

Land cover change in Queensland in 2012–14

Statewide Landcover and Trees Study Report



Executive Summary

BACKGROUND

The Statewide Landcover and Trees Study (SLATS) is a vegetation monitoring initiative of the Queensland Government undertaken by the Department of Science, Information Technology and Innovation (DSITI).

The maps and statistics derived from SLATS support the *Vegetation Management Act 1999* (VMA) administered by the Department of Natural Resources and Mines (DNRM).

The study detects changes in woody vegetation using Landsat satellite imagery. Images captured approximately one year apart are compared using a combination of automated and manual mapping techniques to produce a statewide map of land cover change.

To facilitate comparison between analysed periods, results are reported as woody vegetation clearing rates in hectares per year (ha/year)* for all of Queensland.

Woody vegetation encompasses both woody remnant and woody regrowth vegetation, including high-value regrowth (HVR) as defined by the VMA. Some examples of woody vegetation include undisturbed and disturbed native woodlands, timber plantations and exotic species.

KEY FINDINGS

2012–13 period

- 266 191 ha/year of woody vegetation was cleared, statewide. This is a 73% increase in woody vegetation clearing from the 2011–12 period (153 646 ha/year).
- 59 776 ha/year of remnant woody vegetation was cleared, statewide, representing 22% of the total woody vegetation clearing.

2013–14 period

- 296 324 ha/year of woody vegetation was cleared, statewide. This represented an 11% increase from the 2012–13 period and the highest woody vegetation clearing rate since 2006.
- 103 308 ha/year of remnant woody vegetation was cleared, statewide, representing 35% of the total woody vegetation clearing.

Approximately 90% of cleared woody vegetation was replaced by pasture for both the 2012–13 and 2013–14 periods. The remaining 10% was replaced by crop, forestry, mining, infrastructure and settlements.

Approximately 40% and 32% of woody vegetation clearing in 2012–13 and 2013–14, respectively, had previously been cleared.

Table 1. Clearing by woody vegetation type (ha/year)

| Period | Non-remnant (excl. HVR) | HVR | Remnant | Total clearing |
|---------|-------------------------|--------------|---------------|----------------|
| 2012–13 | 180 570 (68%) | 25 845 (10%) | 59 776 (22%) | 266 191 |
| 2013–14 | 165 295 (56%) | 27 721 (9%) | 103 308 (35%) | 296 324 |

* The unit 'hectares per year' refers to the amount of woody vegetation clearing detected between two specific dates in each year of the analysed period (i.e. 2012–13). These dates depend on satellite image availability and are selected within the dry winter season.

WOODY VEGETATION CLEARING

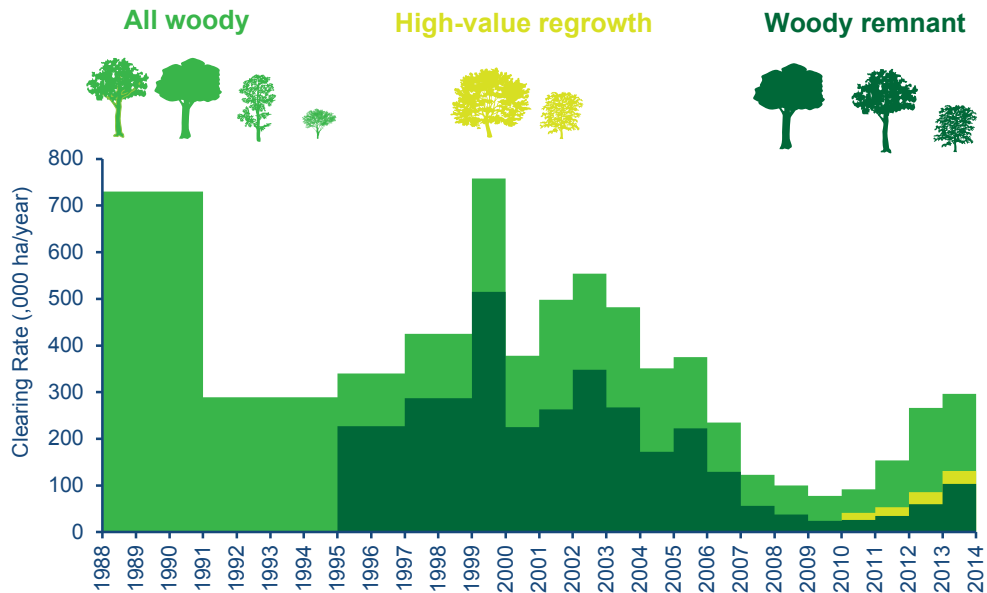


Figure 1. Historic woody vegetation clearing in Queensland

Woody vegetation clearing in 2013–14 (296 324 ha/year) was similar to that of the 1991–95 period (289 840 ha/year). The lowest woody vegetation clearing rate was recorded in 2009–10 (77 591 ha/year). 25 845 ha/year and 27 721 ha/year of woody HVR vegetation were cleared in 2012–13 and 2013–14, respectively (Figure 1).

