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Submission to Committee to support the *Vegetation Management (Reinstatement) and Other Legislation Amendment Bill 2016*

Dear Chair and Committee Members,

We are a group of environmental researchers at the Centre for Biodiversity and Conservation Science at The University of Queensland, one of the highest ranked (top 20) ecology and conservation research groups worldwide. We frequently collaborate with policymakers, Non-Government Organisations and private stakeholders in our research, and regularly produce products helping to inform Australian environmental policy, and peer-reviewed publications in high-impact scientific journals. Our researchers co-authored the Brigalow-Declaration^{1,2} that led to the vegetation clearance legislation (Figure 1). Based upon our collective research experience and the best-available science, we hereby state our support for the reinstatement of the Vegetation Management Bill as outlined below, addressing the general topic of vegetation clearing, its impact on threatened species, carbon emissions reductions, the Great Barrier Reef and other policy initiatives.

Our general statement on the current impact of clearing of vegetation on conservation in Queensland

The ban on broad-scale vegetation clearing in 2006 was effective in slowing the rate of clearing. However, it is clear that the weakening of those regulations has had an immediate and detrimental impact on clearing rates (Figure 1). Clearing in 2013/2014 was 3.8 times higher than that recorded in 2009/2010 and continues to trend upward. Queensland continues to have the highest clearing rates of all states in Australia^{3,4}, with approximately 300,000 ha being cleared in the year 2013/2014 alone, including over 100,000 ha of remnant vegetation (Figure 1).

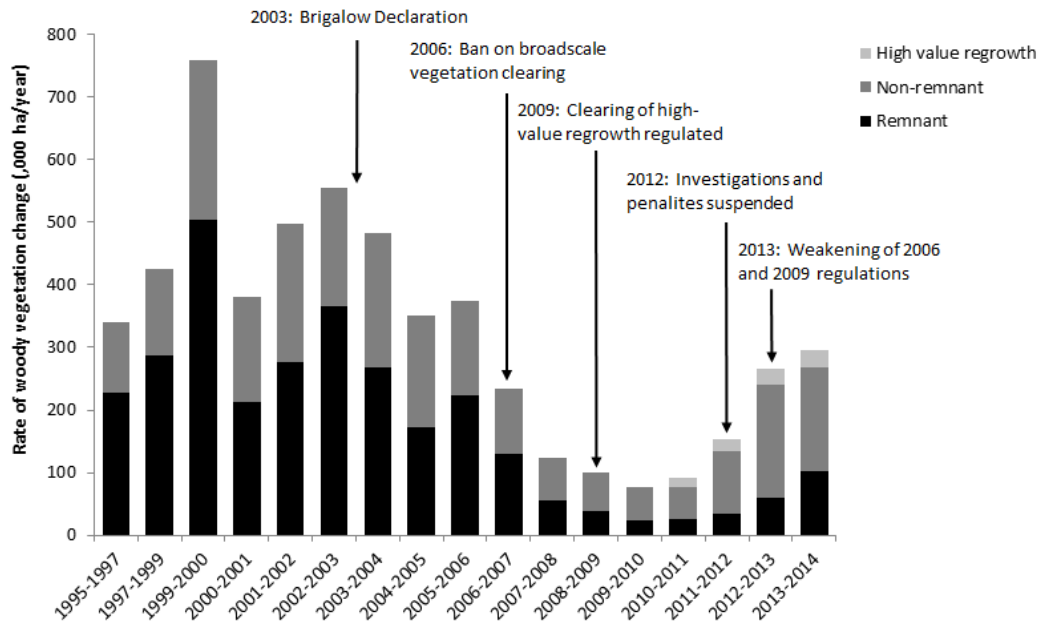


Figure 1. Historical woody vegetation clearing in Queensland based on data from Land Cover Change in Queensland 2012-13 and 2013-14: Statewide Landcover and Trees Study⁶ (adapted from Maron et al⁵).

