

SPEED LIMITS AND ROAD SAFETY IN REGIONAL NSW

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NSW Parliamentary Inquiry into Speed limits and road safety in regional NSW

Attention: Joint Standing Committee on Road Safety

The Koala Koalition, EcoNetwork Port Stephens (KKEPS) welcomes the opportunity to comment on the Inquiry's work on speed limits and road safety in regional New South Wales. With a variety of major and minor roads intersecting (and fragmenting) koala habitat leading to ongoing koala vehicle strikes, KKEPS urges the Inquiry to consider how a change in driver behaviour and a reduction in speed might benefit remaining koala populations, and consider which road infrastructure options safely enable rather than limit habitat connectivity in already fragmented habitats.

Putting Port Stephens into context

Our interest particularly relates to koala populations in Port Stephens LGA, although other regional areas are likely to be facing similar concerns regarding the density of roads within or near koala habitat, and the volume and speed of road users. A WWF report published in 2020 found that the koala populations in Port Stephens are already genetically different due to habitat fragmentation. The more eastern "peninsula" koalas are already less allelic rich than those in the west of Port Stephens. The report concluded that "reconnecting habitat must be an urgent priority for their survival".¹

Port Stephens is one of the top four LGAs for the highest number of koalas killed on roads during spring.² On the 20th June 2022, the Port Stephens Council (PSC) announced details of planned koala barriers as part of a road upgrade program. The council stated that from 2010 to 2020 "89 koala records were identified along Port Stephens Drive which included 11 vehicle strike fatalities, five vehicle strike injury rescues and 11 rescues."³

Port Stephens Drive is one of three main roads in Salamander Bay that koalas are breeding in between, the other two being Nelson Bay Road and Salamander Way. Data from Port Stephens Koala Hospital (PSKH) on call outs and rescues shows that all three roads have witnessed high numbers of koala injuries and mortality following vehicle strikes.⁴

Other roads in Port Stephens on which koalas have suffered the same fate include Lemon Tree Passage Road, Richardson Road, Medowie Road and Gan Gan Gan Road (Figure 1). Collectively the number of koalas recorded as victims of vehicle strike in Port Stephens has greatly reduced since 2008 which, with reduced sightings, is not a positive change but one of population in crisis (Figure 2). In some areas, such as Tomago, the number of dead or injured koalas following vehicle strikes have plummeted since 2005 with rescues and sightings rare or non-existent.⁵

