Is all or part of your submission confidential?	Yes, all ☐ Yes, part ☐ No ☐☒ (☒ (copy box to indicate answer)
If part, please identify which sections are confidential:	
Reason for confidentiality:	

SUBMISSION

in providing this submission I refer directly to the key provisions of the legislation which may be amended.

1. Removing High Value Agriculture and Irrigated High Value Agriculture from the Vegetation Management Framework

Two and a half years ago the Northern Australian White Paper was released. This highlighted the opportunities for agriculture to add intensification and diversity to traditional open range pastoralism via cropping and water harvesting. The federal government claimed, at the time, to have the support of the Queensland government. This will now be removed with the proposed introduction of this legislation.

Irrigation in rangelands, where there is a sustainable supply of water, is being demonstrated by Singaporean businessman, Bruce Cheung, with the installation of centre pivot irrigation in the Pilbara region in West Australia. Eventually he will have 50 units capable of running 10,000 head of Wagyu cattle for export of product to the Asian markets. Agricultural consultant Professor Kevin Bell condoned claims of sustainability and said "the potential of year-round grass in the arid, hot Pilbara is extraordinary". Where water is plentiful in north Queensland it would require a very small percentage of woody vegetation to be cleared to support targeted intensification such as that being carried out in the Pilbara.

*Remember the total vegetation cleared in Queensland in the last SLATS report was 0.23 % of wooded vegetation in Queensland.

Yet the Queensland governments, while criticising rangeland graziers in north west and gulf regions of this state during droughts, have now removed any chance of those regions (

as an example) of ever changing the way they handle drought and run their cattle operations.

2. Retaining Self-Assessable Codes

WHERE THINNING IS AN INDISPENSIBLE TOOL

A thinning operation is carried out by an experienced landowner to restore thickened vegetation to its natural state. It is usually the case in regrowth eucalypt stands for the density of regenerating stems to be 10 times that of the original stand and favour the most successful regenerating species. In our climate and soil these are the *Corymbia* species (Bloodwoods) and it is hard to find the remnant species mix. Ironbarks, Stringy barks and Gum species are outcompeted and disappear from the regrowth species mix. Such results have been recorded by QDPI research in the publication "Managing Native Pastures in Queensland".

The following photographs are records of permanent monitoring plots I have established, in 2005, on my property in the course of a PhD study through Central Queensland University. The study compares the vegetation structure and composition, woody growth rates, ground layer composition, litter production and responses to fire regime on "true remnant" sites and "locked up" regrowth sites.

Figure 1 shows un-grazed (since white settlement), undisturbed remnant woodland. Note the large diameter trees and uneven age distribution of stems and discontinuous tree canopy with a dense grass layer of native tussocky grasses.

Figure 1. "True" remnant woodland.

Figure 2, below, was taken 200m through the fence from the Figure 1 plot and is a paddock that has been rungbark in the early 1900s, continually grazed since that time and had no subsequent treatment to timber. Note the even aged, "locked up" stems and continuous canopy of a single species regrowth, in this case Bloodwood.

Figure 2. Regrowth vegetation of *Corymbia intermedia*. A single species stand typical of regrowth stands in the area.

My studies have shown that the open woodland, "true remnant" sites have had a growth rate (Mean Annual Increment, MAI) of +1 m^2/ha/year while the "locked up" sites had a negative MAI of -0.3 m^2/ha/year. These are typical of sites suitable for thinning. They are not "fixing" any carbon. The application of chemical thinning will "lock" the carbon in standing dead trees and create growth in the thinned stands and the grass understory. The net result of thinning will then "fix" carbon. The objective measure of dead stem residence and survival as a carbon store has not been published previously. My work will be published in the near future and will incorporate data on the "residence time" of dead stems as recorded in a series of canopy photographs spanning 10 years.

Landowners typically understand the unique vegetation mixes applying to their land and have successfully applied this local knowledge in self assessable codes for thinning. Broad brush treatment of applications under the proposed process will not have the precision necessary to get a restorative outcome to a thinning operation. There has been minimal misuse of the self- assessable code which indicates they have been used responsibly.

THINNING: A RESPONSE TO WELL DOCUMENTED THICKENING.

Thinning is pivotal to good land management in grazed woodlands as thickening is occurring throughout the world's woodlands reported by CSIRO's Canadell and Wang

(https://theconversation.com/rising-carbon-dioxide-is-greening-the-earth-but-its-not-all-good-news-58282). They use the following Figure 3 to illustrate this point.

