

# Coffs Harbour Kangaroo Management Plan

## Executive Summary

The key objective of the kangaroo management plan is to establish a strategic approach to maintaining wild populations of eastern grey kangaroos on the Coffs Harbour Northern Beaches while managing their social, economic and ecological impacts and ensuring their welfare.

*“I like the kangaroos visiting our garden”*

The Coffs Harbour region has naturally abundant eastern grey kangaroo populations with highly suitable environmental conditions, expanding urban development and increasing interactions. In recent times a number of these interactions have been negative and have triggered heightened community concern and a call to authorities to respond.

### BACKGROUND

Coffs Harbour Local Government Area (LGA) is a hotspot for the biodiversity of northern NSW, including the Eastern Grey Kangaroo.

Lands supporting relatively high kangaroo populations interface residential, caravan parks, holiday parks and golf courses at a number of locations along the Coffs Harbour Northern Beaches. In these areas residents and visitors experience encounters with free-ranging kangaroos, often positive but sometimes negative in the form of direct threats and aggression. Kangaroos are also the victims of domestic dog and human attacks, and collisions with motor vehicles are not uncommon.

The Kangaroo Management Plan was developed to address issues relating to populations of kangaroos living within, and in close proximity to, human population centres on the Coffs Harbour Northern Beaches.



This executive summary provides an overview of ‘The Kangaroo Management Plan for the Coffs Harbour Northern Beaches’ which should be referred to for an in-depth understanding of the issues and recommendations.



June 2017



## The objectives of the Kangaroo Management Plan

1 To contribute to ensuring the maintenance of a sustainable and healthy eastern grey kangaroo population in the Northern Beaches of Coffs Harbour.

2 To create a better understanding of kangaroo population demographics in the Coffs Harbour kangaroo population.

3 To review and identify best practice strategies and tools used in other localities to sustainably manage kangaroo populations in urban and peri-urban settings.

4 To reduce the incidence of negative interactions between people and kangaroos.

5 To raise community awareness regarding kangaroo management issues.

6 To engage and empower the community to live safely with kangaroos and help deal with kangaroo management issues.

7 To identify management policies and protocols required to achieve more strategic approaches to kangaroo management.

8 To investigate better urban and peri-urban strategic planning in kangaroo areas.

9 To document project findings in a management plan.

## Kangaroo management issues on the Coffs Harbour Northern Beaches

Table 1

	ISSUES	SCALE OF IMPACT
NEGATIVE ISSUES	Kangaroo attacks / threats to people	Overall low but locally significant
	People and domestic dog attacks on kangaroos	Moderate
	Kangaroo-vehicle collisions and collision avoidance accidents	High
	Kangaroo sickness and diseases (including potential transfer to humans)	Moderate / sampling occurring / research needed
	Garden and landscaping damage	Low to locally significant
	Impacts on crops and stock	Insignificant to low
POSITIVE ISSUES	Positive living with kangaroos & nature	Varies with attitude to and/or experience of kangaroos
	Aboriginal significance of kangaroos	Overall low but probably locally significant
	Eco-tourism potential (for example golf courses and headlands)	Currently low but growing
ENVIRONMENTAL AND PLANNING ISSUES	"Over-grazing" of threatened grassy headlands	Locally moderate to high
	Kangaroo habitat loss and population fragmentation	Moderate to high - research needed
	Wild dog/dingo and fox predation on kangaroos	Low - localised
	Council development planning	Locally high
	Council open space management	Locally high

## KANGAROO ATTACKS ON PEOPLE

The issue of kangaroo attacks on people in peri-urban Coffs Harbour was a main driver in the initiation of the management plan. Kangaroo attacks and threats on people are infrequent but locally significant.

Based on data from the NPWS kangaroo incidents database, aggressive kangaroos are generally sub-adult or adult individuals but can be of either sex. Females, particularly those supporting a “young at foot”, can be just as aggressive as large males. As such removing large adult males, which is sometimes discussed as a management action, may not result in any reduction in kangaroo attacks or threats.

In addition to the NPWS / OEH protocol for dealing with aggressive kangaroos the plan promotes ongoing community education and strategic fencing as priority actions for dealing with this issue.

## ATTACKS ON KANGAROOS

Conversely, instances of human and domestic dog attacks on kangaroos are moderately frequent and have obvious kangaroo welfare implications including injury and often death. Community education, and the promotion of responsible dog ownership in relation to kangaroos, is an important management action.

