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

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

- Land use and forest cover information for the area:
 - o Map: Land use and forest cover
 - o Chart: Land use and forest cover area
- Total vegetation cover for this month:
 - o Map: total vegetation cover classified into 4 classes
 - o Chart: total vegetation cover percentage area classified into 4 classes
- Areas protected from erosion for the month:
 - o Map: water erosion protection (>70% cover) percentage area and hectares
 - o Map: wind erosion protection (>50% cover) percentage area and hectares
- Comparison with previous years:
 - o Map: anomaly compare this month to the average cover from the same month in previous years
 - o Map: deciles rank this month against the same month in previous years
- Time series from January 2001 to current:
 - o Wind erosion protection time series: percentage of the area of the region with greater than 50% cover for each month since January 2001 (orange line): Horizontal lines are 10th (cover target) and 50th percentiles. Vertical line is month of report.
 - o Water erosion protection time series: percentage of the area of the region with greater than 70% cover for each month since January 2001 (blue line): Horizontal lines are 10th (cover target) and 50th percentiles. Vertical line is month of report.
 - o Rainfall: millimetres rainfall each month (black line). Vertical line is month of report.
- Time series for each month stacked by year
 - o Same data as time series from January 2001 to current month, grouped by month. Black line is current year of data.
- Water erosion protection on higher slopes. As slope increases, more cover is required to control water erosion.

The thresholds reported are:

- o the percentage area with pixels greater than 80% total clover
- o the percentage area with pixels greater than 90% total clover
- o the percentage area with pixels greater than 95% total clover

The following pages repeat the above sequence for each land use and forest cover class. For example

- All agricultural lands, that is grazing, cropping plus Horticulture (depending on what land use is present)
- Grazing lands by forest classes if present
- Cropping lands
- Irrigation lands
- Protected areas by forest classes if present

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

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

Explanatory notes:

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

Acknowledgment of data:

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

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













Vegetation Cover Sep 2019

Land use and forest cover

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%

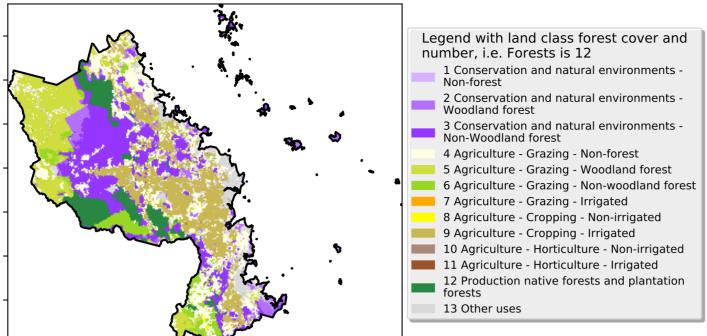
lower than the mean of that pixel. The mean

is only for the month of the map

using baseline from 2001 to

2019.

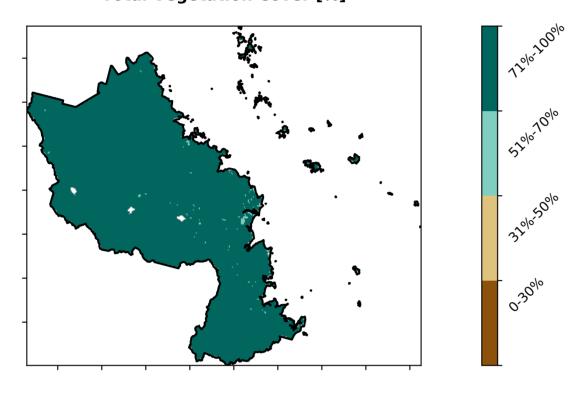
the mean. That



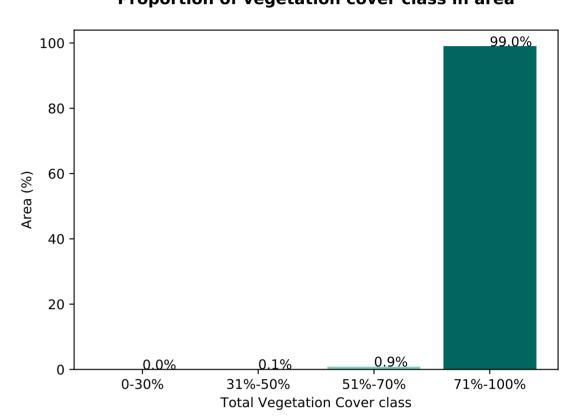
20.1% 20.0 17.3% 17.5 15.0 14.3% § 12.5 · 0.01 g 7.5 5.0 2.5 7 6 8 9 10 11 12 13 3 4 5 Land use class

Proportion of each land class in area

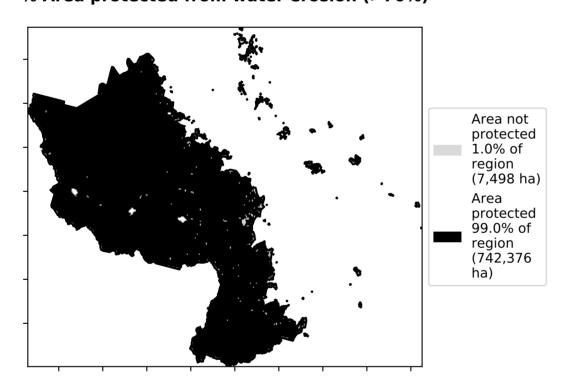
Total Vegetation Cover [%]



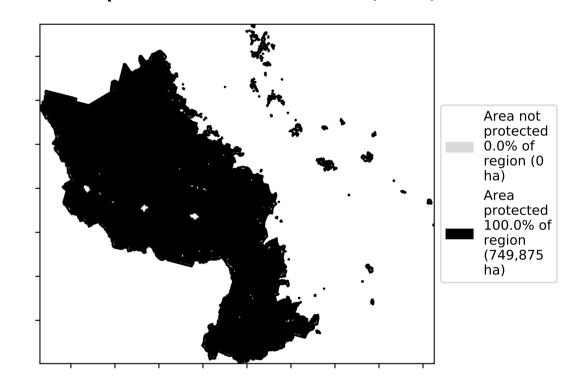
Proportion of vegetation cover class in area



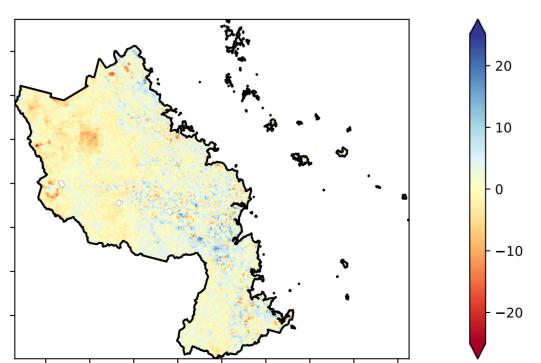
% Area protected from water erosion (>70%)



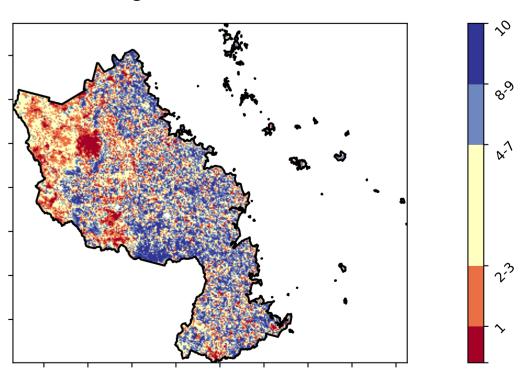
% Area protected from wind erosion (>50%)



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.





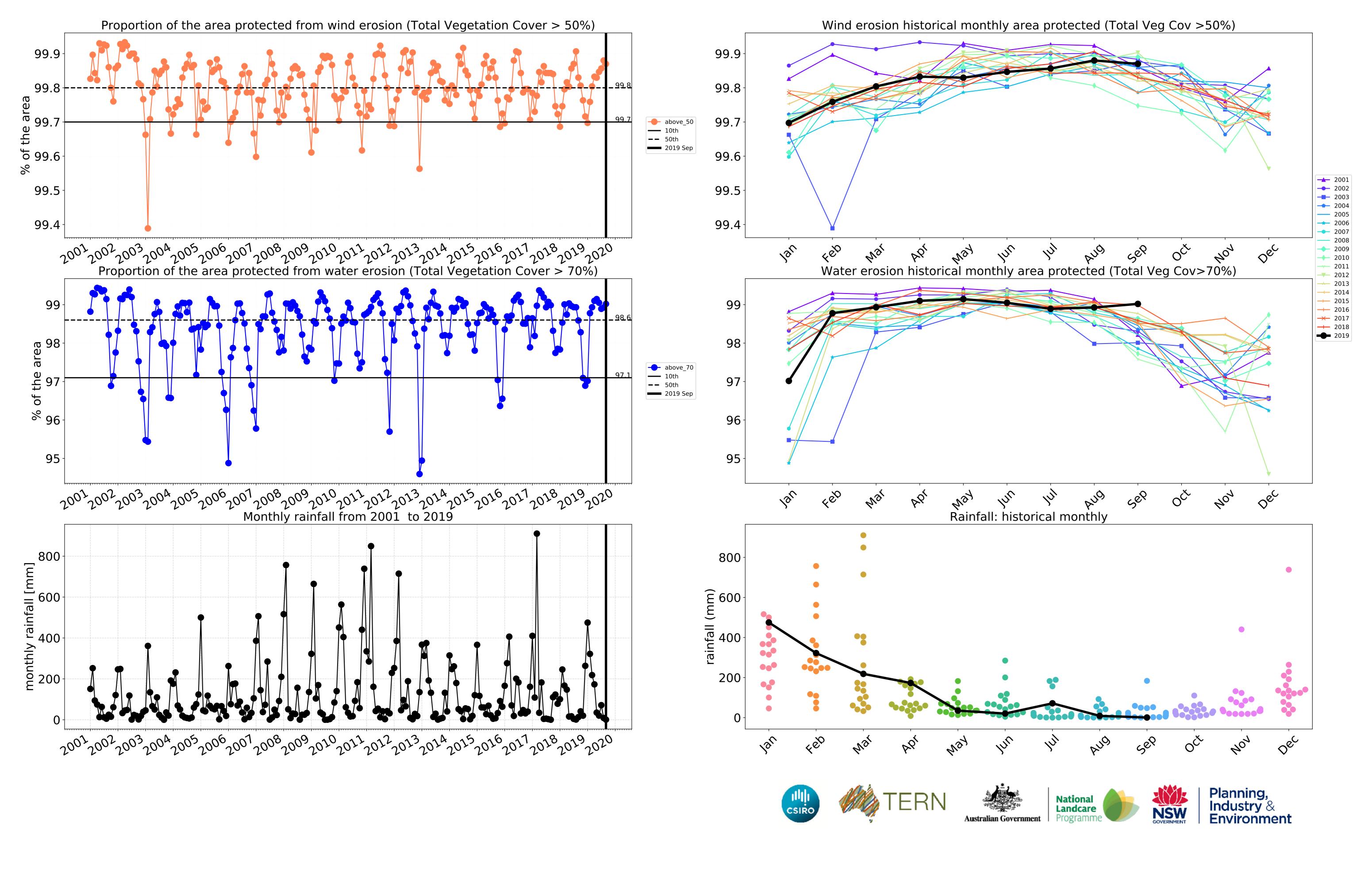


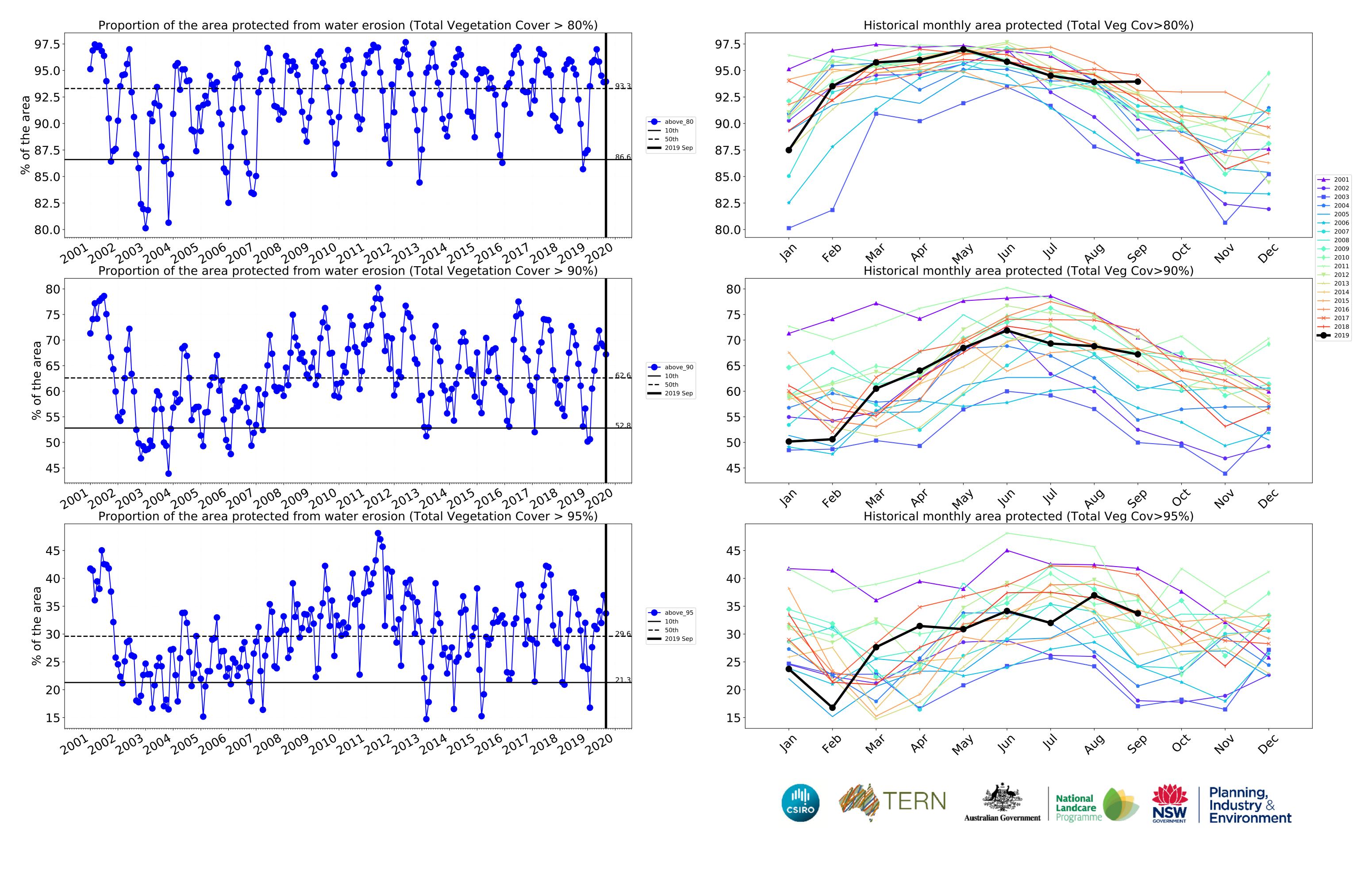












Conservation and natural environments

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.

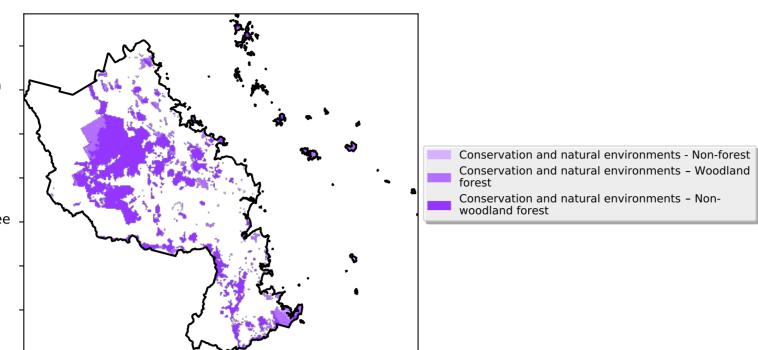
Anomaly show how many percetage points each pixel is from

the mean. That

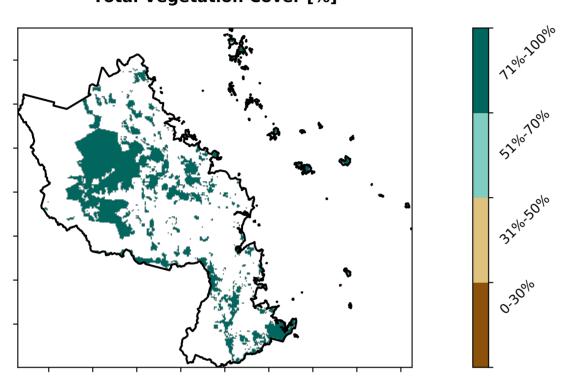
is, red pixels are about 20% lower than the

mean of that pixel. The mean is only for the month of the map

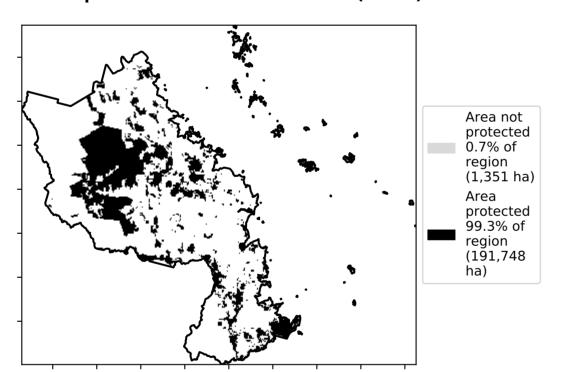
using baseline from 2001 to 2019.



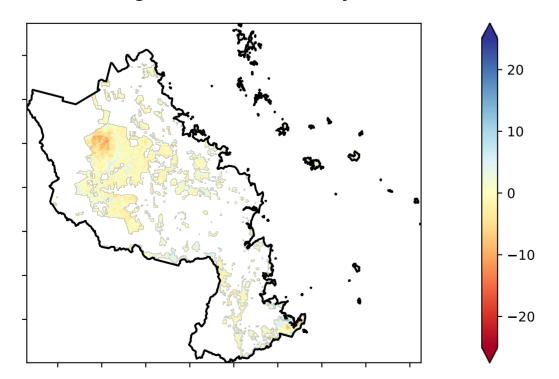
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

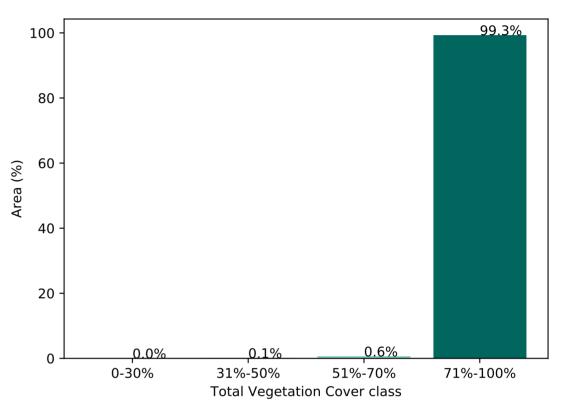


Total Vegetation Cover Anomaly [%]

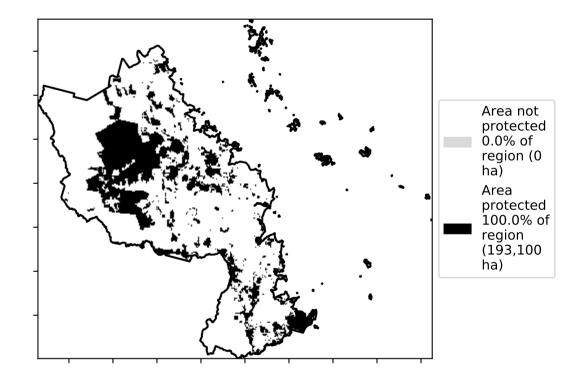


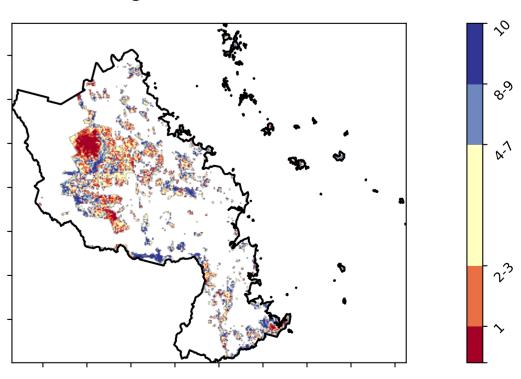
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









