Total vegetation cover soil protection Region:LGA Yankalilla_(DC) SA

Date: November 2022

This report describes vegetation protecting the soil surface from erosion during a chosen month compared to previous years. This report has been generated using MODIS fractional vegetation cover information available in Rangelands and Pasture Productivity (RAPP) map tool https://map.geo-rapp.org/#australia. The report is based on 500 metre pixel data on monthly time steps. Land use forest cover:

Results can be shown for the whole region (polygon), and separated by land use and forest cover classes which are likely to show different cover patterns and targets. Land use is divided into four broad classes: Conservation and natural environments, Agriculture, production native forests and plantation forests (no report), and other (no report). Agriculture is divided into grazing, crops and horticulture which are sub-divided into non-irrigated and irrigated. If forest is present land use is further divided into: non-forest, woodland forest and non-woodland forest. The area of each land use and forest class are shown as a map and chart. The report content is repeated for each land use and forest covers at least 1% of the area of the chosen region. Total vegetation Cover:

The total vegetation cover indicates where soil is likely to be protected from wind and or water hillslope erosion. Total vegetation cover for this month is shown on a map and chart classified into 4 classes.

• 71-100% High cover - protected from wind and usually water erosion (high rainfall, steep slopes, and erodible soils may need greater than 80, 90, 95 and up to 100% cover)

- 51-70% Moderate cover protected from wind erosion
- 31-50% Low cover not protected
- 0-30% Very Low cover not protected

Erosion protection: Wind erosion 50% total vegetation cover

The vegetation cover threshold required to prevent soil erosion is usually 50% to reduce wind erosion, 70% or 80% to reduce water (hillslope) erosion depending on the steepness and rainfall. Areas protected from erosion for the month:

- Map: water erosion protection (>70% cover) percentage area and hectares.
- Map: wind erosion protection (>50% cover) percentage area and hectares. Comparison with previous years:
 - Map: anomaly comparing this month to the average cover from the same month in previous years.
 - Map: deciles rank of month against the same month in previous years.

Anomalies and deciles until September 2019 are calculated comparing to the same months 2001 to 2019. Extra monthly data will be used to calculate anomalies and deciles post September 2019 as they become available. Time series monthly from January 2001 to current:

Erosion protection

- Wind erosion protection time series: percentage of the area of the region with greater than 50% cover for each month (orange lines). Horizontal lines are 10th (cover target) and 50th percentiles.
- Water erosion protection time series: percentage of the area of the region with greater than 70% cover for each month (blue line). Horizontal lines are 10th (cover target) and 50th percentiles.

Rainfall

• Millimetres rainfall each month (black line).

Each time series is also stacked by year. The black line shows the current year of data. Water erosion protection for higher rainfall and steeper slopes:

Water erosion protection on higher slopes. As slope increases, more cover is required to control water erosion. The thresholds reported are:

- the percentage area with pixels greater than 80% total cover.
- the percentage area with pixels greater than 90% total cover.
- the percentage area with pixels greater than 95% total 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:

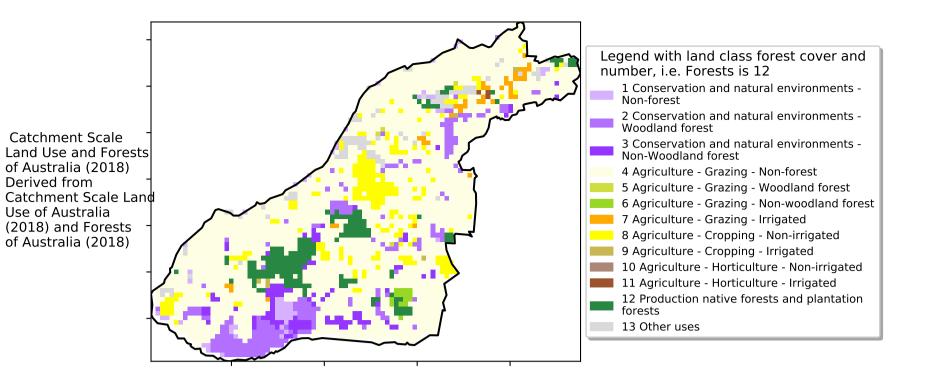
https://doi.org/10.4225/08/5848a3f19a7b3



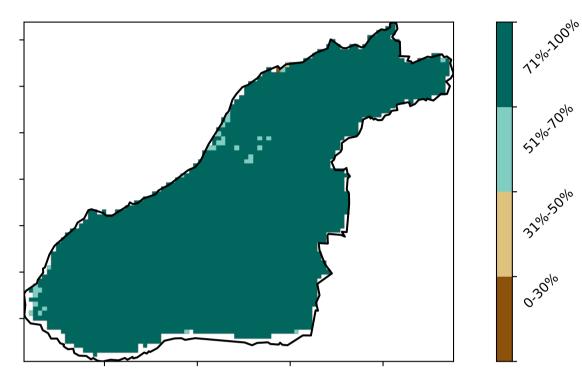
Vegetation Cover Nov 2022

Land use and forest cover



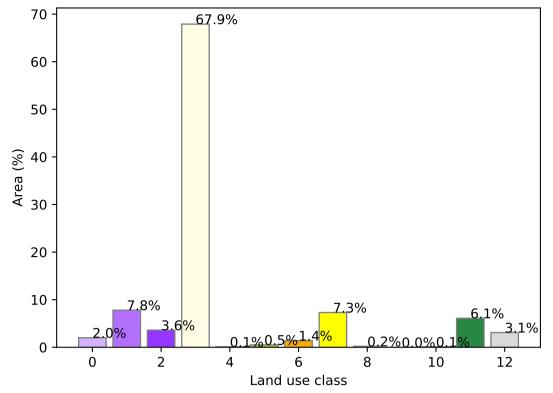


Total Vegetation Cover [%]

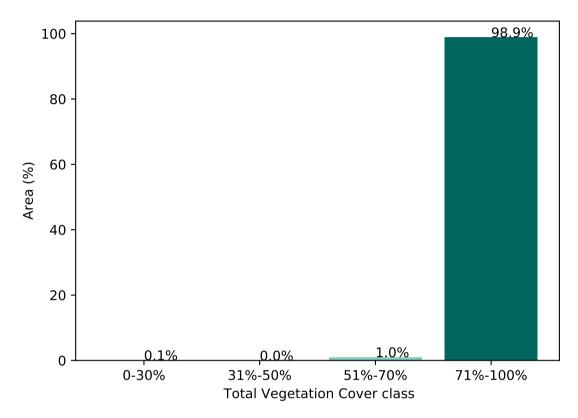


% Area protected from water erosion (>70%)





Proportion of vegetation cover class in area

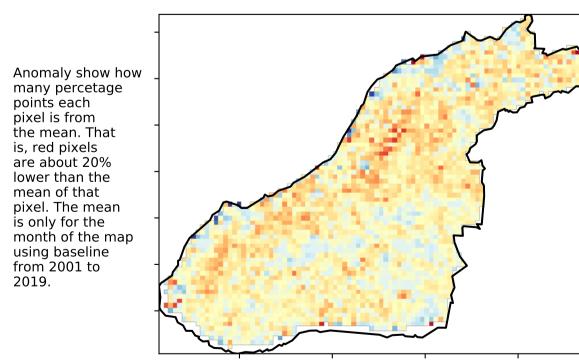


% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]

Total Vegetation Cover Anomaly [%]



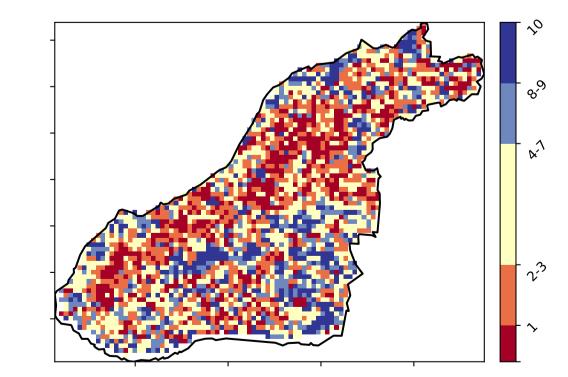
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019. -10

- 20

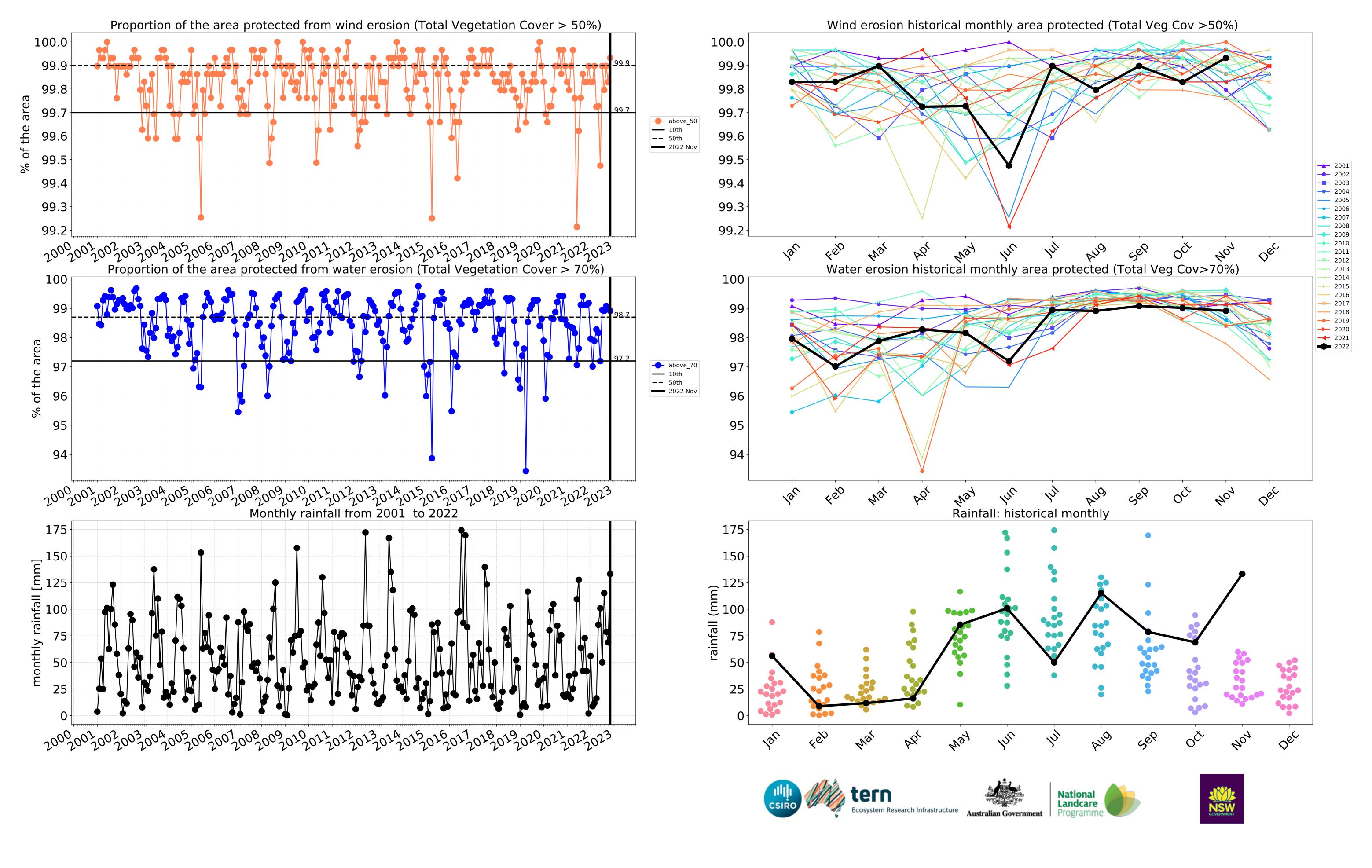
- 10

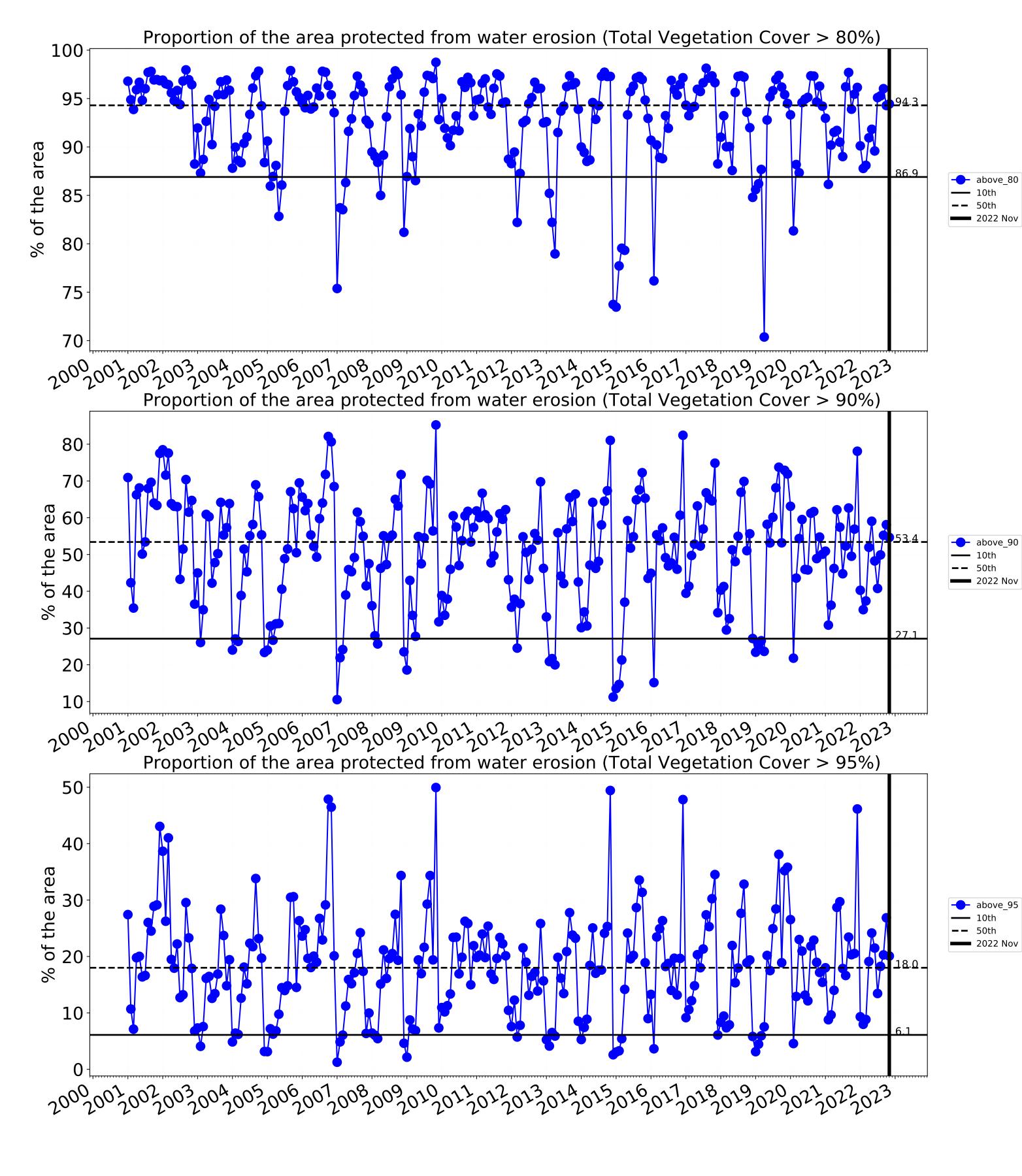
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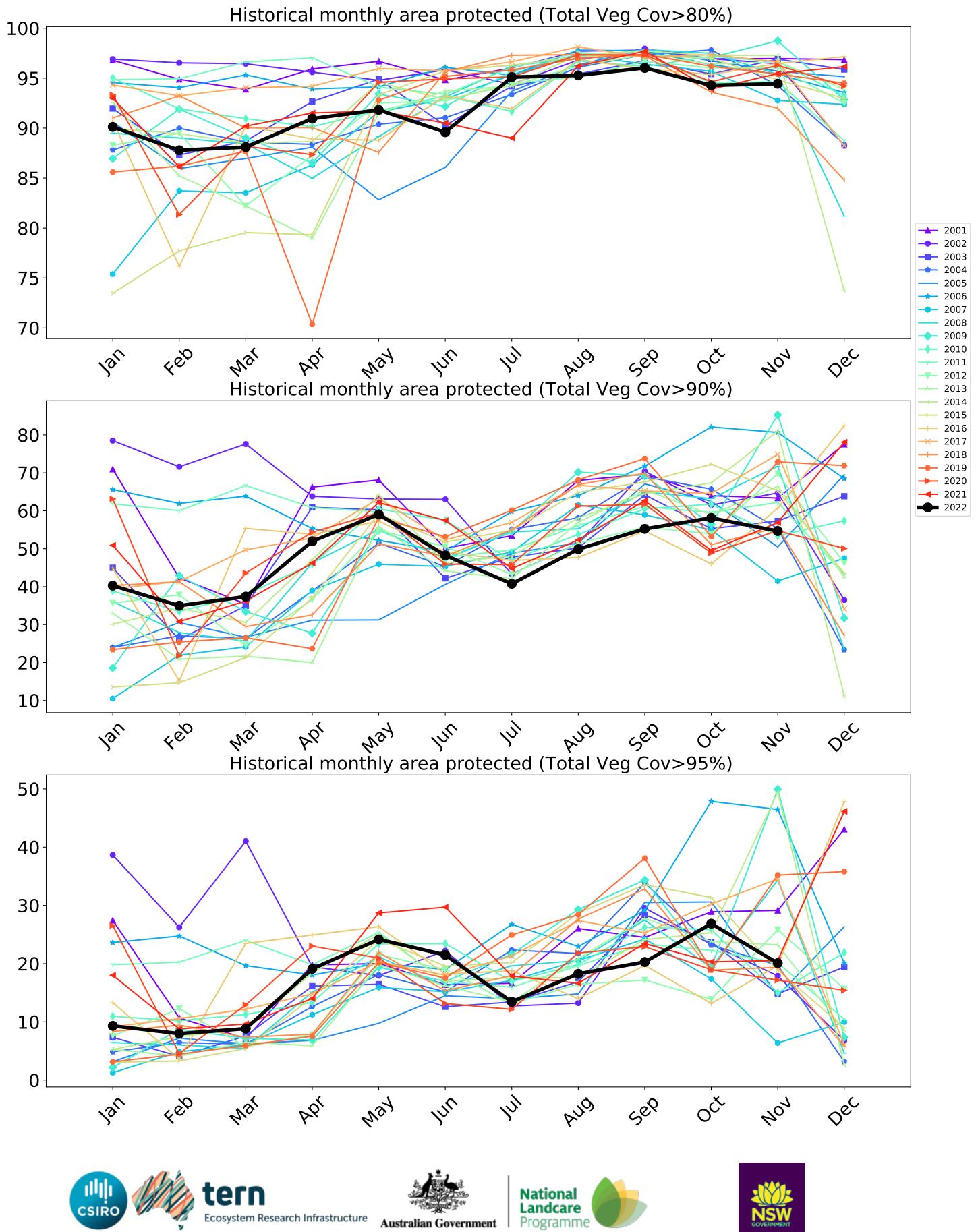
-20













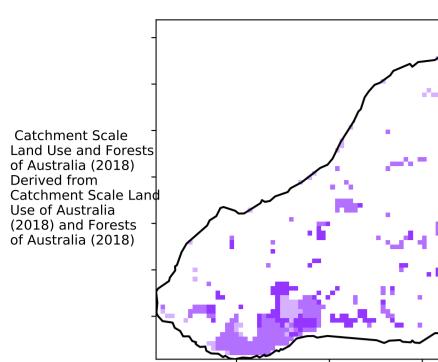
Conservation and natural environments

1 Conservation and natural environments - Non-forest

3 Conservation and natural environments - Non-woodland forest

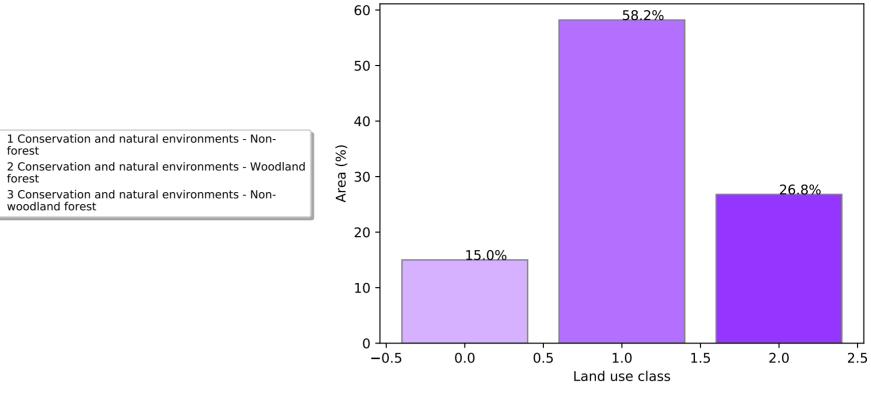
52% 70%

3201050010

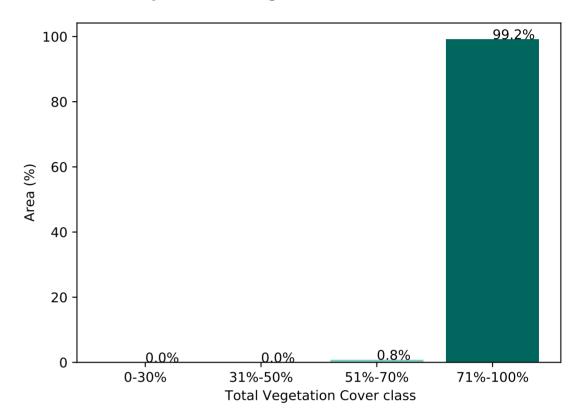


Land use and forest cover

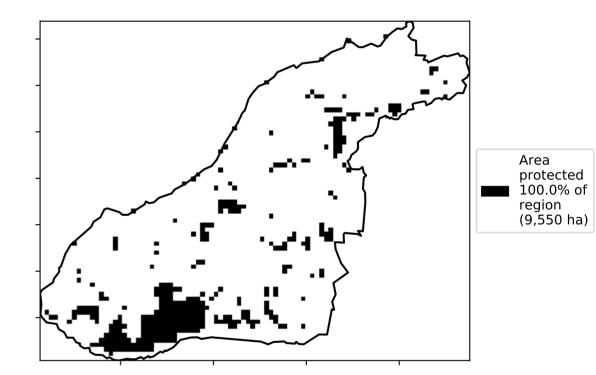
Proportion of each land class in area



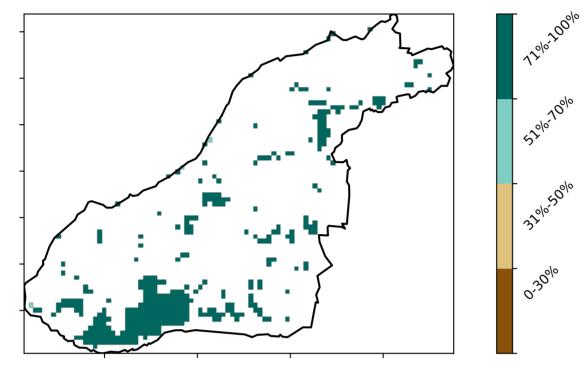
Proportion of vegetation cover class in area



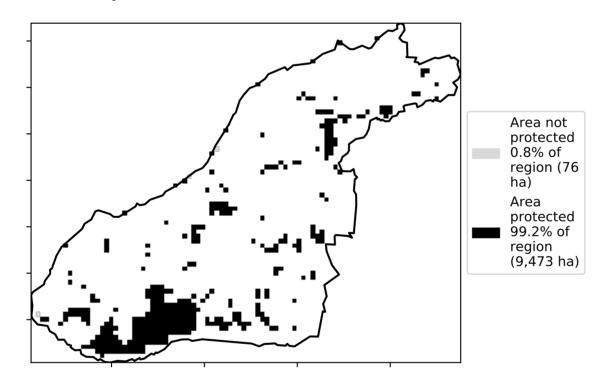
% Area protected from wind erosion (>50%)



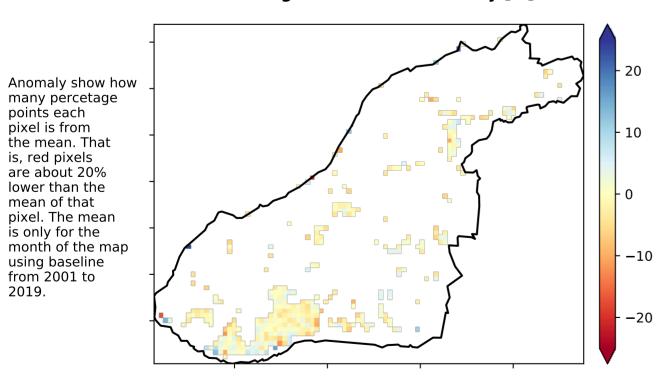
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



Total Vegetation Cover Anomaly [%]

