Northern muster
Information for rural business in North Queensland

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We see Australian business.
Market report

Boat, slaughter cattle enjoy surge in prices

THE GOOD news since our last report has been the rapid improvement in cattle prices for all classes of cattle that meet boat or slaughter specifications. Best bullocks at JBS Townsville have reached $3.95 dressed and boat trade money is approximately $2.15/kg live for light cattle up to 350kg and $1.95/kg for heavier types up to 600kg. Dry conditions are still being experienced over most of Queensland and as of early November, when this report was prepared, there has been a fair rush of good cattle into the marketplace and saleyard prices have started to ease. Large weekly kits have continued this year at near-record levels.

Exports to the US reached a record monthly total in September of 47,238 tonnes. The demand for lean manufacturing beef and good prices has driven this high monthly record. By June 2014, at the close of the financial year, tonnage exported to all markets had reached a record 1,183 million tonnes. The recently finished Australian Agricultural Company (AACo) meanderers at Darwin has been commissioned and is planning to begin operations in March 2015.

Reports indicate that the plant will be processing approximately 520 head a day. As mentioned in the previous Northern muster market report, important factors need to stay in place for market strength in 2015. These include market access and demand in both boxed and live export destinations, as well as the value of the Australian dollar to remain close to the 90-cent mark or below. Meteorologists are predicting a late and ordinary wet season across the North, however, they are not calling it an El Niño event just yet. The best PCAS steers in Rockhampton reached $4.40 dressed and MSA grass steers $4.25, which is a record for both these classes. Most producers are aware that a major review is under way on how the industry is being governed with Meat and Livestock Australia (MLA) and the Cattle Council under the spotlight.

Some facts and figures for our readers:
- MLA has 49,240 cattle, sheep and goat members.
- Income for 2013-2014 was $198.5 million. $95.2 million was spent on marketing and $95.8 million was spent on research and development.
- Contributions from grazing beef producers totalled $61.2 million, sheep $34.2 million, feedlot cattle $9.8 million, goats $0.8 million, processors $10.8 million, MLA donor company $12.3 million, government $46.7 million and other contributions $12.1 million.

The authors of this column were great supporters of the MSA concept many years ago and welcomed its introduction. Then there was the push to get a pasture certified product into the market. This has also eventuated after many years and as a result of some very dedicated producers. The next hurdle is to update the present Australian beef meat language used across our industry. The meat science technology has progressed well past the use of the present technology (dentition, but shape), etc, which was introduced in the 1970s.

MLA general manager of livestock productivity, Dr Alex Beil, is overseeing the Australian Beef Language White Paper project. Many producers who attended any of the recent MLA forums across the state have observed a presentation on possible future technology and use for trading along the supply chain.

MSA

MSA cattle grades numbered across Australia for 2013-14 was up to a record 3,036,192 head. Queensland led the way with 1.2 million carcasses graded successfully, at a compliance rate of 92.6 per cent. The main reasons for failure were dark cutters, poor meat colour and high pH. Failure to meet the $12.1 million, $46.7 million and other contributions $12.1 million.

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WORLD CATTLE NUMBERS 2013

Live export

The live cattle trade has had a bumper 2013-2014 year with numbers shipped totalling 1.13 million head, valued at over $1 billion dollars. With the continued dry conditions across the Northern Dry Tropics players on the world meat export scene and it may not become more responsive to seasonal conditions, and take full advantage of good seasons, and protect land condition during poor seasons.

All of the management approaches mentioned above require careful management, animal condition, forage supply and markets. Forage budgeting is a useful tool that allows you to determine the number of stock a paddock can support for a given period of time by balancing forage supply with livestock demand.

FORAGE BUDGETS

Forage budgets are most important in dry years when beef supply is limited and when restocking a paddock that has been spelt over the wet season. A forage budget will help you decide on a stocking rate. It may indicate that the paddock can carry an increased number of head for the same period of time. Or, the paddock can carry the original number of head for a longer period of time.

After a dry season, the forage budget results may suggest it is time to consider lightening the stocking rate to maintain pasture condition, avoid unnecessary feed costs and preserve land condition. It can also assist in the development of a targeted sell-off plan in poorer years when de-stocking needs to occur.

A forage budget also enables producers to set ground cover and residual pasture yield targets for the end of the dry season. It can also assist in planning for wet season rest to improve paddock condition. The ideal time to undertake forage budgets is at the end of the growing season (April or May for northern Australia) or each time livestock are moved between paddocks.

Forage budgets can be based on grazing periods of days, weeks, months or a season. A dry season forage budget is usually from the end of the pasture growing season (May) to a date when it is likely there will be a bulk of fresh growth (late December).

START PLANNING

So why start planning for forage budgeting now? As with all tools, forage budgets are best combined with your experience and should be viewed in light of historical stocking rates.

A forage budget requires a set of calculations and as such, the answer is only as good as the quality of data entered. Early planning assists in getting the best possible results from your forage budget. Things to consider and begin planning include:
- Monitoring paddocks and knowing paddock sizes
- Determining what paddocks or areas are priorities for forage budgeting
- The Stocktake Plus app is available from either the App Store (iOS users) or Google play store (Android users). The free app has an infused forage budget component which allows users to calculate forage budget out in the paddock.
- To register and find out more about the Stocktake Plus app, visit the website: www.stocktakeplus.com.au.

For more information or to express an interest in attending a Stocktake workshop to learn more about forage budgeting and how to use the app, contact Megan Wilcox.

Tips on managing short-term carrying capacity

There are three broad approaches to managing variation in short-term carrying capacity:

- Protective — plans on having little variation in stock numbers over time (set stocking)
- Opportunistic — bases number of animals that changes little over time but uses temporary stocking: up to take advantage of runs of wetter years and stock numbers and conditions are good
- Trading — stock numbers are adjusted frequently (at least once a year) in line with short-term carrying capacity. It becomes more responsive to seasonal conditions, and take full advantage of good seasons, and protect land condition during poor seasons.

