

# Land cover change in Queensland

## Statewide Landcover and Trees Study Summary Report: 2016–17 and 2017–18

### PREFACE

The Statewide Landcover and Trees Study (SLATS) is a vegetation monitoring initiative of the Queensland Government, undertaken by the Remote Sensing Centre (RSC) in the Department of Environment and Science (DES). The primary objective of the study is to map the location and extent of woody vegetation clearing across Queensland and report annualised rates of clearing. It supports the *Vegetation Management Act 1999* (VMA), administered by the Department of Natural Resources, Mines and Energy (DNRME), and other land management initiatives.

SLATS detects changes in woody vegetation by comparing Landsat satellite imagery captured approximately one year apart. It is informed by ancillary data including higher spatial resolution satellite imagery such as Sentinel 2A and 2B. SLATS is based on scientific approaches which have been peer-reviewed by international remote sensing experts. It includes a combination of automated and manual analyses with rigorous quality assurance checking by experienced remote sensing scientists.

### KEY FINDINGS

The annualised woody vegetation clearing rates for Queensland for the periods 2016–17 and 2017–18 are shown in Table 1. Woody vegetation clearing rates for 2015–16 are also included for comparison.

**Table 1: Annualised clearing rates<sup>1</sup> by woody vegetation type (% of total clearing rate)**

Period	Non-remnant	Remnant <sup>2</sup>	Total
2015–16	257 000 (66%)	132 000 (34%)	390 000
2016–17	278 000 (78%)	78 000 (22%)	356 000
2017–18	318 000 (81%)	74 000 (19%)	392 000

<sup>1</sup>All rates are reported in hectares per year (ha/year) and are rounded to the nearest 1000 ha/year. Percentages are rounded to the nearest whole percentage. Refer to DES (2018) for information about the calculation of the annualised woody vegetation clearing rates and adjustment to previous years' rates.

<sup>2</sup>All remnant woody vegetation clearing rates reported are based on Queensland Herbarium Remnant Vegetation Cover of Queensland, Version 11.0.

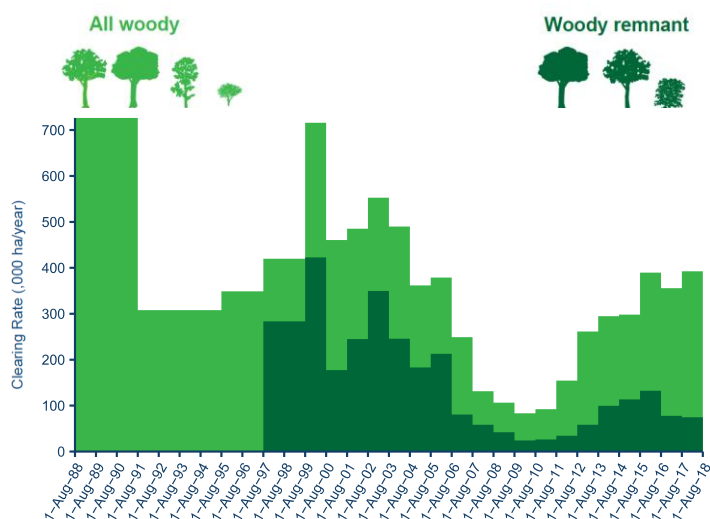
In 2016–17, the statewide clearing rate was 356 000 ha/year. This is a 9% decrease from the 2015–16 woody vegetation clearing rate of 390 000 ha/year (Figure 1 and Table 1). The woody vegetation clearing rate in 2017–18 was 392 000 ha/year. This is a 10% increase from the 2016–17 woody vegetation clearing rate of 356 000 ha/year.

The statewide remnant woody vegetation clearing rate for 2016–17 was 78 000 ha/year. This represents 22% of the total woody vegetation clearing rate for that period. The remnant clearing rate in 2017–18 was 74 000 ha/year, representing 19% of the total woody vegetation clearing rate for that period.

Approximately 91% and 93% of the clearing mapped in 2016–17 and 2017–18, respectively, was assigned to the replacement land cover class *pasture*. The remainder was assigned to the other classes of *crops, forestry, mining, infrastructure and settlement*.

