Alice Springs Rural Review

DEPARTMENT OF **PRIMARY INDUSTRY AND RESOURCES**

VOL #71
MARCH 2019

Inside this issue:

Editorial

Since the last Rural Review we have been sweating through one of the hottest summers on record. This has continued unabated into Autumn, with Yulara experiencing its hottest day in March since records began (44.3 degrees on 10 March 2019) and Alice Springs also recording its hottest March day ever (42.7 degrees on 11 March 2019). Climate change scepticism or not, the death of many of the trees on AZRI over this summer period is an indicator of the harshness of the climate. Cyclone Trevor brought some relief to the Eastern half of the Northern Territory (NT); we would have liked more.

Given this climatic harshness, a meeting of the Alice Springs Pastoral Industry Advisory Committee highlighted to me the complexity of making business decisions in tough conditions. Is there an optimal solution of when to destock, what markets to sell to and the best time to do that? Probably not, seemed to be the feeling in the group.

Lowering risk is probably the best strategy for pastoral businesses, in particular, to smooth their year-on-year incomes. The Commonwealth Government has recently agreed to help this by agreeing to spend $3 million in water infrastructure rebates for NT pastoral businesses who spend money to 'drought proof' their properties. We are in the process of recruiting someone to our Alice Springs office to roll out this scheme, so watch this space.

I was very interested recently to read the Bureau of Meteorology's[1] definition of drought, "Drought is a prolonged, abnormally dry period when the amount of available water is insufficient to meet our normal use. Drought is not simply low rainfall; if it was, much of inland Australia would be in almost perpetual drought. Because people use water in so many different ways, there is no universal definition of drought.

Continued on page 2…

Meteorologists monitor the extent and severity of drought in terms of rainfall deficiencies. Agriculturalists rate the impact on primary industries, hydrologists compare ground water levels, and sociologists define it by social expectations and perceptions". Clearly, we are in the zone where, if defined by low rainfall, we would be in almost perpetual drought except for the rare occasions when it does rain. This makes the continued viability of pastoral properties in the Centre of Australia all the more remarkable, and a testament to the resourcefulness of the people living and working here.

We will be having a field day at Old Man Plains Research Station in late August 2019. Topics of discussion will range from sustainable grazing options to mental health of people on the land. We will share details of the event in future editions of the Alice Springs Rural Review, and hope to see you participating on the day.

Finally, the Centre of Australia lost two of its finest Cattlemen since the publication of the last Rural Review. This edition pays tribute to Grant Heaslip and Dick Cadzow. They clearly had remarkable lives.

Stuart Smith, Editor.

Drought support in the NT

The Northern Territory Government (NTG) **does not have a formal drought declaration process.** However the Department of Primary Industry and Resources (DPIR) officers based throughout the Territory track rainfall and pasture growth conditions. Quarterly updates are provided through the Pastoral Feed Outlook[2]. The March outlook is found later in this Rural Review.

The Australian Government has made funding available to producers who have been affected by drought conditions. **Drought Concessional Loans** of up to $1 million are delivered through the national Regional Investment Corporation (RIC). Further information is available from the Regional Investment Corporation website[3] or by calling 1800 875 675.

Rural Financial Counselling Services (RFCS) are available to support producers with free independent and confidential support and business analysis, including help with applications for available government financial assistance schemes. RFCS are provided by Rural Business Support (RBS) based in Adelaide, with Counsellors making regular visits to the NT to meet with clients. RBS can be contacted on 1800 836 211.

The **Farm Household Allowance** (FHA) provides assistance to farming families experiencing financial hardship. The FHA is administered by the Department of Human Services[4], refer to their website for further information.

DPIR has now opened the **On-Farm Emergency Water Infrastructure Rebate Scheme** in the Territory. This scheme is available to eligible producers to implement new water infrastructure for livestock watering with a rebate of up to 25 per cent of costs available. For further information visit the NTG website[5] or contact Mr David Collinson on 8936 4089 or email david.collinson@nt.gov.au.

Producers are encouraged to visit the **National Farmers Federation Farm Hub**[6] for a comprehensive list of support schemes available for each the Territory.

[2] https://dpir.nt.gov.au/primary-industry/primary-industry-publications/northern-territory-pastoral-feed-outlook

[3] http://www.ric.gov.au/

[4] www.humanservices.gov.au/individuals/services/centrelink/farm-household-allowance

[5] www.nt.gov.au/farm-management/get-financial-help-farm-businesses

[6] https://farmhub.org.au/region/nt/

Assessing new grape varieties in Central Australia

Glen Oliver, Technical Officer, assessing the new grape varieties over the Christmas period.

As plants don't celebrate Christmas, DPIR's Sarah Tsai, Research Horticulturalist and Glen Oliver, Technical Officer spent much of the festive season harvesting and assessing new seedless grape varieties planted at the Arid Zone Research Institute (AZRI).

The trial is part of a nationwide assessment of table grape selections that have been developed in Australia – the goal being to discover new varieties that may be superior in quality, yield, ease of cultivation or harvest timing characteristics.

As part of annual assessments, Glen and Sarah examined fruit for characteristics including seedlessness, colour, sweetness, berry and bunch characteristics and yield.

Selection and commercialisation of new varieties will benefit the entire grape industry. Central Australia is well positioned with some of the first Australian grown grapes to reach the market, but improved and locally adapted green, red and black varieties that extended the Central Australian season could lower risks and provide additional income streams. This will give local growers the option of offering longer employment for harvest workers.

Newly developed Australian varieties adapted to local conditions will also enable the industry to differentiate its products in international markets, enhance export opportunity and increase domestic consumption.

Coming back from interstate? Bin your fruit

All travellers to the NT, including those coming back home from interstate, are reminded to bin their fresh fruit and vegetables at major stops along the Stuart Highway to protect the Ti Tree horticultural industry.

It is illegal to carry fruit north of Aileron, located 135 kilometres north of Alice Springs, which is the start of the Ti Tree fruit fly exclusion zone. A disposal bin is located at Aileron for easy disposal of produce.

Mangoes, melons, table grapes, pumpkins and zucchini are currently grown in the Ti Tree area. The fruit fly free zone is vital to growers, enabling access to interstate markets.

Fruit flies feed on fruit and vegetable flesh, destroying entire crops. They can cause hundreds of millions of dollars in lost income and eradication expenses.

Fruit bins are located before the Ti Tree fruit fly exclusion zone at:

- Marla, South Australia – 454 kilometres south of Alice Springs.
- Kulgera, NT – 275 kilometres south of Alice Springs.
- Alice Springs Airport.
- The Ghan Railway Station – Alice Springs
- Aileron, NT – 135 kilometres north of Alice Springs.
- Ti Tree township – 202 kilometres north of Alice Springs

If you notice anything unusual in your fruit or vegetables, please contact the Exotic Plant Pest Hotline on 1800 084 881.

See the NT Government website[7] for more information about travelling in the NT.

[7] https://nt.gov.au/industry/agriculture/food-crops-plants-and-quarantine/plants-and-quarantine/travelling-within-the-nt

Dick Cadzow obituary

DPIR would like to pay respects to Mr Richard ('Dick') Cadzow a highly respected member of the NT cattle industry who passed away in Alice Springs on 21 March.