For more information or to express an interest in attending a Stocktake workshop to learn more about forage budgeting and how to use the app, contact Megan Wilcox.
A COMMITTEE consisting of local beef producers and DAFF extension staff are organising the first ever Beef Producers Expo to be held in Charters Towers. The event will take place in March, 2015, with organisation already well under way.

The expo will showcase the application of new and emerging technology within agriculture with a particular focus on the beef industry.

The program will include several keynote speeches, practical and interactive information sessions and a trade display – all demonstrating innovation and technology within the beef industry. It will also provide beef producers and industry stakeholders the opportunity to access all the latest beef business information and see new emerging technologies in action.

The event will incorporate industry representatives across all areas of the beef business including beef production, livestock health and welfare, grazing land management, business and financial management.

This will encompass best management practices across the whole of the beef business. A social barbecue dinner will conclude the event, giving participants an opportunity to continue networking with like-minded people over a steak and cold beverage.

Registrations for the 2015 Beef Producers Expo will open early in 2015, with more information to be made available soon.

For more information about this event please contact the DAFF Charters Towers FutureBeef Team on (07) 4761 5150.

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To keep up to date with the latest on the Beef Producers Expo visit the Online Beef Team Facebook page: www.facebook.com/bulkin.beef

Northern cattle prices improve

It’s been another tough year for the beef industry in 2014. Since the last issue of the Northern muster, there has been a major improvement in cattle prices received across the north. However, the price improvement has been significant only to those classes of cattle that meet live export or slaughter specifications.

A hot topic in beef industry news at the moment is the proposed export of live cattle to China. While details are still yet to be confirmed at the time of writing, emerging reports indicate this potential market could have a major effect on all aspects of Australia’s beef industry. This news wraps up what has been a massive year for five cattle exports out of Australia.

With Christmas and the end of the year fast approaching, it is a timely reminder again for those in drought declared regions that all fodder freight and emergency water infrastructure rebates claim forms must be submitted within six months of the date of purchase. Assistance for drought-hit producers is still available under the Drought Relief Assistance Scheme. Contact your local DAFF officer or 13 25 23 for more information.

For information on the latest events and projects, research-based information, and practical tips and tools, visit www.futurebeef.com.au

Lastly, we would like to share some exciting news with our Northern muster readers. DAFF CQccurry extension officer and Northern muster editor Rebecca Gunther and husband Tyson, welcomed the arrival of their first son, Brendan, on October 23, 2014. We wish Rebecca, Tyson and baby Brendan all the very best.

Wishing all our readers a safe, merry ‘wet’ Christmas and a fresh, green 2015.

Melissa Howarth and Jodi Robertson
FutureBeef Team Charters Towers
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FutureBeef: Your link with innovation

THF The FutureBeef website is home to a suite of more than 150 projects. From cutting-edge research to innovative extension, you will find the FutureBeef team in the thick of it. Working with producers, the FutureBeef team is supporting sustainable and profitable productivity gain through collaborative projects including: Climate Clever Beef— to deal with the impact of climate change and methane greenhouse gas emissions while improving business resilience. Grazing BMP program— to improve the economic and environmental performance of beef enterprises.

Next Gen Beef Breeding Strategies— investigating genetic and genomic strategies to increase beef reproductive efficiency in northern Australia.

Join the other 87,000 people who visit our website each year and check out one of the FutureBeef projects on our website at http://futurebeef.com.au/resources/projects/
Update on Spyglass nutritional status

As of November 1, 2014, Spyglass had received 324mm of rainfall to date for the current calendar year. Much of this rain was received in February, with little follow up rain recorded throughout March and April. The only significant dry season rainfall received was 33mm in the middle of June.

For this article, the dry matter digestibility (DMD) and dietary crude protein (CP) results have been taken from a mob of cattle grazing between two paddocks throughout the year. The major land type across both paddocks is narrow-leaved ironbark, consisting of mostly native grass pastures. The predominant pasture species are blackpear grass, bluegrass species, aridina grass species and Indian couch. Both paddocks have a moderate to high presence of browse or top feed species, such as quinine, and a lesser presence of improved pastures such as seca stylos.

Faecal NIRS technology is a tool that can be used by cattle producers to make informed, timely decisions about non-grass within the diet were around 22pc in April, declining to 17pc in May and 8pc in June. This indicates that at the time of sampling, the diet is not grass. The faecal NIRS predicted levels of non-grass within the diet were around 22pc in April, peaking at around 47pc in June before declining steadily back to 25pc in September. This indicates that at different times throughout the dry season almost half the diet selected was grass.

The dietary CP results from the faecal NIRS sampling at Spyglass represent a typical pattern for the north. As the pasture matures and plant condition deteriorates throughout the dry season, there is a decline in the dietary CP. As with DMD, there was a slight increase in the dietary CP in September at the time of sampling. Overall, this may be attributed to a reduction in distance to water, allowing cattle to utilise a greater area of the paddocks. An approximate threshold figure of 17pc is used as a guide for the required dietary CP for the maintenance of a lactating breeder. The Spyglass results indicate that from July through to September protein was inadequate to meet the maintenance requirements of a lactating breeder.

 Dietary crude protein results from faecal NIRS sampling at Spyglass from April to September 2014. The line is an approximate threshold figure of 17pc dietary CP required by a lactating breeder for maintenance.

As with energy, protein is also required by cattle for maintenance of a lactating breeder. The Spyglass dietary CP results from the faecal NIRS sampling at Spyglass indicate adequate energy for a lactating breeder, with a likely moderate to high presence of browse or top feed species, such as quinine, and a lesser presence of improved pastures such as seca stylos. Protein is an important component of milk. Therefore, lactating cows have been defecant in energy and unable to meet their requirements and, therefore, would have been most likely losing weight from June through to September.

Correcting energy deficiencies through supplementation is typically expensive and only carried out when survival becomes an issue. An effective method of reducing energy requirements and, therefore, the nutritional deficiency experienced by a lactating breeder is weaning. Weaning management should be focused on available nutrition and cow body condition.

Dietary crude protein (CP) is the amount of protein required by cattle for almost all body functions. Protein is also an important component of milk. Therefore, lactating cows have been defecant in energy and unable to meet their requirements and, therefore, would have been most likely losing weight from June through to September.

