SUBMISSION

I provide my submission in respect of the proposed Vegetation Management and Other Legislation Amendment Bill 2018 to be included in the SDNRAIDC's detailed consideration.

In providing this submission I refer directly to the Vegetation Management and Other Legislation Amendment Bill 2018, the Introductory Speech of the Hon Dr Anthony Lynham MP, Minister for Natural Resources, Mines and Energy, of 8 March 2018, and the Explanatory Notes that encompass the proposed changes to the above Acts and a range of commentary and issues.

In my opinion the Vegetation Management and Other Legislation Amendment Bill 2018 proposed changes are oppressive, restrictive and onerous and do not reflect the expert knowledge and understanding that landholders hold after decades of sustainable land management.

I do not in any way support broad scale land clearing or land degradation however I do not support and cannot operate with our industry being heavily regulated and debilitated by new oppressive vegetation management laws.

My opinion is set out below:-

HIGH-VALUE REGROWTH

Clause 38 of the Bill (proposed new definition of *'high-value regrowth'* (a) and (b) in Schedule (Dictionary) of the *Vegetation Management Act 1999*) and Clause 16 (omission of s22A(2)(k) and (l) to delete *high-value agriculture clearing* and *irrigated high-value agriculture clearing* as relevant purposes).

- **Changing the definition of *high-value regrowth* vegetation - this term will now apply to vegetation not cleared in the last 15 years – rather than since 31 December 1989 (28 year old trees).**
- **Regulating regrowth on freehold land, Indigenous land and occupational licences in addition to leasehold land for agriculture and grazing.**
- **Removal of 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.**

Introductory Speech - Dr LYNHAM: *"I would like to draw the attention of the House specifically to the removal of provisions that allowed for clearing for high-value agriculture and irrigated high-value agriculture…….The bill will reinstate the protection of high-value regrowth vegetation on freehold and Indigenous land. The bill will change the definition of 'high-value regrowth' to ensure that additional vegetation that has significant environmental value is protected……it is proposed to change the 'high-value regrowth' definition that currently exists from woody vegetation that has not been cleared since 31 December 1989 and forms an endangered, of concern or least concern regional ecosystem vegetation to high-value regrowth vegetation that has not been cleared for 15 years……Under the new definition, high-value regrowth will continue to be mapped as category C on freehold and Indigenous land, as well as on leasehold land, that is, agriculture and grazing leases. Restoring the pre-2013 mapping of high-value regrowth on freehold and Indigenous land protects approximately 630,000 hectares on freehold and Indigenous land…….With the changes I am proposing to the definition of 'high-value regrowth', our government will protect an additional 232,275 hectares. These two measures will protect an additional 862,506 hectares of high-value regrowth. Importantly for the environment, approximately 405,000 hectares*

or 47 per cent of this is within the Great Barrier Reef catchments."

*NB: A landholder could previously apply for a development approval to broadscale clear remnant vegetation for high value agriculture (clearing carried out to establish, cultivate and harvest crops) or irrigated high value agriculture (clearing carried out to establish, cultivate and harvest crops, or pasture, that will be supplied with water by artificial means).

The proposed high value regrowth changes present major challenges for the efficient and productive management of our cattle grazing property. As graziers we manage vegetation and clear our land to grow pastures for our cattle to graze. We strive to achieve healthy grazing land ecosystems on our properties. We do this by adopting sound ecological approaches to grazing land management where optimum productivity and healthy landscapes are ensured. We have been effectively doing this across our properties for over three generations. As beef producers we need to meet growing demand from consumers both here in Australia and overseas in order to remain productive and create sustainable jobs in agriculture. In order to achieve this we must be allowed to manage regrowth vegetation on our land.

Despite media reports to the contrary there has been an overall Australian reduction in land clearing. The following table (*ABC News, 2018*) shows that overall Australia has actually recorded an annual net gain in forest area for the 2010-2015 period of 0.2 per cent per year. This means that more forest area was established over this time period than was actually lost.

The following tables published in the UN's Global Forest Resources Assessment 2015 provide worldwide comparisons of forest changes.