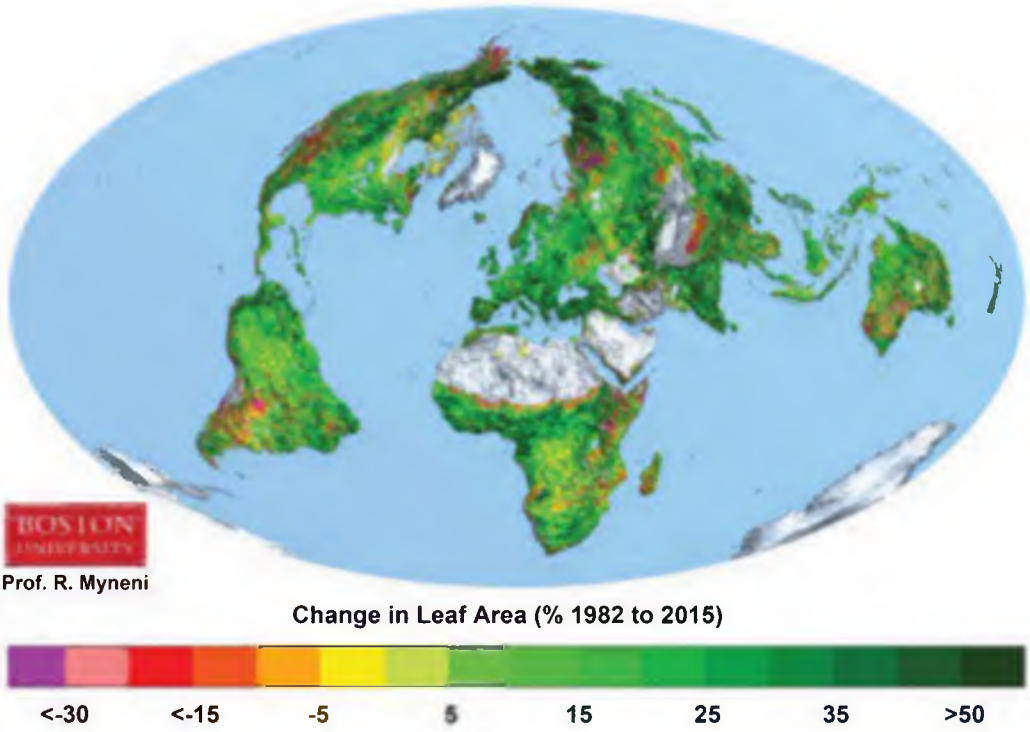


Figure 3. Taken from: https://theconversation.com/rising-carbon-dioxide-is-greening-the-earth-but-its-not-all-good-news-58282. Published in 2016

SEDIMENTATION AND GOOD GRASS COVER.

The major effect of thickened woody vegetation is a closed canopy, followed by reduction in grass layer which should be the dominant component of woodlands. The thick grass layer in woodlands is not only necessary to feed grazed stock but to stop sedimentation and runoff with increased grass cover decreasing sediment loss markedly:

Ludwig and Tongway, Rangeland Journal, 2002 :
" For example, when averaged over a three-year period and over high and low stocking rates, total soil moved in run-off was 12.6 kg/m/a on uncleared, native savanna pastures, was 7.1 kg/m/a on cleared plots sown to exotic pastures, and was only 1.7 kg/m/a on thinned plots sown to exotic pastures.
These sediment loss studies used instrumented field plots and rainfall simulators on gentle slopes".
In considerations of sedimentation and the Great Barrier Reef one can't help but be cynical about efforts to apportion the majority of the blame to agriculture. What role does the huge gravel road system play in sedimentation? Connectivity is the major issue in delivering sediment to streams, roads are naturally very connected. Why do councils spend so much re-gravelling roads if it isn't washed away and blown away as dust? The last re-gravelling of our local road was a huge effort and created an unbroken line of mounds of gravel for spreading, see Figure 4.

Figure 4. Mounds of gravel to re surface the local road in 2017. This is a regular event.

