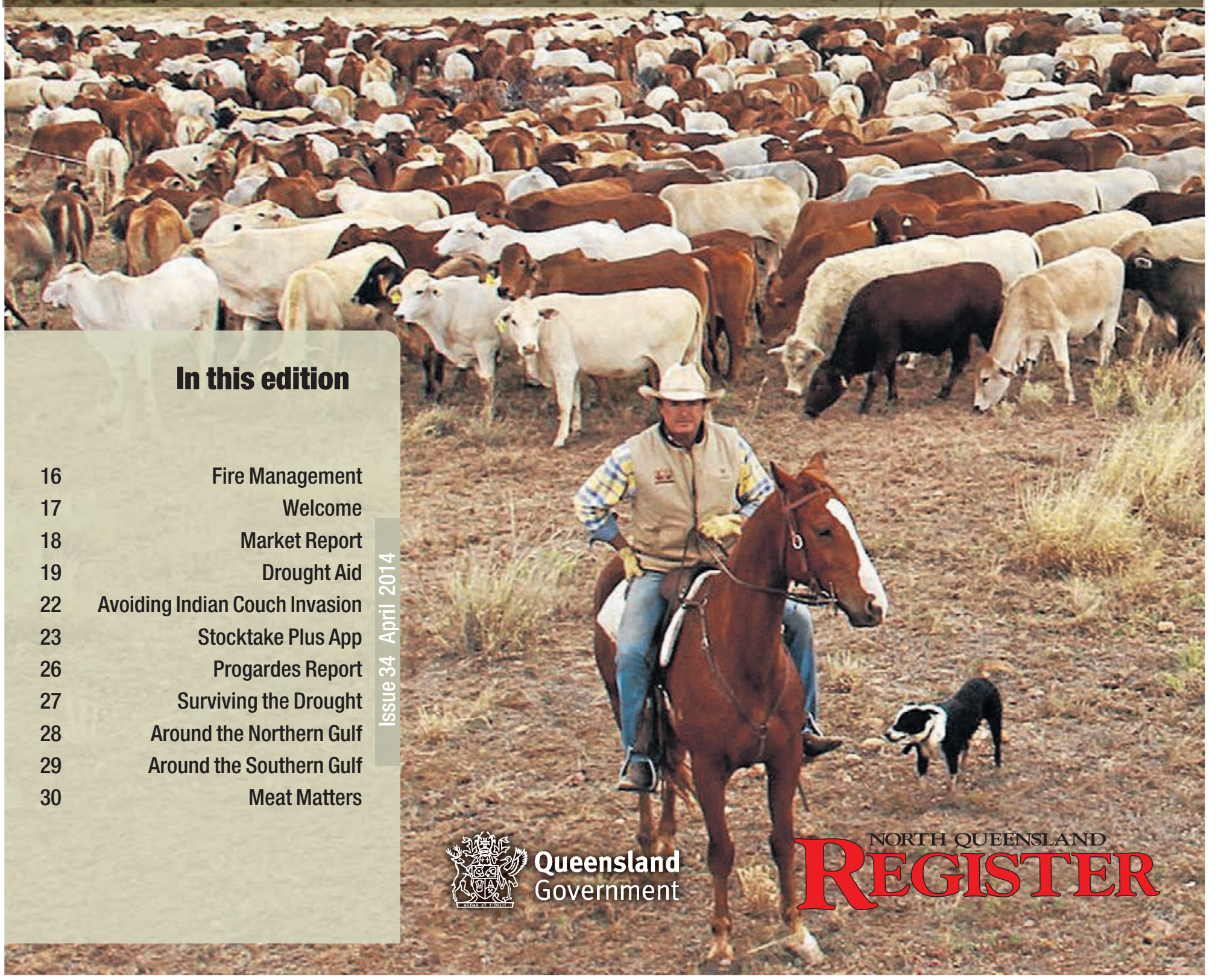
FutureBeef

Northern muster

Information for rural business in North Queensland



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Queensland Government

NORTH QUEENSLAND REGISTER

Feel the burn

Black soil fire plots from the air in 2011.

Red soil site (inland bloodwood, conkerberry, silver box) burning in June 2013.

Late season action boosts bottom line

A RESEARCH project that started 20 years ago is delivering strategies for using fire to control woodland thickening on grazed savannas, and showing that late-season burning is substantially better for the bottom line.

High-value pastoral land across northern Australia's tropical savannas is not being burned enough to combat woodland thickening, while lower value pastoral land, indigenous and conservation land is falling victim to 'overburning' with too many late-season wildfires.

Woodland strategy 20 years in the making

These are among the findings of a long-term research project in the Northern Territory's Victoria River District, which is providing insights into the use of fire in grazed savannas.

The fire experiment on Victoria River Research Station (known as 'Kidman Springs') was established with MLA-funding in the 1990s to assess the impact of fire management on woody cover and pasture condition. The experiment was replicated on grazed red and black soil sites, with experimental plots burnt early or late in the dry season every two, four or six years. The experimental plots were compared with unburned controls.

NT Department of Primary Industry and Fisheries senior rangeland scientist Dr Robyn Cowley said the project was providing clear evidence for optimal fire regimes in grazed savannas, and was relevant to producers from Townsville across to the Kimberley.

"Four-yearly late dry season fires were the most effective for managing woody cover while maintaining pasture condition," Robyn said.

"Two-yearly fires should be avoided, unless required to promote rapid change in woody cover, because of the damaging effects on pasture condition.

"While early fires are recommended on conservation land to reduce damaging late-season fire frequency and extent, on grazed pastoral land early fire was associated with declining pasture condition, probably due to the longer exposure to post-fire grazing on early burnt sites."

THE BUSINESS OF BURNING

Economic modelling of a commercial cattle station found four-yearly fires improved animal production and enterprise profits, with late dry season fire providing the greatest benefits.

There was an opportunity cost of implementing early-season fire (as recommended for carbon and biodiversity outcomes) of $85/km^2 compared to burning later in the year. "If you burn late in the dry season, you don't have to burn the whole paddock," Robyn said. "You just burn a quarter of the paddock and you can leave the animals in there to graze the other three-quarters. "It's not long then before the wet season starts, and next year you can burn another quarter. This is known as rotational burning."

www.mla.com.au/fire

KIDMAN SPRINGS FIRE EXPERIMENT

Scenario	Average annual profit	Number of years with a loss
No fire	$647,737	6
Early burn	$838,234	6
Late burn	$1,174,405	4

Implementing early vs. late fires had an opportunity cost of $85/km2 as recommended for carbon and biodiversity outcomes.

Scenario	Tree Basal Area (m^2/ha)	Pasture growth (kg/ha)	Stocking rate (AE/km^2)	Live weight gain (kg/hd/yr)	Live weight gain (kg/ha/yr)
No fire	3.7	1,200	5.1	96	4.8
Early burn	2.8	1,253	5.2	107	5.4
Late burn	1.9	1,530	6.2	112	6.7

The production implications of fire on property.

FINDINGS ON RED SOIL
- Two-yearly and early fire suppressed perennial grass yield and promoted annuals and forbs.
- Four-yearly late fire managed woody cover.

FINDINGS ON BLACK SOIL
- Two-yearly or early burns reduced total yield and perennial grass yield, and increased annual grass yield and the percentage of legumes. Four-yearly early or late fire managed woody cover.

More information: Savanna Burning: Understanding and using fire in northern Australia http://savanna.cdu.edu.au/publications/savanna_burning.html
http://futurebeef.com.au/topics/grazing-landmanagement/#fire

Industry input sought for MLA's new fire and grazing management research

Producers show lack of confidence in fire for grazing management

MEAT and Livestock Australia (MLA) is scoping the feasibility and methodology to conduct a research, development and extension (RD&E) program around fire and grazing management.

Input to the plan has been sought from pastoralists, researchers and Queensland, Northern Territory and West Australian organisations involved in production and natural resource management RD&E.

MLA's environment and NRM project manager, Cameron Allan, said the plan's development was prompted by evidence of industry members' growing lack of confidence in using fire as a pasture and woody weed management tool, despite the benefits borne out by research.

"There are numerous organisations that generate and provide information and services around vegetation management and use of fire," Cameron said.

"We want to understand why producers are not seeing a compelling case for the use of fire and, if improved information is needed to assist a decision on the use of fire, we want to work with all stakeholders to make that information available."

The consultation process sought to recognise who is already working on vegetation management using fire and what they are doing, and map out a more collective approach to add value to what is already under way. "Recognising who else is working in this space and gaps that need to be filled to present a compelling case for producers will help determine where MLA should invest," Cameron said.

Cameron Allan, Meat and Livestock Australia, (02) 6361 1204, callan@mla.com.au

Welcome to autumn Northern muster!

Editorial

BEEF producers across the north have had a horror run in recent years with the live export ban, destructive bushfires, failed wet seasons and over-supplied cattle markets in 2013 resulting in poor prices at levels not seen since the 1970s beef crash. The widespread nature of this drought has also made agistment difficult to find and very expensive.

Unfortunately, the 2013-14 wet season has been another disappointment, with only very patchy rain across most areas of the state, with some lucky properties receiving isolated heavy falls.

As we move into autumn, the potential to grow an average body of useful feed is rapidly disappearing, and producers need to plan ahead to reduce numbers further to match feed supplies. Out-of-season rainfall cannot be relied upon to produce a body of feed to run normal cattle numbers, as this rain only provides a brief increase in quality with green pick and herbage.

Having adequate pasture is the key driver of any beef business, and getting it right in our highly variable climate is a challenge. Fodder conservation such as hay, silage and fodder crops will only ever play a minuscule role in evening out deficiencies in fodder availability across a range of growing seasons. Tactics such as implementing conservative stocking rates, wet-season spelling and good water distribution to allow access to all pasture resources, and planning and reacting in a timely manner when problems occur, are all well-proven approaches in the north.

