

Northern muster

Information for rural business in North Queensland



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Issue 38 August 2015



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NQ prices rebound

Market report

NORTH Queensland cattle prices have bounced back from a slight downturn over the past few months. Best bullocks at JBS Townsville in early July were over the \$4.40/kg mark and, for the right types, the boat trade was \$2.35/kg delivered to export yards near Townsville.

There has been a lot of speculation across the supply chain on the availability of boat and slaughter cattle in the next six months.

With a third failed wet season in a row across the north, and 80 per cent of Queensland drought declared, we can reasonably expect heavy boat-slaughter cattle supplies to seriously tighten.

Cattle numbers being processed in Queensland have continued at record levels with several weeks seeing slaughter numbers exceeding 90,000 head for the week.

Prices for top store cattle in central and southern Queensland during late June/early July exceeded \$3/kg liveweight at saleyards and on AuctionsPlus, with average prices about \$2.65 to \$2.85/kg live. Pasture certified cattle prices (PCAS) at Teys abattoirs have been over \$5/kg dressed for some time.

Export trading conditions for our beef are still good (overseas demand; value of Australian dollar) and Australian beef exports to all markets have reached 1.34 million tonnes over the last financial year.

The US has again emerged as our most important single customer, importing 471,000 tonnes from July 2014 to June 2015. Drought conditions in the US over the past few years have led to big reductions in their herd numbers, which is causing their present domestic beef supply shortfalls. Cattle numbers in the US, as of January 2015, were estimated at 89.8 million head, up slightly from the previous year.

There has been a lot of comment from market analysts on the possibility of Australia's high import



Cattle numbers being processed in Queensland have continued at record levels with several weeks seeing slaughter numbers exceeding 90,000 head for the week.

levels this year into the US triggering a 26.4pc tariff if our exports exceed a calendar year total of 418,214 tonnes. With the expected downturn in slaughter numbers heading into Christmas, the likelihood of the tariff being triggered is low, but our processors will keep a close eye on the situation.

LIVE EXPORT

Dry conditions are still the norm over most of North Queensland and many producers have had a short, poor wet season, with dam water supplies and grass again critical on many properties. Townsville has exported about 300,000 head of boat cattle over the last financial year and many northern supply districts are running low on suitable weight cattle.

Indonesia had allocated Australia permits for 250,000 head in the second quarter of 2015, but added another 29,000 head of slaughter ready cattle as authorities were worried about beef supplies for festivals.

In mid-July, the live export third quarter quota for Indonesia has been reduced to only 50,000 head. This will cause major disruptions in the marketplace in Australia, especially for cattle in the 250-350kg range. Already there have been reports from agents that

the Indonesian market has changed requests to only send heavier type cattle over 450kg ready or close to slaughter condition. The Indonesian market will need cattle from somewhere fairly shortly so hopefully the situation will change soon.

CHINA

Trading conditions into China are about to change, with eight Brazilian abattoirs getting approval in June to ship product into China. Before the mad cow scare in Brazil in 2012, they exported about \$1.5 billion of beef products into China.

BRAZIL

The 217 million head Brazilian herd (which is mainly grassfed) is moving more into feedlot production, with their estimated annual 4 million head feedlot output now expected to possibly double over the next few years. Traditional pasture cattle production areas are coming under pressure from more cropping activities. Some of these crops will no doubt feed quite easily into an expanding feedlot sector and their annual beef production of just under 10 million tonnes annually could increase substantially.

Brazil has pushed ahead with import protocols for their beef into the US for fresh and frozen product, and commentators expect some trade to begin before the end of the year.

Brazil still has periodic issues with foot and mouth disease and without a reliable traceability system, suitable production areas may be a restriction.

Brazil exported 37,000 tonnes of cooked beef into the US in 2014.

The largest beef importer in the world is Russia and Brazil is still the largest single exporter into this market.

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Take five steps for Bos indicus cattle to 'make the grade'

MSA index

BOS indicus cattle breeders – there is good and bad news on your cattle grading Meat Standards Australia (MSA).

The good news? Bos indicus breeds can consistently achieve MSA grading, MLA project manager for eating quality data analytics, Jessira Perovic, told the recent Beef Australia 2015 MLA Producer Forum.

The bad news? There is wide variation in the eating quality of Bos indicus breeds, but with greater producer understanding of the MSA Index this can be reduced.

Talking at the forum, Jessira said the MSA Index could help producers increase profitability by:

1. Hitting the target. The index provides a "common language for the complex recipe" that goes into high eating quality beef and allows producers to understand which aspects of their animals need improvement to lift compliance.

2. Scoring. MSA registered producers can use the myMSA website to read the MSA performance of their animals as measured by the index. Animals will receive a score between 30 and 80, with 50-60 being the average. Producers can learn where their animals fall and look for opportunities to improve.

3. Herd variation. As all animals receive an individual score, producers can look for variation within the herd and assess the impacts on these different scores to fine-tune their management.

4. Drawing lines in the sand. Once groups are established according to their score within the herd, producers can work on moving the bottom performers to the middle and the middle to the top.

5. Figuring it out. By using the index calculator, producers can assess the impact that different breeding decisions will have on scores that impact on the index, such as ossification, hump height and hormone growth promotants (HGP) use.

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Visit www.myma.com.au
Watch Jessira deliver her presentation at Beef Australia 2015 at:
www.mla.com.au/beef2015



Understanding the tick-control basics

Costly parasite

GIVEN the challenges associated with keeping drought-affected cattle alive, cattle producers are reminded to remain vigilant on tick control or risk suffering further economic losses.

