Submission No. 656

29th April 2016

Garry Reed

[redacted] COLLINSVILLE QLD 4804 [redacted]

[redacted]

[redacted]

Research Director
Agriculture and Environment Committee
Parliament House
BRISBANE QLD 4000
vminquiry@parliament.qld.gov.au

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

Dear Chair and Committee Members, I am writing from the perspective of someone that grew up on an agriculture and grazing property in the Collinsville area, completing an apprenticeship at the local power station - working between Brisbane and North Queensland as an electrician and in agriculture, forestry and landcare.

I sent a letter to the Newman Government leading up to the introduction of the Vegetation Management Act Amendments in 2013 - to report on some alarming waterway clearing activity locally and the history of land degradation and soil erosion that our family has witnessed over the last 90 years.**(See attached** – nb. a spelling mistake, I meant imminent.**)**

An alarming report from a friend travelling to Collinsville from NSW last winter – 2015, who witnessing large scale chain clearing in Queensland, had prompted me to write to the Queensland Government in September because the activity has such far reaching and potentially terminal consequences. The informant had experience as a biologist in Queensland for over 30 years and was horrified to see this occurring again. I pleaded for some sort of mechanism like biodiversity credits or compensation be put in place urgently to fairly and effectively preserve ecosystems for the future of sustainable farming and landuse in Qld and referenced the following: NSW introduced the *Biobanking* system 5 years ago and reviewed it 3 years ago: *http://www.environment.nsw.gov.au/biobanking/*
A review of biodiversity legislation in NSW was released December 2014:
http://www.environment.nsw.gov.au/resources/biodiversity/BiodivLawReview.pdf

What has failed and what has been successful?

I called for a moratorium given the critical importance of biodiversity and the probable extinction of regional remnants and biodiversity especially on high quality land facilitated by the extended clearing permitted by the dysfunctional and politically compromised Newman LNP government. (See End Notes: *Borbidge Sheldon Election Review and Report and Recommendations - QCoal's James Mackay developing environmental policy for Newman Government in Queensland)*

Over my life here I have learned a great deal about some of the systemic problems that are resulting in enormous losses for our state and nation and I have contributed to a number of inquiries to set out my experience. The letter I wrote to the Newman government at the time of the Vegetation Management Act reforms - 22nd May 2013 (attached) has proved to have been very relevant from media reports of major high biodiversity value vegetation loss.

Land clearing soars in Queensland, leaked figures show - By Environment reporter Jake Sturmer and the National Reporting Team's Lisa Main - Updated 16 Jun 2015

In an effort to halt the rise in clearing, Associate Professor Martine Maron, an environmental scientist at the University of Queensland, along with 20 other concerned scientists wrote to the current ALP Government urging them to "consider the irreversible environmental consequences" of clearing.

"Land clearing threatens Australia's national commitments on a number of fronts, including preventing extinctions, reducing emissions and improving reef water quality," Professor Maron said. http://www.abc.net.au/news/2015-06-16/land-clearing-soars-in-queensland-leaked-figures-show/6550622

My father and uncle reported to me that storm rainfall decreased after the clearing of the Brigalow scrubs south of us in the 1970's. Isotopic analysis of rain has confirmed that inland areas receive a large proportion of their rainfall from the transpiration cycle from vegetation. I have heard an anecdotal report that the EPA had documented a rainfall decrease correlating with the Brigalow clearing. The Brigalow ecological communities are now listed as endangered yet continue to be cleared with many remnants also in decline from erosion and weed infestation.

Brigalow is now considered an important species for economic material and biofuel, nitrogen fixing, land rehabilitation, climate engine/water transpiration cycle and carbon sequestration. (See End Notes.)

I recently went on a very encouraging *Innovation in Agriculture Bus Tour* hosted by NQ Dry Tropics, Terrain NRM, Herbert Cane Productivity Services, and Reef Catchments. A major focus of the farms attempting to reduce sediment and fertilizer use and subsequent runoff to improve reef water quality, was soil health and a reduction of tillage.
http://www.nqdrytropics.com.au/innovative-farming-techniques/

About 25 years ago I made inquiries to DPI (Dept of Primary Industries – Qld) about fungi's role in soil fertility – I was informed that no one was working on it. I understand that situation has changed yet I see the issue of habitat for macropods that contribute to ecosystem health is given little consideration. I notice that Currant bush/Conkerberry [Carissa ovata and C. lanceolata) are included in a list of weeds for the Burdekin Dry Tropics although it does state that it is not a declared plant because it is an Australian native plant and you should contact your local government pest management officer. From my experience some local graziers are targeting this species along with the environmental weeds like Chinee Apple and Lantana – leaving little habitat for species like Bettongs that inoculation the soil with fungi. The following project that should be applicable to our Bettongs dates from around 2011:

Eastern Bettong Reintroduction - Returning Ecosystem Engineers
http://www.mfgowoodlandexperiment.org.au/bettong.html

The reintroduction of the Eastern Bettong (*Bettongia gaimardi*) to the Mulligans Flat Woodland Sanctuary is the subject of a major research grant led by the ANU, the ACT Government and CSIRO. This study will examine if the reintroduction of Eastern Bettongs to box-gum grassy woodlands will have cascading effects on the ecosystem. Eastern Bettongs are known to create up to 3000 diggings per ha, this is expected to have profound effects on the soil, water infiltration, seed germination and litter accumulation in the reserve.