Approximately 36% and 41% of woody vegetation clearing in 2016–17 and 2017–18, respectively, had previously been cleared one or more times since 1988.

### WOODY VEGETATION CLEARING



**Figure 1: Historic woody vegetation clearing rates in Queensland**



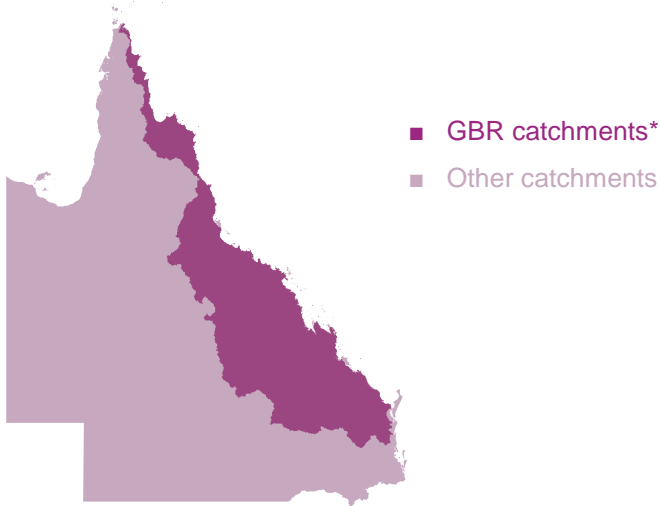
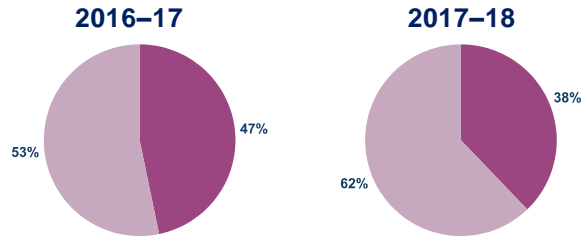


Figure 2. Woody vegetation clearing rate in the Great Barrier Reef catchments as a percentage of the total clearing rate in Queensland

### GREAT BARRIER REEF (GBR) CATCHMENTS

The woody vegetation clearing rate in the Great Barrier Reef catchments was 166 000 ha/year in 2016–17 and 148 000 ha/year in 2017–18. This represented 47% and 38% of the total statewide woody vegetation clearing rates in 2016–17 and 2017–18, respectively (Figure 2). The 2015–16 woody vegetation clearing rate was 158 000 ha/year.



\*The GBR catchments are a subset of the North East Coast drainage division indicated in Figure 4.

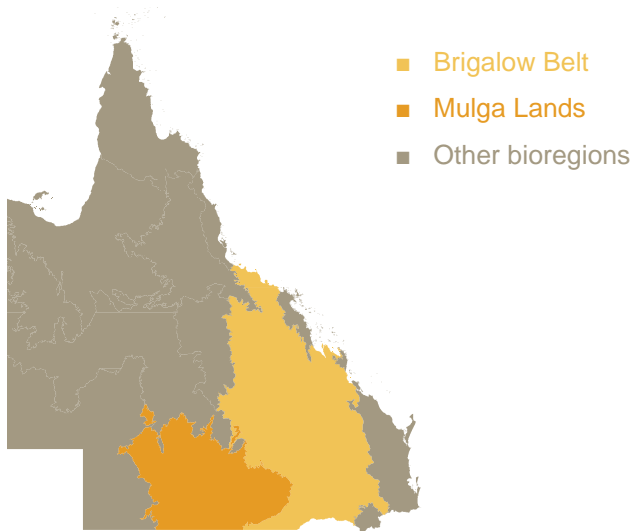


Figure 3. Woody vegetation clearing rate in key bioregions as a percentage of the total clearing rate in Queensland

### BIOREGIONS

Of Queensland's 13 bioregions, the Brigalow Belt and Mulga Lands recorded the highest woody vegetation clearing rates in the 2016–17 and 2017–18 periods (Figure 3). The Brigalow Belt's clearing rate was 193 000 ha/year in 2016–17, and 204 000 ha/year in 2017–18. The Mulga Lands' clearing rate was 73 000 ha/year in 2016–17 and 106 000 ha/year in 2017–18.

