

## Appendix 1: Transcript of question and answer sessions and panel discussion

*The following transcript is taken from a recording of the question and answer sessions following each presentation and the final panel discussion at the conclusion of the 2003 RSPCA Scientific Seminar. While care has been taken in the preparation of this transcript, RSPCA Australia does not guarantee the accuracy of the information presented. Limited editing has been carried out to clarify the text in some places.*

### Session 1- Community needs and expectations in pest animal control: identifying shared goals

#### Integrating Animal Welfare into Vertebrate Pest Management *Bidda Jones, Scientific Officer, RSPCA Australia*

**Mary Bomford (Bureau of of Rural Sciences):** I am interested in the humaneness of the killing and I agree with your point it is best to make it humane, but would you also consider looking at the humaneness of the alternative death, for instance the horses in Guy Fawkes National Park that were culled by aerial shooting, perhaps they would have died inhumanely anyway of starvation and thirst. If the alternative natural death is going to be inhumane do you think there is perhaps a case to consider culling?

**Bidda Jones:** I am not talking about whether or not there is case to consider culling. As I said, it's how it's done. The really important point is where we intervene. Once we have made that decision to intervene, it is something that becomes under human control. The way that animals die in the wild is not under our control, we can't make decisions about that, but once we have made a decision to intervene in the fate of those animals we have a duty to do it in the most appropriate manner.

**David Mellor:** Bidda has given us a list of six principles. I think we will find that a number of other people during the course of the day will be coming up with some principles and guiding ideas. An outcome of today, or a little bit further down the line, might be to bring all of those together to see if we can actually sort out the best list. It won't necessarily be six, it might be more than six and it may have certain subdivisions. If you have that in mind, about how we can guide ourselves to appropriate action in this area, that would be worthwhile.

#### A Landholders Perspective on Vertebrate "Pest" Control

Helen Cathles, Landholder, Wee Jasper

**Joan Papayanni (World League for Protection of Animals):** I was very interested in the comment about the Marema guard dog, and you said you have used them, but you seem to be sort of playing them down a bit. Can you really just tell us a bit more about how affective they are; because from reports we have heard they do save the lives of an enormous number of sheep. Is that correct?

**Helen Cathles:** They definitely do. What I am saying is, don't be misled that everything is very bright and rosy, there is a down side to everything and the down side is the treatment that they give the kangaroos at home, they chase them, they kill them, and they don't always kill them - sometimes they just merely play with them. That is the downside, but they are extremely effective in lowering the predation on lambs and kids.

**Joan Papayanni:** And I guess in those areas where the kangaroos are not so prevalent they would be even more effective, would they?

**Helen Cathles:** Oh they would still do both activities.

**David Mellor:** Any further questions or comments? Helen made a plea for not removing pest control methods that are currently available and working before we have alternatives that are more humane, workable, simple and cost effective. Any comments on that? Do people see that as a delaying tactic or do they see it as a necessity?

**Bidda Jones (RSPCA Australia):** I think the difficulty is in the drive towards finding replacements for existing methods. We should not be complacent about what currently exists. We should really take on this issue rather than playing lip service to it, and do as much as we can to get those alternative solutions that are around at the moment out there in the field so users can trial them. In this way they can get incorporated into current methods, so that then you've got a chance to take away some of the existing methods.

**Helen Cathles:** Yes, I think I commented that research is extremely important. It is very important that continues, but it is very important that when you identify what to do that it is workable, that it is economic, as well as humane.

#### **Stakeholder interests – conservation issues**

Anne Reeves, Environmentalist

**Katherine Rogers (NSW Animal Societies Federation):** I just noticed a couple of comments that you made that I would like to respond to. You say delay is not an option. I have to say I think that is a questionable attitude, given that we have conducted not real in-depth holistic research in to the inter-relationships of introduced and native species, and between introduced and other introduced species. I found it particularly interesting in relation to the kangaroos, as we know kangaroos are a native species, but there is huge commercial pressures for the killing of kangaroos and even at this time of drought, when there is a great deal of evidence from researchers that numbers are dropping, the size and weight of the Big Red is being reduced so that the average now is about two years old even though they can live to 30 years of age. I think so much is driven by myth and what is commonly accepted and by what we read in the news media. Whereas we are not conducting or basing our decision and actions on research which indicates what needs to happen.

**Anne Reeves:** Do you want an answer or do you want to keep your statement going?

**Katherine Rogers:** I would be interested in hearing your response to that.

**Anne Reeves:** I think what you fail to pick up and perhaps I didn't specify it clearly enough, with the Hatter Lakes example, was that there was extensive involvement among a range of scientists who were advising what is the appropriate level for a natural population of roos. As you well know, we have artificially inflated population numbers in some areas, we have planted yummy food crops for them in adjacent paddocks to natural areas. We have put in watering points, we have removed some of the natural predation impacts. We have intervened already. There are times and places where the population grows to totally unsustainable levels, the animals may die off in drought but it is not necessarily a particularly humane option, and responsible culling in the best practice possible often delivers a better outcome for the roo populations as well as for all the other species and the landscape as a whole. This is not all species of roos, and I did also point out very clearly that conservation groups have not yet seen commercialisation of our native wildlife as an acceptable option under the parameters under which it is managed.

**NRA's role in addressing community concerns over the use of poisons for vertebrate pest control**  
*Joe Smith, Program Manager, Pesticides Division, National Registration Authority*

**David Mellor:** What I have taken away from that is that there is a capacity to link animal welfare with efficacy requirements. I suppose my question just to start things off is to say, apart from just the general theme of having discussion, are there specific things that can actually help you, give you support for doing that. Is there sort of resistance within the NRA to doing that, and if there is what can be done to help you overcome that?

**Joe Smith:** I don't think there is resistance. I think there is a general feeling that it is an important thing that we should be considering. I guess the challenge for us is being able to define sound criteria or requirements which are based on good science to help us make those decisions. Because if we were to reject an application or de-register a product on the basis of animal welfare issues, they're appealable decisions, so it really has to be on the basis of good science and clearly linked to our legislation. I don't think there is a resistance but there is a need for help to make it happen.

