DEPARTMENT OF **RESOURCES**

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WHAT'S INSIDE

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Beefing Up Pastoral Knowledge

Jocelyn Coventry, Pastoral Production, Alice Springs

PHOTO (L-R): Keryl and Jamie Evans, John Stanes and Bryan Gill watch Greg Butler at work.

Alice Springs pastoralists were privy to a Meat and Livestock Australian (MLA) Beef-Up Forum at the Alice Springs Resort on Friday 26th February 2010.

For pastoralists who were able to make it into town at the end of that rainy week, the Beef-Up Forum provided a wealth of practical and thought provoking information about beef production, from the pasture in the paddock to promotion of beef on people's plates.

The day's agenda included:

- Grazing land management, sustainability and profit with Dionne Walsh (DoR)
- Improving heifer productivity with Tim Schatz (DoR)
- Beefing Up reproductive performance with John Bertram (Qld DEEDI)
- Beefing Up liveweight gain with Geoff Niethe (MLA)
- Beef business management with Phil Holmes, Holmes & Co
- I did it my way, running a beef business with Tom Mann, 'Hillgrove' Charters Towers
- Beef industry update in Korea with Jim Lim, MLA
- Value adding to beef with Greg Butler, MSA
- Research and development in the northern beef program with Wayne Hall, MLA

Story continued page 2

Beefing Up Pastoral Knowledge *cont…….*

From an informal survey of attendees, 4 take-home messages were identified:

"A customise package of available tools can be used to optimise the kg of beef produced."

Dionne Walsh highlighted the dollar value of rangeland pasture for the pastoralist when the land is kept in good condition. John Bertram spoke about tools such as property infrastructure, breeding objectives, weaner management, body condition of breeder cows, breeding soundness of bulls, EBVs, vaccination, mating strategies, pregnancy testing and best practice indicators. Geoff Neithe emphasised the 'free lunch' in tools such as genetic improvement, HGPs, opportunity feedlotting, phosphorus supplementation, and appropriate stocking rates.

"Attention to the business side of pastoral production plans for sustainable profit and lifestyle."

Phil Holmes provided an incisive discussion on a beef cattle business and how to identify areas such as breeder deaths where profitability can be most easily improved. Tom Mann followed on this theme with a personalised view of profitability in his beef cattle business over time.

"Research and development by MLA is helping industry address current and future challenges."

Tim Schatz explained the findings from the MLA-funded 'NT Heifer Project'. Wayne Hall described other MLA project activity such as the 'CashCow Project', the 'Liveweight Gain Project', the 'Northern Livestock Transporters Course', research to improve animal welfare aspects of cattle speying, and grazing trials to develop grazing management strategies. He also mentioned future activities such as development of a race-side pregnancy testing machine, a PEG trial for Central Australia, biological control of weeds, biological control of bull and cow fertility and the debate on agriculture's contribution to greenhouse gas.

"Innovative advertising and preparation of beef is maintaining markets in Australia and overseas."

To round-off the day, there were a couple of presentations about the tasty end of the beef business. Jim Lim spoke about the battle on the streets and airwaves of Korea with advertising billboards and televised cooking competitions to educate and encourage the Korean consumer to buy Aussie beef. Greg Butler explained Meat Standards Australia (MSA) and then demonstrated the preparation of a beef rump to produce palatable cuts.

The day finished with a BBQ dinner and ample opportunity for catching up with the day's speakers.

Photographs from the day were kindly supplied by Jackie Kyte and Janine King of JK Connections.

Some of the information on the day's topics is found on the MLA internet site and in publications produced by MLA (www.mla.com.au). Spare copies of the MLA publications that were on display on the day are available.

Please contact Bryan Gill on 08 89518127 if you would like one of the following:

- *Water medication - a guide for producers*
- *Grazing land management: sustainable and productive natural resource*
- *A guide to best practice husbandry in beef cattle*

Western Australian Table Grape Expert Visits Central Australia

Gabrielle Ellis, Plant Industries, Alice Springs

Mr Colin Gordon, Senior Technical Officer at the Department of Agriculture and Food Western Australia (DAFWA) came to visit Central Australian growers in the first week of March. With unseasonably wet weather, Mr Gordon got to see a flowing Todd River and a green 'desert landscape'. Not a bad effort for a first trip to the 'Red Centre'.

DAFWA, through its table grape project, has recently been identified as the lead agency in the National Horticulture Research Network (NHRN) RD&E review. This is part of the Primary Industry Standing Committee's (PISC) development of a national framework for the delivery of RD&E for primary industries. It provides an important opportunity for RD&E providers, to influence how RD&E priority areas will be provided to Australia's horticultural industries in the future.

Mr Gordon was keen to talk to Northern Territory table grape growers to find out first hand what issues growers believe are relevant and important and should be addressed by research, development and extension activities. He conducted sight walks at the Ti Tree and Alice Springs areas and answered grower questions. A BBQ lunch was held at the Ti Tree Research Farm on Wednesday March 3rd to give Mr Gordon a chance to give presentations on activities occurring in the WA Table Grape Industry as well as have a group discussion with growers to talk about similarities and differences between WA and the NT table grape industries.

"It has been such a great opportunity to come and talk to table grape growers first hand about what their issues are" said Mr Gordon. "As the NHRN RD&E framework is finalised and when implementation begins, industry priorities at both regional and national levels will need to be identified. In that way a targeted national table grape research framework can be developed that will enable collaborative research where relevant across regions, to give as much bang for buck to as many Australian table grape growers as possible. I am very grateful to the Alice Springs Plant Industries Team and the Northern Territory Department of Resources for giving me this opportunity to visit growers in Central Australia".

Feed back from growers was positive with Richie Hayes saying "that was the most informative meeting that I have been to in a long time. Colin can come back anytime".

Some attendees of the BBQ lunch held at Ti Tree Research Farm. Front from left to right: Richie Hayes, Gabrielle Ellis, Colin Gordon and Hannes Rosslee. Back from left to right: John Isgar and Glen Oliver.

21st Century Pastoralism: Utilising Technology

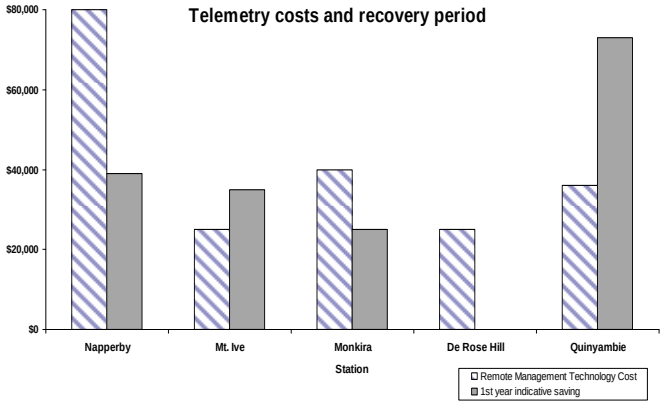
Andy Bubb, Pastoral Production, Alice Springs

The 21st Century Pastoralism (21CP) project is in its final year and will finish in June 2010 as the DKCRC completes its seven years of research. A bid for a further seven years of funding under the new name of CRC for Remote Economic Participation was successful and will start on 1 July 2010.

One of the major areas of research that the 21CP project has undertaken is the Utilising Technology sub project. This project has successfully identified how remote management technologies can reduce the cost of production on properties in arid areas while lifting enterprise productivity. The two types of technologies that have been researched are telemetry systems and remote individual animal management.

Story continued page 4

The WaterSmart Pastoral Production™ Project investigated commercially available technologies aimed at reducing the cost of providing, maintaining and monitoring stock water.
The costs and benefits of installing telemetry systems were measured on five properties and are shown in the graph below.



The utilising technology project has also looked at individual cattle management on extensive stations. The result of this work with our research partners is the development of the Remote Livestock Management System (RLMS). The RLMS is capable of automatically identifying, weighing and drafting individual cattle as they leave trap yards.

The information can then be transmitted via a telemetry system back to the station homestead without the need for anyone to travel to the yards.

