

Maximising the resources for production and profitability

Property development, grazing management and superior cattle genetics create a sustainable business for the Lethbridge family.



Russell and Donna Lethbridge with their daughter Kate

'Werrington' and 'Rainmore' are grassfed beef production businesses owned and managed by the Lethbridge family. Lux and Linley Lethbridge purchased 'Werrington' in 1980. Their son Russell and his wife Donna (pictured) now manage 'Werrington'. 'Rainmore' was purchased by the Lethbridges in 2002 and is managed by Russell and Donna's son Clayton and daughter Kate (pictured).

A key management strategy at 'Rainmore' and 'Werrington' is the use of systems that strategically work with nature and promote biodiversity. The Lethbridge family have also put a large emphasis on selecting cattle genetics that are highly adapted to the North Queensland environment. Cattle that consistently reproduce and thrive in all conditions are critical to business sustainability for North Queensland.



Case Study Snapshot



Location:

'Werrington' Einasleigh, North West Queensland
'Rainmore' Alpha, Central West Queensland

Property size:

'Werrington' – 19,500 hectares
'Rainmore' – 23,900 hectares

Currently runs:

7000 LSU between both properties and on agistment

Average annual rainfall:

'Werrington' – 700mm
'Rainmore' – 525mm

Enterprises: Beef cattle breeding, backgrounding and finishing.

Achievements:

- ✓ Highly productive cattle genetics
- ✓ Cashflow positive business
- ✓ Resilient business model
- ✓ Increased carrying capacity
- ✓ Environmentally sustainable business

Drivers of success:

- ✓ Education
- ✓ Openness to learning
- ✓ Creating systems that work with nature

Ideas for future innovations:

- ✓ Transparent price reporting
- ✓ Gene markers for superior adaptability and production
- ✓ Safe, easy method of water medication

What makes this business sustainable?

The overarching philosophy at 'Werrington' and 'Rainmore' is to maximise the natural resources to create a profitable and resilient business. Several key management strategies the Lethbridge family have adopted include:

- ✓ Developing a herd with superior genetics
- ✓ Increasing sustainable carrying capacity through property development
- ✓ Ensuring their natural resources are not declining through strategic grazing management
- ✓ Spreading risk throughout the business while simultaneously opening market opportunities



'Werrington' has been owned by the Lethbridge family since 1898, and Lux and Linley purchased the property from Lux's cousin Ian in 1980. 'Werrington' is a breeding enterprise and 'Rainmore' a backgrounding and fattening enterprise. Progeny are sent from 'Werrington' to 'Rainmore' which gives the Lethbridges access to additional market opportunities. The family also have breeding cattle on agistment which further spreads risk, creates flexibility and allows them to alleviate pressure on 'Werrington' in poor seasons.

"Breeding cattle that can thrive in this environment is critical to sustainability."

The key management factor that underpins the Lethbridges business success is their achievements with genetics. Russell states "Breeding cattle that can thrive in this environment is critical to sustainability." The cattle bred on 'Werrington' are highly adapted Brahmans. The herd has been based on Alf Collins'

CBV genetics for over 16 years. The Lethbridges are observing phenomenal results in their breeding herd for North Queensland due to rigorous selection for adaptability, fertility and temperament.

Biological timing is critical to this system. Russell states "Early management is the key. Our cows begin calving in August, and we wean in February to April or earlier if the season dictates. We believe this gives cows the greatest possible chance to get back in calf. Anything that doesn't get back in calf is removed from the herd. This system also means we are able to sell 90% of our animals between December and March, which avoids the standard price decline in April." This strategy means that a maximum price is received at time of sale. In addition, removing out of season calving and inferior genetics means the family have achieved less than 0.5% breeder mortalities, despite breeding cattle in one of the most challenging environments in Queensland.

This year they observed a 94.5% conception in maiden heifers. Based on previous results Russell anticipates he will receive at least 50% rebreed rate from these heifers as they will be kept on the marginal Northern Forest country at 'Werrington'.

