

Submission to the State Development , Natural Resources and Agricultural Industry
Development on Proposed Changes to the Vegetation Management Act and Framework

I provide my submission in support of the continuation of the Current Vegetation Management Act 1999 and rejection of the changes proposed in the Vegetation Management and Other Legislation Amendment Bill 2018 (“the Bill”).

My overriding issue with the Bill is that its introduction in the Queensland Parliament on 8th March represents yet another variation to the Vegetation Management Framework, which has been amended over 18 times since its introduction in 1999. This constant change in legislation severely impacts on the ability of farm managers to plan and implement effective long-term property and business management decisions. Ecological processes work in much longer timeframes and can be severely compromised when mismatching, constantly changing regulations are enforced. Farmers have long called for certainty with the vegetation management regulatory framework. With the Bill being introduced when farmers are on their knees with much of Queensland still in drought conditions, or recovering from drought and flood, it should come as no surprise that I am totally opposed to continued uncertainty and attacks on the viability of myself, the long-term sustainability of my business as well as attacks on fellow farmers.

Key provisions of the proposed legislation which I oppose are:

1. Removing high value agriculture and irrigated high value agriculture as a relevant purpose under the Vegetation Management Act 1999. This will remove the ability to apply for a development approval for clearing for high value and irrigated high value agriculture, and removing supporting provisions such as relevant purpose decision making criteria
2. That no compensation will be payable to HVA, IHVA and Property Map of Assessable Vegetation (PMAV) applicants during transitional arrangements
3. Extending the protection of high value regrowth vegetation to align with High Conservation Values by:
 - Increasing the land types on which high value regrowth is regulated (as category C) to include freehold land, indigenous land and occupational licences; and
 - amend the definition of high value regrowth to be vegetation that has not been cleared for 15 years;
4. Extending category R to include regrowth vegetation in watercourse and drainage feature areas in three additional Great Barrier Reef catchments—Eastern Cape York, Fitzroy and Burnett-Mary catchments (see Appendix A);
5. Increasing the penalty units for offence provisions.
6. Introducing enforceable undertakings: a new compliance tool (an enforceable undertaking) to expand the options available under the Vegetation Management Act 1999 and the Planning Act 2016 to address unlawful clearing events. For example Enforceable undertakings commit the alleged offender to deliver on agreed environmental outcomes, for example revegetating an area connecting a strategic environmental corridor (i.e. taking additional productive country out of production in addition to what has been unlawfully cleared.
7. Amending provisions for stop work notices to broaden their use to include instances where there is a reasonable belief that a clearing offence has occurred.
8. Expanding powers of entry allowing an authorised officer to enter a place to monitor compliance for clearing of vegetation under an accepted development vegetation clearing code or an area management plan; or where an authorised officer believes on reasonable grounds that a vegetation clearing offence is happening, or has happened.

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The proposed Bill amends the Vegetation Management Act 1999 to provide a new power of entry that will allow an authorised officer to enter a place where the authorised officer believes on reasonable grounds that a vegetation clearing offence is happening, or has happened. This will allow the authorised officer to enter and re-enter a property without the occupier's consent or a warrant to investigate whether a vegetation clearing offence has happened or is happening at the place. I believe they should not be able to enter without Warrant.

9. Revised accepted development vegetation clearing codes (accepted development codes) including changes to area management plans.

The reforms to Queensland's vegetation management framework in 2013 by the former LNP Government were balanced and responsible, if people actually take the time to understand them.

Background

1. The removal of High Value Agriculture (HVA) and irrigated HVA (IHVA) affects farmers in regions differently, with those in the north particularly hard hit. Throughout northern Queensland energy and protein become limiting in cattle diets during the dry season and this can cause farmers issues with stock survival and welfare through years of drought. HVA and IHVA permits provide farmers in northern Queensland with the opportunity to grow fodder and grain for supplementing in the dry season and finishing off stock for market.
2. Under SDAP State code 16: Native vegetation clearing (i.e. the current vegetation management codes), version 2.1, Table 16.2.3 you cannot:-
 - Clear within 100m of wetlands;
 - clear within watercourses and must maintain required buffers of prescribed distances up to 100m;
 - must maintain connectivity throughout landscape;
 - cannot cause any soil erosion through mass movement, gully erosion, rill erosion, sheet erosion, tunnel erosion, stream bank erosion, wind erosion, or scalding; and 2. any associated loss of chemical, physical or biological fertility – including, but not limited to water holding capacity, soil structure, organic matter, soil biology, and nutrients, within or outside the land the subject of the development application;
 - Cannot contribute to or accelerate land degradation through waterlogging, or through the salinisation of groundwater, surface water or soil;
 - Must maintains the current extent of endangered regional ecosystems and of concern regional ecosystems;
 - Clearing does not result in, or accelerate, disturbance of acid sulfate soils or changes to the hydrology of the location; and
 - Clearing MUST maintain the current extent of essential habitat.
3. This last one is a key point and highlights the lies and scare campaign orchestrated by extreme Green groups like the Wilderness Society, Australian Conservation Foundation and statements made in particular by Tim Seelig and Martin Taylor of WWF to demonize our farmers and graziers. The focus on koala habitat is a good example, because no changes were made to essential habitat mapping for koalas, or any other native species, as

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part of the 2013 vegetation management reforms. You could never clear mapped habitat of any species listed under the State's Nature Conservation Act 1992 as endangered, vulnerable or near threatened (EVNT's), which includes Koalas, under the codes or Act for activities around coordinated project, extractive industry, high value agriculture clearing and irrigated high value agriculture clearing, fodder harvesting.

