

# Resource availability

As the first pathway of *Queensland's agriculture strategy*, securing and increasing resource availability is critical for growth. 'Resources' in this section of the report refer to natural resources, land, people and capital investment, which are all critical elements underpinning the sector's viability and future growth.

## Natural resources

The productivity of Queensland's agriculture, fishing and forestry sector is highly dependent on the condition and availability of natural resources, namely land and water. Queensland is a large and variable state, providing opportunities to produce a vast array of commodities.

The Queensland Agricultural Land Audit (Land Audit), conducted by the Queensland Government in 2013, provides a comprehensive overview of the status and extent of current and potential agricultural land in Queensland. It provides information about the location, land area and types of existing productive agricultural land, and sites with the potential for future agricultural development.

The Land Audit also identifies biophysical, geographical and socio-economic constraints to agricultural production. It is available at [www.daff.qld.gov.au](http://www.daff.qld.gov.au).

In addition, the Queensland Government regularly publishes information on the condition of the State's environment and natural resources. Relevant publications include the *State of the Environment Queensland 2011 Report*, available at [www.ehp.qld.gov.au](http://www.ehp.qld.gov.au), and the *Minister's Report 2012–2013 for Queensland's Water Resource Plans*, available at [www.dnrm.qld.gov.au](http://www.dnrm.qld.gov.au).

## Land

Agricultural development in Queensland reflects the soils, topography and climate found in different regions. Topographically, the Great Dividing Range—which in Queensland is a low mountain range with peaks generally between 600 metres and 900 metres—separates the coastal plain from the wide and generally flat to undulating inland plain, and has a few low ranges of up to 600 metres high.

The coastal plain is dissected by short, relatively fast-flowing streams, while much of the inland plain features highly interwoven and short-lived watercourses with wide flood plains.

The most widespread soils in Queensland are:

- infertile red and yellow soils (kandosols), which are found throughout much of the inland and far northern areas
- texture-contrast soils (sodosols), which are erosion-prone and relatively infertile, on the inland foothills of the coastal range and in the northern inland and far south-western areas
- clay soils of high fertility (mainly vertosols), which tend to be found on open, grassy plains in central, western and southern areas.

Other soils that are fertile and suitable for agriculture, but are less widespread, include:

- well-drained, friable clay-loam soils high in iron (ferrosols), which occur in patches, usually in elevated country along the coastal range
- diverse soils with loam to clay textures (dermosols), which are extensive on the coastal plain and adjoining foothills, particularly in the north.

## Land use

Agriculture is the predominant land use in Queensland. Approximately 85 per cent of the State is used for grazing and 2 per cent of the land area is used for cropping. Other agricultural industries (excluding forestry) each occupy less than 1 per cent of the State.

Queensland has in excess of 52 million hectares of native forest, comprising approximately one third of Australia's total native forests and the largest forested area of any Australian state or territory.

Commercial native timber supply is sourced from approximately 20–40 per cent of this area, on both state-owned and private land, predominately in coastal and southern inland areas of Queensland. Native forests that produce commercial timber are generally also used for grazing and are managed as silvopastoral systems—production systems that combine forestry and grazing in a mutually beneficial way.

**Table 2.1** Current and potential land use

Queensland Land Use Mapping Program (1999, 2006 and 2009) <sup>a</sup>	Current land use		Potential land use <sup>b</sup>	
	Area (ha)	% of state	Area (ha)	% of state
Broadacre cropping	3 547 778	2.06	10 921 561	6.34
Sugar cane	565 162	0.33	6 997 216	4.06
Perennial horticulture	87 829	0.05	12 827 225	7.45
Annual horticulture	47 166	0.03	21 848 591	12.68
Grazing	147 926 860	85.87	155 729 682	90.39
Sown pastures	16 041 166	9.31	15 627 696	9.07
Intensive livestock	37 856	0.02	26 930 082	15.63
Aquaculture	4 548	0.00	492 557	0.29
<b>Other land use</b> (non-agricultural land use, may include some forestry)	20 060 748	11.64		
<b>Total</b>	<b>172 277 947</b>	<b>100.00</b>		

a Information contained in this table is based on Queensland Land Use Mapping Program (QLUMP) mapping from 1999, 2006 and 2009 which best represents the agricultural land use categories used in the audit. Discrepancies that may exist between this data and other data are likely to relate to the different years in which the information was collected, base area calculations and differences in the methodology of classifying grazing and residual native vegetation.

b Potential areas include where the majority of production currently occurs as well as where production could potentially occur, except for sown pastures for which the potential area is in addition to the current area.

