

## Koala Beach Fact Sheet

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In 1993 the Australian Koala Foundation (AKF) and the Ray Group agreed to work together to bridge the gap between conservation and development.

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Koala Beach, home to a small but significant koala population, was the first property to be master planned and designed with the protection of the environment as its priority.

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The project began with the AKF conducting a two year study of the koala population that could potentially be affected by the proposed development.

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Each koala was humanely fitted with radio collars and tracked on a daily basis, (this enabled researchers to determine the colony's home ranges and food trees).

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Once the Koala Management Plan for Koala Beach was complete, it was submitted to the Ray Group who was then able to design the development around the koala population living on the site. The AKF has been involved in all stages of development since that time, refining and fine tuning the environmental issues as they change.

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To ensure the protection of the resident koala colony and other important wildlife a number of initiatives were developed. These included:

- o No cats and dogs within the estate.
- o The inclusion of speed bumps near known koala home ranges.
- o A requirement that all fences within the estate be raised so that koalas and other wildlife can enjoy free access around the estate.
- o The provision that no koala home range or food tree be removed for development purposes.
- o The establishment of a Wildlife and Habitat Management Committee with funding from an environment levy on the rates.

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Out of a total area of 365 hectares, 272.395 hectares have been dedicated intact to conservation.

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The developer and the AKF planted additional food and habitat trees for koalas and other native species living on the site. This is an ongoing project.

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To ensure the conservation of the koalas and other wildlife, an ongoing monitoring and research program was established. Subsequent studies have determined that descendants of the original koala colony appear to be living happily in the area and may not have been adversely affected by the development. Future monitoring will give more information.

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In addition to the koala population, Koala Beach is home to approximately 25 species of endangered or rare flora and fauna, including planigales (a small marsupial), the Queensland blossom bat and a number of threatened microbats,

the wallum froglet, glossy black cockatoos, the bush thick-knee and arthraxon hispidus (a threatened grass).

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Despite its early skeptics, Koala Beach has been hailed a success by developers, residents and biologists. It has provided the perfect model for the coexistence of wildlife and humans, and applauded as a "made for the future development" (The Weekend Australian).

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Koala Beach Estate has become part of the curriculum in a North Coast Institute of TAFE diploma of Business and Real Estate.

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Koala Beach is in stage six of its final land release. It is located in Northern NSW, just north of Pottsville.

between patches. However, despite the fact that koalas are relatively mobile, the isolation of patches is an important predictor of koala occurrence, with koalas more likely to occur in patches close to other patches than in isolated patches. This highlights the connectivity role of the landscape matrix. In urban and semi-urban landscapes, koalas may suffer elevated mortality due to dog attacks and vehicle collisions, reducing their ability to successfully move between patches. In addition, barriers such as fences, buildings and major roads can reduce connectivity. Some studies suggest that corridors of trees may be of little use to koalas, while others show some evidence for the use of corridors of sparse trees by koalas. However, linear corridors may need to be 100s of metres wide to avoid excessive edge effects, such as an increased incidence of dog attacks.

Defining habitat connecting or linking areas may provide opportunities for the successful movement of koalas (e.g., dispersal and recruitment of sub-adults) between breeding populations or into areas of vacant preferred koala habitat. Habitat linking areas may also be used as part of established koala home ranges, depending upon factors such as the vegetation associations and/or species of scattered trees they contain and their location relative to other habitat areas. Development within habitat linking areas should aim to retain any preferred koala food trees (as defined in Appendix 1) that may be present and not compromise the safe use of such areas by koalas. Such areas should also be considered a priority for habitat restoration projects. Habitat linking areas over existing native vegetation also warrant protection and management through performance standards equivalent to those recommended for secondary (class B) and secondary (class C) koala habitat.

## 8. How to Maintain and Develop Road Networks?

### *Planning Objective*

To minimise the impacts of roads on koala populations.

### *Guideline 6.1*

Do not construct new roads or expand existing roads within and between koala habitat patches.

*Scale of application:* whole landscapes or multiple landscapes within LGA.

### *Actions*

- i) Do not construct new roads, or increase the traffic volume on existing roads, within koala habitat patches, especially if this habitat contains high proportions of primary and secondary habitat (Figure 10).
- ii) Do not construct new roads, or increase the traffic volume on existing roads, in areas that adjoin koala habitat patches, especially if these patches contains high proportions of primary and secondary habitat.
- iii) Avoid the construction of new roads, or increases in traffic volume on existing roads, between large (> 50 ha) blocks of habitat that are within 3-4 km of each other.

- iv) If required, accommodate increased traffic volumes by upgrading existing roads, or rerouting traffic on existing roads away from koala habitat, rather than by building new roads within or near to patches of koala habitat.

**Guideline 6.2**

Minimise the risk of koala-vehicle collisions on roads.

