

# Reconstructing landscapes for biodiversity management: predictive models for bird species' occurrence

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Landscape planning and optimization for biodiversity management require reliable predictions of species distributions under alternative landscape futures. Such models should account for local habitat characteristics and landscape configuration. We used a number of modelling approaches, including Bayesian model averaging and boosted regression trees, to model distributions of bird species in the Box Ironbark region of Victoria, Australia. Predictor variables included landscape measurements calculated at four scales, as well as local topographic, climatic and soil characteristics. Models were evaluated against two independent data sets with contrasting spatial and temporal coverages. Our results provide useful insights into how the reliability of model predictions is influenced by attributes of the data, the modelling method used, and the species being modelled.