



## Media Release

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### **Loss of habitat linked to climate change leaves koalas facing a very uncertain future Modelling provides new insights to the risk of total extinction**

Koala populations would once have stretched across the Australian continent, but have now shrunk to the point where we are likely to lose them forever, according to new research that has tracked the impact of diminishing forest cover.

A combination of climate and soil data, and records of koala bone fossils, was used to develop sophisticated modelling to trace the impact of changing forest cover. A team of researchers from the ARC Centre of Excellence in Australian Biodiversity and Heritage (CABAH) pieced together the record of koala populations up to 130,000 years ago — and into the future.

The same modelling was used to predict numbers of koala populations up to 2070, in the face of threats of extinction from the impact on their habitats of deforestation, as well as climate change and disease. The work reveals that prior to humans arriving in Australia, koala populations were found in the southern tip of Western Australia, and on the Nullarbor Plain, that stretches from WA to into South Australia.

The pattern of koala populations suggests that forests of eucalyptus trees extended across the continent in the past few hundred thousand years. But there has been a rapid loss of forests over the past 7,000 years. As the forests retracted eastwards, koala populations disappeared, and they are currently only found on the east coast.

“We found that climate change caused koala sub-population extinctions in south-western Australia and the Nullarbor Plain. We also showed that future climate patterns will likely increase the extinction risk of koalas in their remaining eastern ranges,” said lead researcher and CABAH Associate Investigator Dr Farzin Shabani from Flinders University.

The study, published in the journal [Ecology](#) used mathematical models to predict the past and future distributions of 60 species of trees, mainly eucalyptus, that are eaten by koalas. The team included researchers from Flinders University and The Australian National University, as well as colleagues from Switzerland and Iran.

There is hope for the most quintessential of Australian fauna, the researchers conclude — if action is taken to protect existing habitats and replace those already destroyed.

“Climate change has already reduced the global biodiversity and will continue to do so, driving sometimes rapid shifts in the distributions and abundance of many species, and possibly driving many to local extinction in the near future. On this, Australia and its unique species, koala, is not exceptional,” Dr Shabani added.

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Our goal is to tell the epic story of Australia's rich and distinctive natural and human history, by revolutionising our knowledge of the events and processes that have shaped this nation, and combining that knowledge with cutting-edge predictive modelling techniques to manage and protect our natural and cultural resources into the future.