# Total vegetation cover soil protection **Region:NRM West Gippsland VIC**

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 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











**Date: May 2006** 



# **Vegetation Cover May 2006**

#### Land use and forest cover

Catchment Scale

of Australia (2018)

(2018) and Forests

of Australia (2018)

Anomaly show how many percetage points each pixel is from

the mean. That

is, red pixels are about 20% lower than the

mean of that pixel. The mean

is only for the

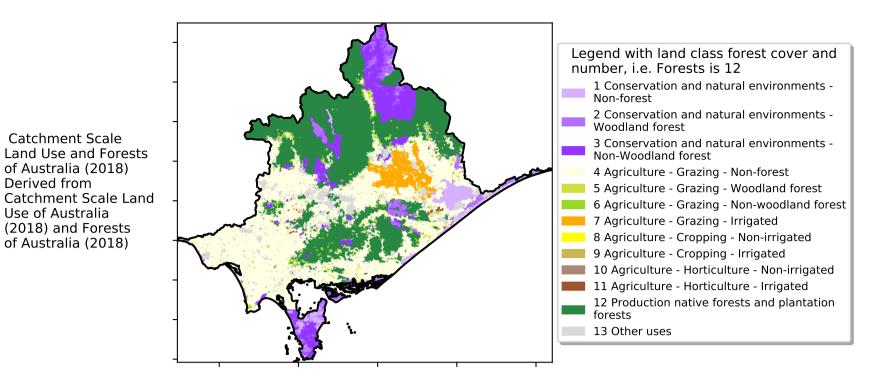
using baseline from 2001 to

2019.

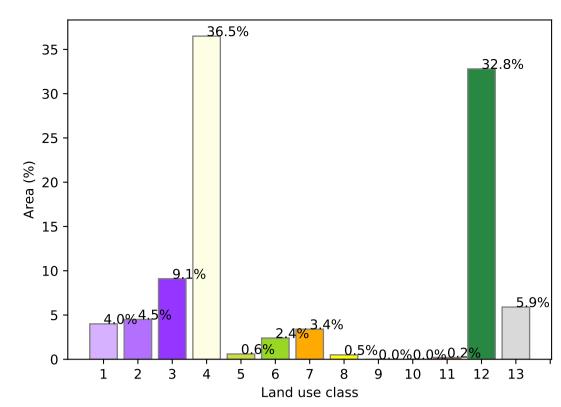
month of the map

Derived from

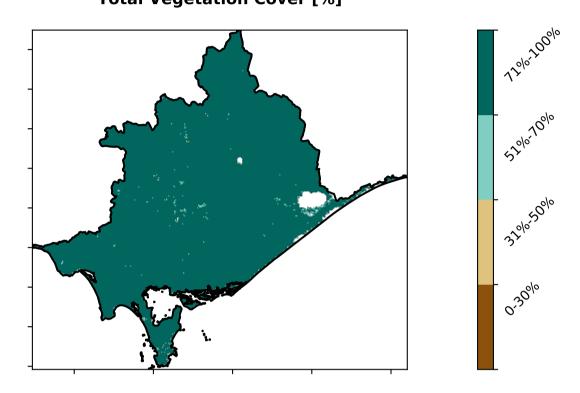
Use of Australia

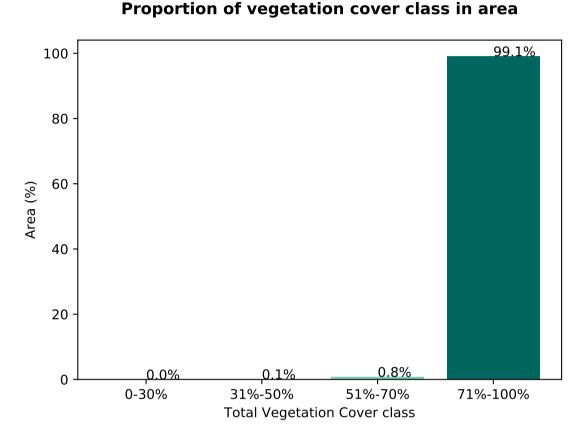


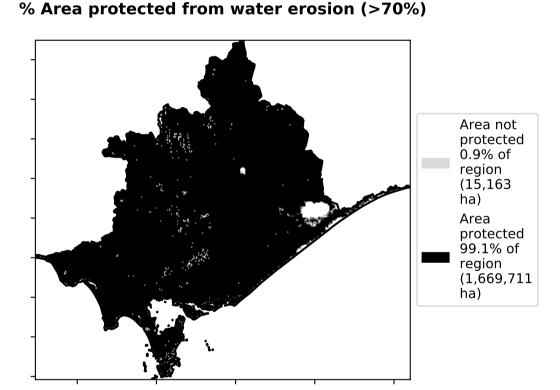
#### Proportion of each land class in area



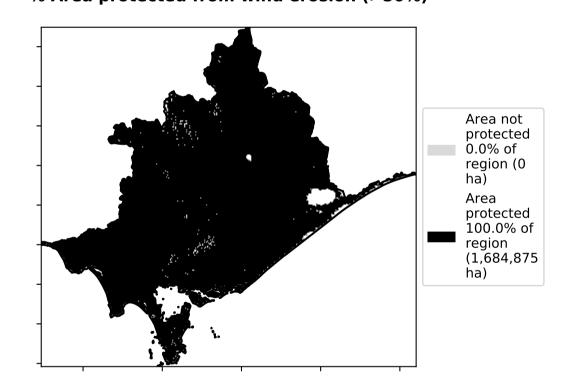
# **Total Vegetation Cover [%]**



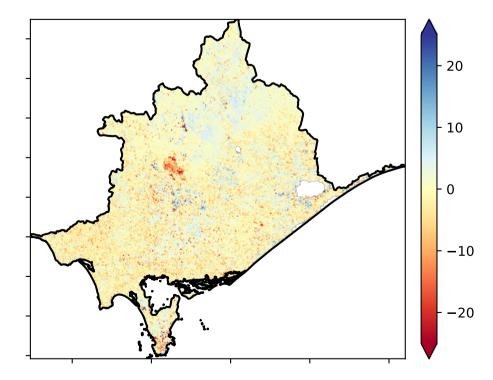




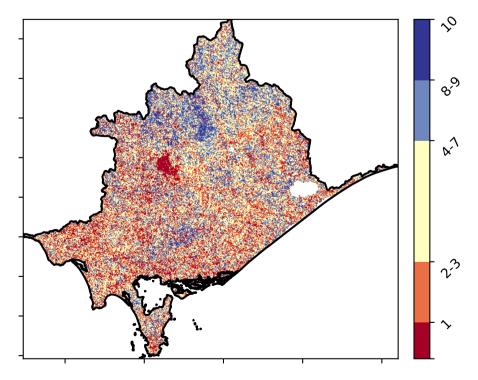
% Area protected from wind erosion (>50%)



# **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.





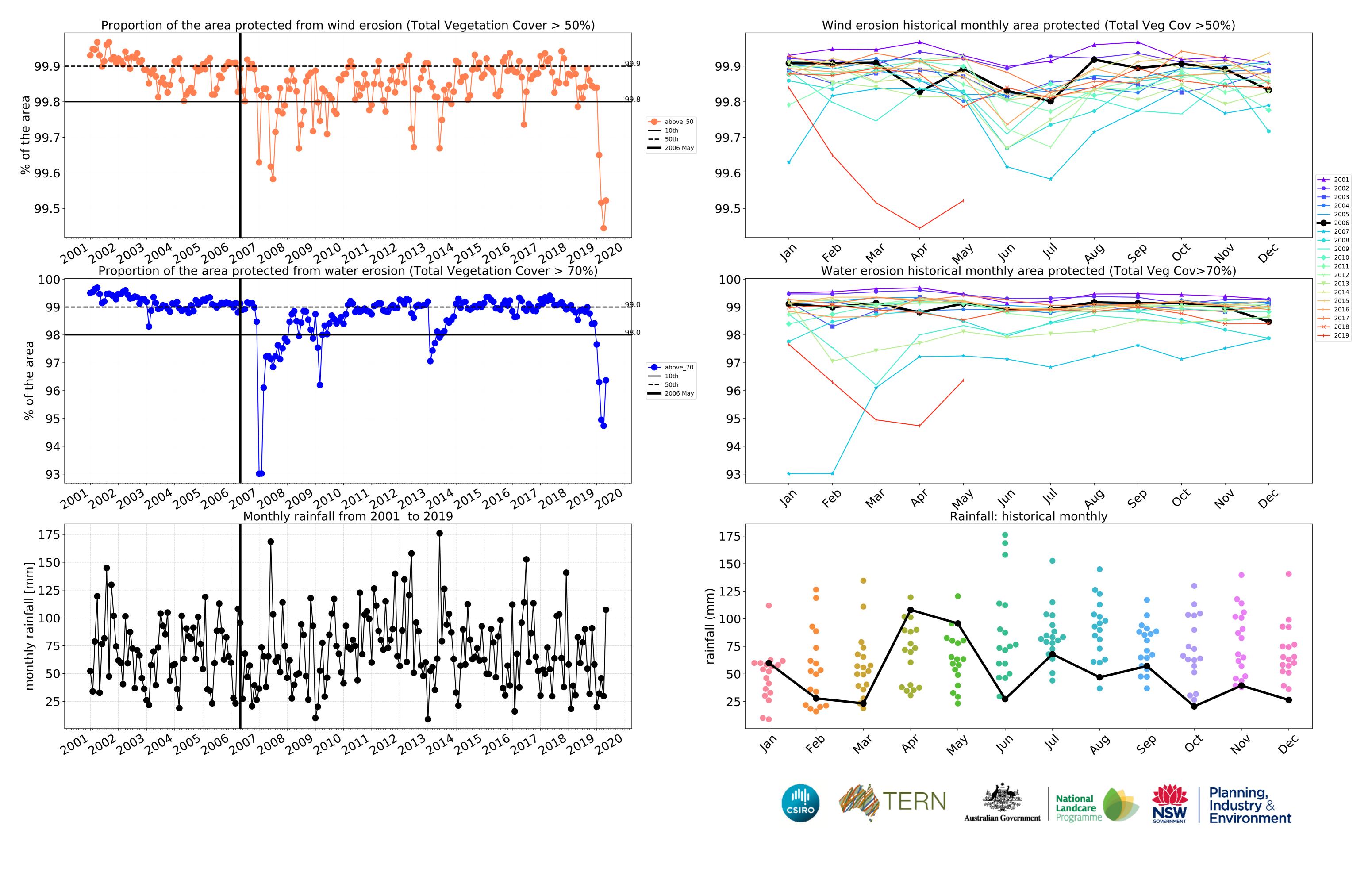




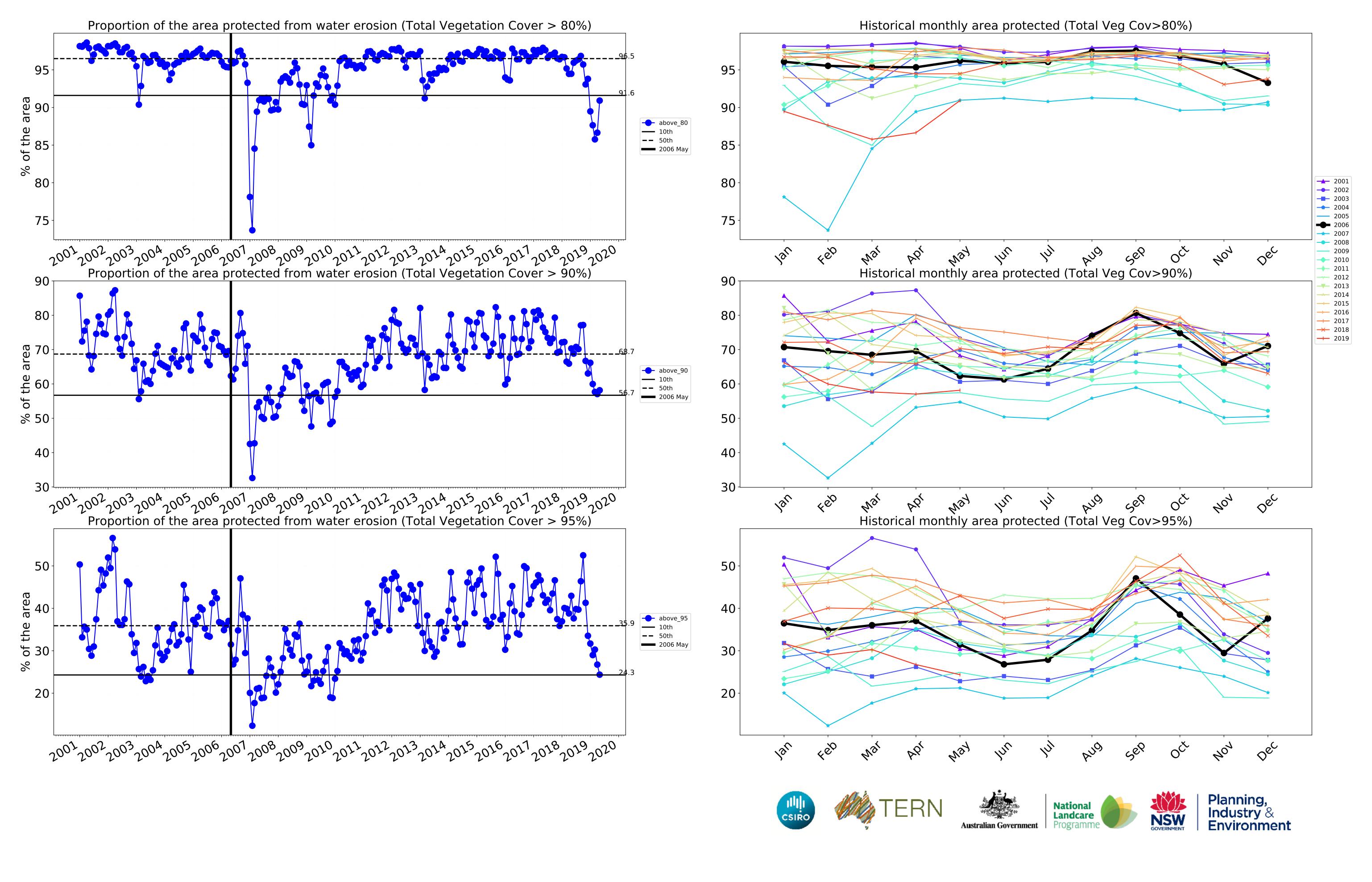








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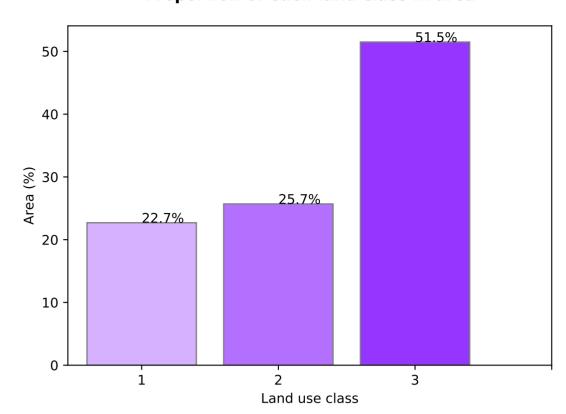


# **Conservation and natural environments**

# Catchment Scale 1 Conservation and natural environments - Non-2 Conservation and natural environments - Woodland 3 Conservation and natural environments - Non-woodland forest

Land use and forest cover

## Proportion of each land class in area



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

Anomaly show how many percetage points each

pixel is from

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

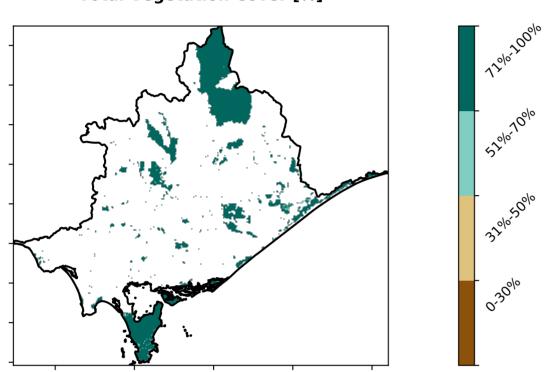
the mean. That

pixel. The mean

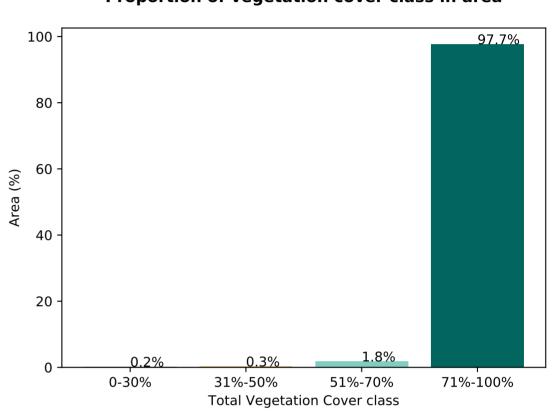
using baseline from 2001 to 2019.

is only for the month of the map

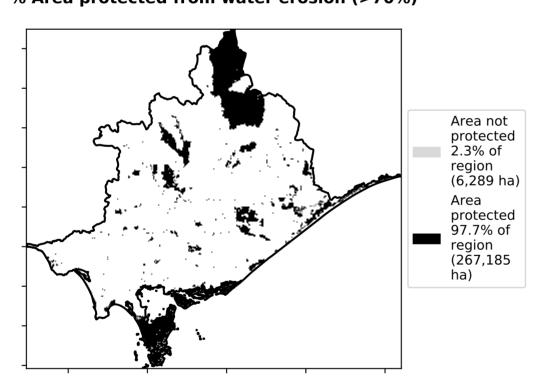




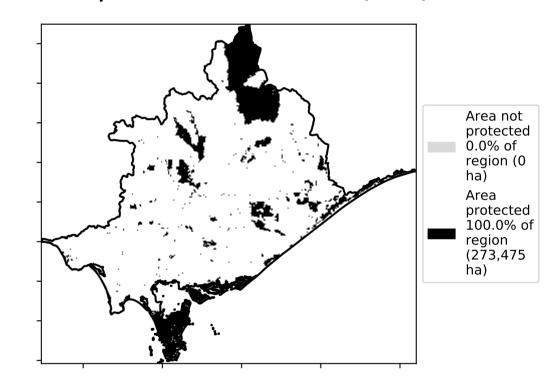
Proportion of vegetation cover class in area



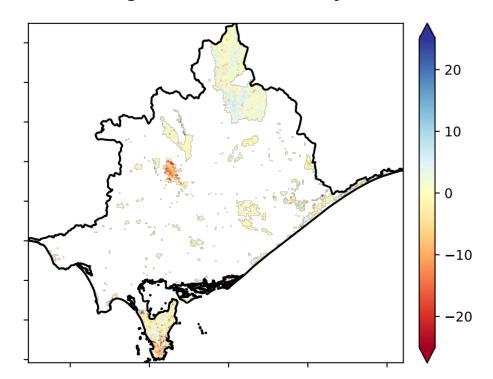
% Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

