

# Striving for symbiotic systems at 'Mt Pleasant'

The Gordon family focus on using simple systems that are mutually beneficial for all involved at 'Mt Pleasant'.



The Gordon family are North Queensland grass farmers and beef cattle producers at 'Mt Pleasant' located between Collinsville and Bowen. They focus on turning sunlight and rainfall into pastures that grow healthy animals. The management system works towards creating mutually beneficial relationships between people, animals and the plants.

The current generation of the Gordon family consists of Jamie and his wife Garlone and their children Georgia and Louis, as well as Jamie's sister Joan and her partner Bill. The families have been managing 'Mt Pleasant' for over twenty years. In this time they have introduced a number of innovations in their business such as time controlled grazing and breeding Nguni cattle.

The family are motivated to create a simple grazing system with good quality pastures where animals are highly adapted and can thrive in the conditions at 'Mt Pleasant'. The Gordons have observed some significant changes in their ecosystem in recent years and considering the property has been in the family since 1917, they are excited to see what the future holds at 'Mt Pleasant'.



Empowering People

## Case Study Snapshot



**Location:** Between Collinsville and Bowen, 270km South West of Townsville, North Queensland.

**Property size:** 13,800 hectares

**Currently runs:** 2100 LSU

**Average annual rainfall:** 700mm

**Enterprises:** Beef cattle breeding, growing/trading and agistment.

'Mt Pleasant' is a beef cattle property near Bowen, North Queensland that focuses on managing the environment for long term ecological improvements, as well as producing quality and healthy beef.

### **Achievements:**

- ✓ Improved ecosystem health
- ✓ Improved soil microbial activity
- ✓ Improved animal performance
- ✓ Increase in plant and animal biodiversity

### **Drivers of success:**

- ✓ Willingness to experiment
- ✓ Holistic, simple focus
- ✓ Attitude
- ✓ Ability to embrace change

### **Ideas for future innovations:**

- ✓ Simple, uncomplicated systems
- ✓ Highly adapted and resilient cattle with high eating quality
- ✓ Carbon sequestration

## What makes this business sustainable?

The goal at 'Mt Pleasant' is to build a symbiotic environment for people, cattle, pasture, soil and wildlife. This is fundamentally achieved by managing the grazing patterns of cattle to ensure animal impact has a positive influence on the environment rather than a detrimental one. The Gordon family have had a holistic management focus since taking over management 20 years ago from the previous generation.

What makes this business sustainable?

- ✓ Adoption of regenerative grazing management
- ✓ Observed changes from Indian couch (*Bothriochloa pertusa*) monocultures to include biodiversity of desirable perennials
- ✓ Improvements in animal performance
- ✓ Simple, robust business model
- ✓ Cattle suited to North Queensland conditions



Joan Gordon and partner Bill Jardine.

The livestock at 'Mt Pleasant' are managed under a time controlled grazing system. Cattle are moved regularly between paddocks in one mob to promote even pasture utilisation and stimulate plant growth. "As soon as we started resting some country, the Indian Couch monoculture began to shift" observes Jamie.

***"As soon as we started resting some country, the Indian couch monoculture began to shift."***

In this grazing system the length of time cattle graze one paddock is dependent on the rest period of the plants. This is determined by the growth rate of the plants. Multiple, light grazes throughout the year followed by long rest periods result in pasture regeneration. Underpinning all of

this is matching stocking rate to carrying capacity. This system focuses on using animal impact to repairing the damage originally caused by unrestricted grazing. Garlone states "we are repairing the damage caused by livestock WITH livestock."

'Mt Pleasant' has a Nguni cattle breeding herd enterprise. The first Nguni cattle were purchased and introduced to 'Mt Pleasant' in 2009, with the aim of trialling adapted genetics that will thrive in the conditions at 'Mt Pleasant'. The Nguni breeds are small to medium frame animals and are highly adapted to harsh African conditions, diseases and parasites. These traits mean that Nguni cattle should continue to perform well and possess good eating quality in below average rainfall years compared to other *Bos Taurus* breeds.



