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

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:

Date: February 2022

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 cover class that 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



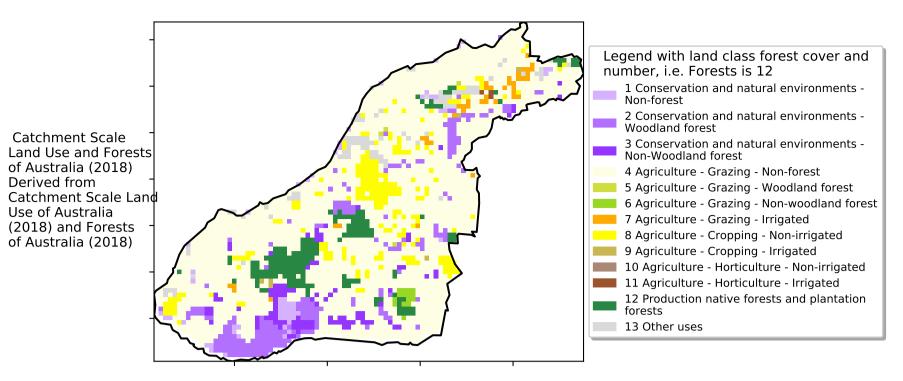




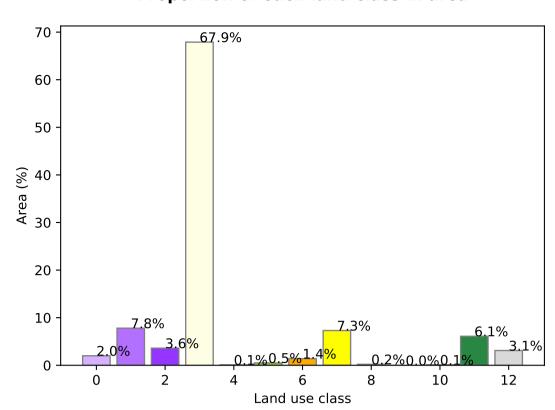


Vegetation Cover Feb 2022

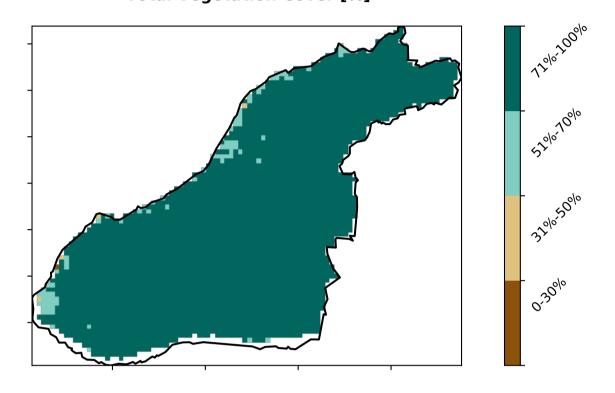
Land use and forest cover



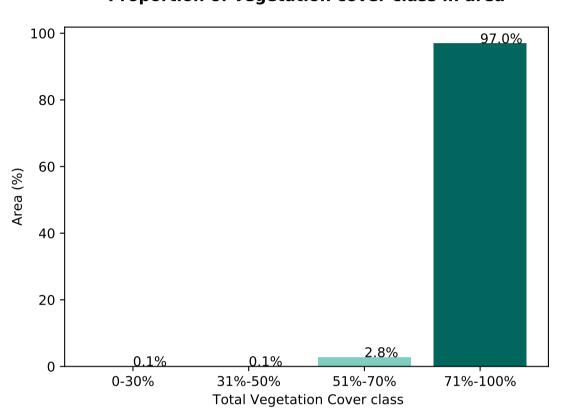
Proportion of each land class in area



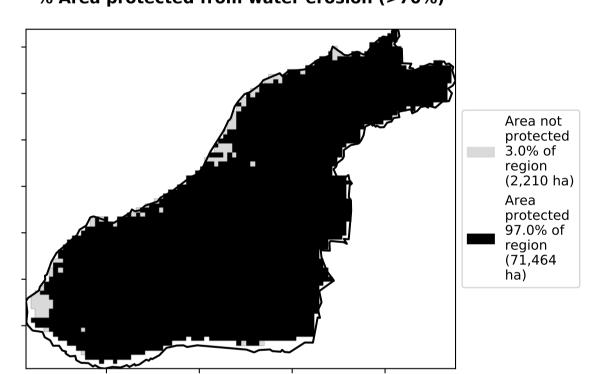
Total Vegetation Cover [%]



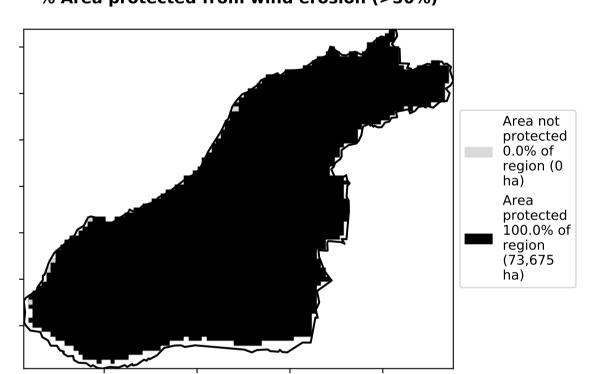
Proportion of vegetation cover class in area



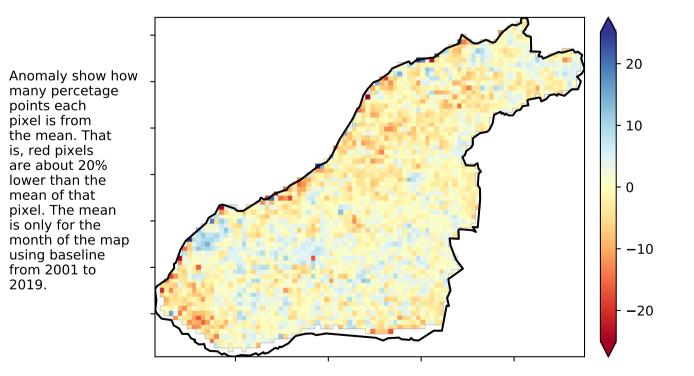
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

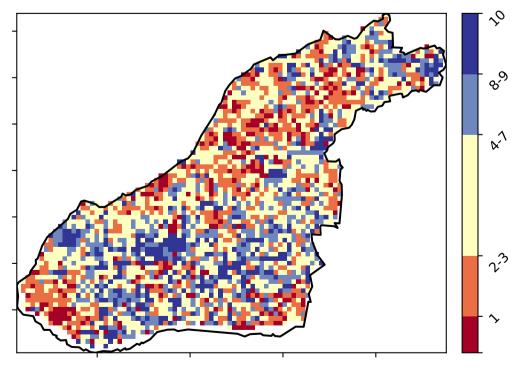


Total Vegetation Cover Anomaly [%]



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.

Total Vegetation Cover Decile [%]

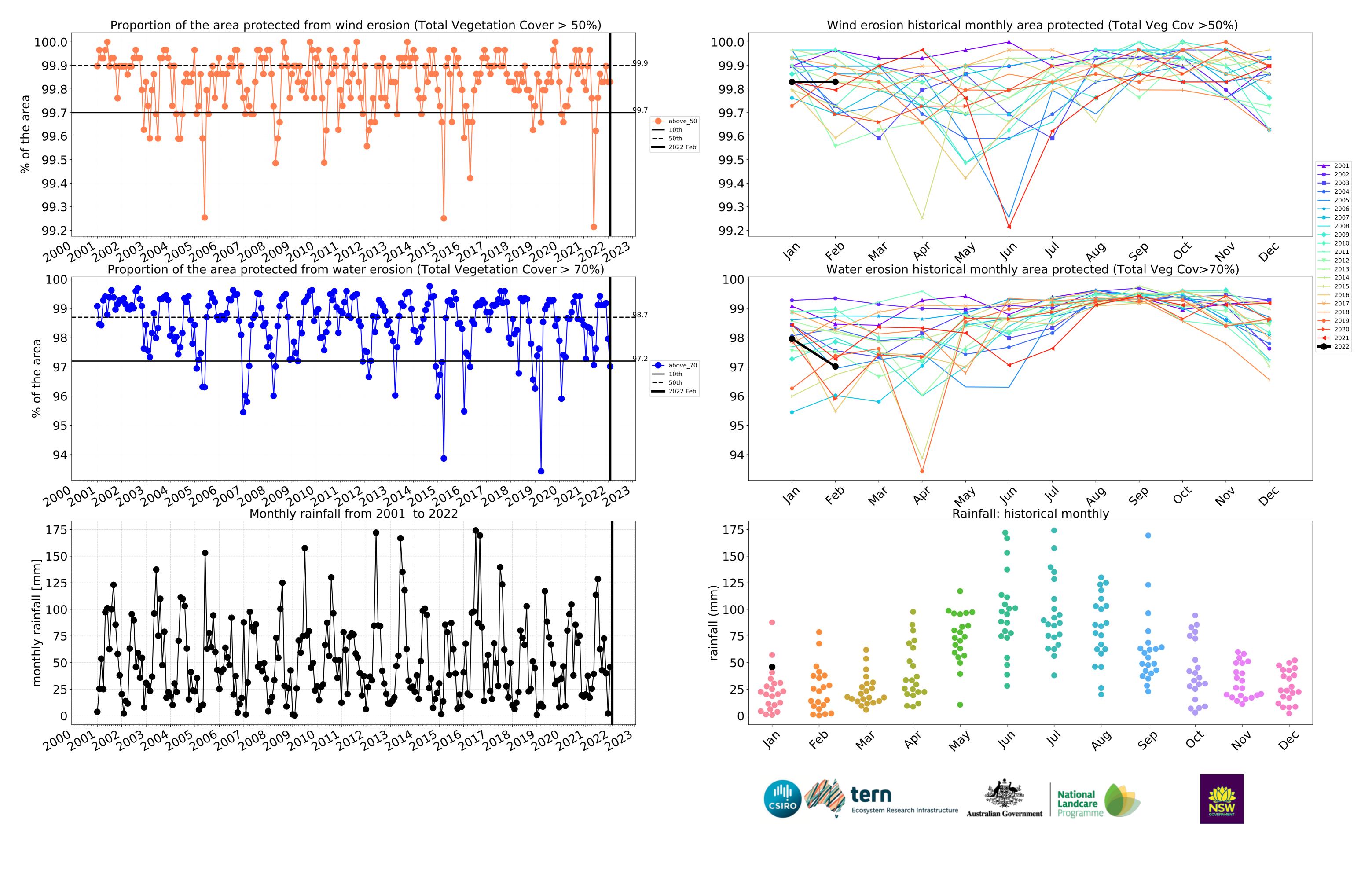


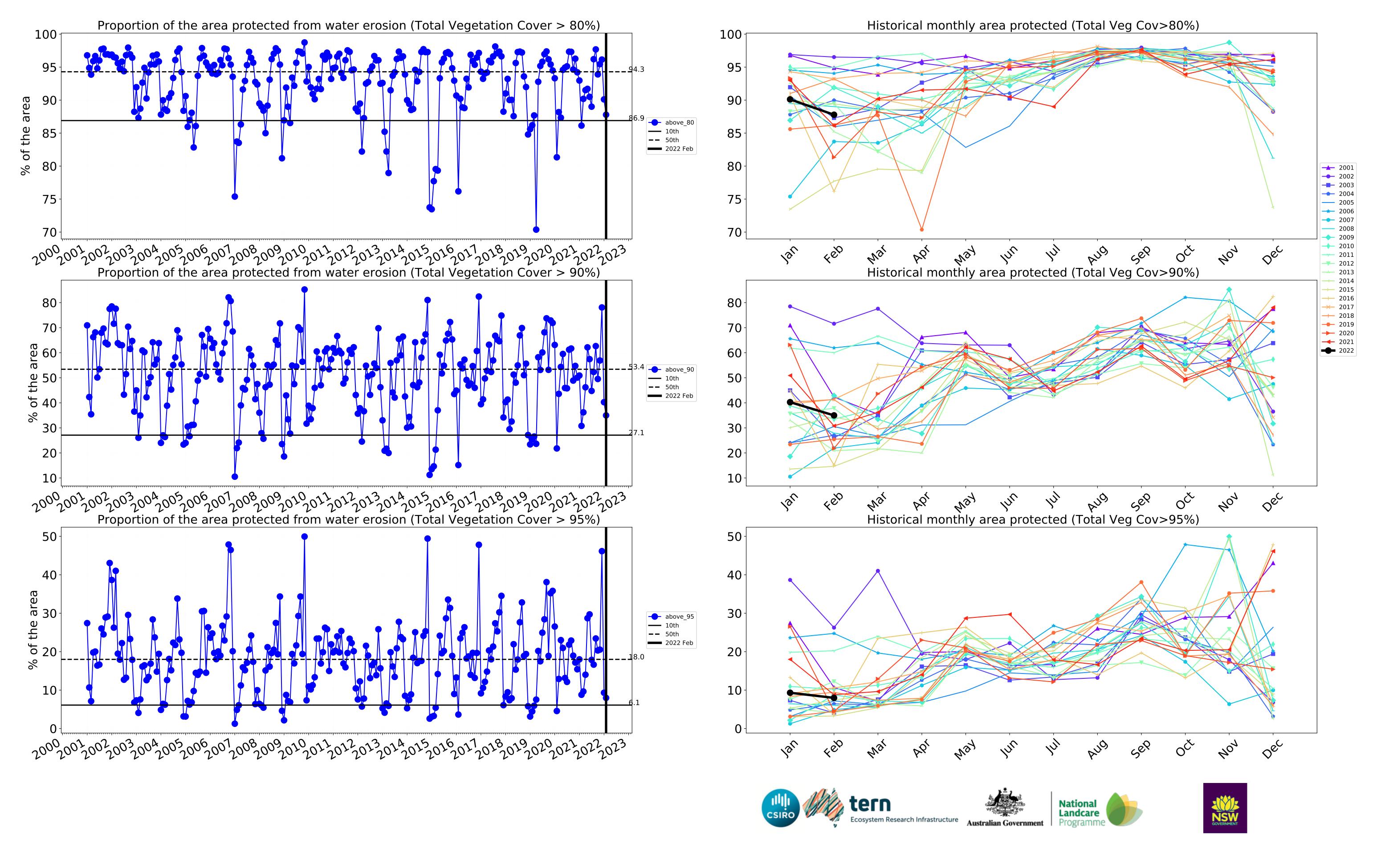












Conservation and natural environments

Land use and forest cover Proportion of each land class in area 60 58.2% 50 Catchment Scale 40 Land Use and Forests of Australia (2018) 1 Conservation and natural environments - Nonforest Area (%) 0 Derived from 2 Conservation and natural environments – Woodland forest Catchment Scale Land 26.8% Use of Australia 3 Conservation and natural environments - Non-woodland forest (2018) and Forests of Australia (2018) 20 15.0% 10 0.5 1.0 1.5 2.0 2.5 -0.50.0 Land use class **Total Vegetation Cover [%]** Proportion of vegetation cover class in area 98.4% 100 80 60 40 20 1.6% 0.0% 0.0% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class** % Area protected from wind erosion (>50%) % Area protected from water erosion (>70%) Area not protected 1.6% of Area region (152 ha) protected 100.0% of Area region (9,500 ha) protected 98.4% of region (9,348 ha) **Total Vegetation Cover Anomaly [%] Total Vegetation Cover Decile [%]** - 20 Anomaly show how many percetage points each pixel is from Deciles show where the - 10 pixel value lies in the the mean. That is, red pixels record, from highest to lowest, for that month. That is, red pixels are are about 20% lower than the mean of that in the lowest 10% of pixel. The mean records for that month of is only for the month of the map the map using baseline from 2001 to 2019. using baseline from 2001 to 2019. -10 **-**20 **National**

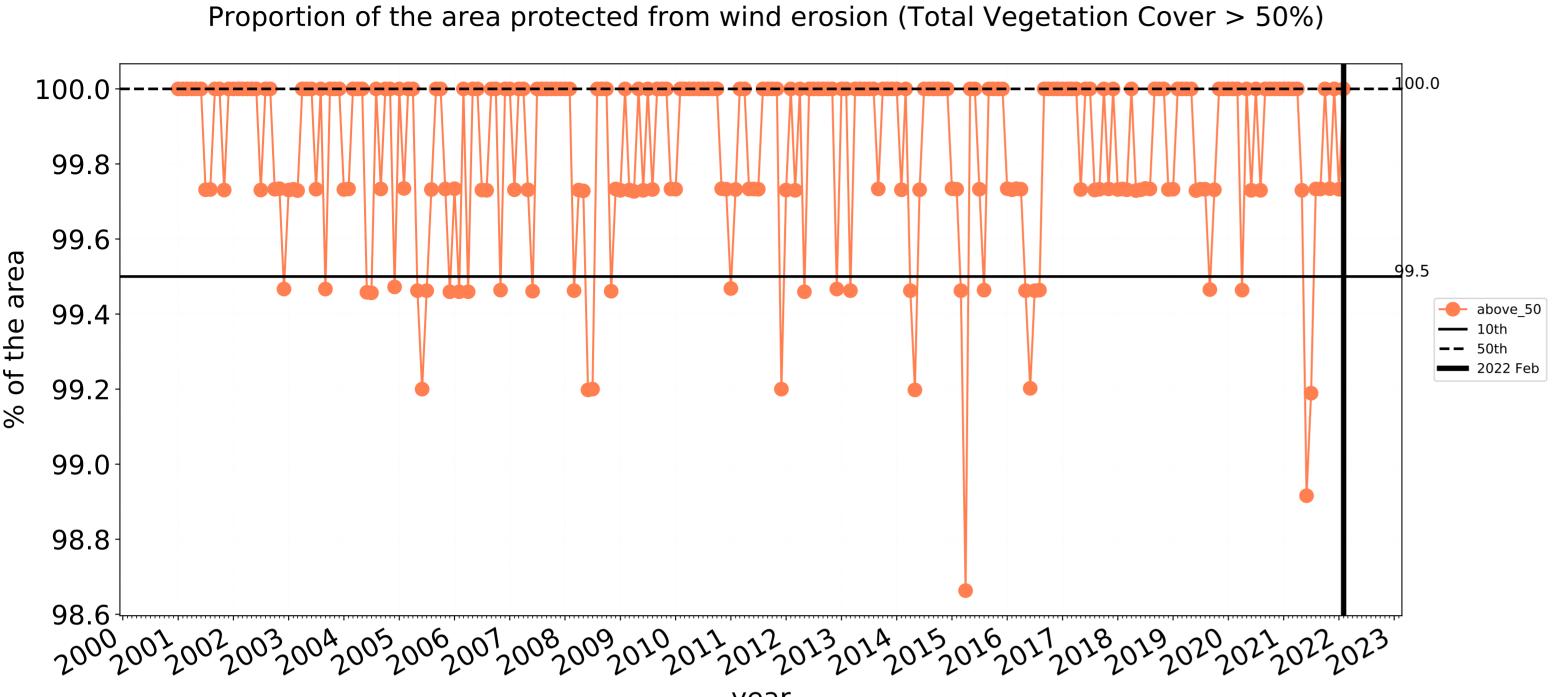
Australian Government

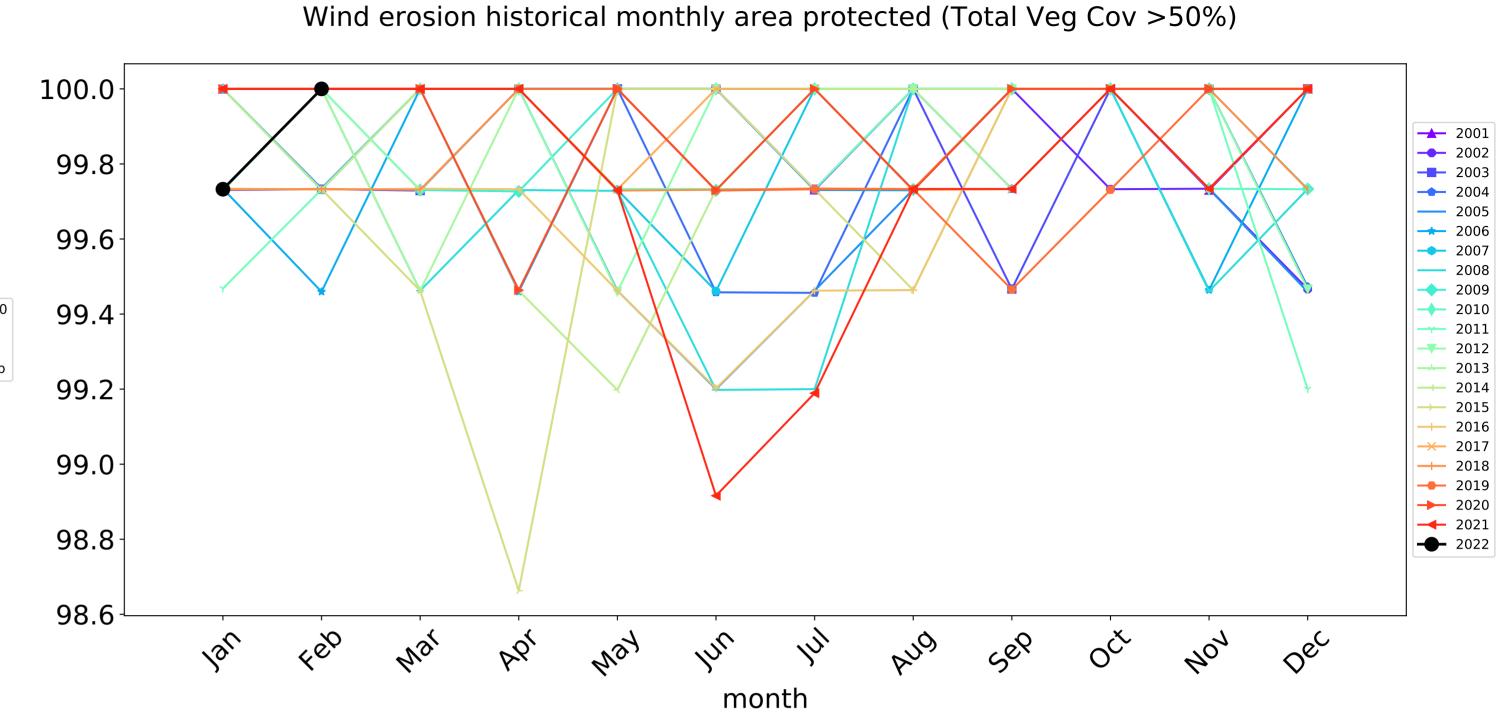
Ecosystem Research Infrastructure

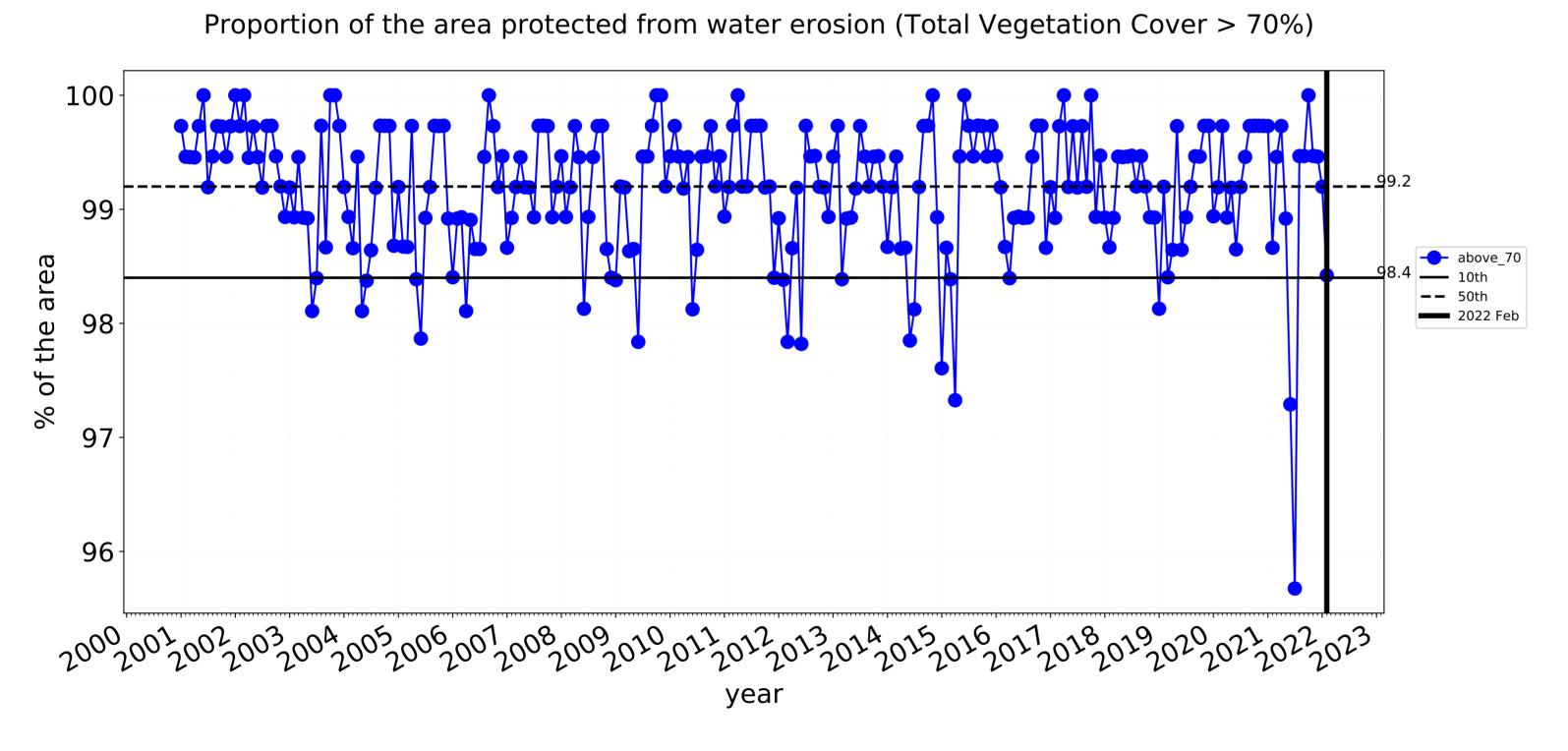
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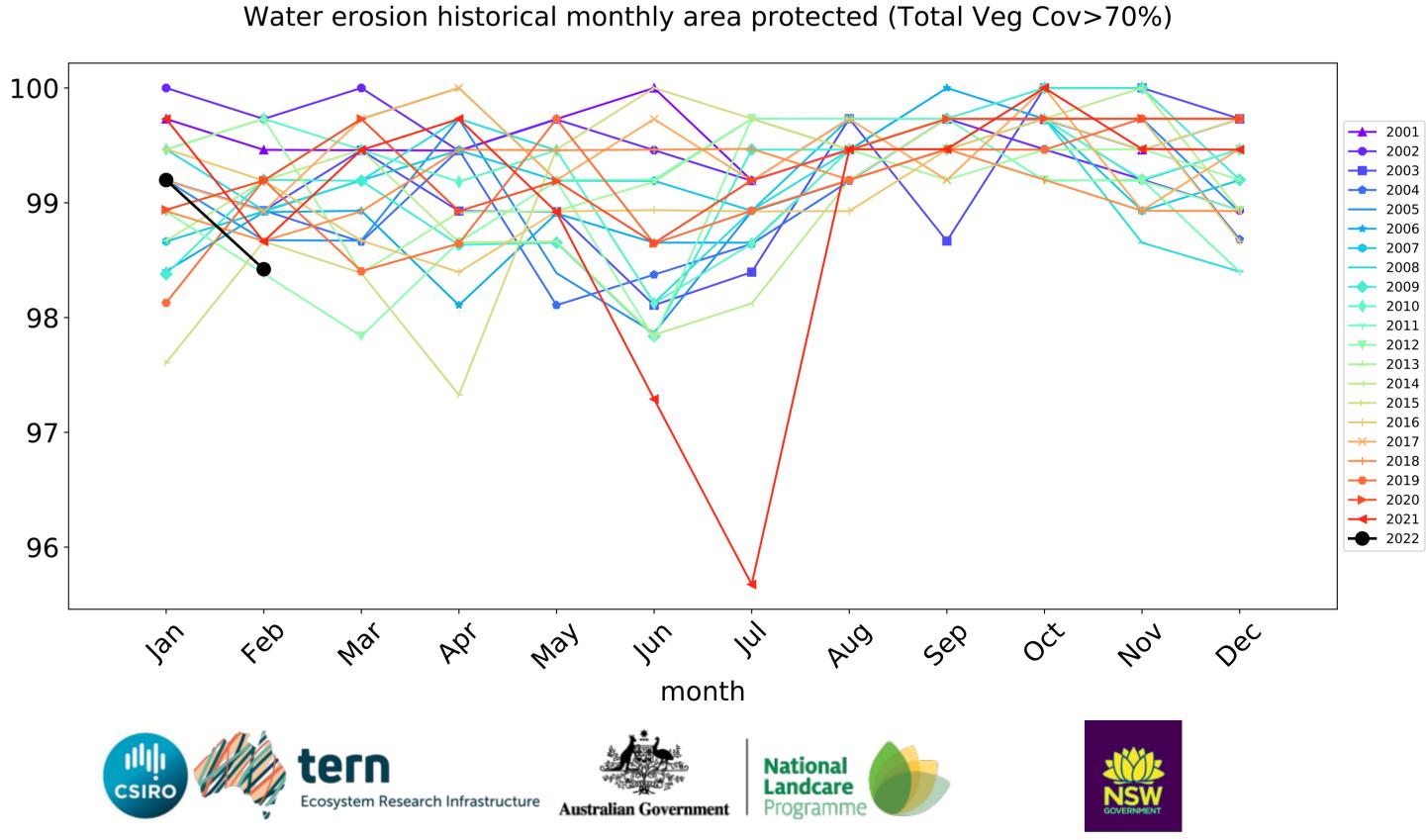
Programme