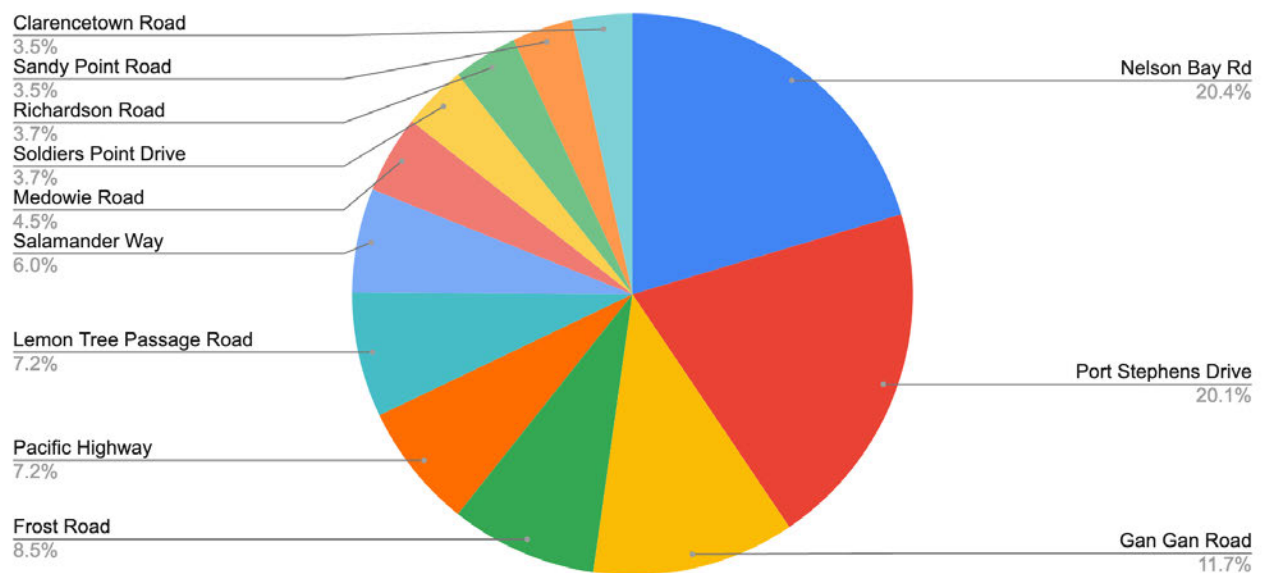


Figure 1. Roads in Port Stephens with the most vehicle strike records between 2008 and early 2021.

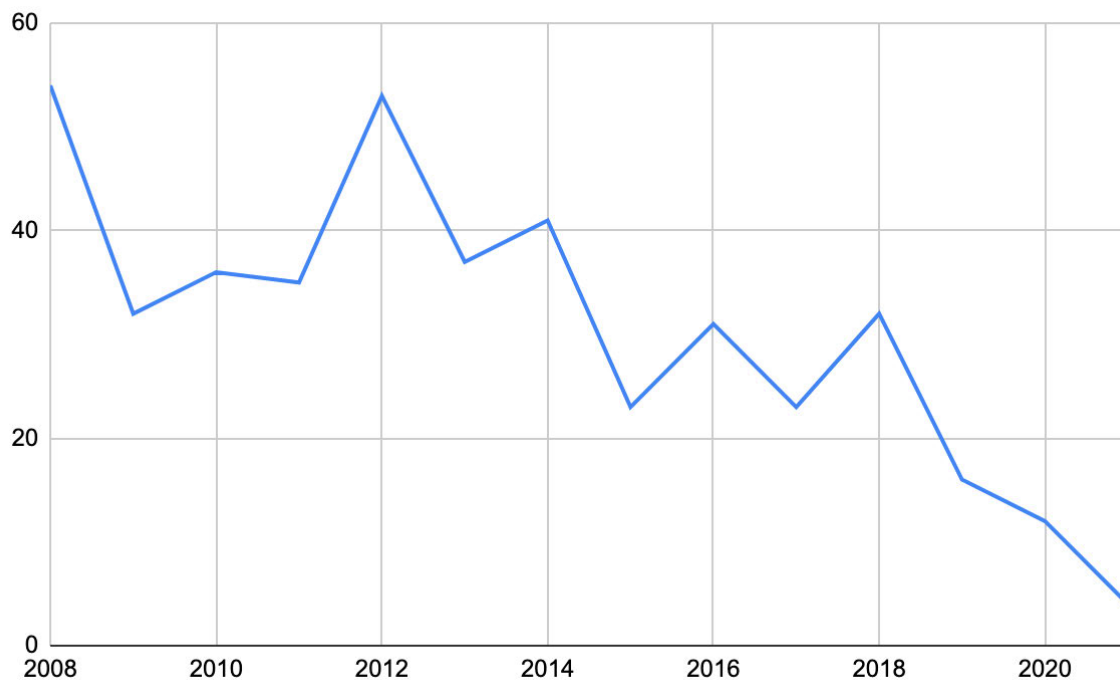
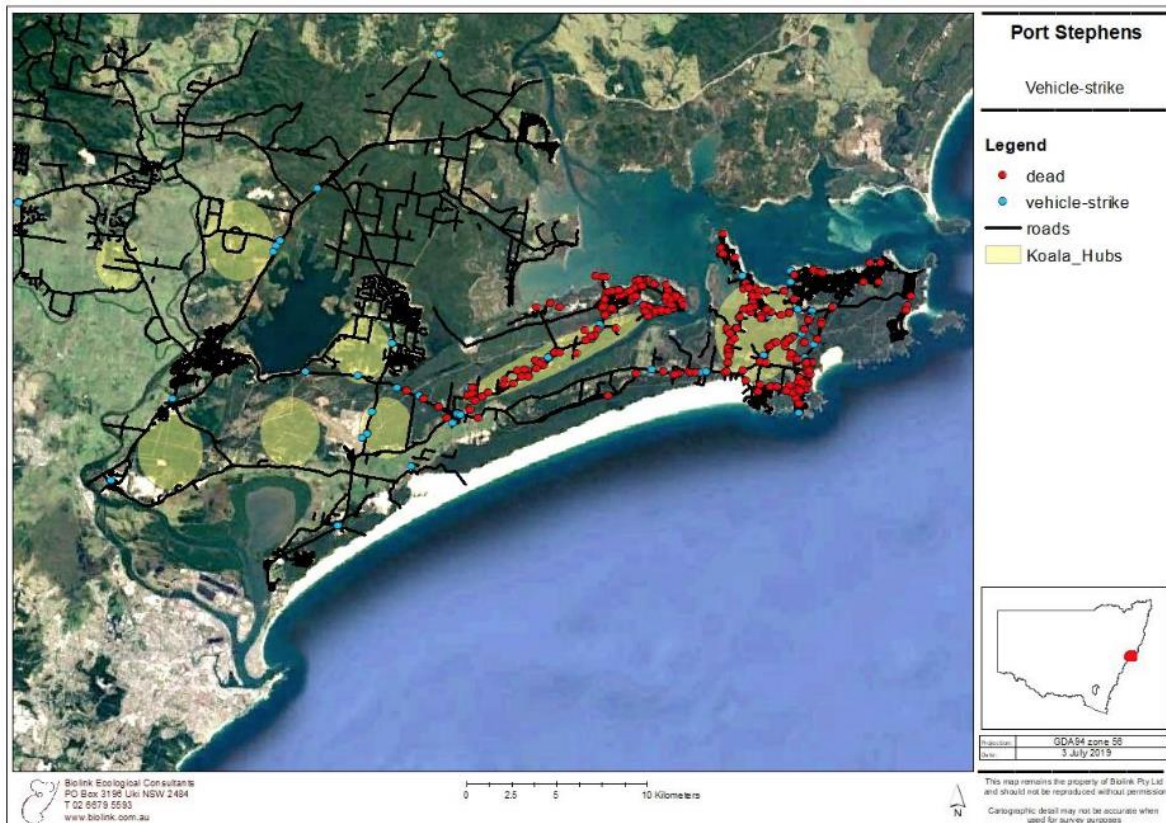