Having reliable cattle water supplies has also come to the fore during this last dry year, with properties relying heavily on dams and run-off flows in serious trouble early on. Clean out and maintain dams when dry. Setting up reliable bores, with accompanying poly pipe and troughs, will improve the operation during low rainfall years. Subsidies are available to help with emergency water infrastructure for properties in drought-declared areas or with an IDP declaration.

If your financial situation is not good, talk to your financial institution as soon as possible. Get in touch with the local Rural Financial Counselling Service or QRAA officer. Do not self-assess on whether you are eligible for financial assistance.

You will find useful articles and contact details in this edition of the *Northern muster* to guide you through the coming dry season.

Joe Rolfe and Bernie English, guest editorial – Mareeba, FutureBeef Team, *Northern muster* editors

Planning all part of minimising biosecurity risks on-property

Everyone working in the beef and sheep industries has a role

BIOSECURITY INSIGHT

Over the next few editions of the *Northern muster*, Livestock Biosecurity Network Queensland regional officer Sarah-Jane Wilson will cover in detail what can be done on your farm to practise high standards of biosecurity.

PART of my role with the Livestock Biosecurity Network (LBN) is to encourage the uptake of on-farm biosecurity planning and practices.

Although not all livestock producers have a farm biosecurity plan in place, almost everyone has their own unique farm plan or a system to manage exposure to biosecurity risk (an example of such would be a quality assurance system).

Farm biosecurity is about protecting your enterprise from the introduction and spread of disease, pests and weeds.

Essentially you can break farm biosecurity down into three basic components: what comes onto the farm; what you do with it when it is on the farm; and what goes off the farm.

Everyone working in the beef and sheep industries has a role in biosecurity.

LBN promotes the seven priority areas of biosecurity, set out in the *National Biosecurity Reference Manual* for grazing livestock production.

The key priority areas describe the actions required for good biosecurity: around people, vehicles and equipment, livestock, feed and water, feral animals, pests and weeds, animal health management, staff training, and waste management.

Over the next few editions of the *Northern muster*, I will cover these topics in detail, describing what can be done on your farm to practice high standards of biosecurity.

I will also provide some handy tips and suggestions.

To start, please go to the LBN website at www.lbn.org.au and download the Farm Biosecurity Plan Checklist to benchmark your current practices, under the 'On-Farm Plan' tab.

In each edition I can assist you to build a farm biosecurity plan one step at a time, providing a training module and template to create a working plan for your own livestock property.

Sarah-Jane Wilson, Queensland regional officer, Livestock Biosecurity Network, sjwilson@lbn.org.au

Farm biosecurity is about protecting your enterprise from the introduction and spread of disease, pests and weeds.

Make sure your documents are ready

Considering animal health issues prior to live export

IN ORDER to protect Australia's long-term credibility and viability of the national live export industry, there are important animal health considerations that must be taken into account prior to exporting livestock.

Biosecurity Queensland senior inspector Rick Dunn said adequate documentation must be prepared and approved prior to exporting livestock.

"Our aim is to demonstrate that livestock being transported have not come from a Queensland property under movement restrictions," he said.

"Under Queensland legislation, livestock are not eligible for export if there is presence of any notifiable diseases on the property, such as bovine Johne's disease. Importing countries have the same restrictions, and livestock from infected properties under movement restrictions will be ineligible for export to that country. It is essential livestock owners and agents check the export health requirements in consultation with exporters when intending to sell or source livestock from Queensland properties."

Mr Dunn said that prior to moving any livestock intended for export off a property there was a legal requirement to obtain a travel permit from a biosecurity inspector. "If there is a change in the destination en route, or additional livestock need to be added or movement dates to be changed, permission must be sought from a biosecurity inspector immediately," he said. "Any alteration to a travel permit can only be done by a biosecurity inspector. No permits will be issued after the movement has commenced."

If you require any further information on the requirements to transport livestock, visit www.daff.qld.gov.au, contact your local biosecurity inspector or call 13 25 23.

Rick Dunn, senior biosecurity inspector, 13 25 23, rick.dunn@daff.qld.gov.au

Drought spurs record run at Qld abattoirs

Home prices firm and live-ex resumes

A round-up of the domestic and international marketplace

SINCE our last report, we have had a busy marketplace with slaughter rates for best prime cattle over $3.50/kilogram dressed in the run into Christmas, and opening in January at the same levels.

With the late patchy wet season across inland areas, producers began booking large numbers of cattle direct to slaughter during February 2014, and weekly slaughter rates across Eastern Australia are again at record levels.

Most of our Queensland abattoirs are now booked out for months in advance as Southern Queensland is also in dire straights with poor summer rainfall.

In North Queensland, the flood of heavier cattle has not impacted on slaughter prices as much as further south, as the live export trade has been shipping cattle of all descriptions up to 600kg live weight.

During February, a cattle council delegation visited the US on several matters, including the investigation of processes to get USDA accreditation for our newly launched PCAS, or Pasturefed Cattle Assurance System.

Our delegation reports that it will be a lengthy process to achieve USDA approval for PCAS product, but once achieved, it will open many opportunities around the world for our meat exporters.

The pasturefed beef has been in good demand in Australia so far, but with better seasonal conditions export markets will offer some good opportunities as well.

However, Woolworths announcing that they will use PCAS to underpin a certified grassfed product throughout their domestic market chain will strengthen demand, and shore-up premium prices for certified producers.

Teys Australia will be supplying the PCAS product exclusively to Woolworths and will begin accepting these cattle from May 1, offering up to $0.50/kg more than current MSA premiums.

There will be good opportunities for northern producers supplying pasturefed certified store cattle into this developing market.

LIVE TRADE

The live trade quickly heated up in the run into Christmas, with a rapid rise in demand for both light, and slaughter ready cattle. This was triggered by the change of Australian Government late in 2013, and quick negotiations with Indonesian officials.

High meat prices in Indonesian wet markets also helped.

Agents got serious as well, and quickly jacked up the price for Townsville delivered cattle to around $1.95/kg for 280-350kg liveweight steers, and $1.85/kg plus for heavier types.

At present the boat trade is very busy around North Queensland, with reasonable prices and demand.

As soon as the wet season moves north of the Northern Territory, and cattle can be accessed and shipped from Darwin, the situation will change in North Queensland.

Current boat prices for light cattle (280-350kg) are hovering around $1.85/kg for steers and $1.60/kg for heifers.

During 2013, Vietnam has quickly moved into the number three destination spot as numbers reached 66,951 head.

Heavier slaughter types have been preferred, and Townsville has loaded a 5000 head shipment already this year, with another 5000 head gone in March.

The situation in Indonesia is far from settled with other factors straining relations between our countries, and industry leaders are being cautious on forecasting numbers too far ahead.

Live export destinations	Number of head
Indonesia	454,152
Israel	98,320
Vietnam	66,951
China (dairy)	66,573
Malaysia	47,620
Russia (breeding stock)	34,584
Philippines	19,412
Japan	13,639
Jordan	11,900
Pakistan (dairy)	11,069

Table 1: Main live export destinations 2012/13.

Shipping Port	Number of head
Darwin	345,336
Fremantle	147,036
Portland	97,050
Broome	73,099
Townsville	65,355
Wyndham	33,517
Karumba	14,519
Geraldton	14,498
Brisbane	12,899
Port Headland	8,300

Table 2: Main shipping ports for the live trade 2012-13.

DOMESTIC MARKET

The widespread dry conditions across Eastern Australia are forcing big numbers into the marketplace. A month before the Christmas break, weekly slaughter rates across Eastern states reached a record 161,930 head.

However, in early February this year, weekly kill rates passed this old record already, with 163,933 head processed in early February. Queensland's contribution was a bit over 80,000 head.

The female percentage of the 2014 slaughter rates is sitting on 39 per cent which is up 5pc on the corresponding period last year.

The drought induced kill numbers of 8.34 million head of adult cattle for 2013, is the highest since 1978. Females contributed 3.9 million head to this total.

Average slaughter weight for 2013 was 277kg which resulted in the production of 2.32 million tonne beef, with 1.1 million tonne exported.

Numbers going through the MSA grading system continue to grow with 2.688 million head graded in 2013, up 17pc on 2012 with 1.174M head from Queensland.

With the widespread drought our feedlots have been busy and exports of grain fed beef have been up 10pc on the previous year.

Numbers on feed across Australia have been above 800,000 head with Queensland contributing 476,000 head.

Predominant grainfed beef export destinations in 2013 were:

- Japan 116,383 tonnes.
- Korea 31,020t.
- China 20,500t.
- Middle East 11,500t.
- EU 10,400t.

USA

The US cattle herd has been shrinking since 2007 with widespread drought, high grain prices and poor profitability for lotfeeders.

Latest estimates put the herd at 87.7 million head, the lowest figure since 82 million head recorded in 1951.

Herd rebuilding is expected to take a number of years and beef supplies are expected to be down by 5pc this year.

The reduced domestic beef supply is expected to flow through to lower US beef exports.

KOREA

An Australia-Korea free trade agreement (FTA) is moving closer on a range of agricultural products.

Beef, which has a 40pc tariff in place at present, will be faced with a phase out period over 15 years. The agreement will also see the elimination of the 72pc tariff on processed beef products over the 15 years.

We are currently at an 8pc tariff disadvantage to US beef imports as their FTA was ratified three years ago.

In 2013, we exported 147,173 tonnes into Korea – up 7pc on the previous year.

CHINA

The strong trade with China has continued into 2014 with just over 10,000t shipped during January.

This total was for frozen product only, as last August trade was suspended for the higher quality-valued chilled beef product.

At the time it was described as a documentation issue, but that was over 6 months ago with no resumption of chilled product to date.

Our total beef exports reached 154,833 tonnes in 2013.