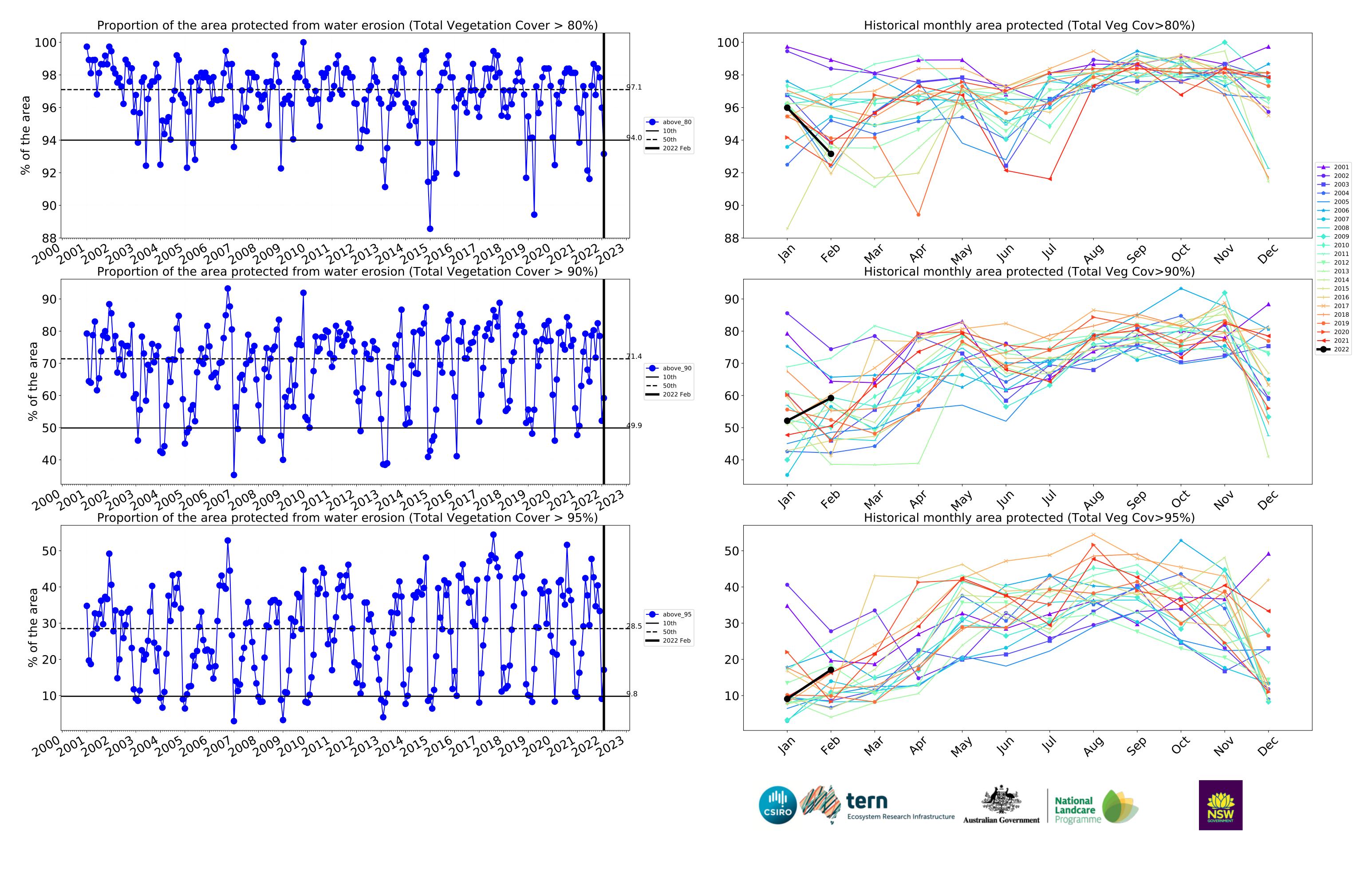
Conservation and natural environments timeseries





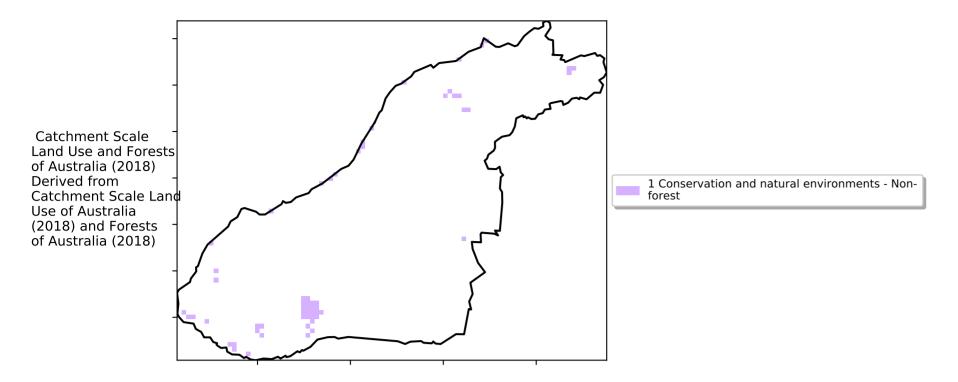




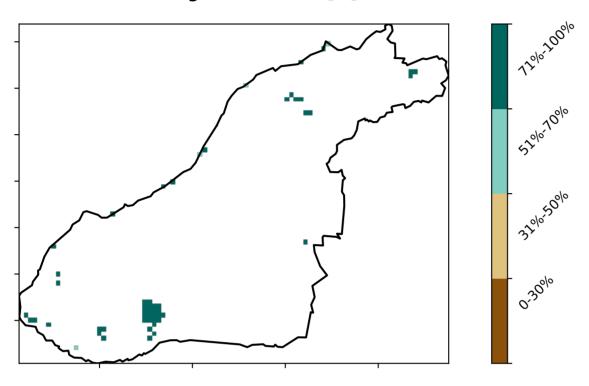


Conservation and natural environments non forest

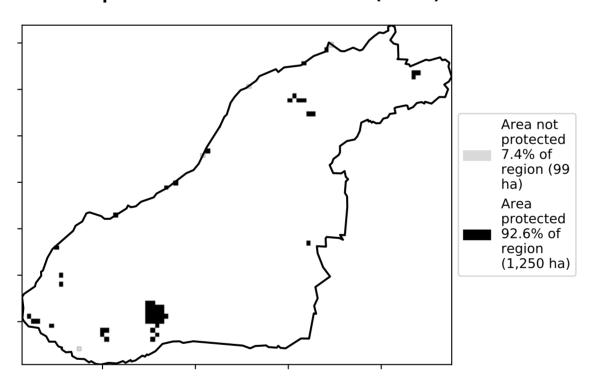
Land use and forest cover



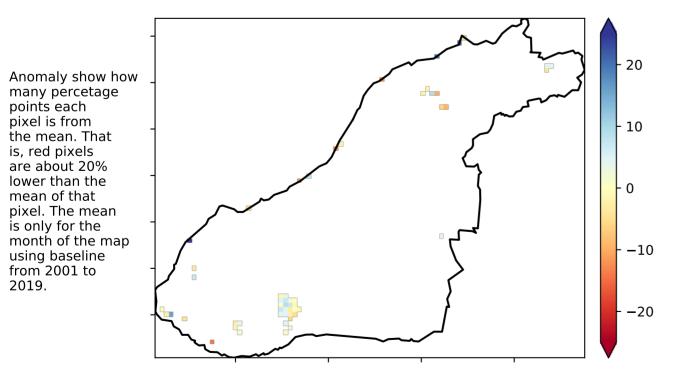
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

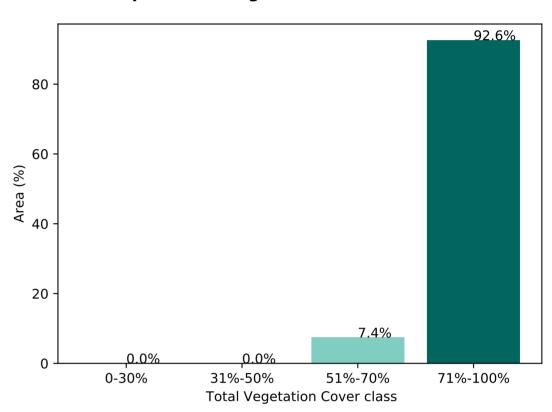


Total Vegetation Cover Anomaly [%]

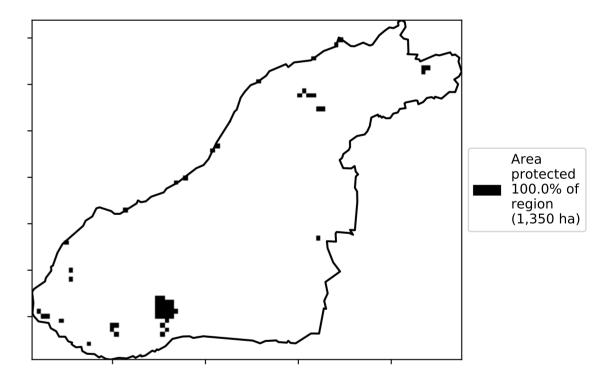


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

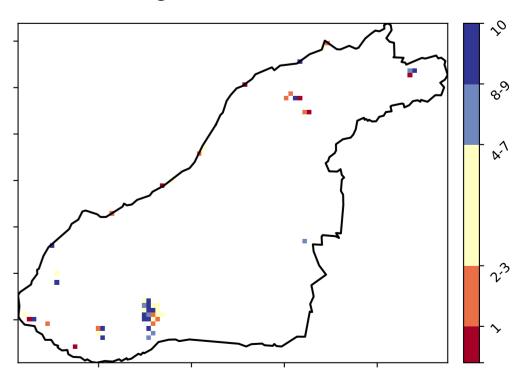
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]