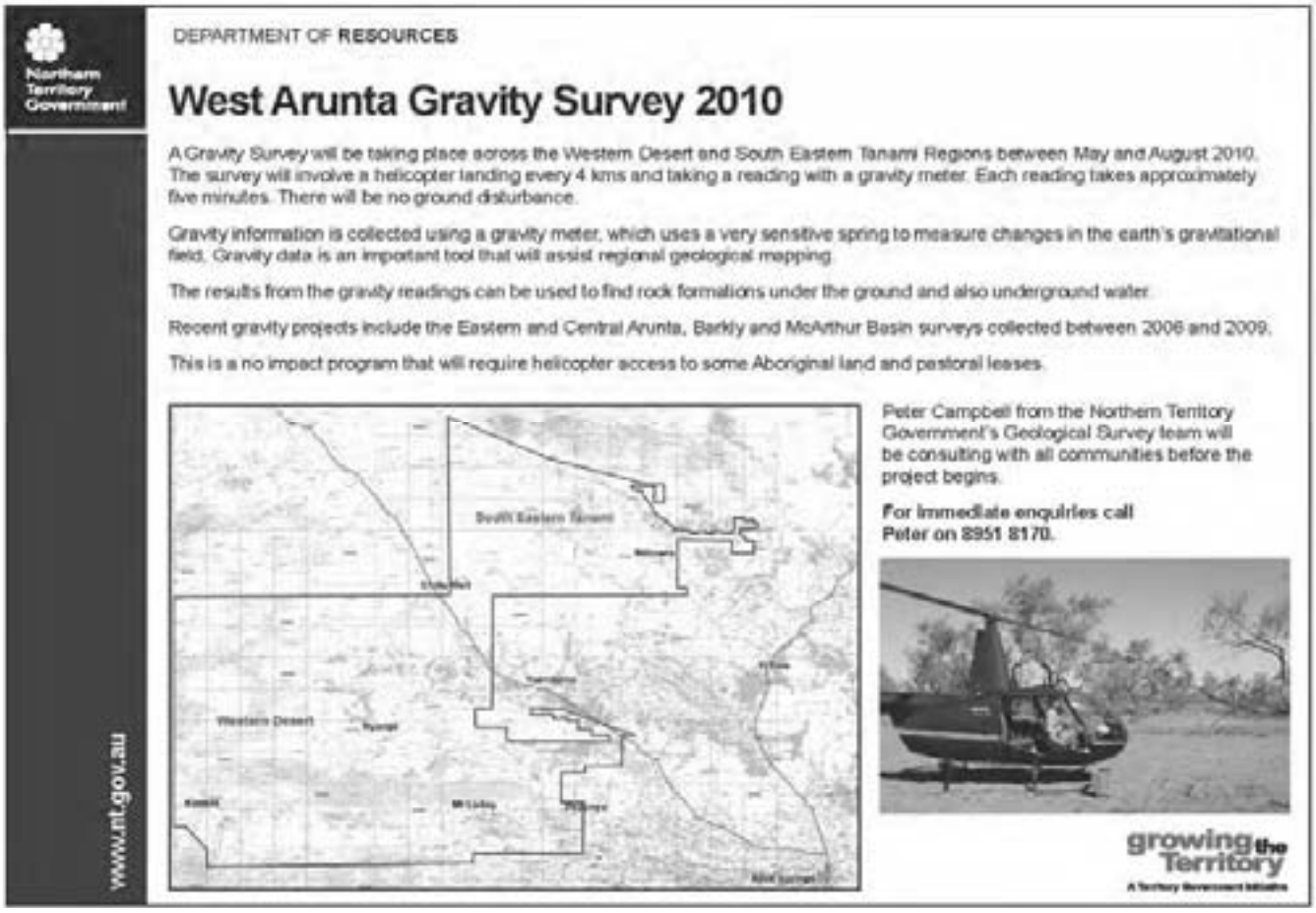
The RLMS has the potential to revolutionise desert pastoral operations as producers now have a way to collect regular data on the performance of their stock. This additional information may result in:

- Better timing of animal sales based on actual weight
- Automated weaning
- Target supplementation of individual animals within a paddock.

Further information about these projects can be found on the 21st Century Pastoralism website
http://www.desertknowledgecrc.com.au/research/pastoralism.html

Or contact

Andy Bubb
21st Century Pastoralism Project Leader
E Andrew.bubb@nt.gov.au
P 08 8951 8139

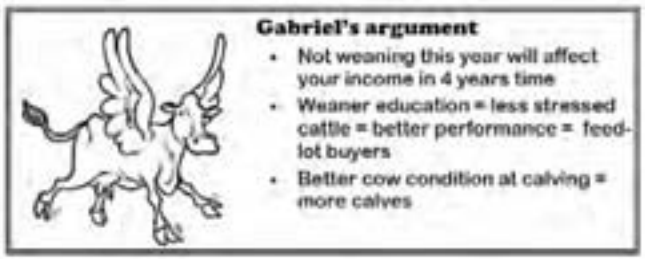


The devil & angel debate: Should central Australian pastoralists wean in 2010?

Sally Leigo, Pastoral Production, Alice Springs

Can you picture this? Pete the Pastoralist is kicking back on the veranda, he's enjoying watching the grass grow and the cattle get fat following on from the tremendous summer rain received. With the day to day dramas of running the station relatively tamed he puts his mind to work about the year ahead and the options the station now has. After branding the calves the next big job would be to wean the calves, but he thinks, if weaning the calves is about looking after the body condition of the cows, does weaning really need to happen this year?

It is at this point that two angels appear one named Lucifer who sits on his right shoulder and Gabrielle who sits on his left. Following are the arguments that each whispers into Pete the Pastoralist's ears about whether to wean the calves this year or not.

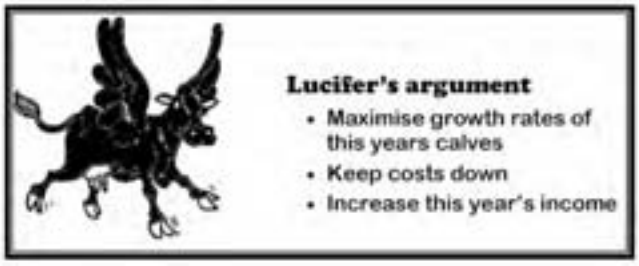


Pete's question to you is with this information what would be the decision you would make.

Lucifer: Pete, look at all this grass, the cows are fat enough, save yourself some time and effort don't worry about weaning this year

Gabrielle: Peter, you should wean your calves this year. Weaning educates your cattle about handling in the yards and being fed from feeders. Research from the Beef CRC found that yard weaned cattle performed better in the feedlot gaining 1.53kg/day against paddock weaned cattle who gained 1.28kg/day, that's a 20% improvement. The feedlot buyer wants cattle that have been yard weaned.

Lucifer: Pete, calves measured at Old Man Plains Research Station were found to put on 1kg/day while on their mother and that weaning saw them loose on average 7kg, taking 9 days to recover their weight. Imagine leaving them on their mothers for another 3 months, that's another 90kgs mate! 90kgs x $1.70/kg is another $153/head.



Gabrielle: Peter, maximising cow condition at calving is important for getting more cows to get pregnant 3 months after calving thus producing a calf a year. Weaning allows the cow to improve her body condition for the remaining length of her pregnancy. Research conducted in the USA found that 24% more cows in a body condition score of 5 - 6 (on a scale of 1 – 9) or 2.5 – 3.5 (on a scale of 1 – 5) at calving were pregnant 40 days after calving than cows that were in a body condition score of 4 (on a scale of 1 – 9) or 2 (on a scale of 1 – 5). Peter if you don't wean your calves in two years time you may find that your calving rate could be down by 24% and that in another 18 – 24 months your steer sales could be down by 24%. Not weaning this year may give you some short term gain but what of your income in 4 years time, when it could be dry again and every kg of beef you sell counts.

Central Australian weaners

and the debate continues…

Lucifer: Pete weaning means costs. The DoR found in 2006 that feeding the weaners hay costs at minimum $2.35/head/day, feeding something fancy & hay $2.71/head/day and that feeding hay, some fancy tucker and the time to do low stress stock handling costs $5.49/head/day. Pete, mate, you could have another $153/head and save yourself another $5.49/head/day by not weaning.

Gabrielle: Peter I think it is my responsibility to remind you that you don't get a season like this every year. AussieGRASS has found that the rain received in the Alice Springs district over February was a one in ten year event. What if next summer is a dry one, you'll be glad that you weaned your calves and your cows' body condition is at its best so she can raise the next calf the best she can regardless of the season.

Pete: You two can buzz off; can't a man think for himself any more?

The devil & angel debate: Should central Australian pastoralists wean in 2010?

What do you think Pete the pastoralist should do?

We're going to run a poll.

To vote on-line

CLICK HERE to answer Yes or No.

OR

Copy and paste link below into your web browser
http://www.nt.gov.au/d/surveytool/survey.cfm?id=46E38BBC-9619-9FD0-301762CA8B23FE1F

OR

Email or phone your response or comments to:
sally.leigo@nt.gov.au
Phone: 8951 8144

We will print the results in the next newsletter.

ASPIAC Update

Chris Nott, Chairman and Sally Leigo

ASPIAC recently held its AGM on the 16th February.

