

**Submission to the Senate Enquiry**  
into the Regulation, Control and Management of  
Invasive Species and Environmental Protection and Biodiversity Conservation Amendment  
(Invasive Species) Bill 2003

by: Edward James McAlister, AO  
Chief Executive  
Royal Zoological Society of SA Inc.

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**Preamble**

I make this submission, not in my capacity as a member of the Council of the C.R.C. for Pest Animal Control, but as someone with a background in Horticulture, Botany and Ecology, and now in my capacity as the Chief Executive of the Royal Zoological Society of SA Inc., a position I have held for a period of thirteen years. I will not attempt to deal with specific matters, best dealt with by experts in the area of Weed Management and Pest Animal Management, but will make some comments of a more generic nature, which may be of some value to the committee.

Over its long history, this continent has had many incursions, both plant and animal, in addition to incursions and invasion by air borne pests and diseases. Indeed one could argue that the arrival of Aborigines on this continent approximately 50,000 years ago was in itself an incursion and one which achieved a great deal of success as the first arrivals spread across this vast continent. The introduction of the dingo around 6,000 years ago could also be regarded as a “successful” incursion.

There were other incursions from Chinese sailors in the 15th century and then later visits from our north from Indonesia and Melanesia, indeed it is felt that the cat may have been such an incursion. Other European visitors arrived in the 16th and 17th centuries but did not stay, or if they did, there is no evidence of this. I have therefore restricted my comments, not only to those species specifically listed in the terms of the enquiry, but to others, all of which have arrived since European colonisation in the latter quarter of the 18th century. I have also made some passing comments on incursions or local outbreaks of pests of native origin, e.g., Koalas on Kangaroo Island, South Australia.

I recognise that in the area of animals, the enquiry is looking specifically at the European fox (*Vulpes vulpes*), Yellow crazy ant (*Anoplolepis gracilipes*), Fire ant (*Solenopsis invicta*), Cane toad (*Bufo marinus*), Feral cat (*Felis catus*) and Pig (*Sus scrofa*), however, many of the same generic principles could be applied to the house mouse, rat, European carp, rabbit, camel, goats, horse, donkey, trout, pigeons and seagulls.

I also recognise that in addition to the plants specifically mentioned in terms of reference viz. Mimosa (*Mimosa pigra*), Serrated tussock (*Nassella trichotoma*), Willow (*Salix spp*), Lantana (*Lantana camara*), Blackberry (*Rubus fruticosus agg*) and Parkinsonia (*Parkinsonia aculeata*), many of the same generic principles could be applied to Pampas grass (*Cortaderia selloana*), especially around Sydney, Privet (*Ligustrum lucidum*) also around Sydney, Olives (*Olea europea*) in the Adelaide Hills, Boneseed (*Chrysanthemoides monilifara*) or sand dunes nitre bush (*Nitraria schoberi*), Rosy dock (*Rumex vesicarius*), Salvation Jane/Patersons curse (*Echium plantagineum*), Camphor laurel (*Cinnamomum camphora*), Capeweed (*Arctotis calendula*), Cape tulip (*Homeria spp*), Onion weed (*Asphodelus fistulosus*), Bridal creeper (*Myrsiphyllum asparagoides*), Topped lavender (*Lavandula stoechas*), Prickly pear (*Opuntia spp*), Tree tobacco (*Nicotiana glauca*), Monterey pine (*Pinus radiata*), Soursob (*Oxalis pes caprae*).

A large number of species, both plant and animal, but particularly plant, would have arrived here by long distance dispersal, e.g., our mangrove flora is extremely rich in the north of the country and shows strong links with the Indomalaysia flora. A number of bird species are shared with the same region and, despite the best efforts of AQIS and Customs, the potential for disease introduction from migratory birds is far greater than that posed by deliberate introduction. Having said this, I do not, in any way, wish to downplay the importance of being vigilant at our ports and airports. It is no doubt that through these places that some of our problems, particularly diseases, have arrived. As an aside, it is worth noting that the possibility of disease or pest importation caused by the activities of zoos importing animals is either negligible, or non-existent. This is caused by two reasons, one, the comparatively, small number of animals involved, and secondly, the strict protocols which the industry has developed in conjunction with Environment Australia, now Department of Environment and Heritage.