In previous years they have had first calf heifers on agistment. On more productive land types the Lethbridges regularly observe an impressive 70% rebreed rate from first calf heifers. If heifers are calving for the first time on 'Werrington' the family may implement a spike feeding regime with molasses and 8% urea (known as M8U) for 4 to 6 weeks. Segregating the herd and having control of different categories of females is essential for business sustainability, as it allows for a cost effective and highly efficient supplementation program.

Russell and Donna state "On the whole, our cows don't receive special treatment. They are expected to perform with little or no help. This allows us to see which animals are superior and hone in on these genetics. The end result is cattle that can not only survive, but thrive." This is highly beneficial for both animal welfare and the business' bottom line.

"The asset that business is conducted on (the land) must be improving, not declining."

Purchasing 'Rainmore' as a backgrounding and fattening block has opened up numerous market opportunities that northern breeding properties alone would not have access to. The majority of cattle from 'Rainmore' are sold into the feedlot market. Depending on market and climate situations some cattle are fattened and destined for the grassfed Japan ox market. Cattle from 'Werrington' that are no longer in the breeding herd are usually destined for live export.

Extensive water and fencing development has enabled the Lethbridges to implement grazing systems that improve land condition and pasture utilisation. At both properties cattle are managed under a rotational system where at any time approximately 25% of the properties are rested at one time. They also rotate the paddocks they spell throughout the wet season.

The watering system on 'Werrington' is almost entirely reticulated. On 'Rainmore' most of the property is watered from dams with some troughs. Since 1999 the Lethbridge family have more than doubled the number of

watering points on 'Werrington' and both properties have reduced their walk to water to less than 3 kilometres.

Installing a reliable and extensive watering system has allowed for optimal utilisation of the land.

Russell states "in the current situation it is increasingly hard to make a profit.

For us to create a



financially resilient business we had to be utilising every area of our land, otherwise you are paying interest on land you are not using. Looking back now we are extremely happy with the quantity of water development on the properties.”

The pastures on 'Rainmore' are mostly Buffel grass with some native grasses whereas 'Werrington' consists of all native pastures with some introduced stylos. The land type of 'Werrington' means it is only suitable to breed cattle as annual weight gains are between 70 to 90kg per animal. 'Rainmore' is able to produce 150-180kg per animal per year.



Maintaining biodiversity in the grazing ecosystem is a concept the Lethbridge family are strong advocates for. Both properties have nature refuges which aim to conserve biodiversity and land condition. Russell states “We can’t see any downsides to the nature refuges. They add to biodiversity and we are happy to conserve that area of the property in its natural state. We manage these nature refuges diligently.” Having effective biodiversity allows an ecosystem to become more resilient, which is highly beneficial for grazing businesses. Linley Lethbridge states “We have done some travelling recently and the biodiversity on 'Werrington' is like nowhere else we have seen.”

Another critical factor in business sustainability is succession. The Lethbridges are all in agreement that inter-generational involvement and co-operation in the business is another key factor to sustainability. With three generations of the family currently involved in management it is important that everyone in the business has roles and responsibilities, as well as a sense of belonging. Linley emphasises that this can be achieved by making the bush a place that young people want to be. “We want to create a fulfilling environment for all family members. We try to have nice houses, gardens and ensure everyone gets enough rest and recreation. This is so important when you live in the bush” states Linley.

For a business to be sustainable the Lethbridges consider that profitability is of utmost importance. Designing a profitable and resilient business was the biggest driver for the Lethbridges to adopt their current management practices. Russell believes “Profitability has to be a fundamental focus on the



business. A grazing operation must be run as a *professional business*, not just a lifestyle. This can be achieved by managing the business so it has a positive cashflow. It is also important to have systems and market strategies in place that reduce risk.”

The focus for the Lethbridge family is to ensure all aspects of the business are functioning to their optimal potential. Russell states “We need to make sure that the asset our business is conducted on (the land) is either maintaining or improving. It can’t be sustainable if the land condition is declining.” They aim for ‘Werrington’ and ‘Rainmore’ to be profitable and environmentally sustainable beef production businesses for future generations.