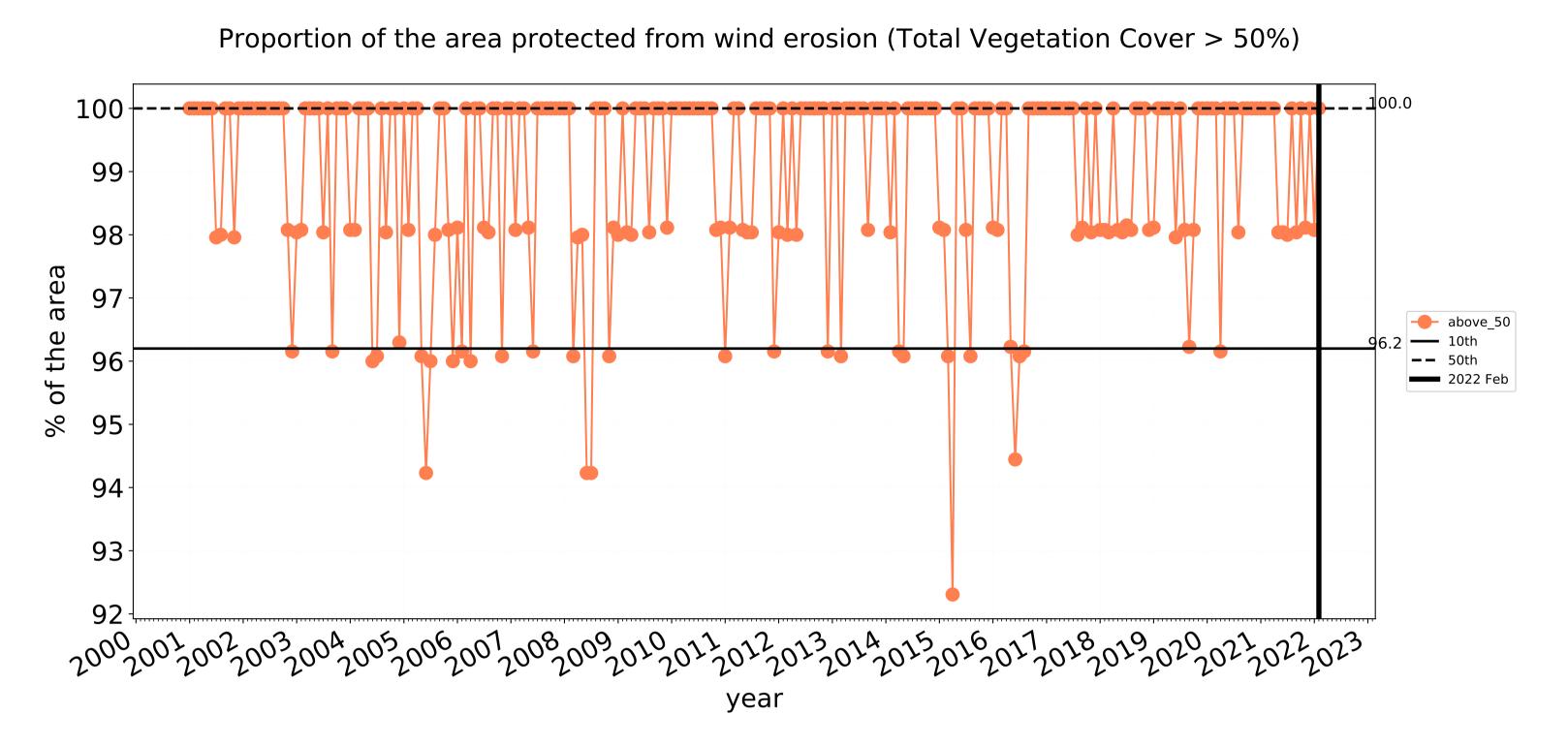


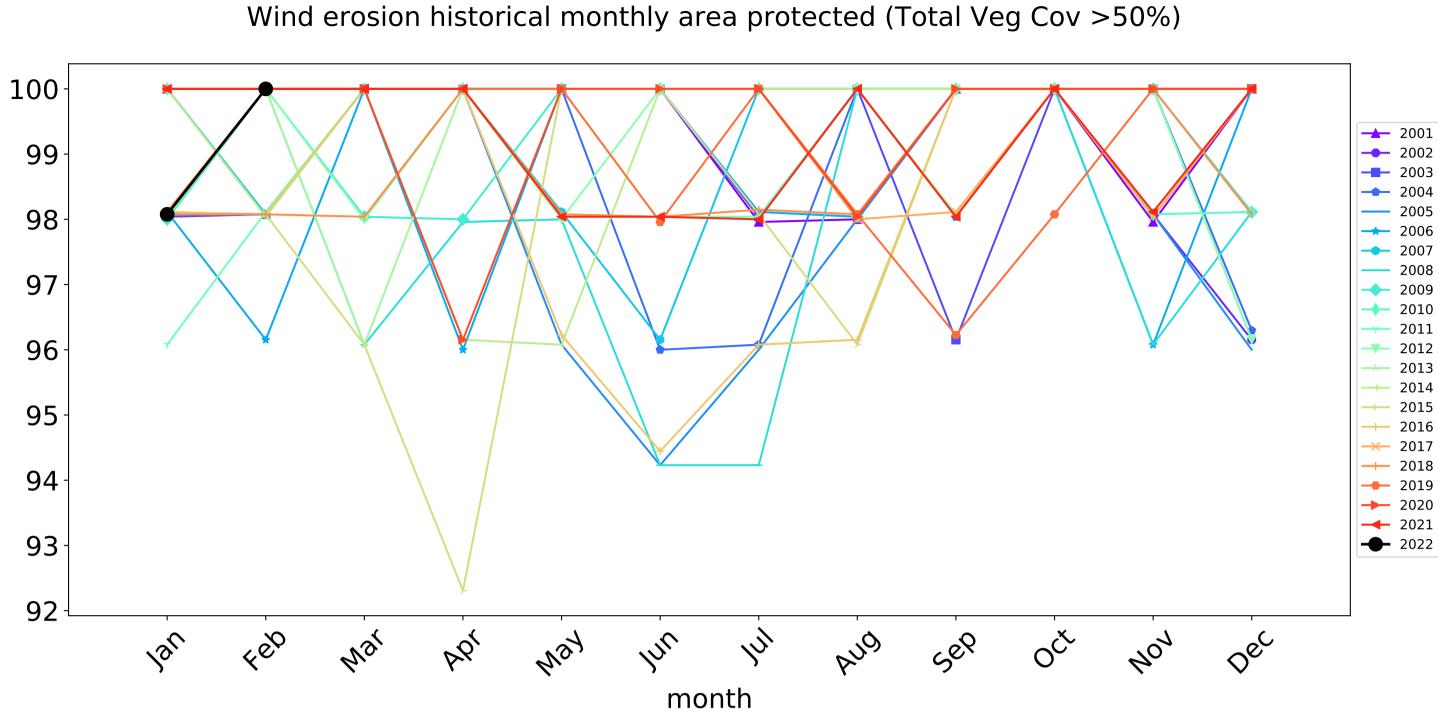


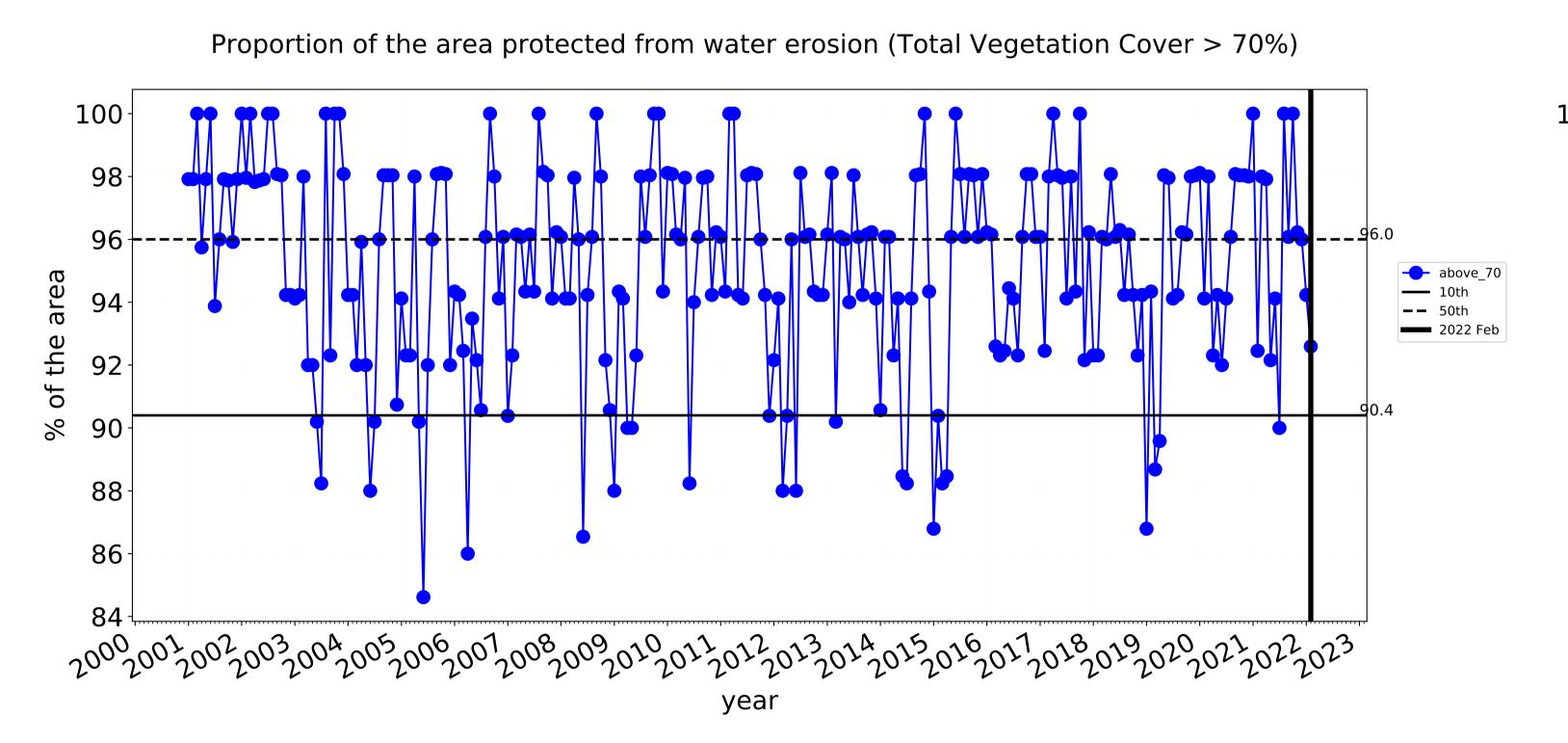


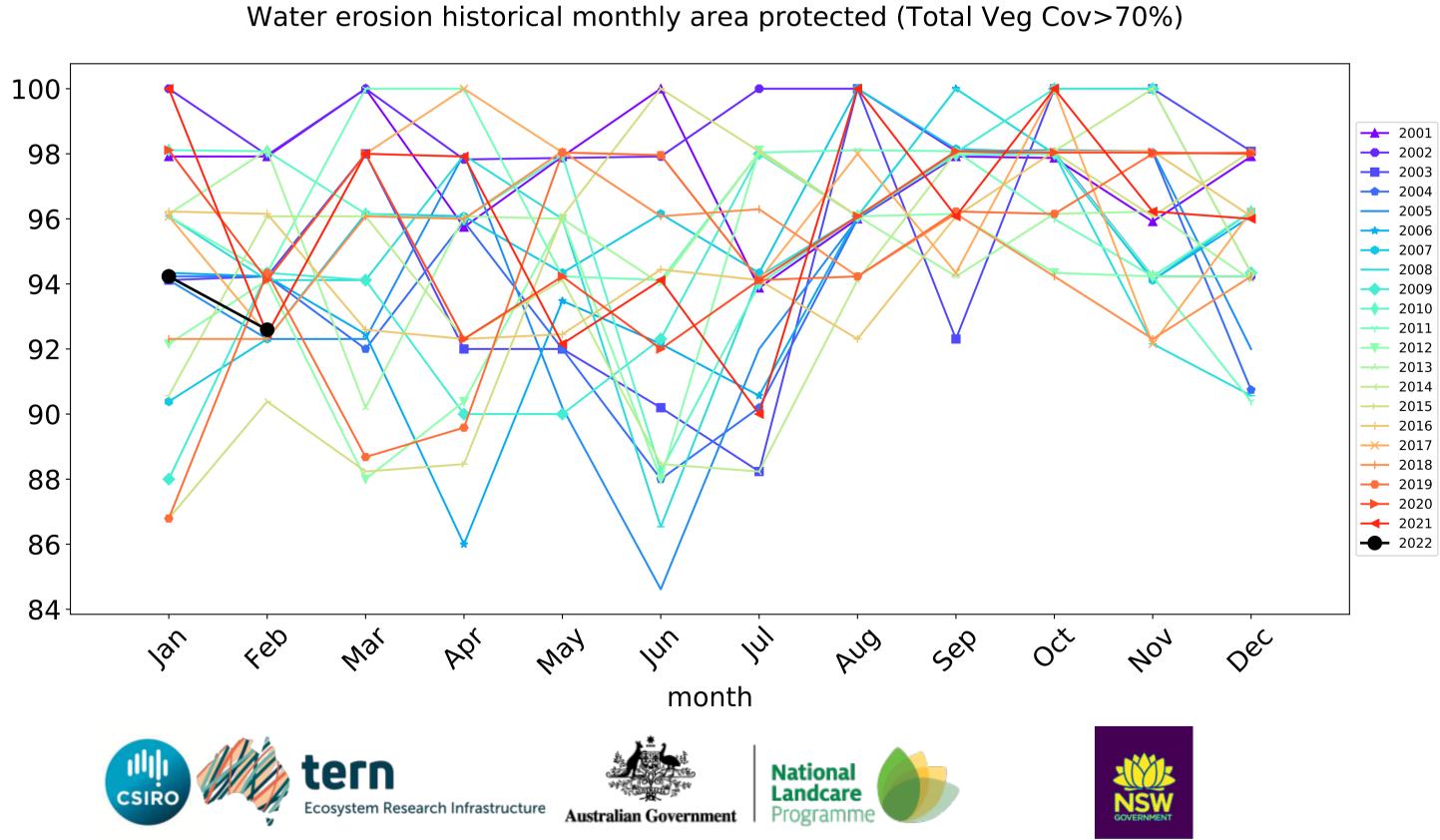


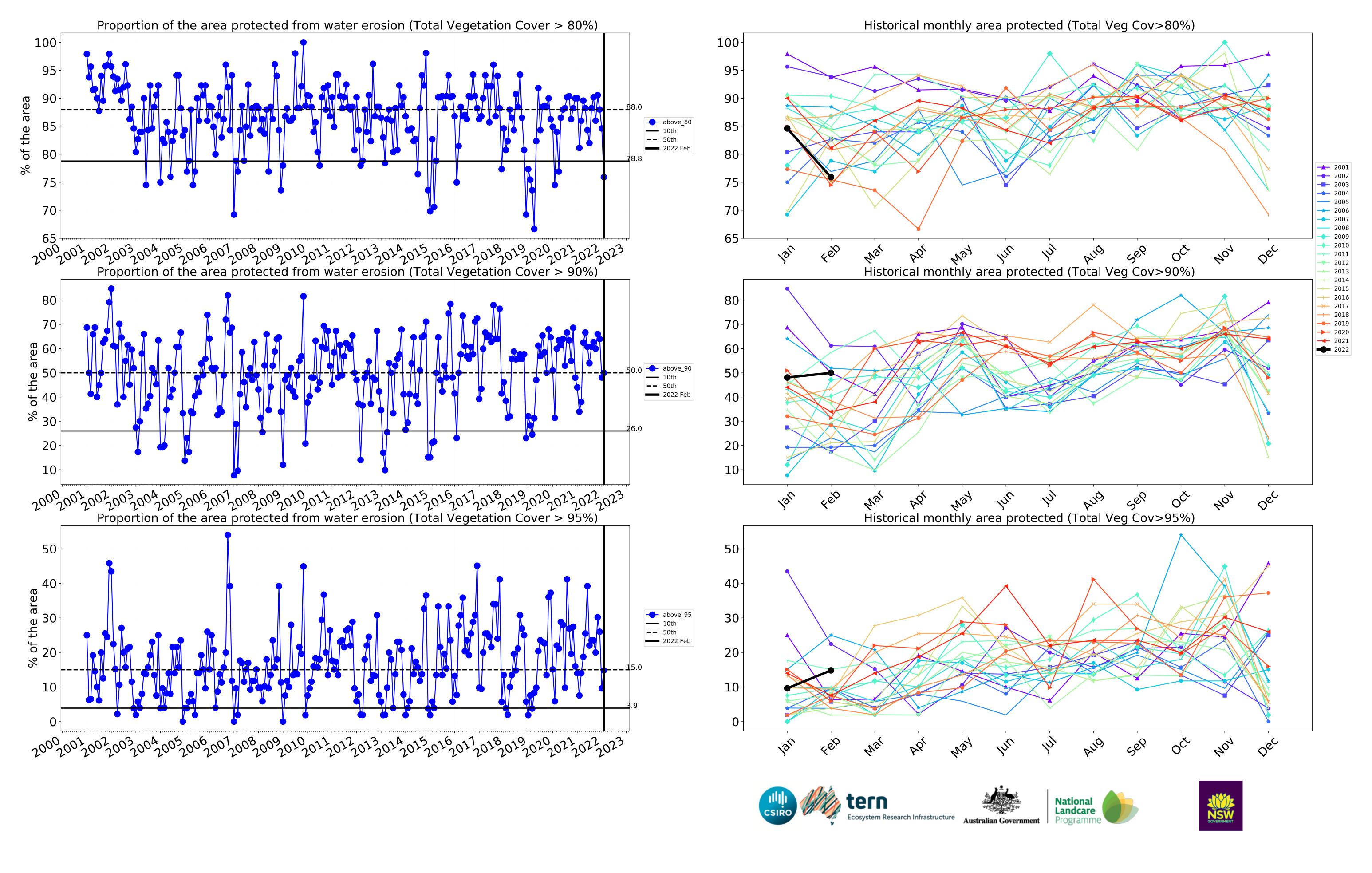
Conservation and natural environments non forest timeseries









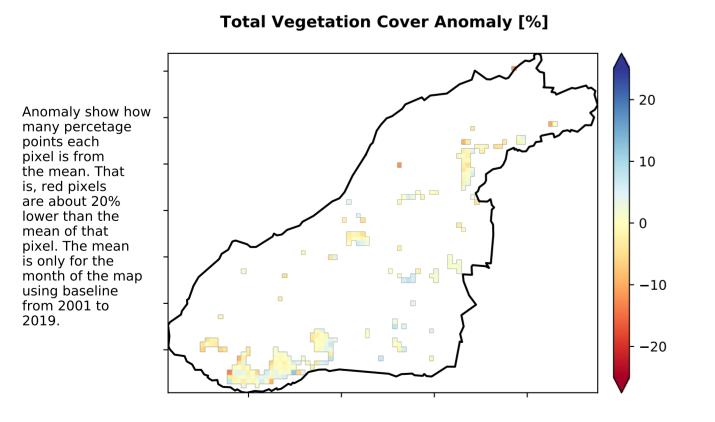


Conservation and natural environments Woodland forest

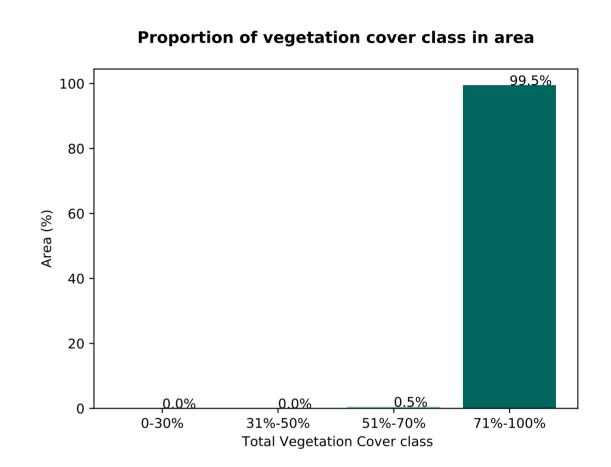
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Conservation and natural environments - Woodland forest Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

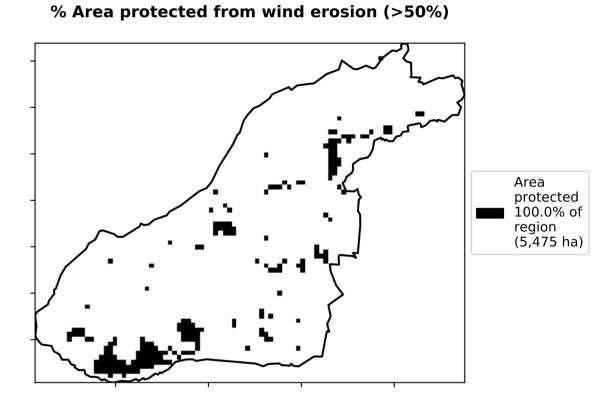
Total Vegetation Cover [%]

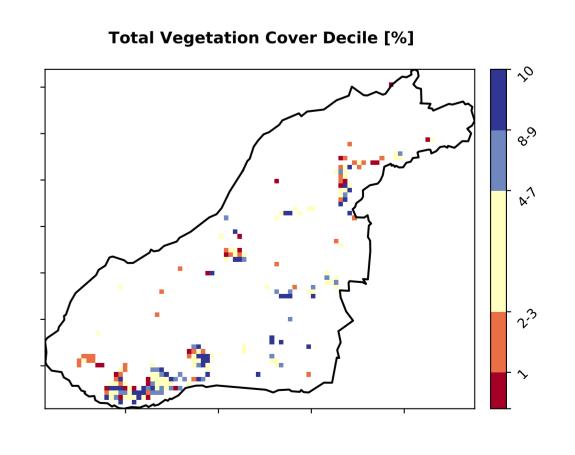
% Area protected from water erosion (>70%) Area protected 99.5% of region (5,447 ha)



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.







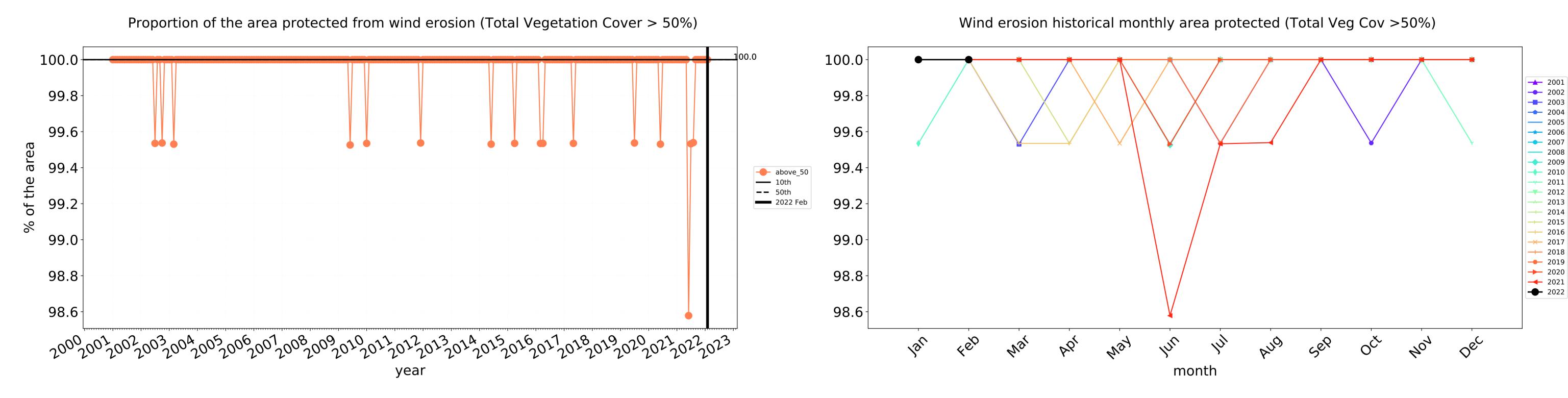


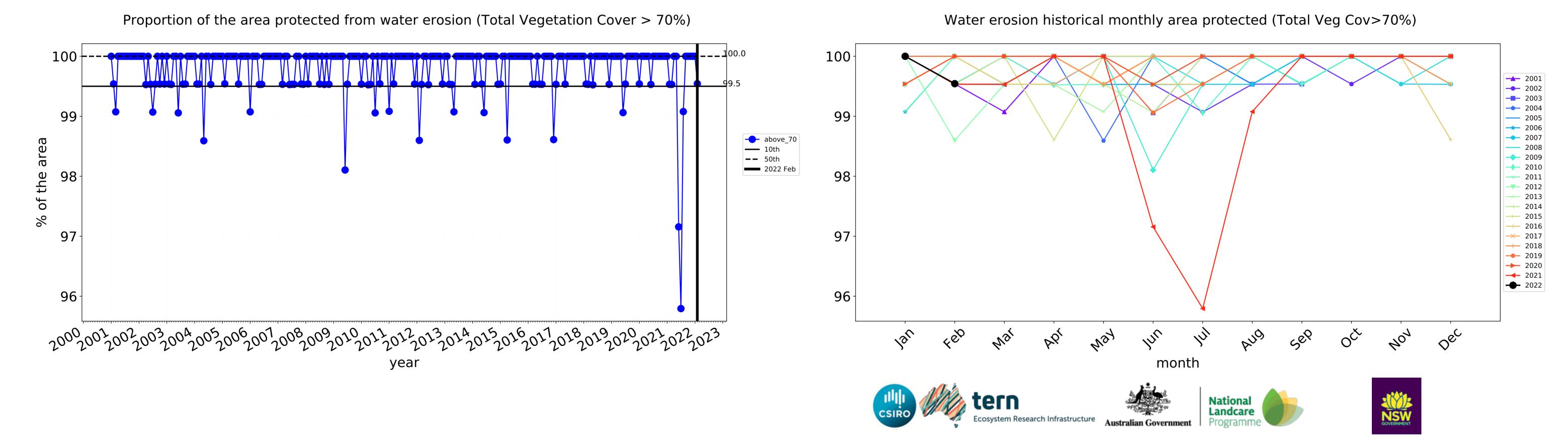


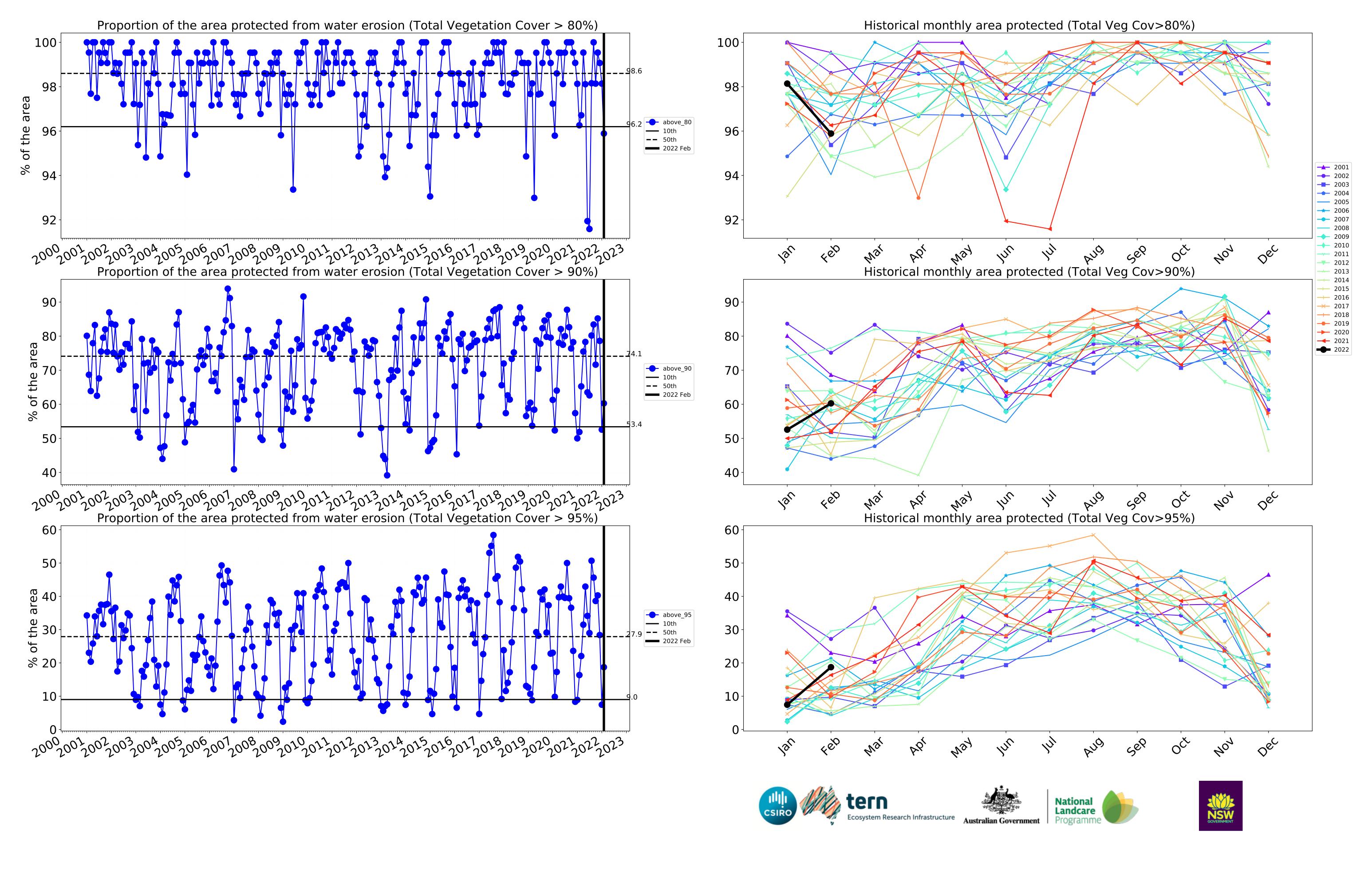




Conservation and natural environments Woodland forest timeseries

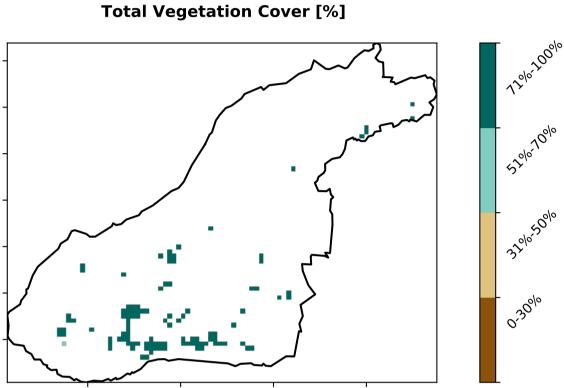


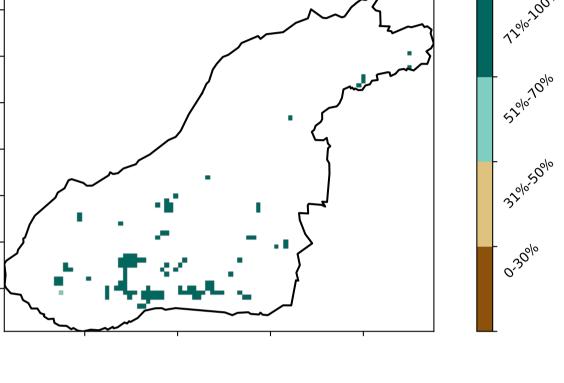


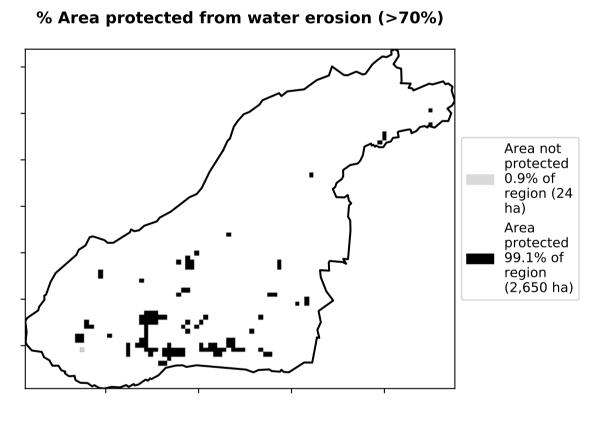


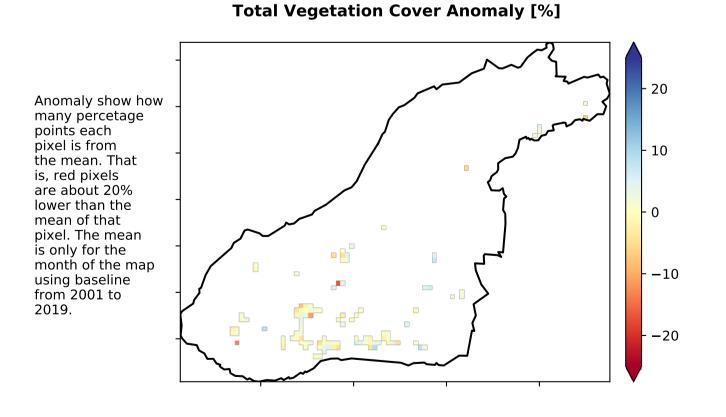
Conservation and natural environments Forest (non woodland)

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)

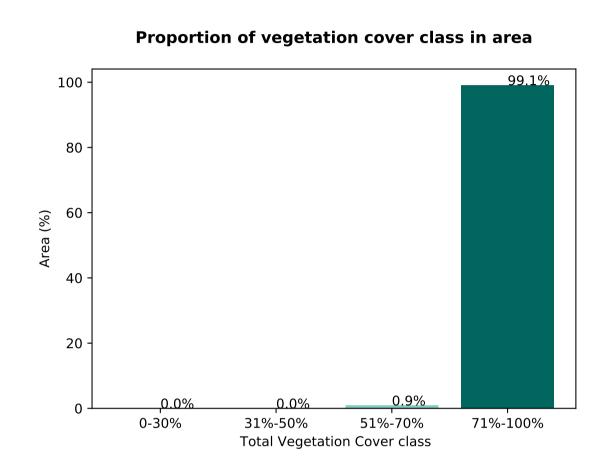


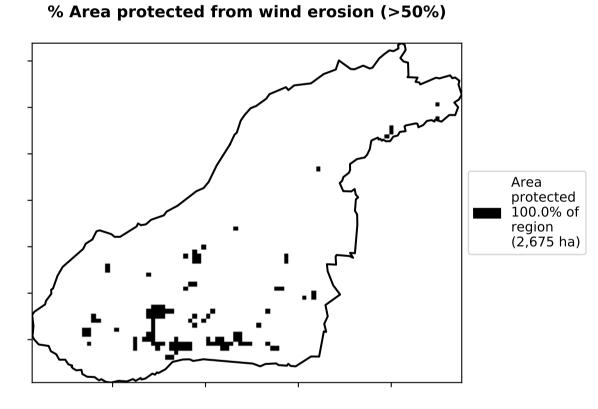


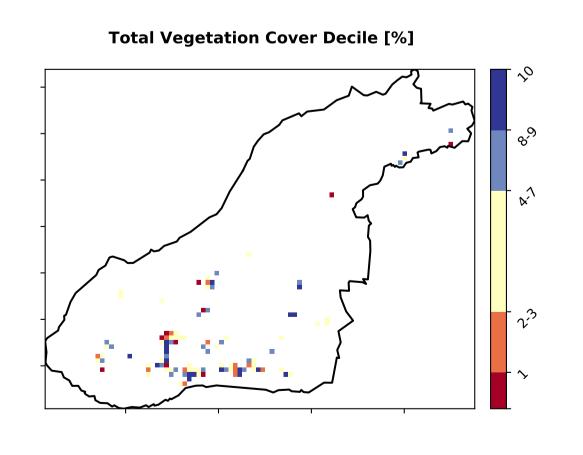




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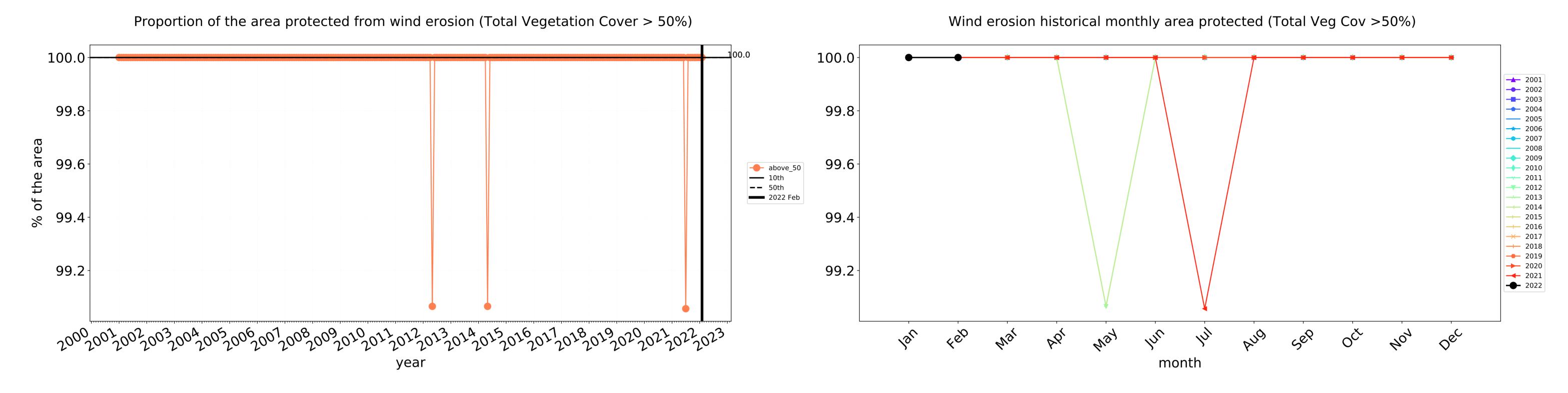