Figure 2. PSKH records between 2008 and early 2021 of koalas found dead, rescued alive or monitored on call following a vehicle strike in Port Stephens.

The PSKH data for Port Stephens Drive indicates that 22 koalas were found dead at the scene within the 2010 to 2020 time period rather than the 11 fatalities quoted by PSC. There were nearly 50 motor vehicle related deaths, injuries or callouts to monitor koalas in situ during this time.⁴ The discrepancy between the numbers killed or injured could suggest that vehicle strikes have had a greater impact on local koala populations than is widely accepted, making it even more important to consider koalas when putting measures in place to protect koala populations and their habitat.

An aerial photograph showing the recorded locations of dead koalas from vehicle strikes on the Tomaree and Tilligerry peninsulas in Port Stephens paints a stark picture of how widespread the impact on koala populations has been.⁶



(Biolink, 2018a)

Measures to protect koalas from vehicle strike in Port Stephens

In May 2018, Port Stephens Council, in consultation with PSKH, painted 20 new koala slow thermoplasted signs on the surface of roads in areas where koalas are known to wander. A mobile trailer with flashing lights was also donated in 2018 to complement the new road signs in the hope that drivers would be more koala aware and cut their speed.⁷ Fixed road signs at the side of the road giving koala death tolls are also at various locations.

