### [LGA Gympie\_(R) (QLD)] - total vegetation cover soil protection report [Sep 2019]

This report provides information about vegetation covering the soil surface for a region during a single month with comparison to previous years. The total vegetation cover indicates where soil is likely to be protected from wind (>=50% total vegetation cover) and water/hillslope (>=70% total vegetation cover) erosion. Results are shown for the whole region (polygon) and also separated by land use and forest cover class. This is because different land use / forest cover classes are likely to have different cover patterns and targets. [Gympie (R)]

The six maps and two graphs provide a report for the month with:

- Land use and forest cover information for the area:
  - o Map: Land use and forest cover
  - o Chart: Land use and forest cover area
- Total vegetation cover for this month:
  - o Map: total vegetation cover classified into 4 classes
  - o Chart: total vegetation cover percentage area classified into 4 classes
- Areas protected from erosion for the month:
  - o Map: water erosion protection (>70% cover) percentage area and hectares
  - o Map: wind erosion protection (>50% cover) percentage area and hectares
- Comparison with previous years:
  - o Map: anomaly compare this month to the average cover from the same month in previous years
  - o Map: deciles rank this month against the same month in previous years
- Time series from January 2001 to current:
  - o Wind erosion protection time series: percentage of the area of the region with greater than 50% cover for each month since January 2001 (orange line): Horizontal lines are 10th (cover target) and 50th percentiles. Vertical line is month of report.
  - o Water erosion protection time series: percentage of the area of the region with greater than 70% cover for each month since January 2001 (blue line): Horizontal lines are 10th (cover target) and 50th percentiles. Vertical line is month of report.
  - o Rainfall: millimetres rainfall each month (black line). Vertical line is month of report.
- Time series for each month stacked by year
  - o Same data as time series from January 2001 to current month, grouped by month. Black line is current year of data.
- Water erosion protection on higher slopes. As slope increases, more cover is required to control water erosion. The thresholds reported are:
  - o the percentage area with pixels greater than 80% total clover
  - o the percentage area with pixels greater than 90% total clover
  - o the percentage area with pixels greater than 95% total clover
- The following pages repeat the above sequence for each land use and forest cover class. For example
- All agricultural lands, that is grazing, cropping plus Horticulture (depending on what land use is present)
- Grazing lands by forest classes if present
- Cropping lands
- Irrigation lands
- Protected areas by forest classes if present

The following pages repeat the above sequence for each land use and forest cover class if 1% or more of area makes up a land use and forest cover class. Four land uses are reported: Conservation and natural environments, Agriculture, production native forests and plantation forests, and other. Agriculture is further divided into grazing,

crops and horticulture are then divided into non-irrigated and irrigated. Land use is further divided by forest class if present: non-forest, woodland forest and non-woodland forest.

Explanatory notes:

This report has been generated using MODIS fractional vegetation cover information available in Rangelands and Pasture Productivity (RAPP) map tool. The report is based on an analysis of 500 metre pixel data on monthly time steps. Report uses baseline from January 2001 to September 2019 for each month to generate anomalies and deciles. Post September 2019 all similar months are used to calculate anomalies and deciles.

#### Acknowledgment of data:

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

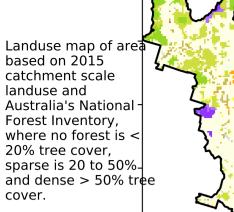
https://doi.org/10.4225/08/5848a3f19a7b3

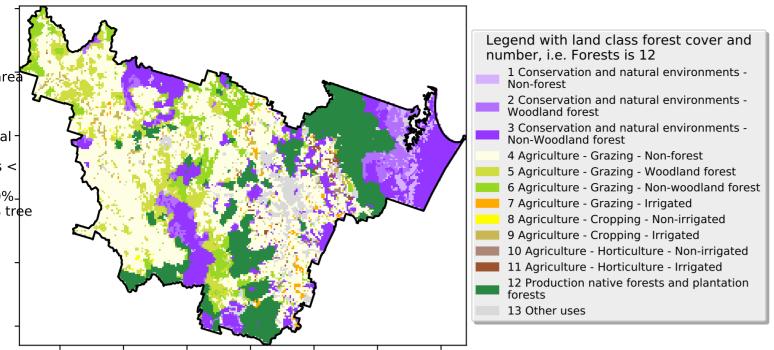


## **Vegetation Cover Sep 2019**

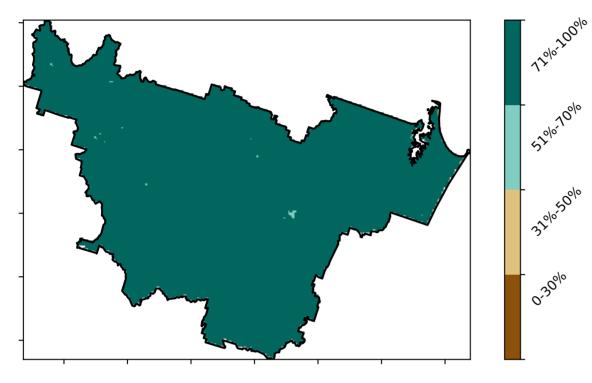
#### Land use and forest cover

#### Proportion of each land class in area

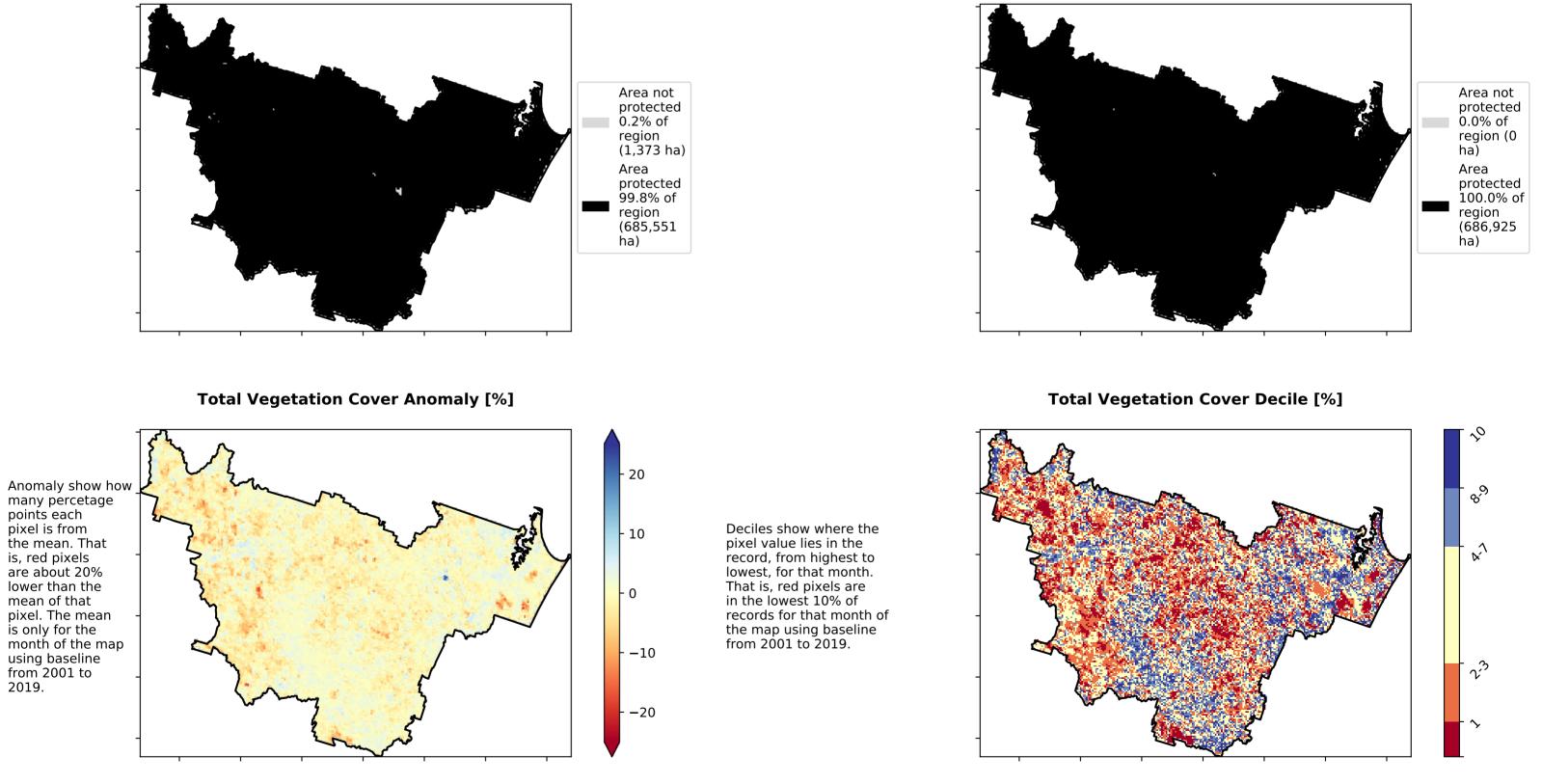


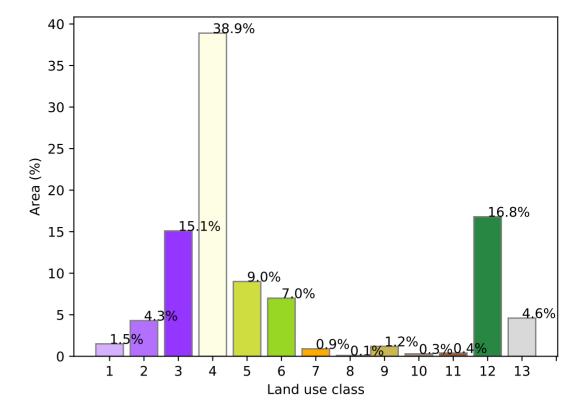


**Total Vegetation Cover [%]** 

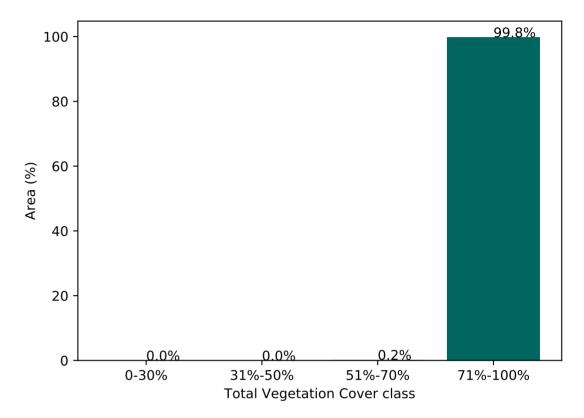


% Area protected from water erosion (>70%)

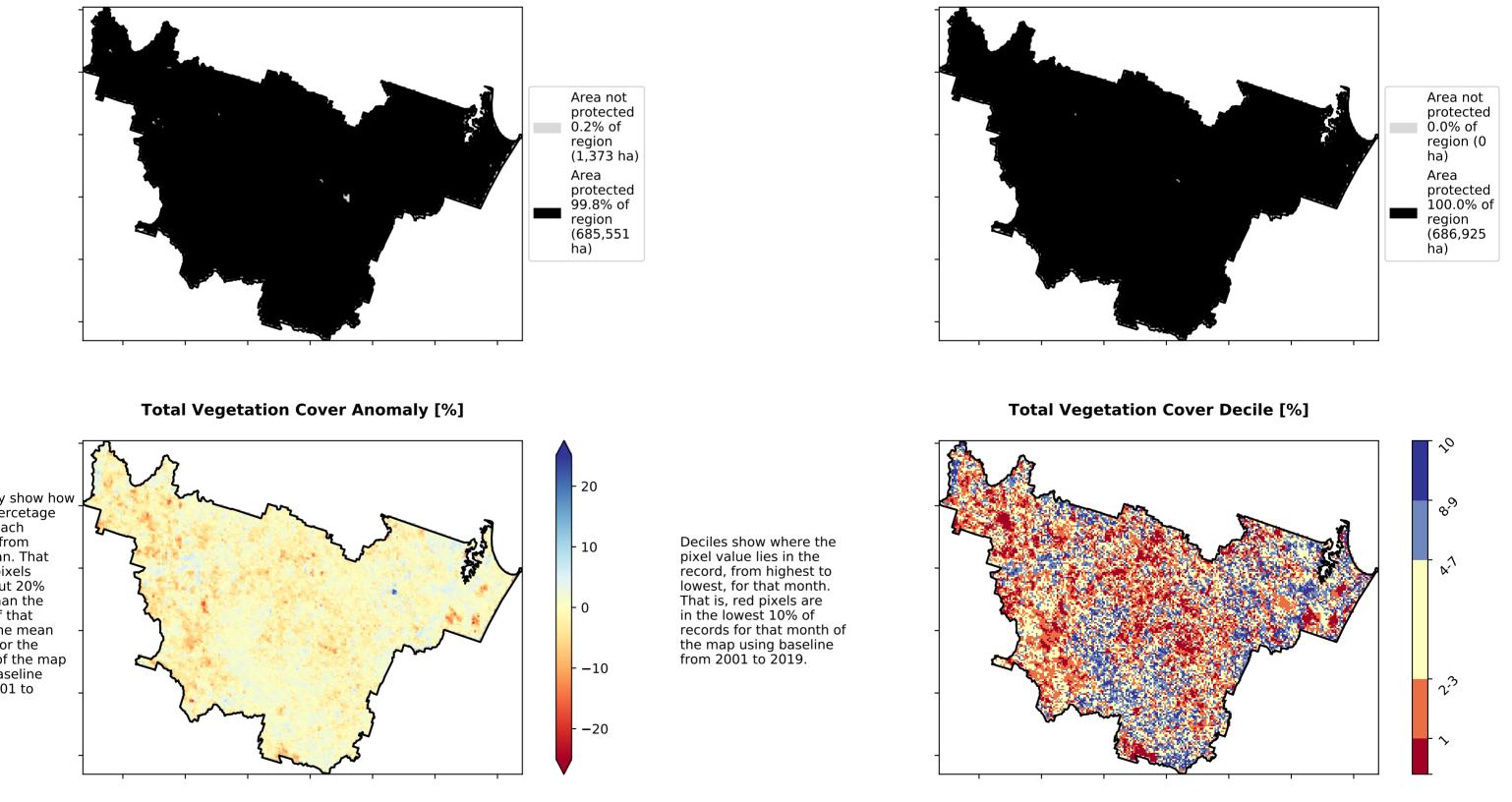




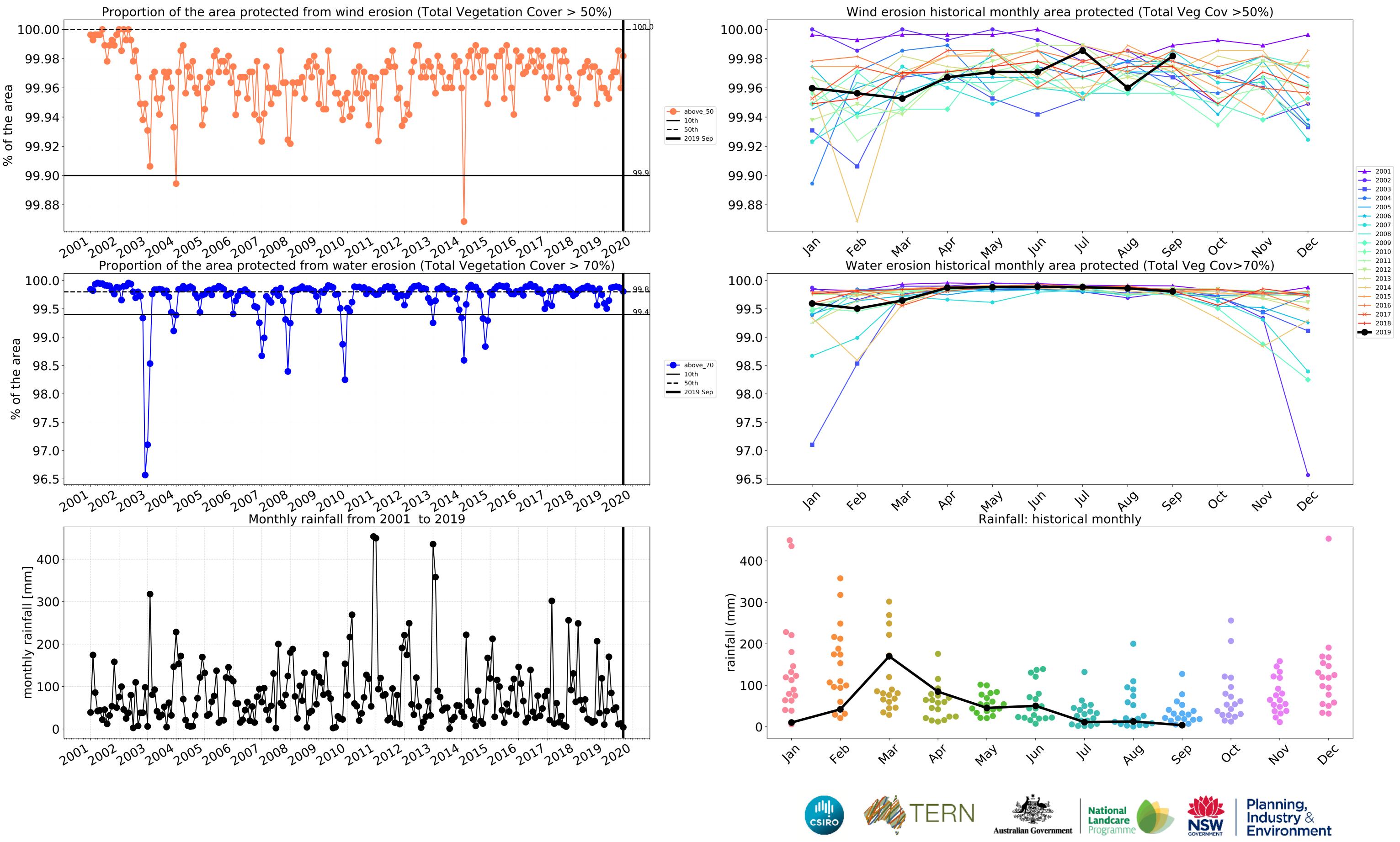
#### Proportion of vegetation cover class in area

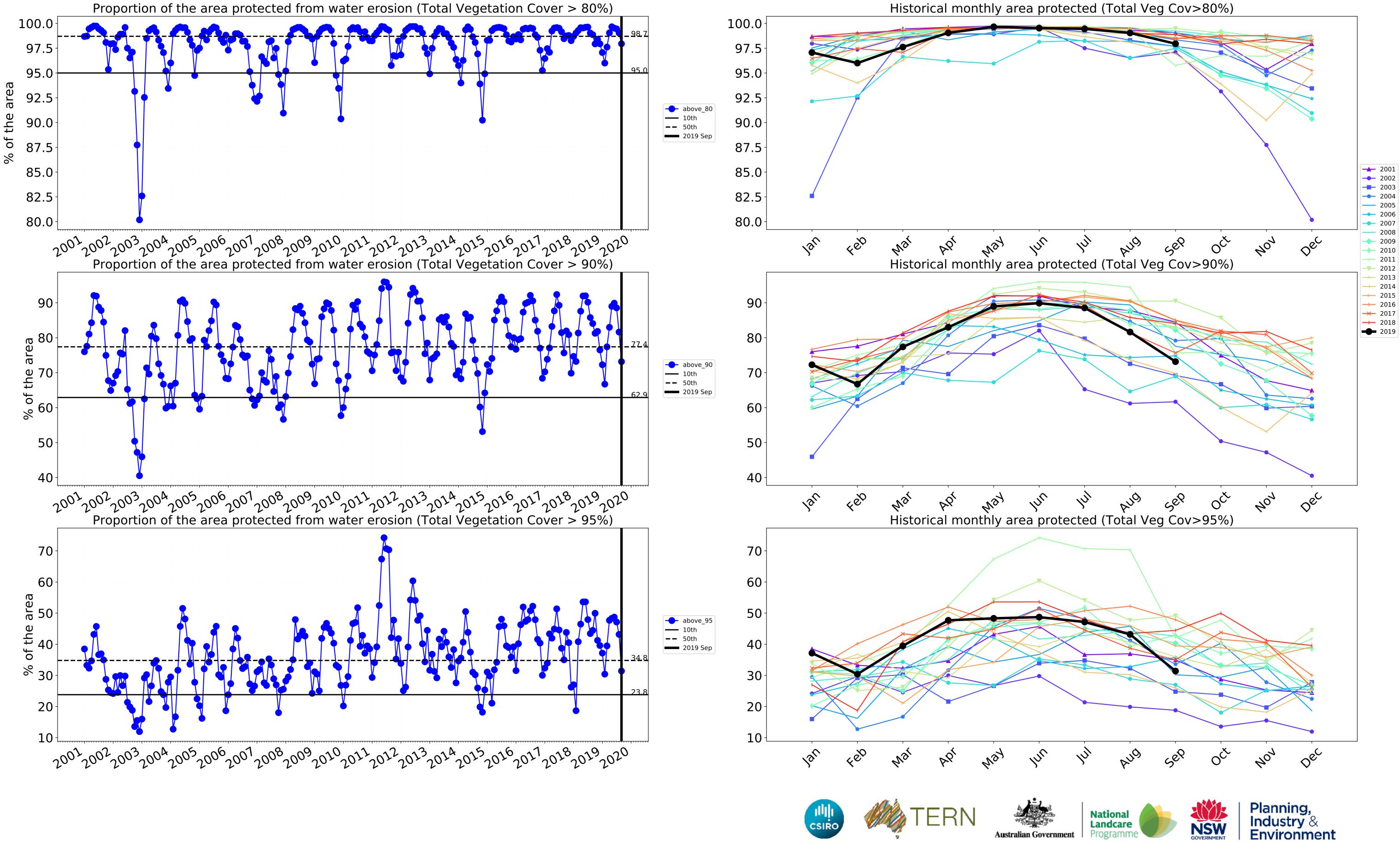


% Area protected from wind erosion (>50%)

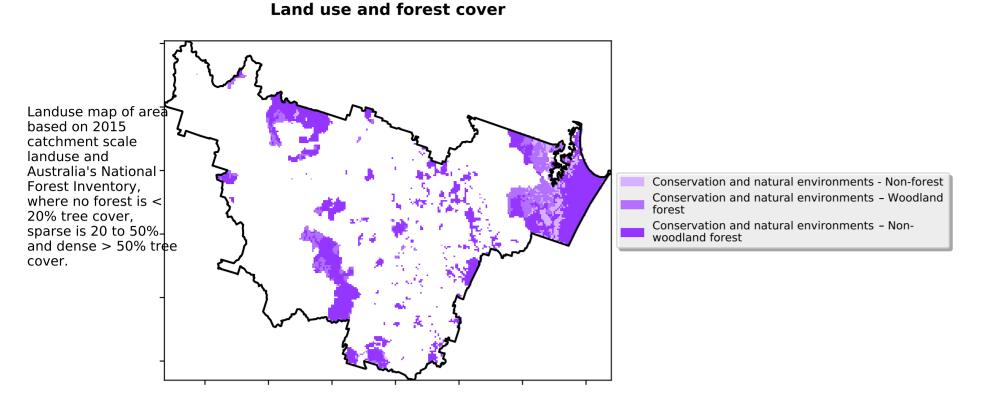




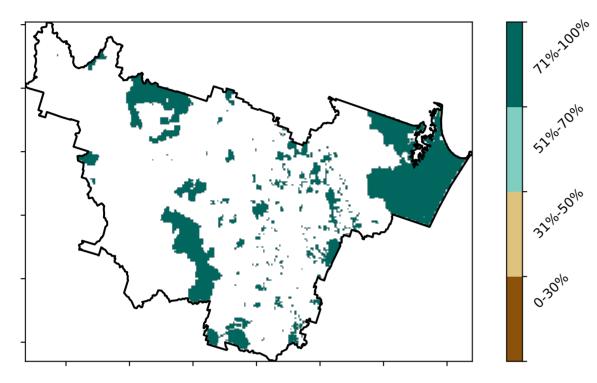




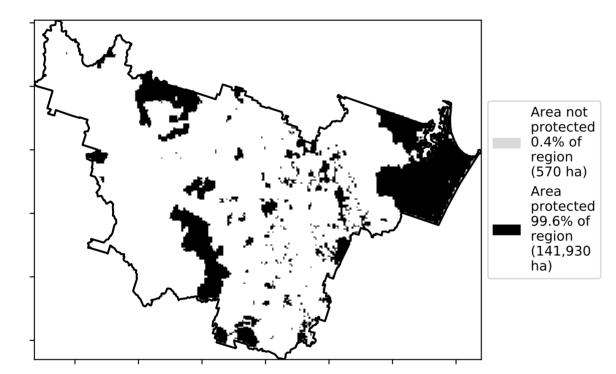
#### **Conservation and natural environments**



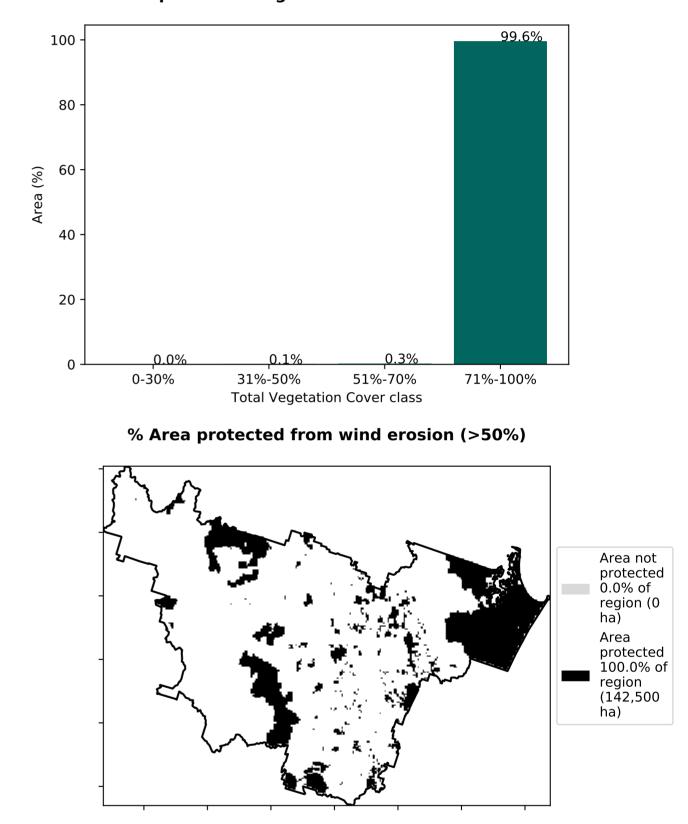
**Total Vegetation Cover [%]** 



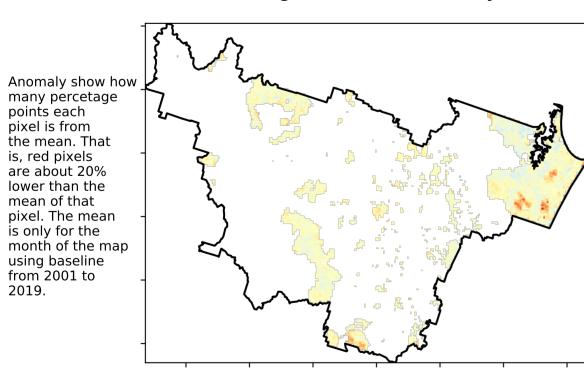
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