Top ten countries reporting the greatest annual net loss in forest area, 2010-2015

Country	Area (hectares)	Rate
Brazil	984,000	0.2 per cent
Indonesia	684,000	0.7 per cent
Myanmar	546,000	1.8 per cent
Nigeria	410,000	5 per cent
United Republic of Tanzania	372,000	0.8 per cent
Paraguay	325,000	2 per cent
Zimbabwe	312,000	2.1 per cent
Democratic Republic of the Congo	311,000	0.2 per cent
Argentina	297,000	1.1 per cent
Bolivia	289,000	0.5 per cent

Top ten countries reporting the greatest annual net gain in forest area, 2010-2015

Country	Area (hectares)	Rate
China	1,542,000	0.8 per cent
Australia	308,000	0.2 per cent
Chile	301,000	1.8 per cent
USA	275,000	0.1 per cent
Philippines	240,000	3.3 per cent
Gabon	200,000	0.9 per cent
Laos	189,000	1 per cent
India	178,000	0.3 per cent
Vietnam	129,000	0.9 per cent
France	113,000	0.7 per cent

Source: Global Forest Resources Assessment, 2015; Food and Agriculture Organisation of the United Nations

Vegetation was cleared on just 0.23 per cent of Queensland's land area in 2015/16, or less than one quarter of one per cent. Despite alarmist analogies about the number of football fields cleared, the Statewide Landcover and Trees Study puts this figure into context. And that doesn't factor in how much vegetation grew during the same period (Department of Science, Information Technolgy & Innovation, 2017).

Two thirds of the clearing occurring in Queensland is to manage areas that have previously been cleared and for routine vegetation management practices. On our property we use regrowth clearing to aid in construction of fences, firebreaks, property maintenance, pasture growth and access tracks. Preventing the clearing of regrowth that is more than 15 years old will impact our regrowth plan. Regrowth clearing is expensive and as such we plan to do this when necessary and when we feel, as effective land managers, that it needs to be done. It also needs to occur when it is financially viable for us to do so, in times of drought and other expenses such as boarding school fees and government red tape (ie application fee to install a bridge over a waterway) it is obviously not economically viable for us to clear regrowth. Also during succession planning and adversities such as death, illness and other family hardships, it is open not possible to stick to a rigid prescriptive legislated timeframe. We would also like to bring to your attention the considerable fee we have already paid to become a freehold property and us such we greatly oppose any restrictions to our land management rights.

It is our opinion the proposed regrowth restrictions in "high-value" regional ecosystems such as the brigalow belt will restrict future management of revegetated regrowth. The Queensland Government can measure vegetation clearing rates, but they do not know how to accurately measure how much vegetation has grown over the same period. A Right to Information request by The Australian newspaper revealed the Queensland Government admitted its vegetation management data is flawed and only looks at half the picture. The Statewide Land and Trees Cover Study examines the amount of woody vegetation removed, but not the amount of vegetation gained through regrowth, encroachment on to grasslands and thickening. The Queensland government has admitted its vegetation management data fails to accurately measure regrowth. *Ministerial briefing notes released to The Australian under a Right to Information request reveals the government quietly admitted last year to flaws in the satellite data used to map Queensland's tree coverage* (*Elks, 2017*)

The government should not take a 'one size fits all approach, rather they should take into account regrowth rates in specific localities before changing the definition of high-value regrowth vegetation. The amount of rainfall in regional ecosystems also varies from year to year and consequently the regeneration of trees and pasture growth varies. Thus, it is important to take into consideration variable rainfall data when looking at regrowth in regional ecosystems. Furthermore, the DNRM are not properly resourced to actually map vegetation and this will cause ongoing issues for graziers.

Land managers are in the best position to effectively manage the landscape to achieve the best outcomes for their land and the environment. They have lived and worked in these environments for generations and are experienced in ensuring

their livelihoods and land are protected.

Agriculture is the fastest growing industry in the country and Queensland is now the number one agricultural state in Australia. Harsh and unnecessary vegetation management restrictions put that at risk. Australian agriculture was the largest contributor to national GDP growth in 2016-17, contributing 0.5 percentage points of national total 1.9 per cent growth *(Johnson, 2017)*. In addition, Queensland edged out Victoria and New South Wales as the nation's most valuable agricultural state last year (*Australian Bureau of Statistics, 2017*). For Queensland agriculture to maintain our number one status and reach our full potential, we need governments to adopt balanced policy settings that help us move forward, not hold us back.

