

Humble Cow: A Koala Serial Killer?

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Background to Project

Koala (*Phascolarctos cinereus*) populations are declining in Australia, with habitat loss believed to be one of the major factors leading to this decline (Seabrook et al., 2003; McAlpine et al., 2006). In Queensland, clearing of koala habitat in coastal zones is mainly associated with urban development, while in rural areas of Central Queensland it is associated with the expansion of cattle grazing from the beef and dairy industries (Preece, 2007). Consequently, research is urgently required into the potential conflicts between cattle and koalas to guide management strategies which will enable cattle and koalas to co-exist. The recent concept of ‘Koala Beef’ is intended to encourage the conservation of koalas in cattle grazing land by developing a koala-friendly beef industry (Ellis et al., 2017). Koala Beef encourages the preservation of remnant bush as koala habitat on grazing properties, with vegetation corridors to connect these habitat remnants so that resident koalas are able to survive and traverse to new areas safely, while maintaining the economic profitability of the cattle property.

Study Area

The University of Queensland is conducting a broad-ranging koala research program (the Hidden Vale Koala Project – HVKP) on a large private property, referred to as Hidden Vale and located in South East Queensland. Approximately 75% of this property is Nature Refuge, but it also includes beef cattle farming, extensive mountain bike trails and an ecotourism resort. The main focus of the HVKP is the investigation of the abundance, distribution,

disease prevalence, fecundity and mortality of the koala population in this area.

The HVKP property includes a large area of koala habitat which is also grazed by free-range cattle herds. Therefore, as part of the broader HVKP, it offers a valuable opportunity to investigate the potential koala–cattle interaction issues raised in inland Central Queensland.

Objectives of the Research

The objectives of the research funded by The Royal Society of Queensland are to:

- (1) investigate the scale and frequency of cattle-inflicted injuries/deaths to koalas via a nation-wide online survey;
- (2) test cattle reactions towards koalas by the use of a koala model mounted on a motorised vehicle; and
- (3) investigate the impact of cattle on koala movements and hence their home ranges, including variations in location and size.

The assumption is that if the presence of cattle in koala habitat has adverse effects on free-ranging koala populations:

- (a) cattle would be found to be a significant cause of injury or death of koalas;
- (b) cattle would be found to display aggressive behaviour towards the koala model; and
- (c) the home ranges of koalas would decrease in size or they would move away to avoid potential contact with the cattle.

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Implications for Koala Conservation

The findings of this study will have several important implications for koala conservation in rural areas, especially in Central Queensland where the overlap of koala home ranges and cattle grazing is extensive compared to coastal areas. Findings of the research may assist koala conservation in the following ways:

1. Guiding koala conservation and mitigation management strategies. Extra monitoring and preventative approaches may be required to manage the potential adverse impacts when a koala population's home range overlaps with cattle grazing land.
2. Alerting cattle farmers in respect to the potential threat of domestic cattle on local koala populations and advising changes to their cattle management procedures which might minimise such risks.
3. Establishing the theoretical basis of the Koala Beef project, the aim of which would be to identify koala-friendly farm management strategies and protocols.

Literature Cited

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