



# Shade benefits in review

## Research gives calf survival insights

**R**ESearch into the benefits of artificial shade near water points to increase calf survival has commenced on open Mitchell grass country at Avon Downs Station on the Barkly Tableland.

The Northern Territory Department of Industry, Tourism and Trade (NT DITT) trial, led by Dr Kieren McCosker, is a foundation project in the research pillar of the Northern Breeding Business (NB2) initiative developed by Meat and Live-stock Australia, which aims to improve the long-term productivity of northern breeding herds.

This article presents results from the first year (2019-20) of the three year study (2019-22).

In September 2019, 150 pregnant No. 7 Wagyu heifers were randomly allocated to either a paddock with one feedlot-grade shade structure (50 x 25 metres) installed within 500m of each water point (shade) or a paddock without artificial shade structures (no shade).

They were due to have their first calf between October and December 2019, stratified for BCS and estimated month of calving.

Heifers observed as lactating at the weaning muster on May 22, 2020 were considered to have



Shade structures used at Avon Downs Station in the Northern Territory for shade trials.

successfully weaned a calf. Calves were trucked back to the homestead where they were weighed on the same day as weaning.

In each paddock, five heifers were fitted with GPS tracking collars, with two of the five collars having the capability to record ambient air temperature.

GPS location data for each collar were summarised for two time periods (daily and between 10am to 3pm) by generating counts for the total number of GPS locations and number of GPS locations within 500m of water. There was no significant difference in foetal and calf loss (pregnancy test to weaning) between the shade mob (28.4 per cent) and no shade mob (29.2pc).

These losses highlight the importance of research to

### RESEARCH

- NT DITT is undertaking a three year trial (2019-22) on the Barkly Tableland to evaluate the benefits of providing artificial shade near watering points.
- Reproductive wastage from pregnancy test to weaning is being assessed.
- The trial is using innovative technology to monitor environmental conditions, animal behaviour, and calving events to better understand factors that may affect reproductive wastage.

identify causes of reproductive loss.

The average weaning weight of calves in the

shade mob was 8 kilograms heavier than those in the no shade mob. However, this result needs to be viewed cautiously as it could be due to paddock differences.

The preliminary GPS data suggested an interaction between average daily ambient temperature and GPS counts close to water.

There appeared to be no difference between mobs for the number of GPS counts within 500m of water on hotter days. However, on cooler days, cows appeared to prefer areas near water when artificial shade was also available.

One potential explanation is that on hot days regardless of shade availability, cows spend increased amounts of time near water.

In summary, early results from this study suggest that

the provision of artificial shade near watering points does not improve calf survival, but there is some evidence that average liveweight at weaning is increased.

### 2020-21

On August 27, 2020, 150 No. 8 pregnant first-calf Wagyu heifers were allocated to each of the shade and non shade paddocks. Their calves will be weaned in May 2021.

Scientific-grade weather stations were installed in each paddock to measure environmental conditions both under and outside shaded areas.

This will more accurately measure the heat loads cattle face.

The monitoring program has been expanded with 110

animals in each paddock fitted with GPS collars.

Within each paddock, approximately 35 GPS units are scheduled to capture locations every 5-, 10- or 15-minute intervals.

These data are expected to provide detailed information on cow behaviour.

### 2021-22

In August 2021, the third draft of pregnant heifers will be allocated to the paddocks. Two different monitoring systems will be trialled to detect calving events. This technology will provide the time and location of calving events and allow their impact on calf survival to be estimated.

The technology will assist technicians with in-field observation around calving and provide information on cows that fail to calve (lost pregnancy), have stillborn or weak calves, and those which have a normal calf.

More advanced GPS tags and collars, which have the capability of describing behaviours (grazing, walking and ruminating) will be fitted to at least 100 cows in each paddock.

It is planned to use the range of different data to develop a monitoring system that can better detect a calving event from either a tag or collar attached to the cow.

This research would not be possible without the ongoing support provided by staff from Avon Downs Station and Australian Agricultural Company; it is gratefully acknowledged.

■ Kieren McCosker, senior livestock scientist, NT DITT Katherine Research Station, 0447 828 315.