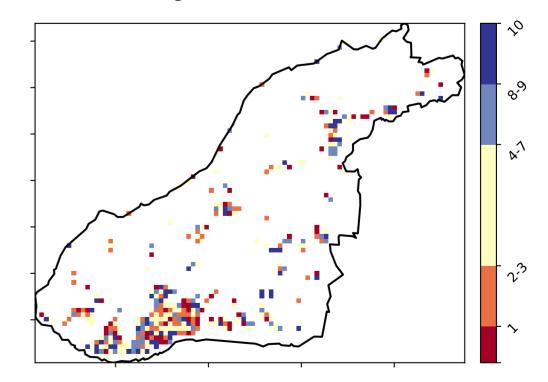


pixel is from

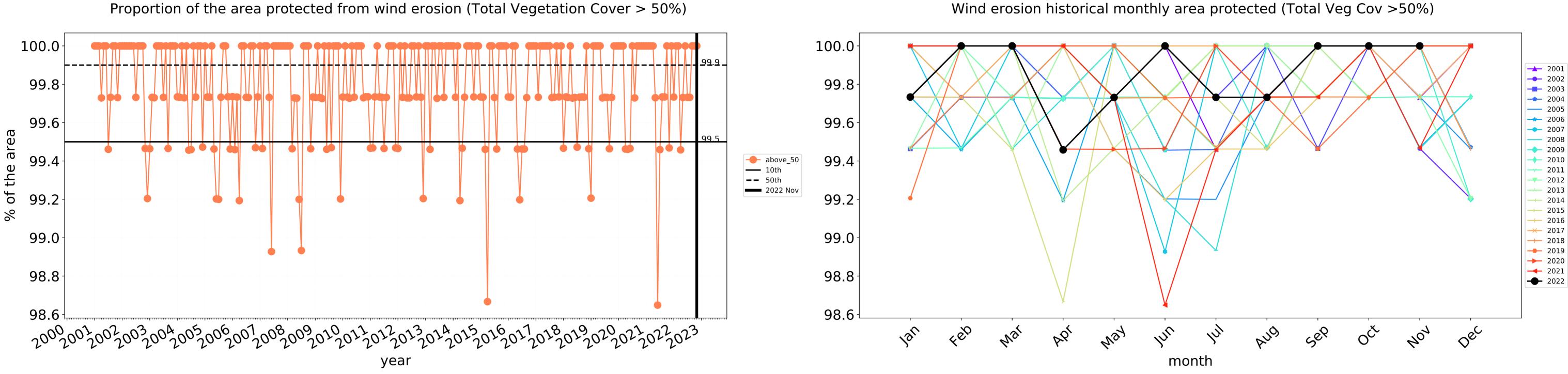
is, red pixels

mean of that

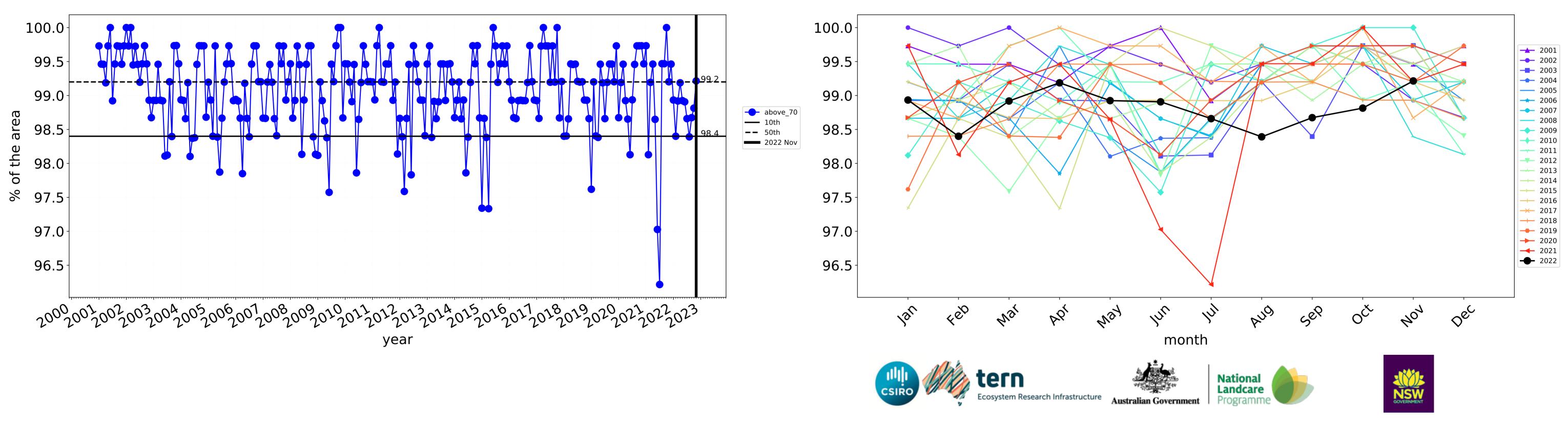
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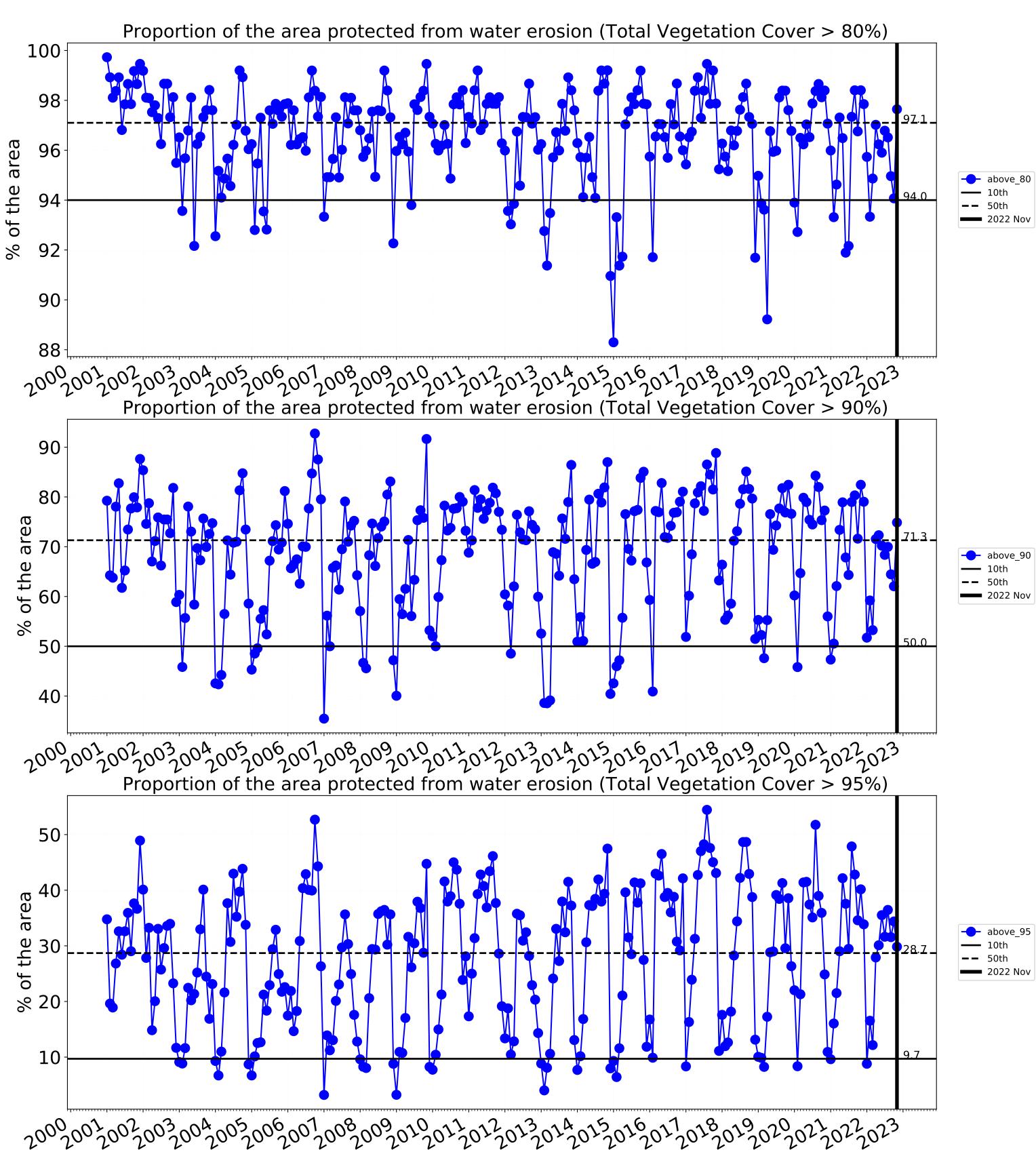


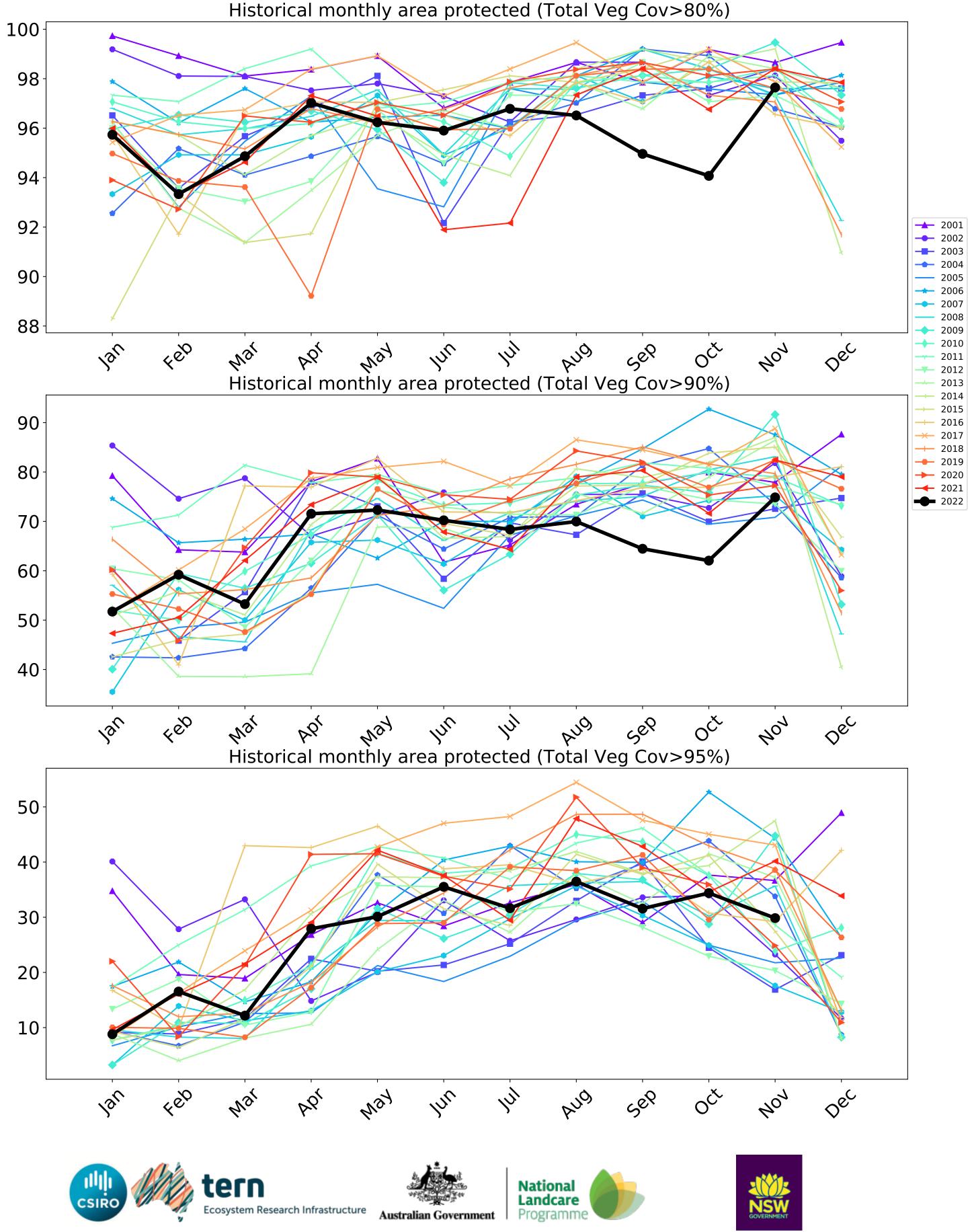




Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

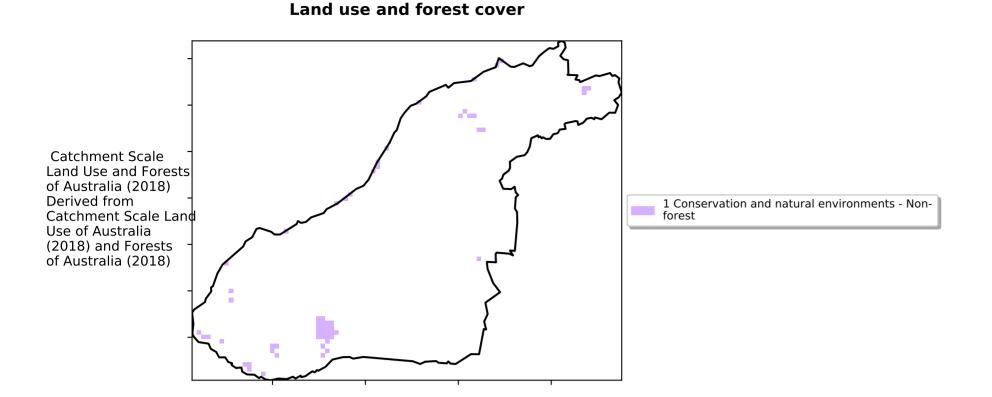








Conservation and natural environments non forest



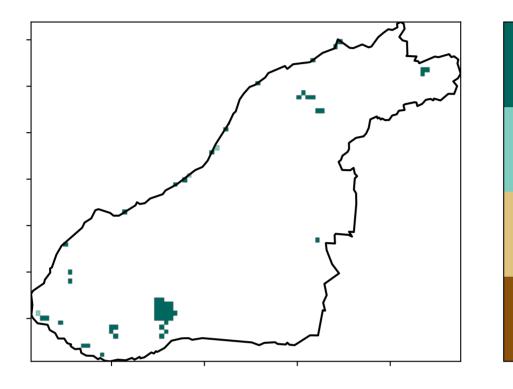
12%100%

· 52°10°10°10

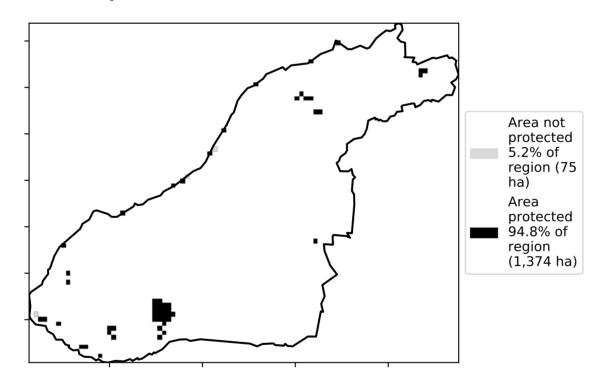
32005000

0.30%

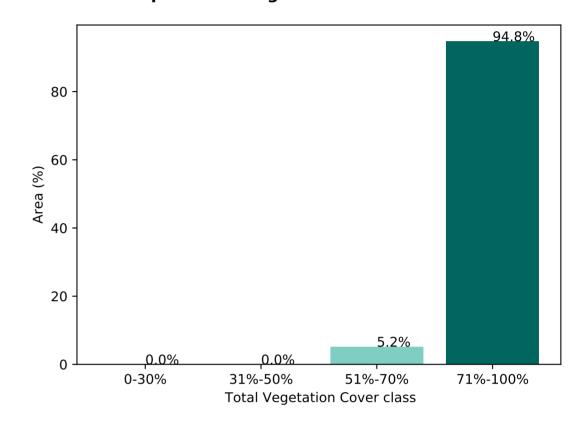
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



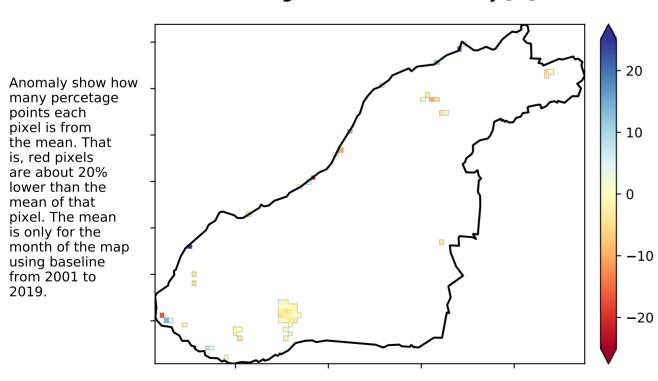
Proportion of vegetation cover class in area



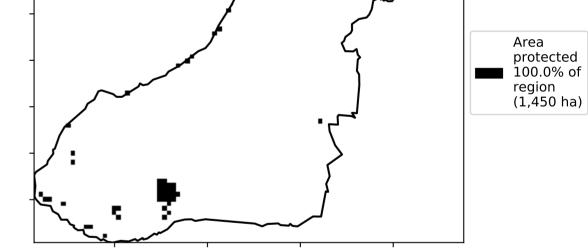
% Area protected from wind erosion (>50%)

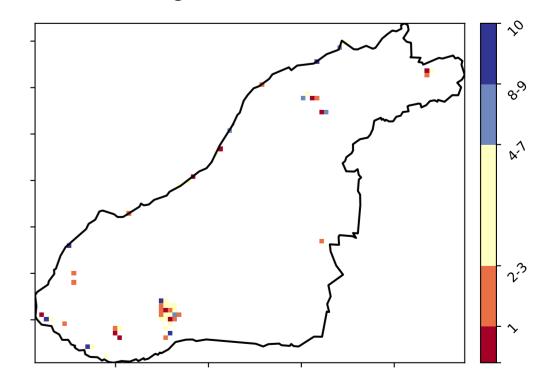


Total Vegetation Cover Anomaly [%]

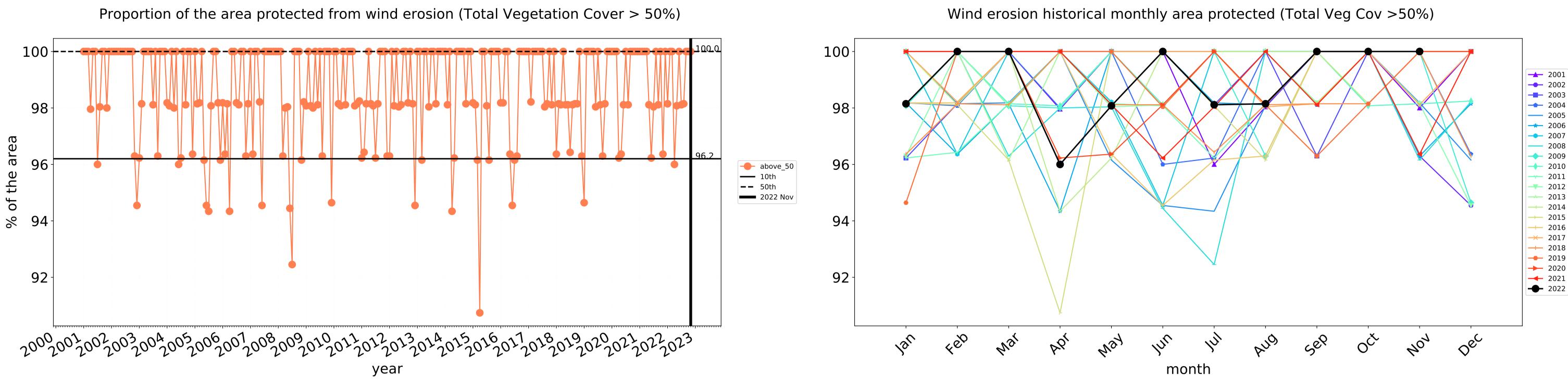


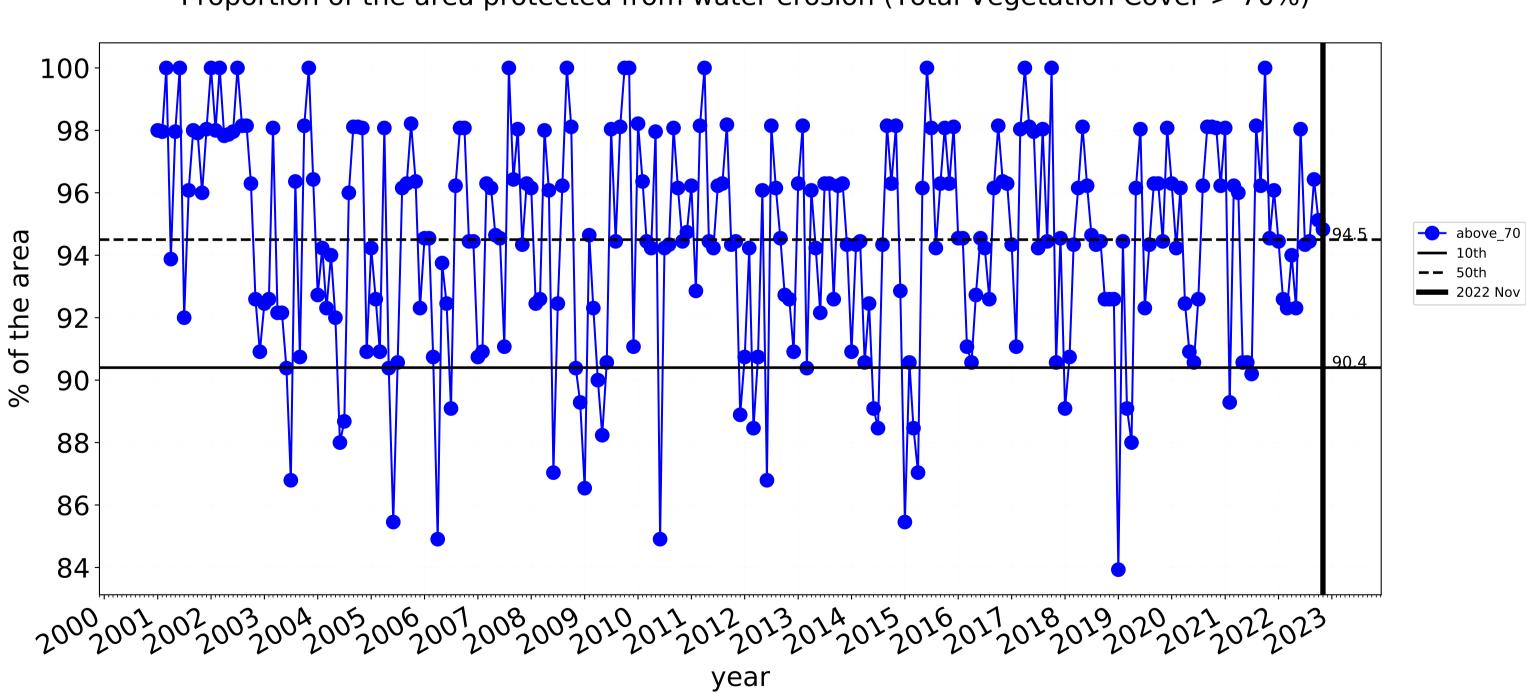
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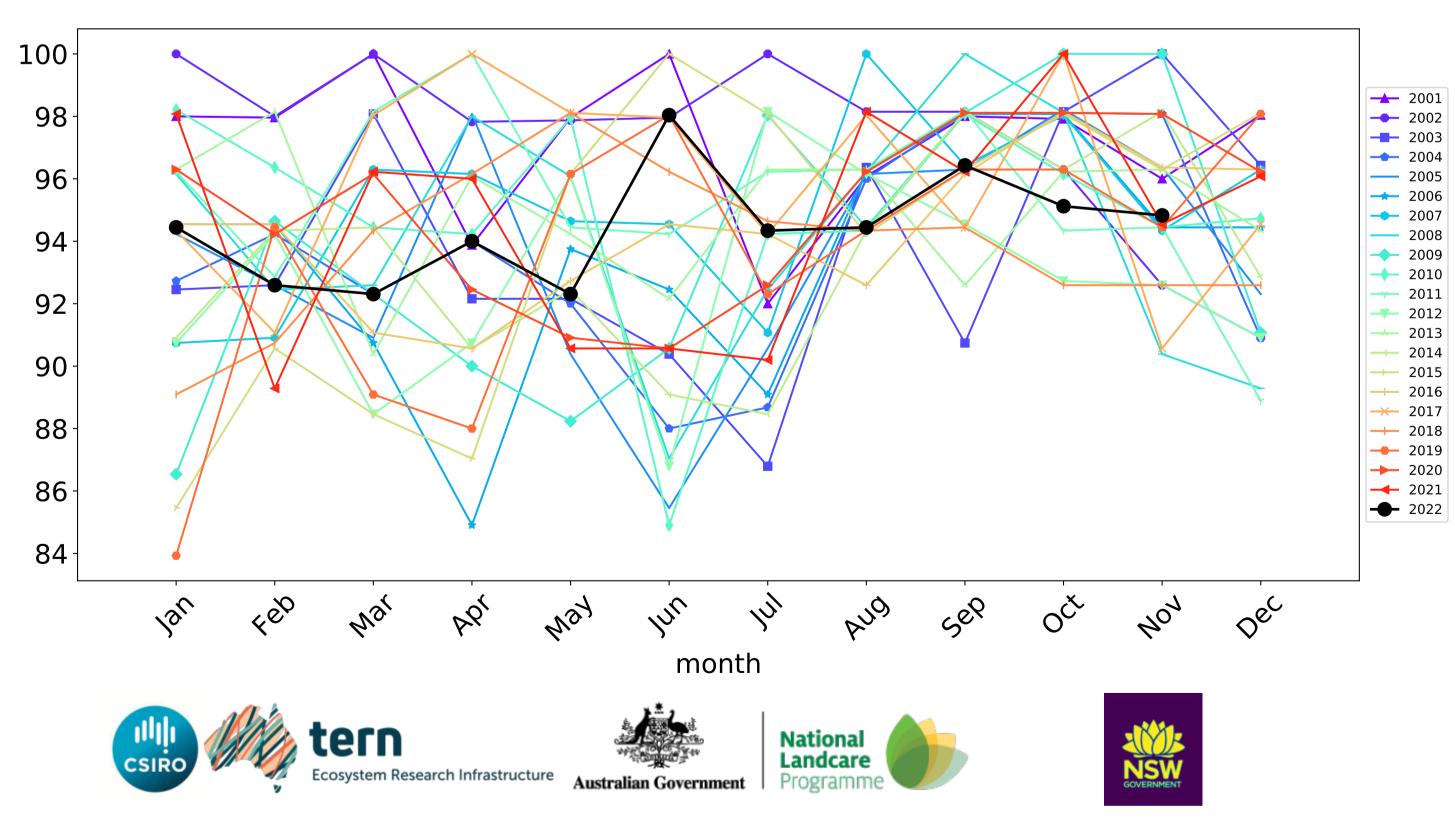


