

# NBRUC

## NORTHERN BEEF RESEARCH UPDATE CONFERENCE


*"Recipe for Success: NBRUC 2023's  
Menu for Northern Beef Research"*






**DARWIN, NT**  
**22-25**  
**AUG**  
2023



**DOUBLE TREE BY  
HILTON ESPLANADE**  
116 THE ESPLANADE, DARWIN

TUESDAY 22 AUGUST 2023	
3.00 – 5.00 pm	<b>Conference Registration</b> Ballroom Pre-Function area, Level 1, Double Tree by Hilton, 116 The Esplanade, Darwin
6.00 - 8.00pm	<b>Hord d'Oeuvres a la Top End: The Northern Territory Department of Industry, Trade and Tourism Welcome Reception</b> Foreshore Lawns, opposite the Double Tree by Hilton Esplanade, Darwin
	
WEDNESDAY 23 AUGUST 2023	
6.30 am	<b>MLA Beef Industry Breakfast – Improving the beef cattle business</b> Hilton Garden Inn, 122 The Esplanade, Darwin
9.00 am	<b>Entrees and Mains – Grand Ballroom</b> <b>Chair: Tim Schatz, Northern Territory Department of Industry, Trade and Tourism</b> <b>Lifting the lid: Conference Opening – Tim Schatz</b>
9.10 am	<b>Welcome</b> to the 2023 Northern Beef Research Update Conference – Jay Mohr-Bell, Chair, NBRUC Organising Committee
9.20 am	<b>KEYNOTE PRESENTATION: Heather Smyth UQ, QAAFI Flavour</b> – Advancing the sensory quality of Australian beef (30 min)
9.50am	<b>KEYNOTE PRESENTATION: Derek Bailey NMSU, Animal and Range Sciences</b> Lecciones del rancho: Applications of western US beef cattle research to northern Australia. (30 min)
	<b>Q&amp;A</b>
10.20 am	Book Launch – “Design, construction and management of Flood Refuge Mounds” – Ian Braithwaite, Chair, North West Qld Beef Research Committee
10.30 am	Morning tea – Grand Ballroom Foyer
<b>Session 1 – Our northern production system ingredients – Grand Ballroom</b> <b>Chair: David Larkin – SPONSORED BY: CRC NA</b>	
	
11:00 am	<b>The recipe for a successful northern beef system?</b> Northern Australia presents many challenges and has a long history of beef production despite seasonal extremes. How can we combine R&D, new investment, extension practices and the environmental, sustainability and governance best practice to take the industry to a new level? <ul style="list-style-type: none"> <li>• <b>Alan Bell; Sally Leigo; Trevor Price</b></li> </ul>
11:45 am	<b>Table talk – Coordinated by CRC for Developing Northern Australia (CRC NA)</b> Moderator: <i>Trudi Oxley</i> . Panel members – <i>Tim Schatz, Rohan Sullivan, Helen Armstrong, Don Heatley</i> representatives from the project and co-funders of the Crops for Cattle project - the development and objectives of a cattle/cropping system for northern Australia.
12.15 pm	Summary – Findings of the 2023 Australian Beef Report – <b>Ian McLean, Bush Agribusiness</b>
12.30 pm	Lunch – Grand Ballroom Foyer – SPONSORED BY Northern Territory Cattlemen’s Association. Brief presentation by Will Evans, CEO, NTCA
	

