



## Using satellite technology to trigger on-farm decisions in NSW rangeland

The Managing Rangelands for Drought Resilience project confirmed that Western NSW pastoralists can use satellite rangeland and pasture mapping technology as an early warning signal for timely decisions on feeding, selling stock and adjusting stocking rates.

### IMPROVED FARM DECISION MAKING

Pastoralists Bill and Pip Ryan sustainably manage “Curragh” their 130,000-hectare properties near Oxley in the Western Riverina using a combination of experience, technology and knowledge sharing with other land managers. The Ryans have a well-developed drought plan that they have used for many years because being drought resilient is essential to farming in a semi-arid environment based on perennial saltbush.

**“Our business is based on managing the land, the animals and the welfare of the people, all within an ethical framework. Vegetation is the core of our production. Protecting perennial saltbush, vegetation and soils, especially during drought, is fundamental to our sustainability,”** said Pip Ryan.

As part of the Managing Rangelands project, the Ryans worked directly with Dr Leys to assess if satellite vegetation cover data, freely available via the [GEOGLAM Rangeland and Pasture Productivity \(RaPP\) mapping tool](#), could be used to predict groundcover levels on farm and support timely management decisions.

For producers like the Ryans, using the RaPP satellite mapping tool effectively complements their drought plan to predict groundcover changes and give them an early warning, up to six months in advance of a dry season to trigger management decisions like feeding, selling stock and adjusting stocking rates. Specifically, what the Ryans discovered through analysis of previous seasons’ ground cover on the RaPP tool, was that if vegetation cover on their farm was below 55% in August then in the following summer that cover was very likely (an 86% chance) to get below 40%. The RaPP tool appears to be a reliable, “independent” way to check and confirm the timing of decisions to change management strategies to deliver the best outcomes for the Ryans’ land, their livestock and their business.

### BACKGROUND

The Managing Rangelands for Drought Resilience project helped pastoralists in Western NSW use technology and data to make decisions about groundcover management and destocking to reduce the impact of drought on farm. The project, which was delivered in partnership with the NSW Farmers’ Association and consultant Dr John Leys, tested and demonstrated how satellite-based mapping technology can predict groundcover changes up to six months ahead of drought.

“Most pastoralists use sustainable farming practices but recognising the signs of an approaching drought and adjusting farming practices early can help reduce the impact on farmers and their land,” said Caron Chester, Regional Services Manager, Western Division, NSW Farmers.

**“Knowledge and tools to help pastoralists improve and prolong the availability of groundcover and pastures during drought is important for feed for livestock and retaining soil moisture,”** she said.





*Booligal workshop participants*

## UNDERSTANDING PASTORALISTS USE OF AGTECH

Another element of the project was understanding how pastoralists are actually using digital tools and technology on farm to monitor and manage their rangelands and introduce them to the RaPP tool as it had proved valuable to the Ryans. To do this a workshop was held in Booligal, hosted by Southern NSW Innovation Hub and NSW Farmers in partnership with Agrista and Dr John Leys.

Of the 12 pastoralists who participated in the workshop, most already had an informal drought plan for their business. Before the workshop, 75% were not aware of the RaPP satellite mapping tool but 60% of them had used Bureau of Meteorology tools and/or the Meat & Livestock Australia Feedbase Monitor. The workshop boosted their confidence in using these tools and all said they were now more aware of both the technology available and the options that they can action in response to shifts in a season, including feeding and selling strategies and use of stock confinement feeding areas. The pastoralists in attendance identified that one-on-one advisor support and training on how to use agtech effectively is very important and that digital tools work best when they are tailored to the specific needs of their properties and businesses.

*Helping producers to predict drought and make timely business decisions can also reduce expenditure and income loss which will also help reduce stress levels for farmers. It can give them the knowledge they need to plan ahead with more confidence."*

CARON CHESTER  
NSW FARMERS

## A CROSS-HUB PROJECT

The national Managing Rangelands for Drought Resilience project was a collaborative cross-hub project that demonstrated and built pastoralists' confidence in applying new digital tools and management systems in their businesses. It was led by the Northern Western Australia and Northern Territory Hub in collaboration with the Southern NSW, South-West Western Australia, South Australia, Southern Queensland and Northern NSW, and Tropical North Queensland Hubs. Southern NSW Innovation Hub received funding for the project through the Australian Government's Future Drought Fund.



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