Climate Change Modelling of an Ancient Endemic: a Koala Case Study

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Major findings and outcomes of the collaboration:
me funding that enabled me to travel to the24th International Congress for Conservation Biology which was held in Edmonton, Canada, in July 2010.

This was a very large conference that was extremely relevant to my PhD Research. It was of great benefit to broaden my perspective beyond Australia and learn about diverse conservation and climate change issues in countries such as Canada, the USA and South America. The mammals are different, but many of the issues mirror Australia's; in particular habitat loss and fragmentation, biodiversity loss, waterways pollution, mining encroachment and of course climate change, which acts in synergy with all of these threats.

I was fortunate enough to have my Abstract accepted for a talk where I presented some of my findings regarding changes in koala distributions under climate change. I have included the Abstract (below) for your reference.

Abstract:

Ongoing concern about climate change and its effects on species distributions and global biodiversity has seen the increasing utilisation of numerous predictive modelling approaches. Species distribution modelling is now a tool that has become an essential component in biodiversity conservation and management.

Australia's endemic folivorous marsupial, the koala, is increasingly threatened by the synergistic threats of primarily, habitat fragmentation and loss, drought and heat waves. Using a range of distribution modelling techniques, we investigated the future distribution of koalas under projected climate change scenarios and incorporated these models into a reserve selection framework.

We found significant range contractions from their western arid and semi-arid range towards rapidly urbanising eastern and coastal regions, suggesting population declines and local extinctions of western populations under a projected hotter climate.

Our reserve selection modelling identified priority future habitat refugia for koalas, information that can feed into a broader land use planning decision-making process. We recommend that koala conservation policies urgently develop systematic conservation strategies that aim to reduce the contemporary land use pressures on extant koala populations and help buffer against the projected impacts of climate change. Such strategies are essential if this flagship species is to survive in the wild.