Noosa & District Landcare | University of the Sunshine Coast | noosa biosphere

Country Noosa
PROMOTING A SUSTAINABLE RURAL FUTURE
Rural Enterprise Project

CONCEPT PAPER

Sustainable grazing

In the Noosa Hinterland and surrounding areas

Author: Dick Barnes

Introduction: why grazing and why beef?

Lifestyle and mixed farming

There has been a decline in large grazing properties in Noosa Shire with many sub-divisions into smaller lots, typically 20 to 60 hectares. A significant proportion of this land has been cleared in the past for grazing. Although there are reforestation opportunities, they are unlikely to cover a large part of the cleared land for economic reasons.

Many of these smaller properties are now owned by new 'lifestyle' farmers who have decided to live in the Hinterland for the quality of life. Typically, they are looking to generate income from the property but supplement the costs with other income. This is necessary as land costs are high due to the popularity, natural environment, and convenience of the Noosa Shire. These contribute to the lifestyle quality we cherish.

There are many high value activities which can generate good income. This can be an area of special interest to the owners and their families. However, in general they will occupy a limited amount of the land typically available in the higher quality areas. It therefore makes sense to mix together high value item production and grazing to maximize income, utilisation, and maintenance of the land. For example, a 40 hectare property might dedicate eight hectares to high value production and 32 hectares to grazing.

Grazing counts as primary production according to the Australian Taxation Office as long as specific criteria are met. This brings many financial advantages for the grazier.

Our climate

The sub-tropical climate brings many opportunities and issues for farming in the Hinterland.

Overall, we have a high annual rainfall of around 1600 millimetres per annum. Monthly rainfall is high in spring and summer and low in autumn and winter. The low rainfall, lower temperatures, and reduced daylight hours mean paddock growth is very low in autumn and winter. This means that, in turn, we must generate enough feed in the paddocks in spring and summer to see us through the low growth months.

Of course, the pattern in any specific year can be very variable around these averages. A degree of resilience must be built into our plans to allow for this. Dams to store water, paddock

irrigation equipment, varying the stocking level, and storing grass bales can be used as necessary but are likely to be costly.

There is another downside to our climate. At the time when we are trying to fatten young cattle, there is a high water content in the grass. This fills the stomachs and slows growth. In that sense our country is good for breeding and not so good for fattening and finishing stock.

Why beef?

Our wet climate and the presence of ticks and other parasites poses serious problems for stock such as sheep, and goats. Keeping more than 20 pigs results in heavy regulation, so most mixed farms are likely to have a small number for their own consumption and limited sales. Chickens can be run in a ‘pastured’ fashion combined with cattle for many benefits. However planning regulations and rural residents can limit poultry and make it uneconomic for the labour involved.

Horse agistment can be a profitable exercise. In general, owners like their horses in individual paddocks and there is often a high infrastructure cost. Also, the predominant improved pasture in the Hinterland is Setaria. This has problems for horses in that it gives them ‘big head’. Alpacas have many of the characteristics of beef from a pasture point of view. There are farms in the area producing wool. However, the real business opportunity is in the growing interest in alpaca meat. It is early days for this opportunity.

All of these factors contribute to beef cattle being a very appropriate stock to keep in a sustainable and low impact fashion. There are few planning issues and rural residents, in general, are happy to have cows nearby.

What works for raising beef in the hinterland?

Rotational grazing

Economics suggests that meeting the consumer desire for grass fed beef is a perfect strategy for the Noosa Hinterland. We can also make clear the provenance of any product which is also in high demand.

An essential part of achieving such production effectively and sustainably in the Noosa Shire is a rotational grazing scheme. In this scheme, paddocks are sized to be grazed for about a week. Seven or eight paddocks are ideal and allows some additional resting of poor paddocks to go on. The mob is rotated around all operational paddocks so that, in fact, paddocks are resting a lot of the time.

When a paddock is working, the cattle eat the grass evenly, intensely and effectively. This is in contrast to range grazing where cattle are free to just eat the best grass at will.

The actual rotation of the cattle is managed by observing the feed available and the rotation can be sped up or slowed down as necessary.