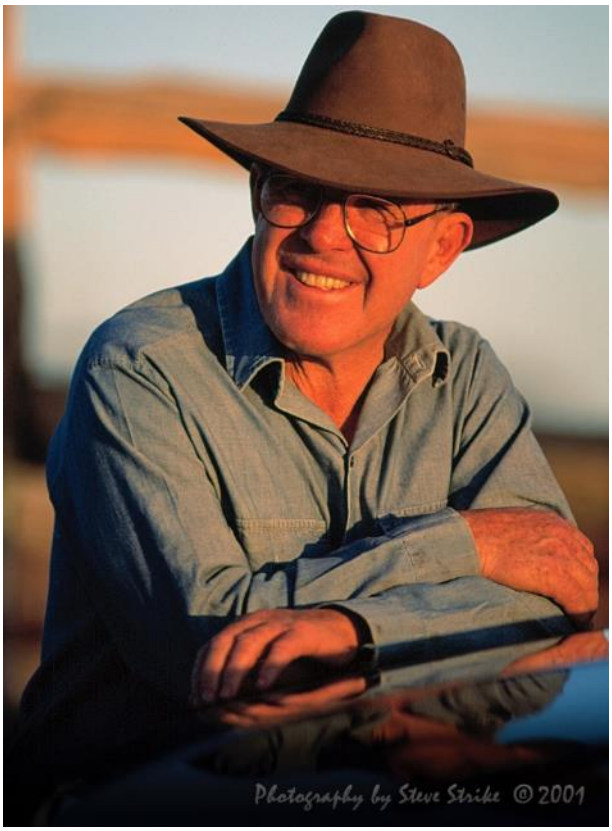
After previously owning Phillip Creek Station, Dick and Ann Cadzow purchased the lease on Mount Riddock in 1986. Dick was a true cattleman and the quality of the Mount Riddock Polled Herefords is testimony to his vision, skills and commitment to the industry. Cattle from Mount Riddock have regularly attracted top prices at the annual Alice Springs Show Sale. Dick was highly regarded by his fellow cattleman and conservationists' alike and received life membership of the NT Cattlemen's Association in 2013. Dick left a legacy of the importance of caring for the land. His passion for this became clear when he effectively removed significant populations of feral rabbits and horses on his property. He was a pioneer in improving the capability of the land, by developing an understanding of landscape functioning and introducing ponding banks, while managing grazing pressure. In recognition for his dedication to natural resource management, Dick was awarded the Rural Press Landcare Primary Producer Award in 2004.

Mount Riddock developed into a trend setting station for Central Australia as Dick welcomed researchers to do studies in pastoral land rehabilitation, cattle herd efficiencies, cattle herd health, rotational grazing, meat quality and development of new technology. As an active member of the Alice Springs Pastoral Advisory Committee for eight years, Dick shared his knowledge with young pastoralists and departmental officials and was often described as a top operator that was easy to work with.

Dick and Ann transitioned to retirement in Alice Springs, leaving an improved, highly productive and resilient station to Steve and Rebecca Cadzow, who have built on the success story and introduced further innovations at Mount Riddock.

We honour Dick Cadzow's memory as a cattleman, a conservationist and a kind gentleman, and we extend our condolences to his wife and family.

Grant Heaslip obituary



Grant Heaslip passed away on the morning of 17 January 2019. With his wife Jan, they owned Bond Springs Station just north of Alice Springs.

Grant was known as a family man and a highly respected member of the community. He bought Bond Springs Station in 1964 with his wife Jan in the middle of a drought, and persisted through many dry years only to experience devastating fires in the late 1960s. They kept going to develop a poll Hereford enterprise that continues on.

Grant was the inaugural president of the NT Cattlemen's Association (NTCA) from 1984 – 1987. He was later awarded a Life Membership of the NTCA in 2005 for his contribution to the

industry, and his advocacy for Central Australia over many decades. The new NTCA training centre at Bohning Yards is now called the Grant Heaslip Training Facility in his honour.

Grant was also a life member both of the Alice Springs Cycling Club and the Country Liberal Party. He was the President of the Country Liberal Party in 1987. He was also the past President and Vice President of the Cattle Council of Australia. Grant was a pilot and spent many hours providing bush fire fighters with aerial assistance, leading to a Rotary Club of Alice Springs Community Award. Grant was also a member of the Bushfires NT Council, and received the Bushfires NT Award for long and meritorious service.

Grant had a particularly strong influence on the development of St Philip's College at Alice Springs. At the College there is a prize called the Heaslip Arid Zone Research Scholarship that reflected the Heaslip's work in the arid grazing areas of Australia. The prize was awarded to a senior school student who showed a strong interest and aptitude in environmental science. Typically Grant and Dr. Dionne Walsh, then working with the Central Land Management Association (CLMA), would identify a small research project that could be done over the course of a few weeks. Dionne would then work with the students to design the project, conduct the research, deliver a public presentation and review their science report. The field work was often conducted somewhere on Bond Springs and Grant would always come and see the project in action and impart his wisdom to those present. Grant was a great supporter of CLMA and Landcare and some of the projects investigated the amount of carbon stored in standing dead mulga, the impact of grazing on buffel seed production and re-monitoring of some old soil rehabilitation works on Bond Springs.

In his speech accepting a Life Membership of NTCA in 2005, Grant said, "Evidence demonstrates that the majority of pastoralists were, practical, sensible, environmental, decision makers who not only nurtured the land, but improved its health and production and left behind, priceless information and practical solutions for generations to come. These achievements go unheralded; disregard them at your own peril". Grant has now left this legacy for the generations to come.

He is survived by his wife Jan and children Tanya, M'lis, Brett and Ben, and their families.

Livestock disease investigations

The department provides a free disease investigation service, including free diagnostic testing through the Berrimah Veterinary Laboratory, to livestock owners for diagnosis or exclusion of notifiable emergency, exotic and endemic disease, including zoonotic diseases. Subsidies are available for producers to contact private veterinarians for significant disease investigations in livestock.

Subsidies for disease investigation

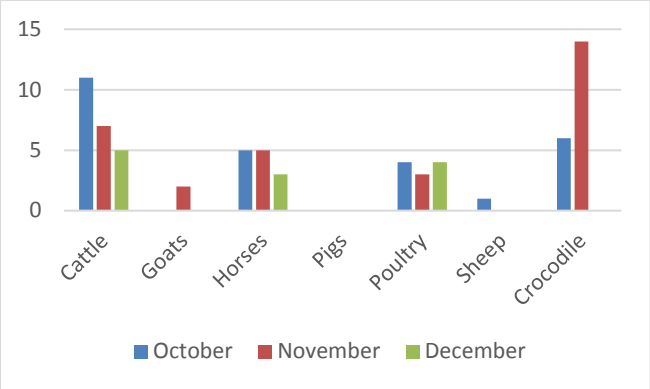
Subsidies of up to $2,000 are available for disease investigations in cattle conducted by private vets until June 2019.

For disease investigations in horses and other species, subsidies of up to $250 are available.

Remember that $300 is available for cattle showing nervous signs where a post-mortem is performed and the brain collected for "Mad Cow" exclusion testing.

Please contact your local vet or regional Livestock Biosecurity Officer Peter Saville on 89518181 for more information.

During October to December 2018, 74 livestock disease investigations were conducted to rule out emergency diseases or investigate suspect notifiable diseases across the NT.



Livestock disease investigations in the NT, October to December 2018

'Pink-eye' in cattle causes concern in the Centre

Jocelyn Coventry and Meg Humphrys

With all the extra flies that have been around lately in ghastly hot weather, there has been some concern and discussion amongst local producers about 'pink-eye' in cattle. The following article provides a timely summary from two references about 'pink eye' in beef cattle (*see internet links at end of article*):

- to explain what local producers have been seeing
- to highlight management strategies.

Background

A study by Meat and Livestock Australia (MLA) reported that 'pink-eye' in cattle (*infectious bovine kerato-conjunctivitis*) costs Australian Beef Producers $23.5 million annually in lost production and treatment costs.

'Pink-eye' in cattle is an eye infection that starts as 'weeping' with inflammation, and can finish with ulceration and abcessation of the cornea. Infection by the primary bacteria (*Moraxella bovis)* occurs in association with many viral, bacterial and physical (environmental, animal) risk factors. Some of the physical factors that predispose cattle and promote spread of 'pink-eye' infection include:

- **Flies** - feed on 'weeping' eyes and spread the bacteria between animals.
- **Ultraviolet light** - sensitises and can damage the cornea.
- **Long grass** - causes physical damage and can cause mechanical transmission of infection.
- **Dust** - irritates eyes, increases tear production and assists spread.
- **Pigmentation** - 'pink-eye' is generally more common in non-pigmented eyes.
- **Breed** - 'pink-eye' is more common in *Bos taurus* than *Bos indicus* cattle.

