CONSERVATION THROUGH SUSTAINABLE USE OF WILDLIFE - OPPORTUNITIES FOR VETERINARIANS AND PRIVATE LANDHOLDERS

George Wilson
Fenner School of Environment and Society
Australian National University
Canberra ACT 2600

Extinction Crisis

The World is facing a biodiversity crisis; rates of extinction are 100 to 1000 times those considered natural background. Conserving biodiversity is vital to maintaining ecosystem resilience. Ecosystems that depend on a few single species to perform critical functions are vulnerable to disturbances such as disease and are at greater risk of tipping into undesirable states. Up to 30% of all mammal bird and amphibian species will be threatened with extinction this century. Preventing such biodiversity loss is but one of nine planetary boundaries that must be not transgressed according to a distinguished review published in *Nature* in 2009 (Rockström 2009). The task will only be achieved with greater involvement of the private sector.

State of Australia's Environment

The State of the Environment report 2011 reveals that almost every bioregion of Australia contains numerous threatened taxa; in central and northern bioregions around 60% of mammals are threatened. Australia's Biodiversity Conservation Strategy 2010–2030 sets out actions and priorities emphasising that protecting diversity will require whole-of-ecosystem efforts across landscapes and seascapes, in both public and private ownership. The Strategy encourages Governments to work closely with and support private land managers and users to build connectivity between conservation areas. It acknowledges that conservation outside reserves is important, but is light on recommendations and activities on how to do it.

Close to half the known extinctions of mammals in last 200 years have occurred in Australia, (Johnson 2006) Much of this damage is due to conversion of natural vegetation on lands now in private hands to agriculture, forestry and urban areas and to the effects of invasive species on the function of ecosystems and their services. (Lindenmayer 2007). Australia's protected area system is not meeting its targets and 21% of critically endangered animals and plants are entirely outside protected areas, (Watson, Evans *et al.* 2011) and so must be on lands where the private sector is dominant.

Market-based conservation mechanisms

Private investment in ecosystem services is an emerging international trend. To quote Fauna and Flora International – 'The world is waking up to the need to *monetarize ecosystem services*' – in other words, direct payments for these services to local stakeholders and give them an economic incentive not to degrade but to improve the environment. The process not only recognises the importance of the marketplace in combating both the causes and effects of climate change but potentially leads to co-benefits for biodiversity, salinity mitigation, water quality, soil restoration and other effects.

Unfortunately the role of the market place in conservation mechanisms in Australia is not well developed. Some comparative examples follow of how the value of wildlife through tourism, hunting, sustainable harvest and aesthetic value can be an incentive for landholders to participate in improved species conservation. Australian ecosystems and landscapes have been managed towards prescribed goals for millennia. (Gammage

2011). The challenge is to enable today's landholders to contribute to conservation through sustainable wildlife use. Veterinarians can assist achieve this outcome.

Tourism
The value of wildlife to tourism is possibly highest in southern Africa. Companies such as '& Beyond' operate luxury adventure travel in safaris lodges and camps, conserve habitat and protect land from development. The company has the dual aim of sustaining rural communities and conserving millions of hectares of wildlife habitat.

In Australia the phenomenon is much less well developed, the exceptions being companies such Wild Bush Luxury, and lodges and hotels in national parks. Even so, experiencing natural landscapes is the major attraction to stay in these resorts, not viewing terrestrial wildlife.

Where intensive management of wildlife is permitted in zoos, wildlife does have higher value to tourism, but the direct link to habitat protection and management that applies in southern Africa, with such positive outcomes for wildlife populations, does not apply.

Hunting
The value of wildlife to hunters is a major incentive overseas; it protects habitat and hence subsequent generations of the hunted species. In South Africa more than 10,000 farms now operate as hunting lodges, enabling the reversion of previous beef pastoral land to wildlife habitat (Bothma and Toit 2010). In the UK the value of heather moors and forests to hunt grouse and deer creates market incentives that sustain them against pressures to be cleared or converted to grassland for sheep and cattle. In the USA the value of hunted species is also a major protector of wildlife habitat. In addition to deer, waterfowl habitat is managed to maximise its value to birds through the activities of Ducks Unlimited which conserves more than 6,000,000 ha of wetland habitat and influences the management of nearly 30,000,000 ha.