This has many advantages:

- The effectiveness of the feeding leads to excellent carrying capacity – up to one breeding unit (cow plus calf) per hectare.
- The delay in returning to a paddock reduces the effectiveness of parasites and reduces the need for pesticides
- The even eating of the grass removes the weeds from the paddock, requiring little use of herbicides
- The manure helps fertilise the grass and the encouragement of worms and dung beetles helps disburse it.
- There is no need for harrowing or slashing, thus reducing the need for machinery and the use of diesel plus reduced compaction.
- There is growing evidence that well managed, improved pasture is an effective carbon sequestration tool.
- The cattle get used to the rotational approach and will move themselves once the gates are opened, which contributes to the best practice of sensitive handling.

This requires:

- Significant fencing infrastructure. While we recommend wire fencing for property boundaries, modern developments in electric fencing can significantly reduce the cost and effort of the internal fencing of the paddocks.
- Off-stream watering in the paddocks. The use of tanks, pipes, troughs, and pumps to provide a water reticulation network. Grants do seem available to help fence off creeks and gullies, and provide the water supply equipment. Typically, the materials are funded and the farmer provides the labour.
- Labour for cattle movement and regular paddock monitoring.

There are many additional conservation benefits of implementing a rotational grazing system around the property. Riparian zones, fewer creek crossings, improved water quality both on and off the farm, nature corridors, re-vegetation, carbon sequestration, and improved habitat are the immediate benefits and opportunities.

All in all, rotational grazing provides a sustainable and profitable way to operate beef cattle in the Noosa Hinterland.

Breed choice

Breed choice is a highly emotional issue amongst farmers and is a matter of personal conviction.

Firstly, there is a big difference between raising stud cattle and commercial beef. A stud requires strict adherence to breed conformation and pure-bred cows and bulls. Raising commercial beef allows the use of hybrids and crossed breeds with associated quality and economic benefits.

Running a stud is a dedicated activity. Attending shows and breed sales events takes a lot of time and effort to publicise the stud and its progeny. In every breed, there are large dedicated studs that attract the cream of the buyers by having their own sales events.

Many of us have learned the hard way that a small stud is hard work and not likely to generate consistent high income. We would not recommend it other than as a real hobby operation.

In our climate, it is important to have tick resistance in the cattle we use. Typically this comes from having a Brahman (Bos indicus) content in the breed. This is usually crossed with a European (Bos taurus) breed for better meat quality and quantity. There are many such crosses which have reached a stable situation and can be regarded as a 'breed' for all intents and purposes.

Droughtmaster is a popular Queensland breed, which crossed Brahman with English short horn. It is very popular in the Hinterland. Other popular crosses are Brangus (Brahman with Angus), Charbray (Brahman with Charolais), and Braford (Brahman with Hereford). With careful pest management, cross bred cows can be serviced with a pure breed bull. Black Brangus cows with Black Angus bulls is a common and effective combination. A Caribbean breed, Senepol, has been found to have good tick resistance and better meat quality than Brahman and is being pursued locally.

In the commercial situation, 'in-breeding' should be avoided so that bulls do not mate with their progeny. Typically, one bull can service 40 cows. It is important to have bulls semen tested each year as it can be an expensive mistake to find out too late that the bull is infertile.

There is no single answer to what breed to use. In starting out, it may well be best to use a well-known breed in the first place rather than a pioneer. When buying cattle, consider that our harsh climate and pests mean our coastal cattle are a tough lot, so we do not recommend you purchase from too far west and bring them to the area.

Pasture grasses, legumes, and weeds

Our paddocks have, in general, been stocked with improved pasture grasses from the time of land clearing and subsidised fertiliser. Where possible it is desirable to have diversity in the grasses and many grass mixes are available. There are some very comprehensive books available on grass recognition and good processes for determining the species and forage quantities available in a paddock. From time to time, Country Noosa runs field days and workshops on these topics, which are well worth attending.

It is important to plant legumes among the pasture grass as these are not only good fodder but are nitrogen fixing and good for soil fertility. Wynn Cassia is a common legume used locally which is very cost effective. Commercial grass mixes will normally contain suitable legumes.

Many local farms were planted with Setaria seed improved pasture which came from Southern Africa. This is highly palatable, perennial and productive – the key '3 Ps' of pasture grasses. However, Setaria is very dominant and will take over other grasses. It will also dominate many legumes, but works well with Wynn Cassia.