Louis, Garlone, Jamie and Georgia Gordon (left to right).

The Gordon family also run an agistment and growing/trading enterprise. The target markets are flexible and price-dependent, particularly for growing/trading animals. With the Nguni breed, they are aiming to create a market once their success is proven. The Gordons have selected their cattle enterprises fundamentally due to the suitability to the region and benchmarking shows it is most profitable for their scenario. Multiple, flexible enterprises also spreads risk throughout the business.



Nguni cattle are a highly adapted *Bos Taurus* breed the Gordon family are trialling at 'Mt Pleasant.'

Currently 'Mt Pleasant' is conservatively stocked at 2100 Large Stock Units (LSU). The land could maintain in excess of 2500 as there is an abundance of available feed. Jamie and Garlone are building up their numbers and giving the landscape a chance to replenish nutrients for increased density in the future. They also maintain this quantity of feed available to put them in the position to take advantage of any trading opportunities that may be present in poor seasons.

The current stock watering system is fully reticulated with 8 large storage tanks with an average capacity of 500,000L. The Gordons have placed high importance on developing a reliable water system with adequate flow rate and abundant storage capacity. The storage tanks also have staggered outlets so if there is a problem the tank only loses half of the water. Developing this water system has been an achievement for the business and has allowed the couple to fully utilise their land at 'Mt Pleasant'.

**“We’re repairing the damage caused by livestock WITH livestock.”**

The pasture species on 'Mt Pleasant' are mostly native, with some introduced grasses and legumes. There is significant pasture biodiversity with over 30 different grass species. Cattle also graze on forbes, shrubs and edible trees. Since implementing the time controlled grazing system, the couple have made some important observations, these are:

- ✓ Desirable native perennial grasses are replacing Indian Couch (*Bothriochloa pertusa*)
- ✓ An increase in ground cover from approximately 60% to 90%
- ✓ Increase in carrying capacity as there is significantly more feed left behind
- ✓ Greater response to rainfall
- ✓ Greater plant and animal biodiversity
- ✓ Landscape is rounding and losing sharp edges
- ✓ Significant increase in diversity of trees and reoccurrence of species such as beefwood (*Grevillea striata*).

The most important management practice underpinning these ecosystem shifts is plat rest.

Like many other grazing businesses in this day and age, animals on 'Mt Pleasant' are treated respectfully and honourably in a natural environment. Animals are a vital part of this business and Jamie and Garlone take pride in ensuring animals have a contented life. Cattle are educated to respond effectively to pressure without feeling stressed. In time controlled grazing systems cattle also associate mustering with access to fresh pasture. This results in cattle movements being a rewarding exercise for people and livestock.

The Gordons believe that a sustainable business is one that is operating in such a way to be rewarding financially, economically and spiritually for the people involved, while improving and regenerating the landscape positively. The end result is healthy land, healthy animals and healthy people. The family feel that any profit derived from reducing health of the land is not profit at all. Their business is profitable because their management is building strength and resilience into the natural resource.

## Motivations for change

Managing 'Mt Pleasant' hasn't always been as rewarding as it is now. Like most rural businesses, the Gordons have overcome numerous challenges over the years. When they first started managing the property, the land was showing symptoms of ecological decline, due to continuous grazing (which was the fundamental grazing method in industry at the time). This resulted in overgrazed feed within close proximity to water points and underutilised rank grass further out from water points.

With the industry experiencing rising fixed costs, the business and people were under pressure to make a financial return but the health of the ecosystem wasn't able to support it. The drive to change came from dissatisfaction with the view of the future. They knew the business couldn't afford to be detrimental to the environment and they were determined to find a way to make a future they were happy to be in.