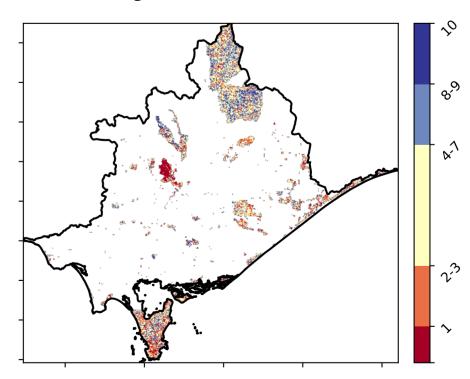


**Total Vegetation Cover Anomaly [%]** 



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 [%]** 







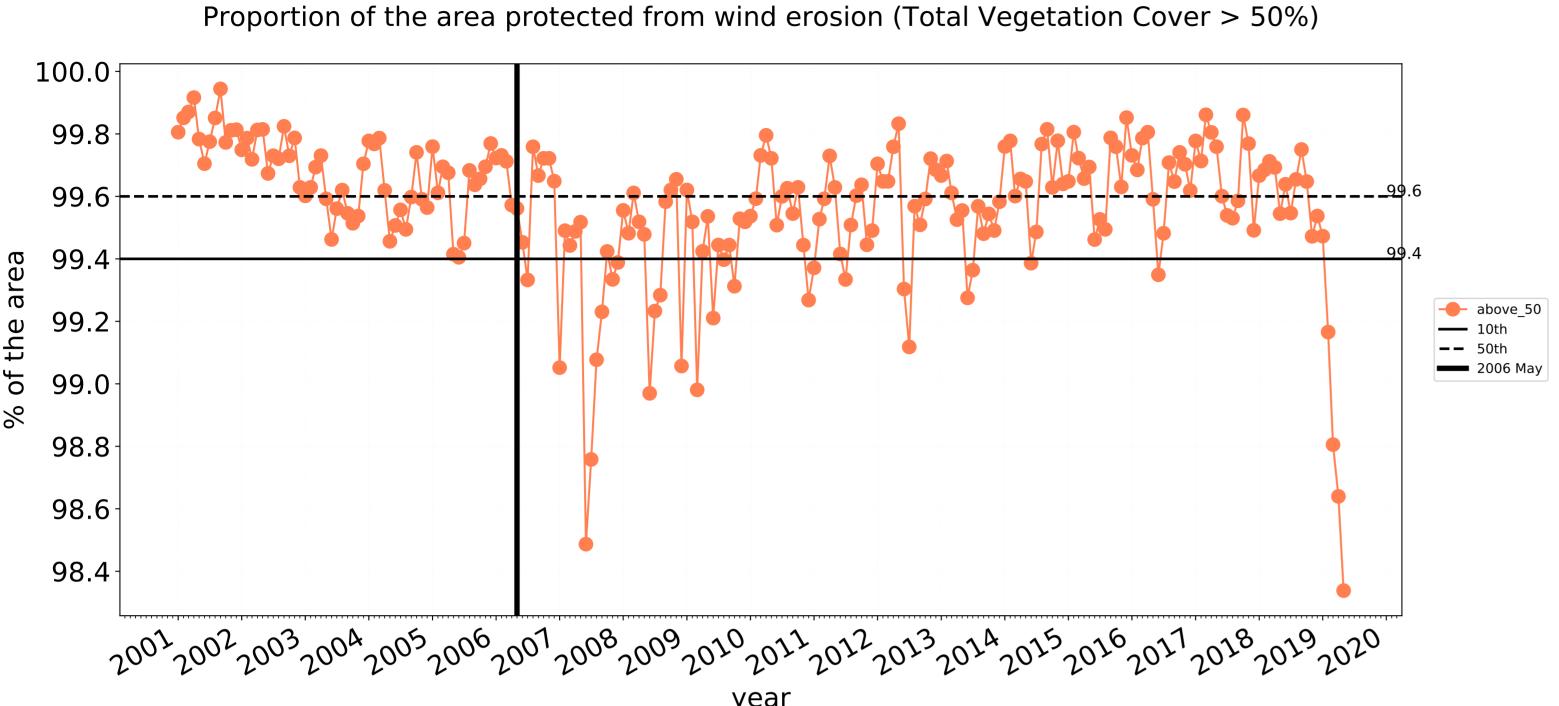


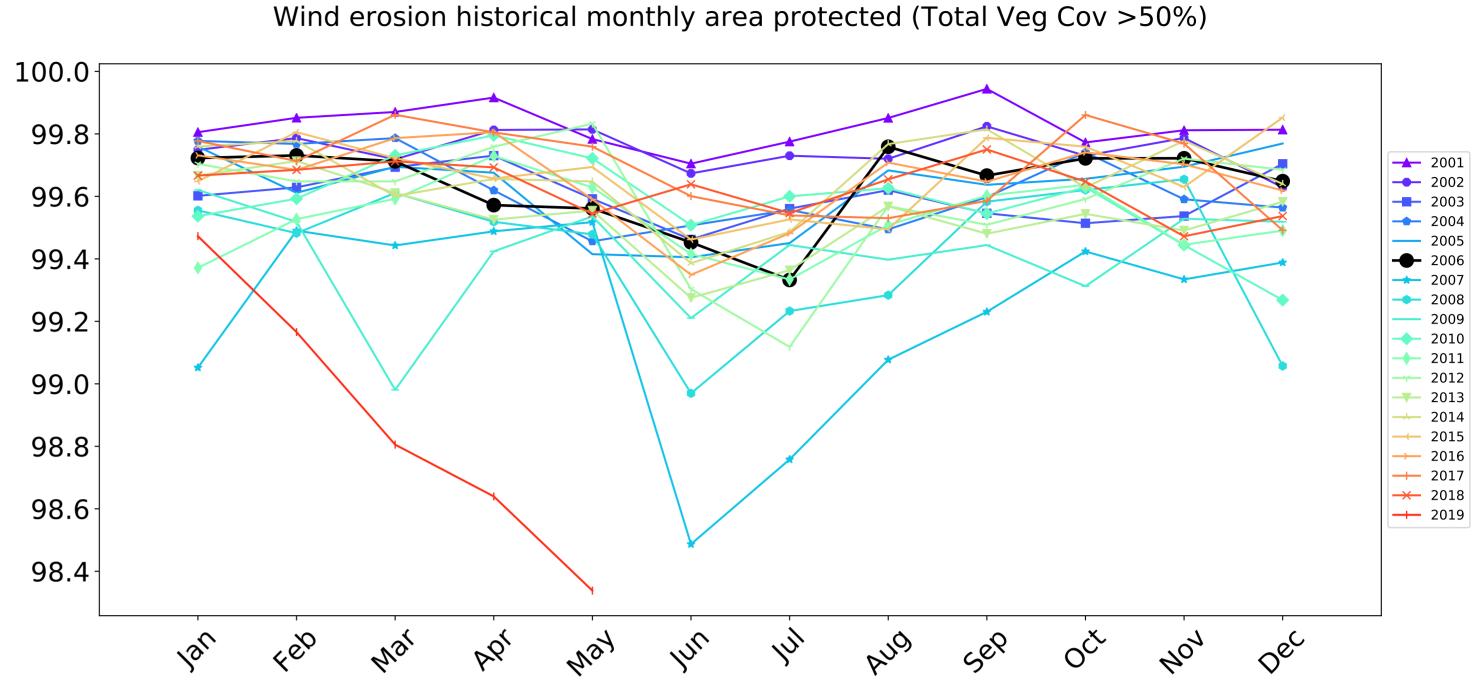




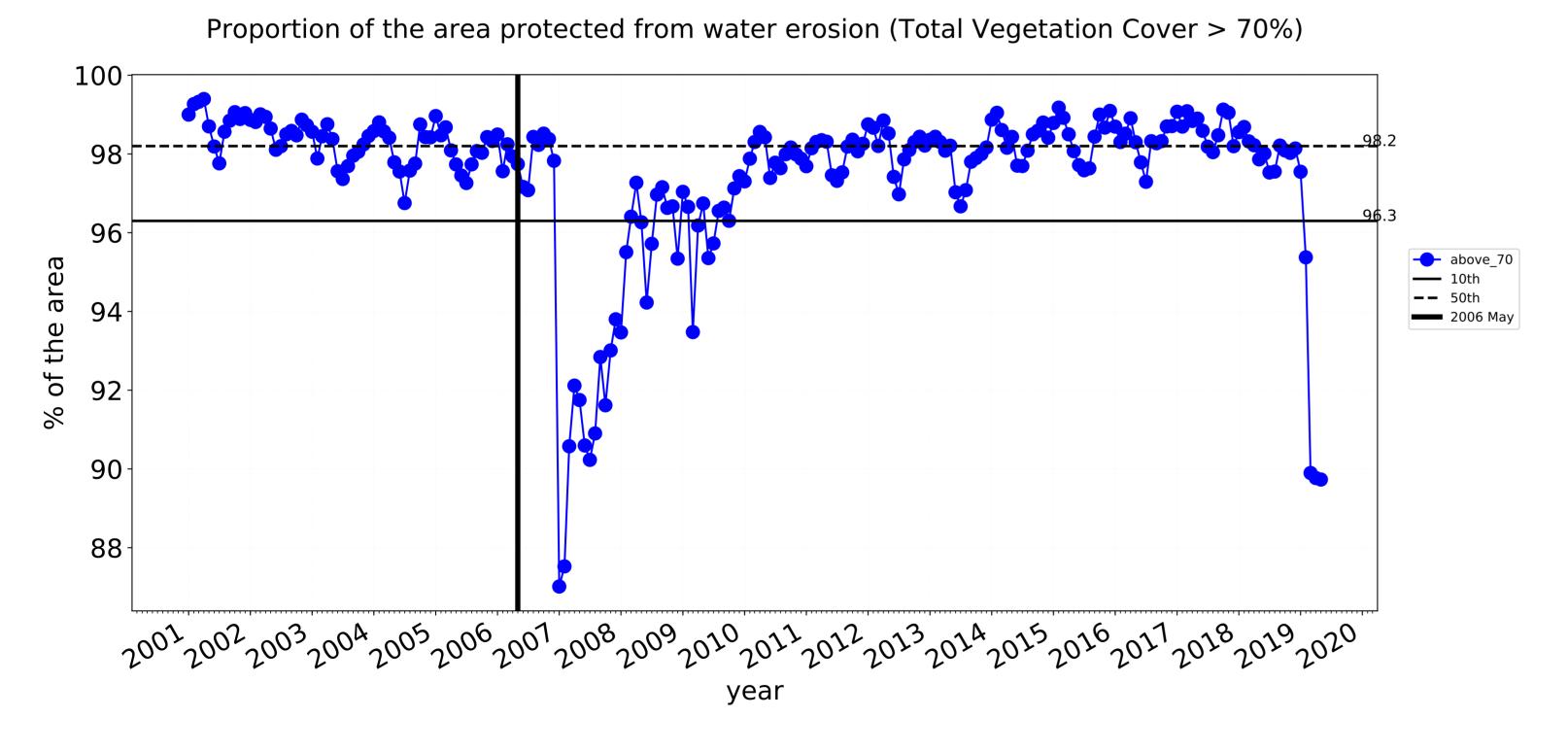


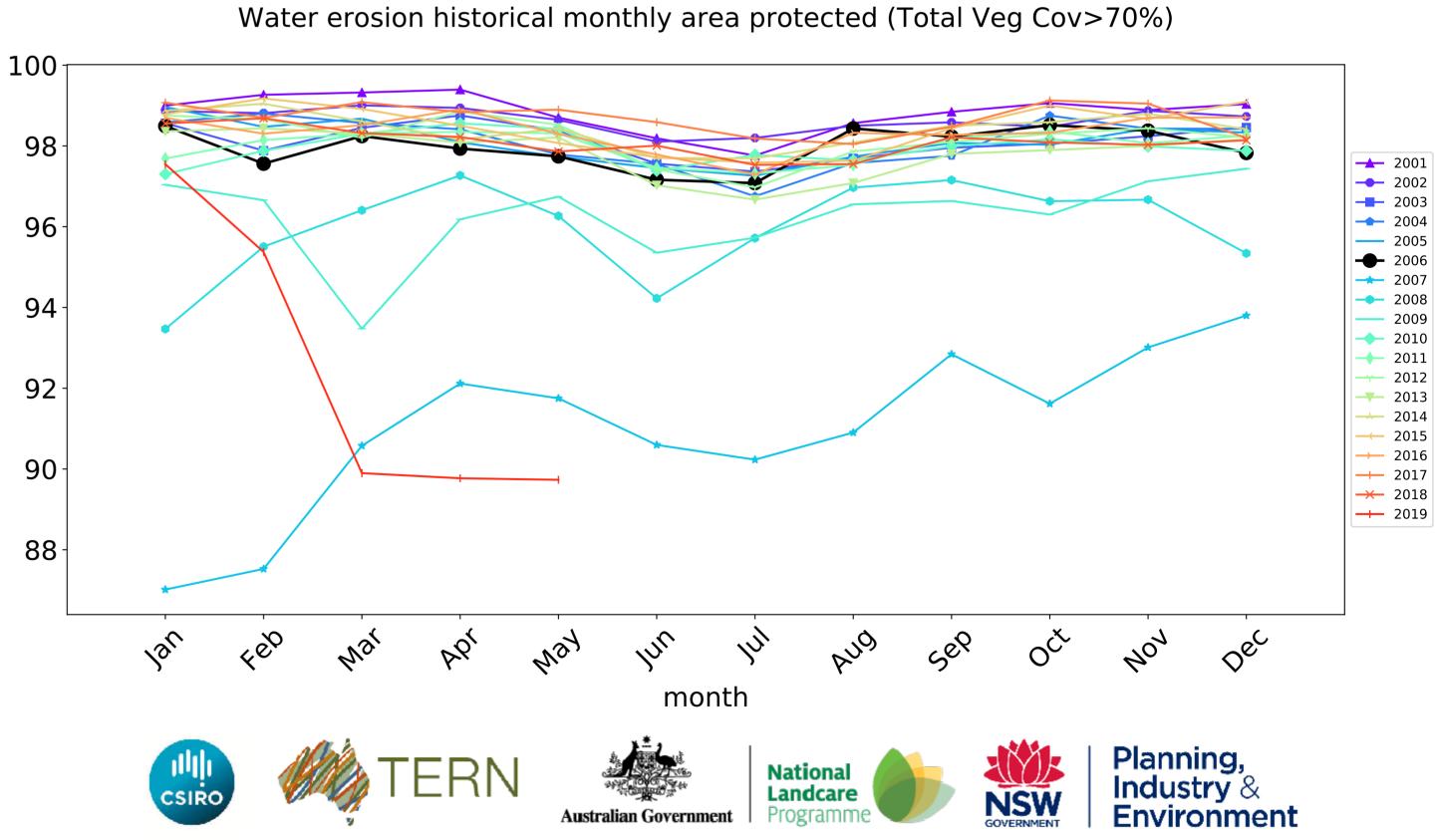
# **Conservation and natural environments timeseries**

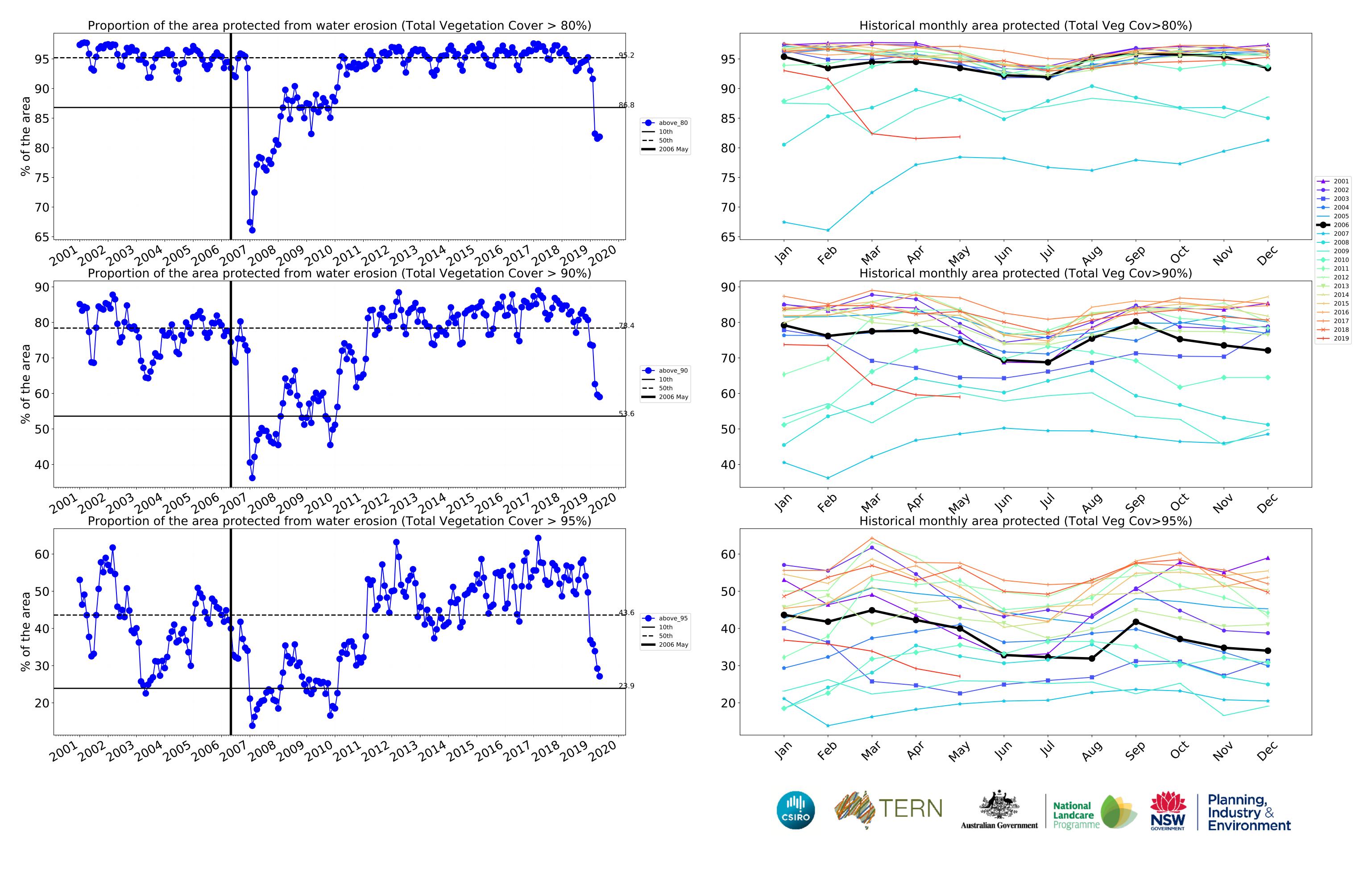




month







# **Conservation and natural environments non forest**

#### 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 of Australia (2018)

Anomaly show how many percetage points each

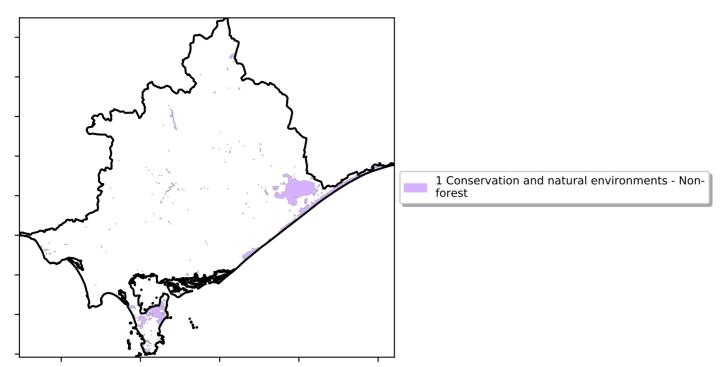
pixel is from

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

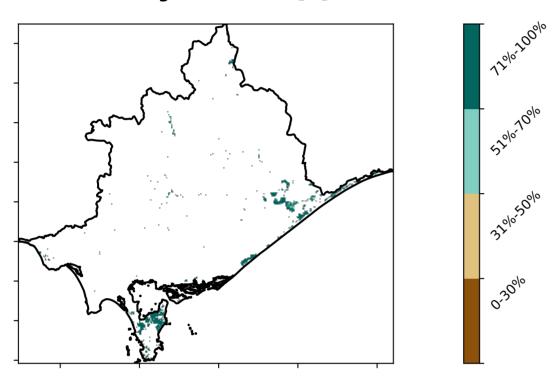
the mean. That

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

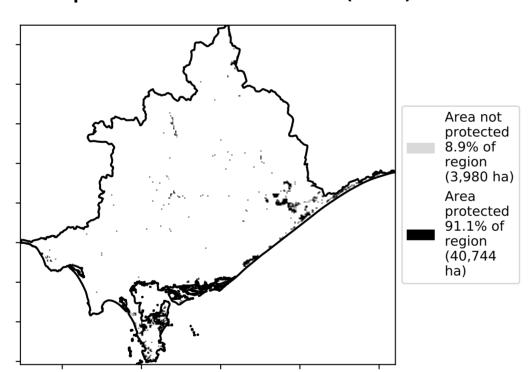
using baseline from 2001 to 2019.



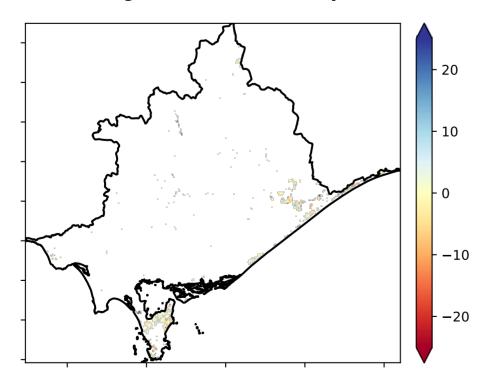
#### **Total Vegetation Cover [%]**



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

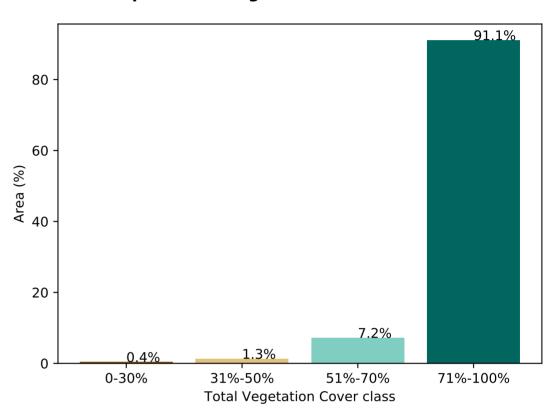


# **Total Vegetation Cover Anomaly [%]**

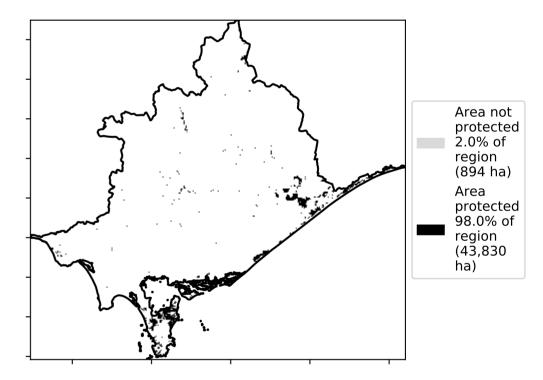


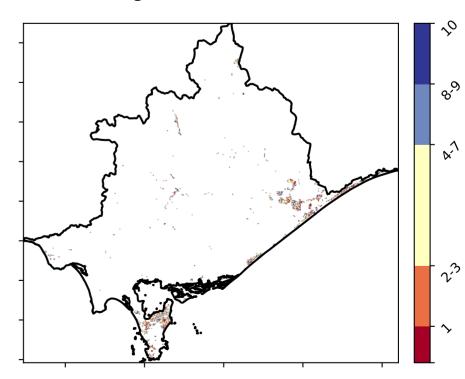
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