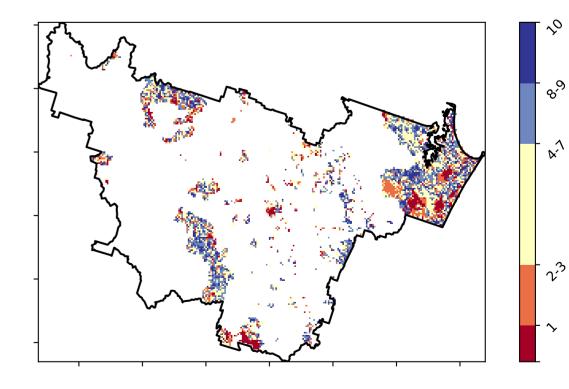
Total Vegetation Cover Anomaly [%]



- 10 - 0 - -10

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**Total Vegetation Cover Decile [%]** 





Deciles show where the

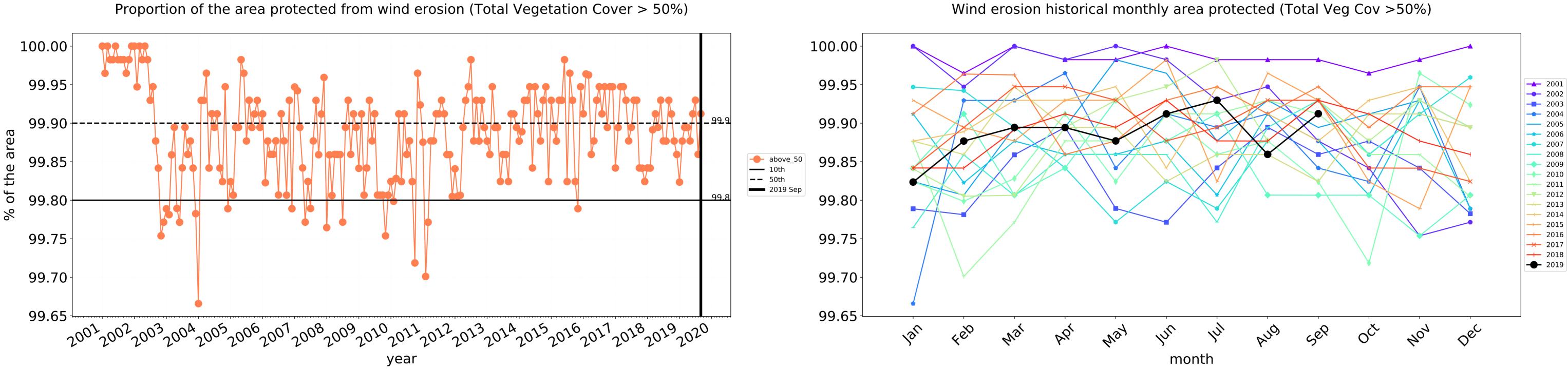
pixel value lies in the

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

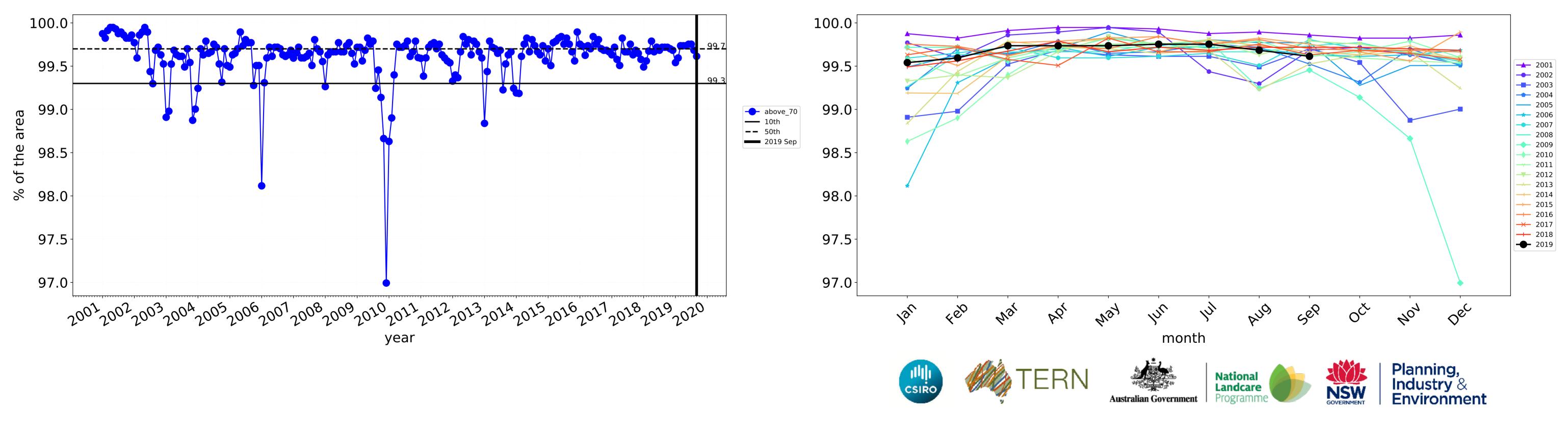
records for that month of

the map using baseline from 2001 to 2019.

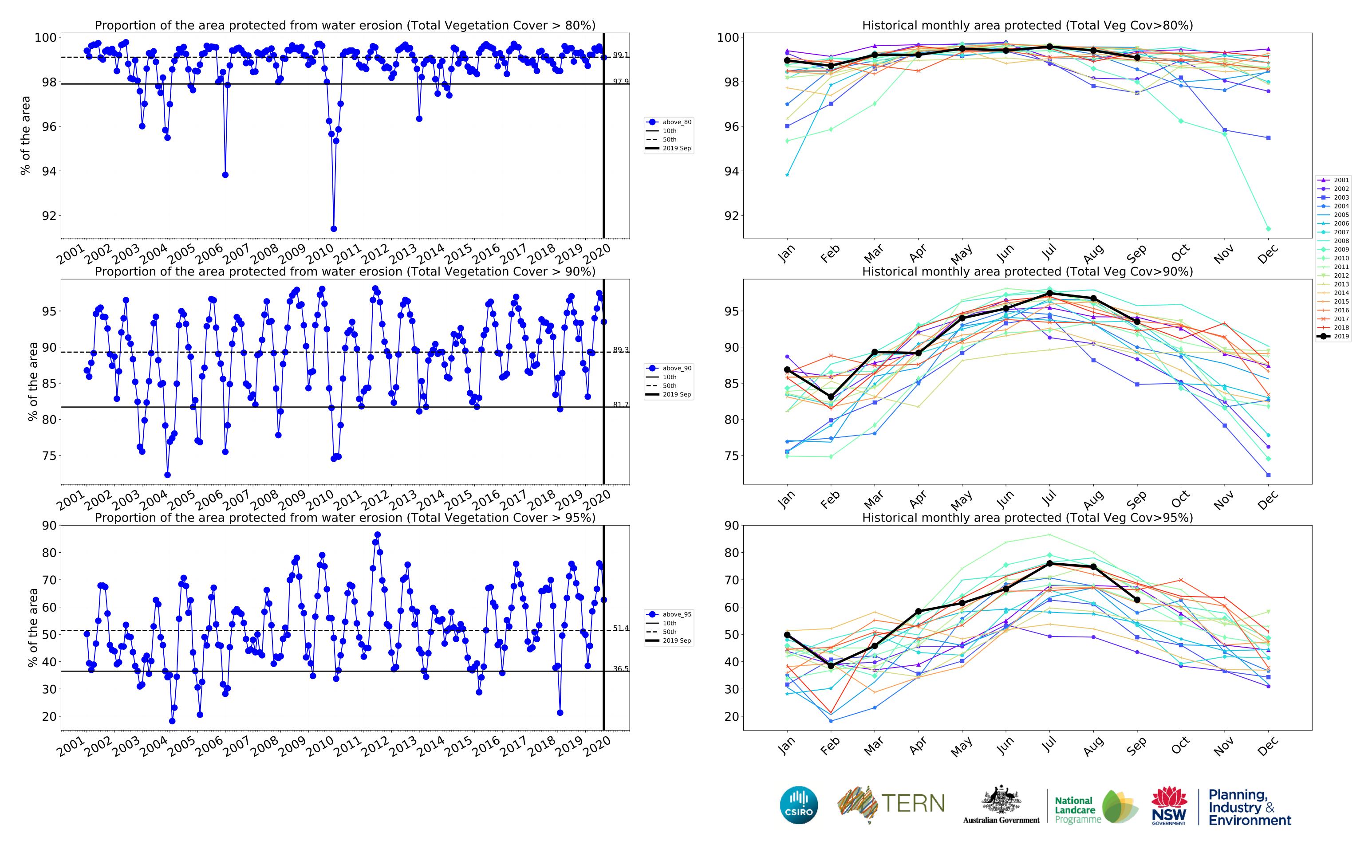
in the lowest 10% of



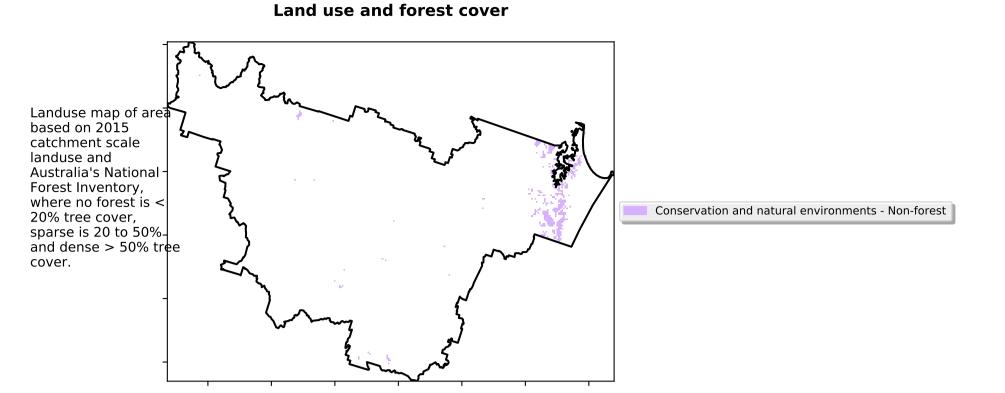
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



