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A range of research projects in the pipeline

Spyglass Beef Research Facility

SEVERAL research projects are under way on Spyglass Beef Research Facility, including tracking Chital deer in an effort to assist in management plans, establishing monitoring sites, in the process to improve long-term carrying capacity information, developing better pasture species, and call hydation trials to understand reasons for calf mortality.

CHITAL DEER PROJECT
BIOSECURITY Queensland (BQ), with the assistance of the University of Queensland, is leading a pilot study to measure movement patterns and habitat use of Chital deer. To date, minimal research has been conducted on these species in North Queensland. Chital deer are a declared Class Two pest as they have adverse economic impacts on graziers through the eating of substantial amounts of pasture.

In August 2013, five adult Chital deer on Spyglass were fitted with GPS collars (two female, three male). The collars will be on the animals for approximately six months. A key outcome so far is that successful dosage rates and methods for darting of Chital deer were fitted with GPS collars (two female, three male).

The collars will be on the animals for approximately six months. A key outcome so far is that successful dosage rates and methods for darting of Chital deer. To date, minimal research has been conducted on these species in North Queensland.

The project is in its infancy. To date, the project team, generously supported by beef producers, has identified nine properties in the North and Southern Gulf and Burdekin grazing districts; defined sites considered representative of the land type, installed stock/cangaroo fences at five (including Spyglass) and made arrangements for the completion of the others.

The project is a collaborative effort between QDAFF research scientists Kendrick Cox, Mark Keating and Steven Dayes and FutureBeef extension staff Joe Rolfe, Bernie English and Emma Hegarty.

Calf dehydration
The Cash Cow project, and others, has shown call loss between confirmed pregnancy and weaning as high as 40 percent, and consistently between 10 and 20 percent in some areas of North Australia. Obvious effects on profitability occur. Previous research shows the greatest loss occurring within a week of birth.

The Cash Cow project showed most losses are associated with nutritional and environmental factors, with occasional significant loss due to diseases like Feline Viral. It is plausible that a high proportion of elevated losses in North Australia is associated with poor calf hydration and/or vigour, and that this may be as much a problem with the cow as the calf.

In a preliminary study led by Geoff Fordyce of QAAFI, newborn Brahman calves were dehydrated over three days. This study provided a way to objectively measure the degree of dehydration.

These techniques require further development for use in systematic research under extensive grazing conditions. The experiment showed that newborn calves experiencing milk deprivation lose on average of 7pc of their body weight daily under comfortable conditions (20 degrees Celsius), but twice this when maximum temperatures are in the vicinity of 40 degrees Celsius.

It also showed that when calves lose 15pc of their live weight, which is equivalent to 20pc dehydration, in as little as one to three days under tropical conditions, some calves are unable to recover without intervention.

A recent study by QDAFF scientist, Jarrod Muller, focused more on milk supply in the first week of life. The aim of the study was to measure normal variation in milk production and delivery in newly-calved Brahman cows, and whether this is possible to measure using a range of indirect measures.

This is complex research as direct measurement of milk supply is not possible at present under range conditions. Indirect measures included a range of calf measures including weight, urination and faecal measures, and behavioural observations (such as evidence of sucking). Analyses of the data have not been completed as no results are currently available.

EFFECTS OF NITROGEN DYNAMICS ON PASTURE AVAILABILITY AND QUALITY
Nitrogen and water are the key limiting factors for pasture and animal production in northern Australia. Nitrogen dynamics are strongly affected by rainfall. Low nitrogen availability (and low animal production) often follows big wet seasons which cause nitrogen dilution. The opposite can occur following years of drought, which leads to high nitrogen availability and high animal production in response to a build up in available soil nitrogen.

In order to test the effects of the amount of rainfall in one year on the nitrogen availability in the second year, the amount of rainfall was manipulated in small plots at Spyglass.

A rainout shelter is being used to simulate the effect of drought to reduce the amount of rain falling to the ground by 25 percent.

‘Drought’ was achieved by building rainout shelters that reduce the amount of rain falling on the ground and ‘wet’ season was achieved using special irrigation. Soil and plants are being collected.

The results of this study will help incorporate the nitrogen dynamics and effect on pasture availability and quality into existing animal production models. This will enable to increase animal production while maintaining land conditions. This project is being led by Moran Segol of CSIRO, 0498 538 788, moran.segol@csiro.au.

Angela Anderson, Spyglass Research Station.

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Angela Anderson, Spyglass Research Station.
(07) 4391 8181, angela.anderson@atx.agr.qld.gov.au
Welcome to summer!

Summer 2013 Northern muster

THERE has been storm activity across the north in late November and early December with some individual falls recorded in excess of 100mm, kick starting the season for those lucky enough to be unaffected. For those who have received lesser falls of 25 to 50mm, especially in harder country, some run-off water has at least spread cattle out into gullies and gilgais, taking some pressure off the emergency water situation.

For those yet to receive their first significant fall, there is at least hope restored that it hasn’t forgotten how to rain.

Please do not forget to put in your fodder freight and emergency water infrastructure rebate claim forms.

Chief of staff to the Department of Agriculture and Forestry, Queensland Government

Peter Smith

PETER Smith, or ‘Smithy’, is one of a handful of practising, top-notch cattle husbandry extension specialists who have made their mark over more than four decades of service from 1970 with the then Department of Agriculture and Stock – or as he would say “back in the dreamtime”.

Smithy’s service spanned Queensland in the late 1970s, development of the Japanese market, the rise of the Pilbara/Kimberley region, taking the younger extension officers under his wing. He was well known and highly respected by cattlemen and his peers for his work in developing early weaning, improved heifer management, supplementation, the rise and fall of Townsville stylo and-based uga feeding. Smithy was a legend in south-east Queensland beef industry with his major works in buffalo fly management, trapping and dung beetles, before finally landing in Darwin. His career encompassed the cattle crash of the mid-70s, development of the Japanese market, the rise of the Pilbara/Kimberley region, taking the younger extension officers under his wing.