Motivations for change

When ‘Werrington’ was purchased from family in 1980 there were some challenging times ahead. Like most northern cattle businesses, the family struggled through the droughts in the 60s and the price slump in the 70s. This meant there had been minimal infrastructure improvements made to ‘Werrington’ when Lux and Linley took over during another severe drought. When the drought finally broke it rained consistently for a month and the couple lost nearly half of their breeding herd. Linley states “We were devastated. We worked so hard to keep the cattle going in tough years, only to lose them when it rained. It took the business nearly ten years to recover from that.”

“You can’t put a price on education. It was the catalyst for all of the changes in our business.”

The motivation to change came in 1994 which was another dry year. Russell recalled that after a particularly challenging muster in the days before Low Stress Stockhandling was common. He stated “There had to be a better way to do business.” The problem was this is what normal management looked like. Russell observed this was highly unsustainable and the family didn’t want to be ‘doing it tough’ every year. As managers, they aspired to be proactive rather than reactive. The business needed to be profitable to have a future and this gave the family strong drive to embrace change and be open to new ideas.

Going to Emerald Agricultural College in the early ‘90s opened Russell’s eyes to new knowledge. Linley and Lux agree that this caused the biggest change the business would ever see. Russell had found that there were easier, more sustainable methods of managing a grazing enterprise emerging that could be applied to North Queensland. Keen to begin implementing better management practices, Russell and Donna completed the GrazingforProfit School in 1998 after receiving some strong encouragement from peers at Hughenden. “The only thing that makes you different from yesterday to today is the people you meet and the books you read” says Russell.

Russell, Donna, Lux and Linley completed the three year RCS ExecutiveLink program between 2000 and 2003. Russell explains that completing GrazingforProfit opened their eyes to the possibilities. However it was during ExecutiveLink they were able to implement *real* changes. The combination of peer support and peer pressure challenged Russell and Donna. Most importantly it gave them solid foundations and lifelong industry networks and friendships. Russell says “Looking at what you do holistically is critical. When you have a strong network of peers that are motivated to achieve business success it is a great environment to be in. They help you see your business for what it is. If there is something you can’t see, someone else will point it out to you. This isn’t always easy to hear but it is very valuable to business development.” Russell

believes that education has been pivotal for their business. He states "You can't put a price on education. It has been the catalyst for all of the changes in our business."

"Working with nature alleviates a lot of problems."

The family could see that managing 'Werrington' alone was risky as they had limited production and market options. This

led to the decision to purchase 'Tamworth' near Hughenden in 1994. The years following ExecutiveLink were an era when the family gained a lot of momentum. Years later in 2002 the family then sold this property to purchase 'Rainmore' which gave the family access to Central Queensland markets and climate. The family agree this is the best business decision they have made. It has allowed the business to have greater resilience to fluctuating conditions - a critical factor in business sustainability.

Russell speaks of investing money in infrastructure on both properties. "There were risks but it didn't outweigh the benefits. The way the business was operating back then was riskier than adopting new practices." Lux Lethbridge states "An important consideration when running a business is to communicate effectively with all people who are important to your business. Keeping financiers up to date with our business has greatly assisted us in achieving integrity in our operation." The family consider effective communication is a way of minimising risk within a business.



Russell believes one of his biggest light bulb moments was when he fully understood nutrient partitioning in breeding cattle. A cow will distribute nutrients into maintenance and growth first and foremost. Only when maintenance and growth requirements are met will nutrients finally be partitioned into reproduction. This highlighted to Russell just how critical it was to manage sufficient nutrition to achieve effective reproduction, an understanding which has prompted the water development, rotational grazing system, rigorous selection of superior genetics, and biological timing model. The family aim to have all of their systems working with nature instead of against it. This lowers costs and results in a more resilient business. Russell states “working with nature alleviates a lot of problems.”



