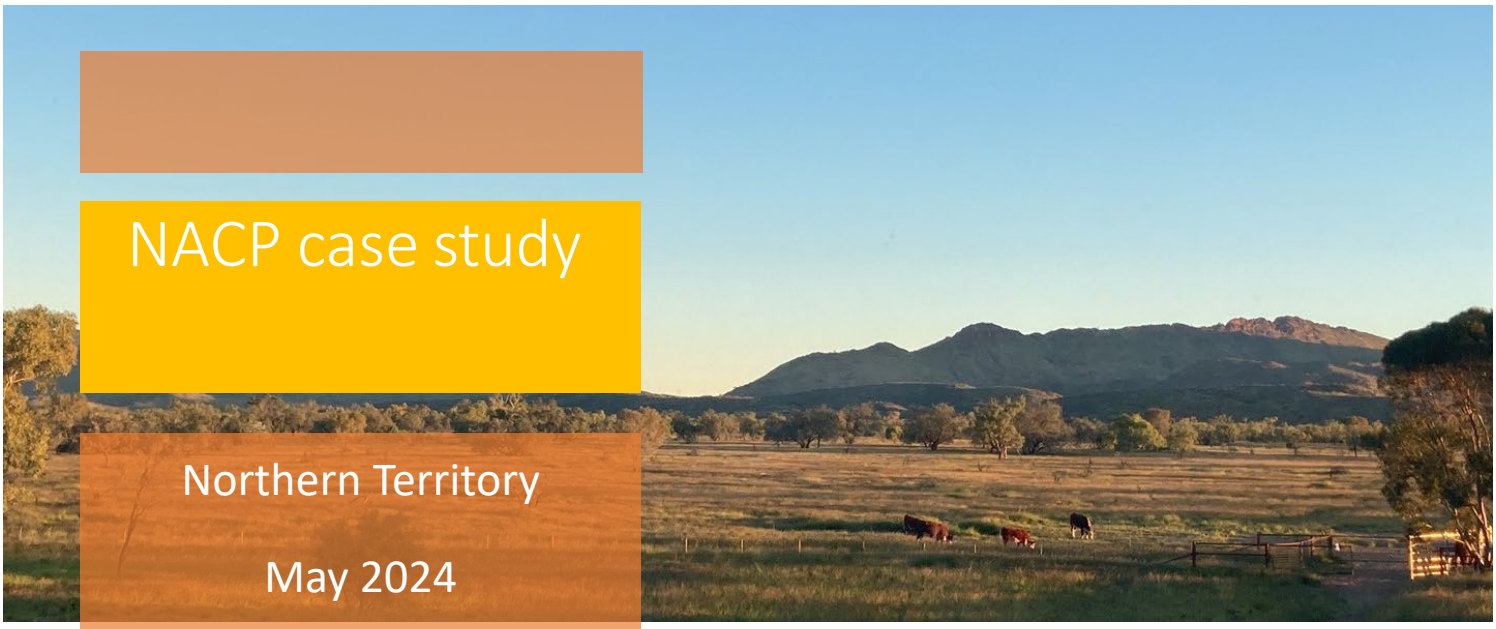
Northern Australia Climate Program



NACP case study

Northern Territory

May 2024

Producers: Rebecca & Steve Cadzow

Property: Mt Riddock

Location: Hart Range, northwest of Alice Springs, NT

Property size: 2800 km^2

Enterprise: Beef production – breeding & fattening

Herd size: approx. 12000 head

Land type: arid zone

Average rainfall: 275 mm

Soil type: Red sandy loam, black soil

Main pastures: Buffel and native pastures including kangaroo grass, blue bush, Mitchell grass & button grass

Key message:

'It's good to see that the decisions you make are actually informed.'

Integrating climate forecasts helps align decisions with anticipated conditions

Mt Riddock Station, owned and managed by Rebecca and Steve Cadzow, is in the NT arid zone, approximately 90 km northwest of Alice Springs. The Cadzows run a Hereford breeding and fattening enterprise aimed at producing high quality environmentally-sustainable beef. They take an adaptive approach to management that has seen them pioneer a number of innovations, including rotational grazing and the Remote Livestock Management System, which allows them to remotely weigh and draft cattle.

