

Queensland's plantation forestry estate

2021 update

December 2021

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Background

Understanding the spatial extent of plantation forestry and changes in the estate over time is necessary for policy development and decision-making. It is also needed to meet monitoring and reporting obligations and allows comparison of the plantation sector with other agricultural sectors.

A basic spatial layer of Queensland's plantation forestry estate prepared by the Department of Agriculture and Fisheries (DAF) was first released to the public as part of the *Queensland agricultural land audit* in 2013. That coverage assigned a general plantation type – softwood, hardwood or mixed species – to each parcel of plantation land.

The spatial layer was updated and validated in 2014 by the former Department of Science, Information Technology and Innovation using the best available plantation coverages and satellite imagery at the time. A further update by DAF in 2016 used plantation datasets from 2016 and satellite imagery from 2014 to 2016.

This 2021 update uses plantation datasets largely from 2019, satellite imagery from 2018 to 2020, and area information for 2016 and 2019 provided by HQPlantations Pty Ltd (HQP).

Findings

This report identifies a total plantation area for Queensland of 206 714 hectares in 2019, consisting of 89% softwoods, 10% hardwoods and less than 1% mixed species. The total plantation estate decreased by 35 158 hectares (15%) between the years 2016 and 2019.

Most of the plantation estate was in the South East Queensland region, with a total area of 181 284 hectares. The North Queensland region had 23 195 hectares and areas of plantation outside these regions totalled 2235 hectares.

HQP owned and managed the resource on 96% of the total plantation area, with the remaining 4% owned by mostly small-scale private growers. Data for 2016 and 2019 is provided in Table 1 below.

NOTE: This update excludes some small areas either previously incorrectly identified as plantation due to the low-resolution imagery available at the time or that cannot be confidently identified as plantations using current imagery.

Table 1: Queensland's plantation estate (2016 and 2019)

	2016 plantation coverage (ha)	2019 plantation coverage (ha)	Difference (ha)	Change (%)
TOTAL	241 872	206 714	-35 158	-15
Softwood	197 915	184 909	-13 006	-7
Hardwood	43 550	21 198	-22 352	-51
Mixed species	407	607	200	49
HQP	209 358	198 630	-10 728	-5
Softwood*	193 401	184 043	-9 358	-5
Hardwood*	15 957	14 587	-1 370	-9
Other growers	32 514	8 084	-24 430	-75
Softwood	4 514	866	-3 648	-81
Hardwood	27 593	6611	-20 982	-76
Mixed species	407	607	200	49

* 2016 areas have been updated since the previously published 2016 report

Plantations by region

The National Plantation Inventory (NPI) is regularly updated by the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES). The most recent update was published in 2020. The NPI includes data on all major plantation regions in Australia.

This 2021 report adopts the same boundaries as those used by the NPI, which differ slightly from the regional boundaries that were used for the 2016 report. While most of the Queensland plantation estate fell within the NPI regions of North Queensland and South East Queensland in 2019, a combined area of 2235 hectares (1%) was located outside these two regions – mostly near the western boundary of the South East Queensland region. Refer to the maps provided in Appendix 2.

The North Queensland region consists of a northern subregion based around Cairns and Townsville and a southern subregion between Mackay and Rockhampton, which have been combined for this report.

Although best efforts have been made to ensure the 2019 plantation coverage is complementary to the NPI data, some minor discrepancies are expected.

North Queensland

The plantation estate in the North Queensland region totalled 23 195 hectares in 2019, consisting of 21 549 hectares of softwoods, 1475 hectares of hardwoods and 171 hectares of mixed species.

Plantation areas were severely impacted by cyclones in 2011 (Cyclone Yasi) and 2015 (Cyclone Marcia), which destroyed or severely affected the plantations owned by both HQP and other growers in the region.

Given the adjustment to NPI regional boundaries used for this report, direct comparisons between 2016 and 2019 are not possible. However, indications are that the softwood plantation estate reduced by about 8800 hectares, mostly due to the disposal of land and subsequent conversion to other uses.

South East Queensland

The South East Queensland estate covered 181 284 hectares in 2019, consisting of 161 454 hectares of softwoods, 19 394 hectares of hardwoods and 436 hectares of mixed species.

Given the adjustment to NPI regional boundaries used for this report, direct comparisons between 2016 and 2019 are not possible. However, indications are that the plantation estate broadly decreased in the region by about 26 000 hectares, mostly due to the continuing conversion of failed managed investment scheme plantation areas back to agriculture. The mandated handback and resumption of plantation licence areas contributed to the small area reductions in the softwood plantation area.

Other areas

Areas of plantation outside the NPI regions totalled 2235 hectares in 2019, consisting of 1906 hectares of softwood plantation and 329 hectares of hardwood plantation.

