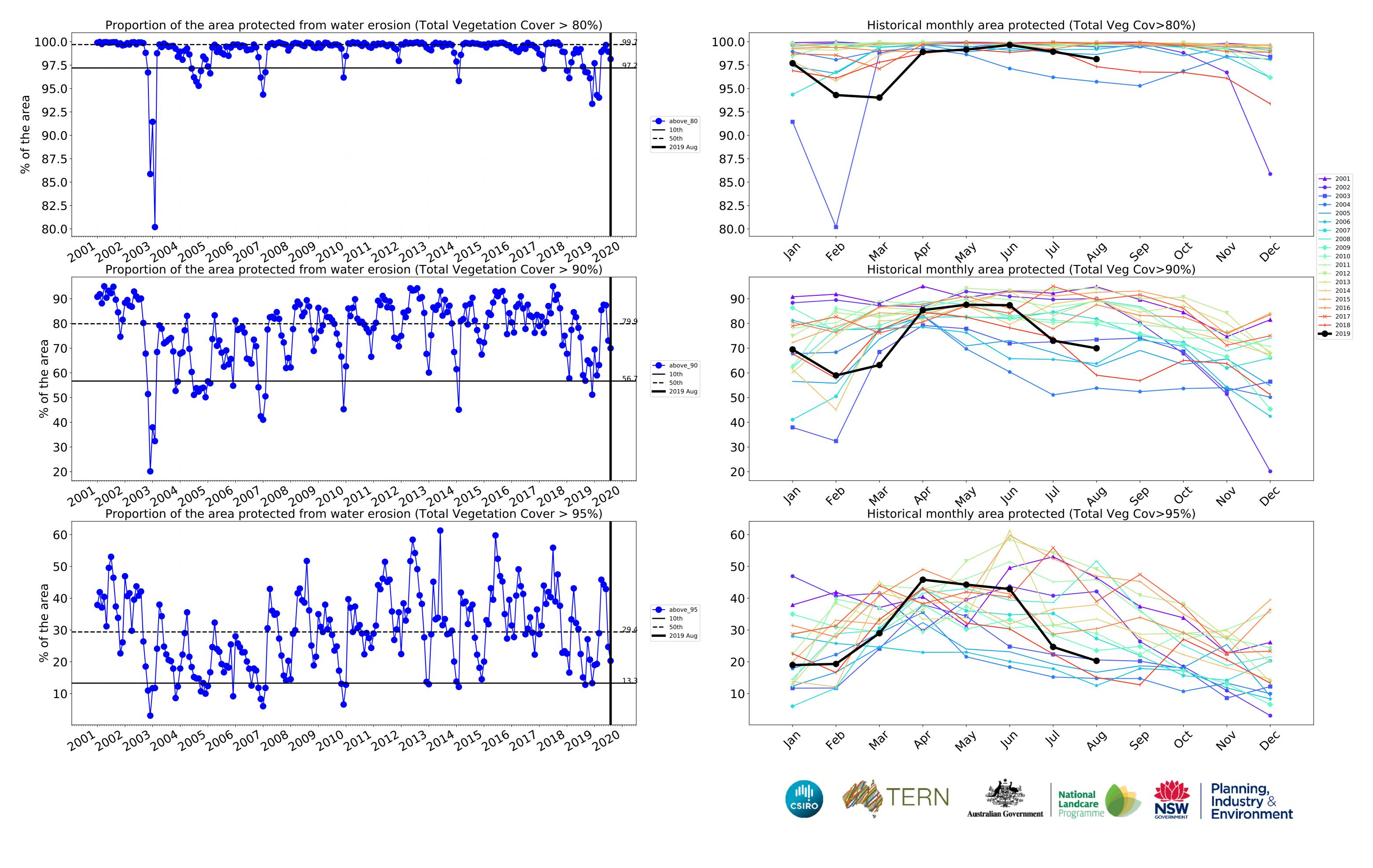












Grazing

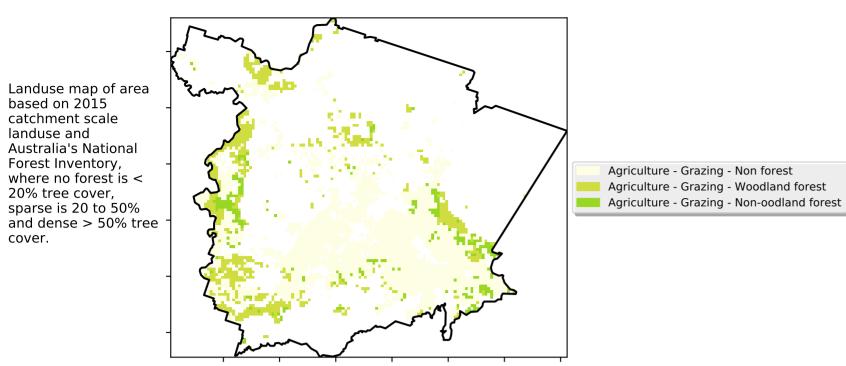
120010000

52°10010

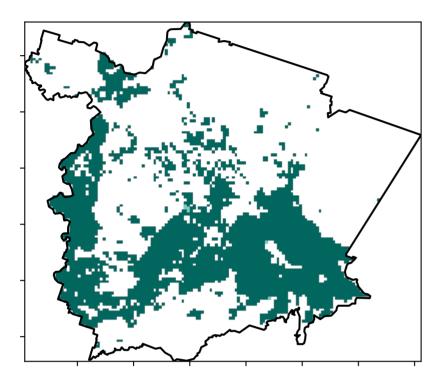
32005000

0.30%

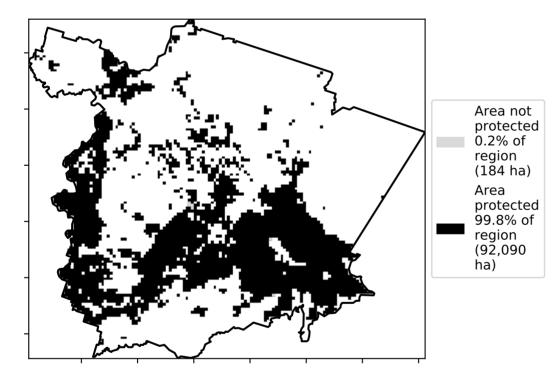
Land use and forest cover



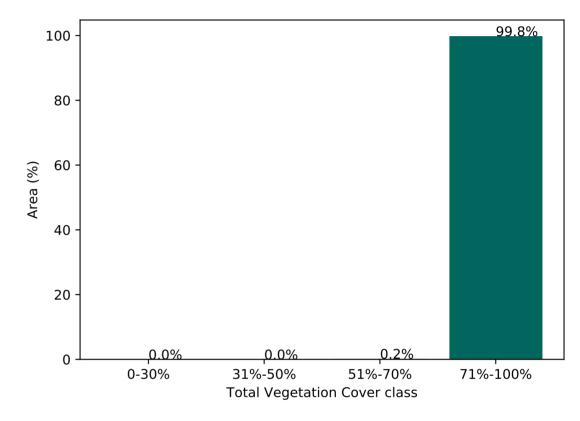
Total Vegetation Cover [%]



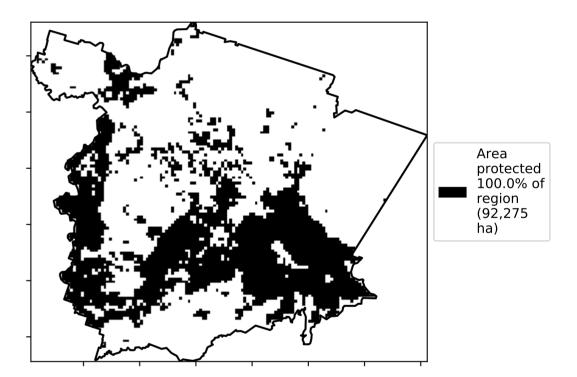
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



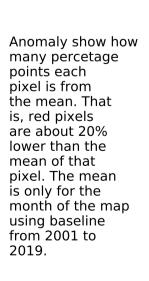
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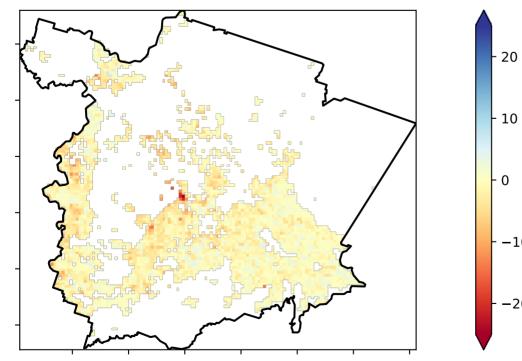
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Total Vegetation Cover Anomaly [%]

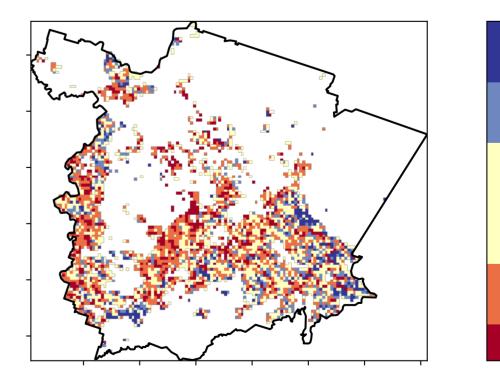


cover.



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 [%]