The loss of the ability to effectively manage regrowth on our land will have a flow on effect in our community. There will be loss of jobs in industries such as transport, meatworks & food manufacturing. Our property value will decline with no compensation being offered to offset these changes. Socially this will have an effect on mental health due to the increase in obstructive legislation. It's estimated that farmers commit suicide at twice the rate of other Australians and farmers are unlikely to consider suicide if they can make a fair living doing what they love *(ARMM Admin, 2017*). The Queensland Government should be focusing on enhancing innovation, competitiveness, productivity and economic growth rather than increasing red tape and restrictive legislation.

NEAR-THREATENED SPECIES

Clause 37 of the Bill (new Part 6, Division 13 – s141 'Proposed map showing essential habitat' and s142 'Provision about essential habitat').

- **A map showing areas of proposed essential habitat for protected wildlife and near threatened wildlife will be published and land will be covered by an area management plan.**

Introductory Speech - Dr LYNHAM: *"Importantly, our government will be providing better protections under the vegetation management framework for near-threatened species. These are species that are listed under the Nature Conservation Act 1994, where our scientists have evidence that the population size or distribution of the wildlife is small, may become smaller or has declined and there is concern for their survival. Our near-threatened plants and animals were dismissed by the LNP government as not worthy of protection. On the other hand, the Labor party is of the firm belief that these species need our protection, otherwise we face the regretful prospect of their decline. Near-threatened species were removed from the essential habitat mapping layer in 2013. When we compared the high conservation values' methodology to the existing statutory framework, it showed that near-threatened species have limited regulatory protection. The essential habitat mapping layer used in the Vegetation Management Act will be updated, protecting endangered, vulnerable and near-threatened species. The essential habitat of our valued animals and plants will be protected in both remnant and high-value regrowth vegetation. Offsets will apply to approvals for any significant residual impact on near-threatened species where the clearing of remnant vegetation cannot be reasonably avoided and minimised."*

Unfortunately our response to this is limited, due the fact that we were unable to locate the maps of proposed essential habitat for protected wildlife and near threatened wildlife and land. We are therefore unable to ascertain if this will have any effect on our property or grazing business.

REGROWTH VEGETATION IN WATERCOURSE AREAS

Clause 37 of the Bill (new Part 6, Division 13 – s133 'How definition regrowth watercourse and drainage feature area applies during and after the interim period') and addition to *regrowth watercourse and drainage feature area* definition in the Schedule (Dictionary) of the *Vegetation Management Act 1999*

- **Extension of Category R areas (from the Burdekin, Mackay Whitsunday and Wet Tropics Great Barrier Reef catchments) to include new catchments to encompass all Great Barrier Reef catchments**
- **Addition of three catchments – the Burnett-Mary, eastern Cape York and Fitzroy catchments – affecting regrowth vegetation in areas located within 50m of a watercourse or drainage feature located in these additional catchments.**
- **This regulation applies across freehold, indigenous and leasehold land.**

Introductory Speech - Dr LYNHAM: *"This bill will also extend protection to regrowth vegetation in watercourse areas for the Burnett-Mary, eastern Cape York and Fitzroy catchments, providing consistent protection to regrowth vegetation in all Great Barrier Reef catchments. This builds on the measures introduced in 2009 which regulate the clearing of vegetation within 50 meters of a watercourse in the Burdekin, Mackay-Whitsunday and Wet Tropics. The bill will also amend the Water Act to re-regulate the removal of vegetation in a watercourse under a riverine protection permit."*

Explanatory Notes: Expanding the regulation of riverine regrowth to include these catchments will increase the protection for the Great Barrier Reef from sediment run-off and other impacts of clearing.

Our property is located in the Burdekin Great Barrier Reef catchment area. From extensive experience living in this ecosystem we can confidently state that pastures on our land are far better at preventing erosion and sediment run off than trees are. We manage our watercourses by fencing off creeks and gullies, to prevent stock from damaging the ground cover. A one-size fits all approach is not the answer to prevent sediment run off to the Great Barrier Reef. The land's position, soil type and slope determine how vulnerable it will be to erosion.

Surface cover is a major factor to control erosion because it reduces the impact of raindrops falling on bare soils and wind removing soil particles. It also reduces the speed of water flowing over the land (*Queensland Government, 2015*). 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. Surface cover is the key to erosion control in grazing lands. It prevents erosion by maintaining the soil so it can absorb rainfall. In the control of erosion, surface cover is essential and bare areas beneath trees are vulnerable (*Queensland Government, 2013*).