4. The large-scale approved High value Agriculture permits in the Gulf, Einasleigh Uplands and southern Cape York bioregions, where Green groups have accused landholders of clearing Koala habitat, are outside the Geographic range of the Koala... where it is too dry for them and their preferred eucalyptus food-sources, such as the blue gum. Areas close to streams and billabongs are also omitted from approved areas under the State's Vegetation Management codes. Areas of known koala habitat cannot be cleared anyway as they are omitted from final approved areas for tree clearing under the State's Nature Conservation Act and are shown on "Essential Habitat layer". The Essential Habitat layer is made up of all known sightings/recordings of the listed species and buffered them accordingly by at least 1.1km. This Rural development is different to urban development in the Redlands area!
5. Further, Clearing could only occur for High Value and Irrigated High Value Agriculture where the land is suitable for agriculture having regard to topography, climate and soil attributes. This had to meet the Guidelines for meeting the land suitability and economic viability requirements for high value and irrigated high value agriculture applications, Department of Natural Resources and Mines; and Clearing could only occur where there is no alternative area on the land subject to the development application for the clearing.
6. The re-inclusion of High Value Regrowth (HVR) as an additional layer of regulation on leasehold, freehold and indigenous land is an overt grab by Queensland Government in search of targets for meeting international treaties such as the Kyoto Protocol. In 2009 when initially introduced, this HVR layer was prepared hastily in a 'desk-top' mapping exercise with associated errors including areas of non-native vegetation (such as orchards), grassland with little or no trees and bare earth.
7. High value regrowth vegetation was previously defined as *“native woody vegetation that has not been cleared since 31 December 1989, and forms an endangered, of concern or least concern regional ecosystem”*. High value regrowth vegetation is shown as a category C area on the regulated vegetation management map. Prior to 2009, only leaseholders for agriculture and grazing leases under the Land Act 1994 needed permits to clear regrowth vegetation that had not been re-cleared since 31 December 1989. All regrowth on freehold and indigenous land was exempt under the Vegetation Management Act 1999. In 2009, protection of high value regrowth was extended to freehold and indigenous land. As a consequence of the 2013 amendments to the Vegetation Management Act 1999, legislative protections for regrowth on freehold and indigenous land were removed. This Bill proposes protecting high value regrowth vegetation and aligning it to High Conservation Values by: 1. re-defining 'high value regrowth vegetation' to mean native woody vegetation that has not been cleared for 15 years, and forms an Endangered, Of Concern or Least Concern regional ecosystem; and 2. further amending the definition to include high value regrowth vegetation on freehold land, Indigenous land, and land which is the subject of an occupation licence under the Land Act 1994.

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8. Many High Conservation Values are already afforded protection under Queensland legislation, however some categories are not comprehensively considered via the assessment framework for clearing regulated vegetation. The Queensland Government intends to further align high value regrowth with High Conservation Values by amending the definition of protected wildlife for the regulation of essential habitat to include habitat for near-threatened wildlife species, for both remnant and high value regrowth vegetation.
9. This will take many productive areas out of production and is a serious threat to long term productivity and sustainability of our Rural Industries, particularly grazing.
10. This Act is about "Reducing the size of the Paddock".
11. The proposed Regulated Vegetation Management Maps, in many instances are inaccurate. Many on the Atherton Tablelands are particularly affected by the Category C High-value regrowth. (Appendix B showing actual remnant vegetation to be taken as Cat C). The new Bill was introduced on 8 March, and if it is passed, it will be made retrospective to this date. Most of these properties are currently cleared and well-established to grass, with just a few scattered trees and some along lower lines, so there was no point clearing anyway. There is no regrowth at present - but are we now expected to let it regrow? The existing trees and smaller clumps are not at what should be considered 'mappable scale' at 1:100,000 scale mapping, being less than 100m wide and less than an acre in size. There is obvious mistakes with mapping and should be raised with DNRM Veg staff and corrected free of charge. Why should landholders pay \$434 to correct the Government's own errors through a PMAV?
12. In particular smaller, closely settled-areas like the Tablelands and Wet Tropics coast stand to be grossly affected by way of percentage area and smaller intense production areas that have been traditionally cleared. If people are made to regrow such productive areas (that until now have been mapped category X) it will make them unviable.
13. Again the issue of compensation arises with the Emissions Reduction Fund selling carbon abatement per tonne. Where the recompense for Queensland farmers and what is the estimated dollar value of "High Value Regrowth"?
14. There is currently a strong focus on developing Northern Australia. A current example of this is the \$220 million being spent to upgrade roads to communities across Cape York, but Queensland State Government Vegetation Management Framework is preventing these farmers from developing agriculture projects. The Queensland Government's Queensland food and fibre policy identifies the agricultural sector as the mainstay of the Queensland economy and commits the government to support the growth of the industry. Food and agriculture is one of the Australian Government's five industry pillars identified as having high potential for growth. The White Paper on Developing Northern Australia predicts a sharp increase in the scale and breadth of activity in the industry as part of sustainable development of the north. Most of the proposed development to new agriculture clearing has NOT been in reef catchments - but in the Gulf Plains.
15. There will no longer be "thinning" but "clearing of encroachment" and "managing thickened vegetation". For "managing thickened vegetation" landowners will have to

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demonstrate that they will restore the original ecosystem and that there will be positive impacts on the ecosystem and biodiversity. No chains are allowed and this increases cost to make it largely unviable on larger less-productive areas. The main purpose of many grazing properties is grazing – i.e. GHPL, PH. Ecological purposes were not an initial purpose of lease. It is therefore unreasonable, when considering maintaining profitability and sustainability on the land to not allow thinning for purpose of maintaining productivity. Ditto for encroachment. Clause 17 inserts a new section 22B into part 2, division 6 which provides the requirements applicants must demonstrate when submitting an application to manage thickened vegetation. These requirements include demonstrating the proposed location and extent of the proposed clearing, the proposed methods, evidence the regional ecosystem has thickened, and limitations based on regional ecosystems and clearing restrictions prescribed under a regulation. The ecological justification is that thinning should only be undertaken where thickening has occurred, and that thickening should also have resulted in negative impacts on biodiversity and / or ecosystem function, and that thinning will mitigate or reverse these impacts. This requires a rigorous demonstration of thickening, and would require careful analyses of aerial imagery (or even more sophisticated remote sensing), and would first remove temporal rainfall trends to show thickening above and beyond natural variation associated with multi-decadal rainfall variation. Demonstrating the associated negative impacts on biodiversity and ecological function is another yet more complicated issue. It is unreasonable to expect landholders to rigorously demonstrate thickening and associated ecological impacts.

16. Instead, a more user-friendly limit-based approach is recommended i.e. number of stems retained per hectare, number of adult trees retained, mix of species composition and age.
17. The result for Queensland consumers will be more expensive fresh produce and loss of jobs. Meat processors have already started putting off staff because of a slowdown in domestic cattle supply as Australia's cattle herd hits a 20-year low.
18. This will ruin the productivity of our native rangelands through increased woody tree species.
19. This will increase runoff and be bad for the reef through less groundcover. It is not trees that protect the reef – it is groundcover. This is a well-known soil conservation principle, outlined in the 2015 Soil Conservation Guidelines for Queensland.
20. Premier Palaszczuk said when she was first elected she wanted to create 55,000 new jobs – where is this to come from with mining and tourism in downturn? This is just bad policy.
21. The biggest cause of environmental degradation is not tree-clearing – it is poverty. Any proposed changes to the Vegetation Management Framework will deny people, indigenous and non-indigenous – social and economic opportunity.
22. These proposed changes to the Vegetation management framework will deny social and economic opportunity, Indigenous and non-indigenous employment, diversification of industry, maintenance of current production levels and drought resilience.

