

Northern Australia Climate Program

NACP case study

Channel Country

South-west Queensland

Producers: Karhlia Smith

Property: Hammond Downs

Location: 25 km east of Windorah

Property size: 26,000 ha

Enterprise: beef production

Land type: alluvial floodplains, open downs, gidgee and mulga woodlands, sandplains

Average rainfall: 12 inches per year

Soil type: cracking clay, red sand and some loamy red

Main pastures: Mitchell grass, buffel, spinifex and other native grasses, sedges and forbs (flood-dependent)

Key message: NACP provides regional perspectives on climate information and trusted advice that build confidence in decision-making.

Karhlia Smith manages a family-owned beef cattle grazing enterprise in south-west Queensland's Channel Country. The property operates in a highly variable climate, with low average annual rainfall of approximately 12 inches and strong dependence on episodic rainfall and flooding events. A third of the property consists of flood-out plains, which can provide high-quality feed in favourable seasons but also expose the enterprise to significant risk. A critical challenge for land management is as-yet-unrepaired flood damage (from flooding 12 months ago) to the government-managed dingo barrier fence, which forms a major section of the property boundary. This severely limits the ability to manage stocking rates, leading to uneven grazing pressure and reduced capacity to respond to climate signals. *"We've had overgrazing pressure. We know we have, but we haven't had a choice due to factors outside our control,"* Karhlia explained.

Interactions with the NACP

Karhlia's engagement with the NACP began 18 months ago when she attended a workshop run by the Queensland Department of Primary Industries (DPI). NACP Climate Mate, Maree Tully, presented at the workshop, introducing the program and providing regional perspectives, which Karhlia found were highly applicable to her family's enterprise.

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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.

Impact of NACP on climate awareness & understanding

Prior to engaging with the NACP, Karhlia says she lacked a clear understanding of how to interpret forecast probabilities; she was confused about what a "90% chance of five to ten millimetres of rain" means in practice—a common challenge among producers. As a result, she mainly relied on basic weather forecasts in her decision-making. Following the initial NACP workshop, ongoing visits and one-on-one discussions with her NACP Climate Mate and extension team have coincided with a transition period in both her personal role within the family grazing business and the broader environmental challenges following significant flood events. Karhlia says that she now has a much clearer understanding of how forecasts are produced and of how forecast probabilities should inform, rather than dictate, decision-making. *"Being able to help me get the most out of the information that was available so that I was interpreting it correctly... has been really helpful,"* she explained.

Karhlia feels that she now has a better understanding of products such as rainfall outlooks and seasonal forecasts. While she is aware that climate forecasts are never perfect, especially in southwest Queensland where regional variability complicates prediction, she feels this gives her the confidence to use the information realistically, reducing frustration when forecasts don't align perfectly with outcomes. *"We don't really fit into either the tropics or the southern neatly ... (so) some of the drivers are sort of somewhat relevant, but not fully."* Karhlia recognises the importance of blending forecasts with experience. *"After the floods last year, that came a little bit out of nowhere for us... I still feel like I need to have more confidence in it."*



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Climate risk decision-making on [property name]

As her family undergoes succession planning; Karhlia is progressively assuming greater responsibility for the property. Alongside traditional (generational) knowledge, she considers climate forecasts in both short-term operational decisions and longer-term strategic planning, describing this as a shift toward a more proactive and anticipatory management approach. She sees significant value in using climate information to “*set the business up*” months in advance, particularly as the wet season ends, and says that climate forecasts allow her to consider different scenarios and assess risk, while knowing that outcomes may be uncertain.

Short-term weather and climate forecasts play a critical role in Karhlia’s day-to-day operational decisions. Seasonal cattle work, including timing of livestock movements, processing, weaning, and mustering activities, is regularly adjusted based on short-term outlooks. For instance, short-term temperature and heatwave forecasts inform scheduling of cattle handling activities to minimise stress on livestock, reduce operational risk and improve efficiency. “*We don’t want to stress the cattle if we can avoid it or minimise stress,*” she explained. Flood risk is also a dominant concern given the property’s floodplain country. A recent example involved the use of short-term forecasts to anticipate flooding and arrange helicopter access to move cattle off the floodplain before paddocks became inundated, reducing animal welfare risks and potential losses. “*We had to get the helicopter in to get our cattle out of our floodplains because of the flood coming.*”

Karhlia also says that long-term climate outlooks are also important, particularly during the seasonal transition from wet to dry conditions. At this time, climate forecasts inform her planning around winter feed availability and early summer conditions. Decisions such as early weaning, selling surplus cattle, and supplementary feeding can be financially significant, while also having lasting impacts on land condition and herd performance. By incorporating climate outlooks in her decision-making, Karhlia aims to avoid over-stocking and ensure that resources are matched to likely seasonal conditions. “*Do I need to sell more cattle than I would plan? Do I need to early wean?*” She says that, in her view, climate information services such as the NACP are essential for planning. “*It’s a great tool for predicting what I need to do now, to make sure through winter and coming into next summer, I can be the best prepared possible.*”

Karhlia acknowledges that trust in forecasts takes time to build and requires repeated use over multiple seasons. With the support of her NACP Climate Mate, she says her confidence has increased primarily in her ability to interpret and critically assess climate information, rather than in any expectation of perfect accuracy. Rather than relying on a single forecast product, Karhlia values the ability to draw on multiple sources and indicators presented through the NACP platforms. This triangulation of information increases her sense of reliability, as decisions are not based on one model or outlook alone. While she says that past experiences, such as unexpected flooding, highlight the inherent uncertainty of climate systems and contribute to lingering caution about using climate information in her region, Karhlia says that the structured presentation of multiple data points has improved her willingness to incorporate forecasts into decision-making processes. Climate information also supports intergenerational decision discussions. “*It gives me more confidence... I’m making these decisions based on this information,*” Karhlia noted, highlighting how forecasts strengthen her position in management conversations.

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The triple bottom line

Economic outcomes

Karhlia says the economic benefits of using climate forecast information are about avoided costs and risk reduction rather than profit maximisation. *"If you're suddenly overstocked and had a huge feed bill, it would chew through money very quickly ... If you ignore it, it just runs you into a world of hurt for the business."*

Environmental outcomes

Karhlia is strongly aware of the land and pasture condition impacts of overstocking but adds that government inaction over post-flood repairs to the dog fence currently limit full application of climate-informed grazing management practices. *"Mitchell grass is suffering from overgrazing ... We know how to recover when we can remove the cattle."*

Social and personal outcomes

The NACP climate services have increased Karhlia's confidence in climate forecasting as a tool to support her decision-making. *"It gave me a lot of information to strengthen my decisions,"* She says that access to a trusted advisor was particularly important in her remote context. *"It helps that I've known Maree for a long time... it's easy to reach out."*