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UREA supplements are a cost-effective means of reducing weight loss of both growing and breeder cattle grazing poor quality dry season pastures in northern Queensland. In a grazing situation, most protein consumed in forage is broken down in the rumen and used by rumen microbes to provide the animal's protein intake. Urea supplementation increases both rumen and blood protein intakes for beef and dairy cows.

**Table 1:** Comparison of pasture and supplement crude protein levels, pasture and protein intakes for beef and dairy cows.

Table 2 shows the intake and feeding costs for cottonseed meal, 10pc and 30pc urea dry licks.

**Table 2:** Comparison of intake and feeding costs for cottonseed meal, 10pc and 30pc urea dry licks.

The theories about high-protein feeds like urea (but also other feed sources such as nitrogen-fertilised pastures) affecting the female reproductive tract and reproductive processes, have arisen from overseas work.

**THE ROLE OF UREA IN RUMINANTS**

Urea is not a foreign compound in ruminants. It is an integral part of protein metabolism in all ruminants and is normally present in blood irrespective of any supplements. Cattle urine usually contains urea as this is the way cattle excrete excess nitrogen not required for protein production.

Ruminants have the ability to utilise two types of protein: rumen degradable protein (RDP) and rumen un-degradable protein (RUP). Rumen fermentation breaks the RDP in the diet into ammonia, and this ammonia is used by rumen bacteria to form microbial protein.

Rumen microbes are digested in the abomasum (true stomach) and small intestine and the resulting amino acids are absorbed from the small intestine into the blood. In a grazing situation, most protein consumed in forage is broken down in the rumen and used by rumen microbes producing microbial protein.

Consequently, microbial protein is the animal's principal source of protein excluding any RUP present in the diet. Ammonia not incorporated into microbial protein enters the blood and is converted to urea in the liver, and most of this urea is excreted in urine.

Amino acids not utilised in body processes are converted in the liver to urea for excretion in the urine and energy substrate. Blood urea nitrogen (BUN) is a measure of the liver's ability to detoxify and excrete urea which is rapidly excreted in urine.

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### Stocktake Plus app a free support tool

**THE FUTUREBEEF Stocktake Plus app is a free grazing monitoring and management decision support tool for graziers and advisors predominantly located in northern Australia. It is an important tool for graziers in the management of their properties, particularly with regard to long-term monitoring and benchmarking carrying capacities.**

The app's mobility allows users to capture data whilst in the paddock directly on their device. This data is then later synced by syncing the device (via Wi-Fi or 3G access) and uploading the data to a private account. This allows users to: Capture important production data for analysis, manage property resources, understand their property environment over time, and view and export their data through a personal and secure portal.

Since the app’s launch its adoption has exceeded expectations, with favourable feedback on its functionality and user friendliness. Valuable feedback has also led to some recent enhancements. As a result of user feedback, a new iOS version 1.1 is now available to download and a new Android version will also be available soon. You can download the app for free from either the App Store (iOS users) or Google Play store (Android users).

The FutureBeef Stocktake Plus team continues to work closely with users and developers to deliver a quality product with enhanced user experience. They always appreciate your feedback.

**To find out more, register an account and download the app visit the Stocktake Plus website:**

**www.stocktakeplus.com.au**

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**FutureBeef Team, Mackay**

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**A fresh new way to do your rural business**

**Steve Heffernan**

Branch Manager

**Amber Hubbard**

and

**Contact our friendly team in Hughenden**

**Steve & Amber will be happy to help you!**
There are many mixed messages about the pros and cons of red meat in the diet. Unfortunately, many of the messages use the terms ‘red meat’ and ‘processed meat’ interchangeably. The following are two examples of findings on fresh red meat in the diet of women based on research done by Deakin University (Melbourne) since 2009.

The first finding relates to red meat and exercise. The four month trial compared two groups of 47 women had the strength training and a protein rich diet of six servings, conducted by Professor Robin Daly (professor of exercise and ageing) and the university’s Centre for Physical Activity and Nutrition Research. The location of the P8 site. P8 site location on a carcass

The second finding related to red meat consumption and the incidence of depression and anxiety disorders in women. This work was conducted by associate Professor Felice Jacka at the university’s Barwon Psychiatric Research Unit. The results were published in the externally peer reviewed American Journal of Clinical Nutrition. R&D was part-funded by graziers’ MLA transaction levies. The location of the P8 site, the P8 site used to assess fat in both live animal and carcass assessment. The P8 site is correlated with percentage of fat in the carcass and therefore the likely yield of salable meat

Red meat seems to be the only form of protein that delivers the goods, as the study found that chicken, pork, fish and plant-based proteins had no effect on mental wellbeing. The benefits of the CRC findings can be utilised in the supermarket to improve the existing one. Northern producers develop a breeding program or improve on the existing one. THE BEEF CRC project has shown that during lactation some cows are genetically predisposed to cycle early. As a consequence these cows also become pregnant and calve earlier than their herd mates. A shorter time to cycle may allow cows to produce more calves in their lifetime, particularly under controlled mating. The Beef CRC project also showed that heifers reaching puberty earlier and then cycling earlier as first oestrus heifers had the highest reproductive performance over their lifetime.

The current Meat & Livestock Australia (MLA) genetics of female reproduction research is being run across research facilities in northern Queensland (Spyglass), central Queensland (Bran Pastures) and the Northern Territory (Douglas Daly). In this research maiden heifers (two years of age) will be measured for age at puberty (first cycle) and first calving heifers (three years of age) will be measured for post-partum anoestrus interval (time from calving until cycling).

The overarching goal of this research is to know which bulls to select to produce high fertility bulls. This project will add significant knowledge in this area by increasing the accuracy of EBVs and contributing to the benefit of genetic EBVs. The project has been funded for five years to allow time for the heifers produced through artificial insemination (AI) to be followed through to their first re-breed.

