LGA Walcha_(A) (NSW) - Vegetation cover soil protection report Aug 2019

This report provides information about vegetation covering the soil surface for a region during a single month with comparison to previous years. Vegetation cover indicates where soil is likely to be protected from wind and or water (hillslope) erosion. Results are shown for the whole region (polygon) and also separated by land use and tree cover. Different land uses are likely to have different cover patterns and targets. Reporting is most reliable with less than 20% tree cover.

Walcha_(A)
• Context

o Map: Land use and forest cover

- o Chart: Land use and forest cover area
- Total vegetation cover for this month

 Map: vegetation cover classified into 4 classes
 Chart: vegetation cover area classified into 4 classes
- Areas protected from erosion for the month

o Map: wind erosion protection (>50% cover)

- o Map: water erosion protection (>70% cover)
- Comparison with previous years
 - o Map: anomaly compare this month to the average cover from the same month in previous years
 - o Map: deciles rank this month against the same month in previous years
- Time series
 - o Wind erosion protection time series: percentage of the area of the region with greater than 50% cover for each month in the archive (orange lines)
 - o Water erosion protection time series: percentage of the area of the region with greater than 70% cover for each month of the archive (blue lines).
 - o Rainfall: millimetres rainfall each month (black lines)
- Time series stacked by year
 - o Wind erosion protection time series: percentage of the area of the region with greater than 50% cover for each month in the archive (orange lines) in case of 5th percentile is less than 80i
 - o Water erosion protection time series: percentage of the area of the region with greater than 70% cover for each month of the archive (blue lines). in case of 5th percentile is less than 80
- Water erosion protection on higher slopes. As slope increases, more cover is required to control water erosion. The thresholds reported are:
 - o the percentage area with pixels greater than 80% total clover
 - o the percentage area with pixels greater than 90% total clover
 - o the percentage area with pixels greater than 95% total clover

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

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

This report has been generated using MODIS fractional vegetation cover information available in Rangelands and Pasture Productivity (RAPP) map tool. The report is based on an analysis of 500 metre pixels. Pixels with greater than or equal to 50% vegetation cover are generally considered to be protected from or have reduced soil loss by wind erosion, and pixels with greater than or equal to 70% vegetation cover are generally considered to also be protected from or have reduced soil loss from water (hillslope) erosion. Report used baseline from 2001 to 2019 for each month to generate anomalies and deciles. And it used threshold of 1% to create land use forest cover reports. Higher cover thresholds may be required for erosion protection in some regions. This report will be less applicable in areas with sparse forest (20-50% tree cover) or dense forest (> 50% tree cover). Therefore land use classes are divided by tree cover: 1) No forest is when there is less than 20% tree cover 2) Sparse forest, is when there is less than 20 to 50 % tree cover 3) Dense forest is greater than 50% tree 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 Aug 2019

Land use and forest cover

Proportion of each land class in area



Total Vegetation Cover [%]



% Area protected from water erosion (>70%)





Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]





120001

52% 70%

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0-30%



Total Vegetation Cover Decile [%]

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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.

based on 2015

catchment scale landuse and

Forest Inventory,

20% tree cover,

cover.

Australia's National

sparse is 20 to 50%





Australian Government



Conservation and natural environments

Land use and forest cover

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



Conservation and natural environments - Non-forest Conservation and natural environments - Woodland forest Conservation and natural environments - Nonwoodland forest

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0.30%

Total Vegetation Cover [%]



% Area protected from water erosion (>70%)







% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]

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.





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. Area protected 100.0% of region (231,175 ha)

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Total Vegetation Cover Decile [%]





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Conservation and natural environments timeseries





Conservation and natural environments Woodland forest

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



Total Vegetation Cover [%]

Land use and forest cover





% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]









Total Vegetation Cover Decile [%]







Conservation and natural environments Woodland forest timeseries



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







Conservation and natural environments Forest (non woodland)

Land use and forest cover

Landuse map of area based on 2015 catchment scale landuse and

Australia's National Forest Inventory, where no forest is <

20% tree cover, sparse is 20 to 50% and dense > 50% tree

cover.



Total Vegetation Cover [%]



% Area protected from water erosion (>70%)





Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]

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.



CSIRO



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.



Area protected 100.0% of region (223,450 ha)

Total Vegetation Cover Decile [%]







Conservation and natural environments Forest (non woodland) timeseries









Agriculture

Land use and forest cover Agriculture - Grazing - Non forest Agriculture - Grazing - Woodland forest Agriculture - Grazing - Non-oodland forest Agriculture - Cropping - Non-irrigated

Total Vegetation Cover [%]







Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



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Total Vegetation Cover Anomaly [%]





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0.30%



Total Vegetation Cover Decile [%]





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.