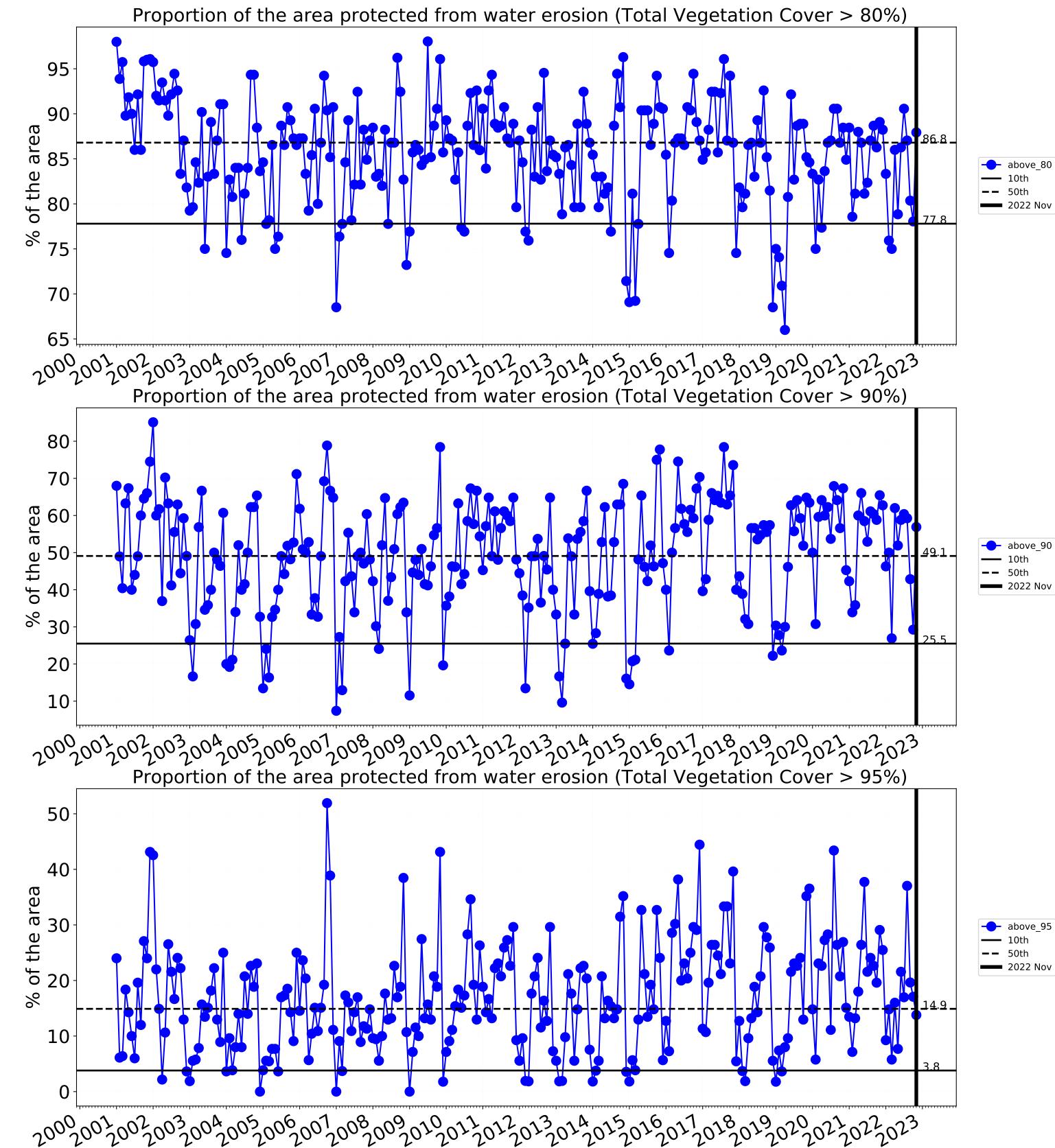


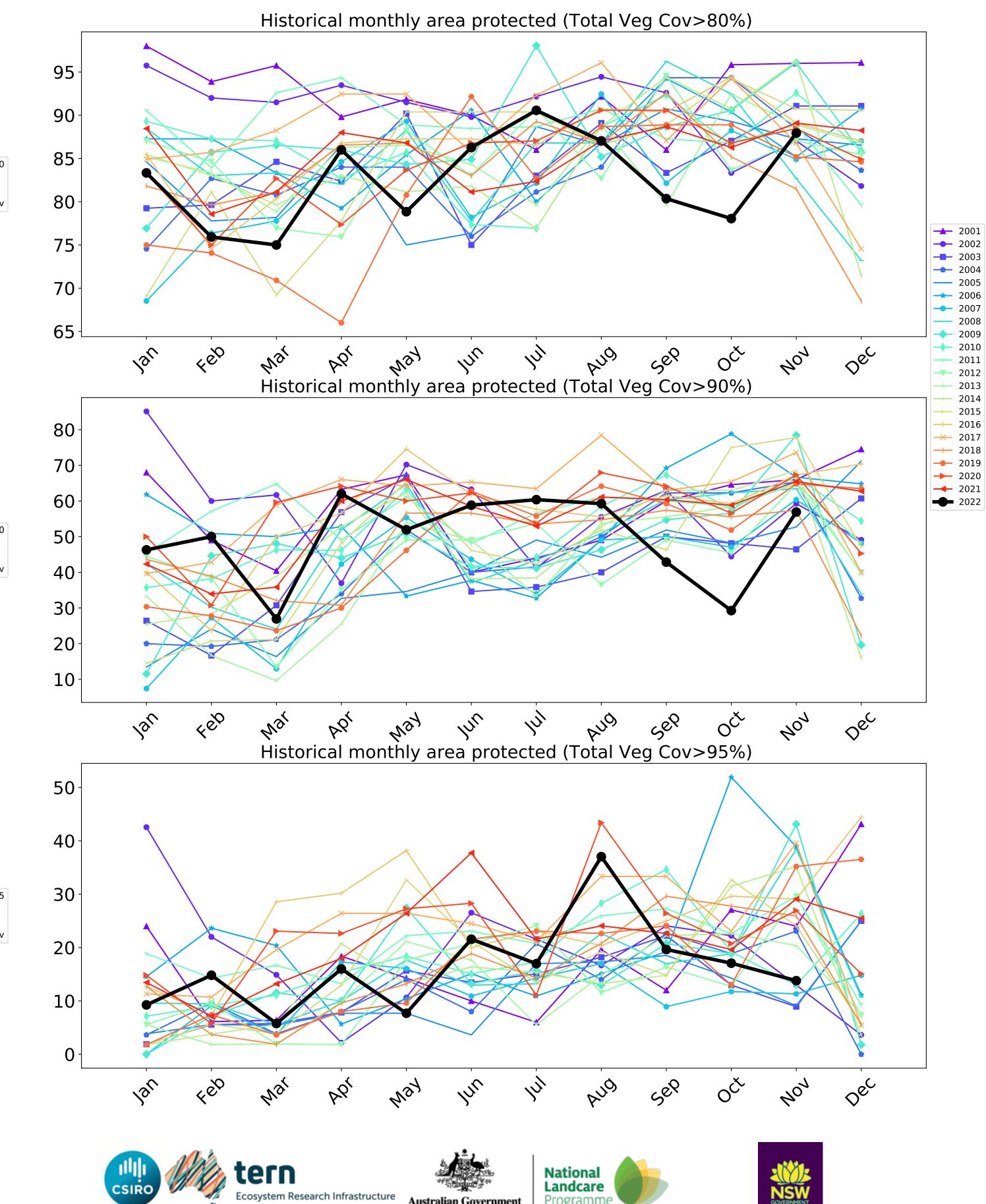




Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)







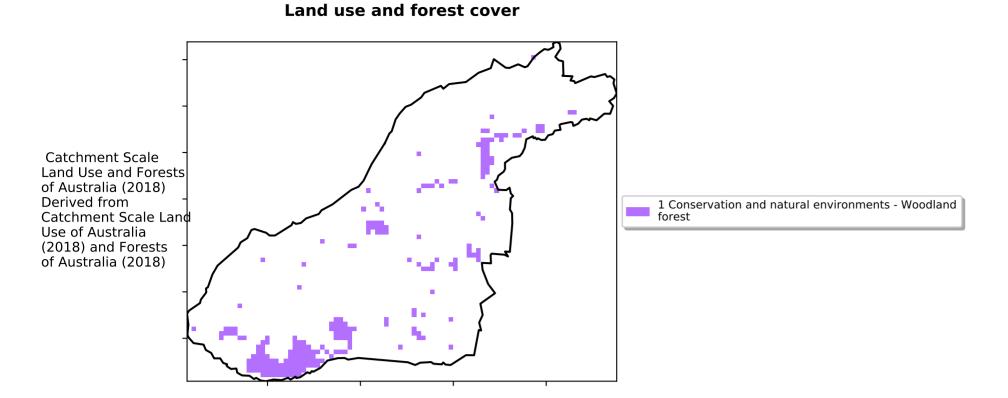
Australian Government

Programme

Ecosystem Research Infrastructure

NSW

Conservation and natural environments Woodland forest



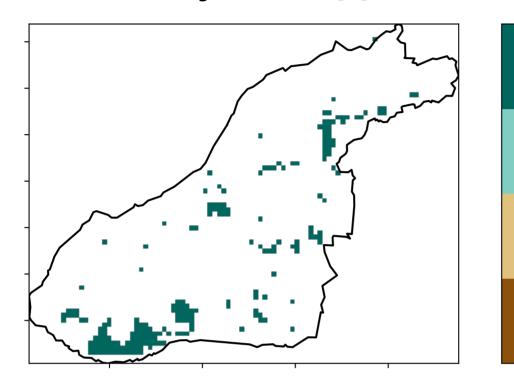
12% 10%

· 52°10°10°10

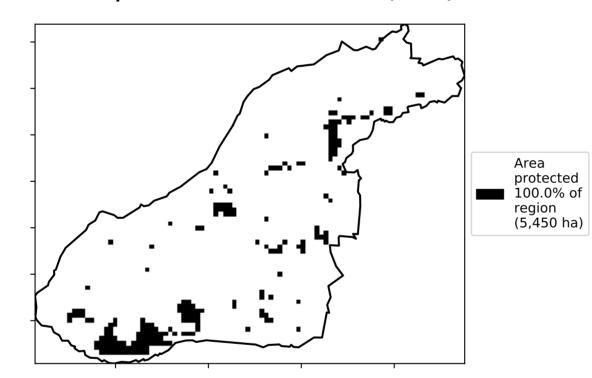
3201050010

0-30%

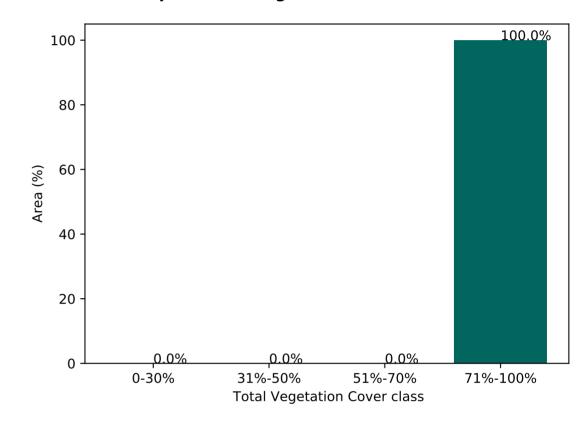
Total Vegetation Cover [%]



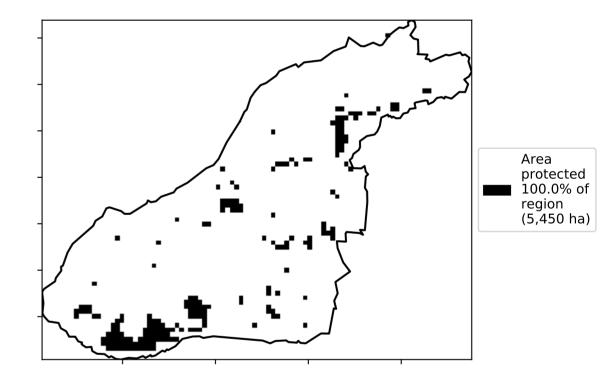
% Area protected from water erosion (>70%)



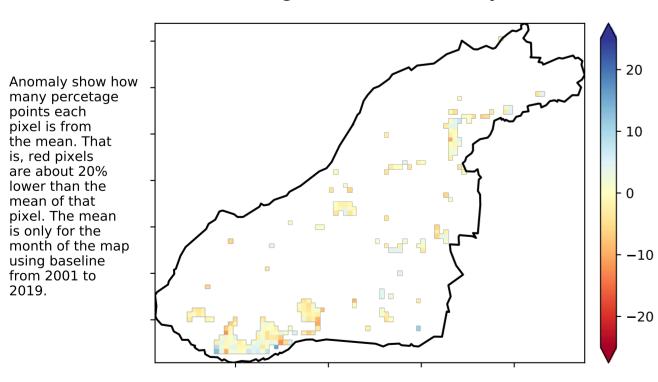
Proportion of vegetation cover class in area



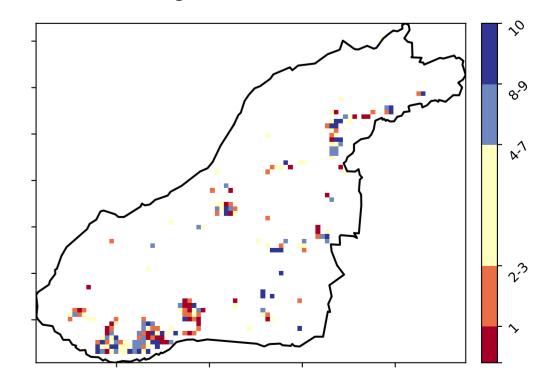
% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]

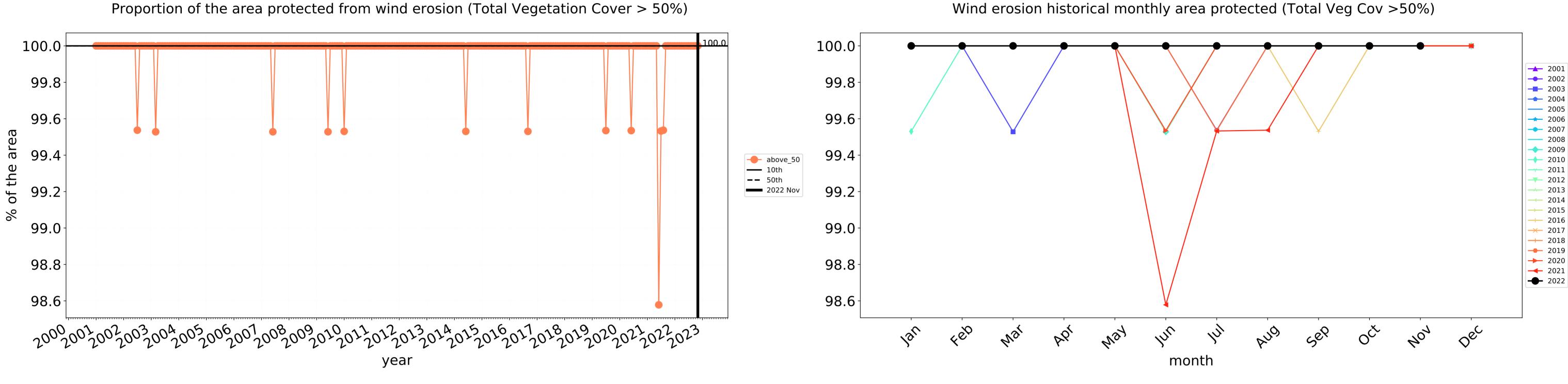


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019. **Total Vegetation Cover Decile [%]**

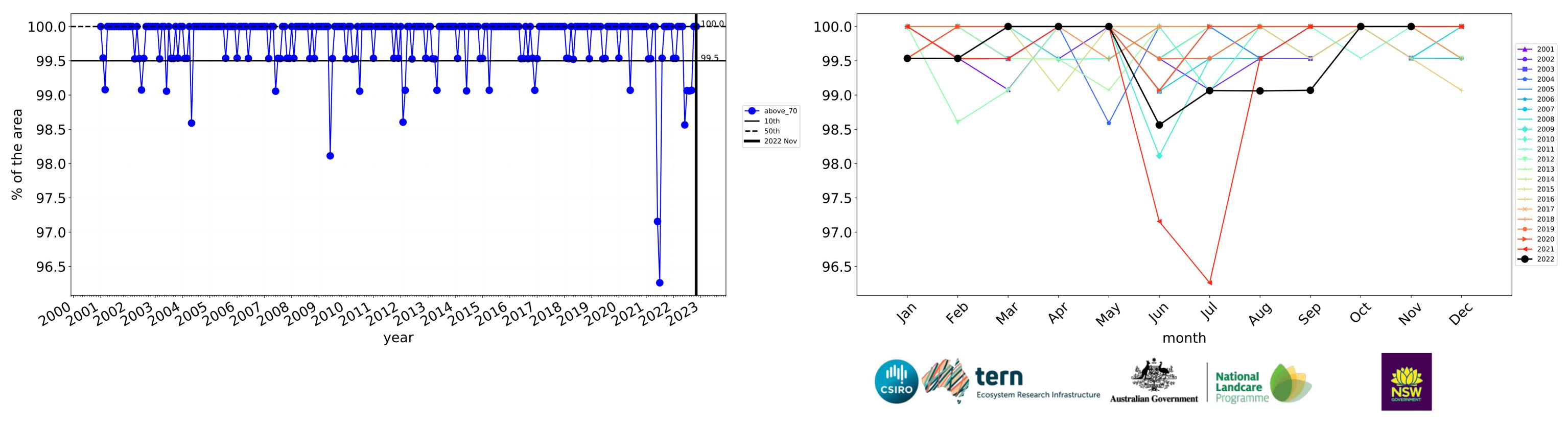




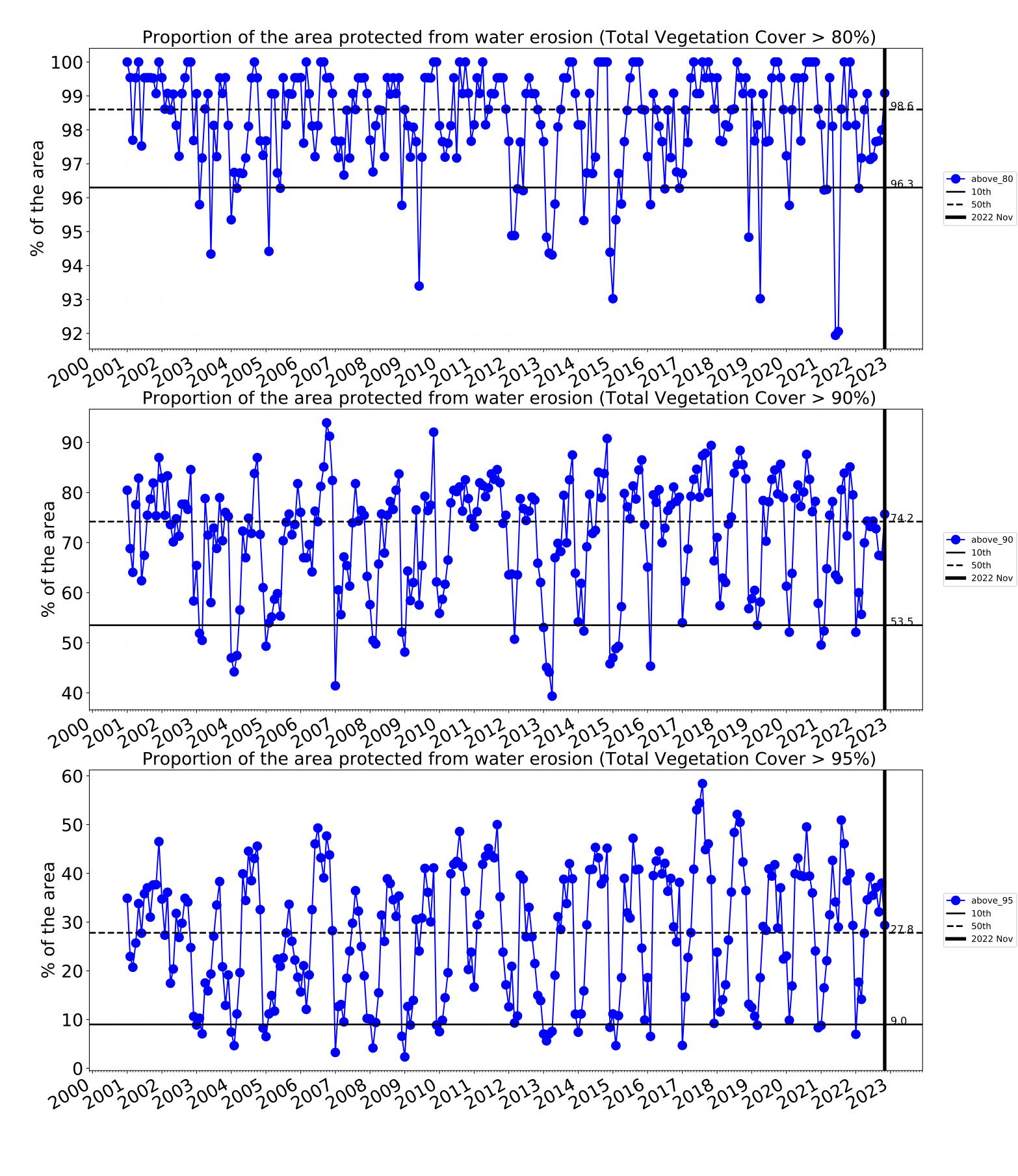
12

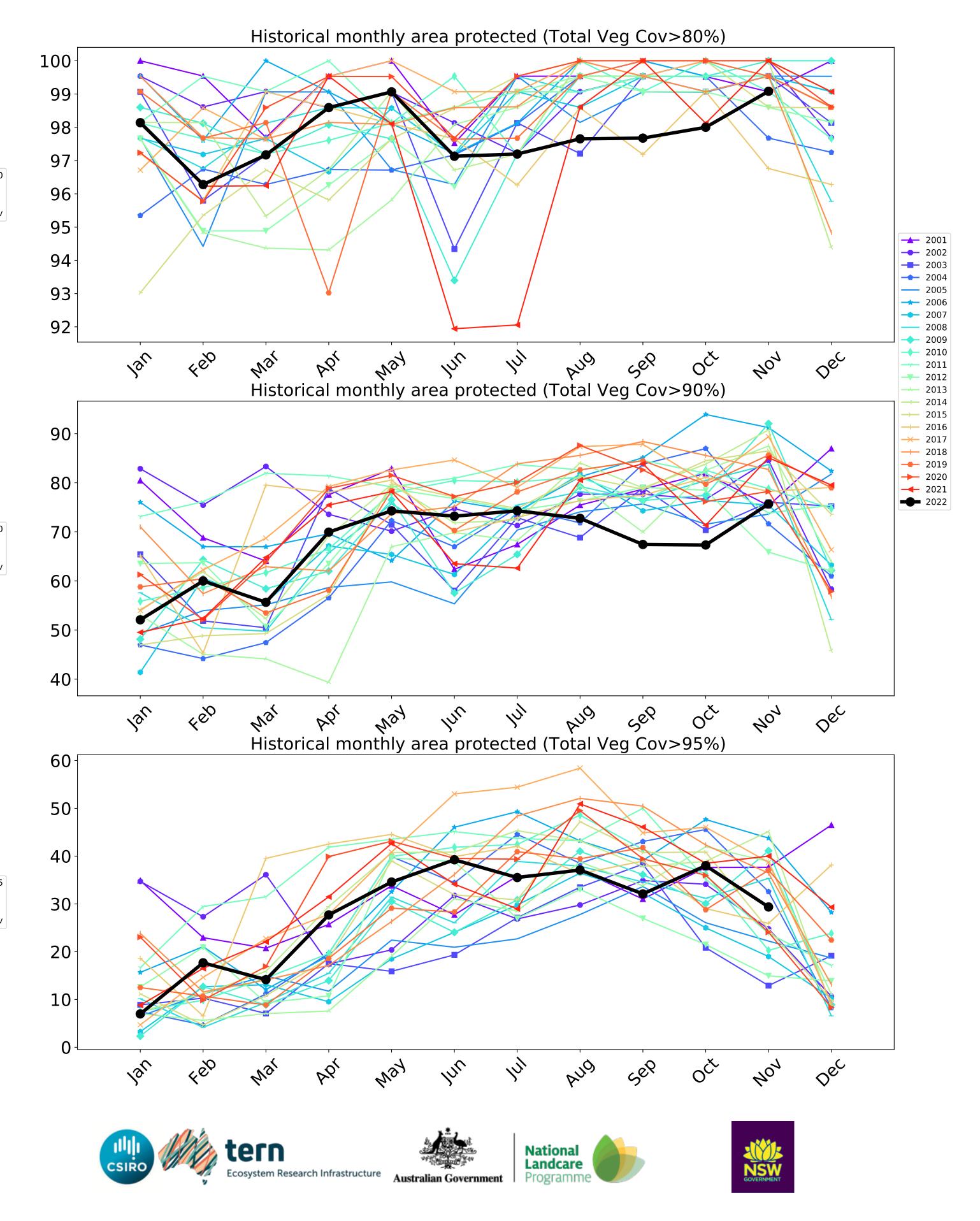


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)





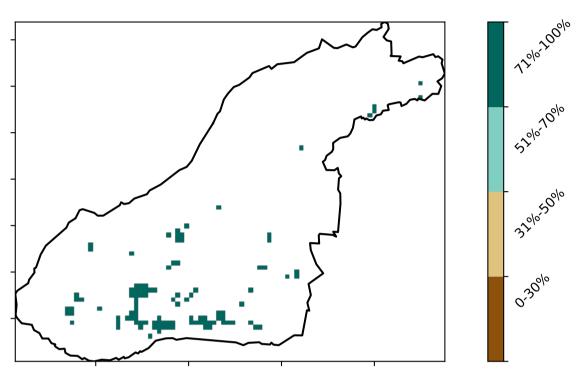




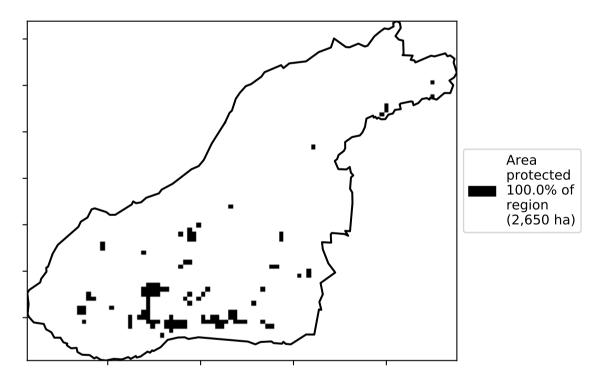
Conservation and natural environments Forest (non woodland)

Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Conservation and natural environments - Non-woodland forest Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