I have been deeply disillusioned and disappointed over the years of following the developments in national and international protocols on the preservation of biodiversity, land and water quality – to go on with others to make great sacrifices and put in years of hard landcare work, then to see such gross loss through negligence and poor governance processes. I found the following report that seems to have been forgotten or neglected as I hear next to nothing about it.

National Report by Australia on Measures Taken to Support Implementation of the United Nations Convention to Combat Desertification
Commonwealth Intergovernmental Working Group for the UNCCD, April 2002
http://www.environment.gov.au/resource/australian-actions-combat-desertification-and-land-degradation-10

Australia is one of the twelve most biologically diverse nations in the world, the only developed nation to have this 'megadiverse' status. Australia is also the world's driest continent, excluding Antarctica, and has a high degree of rainfall variability from one year to the next. Very few of Australia's soils are naturally suited to agriculture, with most being shallow, high in salt stores and low in nutrients. Only 6 per cent of the land is arable without irrigation and large areas are naturally affected by salt, sodicity, waterlogging or acidity….

Yet I find International Agencies are still working on initiatives on this convention. (See End Notes.)

It seems incalculable loss has occurred because of a failure to heed warnings and information from those on the ground. My father would be turning is his grave if he could witness what I have recently. From my observations here, practices that have contributed to the Great

Barrier Reef decline have escalated over the 3 years since the AIMS (Australian Institute of Marine Science) report of 2012.

There is an update to the letter to the Newman government. I subsequently learned of the loss of the *Two Chain Law* (protection of 44 yards/40.23 m of vegetation on waterway banks) in the 1960/70s under the Bjelke-Petersen government. I have also found in the recent **Auditor General's Report - *Managing water quality in Great Barrier Reef catchments* -** (https://www.qao.qld.gov.au/report-20:-2014-15) on page 39/40 – Figure 3F that land clearing in reef catchments increased from 31,000ha/yr in 2008-09 to 102,000ha/yr in 2013-14.

Also the study I quoted in that letter - Bartley et al. 2004 that identified hillslopes as the main source of sediment for the Bowen and Burdekin River catchments has been superseded by Wilkinson et al. 2013 which identifies alluvial gullies as the main sediment source – this is a confirmation of the observations made by my father over 40 years and led him to work his guts out to keep cattle off the creek banks, on control erosion and protection of vegetation buffer zones.

The abolition in the early 1970's of the *Two Chain Law* (protection of 40.23m of waterway bank vegetation) has been a major contributor to the collapsing, degrading and eroding creek banks. Waterway bank vegetation is also important for aquifer recharge, water and air pollution reduction, carbon sequestration, fire retardation, micro-climate and wildlife habitat.

The Bowen-Bogie catchment has recently again been identified as a hotspot for sediment runoff into the Burdekin River and GBR. **Erosion processes and sources in the Burdekin Dry Tropics catchment -(RP65G) - Synthesis Report - Chemistry Centre, Landscape Sciences - June 2015**
Key Findings **-** *Geochemical sediment tracing showed that the largest contributor of the fine sediments delivered to the GBR Lagoon in 2011/12 was the Bowen-Bogie (38%)*
See report - page 11- https://publications.qld.gov.au/dataset/erosion-processes-sources-burdekin

Another issue that is coming to light is the loss of waterways from filling for broadscale agriculture and degradation from diversions which do not replicate the hyporheic zone. (The hyporheic zone is located at the interface of aquifers and rivers, and comprises the sediments in which there is exchange and mixing of groundwater and river water. It is an important zone for pollutant, energy and carbon cycling, and may be an important component of the riverine habitat.) The result of this loss is increased soil runoff and reduced water infiltration, aquifer recharge and water quality.

I have learnt a lot about hydrology, geomorphology and ecology since the proposal was made in 2012 to divert and mine Coral Creek that is a primary feed for the water basin our farm draws from. It is over 20 years since I became acquainted with *ecological economics* [holistic

economics] and have become painfully aware of the systemic failures resulting from the lack of accounting for all costs and benefits.

- **The economic system is completely out of date and needs urgent reform. The present *Neoclassical Economics* that considers environmental and social factors externalities is dangerous at this time of environmental crisis. A recommendation from the NSW ICAC if applied in Qld, to apply *Triple Bottom Line* assessment before the issuing of Exploration Leases would have great benefits.** (I have referred to this in my submissions on land use and mining for some time – it should be applied to all decision making.)

Economic policy analysis is not giving enough consideration to environmental and long term consequences. The economy is a subsystem of the ecosystem yet presently environmental and social factors are considered externalities. (I attended the inaugural conference of the Australian & NZ Society for Ecological Economics (ANZSEE) – Coffs Harbour 1995 - http://anzsee.org/ The Commonwealth Government supported the conference and was instituting environmental economic accounting but that seems to have been scuttled by the Howard/Costello Government after 1996. There are a number of initiatives that are aimed at full/true cost – triple bottom line accounting, that need to be urgently put in place. It is criminal to see we are still only talking about this 20 years on.)