The location of the P8 site. P8 site location on a carcass

The results showed that 140 women (13%) were found to have one of these mental conditions. When diet was considered it was found that women consuming less than the recommended intake of red meat (up to 400g of beef and lamb per week) had more than double the chance of suffering from chronic depression and nearly that of an anxiety disorder. This was irrespective of socioeconomic status, education level, physical activity, alcohol consumption, smoking, overall energy intake, and body mass index (human indicator of body condition score). But more is better, as higher than recommended red meat consumption was related to an increase in depression and anxiety disorders.

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The genetics of influential Brahman, Droughtmaster and Santa Gertrudis industry sire lines will be tested by assessing the reproductive performance of their daughters. This research will identify the sires that produce daughters with younger age at puberty and shorter post-partum anoestrus interval. This project also plays a role in the development of genomic-driven estimated breeding values (EBVs), whereby the goal is to know the genetic value of a bull, for the previously mentioned reproduction traits, by simply plucking tail hair for a DNA sample (genotyping). Genotyping, once developed, could revolutionise genetic selection. It would allow the selection and culling of animals at a very young age based on fertility traits. Genotyping relies on having a large bank of red meat reproduction data available on each bull.

The overarching goal of this research is to know which bulls to select to produce high fertility bulls. This project will add significant knowledge in this area by increasing the accuracy of EBVs and contributing to the benefit of genetic EBVs. The project has been funded for five years to allow time for the heifers produced through artificial insemination (AI) to be followed through to their first re-breed.

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The current drought affecting much of Queensland highlights a recurring challenge to the grazing industry: How do you manage sustainably and profitably when rainfall can vary so much between years? In an attempt to answer this question the Department of Agriculture, Fisheries and Forestry (DAFF) started a long-term grazing trial in 1997 on the Lyons family property Wambiana, near Charters Towers.

Phase 1 of this Meat and Livestock Australia (MLA) funded trial (1996-2011) looked at five grazing strategies: Heavy stocking (HSR), at the forage equivalent (AE = 450kg beast); moderate stocking (MSR) at the calculated long-term carrying capacity of 3ha/AE; rotational wet season spelling (R/Spell) in a three-paddock system (3ha/AE); and two variable strategies, with stocking rates varied based on either available forage (VAR) or available forage and a climate forecast (SOI).

Because of the similar response of these two strategies, results will only be discussed from the VAR. In Phase 2 of the trial (2012 onwards) some of the treatments were adjusted to apply learnings from Phase 1; ie, both the ‘variable’ strategies were changed to ‘flexible’ stocking and then applied as either flexible stocking with wet season spelling or flexible stocking without wet season spelling. As these changes were made only recently, data from the new ‘flexible’ treatment is included with the original VAR data.

There are two experimental paddocks (replicates) for each strategy. Paddocks are about 100ha and contain a mixture of box, silver leaf ironbark and brigalow land types. The cattle are 1.5 and 2.5-year-old Brahman-cross steers, supplemented with wet season phos- phorus and dry season sunna. Cattle stay on the trial for two years before going to the meatworks.

Rainfall and stocking rates
Rainfall varied considerably over the length of the trial: beginning with four good years followed by six dry years in the early 2000s. However, over the past seven years (2007-2014) the seasons have ranged from average to very good (see Figure 1). Stocking rates in the VAR increased to very high levels (up to 3ha/AE) in the early wet years leading to overgrazing in the following dry year (2001-2002). These long-term results indicate that the most proftable strategy for managing climate variability will involve flexible stocking around long-term carrying capacity, with stocking rates changed as seasons vary.

Pasture production and composition
The grazing strategy applied had a major impact on pasture condition; thus, in 2014, after 17 years, the density of 3-P (palatable, perennial, productive) grasses is highest in the MSR and R/Spell but by far the lowest in the HSR (see Figure 2). Importantly, despite seven recent favourable seasons, in the HSR there has been little or no recovery in the population of 3-P grasses since the end of the drought in 2006. The slightly lower 3-P density in the VAR in 2014 compared to the MSR and R/Spell is a direct result of the heavy stocking rates applied in the VAR heading into the drought of the early 2000s. This shows how long the ill-effects of a period of poor management on pasture condition can take to recover.

Animal production
The strategy applied had a major impact on animal production: thus, in 2014, after 17 years, the average annual liveweight gain (AGM) in the VAR is some $10,000/100ha less than in the other strategies. Although the HSR was very proftable in the early wet years of the trial, in the dry years it lost money due to the cost of drought feeding, reduced LW/ha and the price penalty for poorer condition animals. In contrast to the HSR, in the MSR and R/Spell AGMs grew steadily over all years. Hence, after 17 years, AGMs in the MSR and R/Spell are far higher than in the HSR, despite running only half the number of cattle.

WHAT WOULD HAPPEN WITH BREEDERS?
Would these outcomes also hold with breeders at a property level? Our colleague Joe Scanlan attempted to answer this question using the trial data to model the outcomes of different strategies for a 23,000ha property over 30-year sequences of rainfall data for Charters Towers. Modelling results clearly showed that both breeder proftability and pasture condition were maximised at moderate stocking rates. However, the actual ‘optimum’ stocking rate varied with rainfall, reinforcing the need to adjust stocking rates as seasons vary.

General strategy performance
Heavy stocking was ultimately unproftable due to poor individual animal performance and high costs. The strategy was also unsustainable, caused pasture degradation and a long-term loss of productive capacity. Importantly, this degradation was not reversed, despite a run of recent good years. Further pasture deterioration with an associated decline in animal production can be expected when the inevitable dry years return.

Managing profitability in times of drought difficulty

Figure 1: The density of 3-P (palatable, perennial, productive) grass species in 2006 (after six poor years) and in 2014 (after seven average good years).

Figure 2: Pasture yield and species composition after 16 years in different grazing strategies.

Figure 3: Accumulated gross margin for each of the treatments after 17 years of the grazing trial.

Figure 4: Annual rainfall at the Wambiana grazing trial.