The cattle tick (*Rhipicephalus*, formerly *Boophilus*, *microplus*) is a significant, economically important parasite of the North Queensland cattle industry. Due to tick worry and blood loss, heavy tick infestations can cause condition loss and even death. Ticks can carry and transmit fever organisms. North Queensland cattle producers need basic understanding of the tick lifecycle and effective chemical treatment options.

CATTLE TICK LIFECYCLE

The lifecycle can be described in two stages, the parasitic and the non-parasitic. During the parasitic stage the tick spends its entire time on one host. This takes about 21 days and the tick develops (moults) from a larvae (seed) tick to a nymph, then becomes an adult. Female adult ticks feed for 7-12 days before engorging and dropping off the host onto the pasture.

In the pasture, or non-parasitic, stage, females lay up to 3000 eggs, then die. Eggs hatch to produce larvae that climb the pasture sward and wait to be picked up by a host, or they die. This stage can vary from two to nine months depending on time of year and is affected by extremes in temperature and humidity. In North Queensland ticks may lay viable eggs year round.

STRATEGIC TICK CONTROL

Products registered for tick control may be administered as cattle dips and sprays, and pour-on or injectable products. Insect growth regulator treatment contains fluzuron, which breaks the lifecycle.

Immature ticks that ingest fluzuron cannot moult and therefore die. Adult ticks that ingest fluzuron lay eggs that do not hatch. Once the lifecycle is broken tick numbers will plummet. Cattle treated with fluzuron act like vacuum cleaners, moving around sucking up larvae ticks off the pasture, dramatically reducing tick numbers. Knock-down tick treatments simply kill ticks that come into contact with the chemical.

TESTING CATTLE TICKS FOR RESISTANCE

Prolonged or incorrect use of acaricides (tickicides) can lead to resistant ticks surviving chemical treatments. If you are unsure of your tick resistance status or suspect poor efficacy after chemical treatment, contact either your local DAF biosecurity officer or the chemical manufacturer and they can assist with organising for ticks to be tested for resistance.

TICK FEVER VACCINATION

Although Bos indicus cattle have an innate resistance to cattle ticks the risk of tick fever remains. Ticks spread the blood-borne parasites *Babesia* and *Anaplasma*. Bos indicus breeds have a greater level of resistance than Bos taurus breeds to the *Babesia* parasite but all breed types are susceptible to *Anaplasma*. Relying on natural exposure from infected ticks does not guarantee protection.

For information on tick control contact:
DAF Biosecurity Queensland
13 25 23 (or your local office)



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Editorial

WELCOME to the winter edition of the Northern muster. The cattle supply situation has reached new heights in recent months with dramatic pricing movements. This has the industry heading into uncharted territory from a price prospective with market analysts predicting an extremely rare event for the Australian beef supply chain. The astounding high price movements coupled by the breakthrough opening of a live export trade for feeder and slaughter cattle from Australia to China, has the beef industry buzzing in anticipation of what is in store.

Excitement surrounding market movements is providing optimism for producers still affected by drought conditions across more than 80 per cent of Queensland. The state government has increased the maximum amount of funding available under the Drought Relief Assistance Scheme (DRAS) to assist producers as the drought continues.

Maximum DRAS support was lifted from \$30,000 to \$40,000 a year for property owners in their third and/or subsequent year of drought, and with an approved Drought Management Plan in place. This increase was effective for the 2014-15 financial year and as long as the current drought continues.

Hopefully, the additional funding will assist livestock owners with the rising costs of transporting fodder and water supplies over increasing distances. As the Emergency Water Rebate is a part of DRAS, the increase also applies to eligible water infrastructure.

Producers wanting to apply for DRAS assistance, including the Emergency Water Infrastructure Rebate, should contact the Department of Agriculture and Fisheries on 13 25 23. DRAS claim forms and Individually Droughted Property (IDP) applications can also be found at www.daff.qld.gov.au.

A reminder for those in drought declared regions – all fodder freight and Emergency Water Infrastructure Rebate claim forms must be submitted within six months of the date of purchase.

With the Bureau of Meteorology officially declaring a major El Niño event producers are encouraged to plan ahead using the latest forecasted information.

The potential impacts of the El Niño pattern include a later start to the wet-season and monsoon onset.

Industry abuzz on upswing



Zanda Award winner Emma Hegarty with runners-up Luke Wright and Athol New.

We congratulate FutureBeef extension officer and former Northern muster editor Emma Hegarty on winning the inaugural Zanda McDonald award. Emma will now take part in the 2016 Rabobank farm managers' program and a mentoring package.

We hope you enjoy issue 38 of the Northern muster. Please contact the editorial team with any inquiries or feedback. To register to receive the online version of the Northern muster, subscribe on

the FutureBeef website (www.futurebeef.com.au/resources/newsletters/) or email northernmuster@daf.qld.gov.au

For the latest research-based information, tips, tools, events and recorded webinars, visit www.futurebeef.com.au

Melissa Holzwart
Jo Robertson
Melissa Frazer



Stocktake Plus app updated for Android

Talking business

THE Department of Agriculture and Fisheries' popular beef business app, Stocktake Plus, has been updated for Android devices. Forget the pen and paper, GPS, camera and land type sheets – a smartphone and a new Stocktake Plus app are all a grazier needs to determine stocking rates and carrying capacity in any paddock.

The app was developed by DAF's FutureBeef team after extensive industry consultation, and is designed to be a practical, work-anywhere (including outside telephone range), decision-support tool. Supported through FutureBeef and Meat & Livestock Australia, the app is available to all north Australian producers.