As I stated in my Preamble, I will not attempt to deal with the intricacies of programs being developed to manage particular problem species, e.g., immunocontraception in a number of species, “daughterless” technology in the European carp and the use of rabbit haemorrhagic disease (calicivirus) in rabbits. Neither will I deal with economic impact of some of these pest animals and plants on the, particularly, rural industry. I will focus my thinking on the impact that some of these species have upon our native wildlife, both plant and animal.

I am still of the opinion that, apart from the clearance of habitat and overgrazing, the single biggest harmful factor for our wildlife in the European rabbit. I am aware that myxoma virus kills vast numbers of rabbits each year and that RHD has had a significant effect in many parts of the country. Work needs to continue on making rabbit control (extermination is probably impossible) even more effective in all parts of the country.

After the rabbit, the fox would be the greatest threat to native wildlife, killing as it does, many millions of small marsupials each year. The excellent results achieved in Western Australia in the ‘Western Shield’ program by baiting for foxes, gives proof to this assertion as small marsupial mammal numbers have increased dramatically.

My own experience attests to the success of fox baiting and feral animal (rabbit and goat) control. In 1996, the Royal Zoological Society of SA Inc. released a small group of Yellow-footed Rock wallabies (*Xanthopus petrogale*) to an area in the Flinders Ranges. It was decided that no animals would be released until we had not seen any evidence of foxes for twelve months. This was done and the group of animals released has thrived and we now have animals, which are third generation born in the wild from the captive-bred animals released in the first instance. This project is one of only 9%, which are regarded as having resulted in the successful re-introduction of macropods on the mainland and will be used as a model for other such projects.

As corollary to this success, local pastoralists agreed, in some cases reluctantly, to allow us to place fox baits on their properties in a 10km radius. Their lambing success increased and this, plus the pleasure of seeing these beautiful animals return to their former range, caused the pastoralists to increase the size of the baited buffer zone. Enthusiasm from school children at the local Area School also helped to change community attitudes.

The release of captive bred Bilbies on to Thistle Island, off the coast of South Australia, has been an outstanding success because the island was free of foxes and feral cats. In recent years, the release of Bilbies in a fox-proof enclosure at Roxby Downs has been such a success that approval has now been given to release some of the animals from the enclosure to a surrounding area.

The feral cat has been implicated in the serious depletion in numbers of numerous small animal species, bird, reptile and small mammal. I am not aware of any proof that the cat has caused the extinction of any species, but its presence has certainly made it difficult for animals to replace their numbers. Again, from my own experience, presence of cats in a sanctuary on the West Coast of South Australia presented the successful re-establishment of the stone curlew (*Burhinus grallarius*). Eradication of cats has given the birds a better chance.

Overgrazing in some areas of the country has allowed the proliferation of certain plants, e.g., Nitre bush (*Nitraria schoberi*), which offers harbour for pests such as rabbits and feral cats. Enforcement of stocking rates, a removal program for these plant species, and better education of the total community would be of great value in the fight against feral plants and animals. One of the problems is that most tourists are not aware that the landscape they see, e.g., between Quorn and Hawker in the lower Flinders Ranges is not what it used to be, or how it would be if cared for properly. A gradual deterioration begins to become regarded as “the norm”.

While it would be possible to continue to give examples of problems caused by incursions by invasive species, both exotic and native, I am sure that other people will have brought these matters to the attention of the committee. Some of the incursions, or problems, are very localised, e.g., *Pinus radiata* in some parts of the country is invading native woodland, *Lavandula stoechas* is a serious, but localised, problem in the Clare Valley of South Australia, whereas *Echium plantagineum* is a widespread problem plant causing loss of production and the death of horses and sheep in more than one state.

Kookaburras and Crimson corellas are regarded as a pest in Western Australia and the Koala has reached pest proportions on Kangaroo Island and there is a potential for the same problem in the Adelaide Hills. These are localised problems, whereas the fox, rabbit and mouse would be regarded as a nation-wide problem as will be the European carp.

The problem seems immense and there is certainly no “silver bullet” for all, or perhaps even any, of these pest species, either animal or plant. I have not given any attention to diseases either plant or animal, as this is an area in which I do not claim any knowledge. Accepting that the problem is immense and certainly widespread, there appears to be a number of things which can be done.