## Session 2 – Concurrent sessions – The taste of a sunburnt country

1.15 pm (105 mins)	<b>Ballroom 1</b> 	<b>Ballroom 2</b> 	<b>Litchfield room</b> 
	<b>Cooking with catastrophe as your sous-chefs: Droughts and Flooding rains</b> <b>Chairs: David Phelps &amp; Gretel Bailey-Preston</b>	<b>Getting in the kitchen - human capacity for a profitable, sustainable and productive northern industry</b> <b>Chairs: Jodie Ward &amp; John Taylor</b>	<b>More pastures please– what’s new on the feed base menu?</b> <b>Chairs: Peter O’Reagain &amp; Allan Peake</b>
	<ul style="list-style-type: none"> <li>• Likelihood of heat stress in N Australia beef cattle herds. <b>Kieren McCosker</b> 10min</li> <li>• Climatic indices in practices and what it means for cattle. <b>Angela Lees</b> 3min</li> <li>• The temperature humidity index (THI) as a tool for animal management. <b>Elieder Prates Romanzini</b> 3min</li> <li>• Evaluating weather effects on water intake in cattle. <b>Elieder Prates Romanzini</b> 3min</li> <li>• Agreement between interpolated and measured weekly rainfall and temperature humidity index. <b>Gemma Somerset</b> 3min</li> <li>• A data driven heat stress alert system. <b>Sabrina Lomax</b> 10min</li> <li>• <b>Q&amp;A</b></li> <li>• The Gulf Country floods – comparing extreme events. <b>Timothy Cowan</b> 10min</li> <li>• Variability of minimum rainfall requirements for pasture response in N Australia. <b>Joanne Campbell</b> 3min</li> <li>• Rain ready rangelands paddock challenge: trialling research station strategies on commercial properties. <b>Lakota Taber</b> 3min</li> <li>• Land reclamation using water harvesting techniques in the Desert Uplands Bioregion. <b>Simon Hunt</b> 10min</li> <li>• Faecal seeding, drought, and seed survival in dung. <b>Abby Glasser</b> 3min</li> <li>• Long term performance of different stocking strategies in a variable climate. <b>Peter O’Reagain</b> 10min</li> <li>• <b>Q&amp;A</b></li> </ul>	<ul style="list-style-type: none"> <li>• Have we got our extension/adoption models right? <b>Dave Smith</b> 10min</li> <li>• Recognising the people in grazing businesses. <b>Bec Clapperton</b> 10min</li> <li>• Staff retention on northern cattle stations- a survey of station staff. <b>Stacey Holzapfel</b> 3min</li> <li>• Effectiveness of staff informal induction and mentoring programs. <b>Jane Evans</b> 3min</li> <li>• Teamwork makes enviro-dream work. <b>Kerry Goodwin</b> 3min</li> <li>• Promoting sustainable beef production through rangeland management courses. <b>Stacey Holzapfel</b> 3min</li> <li>• Pasture development using the Action Learning Cycle. <b>Kylie Hopkins</b> 3min</li> <li>• <b>Q&amp;A</b></li> <li>• An integrated approach to extension delivery in the Reef Catchments builds capacity. <b>Megan Willis</b> 3min</li> <li>• Advancing Beef Leaders: leadership, impact and influence <b>Emily Corbett</b> 3min</li> <li>• Working with graziers within a practice framework <b>Megan Willis</b> 10min</li> <li>• Empowering indigenous beef producers. <b>Ian Perkins</b> 10min</li> <li>• “And the winner is...” — The FutureBeef experience. <b>Jodie Ward</b> 3min</li> <li>• FutureBeef website activity remains strong. <b>Jodie Ward</b> 3min</li> <li>• <b>Q&amp;A</b></li> </ul>	<ul style="list-style-type: none"> <li>• Effective management options for pasture dieback. <b>Stuart Buck</b> 3min</li> <li>• Irrigated mosaic agriculture for beef production in WA. <b>Carla Milazzo</b> 3min</li> <li>• Rotational grazing of gamba grass for control and cattle production. <b>Tim Schatz</b> 3min</li> <li>• Crops for cattle- increasing the production efficiency of northern systems to improve dry season weight gain. <b>Trudi Oxley</b></li> <li>• A new, mixed microbial drench for detoxification of Leucaena cultivars. <b>Ros Gilbert</b> 3min</li> <li>• Can Queensland cattle degrade Leucaena toxins in their rumen? <b>Diane Ouwerkerk</b> 3min</li> <li>• Effects of pasture quality and herd structure on methane intensity. <b>Dean Thomas</b> 10min</li> <li>• <b>Q&amp;A</b></li> <li>• New methods for mapping and monitoring pasture production, land types and land condition in Australia’s N rangelands. <b>Phil Tickle</b> 10min</li> <li>• Grazing land. condition decline in Queensland’s N Gulf. <b>Niilo Gobius</b> 3min</li> <li>• Seeing is believing – Barkly Mitchell grass recovery project. <b>Jaidyn Eastaughffe</b> 10min</li> <li>• Impact of pasture utilisation on cattle fertility. <b>Kieren McCosker</b> 10min</li> <li>• Pasture succession planning through improved land condition in the north. <b>Allan Peake</b> 10min</li> <li>• An improved model for animal units and estimating intake in northern rangelands. <b>Ian McLean</b> 3min</li> <li>• <b>Q&amp;A</b></li> </ul>
3.00 pm	Afternoon tea – Grand Ballroom Foyer		

### Session 3 — Keeping the pot from boiling over - Climate, carbon and sustainability for Northern Australia? – Grand Ballroom