The hills in the background is the '*Rainmore*' nature refuge

Measured success

Measuring business, animal and grass production is an important factor in managing a profitable and sustainable grazing business. The Lethbridges complete a feed budget at the end of the growing season to measure pasture production and predict potential stocking rates. Animal performance is measured through annual weight gains and reproduction rates. In the business the Lethbridges measure kilograms produced per hectare rather than prices received or return per animal. This gives a better indication of overall annual production over time, as price fluctuates significantly year to year.

Figure 1 shows the number of cows and subsequent weaner production at 'Werrington' and 'Rainmore' over the last ten years. It can be seen that there has been a noticeable increase in the number of cattle run in this period. Similarly, the number of weaners produced per year is progressively increasing. This increase of production is having a significant influence on business profitability, as the land is producing **more kilograms of beef on the same land area**. This is largely due to improved genetics and reproduction efficiency. Russell states "We aimed to be producing more calves from less cows." Figure 1 shows that the family have been successful in achieving this goal.

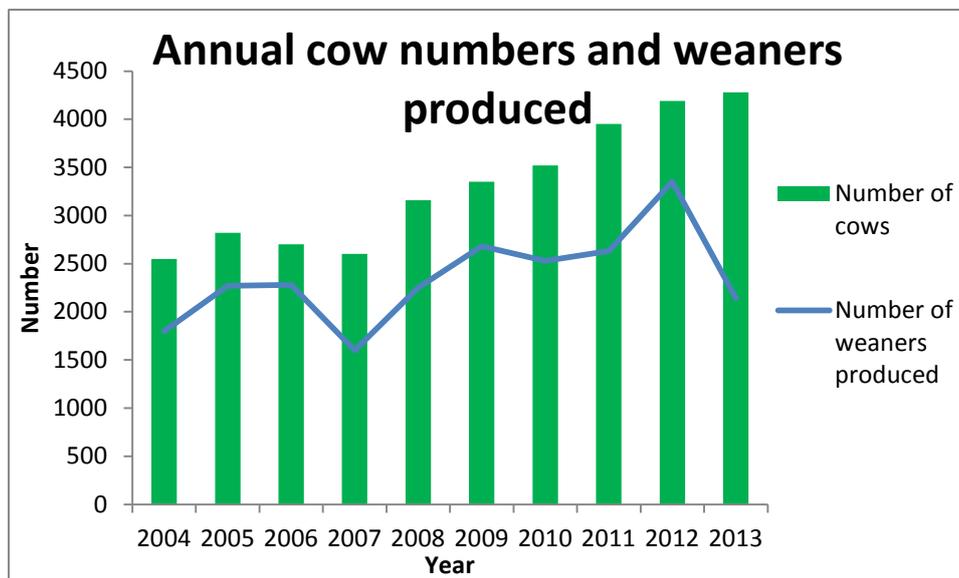


Figure 1 Cow and weaner production

The conception and rebreed rates are well above North Queensland averages. Recent findings from MLA's *Northern Australian Beef Fertility Project (CashCow)* show the following statistics for the Northern Forest land type.

- ✓ In **first calf heifers** the median **re-conception rate** (pregnant within 4 months of calving) is 11%. The Lethbridges are achieving over 50%.
- ✓ In **mature and aged cows** the median re-conception rate (pregnant within 4 months of calving) is 17%. The Lethbridges consistently achieve 70%
- ✓ Annual incidence of pregnant cows **missing/mortalities** (dead, not present at muster or missing identification tag) was 17% in comparison to less than 0.5% mortalities at 'Werrington' and 'Rainmore'.

