# LGA Noosa\_(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.

Noosa\_(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:

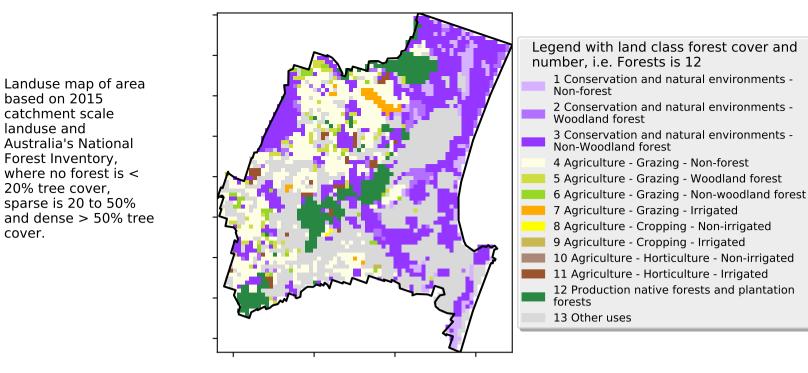
https://doi.org/10.4225/08/5848a3f19a7b3



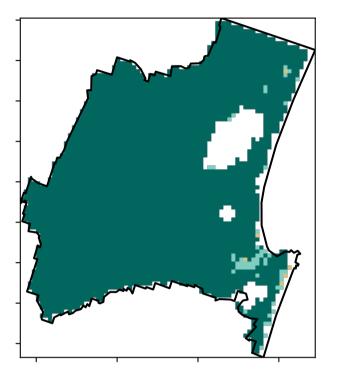
# **Vegetation Cover Aug 2019**

#### Land use and forest cover

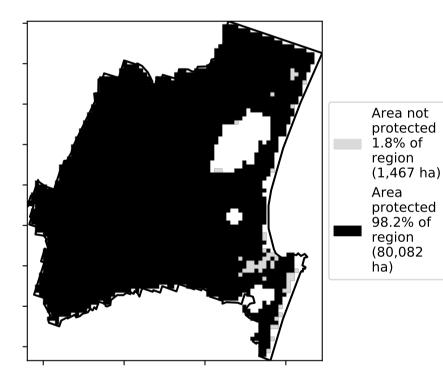
Proportion of each land class in area

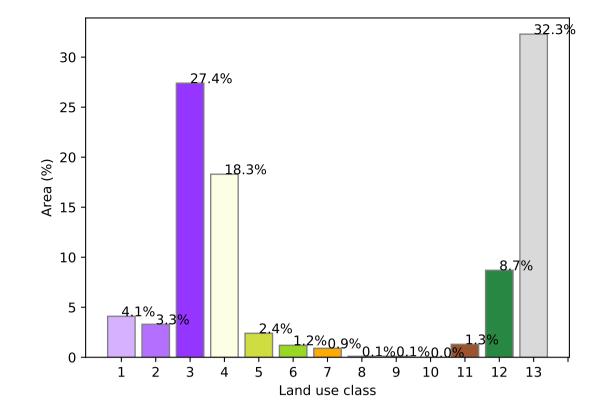


#### **Total Vegetation Cover [%]**

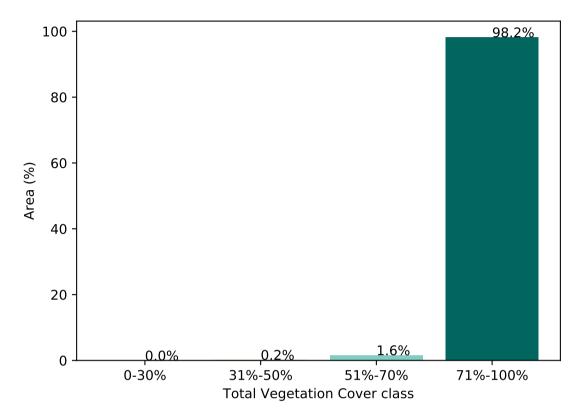


#### % Area protected from water erosion (>70%)





#### **Proportion of vegetation cover class in area**



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



**Total Vegetation Cover Anomaly [%]** 

**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.

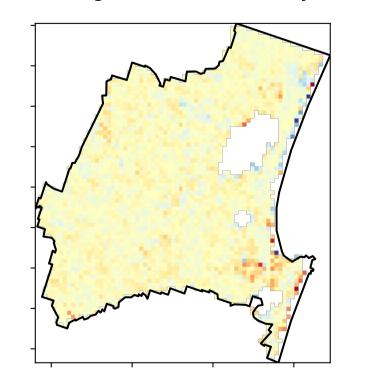
based on 2015

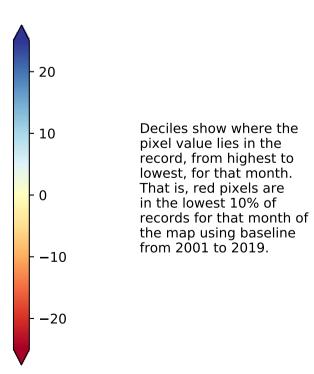
catchment scale landuse and

Forest Inventory,

20% tree cover,

cover.



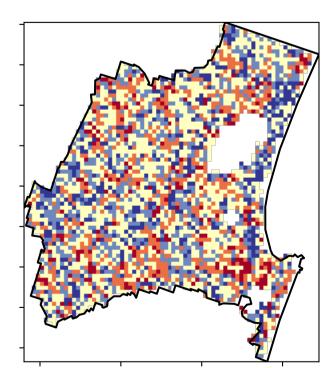


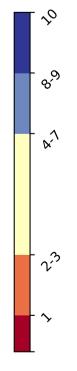
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5201010010

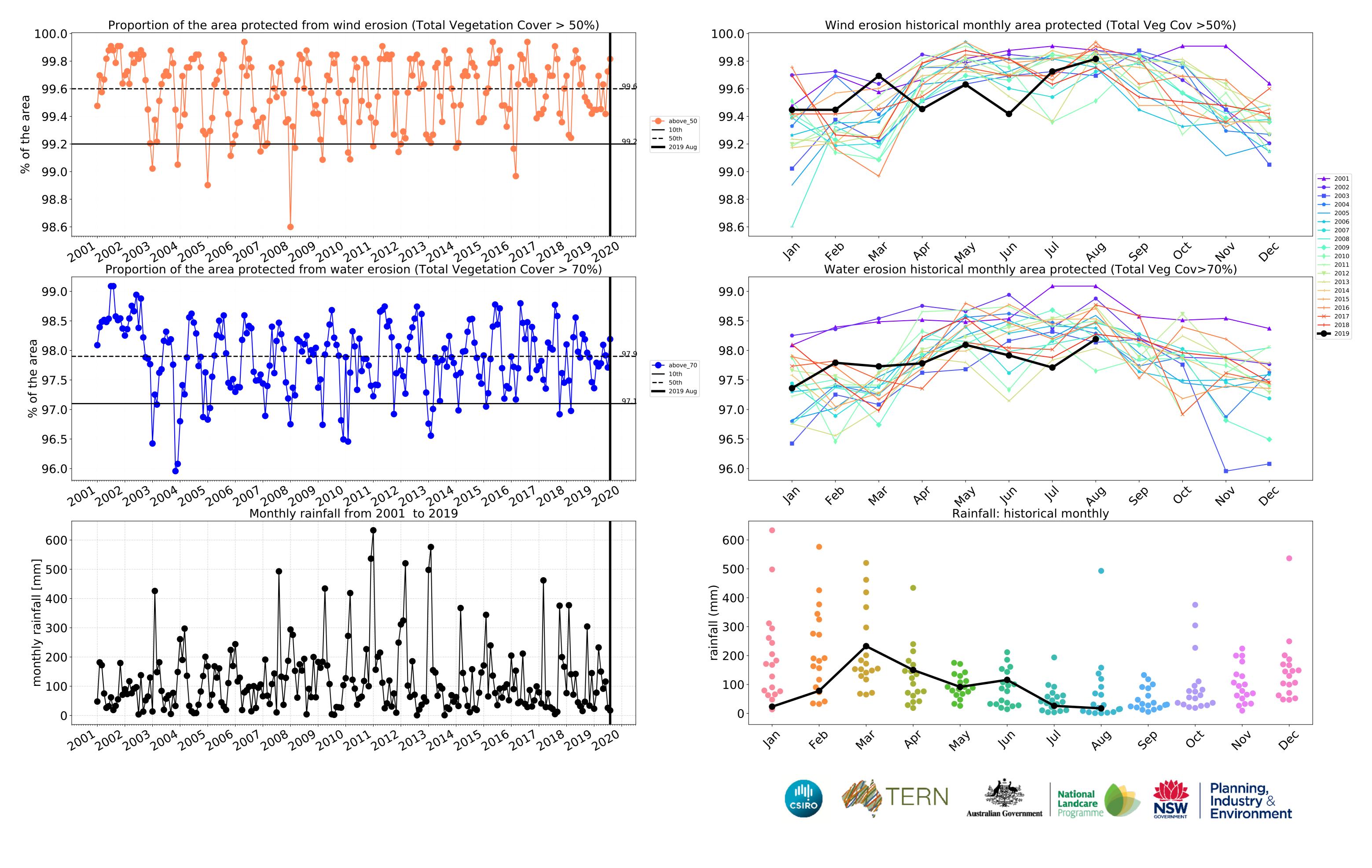
32%50%

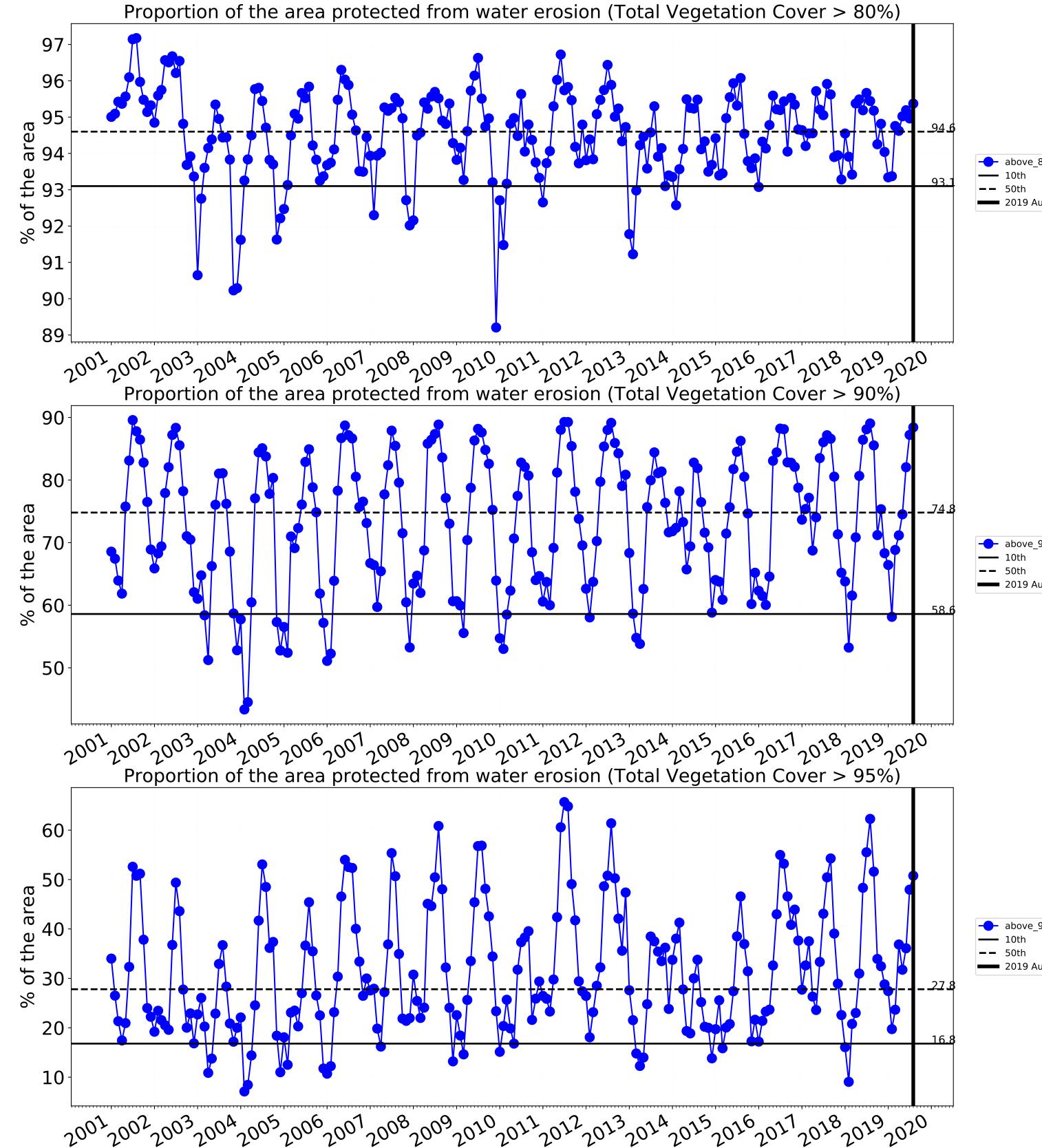
0-30%

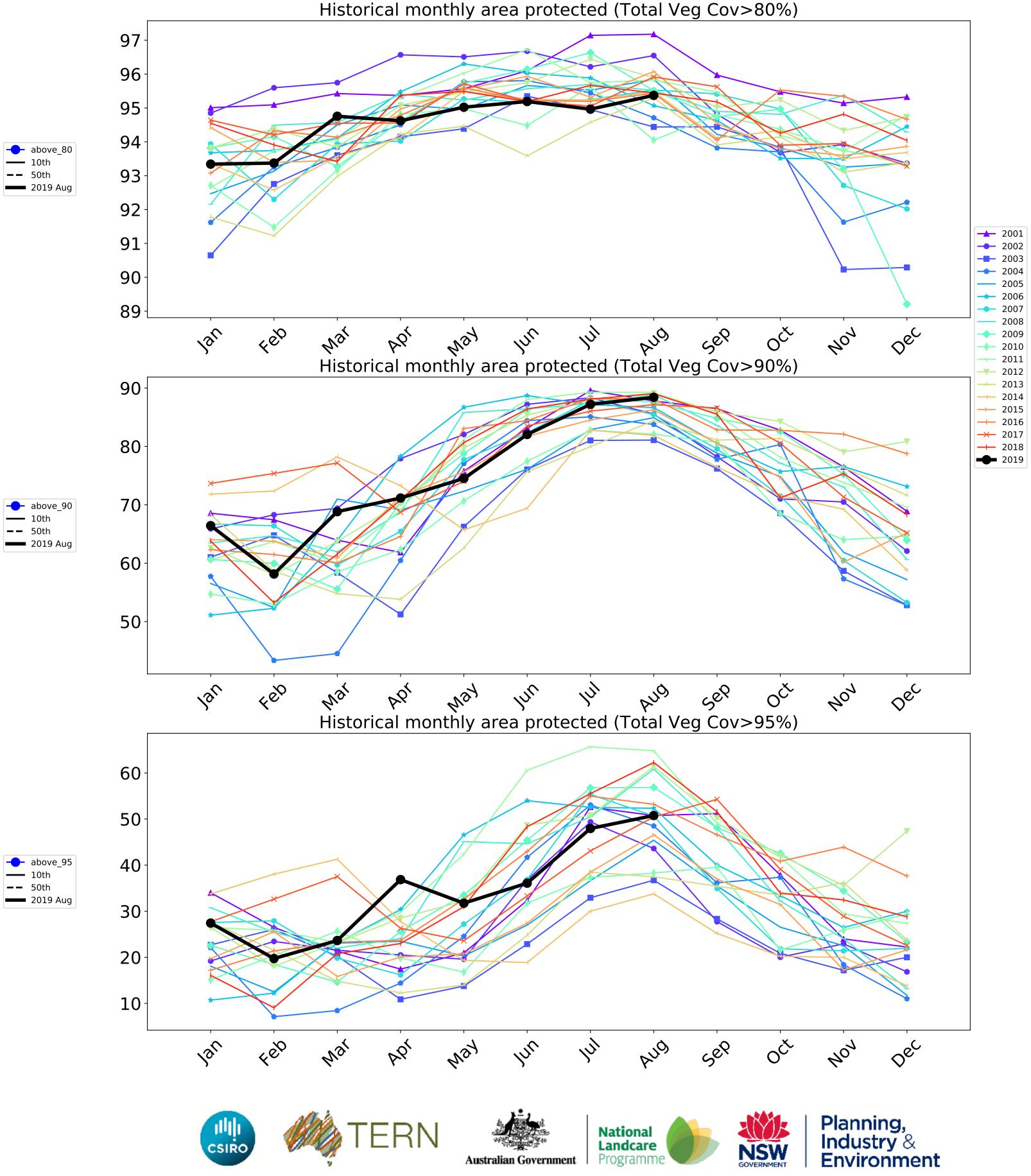








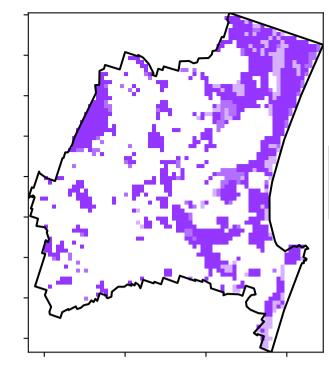




#### **Conservation and natural environments**

Land use and forest cover

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



Conservation and natural environments - Non-forest Conservation and natural environments - Woodland forest Conservation and natural environments – Non-woodland forest

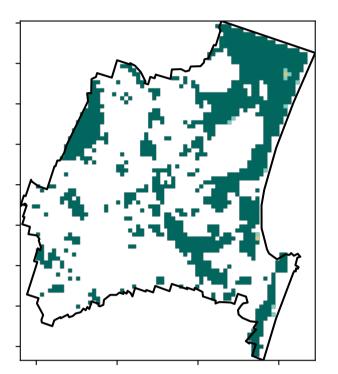
12%200%

· 520/07/00/0

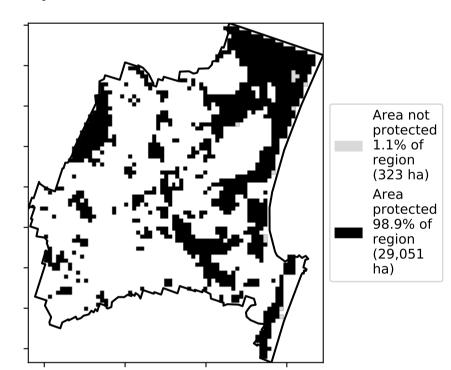
· 320050010

0.30%

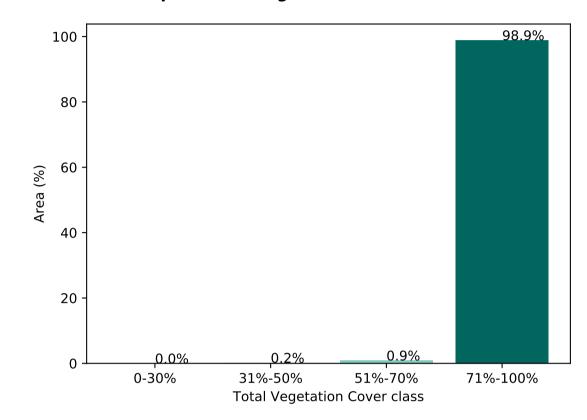
**Total Vegetation Cover [%]** 



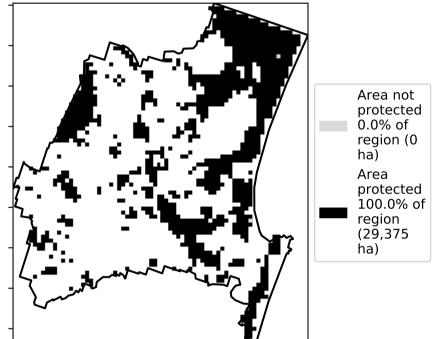
% Area protected from water erosion (>70%)



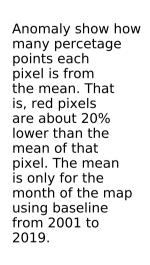
Proportion of vegetation cover class in area

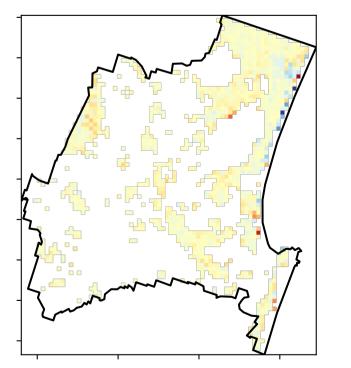


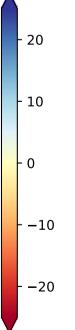
% Area protected from wind erosion (>50%)