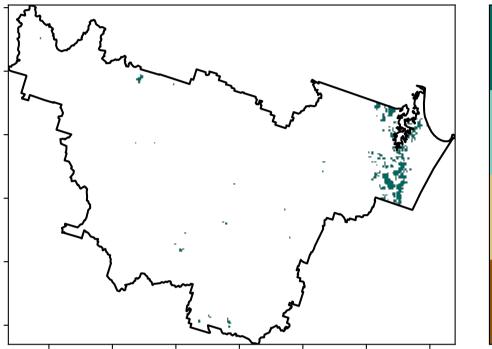


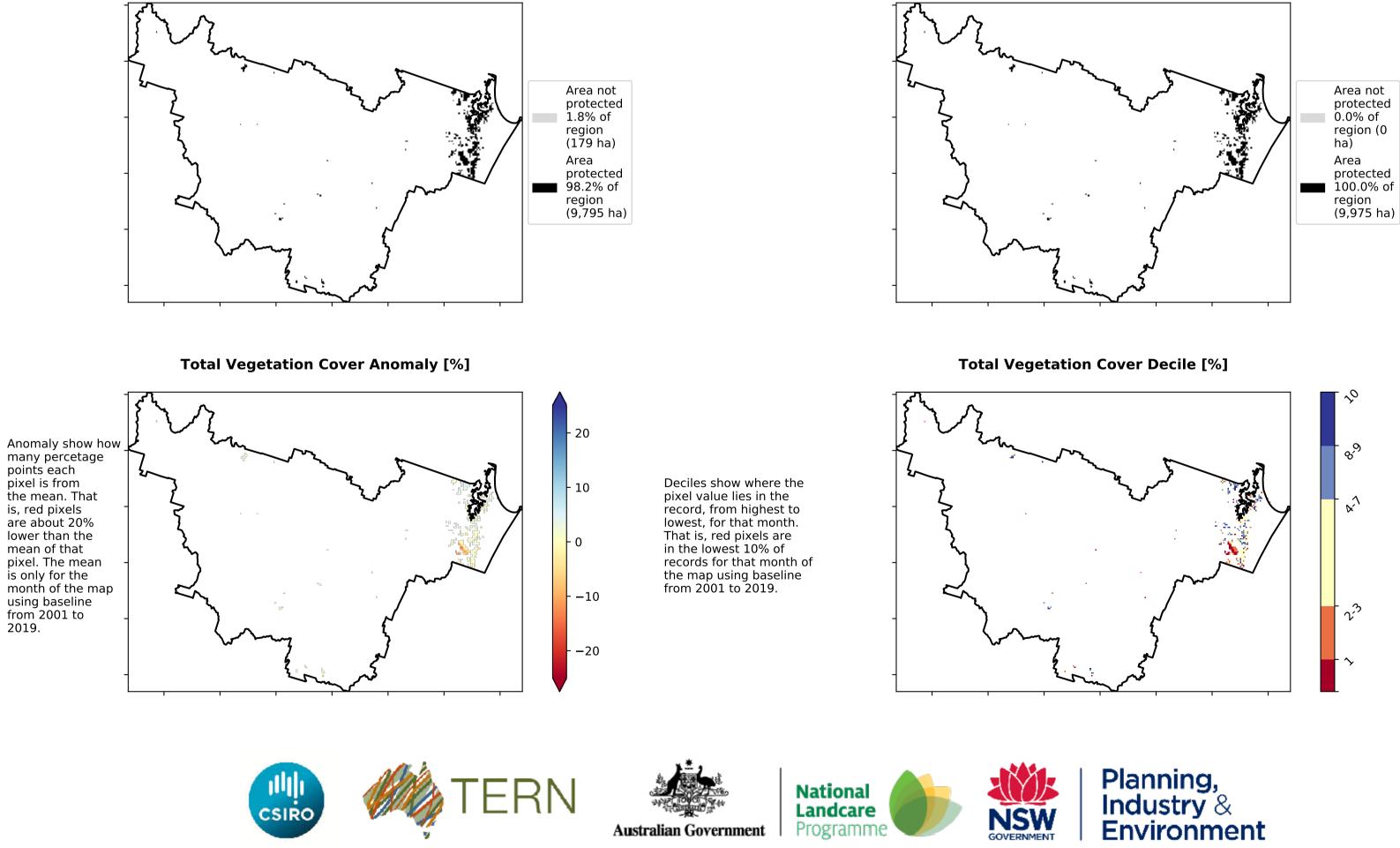


#### **Conservation and natural environments non forest**

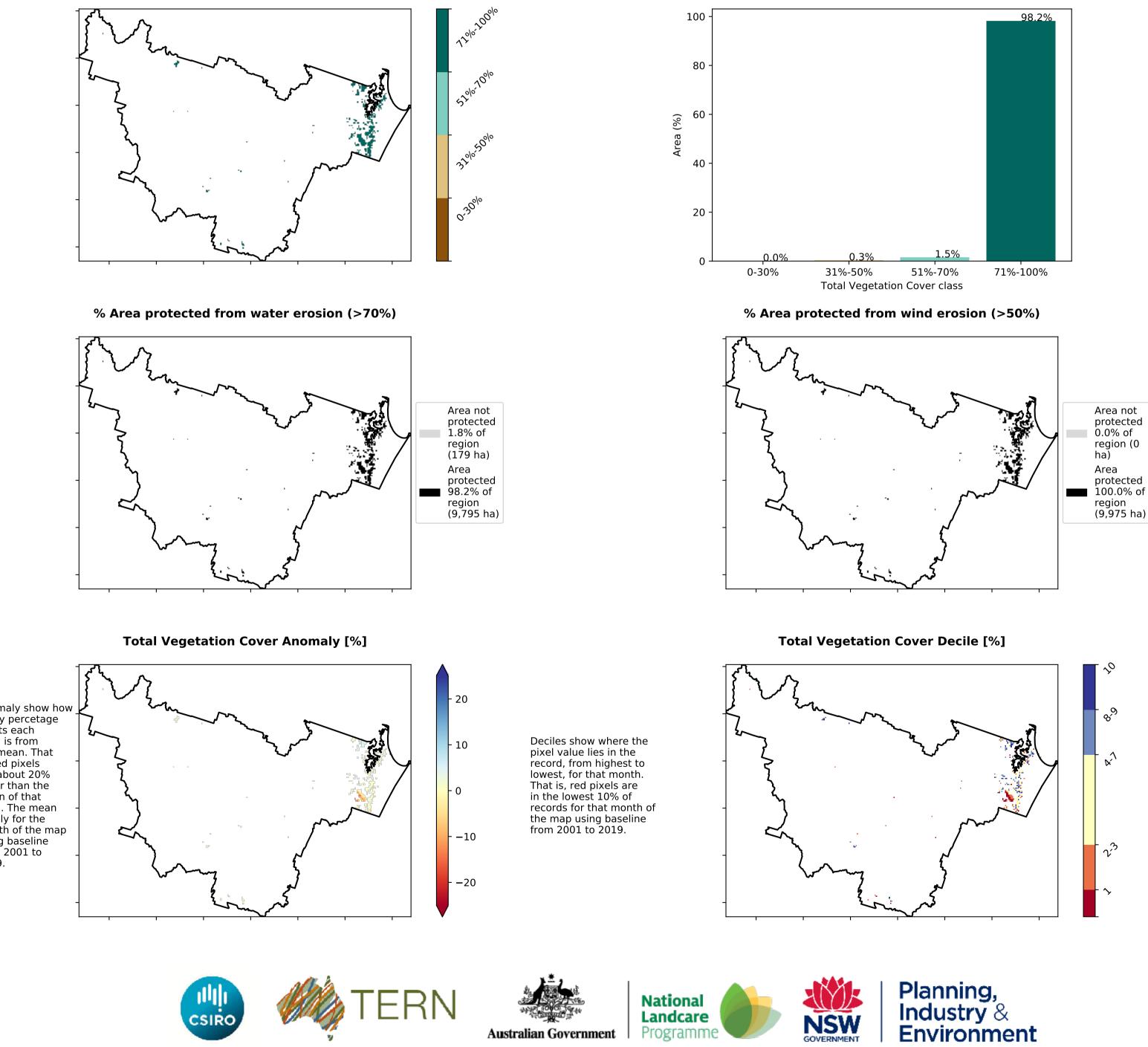


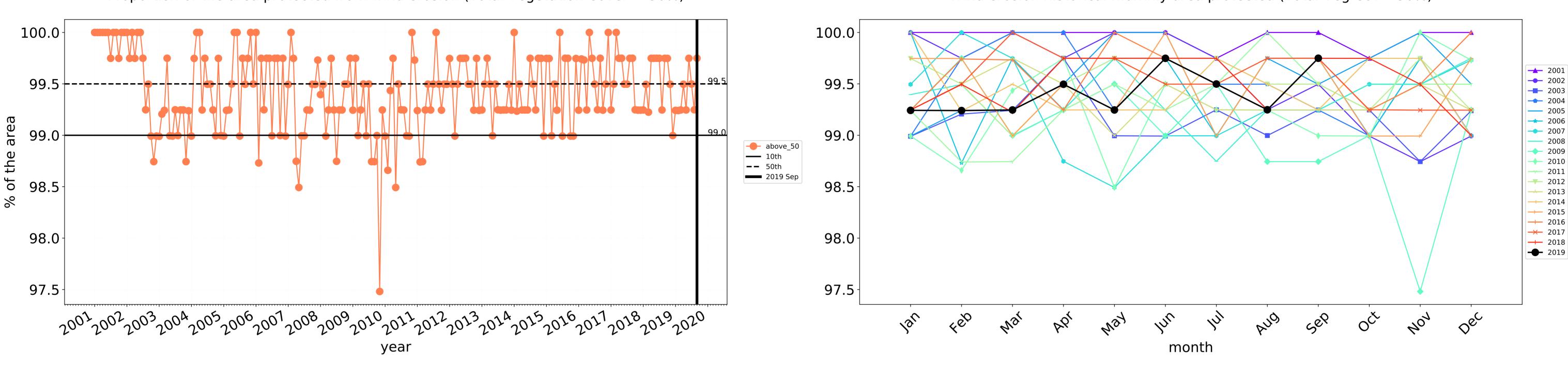
**Total Vegetation Cover [%]** 



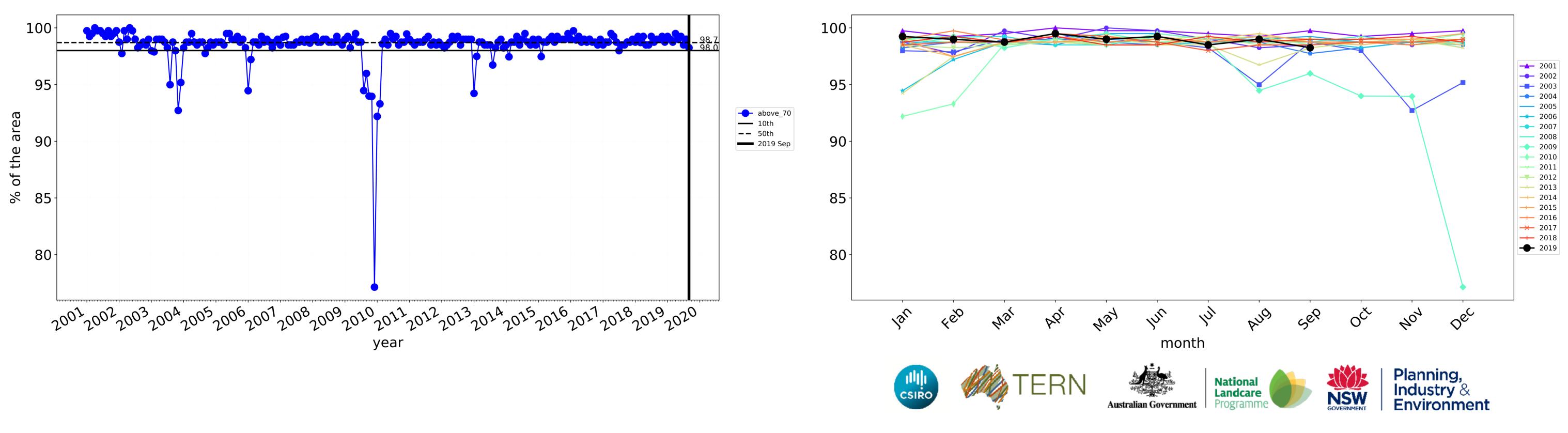


Proportion of vegetation cover class in area



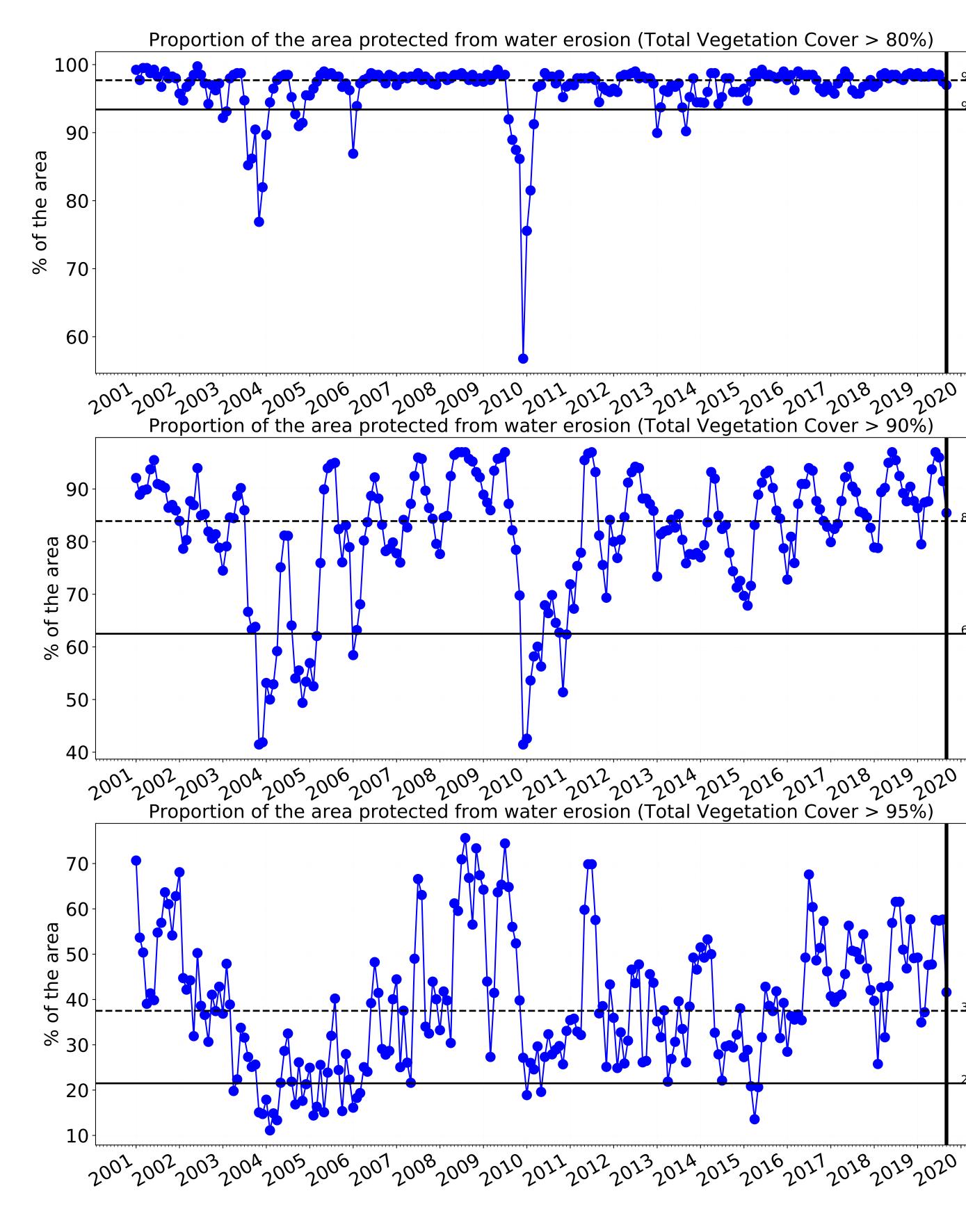


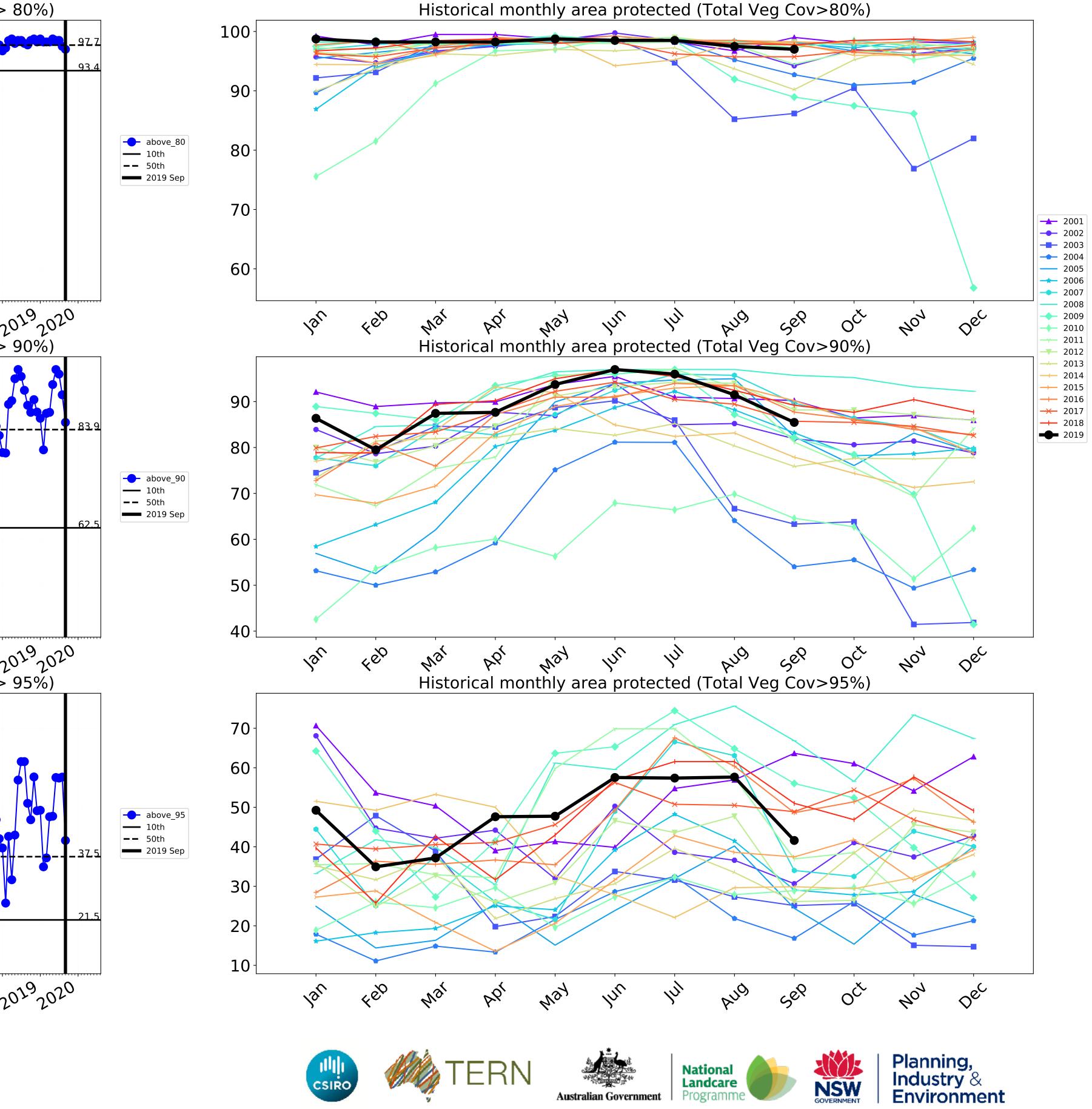
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



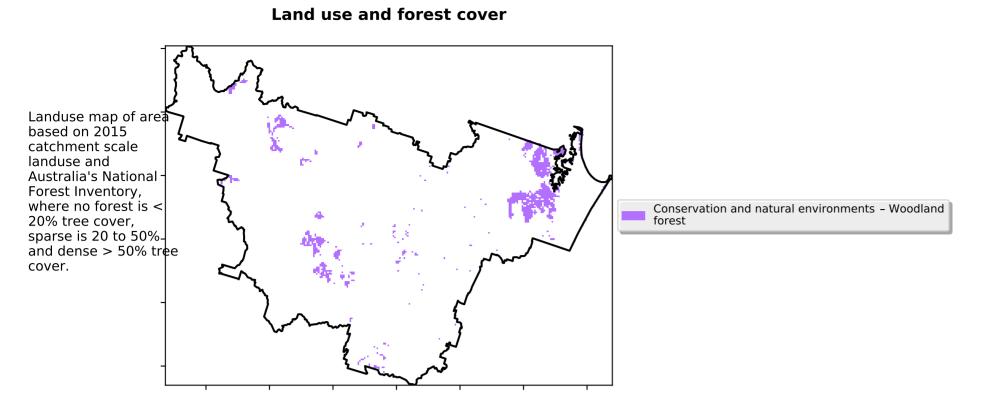
Water erosion historical monthly area protected (Total Veg Cov>70%)

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

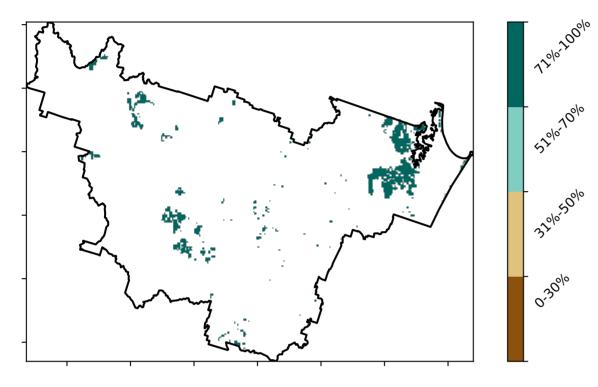




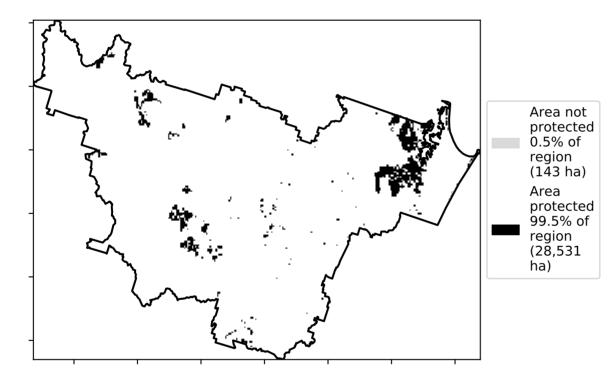
#### **Conservation and natural environments Woodland forest**



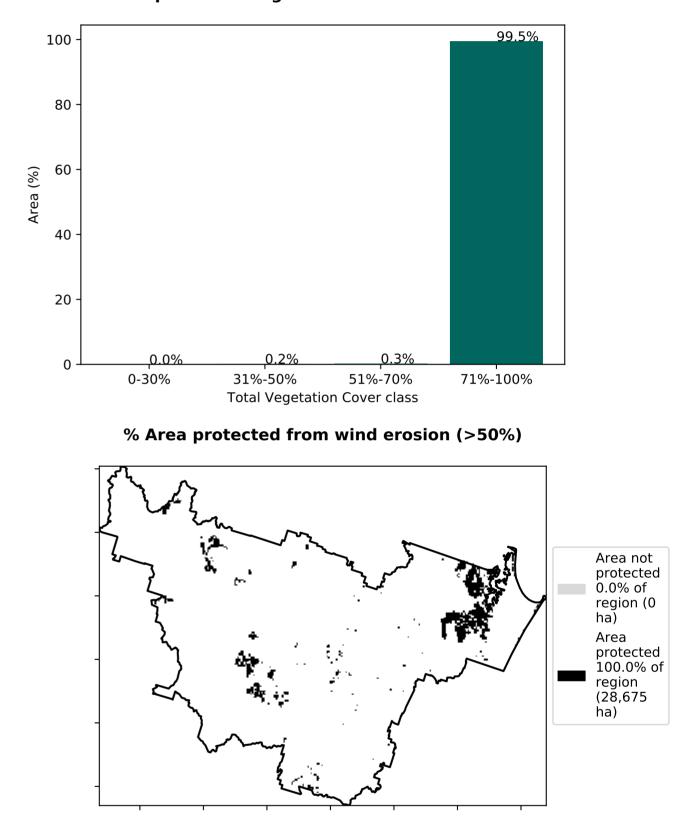
Total Vegetation Cover [%]



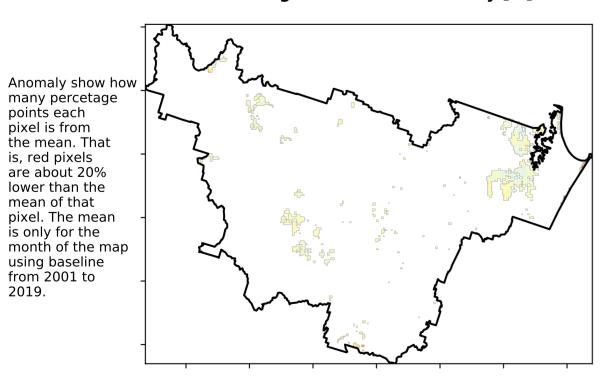
% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



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.

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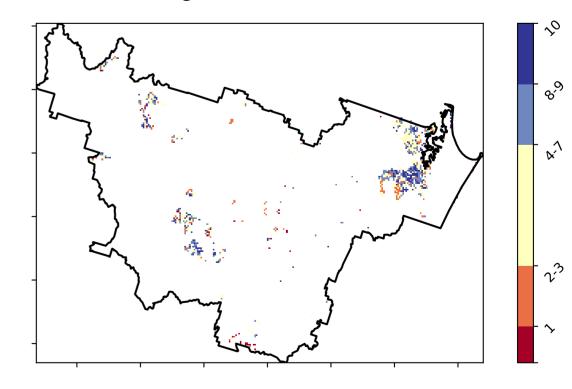
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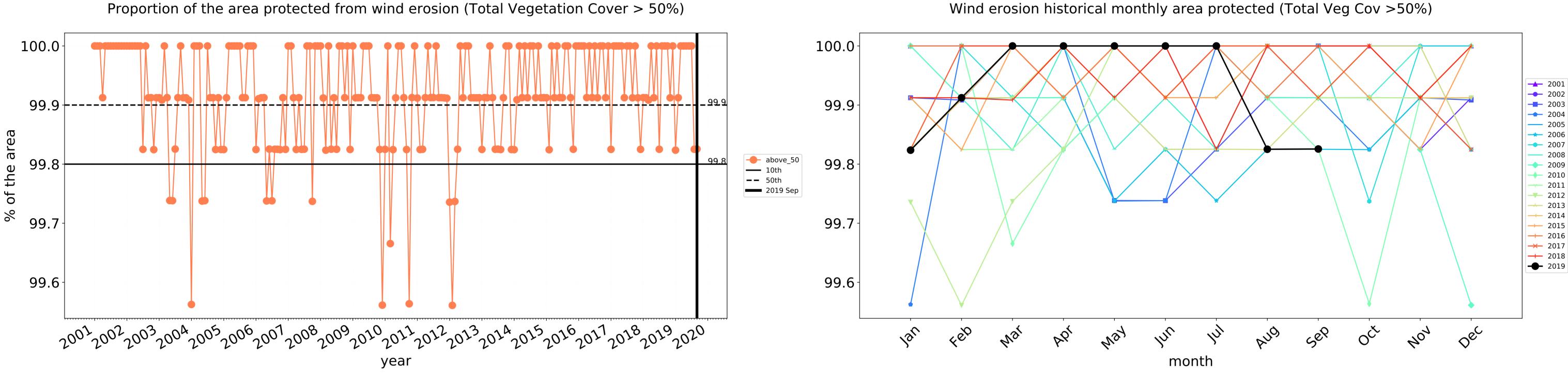
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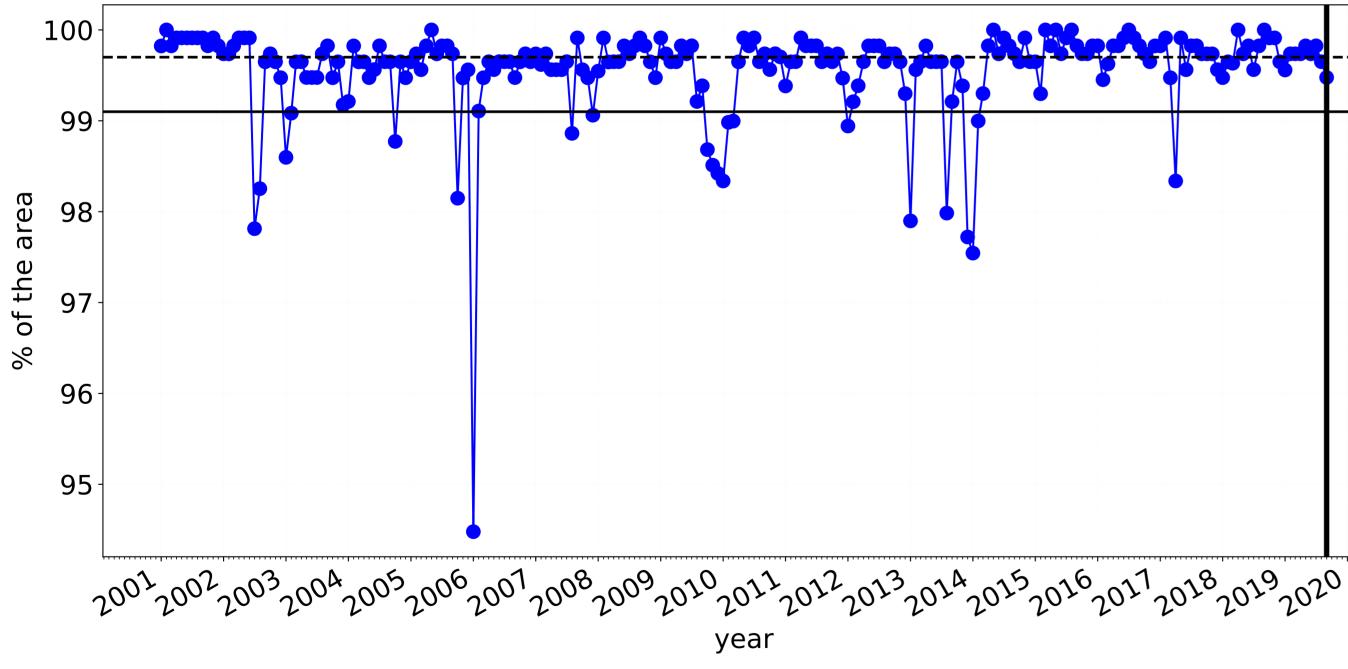
**Total Vegetation Cover Decile [%]** 





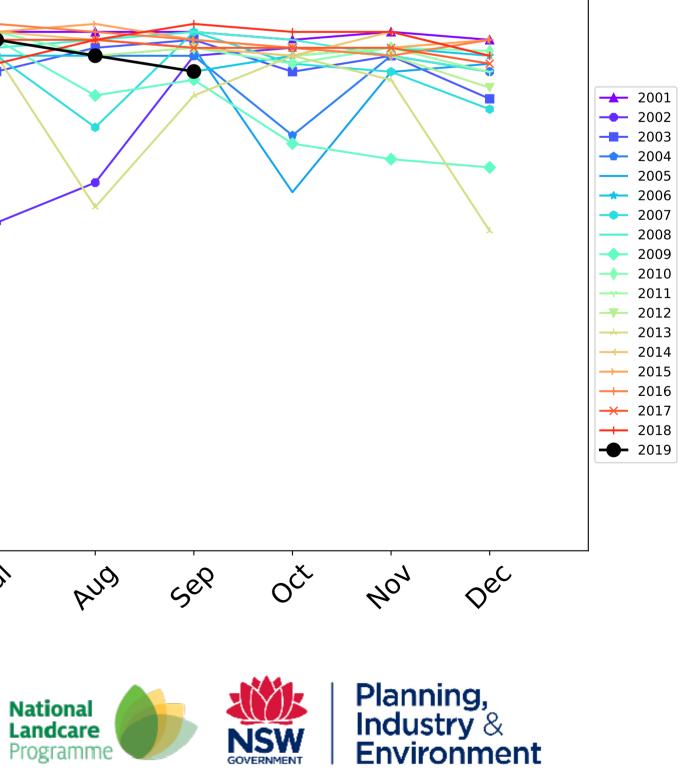


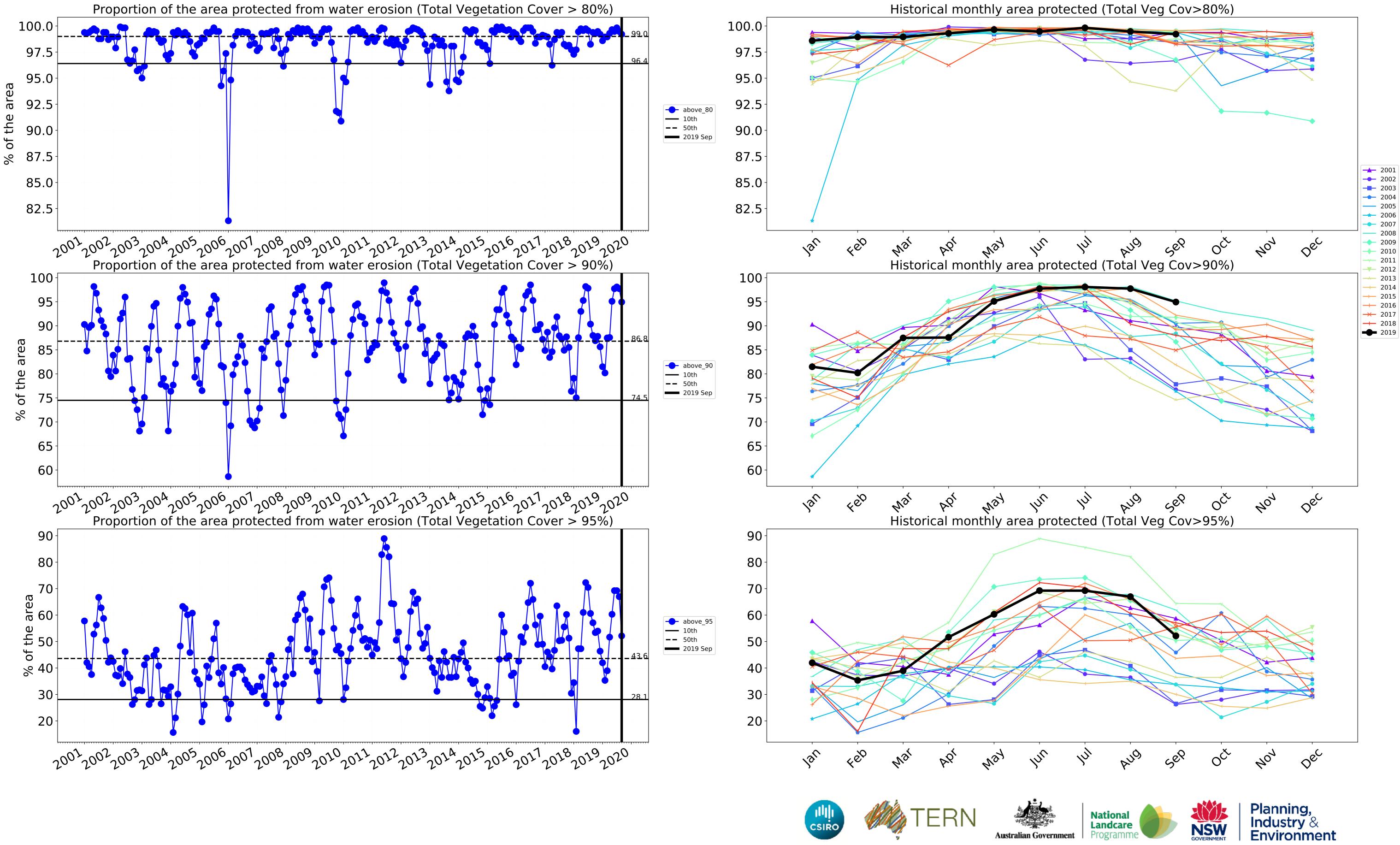
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



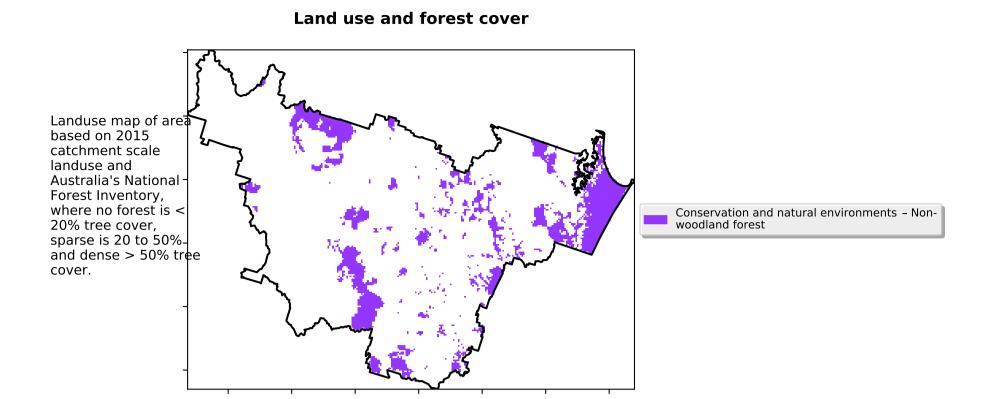
100 99.Z 99 ---- above\_70 98 **——** 10th **——** 50th **——** 2019 Sep 97 96 95 Jan 4eb way PQ Mai In 1st month ERN (SOR) CSIRC Australian Government

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

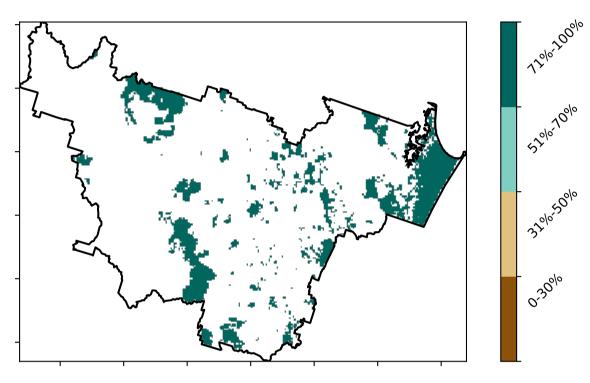




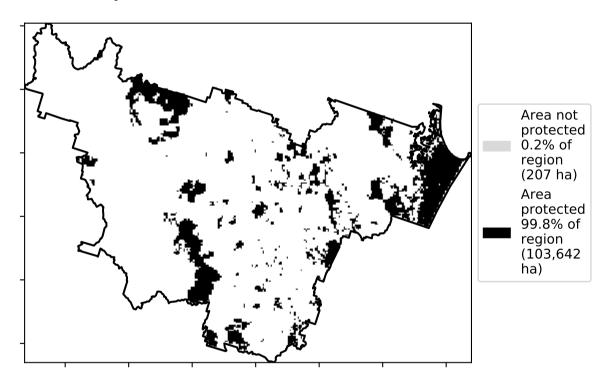
#### **Conservation and natural environments Forest (non woodland)**



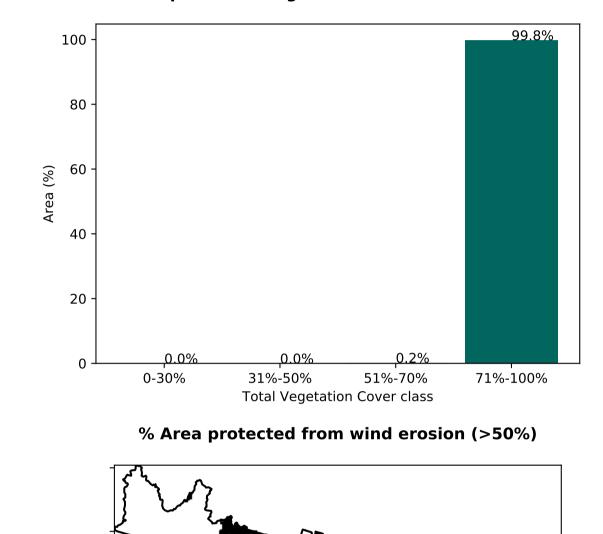
**Total Vegetation Cover [%]** 

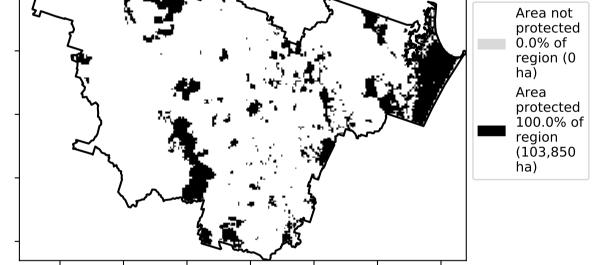


% Area protected from water erosion (>70%)

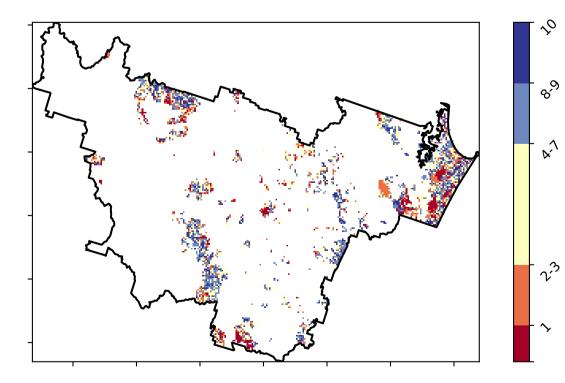


Proportion of vegetation cover class in area

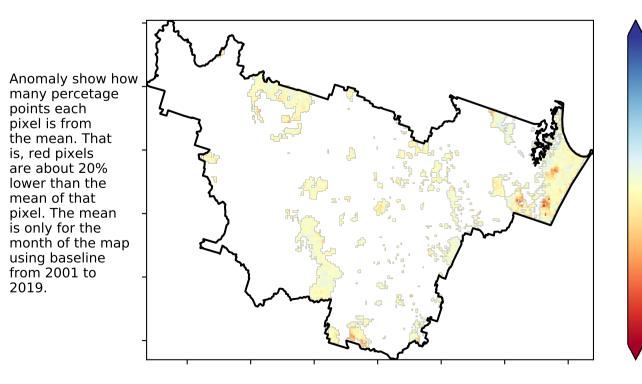




**Total Vegetation Cover Decile [%]** 



**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 man using baseline

the map using baseline from 2001 to 2019.

