Submission by the Koala Research Network (KRN) to the Senate enquiry on: “ The status, health and sustainability of Australia's koala population”

Spokesperson of network: Associate Professor Clive McAlpine
School of Geography, Planning and Environmental Management
The University of Queensland, St Lucia, Brisbane 4072

Introduction

The Koala Research Network is a group of over 60 researchers from universities and government departments and private groups working with koalas. The primary interest of the group is to exchange information, studies and critically comment and assist in koala conservation matters. Many of the network members have worked together frequently, and co-authored many documents.

The list of publications by the members of the network is substantial, and much of it is recent. A list of publications can be supplied on request, and PDFs of papers or books, or hard copy supplied. We were not sure if the intent was to enter the realm of the research scientist, but we are ready to assist by supplying publications and appearing before the Senate enquiry.

We have provided some ideas for the Senate enquiry, but these are far from all the ideas we canvassed in discussion. Some more detailed questions would need to be formulated, such as emerges in a discussion, comments on a particular document, and what is feasible to do with existing methods and what could be done with an increase in resources.

Our specific comments are as follows on

1. *The status, health and sustainability of Australia's koala population, with particular reference to:*

the iconic status of the koala and the history of its management;

The iconic status enables a high recognition by the Australian population of this tree-dwelling native marsupial. It becomes a marker for a willingness to study and conserve our native wildlife, especially those that are dependent on the conservation of eucalypt ecosystems.

The history of its management has followed a traditional path of hunting, loss of habitat, fragmentation of what remains, and efforts at conservation with odd outcomes, such as the translocation of Victorian koalas to Kangaroo Island in South Australia.

Contemporary efforts are better targeted, such as through planning legislation, the 1998 then the 2009-2014 National Koala Conservation and Management Plan and the 2008 NSW Koala Recovery Plan. However, a number of critical deficiencies remain across all levels of government.

2. *estimates of koala populations and the adequacy of current counting methods;*

The status of the koala is uncertain, nationally. Many local and regional populations are declining. For example, in central and southwest Queensland, the declines are driven by drought, climatic extremes and associated loss of critical habitat elements (key eucalypt species which provide fodder). In coastal Queensland and New South Wales, urbanisation is driving declines.

It is becoming increasingly important to develop national standards and guidelines for assessing and comparing the overall health status of koala populations and for deriving meaningful population estimates. This work will be vital for ongoing prioritisation of resources and conservation programs, for monitoring population trends, and for evaluating the performance of conservation measures.

Koalas are hard to find in the wild. There is a range of methods for estimating koala populations, such as direct counts on a walked transect, searching for koala dung under trees, various Atlas schemes, community surveys of koala sighting locations and radio-tracking of individuals. Importantly, there is no best method: the selection of the method depends upon the questions being asked. For example, dung under trees is efficient for habitat mapping, but is more difficult to link to population dynamics. If the question relates to a decline in the population over a large area, then repeated transect surveys of koala abundance or changes in koala distribution (presence/absence) are likely to the most repeatable method to gauge changes over long time periods, e.g. decades.

3. *knowledge of koala habitat;*

Long term monitoring data to estimate trends are much more important than just knowing how many animals there are because this tells something about the direction and rate of change.

A critical limitation at present is the lack of a consistent, commonly agreed approach to monitoring changes in koala abundance at a regional scale.

Important decisions need to be made about where to prioritise koala conservation efforts. In particular, should we be investing resources in urban areas (with low chance of success) or rural areas (with greater chance of success)?

The quality of koala habitat differs among locations according to the tree species selected, and various studies have demonstrated that the findings for one location do not necessarily translate to another area. Thus, local studies are important. This then flows onto the local management strategy to be adopted.

One can also note that habitat can be present, but the population of koalas can decline because of the rise in threats other than habitat loss and fragmentation. In this respect, dogs, cars, fire, drought, disease and now climate change are all relevant.

4. *threats to koala habitat such as logging, land clearing, poor management, attacks from feral and domestic animals, disease, roads and urban development;*

There is a need to determine what impact logging in national forest land of Southern New South Wales and East Gippsland is having on koala populations in these areas. The question then arises: can logging and reforestation after logging be done in a way that would be minimize the impact of these practices on the koala in Southeast Australia.

While the threats to habitat persist, the rise of other factors, such as dogs, cars, disease and climate change needs to be taken into account. Loss of koala populations is a combination of factors.

The converse matter also needs attention, namely, in any restoration program, the species of trees to plant, in what pattern and on what soil types needs more attention. This is deserving of attention in the context of abatement of the threat of loss of habitat.

