

# **ROADKILL: ITS IMPACT ON AUSTRALIAN NATIVE ANIMALS AND WHAT WE CAN DO ABOUT IT**

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## **Introduction**

Every year across the world millions of animals are injured or killed by vehicles. In USA the most killed animal is the white tailed deer. Incidentally this is the most dangerous animal as many humans are also killed in these road accidents. Bears, elk, moose and other large animals migrate across Canada and the United States. Hitting an animal this size can be lethal so it's not surprising that Canada and the USA are leaders in road kill mitigation.

Here too in Australia, millions of animals are killed or injured every year on our roads. Dr Ralph says that 80% of his work is due to vehicles. This statistic is echoed around Australia. NRMA Insurance showed a 30 per cent increase in the number of kangaroo vehicle collisions in the ACT from 509 in 2012 compared to 386 in 2011. In Queensland between July 2012 and July 2013, there were 477 koalas reportedly hit by vehicles.

So why is road kill an issue?

Firstly there is the direct mortality/ injury problem that is discussed in other papers.

Road kill and trauma don't just affect large species like kangaroos and wombats. Small species such as frogs, eastern long necked turtles and small birds can be affected.

Secondly it can push animals to extinction. In the USA, the Florida panther, a critically endangered species had a young male run over in 2014 out of a population of 100 animals left in the wild.

In Queensland, Helmholtz tree kangaroos and cassowaries are being pushed closer to extinction by road kill. In the last decade in the

northern beaches of Sydney, we have had quoll, koala, an Osprey, Southern Brown bandicoots and eastern pygmy possums killed on arterial roads that lead to Sydney. These are all threatened species.



Figure 1 Sapphire to Woolgoolga - Pacific Highway upgrade -RTA image

Thirdly roads/railway construction can cause huge habitat loss. The construction of the Pacific highway in New South Wales has led to many hectares of bushland

habitat being destroyed.

It cuts connectivity which stops animals being able to safely migrate from one area to another in times of chaos such as bushfire.



The critically endangered mountain pygmy possum has been able to migrate across the Snowy Mountain Highway through a purpose built tunnel, The Tunnel of Love, in times of bushfire. These bushfires threatened to destroy the whole population. Fortunately the surviving population on the south side was able to act as a source for repopulation on the north side, slowing the decline to extinction of the mountain pygmy possum.

Figure 2 Critically endangered mountain pygmy possum

We had a similar experience in the Northern beaches of Sydney in the 95 bushfires. Animals were able to re-colonise areas that had been badly affected by the bushfires. They were able to migrate from Ku-ring-Gai Chase National Park to Garigal National Park to the Narrabeen Lagoon Catchment.

We are just starting to see an increase in long nose bandicoots in the Narrabeen Lagoon Catchment now. However for these animals to migrate across this area, they have to run the gauntlet of three major arterial roads.