Clearing of both remnant and high value regrowth sharply increased following changes in regulations in 2013 (Figure 1). Not only does that contradict the purpose of the Vegetation Management Act (VMA) (section 1a: conservation of remnant vegetation, 1b: conservation of vegetation in declared areas, 1c: preventing land degradation, 1d: prevent loss of biodiversity, 1e: maintain ecological processes and 2f: regulation of particular regrowth vegetation), remnant vegetation is crucial for species diversity for many reasons, such as providing increased structural complexity, tree hollows for nesting and woody debris on the ground^{7,8}. High-value regrowth represents the advanced regeneration of endangered vegetation communities and is vital for restoring biodiversity in these threatened areas. For example, less than 10% of the original brigalow-dominated woodlands remain today and regrowth contains similar levels of reptile biodiversity as remnant vegetation⁹. Even where regrowth harbours less biodiversity than remnant woodlands, it still plays an important role in maintaining biodiversity across the landscape⁷ and may act as an important bridge in highly fragmented landscapes.

Threatened Species

Over 400 species are listed under the EPBC act in Queensland¹⁰, including 132 animal species (24 fish, 13 amphibians, 22 reptiles, 38 birds, 30 mammals and 2 invertebrates). 89% of these species are most threatened by development and/or agricultural expansion, and 56% are most threatened by agricultural expansion alone, many of these are affected by habitat loss or degradation, including grazing, trampling, and pasture weeds¹⁰. Although the extent of protected areas is increasing^{11,12}, the latest available Yearbook of Australia¹⁰ shows an increase in the number of species that are listed under the EPBC act. Under Queensland legislation, there are 935 species listed under the Nature Conservation Act¹³. Stopping vegetation clearing is one of the most cost-effective ways of reducing extinction rates¹⁴, but instead of making use of this, threatened species and ecosystems have become exposed to further risk under the relaxation of the regulation in 2013, as the current VMA does not provide adequate protection of crucial

area or habitat^{3,15}. 45% of Queensland's ecosystems are threatened because of land clearing, and currently illegal clearing is not being regulated, prevented or disincentivised, even within these threatened areas. An overlay of property boundaries, spatial layers of clearing⁶ and likely occurrence of species of national significance¹⁶ reveals clear spatial overlaps¹⁷, which undermines section 1a (conservation of remnant vegetation), 1d (loss of biodiversity), 1f (managing environmental effects), 2d (decision making and precautionary principle) of the VMA.

Queensland has a suite of threatened species whose persistence depends on the appropriate management of private land. The 935 species listed under the Nature Conservation Act include:

- Black-throated finch, *Poephila cincta cincta*
- Allan's lerista, *Lerista allanae*
- Coxen's fig-parrot, *Cyclopsitta diophthalma coxeni*
- Golden-shouldered parrot, *Psephotus chrysopterygius*
- Red goshawk, *Erythrorhynchus radiates*
- Palm cockatoo, *Probosciger aterrimus*
- Ornamental Snake, *Denisonia maculata*
- Yakka Skink, *Egernia rugosa*

Without adequate regulation of clearing on private land, these species could be severely impacted and pushed further towards extinction.

Northern Queensland retains substantial biowealth. With the high rate of species discovery in Queensland¹⁸⁻³⁶, particularly in North Queensland, it is highly likely that there are many more species – even conspicuous species like vertebrates – that are yet to be discovered. The current VMA puts these highly biodiverse and highly understudied habitats at high risk of broad-scale destruction, despite the clear instruction to adhere to the precautionary principle in the absence of information in section 2d of the VMA. The east coast of Queensland will provide crucial habitat for species seeking refuge from climate change³⁷, therefore continuous tracts of vegetation are required for species to disperse to these new areas.

Impact on carbon emissions and international policy agreements

The Purpose of the VMA (1g) indicates that clearing be regulated in a way that reduces greenhouse emissions. As a signatory to the United Nations Climate Change Conference (COP) in Paris, France, in December 2015³⁸, Australia has committed to keep global warming below 1.5°C by reducing greenhouse gas emissions. Australia intends to meet its international commitment partly through maintaining woodland carbon sinks, with the Commonwealth Government paying landholders and farmers more than \$670 million not to cut down trees as part of the Emissions Reduction Fund (ERF)³⁹. However, carbon released by the high rates of clearing in Queensland over the period 2012-2014 will have nearly negated any emission savings gained through the federal government's ERF⁴⁰. While national data suggest that targets are being met, more accurate state-level analyses show that the rate of clearing is actually higher than accounted for in Federal calculations, and would result in annual emissions of 55m tonnes between 2020 and 2030, beyond the higher rates already projected by the government^{40,41}. Evidence suggests that land clearing regulations in Queensland were relatively effective at regulating carbon emissions prior to changes in 2013⁴¹ (although not with regard to cessation of loss of important habitat). Emissions from the land-use and forestry sector increased more rapidly than any other sector over the period 2012-2015, driven

primarily by land clearing in Queensland, where approximately 300,000 ha were cleared in 2013-2014³⁹. Prior to this period, clearing rates nationally were in decline and emissions target were being met^{41,42}. Meeting international emission reduction commitments will likely be impossible with the current land clearing regulations in Queensland.