JAPAN

Our beef exports to Japan have continued to slide since the US cleared its product from the 2003 BSE scare.

Australian exports reached 400,000 tonne in 2006, with US beef locked out of this market, but now our export volume only reached 288,000 tonnes in 2013.

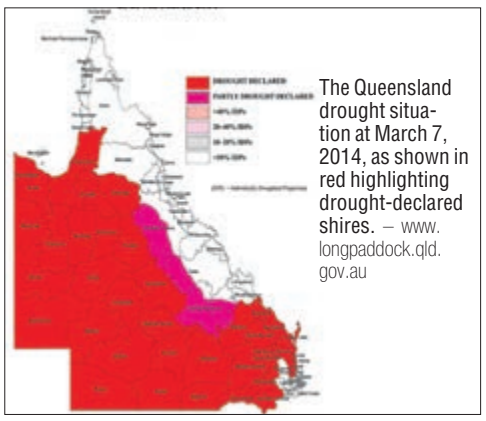
EUROPEAN UNION

JBS, Nippon and Teys Australia hold the lion's share of our EU beef quota and their meat inspection systems have been put under the spotlight by visiting inspectors from Europe.

It seems the audit found no significant issues with current operational procedures, but their rules don't allow meat inspections to be done by personnel employed by the company.

Our abattoirs have until about October to employ independent inspectors which no doubt will add complexities and cost to the supply chain.

Bernie English, FutureBeef Team, Mareeba, 0427 146 063
Greg Brown, Meadowbank Stn, Mt Garnet



The Queensland drought situation at March 7, 2014, as shown in red highlighting drought-declared shires. – www.longpaddock.qld.gov.au

QRAA's regional Client Liaison Officers – contact details

Name	Location	Phone	Mobile	Email
Sam Spina	FNQ and GULF	4064 2824	0429 497 757	sam.spina@qraa.qld.gov.au
Bradley Whittington	EMERALD (Central Highlands& West to NT Border	4987 5807	0417 775 345	bradley.whittington@qraa.qld.gov.au
Peter Crowley	MACKAY	4967 0728	0427 770 147	peter.crowley@qraa.qld.gov.au
Brendan Hamilton	ROCKHAMPTON (Capricornia)	4936 1872	0417 775 245	brendan.hamilton@qraa.qld.gov.au

For details on farm finance concessional loans or productivity loans call 1800 623 946.

Rural Financial Counselling Service (RFCS) Contacts

Name	Location	Phone	Mobile	email
Ian Jackson	GULF	4065 3493	0427 374 371	ianjackson@rfcsqcsr.com.au
Rachel Bock	LONGREACH	4652 5602	0427 583 096	rachelbock@rfcsqcsr.com.au
Richard Lewis	MACKAY		0499 144 522	richardlewis@rfcsqcsr.com.au
Emma Cook	EMERALD	4987 6886	0427 373 572	emmacook@rfcsqcsr.com.au
Glenn Budden	MILES	4627 2027	0429 894 474	glennbudden@rfcsqcsr.com.au

The RFCS in Queensland provides services that are confidential, impartial and free.

Drought assistance available

SEVENTY per cent of Queensland is now drought-declared. A full list of drought declared shires is available at www.longpaddock.qld.gov.au

Assistance is available to producers with properties in drought-declared areas or with an individually droughted property (IDP) declaration, including:

- Financial assistance.
- Freight and water infrastructure rebates.
- A freeze on increases of rural land rents in the 2013-14 financial year.
- Transport concessions for drought-affected primary producers.
- Mental health and community support workshops to help those who may be finding it difficult to cope.

FINANCIAL ASSISTANCE

Primary producers can contact the Rural Financial Counselling Service (RFCS) to seek information on the financial assistance programs outlined below, the application processes, and to discuss other business and financial queries in relation to their enterprise.

The RFCS in Queensland provides services that are confidential, impartial and free of charge to rural producers and small rural businesses.

INCOME SUPPORT – INTERIM FARM HOUSEHOLD ALLOWANCE

The Australian Government has announced a new federal program known as the Interim Farm Household Allowance (IFHA). Primary producers can lodge an application for this assistance from March 1, 2014.

IFHA is provided to help farm families experiencing financial hardship to meet basic household needs and improve long term financial security.

Claims for Interim Farm Household Allowance will be accepted until June 30, 2014.

ELIGIBILITY BASICS

- You must be a farmer.
- Contribute a significant part of your labour and capital to the farm enterprise based on specific criteria.
- Meet with a Rural Financial Counsellor.
- Meet an income and assets test.

Producers who currently receive the Transitional Farm Family Payment will be automatically transferred over to Interim Farm Household Allowance.

Former primary producers who have previously received 12 months' support through Transitional Farm Family Payment or Transitional Income Support can submit a claim for Interim Farm Household Allowance.

More information on IFHA can be found at:

- www.humanservices.gov.au/customer/services/centrelink/interim-farm-household-allowance.
- By contacting your area's Rural Financial Counsellor.
- Department of Human Services on 13 23 16.

QRAA

For information on farm finance concessional loans or productivity loans call 1800 623 946 or your nearest QRAA officer.

DROUGHT RELIEF ASSISTANCE SCHEME (DRAS)

The Queensland DRAS is available for eligible primary producers located within a drought-declared area or with an individually droughted property (IDP) declaration.

The scheme has been set up by the Queensland Government to help primary producers in the grazing industries manage their livestock resource during drought and to help in the restoration of that resource after drought.

DRAS provides freight subsidies on the transport of fodder and water during the drought and the transport of animals returning from agistment and animals purchased for restocking after the drought.

The DRAS scheme also provides a rebate on Emergency Water Infrastructure (EWI) which includes assistance for the purchase, supply and installation cost of water infrastructure purchased for emergency animal welfare need.

A completed Water Availability Statement to confirm water need must be approved by a Department of Agriculture Fisheries and Forestry officer prior to applying for the EWI.

Original tax invoices must accompany any DRAS application and it must be submitted within six months of the date of movement/purchase to receive the rebate.

The Australian Government is now providing an additional 25 per cent rebate of the total cost of EWI. The total rebate the applicant may now receive is 75pc of the total cost of the water infrastructure only.

If the producer has no Drought Management Plan in place, the maximum amount of rebate/subsidy an applicant can receive under all of the DRAS schemes (including freight and EWI) is $20,000. With a Drought Management Plan in place, the maximum amount the applicant can receive is $50,000. The extra 25pc only applies to EWI, is retrospective and will be automatically paid to those who have already received the 50pc Queensland Government rebate for EWI.

All forms for claiming water and freight rebates are available at www.daff.qld.gov.au/environment/drought or at local DAFF offices.

For any inquiries or assistance with a Drought Management Plan, or any of the DRAS scheme subsidies, contact your local DAFF FutureBeef Extension Officer.

TRANSPORT CONCESSION AND ASSISTANCE FOR ROAD TRAINS

Assistance for drought-affected primary producers may be available for the payment of fees and permit requirements, including vehicle inspection fees, drought road train permits, pilot escorts and vehicle height limits when transporting livestock or machined baled hay. Visit www.tmr.qld.gov.au or call 13 74 68.

SCHOOL TRANSPORT ASSISTANCE SCHEME

Families that drive their children to school or connect with a school bus run may be eligible for an increase in the school transport allowance. Visit www.tmr.qld.gov.au or call 13 74 68.

FARM MANAGEMENT DEPOSITS

Visit the Department of Agriculture www.daff.gov.au/agriculture-food/drought.

ELECTRICITY REBATES OR CONCESSIONS

- Visit www.dews.qld.gov.au or call 13 43 87.
- Ergon Energy: For drought relief rebates or concessions visit www.ergon.com.au or call 13 10 46.

LEGAL AID QUEENSLAND

Rural legal services for severe, debt-related problems, lender disputes, or financial hardship with farming businesses, visit www.legalaid.qld.gov.au or call 1300 65 11 88.

THE TELSTRA BILL ASSISTANCE PROGRAM

Short term emergency relief to residential customers if you are unable to pay your Telstra fixed home telephone bill. Administered by national welfare organisations including Salvation Army, Smith Family Anglicare and St Vincent de Paul. Queensland Salvation Army (07) 3222 6666; New South Wales Smith Family (02) 9085 7222.

SOCIAL AND COMMUNITY SERVICES

- Lifeline 13 11 14 Crisis Counselling Line 24 hours for individuals and families.
- Salvation Army 1300 36 36 22 telephone counselling 24 hours a day, 365 days.
- BeyondBlue 1300 224 636 help with personal issues, depression or anxiety.
- Relationships Australia 1300 364 277 confidential counselling and family support services.
- Kids Helpline 1800 55 1800 a national 24-hour telephone counselling service for children and young people (ages 5 to 18).
- Women's Infolink 1800 177 577 free, confidential information and referral service Queensland-wide to support women.
- Mensline Australia 1300 789 978 helps men with relationship issues.
- Queensland Health 13 43 25 84 provides a series of mental health and psychological support workshops across drought-affected areas. Workshops aim to enhance mental health and wellbeing in communities affected by drought.
- Frontier Services 1300 787 247 provides health, family, community services and pastoral support in remote Australia.
- Outback Links 1300 731 349 places volunteers with rural and remote families for short periods.
- The Bush Connection (07) 4639 7897 provides free confidential support including personal support, identifying options, and advocacy, in crisis situations.
- Other assistance – Local doctors, clergy, hospitals or community health centres can also help.

CLIMATE AND MANAGEMENT INFORMATION

- The current Queensland drought situation report, map and seasonal outlooks are at www.longpaddock.qld.gov.au/queenslanddroughtmonitor.
- DAFF 13 25 23 and FutureBeef have resources on feeding and management of livestock during drought, strategies to help cope with stress and software packages to evaluate options and assist in decision making. Email callweb@daff.qld.gov.au or visit www.daff.qld.gov.au/environment/drought, www.futurebeef.com.au/topics/nutrition
- A booklet Dry season management of a beef business can be downloaded free from www.futurebeef.com.au/resources/publications.