**Mary Bomford (Bureau of of Rural Sciences):** You say your assesment criteria are governed by the AgVet Code. It seems to me that they are pretty fuzzy in relation to animal welfare. Who woud need to agree to get animal welfare put in there in a more concrete clear way so that you could take more account of it in your assesment.

**Joe Smith:** Thanks, that is a good question, I think at the beginning of the talk I mentioned we existed by virtue of an authority between the Commonwealth and the other states, so basically ultimately the Parliament of Australia would have to agree if there was to be a change to our legislation. But before that, the key thing that would need to be there would be agreement between the Commonwealth areas of AFFA and the policy areas of the relevant states who were signatories to the National Registration Scheme.

**Glen Saunders (NSW Agriculture):** I am in the business of providing the objective science I guess, behind the registration process, and perhaps doing that in a world of diminishing resources which I guess we are all working in. One of the problems I can see in the future is that in the process of getting products registered for vertebrate pest control, if we use animal welfare constraints as a part of that process, is that scientists are being called on more to participate in the actual registration process, and I find that is a quite expensive and time consuming area. I don't know what the solution to that is, and I don't think that is your fault, but I can see that as a hindrance to future registration of alternatives to present control methods. Care to comment?

**Joe Smith:** I am not sure I have got the question, but if I give the wrong answer you can give me the question again. I guess in your case it is particularly related to efficacy. When we look at efficacy we seek the external advice of people who are expert in the field so we might not necessarily have someone in the NRA who is an expert in the effectiveness of verebrate pest control agents. We do pay. The NRA is a cost-recovered agency and we do pay the states or the other agencies for that advice. It is a matter of whether that level of payment and the level of involvement is appropriate or whether it is adequate - I don't know. We are going through a process at the moment of talking with the states a bit about efficacy related evaluations and that may lead to something that may help sort this concern out.

**Fiona McCrossin (Colong Foundation for Wilderness):** I was just interested to hear of the concept of the adverse experience register and the fact that it need to be extended to agricultural chemicals, could you just expand a little bit on that program.

**Joe Smith:** For some years we have had an adverse experience reporting program for veterinary medicine, veterinary chemical products and more recently there is perceived to be a growing need or a growing desire to have the same sort of system in place for agricultural chemical products. There is already a provision within our legislation which says that if a registrant becomes aware of an adverse event which might impact upon our views on about whether it needs to be registered, they have got to notify us and there are offences for not doing that. I guess what we are looking at is putting in place a process to try and formalize that so we do have a process for gathering information.

## **Role of the Vertebrate Pests Committee in improving the humaneness of pest animal control**

Eric Davis, National Vertebrate Pests Committee

**Ian Lugton (NSW Agriculture):** Given the commitment of VPC to animal welfare, or at least their purported commitment, wouldn't you see it as appropriate that they should actually have some few policies in place to try and bring that together?

**Eric Davis:** That's a good question. I can't speak on behalf of VPC in that sense, but rather than looking backwards and saying wouldn't it be good to, I think probably the way to move forward on that is well, where would VPC be in future. I would agree with your view that VPC probably ultimately will have policies. I think there are members and constituencies within VPC that are trying to move VPC in that direction, to more formally recognize animal welfare in a policy sense.

**Onn Ben David (RSPCA Vic):** One of the things that strikes me at the beginning of your presentation, and I kept looking at the first paragraph was that there is not a word about the responsibilities of anyone in VPC to animal welfare. I will repeat it to you from your own writing here, "the responsibilities are for conservation, sustainable use of management, water, land, biological resources, CSIRO, Bureau of Rural Science, Environment Australia, Biosecurity". Not a word and not a person who is zeroing in on animal welfare. While you do a lot of very good work, I would really have liked to have seen that point identified right from the top.

**Eric Davis:** It is a good comment and I would like to address it. I may not have emphasized this sufficiently, [but there is] an animal welfare working group, so the VPC refers issues to that animal welfare working group. And I guess it is implied but I should have stated it, that VPC brings the whole of Government from each of its jurisdictions position to the table each time it meets. The individual jurisdictions, and I can't speak for any other than my own, are required to take animal welfare issues on board and to consider those. Now we can argue about the extent or the quantum of that but it's not as dry an animal welfare representation as it is would appear.

**Fiona McCrossin (Colong Foundation for Wilderness):** I just want to address the concept of 'achievable and cost effective'. We talk a lot about cost, and while I am coming from an environmental perspective and you have been asked to incorporate ecologically sustainable development in the principles in to your decision making, perhaps this quantification becomes very important also for animal welfare. I will take it a step back: ecologically sustainable development - is there anything within the process that actually looks at quantifying environmental costs using existing environmental economic theory? I know this is an environmental question, but I think it does follow the concept of animal welfare because, how do you quantify welfare?

**Eric Davis:** It is a really good question because it is one of the difficulties that we face. There are two things that I want to say. The first goes back to Helen Cathles' point about the control programs. Whether it is for agricultural protection or whether it is for environmental protection, it is individual landholders and public land managers who implement them, so they are operating more or less in the stand-alone context in terms of their ability to record data, to monitor, and so on. So our capacity to do that is one of the things that limits us at all levels and that is one of the things that we need to improve. I glossed over it, but our national Property Event Management system when it comes will aid this considerably and there has been a lot of other work going into that as well. Taking that forward, how do you cost that, how do you take account of what the actual environmental costs are and match that against control efforts? Very difficult.

## **Assessing public attitudes to vertebrate pest control**

Prof Grahame Coleman, Animal Welfare Centre and Monash University

**Anne Reeves (Environmentalist):** ...the term management is being used in a very limited way. For example, I haven't heard any discussion of different ways of looking at managing animals by poisoning them, relocating or some of those ways. For example, if we were to legally ban pig dogging, (a) it would mean that there would be far fewer dogs becoming wild, (b) it would mean that hunters weren't deliberately re-releasing pigs in to the wild and so on. But basically people come up to issues in their own way and with that particular focus if it is poisoning it is poison and so on. What would you suggest as a way forward to broadening the way the issue of management of animals in the context in which we are discussing, should occur.