A well-managed pasture with good cover will ensure that runoff spreads rather than concentrates. Bore drains, tracks, roads, cattle pads and fences concentrate runoff, so careful planning is required to ensure that property improvements are located where they will not contribute to erosion. We have been managing our watercourses effectively for over three generations and do not need restrictive legislation dictating our land management policies. Fencing off watercourses, stocking rates, regular monitoring of pastures, spelling of paddocks, controlled burning of woody weeds all contribute to effective pasture & land management. There is an urgent need for the Queensland Government to understand that land management needs a holistic response.

In terms of damage to the Great Barrier Reef the Government would do well to

initiate studies into rubbish disposal, insecticide and chemical use in suburban communities that have a flow on effect on water and coral health. It is well known that global warming, urban pollution and over fishing are the greatest threats to the reef, not land clearing.

LOW-RISK ACTIVITIES

Clause 17 of the Bill (new s22B 'Requirements for vegetation clearing application for managing thickened vegetation' of the *Vegetation Management Act 1999*) and Clause 37 (new Part 6, Division 13 – s136 'Area management plans that are to remain in force for 2 years').

- **Thinning redefined as '*managing thickened vegetation*' – s22A(2)(g).**
- **Withdrawal of Code for clearing of vegetation for thinning. *Managing thickened vegetation* now requires notification under the new interim Code until the Bill has passed when a development application will be required.**
- **Requirements to be demonstrated in a development application for managing thickened vegetation – location and extent of clearing, clearing methods, evidence restricted to prescribed regional ecosystems and restrictions and evidence that the regional ecosystem has thickened in comparison to the same regional ecosystem in the bioregion.**
- **New s136 phases out landholder-driven area management plans as a mechanism for managing low-risk clearing that is or may be managed by the accepted development vegetation clearing codes. This new section provides that an area management plan relating to the clearing for encroachment or thinning continues but only remains in force until 8 March 2020.**
- **Notification of an intention to clear vegetation made under the plan before 8 March 2018 may continue while the plan remains in force however an entity may not give notification under the plan after 8 March 2018.**

Introductory Speech - Dr LYNHAM: *"The government is committed to retaining accepted development codes for low-risk activities, while ensuring they deliver appropriate protections…….Following a review by the Queensland Herbarium, and subsequent review by the CSIRO, a decision was reached that thinning is not a low-risk activity. Therefore I intend to withdraw this accepted development code from the regulation once this bill commences. In the interim, I am remaking the code to include the best scientific advice on how to minimise the risks until the code can be withdrawn. I will retain an assessment pathway in the legislation for those landholders who need to manage thickened vegetation. It will remain a relevant purpose in the Vegetation Management Act for which development applications can be made."*

As effective environmental land managers we have used the following practises on our grazing property:

*** Thinning – selective removal of thickening trees to promote native grass growth;**

*** Encroachment – controlling the movement of trees and shrubs into naturally open grassland areas; and**

*** Removal of weeds, including non-native species.**

Thinning involves the selective removal of native trees and shrubs, and is widely used in the grazing industry to improve pasture quality. We believe that thinning returns the environment back to its natural state and provides better habitat for native wildlife. We have used the above practises to manage our ecosystem and

believe we are best placed to continue doing so. Restrictive legislation preventing us from effectively managing our land will have ongoing affects on our livelihood and that of future generations.

The new Vegetation Management Codes to apply for a thinning permit are complicated, complex and time consuming. As thickening has occurred across the landscape for decades, rather than spending hours proving that country has thickened, landholders should be able to demonstrate what a healthy and balanced landscape should look like. If the country thickens beyond the trigger densities, thinning should be able to occur. A healthy landscape should be one that the stem density of trees allows good groundcover to be maintained in a range of seasons, ensuring biodiversity outcomes and sustainability are met over the long term.

Thickening is not isolated to particular regional ecosystems, it is due to particular species acting invasively, dominating regional ecosystems to a point where biodiversity and pasture production is compromised. We have noticed soil erosion, changes to soil surface hydrology, biodiversity decline and reduced ground cover in areas where vegetation is acting invasively. Reduced groundcover has left bare soil surface areas, which are vulnerable to erosion and noxious weed invasions. When the regional ecosystem is out of balance, invasive native species outcompete and choke out natural vegetation, creating issues such as erosion, decline in land condition and pasture decline. Invasive native species found in our regional ecosystem includes berry bush and black wattle.