An ongoing pain in the grass

Indian couch and its two accomplices: Avoiding the slippery slope to their dominance

The good, the bad and the ugly – Chapter 2

THIS article is a follow-up from the article in the December 2013 edition of the *Northern muster*, "Indian couch: The good, the bad and the ugly".

Two other grass species that are often mistaken for Indian couch and behave in a similar manner are Angleton grass and Sheda grass.

This article applies to them as well. The identifying features of the three species, and their preferred soil types, are in the following table.

	Grass species		
	Indian couch (*Bothriochloa pertusa*)	Angleton grass (*Dichanthium aristatum*)	Sheda grass (*Dichanthium annulatum*)
Scent	Green blades - strong scent when crushed	No scent when crushed	No scent when crushed
Nodes	Band of hairs 5.0mm diameter around nodes	No hairs or very short hairs around nodes	No hairs or very short hairs around nodes
Seed	Pits (slight indentation like a pin prick) in the side of the seeds	Seeds not pitted	Seeds not pitted
Seedhead	Stems & branches of seedheads smooth i.e. no downy hairs	Band of short downy hairs in lower part of the seedhead & along stems just below seedhead	Stems & branches of seedheads smooth i.e. no downy hairs
Preferred soil type/texture	Clay loams or heavier; less commonly on sands & loams	Heavy black cracking clays (black basalt country, black goldfields country, clayey alluvials & brigalow/ gidgee scrub country)	Wet areas on range of soils - prefers cracking clays

SLIPPERY SLOPE TO INDIAN COUCH DOMINANCE

Grazing pressure (stocking rate at the paddock scale) is the biggest driver of change in pasture composition.

Continuous heavy stocking creates spaces for Indian couch, while moderate stocking rates that are matched to carrying capacity, favour the palatable, productive, perennial (3P) pasture species.

Drought plays a secondary role as it causes significant death rates in some 3P pasture species, particularly black speargrass.

However, other 3P species such as the native bluegrasses (desert, Queensland and curly), golden beard grass and buffel grass are drought hardy.

Indian couch is drought susceptible, but because of its massive soil seedbank and stoloniferous growth habit (runners), it makes a quicker recovery than the 3P grasses with return to good seasons.

Soil fertility also plays a secondary role, with the 3P grasses that produce a higher yield on the fertile soils having more tolerance of heavy grazing.

Therefore there is a greater resilience against Indian couch invasion on the fertile soils than on the marginal or lower fertility soils.

Selective grazing by cattle often provides bare areas where Indian couch can get a foothold. The patches fall into three categories:

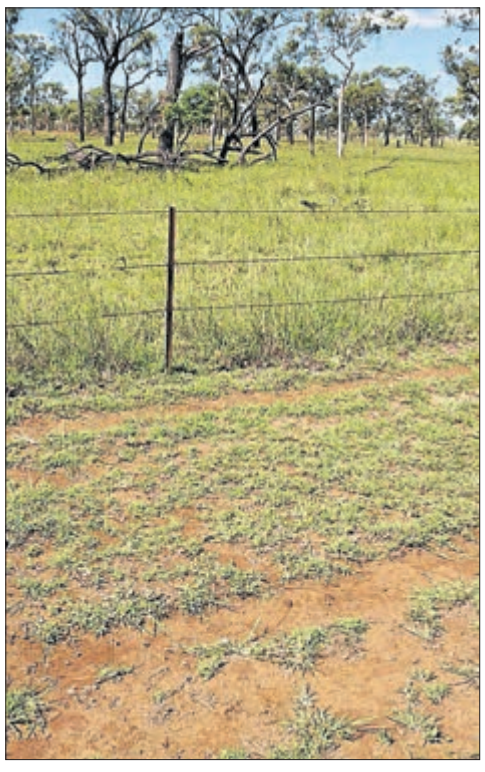
- Patches that are created and constantly kept short by cattle.
- Land types that are preferentially grazed such as alluvial soils and black basaltic soils where they make up the minority of the paddock.
- Fire scars that are attractive for all grazing animals, particularly where a minority of the paddock is burnt, producing short sweet feed.

This selective grazing usually explains why areas of Indian couch are found in locations that are remote from water in paddocks that otherwise have appropriate stocking rates.

Continuous heavy to moderate grazing without spelling favours the expansion of Indian couch patches.

Because paddock carrying capacity declines as the area of Indian couch expands, due to reduced pasture yields, maintaining stocking rates at their original level will cause overgrazing of the paddock which further favours Indian couch.

Stocking rates must be reduced to account for the lower yield from Indian couch to avoid the slippery slope to Indian couch dominance.



Through the fence – grazed native pasture of black speargrass and desert bluegrass with few Indian couch plants. Foreground – Indian couch encroaching into black speargrass and desert bluegrass pasture, weakened by burning and grazing. A wet season spell after the burn would have given the native species a chance to compete.

THE ROAD TO RECOVERY

Reduce stocking rates to match the current carrying capacity of the paddock. Use a forage budget at the end of the growing season to calculate a stocking rate. A rough estimation will get into the ballpark, or use the Stocktake App which includes a forage budgeting tool on a smart-phone or tablet (www.stocktakeplus.com.au).

Contact your local FutureBeef extension officer for a property visit to assist with doing a forage budget or participate in a Stocktake workshop in your local district.

Manage grazing to retain at least 50 per cent pasture cover coming into the wet season. This will maximise infiltration and subsequent pasture growth.

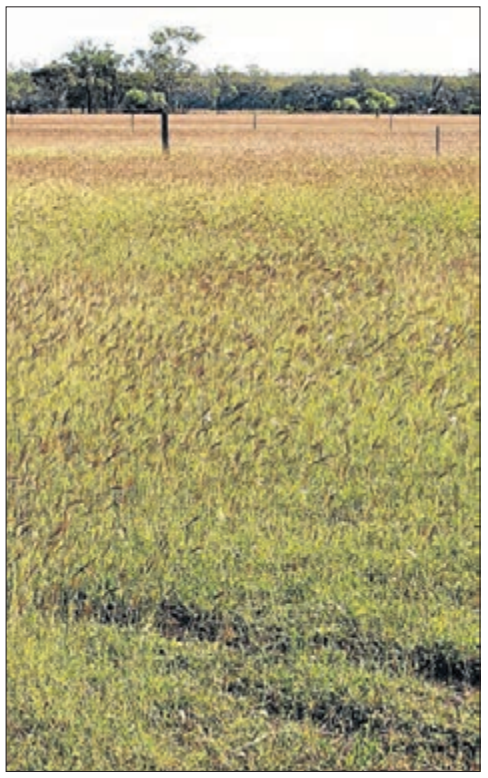
Wet season spell pasture for two consecutive summers – exclude livestock from the paddock from the first rains of the summer until the pasture has seeded. This will maximise seed-set and allow the existing 3P tussocks to increase in size and vigour in both years, and provide an opportunity for seed germination and the establishment of new 3P plants in the second year.

Wet season spelling once every two years should continue as a routine management tool until recovery is well advanced. Stock moderately during each dry season to ensure that ground cover is adequate at the commencement of the next wet season.

Strategic use of fire – fire favours some 3P species such as black spear grass and reduces the incidence of non-desirable species such as wire grass. There is no research data on the effect of fire on Indian couch. However, an observation in a railway reserve near Collinsville by a pasture scientist in the late 1970s indicated that black speargrass that was regularly burnt but not grazed, was not invaded by Indian couch from the adjoining paddock. Whether this is due to the stock exclusion or the regular burning, or a combination of the two, is open for debate.

Late spring or early summer burning after 50 millimetres of rain will give the best results. Pre-burn stocking rates should be light to allow for the retention of sufficient fuel to carry a fire, and post-fire wet season spelling is critical. Failure to wet season spell after fire will further damage the 3P species and open up more spaces for Indian couch.

Fence preferred land types into a separate paddock (where feasible) to allow the preceding management changes to work more effectively.



Complete transformation to Indian couch and angleton grass dominance since 2003 on black basalt country – paddock history is not known.

The rate and length of the road to recovery from adopting these management practices will depend on:

- Degree of Indian couch dominance.
- Frequency of 3P species in the pasture at the start.
- Adoption of grazing management practices to improve the amount of 3P grasses and land condition in general.
- The run of the seasons after making the changes.

In all cases it is imperative to first and foremost reduce grazing pressure/stocking rates.

Failure to take this initial step makes all additional management changes futile.

In the next *Northern muster*, we'll look into the option of using sown pasture species to inject 3P species into the pasture to improve carrying capacity.

Bob Shepherd, Grazing Land Management, FutureBeef Team, Charters Towers, (07) 4761 5150

TRIAL OPPORTUNITIES

CHARTERS Towers DAFF in conjunction with the Dalrymple Landcare Committee has funding to establish a demonstration site(s) on recovering black basalt country that is in poor (C-D) condition.
A letter has been sent to all owners of black basalt country in the Upper Burdekin seeking expressions of interest.

Due to industry concern about Indian couch expansion, MLA is interested in working with a group of producers to establish a producer demonstration site (PDS) to evaluate management options for Indian couch dominance on red basalt country at a commercial paddock scale.

If you are interested in either of the above opportunities, please contact the FutureBeef extension officers in Charters Towers (07) 4761 5150.

Graziers learn to use the app out in the paddock with Megan Willis. The app has support and tools to help you get the information you need about your pastures, to get the answers you want, immediately, while you are still out in the paddock.

The graziers' friend

Get real time in-paddock support with a new mobile tool

The Stocktake Plus app

GETTING the balance right between supply and demand is hard enough at the best of times without adding lack of rain. When it comes to making decisions during dry times and drought, accessing any available tools and support can provide clarity when considering the next step.

