



# Noosa Shire Koala Conservation Plan 2016



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**April 2016**

**Acknowledgements**

Council wishes to thank all interested stakeholders who have taken the time and energy to help guide the development of this plan.

**Disclaimer**

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## Executive Summary

Koalas are of great significance to the Noosa community. Noosa Shire is recognised for its outstanding environmental attributes and was declared a Biosphere Reserve under UNESCO's Man and the Biosphere Program in 2008. Vegetation networks that support koalas extend across rural and coastal landscapes on public and private land. Our koalas live in a diverse environment and visitors are often surprised to encounter koalas in close proximity to residential areas.

Concerns have been expressed about the plight of koalas which are now listed as being 'vulnerable' in Queensland. In 2015 Noosa Council adopted a Koala Conservation Policy with the aim of developing a framework for the conservation and protection of this iconic species.

One of the important outcomes of the Policy was to develop a shire-wide Koala Conservation Plan to deliver tangible on-ground actions. The Plan provides the mechanism to implement the Koala Policy with the aim of conserving our local koala populations in perpetuity. The Plan has been developed through extensive consultation with key stakeholders such as koala interest groups, research organisations, government agencies, and environmental and natural resource management groups. A public consultation process allows residents and visitors to have input into the Plan.

The Koala Conservation Plan identifies a number of specific management objectives to help support koala conservation. These objectives cover statutory and non-statutory protection measures, improved data and mapping resourcing, guidance on minimising the impacts of infrastructure projects, management of domestic and wild dogs, koala health research initiatives and community engagement programs. A specific Action Plan describes the implementation measures to be employed over the next five years.

Conserving Noosa Shire's koala population is a challenging but essential goal. The Noosa Shire Koala Conservation Plan 2016 provides a framework to help achieve this objective.





# 1. Introduction

Koalas (*Phascolarctos cinereus*) are of great interest to Noosa residents and visitors. They are listed as 'vulnerable' by the Australian and Queensland Governments and there is concern that the species may be in decline. The Koala Conservation Plan guides Council and community efforts to help conserve and protect this iconic species. In addition, helping to conserve koalas will provide mutual benefit to other native fauna and ecological communities in Noosa Shire.

Koalas, like many other native species, have suffered decline since European settlement. Koalas used to have a bounty and between 1915 and 1919, over one million koalas were killed in Queensland. Seabrook et al. (Seabrook et al, 2003, Landscape legacies: Koala habitat change in Noosa Shire) describes Noosa generally having a low density of koalas, this being a legacy of clearing native forests by early European settlers. Koala populations in Noosa Shire have suffered a decline similar to other areas of eastern Australia such as Port Stephens, Iluka, Coffs Harbour and Logan.

However, koalas have still been found to occur in various parts of Noosa Shire, from the hinterland to the coast. It is unknown exactly how many koalas there are, but records indicate koalas are known to occur mostly in southern and western parts of the Shire within the localities of Noosa, Eastern Beaches, Tewantin, Cooribah, Doonan, Cooroy, Ridgewood, Federal and Cooran. Further research will help build on our current knowledge of the distribution and abundance of koalas across Noosa Shire.



## 1.1 Purpose of the Koala Conservation Plan

In 2015, Council adopted a Noosa Shire Koala Conservation Policy. The purpose of the policy is to provide a coordinated and structured framework to help conserve and protect koala populations and habitat within the Noosa Shire.

## 1.2 Objectives of the Koala Conservation Plan

The Noosa Koala Conservation Plan identifies eight objectives for each of the key policy areas identified in the Koala Conservation Policy:

- Conserve koalas and habitat through statutory provisions
- Conserve koalas and habitat through non-statutory means
- Improved understanding of koala needs and behaviours
- Improved data collection and mapping of local koala populations
- Informed infrastructure decisions
- Effective wild dog and domestic dog control
- Implement translocation consistent with State policy
- Increased community awareness and participation



## 1.2.1 Conserve koalas and habitat through statutory provisions

Noosa's koalas are listed as 'vulnerable' at both National and State levels. Figure 1 below summarises the various legislation, policy, guidelines and plans that are aimed at conserving koalas.

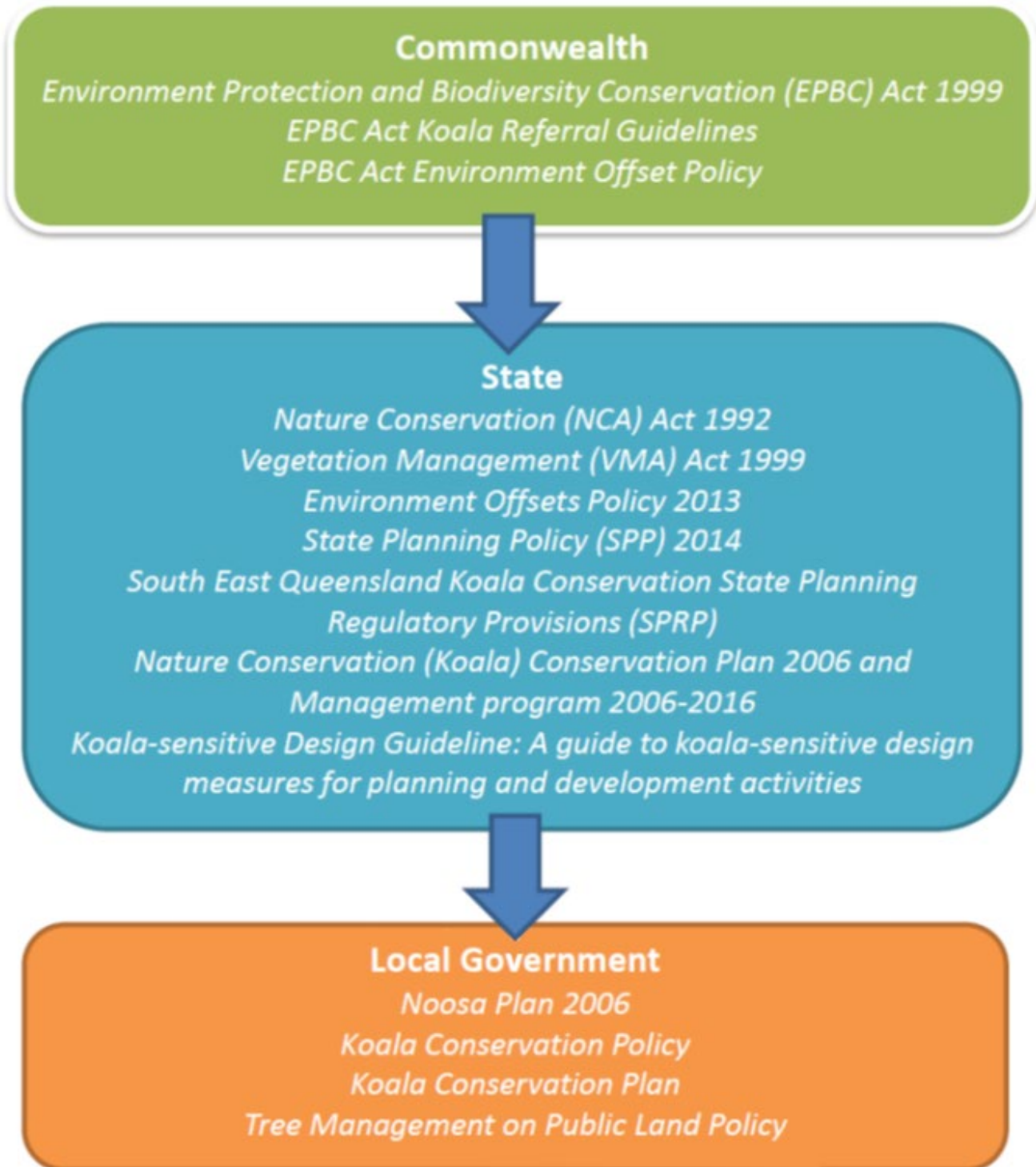


Figure 1. Government legislation, policy, guidelines and plans



## National

The koala is listed as a 'Vulnerable' species under the *Commonwealth Environment Protection & Biodiversity Conservation Act 1999 (EPBC Act)*. Development that has a significant impact on koalas requires referral to the Australian Government Minister for the Environment. Under the *EPBC Koala Referral Guidelines* impacts on 'habitat critical to the survival of the species' and impacts that 'substantially interfere with the recovery of the species' are a 'significant impact'. For example the loss of twenty (20) hectares or more of high quality connected habitat critical to the survival of koalas is likely to be a significant impact. Under the guidelines a development in an urban area is unlikely to require referral because it will become highly fragmented over time, there are substantial risks to koalas, and it is unlikely that populations and habitat will recover over time.