#### Proportion of vegetation cover class in area



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











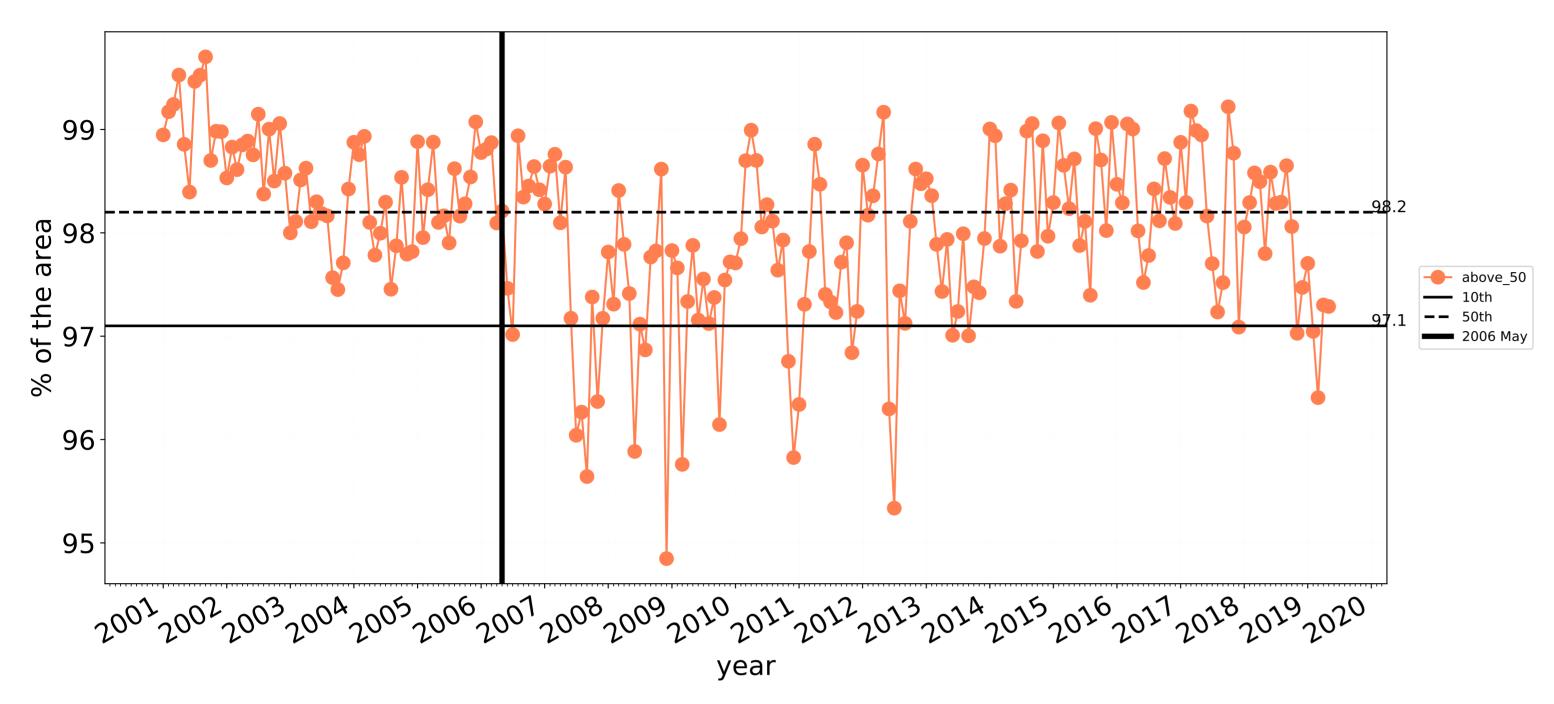




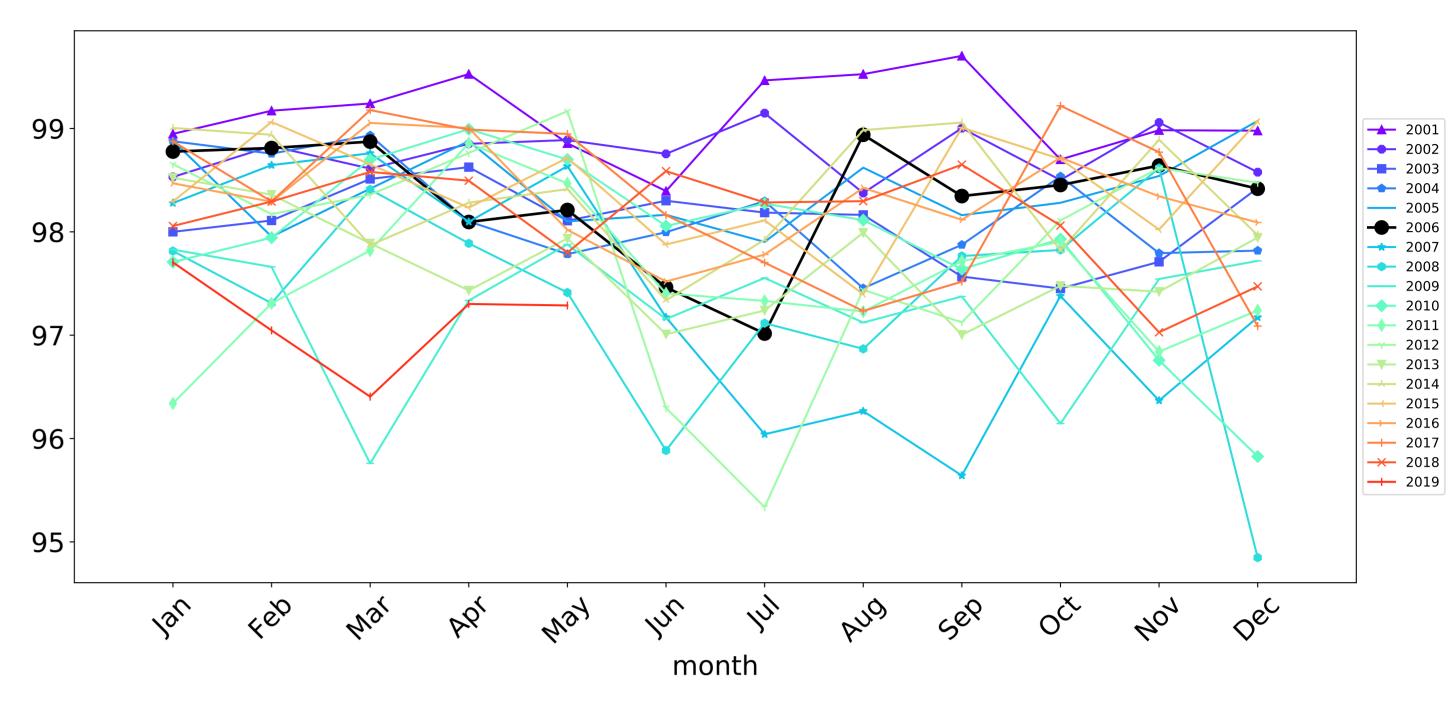


# Conservation and natural environments non forest timeseries

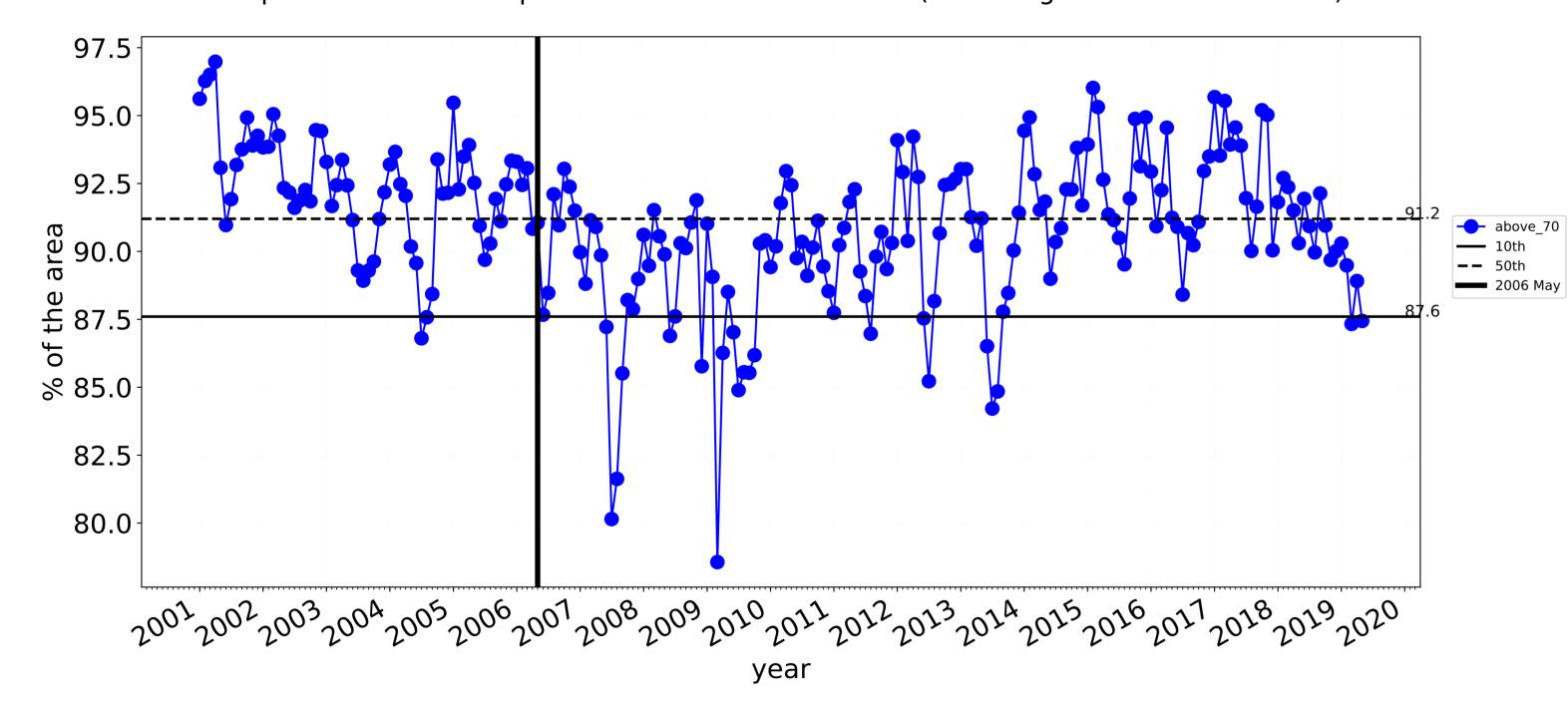




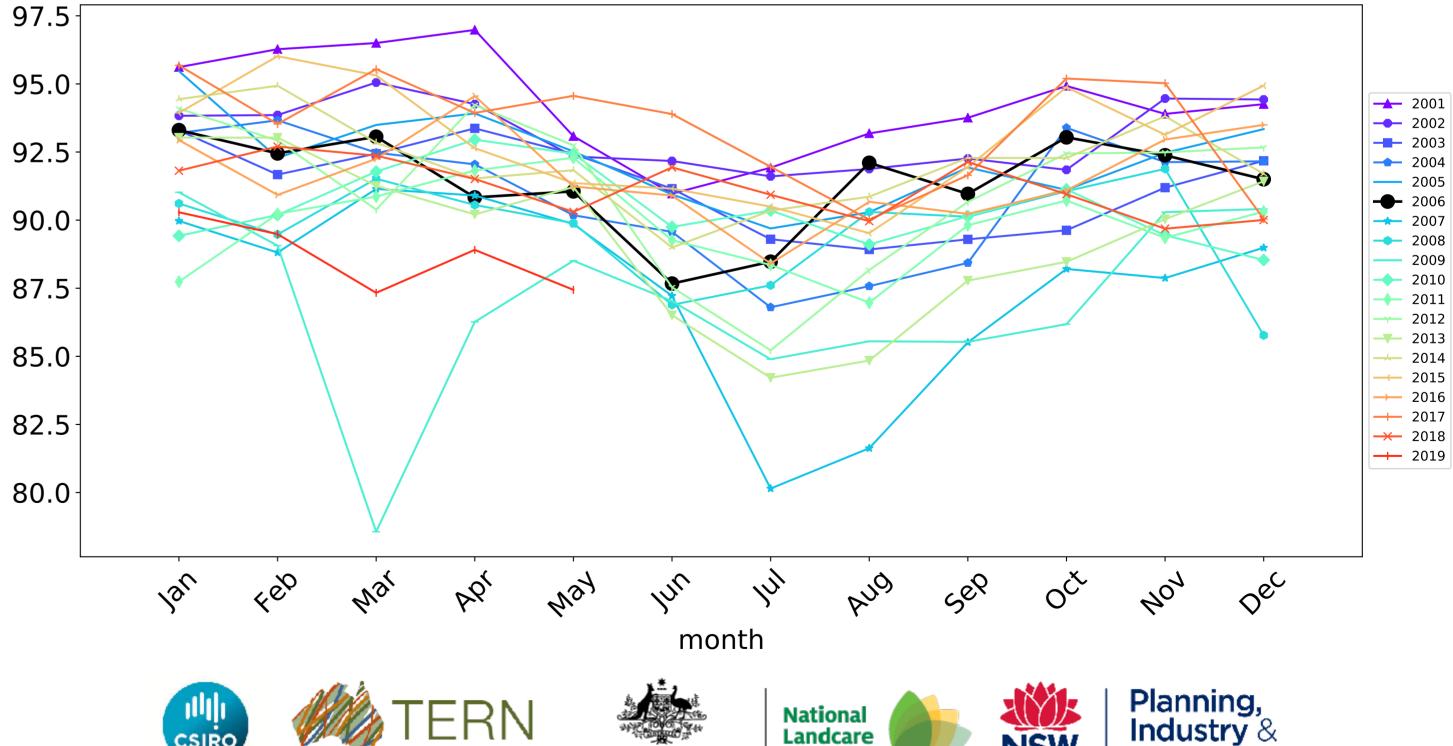
# Wind erosion historical monthly area protected (Total Veg Cov >50%)



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



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

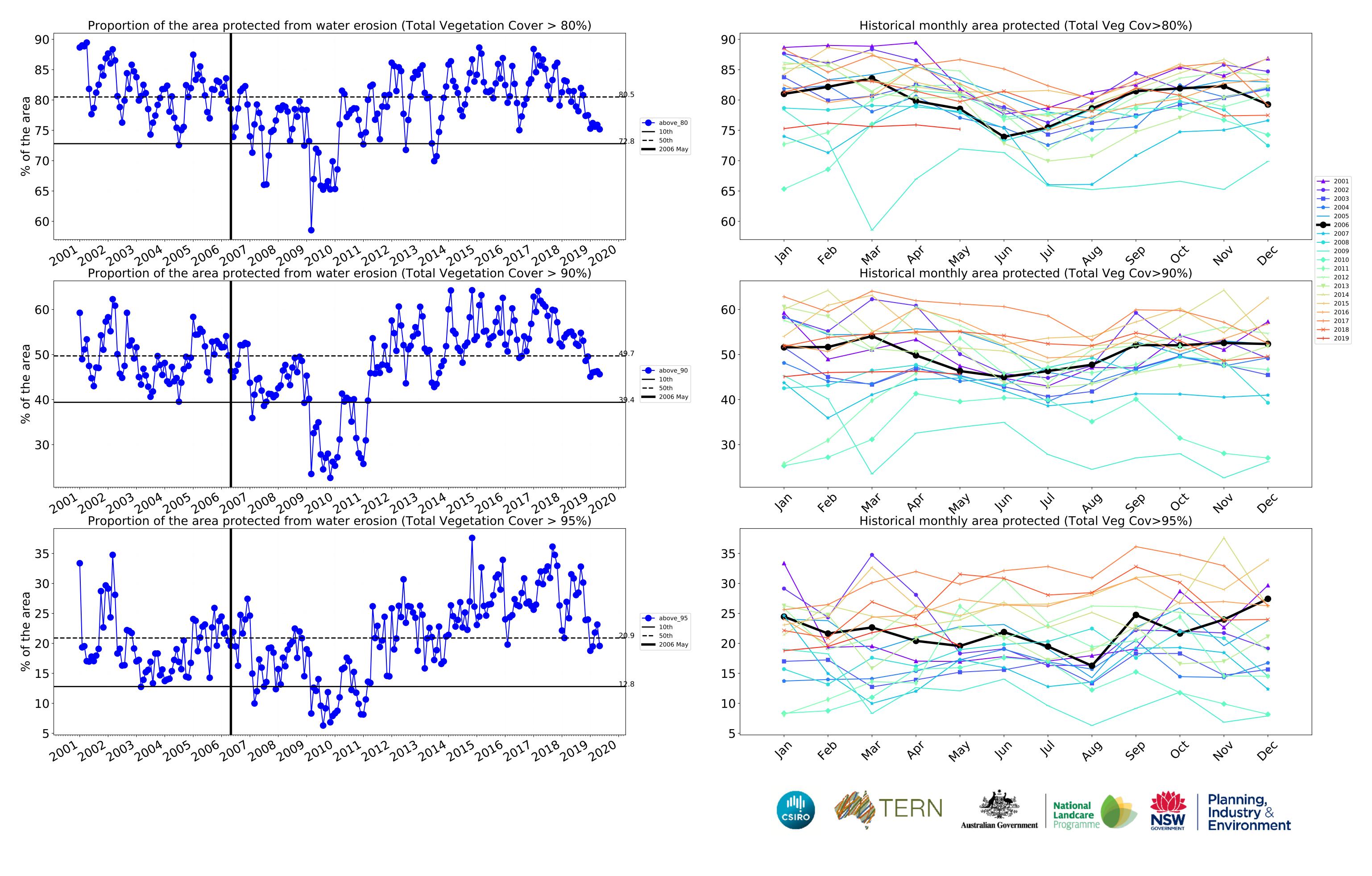












# **Conservation and natural environments Woodland forest**

#### 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 of Australia (2018)

Anomaly show how many percetage points each

pixel is from

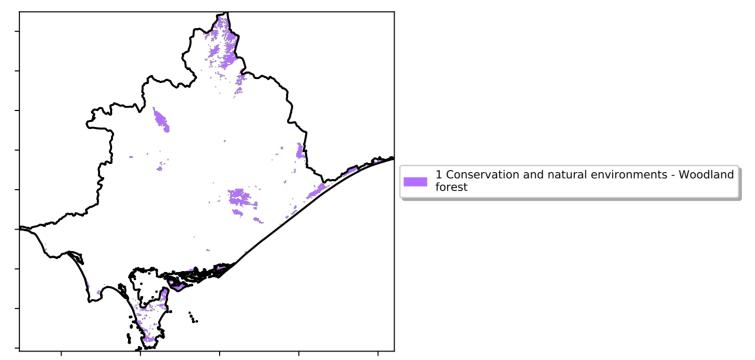
is, red pixels are about 20% lower than the mean of that

the mean. That

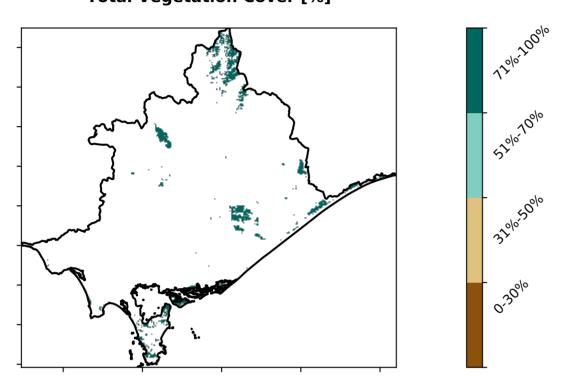
pixel. The mean

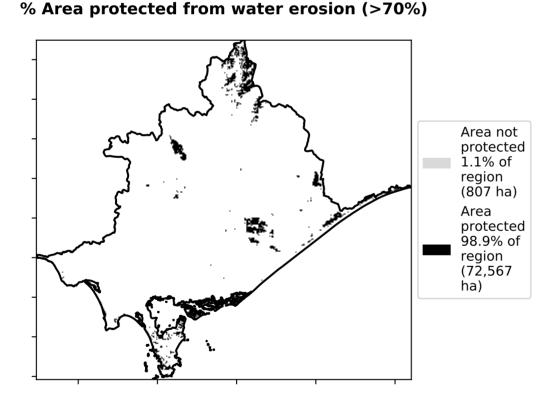
using baseline from 2001 to 2019.

is only for the month of the map

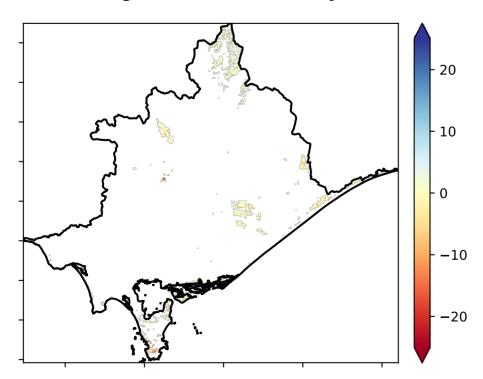


# **Total Vegetation Cover [%]**



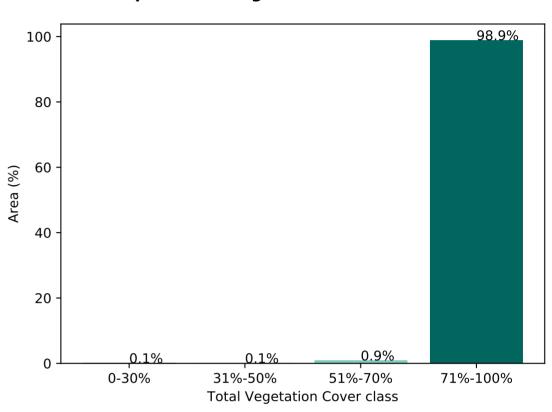


# Total Vegetation Cover Anomaly [%]

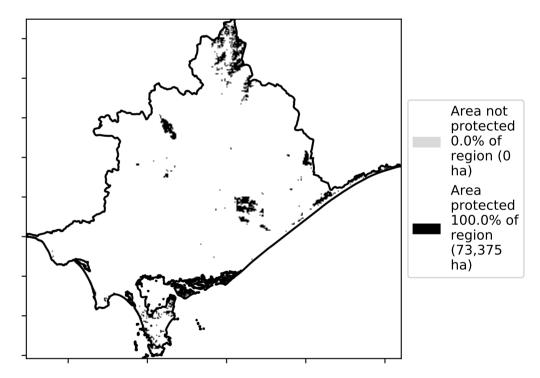


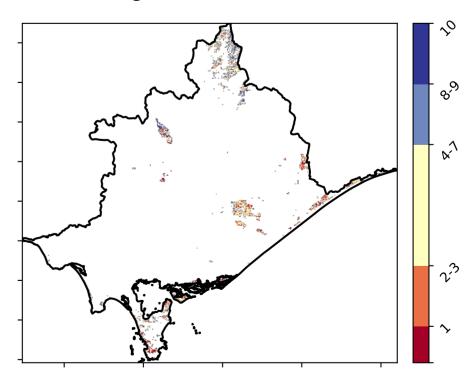
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