## VEHICLE COLLISIONS

Vehicle collisions with kangaroos are a significant issue impacting all peri-urban locations associated with kangaroo populations. Motor vehicle accidents are by far the single most common cause of WIRES kangaroo call outs on the mid-north coast. Mitigation methods can be expensive and of doubtful efficacy and more work in this area is required and is discussed further in the management plan.

# Kangaroos: The issues

*“My wife does feel intimidated if a lot of large kangaroos are in the garden and this sometimes prevents her from going into that part of the garden”*



## LAND USE PLANNING

Land use planning undertaken without the consideration of kangaroo management issues has the potential to favour kangaroo population growth in unfavourable areas such as new residential areas waiting for houses to be built and community open spaces including sports playing fields and parklands. Careful planning is needed to ensure new areas of conflict are not created.

## CONTROLLING NUMBERS OF KANGAROOS

Native animals are protected under the National Parks and Wildlife Act 1974. As protected fauna kangaroos may only be harmed in accordance with the authority of a license under this Act. A license to harm kangaroos, usually by firearms, is a last resort in the absence of practical, cost effective non-lethal management solutions.

Overall, the Coffs Harbour Northern Beaches community has an aversion to the idea of kangaroo culling although some people have a desire to see lower numbers. The idea of non-lethal methods of kangaroo population control, such as the remote delivery of contraceptive implants to female kangaroos, is supported and is currently part of a trial fertility program being undertaken by the University of Sydney.

## DISEASE

The likelihood of transmission of disease is a concern for the local community. As is the case for all animals, kangaroos are susceptible to many diseases which may become more prevalent when animals are present in high densities or when food resources become compromised. The likelihood of people on the Coffs Harbour Northern Beaches contracting diseases carried by kangaroos is very low however some education is still needed.

## BIODIVERSITY IMPACTS

In some locations kangaroos may impact vegetation, including threatened plant species, through direct consumption or even trampling. The impacts of kangaroo grazing within threatened grassy headland communities on Look At Me Now and Damerells headlands are considered detrimental to significant biodiversity values.

# Community Engagement

**From the outset the development of the plan has been based upon the recognition that the Coffs Harbour Northern Beaches community needs to be engaged, educated and informed with regard to kangaroo management issues.**

There were three broad components to the overall community engagement program; an on-line community survey regarding people's attitudes towards kangaroos, face to face community field days at kangaroo hot spots and targeted engagement with specific stakeholder groups.

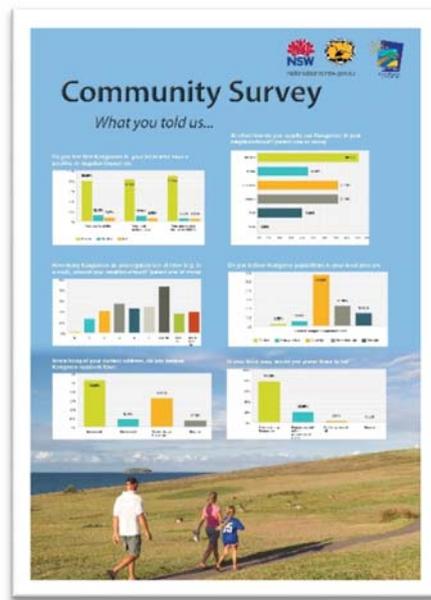
Results from the on-line survey showed a high level of community interest and concern regarding kangaroo management with 344 individual responses. A comprehensive analysis showing differences in survey results between localities is included in the management plan however key findings from the on-line community survey and the community information days indicate that the Coffs Harbour Northern Beaches community, and particularly people living with abundant kangaroos in peri-urban locations, is overwhelmingly in favour of retaining kangaroos in their environment.

## THE COMMUNITY VIEW

*Despite some issues the majority of people who live with kangaroos at Coffs Harbour Northern Beaches enjoy kangaroo interactions and are overwhelmingly in favour of retaining kangaroos in their environment. The appeal of observing wild kangaroos at close quarters within accessible coastal environments is also high for tourists and travellers.*

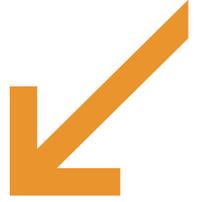
The vast majority of people engaged in these ways indicated that overall their interactions with kangaroos are positive and that they enjoy having free-ranging kangaroos in their living and recreational environments. However significant numbers of people had experienced negative interactions with kangaroos or were concerned about potential conflict with kangaroos. Some of these people also feel socially isolated within communities due to kangaroo related issues. Most people who responded felt that kangaroo numbers had increased.