A development that avoids or mitigates a significant impact also does not require referral. The *EPBC Koala Referral Guidelines* provide guidance on how to mitigate significant impacts covering:

- Dog control
- Vehicle strike
- Koala infection control
- Koala friendly infrastructure
- Maintaining ground water hydrology to support habitat

Under the *EPBC Act Environment Offset Policy*, any residual impact of an assessable development will require an offset obligation.

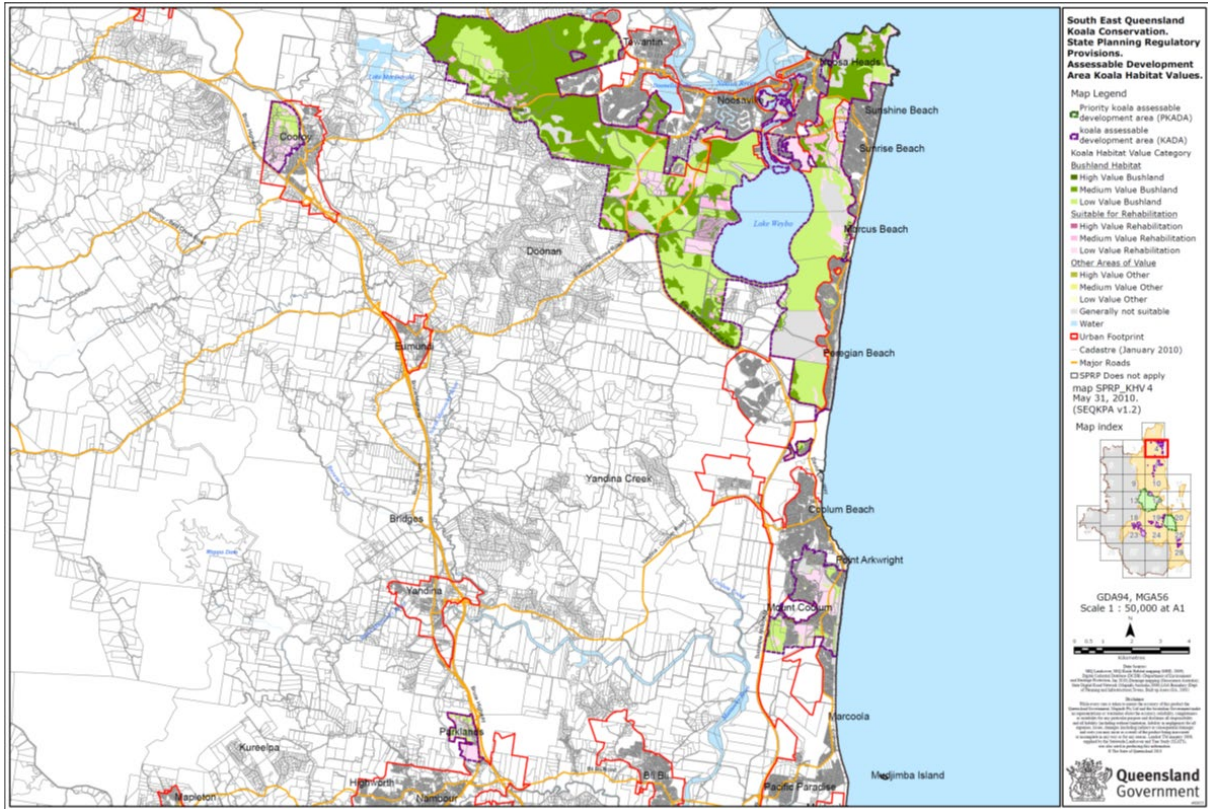
In most cases the *EPBC Act* does not stop development, but provides measures to avoid, mitigate, or offset the significant impacts of development on koalas.

## State

Most regulatory control that affects koalas occurs at a State Government level. Under the *Nature Conservation Act 1992* koalas are listed as 'Vulnerable'. Under the *Queensland Vegetation Management Act (VMA) 1999* clearing of vegetation is generally avoided if an area is mapped as Essential Habitat. These are areas of potential habitat for Endangered, Vulnerable, or Near Threatened species, including koalas. Development applications in mapped Essential Habitat are assessed by the State.

The SEQ Regional Plan 2009 states the principle of koala conservation as '*populations in the region are enhanced through the protection, management and the achievement of a net gain in bushland koala habitat and through managing conflict with urban development*'. The key planning instruments to achieve this are the *State Planning Policy (SPP) 2014* and the *South East Queensland Koala Conservation State Planning Regulatory Provisions (SPRP)*. The *SPP* is to be reflected in local planning instruments and aims to provide a net gain in koala habitat. The *SPRP* identifies assessable development areas which are areas of highest risk to koalas in SEQ. Development assessment in these areas is devolved to Council from the State (see Map 1).





Map 1. Extent of the State SPRP Koala Habitat Areas in Noosa Shire

The SPRP provide measures to avoid/mitigate the impacts of development in SPRP mapped koala habitat areas and has similar provisions to the Commonwealth referral guidelines:

- avoiding, minimising or offsetting the clearing of non-juvenile koala habitat trees
- site design that provides safe koala movement opportunities appropriate to the development type and habitat connectivity values of the site
- construction phases that do not increase the risk of death or injury to koalas
- clearing of native vegetation, undertaken as sequential clearing
- clearing of koala habitat trees, undertaken in the presence of a koala spotter.

The SPRP calls up the 'Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006-2016' and 'Koala-sensitive Design Guideline: A guide to koala-sensitive design measures for planning and development activities' to inform decision makers on development conditions.

The Queensland Environment Offsets Policy 2014 has provisions for offsetting the residual impacts of unavoidable development on koala habitat. Again, this only applies to the mapped SPRP Koala Habitat Areas. Most koala habitat in Noosa occurs outside this mapped area. Koala offset plantings have been delivered in Girraween Nature Refuge, under the former Offsets for Net Gain in Koala Habitat in South East Queensland Policy (2010), which is now integrated into the Queensland Environment Offsets Policy 2014.





The *State Government Supported Community Infrastructure Koala Conservation Policy (2014)* outlines how state public sector entities will consider koala conservation outcomes in the planning and delivery of government supported community infrastructure such as roads and buildings.

Similar to National legislation, in most cases State planning provisions do not stop development, but provide measures to avoid/mitigate/offset impacts to koalas.

## Local

### The Noosa Plan 2006

The *State Planning Policy (SPP) 2014* states that local government planning schemes are to appropriately integrate State and National interests including biodiversity matters. The SPP State interest-Biodiversity Parts 1-6 state that the planning scheme needs to consider matters of national and state significance and facilitate a net gain in koala habitat.

At a local government level vegetation protection across the Noosa Shire is currently achieved through the Noosa Plan Biodiversity Overlay Code which protects significant vegetation. Development within these mapped areas requires assessment by Council and under the Noosa Plan certain activities such as clearing for access, fencing and a dwelling house are exempt. Landholders or contractors can be prosecuted for illegal clearing within the mapped Biodiversity Overlay area and may be required to re-instate vegetation. Outside of the mapped Biodiversity Overlay, protection provisions for all trees are included in the current round of Noosa Plan planning scheme amendments.

In terms of Council infrastructure development projects such as roads, there are two Council non-statutory adopted policies that apply to koalas and their habitat:

### Noosa Koala Conservation Policy

This policy states that impacts on koalas and koala habitat from Council planned capital and operational works are to be assessed through the following process:

- i) In the first instance, investigate measures to avoid any impacts on koalas and koala habitat from planned works;
- ii) Mitigate unavoidable impacts from works;
- iii) Offset unavoidable impacts as close as possible to the impact site

### Tree Management on Public Land Policy

This policy applies to all Council public land including parks, road reserves and other council-owned land including community facilities. The policy states:

- i) Trees are valuable assets and must be managed accordingly
- ii) Council maintains a general commitment to the sustainable management of trees on public land and also the greening of open space
- iii) Unavoidable removal of trees from public land may be offset with planting to ensure there is no net loss of trees on Council controlled land

In terms of Council's infrastructure planning and design, it is the intent of this Koala Conservation Plan that developments within Koala Habitat Areas (see Map 3, page 18) are consistent with these policy provisions.



## Noosa Shire Draft Biodiversity Plan

Council is currently developing a Biodiversity Plan to inform the new Noosa Plan. The plan will identify important core and connecting habitat to consolidate Noosa Shire's vegetation network. This will also help guide Council and community efforts towards koala conservation.