He was awarded the inaugural North Australia Beef Research Council Medal for Communication and Extension in 2006, in recognition for his unfailing service to beef extension in the northern industry.

Graeme Elphinstone

GRAEME Elphinstone is a legend in south-east Queensland beef industry with his major works in buffalo fly management, trapping and dung beetles, before finally landing in Darwin. His career encompassed the cattle crash of the mid-70s, development of the Japanese market, the rise of the Pilbara/Kimberley region, taking the younger extension officers under his wing.

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Graeme Elphinstone, who recently retired, is an inspirational figure to younger colleagues and always made the effort to mentor the up-and-coming beef extension officers, ensuring they benefited from his decades of experience.

Early in his career Graeme worked in Brisbane, Townsvoma, Baundassad and Miles before finally landing in Gypma, where he stayed. He has mainly worked in pastures and cropping, with beef industry and sustainability production very strong themes.

DAFF Animal Science general manager Peter Johnston said Graeme worked tirelessly to assist, inspire and coach the south-east Queensland beef industry with his major projects including giant rats tall grass management, buffalo fly management, tramping and dung beetles, and grazing land management.

“His passion is for sustainability of agricultural production and his commitment to his clients is unwavering and total,” Mr Johnston said.

He was heavily involved in Reef Protection projects with the Mary River Catchment Coordinating Committee and has also been on countless local industry committees and drought and disaster management groups.

We wish Graeme all the very best in his retirement and thank him for a remarkable 51-year commitment to the beef industry and the impact he made across Queensland.

Budget conference

16TH AUSTRALIAN VERTEBRATE PEST CONFERENCE

The conference is a not-for-profit event held every three years to bring together researchers, land managers, students and policy makers dealing with pest animals. There will be presentations on control initiatives, innovations in research, management and policy and the latest research outcomes. May 26-29, Pullman Brisbane King George Square, Brisbane, Qld 4000.

www.apc.org.au

RESOURCING WOMEN OF THE NORTH

Two days of good food, friendships and great speakers on natural resource management, leadership, well-being and viability. April 29-30, Mt Surprise.

Erica Blumens, Northern Gulf Resource Management Group, 0408 493 996.
2013 a harsh year for Qld cattle market

China demand offsets decline in trade to US, Japan, Korea

As we head toward the end of the year, and hopefully widespread rain across the State, 2013 has seen some of the lowest cattle prices since the beef crash in the 1970s.

During 2013 on the back of low US herd numbers, but also solid demand for heavier cattle up to 32.19 million head which has seen beef spread herd reductions. CATTLE prices have hit all time record levels on the trade 2012-13.

Another issue for our industry’s competitiveness is our high costs of production right through the supply chain, our skilled bottling room labour averages $45 per hour versus USA $18 per hour. Power, gas and water costs to our abattoirs is as per usual for this time of the year, as prime cattle and quality store cattle supplies dry up, prices have quickly risen with best bulldogs in Townsville in early November quoted at the $150/kg live delivered to Townsville or Charters Towers didn’t attract much interest.

Early in November prices for light cattle for export were quoted at $2/kg Darwin. If exporters are to attract their 2012-13 slaughter numbers are down one percent to 11.7 million tonnes. Good cattle prices are what their producers need, but high meat prices for long periods, always results in consumers switching to more chicken and pork.

Our export volumes to the US have been quieter this year so far but have shown an upward trend since June. To date, about 161,000 tonnes have been exported. This is a low from the early 2000s when our export volumes were around the 300,000 tonne mark per annum.

Many of our meat industry analysts were predicting good times ahead for our US meat export volumes during 2013 on the back of US herd numbers, but average US slaughter weights per head have been higher and our exporters have been attracted to other markets with better prices.

US beef exporters into Korea have realised their second tariff reduction in January this year, giving them a 5.25pc price advantage over Aussie beef — Australia is still on a 69pc tariff. Australia has also relaxed its age limit from 21 months to 31 months for USA beef stock destined for Japan.

China: Our meat exports have risen to 162,000 tonnes for the 2012-13 period — a rise of 243pc on the previous 12 month period. Both Brazil and USA are blocked from official imports into China at present because of BSE issues, but this situation will not be forever.

It’s estimated that the Chinese domestic beef herd has fallen in number from 130 to 80 million head. Market analysts are predicting good demand from an increasing middle class population that could number over 500 million by 2020.

LIVEPOW BIOSECURITY Network (LBN) encourages farming organisations to participate in developing a better import policy for exotic and endemic biosecurity threats. This includes promoting awareness of biosecurity risk and strengthening defences against outbreaks of exotic and endemic pests and diseases. LBN was formed in 2012 by Australia’s three peak farming organisations; Cattle Council of Australia, Sheepmeat Council of Australia and Wool Producers Australia, which pooled $5 million to fund the LBN after three years of intensive planning.

Sarah Jane Wilson has been appointed to represent the LBN in Queensland. She will be based at the AgForce Queensland office in Brisbane.

Sarah-Jane will be working with key livestock industry ‘influencers’ to increase awareness amongst livestock producers and veterinarians.

We have in-house biosecurity planning tools available and access to libraries of information about different diseases affecting our industry, I will be working with producers, industry representatives and peak industry bodies to gather and report emerging and ongoing issues with exotic and endemic pests and diseases.

Stronger biosecurity safeguards will provide farmers with a set of measures for protecting livestock from infectious diseases and pest incursions. It encompasses all the veterinary, husbandry and management actions and decisions to ensure healthy and well cared for animals.

Freedom from invasive pests and diseases is a vital element in food safety and the sustainability of Australian agriculture, and particularly the livestock industries.

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A fresh new way to do your rural business
Support is out there for drought affected

Subsidies available for water, freight, fodder and restocking

WITH over 62 percent of Queensland now drought declared under state government processes it’s timely to remind readers of current state support for drought-hit producers.