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23. This Bill is causing Landholders an inordinate amount of stress and worry. The proposed Regulated Vegetation Management Maps, in many instances, are inaccurate. Landholders need certainty to be able to manage their properties for thickening vegetation, regrowth and encroachment. Imagine if the Government said that you cannot mow your ever-growing lawn, nor trim your garden? Then remember, farmers must be able to earn a living from their land.

Science

Increase in Woody Vegetation

The State Government has been ‘cherry-picking’ the science. Vegetation regrowth data has been largely ignored in their own report. The fact of the matter is that the actual percentage wooded vegetation cover remaining over Queensland has increased, even with the rise in annual clearing rates reported in the SLATS Report 2012-2014. This report shows that while 296,000ha were cleared, tree coverage increased 437,000ha from 2012-2014 (Table 1). Almost twice the size of the ACT in just three years. In fact tree coverage increased in 51 of 77 council areas across Queensland. The biggest increases in tree coverage came in far north and northwest Queensland, especially in Cook Shire (up 237,000ha), Carpentaria (up 229,000ha), Burke (up 85,000ha), and Mareeba (up 40,000ha). The fact is that trees grow, and right now they are regrowing at a much faster rate than they are being managed. Anyone who enjoys a backyard garden in this bountiful state will appreciate this phenomenon only too well.

Woody vegetation is dynamic. Establishment and growth of woody vegetation is greater during episodic wet years (e.g. 2010/11) and natural tree death can occur during prolonged droughts. The Main change in clearing rates from 2012 to 2013/14 is in southwestern Queensland where mulga was being pushed to keep cattle alive in the drought. Most clearing happened in Paroo Shire, Barcoo and Boulia, the report shows. But anyone who knows Mulga country knows it grows back thicker than the hairs on a cat’s back. This pulled country regrows and remains mapped as remnant vegetation anyhow.

Farmers are in the grip of Queensland’s most widespread drought. Clearing of trees and shrubs for stock feed (fodder) made up 35 per cent (in 2012-13) and 57 per cent (in 2013-14) of the permitted clearing. Obviously keeping stock healthy – in food and water – is a farmer’s priority during drought.

Even with increased clearing rates, the actual wooded vegetation cover across regions increased in all but 5 regions between 2011-12 and 2012-13, and all but 4 regions between 2012-13 and 2013-14 (Table 1).

Table 1.

NRM Region	Total area (,000 ha)	2011-12		2012-13			2013-14		
		Rate of clearing (,000 ha)	% wooded vegetation cover	Rate of clearing (,000 ha)	% wooded vegetation cover	Δ ¹	Rate of clearing (,000 ha)	% wooded vegetation cover	Δ ²
Burnett Mary	5595	11.794	69.175	14.138	69.77	↑	15.240	73.12	↑
Cape York	13685	2.115	92.219	2.204	92.29	↑	2.811	94.43	↑
Condamine	2544	4.935	39.182	8.164	39.82	↑	5.959	40.44	↑
Desert Channels	51000	8.814	20.216	17.667	20.01	↓	19.896	19.04	↓
Fitzroy	15725	41.605	55.594	54.747	55.96	↑	58.617	57.77	↑

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NRM Region	Total area (,000 ha)	2011-12		2012-13			2013-14		
		Rate of clearing (,000 ha)	% wooded vegetation cover	Rate of clearing (,000 ha)	% wooded vegetation cover	Δ^1	Rate of clearing (,000 ha)	% wooded vegetation cover	Δ^2
Northern Gulf	19410	1.675	88.107	1.385	87.94	↓	2.466	89.10	↑
Burdekin	14090	18.900	64.821	38.655	65.09	↑	29.818	65.49	↑
Border Rivers/ Maranoa Balonne	10176	57.570	42.550	57.521	42.76	↑	35.769	42.60	↓
Mackay Whitsunday	934	0.961	67.706	1.038	67.71	↑	0.775	69.67	↓
South East Queensland	2368	3.120	66.740	3.120	67.15	↑	4.577	70.21	↑
South West Queensland	18711	29.051	47.334	63.171	47.89	↑	116.997	44.49	↓
Southern Gulf	19460	1.801	49.179	3.337	49.08	↓	2.019	50.84	↑
Wet Tropics	2224	1.406	84.337	1.211	84.20	↓	1.466	85.46	↑
Torres Strait	85	0.000	70.113	0.000	69.98	↓	0.000	87.97	↑

Δ^1 = Increase (↑) or decrease (↓) in percentage cover between 2011-12 and 2012-13

Δ^2 = Increase (↑) or decrease (↓) in percentage cover between 2012-13 and 2013-14

Thickening Regrowth and Maintaining Current Productivity

Science shows thickened tree cover can increase runoff, adversely affect regional ecosystem functioning, and reduce biodiversity. The work conducted by Bill Burrows, over 40 years in DPI, showed that our Eucalypt woodlands are actively thickening. Queensland's tree/shrub cover increased its aboveground biomass and carbon content over the 20 year period 1993 – 2012. This is despite the fact that this timeframe coincided with a period of active broad scale tree clearing. This conclusion is based on satellite sensor measurements, with the findings strongly supported by a large number of complementary studies employing many different monitoring techniques. The data presented here shows that this State is a net sink for CO₂ overall. Queensland is more than pulling its weight today, both nationally and internationally, in ameliorating CO₂ build-up in the atmosphere. Restricting tree/shrub clearing to simply further increase carbon sequestration on land assigned for agricultural purposes seems to be an unnecessary impost, devoid of fairness to the landholder.

As tree basal area increases, potential pasture yield declines (Back et. al 2009). This means that removal of woody plant competition can increase pasture production and hence livestock carrying capacity by 2-4 times, depending on the pasture, land type and location. Only a small increase in woody plant basal area (regrowth) after clearing will quickly negate the pasture production benefits of that clearing (Burrows 2002). Thinning and follow up management, as outlined in Self Assessable Codes, can restore landscape to a functioning regional ecosystem.

Regrowth needs to be controlled to maintain productivity. A former Queensland Government Botanist, Dr Bob Johnson has monitored the regrowth of a mixed Brigalow scrub at Theodore since its initial clearing in 1963. No further clearing treatments have been imposed on the plot in the ensuing 46 years. Today this regrowth community is dominated by tall 'whipstick' Brigalow suckers, so the regrowth bears little resemblance to the diverse composition and structure of the original Brigalow scrub which it replaced. Certainly this protection has led to the proliferation of Brigalow plant stems on this site. Restricting the clearing of regrowth on agricultural land will not restore the original structure and

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composition of the vegetation, nor its original fauna population and species mix. Reducing flexibility of the ways in which farmers can manage vegetation on property means increased costs in production – costs which will result in increased food prices for consumers.