**Grahame Coleman:** Can I have an hour? I don't think there is any broad prescription in the sense that you can just come up with some strategy which is going to uniformly work across the whole area. The way in which policy is formulated in the first instance really does need to include all of the stakeholders so that you have got a reasonable chance that the strategies that are being proposed have a fair range of inputs: not just the scientific inputs, not just the economic or other inputs of that kind, but also including welfare inputs and so on. If you do that there is a reasonable chance that, providing that there is moderate consensus, the community support will follow which is essential to its implementation. We have seen plenty of examples recently where community opposition to strategies like the relocation of the fruit bats in Victoria, or the culling of kangaroos at Puckapunyal have either impeded or prevented some of the strategies. But if you have got a wide stakeholder input you have got a better chance at getting the subsequent community support.

## **Session 2 – Ethics of controlling vertebrate pests**

### **Killing pest animals – an ethical perspective**

Prof David Mellor, Director, Animal Welfare Science and Bioethics Centre, Massey University

**Glen Fisher (QLD Natural Resources and Mines):** I've got a couple of questions which you might be able to answer together. Firstly, do you consider feasibility to be a key component of sorting out the ethics of vertebrate pest control, and [secondly] is it important to take in to consideration the harm-benefit relationship of not doing something, not just the harm-benefit relationship of actually doing something?

**David Mellor:** Yes, whether you intervene at all is obviously one of the options that has to be considered. There may be circumstances where not intervening would be an appropriate response. The question of the humaneness [must be] balanced against the cost, the feasibility and the efficacy. At the moment we have efficacious methods in killing or allowing control. The danger if we accept that we have got efficacious methods, [and believe that] we don't have to do anything else is that we lose the imperative that is upon us. This is a tidal wave that is overtaking us in terms of considering the humaneness of what we do. It is purposeless for the people who develop methods for use out there to control vertebrate pests to recommend methods that simply won't work or can't be used or are too expensive. The humane methods need to be developed with that in mind. Now it could be that humane, practical methods will arise from work that has been done where the initial approach has been one that wouldn't work in the field. But there must be this drive towards improving the humaneness of them and looking for alternatives. But we can't foist on trappers one that is going to have them losing their hands or fingers and we can't give poison formulations that are going to kill trappers or where the non-target animals are badly affected etc. So all of these features have to be taken in to consideration and balanced. And this is where the harm-benefit analysis is all the harms that can be anticipated and all the benefits that can be anticipated.

## **Session 3 – Re-examining current control strategies**

### **Case studies of control strategies: the Tasmanian story**

Dr Mick Statham, Tasmanian Institute of Agricultural Research

**David Mellor:** Thanks Mike, it is nice to see some examples of the thing in progress. You talked about the amount of 1080 that is being used, did I hear you correctly to say that it is 10 kilograms in Tasmania?

**Mick Statham:** It was about nine and a half kilograms last year.

**David Mellor:** And 180 kilograms in the whole of Australia?

**Mick Statham:** The estimate is about one hundred and fifty. Around that order.

**David Mellor:** How many tonnes do we use in New Zealand?

**Mick Statham:** I think NZ figures are something around two tonnes.

**Anne Reeves (Environmentalist):** It was put to me, for 1080 in Tasmania, that one of the other dilemmas is the proper costing of the various methods we use and that 1080 is significantly subsidized which makes it readily accessible at a low cost to people who may not necessarily exercise the care they should. Would you comment on the validity of that?

**Mick Statham:** It is subsidized to the effect that applications for permits to National Parks Authority are not charged for. The permit can be issued for nothing after an inspection. In terms of the actual control it goes on full cost recovery, something like fifty dollars an hour from when they leave the office to when the operator gets back in to the office, fifty cents a kilometre, and a \$20 service fee. We certainly recover more than the cost of doing the operation. So it is no longer a cheap option, it used to be but that was ten or fifteen years ago.

**David Dall (Pestat):** My question is about Pindone. You mentioned concerns about accumulation in scavengers. I am not sure whether that is well documented - is this a fear of yours or is there hard scientific evidence that it will affect animals that eat poisoned carcasses?

**Mick Statham:** At this stage it is a concern expressed by National Parks Authority. They have essentially stopped, or they haven't started, so they have prevented any use outside urban areas. That is all I can say, it is a perception rather than a hard fact at this stage.

**Linton Staples (Animal Control Technologies):** ...that make some of the Pindone products, and run a company called Animal Control Technologies. I just thought I had better buy in to that discussion. The research has been done on Pindone, the half-life is around about four days in a rabbit and there is very low accumulation up the food chain. Pindone is a first generation anticoagulant which differs very much in tissue accumulation from the second generation anticoagulants, which do have a problem of accumulation in the food chain, so just as a point of clarification, not all chemicals are the same with respect to their accumulation risk.

**Mick Statham:** I realize that, Linton. Would you like to comment on what you think may happen to say devils that move in and only feed on poisoned carcasses?

**Linton Staples:** I think the risk on a short-term exposure basis would be very low, but the risk does increase the more often you keep exposing them to a low doses of the chemical. But as long as they are not feeding in the same area and getting continuous doses, it is very much the story of warfarin as an anticoagulant, they are not very powerful so it is actually quite difficult to kill things second-hand. The studies which have been done deliberately, that sort of disprove that it is theoretically possible, have been to force-feed birds with mice (or something similar) that have been deliberately overdosed with the chemical. So the secondary animal always dies in that situation because they have got no choice to get away. In the field the risk is much much lower. That is not the case though with a chemical known

as brodifacoum and is one reason why no one will use brodifacoum in broad acre control of mice or rabbits or anything else, hopefully.

### **Considering humaneness in implementing and designing control strategies: the Victorian story**

Glenys Oogjes, Convenor, Victorian AWAC Wildlife and Pest animals Working Group

**David Mellor:** What do you think is the greatest achievement so far with your four meetings and amazing agenda?

**Glenys Oogjes:** Well, I think that it is the process as much as anything because in addition to having those people on the committee, what I didn't tell you was that when we meet (every second month for four or five hours) we have had people from the industries or the areas involved come in and talk to us. So people from the department that I have just been bagging all afternoon, they come in and tell us about the way they do things and the reasons they do them. Similarly we had the game bird farm people. I think that is the most important thing at this stage - to get the communication going.