The MLA grazing trial coming up with answers to climate challenge

Geoff Beaumont
Branch Manager
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Futurebeef.com.au
Deer under Spysglass in Towers pilot study

Collars transmit location data to research team

The Department of Agriculture, Fisheries and Forestry’s Biosecurity Queensland (BQ) section has completed a small pilot study to measure movement patterns and habitat use of chital deer on Spysglass Deer Research Facility. Five animals were successfully collared with GPS loggers and VHF transmitters for retrieval. Their locations were recorded over two months between August 2013 and February 2014. Figure 1 (top) shows the locations of each animal. The data from these collars gives an important insight into the habitat requirements of these animals, which have not previously been examined in great depth in Australia. Early results show that chital hinds (females) had a home range of slightly over 600ha, while males had a home range of almost 1500ha. The females’ ranges were smaller than expected and may indicate a desire for a greater degree of isolation. The males’ ranges were larger and more highly concentrated on the north-west side of the study area. The BQ research team plans to conduct further research in the future.

AERIAL SURVEYS OF DEER POPULATIONS

In July 2014 a staff from BQ and the Department of Environment and Heritage Protection (DEHP) conducted aerial surveys of chital deer and other wildlife north of Charters Towers. Nine survey lines (50-70m in length) were flown in a helicopter with the aim of establishing some estimates of deer numbers and the area been concentrated. Deer were not in high numbers across the whole landscape; however, where they were present they were in very high densities. One creek line that was flown had a density of about 146 deer per square kilometre. Deer appear to be concentrating in areas not far from permanent water, and tend to also be close to homesteads. This is consistent with what landholders have been telling us.

The counts were done in the dry season and it is not known if they spread further out across the landscape during periods of higher rainfall. Deer were also counted from the ground along shorter 5km walked lines. Pictured (above) is a group of deer counted on a property north-west of Charters Towers.

Diet Study

Another component of the northern chital research is determining their seasonal diet. In October 2014 a number of animals were submitted for necropsy across two properties with a range of data and samples collected, including samples of the stomach contents. These data are currently being examined. If we can determine the quantity and composition of what is being eaten we can estimate the likely impact on cattle production. Ideally, we would like to know exactly what species of grass and browse (torches, shrubs and trees) are being eaten by chital and how selective they are being from what is available.

The counts were done in the dry season and it is not known if they spread further out across the landscape during periods of higher rainfall. Deer were also counted from the ground along shorter 5km walked lines. Pictured (above) is a group of deer counted on a property north-west of Charters Towers.

Spatial hub at the centre of land-management project

The NRM Spatial Hub is a central element of the 15-year Blueprint of the Australian Rangelands Initiative, which provides guidance for ongoing management and protection of the natural resources of Australia’s rangelands. The stage 1 development and demonstration of the hub is part of a $7.6 million investment over two years from Caring for Country and Meat & Livestock Australia (MLA).

The hub will give land managers systems tools, data and skills to improve access to property scale information and knowledge. These improved tools, data and skills to improve access to property plans, infrastructure maps and data necessary for them to develop and maintain comprehensive digital property plans, land condition and conservation.

A small team from NRM Spatial Hub, NRM rangeland regional bodies and DAFF have identified Queensland land managers interested in participating in the project. There will be at least four properties in each of the seven NRM rangeland-based regions (Cape York, Northern and Southern Gulf, Desert Channels, ND Dry Tropics, Fitzroy and South-west) committed to the project.

Queensland’s participating land managers will use the hub’s online property planning and information system to get data and mapping tools to help them develop and maintain comprehensive digital property plans, infrastructure maps and data necessary to help develop grazing plans. Hub users will have access to national data sets and information that will help them manage and process property information. They will also be able to capture information in the paddock using hand-held devices such as GPS or Smartphones. DAFF grazing specialists will provide land managers with paddock and property carrying-capacity information for different developments (for example, watered areas), land condition and property size and shape. This carrying capacity information, combined with remote sensing products that provide direct measures of woody vegetation extent, ground cover and estimates of pasture biomass, will help land managers to develop grazing plans to achieve sustainable production.

During the property demonstrations, a series of workshops will be held around Queensland in 2015. These workshops will show producers how to access and use the online property planning and information system, tools and products.

If you are interested in finding out more about the NRM Spatial Hub project and future workshops contact:

Australian Rangelands MLA Alliance
0428 611 599
mgross@northernmuster.com.au

Technology to help in wild dog control

Australia’s wild dog problem is becoming more evident with communities with the development of better strategies and tools to minimise stock attacks.

National Wild Dog Facilitator Greg Mitsou of the Invasive Animals CRC (part-funded by MLA), said producers were gaining ground. Greg said this was due to more communities embracing broad-scale control strategies; focusing on how dogs used the environment, rather than on who owned the land or whose stock were being attacked.

The ‘neture’ message is spreading and more farmers realise that they are using control strategies that embrace larger areas – reflecting the distances dogs can travel – that involve state and private landholders and utilise the most effective tools for the situation,” he said. “Experience has taught us there is no point one producer trying to act in isolation. All that does is drive the problem somewhere else, often temporarily. In some instances under-resourced and poorly co-ordinated control programs have actually increased stock attacks.”

Greg said successful broad-scale programs included the South Australian pastoral zone’s ‘Biteback’ and Wild Dog Watch in western Queensland with a full-time, funded co-ordinator who oversaw and integrated control programs in shires covering almost two-thirds of Queensland.

Simon Humphrys, Invasive Animals CRC project lead, said communities affected by wild dogs are getting better at working together and choosing the right tools to achieve the best control outcomes, while minimising effects on non-target species.

He said a range of new tools would improve those outcomes even more, but registration requirements had to be addressed before products could be commercialised.

In The Pipeline

PAPP (para-aminopropionophenone): A new toxin with an anticoagulant for use where domestic dogs are a risk. Like NAP, PAPP is more toxic to some species than others and, importantly, the two poisons affect native species differently so control programs can be tailored for minimal risk to non-target species. PAPP is not yet approved by the Australian Pesticides and Veterinary Medicines Authority (APVMA). Once approved, PAPP baits should be considerably more expensive than NAP baits, but possibly cheaper and more effective and safer on the environment and on native species.

Canid Pest Ejector (CPE): Successfully used in the US for 60 years on coyotes, the CPE device delivers liquid 1080 when a dog or fox bites or pulls on the bait head. Ejectors are considered safe for most non-target species because a certain pull force is required to activate them and their immobilisation makes them suitable for use in populated areas and national parks. The poison is protected from the weather so baits remain active for longer. Animal Control Technologies could have APVMA registration as early as next year.

