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invasive species council

Steve Dunn
Review of the Game Council
C/ Department of Primary Industries
Level 6, 201 Elizabeth Street
Sydney NSW 2000
gamecouncil.review@dpi.nsw.gov.au

22 May 2013

Dear Mr Dunn,

RE: Inquiry into the NSW Game Council

The Invasive Species Council is pleased to be able to offer its perspective on the NSW Game Council to inform the review requested by the Premier. The inquiry's terms of references are at **Attachment 2**.

This submission does not represent our full range of views on the NSW Game Council, but seeks to provide a selection of information to assist your inquiry.

Ineffectiveness

The Game Council has not been accurate in its claim that hunters achieve conservation outcomes and are effective in reducing numbers of feral animals. A statutory body needs to be truthful, scientific and factual in its work. The main example of the misleading work of the NSW Game Council is its claim of effectiveness.

Since its establishment, the NSW Game Council has not credibly measured its conservation effectiveness.

As the former CEO of the Invasive Animals CRC, Tony Peacock said:

> Simply quoting the number of animals killed by Game Council licensed hunters is not enough to demonstrate value. We all go on about measuring impact, not numbers, so there needs to be a demonstration of a positive impact. (see **Attachment 1**.)

The Invasive Species Council prepared two briefings that provide detailed concerns about hunters and the NSW Game Council, one on conservation hunting in 2009 and another about recreational hunting in 2012 (both attached as **Attachments 8** and **Attachments 9** respectively) that demonstrate why simply counting the number of species shot by hunters is not a measure of effectiveness.

The NSW Game Council often quotes the use of volunteer shooters in national parks in Victoria and South Australia to support the hunting program in NSW national parks. These states run integrated feral animal

control programs, rather than the ad-hoc program run by the NSW Game Council, and should not be used to support the hunting programs of the NSW Game Council.

Regarding the Victorian government's use of hunters and shooters, the VNPA fact sheet sets out the situation well. This Fact Sheet is attached (**Attachment 5**) and can be found at : http://vnpa.org.au/admin/library/attachments/PDFs/Fact%20sheets/FACT%20SHEET-shootinginparks.pdf

The fact sheet states:

- "…recreational hunting for Sambar Deer has shown no capacity at all to reduce the numbers of this animal, even though there is now no bag limit on Sambar:
- Recreational hunters are primarily motivated to 'farm' Sambar, making sure there remains a sustainable, or preferably increasing, population.
- The frequent and random disturbance of Sambar (or other target species) results in more wary animals that are more difficult to control in the future.
- Hunters tend to avoid areas where the probability of finding their target is low, thus leaving a population able to expand again."

and

"In summary, pest control programs using accredited volunteer hunters in parks in Victoria:

- Operate as specific strategic programs, with specific objectives aligned with the park
- management plan.
- Are under the control of Parks Victoria staff.
- Involve considerable staff time in planning and supervision, and therefore require considerable budget allocations.
- Operate with a very small number of volunteers, less than 1% of licensed game hunters in Victoria.
- Have achieved varying levels of success."

Allowing the Game Council to actively promote deer hunting and to advocate within government to prevent it being declared a pest species or to use effective control measures on private land will see the range of this destructive pest species continue to expand.

Lack of Hunter Competence

The recent accident this year where a volunteer shooter shoot another volunteer shooter in Onkaparinga River National Park in South Australia highlights the need to ensure that all shooters have appropriate skills before allowed to participate in any volunteer shooting program. In response, the South Australian government suspended all programs involving volunteer shooters until a safety review is carried out. Last

week the Invasive Species Council was told by a SA Government official that this review is likely to lead to the tightening of requirements for competency testing for volunteer shooters.

We attach a recent international study conducted by the Deer Commission in Scotland in 2008 comparing the competency requirement for hunters across 20 countries (see **Attachment 6**). This study found that all countries had a competency test and that this assisted with hunter/shooter safety and effective and humane killing of the target species.

Also attached are details of hunting in Sweden and the requirement that a detailed competence test must be carried out before a firearm can be used (**Attachment 7**).

Culture

The current culture of the NSW Game Council is defensive, lacks scientific rigour and is hostile to those that do not agree with it.

A document demonstrating the NSW Game Council's long term views and broader political and cultural agenda is "Conservation Through Hunting: a broader environmental paradigm change in NSW" (Bauer and English 2011, **Attachment 3**). It reveals the broader objectives of hunters on the Game Council. It is inappropriate for the NSW Game Council to fund and promote such a plan.

We had direct experience of the hostility of the Game Council to those expressing contrary view to its own when the Game Council responded to our proposal to declare deer a pest species in NSW in 2009. The Game Council issued a media release (end of May or early June 2009, since removed) titled: "Declare Invasive Species Council feral, not wild deer". In the media release the NSW Game Council accuses ISC of being an "ill-informed nuisance organisation" that is "seeking to impose extremist environmental messages onto governments" because the Invasive Species Council called on NSW to follow the lead of Queensland and South Australia (and Western Australia) by declaring deer a pest.