**David Dall (Pestat):** Glenys, did I see you write recreational fishing on your list there? That is a mighty big task to take on, would you like to say something about that?

**Glenys Oogjes:** Yes, I am not suggesting they are feral or anything else, because it is wildlife as well as introduced and pest animals. We've been having quite a lot of discussion in the past through AWAC when we were doing other sub-committee type activities, and we have had some of the recreational fishing people in to speak to us in the past. We will probably start with the NACCAW position paper which talks about 'if you go to fish then animals should be killed immediately', and the way they are handled, that sort of thing. My personal view is that we shouldn't be doing it.

**Fiona McCrossin (Colong Foundation for Wilderness):** I just wondered whether you could give me an idea of how you differentiate between the terms wildlife, ie wild living animals, versus pest species and in doing that, perhaps you could use the example of how you might take a stance on wild horses as opposed to wild pigs.

**Glenys Oogjes:** I am sorry - I don't know the distinction between wild horses and wild pigs?

**Fiona McCrossin:** Would you consider a wild horse as a pest animal? Firstly you are differentiating between wild living animals and pest animals. Wild living animals I understand to be both native and introduced species...

**Glenys Oogjes:** I was just using that as broad term to talk about all of the animals that we are looking at.

**Fiona McCrossin:** Okay, so we have got wildlife including introduced species and native species, and then we've got a group of pest animals. Now my organization would consider a wild horse as a pest animal, would you consider a wild horse as a pest animal and if not, why not?

**Glenys Oogjes:** Well I hate the term [pest animal], but wild, introduced animals for a start of course are just that - they are introduced. However when we are talking from an ethical point of view about whether something should be interfered with in some way, then you would have to show that something was causing great damage. It is only then that you can talk about any animal being a pest animal. It is about impact.

**Fiona McCrossin:** Then can I interpret from that that you do not consider wild horses to be having an impact on our ecological systems, for example, Kosciusko National Park.

**Glenys Oogjes:** Not in Victoria.

**Fiona McCrossin:** Another Alpine National Park, Victorian, there are plenty of them.

**Glenys Oogjes:** Well it doesn't have to be horses, it can be anything. You would have to show the impact they were having and that you could actually do something reasonable about them, and then if indeed you thought it was necessary to control them, then you would have to ensure that it was the best method possible. We've been very concerned about many of the methods being used in the past of course. Helicopter shooting – it has been argued that it's good, but you are still shooting an animal from a moving platform so we are very concerned about those sorts of issues.

### **Assessing the humaneness of pest control methods**

A/Prof Neville Gregory, South Australian Agricultural Research and Development Institute

**Mary Bomford (Bureau of Rural Sciences):** I like the idea of your list. My concern is that all the top ranking ones, Av alarm, Shoo Roo, Methiocarb, don't work: Shoo Roo has been well reviewed and is absolutely hopeless, Av Alarm is not much better from the scientific literature I've read, Methiocarb leaves unacceptable residues. It is great but you have got to find things that will work and most of the things that work have some animal welfare problems.

**Neville Gregory:** I totally agree with your comment. I don't think the fact that they are ineffective does not mean that automatically they are off the list, unless they are not used. It does so happen Shoo Roo is used, Av Alarm is used, Methiocarb, not very much. They are there available for use, so that is why I put them up, but I accept your point entirely. In hard reality, when it comes to applying that list, [we could] probably cross out most of the ones in Category 5.

**Anne Reeves (Environmentalist):** In thinking about this topic prior to the seminar I recall the Chinese had this large drive to remove all the sparrows by banging intensively on all sorts of things therefore giving the sparrows no rest, I guess we call that a repellent, but nevertheless, I wondered seriously was that a humane approach?

**Neville Gregory:** A Shoo sparrow device based on pretty intolerable noise, how do we feel about that? It depends to some extent on the alternative. If you put it on the list are you saying it won't be in number 5, or are you questioning would it actually be in number 5 or should it be further down? That is a very good question because there may be an element of suffering. Off the top of my head I haven't got a clue. I expect you're the same, I don't know. So, the make up, the fabrication of that list may not be based on really good evidence. There is a question of whether we feel we are at the right stage to try and make the best call that we can, and you may have to cut the corners off the cube of truth in terms of what the real answer is. You just have to make up the best answer that you can. Is that acceptable?

**Tony Robinson (CSIRO):** I've got no problem with this idea - I think we do it all the time and I think we need to revisit it all the time. I take Mary Bomford's point to say that [the methods] have to work, otherwise there is not even much point putting them on the list. But there is one specific one you have put on the list which I would have to disagree with, and that is RCD as a 2. Rabbit hemorrhagic disease must be one of the most humane ways of killing a rabbit. They die incredibly quickly, very little suffering, in fact no suffering.

**Neville Gregory:** Can I answer that point?

**Tony Robinson:** You can.

**Neville Gregory:** I approached making that list in with exactly the same judgment call as you've just given now. I thought an animal dying from a stroke, which is probably the primary cause or it may be an infarct in the coronary artery, would in fact be a relatively humane method and it should be way up

the top of the list. I then went to the literature and I saw a paper in the Journal of Laboratory Animals which is by a group I believe were from the Netherlands (it might have been Belgium) where they have been looking at it under laboratory situations and frankly the signs, the behavioral signs and the report that they gave made me bring it down. So okay, it is only based on one paper, but I was sufficiently disturbed by that report..

**Tony Robinson:** Yes, I guess that has not been our experience at CSIRO.

**Neville Gregory:** Fine. It would be nice to share a bit more interchange on that later on.

**Frank Gigliotti (Vertebrate Pest Research Department, VIAS):** I just wanted to get your opinion because you highly rate repellants. A lot of concerns with repellants is when you are trying to convince people of them is that you are just moving the problem elsewhere. How do you feel about that?

**Neville Gregory:** What I am doing I am talking about the humaneness of managing that pest for a given situation. So let's say you were trying to give advice on a bird pest. You could go down that list and say the most humane one would be in category 5, but then you obviously have to give the caveats that they may not be very effective and you might be giving [the problem] to your neighbour. In terms of the individual animal itself, that is probably the most humane approach. You're not hoping to kill it. You may be causing it noise disturbance in some of these cases, and that one I fully accept. Have I answered your point?