#### Proportion of vegetation cover class in area



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







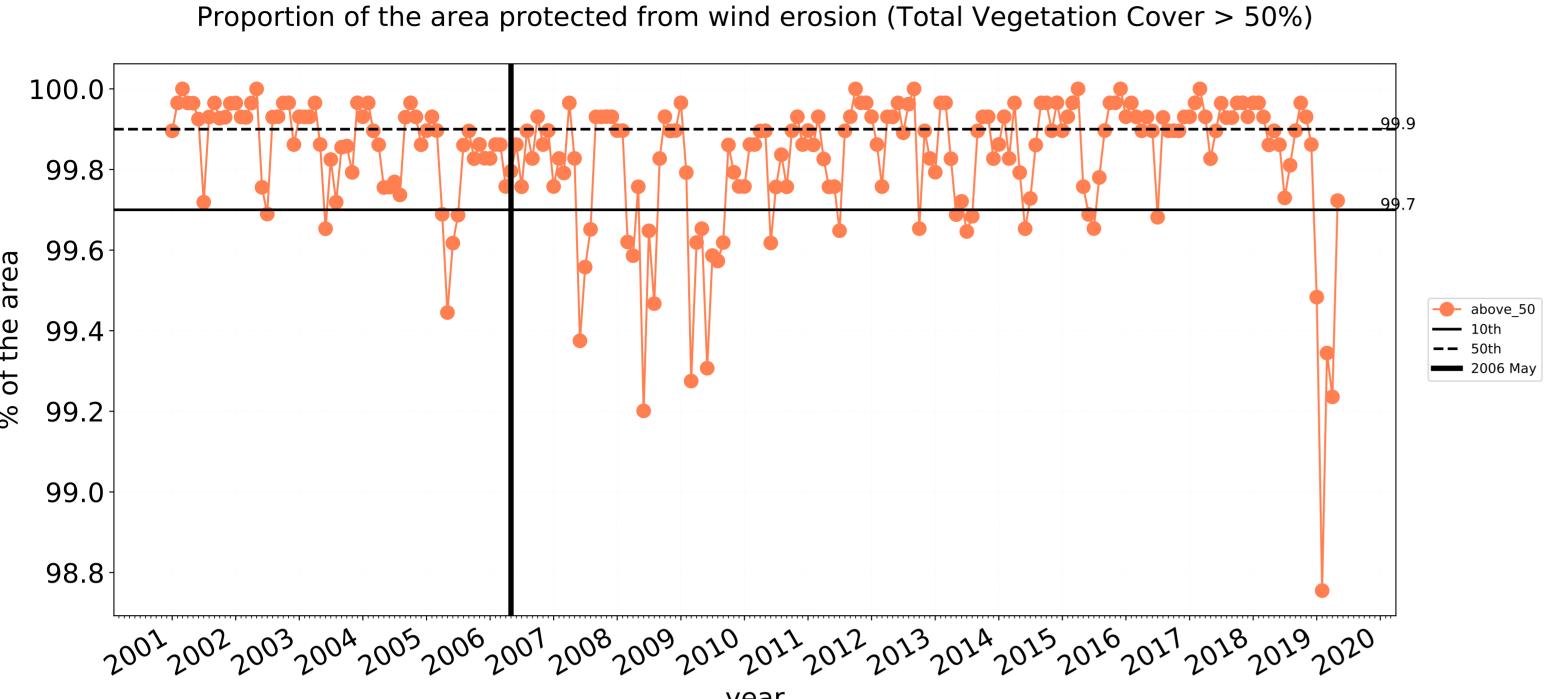




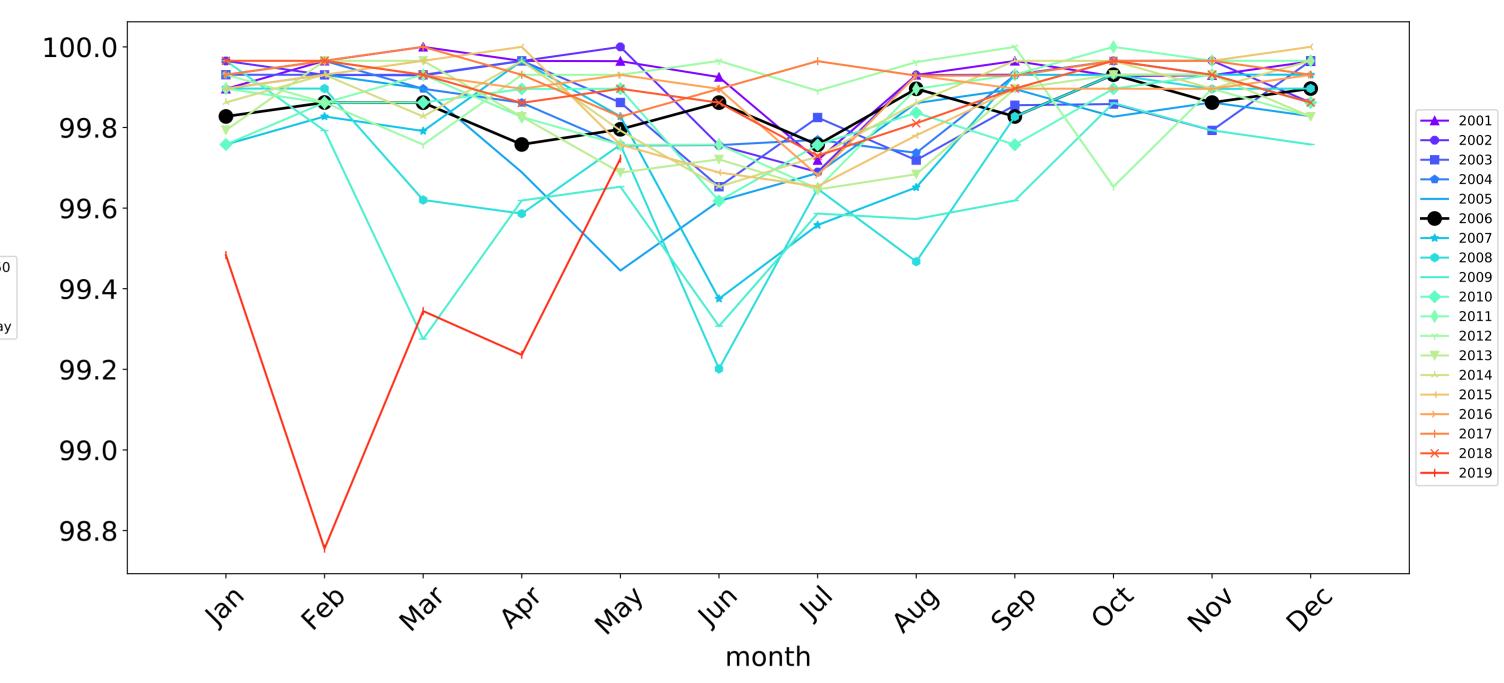


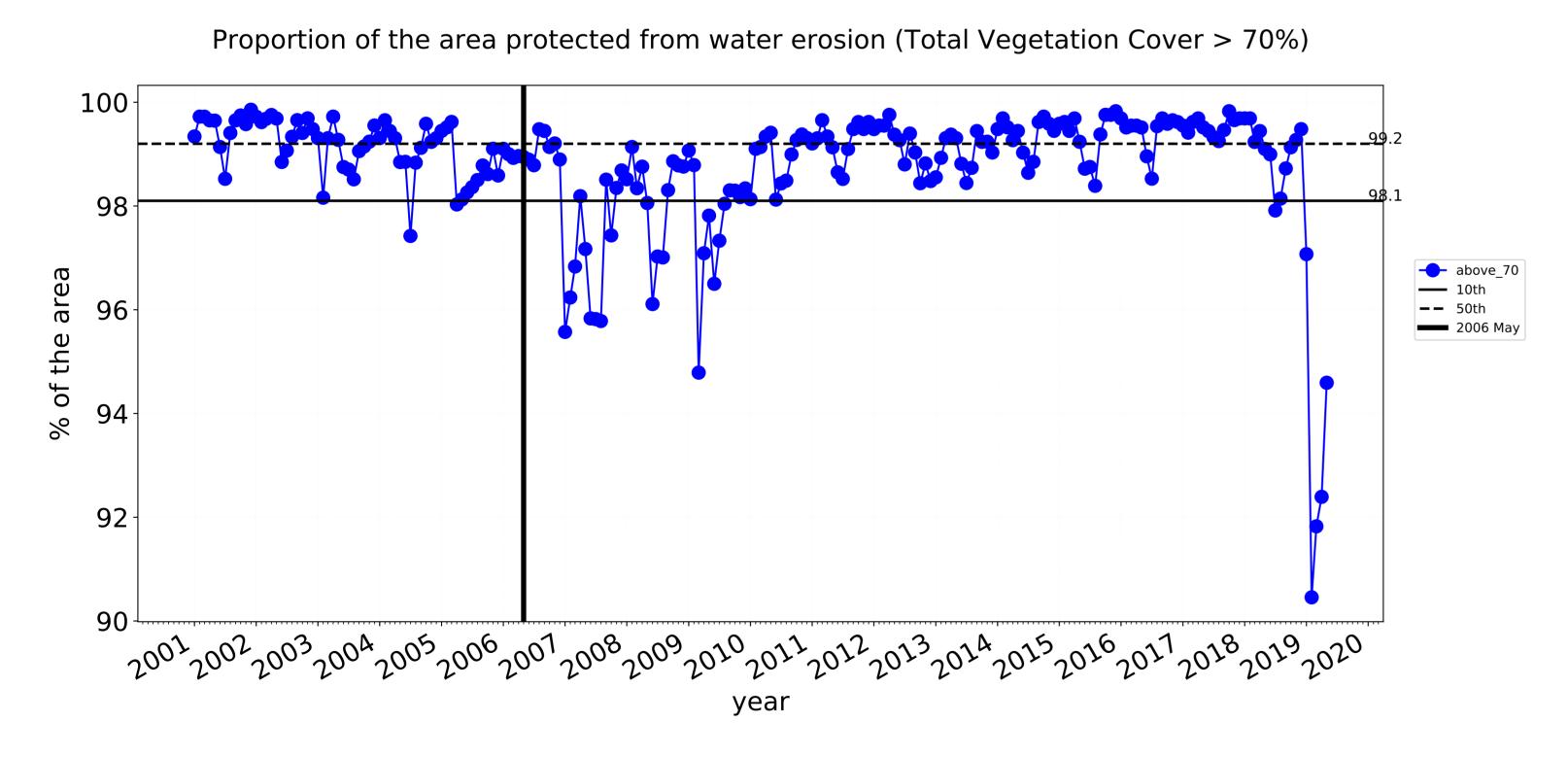


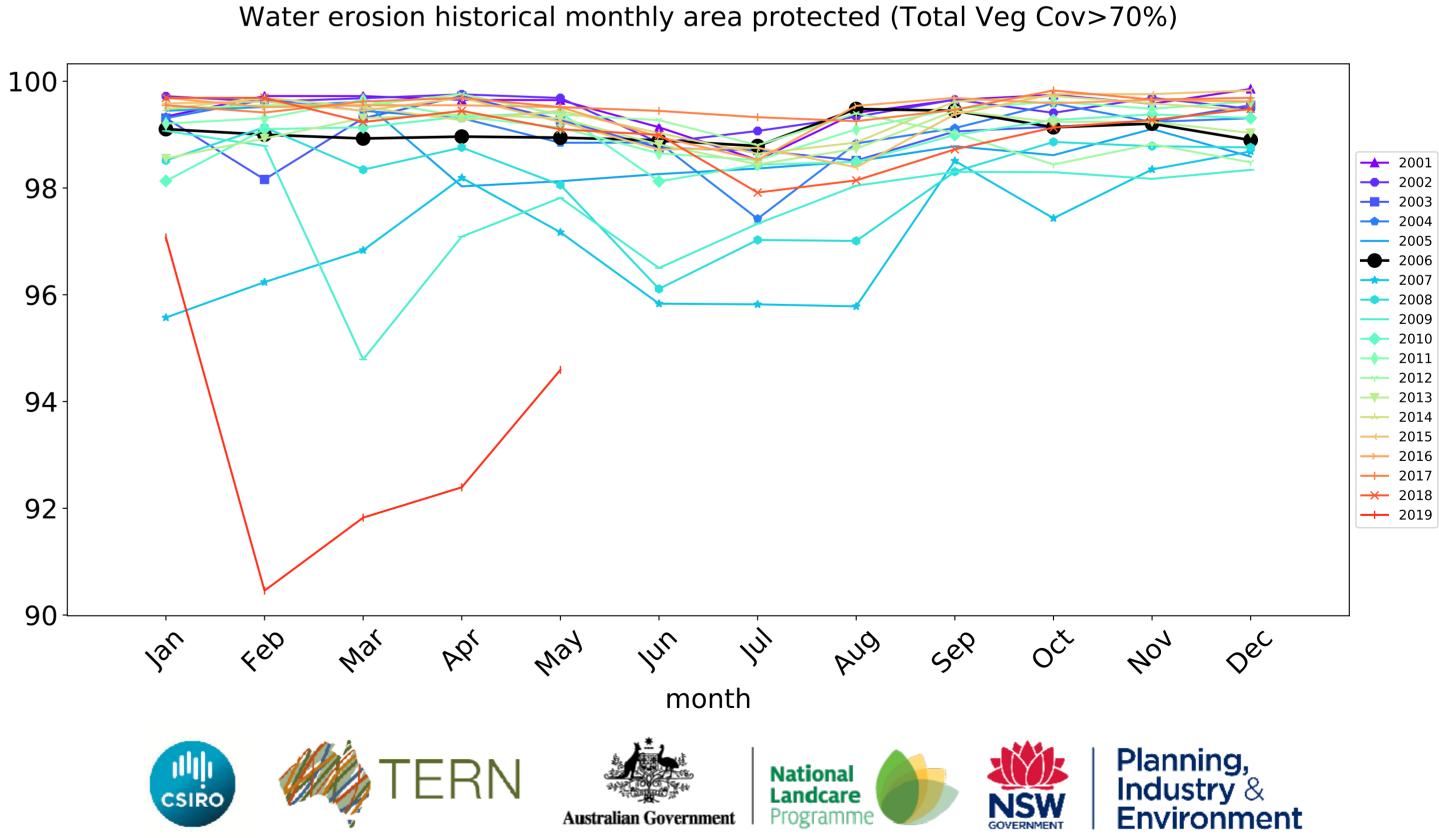


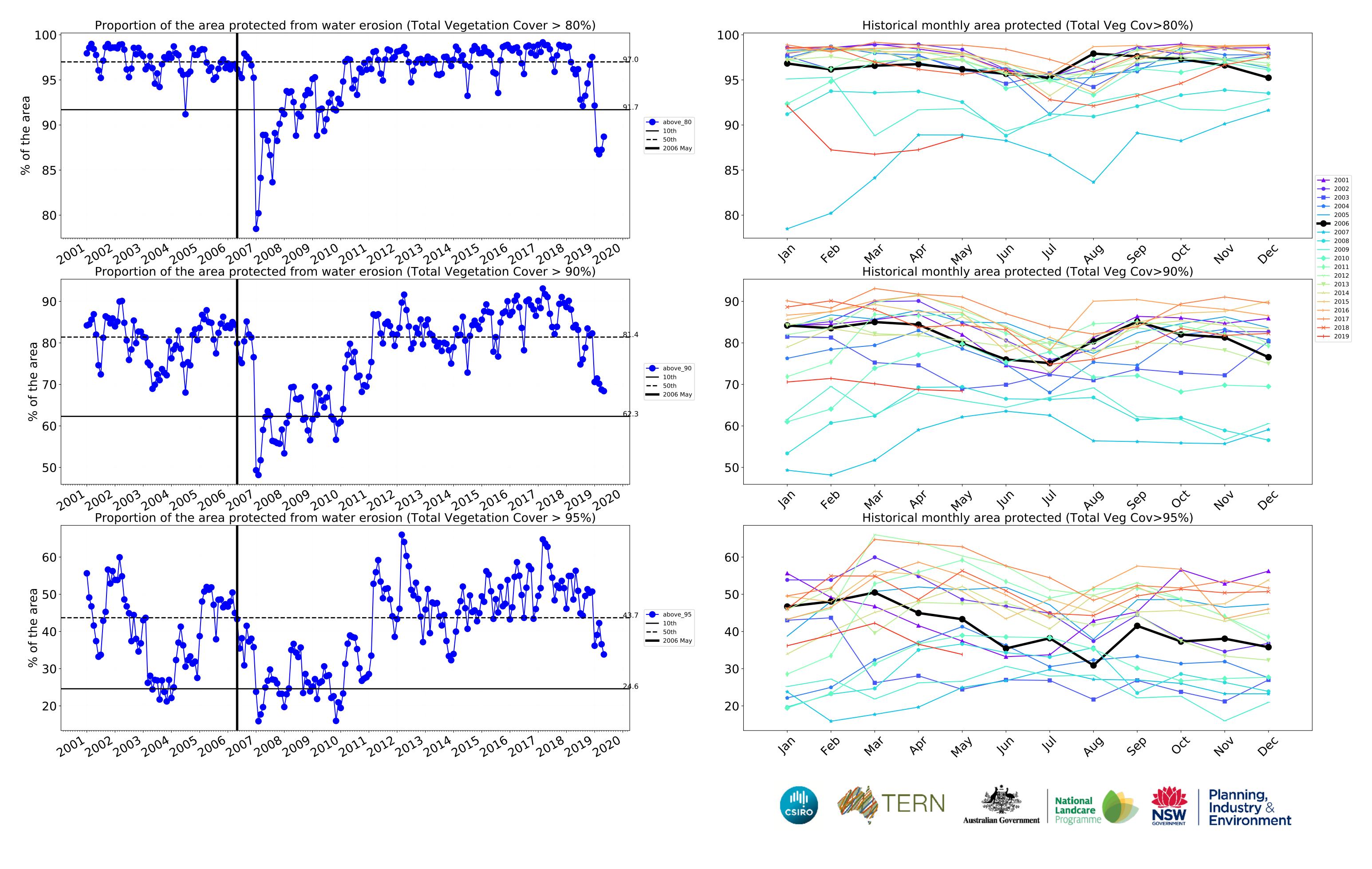


# Wind erosion historical monthly area protected (Total Veg Cov >50%)









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

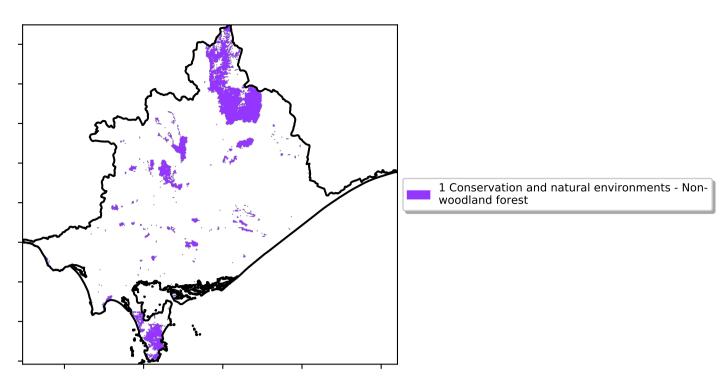
#### **Land use and forest cover**

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

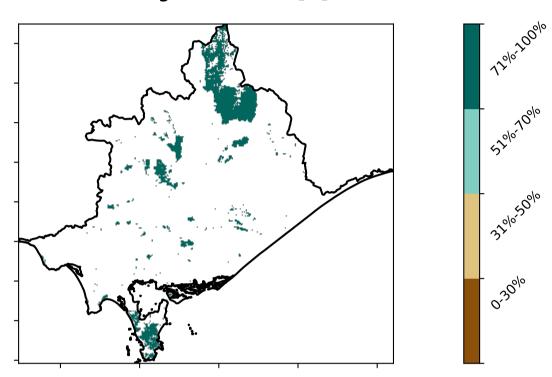
Anomaly show how many percetage points each pixel is from the mean. That

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

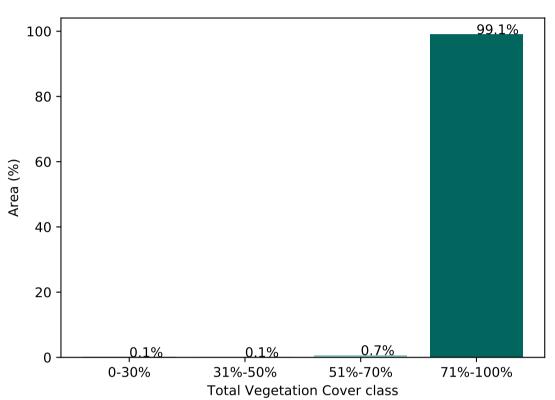
is, red pixels are about 20% lower than the mean of that



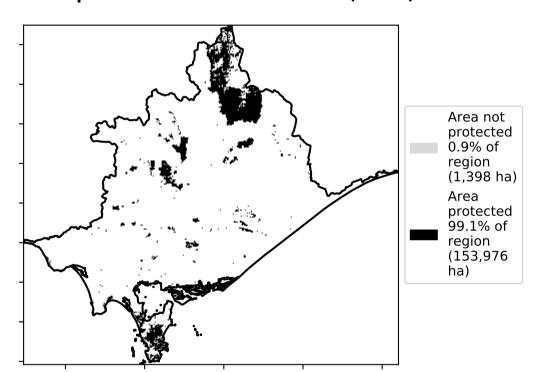
#### **Total Vegetation Cover [%]**



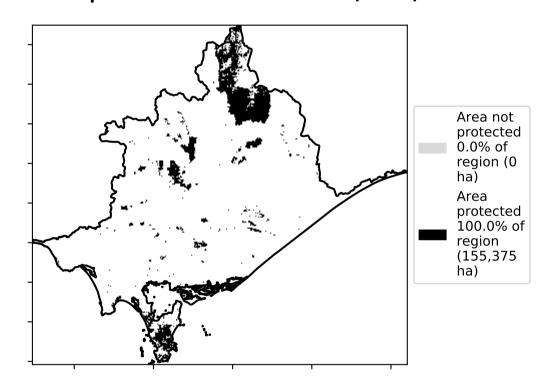
**Proportion of vegetation cover class in area** 



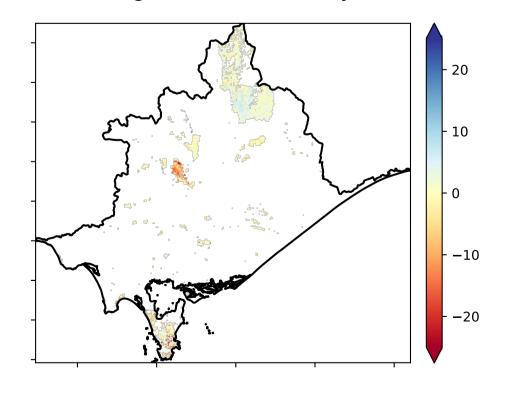
# % Area protected from water erosion (>70%)



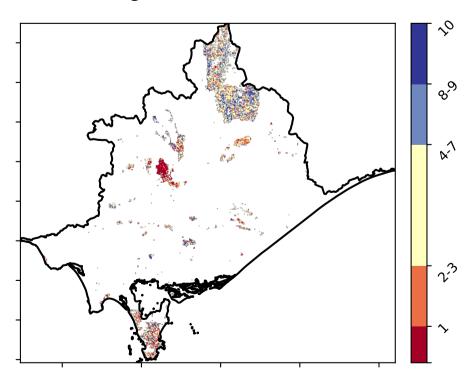
% Area protected from wind erosion (>50%)



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



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





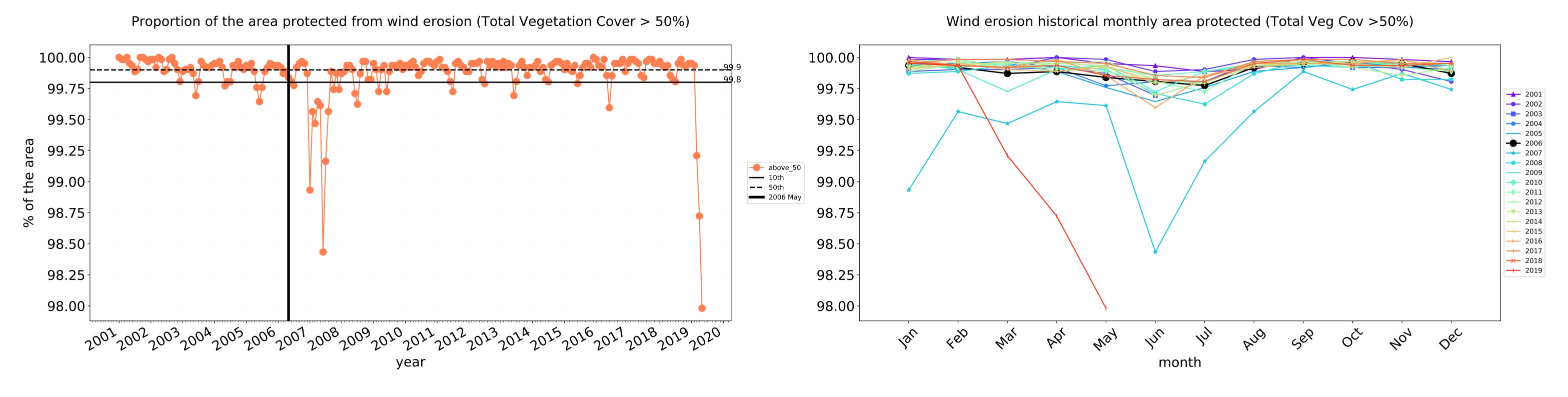


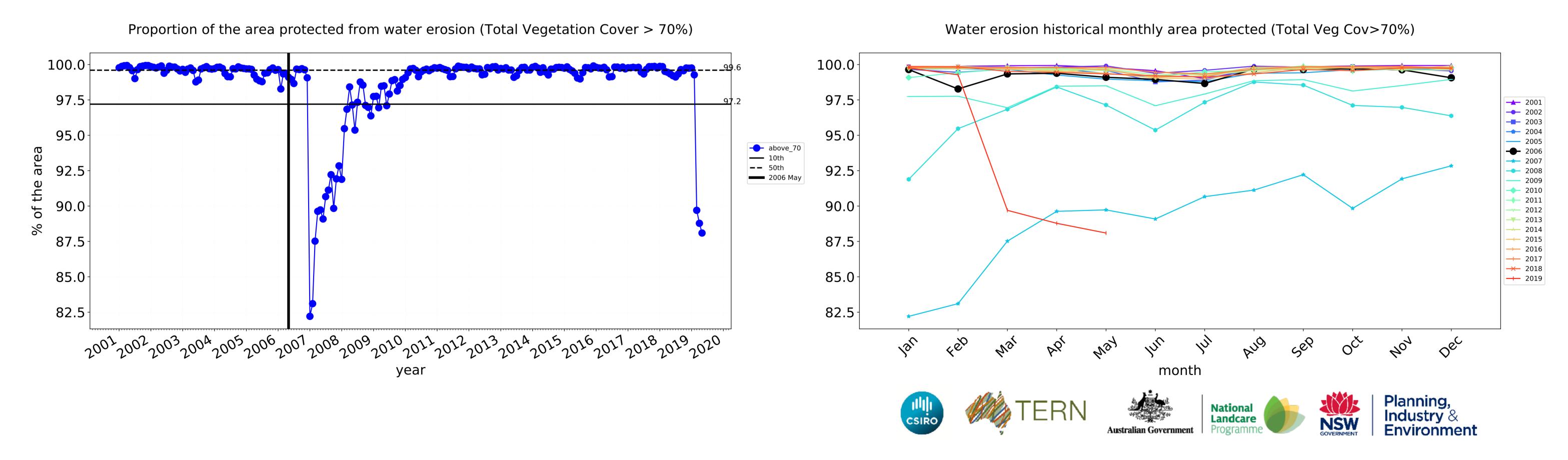


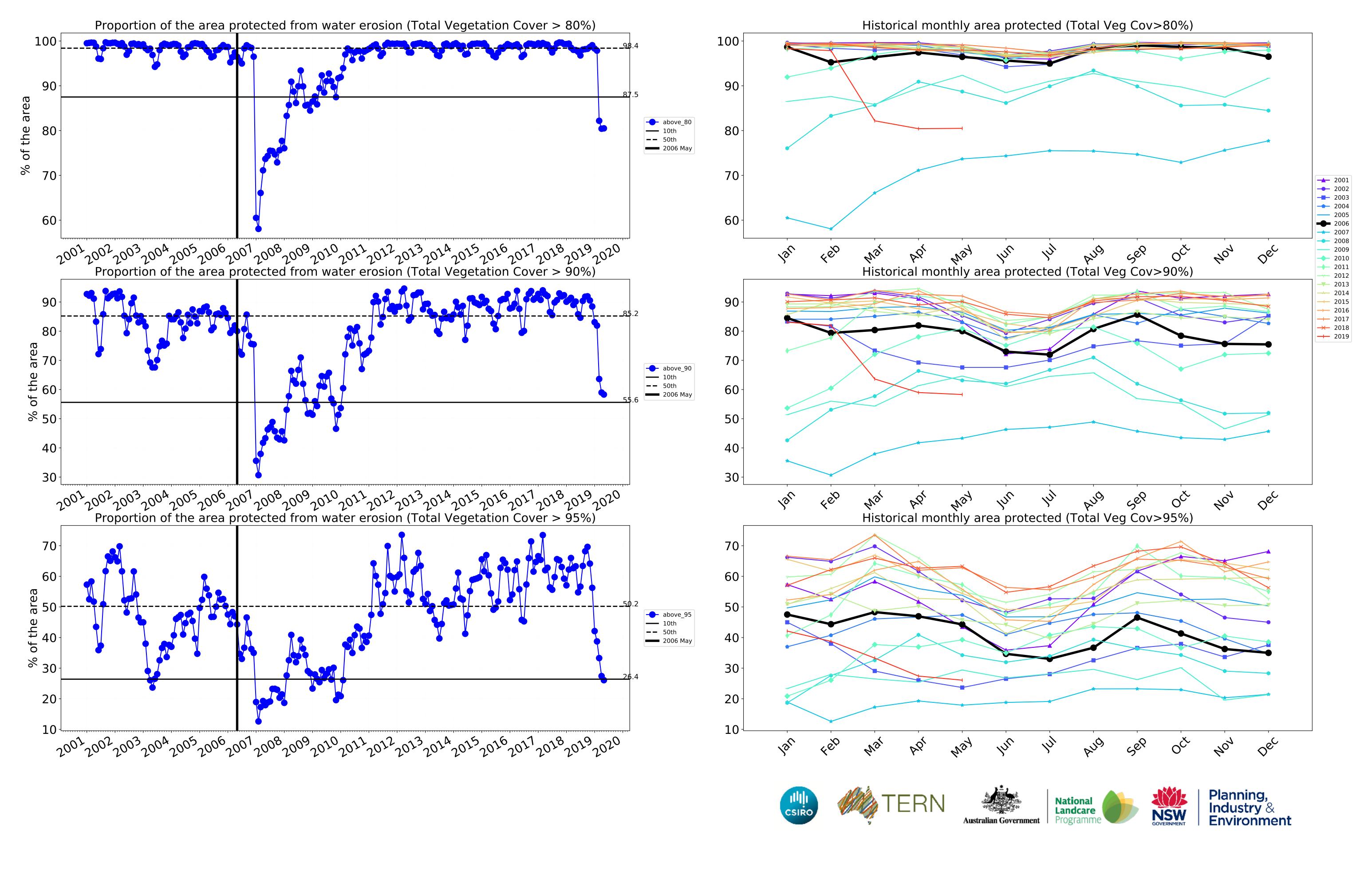












# **Agriculture**

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

(2018) and Forests

of Australia (2018)

Anomaly show how many percetage points each

pixel is from

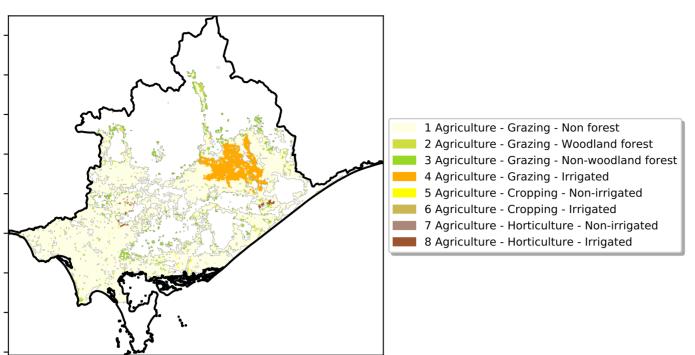
is, red pixels are about 20% lower than the mean of that

the mean. That

pixel. The mean

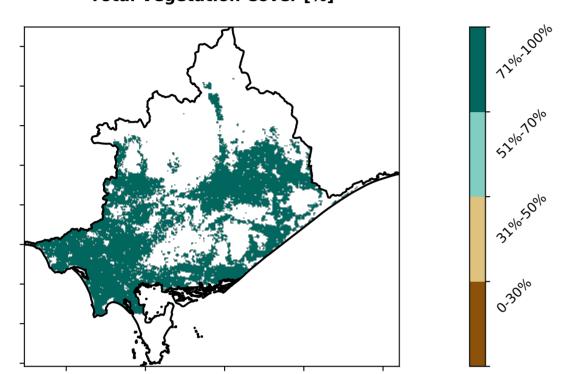
using baseline from 2001 to 2019.