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# Adopt long-term plans

IN MORE than 30 years working with graziers, Bob Shepherd is no stranger to people coming up with new and alternative methods of managing their grazing land.

Some may be worth considering, but many lack any scientific basis, or verification from research trials. Some may not make a significant difference, and in a worst case scenario, can present a significant risk to the beef business.

Always keeping an open mind, Bob decided to investigate an alternative farming system that a grazer had been talking to him about.

"I checked out the website and the principles mentioned were sound, but the 'recipe' with the details, was neither practical, scalable nor adoptable in an extensive grazing land environment," Bob said.

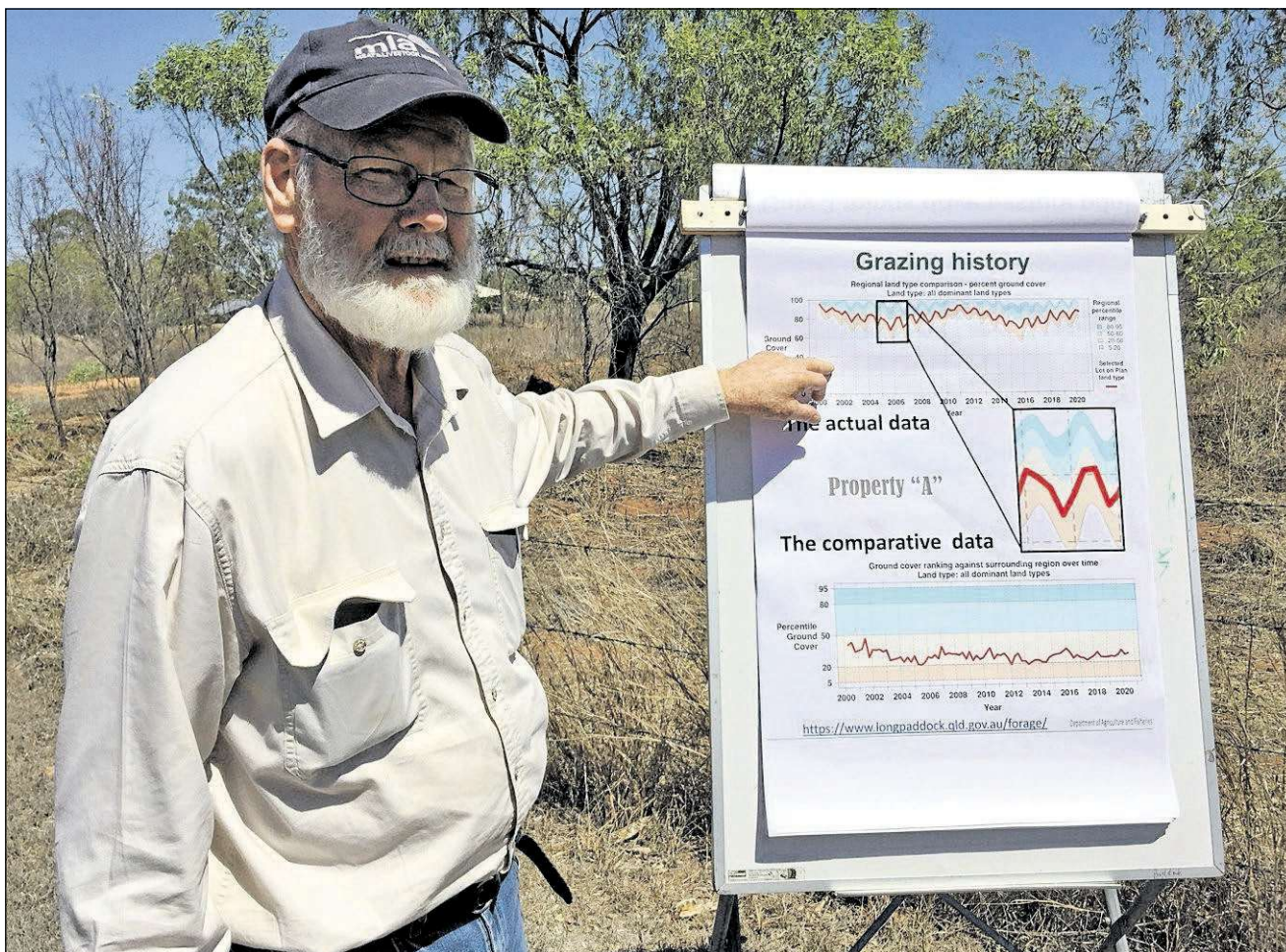
"So, it was concerning to think that this grazer was considering this approach to managing his land."