**Linton Staples (Animal Control Technologies):** I must say I am fascinated and intrigued by an animal rusting to death due to the use of steel shot. But it prompted me to ask you a question which is a little left of field from the specifics of the options you have talked about, but I raise it for a reason and I don't want you to all laugh. If we were to control a group of horses for example, a good control method might be a cluster bomb. How would you rate a cluster bomb for humaneness?

**Neville Gregory:** It really does depend on how it kills the animal doesn't it? Whether it is effective or not. Explosions are covered in [my] paper and if it is a serious question, I suggest you actually read that paper.

**Linton Staples:** The question is loaded, of course, because we are dealing with control of pest animals, and I suppose some human populations would seek to control each other as pests in one form or another. So are we applying the same sorts of standards to our control of pest animals and our ethical considerations than for example the military? I am not doing this for a political stunt here, but maybe there are some lessons, I don't know whether the people that do develop various other lethal control methods for various situations might be able to teach us something or whether they may have quite seriously evaluated humaneness considerations from a military point of view, perhaps we could learn something from it.

**Neville Gregory:** To add a bit more reality to your question I think, explosions are used in a number of contexts, one would be particularly in fresh water fish control. So let's say you've got a pond or a lake or a creek or a dam that is heavily infested with an unwanted species you can get rid of it in one detonation quite effectively. The other scenario which has been used for along time in Australia is explosions in rabbit burrows and warrens. In the old days they used to use carbon disulphide because it was readily available as an insecticide, they would pour it down the burrow and then they would seal it up and detonate it. Sometimes the method of detonation was not particularly savory in itself. But nowadays it's usually propane put down the burrow and then ignited. So explosions are used. We don't really know what happens in the case of warren destruction with explosions. If you imagine the logistics if it, let's say you have got a central corridor in your warren and you have side branches, an animal in the side branches will not get a shock wave as an animal in the main artery warren [would] and there are genuine concerns that some animals will be debilitated but not killed or stunned in an explosion of this context.

## Session 4 – Developing innovative and practical humane solutions

### Short and middle term solutions: what is possible to ensure that existing control methods are more humane

Clive A Marks, Victorian Institute of Animal Science

**Peter Kerr (Pest Animal Control Research Centre):** I was interested Clive why you ruled out sedatives and from your drug combination and went for analgaesics and anxiolytics instead.

**Clive Marks:** Non-sedating anxiolytics. There's a couple of reasons. The main one is that we have to accept that fact that a lot of smaller mammals are probably going to be less susceptible to 1080 than they are to some of the analgesic and anxiolytic agents that we were looking at. If small animals are sedated or tranquillised they don't thermoregulate very well, so if they are lying out in the sun or if they are in a cold environment they die or [get] hyper- or hypothermia, so that was one of the main reasons.

**Neville Gregory (South Australian Agricultural Research and Development Institute):** It was just a comment but one which I would like to share because I think it is important, about carbon monoxide. I share your view that carbon monoxide is a relatively humane way to dispatch an animal. When I have used it in dogs usually there is no lacrymation, no salivation, no increase in respiration, it looks good except for the last moment: they put their head up and give a good howl just before they collapse and that is quite unnerving and is why quite a lot of people in dog pounds who have used carbon monoxide hate it.

**Clive Marks:** Yes, I think that might be related to concentration though. I did come across an unpublished report done by Doug Blood in the 50s or early 60s. I got the unpublished report directly from Doug and it was very interesting reading because it was really based on concentration to the speed of death and the humaneness of it. It appeared to be very humane but it scared the hell out of the people using it, because at 20% CO you only need a brief exposure and you are talking about humane euthanasia of RSPCA staff as well, so people didn't want to use it because it was too much of a risk, so you have got to balance the operator risk with this against the humaneness of the technique and coming up with a magic percentage of between 3 to 6 % seems to be that balance.

### Long-term solutions: is there a holy grail?

Dr Tony Peacock, CEO, Pest Animal Control CRC

**Katherine Rogers (NSW Animal Societies Federation):** Thank you, I found that very interesting. The question I would like to ask you is: it seems to me these are ongoing issues where we are going to need more and more solutions: we had myxomatosis, we got Calici virus and so-on. To what extent do you think it is a good idea to at least look at naturally occurring mechanisms? For example, we are killing the dingoes who kill the foxes, who kill the cats, who kill the mice, and so-on. And to my knowledge there has never been any research to see what would happen if we let that go. There is a guy in Queensland who is a National Parks Officer who said he has seen ecosystems where you get introduced and species living together in a state of balance, and it is when you get development in the area that the more vulnerable native species vanish. I would like to ask you whether you see this as an area where research is necessary, so that instead of being like King Canute trying to hold back the tide (which in fact I think we are doing now) we need more and worse diseases etc.

**Tony Peacock:** I think you would end up with the slide with Brian Cook with the trees gone. I don't think doing nothing is an option, I think pest animal control is just what is necessary in many situations. I agree with the RSPCA principles, you don't want to overdo it or concentrate in on killing animals where it is not necessary. There is a huge experiment, it is called Tasmania where we kept foxes out for 150 years and they've had one mammal extinction compared with 22 in NSW. We only

know what happened to eleven of those animals, and in eight of the fox is implicated. So, I think there is a very clear case and I don't think doing nothing is an issue.

**Katherine Rogers:** (tape not clear)

**Tony Peacock:** Well I did skip over that rather complex slide. I think the great strength of this CRC (and I didn't put it together so I can't take any credit for it) is that we bring ecosystem specialists (ecologists) in with straight virologists, veterinarians, people from a whole range of disciplines. My job as CEO is basically to sit back and watch the fun, because these people argue with these things every day, we have great debates about this type of thing. I agree with you to the extent that you can't just pick out one issue and say 'yes' if we can manipulate that one factor. We are getting on top of complex sciences much more, but that's not to say that we have solved the problem yet. But I certainly don't agree that we can just leave it be. I think you need to look for novel solutions and continue to control pests where necessary.