is only for the month of the map

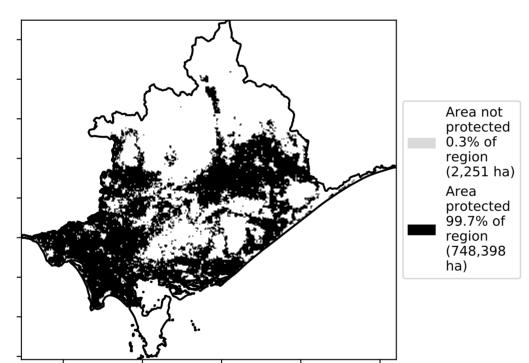


# **Total Vegetation Cover [%]**

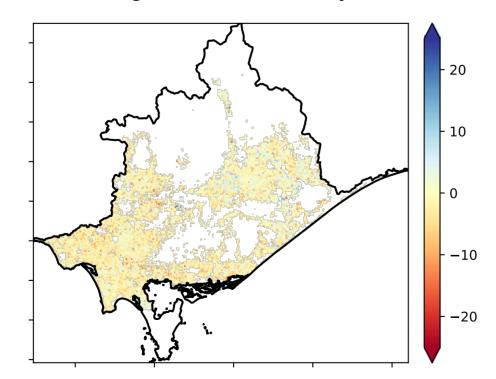
Land use and forest cover



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

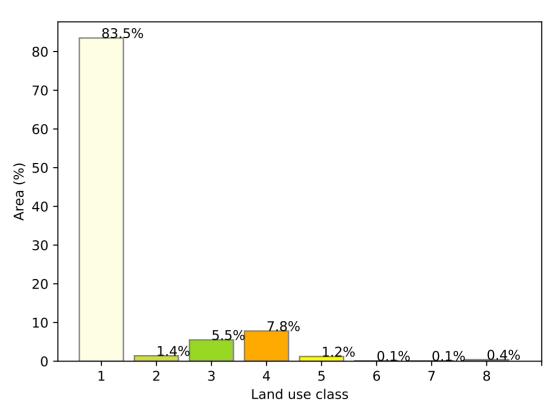


# **Total Vegetation Cover Anomaly [%]**

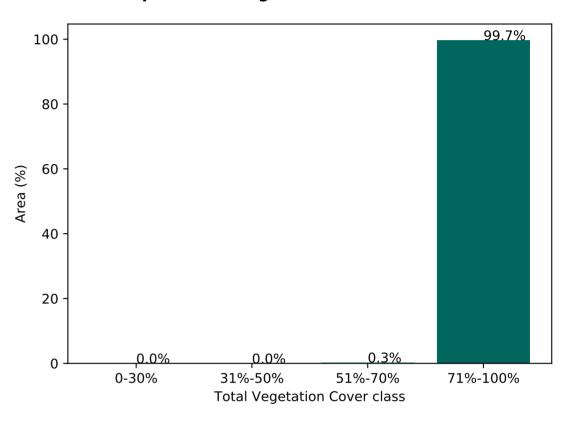


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

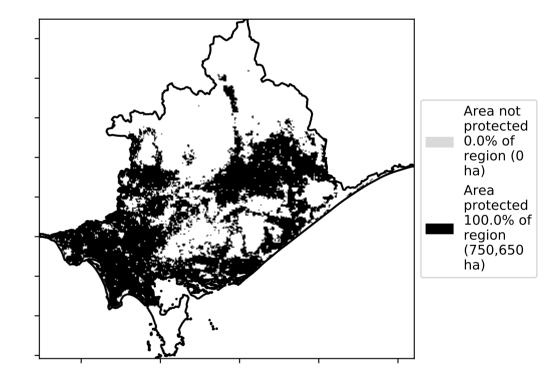
#### Proportion of each land class in area

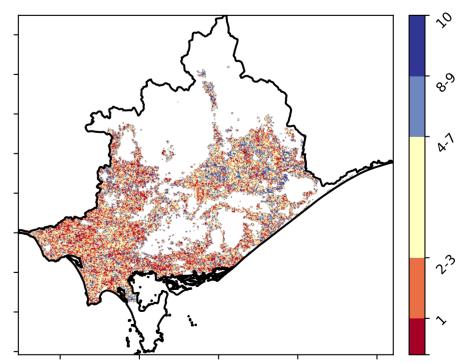


#### Proportion of vegetation cover class in area



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









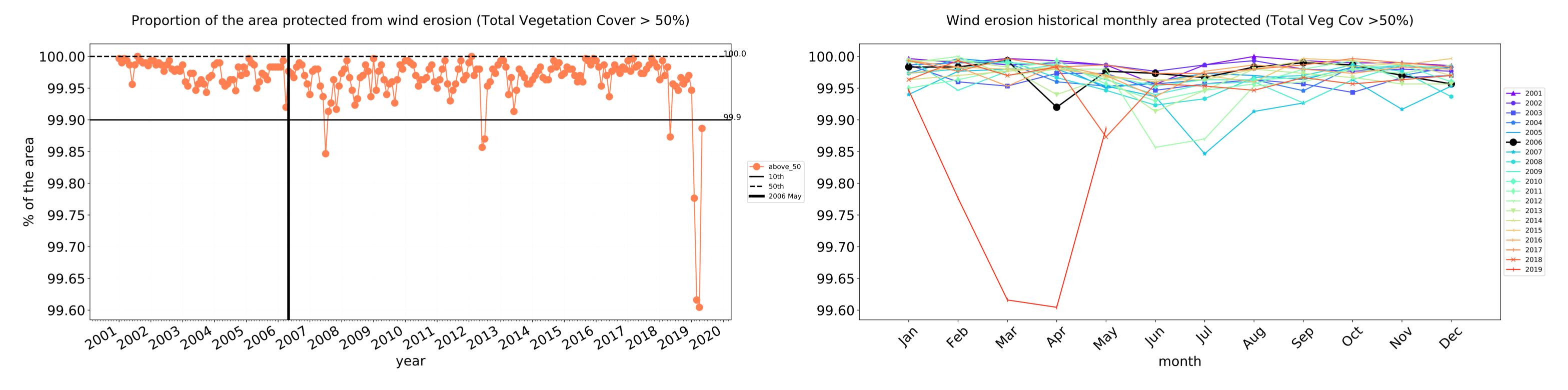


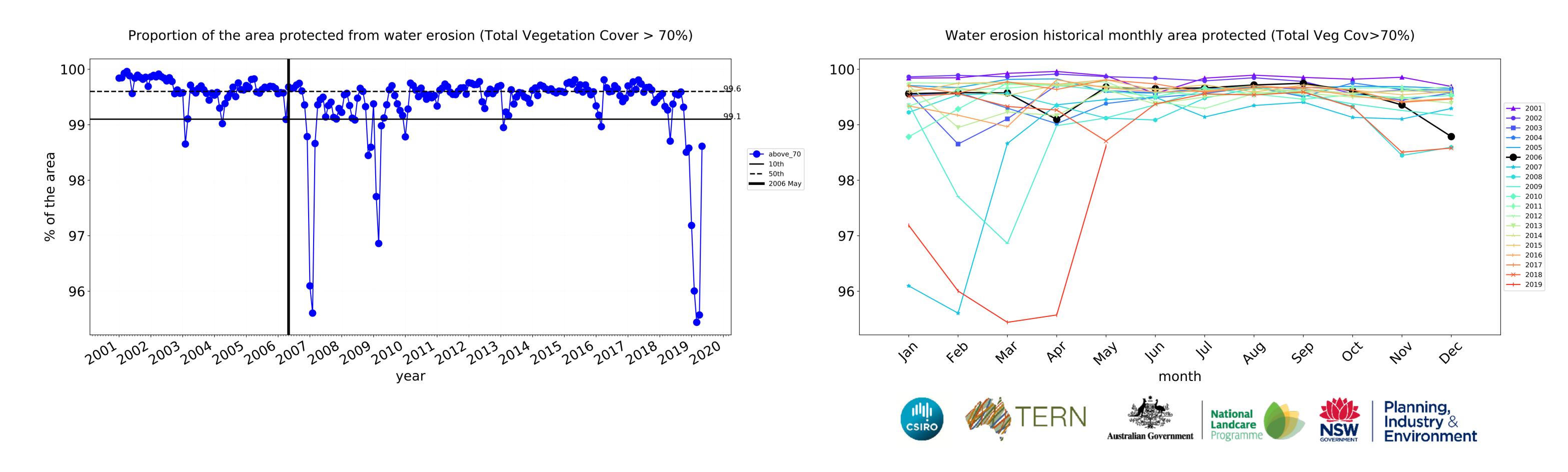


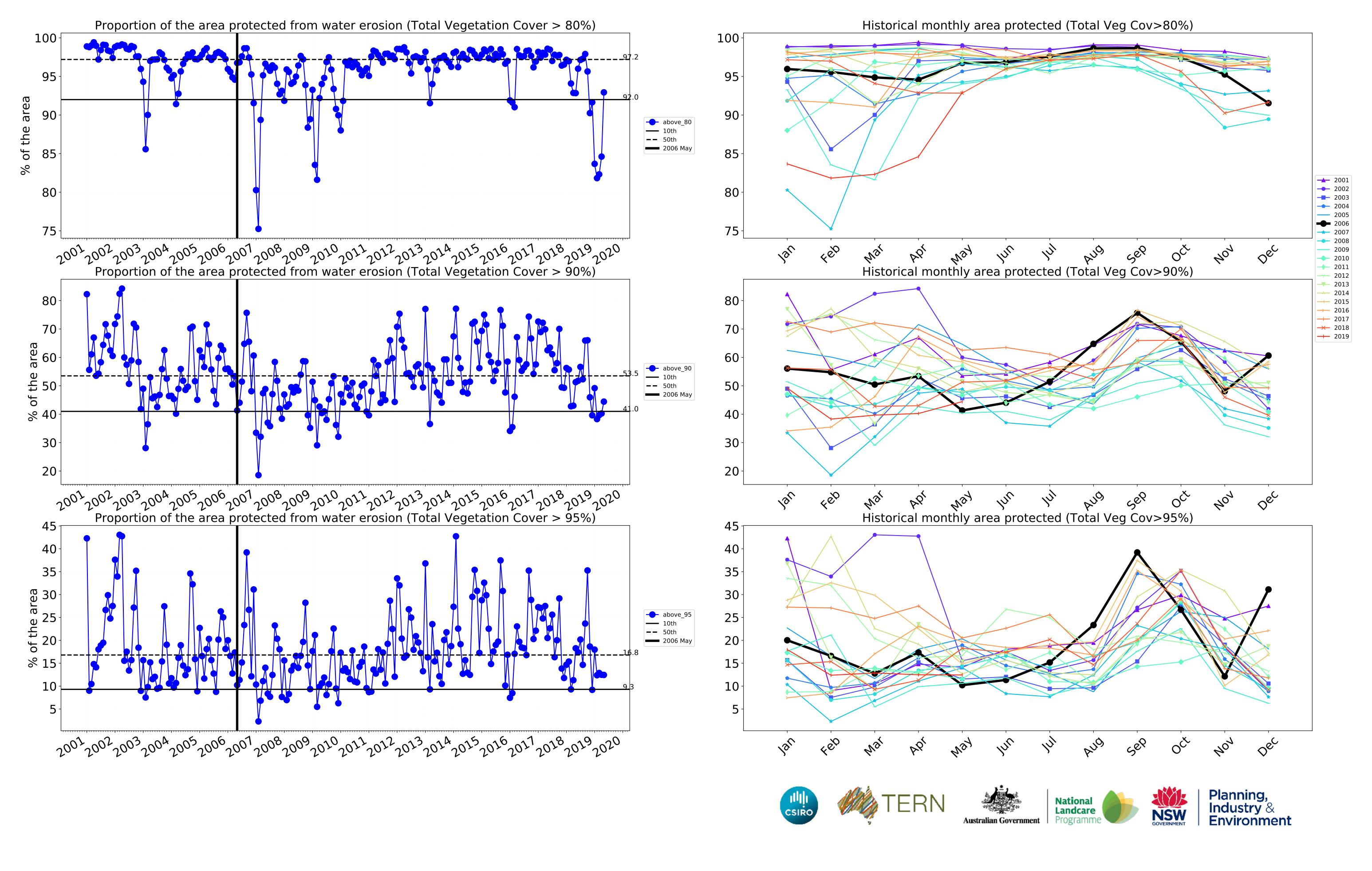




# **Agriculture timeseries**







# **Grazing**

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

Anomaly show how many percetage points each

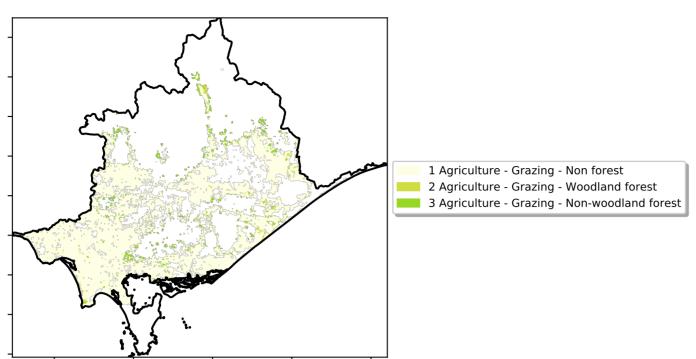
pixel is from the mean. That

pixel. The mean

using baseline from 2001 to 2019.

is only for the month of the map

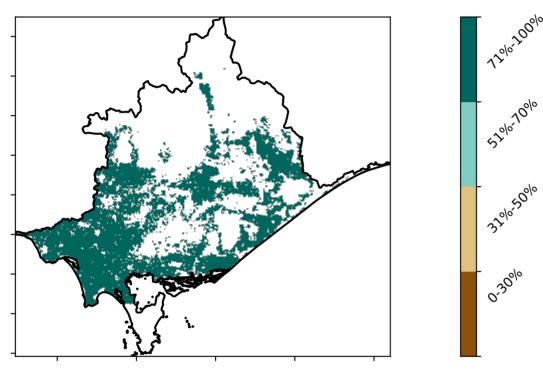
is, red pixels are about 20% lower than the mean of that

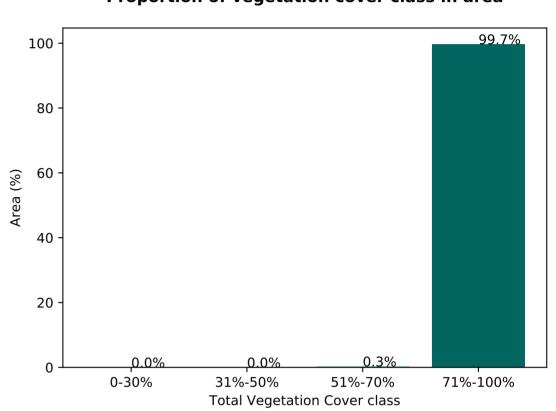


# 92.4% 80 Area (%) 20 6.1% 1.6% 2 Land use class

Proportion of each land class in area

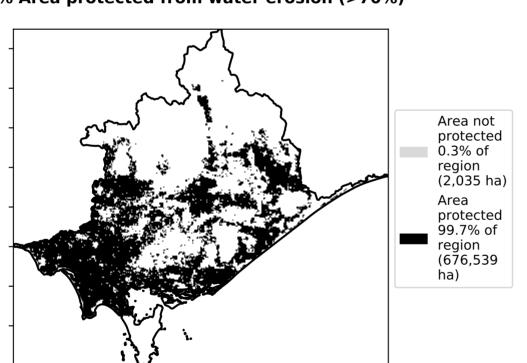




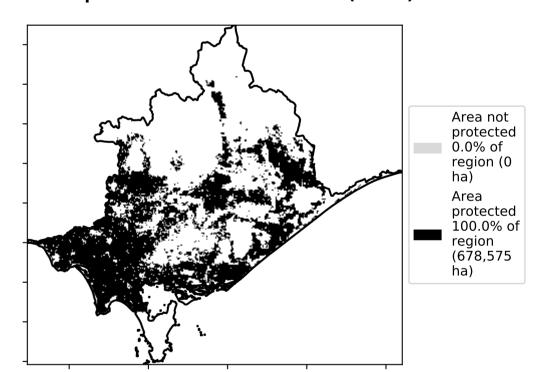


# % Area protected from water erosion (>70%)

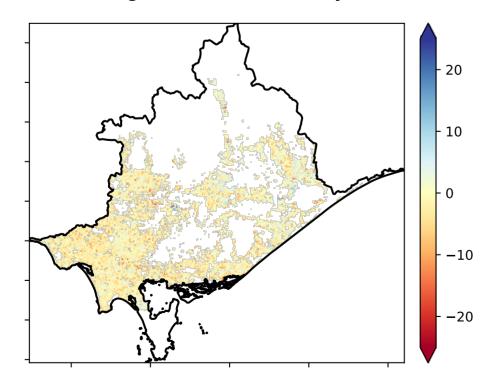
Land use and forest cover



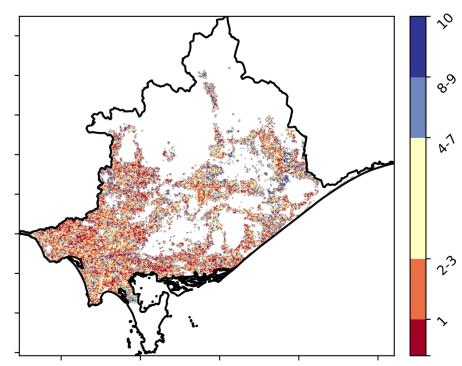
% Area protected from wind erosion (>50%)