Chair: Ed Charmley & John Gaughan

Sponsored by: CSIRO Towards net zero program



3.30 pm	<ul style="list-style-type: none"> <li>• Margaret Jewell, Carbon Neutral by 2030 – opportunities for northern producers</li> <li>• Di Mayberry, CSIRO – Taking the north to net zero</li> <li>• Stuart Denman, CSIRO - The journey to developing abatement technologies for Australia’s ruminant livestock</li> <li>• Chelsea Jarvis, The Northern Australia climate program – Measuring and managing the northern climate</li> <li>• TBC – producer perspective to a C neutral target</li> </ul>
4.30 pm to 5.00 pm	<b>Ticket to ride – for stewardship or carbon neutrality?</b> <i>Hosted by Geoff Murrell</i> <i>Margaret Jewell, tbc; Chelsea Jarvis, Dean Thomas</i>
6.00 pm	<b>Coach transport – Double Tree Hilton to Mindil Beach Casino</b>
6.30 pm	<b>Conference Dinner and NABRC Medals Awards Night</b> – Mindil Beach Casino Resort Lawns, Darwin Pre-dinner drinks; Presentation of NABRC Medals.

## THURSDAY 24 AUGUST 2023

### Session 4: – Rib Fillets and T-Bone – Grand Ballroom




Chair: Tim Schatz




SPONSORED BY: Meat & Livestock Australia



9.00 am	<b>Welcome to Day 2 of the Northern Beef Research Update Conference</b>
9:05 am	<b>KEYNOTE PRESENTATION: - David Beatty, Group Manager – Productivity and Animal Wellbeing, Meat &amp; Livestock Australia.</b> Fewer, bigger, bolder for Northern Australia – Research, development, adoption and sacred cows (30 min)
9.35 am	<b>KEYNOTE PRESENTATION: David Riley, Texas A&amp;M University</b> Getting it right with animal breeding and genetics for challenging environments. (30 MIN)
10.05 am	<b>Q&amp;A (10 min)</b>
10.15 am	Book Launch – Phosphorus Manual – Lindsey Perry, Meat & Livestock Australia
10:20 am	Morning tea – Grand Ballroom Foyer