***"It should be possible to operate a grazing business with no impact on the reef beyond natural processes."***

The first step to creating symbiotic management system was to obtain education and convert their new knowledge into skills. The biggest point of change came when they learnt about time controlled grazing - a grazing management method where livestock can have a positive impact on the environment. This knowledge and skills came from attending GrazingforProfit in 2000. Jamie and Garlone then completed three years in the ExecutiveLink program, graduating in 2004. The family have also participated in the Department of Primary Industries (now Department of Agriculture, Fisheries and Forestry) program called Research to Reality and learned the CSIRO Landscape Function Analysis (LFA) monitoring technique. Knowledge from these educational opportunities has allowed them build a sustainable business and communicate effectively across many levels.

There have been a number of success points which have encouraged Jamie and Garlone to further pursue regenerative management. Looking back, they state "we had no idea the pastures could improve as much as they have." An improvement in annual animal performance has also been a highlight at 'Mt Pleasant'. These improvements allow the business' bottom line to improve, resulting in a long-term sustainable business.

The Gordons state their main driver to work in agriculture is "We have the opportunity to make a living from producing healthy food while improving the health of the environment and giving animals a contented life.

**“Producing healthy food while improving the health of the environment and giving animals a contented life. How good is that?!”**

How good is that?!” The family are implementing symbiotic systems and management practices that are beneficial to their natural resources rather than being detrimental.

Overall the family felt there were few risks associated with adopting the current management strategies, as they completed

changes in gradual steps. Their first step to implement time controlled grazing was to purchase an energiser and a small amount of wire and trial time controlled grazing on existing water points. They noticed ecological change in these pastures, which prompted them to continue the property development. Similarly, purchasing the Nguni cattle has occurred gradually and the herd is now progressively increasing in numbers, allowing Jamie and Garlone to monitor the cattle’s adaptability over time. These gradual changes are an effective method to trial innovative practices in the business while mitigating risk.

The key to this management system at ‘Mt Pleasant’ is *simplicity*. The simple underpinning concept of the business is shifting cattle to promote grass growth. They see that promoting grass growth is beneficial to reduce runoff into the Great Barrier Reef and Jamie states “There are no downsides to better grazing management that results in more topsoil remaining on your property. It should be possible to operate a grazing business with no impact on the reef beyond natural processes. Build and keep the topsoil - for your own sake.”

When it comes to change, an attitude the couple have adopted is “this is the industry we choose to do business in, and there is a great degree of variability in this industry. This should not be an ongoing challenge, but the business should be built to see this as normal, and be viable in all conditions.” This attitude embraces variability and will assist the family to thrive in changing future markets and climates. For the Gordons their key drivers to personal and business success is this resilient and flexible attitude. The family feel that “people’s attitudes make the business. Having imagination and the courage to try new methods and experiment is important in our current industry.”

## Measured success at 'Mt Pleasant'

The management priorities at 'Mt Pleasant' are matching stocking rate to carrying capacity, giving plants rest and balancing plant and animal needs. Building soil health, biodiversity and preventing weeds and erosion is their next level of focus. Jamie, Garlone, Joan and Bill agree it is important to measuring these changes by spending sufficient time in the paddock, visually assessing the landscape.

Tools used to measure production in the business include:

- ✓ Grazing charts
- ✓ Animal performance records
- ✓ Land Function Analysis transect recording
- ✓ Fixed point photo monitoring
- ✓ Soil testing
- ✓ Visual assessment
- ✓ Soil hardness test (also known as pocket knife test)

Jamie has been testing soil surface hardness with a pocket knife for the last few years. He does this by digging the top five centimetres of the ground with the blade to determine the soils friability. Jamie has noticed that areas that used to require a pocket knife to penetrate the surface can be easily loosened with his fingers. They feel this qualitative test is their biggest measure of success to date. Soil health has the biggest influence on all factors of their business and observing this change over the years is a significant step forward at 'Mt Pleasant'.