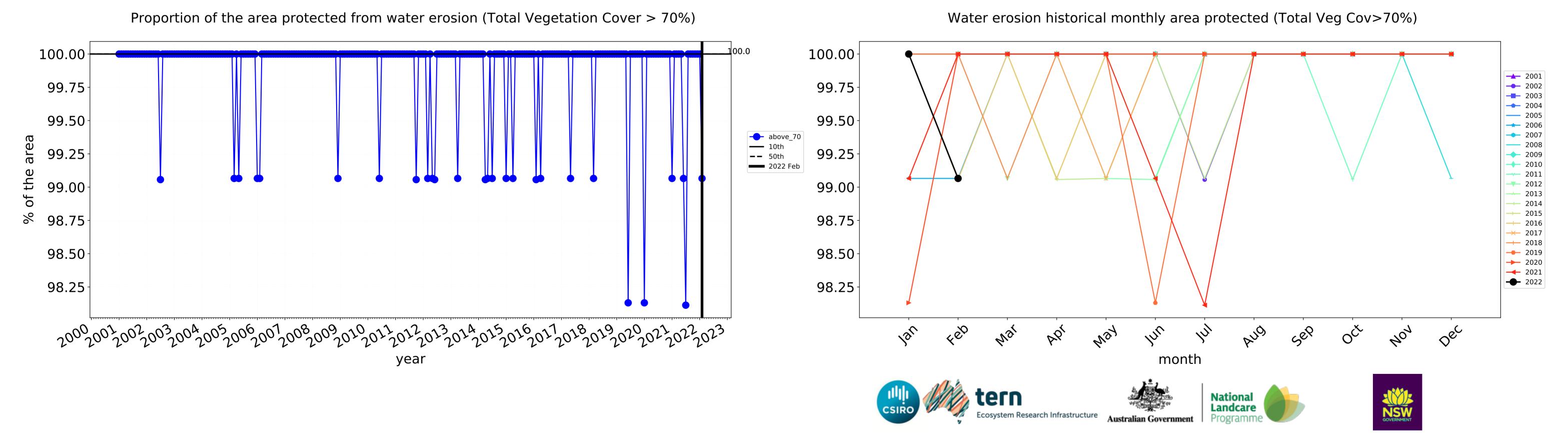


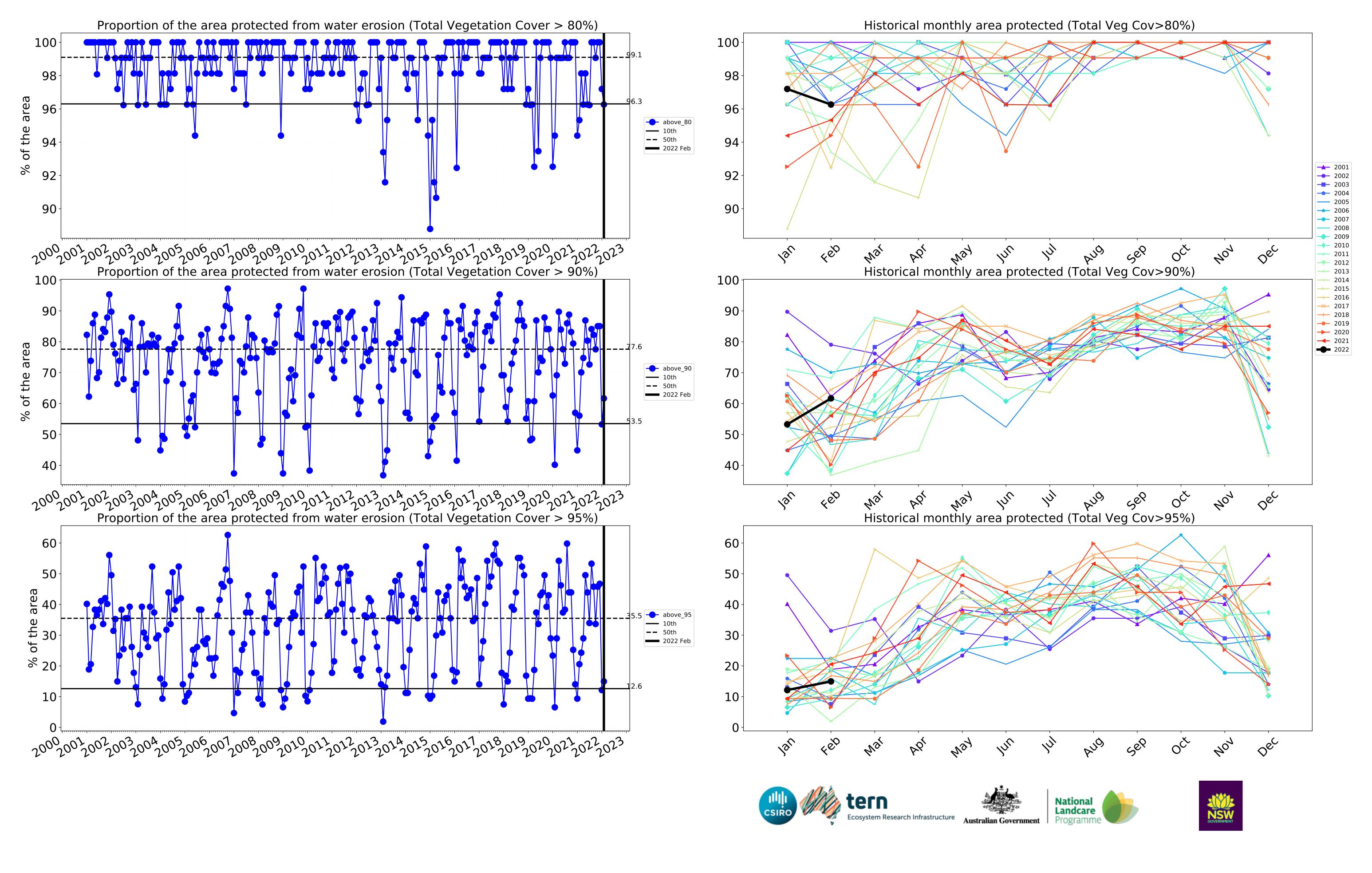








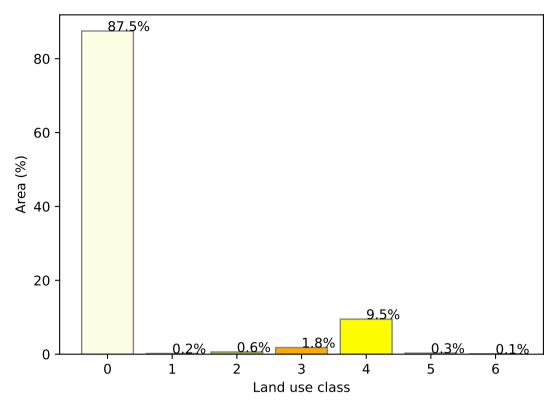




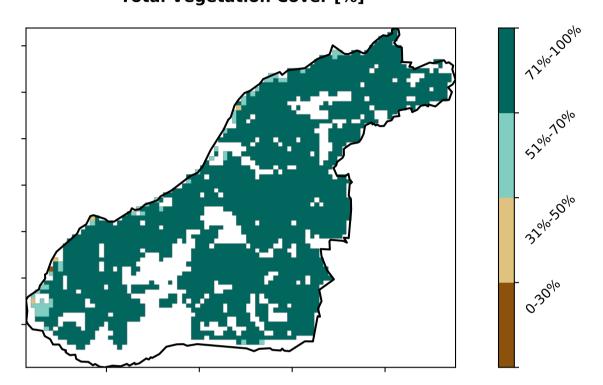
Agriculture

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

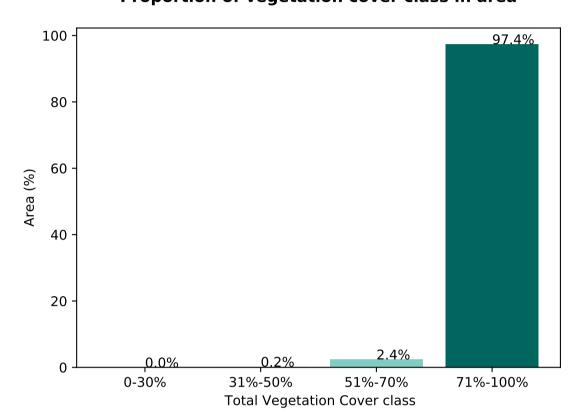
Proportion of each land class in area



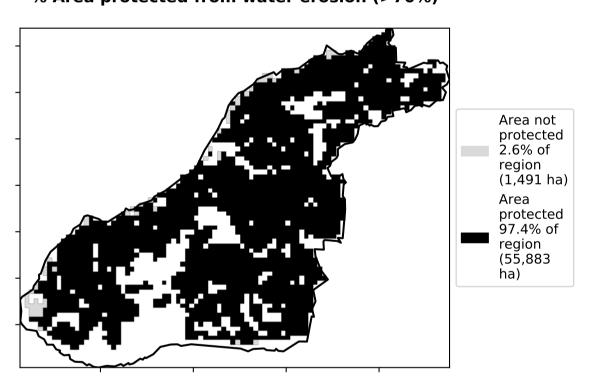
Total Vegetation Cover [%]



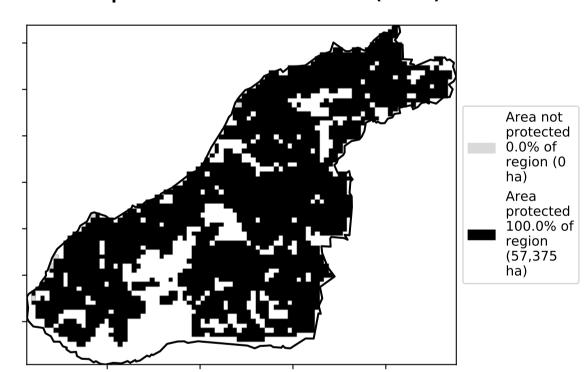
Proportion of vegetation cover class in area



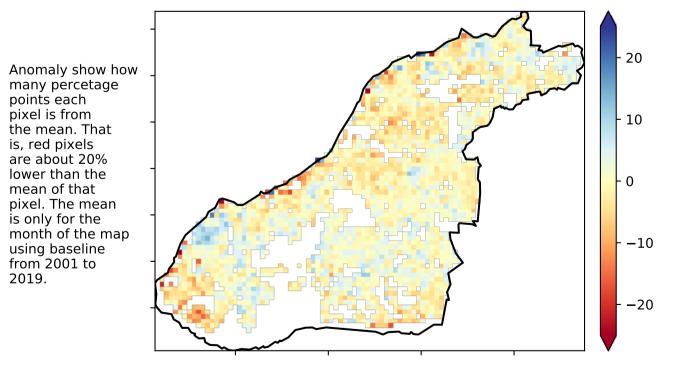
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

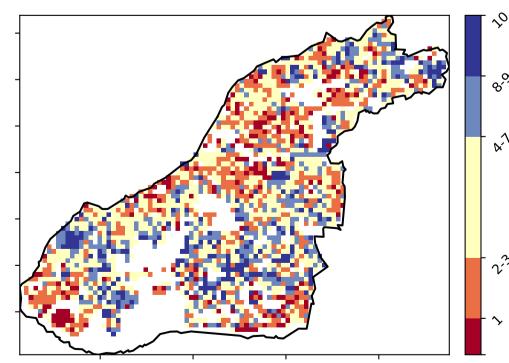


Total Vegetation Cover Anomaly [%]



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.

Total Vegetation Cover Decile [%]







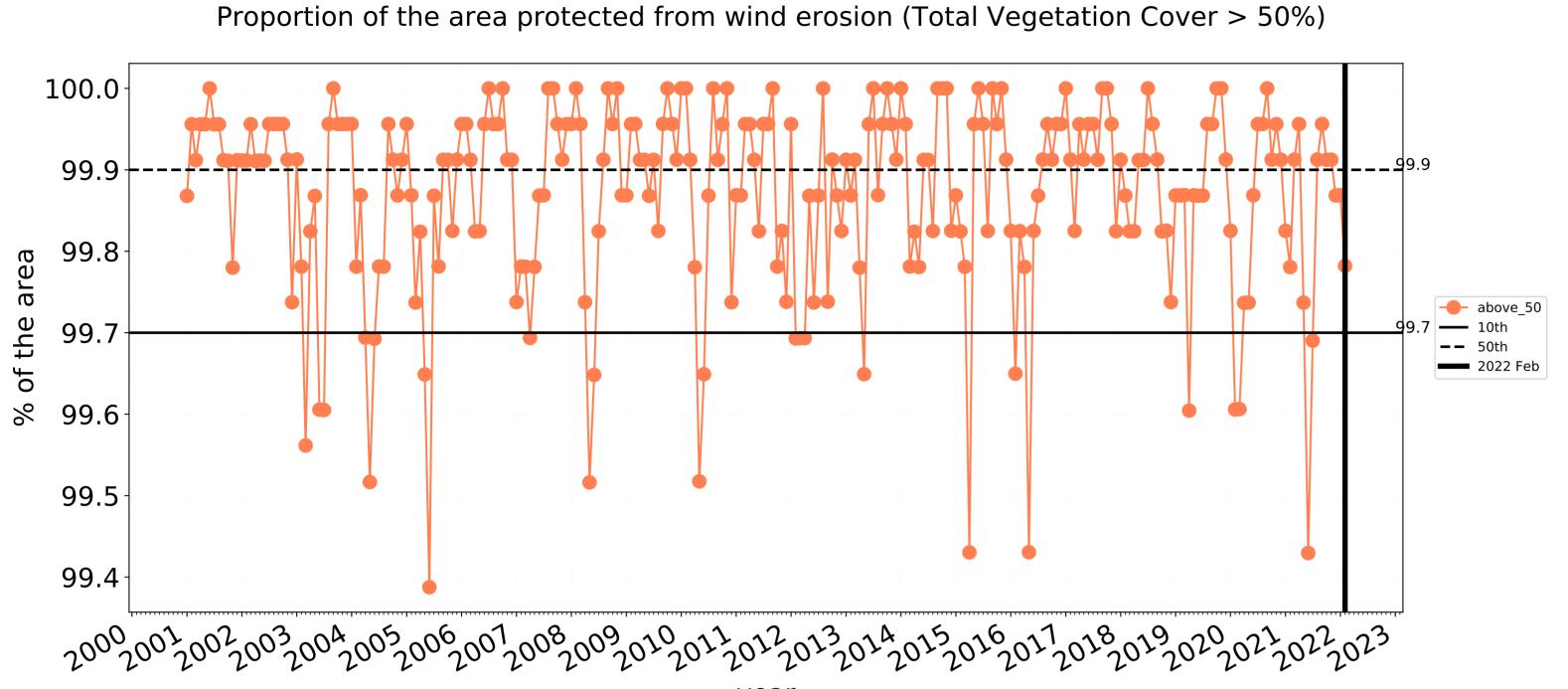


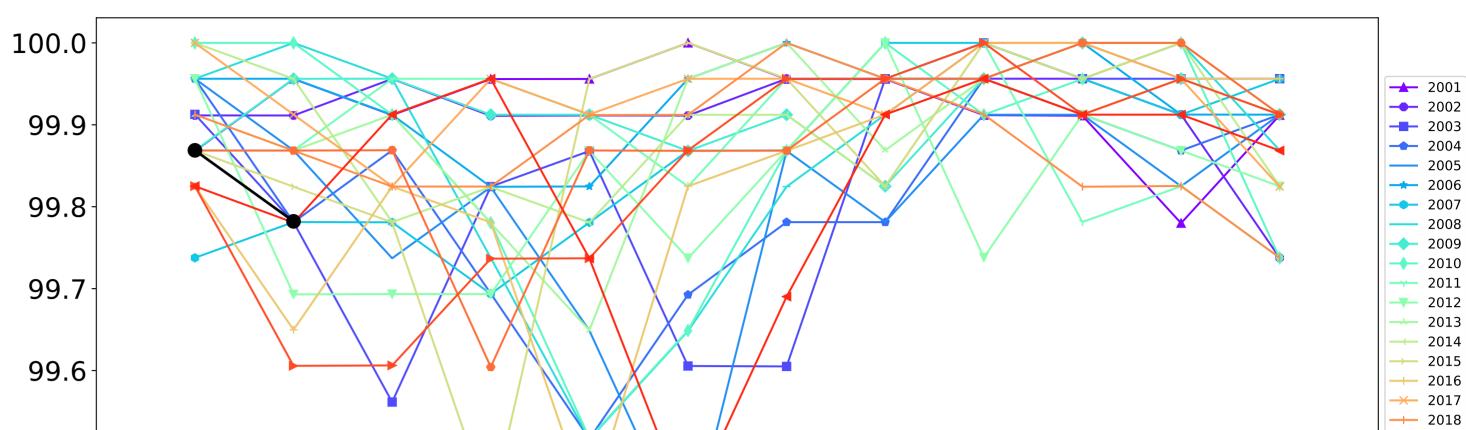


Agriculture timeseries

99.5

99.4

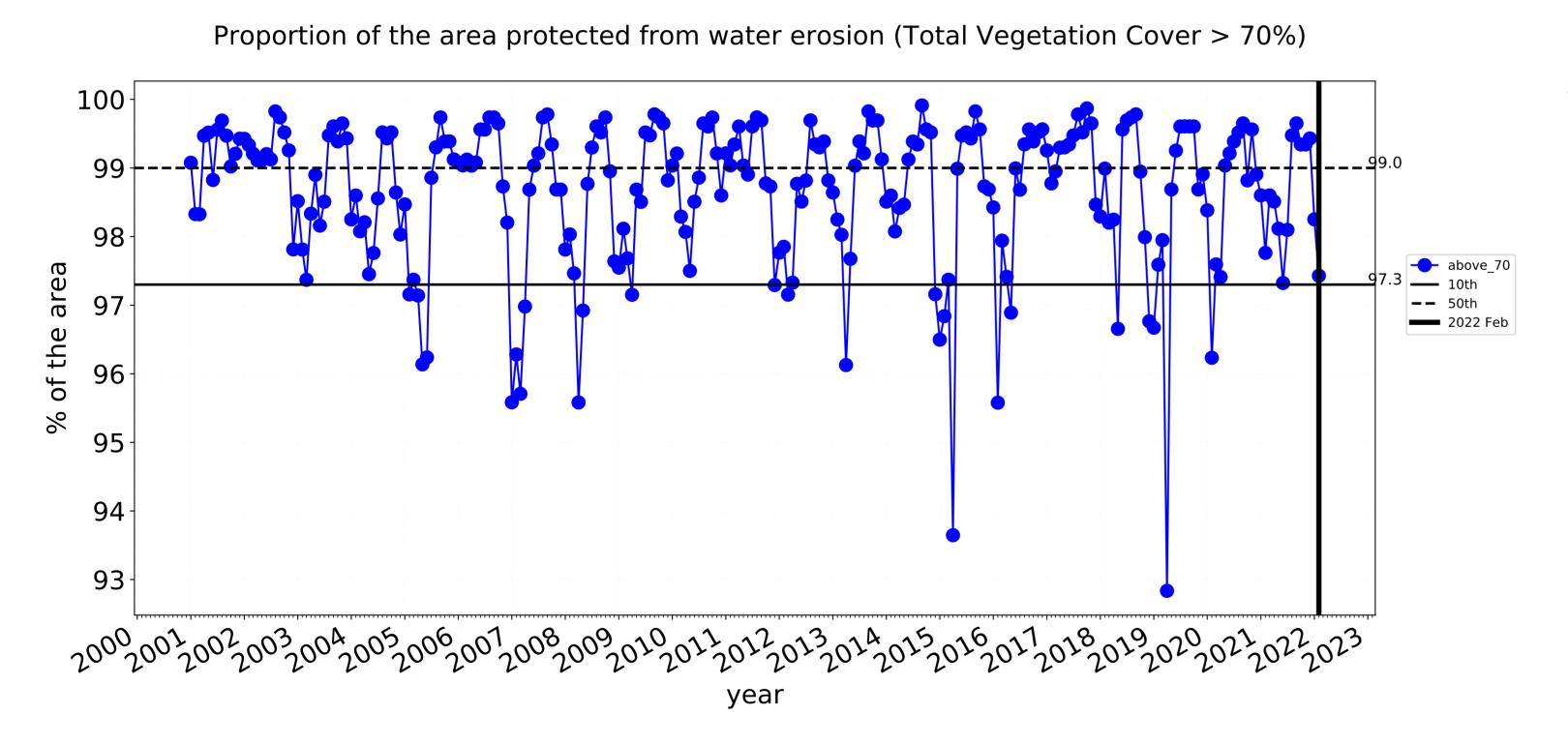


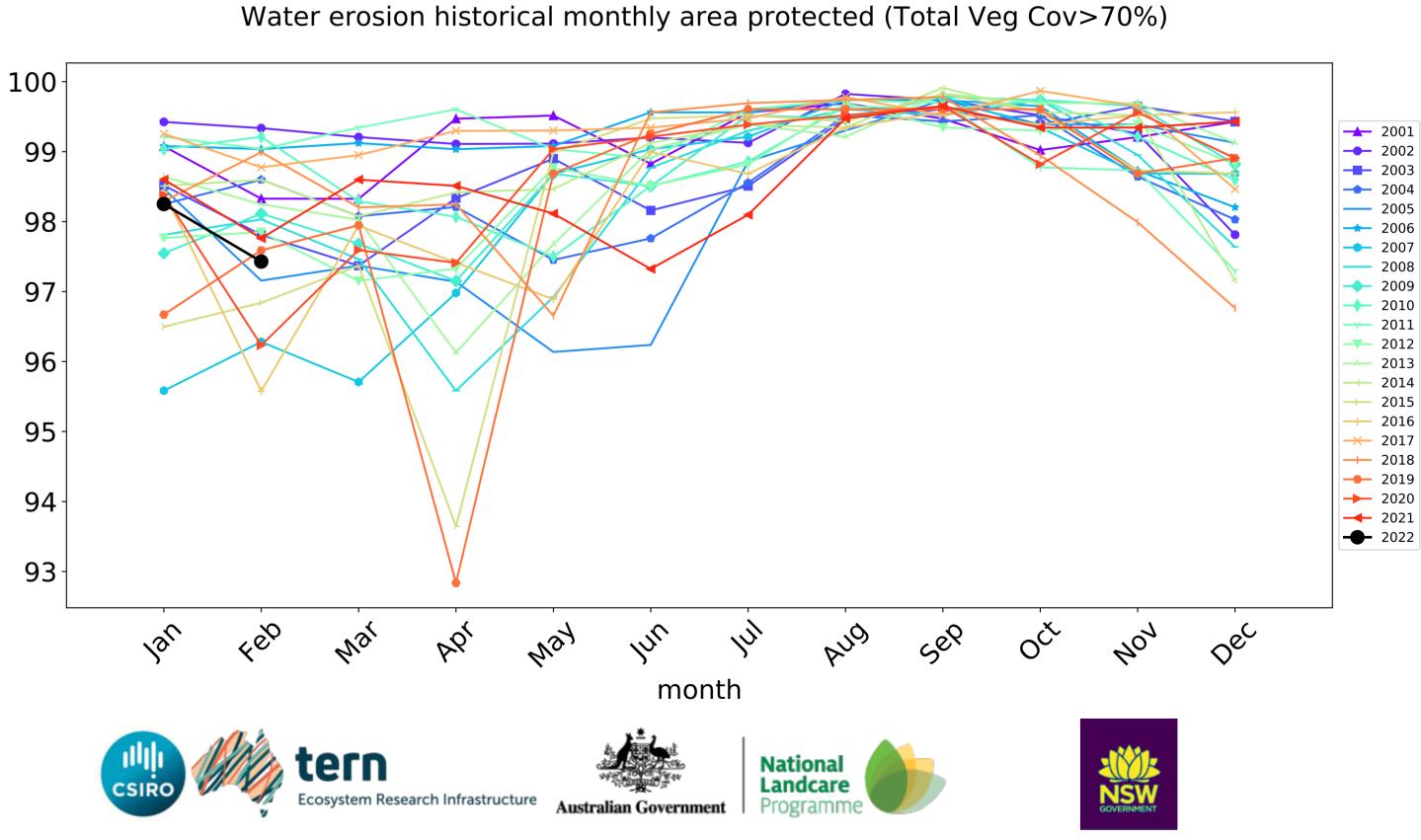


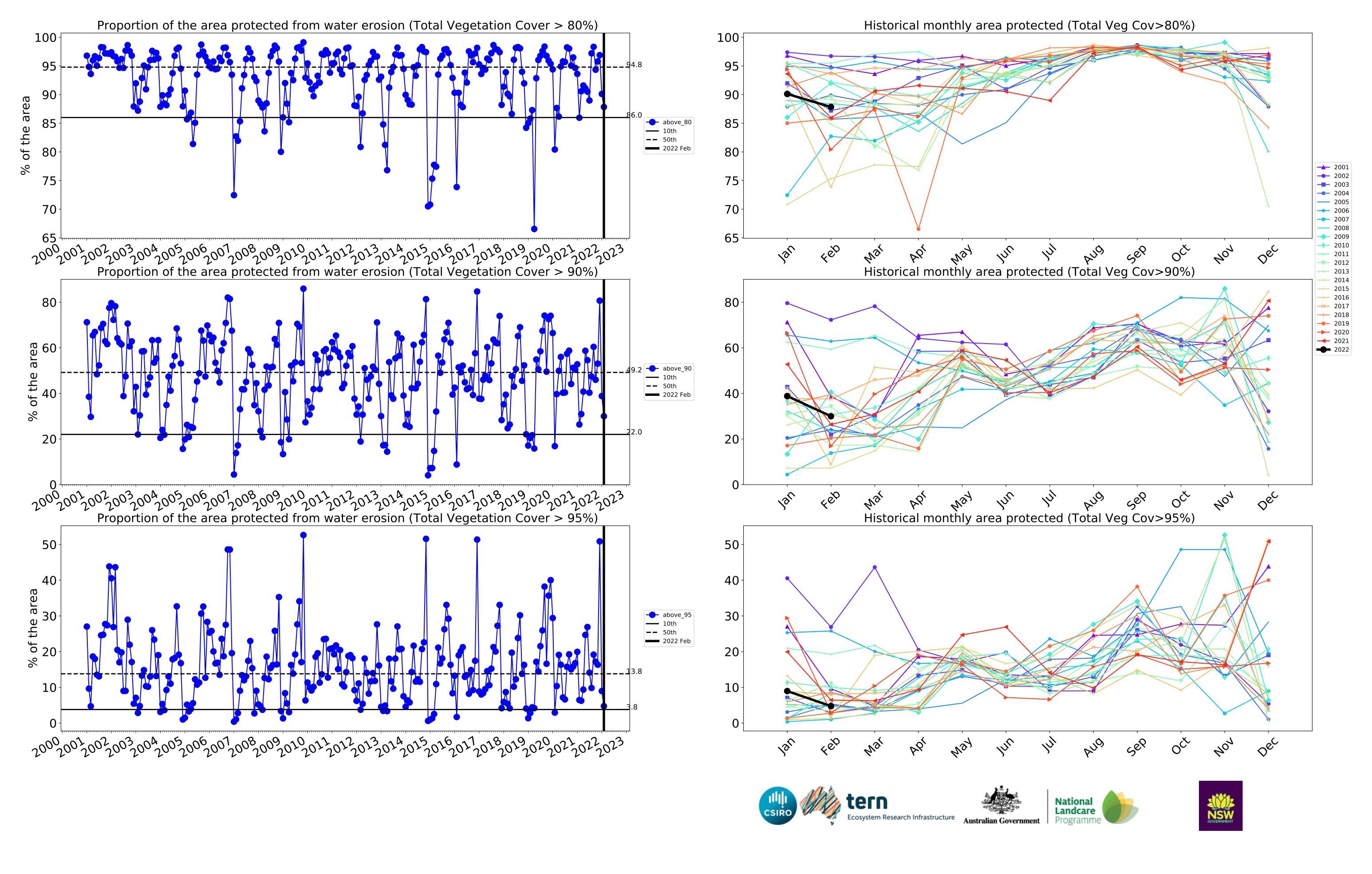
month

2021 2022

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



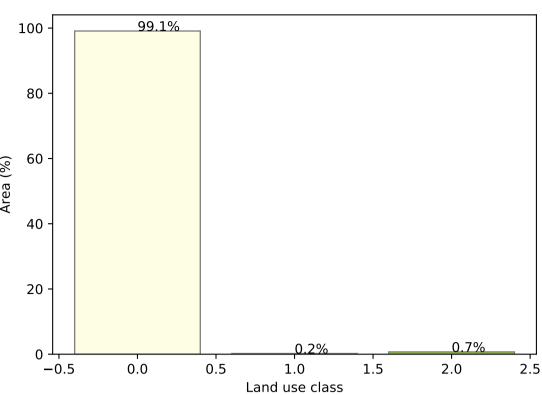




Grazing

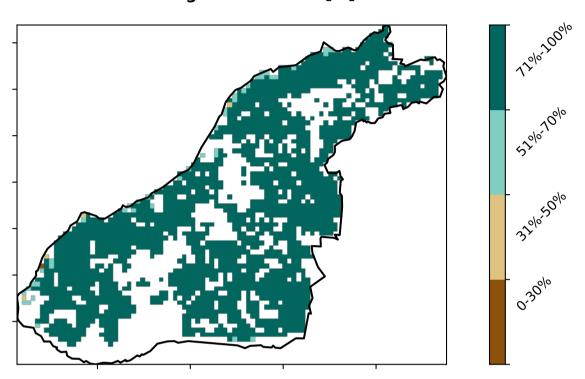
Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia 1 Agriculture - Grazing - Non forest 2 Agriculture - Grazing - Woodland forest 3 Agriculture - Grazing - Non-woodland forest (2018) and Forests of Australia (2018)