The following IQ2 debate is very relevant: http://www.thefifthestate.com.au/spinifex/the-debate-we-nearly-had-on-pricing-nature/75911

The debate we nearly had on pricing nature - Paula Wallace | 27 July 2015

Conservationist Penelope Figgis: *"What I'm talking about are things like TEEB [The Economics of Ecosystems and Biodiversity* - http://www.teebweb.org/areas-of-work/country-studies-home/*] studies… I can't think of anything better to turn this country around," she said, adding that more than 20 countries are now undertaking such studies.*

A country study from TEEB identifies the ecosystem services that are vital to meeting the country's policy priorities and makes recommendations on how these services can be integrated into policies. These recommendations, depending on the country context, can include policies for poverty alleviation, subsidy reform, land use management, protected area management, securing livelihoods, to name a few.

It estimated that the global top 100 environmental externalities (the cost that affects a party who did not choose to incur that cost) are costing the economy worldwide around US$4.7 trillion a year.

Figgis believes having such information available about our ecosystems will enable their value to come into decision-making at all levels and allow business to manage risks better and gain competitive advantage…

It's not unexpected that industry is the greatest contributor to global warming, but it does reinforce economist Pavan Sukhdev's comment: "Corporations determine two-thirds of the economy, and nothing will change unless they change".

He believes that to turn around this "planetary time-bomb" companies need to move from a purely financial understanding of value to a wider understanding that takes externalities into account.

"We cannot manage what we do not measure and we are not measuring either the value of nature's benefits or the costs of their loss. We seem to be navigating the new and unfamiliar waters of ecological scarcities and climate risks with faulty instruments," Sukhdev said….

If Integrated Reporting was mainstream though, it's unlikely that some of the biggest environmental disasters in modern history would have occurred.

The UK based IR (Integrated Reporting) seems to be gaining support also: http://integratedreporting.org/

To sum up my points:

- **Biodiversity is the foundation of the ecosystem resilience. The loss of the remnant biota and refugia at this time of biodiversity loss and ecological crisis is extremely serious.**
- **There has been a history of land-use failures that have resulted in cumulative and ongoing soil erosion and biodiversity loss.**
- **There is a lack of education and awareness about the value of biodiversity and vegetation integrity for ecosystem and landscape functionality.**
- **The environmental weed and soil erosion problems are continuing to accelerate from my experience. Landholders and earthmoving operators should be accredited to an adequate level of competence to improve land use standards.**
- **There is an abundance of more integrated and sustainable agricultural systems yet little transition. eg:** http://www.fao.org/3/a-i4327e.pdf Final Report-International Symposium on Agroecology -18-19.9.14
- **Political conflict of interest is leading to subversion of the assessment and approval process for industry proposals resulting in major decline of land, air and water quality and ecosystem health.**

A case arose during the Newman LNP government that raises serious concern about the separation of powers and good governance. (http://www.abc.net.au/news/2014-05-05/qcoals-james-mackay-developing-environmental-policy-for-lnp/5431008) The case was referred to the CCC (Crime and Corruption Commission) but no breaches of the law were determined. The failure to deal with conflict of interest has been a chronic problem in Queensland and must be dealt with by laws and institutions to save us from the destructive consequences.

- **There is a culture of cover-up and willful blindness in many industries and regional towns that are vulnerable because of dependence on a narrow range of income and employment sources. I have observed and have been informed off the record of many gross failures to maintain environmental and safety standards in the Bowen Basin and the local area.**

I would like to bring your attention to the letter/report I sent to the Newman Government attached. I set out years of experience that is very relevant to our present predicament.

I hope my submission is of benefit for this critically important Parliamentary inquiry.

Yours Sincerely, Garry Reed

End Notes:

Borbidge Sheldon Election Review and Report and Recommendations - 28th May 2015

1.5 The overwhelming election win of 2012 led to hubris and a false sense of security consolidating an energetic and reformist government leadership team but without parliamentary experience. The huge influx of inexperienced new MP's and a leader without parliamentary background contributed to a lack of corporate history in the conduct of parliament and the party room.

The Review Report and Recommendations
1. Parliamentary party and organisational wing relationship

1.2 The overwhelming election win of 2012 led to a changed dynamic where the leadership team of the parliamentary party in a sense of hubris isolated itself from the organisational wing. The primary consequence of the breakdown was the lack of consultation on policy or political party or campaign matters for the best part of the crucial first two of the government's term.

3. Government decision making
3.1 The government's haste to implement the reform agenda and the 'can do' approach left little room for other views or 'listening to' supporters, voters and even the grass roots of the party. External new ideas or friendly criticism was unwelcome.

3.2 The former government in its reforming zeal and decision making processes alienated almost every key interest group across the state. The good policy work done for many stakeholders was lost by the 'lack of listening' or a dismissive arrogant approach which ultimately resonated at the poll.

