

Lawries look to regenerate at 'Moora Plains'

The Lawrie family aspire to take sustainable management one step further.



'Moora Plains' is a family owned and operated beef cattle business, located west of Rockhampton Central QLD. Andrew and Meagan are 'grass farmers' who turn pasture into profit via animal production. The key focus of this business is using grazing management to improve the ecosystem.

Andrew and Meagan Lawrie have been living on 'Moora Plains' with their three children since 2000 when they entered a partnership with Andrew's parents, and brother. They took over ownership and management in 2007. Despite maintaining a conservative stocking rate, a history of continuous grazing seemed to be driving a gradual decline in landscape health.

Andrew and Meagan have completed a great deal of property and personal development to address this decline. Now 'Moora Plains' is a productive, healthy, and innovative operation.



Case Study Snapshot



Location: Gogango, 65km West of Rockhampton, Central QLD

Property size: 3,500 hectares

Currently runs: 1200-1400 LSU (Large Stock Units)

Average annual rainfall: 615mm

Enterprise: Beef cattle trading.

'Moora Plains' is a family owned and operated beef cattle business in central Queensland that regenerates the land and has health, happy cattle and people.

Achievements:

- ✓ Increased ecosystem health and resilience
- ✓ Property development
- ✓ Giving back to community and industry
- ✓ Great result from family succession

Drivers of success:

- ✓ Regenerating, not sustaining
- ✓ Desire to improve land for future generation
- ✓ Education

Ideas for future innovations:

- ✓ More solar technology
- ✓ Satellite mapping for feed budgeting
- ✓ Online grazing charts
- ✓ Walk over weighing and automatic drafting

What makes this business sustainable?

When Andrew and Meagan started managing 'Moora Plains' the couple had a number of challenges ahead of them. Firstly, the family had to work through succession to produce a positive result for all involved. Next they needed to extract more income from a landscape that appeared "tired". Most importantly they aspired to convert the traditionally managed property which was in a state of ecological decline into a thriving, healthy operation for cattle and people.

Looking back now, Andrew and Meagan can see they have achieved all this and more. The Lawries are now contributing to their community by hosting field days, participating in various projects and advocating regenerative management.

So what makes this business sustainable?

- ✓ Created a productive, resilient, healthy ecosystem.
- ✓ The business is more profitable.
- ✓ Animals and people are happy.
- ✓ Family succession has produced a positive outcome for all involved.



Ecosystem health is paramount for the Lawrie family

Andrew and Meagan run a cattle trading operation based on the KLR Marketing Principles. They aim to buy cattle that are under-priced and sell cattle that are over-priced. The predominant animal units the Lawries trade are steers and heifers. They purchase cattle with minimal Brahman content for ease of marketing. This selection of livestock enterprise is the most financially viable operation at the moment for 'Moora Plains'. The flexibility of running dry (non-lactating) animals allows the Lawries to rapidly de-stock when below average rainfall is received. This enables the couple to match stocking rate to carrying capacity in all seasonal conditions. Livestock are handled as per 'Low Stress Stock Handling' principles. Cattle that are educated and can comfortably handle pressure are critical in this business model.

'Moora Plains' has been developed into a time controlled (or cell) grazing system based on the RCS

Regenerative Grazing Principles. This involves the strategic use of animal impact and paddock spelling to regenerate the pasture. Animal impact for a short period of time stimulates plant growth. Paddock rest then allows plants to recover and replenish root reserves. Cattle can spend

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as little as half a day or up to four days in one paddock. The time cattle are in each paddock is dependent on the length of paddock rest period which is in turn dependant on the rate of growth of the plant. This process results in significant improvements in plant and soil health. The Lawries also utilise 400 acres of dryland leucaena on 'Moora Plains'. This block is predominantly used for fattening steers or heifers that do not fit into feedlot specifications and are destined for the meatworks.