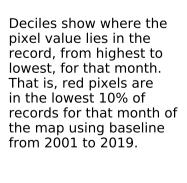


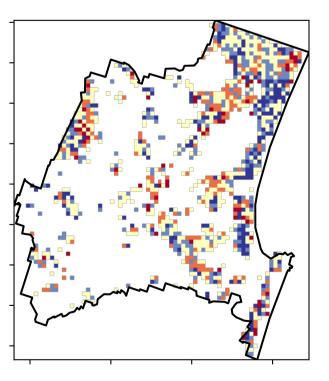
**Total Vegetation Cover Anomaly [%]** 

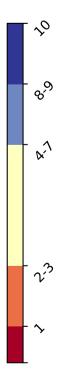




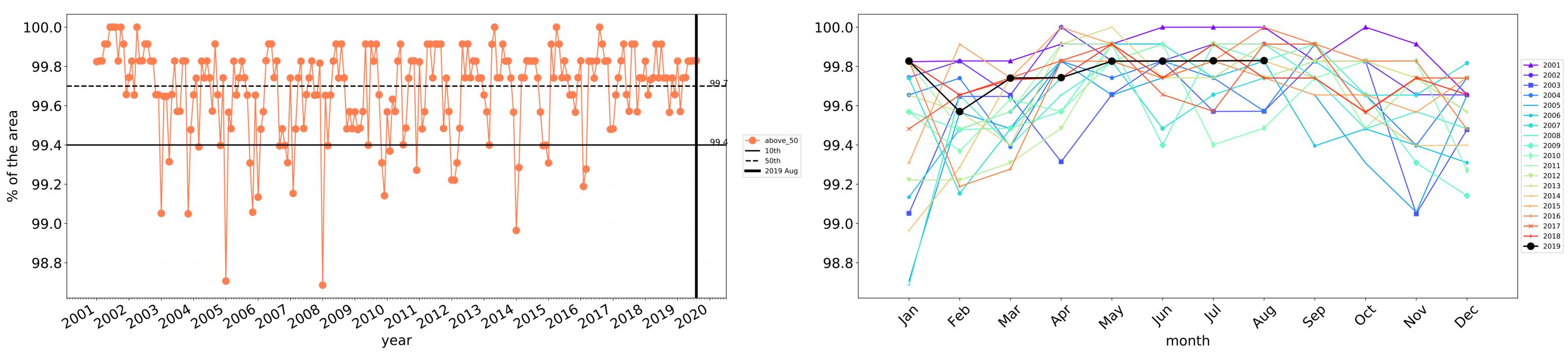






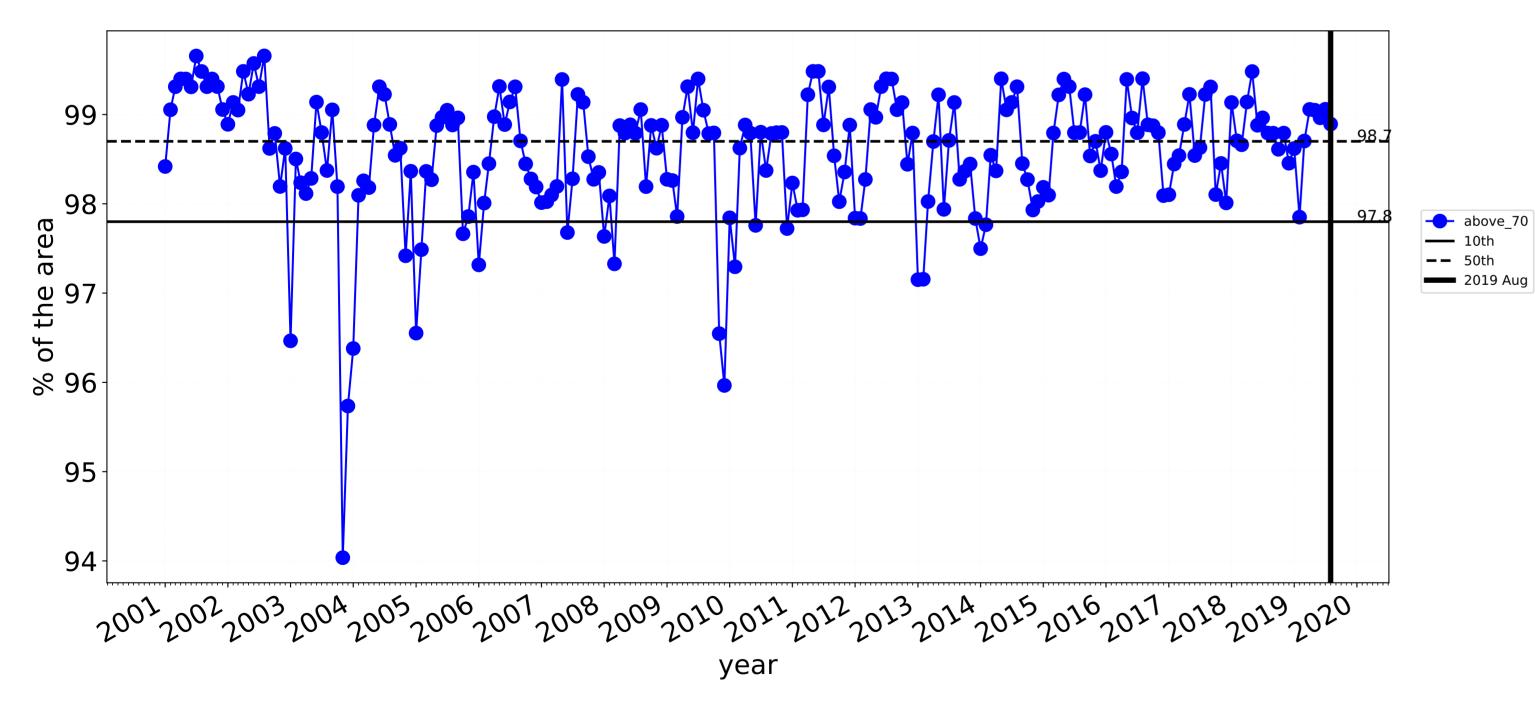






Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

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



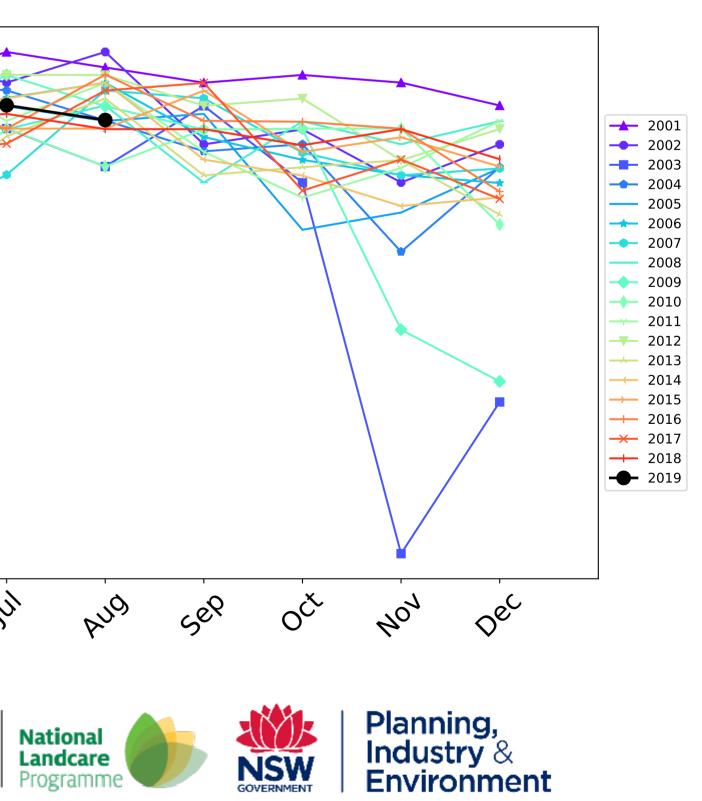


Wind erosion historical monthly area protected (Total Veg Cov >50%)

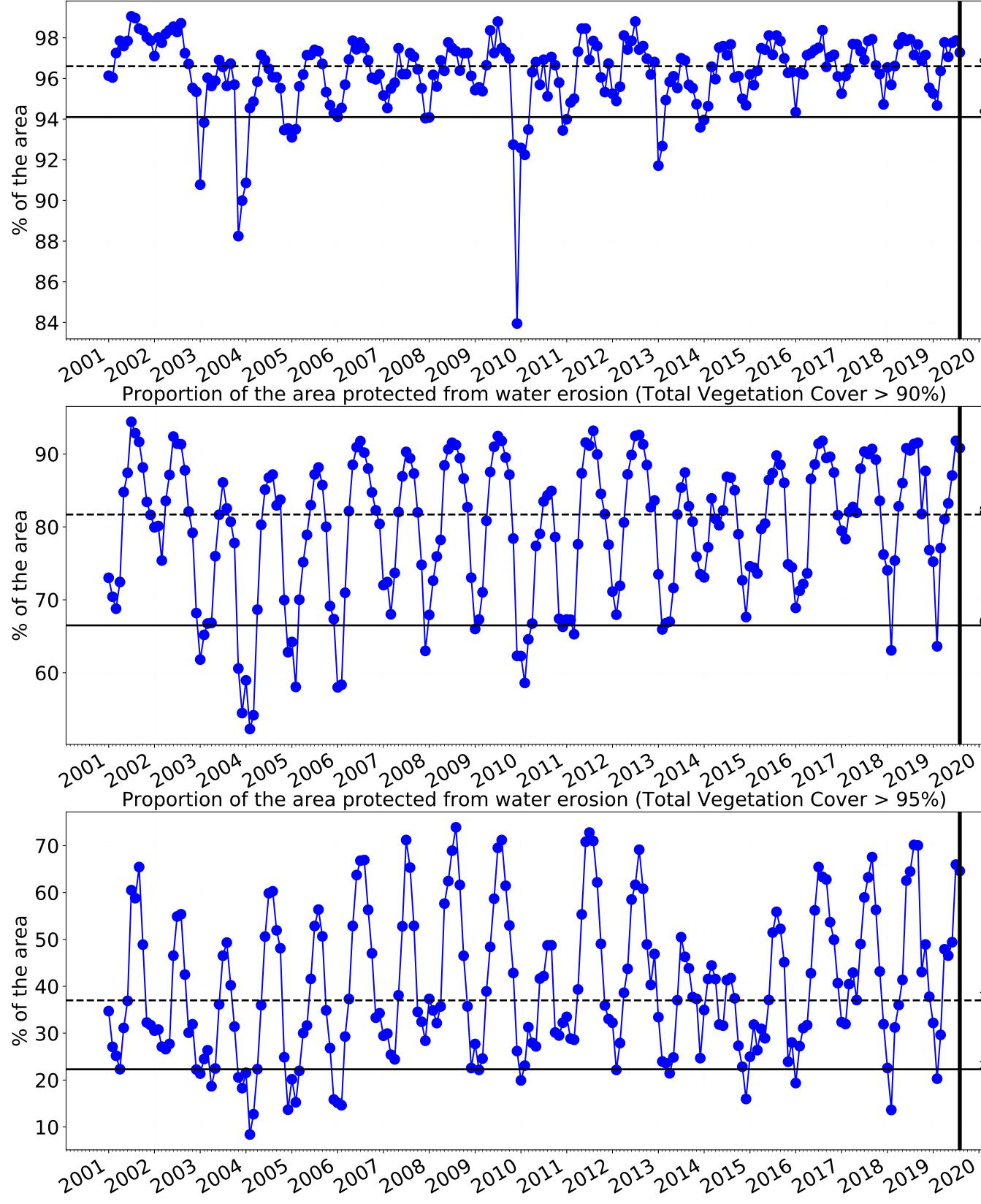
99 98 97 96 95 94 Jan fer In May PQ1 Mal month ERN (1990)

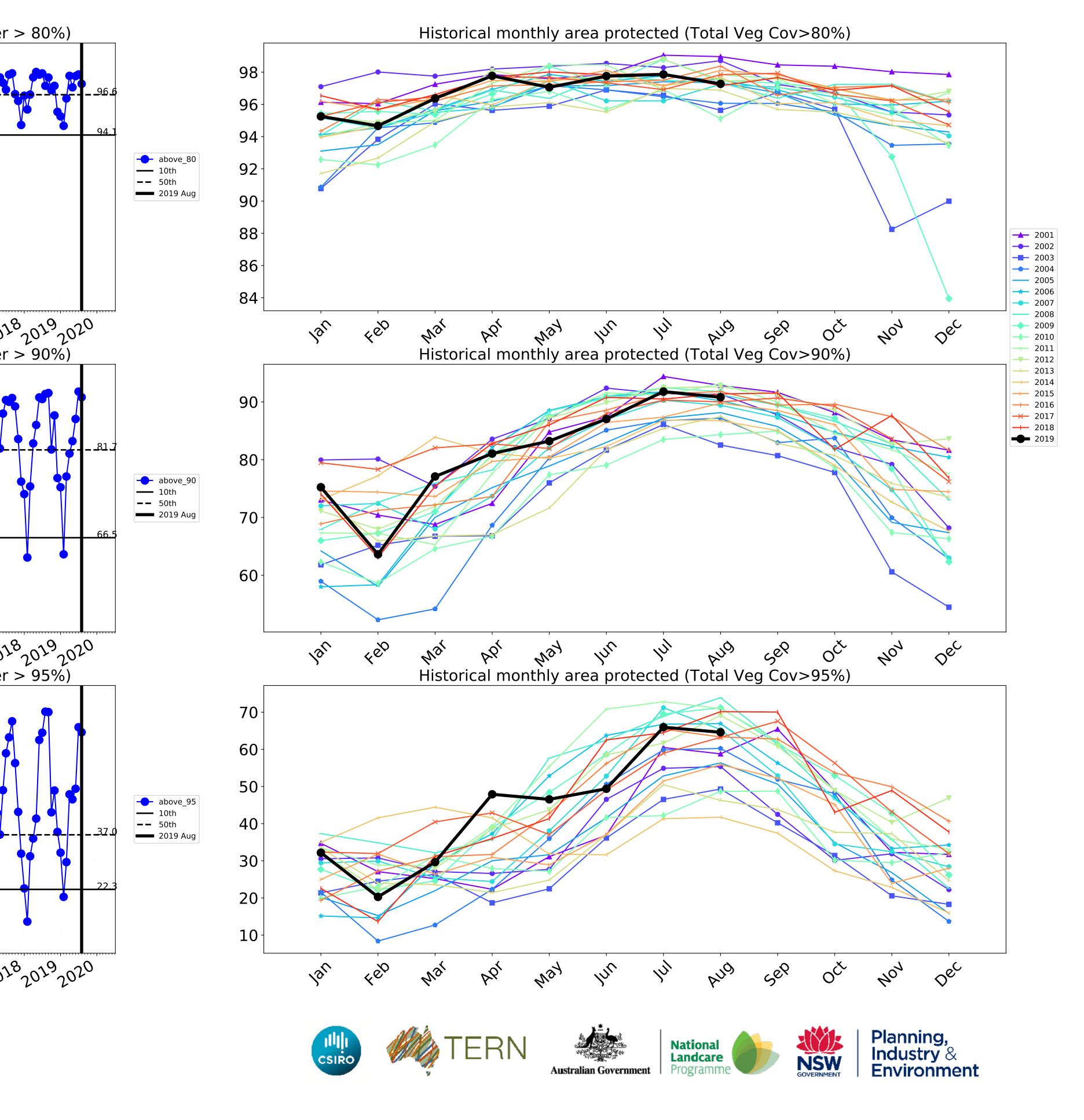
Water erosion historical monthly area protected (Total Veg Cov>70%)

Australian Government



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

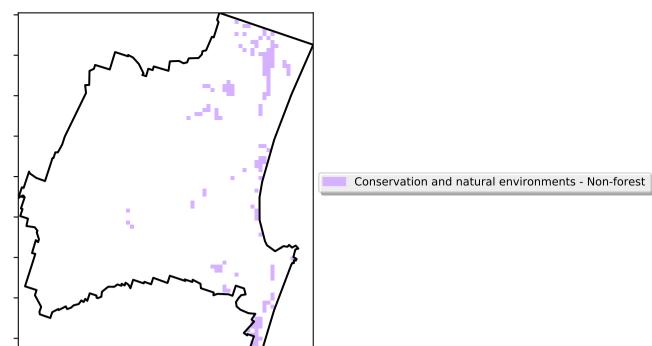




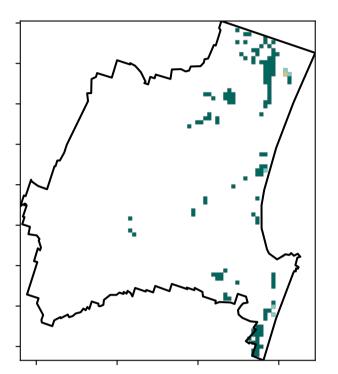
#### **Conservation and natural environments non forest**

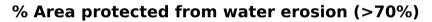
Land use and forest cover

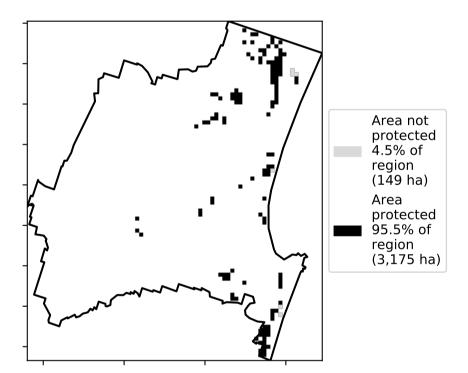
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



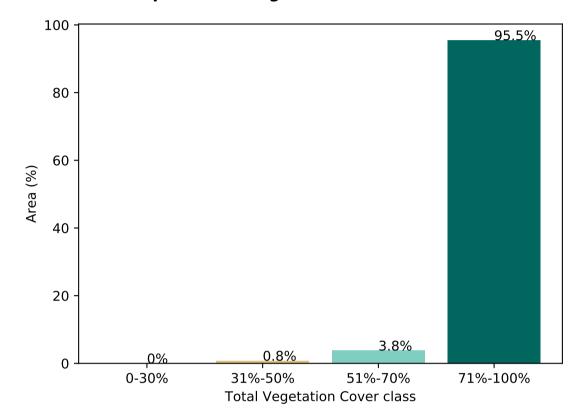
**Total Vegetation Cover [%]** 







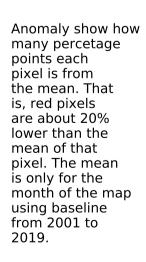
Proportion of vegetation cover class in area

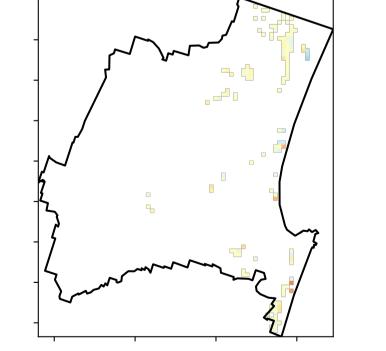


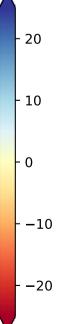
% Area protected from wind erosion (>50%)



**Total Vegetation Cover Anomaly [%]** 





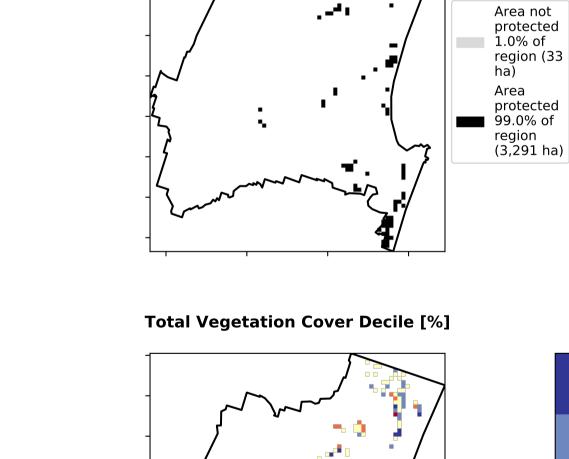


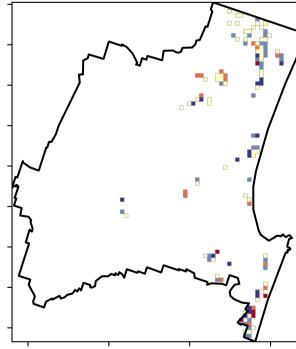
12%200%

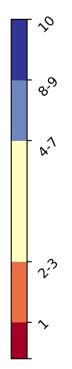
· 52°10'70°10

3201050010

0.30%









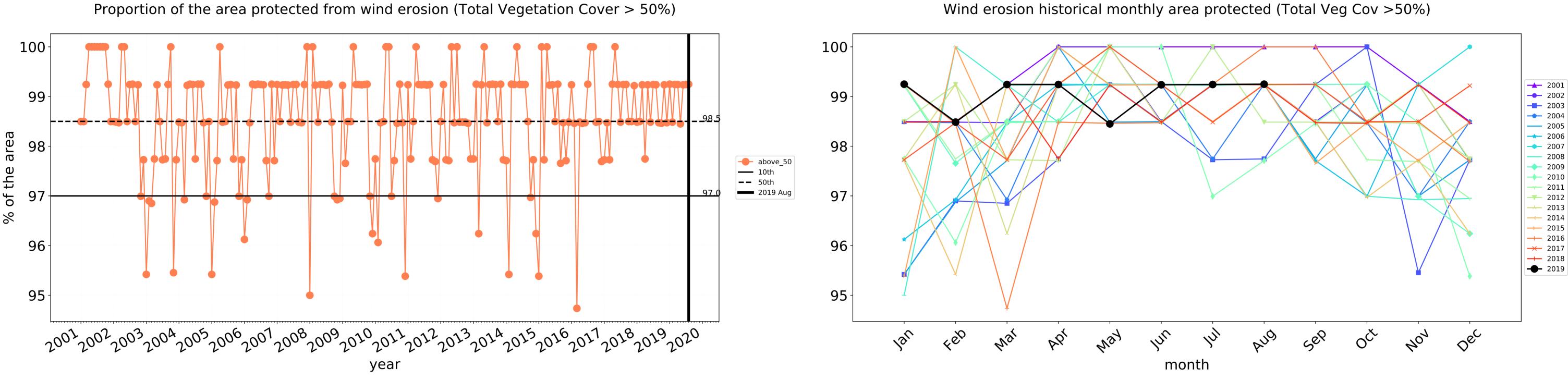
Deciles show where the pixel value lies in the

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

records for that month of

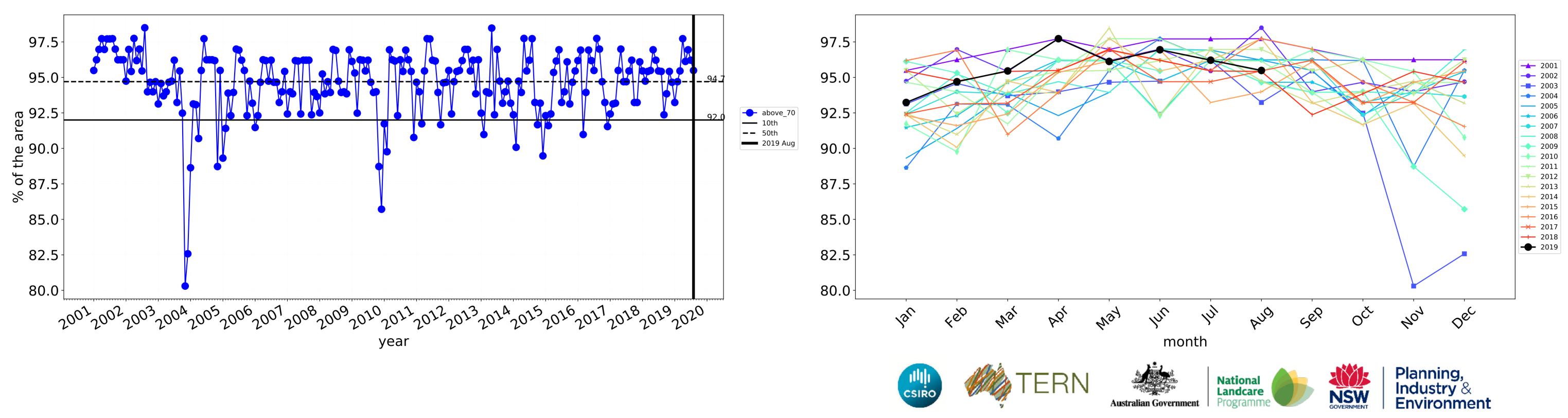
the map using baseline from 2001 to 2019.

in the lowest 10% of



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

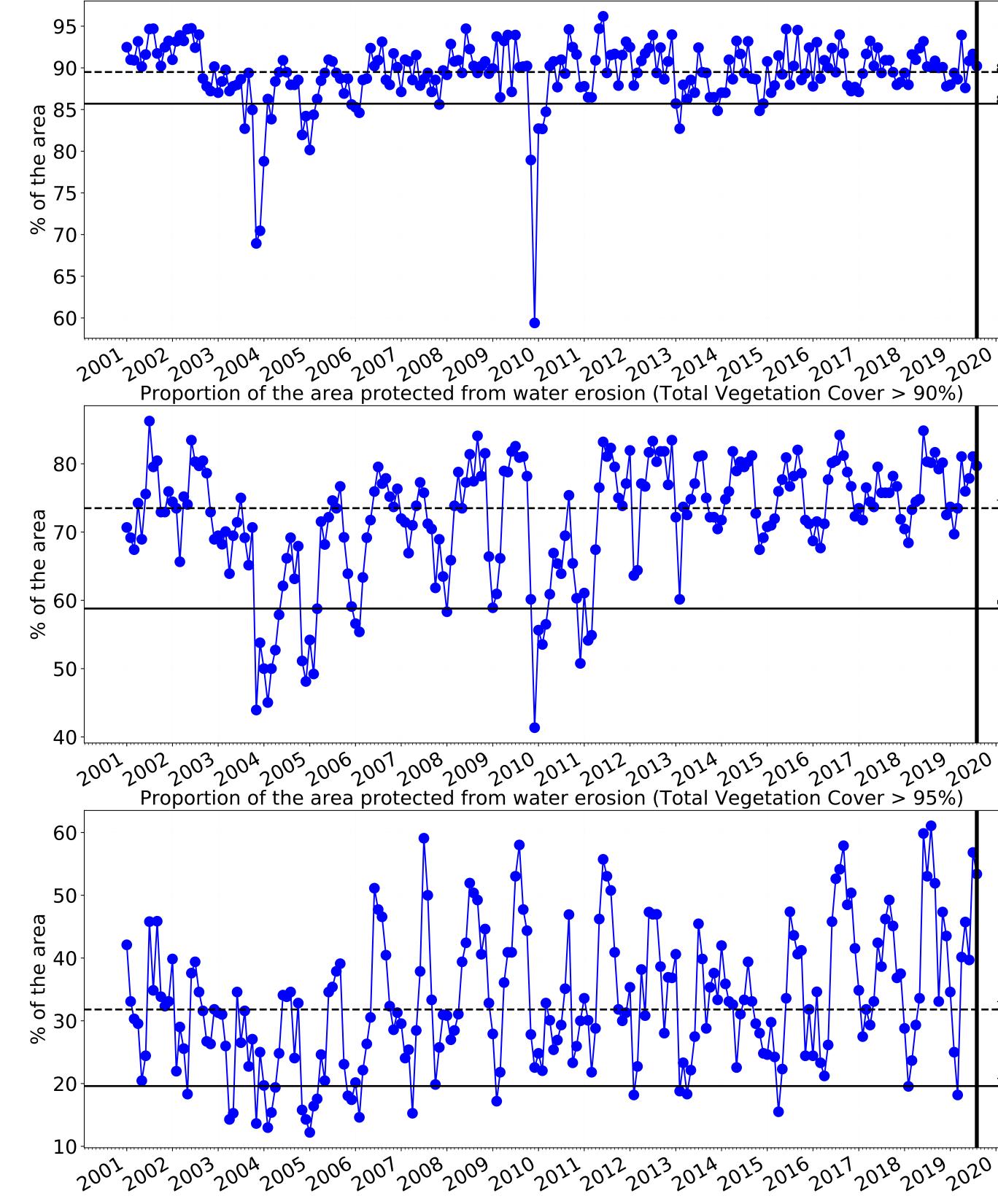
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