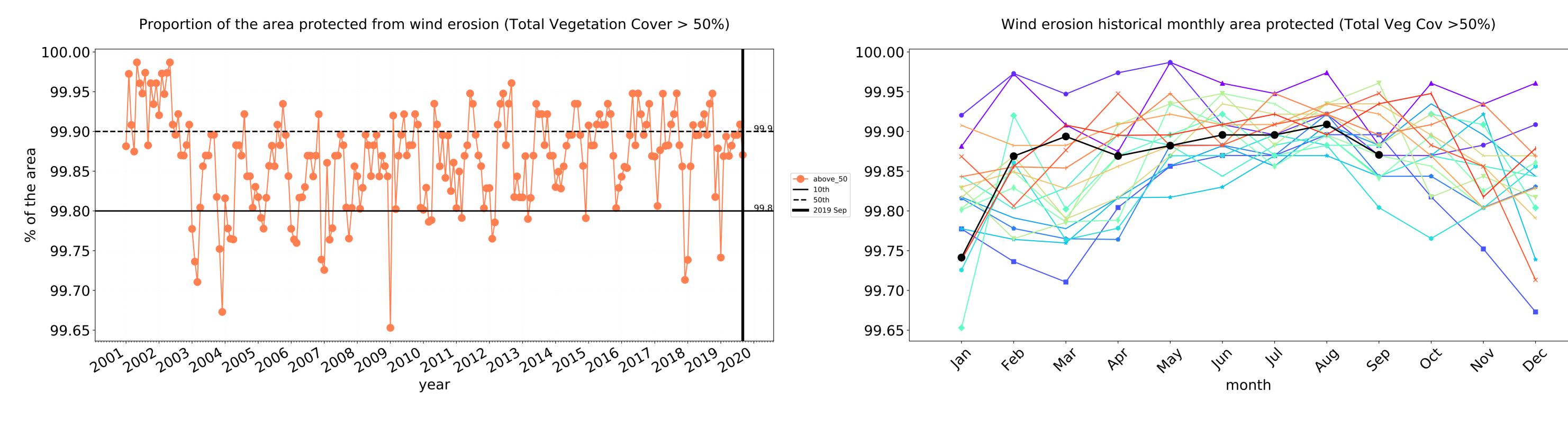


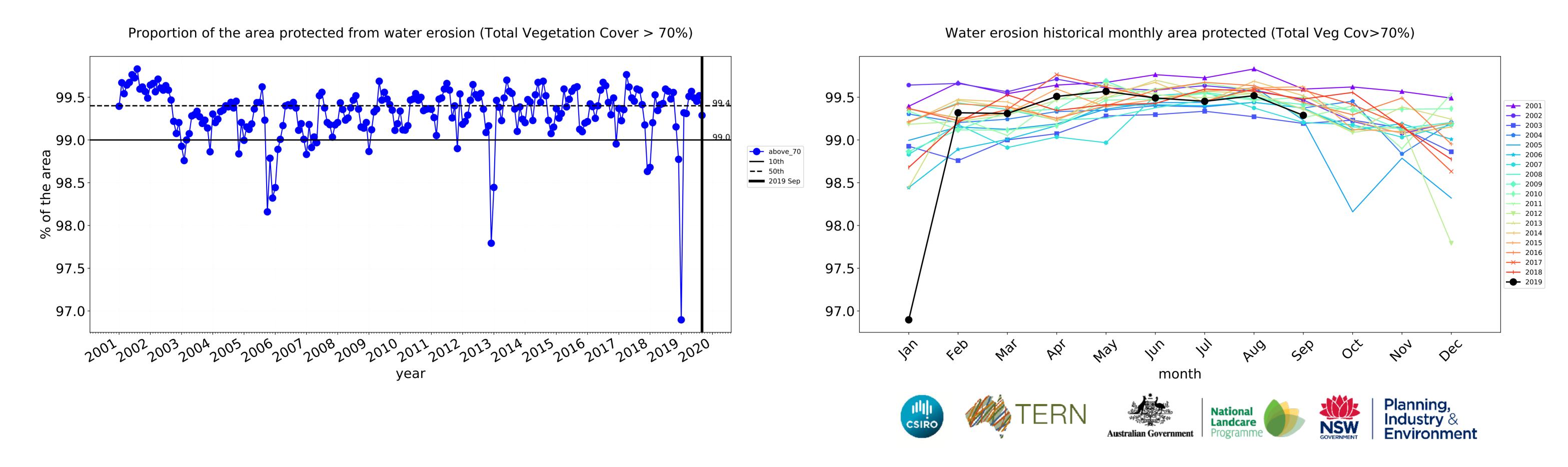






Conservation and natural environments timeseries

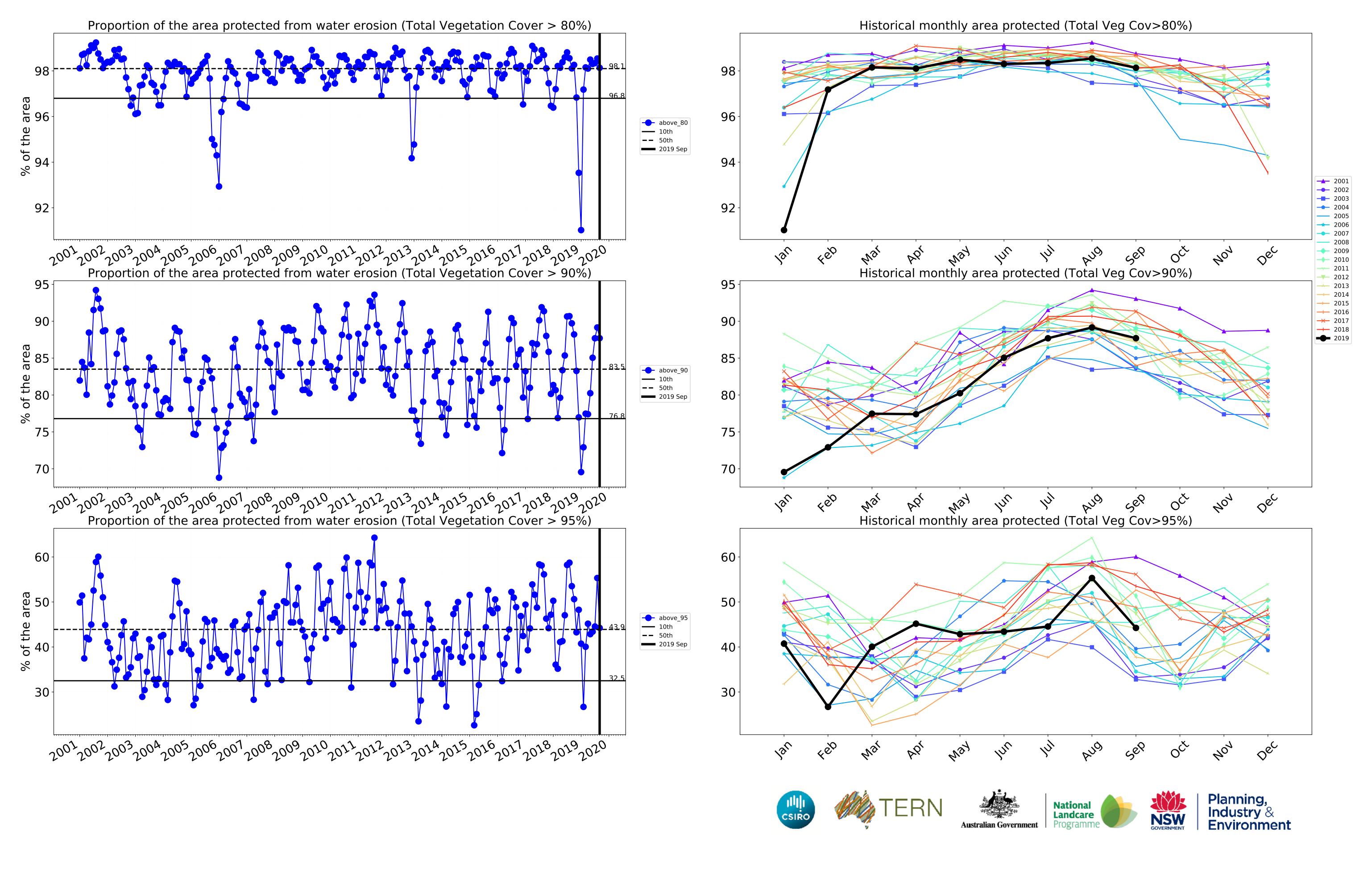




---- 2007

→ 2015

→ 2016
→ 2017



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.

Anomaly show how many percetage points each pixel is from

the mean. That

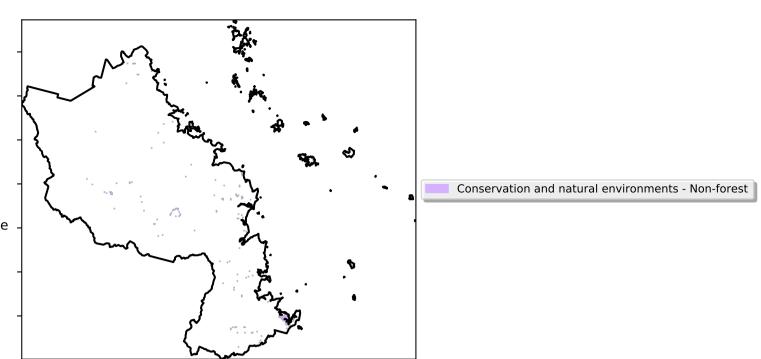
is, red pixels are about 20% lower than the

mean of that

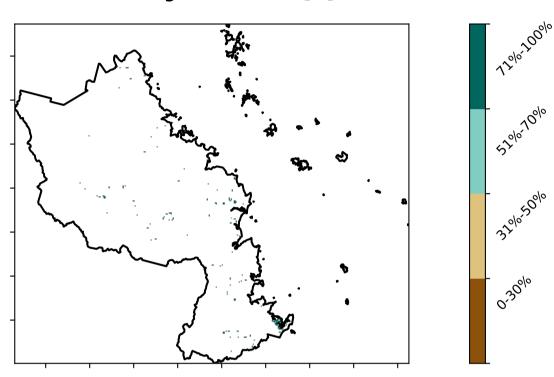
pixel. The mean

using baseline from 2001 to 2019.

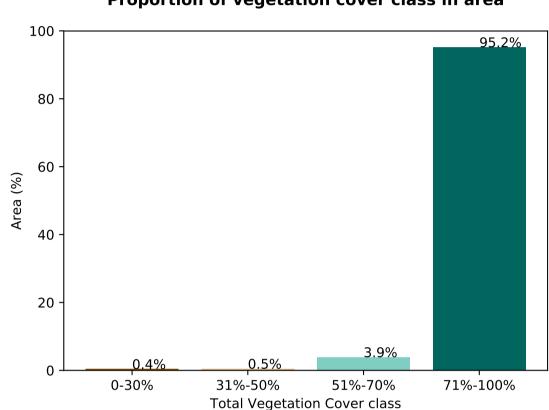
is only for the month of the map



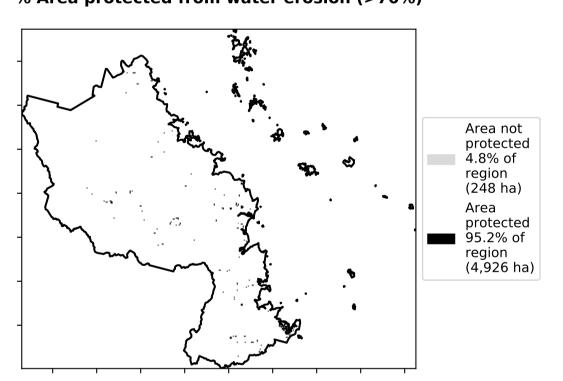
Total Vegetation Cover [%]



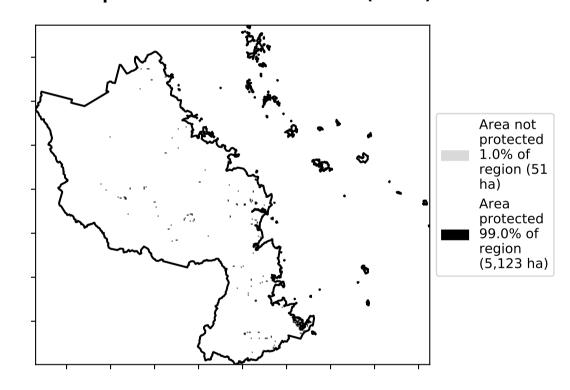
Proportion of vegetation cover class in area



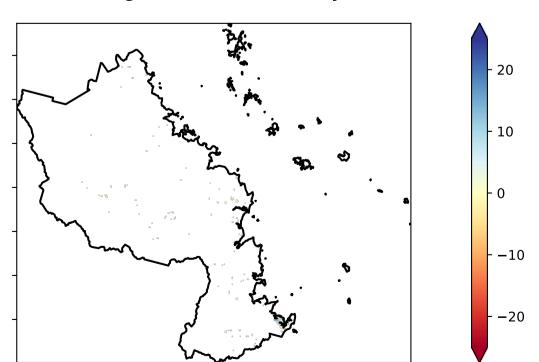
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

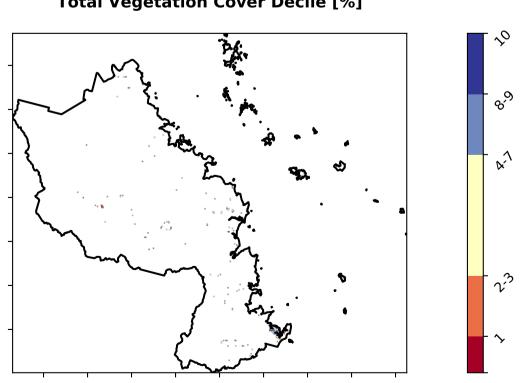


Total Vegetation Cover Anomaly [%]



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.

Total Vegetation Cover Decile [%]







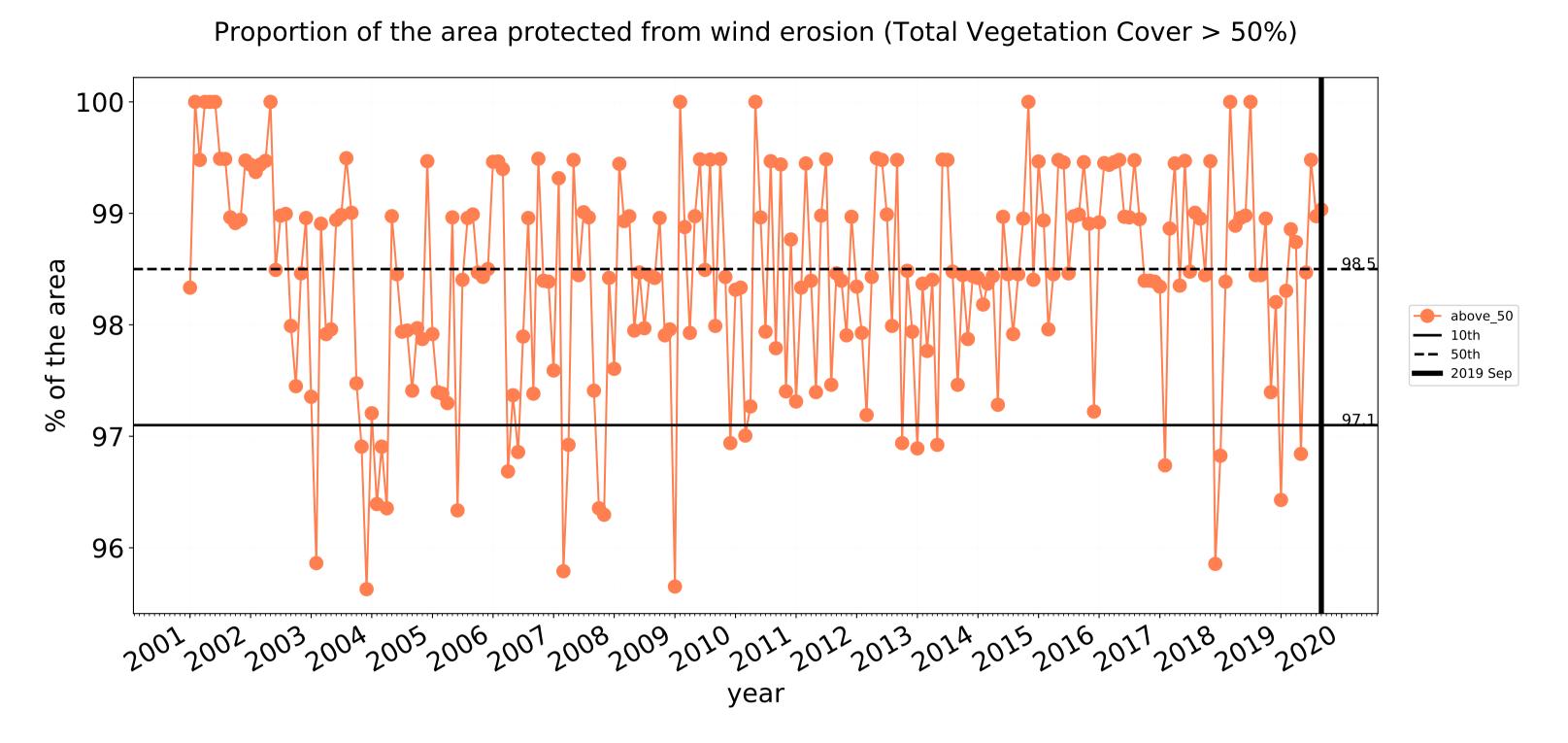


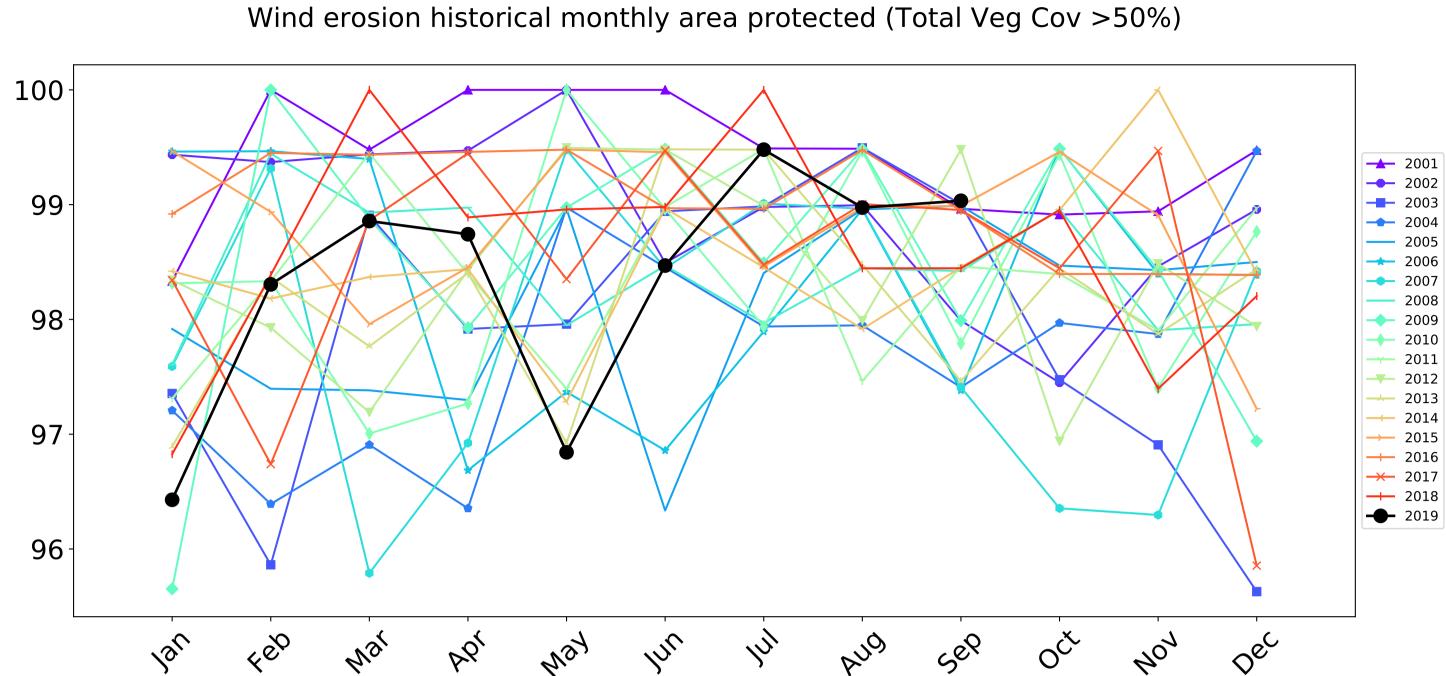




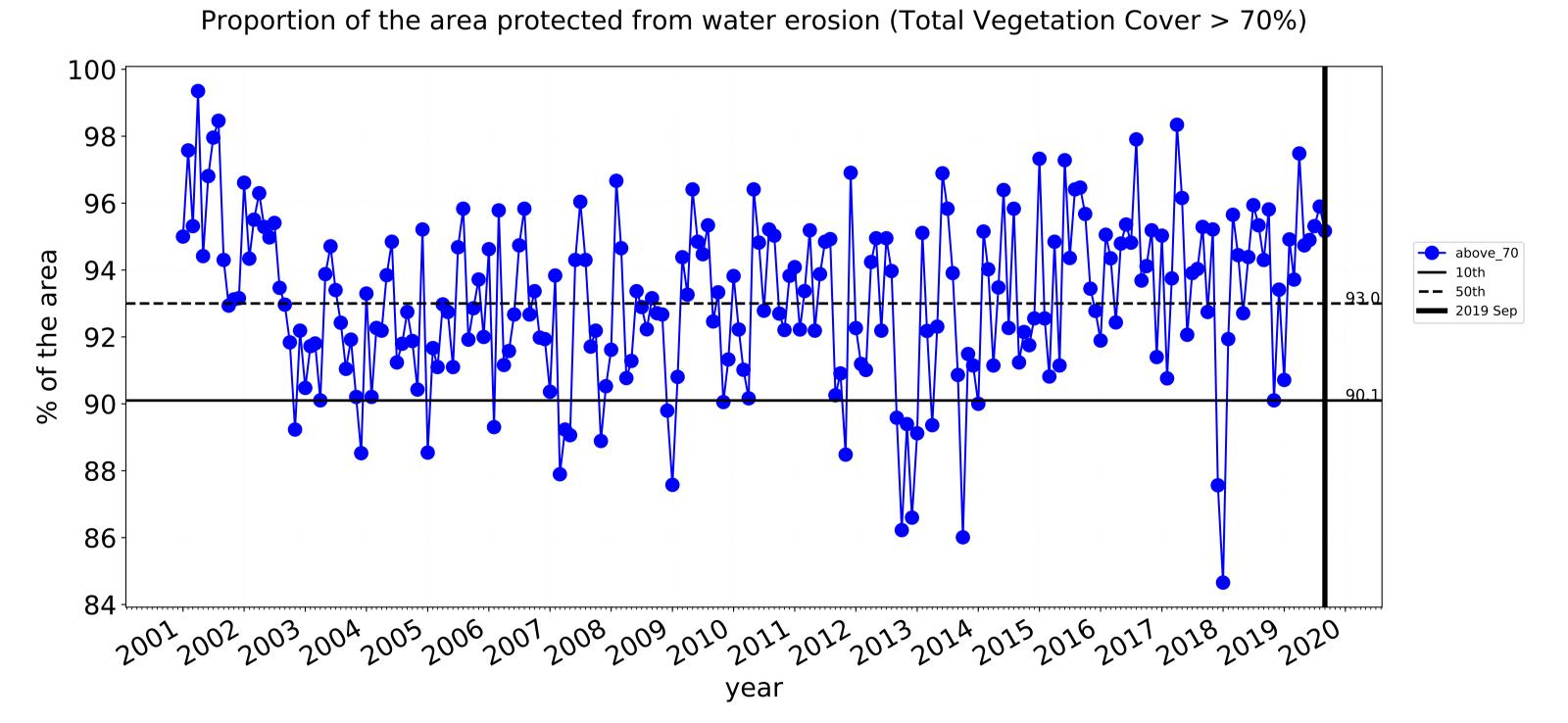


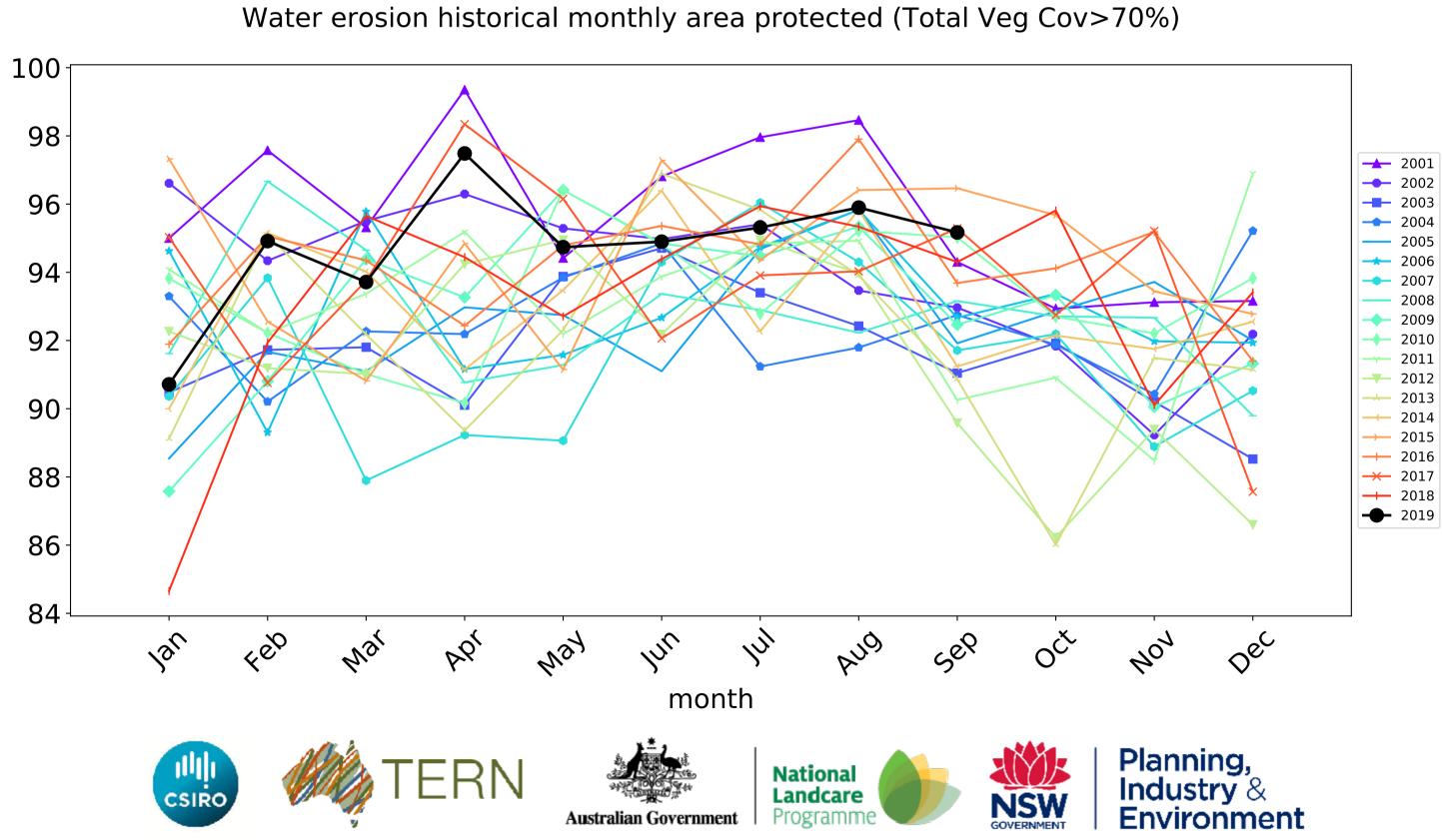
Conservation and natural environments non forest timeseries

