

## Plenary session 2: Roadkill

Chaired by Mike Calver (Murdoch University)

**Mike Calver:** As those talks unfolded I was reminded of a novel that I very much enjoyed when I read it a few years back called *Play Little Victims*. It's set in a post-human world dominated by intelligent mice, and although the mice themselves have no real experience or awareness of people, they have access to human records, and thus as they encounter various problems they look back into those records to see what the humans did about them.

One of the problems they bump into is overpopulation, and in looking back through the human records they come to the conclusion that the solution is the motor car, and if they invent it and release it on their little mouse roads, it will solve their overpopulation problems. So as I was listening to the various talks this morning I was thinking, oh, yes, it seems to be that same sort of logic going ahead. Anyway, some very, very good talks indeed, some of them focussing on population levels, some focussing on human aspects of the problem; a little bit of cultural perceptions, Germany versus Australia.

**Darryl Jones:** I want to make a comment and then ask a question. My group has been monitoring the use of underpasses and overpasses at a little place just to the south of Brisbane called Compton Road, which is going to be really famous because more taxpayers' money has been spent on underpasses and overpasses than everything else that's ever been invented for getting animals safely across a road, and we've been looking at whether they work or not. We started about six months after the road construction was completed. We started in winter, we had 15 animals per night using the underpasses and up to 125 animals per night, by the middle of summer, and between 8 and 25 macropods per night using the overpass.

Now, I'm just telling you that little fact because earlier in the year a bunch of us were invited down to Canberra for the first ever roads and biodiversity get-together to see whether, at the federal level, they could maybe actually do something about that. Several times during those discussions engineers from various places, and the one I remember specifically was from Roads Victoria - the particular person got up, who was the environmental officer, and said, "We've been looking especially at land bridges or overpasses on a lot of roads, and the average is really only probably a couple of hundred animals a year are using those. How can you possibly justify them?"

A couple of hundred animals a year. That's unbelievable. That's fantastic. All we're really seeking in a lot of cases, if we just ignore for a moment the roadkill, is connectivity across the road. The populations can actually exchange some genes. A couple of animals a year would be a fantastic success. The second thing is - we're in Brisbane - it only works because we have an absolutely impenetrable barrier, a specially designed fence.

On two occasions now yobboos have cut big holes. The only roadkill that's occurred after the fence was gone was immediately, the next day, where wallabies got through and got squashed, so the fence really, really matters. So I was just wondering if you could comment - you were a bit hazy about the use of the road on your particular spot.

**Rob Close:** Yes, we're a bit hazy because we know that the residents are staying on either side of the road and yet we're still getting lots of roadkills, maybe associated with the tracks. But that's really all we can say because there are no fences there at the moment, and we are hoping that by using the fences we'll direct them onto the overpasses and underpasses. But those underpasses and overpasses are still going to have to be monitored pretty carefully, and I would hope they would have speed humps and the like approaching those hot spot areas as well as the fences, but early days still.

**Don Fletcher:** Don Fletcher from the kangaroo roadkill capital. Well done, Conny and Jacqui, and particularly for presenting your data per kilometre of road, it's not done often enough, and you appealed for some input from people, and looking at the aims of the conference about identifying underlying zoological principles. We should certainly respond to that request.

We can view roadkill in a couple of different ways. People look at it in terms of animal welfare. People look at it in terms of a threat to populations. We need to be clear about what the concern is. In regard to that latter one, that's the only one I'm talking about, we can use principles of ecology and wildlife management to address the concerns, using the kind of data you collect. It would be best to go out and measure the density of the animals in the area, but that's really only possible with heavy research funding like Rob's deploying from the RTA. But your data can also be used as a harvesting statistic so the roadkill is analogous to someone with a trawler on the South Coast fishery or whatever.