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



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







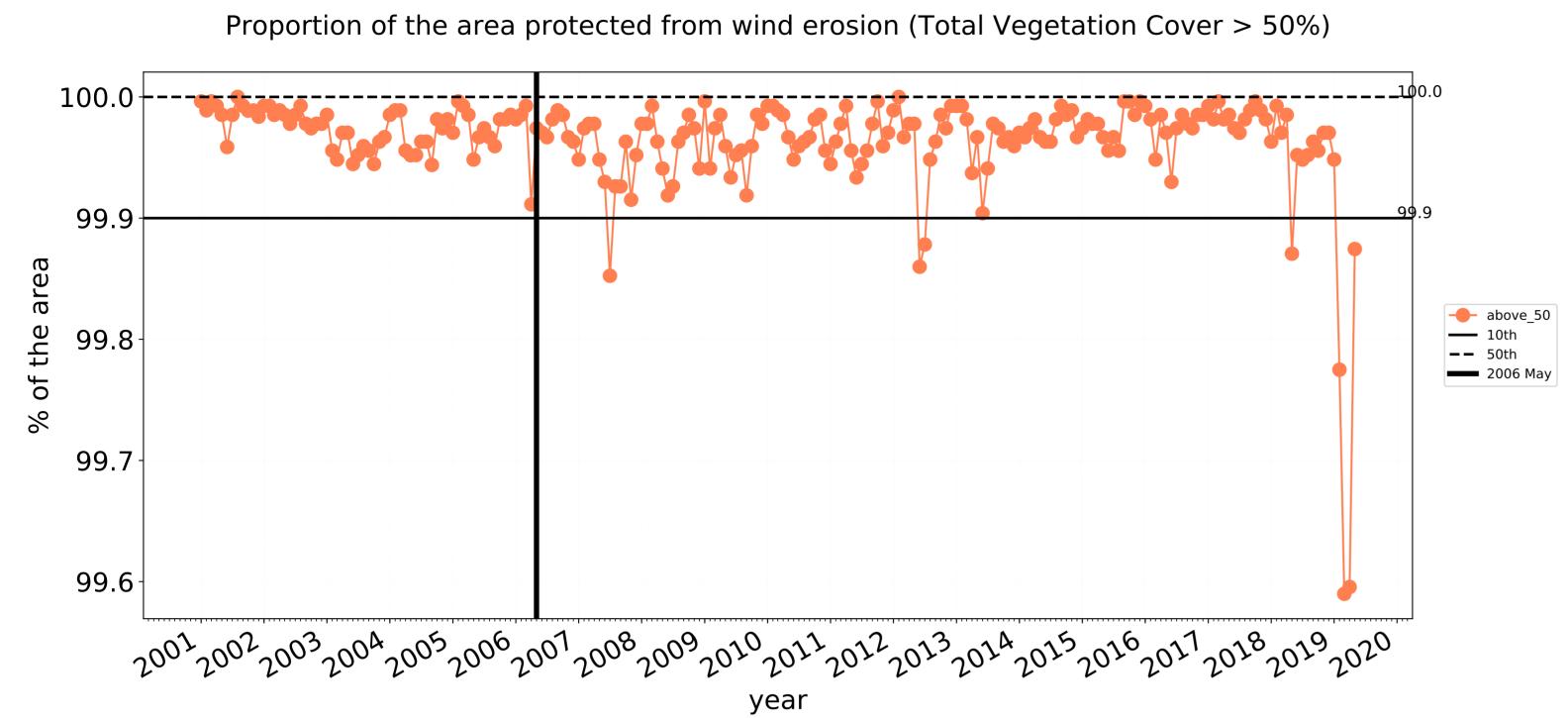


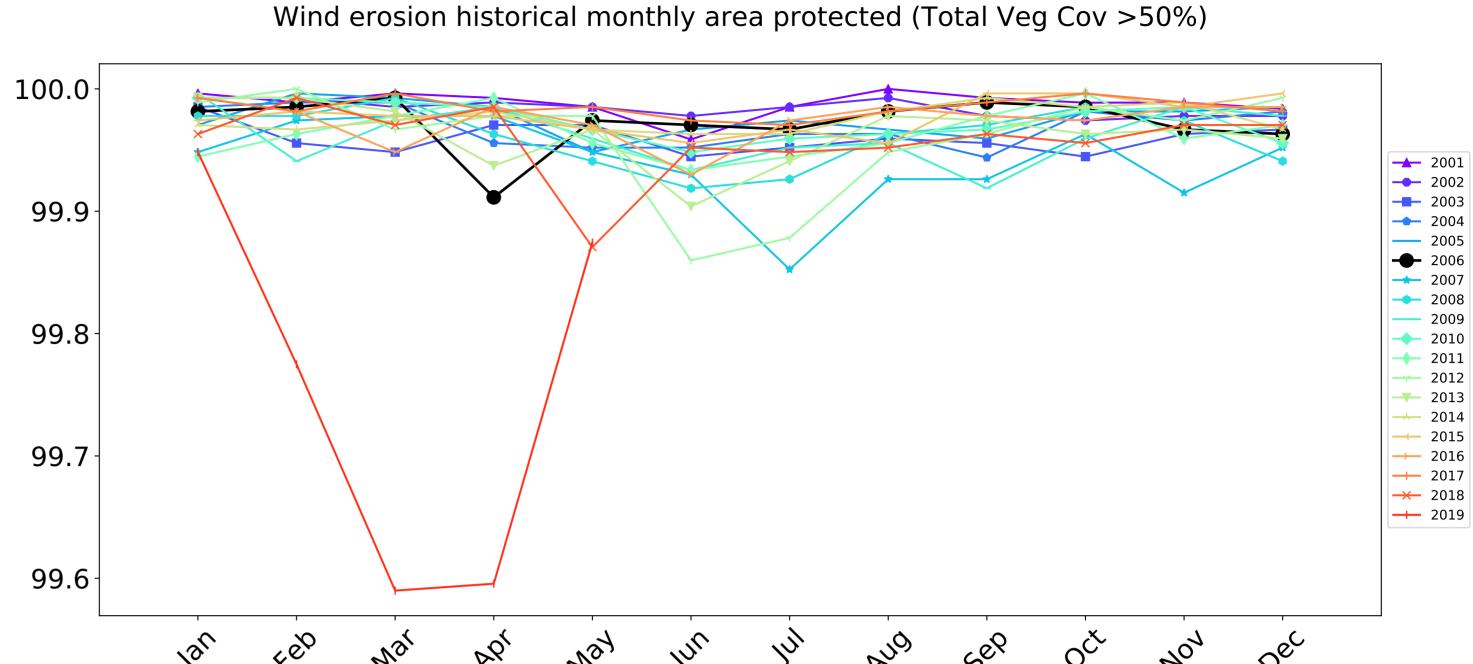




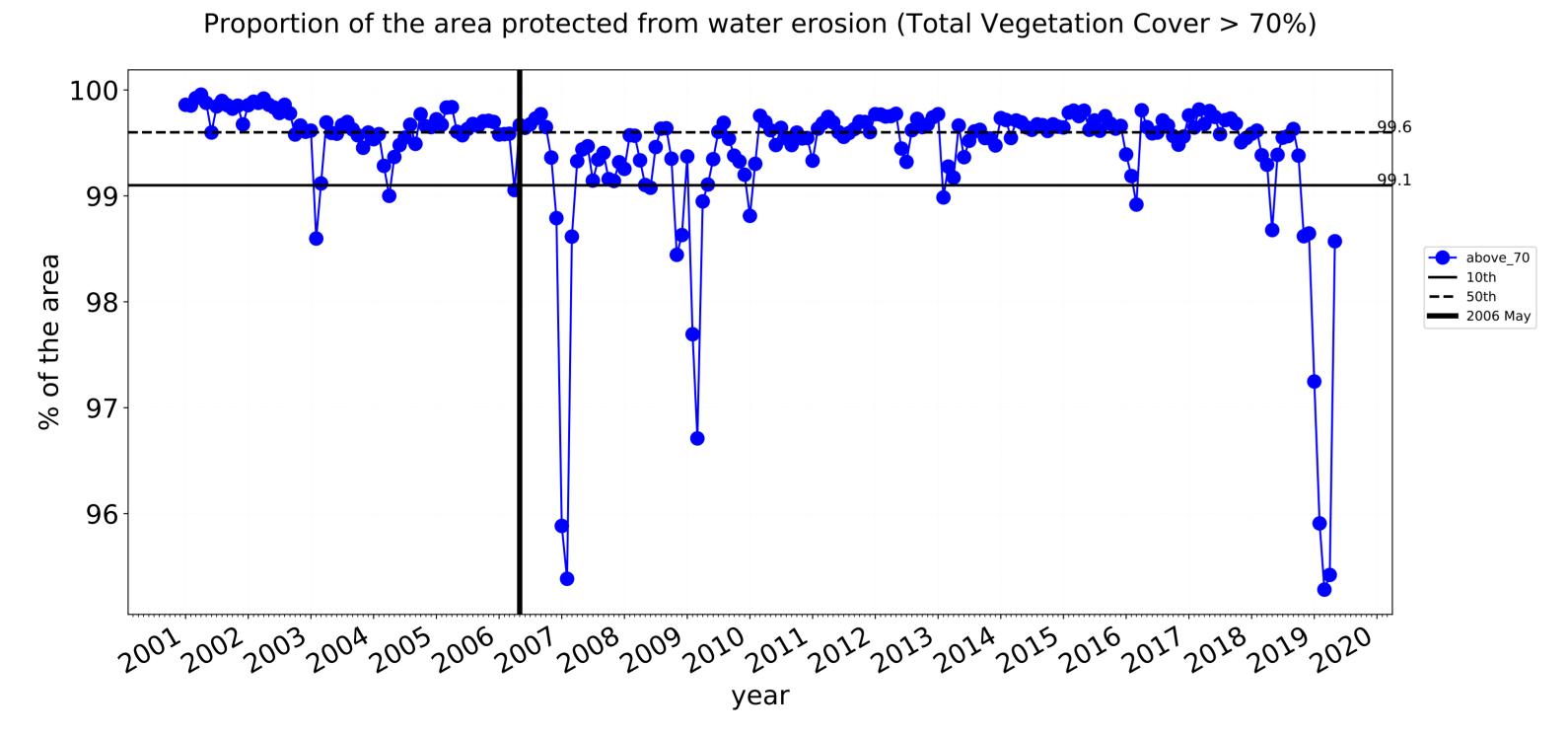


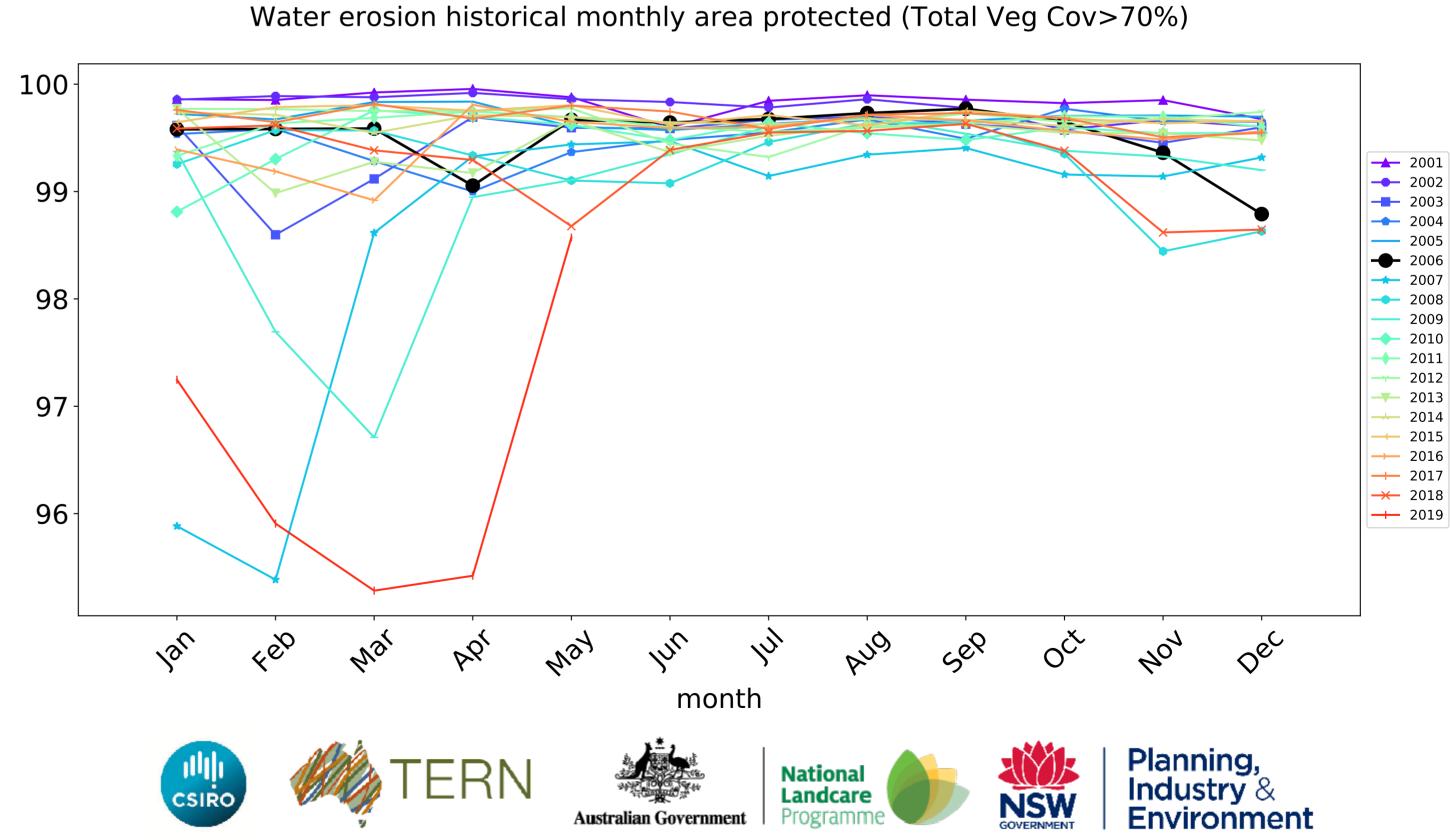
# **Grazing timeseries**

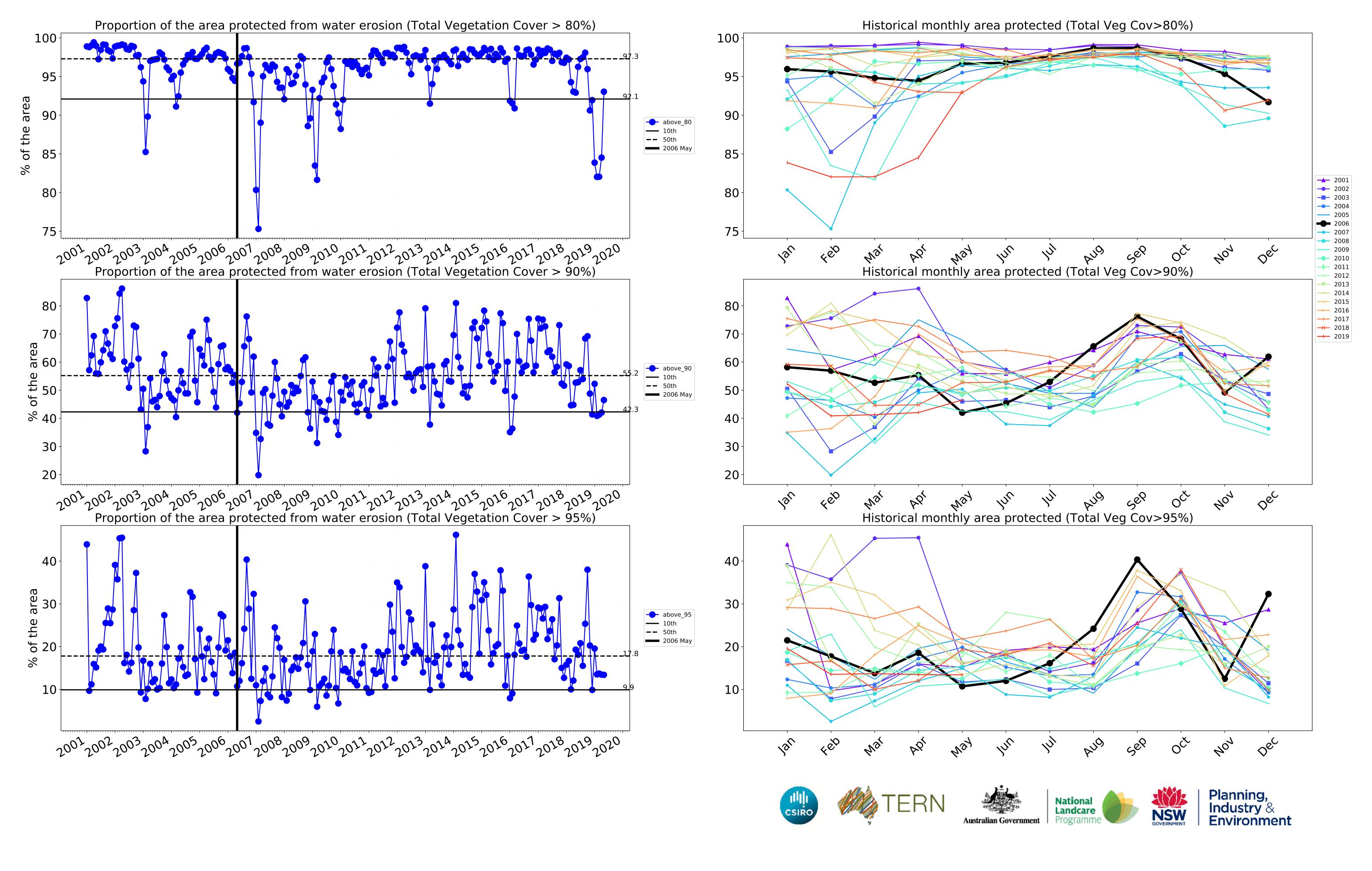




month







# **Grazing non forest**

#### Land use and forest cover

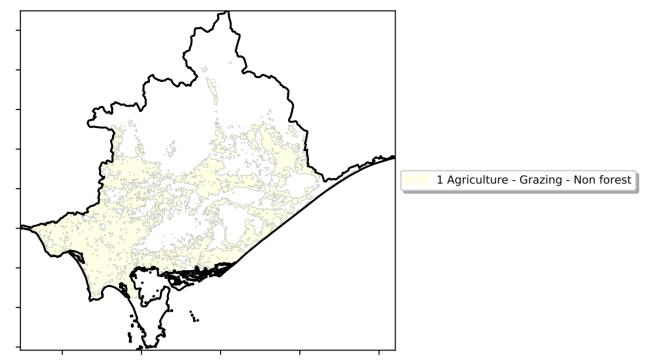
Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

Anomaly show how many percetage points each

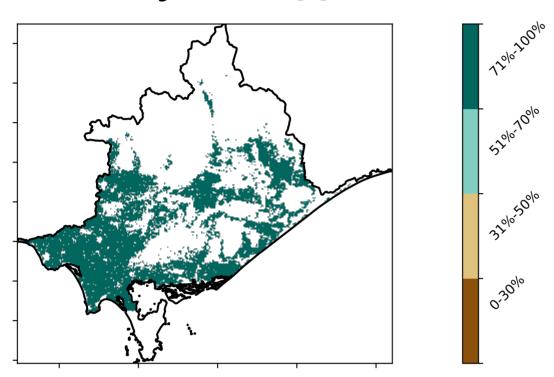
pixel is from the mean. That is, red pixels are about 20% lower than the

mean of that

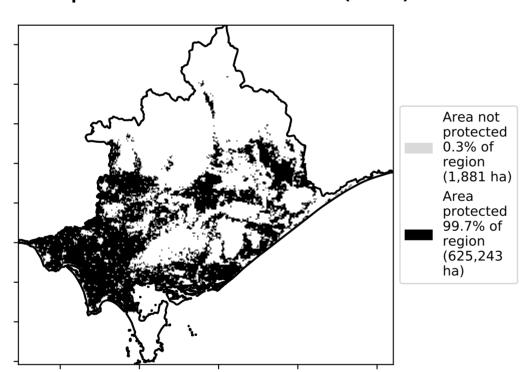
pixel. The mean is only for the month of the map using baseline from 2001 to 2019.



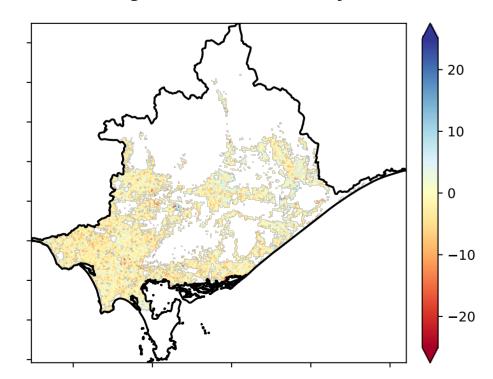
#### **Total Vegetation Cover [%]**



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

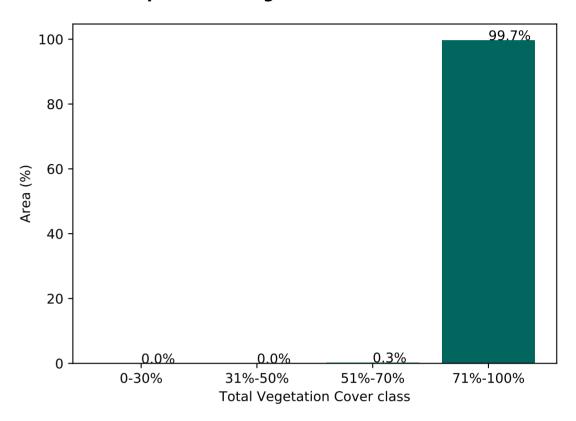


# Total Vegetation Cover Anomaly [%]

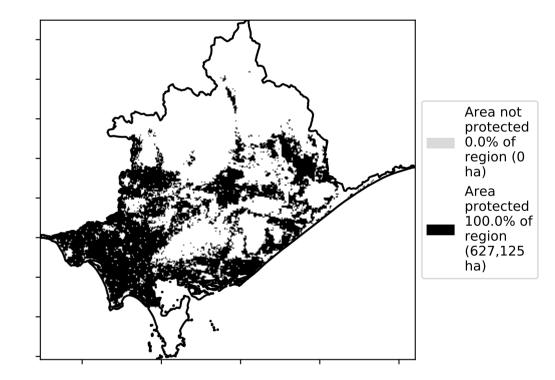


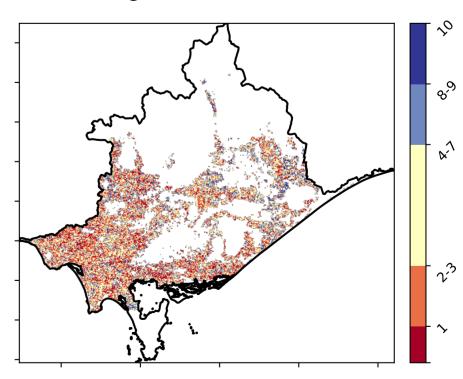
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