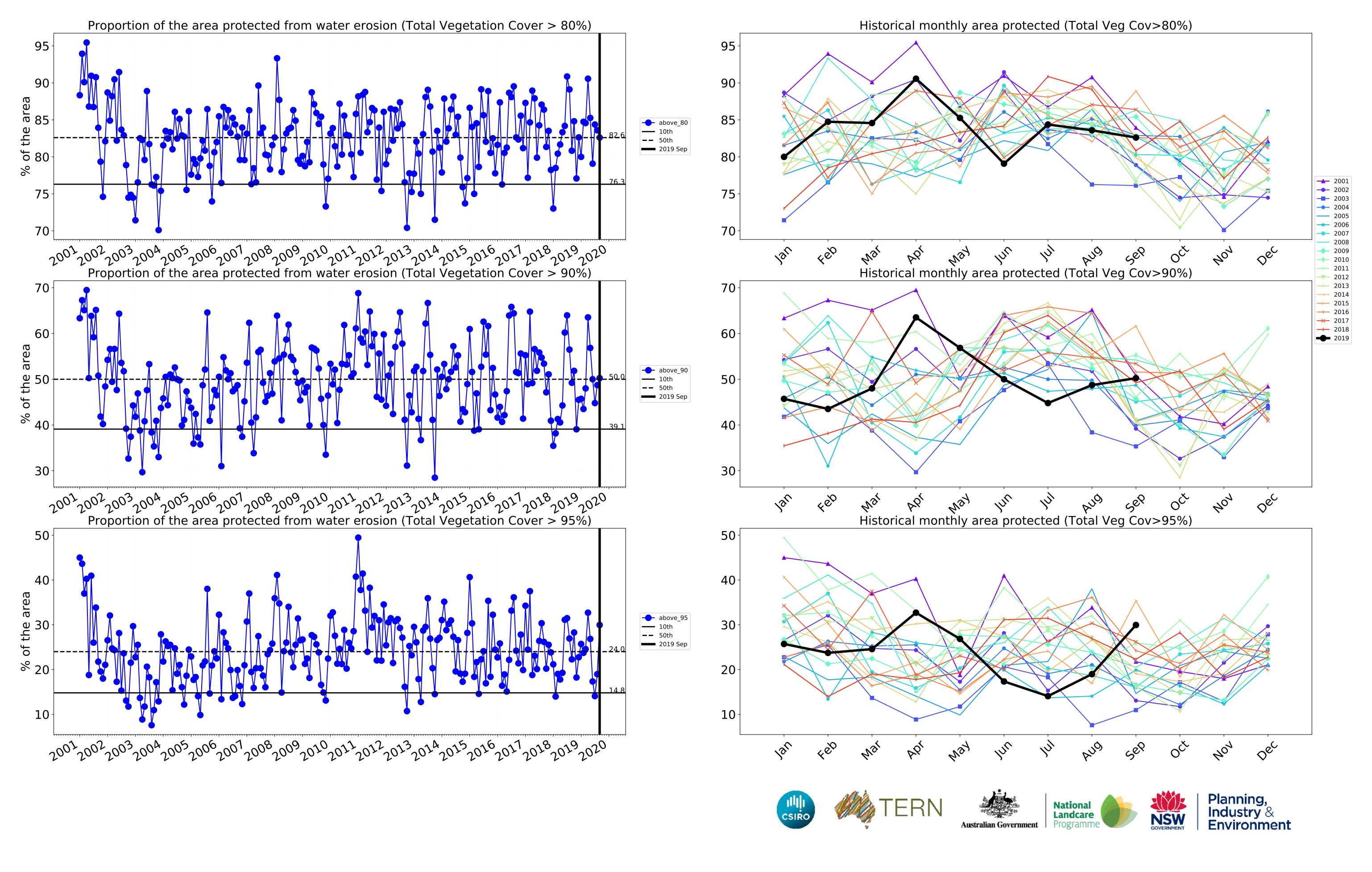




month







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.

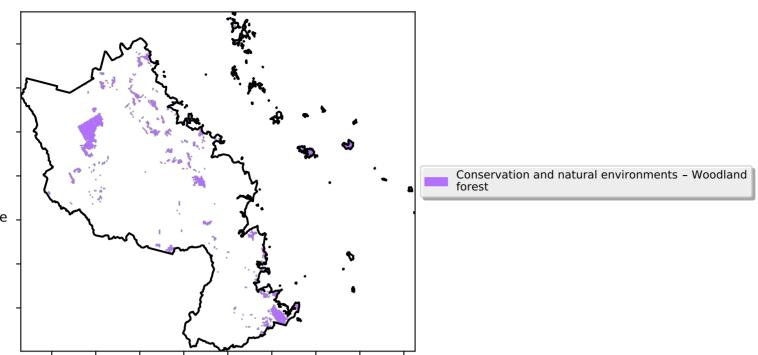
Anomaly show how many percetage points each pixel is from

the mean. That

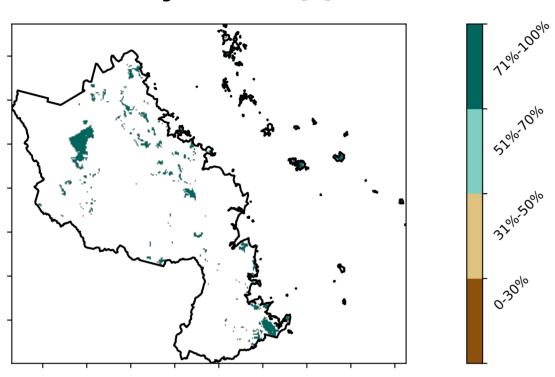
is, red pixels are about 20% lower than the

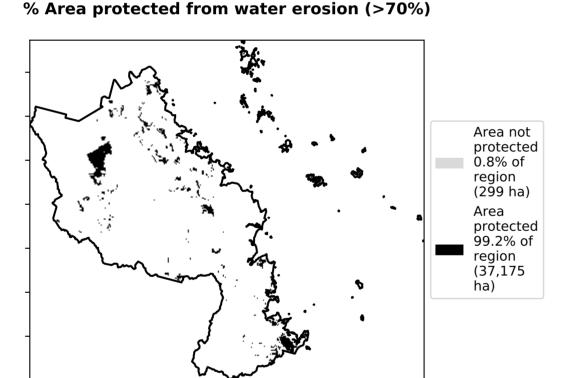
mean of that pixel. The mean is only for the month of the map

using baseline from 2001 to 2019.

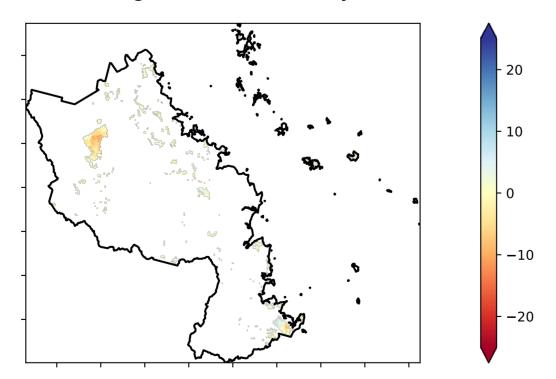


Total Vegetation Cover [%]



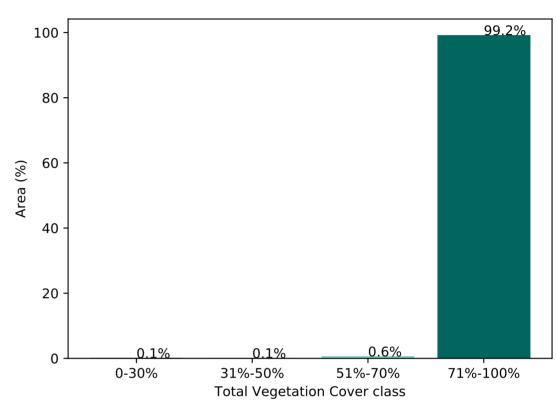


Total Vegetation Cover Anomaly [%]

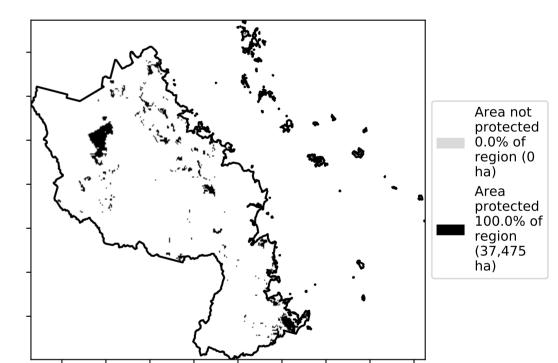


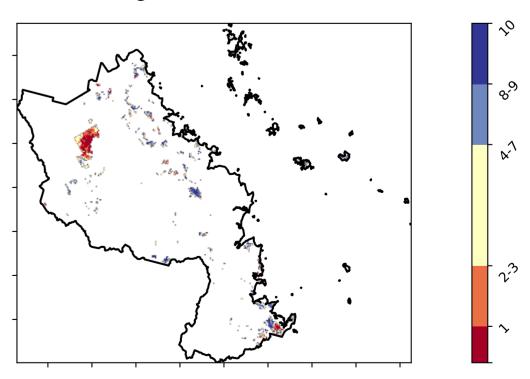
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)