DRAS
THE most commonly accessed assistance is through the Drought Relief Assistance Scheme (DRAS) which provides freight subsidies and emergency water rebates to drought declared properties. Freight subsidies are available for fodder, water, stock returning from assigation and restocking.

A change to the DRAS rules now allows assistance to remain available to graziers that have introduced stock to their drought declared property, as long as the stock are introduced from another drought declared property under the same ownership.

This new rule allows graziers with multiple properties to effectively manage the drought without reducing their access to state drought support.

The other well subscribed part of the DRAS scheme has been the newly introduced Emergency Water Infrastructure Rebate (EWIR). The rebate is for 50pc of the cost to purchase and install water infrastructure for emergency animal welfare needs.

To access the rebate, producers need to complete a Water Availability Statement for endorsement by an authorised Queensland Department of Agriculture, Fisheries and Forestry (QDAFF) officer.

The statement describes the emergency situation and what action will be, or has been taken. The rebate is for emergency animal welfare only and is not for general property development. Access to the rebate ceases when there is no longer an emergency animal welfare need.

The maximum subsidy ceiling for all combined claims under DRAS (fodder and water infrastructure combined) is $20,000 per PIC per financial year. This ceiling can be increased to $30,000 with the submission of a Drought Management Plan (DMP). Local Drought Committees will assess the need to lift the ceiling for individuals producers depending on the information provided in the DMP.

Federal Agriculture Minister Barnaby Joyce announced an additional $7 million towards the EWIR scheme. It is expected that producers who have or will make application for the EWIR will be automatically considered for eligibility for the additional federal funds which would increase the rebate received by up to 25 percent, meaning that up to 75pc of water infrastructure could be covered under the combined Queensland and federal schemes.

This will take the rebate amount up to $50,000 where an approved drought management plan is in place. Contact your local QDAFF officer for further information. Find a list of QDAFF staff in your area under the contacts tab on the FutureBeef website www.futurebeef.com.au.

Remember! All DRAS claims need to be submitted within six months of the date of purchase for water infrastructure and/or six months of the date of movement for freight subsidies.

OTHER ASSISTANCE
OTHER state government drought assistance available includes a freeze in rural land rents for the 2013/14 financial year, transport concessions for road trains, electricity tariff concessions and school transport allowances. Visit the DAFF website for more information www.daff.qld.gov.au.

LAND RENT RELIEF RURAL land rents will be frozen in the 2013/14 financial year for those farm businesses in drought declared areas or properties with an Individual Droughted Property (IDP) declaration. This should have been processed automatically. If you are unsure, please contact the Department of Natural Resources and Mines (DNRM) on 13 QGOV (13 74 68).

ENERGY AND ERGON
IF YOU are a primary producer with an individual droughted property declaration or live in a drought-declared shire you may be entitled to an electricity tariff concession.

Further information online at www.energy.qld.gov.au/energy/rebates-and-concessions.htm

Karl Mobberley, FutureBeef Team, Charters Towers, (07) 4761 5150, Karl.Mobberley@daff.qld.gov.au

Protect pasture to prevent weeds

MORE than half the state is currently drought declared, and understandably many producers are focused on maintaining their stock in good condition.

Weed management tends to be less of a priority during these tough times, but unfortunately drought provides ideal conditions for weeds to invade new areas or increase in density.

When much-needed rain arrives, weeds will be the first thing to take on and hinder pasture recovery.

Good ground cover and a healthy pasture play a big role in preventing weed invasion.

However, the reality for many producers is that due to the current dry conditions, pasture cover will be lower than usual and in instances, less than that required to minimise weed establishment.

It’s not all doom and gloom, with some proactive actions taken during droughts the impacts of weeds post-drought can be minimised.

These include:
- Close monitoring – Rangeland vigilant for new weeds on your property or existing weeds that may be showing up in new areas. Control of these will prevent their spread when more favourable conditions return. While some control techniques are less effective during dry times (e.g. foliar spraying), others such as mechanical control or cut stump and basal bark applications may still be effective.
- Often the use of dry fertiliser for during dry periods to seedling recruitment should be less than usual.
- Maximise the protection of pasture foundations – Giving the most susceptible pastures and those most likely to benefit from rainfall conditions return will give grasses an opportunity to recover and then provide competition with any weeds that may be present.
- Weeds such as parthenium and baelwa bush do not compete so well against healthy perennial grasses.
- Farm hygiene and prevention – Be aware of the potential of introducing weed seed in fodder and put in place steps to minimise this risk.
- Emergency fodder is a necessity during drought and can come from various locations in the state, with producers to be particularly places where they receive fodder from.

A report produced by a local council in New South Wales estimated that 87 percent of hay purchased during drought feeding contained at least one noxious weed, but on average could contain up to 33 different weed species.

When purchasing fodder for stock follow these five steps below to remain on top of the weed situation and watch new infestations early:
- Know where the fodder/hay has come from, and be aware of weed species from those areas.
- Distribute fodder to stock in a small paddock such as a holding yard, or select one part of a paddock and regularly rotate the area for new weedy stock.
- Hold or restrict livestock on return from agitation.
- Remain vigilant for unknown plants on your property and on adjoining stock routes and get them identified early and;
- Pay particular attention to toxic weeds, stock are likely to eat anything when hungry and toxic weeds have been attributed to stock death during drought.

For more information on managing weeds during drought, visit www.daff.qld.gov.au or call 13QGOV (13 74 68).

Don’t let stress win

Revive and Thrive is message from Flying Doctors

Support networks in action

THE Royal Flying Doctor Service (RFDS) health promotion officer, Philippa Harris, explained a series of free Revive and Thrive workshops in several central and north-western Queensland communities in November.

About 120 people participated in the seven workshops that gave participants access to a range of information and particular contact points for further information as well as providing the opportunity for participants to catch up with fellow locals and socialise.