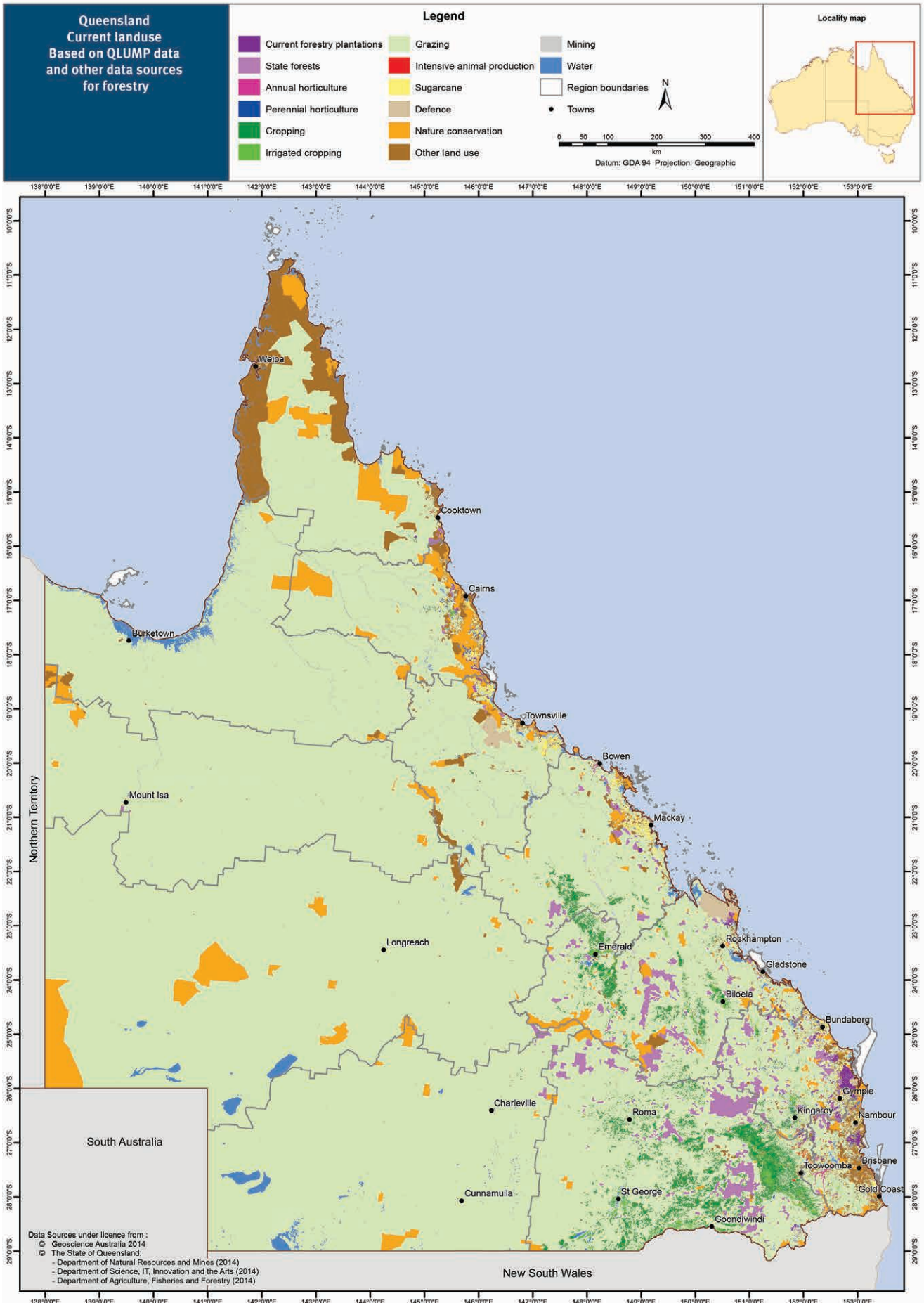
Source: *Queensland Agricultural Land Audit 2013*, DAFF

Table 2.1, taken from the Land Audit, shows the potential for expanding land use for different agricultural purposes, calculated from a purely agronomic point of view. It is instructive to note the capacity for very significant expansion in cropping and intensive livestock (including aquaculture), and even for moderate expansion in extensive grazing.