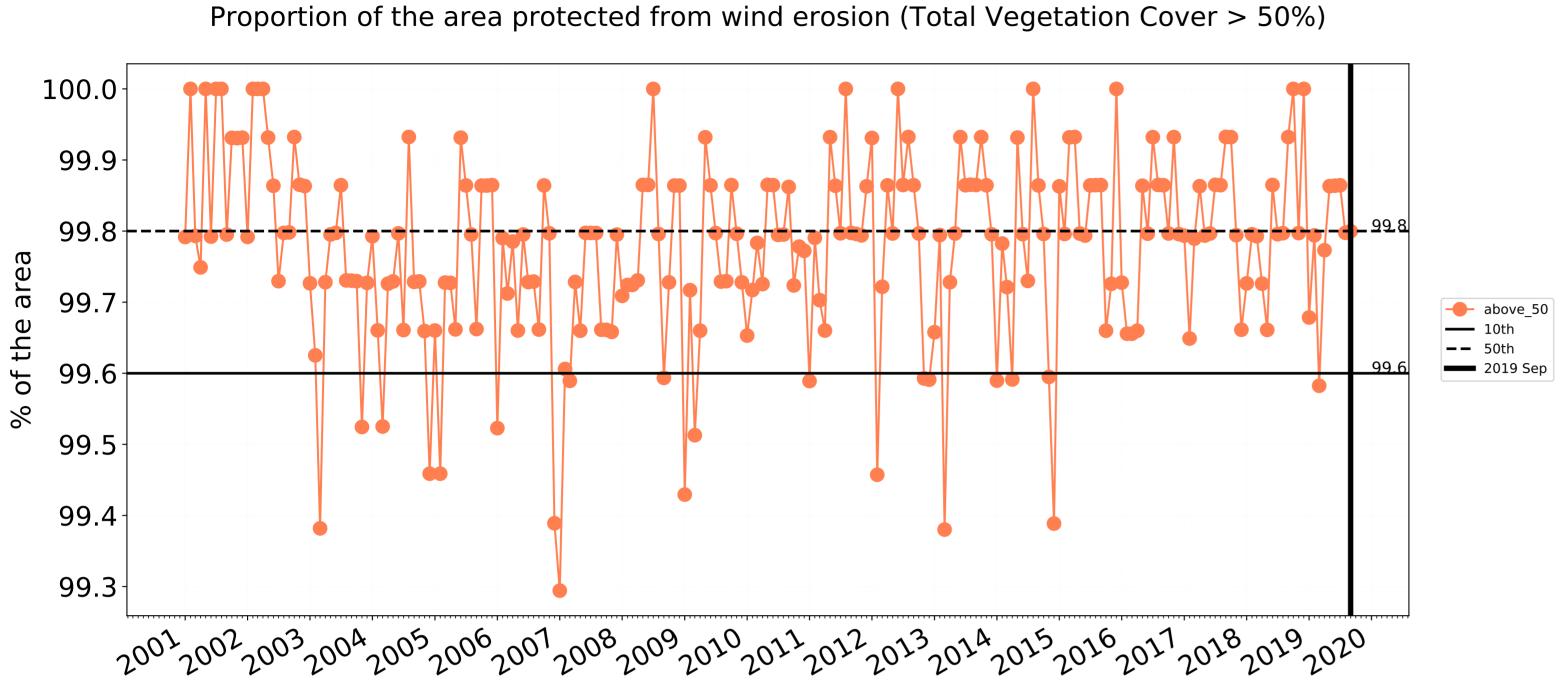


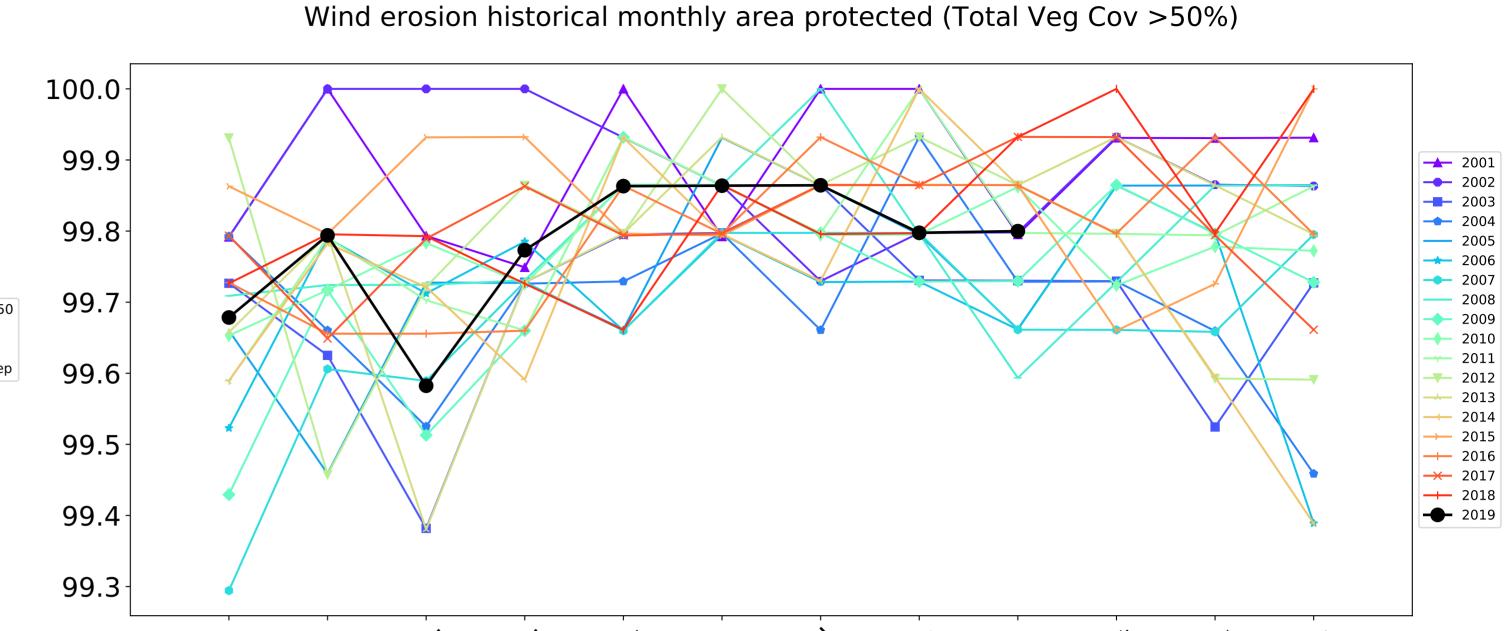




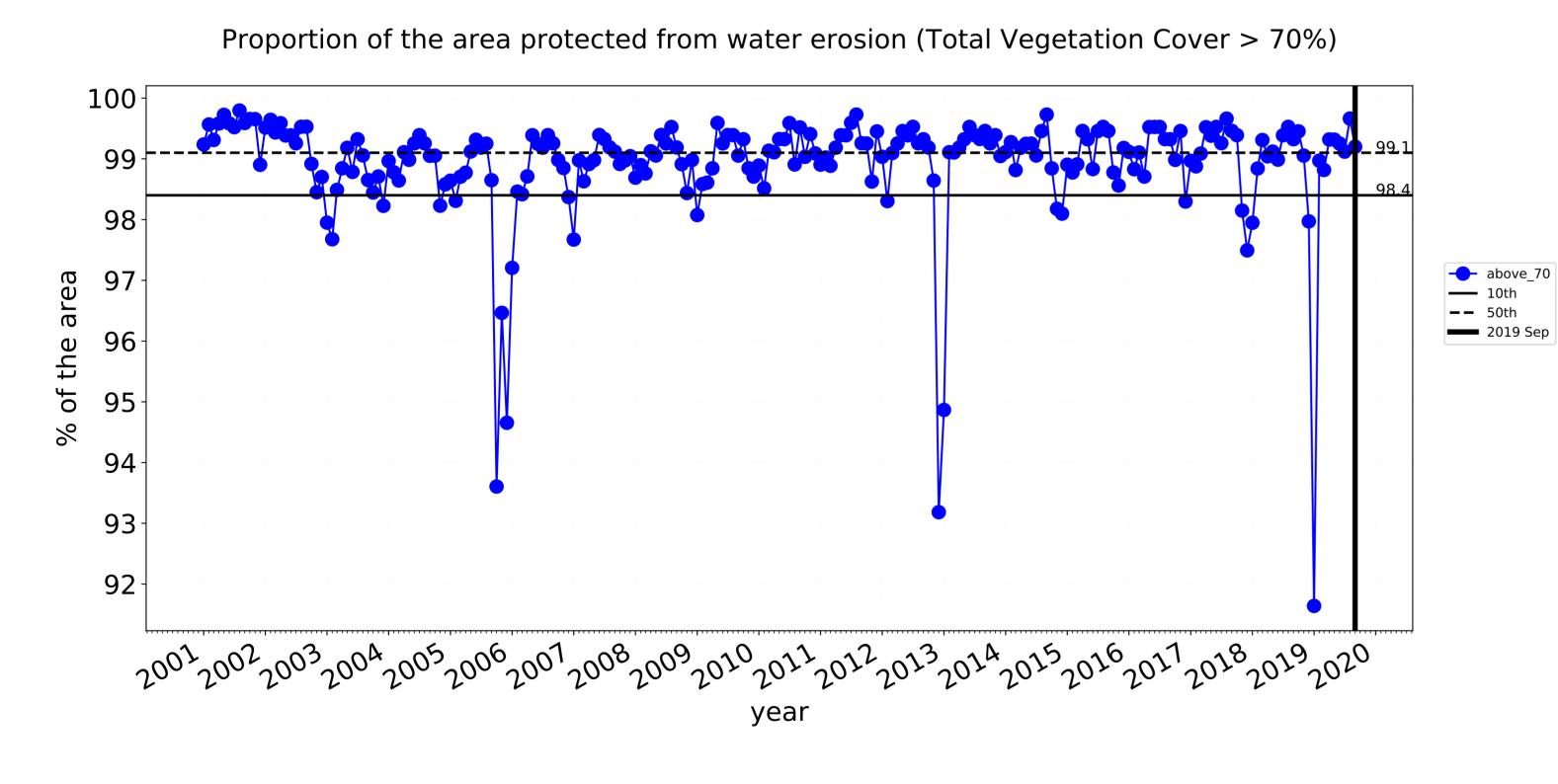


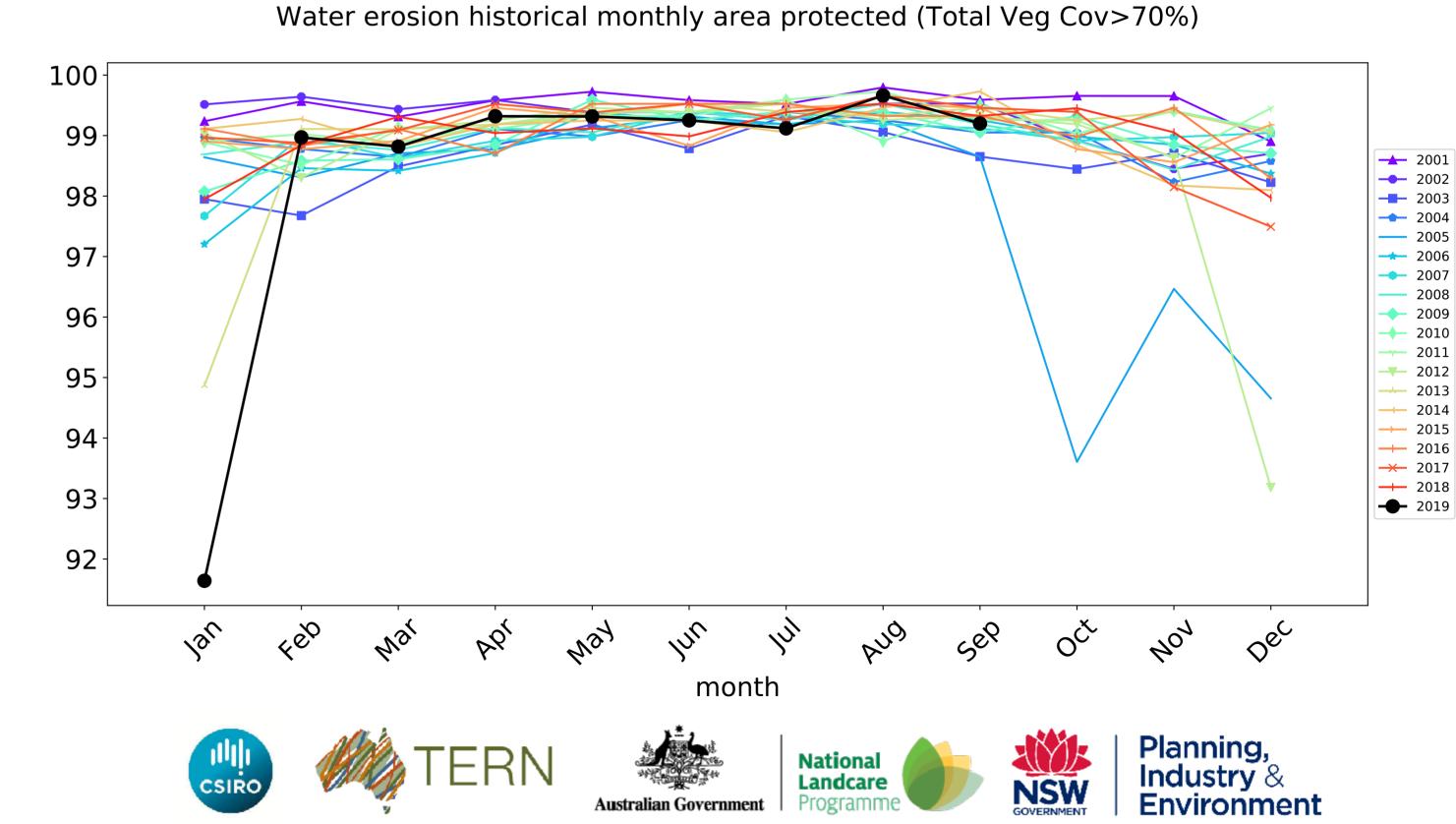


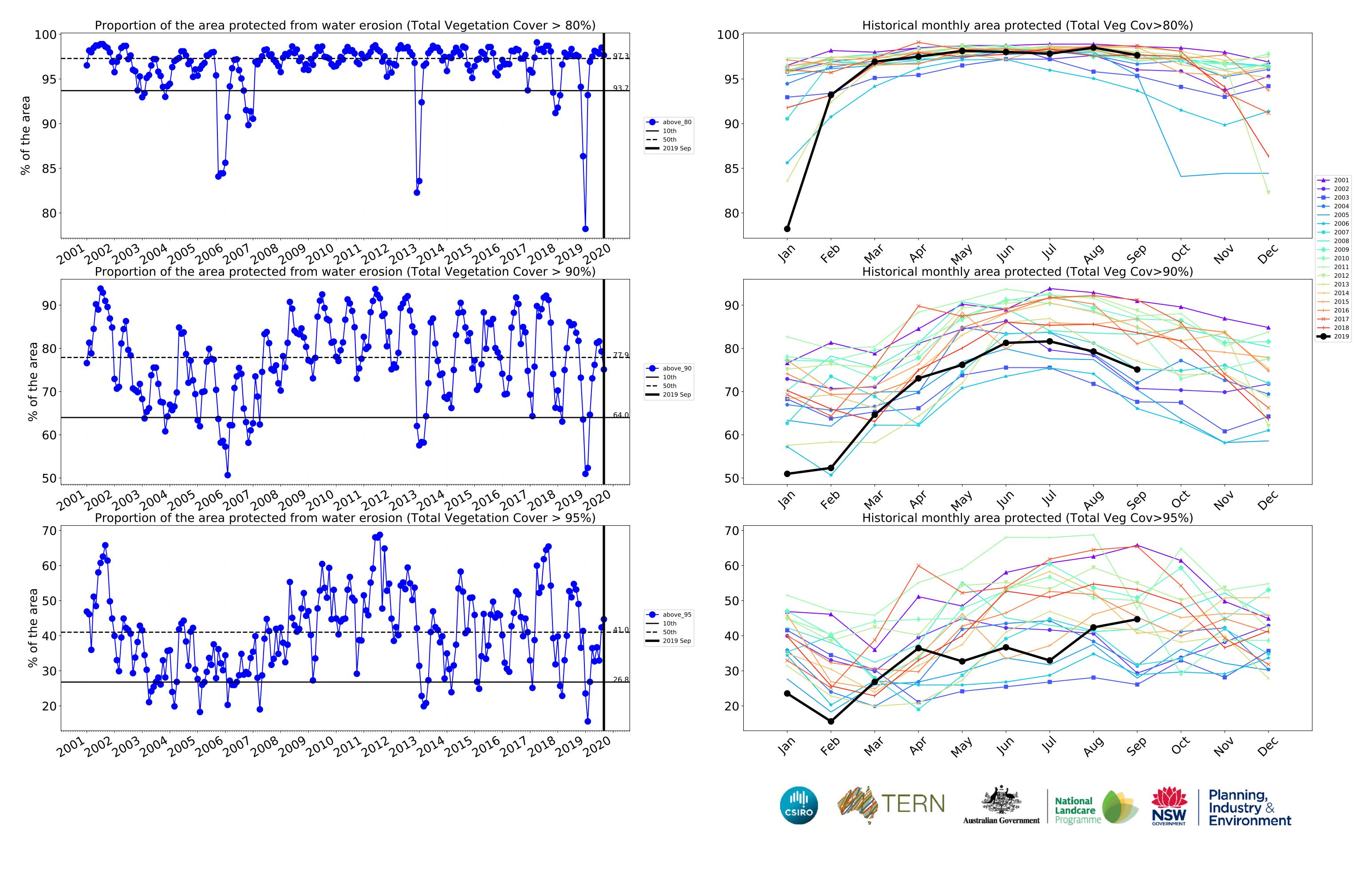




month





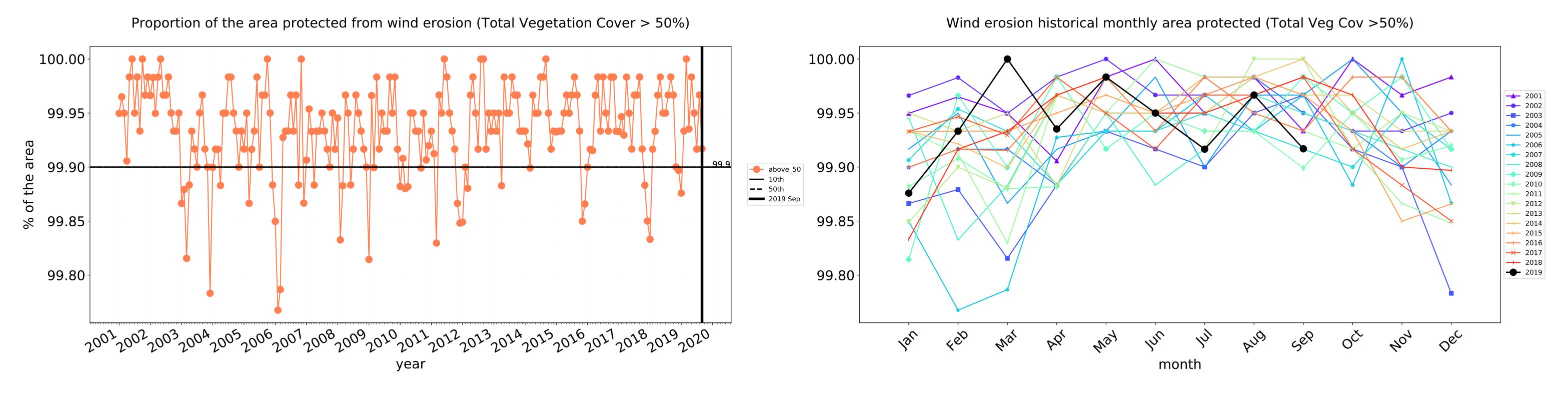


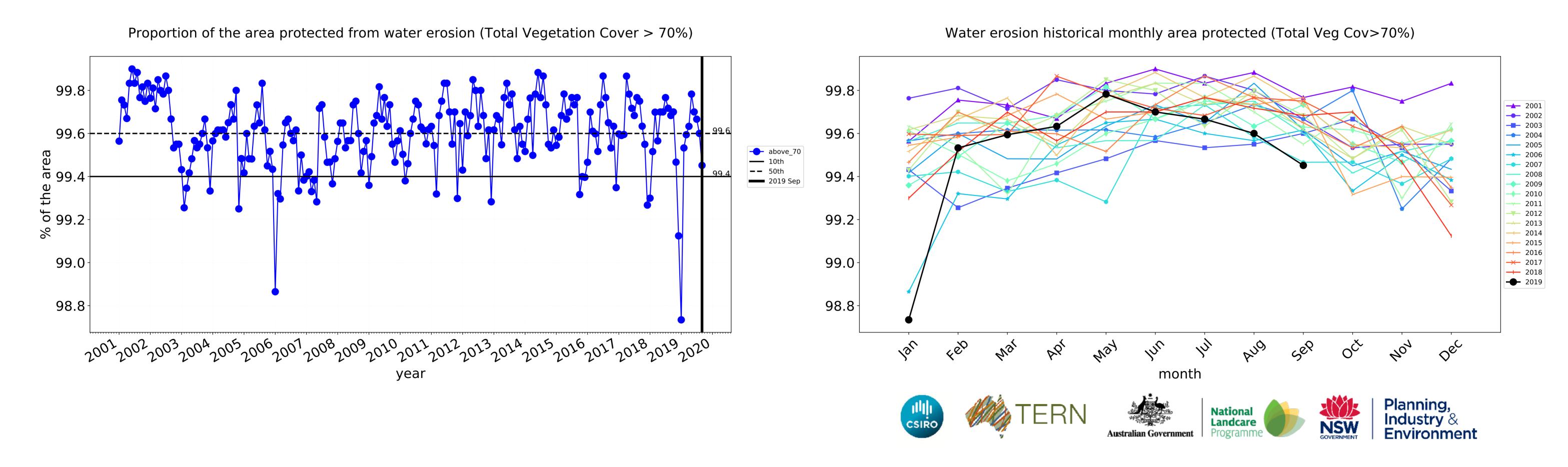
Land use and forest cover Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < Conservation and natural environments - Non-20% tree cover, sparse is 20 to 50% and dense > 50% tree cover. **Total Vegetation Cover [%]** Proportion of vegetation cover class in area 99.5% 100 80 20 31%-50% 51%-70% 0-30% 71%-100% **Total Vegetation Cover class** % Area protected from wind erosion (>50%) % Area protected from water erosion (>70%) Area not protected 0.5% of Area not protected 0.0% of region (0 ha) region (752 ha) Area Area protected 99.5% of protected 100.0% of region (149,697 region (150,450 ha) ha) **Total Vegetation Cover Decile [%] Total Vegetation Cover Anomaly [%]** - 20 Anomaly show how many percetage points each pixel is from the mean. That Deciles show where the - 10 pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseling. is, red pixels are about 20% lower than the 0 mean of that pixel. The mean is only for the month of the map the map using baseline from 2001 to 2019. using baseline from 2001 to 2019. -10 **-**20 Planning, Industry & Environment National

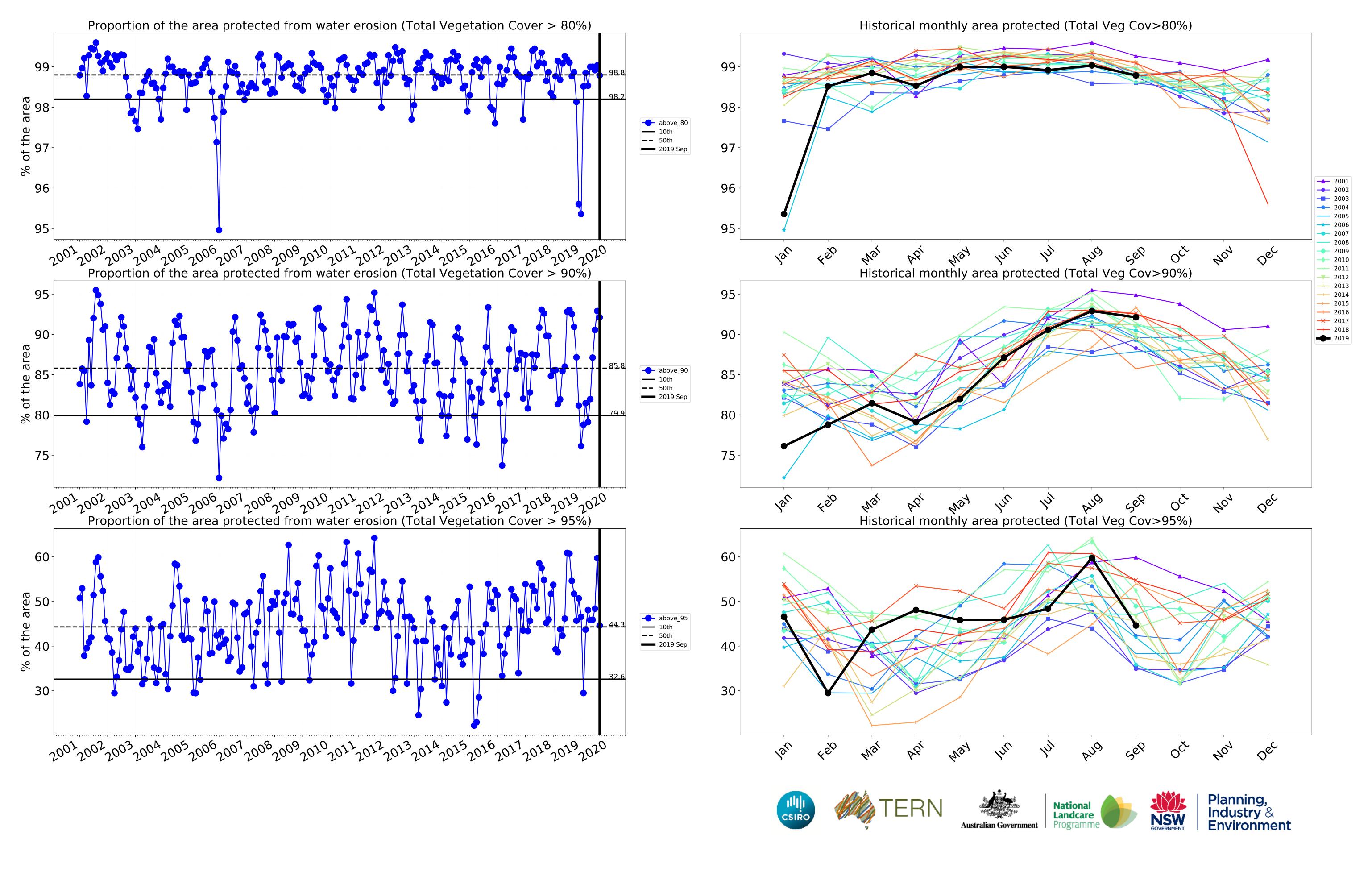


Australian Government

Landcare Programme







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.

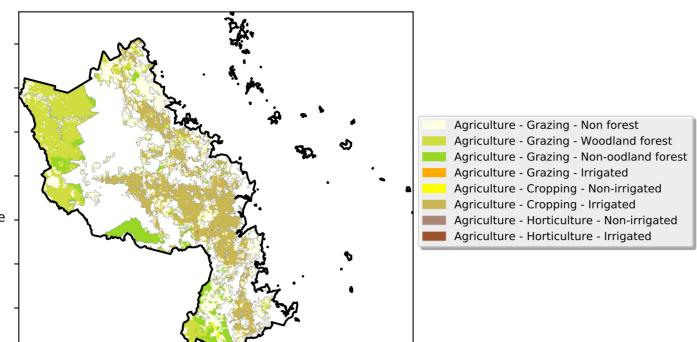
Anomaly show how many percetage points each pixel is from

the mean. That

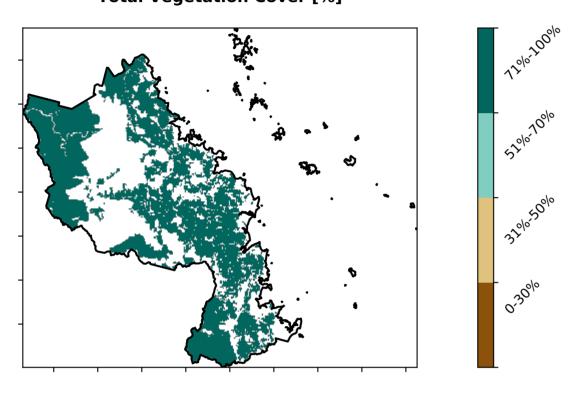
is, red pixels are about 20% lower than the

mean of that pixel. The mean is only for the month of the map

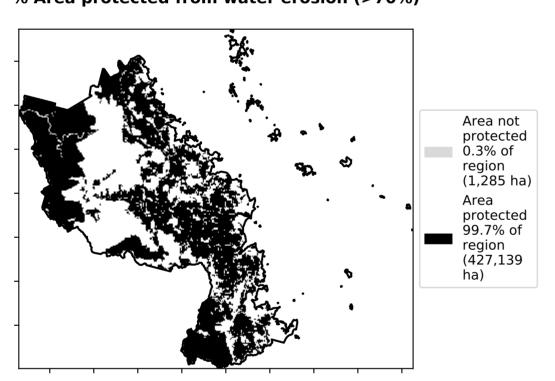
using baseline from 2001 to 2019.



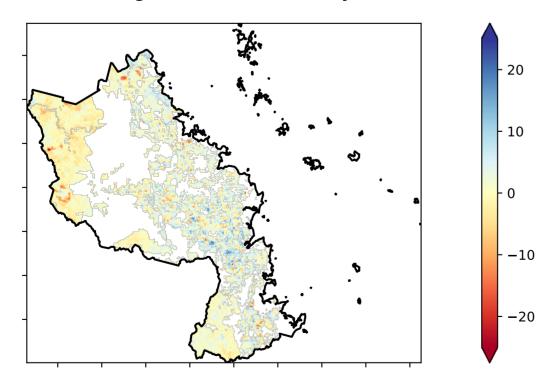
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

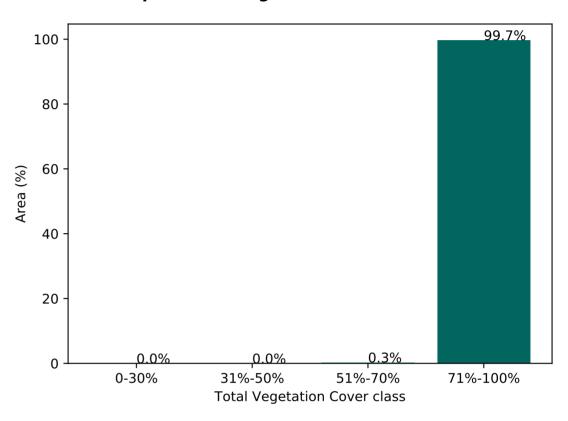


Total Vegetation Cover Anomaly [%]

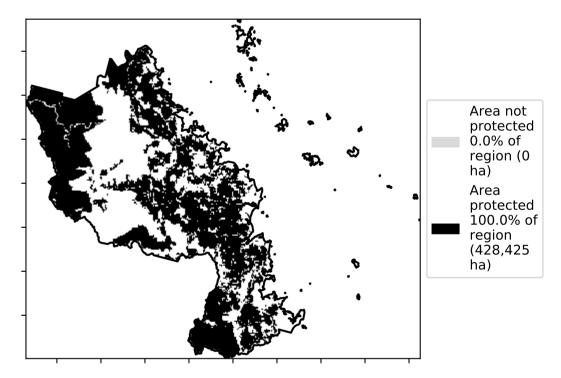


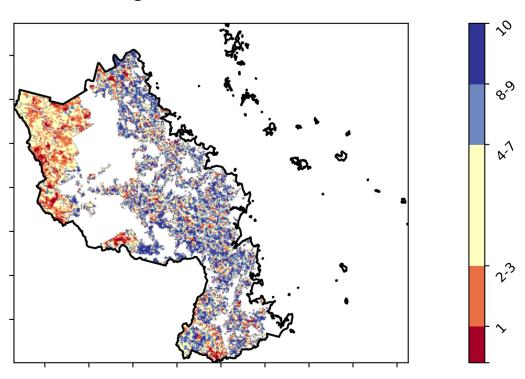
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









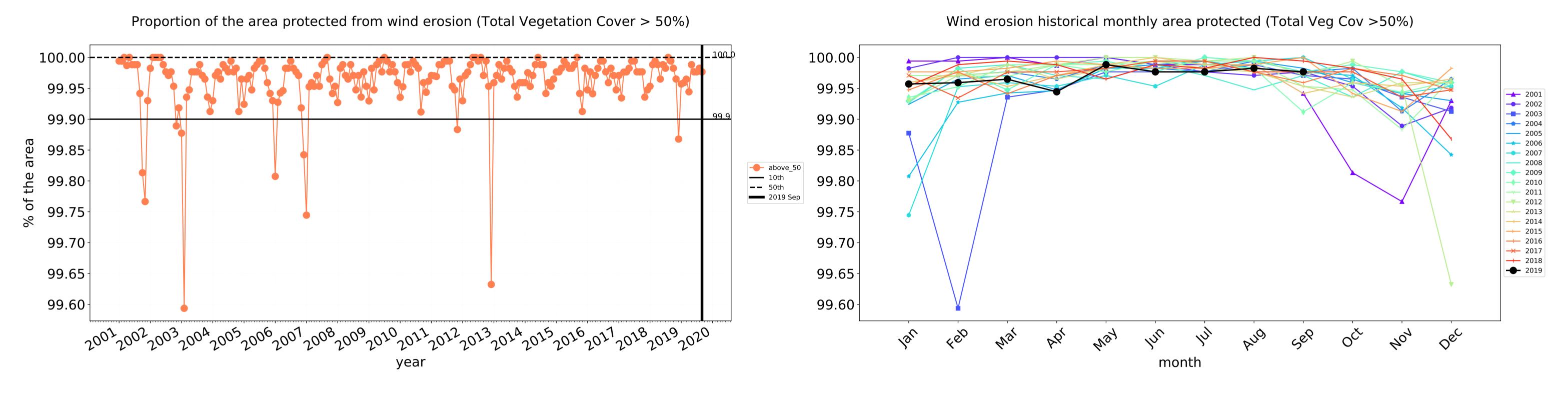


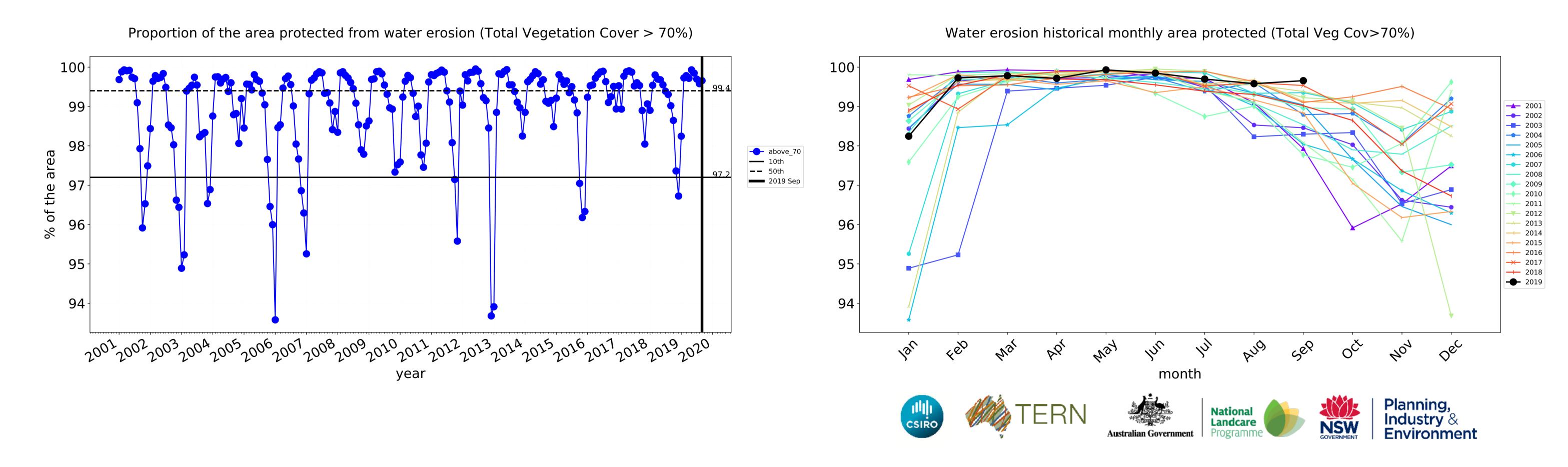


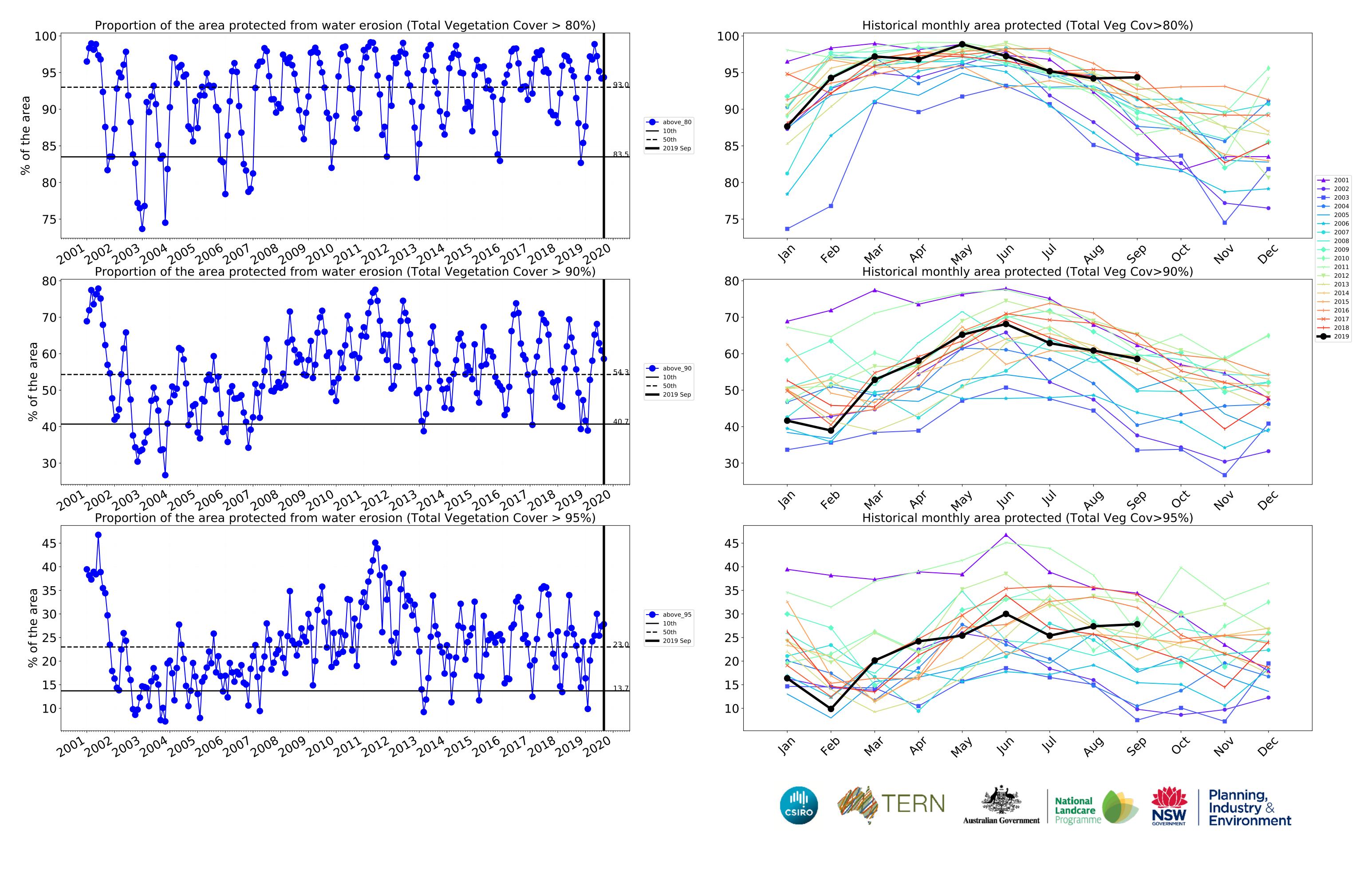




Agriculture timeseries







Grazing

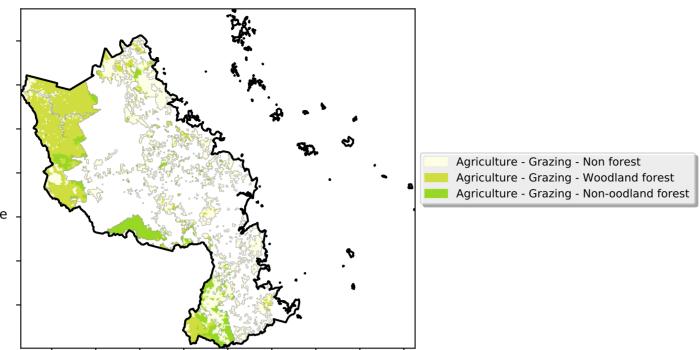
Land use and forest cover

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.