When Bob checked out the regional comparison ground cover for the property on the Forage Long Paddock website, [longpaddock.qld.gov.au/forage/](http://longpaddock.qld.gov.au/forage/), he was astounded.

"The property has been heavily over-grazed for at least 20 years resulting in pasture cover levels being below 50 per cent at the end of the dry season in most years. The land was in condition C (carrying capacity reduced by over 50pc)," he said.

"Clearly the grazer was chasing a silver bullet to sort out a long-term overgrazing problem! Such silver bullets don't exist."

Bob went back to the grazer and had an in-depth conversation about the value of adopting long-term planning



DAF principal beef extension officer Bob Shepherd.

and using science-based grazing land management principles and practices. This has led Bob to develop a simple checklist for any grazer looking for the most effective ways to improve the management and condition of their grazing lands.

How many of the following points can you tick off?

- Know the long-term carrying capacity of your property by paddock
- Stocking rates based on an annual forage budget
- Wet season spelling of paddocks based on need
- Strategic use of fire to control native woodland thickening, exotic woody weeds and manipulate



When considering alternate land management systems, be aware that there is no silver bullet that can instantly sort out problems caused by long-term overgrazing.

**Bob Shepherd, senior beef extension officer**

- pasture species composition
- Adequate distribution of stock waters so that cattle don't have to walk more than 2.5 kilometres for a drink
- Fencing to land type where feasible
- Over-sowing with legumes that are adapted to specific soil types
- Controlling weeds and feral animals based on a pest management plan
- Leftover grass stubble and good ground cover across your paddocks at the break

of season (December).

"These practices make a big difference to land condition. Coincidentally, soil health, water infiltration and the quality of run-off water leaving your property will improve and come along for a free ride!

"If you can honestly tick-off all of these, then by all means start looking at alternative grazing systems. But you will find the gains will be relatively small by comparison to following these tried and tested methods."

■ Bob Shepherd, principal beef extension officer, DAF Charters Towers, 07 4761 5150, or [bob.shepherd@daf.qld.gov.au](mailto:bob.shepherd@daf.qld.gov.au).

## North-west ABL intake named

THANK you to those who expressed interest in the Advancing Beef Leaders intake for north-west Queensland (NWQ ABL). After a thorough interview process, we welcome the cohort which includes Ross Myhill, Shannon Rae, Beau Harrington, Colin Burnett, Rachel Hoolihan, Eloise Moir, Rob Chaplain, Darcy Woods, Nicole Joy Jansen, and Lachlan Lynch.

ABL is a DAF leadership and professional development program developed collaboratively with Meridian Agriculture and Evolve AGRI. DAF extension officers Alison Larard and Megan Munchenberg collaborate with lead facilitators Ben Reeve (Meridian Agriculture) and Amanda Roughan (Evolve AGRI).

The program also includes private trainers, and current industry experts guest-speaking, mentoring and networking.

ABL strives to build industry knowledge, skills and confidence whilst supporting enthusiastic beef producers and agribusiness participants to achieve their business, community and industry leadership aspirations.

ABL participants and delivery staff will present at Beef 2021 forum sessions, including the Coffey property tour (May 3), DAF (May 4), ABL (May 5) and NextGen (May 6) forum sessions.

■ Alison Larard, senior beef extension officer, DAF Mareeba, 0467 804 287, or [alison.larard@daf.qld.gov.au](mailto:alison.larard@daf.qld.gov.au).

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# Toolkit targets calf loss

## Tips to get more calves on the ground

REPRODUCTIVE loss has a large impact on the performance of northern beef herds, so MLA has developed a toolkit of information to provide practical steps to get more calves on the ground.

