

# How to record koala vehicle strike and monitor mitigation efforts

## Koala Vehicle Strike Fact sheet 4



### Roads, cars and koala vehicle strike

Vehicle strike is recognised as a key threat to koalas (*Phascolarctos cinereus*) in New South Wales (NSW) (NSW Koala Strategy 2018).

This fact sheet provides information on methods to record koala vehicle strike and to monitor the effectiveness of strategies to reduce koala vehicle strike. This is one in a series of four about koala vehicle strike. The other fact sheets include:

- [Fact sheet 1: Wildlife vehicle strike and contributing factors](#)
- [Fact sheet 2: How to keep koalas off the road](#)
- [Fact sheet 3: How to change driver behaviour.](#)

### Hotspots

Koala vehicle strikes often occur in clusters at particular places along a road called hotspots (Figure 1).

The location of hotspots is usually established by looking at reported records of koala vehicle strike. These records may have been reported to wildlife groups or the local or state government by individuals, community groups, local councils, or as part of environmental impact assessments conducted for road development projects.

Identifying and understanding koala hotspots is a critical step in reducing vehicle strike. Road managers need this information to understand how koalas use an area and to inform where mitigation structures should be installed to prevent koalas entering the road.



**Figure 1** An identified koala vehicle strike ‘hotspot’ in the Tweed Local Government Area. (Sandpiper Ecological)

## Reporting koala vehicle strike

If you find a koala that has been hit by a vehicle, record the following information where possible:

- date and time
- GPS location (or accurate description of road/location)
- species identification: koala (or other species, if known)
- condition of animal: dead/injured
- name (and contact details) of recorder
- position on road: within lanes/on road shoulder
- presence of pouch young: yes/no
- taken to carer/vet: yes/no
- fate of injured animal: later released/died/ euthanised
- other observations: presence of ear-tags, etc.

The location of an incident is the most important item to record.

The koala victims of vehicle strikes are typically collected by licensed wildlife carer groups, local councils, wildlife hospitals and vets. Records kept by wildlife carers are usually made in a spreadsheet, which are uploaded to the [BioNet database](#), a repository for biodiversity data managed by the NSW Government.

## App and web-based recording

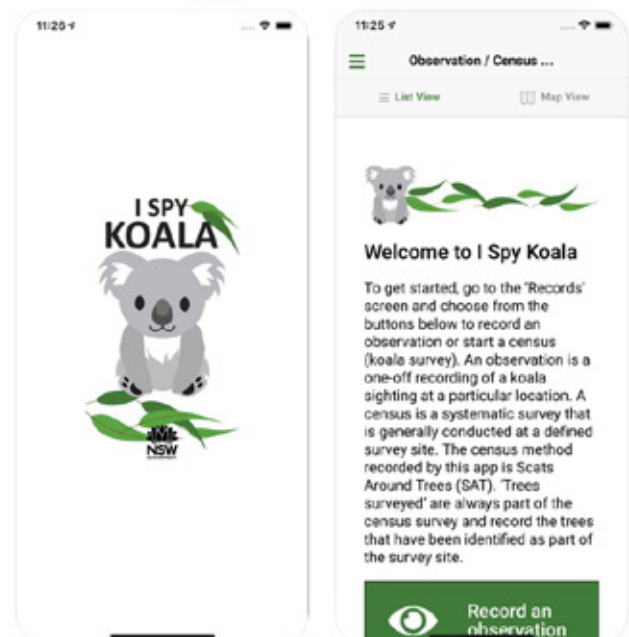
Smart phones enable accurate and simple recording of ‘spot’ locations. When a photo of an injured koala is taken on a phone with location

services enabled, a geo-reference or spot location is created that can be recorded and/or uploaded.

App- and web-based recording systems have also been developed to record koala sightings.

The International Fund for Animal Welfare [Wildlife Rescue app](#) connects people in New South Wales to the nearest animal rescue group when they find injured wildlife.

The I Spy Koala app (Figure 2; download via Google or Apple app stores) enables people to record sightings of koalas. The app captures information about koala sightings in the field and sends it to the publicly available [BioNet database](#).



**Figure 2** Mobile screen shot of the I Spy Koala app.

## Undertaking successful monitoring

Koala vehicle strike recording systems also help us:

- monitor whether efforts to prevent koalas being killed on our roads are working
- establish baseline data for koala roadkill before prevention measures are put in place.

Monitoring can be costly and emphasis should be on mitigation structures for which we have little data. For example, evidence shows that koalas will use dry box culverts, dry bridge underpasses and land bridges, but it is unclear whether they will use koala grids or large pipes.

It is not known whether approaches aimed at changing driver behaviour are effective, or whether rumble strips on roads, fixed/average speed cameras, street lighting, clearing roadside vegetation, dynamic signs and pavement marking reduce the incidence of koala vehicle strikes.

Details about monitoring programs are largely site- and project-specific and beyond the scope of this fact sheet.

Some suggestions for maximising the power and effectiveness of monitoring programs include:

1. Follow a before-after-control-impact design
  - a. Before – conduct surveys (collect data) at control and impact roads before implementing mitigation measures.
  - b. After – conduct surveys at control and impact roads after implementing mitigation measures (Figure 3).
  - c. Control sites – roads where mitigation measures are not implemented. These should be as similar to impact sites as possible.
  - d. Impact sites – roads where mitigation measures are implemented. These sites are also referred to as ‘treatments’.
2. Standardise surveys
  - a. Conduct the same number of surveys before and after implementing mitigation measures. This is important to make sure monitoring results are not biased.
3. Choose a timeframe
  - a. Work out how often data will be analysed/assessed. This may be yearly, every 2 years, or every koala generation (i.e. 6 years).
  - b. Conduct surveys within this timeframe.

4. Set performance indicators (PIs) and targets
  - a. These should be realistic, achievable, measurable and statistically meaningful.
  - b. PIs may include the number of vehicle strikes in an area per unit time, average vehicle speeds, ratio of vehicle strikes resulting in death compared to injury, etc. For example, a reduction in vehicle strikes/kilometre at impact sites compared to control sites over one koala generation.
  - c. Statistically meaningful targets may include differences in means between impact and control sites (e.g. t-tests, analysis of variance).
  - d. Conduct power analyses to determine whether data collected is enough to detect differences.
5. Set corrective actions
  - a. A corrective action is a proposed management response for each PI when a target isn't achieved. For example, when no reduction in average vehicle speed is observed before and after a vehicle-activated warning sign has been installed at a specific location, a corrective action may be taken to remove the sign and consider a different approach.



**Figure 3** Warning sign on the back of a vehicle conducting wildlife vehicle strike surveys along the Pacific Highway. (Sandpiper Ecological)

## Adaptive monitoring plans

A monitoring plan should be adaptive and be able to respond to:

- broad changes in road and/or landscape conditions (e.g. bushfire)
- the emergence of other hotspots in the monitoring area, which may require their own PIs and a revision of any corrective actions undertaken
- the emergence of new (and proven) mitigation approaches and new information about mitigation measures at other locations.

### More information

Find out more about koalas on our [Koala webpage](#).

Cover photo: A tagged male koala in primary habitat near the Pacific Highway upgrade. (Sandpiper Ecological)

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Koala at the Koala Hospital, Port Macquarie. (David Finnegan/DPIE)