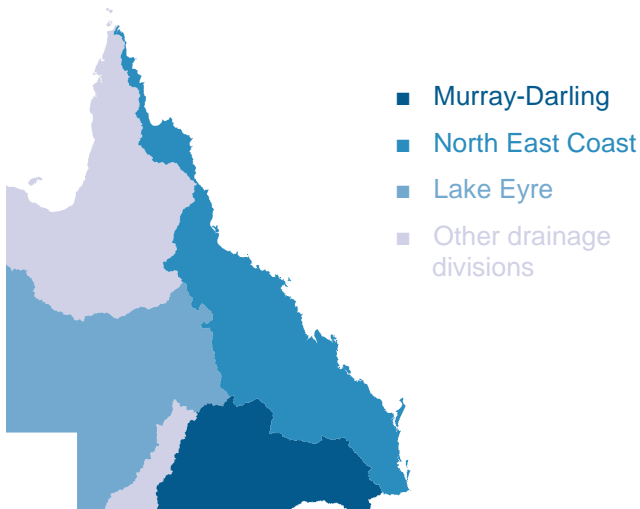
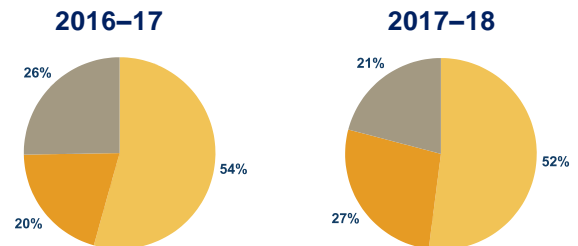
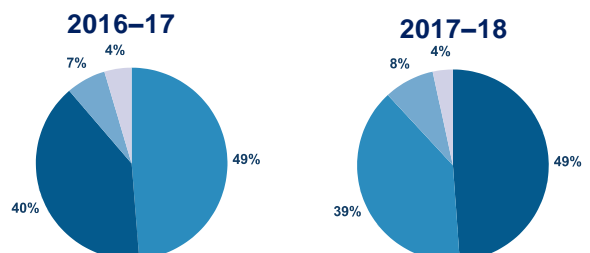


Figure 4. Woody vegetation clearing rate in key drainage divisions as a percentage of the total clearing rate in Queensland

### DRAINAGE DIVISIONS

The Murray-Darling and North East Coast drainage divisions recorded the highest woody vegetation clearing rates in 2016–17 and 2017–18. The woody vegetation clearing rate in the Murray-Darling was 142 000 ha/year in 2016–17 and 192 000 ha/year in 2017–18. The North East Coast division's clearing rate was 173 000 ha/year in 2016–17 and 154 000 ha/year in 2017–18.



## STATEWIDE WOODY VEGETATION CLEARING

The spatial distribution of woody vegetation clearing rates in Queensland for the 2016–17 and 2017–18 periods is shown in Figure 5.