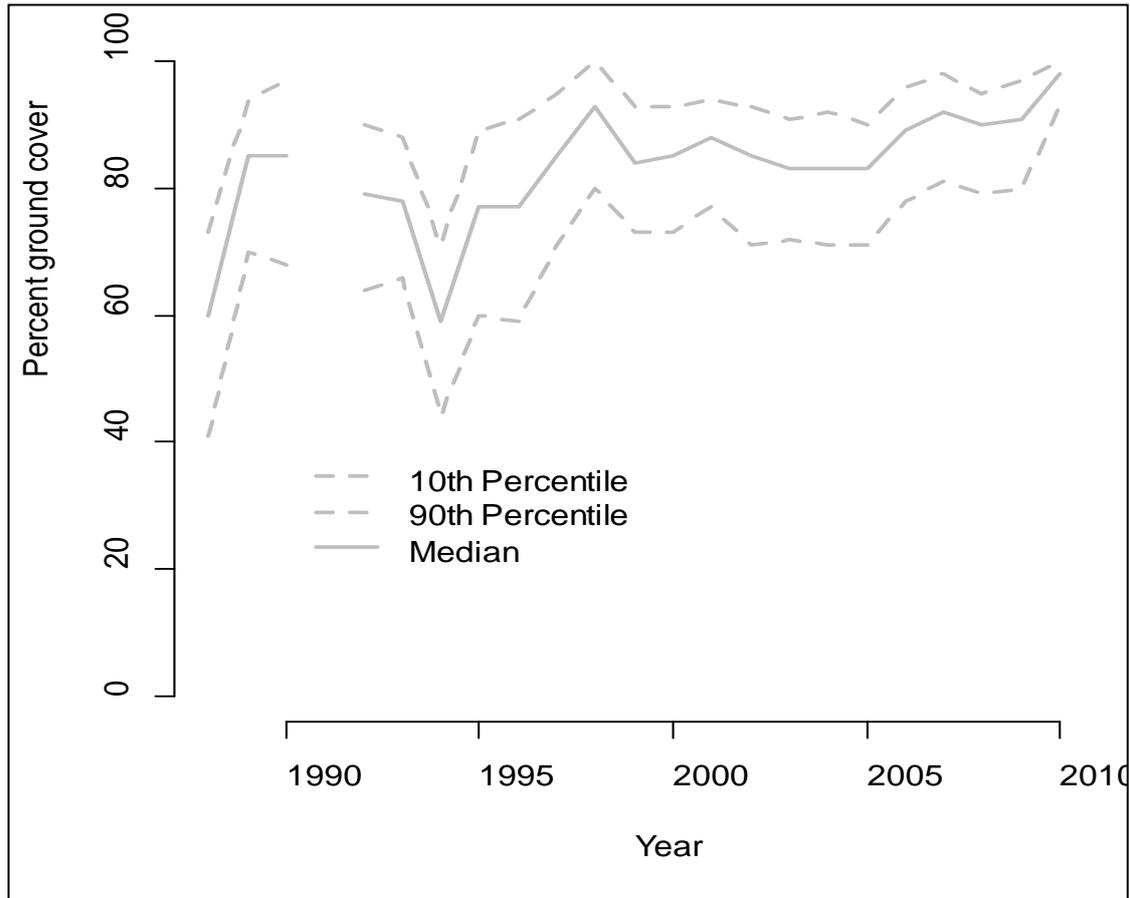


Figure 2 Groundcover trends at 'Werrington'

