

MAY 2025

Drivers of deforestation and land clearing in Queensland



Image: Brigalow belt | Phototrip / istock

Acknowledgement

Wilderness Society acknowledges the Traditional Owners and Custodians of the lands and seas on which, and for which, we work. Wilderness Society acknowledges the Yuggera and Turrbal peoples, whose lands on which this analysis and report was produced. We acknowledge the ongoing impact of deforestation on rich and diverse cultural heritage, stories and connections.

Always was, always will be.

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Executive summary

Australia is a recognised global deforestation front alongside the Amazon, the Congo and Borneo. This is largely driven by deforestation and land clearing in the state of Queensland. Since 2018, over 1.7 million hectares of forest and bushland have been impacted by land clearing activity, according to Queensland government data.¹

In 2019, the Wilderness Society's first edition of this report set out to understand the leading driver of deforestation and land clearing in Queensland. It found that beef production was the leading cause. This updated report and associated analyses intends to ascertain if the expansion of pastures for beef cattle remains the major driver of deforestation and land clearing across the state, potential impacts on the environment and implications for corporate action surrounding deforestation risk.

Image: Trees are bulldozed and burnt for beef pastures | Paul Hilton

Throughout this report, 'deforestation' has been used to describe impacts to forest and bushland vegetation by either technical deforestation² or what may more broadly be considered land clearing.

Six years since the initial report was produced, deforestation remains a leading driver of biodiversity loss, climate change and sediment and chemical pollution affecting the globally significant Great Barrier Reef.

Over the last four years of reporting by the Queensland government, an average of 90% of forest and bushland destruction has been attributed to replacement by 'pasture'. The Wilderness Society has undertaken fine-scaled GIS analysis to determine and monitor the specific sectors contributing to deforestation in Queensland.

This analysis is focused on Queensland for three key reasons. First, Queensland has the highest rates of deforestation and land clearing in Australia—more than the rest of the states and territories combined. Second, Queensland has an accurate and publicly available dataset for measuring tree-cover change, the Statewide Landcover and Trees Study (SLATS). Third, Queensland is Australia's most biodiverse state—home to rainforests, savannas, dry tropics, rangelands, wetlands and grasslands.

This analysis reconfirms that the deforestation and land clearing of forests and bushland in Queensland is driven by the expansion of pastures for beef production.

Over the past four years of reporting (2018-19 to 2021-22) at least 64% of all land clearing activity in Queensland was linked to beef production (totalling 1,089,480 hectares), a figure which is likely to be a conservative estimate.³

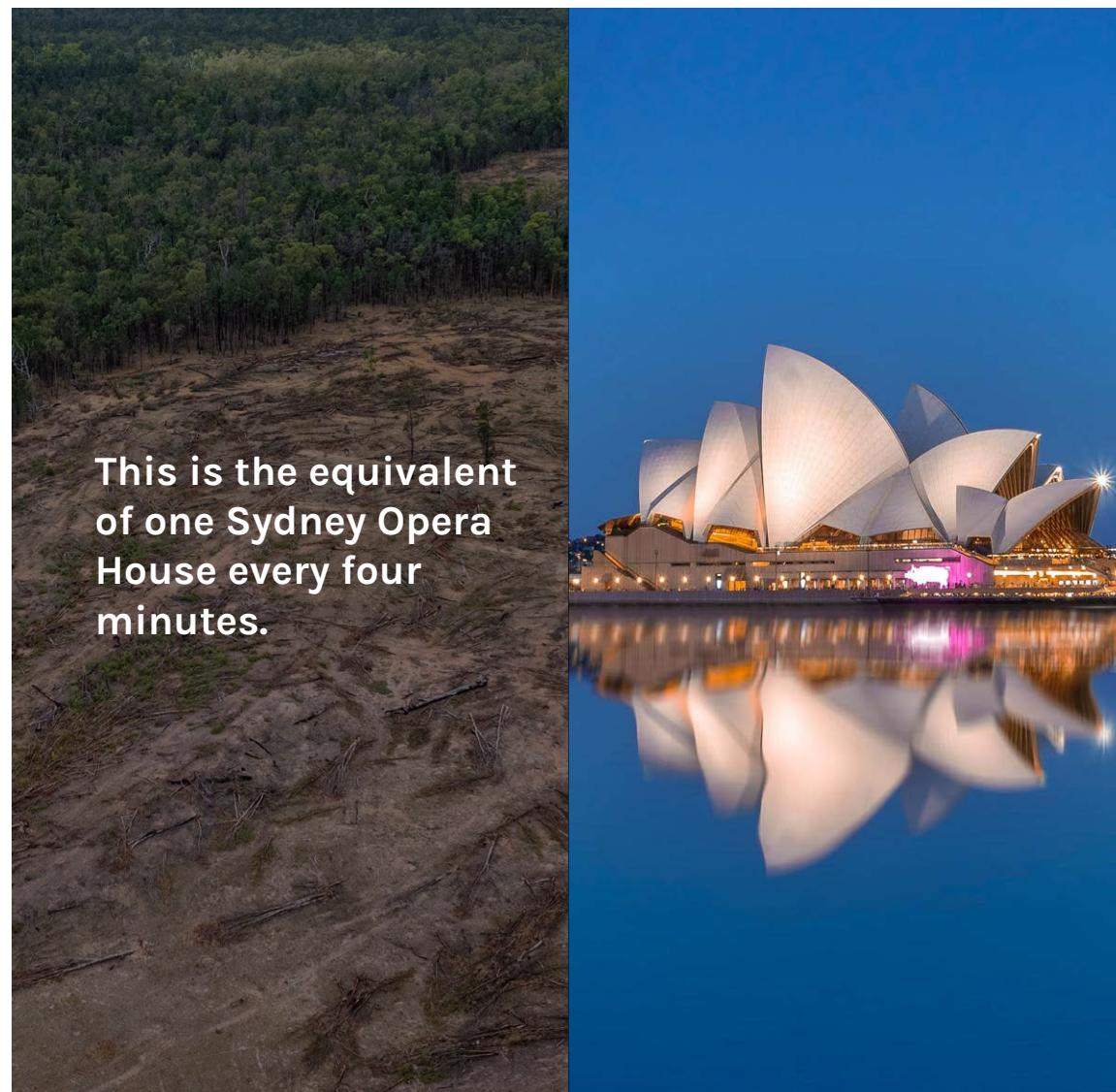


Image: L - Deforestation for beef pasture | Paul Hilton, R - Sydney Opera House | Mudassir Ali / Pexels

Image: Deforestation in Queensland

Throughout the most recent SLATS reporting period 2021-22, at least 67% of land clearing activity in Queensland was linked to beef (206,315 hectares). Of that, 63% was remnant vegetation⁴ or regenerating forests and bushland older than 15 years old.

In this period, 69% of clearing of unregulated vegetation (Category X lands under the *Queensland Vegetation Management Act 1999*) greater than 15 years old was linked to beef pastures. The *Queensland Vegetation Management Act 1999* states that vegetation that is at least 15 years old is 'High Value Regrowth'.

Recent research shows that regrowing forests and woodlands provide valuable habitat and food for threatened species after an average of 15 years, while some species are likely to benefit from trees as young as three years.⁵

Additionally, in the latest reporting period 93% (192,568 hectares) of clearing linked to beef in Queensland was in areas classified as 'forest', that met both the Australian forest definition and the United Nations Food & Agriculture Organisation (UNFAO) forest definition used by the European Union (EU). Of which, remnant forest or regenerating forests older than 15 years make up 62% (118,914 hectares).

After beef production, the next largest land uses linked to deforestation in Queensland are sheep grazing, pasture for other grazing, forestry, cropping and mining. Therefore businesses in the supply chains of sectors identified as key drivers of Queensland's deforestation and land clearing remain highly exposed to deforestation risk.

Since deforestation risk in the beef supply chain was initially demonstrated in *Drivers of deforestation and land clearing in Queensland 2019*, it has increasingly been discussed at domestic and international levels.

This analysis reinforces that the beef supply chain remains the most exposed to deforestation risk in Queensland and that corporate and government action is urgently required.



Deforestation in Queensland

Deforestation: the reduction or complete removal of native forest and bushland.

Prior to colonisation, approximately 80% of Queensland's land surface was covered with forests, shrublands and heathlands, with most occurring in the east and north.⁶

Most of Queensland's deforestation has occurred in the last 60–70 years primarily due to the expansion of agriculture⁷ with restraints to deforestation only introduced in the 2000s.⁸

Historically, much of the deforestation in Queensland took place within the south, central and southeast of the state, particularly in the fertile Brigalow bioregion where most destruction occurred in the 1960s.⁹ This continues into present day, with the majority of deforestation occurring in the Brigalow bioregion.¹⁰ When the *Vegetation Management Act 1999* commenced, 93% of Brigalow forest had been cleared.¹¹



Image: L - Deforestation in Queensland,
R - Koala | Sally Hennessy

Deforestation in Queensland continues to position Eastern Australia on the list of global deforestation hotspots, alongside places including the Amazon, the Congo and Borneo¹² with more than 1.7 million hectares impacted by deforestation and land clearing over the past four years of government reporting.¹³

One recent study estimates that 100 million native animals, including koalas, are killed, injured or displaced by deforestation each year in Queensland and New South Wales.¹⁴ Queensland is the only state considered a net source for land use change emissions, rather than a sink—meaning more emissions are released than absorbed by land use change.¹⁵

Clearing activity in the Great Barrier Reef catchment areas accounted for an average of 42% of the state's total clearing between the reporting periods of 2018–19 and 2021–22.¹⁶ Deforestation and land clearing in Great Barrier Reef catchments increases erosion and run-off of sediment and pollutants into the Great Barrier Reef World Heritage Area.¹⁷ The World Heritage advisory body, UNESCO, has singled out tree clearing as a major threat to the Great Barrier Reef. UNESCO has recommended that the Queensland and federal governments strengthen deforestation regulations to protect remnant and high-quality vegetation in reef catchments and other high priority areas, including vegetation along water courses.¹⁸

Findings

- Beef production remains the number one driver of deforestation and land clearing in Queensland.
- Deforestation for beef pastures remains a key threat to the Great Barrier Reef.
- More than 90% of beef-linked clearing in Queensland occurred in ecosystems meeting Australian and EU forest definitions.
- Deforestation for beef risks hundreds of threatened species, including the iconic koala.
- Merely 10% of land parcels linked to beef accounted for all beef-related deforestation in Queensland (2021-22).