Timber thickening

Declining carrying capacities across >60% of NQ

Photo courtesy of DAF.

Comments by Dr Bill Burrows¹, formerly Australia's leading Woodland Ecologist specialising in tree-grass interactions. *"If you work on a basal area increment of 1% per year an 8% start tree basal area converts to c.12% in 40 years. (Very grass competitive - but still well below 70% canopy cover). Watch out Qld. These are ball park TRAPS averages for Qld's so called "remnant" grazed woodlands - 72 M ha. Forget about the grazing industry; just wait to see what that does to our urban water supplies..."*

- Different satellite based sensors can now reliably detect changes in the aboveground biomass of vegetation, as well as carbon dioxide (CO₂) levels in the air column above the earth's land mass and oceans (Burrows 2016).
- Aboveground biomass increased in Queensland over a 20 year observation period (1993-2012), even though this also coincided with different years of either well below or well above average rainfall, along with years of extensive ('panic') clearing – in the highly publicised lead up to the passing of the State's Vegetation Management Act 1999.
- The satellite sensor observations are validated by a myriad of ground based and aerial photo interpretation studies. This research confirms that uncleared woody vegetation is "thickening" (increasing in stem density, stem size/basal area and/or canopy cover) on the State's rural landholdings. This results in increased woody plant biomass and

¹ Bill Burrows has a Master of Agricultural Science degree from the University of Queensland and a PhD from the Department of Environmental Biology in the Research School of Biological Sciences, Australian National University. He is a Fellow of the Australian Academy of Technological Sciences & Engineering. He was also elected a Fellow of the Tropical Grassland Society of Australia and The Australian Institute of Agricultural Science and Technology. He is a past recipient of the Cattleman's Union of Australia, Research Medal and was awarded a Centenary Medal in 2002 for 'contributions to Australian society in the field of ecology'. Bill retired from his position as Senior Principal Scientist in the Queensland Department of Primary Industries & Fisheries (now DAF) in 2004, after a 40 year career researching the ecology and management of Queensland's grazed woodlands. He is a past president of both the Australian Rangeland Society and the Tropical Grassland Society of Australia, and has authored or co-authored over 100 research and technical papers published in national and international scientific literature.

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carbon storage, as well as providing strong competition that limits the growth of associated pasture.

- Independent sensors on Japan's IBUKI and NASA's OCO-2 satellites now both show Queensland is a net annual sink for CO₂. In other words vegetation is currently removing more CO₂ from the air (atmosphere) above this State than is being added to it from the combined impacts of land clearing, plant respiration, fire, fossil fuel use, adjacent ocean outgassing etc.
- **It is concluded that arguments for the reintroduction of strict tree/shrub clearing control bans on this State's rural landholdings are not supported by the evidence. Our 'intact' woody vegetation is not static, but on a definite 'thickening' trend overall. This trend threatens the viability of many rural enterprises. Reintroducing strict restraints on the clearance of trees/shrubs from the rural landscape will only exacerbate this problem.**
- A review of research literature provides further support for these conclusions.

The proposal to reintroduce strict 'tree clearing' bans is not justified in light of the above compelling evidence that 'intact' woody vegetation continues to 'thicken' in this State. Perhaps because of this reality it is now suggested that another reason to re-introduce clearing bans is to increase the capacity of the land as a greenhouse gas sink. However the data presented here show that this State is already a strong carbon sink and indeed would appear to be the State making the greatest contribution to Australia being a net sink for CO₂ overall. Thus Queensland is more than pulling its weight today, both nationally and internationally, in ameliorating CO₂ build-up in the atmosphere. Likewise, restricting tree/shrub clearing to simply further increase carbon sequestration on land assigned for agricultural purposes seems to be an unnecessary impost, devoid of fairness to the landholder.

Landholders began to understand the relationship between tree/shrub cover and pasture production shortly after grazing commenced; and this provided them with a strong motivation to reduce woody plant cover on their properties, especially where the trees had no timber or fodder tree value. They also found that the increasing woody plant densities in both standing and regrowth communities led to mustering difficulties.

Regrowth management is an essential component of any previously countenanced woodland clearing program on Queensland's rural land. However regrowth should not be cleared from land showing signs of active erosion and landscape instability following the initial clearing. Clearing woodland is only effective, and the increased agricultural production and economic benefits from it only certain, when the regrowth, which inevitably follows clearing, is itself controlled. It is illogical in practice and intent for the State to permit tree clearing, and then retrospectively prohibit the control of regrowth from that clearing. Such action will not lead to the restoration of pre-clearing biodiversity, nor restore the structure and composition of the original woodland community. But it will penalise the land manager and the State by denying them the productive and financial benefits that the initially countenanced clearing was designed to deliver.

The most important message that rural landholders can convey to people in other industries and their urban cousins is that the business they are in is agricultural production – the production of food and fibre for Australian and international markets. It is not conservation. If the two can be combined while not limiting the sustainable agricultural production potential of a property - well and good. But conservation superimposed on agricultural land use can (intentionally or not) restrict responsible development and management of woodland

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resources and so impact the viability of the rural enterprise. For example, it is made very clear in the documentation of most grazing homestead perpetual leases (GHPL) that the Purpose of the Lease is for 'grazing and agriculture'. This of course applies to agricultural land in general.

Yet it is obvious from the WWF's "*Bushland at risk of renewed clearing in Queensland*" document that conservationists want to ignore this inconvenient fact. Instead they are essentially demanding that woodlands on agricultural holdings should be seen as a simple extension of the State's National Park and Reserve system. Or, if that demand can't be justified, they argue that the grazed woodlands should be "locked up" for carbon sequestration. However, as noted above, it is now well established via satellite based sensors, that the woodlands already contribute to Queensland and Australia being a net sink for carbon dioxide (after accounting for all the CO₂ contributing to the flux in this gas above the nation's land mass).