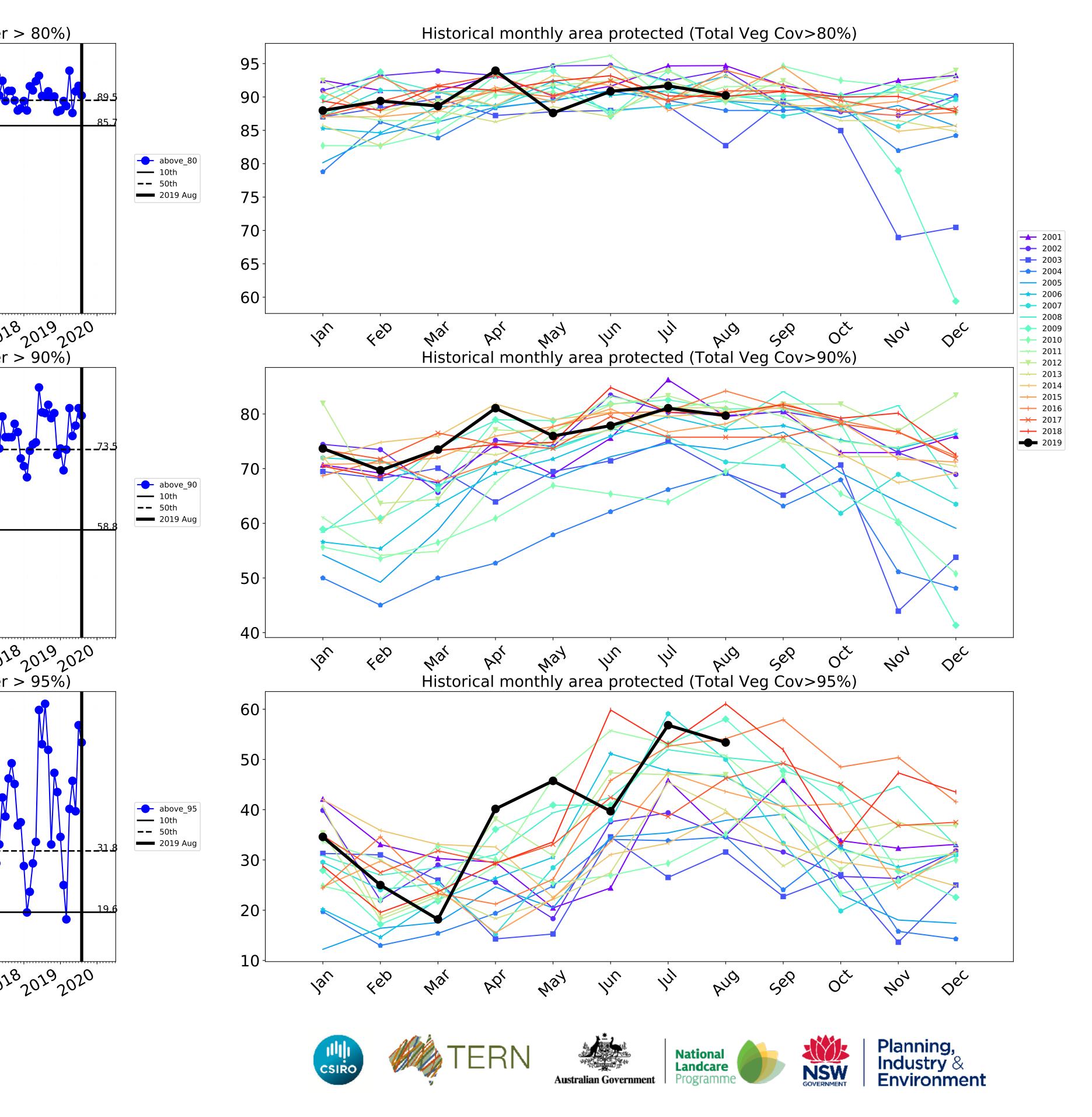


9

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

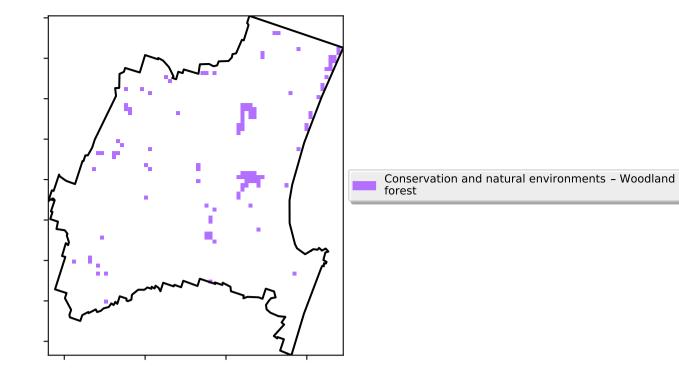
Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)



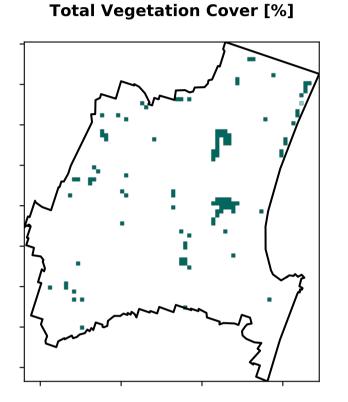


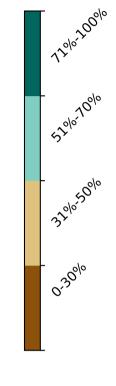
#### **Conservation and natural environments Woodland forest**

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.

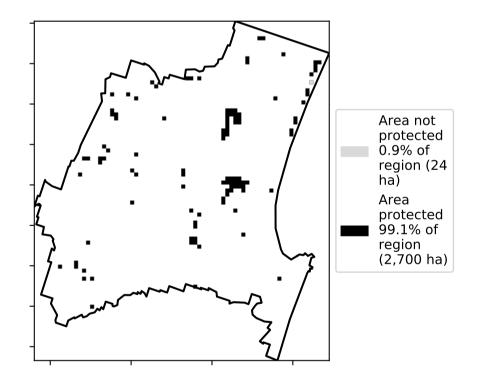


Land use and forest cover

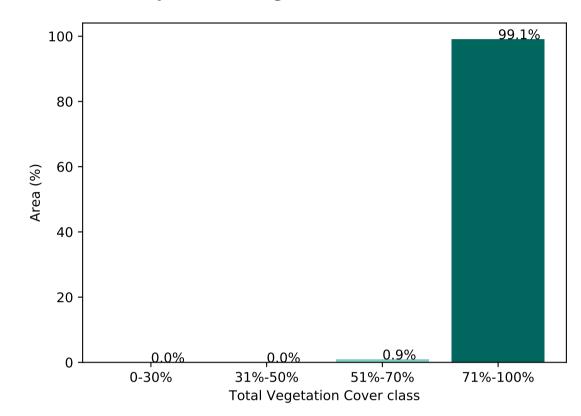




% Area protected from water erosion (>70%)



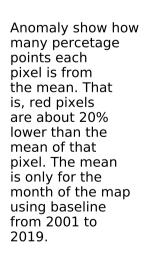


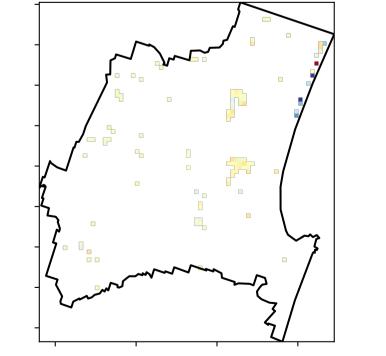


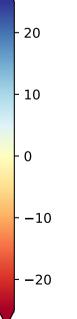
% Area protected from wind erosion (>50%)

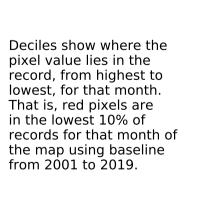


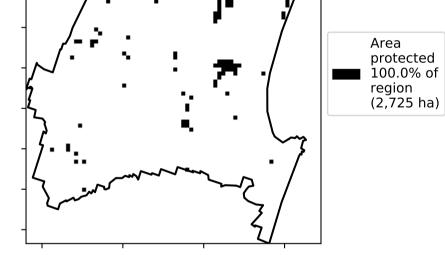
**Total Vegetation Cover Anomaly [%]** 

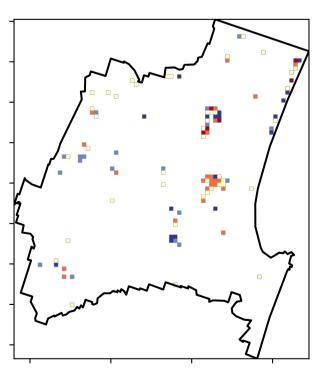


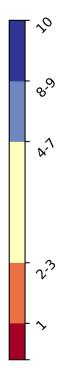




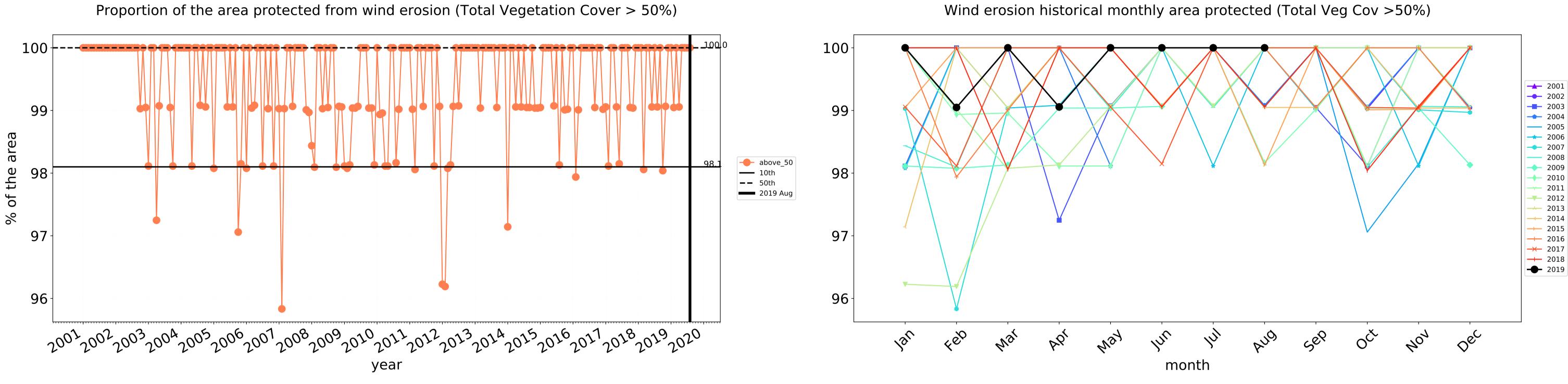




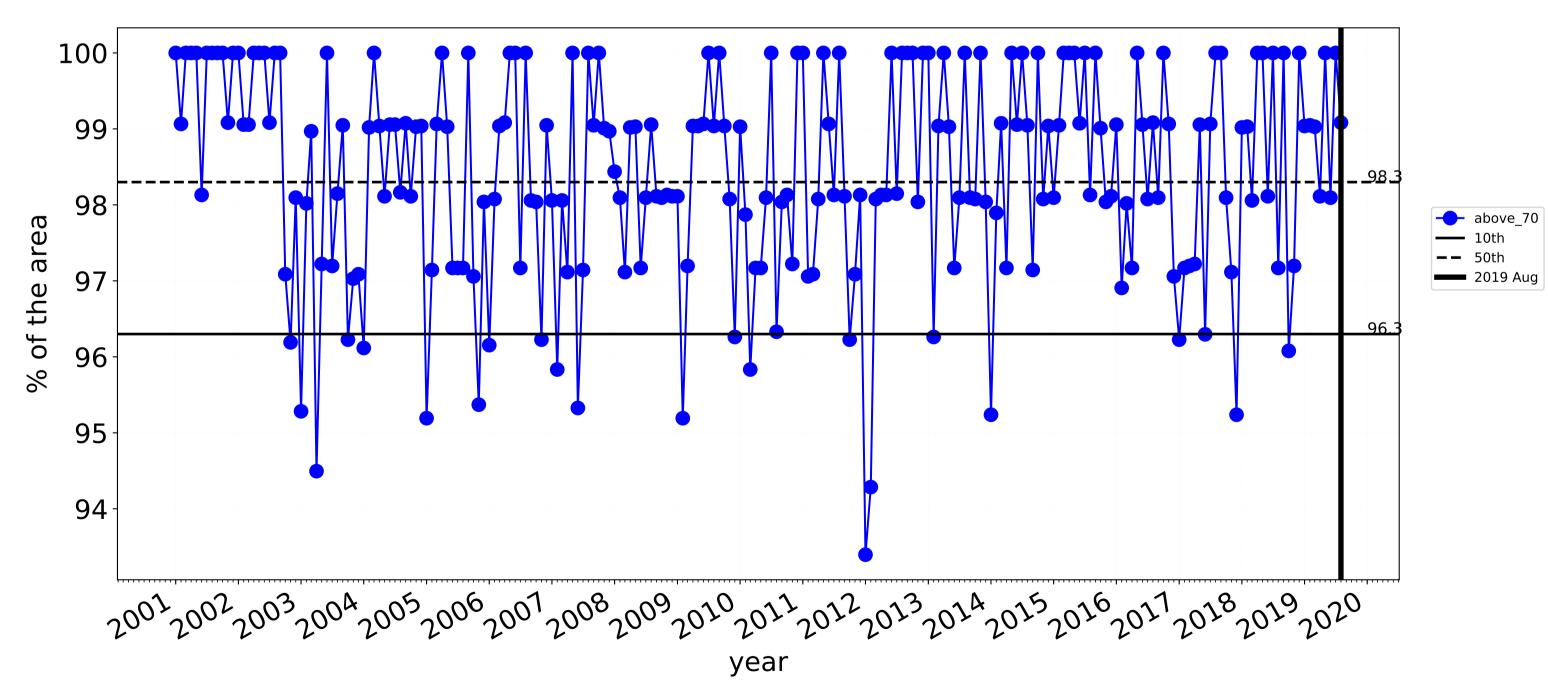




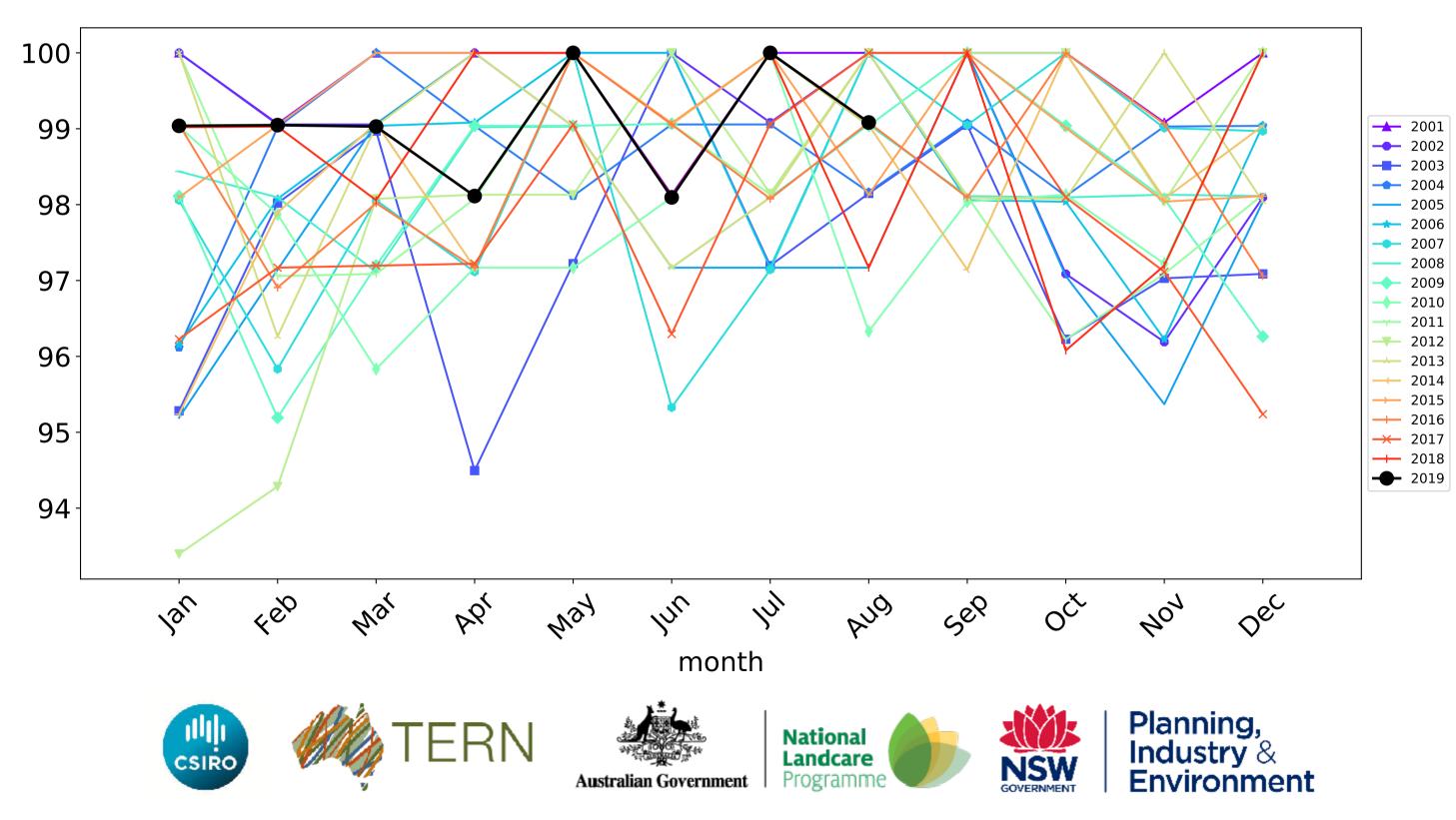


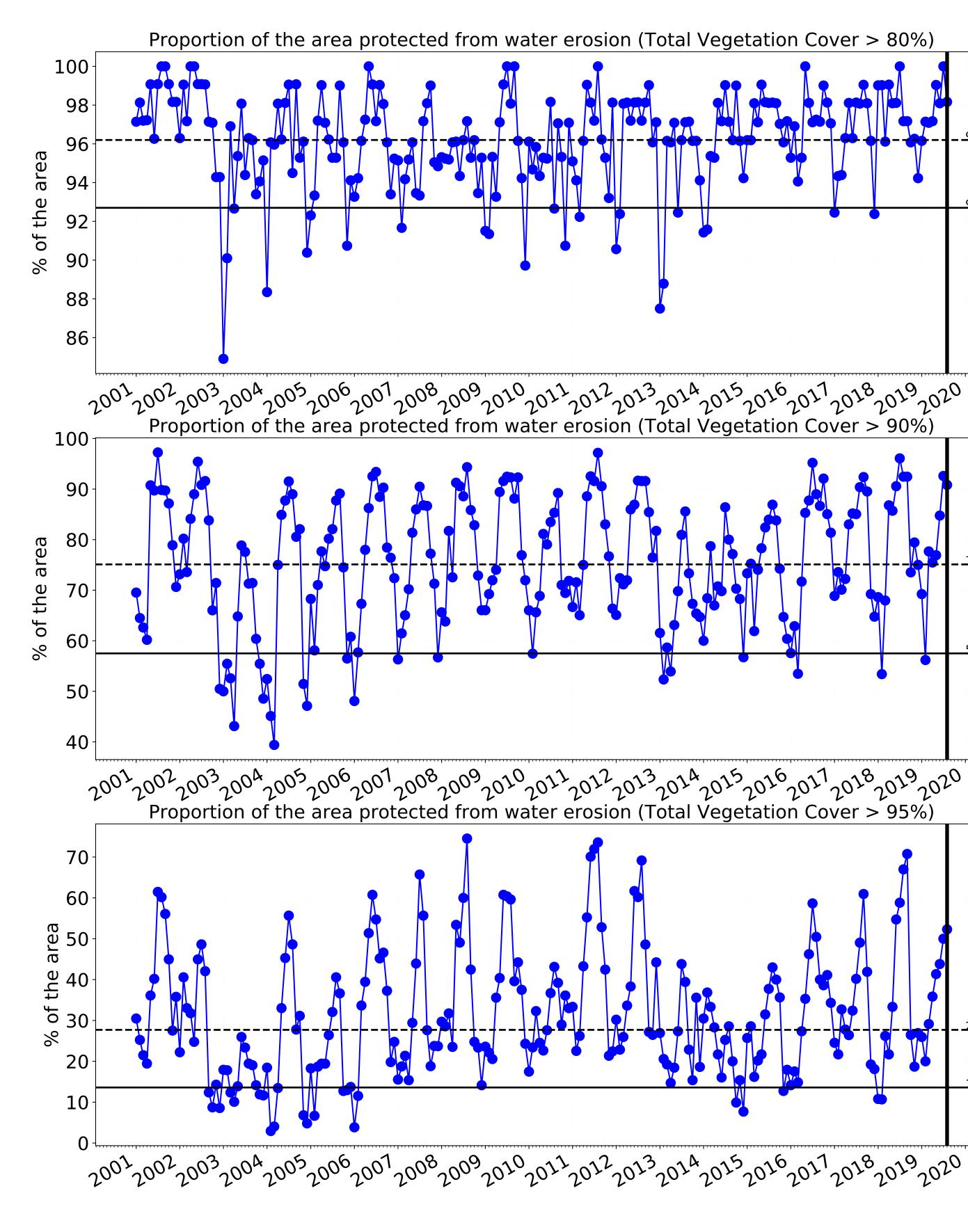


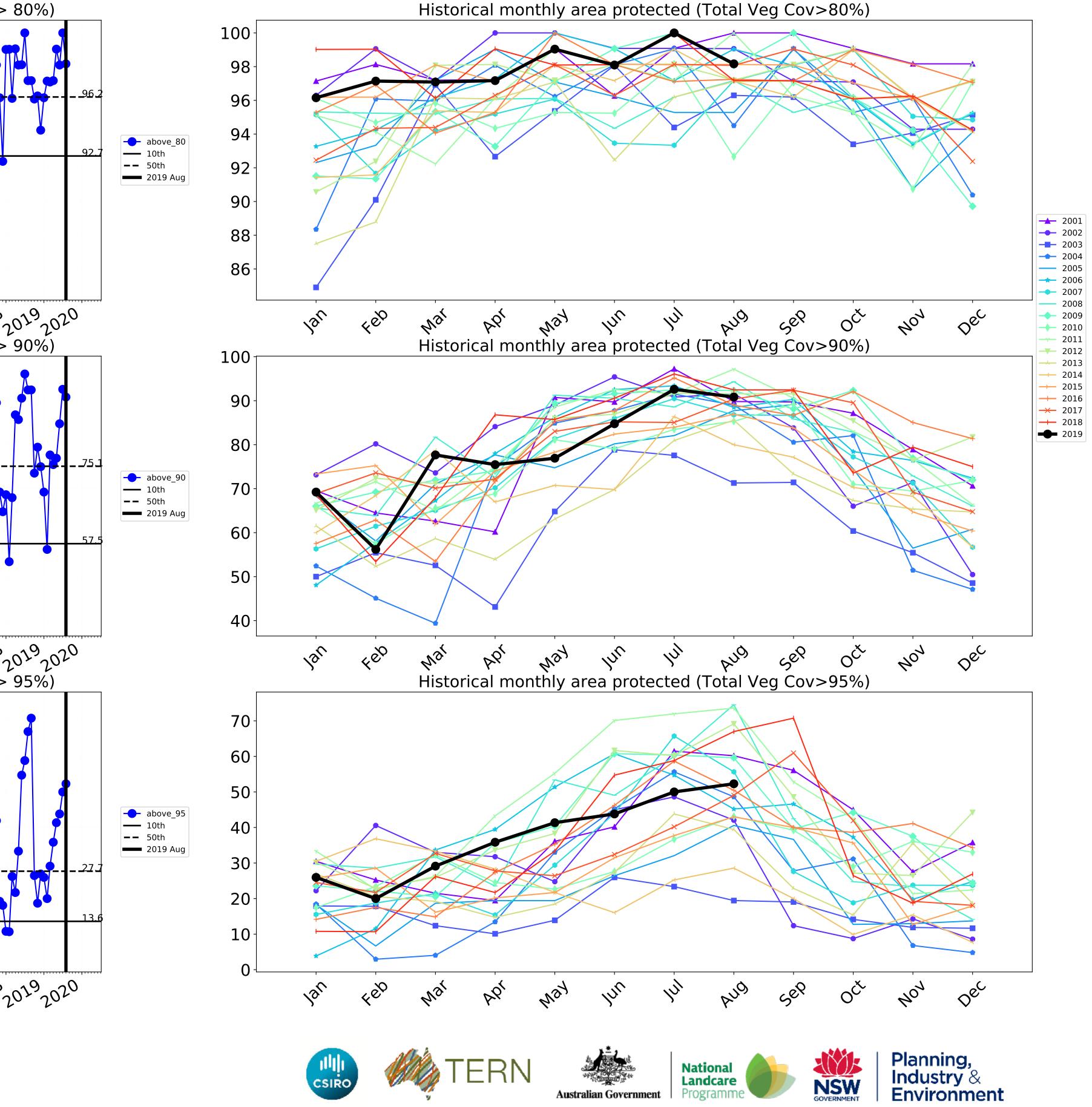




Water erosion historical monthly area protected (Total Veg Cov>70%)