Finding 1: Beef production remains the number one driver of deforestation and land clearing in Queensland

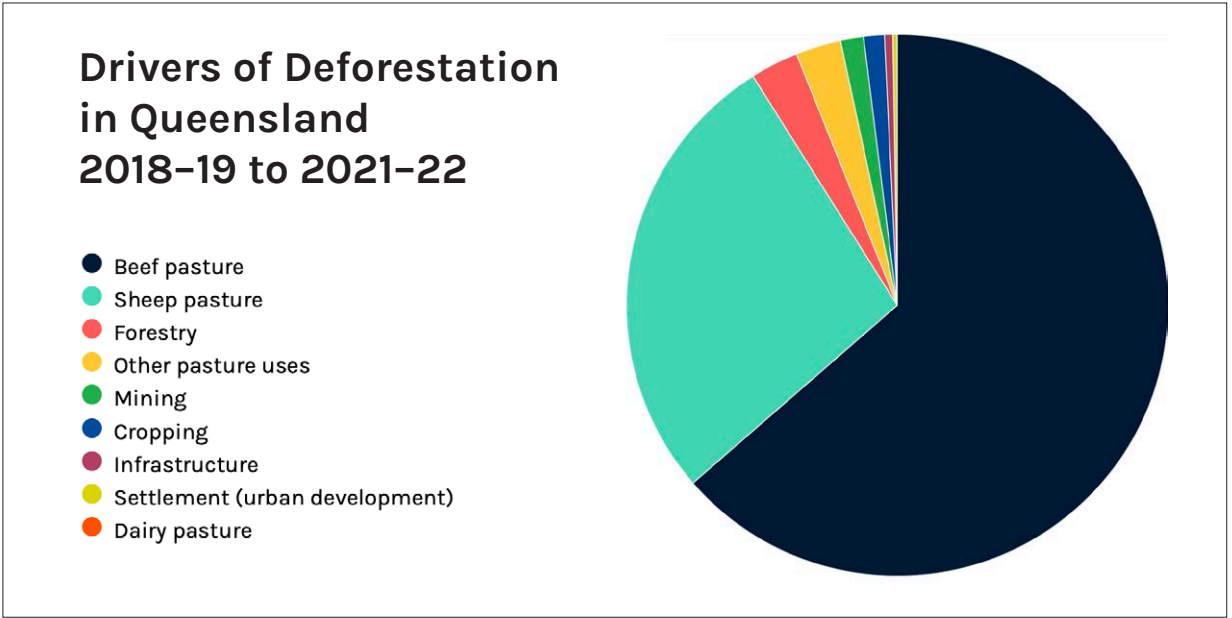
Analysis 1: Total deforestation linked to beef production

The analysis revealed that beef production remained the number one driver of deforestation and land clearing in Queensland between 2018 and 2022. This was followed by sheep, forestry, pasture for other grazing, cropping, mining and infrastructure.

Table 1: Drivers of deforestation in Queensland 2018-19 to 2021-22

SLATS clearing descriptors	2018-19		2019-20		2020-21		2021-22		Four year total (2018-22)	
	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%
Pasture - Beef	385,517	57.98	263,641	65.61	234,007	69.46	206,315	66.68	1,089,480	63.6
Pasture - Sheep	237,975	35.79	97,628	24.3	66,943	19.87	67,866	21.93	470,411	27.46
Partial clearing major - Forestry	12,606	1.9	12,665	3.15	12,902	3.83	11,009	3.56	49,182	2.87
Pasture - Other	12,781	1.92	10,644	2.65	9,770	2.9	13,057	4.22	46,251	2.7
Crop	6,982	1.05	7,416	1.85	5,134	1.52	1,679	0.54	21,211	1.24
Mine	6,335	0.95	6,660	1.66	4,717	1.4	5,887	1.9	23,599	1.38
Infrastructure	1,724	0.26	2,208	0.55	2,228	0.66	2,206	0.71	8,366	0.49
Settlement	923	0.14	934	0.23	1,173	0.35	1,341	0.43	4,371	0.26
Pasture - Dairy	73	0.01	41	0.01	35	0.01	54	0.02	203	0.01
Total	664,916	100	401,837	100	336,909	100	309,414	100	1,713,075	100

Excluding the clearing in parcels with no land use that had a SLATS descriptor related to pasture or thinning to assist in the accuracy of percentages, it is highly likely that most of the unknown land uses with clearing on them are linked to beef. Land use from QVAS was utilised on the three SLATS descriptors associated with pasture (2018-2020 "Clearing - Pasture", "Clearing - Partial clearing major - Pasture" and "Clearing - Partial clearing minor" and 2013-2018 "Pasture" and "Thinning") in order to ascertain the amount associated with beef production and expansion—all other land use data from QVAS was ignored. Previous analysis attributed beef land uses to a clearing event no matter what the SLATS descriptor was. The SLATS descriptors "Missed clearing" and "Timber plantation" were excluded from this analysis.



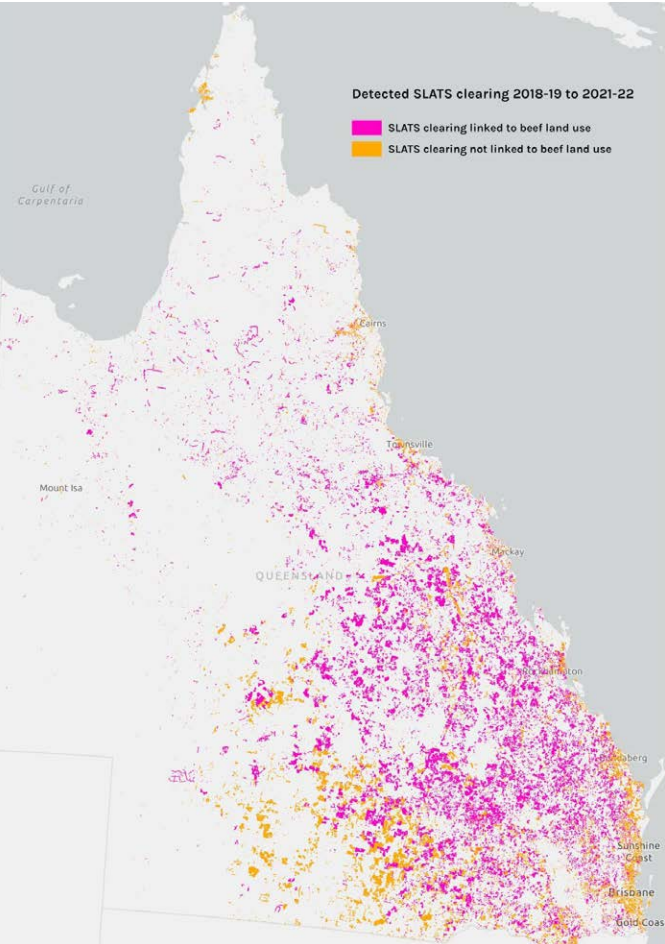


Figure 1: Deforestation and land clearing linked to beef in Queensland

At least 64% of all detected deforestation and land clearing between 2018–19 and 2021–22 reporting periods was associated with beef production.

In total, that is more than one million hectares (1,089,480 hectares) of deforestation and land clearing over the last four reporting periods linked to beef production.

Between 2021-22 alone, at least 67% of all deforestation and land clearing detected was attributed to beef. At least 63% of vegetation impacted was remnant or regenerating forests and bushland (129,490 hectares).

Table 2: Drivers of deforestation in Queensland 2021-22 by age

SLATS clearing descriptors	Non-remnant (<15yrs)		Non-remnant (>15yrs)		Remnant		Total
	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)
Pasture - Beef	76,825	37.24	94,731	45.92	34,759	16.85	206,315
Pasture - Sheep	19,701	29.03	32,097	47.29	16,068	23.68	67,866
Partial clearing major - Forestry	356	3.24	490	4.45	10,163	92.31	11,009
Pasture - Other	5,351	40.98	5,790	44.35	1,916	14.67	13,057
Crop	866	51.58	681	40.59	132	7.83	1,679
Mine	1,384	23.51	934	15.86	3,569	60.63	5,887
Infrastructure	282	12.78	559	25.33	1,366	61.9	2,206
Settlement	246	18.37	708	52.82	386	28.81	1,341
Pasture - Dairy	32	58.75	16	29.65	6	11.6	54
Total	105,043	33.95	136,007	43.96	68,364	22.09	309,414

Excluding the clearing in parcels with no land use that had a SLATS descriptor related to pasture or thinning to assist in the accuracy of percentages, it is highly likely that most of the unknown land uses with clearing on them are linked to beef. Land use from QVAS was utilised on the three SLATS descriptors associated with pasture ("Clearing - Pasture", "Clearing - Partial clearing major - Pasture" and "Clearing - Partial clearing minor") in order to ascertain the amount associated with beef production and expansion— all other land use data from QVAS was ignored. Previous analysis attributed beef land uses to a clearing event no matter what the SLATS descriptor was. The SLATS category "Clearing - Missed clearing" and "Timber plantation" were excluded from this analysis.