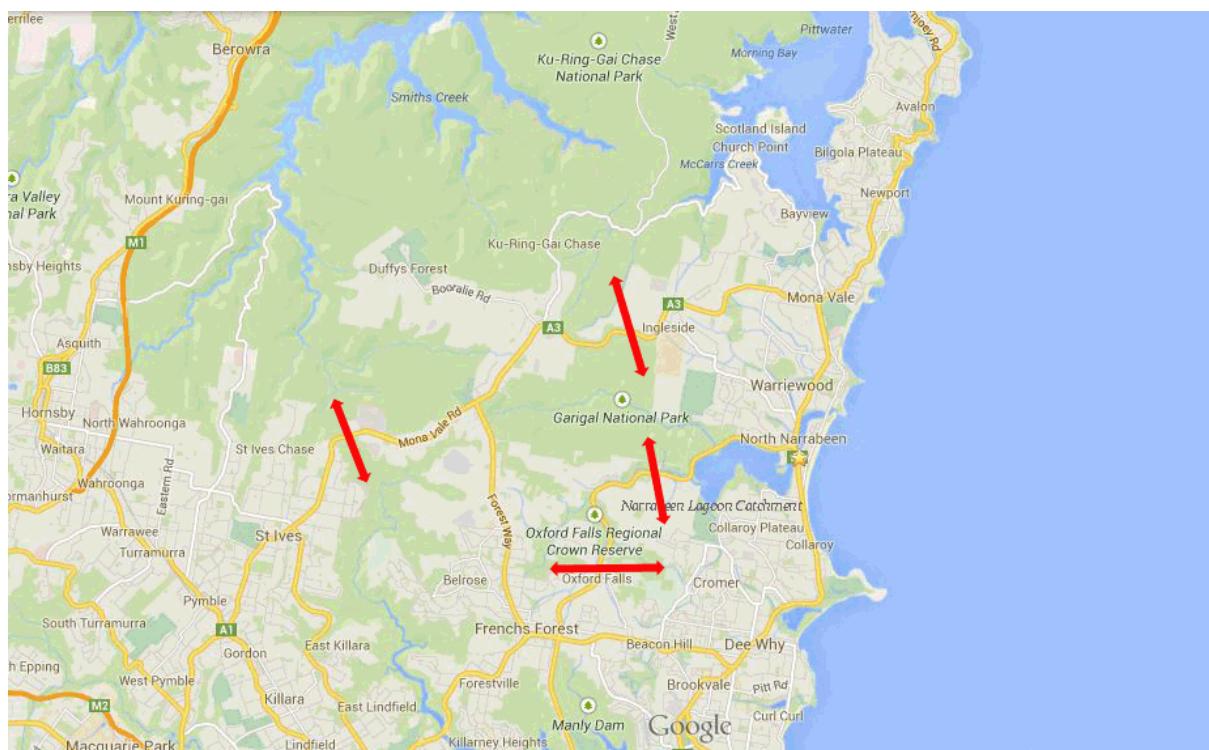


Figure 3 Connectivity for wildlife in the northern beaches of Sydney across arterial roads

The displaced animals from these areas have to find new territories. This means they displace other animals which can lead to chronic stress from reduced territory size or worse still one animal kills another and takes its territory.

Apart from habitat fragmentation, roads have an edge effect: noise and light affect quite a few species so the road/railway acts like a wall. Some species of animals just won't migrate across a road.

There is much scientific evidence that populations that are genetically isolated are at far greater risk of extinction due to the loss of genetic variability and inbreeding.

Run-off from roads especially in very dry areas can cause green pick to grow along the road verge attracting animals. Pollution e.g. oil, petrol and antifreeze can pollute roadside creeks and streams affecting fish and amphibians. Air pollution affects all species including humans and can lead to increased risk of lung cancer and heart disease.

Litter especially food is a perennial problem. It attracts animals to roadsides where they are at a far greater risk of being hit.

## **What Can Be Done About Road kill**

### **Avoid collisions with wildlife:**

Drivers need to be taught to drive defensively at all times. Expect animals to be crossing even during daylight but especially at night.

Try to avoid driving at night especially in the dawn and dusk periods.

Drivers need to be educated

They need to concentrate on the road, not to talk on the phone, speed or tailgate.

If there is an animal lying on the road don't presume it is dead. It needs to be checked to see if it can be triaged or for the presence of pouch young.

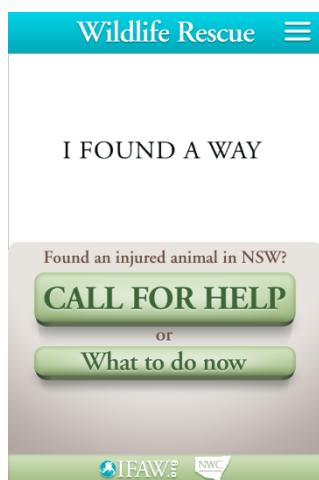
If an animal is on the road and alive do not assume it will get out of the way.