The Stocktake Plus application (app) for smart phones and tablets, and the associated Stocktake Plus workshop, are such tools, now available through FutureBeef.

At the end of the wet season (March - April), it is important to consider how much pasture you have until break of season (mid to late January), and how that pasture supply matches the animal demand you have on hand. This is especially important with the expected low pasture growth for many this year. Using a forage budget can assist you to either capitalise on extra available pasture, or highlight that you may need to lighten the load. A forage budget will also give you time to make decisions about when to destock, and what markets to target based on available pasture.

The Stocktake Plus app guides graziers on how to calculate sustainable stocking rates for their paddocks, based on current available pasture, and how to establish a rangeland monitoring site to understand changes in land condition.

The Stocktake Plus app:

- Helps the user identify what land type they are on, using the land type mapping of Queensland.
- Assists in monitoring grazing land condition by logically guiding the user through the data entry process, securely storing information and producing concise reports, including the calculated long-term carrying capacity.
- Guides the user through either a basic or detailed forage budget.
- Stores rainfall records (from multiple rain gauges).
- Stores stock numbers – and converts all classes of animals to Adult Equivalents (AEs).
- Displays current stock on land condition reports and can pull current stock numbers through when calculating demand within a forage budget.
- Backs up all information securely on the internet (only accessible by the user) by syncing.

Each function within the app can be used independently and maintain full functionality. For example, if you are only interested in doing a forage budget, this is possible. However if you want to link all information from stock records, through land condition and rainfall, you can do that too. The app was designed to be visual, logical and easy to use. One of the most vital design aspects is the ability to work without 3G/4G phone reception.

WHY FORAGE BUDGETING IS IMPORTANT

Forage budgeting is a process for balancing forage supply (existing and anticipated pasture yield) and forage demand (how much the animals will consume) over a defined period. A forage budget allows landholders to calculate objective numbers to support their decisions based on observations and experience.

A forage budget can also help plan for seasonal variability in pasture quantity. For example, a forage budget may indicate that between May and January, you can carry 400 Adult Equivalents (AEs) in a particular paddock, with a certain pasture yield.

Depending on the current stock numbers this gives you the option to either buy in more stock or devise a targeted sell-off plan if grass growing rain is not received by a specified date. This means you are selling your cattle earlier than those who decide to hold stock until seasonal conditions deteriorate further, and animal condition declines. You are also taking better care of your pastures.

[1] 1 AE = a 450 kilogram dry beast maintaining its liveweight.

WHEN SHOULD I DO A FORAGE BUDGET?

Forage budgets are recommended for the end of the growing season (April or May), or each time livestock are moved between paddocks.

The grazing period can be days, weeks, months or a season. A dry season forage budget is usually from the end of the growing season, for example, May, to a date when you are likely to have a bulk of fresh pasture growth, for example, mid to late January.

HOW DO I CALCULATE THE FORAGE BUDGET?

Using the new FutureBeef Stocktake Plus app you will be guided through the process of completing a forage budget.

The app has in built support and tools to help you get the information you need about your pastures to get the answers you want, immediately, while you are still out in the paddock. Results from a forage budget within Stocktake Plus include:

- How many days your current feed will last with the number of AEs you have.
- The number of AEs and/or current class of stock your paddock will carry to the end date.

THEN WHAT?

Forage budgets are not a 'set and forget' tool, you need to continue to monitor both your pastures and livestock during the grazing period to ensure you have the balance right.

This information helps plan your stocking rate strategy for that paddock and grazing period, ensuring that animal productivity is optimised and land condition is maintained or improved.

More information can be found at www.stocktakeplus.com.au

Megan Willis, FutureBeef Team, Charters Towers, (07) 4761 5192, Megan.willis@daff.qld.gov.au

Workshop and trial participant sought in the north

Learn to use the Stocktake Plus app

WHILE most have received some rain to help boost pasture growth, some areas have seen a slow or below average response from the favourable perennial grasses. Do you know how to manage this for best production outcomes?

Southern Gulf Catchments have partnered with the FutureBeef team to provide producers with information and tools to support these management decisions. Stocktake Plus is a practical workshop that gives you the skills to take home to help make critical decisions on how to manage grazing of your pastures for the best possible production results.

Two Stocktake Plus workshops have been run in Hughenden and Cloncurry in March that were well attended by graziers from the area. More will be held based on demand.

The workshop includes a demonstration of using the recently developed Stocktake Plus application (app) for smart phones and tablets which will be trialled on several properties in the Southern Gulf Catchment.

Hughenden Stocktake Plus workshop participants assessing total yield of pasture available to calculate their forage budget from using the Stocktake Plus app.

SEEKING GRAZIERS TO TRIAL THE APP

Southern Gulf Catchments and the Cloncurry FutureBeef team are looking for producers who are keen to use the app on their property to trial the use of this technology in our region.

Please contact Emma Hegarty or Rebecca Gunther, FutureBeef team Cloncurry, on (07) 4742 1311 if you want to be involved. The trial of this new technology will help refine the app further to support graziers in the region.

Participants in the trial will be provided with training in the Stocktake Plus workshop, including how to set up and use the app, and one on one follow support on the participating properties to ensure confidence in using the app on your property.

Stocktake Plus assists land managers to monitor, calculate and report on stock numbers, land condition, short term stocking rates, and pasture yield at paddock and property scales. More information on the app can be found at www.stocktakeplus.com.au

Larissa Lauder, Sustainable Grazing Project Officer Southern Gulf Catchments, (07) 4743 1888

Unlocking north's seed secret

Results of Hughenden Progardes trial

Importance of sown legume persistence

NOTED previously in the *Northern muster* is the importance of persistence that a sown legume requires if it is to be well adapted, survive and be productive in our variable climate – including having the capacity to recover from drought.

If a legume is persistent it implies that:

- The plant is tolerant of grazing.
- Has longevity.
- Has disease and insect resistance.
- Has a suitable flowering and seed maturity time to cope with our sometimes short and variable wet seasons.
- Has adequate seed production and hardseededness for seed soil reserves.

Here we report on the importance of adequate seed production, hardseededness, and, particularly, the soil seed bank found in a trial plot of *Progardes Desmanthus* (www.progardes.com.au) on Mitchell Grass Downs near Hughenden.

Desmanthus seeds, as with many other legume seeds, especially in the Mimosaceae family, have a hard seed coat and are usually highly impermeable to water, a feature identified as hardseededness. To break down hardseededness and to germinate, the seed coat needs to be ruptured so it can take up water and gases and start the germination process.

Typically, Desmanthus seeds will have a low germination percentage unless the seed coat is treated either by artificial means, such as scarification (done before planting and resulting in a high germination percentage), or, when in the soil, the hard seed coat breaks down via natural environmental conditions and agents such as wetting and drying, fluctuating soil temperatures, soil bacteria and fungi.

In nature, even under ideal conditions, not all Desmanthus or similar seeds germinate. Some remain dormant in the soil and germinate in subsequent years. The soil seed bank consists of all viable seeds present on or in the soil, or in any litter that is a component of the ground cover.

The soil seed bank can be transient, whereby seeds germinate soon after they were produced from the mother plant, or persistent, whereby seeds are dormant remaining in the soil for long periods, until germination. Persistent seeds are an important adaptation to uncertain, alternating environmental conditions.

During the current drought, a Progardes legume trial plot near Hughenden was studied with a focus on determining the soil seed bank of Progardes. The site was sown in 2010 and slowly established to be a good stand of the legume. A considerable amount of seed was produced on the grazed plants that naturally entered the soil seed bank over time prior to the drought.

Mature *Progardes Desmanthus* plant.

Progardes seedlings can establish from seed that has remained in the soil seed bank for a number of years, waiting for the right conditions to germinate.

The 2013 rainfall at Hughenden totalled 129.6 millimetres, or about one quarter of the average annual of 492mm. In February 2014, prior to receiving any substantial rain, the plants were considerably stressed by drought, but had a population of 3.7 plants/square metre with a frequency of 66 per cent.

Towards the end of 2013, 16 soil cores (7 centimetres wide x 5cm deep) were taken at random across the 2.5 hectare Progardes trial plot.

The resulting soil cores were sieved to recover any Progardes seeds.

This found 6,349 seeds/sqm across the plot in the top five centimetres of the soil seed bank. In a subsequent germination test of these recovered seeds, 43pc germinated.

This study at Hughenden confirms that in normal seasons:

- Progardes Desamanthus produces abundant seeds so that a large soil seed bank can accumulate over time.
- A good percentage of those seeds are available to germinate.
- A good percentage remains hard in the soil seed bank for germinating at a later date.

With storm rains in February, the surviving 3.7 plants/sqm are expected to spring back to life due to their adaptations to such harsh conditions, including the presence of deep tap roots.

Other similar studies have shown that Desmanthus have from 87 seed/sqm to several thousand seeds/sq m.

Even the lower number of 87 seeds/sqm was sufficient seed to re-establish a productive population once the drought had broken.

The results at the Hughenden site suggest Progardes has adequate seed production, hardseededness and good soil seed bank reserves, so that with a return to more normal seasons, recruitment from this soil seed bank should occur over time, leading to effective plant populations, and thus animal production.

Chris Gardiner, School of Veterinary and Biomedical Sciences, James Cook University, christopher.gardiner@jcu.edu.au

Phosphorus supplementation regimes explored in latest research at Gayndah

Clear trends emerging from preliminary findings

A MAJOR experiment at Brian Pastures Research Station near Gayndah is evaluating better ways to get breeders to eat phosphorus (P). For the past seven months, 40 heifers have been individually fed to evaluate a new P supplementation strategy.

Project leader Dr David McNeill explained that even though the experiment will not finish until April, some clear trends are already emerging.

