

Northern Australia Climate Program

NACP case study

Queensland

May 2024

Producer: Kevin Brennan

Property: Tarella

Locations: Chinchilla, Condamine & Julia Creek, Qld

Property size (total): 25,000 ha

Enterprise: Beef breeding to feedlot

Land types: Brigalow gilgai & black soil downs

Average rainfall: 400 - 650 mm

Soil type: Brigalow scrub soils; heavy grey & black clays; ashy downs

Main pastures: Blue grass, bambatsi, buffel; Mitchell, Flinders

Key message:

"The green date is probably one of the fundamentals of the whole grazing business."

Climate smart strategies help spread the risk

The Brennan family runs a high-performance Wagyu beef production enterprise that spans breeding through to feedlot entry at properties which include 'Tarella' near Chinchilla, 'Kooringa' and 'Dunkerry' at Condamine and 'Isabel Downs' at Julia Creek. Land types include Brigalow gilgai and black soil downs, with soil types ranging from heavy grey and black clays to Brigalow scrub soils and pastures comprising blue grass, bambatsi, buffel grass, Mitchell grass, and Flinders grass. Annual rainfall across the properties ranges from 400 mm to 650 mm.

Kevin says that, while rainfall variability presents challenges, this set up – with properties spread across a several localities - means that, not only do they have access to substantial feed during favourable conditions, they are also able to make the most of things when seasonal conditions are less favourable by transporting cattle between properties. Proximity to markets and transport routes have also been important considerations in their overall strategic planning.

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About NACP

The Northern Australia Climate Program (NACP) is a partnership between the Queensland Government (through the [Drought and Climate Adaptation Program](#)), Meat and Livestock Australia and the University of Southern Queensland (UniSQ) to help red meat producers in northern Australia to manage drought and climate risks. A core component of the program is the 'Climate Mates' initiative, which employs and trains local climate extension experts who are connected through the program to leading climate science researchers at UniSQ, the Bureau of Meteorology (BoM) and UK Meteorological Office.

The NACP Climate Mates have two key roles: to 'translate' the best available climate information for the local regional context to help producers make informed decisions; and to pass feedback from producers back to researchers to ensure research and product development is targeted to producer needs.

Regional NACP Climate Mate, Vicki Mayne, says that *'Working with producers like Kevin and his daughter Lauren has been inspiring and rewarding. Kevin manages a grazing enterprise across diverse locations and regions in Queensland, emphasizing the importance of staying informed when it comes to weather forecasts and monthly and bi-monthly outlooks. He has gained a deeper understanding of climate dynamics and their practical applications. Personally, collaborating with Kevin during NACP workshops has been enriching for me as a Climate Mate and producer. His thoughtful discussions, active participation, and valuable feedback have benefited not only me but also other producers in our community.'*

Climate Awareness & understanding

Kevin has been actively engaged with the NACP since attending workshops in 2020 and finds that the regular newsletters he continues to receive through the program provide valuable information on climate alerts and the Profitable Grazing Systems (PGS) pilot, among other topics. Kevin says that the workshops and ongoing contact with Vicki have enhanced his awareness and understanding of climate dynamics and their practical applications in agricultural management.

Kevin highlights the importance of climate outlooks in informing his operational and tactical decisions such as feed budgeting, stocking rates, and livestock marketing. *'If there's a positive climate outlook, you can step into the market with more confidence, or you might have the luxury of putting extra weight on cattle, knowing that there's unlikely to be a severe correction in the market. And the converse is true if there's a very dry outlook - you know there may be a rapid fall in the market. I think they're real benefits.'*

Kevin says he regularly monitors climate indicators such as the El Niño-Southern Oscillation (ENSO) and the Madden-Julian Oscillation (MJO). *'I'll keep an eye on*

ENSO. I'll pay more attention to it from midwinter on, when I'm praying that it's going to rain. And, if it's giving a strong indication either way, I'll continue monitoring it through summer. I've always thought that the MJO is a good predictor of whether we'll get some activity or not. If it's coming over, then you can keep your fingers crossed.' Kevin says he is also aware that other indicators such as the Indian Ocean Dipole (IOD) and Northern Rainfall Onset (NRO) may also provide useful forecasts for his beef production enterprise.

One forecast tool that Kevin feels could be adjusted to provide more tailored predictions is the Green Date*. *'I think it's way too conservative for a lot of people and a lot of places.'* He suggests that the Green Date could be refined by taking into account not only rainfall up to a certain point in time but tailoring this even more finely by also considering soil type and land condition. Vicki says that this type of feedback from producers is critical to the way the NACP works and that this is something she will look into.

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* The Green Date indicates when a break in the dry season is likely to occur and is usually calculated on the basis of historical rainfall data (e.g., 70% chance of receiving 50 mm or more over a three-day period). Soil and land condition may influence the effectiveness of any rainfall received.