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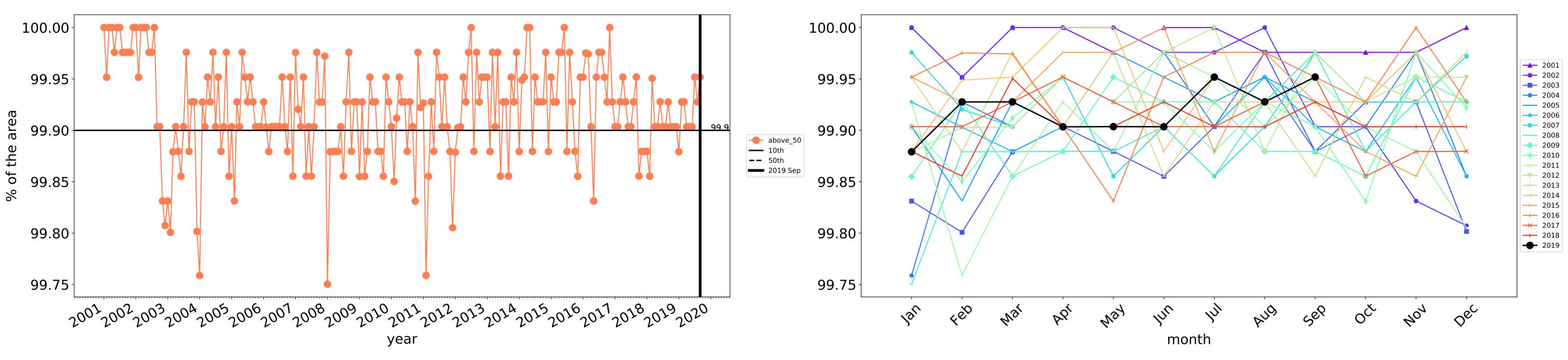
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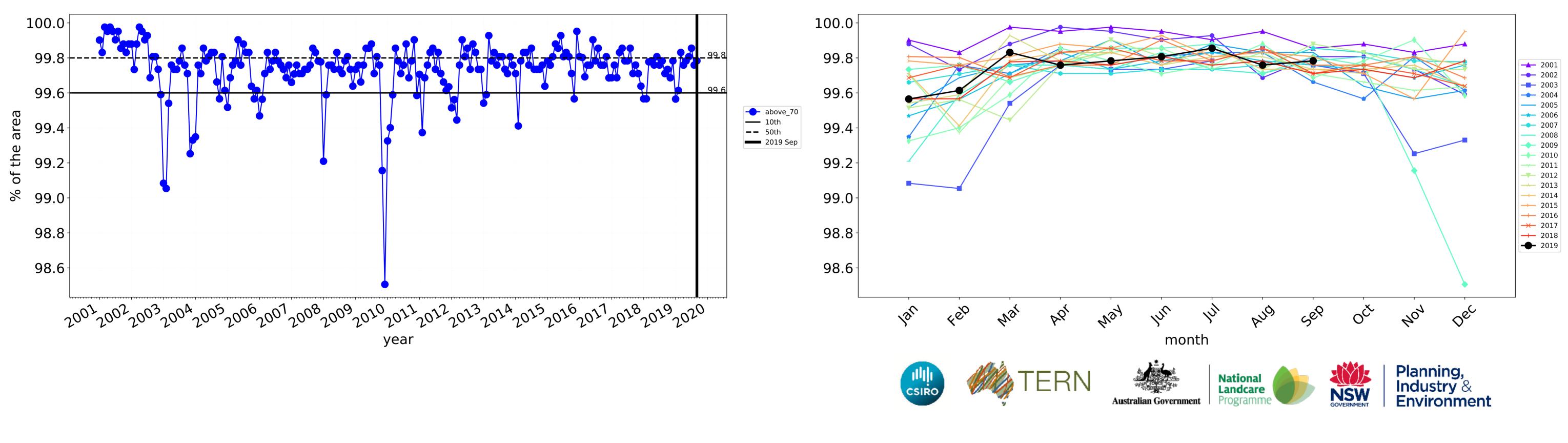
-20

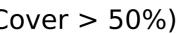
50%



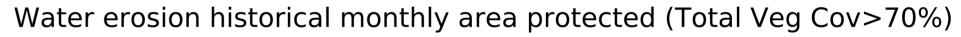
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

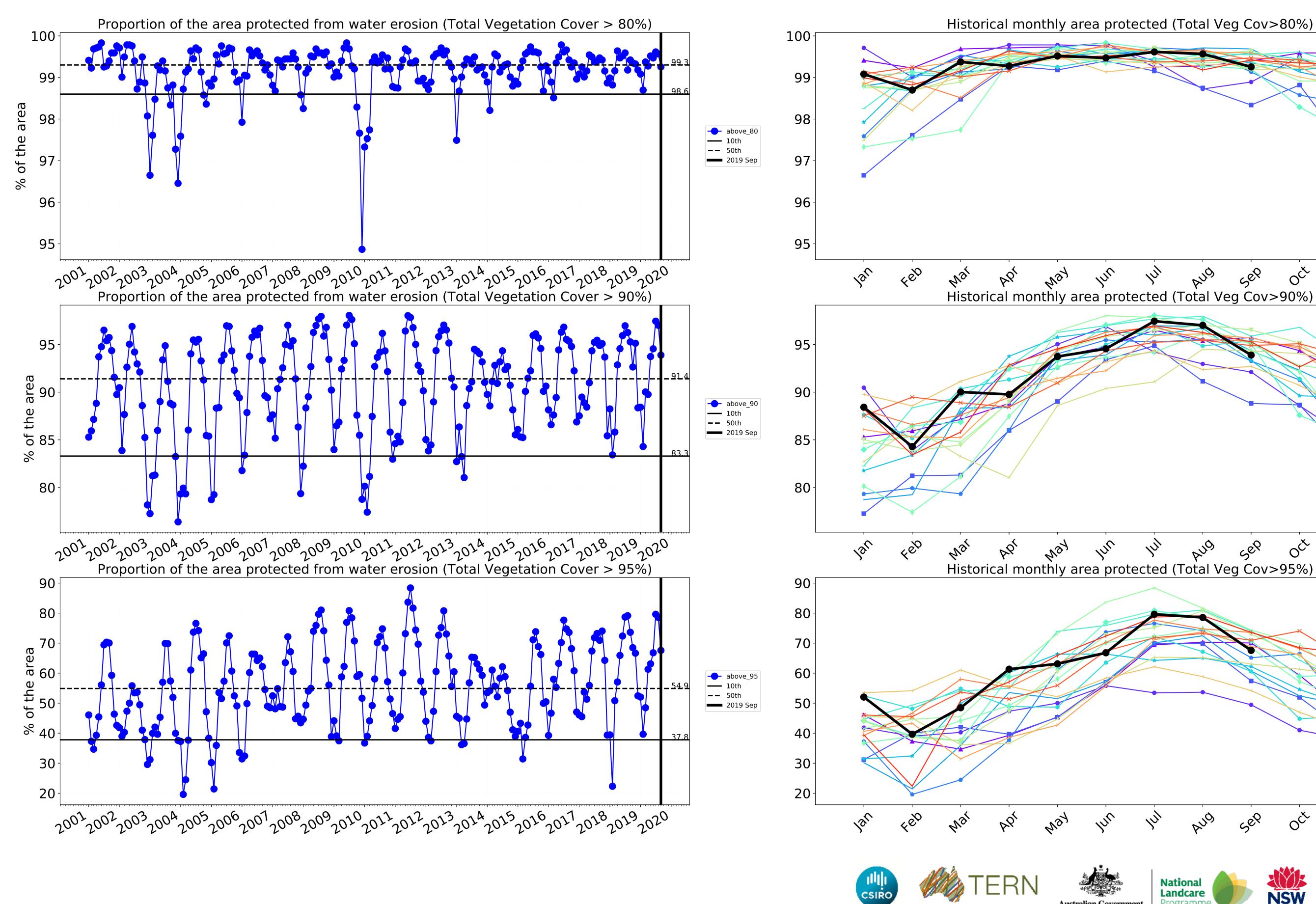






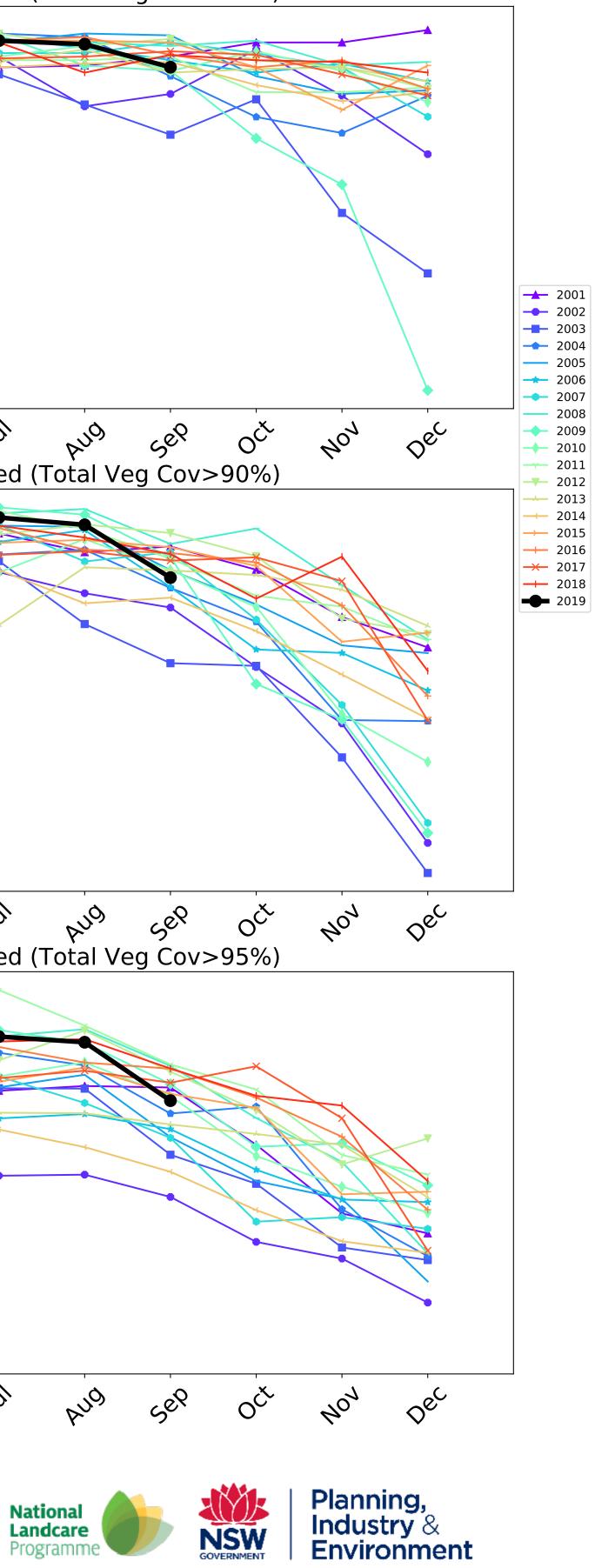
Wind erosion historical monthly area protected (Total Veg Cov >50%)





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#### Agriculture

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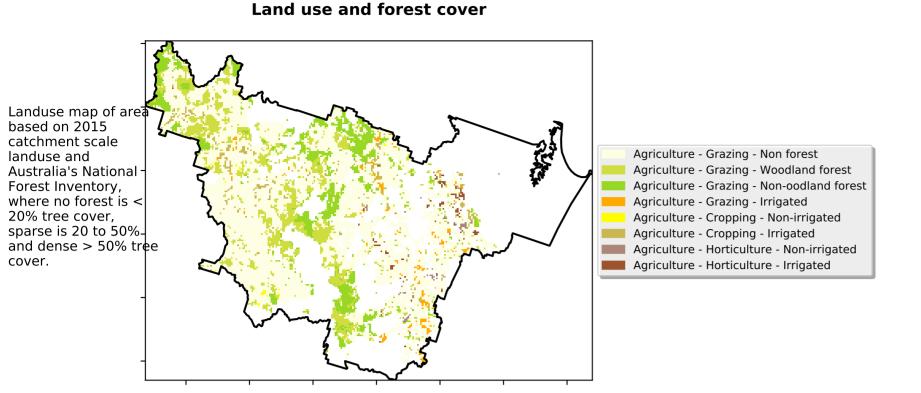
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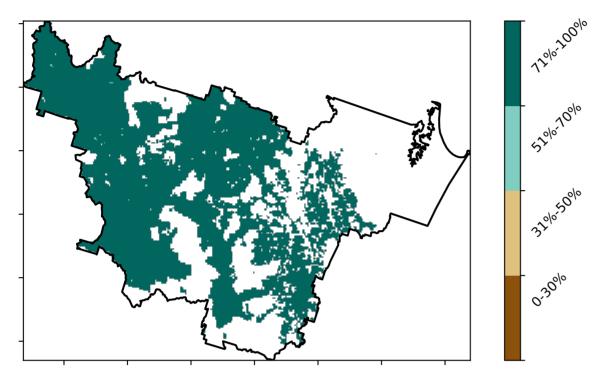
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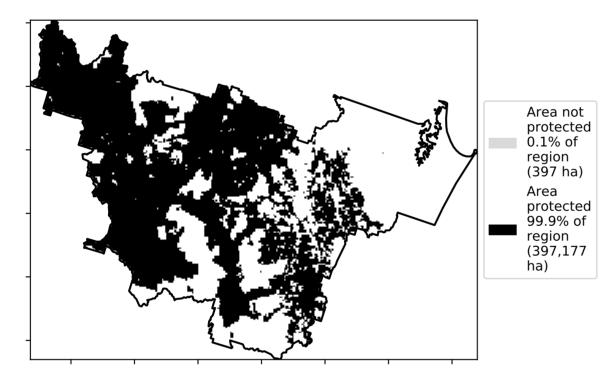
-20



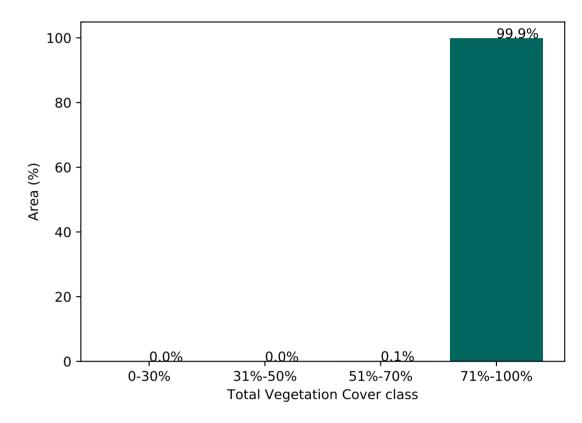
**Total Vegetation Cover [%]** 



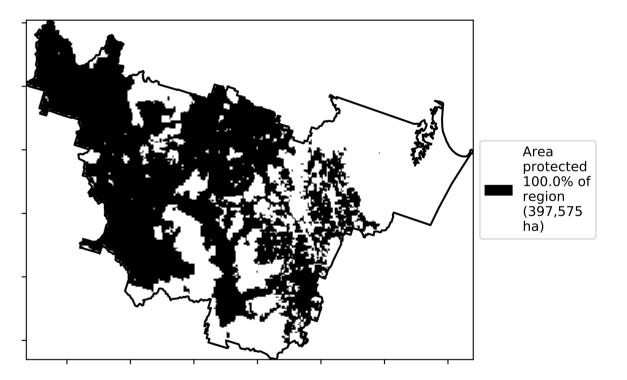
% Area protected from water erosion (>70%)



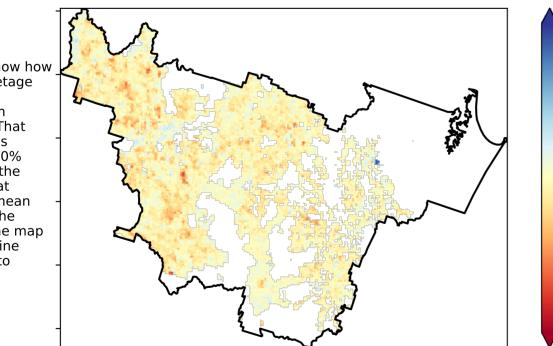
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)

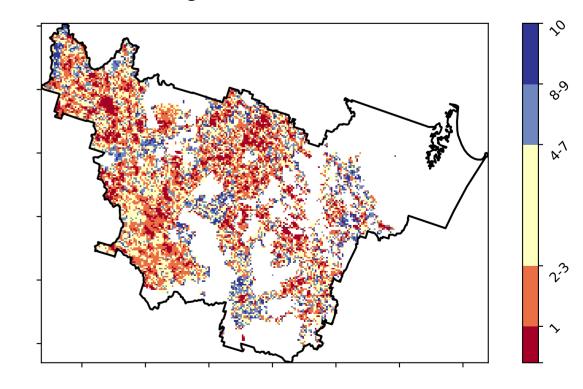


**Total Vegetation Cover Anomaly [%]** 



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.

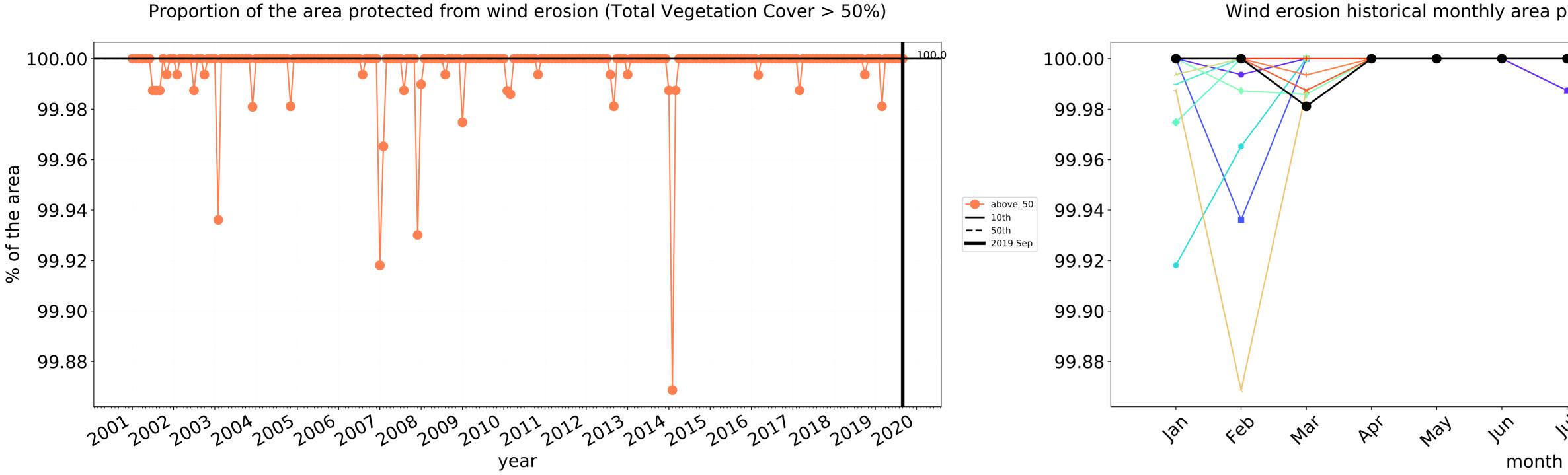
**Total Vegetation Cover Decile [%]** 



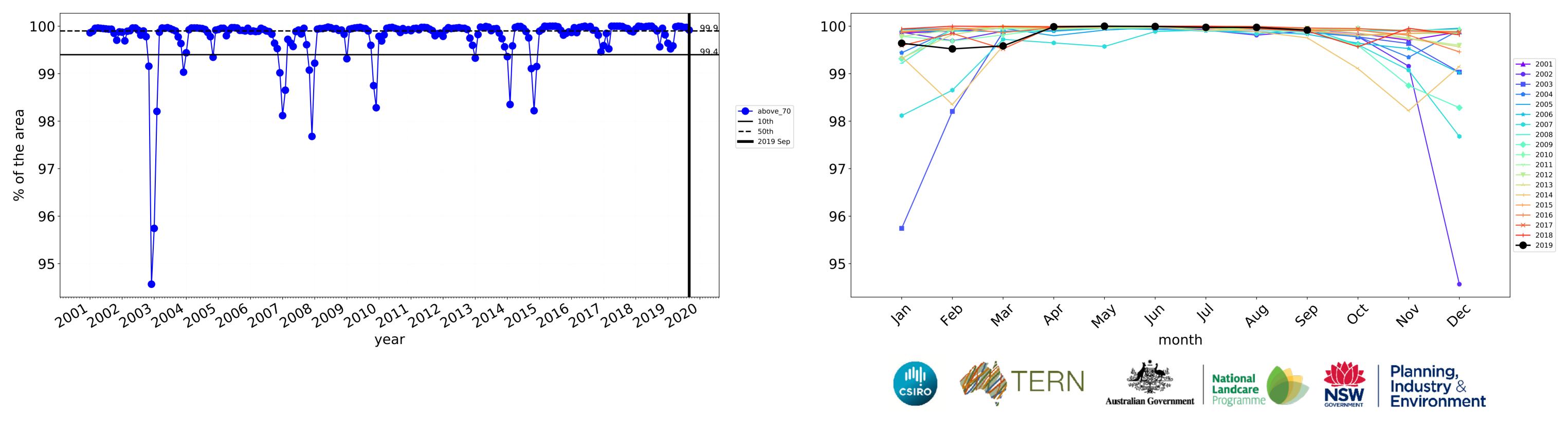


Anomaly show how many percetage points each pixel is from the mean That the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.





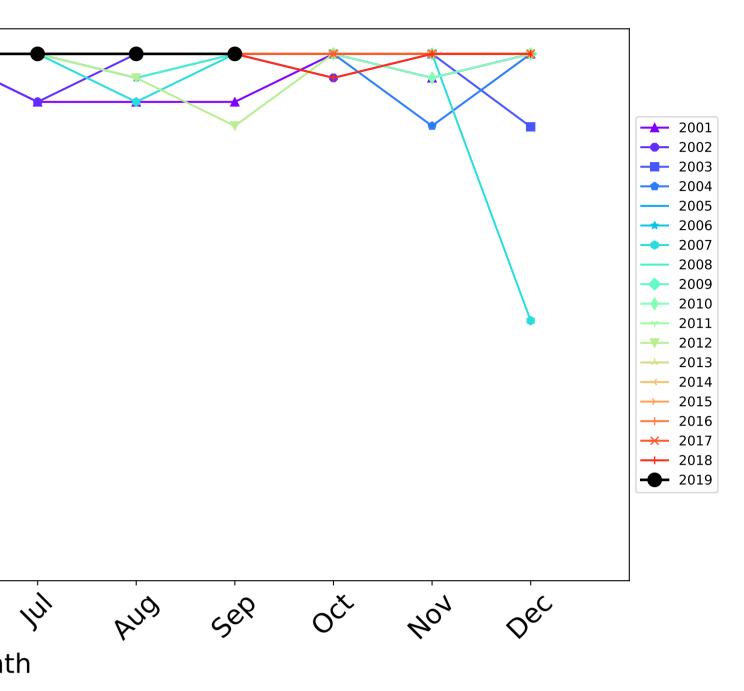
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