We need a balanced approach from the Queensland Government for the sustainable management of thickening invasive shrubs. Science-based self-assessable codes help farmers carry out the routine vegetation management practices necessary to sustainably produce food and fibre. The self-assessable codes help farmers ensure trees and grass stay in balance, avoid soil erosion and feed animals in drought. Farmers are not required to obtain permits for work done under the self-assessable codes, but they are required to notify the Queensland Government. The codes are tightly regulated, regularly audited and approved by the Queensland Herbarium. Please consider the environmental impact that will occur if you prevent graziers from managing thickening non-native vegetation. Thickening in these areas kills the old parent and habitat trees and leads to a significant loss of biodiversity. Thinning in these areas can stop the loss of older habitat trees and restore a balance to the ecosystem.

We have previously notified the Department that we intended to clear vegetation under a Managing thickened vegetation accepted development clearing code. This application came at considerable cost and effort from us. Now it appears the rules have changed and it will be up to us to research, fund and complete thinning under new regulations that we were not informed about when we originally applied.

Furthermore a one code to fit the whole state is ridiculous, vegetation management is a complex issue and a code that covers the whole state of Queensland does not adequately reflect the complexities of managing different ecosystems.

FODDER CODE

Clause 37 (new Part 6, Division 13 – s139 'Revocation of particular area management plan')

- **s139(1) – the 'Managing Fodder Harvesting Mulga Lands Fodder Area Management Plan' is revoked. A new revised Code is in place – 'Managing fodder harvesting accepted development clearing code'.**
- **s139(2) - A notice of intended clearing under the Plan ceases to have effect on 8 March 2018, and no further clearing can be carried out under the Plan from 8 March 2018. Landholders need to lodge a new notification under the new Code and follow the requirements of the new Code.**
- **New s136 phases out landholder-driven area management plans as a mechanism for managing low-risk clearing that is or may be managed by the accepted development vegetation clearing codes. This new section provides that an area management plan relating to the clearing for fodder harvesting continues but only remains in force until 8 March 2020.**
- **Landholders need to lodge a new notification under the new Code.**

Introductory Speech - Dr LYNHAM: *"In conjunction with this bill, I asked my department to progress the review of the revised fodder code on which we consulted in 2016 and commence a rolling program to revise and implement the other acceptable development codes throughout 2018. The revised managing fodder harvesting code has been developed by my department based on scientific input from the Queensland Herbarium and the CSIRO. The immediate remake of the managing fodder harvesting and the managing thickened vegetation codes will invalidate all previous clearing notifications and introduce for the first time size and time limits on the areas able to be notified for clearing under an accepted development code. My department will be consulting throughout 2018 with stakeholders to finalise the remaining codes."*

Explanatory Notes: Revoking the Mulga Lands Fodder Area Management Plan reinforces the role and function of the accepted development vegetation clearing code for fodder harvesting being the supported mechanism in which low-risk clearing activities are undertaken. Landholders can continue to undertake self-assessable clearing under the accepted development vegetation clearing code for fodder harvesting, or alternatively, apply for a development permit under the Planning Act 2016.

The two year period recognises that, in some instances, the clearing requirements for encroachment, thinning and fodder harvesting under current area management plans may not be consistent with the best available science.

Not relevant to our grazing practises.

PENALTY UNIT INCREASES

Clauses 19, 22-23 and 25-33

- **Various amendments to Penalty Units for Maximum Penalty. Eg. s54B(5) 'Non-compliance with Restoration notice' - penalty increasing from 1665 to 4500 penalty units and s58(1) (false or misleading statement) – increasing from 50 to 500 penalty points.**

The new proposed vegetation management penalties are very harsh. Vegetation management is complex and understanding Government legislation can be quite difficult. The proposed changes allow for no mistakes or misunderstandings of the legislation. The changes to a one box fits all approach will have dire consequences for Queensland farmers, adding a 'no mistake' clause will further increase the challenges faced by farmers in comprehending legislation.

OTHER RELEVANT MATTERS

Introductory Speech - Dr LYNHAM: *"I believe this bill and the complementary measures that I have outlined will deliver on the election commitment to deliver a more sustainable vegetation management framework for Queensland. This government will continue to work with our vital agricultural sector so that together we can care for the environment and ensure that their farms can pass, in good condition and in safe hands, from generation to generation."*

"The amendments that I bring into the parliament are necessary to protect Queensland's remnant and high-value regrowth vegetation. It is all about restoring a sustainable vegetation management framework for managing a valuable resource on behalf of the people of Queensland."