“There are some great supportive networks in these communities that strengthen the locals. It was greatly appreciated and a privilege to be able to link in with these to deliver the workshops. The success of these activities was determined by these networks and local residents giving their time of that already have huge demands on it,” Ms Lynch said.

The organisation and implementation was a collaborative activity between government and non-government organisations.

Keynote speaker at the events was Philippa Harris, a mental health nurse known for her laughter workshops and who also featured in the recent Glove Box Guide to Mental Health released as a supplement in Queensland Country Life, October 13, 2013.

Philippa explained to participants that just as station work vehicles and watering points require services and to be checked regularly and maintained, as moment to our wellbeing and resilience is increasing.

During dry times, health and wellbeing checks may be the first thing to be placed on hold. The pressure on individuals face may be managed in the short term be the first thing to be placed on hold. The pressure on individuals face may be managed in the short term but can have a high price to pay when this pressure is constant for an extended length of time.

An important step towards taking control of your wellbeing can be increasing your knowledge.

Under stress, the brain triggers an alarm that activates the fight-or-flight response, increasing the production of adrenaline and cortisol, which work together to speed heart rate, increase metabolism and blood pressure, enhance attention, the immune system and anti-inflammatory response, and lower pain sensitivity – all good things when your survival is on the line. When the stressful situation is over, the body goes back to normal.

However, under constant stress, the body is unable to reset. High adrenaline and cortisol levels persist, potentially causing blood sugar imbalances and blood pressure problems and whittling away at muscle tissue, bone density, our immune system and inflammatory responses. These persistent high levels negatively affect the part of the brain responsible for encoding new memories. Put simply, too much stress can almost make us forget how to make changes to reduce that stress, limiting the mental flexibility needed to find alternative solutions, and triggering general adaptation. This makes us feel unmotivated and mentally exhausted.

COMMON EXTERNAL CAUSES OF STRESS

● Major life changes
● Financial problems
● Work
● Being too busy
● Relationship difficulties
● Children and family

COMMON INTERNAL OR “SELF-GENERATED” CAUSES OF STRESS
● Inability to accept uncertainty
● Unrealistic expectations
● Perfectionism
● Negative self-talk

Lack of assertiveness

COMMON WARNING SIGNS AND SYMPTOMS OF STRESS OVERLOAD

● Cognitive symptoms – memory problems; inability to concentrate, poor judgment, racing thoughts, anxious, constant worry, seeing only negatives.
● Emotional symptoms – moodiness, irritability or short temper, feeling overwhelmed, inability to relax, sense of isolation and isolation, depression or general unhappiness.
● Physical symptoms – aches and pains, diarrhea or constipation, nausea, dizziness, rapid heart beat, chest pain, frequent colds, loss of sex drive.
● Behavioural – eating more or less, sleeping too much or too little, isolating self from others, procrastinating or neglecting responsibilities, nervous habits such as nail biting, and use of alcohol, cigarettes or drugs to relax.

The more signs and symptoms you notice in yourself, the closer you may be to stress overload.

Philippa Harris, Mental Health Fellowshup NO Inc, Townsville, (07) 4725 3664, pharris@mifnq.org.au

WHAT CAN YOU DO?

RATHER than simply living with stress, learn how to effectively master stress levels and build emotional resilience to help you feel and perform better on a daily basis, and protect yourself from the long-term damaging effects of stress.

1. Get some exercise. Studies show that aerobic exercise helps counteract the effects of stress. Regular exercise improves good sleep, reduces depression and boosts self-confidence through the production of “feel-good” hormones (endorphins). You may lead a physically demanding lifestyle on the land, but a 20 minute walk in the afternoon with the family will still be beneficial.

2. Have a laugh. We all know from personal experience that a good laugh can make us feel better, and this is increasingly backed by studies showing that laughter can reduce stress. Even just thinking about something funny can have a positive effect on reducing stress and the damage it causes to your brain. Watch your favourite comedy DVD, or phone a friend and reminisce about the good times.

3. Socialise. When you experience stress overload, it’s easy to let personal connections and social opportunities fall off your list of priorities. But ample evidence shows that maintaining social relationships is critical for both mental and physical health. Don’t miss an opportunity to spend time with family, friends, and even pets. This will give you a sense of belonging and help you remember how good it feels to be with those you love.

4. Relax. Easier than it sounds, right? But relaxation – a walk around the yards, focusing on your breathing, meditation, tai chi, yoga, or whatever helps to quiet your mind and make you feel more at ease – can decrease blood pressure, increased heart rate and muscle tension. Meditation, in particular, is tremendously beneficial for managing stress and building mental resilience.

5. Think positive. How you think about what causes your stress can make a difference. Simply changing the way you look at certain situations, taking stock of the positive things in your life and learning to live with gratitude can improve your ability to manage stress and build brain resilience.

6. Be grateful. Showing that you appreciate your family, friends and loved ones for the positive aspects they bring to your life has a powerful calming effect. If it is impossible to feel positive when you are feeling grateful for all of the good things and people you currently have in your life. Being grateful brings greater perspective and makes your worries appear as they are – temporary.

7. Take control. Studies show a direct correlation between feelings of psychological empowerment and stress resilience. Take charge – deal with unhelpful sources of stress before they build up and become a bigger problem. Make choices – look at areas in your life where you could manage your situation better or change the way you respond.

TIPS FOR DEALING WITH STRESS

● Support networks – A strong network of supportive friends and family members is an enormous buffer against life’s stressors.

● Positive control – Have confidence in yourself and your ability to overcome or persevere through challenges; take stress in your stride. People vulnerable to stress tend to feel like things are out of their control.

● Attitude and outlook – Stress-hardy people have an optimistic attitude. They tend to embrace challenges with a strong sense of humour, accept that change is a part of life, and believe in a higher power or purpose.

● Ability to deal with your emotions – You are extremely vulnerable to stress if you don’t know how to calm and soothe yourself when you’re feeling sad, angry or afraid. The ability to bring your emotions into balance helps you bounce back from adversity.

