LGA Colac-Otway (S) (VIC) - 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.

Colac-Otway (S)

- Context
 - o Map: Land use and forest cover
 - o Chart: Land use and forest cover area
- Total vegetation cover for this month
 - o Map: vegetation cover classified into 4 classes
 - o 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













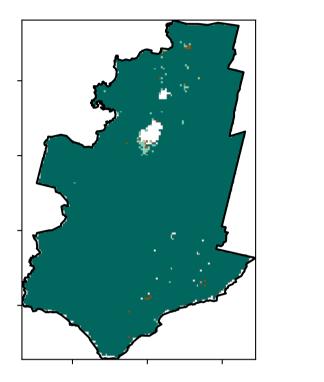
Vegetation Cover Aug 2019

Land use and forest cover

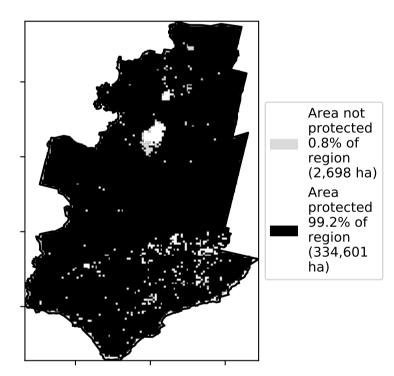
Legend with land class forest cover and number, i.e. Forests is 12 1 Conservation and natural environments - Non-forest 2 Conservation and natural environments - Woodland forest 3 Conservation and natural environments - Non-Woodland forest 4 Agriculture - Grazing - Non-forest 5 Agriculture - Grazing - Woodland forest 6 Agriculture - Grazing - Irrigated 8 Agriculture - Grazing - Irrigated 9 Agriculture - Cropping - Irrigated 10 Agriculture - Horticulture - Non-irrigated 11 Agriculture - Horticulture - Irrigated 12 Production native forests and plantation forests 13 Other uses

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.

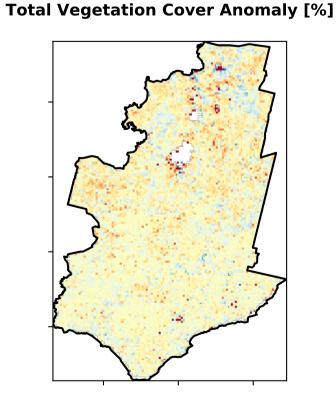
Total Vegetation Cover [%]

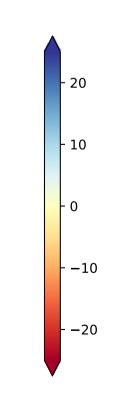


% Area protected from water erosion (>70%)



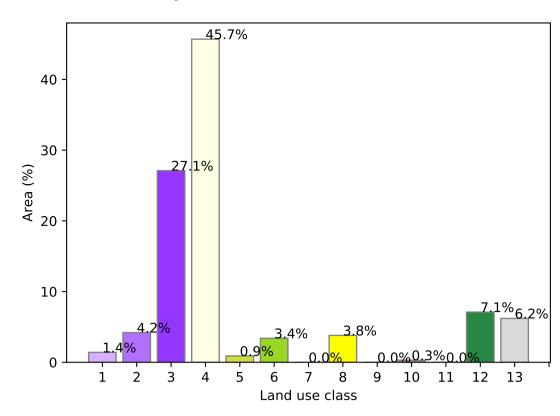
Anomaly show how many percetage points each pixel is from the mean. That is, red pixels are about 20% lower than the mean of that pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



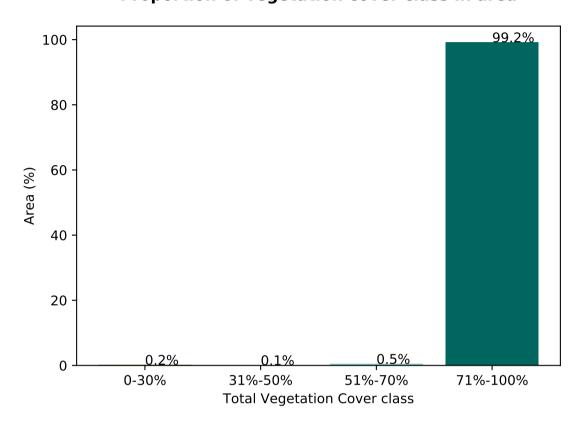


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

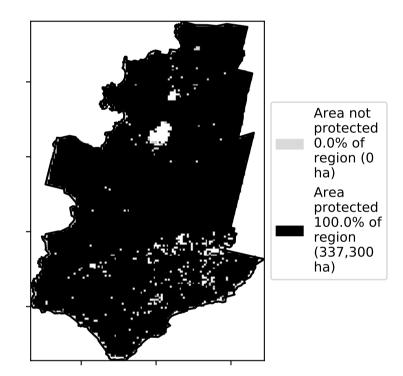
Proportion of each land class in area

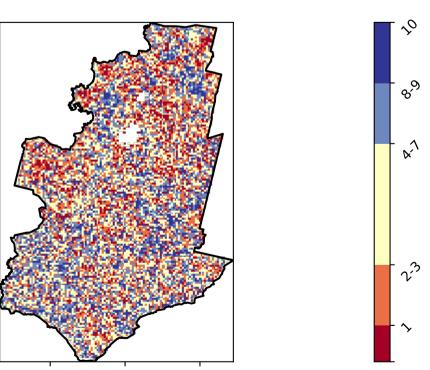


Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)







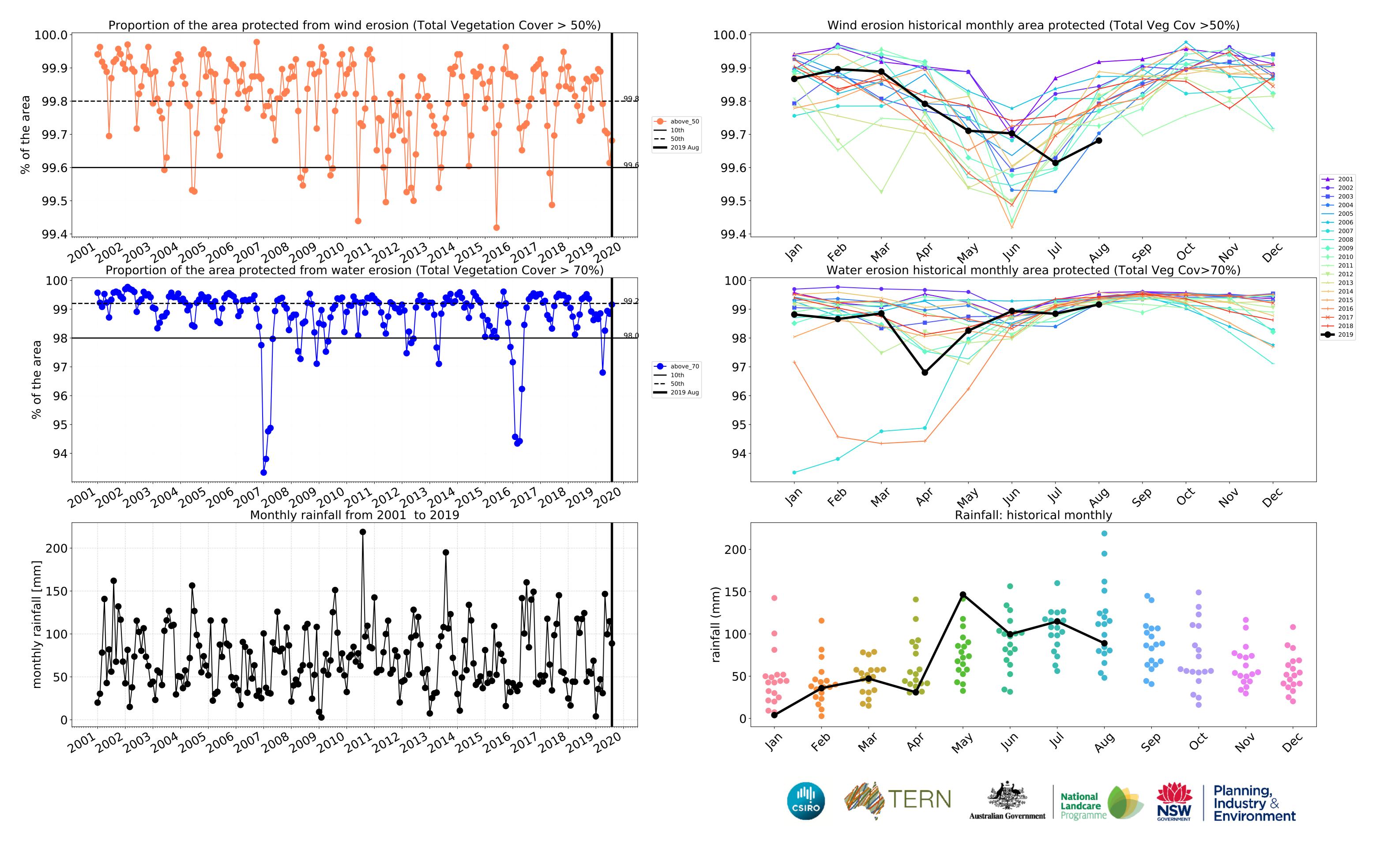


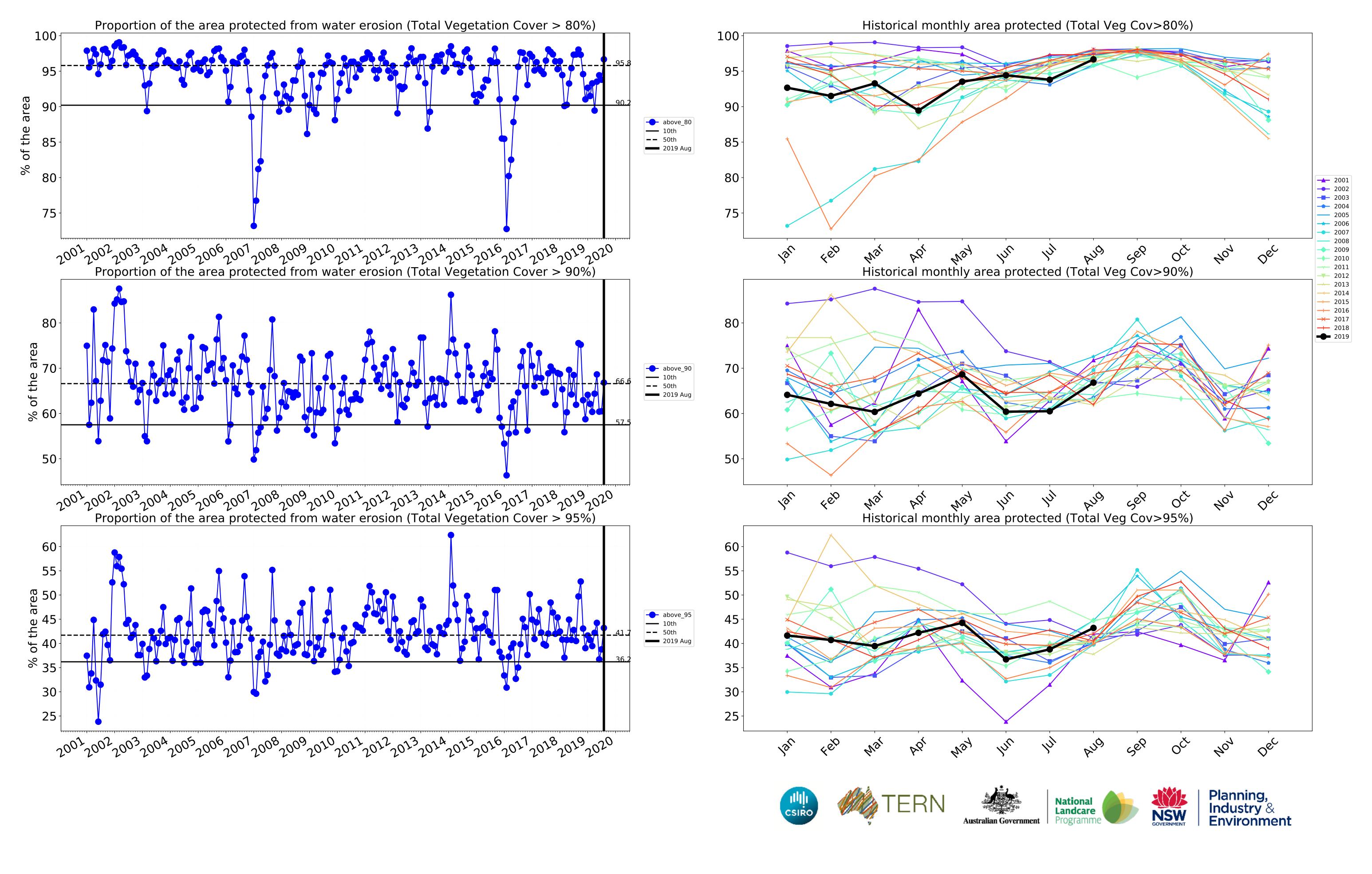












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Conservation and natural environments

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

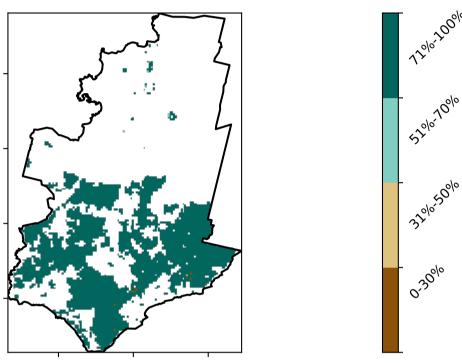
and dense > 50% tree

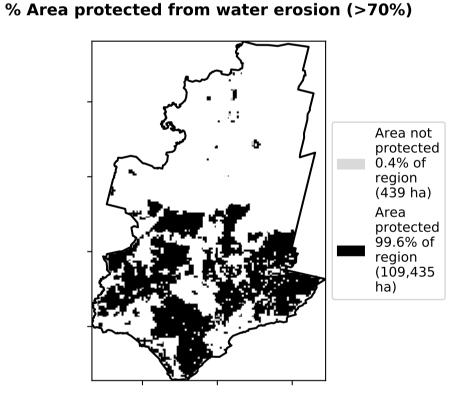
cover.

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

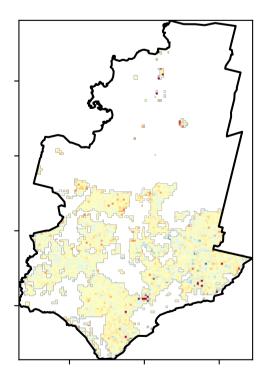
Total Vegetation Cover [%]

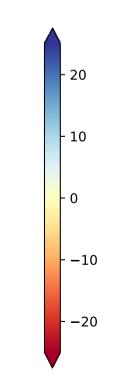
Land use and forest cover





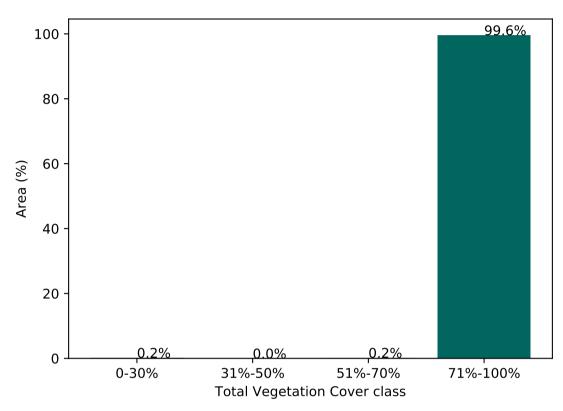
Total Vegetation Cover Anomaly [%]



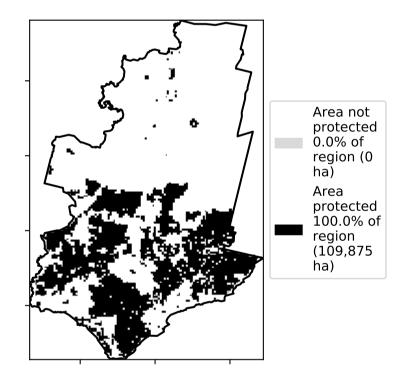


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

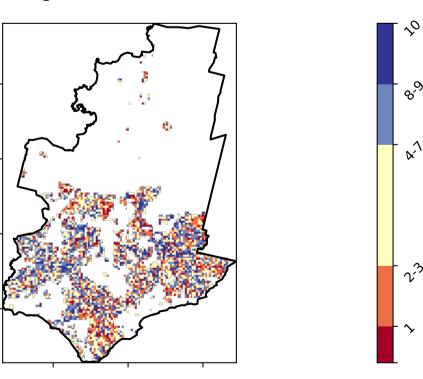
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]





Anomaly show how many percetage points each

pixel is from

is, red pixels are about 20% lower than the mean of that pixel. The mean

the mean. That

is only for the month of the map

using baseline from 2001 to 2019.