Reef and Runoff

The Reef is an outstanding natural asset – nobody can dispute that. Soil management plays a vital role in keeping soils on the paddock, out of waterways and out of the Reef lagoon. Ground cover, not tree cover, determines runoff and erosion risk. This is a well-known soil conservation principle², outlined in the 2015 Soil Conservation Guidelines for Queensland³ and many other soil conservation studies. Industry is concerned Queensland Government has recently considered woody vegetation management as an erosion issue in Great Barrier Reef catchments. There is generally less ground cover under trees than in cleared areas, due to competition for water and nutrient. Grazing management practices, pasture cover and fire regimes, rather than tree clearing, determine runoff and erosion risk. For example, the Queensland Government website for soil erosion management⁴ states "*Trees are often considered to be the universal answer to control soil erosion. Tree roots help prevent landslides on steep slopes and stream bank erosion but they don't stop erosion on moderately sloping hillslopes*".

Published reef science on suspended sediment runoff to the Reef focus on main causes such as amount of ground cover and location / extent of bare areas in erodible soils such as gullies (Wilkinson *et al* 2012, Bartley *et al* 2012). There is NO mention of tree cover, tree basal area or trees contributing or reducing sediment runoff. Ground cover NOT tree cover determines sediment runoff.

A study of how ground cover and extent/location of gullies & scalds affects runoff and erosion was conducted over 10 years (Bartley 2014) within eucalypt savannah woodland within the Upper Burdekin at Virginia Park Station, Charters Towers. It measured suspended sediment runoff from flumes across an Indian couch dominant pasture on goldfield soils. The study looked at grazing strategies to improve grazing land condition. Native woody vegetation was Eucalypt savanna woodland (narrow leaved ironbark, bloodwood, currant

² Scanlan JS and Turner EJ, 1995. The production, economic and environmental impacts of tree clearing in Queensland. Report to the working group of the Ministerial Consultative Committee on tree clearing

³ Queensland Government – Soil Conservation Guidelines for Queensland 2015
<http://www.qld.gov.au/environment/land/soil/erosion/guidelines/>

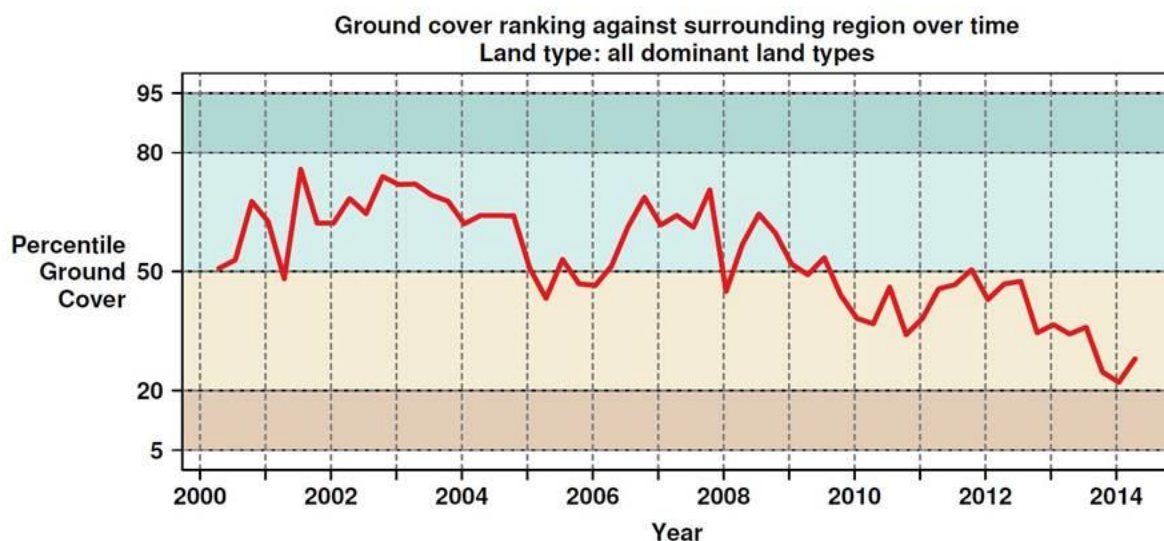
⁴ Queensland Government – Preventing and managing erosion
<http://www.qld.gov.au/environment/land/soil/erosion/management/>

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bush, false sandalwood). Increased ground cover of Indian couch and pasture reduced runoff; however sediment yields were mostly affected by the position of scald, gully and bank erosion areas in the landscape. The amount, distribution and persistence of areas with < 10% ground cover affected the amount of soil erosion. Increased ground cover (> 70%) and rainfall intensity reduced early wet season runoff.

Increasing the abundance of deep-rooted perennial grasses will help reduce runoff from hillslopes which in turn helps to reduce gully and bank erosion in lower sections of the landscape. Riparian vegetation including trees, shrubs and grasses is important in maintaining healthy waterways. Roots help stabilise the banks. Vegetation also helps improve water infiltration, slows down water velocity and provides the last barrier for filtering out sediment and nutrients. However, in cropping and pastoral systems, ground cover will determine the erosion and runoff risk.

The science now proves that it is ground cover, through grasses and crop stubble, which determines runoff and erosion risk and protects the soil - not tree cover. What we hear from the Environmental groups saying tree clearing affects water quality on the reef is not backed by science. There is generally less ground cover under trees than in cleared areas due to competition for water and nutrient.



A report by Megan Star & Peter Donaghy (QDAF) on economic modelling of Burdekin & Fitzroy grazing systems clearly outlines how tree basal area can increase sediment runoff for same level of pasture utilisation (compared to cleared country) across a range of grazing land types. If you compare the graphs from page 24 onwards, you will see the tonnes of sediment exported are always greater where tree – studded landscapes compared to cleared landscapes (where tree basal area = 0). Grazing land types included here are:-

- Goldfield red soils (TBA 0 and 3.5 m²/ha)
- Silver leaf ironbark (TBA 0 and 7.5m²/ha)
- Silver leaf ironbark on duplex (TBA 0 and 5m²/ha)
- Spotted gum ridges (TBA 0 and 11m² /ha)

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In February 2015, the Queensland Government slipped in Water Quality Action number EHA20 to the Reef 2050 Long Term Sustainability Plan⁵ to “*Strengthen the Queensland Government’s vegetation management legislation to protect remnant and high value regrowth native vegetation, including in riparian zones*”. **All previous reef science and soil conservation studies link ground cover impacts to runoff, not woody vegetation cover.** Streambank stabilisation is achieved through a combination of both woody vegetation and grass-ground cover. There was no opportunity for the Reef Partnership Committee to review these inserted actions before the draft Reef 2050 LTSP went to UNESCO – World Heritage Committee. In June 2015 the Queensland Audit Office report on ‘*Managing water quality in GBR catchments*’ stated a 229% increase in land clearing in reef catchments from 2008/09 [31,000ha] to 2013/14 [102,000ha]. No Government information is available to demonstrate if these clearing rates increased the risk of sediment runoff. Long Paddock FORAGE reports show how ground cover on a property compares to regional grazing land types. Ground cover falling below the 50 per cent percentile indicates there is a risk of degrading land condition.