The new Android update makes the app more user-friendly and accurate, and brings it in line with the updated Apple version. It includes:

1. Add 'Available Pasture' to the reports section.
2. Create a home screen on start-up instead of defaulting to properties tab.
3. Export data to a .zip file of a CSV, email or transfer file.

It is also timely to remind all users to routinely back up data and here is how to do this:

1. Once logged in, navigate to 'Secure Backup' via 'More' on the navigation bar (at the bottom), or
2. View the video tutorial www.stocktakeplus.com.au/support/help-tutorials/#tutorial15.

Should you encounter any problems, let me know.

Greg Bath, DAF, Toowoomba
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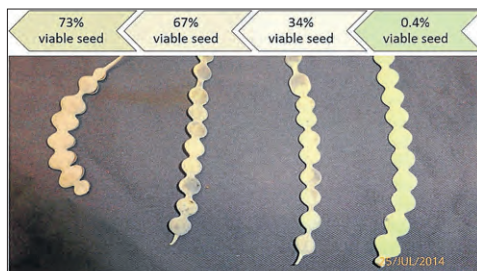
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Tropical Weeds Research Centre issues new data for battle against prickly acacia

PRICKLY acacia (*Vachellia nilotica* subsp. *Indica*) is widespread throughout north-west and central-west Queensland. The prevention of its spread at a local and regional level should be a management priority for all livestock businesses. Livestock eat green and dry seed pods as part of normal grazing habits, with high proportions of ingested seed remaining viable and passing through the animal's gut.

Recent research by the Department of Agriculture and Fisheries (DAF) Tropical Weeds Research Centre revealed the seed has potential to be viable as soon as a pod starts to change from green to grey, and this can be as early as July. The findings have surprised graziers and weed managers as this occurs well before pods dry out and fall from trees, which is when management actions intended to prevent the seed spread are generally performed. Most seed spread prevention actions relate to stock movement and



Viability of seed in prickly acacia pods as they change colour from green to tan/grey during development.

hygiene, as most seed is moved by stock. The new information about seed viability will allow managers to better identify the timing of management practices.

Monitoring prickly acacia pods as soon as they appear will offer the greatest opportunity to assess the risk and make informed decisions. So

far, DAF's research has shown the best indicators of non-viable seeds are when seeds are soft (easily squished between thumb and index finger) or when they are in green, flat pods. While many other visual characteristics were investigated during the study no other features clearly distinguished between non-viable and viable seed, not even seed colour.

Completely green seed did not mean a non-viable seed. On average, 24 per cent of seeds that were completely green, yet plump and hard, germinated. It is yet unknown whether green seeds that are viable remain so once they pass through the gut. However, the study has also shown rates of seed and pod development are highly variable. Hard brown seed can be found in the same pod as hard green seed and totally green pods can grow on the same tree while grey, dry pods are dropping.

This means, while prickly acacia is podding,

restricting stock movement between clean and unclean areas is still the best way to reduce risk of seed spread.

When stock movement is required, it is recommended stock that have had access to prickly acacia pods are held in a pod-free paddock for a minimum of six days to allow for the passage of the seed. This paddock should be chosen based on the ability to diligently monitor and control any prickly acacia that grows from seed deposited in manure.

The study on seed viability will continue throughout 2015 as part of the War on Western Weeds (WoWW) project. The five-year project, managed by DAF, aims to reduce the incidence and spread of prickly acacia. Other research planned for 2015 includes a trial to confirm the maximum time it takes for the seed to pass through cattle.

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Northern heifers monitored

LOW heifer pregnancy rates in northern Australia are quite common. The MLA-funded breeder project, CashCow, has reported median heifer pregnancy rates of 67 per cent in Australia's tougher northern forested areas. The findings aligned with results a local Charters Towers beef producer was seeing in his heifers. With his co-operation, a Department of Agriculture and Fisheries (DAF)/MLA Producer Demonstration Site (PDS), began on his Droughtmaster/Euro-cross type herd in December 2013.

The three-year study is testing the hypothesis that low liveweight during the mating period is the primary cause for low pregnancy rates in heifers. Data collection on the host property, Mt Oweenee Station, formally began in December 2013 with weighing and ultrasound ovarian scanning on 354 No.2 heifers. Mating started in mid-January 2014. Before mating bulls were vaccinated for vibriosis and veterinary checked for structural soundness. Semen was tested for motility (movement) and morphology (percent normal). Only four bulls were mated to the 354 heifers (1pc), showing that in many cases a reduction in bull numbers is a sound way to cut costs without affecting reproductive performance.

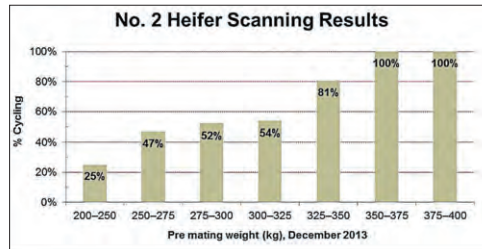
Pregnancy testing (foetal ageing) on the heifers occurred on May 6, 2014. Bulls were also removed on this date. Blood samples from the heifers were tested for pestivirus activity. Results from weighing, pregnancy testing and blood samples were quite interesting:
• Average pre-mating (December 2013) weight of the group was fairly low (291kg) and only 30pc had begun cycling (reached puberty and receptive to mating), with a further 20pc close to cycling.
• Average weight at pregnancy testing (May 2014) was 397kg.
• Pestivirus tests were negative (no exposure to virus).
• A pregnancy rate of 70pc was achieved.

