# Total vegetation cover soil protection Region:LGA Gympie (R) QLD

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: January 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



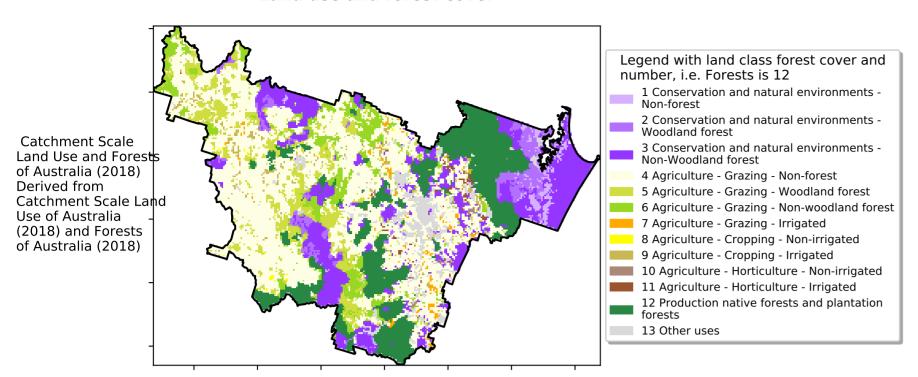




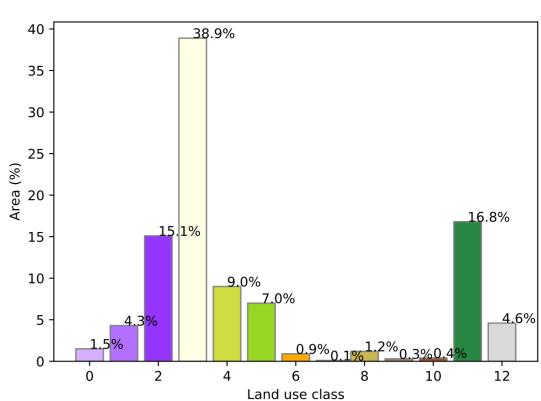


# **Vegetation Cover Jan 2022**

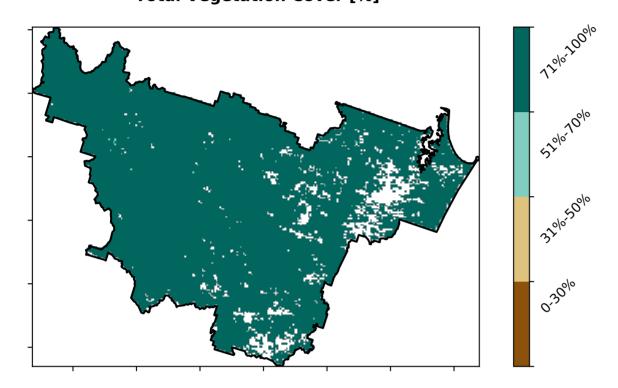
#### Land use and forest cover



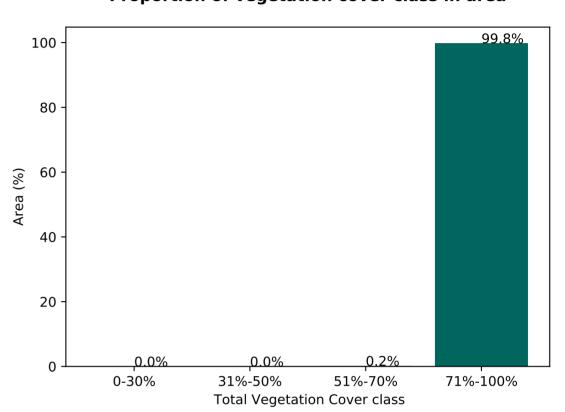
#### Proportion of each land class in area



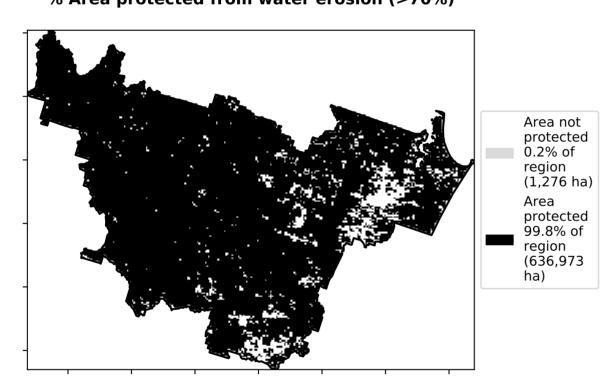
#### Total Vegetation Cover [%]



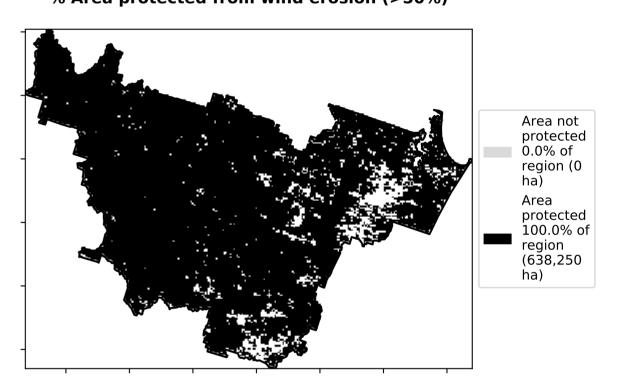
Proportion of vegetation cover class in area



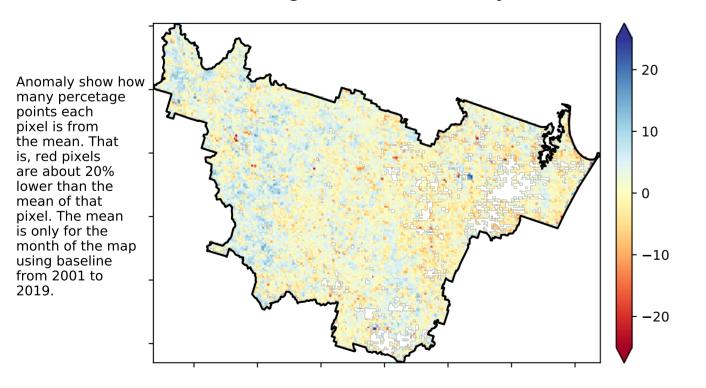
# % Area protected from water erosion (>70%)



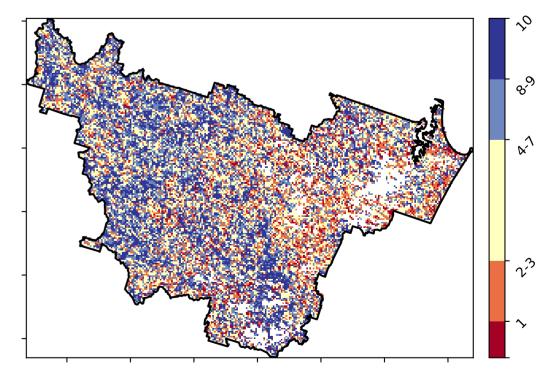
% Area protected from wind erosion (>50%)