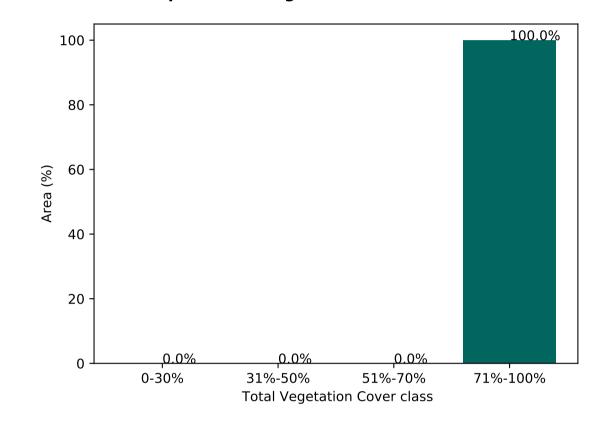
Total Vegetation Cover [%]



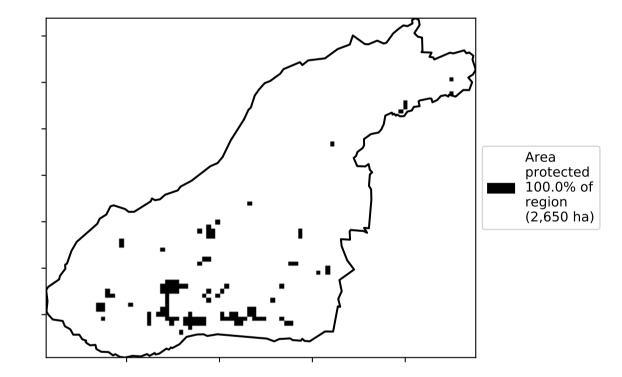
% Area protected from water erosion (>70%)



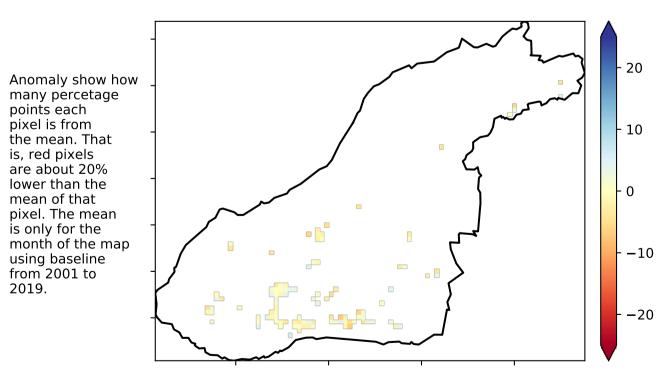
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



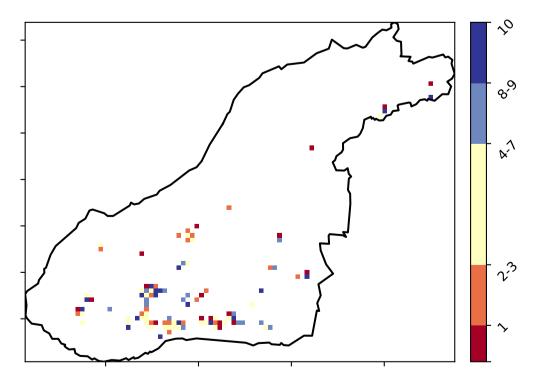
Total Vegetation Cover Anomaly [%]



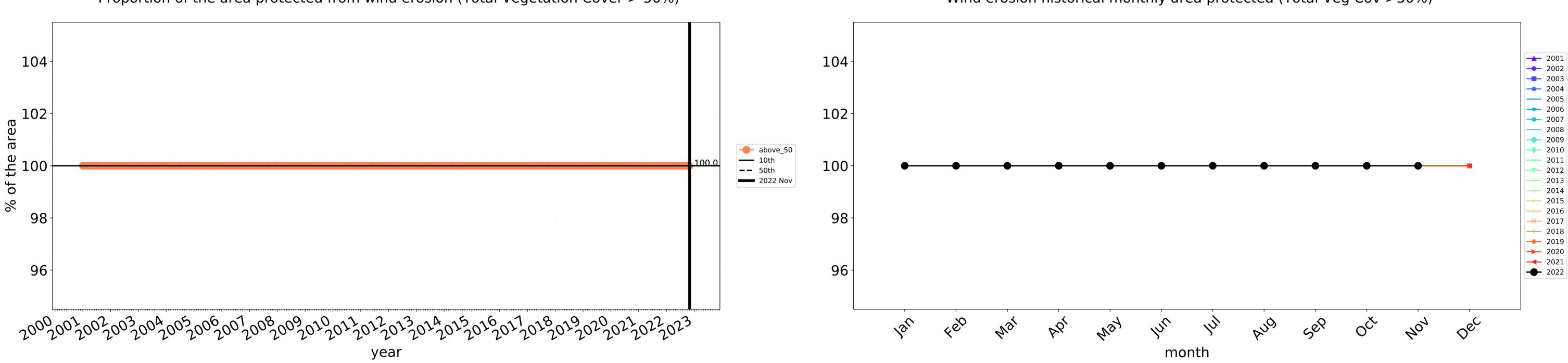
is, red pixels

mean of that

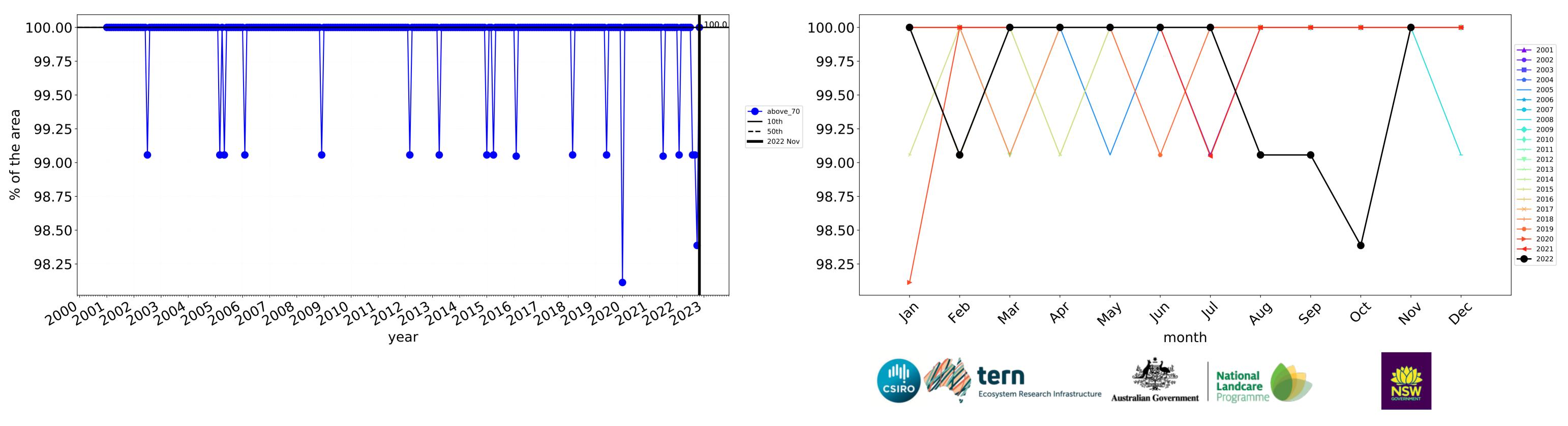
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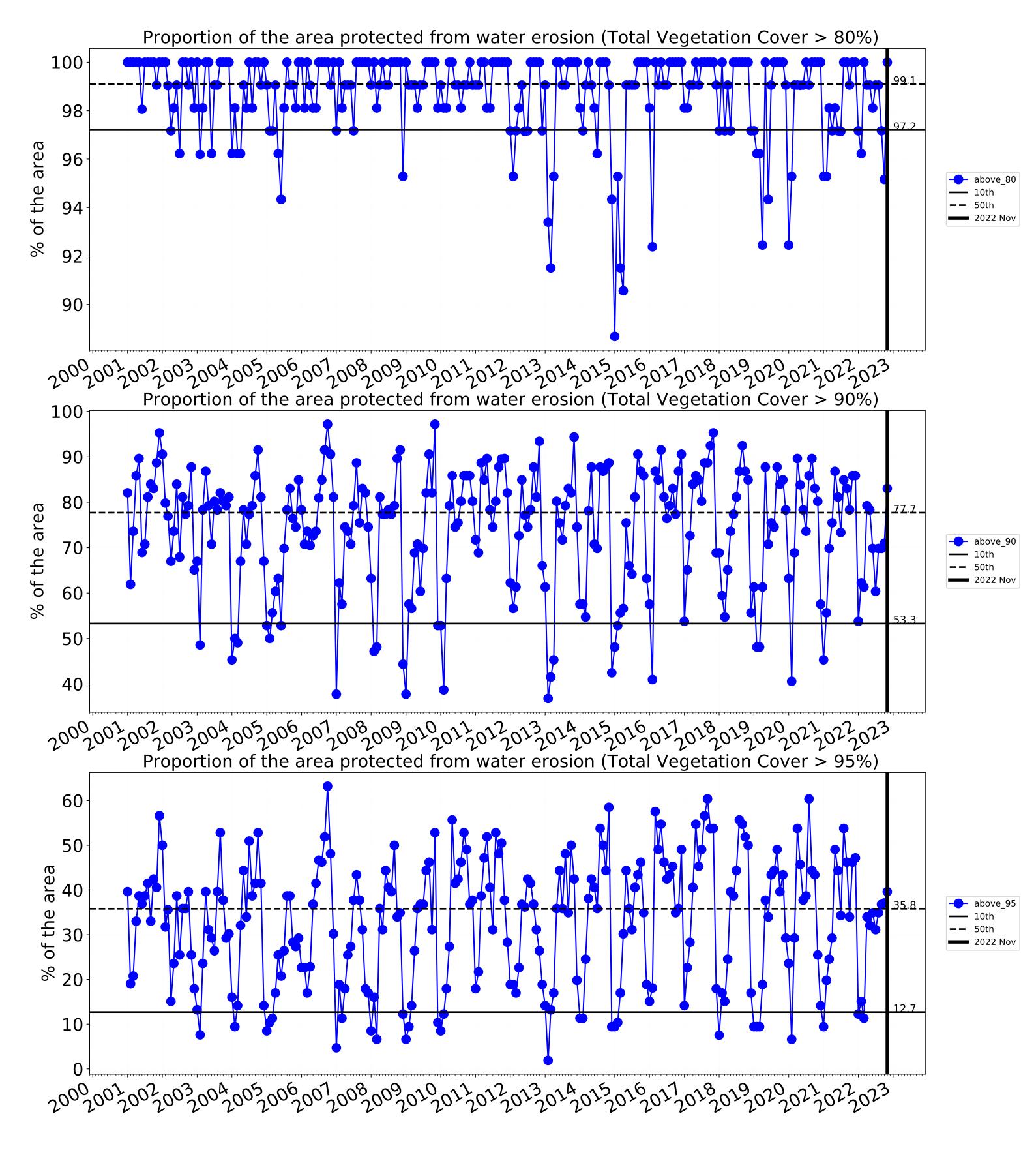


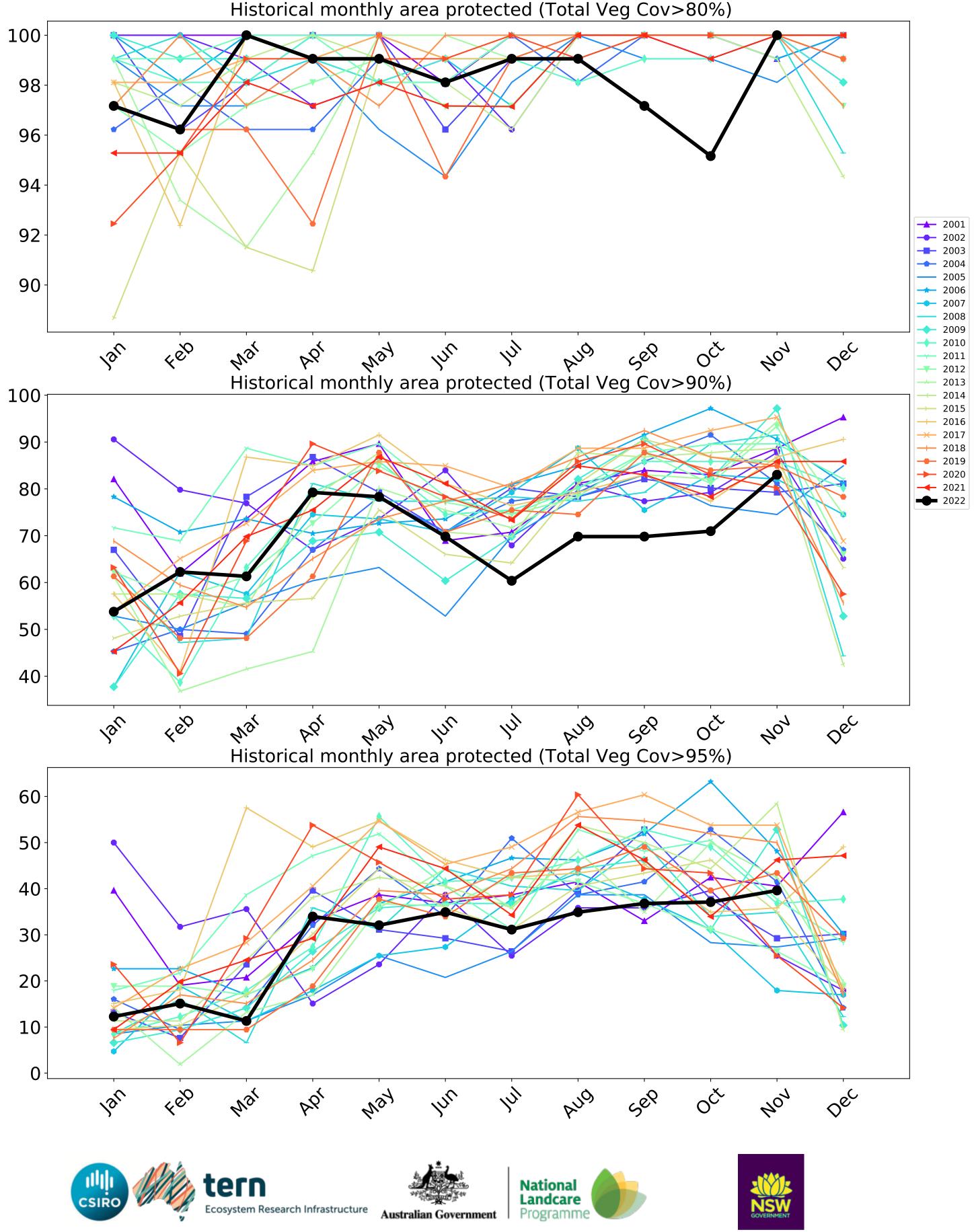


Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



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





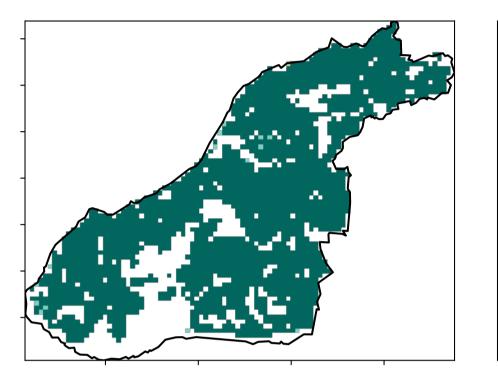


Agriculture

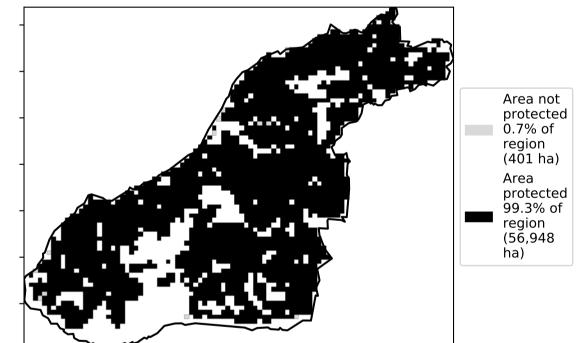
Catchment Scale Land Use and Forests of Australia (2018) 1 Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest Derived from Catchment Scale Land 4 Agriculture - Grazing - Irrigated 5 Agriculture - Cropping - Non-irrigated Use of Australia 6 Agriculture - Cropping - Irrigated (2018) and Forests of Australia (2018) 7 Agriculture - Horticulture - Irrigated

Total Vegetation Cover [%]

Land use and forest cover



% Area protected from water erosion (>70%)



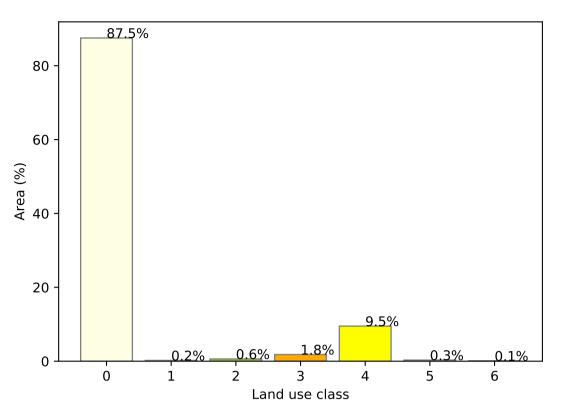
1 12º00 200%

· 52% 70%

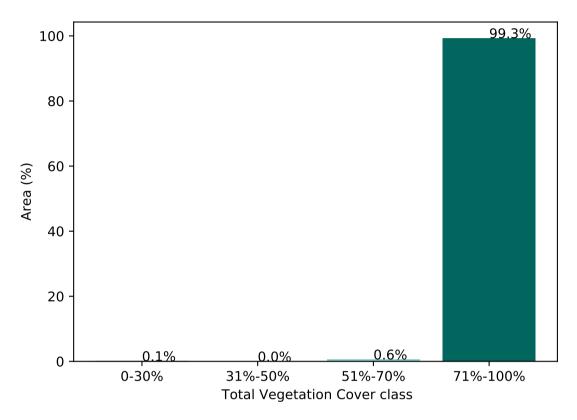
32005001

0.30%

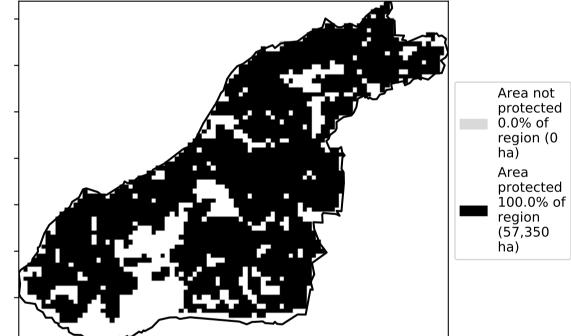




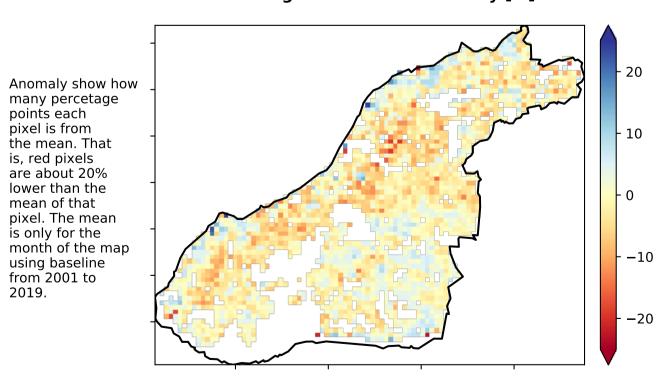
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)

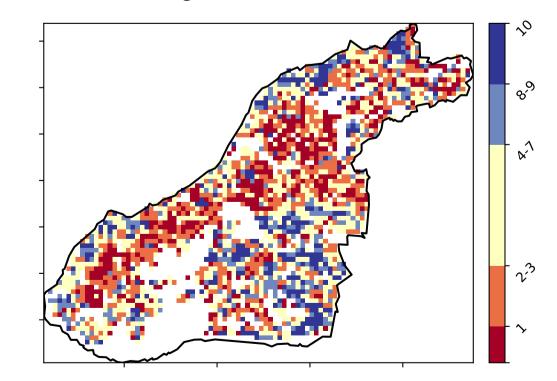


Total Vegetation Cover Anomaly [%]

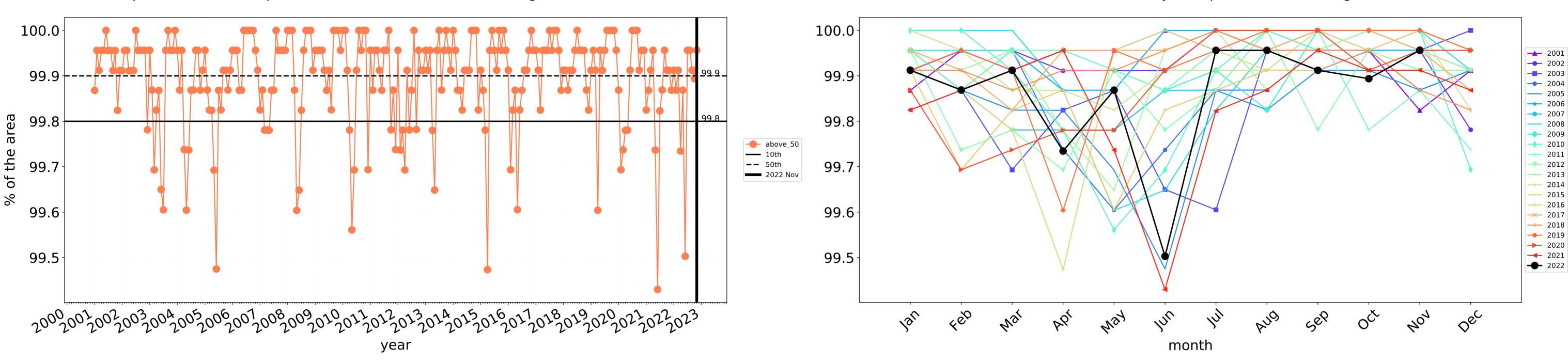


is, red pixels are about 20% lower than the mean of that

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.