Landuse map of area based on 2015

catchment scale landuse and Australia's National

Forest Inventory, where no forest is <

20% tree cover,

cover.

sparse is 20 to 50%





__<u>100</u>0 100.0 99.5 99.0 --- above_70 **—** 10th **--** 50th 98.5 98.0 97.5 97.0 feb hill Mar May Jar POL month ΓERN CSIRO Australian Government

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







Grazing

Land use and forest cover



Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



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

Total Vegetation Cover Anomaly [%]





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· 52% 70%

32°1050°10

0.30%



Total Vegetation Cover Decile [%]









__100|0 __99.9 100.0 99.5 99.0 ---- above_70 **—** 10th **--** 50th 2019 Aug 98.5 98.0 97.5 97.0 feb lar May In Mar PQ month ERN CSIRO Australian Government

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







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1)



Grazing non forest

12%200%

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0.30%

Land use and forest cover



Total Vegetation Cover [%]



% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



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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 baseline the map using baseline from 2001 to 2019.

Total Vegetation Cover Decile [%]





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.

landuse and

cover.









__<u>_100</u>0 100.0 99.5 99.0 ---- above_70 **—** 10th **--** 50th 98.5 98.0 97.5 97.0 feb lar Mar May In PQ month ΓERN CSIRO Australian Government

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







Grazing Woodland forest

Land use and forest cover



Total Vegetation Cover [%]





% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]







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Total Vegetation Cover Decile [%]





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landuse and

cover.





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



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



Grazing - Forest (non woodland)

Agriculture - Grazing - Non-oodland forest

Total Vegetation Cover [%]

Land use and forest cover





% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



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

Total Vegetation Cover Anomaly [%]





Total Vegetation Cover Decile [%]







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 - Forest (non woodland) timeseries

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



Cropping

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



Total Vegetation Cover [%]





% Area protected from water erosion (>70%)



91.1%

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Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]







Total Vegetation Cover Decile [%]









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



Proportion of the area protected from water erosion (Total Vegetation Cover > 80%)

Production native forests and plantation forests

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



Total Vegetation Cover [%]





- 20

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-10

-20

% Area protected from water erosion (>70%)



Proportion of vegetation cover class in area



% Area protected from wind erosion (>50%)



Total Vegetation Cover Anomaly [%]



Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019. Area protected 100.0% of region (63,550 ha)

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Total Vegetation Cover Decile [%]









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



Walcha_(A) (total 626,350 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	626,350	100.0% 626,350	100.0% 626,350	98.3% 615,775	85.9% 537,950	52.8% 330,850	28.7% 179,625
Conservation and natural environments	231,749	100.0% 231,749	100.0% 231,749	100.0% 231,724	99.6% 230,797	87.2% 202,050	51.8% 119,972
Conservation and natural environments Woodland forest	6,263	100.0% 6,263	100.0% 6,263	100.0% 6,263	100.0% 6,263	86.2% 5,397	51.2% 3,208
Conservation and natural environments Forest (non woodland)	223,606	100.0% 223,606	100.0% 223,606	100.0% 223,581	99.6% 222,681	87.3% 195,237	51.8% 115,856
Agriculture	330,712	100.0% 330,712	100.0% 330,712	96.9% 320,330	74.2% 245,451	22.2% 73,527	4.4% 14,535
Grazing	320,064	100.0% 320,064	100.0% 320,064	97.1% 310,633	75.0% 239,936	22.7% 72,623	4.5% 14,484
Grazing non forest	288,121	100.0% 288,121	100.0% 288,121	96.8% 278,767	72.5% 209,019	19.0% 54,693	2.7% 7,777
Grazing Woodland forest	6,889	100.0% 6,889	100.0% 6,889	99.6% 6,864	95.3% 6,562	44.5% 3,067	15.7% 1,081
Grazing - Forest (non woodland)	25,054	100.0% 25,054	100.0% 25,054	99.8% 25,003	97.3% 24,376	59.5% 14,896	22.5% 5,642
Cropping	10,647	100.0% 10,647	100.0% 10,647	91.1% 9,695	51.8% 5,511	8.5% 901	0.5% 50
Production native forests and plantation forests	63,261	100.0% 63,261	100.0% 63,261	99.9% 63,186	97.5% 61,693	87.8% 55,546	71.5% 45,218