By September 2018, six of the twenty thermoplasted signs had been damaged by drivers doing burn-outs on the signs.⁷ The mobile warning sign trailer has been repeatedly targeted with the wheels stolen in June 2019, and the deep-cycle batteries stolen in April 2022.⁸ A local initiative to place hand made fluoro koala crossing signs at the highest kill locations in the Tomaree peninsula was shut down by PSC in June 2022 citing driver safety as the reason for the ruling.⁹ Despite the best efforts of wildlife groups and local initiatives, GeoLINK concluded in 2021 that driver speeds and complacency were an indication that the warning signs were “having limited impact on reducing the number of koala fatalities and injuries due to vehicle strike”.¹⁰

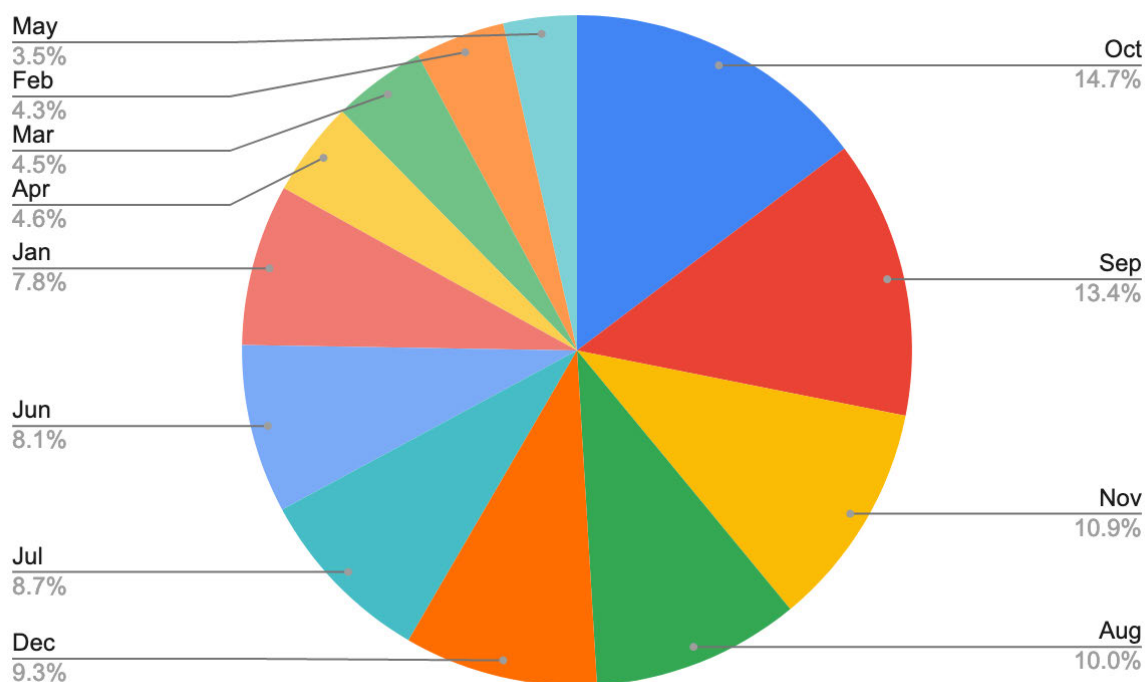
GeoLINK was engaged by NSW DPIE Biodiversity and Conservation Division to look at vehicle strike mitigation measures. They ascertained that the high strike rates on Port Stephens Drive have been caused by the difficulties avoiding collision in the 80 km/h speed area, koala movements in the mating season (particularly July to November) and at dawn and dusk, driver visibility and the volume of traffic. GeoLINK therefore proposed a range of measures for works which included koala exclusion fencing, culvert underpasses, street lighting, dynamic signage, rumble strips and road painting.¹⁰ The NSW DPIE Biodiversity and Conservation Division are funding a program that includes the installation of more than two kilometres of koala exclusion fencing to keep koalas off the road, and the addition of a culvert to “allow koalas to move under the road to access different patches of habitat”.¹¹

Recent work has started to upgrade Nelson Bay Road, also a vehicle strike hotspot. Provisions to protect koalas have included fauna fencing on the southern side of the road between the Boyces Trail and the easement Trail, fauna signage and climbing chutes on the temporary concrete barriers.