#### 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.

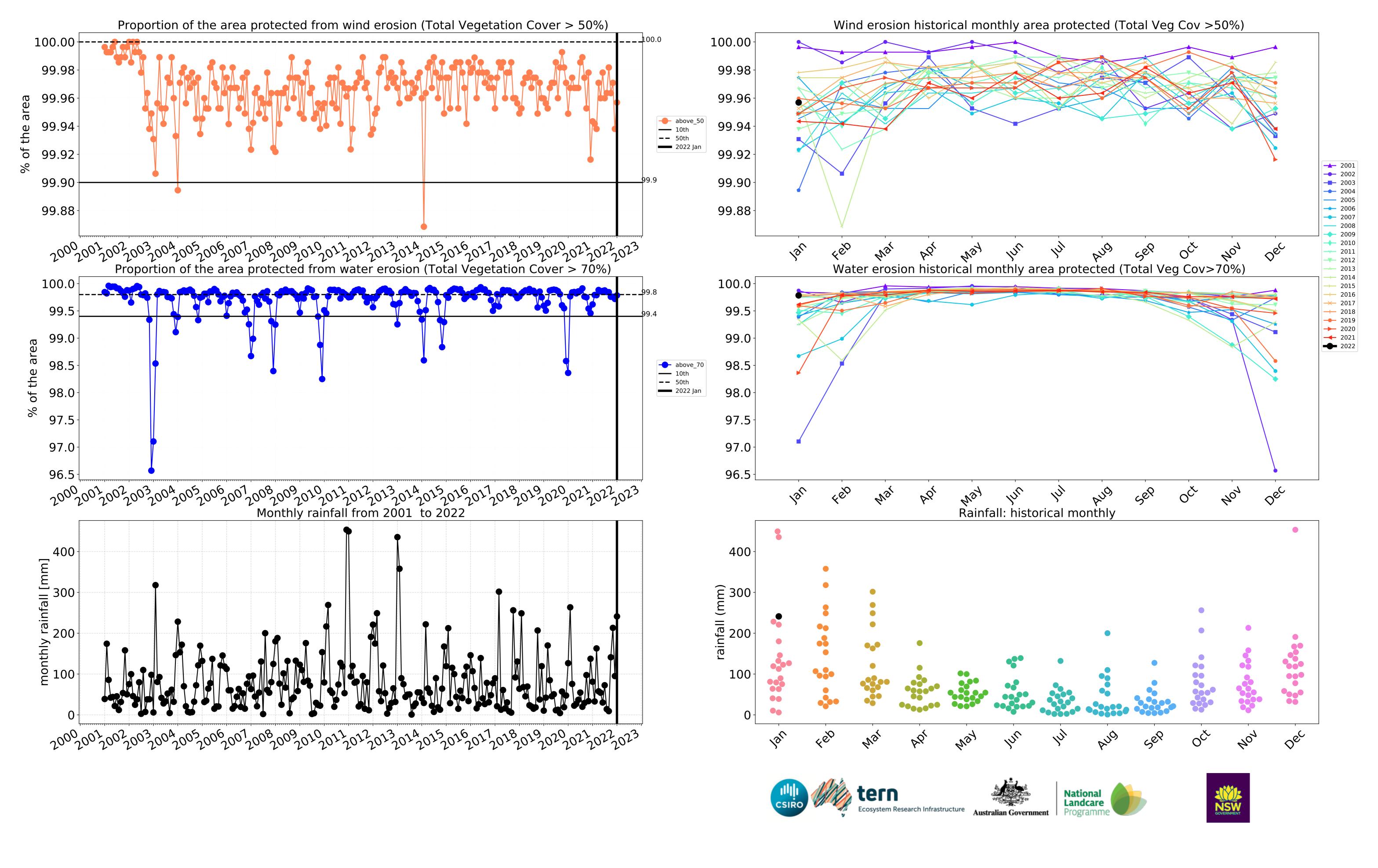


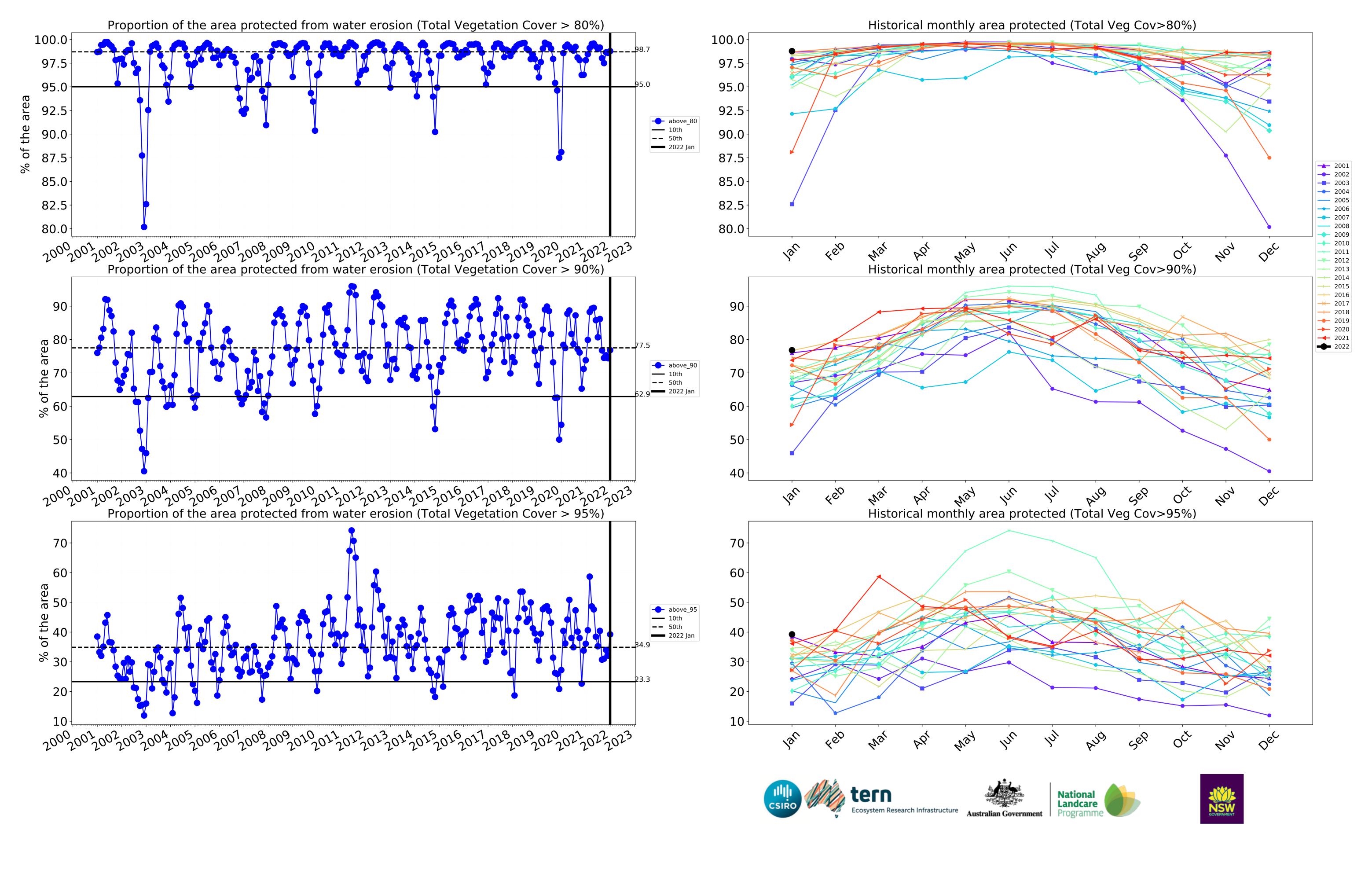




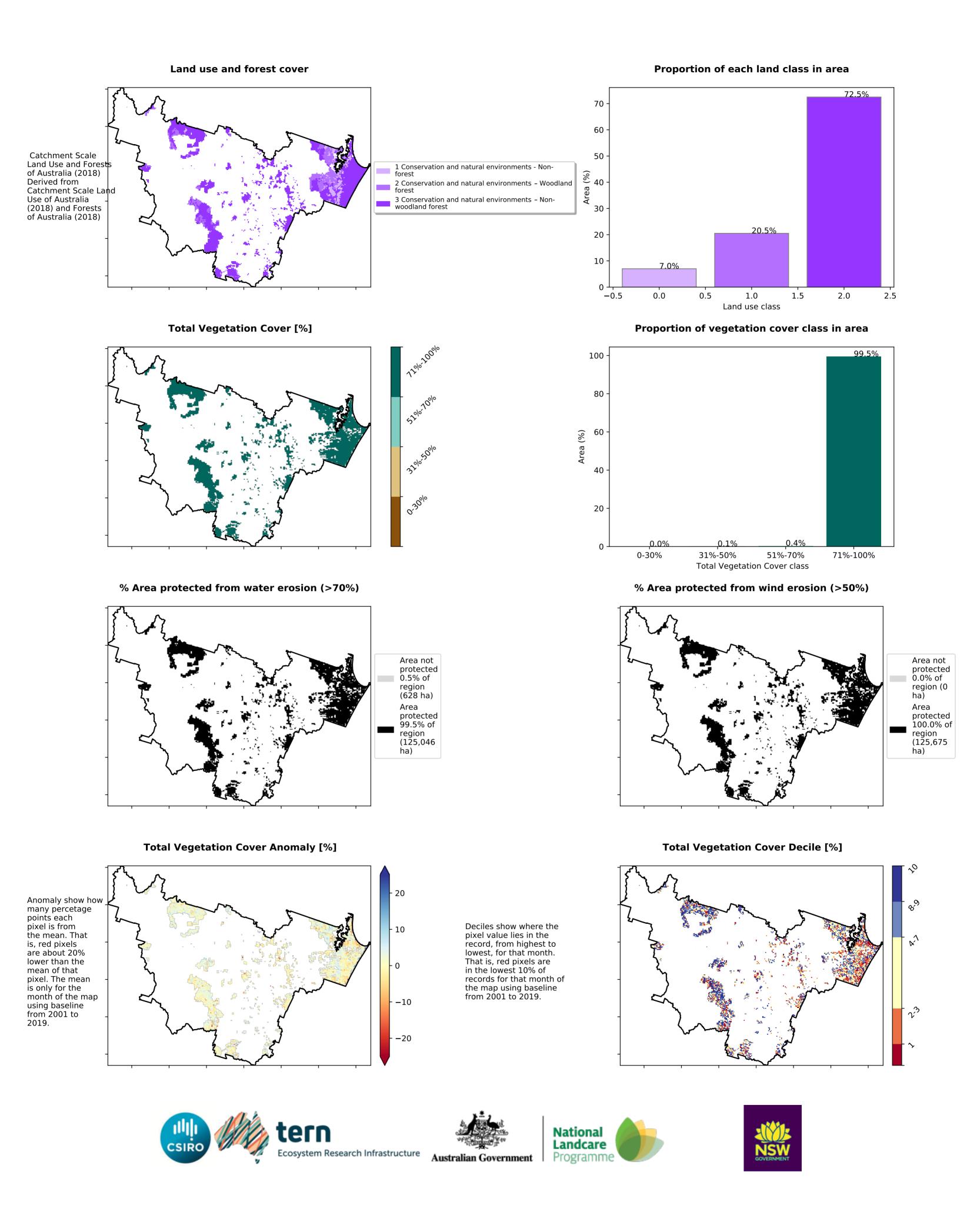




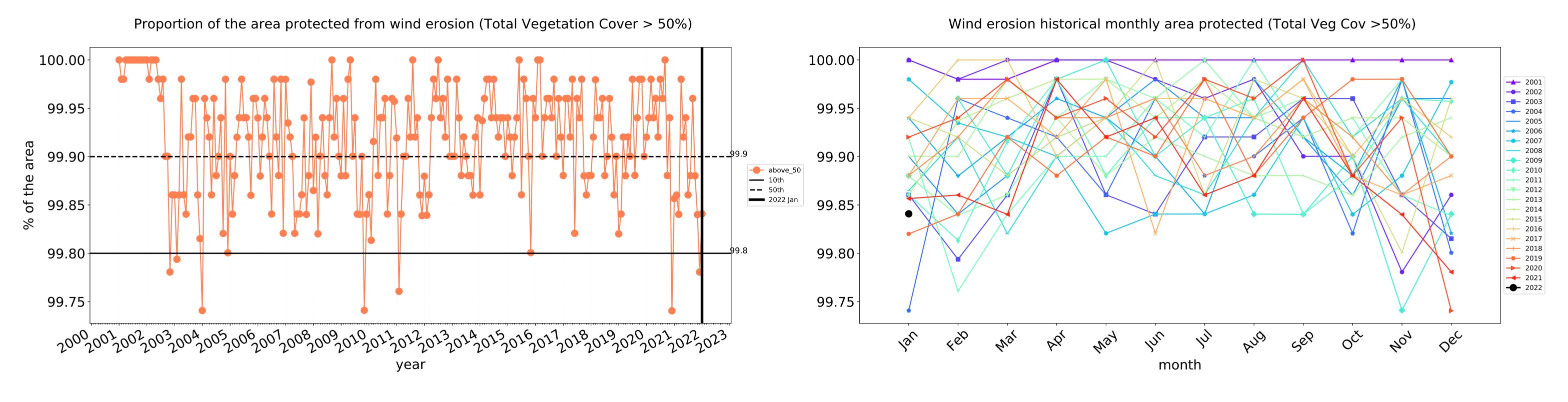


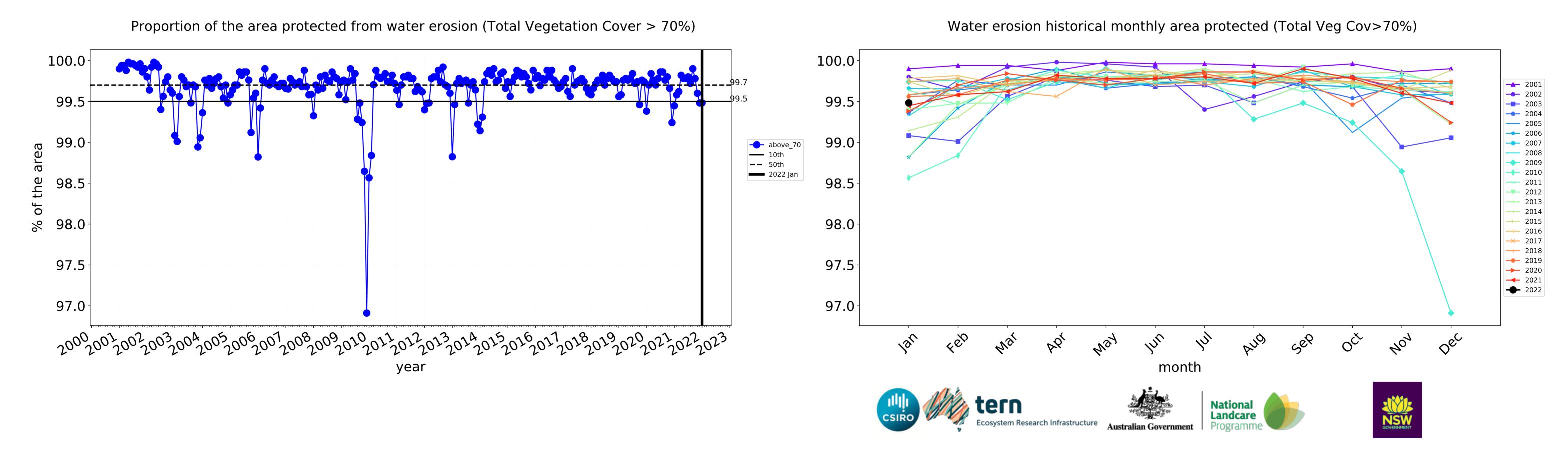


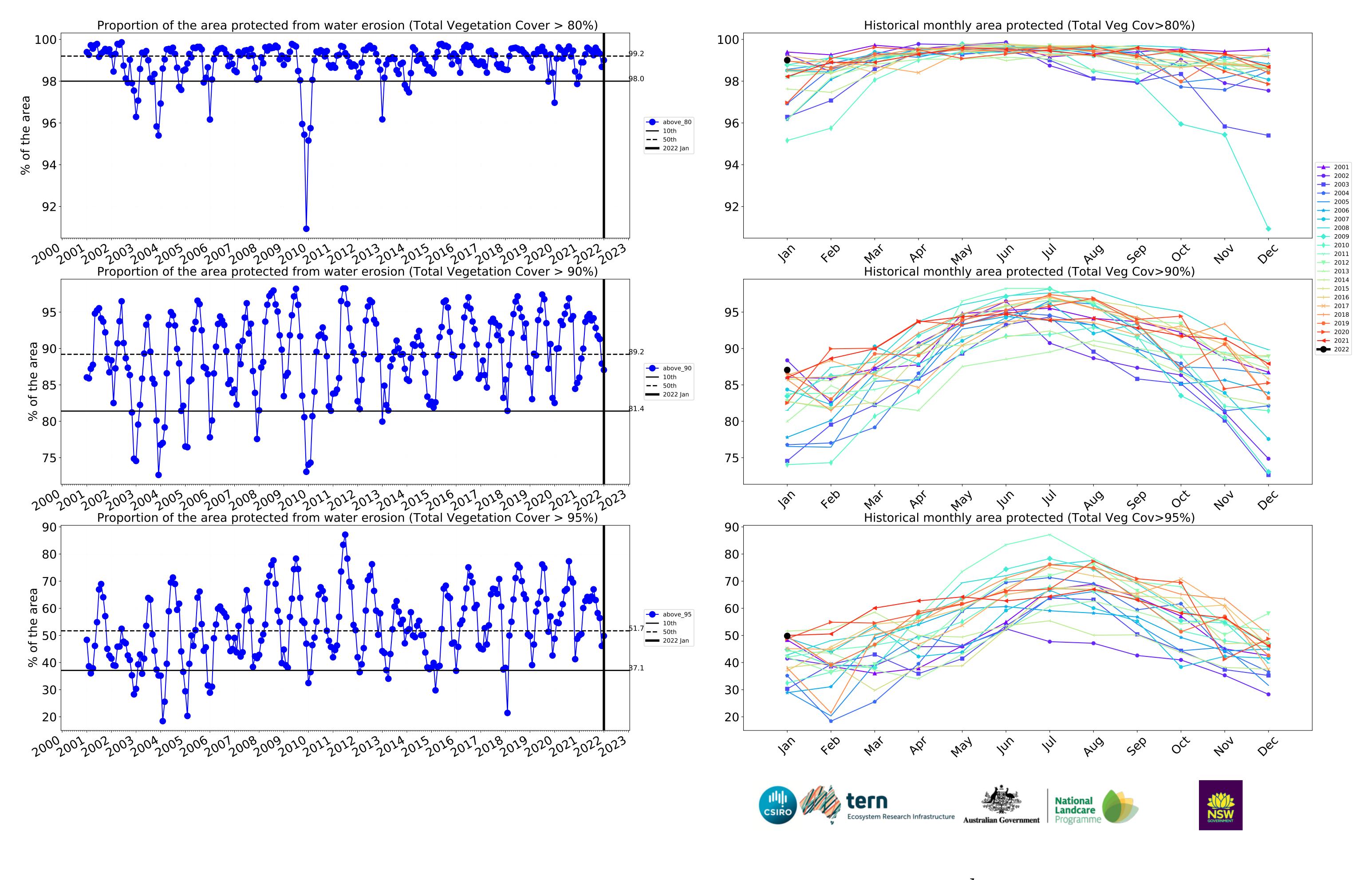
#### **Conservation and natural environments**



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

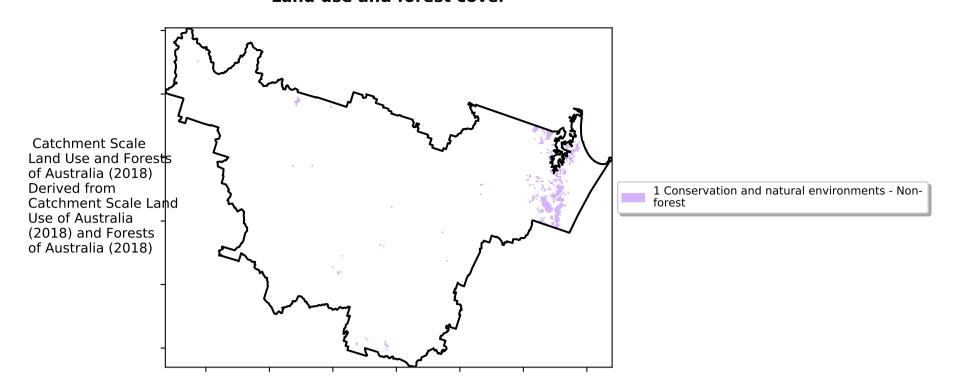




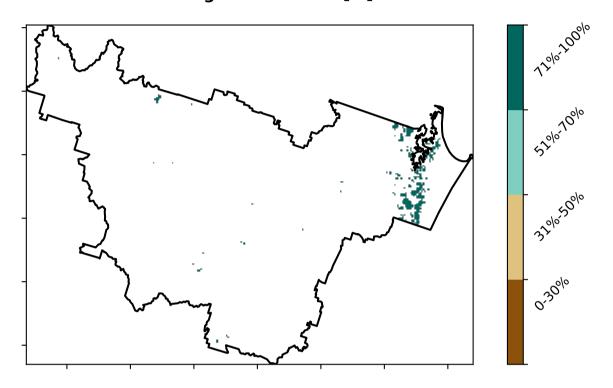


#### **Conservation and natural environments non forest**

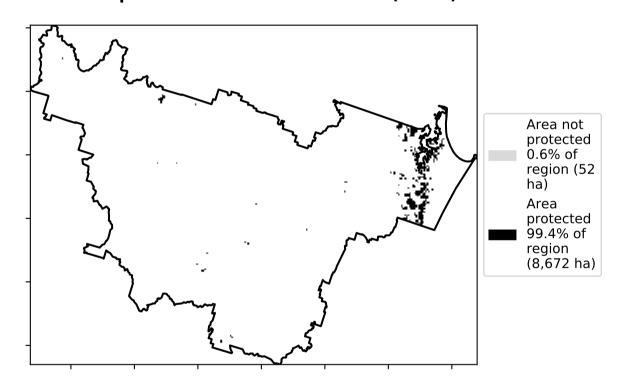
#### Land use and forest cover



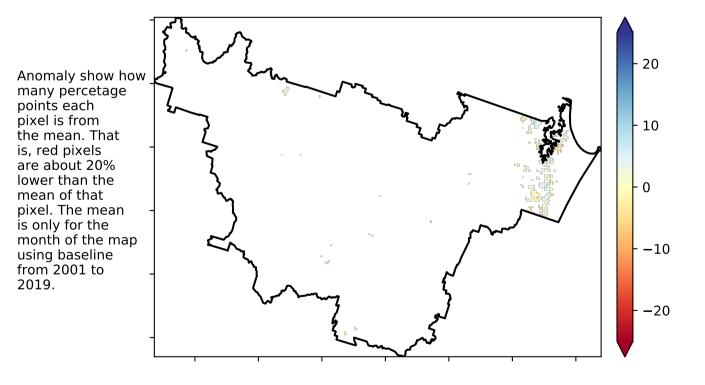
#### Total Vegetation Cover [%]



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

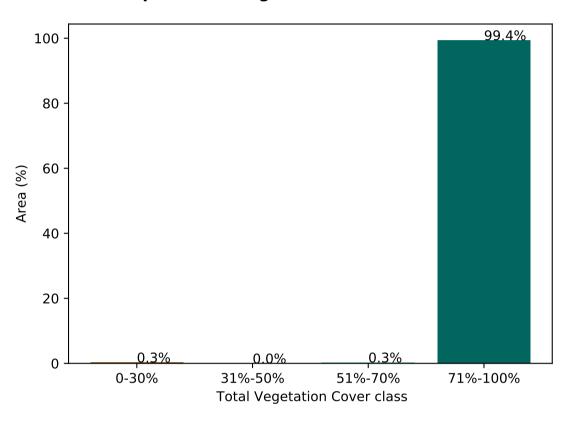


#### Total Vegetation Cover Anomaly [%]

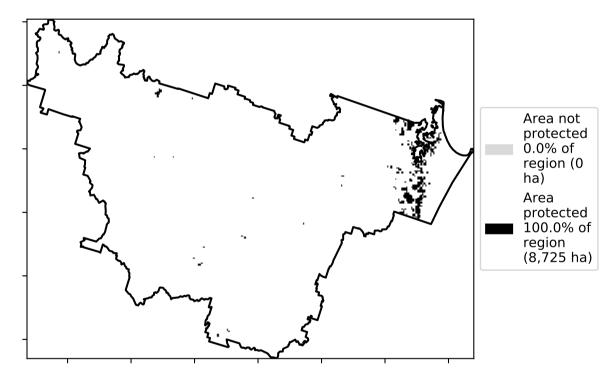


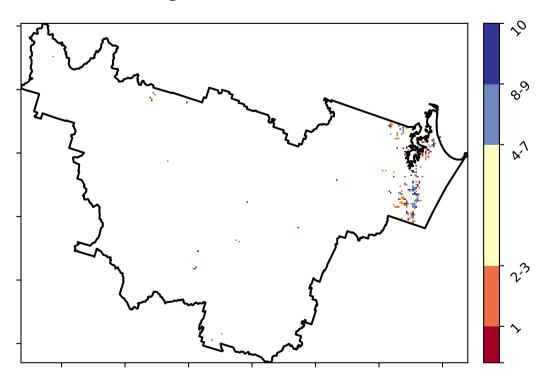
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

#### Proportion of vegetation cover class in area



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





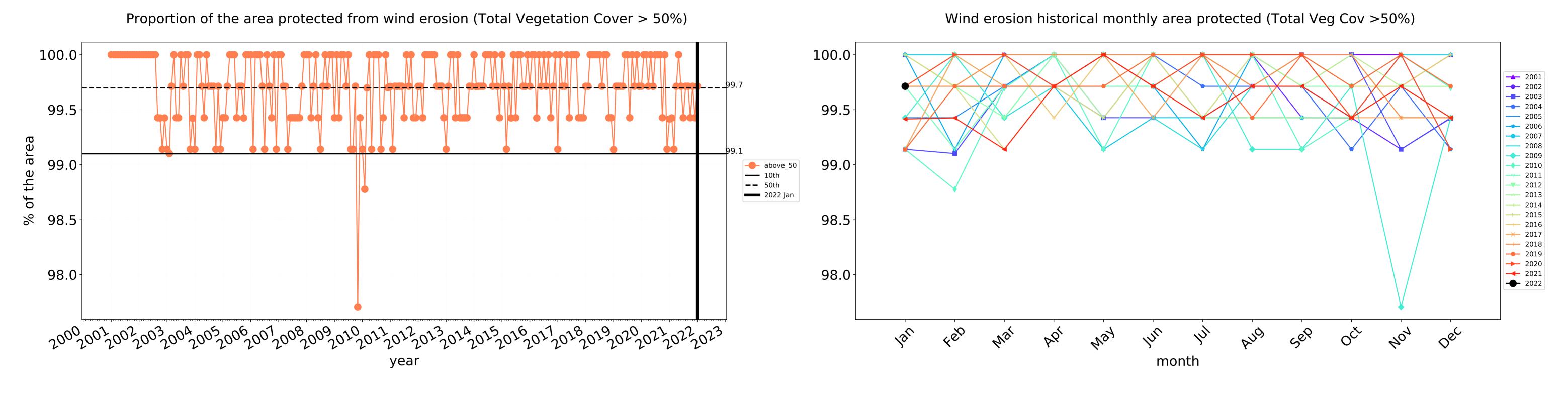


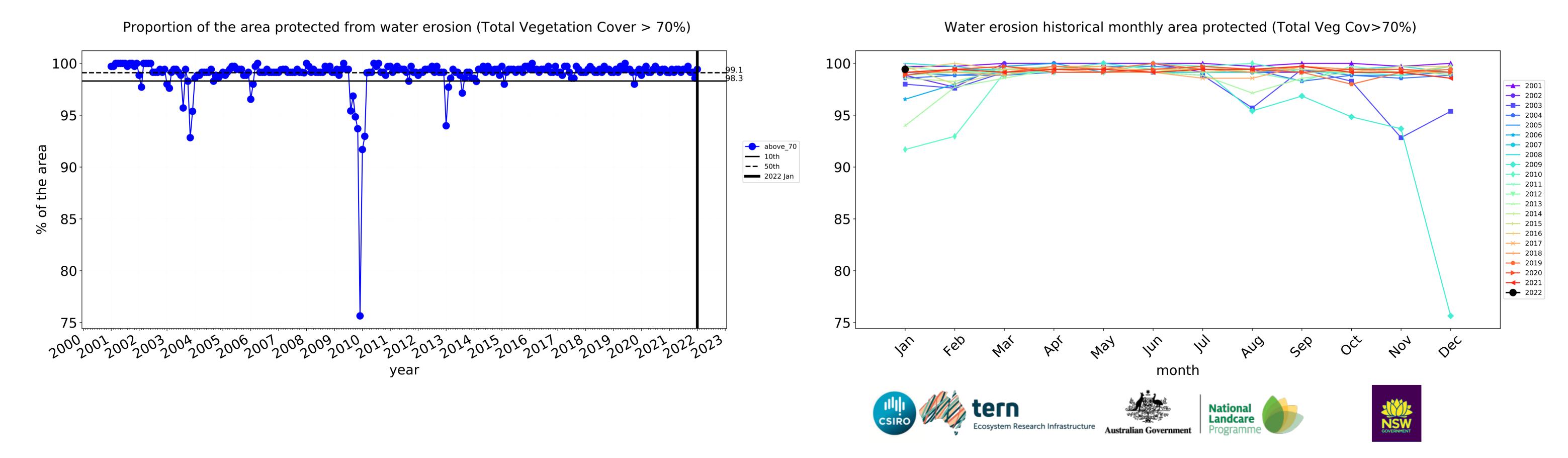


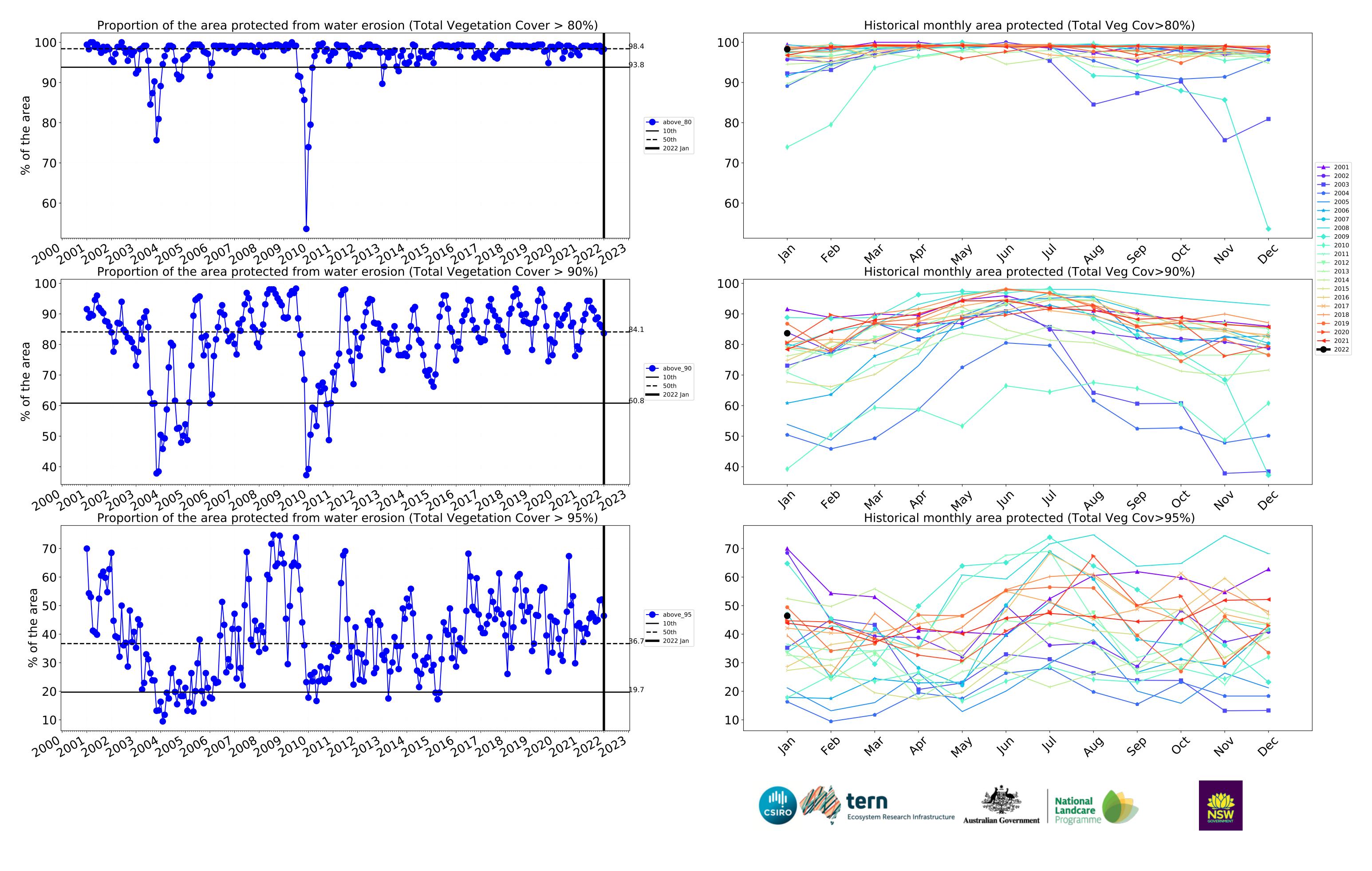




#### **Conservation and natural environments non forest timeseries**





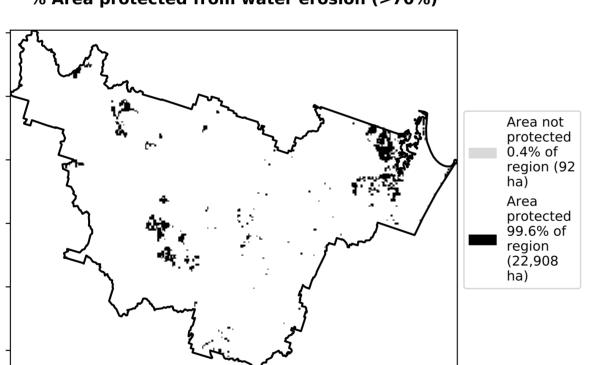


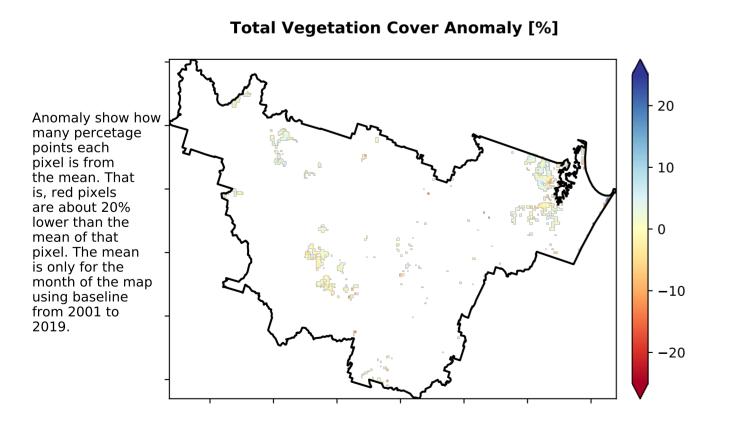
#### **Conservation and natural environments Woodland forest**

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

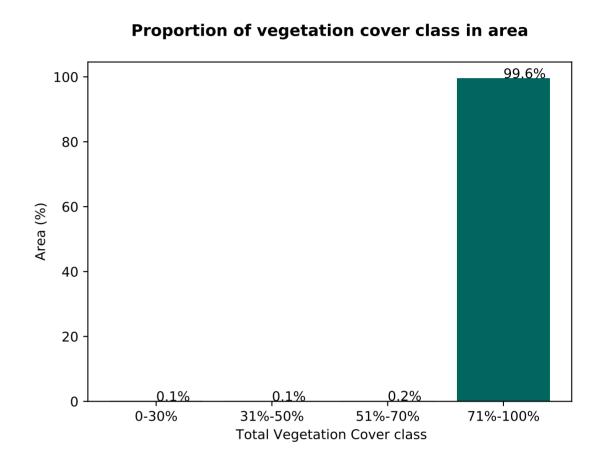
# **Total Vegetation Cover [%]**

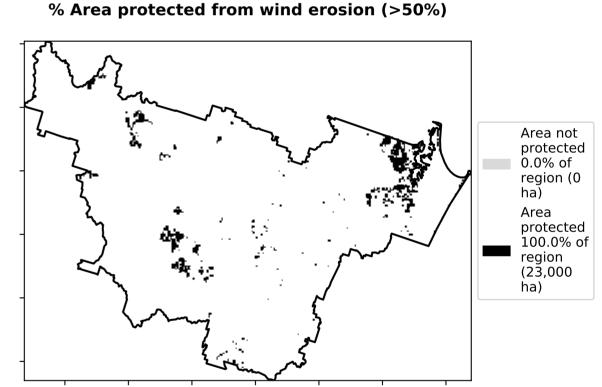
# % Area protected from water erosion (>70%)