## **Panel discussion**

### **Panel Discussion**

**Hugh Wirth (President, RSPCA Australia):** It was a chance remark from Anne Reeves about the Hattah-Kulkyne development from Victoria that started me on this track. We talk about humaneness and how research is essential, but Anne's remark was that people objected to the slaughter of kangaroos on this particular property and set back a reasonable change to the environment, I think that what Anne neglected to say is, (because I was involved in this) that in the very early 1980s we were confronted with a government that refused to recognise that the Hattah-Kulkyne area should never have been settled and submitted to European farming. A government that refused to believe that there should be a buffer zone between native species that could get out of control and become pests, and our legitimate agricultural pursuits. A government that refused to do something about the grazing of domestic animals in that unsuitable area. A government that refused to do anything about pest animal control. And a government that decided that a way to control kangaroo numbers was to have a slaughter (because that is all it could be described with) every ten years of 8-10,000 kangaroos and bury them all in a pit. Now there was justified community uproar over that attitude and it was that uproar which forced on the government acceptance of the reverse of the situation. Even to the point of having controlled kangaroo grazing by a proper kangaroo management plan. The point I am trying to make, Mr Chairman, is that a lot of the papers that have been given to date tell us what is in the future, and what we must strive for. It was Clive Marks who said we have got to have the will. My point is that if we had the will now, and that includes government and not just all of us here and whom we represent, we can make a very good success story of what we've got. Hattah-Kulkyne is a perfect example of that. If you compare it with the shambolic thing that is going on in the Puckapunyal Army Reserve right at this moment, you can see the huge difference. In applying what we know, not only humanely, but with a proper strategic plan backed by government and financed by government and supported by the community, there will be no more uproar.

**David Mellor:** Was that a question to Anne?

**Hugh Wirth:** She can have a go at me if I misinterpreted.

**Anne Reeves (Environmentalist):** Thank you for picking that point up because I think it does reinforce one of the elements of my thesis, which was that we have had experienced much rapid change and are managing (inescapably) a landscape and a fauna and flora against a changed background. We have to come to terms with the issues and opportunities and that the final outcomes [come] through restoring the balance. A proper and strategic approach to kangaroo management and other vertebrate pests or other vertebrate species which are disrupting the ecological patterns in Hattah-Kulkyne is one model that we can all learn from. And so, we move forward sometimes out of

doing very stupid things. It sometimes takes time to change, but it is very important that we get to grips with the situation and, having been in Australia now for somewhat over 40 years, coming in from the UK, I have seen huge changes. The time is running out for many of our woodland species. We need to take action and we can't afford to delay.

**Hugh Wirth:** Well, Mr Chairman who takes the action? I know Clive Marks can't say it but I can: I don't think government has the will.

**David Mellor:** Well I think the point you made earlier, Hugh, is on the record and that can be vigorously placed prominently in the proceedings.

**Steve Lapidge (Pest Animal Control CRC):** A question for Neville. **I notice on your list<sup>1</sup>** before, which I did support, you had potassium cyanide up in the number 4 category. Now [with] potassium, while it kills very quickly, there are many doubts over its humaneness as well, plus there are massive non-target issues, so I was just wondering why you had it up so high?

**Neville Gregory:** There has been a lot of work done on the brush-tailed possum in NZ where they have a new formulation of cyanide called Feratox which is in encapsulated form. This delivers a fairly species-specific dose. It also doesn't affect non-target species as much as cyanide paste because it has a coating which resists water, resists solubilisation, and has to be put between the molars of the possum in order to break it open and liberate the toxin. Now, in terms of time to unconsciousness, it's about six and a half minutes. Time to death is, on average, 14 minutes. The signs up to about six and a half minutes include ataxia, there isn't any pronounced increase in respiratory frequency, there is a slightly more shallow breathing, there is obviously uncoordination, but beyond that there isn't a lot you can say which is an adverse sign. There are short, 9-second convulsive episodes, so taking that in entirety I would say that the signs are benign by comparison with most toxins and its beauty is that it is quick.

**David Dall (Pestat Pty Ltd):** Mine is actually a follow-up to that one. What we are really seeing here is that you need a list for each species. 1080 might be in one place for one species and in another place for another. The cyanide for possums is great but not as a paste that you are going to spray around all over. So you really are talking about each pest having its own ranking list. Is that what I am hearing?

**Neville Gregory:** Yes, you could do it that way, but the alternative might be where you have your list of say 0-5 and, let's say that one is less comfortable about 1080 in foxes than in herbivores, in which case 1080 carnivores might score 4 whereas it would be 3 for herbivores. So you could use the same list but subdivide the species: it depends on how you want to present it.

**Anne Reeves:** I think that also raises the issue that one needs to look at the non-target species and the humane or non-humane potential impacts of the different methodologies.

**Tim Kuchel (Institute of Medical & Veterinary Science):** I just initially would like to say how much I have really enjoyed today and [it has] certainly [improved] my understanding of the issue. I am on an Animal Welfare Advisory Committee so this sort of topic is very much grist for the mill. The message that I am picking up from today is that there isn't necessarily a cogent argument against control of pest animals, and incremental improvement is the way that we should be heading. I really enjoyed David, your systematic way of helping us come to the right conclusion but you did of course have 10 minutes more than everyone else! Now the point that I wanted to make is the issue of training and best practice was an issue that Eric brought up. On the Animal Ethics Committee at the University of Adelaide where we have students being taught Natural Resource Management techniques (euthanasia and animal control techniques), it's a real paradox for the ethics committee to, on the one hand sanction the burying alive of rabbits in the name of 'best practice training', and then on the other we have extraordinary lengths that we expect researchers to go to when using animals in research. And I would just like to make that point: that there is a real conflict here, there is a balance where measuring harms

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<sup>1</sup> See Table 1

and it is very complicated. What I am hearing here today is that the quality of the justification for what is going on in vertebrate pest control is extraordinarily well thought through and it's nice that there is also light at the end of the tunnel.