Lethal trap devices: Developed by the CRC and its partners Conservation in New Zealand and the NSW Department of Primary Industries (DPI), this product improves the humaneness of leg-hold traps. The device is essentially a bubble of PAPP, fixed to the trap jaws. As the animal chews at the jaws, the nipples is punctured and the animal quickly becomes unconscious and dies within 60 minutes.

Computer-assisted technologies: CRC, NSW DPI and then University of New England are working on electronic ways to automate near-real-time detection and monitoring of wild dogs, including individuals, from facial features. Some day, monitoring could be possible from a device that recognises the target pest. Smartphone technology could also be applied to warn producers of troublesome dogs on their property.


Digital Homestead project could boost beef dollars

Five major outcomes already delivered

THE Digital Homestead project evaluated how modern information and communication technology (ICT) – such as wireless sensor networks (WSNs), data analytics and rural connectivity – could support greater productivity for beef producers.

The project focused on the northern cattle grazing industry as a partnership between the Commonwealth Scientific and Industrial Research Organisation (CSIRO), James Cook University (JCU), the Queensland Department of Agriculture, Fisheries and Forestry (DAFF) and Queensland University of Technology (QUT).

This project was funded by the project partners with assistance from a Co-investment Fund grant from the Queensland Department of Science, Innovation, Technology and the Arts (OSITIA).

Elements of the project system have been brought together by the development of a browser-based data dashboard. The data dashboard combines on-farm sensors and external data sources (including weather forecasts and live market pricing) in one user-friendly interface.

Sensors used at the research sites measure air temperature, rainfall, wind speed, wind direction, tank levels and cattle location, as well as animal activity and weight. In addition, methods have been developed to use WorldView-2 satellite imagery to assess pasture temperature, rainfall, wind speed, wind direction, tank interface, forecasts and live market pricing in one user-friendly interface.

The project had five major outcomes to date:

1. Development of new livestock monitoring solutions
2. Development of pasture monitoring solutions
3. Understanding cattle and environment interactions
4. Dashboard development
5. Industry engagement and design input

The digital homestead project has successfully demonstrated improved on-farm management of animals through gathering data via a wireless sensor network. This data is synthesised and presented in a user-friendly format so that the information – such as knowing the number of animals that meet market specifications – can be used to improve beef herd management.

The ultimate success of the project will be dependent upon further development in close collaboration with producers. It is likely some of this work will be done as a project through the growNORTH collaborative research and development proposal (http://www.grownorth.com.au) – watch this space for further collaborative activities and information.

Low to medium cost sensor technology is developing rapidly and during the project there have been significant advances in the actual technology that is commercially available.

However, the slower than expected roll-out of the National Broadband Network (NBN) satellite service into rural regions has resulted in challenges. The NBN was to be the backbone needed to deliver the project. This situation may not be fully resolved until the NBN satellite service is available in late 2015 or early 2016. Once the dashboard system is refined and commercialised the remote sensor technologies being integrated into the dashboard will reduce daily labour costs.

It will also improve record keeping, improve management of animal welfare, and allow for more accurate and timely decision making. Improved decision making will assist producers in ensuring animals meet market specifications, reproductive strategies are effective, and better managing drought. All of which will drive up producer profits as well as productivity.

Using the CSIRO dashboard farm managers can see real-time statistics of their property and livestock at a glance. They can know where cattle are, explore trends in cattle weight, see how much water is in tanks, and browse climate variables from on-farm sensors. It is a truly flexible system that has been created to allow for the addition of new data streams as they are developed and become commercially available.

Set-up is simple and follows a ‘drag and drop’ approach, whereby users can select and display just the data feeds they want.

Professor Ian Atkinson
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Five major outcomes already delivered

Leucaena varieties show promise at field days

PRODUCERS at two recent field days (Whitewater and Leucana Creek Stations) were presented with information on the value of improving current feed base systems with improved pastures such as leucaena.

Successful establishment of leucaena can potentially double annual liveweight gains, giving the producer increased herd management and marketing options.

The Producer Demonstration Site (PDS) at Whitewater Station, Mount Surprise, is aimed at improving industry understanding of establishment methods, costs and management requirements of leucaena.

The PDS will also showcase the potential productivity and profitability gains associated with improving the feed base with leucaena.

Reference to Northern muster issue 35 for further information on the establishment of the Whitewater Station Leucaena PDS.

A 49-hectare site was planted last wet season to Wondergraze, a current industry cultivar. The aim is to establish leucaena into an area with minimal disturbance of the existing woody vegetation.

During this process a ‘Tips and Tools’ guide will be developed for local graziers.

The project will also include a detailed economic analysis of leucaena production systems and will develop and implement best management practices and produce a ‘Fact Sheet’.

The PDS will also showcase the potential productivity and profitability gains associated with improving the feed base with leucaena.

The economic analysis will enable producers to make informed decisions about leucaena establishment through using sensitivity analysis and various cattle price scenarios.

The 1-hectare grazing trial established on Whitewater – with four promising lines showing good psyllid tolerance – has been progressing well.

Psyllid tolerance has been measured using current industry understanding of establishment methods, costs and management requirements of leucaena.

The ultimate success of the project will be dependent upon further development in close collaboration with producers. It is likely some of this work will be done as a project through the growNORTH collaborative research and development proposal (http://www.grownorth.com.au) – watch this space for further collaborative activities and information.

In comparison, both Cunningham and Wondergraze suffered extensive damage with leaf production almost completely stopping.

Given the success of the new lines, seed production blocks have been set up to enable a cultivar release in the future once grazing trials have been completed.

A preliminary grazing trial was completed in September on Whitewater. The grazing trial incorporated weavers freely grazing the 1ha site for four days.

No apparent difference in palatability was evident, with all lines being freely grazed and little preference shown to a particular variety.

A replicated grazing trial is about to commence, measuring and comparing the palatability preference of the new Psyllid tolerant lines with the two commercial cultivars – Wondergraze and Cunningham.