Plantations by ownership

In Queensland, 96% of the plantation resource in 2019 was owned by HQP. The other 4% of plantations were owned by several other private growers, mostly in the South East Queensland region.

HQPlantations Pty Ltd

In 2019 the HQP plantation area amounted to 198 630 hectares, consisting of 184 043 hectares of softwood plantations and 14 587 hectares of hardwood plantations. Most of the HQP plantation area was located in South East Queensland (88%), followed by North Queensland (11%) and areas outside these regions (1%).

The HQP resource decreased by 10 728 hectares in the three years from 2016 to 2019, largely due to the sale of freehold land and the commencement of a rationalisation program for the failed hardwood plantation acquired from the state in the June 2010 plantation acquisition.

Other growers

Softwood

The total softwood plantation estate attributed to other growers decreased by 3648 hectares over the three-year period, leaving a total of 866 hectares.

Most of this reduction was in the South East Queensland region, leaving 795 hectares. The North Queensland region softwood area totalled 71 hectares in 2019. No hectares of softwood were identified outside these two NPI regions for other growers.

Hardwood

From 2016, the area of hardwood plantations owned by other growers decreased by 20 982 hectares, leaving a balance of 6611 hectares in 2019.

Most of this reduction occurred in the south and was due to the write-off of areas in the failed hardwood plantations managed investment scheme. A total of 4979 hectares remained for the South East Queensland region in 2019, with 1333 hectares of hardwood plantation identified for the North Queensland region and 299 hectares outside these NPI regions.

Mixed species

The mixed species estate owned by other growers was estimated at 607 hectares in 2019, with 436 hectares in the South East Queensland region and 171 hectares in the North Queensland region. This estate likely consisted of small plantations and corridor or screening plantings with the potential to produce commercial timber.

The total area of 607 hectares was a small increase over the 407 hectares reported in 2016. This is probably the result of improved information sources enabling more certain identification of plantation areas.

There were no areas of mixed plantation owned by other growers outside the two NPI regions.

Appendix 1: Methodology

Updated spatial data was obtained from HQP, DAF and the Department of Environment and Science (DES) to complement the dataset from ABARES.

The 2019 plantation coverage was updated using the following process:

- All available datasets (HQP, DAF, DES and ABARES) were combined into a single aggregate map.
- The following data was merged to create an interim 2019 dataset
 - parcels classified as 'plantation forestry' or 'irrigated plantation forestry' from DES [Queensland Land Use Mapping Program \(QLUMP\)](#) 2019 data
 - a Queensland extract from [ABARES Australia's plantations 2016](#) data
 - plantation forest data from the DAF 2017 [Queensland agricultural land audit](#).
- Areas covered by current HQP plantations were removed from the interim dataset.
- Each remaining parcel from a non-HQP source was checked against the most recent imagery to confirm the presence of plantation. If a parcel did not match with plantation in the imagery, it was deleted or, if appropriate, boundaries were amended as accurately as possible.
- The interim data and the 2019 HQP data were merged to create the final dataset and areas were then identified by reporting regions.

Attributes in the final dataset include 'Source', 'Plant_type', 'Region' and 'Description'. 'Source' denotes where the data was obtained or the currency of the imagery used to check for plantation. 'Plant_type' indicates the dominant species group (hardwood, softwood or mixed species). 'Region' and 'Description' refer to the reporting regions – NQ North, Cairns–Townsville, NQ South, Mackay–Rockhampton, SEQ North, Bundaberg, SEQ South, Southern SEQ.

Data sources

Data for this review was compiled from a mix of sources. The data from HQP, DES (formerly DSITI) and ABARES had been updated since the last review (2014) and was therefore included.

HQPlantations Pty Ltd

HQP also provided total area information for 2016 and 2019, which was taken to be the most up-to-date and accurate representation of their plantations.

Department of Environment and Science

Data provided by DES (formerly DSITI) was extracted from the QLUMP dataset. For this update, those features classified as 'plantation forestry' or 'irrigated plantation forestry' were extracted from the statewide dataset. These features were then checked using updated imagery as part of the process to determine whether they should be included in this update.

Imagery

Aerial and satellite imagery were used to cross-reference parcel boundaries and plantation types. The latest imagery available through the Spatial Imagery Subscription Plan (SISP) was used. Generally, recent high-resolution imagery to 2020 has been used. In some instances lower resolution 2018 statewide satellite image mosaic has been used for confirmation if available high-resolution imagery was captured prior to 2018. Reference has also been made in some instances to earlier imagery available through SISP.