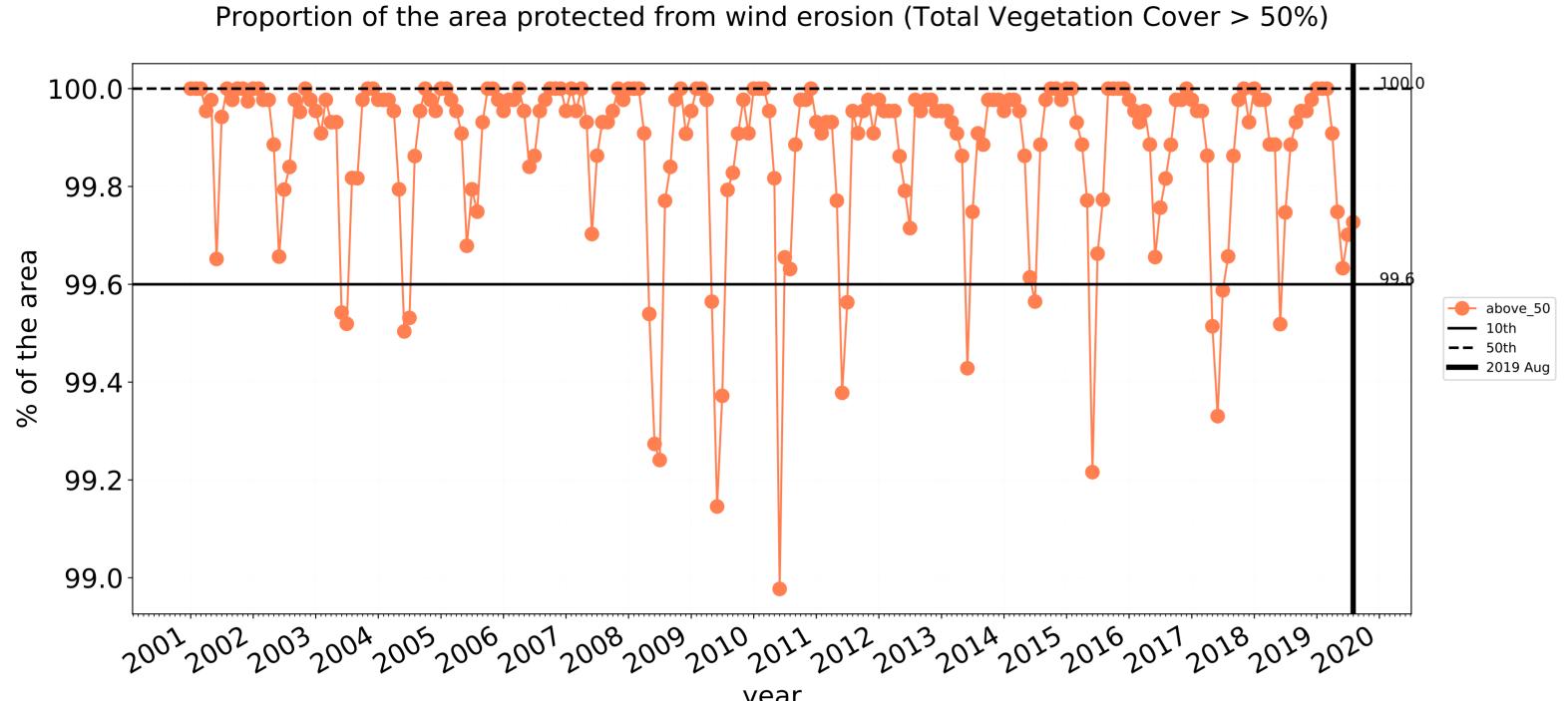


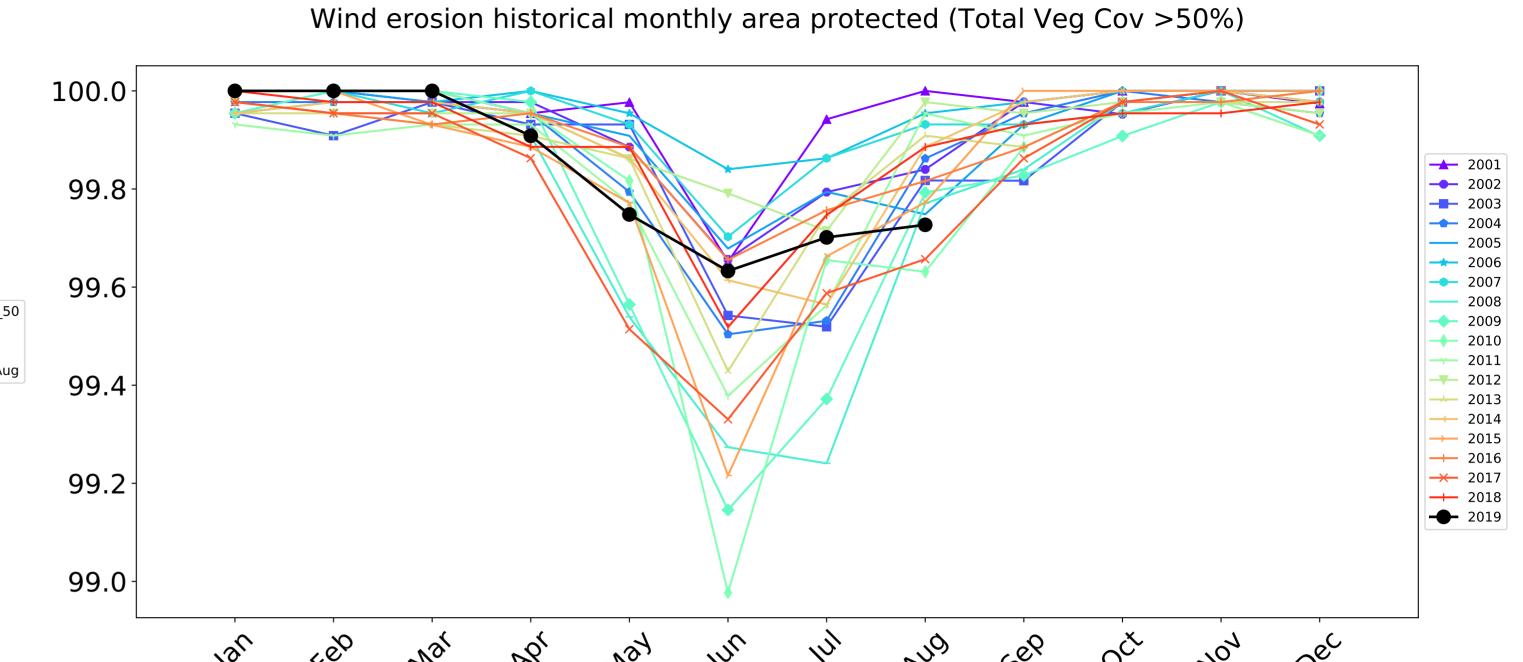


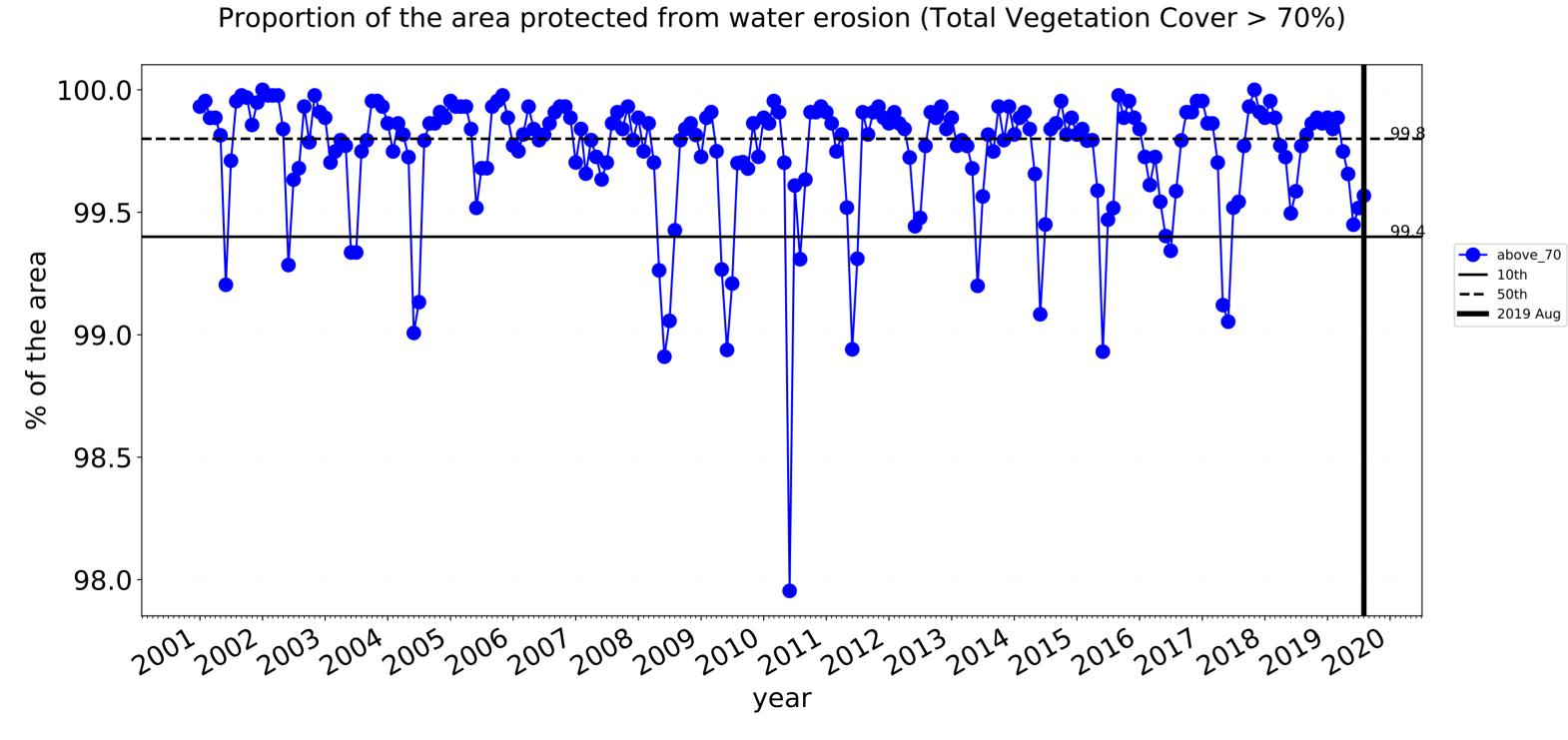


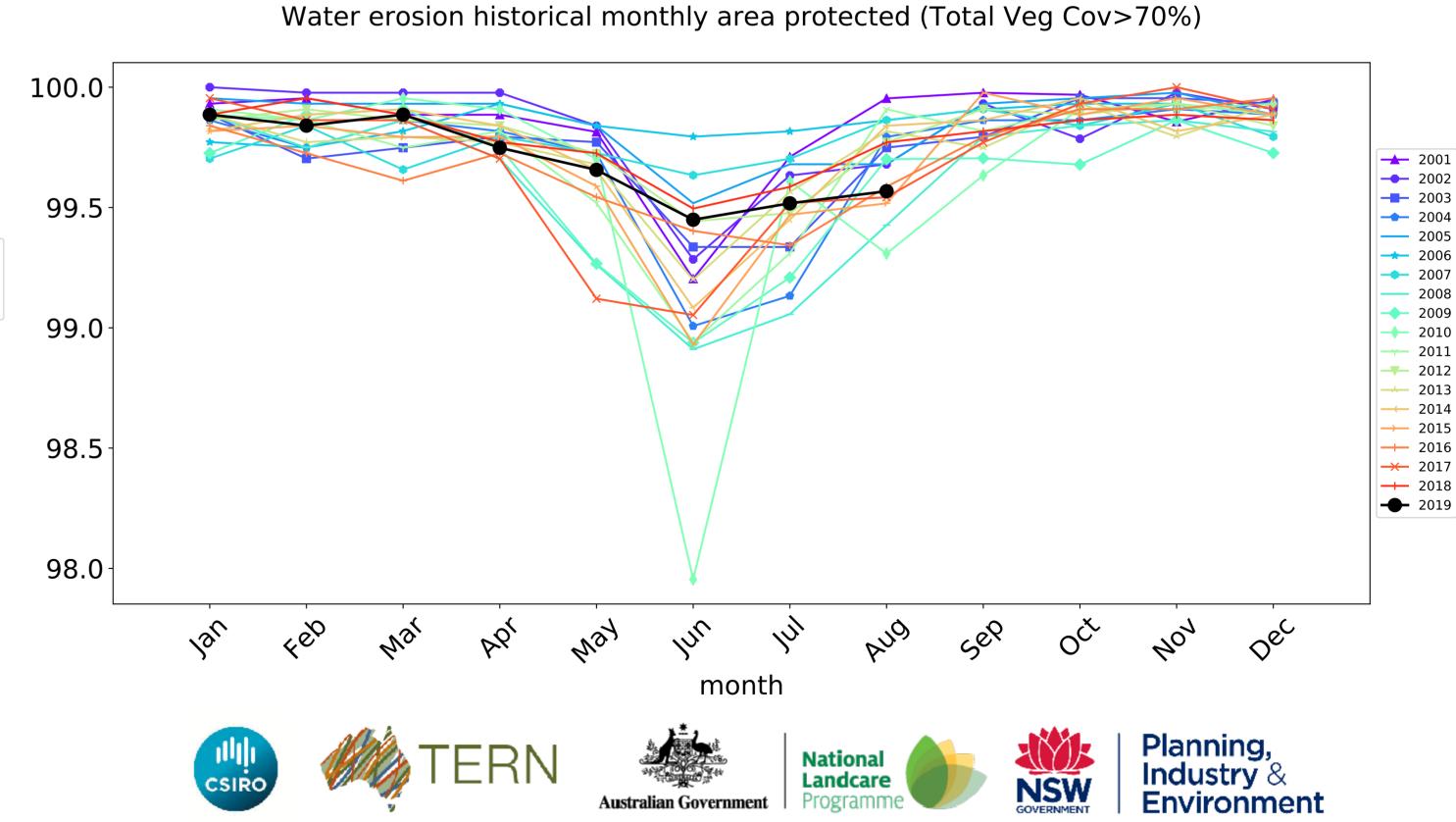


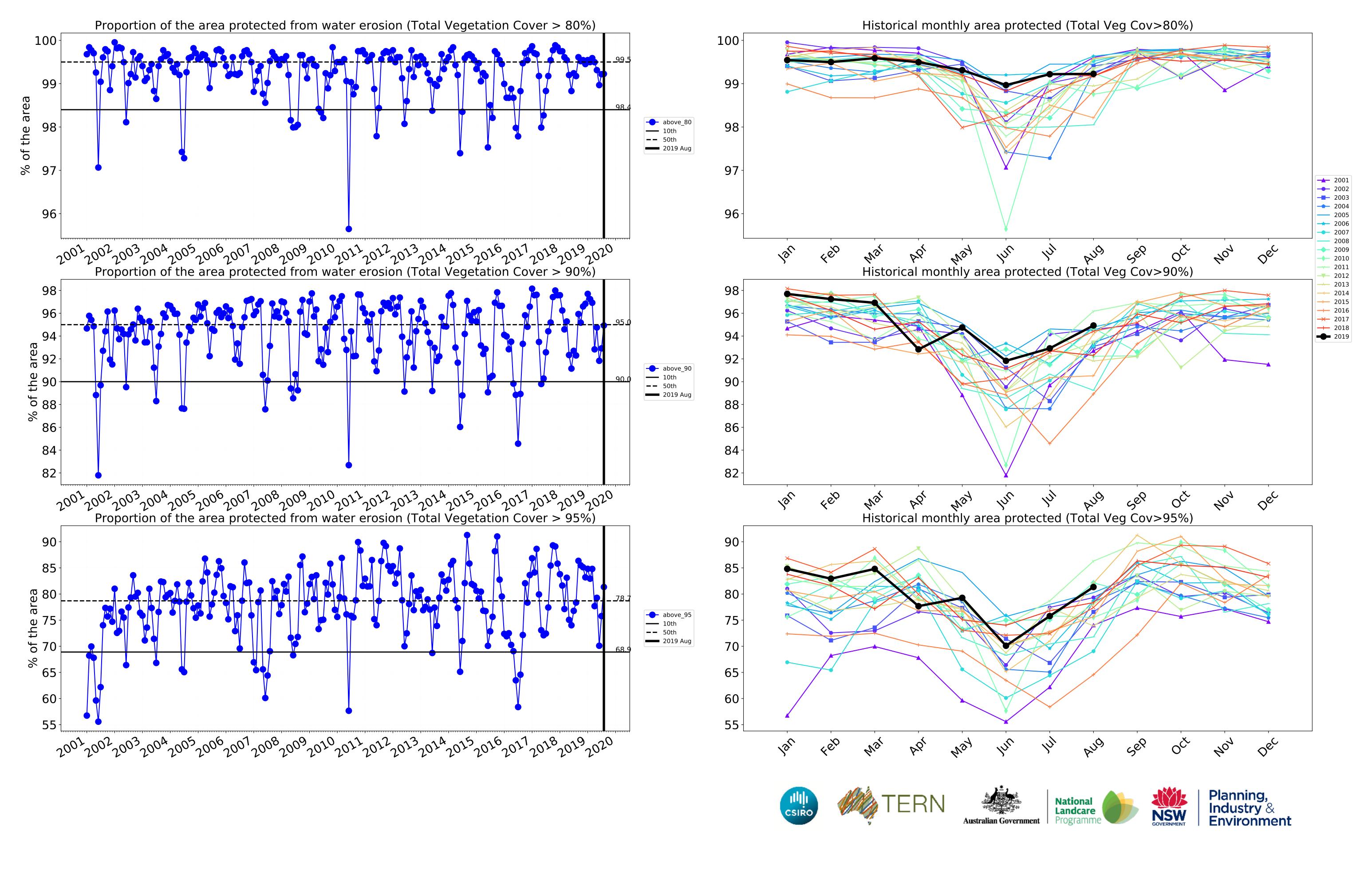
Conservation and natural environments timeseries











Conservation and natural environments non 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.

Anomaly show how many percetage points each

pixel is from

is, red pixels are about 20% lower than the

mean of that

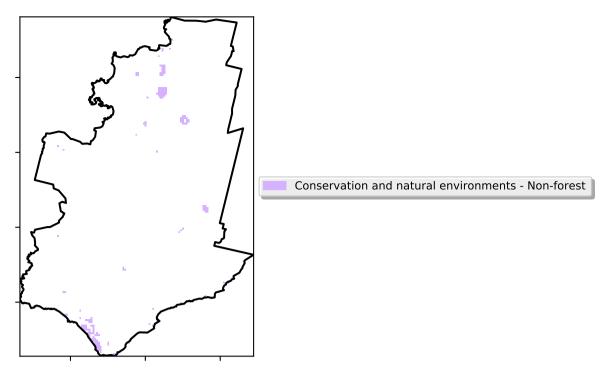
pixel. The mean

using baseline from 2001 to 2019.

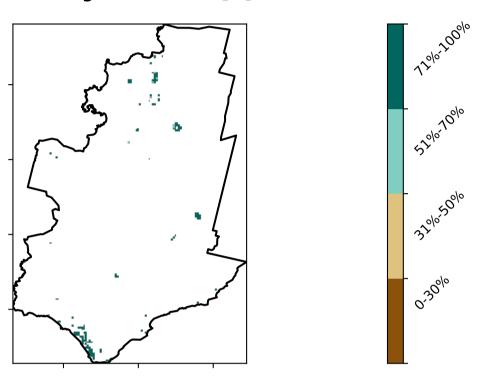
is only for the month of the map

the mean. That

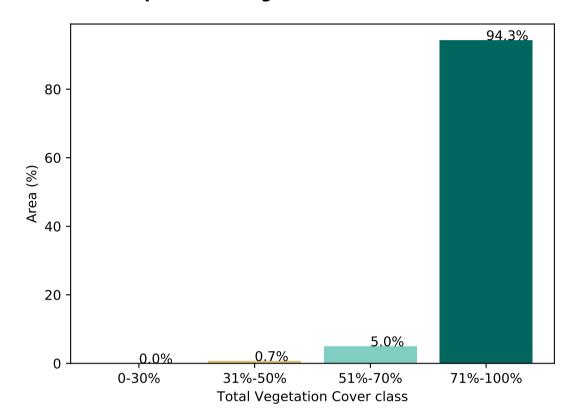
Land use and forest cover



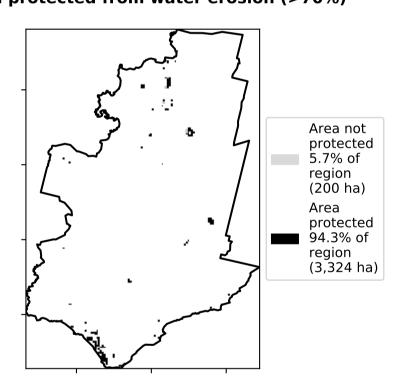
Total Vegetation Cover [%]



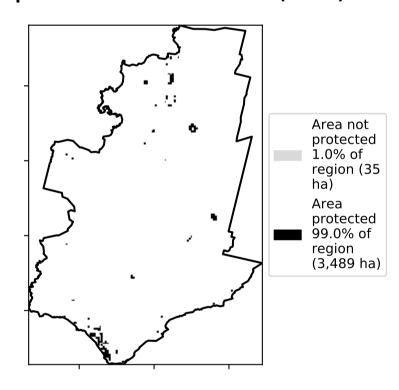
Proportion of vegetation cover class in area



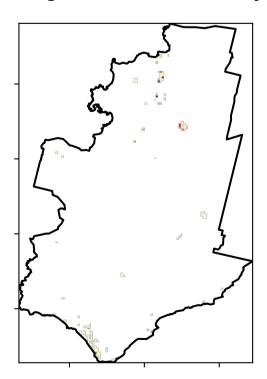
% Area protected from water erosion (>70%)

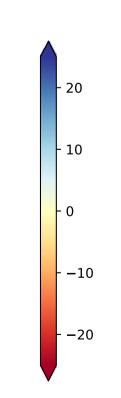


% Area protected from wind erosion (>50%)

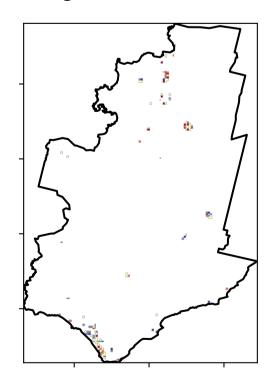


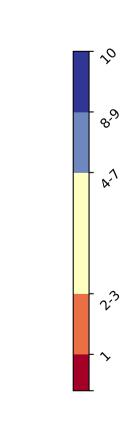
Total Vegetation Cover Anomaly [%]





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.







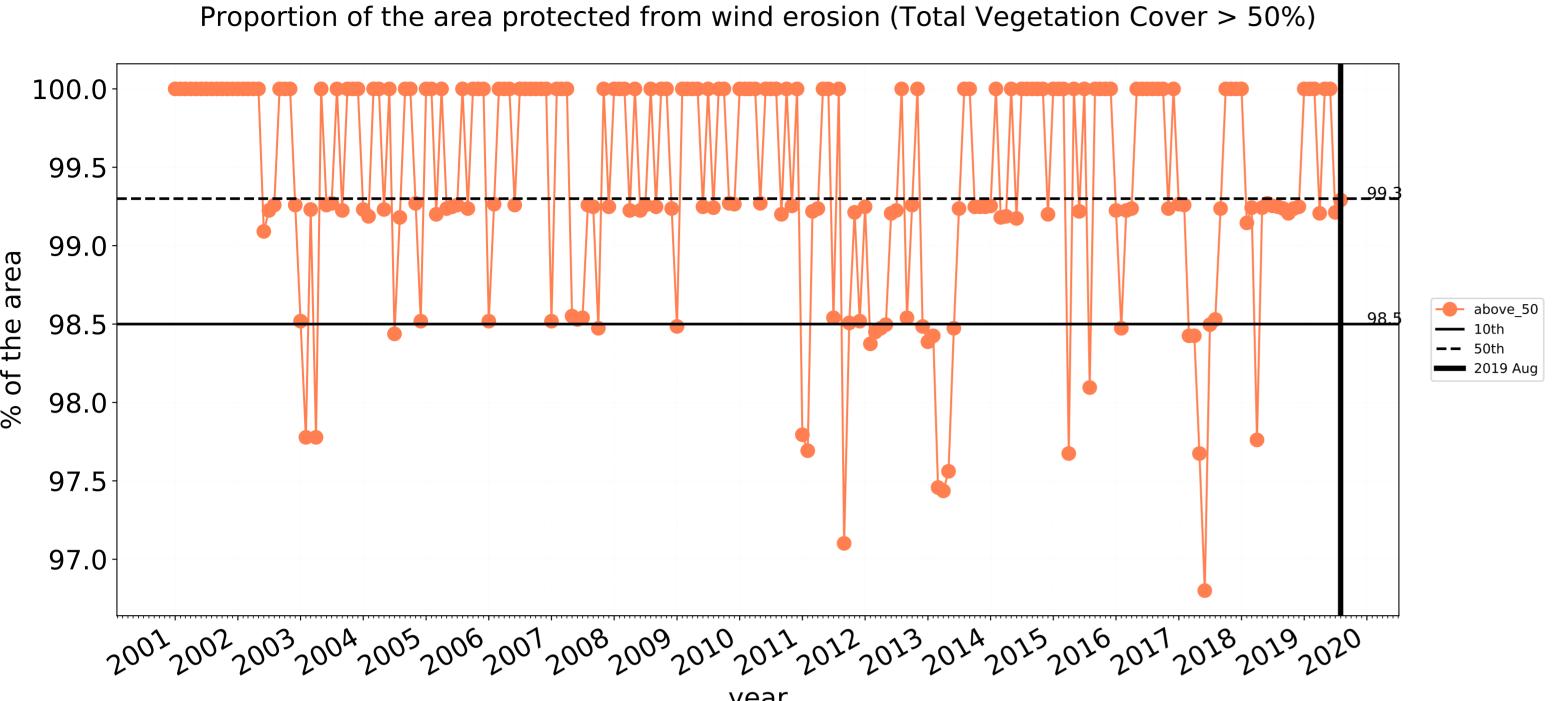


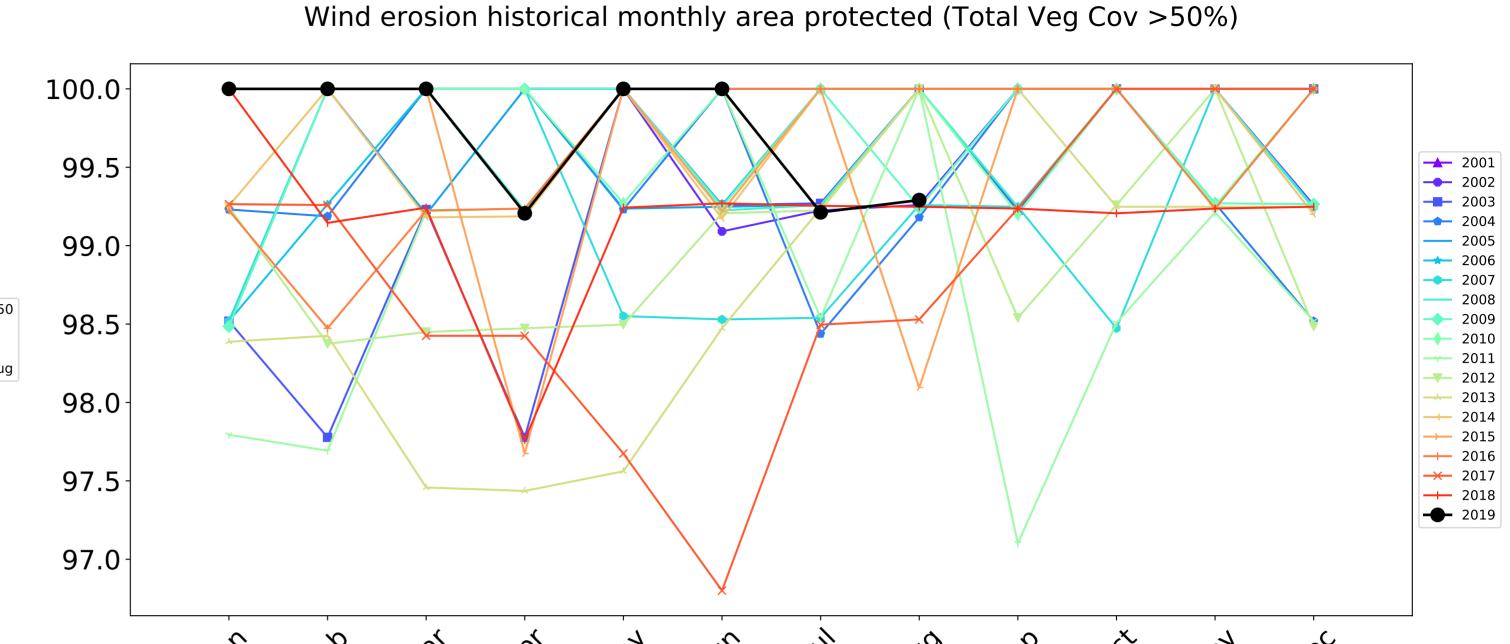


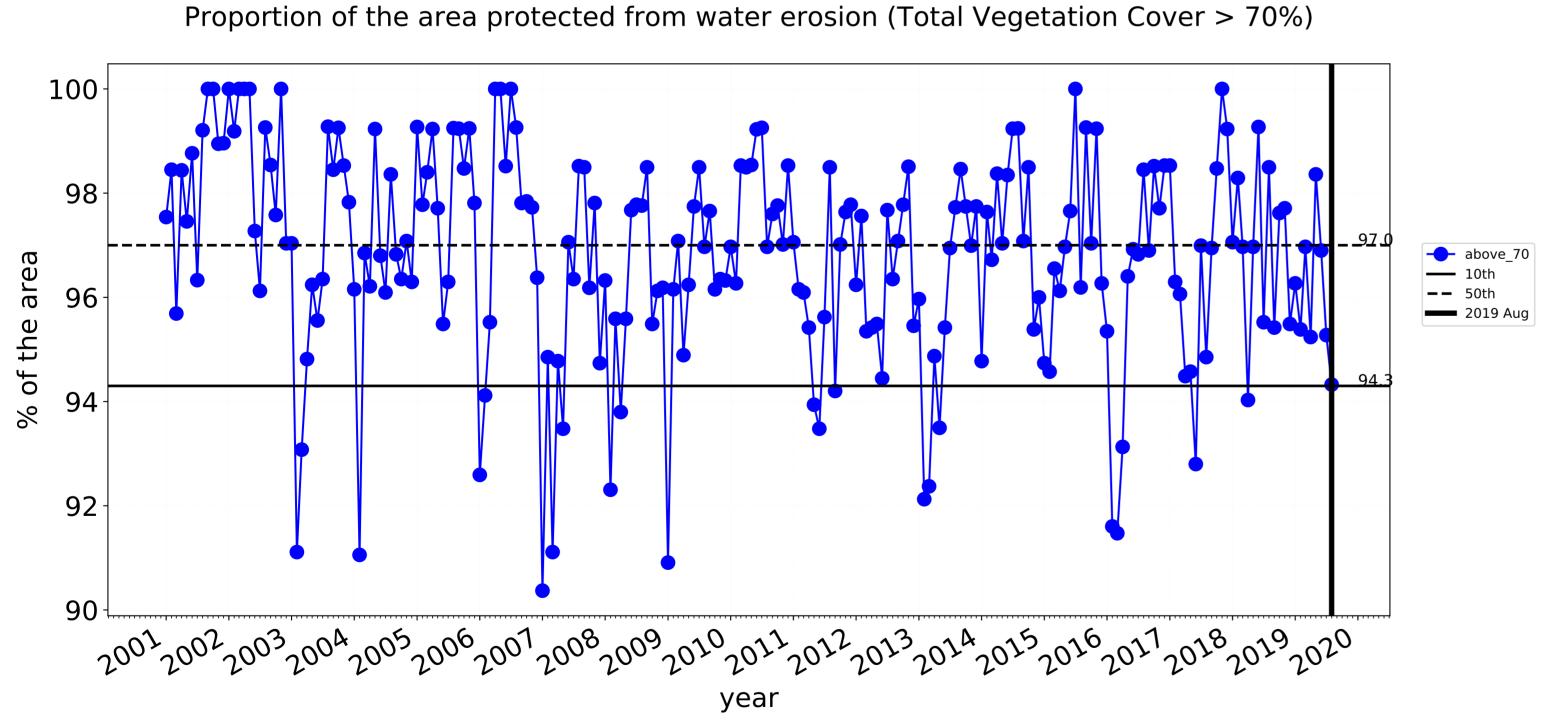


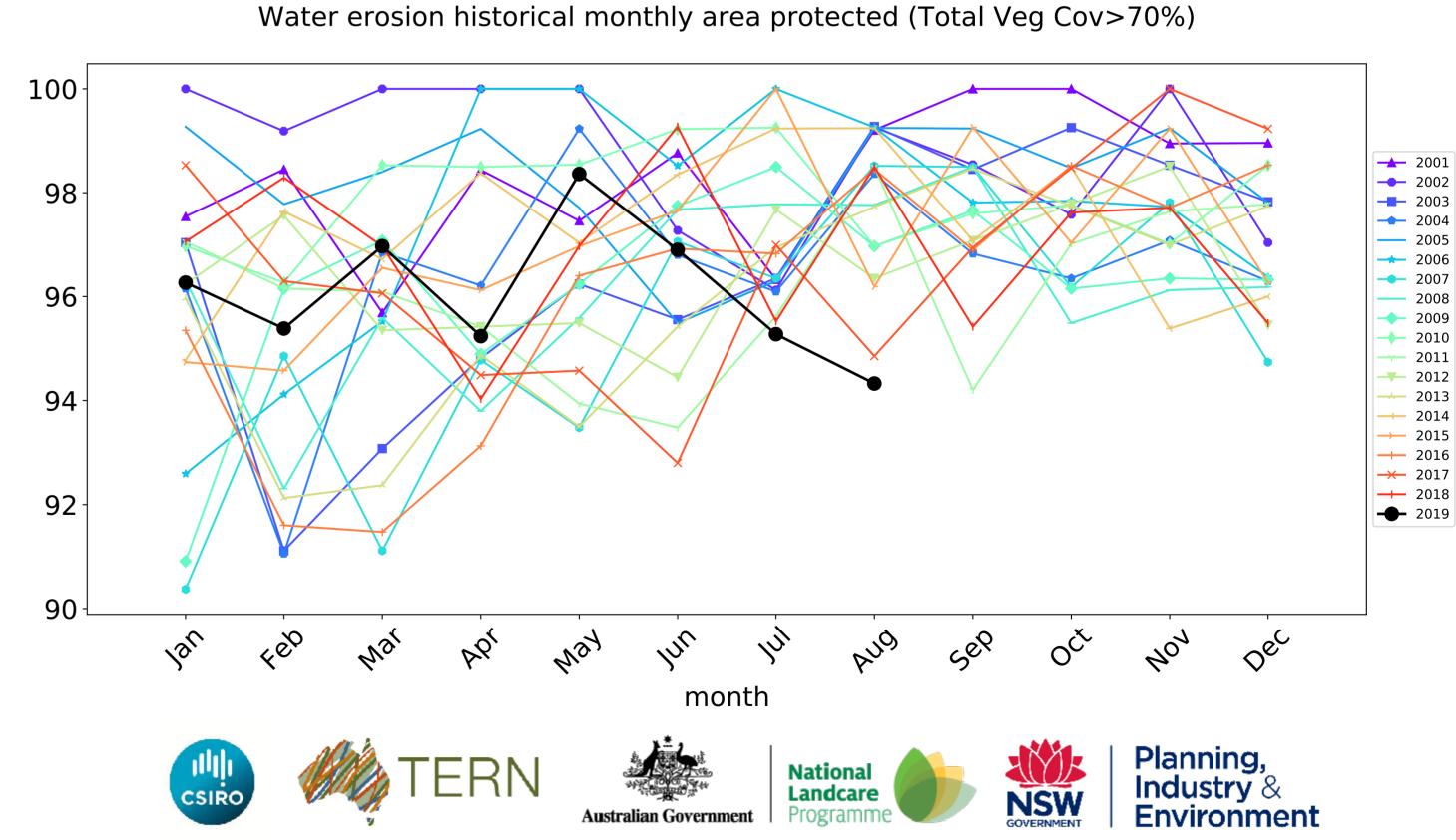


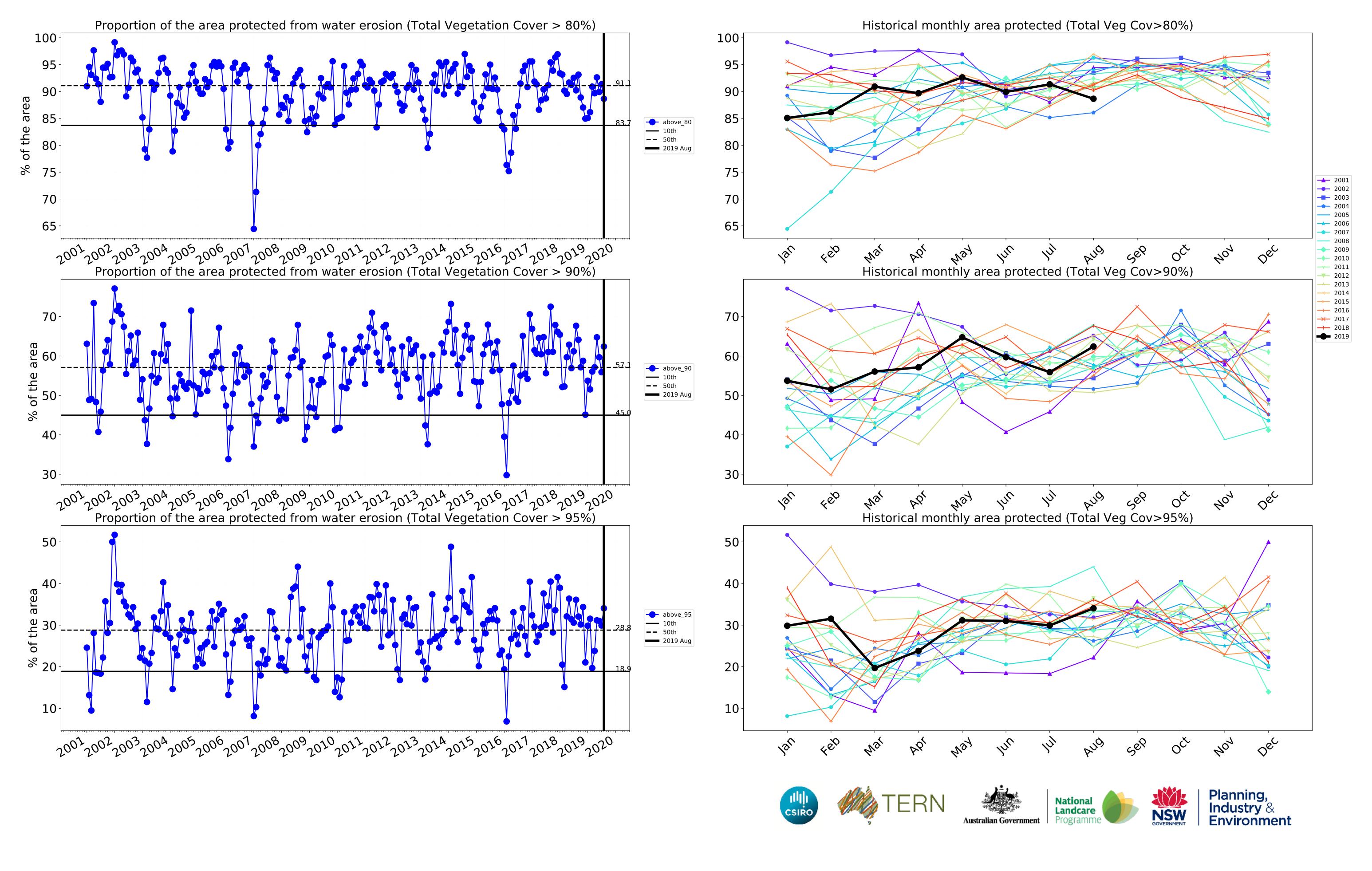












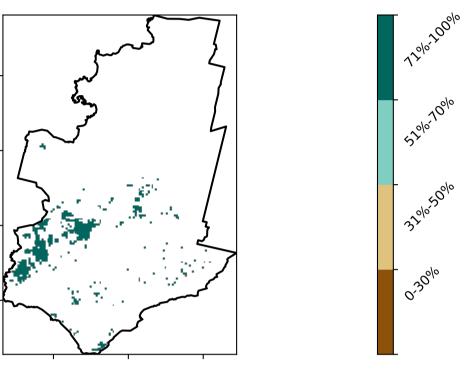
Conservation and natural environments Woodland forest

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.