4. Policy and Reform Agenda
4.8 Emphasis on the four pillars of tourism, resources, agriculture and the construction industries in 2012 worked well after years of neglect by the previous Labor government. Over the term, however, the view of the government emerged that the new industries, the scientists, the researchers, the innovators and the arts were sidelined or even excluded.

7 Local Campaigns
7.1 The principle that all politics is local was discarded, usurped by a centralised presidential style of campaign, and tightly controlled by the central campaign committee staff with minimal input from local campaign committees. With the exception of one or two well organised campaigns, there were no genuine local policy initiatives other than those approved by the central campaign committee.

Recommendations:

1. *The Borbidge Sheldon review report and recommendations must be released to party units at the same time it is given to the state executive and made public thereafter*.

5. That the LNP *Integrity Paper* should be updated and implemented and all candidates should be required to acknowledge and accept its requirements. That the LNP in government or opposition be required to adhere to the principles which include:

- broken promises will not be tolerated by the public;
- corruption and lack of accountability will not be tolerated;
- the institutions of state must be respected.

39 That the LNP consider the full public funding of election campaigns and the banning of trade union and corporate donations.

QCoal's James Mackay developing environmental policy for Newman Government in Queensland

By the National Reporting Team's Mark Solomons and Mark Willacy - Updated 5 May 2014

The head of corporate affairs for a mining company at the centre of an environmental dispute has been in charge of developing policy on the environment for Queensland's ruling Liberal National Party (LNP) since 2012.

http://www.abc.net.au/news/2014-05-05/qcoal's-james-mackay-developing-environmental-policy-for-lnp/5431008

The case arose during the Newman LNP government that raises serious concern about the separation of powers and good governance. The case was referred to the CCC (Crime and Corruption Commission) but no breaches of the law were determined. The failure to deal with conflict of interest has been a chronic problem in Queensland and must be dealt with by laws and institutions to save us from the destructive consequences.

Centre for Mined Land Rehabilitation - Sustainable Minerals Institute – The University of Queensland - Restoration of Brigalow Plant Communities on Degraded Landscapes

https://www.cmlr.uq.edu.au/restoration-brigalow-plant-communities-degraded-landscapes

One of the most critical challenges in restoration ecology is the rehabilitation of water-limited ecosystems at landscapes of post-open-pit mining, because both soil and plant communities are substantially disturbed (i.e., removed).

The Brigalow Belt Bioregion represents a unique water-limited ecosystem and is therefore highly relevant as an example for the development of successful rehabilitation strategies in Australia as well as any other semi-arid post-mining restoration sites around the world.

P.J. Peeters and D.W. Butler (2014) ***Brigalow: regrowth benefits management guideline.*** Department of Science, Information Technology, Innovation and the Arts, Brisbane.

https://www.qld.gov.au/environment/assets/documents/plants-animals/regrowth/brigalow-management-guideline.pdf

Water loss from brigalow leaves is minimal, and plants do not shed leaves in adverse conditions. As a result, brigalow leaves have the ability to maintain a positive carbon balance over a wide range of environmental conditions, and this species is very productive in a relatively low-rainfall, high-evaporation environment (Tunstall and Connor 1975). Brigalow can also tolerate high salt levels, even though growth under these conditions is reduced

Dry rainforest or brigalow

Brigalow can develop into dry rainforest (semi-evergreen vine thicket or softwood scrub, often with *A. harpophylla* present as an emergent tree) given sufficient moisture, protection from fire, and a suitable seed source (Johnson and Burrows 1994; Nix 1994). If your site will support dry rainforest, it may be preferable to restore this vegetation type rather than 'pure' brigalow, as brigalow with dense dry rainforest is likely to accumulate more carbon and a shady dense tree and shrub layer will be more resistant to grass invasion.

Queensland land-clearing changes threaten trees farmers need - 3 October 2012

https://theconversation.com/queensland-land-clearing-changes-threaten-trees-farmers-need-9714

The trees are nitrogen fixing via a bacteria in their root systems, and they provide calcium to the soil through their leaf foliage. Brigalow trees can withstand high levels of salinity and keep salinity levels in the soils stable. Clearing these trees has led to less crop production as well as less pasture grasses, meaning smaller cattle.

Land clearing encourages exotic and invasive plants, animals and insects to make a new home. These invasive species include weeds like lantana (*Lantana camara*) and the rubber vine (*Cryptostegia grandiflora*), which are a nightmare for farmers.

And brigalow holds the soil together and helps water seep down into the ground. Clearing brigalow has meant more erosion problems for farmers, increased runoff for water, and higher salinity levels in the groundwater.

Whether you're growing crops or pasture for cattle, if you want to have good soil, brigalow is an extremely important tree to have around. Too often, the health of the soil on a property is not valued enough. Farmers have been found to favour clearing these types of vegetation from the most fertile areas on their properties.

Putting at-risk brigalow-dominated ecosystems on the endangered list helps bring attention to this tree, but it isn't enough. There has to be a change in attitudes and land management practices by property owners in this area.