80 Area (%) 60 40

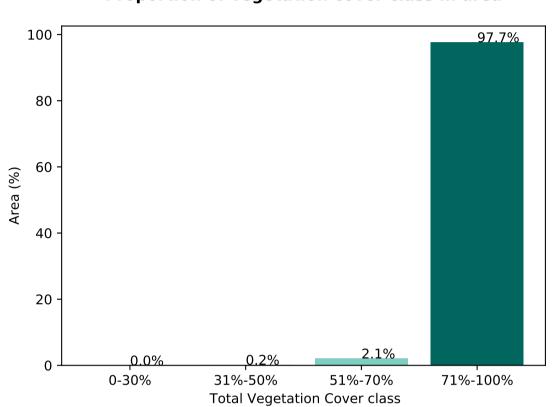


Proportion of each land class in area

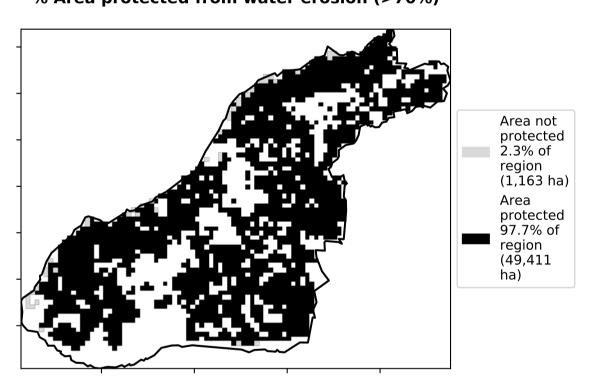




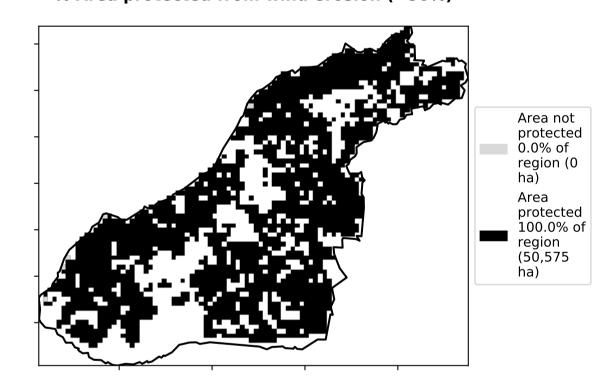
Proportion of vegetation cover class in area



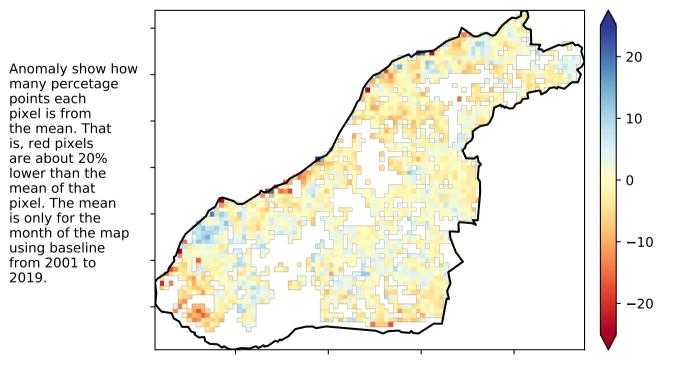
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

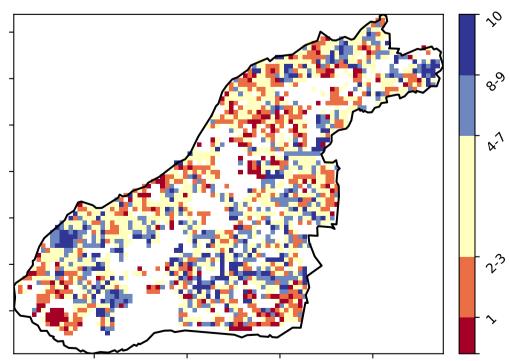


Total Vegetation Cover Anomaly [%]



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Total Vegetation Cover Decile [%]



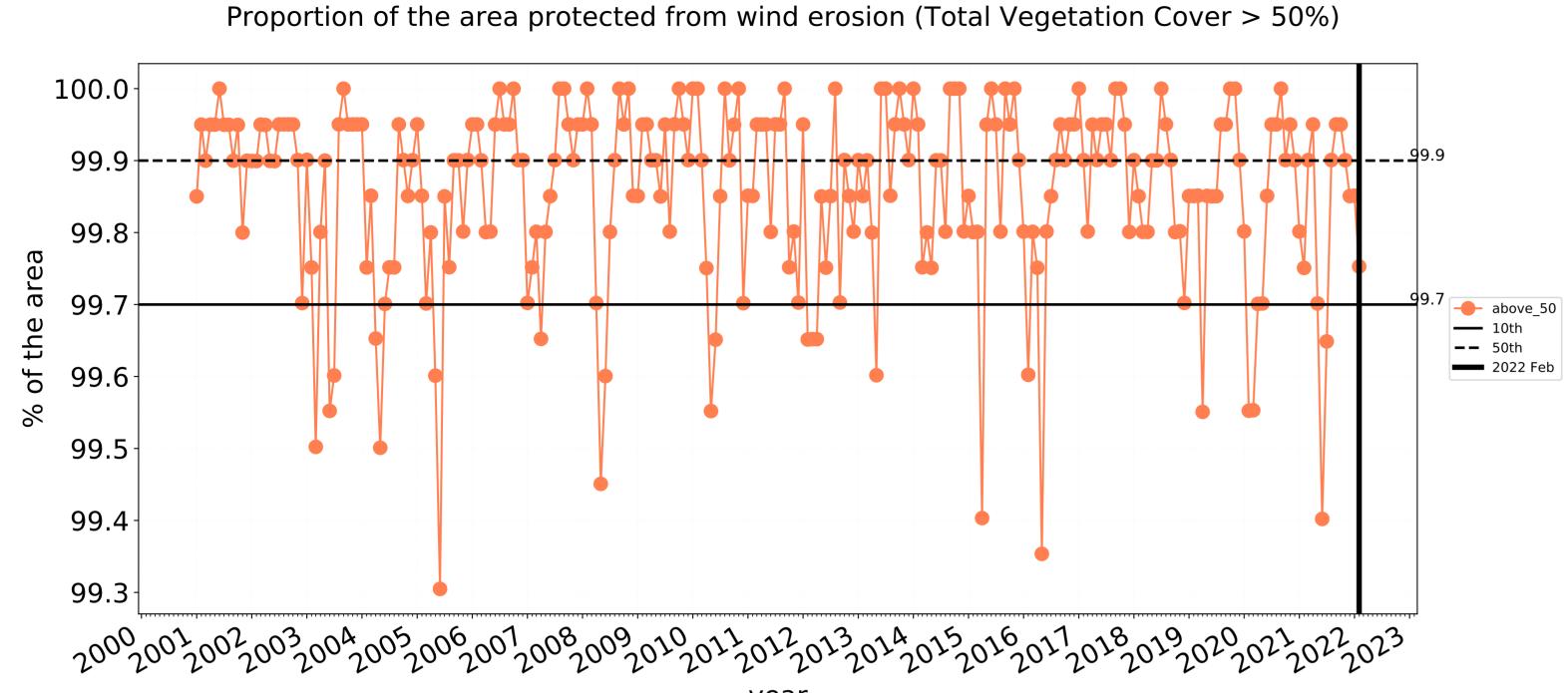


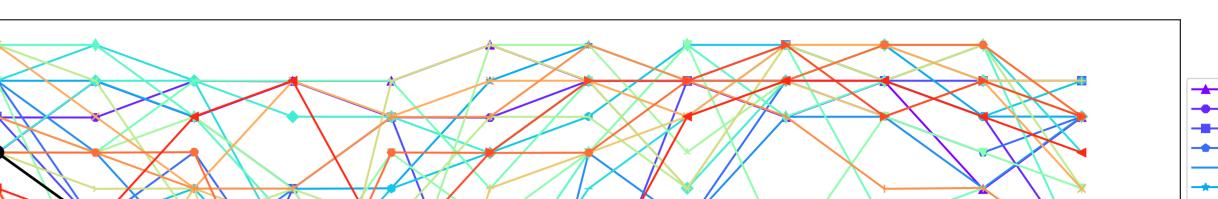




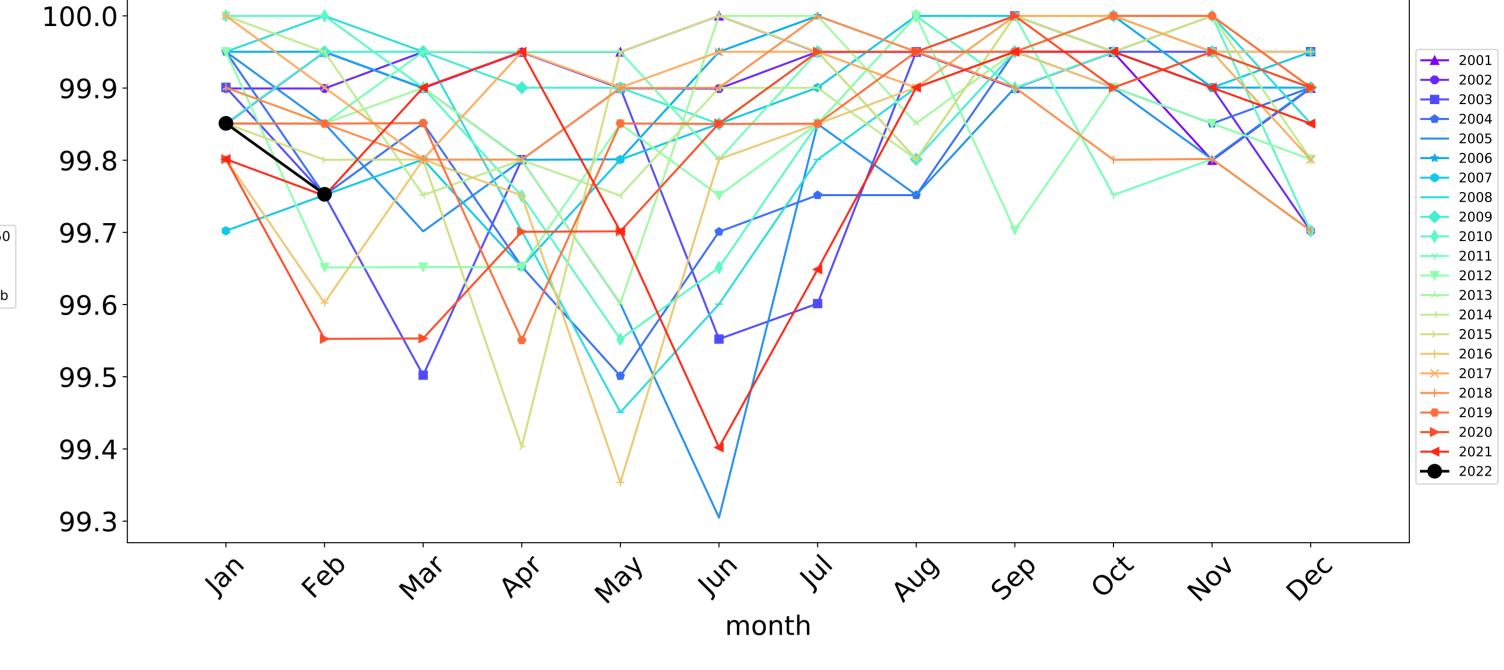


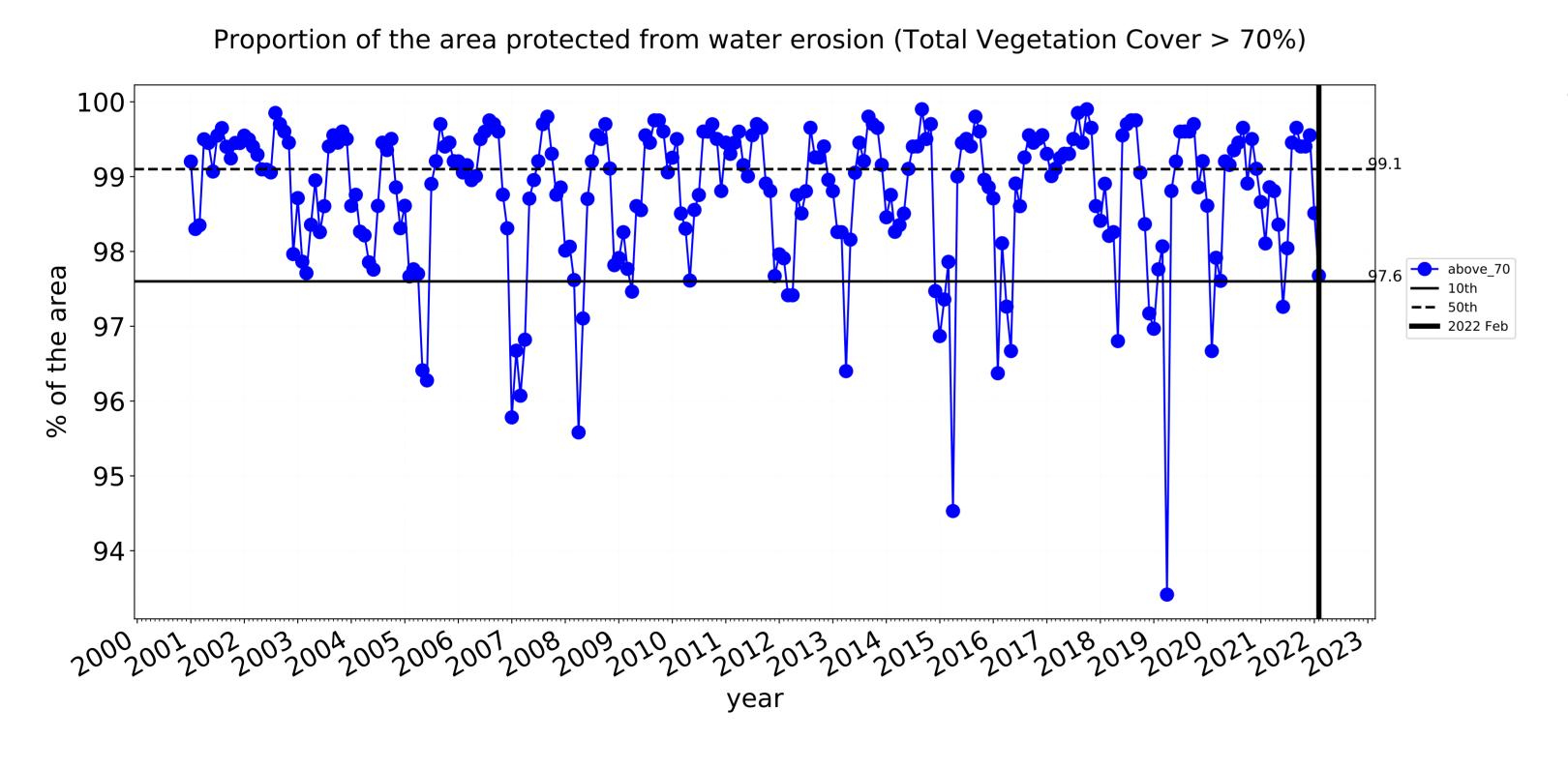
Grazing timeseries

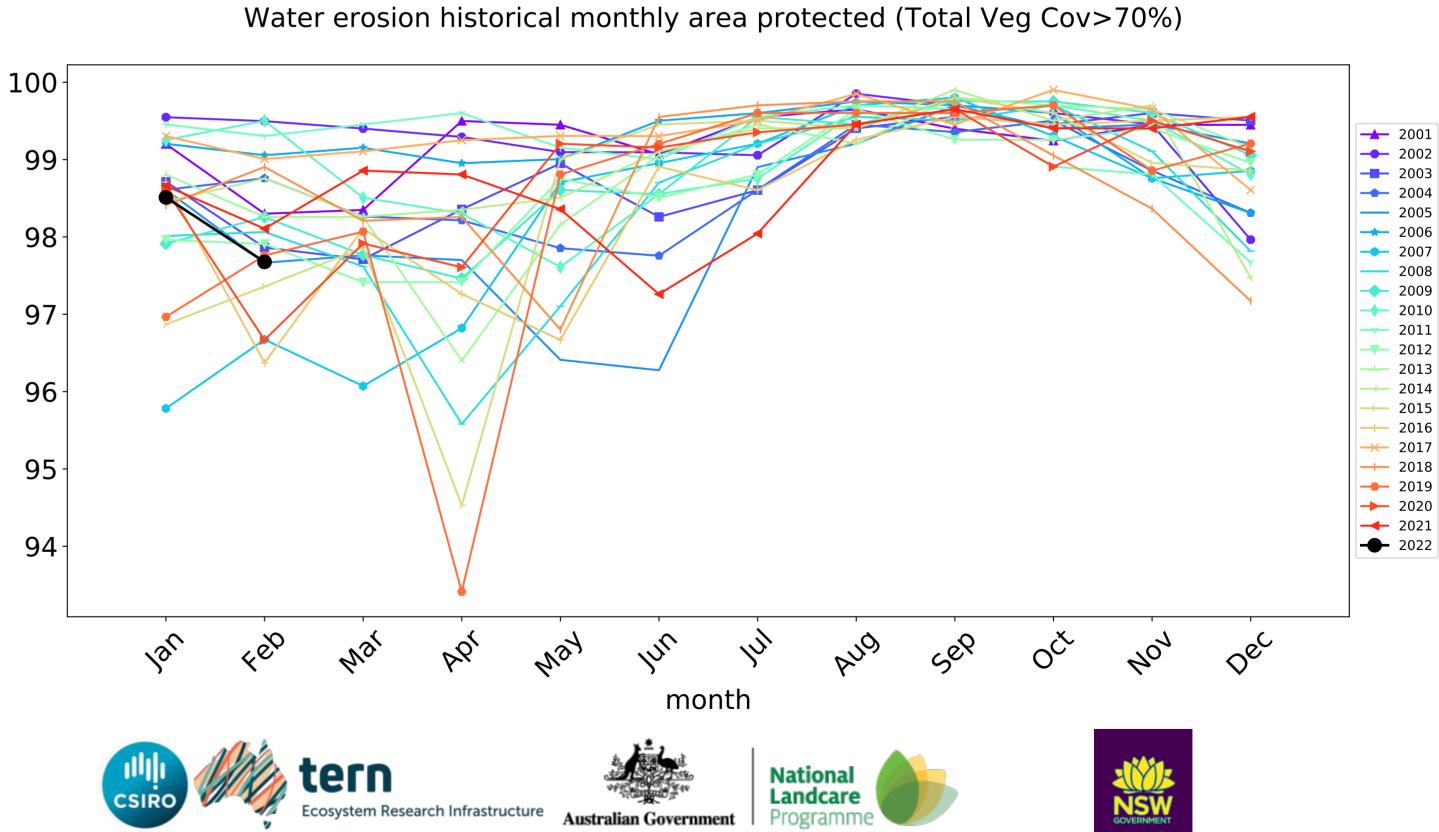


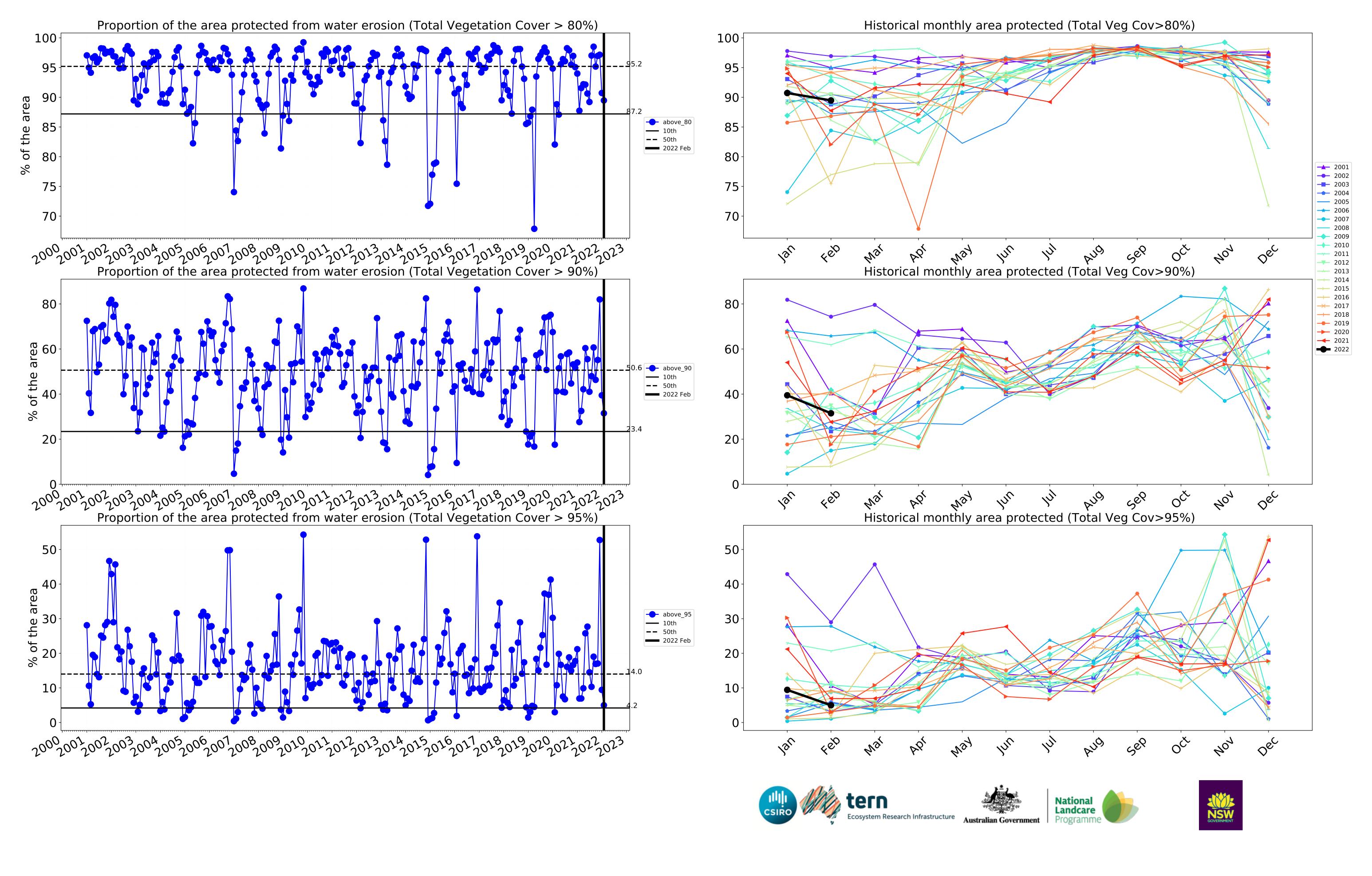


Wind erosion historical monthly area protected (Total Veg Cov >50%)



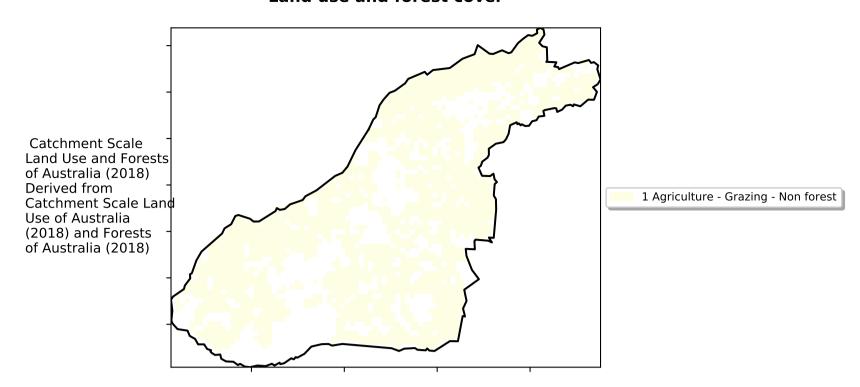




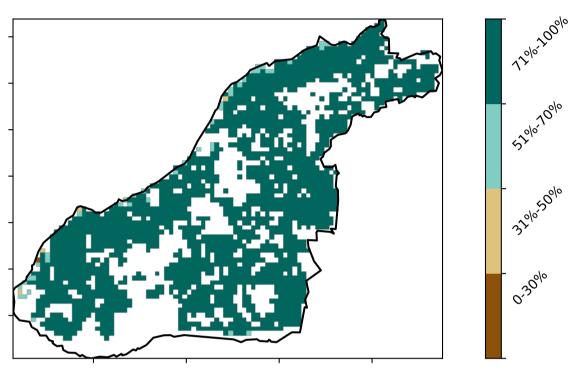


Grazing non forest

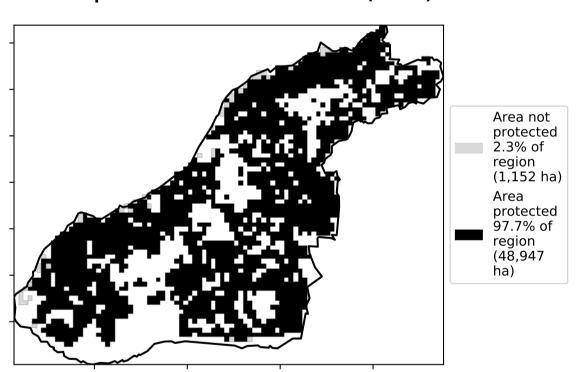
Land use and forest cover



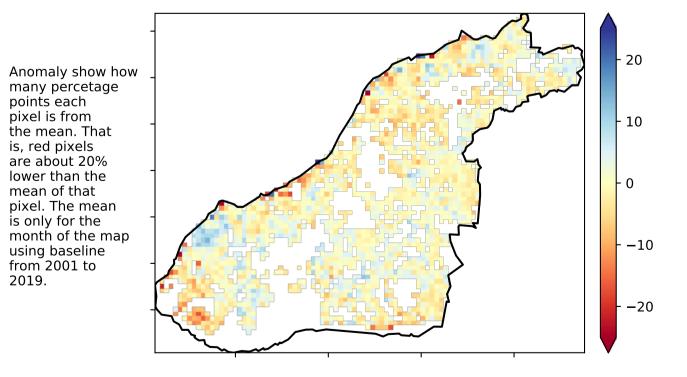
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