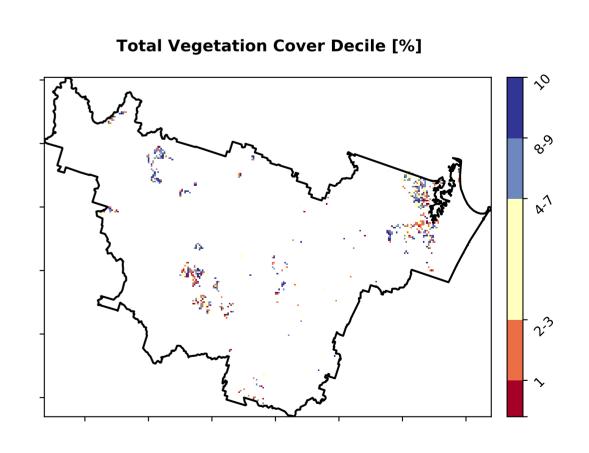




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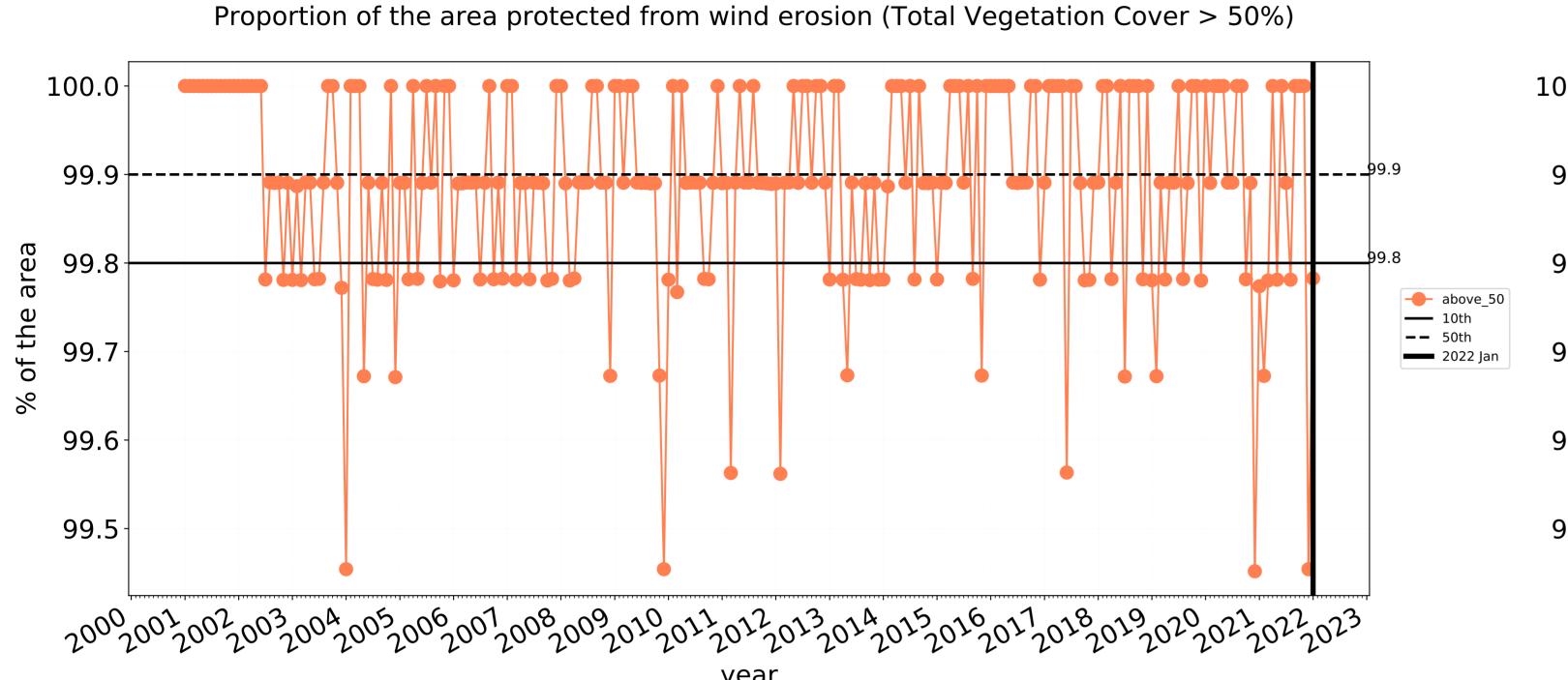


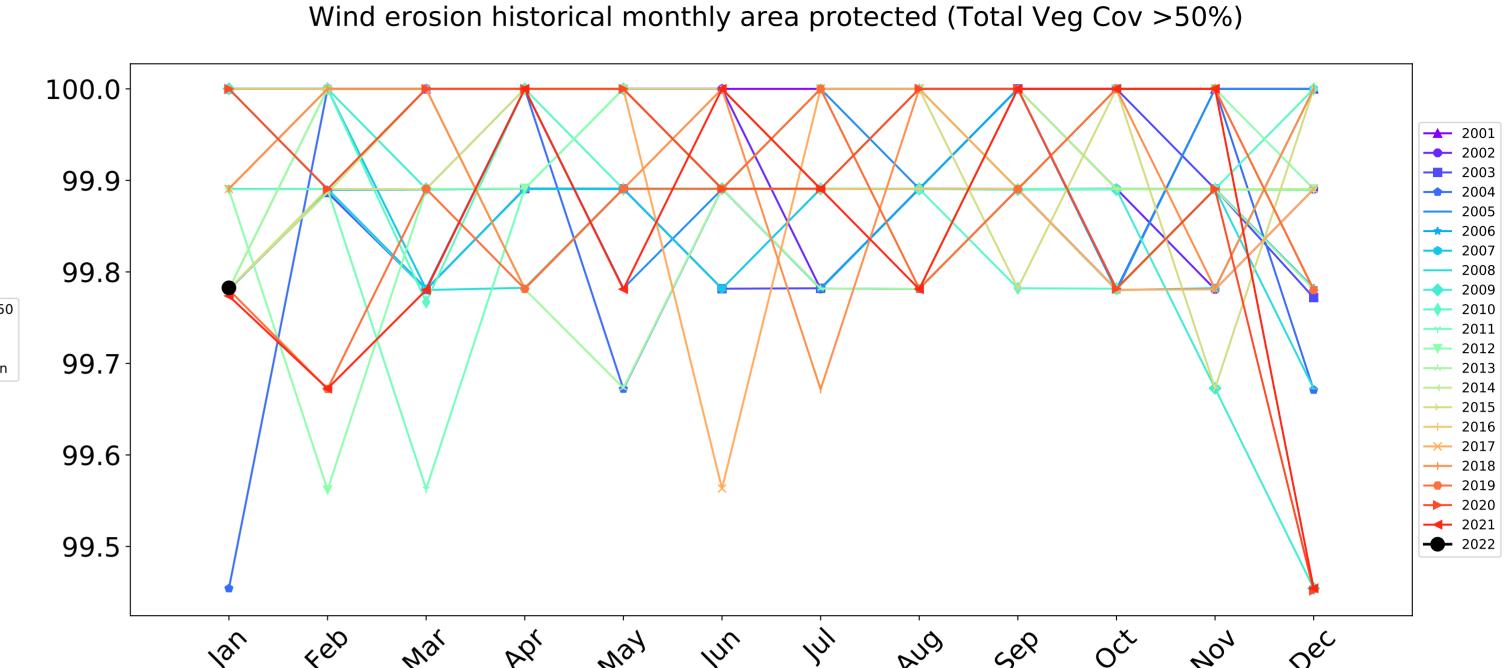




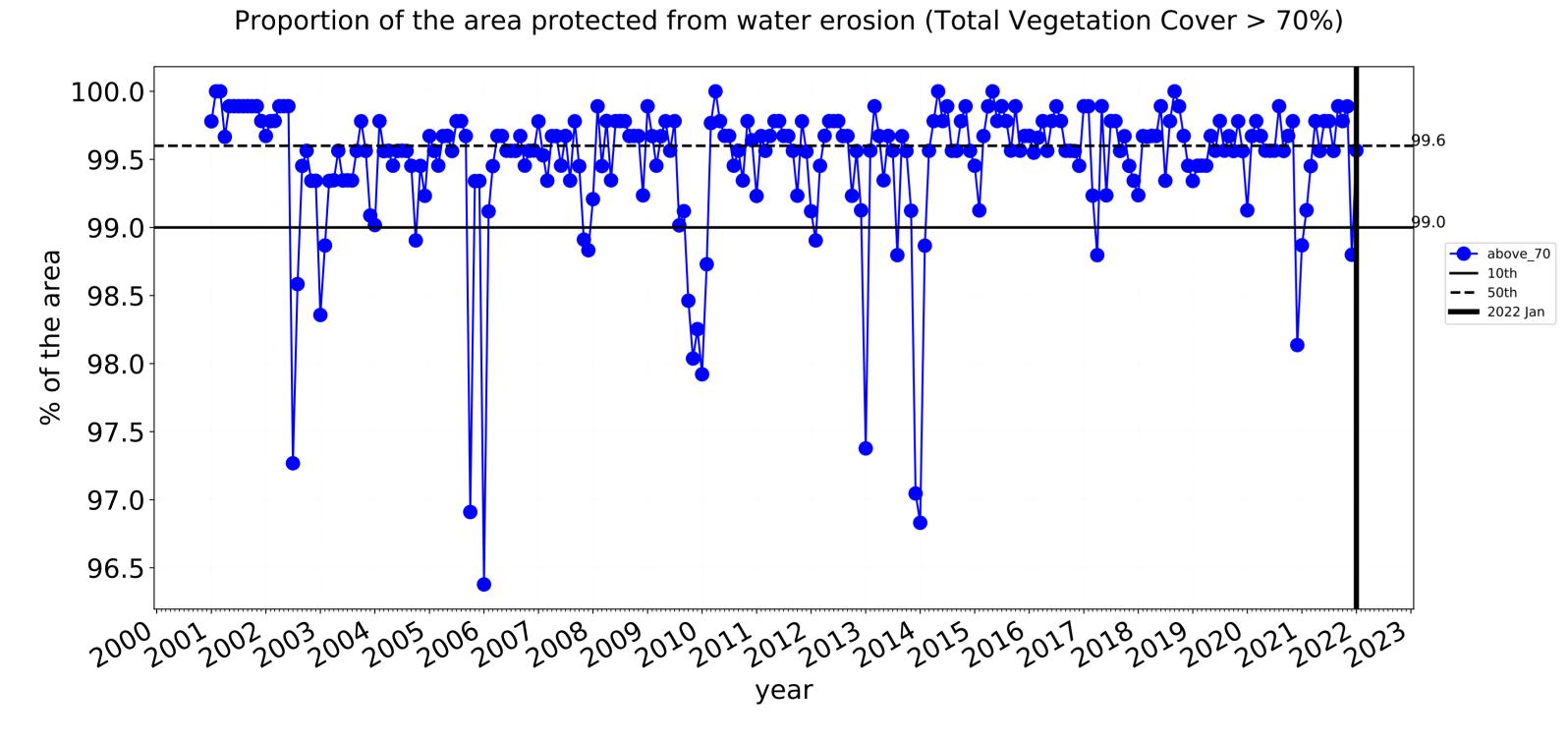


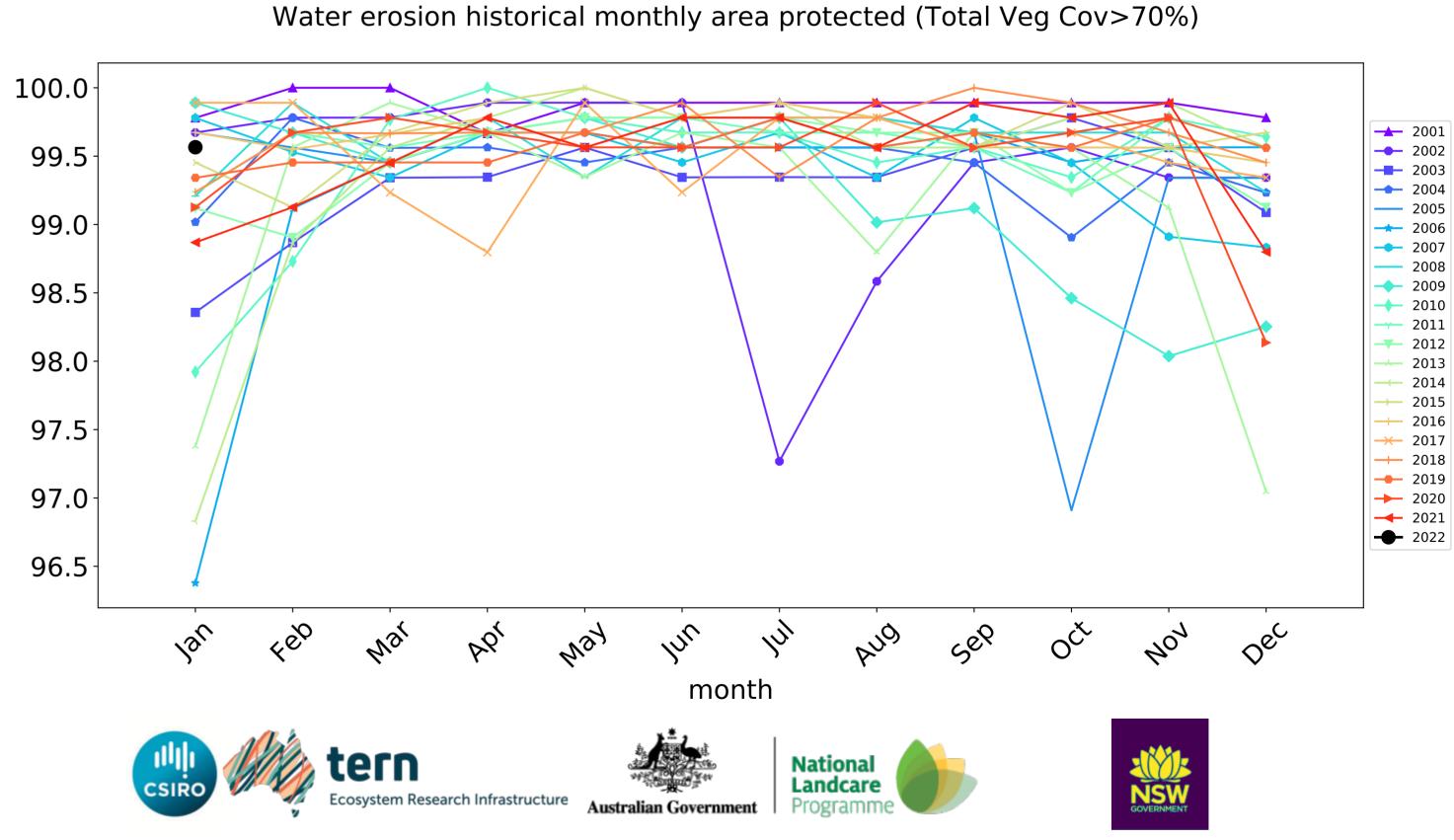
#### **Conservation and natural environments Woodland forest timeseries**

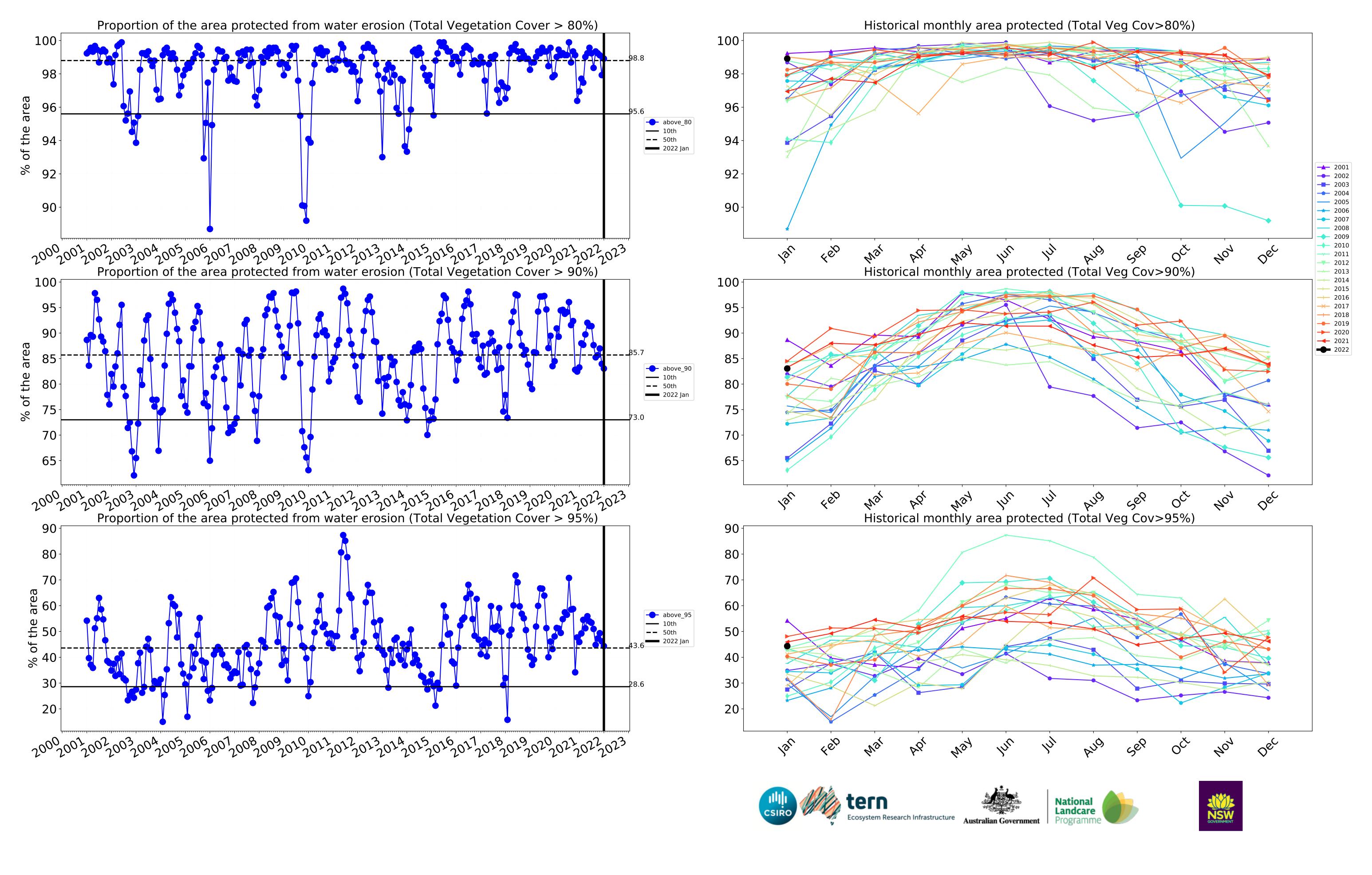




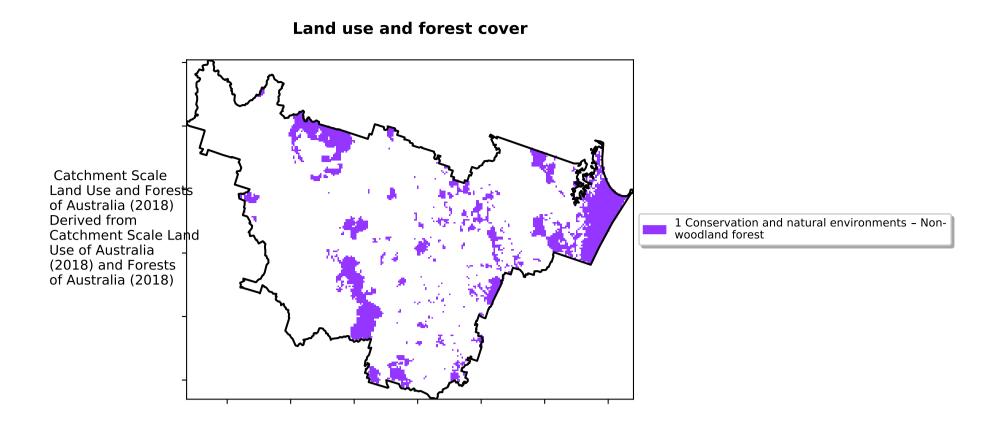
month



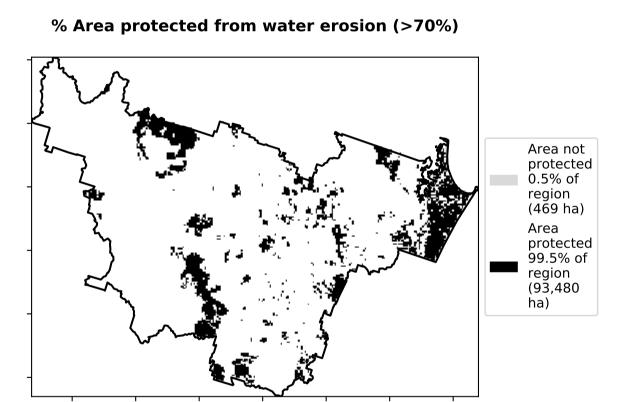


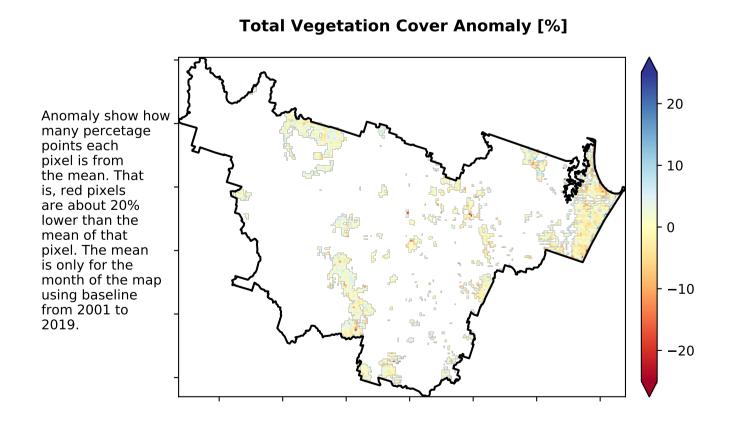


## **Conservation and natural environments Forest (non woodland)**

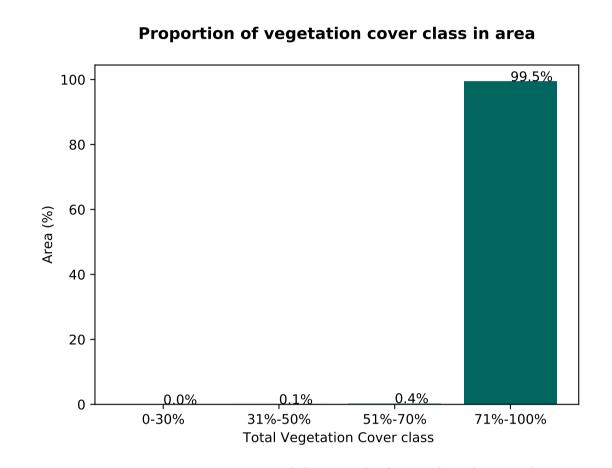


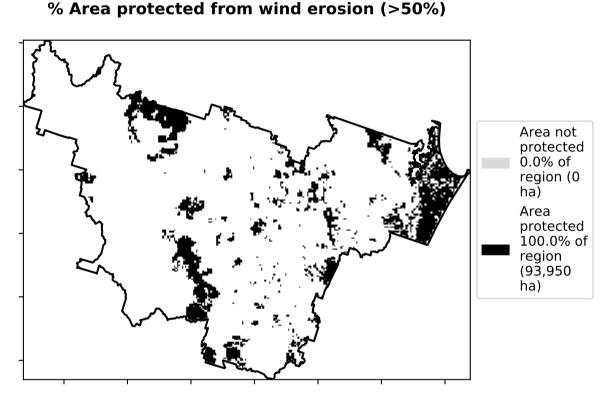
# Total Vegetation Cover [%] Total Vegetation Cover [%] Total Vegetation Cover [%]

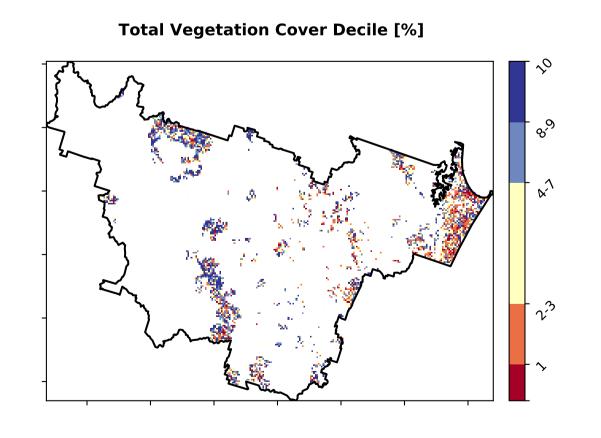




# Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.