Education is definitely one way. Financial incentives such as the Carbon Farming Initiative may be another way to encourage famers to keep existing brigalow trees on their properties. Until this happens, legislation like the Vegetation Management Act 1999 provide an important way to protect brigalow from being cleared.

Preserving Biodiversity in Brigalow landscapes.

https://www.gpem.uq.edu.au/docs/Brigalow/ConservingBrigalowLandscapesl.pdf

Henry Nix is an Emeritus Professor at Australian National University with over 30 years experience studying Australian landscapes.

In 1960 when I graduated B. Agr. Science from the University of Queensland the prevailing ethos was that unproductive lands should be developed, as a priority. The brigalow lands were at the top of the list.

New methods of clearing using heavy machinery and aerial spraying with potent herbicides gave momentum to the attack. Back then the sheer immensity of the brigalow lands made it difficult to conceive of a time when there would be concern for the remnants of these once distinctive landscapes. But within a few decades less than ten per cent of the original cover remained. Even this pitiful total conceals the true picture. Very few large (>1000 ha.) tracts remain and even fewer are in reserves.

What is more these do not provide a representative sample of the original great diversity of brigalow landscapes. The best developed brigalow vegetation on the most productive sites was targeted early and of this virtually nothing remains.
Much of what is left, along roads and in small paddock remnants, is conservation by default; it was deemed unavailable or unsuitable for productive use. The loss of biodiversity has been incalculable but, as this booklet affirms, not all is lost

Then in the early 1960s I consider myself fortunate to have been a member of the CSIRO teams that conducted land resource surveys that preceded the massive clearing of the Brigalow Lands Development Scheme in the Fitzroy and Belyando catchments. These surveys focused on descriptions of land forms, soils and vegetation and subsequent evaluation of the potential for agricultural, pastoral and forestry production. Conservation was not a focus, but attention was drawn to the need to reserve adequate representative samples of the landscapes described, as well as specific examples of unique, unusual and restricted areas of vegetation.

The Government of the day steadfastly ignored this advice and by the time later Governments took action, it was too little and too late. Active brigalow regrowth has been a scourge for the settler, but it does provide an opportunity as well as a challenge. It can provide a basis for renewal of wildlife habitat, for enhancing connectivity across landscapes and for developing a potentially valuable carbon sink.

World Day to Combat Desertification - 17 June 2016
http://www.un.org/en/events/desertificationday/background.shtml

Desertification - Environmental Degradation

Desertification is a phenomenon that ranks among the greatest environmental challenges of our time. Yet most people haven't heard of it or don't understand it.

Although desertification can include the encroachment of sand dunes on land, it doesn't refer to the advance of deserts. Rather, it is the persistent degradation of dryland ecosystems by human activities — including unsustainable farming, mining, overgrazing and clear-cutting of land — and by climate change

What Causes Desertification

Desertification occurs when:

- the tree and plant cover that binds the soil is removed. It occurs when trees and bushes are stripped away for fuelwood and timber, or to clear land for cultivation.
- animals eat away grasses and erode topsoil with their hooves.
- intensive farming depletes the nutrients in the soil.

Wind and water erosion aggravate the damage, carrying away topsoil and leaving behind a highly infertile mix of dust and sand. It is the combination of these factors that transforms degraded land into desert.

Impact of Desertification

Desertification is a global issue, with serious implications worldwide for biodiversity, eco-safety, poverty eradication, socio-economic stability and sustainable development.

Drylands are already fragile. As they become degraded, the impact on people, livestock and environment can be devastating. Some 50 million people may be displaced within the next 10 years as a result of desertification.

The issue of desertification is not new though — it played a significant role in human history, contributing to the collapse of several large empires, and the displacement of local populations. But today, the pace of arable land degradation is estimated at 30 to 35 times the historical rate.

Towards Sustainable Development

Desertification, along with climate change and the loss of biodiversity, were identified as the greatest challenges to sustainable development during the 1992 Rio Earth Summit.

Established in 1994, the United Nations Convention to Combat Desertification (UNCCD) is the sole legally binding international agreement linking environment and development to sustainable land management. Parties to the Convention work together to maintain and restore land and soil productivity, and to mitigate the effects of drought in drylands — the

arid, semi-arid and dry sub-humid areas where some of the most vulnerable ecosystems and peoples can be found.

What can be done?

- Reforestation and tree regeneration
- Water management — saving, reuse of treated water, rainwater harvesting, desalination, or direct use of seawater for salt-loving plants
- Fixating the soil through the use of sand fences, shelter belts, woodlots and windbreaks
- Enrichment and hyper-fertilizing of soil through planting
- Farmer Managed Natural Regeneration (FMNR), enabling native sprouting tree growth through selective pruning of shrub shoots. The residue from pruned tress can be used to provide mulching for fields thus increasing soil water retention and reducing evaporation.