Data for the heifers confirmed there is a weight threshold to understand. Graph 1 shows the pre-mating average weight of heifers needs to be about 340kg to have about 80pc of animals cycling. Alternatively, Graph 2 demonstrates that weights of at least 400kg at pregnancy testing are required to achieve a substantial pregnancy result.

BULL POWER

A major study led by former state government researcher Dick Holroyd, supported by a host of specialists, ran from 1992-97 looking at bull selection and management to enable a reduction in bull numbers. The study across eight commercial properties and four research stations in Queensland and the Northern Territory included 1000 bulls. The report can be found

Fertility rates under study

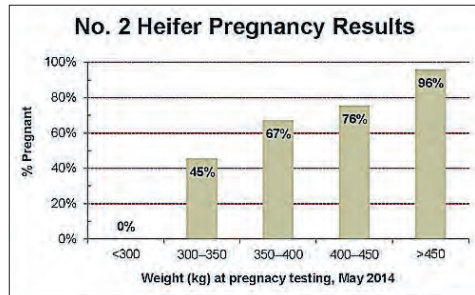


Graph 1: Percentage of No.2 heifers cycling, or about to cycle, by weight range.

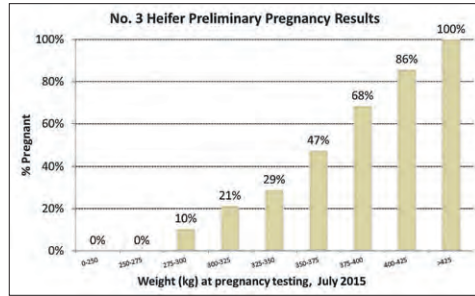


The three-year study is testing the hypothesis that low liveweight during the mating period is the primary cause for low pregnancy rates in heifers.

at www.mla.com.au/Research-and-development/Search-RD-reports/RD-report-details/Productivity-On-Farm/Bull-selection-and-use-in-northern-Australia/1812. A key finding of the research was with multiple sire mating, Brahman- and Bos indicus-derived bulls (that are assessed as reproductively sound) could be used at rate of 2.5pc bulls per cycling females without jeopardising herd fertility under most conditions in northern Australia. It was the concept of setting a bull percentage per the number of cycling



Graph 2: Percentage of No.2 heifers pregnant by weight range.



Graph 3: Preliminary results for percentage of No.3 heifers pregnant by weight range.

females (not all females within the mob) that was the basis for deciding to substantially reduce bull numbers in this mob of heifers.

For Mt Oweenee the standard bull ratio for heifer mating is about 3pc. Owners Doug and Zoe O'Neill would have normally joined 11-12 bulls to a mob of 354 heifers, for an expected pregnancy rate about 60pc. However, the ovarian scanning results (pre-mating in December 2013) showed 30pc of the mob had started cycling with a further 20pc near to cycling. Therefore

50pc of the mob, or about 177 heifers, were cycling or near to cycling. The PDS used a bull ratio of 2.5pc for cycling or near-cycling heifers (177 heifers). This meant only four bulls were mated to the whole mob (354 heifers), a bull ratio of 1pc. A pregnancy rate of 70pc was achieved.

The additional seven to eight bulls that would have normally been used for heifer mating were then able to be used elsewhere in the breeder herd. As a result no new replacement bulls were required to be purchased for this year (a substantial saving). This result is not advocating using 1pc bulls, but does demonstrate if you are using more than 2.5pc bulls you are potentially wasting bull power and money.

The past few seasons have been tough in North Queensland with drought conditions worsening. A group of No.3 heifers observed within the PDS has been split into three mobs and sent on agistment due to a shortage of feed and water at Mt Oweenee. Preliminary results for the No.3 heifers show a similar trend in an optimum weight at pregnancy testing to achieve a substantial pregnancy rate.

Two of the three mobs of No.3 heifers were pregnancy tested in July 2015 with an overall pregnancy rate of 29pc. This result is not surprising as the average weight of the heifers across both mobs at pregnancy testing was only 325kg. Graph 3 shows the pregnancy rates in different weight ranges. The results again demonstrate that heifers in the weight range of 400kg and above at pregnancy testing (six months after mating) achieve pregnancy rates greater than 70pc.

The third group of No.3 heifers will be pregnancy tested in the coming weeks to complete the data set. An update of the final results for the No.3 heifers will be included in the next issue of the Northern muster. Thank you to the O'Neill family at Mt Oweenee for their continued commitment to the project through difficult drought conditions. Thank you also to the producer group supporting the project. The PDS will continue until 2016.

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ONLINE RESOURCES

Heifer management in northern beef herds 2nd edition is a publication of MLA-funded heifer projects conducted in northern Australia. The publication can be downloaded at www.mla.com.au/News-and-resources/Publication-details?pubid=5934. Further information on heifer management can also be found www.futurebeef.com.au/knowledge-centre/breeding-and-genetics/heifer-and-breeder-management/

Wambiana field day looks at long-term stocking strategies

DAF project

IN 1997 the first research paddocks were erected on the Lyons family's property Wambiana, south-west of Charters Towers, to compare different stocking strategies in a variable climate.

Department of Agriculture and Fisheries' staff, Peter O'Reagain and John Bushell, started and ran the project through the life of the research – implementing and monitoring stocking strategies season, after season, after season. "Strategies include heavy and

light stocking, flexible stocking, rotational wet season spelling and combinations thereof, run in large, replicated paddocks," Dr O'Reagain said. "After 18 years there are dramatic visual differences in land condition and animal condition between treatments. This is supported by long-term data on animal production, profitability, pasture condition, water run-off and faunal biodiversity, as well as carbon sequestration.