The family have also observed an increase in native wildlife at 'Mt Pleasant'. This includes species such as kangaroo rats, blue tongue lizards and red back wrens. This diversity is due to the larger quantity of standing feed available, which creates a safe habitat for wildlife.

E experience on the property, extensive pasture knowledge and acute observations also allow the Gordons to visually observe improvements in the land. Some observations under the time controlled grazing system are:

- ✓ Kangaroo grass (*Themeda Triandra*) is increasing rapidly from individual seedlings to colonies, small, juveniles to large established tussocks.
- ✓ Black spear grass (*Heptorogon contortus*) and Giant spear grass (*Heteropogon triticeus*) is increasing. Jamie has also heard other graziers share this observation so perhaps it is a seasonal trend.
- ✓ Queensland blue-grass (*Dicanthium sericeum*) and Curly blue grass (*Dicanthium fecundum*) are both increasing rapidly from isolated individual seedlings to colonies with good age spread from juveniles through to mature, large tussocks.
- ✓ Golden beard grass (*Chrysopogon fallax*) is changing from very small tussocks to larger tussocks, and has increased in number as well.
- ✓ Desert blue-grass (*Bothriocloa ewartiana*) and Forest Mitchell grass (*Bothriochloa bladhii*) are slowly increasing and Jamie can now find juvenile seedlings. Desert blue-grass has been the slowest to change. Only in recent times Jamie can confidently see the numbers have increased, observing juveniles present in or around the remnant colonies.

Figure 1 shows the relationship between carrying capacity and increase in groundcover at 'Mt Pleasant'. As groundcover increases, so does sustainable carrying capacity.

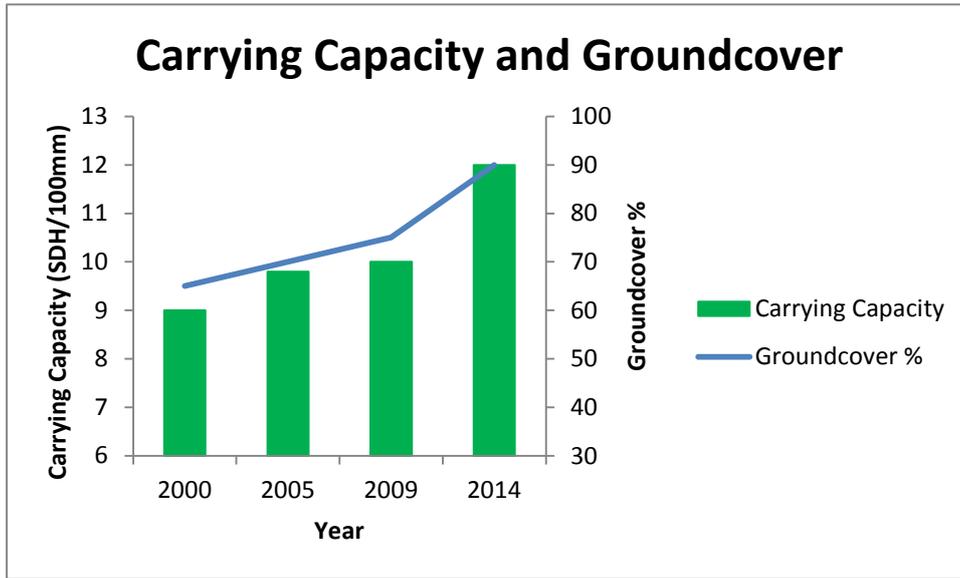


Figure 1 Relationship between groundcover and carrying capacity

Figure 2 shows a clear increase in average annual animal performance at 'Mt Pleasant'. Annual weight gain emphasises the benefits of improving pasture quality through grazing management. Information from Figure 1 shows animal performance has improved at the same time as an increase in groundcover. These two graphs highlight the strong link between increased ecosystem health and business profitability.