### Summary of Koala legislation and policy

In summary, there are several layers of koala legislation and policy with the aim of protecting koalas. However, National, State and Local Government legislation and policy does not preclude development if a landholder has a right to develop their land or if exemptions apply. Under the *Sustainable Planning Act 2009*, removal of development rights can lead to a claim of injurious affection and compensation. Therefore, if development cannot be avoided, impacts are to be mitigated and residual impacts are offset. Based on historic evidence, koala populations in high risk areas (i.e. urban development areas), are unfortunately likely to decline over time.

In 2010 the Queensland Department of Environment and Resource Management (DERM) published the Koala Coast-Koala Population Report covering Redlands, Logan and Brisbane City, all areas of significant urban expansion. Their research revealed that there has been significant decline (68%) in the koala population since 1996.

Where legal mechanisms allow, Noosa Council will continue to apply development control, with the aim of avoiding and mitigating impacts on koalas. Improved understanding of the distribution and abundance of koalas will enable a more informed response when assessing developments.





## 1.2.2 Conserving koalas and habitat through non-statutory means

There are a number of opportunities to further protect and enhance koala populations and habitat through non-statutory measures. The focus of koala conservation activities will be:

- In areas identified as core habitat or within essential corridors between core habitat areas, as shown in Map 3, page 18.
- Prioritised in areas identified as low to medium risk (see Map 4, page 19), where there is a greater chance of maintaining a viable population of koalas in the long term.

The following programs may be used to support koala conservation measures:

### **Land for Wildlife (LFW) programs and Voluntary Conservation Agreement (VCA)**

Landholders with suitable properties can apply to become part of the SEQ Catchments Land for Wildlife (LFW) program. Currently there are 300 LFW landholders within Noosa Shire and it is Council's most popular voluntary private land conservation initiative. There is opportunity to provide incentives to LFW landholders to re-instate koala habitat on their land. Once the Noosa Plan Biodiversity Code-Vegetation Protection provisions are approved in the current round of planning scheme amendments by the State, publicly funded vegetation works can be afforded long term protection on private land.

The Voluntary Conservation Agreement (VCA) program encourages private landholders to elect to have a portion of their land protected under covenant that remains on title. Council provides a financial incentive to the landholder to fund environmental works and/or a rate contribution. Many of the VCA property owners have started from the LFW program. An agreed property management plan is developed with the landholder and this guides environmental rehabilitation on the land.

Through the LFW and VCA programs there is opportunity to expand conservation efforts on private land and reinstate koala habitat and linkages through revegetation projects.







### **Case study: Federal Voluntary Conservation Agreement (VCA) Cluster**

In the western part of Noosa Shire, at the locality of Federal, three VCA landholders have been active with efforts to conserve local koalas. The landholders have been monitoring and recording koalas in the area and recently participated in a survey with University of Sunshine Coast researchers and Maya, the koala detection dog. Most evidence occurs in Spotted Gum (*Corymbia citriodora*) country along ridgelines. This data has contributed to expanding the known range of koalas in the western part of the Shire and has been included in the Noosa Shire Koala Habitat map.



Controlling weeds in koala habitat on VCA land

Photo: Joel Morris

### **Noosa and District Landcare Group (NDLG)**

Noosa and District Landcare Group (NDLG) have been involved in habitat restoration projects on both private and public land for many years. In 2013, NDLG were successful in gaining \$30,000 in grant funding for the 'Noosa Hinterland Koala Habitat Restoration and Awareness Project' through the Everyone's Environment Grant Program. The project involved extensive consultation with private landholders and key stakeholders such as Council, Koala Care Groups, Environment Groups, Natural Resource Management Groups and research agencies. The project was promoted through the media, environmental networks and koala brochures were distributed to landholders inviting them to be part of the initiative. Seven properties were selected and two-thousand koala trees were planted. Workshops, school visits and community events were held to promote the importance of koala conservation.



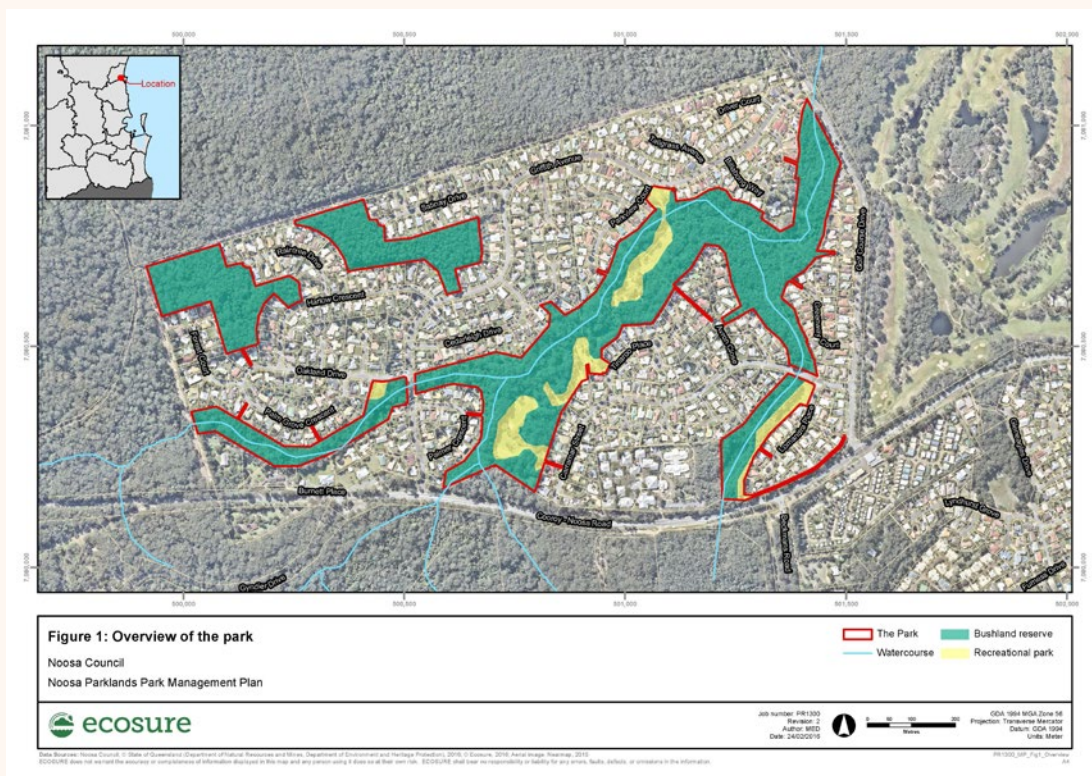
## Noosa Bushland Care Volunteer program

Noosa Shire has eighteen (18) Bushland Care Groups with approximately three hundred (300) members. Some bushland groups specifically work in areas that make a significant contribution to protecting and enhancing koala habitat.

### Case study: Heritage Park Bushland Reserve

Heritage Park Bushland Reserve is a riparian corridor of remnant vegetation in Noosa Parklands, Tewantin. It provides an important linkage with surrounding National Park and is habitat for a number of threatened species including koalas, frogs and the Richmond Birdwing Butterfly. Attractive pathways meander through the park providing visitors with recreational and nature based experiences.

The Heritage Park Bushland Care Group has been actively involved in protecting and enhancing the bushland reserve since 2003. The focus of the group has been to restore the natural habitat of the site through weed control and revegetation. Educational signage provides park visitors with information on the parks outstanding natural values.



## Environment Levy land acquisition program

Council’s Environment Levy program provides funding to purchase environmentally significant land. Since 1996, 19 properties covering approximately 1700 ha have been purchased through the levy. Most of these properties are mapped as koala habitat.

Between 2004 and 2015, Noosa Council purchased three parcels of land along the Noosa River through the levy. Some of these purchases were co-funded with the Australian





Government National Reserve System Funding (NRS) and from State funding. Securing these parcels of land helps to protect the riparian and wildlife corridor along the western side of the Noosa River and consolidates koala habitat in the adjoining Cooloola National Park. The parcels are mapped as koala habitat and koala ‘scats’ or droppings have been found on some of the sites. Neighbouring residents report hearing koalas calling during the spring mating season.



Map 2. Noosa River Environment Levy land acquisitions

Council is currently developing a Conservation Land Plan to identify environmentally significant parcels of land for potential purchase or suitability for the Voluntary Conservation Agreement (VCA) program in the future. Some of the identified parcels will be suitable for offset receiving sites and can be planted in advance of future developments.