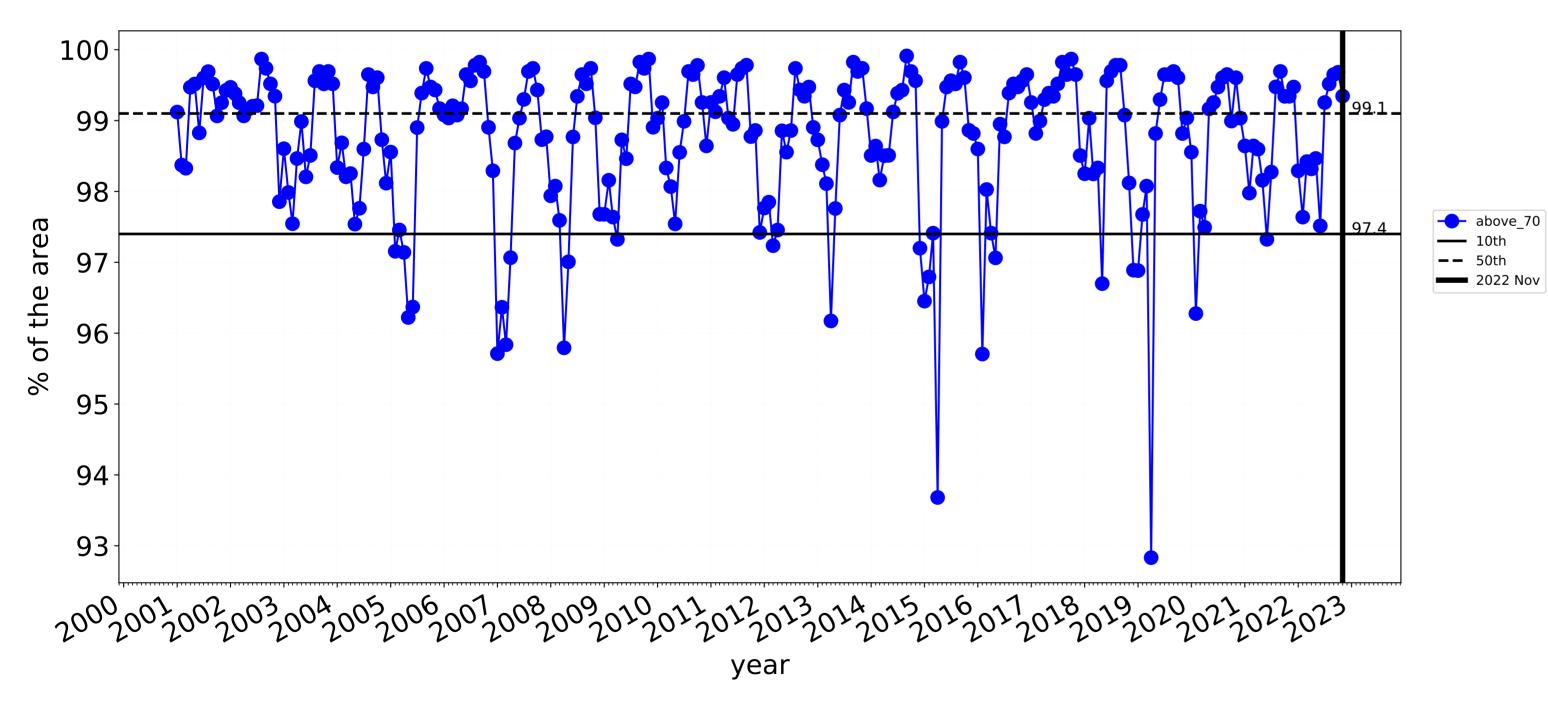




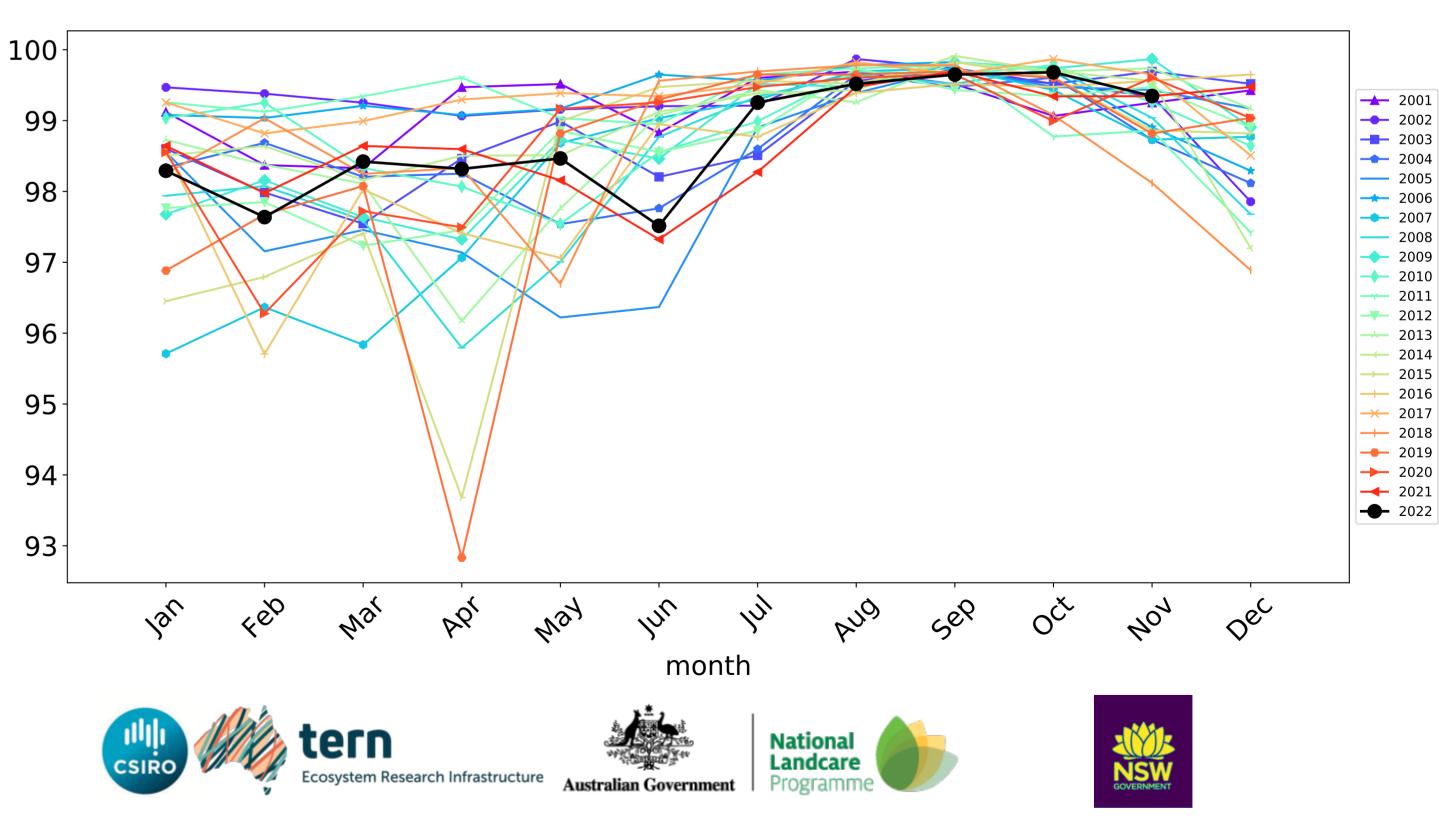


Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

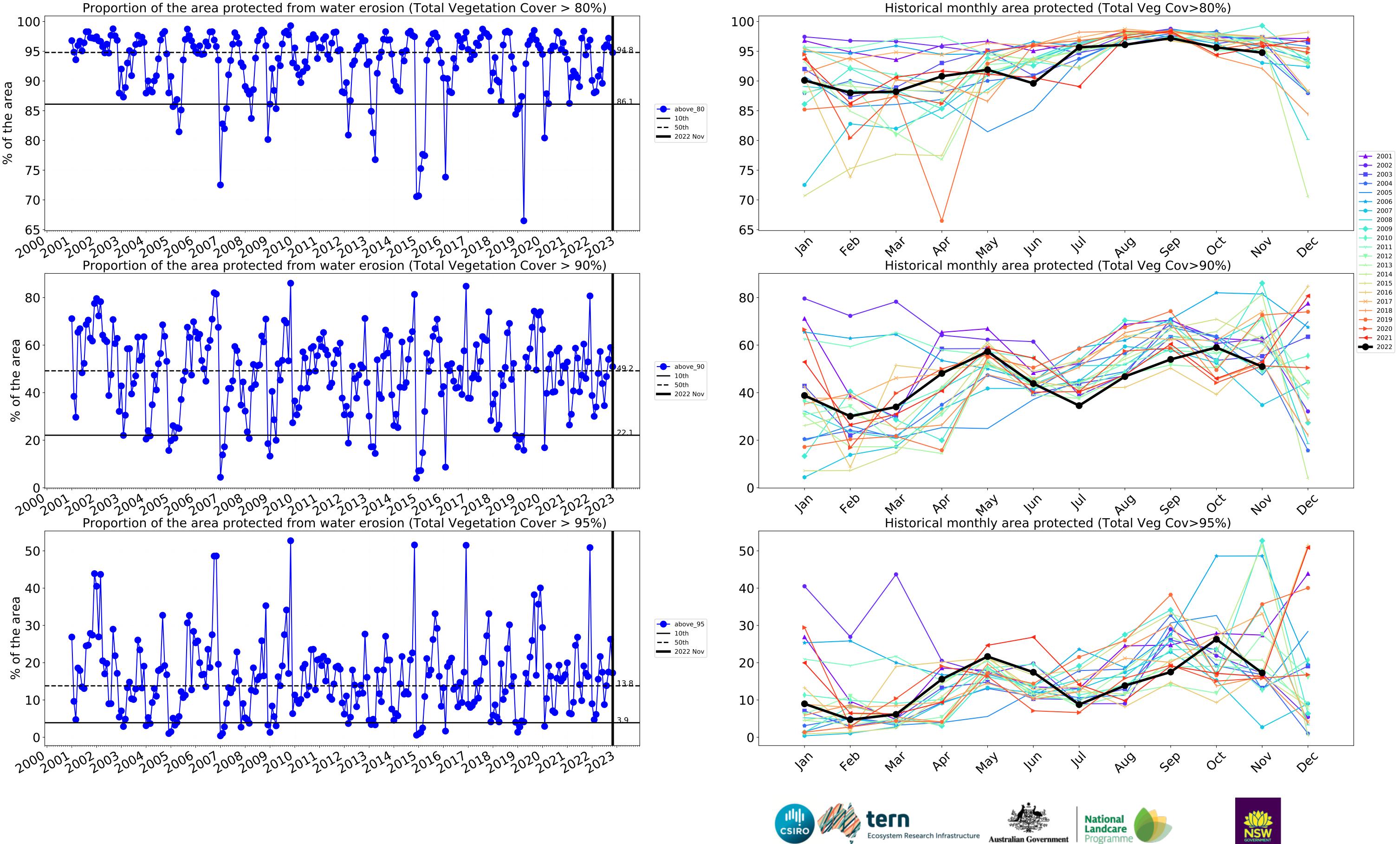
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)



Agriculture timeseries



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





Grazing

1 Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest

1 12º00 200%

52°10'10°10

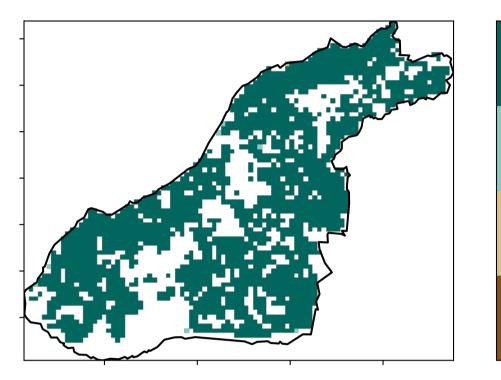
32%50%

0.30%

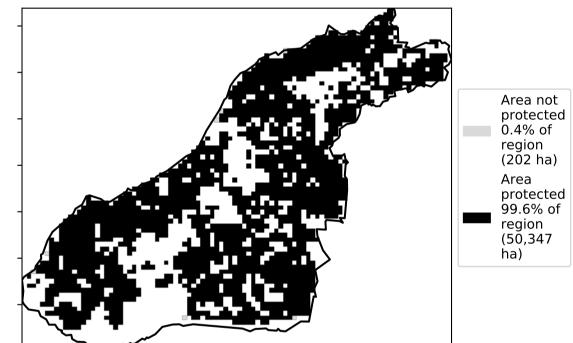
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia 3 Agriculture - Grazing - Non-woodland forest (2018) and Forests of Australia (2018)

Total Vegetation Cover [%]

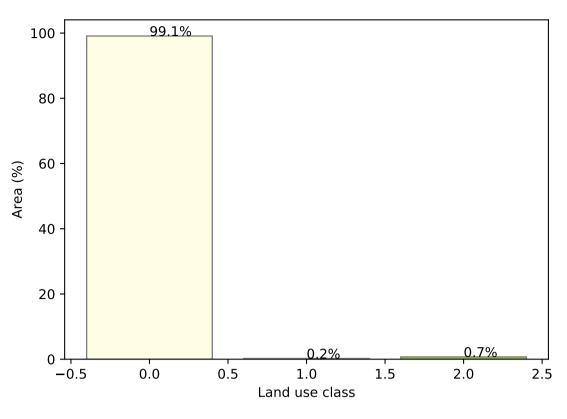
Land use and forest cover



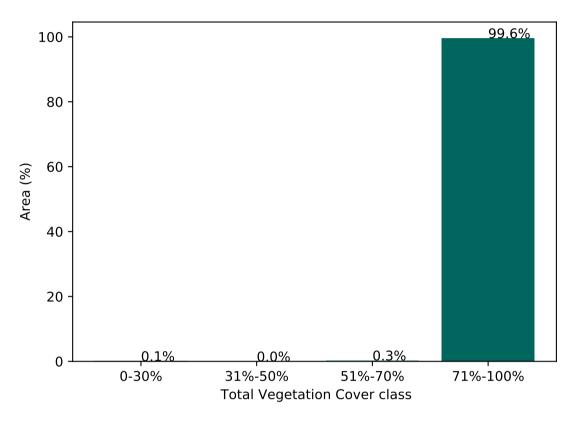
% Area protected from water erosion (>70%)



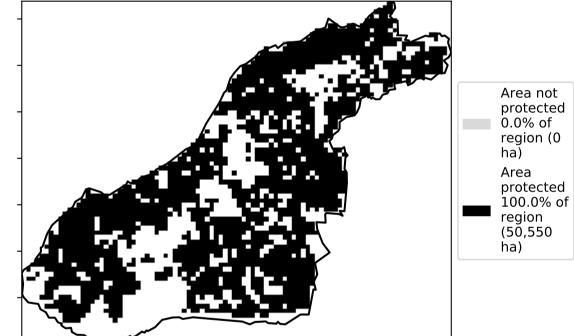




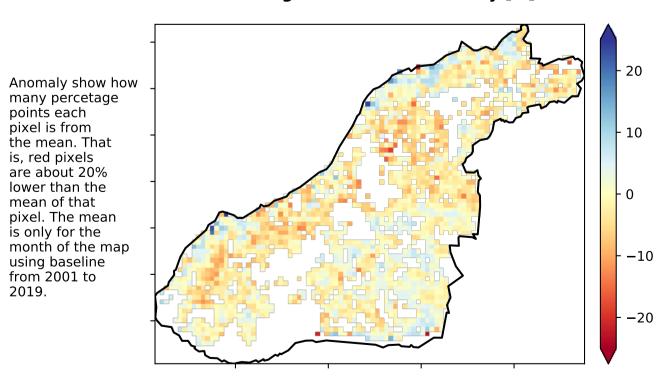
Proportion of vegetation cover class in area



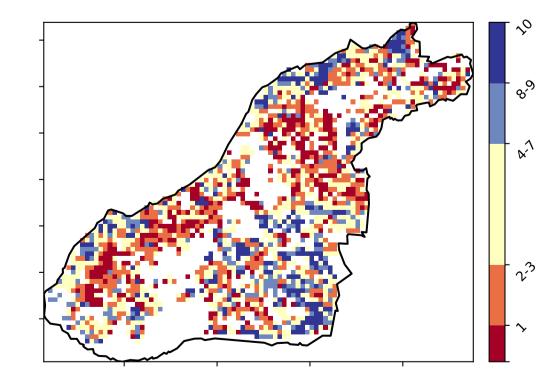
% Area protected from wind erosion (>50%)



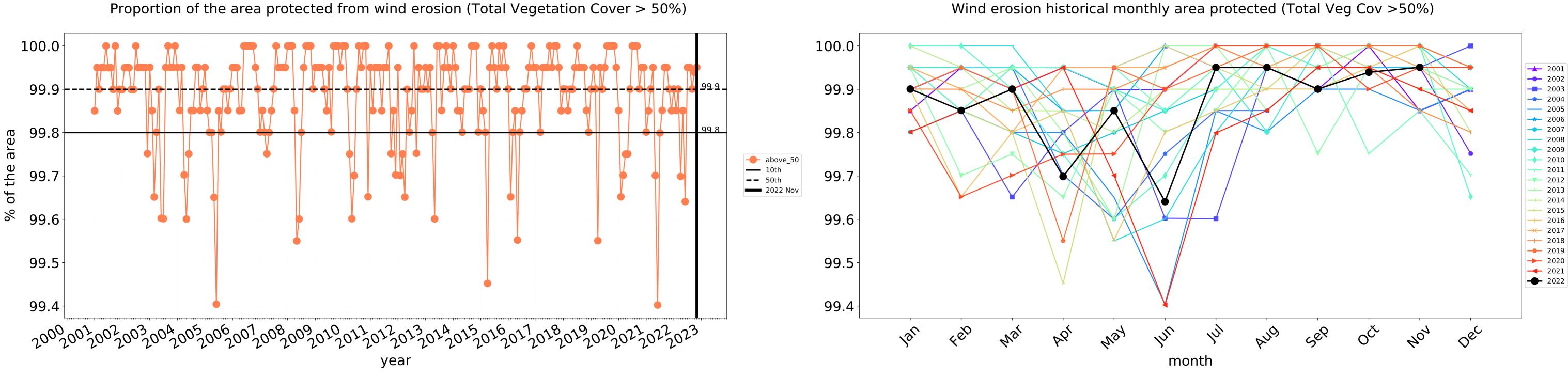
Total Vegetation Cover Anomaly [%]



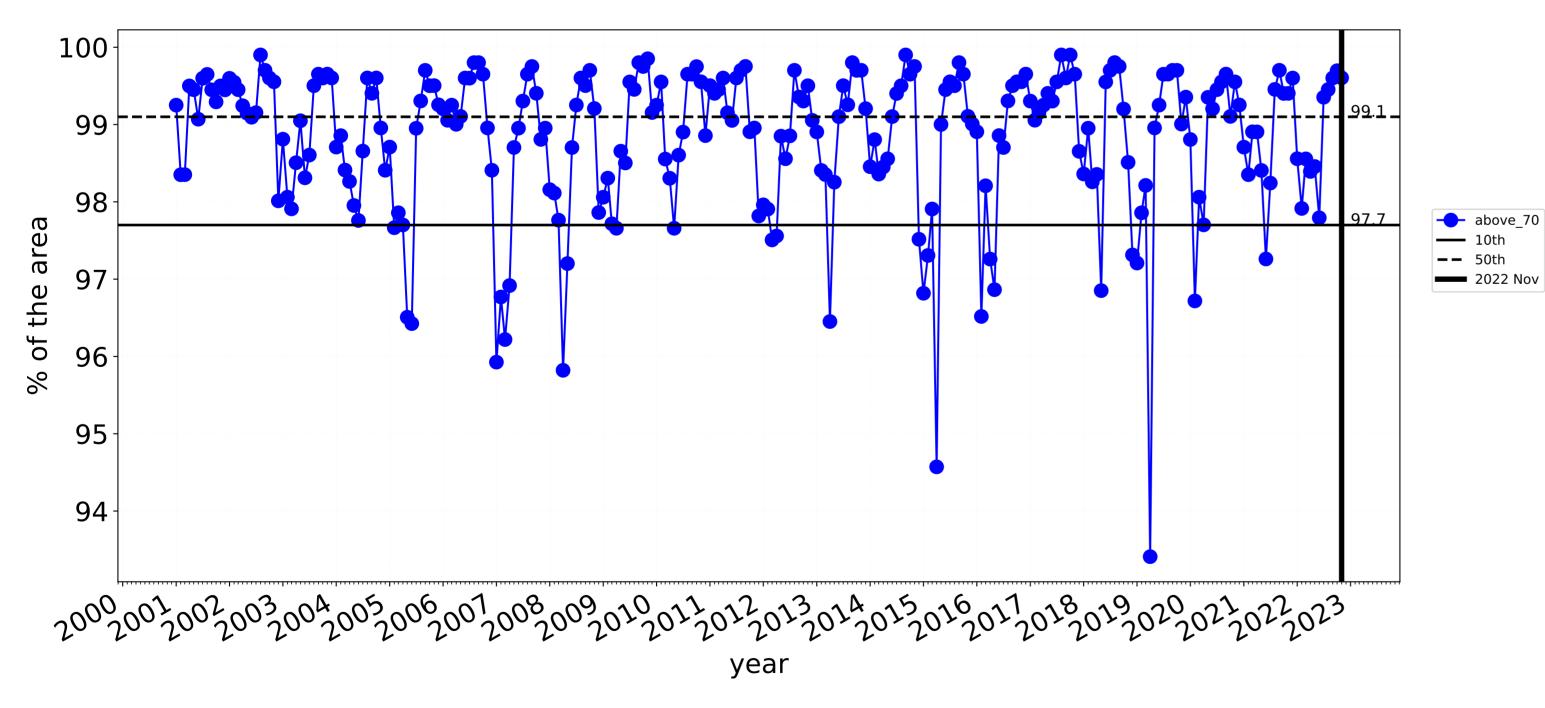
is, red pixels are about 20% lower than the mean of that Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.



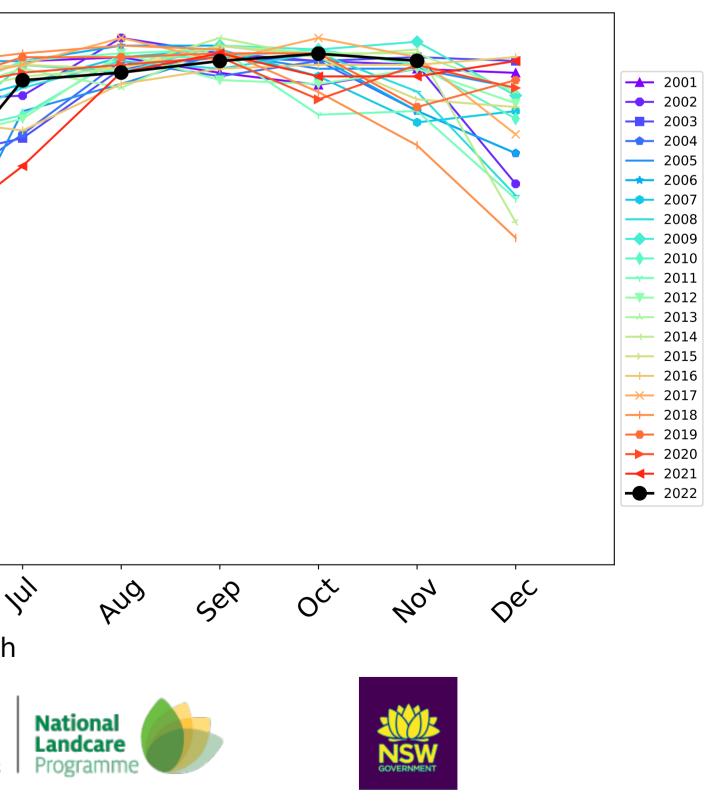


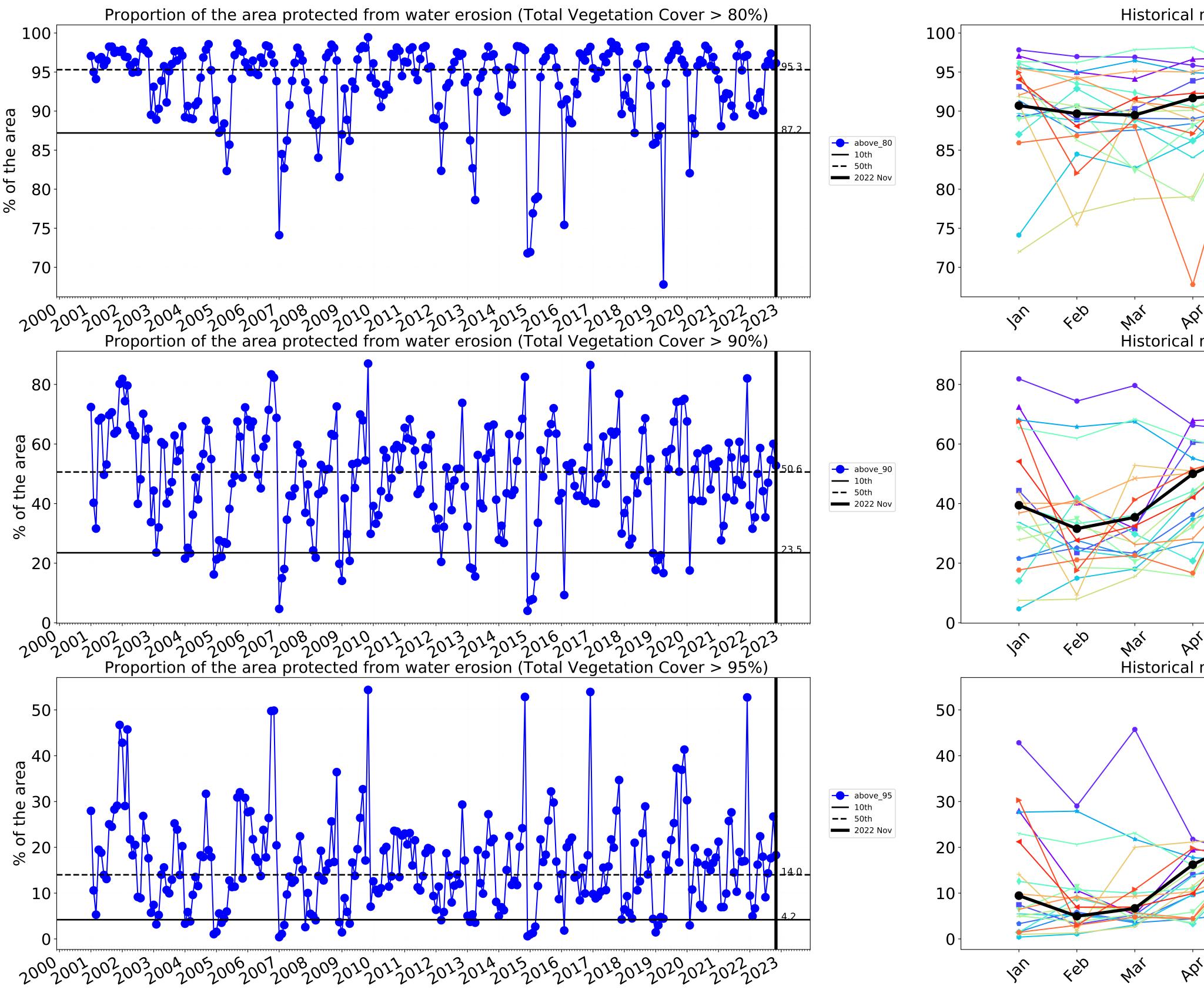


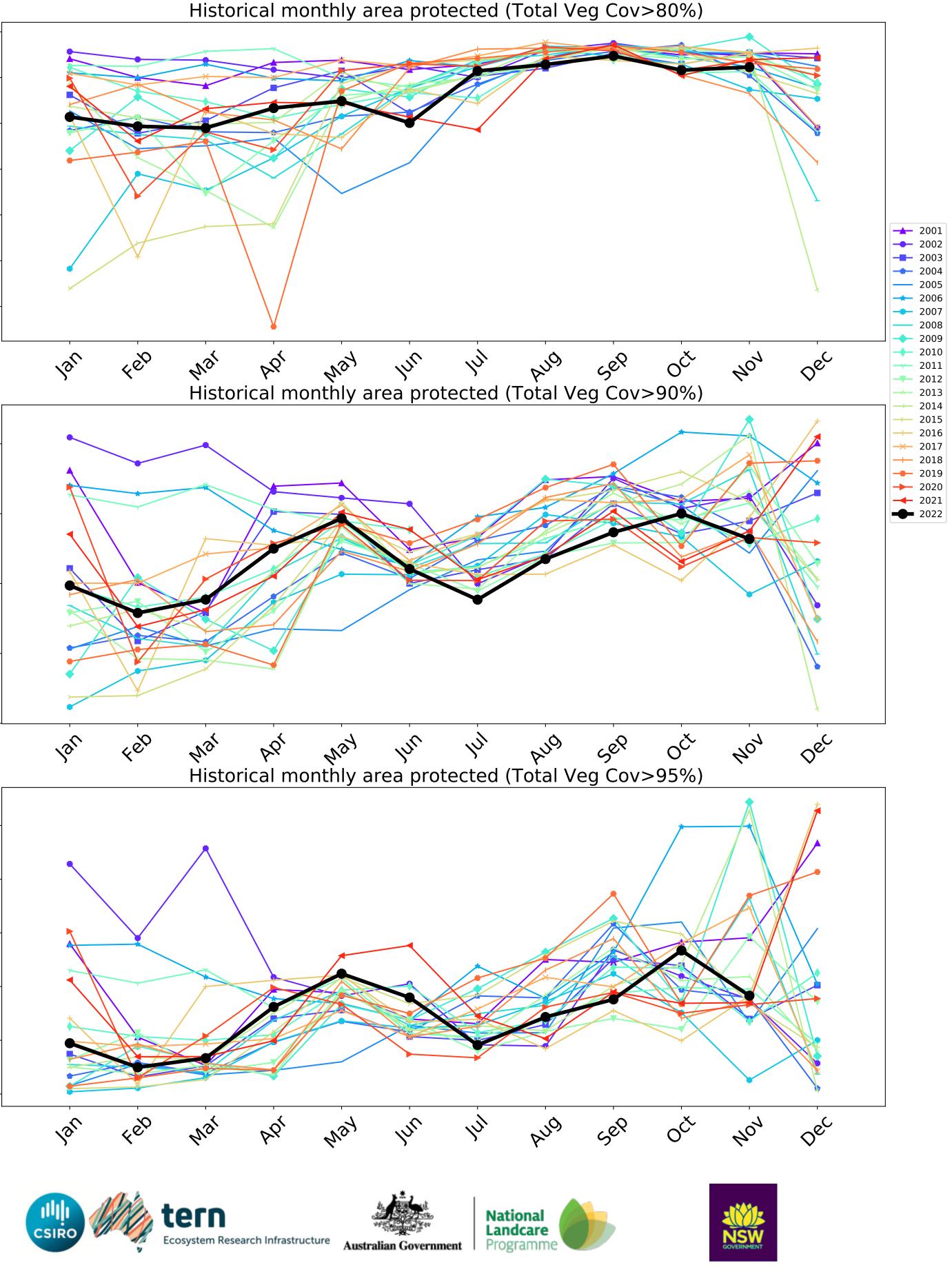
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)