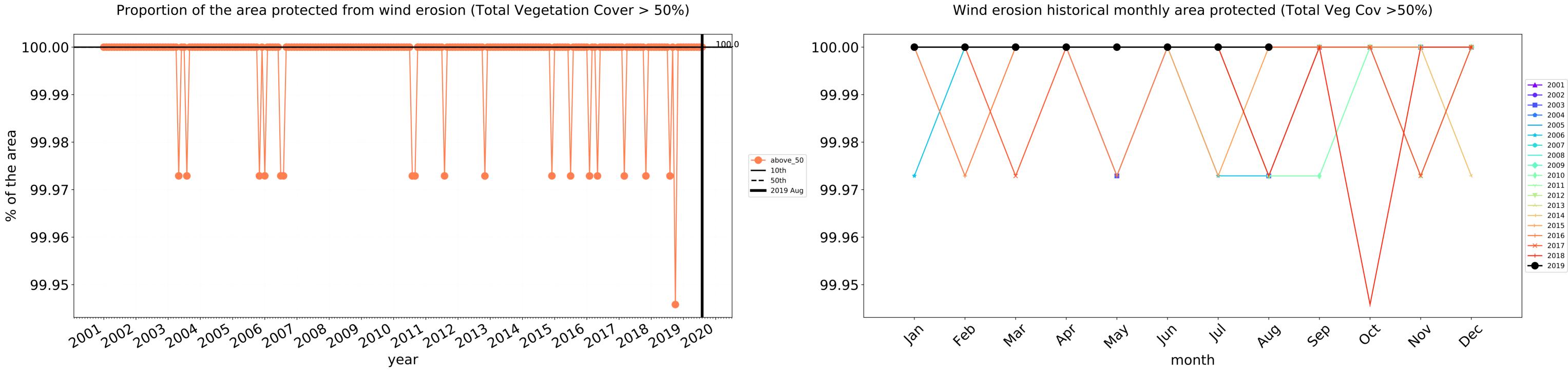


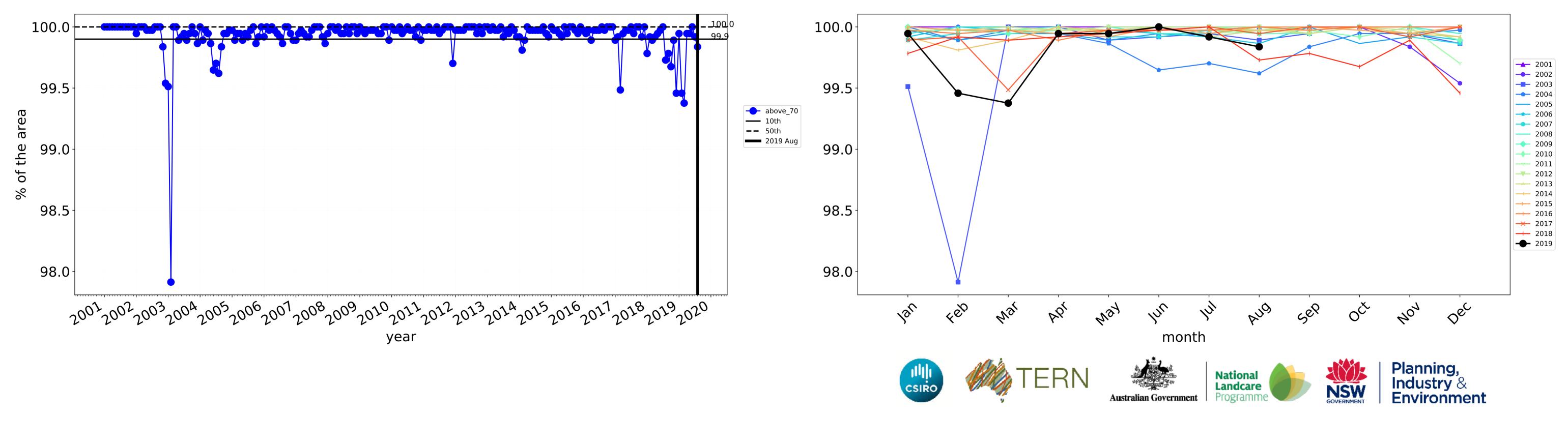


0

-10

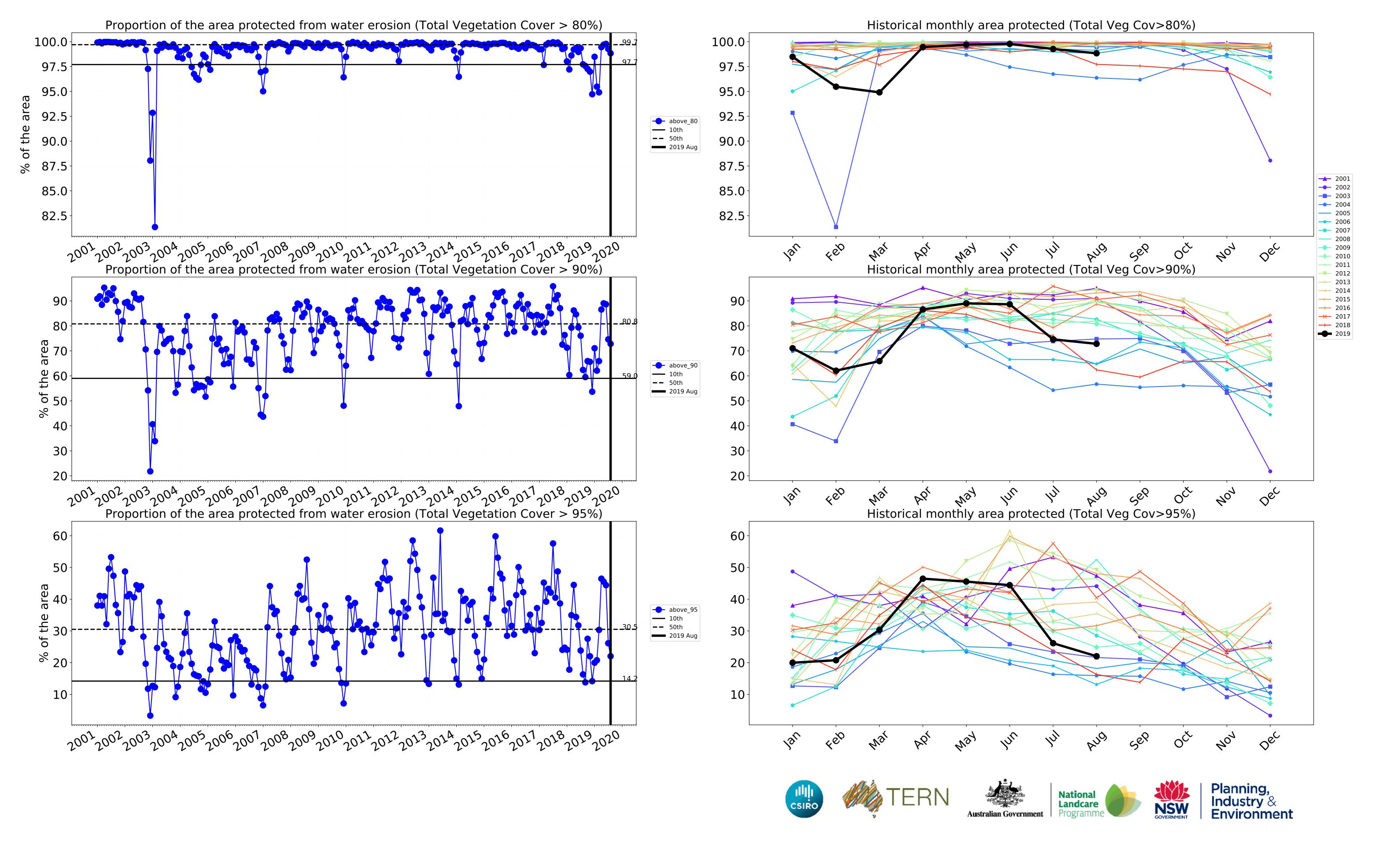
-20







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



Grazing non forest

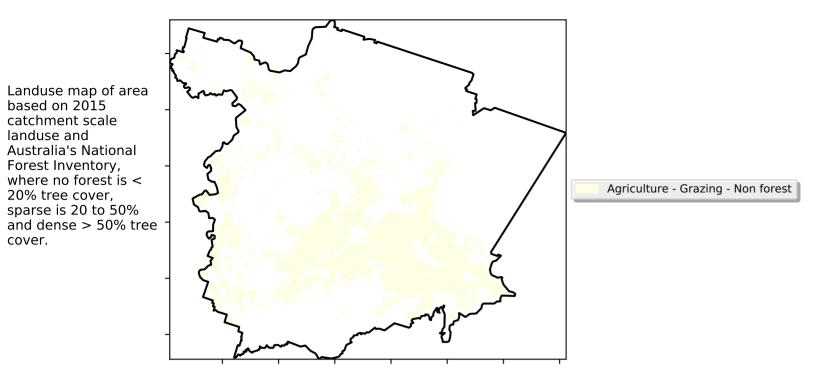
1200-2000

52°10010

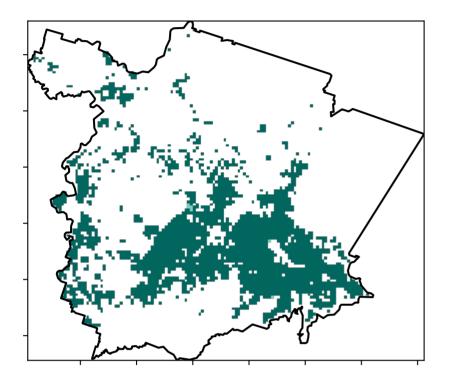
32005000

0.30%

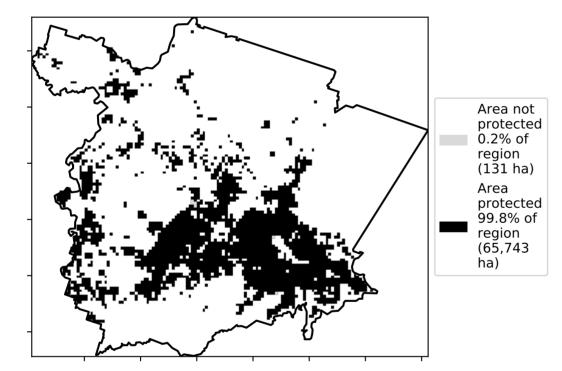
Land use and forest cover



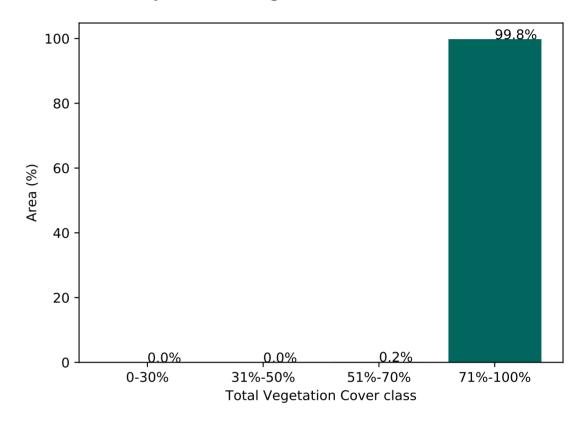
Total Vegetation Cover [%]



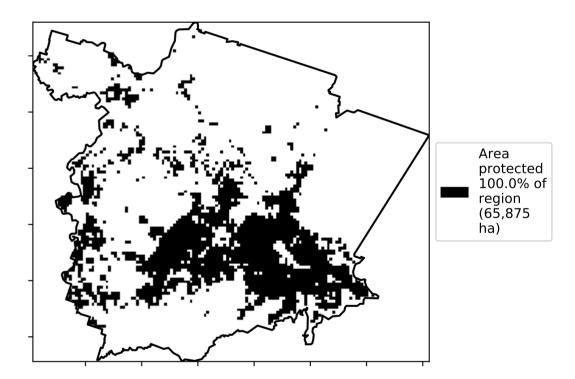
% Area protected from water erosion (>70%)







% Area protected from wind erosion (>50%)

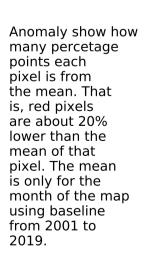


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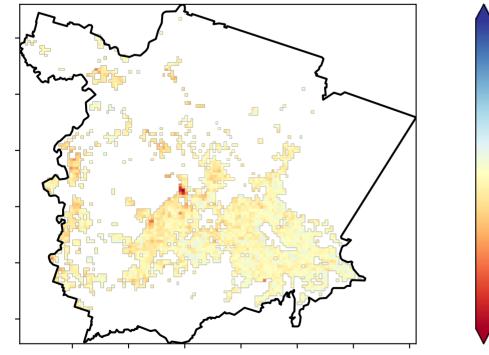
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Total Vegetation Cover Anomaly [%]



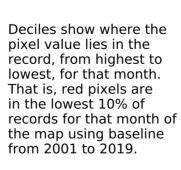
cover.



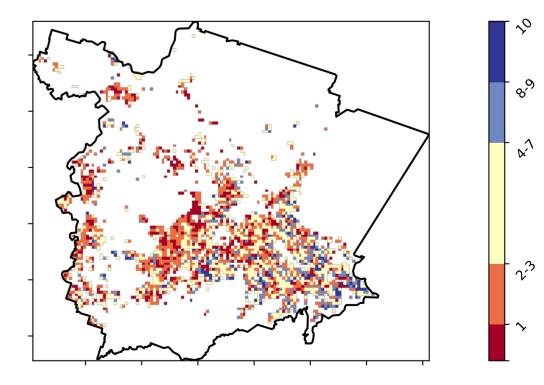
- 10 0 -10

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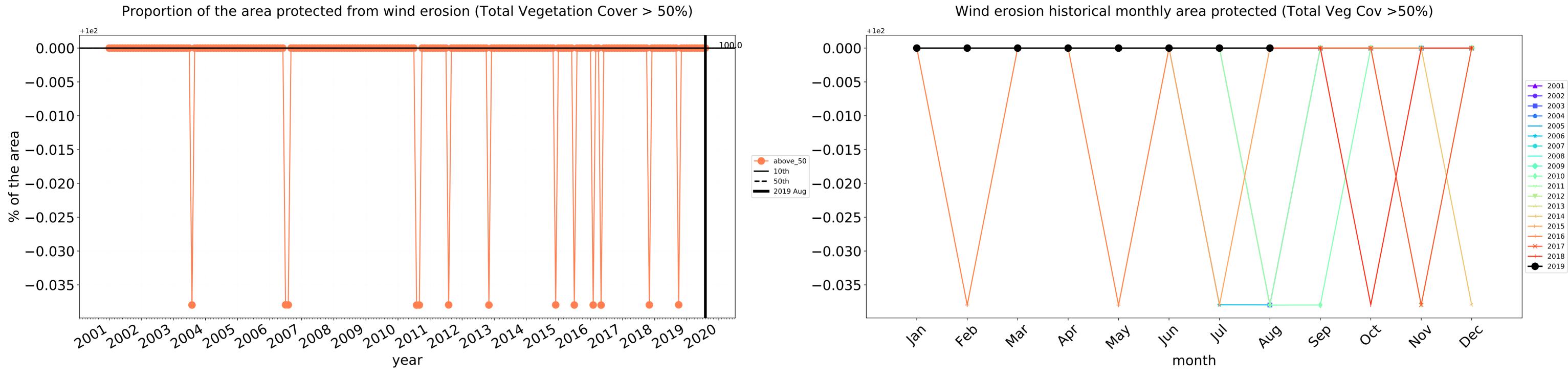
- 20