### 1.2.3 Improve understanding of koala needs and behaviours

Koalas are solitary animals and very territorial. They often act aggressively towards other individuals. Males are more aggressive. The home range of an individual koala will depend on the habitat including available food trees. Within a socially stable group, home ranges overlap at the edges, and that is where any social interaction takes place. Koalas are very fussy eaters. They consume foliage of certain eucalypts, although some non-eucalypts may contribute to the diet. Females produce just one young per year.

It is not known how many Koalas there are in the Noosa Shire area. Locally, koalas have been sighted at Peregian Beach, Weyba, Sunshine Beach, Noosa National Park, Tewantin, Tewantin National Park, Tinbeerwah, Cooroibah, Cootharaba, Doonan, Lake Macdonald, Ringtail Creek, Yurol Forest, Pomona, Cooran, Kin Kin, Woondum National Park and elsewhere. Recently there have been verified reports of a koala on Noosa North Shore. Climate change is anticipated to alter the distribution of koalas over time and drought can also threaten survival.

The current population of koalas in the Noosa Heads National Park Headland section on the northern side of the Park are probably related to the two males and three females purposely released there in 1966. These 5 koalas were translocated from forestry sites near Beerburum.

As the *Queensland Nature (Koala) Conservation Plan 2006* notes, small fragmented populations may result in inbreeding and thus a reduction in genetic variation. This in turn can reduce the health potential and long-term viability of fragmented populations. Koalas are subject to a range of diseases. Most significant and commonplace is KoRV (koala retro-virus) and Chlamydia, which causes urinary tract infection, infertility and sometimes death.

In 2015, Council engaged the University of the Sunshine Coast (USC), Detection Dogs for Conservation, to conduct koala presence/absence surveys on Council reserve and on Land for Wildlife (LFW) properties. The survey helped to build on current knowledge of the distribution of koalas sourced from Wildnet, Moggill Koala Hospital, Council records and Koala Tracker. However, determining the presence/absence of koalas does not provide information on the long term sustainability of koala populations in different localities. Historic records indicate that infection (Chlamydia and KoRV) are the greatest cause of sickness and mortality in Noosa Shire. However, these records have been gathered in areas frequented by people, and do not necessarily reflect the health of koalas in the bush. Understanding the distribution and extent of these diseases in koala populations would allow Council and the community to focus management actions where efforts will be most effective.

There has been some suggestion that Noosa Shire koalas could be the first round of recipients for a new Chlamydia vaccine.



Maya, the USC Koala 'poo' detection dog



The University of the Sunshine Coast (USC) is currently undertaking research into the long-term sustainability of koalas through its post-graduate research program. USC has been granted \$65,000 from the Noosa Biosphere Foundation to progress this work and develop koala health maps for the Shire. The research utilises non-invasive techniques of scat analysis.

In consultation with Queensland Koala Crusaders, the Richard Branson Koala Conservancy was recently launched to help raise funds for koala research and conservation. The funding will support a research collaboration between koala experts and USC researchers. GPS tracking devices will be placed on local koalas to study home range movements and long term survival.

*Recent modelling shows that targeting chlamydial disease, among the many variables adversely affecting koala survival, would have the greatest positive impact. Professor Peter Timms, Queensland University of Technology, Koala Summit 2012.*

## 1.2.4 Improved data collection and mapping of local koala populations

### Data collection

Koala data informs koala habitat maps which are used for a number of purposes including development assessment, infrastructure planning and identifying areas for investment in koala habitat restoration projects and land acquisition programs. Records of koalas are collected by incidental means (e.g. citizen science, wildlife rescue, reports to Council) or through planned projects (e.g. koala surveys by consultants, research projects). Currently different organisations have their own systems and processes for recording koala sightings:

- Qld Department of Environment & Heritage Protection (EHP): The WildNet database informs the SPP Wildlife Habitat Map which is used for State Government development assessment purposes. Data must have a certain level of confidence attributed to the record to be accepted in the database
- Faunawatch: This association collects fauna data from volunteers and also data collected from Faunawatch consulting services
- Koala Tracker: A private 'citizen science' web-based facility
- Hospital and Wildlife Rescue organisations: Moggill Koala Hospital, Australia Zoo, Koala Rescue and Wildlife Rescue keep their own records of 'in-patients'
- Noosa Council: Records are kept from public consultation processes, consultant reports on development applications and engagement of koala survey services such as the USC Koala Detection Dogs for Conservation



There are also some local residents who are 'champions' in monitoring local koalas and who record their sightings and photos on Facebook.

Koala Tracker is a 'citizen science' web based facility and is a very useful database. Verifiable data from this resource has been used to inform the Noosa koala habitat maps. Members of the public can record their koala sightings online.

Each organisation will continue to keep their own records. Any koala records received by Council can be entered onto the WildNet database for use in the State Essential Habitat Mapping.

### **Koala Habitat Mapping**

To help guide Council and community koala conservation actions it is important to accurately identify koala habitat areas. There are currently several mapping resources available to Council. Statutory maps are used for development assessment purposes. Local mapping can provide more detail to State mapping and can be used as supporting material to inform development assessment decisions.

Statutory koala habitat maps include the Queensland State Planning Policy (SPP) Wildlife Habitat Mapping, State Planning Regulatory Planning Provisions (SPRP) mapping (see map 1, page 8) and Essential Habitat mapping for threatened species (including koalas)

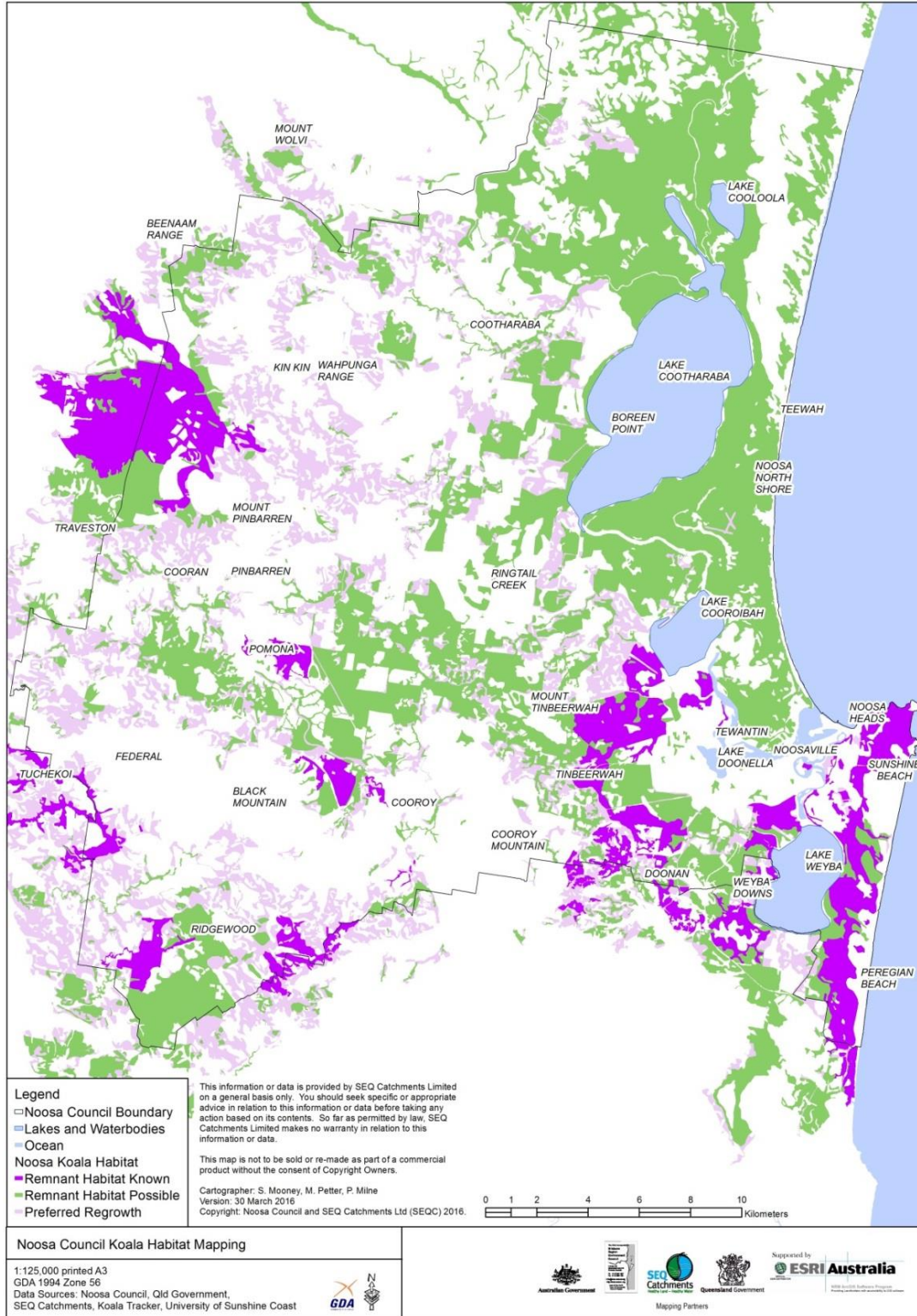
Non-statutory koala habitat maps include the Australian Koala Foundation (AKF) Noosa Koala Habitat Atlas and the South-east Queensland Catchments (SEQC) Noosa Koala Habitat and Threat Mapping Project. These are discussed below.