● Knowledge and preparation – The more you know about a stressful situation the easier it is to cope. You may not be able to predict the end of the drought, but you can prepare for an increase in your level of stress and that of those around you.

The guide is also available online, presenting stories and information gathered from a wide range of locations across Queensland. Either type in “glovebox guide to mental health” in your preferred search engine, or use the following web address: www.resources.farmonline.com.au/qcl/features/ GGtoMH/3dissue/index.html

THINGS THAT INFLUENCE YOUR STRESS TOLERANCE LEVEL

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Indian couch: The good, the bad and the ugly

Bare ground. It provides high cover levels at relatively low cost. It is well adapted to imperfect soils, and is positively affected by flooding. It establishes quickly in disturbed areas, and can support high grazing pressure. It is a hybrid species that has been widely planted to replace native pastures in areas experiencing an increase in Indian couch pastures. The GOOD

Research by CSIRO at Lansdown Research Station in the early 1990s showed that Indian couch pastures will produce live weight gains comparable with native pastures dominated by the preferred species – the 3P (palatable, perennial and productive) species such as black spinifex. This trial was done in drought years and interestingly, the Indian couch treatment had to be destroyed, as they were running out of feed at the same stocking rate as the native pasture paddocks that had sufficient feed to support continued grazing. However, the land was in good condition in both cases. In commercial-sized paddocks this is usually not the case. On country that has lost most of the preferred pasture species and is dominated (more than 95%) by Indian couch, the soils are usually in a degraded state. In terms of the ‘ABCD Land Condition Framework’, this equates to land in condition C. Indian couch will establish and colonise areas of bare ground. It provides high cover levels at relatively low yields, so it is good at slowing down overland flow, trapping sediment and reducing sheet erosion. Indian couch also competes quite well with grader grass. It is surprising that a low-growing species can challenge such a tall species as grader grass.

An example of an area that has lost most of its preferred pasture species and is now dominated by Indian couch. The country is in land condition C, even though there is good cover. A comparison of Indian couch, being a perennial grass, and grader grass, an annual, shows why this is the case. As the density of the Indian couch stands increases, the grader grass finds it more difficult to establish. The short viability of grader grass seed (12 months) is also a weakness that favours perennials.

THE BAD

Indian couch pastures have one major limitation for potential future graziers – they have a tendency to die during a drought. The longer and more severe the drought, the greater the death rate. In those pastures that have a history of heavy stocking rates in the years prior to the drought, the situation is made worse. This is understandable. Grasses that are continuously kept short have correspondingly shallow and restricted root systems. These die first when conditions get tough as they can only extract moisture and nutrients from a small volume of soil. During the last drought in the Burdekin region (2002-2005), widespread death of Indian couch occurred, resulting in a poor response to the rains when they came. In particular, the area from Charters Towers through Mingela and Ravenswood to the Burdekin Falls Dam grew a short goose-pick of green vegetation. On closer inspection, the dominant plant in the pasture was found to be Birdsville midge (Indiogropa linnaei), a native legume highly toxic to horses, but luckily not harmful to cattle. As Indian couch is a prolific seedler, there was a large soil seedbank present. So over two years of reasonable rainfall after the drought, the pastures recovered. But the carrying capacity in the meantime was very low. So be aware that the response to rainfall on Indian couch pastures during the 2013/14 summer may be much less than you expect. If the seasons continue to be lean in subsequent summers, recovery may not occur until a couple of good seasons arrive.

THE UGLY

Indian couch pastures provide high cover levels at low yields, hence they reduce raindrop splash, which is the primary source of sediment generation. Much of the soil that is dislodged is trapped by Indian couch. So far so good. The string comes from the fact that a disproportionally high volume of run-off is generated on Indian couch-dominated country. Heavy grazing further aggravates the situation. As land condition declines, there is not only a loss of 3P pasture species, but soil condition also deteriorates. This is what has happened during the transition from 3P-dominant pastures to Indian couch. The soil has lost some of its ability to absorb rainfall, resulting in more run-off.

CONSEQUENCES:

A LOSS of pasture growth and carrying capacity. On land that is in condition C, every millimetre of infiltration during summer grows about 7kg/ha of pasture on goldfield country at Ravenswood or 4kg/ha of pasture on red basalt country at Hillgrove. A probable loss of 15pc of the rainfall as run-off under Indian couch equates to 650kg/ha of pasture growth foregone in both instances. This represents a reduction in annual carrying capacity of 21pc on the goldfield and red basalt country respectively.

Accelerated gully erosion is a serious problem primarily on the goldfield country, which is prone to gullying, as well as some other soil types.

In the next edition of the Northern muster, we’ll look at the possible causes of Indian couch dominance of pastures. In the meantime, I would welcome producers’ experiences and views on Indian couch.

Steve Shepherd, Volunteer Team, Charters Towers, (07) 4761 5150, steve.shepherd@dpi.qld.gov.au

Indian couch has replaced native pastures over large areas of grazing lands in north-east Queensland. The main areas with Indian couch-dominated pastures are the Goldfields country from Charters Towers to Bowen, the Georgetown granites, and the Nutile, McBride and Surgeon basalt provinces bounded roughly by Charters Towers, Mt Surprise and Hughenden. Other land types are also experiencing an increase in Indian couch pastures.

Why Grazing BMP is vital for our industry

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School children get involved in environmental concerns

OUTBACK kids have teamed up with the Northern Gulf Resource Management Group in 2013 in a range of activities to learn more about their local environment.

The first big event of the year was the Gulf Kids Competition on Healthy Waterways, with more than 100 students from Mt Molloy across to Kurumba getting involved. This is the International Year of Water Cooperation and to celebrate Northern Gulf Resource Management Group (NGRMG) incorporated the theme into its annual Gulf Kids Competition titled Gulf Kids – Healthy Waterways.

The competition was open to children aged five to 13 years living within the Mitchell, Staaten, Gilbert and Norman River catchment areas. Students were asked to develop collages, bumper stickers and posters depicting healthy waterways and healthy communities.

