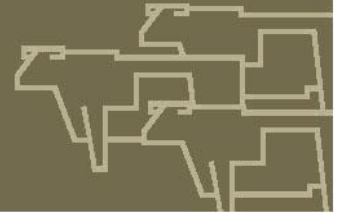


Driving sustainability through use of legumes, spelling and documented herd management

“Glenlinden” Injune



Overview

George and Kate Weldon have owned *Glenlinden*, a 2616 hectare property 25 km north of Injune in Southern Queensland, since the mid-2000s. The property primarily consists of light, sandy loam soils and has large stands of cypress pine. It has an average annual rainfall of 637 mm and regularly receives severe frosts in the winter months. Since acquiring the property, a major focus of the Weldons has been to develop the country and introduce improved pastures and legumes, with the aim of increasing carry capacity and liveweight gains to lift overall productivity. Implementation of routine wet season spelling and appropriate stocking rates has aided the success of establishing a highly productive pasture base. Through having access to additional agistment country, the Weldons have typically run 350 crossbred breeders and sold mainly weaners. They are transitioning to only have cattle at *Glenlinden* (no agistment). Breeder numbers will be reduced to 150 and the progeny will be grown to feedlot entry weight. The Weldons have embraced using NLIS technology as a management tool and routinely use grazing charts to document stock movements.



*The
Weldon
family in
early
2013*

Given the size of *Glenlinden* and its production capacity, George spends the majority of his time working off-farm as a fencing and yard building contractor. Kate shares her time between day-to-day management of *Glenlinden* and caring for their two sons.

Land resource and development

Glenlinden is a diverse property in terms of its land types, with approximately 60% cypress pine on deep sands, 25% softwood vine scrub on loam and 15% poplar box on duplex soils. A major constraint of the property in terms of productivity potential is 1130 ha of cypress pine forest that cannot be cleared due to legislative obligations. The Weldons however are accepting of this fact and manage the area accordingly, controlling what regrowth is permissible and implementing management practices, namely spelling and appropriate stocking rates, to promote healthy pastures.

The only pasture development undertaken on *Glenlinden* prior to the Weldons taking over was the establishment of buffel grass in the vine scrub country. On acquiring the property, George was proactive in seeking advice to determine which areas could be developed. In 2004, land development commenced by using dozers and a chain to re-pull country that was cleared decades earlier. In late 2005 a cutter-bar was used on the duplex soils to break up the soil surface while seeding with buffel grass, Rhodes grass, silk sorghum, and burgundy bean. From mid-2006 to late 2012, some of the deep sand country was stick-raked and later cutter-barred, with the other land types being either re-pulled or cutter-barred.



*Kate inspects the pasture base where
the cutter bar was used*

The pasture mix used was dependent on the land type and included grasses and legumes. In addition to those previously mentioned, George selected premier digitaria, Gatton panic, creeping bluegrass, caatinga stylo and fine stem stylo.

Other measures implemented for regrowth control have included Velpar® and Tebulan granules. Using Tebulan granules has meant effective control while cattle remain in the paddock, and George is keen to continue using this method of regrowth control.

George believes the time, money and effort spent on developing the land at *Glenlinden* has certainly been worth it, positively influencing the carrying capacity of the paddocks, promoting healthier soils and improving animal performance.

Grazing management and spelling

The Weldons place a high priority on looking after the health of their soils, pastures and cattle. They continually monitor their feed base and adjust stock numbers based on the forage available and seasonal conditions. By doing this, their pasture condition is improving and they are noticing that after every rainfall event, even if it's minimal, the pasture is showing an immediate response. Kate believes they must be getting something right for this to be happening.

Glenlinden is currently divided up into seven main paddocks, ranging in size from 200 ha to 480 ha. On average, the Weldons run 350 adult equivalents (AE) and they are rotated between these paddocks over the course of the year but not as a single mob and not based on a set timeframe. The cattle tend to be moved on the change of a useful rainfall event so that the paddock they've just been in has every opportunity to respond quickly. George has used grazing charts for the last five years to monitor these stock movements.