If you have some paddocks with other pasture grasses then it is very valuable to build on this diversity. Make sure, where possible, that Setaria cannot spread into it from nearby paddocks. If

you have heavy Setaria in paddocks, there will be so much seed in the soil that it is probably best to live with it and encourage Wynn Cassia to live amongst it.

Setaria has many specific characteristics and needs to be managed with these in mind. Country Noosa has produced a short handbook on this which can be found once again at www.countrynoosa.com/resources/.

There are not many weeds that a good rotational grazing system will not keep under control. However, Giant Rats Tail is a real problem that can spread very quickly, but it's easy to recognise and there are techniques for dealing with it. Completely getting rid of it is an ongoing task that takes many years. Neglected farms can often have an infestation of Giant Rats Tail and the real effort required to contain and eliminate this needs to be recognised.

The product

There are a number of product options for commercial beef farms. In particular, breeding can be avoided by buying young steers and fattening them for market. If breeding, many farmers sell weaners at around nine months old for others to fatten. Alternatively, we could breed and finish over two years.

Making a simple assumption that costs are equal in each option then, at typical market prices, the income from each approach would be $700 per year for breeding and selling a weaner, $500 per year for breeding and finishing over two years, and $300 per year for buying a weaner and fattening for a year. On this basis, breeding a weaner each year is a more attractive proposition.

It is recommended to cull around 15 percent of your breeding cows each year to maintain fertility, to keep the average age down, and manage temperament. This is not such a burden as cows put on weight during their lifetime. As such, purchasing a young cow at $1100 would be more or less balanced later by selling a heavier animal at a lower cents per kilogram.

It is tempting to replace culled cows by hanging on to some of the weaner heifers. As it will take two seasons or so to bring the heifers to fertility, this may be a poor economic decision. Purchasing cows ready to breed may be a simple and more cost-effective approach which also avoids the issues of in-breeding.

Further opportunities

The above has described the basic choices in commercial beef production. There are a number of other production opportunities worth considering.

Adding value by detailed planning

As described above, given the climate, topography, and soil types in the hinterland, each paddock can have different qualities and attributes. By carefully recording how each paddock performs and when it is used, we can gain a good understanding of the real production value. It is a common approach to spend money and energy trying to improve poor paddocks when, in fact, making good paddocks even better has a higher return.

Just as each paddock can be different, so can the performance of individual cows, bulls, and calves. Again, by recording detailed results, individual animal performance can be assessed. This can then lead to a highly effective process of giving the best paddocks to the best animals to improve the top end performance rather than settling for the average. It is important to consider where value can be added most profitably.

Yearling beef

With funding from Noosa Council, Country Noosa is researching the feasibility of a yearling beef process. In this, weaners would be held for longer on the mothers until they can be processed as young grass-fed beef. It appears this is a product we can finish effectively in our climate. The product is lower fat, ideal for general use but also good for the sorts of recipes usually associated with veal. The feasibility study looks good and further work is planned on the marketing, distribution, and organisational aspects.

Group farming

A real possibility is to group together beef activities to achieve economies of scale. A group of farmers may join together with each doing their own specialist high value activities but co-operating together on beef production. Individual properties could specialise on certain parts of the production chain for the overall benefit of everyone, for example fattening cull cows.

This concept seems to have real potential in the shire, particularly with the spirit evident among the new entrants. Country Noosa expects to play a significant part in bringing these together.

With this is in mind, the case study below is about a group farming activity.

Processing, marketing, and distribution

At the moment, the majority of beef farmers are selling weaners, finished animals, and cull cows through the Sullivans Gympie Saleyards. Many of these then go through the processing activities of Nolans and feedlot owners, although some go to local farms too.

There is increasing pressure for larger animals and the avoidance of ‘private kills’.

Any farmers wishing to breed or fatten other animals than beef are required to transport the animals a long way for processing. This is expensive and stressful for the beasts.

Country Noosa is investigating the feasibility of re-opening the Eumundi Abattoir – a small, multi-purpose operation ideal for a farmers’ co-operative. This would greatly simplify processing for both the Noosa Shire and the Sunshine Coast.