The new committee is:

Chairman:	Chris Nott, Alcoota Station
Members:	Dick Cadzow, Mt Riddock Station
	Lance Cramer, Temple Bar Station
	Jamie Evans, Yambah Station
	Tracey Hayes, Deepwell Station
	Anne Kilgariff, Lyndavale Station
	Paul Smith, Tieyon Station
Ex-officio:	Sally Leigo (secretary)
	Natalie Turner & Chris Materne

ASPIAC is responsible for advising the NT Minister for Primary Industry on:

- Technical & economic problems facing the central Australian pastoral industry
- Areas of research and extension that will improve production of the pastoral industry in central Australia

and to:

- Receive and review the results of pastoral research undertaken by the DoR
- Participate in the planning of DoR programs that support and service the pastoral industry

Following on from the AGM, ASPIAC held its general meeting and was presented with DoR's issues paper for their Agribusiness Strategy. ASPIAC has submitted comments on this paper and is optimistic that participation in the process will improve the service provided to pastoralists in central Australia.

Another project that was presented to the committee was that of improving the quality of maps provided in central Australia. Jason Hill from DNRETAS in Darwin described how they will develop maps of a 1:250000 scale that will link with soil landscape and vegetation mapping ready in 12 months time. This scale of mapping will be slightly broader than the land unit maps (1:100,000 scale) which were developed for a handful of stations in the region. ASPIAC believes these maps will assist greatly with planning fencelines, bores and land management activities.

For those who didn't make it to the Beef Up Forum, Meat and Livestock will be funding a project in conjunction with DoR around the effectiveness of supplementing with PEG during very dry periods. The project will commence this year with some pen trials too look into what kind of response can be achieved with supplementing with PEG.

If you have some research and extension ideas for ASPIAC then don't hesitate to contact any of the committee members.

How Much Feed Do I Really Have?

Preparing a forage budget

Whitney Dollemore, Pastoral Production, Katherine

Forage budgeting and forward planning of stock numbers is a valuable management tool, but why?

Pasture is the main ingredient when it comes to growing beef. Pasture will grow each wet season in the NT so long as it has 3 things: rainfall, sunlight and nutrients. But the amount and quality of pasture grown each season is dependant on land condition.

Forage budgets are a tool to calculate how much feed has been grown over the wet season; how much food we have for our cattle consequently how many cattle numbers we can have in that paddock for a set number of days. This allows us to set stock numbers directly in accordance with the seasonal requirements, which is particularly important coming off a long dry season followed by a short wet. If we use forage budgets annually we will set stock numbers correctly so that we can maintain or improve land condition.

Land condition is of vital importance as any decline in land condition will affect your bottom line. In Table 1 is a comparison of the effects that land condition has on production and the bottom line for the same property. In this example we have a 20,000ha property that produces live export steers. The cattle on this property are stocked at a carrying capacity where the cattle consume 25% of the annual pasture growth. The poor land only grows 40% of the pasture grown on the land in good condition.

Table 1 – The effect of land condition on profits

	Good Condition	Poor Condition
Carrying Capacity (head)	3,625	2,290
Weight gain steers (kg/hd/yr)	125	125
Net revenue at sale ($/kg)	1.70	1.70
Direct costs ($/kg/yr)	50	50
Overhead costs ($)	150,000	150,000
Profit before tax ($/yr)	**$439,063**	**$222,125**

Have I got your attention?

Great! Here are some simple steps to enable you to calculate a forage budget for a particular paddock:

1. Estimate the yield of the paddock – to help with this process there are photo standards, the quadrant method or assistance on measuring pasture yields is available from DoR.
2. Deduct 15% off the total yield of the paddock for trampling, dropped feed and defecated on, A.K.A detachment value.
3. Estimate the percentage of useful species – these include your 3P grasses – perennial, palatable and productive (e.g. Mitchell, Kangaroo or blue grasses). Deduct this from the amount of pasture left after detachment. This is the total amount of useful pasture.
4. Not all the pasture can be eaten, so you need to decide based on the starting amount an acceptable amount of pasture to be left at the end of the season. About 1000kg/ha is probably a sufficient amount of ground cover to be left to prevent land degradation – erosion/loss of pasture species during the wet season. Once deducted from the total amount of useful pasture this gives you the amount of pasture available for stock.
5. Next we look at the animal side. Your animals must be converted into animal equivalents (AEs) – a spayed cow at 450kg is equal to 1AE. Breeders (>3yrs) are 0.93AE, breeders with calves is 1.35AE, heifers are 0.68AE, steers are (1yo) 0.68AE and (2yo) 0.93AE.
6. Each AE eats 10kg of feed per day. So, Multiply the AEs by 10kg/hd. This is how much feed will be consumed daily. If you divide the amount of feed consumed daily by the amount of pasture available for stock and times that by the size of your paddock in hectares. This will give you the number of days you can feed those animals for in that paddock.

This is a very rough calculation and is complicated by a number of factors however this basic calculation could save you a lot of money in the long run!

If you are interested in learning about land condition and carrying capacities for your particular property, I would recommend you get yourself to a Grazing Land Management course.

For any enquiries about either the GLM courses or if you have any questions about forage budgeting or pasture yield assessments please contact:
Jillian Fisher P: 08 8951 8143
E: jillian.fisher@nt.gov.au

New information and skills in an expanding business

In 2007, the Costello family expanded its holdings in central Australia and have found GLM to be particularly useful for increasing their knowledge of their new properties and getting their managers up to speed.

Grazing Land Management workshops

Specific to Central Australia, the workshop, an MLA EDGE*network*® training package, provides a process to develop and implement GLM strategies that optimise land condition, production and profit.

The principles and tools presented will assist you to:

- Calculate land type carrying capacity and stocking rates
- Anticipate and respond to variations in rainfall, land type and land condition
- Understand the relationship between pasture, water, soils, woodlands, biodiversity, fire and weeds
- Plan & determine the financial impact of GLM strategies

The workshop includes open discussions, building on the wealth of knowledge and experience already present in the industry.

A 'hands on' approach is used with technical information demonstrated both in and out of the 'classroom'.

Attending a GLM workshop, and using the follow up service, will put in place a process for achieving the outcomes you see possible for your business.

Producers:
Donny and Colleen Costello & family. New Crown, Lilla Creek and Andado Stations

Location:
~450 km south-east of Alice Springs, Northern Territory

Combined area:
>20,000 km²

Enterprise:
Heavy bullock production for the Jap Ox and domestic abattoir markets

Goal:
"To resolve the conflict between optimal profit and protection of the resource base"

Livestock:
Herefords, Angus & Droughtmasters

Annual rainfall:
6 to 8 inches, summer and winter rain possible

For further information contact:
Central Australia Grazing Land Management, Arid Zone Research Institute, Alice Springs, NT
Phone: 08 8951 8143

central australia glm grazing land management

How can a GLM workshop help your enterprise?

Case Study: New Crown, Lilla Creek & Andado Stations

Background

Colleen Costello has been involved in the central Australian pastoral industry her whole life and together with her husband Donny, has owned Lilla Creek Station for 24 years.

In 2007, the Costellos expanded their holdings by purchasing two neighbouring stations - New Crown and Andado. Donny and Colleen's adult children are assisting with the management of the properties, together with Wayne and Clarice Kimlin as managers at Andado.

How GLM has changed them

"Doing the GLM course has provided a useful starting point to ensure we protect our resource base for future generations." says Colleen. "Along with the development of property plans, it gives us a good starting point."

The issues

Colleen notes that there are two issues that have to be managed at all times. The first of these is financial sustainability and the second is the maintenance of the resource base.

The management approach at Lilla Creek has been to develop watering points and infrastructure to effectively utilise as much country as possible. Similar plans for infrastructure development on the new properties will allow greater flexibility when making management decisions.

"Our focus is to find the balance between the number of cattle needed to be financially viable whilst at the same time keeping the landscape stable" says Colleen.

For daughter Tanya and son-in-law Ben, the maintenance of landscape health is a priority and both are keen to explore tools to maintain the land. They are also keen to implement rehabilitation techniques to optimise sustainability if needed. The management of track and gully erosion is one of the issues at Lilla Creek. There has been a lot of work done over the years and Ben and Tanya are keen to continue rehabilitating roads and putting in ponding banks.

"GLM helped us to see that fixing erosion will mean rain is used to grow feed rather than running to waste down roads and gullies" says Tanya.

The future

The Costellos are members of the Southern Beef Producers benchmarking group, which focuses on the overall sustainability of the business. Benchmarking data have shown that the stocking rate required to optimise profit is different to that required to protect the resource base. Colleen feels that the GLM course provides an additional perspective on resource protection and helps to resolve this management conflict.

"I also liked the fact that the information in GLM was specific to central Australia and we were able to get good maps of our new properties" Colleen says.

For Ben and Tanya, and Wayne and Clarice, having a plan to work towards is a benefit to them as managers just starting out.

"A GLM plan will help us to get the most important things done. It gives us a bit of a plan of attack to help our business" says Tanya.

Final word

"GLM courses provide you with the tools to ensure protection of the country under your management for future generations."