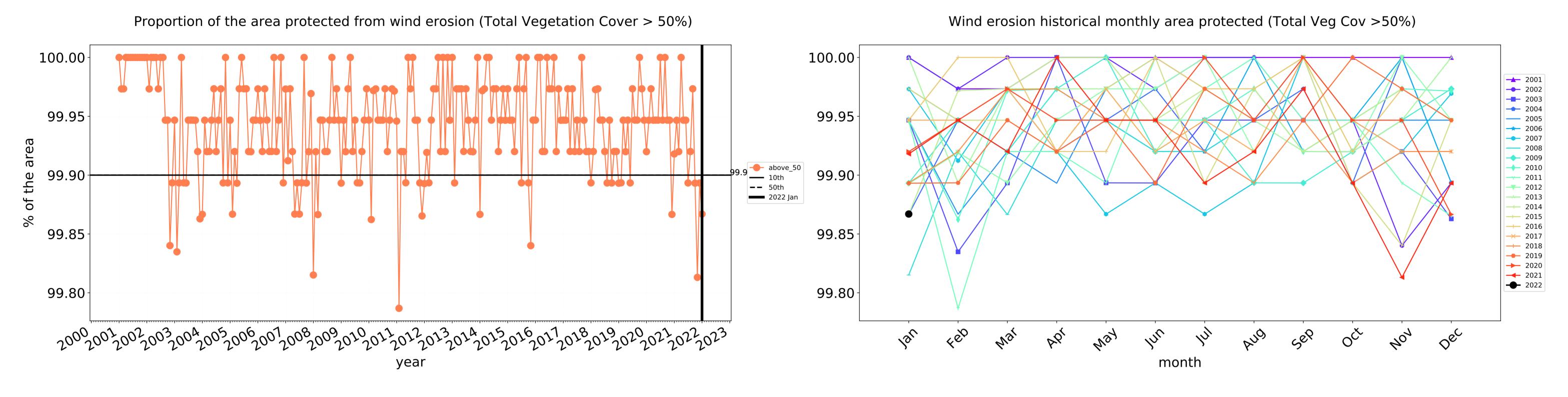


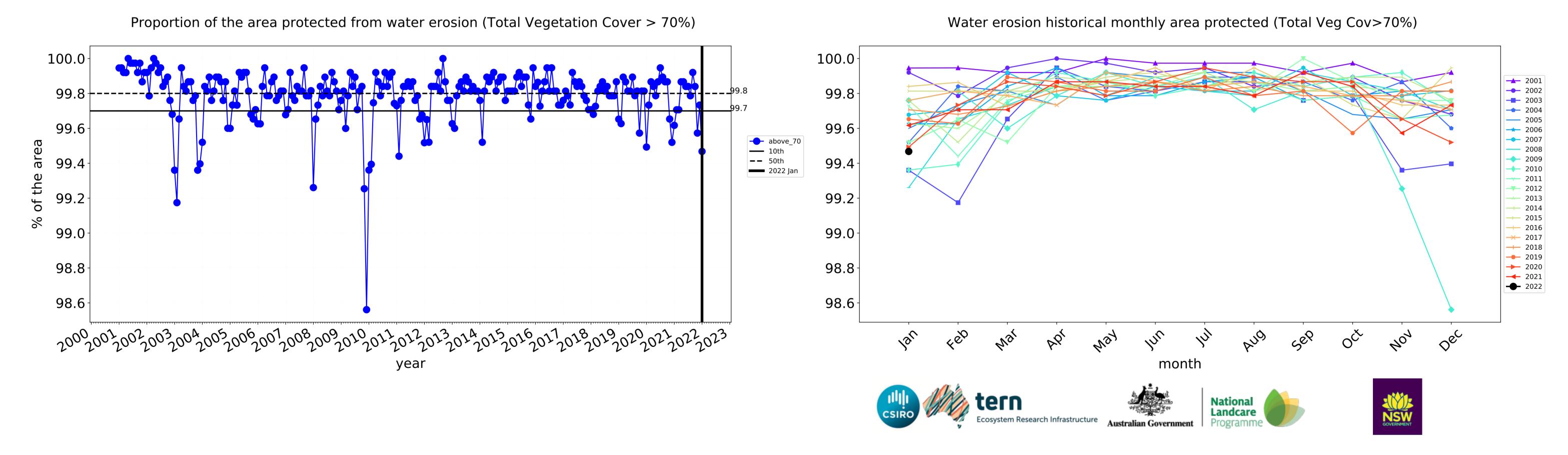


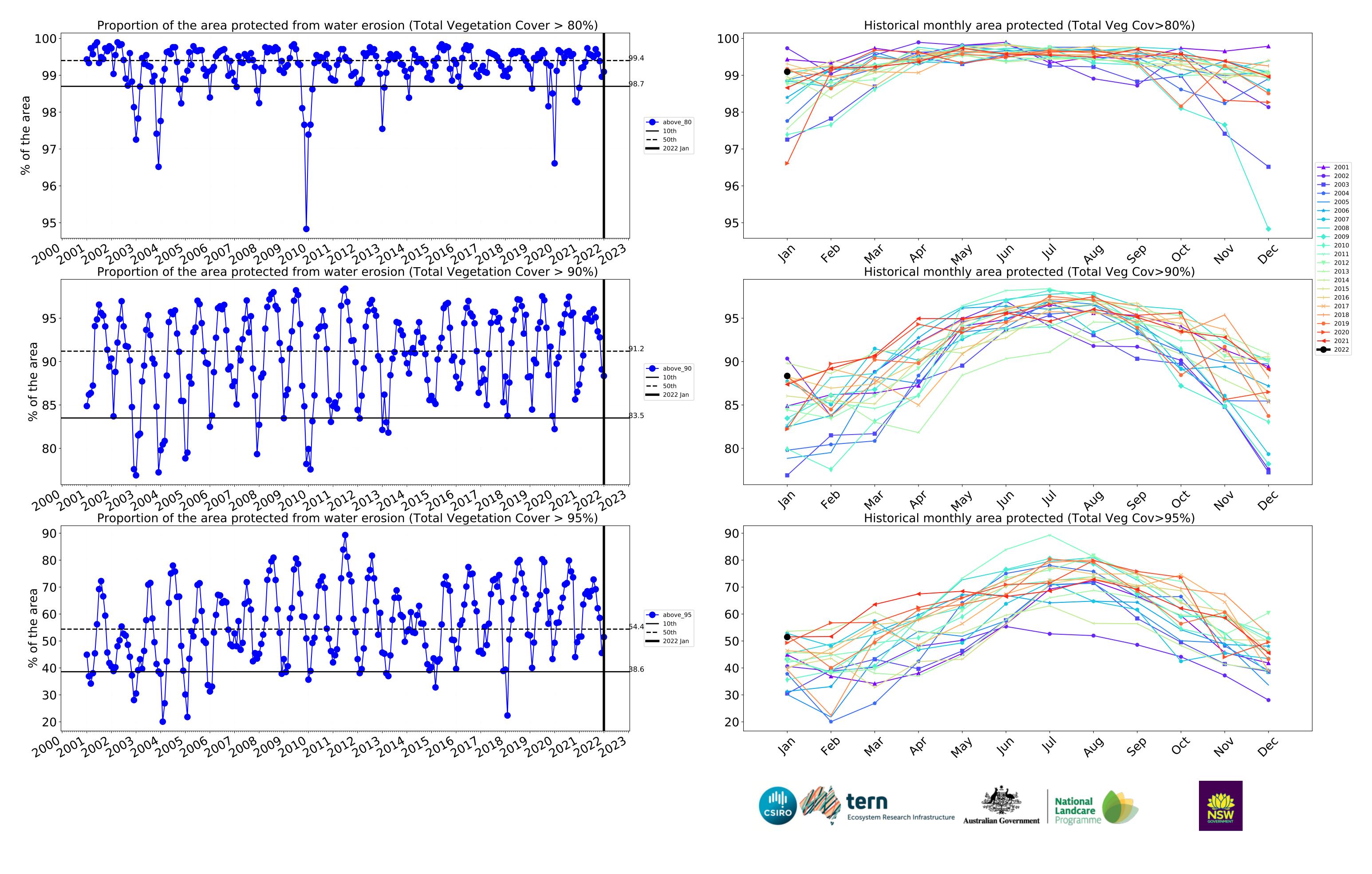






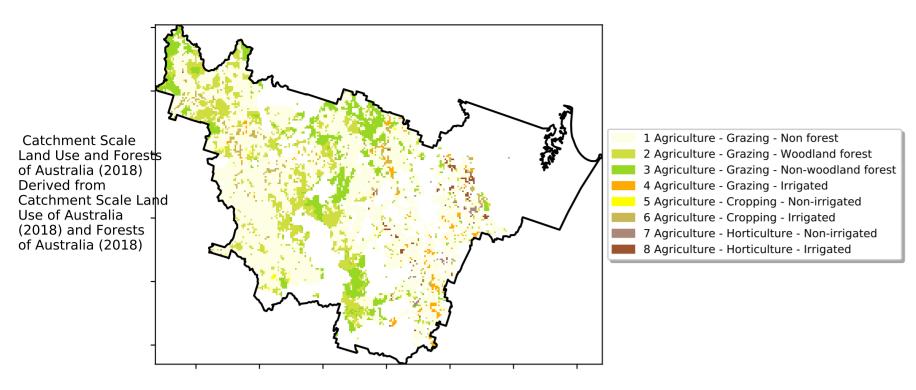




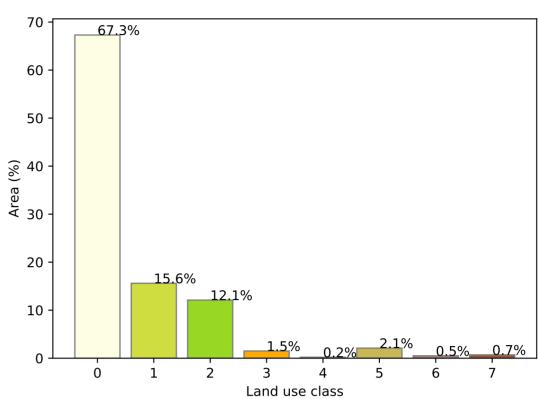


# **Agriculture**

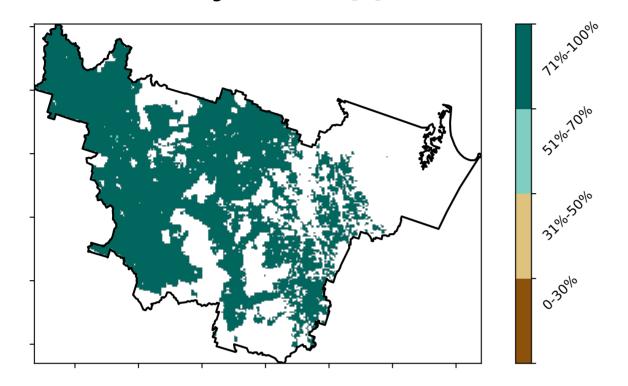
#### Land use and forest cover



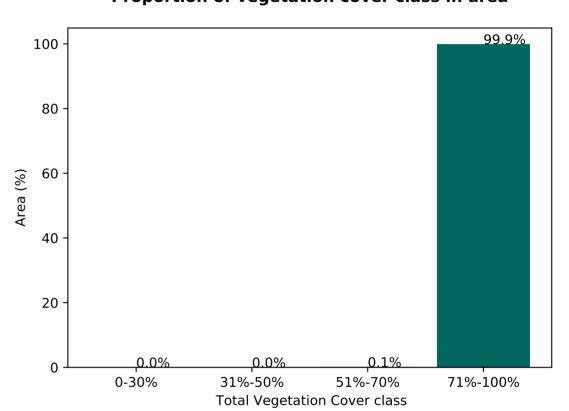
#### Proportion of each land class in area



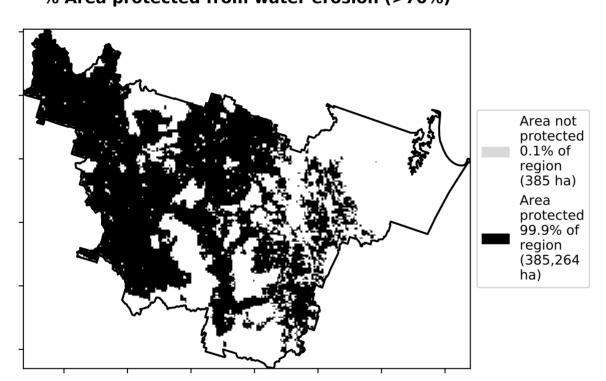
#### **Total Vegetation Cover [%]**



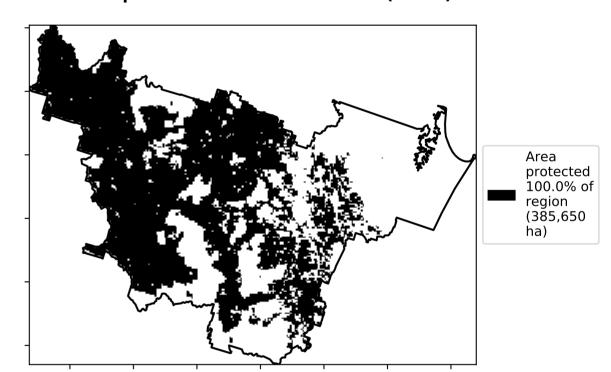
Proportion of vegetation cover class in area



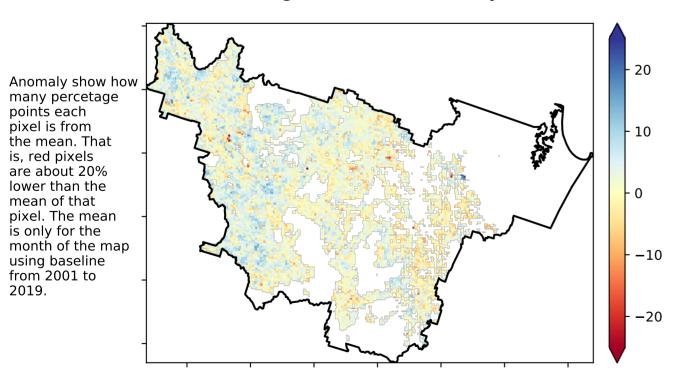
#### % Area protected from water erosion (>70%)



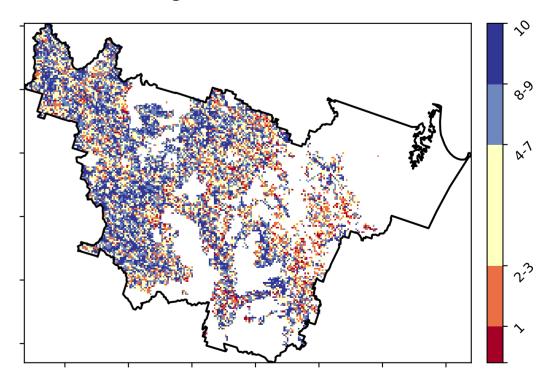
% Area protected from wind erosion (>50%)



#### Total Vegetation Cover Anomaly [%]



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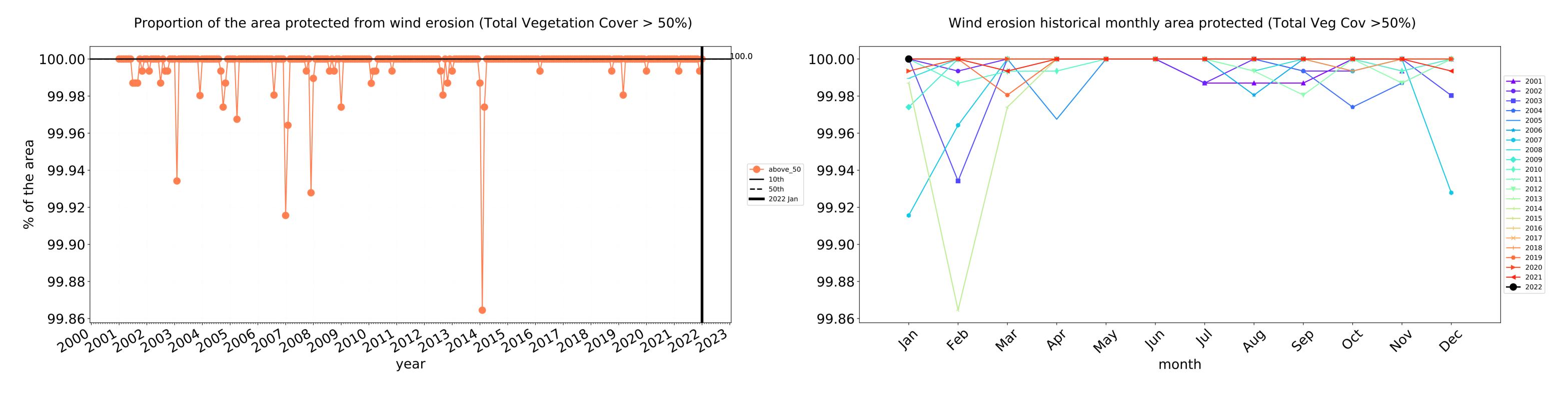