At community information days many people were of the view that kangaroo numbers are about right but supported non-lethal methods of kangaroo population control.



*“We absolutely love them, but we are aware of how dangerous they could be, our 12 and 7 year old children are not allowed to walk to the bus stop on their own”*

# Kangaroo management units on the Coffs Harbour Northern Beaches



For the purposes of the management plan 10 Kangaroo Management Units (Figure 1) were delineated on the Coffs Harbour Northern Beaches based upon:

- Known kangaroo hot spots;
- Emerging and potential kangaroo hotspots;
- The spatial extent of logged NPWS and WIRES kangaroo incidents;
- Potential kangaroo movement barriers or inhibitors such as the Pacific Highway, Woolgoolga Creek and non-kangaroo habitats like dense forests and coastal heaths.

Management units were assigned priority levels (1, 2 or 3) based upon current understanding, extent and perceived intensity of kangaroo management issues and are listed in table 2.

Table 2: KANGAROO MANAGEMENT UNITS	PRIORITY
Heritage Park - Avocado Heights	1
Arrawarra - Darlington Park - Lorikeet Park	2
Safety Beach - north-west Woolgoolga	2
Central and south Woolgoolga	2
Emerald Beach - Sandy Beach - Hearn's Lake	2
Corindi Beach - Red Rock Road	3
Corindi Valley	3
Mullaway - Arrawarra Headland	3
Moonee Beach - Forest Glen	3
Korora - Sapphire Beach	3

*“They are part of our world here, they are a delight to see and I have had no problems with them. I think if people understood how to live with them and didn't feed them or try to get too close physically to them they would be harmless.”*