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



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









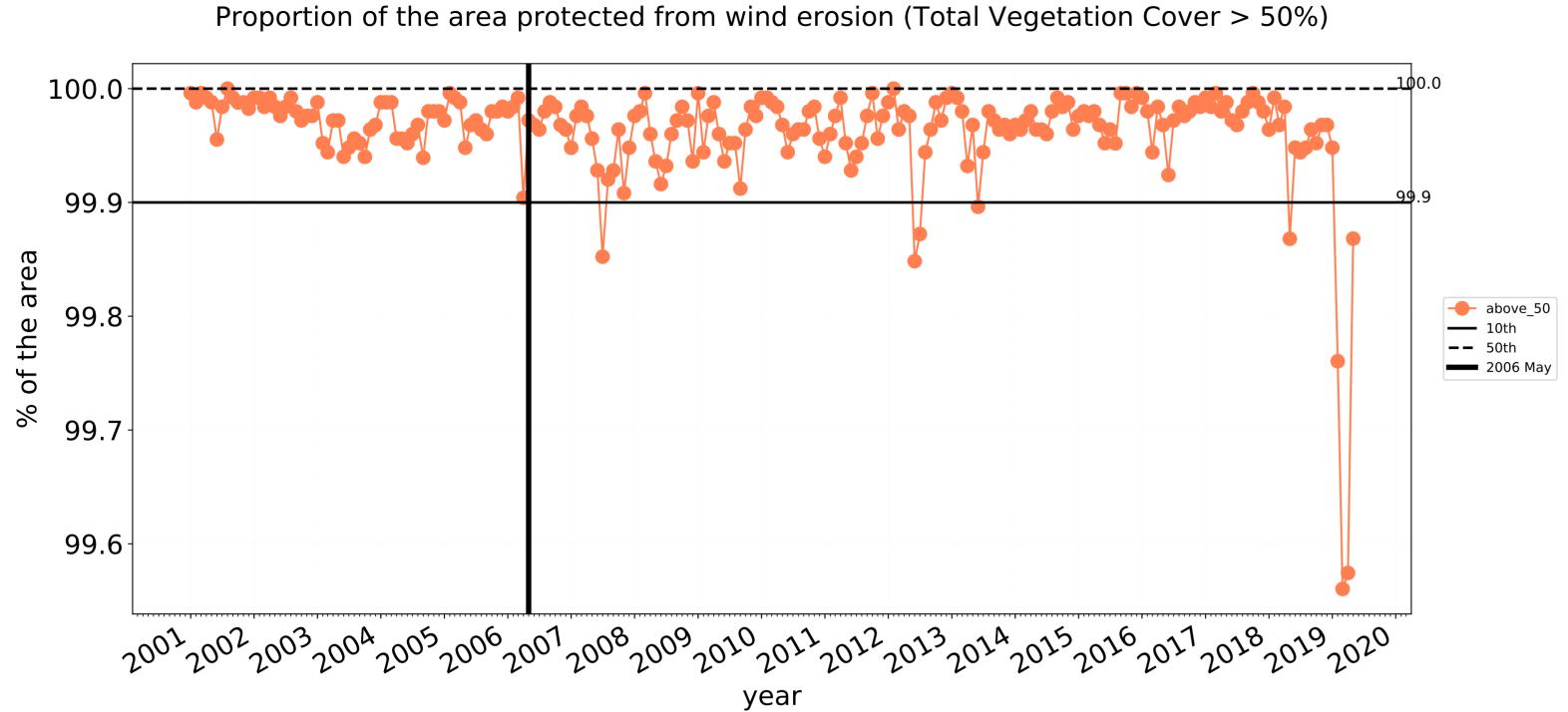


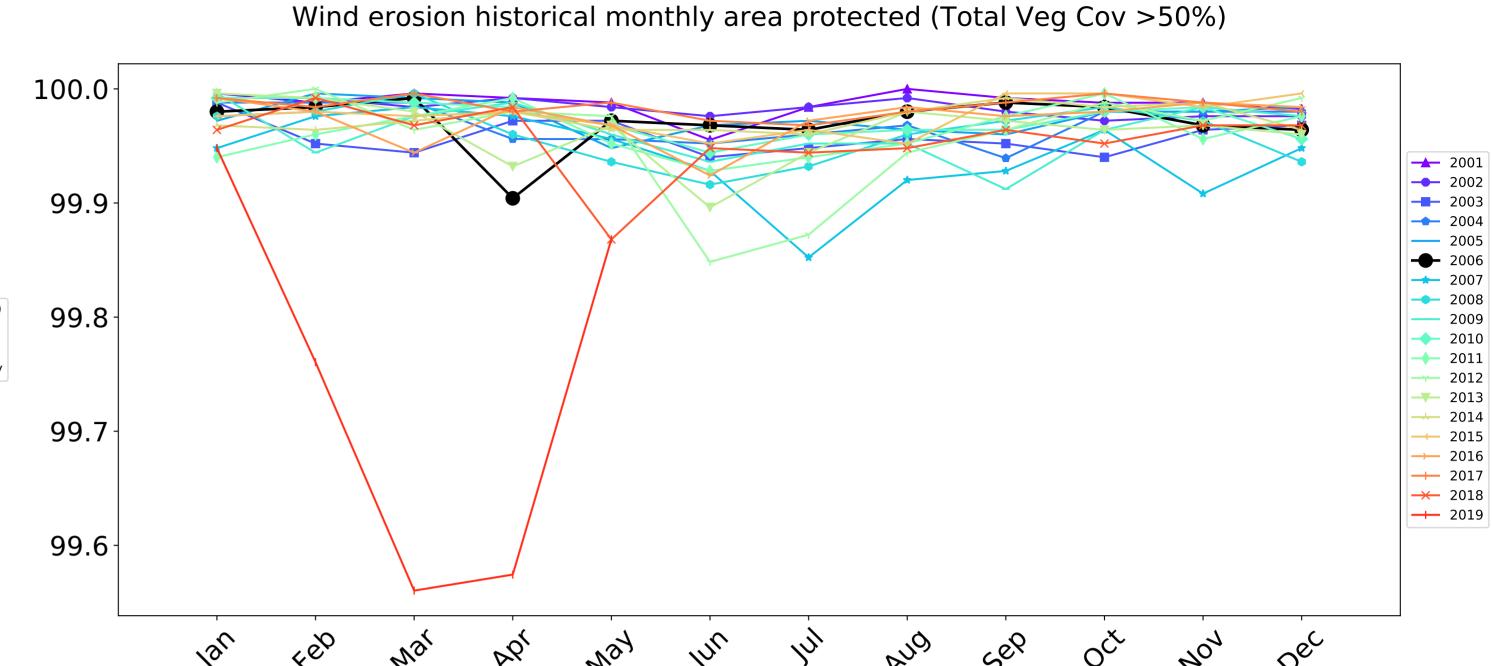




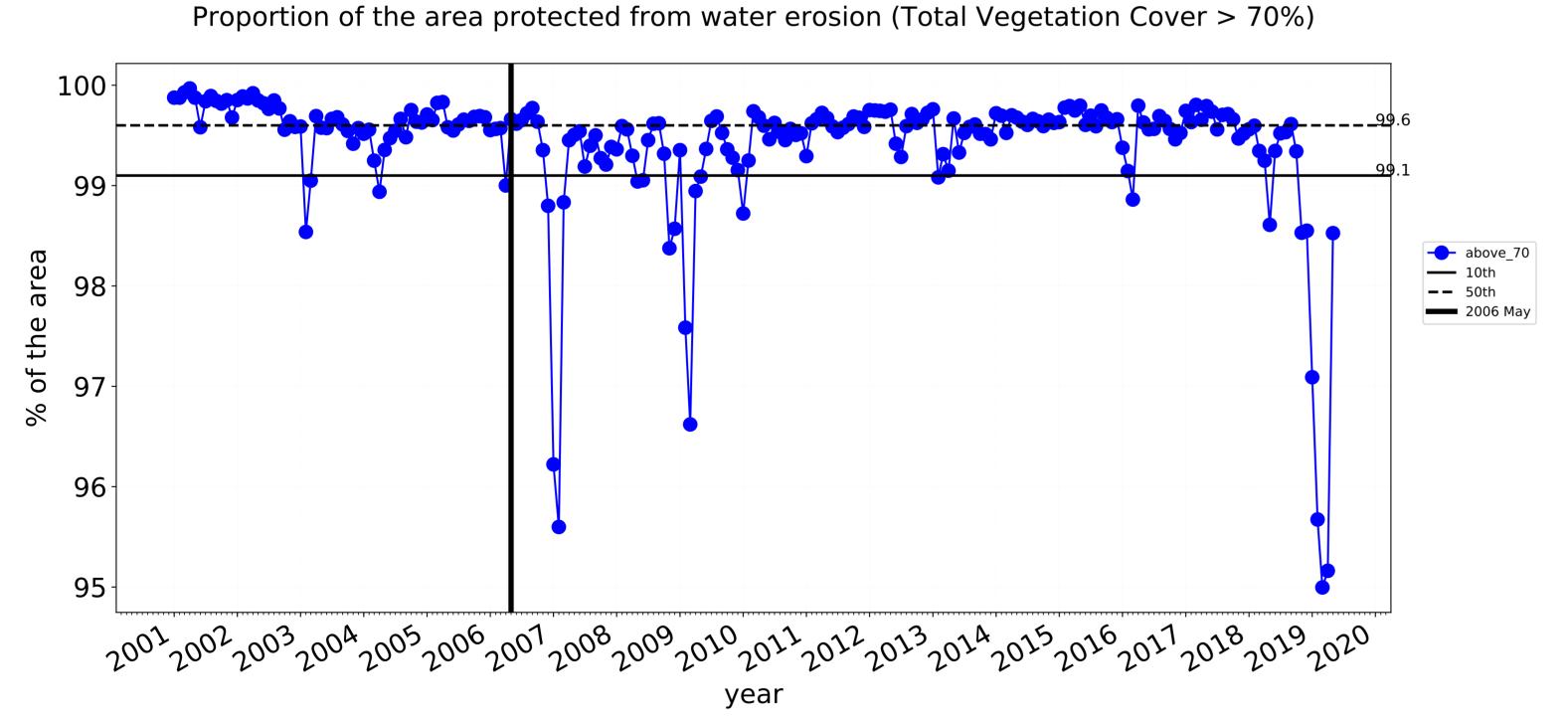


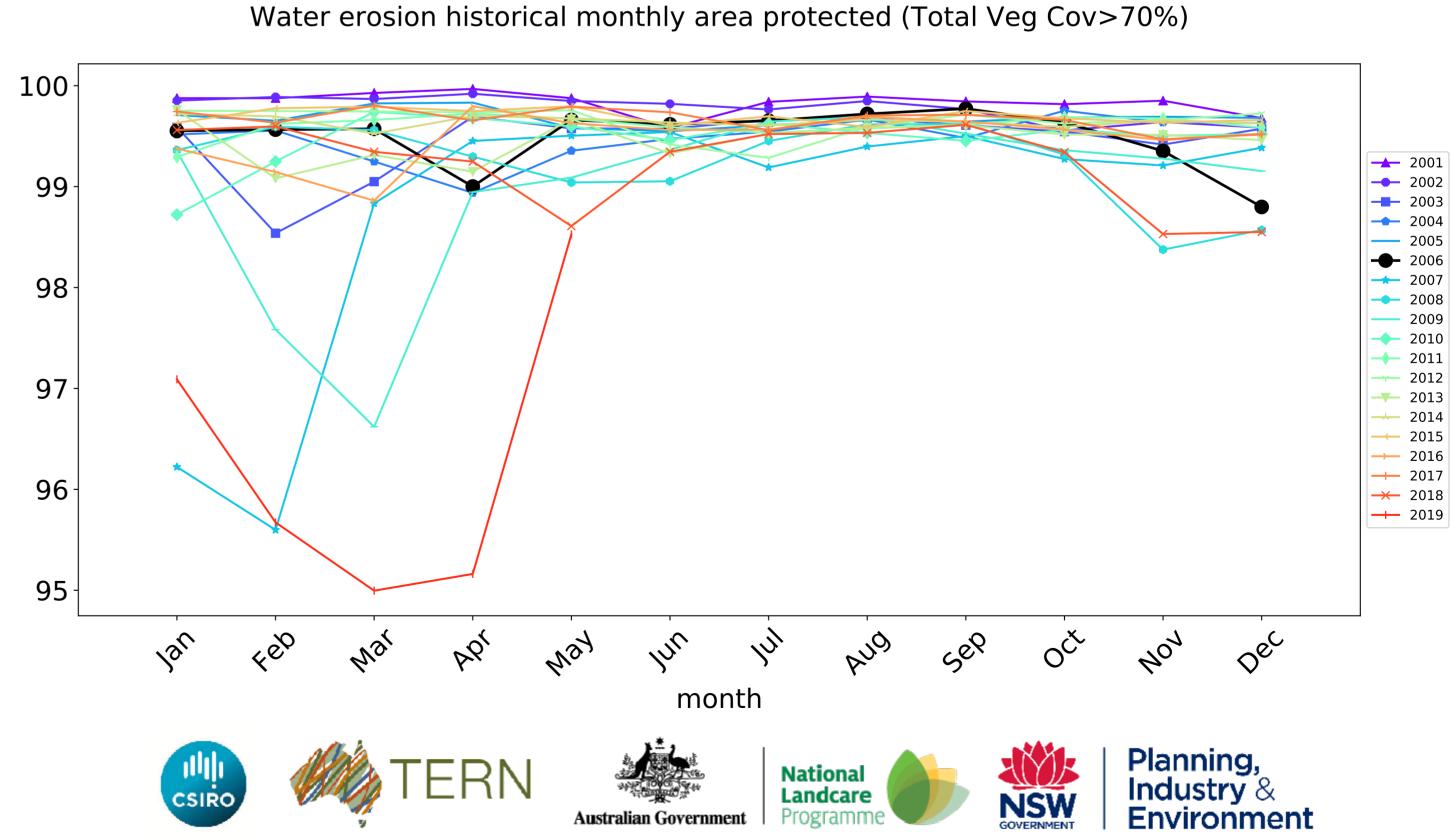
# **Grazing non forest timeseries**

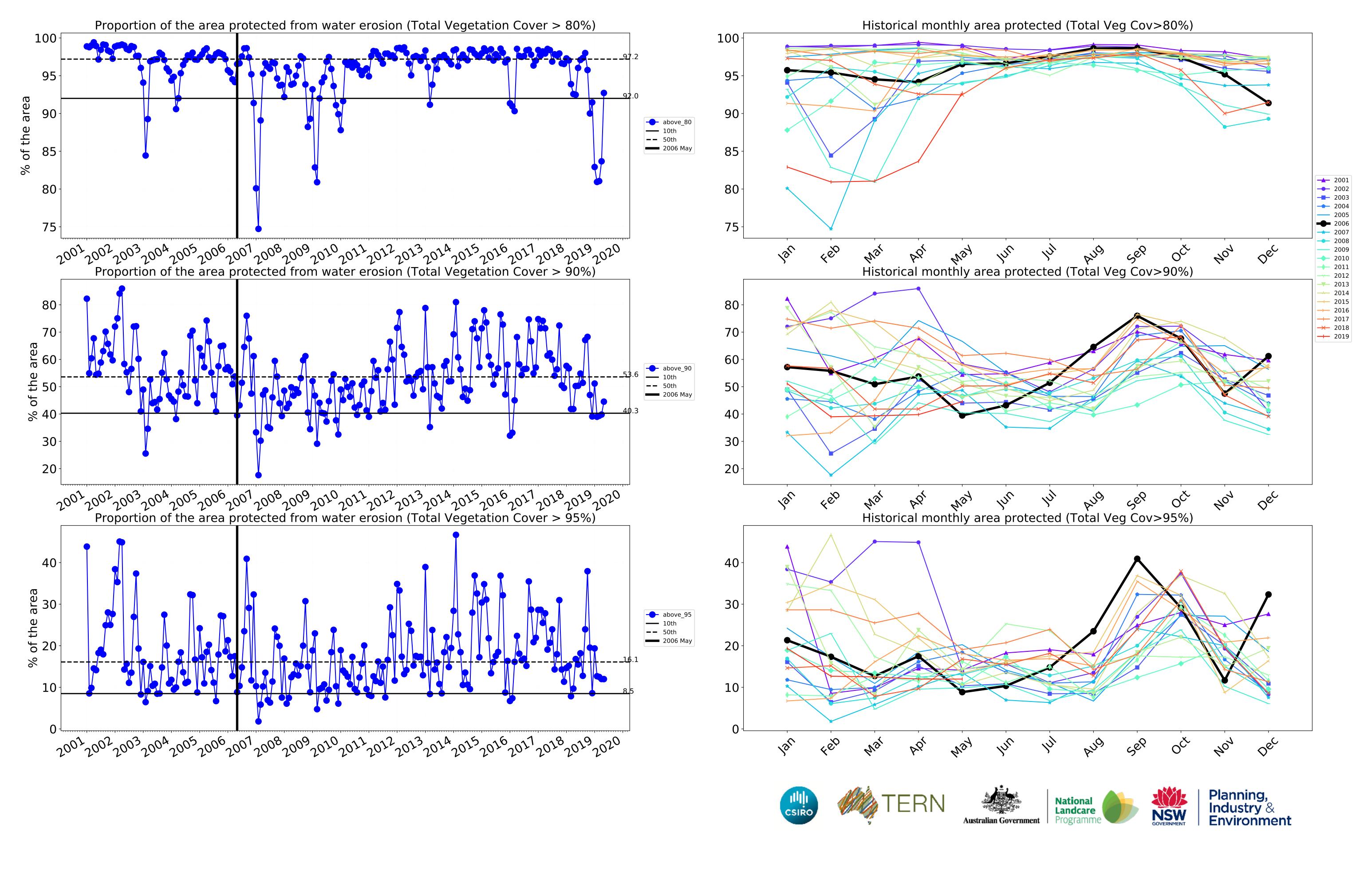




month







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

#### 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 of Australia (2018)

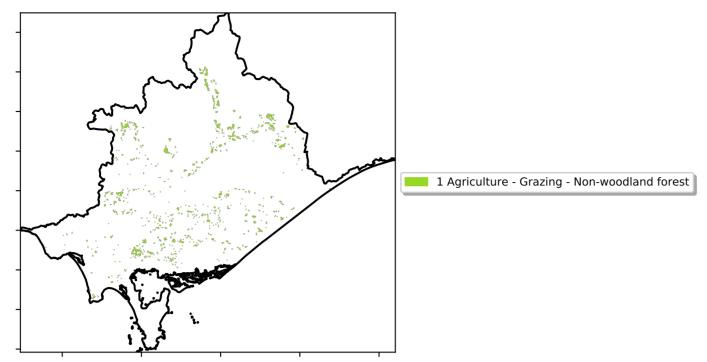
Anomaly show how many percetage points each

pixel is from the mean. That

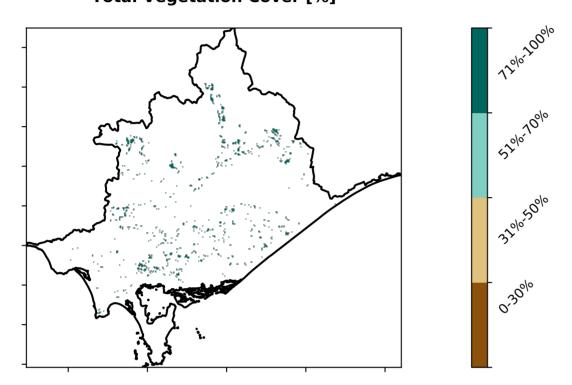
is only for the month of the map

using baseline from 2001 to 2019.

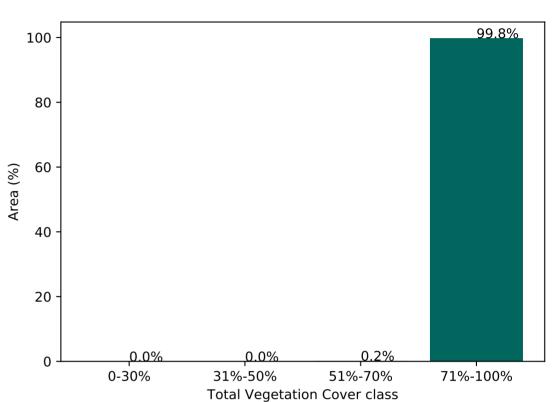
is, red pixels are about 20% lower than the mean of that pixel. The mean



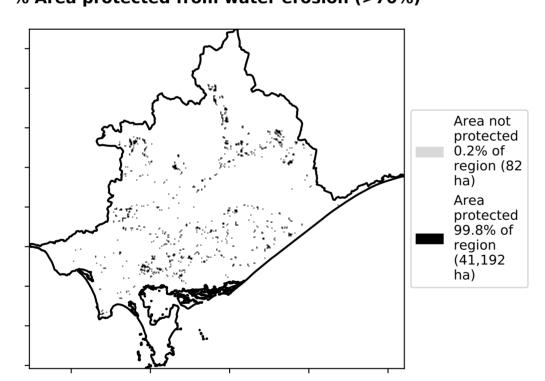
# **Total Vegetation Cover [%]**



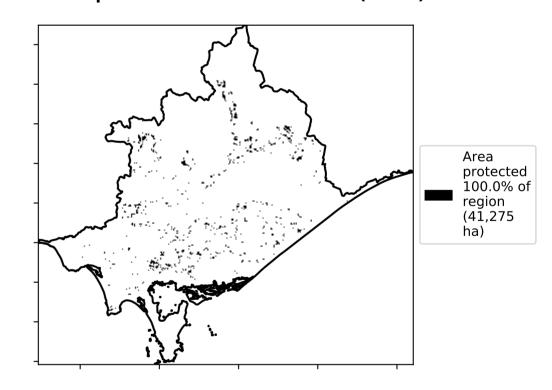
## Proportion of vegetation cover class in area



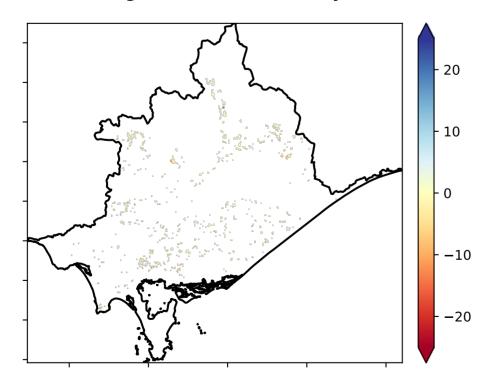
# % Area protected from water erosion (>70%)



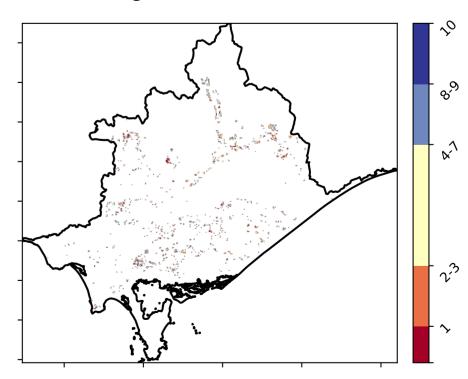
% Area protected from wind erosion (>50%)



# 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.





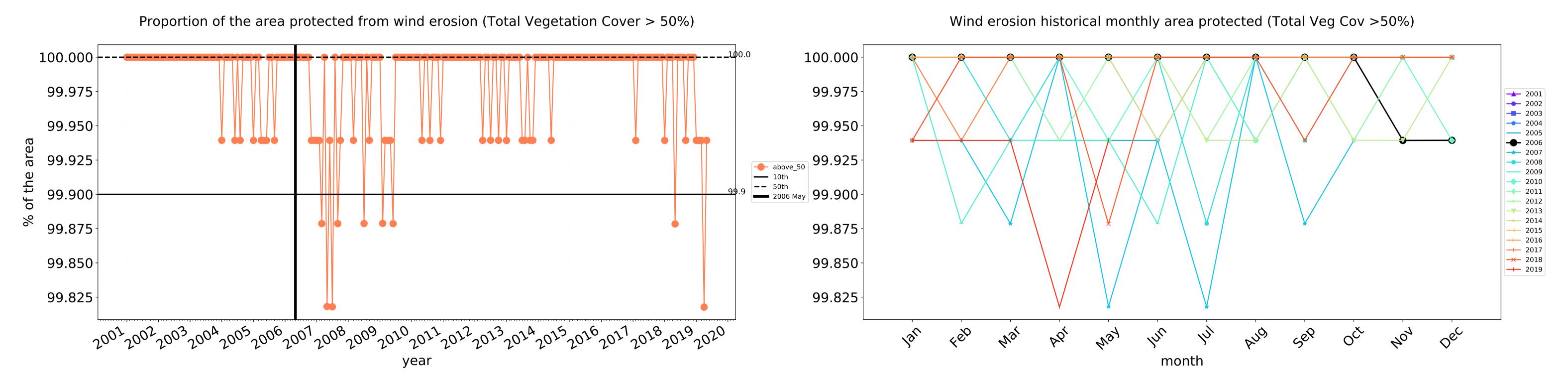


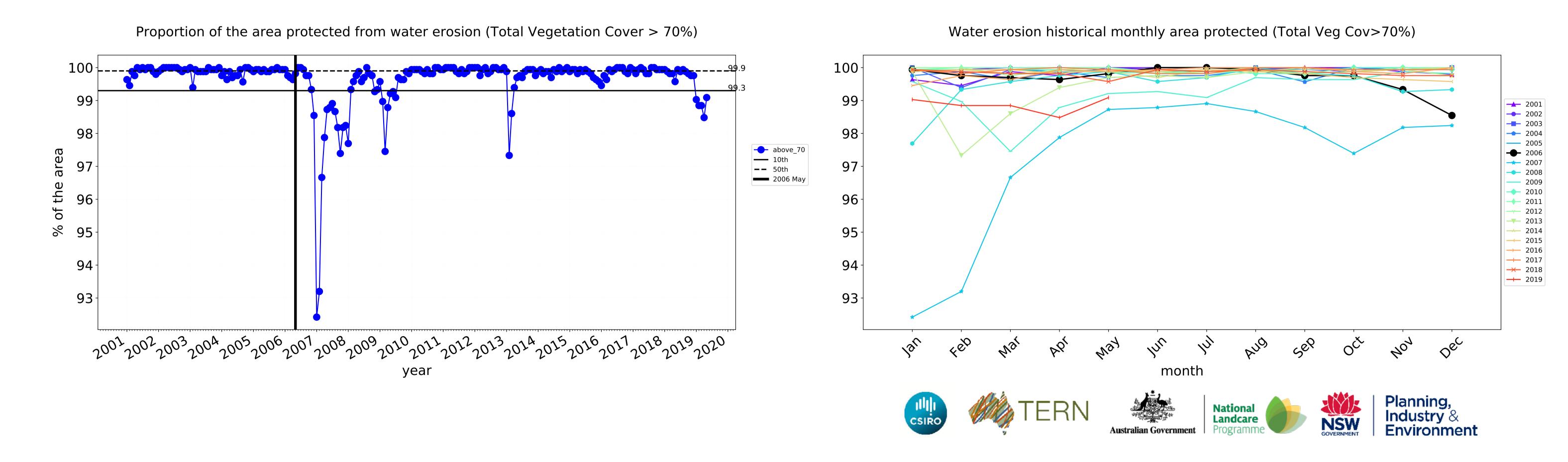


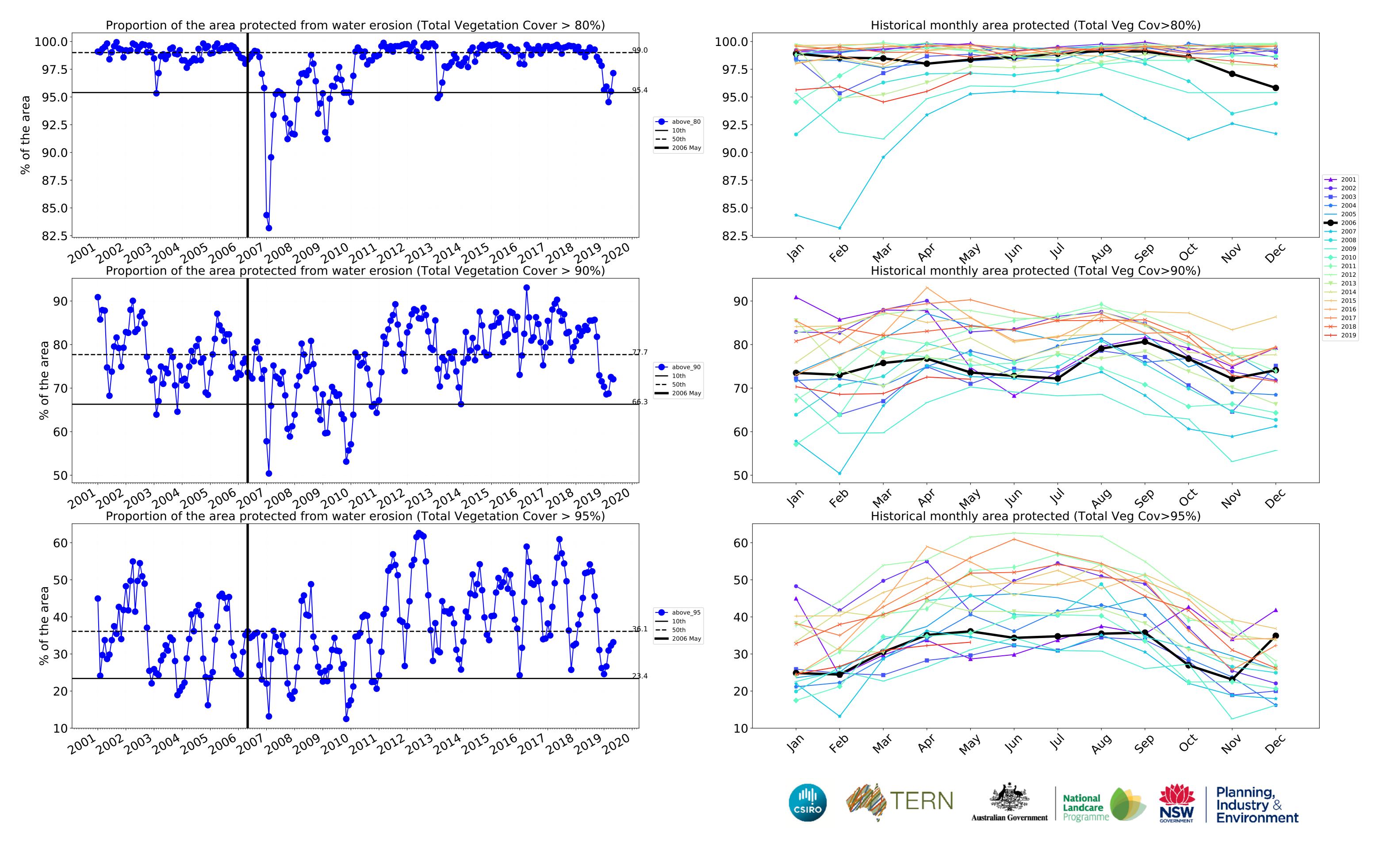












# Irrigation

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

Anomaly show how many percetage points each

pixel is from

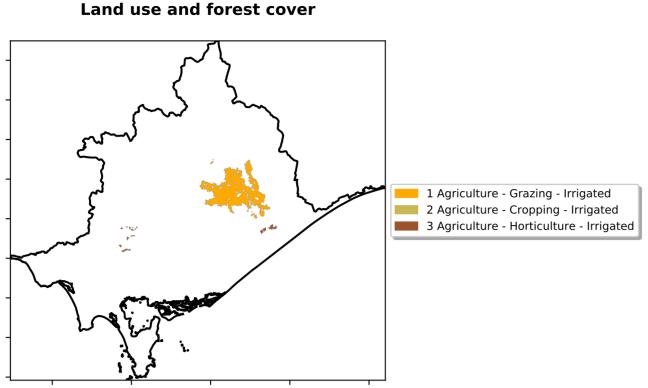
is, red pixels are about 20% lower than the mean of that

the mean. That

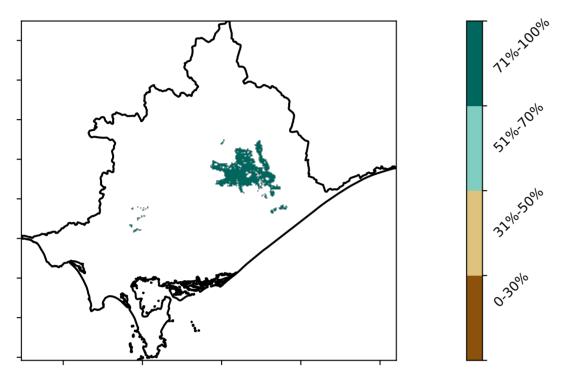
pixel. The mean

using baseline from 2001 to 2019.