In October 2000 the Australian Koala Foundation (AKF) provided Council with the Noosa Koala Habitat Atlas. Suitable feed and shelter trees were identified that had koala 'scats' underneath. Vegetation types were attributed to the location data and shire-wide maps developed. The maps identify primary, secondary and tertiary habitats based on the likely density of koalas utilising that particular habitat type.

In 2015, Noosa Council engaged SEQ Catchments to develop local koala maps for Noosa Shire. Similar to the AKF Koala Habitat Atlas, the SEQC Noosa Koala Habitat Mapping Project has taken an evidence based approach to identifying habitat. This means that land can only be mapped as koala habitat if there has been evidence of koalas using that particular vegetation in Noosa Shire. Map 3 on page 18 shows the SEQC koala habitat mapping. The SEQC koala habitat mapping is a verifiable mapping resource because it is based on local evidence and also includes regrowth, which koalas often utilise. Fifty per cent of koala records have been found to be outside remnant vegetation in regrowth and other areas.

Koalas are recorded in National Park, State Forest, Council controlled land such as Bushland Reserve and on private land. There are some important vegetation linkages that cross jurisdictional boundaries and Noosa Council will work with Sunshine Coast Council and Gympie Shire Council to help protect this habitat.



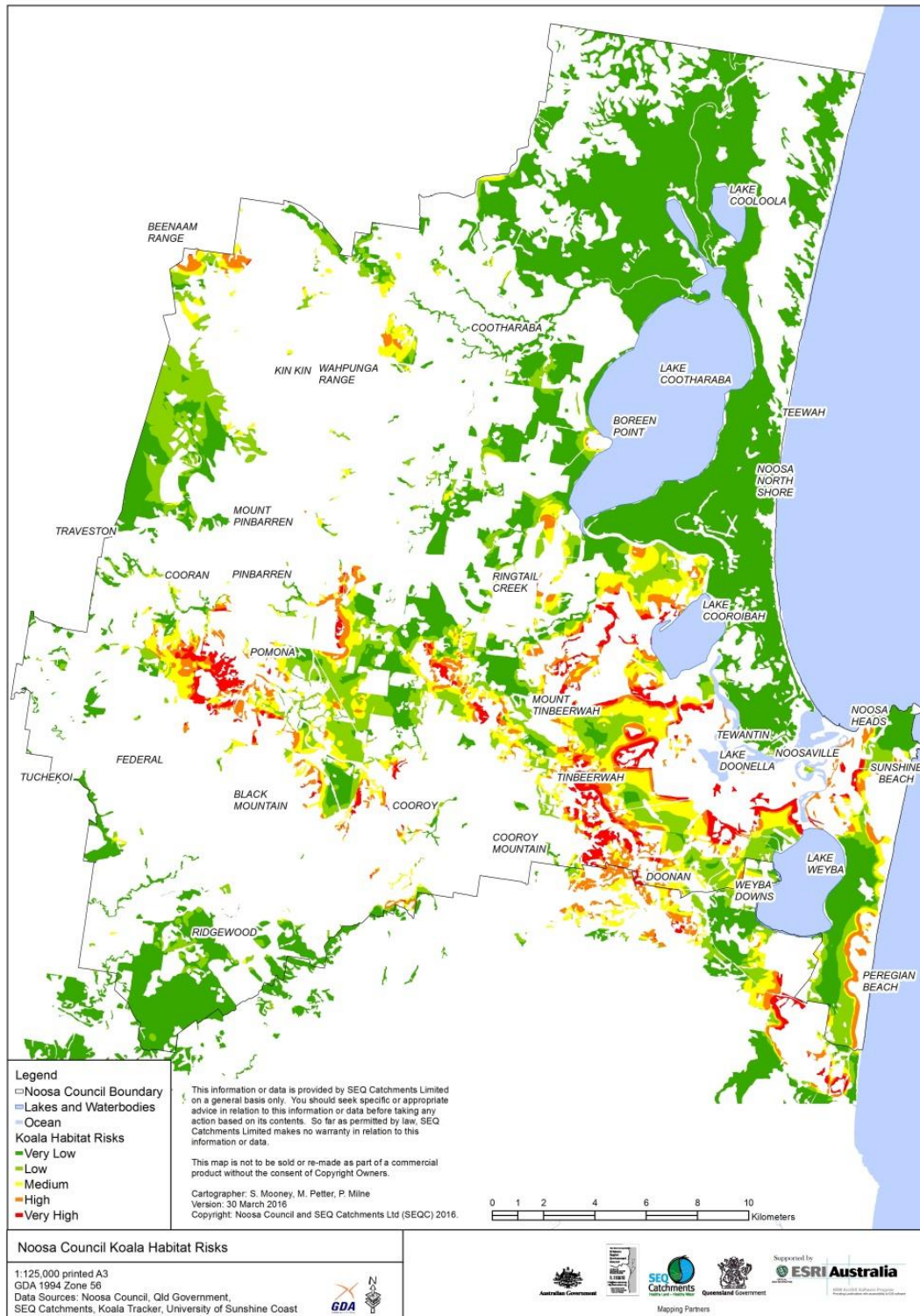


Map 3. Noosa Shire Koala Habitat Map.

Koala Threat Mapping (Map 4, page 19) is based upon identifying areas of development pressure which aggravates car strike, dog attack or the increased incidence of bushfire. There is no strong scientific evidence to suggest that development aggravates disease within koala populations as some populations in relatively undisturbed areas also have Chlamydia (pers. comm. with Dr Jon Hanger).



Based on the Koala Threat Mapping, the Koala Conservation Plan places a priority on protecting populations in low to medium risk areas where koalas have the best chance of survival in the long term (see Map 4 below). The localities of Lake Weyba, Noosa Hill/Noosa Heads, Mt Tinbeerwah, Ridgewood, Woondum, Ringtail Creek and Federal West are identified as priority areas for koala conservation actions. Council is also developing a Biodiversity Plan which will identify important linkages between core habitat areas.



Map 4. Koala Threat Map





## 1.2.5 Informed infrastructure decisions

National and State legislation, The Noosa Plan, and Council policy, guide Council infrastructure decisions.

Best practice design and construction is to be applied to existing or planned infrastructure that impacts on koalas in mapped Koala Habitat Areas. Measures to mitigate may include hard infrastructure (exclusion and guiding fences, bridges, underpasses and culverts, koala ladders) or soft measures (speed limit reductions, signs, road markings, improved street lighting).

### Hard infrastructure

In 2008, the Australian Government conducted a study titled 'Review of mitigation measures used to deal with the issues of habitat fragmentation'. The researchers concluded that there was strong evidence that mitigation structures such as wildlife crossings were effective for individual fauna (koalas utilising bridge underpasses and culverts), but the long term impact of the habitat fragmentation (e.g. construction of linear road through habitat) on fauna populations is unclear.

In discussion with wildlife rescue organisations and based on koala threat mapping the following Noosa Shire roads are identified as being highest risk:

- Eenie Creek Road, Noosa Heads
- Eumundi Road (Noosaville to Doonan)
- Noosa-Cooroy Road (Tewantin to Tinbeerwah)
- McKinnon Drive (Tewantin to Noosa Banks)
- Bruce Highway (Black Mountain)
- Yurol Forest Drive, Pomona
- Noosa Drive, Weyba Creek
- Jampot Creek Road, Pomona
- Beckmans Road, Tewantin







Those roads that traverse known koala habitat areas (Map 3, page 18) are to be prioritised for auditing of koala infrastructure. The process of identifying koala infrastructure needs for these roads is as follows:

- Undertake an audit of existing wildlife structures in Known Koala Habitat Areas, including their location and condition
- Identify areas where there are 'gaps' in koala infrastructure
- Develop a feasibility report including cost to deliver and maintain koala infrastructure at priority sites during infrastructure upgrades

New koala infrastructure will be considered for major road projects located in proximity to known koala habitat areas. Consultation with the Department of Transport and Main Roads will be required on koala infrastructure needs identified on State Roads.