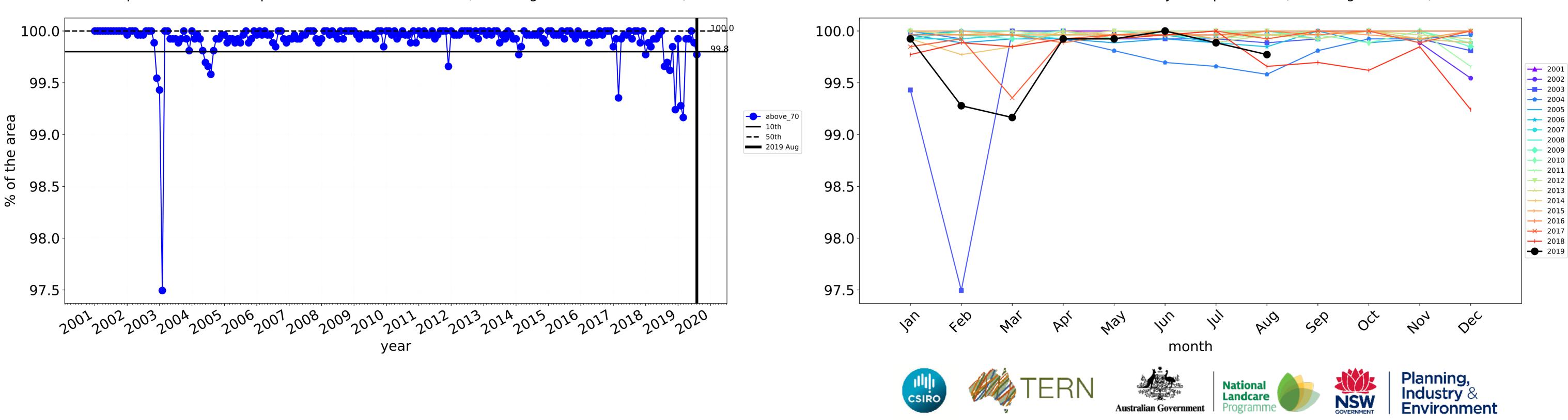


Total Vegetation Cover Decile [%]

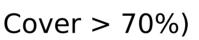




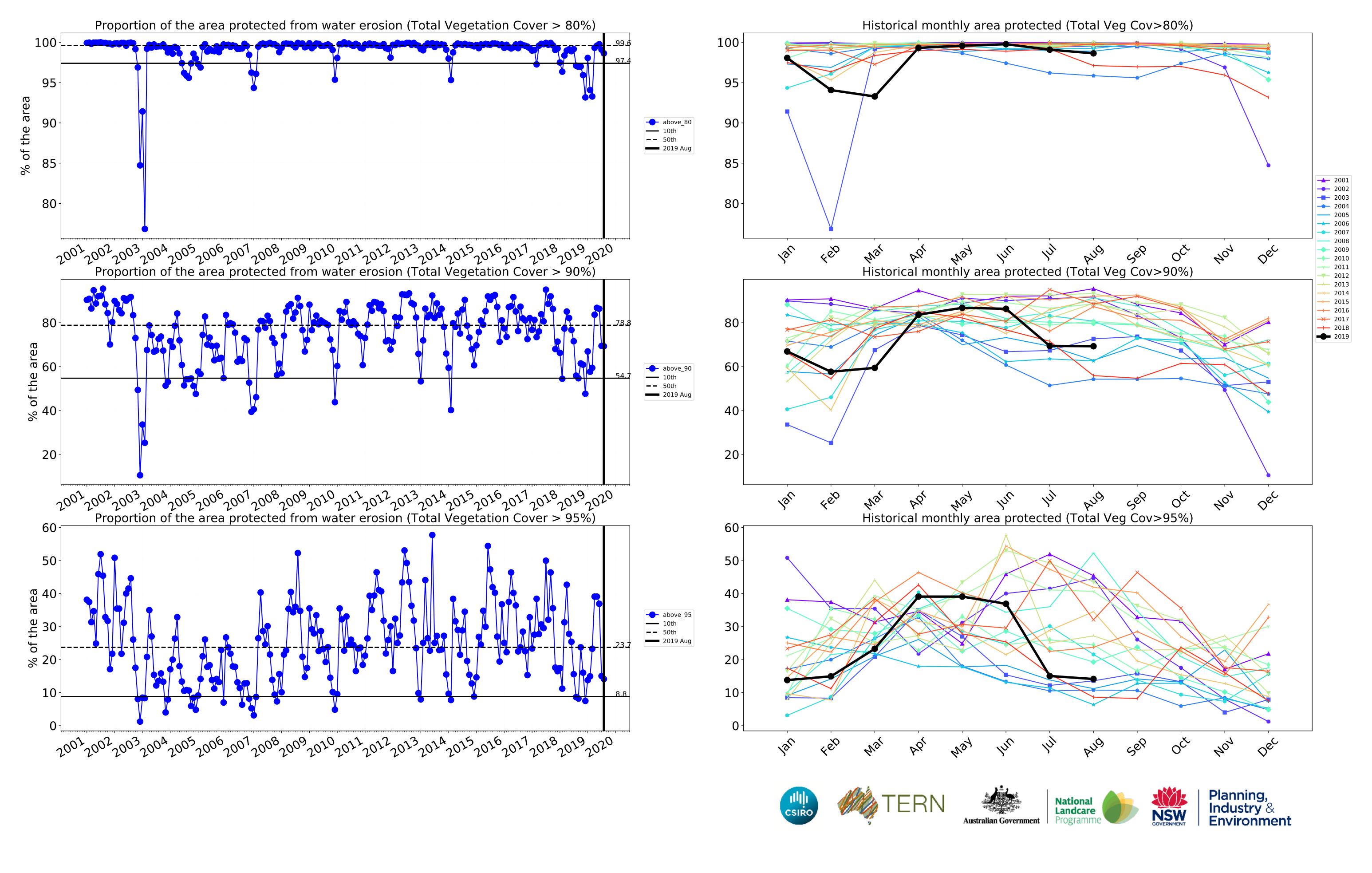




Grazing non forest timeseries



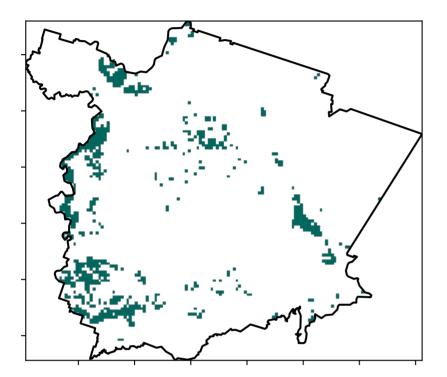
Water erosion historical monthly area protected (Total Veg Cov>70%)

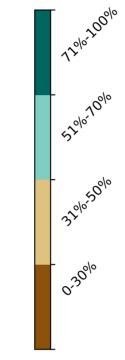


Grazing Woodland forest

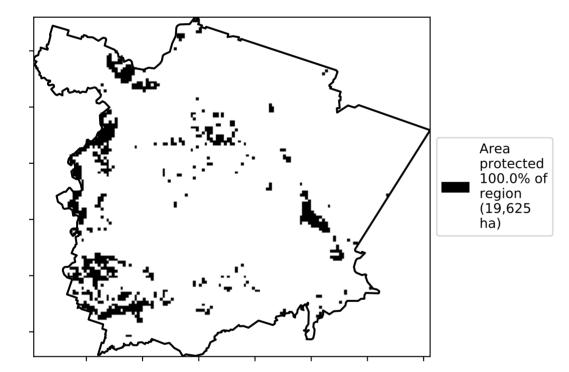
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < Agriculture - Grazing - Woodland forest 20% tree cover, sparse is 20 to 50% and dense > 50% tree

Total Vegetation Cover [%]

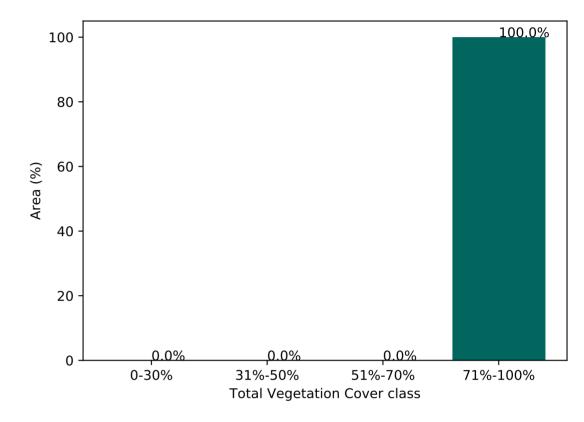




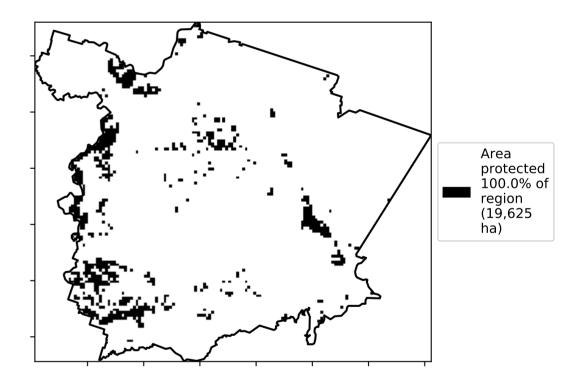
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



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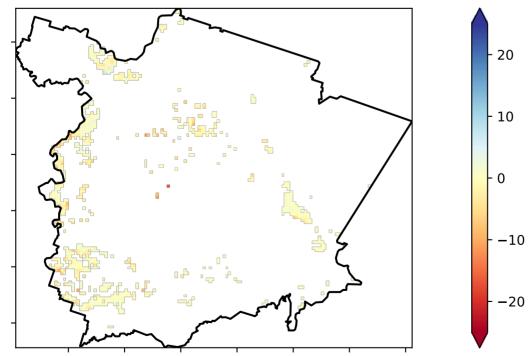
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Land use and forest cover

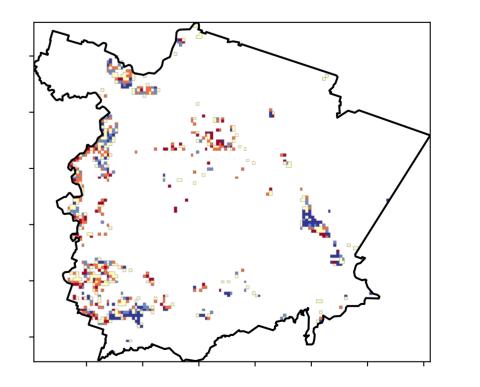
Total Vegetation Cover Anomaly [%]

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.

cover.



- 10 0 -10 **Total Vegetation Cover Decile [%]**





Deciles show where the pixel value lies in the

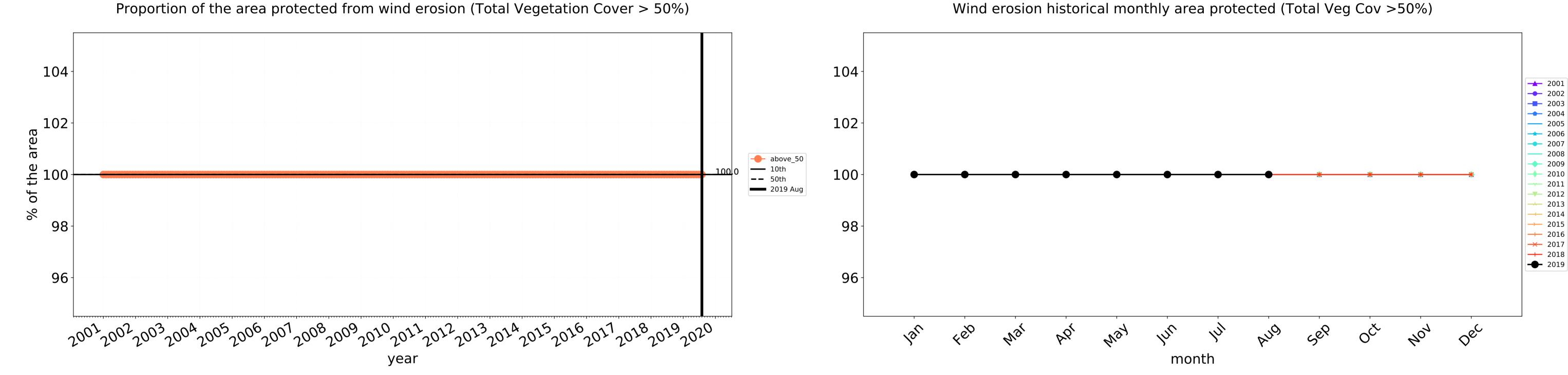
record, from highest to lowest, for that month. That is, red pixels are