Mt Riddock receives an average annual rainfall of 275 mm, and benefits form its proximity to the Hart mountain range, which aids in capturing orographic rainfall. Predominant soil types on Mt Riddock are red sandy loam, with pockets of black soil. Main pasture species are buffel grass and native kangaroo grass, blue bush, Mitchell grass, button grass, and kerosene grass, which provides good grazing after burning.

While managing pastures and production in the NT arid zone presents a range of challenges, compounded by increased production costs associated with distance, producers in the region have access to a variety of markets. Most produce cattle for the live export trade; however, Mt Riddock focuses on breeding and growing cattle for the domestic market.

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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.

The Climate Mate for the NT, Emily Hinds, says '*Working with the Bec and Steve at Mount Riddock demonstrates how a successful operation can still gain further benefit through understanding and using forecasts. Mount Riddock operate a great business, they know their country and their cattle, and they have operated very successfully for a long time. To know that by providing climate forecasts, interpretation and knowledge to them through the NACP has been able to fine tune property decisions and add extra benefit to the bottom line is really rewarding. When you hear your producer say that they have reduced stress when making these decisions due to increased confidence in the forecast, that's meaningful, and shows how important this extension work is*.'

Climate Awareness & understanding

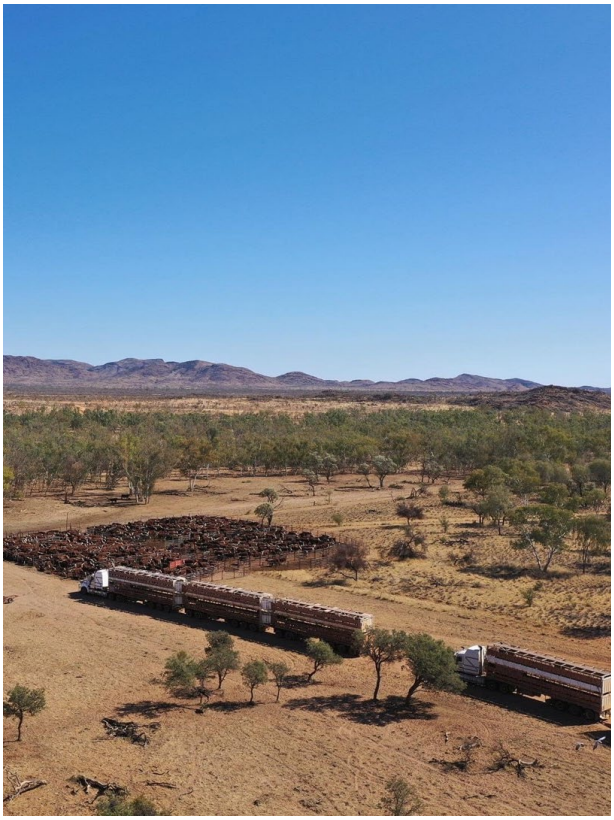
The Cadzows credit the NACP for helping them develop a better understanding of climate forecasts and particularly the climate drivers that are most relevant to their region. This understanding allows them to more effectively navigate climate information and assess the impacts of different forecast models. As a result, Rebecca feels they are able to make more informed decisions based on the information provided, and that this allows them to be more proactive in their decision-making process. Shes add that '*Before that, we were making decisions that weren't really informed*.' Without the training and support provided by programs such as the NACP, she believes many individuals struggle to interpret the Bureau of Meteorology (BoM) forecasts effectively, potentially leading to indecision and missed opportunities. She says she is somewhat critical of the BoM for its perceived reluctance to make definitive predictions, contrasting this with the informed proactive approach encouraged by the NACP.

Rebecca emphasizes that her broader understanding of climate drivers has significantly improved her ability to interpret forecast models and their implications for the region. While short-term weekly forecasts are used in immediate decisions for activities such as mustering, she says they primarily rely on the longer-term seasonal forecasts for mapping out their broader strategic planning and management. By integrating climate predictions into their decision-making, Rebecca believes they are better able to align their operation with anticipated conditions, allowing them to use their pasture and labour resources more efficiently and to inform their marketing decisions.