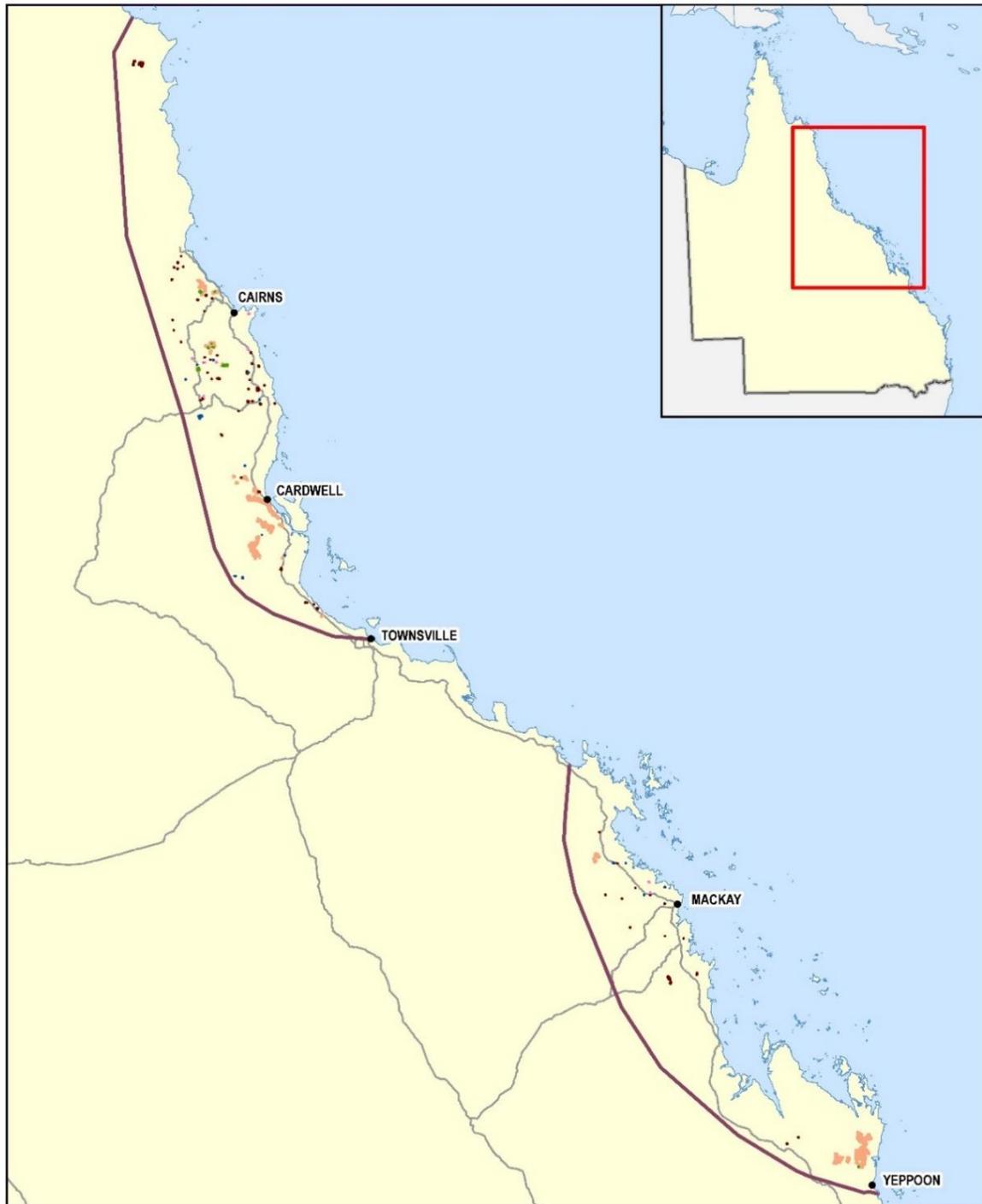
Data limitations

The 2019 plantation coverage contains only those areas previously identified in the source datasets. It is possible that some areas of plantation have not been identified. While these may be locally significant areas, it is unlikely that any plantations that are significant at a regional or state level have been missed.

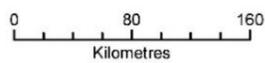
For some sources the mapped extent is likely to be an overestimate, as it describes the outer boundary of a land parcel containing some plantation and includes some areas of non-plantation vegetation (such as buffers, roads, or unplanted areas).

It is also likely that some areas included in the coverage may no longer support plantation due to ongoing effects from natural events (such as cyclones or drought) or the collapse of commercial plantation forestry companies since the areas were mapped in their source dataset. Also, there may be inaccuracies because of a lack of updated aerial or satellite imagery of the area.