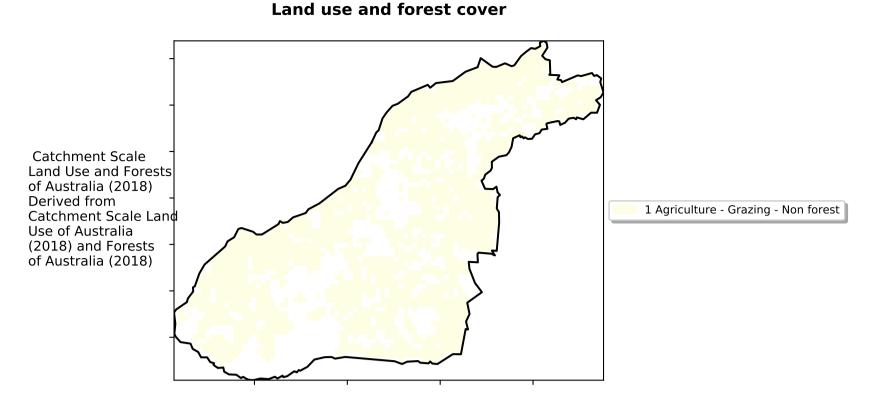
100-99 98 97 96 95 94 4eb Jan In May Þb, Mai month tern Ecosystem Research Infrastructure Australian Government



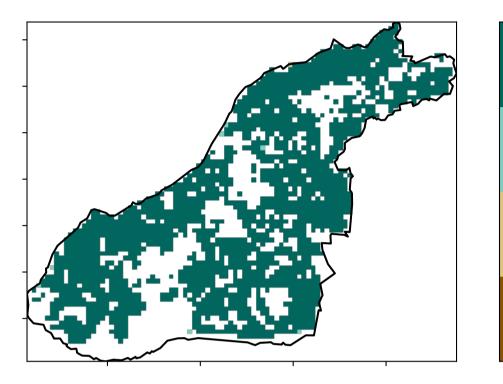




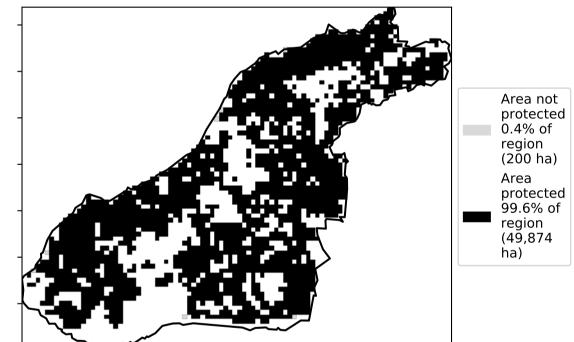
Grazing non forest



Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



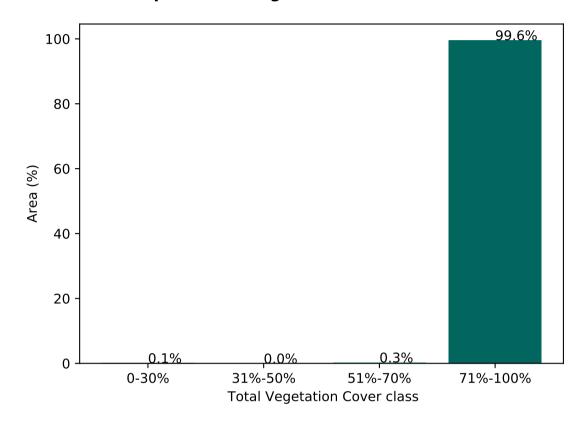
1 12º00 200%

52°10°10°10

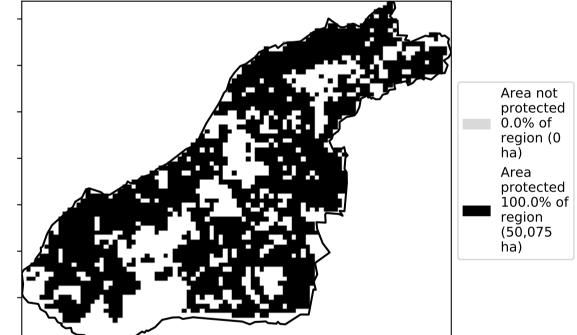
32005001

0.30%

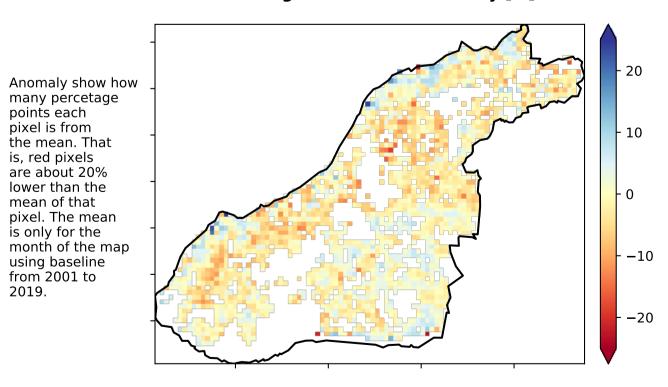
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)

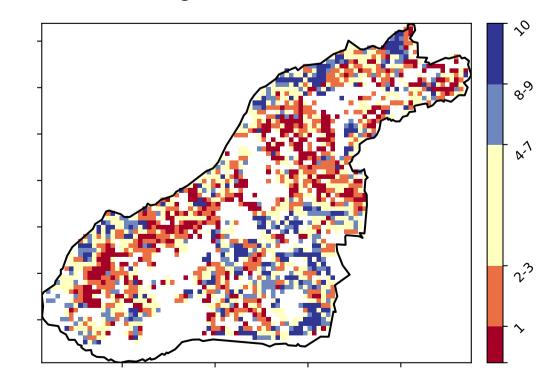


Total Vegetation Cover Anomaly [%]

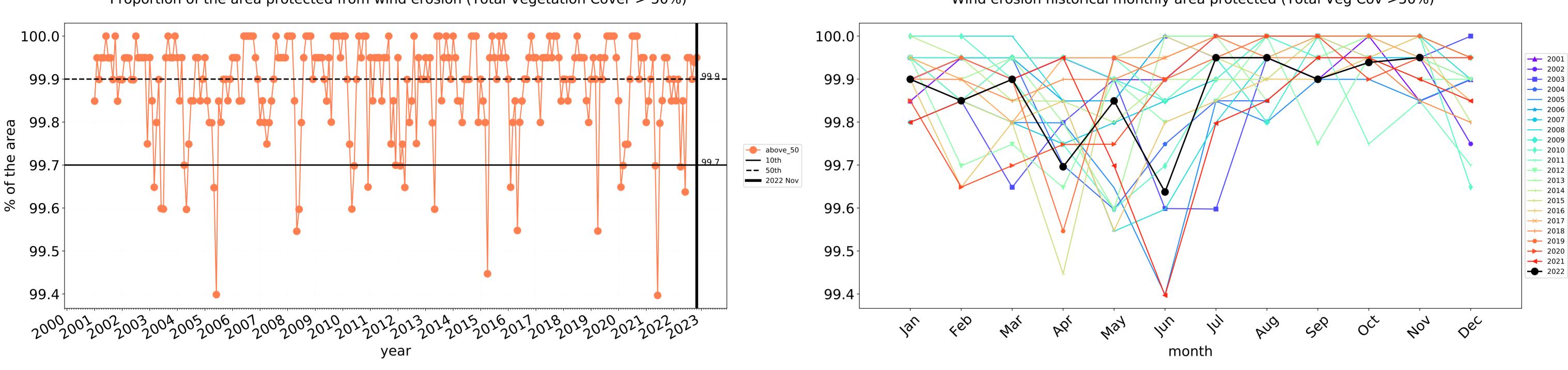


lower than the mean of that

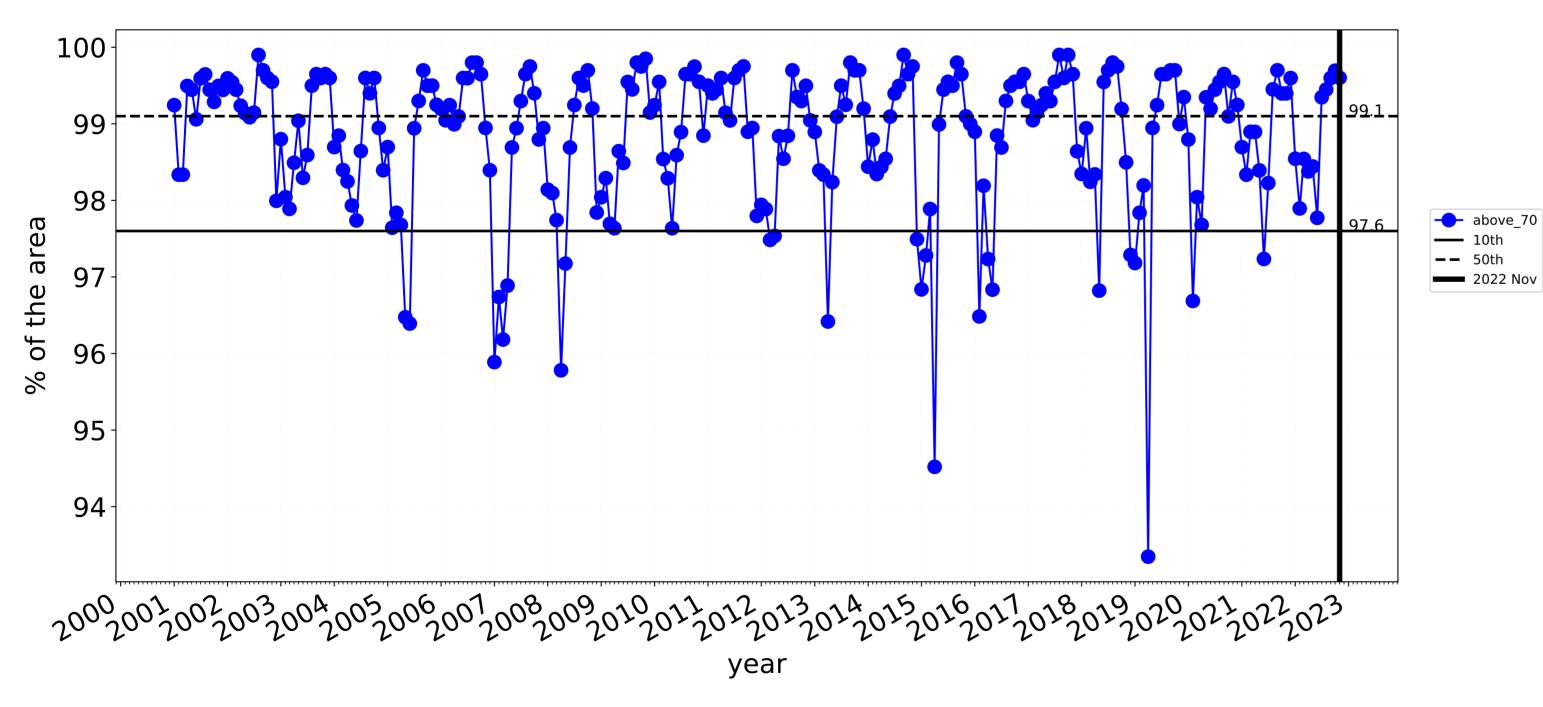
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline the map using baseline from 2001 to 2019.







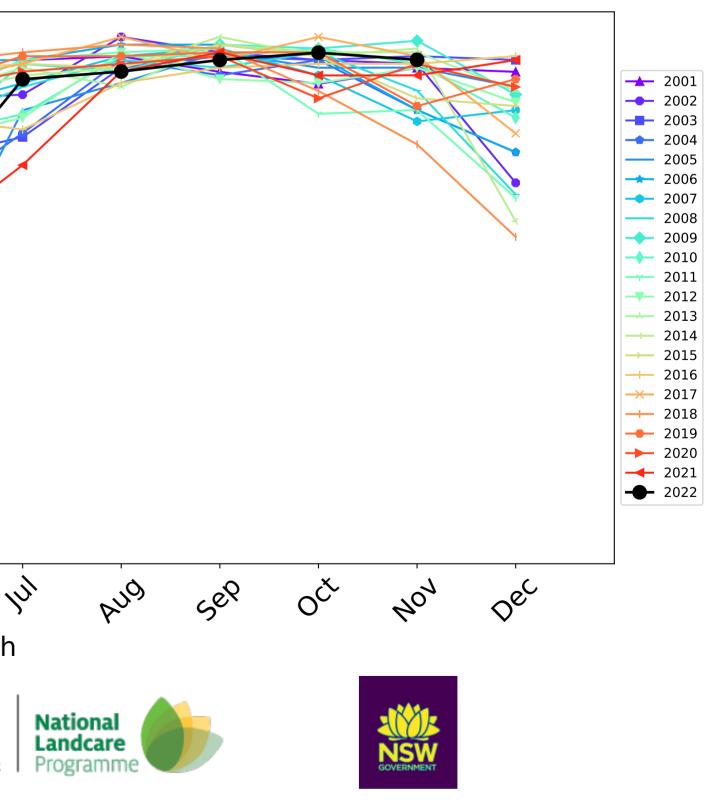
Proportion of the area protected from wind erosion (Total Vegetation Cover > 50%)

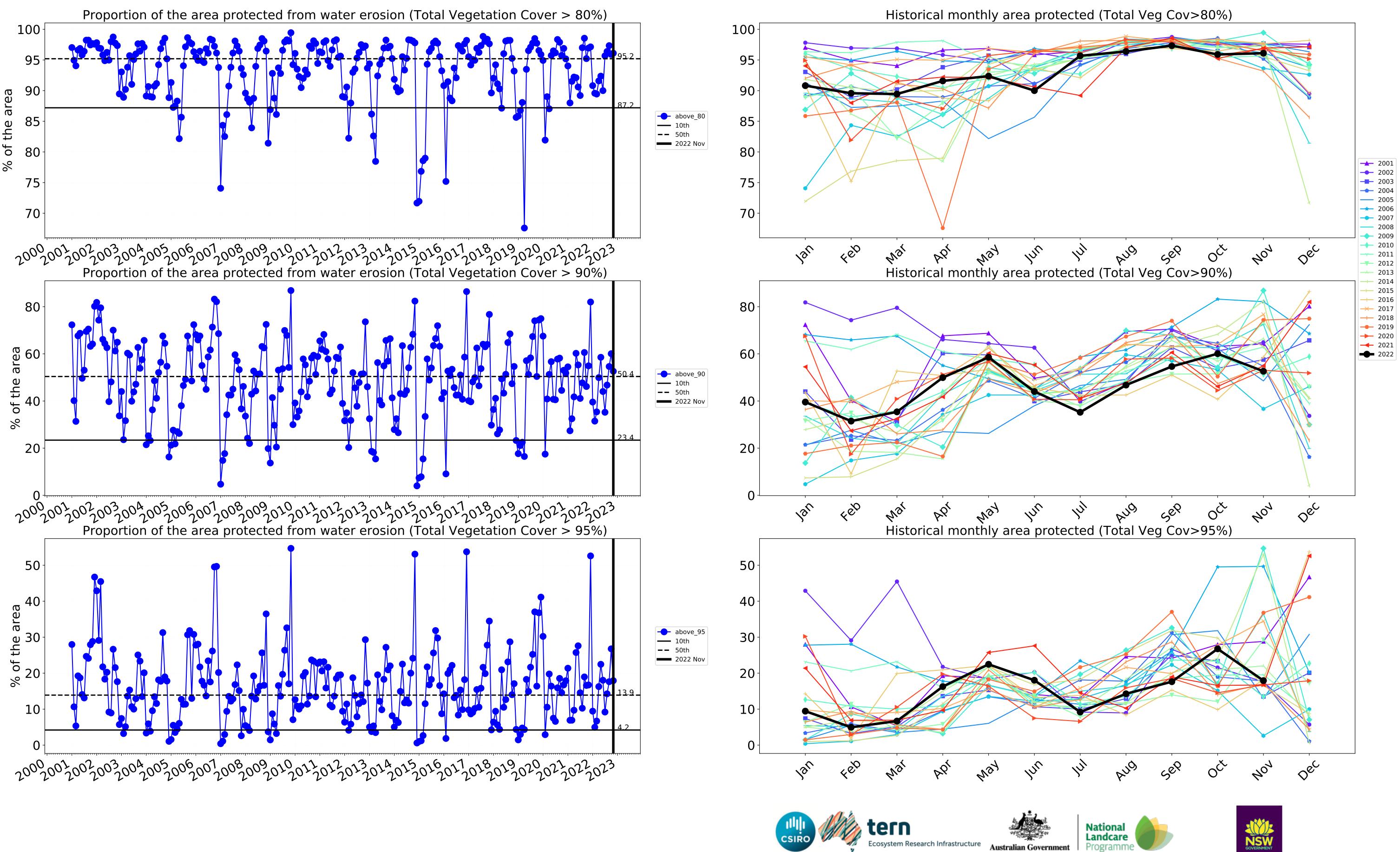


Grazing non forest timeseries

100 99 98 97 96 95 94 4eb Jan In May Þb, Mai month tern Ecosystem Research Infrastructure Australian Government

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







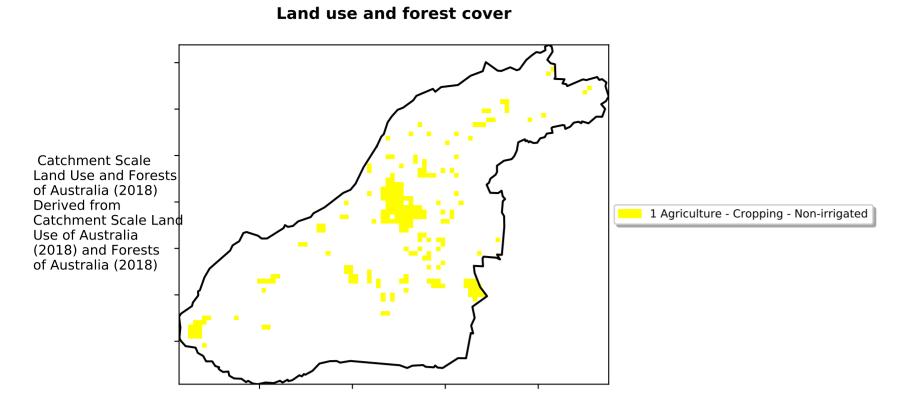
Cropping

12% 200%

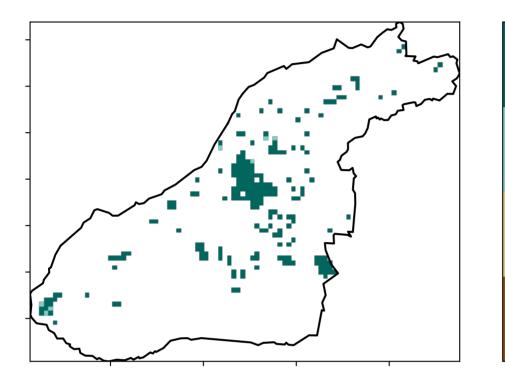
52°10°10°10

32°1050°10

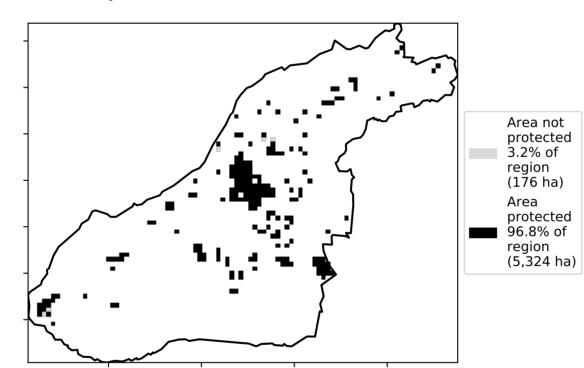
0.30%



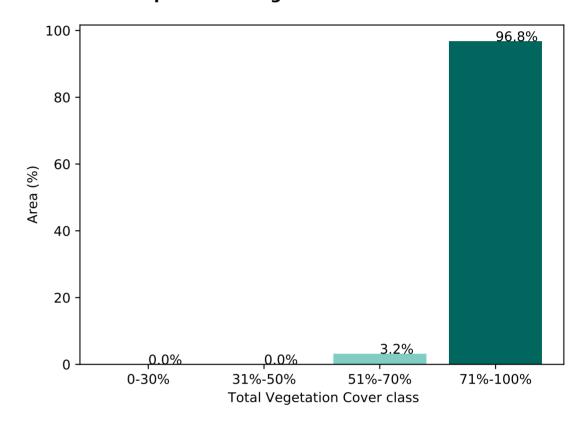
Total Vegetation Cover [%]



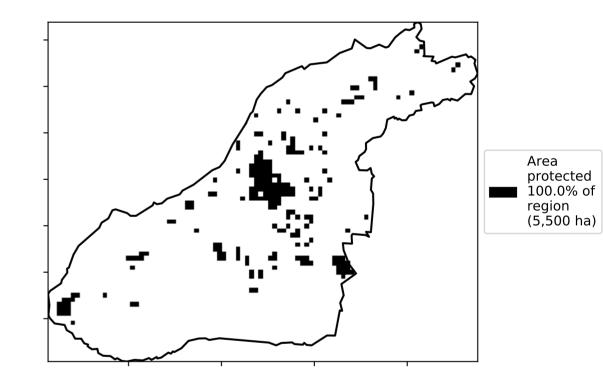
% Area protected from water erosion (>70%)



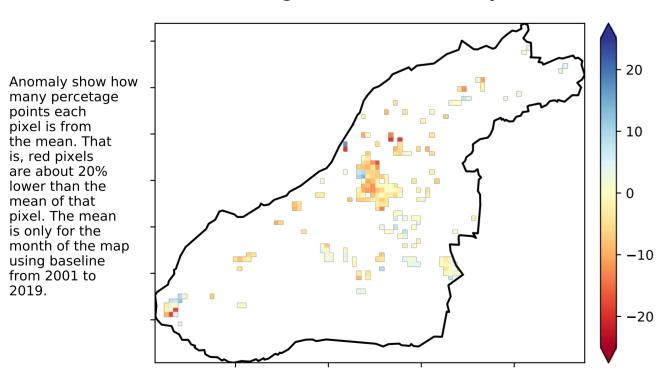
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



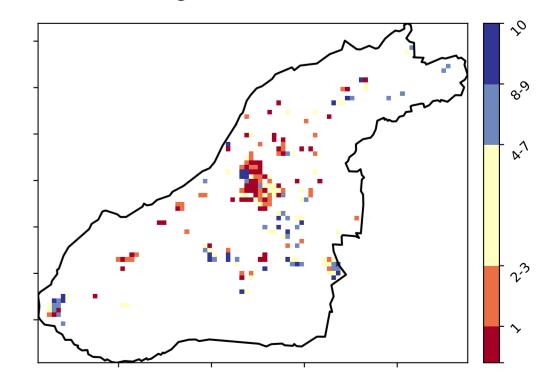
Total Vegetation Cover Anomaly [%]