In Australia there are few examples of hunting contributing to the conservation of wildlife habitat. Proposals to achieve the outcome with crocodiles have been stalled at the political level. Hunters are ready to pay large sums to Indigenous landowners for crocodile trophies which would create an incentive to protect crocodile breeding habitats. Without it, damage by buffalo and cattle continues.

Consumptive use
In southern Africa, managed exploitation of iconic species occurs both for meat production and for sport. 35 different types of animal are hunted, the most popular being Springbok, Impala, Blesbok, greater kudu and warthog. In Europe and North America and in the United Kingdom, deer are hunted extensively both as trophies and as a source of venison for personal consumption. In the UK, deer shot on estates enter the commercial market (Deer Commission for Scotland 2008) whereas in North America they are taken for personal use.

In Australia the kangaroo meat industry takes around 2 million carcasses per year for sale in accordance with strict population quotas, welfare and hygiene standards. However landholders rarely benefit. There is some sport hunting, and where it occurs legally, it is under the guise of pest control. There are also significant opportunities for science to support consumptive wildlife use by Indigenous landowners.(Wilson, Edwards *et al.* 2010)

Trading in live animals
In southern Africa, wildlife, particularly high value species, are traded to restock properties. This process has led to more wildlife in southern Africa than for 100 years.

Wildlife auctions are held on a regular basis at which the South African National Park Service and others offer their surplus animals.

In Australia, native birds and reptiles are traded in the pet and aviculture industries. Trading mammals is permitted in some States but not in others. Trade in all species of surplus animals also occurs between zoos although the market does not extend to the private sector. As an unintended consequence of this restriction breeding males and females of endangered species are often separated because government agencies have no mechanism for disposing of surplus progeny. This is the complete opposite of the policy adopted with the endangered plants. The first step on discovery of the Wollemi Pine was to commercialise it and sell plants to raise money for conservation. If the difference between the policies is to avoid animal welfare issues then let us address them.

Recovery plans
Notwithstanding the fine efforts of isolated government programs and land managers supported by charity, the breeding and habitat management plans for animals that have been prepared remain largely unfunded at the scale of need. Yet many landholders who would like to become involved with recovery plans, especially assisted recolonisation, are excluded and cannot get support from programs such as the Biodiversity Fund. In 2012 it has $946 million over six years as part of the Australian Government Clean Energy Future plan to support projects that establish, restore, protect or manage biodiverse carbon stores. Funding is being provided for areas of high conservation value including wildlife corridors, riparian zones and wetlands.

Recovery plans are species orientated and private sector is more interested in high value species. However, because habitat protection and management is central, benefits accrue to a wider range of species.

Private ownership or transfer payments
A key driver behind the value which people place on wildlife and which motivates them is the personal pleasure and aesthetics of watching animals. This is a global tendency, but in Australia, an investor's capacity to realise it is constrained by legislation and policy. Notwithstanding that landholders are more likely to protect habitat and go to lengths to ensure the survival of the species on their property if the species are assets, current legislation places ownership in the State / Crown.

Sections of the conservation movement and most animal rightists believe it is un-ethical to allow financial benefit based on the market value of any of Australia's wildlife. They feel this most strongly for charismatic and iconic species like koalas. Private ownership could therefore be too 'courageous' for political support.

So maybe a more realistic compromise would be for traded species to remain the property of the Crown and for transactions to be in the form of transfer payments as is currently done between zoos. There would also need to be a uniform approach across States.

Government as the regulator
Wildlife management is one few sectors in the economy which has not been opened to competition. It is still dominated by government agencies at both the operational and regulatory level which monopolise all aspects like the Postmaster General did before Telstra, Optus and Vodaphone.

Under the proposed policy change, the Governments' primary role would be as a regulator hopefully with much less complex, outcome-based licensing procedures than currently in use. Operational activities by Government would focus where market failure exists, for

example on species of less interest to the market but nevertheless important contributors to ecosystems.