Conservation and natural environments - Woodland

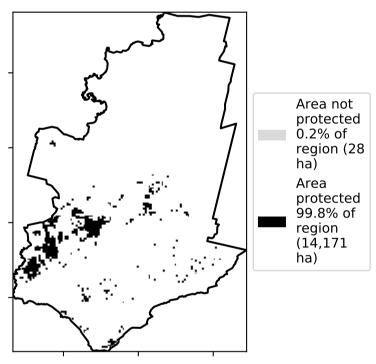
Total Vegetation Cover [%]

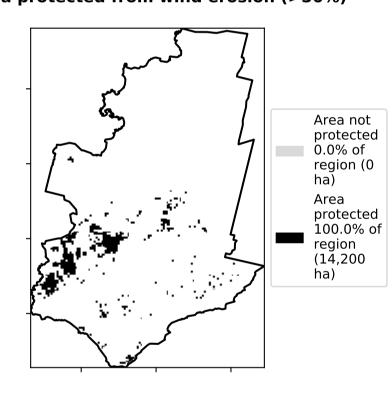


60 40 20 0.0% 0.0% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class** % Area protected from water erosion (>70%) % Area protected from wind erosion (>50%)

100

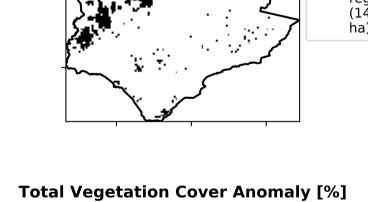
80



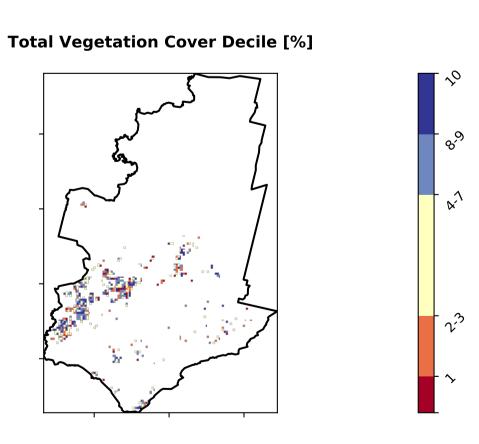


Proportion of vegetation cover class in area

99.8%



- 20 Deciles show where the pixel value lies in the - 10 record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of 0 records for that month of the map using baseline from 2001 to 2019. -10**-**20



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



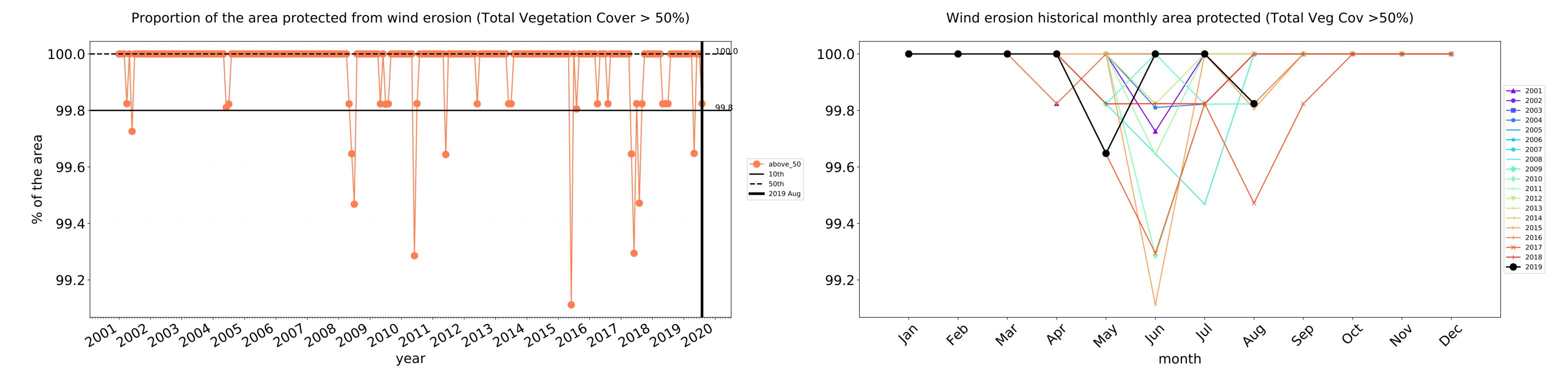


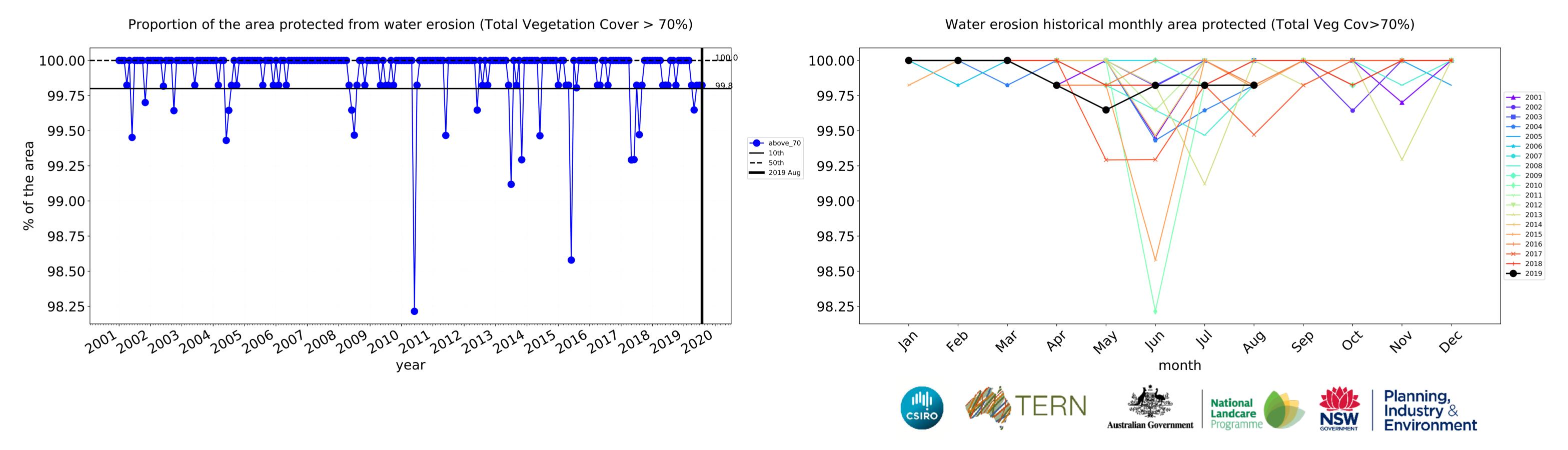


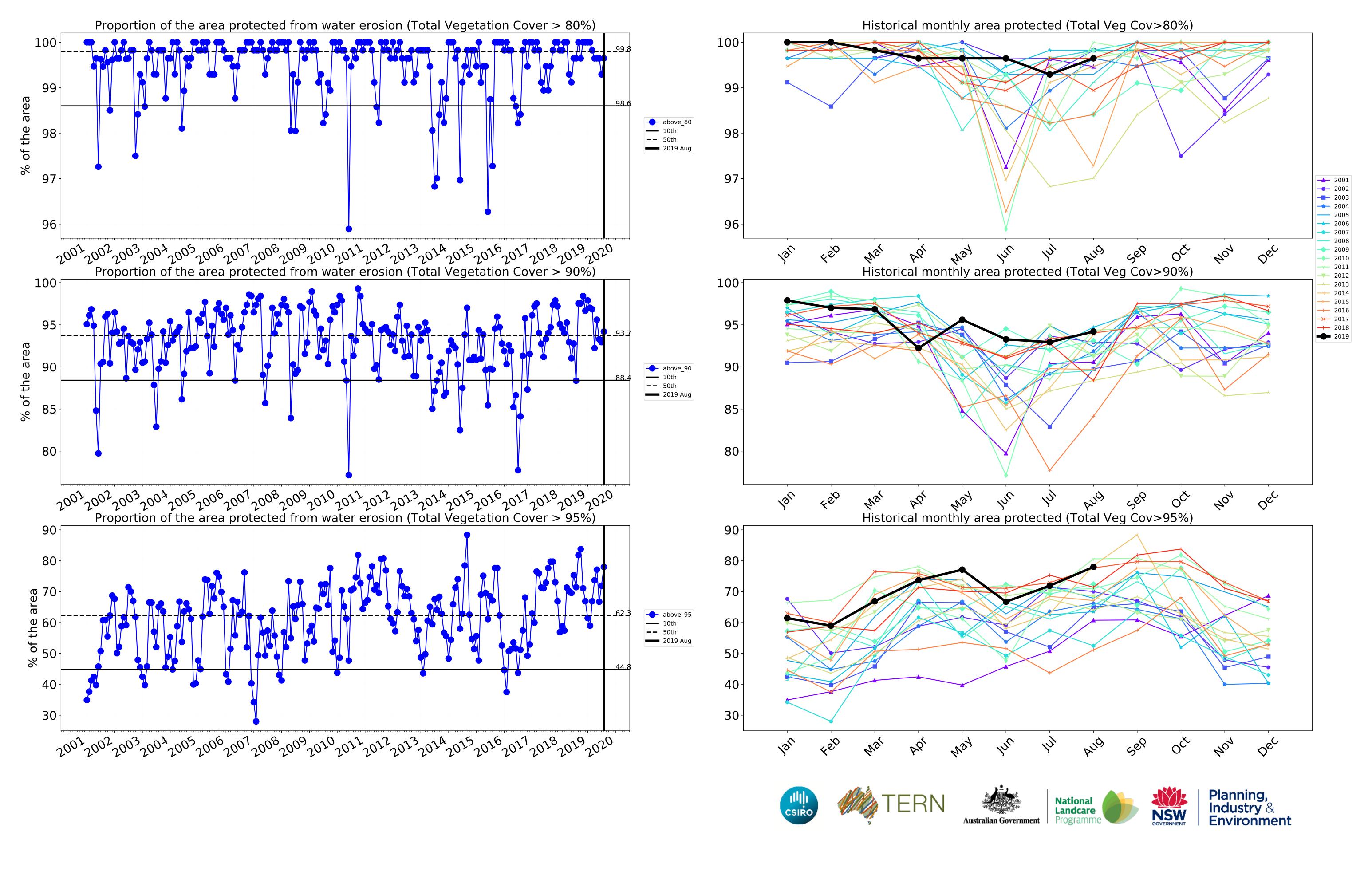












Conservation and natural environments Forest (non woodland)

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.

Anomaly show how many percetage points each

pixel is from

is, red pixels are about 20% lower than the mean of that

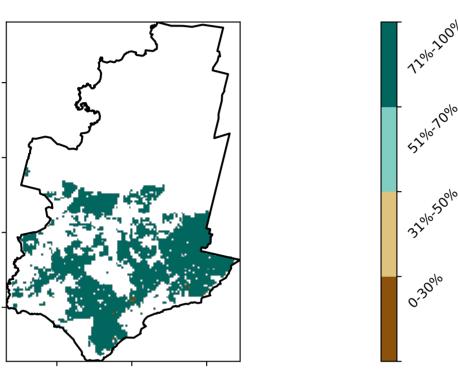
the mean. That

pixel. The mean

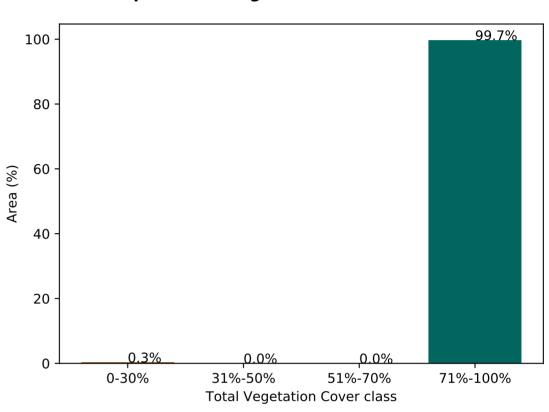
is only for the month of the map using baseline from 2001 to 2019.

Conservation and natural environments - Non-woodland forest

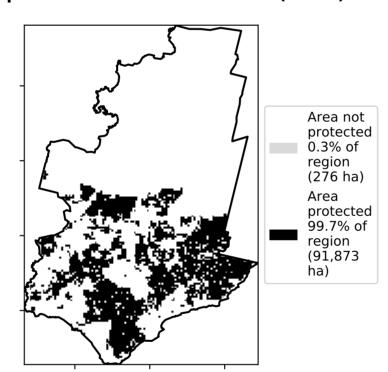
Total Vegetation Cover [%]



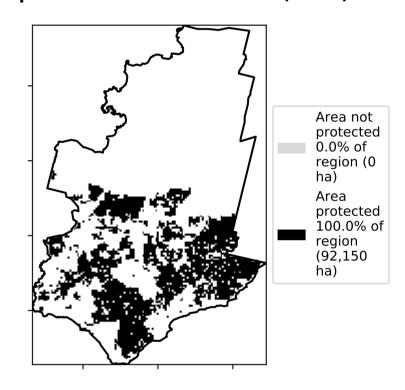
Proportion of vegetation cover class in area



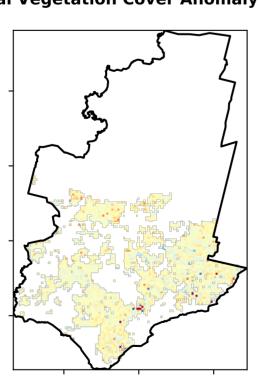
% Area protected from water erosion (>70%)

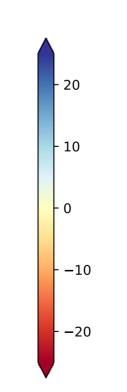


% Area protected from wind erosion (>50%)

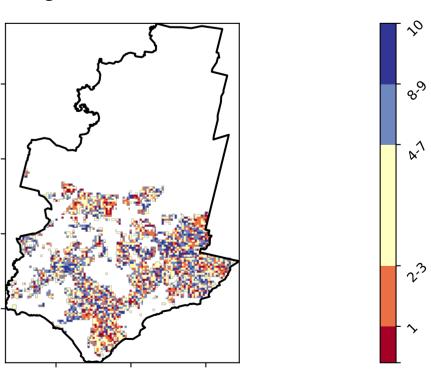


Total Vegetation Cover Anomaly [%]





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.