THICKENING AND 'NATURE'S BULLDOZER'

This was the title of a dissertation by Rod Fensham in one of his many publications advocating no man made action to control thickening. He is one of a small group of advocates who ascertain that time will cure dense regrowth. Such an approach has:

(a) No scientific validation beyond Qld EPA. Example: the well documented *Corymbia* woodlands of Ocean Grove, a nature refuge in Victoria which have undergone transitions from open woodlands with *Eucalypt* overstory to death of the overstory, no *Eucalypt* regeneration and biomass replacement by *Allocasuarina littoralis* and *Acacia sp.* Compared to a 1977 report by Withers and Ashton the density of *Allocasuarina littoralis* increased from 911 to 3565 stems per ha when resurveyed by Lunt in 1996. This species is a common invader in mesic coastal eucalypt woodlands of Queensland, especially with reduced fire frequencies, and is very allopathic to grass growth within its canopy. Where some might consider more *Allocasuarina* to be more Black Cockatoo fodder, the fact is there is little cone development on dense stands of this species. Thickening here resulted in ecosystem conversion.

(b) As its foundation … the fluctuation and death in stem numbers in supposedly remnant woodland in north western Queensland is a response to drought cycles. The vegetation in these areas while not being physically cleared or disturbed was subject to huge herds of horses bred for the remount trade and work in northern cane fields. Horses graze in

a manner which advantages seedling regrowth over grass growth (grazing meadows kept short) and in fact these areas were highly disturbed, thickened, non- remnant, degraded woodlands.

IN CONCLUSION

Thinning under self- assessable codes is complementary to good land management and the best way to maintain good grass cover which is the only way sediment will be minimised in runoff events. There are no true remnant woodlands in Queensland's grazed areas and thinning is a form of woodland restoration done at private expense for public gain.

3. Including High Value Regrowth as an additional layer of regulation under the Vegetation Management Framework on leasehold, freehold and indigenous land

I have a PMAV on my freehold land and in this instance this layer does not affect my property. However I note with some amusement that just outside my boundary an area of such regrowth has been identified on a major landslip exacerbated in cyclone Debbie. If this does indeed now support vegetation, it would be amazing.

I also note the Queensland Government politicians have greatly exaggerated the extent of threatened species. In March 2018 Dr Steven Miles quoted "a report" showing 739 plant and 210 animals at risk from clearing. Compare this to: Dr April Reside from the University of Queensland (UQ) who said in June 2017 ""We have 95 threatened species of animal, 12 threatened species of plant that are impacted by land clearing."
[http://www.abc.net.au/news/2017-06-19/land-clearing-rates-qld-need-to-be-lowered-new-study/8628524>}

Others with little science behind their statements include UQ researcher Dr Leonie Seabrook who said Queensland had one of the highest land clearing emissions rates in Australia. [http://www.abc.net.au/news/2017-06-19/land-clearing-rates-qld-need-to-be-lowered-new-study/8628524]

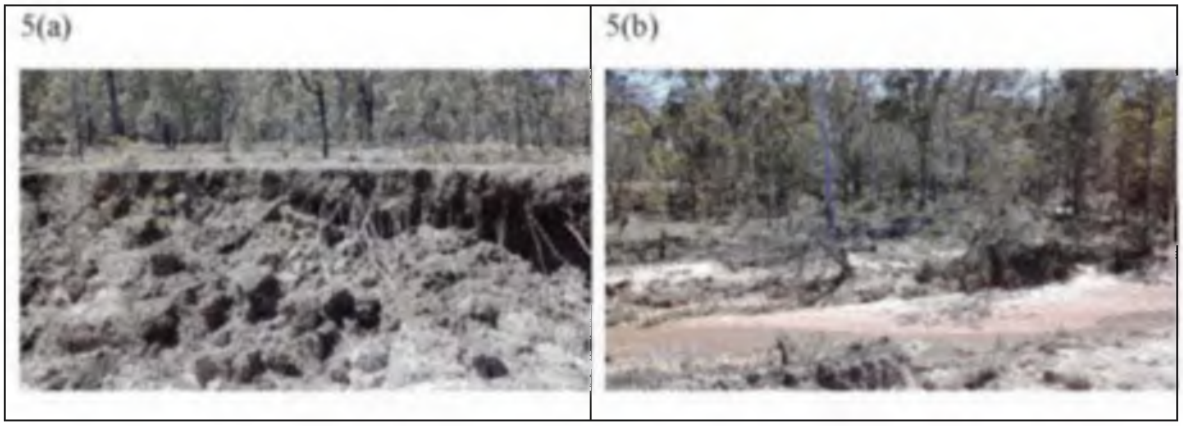
This in contrast to the calibrated satellite sensors used by Liu *et al.* in 2015 (Nature Climate Change) where measurements of the above ground biomass after allowing for clearing, fires etc., in Northern Australian woodlands, most of which are in Queensland, **increased** by c. 1200 kg/ha/year over 20 years 1993 to 2012.