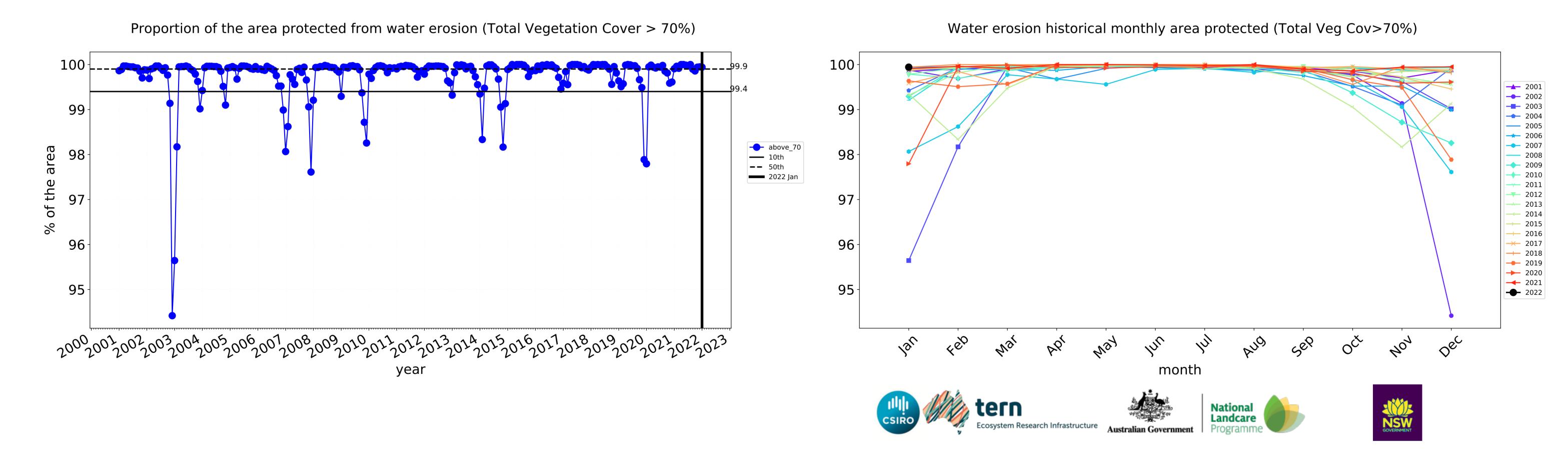


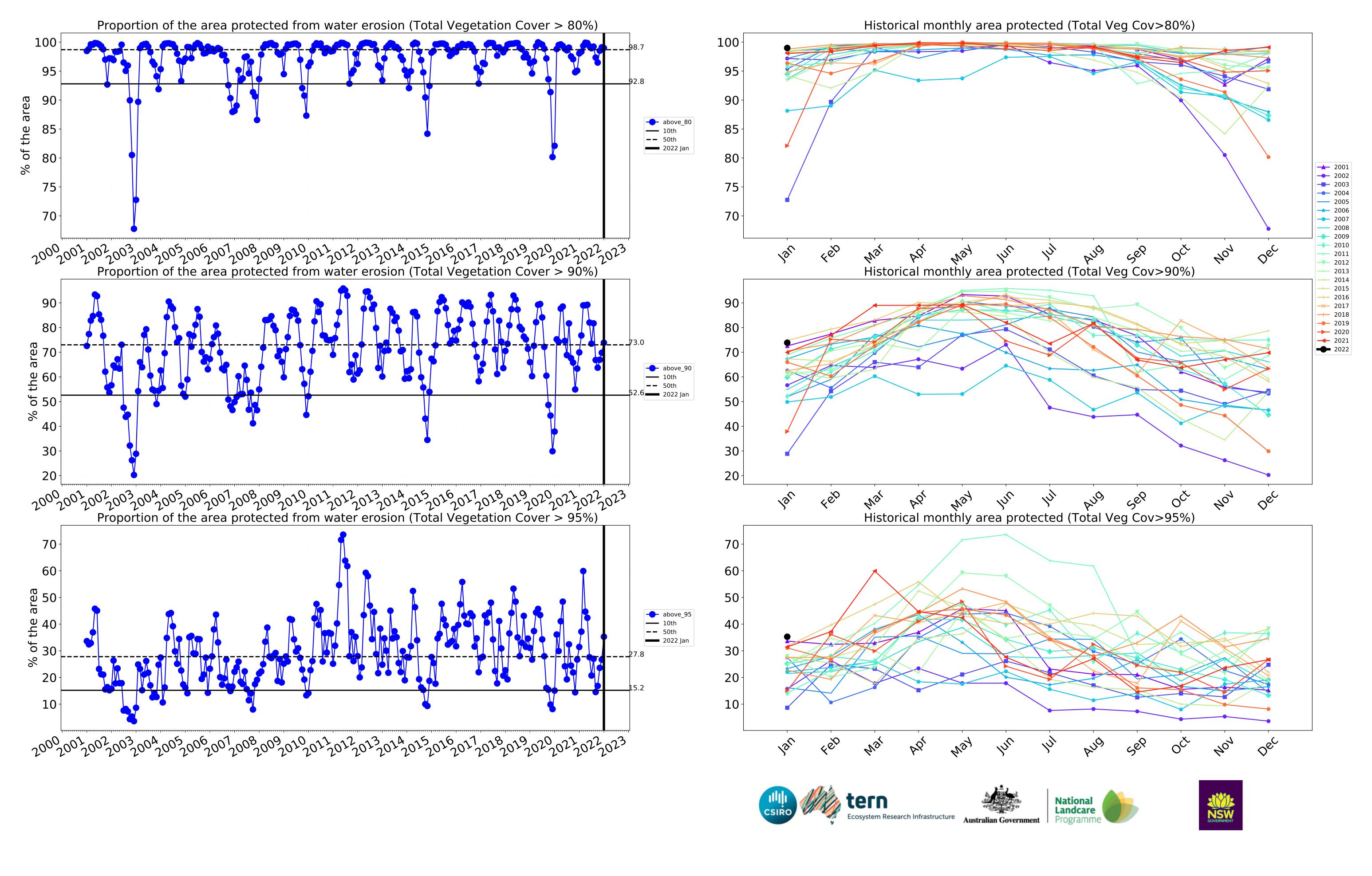




# **Agriculture timeseries**

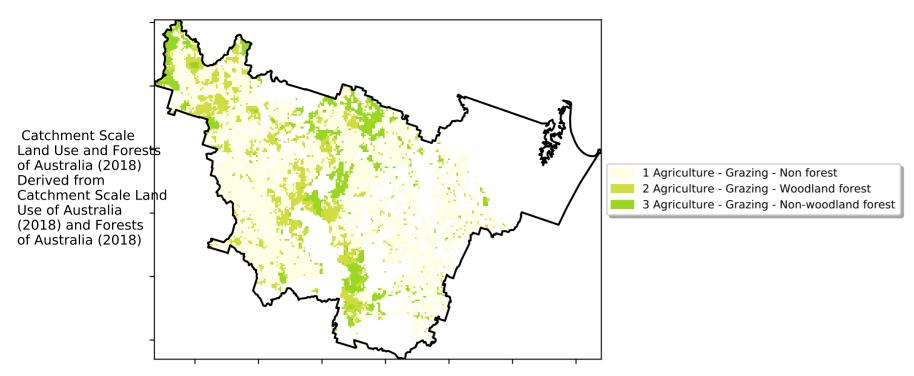




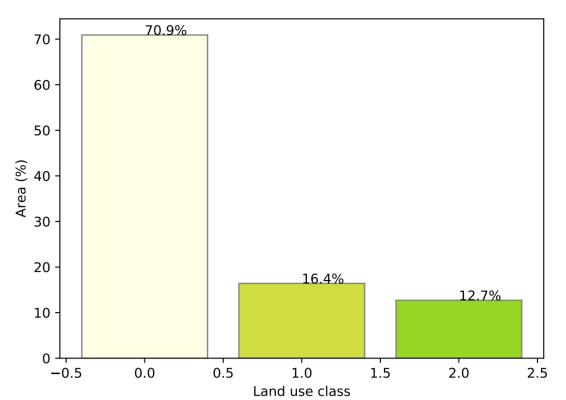


# **Grazing**

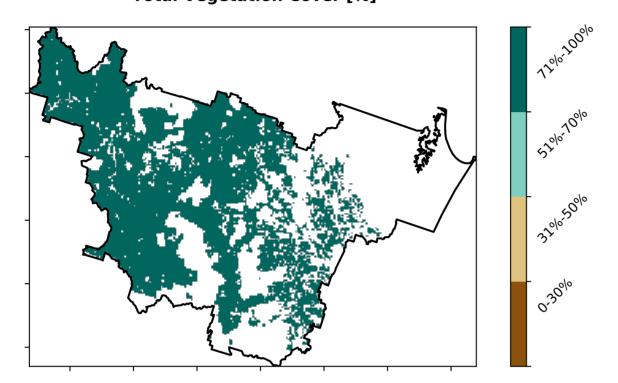
#### Land use and forest cover



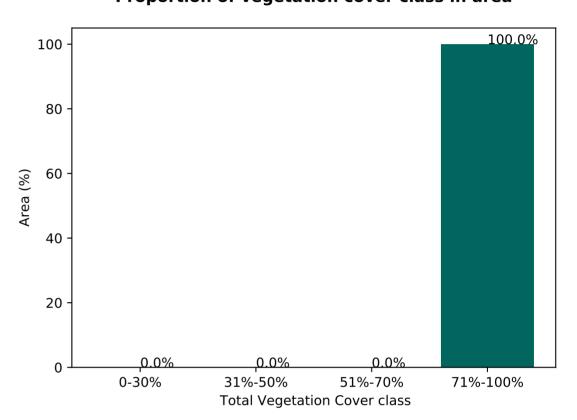
#### Proportion of each land class in area



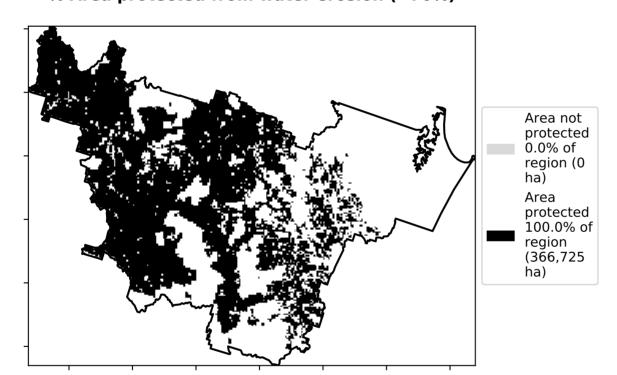
#### **Total Vegetation Cover [%]**



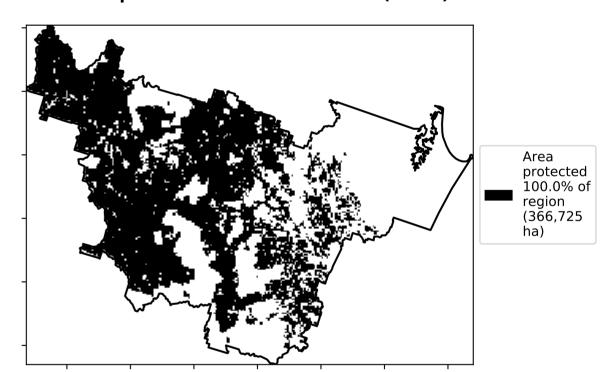
Proportion of vegetation cover class in area



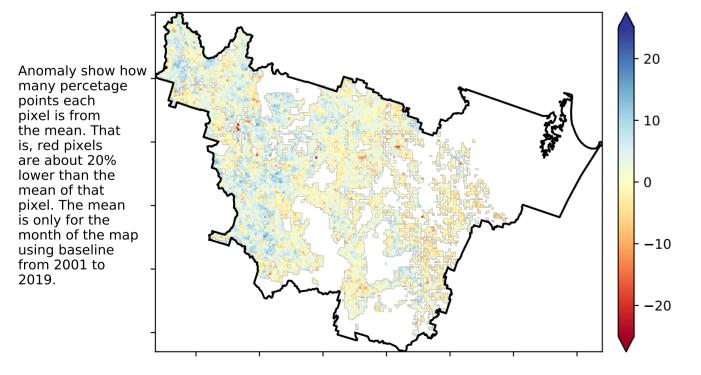
## % Area protected from water erosion (>70%)



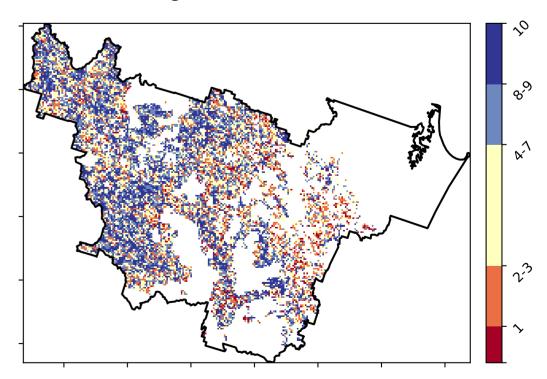
% Area protected from wind erosion (>50%)



#### Total Vegetation Cover Anomaly [%]



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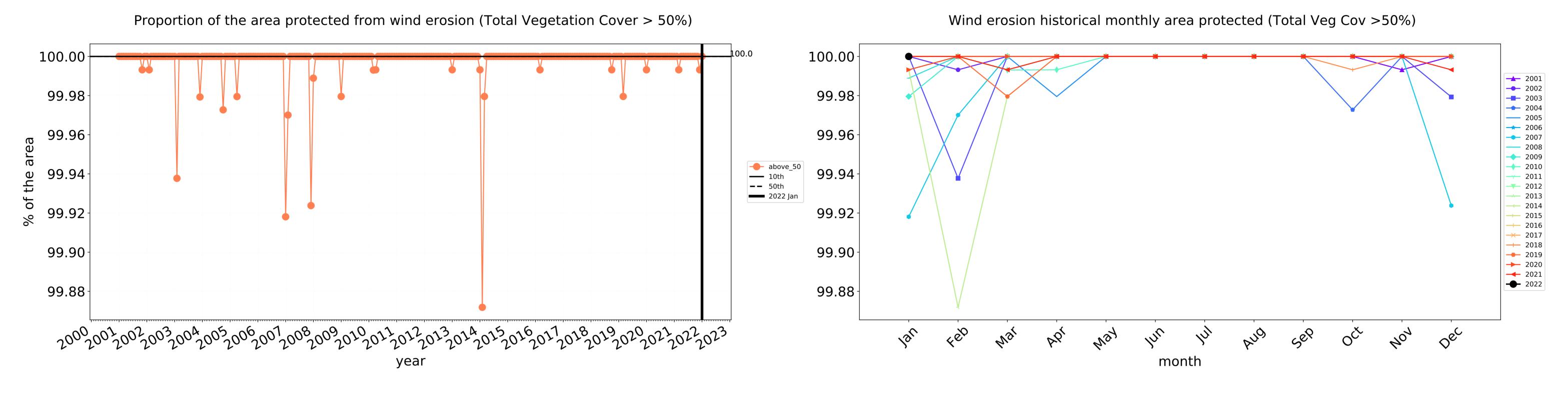


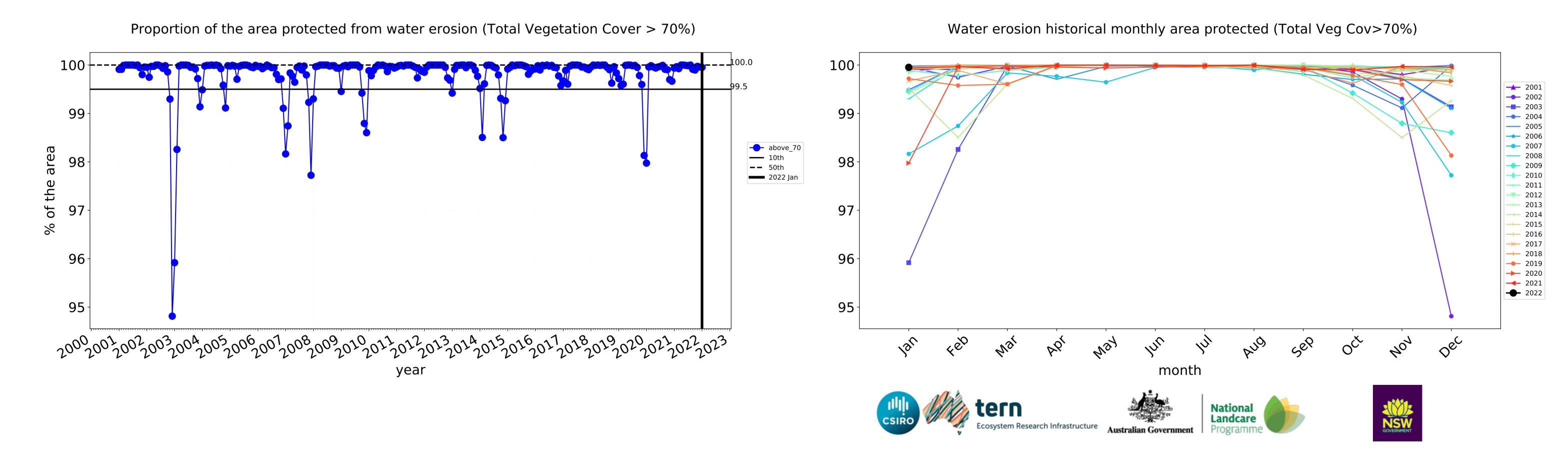


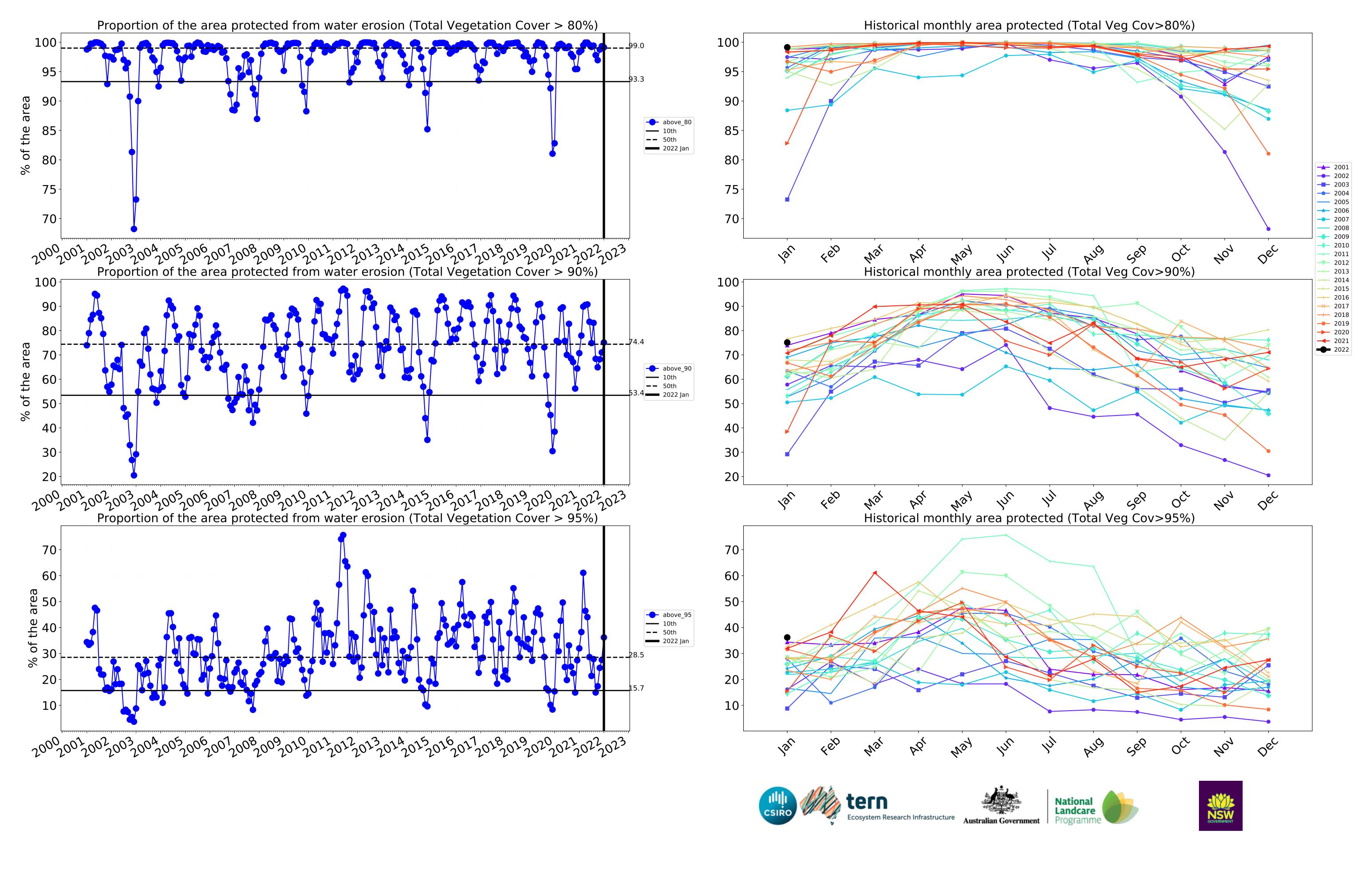




# **Grazing timeseries**

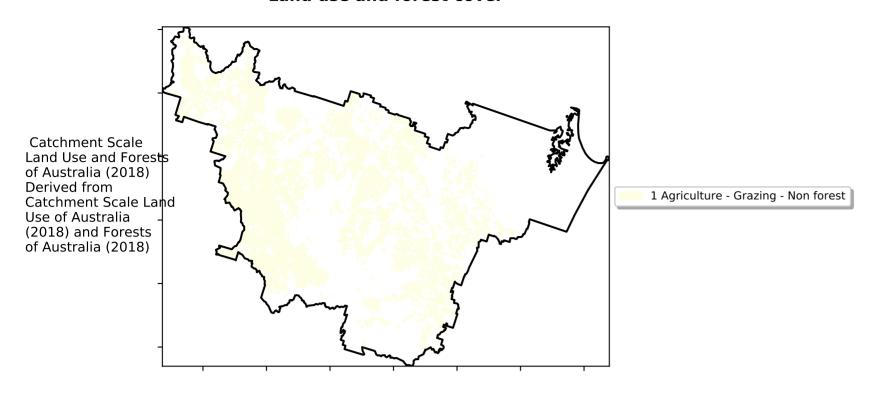




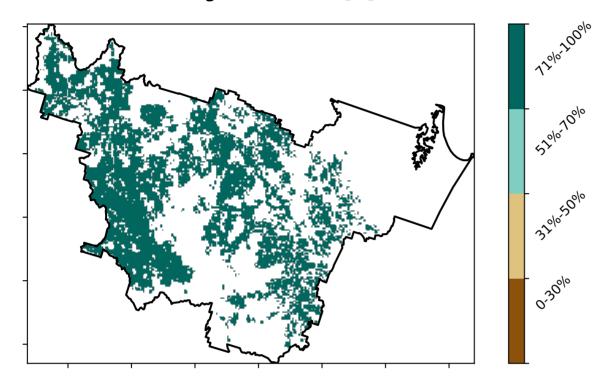


# **Grazing non forest**

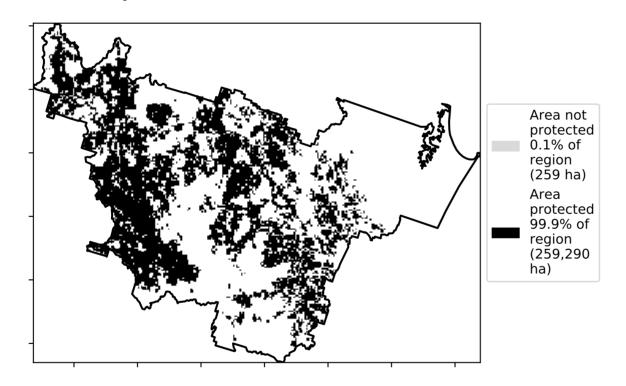
#### Land use and forest cover



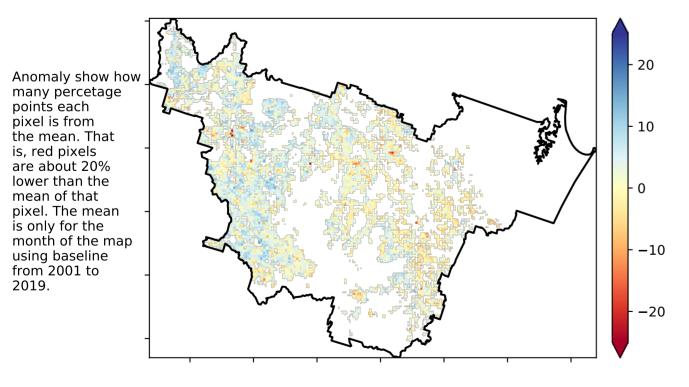
#### **Total Vegetation Cover [%]**



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

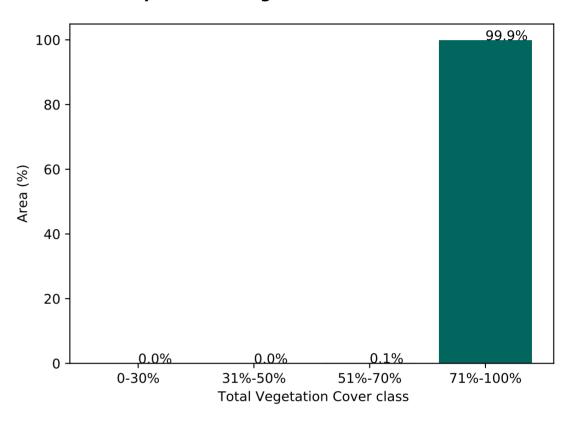


#### Total Vegetation Cover Anomaly [%]

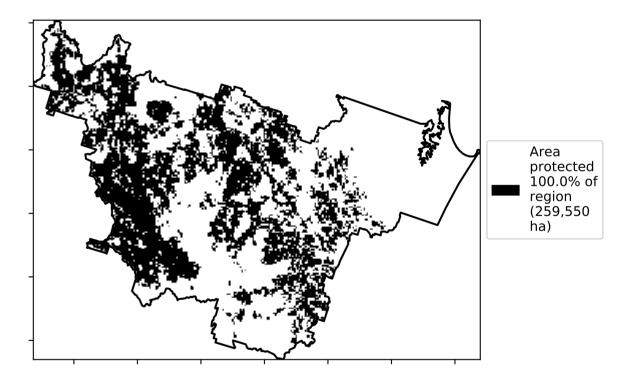


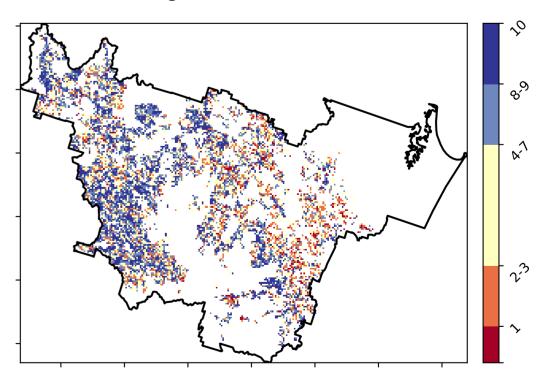
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