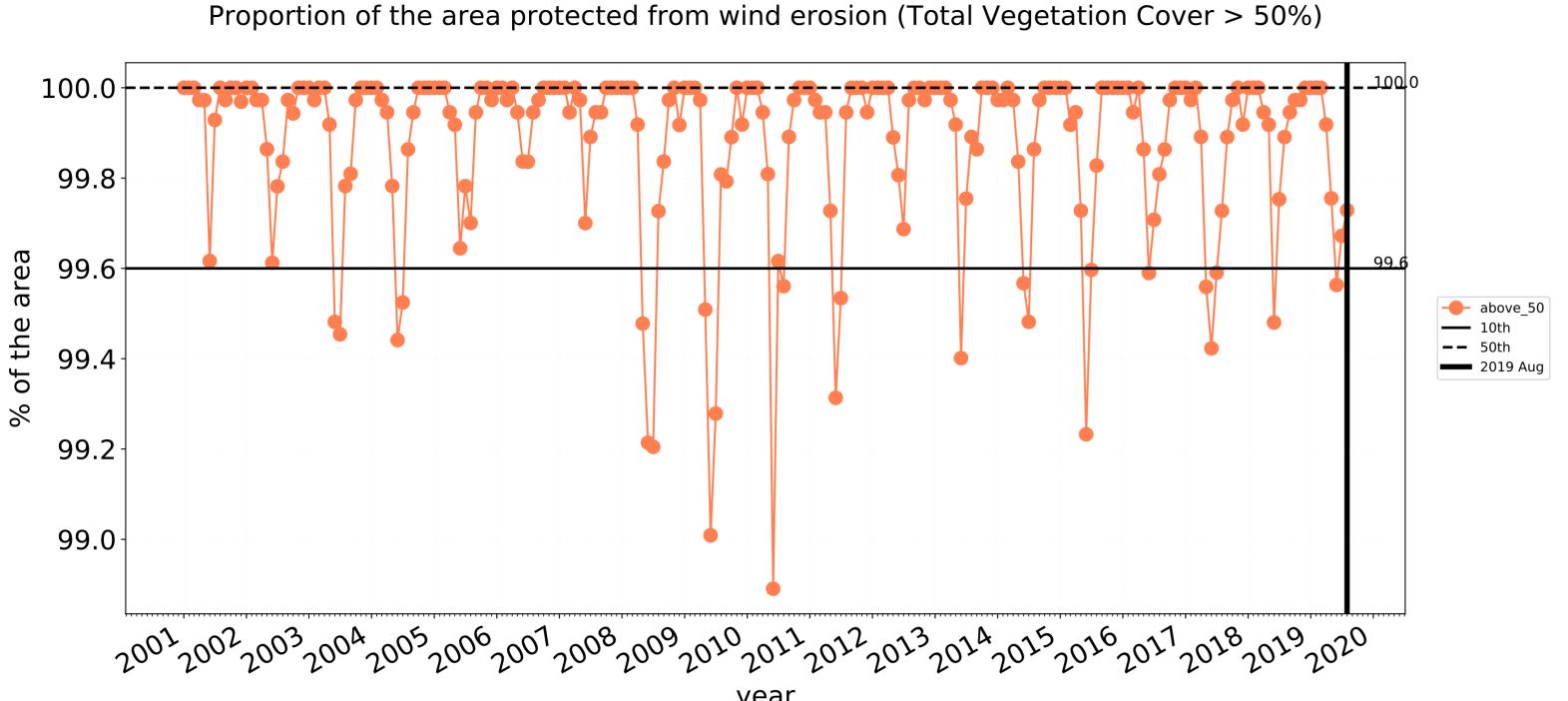


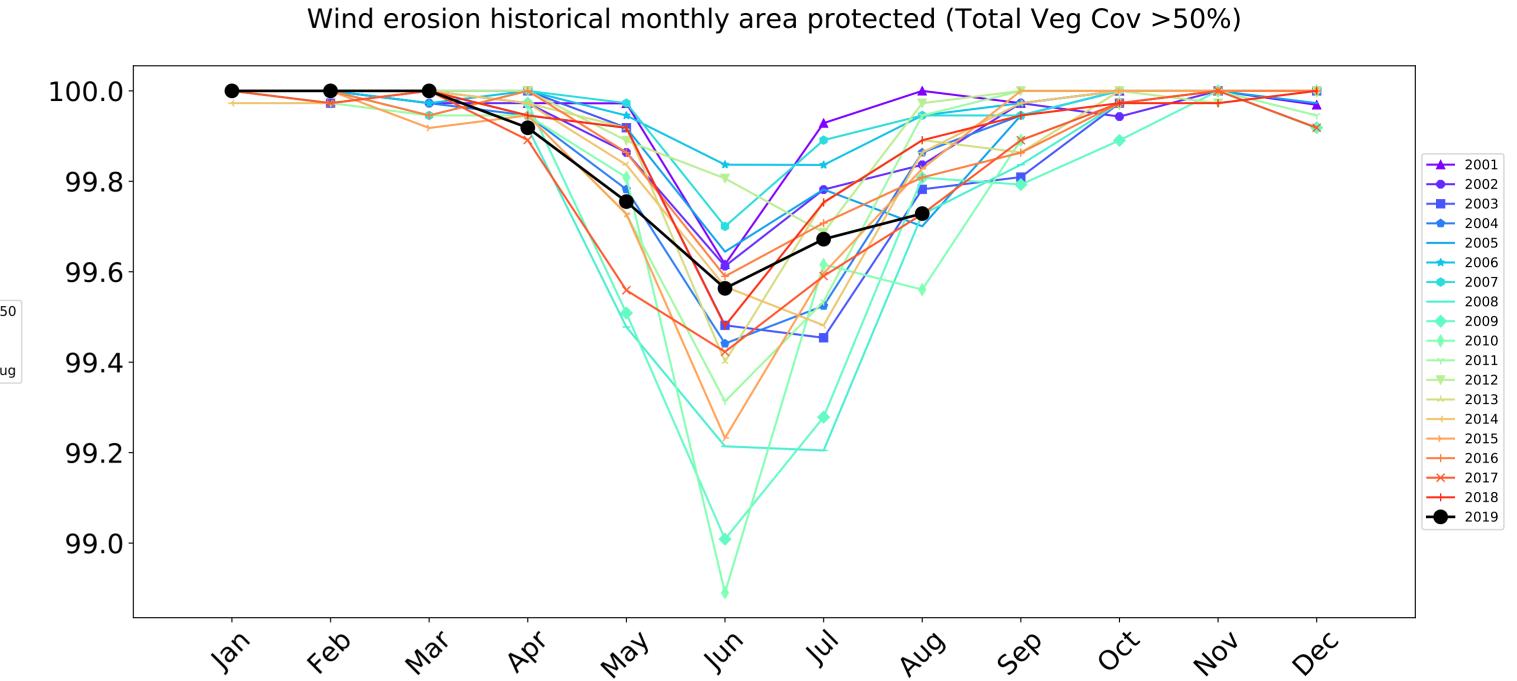


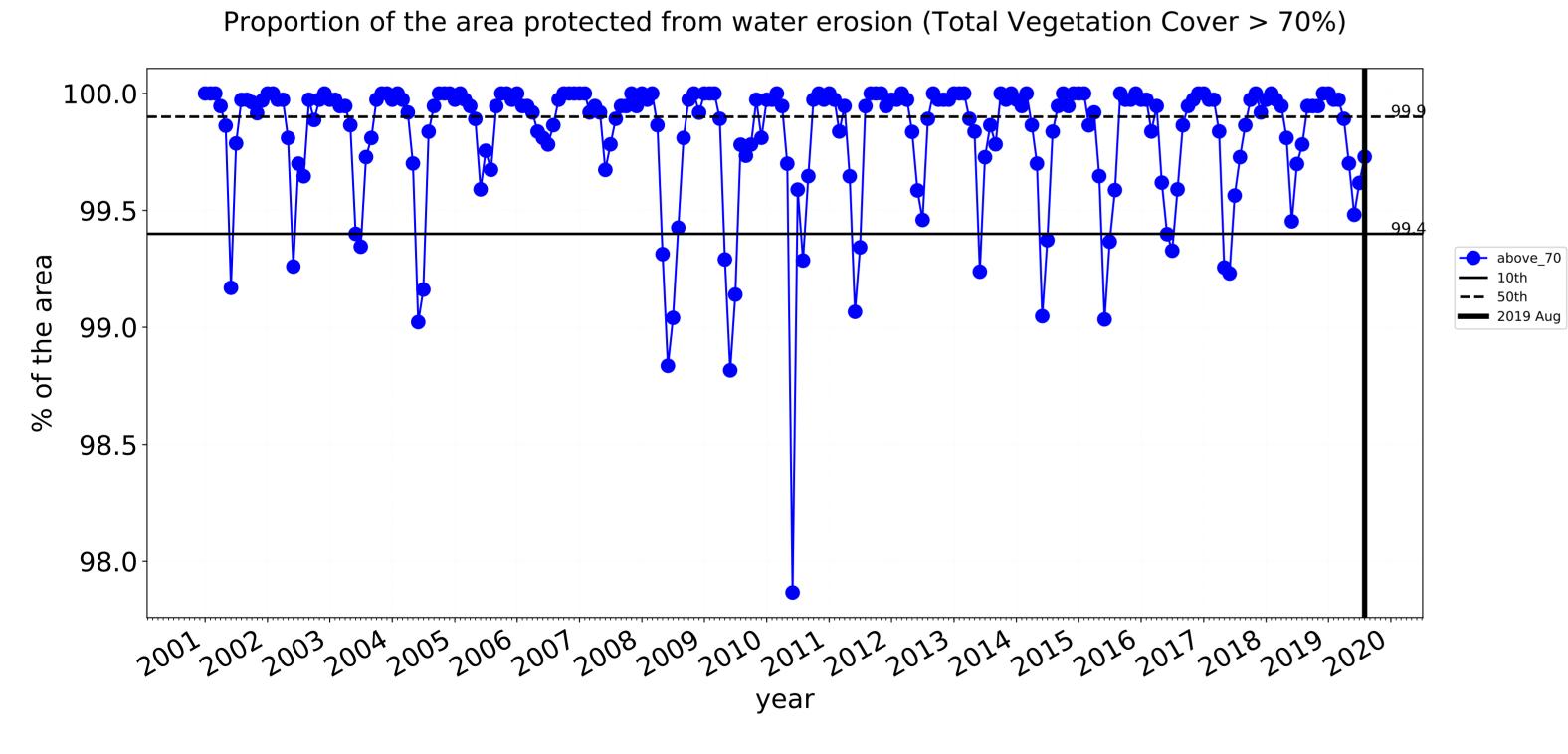


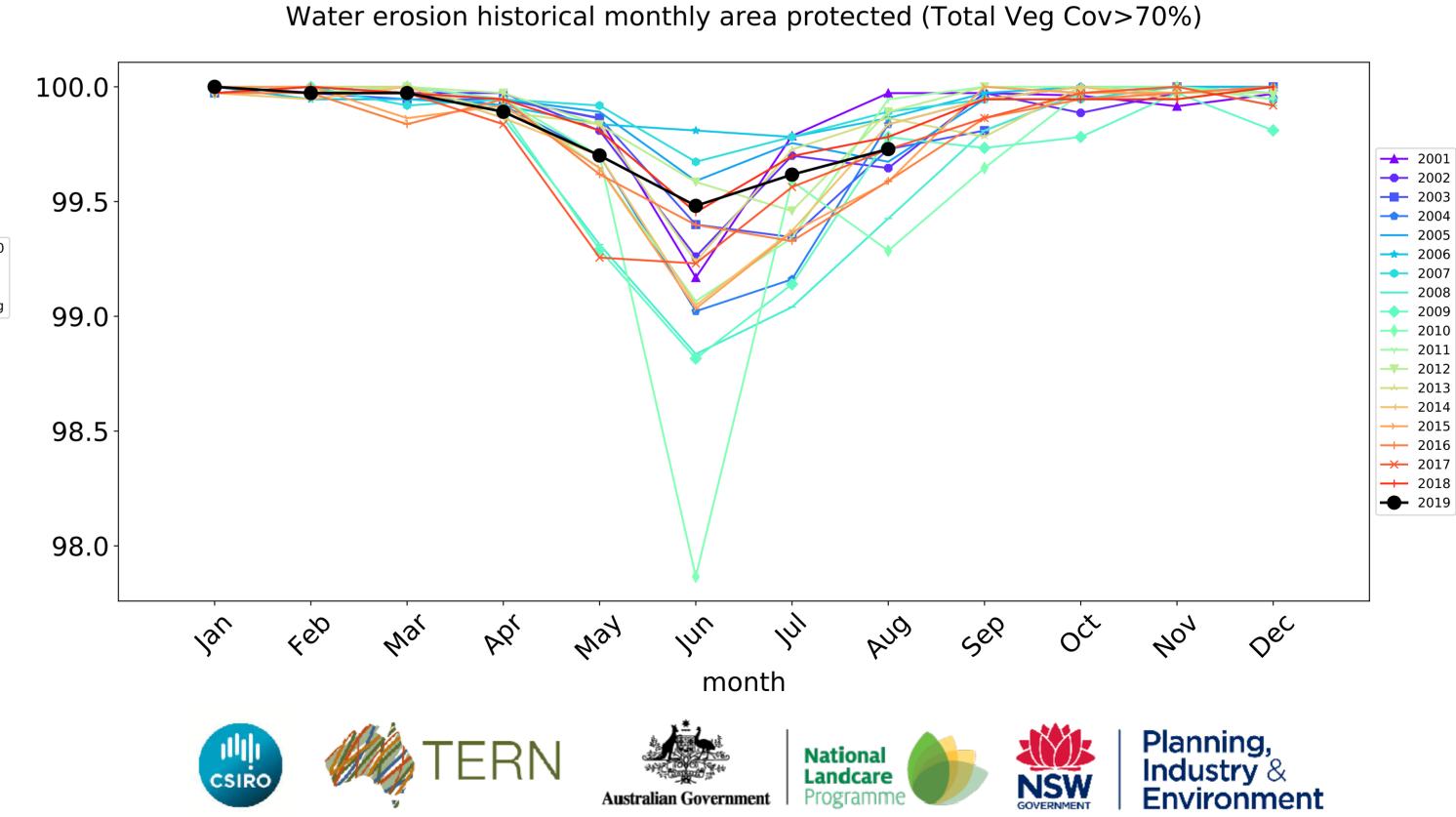


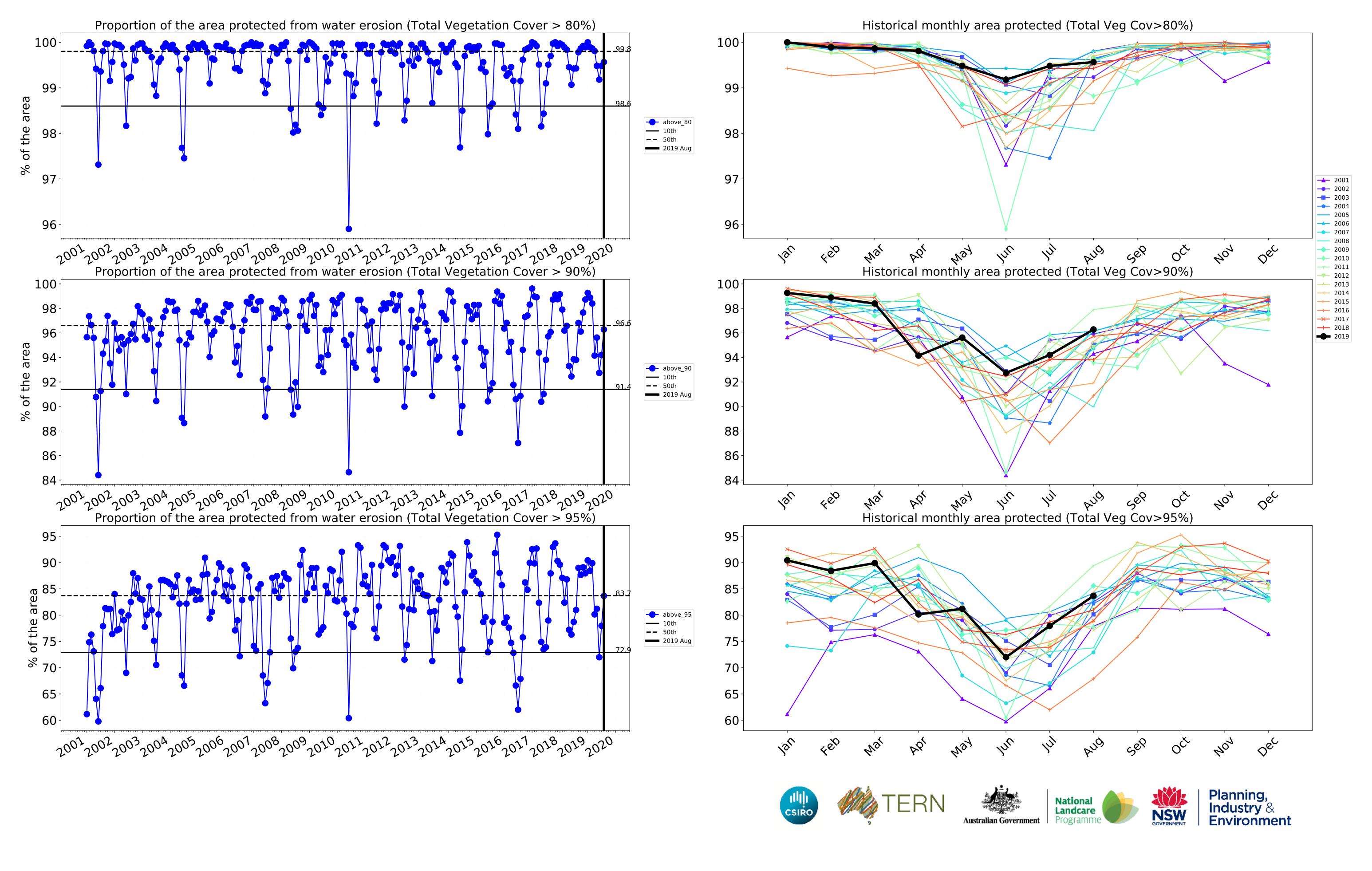












Agriculture

Land use and forest cover

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

Anomaly show how many percetage points each

pixel is from

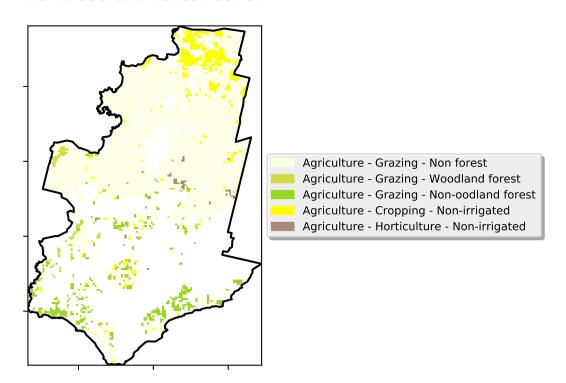
is, red pixels are about 20% lower than the

mean of that pixel. The mean

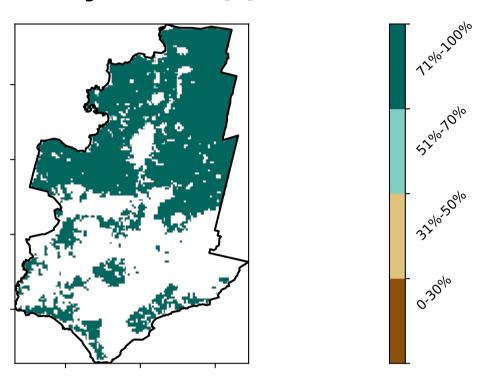
is only for the month of the map

using baseline from 2001 to 2019.

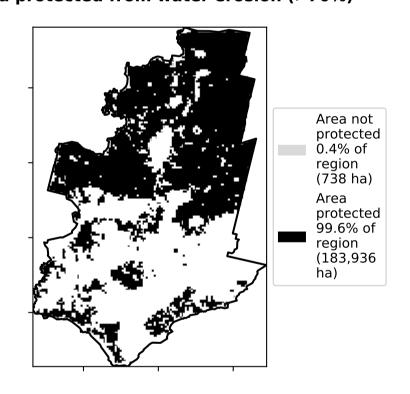
the mean. That



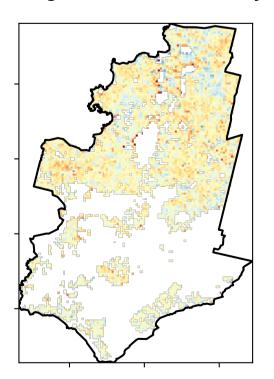
Total Vegetation Cover [%]

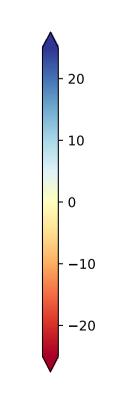


% Area protected from water erosion (>70%)



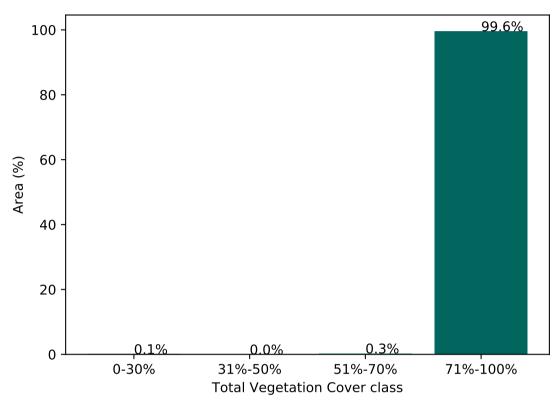
Total Vegetation Cover Anomaly [%]



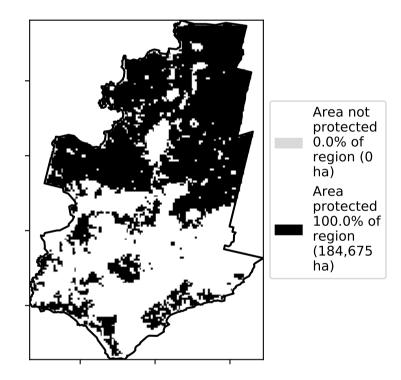


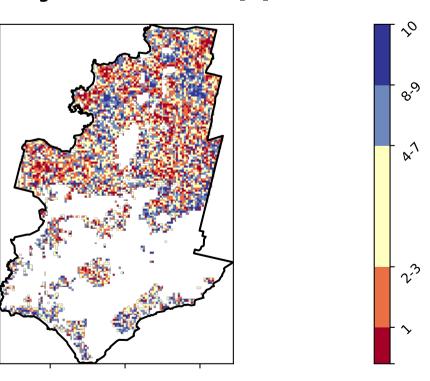
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









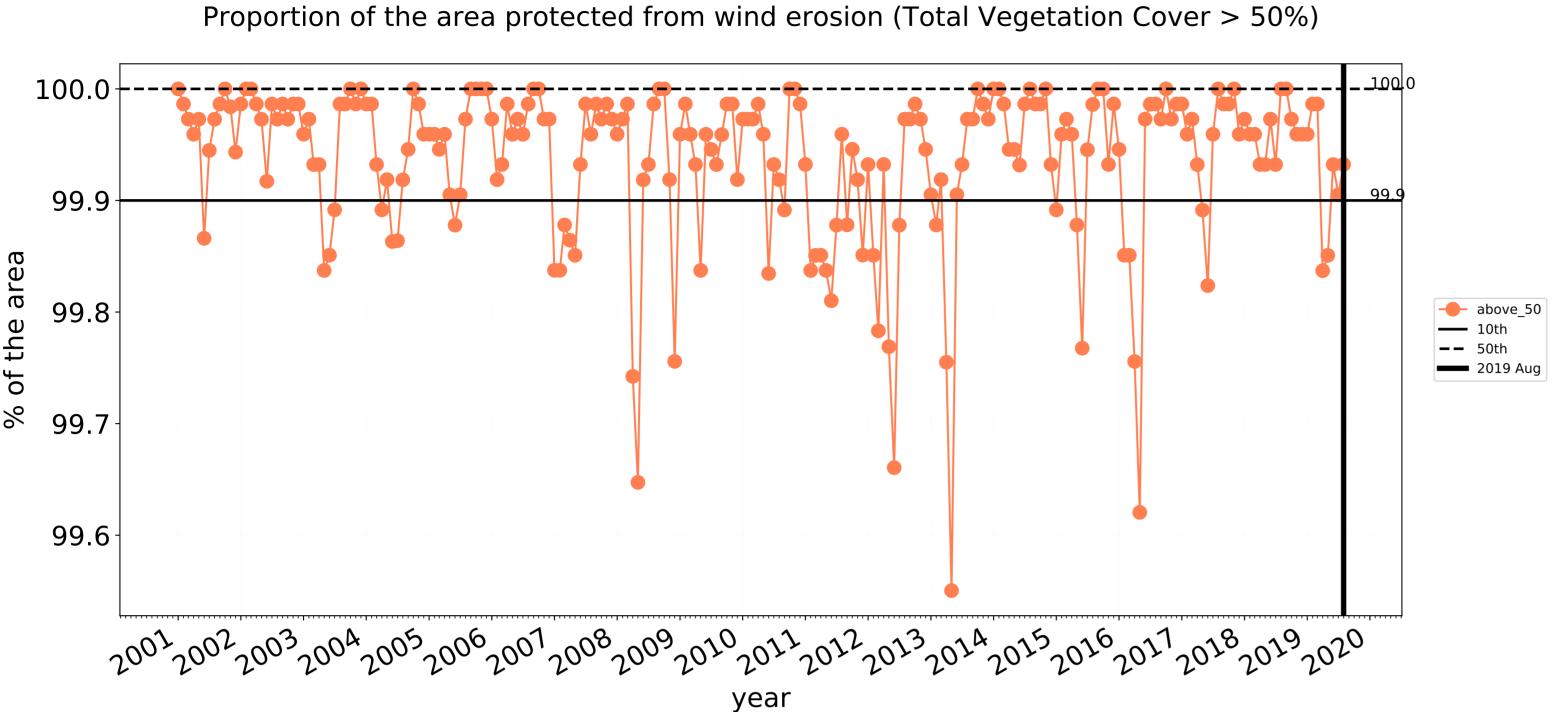


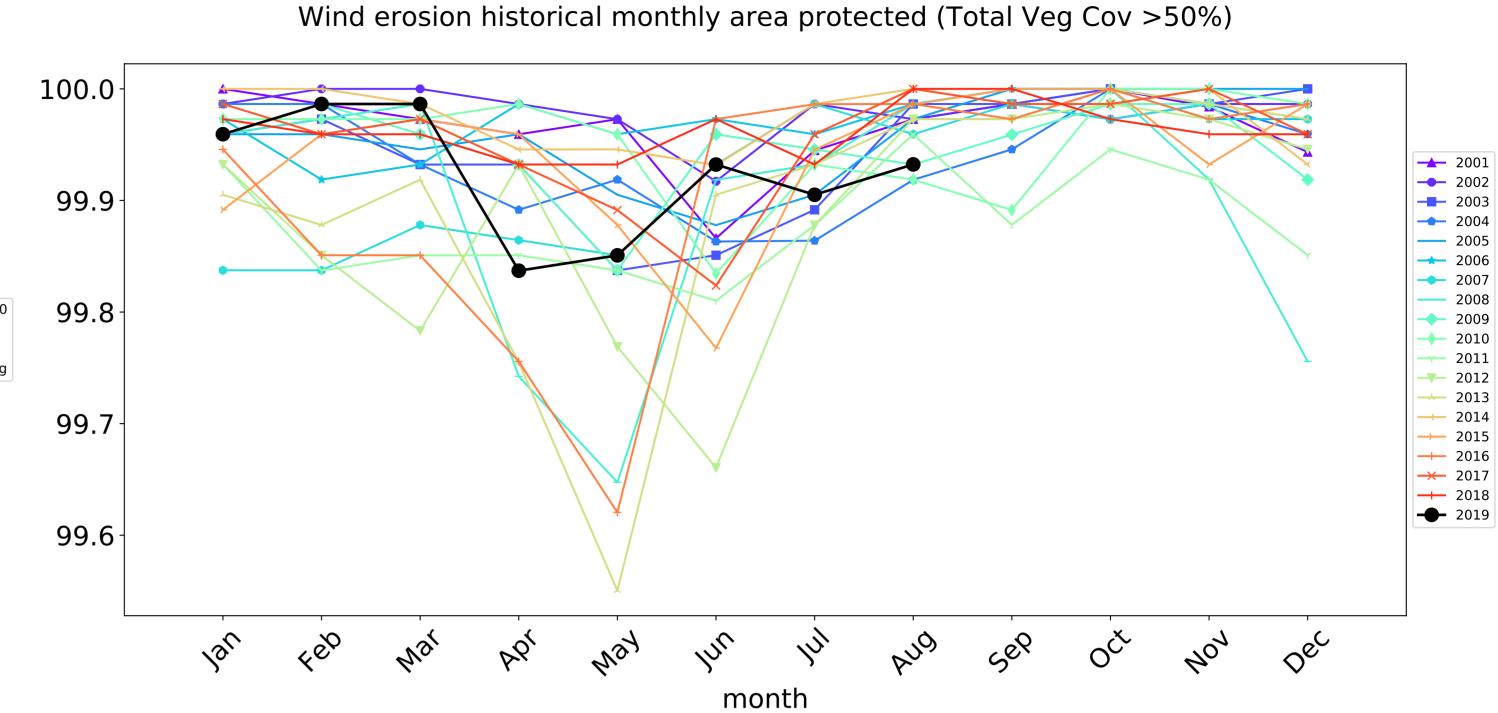


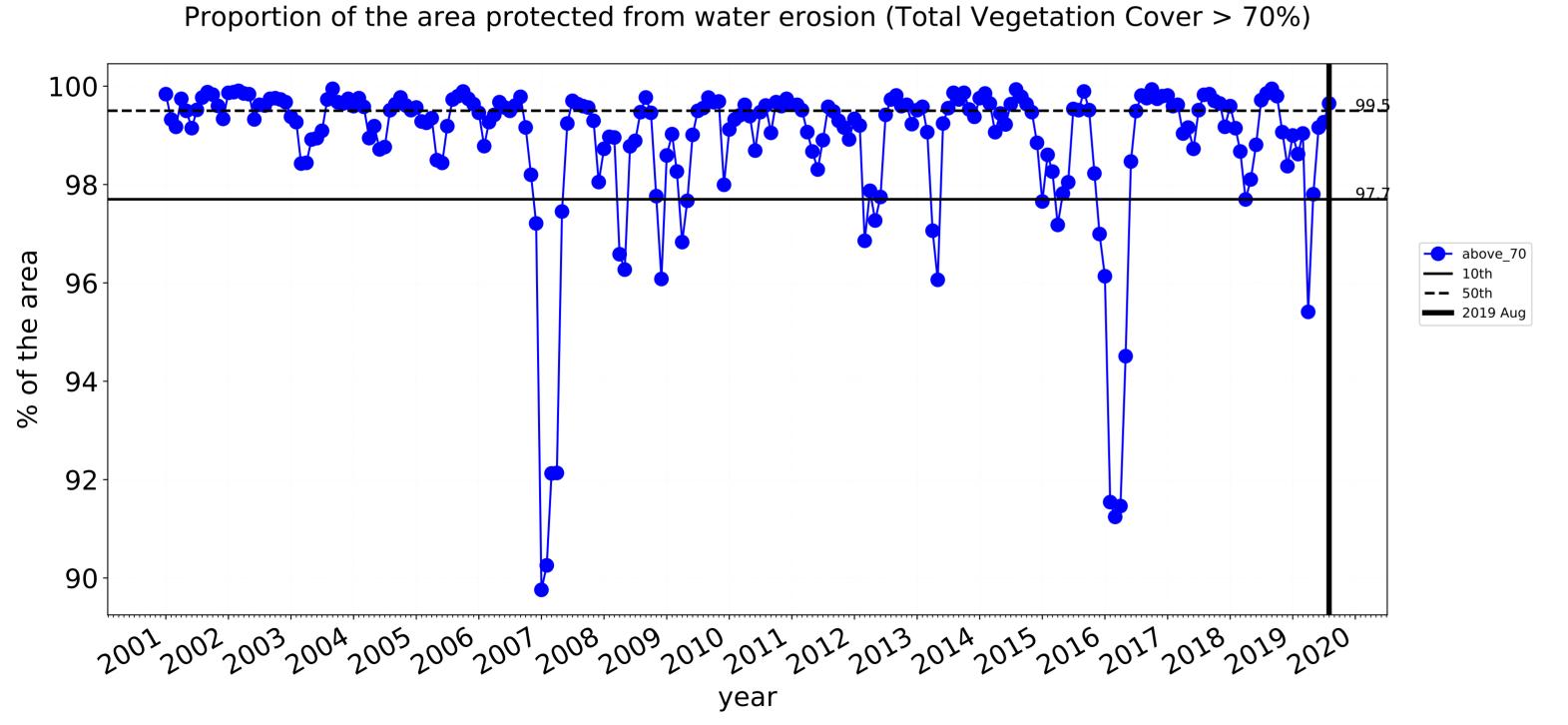


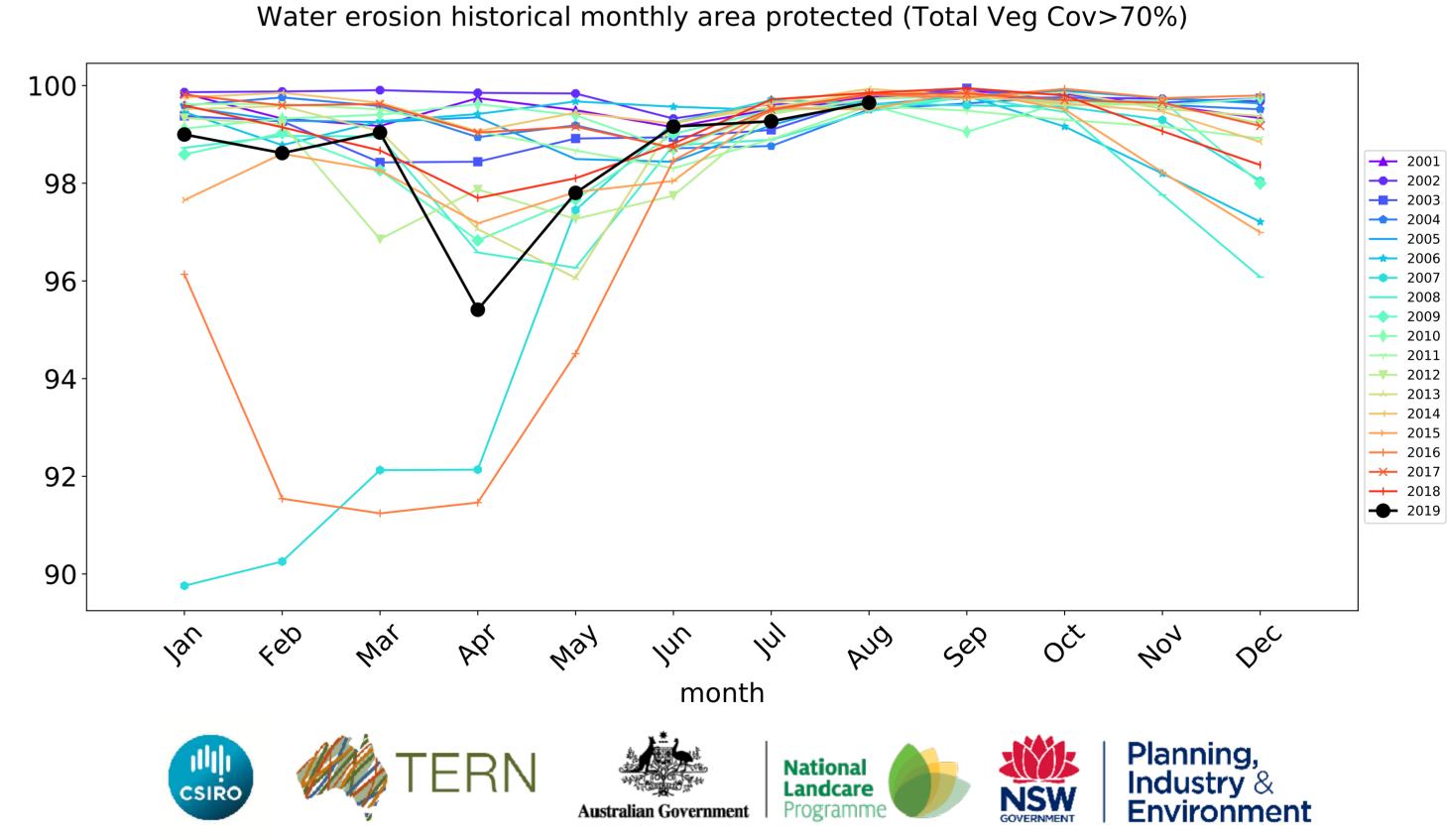


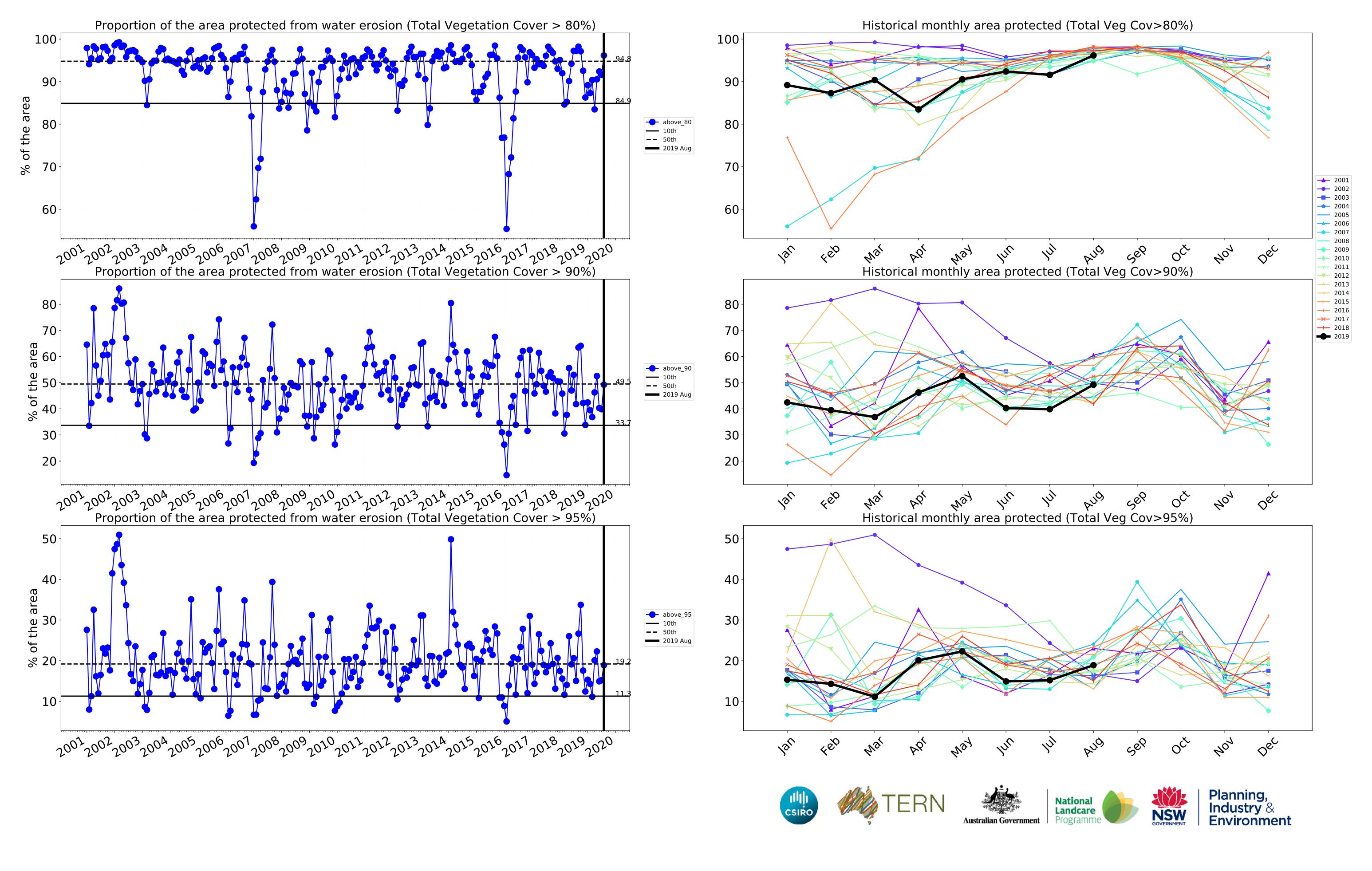
Agriculture timeseries











Grazing

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.