The viability of this expansion would depend on factors such as alternative land uses and the availability of markets and other infrastructure. This is why expanded land use is likely to play a relatively minor role in doubling agricultural production by 2040, with most of the increased output likely to be associated with increased intensity of land use.

For more information on current land use and the potential for agricultural production in Queensland, see the Land Audit at [www.daff.qld.gov.au](http://www.daff.qld.gov.au).

**Figure 2.1** Current land use in Queensland



## Tenure

**Table 2.2** Tenure in Queensland

Tenure	Area (ha)	% of state	No. of parcels
Freehold	45 820 894	25	2 577 440
Leasehold	113 725 006	63	53 734
Protected area	8 717 311	5	4 502
Forestry	3 236 642	2	3 076
State land	1 290 351	1	21 329
Reserve	1 733 328	1	36 406
Other (everything else)	1 911 073	1	250 912
None (roads, rivers etc.)(blank)	4 094 173	2	559 578
<b>Total</b>	<b>180 528 776</b>	<b>100</b>	<b>3 506 977</b>

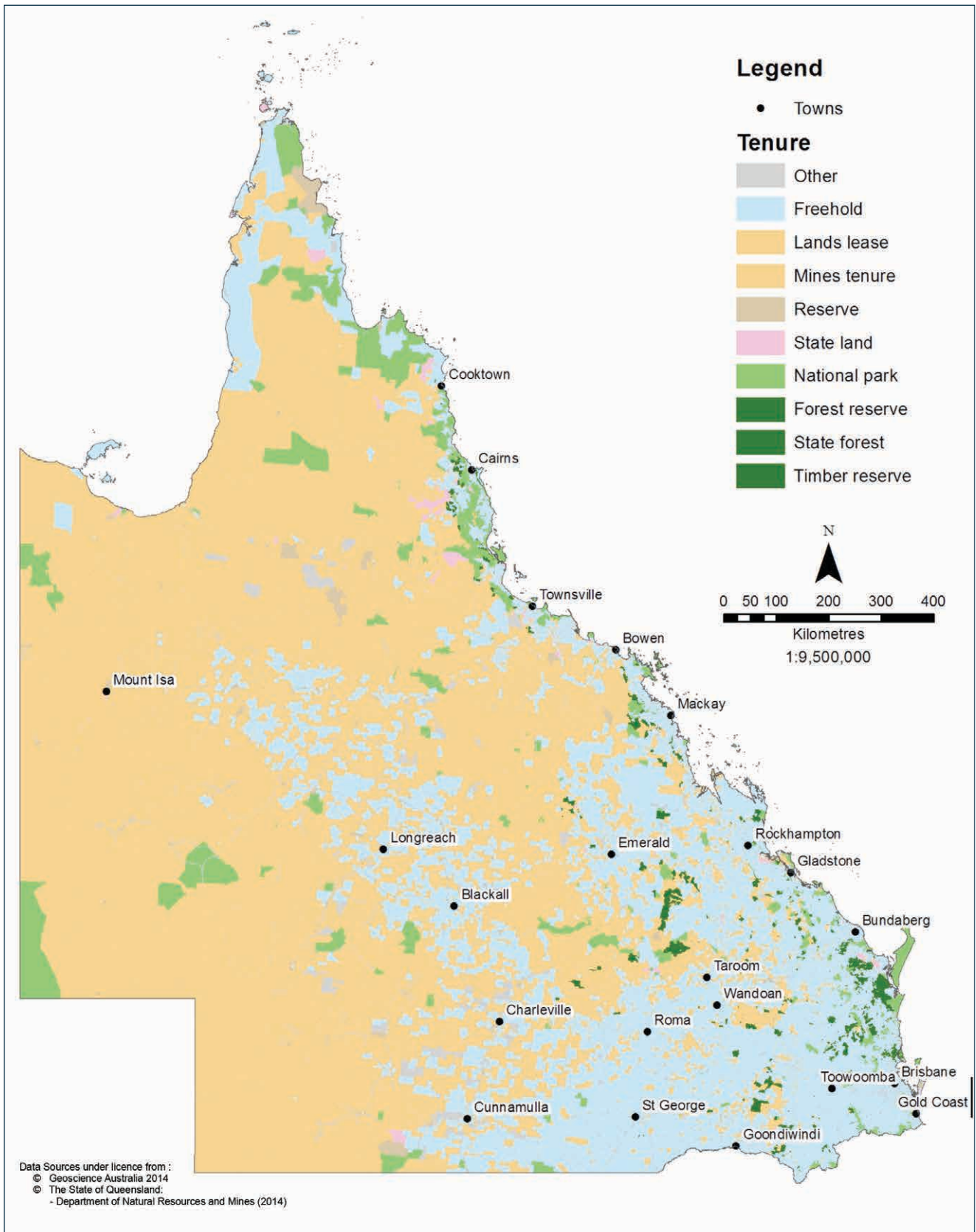
**Note:** Tenure area totals include all offshore islands, hence the difference to the total figures in QLUMP mapping.