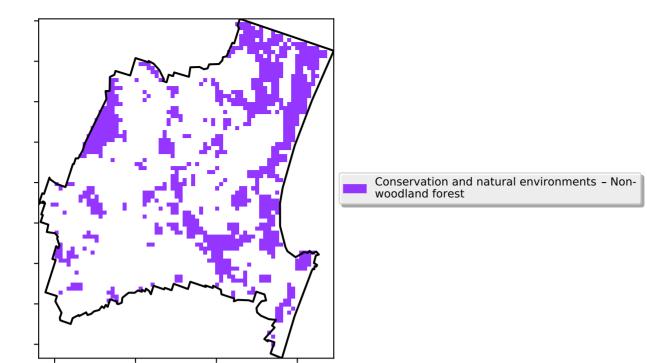




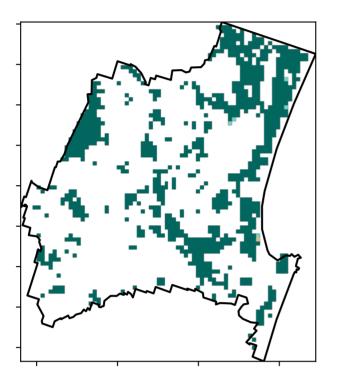
#### **Conservation and natural environments Forest (non woodland)**

Land use and forest cover

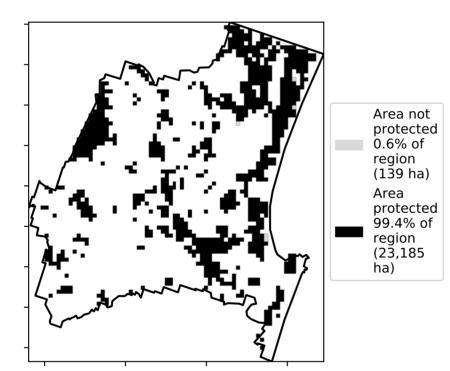
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



**Total Vegetation Cover [%]** 

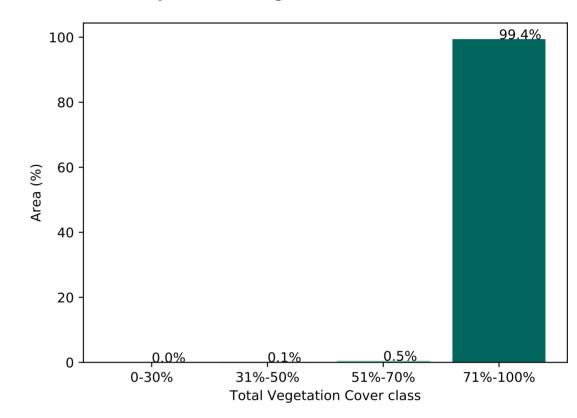


% Area protected from water erosion (>70%)

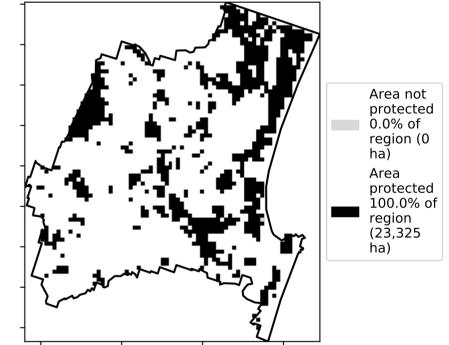




Proportion of vegetation cover class in area

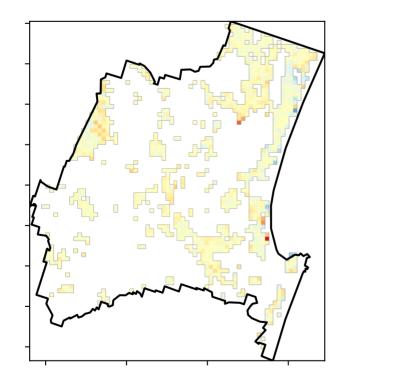


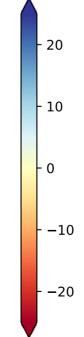
% Area protected from wind erosion (>50%)



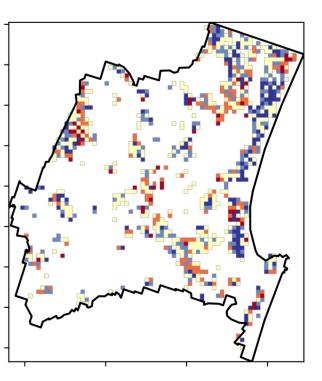
**Total Vegetation Cover Anomaly [%]** 

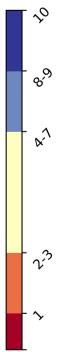
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.





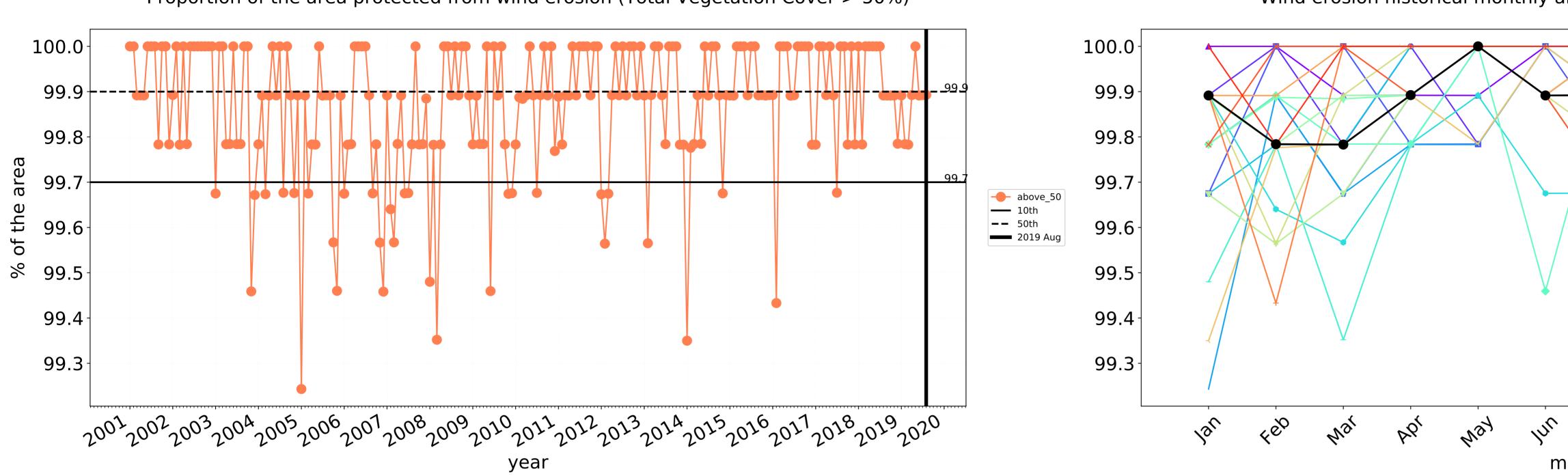
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.





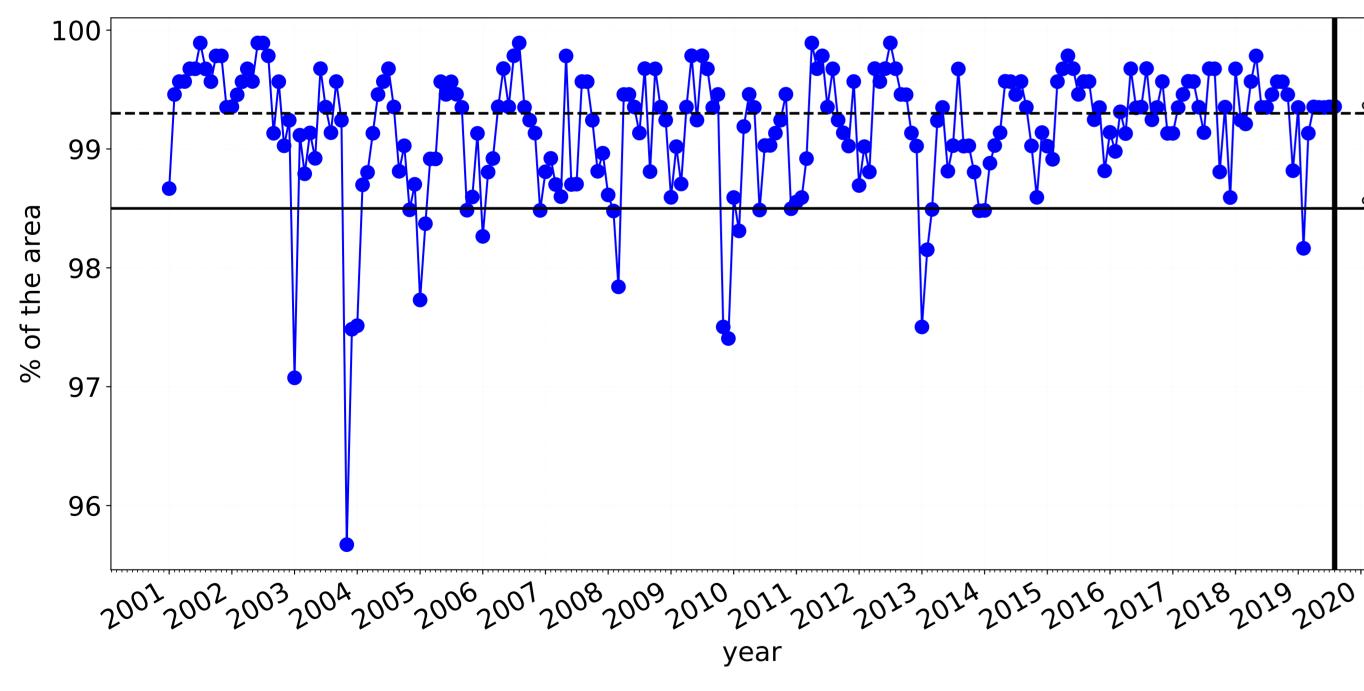


### **Conservation and natural environments Forest (non woodland) timeseries**



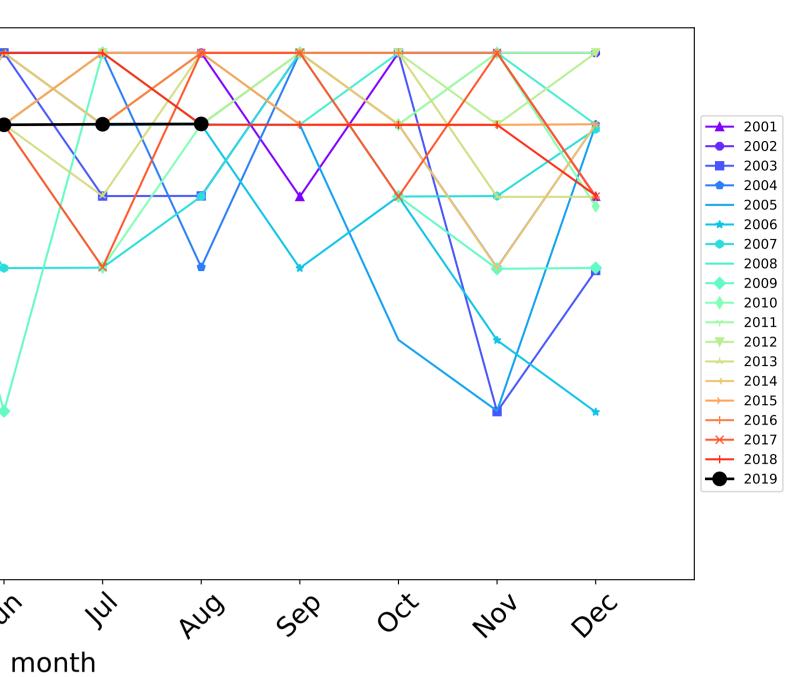
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

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

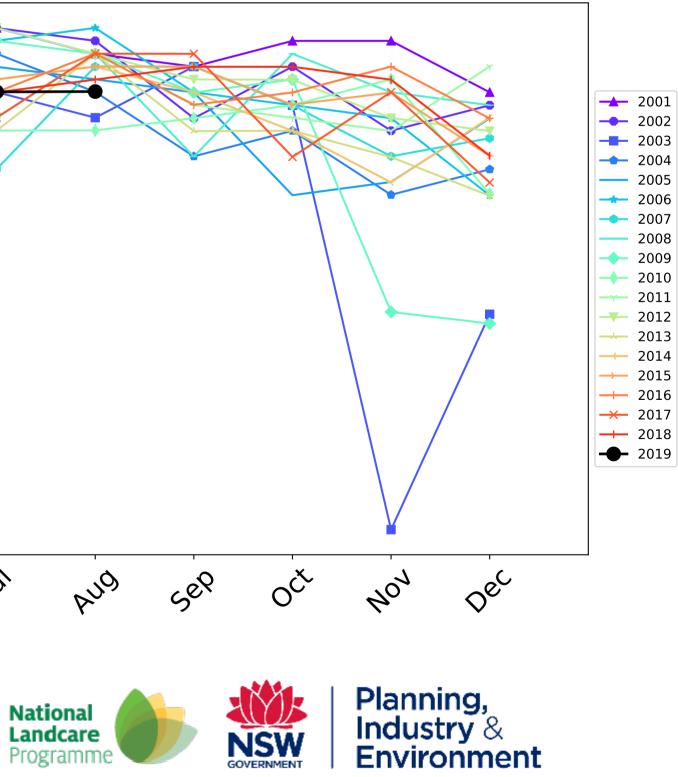


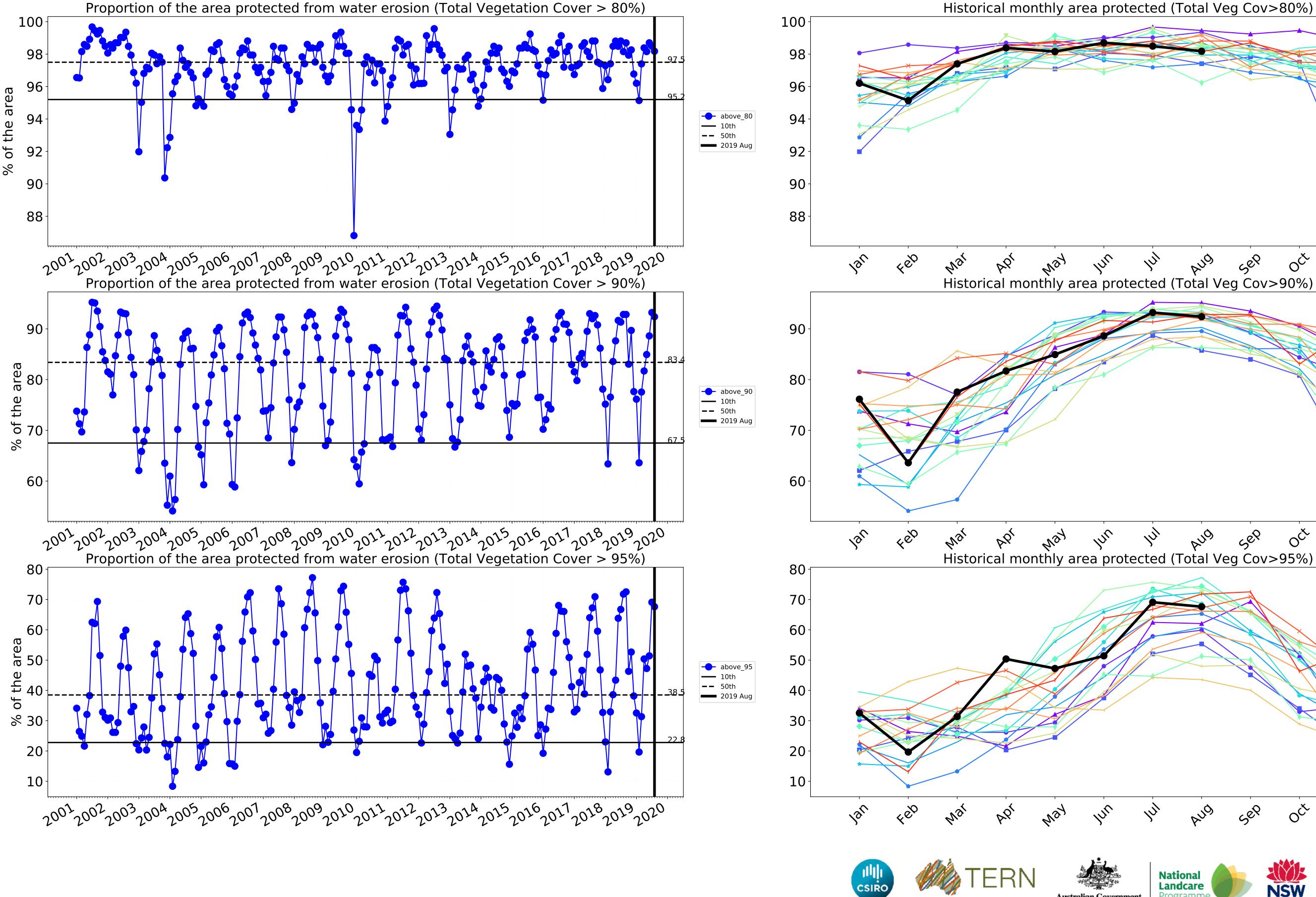
Wind erosion historical monthly area protected (Total Veg Cov >50%)

100-99 above\_70 ----**—** 10th **——** 50th 98 **—** 2019 Aug 97 96 Jan feb In May 1<sup>1</sup><sub>1</sub> P.Q1 Mal month ERN Australian Government



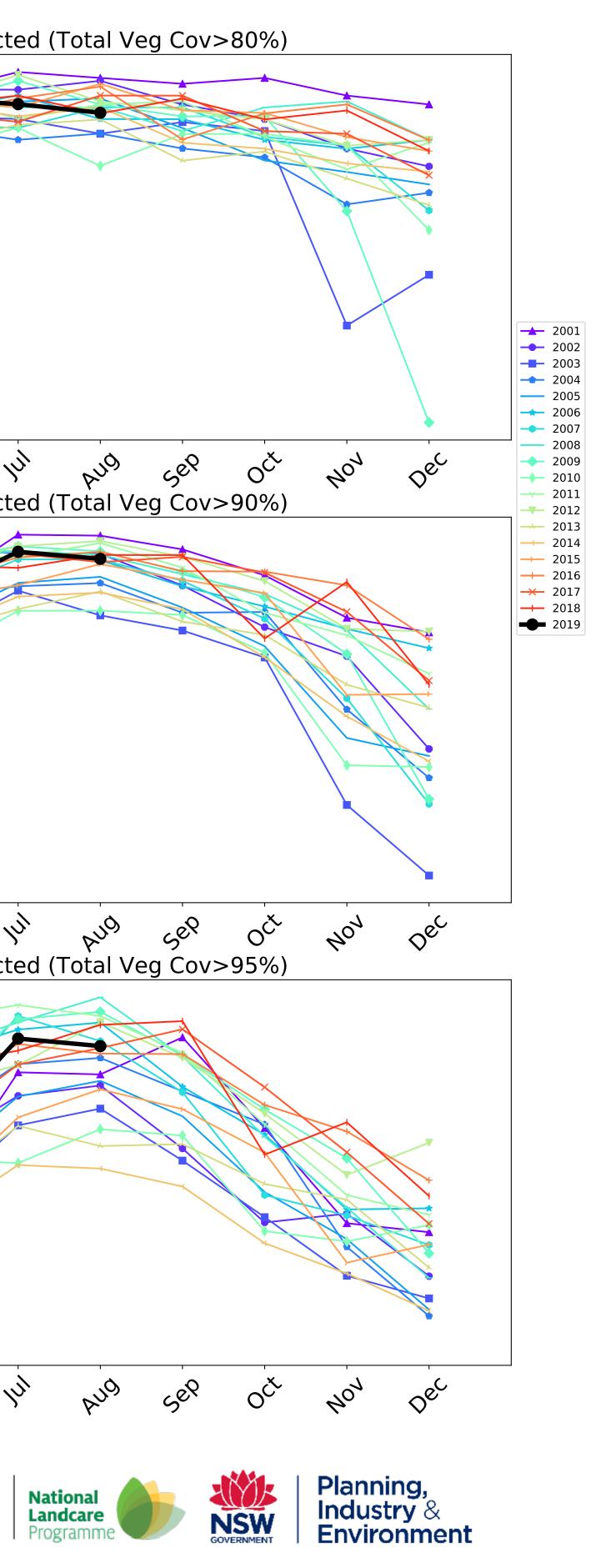
Water erosion historical monthly area protected (Total Veg Cov>70%)