Image: Fitzroy River turtle | CraigL / Wikimedia Commons, CC BY-SA 4.0

Finding 2: Deforestation for beef pastures remains a key threat to the Great Barrier Reef

Analysis 2: Total deforestation linked to beef production in Great Barrier Reef catchments

In Great Barrier Reef catchments, the analysis found that between 2018-22, 86% (or 582,499 hectares) of forest and bushland clearing was attributed to beef production. This is followed in order by forestry (5%), pasture for other grazing (4%), mining (2%) and cropping (2%).

In the 2021-22 reporting period alone, 113,104 hectares of land clearing activity in the Great Barrier Reef catchment was linked to beef. Of that, 62% was remnant or regenerating forests and bushland at least 15 years old (69,637 hectares).

Since 2018, 95,402 hectares of potential Fitzroy River turtle habitat has been impacted by deforestation linked to beef. The Fitzroy River turtle, listed as endangered under the EPBC Act, is found exclusively in the Fitzroy catchment, the largest catchment on the east coast of Australia that drains into the Great Barrier Reef.¹⁹



Table 3: Drivers of deforestation in Great Barrier Reef catchments

SLATS clearing descriptors	2018-19		2019-20		2020-21		2021-22		Four year total (2018-22)	
	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%
Pasture - Beef	187,406	88.67	147,127	85.25	134,862	85.86	113,104	83.62	582,499	86.14
Pasture - Sheep	0	0	28	0.02	0	0	0	0	28	0
Partial clearing major - Forestry	8,880	4.2	9,448	5.47	9,709	6.18	6,048	4.47	34,085	5.04
Pasture - Other	6,891	3.26	6,673	3.87	4,655	2.96	10,408	7.7	28,627	4.23
Crop	3,455	1.63	3,575	2.07	3,433	2.19	1,255	0.93	11,718	1.73
Mine	3,758	1.78	4,033	2.34	2,918	1.86	3,094	2.29	13,803	2.04
Infrastructure	784	0.37	1,475	0.85	1,126	0.72	1,053	0.78	4,438	0.66
Settlement	143	0.07	201	0.12	361	0.23	252	0.19	956	0.14
Pasture - Dairy	35	0.02	16	0.01	1	0	38	0.03	90	0.01
Grand Total	211,352	100	172,575	100	157,065	100	135,252	100	676,244	100

This analysis excluded the clearing in parcels with no land use that had a SLATS descriptor related to pasture to assist with the accuracy of percentages; it is highly likely that most of the unknown land uses with clearing on them are linked to beef. Land use from QVAS was utilised on the three SLATS descriptors associated with pasture (2018-2020 "Clearing - Pasture", "Clearing - Partial clearing major - Pasture" and "Clearing - Partial clearing minor" and 2013-2018 "Pasture" and "Thinning") in order to ascertain the amount associated with beef production and expansion—all other land use data from QVAS was ignored. Previous analysis attributed beef land uses to a clearing event no matter what the SLATS descriptor was. The SLATS descriptors "Missed clearing" and "Timber plantation" were excluded from this analysis.

Finding 3: More than 90% of all beef-linked clearing occurred in ecosystems meeting the Australian or EU forest definitions

Analysis 3: Deforestation of ‘forest’ by definition linked to beef production

‘Deforestation’ can have a specific meaning when applied to vegetation that meets a technical definition of a ‘forest’. ‘Deforestation’, in accordance with a forest definition, is a subset of overall vegetation clearing in Queensland (overall vegetation clearing is often referred to as ‘land clearing’).

This third analysis sought to understand how much total clearing linked to beef production in Queensland would formally be defined by the Australian government and the EU as ‘forest’ and therefore its removal technically, ‘deforestation’.

The Australian government has a technical definition of what constitutes a ‘forest’ (as opposed to other types of vegetation like sparse woodlands) which it uses for international reporting of carbon emissions.

According to the Australian government’s National Greenhouse Accounts forest land includes: “All lands with a vegetation height of two metres or higher and crown canopy of 20% or more over an area of at least 0.2 hectares; and lands with ecosystems with woody vegetation that currently fall below but which, in situ, could potentially reach the threshold values of the definition of forest land.”²⁰

The analysis revealed that 96% (197,435 hectares) of all land clearing activity linked to beef in the last reporting period (2021–22) was in forest ecosystems which met the Australian forest definition and therefore constituted ‘deforestation’. Of that, 62% was mature regrowing forest or remnant forest.

Further, this analysis found that in the last year of reporting 94% (194,282 hectares) of all clearing linked to beef was in forest ecosystems which met the EU’s definition of ‘forest’ and therefore constituted ‘deforestation’.

The EU follows the United Nations Food and Agriculture Organization (UNFAO) definition of forest as “land with tree crown cover of more than 10% and an area of more than 0.5 hectares. The trees should be able to reach a minimum height of 5 metres at maturity in situ.”²¹

Additionally, in the last reporting period 93% (192,568 hectares) of land clearing activity linked to beef in Queensland was in areas that were classified as ‘forest’ under both Australian and EU definitions. Of which, 62% was remnant or regenerating forests over 15 years old (118,914 hectares).

It is important to note that many valuable natural ecosystems are not technically classed as a ‘forest’ under the official Australian definition. Often the vegetation impacted in parts of Queensland is referred to as ‘scrub’, implying it is not ecologically or culturally valuable, when this is not the case.

Finding 4: Deforestation for beef pastures risks hundreds of threatened species, including the iconic koala

Analysis 4: Deforestation linked to beef production in koala & threatened species habitat

This fourth analysis sought to understand the impact of deforestation and land clearing linked to beef production in habitat for the koala and other threatened species.

The analysis revealed that 99% of land clearing activity linked to beef between 2018-22 occurred within mapped known or likely threatened species habitat.

In 2021–22, 271 threatened species had habitat mapped in areas impacted by deforestation and land clearing linked to beef in Queensland—28 of those were critically endangered.

Threatened status	# of threatened species			
	2018–19	2019–20	2020–21	2021–22
Conservation Dependent (total)	2	2	1	1
fishes	2	2	1	1
Critically Endangered (total)	19	21	32	28
birds	6	6	3	3
fishes	2	0	1	1
flora	5	7	13	10
frogs	2	3	4	4
mammals	0	0	1	0
other-animals	2	2	4	4
reptiles	2	3	6	6
Endangered (total)	85	87	100	92
birds	15	13	15	15
fishes	2	2	5	5
flora	47	50	51	43
frogs	3	3	3	3
mammals	11	12	11	14
other-animals	3	3	7	6
reptiles	4	4	8	6
Vulnerable (total)	164	167	163	150
birds	12	12	12	12
fishes	7	6	3	4
flora	116	118	114	106
frogs	3	4	6	3
mammals	17	16	16	15
other-animals	0	0	1	0
reptiles	9	11	11	10
Total	270	277	296	271

Table 4: Threatened species with habitat mapped in areas impacted by deforestation link to beef in Queensland

These epoch totals cannot be added with other epochs as the same species have been impacted by clearing over the years. The threatened status has been updated with the status as of 2024. Note that only the 2021 and the 2022 analysis used the updated SNES data—for 2018–2020, the spatial data used was 2022, but the threatened status was updated for species whose status changed in 2024. This table only includes clearing identified under a beef land use and SLATS descriptors relating to pasture (“Pasture”, “Partial clearing major - Pasture”, or “Partial clearing minor”).

Between 2018 and 2022, 717,636 hectares of potential koala habitat (mapped as known or likely) was bulldozed, of which 80% was linked to beef.



Since 2018, 21,951 hectares where the endangered king blue grass is known or likely to be found has been impacted by deforestation for beef.



Since 2018, 45,137 hectares of potential habitat for the endangered *Cossinia australiana* has been impacted by deforestation for beef in Queensland.



Since 2018, 91,167 hectares of potential red goshawk habitat has been impacted by deforestation for beef. Over 24,000 hectares of known or likely red goshawk habitat was impacted between 2021-22 for beef production.



Since 2018, 29,208 hectares of potential habitat for the endangered *Cycas megacarpa* has been impacted by deforestation for beef in Queensland.



Since 2018, 397,532 hectares of potential greater glider (southern and central) habitat has been impacted by deforestation for beef. In 2021-22, 82,774 hectares were impacted for beef production.



Since 2018, 288,219 hectares of potential habitat for the endangered northern quoll has been impacted by deforestation for beef. During 2021-22, 66,779 hectares of mapped known or likely northern quoll habitat was impacted for beef production.



Since 2018, 10,335 hectares of potential habitat for the critically endangered regent honeyeater habitat has been impacted by deforestation for beef in Queensland.

