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# 'Big picture' science could save more habitats, species

**A new 'macroecological' approach to modelling is shedding new light on how biodiversity may respond to climate change.**



Credit: scienceimage/W. van Aken

'Understanding how climate change could influence biodiversity is vital in formulating management strategies that best retain biodiversity into the future' said CSIRO scientist, Karel Mokany.

In a paper just published in *Global Change Biology* Dr Mokany and researchers from CSIRO's Climate Adaptation Flagship present a novel approach to projecting outcomes for biodiversity under climate change.

'Our dynamic macroecological modelling approach can project climate-change outcomes collectively across all species in diverse taxonomic groups. This overcomes shortfalls in our knowledge of biodiversity, while incorporating the key processes of dispersal and community assembly,' he says.

In the paper, the authors demonstrate the usefulness of this new modelling approach by simultaneously projecting outcomes for all 2051 native plant species across Tasmania under alternative scenarios of climate change and habitat availability.

'For Tasmanian plant biodiversity, we've used our modelling approach to identify where new conservation reserves or restoration efforts would best contribute to retaining biodiversity into the future,' Dr Mokany explains.

'We have also identified lowland and fragmented habitats in Tasmania as being those most vulnerable to biodiversity loss under climate change.

'We're now using our modelling approach to assess which configurations of habitat are likely to best retain biodiversity over time, under climate change.'

The authors suggest that their new macroecological approach has significant potential to improve our capacity to project outcomes for biodiversity, especially for highly diverse and poorly studied taxonomic groups.

Source: CSIRO

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