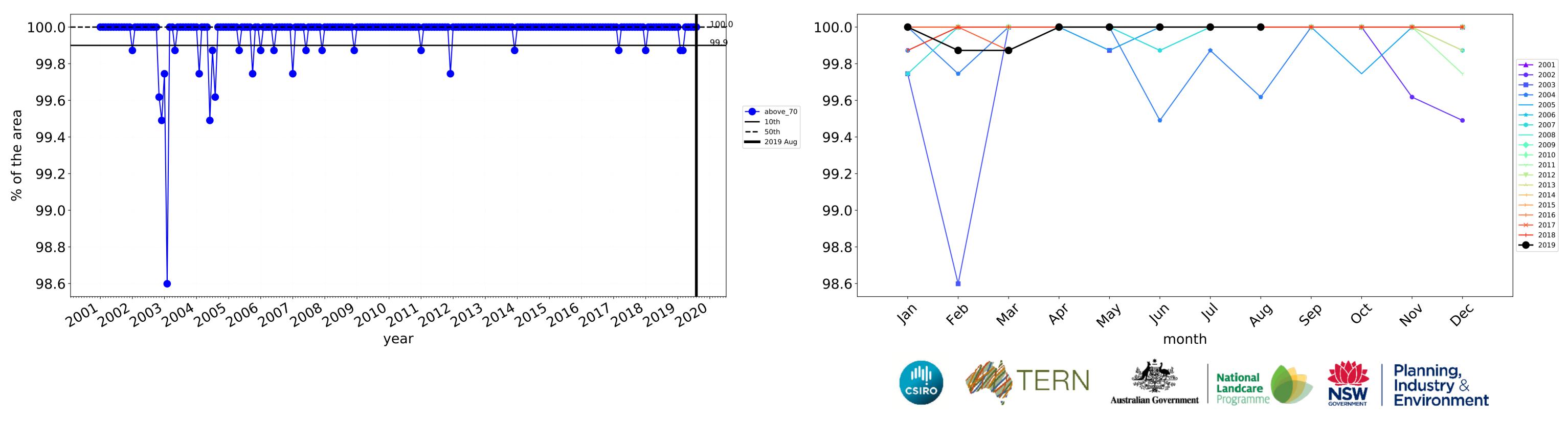
in the lowest 10% of records for that month of

the map using baseline from 2001 to 2019.

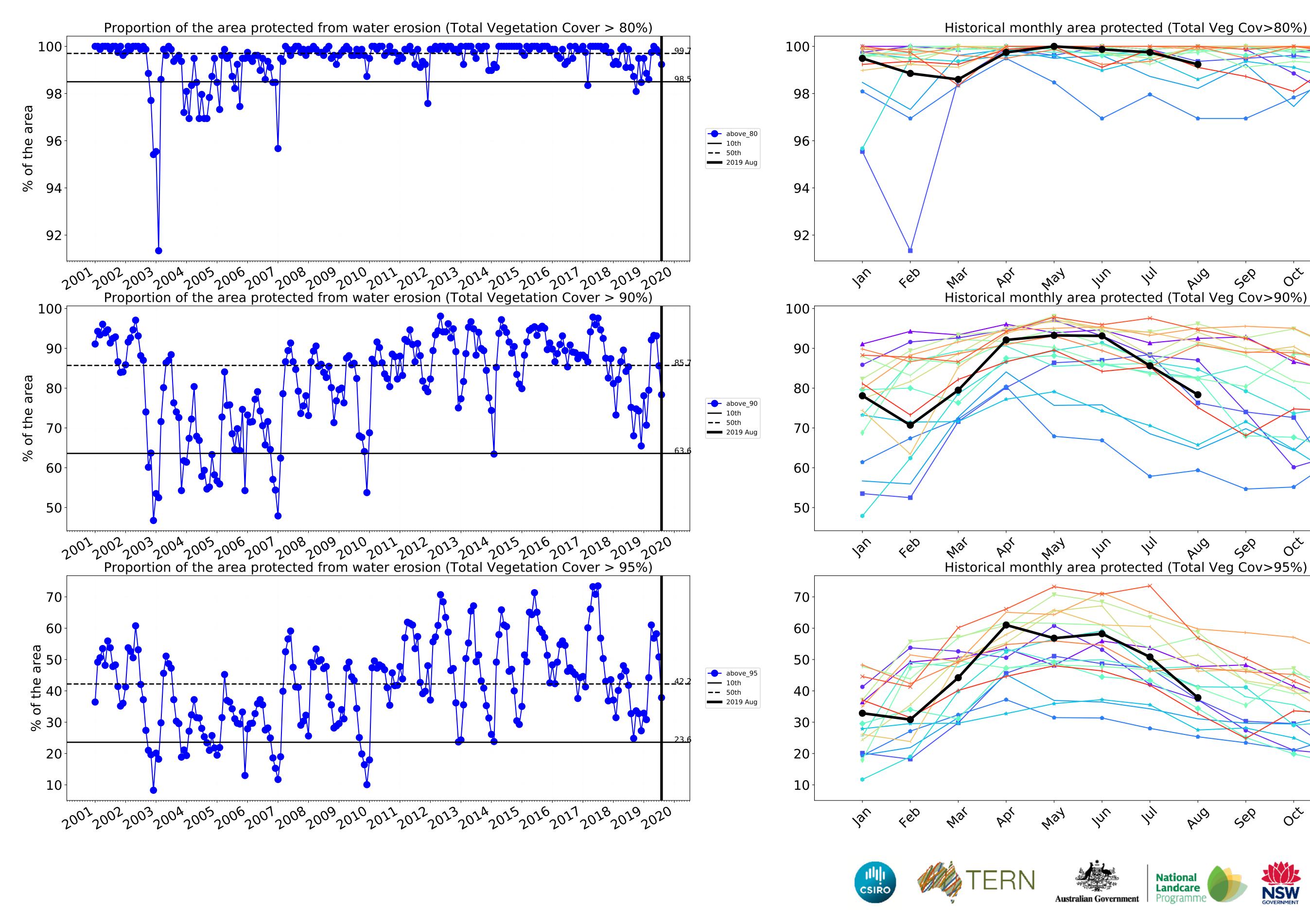
23

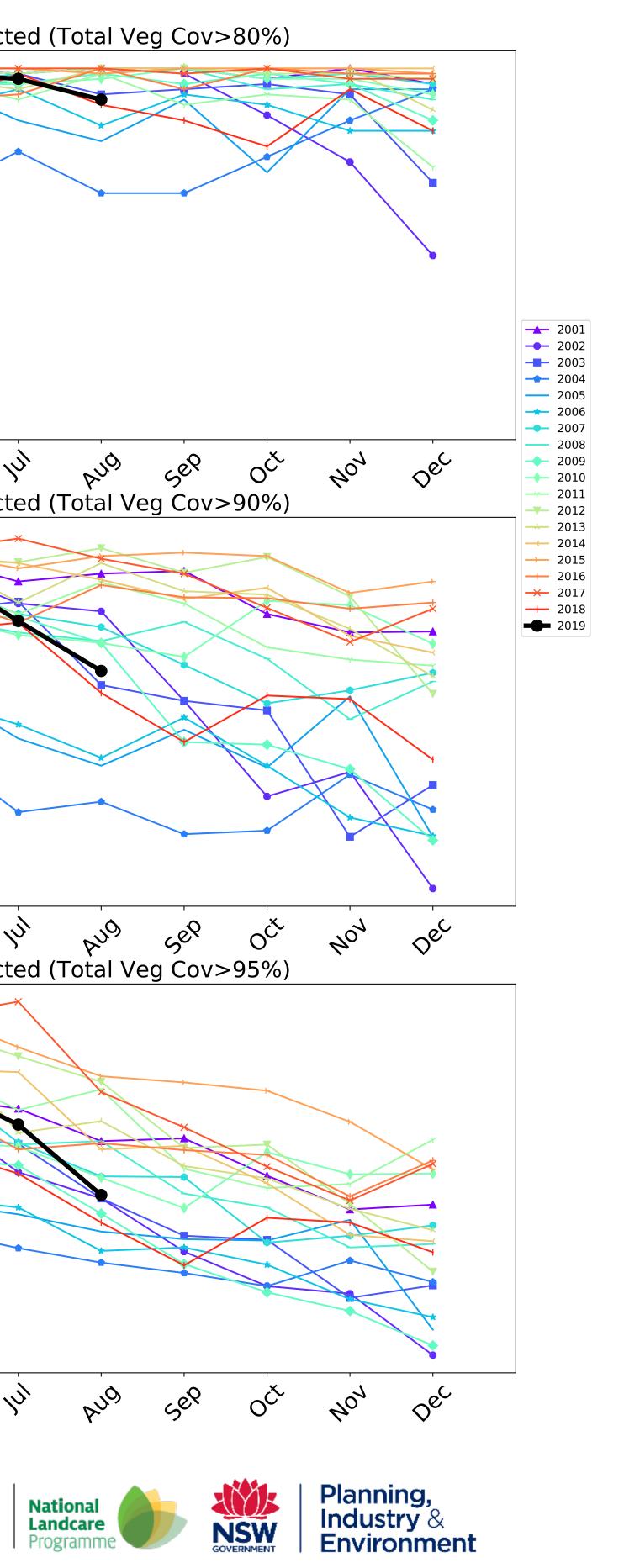
Grazing Woodland forest timeseries





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





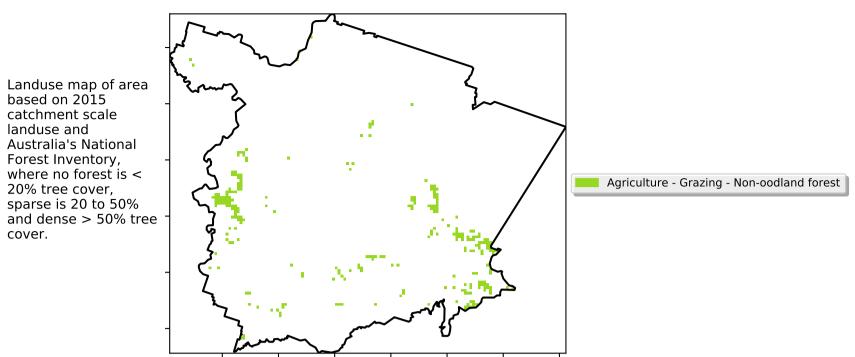
Grazing - Forest (non woodland)

12% 10°10°%

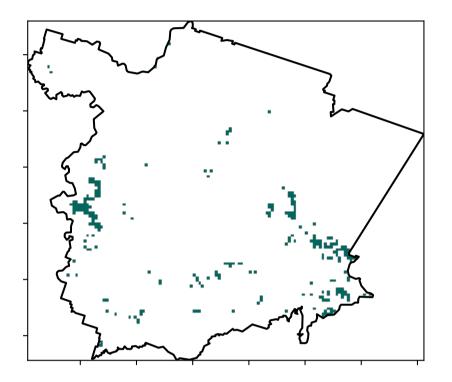
52°1070°10

3201050010

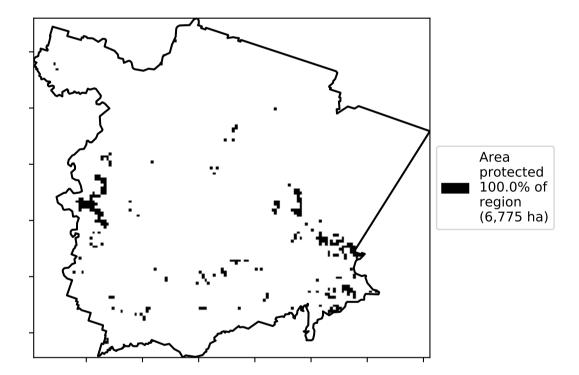
0.30%



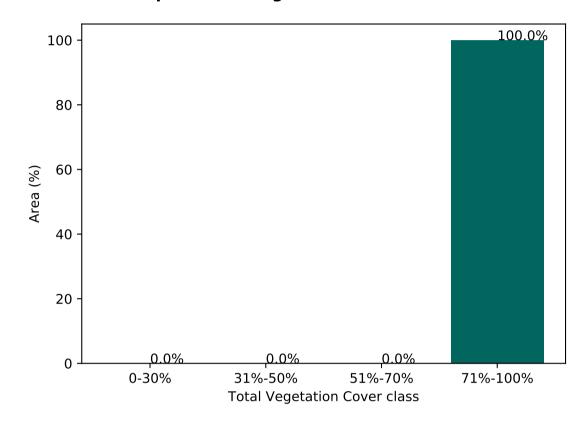
Total Vegetation Cover [%]



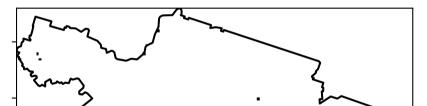
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)

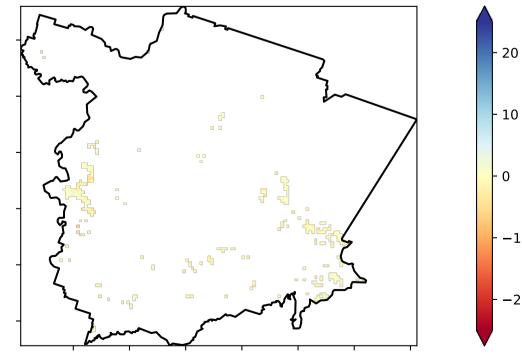


Land use and forest cover

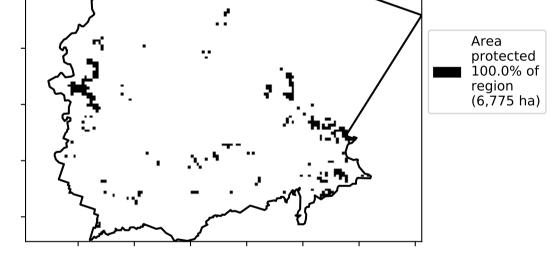
Total Vegetation Cover Anomaly [%]

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 map using baseline from 2001 to 2019.

cover.