"With 2015 the fourth driest year since records began in 1910, there could hardly be a better time to witness the long-term effects of the different

management strategies".

A field day will run at Wambiana on August 29. A full wrap up of the day will be available in Issue 39 of the Northern muster for those who are unable to attend.

You can also order or download the 60-page booklet from MLA: phone 1800 023 100 or visit www.futurebeef.com.au/resources/projects/wambiana-grazing-trial/ The Wambiana Research Project has been co-funded by the Queensland government, Meat & Livestock Australia, and continued support of the Lyons family.



Steers at Wambiana in July 2014.

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\$avannaPlan-Beef\$ense analysis

THIRTY-FIVE families are closely examining the stocking rates, herd productivity, operational costs and profitability of their beef businesses through the \$avannaPlan-Beef\$ense program.

These \$avannaPlan-Beef\$ense 'business health checks' are funded by the Department of Agriculture and Fisheries, Northern Gulf Resource Management Group and Southern Gulf Catchments. This confidential service includes a whole-of-business analysis.

With poor equity a major concern, we are spending considerable time helping beef producers develop debt management and servicing strategies. Many families are caught on high fixed interest rates and the interest bill is the largest annual expense. If you are in a similar position, try to renegotiate interest rates with your current lender or look elsewhere for a better rate.

So what else is the program achieving? \$avannaPlan-Beef\$ense is assisting beef producers to:

- Understand their business position, credit risk rating and current lending rates.
- Use financial and herd performance benchmarking to link decision making with business performance.
- Optimise sell-down strategies and better match cattle numbers with available feed and water.
- Investigate agistment options to reduce overgrazing, feed costs and mortalities.
- Weigh up the feasibility and affordability of on-property infrastructure projects with that of off-farm investment options.



\$avannaPlan-Beef\$ense customers interested in investment options were able to participate in the Noel Whittaker 'Golden Rules of Wealth' Forums in May 2015. Geraldine Whittaker, Greg Ryan (Greenhills) and Noel Whittaker at the Georgetown forum.

- Examine cost effective supplementation and production feeding programs.
- Combine safe stocking rates with wet season spelling systems.
- Explore heifer segregation and targeted supplementation programs.
- Use cash flow budgets to identify income deficits when transitioning from weaner to 18 month turnoff.
- Convene family meetings to improve family communication, clarify roles/responsibilities and negotiate asset transfer.
- Test the viability of business exit strategies, including the sale of some or all business assets.
- Examine the feasibility of establishing improved

pastures (Seca, Verano and/or Leucaena). Compile and analyse pasture planting cost, establishment timeline, predicted liveweight gain improvement, additional carrying capacity and projected cash flows.

- Compare the feasibility/affordability/profitability of capital improvements versus off-farm investments.
- Compare the profitability of weaner vs older turnoff.
- Improve their herd and financial records.

There are many things we can assist you with under \$avannaPlan-Beef\$ense, so don't be shy to make contact and ask to be involved. It is really about trying to get a better understanding of your financial position and what this means for your future.

Business analysis is even more valuable when fully integrated with practical herd and grazing management knowledge.

If you are interested in being involved in \$avannaPlan-Beef\$ense please contact any member of the delivery team.

For the Northern Gulf:

- Alison Larard, 0458 007 999
- Joe Rolfe, 0427 378412
- Bernie English, 0427 146 063
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- Melissa Bethel, 0499 059 907

For the Southern Gulf:

- Emma Hegarty, 0467 808 340

Joe Rolfe, DAF FutureBeef Team, Mareeba, joe.rolfe@daf.qld.gov.au



Youth in sustainable agriculture



While on tour students got an insight into practical on farm applications such as rotational grazing, layered planting, biodynamics, reusing waste and solar energy.

YOUTH from the Northern Gulf Region had their eyes opened to a range of careers in agriculture after attending the Youth in Sustainable Ag (YISA) camp at Wetherby Station, July 4-8, 2015.

Eleven students from Croydon, Julatten, Mount Molloy and Mount Surprise attended the three-day camp to learn about innovations in agriculture and natural resource management in northern Australia.

The Northern Gulf Resource Management Group (NGRMG) planned the YISA camp to bring together students who are mostly at high school outside the region to reconnect with each other and the latest in sustainable agriculture in their region.

The camp included tours to Bushy Creek Farm, the Henning-White Cocoa Farm and Skybury Farmgate. While on tour students got an insight into practical on farm applications such as rotational grazing, layered planting, biodynamics, reusing waste and solar energy.

While most of the students have an interest in cattle, these farm visits showed them different aspects to agriculture that they may not have been exposed to previously.

A full program was also held at Wetherby Station looking at low stress stock handling, pasture monitoring, stocking rates and mapping technology; updating students on some of the best management practice techniques used in the cattle industry.

The camp also coincided with sale day at Mareeba, where the students were introduced to the sale yards by Mareeba Saleyard chairman Gerry Collins. Department of Agriculture and Fisheries' (DAF) Biosecurity Queensland (BQ) staff also gave the students an insight on requirements for moving cattle and animal welfare.

YISA concentrated on developing leadership, communication and teamwork skills. A highlight of the camp was the 'moment with a mentor' sessions, giving participants one on one sessions with a range of different mentors, discussing career ambitions and opportunities.