Appendix 2: Plantation estate maps



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Plantation Ownership and Type

- HQP - Softwood
- HQP - Hardwood
- Other Growers - Softwood
- Other Growers - Hardwood
- Other Growers - Mixed Species
- North Queensland NPI Region
- Highway

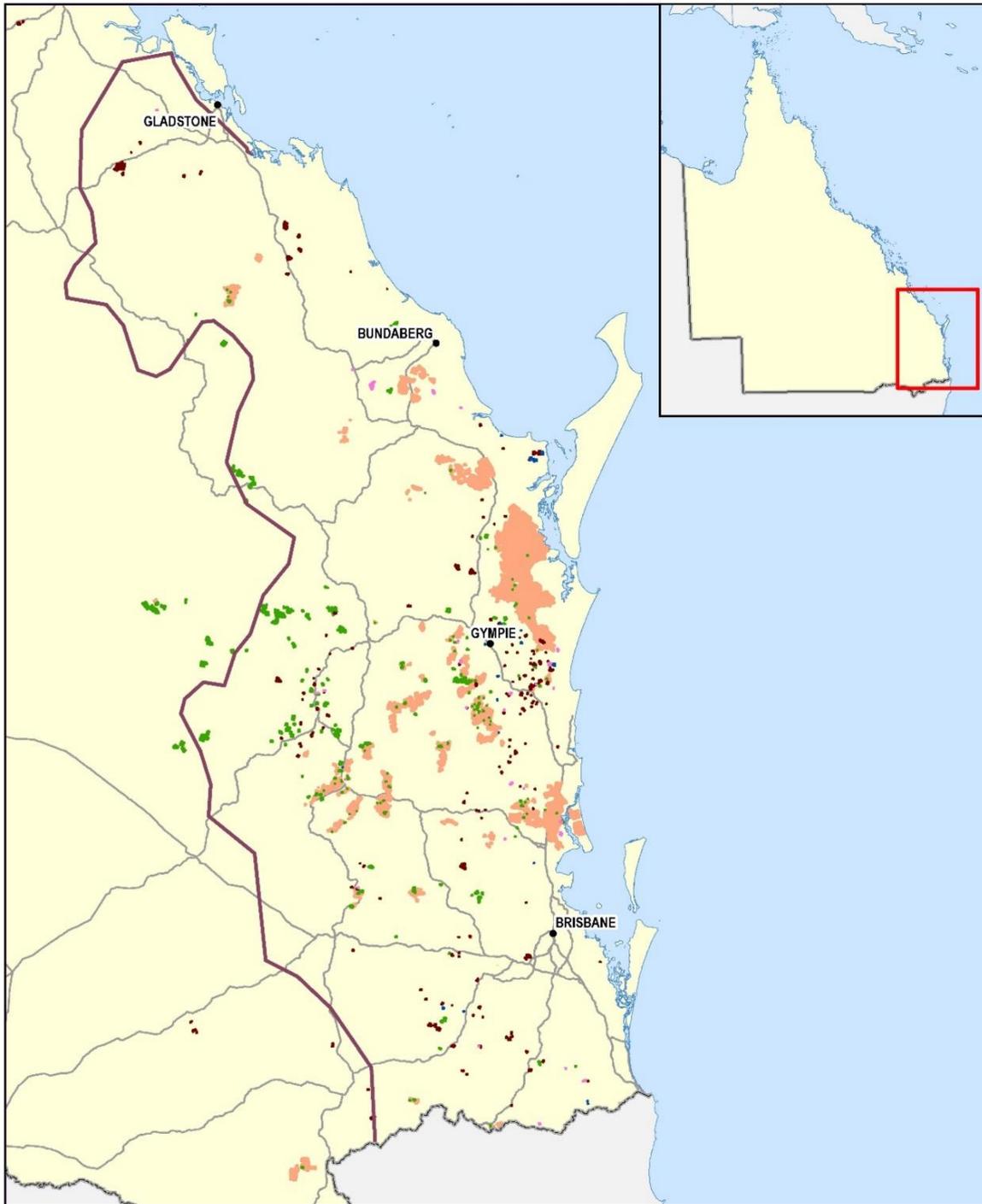
**North Queensland
 Plantation Estate 2021**

Queensland Albers Equal Area Conic
 Date of Preparation 7/05/2021

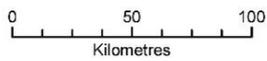


FP334 Appendix 2 Maps. Produced: 7/05/2021, 9:50:42 AM lakeg

Figure 1: North Queensland plantation estate



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**South East Qld
 Plantation Estate 2021**

Queensland Albers Equal Area Conic
 Date of Preparation 7/05/2021



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Figure 2: South East Queensland plantation estate