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.



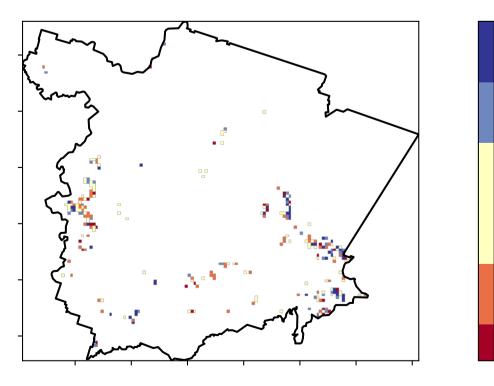
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Total Vegetation Cover Decile [%]



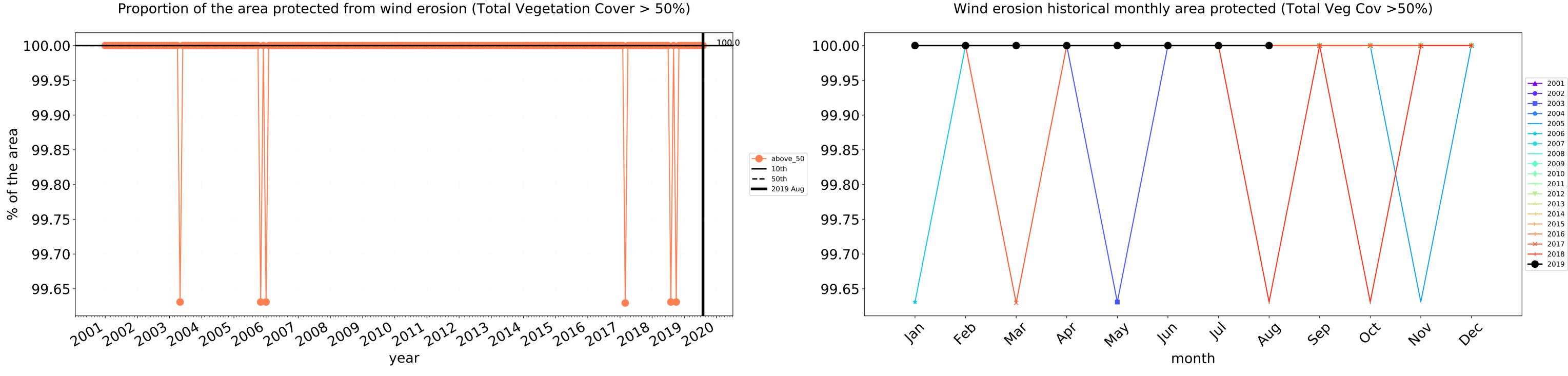


- 20

- 0

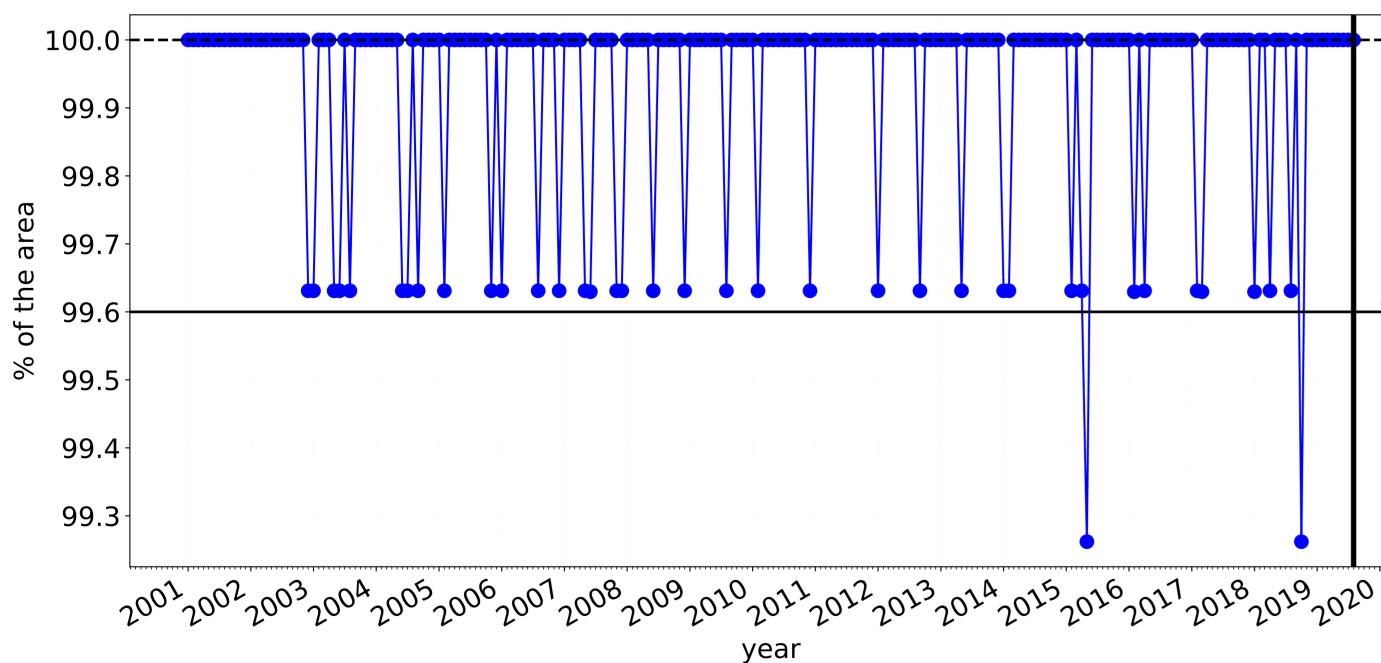
-10

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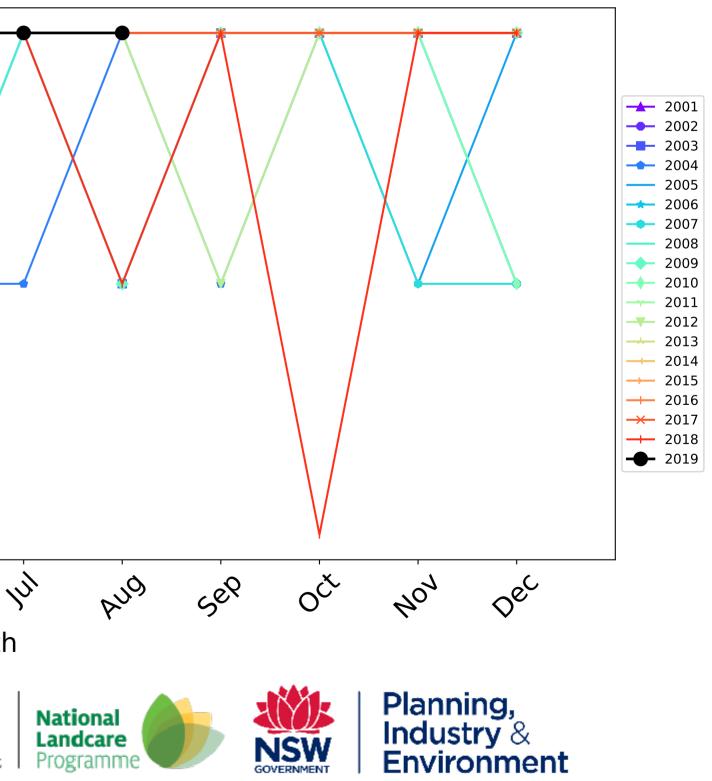
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

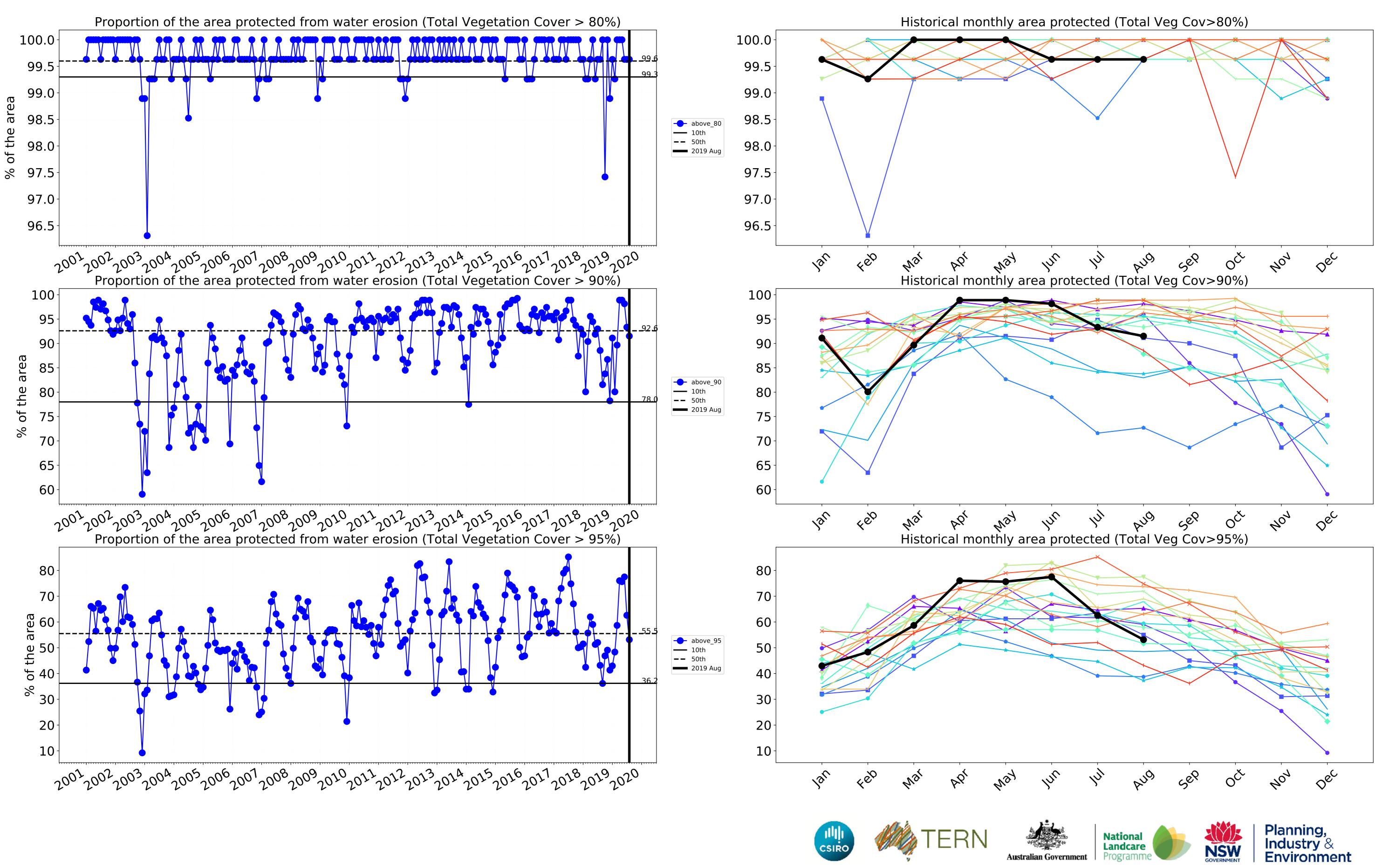


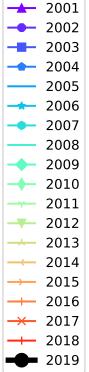


100.0 99.9 99.8 ---- above_70 **—** 10th 99.7 **——** 50th 90 99.6 99.5 99.4 99.3 fed lar May In POL War month ΓERN **HORA** Australian Government