(Over) crowding - congregation of cattle (e.g. for drought feeding, for yard weaning) increases physical contact and mechanical transmission.

Immune status - cattle in poor body condition tend to be less able to mount an immune response against the bacteria. Lack of prior exposure, and thus lack of immunity to the primary bacteria, makes 'pink-eye' more common in young stock.

Prevention and control

Prevention and control activities should be undertaken to manage the impact of risk factors. The scope of activities include:

- **Flies** - minimise fly numbers, especially around cattle in the yard; chemical-use needs to be limited to those chemicals registered for cattle, with observed withholding periods (WHP) and export slaughter intervals (ESI);
- **Immune status** - vaccinate susceptible cattle (with Piliguard®), where seasonal outbreaks with 'pink-eye' have been caused by infection with *Moraxella bovis* bacteria.
- **Crowding** - avoid unnecessary yarding of cattle during periods with fly and dust problems that would increase the spread of infection.

Active infection – mustering cattle for the purpose of treating 'pink-eye' may be unwise if associated crowding or dust would increase spread of infection. However, if 'pink-eye'-affected stock are seen in the yard, it is best to promptly segregate and treat these to speed-up recovery and minimise spread of infection to other cattle.

A judgement call will always be required for treatment of individual cattle, to ensure that treatments do more good than harm for the herd.

Treatment

After ruling out other causes of 'weeping' eyes (e.g. eye cancer, grass seeds), the basic treatment described below assists general healing of eye infections. This treatment should focus on veterinary-prescription antibiotic eye ointment and eye patches. Veterinary prescription anti-inflammatory treatments are indicated for severe cases.

Many cattle can recover from mild 'pink-eye' without treatment within three to five weeks. Hence individual treatment should in general be limited to severely affected cattle (e.g. with eye abscesses) and obviously-affected cattle that are yarded for essential management.

Eye ointment – with prescription antibiotic (cloxacillin) will in most cases only require a single application into the conjunctival sac of the lower eyelid. However this may be repeated every 48 hours for severe infections.

Eye patches - assist treatment and healing by preventing flies, dust and ultraviolet light from causing further irritation. Patches are carefully glued over the eyelids (around the eye sockets) so that glue does not get into the eye and the patch can fall off in a few weeks. A cheap eye-patch can be crafted from heavy cloth (e.g. denim) or a dust mask.

Eye patch applied after treatment of pinkeye

Photo courtesy of Victorian Department of Agriculture

References

Pink-eye in Beef Cattle[8] by Victorian Department of Agriculture. Note Number: AG0066, Published: September 1998, Updated: February 2010.

Pink-eye in Beef Cattle[9] by Coopers Animal Health,

If you have any further questions or comments on this article or any of the others you have read, please contact your local Pastoral Extension Officer, Meg Humphrys on 08 8951 8144 or 0427 373 011.

The following article provides a local pastoralist's perspective on a familiar chore for cattle properties—raising 'poddy calves'. Although this article has been adapted for the ASRR, this does not infer singular endorsement by the department for described products or practices.

Raising poddy calves: A pastoralist's perspective

By Paddy Weir, Allambi and Todd River Stations, NT

Definition: Poddy (noun)—an orphaned calf that is fed by hand

It is not unusual to become a surrogate parent to orphaned calves after they are mismothered during a dry season, after a calving in the yard, or after injury of the calf.

The following outlines our method of raising orphaned and injured calves, based on more than 20 years of practice.

We transport calves to the homestead calf pen as soon as possible. This usually involves a ride in a station vehicle.

To start (Day 0), we feed the calf only by bottle with **electrolytes** (mixed as instructed on the container) for the first two feeds. Every calf receives two litres of warm water with a measure of either powdered or liquid electrolytes. Our preference is the powdered form and we buy it in bulk (10 -15kg buckets) so we always have it on hand. A 10kg bucket of powdered electrolytes

[8] http://agriculture.vic.gov.au/agriculture/livestock/beef/beef-health-and-welfare/pink-eye-in-beef-cattle

[9] http://www.coopersanimalhealth.com.au/pink-eye

costs about $100 but will feed a number of calves and dramatically increase their survival rate.

Some calves feed straight away, and some need time. Some are fussy about the type of teat and others need to be assisted by massaging the teat to get the liquid into their mouth. After the initial two feeds of electrolytes, we start them on 'calf milk replacer' with gradual building up of the strength of the milk mixture to avoid potentially fatal scouring (diarrhoea). For example, most milk replacers require two heaped cups (total: 250 - 300g) of powder to two to three litres of warm water, fed once a day in the morning. We build up the amount of milk powder that is mixed daily into two litres of warm water, using the schedule below:

Day							
1	2	3	4	5	6	7	8
¼ cup	½ cup	¾ cup	1 cup	1¼ cups	1½ cups	1¾ cups	2 cups (heaped)

Generally, we continue feeding electrolytes in the afternoons for extra sustenance until the calf is on full milk. If the calf is sickly, for example with dog bites, we may continue this evening feed of electrolytes for longer.

Once the calves are on full strength milk replacer, we usually switch from the bottle to a 'calf-a-teria' (mulit-teat feeder); if the calf is drinking well, this switch can happen earlier. We notice an increase in appetite for liquid once they have been feeding for three-four weeks, so we usually build up the daily volume to about four litres for each calf, while maintaining the amount of milk powder (two heaped cups).

The above feeding method has worked well for us.

Although **colostrum** powders are available to feed a calf that may not have had its first drink, these powders are very expensive and we have not noticed any advantage when using them for our calves.

Sometimes we find poddy calves with **dog bites.** These can be treated with injectable antibiotics and anti-inflammatories that are prescribed by a veterinarian. We have also discovered that flushing and cleaning the wound daily with warm salty water (a hand full of table salt in half a bucket of water) assists healing, along with a wound spray to help treat infection and fly strike.

From day one we offer calves hay in their feeder and a scoop on top of 'calf starter meal'—a protein-rich grain mix which looks a bit like muesli and can be fed from birth until 12 weeks. The other feed we give them from about six weeks of age on is 'beef weaner pellets'. Once they are consuming 1-1.5kg of pellets a day, they can be weaned off the 'calf milk replacer'. The milk replacer instructions recommends abrupt weaning at six-seven weeks, but we will feed milk replacer up until approximately eight to twelve weeks of age or longer, depending on how well the calf is eating solids.

Fresh water must be available at all times.

We have also had calves that are **knuckled over**. We have found a suitably-padded poly pipe is an effective splint. Newborn calves can recover very successfully if treated with a splint.

Another common problem is blindness caused by **pink eye infection**. We have treated calves with veterinary-prescription eye ointment and purchased or homemade adhesive eye patches. We may also need to treat them with veterinary-prescription injectable antibiotics and anti-inflammatories.

A calf with ripped ears from dog bites

Raising a healthy, happy poddy can be very rewarding

The products mentioned in this article can be purchased from local livestock agents or veterinary suppliers.

Overall, we have found great success with these methods, and the experience of raising poddy calves has been very rewarding.

Q Fever? … What's that?

Meg Humphrys and Jocelyn Coventry

A producer recently came to me (Meg) and said that despite her 20 years in the livestock industry "no one has ever told me about Q Fever" and "why should I be aware of it if I work in the livestock industry?"

To address this need I uncovered some **facts** in conjunction with Jocelyn Coventry and the staff at the Centre for Disease Control and have summarised them below.