Source: Department of Natural Resources and Mines (DNRM)

Only 25 per cent of Queensland is privately owned; 63 per cent of Queensland is leasehold land. The 63 per cent of leasehold land is predominantly used for agricultural purposes. There are approximately 2744 perpetual leases and 2992 term leases over 106.5 million hectares of rural leasehold land.

In recent years, leasehold properties have traded at comparable prices with freehold properties. This reflects the relative security of tenure and common regulatory provisions over different tenures.

**Figure 2.2** Tenure in Queensland





## Native vegetation

The *Vegetation Management Act 1999* underwent significant legislative reform in 2013. As a result, the area of the State constrained by regulated vegetation has reduced since the publication of the Land Audit. Furthermore, the introduction of an allowable purpose for clearing for high-value, including irrigated high-value agriculture, may enable the development of new production areas.

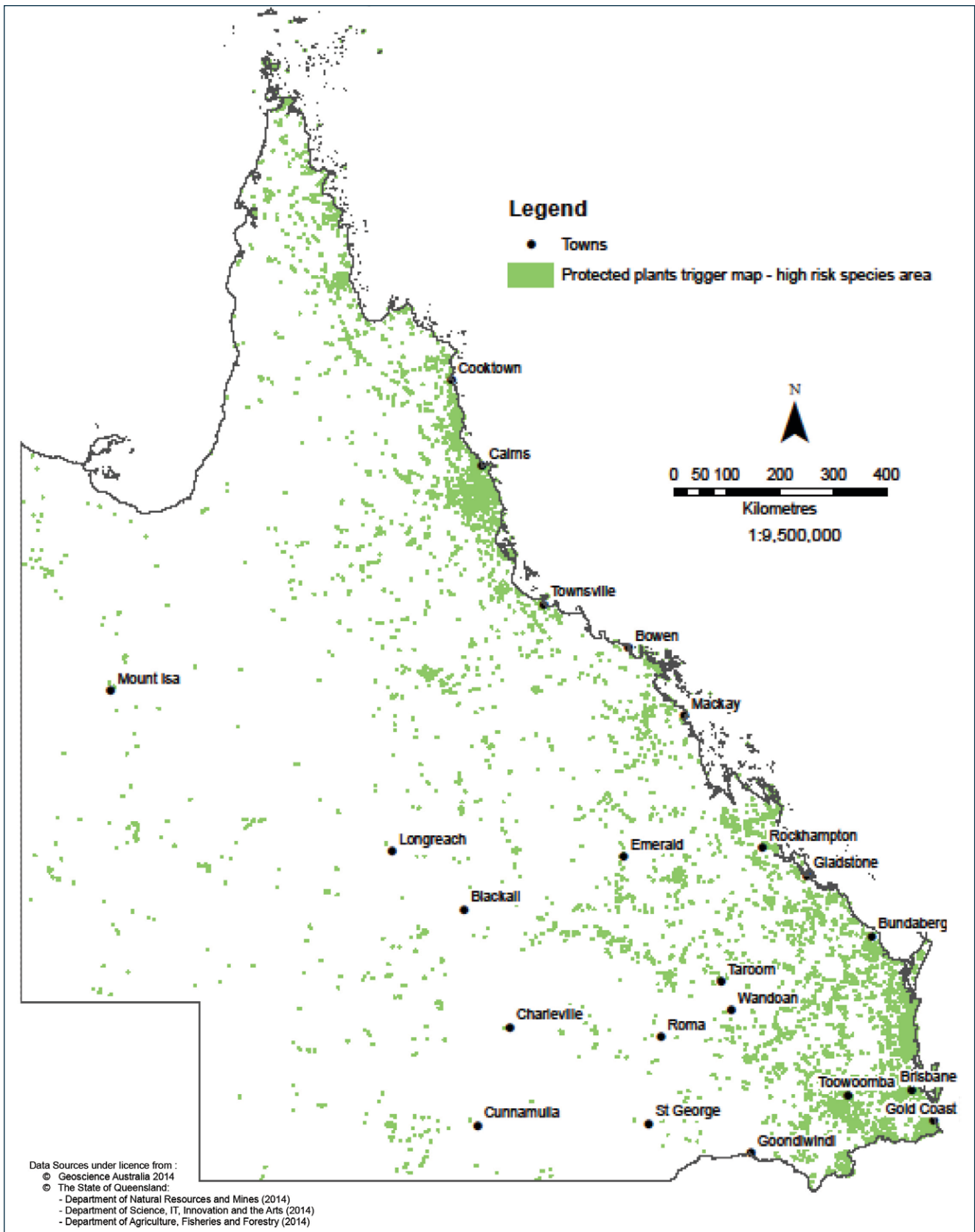
**Table 2.3** Regulated vegetation in Queensland