5. *the listing of the koala under* the Environment Protection and Biodiversity Conservation Act 1999*;*

Currently, there is not adequate national data to address the IUCN criteria in any consideration of the formal status of the koala. Delaying any reclassification until data meets IUCN criteria will inevitably produce a crisis driven response with limited capacity to recover the species. A strategic review of the approach to managing the koala and its habitat is required taking account of the distinctly different needs in: (a) the over-abundant, genetically depauperate race of the koala in South Australia and Victoria, (b) the expanding urban and industrial footprint in predominantly coastal eastern Australia, and (c) the rural and regional western and northern habitats affected by climate extremes, fire and drought.

The Koala Research Network recommends moving away from the IUCN criterion-based assessment of the koala's status,

6. *the adequacy of the National Koala Conservation and Management Strategy;*

A proactive approach from the Commonwealth is recommended including: implementation of the actions of the national koala strategy within the Commonwealth's sphere of influence, Commonwealth resourcing of research and community organizations pursuing the objectives of the national koala strategy, support for the establishment of a network of koala sentinel sites for

monitoring trends in population and habitat status.

Implementation of the *National Koala Conservation and Management Strategy* needs substantial resources to fund conservation actions.

This will require comprehensive promotion and resourcing to facilitate broad adoption and implementation. It will be vital to engage local councils as well as State Governments, with guidance and support from the Federal Government, in order to achieve consistent and widespread application of the national strategy.

The *National Koala Conservation and Management Strategy* currently lacks the legislative powers to enforce consistent identification and protection of key koala habitat areas. Needs to: a) Develop national standards for koala habitat identification, rating and mapping; b) Ensure federal and state legislative powers are in place to protect high quality koala habitat areas; c) Identify national koala research priorities and additional funding opportunities; and d) Provide improved federal support for State and Local Government koala conservation programs. Local or regional-scale koala conservation plans or strategies should be required in accordance with an established national standard or model across the koala's geographic range, with financial and resource support provided by the Federal Government.

The great advantage of the *National Koala Conservation and Management Strategy* is that it was carefully negotiated and formally signed off. This represents a high level of agreement, sets a framework that is so hard to obtain for any species, and gives clear direction for the way forward. A recognised limitation may well be the fate of the 1998 strategy, in that the aspirations were fine, but it was not implemented. Implementation is now part of the intent of the current strategy and that is welcome. The KRN is largely supportive of the *National Koala Conservation and Management Strategy.*

7. *appropriate future regulation for the protection of koala habitat;*

Koala conservation status varies regionally and this impacts on their direct management as well as that of the habitat. Regional strategies need to be developed within a national policy to address important regional issues. The distribution and abundance of regional populations requires assessment using standardised methods in combination with habitat selection models to consider the value of all potential habitat, and threats to these populations. Establishing effective management interventions and measures of their success, in response to identified habitat retention thresholds could focus conservation efforts.

One of the critical issues for the survival of koalas relates to their persistence in human-dominated landscapes. Although considerable research has been completed on the ecology and movements of the species in wooded landscapes, it is in the many locations where koala habitat is being

encroached on by urban development that attention is needed. The combination of roads and traffic, dogs and physical obstructions to movement appears to be exacerbating the existing issues of disease and stress.

8. *interaction of state and federal laws and regulations; and*

This needs a major independent review to overcome current inconsistencies.

9. *any other related matters.*

A research network such as the Koala Research Network should be established to help researchers and management practitioners communicate and share information about the latest developments in koala conservation. State governments could maintain research units/expertise including conservation biologists/teams with koala conservation expertise. Relates to: Outputs A, B, C. Stakeholders: Research agencies, universities, Australian, state and territory governments, local government, non-government organisations and community groups.

Priority actions:
Time scale: 5–10 years; koala research network established within one year.

i. Identify and prioritise knowledge gaps in koala research: Focal areas may include methods for conservation of habitat, improving design of programs for population monitoring or understanding the habitat requirements of koalas.

ii. Disease: The extent, impact and possible treatment of koala diseases are poorly understood at present and require further study. *The frequency of severe cases of disease in healthy koala populations is usually low, and thus does not normally threaten the survival of koala populations; however, further research is required on the potential impacts of some diseases*. Vulnerability to disease may itself be an indicator of problems such as nutritional or environmental stress.

iii. The low genetic variation found in koalas in some locations may exacerbate the risk of disease. If a new disease risk arises in such populations, low genetic variation means that a high proportion of individuals may be vulnerable to the disease.

iv. Climate change: detailed consideration of the likely effects of climate change on koalas in the implementation of the National Koala Conservation and Management Strategy. Climate change will affect the nutritional quality of Eucalyptus leaves in ways that will likely reduce the long term reproductive output of koalas. Recent advances in nutritional ecology and remote sensing permit this

broader range assessment of the impact of global climate change on future koala populations and resources should be devoted to developing this broader view.

v. The diversity of views within the research community about koala conservation and management reflects the many issues that are confronting Australia and its koala populations. That diversity needs to be drawn upon to arrive at answers to the pressing issues of conservation.