DESERTIFICATION LAND DEGRADATION & DROUGHT (DLDD) - SOME GLOBAL FACTS &FIGURES
http://www.unccd.int/Lists/SiteDocumentLibrary/WDCD/DLDD%20Facts.pdf

Land degradation & Desertification
• 2.6 billion people depend directly on agriculture
• 52% of the land used for agriculture is moderately or severely affected by soil degradation
• Land degradation affects 1,5 billion people globally
• Arable land loss estimated at 30 to 35 times the historical rate.
• Total land degradation affects some 1.9 billion hectares of land worldwide
• 24 billion tons of fertile soil disappear/year, the most significant, non-renewable geo-resource
• Due to drought and desertification each year 12 million ha are lost (23ha/mn!), where 20 million tons of grain could have been grown.
• Six million km2 of drylands bear a legacy of land degradation.

DLDD & Biodiversity
• Land degradation jeopardizes biodiversity. Desertification affects the global loss of biodiversity; 27,000 species are lost each year

DLDD & Climate change
• Current agricultural practices represent over 13% of GHG emissions
• Climate change will depress agricultural yields by up to 15-50% in most countries by 2050, given current agricultural practices and crop varieties
• The percentage of Earth's land area stricken by serious drought has more than doubled from the 1970s to the early 2000s

End - Submission to Committee on *Vegetation Management (Reinstatement) and Other Legislation Amendment Bill 2016* – 29th April 2016 – Garry Arthur Reed

22nd May 2013 EMAIL TRANSMISSION

[redacted]

Dear Premier and Ministers, I am sending this letter adapted from my letter of the 21.9.12 because of the issue of the immanent Vegetation Management Legislation.

I have edited the original letter as it mostly related to the diversion of Coral Creek for a coal mine but there is a lot of material that relates to land management going back decades. I have highlighted text and added photographs that relate to the vegetation management issue.

Our family has had a lot of experience here with almost 90 years on this farm. My father had been very distressed over the last 50 years to see the amount of clearing and over grazing with a great increase in the amount of topsoil washing down our creeks.

My father and I had many disagreements over politics and folklore and there was often resistant to new ideas but our mutual respect for the land and future generations was rock solid. Now many of my father's fears and concerns from years of experience are coming home.

I now learn from a 22 June 2012 affidavit from Dr Andrew Markham for the mining company in the Land Court case EPA1002-11, quoting Bartley et al. (2004) that the *Bowen River Catchment is a hotspot for soil erosion and suspended sediment export. The study estimates that while the Bowen River represents only 7.3% of the catchment area of the Burdekin River, it constitutes 45% of the total sediment load (mostly derived from hillslope erosion), with sediment yields up to 4t/ha/yr for parts of the catchment. The study noted that Pelican Creek was among a number of smaller catchments noted for high sediment contribution, estimated to be 1.3t/ha/yr. Therefore it is clear that the Bowen River Catchment is already a significant contributor of sediment to the Burdekin River (presumed due at least in part to landuse practices and grazing pressure) and that the incremental impact of possible sediment loss from the Coral Creek Diversion on the Coral Sea is likely to be small.*

I would like to draw attention to the Australian Government Caring for our Country Reef Rescue initiative that is improving grazing land use practices and the cumulative increases in sediment run-off from the new Jax Mine and proposed Drake Mine on the bank of the Bowen River.

Also a recent Coral Reef symposium in Cairns reported extremely serious coral cover loss on the Great Barrier Reef with a 50% decrease over the last 50 years with sediment and contamination a contributor.

Subsequent to this report an AIMS report has stated that there has been a 50% loss of Coral over 27 years and another 50% loss is expected over the next 10 years unless major changes are made to improving land use standards.

My father was also distressed about 30 years ago, to see 2 of the 3 big old cluster fig trees (Ficus racemosa) on the bank of Coral Creek washed out in a flood that eroded the bank.
I have been attempting to revegetate the bank to halt the erosion over the last 20 years. So far I have planted over 100 trees and have only ended up with 6 trees surviving, with one 10 year old Black Ironbox (Eucalyptus raveretiana) undermined by a flood 3 years ago and a 15 year old River Sheoak (Casuarina cunninghamiana) having only just died in the last month.
It is now evident why this situation has occurred. It is as a result of the ring barking and clearing of vegetation behind the fig trees and creek banks. The large Gum trees close to the banks were ring barked about 50 years ago and the scrubs running further back were clearing about 40 years ago. Some vegetation has regenerated on the cleared land but is mostly shallow rooted environmental weeds and grasses.

Therefore there has been a major loss of water infiltration, shelter, transpiration and micro-climate that is causing stress and dieback in the remaining vegetation on the creek bank. Also the dead hardwood roots are decomposing further reducing bank stability. Coral Creek has a catchment that runs high into the ranges and can have intense flood flows. Because of the failure to fully rehabilitate this bank erosion there is a serious risk that in a large flood the erosion could spread and cause a catastrophic loss of hundreds of meters of bank in length and breadth and mature trees extending downstream and changing the confluence position of the mouth of Coral Creek effecting the hydrology and water availability for natural vegetation and our farm's water supply.


Coral Creek bank erosion rehabilitation


Creek Coolabah undermined


River Sheoak - possible Dieback diseased

The situation described here is not isolated and is very widespread and also around here the loss of Brigalow (Acacia harpophylla) over the last 60 years has exposed land that continues to erode where no regeneration has occurred because of the nature of the soils and grazing. My Father and Uncle maintained that after the widespread clearing of the Brigalow scrubs in the 1970's, the amount of storm rain declined greatly. It is now known from isotopic analysis of rain water that a large amount of rain comes from the transpiration cycle that depends on deep rooted drought tolerant trees.