The horn if used wisely can warn animals a fair distance away so that they can move away from the road before the vehicle reaches that spot. However blowing the horn when the vehicle is right on top of the animal can startle them and they may run into the car.

High beam is a very useful tool as it shows animals eyes shine alerting the driver to the fact that they may cross the road. Often animals travel in pairs so if there is a set of eyes, slow down and anticipate more animals may cross the vehicles path. Some animals however freeze in the headlights. The headlights need to be switched off to get the animal off the road.

### To move an animal safely off the road:

- Park safely
- turn on the indicators
- don a yellow safety jacket
- use a headlight torch
- have a blanket ready to throw over the injured animal or to lay it on
- Have sturdy gloves, a net and a rescue basket.



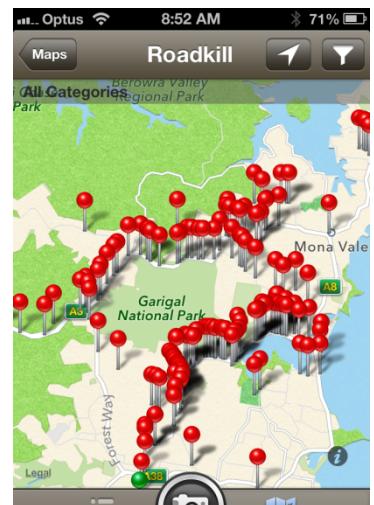
IFAW have produced an app with information about the nearest rescue group.

Encourage people not to litter and to participate in roadside clearing and beaches on Clean-up Australia Day and other similar events.

Figure 4 IFAW iphone app

### Record road kill:

Statistics and maps are extremely useful in convincing local government and state government instruments such as the RTA where to put road kill mitigation.



There is an iphone app that makes it very quick and easy to record Road kill. It also maps where road kill occurs

There is also a webpage that records road kill. It includes species and age

<http://awcn.org/mapping/>

**The Northern Beaches Road kill Prevention Committee has its own web page and Face book page to raise the issue of road kill**

**<http://wildliferoadkill.org>**

Figure 5 iphone

app

**Get involved in local area road planning and development:**

The Environmental Defenders Office in New South Wales lists all impending major developments for comment. Local councils usually publish a weekly list of all impending or proposed development.

Don't be afraid to ask for road kill mitigation and the preservation of wildlife corridors and riparian zones.



There are many cheap and effective ways of preserving bushland and connectivity while reducing road kill.

Figure 6 Cheap exclusion fencing

**The Northern Beaches Road kill Prevention Committee and wildlife road kill prevention**

Our organisation was formed in 2006 following a public meeting to discuss the high incidence of wildlife road kill on one of the arterial roads in the Northern Beaches of Sydney. The Committee was formed from community environmentalists, wildlife rescue organisations – Sydney Metropolitan Wildlife Services and WIRES, National Parks and Wildlife Services, Roads and Traffic Authority (RTA), police, Warringah Council administrator and the local state member for Pittwater.

The Northern Beaches Road kill Prevention Committee began to look at:

- where were the majority of animals killed on the road
- which species were involved
- how many animals were killed
- what fauna protection/mitigation devices would be the most effective and cost effective?

Initially a hand held GPS was used to document road kill. The major hotspots for wildlife road kill were identified.

The RTA and Warringah Council agreed to jointly fund the construction of fauna exclusion fencing in the worst area for road kill. Mitigation was provided by two bridges which enable the wildlife to cross safely below the arterial road.

Fencing was considered the most cost effective and easiest mitigation to put in place. The first fence was erected in 2007 No wallabies have been killed in this section of road apart from one swamp wallaby killed when a hole was made in part of the fencing, which was quickly repaired.

### **What have Northern Beaches Road kill Prevention Committee achieved since 2012?**

In 2012, a report funded by RTA and prepared by SMEC, an environmental consultancy, detailed the three major areas responsible for most road kill on the Northern Beaches.