Darlington Park

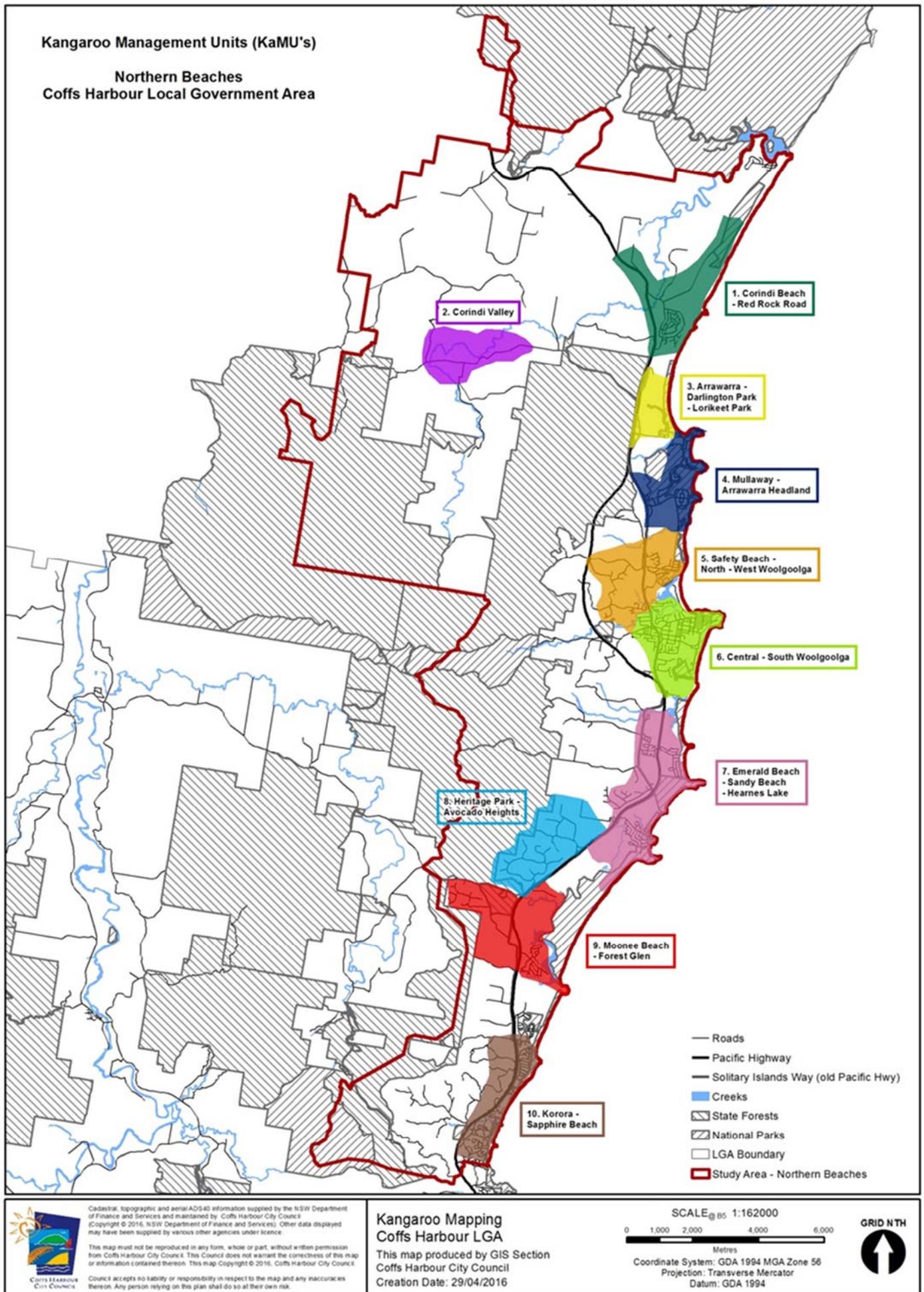
## CONCLUSION

Kangaroo management on the Coffs Harbour Northern Beaches, as elsewhere, involves the consideration and integration of a complex mixture of issues, data, opinions and attitudes. There are no black and white answers and adaptive management, informed by ongoing and open community engagement and education, as well as the findings of strategic research and citizen science, will be required over the long term.

Action relating to kangaroo management issues is not supported by statutory drivers meaning that other drivers will be needed to ameliorate the many likely impacts. One key driver is the consequence of inaction, which carries substantial risks and potentially significant social, economic and animal welfare implications.

Community engagement will continue to be the basis for ongoing proactive management of kangaroo issues. An engaged and educated community will go a long way towards resolving management issues.

Figure 1: Kangaroo Management Units on the Coffs Harbour Northern Beaches



# Kangaroo management: **Actions**

## **MANAGEMENT OBJECTIVE 1: To maintain and improve the strategic role of the Coffs Harbour Kangaroo Management Committee in overseeing kangaroo management issues across the Local Government Area**

**Outcome 1.1:** Ongoing and enhanced Kangaroo Management Committee representation

**Actions:** Coffs Harbour Local Government Area

**1.1.1** Commitment of stakeholders to ongoing committee role

**1.1.2** Expansion of community representative numbers (from current priority Kangaroo Management Units) on the committee to provide enhanced local perspective

**Outcome 1.2:** Formalised reporting regarding relevant kangaroo management issues to the Kangaroo Management Committee

**Actions:** Coffs Harbour Local Government Area

**1.2.1** Development of a standard macropod incidents data base to be populated routinely (e.g. monthly) by WIRES macropod carers, other licensed macropod carers, vets dealing with kangaroo incidents and NPWS officers dealing with kangaroo incidents

**1.2.2** Annual reporting on the standard macropod incidents data base

**1.2.3** Bi-annual reporting of ongoing research programs

**1.2.4** Annual reporting on CHCC planning and kangaroo considerations

**1.2.5** Annual or periodic update on kangaroo disease issues & research & the establishment of a standard kangaroo incidents database for use by vets and WIRES.

**All High Priority / Funding: Agency core funding or grant applications.**

## **MANAGEMENT OBJECTIVE 2: To provide for strategic & targeted community engagement**

**Outcome 2.1:** Emerging kangaroo issues addressed within priority KaMUs

**Actions:** Coffs Harbour Northern Beaches

**2.1.1** Provide targeted engagement (workshops, information days) on an 'as needs' basis as part of NPWS's community engagement program's core funding.