Brigalow (Acacia harpophylla) On Pelican Creek near Scottville, Brigalow was harvested for the town suction gas engine powered water pump in the 1920's and also poisoned because of Harrisia Cactus infestation in the 1950's.

We have made many observations and have done some study relating to these issues and gained a lot of experience over the years but as laymen you do not always feel confident in your perspective. It is evident that many bad decisions have been made in the past, with or without regulator approval, that continue to cause significant problems with little rectification occurring.
The following observation relates to mining companies who you would think have an interest in maintaining a high degree of credibility in the community but some of them have been guilty of taking advantage of poor regulation. My concern is that weakening Vegetation Management Regulation will be taken advantage of by some landholders which could result in very significant damage and adverse impacts at this critical time.

At the time of talking to one consultant the Federal Government was discussing green tape reduction and we discussed it. He believed that the problem was not an excess of green tape but a lack of effectiveness and loopholes in that regulation. He thought the reason that some proposals were taking an extended time to get approval was because the mining companies were taking advantage of the process and trying to get approvals for works that should not have been proposed in the first place. (I have also heard similar things from a number of others recently.)

The following reports also apply to Land and Vegetation Management.
I studied the EIS for the Drake Mine extension to the Sonoma Mine and found this prediction of climate changes for the local area. When you consider the damage that has been done to the land and creeks here already, the scenario of a significant increase in drought and severe cyclones is extremely worrying in light of our compromised country here.

From Drake Coal Project EIS June 2012

4.4 Climate Change

As well as a decrease in annual rainfall, an increase in daily precipitation intensity (rain per rain-day) and the number of dry days is predicted. The future precipitation regime will have longer dry spells interrupted by heavier precipitation events. Changes to extreme events would have the potential to increase erosion rates and flood frequency, with implications for river flow, water quality, and the design standards of infrastructure.

Drought occurrence is projected to increase over most of Australia (CSIRO, 2007). (CSIRO (2007). Climate Change in Australia, Technical Report, developed by Commonwealth Scientific and Industrial Research Organisation and the Bureau of Meteorology in partnership with the Australian Greenhouse Office, Canberra.)

Models have predicted a range in rainfall changes from an annual increase of 17% to a decrease of 35% by 2070. The 'best estimate' of projected rainfall change shows a decrease under all emissions scenarios (DCC, 2009). (Department of Climate Change (2009). Climate Change Risks to Australia's Coast, Commonwealth of Australia, Canberra.)

4.4.5 Cyclones

Under three different studies the number of severe tropical cyclones is projected to increase by 56% by 2050 (Walsh et al., 2004) (Walsh KJE, Nguyen KC and McGregor JL (2004). Finer resolution regional climate model simulations of the impact of climate change on tropical cyclones near Australia, Climate Dynamic, 22:1,www.springerlink.com/contect/brmpmturdqvxh3vv.), 22% by 2050 (Leslie et al., 2007) (Leslie LM, Karoly DJ, Leplastrier M and Buckley BW (2007). Variability of Tropical Cyclones over the Southwest Pacific Ocean using High Resolution Climate Model, Meteorology and Physic 97 (Special Issue on Tropical Cyclones), ftp.gfdl.noaa.gov.au/qld-regional-profiles.) and 140% by 2070 (Abbs et al., 2006).(Abbs D, Aryal S, Campbell E, McGregor J, Nguyen K, Palmer M, Rafter A, Watterson I and Bates B (2006). Projections of Extreme Rainfall and Cyclones: Final Report to the Australia Greenhouse Office, CSIRO Marine and Atmospheric Research, Canberra, www.cmar.csiro.au/eprint/ open/abbsdj_2006b.pdf.)

These comments relate to vegetation management also and the past loss of critically important vegetation communities is likely to have resulted in the loss of the local variation in species which is considered to be as important as the loss of a entire species.

The fragmentation and reduction in community size of remnant populations can make them vulnerable to genetic weakness, weed infestation and disease.
I have made observations here that defy prevalent folklore about trees and grass. Corridors of trees have been planting on our property and grazed yet the grass under the trees is lusher than in the open and after frost or hot dry weather, is green rather than dry. I have spoken to old time graziers and they tell me that trees get their moisture from a different place than grass.
The implications for soil erosion is critically important as leaf, twig and branch fall from trees prevail while grass disintegrates quickly in drought. The other critical issue is loss of tree cover results in a reduction of rainwater infiltration and ground water recharge. Isotopic analysis show that the transpiration cycles is a significant source of rain and dew especially in inland areas.

Grass green under savannah trees

Leichardt Bean (Cassia brewsteri) dozed by a contractor on a neighbour's land

I have observed some very troubling activity on neighbouring properties over the years. Recently a contractor dozed a track beside the fences and in the process pushed mature healthy trees like Brigalow and Leichardt Bean which are nitrogen fixers, are fire retardant and are very drought tolerant and were away from the fence lines.