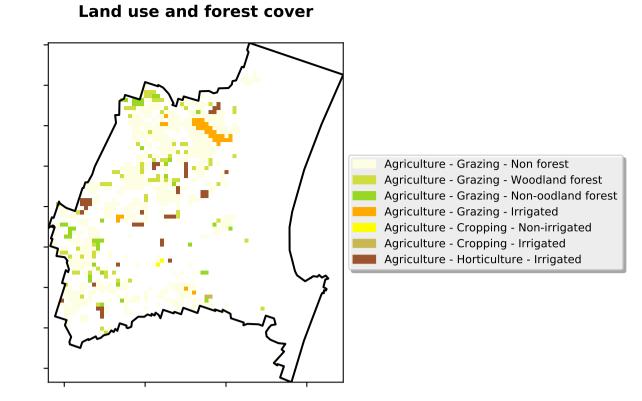
Australian Government

CSIRO

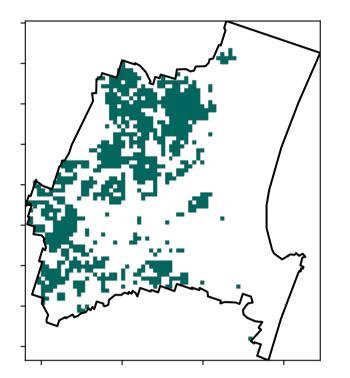


#### Agriculture

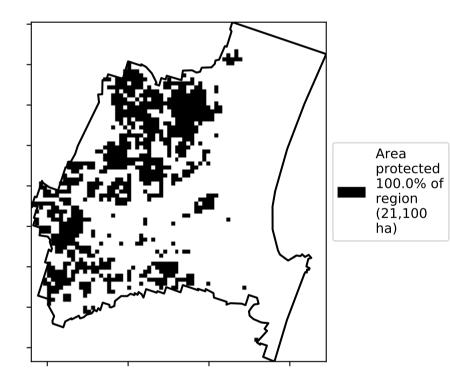
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



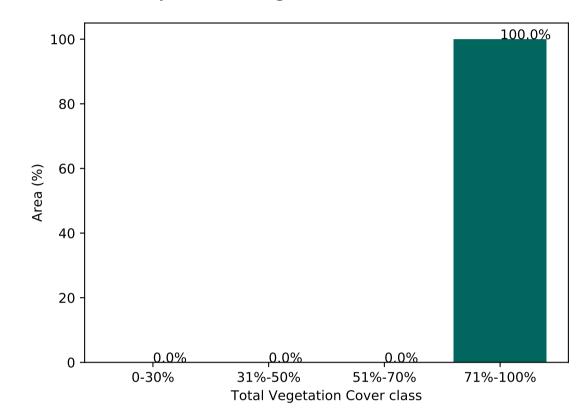
**Total Vegetation Cover [%]** 



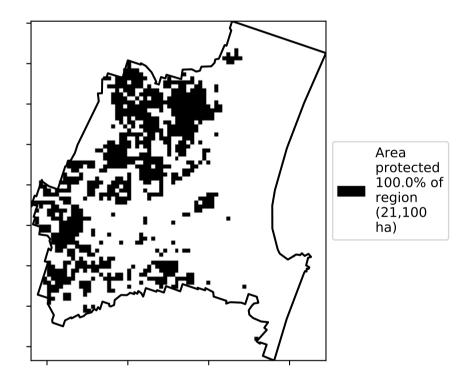
% Area protected from water erosion (>70%)

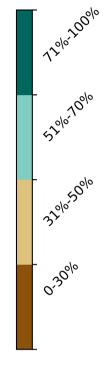




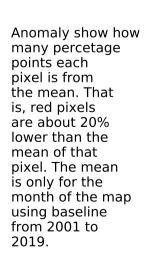


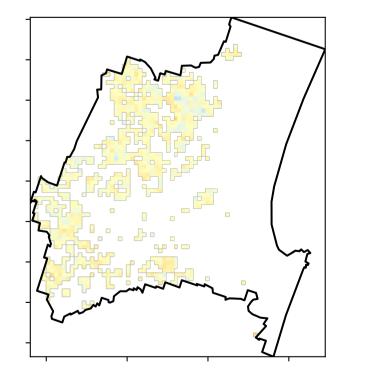
% Area protected from wind erosion (>50%)

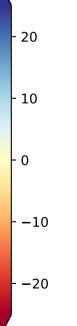




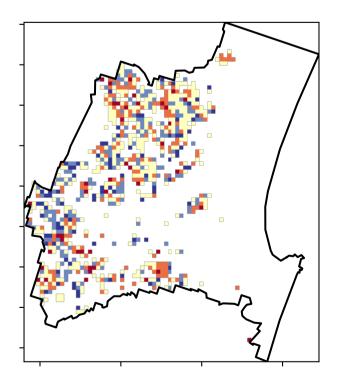
**Total Vegetation Cover Anomaly [%]** 

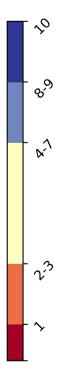






**Total Vegetation Cover Decile [%]** 





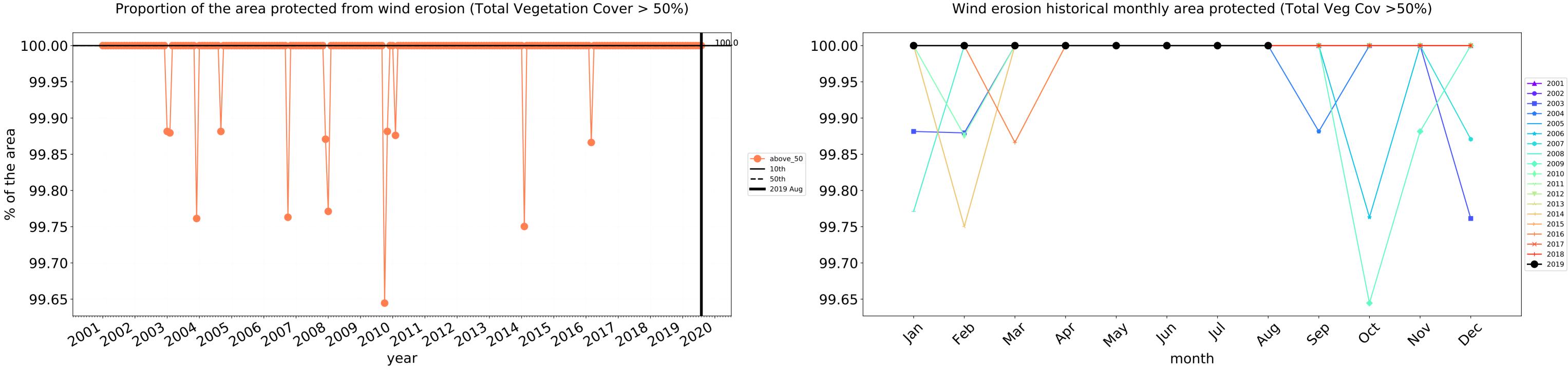


Deciles show where the pixel value lies in the

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

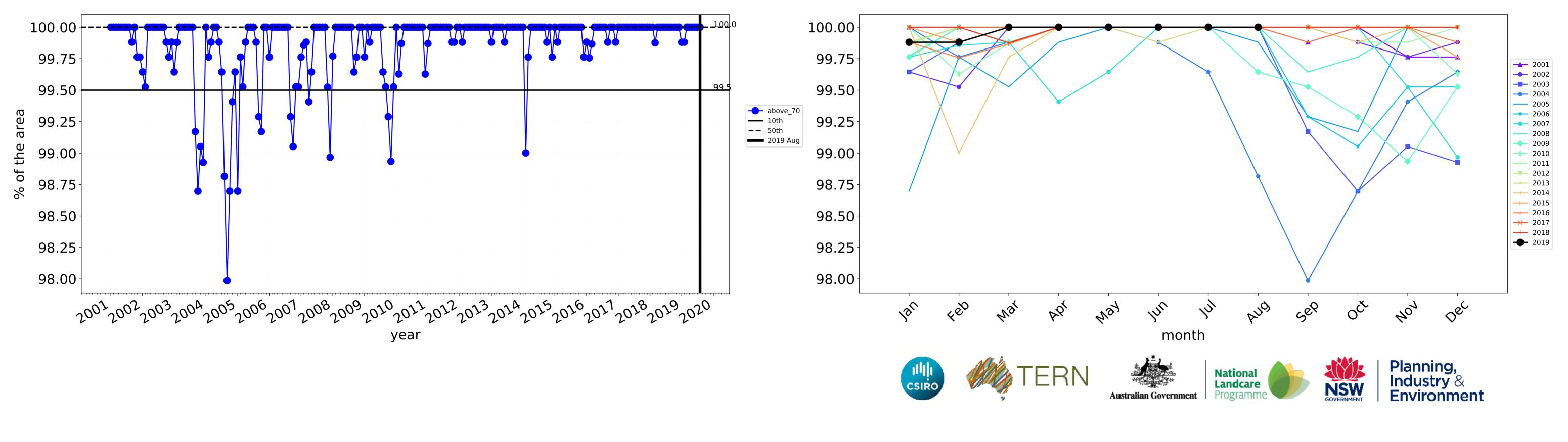
records for that month of

the map using baseline from 2001 to 2019.



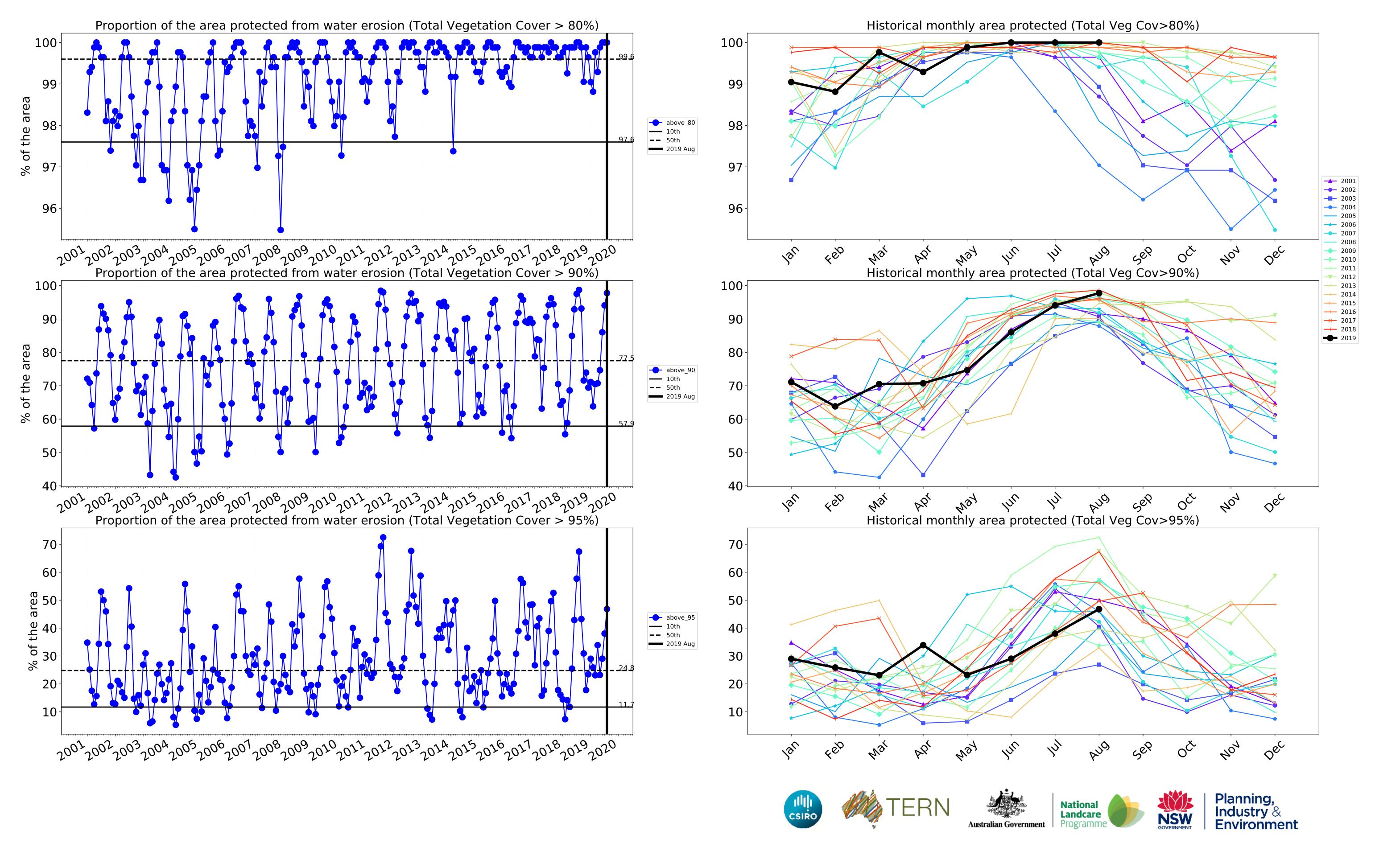
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

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



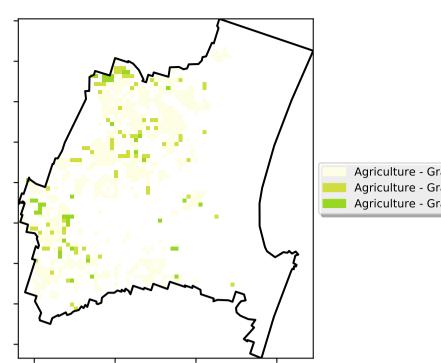
## Agriculture timeseries

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.



Agriculture - Grazing - Non forest Agriculture - Grazing - Woodland forest Agriculture - Grazing - Non-oodland forest

12º10-20010

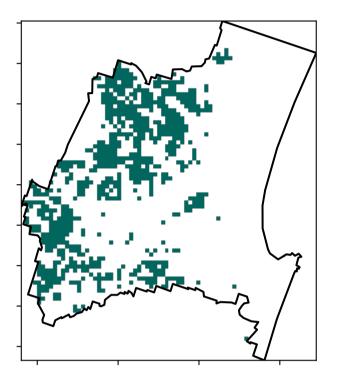
52°10'10°10

3201050010

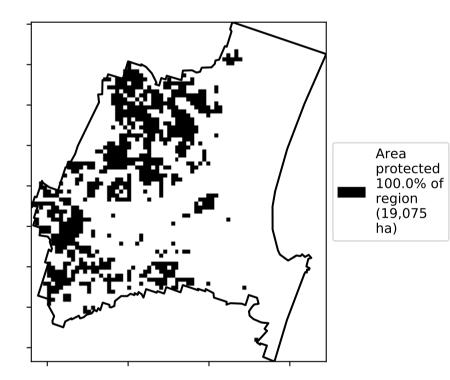
0.30%

**Total Vegetation Cover [%]** 

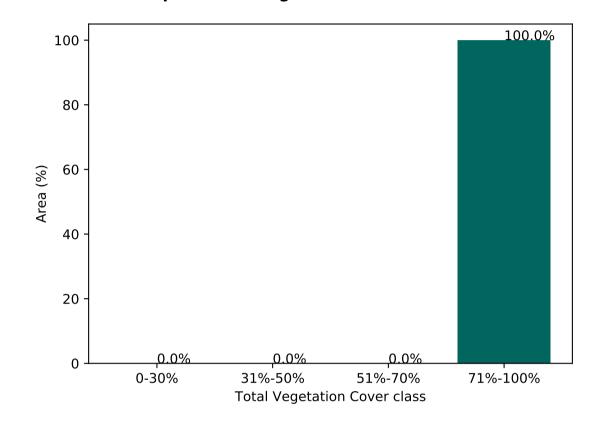
Land use and forest cover



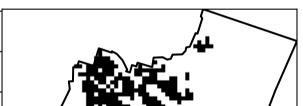




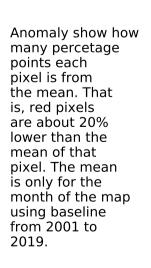
Proportion of vegetation cover class in area

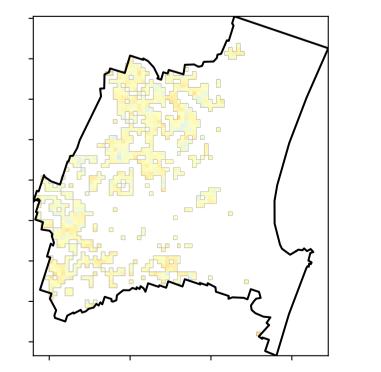


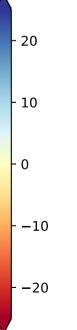
% Area protected from wind erosion (>50%)

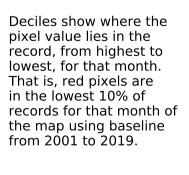


**Total Vegetation Cover Anomaly [%]** 

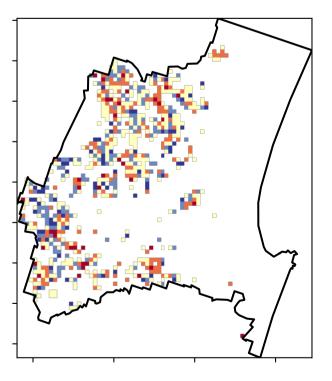


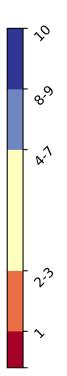




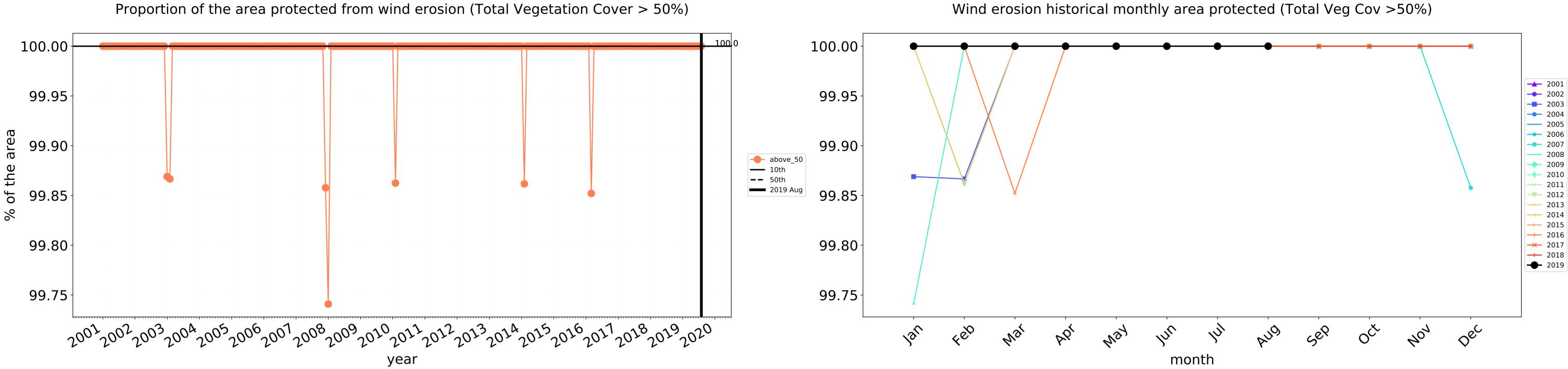




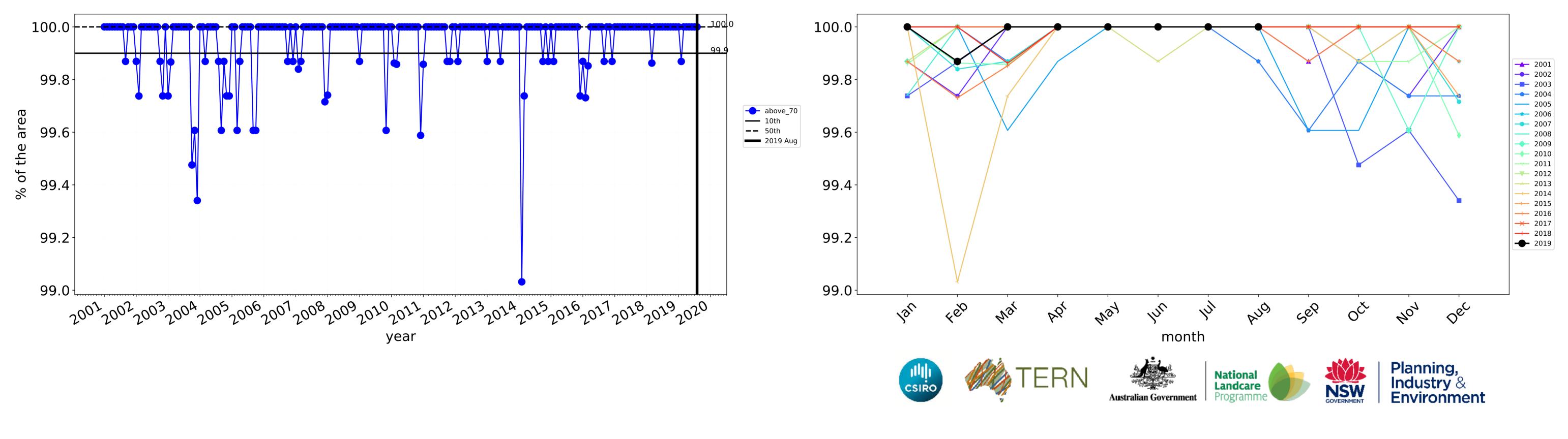




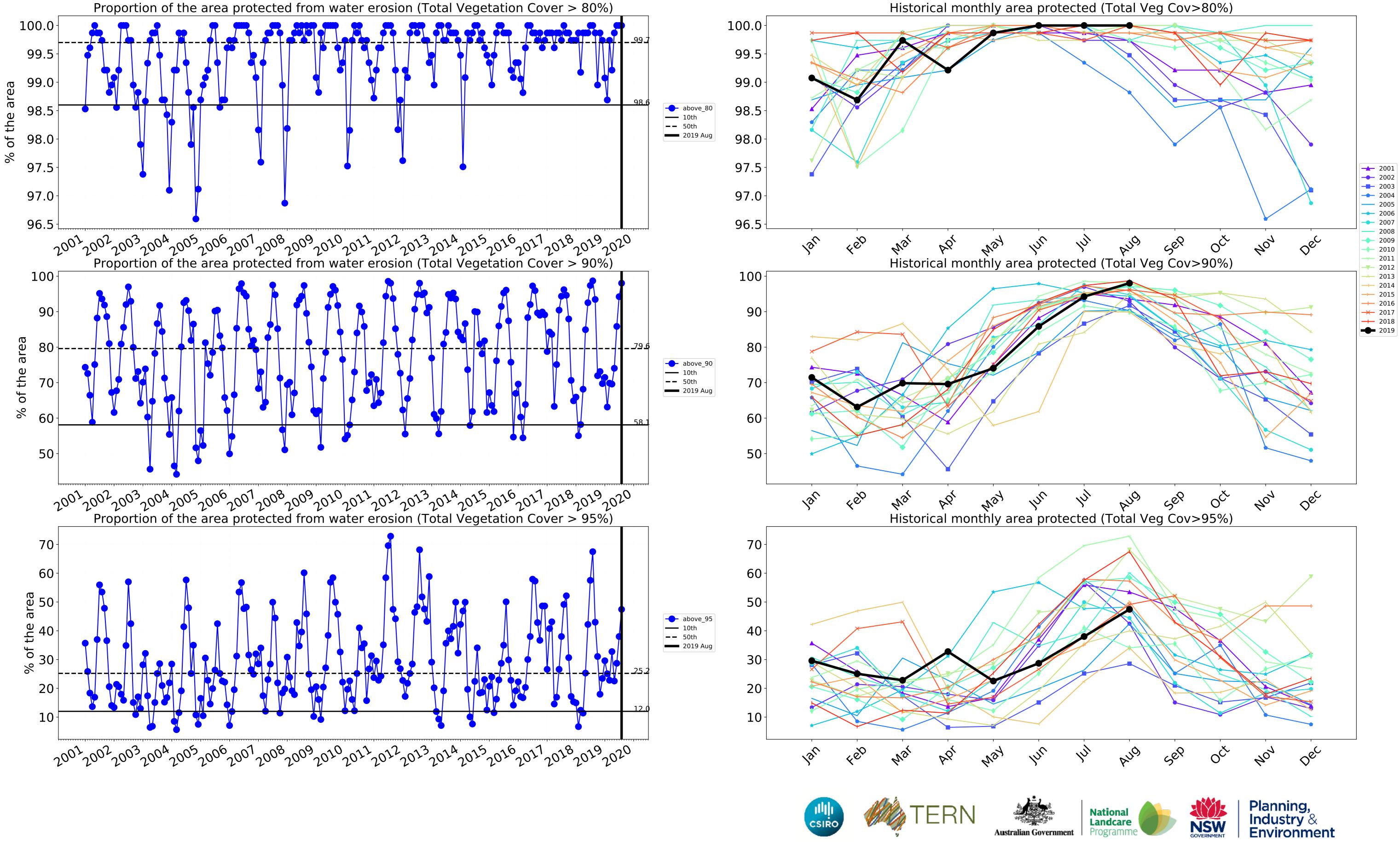




Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



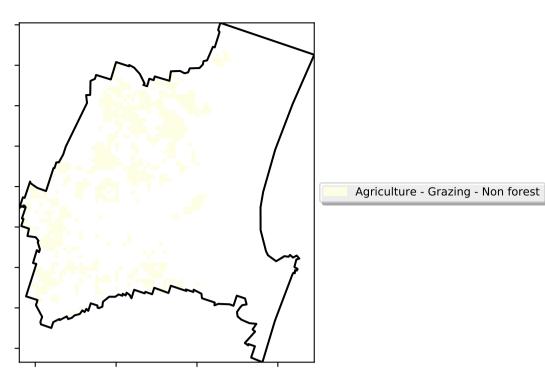
Water erosion historical monthly area protected (Total Veg Cov>70%)



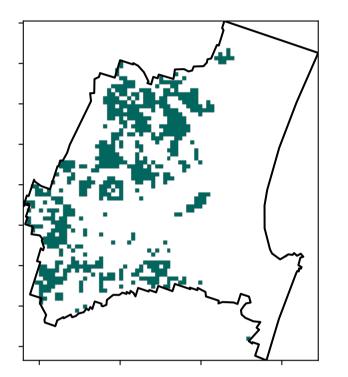
#### **Grazing non forest**

Land use and forest cover

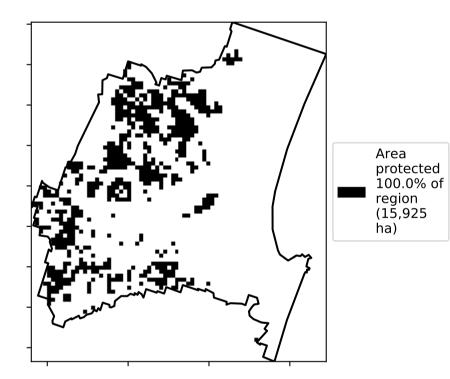
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.