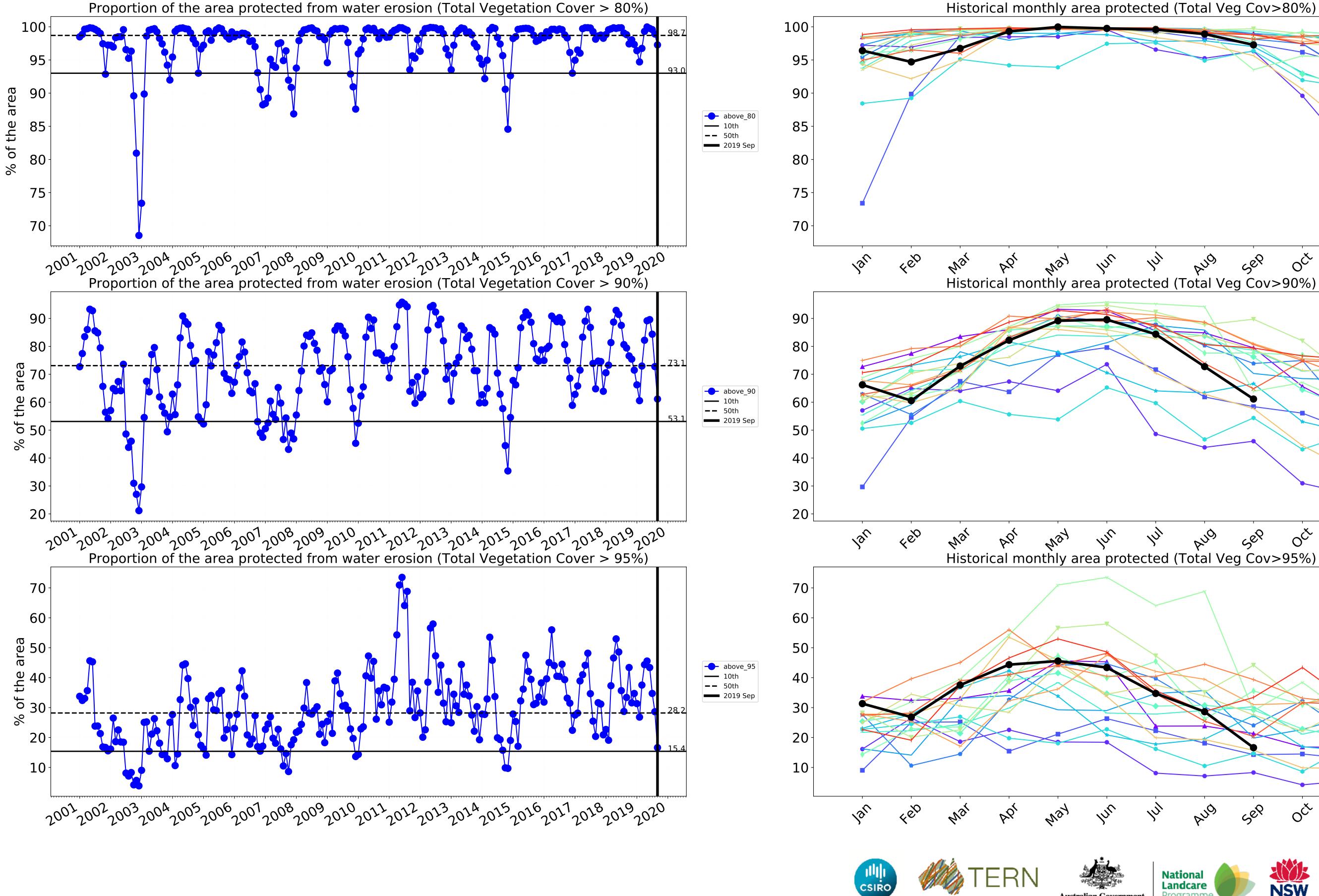


### Agriculture timeseries

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

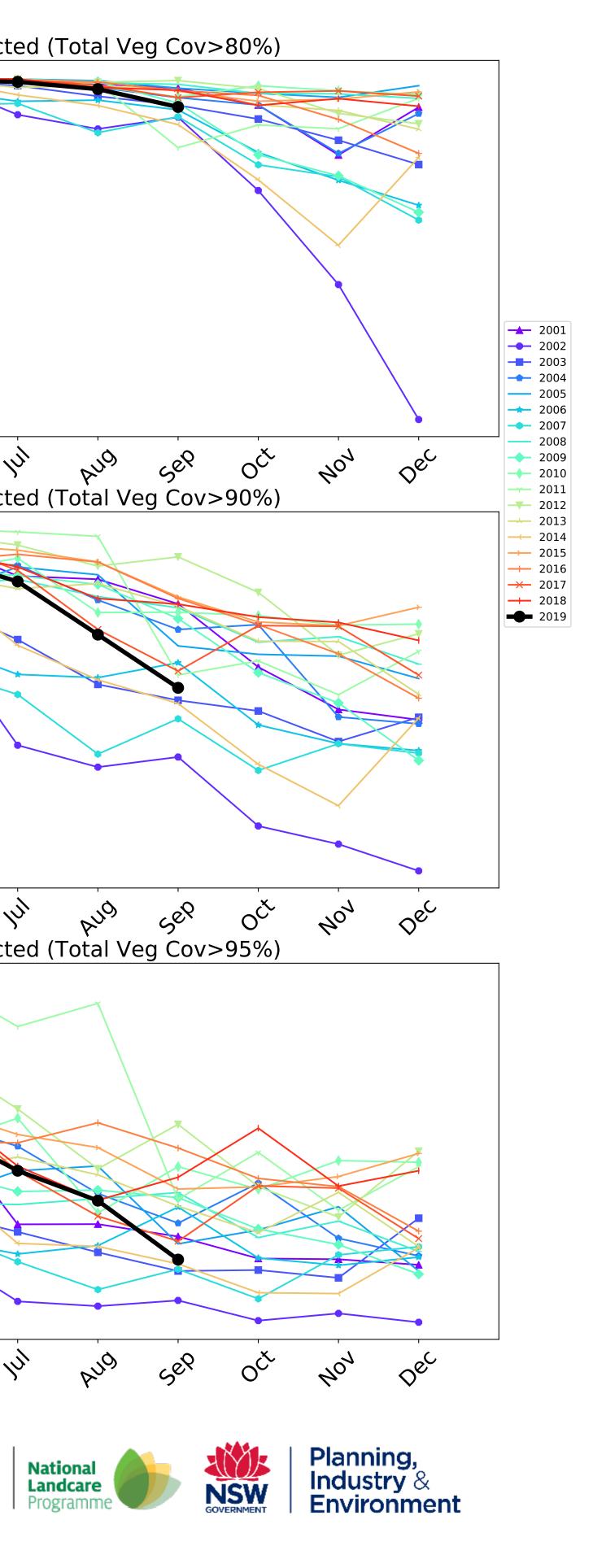
Wind erosion historical monthly area protected (Total Veg Cov >50%)



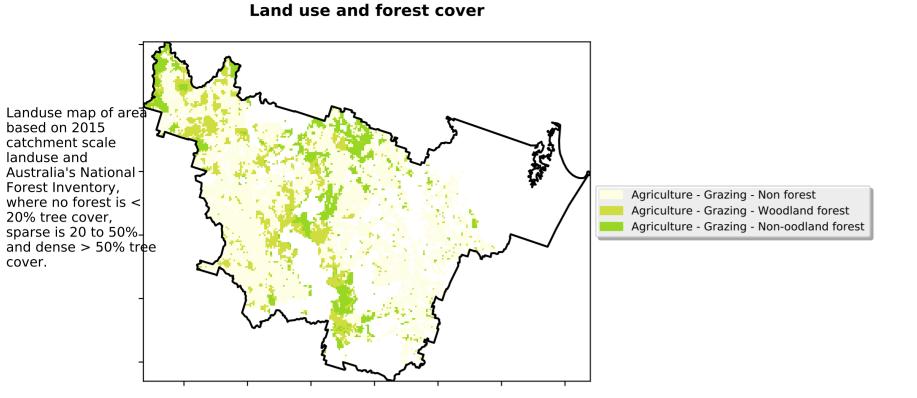


Australian Government

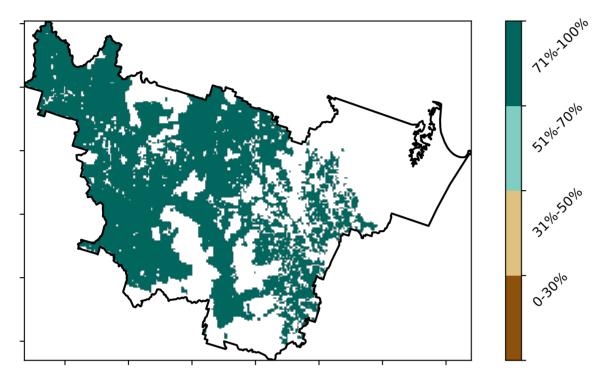
19



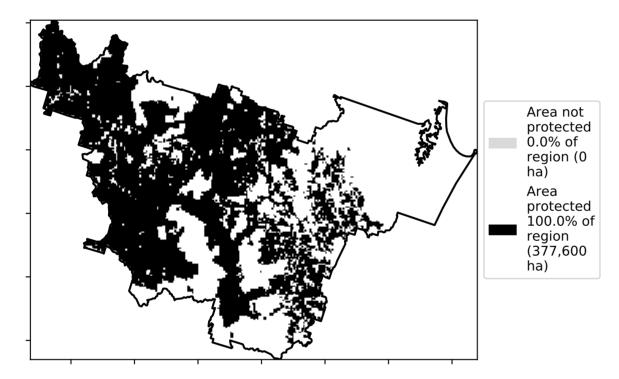
### Grazing



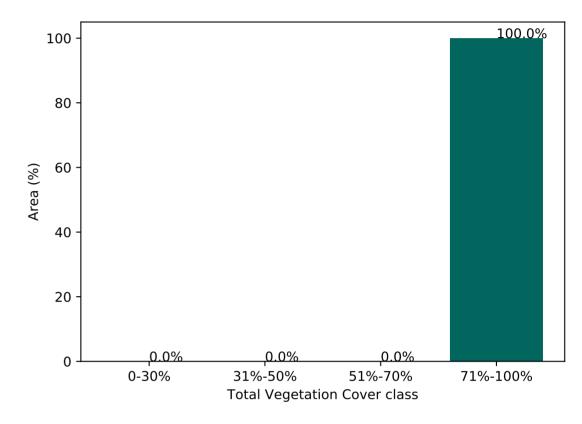
**Total Vegetation Cover [%]** 



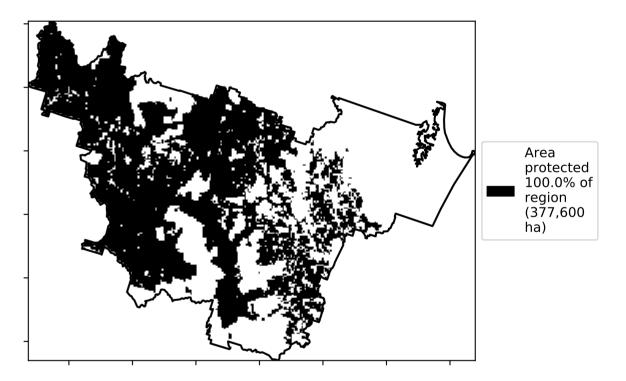
% Area protected from water erosion (>70%)



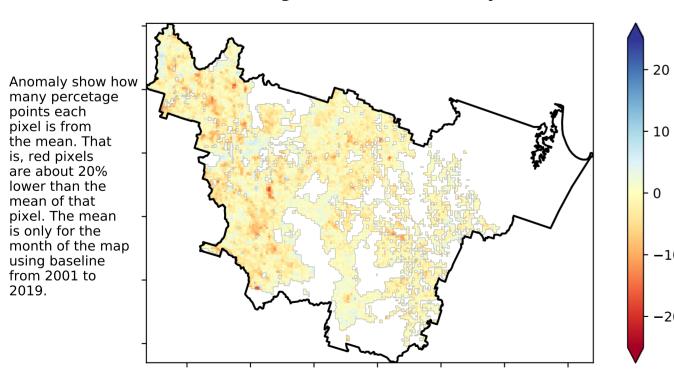
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)

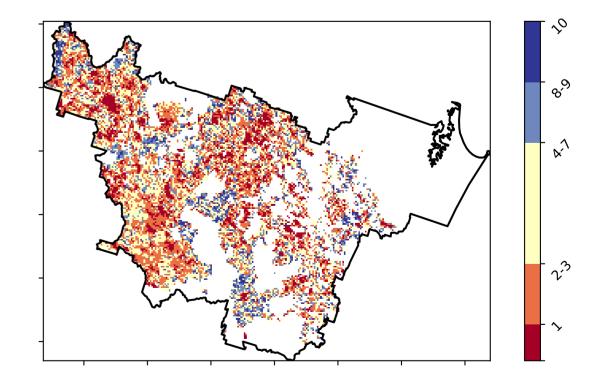


Total Vegetation Cover Anomaly [%]



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.

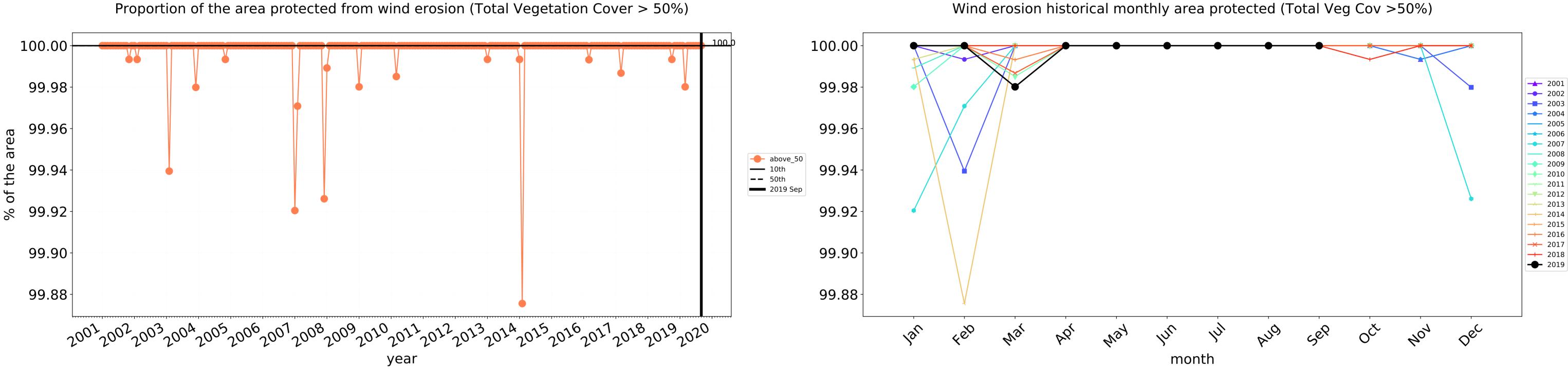
**Total Vegetation Cover Decile [%]** 



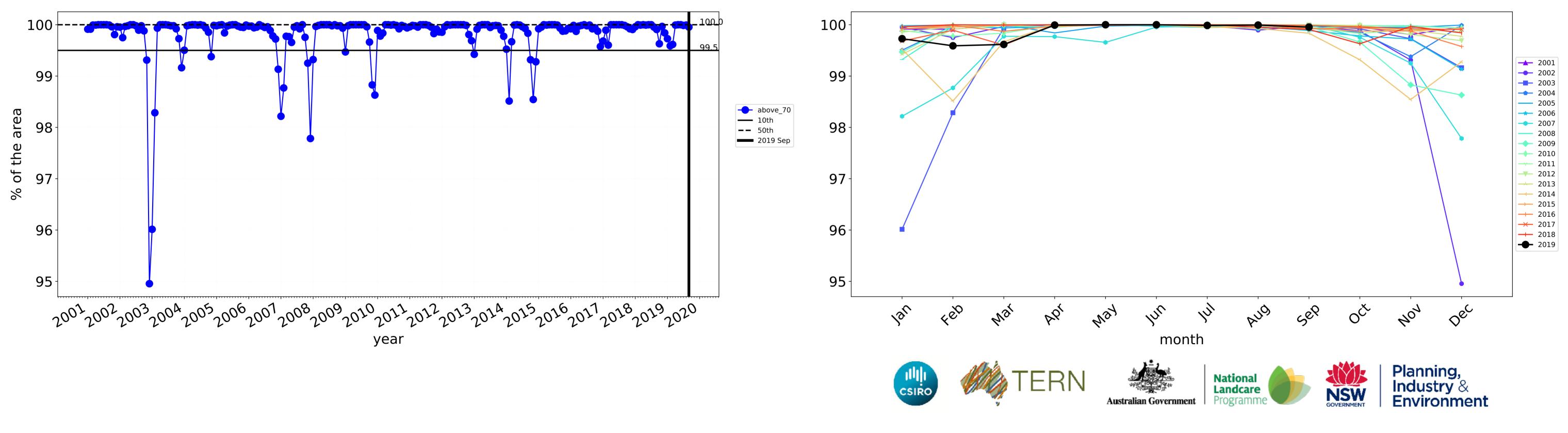


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-10

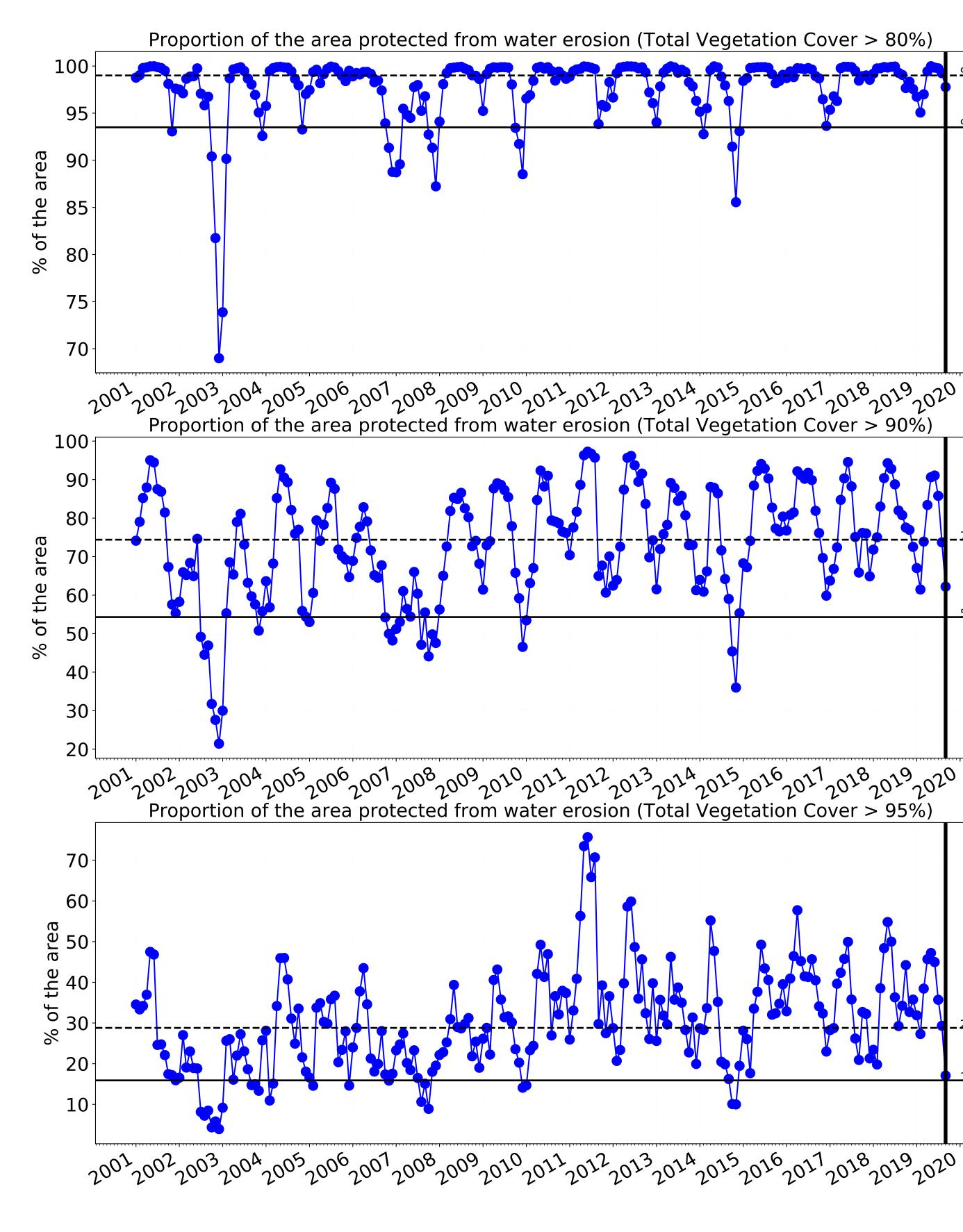


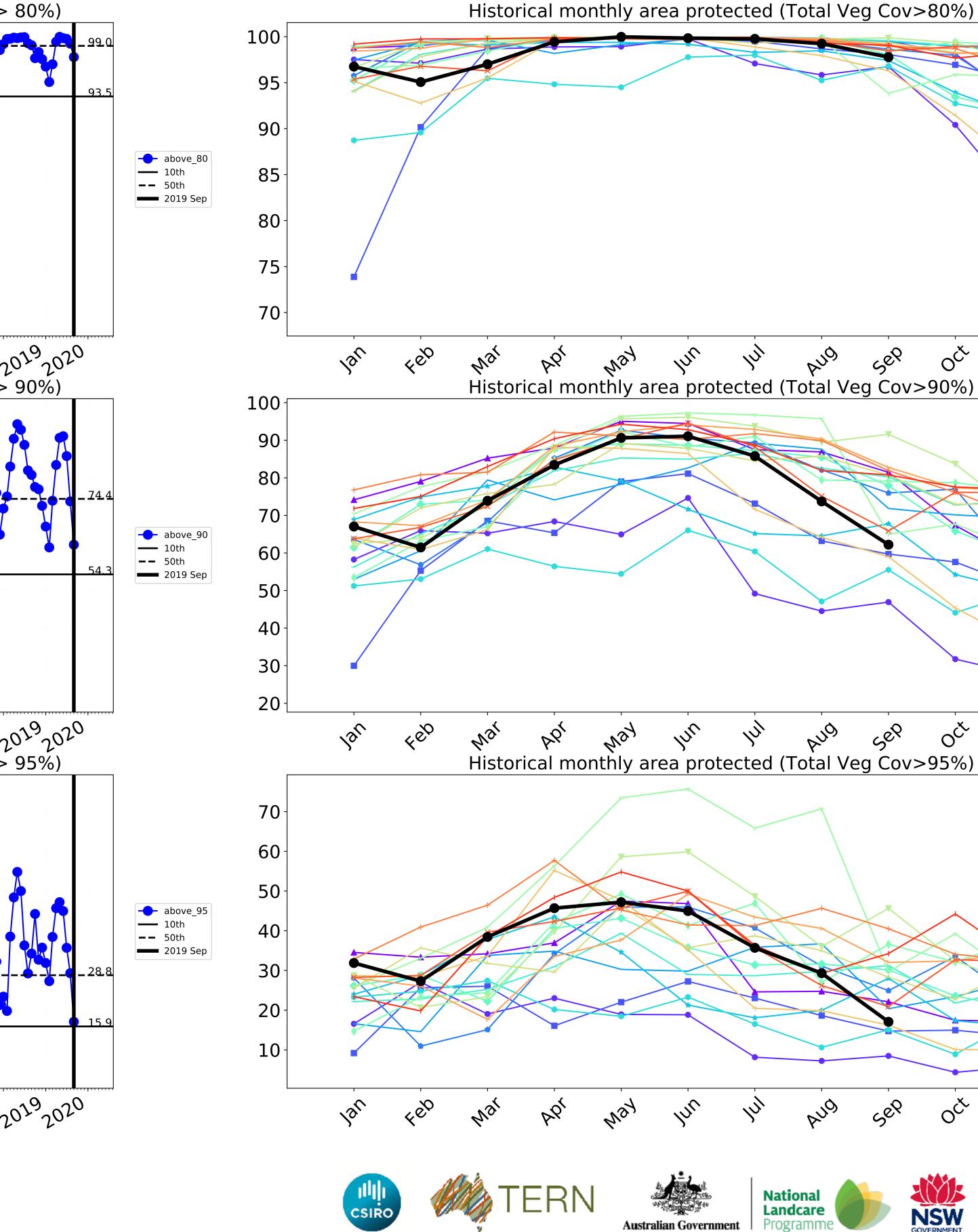
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

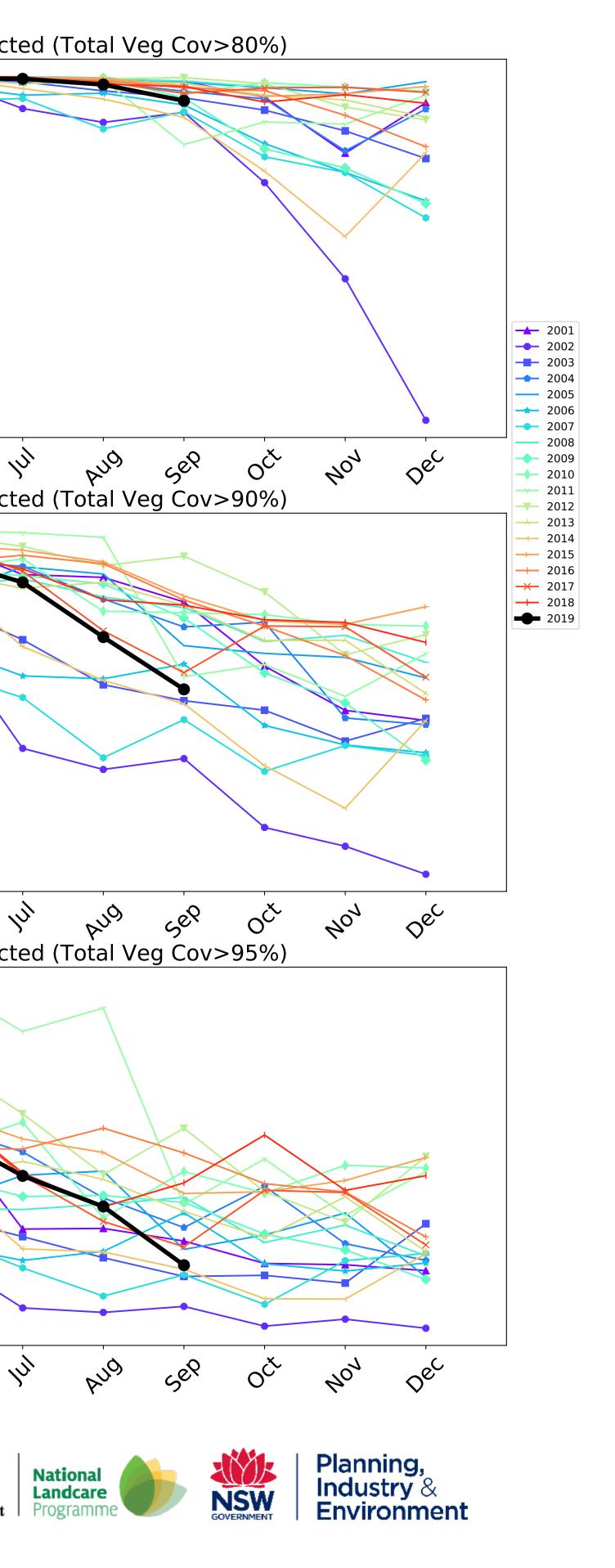


### Grazing timeseries

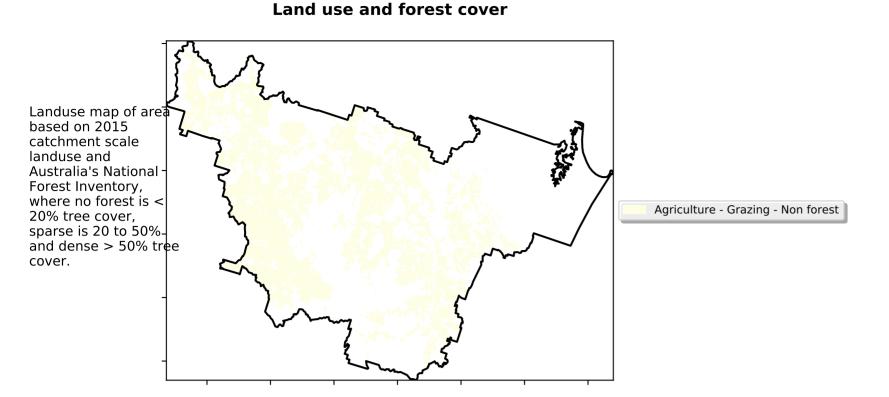
Water erosion historical monthly area protected (Total Veg Cov>70%)