Source: Daniel Gregg CQ University

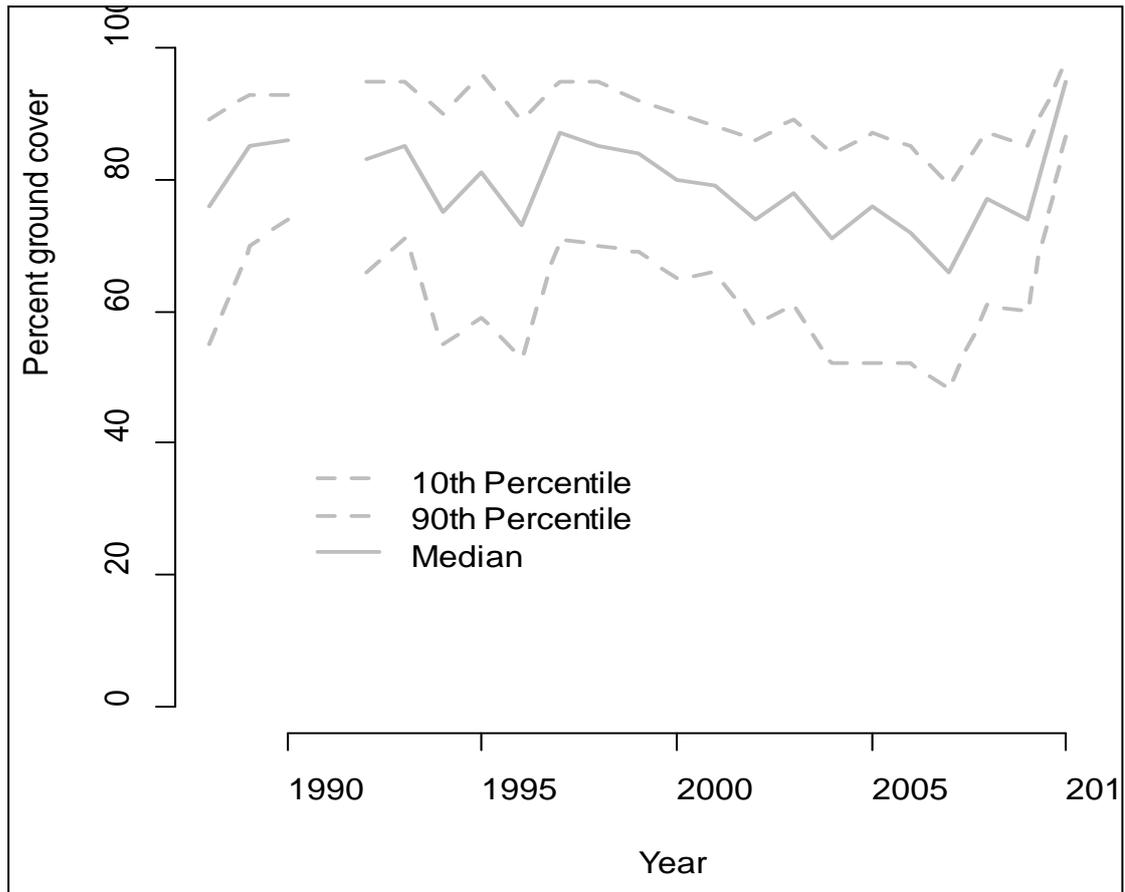


Figure 3 Groundcover trends at 'Rainmore'

Source: Daniel Gregg CQ University

Figures 2 and 3 show groundcover trends at 'Werrington' and 'Rainmore'. In Figure 2 the increase in the bottom 10th percentile line shows areas of the lowest groundcover are improving and becoming more alike to areas with high groundcover. Little difference in groundcover over the property indicates an even grazing pressure and grass utilisation, undoubtedly a result of increased water infrastructure and effectively managing stocking rate to carrying capacity. Similarly, Figure 3 shows groundcover at 'Rainmore' has increased significantly in recent years following the completion of water development.

The following photo monitoring series is from a site at 'Werrington'. The main observation from this photo series is the reduction in weeds over the fifteen year time period.



A recent study was completed by Carly Starr and Natalie Waller of Northern Gulf Resource Management Group investigating 'Are small to medium sized mammals declining in the Northern Gulf?' This trial involved extensive biodiversity surveys at 'Werrington'. An excerpt from the draft report is below:

"Of the 468 plots, 310 failed to detect any small or medium sized mammals, particularly in the Gulf Plains bioregion. The **majority of small and medium sized mammal records in the Einasleigh Uplands bioregion were restricted to Blackbraes National Park and its neighbouring property (Werrington Station)**, where 99 of 131 (76%) plots contained small to medium sized mammals. When these two sites are removed from the Einasleigh Uplands data set, 76.8% of the plots failed to record any small to medium sized mammals, and species richness fell to 0.29/plot."