An underlying principle for adopting this system is the Lawries' drive to improve the health of the land. Andrew states, "We didn't want to just create a sustainable ecosystem, we wanted to go one step further and regenerate it." A key achievement for the Lawrie family has been converting areas of erosion or poor land condition into productive areas with effective ground cover. This is outlined in the photo monitoring sequences below.

The Lawries have noticed a number of improvements in their ecosystem since adopting the time controlled grazing system. The main ecological change has been the **increased response to rainfall**. The more uniform pasture utilisation from the time controlled grazing system has increased ground cover. Now when rainfall events occur, the pasture captures and stores the maximum amount of moisture increasing pasture quality and quantity as well as boosting their carrying capacity. Simultaneously this system has increased plant and animal biodiversity on the property, improving the resilience of the ecosystem. Seeing the results from these changes has been incredibly rewarding for Andrew and Meagan.



The banks of the Fitzroy River at Island Paddock 'Moora Plains'

The Lawries also acknowledge the importance of monitoring changes in the business and environment. This information is then used to make strategic decisions, giving the Lawries a great deal of control over their business direction. Another change they have noticed in their current business model is they are more resilient to market fluctuations and changing weather conditions. This stability comes from a number of things, including:

- ✓ the ecosystem improvements
- ✓ the livestock enterprise selection on 'Moora Plains'
- ✓ control over business decisions through rigorous and strategic data collection

Andrew also works outside the business, taking advantage of their proximity to Rockhampton. This extra income goes back into the business, assisting with available cash flow. This is one example of how the Lawries fully utilise their resources and opportunities surrounding them.

It has taken time, but the Andrew and Meagan know they are finally running a profitable and sustainable business. Overall, Andrew and Meagan feel proud knowing that the people, business, land and livestock are improving all the time. They feel it is a 'wholesome,' resilient business providing a bright future for the next generation at 'Moora Plains'.

Motivations for Change

The underlying incentive for Andrew and Meagan Lawrie to adopt sustainable management is their drive to improve the land for future generations. The Lawries also knew the key to achieving business profitability is improving ecosystem health. They were so driven to achieve this that they took on significant debt for property development to improve their country. They are now seeing the benefits from this investment.

'Moora Plains' is located on the banks of the Fitzroy River, so the Lawries know firsthand the importance of using effective grazing management to create optimum ground cover. This is what ultimately ensures there is minimal runoff into the Great Barrier Reef via the Fitzroy River. Andrew and Meagan feel inspired knowing what they have achieved is having a positive impact on their local ecosystem and the reef.

Looking back, Andrew and Meagan feel they have come a long way. When they first started managing 'Moora Plains', the land was tired and depleted. The continuous grazing system wasn't allowing the land to recover, despite running conservative stocking rates. There were some areas of bare ground, underutilised rank feed, erosion and patch grazing. Overall they felt the business lacked direction and the land condition was declining.

One of the Lawries core values is "if you look after the land, everything else will sort itself out." They wanted to see a different outcome and would do whatever it takes to achieve this. The biggest single turning point

"If you look after the land, everything else will sort itself out."

for the couple came from completing the RCS GrazingforProfit School. It raised their awareness to the information that was out there and they knew they wanted to be a part of it. The course opened their eyes to what was possible on 'Moora Plains' with ecosystem regeneration.

The couple went on to finish the three year RCS ExecutiveLink program in 2003-2006. This was an era when the Lawries gained huge momentum in their business. They found the support from other producers and mentors assisted them to maintain strategic direction. The pair strongly believes education was the catalyst to their business success to date.

Succession was an important process for the Lawrie family. Education, adequate communication and forward planning resulted in opportunities for all parties. Succession is currently a big challenge for the rural industry and the Lawrie family are one example of a positive outcome.

Like most other graziers, an obstacle the Lawries face every year is extreme weather events. In the last decade the family have experienced floods, droughts and frosts. The Lawries believe that Grazing Charts are a tool that gives them resilience to changing

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climatic conditions. "We can't control extreme weather events, but we can control our reaction to them." Grazing Charts allow the Lawries to effectively match stocking rate to carrying capacity in all seasons. This is what underpins the management system at 'Moora Plains'.