Rebecca says that, for their region, the Indian Ocean Dipole or IOD is the driver they take most notice of. '*Definitely the IOD. It has a big influence; it can really upset things down here. The El Nino Southern Oscillation ... I know it's important, but for us it can be hit and miss*.' However, she also says that, because they mainly sell into the domestic market, they also watch what's happening around the country. '*So domestically, if you know NSW or Queensland is going to have a really bad season, you're going to get your dollars locked in early on, when the market's still good and strong, because everybody's going to be destocking by the end, then our markets are going to be really stressed. So, you've got to be aware of the whole nation as to what's happening and how best to access it and where*.'

Climate risk decision-making

Overall, the Cadzows leverage a combination of forecasting models and on-ground experience to make informed decisions that optimize resource use and mitigate risk. This allows them to take a proactive approach in their operational, tactical and strategic decision making around stocking rates, pasture utilisation and marketing. Rebecca says that, while they adjust operational decisions such as mustering and trucking cattle based on short-term (e.g., weekly) forecasts, tactical decisions around stock numbers and grazing schedules are more likely to be informed by the three- to six-month seasonal forecasts.



Rebecca emphasizes the importance of making early decisions to reduce stocking rates and minimise pasture overutilization when seasonal forecasts indicate drier than normal conditions. *'If we know we're going to have a really dry year, we'll lock in mustering early, truck early and truck more cattle, get cattle off to give the pastures and the land a rest, so that you don't overutilise your pasture and whatever rainfall you get you capture. And we're also making decisions around water. We'll totally destock certain paddocks, knowing that our water won't be able to keep up if we don't have rain. Water levels are really important if you can see a long dry forecast.'*

The Cadzows have adopted a 'critical date', which for them is February 28th, that serves as a key decision point, such that if they haven't received a certain amount of rain by then, they move everything forward and start destocking. *'This year, we hadn't received really any rain in our wet season by then. The way the forecast models were going, we couldn't guarantee that the rain was going to come. We trucked off 700 head, and it was probably the best thing we did. Our place has got plenty of feed and it's all gone to seed and looks so healthy. Then whatever rainfall we do get is captured, the country is not flogged and we can make money out of it.'*

Paying attention to forecast conditions, both locally and across different regions, also allows the Cadzows to make beneficial marketing decisions that reduce their exposure to market fluctuations. *'If it's going to be a long, hot, dry spell, we'll actually forward sell all our steers and our heifers knowing that the domestic market's going to be flooded with Top End cattle because they haven't had their rain. We'll sign contracts and make sure we can meet the specifications. We've also got the best dollar and we're not waiting on the market to plummet.'*

Triple bottom line

Overall, the Cadzow's experience with the NACP demonstrates the value of integrating climate information into decision-making processes, fostering adaptive capacity and promoting holistic approaches to rangeland management that ultimately contribute to more sustainable and resilient production systems.

Economically, the Cadzow's beef breeding and fattening enterprise has benefited from proactive decision-making based on climate forecasts. Being able to anticipate adverse conditions and their impact on market prices, gives them the chance to sell cattle early, maintaining cash flow and avoiding potential financial losses. However, Rebecca also emphasises the significance of non-monetary factors such as pasture health and herd well-being. This more holistic approach to economic management reflects the Cadzow's understanding that financial gains need to be balanced against long-term sustainability.

Environmentally, Rebecca says that managing pasture conditions to ensure optimal growth and seed response is critical to the success of their operation. By aligning management decisions with seasonal forecasts, the Cadzows can both mitigate the risks associated with drought and protect pasture integrity and animal welfare. This proactive approach not only enhances environmental sustainability but also contributes to the resilience of their production system in the face of climate variability. '*At the end of the day, we're more interested in where our pasture is and our herd.*' Rebecca adds that their rotational grazing system allows them to spell country. '*I think in this area it's really important - even if you don't get rain, you get some sort of moisture that the pasture can make use of. Then you have grass there that's going to grow and have a seed response when it does rain. Having that spelling time in dry years has been really important.*'

Rebecca says that their greater confidence in using climate forecasts in their decision-making has certainly been beneficial, minimising surprises and enabling more informed decisions. '*It reduces the stress levels in that you've actually got stuff to back up what's going on and you can look ahead and get some reliability in some of those forecasts. So, there are no surprises. It reduces the stress and you look after your land. And to see the decisions that you make are actually informed? It's good.*'

She says she also feels much more confident to share information and their experiences with other producers in the industry, and that this helps to foster a sense of community resilience and confidence more broadly in decision-making processes.