**Very High Priority / Funding: Coffs Harbour Environment Levy 2016-17 funded but ongoing agency funding will be needed.**

**MANAGEMENT OBJECTIVE 3: To continue and enhance the NPWS Ranger-guided kangaroo awareness and safety program within all Coffs Harbour Northern Beaches primary schools**

**Outcome 3.1:** All Northern Beaches schools are included in the annual NPWS Ranger-guided kangaroo awareness & safety program

**Actions:** Coffs Harbour Northern Beaches

**3.1.1** Embed the NPWS Ranger-guided kangaroo schools program within ongoing NPWS core funding to ensure provision of the program to relevant schools on an annual basis.

**3.1.2** Expand the NPWS Ranger-guided kangaroo program to all Northern Beaches schools.

**Very High Priority / Funding: Coffs Harbour Environment Levy 2016-17 funded but ongoing agency funding will be needed.**

**MANAGEMENT OBJECTIVE 4: To make the NPWS Ranger-guided kangaroo awareness & safety program available, on a user-pays basis, to Coffs Harbour Northern Beaches caravan parks, holiday parks and aged-care facilities**

**Outcome 4.1:** All Northern Beaches aged care facilities and priority holiday parks & caravan parks are offered inclusion in the program, on a user-pays basis

**Actions:** Coffs Harbour Northern Beaches

**4.1.1** Offer the NPWS program to Northern Beaches aged care facilities, on a user-pays basis.

**Medium Priority / Offer of program by NPWS; Program funding by aged care facility.**

**4.1.2** Offer the NPWS Discovery Rangers program to priority Northern Beaches holiday & caravan parks, on a user-pays basis.

**High Priority / Offer of program by NPWS; Program funded by holiday and caravan parks.**

### MANAGEMENT OBJECTIVE 5: Update the OEH / NPWS Living with Kangaroos brochure and develop a strategic program for brochure dissemination and provision

**Outcome 5.1:** Living with Kangaroos update completed

**Actions:** OEH / NPWS

**5.1.1** Complete the planned update of the Living with Kangaroos brochure

**5.1.2** Develop tailored communication products for the specific overseas tourist audience including backpackers and fruit-pickers

**High Priority / Funding: Coffs Harbour Environment Levy and NPWS core funding.**

**Outcome 5.2:** A strategic program for dissemination and provision for the updated Living with Kangaroos brochure and other educational material is developed

**Actions:** Priority 1, 2 & 3 Kangaroo Management Units

**5.2.1** Strategic provision of Living with Kangaroos communication to existing residents, new residents and caravan / holiday parks within priority 1, 2 & 3 Kangaroo Management Units

**5.2.2** Strategic provision of updated Living with Kangaroos communication to Coffs Harbour backpacker accommodation, fruit pickers, tourist information outlets and on-line tourism information sources relevant to Coffs Harbour tourism

**High Priority / Coffs Harbour Environment Levy 2016-17 funded but ongoing agency funding will be needed if educational programs are to be ongoing.**

### MANAGEMENT OBJECTIVE 6: Undertake or facilitate the installation of up to date kangaroo awareness and safety signage at strategic key locations

**Outcome 6.1:** Kangaroo awareness & safety signage installed at key public land locations (entries to NPWS and Council managed headlands, reserves & playing fields) within priority 1, 2 & 3 Kangaroo Management Units

**Actions:** Priority 1, 2 & 3 Kangaroo Management Units

**6.1.1** Finalise key messages for kangaroo awareness signage

**6.1.2** Install signage at entry points to key headlands, reserves & playing fields

**Medium Priority: Coffs Harbour Environment Levy 2016-17 funds applied for but ongoing agency funding will be needed.**

### MANAGEMENT OBJECTIVE 6 continued: Undertake or facilitate the installation of up to date kangaroo awareness and safety signage at strategic key locations

**Outcome 6.2:** Kangaroo awareness & safety signage installed at key privately owned caravan parks, holiday parks and golf courses within priority 1, 2 & 3 Kangaroo Management Units

**Actions:** Priority 1, 2 & 3 Kangaroo Management Units

**6.2.1** NPWS to promote need for kangaroo awareness signage & key messages for signage to affected caravan parks, holiday parks & golf courses

**6.2.2** Affected private enterprises install signage at key vantage points

**Medium Priority / Coffs Harbour Environment Levy 2016-17 funds applied for but private enterprises will need to fund their own signage.**