For more information on the YISA camp contact: Erica Blumson, Education Officer, NGRMG, 0488 499 266, education@northerngulf.com.au, www.northerngulf.com.au/big-futures



NGRMG welcomes Melissa Bethel to the team



Melissa Bethel.

THE Northern Gulf Resource Management Group (NGRMG) welcomed a new member to their team in June with the appointment of Melissa Bethel. Melissa will be working in the role of regional Landcare facilitator / sustainable grazing officer. She was born and raised in Georgetown before heading off to the University of

Queensland to complete a Bachelor of Applied Science (Animal Production and Equine Science).

After completing her studies she undertook various roles, working for six months for a leading Australian stock horse trainer and five years contract mustering.

In 2012 Melissa was awarded the Edgar Hudgins Memorial Scholarship. This enabled her to spend three months in the US visiting various Brahman studs and making many valuable industry contacts. She also completed a Pregnancy Testing and Artificial Insemination course through Bovine Elite in the USA.

Upon returning to Australia a change of pace was needed and she was successful in securing a position in the Elders Charters Towers office as Farm Supplies Sales Representative. Melissa held this position for over two years and thoroughly enjoyed her time working with the Elders team and living in the Charters Towers community.

UPCOMING EVENTS

NORTH-WEST GULF GRAZERS' FORUM

10-11th October, Georgetown Shire Hall

Topics include

Succession planning, climate forecasting, herd productivity, innovations in agriculture, the North Australian White Paper, mental health and much more.

There will also be trade stalls, dinner, entertainment and a not-to-be-missed key note speaker. For further information about the forum contact NGRMG.

To find out more about upcoming NGRMG activities and projects contact:

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Best-practice bull buying

WITH bull buying season just around the corner here are some points to consider when purchasing new bulls.

SET CLEAR BREEDING OBJECTIVES

Predetermine what traits you are looking for when purchasing a bull. Select bulls with traits that are of economic importance, satisfy customer/market requirements, compliment herd production targets, will lift current herd performance and are in line with your breeding goals and selection criteria. It is important that you apply a ranking to your selection criteria by order of priority. This will be beneficial in deciding between bulls that generally meet your selection criteria.

GET AS MUCH INFORMATION AS YOU CAN

Request dam history, that is, information about the mothers of the bulls you are looking to buy. This is particularly important if you are looking at breeding replacement females. Dams that can rear a calf every year are more fertile than those that only rear a calf every two or three years.

Where data is available, use Estimated Breeding Values (EBVs). Always use the data appropriately. Look at the accuracy of the figures and consider what has actually been measured on the animal (traits observed) and know the breed average. While some figures may look good, they may be either low or high when compared to the breed average.

It is important to understand when figures need to be either above or below average. This depends on the particular trait. For example, a bull with good figures for 200-day weight will have a figure above the breed average. However, a bull with good figures for days to calving will have a figure below the breed average. For more information on EBVs visit the BREEDPLAN website <http://breedplan.une.edu.au/index.php>



Evaluation of fertility includes semen testing crush side for motility, colour and per cent progressively motile, and in a lab it is examined for per cent normal (morphology) under high-power magnification.

LOOK AT THE INDIVIDUAL DATA AVAILABLE

Individual data available may include weight, age, scrotal circumference, ultrasound scanning data (eye muscle area, rib fat and P8 fat) and dentition. Scrotal circumference is important as it is associated with earlier age of puberty of bull and heifer progeny. Scrotal size also has a small favourable relationship with days to calving such that bulls with a larger scrotal size tend to have daughters with shorter days to calving. For a guide to average or better scrotal circumference by weight visit <https://futurebeef.com.au/resources/newsletters/futurebeef-ebulletin/fertility-matters-part-2-beef-crc-outcomes/>

BULL BREEDING SOUNDNESS EVALUATION

Make sure the bull has passed a Bull Breeding Soundness Evaluation (BBSE). This assessment indicates whether the bull has met the standards for key fertility components. The evaluation indicates whether a bull has a high probability of being fertile. It

will also provide an indication of any possible physical limitations that will impact on fertility.

One of the fertility components within the evaluation is morphology, or structure of the individual sperm cells. Always ask for semen morphology data. While most bull breeders will now provide you with motility data, unless the semen is normal (morphology) and can fertilise the egg, motility is of little use. As a guide it is best to purchase animals with a per cent normal of 70pc or above to ensure optimal fertility in both the bull and subsequent progeny.

Where possible use a combination of visual appraisal and data to make your bull selection. Using one or the other alone is undesirable.

Just because a bull has four legs, a head and a set of testicles, it does not necessarily mean he is permanently a functional bull.

How he is handled, what stressors he has undergone, the level of nutrition available and other factors can all have a strong effect (either positive or negative)

on the ultimate fertility and functionality of that bull. His fertility is dynamic, meaning it can change due to these and other stressors / circumstances.

Relocation to a new environment, subjecting bull to new viral and bacterial challenges, fighting and other issues associated with establishing new social groups, could all have often unseen impacts on semen quality. These impacts then flow through to fertility in the herd.

Where possible, incoming bulls should be kept with animals of similar age, and bulls coming from very different geographic and climatic environments, should be relocated much earlier in their life than those animals bought from a similar environment to your herd. Some bulls adapt to more stressful environments more readily than others – these being more likely to have their semen quality affected.

Selection of bulls that meet minimum fertility standards has been a difficulty to many beef producers for a long time. Limited reproductive information has been included in sale catalogues, because many seedstock producers only supply the information that buyers either ask for or are prepared to pay for.

Regardless of whether you have sourced bulls out of the paddock or the sale ring, the need for some objectivity in selection remains the same.