There are many reasons for calf loss (in utero or post calving) but unless calves are examined soon after abortion or death, it can be difficult to determine the cause.

Understanding the causes of reproductive loss is key to finding a solution, to lift whole herd productivity, and increase profitability. Every breeder that fails to produce a weaner can reduce income by about \$400 a head.

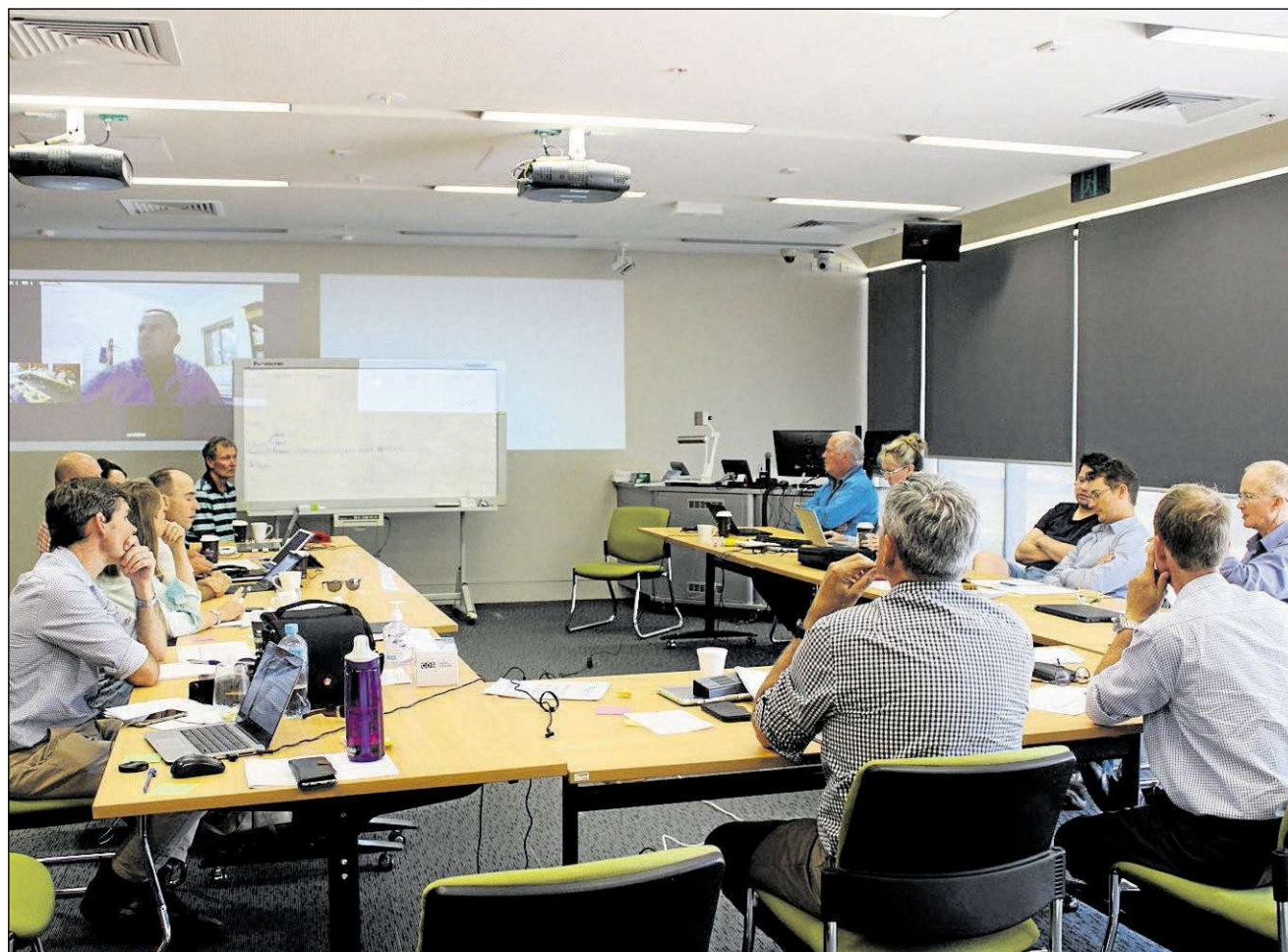
MLA's suite of *Reproductive Performance Tips and Tools* helps producers improve the reproductive performance of their herd.