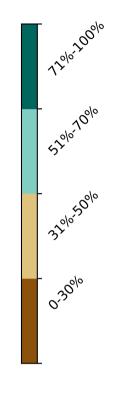


**Total Vegetation Cover [%]** 

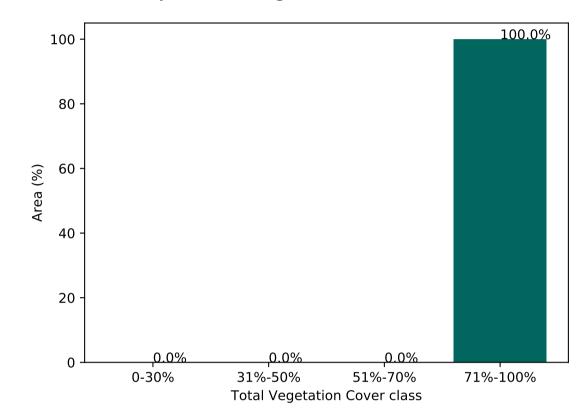








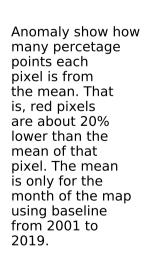
Proportion of vegetation cover class in area

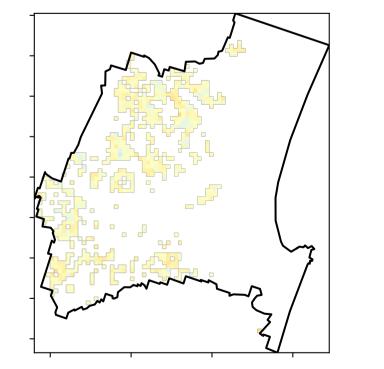


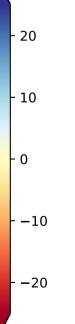
% Area protected from wind erosion (>50%)

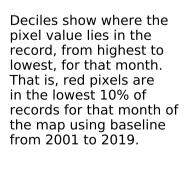


**Total Vegetation Cover Anomaly [%]** 

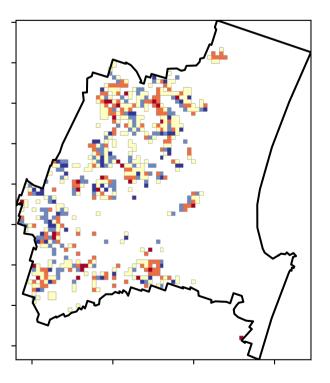


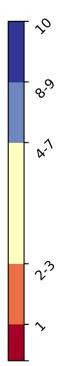




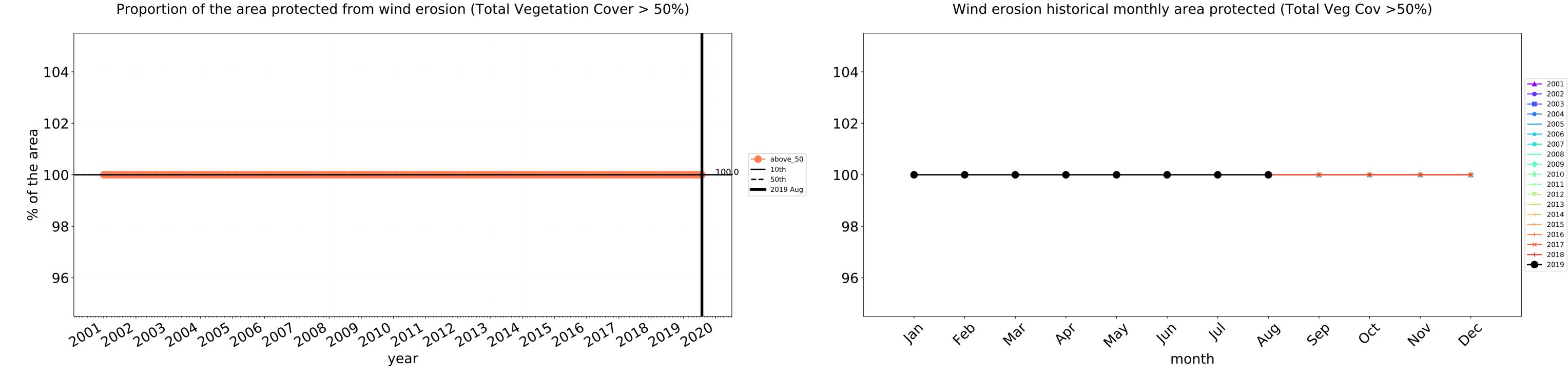




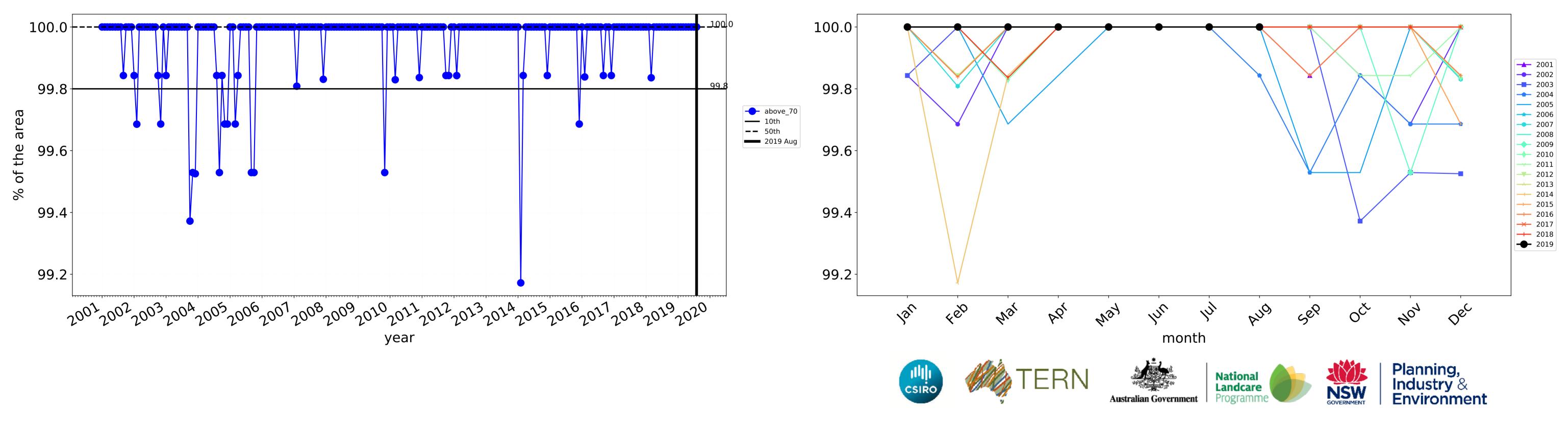






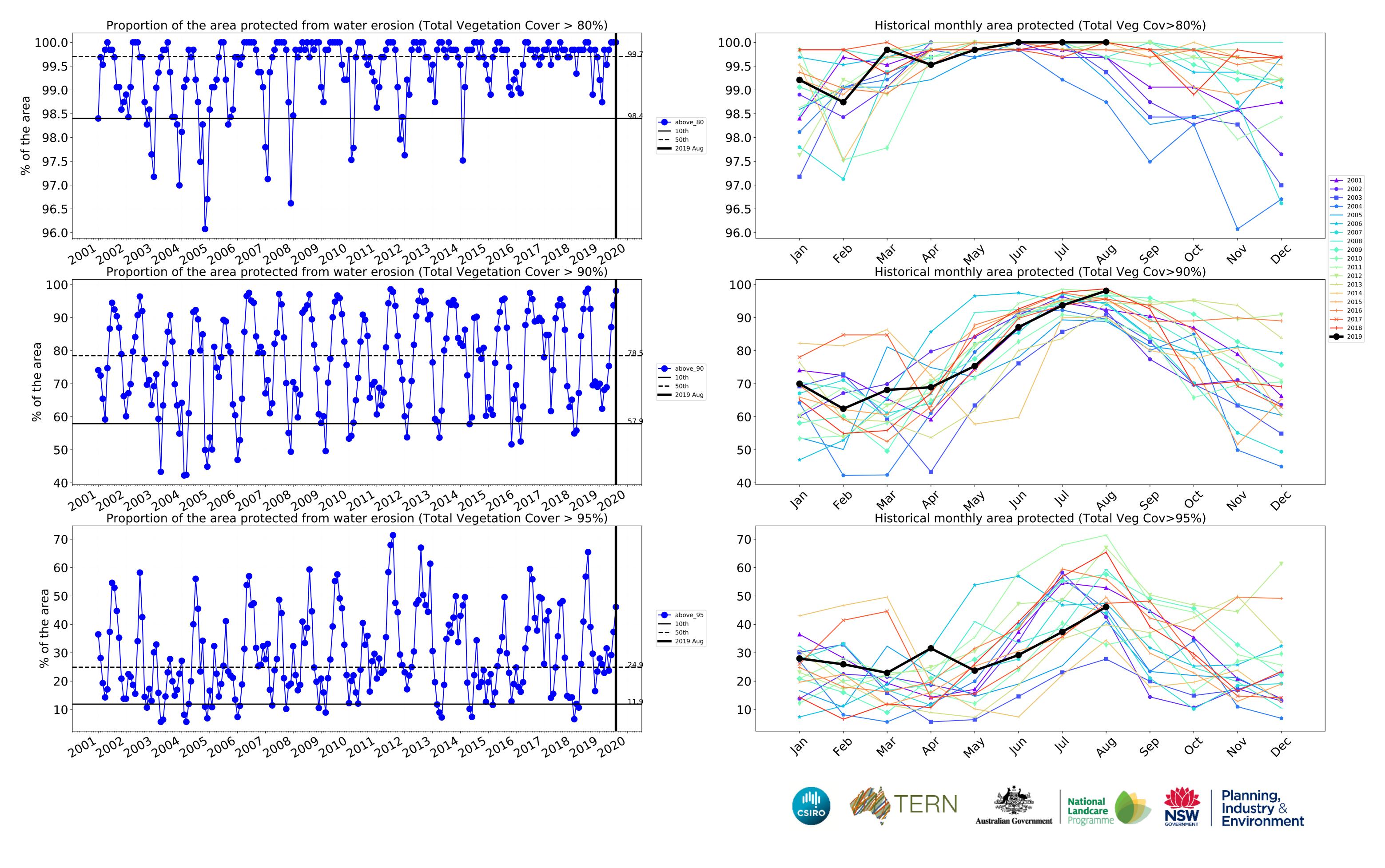


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



## Grazing non forest timeseries

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



### **Grazing Woodland forest**

12º100010

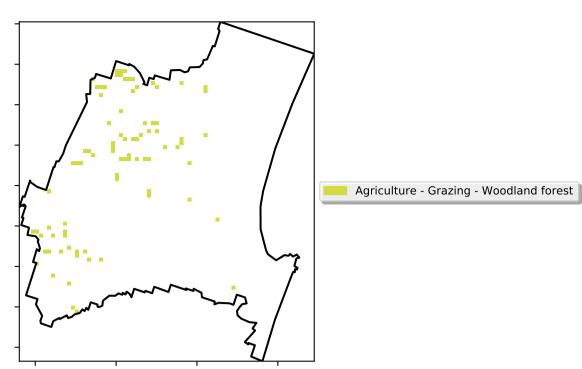
52% TO%

32005000

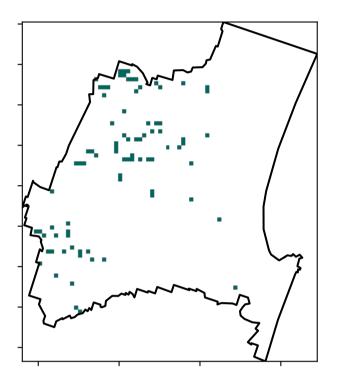
0.30%

Land use and forest cover

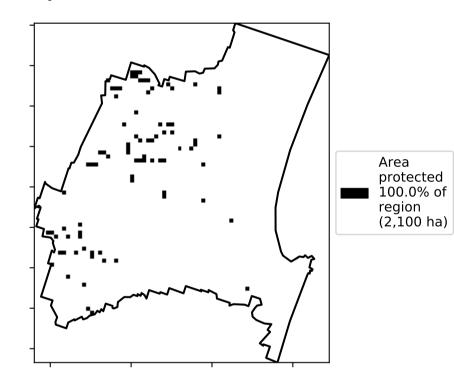
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



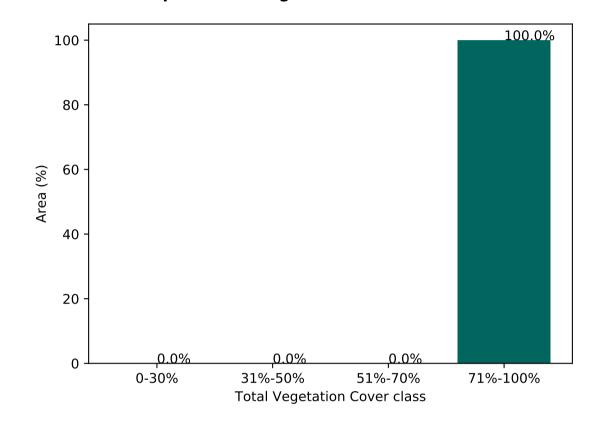
**Total Vegetation Cover [%]** 







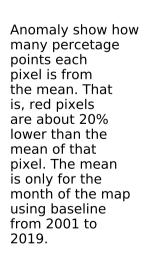
Proportion of vegetation cover class in area

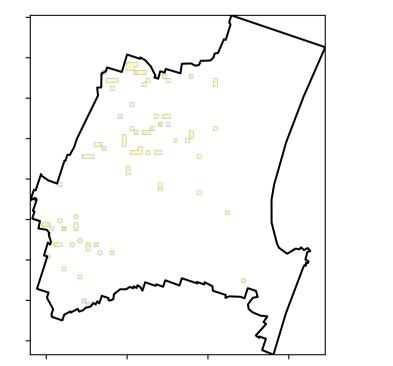


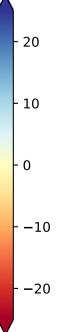
% Area protected from wind erosion (>50%)