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Conflicting opinions and alarming evidence

'Koalas are more at risk of vehicle strikes between July and November as this is the mating season.' The PSKH data on vehicle strikes between 2008 and early 2021 indicates that the risk is more year-round ⁴ than current opinion suggests, with significant reductions in strikes only being between February and May. If initiatives to restrict speed are limited to high-risk periods, we suggest that NSW/ local rescue data is collated and further research done to ensure a more accurate picture.



Koala hotspot indicators

With an estimated 3500 koalas killed by vehicles on NSW roads between 1980 and 2018 (NSW OEH 2019) ², identifying likely vehicle strike hotspots has been the subject of various studies both in terms of habitat use by koalas and in terms of visibility and conditions for the drivers and is important if vehicle strikes are to be reduced. The primary way to assess the location of hotspots is by looking at reported records of koala vehicle strikes. ¹³ Given that records for the same area can vary, as identified above, methods to collate different sources of records for any one area may help give a more accurate picture.

Recent studies do not provide any consensus on how habitat correlates with vehicle strike hotspots. A 2022 study by Melzer and Black found that koala road kills were more likely in areas near streams, on ridges, in woodland abutting streams, and on mid-lower slopes where the dominant vegetation included particular species such as *Eucalyptus tereticornis*, *E. platyphylla*, *E. drepanophylla*. ¹⁴ A 2022 study by Lunney et al found that the habitat type adjacent to a road appears to have little influence on the likelihood of a koala being killed on the road. They suggest that the type of road is of greater importance with koalas statistically more likely to die on major roads than local or arterial roads. ¹⁵

'Keeping koalas off the roads to keep them safe'

Major and minor road networks often criss-cross through koala habitat hence the risk of koalas trying to cross roads. While fauna fencing has been proven to reduce the risk of the koala being struck by cars, if the locations where koalas can access other habitat are limited, the fencing will add to the barrier effect of the road and increase distances that the koala needs to travel to feed. As stated by NSW DPIE, "fences should only be installed with appropriate road-crossing structures that allow safe passage for koalas".¹⁶

A study by Rus et al 2021 found a link between koala movement and habitat fragmentation. Habitat that has low functional connectivity has a higher cost to the koala as a result of travelling greater distances. While dietary needs may be met, fragmented habitat may not provide sufficient resources for reproduction.¹⁷

Fauna fencing and limited crossing points installed as part of the Ballina Pacific Highway Upgrade were heavily criticised when a major bushfire in September 2017 apparently left koalas trapped in burnt areas with limited access to healthy trees across the main road.¹⁸ As there are areas of vegetation in Port Stephens that have not recently burnt, which may be the same for other areas, consideration needs to be given on how koalas can escape or get to food and water in case of fire.

Fauna related crossings and wildlife furniture

The University of Southern Queensland (USQ) is currently studying the effectiveness of underpasses, viaducts, and culverts on a \$1.6 billion bypass in south-east Queensland. The findings could have important implications on how beneficial and safe these road crossings are to the native wildlife they are trying to help. About 75 percent of wildlife using the underpasses, viaducts, and culverts were invasive species. Camera footage shows feral dogs and cats using the underpasses and culverts. More research is needed on the effectiveness of wildlife crossings which includes longer term assessments as native wildlife may take time to get used to the crossings. Given the predation risk from feral animals using the crossings, research also needs to focus on how the crossings can exclude or deter non natives. Dr Allen suggested that in time, species recognition cameras may be used to allow passage through the crossing.¹⁹ In the meanwhile, NSW DPIE recommends the use of wildlife furniture such as timber posts and rails in box culverts and bridge underpasses, and timber refuge poles as they may assist koalas.¹⁶

'Changing driver behaviour only if koalas can't be kept off the road'

In the Port Stephens Local Traffic Committee meeting in May 2021, the committee agreed to request the installation of a 40 km/h High Pedestrian Activity Area in Anna Bay. In the same meeting there was mention that Port Stephens Drive with its 80 km/h speed limit "has a significant crash history".²⁰ Underpinning the accidents and the need to make a pedestrian area 40 km/h is driver behaviour. The importance of driver behaviour should not be taken lightly as its modification can be cost effective and allow resources to be used elsewhere.