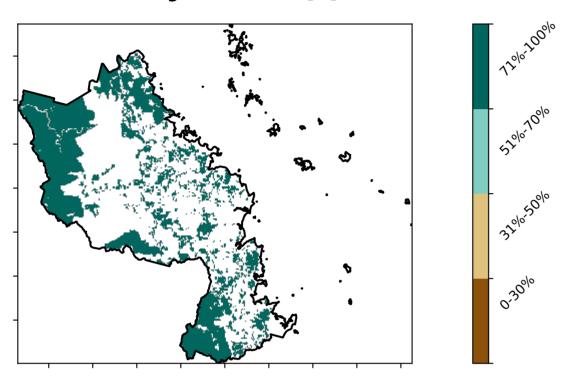
lower than the

using baseline from 2001 to 2019.

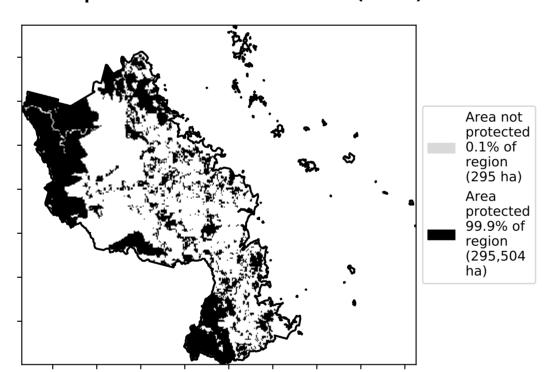
mean of that pixel. The mean is only for the month of the map



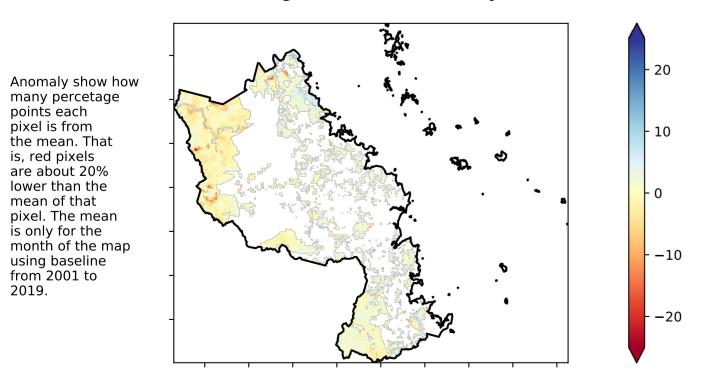
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

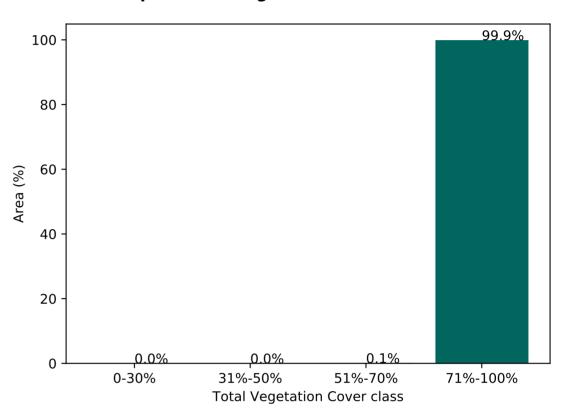


Total Vegetation Cover Anomaly [%]

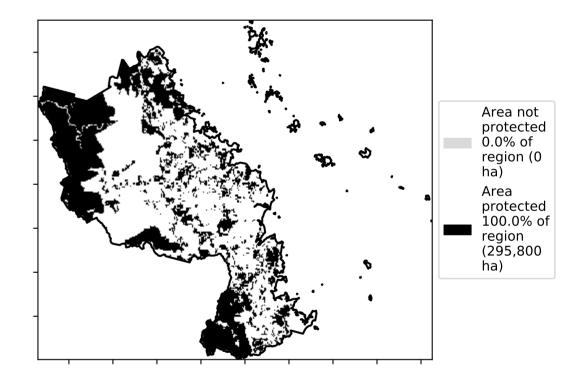


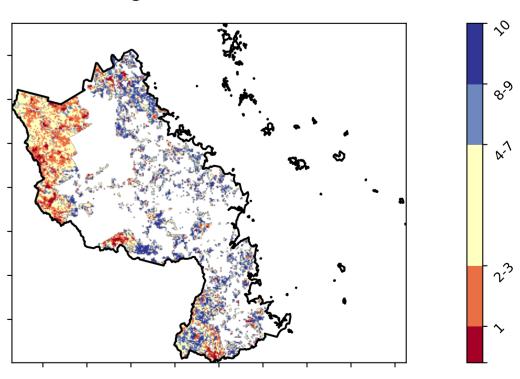
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









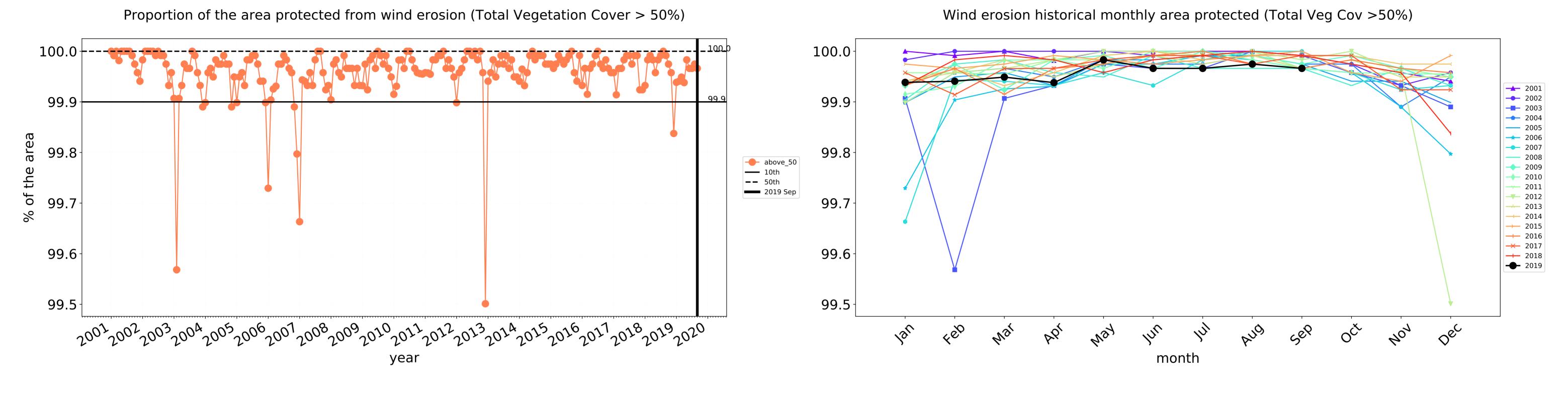


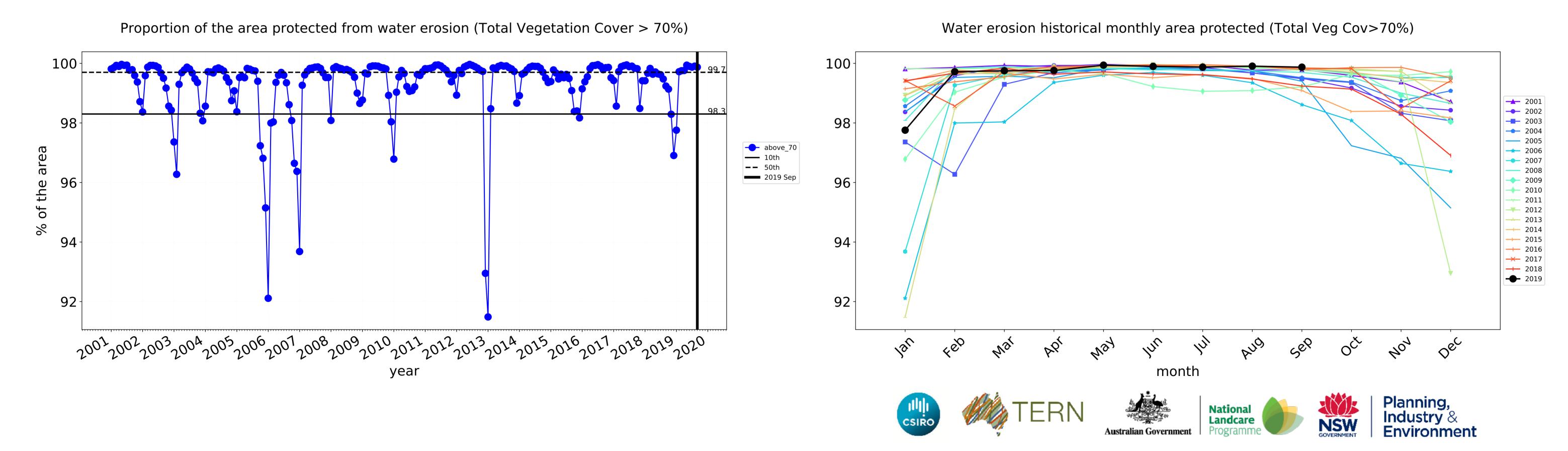


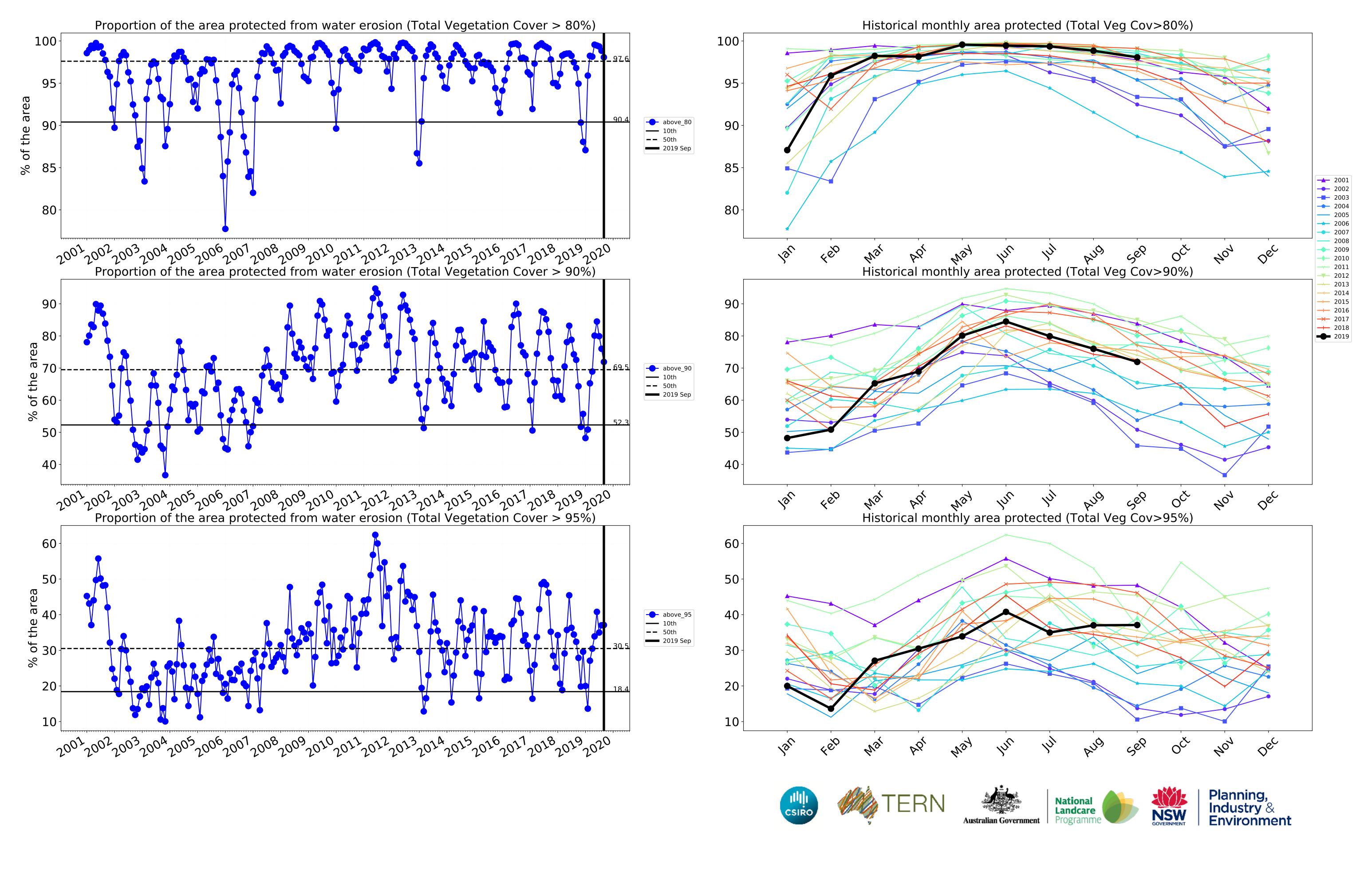




Grazing timeseries







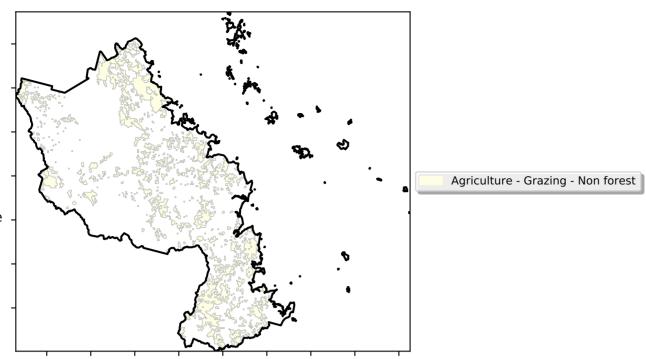
Grazing non forest

Land use and forest cover

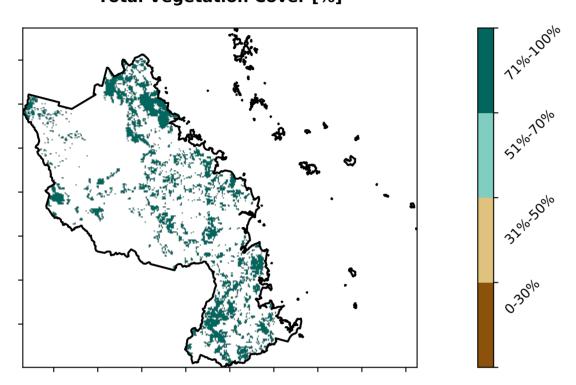
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.

lower than the mean of that pixel. The mean is only for the month of the map

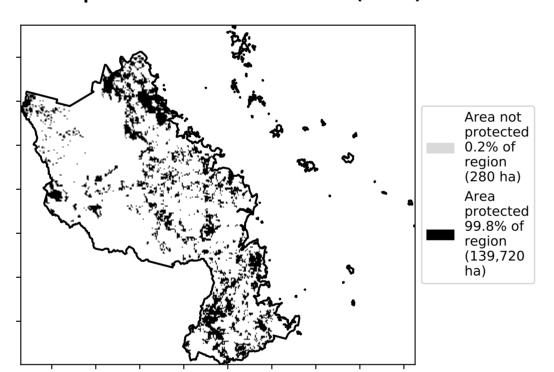
using baseline from 2001 to 2019.



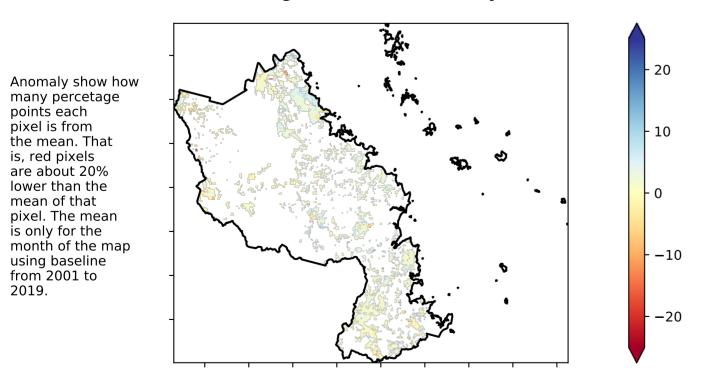
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

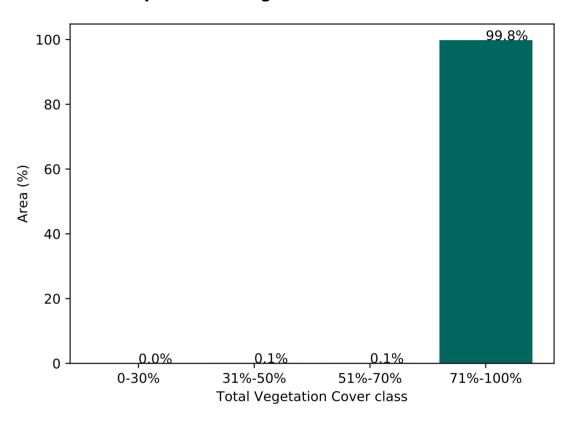


Total Vegetation Cover Anomaly [%]

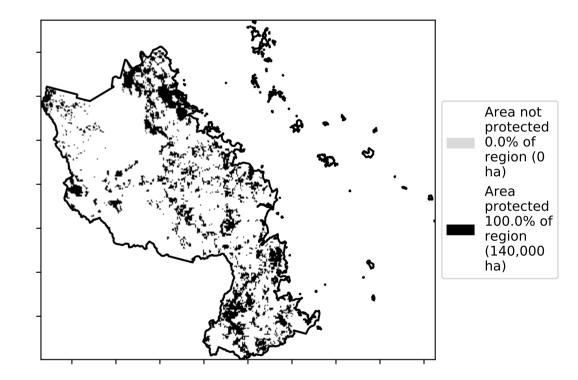


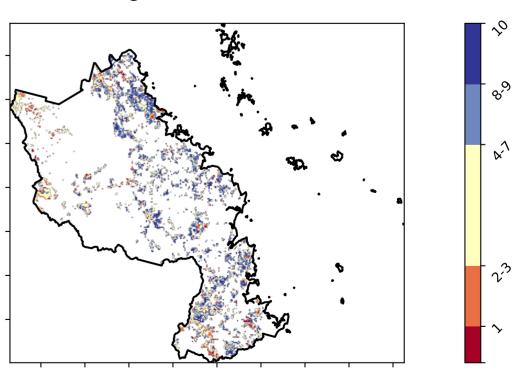
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