Northern Territory Government

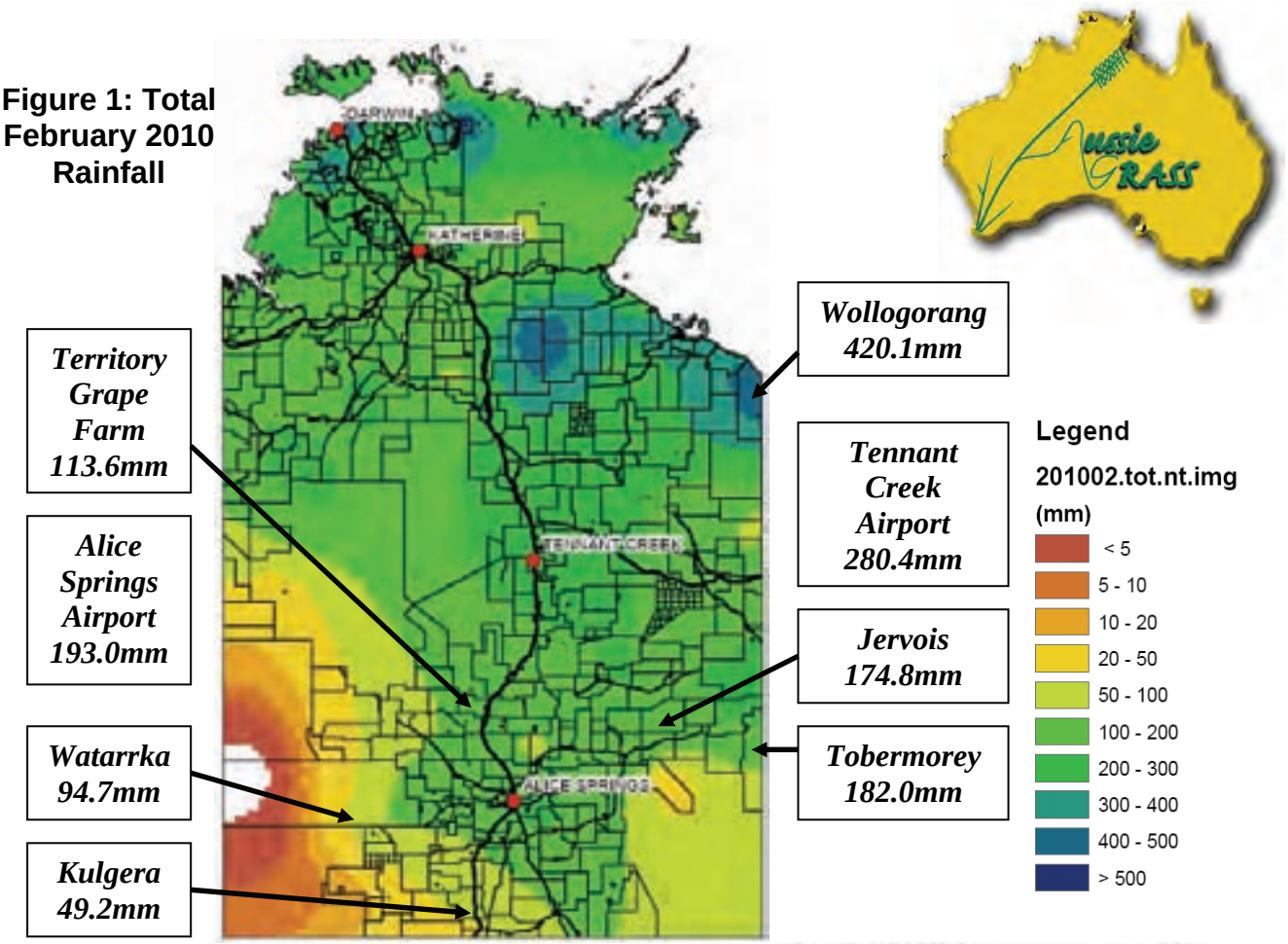
Australian Government Department of Agriculture, Fisheries and Forestry National Landcare Program

glm

Where Did The Rain Fall In February?

Chris Materne, Pastoral Production, Alice Springs

Figure 1: Total February 2010 Rainfall



The **Total February 2010 Rainfall** map shows that the majority of the NT pastoral districts have received good falls over February. Tobermorey experienced its highest total February rainfall on record (182.0mm), while Nutwood Downs in the northern Barkly recorded its wettest single day on record of 195.2mm (BoM).

The **Rainfall relative to historical records** map indicates that this February rain can only be expected once in 10 years over the majority of the Tennant Creek and north-eastern, central and south-eastern Alice Springs regions.

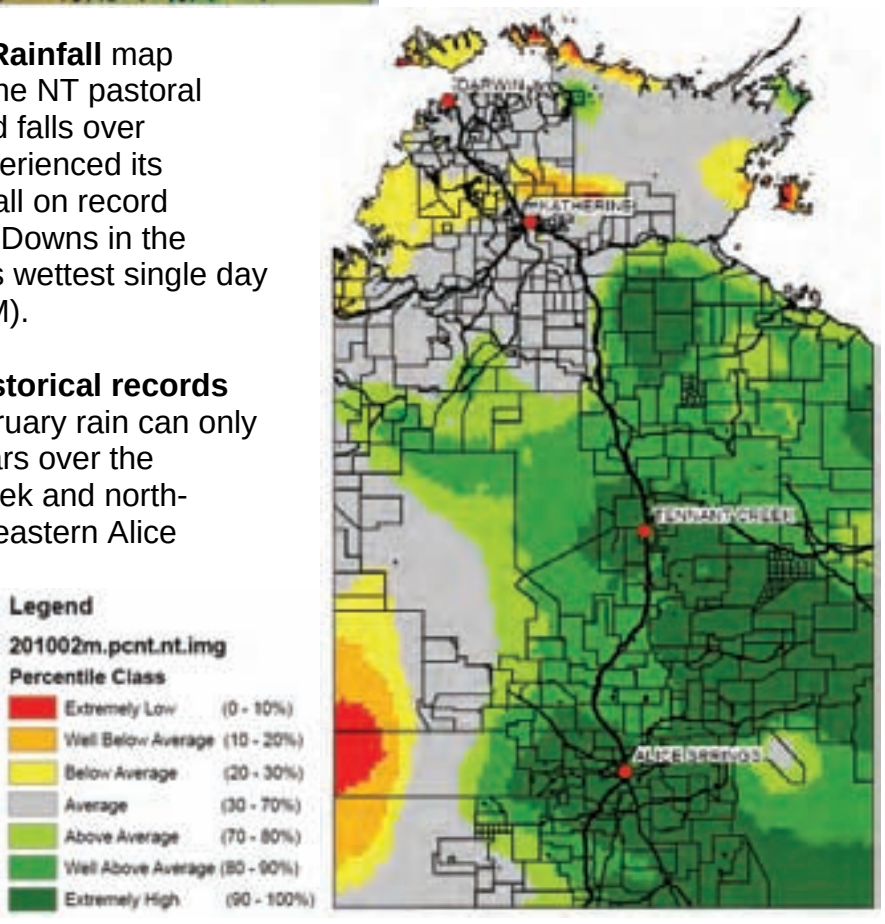


Figure 2: Total February 2010 Rainfall relative to historical records

AussieGRASS - April 2010 Update

Chris Materne, Pastoral Production, Alice Springs

AussieGRASS is a valuable tool to help pastoralists make informed land management decisions. It is a spatial modelling framework that estimates various pasture characteristics (such as growth and total standing dry matter) over a given time period and compares it with historical records. It does this by using rainfall, climate, soil and pasture type information to estimate average pasture growth (among other parameters) over 5km x 5km square grids across Australia.

For more information on AussieGRASS see http://www.longpaddock.qld.gov.au/.

Modelled pasture growth for the past six months (Figure 1) suggest the majority of the NT south of Daily Waters has experienced at least average growing conditions over the 2009/10 season, with the Barkly Tablelands and Eastern Alice Springs regions also showing above average to extremely high seasons. North of Daily Waters generally shows below average to extremely low growth.