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Climate risk decision-making

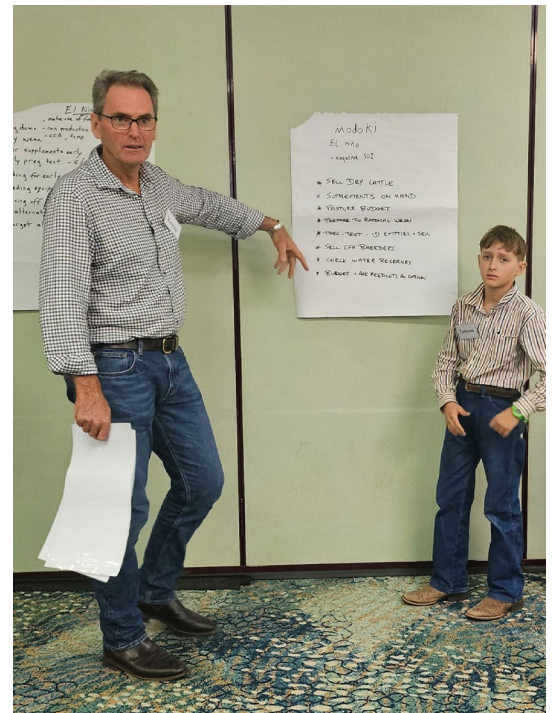
Kevin relies on a range of short- and longer-term climate forecasting products to inform both operational and strategic decisions in his grazing business. He says that weekly and fortnightly forecasts are crucial for immediate operational planning, such as scheduling jobs and adjusting cattle movements based on weather predictions. Monthly and bi-monthly forecasts are used for a combination of operational and strategic purposes, including estimating pasture growth and cattle supplies. Seasonal and bi-seasonal forecasts provide background information for feed budgeting and help in making strategic decisions.

'I've got multiple properties spread around the place. So, we look to go and undertake work in those areas where it might be drier, and there might be better access. For example, we brand in January, and we are often impacted by storms, so I'll change branding based on the rain forecast ... and it certainly affects trucking. Last week, we brought mustering forward and treated cattle for fly before the rain. This week, it's trucking bulls to Julia Creek from here. Everything we do ... all our management decisions, operations, rely on the forecasting.'

Kevin says he uses the Green Date, which estimates the start of the growing season, to inform his feed budgeting and stocking rate adjustments to ensure adequate feed availability through to the end of the growing season. *'The green date's extremely important because it's probably one of the fundamentals of the whole grazing business.'*

Given the dispersed nature of his properties, Kevin is aware that he needs to consider the relevance of different forecasts to the management of each property. However, he also says that, while climate forecasts play a crucial role in his decision-making process, they are just one of many factors to be considered. *'I'd say it's a factor in my decision making ... one of the tools I use. It helps inform what cards I have in my hand.'*

'I'm not going to make a huge decision based solely on the forecast, but it's a factor. I like the 'chance of at least' forecast tool. So, if I'm going to make a decision, I'll bring up the Long Paddock and have a look at the likelihood of 50 mm or 25 mm or 75 mm and say, well, if I get 75 mm in the next three months, I'm going to be OK. Or I need 150 mm and the chance of that is 5%. Well, then I don't know that that's unreasonable. So, I guess they provide a good barometer for me.'



Kevin and his offsider at a NACP workshop discussing the types of decisions to be considered with an El Nino seasonal forecast



Row-planted drought tolerant Leucaena contributes to pasture productivity

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Triple bottom line

Kevin says that, in his experience, using climate information to inform his management decisions has had several key benefits. From an environmental perspective, early weaning, prompted by climate forecasts, helps reduce grazing pressure, leading to improved pasture regeneration, ground cover, and overall land condition. This aligns with his commitment to environmental stewardship. *'Based on the climate information, we might look at an early weaning - ultimately to reduce the grazing pressure - which will have an environmental benefit because that then leads to improved pasture regeneration, more ground cover and better land condition. So that's the one of the primary drivers.'*

On the economic front, he says that taking climate information into account in his decision making enables him to achieve improved conception rates and fertility in his cows, resulting in more calves, and also supports more effective management of weaners to enhance growth rates and ensure they meet market specifications. *'It gives me two prompt benefits. One is more calves on the ground, and two, if I do sell cattle, they'll be likely to achieve a better sale price.'*

Kevin places importance on targeted timely climate information about adverse weather conditions such as chill events in time to respond to ensure the wellbeing of his cattle and especially weaners, *'because then you can ensure that they've got plenty of high energy food in the yard, and you can probably protect them.'* He adds, *'But it's very difficult in the more extensive areas. If you have more sheltered paddocks or paddocks with more timber in them, and you've got the ability to move them or, if you've got a fresh paddock where they could go and get a full belly of good feed before that cold front or chill hits, that's probably very useful.'*

Kevin also notes that the more he incorporates weather forecasts into his decision-making process, the more confident he becomes in their utility. *'I think the more you look at those tools, you're becoming better equipped to make decisions incorporating the weather, climate, the forecast tools and, the more you do that, the more confidence you get in them. Where my decision incorporates these long-term weather forecasts and it turns out to be a good decision, I'm more likely to use those tools again and have confidence in them.'*