Subsequently the Invasive Species Council replied via its own media release on 2 June 2009 (http://www.invasives.org.au/mediaReleases.php?MediaReleaseId=15&year=2009). In this media release we stated:

> "their [NSW Game Council's] claim that declaration as a feral species would increase the environmental harm deer cause is difficult to understand, and the game council provides no information to substantiate this," Mr Low said.

The Invasive Species Council then requested that the Game Council remove incorrect assertions about our work from its website. They refused to do so. As a result we lodged a complaint with the NSW Ombudsman.

The NSW Ombudsman found against the Game Council. In the 2009-10 Annual Report, the NSW Ombudsman stated (page 91, **Attachment 4**) that:

"We found that the Game Council had published inappropriate material on their website, including a paper that misquoted and misrepresented the work of a conservation advocacy group.

The NSW Ombudsman wrote to the NSW Department of Industry and Investment with concerns that:

- "the Game Council h › ad not corrected the quote voluntarily when asked to do so
- the content and tone of other articles on the website was inappropriate for a statutory authority
- the advocacy role played by the Game Council might potentially conflict with their regulatory function of administering the licensing system for game hunters
- the Game Council's complaint-handling policy was inadequate.

The CEO of the Invasive Animals CRC, Tony Peacock, wrote about this issue in his blog at the time. A copy of this is found in **Attachment 1**.

The Game Council has not been as publicly hostile to our arguments since, yet they still continue to promote hunting as providing conservation benefits without any credible evidence (see above).

Suitability of statutory arrangements

While the statutory requirements governing the Game Council are outside of the scope of the current inquiry, we believe that these require a major review. This is because the government suggests that the purposes of the Game Council, and even the title of the enabling legislation – 'Feral Animal Control', include providing conservation benefits and undertaking effective feral animal control. The *Game and Feral Animal Control Act 2002* at present does not ensure that effective feral animal control is undertaken.

These matters could be included in the upcoming five-year review of the Game and Feral Animal Control Act 2002 that is meant to be underway now. The last review was conducted with limited public input and largely looked at ways of further advancing the interests of hunters rather than dealing with broader matters in the public interest such as providing effective feral animal control and protecting native species. It seems that the last five-year review was led by the NSW Game Council or interests with the then Department of Primary Industries that were in favour of expanding hunting in NSW.

Some of the deficiencies where the *Game and Feral Animal Control Act 2002* does not support effective feral animal control are included below:

a) Objectives of the *Game and Feral Animal Control Act 2002* do not include control or eradication of feral animals

The current objects of the Act are:

"Section 3 Objects

"The objects of this Act are:

(a) to provide for the effective management of introduced species of game animals, and
(b) to promote responsible and orderly hunting of those game animals on public and private land and of certain pest animals on public land.

If the purpose of the body is to use volunteer shooters to undertake feral animal control work, the concept of a game animal should be removed from the Act and replaced with the word pest animal. The objectives should require the Game Council be tasked with a primary objective to undertake 'effective pest control and eradication'. The word 'management' in association with pest or game animals should not be used in the objects otherwise this can be interpreted to include sustainable harvesting and protection of the game or pest animal.

At present the legislation appears to promote the establishment and expansion of game animals which are invasive and causing significant impacts.

b) The functions of the Game Council in the Act do not require the Council to ensure feral animals are controlled or eradicated.

These functions need to be changed to have an over-riding purpose to ensure that it advances 'effective pest control and eradication'. This needs to include game animals.

The current functions of the Game Council do not include pest/game animal eradication and control. At present the functions of the Game Council are:

"Section 9 Functions of Game Council

(1) The Game Council has the following functions:
(a) to represent the interests of licensed game hunters in matters arising under this Act,
(b) to administer the licensing system under this Act for game hunters (including the granting of licences and the enforcement of the Act) and to engage agents for that purpose,
(c) to make recommendations to relevant Ministers for the purposes of section 20 (Declaration of public lands available for hunting game),
(d) to provide advice to the Minister on game and feral animal control (whether at the request of the Minister or on its own initiative),
(e) to liaise with the Pest Animal Council, livestock health and pest authorities and other relevant bodies in connection with their respective functions,
(f) to promote or fund research into game and feral animal control issues,
(f1) to promote, fund, develop or deliver educational courses regarding game animals and animals that interact with game animals,
(f2) to promote or fund research into issues regarding animals that interact with game animals,
(g) to engage in such other activities relating to the objects of this Act as are prescribed by the regulations.