The Queensland Department of Transport and Main Roads (TMR) provide Fauna Sensitive Road Design technical manuals for road infrastructure. TMR is also financially supporting koala research and koala detection dogs.

### **Soft infrastructure**

Car strike is one of the leading causes of death and injury for koalas in Noosa Shire in developed areas (see Chart 1 next page). Between 1995-1999, the Queensland National Parks and Wildlife Service, the Queensland Department of Main Roads and Redland City Council undertook a trial of speed limit reductions from 80km/hr to 60km/hr between 7pm and 5am, in August and December when koalas are most active. 1407 koalas were hit by cars during the trial period and most died. Results indicated that there was no significant reduction in speed by motorists, and no evidence that low speed zones cause a reduction in koalas being hit by cars. QPWS suggested that speed limits would have to be reduced below 60 km to have any affect. To implement a Noosa shire wide road speed reduction from 80-100km/hr to say 40km/hr, similar to school zones, would require significant community support and substantial police regulation. Efforts would be better directed to improved koala infrastructure to facilitate safe road crossings or exclusion fencing at key sites.

Similarly the effectiveness of koala signs or markings along roads needs to be reviewed as motorists often do not notice signs/markings and improved lighting will only assist in 'go slow zones'. Innovative signs and speed bumps may be an option in key koala crossing areas.

## **1.2.6 Effective wild and domestic dog control**

Domestic and wild dogs can significantly impact on koala populations. Records indicate that the greatest cause of injury and mortality to koalas in Noosa Shire is from disease and car strike (see Chart 1). However, the majority of records come from areas that are actively used by humans (roads and residential areas). Within the Noosa records there are a small number of records of mortality from dog attack, but these are likely to be domestic dog.

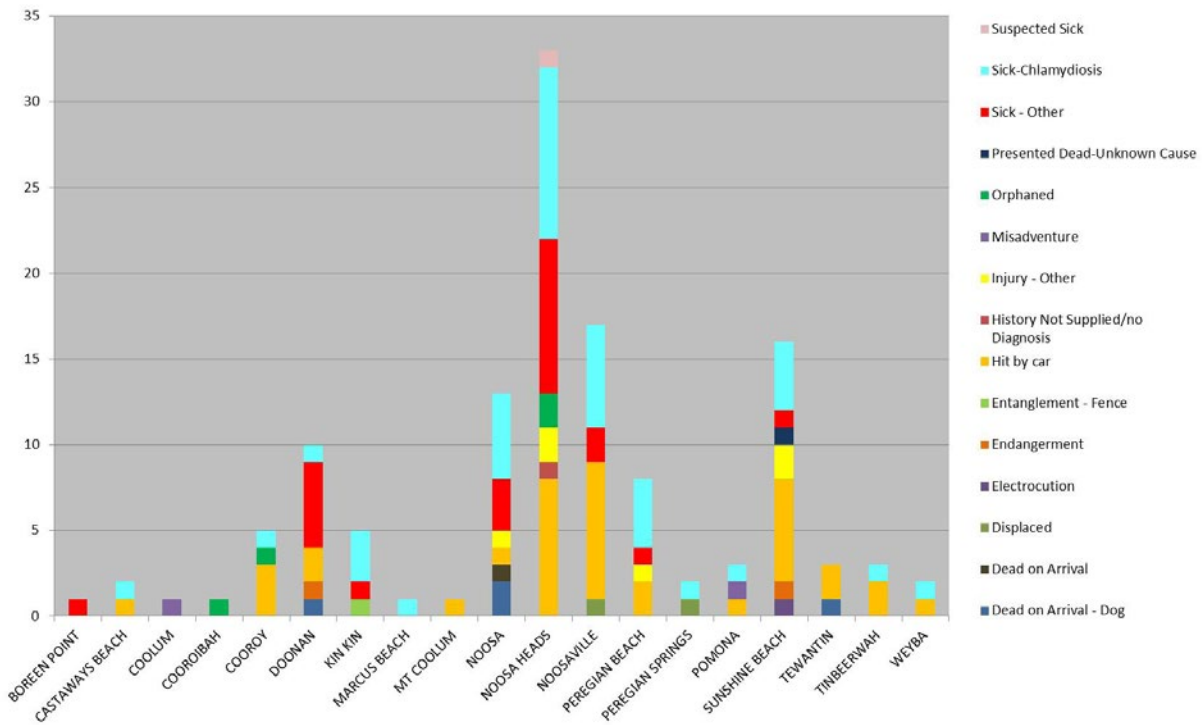


Chart 1. Data on Koala in-patients at Australia Zoo

### Domestic dogs

Domestic dogs are regulated under Noosa’s Animal Management Local Law No. 2. In public spaces dogs must remain under control by the owner at all times and on private land, must be confined to property boundaries. Local Law No. 2 also regulates the restraint of dogs in Koala Habitat Areas. On occasion koalas wander onto private property, or dog owners fail to keep control of their dogs in public spaces, and koalas are attacked.

Other Councils have declared through local laws, dog and cat free estates as a measure to protect wildlife. Given the low proportion of attacks on koalas by domestic dogs in Noosa Shire it is recommended that resources be directed to other areas such as wild dog control, disease research and fauna sensitive road design. However, public education on dog control is still important. Noosa Council has a ‘Responsible Dog Ownership’ program and education on dog control and minimising attacks on native animals is to be part of this program.

### Wild dogs

In one study of the Moreton Bay Rail Project at Amcor, one rogue dog was responsible for 8 cases of koala mortality in one month alone. However this was an unusual case and there is no evidence to suggest that this is happening in Noosa Shire. Given the potential of wild dogs to significantly impact on koala populations, it is recommended that Council’s current wild dog control strategy continues and efforts be directed in and around the mapped priority Koala Habitat Areas.



**A common sense approach to the conservation of any declining or threatened species must seek to identify all the significant threats and quantify the relative impact of each. This enables management actions to be targeted as appropriate. Failure to properly identify and quantify threats to population viability is likely to result in misdirected management actions that result in inefficiencies and wasted resources.**

*Dr Jon Hanger, Endeavour Veterinary Ecology, Koala Summit 2012*

### 1.2.7 Implement translocation consistent with State policy

The *Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006-2016* sets strict policy in respect to koala translocation. State approvals are required and proponents need to demonstrate that the re-introduction/re-stocking of koalas in an area will actually benefit local koala populations. Any release requires a long-term monitoring program to assess the success of the translocation. The risk of koala translocation is as follows:

- Potential disease transmission to local populations
- Impacts on the social structure and range of existing koalas
- Potentially outcompeting local koalas for food
- Alteration of local gene pool
- Introducing koalas that are not accustomed to local tree species
- Releasing koalas in area where koalas have not been able to survive previously

The advantages of translocation include:

- Koalas can be relocated from high risk, to low risk areas
- Koalas are an iconic species and are of great interest to tourists
- Introduced koalas may help diversify the gene pool
- Koalas may have been hunted into local extinction previously. Re-introducing koalas may be a viable option.

Council may be supportive of koala translocation but only if proponents have State permits and comply with the *State Nature Conservation (Koala) Conservation Plan 2006 and Management Program 2006-2016*. The koalas would need to be from the local vicinity (i.e. less than 20 kms from release site), healthy, and at risk from unavoidable development. Proposals for translocation to Council land will be considered in consultation with State Government on an as needs basis. Some koala experts maintain that current translocation policy is ineffective and needs review. Council will observe any new policy changes as they arise.



## 1.2.8 Increased community awareness and participation

Residents and visitors have a great interest in our local koalas. Involving residents, visitors and community groups in koala conservation has a number of benefits:

- Encouraging landholders to plant koala food trees;
- Participating in the collection of data for research purposes;
- Raising awareness of threats from dogs, cars, fencing and pool drowning;
- Improved reporting measures for sick/injured/orphaned koalas;
- Capacity building with key stakeholders for koala habitat restoration projects.

Council will continue to support koala conservation through attendance at public events and provision of education materials. Council also supports wildlife rescue through the community grants program.