PAST - Pasture Growth relative to historical records since 1957

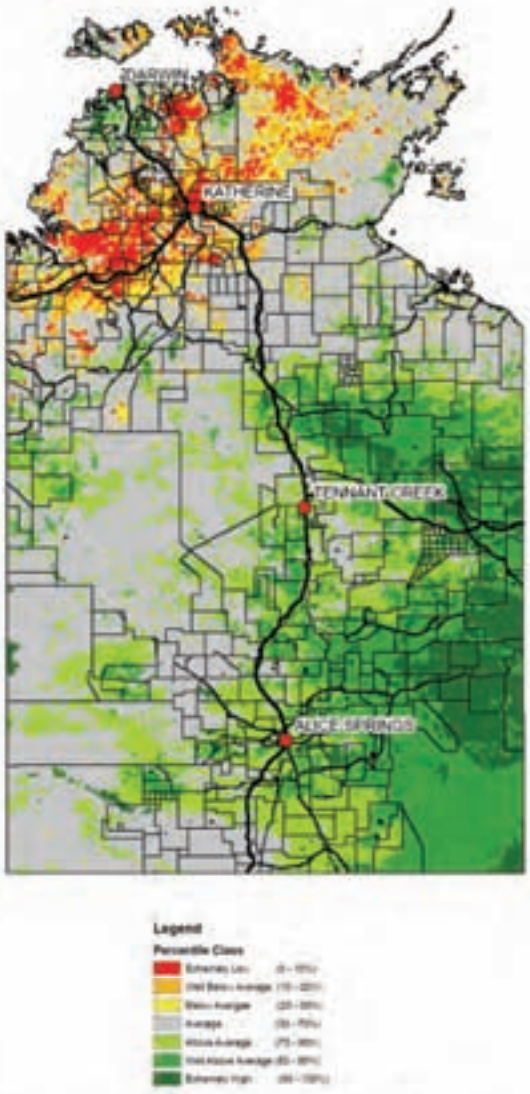


Figure 1: Past 6 – Months Pasture Growth (1st November 2009 to 30th April 2010)

PRESENT – Total Pasture Growth

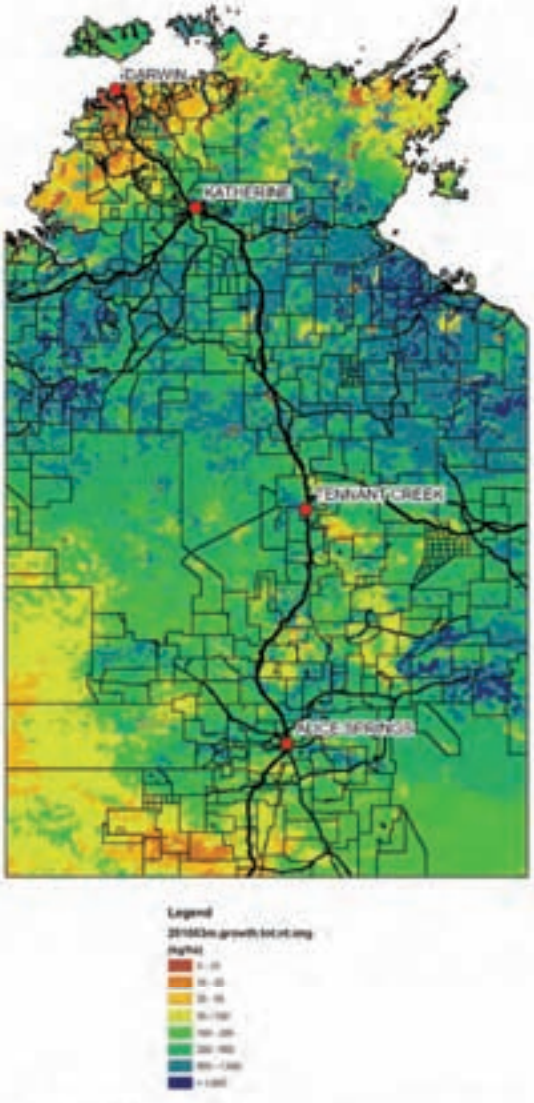
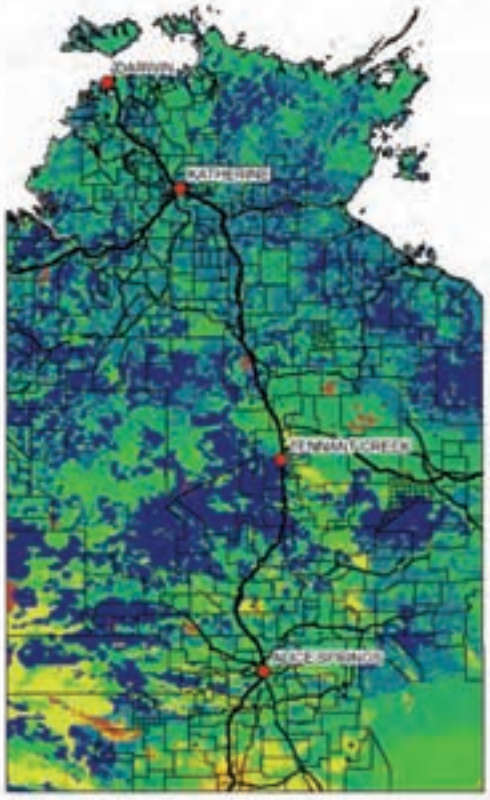


Figure 2: Total Pasture Growth during March 2010 (kg of dry matter / ha)

PRESENT – Total Standing Biomass

TSDM is estimated by incorporating pasture carried over from previous seasons (less grazing, fire and detachment) and the current season's growth.

The TSDM map in figure 3 indicates pasture quantity is generally greater than 1000kg/ha over the entire NT. The southern Alice Springs district however does varies considerably from grater than 1000kg/ha to as low as 100kg/ha.



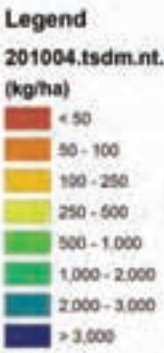


Figure 3: Total Standing Dry Matter (as of 30th April 2010)

Future - Growth Predications

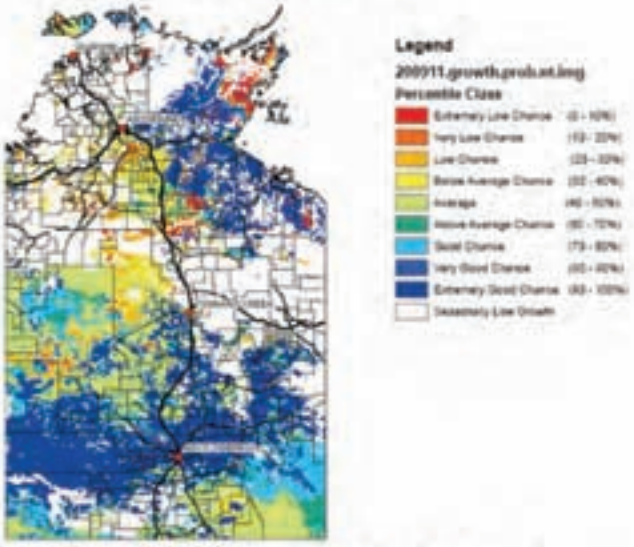


Figure 4: Chance of exceeding Median Growth over April to June 2010 period

The chance of exceeding median pasture growth over the coming April to June period based on the SOI index is good to extremely high across much of the NT south of Tennant Creek

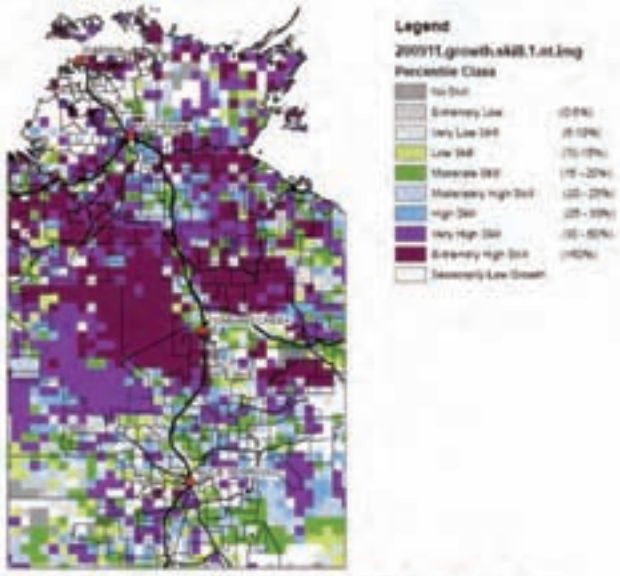


Figure 5: LEPS Growth Forecast Skill from April to June 2010 based on SOI Phase 1 in March 2010

The level of skill or confidence in these growth predictions over the next three months is mixed but generally high to extremely high across the districts between Katherine and Ti Tree.

PERSONALISED PROPERTY MAPS

Are you interested in obtaining detailed AussieGRASS maps for your property?

If so get in touch with Chris Materne, DoR, Alice Springs (89518135) chris.materne@nt.gov.au.

General NT and Australia scale maps are available on line at:
http://www.longpaddock.qld.gov.au/RainfallAndPastureGrowth/

Culling Of Low Performance Bulls, To Improve Herd Efficiency

Jocelyn Coventry and Bryan Gill,
Pastoral Production, Alice Springs

Identifying unsuitable bulls for joining can be easily undertaken by pastoralists by a physical examination in the yards and keeping records of bull age. This is a practical means of having the best quality bulls that you want working in your herd.

