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# Climate change, weed invasions and impact on biodiversity hotspots

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## Abstract

Weed invasions under projected climate change scenarios have serious implications for biodiversity, both in Australia and globally. *Lantana camara* L. (lantana) is a highly invasive woody shrub with a profound economic and environmental impact worldwide. Biosecurity agencies require information on the potential distribution of lantana under current and future climate for the formulation of effective management strategies. A process-oriented niche model of lantana was developed using CLIMEX to estimate its potential distribution under current and future climate scenarios. Phenological data and geographic distribution records were used to calibrate the model. The potential global distribution of lantana under historical climate exceeded the current distribution in some areas of the world, notably Africa and Asia. However, under future scenarios, the climatically suitable areas for lantana globally were projected to contract. A database of biodiversity hotspots for Australia was developed based on numerous sources. The projected lantana distribution was overlaid on the biodiversity hotspot regions to identify areas of greatest risk. The results can inform strategic planning by biosecurity agencies, identifying areas to target for eradication or containment. Furthermore, distribution maps of risk of potential invasion can be useful tools in public awareness campaigns and prioritizing biodiversity hotspots for protection.

## Biography

Lalit Kumar is an Associate Professor at the School of Environmental and Rural Science at the University of New England in Australia. He completed his Ph.D. in 1998 from the University of New South Wales in Australia and went on to be an Assistant Professor at the International Institute for Geoinformation Science and Earth Observation (ITC) in the Netherlands. He then moved to the University of New England in Australia where he is currently Associate Professor in Spatial Analysis and Modeling. He has over 120 papers, including more than 50 papers in highly reputed peer reviewed journals. He is an Associate Editor for the ISPRS Journal of Photogrammetry & Remote Sensing and Editor for the Journal of Spatial Science.