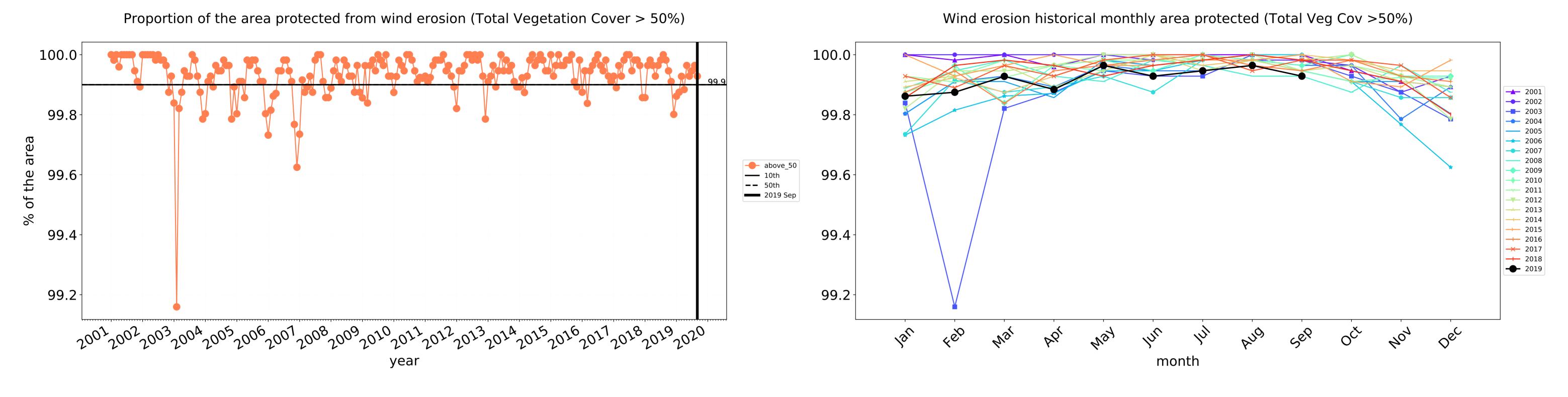


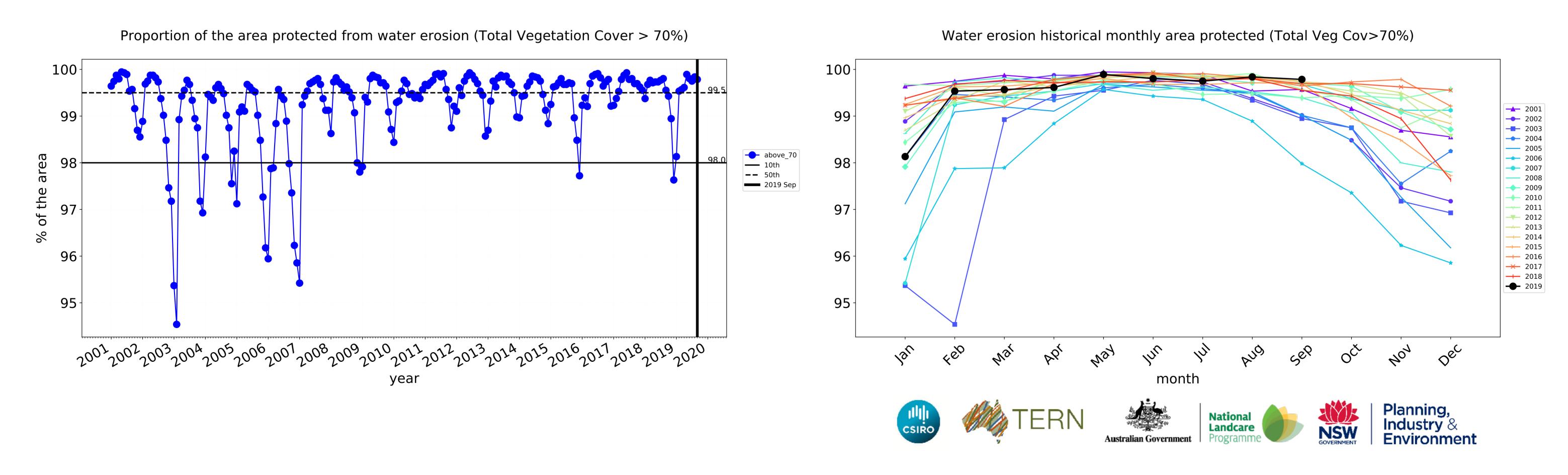


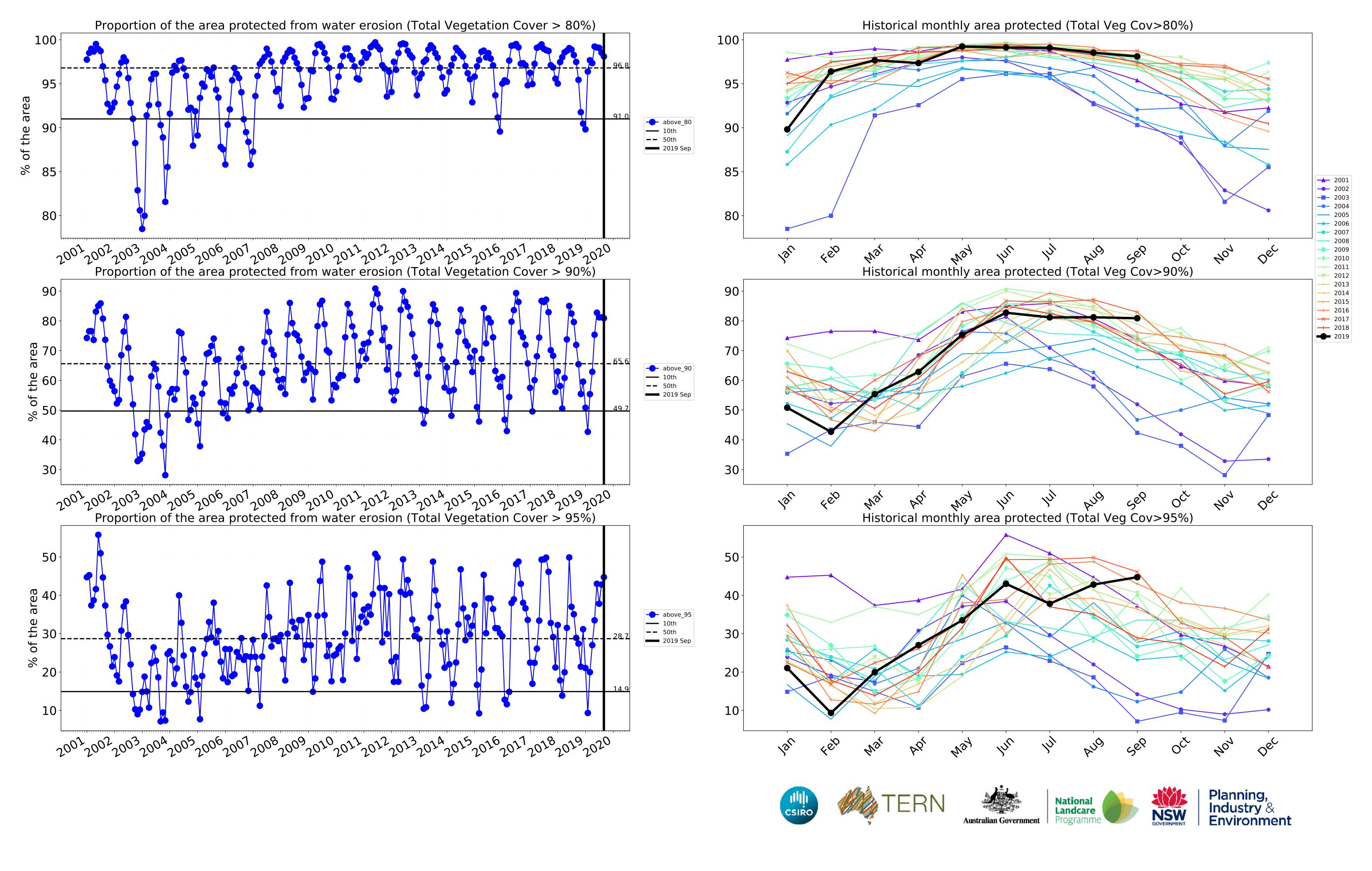




Grazing non forest timeseries







Grazing Woodland forest

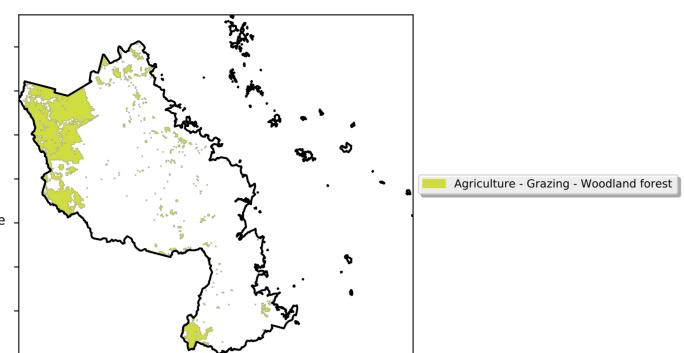
Land use and forest cover

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.

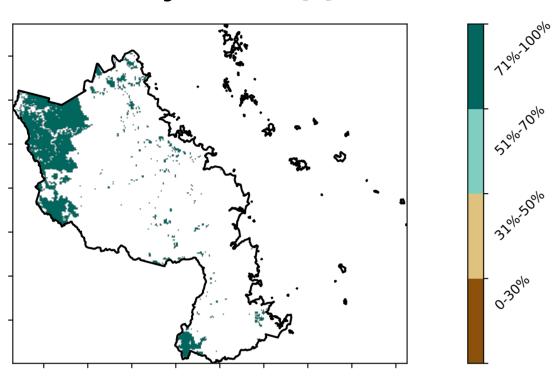
Anomaly show how many percetage points each pixel is from the mean. That

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

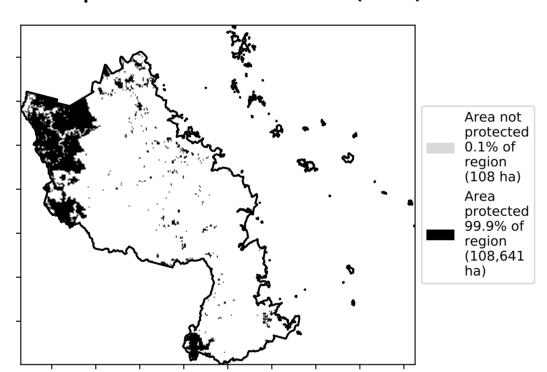
using baseline from 2001 to 2019.



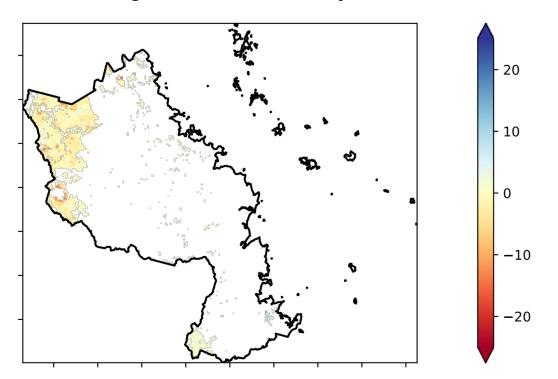
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

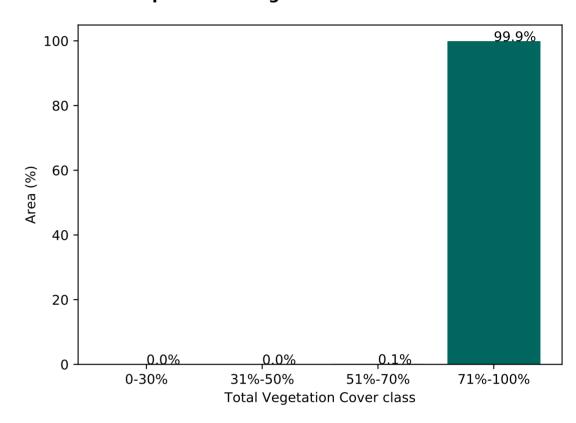


Total Vegetation Cover Anomaly [%]

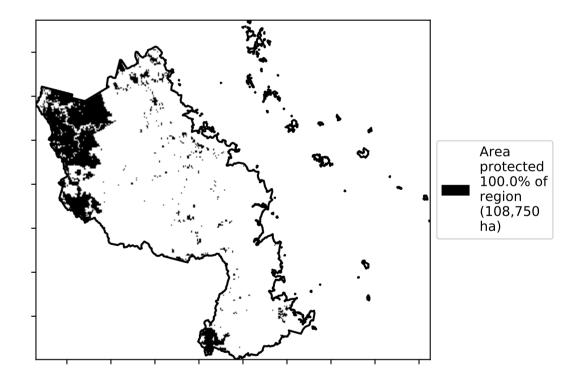


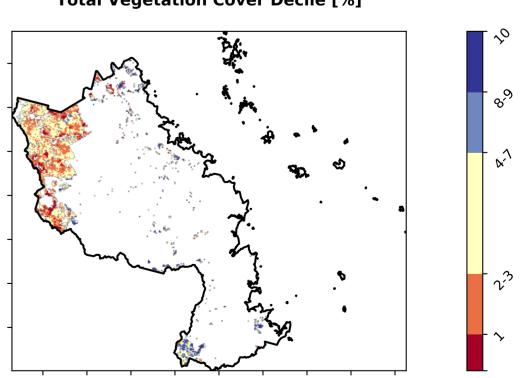
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









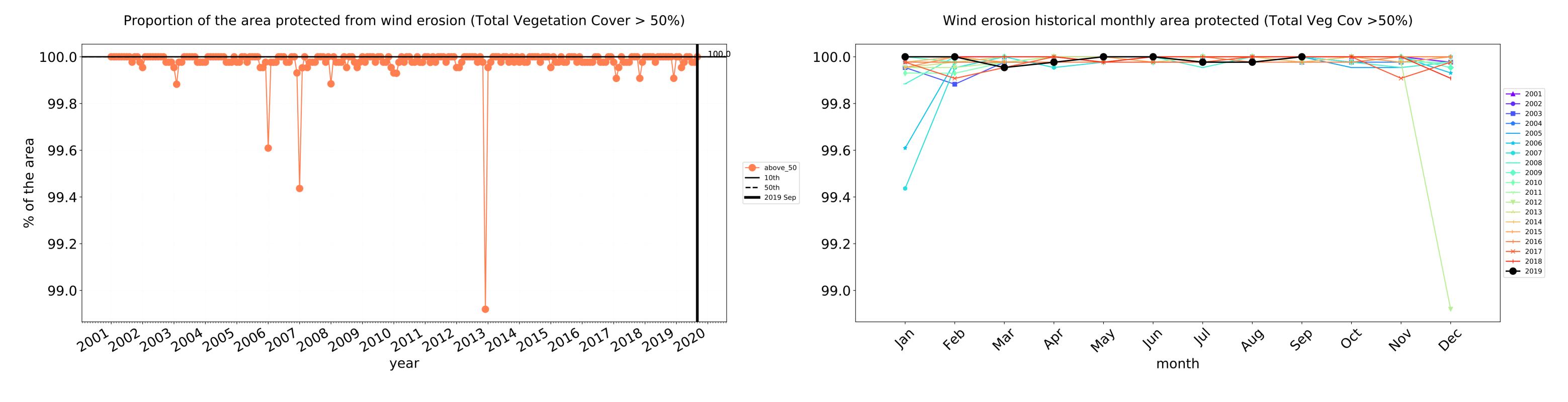


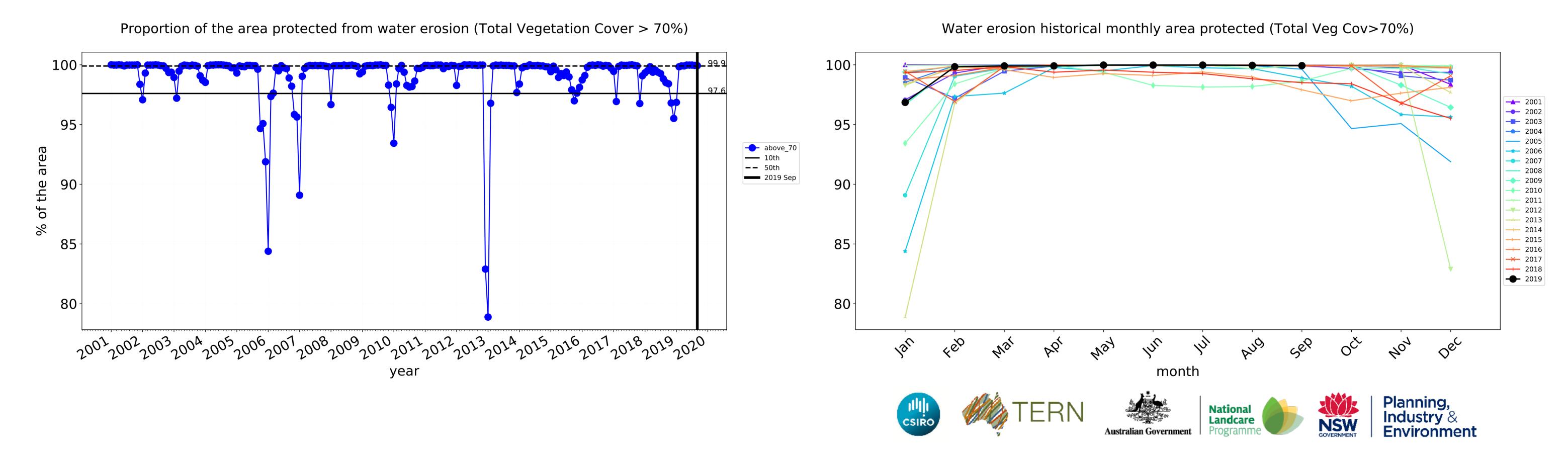


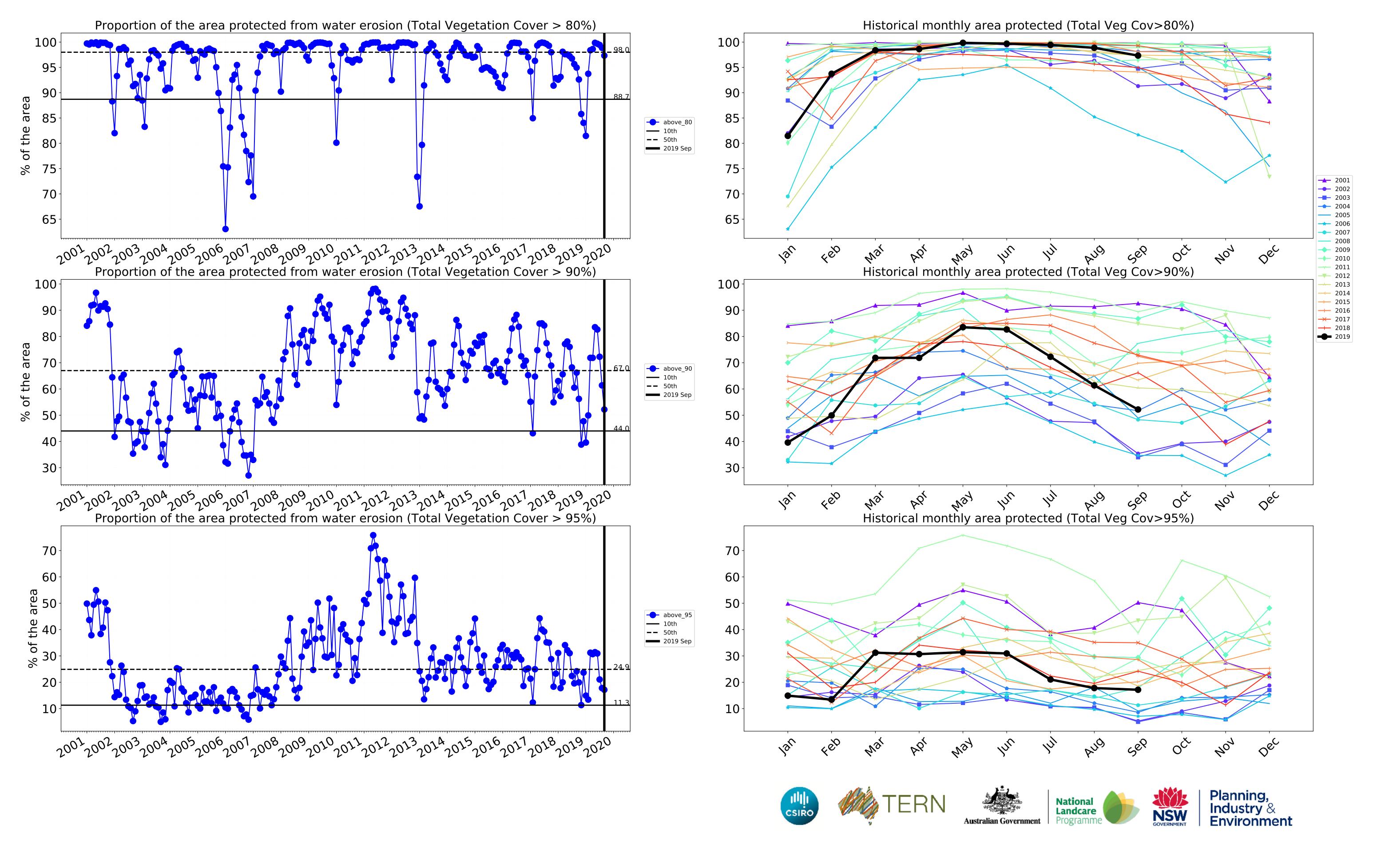




Grazing Woodland forest timeseries







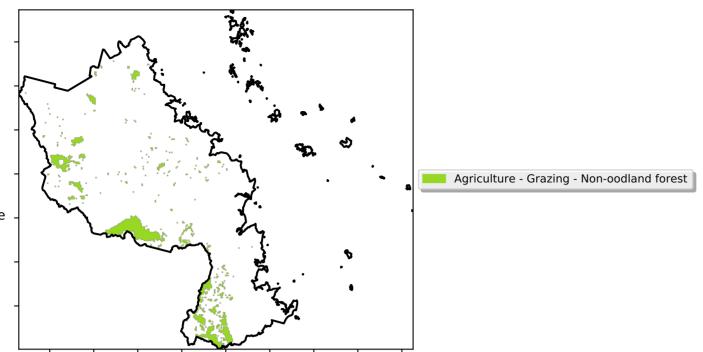
Grazing - Forest (non woodland)

Land use and forest cover

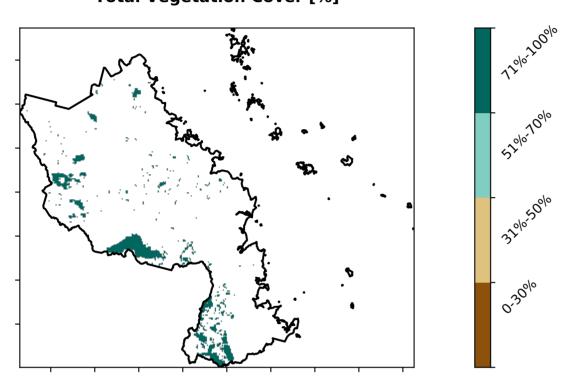
Landuse map of area based on 2015 catchment scale landuse and Australia's National Forest Inventory, where no forest is < 20% tree cover, sparse is 20 to 50% and dense > 50% tree cover.

are about 20% lower than the mean of that pixel. The mean is only for the month of the map

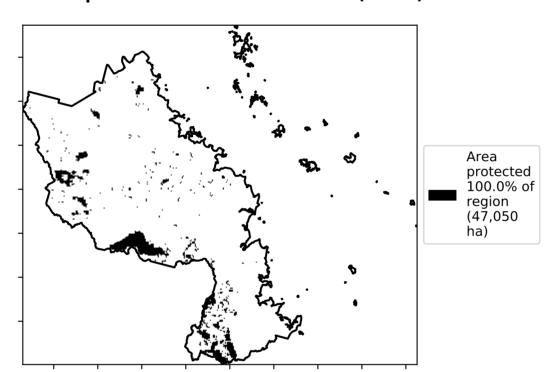
using baseline from 2001 to 2019.