BIOGEOGRAPHIC REGIONS

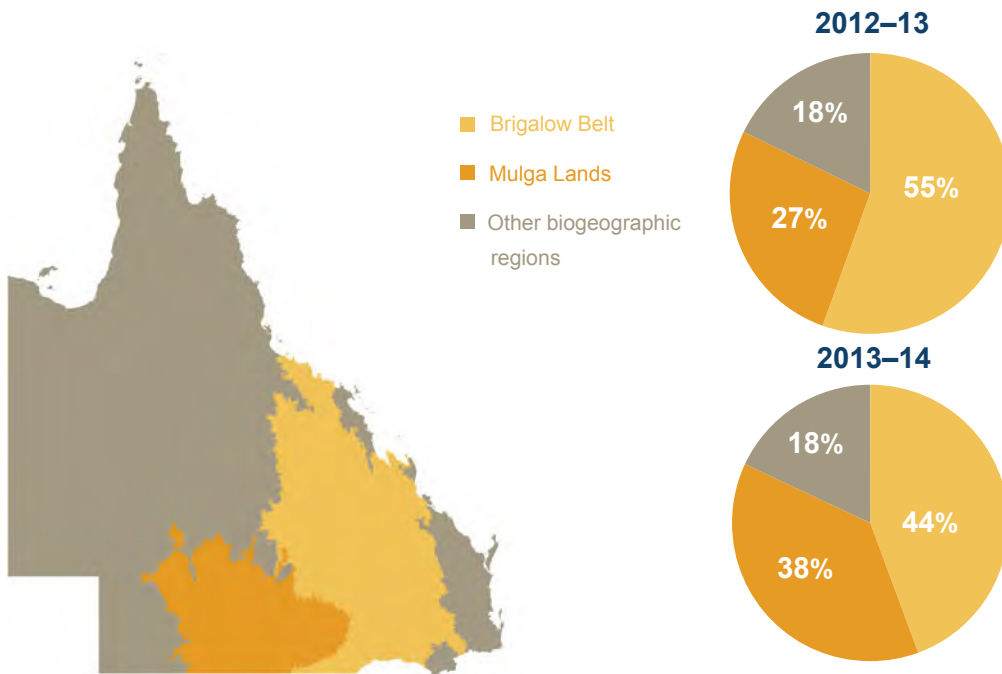


Figure 2. Woody vegetation clearing in key biogeographic regions as a percentage of total clearing in Queensland (Table 1)

The Brigalow Belt and Mulga Lands biogeographic regions continued to record the highest woody vegetation clearing rates. 147 705 ha/year and 131 462 ha/year of woody vegetation were cleared in the Brigalow Belt in 2012–13 and 2013–14, respectively. 71 154 ha/year and 111 477 ha/year of woody vegetation were cleared in the Mulga Lands in 2012–13 and 2013–14, respectively (Figure 2).