### MANAGEMENT OBJECTIVE 7: Bi-annual kangaroo counts (spring-summer & autumn-winter) are continued to monitor kangaroo populations at key locations

**Outcome 7.1:** Systematic kangaroo counts undertaken bi-annually at key locations

**Actions:** At established count locations & others where significant issues emerge

**7.1.1** Undertake at least bi-annual kangaroo counts, applying the transect methods at established key locations

**7.1.2** Initiate counts at new locations if significant kangaroo issues emerge

**All High Priority / NPWS ongoing core funding.**

### MANAGEMENT OBJECTIVE 8: Embed the consideration of kangaroo management within Council strategic planning corresponding with mapped Kangaroo Management Units

**Outcome 8.1:** Kangaroo considerations are embedded within Development Control Plans corresponding with mapped Kangaroo Management Units for new development

**Actions:** Priority 1, 2 & 3 Kangaroo Management Units

**8.1.1** Incorporate kangaroo planning within Development Control Plans corresponding with mapped Kangaroo Management units

**8.1.2** Council to require new developments to consider the use of exclusion fencing to either exclude kangaroos from common areas (e.g. play grounds), or channel kangaroos around a development

**MANAGEMENT OBJECTIVE 8 continued: Embed the consideration of kangaroo management within Council strategic planning corresponding with mapped Kangaroo Management Units.**

**8.1.3** Council to require new greenfield developments within Priority 1, 2 & 3 Kangaroo Management Units to implement staged clearing linked to infrastructure needs and demand for lots rather than broad scale clearing which creates large areas of grassy habitat. If this cannot be achieved then alternative measures are to be implemented such as site stabilisation techniques that do not create grassy habitat, or temporary exclusion fencing in stages that are yet to be released

**8.1.4** Council to update its Water Sensitive Urban Design (WSUD) guidelines to require new developments seeking to implement WSUD to use approaches that do not promote kangaroo habitat. This may include, but is not limited to, using kangaroo un-friendly plantings in place of grass and avoiding detention basins or wetlands that retain permanent water in high use areas

**8.1.5** Investigate the application of developer-sponsored kangaroo issue mitigation schemes in new developments (e.g. for strategic fencing, landscaping, movement corridors and fertility control programs should they be found to be successful

**All High Priority / CHCC ongoing funding.**

**Outcome 8.2:** Council open space managers incorporate kangaroo-unfriendly mowing, gardening and landscaping approaches to minimize the promotion of kangaroo habitats within mapped Kangaroo Management Units

**Actions:** Priority 1, 2 & 3 Kangaroo Management Units

**8.2.1** Council open space managers to implement gardening & landscape design approaches that minimize grassy open spaces and promote kangaroo un-friendly plantings (e.g. sedges, shrubs, rockeries) and structures

**High Priority / CHCC ongoing funding.**

**MANAGEMENT OBJECTIVE 9: Promote the strategic use of appropriate individual property fencing to largely exclude kangaroos from high human use areas (e.g. school grounds) or children's play & family recreation areas within mapped Kangaroo Management Units**

**Outcome 9.1:** The Kangaroo Management Committee commissions the development of a property fencing guideline applicable within mapped Kangaroo Management Units

**Actions:** Priority 1, 2 & 3 Kangaroo Management Units

**9.1.1** Coffs Harbour Kangaroo Management Committee to commission the production of a strategic property fencing guideline to encourage strategic kangaroo fencing of high human use areas but discourage property perimeter fencing

**9.1.2** The Coffs Harbour Kangaroo Management Committee to provide support for any funding applications or organized funding drives for strategic kangaroo fencing submitted by schools & caravan parks / holiday parks mapped as Priority 1 or 2 Kangaroo Management Zones

**Medium Priority / subject to funding.**

### MANAGEMENT OBJECTIVE 10: Inform gardeners & landscapers about kangaroo unfriendly plantings and structures to mitigate localized impacts of kangaroos

**Outcome 10.1:** Gardeners & landscapers are informed of kangaroo unfriendly options

**Actions:** Priority 1, 2 & 3 Kangaroo Management Units

- 10.1.1** Coffs Harbour Kangaroo Management Committee to seek funds to commission the production of a kangaroo unfriendly gardening & landscaping guideline

**Low Priority / subject to funding application.**

### MANAGEMENT OBJECTIVE 11: Educate dog owners regarding legal and moral responsibilities of dog ownership in relation to kangaroos