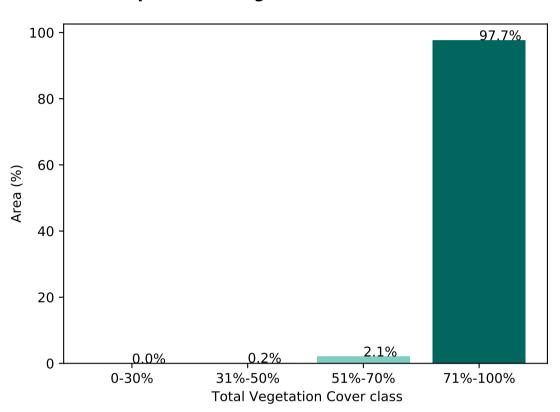


Total Vegetation Cover Anomaly [%]

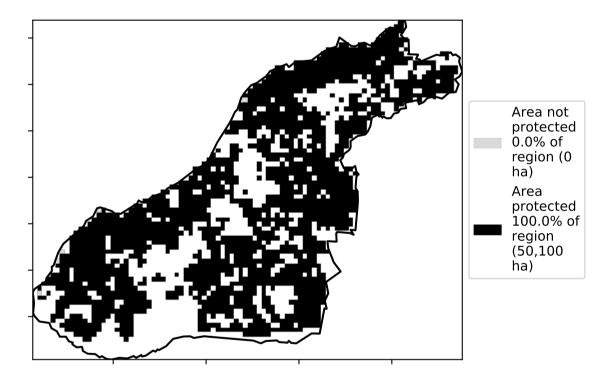


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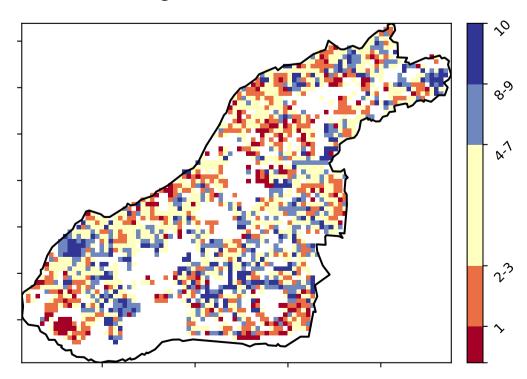
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]



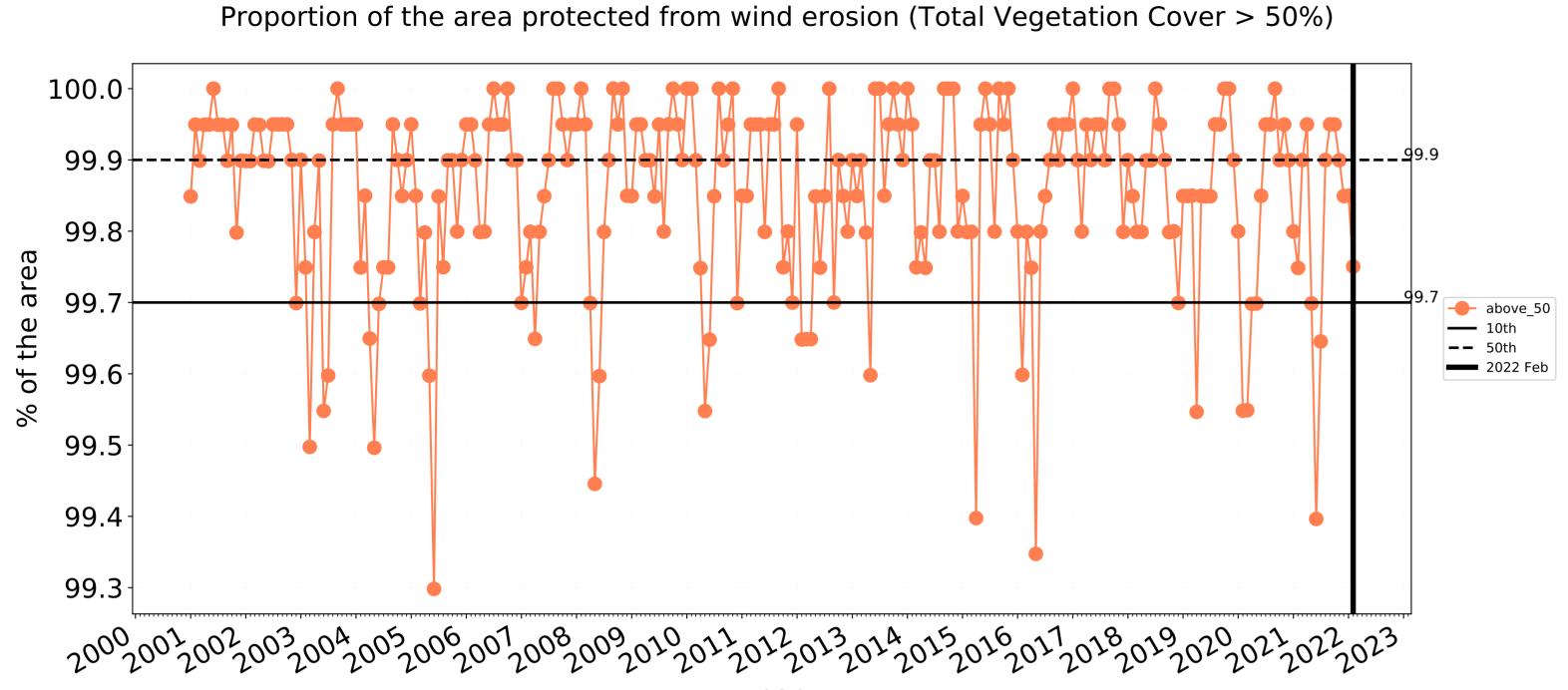




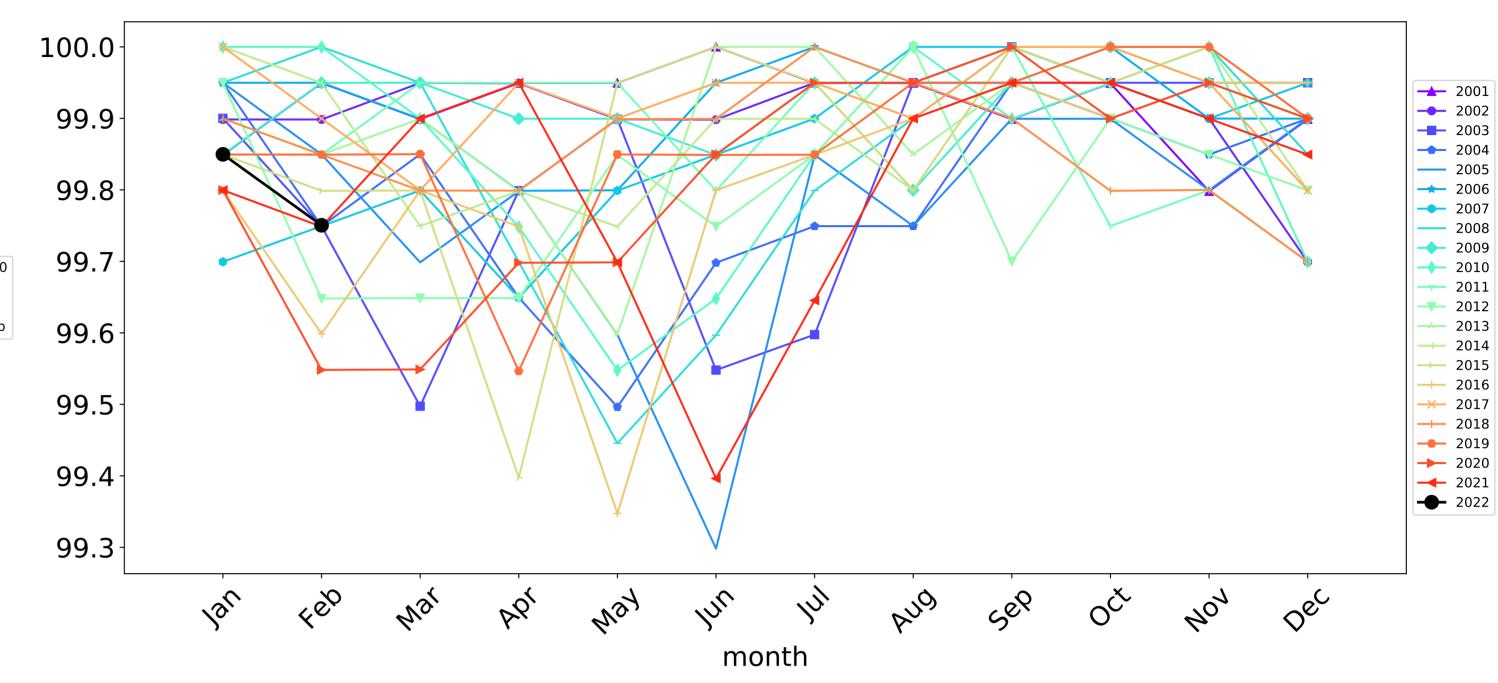


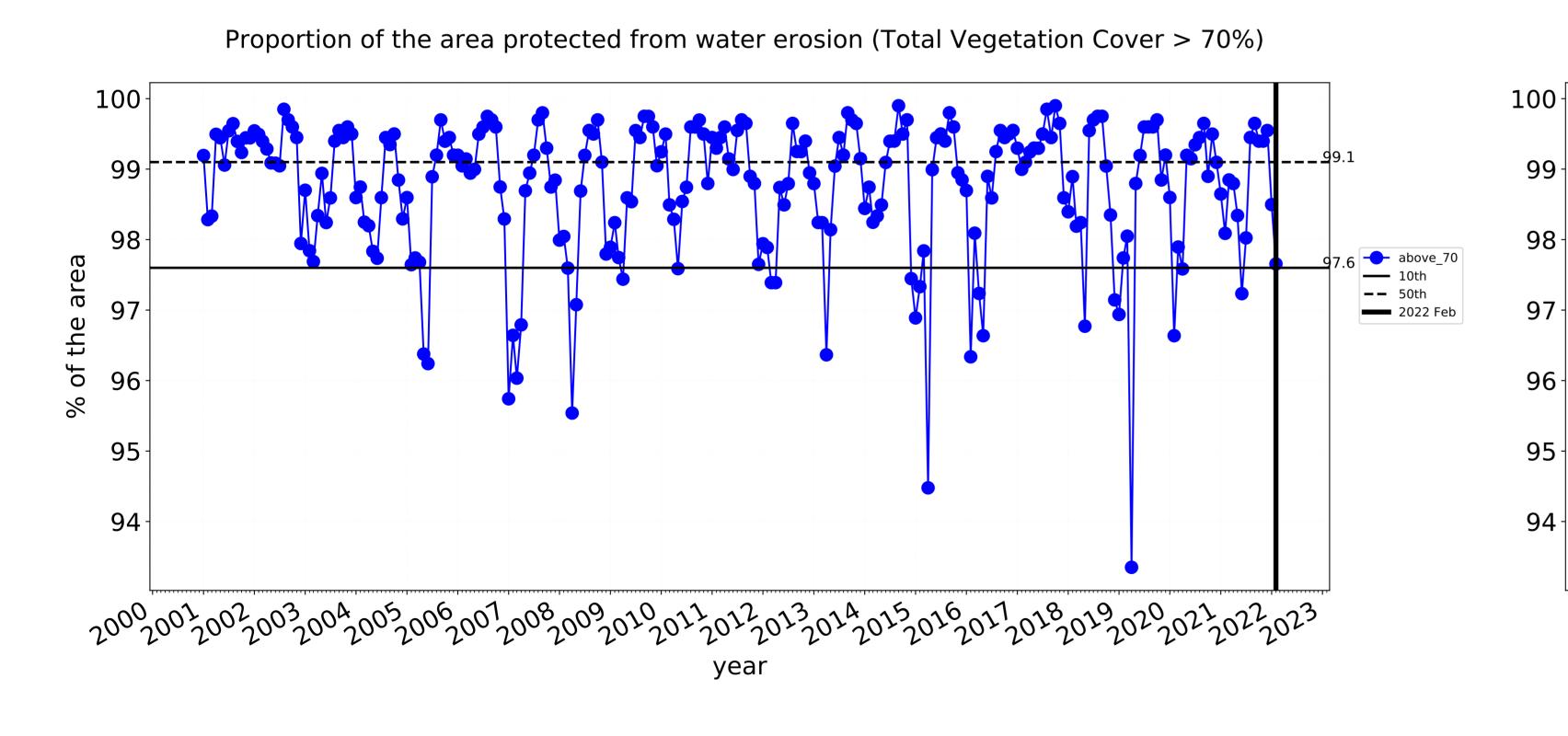


Grazing non forest timeseries



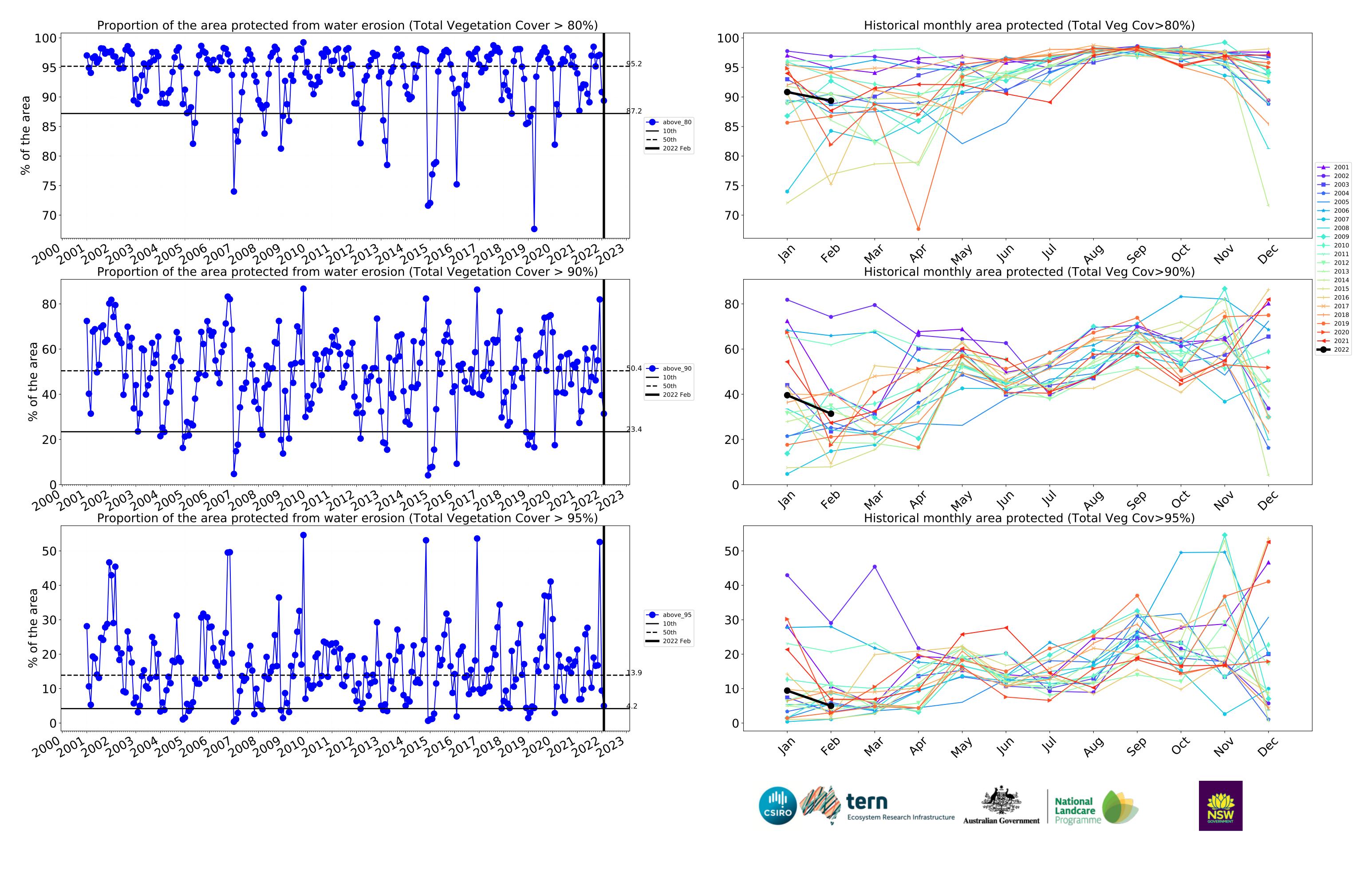






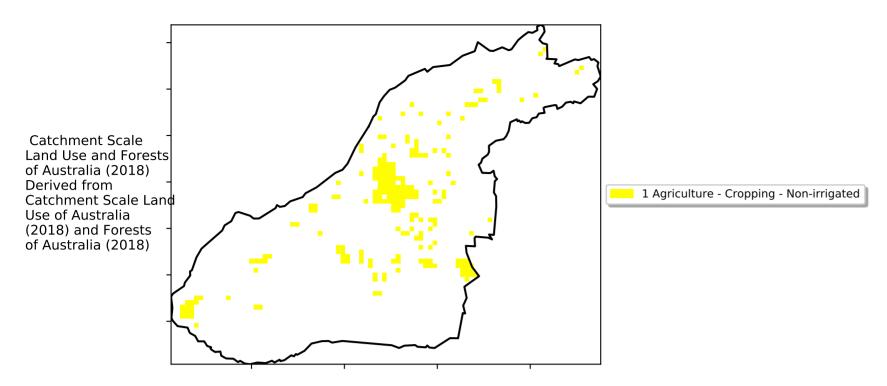
____ 2001 2003 2004 2007

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

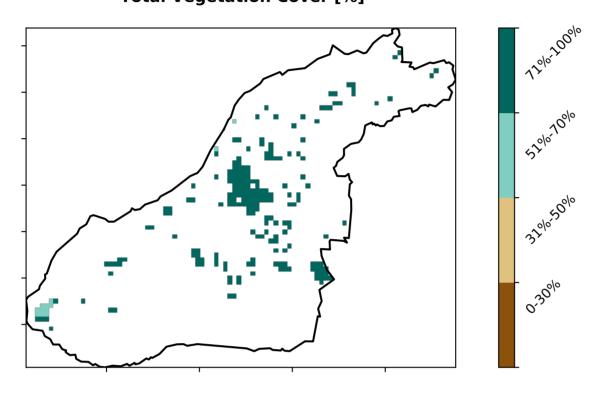


Cropping

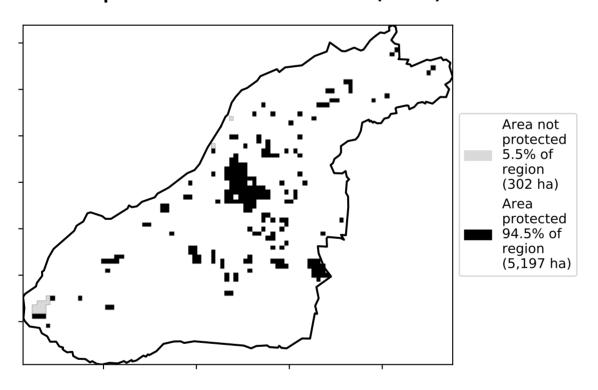
Land use and forest cover



Total Vegetation Cover [%]



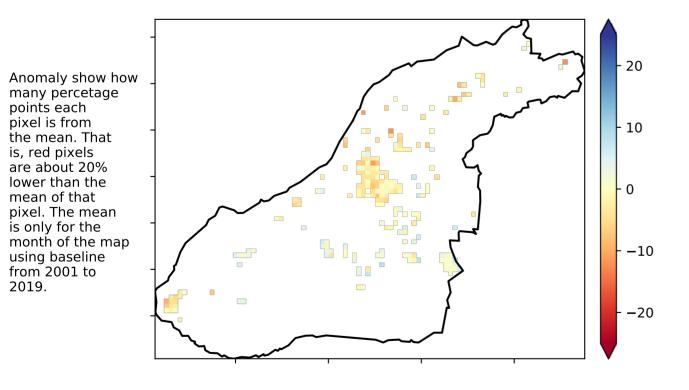
% Area protected from water erosion (>70%)



Total Vegetation Cover Anomaly [%]

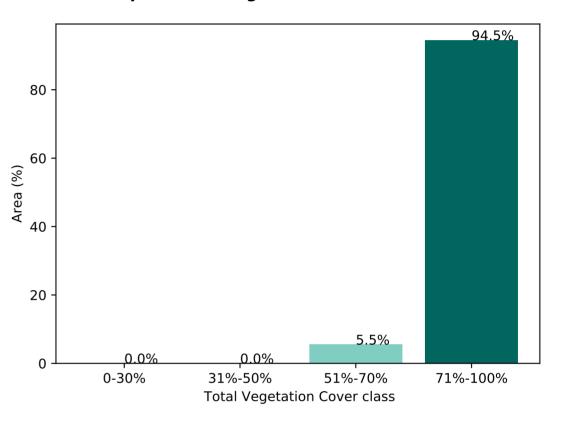
is, red pixels

mean of that

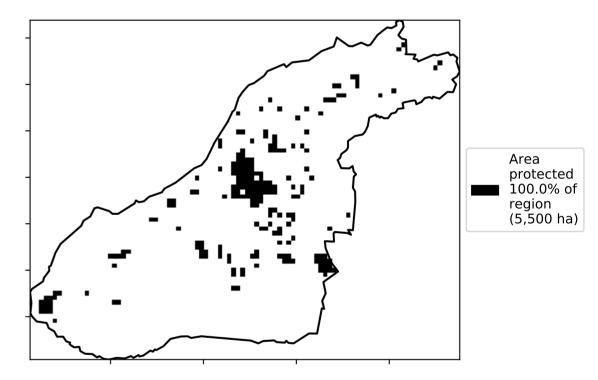


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the man using baseline. the map using baseline from 2001 to 2019.

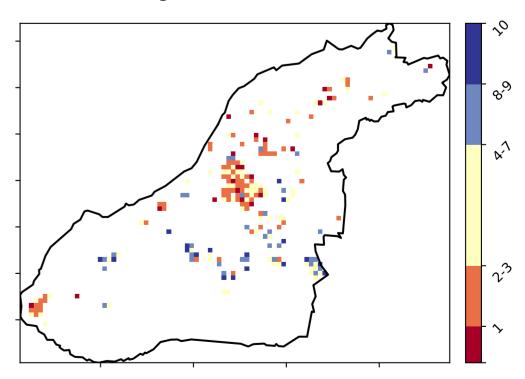
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]