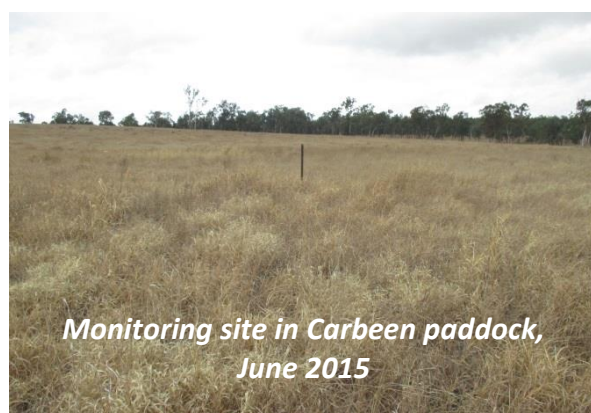
To encourage evenness of grazing and better animal performance, water infrastructure (dams and troughs) has been strategically positioned so that the upper limit cattle have to walk to water is 1 km.

George and Kate tend to run fewer cattle than what is often possible as it allows them to produce a more saleable product in a shorter time period. With ample feed available, if required, they can

hold onto cattle longer and not be forced to sell, and also opportunistically purchase stock.

The Weldons are the first to admit that they are 'big spellers'. By routinely wet season spelling, they are enhancing pasture recovery and seed regeneration, along with achieving higher productivity. Over the summer, each paddock gets at least 4–6 weeks rest, although over the course of the year each paddock is generally spelled for 12 weeks. In those paddocks where woodland thickening is of concern, wet season spelling is routinely implemented in order to establish an ample quantity of feed for a successful burn.

In order to verify that their grazing practices are having a positive influence on the condition of the land at *Glenlinden*, the Weldons in 2011 established three pasture monitoring sites in two of their paddocks, Carbeen and Pine. These sites have been independently assessed on an annual basis at the end of the growing season, with two sites classified in 'A' or good land condition in each instance. The third site in Carbeen paddock was initially deemed on the lower end of 'B' or fair land condition, but through careful management, it is now verging on 'A' classification. To further understand the influences on pasture and soil condition, along with the productivity potential in these two paddocks, the Weldons since 2011 have been recording stock movements in and out, attained cattle liveweight gains throughout the year and collected faecal samples to assess diet quality. Although these measurements have taken extra time to collect, the Weldons believe they have gained a much better understanding of how their grazing land management practices influence productivity and profitability.



*Monitoring site in Carbeen paddock,
June 2015*

Legumes

Increasing the amount of legumes in the pasture is seen as important to increase liveweight gain and production efficiency. For ten years George has been endeavouring to establish legumes into the pasture at *Glenlinden* with mixed success. The first legume he included in a pasture mix on duplex soils was burgundy bean in 2005. Overtime he discovered that burgundy bean wasn't straight forward to manage due to it generally wanting to seed in March, meaning that the paddock had to be rested during that period. Today, burgundy bean is difficult to find in that original paddock.

In 2008 George commenced experimenting with caatinga stylo on the duplex soils and as time has gone on he has discovered that it tends to get frosted but has generally persisted. The third legume trialled has been fine stem stylo on the deep sands and this has been the biggest success to date. Fine stem stylo seems to tolerate cold conditions, which is extremely important as it can get to -12 degrees Celsius at *Glenlinden*, and it has persisted on the least fertile soils on the property. The ability of fine stem stylo to self-seed has enabled it to spread really well.

Despite having success establishing caatinga and fine stem stylo, George feels as though the amount of legume in the pasture system is still insufficient to lift the carrying capacity of the country. However it is adding nutritive value to the pasture base and the cattle are benefiting through slightly more weight gain. George admits that he's still learning lots when it comes to legumes, but he's excited that he has found two legumes that will grow on *Glenlinden* and hopefully overtime they will boost the carrying capacity and lift the performance of his cattle significantly.



Stylo amongst renovated country

Supplementation

The use of supplementation programs are quite typical across the Queensland beef industry as they help to provide animals with the necessary dietary requirements to maintain and gain weight and improve reproductive performance.