In the last few months, a koala named 'Port Stephens Drive Jacko' was hit for a second time by a vehicle, and was lucky to survive both incidents as he crossed near homes where there was some street lighting and a lower speed limit. 'Solstice' is in permanent care at the Port Stephens Koala Sanctuary, needing intensive therapy and laser treatment after a vehicle strike left him with radial nerve damage and a limited range of motion in his left forearm. 'SES Maree' is also in permanent care after a vehicle strike has left her blind. Kempsey Wazza was hit in 2019 on the Pacific Highway and dragged 10 kilometres at speed on the car's grill. The driver was unaware that he had collided with a koala until he stopped the car.⁸

Drivers, witnesses, rescuers and carers, are all traumatised by road incidents involving koalas, and other wildlife. There have been near misses of rescuers being hit by other vehicles while they work.

Wildlife care is costly and relies primarily on volunteers. “A conservative estimate of marsupial roadkill in Australia exceeds 4 million per year.” ²¹

KKEPS recent liaison with Daracon and Transport for NSW staff and Port Stephens Council staff, regarding Stage 1 of the Nelson Bay Road upgrade, currently being constructed, has revealed that there are no regulations or standard operating procedures to deploy fauna safeguards during road construction through wildlife habitat in Port Stephens, and perhaps none for NSW. (There are detailed regulations/policies for the associated destruction of habitat.) ²⁶

Now that koalas are listed as Endangered in NSW, KKEPS recommends that mandatory speed limits for roads traversing koala habitat or in koala hotspots be reduced to levels where drivers have enough time to react and avoid a collision. Studies have shown that lower vehicle speeds reduce the number of vehicle strikes, reduce the severity of injuries and increase chances of survival. ²² Studies have shown that without any sort of policing or visible deterrent reduced speed limits will not be complied with. ²³ NSW DPIE suggests that speeds need to be 60 km/h or less to achieve this. ² an application made on 4 March 2022 by Port Stephens Council's Kimberly Baker to reduce the speed on Port Stephens Drive to 60 km/h is still pending a decision by Traffic for NSW. ²⁴ Biolink found that fixed and average speed cameras may help reduce vehicle speeds at koala vehicle strike hotspots, with any revenue going towards conservation efforts. ²⁵

Recommendations

Given the points raised above, KKEPS recommends that the Inquiry considers the following;

1. Undertake long term research into the effects of fauna fencing and crossing structures on koala access to resources, fecundity, allelic richness, disaster avoidance and predation. Special attention should be given to their use in fragmented habitats.
2. Ensure that any assessment of koala vehicle strike hotspots take into account all data sources for any one area.
3. Limit fauna fencing to areas where habitat connectivity is not greatly impacted and the cost to the koala is low enough not to impact access to resources, fecundity, allelic richness, disaster avoidance and predation. This recommendation recognises that the primary function of wildlife fencing is to keep animals off roadways and that adjustments or additional measures may benefit fragmented habitats.
4. Reduce mandatory speed limits to lower the rate of accidents and vehicle strikes and use revenue generated by non compliance to fund conservation efforts.
5. Employ other speed reduction measures which have proven effective such as rumble strips and enhanced or dynamic signs which drivers are more likely to notice and remember.
6. Develop a state-wide public awareness program/ campaign. ‘Don’t be a tosser’ has been a successful campaign against littering in NSW; a similar campaign against driving at speed in koala habitat may also be effective.
7. Develop and implement regulations to deploy fauna safety guidelines during road construction.

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