There are a number of active organisations involved with the conservation of koalas. Advocacy groups include the Australian Koala Foundation, Queensland Koala Crusaders, Koala Tracker, and Koala Diaries. In addition there are several wildlife care groups involved with saving koalas such as Australia Zoo, Sunshine Coast Koala Rescue, Wilvos, Wildlife Rescue and Wildcare Australia. Research organisations include the University of Sunshine Coast Detection Dogs for Conservation and University of Queensland Koala Research Network. Environment groups, natural resource management groups and government agencies are also key stakeholders in koala conservation.

The identified stakeholder groups in Appendix 3 have been consulted on the Koala Conservation Plan. Council will continue to work with these organisations during implementation phases of the Plan.

### Case study: Cooroy Lower Mill Site Project

In 2005, Noosa Council and the Noosa and District Landcare Group (NDLG) joined forces to rehabilitate Cooroy Creek. The first stage was to remove environmental weeds, particularly Camphor laurel (*Cinnamomum camphora*) which was dominating the creek and shading out native vegetation. Following this, native plant species including koala food trees, were planted to bring the creek back to a natural condition. The success of this project led to further funding and restoration of Cooroy Creek. Funding contributors included Council, NDLG, Burnett Mary Regional Group, Mary River Catchment Coordinating Committee and SEQ Water. The Cooroy Lower Mill Site Project has reaped multiple benefits including improved water quality, greater public amenity, and even recent recorded sightings of koalas.







## 2. Koala Conservation Action Plan (To be reviewed on an annual basis)

Reference	Action	Success Indicator	Responsibility	Time frame	Resources	Status
<b>Objective 1. Conserve koala populations and habitat through statutory provisions</b>						
1.1	Amend the Noosa Plan to include Shire-wide individual tree protection provisions outside the mapped Biodiversity Overlay	Provisions are included which avoid/mitigate/offset impacts on koala trees outside the mapped Biodiversity Overlay	Strategic planning	May 2016	Officer time	Individual tree protection provisions have been included in the 2016 planning scheme amendments
1.2	Identify Koala Habitat Areas based on local data and approach State for inclusion in SPP mapping	Data is submitted for State review	Environment Services and Strategic Planning	August 2016	Officer time	Koala Habitat Mapping completed April 2016.  Update mapping every 5 years
1.3	Investigate harsher penalties for illegal tree clearing	Harsher penalties are applied and the incidence of illegal tree clearing is reduced	Environment Services	October 2016	Officer time	Not started
1.4	Deliver environment offsets as required	Offsets are delivered on demand and koalas utilise habitat	Environment Levy Working Group	Subject to developments that trigger offset provisions	Officer time and offset funds	Settlers Cove Koala Offsets delivered at Girraween Nature Refuge in 2015. TMR Cooroy to Curra offsets pending



Reference	Action	Success Indicator	Responsibility	Time frame	Resources	Status
<b>Objective 2. Conserve koala populations and habitat through non-statutory means</b>						
2.1	Secure koala habitat through land acquisition and rehabilitation	Purchase of key properties mapped as koala habitat and koalas are recorded onsite.	Environment Levy Working Group	Ongoing	Officer time Environment Levy generates \$1.8m per annum	100 ha purchased in 2015 on Noosa River and is mapped as 'possible' koala habitat
2.2	Fund koala tree planting projects targeting private landholders located next to, or within, Koala Habitat Areas and in areas mapped as low to medium threat.	Koala tree plantings are delivered on key properties and koalas occupy habitat	Environment Services	2017-2022	Officer time Target budget of \$20,000 per annum each year for 5 years through operational or grant funding	Subject to 17/18 new initiative budget approval and/or grant funding
2.3	Continue to support environment and natural resource management groups with applications for grant funding to restore koala habitat on public land	One major koala grant to be delivered every 3 years and koalas are recorded onsite	Environment Services	Ongoing	Officer time State or National grants	Ongoing
2.4	Focus Bushland Care weed control and tree planting projects towards koala habitat areas	One major koala tree planting (e.g. National Tree Day) project is completed each year in key Koala Habitat Areas	Parks and Natural Areas	2016-2021	Officer time	Ongoing



Reference	Action	Success Indicator	Responsibility	Time frame	Resources	Status
<b>Objective 3. Improve understanding of koala needs and behaviour</b>						
3.1	Develop research partnerships with other Councils, State Government Koala interest groups and research organisations to determine the health and sustainability of koala populations	Partnership is formalised and health status of Noosa's koala populations is assessed	Environment Services	2016-2021	Officer time Australian Government ARC funding Noosa Biosphere® funding Richard Branson Conservancy and Queensland Koala Crusaders Grant funding	Council provides in-kind support to USC post-graduate koala health research program  USC has been granted \$65,000 by the Noosa Biosphere (R) Reserve Foundation for the Koala Health Mapping Project  USC is applying for an ARC Research Project to fund a comprehensive study across SEQ and Wide Bay Regions
<b>Objective 4. Map and monitor local koala populations</b>						
4.1	Develop local koala habitat and threat mapping	Koala habitat maps completed and used to inform development assessment and Council operational works programs to minimise impact on koalas	Environment Services	March 2016	\$8500 for USC koala survey and \$8600 for SEQC koala habitat/threat mapping  Update maps after 5 years \$1000	Maps finalised April 2016  Update maps every 5 years
4.2	Investigate latest methods for efficient and effective ground truthing of koala presence/absence and health	Discussions are held with USC and other research agencies and efficiencies improved	Environment Services USC UQ Koala Research Network Richard Branson Conservancy	2016	Officer time	Ongoing



Reference	Action	Success Indicator	Responsibility	Time frame	Resources	Status
4.3	Maintain database with koala records	Data is entered quarterly on Wildnet and used to inform State Essential Habitat Mapping	Environment Services	Ongoing	Officer time	Not started
4.4	Explore opportunities to improve the rigour of citizen science data records	Consultation completed and all data verifiable for State mapping purposes	Environment Services	September 2016	Officer time	Not started
4.5	Implement Noosa Bushland Reserve Fire Management Plan (FMP) with a focus on 'high' to 'very high' fire hazard areas	FMP is implemented and potential fire hazard to koalas reduced	Environment Services and Parks and natural Areas	Ongoing	Officer time FMP budget	Started 2015
<b>Objective 5. Informed infrastructure decisions</b>						
5.1	Include new Koala Mapping in Council's internal GIS mapping system for capital and operational works environmental assessment	New layer is included and used to inform Council capital and operational works Infrastructure works including tree koala tree assessment are reviewed by the Environment services team and are consistent with Koala Policy and State/Federal legislation	GIS Environment Services and Natural Areas	August 2016 Ongoing	Officer time Officer time	New Koala mapping finalised March 2016 Commenced
5.2	Upload koala sensitive design guidelines on Intranet	Intranet webpage is developed and utilised by Council capital and operational works.	Environment Services IT	August 2016	Officer time	TMR technical guidelines for roads are available online





Reference	Action	Success Indicator	Responsibility	Time frame	Resources	Status
5.3	Conduct audit of current koala infrastructure including land bridges, culverts, pipes, culverts, road signs, climbing ladders, directional and exclusion fencing.	Audit and feasibility report on development and maintenance of koala friendly infrastructure is completed	Environment Services	February 2017	Officer time Tablet for mobile data collection \$4000 Current GIS bridge asset layer	Not started Apply through IT budget
5.4	Deliver koala hard infrastructure during road renewals near mapped koala habitat areas	Koala infrastructure is delivered and the incidence of koala car strike is reduced or negated	Civil operations	2017-2022	Officer time Include in capital works/operational works budget	Ongoing
5.5	Consult with Qld Department of Transport and Main Roads and USC on koala infrastructure requirements for State Roads	Meet with State Government officers to gauge effectiveness of koala infrastructure	Environment Services	August 2016	Officer time	Not started
5.6	Monitor the effectiveness of new technology trials such as road reflectors to discourage koalas and other wildlife from crossing roads, koala alert signs at crossing points and improved lighting	Monitoring is undertaken and assessed for suitability to reduce car strike	Environment Services	Ongoing	Officer time	Started