You need to collect your data the way you're doing. You do need to express it per kilometre. You need to express it per harvesting effort. So you need to express it per kilometre of vehicle travelled, so at the same time you need to be acquiring traffic information, and we can look at the change over time in the harvest as a coarse indicator of whether there is a threat to the wildlife populations in the area from your statistics or from your areas or not. I'd be interested in any comment you can offer to respond to that, bearing in mind your commendable effort is a voluntary one.

**Jacqui Marlow:** We have approached the RTA. In our working party we have police, we have RTA, we have National Parks and Wildlife Service, we have a whole group of people, and basically in our working party we discuss all the different pieces of information that are relevant. We really see this as a big project. I mean, it's only a starting project at the moment, but we are trying to gather data from everywhere.

The RTA will be giving us their information on how many cars are using the road, but the other problem that we do have is that we're in an area that is expected to have an increase in human population, quite significantly, 35 per cent in the local area. We already have had urban consolidation, so we have seen a big increase in roadkill. A decade ago, wallabies were virtually never reported in the Northern Beaches, now as the numbers are coming in it is huge.

The other problem we have is the surveys that people are doing, we haven't GPS'd the whole lot together and amalgamated it, we've still got individual surveys. And the third problem is that if we do use other people, which was one of my questions, to bring in extra information because it's more than just Conny and I can manage, how do we actually standardise all that information.

**Brenda Kranz:** It seems to me there's a bit of dilemma between the need for corridors, like vegetative corridors in fragmented landscapes such as urban areas, and also agricultural areas and those corridors often occurring on roadsides. I'm just wondering, apart from the great idea of fencing, which of course is extremely expensive, how we resolve this issue?

**Conny Harris:** One of the things which I find really interesting is the persistence of Australians to zoom around the roads with that heavy speed. I really am amazed about it. I've been just recently in Germany and Sweden and England, and people are quite happy to go slower, also the other way of transport, the pushbike, is really not taken up very much here, and it's not only for the safety of animals, we've got other problems in this country. We have childhood obesity here. My other thing is that I'm a medical practitioner, and I do see that very clearly.

We could solve a lot of problems quite easily, also the environmental of course with our greenhouse gases, if we would sort of swing a little bit around and make it for everybody a better place, so let's not only always consider fencing the animals out, or us in, or however you want to see it, but think of how we could perhaps live better together, I reckon.

**Barbara Smith:** Conny, I was fortunate to have an acreage backing onto your area, and lived in that area for 20 years, and I'd like to suggest that the current increasing road mortality of wallabies has got nothing to do with increased vehicular traffic but the fact of the fox control.

In 20 years I would have travelled those roads regularly and I would have only seen 20 swamp wallabies. I'm sure if I'd kept an accurate record and, as I say, I think the increase is a response to fox control, that more swamp wallabies are actually surviving to adulthood or at an age where the current wallaby population is actually reproducing after being really in a predator pit for years and years.

**Conny Harris:** This is a difficult question to answer. Okay, let's say the foxes have kept the numbers beforehand down, but what do we want? Do we want to have the numbers as low as if it was when foxes were roaming around? I think it's an absolute asset to have these

wallabies and to have people actually have the chance to see them. I understand you think the population has increased because of the rural properties. Is that right? Yes. And I think that that would be wonderful if that has happened, and because that is so that doesn't mean that we've got the right to hit them on the road.

It's just means we have to look into how we now respond to that, and I think a speed reduction would be the best way, and also, to make other forms of transport, not just for transporting certain items from A to B as Dan Ramp has mentioned, but also for our daily commuting. It would be great if we find other ways where we can live with this beautiful Australian fauna.

**Enhou Lee** (University of New South Wales): I just thought I'd respond to the comment we had earlier about roads as transport corridors. I really want to hammer in the point that we need to be very specific about the roads that we're talking about. In Western Australia, we've got the Western Australian wheat belt, and some roads in those areas act as transport corridors and they have remnant habitats and lots of wildlife that use them, but the majority of roads actually fragment the habitat. So, I suggest that mitigation strategies, like fencing, would be quite useful in those situations.