It is strongly recommended that bull buyers request a complete BBSE when sourcing bulls.

Remember the bull with unknown fertility (and genetic merit for fertility) is going to affect herd function and profitability well into the next decade.

For more information on bull selection and fertility head to the FutureBeef website <https://futurebeef.com.au/knowledge-centre/raising-and-genetics/>

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Northern rainfall onset service provides planning assistance for producers

THE Bureau of Meteorology introduced its northern rainfall onset outlook service in late June, in time for this year's wet season.

The northern rainfall onset outlook provides guidance on the timing of rainfall onset for the coming northern Australian wet season. That is, are useful rains likely to start earlier or later than normal at locations in Queensland, the Northern Territory and northern parts of Western Australia?

This information will provide an important and useful service for many industries across northern Australia that need to look ahead for their planning, particularly the agricultural sector.

The Bureau has defined the northern rainfall onset as the date after September 1 when a location has received a total rainfall accumulation of at least 50 mm. This amount is roughly what is required to stimulate

plant growth after the dry season.

This outlook will be issued monthly from late June through to the end of August. Generally, the closer to September an outlook is produced the higher its accuracy will be.

Typically, coastal parts of northern Australia accumulate 50mm of rainfall by October, with locations further south and inland reaching the onset threshold over the following weeks.

Southern parts of the Northern Territory and western parts of Western Australia usually have the latest northern rainfall onset; around mid-January. The rainfall onset as defined here is different from the Australian monsoon onset, which is characterised by a reversal of the prevailing winds and widespread heavy rainfall.

The Australian monsoon onset can be



viewed at <http://www.bom.gov.au/climate/about/?bookmark=monsoon>. The north Australian monsoon usually begins in late December.

The northern rainfall outlook service was developed with support from Managing Climate Variability (<http://www.managingclimate.gov.au/research/>) a consortium of primary industry research and development corporations.

The northern rainfall onset outlook complements the Bureau's broader Climate Outlooks service, which indicates likely temperature and rainfall variations over the next three months, driven by large-scale shifts in the climate such as El Niño or La Niña events.

Check the northern rainfall onset outlook:
<http://www.bom.gov.au/climate/rainfall-onset/>
Subscribe to receive Climate Outlooks:
<http://e.bom.gov.au/link/id/zzz53bb31db150fb433/page.html?prompt=1>

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El Niño, La Niña unpacked

LARGE parts of Queensland have been affected by drought over the past three years. Rainfall from July 2012 to June 2015 has been low enough to be classed as being a 'serious' or 'severe' deficiency over many inland areas of the state, extending to the northern coast around Townsville and in the Gulf Country.

Rains in June and July have been welcome and locally useful, especially around the Queensland-New South Wales border, but have had only a marginal impact on long-term rainfall deficits.

The most significant features of the current drought have been its length, and how large an area it has covered. Rainfall averaged over western Queensland has been below normal in each of the past three wet seasons:

- 2012-13 – 41 per cent below normal
- 2013-14 – 20pc below normal
- 2014-15 – 26pc below normal

None of these individual seasons was especially extreme on its own – 2012-13 ranks eleventh driest on record, with more than double the rainfall of the two worst wet seasons on record (1901-02 and 1934-35). It is unusual to get three wet seasons in a row as dry as that without any recovery in between.

The most severe long-term drought on record in western Queensland occurred in the 1920s and 1930s. During this time, the dry conditions we have seen in the past three years persisted for a decade; all ten of

the wet seasons from 1925-26 to 1934-35 had below-normal rainfall, with eight of the ten being 20pc or more below normal.

The 1920s and 1930s stand well above all other long-term droughts for duration. The only other occasion when there have been three or more wet seasons in a row as dry as the past three have been from 1963-64 to 1966-67.

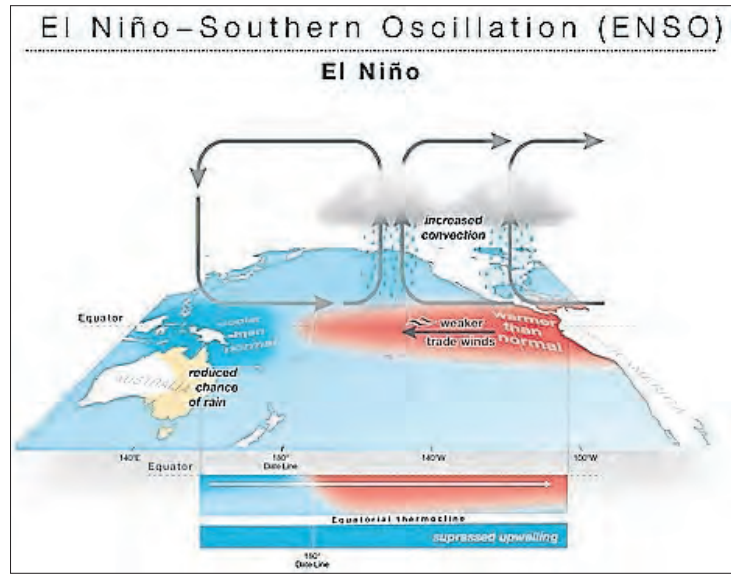
The current drought has affected a vast area of Queensland, with major areas of long-term rainfall deficiency both in the state's central west and north-west, and in the southern inland. In total, 45pc of the state has experienced serious or severe rainfall deficiencies over the past three years.

While only a handful of individual places with long-term observations (of 100 years or more) have had their driest three years on record, the fact that this drought has affected both north and south makes it especially significant.