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







Cropping

12%100%

52°10°10°10

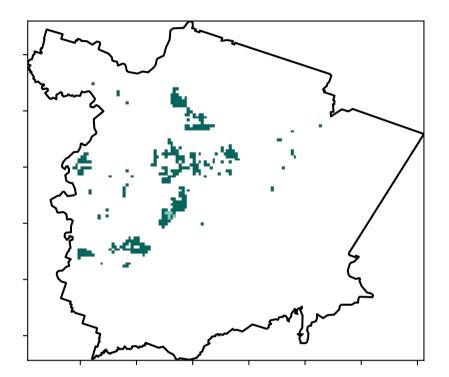
32005000

0.30%

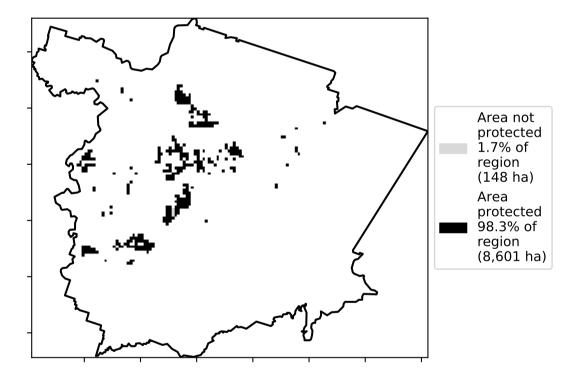
Landuse map of area based on 2015 catchment scale Australia's National Forest Inventory, where no forest is < Agriculture - Cropping - Non-irrigated 20% tree cover, sparse is 20 to 50% and dense > 50% tree

Total Vegetation Cover [%]

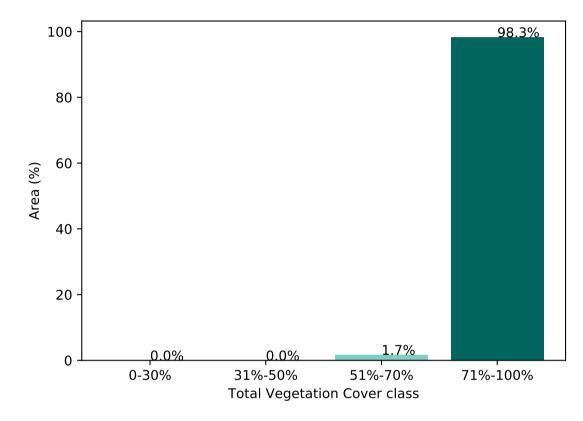
Land use and forest cover



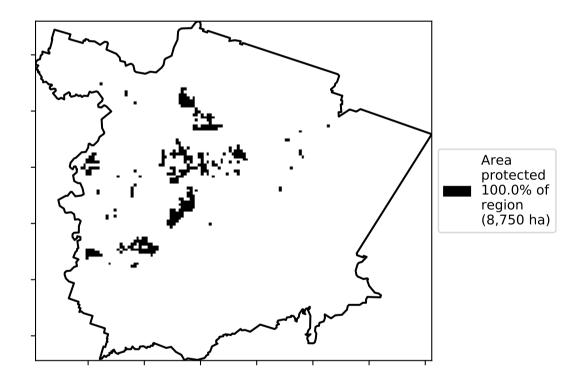
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



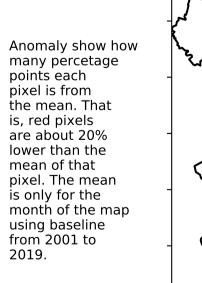
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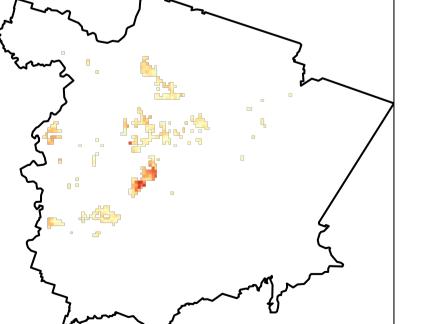
2.3

Total Vegetation Cover Anomaly [%]



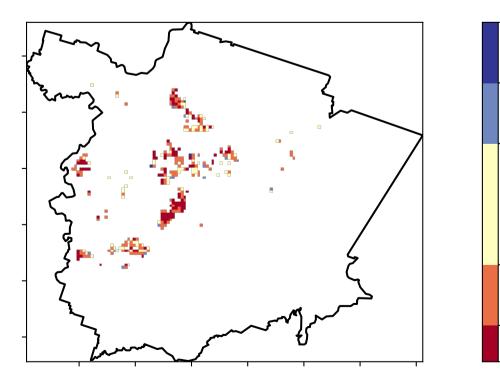
landuse and

cover.



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 [%]





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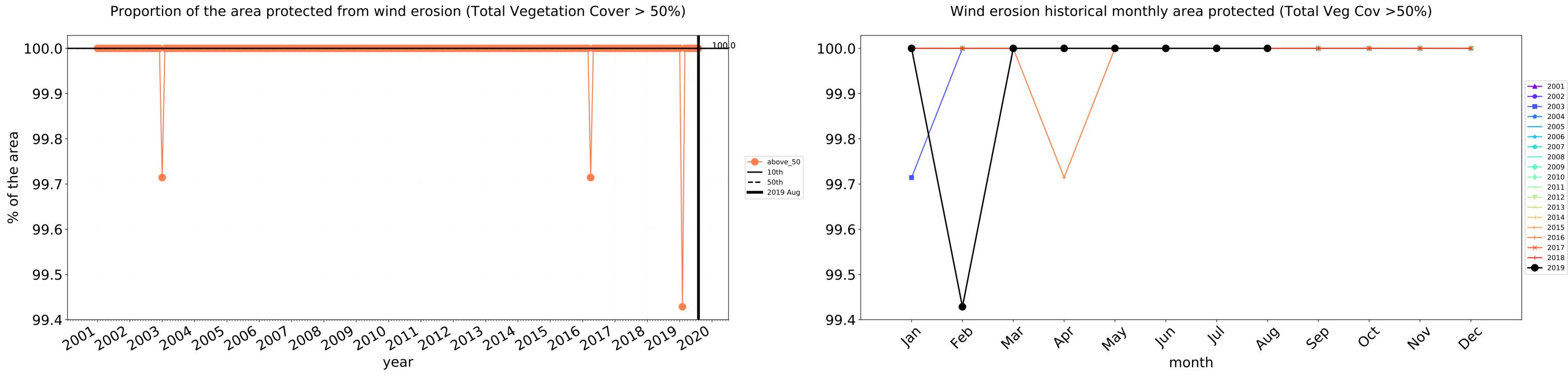
- 20