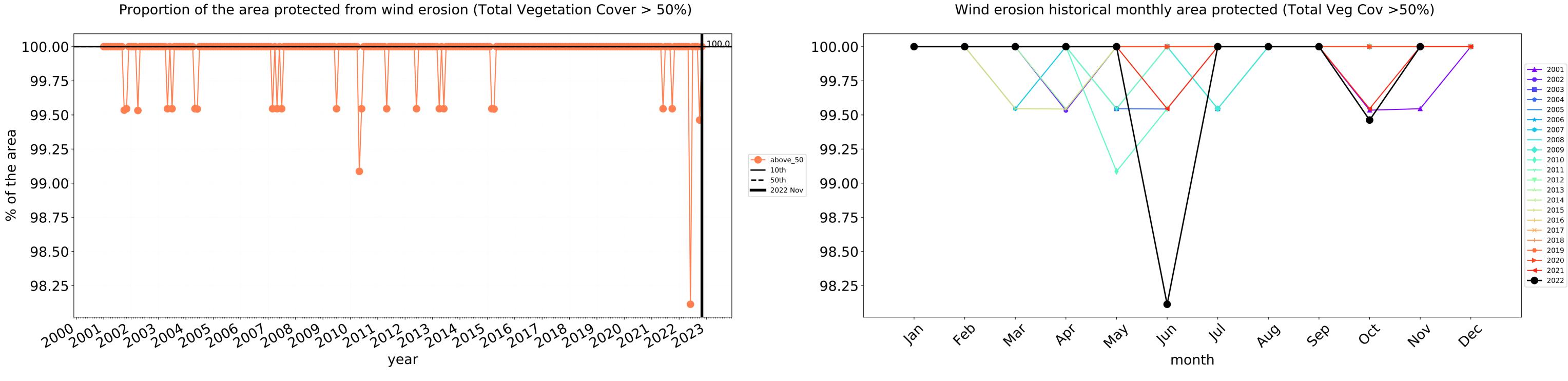
is, red pixels

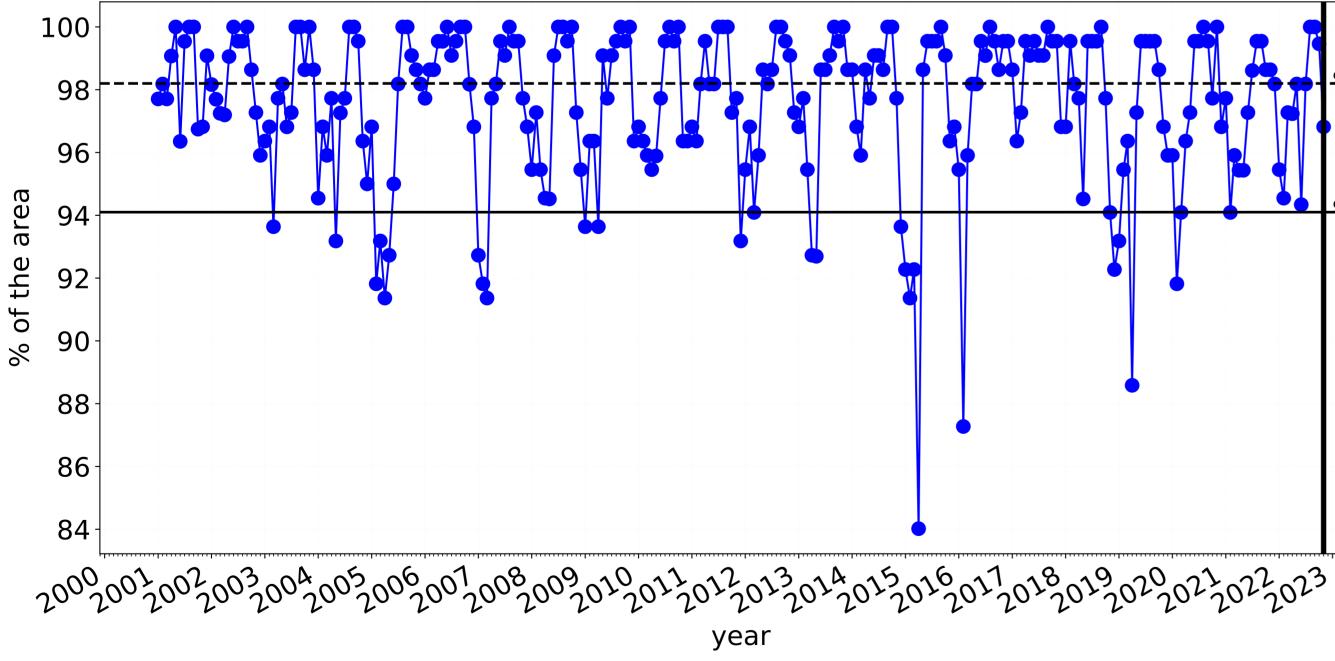
mean of that

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



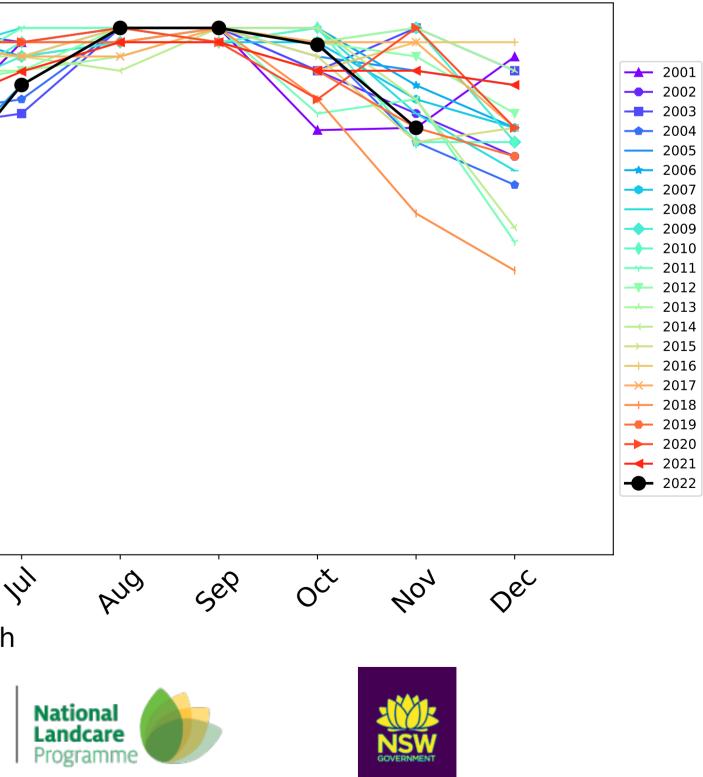


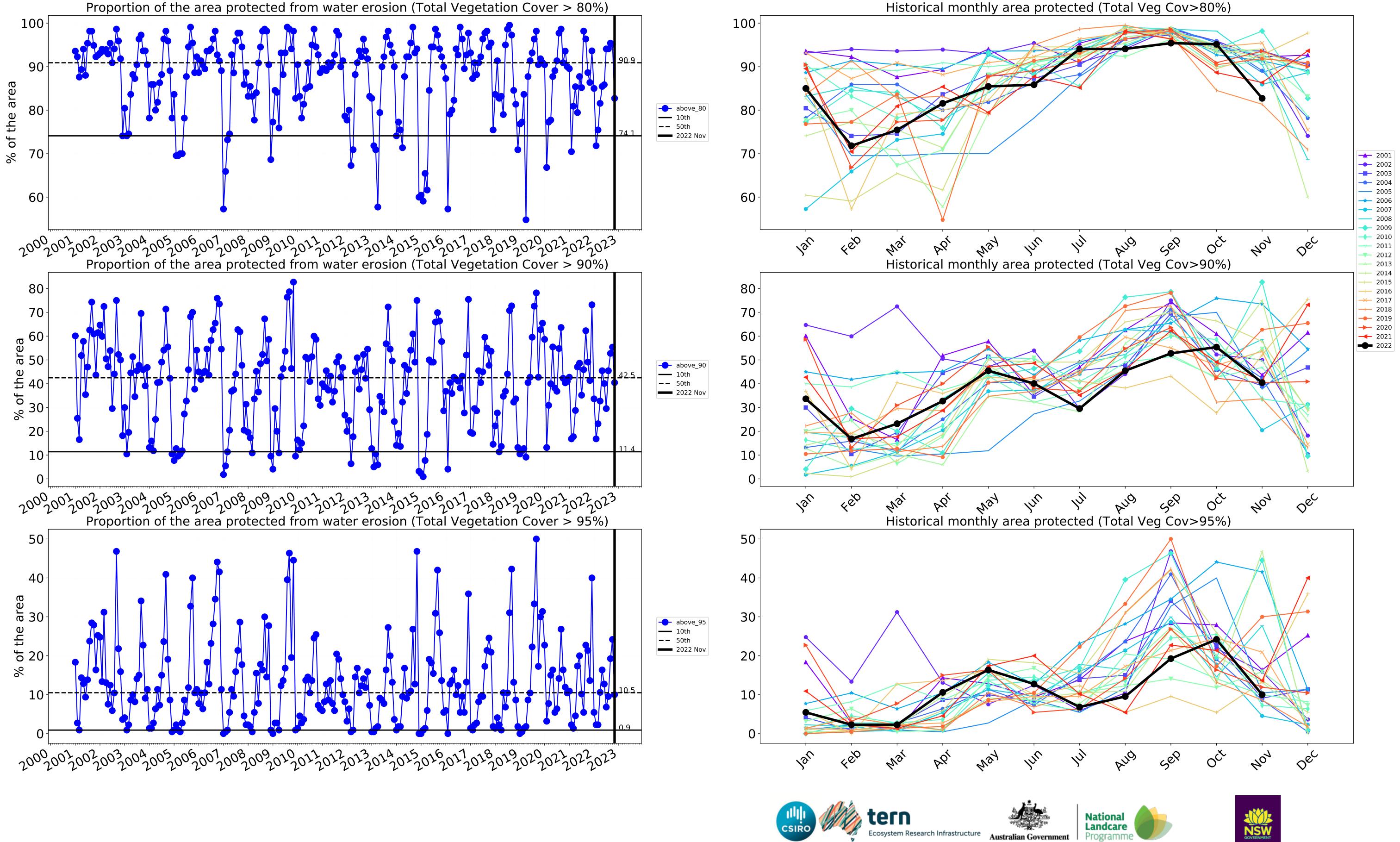




100 98 96 ---- above_70 94 **—** 10th **——** 50th 2022 Nov 92 90 88 86 84 fer Jan In May War PQ' month tern Ecosystem Research Infrastructure Australian Government

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



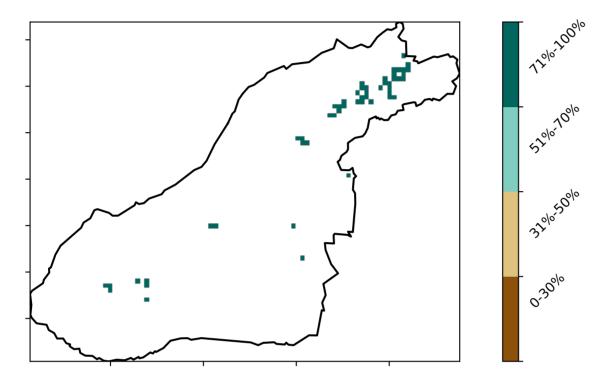


Irrigation

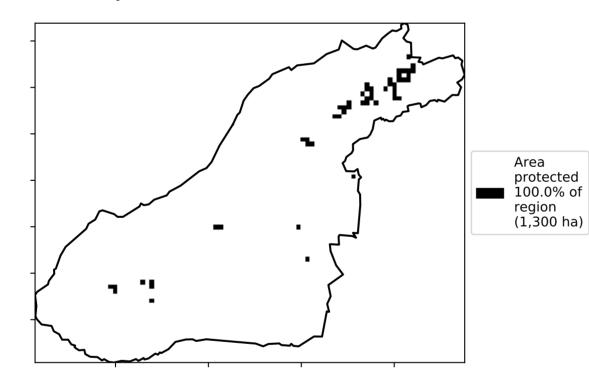
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

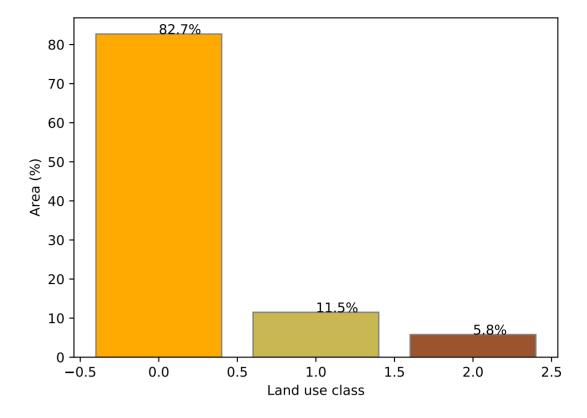
Land use and forest cover

Total Vegetation Cover [%]



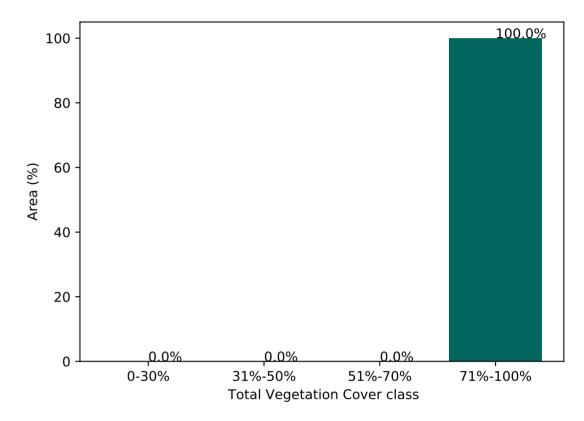
% Area protected from water erosion (>70%)



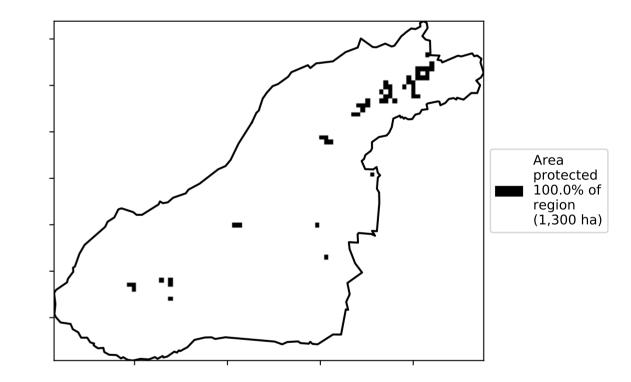


Proportion of each land class in area

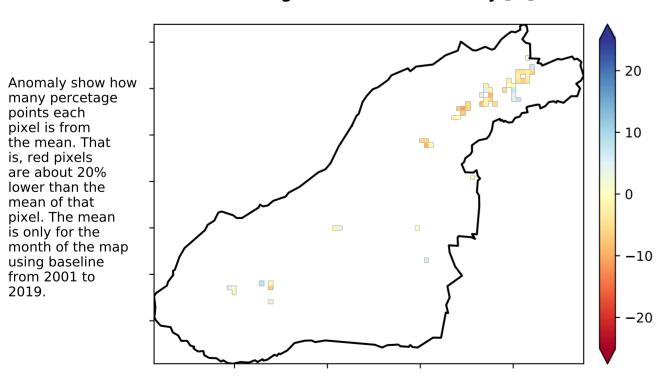
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)

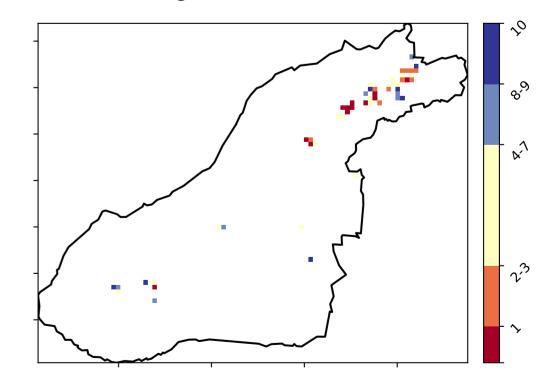


Total Vegetation Cover Anomaly [%]

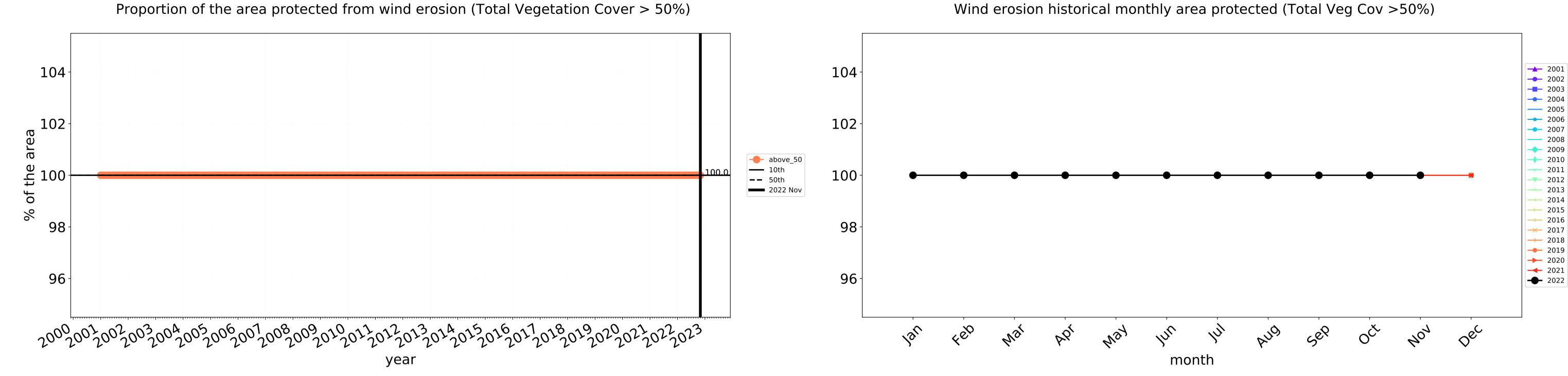


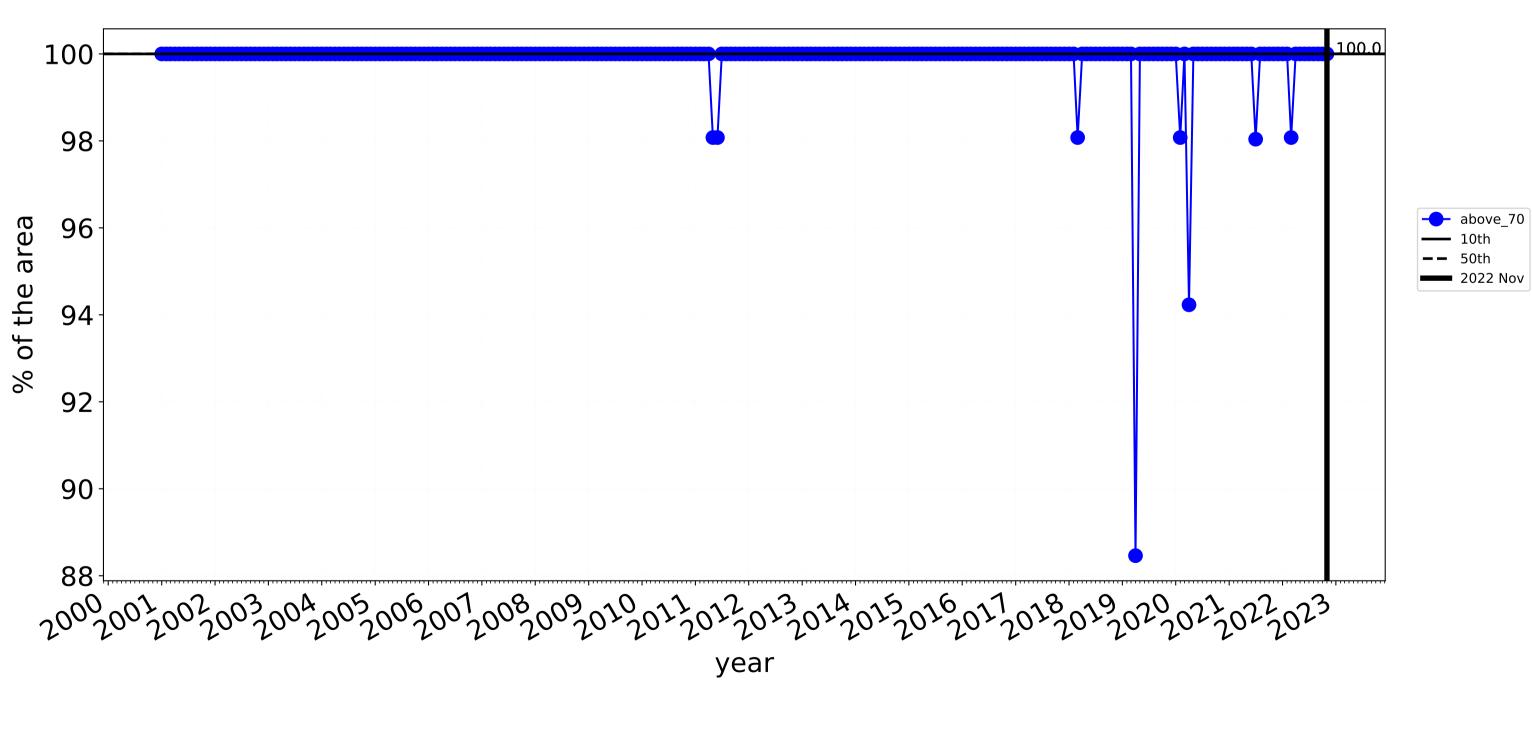
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Total Vegetation Cover Decile [%]

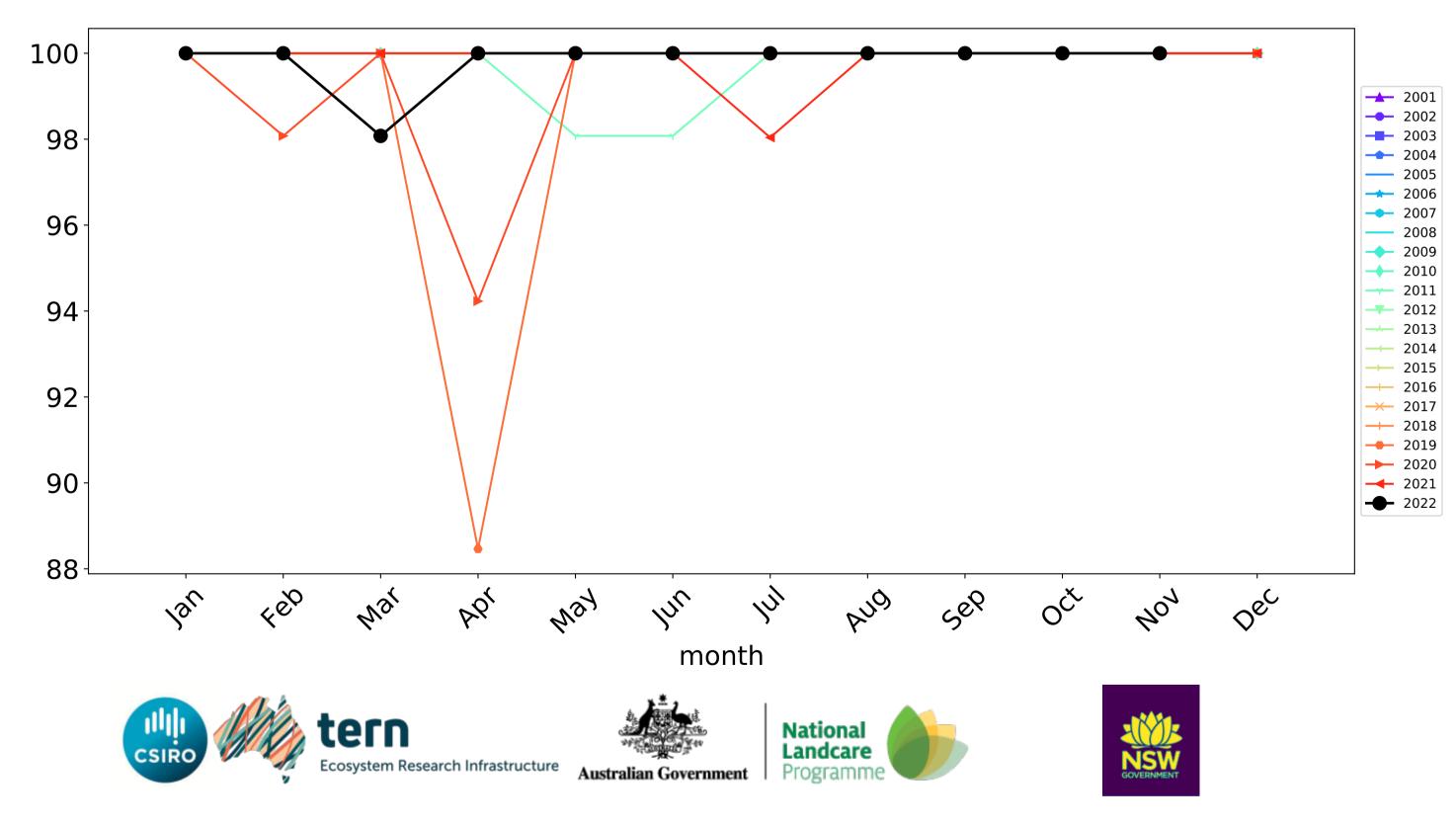


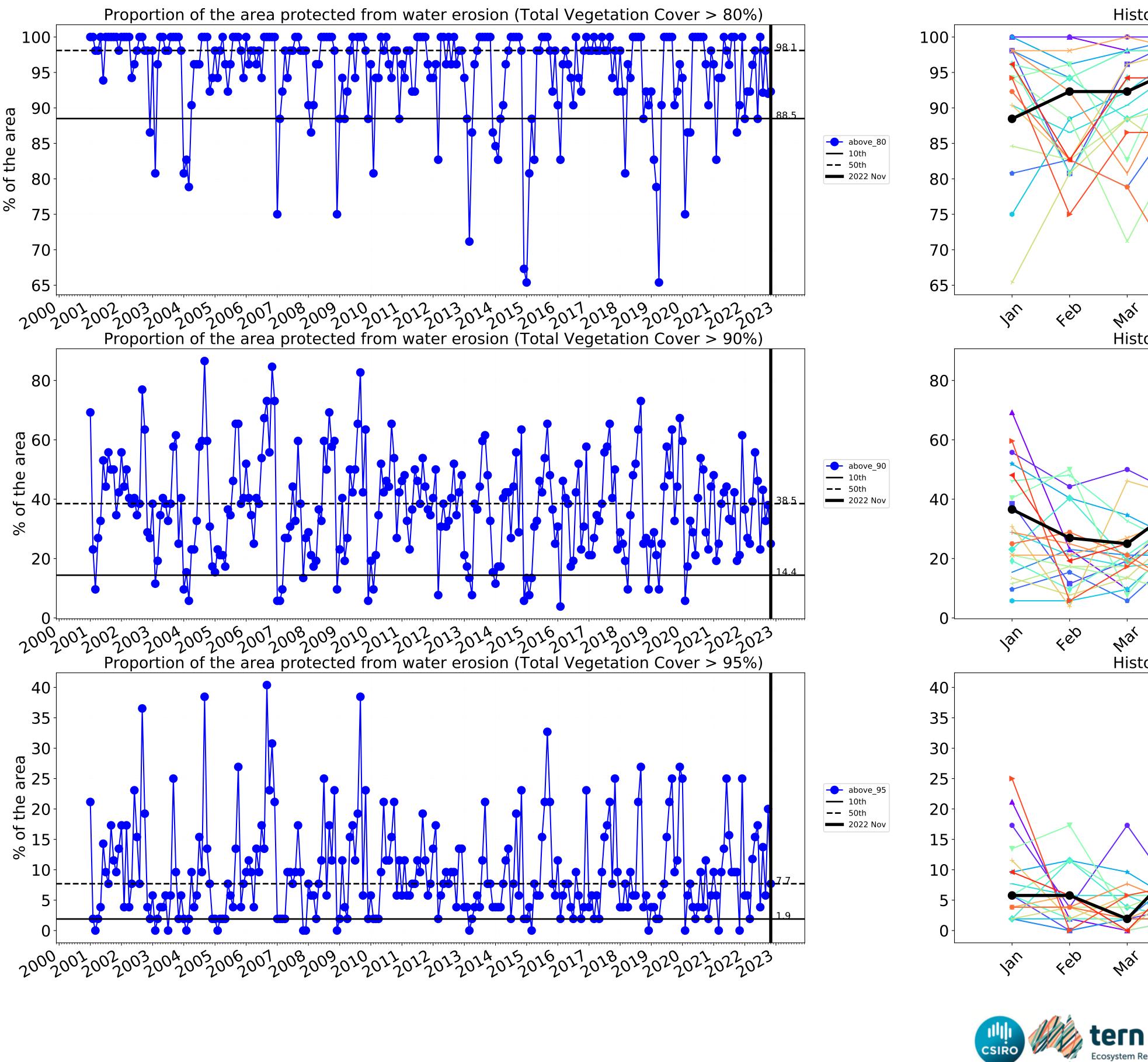






Irrigation timeseries





Historical monthly area protected (Total Veg Cov>80%)