About 70 per cent of the grazing land in northern Australia is P deficient, and the expense of P supplementation is a huge issue for profitability. Current advice is to supplement heifers with P to meet their immediate and greatest needs, that is, in lactation.

However, feeding P while heifers have a calf at foot is only useful if they actually eat the supplement. The challenges of the wet season can make this difficult.

The 'pre-loading' strategy examined in this experiment is to try to pre-load heifers with phosphorous in the dry season, when they should be pregnant and it's relatively easy to get them to take a supplement. Bone is a rich source of P, and the heifer's skeleton could potentially be used to store large amounts of P.

The heifer could then draw on these body stores of P through the next wet season, when they should have a calf at foot. Phosphorus is especially needed to maximise the heifer's ability to produce milk, as milk is very rich in P. The experiment started in June 2013 and will finish early April 2014. It covers the last four months of pregnancy and the first three months of lactation, followed by a recovery phase of six weeks after weaning when all heifers will be fed a high P diet.

Forty maiden heifers due to calve at three years of age were started on a diet rich in energy, protein and fibre with both diets identical apart from the presence or absence of Kynophos® as the P supplement.

In pregnancy, half the heifers were fed the diet with Kynophos fully mixed into their diet, and the other half without. At calving these groups were split again into half with and half without Kynophos.

During lactation the fibre was reduced and energy increased to meet the nutritional demands of the heifers and calves.

Is it viable to supplement in the dry but not the wet? Emerging trends show that after four months on the high P diet the pre-loaded heifers gain an extra 45 kilograms of live weight by time of calving, and use these body stores to produce about 30 per cent more milk than heifers on a low P diet through the experiment.

In fact, the milk production of the pre-loaded heifers matched that of the heifers fed according to current advice (low P in pregnancy, high P in lactation), for the first four weeks of lactation.

However, after the first four weeks of lactation the heifers managed according to current advice began to produce much more milk than the pre-loaded heifers. Over the three months of lactation, the 'current advice' treatment heifers produced about 20pc more milk than the pre-loaded treatment heifers. The project team is also investigating how important a role bone reserves play in the pre-loading strategy by taking bone samples from the heifers at key points in the experiment. Calf weaning weight data is still to be finalised.

Measuring indicators of P in maiden heifers:

- Bone tissue is collected at the beginning of the trial, at calving, at weaning and after the replenishment stage to indicate the ability to store and release P.
- Faeces, urine, blood and milk samples are taken fortnightly to determine mobilisation of P in the body and P outputs.
- Phosphorus inputs measured through weekly feed intakes.

PRELIMINARY FINDINGS

- The high P and low P groups had a difference of approximately 45kg in live weight by calving.
- Addition of Kynophos improved appetite dramatically.
- There was no difference between the high P and low P groups in calf birth weights, indicating the extra nutrition in pregnancy helped the high P heifers to continue to grow their own body stores of fat, protein and bone.
- According to the expectation of P storage, the heifers fed high P in pregnancy but low P in lactation produced 30pc more milk than those fed low P throughout pregnancy and lactation.
- The 'current advice' strategy still proved to be superior to the "pre-loading" strategy. The heifers fed low P in pregnancy but high P in lactation produced 20pc more milk than the high P in pregnancy, low P in lactation heifers.
- The heifers fed high P through pregnancy and lactation produced three times more milk than those fed the low P diet throughout, indicating the value of P supplementation in pregnancy and lactation.
- During lactation, P supplementation allowed the heifers to continue to grow their own bodies as well as produce extra milk.
- Calf data is yet to be finalised but current trends indicate that weaning weights will reflect the milk production rankings of P supplementation strategies.
- Ideally, P should be fed during lactation in the wet season in areas of Queensland deficient in P. However, if this is not possible, the 'pre-loading' hypothesis has merit – dry season supplementation can be a viable alternative to maintain P storage levels in the bone that can be drawn out and mobilised throughout the body to stimulate milk production when wet season supplements are restricted.

The research team for this experiment includes Dr Llorenç Castells Domingo (UQ) and Kerry Goodwin (DAFF) at Brian Pastures Research Station, supported by Dr David McNeill, Dr Rob Dixon, Dr Mary Fletcher, and Dr Lisa Kidd (UQ). Thanks to MLA, DAFF and UQ (School of Veterinary Science and QAAFI) for funding this project.

Dr David McNeill, University of Queensland, d.mcneill@uq.edu.au

Gathering facts to manage drought

Know your stuff

Make informed decisions for survival during dry periods

AS the drought continues across large regions of Australia, producers are reminded that ongoing decision-making and honest assessment of their situation remain crucial.

MLA research and development co-ordinator for Northern Beef, Geoff Niethe, suggests that a rational decision-making approach is the best way to tackle what can appear to be an insurmountable mountain.

"The key is to have as much information as possible, and if you don't have all the facts, know where to seek advice," he said.

A list of focus areas for drought-management decision-making has been developed by Geoff Niethe and MLA consultant Desiree Jackson:

- Water: Assess the quantity of and demand for water. Water intake varies considerably, depending on temperature, class of cattle and moisture content of feed but, on average, budget on 40 litres/head/day. If surface waters can be fenced and stock are forced to water at a trough, the water will last longer and it stops bogging.
- Feed: Producers who are retaining stock need to comprehend the feed value and dollar contribution of pastures and all supplements purchased. Even if you have feed, as it matures, it loses its nutritive value during the dry season, regardless of the amount of feed on offer.

DO A FORAGE BUDGET

Determine how long the pasture will last with the cattle you have now and which mobs get preference.

Determine the pasture composition – the previous dry year has undoubtedly caused damage to pasture when feed became depleted through heavy grazing.

Get an indication of diet quality by faecal near infrared spectroscopy (NIRS) analyses. NIRS analyses will help ensure supplementation is judiciously targeted. It is difficult to determine how much green feed stock can access when it is limited.

PRIORITISE TURNOFF

If you haven't got the financial resources to feed energy supplements for another year, consider your options. Collect as much data on your breeders (pregnancy status, age, condition score) and aim to retain a nucleus of breeders that are four to nine years of age and that will calve in their 'normal' calving window. These are the most productive animals and will be a springboard for recovery.

DETERMINE ORDER

Identify in what order groups of cattle will be sold and work on a contingency plan – take into account which animals have the highest nutritional requirements and which are the biggest drought risks.

On the pregnancy test muster, identify breeders that are likely to calve during the dry season and consider selling them.

EARLY WEANING

Radical weaning (down to 60kg or at 10 weeks of age) is the best supplement to give a lactating breeder cow. The calves will need quality energy and protein, but it's much cheaper to feed the calf than the cow.

HIT THE GRID

Ascertain what the delays are in getting stock slaughtered with your preferred abattoir. Then check the slaughter grid and also availability of feedlot space.

Usually the critical carcase weight is 200kg (or about 380-400kg liveweight if they are non-pregnant).

If you have empty breeder cows that are currently about 320-360kg, then even if feed prices are $350/tonne (i.e. 35c/kg), 50 days on feed should get you above a 180kg carcase weight.

NITROGEN

If you are lucky enough to have mulga and are feeding a supplement, make sure there is a source of sulphur in your loose lick or block which is also providing much-needed nitrogen. Mulga is high in tannins and binds with sulphur as well as protein, making it largely unavailable to the animal for digestion. You will get more benefit from your licks if the nitrogen:sulphur ratio is balanced.

Geoff Niethe, MLA, 0428 712 756, g.niethe@bigpond.com

RESOURCES

- See the Feedback June 2013 two-page feature on drought management at www.mla.com.au/feedback

Forage budgeting
- Visit www.stocktakeplus.com.au to learn about and download the free forage-budgeting app to your smart phone or tablet.
- Alternatively, search 'forage budgeting' in YouTube to find a number of short instructional videos that will help you to do your own forage budget.

Crisis and dry-season management
- www.futurebeef.com.au/topics/nutrition/crisis-feeding-of-weakand-poor-stock
- www.futurebeef.com.au/wp-content/uploads/Dry_season_mgt_of_a_beef_business_LowRes.pdf

Feed quality testing
- www.futurebeef.com.au/topics/nutrition/assessing-pasture-diet-quality-nirs

Symbio Alliance
- www.symbioalliance.com.au

Special needs
- A national guide to describing and managing beef cattle in low body condition at www.mla.com.au/lowbodycondition

Transport
- To assess cattle for transportation download Is it fit to load? at www.mla.com.au/fittoload

Face-to-face support
- Talk to your local livestock management consultant or FutureBeef extension officer.

Improve the viability of your beef business through SavannaPlan-BeefSense

Project puts graziers on right track

THE current seasonal, debt and cost/price pressures across the northern beef industry are overwhelming for many families. The DAFF FutureBeef Team, Northern Gulf Resource Management Group, Southern Gulf Catchments and Agribusiness Consultants (Alison Larard and Ian MacLean) have joined forces to help producers identify and overcome key financial, herd and grazing management constraints through the SavannaPlan-BeefSense project.

SavannaPlan-BeefSense 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.

It is designed to help Gulf cattle producers tackle their current production and financial challenges by focusing on issues that improve the viability of their particular business.

SavannaPlan concentrates on herd and land management, with participants receiving a detailed property map and one-on-one support from the FutureBeef team to identify and discuss key issues.

Previous participants have worked through herd and land management after major fires, improving breeder productivity, additional infrastructure, wet-season spelling and stocking rate adjustments.

BeefSense assesses the current financial position of the enterprise, focusing on debt management and overall business performance.

Southern Gulf GIS officer Steve Cobbin, refining a property map on the ground.

This enables the landholder to:
- Understand and document their business situation including assets/liabilities, equity, cash flow, gross margins, direct costs and overhead costs.
- Identify and implement specific financial and business strategies to improve their position.
- Develop simple and useful herd, business and grazing management systems.