Uncertainty in data and decision making process

It is important that the policy and analysis of land cover trends are based on the best available data. The appropriate definition and classification of vegetation types and the best methods to accurately analyse satellite imagery are an active area of scientific research. The SLATS dataset⁶ combines satellite derived imagery with field-based measurements, and therefore is far more reliable than other analyses based on satellite imagery alone. Other data, such as the nationally consistent spatial data on clearing events developed as part of the National Carbon Accounting System are now available from 1972 to 2014⁴³.

Without field-based validation, the potential error in imagery analysis can be substantial, and definitions around vegetation types in satellite imagery analysis are the subject of scientific debate. Differences in detected foliage and cover density vary greatly with precipitation and can make differentiation between increased foliage and increased plant numbers difficult to achieve⁴⁴. Different methods can lead to a large margin of error, leading to the possible conclusion that the same vegetated area has both increased or decreased based on the same satellite image. As the most reliable data suggest an increase in clearing, any claim to the contrary would need to be backed up with appropriate data, which is not based solely on satellite imagery (as suggested in the public briefing⁴⁵). The act itself states the importance of a sound decision making process and the implementation of the precautionary principle in section 2d.

The VMA also requests the regulation of specific regrowth vegetation in section 2f, which cannot be classified through imagery alone and further underlines the importance of the precautionary principle and the use of the best available information.

Impact on marine ecosystems, Great Barrier Reef (GBR) and related policy initiatives

Amendment to the bill would restore protection for vegetation along riparian areas and extend these provisions to all catchments draining onto the GBR. These protections are important for several reasons:

First, UNESCO has indicated that the GBR World Heritage Area remains on its watchlist⁴⁶ of sites at-risk of being declared *in danger* and intends to monitor the state of the GBR over coming years in order to re-evaluate its status. Improving water quality and halting loss of coastal habitats are key requirements to ensure the reef is given the best chance to adapt to increasing human pressures, such as population growth and climate change.

Second, existing commitments of the Australian Commonwealth Government's Reef 2050 Long-Term Sustainability Plan⁴⁷ aim to strengthen the Queensland Government's vegetation management legislation, and to protect terrestrial vegetation, including riparian zones. The plan explicitly calls for no net-loss of terrestrial vegetation that contributes to ecosystem health and resilience, qualities true for all vegetation that reduces erosion and run-off within the GBR catchments.

Third, the worst coral bleaching event on record is happening now, with predicted widespread mortality. With bleaching events projected to increase as the climate warms over the coming century⁴⁸, building resilience to future stress events into reefs of the GBR and enabling recovery from the current bleaching event depends largely on managing and reducing the impacts of run-off to the reef^{49,50}.

Forth, the recent surge in land clearing in Queensland risks undoing large investments into the ReefPlan and decades of collaboration between Natural Resource Management groups and landholders to improve land condition. In particular, the management of grazing in the Fitzroy or Wet Tropics shows least progress in reaching targets⁵¹. Recent studies question whether targets to be met in 2020 are relevant or even ecologically meaningful⁵².

Finally, most clearing occurs for conversion to pasture⁶, which has a much higher erosion rate than areas converted for forestry or conservation areas; run-off is greater in catchments cleared primarily for grazing purposes⁵³. Healthy riparian vegetation can reduce run-off of nutrients and other pesticides⁵⁴. Nutrient run-off to the GBR Lagoon has been identified as a primary cause of outbreaks of Crown of Thorn Starfish, which have drastically reduced coral cover on the GBR⁵⁵.