Facts

Q fever is caused by bacteria (*Coxiella burnetii)* carried by a wide variety of livestock, domesticated pets and wild animals. It can also be carried by humans although human to human transmission is not thought to occur.

About 50% of people with Q fever will have no symptoms. Others may develop a brief or mild illness. Other people can also present with acute severe influenza-like symptoms, commonly resulting in infection of the lungs or liver. In 1-5% of cases, Q fever may persist and cause chronic infection.

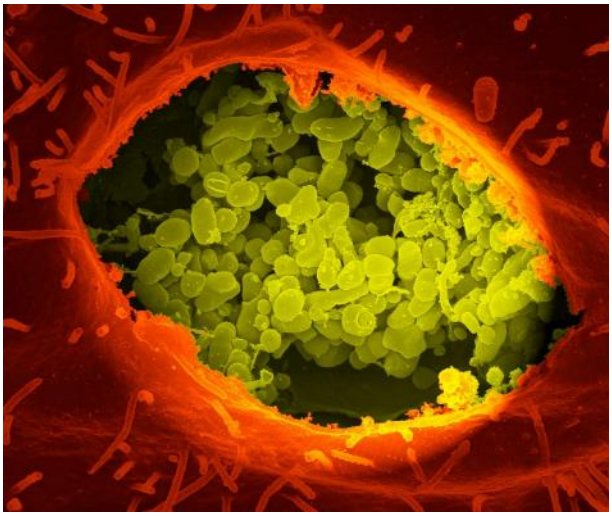
Q Fever is **infrequently diagnosed**; but most frequently found in people working in abattoirs, meat processing, veterinary practices or with livestock. Q Fever is **potentially serious**, especially for people with HIV, lymphoma or if pregnant.

The first reported case of Q Fever in the NT was in 2002. There have been 33 cases notified in the NT, some of those might have been contracted across borders. This number is probably an under-estimate because it is likely many cases go undiagnosed.

For those at high risk of Q fever, a vaccination is available. A register of vaccinators can be found at the Australian Meat Processor Corporation website[10].

Please see the following links for more information:

- Australian Q Fever Register - Frequently Asked Questions[11]
- Centre for Disease Control - Fact Sheet[12]



Scanning electron micrograph of the bacteria that causes Q Fever (Coxiella burnetii)

[10] http://www.qfever.org/

[11] www.qfever.org/faqs

[12] https://digitallibrary.health.nt.gov.au/prodjspui/bitstream/10137/1244/1/Q%20fever%20fact%20sheet%20August%202016.pdf

Where there is swill, there is a way

Pig owners are reminded that feeding pigs meat scraps poses a serious risk to Australian biosecurity as African Swine Fever (ASF) spreads through China, South East Asia and Eastern Europe.

It is illegal in every Australian state and territory to feed swill to pigs. Swill is the name for meat products or products that have come into contact with meat. Examples of swill include:

- pies and pasties
- sausage rolls
- pizza
- table scraps
- restaurant leftovers
- discarded cooking oils.

* Non-Australian dairy products are also banned.

Feeding swill to pigs is one of the simplest ways that serious diseases can enter the food chain.

ASF, a highly contagious viral disease of pigs, is currently spreading throughout China. It can cause up to 95% mortality in affected pigs, and has the potential to severely threaten the Australian pork industry. The virus survives at a wide range of pH levels, is resistant to most disinfectants and remains active in meat products through freezing and thawing.

ASF does not pose a risk to human health.

If you notice any suspicious symptoms in your pigs, such as weakness, lethargy, reduced appetite, discharge and blotchy skin lesions, please contact the Exotic Animal Disease Hotline on 1800 675 888.

NT Way bill – 28 days

Obligations of the owner of the livestock.

A copy of a waybill must be forwarded to the DPIR within 28 days after the date on which the waybill was issued.

The owner must retain a copy of the waybill for at least seven years.

At the request of an inspector during that period – the owner must produce a copy to the inspector.

National Livestock Identification System (NLIS) reporting – 48 hours

NLIS reporting obligation for the owner of the destination property.

The owner of the destination property must ensure the NLIS transfer is entered on the NLIS database within 48 hours after the movement is completed.

If you are unsure or have any questions on any aspect of meeting your compliance obligations contact your local livestock biosecurity officer.

NT brands register audit

Have you received the 2018 audit of NT brands register form and instructions?

Yes: Have you completed the form as per instructions? And have you returned the form to LISA for processing?

No: You must complete the brands audit form urgently. If lost, please complete the attached by completing all sections, sign and date, then return for processing.

Changes: If there are any changes to your brands write comments/notes on the audit form so the appropriate paperwork can be sent to you.

Example: Brand no longer being used – cancel brand, registered by owner/s changed (by marriage, death, company etc), brand being used on another proper/run/etc.

Return audit form to via:

Email: adele.kluth@nt.gov.au or susan.gillis@nt.gov.au

Fax: 08 89992089, 08 89739759 or 08 89624480

Post: DPIR, GPO Box 2000, Darwin NT 0801.

Forms are available from the DPIR website[13]

Exploring for the Future

As part of a wider Australian Government initiative to boost exploration for resources in northern Australia, Geoscience Australia (GA) is leading the four-year Exploring for the Future (EFTF) program to help identify potential mineral, energy, and groundwater resources across the region.

EFTF is generating new geoscience data on existing and potential resource-rich regions to reduce risk for private investors, and improve the likelihood of important discoveries.

The organisation's leading scientists and technicians are using innovative tools and techniques to gather new data and information including: airborne electromagnetic surveys, stratigraphic drilling, deep seismic reflection and gravity surveys, geochemistry, and magnetotelluric mapping. Combining all these datasets will mean northern Australia is one of the most thoroughly mapped parts of the Earth's crust.

Geoscience Australia is working with a range of stakeholders, including state and territory government agencies, local councils, pastoral leaseholders, local indigenous groups, and Land Councils to deliver the program.

The new information will help to improve government, industry and community understanding of the potential resources available. For example, new groundwater information will support Australia's environmental outcomes. The program is integrating several methods to build a comprehensive picture of groundwater resources in several targeted areas, ensuring communities have access to water supply, and the development of sustainable agriculture is supported.

Installing Manetotelluric data collection equipment in the NT to better understand geological structure deep below the ground.

A recent release of soil geochemistry data over completed between Mt Isa and Tennant Creek reveal new potential areas for copper, zinc and nickel. The data are also valuable for agricultural management and environmental monitoring. Farmers can use the data and maps to assess soil fertility and inform sustainable crop production and cattle grazing management over areas such as the Barkly Tableland region of the NT and Queensland.

The data will be made publicly available and published on an ongoing basis through the Exploring for the Future website[14].

Vibroseis trucks alongside the Barkly Highway, Queensland, working on the South Nicholson Basin seismic line

[13] http://www.nt.gov.au/agriculture/livestock

[14] http://www.ga.gov.au/eftf

For further information visit the Geoscience Australia[15]:

Phone: +61 2 6249 9111 (Mon-Fri, 9am to 5pm AEST) Email: eftf@ga.gov.au

Australian Government
Geoscience Australia

Exploring for the Future
minerals | energy | groundwater

Retired vets return and reminisce at AZRI – Christmas Eve 2018

Just before Christmas last year, staff at the Arid Zone Research Institute (AZRI) were pleased to be visited by two retired veterinarians, each who had worked at one time as the 'Senior Veterinary Pathologist' when AZRI housed a key northern Australia veterinary laboratory. Dr. Peter Hooper was based at AZRI as a pathologist in the early 1970s and later went on to work for the NT government as the Department Secretary[16]. Dr. Denise McEwan worked as a pathologist at AZRI until the early 1990s.