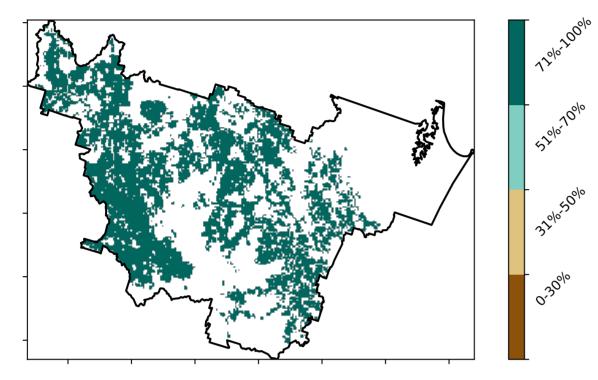




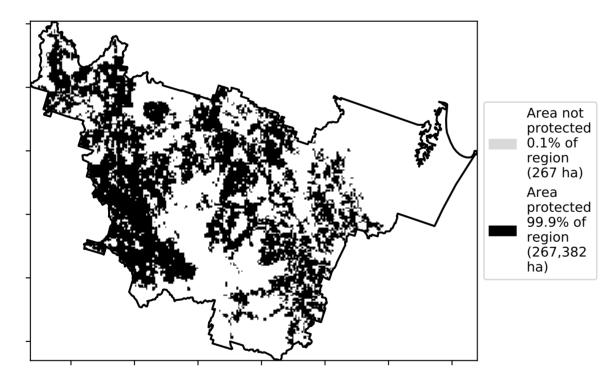
#### **Grazing non forest**



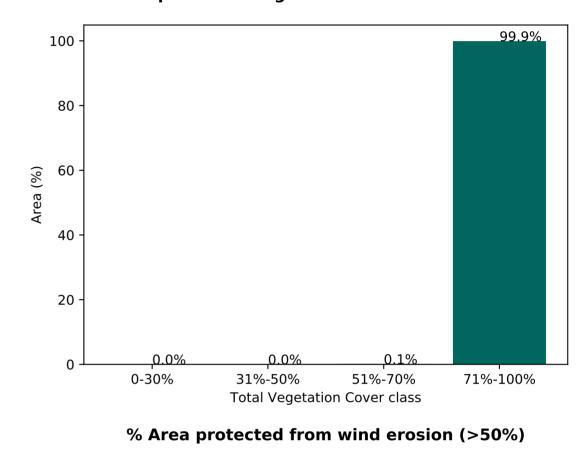
**Total Vegetation Cover [%]** 

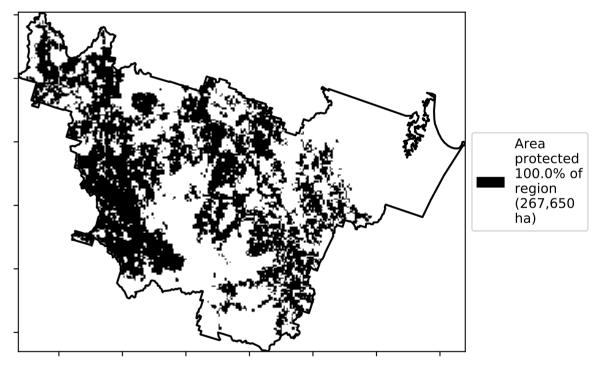


% Area protected from water erosion (>70%)

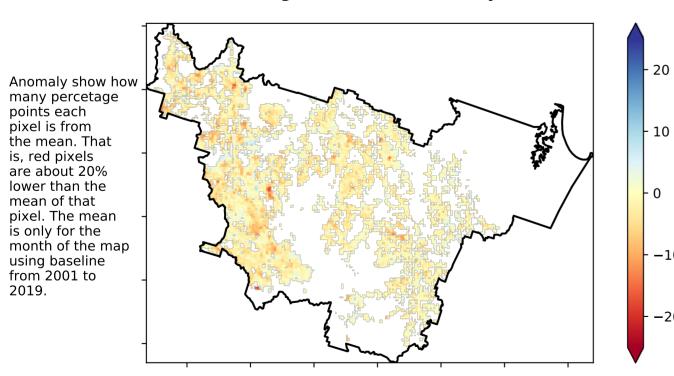


Proportion of vegetation cover class in area



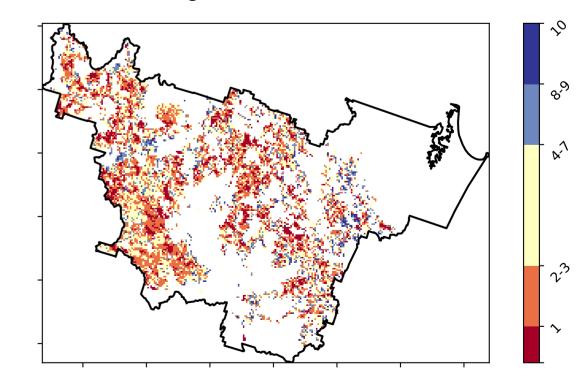


Total Vegetation Cover Anomaly [%]



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 [%]** 



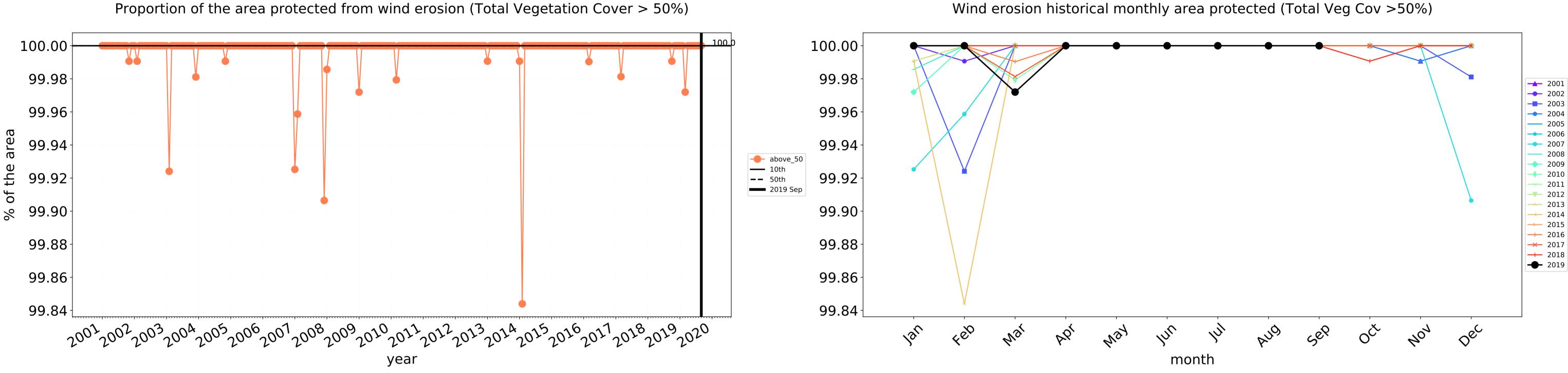


23

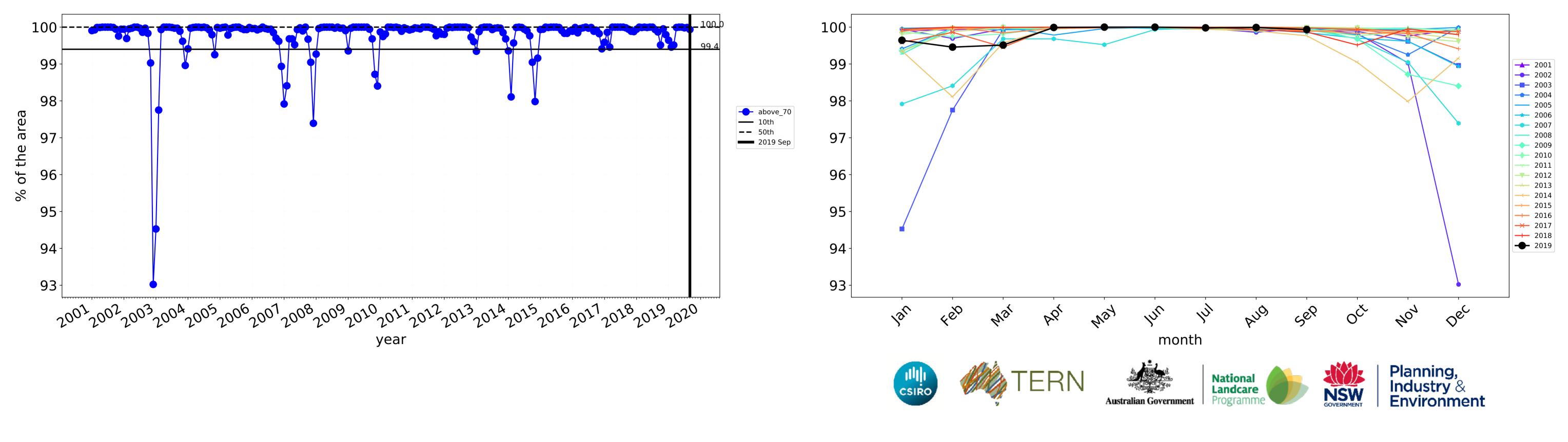
0

-10

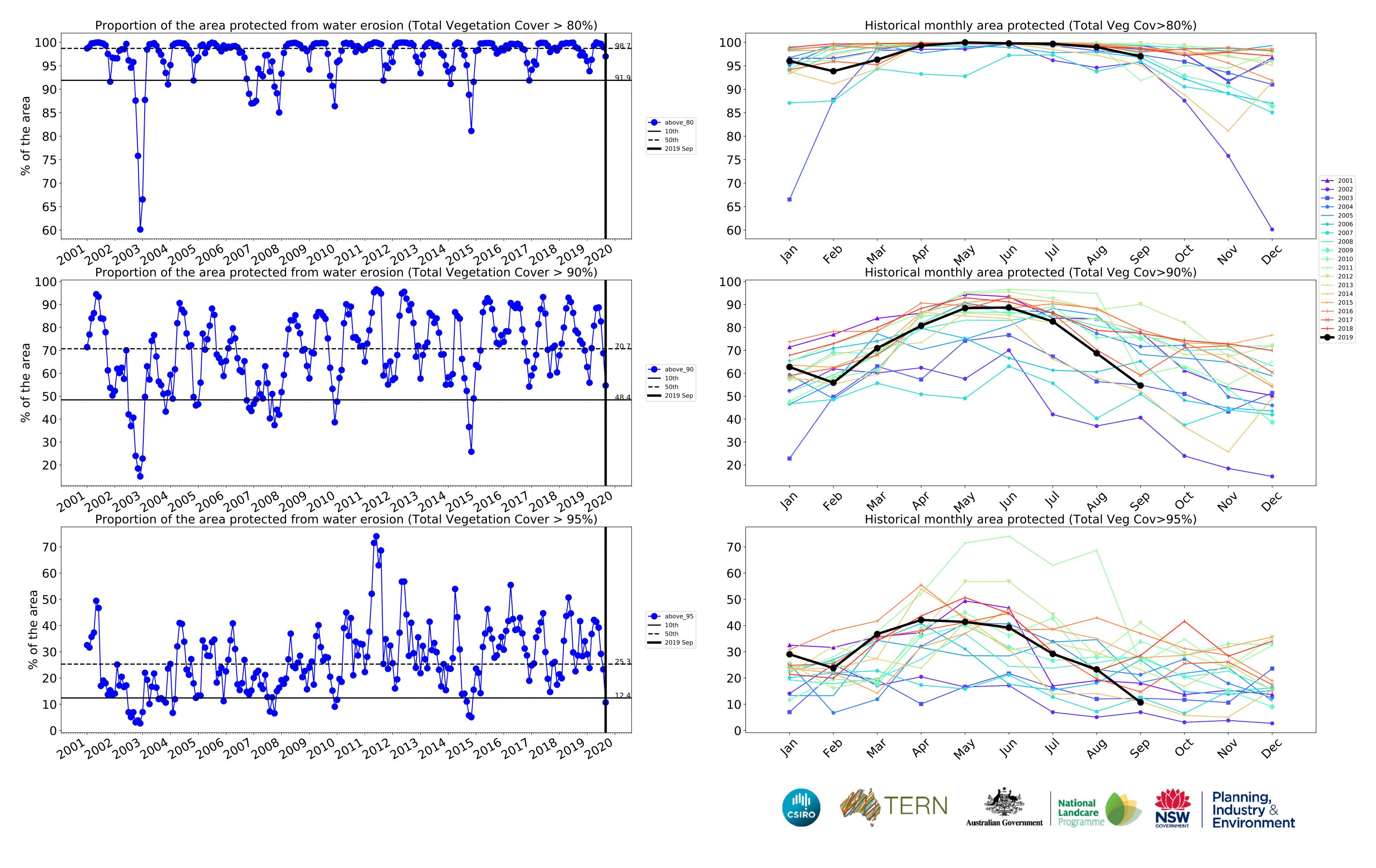




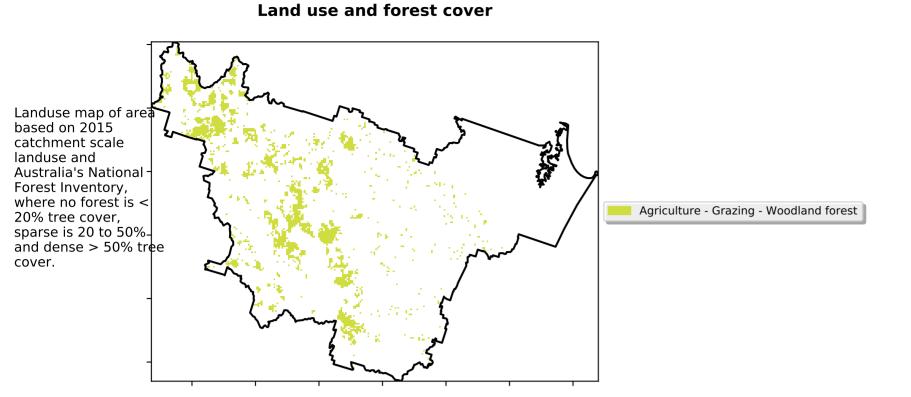
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



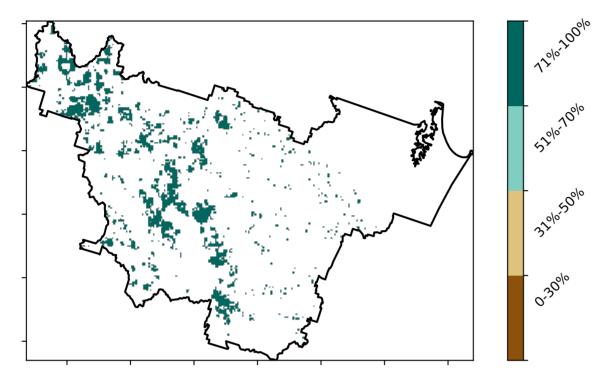
Water erosion historical monthly area protected (Total Veg Cov>70%)



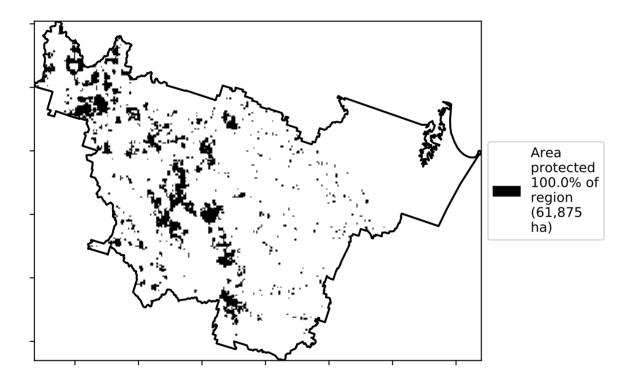
#### **Grazing Woodland forest**



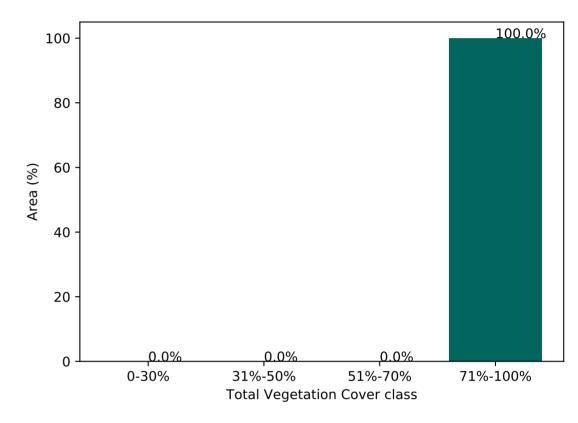
**Total Vegetation Cover [%]** 



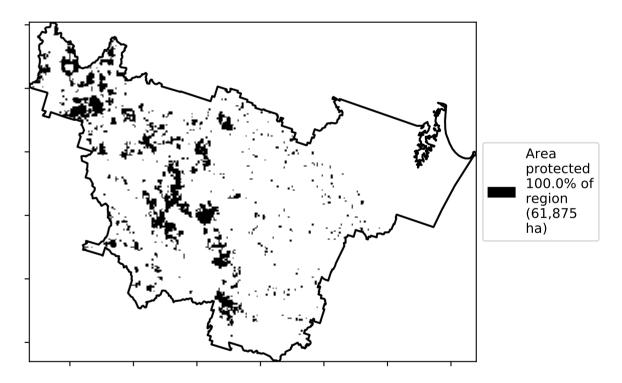
% Area protected from water erosion (>70%)



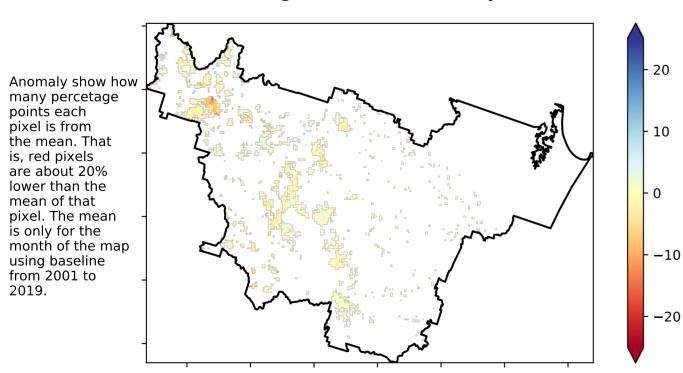
Proportion of vegetation cover class in area



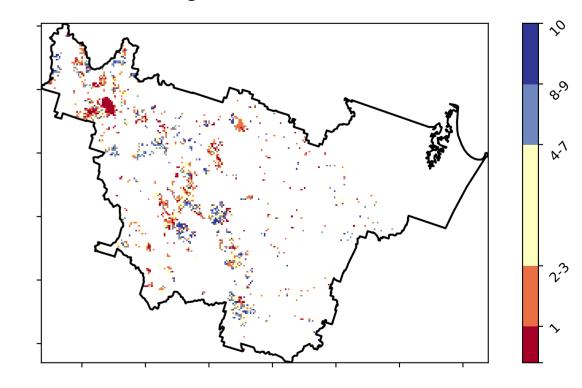
#### % Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



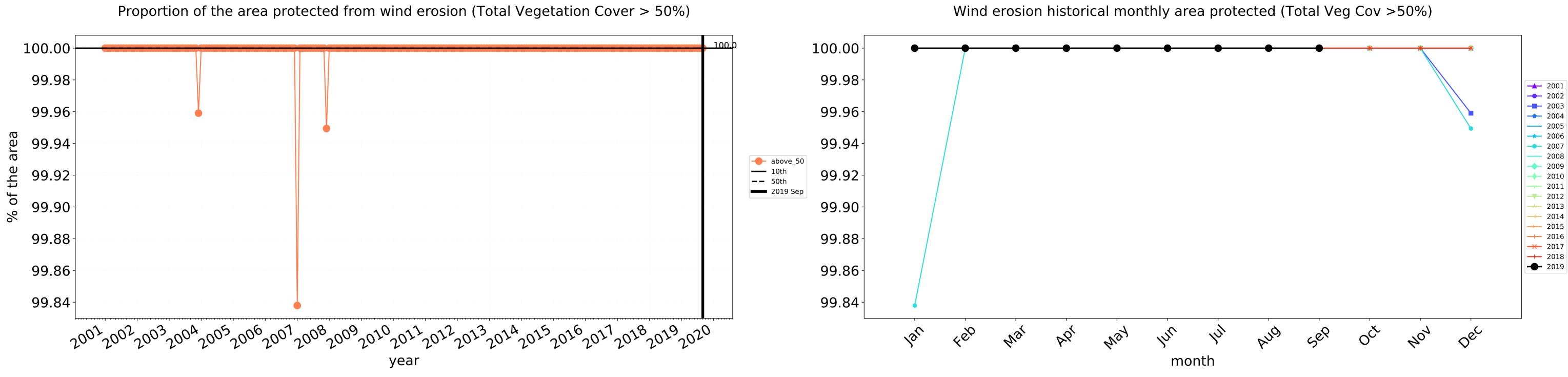
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019. **Total Vegetation Cover Decile [%]** 



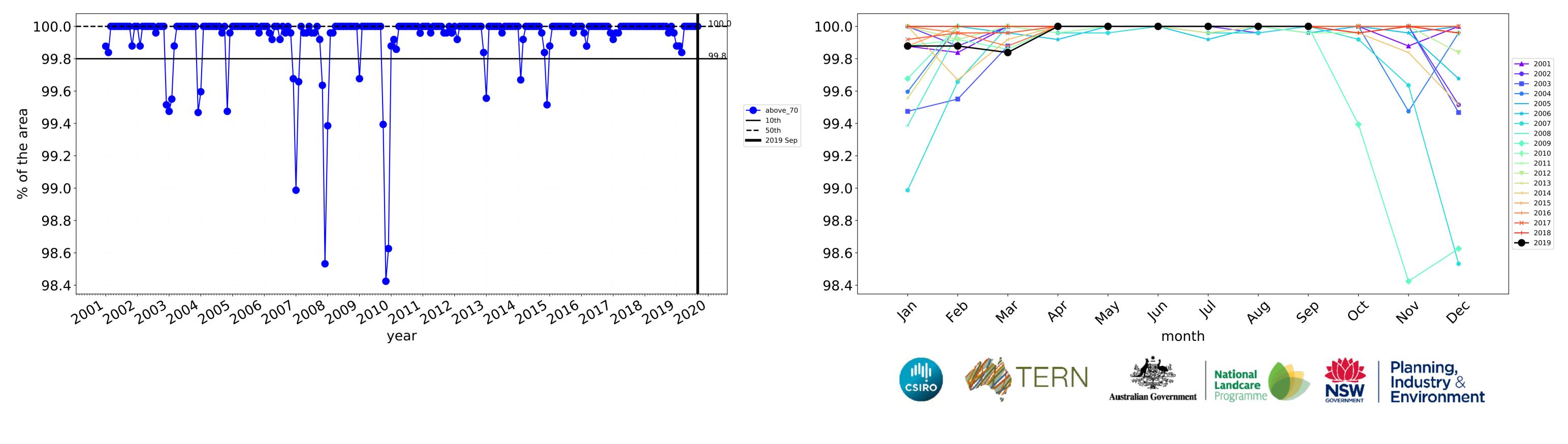


the map usi from 2001 t

### **Grazing Woodland forest timeseries**

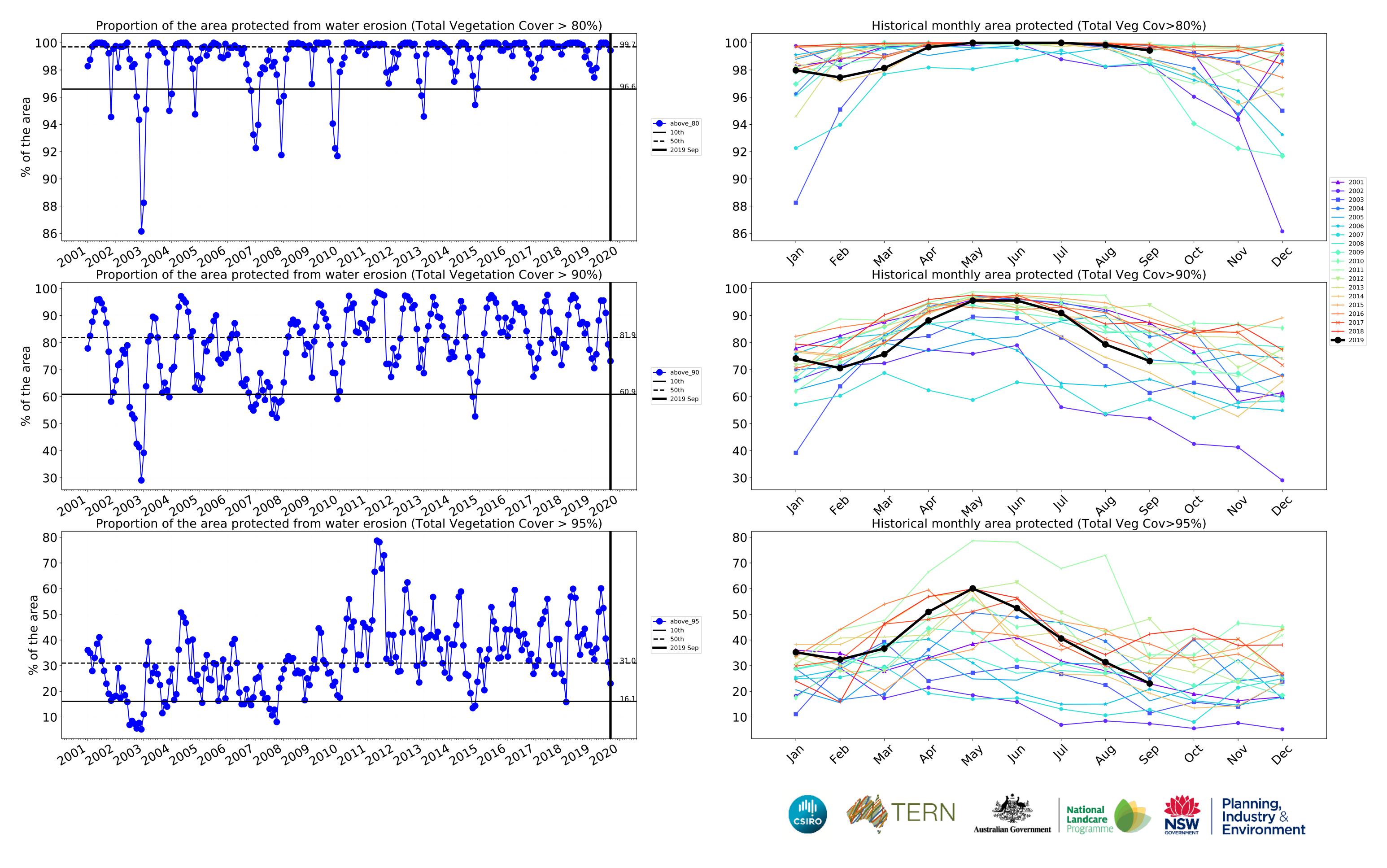


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

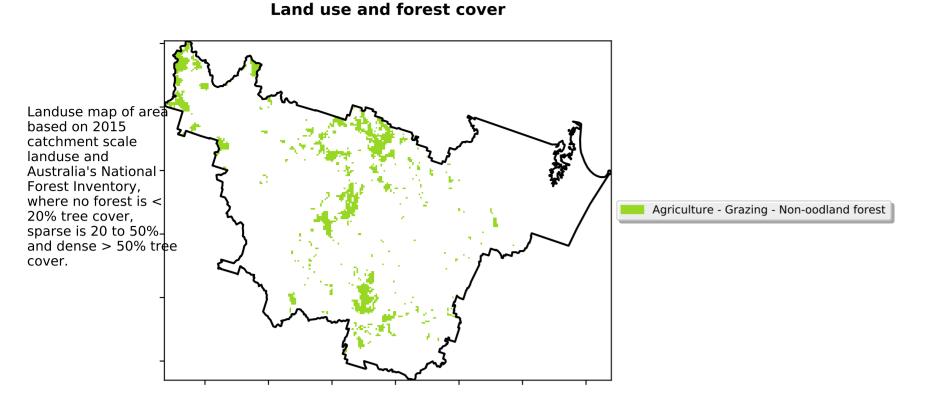


Water erosion historical monthly area protected (Total Veg Cov>70%)