**Mel Hall** (National Parks and Wildlife, Sydney north region). A comment to Conny on the roadkill in the Northern Beaches area. Interestingly, Conny's main sites, Morgan Road and Wakehurst Parkway, are in our "no fox control" control site. We're running a fox threat abatement plan experiment where we undertake fox baiting four times a year in Ku-ring-gai Chase National Park.

Twice a year, most of the councils in the northern Sydney area undertake fox baiting to help lower numbers across the area, but Garigal National Park and East Garigal, which backs onto Morgan Road, a substantial amount of Warringah Council land and Crown land adjacent Conny's site, foxes are not controlled. We monitor fox numbers twice annually and there still is a reasonable number of foxes surviving and preying in that area.

No situation has a simple answer, and some of the other things that we need to consider - yes, anecdotal evidence is showing us that one of the effects of fox control is that we are seeing more swamp wallabies. One of the other factors that we need to think about, as well as population increases and development, is the effect of wildfire and hazard reduction burning in these areas. Just anecdotally at this stage, we're noticing that wallabies, bandicoots and brush turkeys tend to be encroaching in urban areas, more in areas adjacent to hazard reduction burning areas.

In terms of scientific evidence, we're in the process of collating fox threat-abatement plan data. Our study has been based on the southern brown and the long-nosed bandicoots. Some of the preliminary results will be released mid next year, so that's something that we'll flick on to people like Conny.

**Rob Close:** Just as a bit of balance from southern Sydney. We're getting a lot of swamp wallabies around the southern part of Sydney as well, and also wallaroos.

As far as I know, there's no fox abatement program, and I can't see any particular factor that's leading to this increase, but it's certainly there and we're getting a lot of dog kills of swamp wallabies.

**Chris Moon:** I've worked a lot with Rob on his project, but I've been focussed on wildlife roadkill for a decade or a decade and a half. There seems to be a presumption that the kangaroos and wallabies get killed just because they're there. I've given a lot of thought to why they get killed, and I've actually watched them when they're in the headlights, and there's a point which I think is very pertinent to management, that when a roo or a wallaby is caught in the headlights, or a group of them, they hop, and every time they hop their shadow changes.

What they're actually doing with this very random-looking hopping around and getting killed is they're reacting to shadows, and I think that the provision of lighting at black spots would make a massive difference because it would reduce the shadows. The other thing that it does is allows drivers to see wildlife on the road ahead of them, and possibly a few other benefits, like the animals not having dilated pupils, but that's something I'd like to see taken up in an experimental way.

**Jacqui Marlow:** One of the areas where we are getting a huge amount of roadkill of wallabies and possums is on Mona Vale Road. In a well-lit area as you come down Tumbledown Dick Hill, which is an area where there is Garigal National Park to the right and Ku-ring-gai National Park to the left, it's got street lights right through it, yet there is a huge number of roadkill there of wallabies.

One of the things our working party is going to address with the WIRES and Sydney Metropolitan Wildlife people, is that we're going to try and work out if light does or doesn't affect roadkill.

**Graeme Coulson** (Melbourne Uni.): A point of clarification, and then a question. First of all, just to clarify, the data I presented on roadkills for Anglesea were based on what the police call use of force records, which is a much more restricted data set than the one that Dan Ramp was talking about for New South Wales. It's not what it sounds like, they don't take them to a back room and give them a stern speaking-to. It's where a firearm has been discharged to kill an injured kangaroo, so it's a very narrow tip to the iceberg, but the question I wanted to ask is the same one that Jacqui raised before.

We've got a number of Parks Victoria rangers and DSE Wildlife officers, we've got wildlife carers and council workers and others all dealing with, and often removing carcasses, and that data are currently completely scattered. If anybody has any suggestions about how we can integrate that information and get some decent figures, it would be really useful.