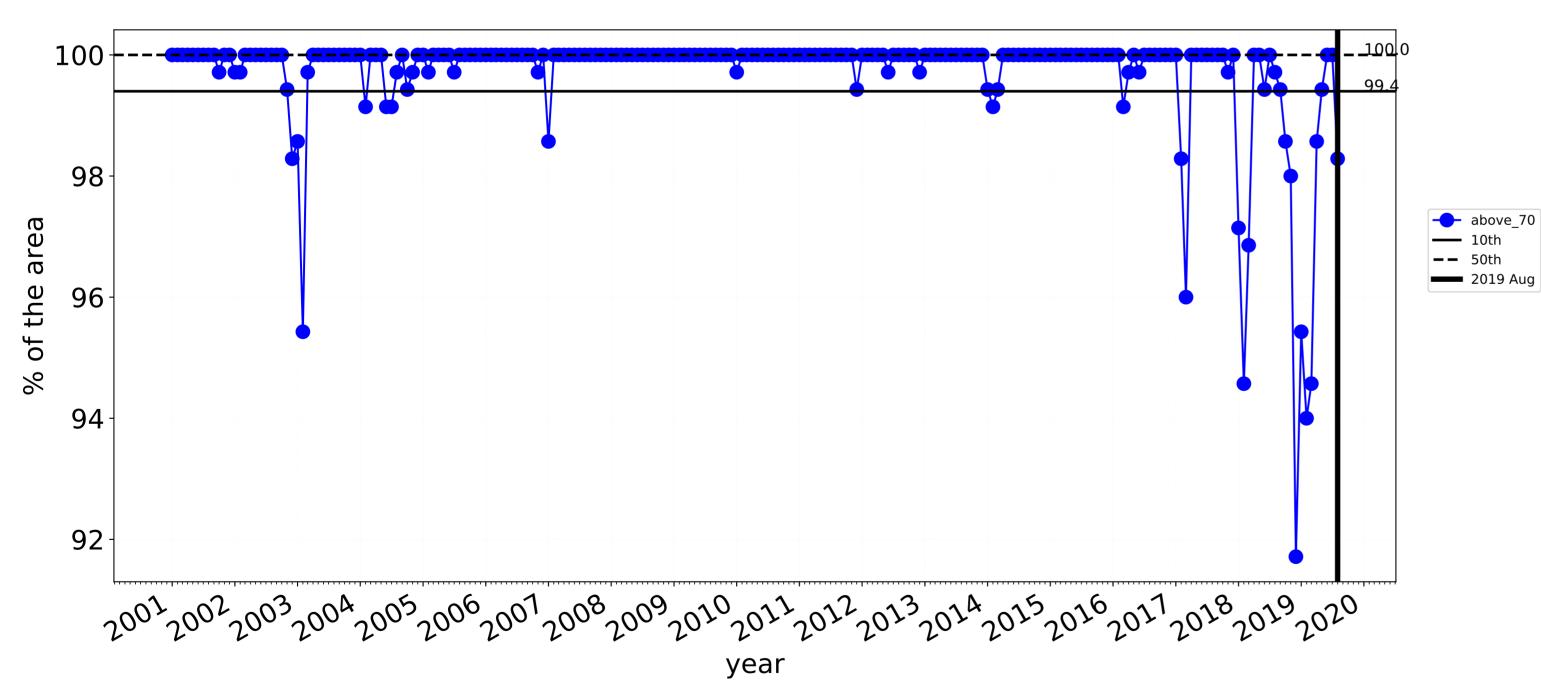
- 10

- 0

-10

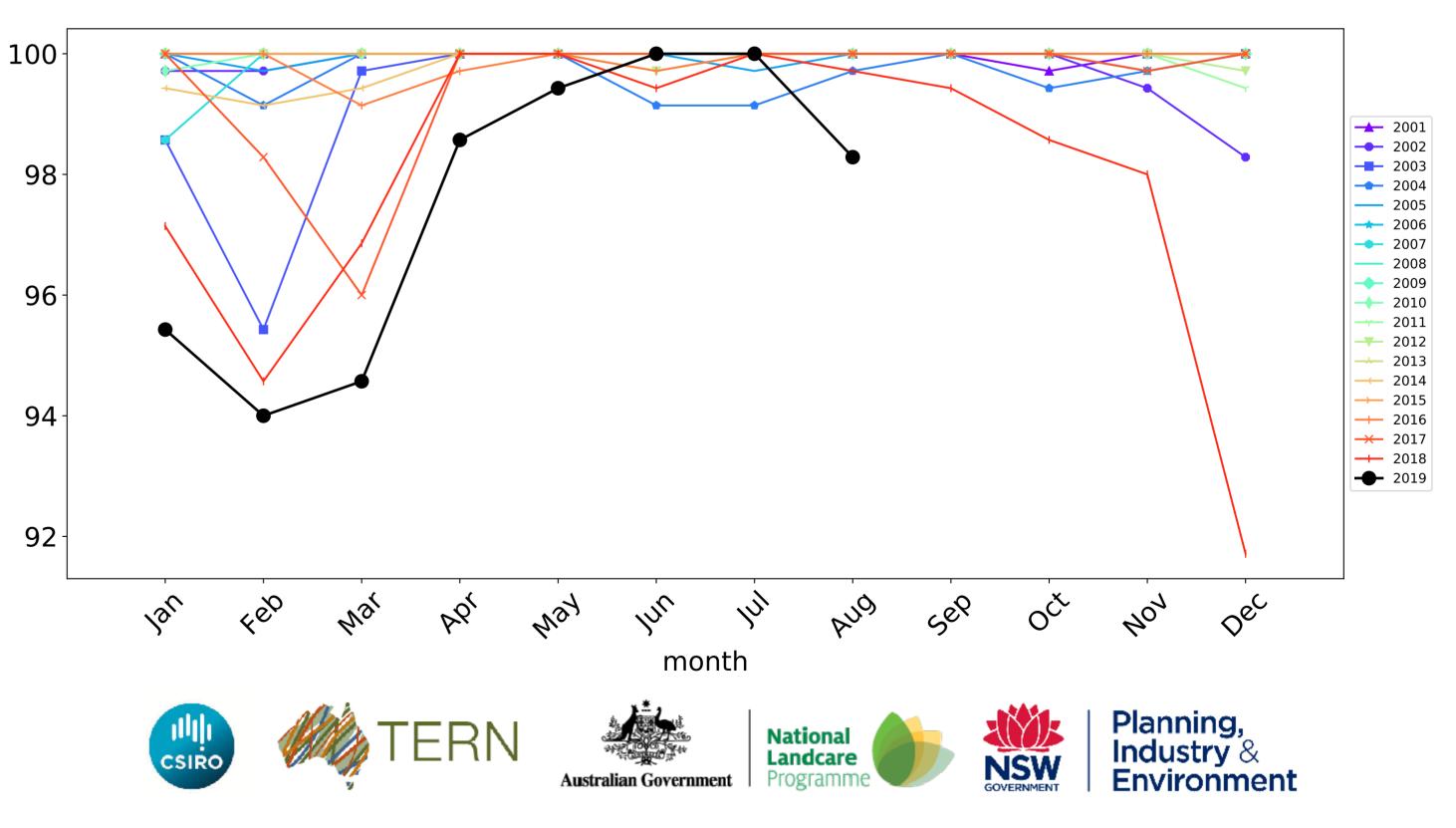
-20

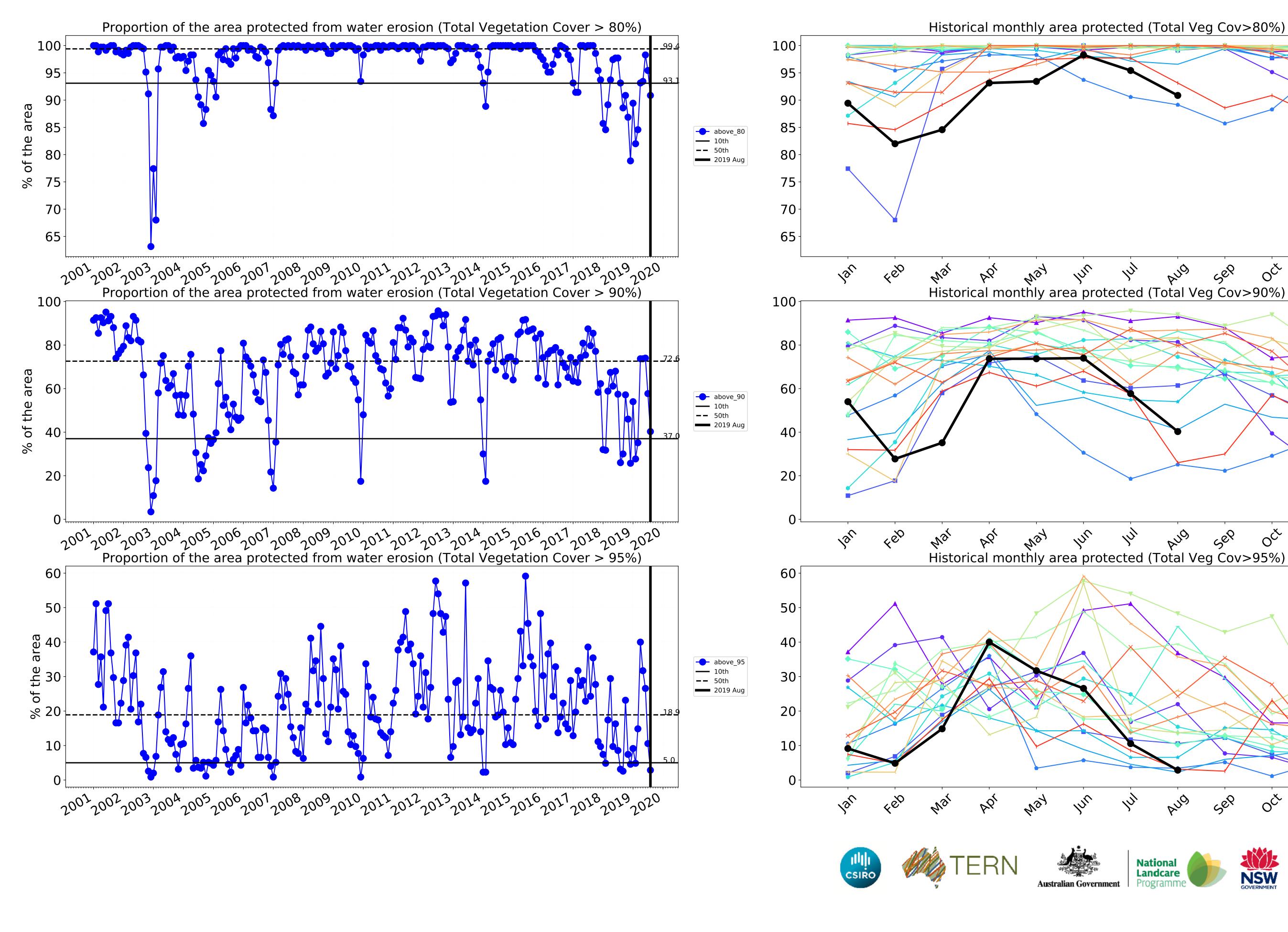


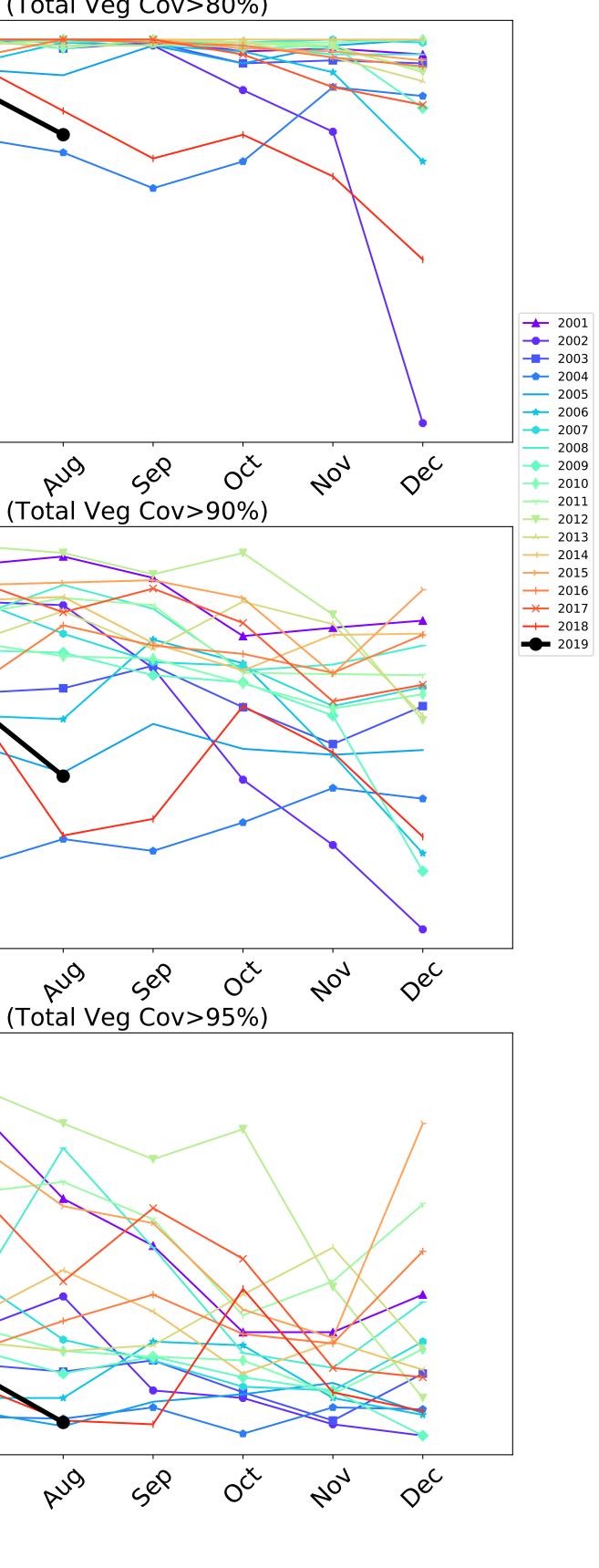


Cropping timeseries

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









Production native forests and plantation forests

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.

1200-200%

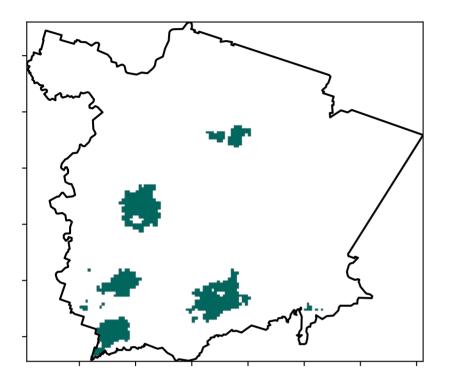
52°1070°10

· 32°10'50°10

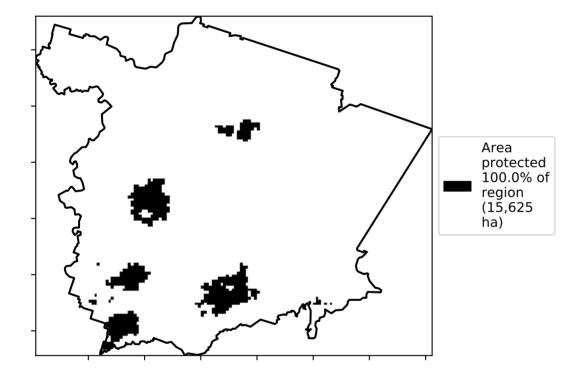
0.30%

Land use and forest cover

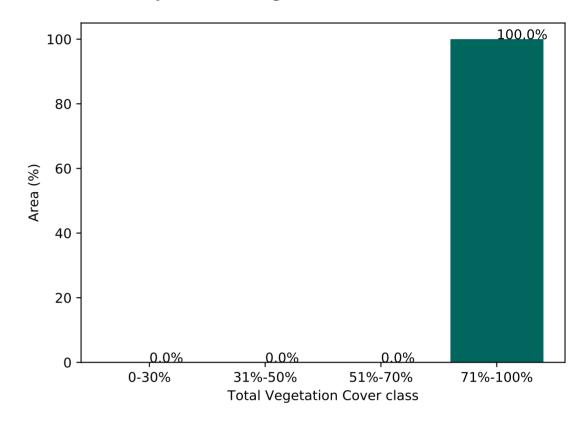
Total Vegetation Cover [%]



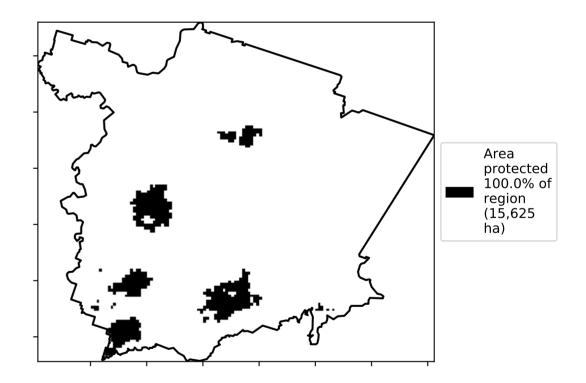
% Area protected from water erosion (>70%)







% Area protected from wind erosion (>50%)



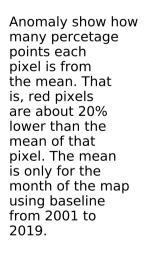
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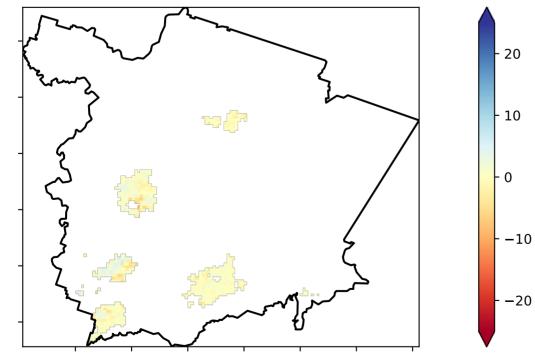
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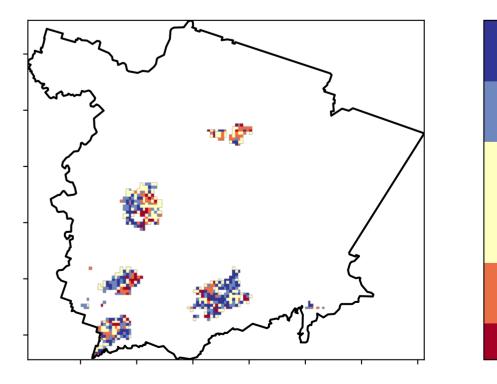
Total Vegetation Cover Anomaly [%]