In the last decade the Lawries have completed a huge amount of development at 'Moora Plains'. The aim of this capital investment was to use grazing management to regenerate the ecosystem and improve business profitability. The quantity of development is outlined in Figure 1 and 2 on the next page.



A good team of helpers assisting in property development



Installing troughs to protect natural water sources



Laying poly pipe for the reticulated water system

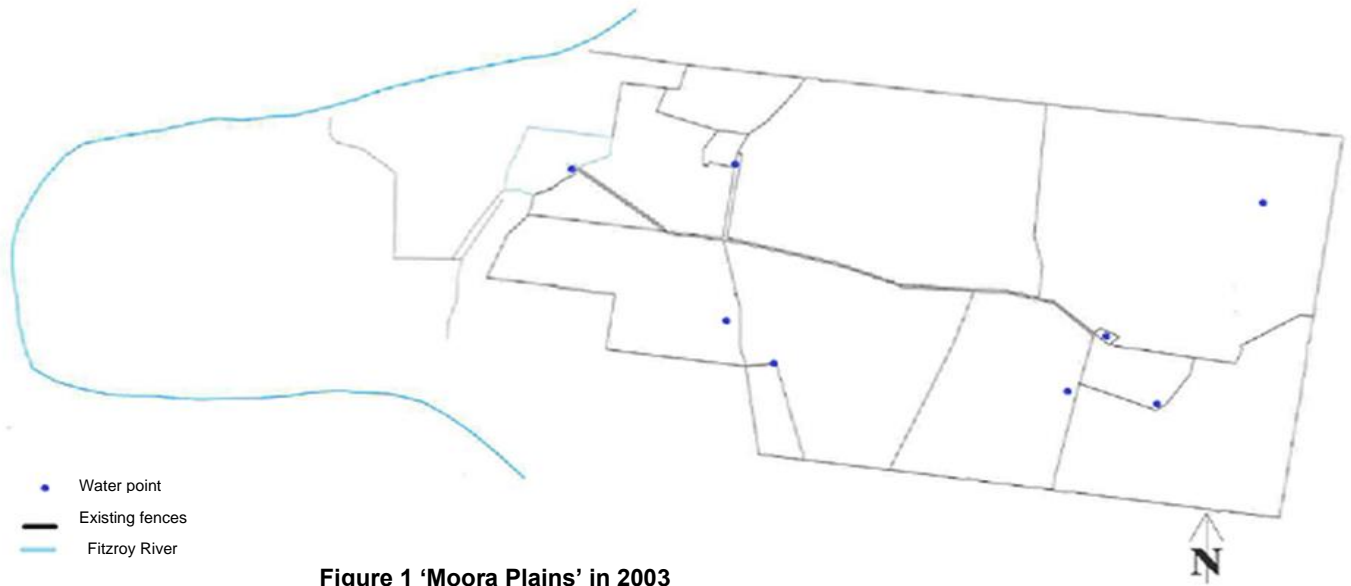


Figure 1 'Moora Plains' in 2003

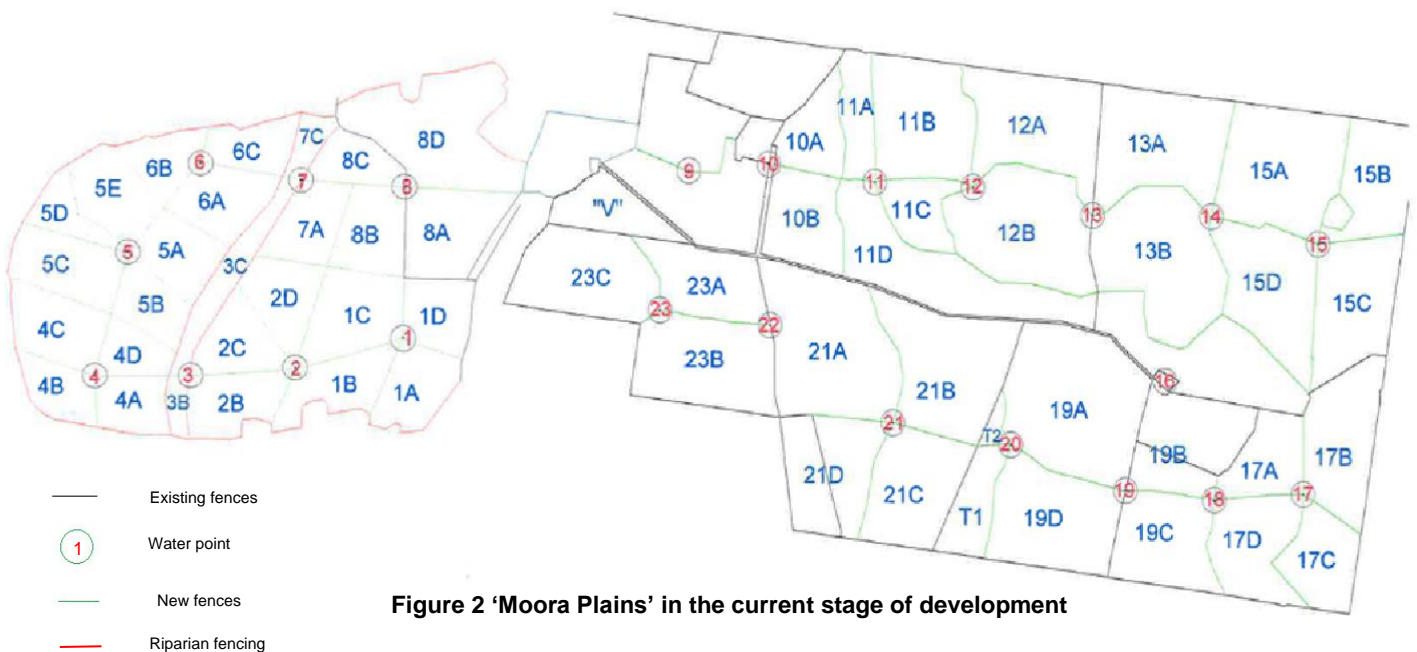


Figure 2 'Moora Plains' in the current stage of development

The difference between Figure 1 and 2 shows there have been fundamental improvements that are beneficial for the local ecosystem and the reef.

The Fitzroy River has been fenced off to regulate cattle using it as a water source, preventing erosion as they walk down the bank to drink. Paddock 3C (on left hand side of the map) marks where the Lawries have fenced off an ecosystem corridor around a natural waterway. The aim is to protecting the waterway and biodiversity by managing when cattle are in that paddock.

The increased number of paddocks means that the cattle are located in a smaller area of the property for a shorter period of time, allowing the remaining paddocks to rest, regrow and replenish root reserves after grazing.

The additional water points spread grazing pressure evenly over the property, preventing overgrazing and allowing maximum utilisation of all areas of the property. This level of development only occurred because the Lawrie family are committed to improving their land. They feel that improving land condition and reducing runoff benefits everybody, and ultimately the reef.

“Reducing runoff benefits everybody, and ultimately the reef.”

Measured Success at 'Moora Plains'

One of the factors that allows Andrew and Meagan to be successful business owners is their ability to record meaningful data and use this information as a decision making tool.

The main monitoring tools used in this business include:

- ✓ Grazing Charts
- ✓ Fixed point photo monitoring
- ✓ Feed budgeting using SDH (Stock Days per Hectare) and information from the Grazing Chart
- ✓ ProfitProbe business analysis tool
- ✓ Land condition scoring (A-D)
- ✓ KLR Business Analyser Spreadsheet

The unit of measurement the Lawries use to do feed budgeting is **Stock Days per Hectare/100mm rainfall** (SDH/100mm). The advantage of this system is graziers can adjust their business decisions to correlate with the amount of rainfall received.