**Dan Ramp** (University of New South Wales): I think we really do need to have some streamlining of how data are collected. For example, just recently we've been doing some work up around Ku-ring-gai, and we asked DEC about how many swamp wallabies have been killed on the highway, and they said they didn't think that any

were, and then we spoke to the RTA, and they said that they collect them off the road every day. So there's a lack of communication between agencies on collection of carcasses. I think we really need to start at the top and work down and get agencies all to adopt some kind of streamlined procedure in the way in which this kind of information is collected.

**Peter Stephens** (National Parks): One for Dan Ramp. Royal National Park, and I guess it's about language, animal-vehicle collisions. Having had the experience there of managing some of those reserves I've picked up as many echidnas as people in some of those black spots, and I think in terms of your last comment, Dan, I'd be keen to know what you'd propose both in terms of research and community involvement in looking at that match.

You know, people, animals tend to get killed, hurt, have accidents in the same places. Why? We had that debate about road speed in the Royal National Park, for example, and didn't win it. So the question is, how do you involve the community in that discussion when you've got such disparate facts and figures to work with? Let's take, for example, koalas and Bonville.

There is such an opportunity, it seems, to celebrate the fact, not necessarily that there is an increase in population because we've been successful so therefore higher roadkill is great. I mean, try the media run on that, but more that these are special places in the landscape and therefore it's not just about getting a few animals backwards and forwards across the road. It is, in fact, about highlighting the value of that whole place and precinct. So I'm wondering if any of the other speakers would like to talk about that, particularly in arid landscapes, given that we're going to see more of them in our lifetime.

**Dan Ramp:** Yes, it was a really interesting study that we did. We surveyed all the residents as well as tourists to the area. We were really interested in what the attitudes were, and perceptions, of whether or not it was a problem and what people were willing to do to try and alleviate the problem. It's interesting, we really had a lot of support from the residents in the area. They were very vocal in their support. We ran a prize as part of the questionnaire that we did and we had a number of the businesses in Bundeena providing prizes.

So there was a good level of awareness of the issue, and a willingness to do things, yet at the same time the residents don't want the speed limit reduced on the road because they often have to go out of the park to get to work every single day, and they don't want to add an extra 10 minutes or 15 minutes to their driving time. It's that difficult thing between I know what I should be doing, I know I should be vegetarian because killing an animal is bad, but yet we still eat meat.

So it's one of those things where knowledge isn't necessarily enough to get action. But I think we really do need to focus on having some kind of leadership that involves community, and I think community education is the biggest prohibitive factor in making any real difference in preventing roadkill.

**Shelley Burgin:** Dan, how many black dogs did you find in your database? I'll tell you why then.

**Dan Ramp:** How many black dogs, as in the colour?

**Shelley Burgin:** Yes.

**Dan Ramp:** It's not listed unfortunately.

**Shelley Burgin:** There is another reason why you might get so many dogs on the database. I rolled my car a few years ago, and there wasn't anybody else involved, I just rolled my car on a bad corner that had just been fixed by the RTA. When the police came they said to me, "So where was the black dog?" and I said, "There weren't any dogs," and the policeman said to me, "It's the first time ever that I've seen a collision that didn't involve somebody else that didn't involve a black dog." So that might be a part of your answer.

We're talking about getting the agencies together - this is really a comment about looking at roadkills, so that we actually know where they get picked up regularly,

and who doesn't pick up the carcasses. One of the things I've noticed in the last 5 to 10 years on the UWS Hawkesbury campus where we have lots and lots - it's a farm - is that we've changed the grazing pressure on the property substantially. Because of drops in government funding, we can't afford to run herds of stock any more, so we've gradually got rid of them, and I've noticed the numbers of kangaroos have bred up hugely.

When I first went there, nearly 20 years ago, I occasionally saw a kangaroo. Now I can go out any morning or any late afternoon and see small mobs of them, and sometimes multiple mobs. So it's not just what we're doing on the side of the road, it's also the management of adjacent lands that we need to think about when we're thinking about reducing roadkill. I actually saw my first kangaroo killed, on the side of the road, just recently, which reinforces the fact that we need to do something about the management of kangaroos.