Category	Area (ha)
Category A: Vegetation offsets/compliance notices and variable Declarations	29 494
Category B: Remnant	138 419 192
Category C: High-value regrowth	407 954
Category R: Reef regrowth watercourse vegetation	249 147
Category X: Not regulated under the VMA	33 707 985
Water	27 020 394
Outside	521 040
<b>Total</b>	<b>200 355 206</b>

Source: DNRM

In Queensland, plants of conservation value are protected under the *Nature Conservation Act 1992*. Recent amendments to the protected plants framework have reduced the area that is subject to protected plant requirements for clearing activities from 100 per cent of the State down to approximately 3.5 per cent.

**Figure 2.3** Protected plants trigger map





## Environmental protection on farm

Approximately 53.2 per cent of agricultural producers consciously protect native vegetation on their properties. However, this is below the national average of 57.8 per cent. Queensland's agriculture industry also lags behind the national average in the protection of wetland areas, but is above average in the protection of river and creek banks.

**Table 2.4** Protection of the native environment on farm, 2011–12

	Queensland	Australia
<b>Agricultural businesses</b>		
Agricultural businesses	28 171	135 692
Native vegetation on holding	19 926	85 212
Wetlands on holding	3 648	18 831
Rivers or creeks on holding	17 015	71 024
<b>Undertook activities to protect natural environment areas (%)</b>		
Protected native vegetation	53.2	57.8
Protected wetland areas	47.3	50.4
Protected river and creek banks	54.2	51.7

Source: Land management and farming in Australia, 2011-12, ABS 4627.0

While largely associated with vegetation management regulations, the higher proportion of farmers protecting river and creek banks may partly be attributed to large numbers of landholders across six catchments participating in best management practice (BMP) programs and other programs as part of the Reef Water Quality Protection Plan (Reef Plan) and related initiatives.

BMP programs have been designed for a number of specific commodities. They aim to boost productivity or profitability, while setting a standard for environmental stewardship to foster more sustainable environmental outcomes.

In particular, certain BMP modules focus on maintaining or improving land condition and water quality. As these natural resources are the basis of agricultural production, adopting improved practices can benefit the environment and ensure the longevity of agricultural production in Queensland.

Improved management practices have also been identified outside of BMP programs. Between 2009 and 2011, 17 per cent of graziers, 34 per cent of cane farmers and 25 per cent of horticultural producers within reef catchments adopted improved practices. For more information on improved management practices adopted under the Reef Plan, see [www.reefplan.qld.gov.au](http://www.reefplan.qld.gov.au).