NGRMG education officer Erica Blumson said judges were very impressed with the high-quality entries and found it challenging to decide on a winner.

“It’s great to see so many students thinking about water and how we can use it efficiently as well as how to keep our waterways clean,” she said.

Following the Healthy Waterways competition and there was the annual Gulf Kids Day Environment (GKED), this year held at Lake Belmore near Croydon. This year GKED was themed round the International Year of Water Cooperation, celebrating healthy water ways from creeks to coast.

One hundred and twenty students from Croydon, Forsyth, Normanton, Georgetown and surrounding properties attended, with school staff and families travelling up to 200 km to attend.

GKED is in its third year and has been well supported by the community. The day opened with guest speaker Jodie Creek from Zoo to You, talking about the importance of looking after waterways.

Presentations and a celebration cake ended the day.

Activities included water bug monitoring in Lake Belmore, a sustainable fishing game, getting hands-on with marine and freshwater animals and learning about water properties in healthy areas. Students were asked to do all the activities were done in teams to allow the kids to interact with others from their region.

Outback kids join NGRMG

FUTURE viability depends on better business management and productivity – this is the focus of SavannaPlan-Beef$ense program developed to help Gulf cattle producers tackle their current financial challenges.

Queensland Department of Agriculture, Fisheries and Forestry (QDAFF), the Northern Gulf Resource Management Group (NGRMG) and the Department of Agriculture, Fisheries and Forestry (DAFF) have joined forces to identify and overcome key financial, herd and grazing management constraints.

SavannaPlan–Beef$ense is delivered on-property by a team that understands all aspects of running a profitable beef business from breeder productivity, and stockings rates through to cash flow budgeting, debt management and marketing.

The team also has a genuine interest in the industries and the wellbeing of the people in it. Attuned to the sensitivities of people’s lives and businesses, a SavannaPlan–Beef$ense service agreement is used to outline the program steps and appropriately cover confidentiality issues.

Beef enterprises across the Gulf vary in terms of scale, debt, property development and business management structures. Likewise, SavannaPlan–Beef$ense has the flexibility to focus on the issues that will improve the viability of a beef business.

If you are interested in being involved in Savanna Plan–Beef$ense please contact the delivery team.

Natalie Waller, a PhD student from the University of Queensland (UQ), has been working on a project to develop a method for determining the current status and changes in abundance of species related to farming systems. The project has been assisted by the Australian Government through the Australia Council for the Arts, its arts funding and advisory body.

The project has been assisted by the Australian Government through the Australia Council for the Arts, its arts funding and advisory body. Frontier Services Savannah Regional Health Service contributed funding for the day. The event is also well supported by part-

We will be looking forward to a sustainable future if the keen interest that students in the region are showing in Junior Landcare continues through to their future careers. To see photos of any of this year’s Junior Landcare activities visit the NGRMG facebook page Northern Gulf Resource Management Group.

Erina Blumson, Northern Gulf Resource Management Group, 0427 995 168, erina@northerngulf.com.au – Natalie Walker, University of Queensland, n.walker@uq.edu.au

RIGHT: Red-cheeked dumurr, Sminthopsis virginiae.

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Recognising industry’s stars

Sarus Crane Award winners 2013

THE SARUS Crane Awards are held annually by Southern Gulf Catchments Limited (SGC) to acknowledge contributions individuals and groups have made to land management, the environment and local communities in Queensland’s north-west. The Sarus Crane Awards are an opportunity to reward and acknowledge those who have put exceptional effort into improving the environment, whether in sustainability, best practice, implementation, management or combating threats to our environment.

There was an overwhelming number of nominations this year, demonstrating the dedication and passion in communities for improving land management, controlling pests and weeds and developing best practice management plans to protect the environment for future generations.

The individual Sarus Crane Award was awarded to Ninian Stewart-Moore, local landholder and councillor with the Flinders Shire Council. In the past 12 months Ninian has been the driving force in establishing the Flinders Shire Wild Dog Advisory Group and the Flinders Shire Weed Advisory Group. These groups are chaired by Ninian and managed by local landholders and key stakeholders in the shire, working together to achieve positive long-term outcomes.

A major achievement of Ninian’s leadership of the Weed Advisory Group, also a nominee in this year’s awards, has been the establishment of the Good Neighbour Program. This involves five new Catchment Management Groups, each one introducing buffer zones on boundaries, watercourses and roads as well as other measures to reduce the spread of weeds from one property to another. Each group has its own priorities and will aim to take ownership locally to deliver a high ratio of on-ground activities and develop long-term management plans.

Charles Curry, project coordinator for SGC said the Good Neighbour Program was unique and could be adopted by many other shires.

“It will potentially involve all properties across the shire and is driven at the grassroots level. SGC will endeavour to assist with efforts to fund the groups and provide as much encouragement as we can,” he said.

The Sarus Crane Award for groups was awarded to the Upper Gilliat Weed Management Group. This committed group consists of 10 property owners from Cairo, Rutlhills, Redland Park, Eulalo, Willcamp, Kooroora, Glen Bede, Malvie Downs, Kelloshiel and Wolseley Downs properties working together since 2009 to stop the spread and greatly reduce the density of prickly acacia in the upper parts of the Gilliat River – an area in excess of 10,000 hectares.

In addition to on-ground weed control, over the past 12 months many in the group have also implemented paddock quarantine methods to control cattle movement and prevent the spread of prickly acacia. By working closely as a group, significant achievements have been made on a sub-catchment scale instead of within individual property boundaries. Information sharing has led to a greater awareness in the community by opening discussions, sharing the problems and achieving results. This will assist in securing the long-term viability of properties in the region and conserve the area’s biodiversity.

Bob Wilson, CEO of Southern Gulf Catchments Limited, explained: “Under Ray Campbell’s guidance and leadership, this group has expanded and after four funding rounds and considerable efforts by all members, has achieved significant outcomes in their dedicated fight against prickly acacia on their neighbouring properties. The group has set excellent standards for other groups to aspire to.”