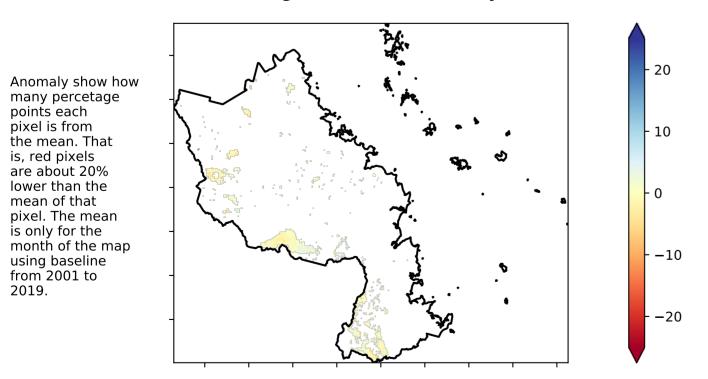
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

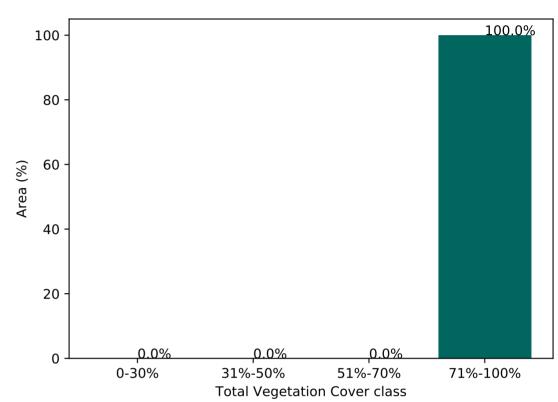


Total Vegetation Cover Anomaly [%]

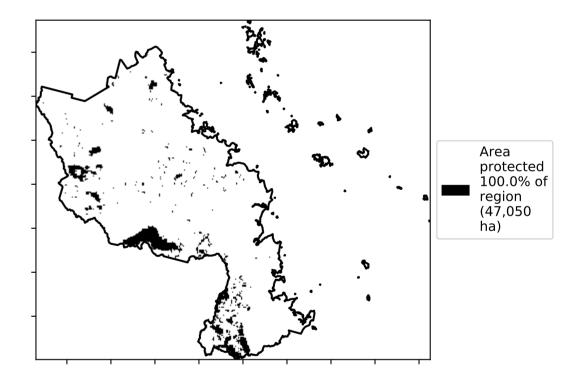


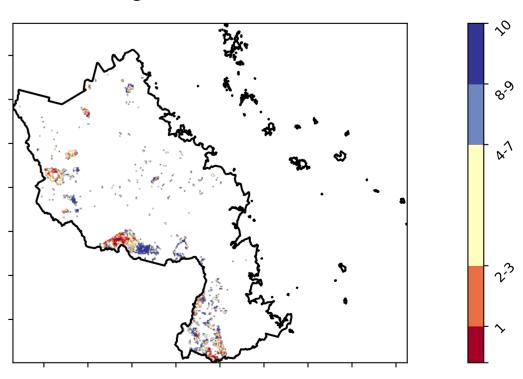
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)







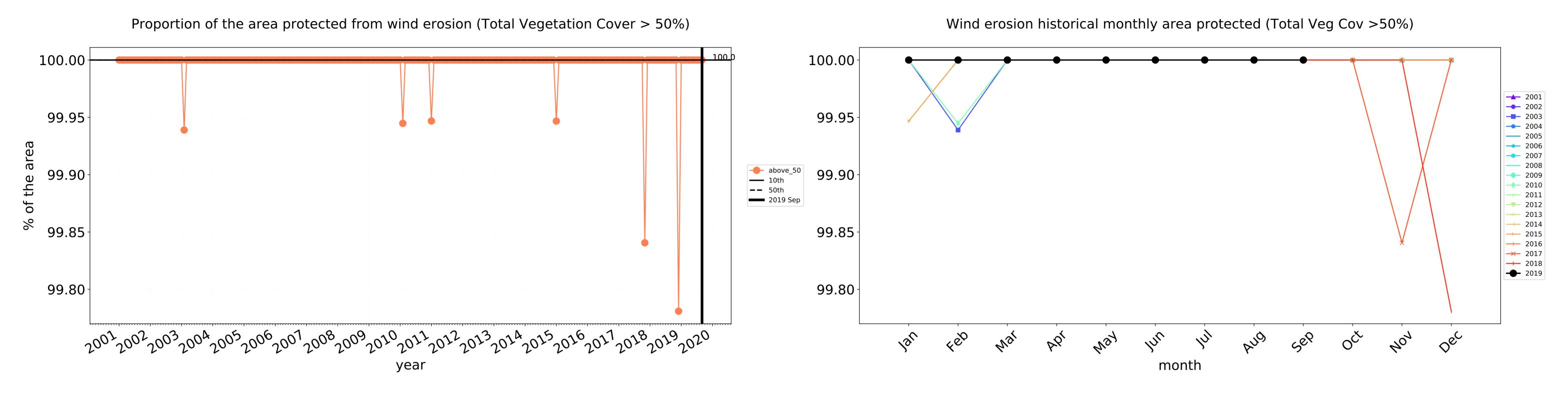


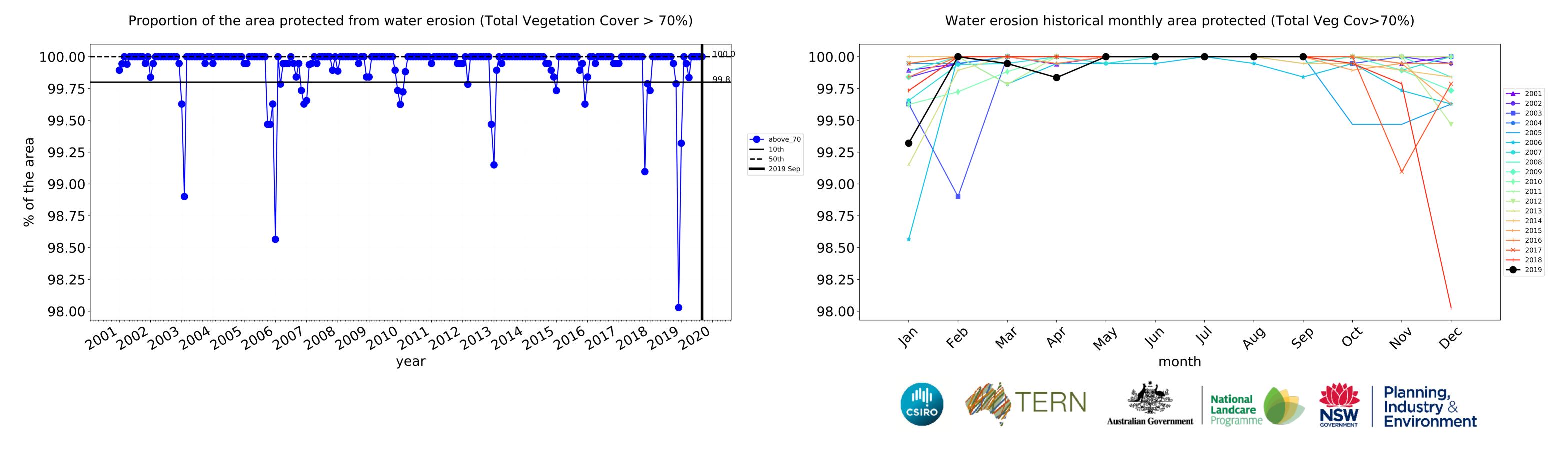


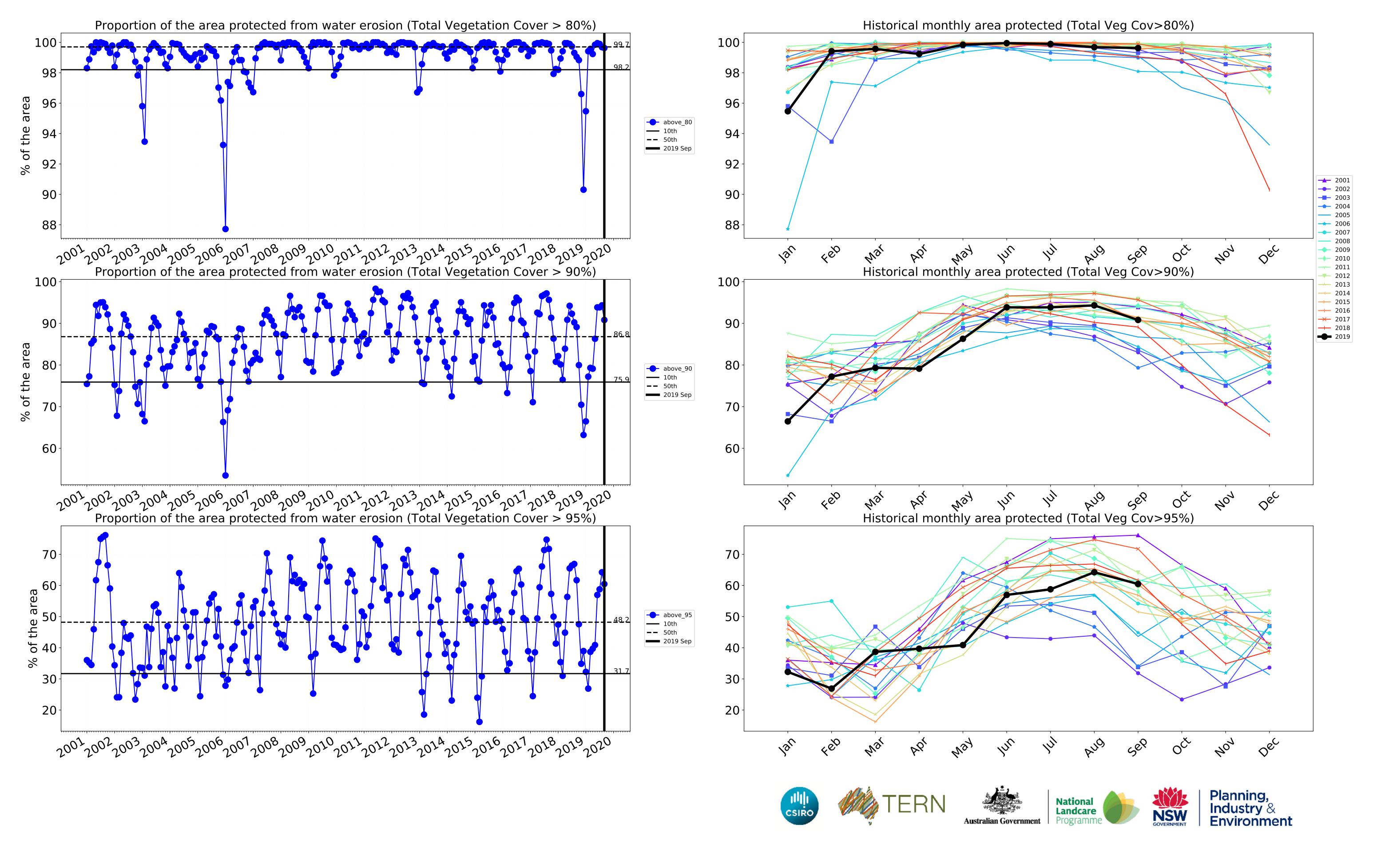












Irrigation

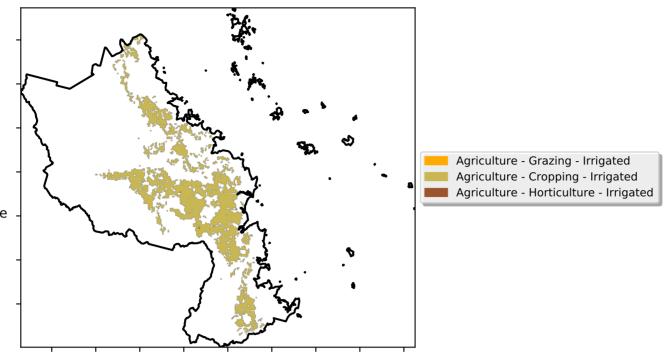
Land use and forest cover

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.

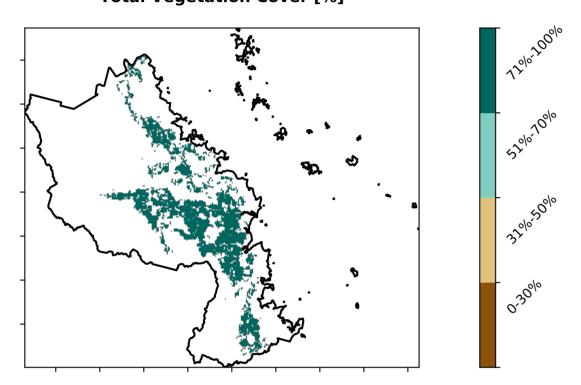
are about 20% lower than the

mean of that pixel. The mean is only for the month of the map

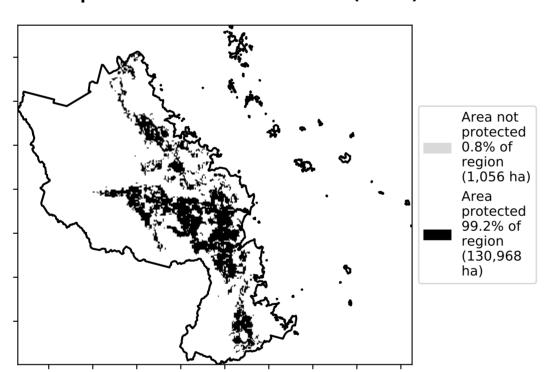
using baseline from 2001 to 2019.



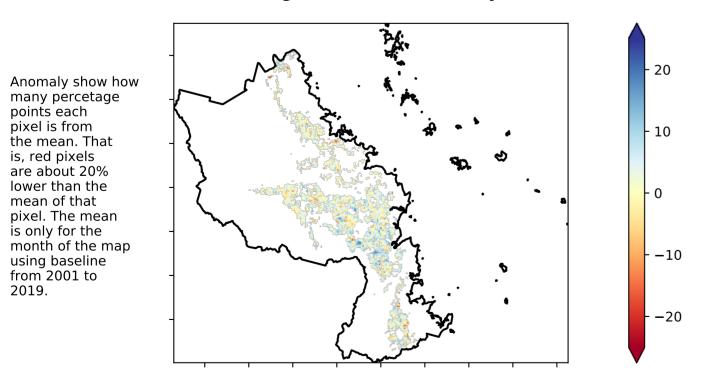
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

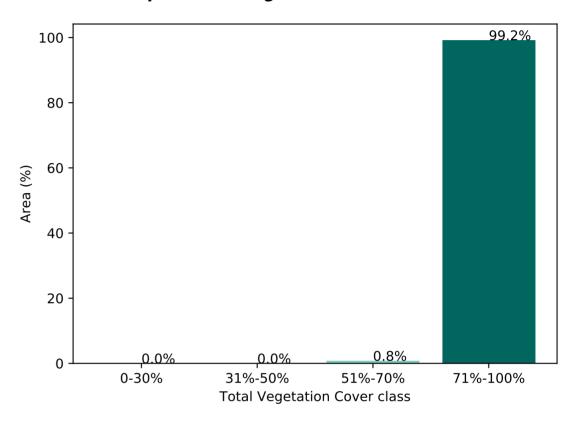


Total Vegetation Cover Anomaly [%]

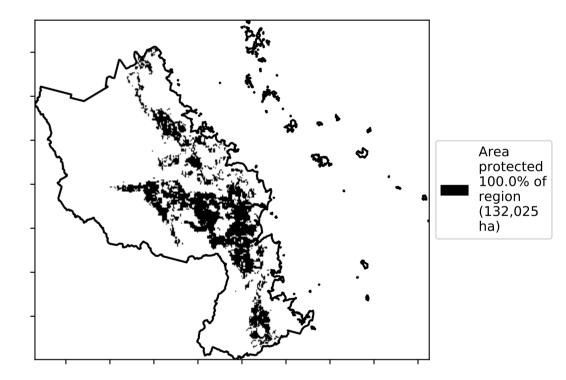


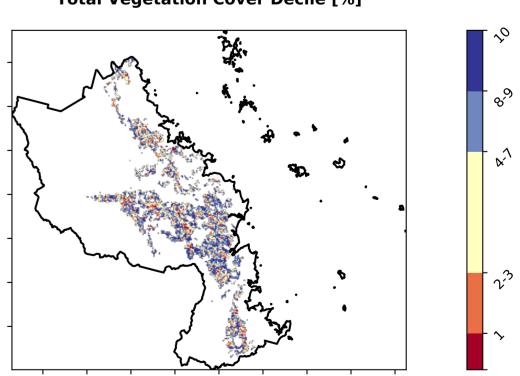
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