**David Mellor:** Thanks Tim.

**Jane Conole (Bureau of Animal Welfare, Dept of Primary Industries, Victoria):** I have been interested to see ethics and public susceptibility sort of weave its way through most talks that people have given. One of the things that hasn't expressly come out (and of course I am sitting amongst a group of people who spend their lives thinking about this stuff, so it is sort of like teaching grandma to suck eggs) is it is not just the humaneness of killing the animals. So, you go out and kill this group of animals and they die quickly: [what] is the point of it all, as in: do they then repopulate from next door, and do you then have to go back and kill more again next time and next time and next time; and are you doing anything to use a good strategy to make sure that your killing of animals is effective? Effective in having a long term outcome... if you look at any of the information put out by all the relevant departments it always looks at those other elements. I think that [long-term effectiveness] is really an important aspect of humane vertebrate pest control: that it is not just [about] better and better ways of killing them, but that you need to try and make sure that in the future we don't have to keep doing this massive slaughter again and again. I just wanted to make that point.

**David Mellor:** I think that would be a point endorsed by at least three, if not all of the members of the panel.

**Paul Hemsworth (Animal Welfare Centre, Vic):** Just a question to Neville or a comment to Neville and perhaps a response, I like the idea of trying to rank the humaneness or the welfare implication of those individual methods of control and I think that is a really useful exercise, but I think what we need to be really careful about is clearly defining the indices that we are using to assess humaneness. I think in order to progress this we do need to have some degree of consensus on what are the indices that we are going to use. I know it is easier said than done but I think that is probably an important step in developing this list.

**Neville Gregory:** I agree with you. I would to add one comment: I am not so sure that the problem is on deciding which indices to use, but is on deciding how to compare different indices. So for example, how do you compare a trap with a poison in terms of humaneness? You can't. At the end of the day, at least that is my view, there is going to be no absolute measure or quantitative measure that you can throw at it and say, well this is what the sums came out at. It is going to be a judgment call at the end of the day and I think the best we can do is to have an informed judgment which is based on science which is based on quantified numbers and times to death and duration of sickness of suffering, yes, but then we have to put all of those numbers together, and we are not comparing apples to apples so we just have to make a judgment when it comes to it on the final answer.

**David Mellor:** Thank you. I want to ask Grahame Coleman a question because we have given a lot of emphasis to the science and elements of practicality, but Grahame raised the question of public perceptions and how you measure that. Tony finished by talking about the challenge to public opinion and sentiment. I am just wondering, Grahame, in terms of a paradigm shift in thinking, are there any measures of how long it takes? It probably relates to the issue, but [is there] any advice you can give Tony and the CRC on their approach to discussing the issues with the public: the social issues that their approaches raised.

**Grahame Coleman (Animal Welfare Centre and Monash University):** There is no simple answer to it, but there are a few indicators around I think. Unfortunately [they] are somewhat anecdotal. The aim of most mass media-type campaigns to produce change tend to be largely ineffective, that is to say they are really only designed to target a relatively small proportion of the population and they also tend to be fairly general in their emphasis. For example, in advertising to get people to brand-switch you mount this multi-million dollar campaign, the net affect of which is probably to shift a few percent of

people from one brand to another: similarly with politics to shift people from one party to another. The outcomes in dollar terms are tremendous: in the old days it would have been cigarettes; shift a brand preference by five percent and you have made squillions of dollars which has well and truly offset the cost of the campaign. The timescale over which these things occur is really quite long and again you can see anecdotal instances of this. The change in public sentiment over the Vietnam War is a good example and that timescale was approximately a decade. I think you can get these kinds of change but as a couple of people have said today, they are incremental, that there has to be a sustained public debate with the appropriate information promulgated to produce this long-term change. You can produce at the individual level, with the appropriate intensive techniques, major change: you can produce major behavioural attitudinal change but it is virtually one-on-one. A classroom situation is a kind of intermediate form of this. But there the strategy is to use what are called cognitive behavioural techniques. Basically you give a person the facts so that you change the beliefs that underlie the relevant attitudes, and you also give them opportunities to rehearse: to practice, to role play whatever it is, the appropriate responses to those things, if you do that then you can change 70-80 percent of the target audience. So the strategy you employ very much depends on the situation. A forum like this with the kinds of information that has been disseminated this afternoon does have the opportunity to give all of us a chance to hear some of the other relevant facts and all of us will come away with a slightly different approach to the situation. That will develop then over the next several months you know as we workshop it and so-on. But that is really what we are talking about.

**David Mellor:** Thanks very much, now what I am going to do, since we are actually running out of time, is to ask each of the speakers to name in short sentences an action or actions that we should take. Now some people may come up with the one you had in mind and you can just pass on, but I am going to pass the microphone along and ask [the speakers] to note the actions. I want you [the audience] to think about them, and if you think any are missed out, I want you in one brief sentence, no longer than one line long to help us out.

**Grahame Coleman (Animal Welfare Centre and Monash University):** I think this follows from what I was just saying a few minutes ago. One of the things we are really lacking from most of the factual data that we have is what the inter-relationships are amongst the public perceptions and their outcome. I think we need substantive research to provide us with this kind of basic information.

**Bidda Jones (RSPCA Australia):** My point would be, in some of the layers of decision-making that we have been discussing today, to get people with practical animal welfare experience involved in those decision-making processes because I don't think they are there at the moment.

**Helen Cathles:** I think that the focus as well as being humane must also remain workable. Unless it is workable it won't be put into practice and that is very important for you actually change the culture of the way things are done. For them to be workable is the only way you will do that.

**Eric Davis:** One of the things that needs to happen here is for us as a community, forgetting the various constituencies from which we have come, but for us to be able to demonstrate that there are win-win approaches: that there are solutions that we can actually achieve. Because that is about the only way we will get the government resources, the funding, in this sort of competitive environment. I think that is a really important outcome that we can take from this.

**Mick Statham:** We need to look at all the effects of any of the control options we are looking at rather than just the superficial immediate effects.

**Glenys Oogjes:** I have got a couple of points. The first is that from a couple of speakers it was very clear that there is not good animal welfare advice going into some of the major decision-making bodies. I mean by that the Vertebrate Pest Committee and the NRA for example. Sometimes that means legislation, in the case of NRA, other times it means actually changing the structure of committees so that it's good advice. But the other point I want to make, a separate point, is that

calling these animals 'pests' already condemns them. I think we should change the names and they should be called 'mislocated' because they are just in the wrong place at the wrong time.