Also in the process large trees in a major creek were dozed including the Nationally listed Eucalyptus raveretiana. Large Paperbarks and Sheoaks were also dozed into the running water. I contacted the landholder to get the phone number of the contractor to alert them to the breach of the law that had inadvertently happened. Unfortunately my approach was not greeted with cooperation despite the activity being upstream of my water pump and farm.

Land use and vegetation issues are of critical importance and I believe strong education and regulation are imperative as failure can have very serious and long term consequences. Also there are a lot of inexperienced landholders and operators that can make serious mistakes.

The landholder that contracted the dozer operator to carry out this work was justifying this loss of creek vegetation & soil and water contamination because of rubber vine that I could have controlled with a hand saw and herbicide.

There is little doubt that biodiversity is the foundation of the resilience of the ecosystem and our economy is a subsystem of the ecosystem. Policy decisions do not always take this into account and is leading to diminishing natural capital and environmental health for future generations.

I wrote the following about the mining industry which could also be applied to the grazing industry.

The short term financial gain from the high risk components of the coal mining occurring in this area will be at the expense of our long term primary production and economic viability.

Thankfully most graziers have a respect and love of the country and they are not of a fly in-fly out nature and have a long term perspective yet mistakes can be made despite good intentions.

Another issue that relates to land clearing and again is of the utmost concern to me as it was to my father, is environmental weeds. From my observation the problem seems to be escalating and the loss of native vegetation and increased clearing and earthworks exacerbates colonisation because of reduced competition and the increase in vectors.

I have noticed that some landholders use heavy machinery to clear species like Lantana, Chinee Apple and Rubber Vine when a small amount of herbicide on the basal trunk or cut stump is all that is required. The downside of using dozers to clear weeds is obviously soil erosion but also from observation the weeds comes back from seeds and roots and grow more vigorously because of the reduction of moderation from native vegetation. The weed problem is often exacerbated and many areas that have been cleared over the last 50 years are often now completely weed infested.


Peter Delamothe Road 5 km east of Collinsville


Fire break on grazed land – Grader grass infestation

http://www.daff.qld.gov.au/4790_7293.htm

The Queensland Government Biosecurity website states: *Grader grass* (*Themeda quadrivalvis) The best form of weed control is prevention. Treat weed infestations when they are small - do not allow weeds to establish.*

This recent report makes some very important points: http://www.abc.net.au/news/2013-05-17/predictions-australia-will-be-hardest-hit-by-climate-change/4695718

Ian Dunlop is a former senior Executive of Royal Dutch Shell and a former chair of the Australian Coal Association.

"We're one of the driest continents on the earth and the effects on Australia will be more severe than elsewhere."

Mr Dunlop says climate change will also have a negative impact on Australia's agricultural industry.

"The much longer term problems of the sustainability of things like agriculture because if we keep on going where we're going large parts of the country are either going to be moving back into deserts or alternatively they'll end up subject to extreme flooding and conditions that aren't particularly conducive to agriculture anyway," he said.

As I have been working on this letter I hear that the vegetation management legislation changes have been passed in Parliament. I regret not working on this before now because I am very concerned that a lot of irreplaceable natural capital will be lost with very serious consequences. There are presently many land use problems, unsustainable practices and inefficiencies that should be rectified before more land is made vulnerable to further damage.

I heard this report yesterday on Bush Telegraph and I am very concerned that you have jumped the gun to pass this legislation without all of the information relating to its consequences.
http://www.abc.net.au/rural/telegraph/content/2013/s3762955.htm
To quote; If the changes are approved in parliament this week, farmers will be allowed to clear their land if it is deemed to be of "high-value agriculture". It occurs to me that this is a very dangerous development because areas of high value for agriculture are also likely to be of high value for biodiversity which is of critical importance for ecosystem services. And as our economy is a subsystem of the ecosystem, the challenge of balancing our short term use with the long term viability for future generations could be a terminal failure.

I have immense faith in our farmers and graziers and know their love of the land but I also know how stubborn and how many views there are about the way things work.

Unfortunately not everyone does understand exactly how the complexity of the ecosystem works and scientific knowledge is constantly being updated and analysis refined.

I have come to meet many scientists and environmentalists over the years and I find that they are not immune to cherry picking information and engaging in motivated reasoning and wishful thinking, but they are usually open to scrutiny and new evidence and knowledge.

One very experienced fellow said to me some time back that the problem with the environmental crisis is that it is slow moving and people pass away with the knowledge of what we have lost and that our environment is dying by a thousand cuts and as it gets weaker it will be more vulnerable to what could become the final cuts. I hope for the sake of future generations that we are not committing slow motion huri-kuri.

It is admirable to show trust but foolish to fail to verify. Management of impacts on our common environment is a Government responsibility. Failure can have extremely serious consequences.

Please contact me if I can help further with these critical issues for our area, state and nation.

Thank you for your attention to our concerns.

Yours Sincerely, Garry Reed


Pelican & Coral Creeks, Scottville via Collinsville


Pelican Creek 19.2.13 Governance Failure