The photo monitoring series below captures changes in ground cover at a single point from 2004 to now. This highlights the ecosystem improvements that have occurred over 10 years at 'Moora Plains'. Over the last seven years the Lawries have increased carrying capacity from **800 LSU** to **1400 LSU** (1 LSU is a 400kg steer at maintenance). The photo monitoring series below highlights they achieved this by improving pasture quality and quantity through grazing management.



Figure 3 Photo monitoring at 'Middle Mill' site from 2004 to 2014

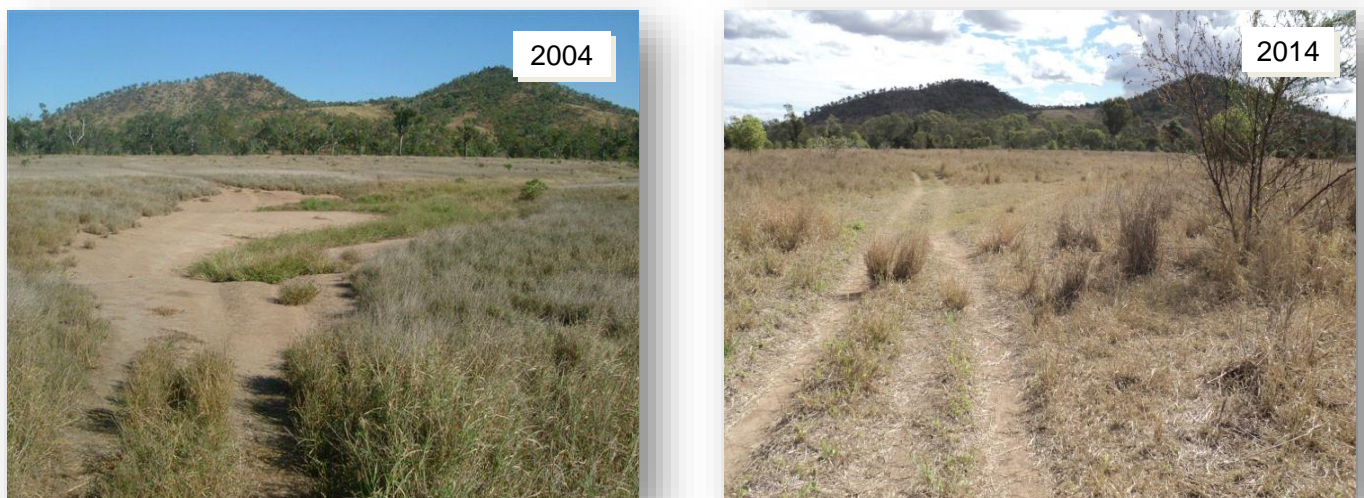


Figure 4 Bare ground rehabilitation from 2004 to 2014



Figure 5 Land rehabilitation at 'Moora Plains' - achieved with animal impact, rest and rain

Figure 6 shows that ground cover is increasing at 'Moora Plains'. The increase in the lower dashed line indicated that areas of poor land condition are increasing noticeably in ground cover. This supports the evidence from the photo monitoring series. Overall Figure 6 shows that the Lawries management system is having a positive influence on their land and reducing runoff into the reef.