**Anne Reeves:** We need to reinforce the broader strategies. I particularly liked the comment from somebody at the back of the hall today that really we are looking at end-of-the-pipe when we are talking about pest animal control. What we should be doing is developing the broader improved strategies for land and resource management so that we can deal and address with what Glenys likes to call 'the wrong animals in the wrong place at the wrong time'. I think we need to take that broad strategic view and work together in seeking to persuade government to better-resource the long-term sustainable management of our lands.

**Joe Smith:** The focus for me has got to be engaging in developing science-based requirements for looking at animal welfare in the sorts of decisions that we are involved in. I take Neville's point before that maybe it is more about developing a basis for making informed judgments, rather than being able to specify broad-ranging requirements to cover everything, so that is the focus for me.

**Neville Gregory:** I would put in the last plug for the acceptability rating system, I would emphasise that my preference would be for the principles of the killing methods rather than the individual techniques. I think both should be done but I put the principles of the killing methods first because I think that would have more impact on the way people think.

**Clive Marks:** Two things: firstly I would like to see continuous improvement linked in with best practice; secondly, because the government likes strategies, I think what we need to do is put together a strategy that looks at innovation and adoption of alternative techniques. Leaving innovation to the scientists only to the point of proof of concept is not going to work without a lot of thought about how we go further: to do those hard yards and to fund them so we get things moving out there rather than just turning around and looking at the researchers and saying "when are you going to make it happen?".

**Tony Peacock:** I guess our hardest task and our plea, if anything, is the issue of humaneness. We ended up taking the word out of our strategic plan and putting in 'social acceptability'. It is so hard to define. I don't think you are ever going to get a hard and fast definition because it will mean so many things to so many people. But for the research to be really effective what we need is a very good dialogue, so that we are getting the feedback: getting our message out but also getting messages in. We talk in terms much more these days of a dialogue with the community rather than public education or those old concepts of 'we'll invent it and then hand it over and you accept it' sort of thing. I think we have moved past that, but what we have moved to we are not quite sure of.

**David Mellor:** Thanks very much. Now a number of people have spoken during the course of the workshop - is there anyone (and your points will of course be recorded) who wants to make an additional point, briefly and in the same sort of character as these speakers we have just heard?

**Dave Berman (QLD Dept of Natural Resources and Mines):** I would just like to say that I think there needs to be a lot more research on measuring the impact of these animals that are 'in the wrong place at the wrong time' and how much damage they are doing. I think we need to do a lot more of that.

**Fiona McCrossin (Colong Foundation):** I just wanted to note two dichotomies that I find in my work (which is basically looking at Kosciusko National Park and therefore vertebrate pest control particularly horses). The first one is: I have heard a lot about the need to prove impacts that feral introduced species are having, and yet this in a sense goes against a fundamental component of ecologically sustainable development which is the precautionary principle, which I won't elaborate on but I think it needs to be talked about. And the second is: something else we are finding is differentiation in the treatment and control methods of vertebrate pests, for example pigs versus horses. Obviously that is a community attitude concept and a political judgment at the highest level.

**Onn Ben-David (RSPCA Vic):** I am sitting here all day long and enjoying everything that I heard. But something has been bugging me all day. I have just heard a few comments at the end now which open some horizon to me. I really feel that the emphasis has always been, and so far has been happening, on the word 'control'. And the word 'control' to me implies a very narrow approach: control to me implies a bang with a rifle or a poison to solve the problem, a bit like as Hugh identified before. I really feel that if we have to take one thing and move it forward, it is to get this word 'control' out of the terminology and call it 'management'. Pest animals are pest animals, they are the animals that we don't want in our community so to speak: we don't want them in our environment; they are pests. If we talk about management of those pests and open our eyes to the entire scope and menu of the issues that are being addressed here and look at them as a management issue (which I think has been happening in a way at [Hattah-Kulkyne] at the moment, or certainly has been happening since the issue in the past) and look at it in this way we will get a lot further. We will get a better public opinion because the public also is fairly concerned with control, which for them again is a narrow kill approach, and the management [approach] will open up their options. It will help any one of the organisations and any one of the stakeholders in that issue, and hopefully will convince the government to put a bit more money and resources into management which is most sustainable.

**Mark Lawrie (RSPCA NSW):** Some really interesting research in NSW National Parks and Wildlife Service looked at public opinion of animals in backyards. I guess it sort of highlights the need for education. They ranked the species that were in there and a butterfly was seen as a very favourable species to be there, a non-pest I guess or a not mislocated species, [whereas] a caterpillar of the same species was seen as a pest. It is certainly worthy of noting that that research should be looked at because there are a lot of parallels for what we have been looking at today, so I guess it highlights the difficulty that might be ahead with educating Joe Public.

**David Mellor:** I think that has drawn our contributions to a close, I would like you to thank the speakers not only for their contributions during the day but just now. I want you to also thank yourselves and then I am going to very briefly sum up and give you some final information.

(The Chair's summing up is presented in the main proceedings.)

**Figure 1** Ratings of control methods (from Neville Gregory's presentation)

<b>ACCEPTABILITY RATING</b>	
<b>0</b>	<b>UNACCEPTABLE</b>
<b>5</b>	<b>HIGHLY ACCEPTABLE</b>
<b>5</b>	<i>Av-alarm]</i> <i>Shu roo</i> <i>electronic repellents</i> <i>denatonium benzoate</i> <i>polybutene</i> <i>methiocarb</i>
<b>4</b>	<i>α-chloralose</i> <i>potassium cyanide</i> <i>carbon monoxide</i> <i>head shot – rifle</i> <i>head shot – close range shotgun</i> <i>cage and box traps</i>
<b>3</b>	<i>1080</i> <i>mist nets</i> <i>net gun</i>
<b>2</b>	<i>padded Victor leg hold trap</i> <i>Conibear trap</i> <i>phosphorus</i> <i>anticoagulants</i> <i>bromethalin</i> <i>RCD</i> <i>warren ripping</i> <i>leg and neck snares</i> <i>break-back trap – little nipper</i>
<b>1</b>	<i>unpadded Victor leg hold traps</i> <i>glueboards</i> <i>strychnine</i> <i>myxomatosis</i>
<b>0</b>	<i>Lanes Ace leg hold traps</i> <i>cholecalciferol</i> <i>chloropicrin</i>