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



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





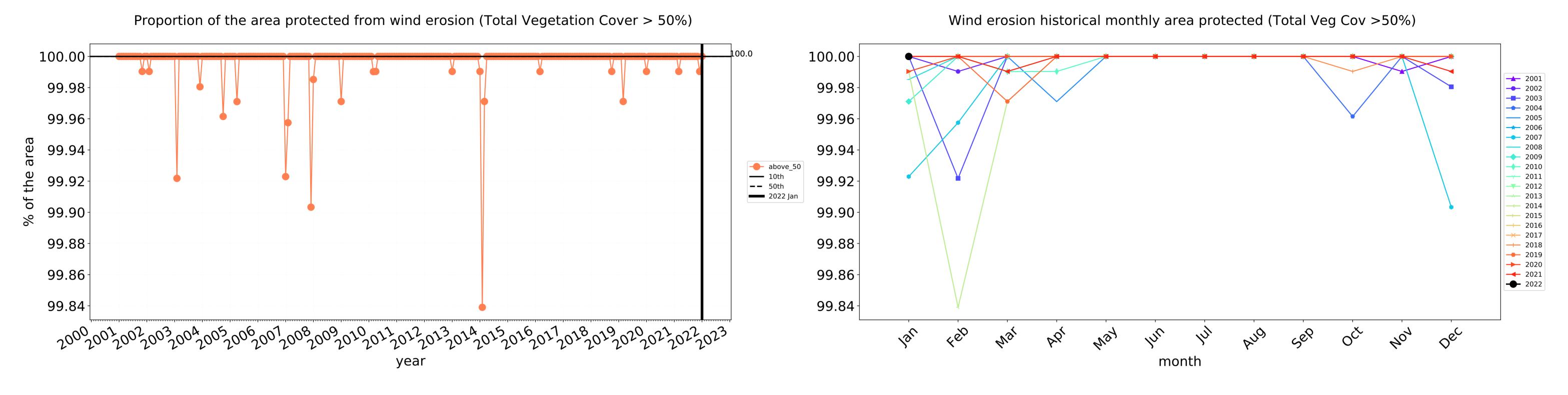


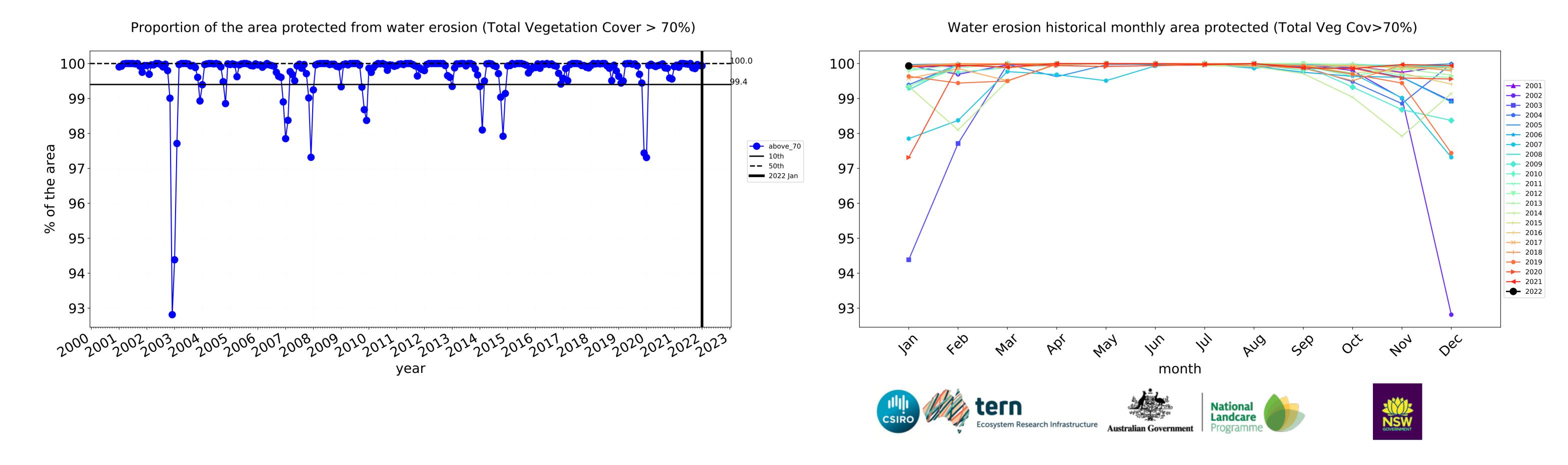


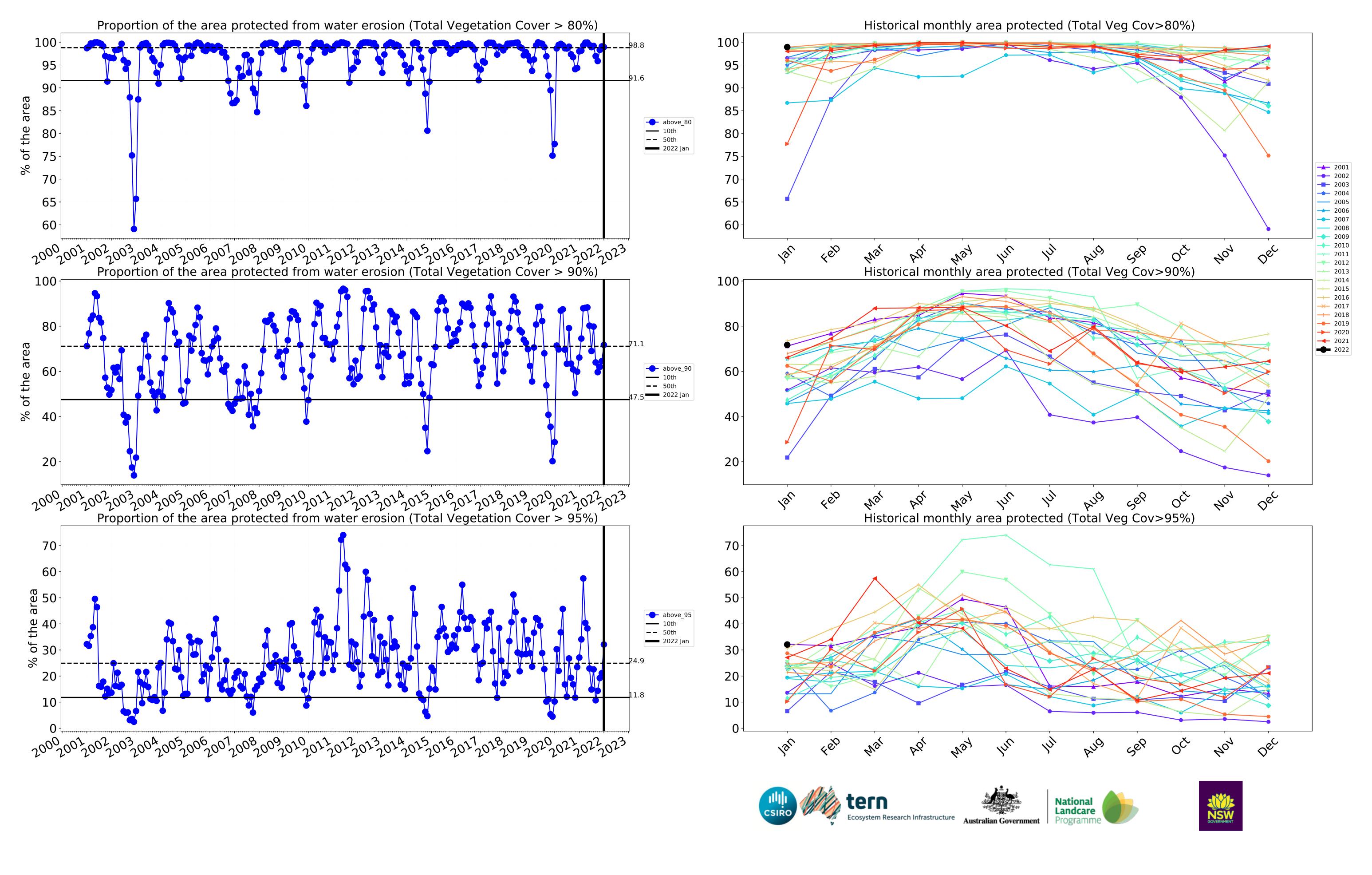




# **Grazing non forest timeseries**

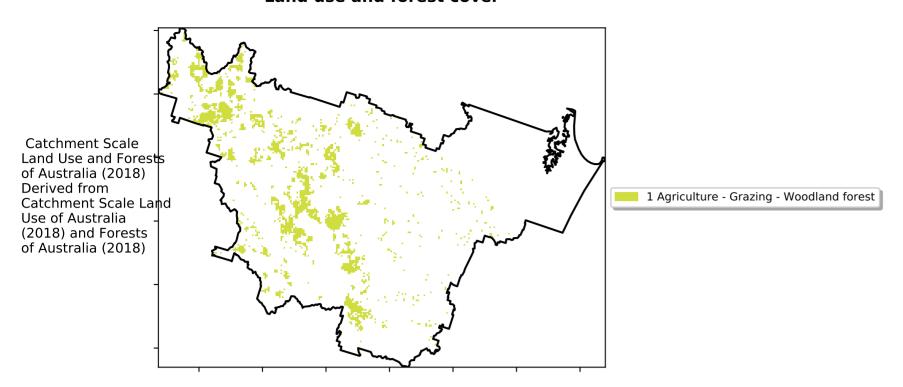




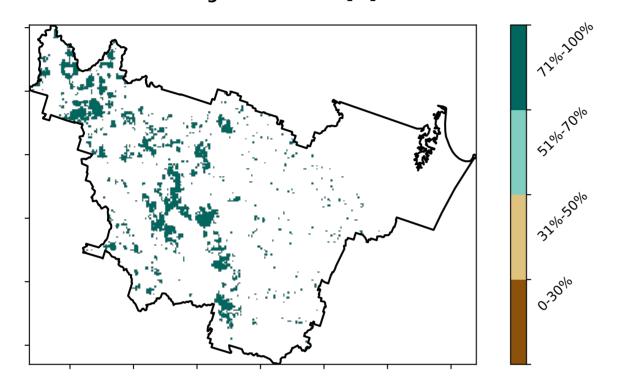


# **Grazing Woodland forest**

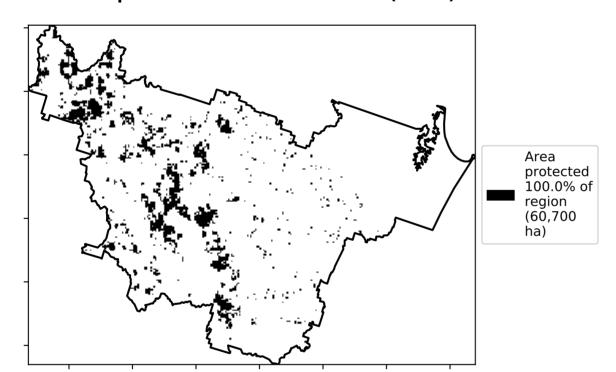
#### Land use and forest cover



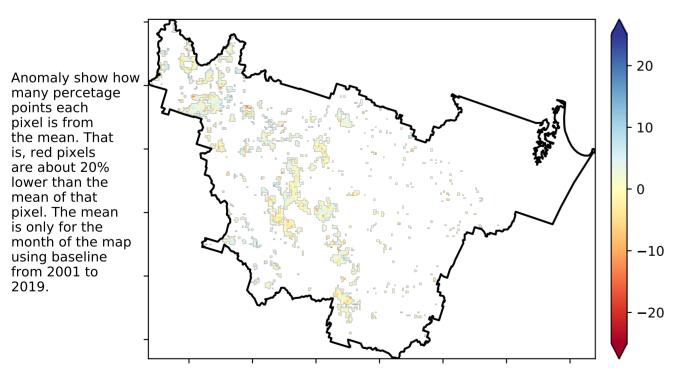
#### **Total Vegetation Cover [%]**



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

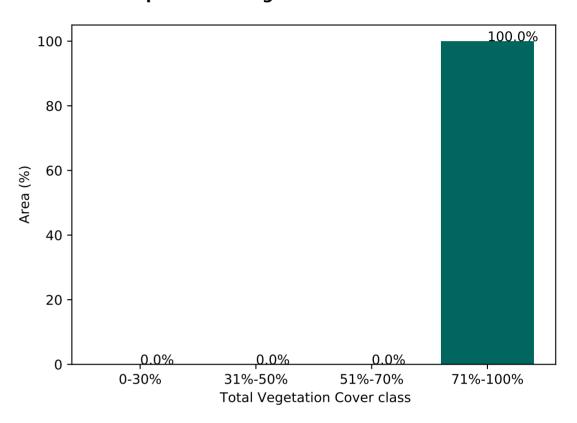


#### Total Vegetation Cover Anomaly [%]

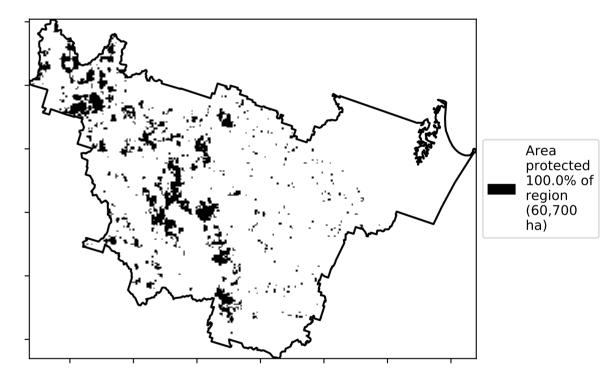


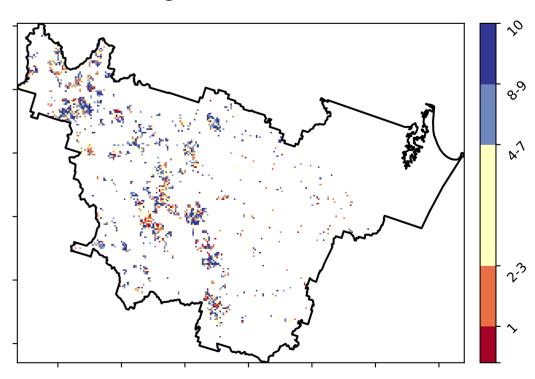
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