Anomaly show how many percetage points each

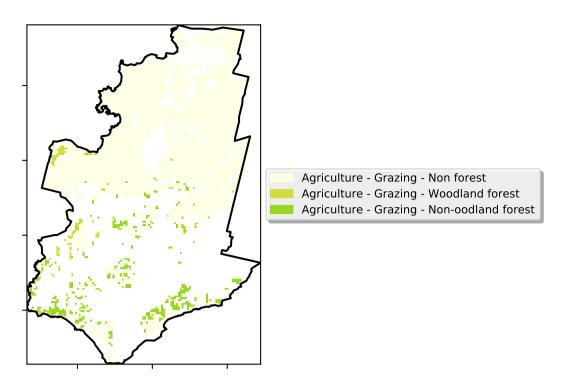
pixel is from

is, red pixels are about 20% lower than the

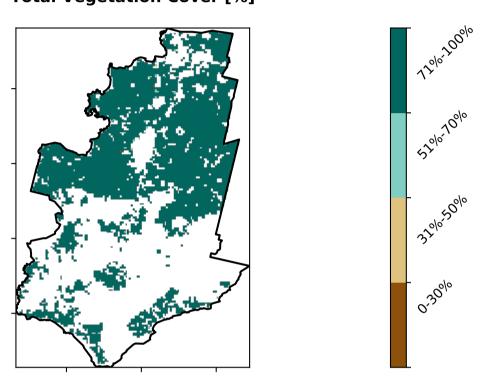
mean of that pixel. The mean

is only for the month of the map using baseline from 2001 to 2019.

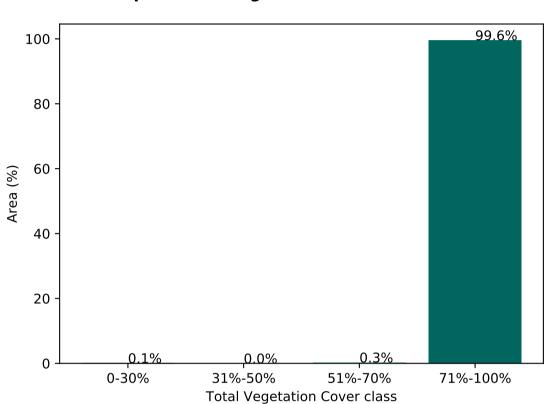
the mean. That



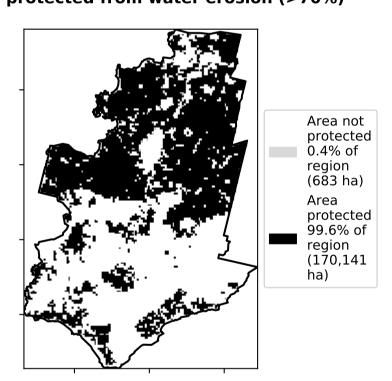
Total Vegetation Cover [%]



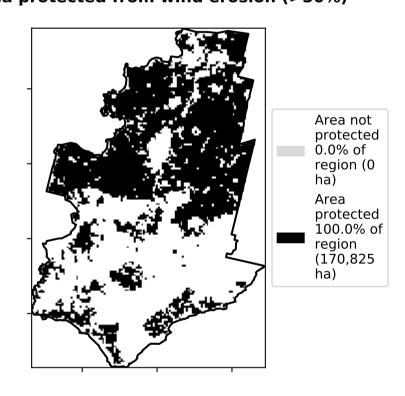
Proportion of vegetation cover class in area



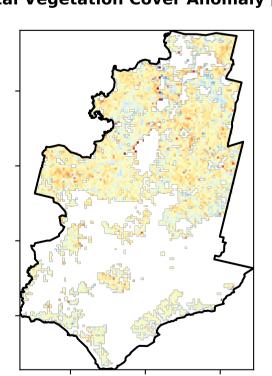
% Area protected from water erosion (>70%)

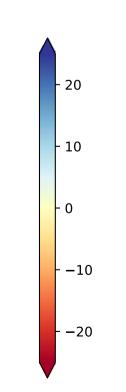


% Area protected from wind erosion (>50%)

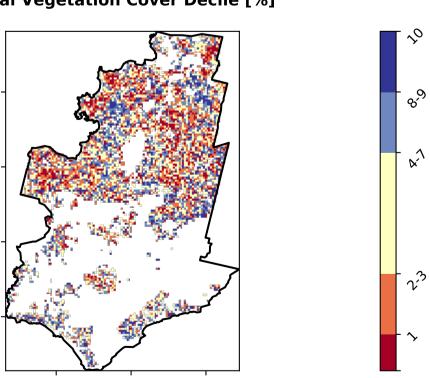


Total Vegetation Cover Anomaly [%]





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.







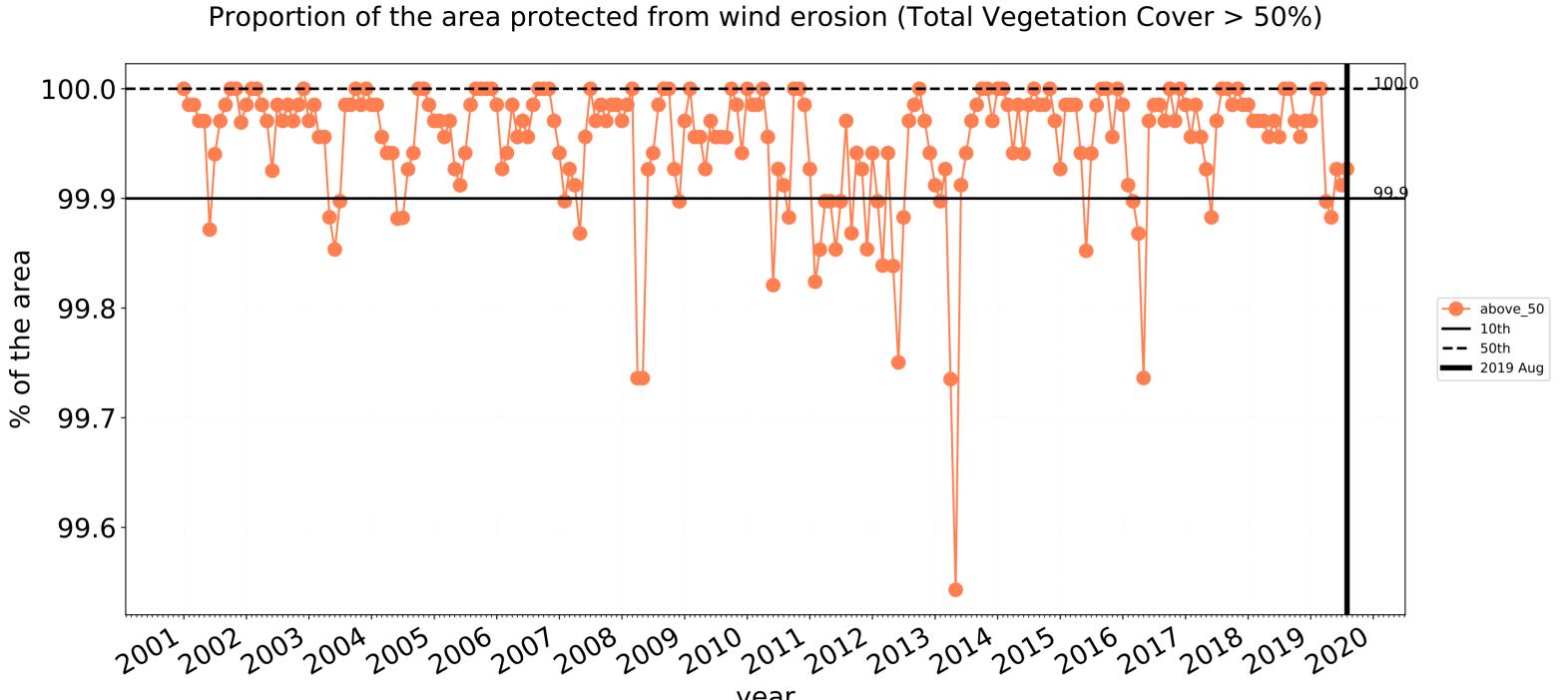


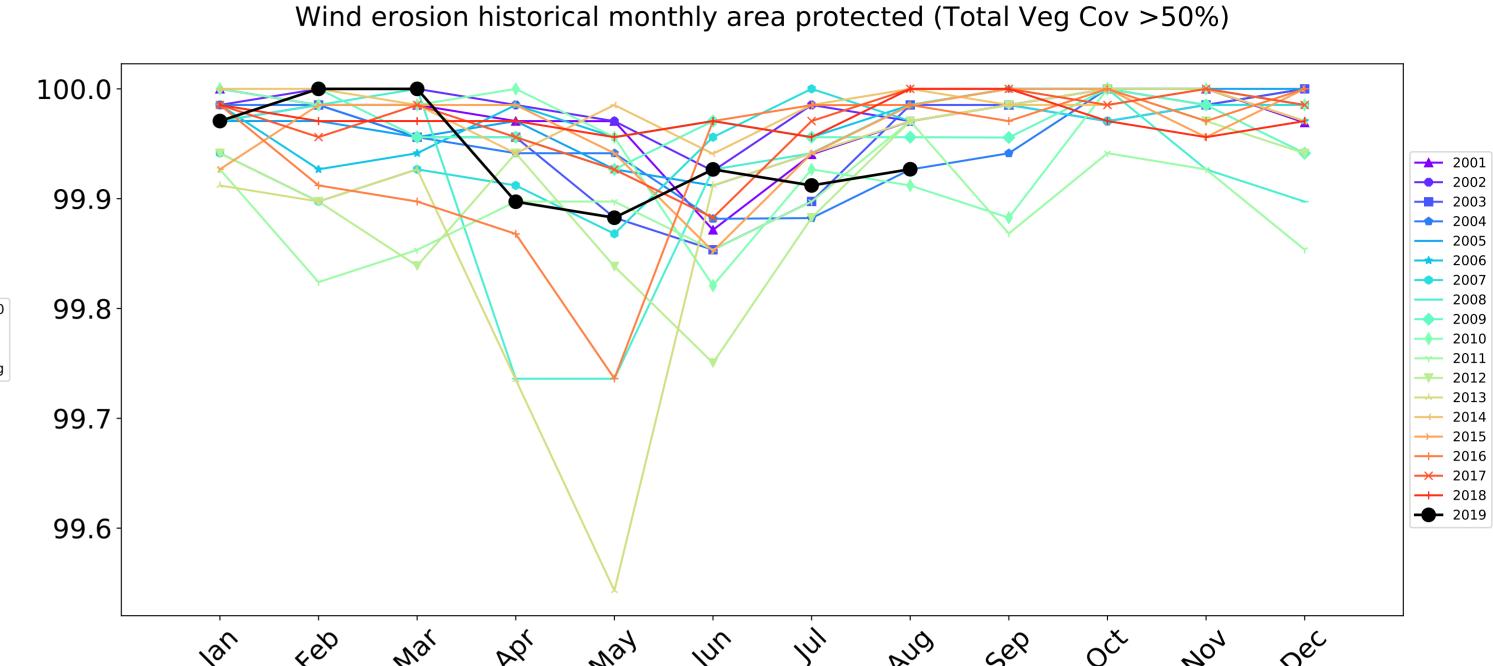


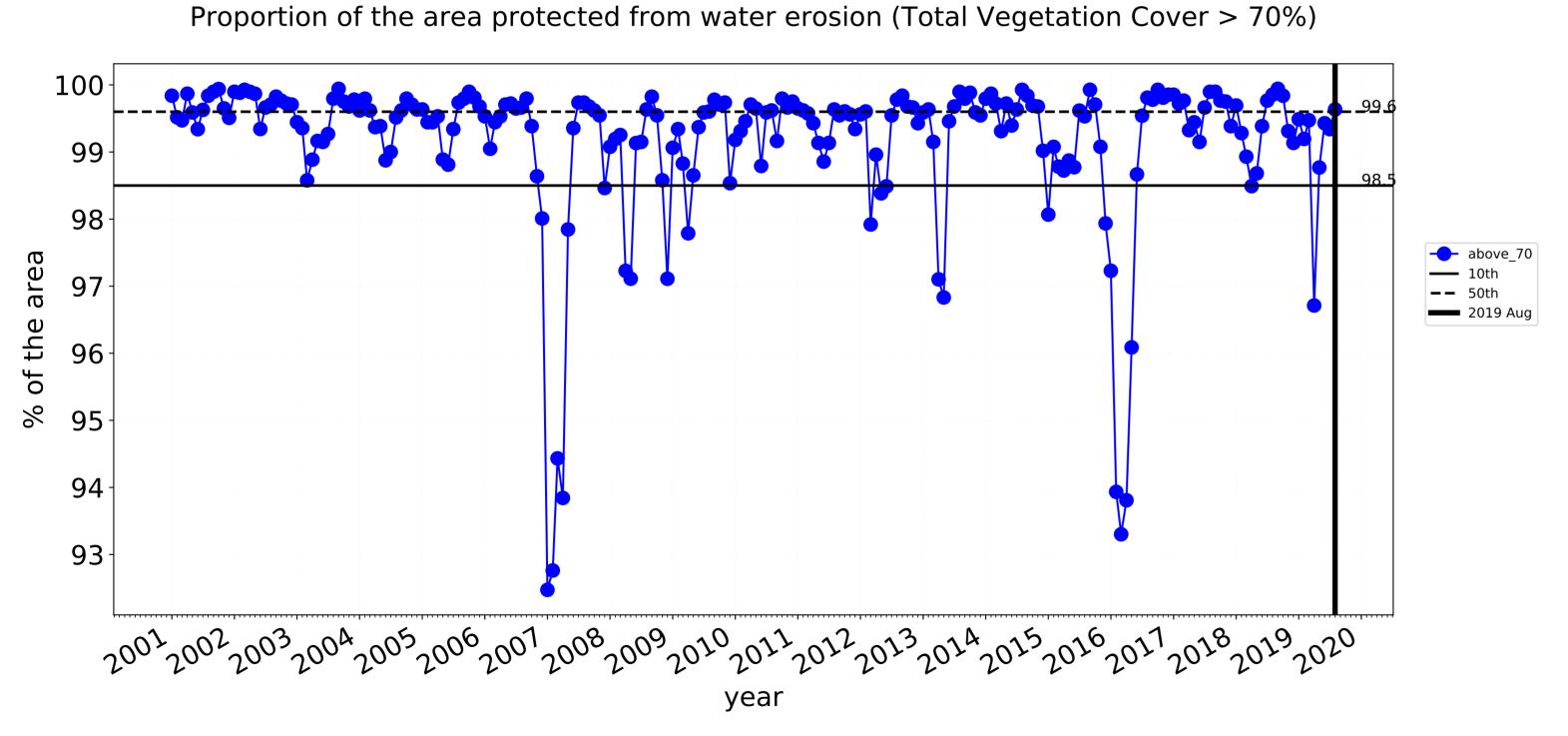


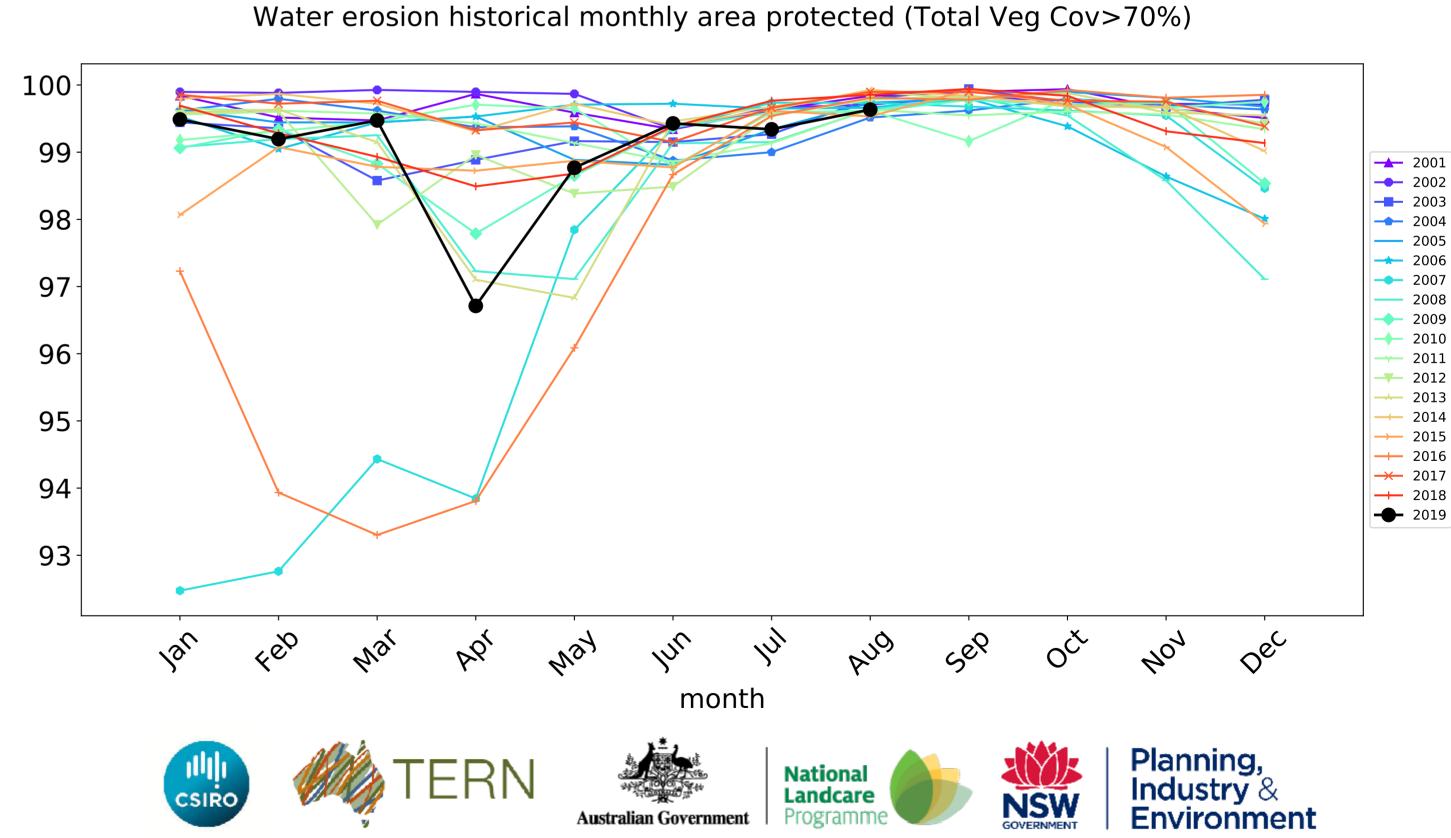


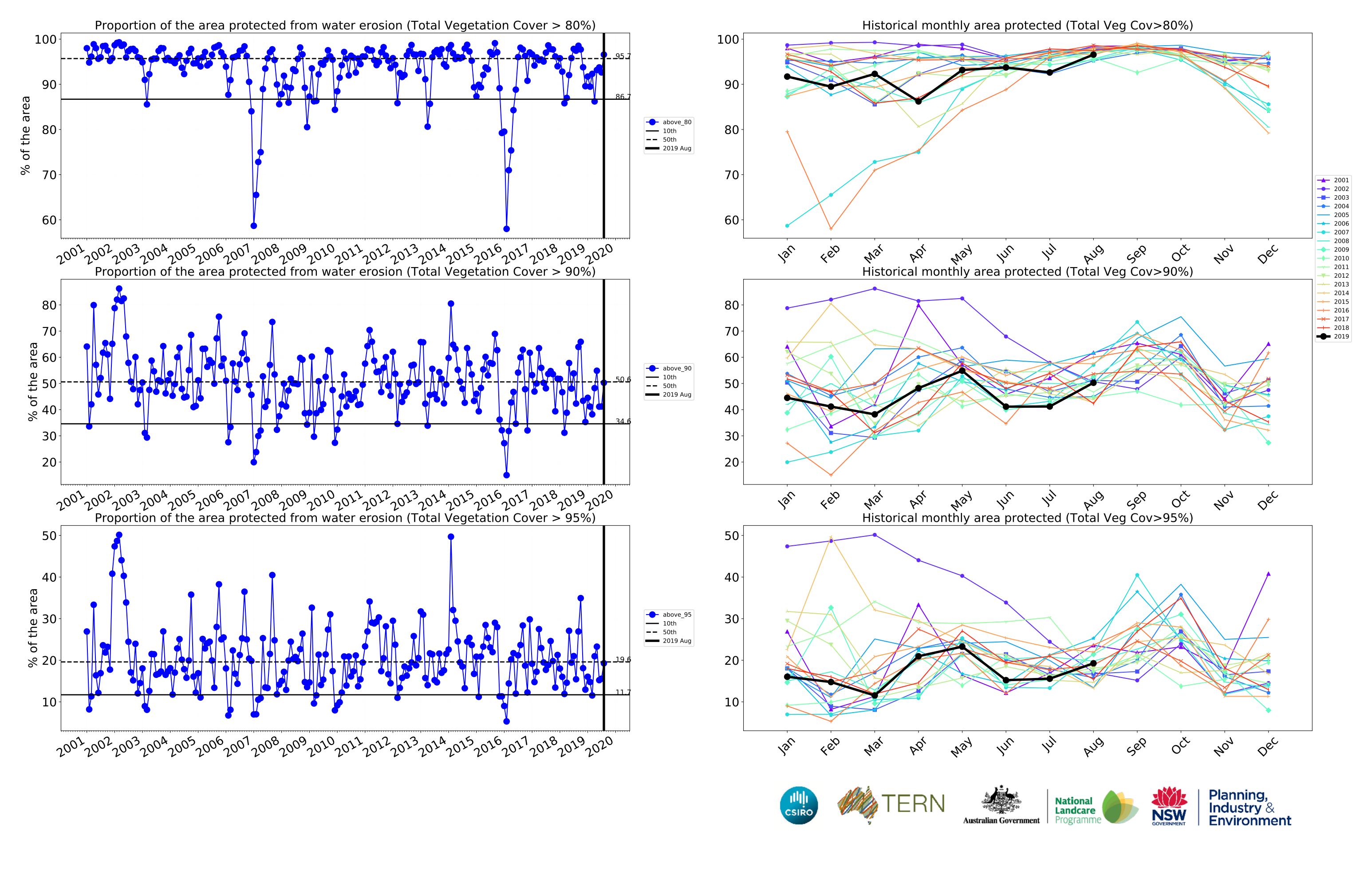
Grazing timeseries











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.

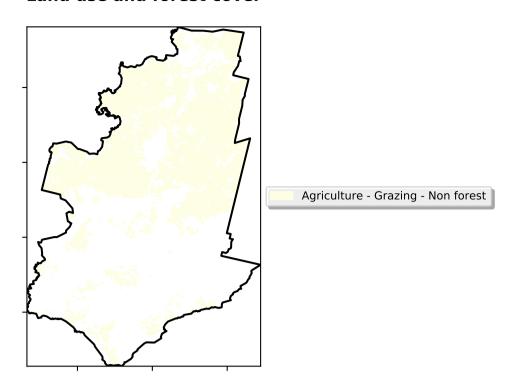
Anomaly show how many percetage points each

pixel is from

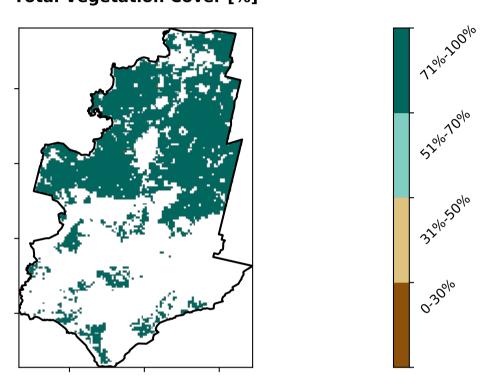
is, red pixels are about 20% lower than the mean of that

the mean. That

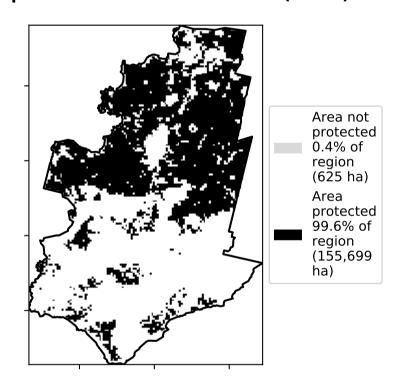
pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



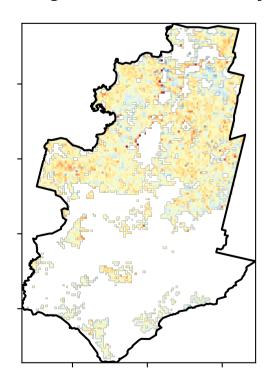
Total Vegetation Cover [%]

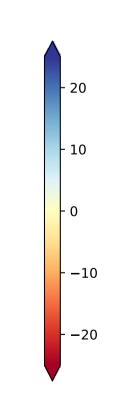


% Area protected from water erosion (>70%)



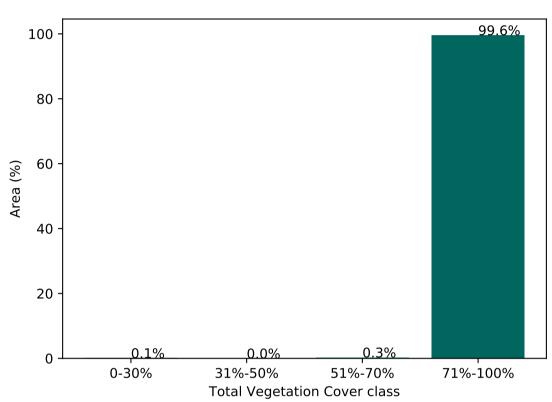
Total Vegetation Cover Anomaly [%]



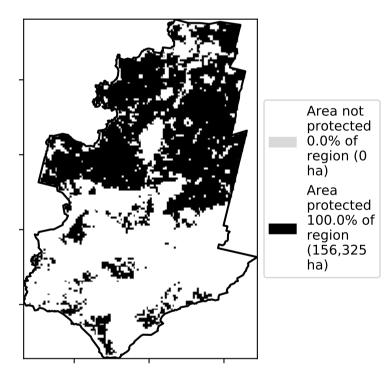


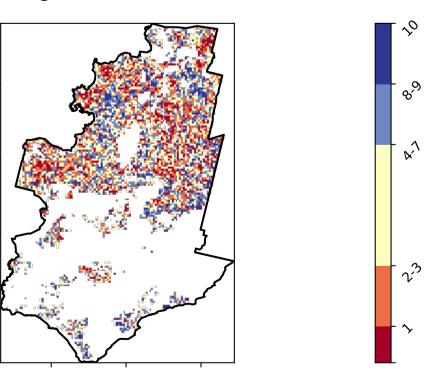
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