"Within three years in Queensland clearing rates of remnant native vegetation increased from 59,800 hectares in 2012-13 to 138,000 in 2015-16. This amendment bill seeks to end the levels of broadscale clearing that the LNP legislation created."

Our partnership effectively manages over 40,000 acres of prime grazing land in Central Western Queensland. We have been working on this land for the past 35 years and are extremely experienced at managing vegetation including regrowth and weed control. It is in our best interests to manage vegetation productively and efficiently to ensure that our land remains sustainable and profitable for our children.

It is our view that the proposed legislation cannot possibly protect and enhance regional ecosystems. The one size fits all approach is detrimental to the economic, social and sustainable future of regional communities in Queensland.

We believe the proposed legislation is flawed because:

*** A one size fits all approach is not an effective tool for management of diverse regional ecosystems.**

*** The consultation period and submission process has been rushed, allowing limited time and resources for landholders to fully comprehend the new legislation.**

*** The current Queensland Government has admitted that their vegetation data management knowledge is defective.**

*** In the 30 years from 1981 to 2011 we lost 106,200 farmers in Australia, 40% gone, that is 294 farmers disappearing each and every month for 30 years (*Australian Bureau of Statistics, 2017)*. The decline continues today. The proposed Queensland vegetation management laws are guaranteed to further that decline with a land confiscation of over 1 million hectares of farming land that has previously been effectively managed by landholders for generations.**

*** There has been no consideration on the costs, time, labour input and stress that this will add to our grazing business. No compensation packages for vegetation permits already acquired and for fees and leases paid on freehold land. No time given for graziers to establish a regrowth and thinning management plan.**

*** The proposed changes will result in graziers not being able to forward plan due to**

constantly changing legislation, which is complex to understand and comprehend. **The proposed changes will result in lower land values and decreased productivity for Queensland. Any changes to existing legislation MUST be holistic and diverse, factoring in the differences between regional ecosystems and taking into account the many land management tools that have been effectively used by farmers for generations.**

Signed:	
Date:	

Bibliography

ABC News. (2018, February 23). *Fact check: Is Queensland clearing land as fast as Brazil?* Retrieved March 20, 2018 from ABC News: http://www.abc.net.au/news/2017 12 01/fact check queensland land clearing brazilian rainforest/9183596

ARMM Admin. (2017, October 9). *Farmer suicide and examples of Hope and Recovery*. Retrieved March 20, 2018 from Australian Raw Milk Movement: https://www.ausrawmilk.org/blog/farmer suicides

Australian Bureau of Statistics. (2017). *Agriculture*. Retrieved March 20, 2018 from Australian Bureau of Statistics: http://www.abs.gov.au/Agriculture

Department of Science, Information Technolgy & Innovation. (2017, November 20). *Land cover change in Queensland 2015–16: Statewide Landcover and Trees Study Report*. Retrieved March 20, 2018 from Queensland Government Publications: https://publications.qld.gov.au/dataset/land cover change in queensland 2015 16/resource/60a7902d 7a9d 49a7 90b1 a54686fbcef5

Elks, S. (2017, May 22). *Queensland government admits tree survey flawed*. Retrieved March 20, 2018 from The Australian: https://www.theaustralian.com.au/national affairs/state politics/queensland government admits tree survey flawed/news story/40982ccbd8bee4e30129cbd3f272327e

Johnson, D. R. (2017, September 15). *Agriculture is now the powerhouse driving economic growth in Australia*. Retrieved March 20, 2018 from Agricultural Appointments: https://www.agri.com.au/agriculture is now the powerhouse driving economic growth in australia/

Queensland Government. (2013, July). *Erosion control in grazing lands.* Retrieved March 20, 2018 from Queensland Government Land Series 91: 1. https://publications.qld.gov.au/storage/f/2015 01 16T07%3A00%3A15.388Z/sn l91 erosion control in grazing lands.pdf

Queensland Government. (2015, October 14). *Preventing and managing erosion*. Retrieved March 20, 2018 from Queensland Government: https://www.qld.gov.au/environment/land/soil/erosion/management

WFF. (2017). *Great Barrier Reef*. Retrieved March 20, 2018 from WWF: http://www.wwf.org.au/what we do/oceans/great barrier reef#gs.zGG4zPw