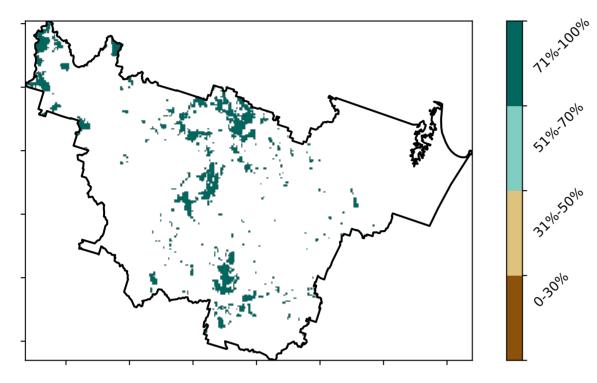
23



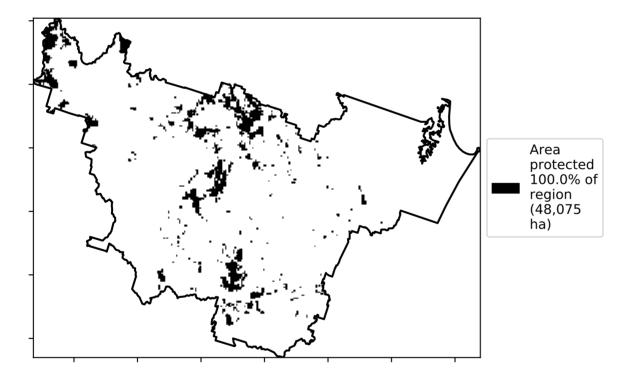
#### Grazing - Forest (non woodland)



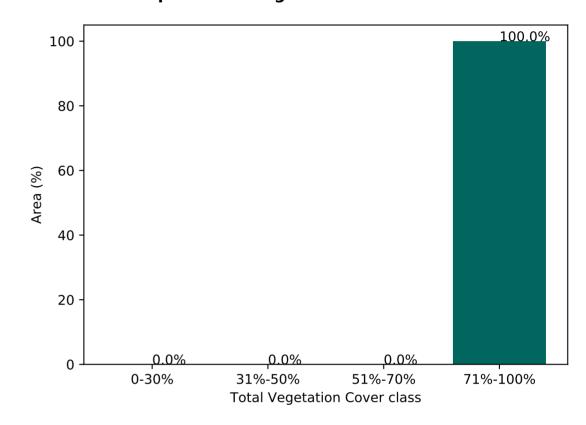
**Total Vegetation Cover [%]** 



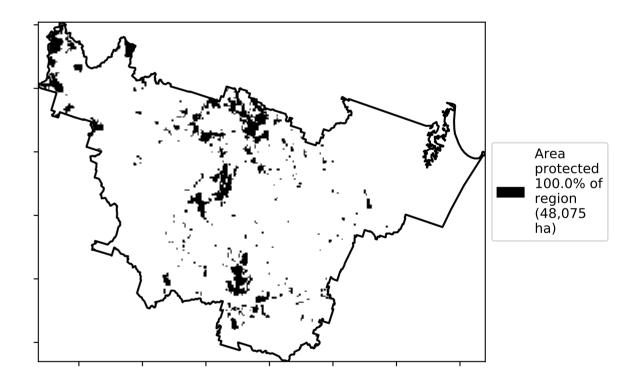
% Area protected from water erosion (>70%)



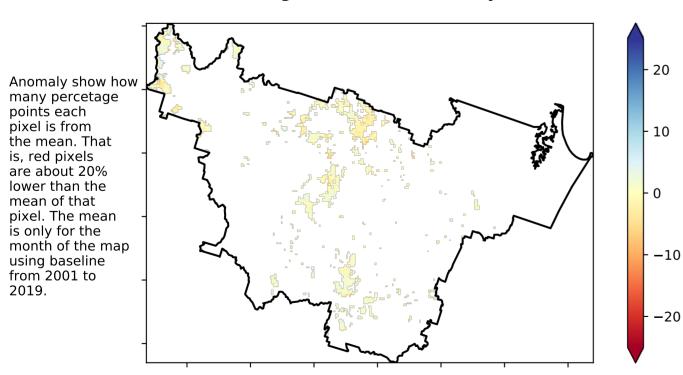
Proportion of vegetation cover class in area



#### % Area protected from wind erosion (>50%)

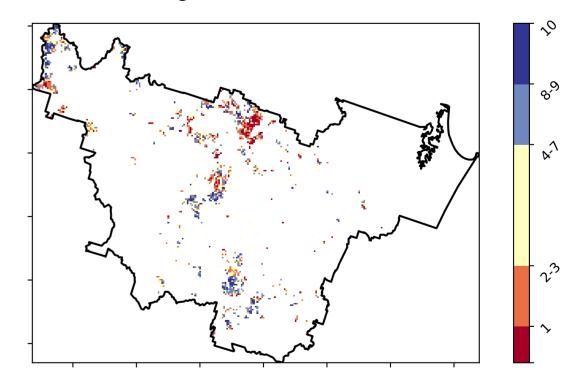


Total Vegetation Cover Anomaly [%]



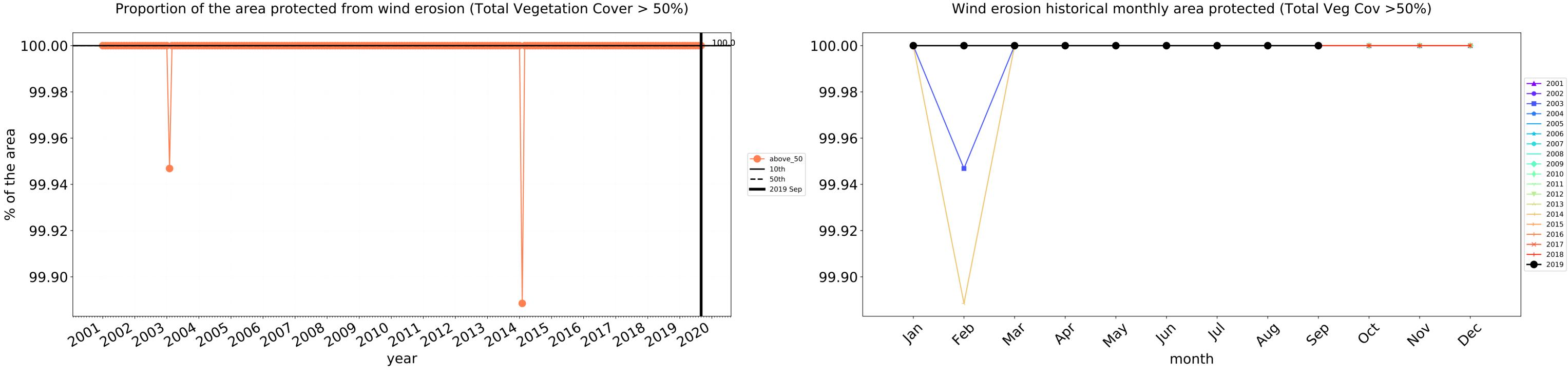
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

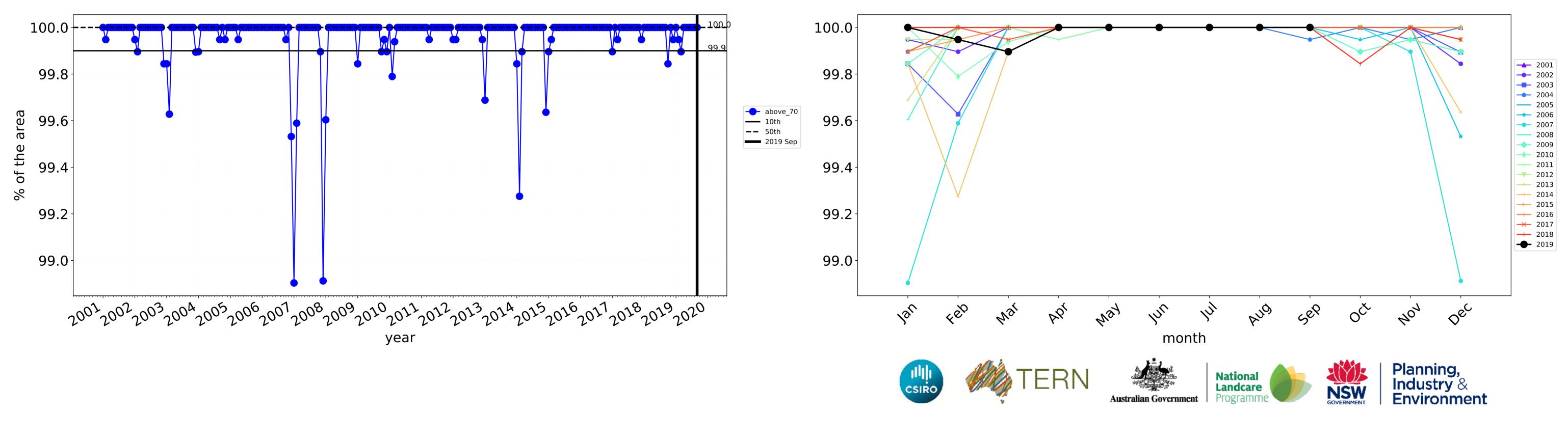
**Total Vegetation Cover Decile [%]** 



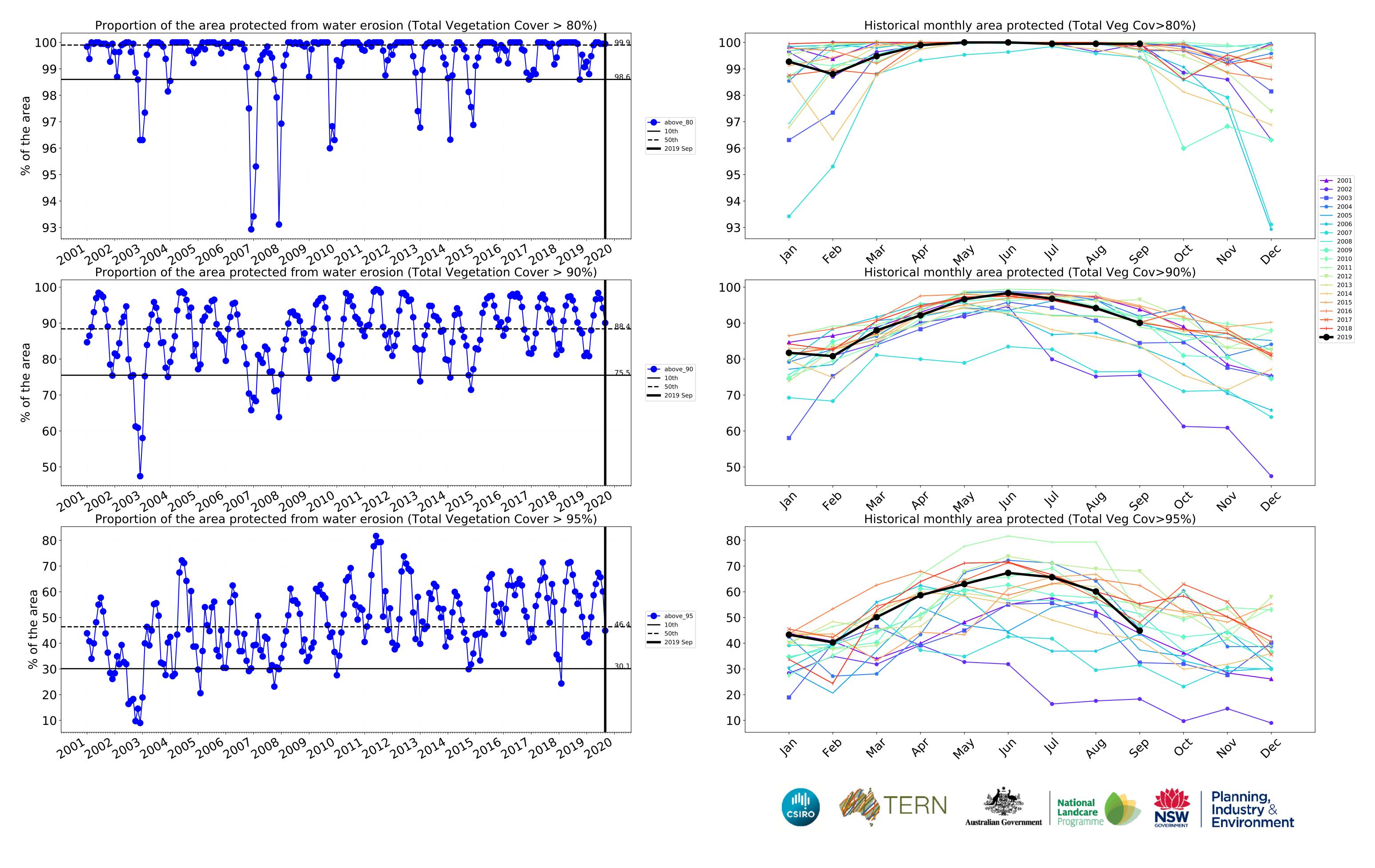


292

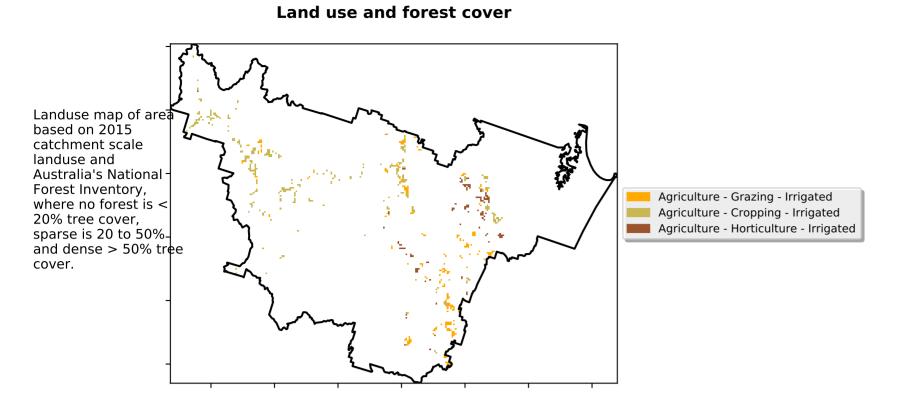




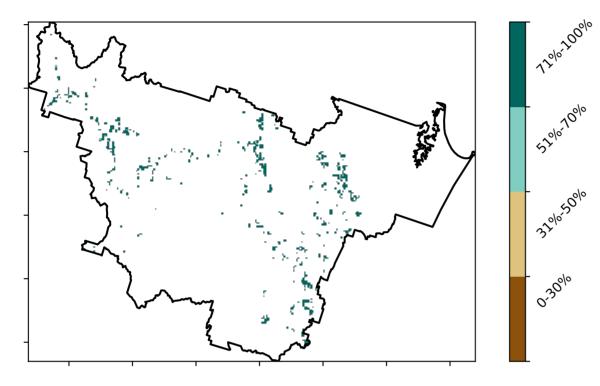
Water erosion historical monthly area protected (Total Veg Cov>70%)



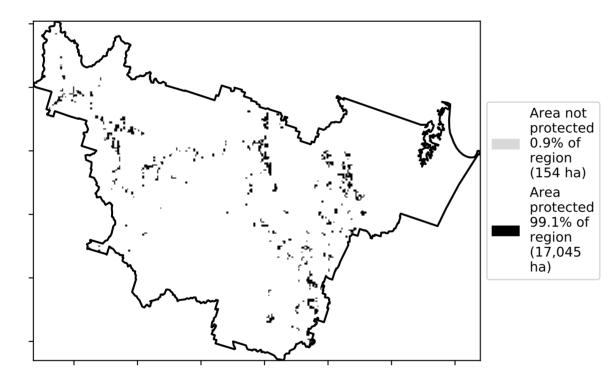
#### Irrigation



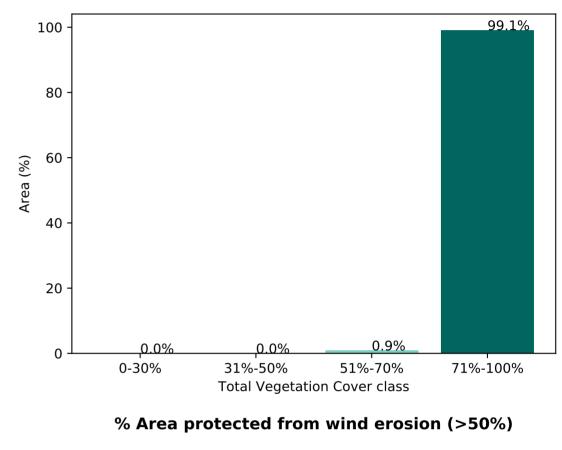
**Total Vegetation Cover [%]** 

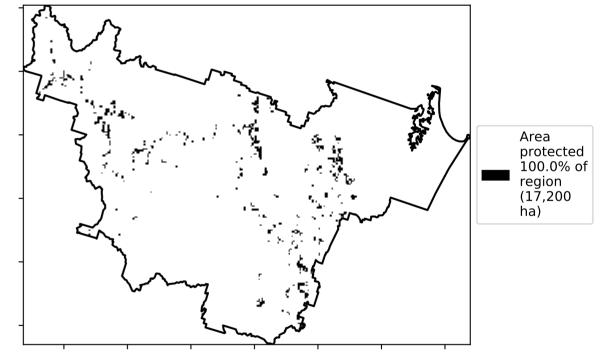


% Area protected from water erosion (>70%)

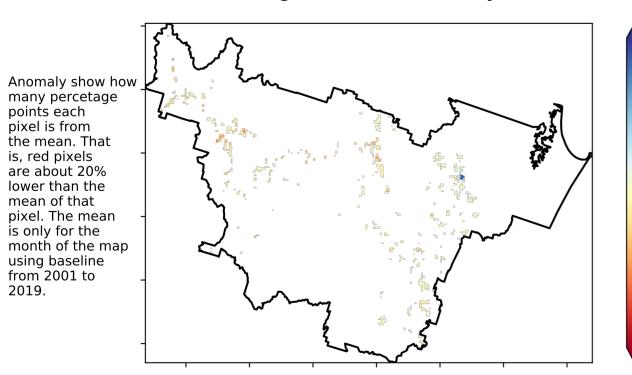


Proportion of vegetation cover class in area



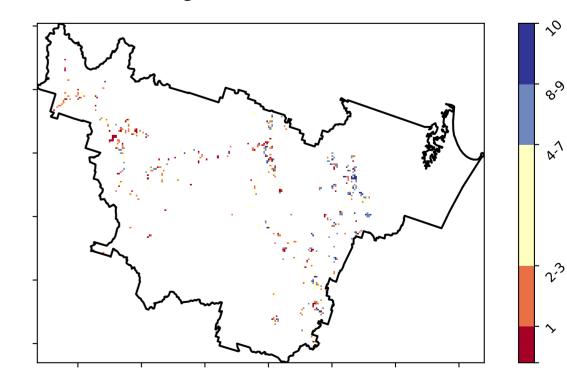


Total Vegetation Cover Anomaly [%]