Pastoralists can annually physically examine their herd bulls for the following:

- Structure, checking the legs, feet
- Sheath structure and palpate to ensure there are no lumps or bumps
- Presence of both testicles
- Texture of testicles (not too soft or hard)
- Measure the scrotal circumference

By examining bulls annually for any abnormalities and culling unsuitable bulls, pastoralists can increase the chance of maintaining or improving their calving percentages.

Following yard inspection and testing in 2007-08, herd bulls from the Old Man Plains Research Station were selectively culled for the following reasons:

- excessive age (>6 years old),
- poor temperament, or
- poor reproductive tract soundness.

DNA testing of the 2009-branded calves showed that in both paddocks, 50% of the bulls had been producing no calves (see figure 1). With exception of the two top performing bulls, the rest were the bulls that were selectively culled (just prior to the drop of these last calves).

There is a critical point here. With exception of a 3-year old bull with poor semen quality, there were two primary reasons for culling—excessive age and poor temperament—both of which were identified on yard inspection. It turned out that all culled bulls were poor calf producers and the DNA testing of calves was used to demonstrate how an annual examination with selective culling can improve productivity of a herd bull group for the next mating.

For more information contact:
Jocelyn Coventry 08 8951 8142 or
Bryan Gill 08 8951 8127

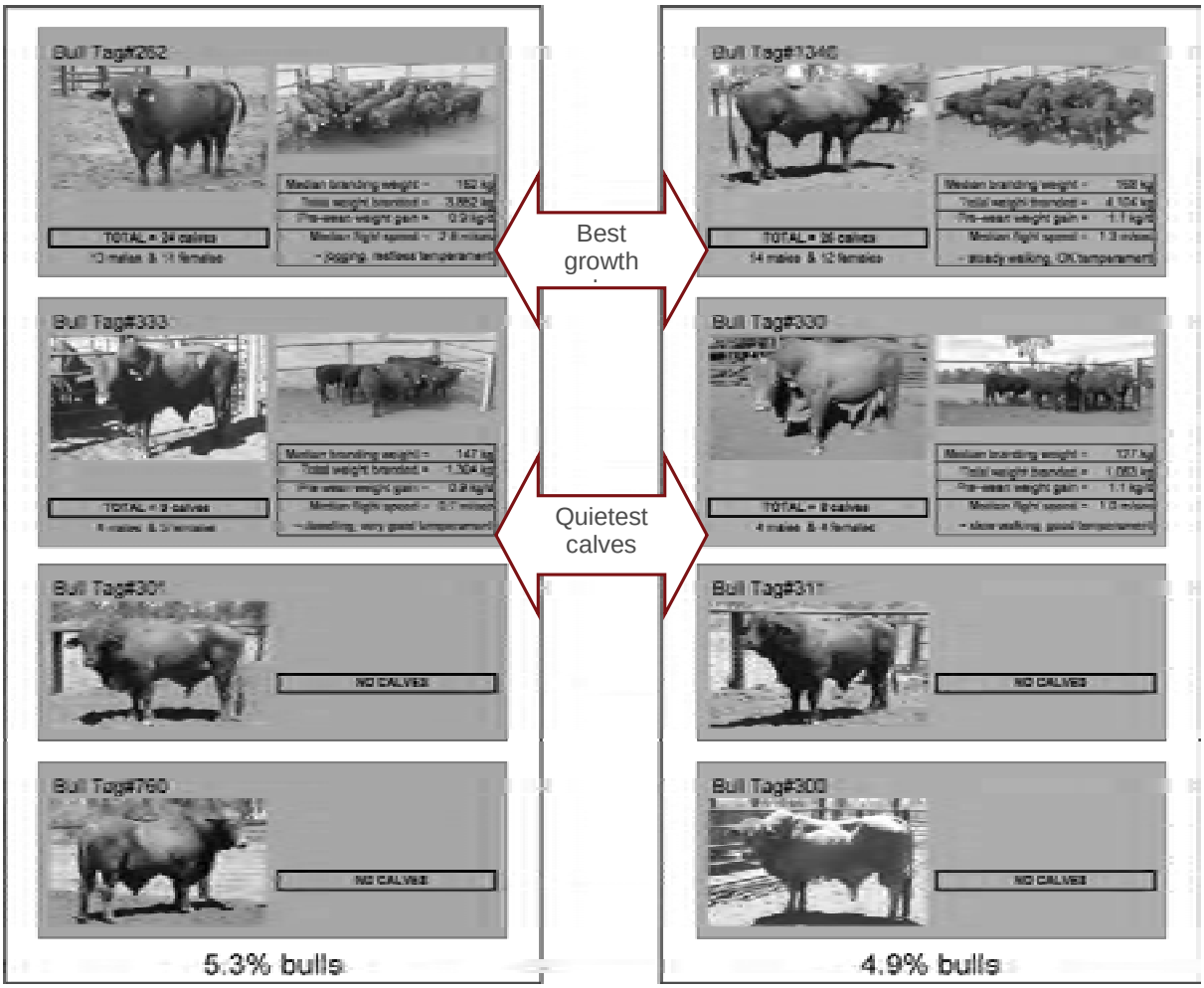


Figure 1 – Bull Performance at Old Man Plains Research Station

Towards sustainable agriculture:

One step at the time

Martin Hidalgo Castro & Glen Oliver,
Plant Industries, Alice Springs

Increasing attention is being paid to the sustainable use of resources in primary industries. A central component of sustainability is the reduction in external inputs (e.g. agrichemicals) for the production of food and fibre. The sustainability challenge in central Australia is accentuated by its aridity and remoteness which adds costs to production and getting produce to markets. Any assistance with reduction in input costs could potentially be beneficial for growers.

Agriculture in arid central Australia is reliant on irrigation with groundwater. One of the consequences of localised irrigation of high frequency is an increase in weed density along drip lines, resulting in increased weed-crop competition. As elsewhere, Centralian growers rely on herbicides for the management of weeds in their production systems. Chemical management adds significant costs to production and also poses risks to the health of farm workers and the environment.

To assist growers in reducing their herbicide inputs we investigated the feasibility of reducing the amount of herbicide used for weed management in irrigated production systems in Central Australia. We selected two commonly used post-emergent herbicides with differing modes of action, Basta and Amitrole T. Herbicides with differing modes of action attack weeds in different ways which if used in rotation can reduce the chances of weed resistance. The trial evaluated whether sub-label rate applications of these herbicides would deliver the same level of weed suppression as the recommended label rate. We compared the effects of label rate (LR=Dose 1 or D1) and three sub-label application rates (85% LR (D2), 75% LR (D3) and 65% LR (D4) of these herbicides to the recommended label rate of RoundUp. Water was used as a control to assess the relative effectiveness of the chemical weed control treatments versus no chemical treatment at all.

The experiment was conducted at the Arid Zone Research Institute (AZRI) between June and December 2009. The area of study contained 60 date palms comprising of 18 cultivars, under drip irrigation.

Prior to commencement of the trial, all date palms were pruned, and the weeds at the area of study received mechanical control to even out weed growth. The canopy area of each date palm was projected and marked on the ground, becoming the sampling unit. Treatments were applied using a Solo Backpack sprayer once a month for four months.

The living/green weed cover was estimated as a proportion (%) of the projected canopy area of each of the date palms prior to each herbicide application. An economic benefit-cost ratio (EcBCR) and an environmental benefit-cost ratio (EnBCR) were calculated. EcBCR was calculated at each sampling time as the percent reduction in cover (relative to initial weed cover) per unit cost ($) of active ingredient (AI) used in the treatment. The EnBCR was calculated at each sampling time as the percent reduction in cover per unit volume (ml) of AI used in the treatment. The EnBCR assumes that reducing the volume of AI of herbicides used is beneficial to grower health and the environment.

The results of the study show:

- That it is possible to reduce by 35% and 25% the doses for Amitrole T and Basta respectively, and have the same significant reduction of weed cover (%) than the recommended label rate of Roundup. These results indicate that the cost for weed management (Chemical control) could be reduced by 35% due to a reduced chemical application rate.
- That Roundup, with the recommended label dose, was the most economically efficient treatment, by reducing more weed cover per dollar of active ingredient.
- That Basta with dose 75% label rate was the only beneficial treatment for the environment. This is due to a 25% reduction chemical input, which in turn has a positive impact to the environment and reduced risk to grower health.
- That Amitrole T and Basta could be used in rotation to reduce weed resistance, at below label rates, as part of an integrated weed management strategy, and still give an effective reduction in weed cover and in turn deliver both economic and environmental benefits.

This article explains the results of research undertaken at AZRI. The manufacturers of chemicals investigated do not take any responsibility for non-effectiveness if chemicals are used at below label rate. The Northern Territory Government gives no warranty or assurance, and makes no representation as to the accuracy of any information or advice contained in this article, or that it is suitable for your intended use.