## Session 5 – Concurrent sessions – Camp Oven Cooking – Beef Stew, Damper and Billy Tea

	Ballroom 1 	Ballroom 2 	Litchfield room 
10.45 am to 1.00 pm	<p><b>First, catch your beast: Livestock performance and management</b>  <b>Chairs: Alan Bell &amp; Tony Parker</b></p> <ul style="list-style-type: none"> <li>Productivity of breeding cattle in N Australia. <b>Alan Bell</b> 10 min</li> <li>Relationship between vegetation index and home range of cattle in northern rangelands. <b>Christie Pearson</b> 10min</li> <li>Detection of maternal behaviours associated with suckling in beef cattle. <b>Kieren McCosker</b> 3min</li> <li>Quantifying the mortality-risk associated with age at first calf in breeding herds. <b>Kieren McCosker</b> 3min</li> <li>Impact of bottle teat score on calf mortality in an extensively managed NT herd. <b>Georgia Glasson</b> 3min</li> <li>Paddock-shade shelters for reducing calf loss in the treeless Barkly Tableland. <b>Kieren McCosker</b> 3min</li> <li>Impacts of paddock watered areas on home range and spatial behaviour in extensive rangelands. <b>Christie Pearson</b> 3min</li> <li>Is Caltrop the Cause? Investigating ‘staggers’ in a Northern Territory breeder herd. <b>Melissa Wooderson</b> 3min</li> <li>Opportunities to increase production and profit from young breeding cattle. <b>Todd Donaldson</b> 3min</li> <li>The effect of nitrogen use efficiency on productivity in tropical beef. <b>Kim Hubbard</b> 3min</li> <li>A comparison of abrupt and fence line weStronaning methods for beef cattle. <b>Sabrina Lomax</b> 3min</li> <li>New diagnostic tools for bovine vibriosis. <b>Ala Tabor</b> 3min</li> <li>The effect of collection method on post-thaw bull semen quality. <b>Eleanor Fordyce</b> 3min</li> <li><b>Q&amp;A</b></li> <li>The performance of P deficient mature cows improves with supplementation. <b>Tim Schatz</b> 10min</li> <li>Phosphorus supplementation using water medication or lick-blocks. <b>Jarud Muller</b> 3min</li> <li>Increasing P supplementation in areas that are difficult to access during the wet. <b>Tim Schatz</b> 10min</li> <li>The Easy P – Increasing P supplementation in difficult to reach areas. <b>Annie Bone</b> 3min</li> </ul>	<p><b>Camp oven or a Thermomix: Technology, data management and applications</b>  <b>Chairs: Lindsey Perry &amp; Anita Chang</b></p> <ul style="list-style-type: none"> <li>Data and alerts from real-time remote water monitoring. <b>Elle Rands</b> 10min</li> <li>Ceres Tag Pasture Feed Intake (PFI) for grazing time, feed efficiency and emission predictions. <b>David Smith</b> 3min</li> <li>Preferential grazing of cattle on Leucaena pasture utilising GPS data. <b>Melissa Matthews</b> 3min</li> <li>Attendance of animals at walkover weigh and auto drafting units. <b>Gemma Somerset</b> 3min</li> <li>Satellite Assisted Pasture Budgeting Supporting Best Management Practices. <b>Gabrielle Parker</b> 3min</li> <li>No Connectivity? No problem for capturing collar data in N grazing systems. <b>Melissah Dayman</b> 3min</li> <li>Insight to individual breeder performance using paddock-based technology. <b>Tim Emery</b> 3min</li> <li>Navigating on-animal sensor technologies: A guide for graziers. <b>Thomas Williams</b> 3min</li> <li>Assessing pasture dieback with a drone. <b>Polani Shadur</b> 3min</li> <li>Using strategic patch burning to influence cattle landscape preference and improve land condition. <b>Gretel Bailey Preston</b> 3min</li> <li><b>Q&amp;A</b></li> <li>Stocktake GLM app assists graziers in SE Qld. <b>Jodie Ward</b> 3min</li> <li>What’s grass got to do with it? Getting the most out of your animal production data sets. <b>Robyn Cowley</b> 10min</li> <li>Are production measures a good indication of pregnancy success? <b>Kieren McCosker</b> 3 min</li> <li>Applying AE ratings to cattle by class and productivity. <b>Ian McLean</b> 10min</li> <li>New generation NIRS calibrations to predict diet quality and animal performance. <b>Hayley Norman</b> 10min</li> <li>Use of ultrasound to determine lung health changes of calves during weaning. <b>Stephanie Sammes</b> 3min</li> <li>Preliminary analysis of immune competence traits in tropically adapted beef breeds. <b>Kirsty Moore</b> 3min</li> <li>The impact of previous lactation and pregnancy status on tail hair isotopes. <b>Karen Eyre</b> 10min</li> <li>“Paddock Power”: a user-friendly tool for planning new pastoral infrastructure. <b>Christie Pearson</b> 10min</li> <li></li> </ul>	<p><b>Serve carefully: Animal welfare and best practice</b>  <b>Chairs: Kylie Hopkins &amp; Johann Schroder</b></p> <ul style="list-style-type: none"> <li>Continuing the search for a tick vaccine <b>Johann Schroder</b> 10min</li> <li>Biomarkers for cattle tick resistance. <b>Ala Tabor</b> 3min</li> <li>The effect of insecticidal fly tags and Bovine Ephemeral Fever infection on cattle liveweight gain. <b>Tim Schatz</b> 3min</li> <li>The effect of worm infestation and treatment on cattle growth on NT floodplain. <b>Tim Schatz</b> 3 min</li> <li>Long term effects of coccidiosis infection and treatment on cattle growth. <b>Tim Schatz</b> 3min</li> <li>The cause of buffalo fly lesions – what have we learned? <b>Peter James</b> 3min</li> <li>Phenotyping cattle for buffalo fly resistance. <b>Peter James</b> 3min</li> <li>The Australian trichomoniasis vaccine. <b>Ala Tabor</b> 10min</li> <li><b>Q&amp;A</b></li> <li>Water restriction impact on the performance of late gestation heifers. <b>Latino Coimbra</b> 3min</li> <li>Animal welfare and ethics principles for managing dingo-cattle conflicts. <b>Ben Allen</b> 10min</li> <li>Objectively monitoring animal welfare across contexts. <b>Sabrina Lomax</b> 10min</li> <li>Cattle behaviour and weight gain following dehorning and castration with and without pain mitigation. <b>Dominique Van der Saag</b> 3min</li> <li>Novel analgesic therapies for improved and lasting pain relief for cattle. <b>Shannon Chatfield</b> 3min</li> <li>Novel wound treatment strategies for dehorning. <b>Sami Rudd</b> 3min</li> <li>Delivery of meloxicam in molasses lick block to surgically castrated calves. <b>Sami Rudd</b> 3min</li> <li>Impact of sinus exposure during dehorning on wound healing, infection and liveweight. <b>Melissa Wooderson</b> 10min</li> <li>Observations on the causes of calf loss in a herd near Katherine, Northern Territory. <b>Georgia Glasson</b> 10min</li> <li><b>Q&amp;A</b></li> </ul>