Department Pastoral Production Officer, Jocelyn Coventry, organised a tour with the help of Mrs Pam Hooper for a 'trip down memory lane' through the AZRI buildings, the AZRI Farm and the Old Man Plains Research Station. Tour stops of interest included:

- AZRI Library to find a publication on the history of department animal health staff. AZRI Library Manager, Bid Rose, is thanked for her assistance in accessing the archival material and answering some curly questions.
- AZRI Farm paddocks to see the sentinel heifer group for the National Arbovirus Monitoring Program. Acting AZRI Farm Manager, Simon Carr, is thanked for organising the paddock parade and inspection of well-behaved heifers.
- AZRI Horticultural Block to see some recent plantings. Technical Officer, Glen Oliver, is thanked for providing a memorable taste of the viticulture research efforts.

Retired veterinarians, Drs Denise McEwan (L) and Peter Hooper (R), visited the AZRI Department library, prior to heading out to view research cattle on the AZRI Farm and Old Man Plains Research Station.

After the tour, Peter Hooper commented that he was interested to see how AZRI continued to be '*very active and productive'*, but how the focus of the department had changed—research into "*infectious animal disease (now appeared to be) far less important than (in his) day*"

Peter had been unable to attend the celebrations for '*AZRI—50 years of research, development and extension'* in the previous month (16/11/2018)[17], so it was serendipitous that he was now able to visit and see some of the changes.

[15] www.ga.gov.au/eftf

[16] Animal Health News from the Northern Territory, Issue 21, April 2001

[17] https://dpir.nt.gov.au/primary-industry/primary-industry-publications/newsletters/regional-newsletters/asrr/alice-springs-rural-review-122018/azri-knocks-up-half-a-century

Grazing fundamentals EDGE Workshop in Alice Springs last week of May

The Northern Territory Government is offering a MLA EDGE Network Grazing fundamentals workshop in Alice Springs in the last week of May (exact date TBA but it's looking like the 28th, 29th or 30th). The workshop is one day and is designed to give you a broad understanding of the components of the grazing production system and the core, evidence-based principles behind optimising grazing land productivity.

The workshop will be run by Dionne Walsh, the Rangeland Program Manager for Department of Primary Industry and Resources. Dionne has lived and worked in the Northern Territory for 18 years and spent the first six years of that in the Alice Springs district with the Centralian Land Management Association (CLMA).

The workshop covers practical skills such as interpreting your climate records and how they influence the feed supply, what land types you have and how much grass grows on them in different seasons and land condition, as well as interactions between the feed supply and livestock productivity. The workshop also discusses the pros and cons of different grazing approaches and is a great way of hearing how other producers manage grazing. As a participant you will take away skills in forage budgeting and grazing planning as well as land type maps of your property. See the flyer attached for more information.

The cost for pastoralists is $825 for the first person from the business and $550 for subsequent people from the same business.

To register contact:

Meg Humphrys – email: meg.humphrys@nt.gov.au or Dionne Walsh – email dionne.walsh@nt.gov.au.

Are you up for the 2019 MLA phosphorus challenge?

Do you want to be part of MLA phosphorus challenge? MLA are looking for 100 producers willing to participate in blood sampling of nominated mobs to determine their P status. It will lead to an assessment of the P status of northern herds and help demonstrate that supplantation provides a cost benefit.

To be eligible, producers must be able to:

Yard stock at a time nominated for sampling OR can organise a technician, extension officer or vet to collect the samples during routine husbandry practices before mid-June 2019.

- Have adequate stock handling equipment, such as a vet crush.
- Have young breeders, heifers OR steers on a good plane of nutrition.

Producers should also meet at least two of the following criteria:

- Have cattle grazing in a known P deficient region OR an old cropping paddock.
- Steers/heifers achieving annual growth of less than 120kg OR a record of poor reproductive performance.
- Understand they're managing P deficient country and feed P (but want to know if supplementation is sufficient).
- New to the industry and keen to manage any P deficiency to improve production.

Interest needs to be registered by 14 April 2019.

For more information about the P Challenge contact:

Meg Humphrys
Email: Meg.Humphrys@nt.gov.au
Pastoral Extension Officer – Alice Springs

Acknowledgement – Meat Livestock Australia (MLA) Market Report

The following market reports were reproduced courtesy of MLA Limited - through the permission of Tim Ryan, MLA.

- Detailed saleyard report – cattle – Naracoote.
- Over the hooks indicator – cattle – South Australia

Detailed saleyard report - cattle

Market information provided by MLA's National Livestock Reporting Service

Naracoorte

report date 12 Mar 2019

Yarding 853
Change -106

comparison date 05/03/2019

Agents yarded the slightly smaller number of 853 head of liveweight and open auction cattle. These sold to a smaller field of regular trade and processor buyers, with restocker and feeder orders also present and active. Quality was mixed at best, with a large number of store conditioned types on offer, as this combined with a lack of competition in areas produced another cheaper market.

A small number of vealers came forward as steers sold to 275c and heifers 245c/kg. Yearling cattle were very mixed with steers to the trade falling up to 6c as they ranged from 245c to 287c, with feeder support from 185c to 220c and restockers operated from 170c to 279c/kg. Yearling heifers to the trade ranged from 210c to 275c, with feeders active here from 205c to 266c and restockers turned these back out from 145c to 240c/kg.

Grown steers and bullocks lifted in number and quality as these bucked the easier trend to lift a few cents, as they ranged from 210c to 278c, as grown heifers ranged from 158c to 270c and manufacturing steers sold to 170c/kg. Cows lifted in number, however there were larger numbers of light weight types, with some big falls in price from 10c up to 50c/kg in places. Heavy cows ranged from 162c to mainly 190c, to be up to 12c easier, with only a single cow returning 195c/kg. The light weight and store conditioned selection felt the brunt of the fall in price with falls of 25c to 50c, as these ranged from mainly 103c to 165c/kg. Bulls ranged from 180c to 210c/kg.

Category Weight	Sale Prefix	Muscle Score	Fat Score	Head	Live Weight c/kg				Estimated Carcase Weight c/kg			Estimated $/Head		
					Low	High	Avg	Change	Low	High	Avg	Low	High	Avg
Vealer Steer														
330+	FD	B	3	2	256.0	256.0	256.0	N/Q	-			922	922	922
		C	3	13	230.0	275.0	261.7	-20	442	504	488	782	1265	1126
				15	**230.0**	**275.0**			**442**	**504**		**782**	**1265**	
Vealer Heifer														
280-330		C	2	10	158.0	170.0	164.0	N/Q	316	327	322	506	510	508
		C	3	6	225.0	225.0	225.0	N/Q	433	433	433	743	743	743
330+		C	3	4	245.0	245.0	245.0	-18	438	438	438	833	833	833
				20	**158.0**	**245.0**			**316**	**438**		**506**	**833**	
Yearling Steer														
280-330	FD	C	2	2	205.0	205.0	205.0	N/Q	-			677	677	677
	RS	C	2	9	170.0	235.0	205.0	-31	-			544	776	664
	FD	D	2	2	185.0	185.0	185.0	N/Q	-			592	592	592
330-400	RS	C	2	11	220.0	220.0	220.0	N/Q	-			748	748	748
	FD	C	2	3	210.0	220.0	216.7	12	-			714	880	825
		C	2	7	155.0	155.0	155.0	N/Q	310	310	310	620	620	620
		C	3	17	260.0	279.0	270.1	-2	473	537	507	910	1004	960
	RS	D	2	10	198.0	198.0	198.0	N/Q	-			673	673	673
400+		B	3	1	245.0	245.0	245.0	N/Q	446	446	446	1029	1029	1029
	RS	B	3	17	278.0	279.0	278.1	N/Q	-			1168	1283	1181
	RS	C	2	2	225.0	225.0	225.0	N/Q	-			945	945	945
	RS	C	3	19	223.0	255.0	253.3	N/Q	-			1026	1173	1161
		C	3	10	258.0	287.0	263.3	-6	469	522	479	1134	1378	1190
				110	**155.0**	**287.0**			**310**	**537**		**544**	**1378**	
Yearling Heifer														