Northern Territory Government DEPARTMENT OF RESOURCES

The Northern Territory *Livestock Act* and *Regulations* commenced in September 2009. The legislation is an amalgamation of five previous *Acts.*

Under the *Livestock Act* and *Regulations* there is a provision for infringement notices to be issued for some offences whilst other offences are strictly liable for prosecution. The penalty for an alleged offence where an infringement notice is issued varies from $260 to $1300 depending on the severity of the non compliance.

An example of some of the offences (but not all) where an infringement notice can be issued are:

- Importing livestock into the NT without a NT Health Certificate/Waybill
- Moving livestock within the NT without a completed Waybill
- Moving Cattle/Buffalo/Sheep/Goats without being correctly identified with NLIS tags
- Not completing the upload to the NLIS database within 48 hours of cattle arriving at the destination property

If you have any questions concerning infringement notices or your requirements under the *Livestock Act* and *Regulations* please contact your local Regional Livestock Biosecurity Officer.

Darwin Region
Ian Doddrell
Regional Livestock
Biosecurity Officer (RLBO)
Ph: 08 8999 2030
Fax: 08 8999 2146

Katherine Region
Greg Scott
Regional Livestock
Biosecurity Officer (RLBO)
Ph: 08 8973 9754
Fax: 08 8973 9759

Tennant Creek Region
Tom Haines
A/Regional Livestock
Biosecurity Officer (RLBO)
Ph: 08 8962 4490
Fax: 08 8962 4480

Alice Springs Region
Greg Crawford
Regional Livestock
Biosecurity Officer (RLBO)
Ph: 08 8951 8125
Fax: 08 8951 8123

www.nt.gov.au

Is my water safe to drink?

Gabrielle Ellis and Cinzia Rovida,
Water Microbiology Laboratory, Alice Springs

Located at AZRI, the Water Microbiology Laboratory (WML) provides bacteriological analysis of water for the private sector, government departments and general public on a fee-for-service basis. Numerous water types including, potable (drinking) water, waste water, recreational water, bottled water and dialysis water are tested at the laboratory to ensure that drinking water is safe for human consumption according to Australian Guidelines. Staff at the laboratory provide advice and assistance with water quality testing, water sample collection and water sample transport logistics.
Recently the ASRR caught up with Cinzia Rovida, a technician at the laboratory, to discuss bacteria in water and why testing drinking water is important.

Why is it important to know if there are certain types of bacteria in drinking water?

The transmission of disease through drinking water is one of the primary concerns for a safe water supply. Human illnesses such as typhoid, dysentery, cholera, hepatitis and giardiasis have been linked to drinking water contaminated by faecal bacteria.

How can I tell if drinking water is contaminated with bacteria?

There is no way to know if water is contaminated with disease-causing bacteria unless it is tested. Testing a water supply for specific disease-causing organisms is time consuming and expensive. Handling and culturing disease organisms requires special training and equipment.

As recommended in the Australian Drinking Water Guidelines, drinking water is tested for two indicator organisms: Total Coliforms and *E-coli*. Together these organisms provide reliable indication of faecal contamination of drinking water. The two must be tested together because coliforms can be present naturally in soil and plant material. As such, a second indicator like *E-coli* is needed to confirm faecal contamination. *E-coli* are part of the Coliforms group and are nearly always present in faeces in very high number. It is the most specific indicator of faecal contamination. The precence of *E-coli* in water indicates faecal contamination and should be acted on immediately.

Cinzia Rovida prepares water samples for analysis

The Total Coliforms and *E-coli* test is relatively inexpensive and has the great advantage of test results being available after 24 hours of incubation.

The laboratory also tests the water for Total Plate Counts of Bacteria. This test reflects the number of viable bacteria in the water and provides an indication of the general quality of water supply and the effectiveness of any water quality treatment processes in place.

How do I collect and handle a water sample to test for bacteria?

Proper collection and handling of a water sample is critical for accurate bacteriological water test results. Water samples for bacteriological analysis must always be collected in sterile containers which are provided by the laboratory.

The following aseptic techniques on page 17 should always be applied when sampling.

Aseptic techniques

1. **CLEAN THE TAP** - Remove any attachments from the tap that may cause splashing and using a clean cloth wipe the outlet in order to remove any dirt.

2. **RUN THE TAP** - Turn the tap on at maximum flow rate and let the water flow for 1 – 2 minutes.

3. **STERILIZE THE TAP** - Sterilize the tap for one minute with a flame. Heat only the mouth of the tap .Excessive heating can damage the tap.

4. **OPEN THE TAP BEFORE TAKING WATER SAMPLE** - Carefully turn on the tap and allow the water to flow for 1– 2 minutes at a medium flow rate. Do not touch the sterilized mouth of the tap.

5. **FILL THE BOTTLE** - Place the bottle under the flowing tap. The mouth of the bottle and the bottle top must not touch anything (Do not rinse the bottle).

6. **WATER LEVEL REQUIRED** - Fill the bottle to the line (200ml) approximately 1cm down from the top of the bottle, leaving a small air space.

7. **CLOSE THE BOTTLE** - Place the bottle into an esky cooled with freezer bricks. (Do not use freestanding ice to cool the esky as this may contaminate the sample).

To collect samples from tanks and dams hold the bottle by the base and submerge it to a depth of approximately 20cm with the mouth facing slightly upwards. Move the bottle slowly forwards as it fills.

Samples for bacteriological examination must be delivered to the laboratory within 24 hours of collection. Samples will be accepted Mon - Fri but as the test analysis requires reading after 24 and 48 hours from processing, samples received on Thursday or Friday will attract an overtime penalty charge on top of normal fees as the Laboratory is closed on Saturday and Sunday. We ask that people notify the laboratory (08 8951 8110) when sending water samples, to ensure the samples are delivered and tested in a timely manner.

An information sheet on how to collect water samples is provided by the laboratory.

This information sheet is available in hard copy from the lab or can be downloaded from the DoR web site:

http://www.nt.gov.au/d/Primary_Industry/Content/File/diagnostic_services/A04_Factsheet_collecting_samples_watermicro.pdf

What should I do if my water is contaminated with bacteria?

If a water quality failure occurs you will be notified immediately by either phone, fax or email, as directed by yourself at the time of sample submission. For a full interpretation and appreciation of a failure, we encouraged clients to contact an environmental health officer from the NT Department of Health.

What if I want to know what chemicals or heavy metals are in my water?

Chemical and Metal analysis of water is not undertaken at the Alice Springs WML. The Alice Springs Laboratory can provide water bottles needed for Chemical and Metal testing and information on other laboratories in the Northern Territory that provide these analyses. For advice on how to collect and submit water samples for Chemical and Metal Testing please contact the Water Laboratory in Alice Springs or the Water Chemistry Laboratory in Darwin on 8999 2196.

The Alice Springs and Darwin WML are National Association of Testing Authorities (NATA) accredited laboratories giving international recognition of the quality and validity of water testing results.

For further information or advice related to this article please contact the Alice Springs Water Microbiology Laboratory by:
P: 08 8951 8110
F: 08 8951 8116

Check out our website for more details, See the link below:
http://www.nt.gov.au/d/Primary_Industry/index.cfm?header=Laboratory%20Services

Northern Territory Government

Pastoral Market Update

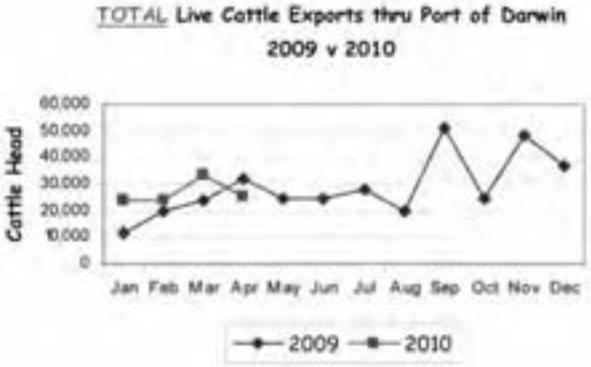
Live Cattle Exports via Darwin Port – APRIL 2010

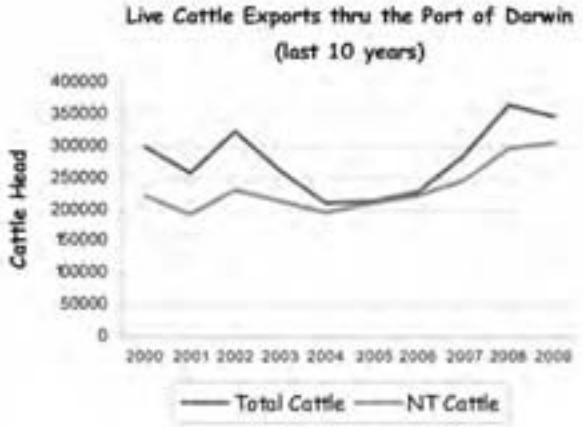
Please note that the 'NT CATTLE' figures are NT cattle exported through the Port of Darwin only, some NT cattle are exported through interstate ports.