DRAINAGE DIVISIONS

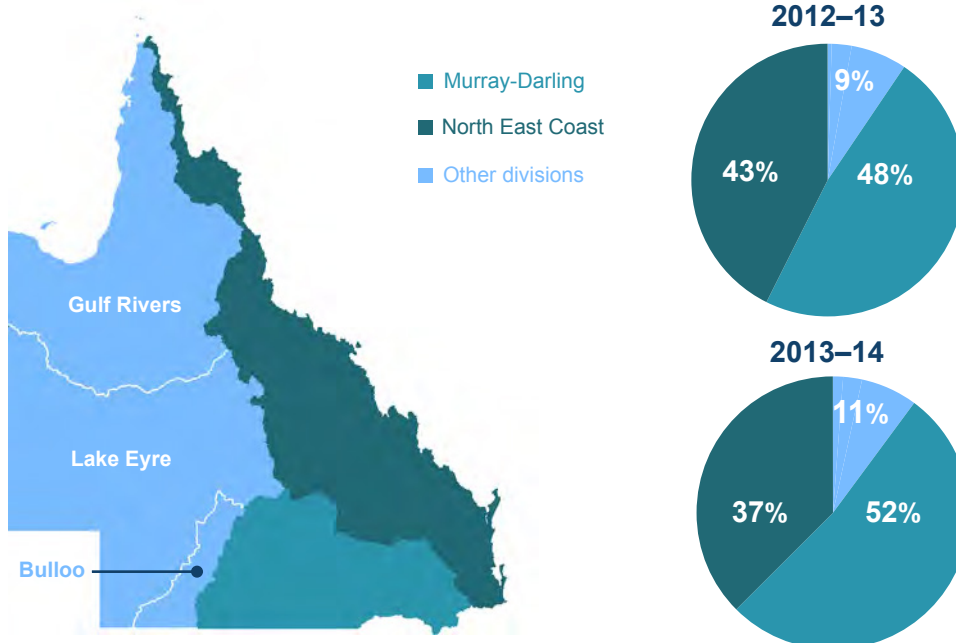


Figure 3. Woody vegetation clearing in key drainage divisions as a percentage of total clearing in Queensland (Table 1)

The Murray-Darling and North East Coast divisions had the highest woody vegetation clearing rates. This was consistent with previous periods. 127 595 ha/year and 155 200 ha/year of woody vegetation were cleared in the Murray-Darling division in 2012-13 and 2013-14, respectively. 113 398 ha/year and 111 070 ha/year of woody vegetation were cleared in the North East Coast division in 2012-13 and 2013-14, respectively (Figure 3).

GREAT BARRIER REEF (GBR) CATCHMENTS

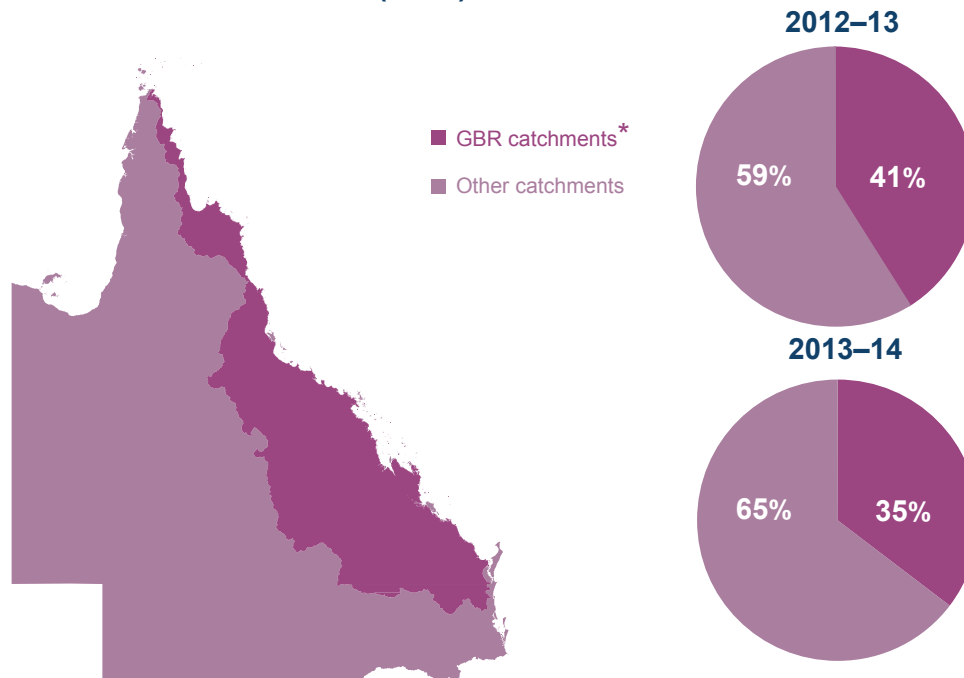


Figure 4. Woody vegetation clearing in the Great Barrier Reef catchments as a percentage of total clearing in Queensland (Table 1)

109 235 ha/year and 104 802 ha/year of woody vegetation were cleared in 2012-13 and 2013-14, respectively, in the GBR catchments (Figure 4).

A 48% increase in woody vegetation clearing was reported within the GBR catchments in 2012-13 compared to 2011-12 (73 717 ha/year). Woody vegetation clearing decreased slightly in 2013-14 compared to 2012-13.

* The GBR catchments are a subset of the North East Coast drainage division indicated in Figure 3.