Category Weight	Sale Prefix	Muscle Score	Fat Score	Head	Live Weight c/kg				Estimated Carcase Weight c/kg			Estimated $/Head		
					Low	High	Avg	Change	Low	High	Avg	Low	High	Avg
200-280	RS	C	2	2	155.0	- 155.0	155.0	N/Q		-		434 -	434	434
		D	2	7	144.0	- 144.0	144.0	N/Q	300 -	300	300	389 -	389	389
280-330	RS	C	2	10	152.0	- 194.0	180.0	N/Q		-		441 -	582	539
		C	2	5	266.0	- 266.0	266.0	N/Q	554 -	554	554	798 -	798	798
	FD	C	2	1	205.0	- 205.0	205.0	N/Q		-		677 -	677	677
	FD	C	3	1	210.0	- 210.0	210.0	N/Q		-		693 -	693	693
		C	3	6	210.0	- 260.0	226.7	-43	420 -	482	435	693 -	858	748
	RS	D	2	8	168.0	- 240.0	222.0	62		-		504 -	768	702
330-400	RS	C	2	2	148.0	- 148.0	148.0	N/Q		-		592 -	592	592
		C	3	12	235.0	- 266.0	248.6	-5	444 -	512	480	833 -	931	886
	FD	C	3	3	266.0	- 266.0	266.0	28		-		931 -	931	931
	RS	D	2	9	145.0	- 158.0	152.2	N/Q		-		493 -	553	526
		D	2	7	141.0	- 141.0	141.0	N/Q	294 -	294	294	529 -	529	529
400+		B	3	13	250.0	- 275.0	259.6	-13	463 -	509	481	1050 -	1155	1090
		C	3	25	254.0	- 272.0	266.0	18	470 -	504	494	1121 -	1219	1159
				111	**141.0**	**275.0**			**294**	**554**		**389**	**1219**	
Grown Steer														
400-500		C	3	10	245.0	- 264.0	256.7	N/Q	462 -	490	477	1176 -	1320	1279
500-600		C	3	105	250.0	- 278.0	266.3	11	455 -	506	484	1275 -	1566	1471
600-750		C	3	3	210.0	- 240.0	228.3	N/Q	382 -	436	415	1302 -	1488	1424
				118	**210.0**	**278.0**			**382**	**506**		**1176**	**1566**	
Grown Heifer														
0-540		B	3	1	265.0	- 265.0	265.0	N/Q	491 -	491	491	1378 -	1378	1378
		C	2	7	158.0	- 185.0	172.6	-17	316 -	370	345	774 -	925	841
	RS	C	2	20	225.0	- 225.0	225.0	N/Q		-		1058 -	1058	1058
	RS	C	3	20	265.0	- 270.0	266.8	N/Q		-		1219 -	1350	1265
		C	3	26	215.0	- 258.0	240.3	-3	415 -	485	452	1118 -	1382	1285
		C	4	4	226.0	- 226.0	226.0	-20	419 -	419	419	1130 -	1130	1130
540+		C	3	4	210.0	- 258.0	246.0	-7	389 -	478	456	1218 -	1471	1407
				82	**158.0**	**270.0**			**316**	**491**		**774**	**1471**	
Manufacturing Steer														
540+		D	2	1	170.0	- 170.0	170.0	N/Q	327 -	327	327	986 -	986	986
				1	**170.0**	**170.0**			**327**	**327**		**986**	**986**	
Cows														
400-520		D	1	34	110.0	- 125.0	116.6	-25	275 -	313	291	547 -	600	572
		D	2	8	110.0	- 142.0	124.3	N/Q	256 -	330	289	539 -	738	630
		E	1	7	103.0	- 103.0	103.0	-51	258 -	258	258	484 -	484	484
520+		B	3	1	195.0	- 195.0	195.0	N/Q	406 -	406	406	1112 -	1112	1112
		D	2	71	138.0	- 165.0	157.3	-5	321 -	384	366	745 -	941	879
		D	3	72	162.0	- 190.0	176.1	-13	338 -	396	367	908 -	1222	1067
		D	4	1	155.0	- 155.0	155.0	N/Q	310 -	310	310	1023 -	1023	1023
		D	5	1	132.0	- 132.0	132.0	N/Q	264 -	264	264	871 -	871	871
				195	**103.0**	**195.0**			**256**	**406**		**484**	**1222**	
Bulls														
600+		B	3	3	197.0	- 205.0	202.3	-13	366 -	379	370	1743 -	1896	1820

Category Weight	Sale Prefix	Muscle Score	Fat Score	Head	Live Weight c/kg				Estimated Carcase Weight c/kg			Estimated $/Head		
					Low	High	Avg	Change	Low	High	Avg	Low	High	Avg
		C	2	2	180.0	- 185.0	182.5	N/Q	346 -	370	358	1485 -	1526	1506
		C	3	27	180.0	- 210.0	198.2	-14	346 -	389	366	1235 -	1948	1553
				32	**180.0**	**210.0**			**346**	**389**		**1235**	**1948**	

Abbreviations

CATTLE FD: Feeder RS: Restocker GF: Grainfed DA: Dairy PC: Pastoral Cattle SHEEP & LAMB RS: Restocker MR: Merino RM: Restocker Merino 1X: 1st Cross FD: Feeder DP: Dorper

Over the hooks indicator - cattle

Market information provided by MLA's National Livestock Reporting Service

South Australia

report date 22 Mar 2019

Grade	Weight Range (cwt kg)	Dentition	Muscle Score	Fat (mm)	Average (c/kg cwt)	Trend
Cows						
	180-200	0-8 (C)	A-D	13-22	325	-11
		0-8 (C)	A-D	3-12	330	-11
		0-8 (C)	A-E	0-32	315	-11
	200-220	0-8 (C)	A-D	13-22	329	-11
		0-8 (C)	A-D	3-12	334	-11
		0-8 (C)	A-E	0-32	319	-11
	220-240	0-8 (C)	A-D	13-22	343	-11
		0-8 (C)	A-D	3-12	348	-11
		0-8 (C)	A-E	0-32	333	-11
	240-260	0-8 (C)	A-D	13-22	353	-11
		0-8 (C)	A-D	3-12	358	-11
		0-8 (C)	A-E	0-32	343	-11
	260-280	0-8 (C)	A-D	13-22	361	-11
		0-8 (C)	A-D	3-12	366	-11
		0-8 (C)	A-E	0-32	351	-11
	280-300	0-8 (C)	A-D	13-22	366	-11
		0-8 (C)	A-D	3-12	371	-11
		0-8 (C)	A-E	0-32	356	-11
	300-400	0-8 (C)	A-D	13-22	368	-11
		0-8 (C)	A-D	3-12	373	-11
		0-8 (C)	A-E	0-32	358	-11
Bulls						
	260-280	0-8 (B)	A-E	0-32	358	-5
	280-300	0-8 (B)	A-E	0-32	360	-5
	300-320	0-8 (B)	A-E	0-32	365	-5
	320-440	0-8 (B)	A-E	0-32	365	-5

Pastoral Feed Outlook

Dionne Walsh, Chris Materne and Dale Jenner

The DPIR publishes this Pastoral Feed Outlook every quarter. If you would like to automatically receive the Outlook when it is released, click on the “Subscribe” button on our webpage:

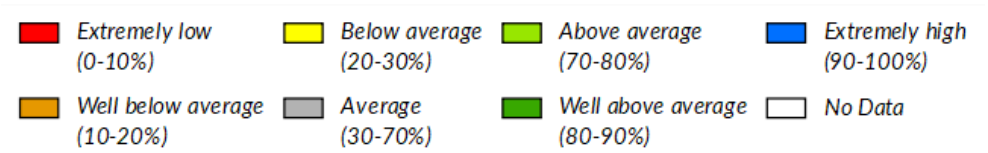
https://dpir.nt.gov.au/primary-industry/primary-industry-publications/northern-territory-pastoral-feed-outlook