[http://www.rms.nsw.gov.au/roadprojects/projects/sydney\\_region/northern\\_sydney\\_region/nth\\_beaches\\_roadkill\\_study/documents/nth\\_beaches\\_roadkill\\_report.pdf](http://www.rms.nsw.gov.au/roadprojects/projects/sydney_region/northern_sydney_region/nth_beaches_roadkill_study/documents/nth_beaches_roadkill_report.pdf)

This included the fauna species killed, the types of fauna mitigation methods most suitable for each area and the economics of each type and site.

**Figure 7 Exclusion fencing Wakehurst Parkway**

The Committee was involved in the preparation of the report and advised on the most suitable fauna protection devices, which included speed bumps, electronic signage, over and underpasses and exclusion fencing.



As a result of the SMEC report, funding was given by RMS (formerly the RTA) for a second area of Wakehurst Parkway to be fenced, this was the second worst area identified for road kill of swamp wallabies.

To date no wallabies have been killed in this section of road either.

### **The Northern Beaches Road kill Prevention Committee continued to lobby local politicians and councillors for fauna mitigation.**

In 2012, an extension of a large section of Mona Vale Road was announced by the NSW Minister for Roads. The Northern Beaches Road kill Prevention Committee alerted the RMS to areas of high road kill and began to lobby for fauna overpasses, underpasses and exclusion fencing to be included in the design for the road extension. This was especially important to ensure animals can safely cross from Garigal national Park to Ku-ring-gai Chase National Park.

A petition was drawn up and circulated amongst wildlife rescue

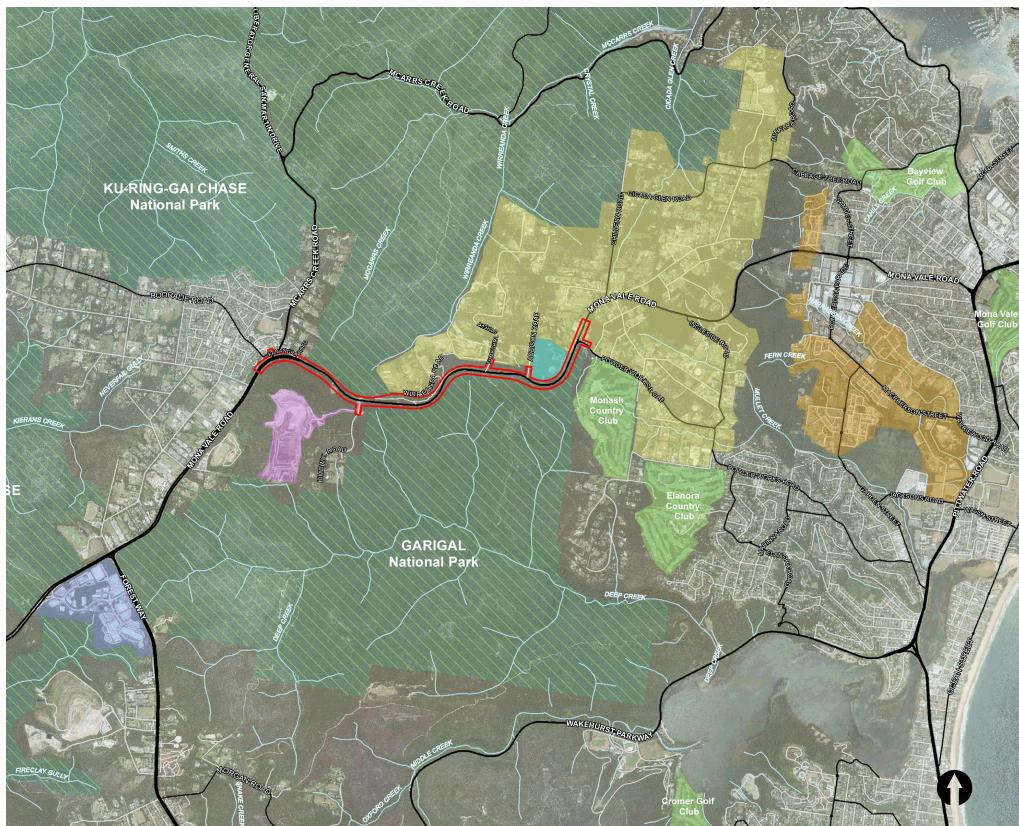
**Figure 8 Petition by Northern Beaches Road kill Prevention Committee**