The delivery team has a genuine interest in the industry and the well-being of the people in it.

Attuned to the sensitivities of people's lives and businesses, a SavannaPlan-BeefSense 'service agreement' is used to outline the program steps and appropriately cover confidentiality issues.

More than 18 Gulf properties are currently participating in SavannaPlan-BeefSense to better understand their business position and identify ways to move forward sustainably, and financially.

Through our on-property contact, the following issues and constraints are emerging:
- Business equity is a major concern with the fall in property prices (30 per cent plus since 2008) and regular transferral, or 'rolling over' of operating facilities (overdrafts) into term loan facilities.
- Poor communication with lenders is common. Often this results in high interest rates, and in extreme cases, 'frozen accounts' and possible referral to asset-management sections within the banking sector. The top producers clearly model 'what' and 'how' to communicate effectively with their lenders.
- If properly armed, some producers are in a position to renegotiate improved interest-rate terms with their lenders. Cash flow is very limited and gross margins on most family businesses in the forest country range from $80-95 per adult equivalent (AE). Overheads and finance costs often exceed $75/AE.
- Losses are commonplace on most family properties when analysing the past three to five years of financials. Very few businesses can afford to pay a baseline wage to the owner(s) and principal repayments are very rare. Business records are generally for GST compliance only, with little management accounting, financial control or analysis occurring. Herd records on many properties are poor.

In general terms, the positive steps being made by beef producers include:
- Business financial analysis, and identification of issues and options for improvement (both production and financial).
- Finance-related – applications for further finance, renegotiation of existing facilities and rates, refinances.
- Past and future economic analysis of herd performance, with partial budgeting and options, or 'what if' testing.
- Support for succession/mediation process.
- Support for government applications (for both assistance measures and traversing red tape).

If you are interested in being involved in SavannaPlan-BeefSense project please contact the delivery team:

Northern Gulf – Joe Rolfe, 0427 378 412, Bernie English, 0427 146 063. Southern Gulf – Emma Hegarty 0467 808 340, Rebecca Gunther 0417 726 703.
FutureBeef Team, Mareeba and Cloncurry.

Research pioneers on carbon values

Soil's role in beef business

EVER wondered what role soil carbon plays in an extensive grazing beef business?

In partnership with the Commonwealth Department of Agriculture and Northern Gulf Resource Management Group, the far North and North West DAFF FutureBeef team has been working with three properties under the second round of the Climate Clever Beef (CCB) project.

One aspect the project is identifying, is the potential soil carbon has within extensive grazing systems, in terms of carbon trading, and the influence management practices have on soil carbon levels. The project highlights and documents the land resources, land condition, production systems and business performance of each property.

Demonstration property, Karma Waters, is located near the Mitchell River and was purchased in 1991 by Alan and Karen Pedersen. The Pedersens are working to improve land and pasture condition, breeder mortality and weaning rates.

Ongoing pasture and stocking rate monitoring, wet season spelling and over sowing significant areas with stylos has greatly improved pasture productivity and feed quality.

Under the CCB project, two sites on the same land type, but under different management strategies, were identified and studied. The purpose of the study was to compare soil carbon accumulation between two sites, one in good condition with stylo legume pastures while the second site was continuously grazed without Stylos.

Twelve soil samples across each one hectare site were taken at depths of 0-10cm and 10-30cm. It was presumed that the site in good condition with improved pastures would have a higher capacity to store carbon.

However, the soil sample analyses indicated the following:

Stored Carbon (t/ha) – There was no significant difference between the two sites at either depth.

Nitrogen (t/ha) – There was a significant difference between the two sites at 10-30cm, with the site with no stylos present considerably lower. There was no significant difference between the two sites at 0-10cm.

Carbon/Nitrogen ratio – There was a significant difference between sites at the lower (10-30cm) depth with the stylos site having a higher carbon to nitrogen ratio than the no stylos site.

Two sites of the same land type were studied – good condition site with stylo legumes established and poorer condition, continuously grazed site with no stylo established.

The carbon/nitrogen ratio is a ratio of the mass of carbon to the mass of nitrogen in the soil.

The results showing no significant difference between the two sites for soil carbon may indicate that increasing carbon storage in extensive rangelands is difficult despite management practices.

Other soil carbon research work in the Gulf and Charters Towers regions also supports this finding.

Introducing improved pastures, implementing wet season spelling, reducing herd mortality rate, increasing your weaning rate and lightly stocking your country will improve your land condition, herd productivity and overall business.

Olivia Pisani, FutureBeef Team, Mareeba, (07) 4048 4882, olivia.pisani@daff.qld.gov.au

Learning about behaviour styles is one of the sessions that will be available at Resourcing Women of the North in May.

Range of resources at fingertips of northern women

Women unite at Mt Surprise event

WOMEN of the Northern Gulf Region have a fantastic opportunity to meet at Mt Surprise on April 29 and 30 to celebrate their strengths and empower themselves with knowledge and resources to address the challenges they face living and working in the remote north.

The Resourcing Women of the North (RWOTN) event will bring together women from Mt Surprise, Einasleigh, Forsayth, Georgetown, Croydon, Chillagoe and beyond for two days of good food, friendships and great speakers.

Some of the topics to be covered include using social media to promote your business and industry, plant identification and pasture monitoring, new apps relevant to the pastoral industry, dealing with stress and energy efficiency audits.

There will be trade displays with the latest information on natural resource management, Landcare, health care and grazing land management. There will also be the opportunity to learn new skills such as photography and mosaics. Childcare is available for remote families.

The highlight will be a Rural Industries Research and Development Corporation Dinner with guest speakers – rural women Catherine Marriott and Terressa Ford.

The workshop has been made possible through funding from the Queensland Government Gambling Community Benefit Fund and support of partners Northern Gulf Resource Management Group, Gulf Horizons Foundation, Queensland Department of Agriculture Fisheries and Forestry, Mental Health Illness Fellowship North Queensland, Gulf Savannah Development, Rural Industries Resource and Development Corporation, Bunnings, Royal Flying Doctor Services, Savannah Regional Health, Frontier Services and CBC Lawyers.

The full program and registration forms are available by contacting Erica Blumson at Northern Gulf Resource Management Group.

Erica Blumson, (07) 40 921 088, 0488 499 266, education@northerngulf.com.au

Splattergun targets weeds at Mount Surprise

Collaboration leads to trials for controlling rubber vine

IN EARLY March, collaboration between the Department of Agriculture, Fisheries and Forestry's Biosecurity Queensland agency and the Northern Gulf Resource Management Group's Regional Landcare Facilitator has led to the implementation of splattergun trials for controlling rubber vine at Whitewater Station near Mt Surprise.

The splatter gun technique is new to the area and has been proven effective against lantana, bellyache bush and siam weed.

A significant feature of the innovative technique is that it is a concentrated herbicide approach with relatively low water requirements, compared with full foliage application techniques, and the plant only requires a strategic splatter.

This can have a significant impact on improving time efficiency of application by the very fact that you do not need to fully cover the targeted weed plant's foliage.

Shane Campbell of Biosecurity Queensland with Tom Saunders of Whitewater Station, Mt Surprise, in front of rubber vine at the proposed trial on Whitewater Station.

The splatter gun used in the trial will be utilising a gas assisted gun from a five litre knapsack which is a very useful method in difficult to access sites.

This technique has evolved to larger scale applications for some weeds where commercial operators have adapted the technique to larger spray units which have proven effective.

There will be more updates on the progress of the trial in future *Northern muster* editions.

Andrew Taylor, Regional Landcare Facilitator, Northern Gulf NRM, (07) 4062 1330.

Give your grass a fighting chance

Control emerging weeds now

Simple steps can help minimise costs

DROUGHT often pushes weed management down the priority list. However, it is also the time when new infestations may occur particularly through stock feed, cattle movements and earthmoving equipment.

Give your grass a fighting chance during the recovery period by staying on top of weed management.

Simple, practical steps taken now can help minimise the costs and burden further down the track:

Ask for a weed vendor declaration from the feed supplier or at least familiarise yourself with potential weed species from the area of origin and keep records of where the feed has come from.

This will act as an important reference in identifying unknown plants.

Feed stock in a confined area such as a holding paddock, laneway or corner of a paddock, away from drainage lines, so if an outbreak does occur, access can be easily restricted.

Monitor feed out areas regularly and be suspicious of any unfamiliar plants.

Many weeds prefer areas which are bare or disturbed e.g. roadsides, cattle pads, cattle camps and watering points.

Keep a particularly close eye on these.

Use the weed identification skills of the Department of Agriculture, Fisheries and Forestry or Southern Gulf Catchments staff.

Clean vehicles and trailers used to cart feed after deliveries in a designated area which can be easily and regularly monitored.

If a weed is identified, act on it while it is in low density, or a single location.

When restocking from outside the property, be aware of weeds from the area cattle were agisted or purchased from.

Spell the cattle in a contained area such as a holding paddock for a period of at least seven days to allow weed seeds to pass out of their digestive system, then monitor and treat any weed outbreaks.

If bringing in contractors to desilt or build dams, ask for a weed hygiene declaration or ask them to wash their vehicles and machinery prior to coming onto your property.

Weeds cost Queensland an estimated $600 million every year and just five weed species cost Queensland $50 million* every year in lost production and control costs.

All five species are found in the Southern Gulf region – parthenium, rubber vine, prickly acacia, mesquite and parkinsonia.

- For more information and help to control weeds on your property contact SGC or your local Biosecurity office. For more information on Weed Hygiene Declarations go to: http://www.daff.qld.gov.au/plants/weeds-pest-animals-ants/weeds/preventing-weed-spread/legal-requirements/weed-hygiene-declaration

Weeds to watch out for

POTENTIAL species will depend on where the feed was sourced and machinery previously worked. If in doubt, ask.