4. Increasing Category R regrowth watercourse vegetation to include additional catchments in the Burnett Mary, Eastern Cape York and Fitzroy Great Barrier Reef Catchments.

At the moment I am not impacted by Category R vegetation though I am aware I would be if I were to present my PMAV for future adjustment.

However I have evidence that the fixation with trees in water courses adds to sedimentation and does not stabilise banks. This misunderstanding is promulgated and espoused by politicians and followed by government regulation with no attempt to apportion this component of "natural" sediment, to the Great Barrier Reef. Cyclone Debbie had a huge effect on our land due to rainfall intensity and quantity as the following photographs show

The stream bank erosion on the outside bend of the creek in Figure 5 (a) was a result of the thickened vegetation, mainly *Allocasuarina littoralis* on the inside of the bend completely covering the lower bank Figure 5 (b). The high bank is visible in the distance and without the *Allocasuarina littoralis* mid-story this would have accommodated the huge flow without erosion.



Figures 5 (a) and (b) shows the outer bend with massive erosion caused by the development of thickened vegetation on the inside lower bank blocking the natural creek flow. In Indigenous management times and pre- Government regulation this inner bank would have maintained an open canopy of few trees and dense grass cover. Grass does not survive under thick *Allocasuarina littoralis* canopy. Note there is no shortage of tree roots visible in Figure 5 (a) but these have not held the soil they are as they are reported to be capable of doing.

Standing trees created further swirling and erosion, for example Figures 6 (a) and (b).

6(a)

6(b)

Figure 6(a) shows the swirl and erosion caused by the large tree during cyclone Debbie. The same situation was apparently caused by the large tree in Figure 6(b) some years ago. These two photos are of situations directly opposite in the stream. With the extra live trees behind the fresh erosion in Figure 6 (a) it is doubtful that the bank will round as it has in Figure 6 (b). More soil loss will be inevitable.

In-stream vegetation is a result of a decrease in fire intensity and long fire free intervals, allowing woody vegetation to escape the period when the suckers are killed or restricted by fire. This vegetation has compounded the erosion in flood events. These floods do not have to be equal to cyclone Debbie in intensity to be restricted by mid- stream vegetation. See Figures 7 (a) and (b).

7(a)

7(b)

Figures 7(a) and 7(b) show the density of mid-stream vegetation that can develop in open woodland ecosystems over a long period with less fire. This vegetation is reported

to be necessary to stop erosion and create habitat under the current political rhetoric but is the cause of the devastation and erosion shown in Figure 7(b).

I noted the Government stated …. Landowners had the right to clear these trees from the streams for `1 year from the date of cyclone Debbie but they were to be removed from the stream to be burnt. The cost of this operation would have been enormous, if possible to do. All caused by Government imposed timber retention pattern and about to be exacerbated by the creation of Category R Regrowth Watercourse Vegetation.

As well as Eucalypt country we own Brigalow country close to Rockhampton. Once the small gullies are cleared they support dense swaths of native grasses or improved grasses and as shown in the Figures 6 (a) and (b) below it is obvious which situation is going to add sediment to the Great Barrier Reef and which is going to trap sediment in rain events.

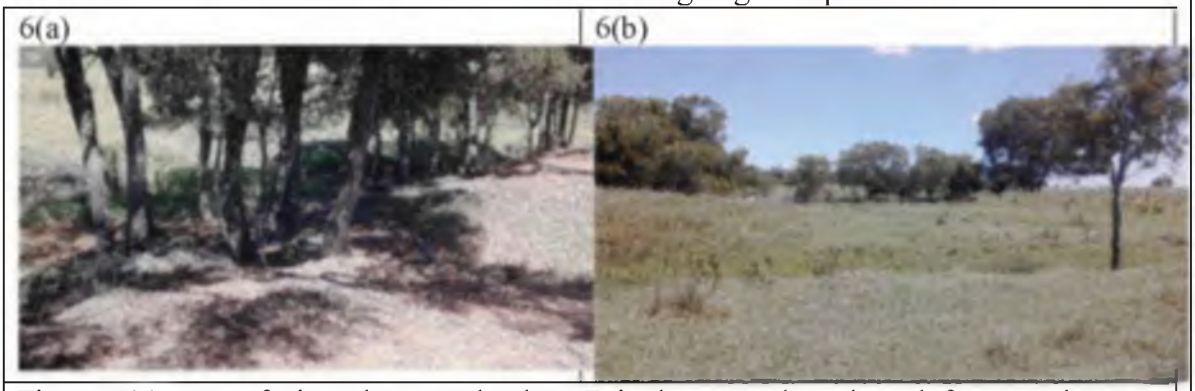


Figure 6(a) a west facing photograph where Brigalow trees have been left on southern edge of a gully and Figure 6(b) was taken from the same position but facing south-east where the same gully has been mostly cleared of trees and maintained in a heavily grassed state.