mongst wildlife rescue organisations, local veterinary surgeries and many signatures were gained at local community events from the general public who had also seen the number of dead animals along Mona Vale Road.

In 2014 an on-line petition was begun with Change.org 'To install fauna protection

devices when widening Mona Vale Road and whenever major highways are upgraded'.

It has been successful in obtaining further recognition of the need for fauna mitigation methods for not only the Mona Vale Road but for all major highway development.



**Figure 9 Proposed Ingleside precinct housing plan for the northern beaches of Sydney**

The Northern Beaches Road kill Prevention Committee is also involved in planning for the development of the Ingleside precinct (the area for development is marked in yellow on the map) for 4800 houses and associated infrastructure such as schools, playing fields and roads

The committee is working with the Department of Planning to ensure that road kill mitigation is put in place, that wildlife corridors are protected through the new area of development and that the bushland containing threatened species is not destroyed.

The Northern Beaches Road kill Prevention Committee has demonstrated that even a small but very determined committee can achieve a marked reduction in road kill on major arterial roads and improved connectivity across bushland areas in peri urban areas of a major city for native wildlife for future generations.

## **References**

<http://statements.qld.gov.au/Statement/2013/12/23/motorists-urged-to-be-alert-for-native-wildlife-over-the-holidays>

<http://www.abc.net.au/news/2013-07-18/canberra-nrma-car-accidents-kangaroos/4827544?section=act>

[http://www.rms.nsw.gov.au/environment/downloads/biodiversity\\_guidelines.pdf](http://www.rms.nsw.gov.au/environment/downloads/biodiversity_guidelines.pdf)

**JACQUELINE MARLOWE** has been active in her community and nationally, with her membership of many key groups:

Northern Beaches Road kill Prevention Committee (Chairman)

Sydney Wildlife Services

Friends of Narrabeen Lagoon Catchment:

Pittwater Natural Heritage

(Community groups aiming to protect the remaining bushland in Warringah and Pittwater)

Bush regenerator

### **PROFESSIONAL AND SCIENTIFIC MEMBERSHIPS**

Ecological Society of Australia

Royal Zoological Society NSW

Australian Mammal Society

Australian Plants Society

### **SCIENTIFIC PUBLICATIONS**

Narrabeen Lagoon Catchment - Past, Present and Future

No prescription yet to counter the road kill of native fauna: a study of road kill in the Narrabeen catchment of Sydney

## QUALIFICATIONS

Bachelor Science University of Sydney

Post graduate diploma Information Technology

## **EIRA BATTAGLIA**

Wildlife Educator & Carer, Sydney Wildlife

Vice Chair Northern Beaches Road kill Prevention Committee

**Eira Battaglia** is a trained nurse and holds a diploma in nurse education. She is a Health care manager/educator with a graduate diploma in public sector management (health); and a 10 year Member of Sydney Metropolitan Wildlife Service and is the Northern Beaches Community Education Officer and Northern Beaches branch bird coordinator for carnivorous birds.

Eira is a founding member of the Northern Beaches Road kill Prevention Committee, is the vice chairperson and membership secretary.

She is also a founding volunteer of Manly Penguin Warden Scheme with National Parks and Wildlife Services since 2005 - 2010, and again protecting the endangered colony for the 2013-14 breeding season.

Eira was awarded the 2014 Manly Council Enviro Award for her contribution to wildlife rescue and care and for being a volunteer penguin warden for National Parks and Wildlife Services.