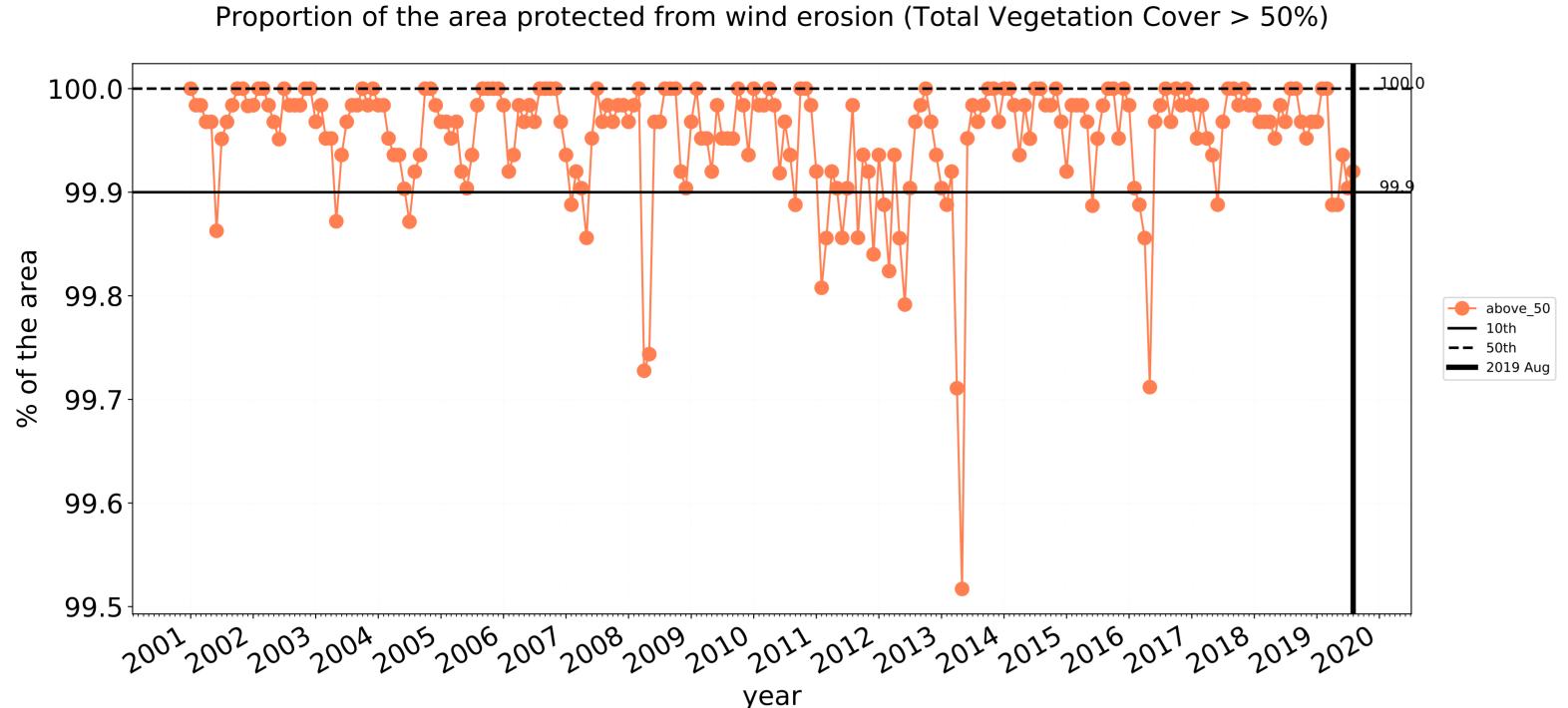


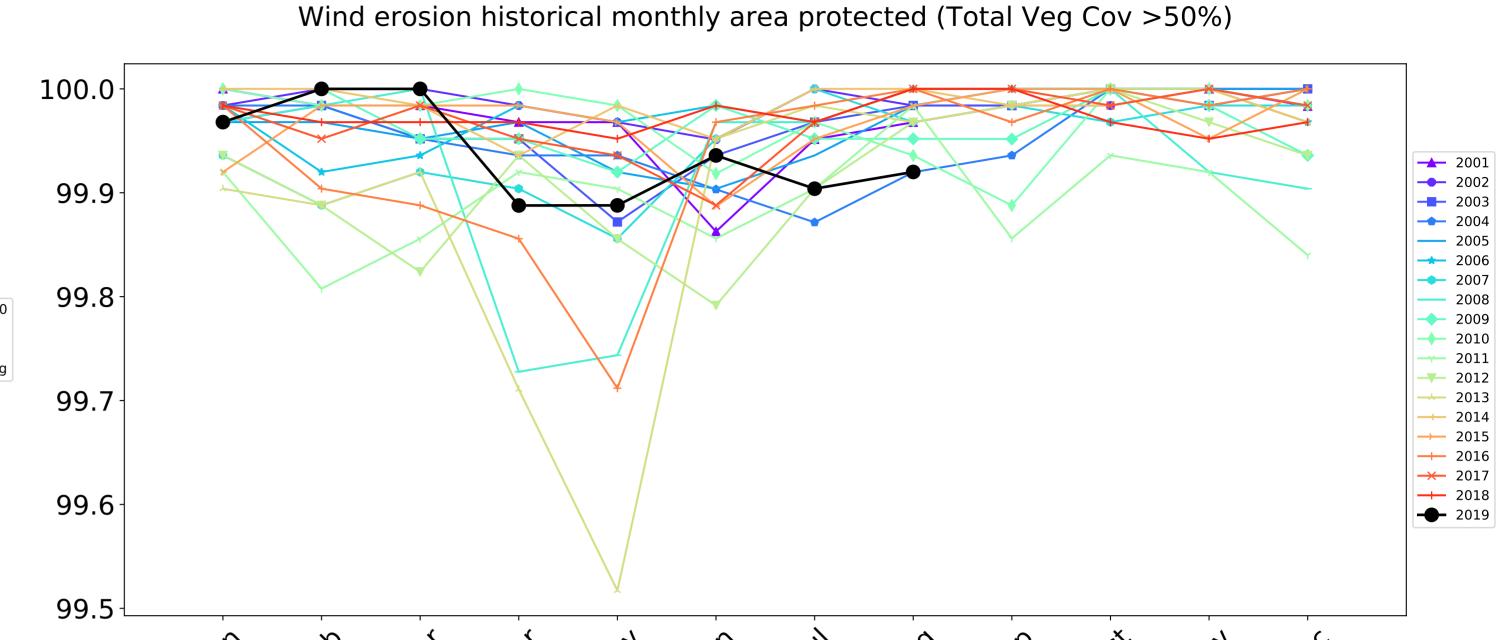


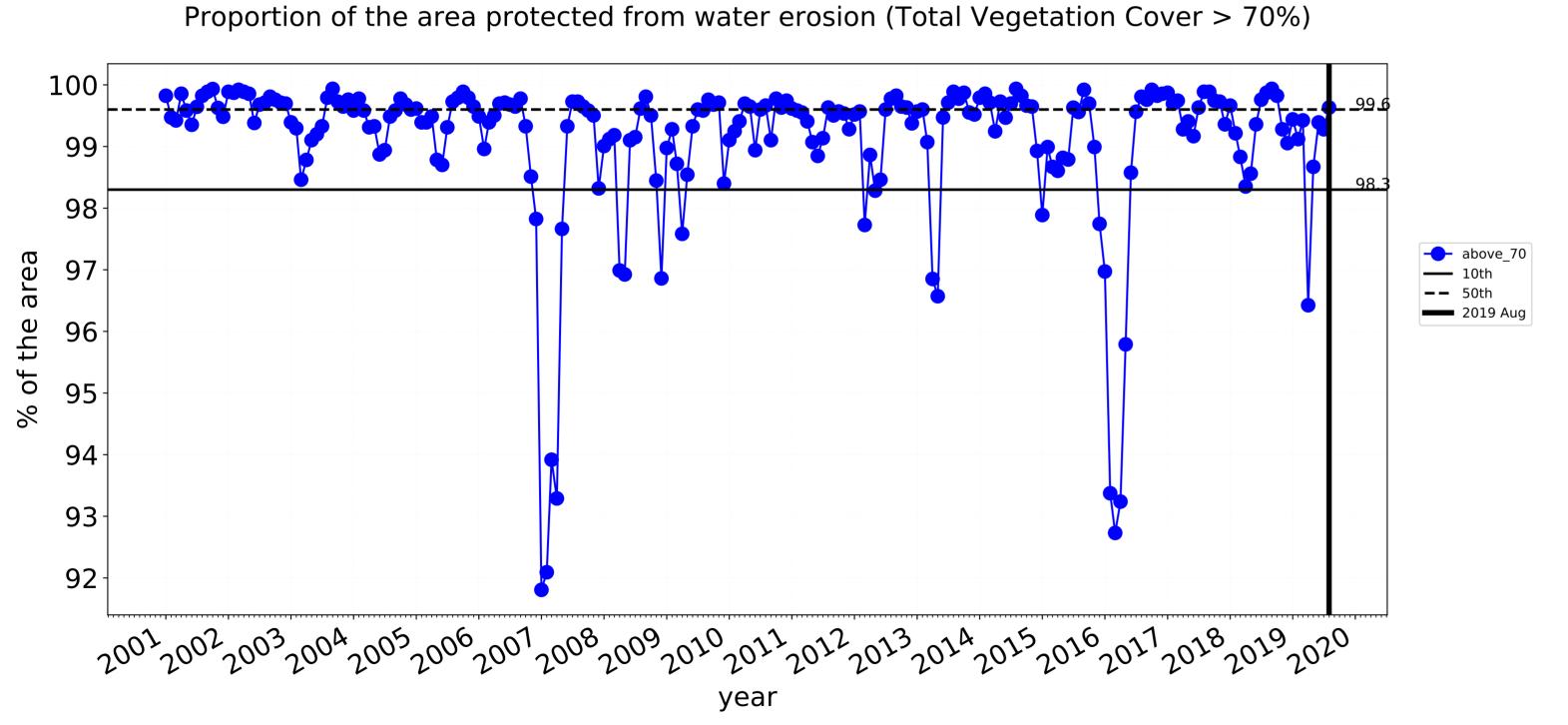


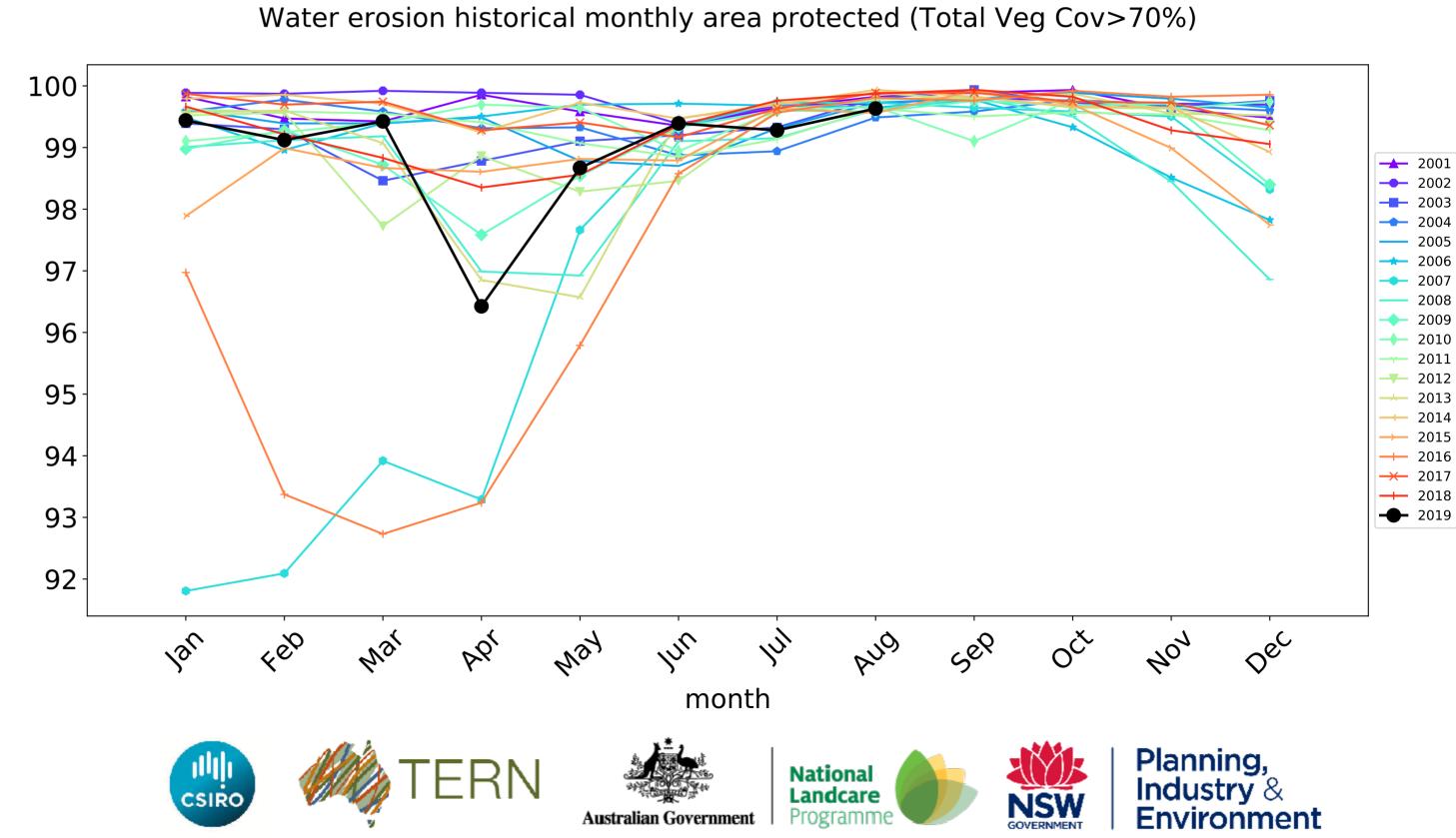


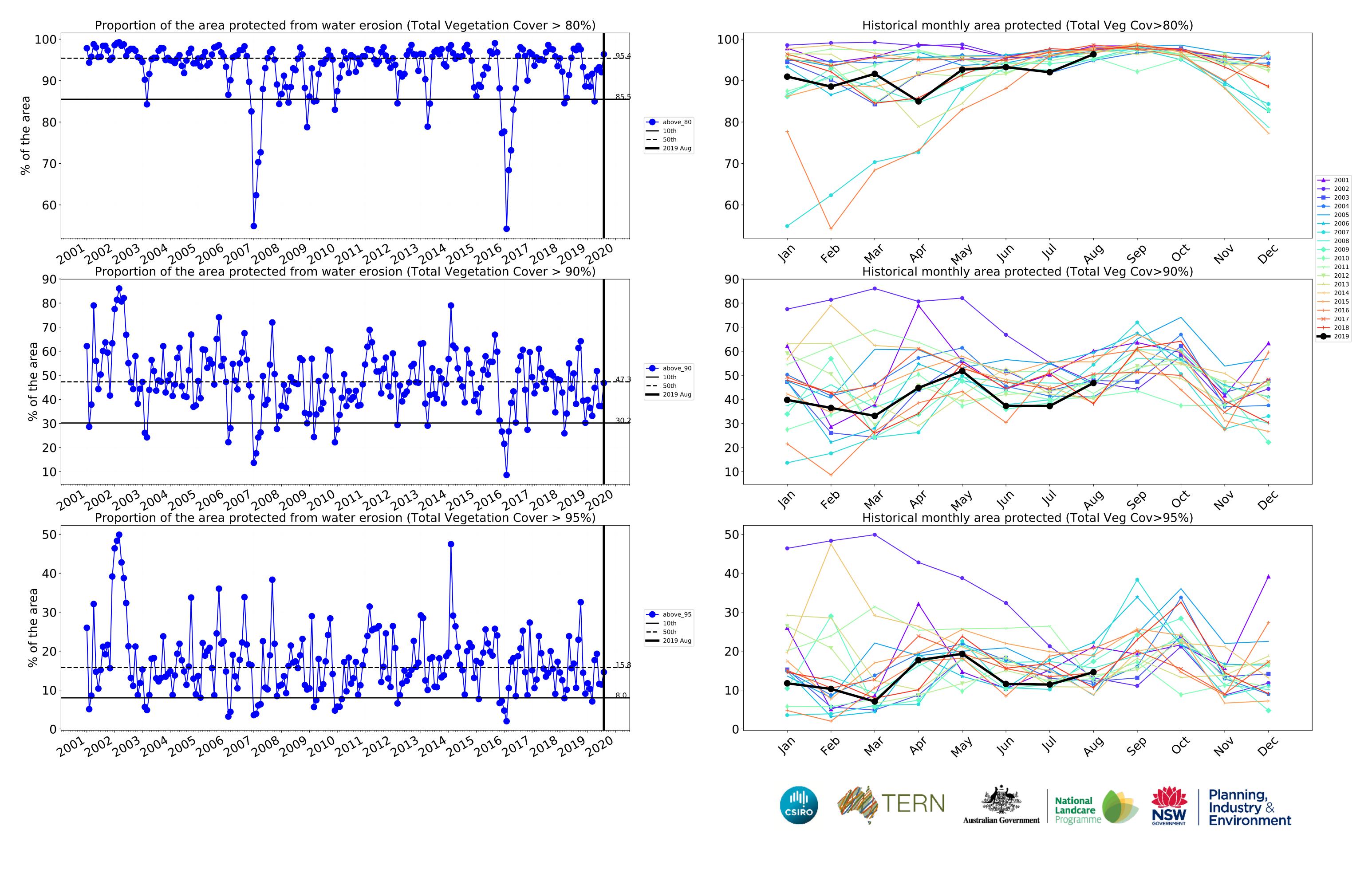
Grazing non forest timeseries











Grazing - Forest (non woodland)

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

and dense > 50% tree

Anomaly show how many percetage points each

pixel is from

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.

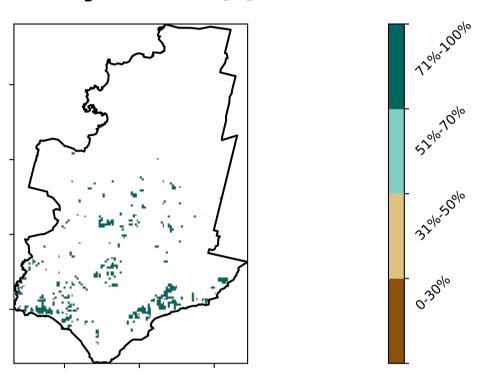
the mean. That

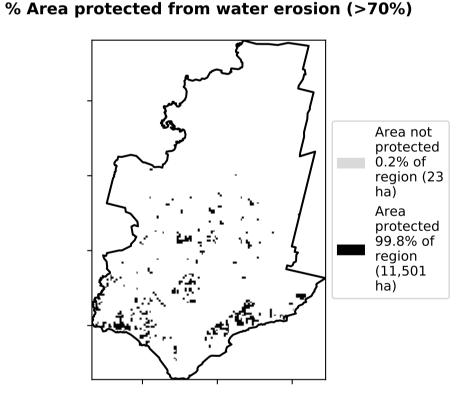
cover.

Agriculture - Grazing - Non-oodland forest

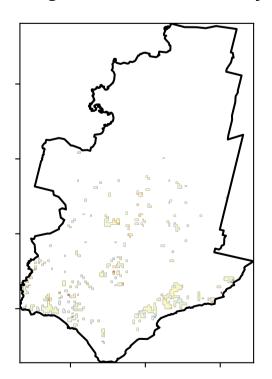
Total Vegetation Cover [%]

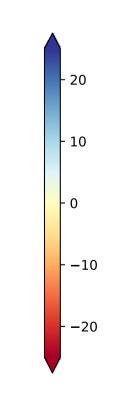
Land use and forest cover





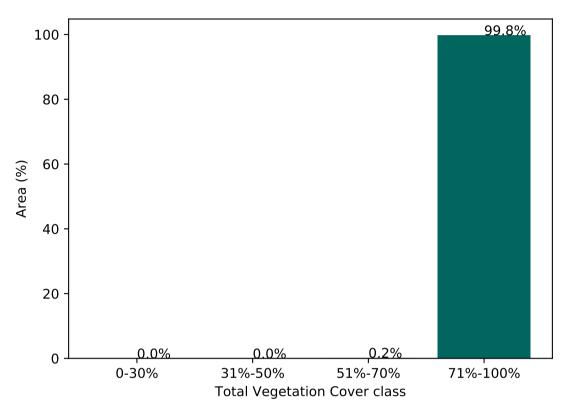
Total Vegetation Cover Anomaly [%]



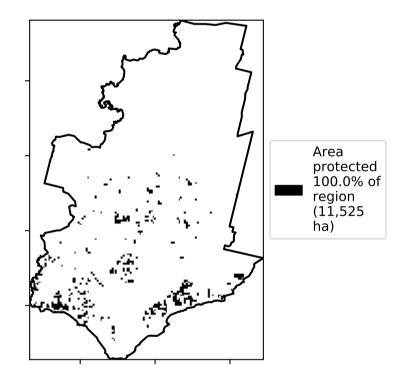


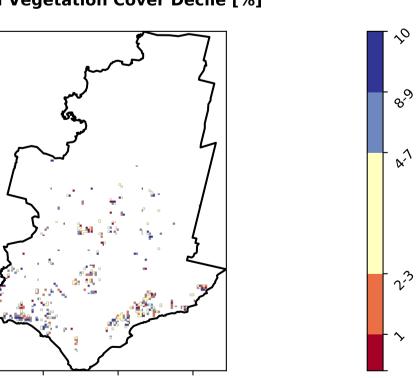
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)