Building Resilience and suggested Option

Many indigenous and non-indigenous communities, particularly in the Cape and Gulf, aspire for Agricultural development to provide employment and opportunity in what is a low socio-economic area. These opportunities should not just be afforded to southern areas, that have had centuries of development. A one-size fits all approach to vegetation management on a state-wide basis denies opportunity to parts of north and western Queensland; areas such as Einasleigh Uplands, Gulf Plains, Cape York, Desert Uplands, North-west Highlands, Mulga Lands, Mitchell grass downs and Channel Country. Areas where there is untapped potential for improved productivity through sustainable development of better soils.

Many struggling small rural and Indigenous communities, within the State’s Far North and Gulf, would stand to benefit greatly from the much needed social and economic opportunities that this suggestion would present, through carefully planned and appropriate agricultural development . This is a region with over 90% remnant vegetation – an intact landscape that can have a sustainable level of development (see Figure 1).

For High-value agriculture - even with a relatively low value crop like sorghum (assuming value at \$250/tonne), an extra 500,000Ha at a conservative average of 2T/Ha results in an extra \$250M per year. That can be multiplied 5X through the supply chain and is a huge boost to the economy.

Scale of operation is a major contributor towards profitability in the Beef industry and effects are amplifying. The 2013 Northern Beef Report details the performance of the northern beef industry, by region, market and herd size over the 12 years since the start of the century. On average, the profits achieved over that time frame have been low, but not trending down. Profitability of the top performers has declined over the longer term, suggesting that industry profitability is decreasing. Profit after interest is decreasing, and is mostly negative, as a

⁵ The Reef 2050 Plan <http://www.environment.gov.au/marine/gbr/long-term-sustainability-plan>

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result of increasing debt with no increase in profits. The majority of Northern Beef producers are not economically sustainable as they are not able to fund present and future liabilities.

Major issues facing the Beef Industry include significant cost escalations, doubling of debt over last decade and return on assets have declined to very low levels averaging less than 1% across the industry over the last 3 and 12 years (The Northern beef report - 2013 Northern beef situation analysis). Nearly all productivity differences between herds can be attributed to the better performers achieving:

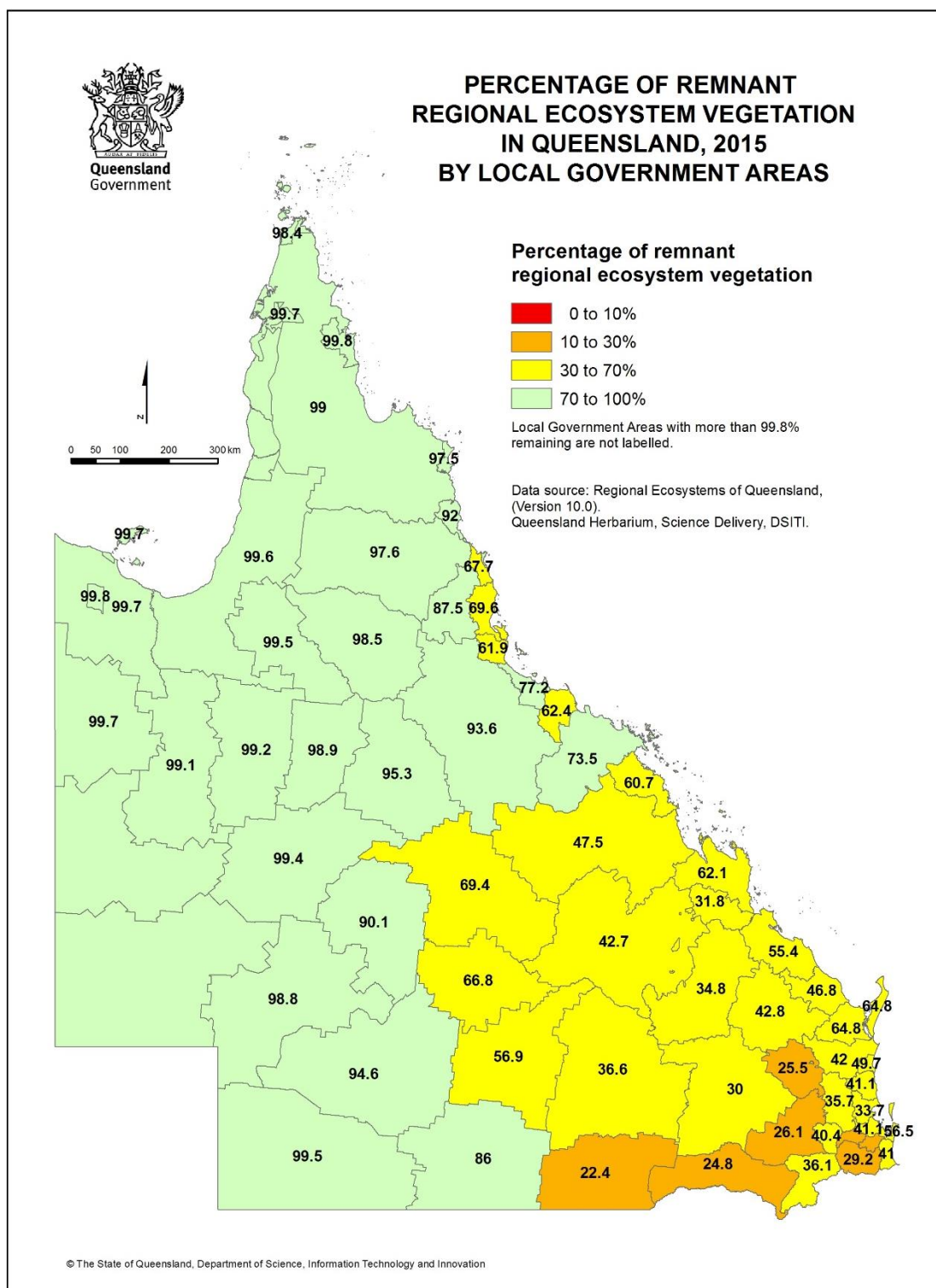
- Higher reproductive rates
- Lower mortality rates
- Heavier sale weights

Not to mention maintaining body condition and meeting animal welfare obligations. Clearing for discrete areas of improved crop and pasture allows this to be achieved.