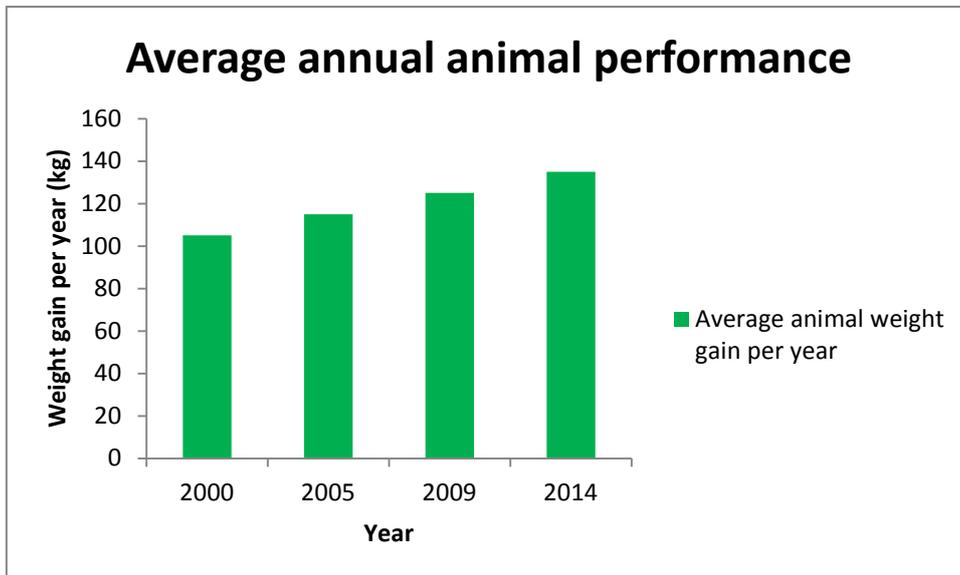


Figure 2 Annual animal performance at 'Mt Pleasant'

The series of four photos below were taken at 'Ditch cattle camp' which was one of the worst sites on 'Mt Pleasant' in 2003. The ironbark tree in the forefront of the photos in 2014 was not there in 2003 which makes the photo monitoring site look significantly different. The original logs on the ground and a tree growing on a distinctive angle can still be identified in both photo sets.



The photos above were taken at 'Ditch cattle camp' at 'Mt Pleasant'



The two photos above are from Ditch cattle camp in late September 2014

In 2003 and 2004 there was virtually no biodiversity at the site due to the lack of habitat. The land was unproductive for grazing and was a source of sediment runoff due to large amounts of bare ground. The photos from 2014 show that this site is now a productive, healthy grazing area with significant biodiversity and ecosystem activity. This is accentuated by the presence of a rufus bettong and dung beetle activity when the photo monitoring was performed. Garlone states “back in 2003 there is no way you would see a rufus bettong at that site. There was no habitat for them. Similarly, there was no dung beetle activity at the site in 2003. We haven’t done anything difficult or radical. This highlights what is possible with simple regenerative grazing management systems.”



A rufus bettong



Desirable perennial grass tussocks



Dung beetle activity

**A rufus bettong and dung beetle activity also photographed at Ditch cattle camp in September 2014.**

Figures 3 and 4 outline the property development that has occurred at 'Mt Pleasant' since 2000. Spreading of water and subdividing paddocks has enabled animal impact followed by paddock rest, which has increased biodiversity and carrying capacity.