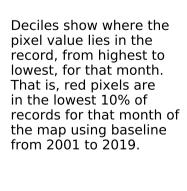


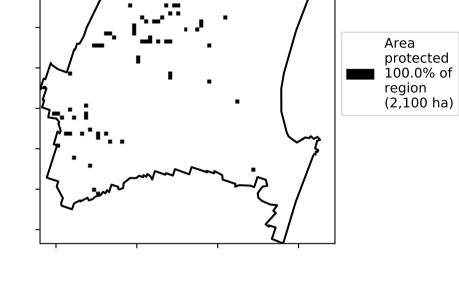
**Total Vegetation Cover Anomaly [%]** 

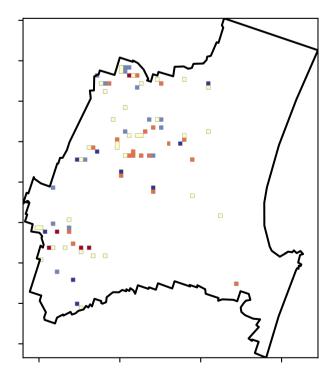


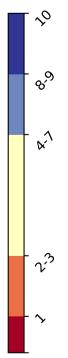






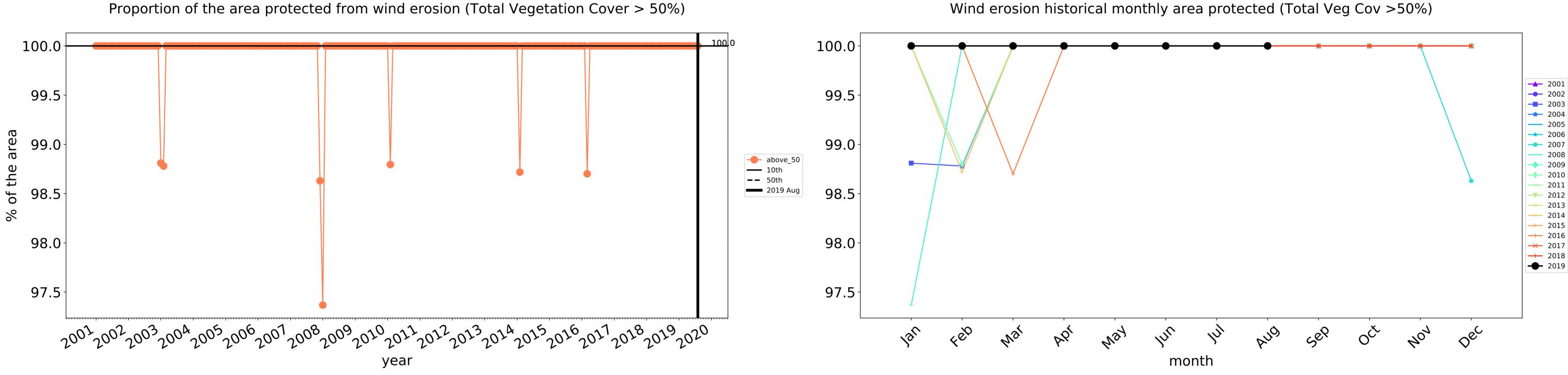




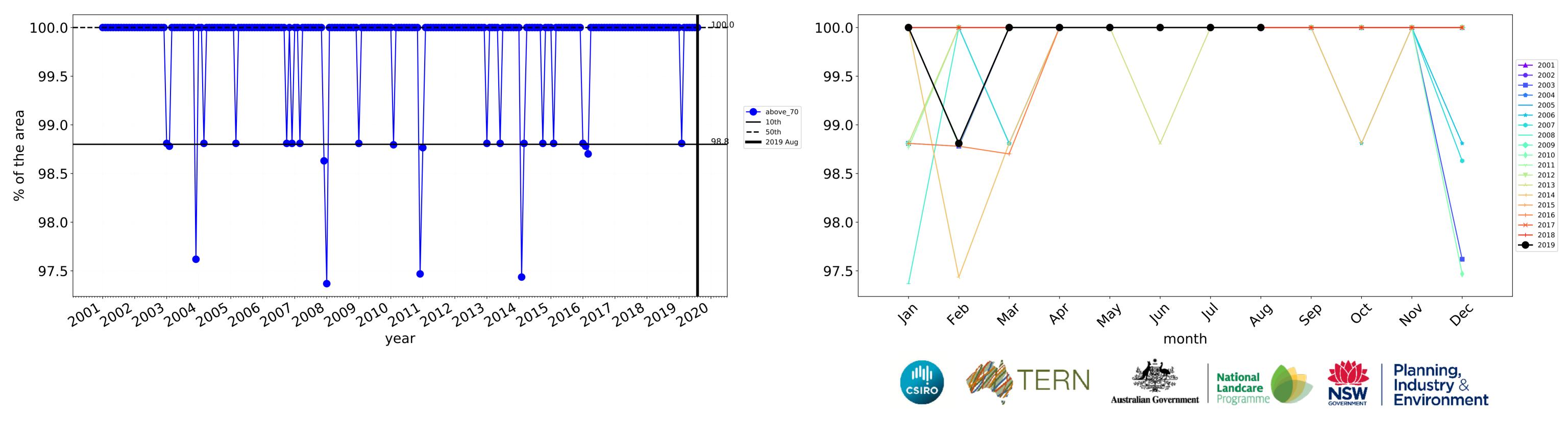




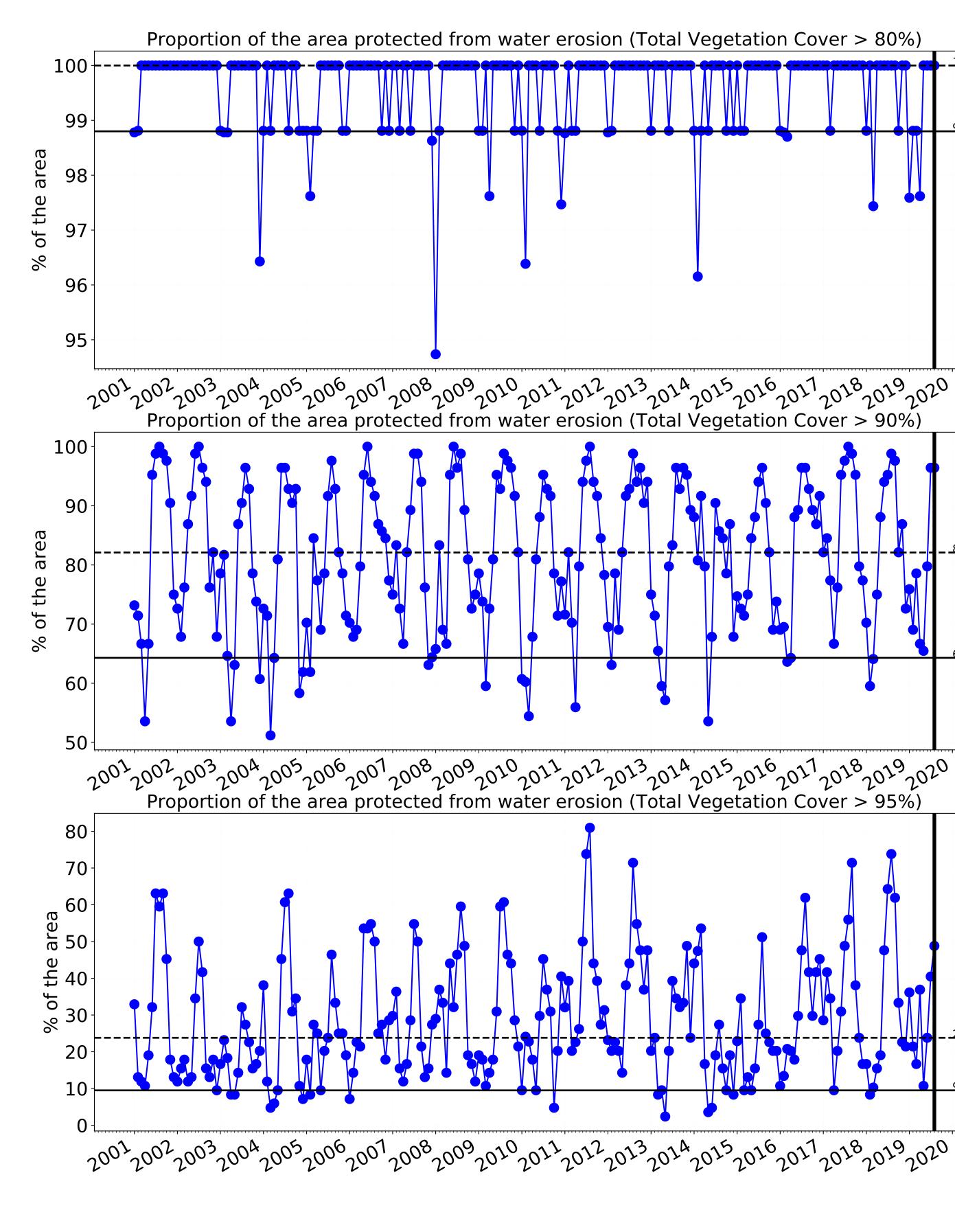
# Grazing Woodland forest timeseries

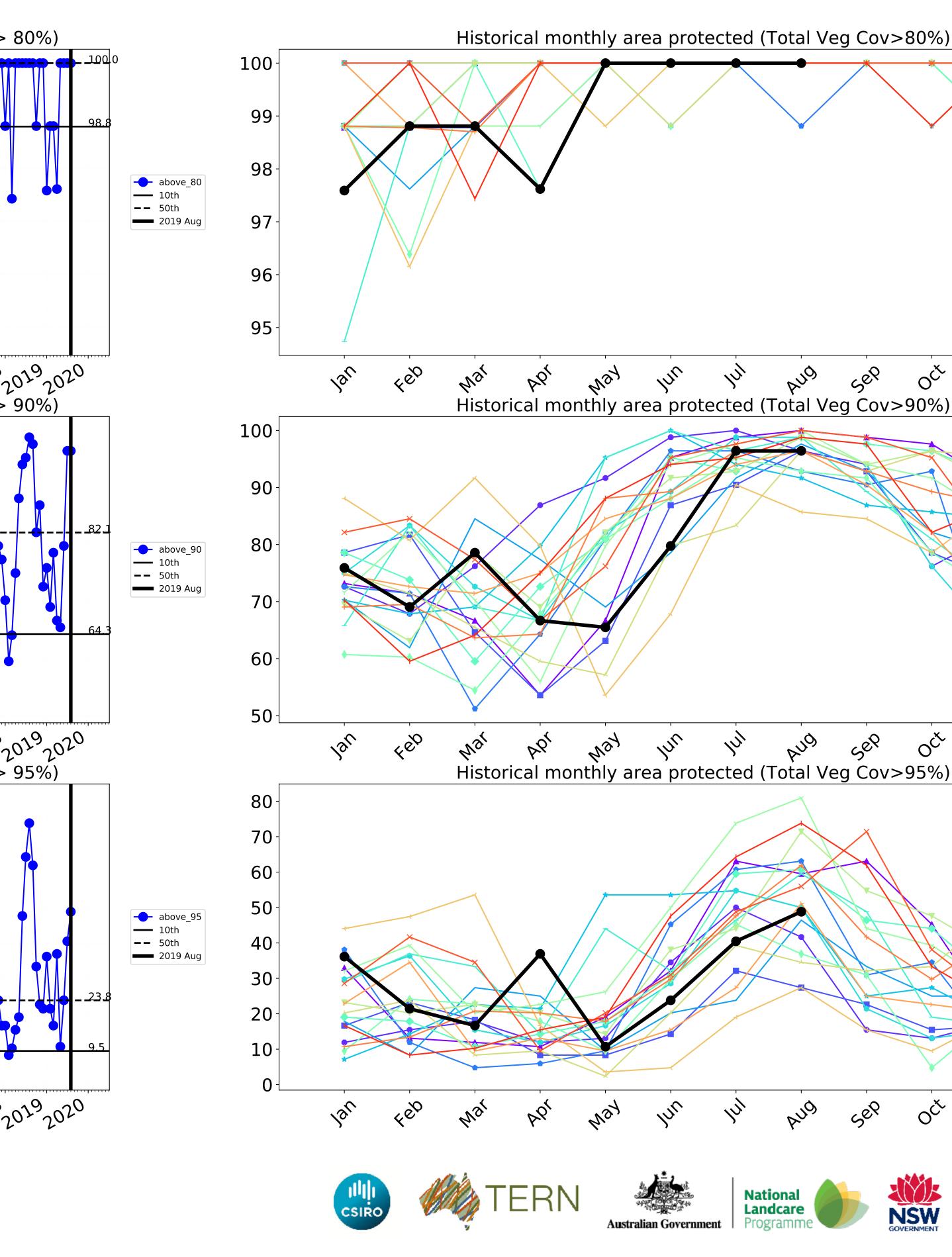


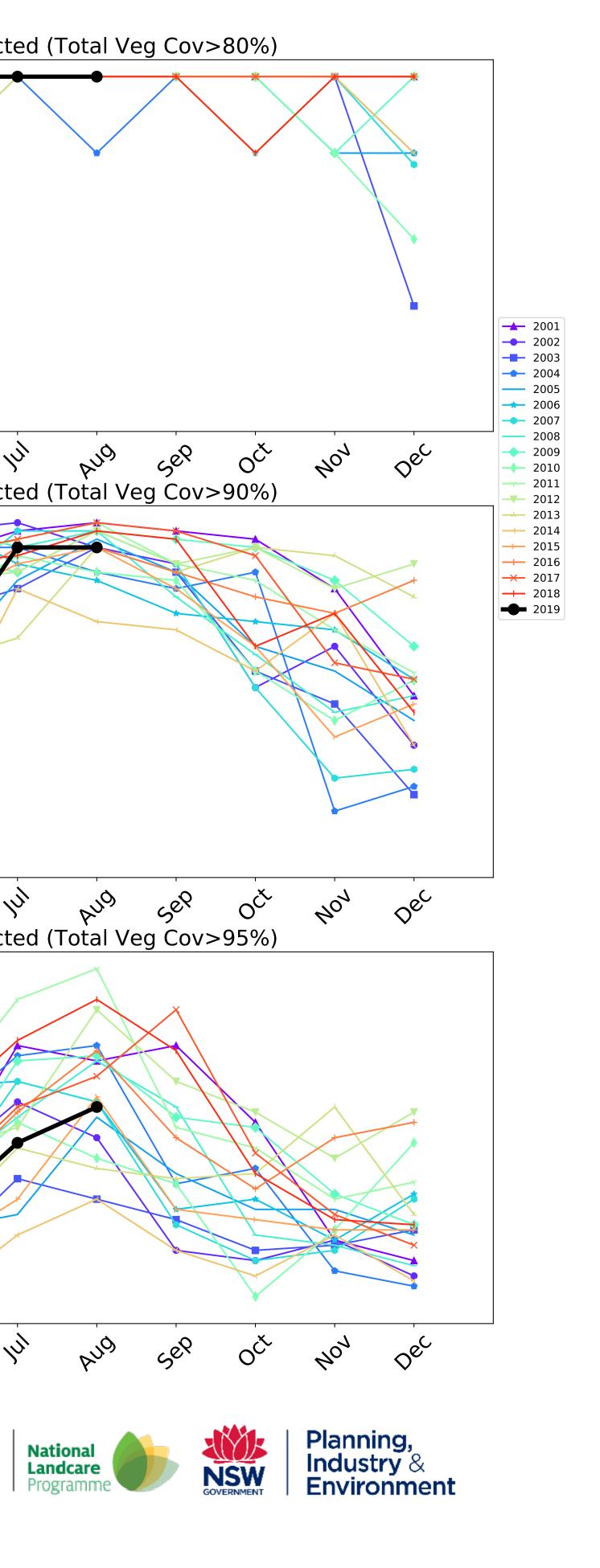




Water erosion historical monthly area protected (Total Veg Cov>70%)



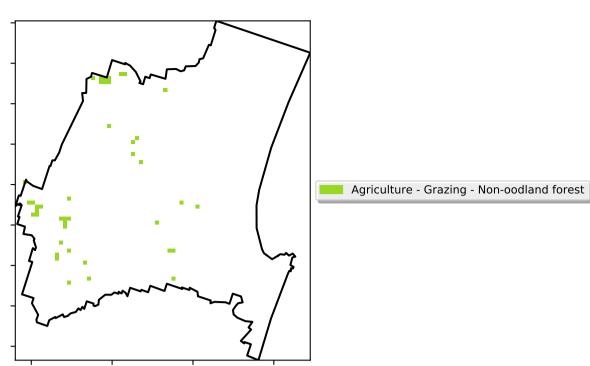




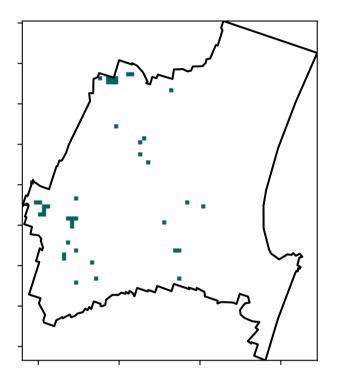
### Grazing - Forest (non woodland)

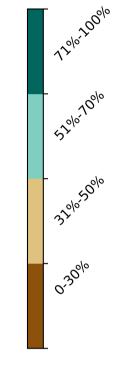
Land use and forest cover

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

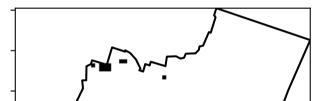


**Total Vegetation Cover [%]** 

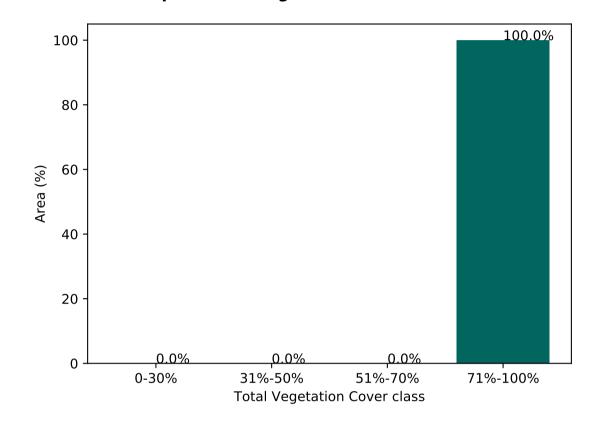




% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area

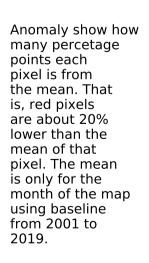


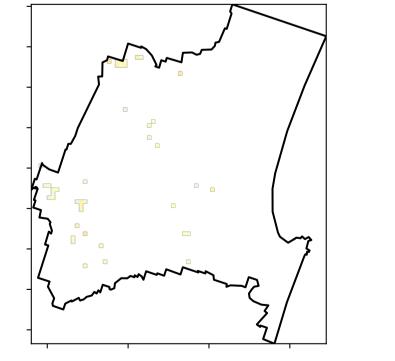
% Area protected from wind erosion (>50%)

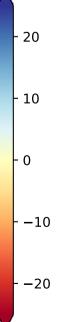


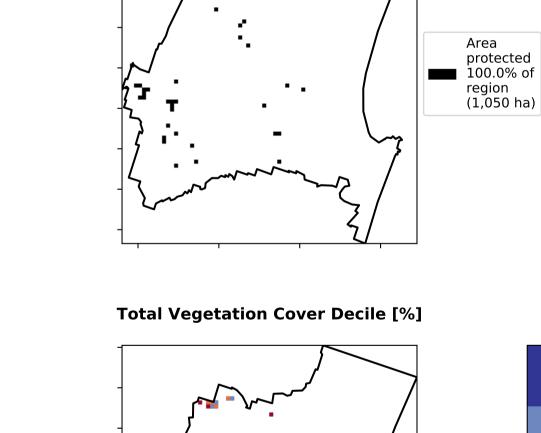


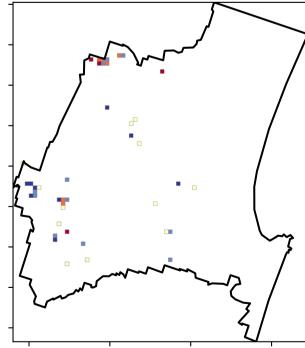
**Total Vegetation Cover Anomaly [%]** 

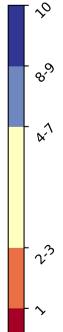














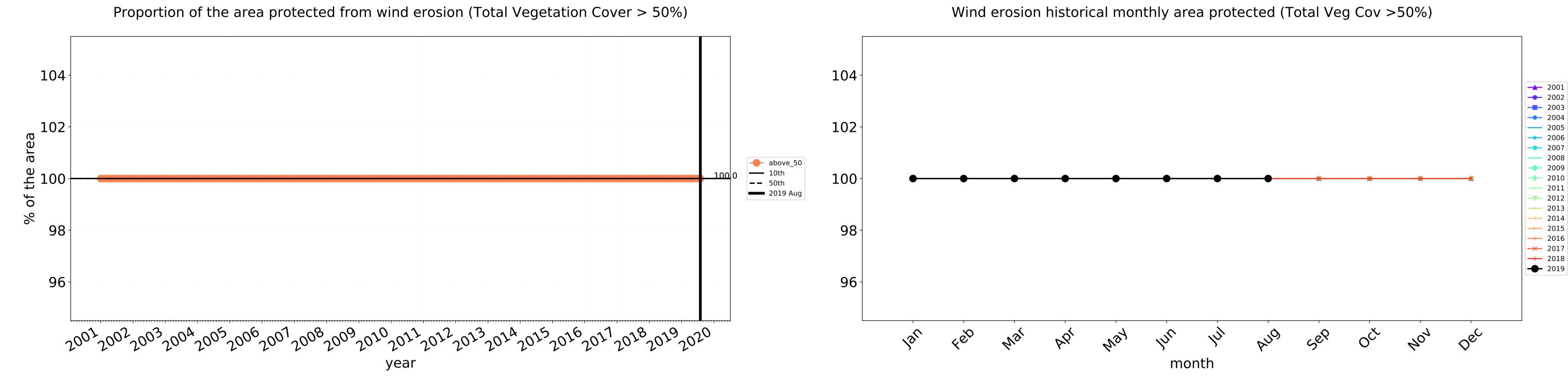
Deciles show where the pixel value lies in the

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

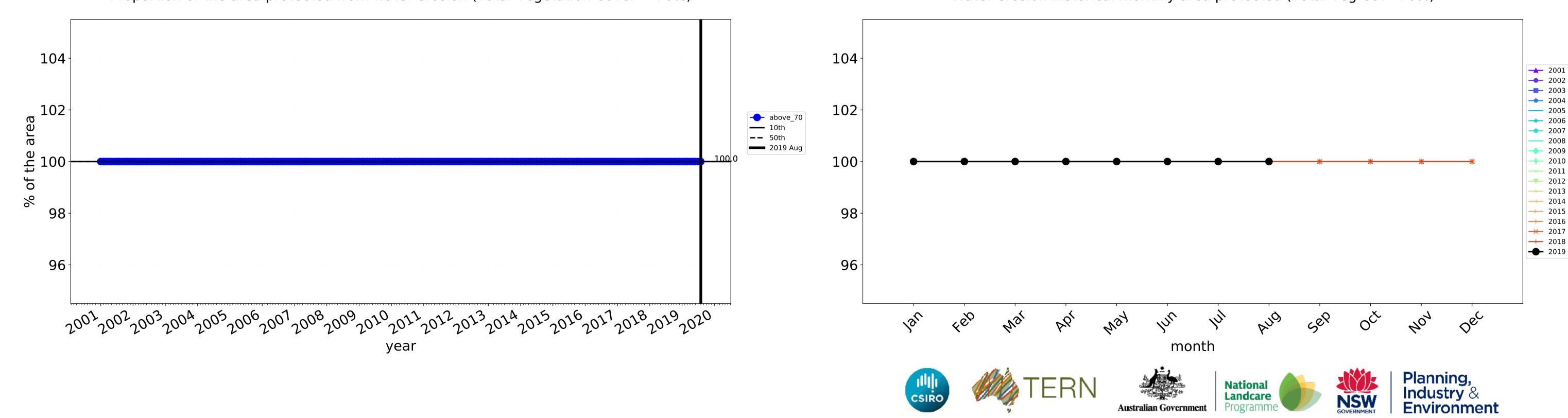
records for that month of

the map using baseline from 2001 to 2019.

in the lowest 10% of



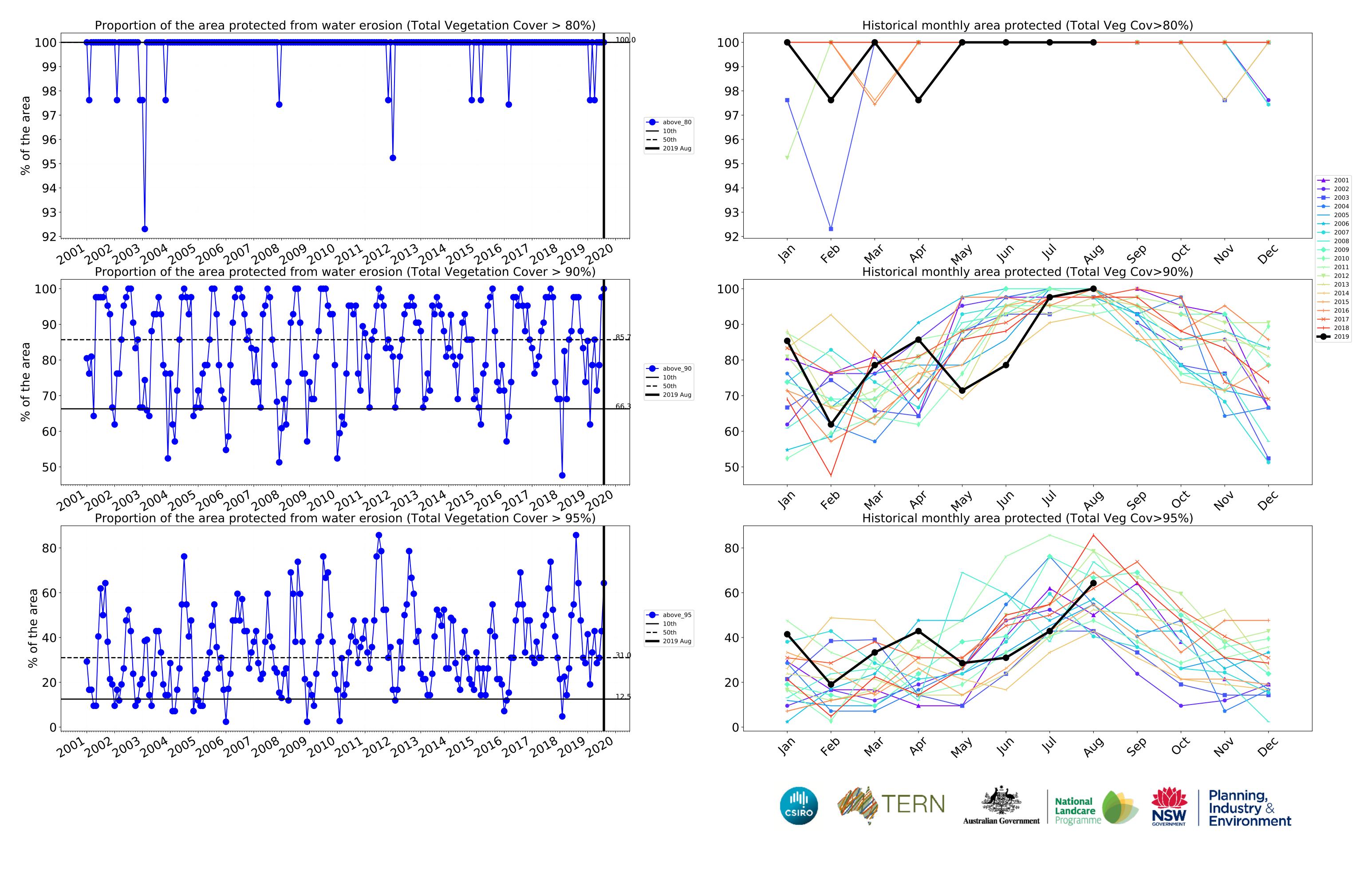
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



# **Grazing - Forest (non woodland) timeseries**

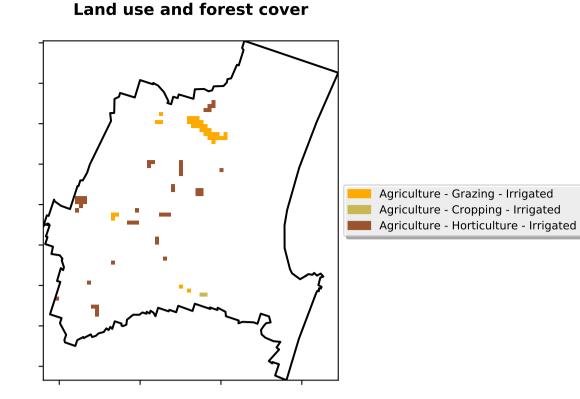
30

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

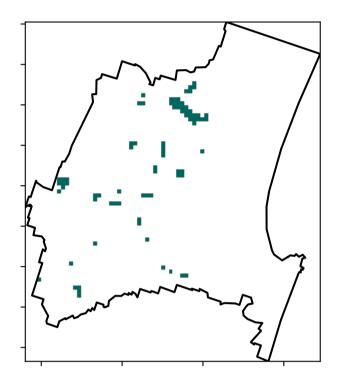


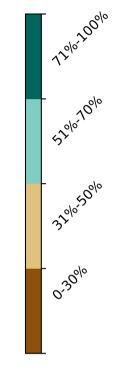
# Irrigation

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

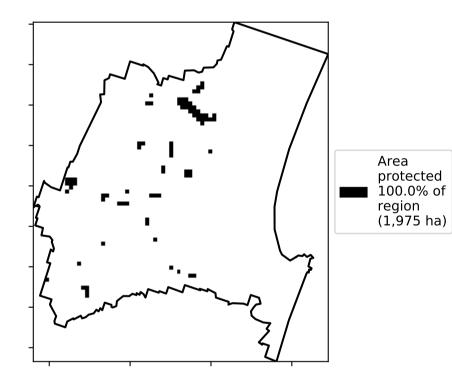


#### **Total Vegetation Cover [%]**

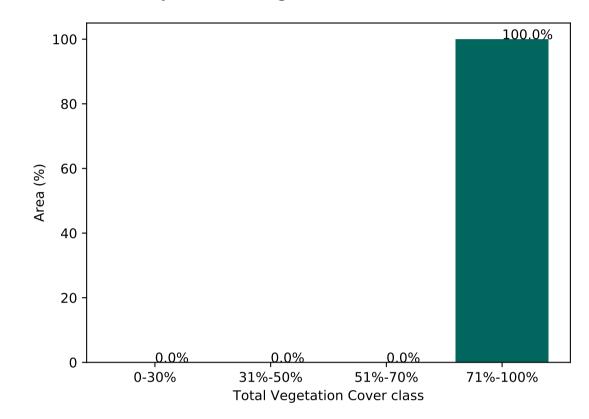




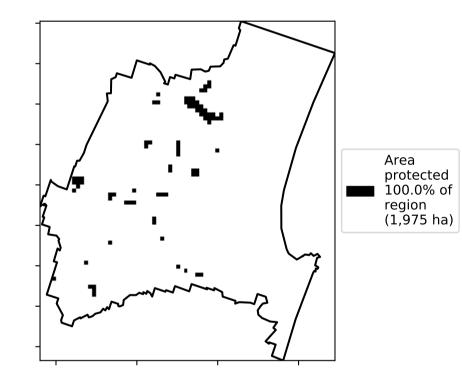
% Area protected from water erosion (>70%)