A pre-wet season measurement took place in November, with no grass yet established in between the rows. Grasses will be established between the rows and post-wet season palatability trials will begin in April 2015.

Mark King
DAFF FutureBeef Team Mareeba
Mark.King@Daff.qld.gov.au

Leucaena varieties show promise at field days

Five major outcomes already delivered

A fresh new way to do your rural business

Talk to someone located in finance and insurance who understand the needs of your grazing enterprise.

A fresh new way to do your rural business

A fresh new way to do your rural business

Talk to someone located in finance and insurance who understand the needs of your grazing enterprise.
**Women of north share business experiences**

Debbie Nucifora, from Zingo 100% Pure Mango, talks about the challenges of starting a new business with fellow entrepreneurs, (from left) Frantiska Inderbitzen, Fiona George, Michelle Bell Turner and facilitator Julia Telford.

EIGHTY women from across North Queensland travelled to Mareeba to celebrate the International Day of Rural Women in October 2014. Northern Gulf Resource Management Group (NGRMG) and Cape York Natural Resource Management (CYNRM) partnered to bring together women from across the region for the Resourcing Women of the North event.

This event is an opportunity for rural women to connect and learn about natural resource management and opportunities in business. A theme that came out of the day was the inspiration women drew from each other’s stories. Keynote speaker Karen Broek from KBSACO spoke on the challenges of running a business and the secret to bringing your ideas to life.

This was followed by a panel session with four women from the region — Michelle Bell-Turner, Debbie Nucifora, Fiona George and Frantiska Inderbitzen — sharing their journeys in business. The event enabled women to learn from each other’s experiences and connect with and support each other.

In the afternoon participants broke off into small groups to get practical tips. Topics included the Beef Belize project, innovative agriculture, holistic marketing using the web and grant writing.

A highlight of the event was the Rural Women’s Dinner, which included writer, presenter and producer Anna Daniels talking on her journey in the media. Ms Daniels spoke to the participants about being yourself, and how to showcase rural and regional Australia.

The event was facilitated by Julia Telford from Engage and Create Consulting and made possible through funding from NGRMG, CYNRM, Caring for our Country, Mareeba Community Bank Branch – Bendigo Bank, David Kempston and the Foundation for Rural and Regional Renewal.

This was the third Resourcing Women of the North event held this year. Resourcing Women of the North is proving to be a popular way for women to engage with each other on the issues and challenges they and their families face on their properties. Highlights can be seen on www.facebook.com/northernregionals or contact Erica Blumson for more information.

**Collaboration works to rehabilitate former mine tailings site**

A COLLABORATION between All Souls St Gabriel School (pre-Prep to Year 12, Charter Towers) and Dalrymple Landcare — with advice and assistance from the Charter Towers Department of Agriculture, Fire and Emergency Services — is under way to rehabilitate a severely degraded, 3-hectare former mine tailings site.

The site, within the school’s paddocks, has been excluded from grazing for a number of years. Salt and heavy metals have inhibited plant growth.

Past students of All Souls St Gabriel School have been excluded from grazing for a number of years. Salt and heavy metals have inhibited plant growth.

Past students have been allowed to use the site for various environmental projects.

A recent initiative is the establishment of a cattle feedlot on the site, with the cattle being used to graze and spread the seed through the paddocks.

The site, which is located on the school’s property, has been declared a nature reserve and is used for educational purposes.

The project is funded by a grant from the Department of Environment and Heritage.

**NGRMG targets youth to drive sustainable agriculture**

NORTHERN GULF RESOURCE MANAGEMENT GROUP (NGRMG) has initiated a new project to support youth from the region considering careers in sustainable agriculture.

NGRMG is aiming to engage youth aged 15 to 18 years, who are interested in agriculture and natural resource management, with a tool kit of resources showcasing pathways to careers in this field.

The project has launched a Gulf Youth in Ag Facebook page with plans for a Youth in Sustainable Agriculture competition coming up over the wet season. The Facebook page is a way to keep students connected with career opportunities in agriculture that are relevant to where they are from,” Ms Blumson said.

Find the Gulf Youth in Ag Facebook page at www.facebook.com/gulfyouthinag.

For more information contact education@northerngulf.com.au

**Stock do deed for seed**

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Infrastructure mapping and $avannaPlan-Beef$ense

THE current seasonal, debt and cost/price pressures across the northern beef industry are overwhelming for many families. However, the resilience of beef producers is shining through in their enthusiasm to identify and overcome key financial, herd and grazing management constraints.

Northern Gulf Resource Management Group (NGRMG) staff, the Department of Agriculture, Fisheries and Forestry Far North FutureBeef Team and agribusiness consultant Alison Larard offer a range of services to help beef producers address their sustainability and viability issues.

PROPERTY INFRASTRUCTURE MAPPING

The demand to map paddocks, water points, land types and infrastructure is increasing. Ricky Archer (NGRMG) is receiving several calls on a weekly basis from producers requesting proper infrastructure mapping.

Once the mapping is complete Ricky is also busy updating proper maps so new owners and fences can be included. These property maps greatly assist with decision making, including land management, carrying capacity, stocking rates, property layout and infrastructure development. Producer feedback in relation to the value of property mapping is very encouraging and details:

- how grazing circles from water points clearly identify ungrazed areas and assist in planning the placement of additional waters.
- how various formats of the property map can be used, including wall maps for planning, A4 box and A3 versions to help new staff on the property, and as inserts in funding or bank applications.

Ricky Archer can be contacted on 0488 614 115.

$AVANNAPLAN-BEEFSENSE

This is delivered on-property by a team who understand all aspects of running a profitable beef business; from breeder productivity and stocking rates, through to cash flow budgeting, debt management and marketing.

Team members work with producers to help them better understand the financial and economic aspects to their business. The team help producers gauge the implications of making significant changes to their production systems, and move towards securing a better future. Attuned to the sensitivities of people’s lives and businesses, ‘A Service Agreement’ is used to outline the program and cover confidentiality issues.

More than just financial businesses, including 35 Gulf properties, are participating in $avannaPlan-Beef$ense to better understand their business position and identify ways to move forward financially and sustainably.