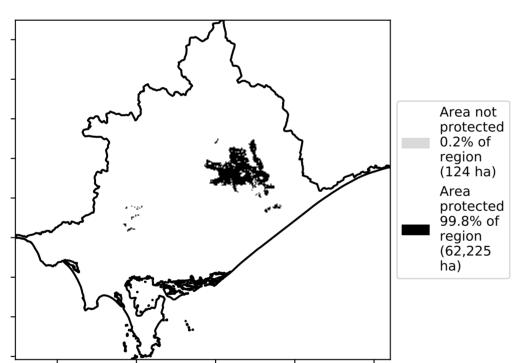
is only for the month of the map



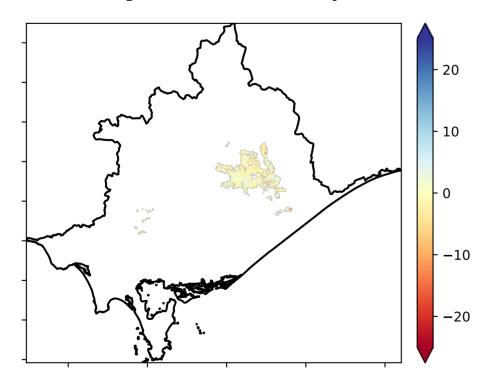
## **Total Vegetation Cover [%]**



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

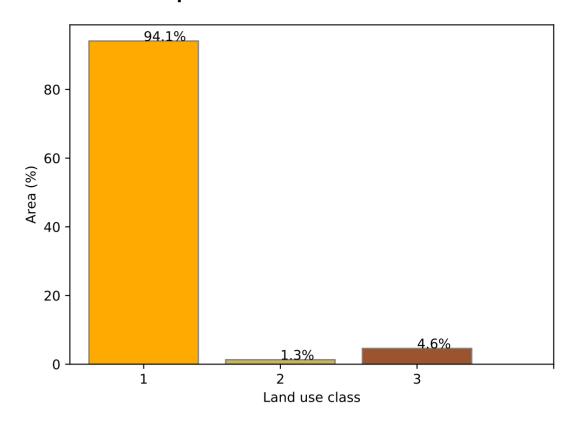


# Total Vegetation Cover Anomaly [%]

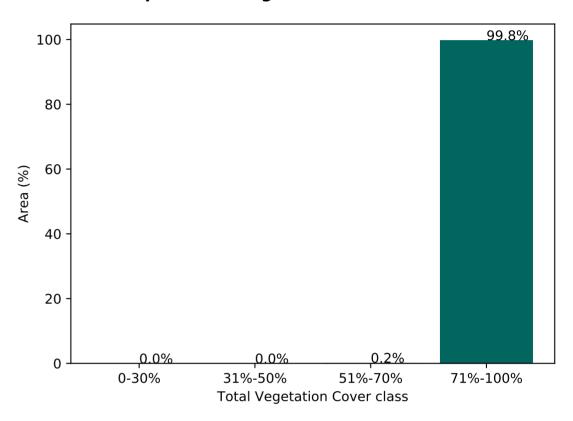


Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

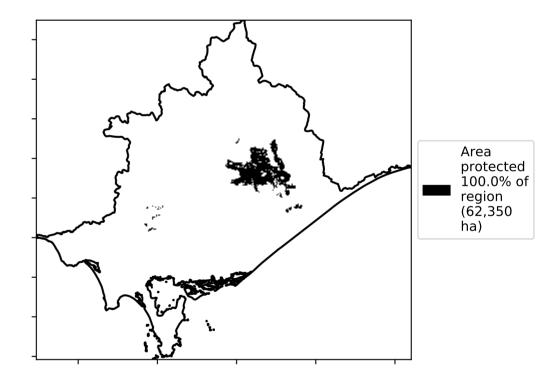
#### Proportion of each land class in area

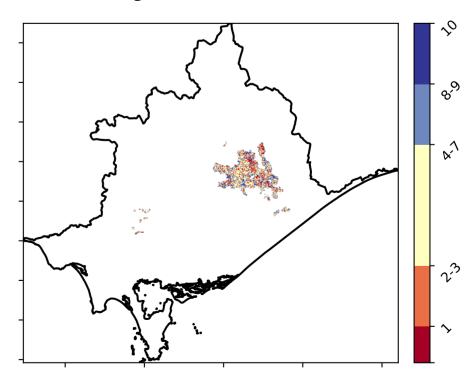


#### Proportion of vegetation cover class in area



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









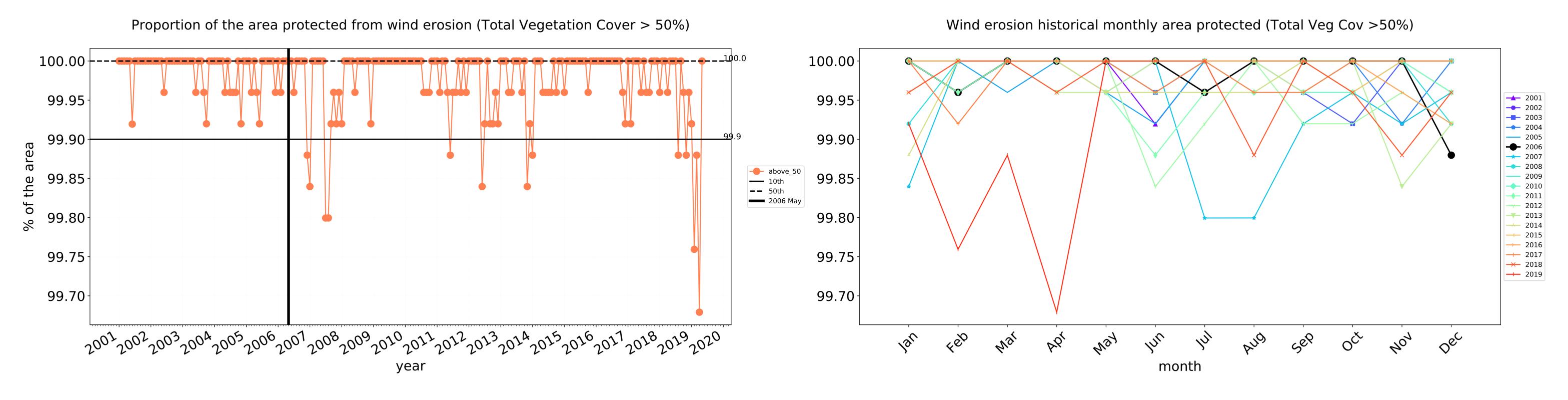


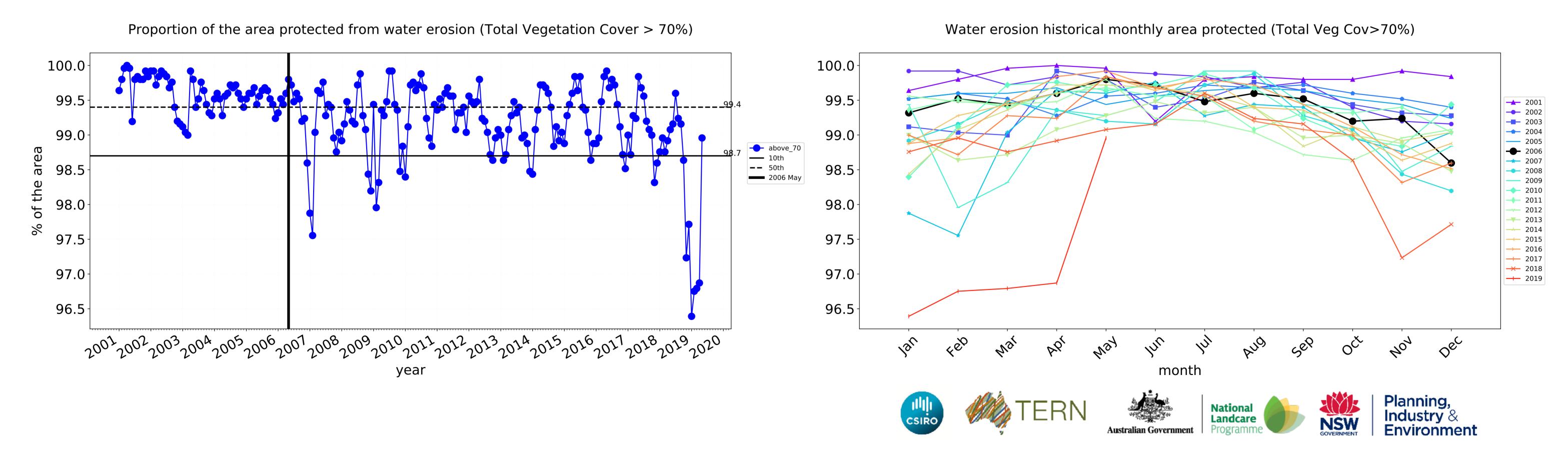


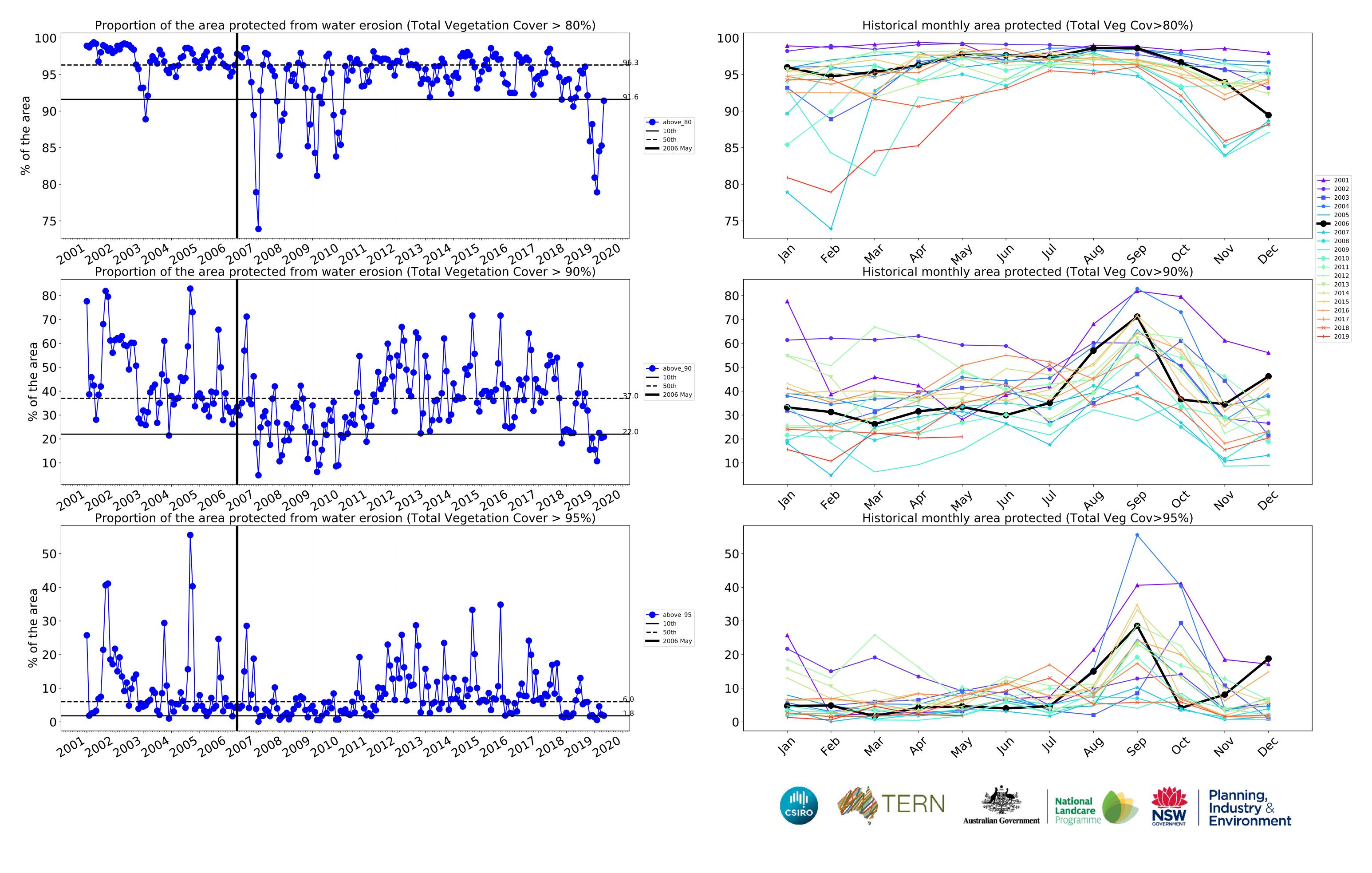




# **Irrigation timeseries**







# **Production native forests and plantation forests**

#### 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 of Australia (2018)

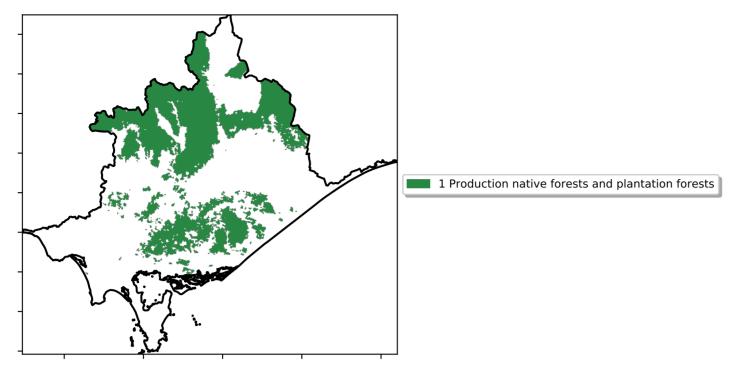
Anomaly show how many percetage points each

pixel is from the mean. That

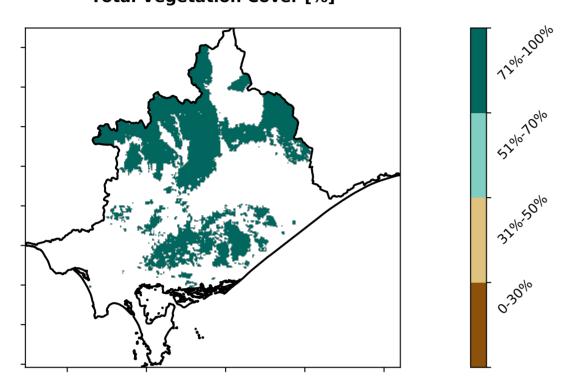
is only for the month of the map

using baseline from 2001 to 2019.

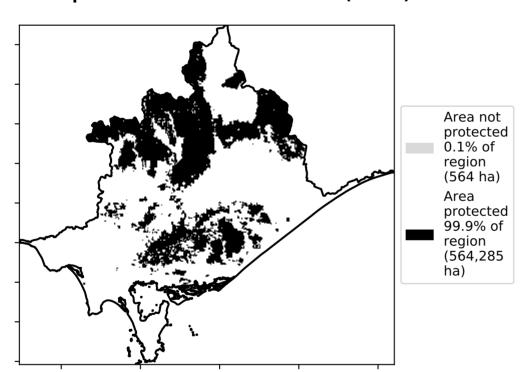
is, red pixels are about 20% lower than the mean of that pixel. The mean



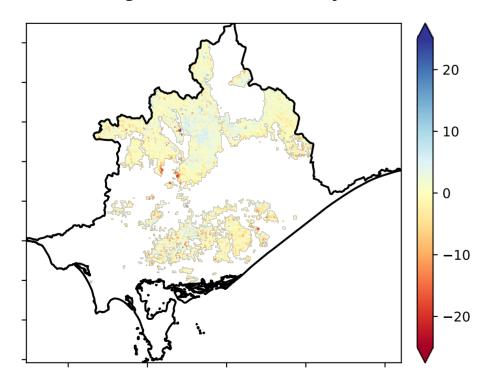
# **Total Vegetation Cover [%]**



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

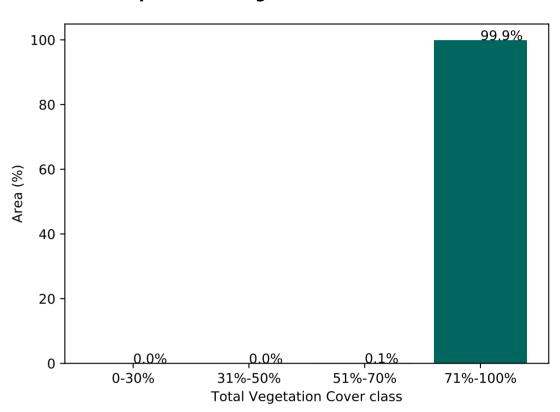


# Total Vegetation Cover Anomaly [%]

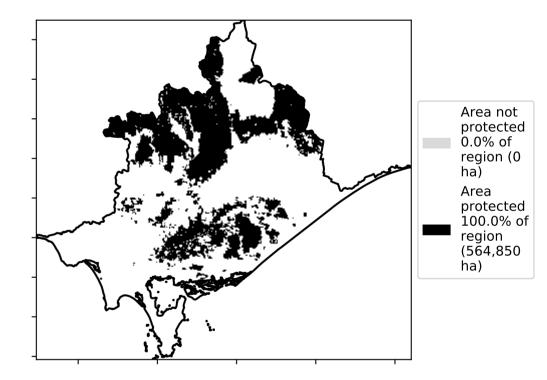


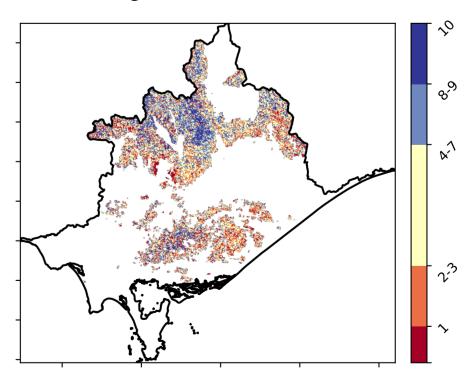
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

#### Proportion of vegetation cover class in area



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









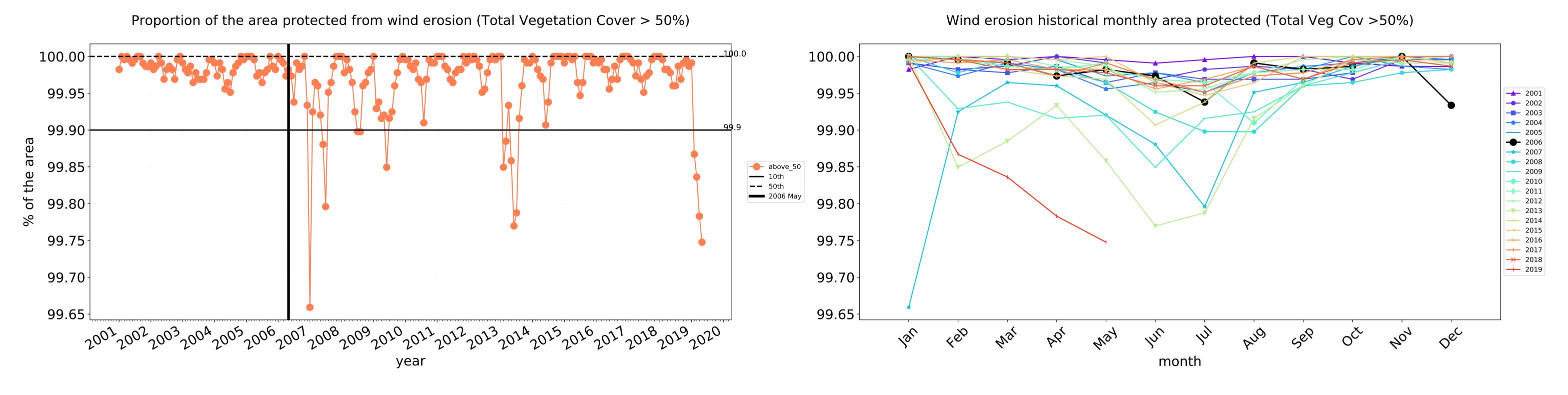


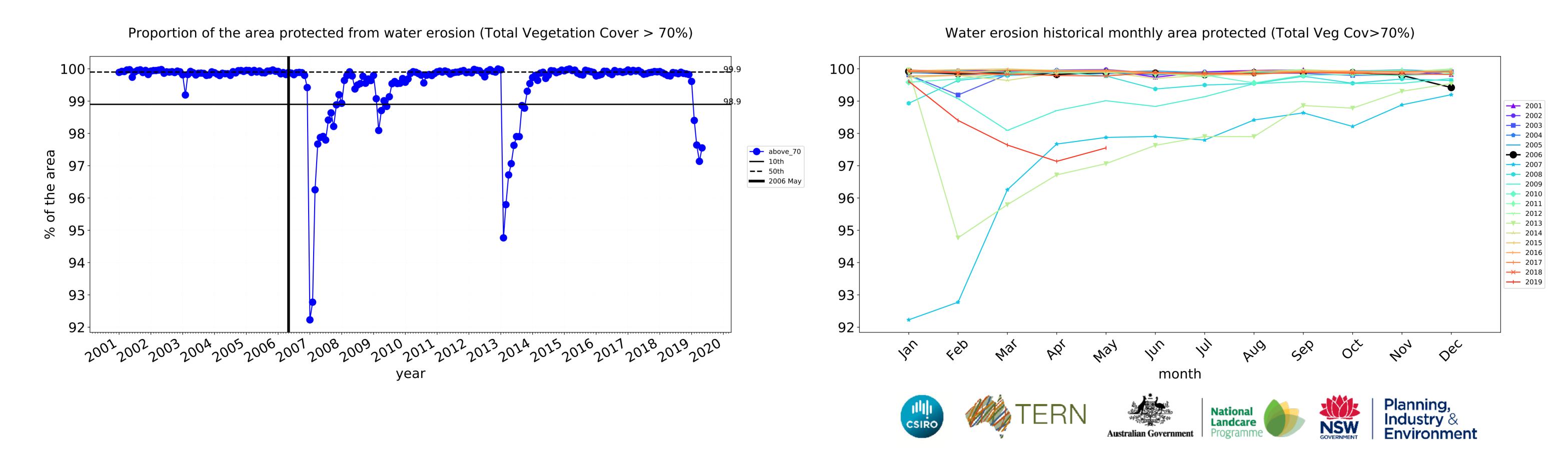


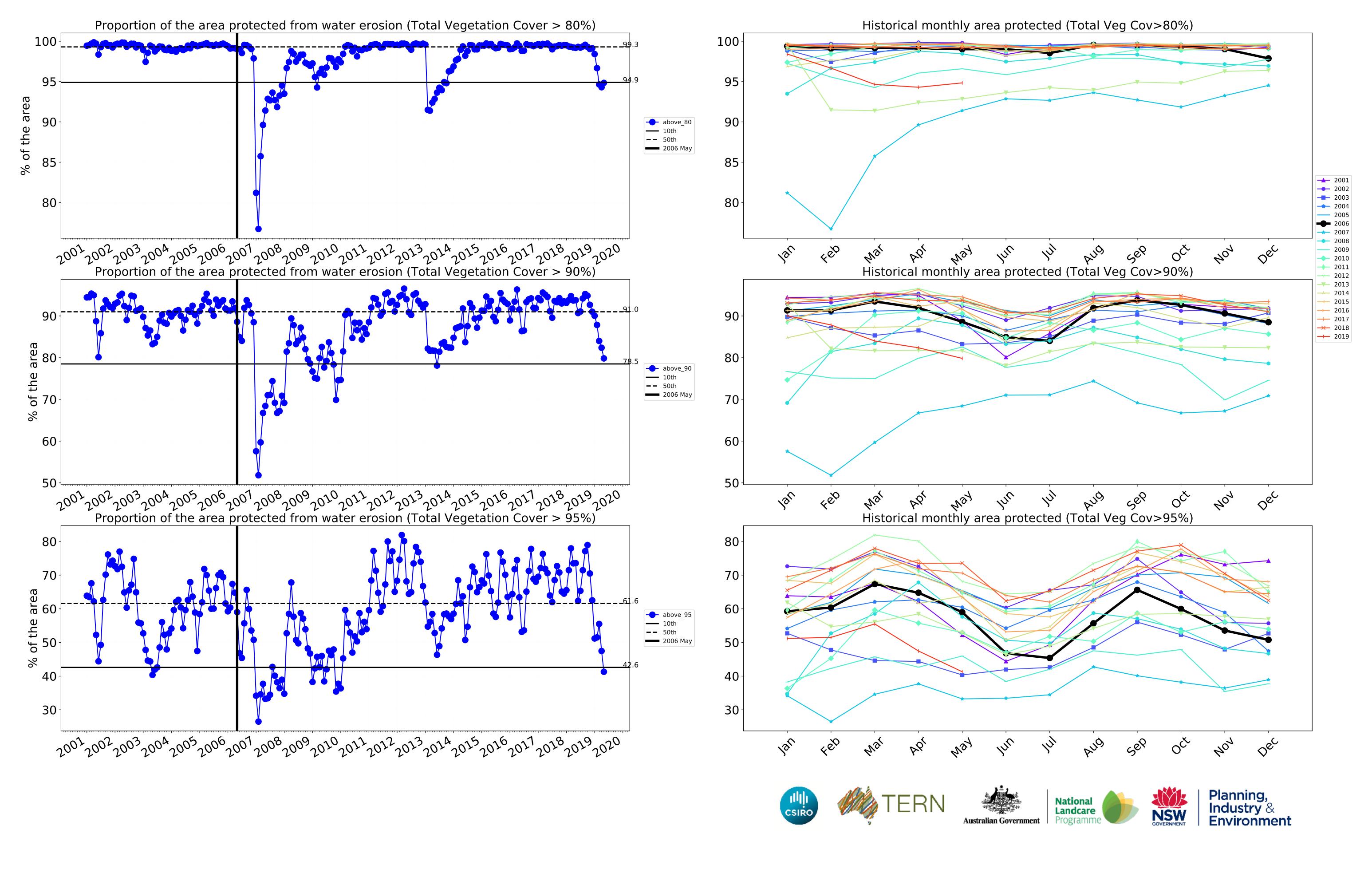




# **Production native forests and plantation forests timeseries**







# West Gippsland (1,684,875 ha and no data 40,769 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	1,684,875	100.0% 1,684,550	99.9% 1,683,076	99.1% 1,670,137	96.2% 1,621,052	62.3% 1,050,267	31.5% 530,467
Conservation and natural environments	273,475	99.9% 273,150	99.6% 272,275	97.7% 267,300	93.5% 255,575	74.5% 203,675	40.0% 109,350
Conservation and natural environments non forest	44,725	99.6% 44,525	98.2% 43,925	91.1% 40,725	78.5% 35,125	46.3% 20,725	19.6% 8,750
Conservation and natural environments Woodland forest	73,375	99.9% 73,300	99.8% 73,225	98.9% 72,600	96.2% 70,575	79.9% 58,625	43.3% 31,775
Conservation and natural environments Forest (non woodland)	155,375	100.0% 155,325	99.8% 155,125	99.1% 153,975	96.5% 149,875	80.0% 124,325	44.3% 68,825
Agriculture	750,650	100.0% 750,650	100.0% 750,475	99.7% 748,250	96.7% 726,250	41.3% 310,100	10.2% 76,675
Grazing	678,575	100.0% 678,575	100.0% 678,400	99.7% 676,325	96.7% 655,925	42.0% 285,200	10.7% 72,700
Grazing non forest	627,125	100.0% 627,125	100.0% 626,950	99.7% 625,000	96.5% 605,450	39.5% 247,550	8.8% 55,500
Grazing - Forest (non woodland)	41,275	100.0% 41,275	100.0% 41,275	99.8% 41,200	98.4% 40,600	73.6% 30,375	36.1% 14,900
Irrigation	62,350	100.0% 62,350	100.0% 62,350	99.8% 62,225	97.8% 61,000	33.4% 20,800	4.7% 2,900
Production native forests and plantation forests	564,850	100.0% 564,850	100.0% 564,750	99.9% 564,225	99.0% 559,300	88.6% 500,400	59.0% 333,275