Highly commended certificates were also awarded to the following landholders for their ongoing work in the community:

- Tex Battle from Swens Island
- Arthur Ferguson of Richmond Shire Council
- Duncan and Judy First from Proa
- Britt Epple, winner of the inaugural Sarus Crane award
- Carpentaria Land Council Aboriginal Corporation, Gangalidda and Garawa Rangers
- Gregory River Landcare Group
- Flinders Shire Weed Advisory Group

Victoria Corner, Southern Gulf Catchments Limited, (07) 4743 1888, admin@southerngulf.com.au

Ninian Stewart-Moore leading the Flinders Weeds Advisory Group meeting at Gunnerside Station.

Landcare group supports graziers with weed spraying

EIGHT members of the Gregory River Landcare Group (GRLG) spent a week in the Gregory River catchment in October to support local graziers by spraying several highly invasive weeds on three properties.

Rubber vine and bellavache bush were the key species targeted although mesquite, parkinsonia, calotrope and lantana were also treated. Three hundred and fourteen litres of herbicide mix were applied over 2009 to stop the spread and greatly reduce the density of prickly acacia in the upper parts of the Gilliat River – an area in excess of 10,000 hectares.

While we achieved a lot it was very disturbing to see how bad the weed situation has become. “We will have to come back again shortly to do follow up spraying.”

Five of the GRLG members were volunteers from Mount Isa and one, a member of South East Queensland-based Landcare group Bulimba Creek Catchment Coordinating Committee, flew up from Brisbane. The other two members were from SGC-based in Mount Isa.

Mark van Ryt (Gregory River Landcare Group) and Charles Curry (Southern Gulf Catchments) preparing spray equipment.
Sizing up carcases

Beef Challenge produces fantastic results

MCKINLAY Shire Beef Challenge cattle were sent to abattoirs in Kilcoy and Dinmore in July where MSA data was collected and used to assess the carcass attributes for each individual steer. This followed 132 head of steers being fed at Mort and Co Grassdale feedlot for 100 days.

Most of the cattle went to the Kilcoy abattoir, with 17 head below the 440kg minimum liveweight cut-off being sent to Dinmore. A summary of the data is shown in Table 1. All of the cattle met Meat Standards Australia (MSA) specifications, which are:

- pH – 5.5
- Meat colour – 18 to 3
- Rib fat minimum of 3mm

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 for the beef challenge steers.

TABLE 1: A summary of the average carcase data collected for the beef challenge steers.

<table>
<thead>
<tr>
<th>Carcase attribute</th>
<th>Average data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average hot standard carcase weight</td>
<td>330 kg</td>
</tr>
<tr>
<td>Average dressing percentage</td>
<td>54%</td>
</tr>
<tr>
<td>Average P8 fat</td>
<td>13mm (5-23mm range)</td>
</tr>
<tr>
<td>Average pH</td>
<td>5.47</td>
</tr>
<tr>
<td>Average marbling score</td>
<td>5/8 (1-18 range)</td>
</tr>
<tr>
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<td>5/8 (1-18 range)</td>
</tr>
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</tr>
<tr>
<td>Rib fat</td>
<td>13mm (5-23mm range)</td>
</tr>
</tbody>
</table>

The average hump height across the mob of cattle was 132 millimetres, but ranged up to 265 mm. Hump height is used to measure the tropical breed content of the animal.

The steers were placed into boning groups (BG) ranging from 6 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.

The average price received was $3.65/kg, ranging from $2.60 to $3.72. The highest price was received at Kilcoy for a 320+kg carcase with 8-25mm P8 fat and milk or two teeth. These prices were for 100-day grain fed product, non MSA.

The Richmond Beef Challenge cattle were sent to Kilcoy abattoir in mid-November following their 132 days on feed at Smithfield Feedlot, Proston.

The Richmond Beef Challenge steers will be presented in the April 2014 issue of the Northern Muster.

To learn more about the MSA grading system and for assistance with interpreting MSA feedback data processed and the MSA data collected.

Emma Hegarty, FutureBeef Team Cloncurry, Rachael French of Eddington, Julia Creek, and Rebecca Gunther also of FutureBeef Cloncurry went to the abattoir to see the animals.
High performing cattle

McKinlay Beef Challenge

THE inaugural McKinlay Shire Beef Challenge has concluded with a celebratory dinner on Saturday, October 19, where high-achieving pens of cattle were recognised across grassfed, grainfed and carcase categories. Peter Lewis from ABC television’s Landline travelled to Julia Creek, sharing with guests entertaining stories and a slideshow of fascinating photos from a recent trip to South America.

The cattle entered the paddock in October 2012 with two different induction weight ranges – 200kg to 230kg and 380kg to 420kg. The official challenge start weight for each animal was recorded in early November with the mob average at 375kg.

As the mob headed to Mort and Co’s Grassdale feedlot in March, they had gained an average of 63kg per head, or 0.47kg/hd/day, an impressive effort given the lacklustre wet season.

The highest weight gain performing pen of steers on grass gained 92kg (0.69kg/d), entered by Calvin and Karen Price from Mimong Station.

The first half of the 100 days on feed (DOF), the cattle gained quickly, putting on 2kg/hd/d before slowing to 1.6kg/hd/d. Over the grain-feeding phase, the cattle put on 163kg. Since November 2012, the cattle gained a total of 227kg or average gain of 0.93kg/hd/d.

In comparison, the Richmond Beef Challenge cattle in the previous 2011/12 challenge on grass alone, gained 219kg, or an average gain of 0.66kg/hd/d. The highest weight gain performing pen of steers gained 298kg (1.21kg/hd/d) from November to July, entered by John and Margo Stevens of Cremona.

The same pen of steers gained the most weight during the feedlot phase – 2.49kg/d.