STATEWIDE WOODY VEGETATION CLEARING 2012–14

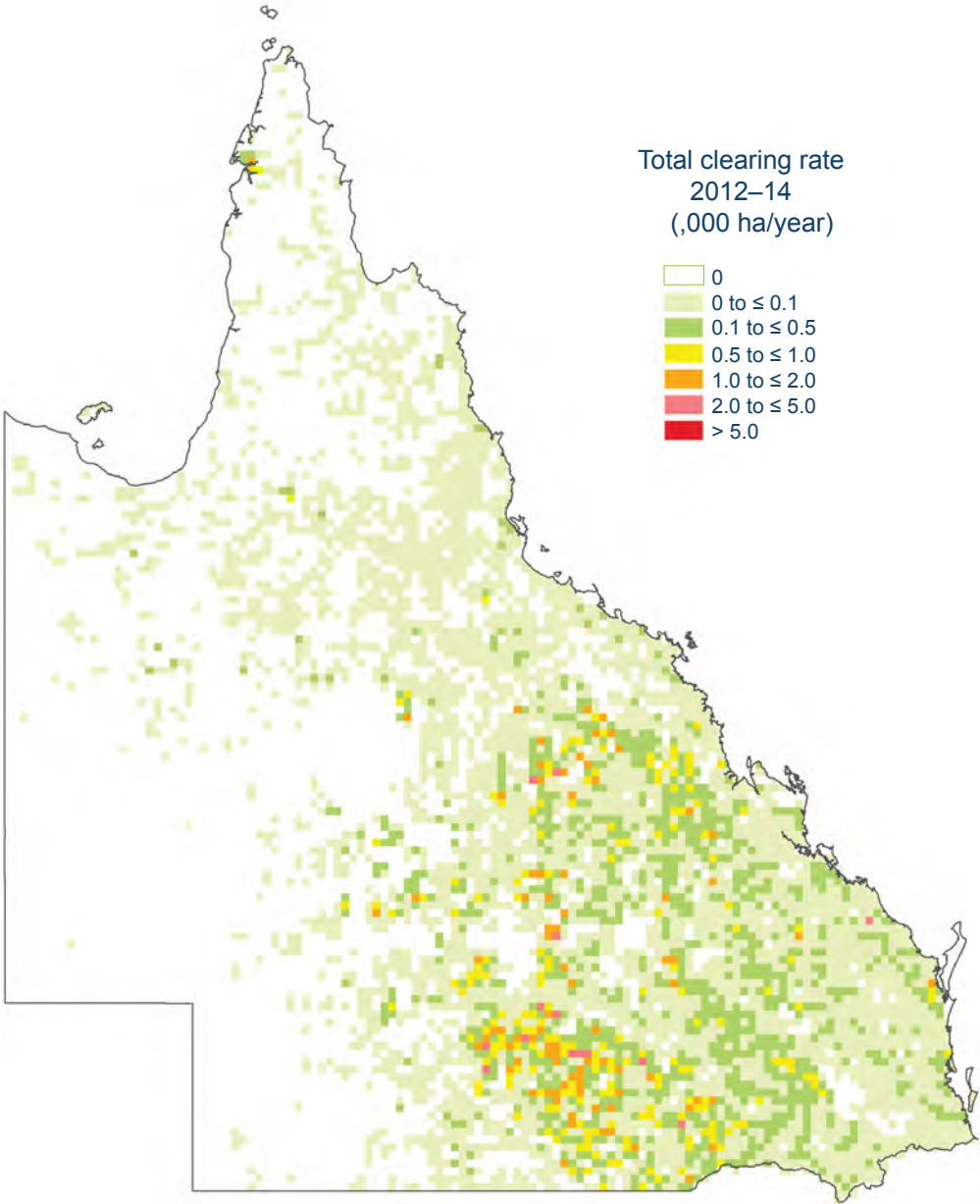


Figure 5. Woody vegetation clearing in Queensland (2012–14). Individual cell area = 17 500 hectares

Figure 5 shows the spatial distribution and intensity of woody vegetation clearing in Queensland for the 2012–13 and 2013–14 periods, combined. The pattern of distribution is similar to that of previous reporting periods.

DEFINITIONS

Remnant vegetation: defined by the VMA as “vegetation forming the predominant canopy of the vegetation covering more than 50% of the undisturbed predominant cover and averaging more than 70% of the vegetation’s undisturbed height and; dominated by species characteristic of the vegetation’s undisturbed canopy” (VMA 1999, section 5, page 168).

High-value regrowth: defined by the VMA as “vegetation located in an area that has not been cleared since 31 December 1989” (VMA 1999, section 5, page 162). The regulation of HVR was in place for the entire 2012–13 period and for approximately half of the 2013–14 period.

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