Currently Landholders are unable to clear or even achieve “Parkland-style” clearing for grazing purposes. Scale of operation is a major contributor towards profitability in the Beef industry and effects are amplifying. Major issues facing the Beef Industry include inadequate scale in more closely settled areas, significant cost escalations, doubling of debt over last decade and return on assets have declined to very low levels (0.3% to 2.0% average). The northern beef industry is generally in a very unprofitable and unsustainable state. Previous legislation around vegetation management, under the Beattie and Bligh Governments, impacted both development and maintenance options for producers in affected regions. Farmers must be allowed to manage their vegetation in a practical, environmentally sustainable way.

Figure 1

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Large areas of the North have not had the opportunity to be developed over time, unlike the Darling Downs and Central Queensland (Figure 1). The Northern Einasleigh Uplands has over 96% remnant vegetation and there is untapped potential for improved productivity through Sustainable development of particular Land types. By allowing for discrete, better, more suitable areas of soil be developed, up to a maximum of 10%, on those properties only that aspire to some economic development, we retain landscape connectivity. We allow for stocking rates to be reduced on other parts of the property. We can improve land condition

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through grass growth, improved ground cover and less soil erosion and suspended sediment. We can introduce the possibility of 'trade-offs' of less suitable areas being surrendered for conservation purposes to allow for development in the better areas. Under this proposal at least 90% of remnant vegetation will be retained for habitat and connectivity purposes on a property-basis, with greater retention rates across the bioregion.

DAFF has provided figures of potential gains on properties in the North. Allowing clearing for improved pastures on less than 10% of a 'typical family block' of 25,000 Ha gives 25% increase in total gross margin, which includes amortising the cost of that clearing over 10 years (see below). According to ABS data, focusing on North Queensland regions with a high percentage of remnant vegetation, the total area of land used mainly for Agricultural production is over 74 million hectares. If the figures from the Land Clearing Proposal were used as a rough guide of economic opportunity, allowing up to a maximum of 10% clearing for grazing purposes, this represents an economic opportunity of at least \$300 million, or \$3 Billion across the next 10 years.

Rising costs - Typical Herd (4000 AE)

- Typical Gross Margins - Ranging from \$75-95/AE
- Typical Overheads including finance costs - \$83/AE
- Typical cattle costs - \$35/AE



Potential herd performance with improved pastures

1. Leucaena and Native Pastures on fertile soils in north Queensland. Assumptions:

- **LWG to rise from 120kg to 240kg**
- Stocking rate goes from 1 AE to 20Ha down to 1 to 5ha to 1 to 3.2 ha
- The most profitable turnoff from this country is meatworks Ox
- Typical family block of 100 sq. mile – 25,000ha
- Develop 2000 ha (8% of property)
- \$200/ha development costs - \$400,000
- No overhead costs included in calculations below
- Improved pasture cattle turnoff prices do not allow for MSA grading premiums

	No clearing/no improved pastures	Improved pastures on 5000 acres
Total Cattle	4418	4399
Cows mated	2115	2135
Cull cows & heifers sold	451	455

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Av Sale price - females	\$542	\$580
Steers and bullocks sold	502	519
Av male sale price	\$815	\$1017
Total cattle sale	\$653,816	\$792,508
Direct costs – dips, drenches, vaccines, bull replacement and supplements	\$177,666	\$151,532
Total Gross Margin	\$476,150	\$640, 976
Annual pasture development capital cost (over 10yrs)		\$40,000 plus interest

In allowing high-value agriculture to proceed, under this suggestion, we must ensure it is sustainable, that the soils are suitable and the projects financially viable. However, the current guidelines and policy that exist for high value agriculture and irrigated high value Agriculture allow for this. However, farmers are not stupid. If a farmer applies to grow sorghum, but then makes a decision to grow maize, millet, pulses or peanuts – higher value crops, then that is a management decision and he should not have compliance police come along and charge him for it. The vegetation laws need to be practical and common-sense.

Conclusion

Unquestionably, economic development and environmental protection must go together, however the Government must shift from approaches that place economic development and environment at loggerheads. The science now proves that it is ground cover, through grasses and crop stubble, which determines runoff and erosion risk and protects the soil - not tree cover. What we hear from the Environmental groups saying tree clearing affects water quality on the reef is not backed by science. There is generally less ground cover under trees than in cleared areas due to competition for water and nutrient.

Moves by the State Government to reject simple data and repeal current vegetation management laws are the biggest threat to Queensland Landholders since the Gillard government smashed the cattle export trade in 2011. The result for Queensland consumers will be more expensive fresh produce and loss of jobs. Meat processors have already started putting off staff because of a slowdown in domestic cattle supply as Australia's cattle herd hits a 20-year low.

Failure, by this government, to understand woody population dynamics in Queensland's grazed woodlands has no doubt contributed to this seeming inability to settle on a realistic and stable woodland management policy, applicable to agricultural lands. The proposal to reintroduce strict 'tree clearing' bans is not justified in light of compelling evidence that 'intact' woody vegetation continues to 'thicken' in this State. Queensland landholders should not be subject to punitive laws promoted by this Government who fail to back up their claims with scientific evidence. At the end of the day, landholders want long term certainty to sustainably manage natural resources. Imagine if you tried to run a business without being allowed to manage it?

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This suggestion above, regarding an allowable 10% development within bioregions with greater than 90% remnant vegetation, will ensure that government is supporting our agricultural producers in the less developed regions to the fullest ability. Not only this, but this will be ‘sustainable mosaic agriculture in a landscape planning approach’. By supporting this suggestion, this Parliament can lead the way in world’s best practice in new and innovative, sustainable agricultural development – the foundational platform required if we are to achieve essential food security and if we are to go anywhere near our potential as the future food bowl for Asia. By building resilience – we reduce the reliance on Government funding for drought relief.

References:-

Back, P.V, Anderson, E.R., Burrows, W.H and Playford, C. (2009) *Woody plant responses to various clearing strategies imposed on a poplar box (Eucalyptus populnea) community at Dingo in central Queensland*, Tropical Grasslands Volume 43, 37–52 37

Bartley R, Bainbridge Z.T., Lewis S.E., Kroon F.J., Wilkinson S.N., Brodie J.E. and Silburn M. (2014) *Relating sediment impacts on coral reefs to watershed sources, processes and management: A review* Science of the Total Environment 468-469 1138–1153

Bartley R, Corfield JP, Hawdon AA, Kinsey-Henderson AE, Abbott BN, Wilkinson S and Keen RJ (2014). *Can changes to pasture management reduce runoff and sediment loss to the Great Barrier Reef?* The result of a 10-year study in the Burdekin catchment, Australia. The Rangeland Journal, 36, pp 67-84.