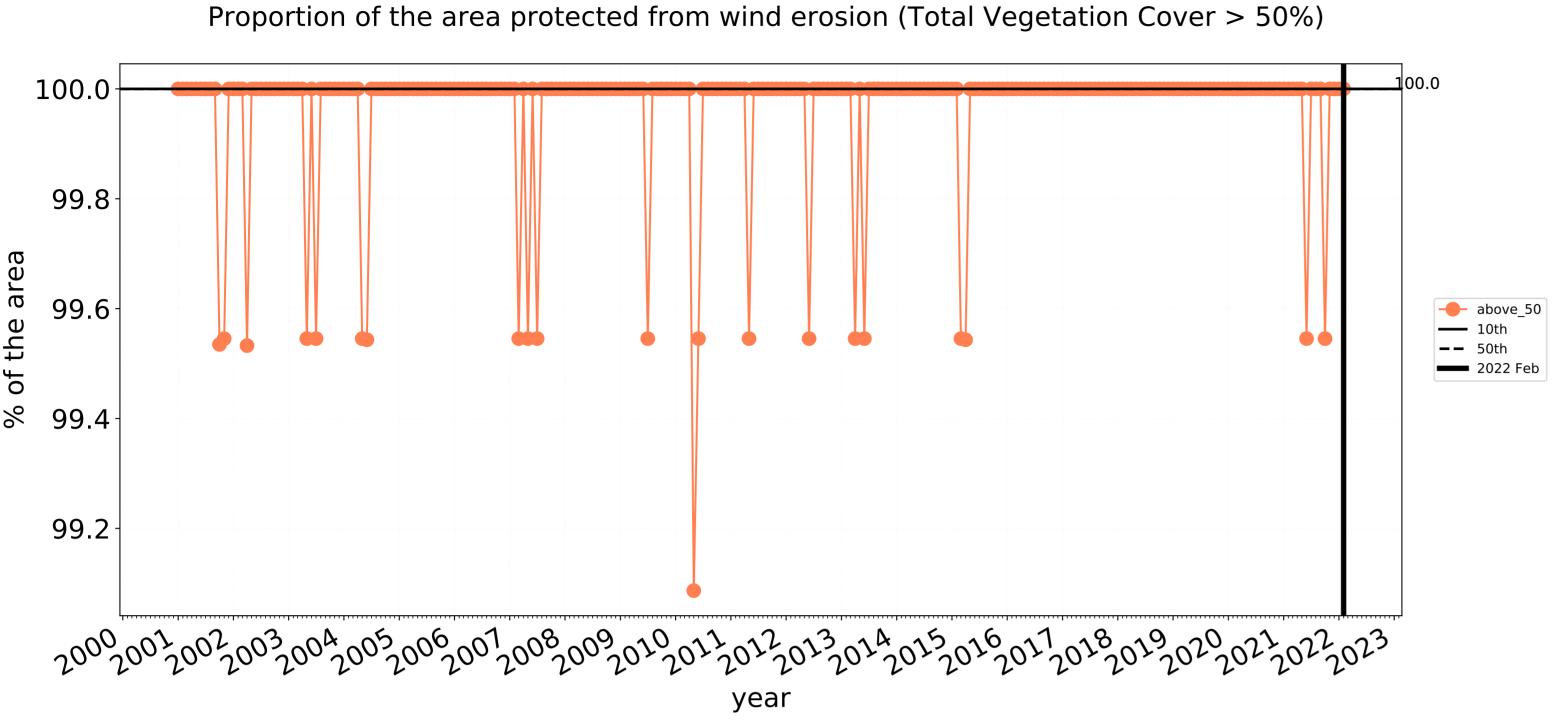


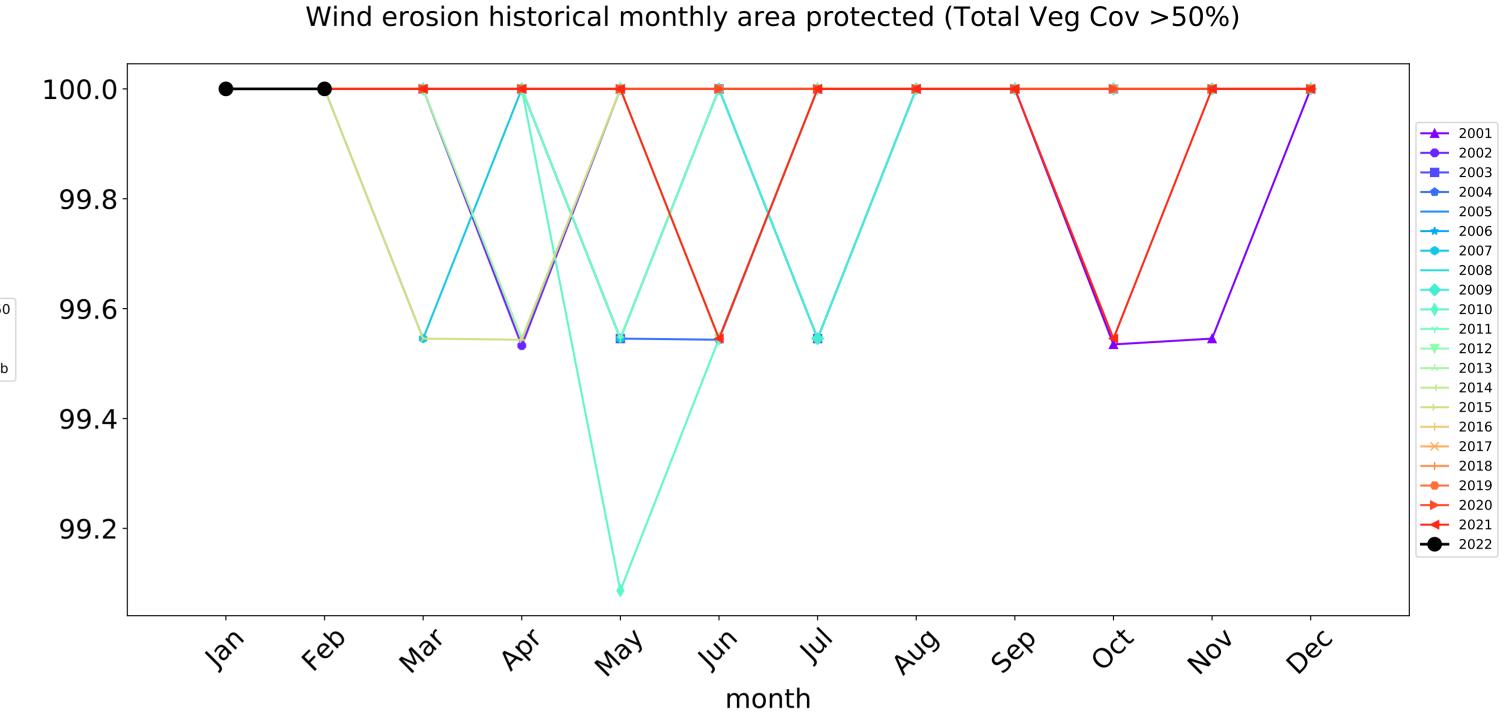


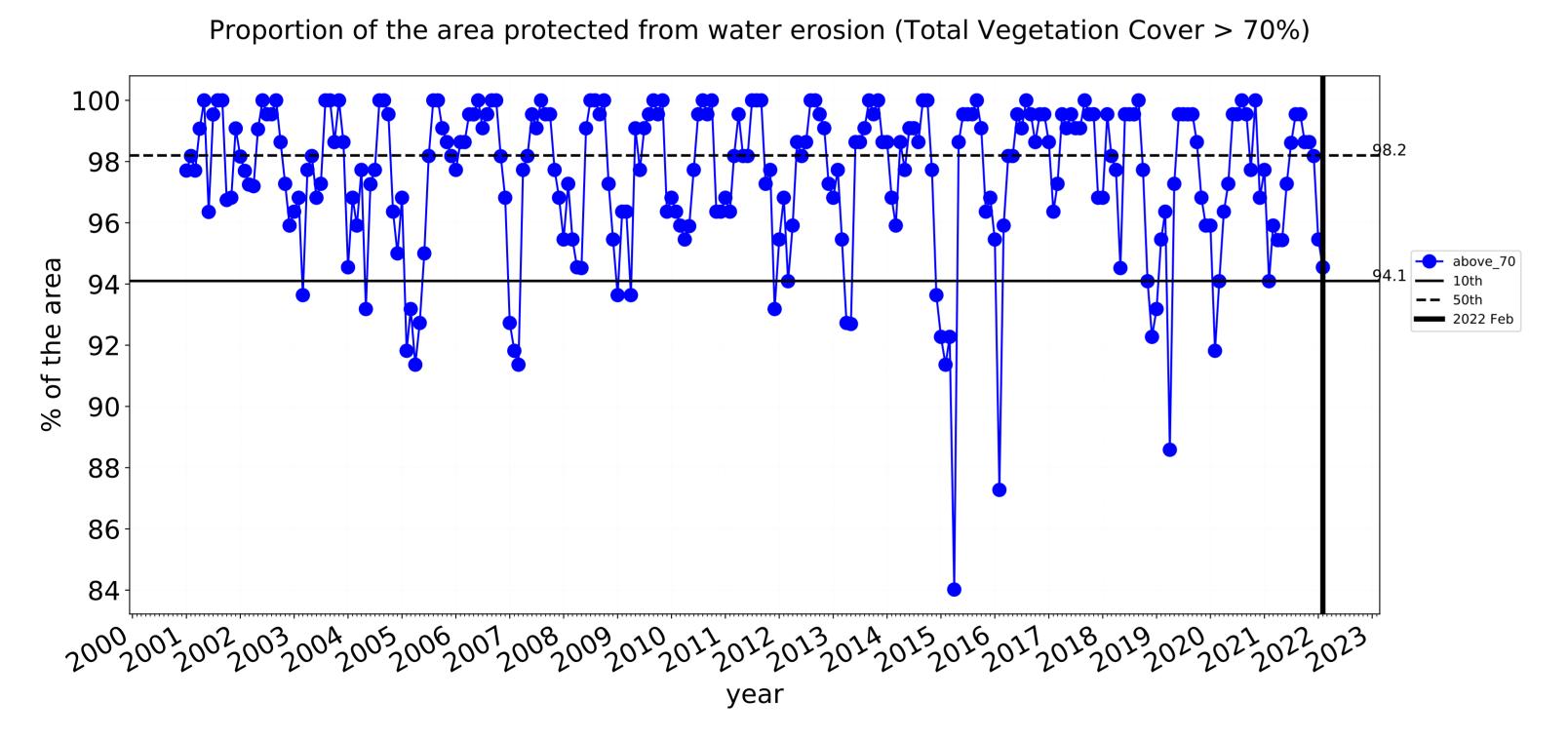


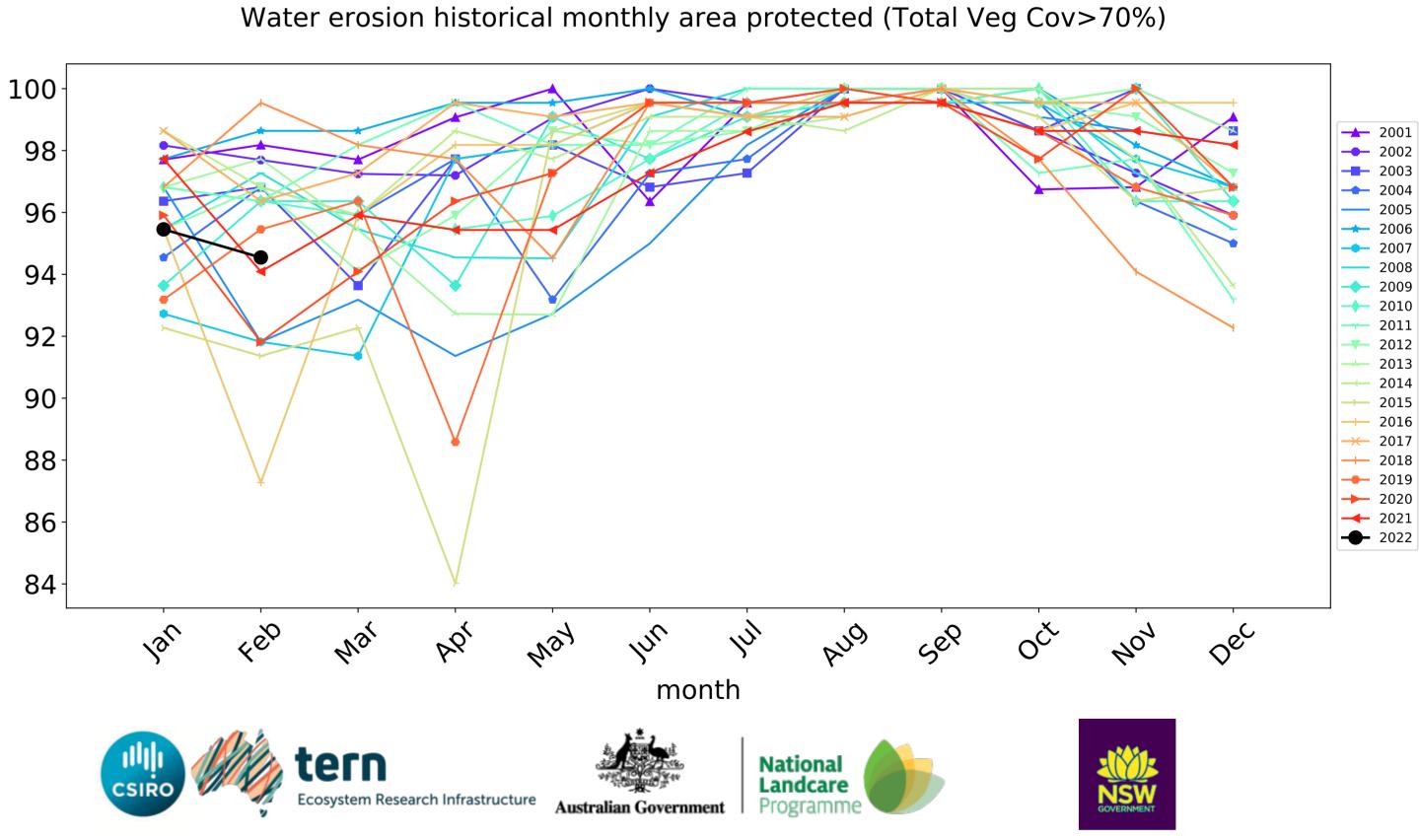


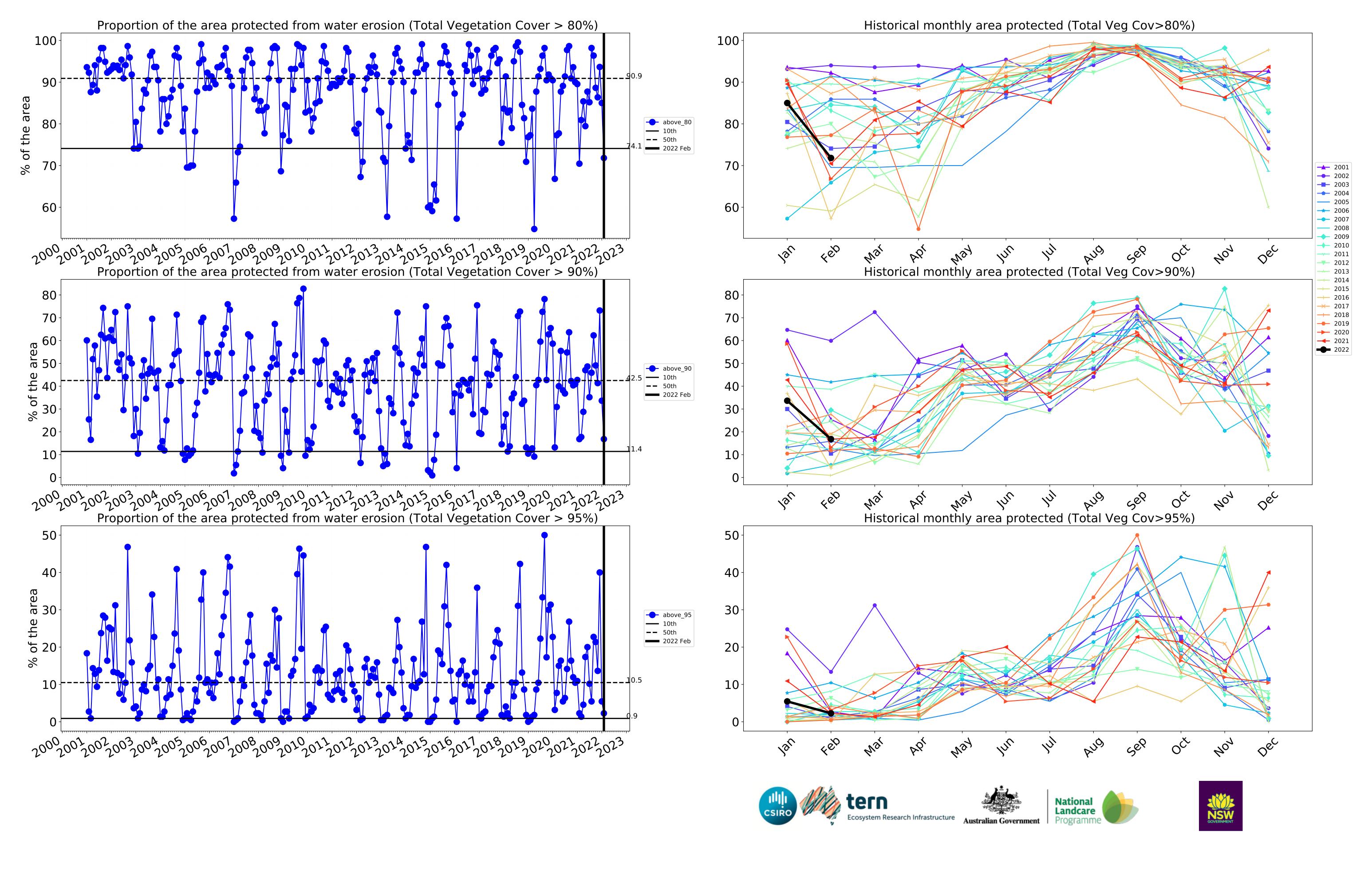
Cropping timeseries







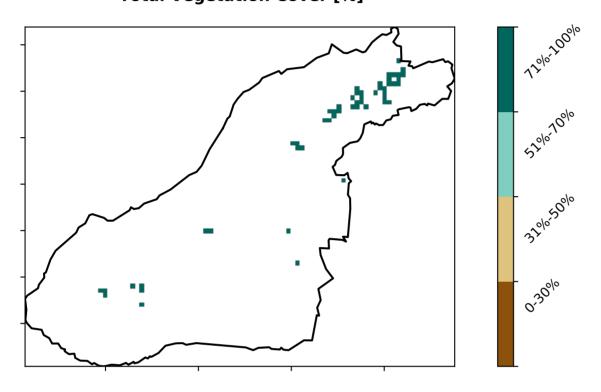




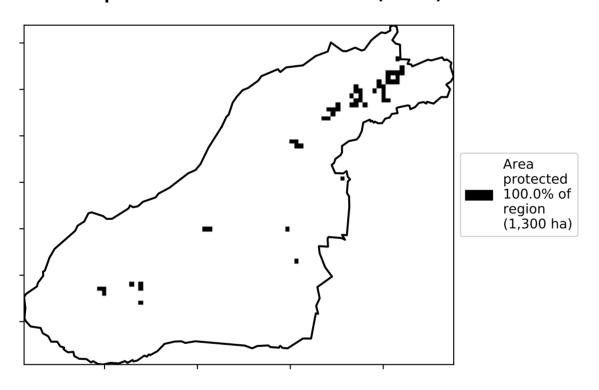
Irrigation

Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018) Australia (2018) Agriculture - Grazing - Irrigated 2 Agriculture - Cropping - Irrigated 3 Agriculture - Horticulture - Irrigated 4 Australia (2018)

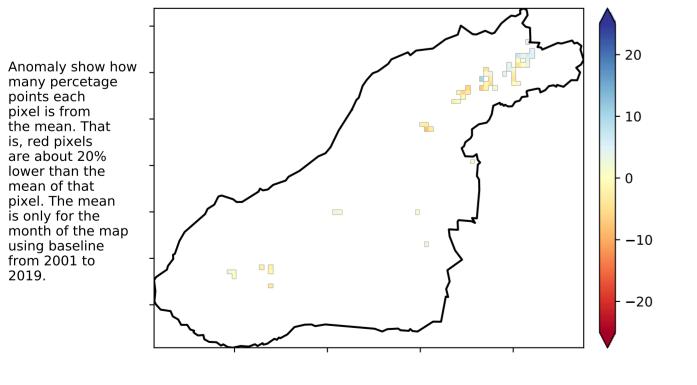
Total Vegetation Cover [%]



% Area protected from water erosion (>70%)

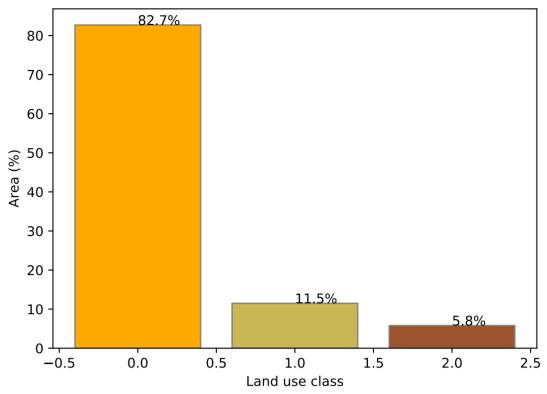


Total Vegetation Cover Anomaly [%]

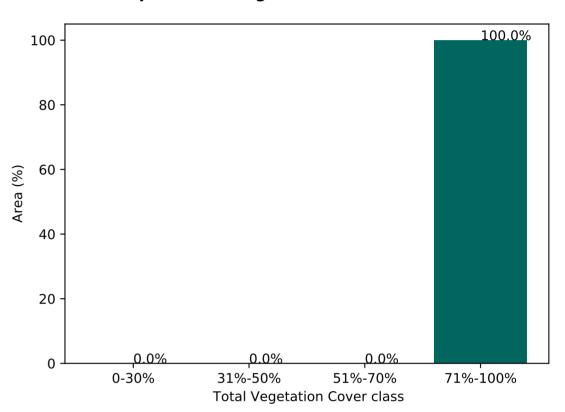


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

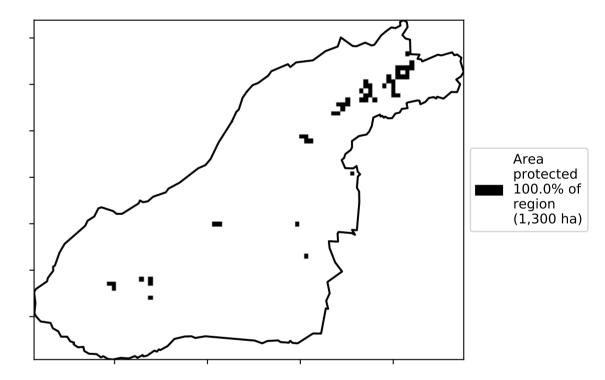
Proportion of each land class in area



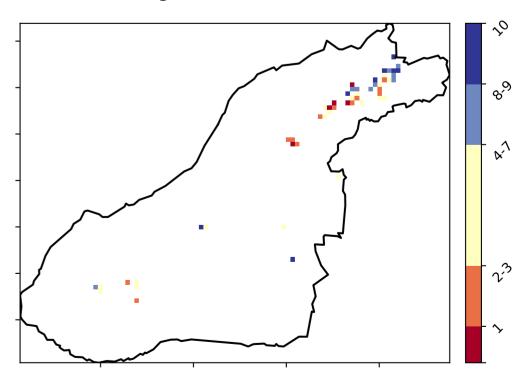
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]