1. Koala | Bruce Thomson
2. *Cossinia australiana* | aavankampen / iNaturalist Australia, CC BY 4.0

3. *Cycas megacarpa* | coenobita / iNaturalist Australia, CC BY 4.0
4. Northern quoll | Bruce Thomson

5. King blue grass | Darren Fielder / iNaturalist Australia, CC-BY-NC 4.0 (Int)
6. Red goshawk | John Harrison / Wikimedia Commons, CC BY-SA 3.0

7. Greater glider | Justin Cally
8. Regent honeyeater | Mark Gillow / Flickr, CC BY 2.0

Finding 5: Merely 10% of land parcels linked to beef accounted for all beef-related deforestation in Queensland (2021-22)

Analysis 5: A snapshot of deforestation-free practices linked to beef production between 2021-22

This analysis found that 90% of land parcels linked to beef in Queensland were **free** from deforestation in 2021-22. That's 48,988 land parcels linked to beef without deforestation during the 2021-22 reporting period—whereby ‘forest’ meets the Australian forest threshold.

Only 142 land parcels accounted for half of the deforestation linked to beef (98,714 hectares) in Queensland in the same year. That's less than 0.3% of beef land parcels.

This analysis serves solely as a snapshot of deforestation-free practices linked to beef production for the year 2021-22.

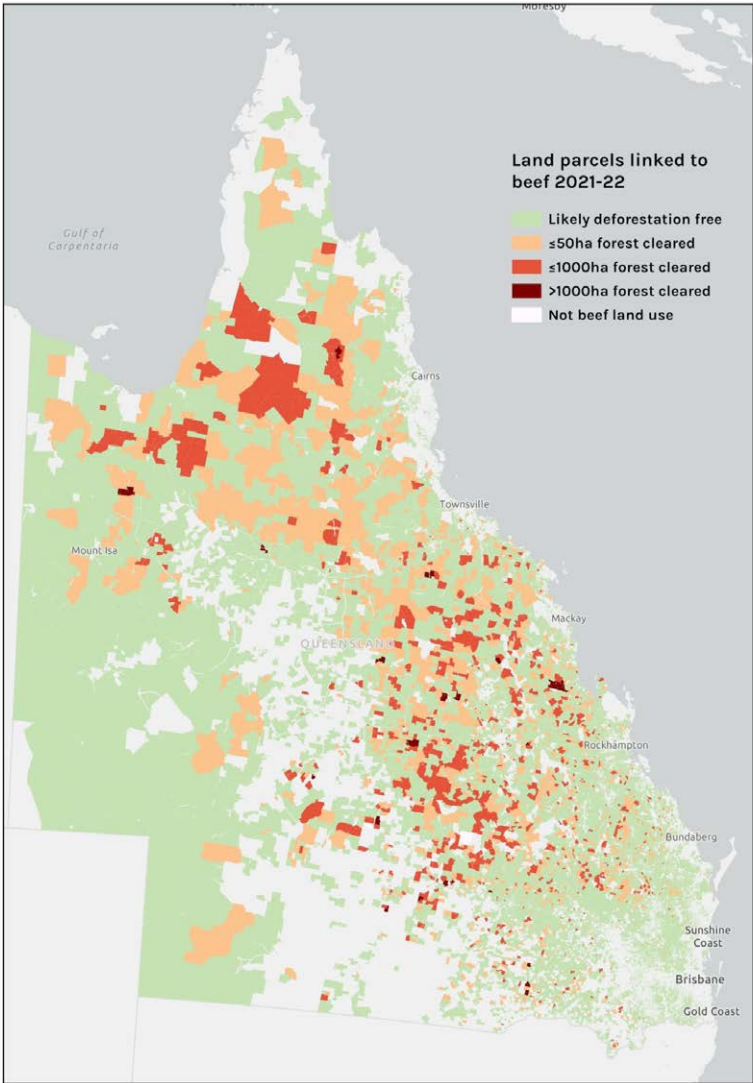


Figure 2: Deforestation free land parcels linked to beef

These epoch totals cannot be added up with other epochs as the same species have been impacted by clearing over the years. The threatened status has been updated with the status as of 2024. Note that only the 2021 and the 2022 analysis actually used the updated SNES data—for 2018-2020, the spatial data used was 2022, but the threatened status was updated for species whose status changed in 2024. This table only includes clearing identified under a beef land use and SLATS descriptors relating to pasture ("Pasture", "Partial clearing major - Pasture", or "Partial clearing minor").

Due to cyclic deforestation practices, the land parcels that are free from deforestation in this analysis, may not be in future analyses—nor were they necessarily deforestation-free in the years prior to 2021-22. Ineffective state and federal laws mean that deforestation and land clearing could occur on these land parcels in future reporting years.

However, knowing that the majority of beef land parcels are deforestation-free each year presents an opportunity for companies in the beef supply chain to incentivise deforestation-free and no conversion²² beef production.

The deforestation ‘hotspots’ by the local government area for the reporting year of 2021-22 were Central Highlands, Maranoa and Isaac Regional Council areas. Central Highlands Regional Council had the highest amount of deforestation linked to pasture (26,549 hectares) of which 97% was in forest ecosystems, followed by Maranoa Regional Council (26,213 hectares) with 100% in forest ecosystems and Isaac Regional Council (20,488 hectares) with 97% in forest ecosystems.

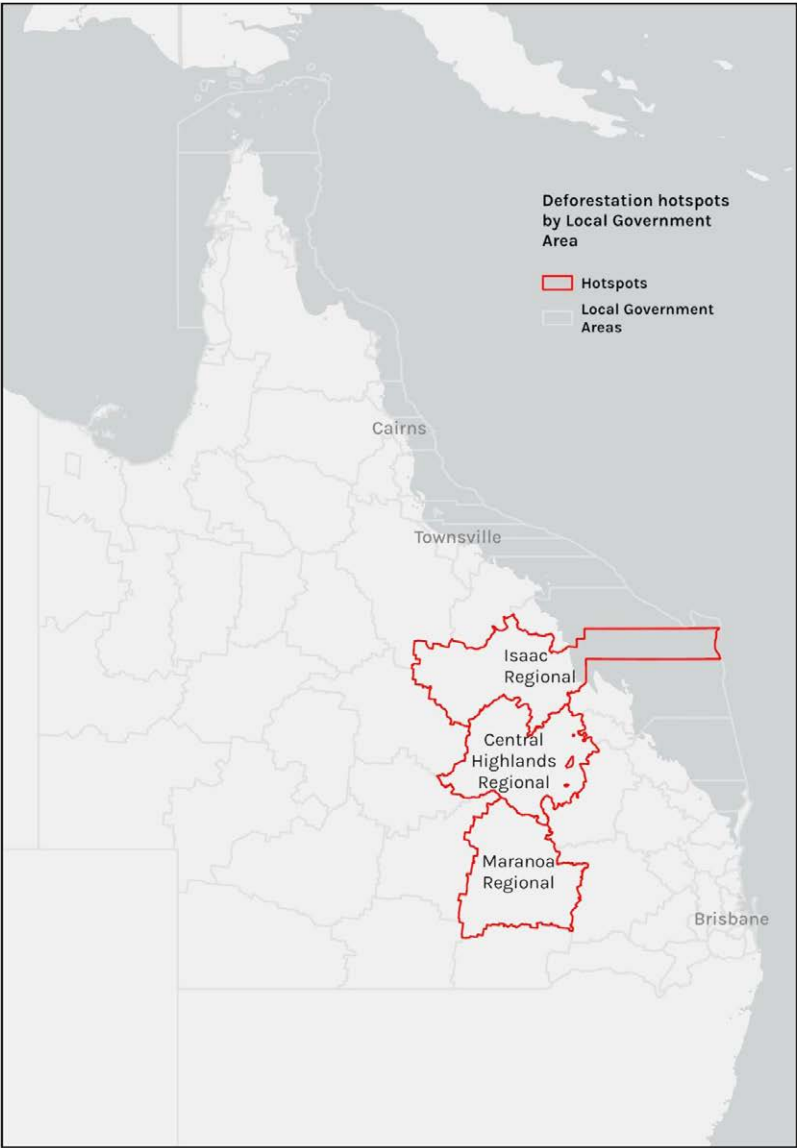


Figure 3: Deforestation hotspots by Local Government Area in Queensland

Addressing deforestation in supply chains

Deforestation risk refers to the financial, reputation and brand damage that could flow from a company's activities being linked to deforestation.

This analysis demonstrates that companies linked to the beef value chain—which continue to do business in Queensland—are exposed to substantial deforestation risk.

State and federal laws and regulations have so far failed to prevent deforestation. But globally, international agreements and corporate commitments to deforestation-free commodity supply chains have increased demand on Australia's soft commodity sectors to transition to sustainable practices.

Public concern about the impacts of deforestation, forest degradation (logging) and habitat destruction has sparked a growing wave of international pledges from governments and corporate actors to reduce deforestation and the destruction of natural ecosystems.

In 2023, the EU adopted a landmark Deforestation Regulation (EUDR), with the intention of restricting its market to deforestation-free products.

From December 2025, companies will have to conduct due diligence to demonstrate no risk, or negligible risk, of deforestation. The EUDR requires exporters “to ensure the land has not been subject to deforestation or forest degradation since 31 December 2020.”²³

The EUDR is just one of many signals that foreign markets are turning away from deforestation. For instance, the China Meat Association has committed to “... avoiding land degradation, deforestation and conversion of natural vegetation in the livestock production value feed chains.”²⁴ A commitment that bears importance for the Australian red meat sector, for which China is a major export destination.