Bray, S.G., Liedloff, A.C., Sim, A.K., Back, P.V., Cook, G.D. and Hoffmann M.B. (2007) *Comparison of woody vegetation change datasets from the grazed woodlands of central Queensland*. Proceedings Northern Beef Research Update Conference, pp. 70-77.

Burrows, W.H. (2002) Seeing the woodland for the trees – An individual perspective of Queensland woodland studies (1965-2005). Tropical Grasslands 37: 202-217.

Burrows, W.H. (2016) *Vegetation Management in Queensland - Some essential facts for politicians, rural industry and all Queenslanders*

Crowley, G.M. and Garnett, S.T. (1988) *Vegetation change in the grasslands and grassy woodlands of east-central Cape York Peninsula, Australia*. Pacific Conservation Biology 4: 132-148.

Crowley, G., Garnett, S. and Shephard, S. (2009) *Impact of storm burning on Melaleuca viridiflora invasion of grasslands and grassy woodlands in Cape York Peninsula, Australia*. Austral Ecology 34: 196-209.

Fensham, R.J., Low Choy, S.J., Fairfax, R.J., Cavallaro, P.C. (2003). *Modelling trends in woody vegetation structure in semi-arid Australia as determined from aerial photography*. Journal of Environmental Management 68: 421-436.

Krull, E.S., Skjemstad, J.O., Burrows, W.H., Bray, S.G., Wynn, J.G., Bol, R., Spouncer, L., Harms, B. (2005) *Recent vegetation changes in central Queensland, Australia: evidence from 13C and 14C analyses of soil organic matter*. Geoderma 126: 241-259.

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Krull, E., Bray, S., Harms, B., Baxter, N., Bol, R. and Farquhar, G. (2007) *Development of a stable isotope index to assess decadal-scale vegetation and application to woodlands of the Burdekin catchment, Australia*. *Global Change Biology* 13: 1455-1468.

McLean, I., Holmes, P., Counsell, D., (April 2014) *The Northern beef report - 2013 Northern beef situation analysis* Meat & Livestock Australia Limited NORTH SYDNEY NSW

Sim, A.K. (2004) *The investigation of vegetation thickening in central Queensland using palaeoecological techniques*. Hons Thesis. University of New South Wales.

Wilkinson S.N, Hancock G.J., Bartley R., Hawdon A.A., Keen R.J. (2012) *Using sediment tracing to assess processes and spatial patterns of erosion in grazed rangelands, Burdekin River basin, Australia* Agriculture, Ecosystems and Environment. journal homepage:
www.elsevier.com/locate/agee

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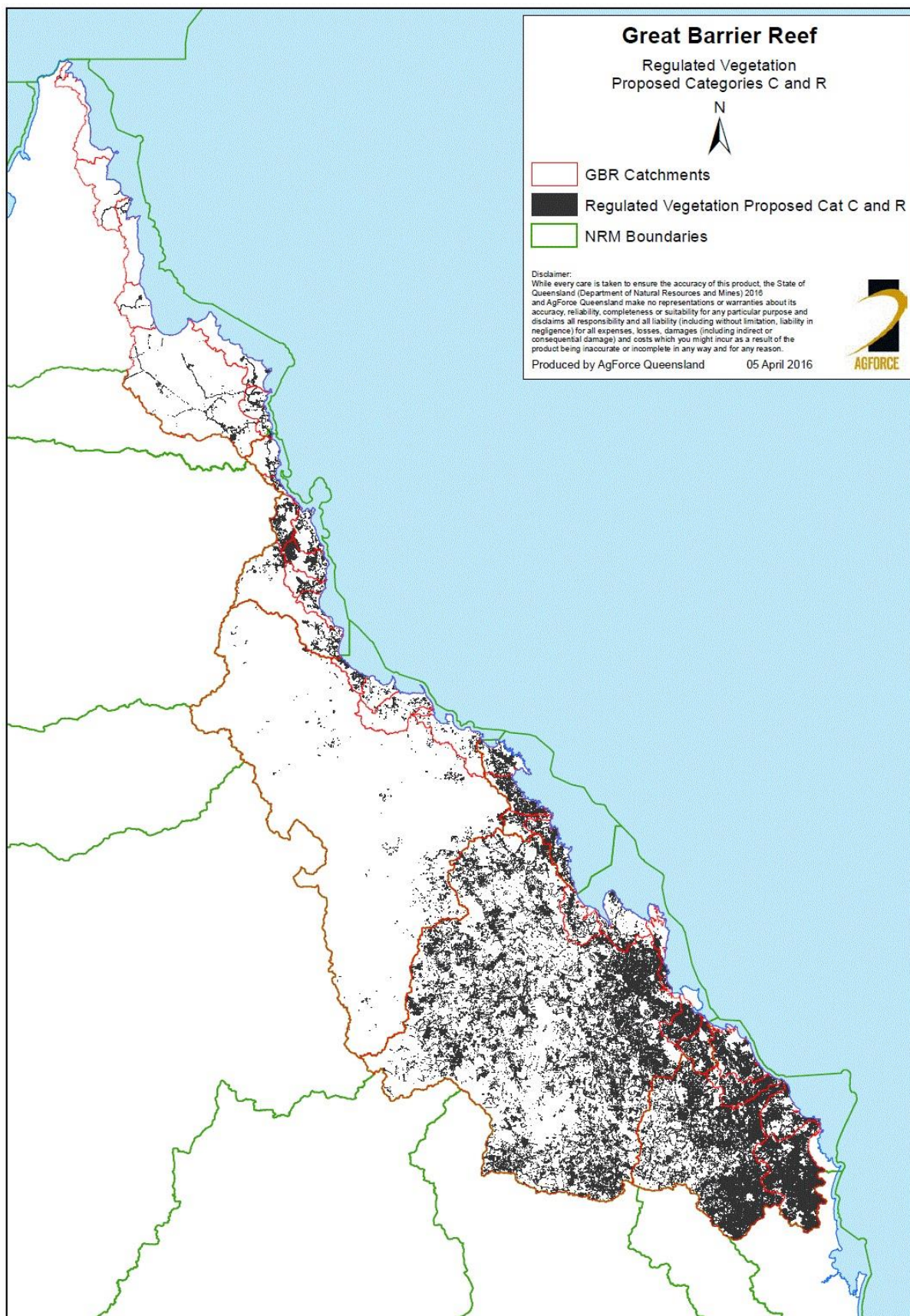
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APPENDIX A – PROPOSED REGULATED VEGETATION CAT C & R

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APPENDIX B – PROPOSED CAT C TABLELANDS REGIONAL COUNCIL