In both weight groups, weight advantages were still seen in the animals that had been implanted. The McKinlay Beef Challenge was made possible through the generous support of sponsors Rabobank, Zoetis, Elanco, Allflex, Ray and Judy Heslin, Q DAFF FutureBeef staff, and the hard work of committee members Lindsay Allen (president), Rachael French (secretary) and Gayle Batt (treasurer).

The group is looking forward to holding its next challenge in the new year.

Richmond Beef Challenge

SMITHFIELD Feedlot at Proston hosted the Richmond Challenge cattle for 100 days on feed. The mob averaged 456kg when loaded at Richmond and had a 4.86 percent shrink to average 434kg at induction.

During their time at the feedlot, they gained 2.05kg/hd/d, leaving the feedlot with an average weight of 637kg. The cattle were processed at Kilcoy abattoir in mid-November with FutureBeef officer, Emma Hegarty, travelling down to be on the kill floor at Kilcoy. Information was collected to enable the carcase feedback data to be analysed to provide producers with some detailed feedback on how their animals graded and performed.

Emma also travelled to Proston where Ryan Brown kindly gave his time to enable Emma a comprehensive tour of the facilities.

Information collected at the feedlot and fill live-weight and carcase data will be reported to the group at a debrief day in February. A full summary of the debrief day results will be published in the autumn issue of Northern muster.

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FOR the past decade, the Dunnicliff and Armstrong families have implemented a strategic development plan at Beetaloo Station, NT. In transforming their 1,054,700-hectare piece of the Barkly Tableland into a well-watered and sustainably-grazed enterprise, the family has lifted carrying capacity from 20,000 to 100,000 head, while providing a blueprint for northern development.

The improvements are impressive: they are on track to finish 600 watering points by next year (at a cost of $60,000 each), linked by a network of bores, pipes and fences.

While John Dunnicliff—who runs Beetaloo with wife Trish, daughter Jane and son-in-law Scott Armstrong—admits there are times he thinks they were crazy to tackle such a project, he doesn’t hesitate when asked if the investment was worthwhile. “We are in the business of growing grass and selling it as beef, but we can’t do that without water. Our business starts and stops with water,” John said.

When the Dunnicliffs acquired Beetaloo (encompassing the perpetual pastoral leases of Beetaloo, OT Downs and Mungabroom) in 2002, less than 10 percent of the land was effectively watered.

“Our business was grazing stock in underutilised grassland, which John credits to improved pasture utilisation and management.

“The Dunnicliffs are increasing stock numbers by breeding, rather than buying. This strategy is helped by improved weaning rates, which John credits to improved pasture utilisation and management.

“This year, they achieved 65pc weaning rates, up from historical rates of 50pc. They have set a conservative 100,000-head goal. “An intensive grazing system of this size has limited stockholding options so we will retain 20pc of pasture as a drought buffer.”

CHALLENGES

COST is the biggest challenge, but John said dividing the capital required into 600 tanks planned by 2014.

There are currently 40 paddocks in the rotational grazing system – groups of 5000 head are moved every three days to prevent over-grazing and promote pasture growth. John said any property development, regardless of scale, must begin with small steps.

“Infrastructure is expensive and time-consuming, especially in northern Australia where access to resources and labour is difficult. If development is currently cost-prohibitive, use the time to develop a budget and an infrastructure plan. As seasonal and market conditions improve, start putting in watering points one at a time – each one is a step forward.”

Each new watering point delivers benefits, such as:

- Combining waters and fences allows stock to be controlled to increase pasture utilisation;
- The ability to spoil paddocks promotes plant regeneration and soil health;
- Controlled, high-density stocking prevents over- or under grazing, so pastures are consumed when their nutritional value is highest.

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“Achieving this will be even more challenging due to increased capital costs, the price of cattletags, and the pressure required to fill tanks up to 30km from bores, and a suitable solar system would be cost-prohibitive.

A breakdown could be devastating, so every bore and trough has A grid system of fences, complemented by strategic watering points underpins the development of Beetaloo Station.

Findings at Pigeon Hole Station provide answers

FOR the past decade, Heytesbury Beef’s Pigeon Hole Station has been synonymous with cattle edge research. A new Meat and Livestock Australia (MLA) publication summarises the highlights and key messages from this research.

“Ecosystems in the Northern Territory are extremely diverse, but the production capability of the region is limited by water availability,” said MLA’s Nick McDonald.

“Pigeon Hole Project research is helping producers develop a better way to move water throughout their properties and modifying the grazing patterns to suit the new water supplies.”

1. Establish a water supply system to redistribute grazing:
- 70 sub-artesian bores, connected by a grid network of 75mm pipe running 80km (to improve expansion/connection with temperature change) along fence lines;
- 150,000-litre steel tanks at each fence intersection;
- Concrete troughs in each corner of each paddock gravity-fed by tanks;
- Each bore supplies nine tanks and each tank supplies four paddocks; and,
- 600 tanks planned by 2014.

2. Reduce paddock size to control stock:
- Initially, paddocks re-fenced to 4km x 4km (1600ha), more recently reduced to 1000ha to enhance pasture utilisation.

3. Increase stocking rates:
- 5000 head per paddock grazed to a 50pc pasture utilisation, allowing more management, extra handling facilities and new pathways to market.

The Pigeon Hole project identified pathways for long-term investment that producers can implement at their own pace.

“Whether you have current or future development plans, the guidelines help strategic, set in motion, well before needing funds. Budget – For new infrastructure, maintenance, operating costs, additional stock, forage sales from breeder retention, retain core of development, partner with local expertise, climate variability and market volatility. Identify development order – Develop the right management packages first, then subdivision fencing. Choose investments – Is increasing carrying capacity through fencing/water more cost effective than purchasing more land? Identify resources – More cattle may require more management, extra handling facilities and new pathways to market. Identify suitable grazing systems – Is rotational wet seasonIslam wellbeing of cattle edge research. A new Meat and Livestock Australia (MLA) publication summarises the highlights and key messages from this research.

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