Since 2014, a number of companies have signed onto the New York Declaration on Forests which aims to halt natural forest loss by 2030.²⁵ While the Consumer Goods Forum, for example, leads a Forest Positive Coalition that aims to “drive collective, transformative change in order to remove deforestation, forest conversion and degradation from key commodity supply chains and support forest positive businesses.”²⁶

The Science Based Targets initiative (SBTi), a corporate climate action organisation aimed at enabling companies and financial institutions globally to address their carbon footprint, requires companies in the forest, land and agriculture sectors to set a no deforestation target by 2025. The initiative—a partnership between CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF)—also recommends companies stop sourcing products that come from the conversion of natural ecosystems, such as sparse woodlands and grasslands. The initiative's guidance for deforestation-free policies sets a cut-off date of 31 December 2020 and uses verifiable, international best practice definitions as set out by the Accountability Framework initiative (AFi).

According to the SBTi (and AFi), “a cutoff date is the date after which any deforestation occurring in a specific area is considered non-compliant. This means that if a company sources commodities from a production unit deforested after 2020 then they would not be compliant with their no-deforestation commitment after the 2025 target date.”²⁷



Image: Deforestation for beef production in Queensland | Paul Hilton

Despite shifts from international and domestic actors to address deforestation and the destruction of natural ecosystems in beef value chains, the beef industry is yet to properly address the immense deforestation and biodiversity impacts of its sector.

Instead, industry groups have proposed industry defined and led indicators. For instance:

- Cattle Australia has released a Land Management Commitment that includes an industry definition of ‘deforestation’, centred around excluding ‘agricultural land’ and state and federal legislation.
- The Australian Beef Sustainability Framework is an initiative of the Red Meat Advisory Council (RMAC) and now governed by Cattle Australia, Australian Meat Industry Council and the Australian Lot Feeders’ Association. It continues to measure ‘the balance of tree and grass cover’ in Australia and is yet to release verifiable sectoral goals and targets to meet market demands regarding deforestation.

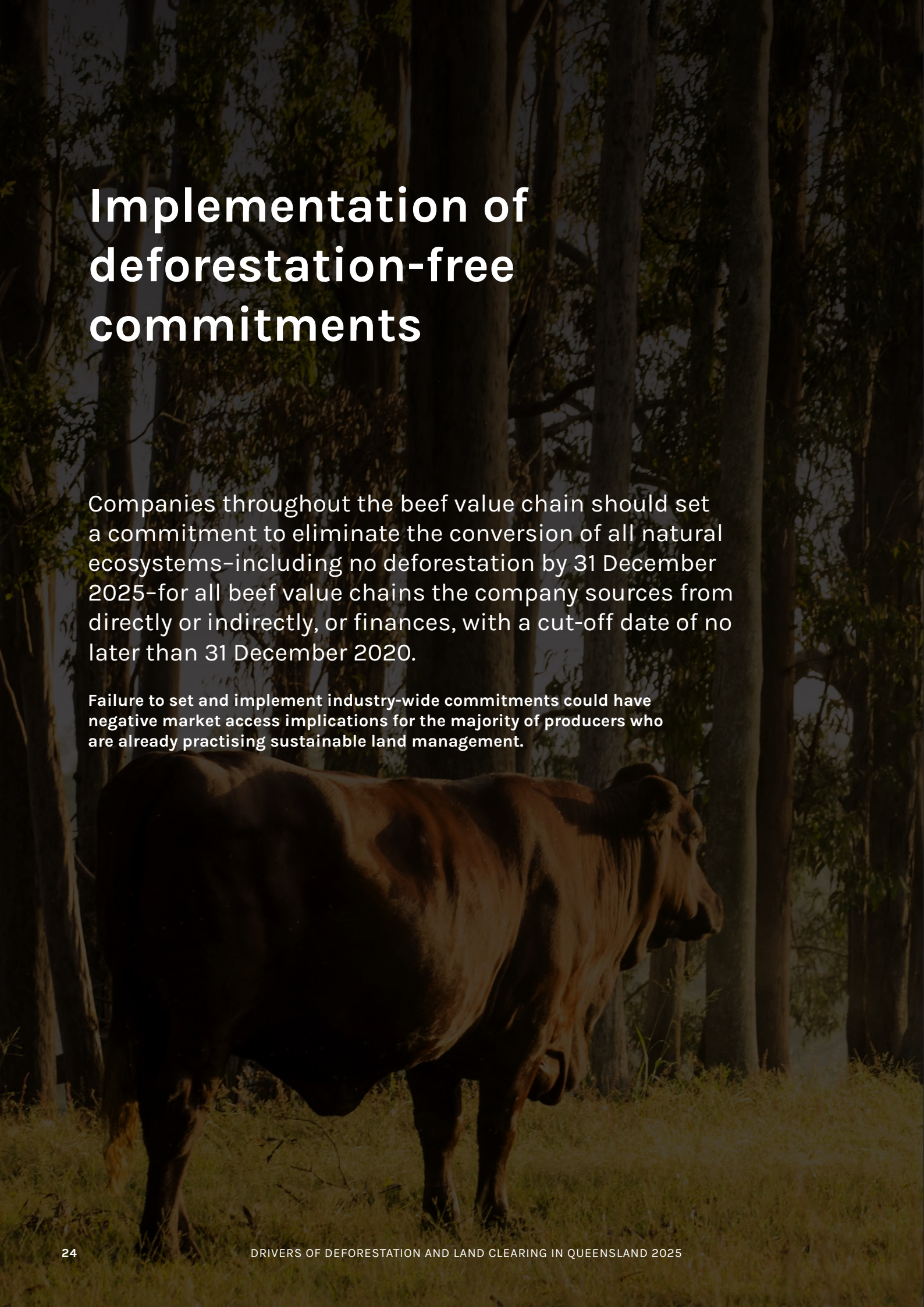
Regardless of their robustness or credibility, sustainability commitments from the agricultural sector are premised on the recognition that the sustainability of commodity production is essential to its long term viability.

In fact, production and sustainability can co-exist, given the right management practices. It is important to note that beef and other livestock can be, and are, grown on already cleared land and can also co-exist with intact or regrowing forests. A large proportion of Queensland is grassland or savanna ecosystems where beef can be productive without replacing native vegetation with cleared lands for pasture (including native grassland and wetlands).

Throughout 2024, some of Australia’s largest purchasers in the Australian agricultural supply chain released deforestation-free or conversion-free commitments validated by the SBTi. For example:

- “Woolworths Group aims to achieve no-deforestation across [its] primary deforestation-linked commodities, with a target date of 31 December 2025.”²⁸
- McDonalds “committed to eliminating deforestation and addressing conversion in [its] global supply chain by 2030.”²⁹
- “The ALDI South Group (including Australia) strives to eliminate deforestation and conversion of our natural ecosystems from our high priority supply chains by 31 December 2025.”³⁰

Banks including Westpac and Bendigo Bank have also made commitments in regards to forests. Westpac has set a target for the bank’s loans to agriculture (dairy, beef and sheep) and includes “a commitment to no deforestation, which provides for no further conversion of natural forest to agricultural land use within farm systems from 31 December 2025 for customers in scope of the targets.”³¹ While Bendigo Bank “does not and will not provide finance directly to projects...in the native forest logging [sector].”³²

A photograph of a brown cow standing in a grassy field with tall trees in the background. The image is used as a background for the left page of a report.

Implementation of deforestation-free commitments

Companies throughout the beef value chain should set a commitment to eliminate the conversion of all natural ecosystems—including no deforestation by 31 December 2025—for all beef value chains the company sources from directly or indirectly, or finances, with a cut-off date of no later than 31 December 2020.

Failure to set and implement industry-wide commitments could have negative market access implications for the majority of producers who are already practising sustainable land management.

Image: Cow on a cattle farm, Jimboomba, Queensland Australia | C de la Cruz / Shutterstock

In order to successfully claim to have a deforestation-free and conversion-free beef product, a company must set in place procurement processes to implement these commitments including:

- Geolocation of its value chains for deforestation-risk and conversion-risk commodities, including beef,
- A published supplier list,
- A robust 'farm-to-fork' or 'whole-of-life cycle' commodity movement traceability system for its beef value chain,
- Regular monitoring for deforestation and land use change across the value chain or third party verification through its entire value chain,
- Disclosure of deforestation and conversion related impacts, dependencies and risks, and
- Transparent processes to ensure suppliers are delivering against targets.

To ensure Australia can be a leading producer of deforestation-free beef, the Australian government must also invest in:

- A national vegetation change monitoring and compliance system, including a national dataset akin to the Queensland SLATS and Early Detection System.
- A national traceability program to ensure companies can track products' life cycles to determine deforestation and conversion risk.

Conclusion

Utilising government datasets to attribute forest and bushland destruction to land use, our analysis found that beef production remains the largest driver of deforestation and land clearing across the state of Queensland.

As of 2022 data, the second largest driver is sheep, followed by forestry, other pasture uses, mining and crops.

Deforestation for beef production continues to threaten habitat for hundreds of native plants and animals. Close to all clearing activity over the last four years of government reporting occurred in mapped known or likely threatened species habitat.

Importantly, the vast majority of deforestation linked to beef in Queensland during the most recent reporting period (2021–22) was of ‘forest’ as per the Australian and EU ‘forest’ definitions.

The SBTi and the EU’s Deforestation Regulation both stipulate a 2020 cut off date. Therefore any beef produced in those areas may not be compliant with either scheme.