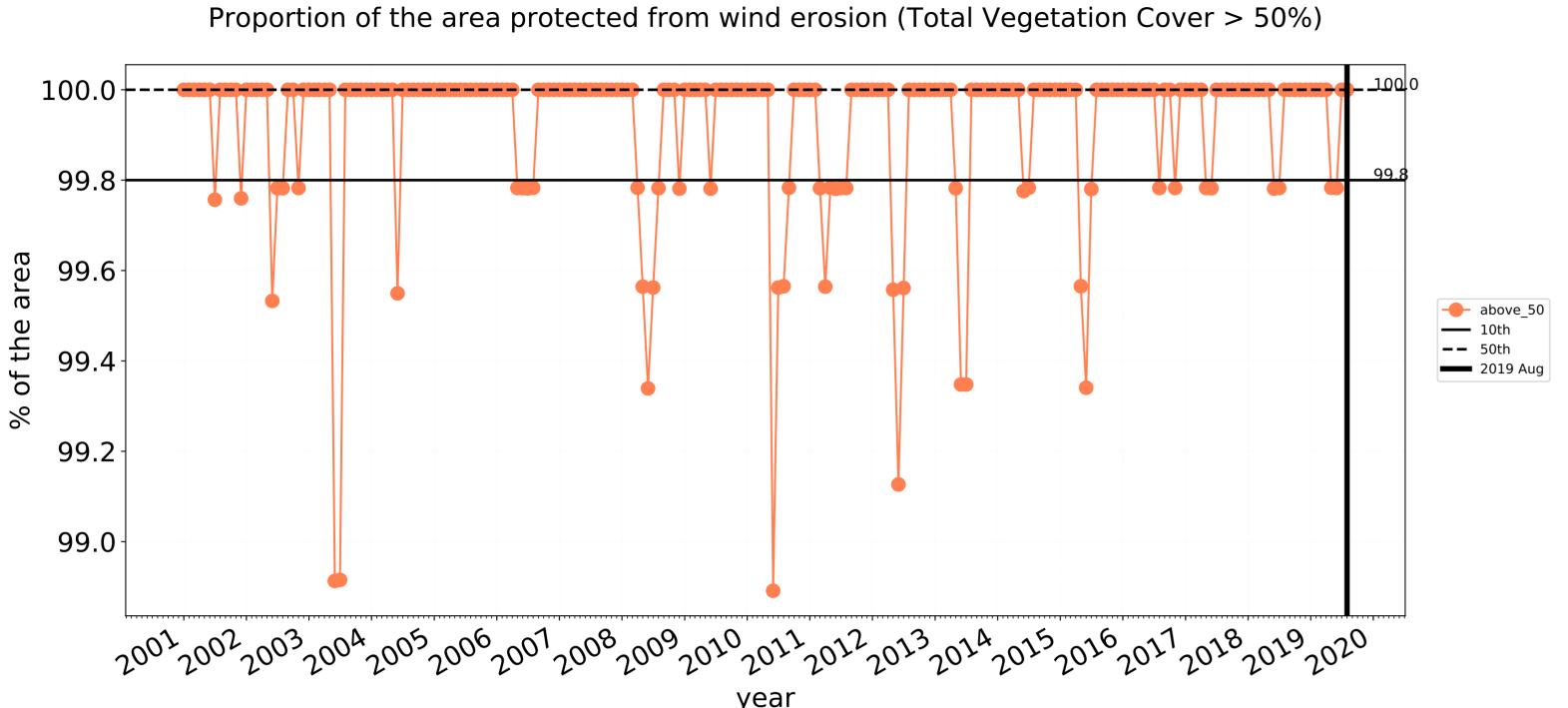


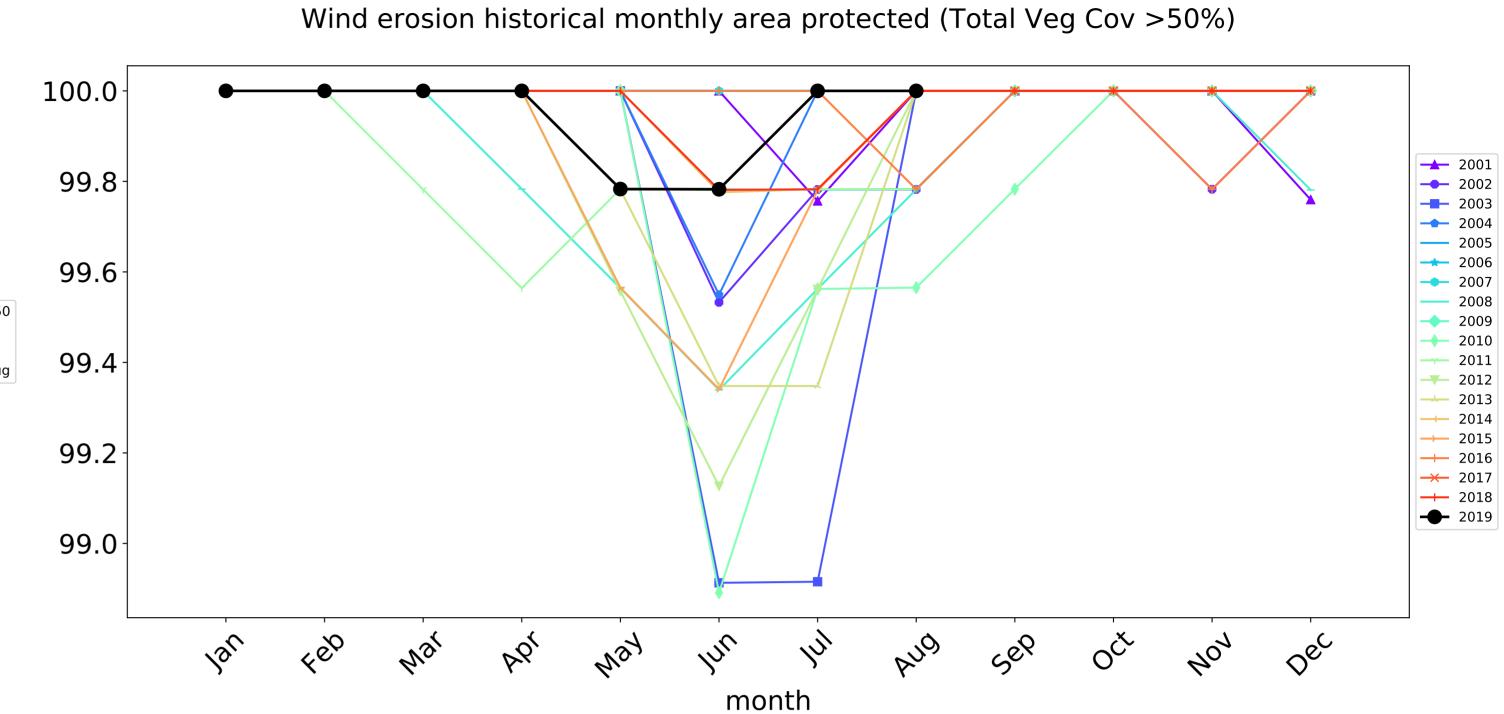


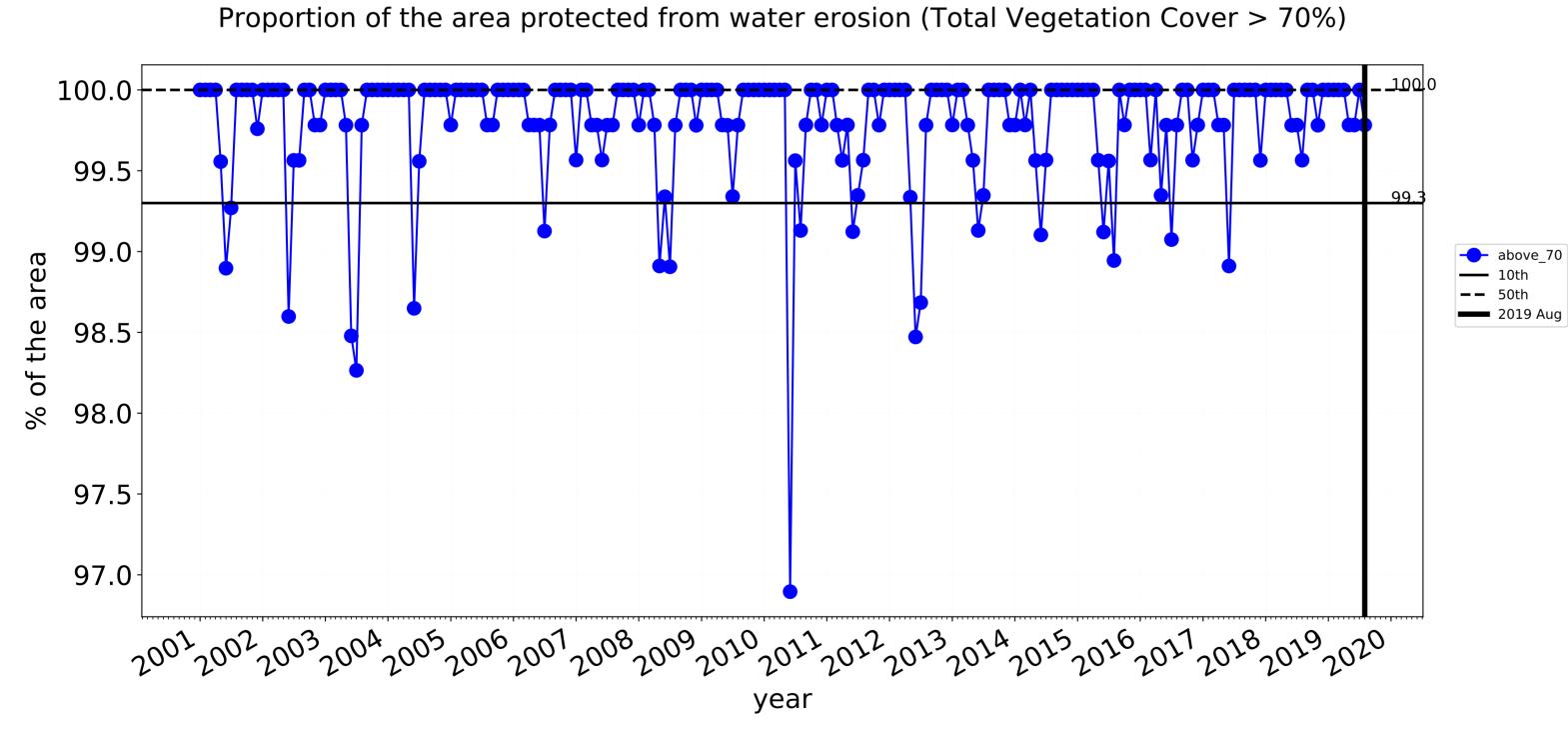


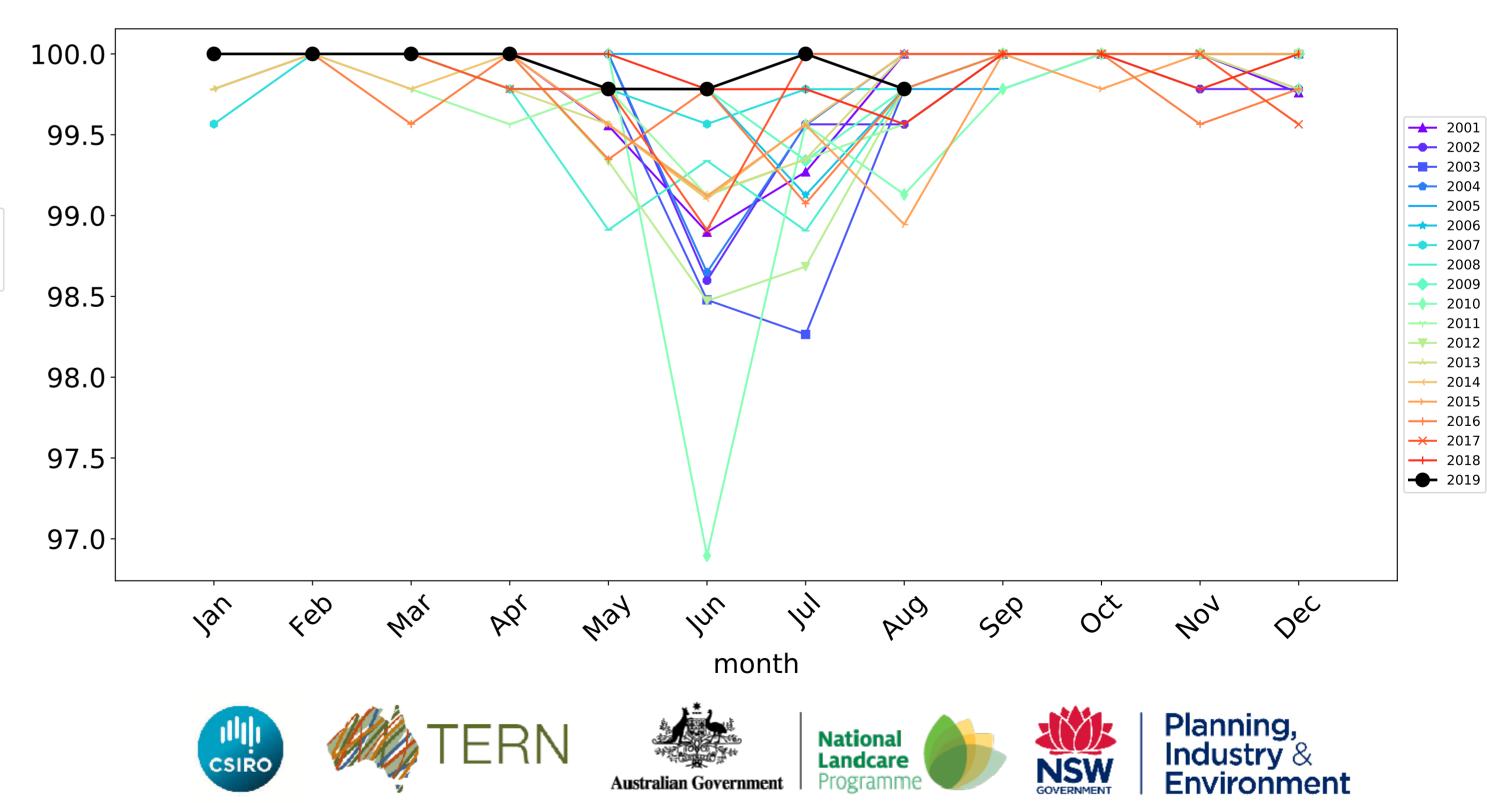




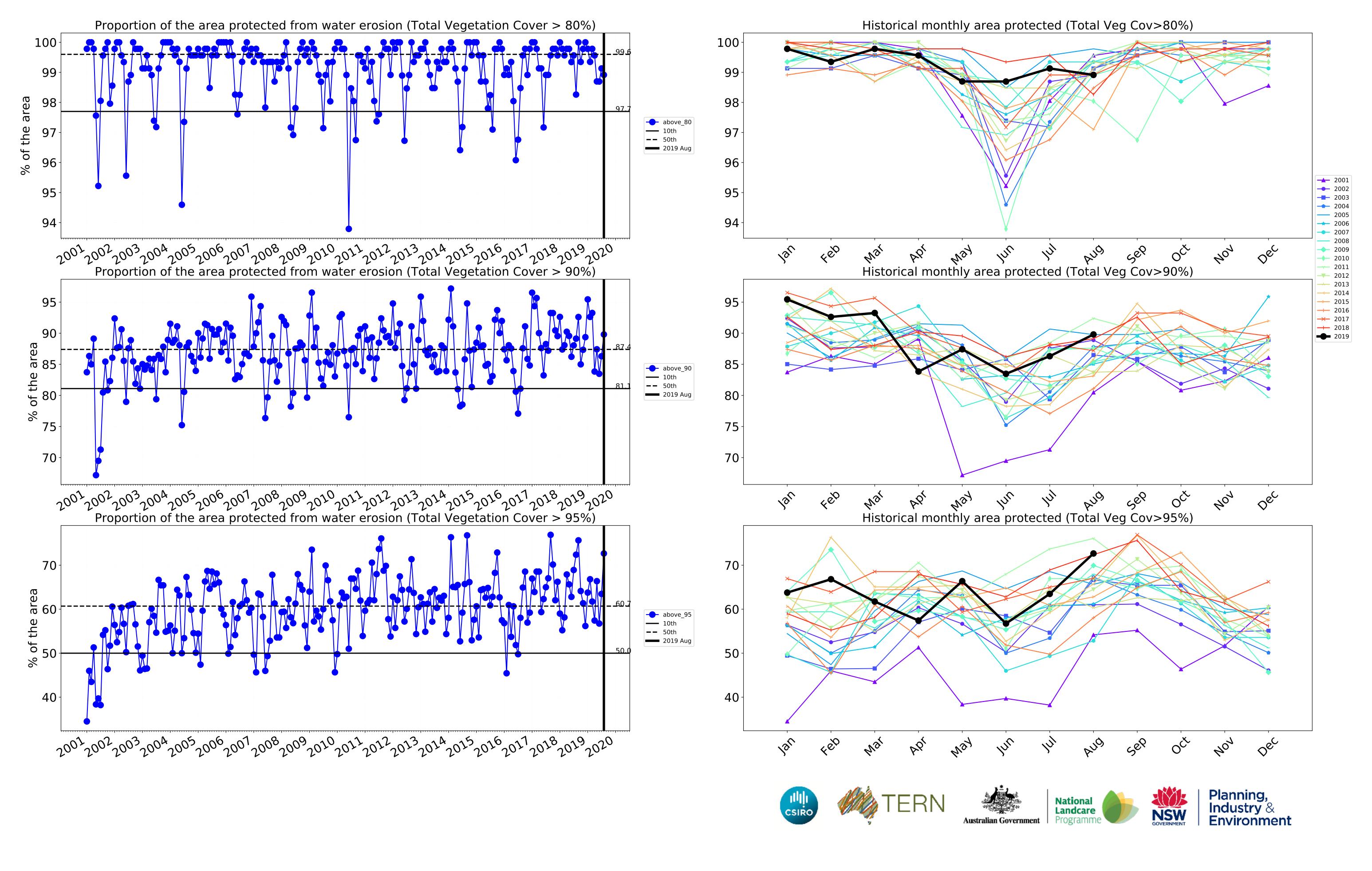








Water erosion historical monthly area protected (Total Veg Cov>70%)



Cropping

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.

Anomaly show how many percetage points each

pixel is from

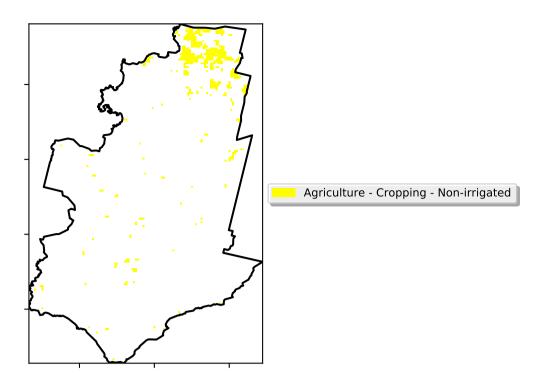
is, red pixels are about 20% lower than the

mean of that pixel. The mean

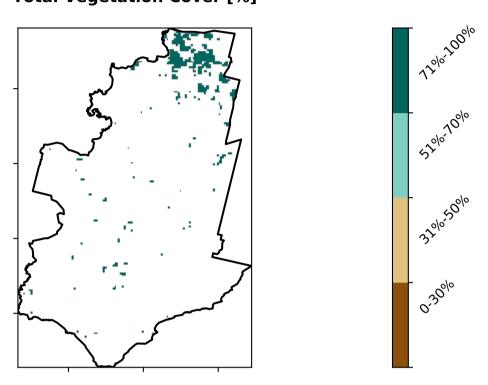
is only for the month of the map

using baseline from 2001 to 2019.

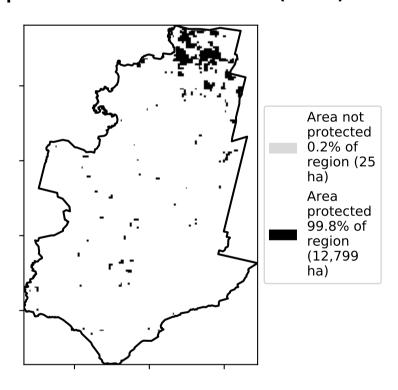
the mean. That



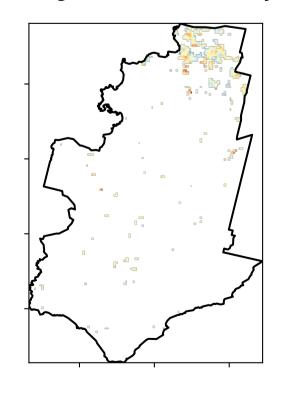
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



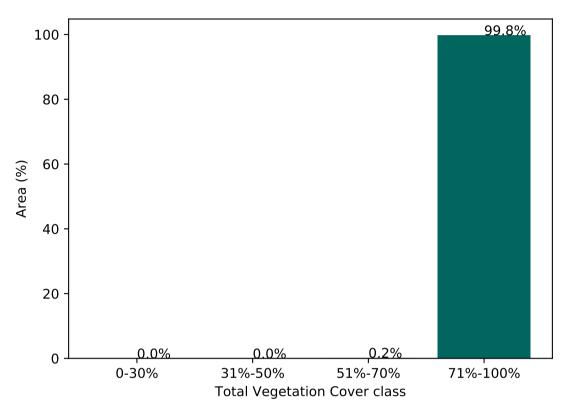
Total Vegetation Cover Anomaly [%]



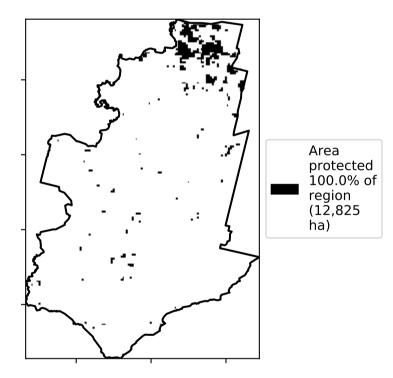
- 20 - 10 - 0 - -10 - -20

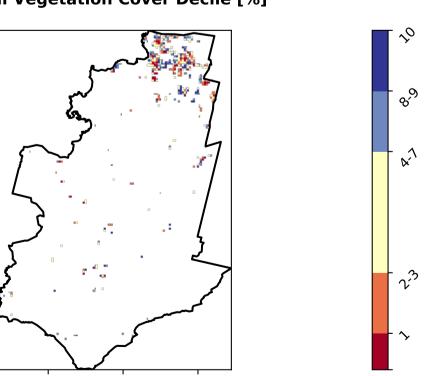
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