Government would enforce animal welfare codes, administer control over genetic issues, - selection and breeding, and releases out of range. Detailed discussions are necessary on these important matters.

Koalas as a case study
Koalas are under threat, as evidenced by their patchy distribution and apparent incapacity to recolonise suitable habitat notwithstanding 90 years of protection from hunting. Under government domination of their management, their conservation status continues to get worse. Assisted recolonisation is a strategy under consideration especially in the context of climate change (Adams-Hosking, Moss *et al.* 2011). Although enabling the development of private breeding programs does present a risk of criticism, the benefits outweigh the costs. The cuteness and cuddliness of koalas generates many strong emotions which translate into political pressures that have the ability to cloud ecological and economic decisions. Further, there will most likely be resistance from some zoos which have an interest in maintaining rarity.

Translocation and ownership
Habitat fragmentation and isolation are a major issue facing koala populations. As a result significant inbreeding takes place creating genetic bottlenecks. There are many landholder, farmer and grazier groups willing to become involved in addressing these issues. If governments would permit trade in koalas in the short to medium term, overcrowding and habitat destruction in locally overpopulated communities would be reduced. The ability to trade and relocate koalas would create self-funded surrogate corridors between populations. This would reduce genetic bottlenecks in isolated and fragmented communities.

Whilst assisted recolonisation of koalas is nothing new, very few programs have crossed state borders. So trials of interstate relocation from over-populated communities to vacant or low population habitats are needed.

Conclusion
Current policies to conserve threatened species in Australia and their implementation are not working. Wildlife management is one of the few areas of the economy where private sector is largely excluded. There are considerable opportunities for market-based solutions and good science, including better animal welfare and veterinary science, to deliver conservation benefits. At least for a trial period, governments should follow the overseas models and enable the private sector to have a go at assisting conservation by 'getting out of the way'. The key outcome would be to use the value of animals, and the need for them to survive in the wild, to encourage the protection and expansion of natural habitat which benefits not only target species but also others. The principal aim should be to expand the distribution and size of wildlife populations. This can be achieved by enabling landholders to benefit from wildlife presence. Veterinary expertise has a great role to play in this process.

References
Adams-Hosking C, Moss PT, Rhodes JR, Grantham HS, McAlpine C (2011) Modelling the potential range of the koala at the Last Glacial Maximum: future conservation implications. *Australian Zoologist* **35**, 983-990.

Bothma JdP, Toit JG (2010) 'Game Ranch Management.' (Van Schaik: Pretoria)

Deer Commission for Scotland (2008) Strategy for Wild Deer Management. In. (Inverness)

Gammage B (2011) 'The Biggest Estate on Earth - How Aborigines made Australia.' (Allen & Unwin: Sydney)

Johnson C (2006) 'Australia's Mammal Extinctions: A 50 000 Year History.' (Cambridge University Press: Cambridge)

Lindenmayer D (2007) 'On Borrowed Time.' (Penguin Books: Camberwell, VIC)

Rockström J, Steffen, W., Noone, K., Persson, A., Chapin, F.S., Lambin, E.F., Lenton, T.M., Scheffer, M., Folke, C., Schellnhuber, H.J., Nykvist, B., de Wit, C.A., Hughes, T., van der Leeuw, S., Rodhe, H., Sorlin, S., Snyder, P.K., Costanza, R., Svedin, U., Falkenmark, M., Karlberg, L., Corell, R.W., Fabry, V.J., Hansen, J., Walker, B., Liverman, D., Richardson, K., Crutzen, P., and Foley, J.A. (2009) A safe operating space for humanity. *Nature* **461**, 472-475.

Watson IW, Evans MC, Carwardine J, Fuller RA, Joseph LN, Segan DB, Taylor MJF, Fensham RJ, Possingham HP (2011) The Capacity of Australia's protected area system to represent threatened species. *Conservation Biology* **25**, 324-332.

Wilson G, Edwards M, Smits J (2010) Support for Indigenous wildlife management in Australia to enable sustainable use. *Wildlife Research* **37**, 255–263.