*Scale of application:* whole landscapes or multiple landscapes within LGA.

**Action**

- i) Existing roads in close proximity to koala habitat, or adjacent to blocks of koala habitat (especially blocks of habitat within 3-4 km apart) should be managed in such a way as to minimise the risk of koala-vehicle collisions. **Blackspot-analysis should be conducted to identify road segments/sections with high rates of koala mortality. Blackspots often equate to roads with high traffic volumes, high speed limits, and/or poor roadside visibility.** This will allow spatial-prioritisation of management actions to ensure infrastructure investment delivers 'maximum' benefits in reducing koala road mortality. Potential mitigation measures include low speed limits (e.g., 40-60 kph) and engineering designs to reduce traffic speed (traffic calming devices), warning signage, wildlife overpasses and underpasses, roadside lighting, clear road verges, and exclusion fencing (for some extreme risk situations).

**The Science**

The direct effect of roads on wildlife populations are wide ranging and include the destruction and modification of habitat, modification of animal behaviour, fragmentation of habitat by the formation of barriers and elevated mortality due to vehicle collisions. These effects can have substantial negative implications for wildlife populations. Increased mortality and habitat fragmentation imposed by roads is a serious concern for long-term koala survival. This is particularly the case in rapidly urbanising coastal areas of New South Wales and South East Queensland. In the Koala Coast area of South East Queensland, at least 250-300 koalas are known to be involved in vehicle collisions annually, of which ~ 80% do not survive. With an estimated population size of around 6,000 koalas in this region, this equates to a significant threat. Recent studies in Port Stephens and Noosa show that the presence of koalas is greatly reduced by high road densities, especially in areas within or adjacent to koala habitat. Attempts to reduce koala-vehicle collisions by measures such as reduced speed limits and underpasses have generally only shown limited success. Therefore, a combination of these measures together with careful design of road networks and traffic flow to minimise impacts on koalas is necessary. This should include careful consideration of placement of new roads, to avoid areas within or adjacent to koala habitat. Further, upgrading existing roads to carry greater traffic volumes or for improved safety is likely to be less detrimental to koala populations than building new roads, although the location of roads remains a crucial consideration (see Figure 10).

Not only do roads increase koala mortality rates, they also tend to form barriers to movement because either few koalas can successfully cross without suffering mortality, or because of physical barriers, such as fences or retaining walls. These effects reduce connectivity between patches and increase habitat fragmentation. On existing roads, with very high traffic volumes, and/or high traffic speeds, it may be appropriate to construct exclusion fencing in known black spot areas. This measure creates a physical barrier to movement, offset by the benefit of reducing direct mortality rates. However, this could potentially have the negative effect of isolating parts

## "Koala-Friendly" Subdivision Seems to Be a Hit

Elizabeth M. Tasker  
for National Geographic News  
December 30, 2002

On the north coast of New South Wales, Australia, koala researchers, a property developer, and local citizens have joined forces to create the first housing development planned around the needs of koalas.

Koalas and people thrive in the same places, along the fertile east coast of Australia. The native forests are rapidly being cleared and converted to urban landscapes. Because most koalas live on private land, their survival depends on community support.

### Email to a Friend

The six-year-old housing development, known as Koala Beach Estate, is proving to be an example of how human development can be more friendly to resident wildlife.

### A Famous Australian

Koalas are Australia's best known tree-dwelling marsupials, coming to the ground only to move from one tree to the next. More than 20 Eucalyptus species provide sustenance for koalas, but in any given region, the marsupials eat only a few species.

"Even with the species that they do eat, koalas choose the trees in fertile areas, those that grow on farms and on river banks," said Dan Lunney, a koala researcher from the New South Wales (NSW) National Parks and Wildlife Service.

Koala numbers decreased drastically in the 20th century. Until the late 1920s millions of koalas were killed for their fur; in August 1927 alone, the last open season for koala hunting, more than half a million were killed in Queensland. Most were exported to fur factories in the United States. The Australian government accorded them legal protection in the 1930s.

However, land-clearing and fragmentation of the remaining forests have had an even greater impact, and now pose the greatest threats

to the species' survival. Many koalas live in New South Wales and Queensland (QLD), two states with the highest current rate of forest clearing in Australia. In NSW, a majority of the koalas live along the north coast. But the beaches, sunny climate, and beautiful scenery are people magnets, and housing developments threaten to consume most prime koala habitat.

Protecting these coastal populations of koalas is critical. The Koala Beach Estate demonstrates that urban development does not have to mean the loss of koalas.

#### A Koala-friendly Development

Before development of the Koala Beach Estate near the New South Wales–Queensland border began in 1996, Steve Phillips, then a researcher with the Australian Koala Foundation (AKF), conducted detailed studies of the koala populations living in the area.