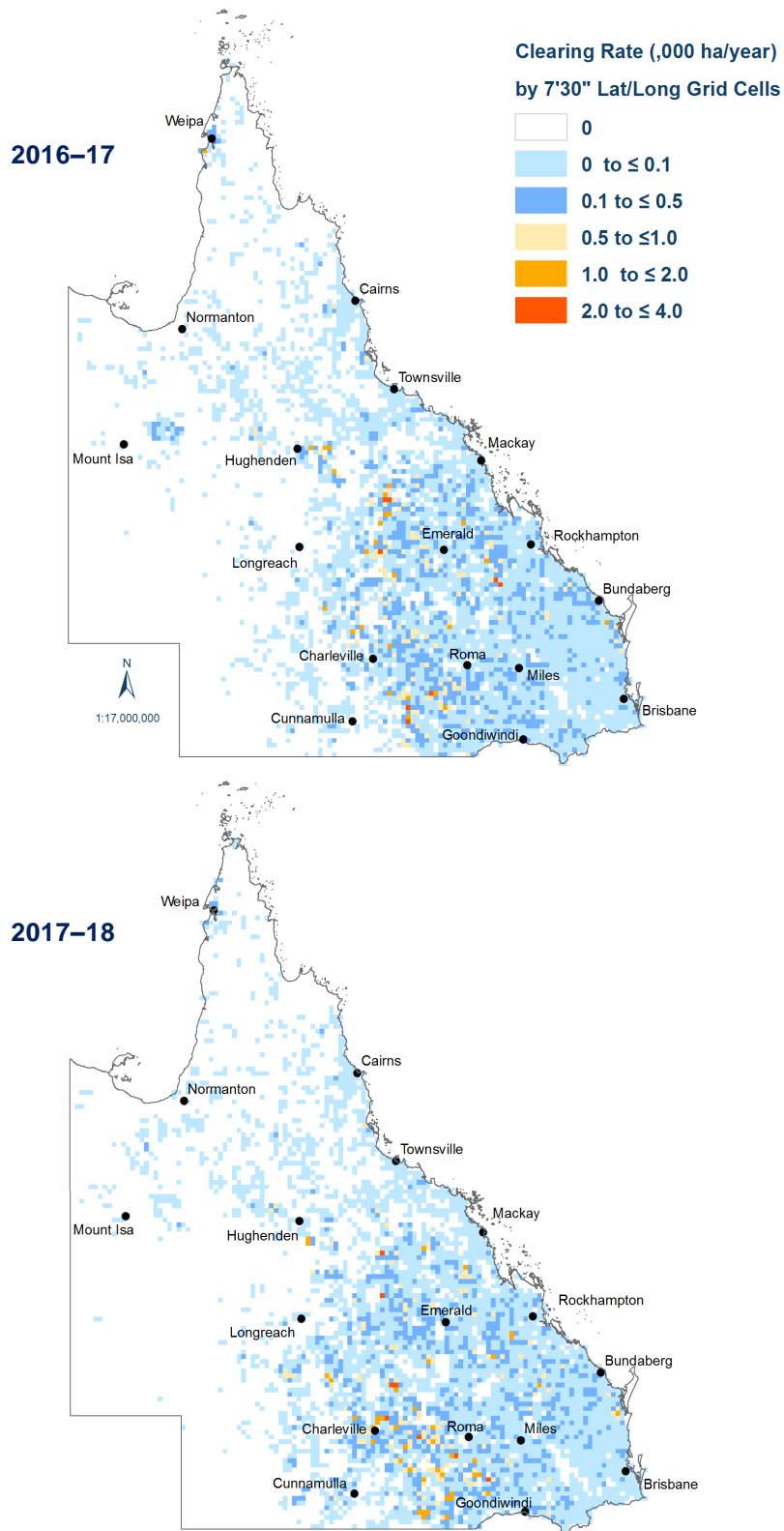


Figure 5. Woody vegetation clearing rates in Queensland 2016–17 (top) and 2017–18 (bottom). Individual cell area = 17 500 hectares

## FUTURE DIRECTIONS

The Queensland Government is committed to enhancing the scope of SLATS and vegetation information to support evidence-based decision-making. New earth observation and computing technologies are available to enhance woody vegetation extent mapping and to develop new regrowth and vegetation condition monitoring methods for the state. This will inform a more comprehensive monitoring and reporting framework for the management of Queensland's vegetation.

## REPORTS AND SPATIAL PRODUCTS

For further information about SLATS, refer to: <https://www.qld.gov.au/environment/land/management/mapping/statewide-monitoring/slats>

Data summaries to accompany this Summary Report, SLATS methodology and previous reports are available at: <https://www.qld.gov.au/environment/land/management/mapping/statewide-monitoring/slats/slats-reports>

SLATS spatial data products can be downloaded from the Queensland Spatial Data Catalogue (QSpatial): <http://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

### Reference:

Queensland Department of Environment and Science. 2018. Statewide Landcover and Trees Study: Overview of Methods. DES, Brisbane.

Department of Environment and Science

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