



Rangeland grazing systems in New South Wales: preparing for a changing climate

Rangeland grazing systems are likely to continue to experience high climate suitability for livestock production by 2050.

Developing industry-informed climate planning information

Climate change is altering the growing conditions for many agricultural commodities across NSW. Primary producers need evidence-based information about the changing climate, and the risks and opportunities it may bring.

Through its Vulnerability Assessment Project, the NSW Department of Primary Industries is enhancing the resilience of our primary industries by providing information and data to help the sector better plan for, and respond to, climate change. The project has assessed climate change impacts for extensive livestock, broadacre cropping, marine fisheries, forestry, horticulture and viticulture, and important biosecurity risks associated with these industries to inform sound planning, risk management and adaptation decisions.



Rangeland grazing systems in NSW

Rangeland grazing systems in the Western Division of NSW occupy around 40% of NSW but carry only 3% of cattle and 9% of sheep in NSW. Pasture in rangeland grazing systems is made up of a wide variety of native grass, forb and shrub species. Species typically found in this zone may be better adapted to survive in the changing climate of lower rainfall or higher temperatures.

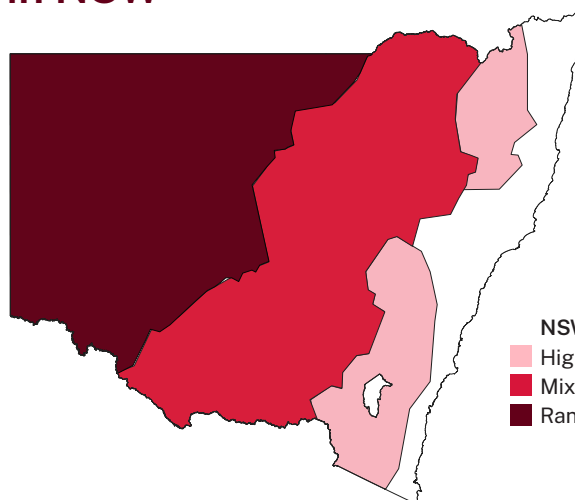


Figure 1. Map of NSW grazing systems areas used in the Vulnerability Assessment Project.

NSW Grazing Systems
■ High Rainfall Zone
■ Mixed Cropping Zone
■ Rangelands

Climate and rangeland grazing systems

Rangeland grazing systems are expected to have no significant change in climate suitability by 2050.

Climate change risks to rangeland grazing systems include:



Increased temperatures and increased rainfall variability are likely to impact some areas of Western NSW.

Climate impacts: what to expect

Ability to meet animal requirements are likely to remain similar to what has been historically experienced in the rangeland grazing system across all seasons (*moderate confidence*). However, a small region along the north-western boundary of the Western Division may slightly decline in climate suitability from very high to high suitability (*moderate confidence*).

Methodology and data

The ability of this grazing system to meet the feed intake requirements of livestock was analysed using a winter lambing system with a 0.5 DSE/ha stocking rate, considered representative of livestock enterprises employing rangeland grazing.

Climate projections were sourced from Climate Change in Australia's 'Application Ready Data'. This dataset is comprised of projections from an ensemble of 8 global climate models, each presenting a plausible future climate. The models differ in their projections, giving rise to uncertainty in our modelling which is reflected in the confidence statements given in brackets. Care should be taken when interpreting these results.

The Vulnerability Assessment Project is intended to highlight potential industry- or regional-level changes. Intermediate and high emissions scenarios were used in the assessments (RCP4.5 and RCP8.5), but these are not the only future scenarios possible. The inclusion of climate variables important to the commodities production was based on published research, expert knowledge and data quality and availability.

Adapting to Climate Change

Adapting to changes in temperature and rainfall

Controlling total grazing pressure (including unmanaged herbivores) has been identified as a key adaptation for rangeland grazing systems, especially where grazing pressure is high and resource condition is low. Providing supplementary feed, changing stocking rates, and increasing groundcover are adaptation strategies that can help prepare for any future reduction in feed. There is also an opportunity to change business structures to have more of a focus on trading livestock to take advantage of seasonal conditions.



FOR MORE INFORMATION

Please get in touch with vulnerability.assessment@dpi.nsw.gov.au

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