#### Proportion of vegetation cover class in area



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





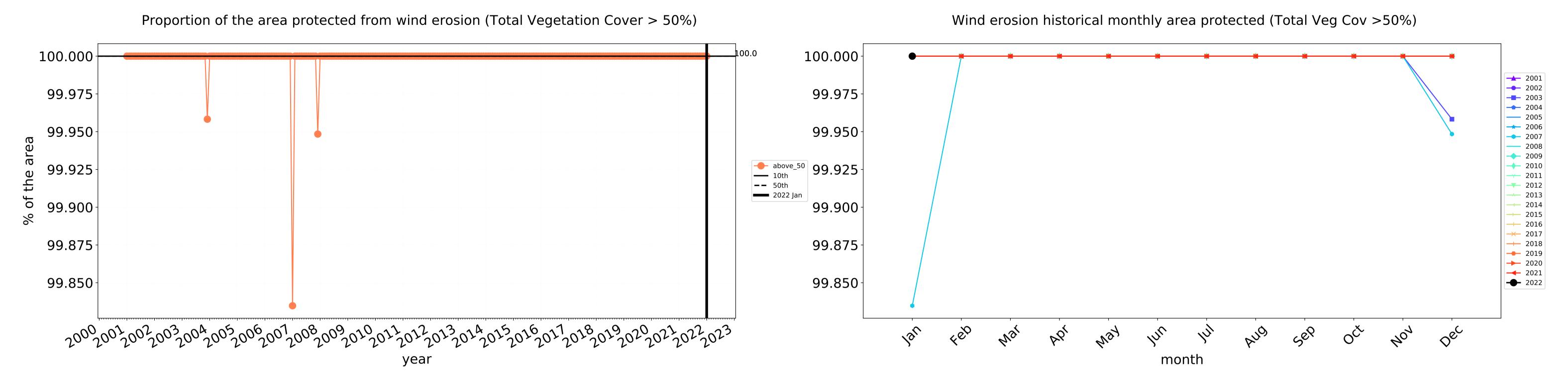


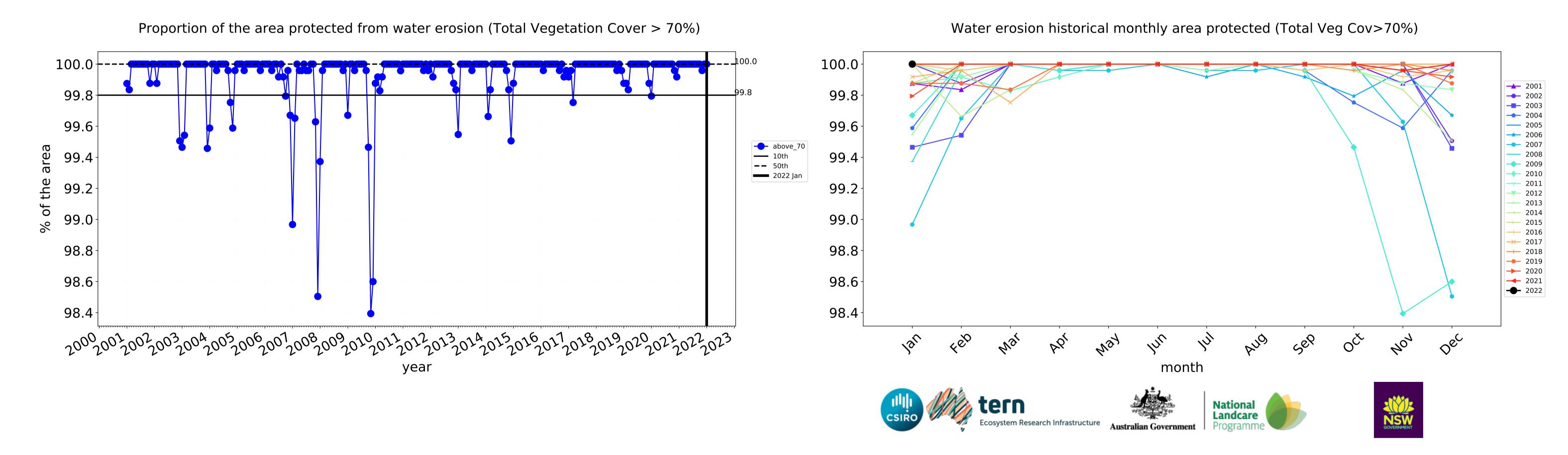


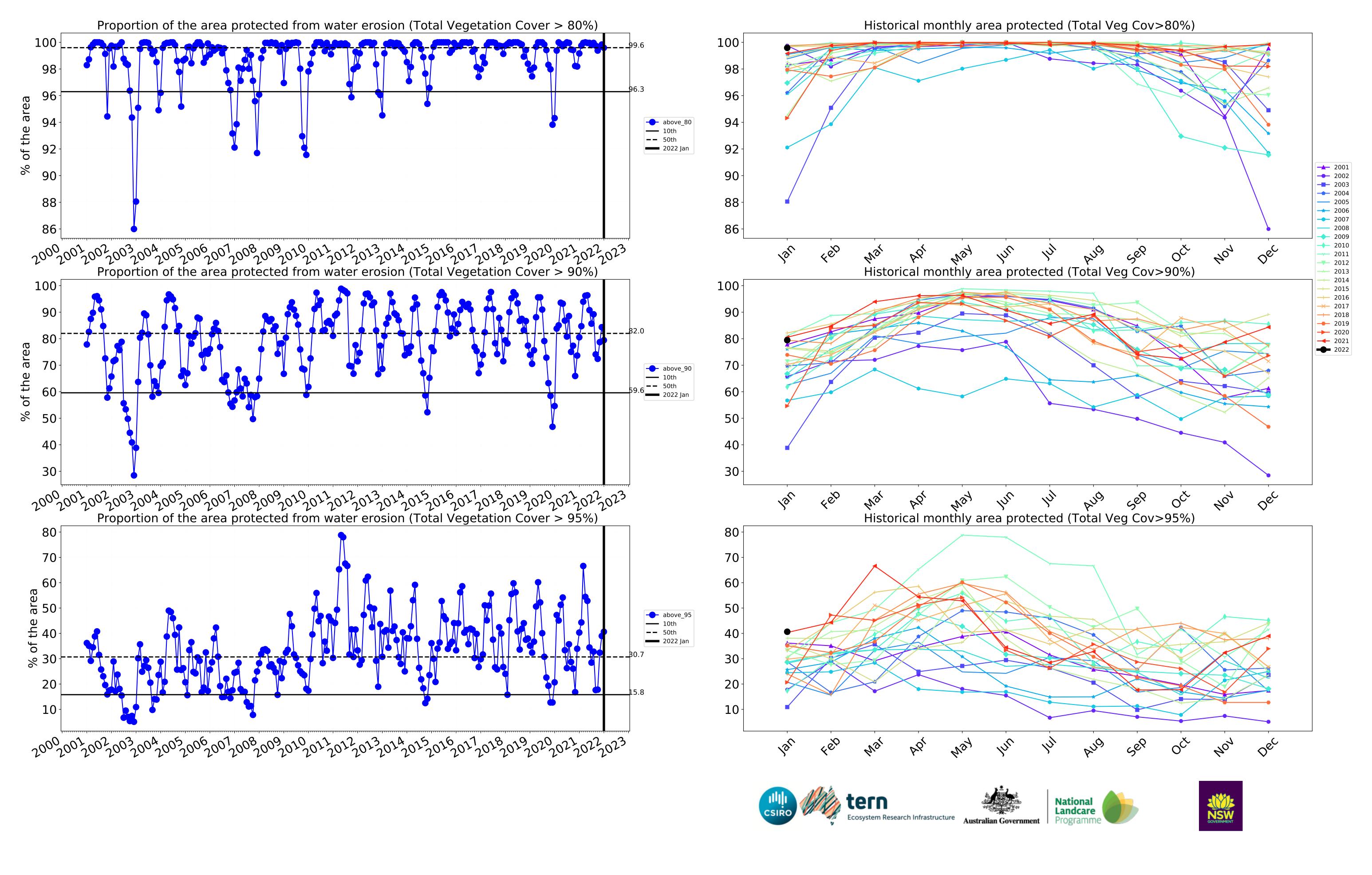




# **Grazing Woodland forest timeseries**

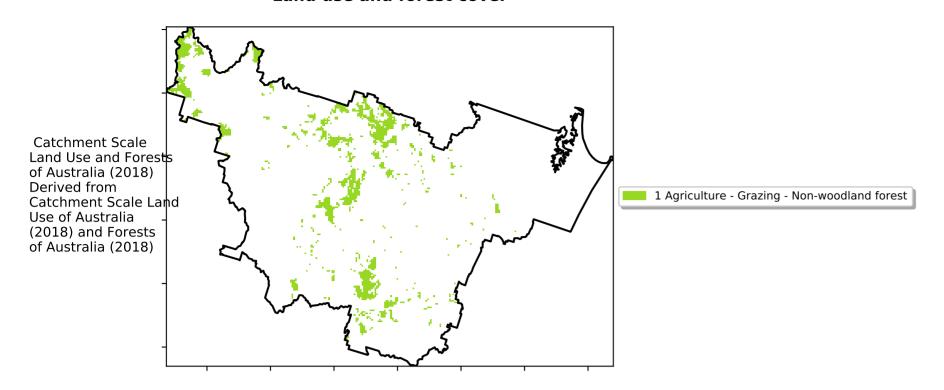




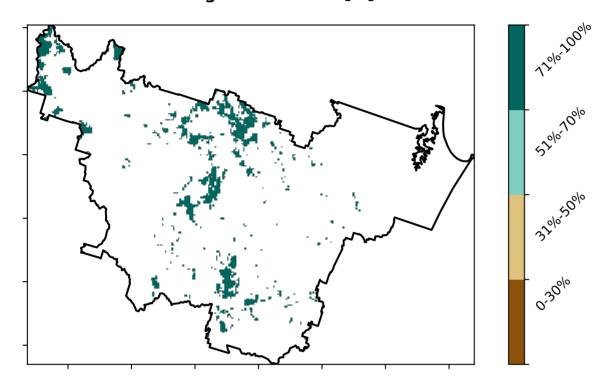


## **Grazing - Forest (non woodland)**

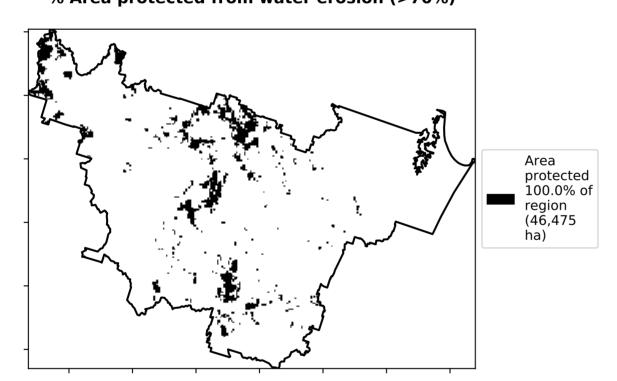
#### Land use and forest cover



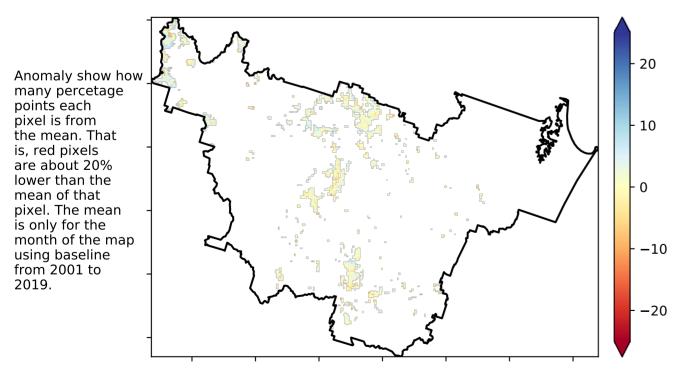
#### Total Vegetation Cover [%]



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

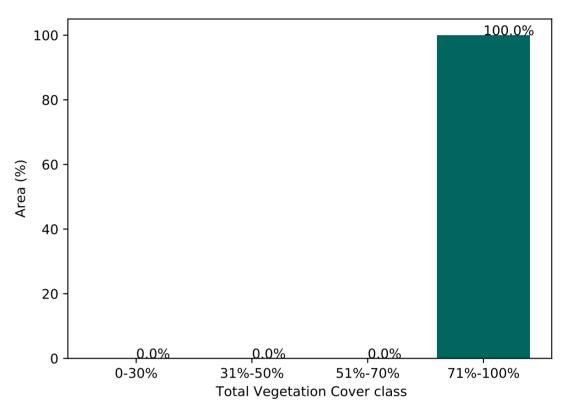


#### **Total Vegetation Cover Anomaly [%]**

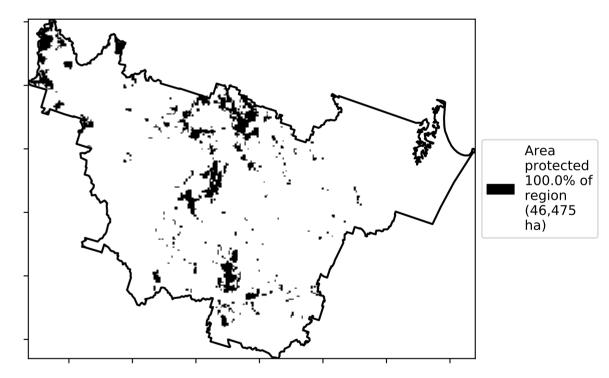


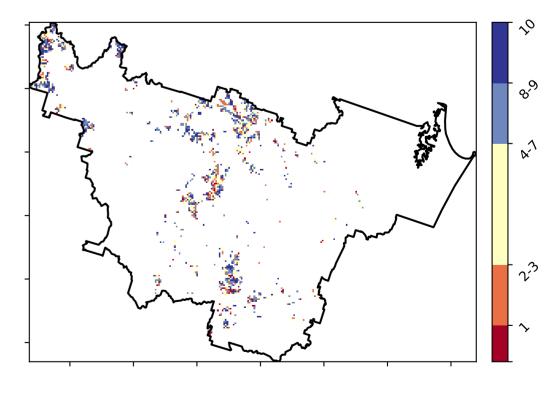
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

#### Proportion of vegetation cover class in area



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



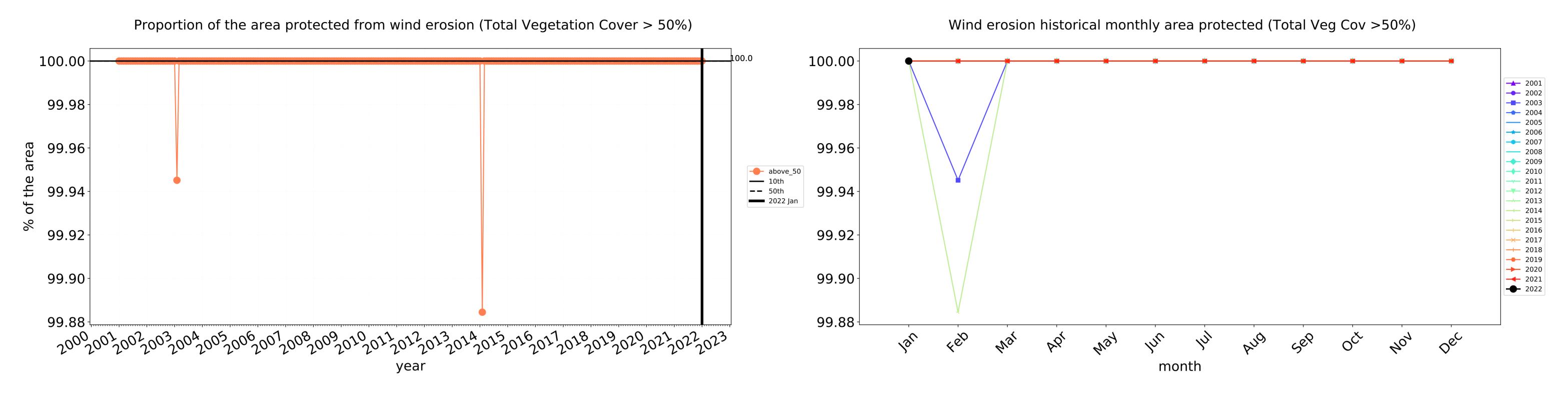


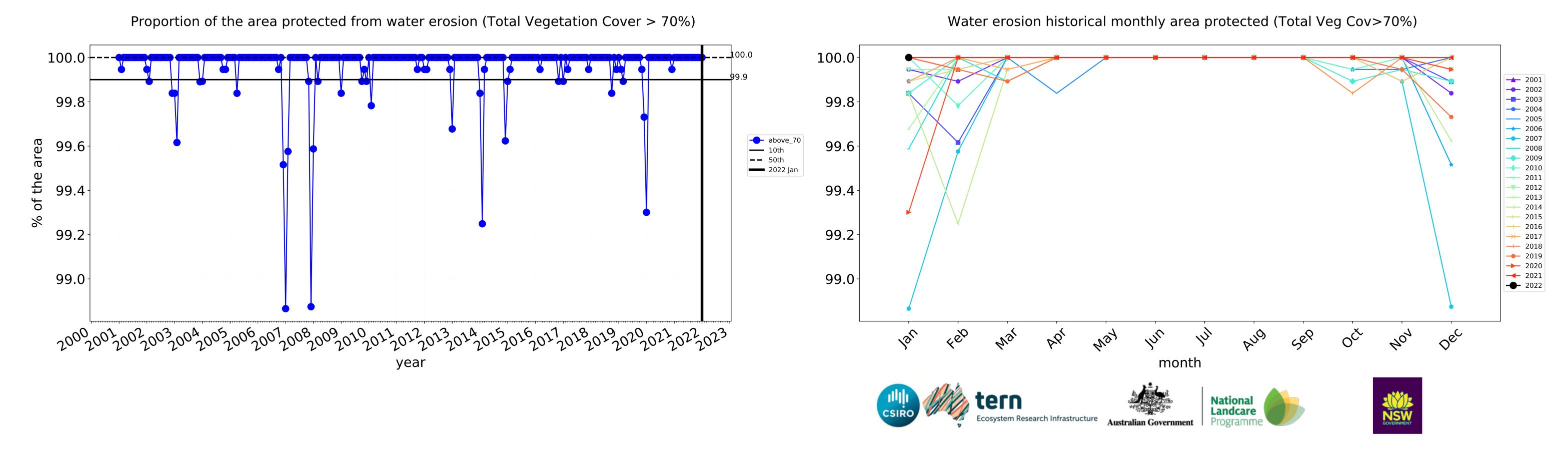


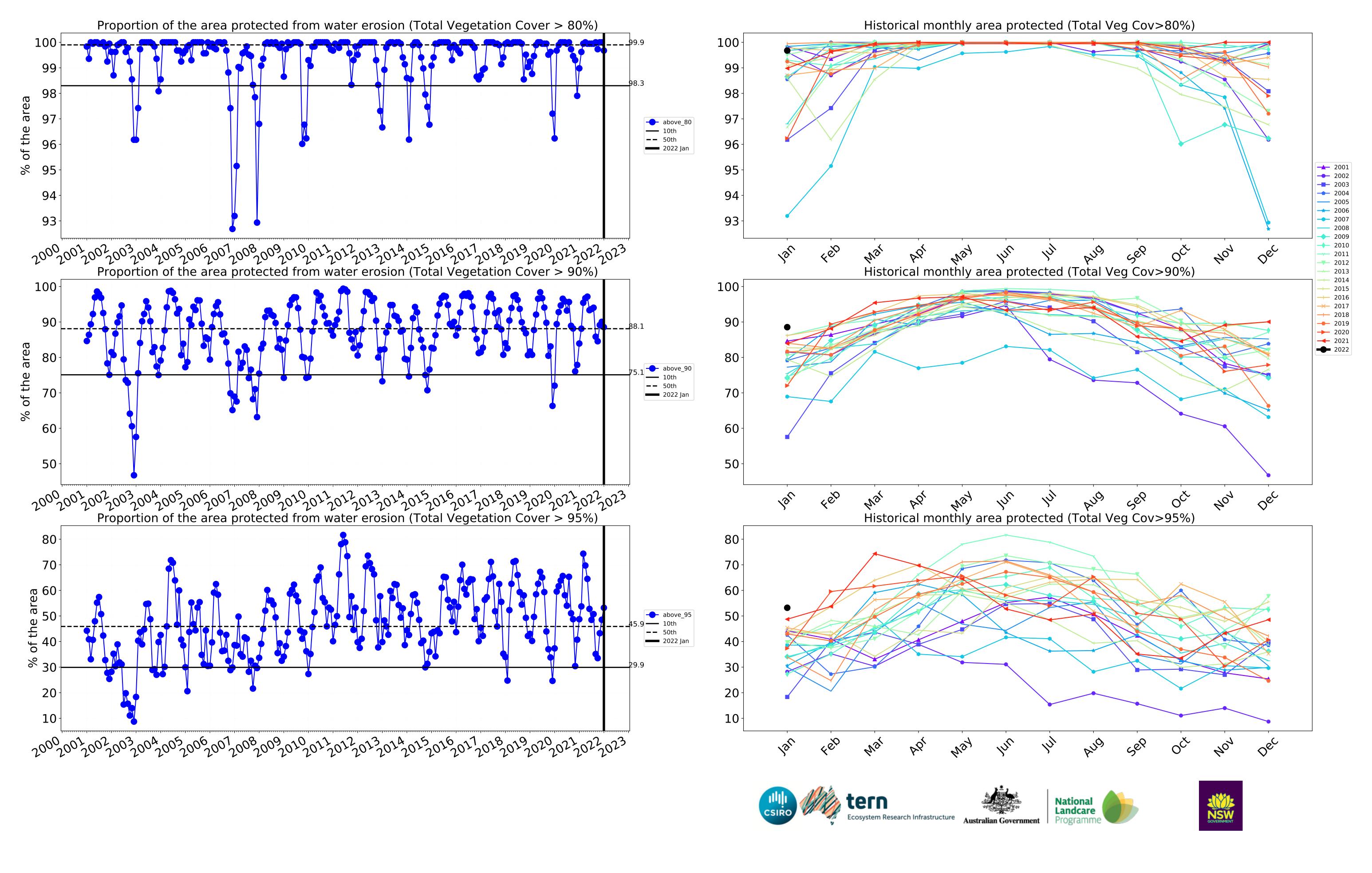






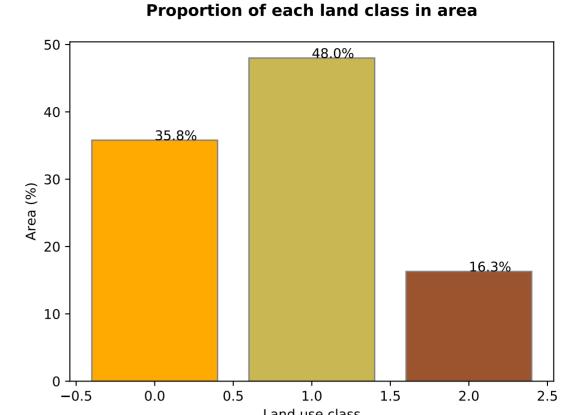


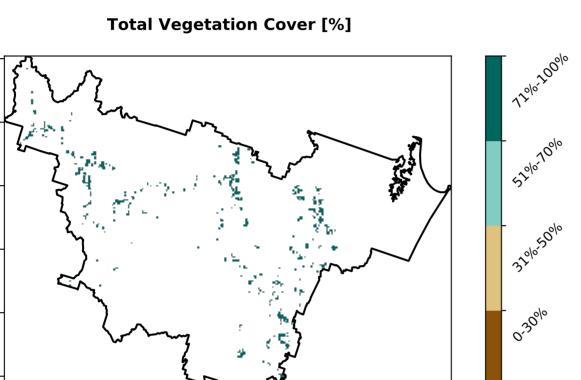


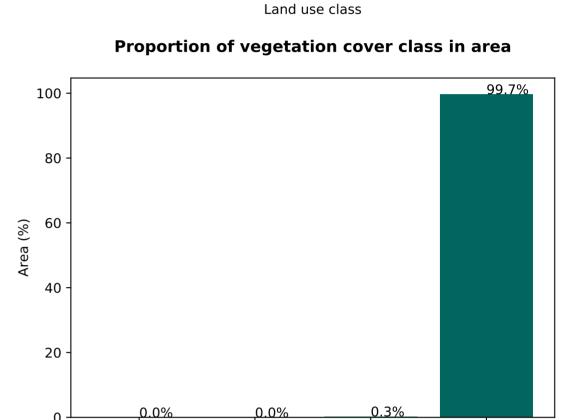


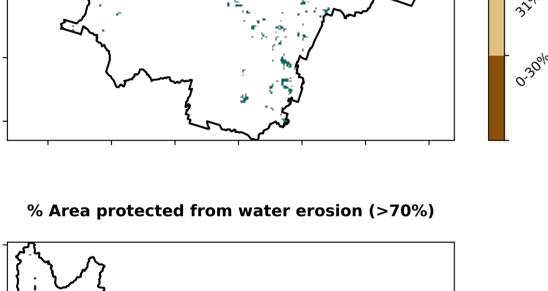
# **Irrigation**

# Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests 1 Agriculture - Grazing - Irrigated 2 Agriculture - Cropping - Irrigated 3 Agriculture - Horticulture - Irrigated of Australia (2018)







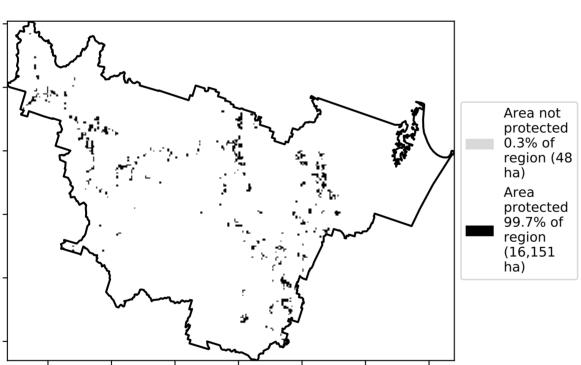


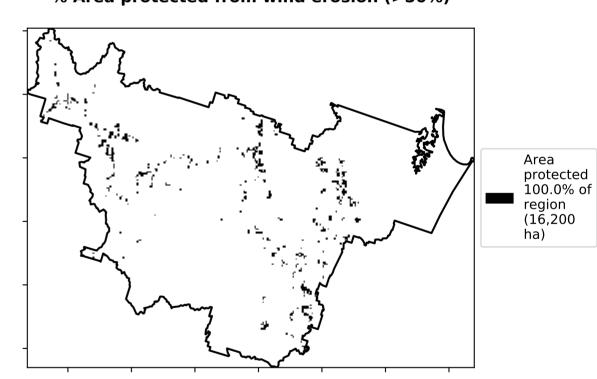


**Total Vegetation Cover class** 

31%-50%

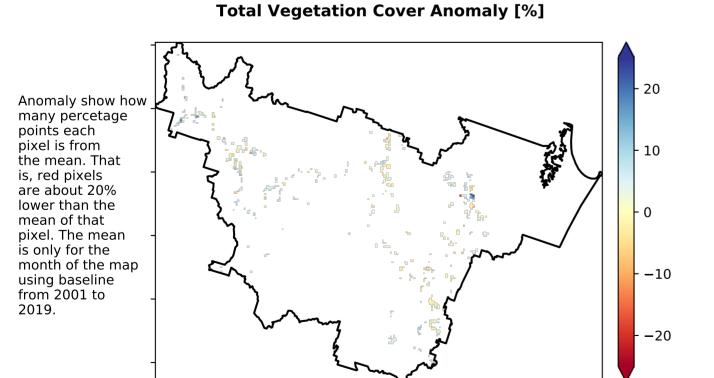
0-30%





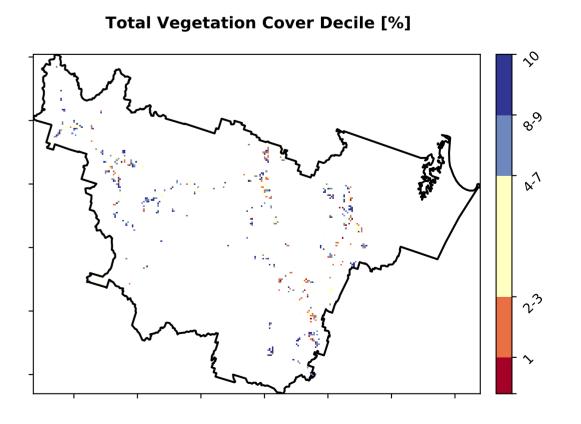
51%-70%

71%-100%



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.

