Extensive livestock

Climate Vulnerability Assessment
Cattle Factsheet

Raising Cattle (*Bos taurus*) in New South Wales: preparing for a changing climate

Climate changes offer opportunities and challenges for cattle production in NSW 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.

Cattle in NSW

The beef cattle industry in NSW is significant, representing around 20% of Australia's cattle and calves. There are approximately 4 million head of beef cattle distributed across the state.

Reproduction, survivability, production, and lactation were chosen as key drivers of performance in a beef cattle enterprise, as they are affected by climatic conditions, such as heat stress and chill conditions. Only direct climate impacts on cattle were considered in this model (which did not include weeds, parasites and diseases).

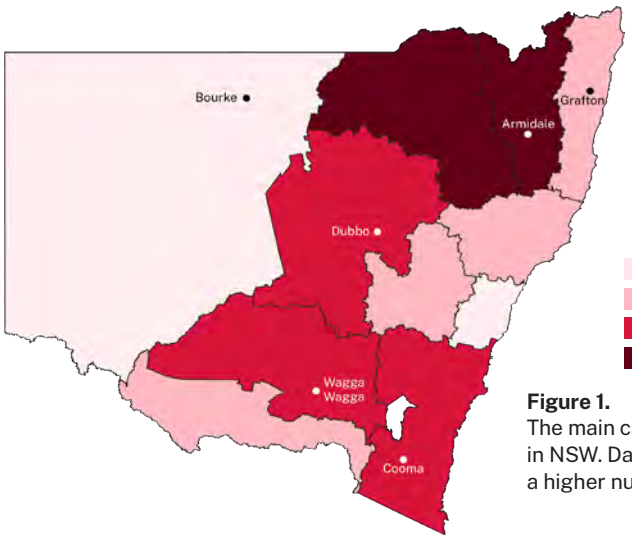

Figure 1.
The main cattle growing regions in NSW. Darker colours represent a higher number of cattle.

Department of Primary Industries

NSW GOVERNMENT

Climate and the cattle industry

Cattle production is expected to maintain very high climate suitability across NSW by 2050. There is likely to be no significant change across the state in an intermediate or high emissions scenario.

Climate change risks to the NSW cattle industry include:

Heat stress: higher temperatures and humidity during joining is likely to have minimal negative changes in central and western NSW. This could be exacerbated if joining occurs 1-2 months later than what was modelled, into the warmer summer months.

Climate impacts: what to expect

Survivability overall is expected to remain similar climate suitability to what has been experienced historically. In a high emissions scenario, north-east NSW may minimally decrease in climate suitability due to increased heat stress (*high confidence*).

Reproduction, production and lactation are expected to remain very highly suitable across NSW in both emissions scenarios (*high confidence*).

Adapting to Climate Change

Adapting to heat stress

Moving joining forward is a potential adaptation for adjusting cattle to heat stress. Dates will depend on the region, but calving in late spring instead of early summer could mitigate heat exposure of calves. However, sometimes this is not possible or is complicated by a lack of oestrus in cows due to low body weight or fat scores. In those situations, weaning calves earlier in warmer years to maintain cow body weight is a demonstrated management option.

Methodology and data

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.

FOR MORE INFORMATION

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

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