In order to increase animal performance across the year, *Glenlinden* feed the cattle a urea based dry lick (mainly 20% urea) during the dry season. In very dry seasons they also make use of whole cottonseed. By collecting faecal samples over a number of years, it has been demonstrated that during the dry season, pasture quality declines to a point where animals can benefit from urea based supplementation. The Weldons have monitored the weight gains of cattle in two main paddocks since June 2011 and they've discovered that on average, yearling heifers from June to September are achieving 0.1–0.3 kg/hd/day with access to dry lick. Without supplementation it is likely that these heifers would have lost weight. Keeping an animal on an even plane of nutrition can assist later in life with meat quality grading. The Weldons also feed dry lick to breeding females to maintain body condition score to enhance reproductive performance.

Genetics

Genetics play an important role in driving animal performance within a beef business and the Weldons are fully aware of this, making selection decisions to maximise reproductive performance and market suitability of their livestock. When the Weldons moved to *Glenlinden* ten years ago, their breeding females consisted of Belmont Red, Boran and Tuli and the bulls Santa Gertrudis, Black Angus and Shorthorn. Overtime they have continued to use Angus bulls, along with transitioning to use Droughtmaster for maternal purposes and Charbrays as terminal sires. The majority of the breeders are now Droughtmaster X Angus, of which 80% are polled.

The Weldons ensure that all bulls prior to purchase have passed a Bull Breeding Soundness Evaluation (BBSE), and then great emphasis is placed on having impeccable temperament and being polled. Estimated Breeding Values (EBVs) for 200 and 400 day growth are considered. Heifers are selected based on their mother's performance, polledness, temperament and then body frame.

Herd management

The Weldons herd management is targeted at having efficient females that produce a calf every year. As a general overview, bulls are joined to the cows at a rate of 2% from late October till mid-March, resulting in calves being born from August to mid-December. Branding is normally undertaken over Christmas/New Year, with weaning and annual pregnancy testing being done in May.

To minimise risk, a BBSE with morphology is undertaken every second year on all bulls on *Glenlinden* before joining. Pregnancy testing is a fundamental management strategy used by the Weldons for identifying non-performing females that can then be removed from the breeding herd and managed accordingly for sale, thus reducing the feed demand, improving herd efficiency and reducing greenhouse gas emissions. Breeder numbers are generally kept static by having replacement heifers coming through. Heifers are joined as yearlings (14–15 months) to calve as two year olds.

In order to monitor the performance of their herd and property, the Weldons have used a Tru-Test XR3000 indicator for five years and have found it to be a very useful tool for their business. To kick-start the data capture, each animal on the property received both a management tag and NLIS tag and these were linked on the indicator, meaning that if either tag was to fall out, the animal could still be identified and retain its traceability. The Weldons use the indicator to monitor liveweight gain through the year, record health treatments, and the draft function for sex and/or weight is used to make drafting more efficient. The indicator also records the life history of a cow and pregnancy test results. By examining weights regularly, the individual performance of animals on a varied feed base is determined, identifying those animals that have met market specifications and those that are non-performing and need to be culled. The productivity of paddocks can also be examined through use of this technology and forward planning is made possible by knowing predicted weights based on expected weight gain.

Kate is passionate about handling stock both in the yards and paddock using a low stress approach and she believes it beneficial to their bottom line.

The future

George and Kate plan to stabilise their breeder numbers at *Glenlinden* to 150 head and grow the progeny out to feedlot entry weight. This reduction in breeder numbers will improve business and land sustainability through lessening the risks to their business in dry times by not being forced to sell. European Union (EU) accreditation is also being investigated with the aim of attracting a price premium for their cattle. To further boost profitability, fine-tuning the crossbreeding program is being considered to maximise hybrid vigour. The Weldons plan to continue to integrate legumes into their pasture systems, in particular fine stem stylo, as it has prospered on their lighter soils and tolerates the cool conditions. The Weldons will remain accepting of change, especially if techniques are demonstrated to be better and the business can benefit from a financial and sustainability perspective.

Further information

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This project was supported by funding from the Australian government.

Emery, T., Broad, K. and Sneath, R. (2016) *Driving sustainability through use of legumes, spelling and documented herd management*. Climate Clever Beef case study, Department of Agriculture and Fisheries, Queensland.

Available at: www.futurebeef.com.au/knowledge-centre/environmental-management/climate-clever-beef