This Outlook includes information on:

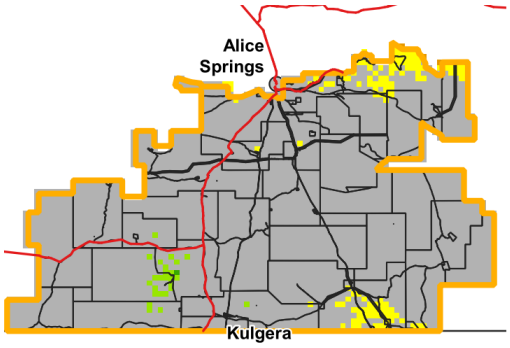
- the current estimated feed supply
- recent and anticipated pasture growth and how these compare to long-term records
- the seasonal outlook for the coming months
- emerging drought conditions
- the risk of wildfire

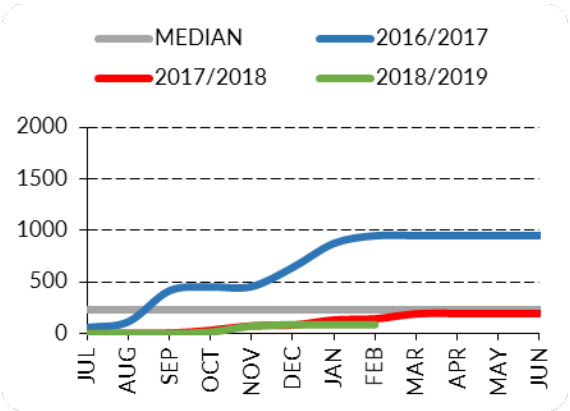
It will come as little surprise that pasture growth in many parts of central Australia has been very poor. But the images below help to visualise the extent of the issue and highlight that pasture growth experienced by many this summer is some of the lowest on record since 1957 (areas in red). Whilst the Southern Alice Springs district has experienced average pasture growth this season, this has followed two average to above-average years, so it might seem like a dry year. Unfortunately the outlook for the coming three months is not very positive with hotter than average days and nights expected to persist. The Bureau’s rainfall outlook suggests that the chances of receiving the median rainfall for the coming three months is average to below-average.

Map colours indicate how the past 3 months compare to the same period in all years since 1957

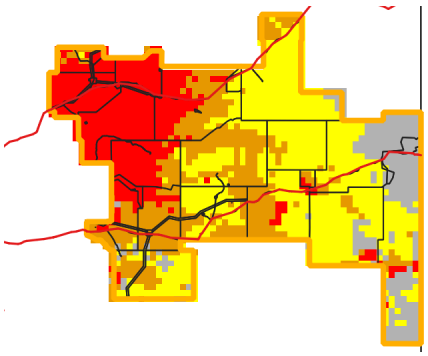


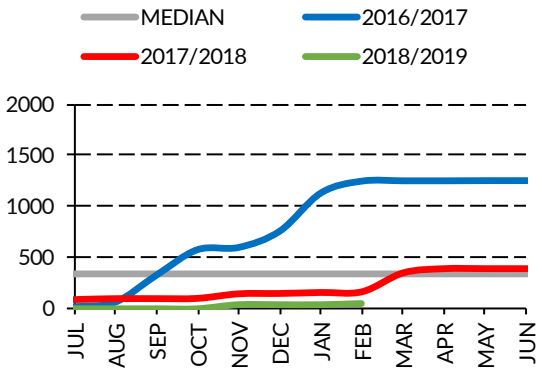
Southern Alice Springs District Pasture Growth (December 2018 to March 2019)



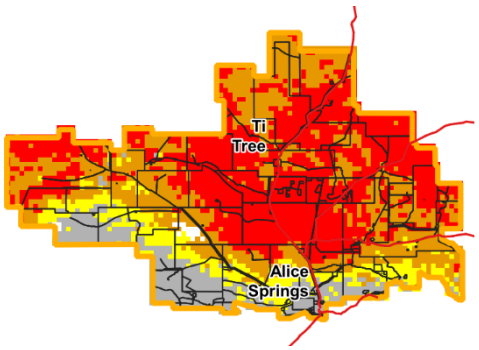


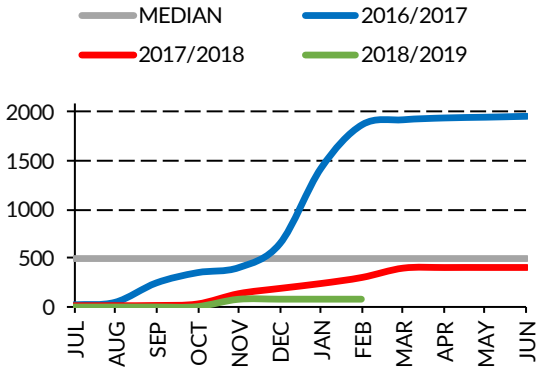
Plenty District Pasture Growth (December 2018 to March 2019)



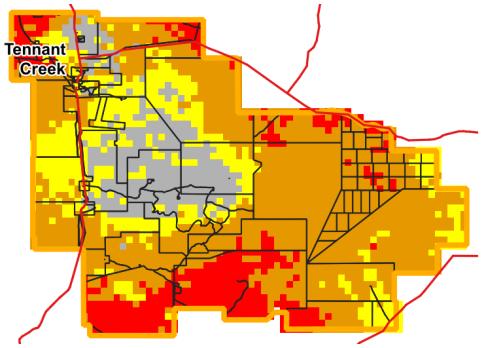


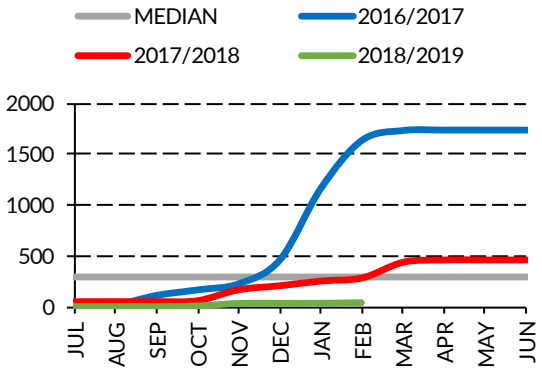
Northern Alice Springs District Pasture Growth (December 2018 to March 2019)





Tennant Creek District Pasture Growth (December 2018 to March 2019)