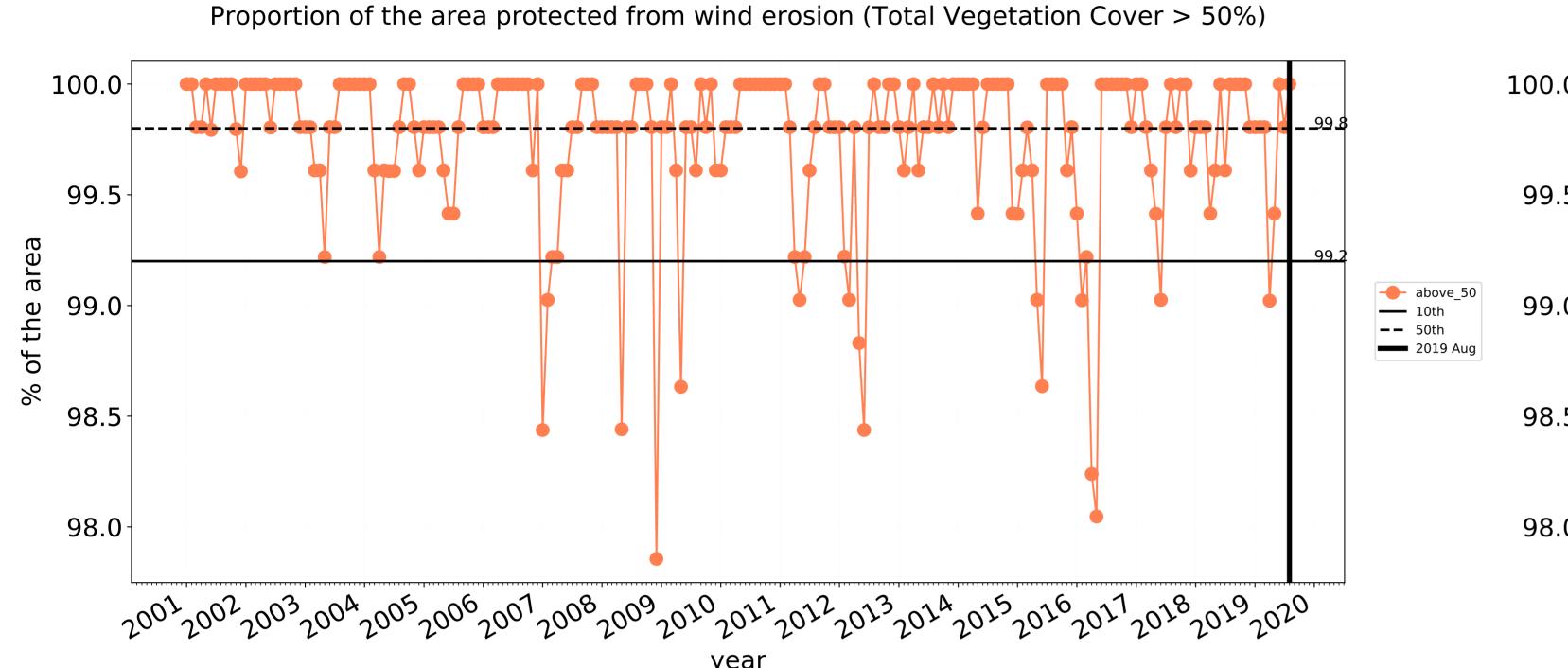


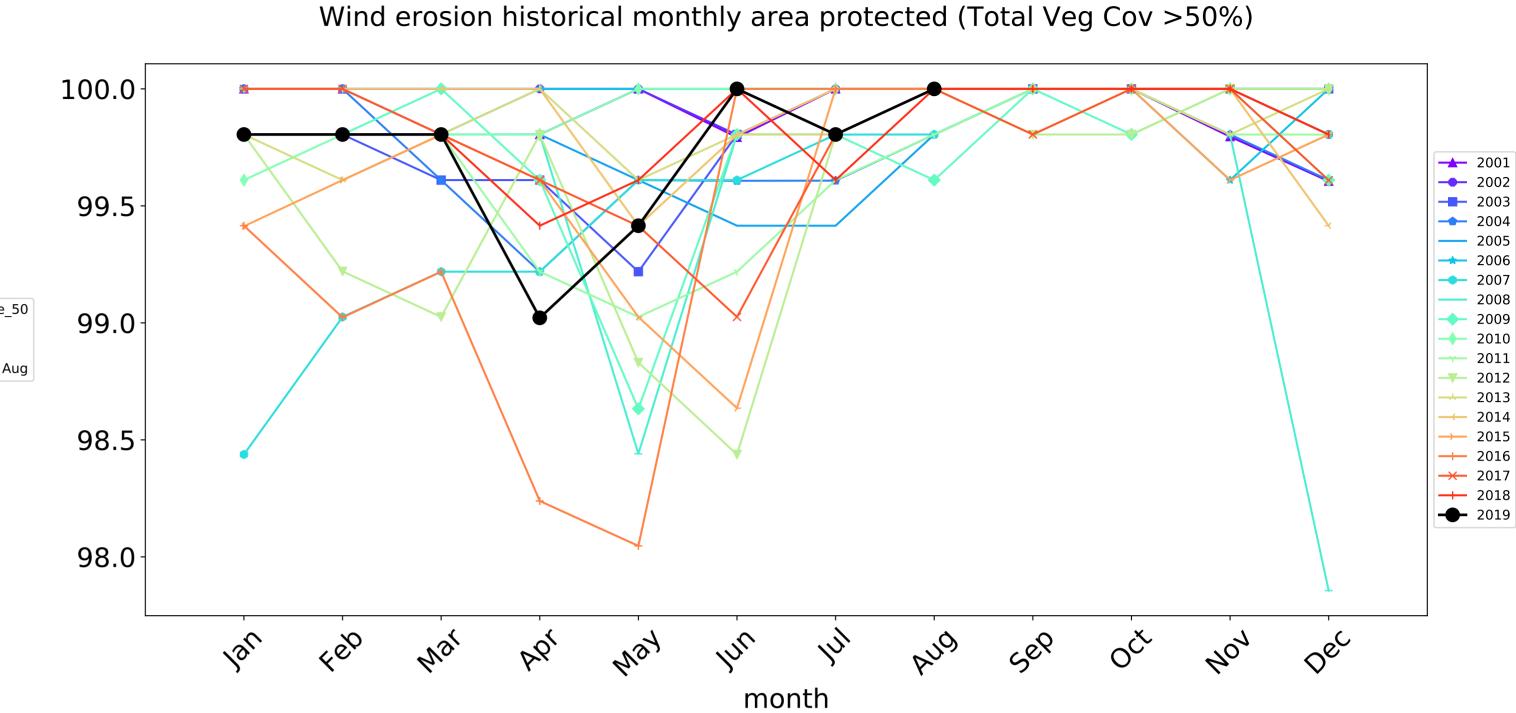


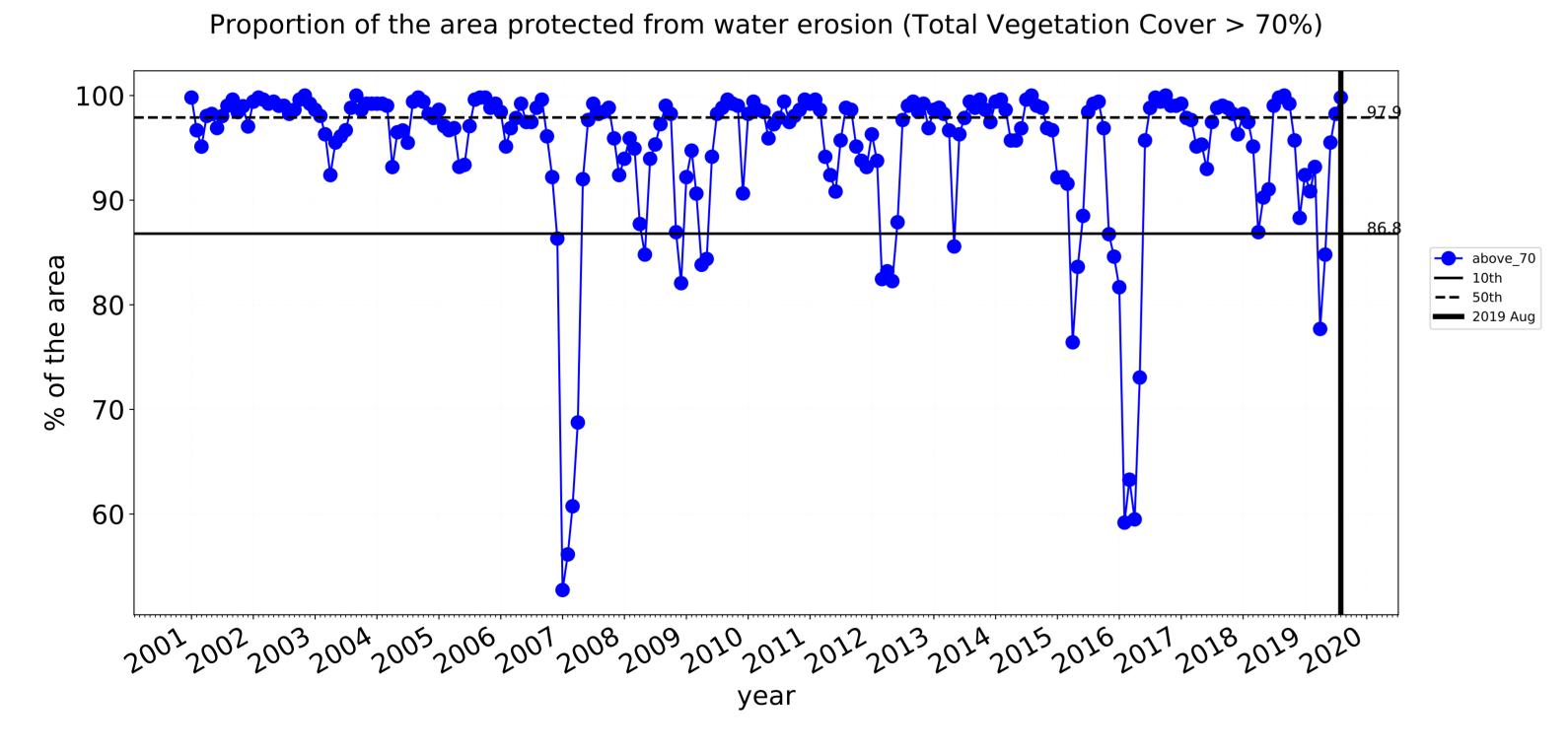


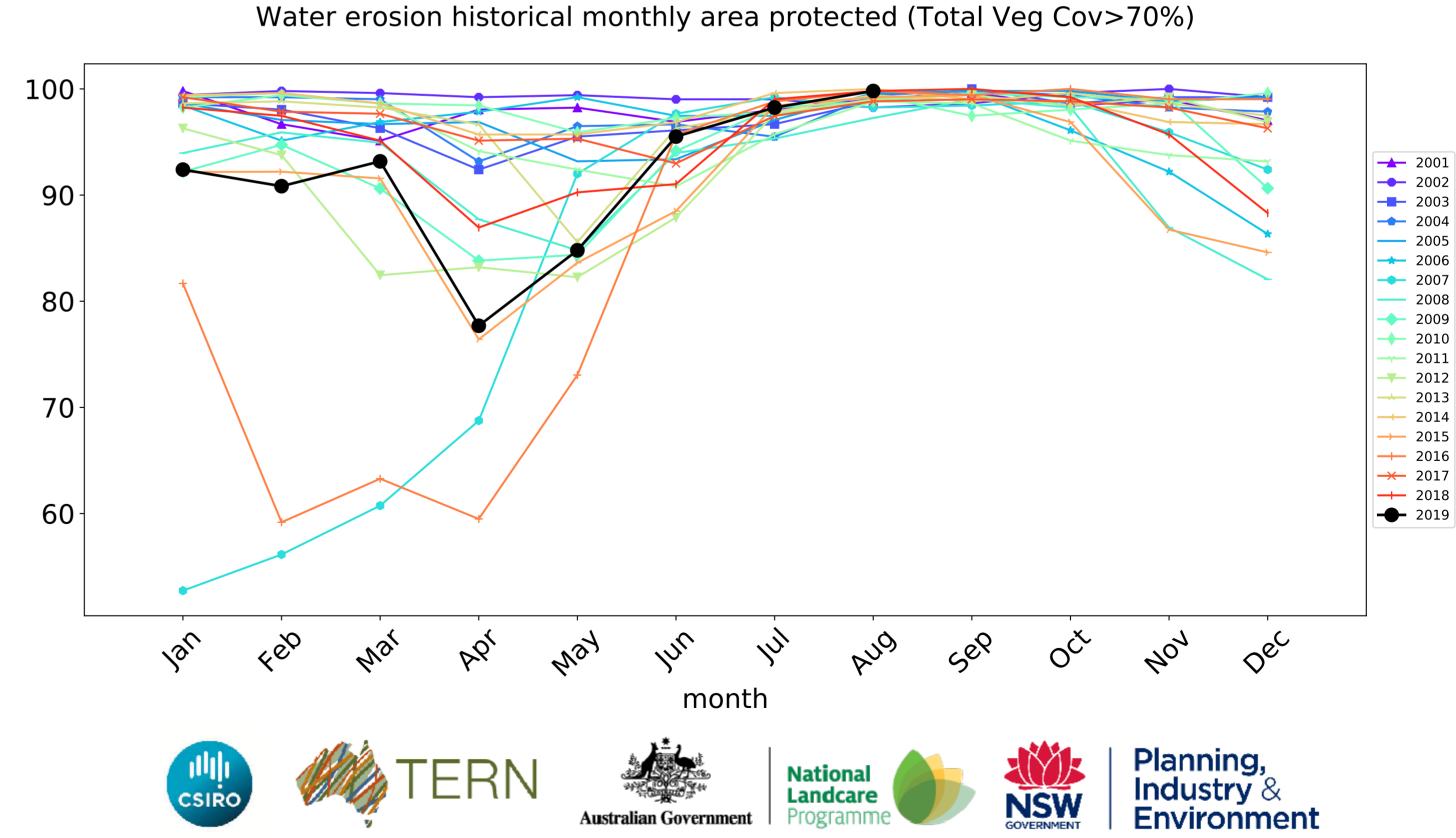


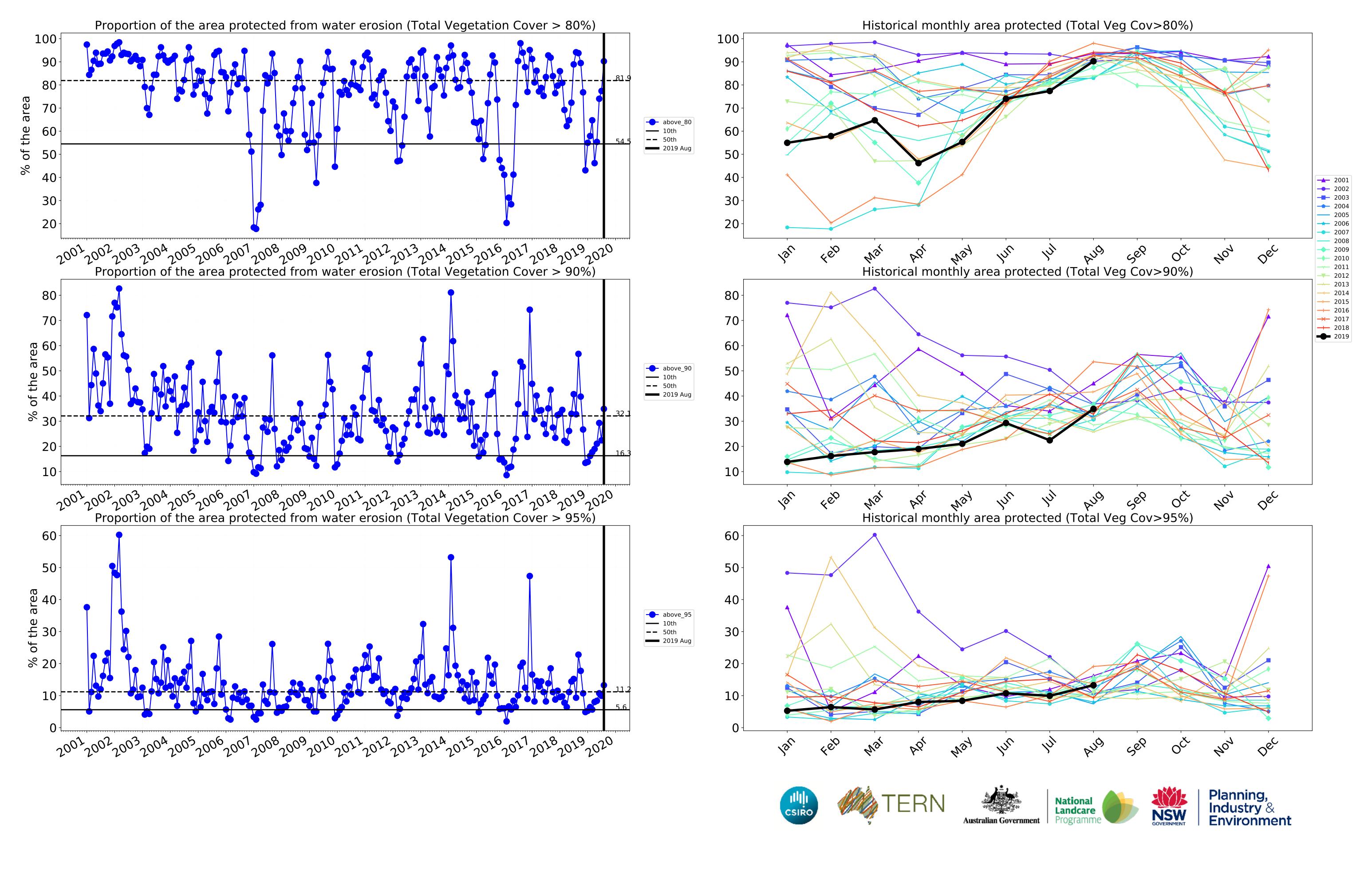
Cropping timeseries











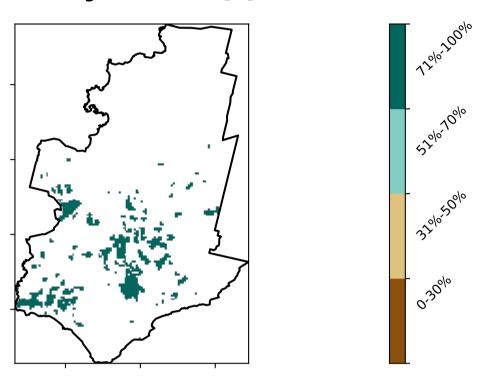
Production native forests and plantation forests

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

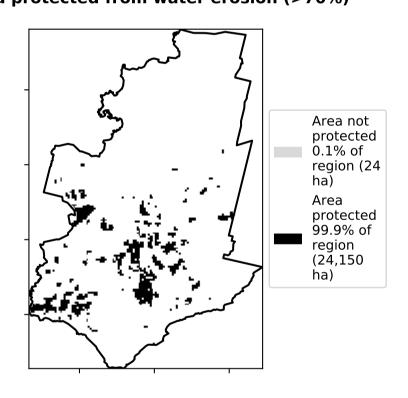
Production native forests and plantation forests

Total Vegetation Cover [%]

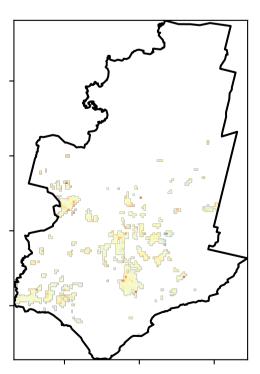
Land use and forest cover

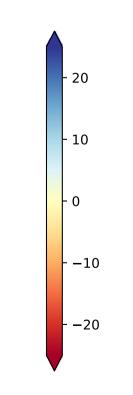


% Area protected from water erosion (>70%)



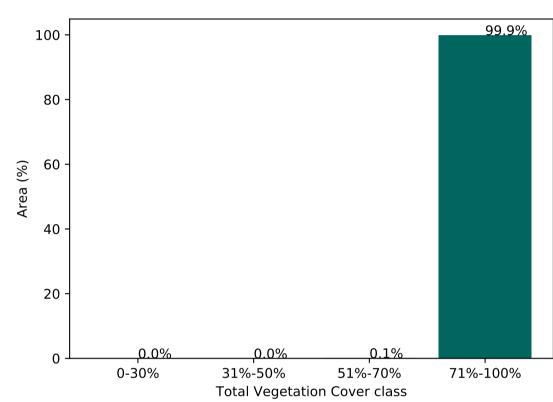
Total Vegetation Cover Anomaly [%]



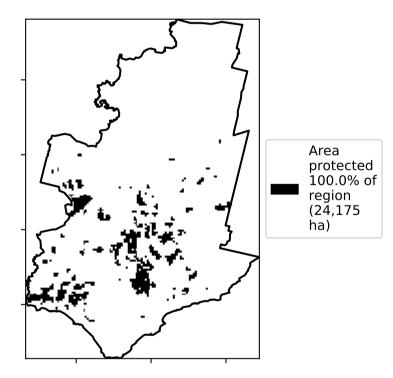


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

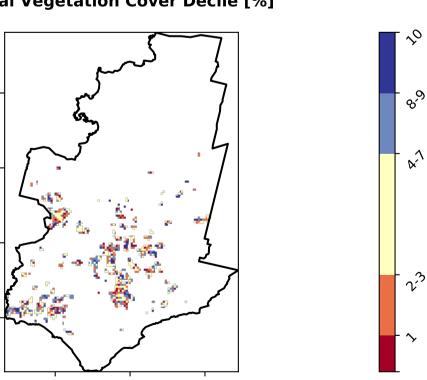
Proportion of vegetation cover class in area

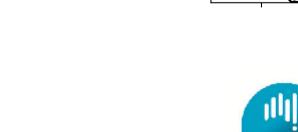


% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]





Anomaly show how many percetage points each

pixel is from

is, red pixels are about 20% lower than the mean of that pixel. The mean

the mean. That

is only for the month of the map

using baseline from 2001 to 2019.



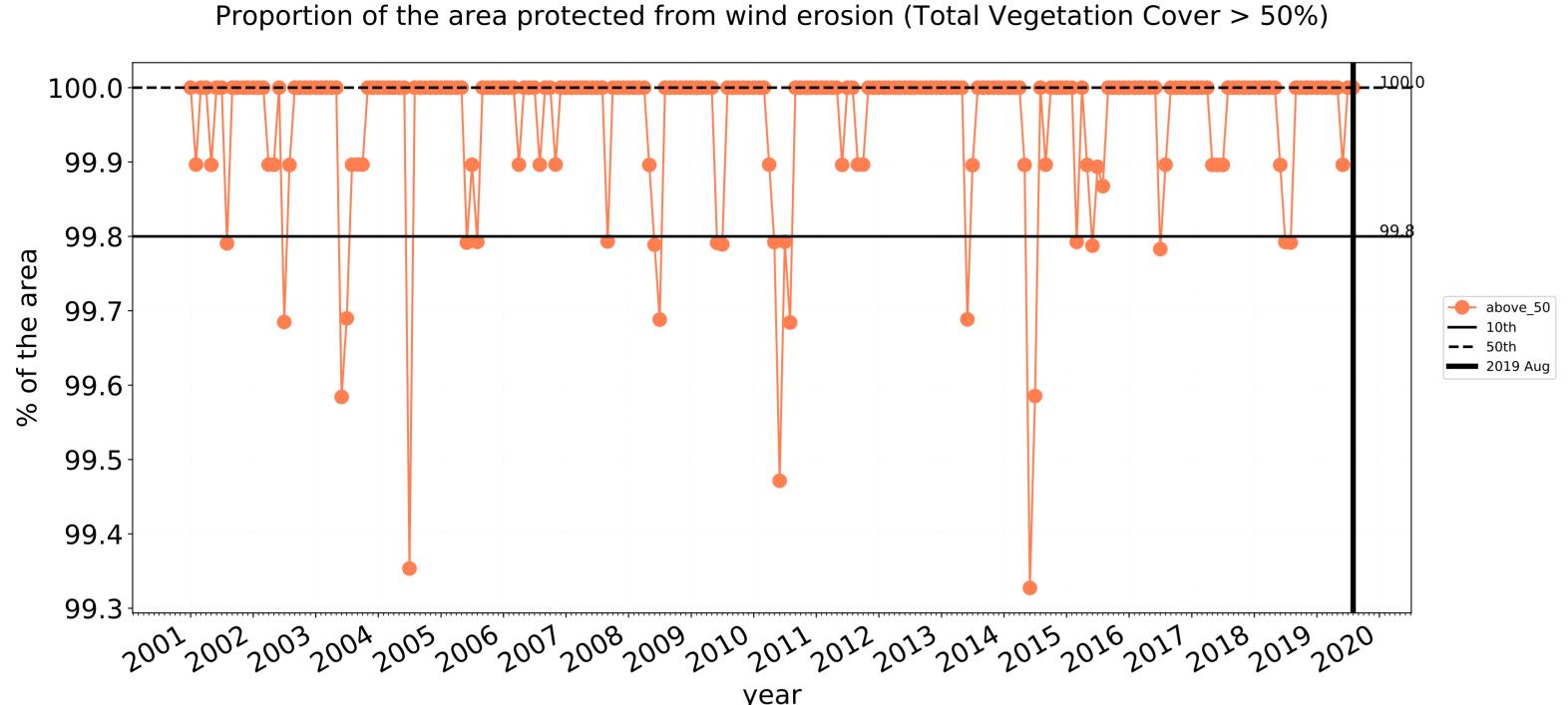


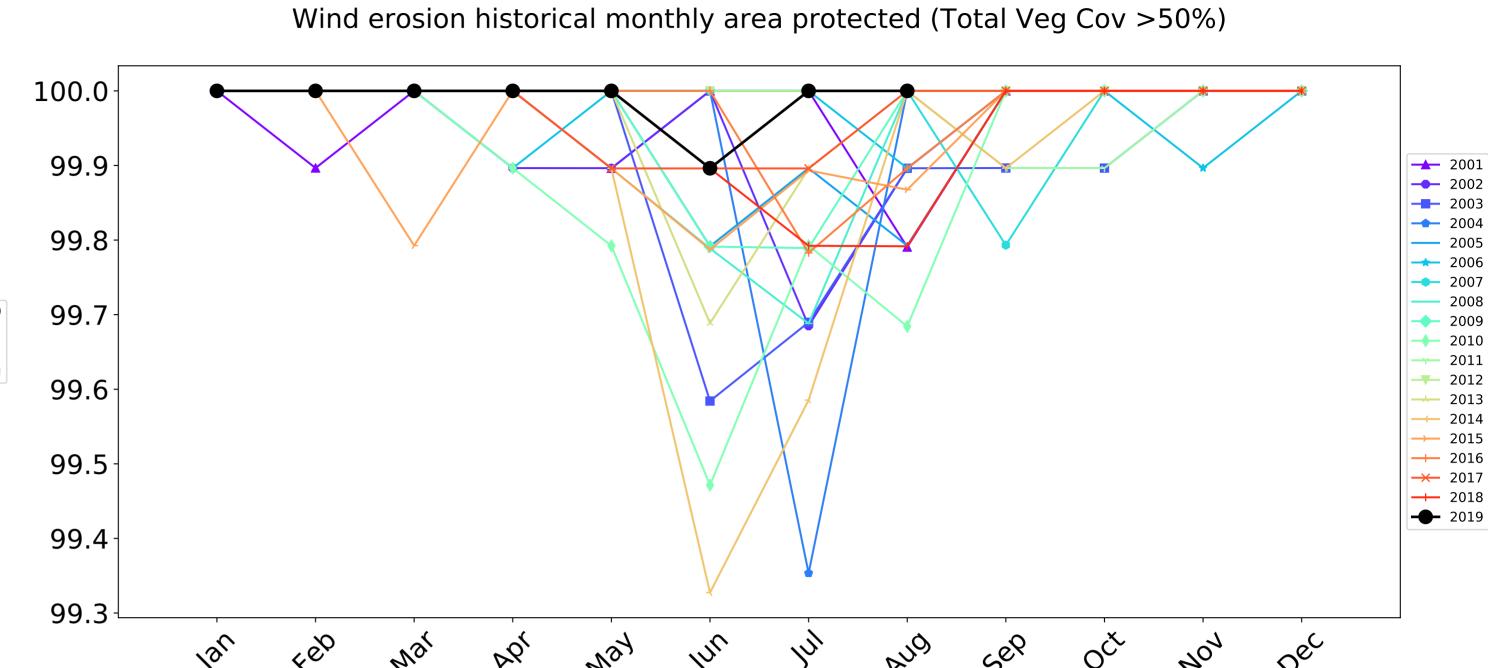


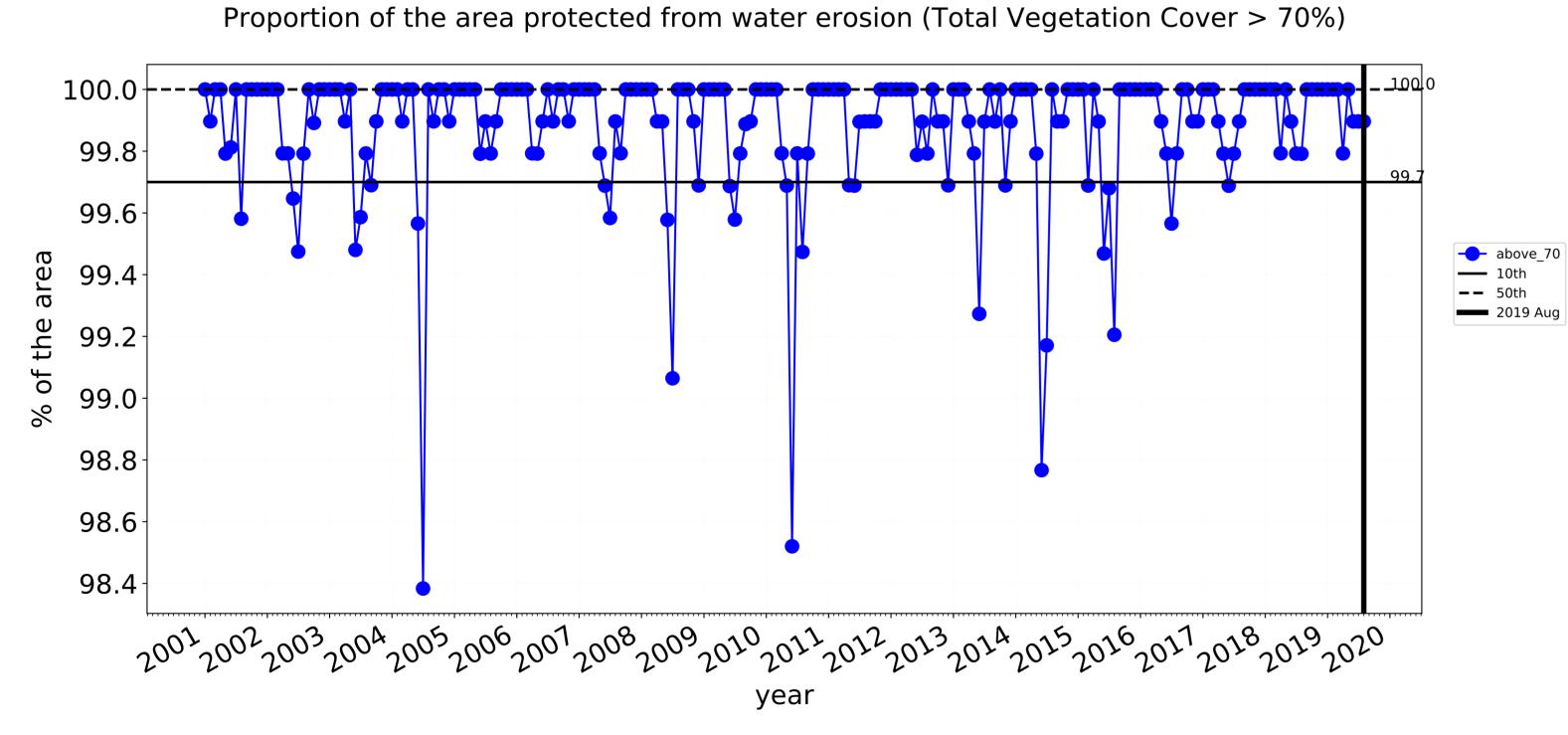


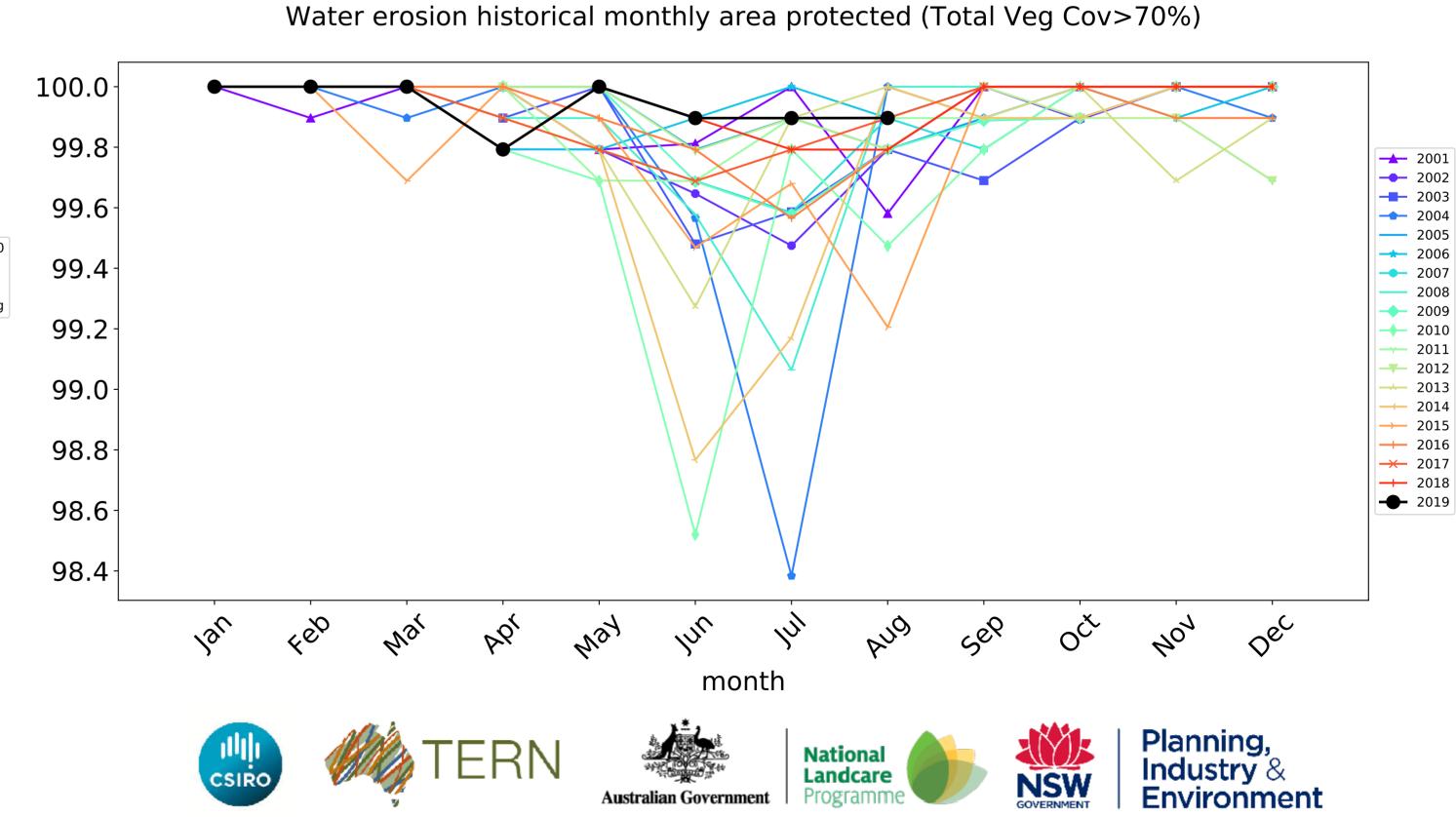


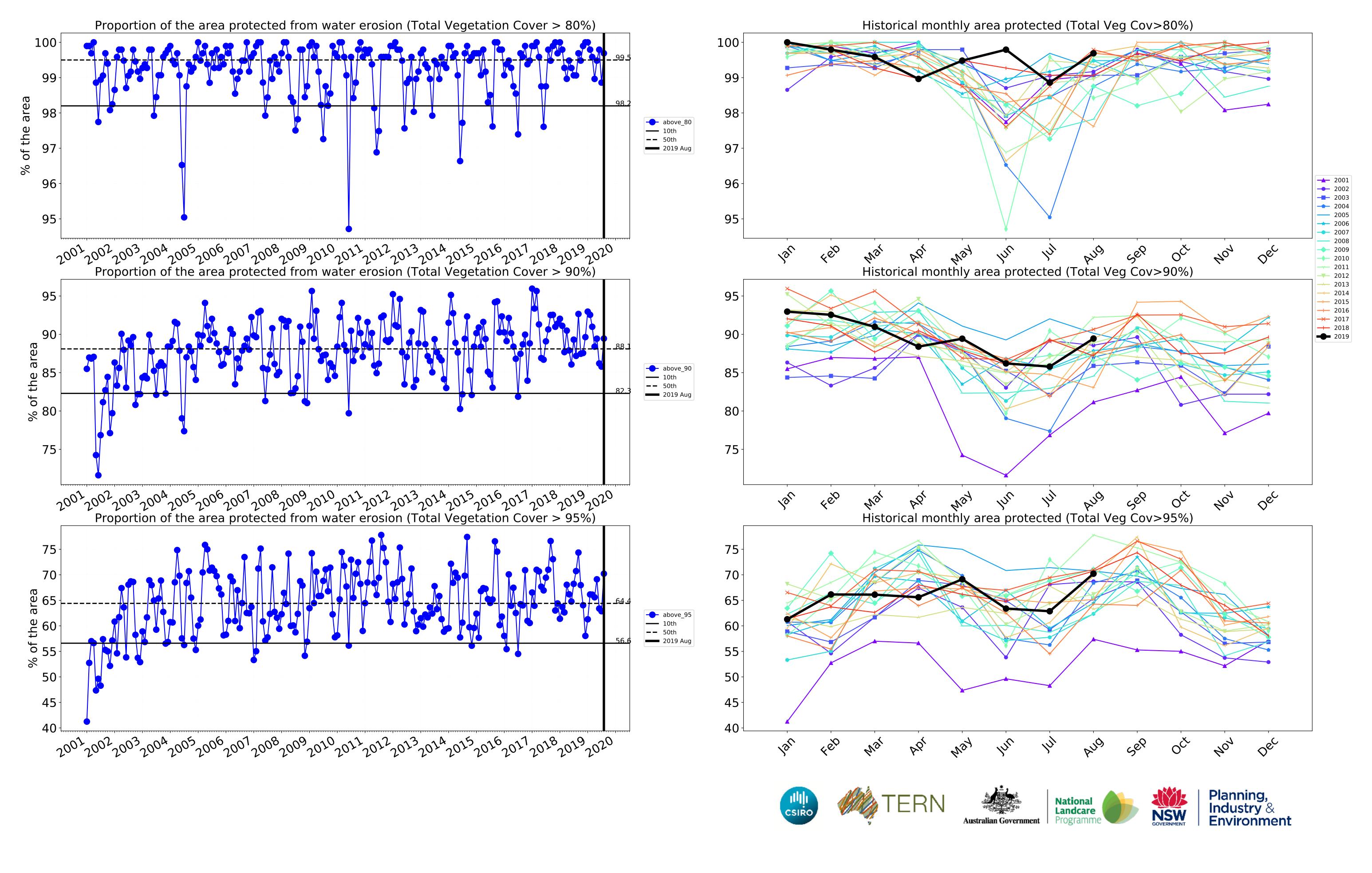
Production native forests and plantation forests timeseries











Colac-Otway_(S) (337,300 ha and no data 6,525 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	337,300	99.8% 336,625	99.7% 336,225	99.2% 334,475	96.7% 326,075	66.8% 225,375	43.2% 145,700
Conservation and natural environments	110,297	99.7% 110,021	99.7% 109,995	99.6% 109,820	99.2% 109,443	94.9% 104,700	81.3% 89,718
Conservation and natural environments non forest	4,722	100.0% 4,722	99.3% 4,688	94.3% 4,454	88.7% 4,186	62.4% 2,947	34.0% 1,607
Conservation and natural environments Woodland forest	14,166	99.8% 14,141	99.8% 14,141	99.8% 14,141	99.6% 14,116	94.2% 13,343	78.0% 11,048
Conservation and natural environments Forest (non woodland)	91,408	99.7% 91,160	99.7% 91,160	99.7% 91,160	99.6% 91,011	96.3% 88,010	83.7% 76,479
Agriculture	182,479	100.0% 182,429	99.9% 182,355	99.6% 181,837	96.2% 175,463	49.2% 89,843	18.9% 34,485
Grazing	168,650	100.0% 168,600	99.9% 168,526	99.6% 168,032	96.6% 162,874	50.3% 84,781	19.3% 32,505
Grazing non forest	154,146	100.0% 154,096	99.9% 154,022	99.6% 153,579	96.4% 148,550	46.8% 72,155	14.6% 22,506
Grazing - Forest (non woodland)	11,468	100.0% 11,468	100.0% 11,468	99.8% 11,443	98.9% 11,343	89.8% 10,298	72.7% 8,333
Cropping	12,817	100.0% 12,817	100.0% 12,817	99.8% 12,792	90.3% 11,568	34.9% 4,472	13.3% 1,698
Production native forests and plantation forests	23,948	100.0% 23,948	100.0% 23,948	99.9% 23,923	99.7% 23,874	89.5% 21,422	70.2% 16,815