	<ul style="list-style-type: none"> <li>Increasing the adoption of P supplementation in N Australia. <b>Annie Bone</b> 3min</li> <li>The impact of prepartum supplementation on the liveweight of cows. <b>Luis Silva</b> 10min</li> <li><b>Q&amp;A</b></li> </ul>		
1:00 pm	Lunch – Boulevard Auditorium Foyer		
			
<b>Session 6– Genes and Beans– the G x E northern accompaniments</b>			
	<b>Ballroom 1</b> 	<b>Ballroom 2</b> 	
2.00 pm	<b>Legumes well done in a northern environment</b> <b>Chairs: Robyn Cowley and Jaidyn Eastaughffe</b> <ul style="list-style-type: none"> <li>Legume production paddocks increase pasture productivity on red earths and suppressing invasive grasses. <b>Kendrick Cox</b> 10min</li> <li>Adoption of legumes and good agronomy in the Brigalow Belt. <b>Louise Walker</b> 10min</li> <li>Redlands Leucaena for increasing beef productivity in N Queensland. <b>Bron Christensen</b> 10min</li> <li>Adoption, performance and management of leucaena. <b>Craig Lemin</b> 3min</li> <li>Establishing improved pastures on NW Qld downs country. <b>Jane Evans</b> 3min</li> <li>Potential disruptors to early follicular development and embryonic loss in cattle grazing legumes. <b>Jessica Wyse</b> 3min</li> <li>Desmanthus for silage. <b>Ed Charmley</b> 3min</li> <li>Seed production of new cold-tolerant stylos in N Queensland. <b>Kendrick Cox</b> 3min</li> <li><b>Q&amp;A</b></li> </ul>	<b>G for genetics in northern production systems</b> <b>Chairs: Elizabeth Ross and Nigel Perkins</b> <ul style="list-style-type: none"> <li>Recent advances in cattle genome sequencing. <b>Elizabeth Ross</b> 10min</li> <li>Genomic breeding values to improve fertility and productivity of tropical beef cattle. <b>Ben Hayes</b> 10min</li> <li>Using genomics to select non-pedigree cattle for bull fertility traits. <b>Laercio Porto-Neto</b> 3min</li> <li>Genomic selection of commercial bulls – “Is my bull worth keeping?” <b>Kerry Goodwin</b> 3min</li> <li>Genotype by environment interaction in tropically adapted beef cattle. <b>James Copley</b> 3min</li> <li>The genetics of cow temperament at calving. <b>David Riley</b> 3min</li> <li>Stayability trends in a Brahman herd that has been selected for fertility. <b>Melissa Bethel</b> 3min</li> <li>Genetic evaluation tools to identify and breed profitable cattle for WA. <b>Matt Wolcott</b> 3min</li> <li>Balancing selection for polled beef herds using digital twin simulations. <b>Matthew Kelly</b> 10min</li> <li><b>Q&amp;A</b></li> </ul>	
3.10 pm	Afternoon tea – Boulevard Auditorium Foyer		
<b>Session 7 – Our northern recipe for success– bringing it all together</b>			
<b>Chair: Thom Williams</b>			
3.30 pm	<ul style="list-style-type: none"> <li>Looking forward – looking back. <b>Ed Charmley</b> 25min</li> <li>Celebrating 30 years of NABRC – <b>Geoff Murrell and Libby Homer</b> 20min</li> <li>Farewells from NBRUC2023. Concluding remarks - <b>John Taylor</b> 20min</li> </ul>		
7.00 pm	<b>NABRC 30<sup>th</sup> birthday celebration</b> - Grand Ballroom Double Tree Hilton, Darwin		
<b>FRIDAY 25 AUGUST 2023</b>			
7.00 am departure	<b>FIELD TRIPS – a choice of half OR full day field trip</b> <b>Half day: Beef and Barra – Beatrice Hill Research Farm and Humpty Doo Barramundi Farm</b> <b>Full day:- Beef the NT Way – La Belle Downs , Lunch &amp; Swim – Litchfield National Park; Eva Valley Meats</b>		