The report identified 'Werrington Station' as an important refuge for Australian mammals in Northern Australia, particularly given that trends are identifying these mammals are declining in population across the top end of Australia. The study observed there was significantly biodiversity on land that had been grazed. While more results are needed to draw conclusive evidence, it is appearing that grazing is not having a detrimental effect on biodiversity at 'Werrington'. This data highlights how effective grazing management can promote high levels of natural biodiversity, and livestock and wildlife can sustainably co-exist.



Photos courtesy of Northern Gulf Resource Management Group

Innovations

Willingness to learn and embrace change is an attitude that has allowed the three generations of the Lethbridge family to make continual improvement in the business. Under the Lethbridges management there are a number of innovative practices adopted at 'Werrington' and 'Rainmore'. The most significant innovation in the business is the breeder management system resulting in industry-leading reproduction rates. The biological model differs from many other northern properties, with calving commencing in August.

The conception and rebreed results outlined in 'Measured Success' show that the cattle genetics the Lethbridge family have developed is well above industry standards and is highly suited to the North Queensland environment.

The significant quantity of water development that has occurred on both properties is innovative for North Queensland. The Lethbridges were also early adopters of rotational grazing and wet season spelling. Purchasing 'Rainmore' also shows the family are consistently looking for new opportunities toward a resilient business model. All of these innovations create a business that is continually moving forwards – financially and environmentally.



Russell with the 2014 maiden heifers at 'Werrington'

Looking ahead...

The Lethbridge family aim to keep increasing animal production and ecosystem health. Russell states "It is important to have business growth every year. If the business isn't growing you are standing still or going backwards."

Future production goals include:

- ✓ Achieving greater than 90% groundcover on both properties
- ✓ Reduce calving consistently to a 90 day window with an average 75% reproduction rate.
- ✓ Brand more calves from fewer cows to maximise efficiency of the herd.

"If the business isn't growing, you are standing still or going backwards."

To achieve these goals the Lethbridges aim to further optimise stocking rate to carrying capacity. To achieve these goals it will be necessary to reduce the size of paddocks to allow for greater grazing management. Measuring these goals could be assisted by using data from the NRM Spatial hub. This technology will provide graziers with an indication of measurements such as groundcover changes.

For the industry to have a sustainable future, it must be financially viable. One broad scale change Russell feels would be beneficial to graziers is creating a market place with mandatory transparent price reporting. This would create an upward pressure on price and provide a consistent grid for all producers. Russell states "Information is power in the marketing game."

Funding for water development from state and federal governments has also been advantageous to the Lethbridge family. Water development has been a large contributing factor in developing sustainable businesses at 'Werrington' and 'Rainmore', as it has helped them fully utilise their resources sustainably. The family feel that any assistance that helps graziers complete water development will be beneficial to the industry.

Support for education such as Farmbiz has also assisted the Lethbridge family to acquire knowledge and implement changes in their business providing a greater return for their assets. Farmbiz funding is no longer available for graziers to complete education. The Lethbridges believe this was a useful scheme that is beneficial to graziers.

Tools and technologies that would assist graziers include access to spatial imagery from the NRM Spatial Hub (as previously mentioned). Also telemetry would be an advantageous technology, particularly at 'Werrington'. Access to phone reception is something many rural businesses do not have including the Lethbridges. Increasing mobile phone reception in rural areas would be beneficial in assisting graziers to adopt technologies that provide value for time.

The Lethbridges believe that graziers have a social responsibility to manage their land sustainably. Given that ecosystem health and business profitability are strongly correlated it is highly beneficial for graziers to adopt management practices that are sustainable to the land and reduce runoff into the reef. Russell states "good grazing management leads to a sustainable business financially and ecologically. This leads to a healthy reef, so this is a win for everybody."

The Lethbridge family have a fundamental focus on maximising their resources in a sustainable manner. Genetics, property development and grazing management have been the biggest tools enabling them to succeed in sustainable management. The involvement of three enthusiastic generations in the business indicates there is a bright future at 'Werrington' and 'Rainmore'.