It is evident that despite some recognition of deforestation risk in beef commodity supply chains, the implementation of deforestation-free commitments is still outstanding. Companies in the beef supply chain must prioritise the implementation of deforestation-free commitments to uphold their social and financial responsibility to climate and nature. It is clear that companies buying beef products from Queensland have significant deforestation risk in their supply chain.

While the majority of land parcels are deforestation-free each reporting year, to ascertain a fuller picture of land parcels that are free from deforestation ongoing, it is crucial to analyse cyclic land clearing and deforestation over a longer period with publicly available traceability methods and monitoring systems in place.

These results remain nationally and internationally significant, despite a lack of national deforestation data. Queensland continues to position Australia as a deforestation hotspot with the highest rates of deforestation on the continent. Market requirements and government regulation can significantly diminish destruction of forests and bushland. To avoid perverse impacts to woodlands, grasslands, shrublands and other ecologically and culturally significant ecosystems that do not necessarily meet ‘forest’ definitions, companies in the beef sector must set commitments to eliminate the conversion of natural ecosystems from their supply chains.

Wilderness Society’s view is that every sector with deforestation risk should adopt a sector-wide commitment to deforestation-free and conversion-free practices by December 2025.

In addition, individual companies with deforestation and land clearing risk in their supply chains—producers, processors, retailers and fast food restaurants—should follow the growing trend in global corporate commitments and remove forest and bushland destruction from their operations and products. The removal of deforestation and land clearing from supply chains would have strong local, national and international benefits for the industry and consumers, as well as for the environment and climate.

Queensland can be a leading provider of deforestation-free beef at home and abroad.



Methods

Image: Kingvale forest, QLD | Wilderness Society

Data used

Spatial data:

- Queensland cadastral data weekly—whole of State © State of Queensland (Department of Natural Resources, Mines and Energy) 2018, downloaded on 14/10/2018.
- Statewide Landcover And Trees Study (SLATS) Sentinel-2 - 2018 to 2019 woody vegetation change - Queensland © State of Queensland (Department of Environment and Science) 2023
- Statewide Landcover And Trees Study (SLATS) Sentinel-2 - 2019 to 2020 woody vegetation change - Queensland © State of Queensland (Department of Environment and Science) 2023
- Statewide Landcover And Trees Study (SLATS) Sentinel-2 - 2020 to 2021 woody vegetation change - Queensland © State of Queensland (Department of Environment and Science) 2023
- Statewide Landcover And Trees Study (SLATS) Sentinel-2 - 2021 to 2022 woody vegetation change - Queensland © State of Queensland (Department of Environment and Science) 2024
- Statewide Landcover And Trees Study (SLATS) Sentinel-2 - 2018 Woody Vegetation Age Since Disturbance - Queensland © State of Queensland (Department of Environment and Science) 2023
- Statewide Landcover And Trees Study (SLATS) Sentinel-2 - 2019 Woody Vegetation Age Since Disturbance - Queensland © State of Queensland (Department of Environment and Science) 2023
- Statewide Landcover And Trees Study (SLATS) Sentinel-2 - 2020 Woody Vegetation Age Since Disturbance - Queensland © State of Queensland (Department of Environment and Science) 2023
- Statewide Landcover And Trees Study (SLATS) Sentinel-2 - 2021 Woody Vegetation Age Since Disturbance - Queensland © State of Queensland (Department of Environment and Science) 2023
- Remnant vegetation cover - 2017 - Queensland - version 11 © State of Queensland (Department of Environment and Science) 2018
- Remnant vegetation cover - 2019 - Queensland - version 12 © State of Queensland (Department of Environment and Science) 2021
- Biodiversity status of pre-clearing regional ecosystems—Queensland—version 13 © State of Queensland (Department of Environment and Science) 2023

Non-spatial related resources:

- Regional Ecosystem Description Database (REDD) © Environment and Science, Queensland Government, licensed under Creative Commons Attribution 4.0, accessed on 15/10/2023.
- List of Queensland regional ecosystems meeting the Australian Forest threshold (>20% canopy cover, 2m height) and the EU Deforestation Regulation Forest threshold (>10% canopy cover, 5m height) was compiled by Professor Don Butler, ANU, provided November 2023.
- Queensland Valuation and Sales System (QVAS), Office of the Valuer-General, State Valuation Service © State of Queensland (Department of Natural Resources, Mines and Energy) 2018, sourced from Pricerfinder 15/10/2018.

Basic analysis

Stage 1 Identifying clearing in Queensland

The Queensland Statewide Landcover and Trees Study (SLATS) datasets for the period 2018–19 to 2021–22 were used to detect deforestation. This analysis excludes repeat clearing. Where repeat clearing occurs, the first epoch of detected clearing is used. Australia Albers Equal Area projection was used to calculate area in hectares for the detected clearing polygons. The analysis excludes SLATS replacement categories of “Natural disaster damage”, “Clearing - Timber plantation” and “Clearing - Missed clearing”, totalling~3% (58,414 hectares) of the total detected SLATS clearing for the four reporting periods (epochs) between 2018–19 and 2021–22. Clearing related to pasture was analysed against land-use data to determine the driver of the clearing (beef, sheep, dairy or other pasture use). The remnant vegetation cover 2017 and 2019 datasets were used to determine if the vegetation being cleared between 2018–19 and 2021–22 was remnant or non-remnant. For each epoch, the SLATS Woody Vegetation Age Since Disturbance datasets for the first year of the epoch were used to calculate maturity of the vegetation cleared (>15 years or <15 years). Further analysis was conducted to identify clearing of forest (vegetation that meets the Australian forest threshold) in stage 3 using Preclearing Regional Ecosystems data, where each regional ecosystem was assessed to determine if it meets the forest threshold for Australia (can reach canopy cover greater than 20% and height greater than 2m).

Stage 2 Property related land use data

The largest drivers of deforestation using SLATS data are descriptors related to pasture (“Pasture”, “Partial clearing major - Pasture” and “Partial clearing minor”). In this analysis, we used land use data to determine the commodity driving SLATS clearing related to pasture. The commodities related to pasture that were analysed were beef, sheep and dairy. All other land uses on parcels containing pasture related SLATS descriptors were assigned “Pasture - Other”. The previous analysis used beef land use for all SLATS descriptors excluding “mining” and “settlement”, regardless of the SLATS descriptor. This means that cropping on beef properties for sorghum and other cattle feed are not included as linked to beef in this analysis. However, this new method aligns better with government reporting and makes the analysis easier to replicate. The Queensland Digital Cadastral Database (DCDB) November 2018 was used as a base for land use attribution on parcels greater than 30 hectares (102,227 parcels). Data from QVAS (sourced from Pricefinder, November 2018) was attributed to the DCDB data using the unique legal parcel number (lot number, plan type and plan number), including primary and secondary land uses of the parcel. Primary and secondary land uses in the QVAS data were categorised into land use groups as shown in Table 5.

Table 5: Land use groups used in analysis to determine pasture related land uses

Primary and secondary land use in QVAS*	Primary land use Group name	Secondary land use Group name
CATTLE BREEDING & FATTENING CATTLE FATTENING CATTLE GRAZING & BREEDING	Beef Cattle	Beef Cattle
MILK-NO QUOTA MILK-QUOTA CREAM	Dairy	Dairy
ANIMALS-SPECIAL HORSES PIGS GOATS POULTRY	Other livestock/animals	Other livestock/animals
SHEEP BREEDING SHEEP GRAZING-DRY	Sheep	Sheep
SMALL CROPS & FODDER - IRRIGATED SMALL CROPS & FODDER - NON IRRIGATED	Fodder	Fodder
SUGAR CANE GRAINS PEANUTS ORCHARDS PINEAPPLES TROPICAL FRUITS TURF FARMS VINEYARDS COTTON TOBACCO OIL SEEDS	Other crops	Other crops
VACANT - LARGE HOUSE SITE VACANT RURAL LAND (EXCL 01 & 04) EXCLUSIVE USE AS SINGLE DWELLING OR FARMING DWELLING - LARGE HOUSE SITE SUBDIVIDED LAND - DISCOUNTED BY LG GROUP TITLE (PRIMARY USE ONLY) NOT ALLOCATED STRATUM	Rural housing	Rural housing or NONE
VACANT URBAN LAND OUTBUILDINGS TRANSPORT TERMINAL SPORTS CLUBS/FACILITIES OTHER CLUBS (NON BUSINESS) BUILDING UNITS (PRIMARY USE ONLY) CAR PARK CARAVAN PARKS CEMETERIES CHILD CARE - EX KINDERGARTEN COLD STORES-ICEWORKS COMMUNITY PROTECTION CENTRE DRIVE-IN SHOPPING CENTRE EDUCATIONAL - INCLUDING KINDERGARTEN FUNERAL PARLOUR GUEST HOUSE/PRIVATE HOTEL HOSPITALS, CONV. HOMES (MEDICAL CARE) PRIVATE HOTEL/TAVERN LICENSED CLUBS MARINA MOTEL MULTI UNIT DWELLING (FLATS) NURSERIES (PLANTS) PROFESSIONAL OFFICES PUBLIC HOSPITAL RELIGIOUS RESIDENTIAL INSTITUTIONS (NON-MEDICAL CARE) RESTAURANT SALES AREA OUTDOORS (DEALERS, CAR, BOATS, ETC.) SERVICE STATION SHOPPING GROUP (2 TO 6 SHOPS) SHOP-SINGLE SHOWGROUND, RACECOURSE, AIRFIELD SINGLE UNIT DWELLING WAREHOUSE & BULK STORES WELFARE HOMES/INSTITUTIONS WHARVES SPECIAL TOURIST ATTRACTION SHOPPING GROUP (MORE THAN 6 SHOPS) WALKWAY RETAIL WAREHOUSE	Urban and recreational	Urban and recreational
LIGHT INDUSTRY NOXIOUS/OFFENSIVE INDUSTRY (INCL ABATTOIR) GENERAL INDUSTRY BUILDERS YARD, CONTRACTORS YARD OIL DEPOT & REFINERY HARBOUR INDUSTRIES TRANSFORMERS	Other industry	Other industry
STATE(SECONDARY LAND USE ONLY) LOCAL AUTHORITY (SECONDARY USE ONLY) COMMONWEALTH (SECONDARY USE ONLY)	N/A N/A N/A	State Local Authority Commonwealth
FORESTRY & LOGS RESERVOIR, DAMS, BORES EXTRACTIVE	Forestry & logs Reservoir, dams, bores Extractive	Forestry & logs Reservoir, dams, bores Extractive
DEFENCE FORCE ESTABLISHMENT Not in QVAS	Defence Force Not in QVAS	Defence Force Not in QVAS