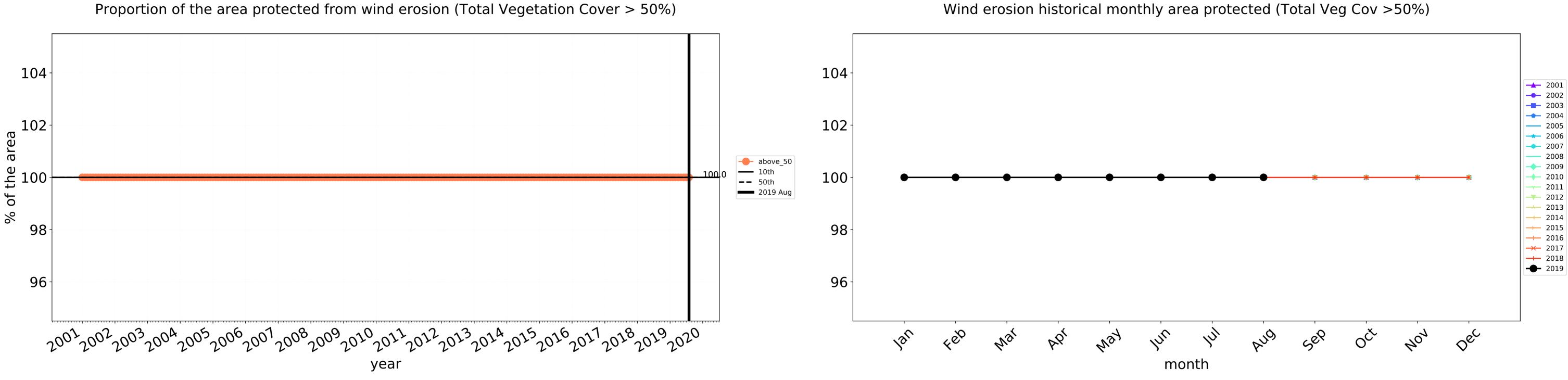


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

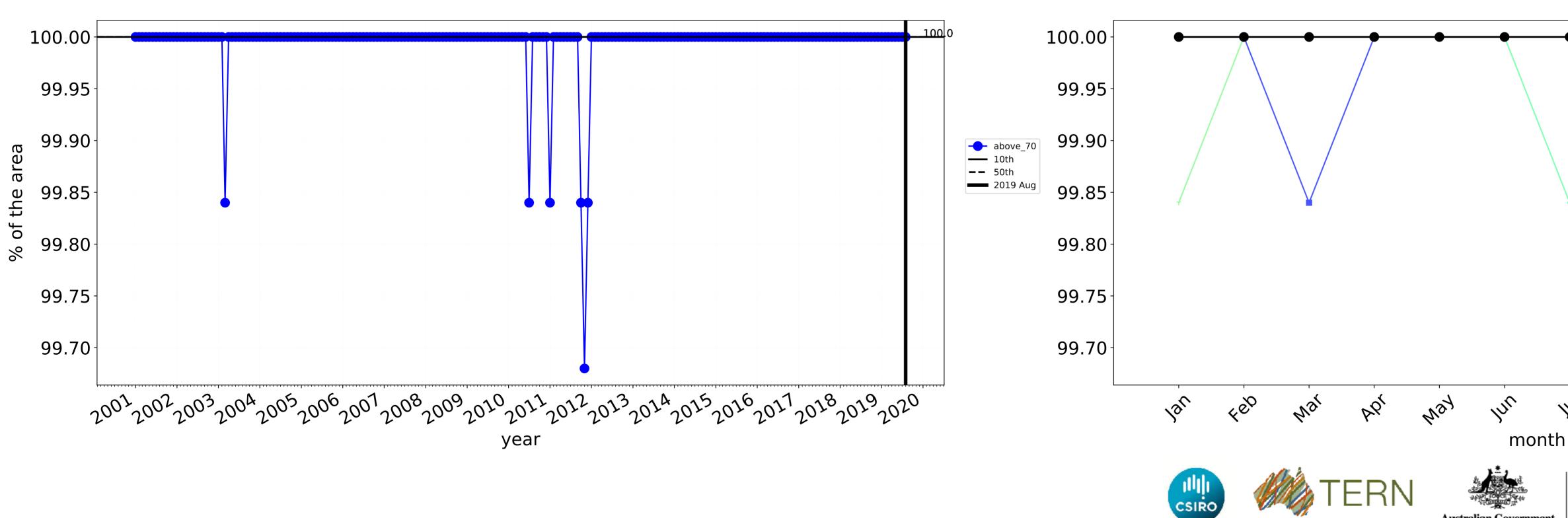
Total Vegetation Cover Decile [%]



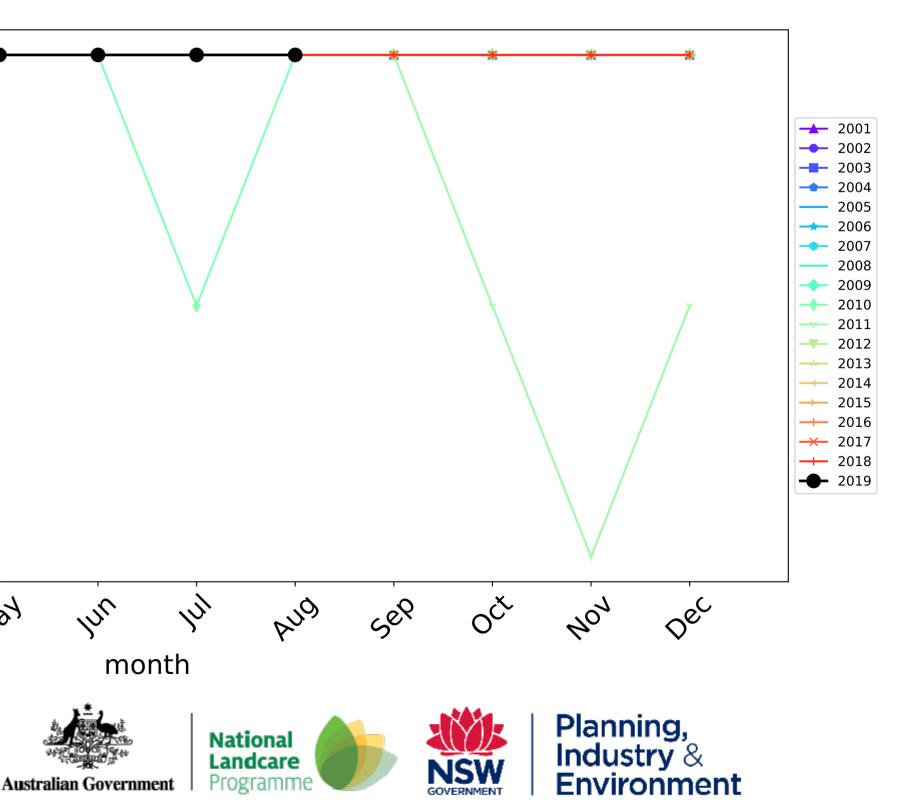


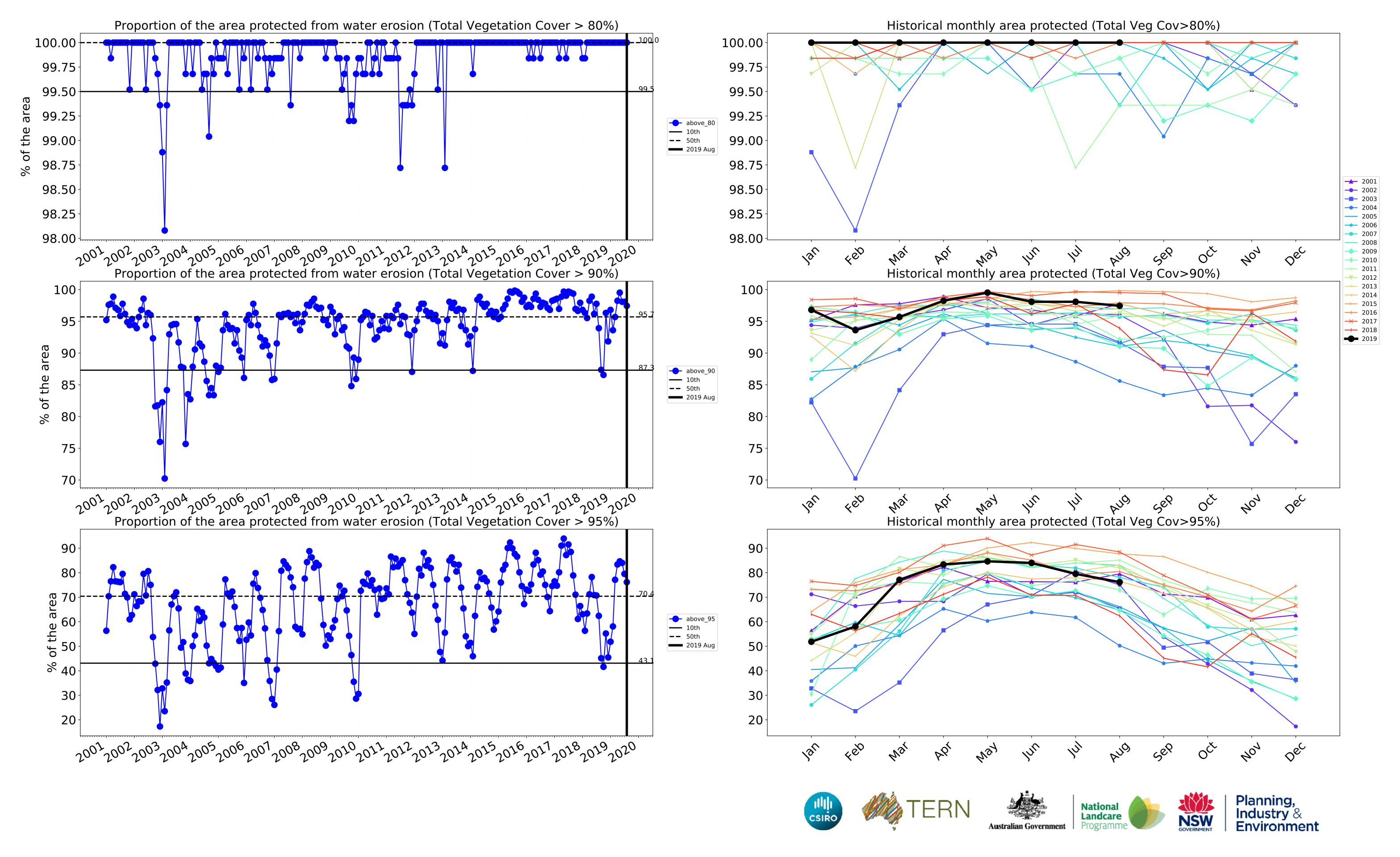


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



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





Wingecarribee_(A) (268,475 ha and no data 426 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	268,475	100.0% 268,475	100.0% 268,475	99.8% 267,825	98.4% 264,150	81.4% 218,450	45.8% 123,075
Conservation and natural environments	127,525	100.0% 127,525	100.0% 127,525	100.0% 127,525	99.9% 127,425	95.4% 121,658	69.4% 88,503
Conservation and natural environments Woodland forest	102,825	100.0% 102,825	100.0% 102,825	100.0% 102,825	99.9% 102,726	95.6% 98,331	71.7% 73,760
<u>Conservation and</u> natural environments Forest (non woodland)	23,894	100.0% 23,894	100.0% 23,894	100.0% 23,894	100.0% 23,894	95.0% 22,700	61.2% 14,620
Agriculture	101,215	100.0% 101,215	100.0% 101,215	99.7% 100,915	98.2% 99,343	70.0% 70,820	20.3% 20,562
Grazing	92,086	100.0% 92,086	100.0% 92,086	99.8% 91,937	98.8% 91,014	72.8% 67,063	22.0% 20,283
Grazing non forest	65,776	100.0% 65,776	100.0% 65,776	99.8% 65,626	98.6% 64,877	69.3% 45,556	14.1% 9,286
Grazing Woodland forest	19,598	100.0% 19,598	100.0% 19,598	100.0% 19,598	99.2% 19,448	78.3% 15,354	37.8% 7,415
Grazing - Forest (non woodland)	6,711	100.0% 6,711	100.0% 6,711	100.0% 6,711	99.6% 6,687	91.5% 6,142	53.1% 3,566
Cropping	8,859	100.0% 8,859	100.0% 8,859	98.3% 8,707	90.9% 8,049	40.3% 3,569	2.9% 253
Production native forests and plantation forests	15,571	100.0% 15,571	100.0% 15,571	100.0% 15,571	100.0% 15,571	97.4% 15,172	76.2% 11,859