Reference	Action	Success Indicator	Responsibility	Time frame	Resources	Status
<b>Objective 6. Conduct targeted pest control</b>						
6.1	Partner with Council Regulatory Services to promote responsible dog ownership	Campaign is run Spring each year and the incidence of attacks on koalas is reduced or negated	Environment Services and Regulatory Services	One campaign per year	Officer time Fact sheets	Started in 2015
6.2	Targeted wild dog control in key Koala Habitat Areas as identified in Koala Threat Map	Targeted wild dog control is undertaken twice per year. Local koala maintain population numbers	Environment services Pest Management	Twice per year	Officer time Current Wild Dog program budget	Ongoing
6.3	Investigate partner research opportunities to assess the impact of wild dogs on koala populations in Known Koala Habitat areas	Research project is undertaken and impact of wild dogs assessed	Environment Services Research organisation such as Universities	2017/2022	Officer time Research grant	Not started
<b>Objective 7. Review translocation as a measure to increase local koala populations</b>						
7.1	Consult with State Government and experts on koala translocation	Consultations occur and recommendations made to Council on koala translocation policy	Environment Services	August 2016	Officer time	Not started



Reference	Action	Success Indicator	Responsibility	Time frame	Resources	Status
<b>Objective 8. Increase community awareness and participation</b>						
8.1	Support koala conservation through, public events, educational materials, LFW, VCA program and tourism promotions.	Delivery of promotional program in September. Residents and tourists report koala findings to Council, USC or interest groups such Koala Tracker or interest groups  Koala trees are planted on National Tree Day and koalas are found to utilise the site	Environment Service Parks and Natural Areas	Annual events  National Tree Day is held in July each year with schools and Bushcare Groups  September is national 'Koala Month'	Officer time July 2016  Local sponsorship and Council operational funding  Media release on 'Living with Wildlife' each September	Ongoing Update existing fact sheet  Ongoing  Ongoing
8.2	Review fauna rescue network signage and contact details	Review and provide brief report with recommendations to improve response time to sick, injured or orphaned fauna	Environment Services	February 2017	Officer time	Not started
8.3	Engage with other Councils, environment groups, NRM groups, Bushland Care Groups on koala corridor projects	Meet with groups and investigate opportunities to expand koala corridors.	Environment Services	Ongoing	Officer time	Started in 2015

**Note: Funding for years 2-5 will be subject to results of infrastructure audits, budget deliberations and success of grant funding applications**





### 3. Appendix

#### Key stakeholder list

Organisation	Website	Contact
<b>Advocacy</b>		
Australian Koala Foundation (AKF)	<a href="http://www.savethekoala.com">www.savethekoala.com</a>	3229 7233 Email: online
Koala Diaries	<a href="http://www.koaladiaries.com.au/">http://www.koaladiaries.com.au/</a>	Website Email: online
Koala Tracker	<a href="http://www.koalatracker.com.au/">http://www.koalatracker.com.au/</a>	0412 635 274 Email: <a href="mailto:alex@koalatracker.com.au">alex@koalatracker.com.au</a>
Queensland Koala Crusaders Inc.	<a href="http://www.koalacrusaders.org.au/">http://www.koalacrusaders.org.au/</a>	Website Email: online
<b>Wildlife Care</b>		
Australia Zoo Wildlife Hospital	<a href="http://wildlifewarriors.org.au/wildlife_hospital/">http://wildlifewarriors.org.au/wildlife_hospital/</a>	5436 2097 Email: <a href="mailto:hospital@wildlifewarriors.org.au">hospital@wildlifewarriors.org.au</a>
Endeavour Veterinary Ecology	<a href="http://www.endeavourvet.com.au/about-us.html">http://www.endeavourvet.com.au/about-us.html</a>	Website Email: Online
Moggill Koala Hospital	<a href="https://www.ehp.qld.gov.au/wildlife/koalas/care/moggill-koala-hospital.html">https://www.ehp.qld.gov.au/wildlife/koalas/care/moggill-koala-hospital.html</a>	3330 4666 Email: online
RSPCA (and Eumundi Wildlife Care and Rehab Centre)	<a href="http://www.rspcaqld.org.au/">http://www.rspcaqld.org.au/</a>	General enquiries: 3426 9999  Wildlife emergencies: 1300 264 625  Email: <a href="mailto:admin@rspcaqld.org.au">admin@rspcaqld.org.au</a>  Eumundi Wildlife Rehabilitation Centre 5442 8057
Sunshine Coast Koala Rescue	<a href="https://www.facebook.com/sunshinecoastkoalawildliferescue/">https://www.facebook.com/sunshinecoastkoalawildliferescue/</a>	0423 618 740 0431 300 729 Email: Facebook



Wildlife Volunteers Association Inc. (Wilvos)	<a href="http://wilvos.org.au/">http://wilvos.org.au/</a>	5441 6200 Email: Online
Wildcare Australia	<a href="http://wildcare.org.au/">http://wildcare.org.au/</a>	5527 2444 Email: <a href="mailto:enquiries@wildcare.org.au">enquiries@wildcare.org.au</a>
Wildlife Rescue Sunshine Coast Inc.	<a href="http://www.wrsc.org.au/">http://www.wrsc.org.au/</a>	0432 310 556 0415 839 554 Email: <a href="mailto:enquiries@wrsc.org.au">enquiries@wrsc.org.au</a>
<b>Research</b>		
USC Detection Dogs for Conservation	<a href="http://www.usc.edu.au/connect/research-and-innovation/animal-and-marine-ecology">http://www.usc.edu.au/connect/research-and-innovation/animal-and-marine-ecology</a>	5456 5415 Email: <a href="mailto:information@usc.edu.au">information@usc.edu.au</a>
UQ Koala Research Network	<a href="https://www.gpem.uq.edu.au/contact-us">https://www.gpem.uq.edu.au/contact-us</a>	3365 6455 Email: <a href="mailto:gpem@uq.edu.au">gpem@uq.edu.au</a>
<b>Environment and Landcare Groups</b>		
Mary River Catchment Coordination Committee (MRCCC)	<a href="http://mrccc.org.au/">http://mrccc.org.au/</a>	5482 4766 Email: <a href="mailto:admin@mrccc.org.au">admin@mrccc.org.au</a>
Noosa & District Landcare Group	<a href="http://www.noosalandcare.org/">http://www.noosalandcare.org/</a>	5485 2468 Email: <a href="mailto:info@noosalandcare.org">info@noosalandcare.org</a>
Noosa River Integrated Catchment Association (NICA)	<a href="http://www.noosariver.com.au/">http://www.noosariver.com.au/</a>	5449 9650 Email: online
Noosa Parks Association (NPA)	<a href="http://www.noosaparks.org.au/">http://www.noosaparks.org.au/</a>	Email: <a href="mailto:office@noosaparks.org.au">office@noosaparks.org.au</a>
Sunshine Coast Environment Council	<a href="http://www.scec.org.au/">http://www.scec.org.au/</a>	5441 5747 Email: online
<b>Regional Natural Resource Management Groups</b>		
Burnett Mary Regional Group (BMRG)	<a href="http://www.bmrg.org.au/">http://www.bmrg.org.au/</a>	4181 2999 Email: <a href="mailto:admin@bmrg.org.au">admin@bmrg.org.au</a>
SEQ Catchments	<a href="http://www.seqcatchments.com.au/">http://www.seqcatchments.com.au/</a>	5450 2677 Email: <a href="mailto:schapman@seqcatchments.com.au">schapman@seqcatchments.com.au</a>



Common-wealth Department of Environment	<a href="http://www.environment.gov.au/biodiversity/threatened/species/koala">http://www.environment.gov.au/ biodiversity/threatened/species/ koala</a>	General enquiries: 1800 803 772 Email: online
Noosa Council	<a href="http://www.noosa.qld.gov.au">www.noosa.qld.gov.au</a>	5329 6500 Email: <a href="mailto:mail@noosa.qld.gov.au">mail@noosa.qld.gov.au</a>
Qld Department of Environment & Heritage Protection	<a href="https://www.ehp.qld.gov.au/wildlife/koalas/index.html">https://www.ehp.qld.gov.au/ wildlife/koalas/index.html</a>	13 74 68 <a href="mailto:info@ehp.qld.gov.au">info@ehp.qld.gov.au</a>
Qld National Parks and Wildlife Service	<a href="http://www.npsr.qld.gov.au/">http://www.npsr.qld.gov.au/</a>	13 74 68 Email: <a href="mailto:info@npsr.qld.gov.au">info@npsr.qld.gov.au</a>
Queensland Transport and Main Roads	<a href="http://www.tmr.qld.gov.au/">http://www.tmr.qld.gov.au/</a>	13 74 68
<b>Other</b>		
Noosa Biosphere®	<a href="http://blog.noosabiosphere.org.au/">http://blog.noosabiosphere.org.au/</a>	5474 0932 Email: online
Tourism Noosa	<a href="http://www.visitnoosa.com.au/">http://www.visitnoosa.com.au/</a>	13000NOOSA





## NOTES

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