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 [%]** 





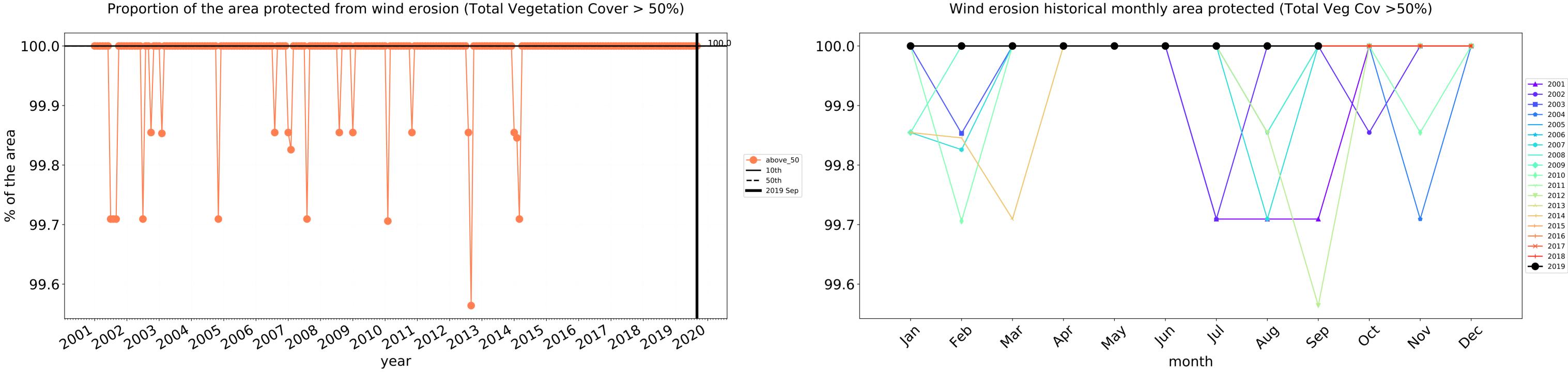
32

- 20

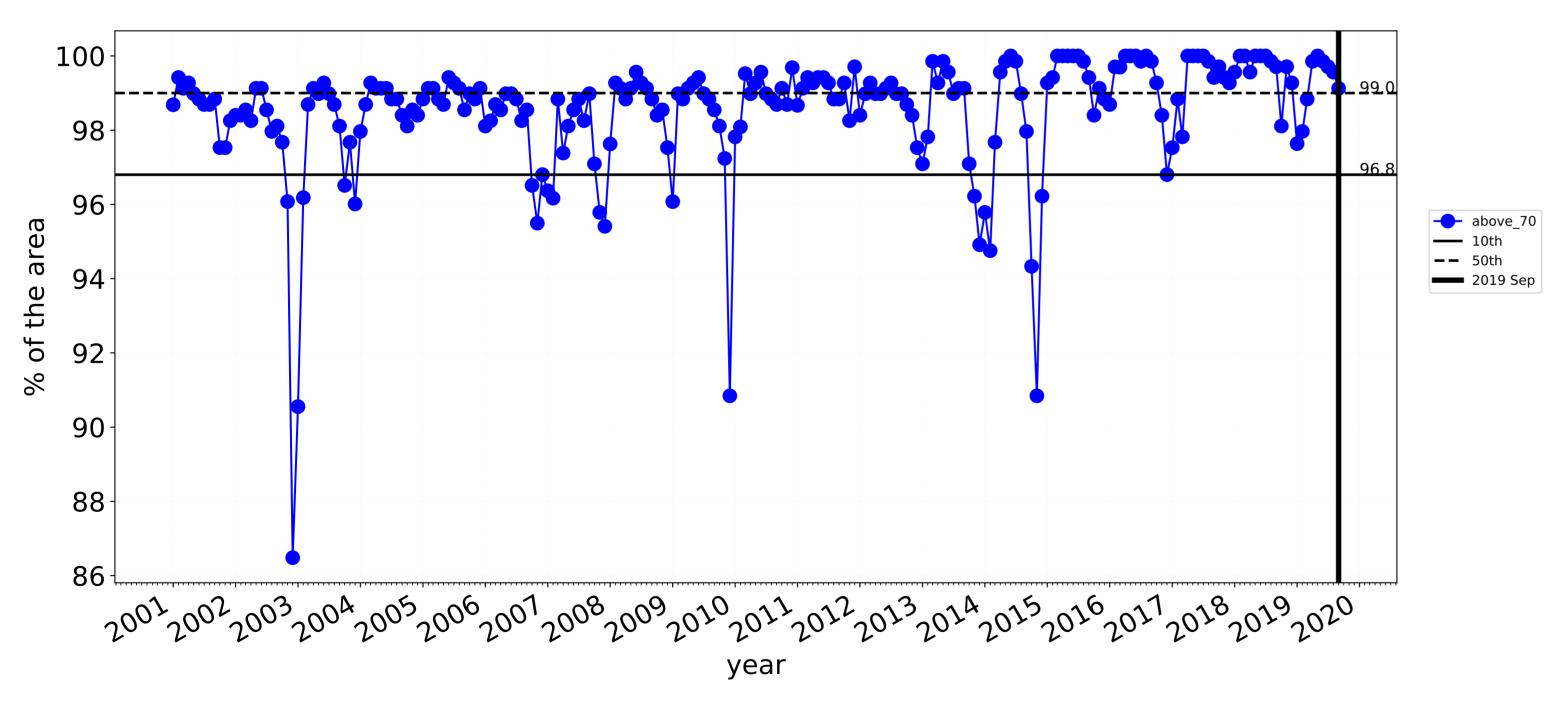
- 10

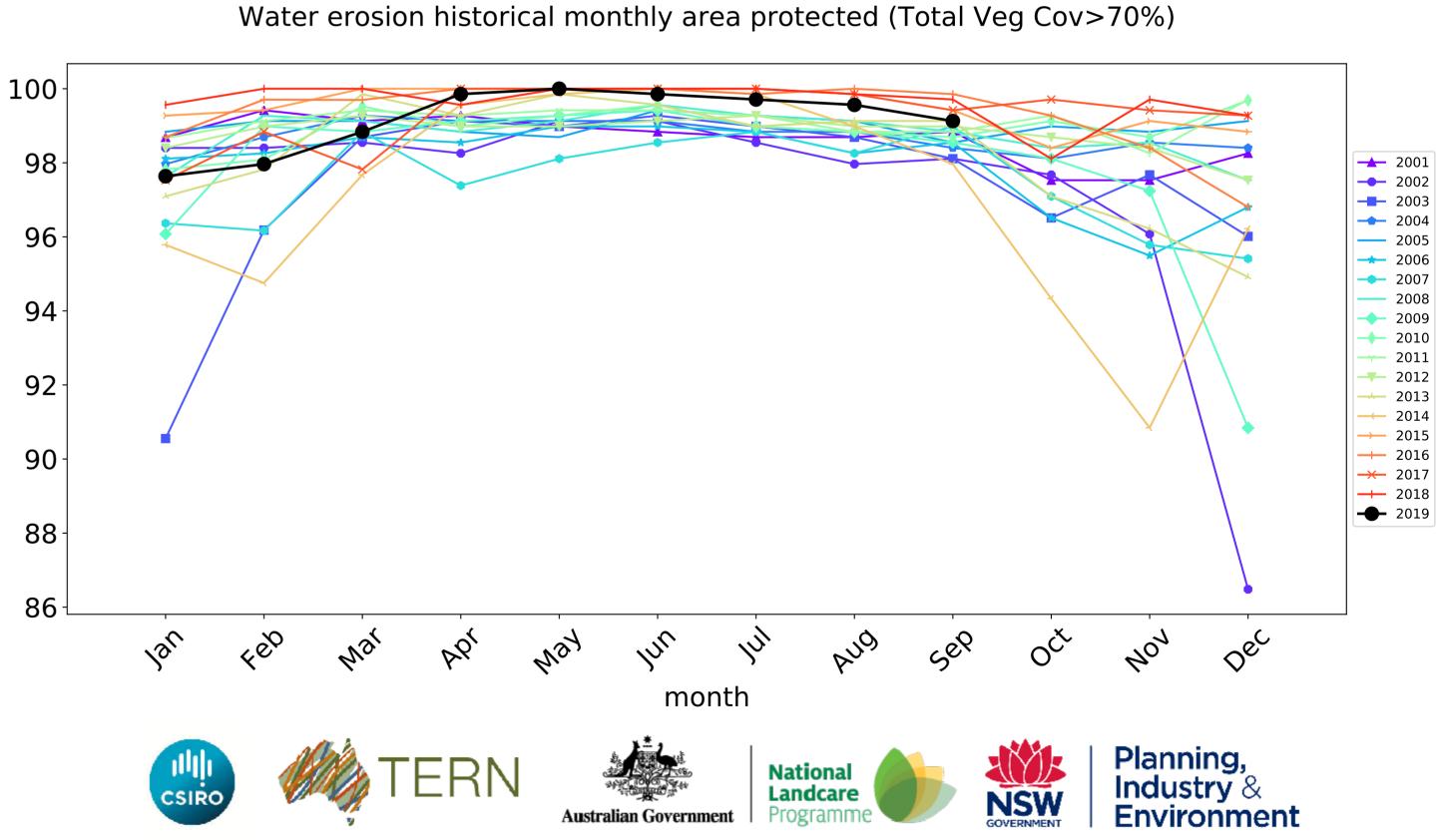
0

-10

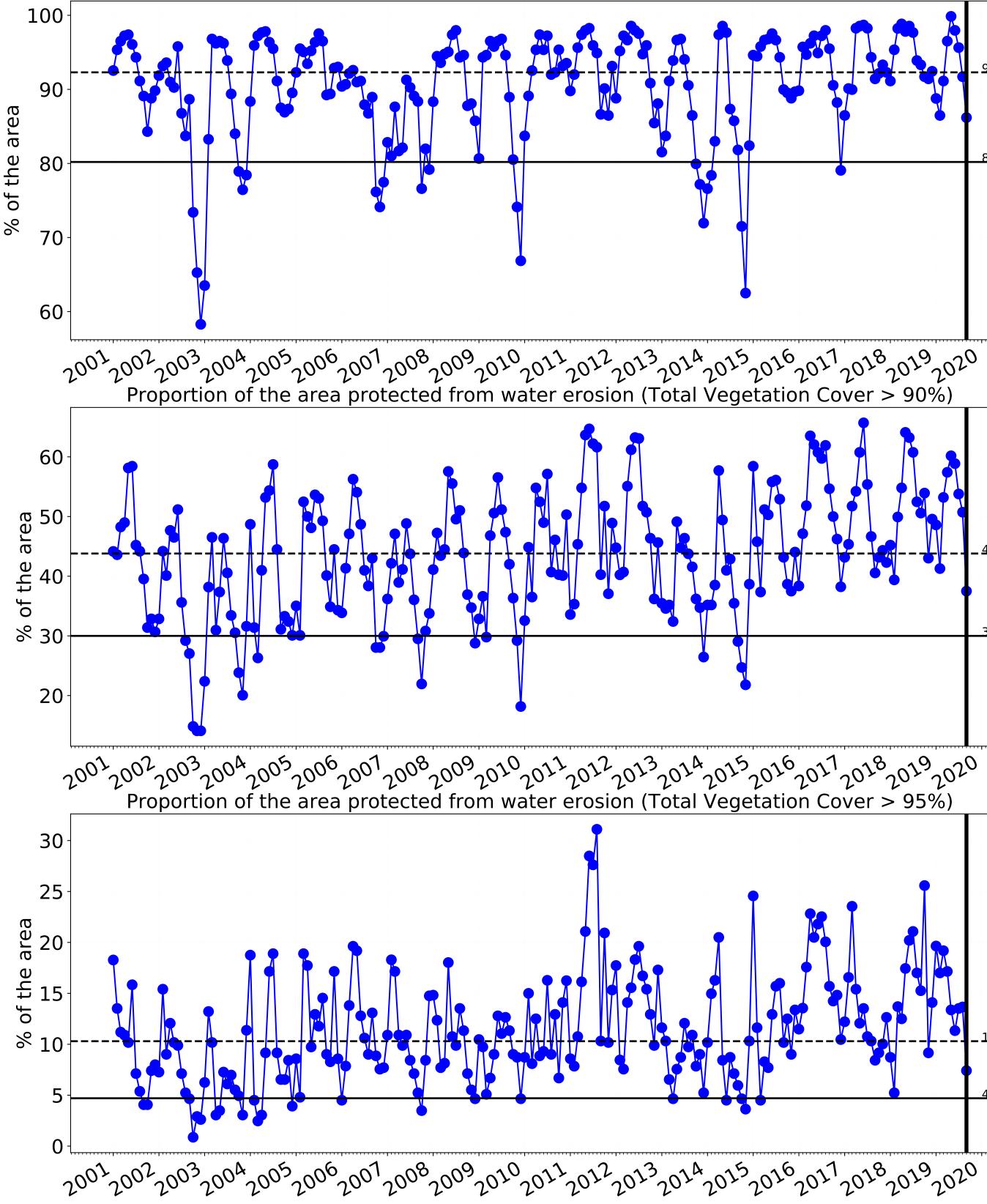


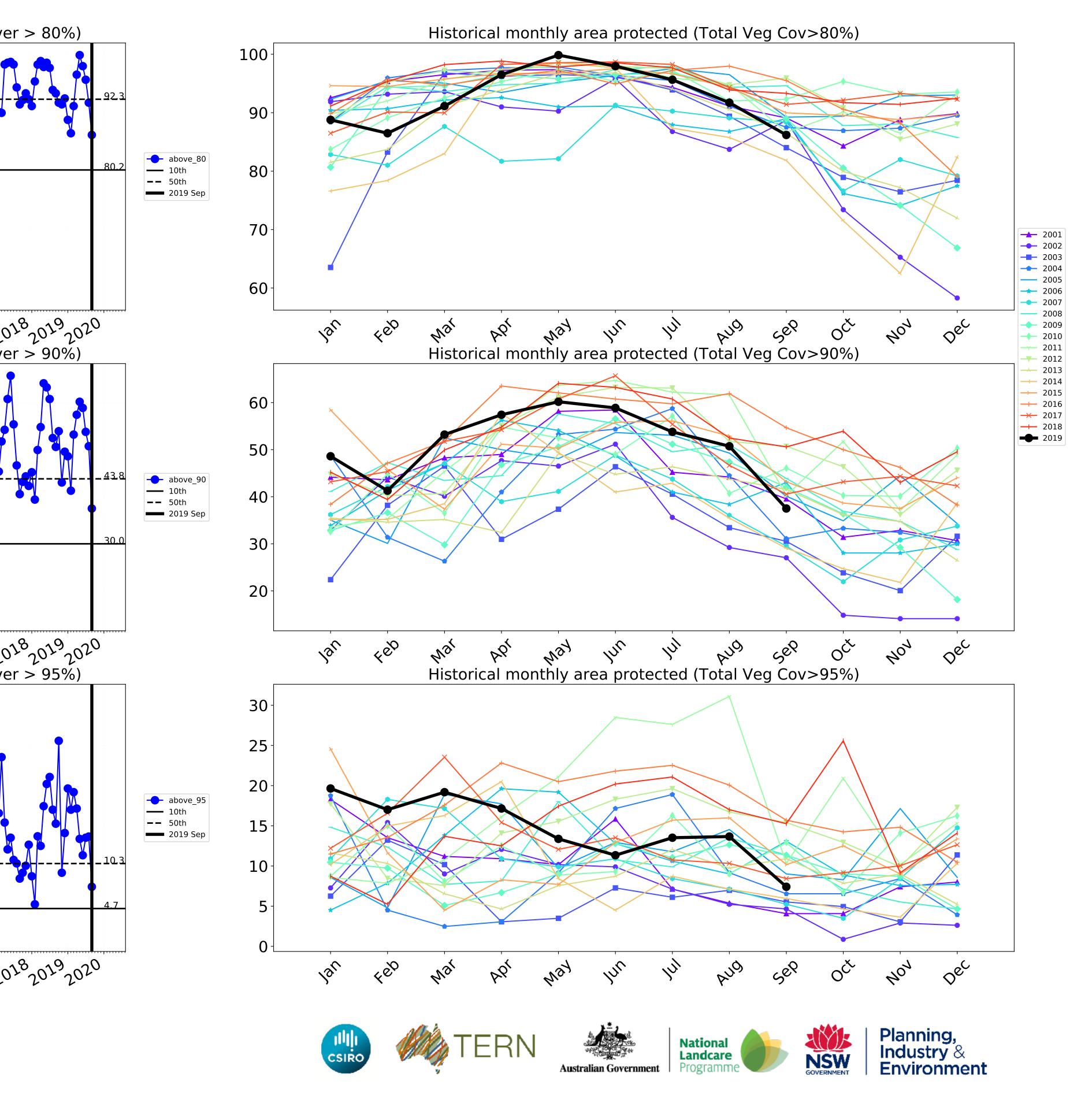
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



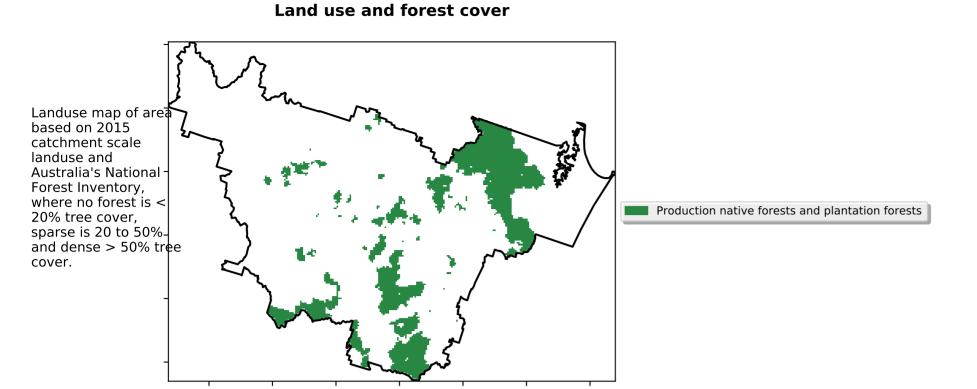


Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)

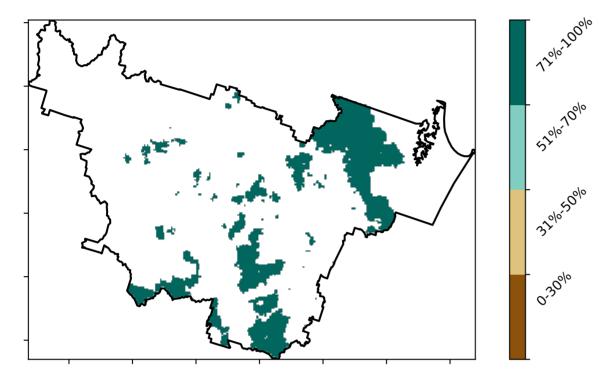




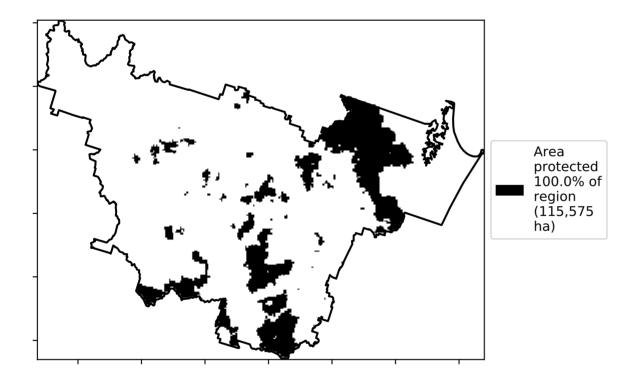
### **Production native forests and plantation forests**



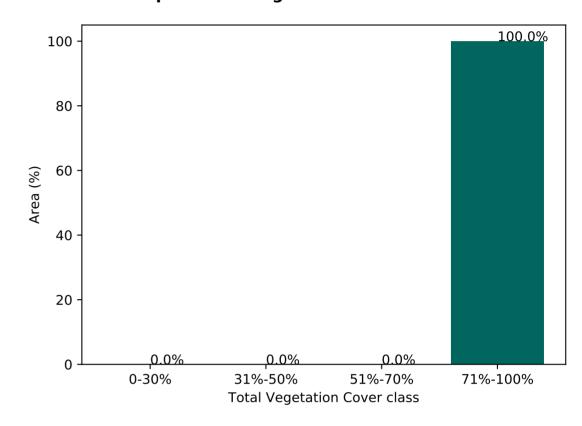
Total Vegetation Cover [%]



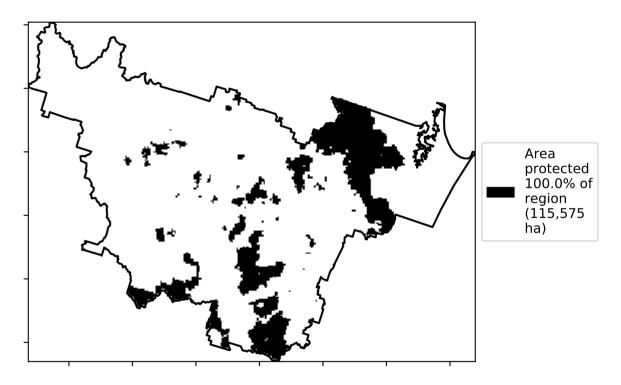
% Area protected from water erosion (>70%)



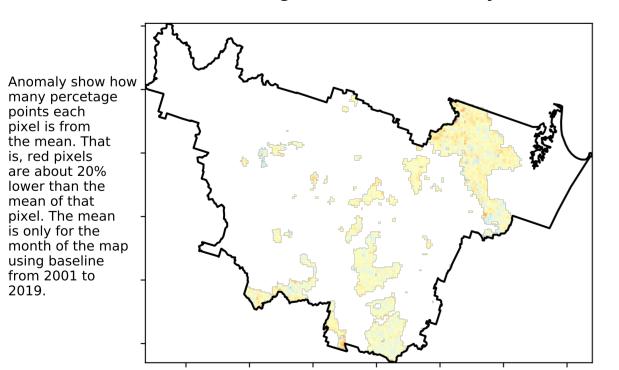
Proportion of vegetation cover class in area



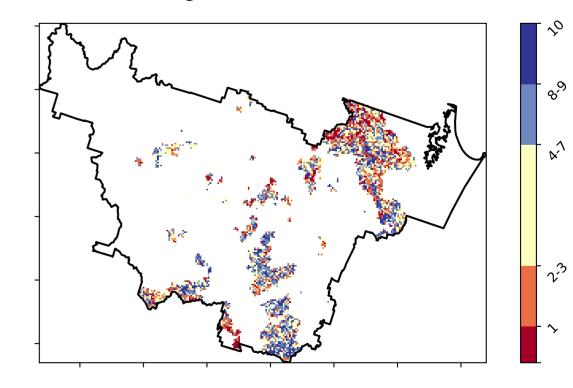
#### % Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



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 [%]** 



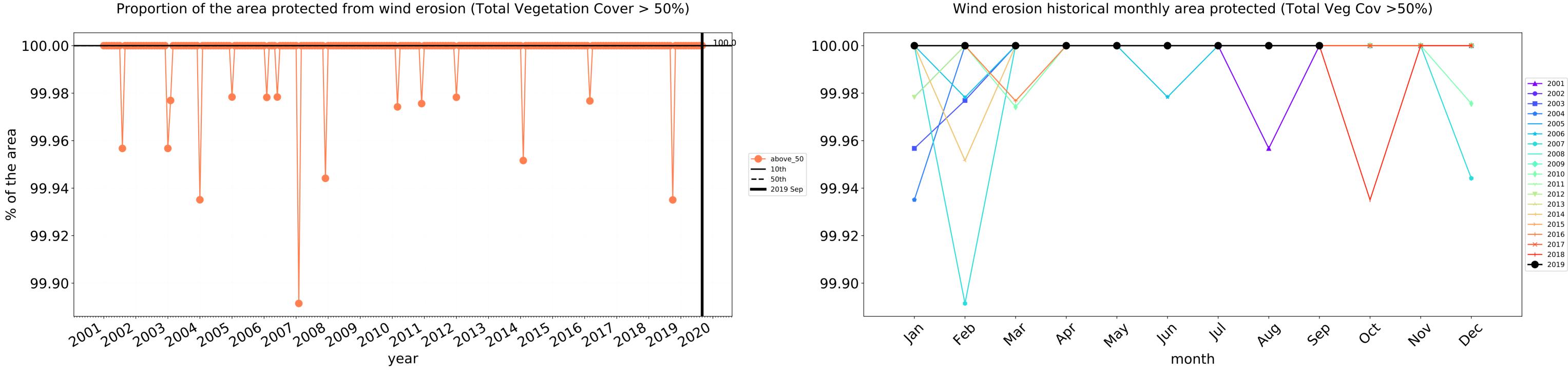


- 20

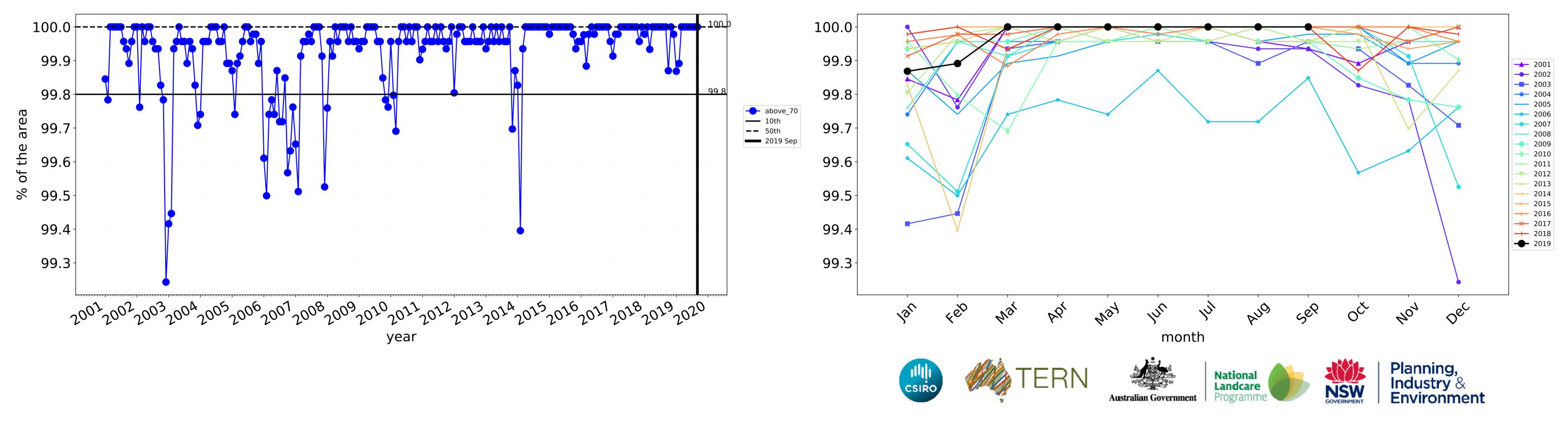
- 10

0

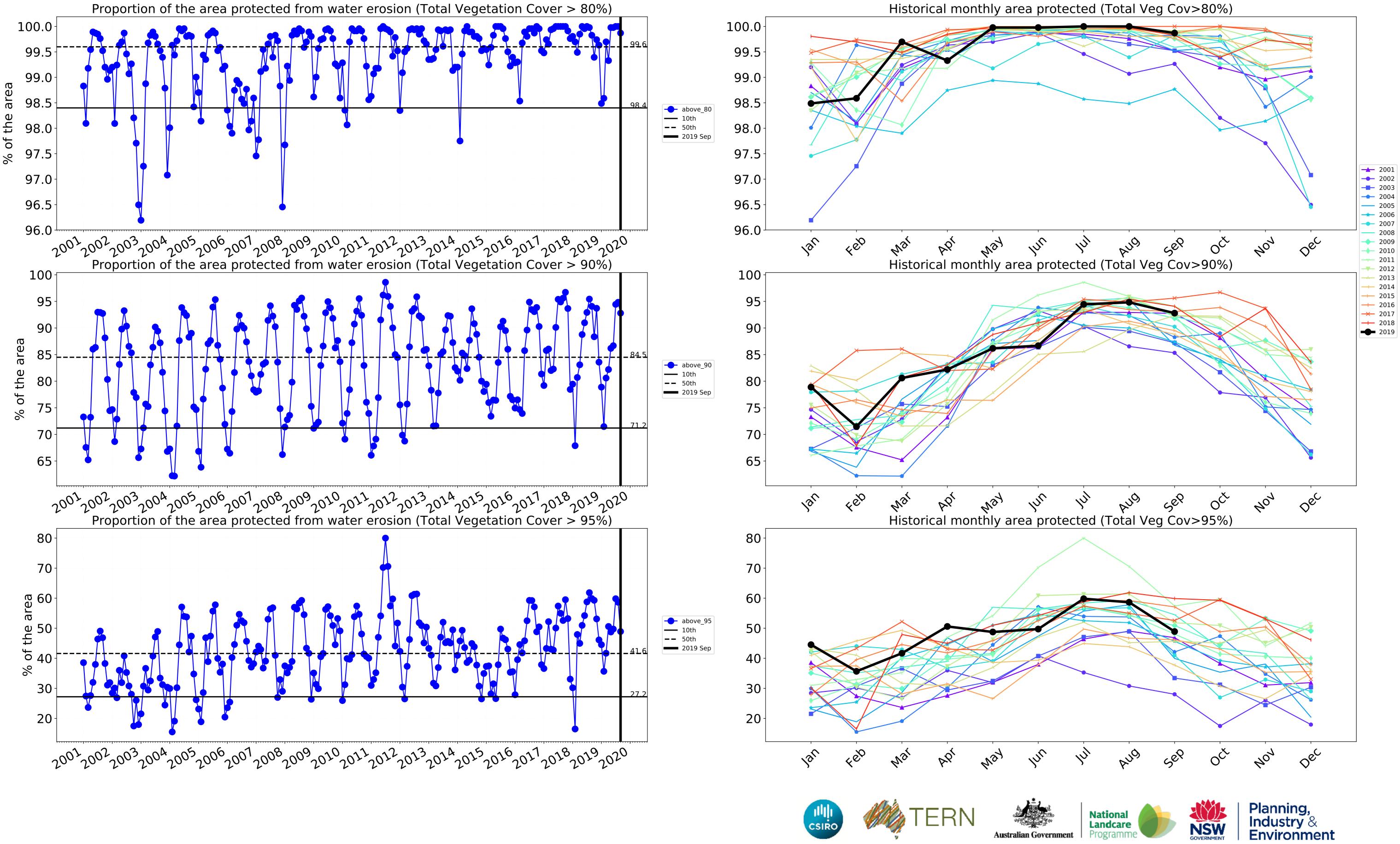
-10



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



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



# Gympie\_(R) (686,925 ha and no data 1,450 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	686,925	100.0% 686,925	100.0% 686,800	99.8% 685,600	98.0% 672,850	73.2% 502,550	31.4% 215,725
Conservation and natural environments	143,567	100.0% 143,567	99.9% 143,441	99.6% 143,013	99.1% 142,257	93.5% 134,248	62.6% 89,943
Conservation and natural environments non forest	10,303	100.0% 10,303	99.7% 10,278	98.2% 10,123	97.0% 9,993	85.5% 8,806	41.6% 4,286
Conservation and natural environments Woodland forest	29,537	100.0% 29,537	99.8% 29,486	99.5% 29,383	99.2% 29,306	94.9% 28,044	52.1% 15,399
Conservation and natural environments Forest (non woodland)	103,725	100.0% 103,725	100.0% 103,675	99.8% 103,500	99.3% 102,951	93.9% 97,383	67.6% 70,090
Agriculture	399,790	100.0% 399,790	100.0% 399,790	99.9% 399,463	97.3% 388,879	61.1% 244,429	16.6% 66,443
Grazing	377,121	100.0% 377,121	100.0% 377,121	100.0% 376,947	97.8% 368,732	62.2% 234,577	17.1% 64,393
Grazing non forest	267,213	100.0% 267,213	100.0% 267,213	99.9% 267,039	97.0% 259,201	54.7% 146,061	10.7% 28,578
Grazing Woodland forest	61,823	100.0% 61,823	100.0% 61,823	100.0% 61,823	99.4% 61,473	73.2% 45,237	23.1% 14,263
Grazing - Forest (non woodland)	48,084	100.0% 48,084	100.0% 48,084	100.0% 48,084	99.9% 48,059	90.1% 43,308	44.9% 21,579
Irrigation	17,173	100.0% 17,173	100.0% 17,173	99.1% 17,023	86.2% 14,801	37.5% 6,439	7.4% 1,273
Production native forests and plantation forests	115,403	100.0% 115,403	100.0% 115,403	100.0% 115,403	99.9% 115,253	92.8% 107,090	48.9% 56,441