NUI

NO

26,

way

PQ

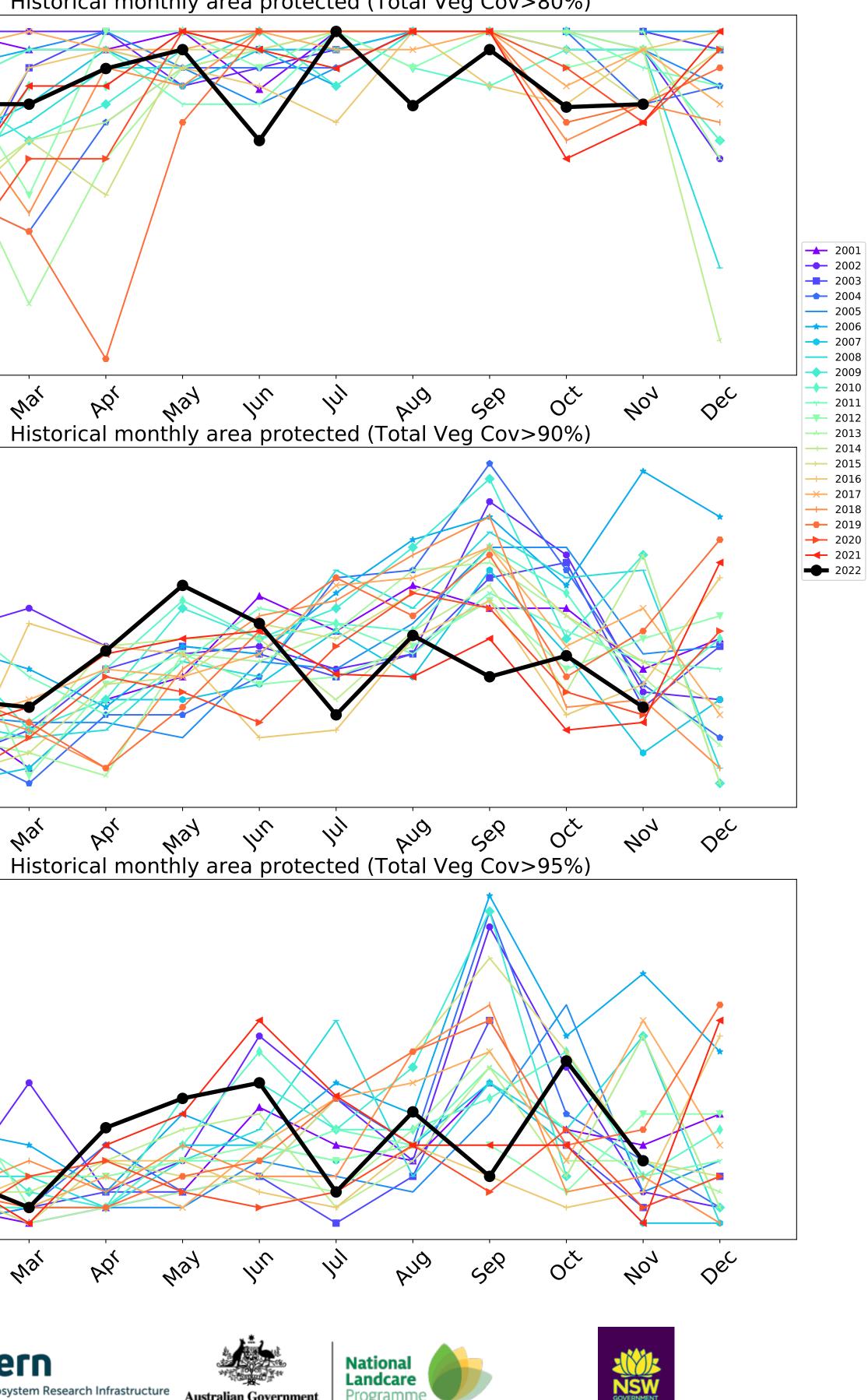
Ecosystem Research Infrastructure

In

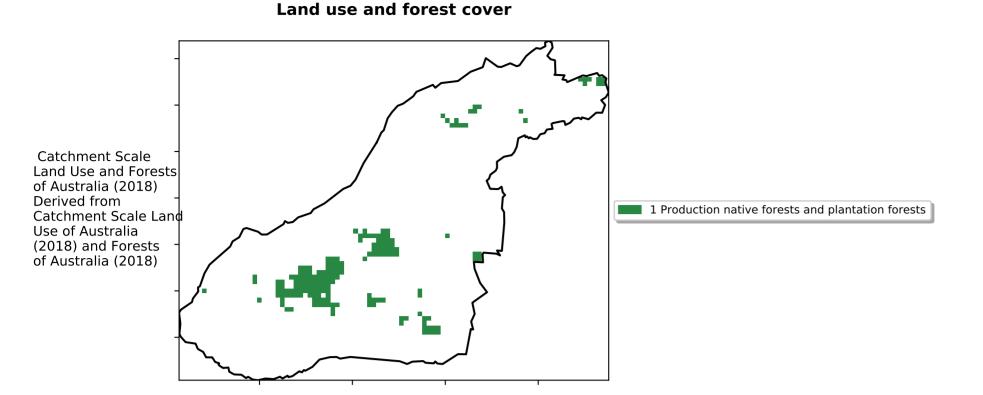
Australian Government

1st

Programm



Production native forests and plantation forests



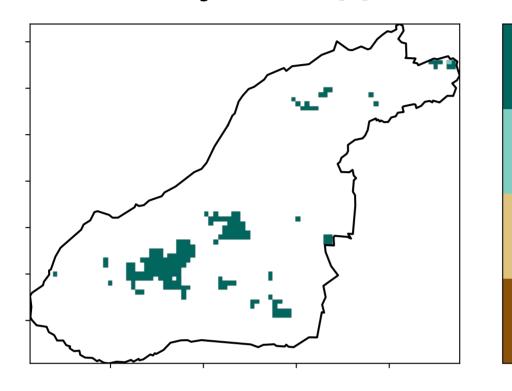
12º10-200%

· 52% 70%

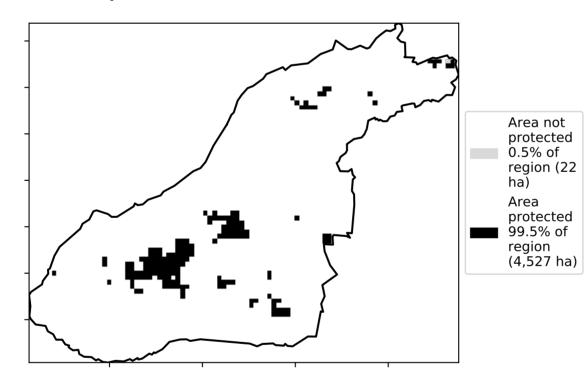
· 32°10,50°10

0.30%

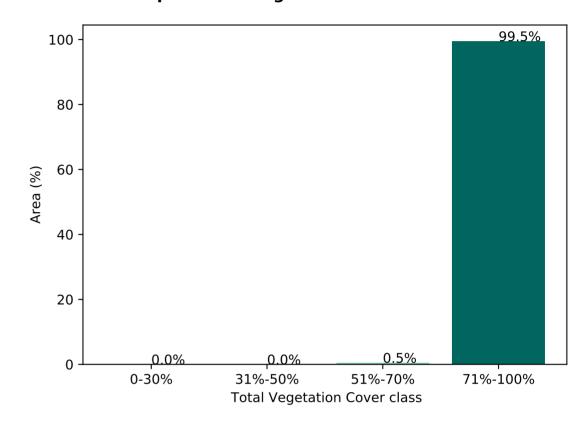
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



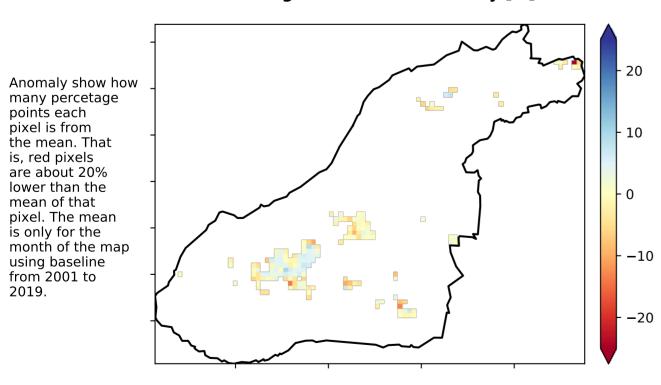
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)

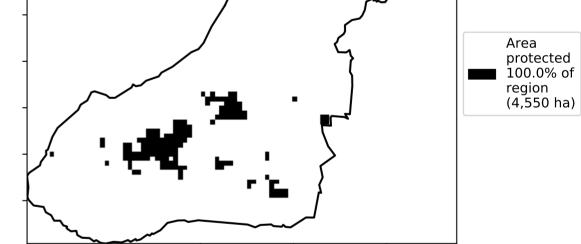


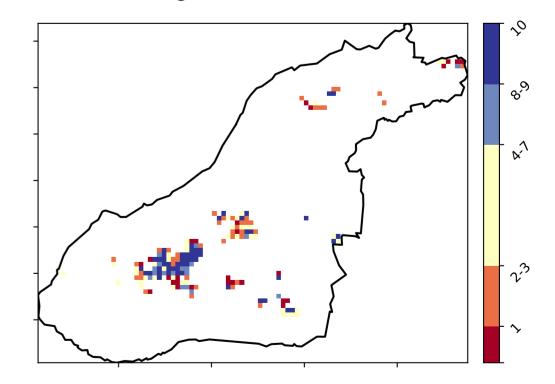
Total Vegetation Cover Anomaly [%]



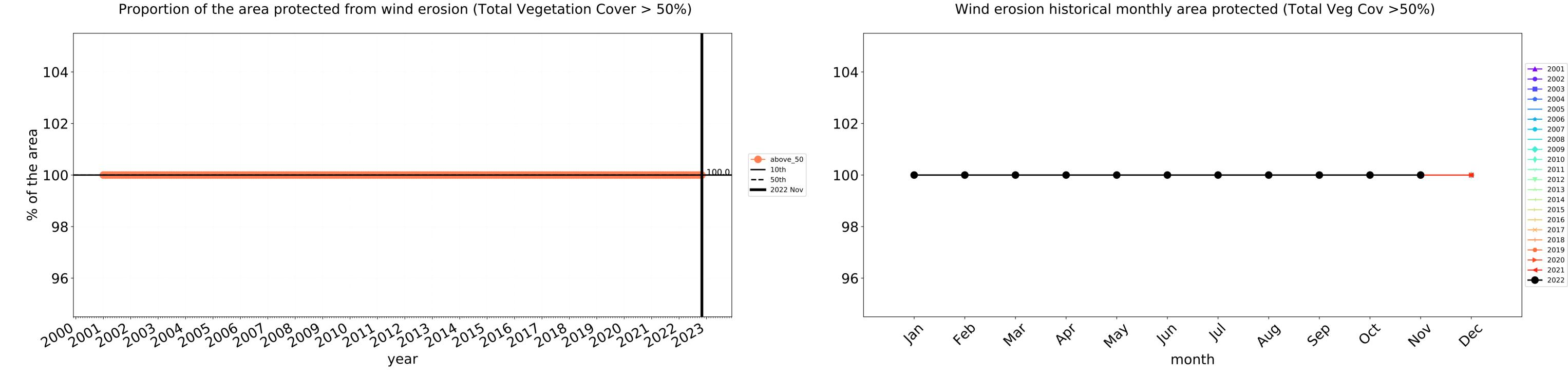
pixel is from

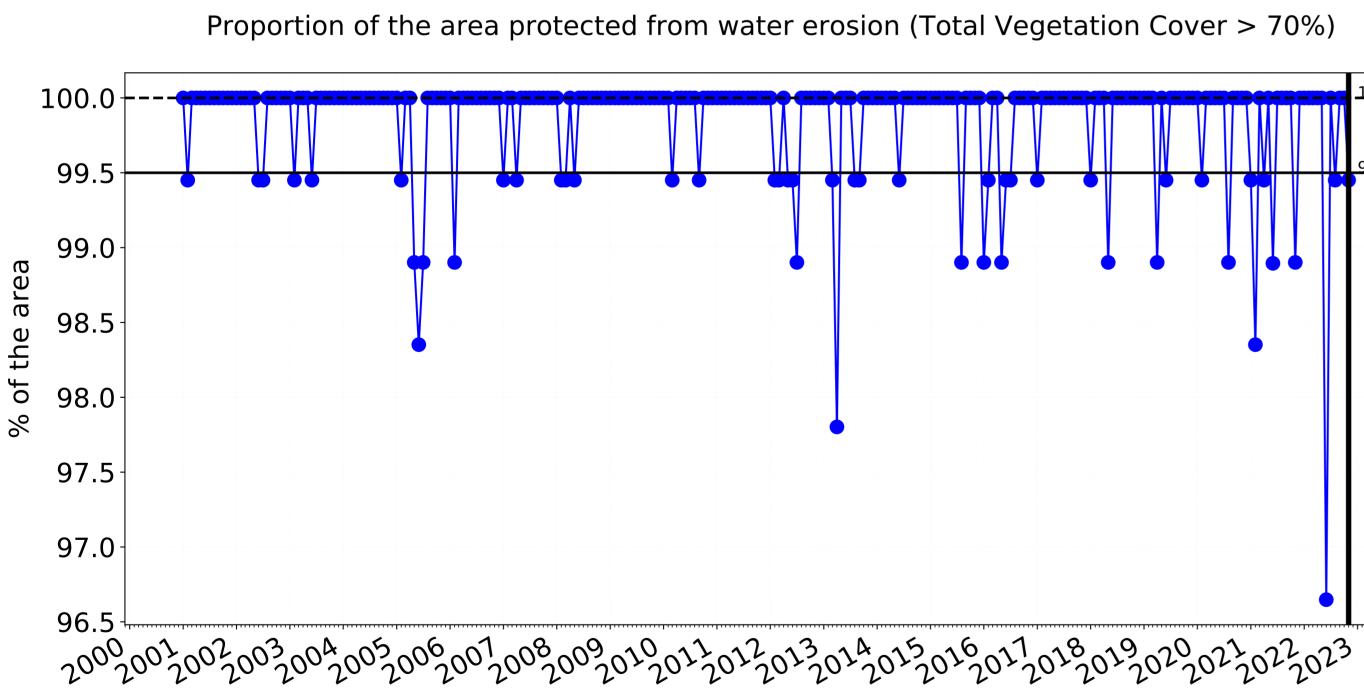
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.









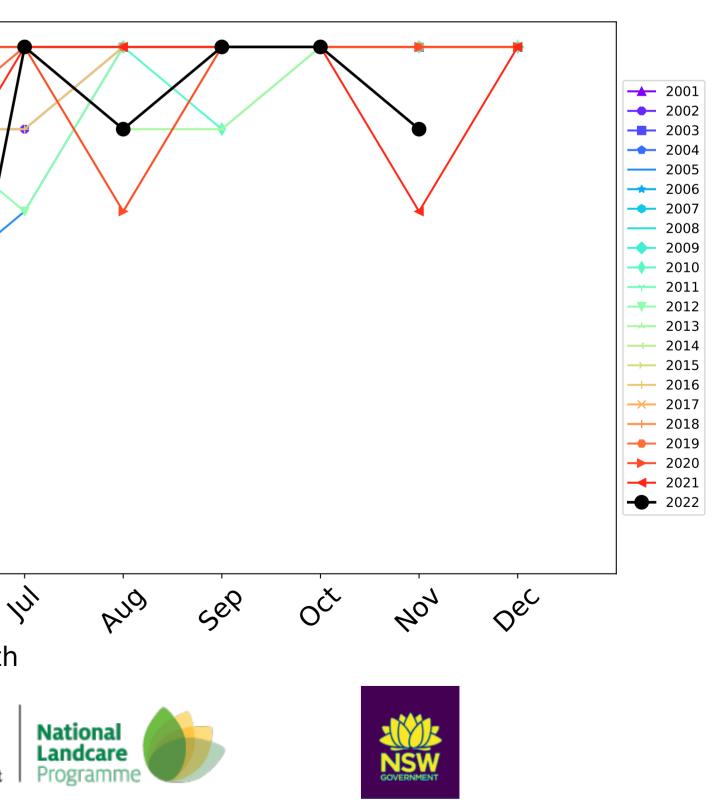


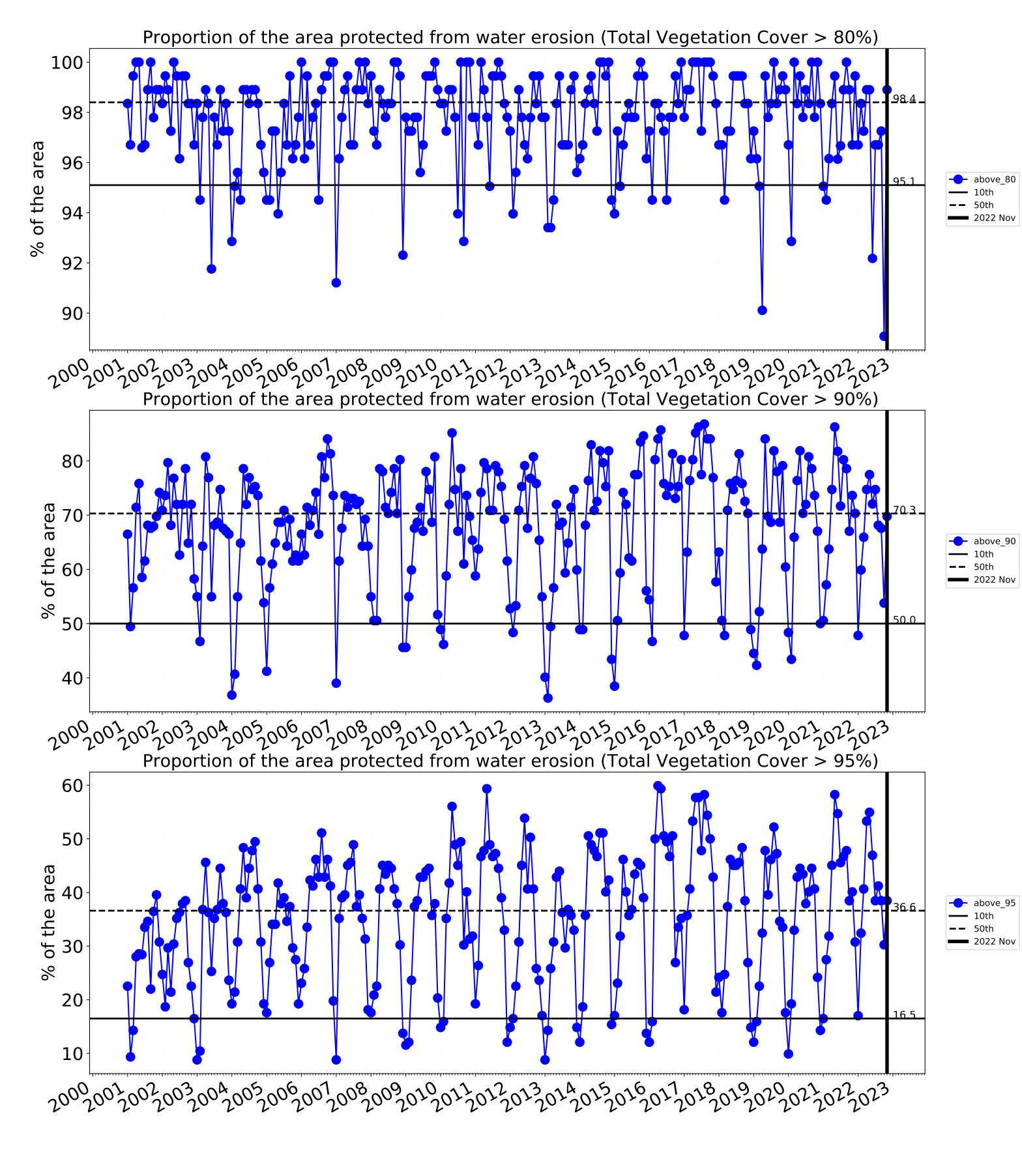
Proportion of the area protected from water erosion (Total Vegetation Cover > 70%)

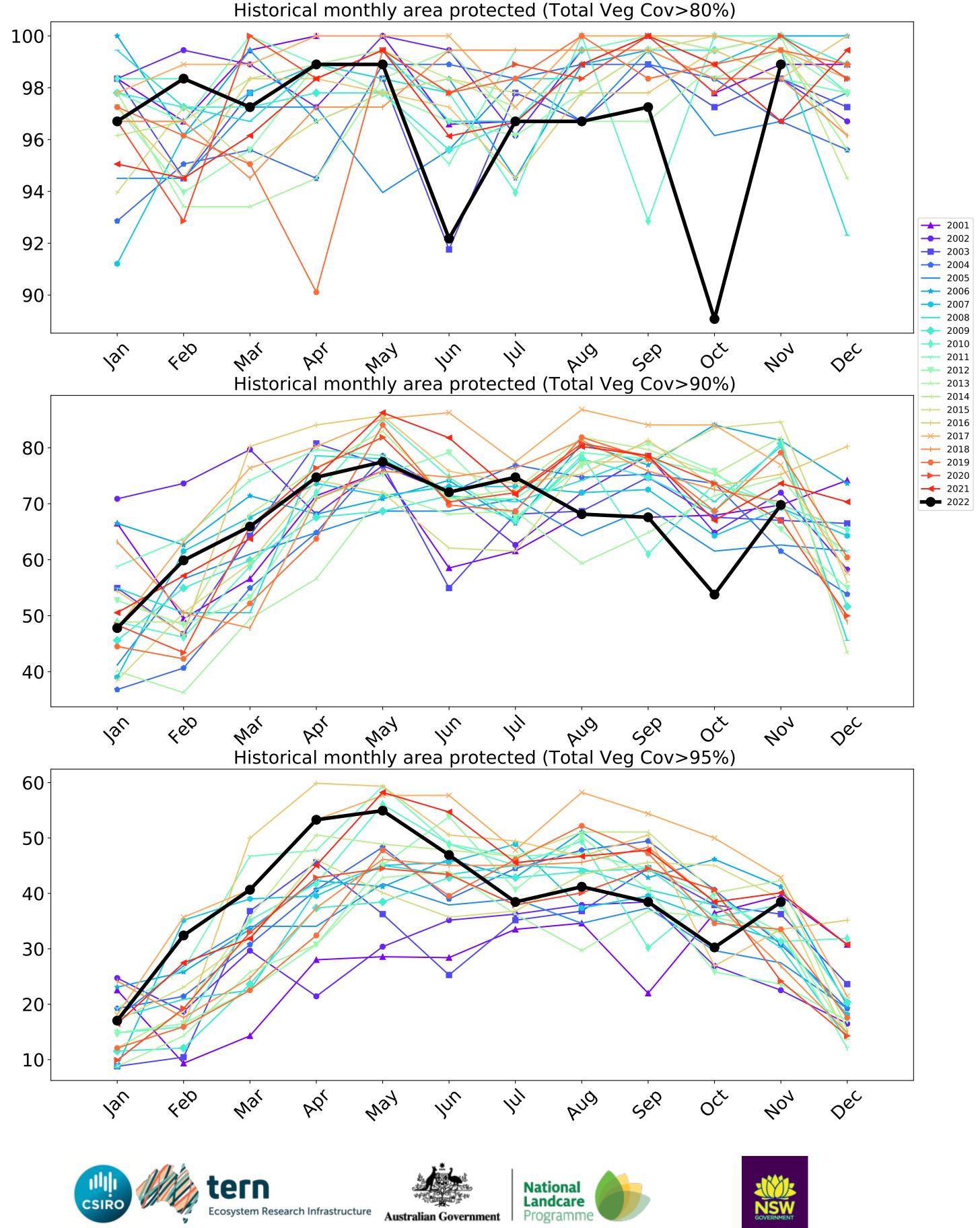
year

0.00 100.0-99.5 99.0 ---- above_70 **—** 10th **——** 50th 98.5 **—** 2022 Nov 98.0 97.5 97.0 96.5 4eb May hr Sal PQ Mai month tern Ecosystem Research Infrastructure Australian Government

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







Yankalilla_(DC) (73,700 ha and no data 1,437 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	73,700	100.0% 73,675	99.9% 73,650	98.9% 72,900	94.4% 69,600	54.6% 40,275	20.1% 14,800
Conservation and natural environments	9,550	100.0% 9,550	100.0% 9,550	99.2% 9,475	97.6% 9,325	74.9% 7,150	29.8% 2,850
Conservation and natural environments non forest	1,450	100.0% 1,450	100.0% 1,450	94.8% 1,375	87.9% 1,275	56.9% 825	13.8% 200
Conservation and natural environments Woodland forest	5,450	100.0% 5,450	100.0% 5,450	100.0% 5,450	99.1% 5,400	75.7% 4,125	29.4% 1,600
Conservation and natural environments Forest (non woodland)	2,650	100.0% 2,650	100.0% 2,650	100.0% 2,650	100.0% 2,650	83.0% 2,200	39.6% 1,050
Agriculture	57,350	100.0% 57,350	100.0% 57,325	99.3% 56,975	94.8% 54,350	51.0% 29,225	17.3% 9,900
Grazing	50,550	100.0% 50,550	100.0% 50,525	99.6% 50,350	96.1% 48,600	52.8% 26,675	18.3% 9,250
Grazing non forest	50,075	100.0% 50,075	100.0% 50,050	99.6% 49,875	96.1% 48,125	52.6% 26,350	17.9% 8,975
Cropping	5,500	100.0% 5,500	100.0% 5,500	96.8% 5,325	82.7% 4,550	40.5% 2,225	10.0% 550
Irrigation	1,300	100.0% 1,300	100.0% 1,300	100.0% 1,300	92.3% 1,200	25.0% 325	7.7% 100
Production native forests and plantation forests	4,550	100.0% 4,550	100.0% 4,550	99.5% 4,525	98.9% 4,500	69.8% 3,175	38.5% 1,750