It is rare for both the north and the south to be very dry at the same time – as an example, most of the Maranoa and Warrego had a drier three-year period in 1990-93 than they have had in 2012-15, but the early 1990s drought left the northwest largely unaffected.

WHAT IS AN EL NIÑO?

El Niño and La Niña are part of a natural cycle known as ENSO (El Niño Southern Oscillation). The state of ENSO is determined by the interactions



El Niño is the negative phase of ENSO – the El Niño Southern Oscillation.

between the atmosphere and ocean circulation.

ENSO transitions between El Niño, Neutral and La Niña. Sustained periods of warming or cooling in the central and eastern tropical Pacific is referred to as El Niño or La Niña, respectively.

El Niño is the negative phase of ENSO – the El Niño Southern Oscillation. An El Niño is associated with an extensive warming of the tropical eastern and central Pacific Ocean resulting in a major shift in weather patterns over the Pacific.

But there are other changes that occur too. El Niño events are often accompanied by cooler than normal sea surface temperatures in the western Pacific, and to the north of Australia.

HOW DO YOU IDENTIFY AN EL NIÑO?

There are changes to the atmosphere and ocean circulation during El Niño events. These include:

Sustained warmer than usual sea surface temperatures across the central and eastern tropical Pacific Ocean.

A decrease in convection, or cloudiness, over tropical Australia, Papua New Guinea and Indonesia, where the focus of the convection migrates from the Australian and Indonesian region eastwards towards the central tropical Pacific – that is, the convection

forms far east of the Australian mainland.

The 'trade winds' (or the 'easterlies') in the tropical Pacific will weaken, or even reverse, during an El Niño.

There are sustained negative values of the SOI (Southern Oscillation Index), typically below -8. This means there is higher pressure than normal over Darwin and lower pressure than normal over Tahiti. It should be noted that daily values of the SOI can fluctuate markedly because of daily weather patterns rather than change in a broad-scale pattern, so we look at a thirty day moving average of the SOI, not daily or weekly values.

When an event significantly exceeds these thresholds the event is referred to as 'strong', while events that maintain close to these thresholds are referred to as 'moderate' or 'weak'.

However, the strength of an event does not correlate directly with the impacts over Australia. That is, a weak or moderate event can have greater impacts than a strong event.

WHAT ARE THE TYPICAL IMPACTS OF EL NIÑO?

Historically, El Niño events are associated with a higher risk of low winter and spring rainfall, and a delayed start to the wet season in many of the drought affected areas. While El Niño increases the risk of drought it does not guarantee it.

For long-term drought in western Queensland, perhaps more important is the absence of La Niña. In particular, the 1920s and 1930s-when western Queensland had its most severe long-term drought (as did South Australia)-were notable for their lack of El Niño or La Niña events.

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Forecasting El Niño

THE Bureau of Meteorology issues monthly seasonal forecasts – Climate Outlooks – which include outlooks on the state of ENSO for the upcoming months.

The accuracy of long-term forecasts varies with the time of year and decreases the further out we look. The outlooks can give guidance on when an El Niño (or La Niña) is likely to occur and how long it may go on for.

Forecasts of the likelihood of ENSO events take into account temperature patterns across the tropical Pacific Ocean at the surface and sub-surface, variations in trade wind ('easterlies') strength, atmospheric pressure and ocean currents.

Indian Ocean sea surface temperatures are also a significant contributor to the outlook. Information on these is available fortnightly in the ENSO Wrap-Up (<http://www.bom.gov.au/climate/enso/>)

Climate Outlooks <http://www.bom.gov.au/climate/outlooks/> shows the likelihood of the next three months being wetter or drier or warmer or cooler than usual. While weather forecasts predict what the rainfall or temperature will be tomorrow, the climate outlooks are not this specific as they look further ahead and attempt to model a chaotic system.

AUGUST-OCTOBER OUTLOOK

The current outlook is for the August to October period. The rainfall outlook shows an increased chance of a drier three months over far northern Queensland and a roughly equal chance of wetter or drier August to October in remaining parts of Queensland.

Historical outlook accuracy for the August to October period is moderate over most of Queensland, but low over parts of central Queensland.

The outlook includes a maximum (daytime) and minimum (overnight) outlook. For August to October, daytime temperatures are likely to be warmer than average across a large part of Queensland except in the far north. Accuracy for the August to October period for maximum temperature is moderate to high over most of Queensland but low in the far west.

Overnight temperatures are very likely to be warmer than normal for most of Queensland, apart from the far northern Cape York Peninsula. Historical accuracy for the August to October period for minimum temperature is moderate for most of Queensland, except in areas in the southeast.

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EL NIÑO POTENTIAL IMPACTS

In Queensland these include:

- Reduced rainfall
As the convection shifts eastwards over the tropical central Pacific and away from the western Pacific there is usually a reduction in rainfall through the winter-spring in eastern and northern parts.
- Later wet season start and monsoon onset
Rainfall in the northern tropics is typically well below average during the early part of the wet season.
- Reduced tropical cyclone numbers
During El Niño years, cyclones are half as likely to cross the coast compared to Neutral years.
- Warmer temperatures
During El Niño years there is a tendency to see warmer than average daytime temperatures across the southern half of Queensland (excluding the coast). In the northern part of Australia there is a tendency to see an increase in both individual extreme hot days and multi-day warm spells.
- Increased risk of frost
The reduction in cloud cover often leads to cooler than average overnight temperatures during winter, with an increase in the number of frost days during El Niño years compared to the historical average.

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