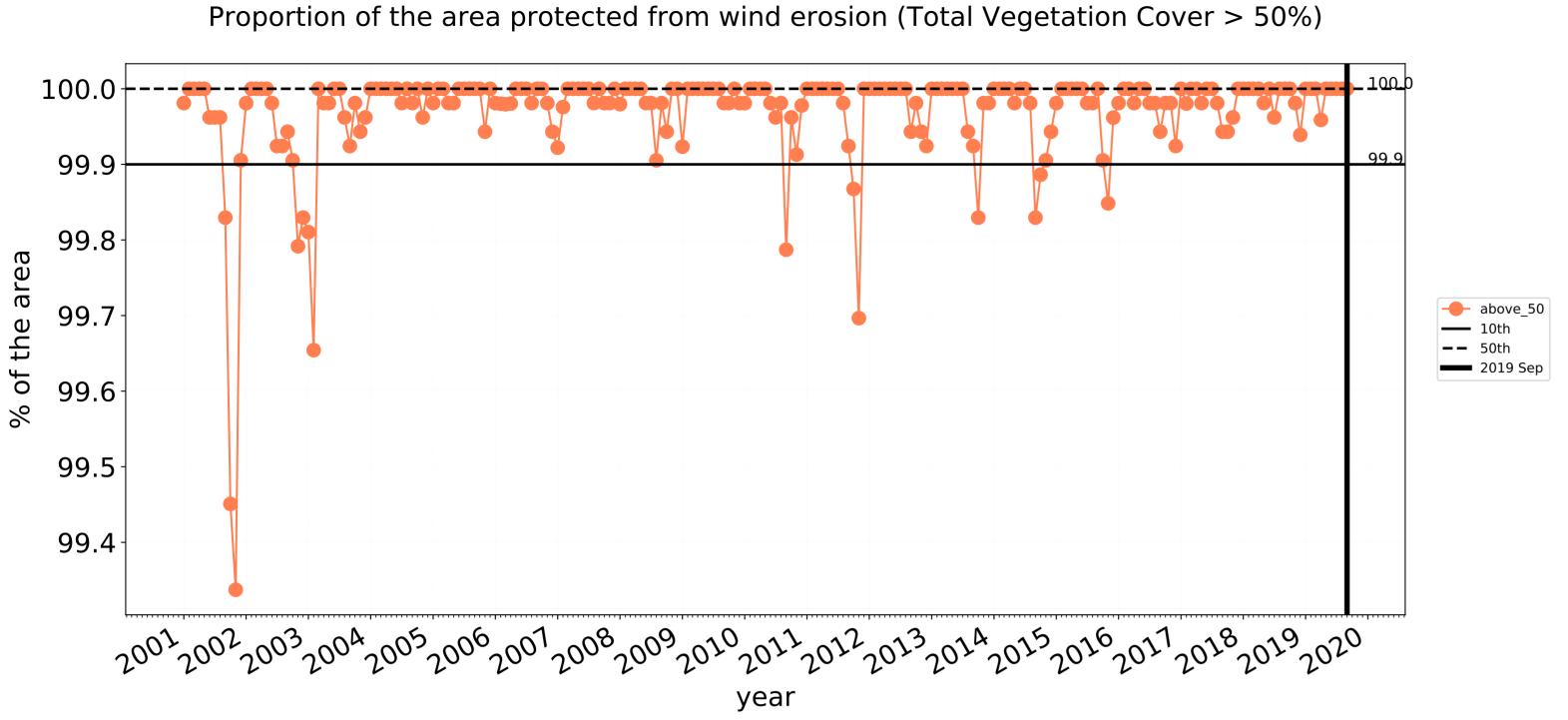


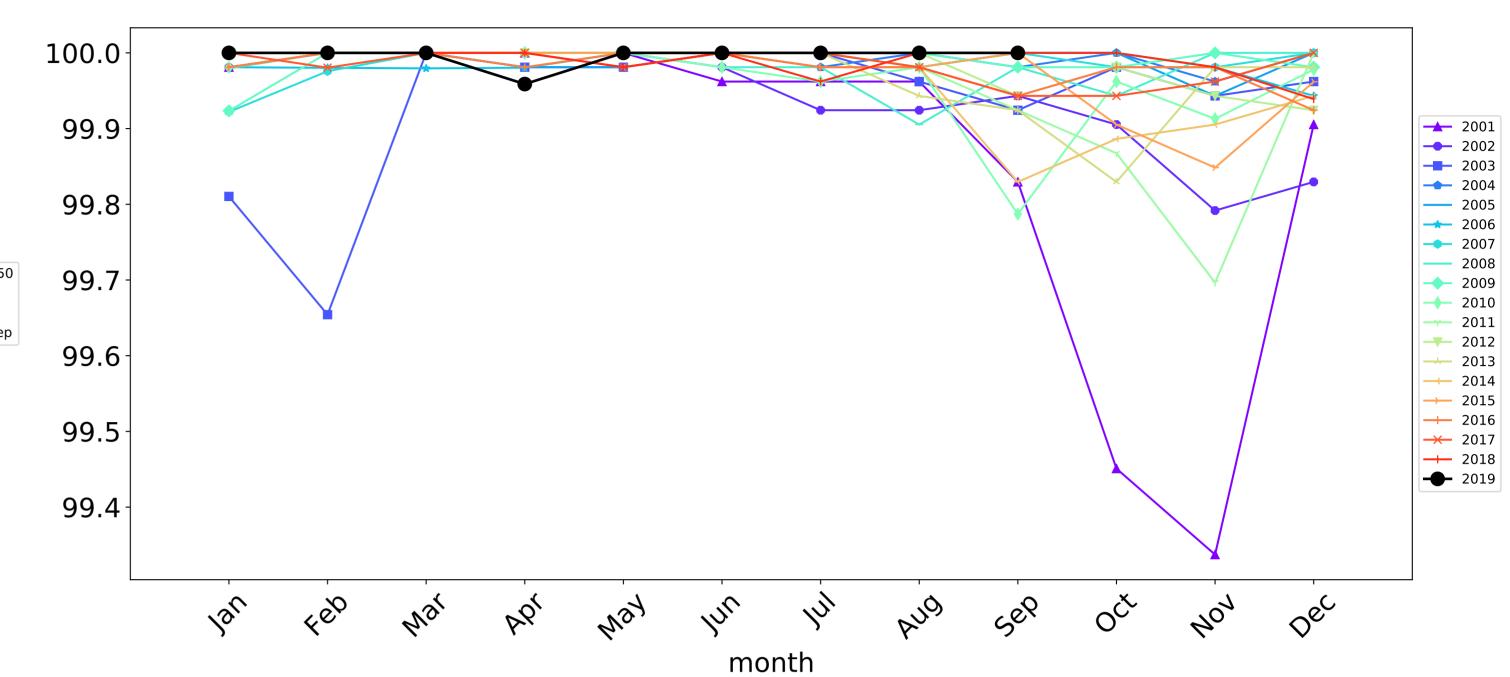




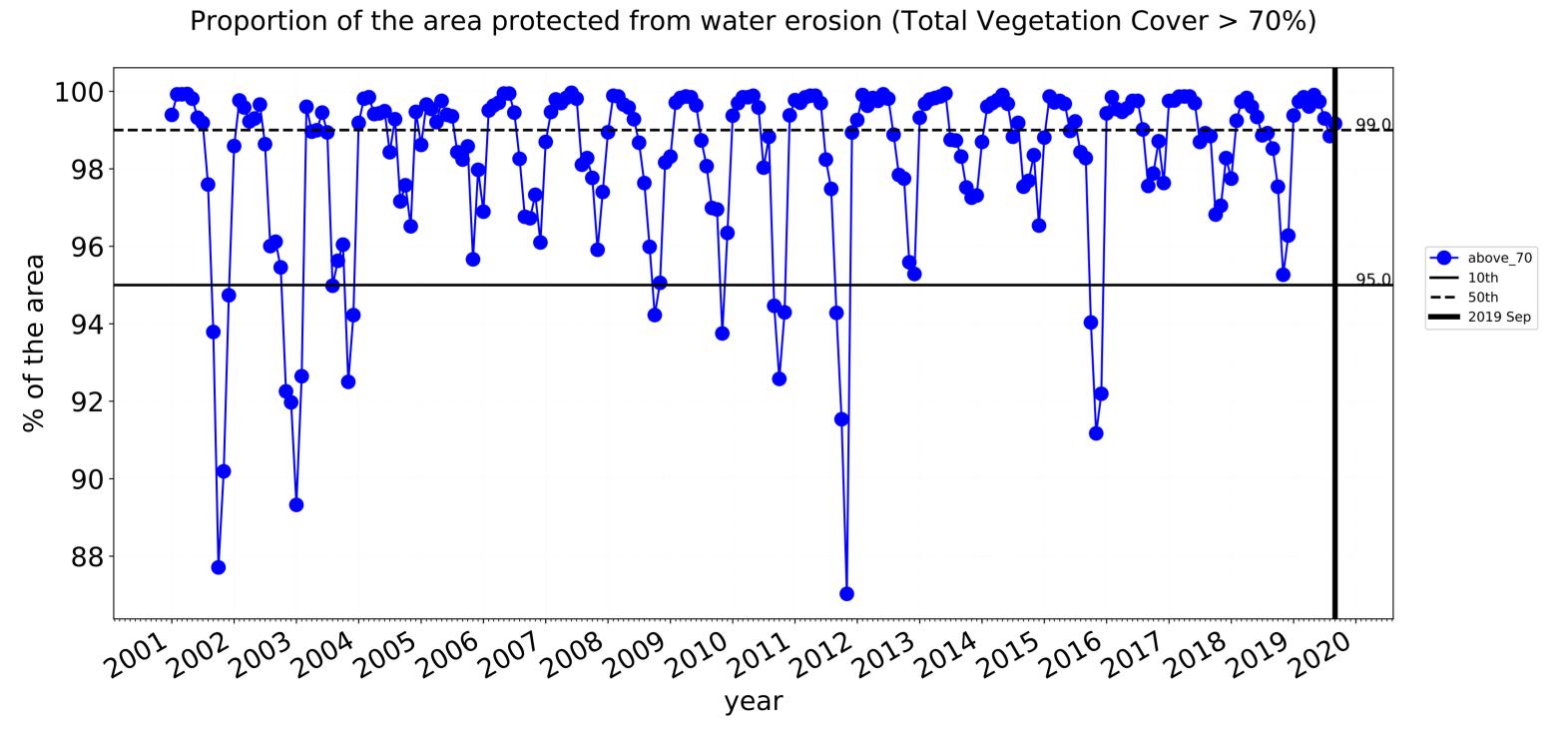


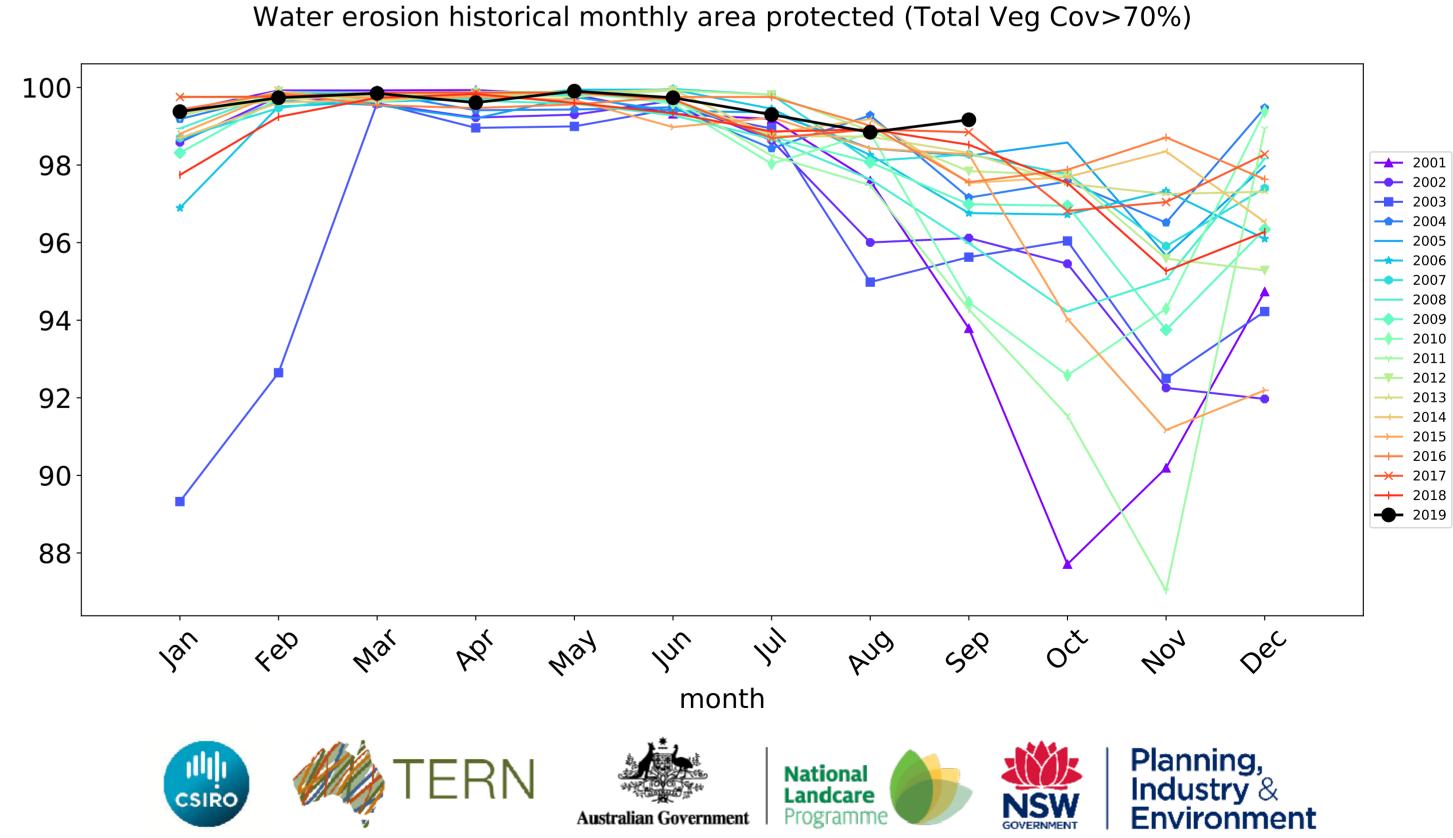
Irrigation timeseries

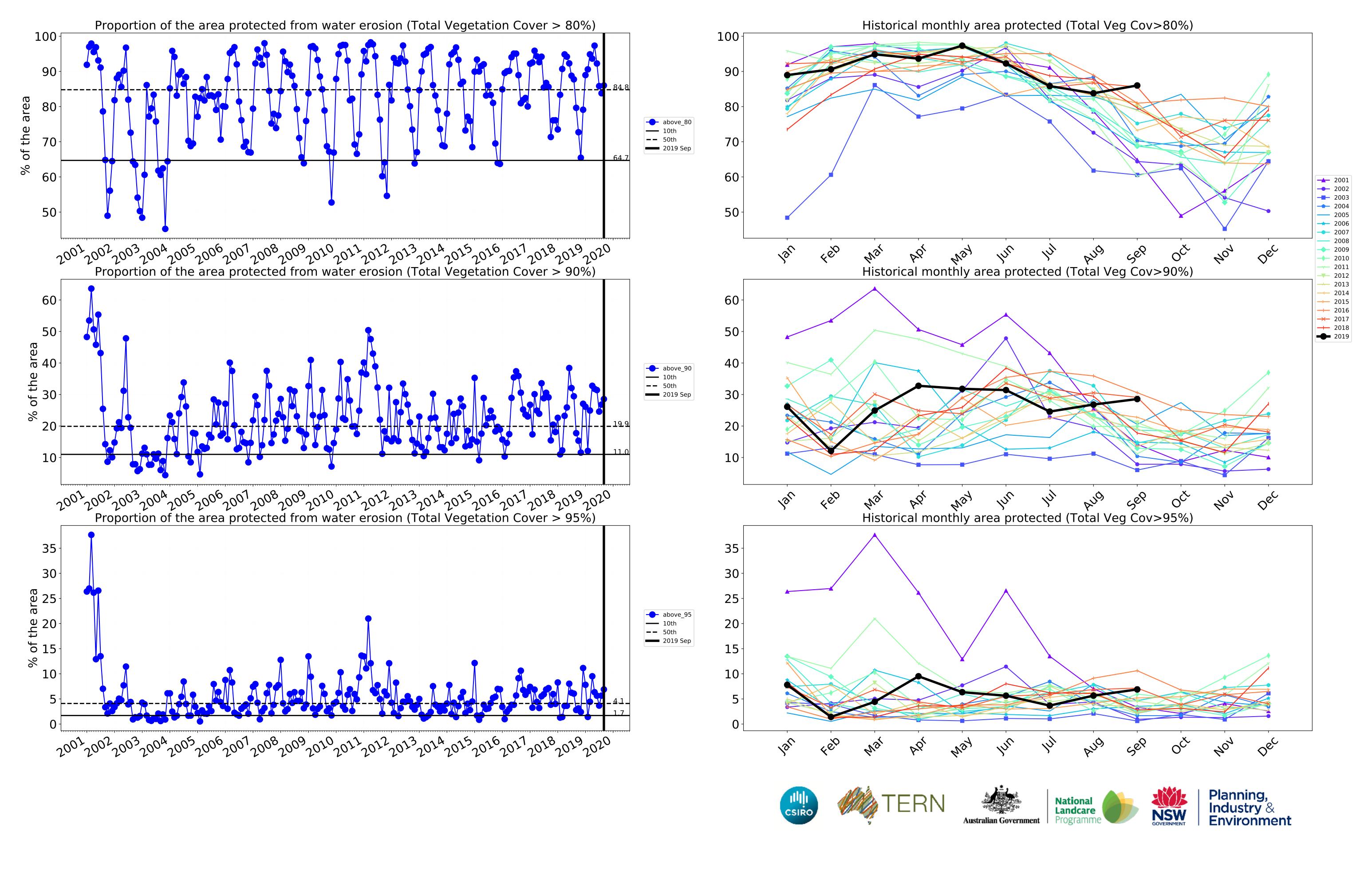




Wind erosion historical monthly area protected (Total Veg Cov >50%)







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.

Anomaly show how many percetage points each pixel is from

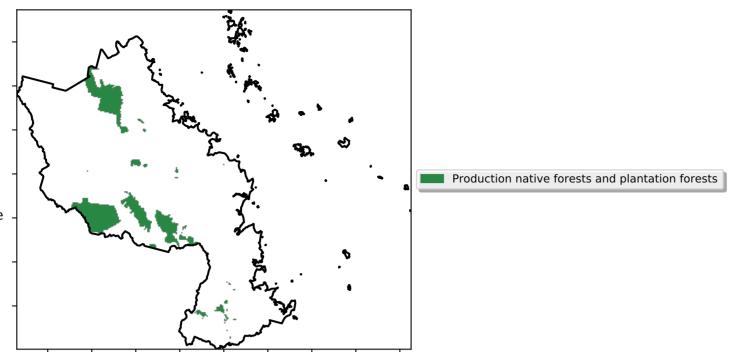
the mean. That

pixel. The mean

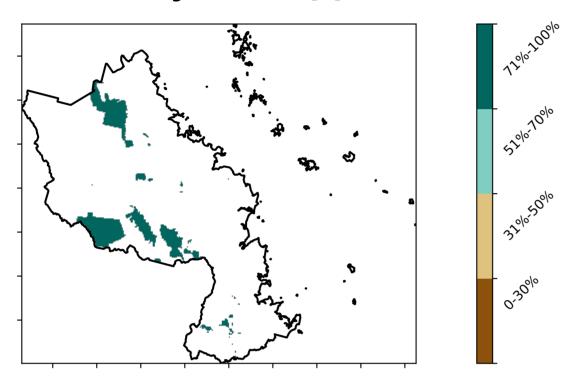
using baseline from 2001 to 2019.

is only for the month of the map

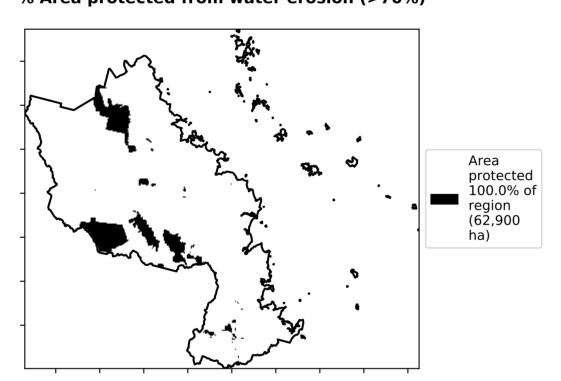
is, red pixels are about 20% lower than the mean of that



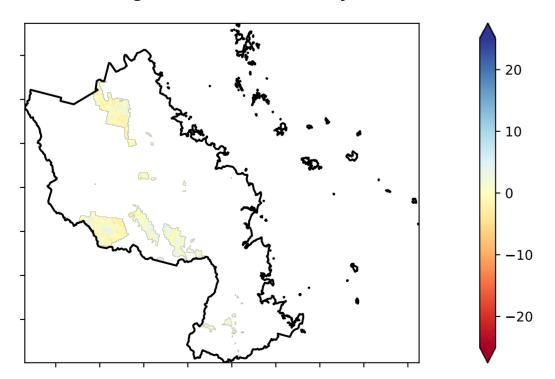
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

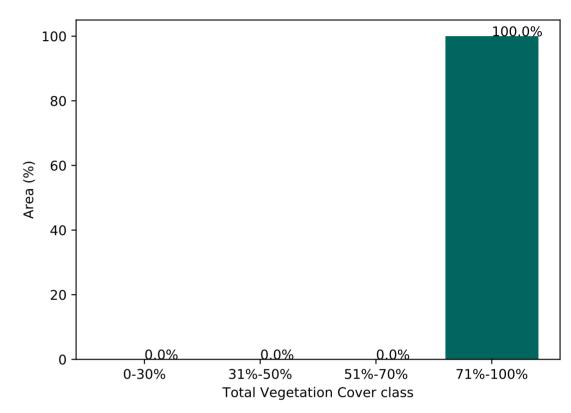


Total Vegetation Cover Anomaly [%]

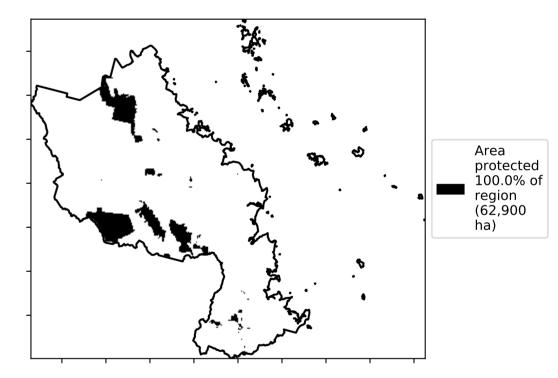


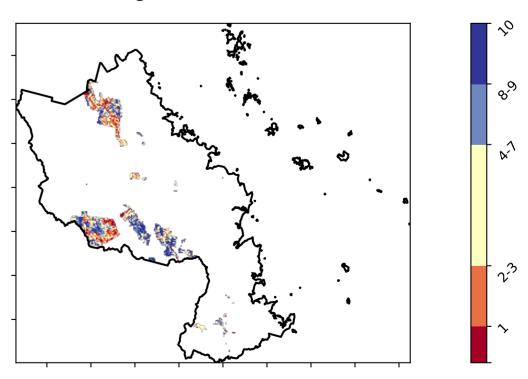
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Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)









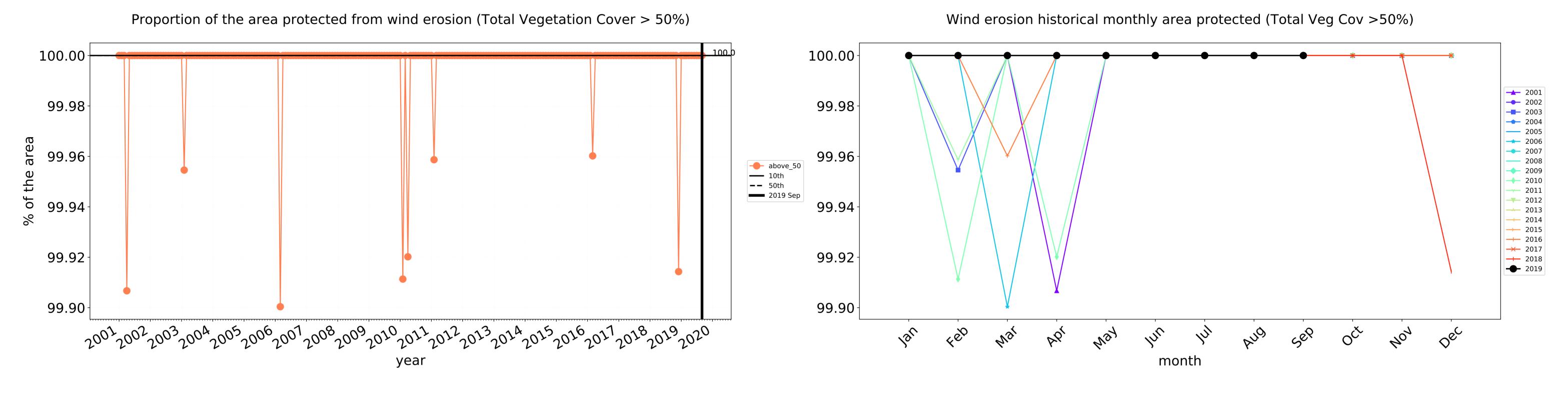


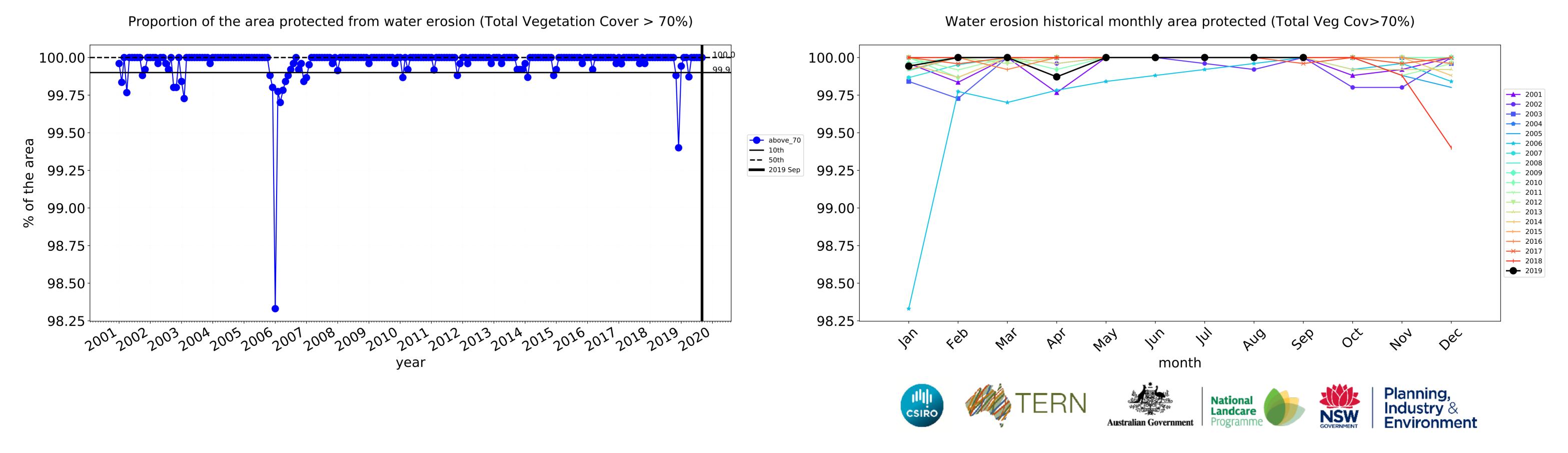


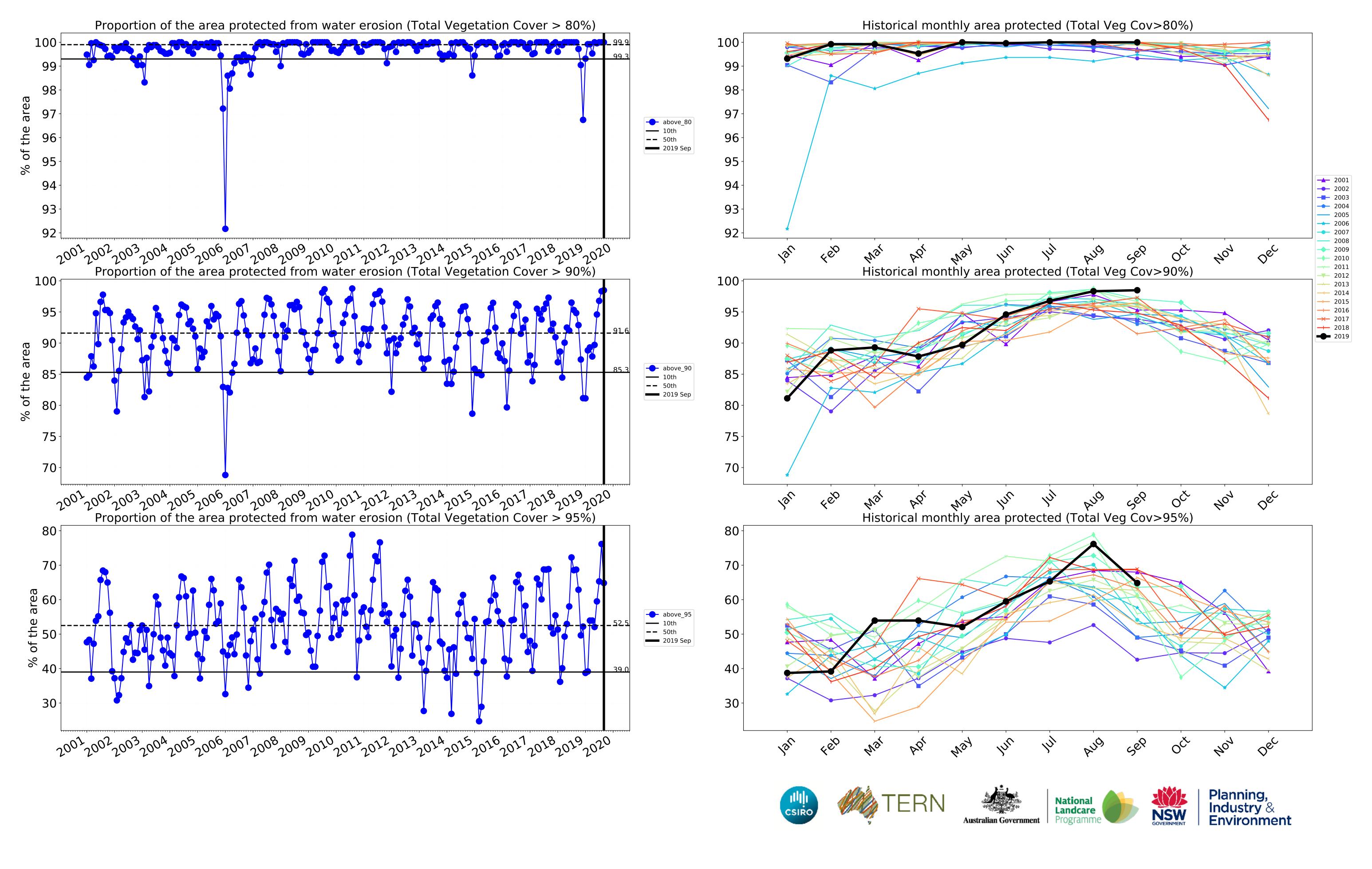




Production native forests and plantation forests timeseries







Mackay_(R) (749,875 ha and no data 11,436 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	749,875	100.0% 749,575	99.9% 748,900	99.0% 742,525	94.0% 704,525	67.2% 503,975	33.7% 252,750
Conservation and natural environments	197,217	99.9% 197,089	99.9% 196,961	99.3% 195,812	98.1% 193,540	87.7% 172,960	44.2% 87,246
Conservation and natural environments non forest	7,498	99.5% 7,462	99.0% 7,426	95.2% 7,136	82.6% 6,194	50.2% 3,767	30.0% 2,246
Conservation and natural environments Woodland forest	38,993	99.9% 38,967	99.8% 38,915	99.2% 38,681	97.7% 38,083	75.1% 29,290	44.7% 17,428
Conservation and natural environments Forest (non woodland)	150,724	100.0% 150,649	99.9% 150,599	99.5% 149,898	98.8% 148,896	92.1% 138,853	44.6% 67,247
Agriculture	422,179	100.0% 422,179	100.0% 422,081	99.7% 420,726	94.4% 398,332	58.6% 247,365	27.8% 117,486
Grazing	291,701	100.0% 291,701	100.0% 291,602	99.9% 291,331	98.1% 286,055	71.9% 209,777	37.1% 108,204
Grazing non forest	137,977	100.0% 137,977	99.9% 137,878	99.8% 137,681	98.1% 135,365	80.9% 111,613	44.7% 61,720
Grazing Woodland forest	107,232	100.0% 107,232	100.0% 107,232	99.9% 107,158	97.3% 104,372	52.2% 55,957	17.1% 18,389
Grazing - Forest (non woodland)	46,492	100.0% 46,492	100.0% 46,492	100.0% 46,492	99.6% 46,319	90.8% 42,218	60.5% 28,112
Irrigation	129,728	100.0% 129,728	100.0% 129,728	99.2% 128,647	86.0% 111,574	28.6% 37,044	6.9% 8,941
Production native forests and plantation forests	62,239	100.0% 62,239	100.0% 62,239	100.0% 62,239	100.0% 62,239	98.5% 61,299	64.8% 40,346