PARTHENIUM WEED PARTHENIUM HYSTEROPHORUS L.

Declared Class 2 Pest Plant:

- May reach a height of 2 metres
- Leaves are pale green, deeply lobed and covered with fine soft hairs
- Small creamy white flowers occur on the tips of the stems
- Normally germinates in spring and early summer and dies around autumn
- A vigorous species that colonises weak pastures with sparse ground cover
- Reduces pasture production potential

Parthenium weed is a declared Class 2 Pest Plant that reduces pasture production potential.

GIANT RAT'S TAIL GRASS S. PYRADMIDALIS AND S. NATALENSIS

Declared Class 2 Pest Plant:

- Capable of producing up to 85,000 seeds/sq m/year with initial seed viability of about 90 per cent

Giant rat's tail grass is a declared Class 2 Pest Plant that reduces pasture productivity.

- Gows to 1.7 metres tall with a seed head of up to 45cm long and 3cm wide
- Invasive grass that reduces pasture productivity

Weeds impact grazing enterprises through:

- Loss of production through reduced quality and quantity of pastures and carrying capacity
- Changes to native pasture composition and ground cover leading to erosion
- Reduced health of riparian vegetation which may lead to erosion and reduced water quality
- Altered fire regimes
- Toxicity to stock and people.
- Increased management costs for mustering, infrastructure maintenance and weed control
- Refuge for feral animals

Southern Gulf Catchments Limited

Work on Federal Government's discussion papers

SOUTHERN Gulf Catchments Limited (SGC) has been invited to comment on the Federal Government's NRM priorities list and will be providing input back to the government on these issues.

The various papers include:

- 2030 Vision for Developing Northern Australia
- Emissions Reduction Fund – Green Paper
- Environmental Protection and Biodiversity Conservation – response to threatening process nomination
- Agricultural Competitiveness Issues Paper
- Green Army Program, Draft Statement of Requirements
- Dams and Water Management – Discussion Paper.

Key notes will be formulated by CEO, Bob Wilson, on each of the above papers in consultation with:-

- SGC members, board directors and stakeholders
- Rangelands Alliance
- National NRM Working Group
- Regional Groups Collective (Qld)
- Pastoral Industry Advisory Group

The opportunity to provide comment is welcomed by SGC, as it allows us to represent key members and stakeholders within our region and put forward comment for consideration by the government.

By contributing to the development of these important papers, SGC hope to have input into long term government policies and work closely with the federal government to make informed decisions for future NRM initiatives in our region.

Southern Gulf Catchments Limited board chairman Brian Atherinos, Southern Gulf Catchments CEO Bob Wilson, (07) 4743 1888, ceo@southerngulf.com.au

Students take on the States

National Western Contest, Denver, Colorado. Pictured are Demi Lollback (coach), Tammy Heir, Frederick Broughton, Nick van den Berg, Hamish Irvine, Laura Kemmis and Emma Hegarty (coach).

RIGHT: Training at Wyoming University. Pictured are Emma Hegarty (coach), Frederick Broughton, Hamish Irvine, Tammy Heir, Laura Kemmis and Nick van den Berg.

Meat-judging team impresses

THE Australian national meat-judging team arrived home from the United States with an impressive line-up of awards from three meat-judging contests, and some experiences that would make any university student envious.

The enthusiastic students making up the team included Hamish Irvine from University of Sydney, Frederick Broughton from University of New England, Nick van den Berg from University of Adelaide, and Tamara Heir and Laura Kemmis, both from Charles Sturt University, Wagga Wagga.

The month-long meat and livestock industry tour of the US included participating in three meat-judging contests against US colleges. As a team, the Australians placed nothing less than fifth place in all categories of all of their contests. They were placed third overall, and won the category for judging placings at the National Western in Denver, Colorado.

Individual award highlights included Nick van den Berg placed as the fourth and seventh highest overall individual at the National Western (Denver) and South Western competition (Fort Worth) respectively. Laura Kemmis achieved fourth and fifth highest individual in beef judging at both of these contests. Tammy, Fred and Hamish were also successful in securing a great display of ribbons over a number of categories.

The team at the US Meat Animal Research Centre in Nebraska: Hamish Irvine, Nick van den Berg, Laura Kemmis, Emma Hegarty (coach), Frederick Broughton, Tammy Heir and Demi Lollback (coach).

"The students this year were a great group who worked very hard," Australian coach Emma Hegarty said.

"They put a lot of effort into everything we did – whether it was long training sessions in the abattoir or representing their country at the many industry visits and tours we did."

Demi Lollback of Meat & Livestock Australia, who assisted in the coaching role, was overwhelmed by the extent of the tour itinerary.

"As my first year in this role, this was a trip of a lifetime. The students have just had a very exclusive insight into the US industry that not many people ever get to do," she said.

Aside from the contests, the team spent a month covering nearly 10,000km across 10 states visiting industry organisations.

The trip gave the students a complete paddock-to-plate insight from ranch and feedlot visits, to processor tours of beef, pork and lamb facilities, including the three major US packers – JBS, Tyson and Cargill.

Other tour visits included the National Cattlemen's Beef Association, meat science faculties of seven major universities, as well as meeting with Global Animal Products in Amarillo, who provided the team with a personal flight over their feedlots.

Nick van den Berg was very impressed with the visit to the USDA Meat Animal Research Centre (MARC) in Nebraska.

"The research centre runs 7000 breeding cows, 3000 ewes and produces 700 litters of pigs a year. The variety and integration of their research projects had myself and the whole team astounded at the work being undertaken," he said.

The Australian team will be guests at the 2014 Australian Intercollegiate Meat Judging program to be held in Wagga Wagga on July 8 to 13, inspiring the next intake of meat-judging enthusiasts.

This year will be the 25th anniversary of the meat-judging contest in Australia. Meat & Livestock Australia and Australian Meat Processors Corporation were the major sponsors of the Australian team.

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Richmond Beef Challenge yields top results

Liveweight results

AT the July 2012 weigh day, the official start weight for each Richmond Beef Challenge animal was recorded, with the mob of 89 head averaging 341kg.

The cattle gained at 0.19 kilograms per day (kg/d) through to November, and 0.53kg/d over the lacklustre wet season through to end of March 2013.

In the previous challenge, the cattle gained 0.85kg/d over the similar November 2011 to March 2012 wet-season period.

The cattle continued to gain weight through to May 2013, but began to lose weight thereafter. When leaving the paddock for the feedlot in late July, the mob averaged 455kg, or had put on an average of 0.29kg/d over the 390-day grassfed period.

In the feedlot, the mob performed at an average of 2.05kg/d with an individual animal gaining 3.56kg/d.

When the cattle left for the abattoir, the mob had put on an average 290kg/head over the 488-day combined grass and grainfed phases of the challenge, at an average rate of 0.59kg/d. In comparison, the previous challenge cattle put on 219kg at an average rate of 0.66kg/d over only 345 days.

It has been very interesting to compare the performance of similar animals in the same paddock over two very different seasons.

Carcase results

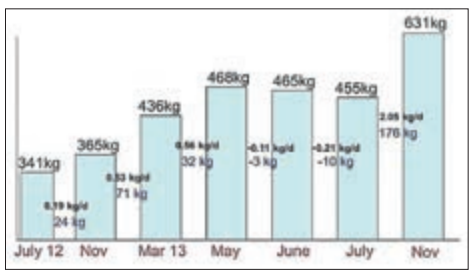
The Shire Beef Challenge cattle were sent to abattoirs in Kilcoy in mid-November last year, where MSA data was collected and used to assess the carcase attributes for each individual steer. This was following on from the steers being fed in Smithfield feedlot, Proston, for 100 days.

All of the cattle met Meat Standards Australia (MSA) specifications, which are pH < 5.7; meat colour – 1B to 3; rib fat minimum of 3mm.

LEFT: Finished Richmond Beef Challenge cattle.

BELOW, LEFT: When leaving the paddock for the feedlot in late July, the mob averaged 455kg, or had put on an average of 0.29kg/day over the 390-day grassfed period.

BELOW: A summary of the average carcase data collected for the beef challenge steers.



Carcase attribute	Average data
Average hot standard carcase weight	338kg
Average dressing percentage	53.5%
Average P8 fat	15mm (8-31mm range)
Average pH	5.47 (5.3 to 5.6)
Average ossification score	151 (120-200 range)
Average marbling score	213 (110-370 range)
Rib fat	13mm (5-23mm range)

This was a fantastic result, given that the steers went through a drier than normal wet season and a very dry start to 2013.

While the cattle had MSA data collected on them, it was for a learning exercise only, and none of the steers was marketed as MSA product.

The P8 fat ranged from 8 to 31mm, with an average of 15mm across the mob. Only two head received a discount for having greater than 26mm.

There were no dark cutters in the mob and fat colour was white across all bodies.

Ossification was good, with the highest score being a 200, which equals an approximate physiological age of 30 months. Marbling scores were quite low for the mob, with the average carcase only showing slight marbling in the rib eye.

An interesting fact to note from the data collected was the average hump height of 122mm, but ranging up to 230mm. Hump height is used to measure the tropical breed content of the animal.

The steers were placed into boning groups (BG) ranging from 4 to 14 on a 1 to 18 scale (BG 1 being the best).

The data showed that as the boning group increased (and eating quality decreased), the rib fat decreased, hump height increased and the MSA eating quality score decreased significantly.

MSA data was collected to use as a learning tool to better understand the carcase attributes for each individual steer.

The average price received was $3.73/kg dressed, ranging from $3.55 to $3.80. These prices were for 100-day grainfed product, non-MSA.

To learn more about the MSA grading system and for assistance with interpreting MSA feedback data, visit www.mla.com.au/Marketingbeef-and-lamb/Meat-Standards-Australia/MSAbeef.

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