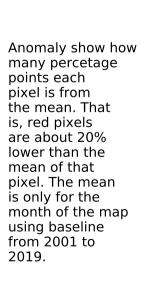
Proportion of vegetation cover class in area

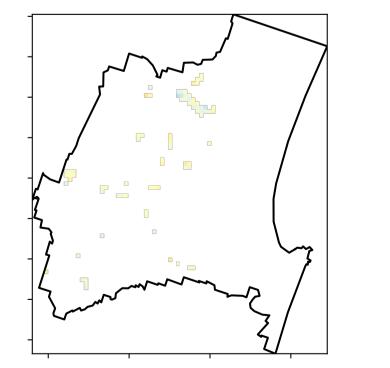


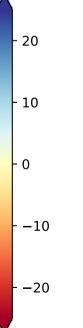
% Area protected from wind erosion (>50%)

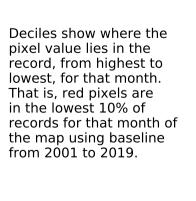


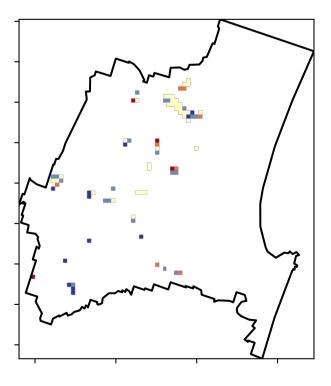
**Total Vegetation Cover Anomaly [%]** 

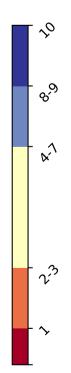




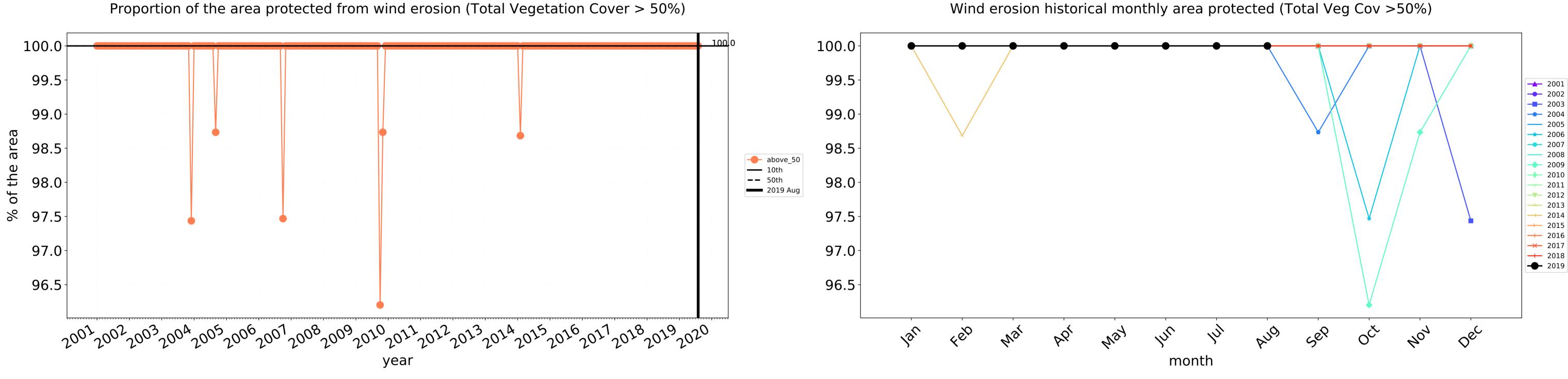




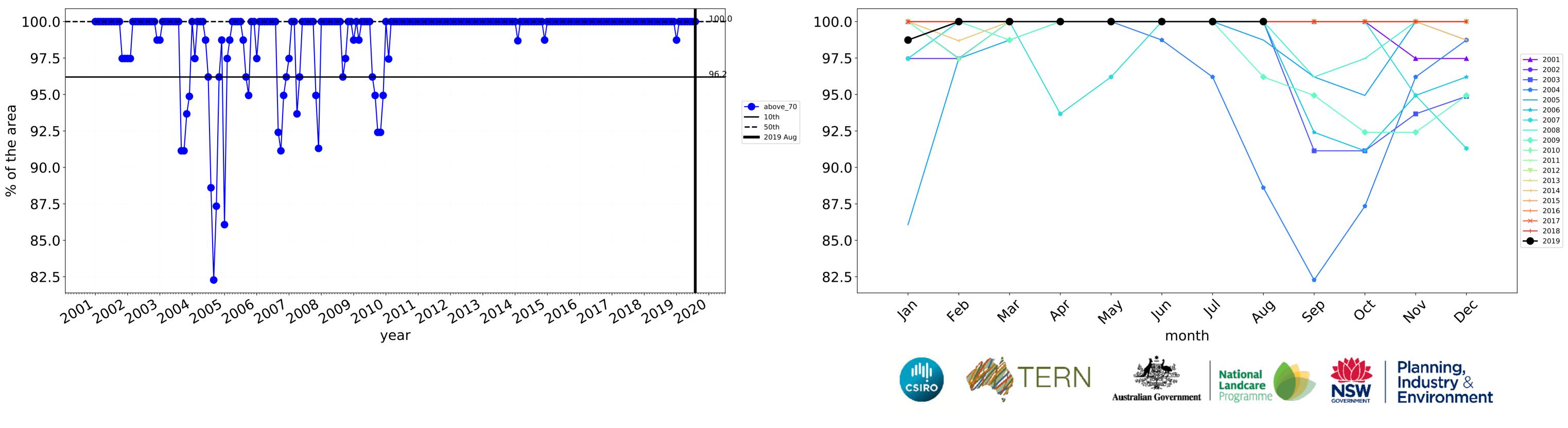




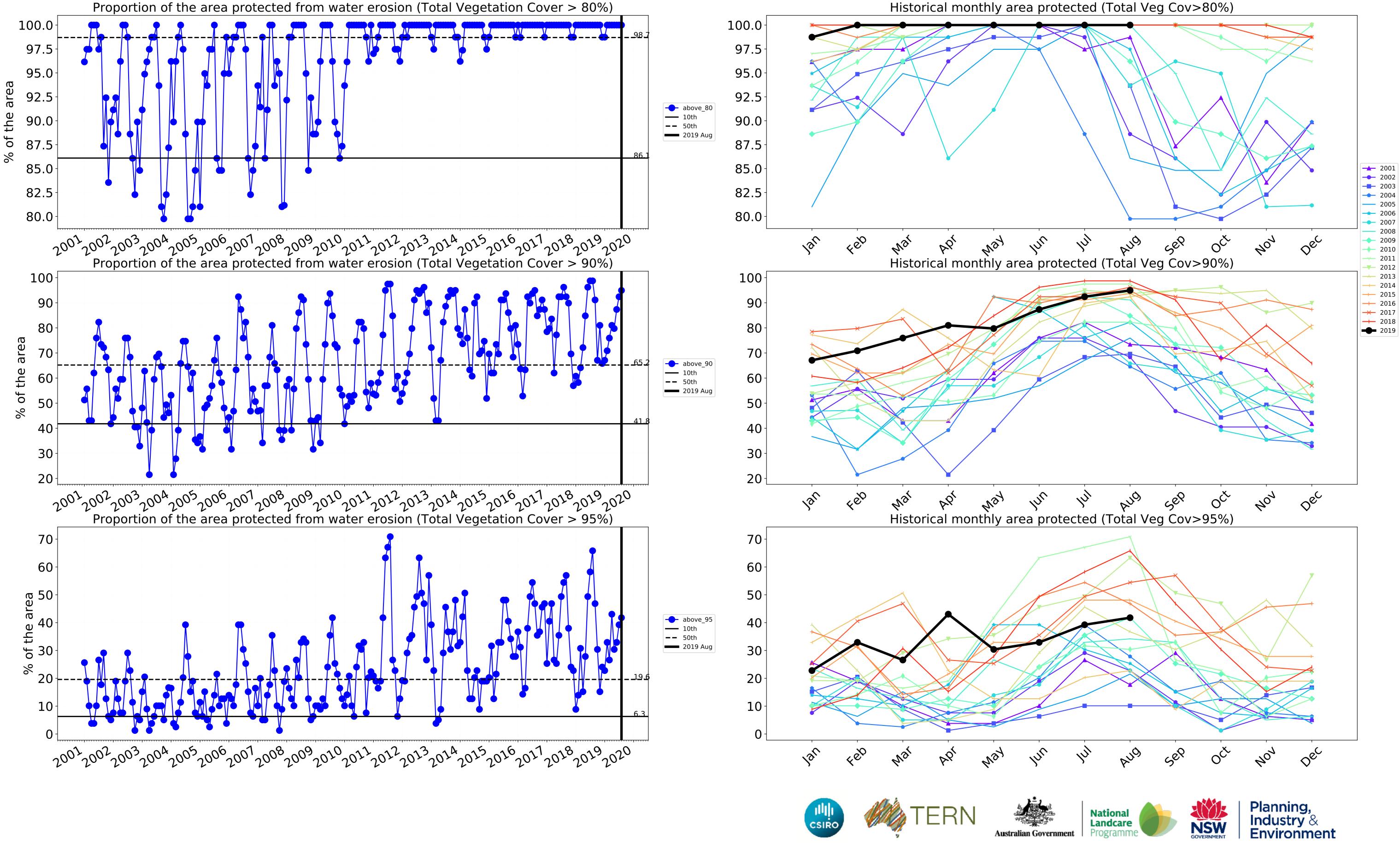




Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



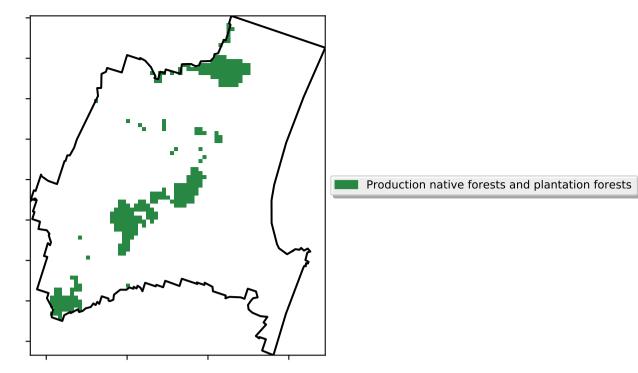
Water erosion historical monthly area protected (Total Veg Cov>70%)



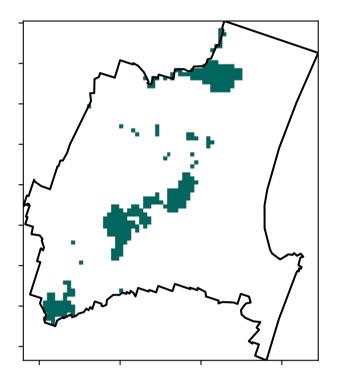
### **Production native forests and plantation forests**

Land use and forest cover

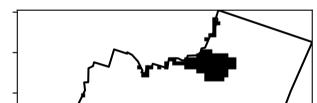
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.



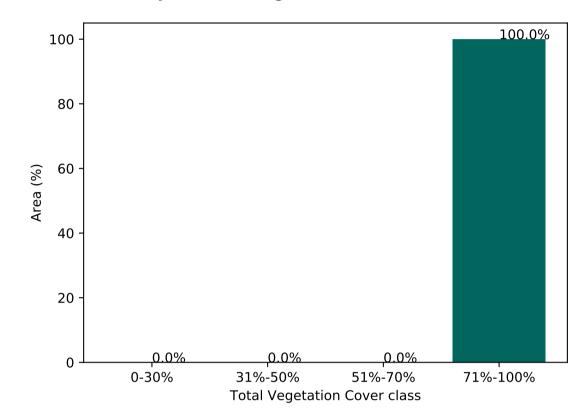
**Total Vegetation Cover [%]** 



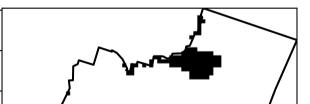


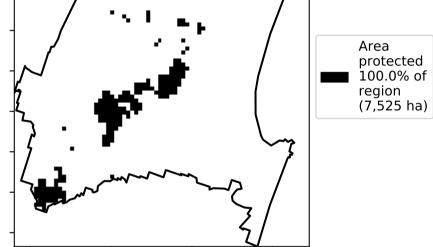






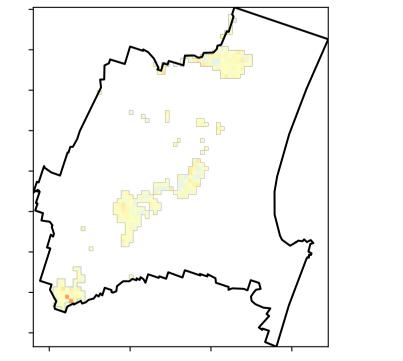
% Area protected from wind erosion (>50%)

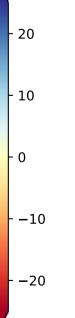




**Total Vegetation Cover Anomaly [%]** 

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.



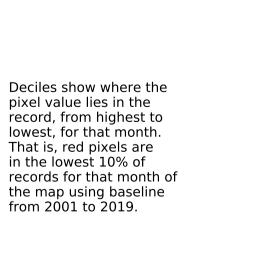


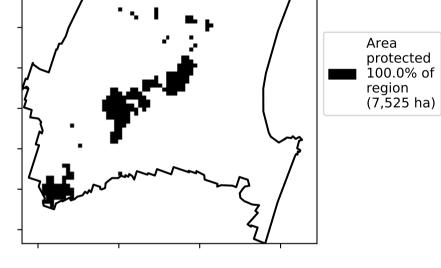
12º100010

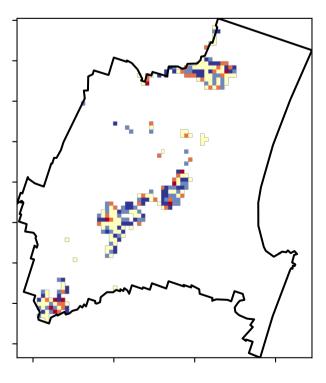
· 52°10'10°10

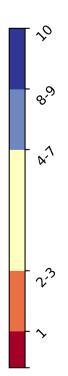
3201050010

0.30%

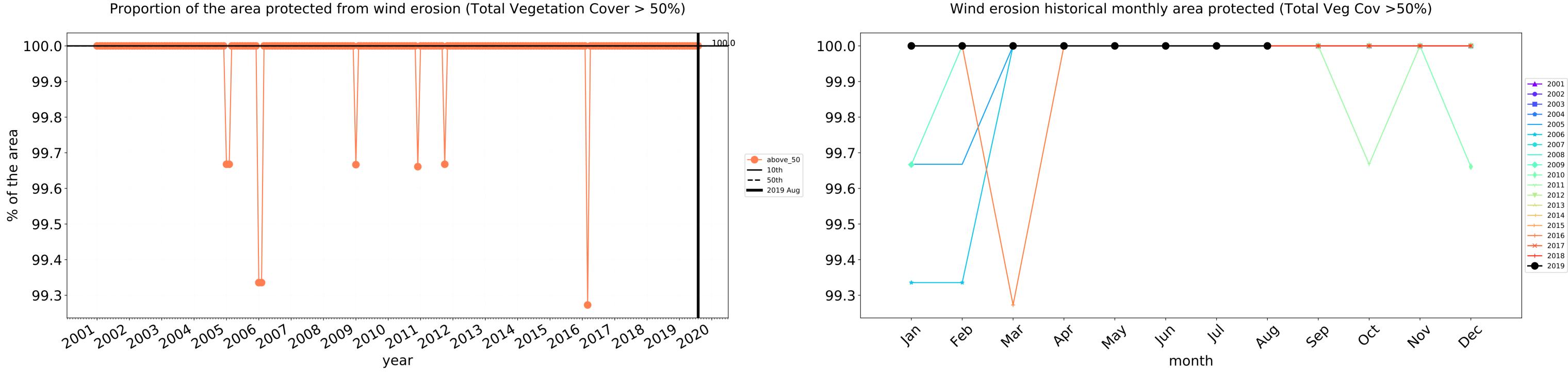


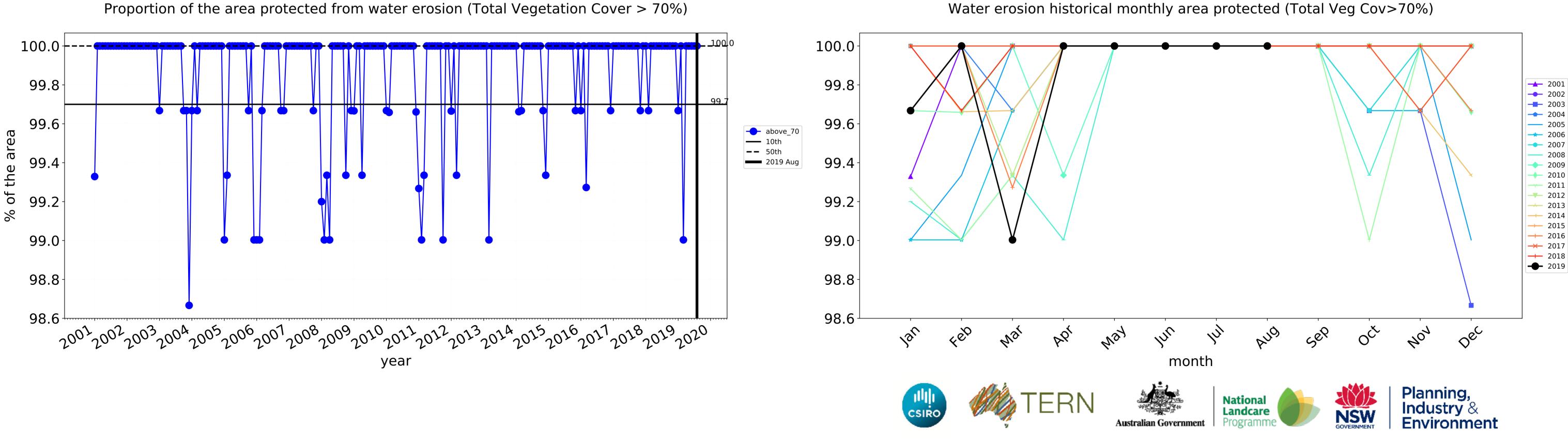




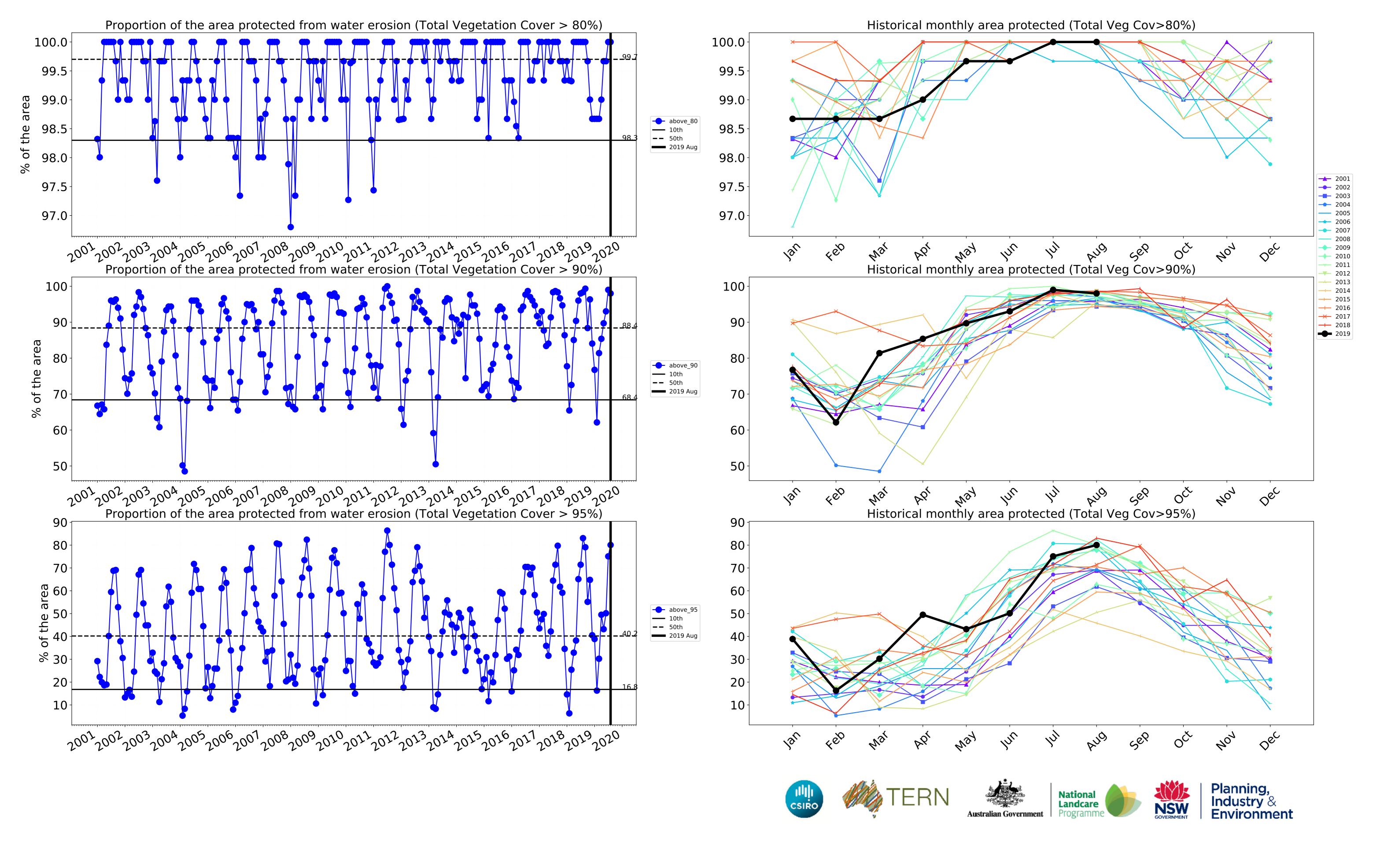








# 3**6**



# Noosa\_(S) (81,550 ha and no data 5,452 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	81,550	100.0% 81,550	99.8% 81,400	98.2% 80,075	95.4% 77,775	88.4% 72,100	50.8% 41,400
Conservation and natural environments	28,379	100.0% 28,379	99.8% 28,331	98.9% 28,065	97.3% 27,606	90.8% 25,770	64.6% 18,331
Conservation and natural environments non forest	3,343	100.0% 3,343	99.2% 3,318	95.5% 3,192	90.2% 3,016	79.7% 2,664	53.4% 1,784
Conservation and natural environments Woodland forest	2,691	100.0% 2,691	100.0% 2,691	99.1% 2,666	98.2% 2,641	90.8% 2,444	52.3% 1,407
Conservation and natural environments Forest (non woodland)	22,344	100.0% 22,344	99.9% 22,320	99.4% 22,201	98.2% 21,937	92.4% 20,644	67.6% 15,112
Agriculture	20,876	100.0% 20,876	100.0% 20,876	100.0% 20,876	100.0% 20,876	97.7% 20,406	46.8% 9,770
Grazing	17,859	100.0% 17,859	100.0% 17,859	100.0% 17,859	100.0% 17,859	98.0% 17,508	47.4% 8,473
Grazing non forest	14,923	100.0% 14,923	100.0% 14,923	100.0% 14,923	100.0% 14,923	98.1% 14,642	46.2% 6,887
Grazing Woodland forest	1,957	100.0% 1,957	100.0% 1,957	100.0% 1,957	100.0% 1,957	96.4% 1,887	48.8% 955
Grazing - Forest (non woodland)	978	100.0% 978	100.0% 978	100.0% 978	100.0% 978	100.0% 978	64.3% 629
Irrigation	1,875	100.0% 1,875	100.0% 1,875	100.0% 1,875	100.0% 1,875	94.9% 1,780	41.8% 783
Production native forests and plantation forests	7,094	100.0% 7,094	100.0% 7,094	100.0% 7,094	100.0% 7,094	98.0% 6,953	80.1% 5,680