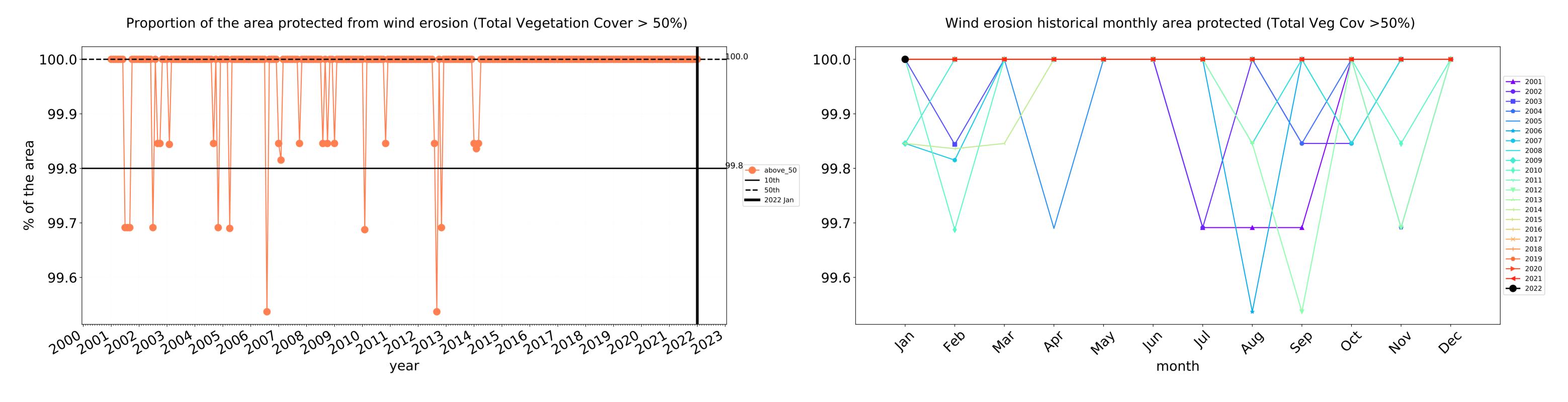


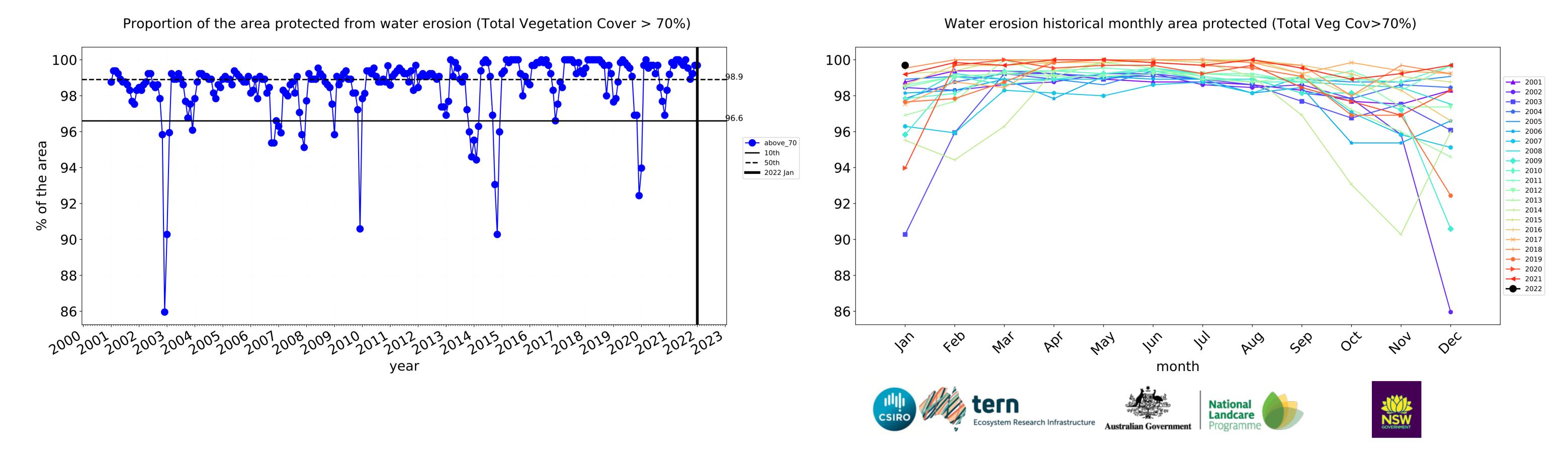


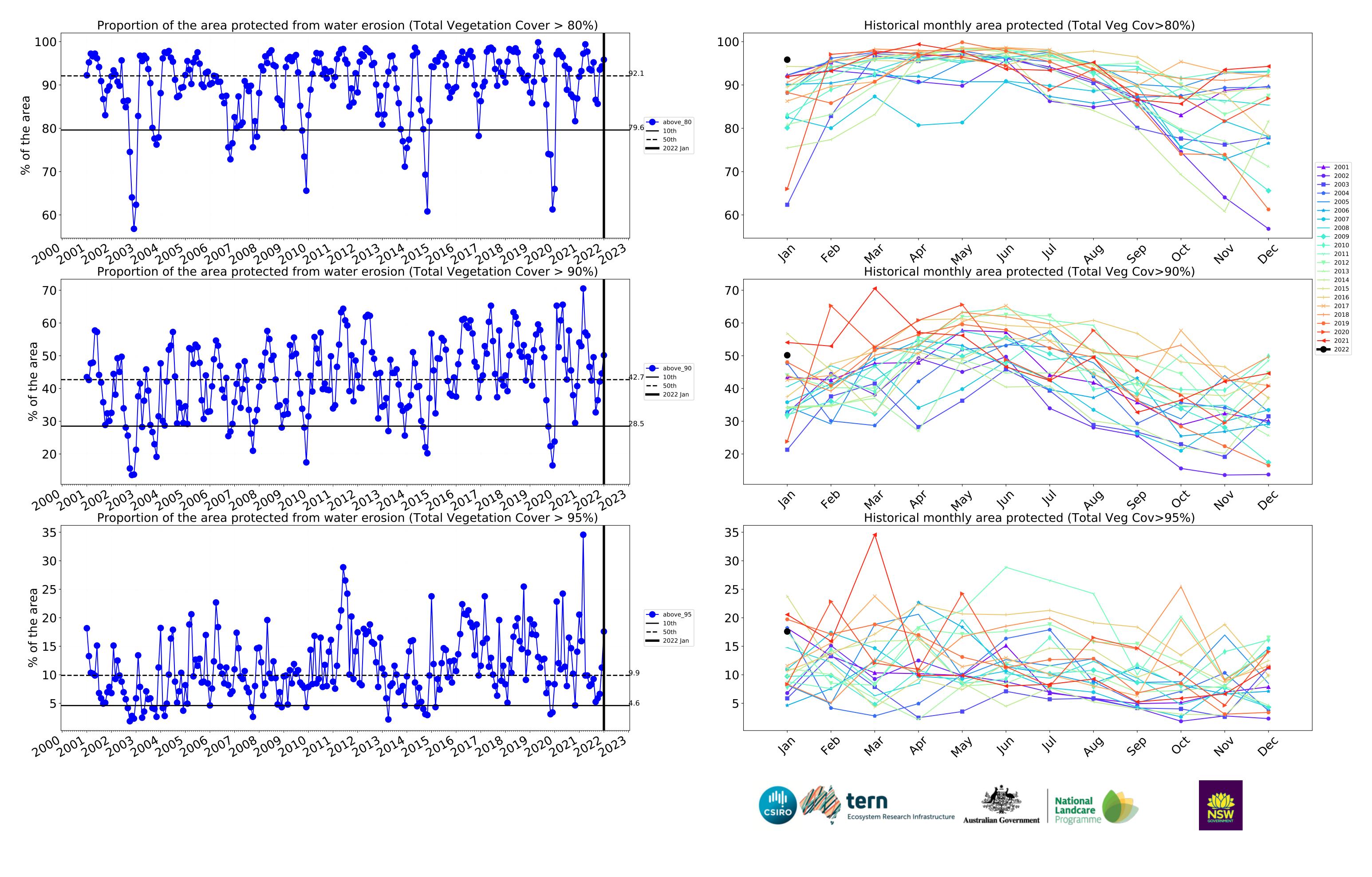




# Irrigation timeseries

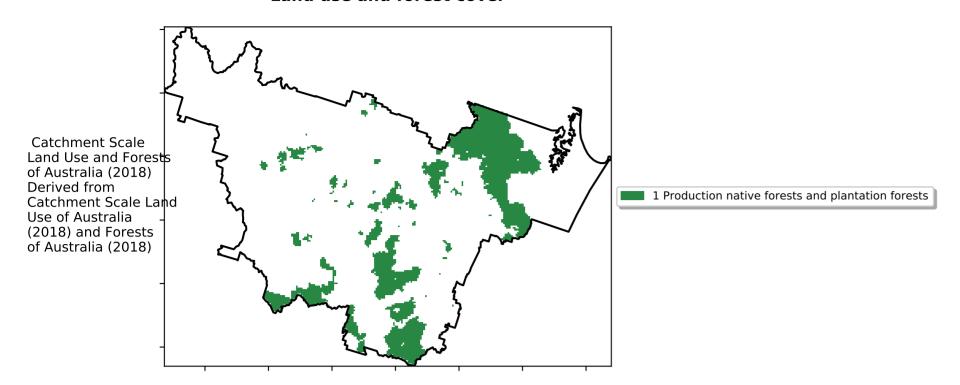




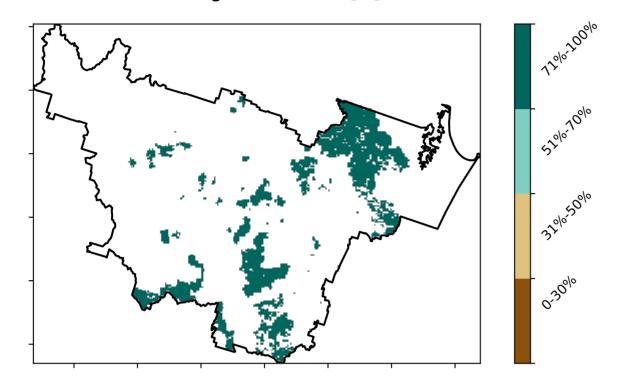


# **Production native forests and plantation forests**

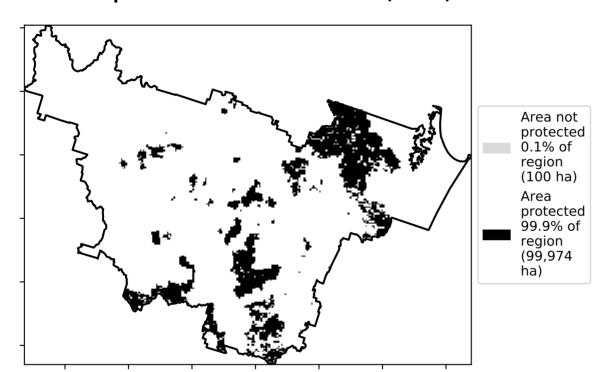
#### Land use and forest cover



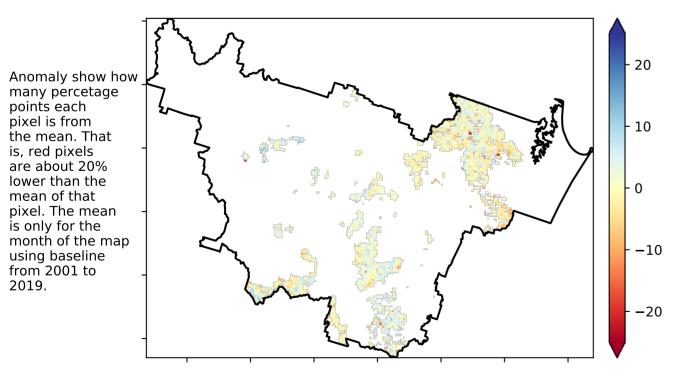
#### **Total Vegetation Cover [%]**



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

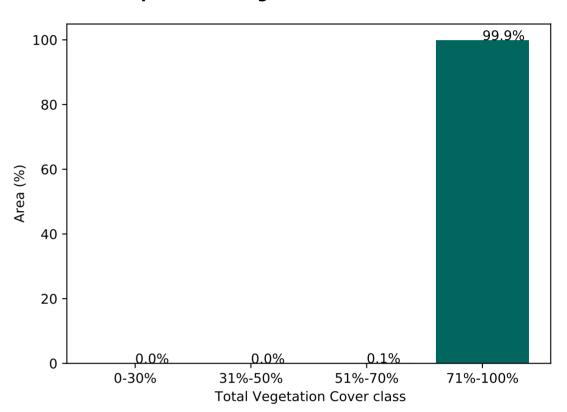


#### Total Vegetation Cover Anomaly [%]

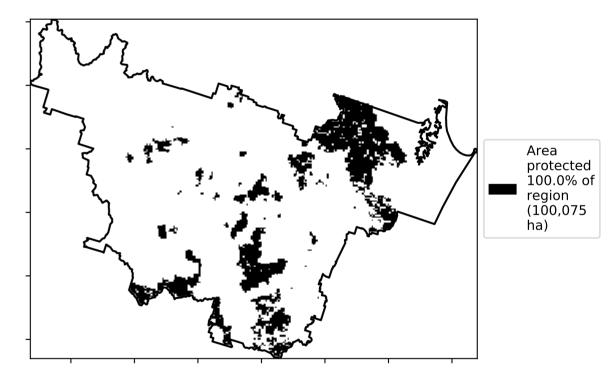


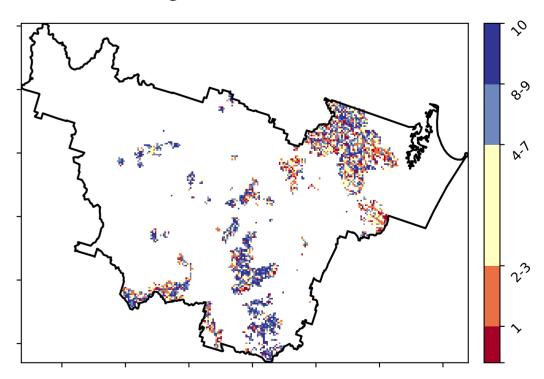
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

#### Proportion of vegetation cover class in area



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





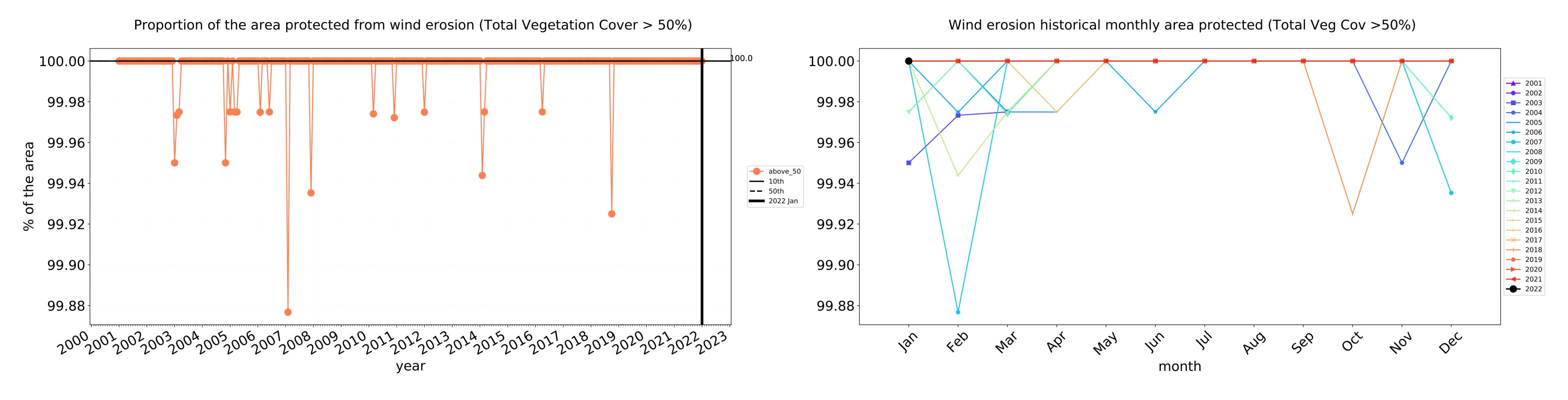


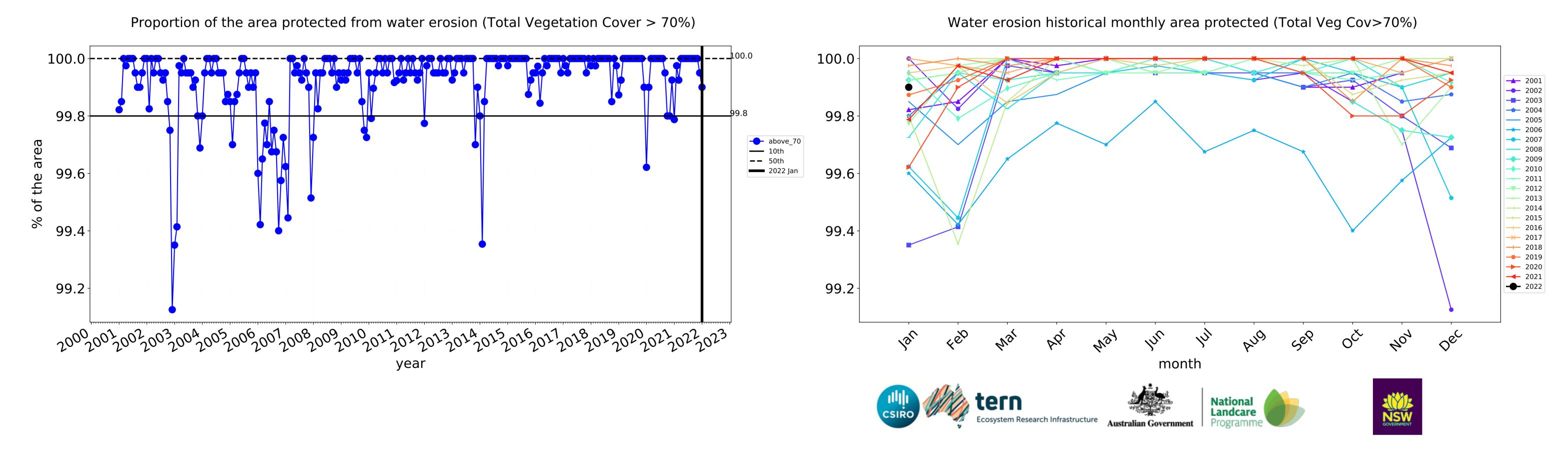


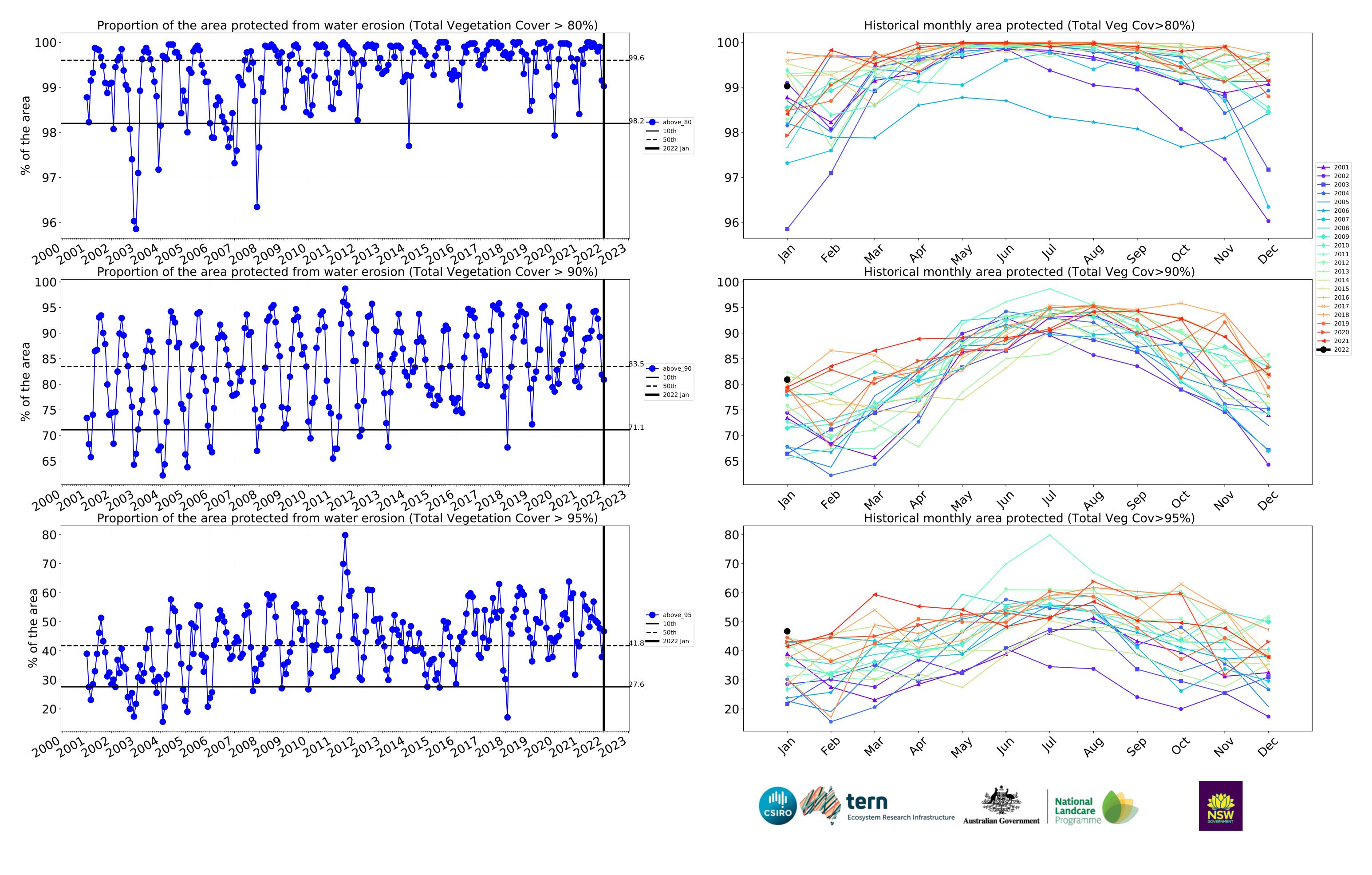




# **Production native forests and plantation forests timeseries**







# Gympie\_(R) (638,250 ha and no data 50,125 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	638,250	100.0% 638,125	100.0% 637,975	99.8% 636,875	98.8% 630,425	76.8% 490,175	39.2% 250,425
Conservation and natural environments	125,675	99.9% 125,550	99.8% 125,475	99.5% 125,025	99.0% 124,425	87.0% 109,400	49.8% 62,600
Conservation and natural environments non forest	8,725	99.7% 8,700	99.7% 8,700	99.4% 8,675	98.3% 8,575	83.7% 7,300	46.4% 4,050
Conservation and natural environments Woodland forest	23,000	99.9% 22,975	99.8% 22,950	99.6% 22,900	98.9% 22,750	83.0% 19,100	44.3% 10,200
Conservation and natural environments Forest (non woodland)	93,950	99.9% 93,875	99.9% 93,825	99.5% 93,450	99.1% 93,100	88.3% 83,000	51.5% 48,350
Agriculture	385,650	100.0% 385,650	100.0% 385,650	99.9% 385,425	99.0% 381,775	73.8% 284,800	35.3% 136,025
Grazing	366,725	100.0% 366,725	100.0% 366,725	100.0% 366,550	99.1% 363,550	75.1% 275,450	36.2% 132,675
Grazing non forest	259,550	100.0% 259,550	100.0% 259,550	99.9% 259,375	98.9% 256,775	71.7% 186,075	32.1% 83,275
Grazing Woodland forest	60,700	100.0% 60,700	100.0% 60,700	100.0% 60,700	99.6% 60,450	79.4% 48,225	40.7% 24,675
Grazing - Forest (non woodland)	46,475	100.0% 46,475	100.0% 46,475	100.0% 46,475	99.7% 46,325	88.5% 41,150	53.2% 24,725
Irrigation	16,200	100.0% 16,200	100.0% 16,200	99.7% 16,150	95.8% 15,525	50.2% 8,125	17.6% 2,850
Production native forests and plantation forests	100,075	100.0% 100,075	100.0% 100,075	99.9% 99,975	99.0% 99,100	80.9% 80,975	46.7% 46,750