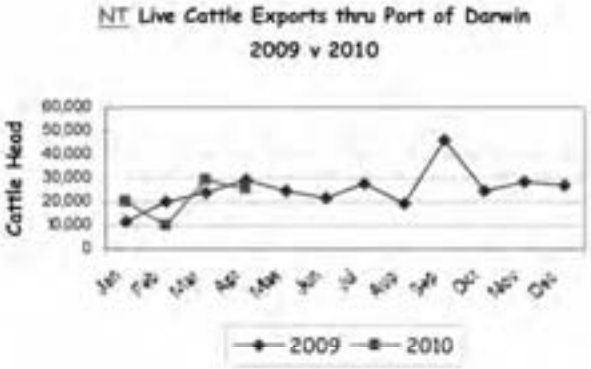
Destination	TOTAL CATTLE (including interstate)							# NT CATTLE						
	2008	2009	Last year 30/4/09	YTD 30/4/10	1-30 APR	Previous Month	Difference	2008	2009	Last year 30/4/09	YTD 30/4/10	1-30 APR	Previous Month	Difference
BRUNEI	4,288	3,131	991	716	0	716	-716	3,238	2,681	991	716	0	716	-716
INDONESIA	341,766	330,433	82,441	105,460	25,410	32,622	-7,212	276,293	288,887	79,093	84,668	25,410	28,622	-3,212
PHILIPPINES	12,247	10,422	4,160	0	0	0	0	11,945	10,422	4,160	0	0	0	0
SABAH	2,965	1,410	0	0	0	0	0	2,055	910	0	0	0	0	0
SARAWAK	2,340	0	0	0	0	0	0	1,590	0	0	0	0	0	0
W-MALAYSIA	1,296	1,918	0	0	0	0	0	418	1,918	0	0	0	0	0
EAST TIMOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	364,944	347,314	87,592	106,176	25,410	33,338	-7,928	295,539	304,808	84,244	85,384	25,410	29,338	-3,928
				+18,584							+1,140			

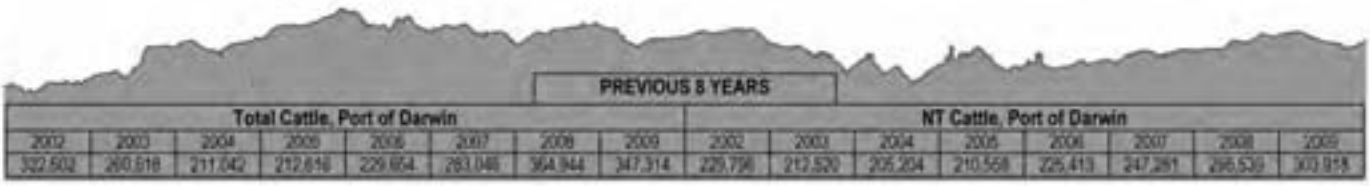
APRIL at a glance

- 25,410 head of cattle through the Port of Darwin during April, 7,928 less than March and 6,686 less than April last year.
- 2010 total cattle figures indicate 18,584 head more than last year. NT cattle 1,140 more than last year.









Total Cattle, Port of Darwin								NT Cattle, Port of Darwin							
2002	2003	2004	2005	2006	2007	2008	2009	2002	2003	2004	2005	2006	2007	2008	2009
332,502	260,616	211,042	212,616	229,654	283,046	364,944	347,314	229,756	212,520	205,204	210,568	225,413	247,281	295,539	303,915

Northern Territory Government

Pastoral Market Update

OTHER LIVESTOCK EXPORTS VIA DARWIN PORT (includes NT and Interstate Stock)

Destination	Buffalo			Camels			Goats			Horses			Sheep			Pigs		
	2009	2010	1-30 APR	2009	2010	1-30 APR	2009	2010	1-30 APR	2009	2010	1-30 APR	2009	2010	1-30 APR	2009	2010	1-30 APR
BRUNEI	327	0	0	0	0	0	397	880	0	0	0	0	0	0	0	0	0	0
INDONESIA	3,274	1176	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHILIPPINES	0	0	0	0	0	0	0	0	0	0	0	0	531	0	0	0	0	0
W-MALAYSIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SABAH	176	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SARAWAK	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL	**3,777**	**1176**	**0**	**0**	**0**	**0**	**397**	**880**	**0**	**0**	**0**	**0**	**531**	**0**	**0**	**0**	**0**	**0**

NATIONAL CATTLE PRICES - W/E 30/4/10

JAPAN OX

	Estimated dressed weight price (cents/kg)							
	SALEYARDS				O.T HOOKS			
	NSW	QLD	SA	AV (Aust)	NSW	QLD	SA	AV (Aust)
This week	302	307	338	313	309	316	Nq	304
Last week	311	312	336	316	309	313	Nq	302
Year ago	295	294	321	295	290	288	nq	281

MEDIUM STEER

	Estimated dressed weight price (cents/kg)							
	SALEYARDS				O.T.HOOKS			
	NSW	QLD	SA	AV (Aust)	NSW	QLD	SA	AV (Aust)
This week	317	323	333	322	300	305	Nq	299
Last week	309	326	343	323	300	307	Nq	299
Year ago	298	315	329	308	279	281	Nq	284

US COW

	Estimated dressed weight price (cents/kg)							
	SALEYARDS				O.T.HOOKS			
	NSW	QLD	SA	AV (Aust)	NSW	QLD	SA	AV (Aust)
This week	270	252	311	267	237	243	250	248
Last week	270	249	300	264	237	249	240	248
Year ago	256	258	260	257	233	235	220	230

TRADE STEER

	Estimated dressed weight price (cents/kg)							
	SALEYARDS				O.T.HOOKS			
	NSW	QLD	SA	AV (Aust)	NSW	QLD	SA	AV (Aust)
This week	343	343	341	346	304	305	310	313
Last week	343	364	336	353	304	303	310	313
Year ago	320	336	318	326	289	284	nq	309

LIVE EXPORT QUOTES

	Estimated live weight price (cents/kg)			
	LIGHT STEERS (280-400 kg)		HEAVY STEERS (400+ kg)	
	Darwin	Fremantle	Darwin	Fremantle
This week	170	nq	160	nq
Last week	180	nq	170	nq
Year ago	170	nq	160	nq

Prices courtesy of Meat & Livestock Australia

mla market information

www.mla.com.au

CURRENCY EXCHANGE RATES

Key Currencies 1AUD =	Current 5.5.2010	Previous month 1.4.2010	3 months ago 1.2.2010	1 Year ago 1.5.2009	Pre-devaluation 01.07.1997
Brunei Dollar	1.25430	1.27651	1.23266	1.09172	1.076
Indonesian Rupiah	8,400.67	8,417.18	8,167.38	7,826.93	1830
Philippine Peso	41.1219	41.3786	41.0665	35.22998	19.84
Malaysian Ringgit	2.96064	2.97576	3.01202	2.60219	1.9
Euro	0.70032	0.68966	0.63672	0.54929	N/A
US Dollar	0.92575	0.92421	0.88296	0.72947	0.752

PREVIOUS 8 YEARS

Total Cattle, Port of Darwin								NT Cattle, Port of Darwin							
2002	2003	2004	2005	2006	2007	2008	2009	2002	2003	2004	2005	2006	2007	2008	2009
332,502	260,616	211,042	212,616	229,654	283,048	364,944	347,314	229,798	212,520	205,204	210,568	225,413	247,281	286,539	333,958

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PO Box 8760 ALICE SPRINGS NT 0871

Alice Springs Rural Review

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GLOSSARY

ASPIAC:	Alice Springs Pastoral Industry Advisory Committee	DoR:	Department of Resources
CAGLM:	Central Australian Grazing Land Management	GRASSp:	Pasture Growth Model
CLMA:	Central Land Management Association	MLA:	Meat & Livestock Australia
CSIRO:	Commonwealth Scientific & Industrial Research Organisation	NABRC:	North Australian Beef Research Council
		NBRUC:	Northern Beef Research Update Conference
DAFF:	Department of Agriculture, Fisheries & Forestry	NLIS:	National Livestock Identification System
DCQ:	Desert Channels Queensland Inc.	NLP:	National Landcare Program
DET:	Department of Education & Training	NTCA	Northern Territory Cattlemen's Association
DK-CRC:	Desert Knowledge Cooperative Research Centre	PIC:	Property Identification Code
DNRETAS:	Department of Natural Resources, Environment, the Arts and Sport	RFID:	Radio Frequency Identification Device
		VRD:	Victoria River District

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