

Assessing surveillance: identifying areas of greatest likelihood of disease introduction and establishment
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Australia is a major exporter of livestock and livestock products; a trade assisted by a favourable animal health status. However, increasing international travel and trade, land use changes and climatic change have resulted in greater risks of exotic and emerging diseases. At the same time, public sector resources for managing these risks are static or declining. Veterinary authorities have identified the need to develop a consistent national approach to surveillance that allocates resources according to risk. This study maps the risk of occurrence of eight significant diseases within 12 livestock production regions of Australia. The likelihood of disease occurrence was divided into likelihoods of introduction (LI) and establishment and spread (LES). Pathways for both I and E/S were identified and data layers representing the factors contributing to each pathway produced as raster maps. The Multi-Criteria Analysis Shell (MCAS) was used to combine data layers into pathways and pathways into likelihood maps using weightings that reflect the relative importance of each layer and pathway. The likelihood maps for introduction and for establishment and spread were then combined to generate national likelihood maps for each disease. The eight diseases were subsequently grouped (foot and mouth disease, zoonotic diseases and other diseases) and combined using weightings to reflect their relative consequences. The result was a map of relative risk of occurrence of any significant disease. Current surveillance activity was assessed by combining data layers for government disease investigations, proximity to vets and wildlife disease investigations. Comparison of the overall risk and current surveillance maps showed that the distribution of current effort was well matched to the distribution of risk.