Successful beef producers concentrate on managing grass through wet season spelling, wise stocking rate decisions and maintaining good break-of-season ground cover. These management practices maintain ground cover. These management practices maintain

$avannaPlan-Beef$ense Team comes to aid with viability services

Making sense of beef profitability plan

THROUGH the DAFF/NGRMG on-property $avannaPlan-Beef$ense program it is common to see extended break of season with very little or no cattle and the main reasons are very clear.

- Low cattle prices
- High costs

$avannaPlan-Beef$ense, including knowledge that the top producers clearly model ‘what’ and ‘how’ to communicate effectively with their lenders.

- The team offers support and acts as a ‘bouncing board’ for families facing the ‘hard decisions’, such as selling assets (land and/or cattle) or staying on in tough circumstances to see out a specific business strategy.

- Four businesses are refinancing with a new lender or negotiating improved interest rates and terms with existing lenders. The team conduct detailed business analysis, including financial and herd productivity benchmarks over the past five years. Producers are using this information to identify and implement options to improve the production and financial performance of the business.

- Families are improving their understanding of the ‘people’ issues in their business (roles and responsibilities, succession, asset transfer) and making positive steps to meet these challenges (family meetings, employing communication and succession experts).

- A methodical cost/benefit analysis of pasture improvement, infrastructure development and cattle marketing strategies is also completed with producers.

- Producers find getting a better grip on their finances empowering them and supports decision making. There is some peace of mind in acknowledging what is likely to be ahead and making plans accordingly. Putting numbers to likely business activities reduces uncertainty and keeps you on top of things. One producer said, “I now have a sense of control and better understand what I think is going to happen.”

- If you are interested in being involved in $avannaPlan-Beef$ense, contact Alison Larard (0458 007 999), Bernie English (0427 405 011), Joe Rolfe (0427 378 432) or Andrew Taylor (0499 009 567).

Joe Rolfe
DAFF Beef Team
Mareeba

Table 1: Age of turnoff and impact on gross margins

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Need help with your super?

Contact Eddie, your local Regional Manager, for personal, one-on-one super support

0488 999 711
eisaac@primesuper.com.au

11 December 2014 | NQR | FUTURE BEEF NORTHERN MUSTER

AROUND THE NORTHERN GULF

FutureBeef Northern muster

Team comes to aid with viability services
Herbicide pellets rain down on prickly acacia

PRICKLY acacia (Acacia nilotica subsp. indica) has become a widespread weed throughout north-west Queensland since it was introduced in the 1890s. There are currently a variety of mechanical and chemical control options available for prickly acacia. However, in many cases, the extent and density of prickly acacia mean that control costs become prohibitively expensive. Therefore, the continued development of more efficient and cost-effective options for control of prickly acacia is important.

A granular pelleted herbicide with the active ingredient tebuthiuron was initially developed by Dow Agrosciences and called Graslan (other generic versions are available). It is normally applied by hand to the soil around the prickly acacia plant. A new tool for the application of Graslan has recently been developed to help control prickly acacia. The weed sniper is a single, variable-dose pellet dispenser applied to each tree from a helicopter. The pilot identifies the target plant, determines the size and dose required according to manufacturer recommendations, and then hovers over the tree and applies the single dose.

Herbicide application is via a tube directed to the centre of the tree mass, allowing the pellets to follow the natural rain collecting structure, which results in an ideal spread of the pellets around the base of the tree. When carried out in calm to light wind conditions, downwash from the helicopter appears to have minimal effect on the dispensed pellets as they fall. The weed sniper is a single, variable-dose pellet dispenser applied to each tree from a helicopter.

Within the treatment zone there was a mixture of scattered, low-density prickly acacia, as well as higher density areas associated with cattle pads and fence lines. The number of treated plants was recorded using a manual counting device and an aeronautical GPS unit. The pilot recorded 4260 treated plants, but the actual number killed was 4548. The difference between the two numbers is likely to be due to collateral damage, where smaller prickly acacia plants within the drip line of larger dead trees were killed by the Graslan dose to the larger tree. A higher mortality was achieved for taller plants. The plants over four metres tall (only 10 per cent of total treated) recorded a mortality rate of 88pc. For plants 2 to 4 metres tall there was a kill rate of 88pc. However, mortality rates were much lower for smaller plants under two metres.

A comparative trial using on-ground application of Graslan by foot and by quad bike was carried out on May 8, 2014. However, no results will be available until sufficient rain falls to activate the herbicide. Assessment of the mortality rates by these two methods will take place in early 2015.

The benefits of the weed sniper are expected to be evident when used over vast areas where large prickly acacia trees are scattered and at relatively low densities, which is the case on a number of lower Gulf properties. Where there is a moderate density of prickly acacia, on-ground application of pelleted herbicide may be the more cost-effective option.

This project is supported by Southern Gulf Catchments Limited through funding from the Queensland government.

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PIAG keen to see MLA push northern R&D

THE Pastoral Industry Advisory Group (PIAG) for the Southern Gulf NRM region has discussed the need for transformational change with Meat & Livestock Australia (MLA) managing director Richard Norton. PIAG chairman Charlie Hawkins said PIAG members discussed how MLA could help move the industry forward with strong representation for the north. He said the group also spoke about using northern levy funds and were encouraged that action was already under way through MLA’s new consultation model, to ensure levy payers had more say on R&D spent in the north.

Mr Norton said MLA had run projects such as CashCow, looking at key husbandry practices associated with improved reproductive performance and investigation into different feedback options, which directly benefited northern levy payers.

The group also discussed, at length, MLA’s price transparency project, to analyse options for increasing price transparency in the beef supply chain. Benefits of prior discovery, risks of price disclosure and potential benefits at the farm gate were all debated and PIAG requested continuous updates on the project.

PIAG also discussed debt issues and opportunities in northern Queensland. One of the options put on the table was a tax loss credit swap scheme to transfer previously accrued tax losses into interest credits.

Mr Hawkins also said PIAG believed the northern beef industry would be open to investors who may be able to help the industry take advantage of opportunities currently out of reach of the average producer.

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