*There may be land uses associated with parcels <30 ha that are not included in this table. Primary or Secondary land use “Fodder” was not treated as linked to beef as we are unable to identify which grazing animal the fodder is being used to feed.

QVAS data attributes a primary and secondary land use to parcels based on information provided to the Office of the Valuer General when a parcel is legally transferred from one entity to another. It has been noted that many graziers, especially on parcels in Mulga Lands bioregion and other parts of south west Queensland, have converted from a primary land use of sheep to cattle prior to 2018, without a land transfer occurring (no sale occurred). The clearing on these parcels would be attributed to sheep but could in fact be linked to beef, meaning deforestation and land clearing linked to beef is likely to be underestimated in this analysis.

Parcels less than 30 hectares: Financial cost restricted the number of parcels that were able to be extracted from Pricerfinder. An initial analysis was conducted in 2018 to ascertain which parcels contained the bulk of the clearing and these parcels were again used in this analysis. Parcels greater than 30 hectares contained 98% of the SLATS detected clearing. The amount of clearing in parcels less than 30 hectares was 2% of all detected SLATS clearing or 36,448 hectares over the initial five year study period. Therefore, clearing in parcels less than 30 hectares, although still very important, was excluded when determining the land use that can be linked to the highest amount of clearing. Approximately 67% of the clearing in parcels less than 30 hectares was attributed a SLATS replacement land cover class relating to “Pasture”, implying that a significant amount of the clearing that is excluded in this analysis is likely to be linked to beef. This again suggests that the clearing attributed to beef has been underestimated in this report due to the conservative analytic approach that was employed.

Parcels where land use data was not returned: QVAS data from Pricerfinder was not available for some parcels greater than 30 hectares. These parcels were not able to be assigned with land use attributes. Of the 102,227 parcels provided to Pricerfinder (all parcels greater than 30 hectares in 2018), 1,300 parcels were not assigned land use data. In the 2018–22 analysis, land use was only attributed to SLATS clearing associated with pasture to determine which grazing commodity was likely driving the clearing events. In the SLATS clearing from 2018–22, unassigned land use accounted for 51,523 hectares of the total SLATS clearing (3%)—this includes parcels less than 30 hectares where no data was available. Approximately 84% of the clearing in parcels that had no data returned from Pricerfinder was attributed a SLATS replacement land cover class relating to “Pasture”. This again implies that a significant amount of the clearing that is excluded in this analysis is likely to be linked to beef.

Parcels returned with more than one tenure: Some parcels were returned from Pricerfinder with more than one tenure. These parcels were reassessed to determine the extent linked to the most commonly cleared land use, i.e. beef cattle. These parcels were assigned a mixed land use in relation to beef. If at least one tenure included a beef land use the parcel was determined to be linked to beef.

Parcels attributed to beef: We used the primary and secondary land use from the QVAS data to determine if the property was used for beef production as described in Table 5. Parcels with multiple tenures with different primary and secondary land uses were then assessed with relation to beef, and if a land use for that parcel contained beef as a primary or secondary land use it was determined to be linked to beef. The analysis then looked at the SLATS descriptors, if any relating to pasture were located on a property linked to beef, the clearing event was determined to be linked to beef production. Table 6 shows how the land use related to beef was utilised in the analysis.

Table 6: Land use categories linked to beef

GIS derived attribute	Description	Included in analysis of all SLATS descriptors relating to pasture*
No data from Pricerfinder	The extract from the Pricerfinder data was missing data for these parcels	No (1.3% of parcels >30ha)
Primary beef	Primary land use is Beef Cattle	Yes, included as linked to beef where the SLATS descriptor was “Pasture”, “Partial Clearing major - Pasture” or “Partial clearing minor” (86% of parcels linked to beef production are Primary land use Beef Cattle)
Secondary beef	Secondary land use is Beef Cattle	Yes, included as linked to beef where the SLATS descriptor was “Pasture”, “Partial Clearing major - Pasture” or “Partial clearing minor” (9% of parcels linked to beef production are secondary land use Beef Cattle)
Multiple tenures containing beef land uses	There are different land uses associated with different tenures on the parcel, but at least one is beef cattle	Yes, included as linked to beef where the SLATS descriptor was “Pasture”, “Partial Clearing major - Pasture” or “Partial clearing minor” (5% of parcels linked to beef production contain more than one tenure)
Not beef	Both the primary and secondary land uses are not Beef Cattle	Yes, included as not linked to beef (where the SLATS descriptor was “Pasture”, “Partial Clearing major - Pasture” or “Partial clearing minor”, the Primary land use was used for linking the clearing to “Sheep”, “Dairy” Or “Other”)

*SLATS descriptors relating to pasture include “Pasture”, “Partial Clearing major - Pasture” or “Partial clearing minor”.

Stage 3 Vegetation data that identifies deforestation

Defining forest: The desktop analysis uses the Australian forest threshold as defined in the *National Inventory Report 2022, Volume I*, Australian Government (2024), Department of Climate Change, Energy, the Environment and Water (p.290). “Forests include all vegetation with a tree height of at least two metres and crown canopy cover of 20% or more and lands with systems with a woody biomass vegetation structure that currently fall below but which, in situ, could potentially reach the threshold values of the definition of forest.”

Determining forest: Pre-clear Regional Ecosystem (RE) mapping v13, the Regional Ecosystem Description Database (REDD) and advice from Professor Don Butler (ANU) were used to identify REs that met the Australian forest threshold. In the previous analysis, we used structural classes to determine which REs met the forest threshold.³³ The Queensland Herbarium noted that assessing each RE individually instead of using structural classes would eradicate the need of the “Maybe forest” category in the previous analysis. Refining the methods of identifying REs that meet the Australian forest threshold (instead of structural codes) would enable us to remove the label “Maybe forest”. Therefore, we refined the process for this analysis by assessing each RE against the forest threshold. Professor Don Butler was approached to assist in identifying which REs meet the Australia forest definition.

Table 7: Queensland regional ecosystems that meet the Australian forest threshold