Some local farmers have arrangements with local butchers for mutual benefit. Some offer product to a network of local consumers. This whole area is one we look to expand as the Shire produces more beef and especially if we can develop the yearling beef concept.

At the moment, marketing is very much an individual activity. As some of the new concepts develop, we will be able to pursue this in very advantageous ways.

Financials

A simplified financial model has been developed as a guideline for beef farmers. As an illustration, the following chart show the profitability of producing weaners. Prices and costs have been taken from real life.

To simplify further, the commercial rates for agisting and having cattle managed have been used as a surrogate to reflect the contribution to the cost of land and the cost of farm labour that can be legitimately charged to the cattle. In these financials, the cattle activity is regarded as an 'add on' to the property and this is a guide to the income that can be achieved.

ON FARM MODEL FOR PRODUCING AND SELLING ONE WEANER CALF:

Assets – buy cow	$ 1,100 (as young cows put on weight they can later be sold for purchase price and replaced.)
Sales	Transfer value of offspring to next stage is, say, $750 p.a. (average sale price between a steer and a heifer)
Costs	Buy Bull $3,000 - as services 40 cows for 5 years – cost effect $15 per calf produced
Fertility	85% - cost 750 x .15 = $112.50 (includes calf mortality)
Mortality	3% - cost $1,100 x 0.03 = $33
Agistment	$2.50 pw / breeder = $130 p.a. surrogate for land charge
Management	$3.00 pw/breeder = $156 p.a. surrogate for labour cost
Cow and Calf Treatments	$100 p.a. pesticides, testing
Total Costs	$546.5 p.a. per calf
Income	750 - 546.5 = $203.5 per calf
Return	203.5 / 1100*100 = **18.5%**

As such, this shows a high and worthwhile return for investing in beef production at 18.5 percent. Using these estimates and taking a simplified example of 40 hectares used for weaner beef production:

100 acres devoted to beef grazing with 50 breeding 50 cows:

Investment	$55,000 (50 x $1100 cows– not depreciated but bull written off)
Gross Income	$35,063 (50 x 85% x $750)
Calf Income (after all direct costs)	$10,175 ($203.5 x 50)
Return on investment cow costs	18.5 %
Agistment income for use of land	$ 6,500 (50 x $130)
Cattle Management Income	$ 7,800 (50 x $156)
TOTAL INCOME	**$24,475**

(If land owned and self-managed)

This example shows that the calves themselves make a good return on the capital cost of the cows. In addition, the operation makes additional contributions to the cost of the land and the labour cost of cattle management. If the cows and land are owned, and the mob self-managed, an income of around $25,000 can be obtained towards costs and living expenses. In addition, the land is maintained and at these levels the property could be classified as a primary producer with significant tax advantages.

Case study: an example of group farming at Bellbird beef

This case study is a comprehensive example of how group farming can work across a large area, with six farmers using a variety of co-operation techniques. It operated from 2010 until 2017 when the owner of Bellbird Homestead retired. At the time, many of the property owners were new to local farming and this provided a vehicle to establish their farm in an economic way. It is satisfying to note that these farms are either still managed on a group basis or are now established separately in their own right.

At the start of this co-operation, the farms were only running around 80 breeding cows. The group farming concept allowed this to expand to around 450. Rotational grazing was used everywhere to provide excellent carrying capacity and the approach proved highly resilient despite several periods of drought.

Bellbird Beef Pty was formed to manage the operation, which today could easily be a formal co-operative. This structure did enable a variety of different sharing approaches. Bellbird Beef oversaw operations and financials.

The home farm, Bellbird Homestead, was the core of the co-operation and provided the machinery, expertise, management, and labour as required.

Ridgewood Downs and Eli Farm are owned by investors who wanted to be involved but not on a day-to-day basis. They owned the properties and the cattle, and Bellbird Beef provided labour and expertise on a fee basis as required.

Fig Tree farm shared in the profits of the operation by share farming with Bellbird Beef, which provided the cattle and management. As long as the owners of Fig Tree shared in the risks it could be classified as a primary production property. On Red Cedar Ridge, Bellbird Beef placed its own cattle and paid an agistment fee and a management fee for them to look after the cattle. There were also several simple agistments involved.

We believe this case study shows that effective group farming can dramatically increase the production, productivity and profitability of beef in the Noosa Shire