Sound decision making and the triple bottom line

We support smart decision making for agricultural land⁵⁶. Studies show that the triple bottom line of maximising benefits for economy, society and conservation can work⁵⁷, and land can be managed to be economically viable without undermining other investments and initiatives. Current investments from the Commonwealth Government that include planting of trees and paying landholders to improve their land-management practise include the Million Trees Campaign (\$525.4 million over 4 years), The Reef Rescue campaign (\$200 million over 5 years), and ReefTrust (\$39.9 million over 4 years)⁵⁸. While these large investments are intended to re-establish vegetation and reduce run-off on private land, it would be part of smart decision making to also assess the cost of clearing on private land. It might be more cost-effective to keep the vegetation than to plant somewhere else as prevention is usually cheaper than cure, and could even be economically beneficial for the landholder^{59,60} as it promotes soil stability and moisture content. Regarding the reduction of carbon emissions, the management of pastureland is a rather cost-effective measure, while restoration of degraded farmland is one of the most expensive options to choose from⁶¹. The VMA itself highlights the importance of a sound decision making process and implementation of the precautionary principle in section 2d.

Compliance and enforcement

The amendment will remove the claim of mistaken clearing, and restores the starting-presumption that a landholder is responsible for clearing that takes place on their property. We support this amendment as it prevents landowners from naively clearing land clause 6 in Part 2 section 67(a) & 67 (b) of the amendment bill.

Summary

If passed, the Bill would reinstate the VMA 1999 as per the 2009 amendments. The protection of high value regrowth would be extended to three additional GBR catchments, and environmental offsetting would be required for all residual impacts on prescribed environmental matters, rather than only for significant residual impacts.

All suggested amendments to the *Vegetation Management (Reinstatement) and Other Legislation* are critical to on-the-ground and legislative protection of lands outside of reserve estates.

1. The protection of high-value regrowth

We support the amendment to reinstate the protection of regrowth vegetation. This helps support the resilience of threatened ecosystems and species as well as contributing to international policy agreements on CO₂ emissions reductions.

2. Removal of provisions for permitting clearing for high-value agriculture and irrigated high-value agriculture

We support the removal of the high-value agriculture clause, as it removes the loophole currently allowing easy approvals for broad-scale clearing with no offsets. This clause has resulted in the clearing of over 50,000 ha of remnant ecosystems in far Northern-Queensland. The impact on the ecosystems and species within undermines sections 1c, 1d, 1e, 1f and 1g of the VMA, as well as current international policy agreements on CO₂ emission reductions.

3. Riparian areas and areas extending into the GBR catchment

We support the restoration of protection for vegetation in riparian areas and extending provisions from some to all Great Barrier Reef catchments.

4. Sound decision making

Trade-offs between agricultural land-use and conservation of natural vegetation can be necessary for many reasons, but should be assessed and quantified through existing transparent decision frameworks to ensure efficient management and control of consequences.

5. Reinstating compliance and enforcement provisions

We support the removal of the *honest mistake of fact* defence for vegetation clearing offences, which would then mean that landholders are liable for illegal land clearing outside of reserve estates. We also support the reinstatement of compliance provisions for the reverse onus of proof.

6. Deterring panic clearing

We support the retrospectivity of the Amendment Bill to date back to 17 March 2016, as the introduction of new vegetation laws can be met with 'panic' by landholders, which can cause a spike in land clearing prior to the reinstatement of new legislation. We support the retrospectivity of this amendment bill that will hold landholders accountable for any action that could potentially be illegal under proposed change to the law.

Further recommendation

We support the Bill in its current form as it will make significant progress in restoring effective controls and support many conservation and policy programs that aim to save threatened species and ecosystems from further decline and possible extinction instead of counteracting them. Fully adequate conservation management would require further changes in legislation to close other loopholes that enable clearing of land of value to threatened species, which is currently not protected under any law. We present a few examples of what would be necessary to halt or reverse the decline of the Australian fauna and flora:

1. Reduce the amount of exemptions still permitted under the new amendment.

2. PMAVS should be only a device to ground-truth accuracy on regulatory maps, but should not give any rights *per se*.
3. Self-assessable codes would need to be constrained within the VMA itself to close the still existing loophole that allows broad-scale clearing of unlimited areas with bulldozers, labelled as “thinning” under these codes.
4. High Value Regrowth would need to be defined in a way that is not fixed to the baseline of 1989, but uses a shifting baseline to keep up with ongoing growth and age.

Opportunities

We would welcome the opportunity to appear before the Committee in their hearing into this inquiry.

Yours sincerely,

The scientists of the CBCS and collaborating research institutions, listed below:

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