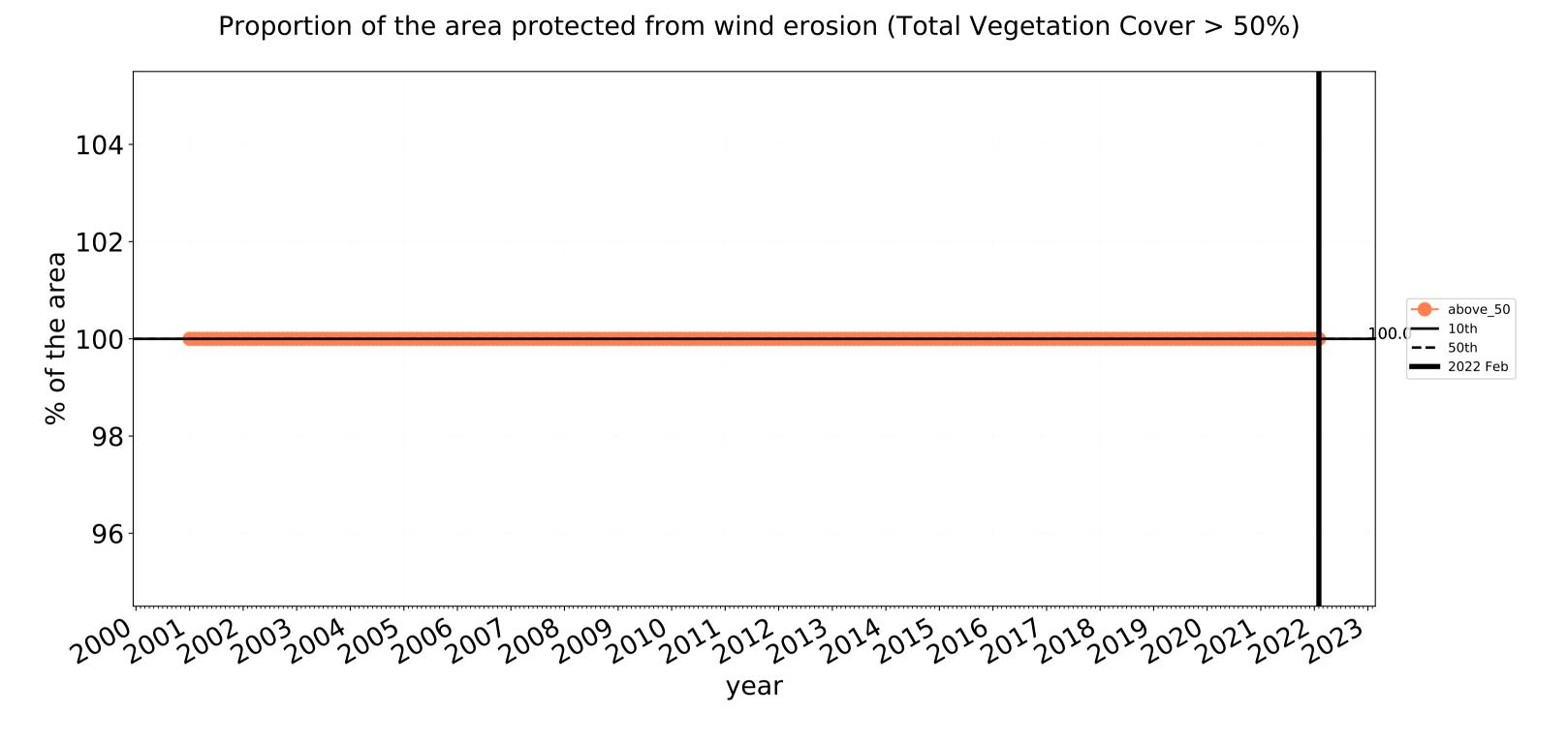


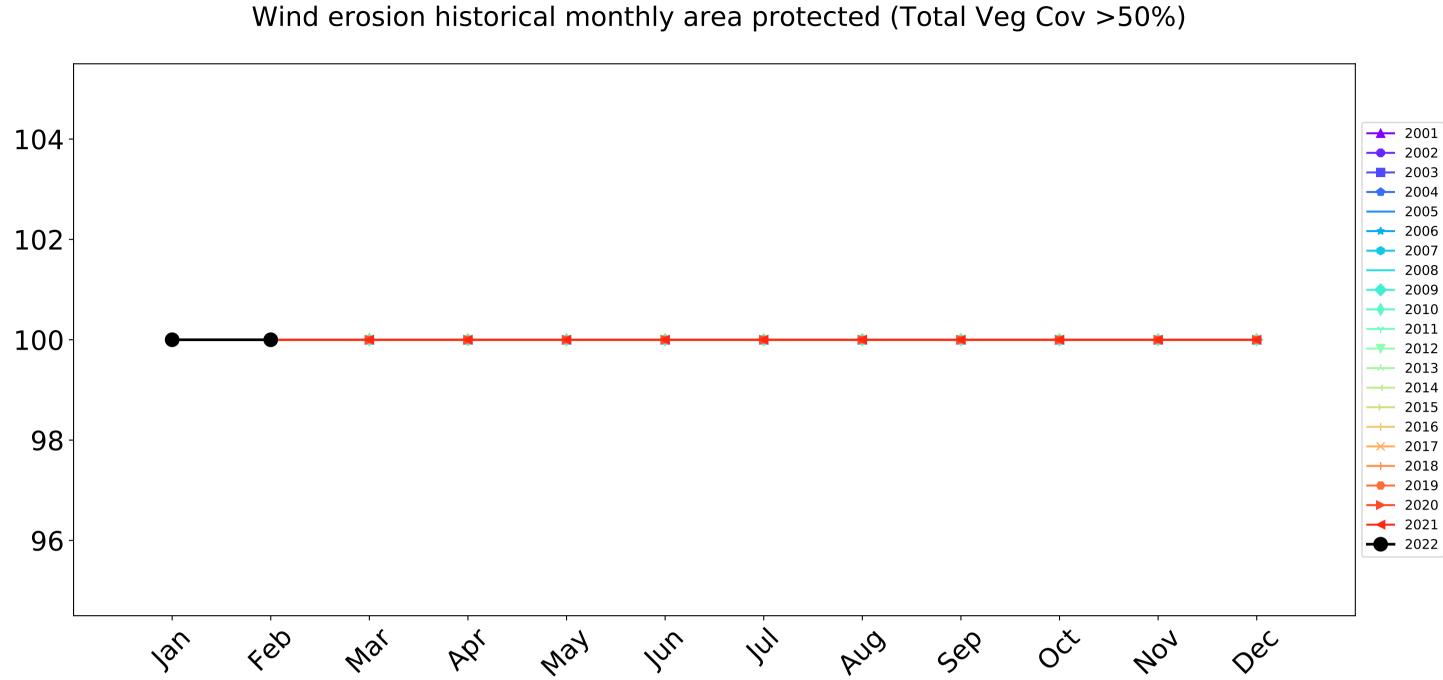




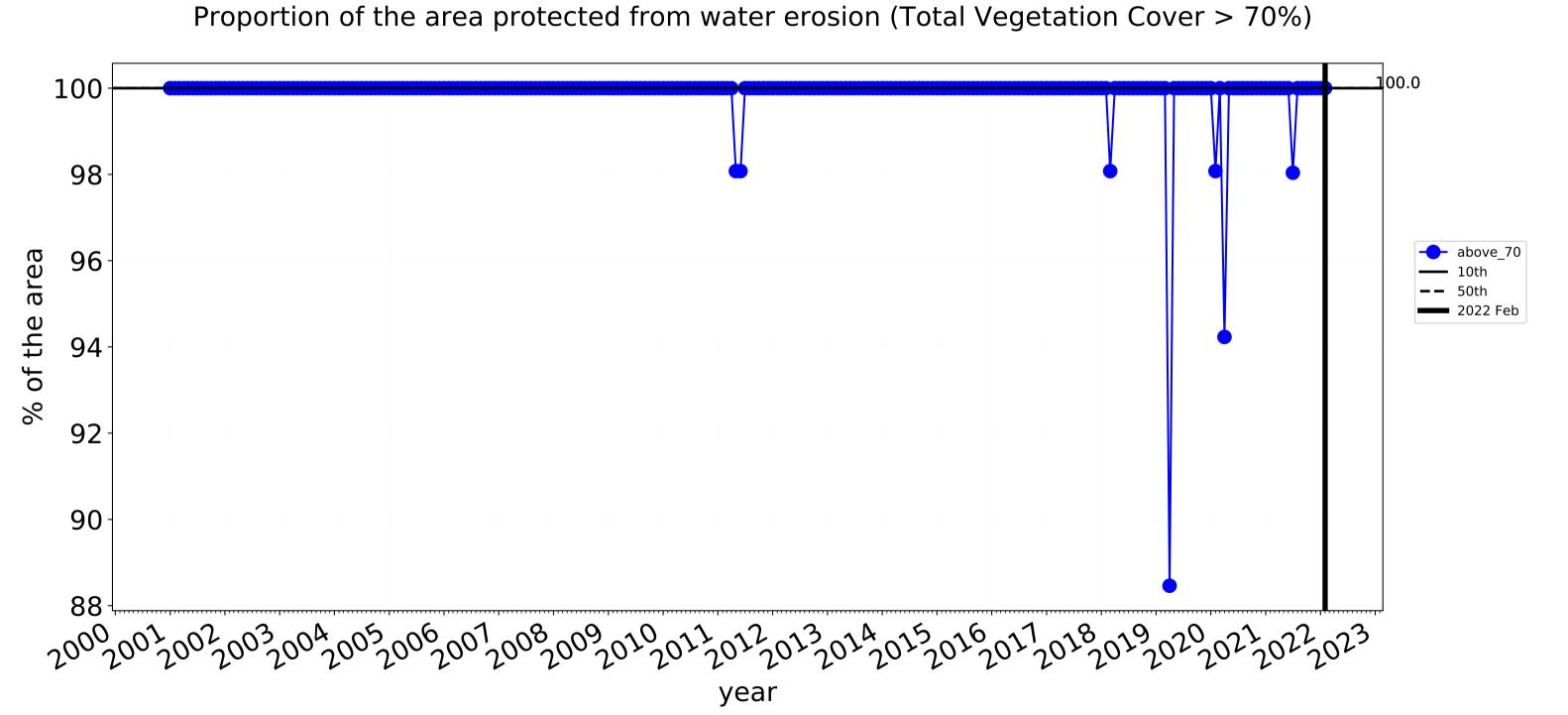


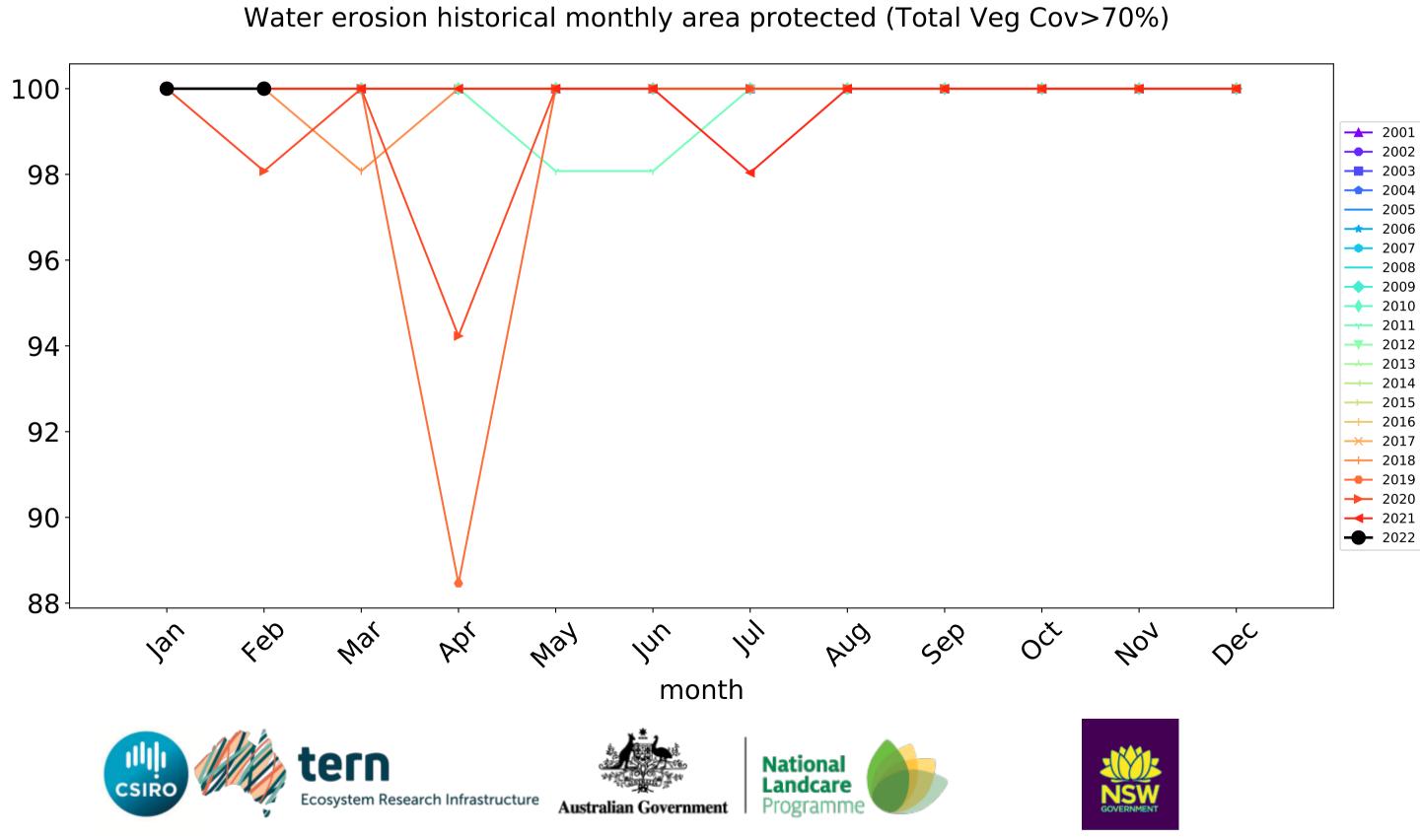


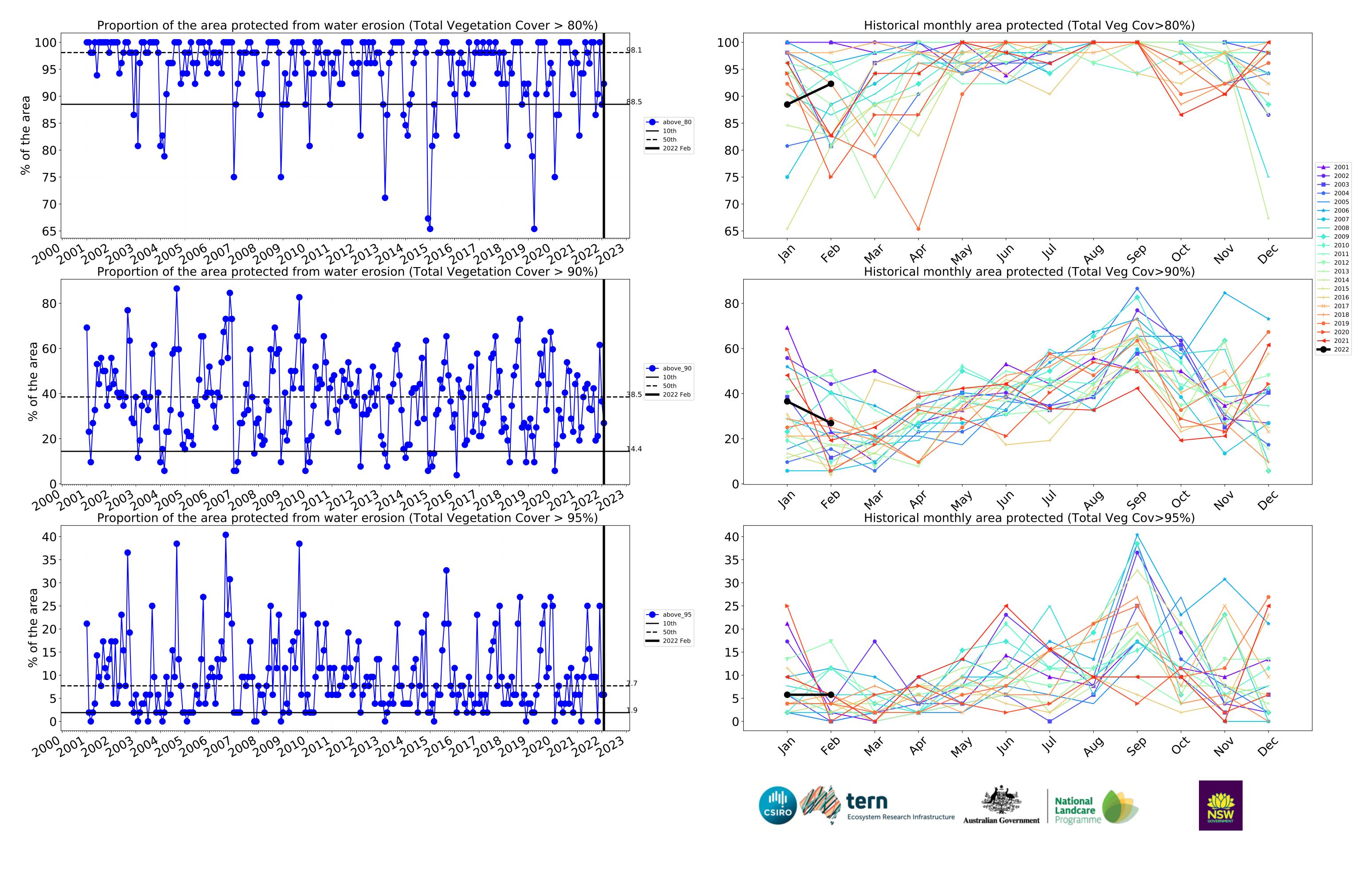




month

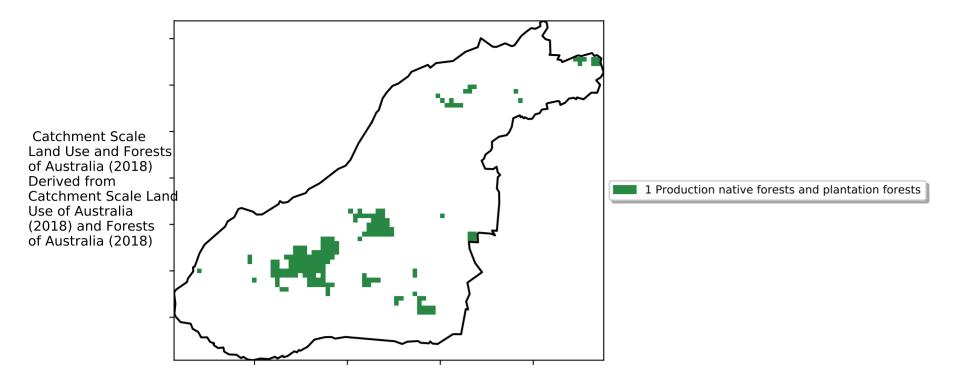




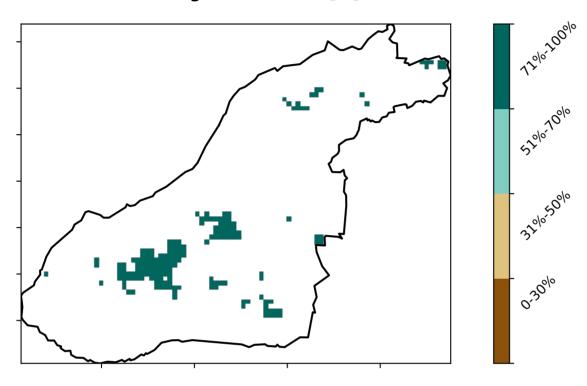


Production native forests and plantation forests

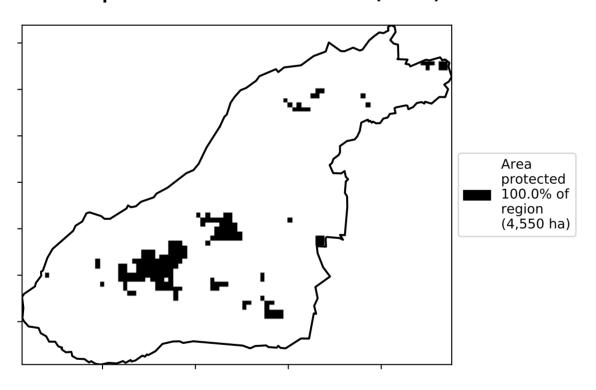
Land use and forest cover



Total Vegetation Cover [%]

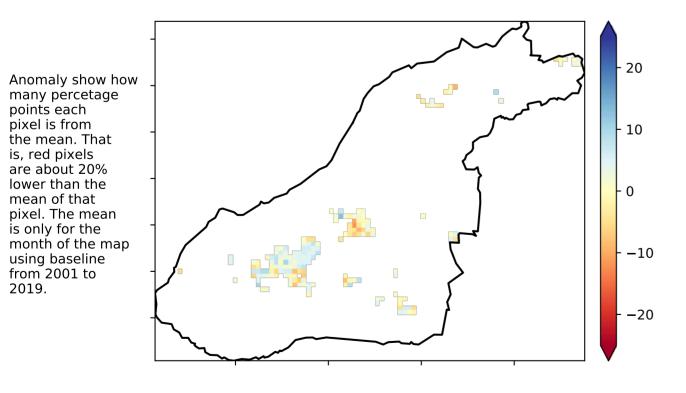


% Area protected from water erosion (>70%)



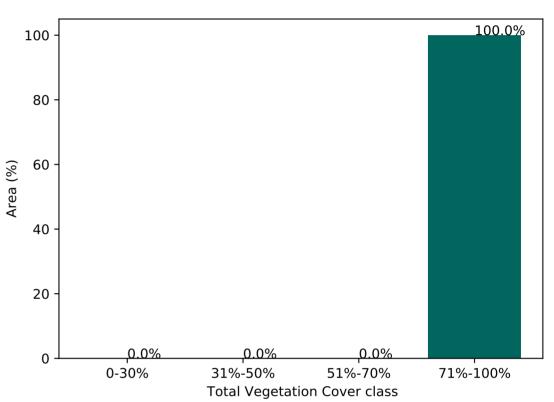
Total Vegetation Cover Anomaly [%]

pixel is from

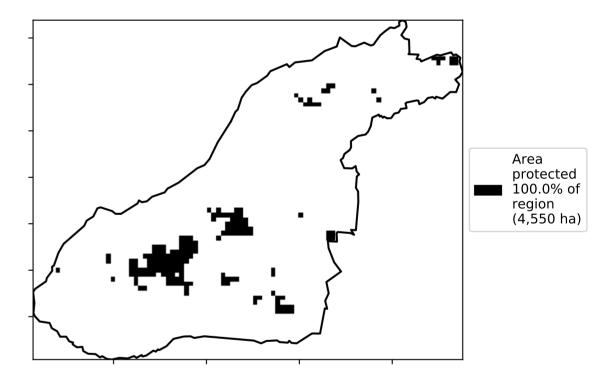


Deciles show where the pixel value lies in the record, from highest to lowest, for that month.
That is, red pixels are
in the lowest 10% of
records for that month of the map using baseline from 2001 to 2019.

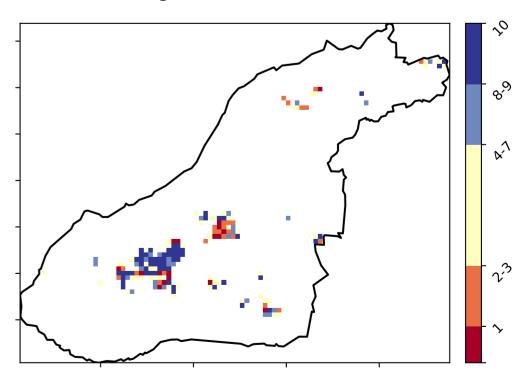
Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Decile [%]



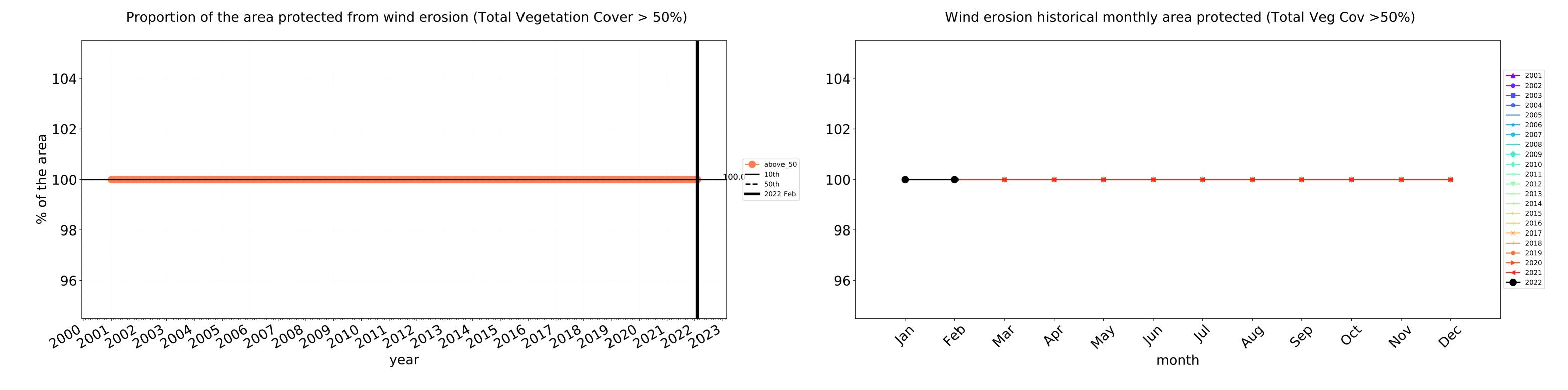


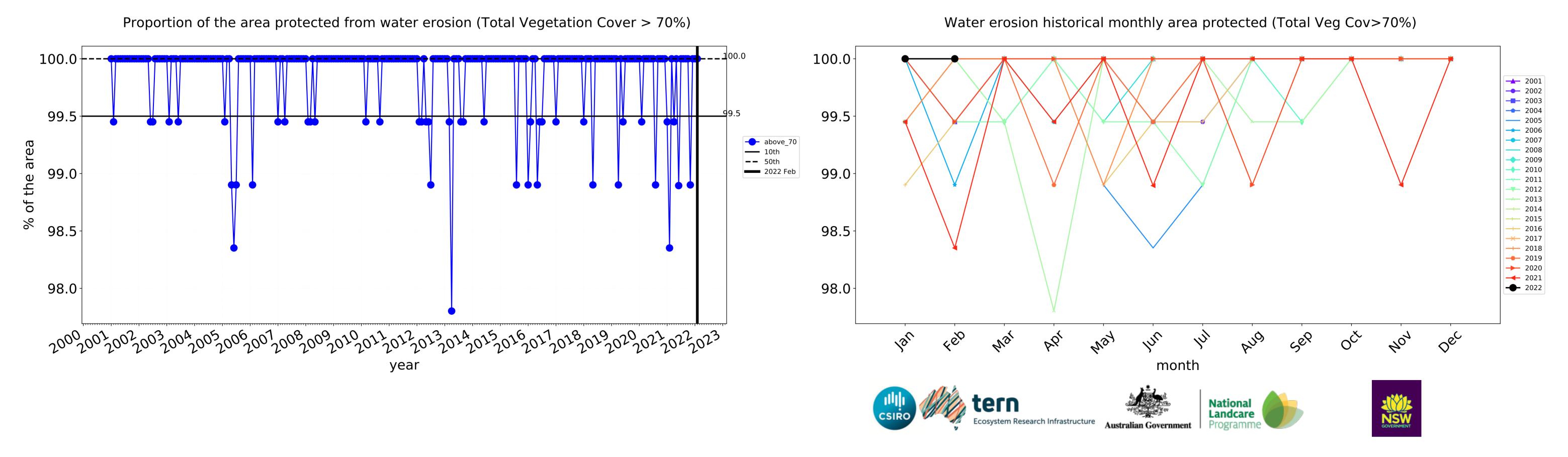


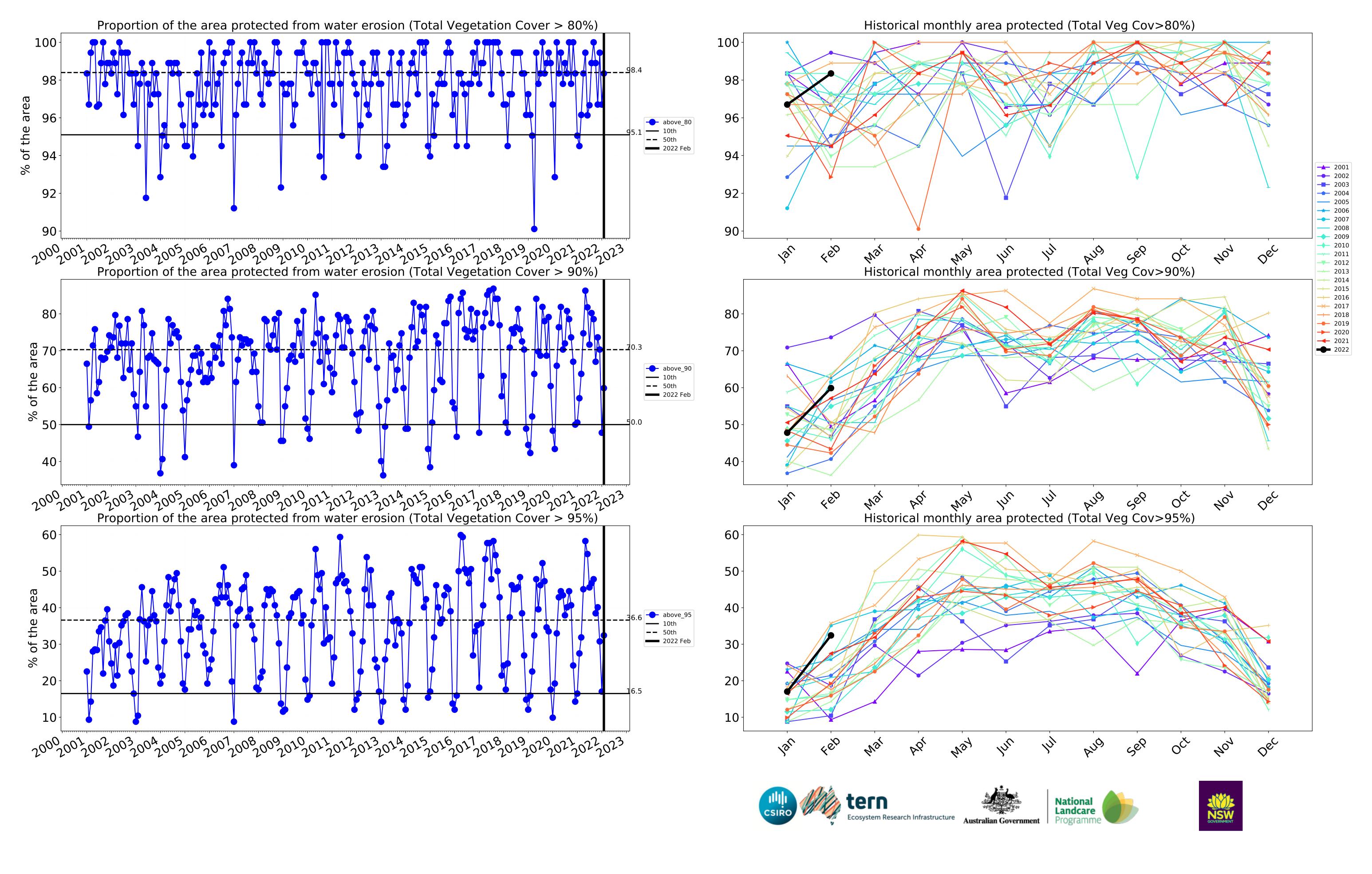




Production native forests and plantation forests timeseries







Yankalilla_(DC) (73,675 ha and no data 1,462 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 | 73,675 | 100.0% 73,650 | 99.8% 73,550 | 97.0% 71,475 | 87.8% 64,675 | 35.0% 25,775 | 8.0% 5,875 |
| Conservation and natural environments | 9,500 | 100.0% 9,500 | 100.0% 9,500 | 98.4% 9,350 | 93.2% 8,850 | 59.2% 5,625 | 17.1% 1,625 |
| Conservation and natural environments non forest | 1,350 | 100.0% 1,350 | 100.0% 1,350 | 92.6% 1,250 | 75.9% 1,025 | 50.0% 675 | 14.8% 200 |
| Conservation and natural environments Woodland forest | 5,475 | 100.0% 5,475 | 100.0% 5,475 | 99.5% 5,450 | 95.9% 5,250 | 60.3% 3,300 | 18.7% 1,025 |
| Conservation and natural environments Forest (non woodland) | 2,675 | 100.0% 2,675 | 100.0% 2,675 | 99.1% 2,650 | 96.3% 2,575 | 61.7% 1,650 | 15.0% 400 |
| Agriculture | 57,375 | 100.0% 57,350 | 99.8% 57,250 | 97.4% 55,900 | 87.8% 50,400 | 30.0% 17,200 | 4.7% 2,725 |
| Grazing | 50,575 | 100.0% 50,550 | 99.8% 50,450 | 97.7% 49,400 | 89.5% 45,250 | 31.5% 15,925 | 5.0% 2,525 |
| Grazing non forest | 50,100 | 100.0% 50,075 | 99.8% 49,975 | 97.7% 48,925 | 89.4% 44,775 | 31.4% 15,725 | 5.0% 2,500 |
| Cropping | 5,500 | 100.0% 5,500 | 100.0% 5,500 | 94.5% 5,200 | 71.8% 3,950 | 16.8% 925 | 2.3% 125 |
| Irrigation | 1,300 | 100.0% 1,300 | 100.0% 1,300 | 100.0% 1,300 | 92.3% 1,200 | 26.9% 350 | 5.8% 75 |
| Production native forests and plantation forests | 4,550 | 100.0% 4,550 | 100.0% 4,550 | 100.0% 4,550 | 98.4% 4,475 | 59.9% 2,725 | 32.4% 1,475 |







