CASE STUDY

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KEY INFORMATION

- The koala is a mammal with specific habitat requirements and is exposed to increasing threats and compounding pressures from habitat loss and conflicting land-use values across Eastern Australia.
- The national listing in 2012 as 'Vulnerable' under the Environment Protection and Biodiversity Conservation Act 1999 for koala populations in Queensland, New South Wales and the Australian Capital Territory, is long overdue recognition of the uncertain future for this species.
- An investigation of overall habitat quality was conducted for a low-density koala population on the South Coast of NSW which is potentially on the brink of localised extinction, it has been estimated that there are less than 50 individual koalas remaining in the region.
- These remaining South Coast koalas are extremely unique in that they are considered to be one of the last endemic populations throughout Australia with a high level of genetic diversity.
- Data for this investigation was provided by National Parks and Wildlife Services (NPWS) who have been conducting faecal pellet surveys for the past 4 years with the help of hundreds of volunteers. This has attempted to quantify the number of koalas remaining in the area, however previous to this honours research there has been limited assessment of habitat requirements and tree species preferences.
- There is the potential to work alongside farmers to establish wildlife corridors across areas of open farmland to link known locations of koalas. A project conducted by the Southern Rivers CMA under the federal Biodiversity Fund is investigating locations for these corridors and starting work to conserve, connect and rehabilitate habitat.

BACKGROUND

The koala (Phascolarctos cinereus) is an iconic Australian species that is recognised throughout the world. Despite such a high international standing, koalas are under increasing pressures across Eastern Australia, with many populations on the brink of localised extinction.

Since the arrival of Europeans, koalas have experienced a sharp decline in both population size and distribution. Hunted almost to extinction for the soft fur pelt trade in the early 1900's, intervention and legislation have assisted the recovery of a number of koala populations. However, compounding threats from disease, predation, road deaths and conflicts with land use and habitat are again putting pressure on the remaining koala populations.

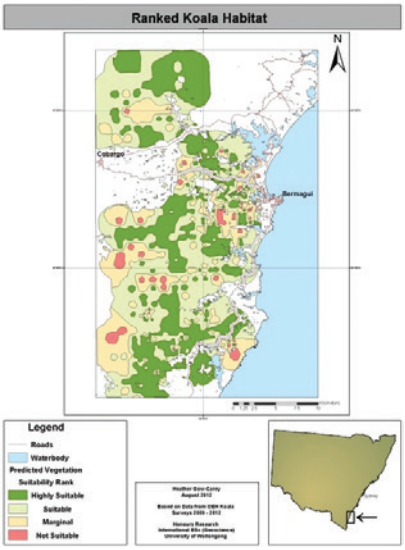
Throughout NSW, the loss and degradation of habitat has been identified as the most considerable threat to koalas. They are considered to be one of the most specialised mammalian herbivores, feeding predominantly on species from the Eucalypt genus. As they have such niche habitat requirements, koalas are limited in their ability to adapt to changes in their environment and hence are an extremely vulnerable species.

Many studies have been undertaken to assess the existing habitat of koala populations across Australia, though one small and low-density population has not been investigated to the same extent. This case study is focused on tree species preferences and overall habitat quality of a koala population on the Far South Coast of NSW, as conducted for requirements for an honours degree at the University of Wollongong.

FINDINGS

In total, 19260 trees were assessed from 657 sites across the study area. Of these sites, 72 (11.21%) were active, with 176 trees indicating evidence of koalas. From a statistical analysis of tree usage, it indicated that throughout the South Coast study site, suitable habitat is focused on one main Eucalypt species: Woollybutt (E. longifolia). Overall, there were 8 tree species that were found to be regularly used by koalas and they were classified into Primary, Secondary and Supplementary usage species.

These findings were applied spatially to create a ranked predictive habitat map for koalas, based on areas of vegetation that included a high proportion of identified koala tree species. Due to the habitat covering a very large region, including areas of private, National Park and State Forests land, there can be many issues in suitable land management.



The koalas' ability to adjust to environmental change is so limited, that a single catastrophic event, such as drought or bushfire, could all but wipe out the remaining koalas in this region. Therefore, the most practical outcome for these remaining koalas would be to incorporate the findings of this investigation into practical approach to conserve the remaining habitat.

This study has provided a unique insight into the choices koalas are making regarding tree species usage, and when mapped, it revealed that there is in fact a quite extensive habitat network. The configuration of habitat surrounding active sites demonstrates that majority of sites are located in large, high quality patches, which in turn, reduces isolation pressures on the species. From the perspective of the koala, there is enough habitat of a suitable standard. Though, for this population is to recover, multi-tenure management strategies must be developed to address any further threats to the habitat area.

OUTCOMES

Conservation efforts should focus on protecting and enhancing remnant habitat patches while aiming to reduce any further fragmentation through logging, land clearing and bushfire. If koalas are to persist throughout the region, a comprehensive plan of management is required, building on these insights while addressing the knowledge gaps and habitat requirements of this unique population.

While there is still limited understanding of the distribution, structure and feeding requirements of these koalas, this thesis provides a basis for conservation and recovery plans which builds on the overall knowledge of this population. Vital to the success of all koala management plans is the protection of remnant eucalypt forests, developed in association with spatially adept revegetation strategies using indigenous tree species. Through restoration programs, these patches can be enhanced to restore overall connectivity throughout the landscape by focused plantings of the identified preferred species.

If koalas are to be properly managed across the South Coast study area, it is imperative to:

i. Protect and enhance areas of highly suitable and suitable habitat while not excluding areas of marginal habitat from any conservation and management plans as these areas are important for both biodiversity, connectivity and dispersal functions;

ii. Investigate the connectivity of habitat patches and examine the potential for wildlife corridors across private land to increase safe movement across the landscape; and

iii. Ensure ongoing population management surveys are undertaken to provide information on changes in the koala community's size and structure.

WATCH THE VIDEO
http://www.youtube.com/watch?v=h7qYi36njFc