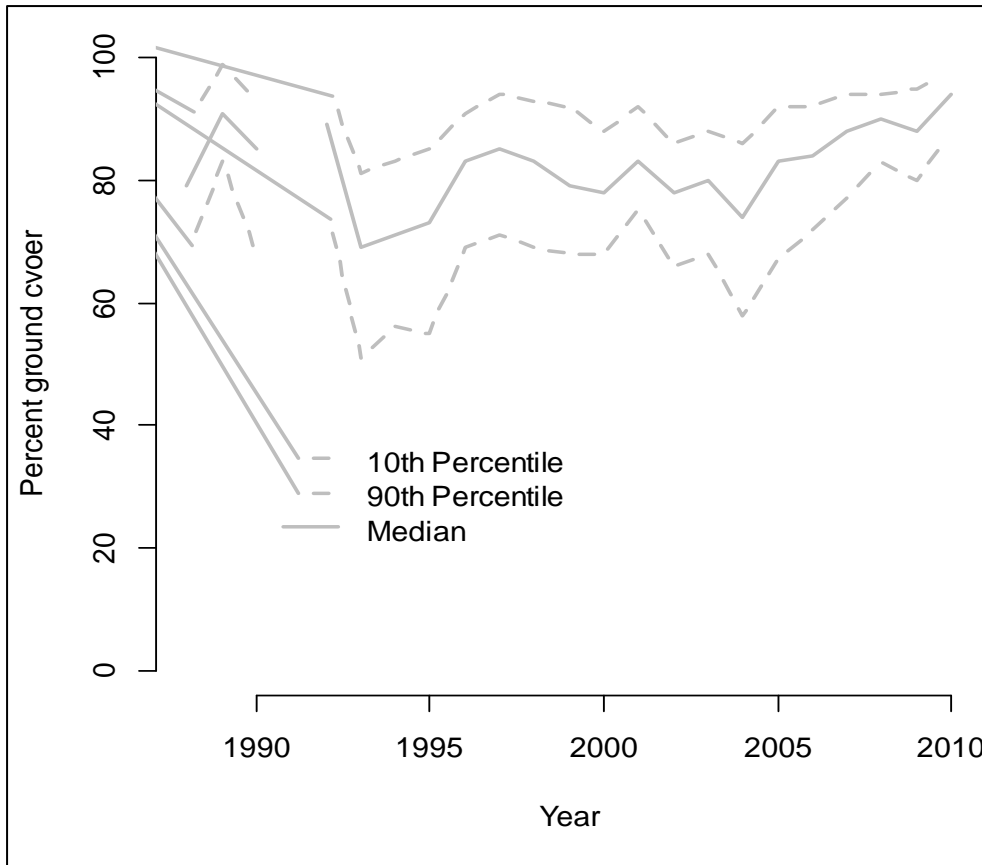


Figure 6 Ground cover trends at 'Moora Plains'

Source: Daniel Gregg, CQ University

Figure 7 below shows the production trends at 'Moora Plains' since 2007. This graph demonstrates how improved ground cover is allowing the Lawries to sustainably increase their carrying capacity. This means more kilograms of beef are produced on the same area, resulting in an increase in overall production levels. A major concern in the beef industry at the moment is profitability. This data highlights the clear link between healthy ecosystems and improved business productivity.

Improved groundcover and pasture health has led to an increase in water use efficiency and beef production as seen in figure 7. With profitability a major concern within the beef industry at present, the link between grazing management to healthy ecosystems to productivity must be considered in all businesses.

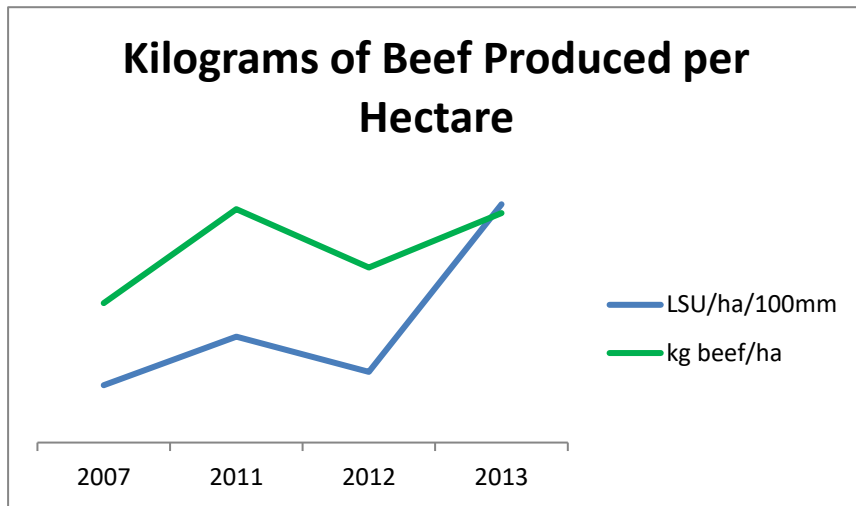


Figure 7 Kilograms of beef produced at 'Moora Plains'