Gra

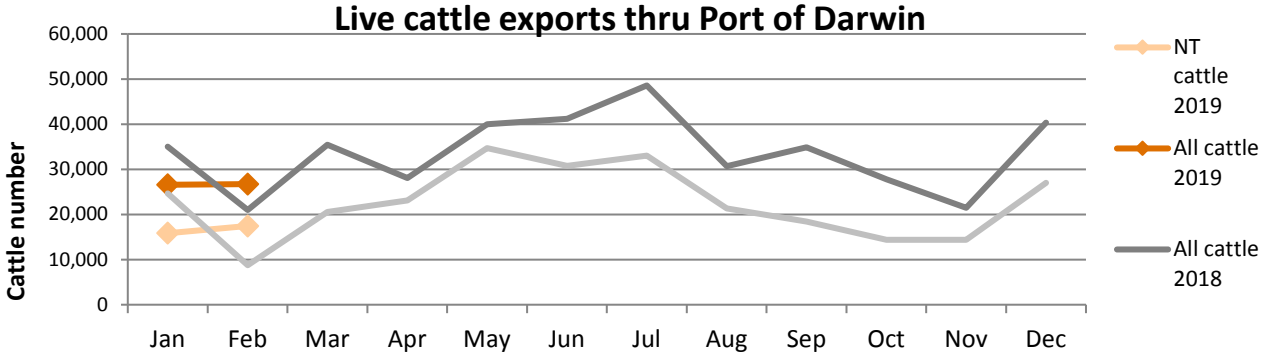
Pastoral Market Update

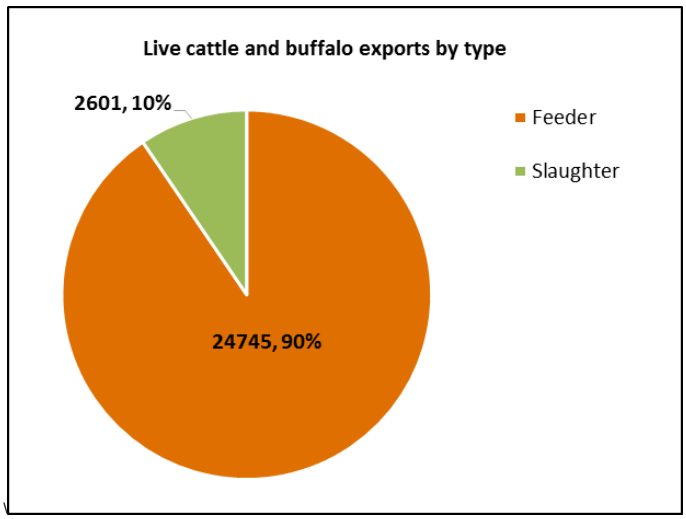
DEPARTMENT OF **PRIMARY INDUSTRY AND RESOURCES**

Live Exports via Darwin Port – FEBRUARY 2019

Please note: figures are for stock exported through the Port of Darwin only; some NT stock are exported through interstate ports.
Please note: the NT Cattle figures here have been rounded respectively and may not tally to totals.
The figures listed below are correct as at February 28 2019 and are subject to change as further data becomes available.

Destination	Export of ALL CATTLE (including interstate)							Export of NT CATTLE (estimate only)						
	2017	2018	Last year to 28/02/18	YTD to 28/02/19	Feb	Last month	*Difference*	2017	2018	Last year to 28/02/18	YTD to 28/02/19	Feb	Last month	*Difference*
Brunei	3,872	3,653	896	0	**0**	**0**	0	2,423	2,292	374	0	**0**	**0**	0
Indonesia	245,544	324,856	51,531	41,840	**20,599**	**21,241**	-642	150,489	215,353	30,717	26,108	**13,451**	**12,657**	795
Philippines	0	10,482	0	1,563	**1,563**	**0**	1,563	0	7,262	0	1,021	**1,021**	**0**	1,021
Sabah	2,640	0	0	0	**0**	**0**	0	1,680	0	0	0	**0**	**0**	0
Sarawak	2,743	2,106	0	0	**0**	**0**	0	1,594	1,631	0	0	**0**	**0**	0
Malaysia	13,257	11,813	719	1,959	**1,959**	**0**	1,959	8,109	7,848	300	1,279	**1,279**	**0**	1,279
Vietnam	39,989	49,771	2,830	7,939	**2,601**	**5,338**	-2,737	25,884	35,342	1,992	4,879	**1,698**	**3,181**	-1,482
Egypt	0	0	0	0	**0**	**0**	0	0	0	0	0	**0**	**0**	0
Thailand	800	1,720	0	0	**0**	**0**	0	535	1,274	0	0	**0**	**0**	0
Cambodia	0	0	0	0	**0**	**0**	0	0	0	0	0	**0**	**0**	0
TOTAL	**308,845**	**404,401**	**55,976**	**53,301**	**26,722**	**26,579**	**143**	**190,715**	**271,001**	**33,383**	**33,287**	**17,449**	**15,837**	**1,612**





OTHER LIVESTOCK

Destination	Buffalo		Goat		Camel	
	YTD	Feb	YTD	Feb	YTD	Feb
Brunei	0	**0**	0	**0**	0	**0**
Indonesia	371	**204**	0	**0**	0	**0**
Philippines	0	**0**	0	**0**	0	**0**
Sabah	0	**0**	0	**0**	0	**0**
Sarawak	0	**0**	0	**0**	0	**0**
Malaysia	420	**420**	0	**0**	0	**0**
Vietnam	246	**0**	0	**0**	0	**0**
Egypt	0	**0**	0	**0**	0	**0**
Thailand	0	**0**	0	**0**	0	**0**
Cambodia	0	**0**	0	**0**	0	**0**
TOTAL	**1,037**	**624**	**0**	**0**	**0**	**0**

LIVESTOCK MOVEMENT STATISTICS

Reports for livestock movements from NT to Interstate, within NT and Interstate to NT are updated biannually - see www.dpir.nt.gov.au/primary-industry/primary-industry-strategies-projects-and-research/livestock-movement-statistics

Total of ALL CATTLE through Port of Darwin						
2012	2013	2014	2015	2016	2017	2018
246,990	359,616	493,958	510,860	372,251	308,845	404,401

Total of NT CATTLE through Port of Darwin						
2012	2013	2014	2015	2016	2017	2018
234,249	308,784	324,477	295,738	236,511	190,715	271,001

Subscribe or unsubscribe to the monthly Pastoral Market Update.

Prepared by NT Department of Primary Industry and Resources. For further information contact PMU@nt.gov.au.

Grazing fundamentals EDGE Workshop

Northern Territory

VENUE Any venue in the Northern Territory that can host a minimum of 10 people
TIME 8:30am to 5.00pm

GRAZING FUNDAMENTALS EDGE IS A ONE-DAY WORKSHOP DESIGNED TO GIVE YOU A BROAD UNDERSTANDING OF THE COMPONENTS OF THE GRAZING PRODUCTION SYSTEM AND THE CORE, SCIENTIFICALLY-BACKED PRINCIPLES BEHIND OPTIMISING GRAZING LAND PRODUCTIVITY.

Participants will be able to make better decisions to achieve grazing performance by looking at the local influences on pasture yield and quality and how seasonal planning and strategic management can be used to achieve land condition and animal production goals.

Attending this workshop will help you to:

- better understand the connection between land condition, pasture growth and animal production
- understand how climate influences pasture growth
- allow for climate variability when planning livestock management
- build a seasonal climate profile for your location.

Prices (inclusive of GST)

$825pp inc GST / 1st person from one business
$550pp inc GST / when two or more attend from the same business

Cost includes comprehensive set of workshop notes, workbook, lunch, morning and afternoon tea.

What you will learn

- environmental regulators of pasture growth and quality
- local seasonal pasture growth patterns & key decision dates
- how soil properties influence pasture growth
- how grazing affects pasture plants, their productivity & growth
- how to assess land condition & how this impacts on carrying capacity
- when & how to use pasture spelling
- principles behind successful grazing systems
- what's involved with forage budgeting.

Deliverer:

- Dr Dionne Walsh - Rangeland Program Manager, DPIR NT

Places are limited. To register contact:

Dr Dionne Walsh, DPIR NT
T: 08 8999 2178
E: dionne.walsh@nt.gov.au

NORTHERN TERRITORY GOVERNMENT

mla MEAT & LIVESTOCK AUSTRALIA EDGE NETWORK

What do other producers think of Grazing fundamentals?

What aspect producers found most valuable

"Production point, when to spell, what to look for in assessing land condition."

"Different grazing systems, pasture stability and resilience."

"Pasture management and identification."

"Feed budgets and land condition."

"The explanation of AEs and determining carrying capacities."

General feedback

"Great workshop, informative and practical."

"Very beneficial and well presented."

"I found it very informative for the time available."

The Presenters

"Knowledge exceptional, good mix of theory and activity."

"Very experienced and great presentation."

"Excellent presenters, knowledgeable and approachable."

"Presenters were clear and precise in their presentation."

"Experienced in broad range of topics. Have real life experience."

Value for time & money

"Best investment of my time and money in a long time."

"Well worth it."

"Extremely valuable."

"So good. Worth the time investment."

"Small outlay for major gains."

"Day well spent."

Register now for Grazing fundamentals EDGE!

Places are limited.