### **Education**

Community education of the problems caused by pest species must take a high priority. This education comes at all levels. During the time that I was Chairman of the Anti-Rabbit Research Foundation of Australia we introduced the concept of the ‘Easter Bilby’. Chocolate bilbies accompanied by stories about the Easter bilby related to the Easter message made some impact in South Australia and Victoria, but little impact elsewhere. However, education aimed at children will become a powerful tool in the future.

The power of using education at zoos, which are a very popular recreational activity and, to a lesser extent, at Botanic Gardens must not be overlooked.

Higher education is important also, A number of universities and other tertiary bodies are offering courses in ecology and pest management. These courses need to be encouraged, regulated to make sure that they deliver, and expanded where possible.

Having post-graduate students and post-doctoral fellows employed by the appropriate C.R.C.’s to undertake both applied and, what is euphemistically called, “blue-sky” research is of paramount importance.

### **Research**

Obviously this must continue and **MUST** be co-ordinated. The employment of ecologists within C.R.C.’s is a must as they can give a better cross discipline view than could be expressed by any one person who has focussed on a detailed area of research.

C.R.C.’s offer an excellent opportunity for expertise from various sectors of the community to be harnessed and capitalised upon.

The research must continue and must continue to be funded. Realistic goals must be set and, as is the case now, regular reviews are important and Key Performance Indicators should be set, and met, if funding is to continue.

### **Communication**

Education and communication do to some extent go hand-in-hand. However, I am not sure how effective the communication is between bodies such as C.R.C.'s. While there exists a Council of Co-operative Research Centres and this group, which comprises Chairmen, CEO's, Business Managers and PR Managers, meets on a yearly basis, I believe the formation of smaller groups working in closely related areas would be of advantage. I believe that, in the case of the Pest Animal C.R.C., obvious links exist with the Weed Management C.R.C., Tropical Ecology, Marine Environment and perhaps the C.R.C. involved with Fire Ecology and Bushfire Prevention..

If these forums were formed, I believe the cross-fertilization resulting would be of great value to all concerned.

### **Commercialisation**

Where a result or solution is reached, which has potential to assist in solving one of these problems facing the nation in relation to pest species, development of such a product should be taken over by a group with expertise in this area. These people being paid to do the "ground-breaking" research should not be diverted from their main task. They should, of course, be called upon by the outside body on a cost-recovery basis to assist where necessary.

The question of ownership of Intellectual Property will need to be resolved quite clearly at the commencement of any project and a proportion of any income derived should find its way back to assist in funding the C.R.C. involved.

### **Miscellaneous**

- Adequate funding supplied in a timely fashion must be made available.
- Animals and plants do not recognise State or Territory boundaries. The Commonwealth Government must have power to act in these areas. This would be the case for, e.g., a Foot and Mouth Disease outbreak so, in relation to a pest, such as the fox, or the cat, why would not the same case apply?

- There would be some value in organising efforts across regions, e.g., the Mallee Region which crosses at least three state boundaries, NSW, Victoria and South Australia.
- We must not wait for research to find the ‘silver bullet’ for, e.g., rabbits, foxes, or cats. The government must be aware that none of those of us involved in eliminating pest animals enjoys causing an animal a painful death. However, in the case of wild dogs and foxes, there is currently no alternative to large scale baiting using 1080, or equivalent. The animal liberationists lobby must not be allowed to stop the use of these poisons while we wait for a “totally humane” solution.

In the case of macropods, a properly administered bullet is a quick and humane death, but I am aware that dealing with local “explosions” in numbers, or incursions of native animals is a very vexed question. This problem will be very well displayed in relation to the Koala population on Kangaroo Island. This introduced population is wreaking havoc on the environment and easy, palatable solutions will be most difficult to find.

- Cross-Tasman and other international co-operation is essential in any actions taken to combat invasive species.
- The expertise and knowledge base of “non-traditional” partners should not be overlooked. I refer to the expertise possessed by staff at zoos and botanic gardens who would have a good understanding of an animals (or plants) biology and habits. The use of enthusiastic volunteers from organisations such as “Trees for Life”, Birds Australia, Society for Growing Australian Plants and even Shooting Clubs and Four Wheel Drive Clubs in reporting outbreaks of problems could have far-reaching effects in many ways. One, localising the effect and a second is engaging the community.

E J McAlister, AO  
**CHIEF EXECUTIVE**  
**ROYAL ZOOLOGICAL SOCIETY OF SA INC.**

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