**Outcome 11.1:** A decrease in the incidence of domestic dogs harassing and killing kangaroos in peri-urban areas

**Actions:** Coffs Harbour Local Government Area

- 11.1.1** NPWS to produce, or commission the production of, a responsible dog ownership brochure dealing with wildlife generally and kangaroos specifically

- 11.1.2** Once produced the brochure is provided to dog owners through Council's dog registration processes and through Coffs Harbour veterinarians

**Both High Priority / Funding through NPWS and Coffs Harbour Council funding.**

### MANAGEMENT OBJECTIVE 12: To reduce the incidence of motor vehicle accidents involving kangaroos on the Coffs Harbour Northern Beaches

**Outcome 12.1:** A decrease in the incidence of motor vehicle accidents involving kangaroos

**Actions:** Coffs Harbour Local Government Area

- 12.1.1** Installation of kangaroo awareness signage at kangaroo-related road accident hot spots (e.g. Heritage Park, Avocado Heights, Woolgoolga, Safety Beach, Mullaway)

- 12.1.2** Elevate community awareness regarding kangaroo-related motor vehicle accidents through provision of education material through local media outlets

**All High Priority / Funding through CHCC Strategic Asset Management; NPWS has applied for kangaroo community engagement funds through the Coffs Harbour Environment Levy 2016-17.**

**MANAGEMENT OBJECTIVE 13: To continue application of the OEH protocol dealing with aggressive individual kangaroos, including the licensing and undertaking of euthanasia**

**Outcome 13.1:** The OEH Protocol is applied as efficiently and humanely as possible

**Actions:** Coffs Harbour Local Government Area

**13.1.1** Continue to apply the OEH protocol dealing with aggressive individual kangaroos

**13.1.2** Investigate the deployment and funding of Coffs Harbour City Council Rangers for licensed kangaroo darting for purposes of kangaroo tranquilizing when circumstances require it

**High Priority / Ongoing NPWS funding.**

**MANAGEMENT OBJECTIVE 14: To facilitate and assist with the undertaking of kangaroo fertility control research on the Coffs Harbour Northern Beaches**

**Outcome 14.1:** The trial program is demonstrated to be successful in reducing kangaroo populations in need of management intervention at Heritage Park, Darlington Park and Emerald Beach headlands

**Actions:** Priority 1 & 2 Kangaroo Management Units on the Northern Beaches

**14.1.1** Provide logistic support as needed to the Sydney University kangaroo fertility control trials planned for Heritage Park, Darlington Beach Holiday Park and Emerald Beach headlands

**14.1.2** Investigate and establish resourcing options for a long term program of kangaroo population fertility control (should trials prove to be successful) through mechanisms such as developer contributions, Coffs Harbour's Environment Levy and funding by private operators (golf clubs, caravan / holiday parks)

**14.1.3** Investigate the deployment and funding of Coffs Harbour City Council Rangers for kangaroo darting for fertility control drug delivery for kangaroo tranquilizing prior to drug injection. This will be subject to available resources.

**All High Priority / Long term funding requires addressing.**

**MANAGEMENT OBJECTIVE 15: Foster partnerships with universities to pursue opportunities for peri-urban kangaroo research and Citizen Science projects**

**Outcome 15.1:** Research partnerships and Citizen Science projects are established to address kangaroo management issues

**Actions:** Coffs Harbour Northern Beaches

**15.1.1** The Coffs Harbour Kangaroo Management Committee to establish and maintain communication with relevant universities to encourage research partnerships for peri-urban kangaroo projects

**15.1.2** The Coffs Harbour Kangaroo Management Committee to investigate the potential for Citizen Science projects, including the development of a mobile phone App to encourage community engagement with kangaroo management issues

**Medium Priority / subject to funding.**

**MANAGEMENT OBJECTIVE 16: Maintain and foster liaison with non-government groups with an interest in peri-urban kangaroo management**

**Outcome 16:** Liaison with non-government groups with an interest in peri-urban kangaroo management is maintained and fostered

**Actions:** Coffs Harbour Northern Beaches

**16.1.1:** The Kangaroo Management Committee to facilitate on-going liaison (by NPWS) with non-government groups with an interest in peri-urban kangaroo management issues (e.g. Aboriginal groups, CHART, Wildlife Rescue Incorporated)