Bioregion	Regional ecosystems meeting the Australian forest threshold
Northwest Highlands	1.3.4a,1.3.4b,1.3.5,1.3.6c,1.3.6a,1.3.6b,1.3.6e,1.3.7b,1.3.7f,1.3.7g,1.3.7a,1.3.9b,1.3.9a,1.3.13a,1.3.13b,1.3.15,1.5,1.5.2c,1.5.7,1.5.11x1,1.5.16,1.5.19,1.7.5a,1.7.5b,1.7.6,1.9.4b,1.9.9,1.9.10,1.10.2,1.10.6,1.11.2h,1.11.7,1.11.8,1.11.14,1.12.1x9,1.12.4
Gulf Plains	2.1.2,2.1.3,2.2.1,2.2.3,2.2.5,2.2.7x2,2.2.7,2.2.8,2.3.2x1,2.3.5,2.3.6a,2.3.6b,2.3.7a,2.3.7b,2.3.10c,2.3.10a,2.3.10b,2.3.10e,2.3.10f,2.3.11,2.3.13,2.3.15,2.3.16,2.3.17a,2.3.17b,2.3.17d,2.3.18,2.3.19,2.3.20g,2.3.20a,2.3.20b,2.3.20f,2.3.20e,2.3.21j,2.3.21c,2.3.21b,2.3.21h,2.3.21e,2.3.21f,2.3.22,2.3.24a,2.3.24c,2.3.24d,2.3.26c,2.3.26f,2.3.26b,2.3.26e,2.3.26d,2.3.26a,2.3.29b,2.3.29c,2.3.29a,2.3.30c,2.3.30a,2.3.30b,2.3.30d,2.3.33a,2.3.33b,2.3.36a,2.3.37,2.3.40,2.3.42e,2.3.42b,2.3.42d,2.3.42a,2.3.46,2.3.47,2.3.52,2.3.53,2.3.54,2.3.55d,2.3.55a,2.3.55c,2.3.56b,2.3.56a,2.3.60,2.3.61c,2.3.61a,2.3.61b,2.3.61d,2.3.62a,2.3.62b,2.3.63,2.3.68,2.3.70,2.3.71,2.3.72b,2.3.72a,2.4.3a,2.4.3b,2.4.4a,2.4.5,2.5.1b,2.5.1c,2.5.1a,2.5.2,2.5.4,2.5.5a,2.5.6c,2.5.6a,2.5.6e,2.5.6b,2.5.8x70,2.5.9,2.5.10c,2.5.10b,2.5.10a,2.5.11c,2.5.11b,2.5.12a,2.5.14a,2.5.14c,2.5.17b,2.5.17a,2.5.18b,2.5.19b,2.5.19c,2.5.19d,2.5.19a,2.5.20,2.5.21,2.5.22c,2.5.22a,2.5.22b,2.5.23c,2.5.23d,2.5.24c,2.5.24a,2.5.24b,2.5.25,2.5.26,2.5.27,2.5.28a,2.5.28b,2.5.29,2.5.30,2.5.32,2.5.33a,2.5.33b,2.5.33d,2.5.34a,2.5.34b,2.5.36,2.5.37b,2.5.37a,2.5.37x1,2.5.40,2.5.41,2.7.1x7,2.7.2,2.7.2b,2.7.2x9,2.7.2x3,2.7.2a,2.7.2x2b,2.7.2x11,2.7.2x5,2.7.2x2a,2.7.2x2c,2.7.2x10,2.7.4x3,2.7.9,2.7.10,2.7.11,2.7.12,2.7.15,2.7.16,2.7.20,2.7.21,2.9.3,2.9.4,2.9.7,2.9.8,2.9.9,2.9.10,2.10.2x5a,2.10.2x2,2.10.2x3a,2.10.2x5b,2.10.2x3b,2.10.2x5c,2.10.3,2.10.4,2.10.5c,2.10.5a,2.10.10,2.10.14,2.11.1a,2.11.1c,2.12.1a,2.12.1b
Peapack Peninsula	3.1.1a,3.1.1c,3.1.1b,3.1.2a,3.1.2b,3.1.3,3.1.4,3.2.1,3.2.2,3.2.3,3.2.4b,3.2.4x1,3.2.4c,3.2.4a,3.2.5a,3.2.5b,3.2.5c,3.2.6b,3.2.6a,3.2.7b,3.2.7a,3.2.9,3.2.10,3.2.12a,3.2.12b,3.2.13b,3.2.13c,3.2.13,3.2.13a,3.2.14,3.2.15,3.2.17,3.2.24c,3.2.28b,3.2.28a,3.2.29,3.2.30,3.3.1c,3.3.1d,3.3.1a,3.3.1b,3.3.4,3.3.5a,3.3.5b,3.3.6,3.3.8b,3.3.8a,3.3.9a,3.3.9b,3.3.9,3.3.10,3.3.10c,3.3.10a,3.3.10d,3.3.10b,3.3.11,3.3.13,3.3.15,3.3.16,3.3.20b,3.3.20,3.3.20a,3.3.24,3.3.27,3.3.28,3.3.31a,3.3.31b,3.3.34,3.3.35,3.3.37,3.3.38d,3.3.38a,3.3.38c,3.3.38b,3.3.39,3.3.48b,3.3.50g,3.3.50i,3.3.50f,3.3.50j,3.3.50m,3.3.50,3.3.50d,3.3.50x1,3.3.50b,3.3.50k,3.3.50c,3.3.50j,3.3.51,3.3.52,3.3.53,3.3.53,3.3.68,3.3.69,3.3.70,3.5.3,3.5.4,3.5.5,3.5.6,3.5.9,3.5.7,3.5.8,3.5.38a,3.5.38b,3.5.39x1,3.5.39,3.5.40,3.5.41,3.5.41a,3.5.42,3.5.43,3.7.1,3.7.2,3.7.3,3.7.4,3.7.6,3.8.2c,3.8.2a,3.8.2d,3.8.2b,3.8.3a,3.8.3b,3.8.5e,3.8.5d,3.8.5c,3.8.5b,3.8.5a,3.9.2x2,3.9.4a,3.9.5,3.10.1d,3.10.1a,3.10.1b,3.10.3,3.10.5a,3.10.5c,3.10.5d,3.10.6x4,3.10.6x3,3.10.6x2,3.10.6x3,3.10.7,3.10.9,3.10.14,3.10.16,3.10.16x3,3.10.21,3.11,3.11.2,3.11.3,3.11.4,3.11.5,3.11.6,3.11.7,3.11.11,3.11.1x2,3.11.12,3.11.13,3.11.13,3.11.5,3.11.7,3.11.20,3.11.21,3.12.2,3.12.3c,3.12.3b,3.12.3a,3.12.4c,3.12.4,3.12.4a,3.12.4b,3.12.6,3.12.7,3.12.8,3.12.9,3.12.10,3.12.10a,3.12.10b,3.12.11,3.12.18a,3.12.18b,3.12.20,3.12.21,3.12.22,3.12.23,3.12.28,3.12.31b,3.12.35b,3.12.35a,3.12.35d,3.12.35a,3.12.35d,3.12.35f,3.12.35c,3.12.36b,3.12.36a,3.12.37,3.12.38,3.12.39a,3.12.39b,3.12.40,3.12.41,3.12.42,3.12.43b,3.12.43a,3.12.43,3.12.45,3.12.47
Mitchell Grass Downs	4.3.1b,4.3.1a,4.3.2b,4.3.2a,4.3.2.4,3.2c,4.3.3c,4.3.4x2e,4.3.5x1,4.3.5a,4.3.8e,4.3.9,4.3.9c,4.3.10c,4.3.11e,4.3.11x1,4.3.11d,4.3.23x40,4.5.2,4.5.3x1a,4.5.4,4.5.5x2,4.5.6x4,4.7.1b,4.7.1a,4.7.4a,4.7.4e,4.9.11x1,4.9.11x2,4.9.11x40,4.9.12x2,4.9.15,4.9.16x40,4.9.17,4.9.19
Channel Country	5.3.4,5.3.5,5.3.6x2,5.3.9x1,5.3.9,5.3.11,5.5.1,5.5.3a,5.5.3b,5.6,5.6.4,5.7.1,5.7.2,5.7.3,5.7.6,5.7.12,5.7.13
Mulga Lands	6.3.1,6.3.2b,6.3.2a,6.3.3,6.3.4,6.3.5,6.3.6,6.3.7x2,6.3.7x1,6.3.8x3,6.3.8x4,6.3.8.6,3.12.6,3.16x50,6.3.17,6.3.18,6.3.18x2,6.3.21x50,6.3.24a,6.3.24,6.3.25,6.4.1,6.4.2,6.4.3x50,6.4.4,6.5,6.5.2,6.5.3,6.5.5,6.5.6,6.5.7,6.5.8,6.5.9,6.5.10,6.5.11,6.5.13,6.5.15,6.5.17,6.5.19,6.6.1c,6.6.1x1,6.7.1,6.7.2,6.7.5,6.7.6,6.7.

[illegible]

List of Queensland regional ecosystems meeting the Australian Forest threshold (>20% canopy cover, 2m height) was compiled by Professor Don Butler, ANU, provided November 2023.

Data caveats and limitations

There are 35,219 hectares of detected clearing in parcels less than 30 hectares. This clearing is excluded from the analysis; 67% of this is identified as pasture in the SLATS replacement land cover class, and are likely to contain beef land uses. This analysis is a conservative calculation of deforestation and woody vegetation loss associated with beef.

REDD was used to determine which regional ecosystems met the Australian forest threshold (more than 20% canopy cover or more than two metres tall). The preclear RE spatial data was then used to ascertain if vegetation that was cleared in the study period (2018–22) met the threshold.

Utilising the preclear RE spatial data allowed us to determine if regrowing vegetation was likely to meet this threshold. It was further enhanced by applying the age of the vegetation to the non-remnant areas. Some of the regrowing areas under 15 years may not meet the threshold at the time of clearing, however those are likely to be regrowing forest, and pose risk to any supply chains claiming to be deforestation-free. The forest related analysis is not to be used for certification purposes and is an estimation of deforestation risk based on the vegetation type in relation to forest definitions.

Image: Cape York, Queensland | Kerry Trapnell

QVAS data uses economic assessments of land uses on a property, and where land has multiple uses, the primary land use reflects the highest economic activity. Area is not necessarily the basis for determining the primary land use. In cases where there are multiple land uses and the valuer determines that the primary land use is beef, it is likely that it is also the biggest area. It is likely that this caveat mostly impacts clearing attributed to small area productions such as vineyards and poultry. In these cases, the valuer would assign the primary land use of the vineyard, even if the land owner is using most of the land for beef production.

QVAS data is usually updated if a property transfer occurs, such as when it is sold. The Office of the Valuer-General notes that a land holder could change the land use from one type of grazing to another and the department may not become aware of the change for some time. South West Queensland has seen a shift in grazing trends from sheep to beef in the last decade, and this is not reflected in the QVAS data. This outdated QVAS data could significantly underestimate the impact on the clearing and deforestation rate associated with beef in this report.

Mixed polygons containing less than 50% REs that meet the Australian forest definition were excluded from the technical forest analysis. Including these forest areas in this analysis would have increased the deforestation figure, again showing that this analysis chose the conservative approach.

The Wilderness Society has chosen to be conservative in this analysis and refinement of the methods would result in a higher attribution of clearing to beef land uses. This is a desktop analysis only. Please refer to the data custodian metadata for further information on individual dataset limitations.

Endnotes

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