No landowner can be responsible for this devastation or sedimentation. Conversations with landowners further down the cyclone effected catchments reported that no Government officers visited to assess the level of streambank erosion.

Intense monitoring and reporting of the effects, positive and negative is essential to gauge the value of any Vegetation Management responses if the health of the Great Barrier Reef is the ultimate concern of Government.

On this matter the following Abstract summarises the problem with Government directed responses to problems which are of questionable value.

Source: Larcomb,P and Ridd,P (2018) The need for a formalised system of Quality Control for environmental policy-science. Marine Pollution Bulletin, 126, pp 449-461.

“Research science used to inform public policy decisions, herein defined as Policy-Science is rarely subjected to rigorous checking, testing and replication. Studies of biomedical and other sciences indicate that a considerable fraction of published peer-reviewed scientific literature, perhaps half, has significant flaws. To demonstrate the potential failings of the present approaches to scientific Quality Control (QC), we describe examples of science associated with perceived threats to the Great Barrier Reef (GBR), Australia. There appears a serious risk of efforts to improve the health of the GBR being directed inefficiently and/or away from the more serious threats. We suggest the need for a new organisation to undertake quality reviews and audits of important scientific results that underpin government spending decisions on the environment. Logically, such a body could also

examine policy science in other key areas where governments rely heavily upon scientific results, such as education, health and criminology."

Essential Habitat and Trigger Mapping

We have greater than half our property in a Nature Refuge (around 4500ha refuge area). Our Category X areas are impacted by (a) a Trigger map for a species which is not even there and (b) an Essential Habitat zone for a species which is common all along the Clark Connors range system. The vegetation of which was > 90% intact when I last checked.

This is wrong. It will not help any Endangered Vulnerable Near Threatened (EVNT) species. I have donated much to nature and I maintain the inherent value of this land. However I watch the conservation groups, the present government is keen to appease, erode my capacity to manage my land as though I am a vandal. And I wonder about the commitment of the general population to the environment. Is it token? Here the most popular action taken to address environmental issues is reported to be 17% who will sign a petition (Decision Point, Issue 33, October 2009). Both these parties are courted as stakeholders and treated with more respect by politicians than the actual foot soldiers out there managing the environment. Which in many cases is better than the National Parks for iconic species such as the koala who needs his open woodlands and the Plains Wanderer, or Bustard, who needs his open grassy habitat.

5. That no compensation will be payable to landholders subject to added layers of regulation – high value regrowth, regrowth watercourses and essential habitat during transitional arrangements

If these new layers of regulation were to impact my property it would become unviable as a cattle rearing operation. Forestry would be the only source of income and our access roads make this difficult. Even single stem selection forestry would create a huge regrowth problem and the whole landscape would resemble the state owned forests which have been heavily cut and due to transform in 2025 to protected areas. Devastated woodlands.

6. Increasing compliance measures and penalties under vegetation management laws.

The operation of the Vegetation Management saga since the early 1990s has precipitated clearing at rates and frequency which was not part of the established family farm physic. Bearing in mind also the practical considerations that drought and financial returns dictate clearing intensity. So the harsh treatment historically imposed in the cases under investigation have been a cause of severe stress and possibly loss of life. This is particularly sad and discriminatory and so far has gone unchallenged in the Human Rights Courts. Increasing this victimisation will not be good.

7. Other matters relevant to the Vegetation Management and Other Legislation Amendment Bill 2018 that the review committee should consider appropriate and worth some consideration
I have been involved with the Vegetation Management process since its inception to the detriment of my family business. The continual raft of changes and politicisation of the issue is very disheartening. It would be difficult to see how young people such as my son can continue to plan for the future with hope and enthusiasm, (that he shows now), when family farms and farmers are treated as impediments to the future.

Signed:	Dixie Nott 
Address:	
Date:	20/03/2018