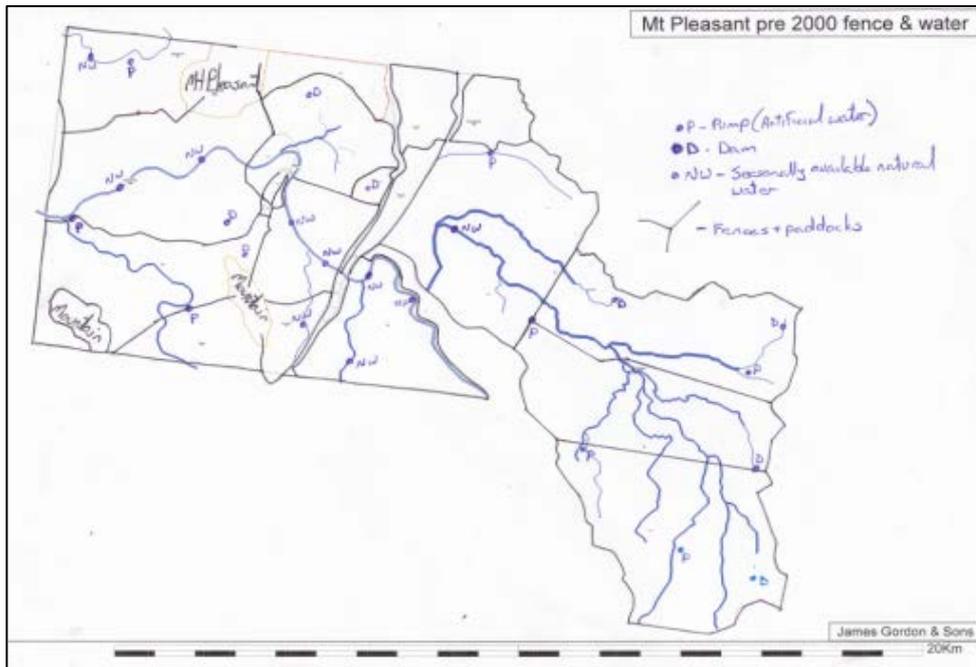


Figure 3 'Mt Pleasant' prior to property development

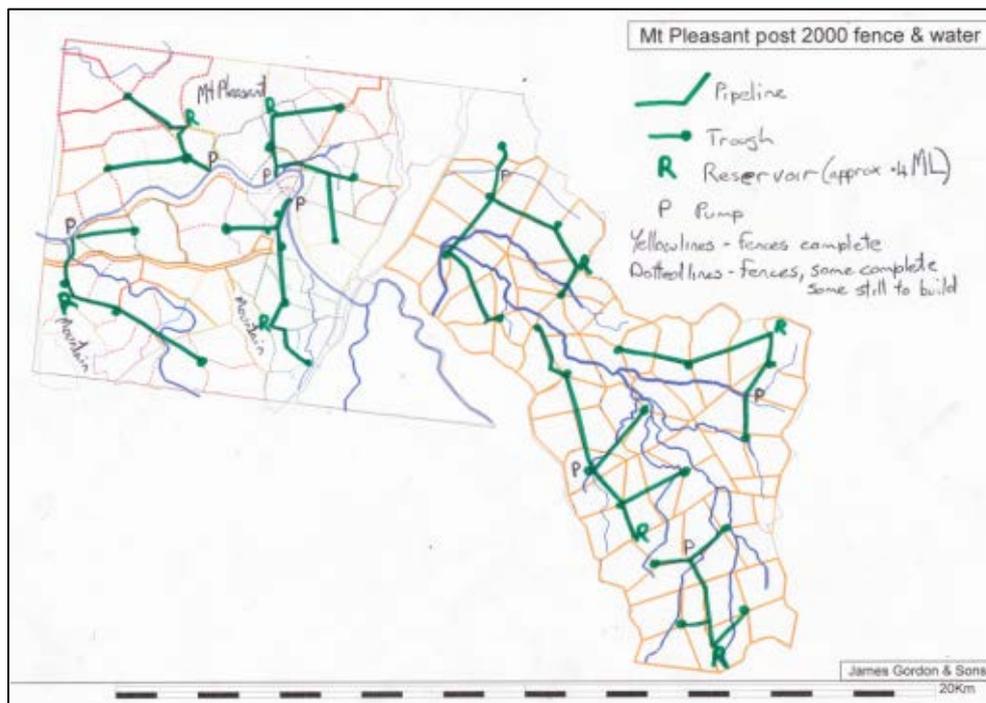


Figure 4 'Mt Pleasant' with completed property development

## Innovations

The Gordon family are keen innovators and look forward to trialling new practices. Numerous innovations implemented at 'Mt Pleasant' in recent years include:

- ✓ Time controlled grazing
- ✓ Single wire electric fencing
- ✓ Fully reticulated water system with high flow rate and large water storage
- ✓ Extensive knowledge on ecosystem and grass identification
- ✓ Breeding Nguni cattle
- ✓ Pocket-knife soil test
- ✓ Building relationships with environmentally focused organisations

Jamie and Garlone are looking to create a simpler, rather than more complex business. Garlone states "Master your grazing management first. Then look for technology."

Their whole business revolves around moving forwards with minimal input.



***"Master your grazing management first. Then look for technology."***

The Gordons have an alternative approach to animal health at 'Mt Pleasant'. Currently, none of the livestock receive any dipping, drenching or chemical treatment. The parasite management scheme in place is that cattle are moving into clean paddocks that have been rested for long enough periods that break the parasite life cycle. Jamie and Garlone haven't had any significant troubles with parasite burdens and

this method significantly reduces animal husbandry costs. It prevents detrimental chemicals affecting the soil microbial health, which promotes natural cycles such as dung beetle activity. At 'Mt Pleasant' there isn't a big emphasis on vaccinating livestock, instead the family focus on creating animals that are robust, suited to the system with good natural nutrition and immunity. Good nutrition is the key management tool used for animal health.

## What does the future hold?

Jamie and Garlone can see in the future at 'Mt Pleasant' will have an abundance of opportunities. By continually making positive changes in landscape function, the couple can see further gains in animal production. The possibility that Nguni cattle could be a successful enterprise at 'Mt Pleasant' is exciting and the couple also see potential opportunities to diversify in livestock enterprises in the future.

Looking ahead, production goals at 'Mt Pleasant' include a 10 year average animal performance improvement, while seeing continued improvement in land condition and function. This would be measured by:

- ✓ A continued individual improvement in animal performance
- ✓ Increased kilograms per hectare of beef produced per year
- ✓ Visual improvements in photo monitoring sites
- ✓ Improved pasture condition



To achieve these goals it would take diligent holistic management with a focus on improving soil and plant health.

The family feel that one way for the industry to be supported is with funding for training and education that can deliver on ground improvements in the landscape. An example is a reward system such as rates and rent rebate for positive custodianship of the land.

The couple have learnt that the answers in their business do not lie in extreme technology improvements. Instead, they see technology as more of an add-on or accessory, rather than a key management tool. Jamie and Garlone's experience to date tells them their key focus should be on grazing management. Garlone believes the biggest change the industry can make to improve the ecosystem is the first principle of regenerative grazing – *giving plants adequate rest*.

At 'Mt Pleasant', carbon sequestration is seen as an innovation that would be beneficial without over complicating grazing systems. The problem with over complicating grazing systems is people can lose focus on the fundamentals. If graziers received financial benefits from replenishing and storing carbon in the soil, this could strongly encourage regenerative grazing management while providing graziers with another opportunity to improve business profitability.

The Gordon family are happy to share their experience and management practices that have worked for them and state that they aspire to be a "real farmers". They believe real farmers care deeply for the land,

and have a positive influence on ecosystem cycles. They massage and nurture the processes which work with little human input, and are part of the cycle but do not dominate it.

Changing the focus of cattle businesses would be a big step forward for the industry. Garlone states “Putting a higher emphasis on maximising long term pasture and environmental health rather than animal production is what we have done in our business. This still results in improved long term animal production, but achieves this in a way that is sustainable for the environment.” In turn this will result in optimum cattle production, a resilient and robust landscape, and healthy people, community and Great Barrier Reef.