The first step is to determine when losses are occurring to work out if the problem is failure to conceive, abortion or losses at or after calving.

Tips to diagnose reproductive loss on-farm this autumn:

**Check cow body condition:** If pregnant cows are in body condition score less than 2.5, nutrition could be an issue. Check their pastures and supplementation program.

**Review pregnancy status**



MLA's suite of Reproductive Performance Tips and Tools helps producers improve the reproductive performance of their herd.

**of different age groups:** Pregnancy rates in first calf cows that are lower than mature cows can indicate nutritional issues.

**Benchmark maiden heifer performance:** Low pregnancy rates in maiden heifers may mean they were below critical mating weight at joining. If they are above critical mating weight, low pregnancy rates may indicate an underlying disease exists.

**Assess fat breeder cows:** Most cows should be pregnant to achieve the goal of one well grown weaner per breeder, per year. A non-lactating cow at pregnancy diagnosis suggests abortion

or calf loss. Fat, nonlactating and nonpregnant cows suggest a permanent infertility problem.

### Dig deeper with data

Another way to determine what's causing reproductive loss is to submit samples for analysis from non-pregnant breeders or deceased calves.

Sampling and recording data can help identify reproductive diseases. Consult your veterinarian on how to collect and store samples for pathological diagnosis.

When collecting samples, focus on:

**Cow history:** Accurately record identity, the property identification code (PIC),

age, pregnancy status, lactation status and body condition score for animals sampled.

**Calf, foetal or placenta specimens:** Collect a fresh foetus, deceased calf or placenta (if available). If a veterinarian is unavailable to collect, keep fresh specimens chilled until one can be contacted.

**Cow samples:** Collect 15-30 blood samples and vaginal swabs from identified mobs of nonpregnant and pregnant cows. Keep records for each cow sampled.

**Bull samples:** Collect swabs from the prepuce of bulls where the pregnancy rate is low, or a venereal

disease is suspected in the breeder herd.

For more information, contact Nigel Tomkins on [ntomkins@mla.com.au](mailto:ntomkins@mla.com.au) or Geoff Niethe on [g.niethe@bigpond.com](mailto:g.niethe@bigpond.com)

MLA has tips and tools on these topics for northern cattle producers:

- How do I manage heifers pre-joining to improve reproductive performance?
- What's causing reproductive loss?
- What females should I sell?
- What joining system should I use?

Download the full suite of Tips and Tools at [mla.com.au/reproperformance](http://mla.com.au/reproperformance).

## Building a strong beef business

BASHING around their 4400 acre cattle property, Wulfden, at Charters Towers, father and son team Evan and Kade Collins are building a sustainable future.

Farm dog Zeba keeps watch while Kade, 10, and dad Evan tend to up to 400 head of trade steers destined for local and export markets.

Evan accessed a sustainability loan from the Queensland Rural and Industry Development Authority (QRIDA) to invest in infrastructure improvements and cattle works, including drought mitigation measures.

Evan said building sustainability on the property and for the farming business meant he was able to ensure long-term viability.

"Without getting a sustainability loan from QRIDA it would have been harder to kick off. I wouldn't have been able to live here and if you're not on the property full-time it's harder to manage," he said.

Evan considered a QRIDA sustainability loan to support higher productivity through investment in cattle yards, boundary fencing, water tanks, solar and other on-farm infrastructure.

Find QRIDA regional area managers at Townsville, Innisfail, Cloncurry, Mackay, Rockhampton, Roma, Toowoomba, Kingaroy, Emerald, Bundaberg and Brisbane. They can meet producers on-farm to discuss options.

For information freecall 1800 623 946 or visit [qrlda.qld.gov.au](http://qrlda.qld.gov.au).

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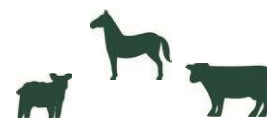
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