Innovations

Andrew and Meagan Lawrie have shown they are early adopters of new technologies. The biggest innovation adopted by Andrew and Meagan is time controlled grazing with electric fencing. Also, the Lawries have shifted their reliance off bores and dams and developed a fully reticulated water system. This has improved the quality of drinking water while conserving fragile natural water points. It also helps with managing pest animals, as water is turned off when cattle are not in the paddock. They have also trialled adding biodynamic brews in stock water. While the results are difficult to measure, Andrew believes he has noticed an improvement in animal health.



Camels are used instead of chemicals to control weeds at 'Moora Plains'

The Lawries have also introduced camels to their grazing ecosystem. The couple wanted an environmentally friendly method to manage weeds without using chemicals that are detrimental to soil health. Camels also add to grazing biodiversity. Low stress stock handling and telemetry were other innovations adopted by the Lawrie family. The high level of ecosystem monitoring from Grazing Charts, photo monitoring and land condition scoring demonstrate the Lawries are strategic land and business managers.

What does the future hold?

When it comes to land management, the Lawries believe there is no end point in how much the ecosystem can improve. In the future Andrew and Meagan aim to run 2000 LSU on the same land area. They aim to improve production while

increasing profitability. Their business goals are to reduce debt, increase diversity of income and boost the annual cash flow into the business. The Lawries believe the main way this can be achieved is through further paddock subdivision. This will create higher stock density resulting in greater land and animal production. Increasing water storage capacity in some areas of the property would make this goal achievable. These production targets would be measured through Grazing Charts, Profit Probe business benchmarking, and photo monitoring. The Lawries are also open to any other new technologies that could allow them to manage their business better.

“There is no end point in how much it can improve.”

Innovations that would make a big difference at 'Moora Plains' include

- ✓ Online grazing charts. Ideally this program could allow graziers to click and drag a mob of cattle around on a paddock map to automatically calculate feed removed.
- ✓ Satellite technology for feed budgeting and ecosystem health monitoring
- ✓ Brix measurements to calculate optimal energy in grass level
- ✓ Walk-over-weighing and automatic drafting
- ✓ Improved solar pumping technology
- ✓ More economical telemetry and inputs

The Lawries believe more funding to allow producers to upskill easily would be highly beneficial for the industry. Farmbiz funding was very helpful in assisting the couple to complete education. This proved to be the catalyst for regenerating their ecosystem. The Lawries also feel that financial support for property

development would be beneficial. The Lawries feel that a useful practice for the industry is introducing incentives to maintain a certain level of ground cover. The aim behind this would be for management that prevents reef runoff to be rewarded, providing graziers with motivation to improve their land.

Another technology that would be advantageous is affordable access to more solar power. Specifically the Lawries would prefer to use solar power rather than a diesel generator for pumping water out of the river. Once established, solar power is a cost-effective, sustainable tool the Lawries aspire to include in their business.

In the future Andrew and Meagan hope to see the beef industry working together to create profit and healthy ecosystems. More cohesion within producers and other members of the supply chain



would greatly assist graziers in receiving better prices for sustainable, healthy beef.

For other producers wanting to make positive changes in their business Andrew and Meagan recommend getting education on all aspects of agricultural business, including communication and people management. "Get educated and take action. Taking action and implementing what you learnt is critical, as education with no action won't give you the changes you need." The Lawrie family have come a long way and should be proud of their achievements at 'Moora Plains'. The improvements they have made to their environment will benefit the industry, the local environment and the wider ecosystem – the Great Barrier Reef.