(2) In exercising its functions, the Game Council is to have regard to public safety.
(3) The Game Council cannot employ any staff.

c) Membership of Game Council should not be dominated by hunters

At present the requirements of the Act specify that membership of the Game Council consists of:

> "Section 8 (2)
>
> The members of the Game Council are:
>
> (a) 8 persons appointed on the nomination of hunting organisations prescribed by the regulations for the purposes of this paragraph, and
> (b) a person appointed on the nomination of the State Management Council of Livestock Health and Pest Authorities, and
> (c) a person appointed on the nomination of the Australian Veterinary Association, and
> (d) 2 persons who are wildlife management scientists, and
> (e) a person appointed on the nomination of the Minister administering the *Aboriginal Land Rights Act 1983*, and
> (f) a person appointed on the nomination of the Minister administering the *Forestry Act 2012*, and
> (g) a person appointed on the nomination of the Minister administering the *Crown Lands Act 1989*, and
> (g1) a person appointed on the nomination of the Minister administering the *National Parks and Wildlife Act 1974*, and
> (h) a person appointed on the nomination of the Minister.

This makeup ensures that there is always a majority of hunters. This means that in all decisions, hunter interests predominate, rather than the broader public interest, including the need to eradicate and control feral animals. Conservation interests, views of experts in feral animal control and animal welfare interests are subsumed by hunter interests.

For a public funded statutory body this is inappropriate. It is also inappropriate where this body has a major role in the spread of feral animals such as the deer, on private property.

d) Need for government control

Feral animal control should not be under the independent control of hunters because we believe the interests of hunters will predominate, rather than the public interest in conservation, public safety and integration with existing feral animal control programs. As a publicly funded authority, the government needs to retain control of the Game Council.

The Game Council should be subject to over-riding control by the Government.

e) limits on deer control on private land

Recent changes to NSW legislation now prevent landholders from using people to shoot deer on their own land without permissions from the NSW Game Council. The Game Council prevents effective control measures on private land, such as spotlighting and night hunting when shooting deer.

Please contact me at andrewcox@invasives.org.au if you seek further information.

Yours sincerely

Andrew Cox
CEO

ATTACHMENT 1: Invasive Animals CRC Blog by Tony Peacock re Game Council

From: http://feral.typepad.com/feral_thoughts/2009/06/invasive-species-councils-argument-deserves-more-than-an-up-yours-from-the-game-council-.html

June 24, 2009

Invasive Species Council's argument deserves more than an "up yours" from the Game Council.

In doing some research for debates on a proposed new law on hunting in New South Wales, I've been surprised at the level of angst between the Game Council and the Invasive Species Council. The Game Council is a NSW Statutory Body whereas the Invasive Species Council is a lobby group reminding us all of the impacts of weeds and feral animals and of the importance of biosecurity.

In a recent media release, the Chairman of the Game Council went as far as saying "In fact, if we are talking about 'feral pests', well that name describes ill-informed nuisance organisations such as the Invasive Species Council."

The Invasive Species Council's Tim Low came back with what must have been a frustratingly calm answer in a return media release: "In NSW state forests over the past two years, recreational hunters licensed under the Game Council have killed on average just 350 deer a year. This is only a few more than the 300 rusa deer that need to be killed annually in one small national park (Royal National Park) to achieve slight population reductions (0.4 per cent), according to estimates by the NSW Department of Environment and Conservation".

The ABC's Bush Telegraph presenter Michael Mackenzie did a great job moderating a debate between Tim Low and the Game Council's CEO Brian Boyle a few days after the media release exchange, and both got to present their side.

I know a quarter of the Game Council's board as well as the Invasive Species Council's Tim Low (as the author of *Feral Future* and many other natural science books, almost everyone with an interest in feral animals knows of Tim). The vitriol in the Game Council's media statement is a bit over the top. I guess to an extent I can understand them saying Invasive Species Council is "small", "unofficial" and even a "nuisance" (they are a lobby group after all) but I reckon the Game Council is missing the mark saying the Invasive Species Council is "ill-informed".

As much as both organisations might want the other to disappear, neither is going to shut up shop any time soon. If the debate becomes too polarised, we may even end up with worse outcomes than both organisations want. For example, I heard ex-Chairman of the Game Council and current MLC, Robert Brown, on radio deriding the use of poison baits in National Parks and claiming a big impact on quolls and birds. It might be time to start discussing the realities. Shooting can form part of an integrated pest control program, but it can't simply replace larger programs. The Game Council often quotes the case of "Operation Bounceback" in South Australia, where shooters played a vital role in an excellent program (and continue to do so), but that's an integrated program, not an *ad hoc* one.

The quality of the work coming out of the Invasive Species Council is very high. It isn't going to be discredited by dismissing it. ISC's "Deer Mistake" report warrants a much more thorough debate than simple name calling. I imagine some biofuel advocates are frustrated by the ISC report "The weedy truth about biofuels", but a simple media release "up yours" response is not going make important questions go away. It would be better to set out to more clearly demonstrate the role shooting can play in feral animal control.

Simply quoting the number of animals killed by Game Council licensed hunters is not enough to demonstrate value. We all go on about measuring impact, not numbers, so there needs to be a demonstration of a positive impact. In Game Council's defence, it is a young organisation whose initial job has been to set up a license system. Now they can start to demonstrate a conservation benefit from shooting if they want to bear the title of "conservation hunters".

For example, I would think it would be well within the abilities of the Game Council to organise intense conservation culling of, say, foxes in a particular forest or two, along with appropriate monitoring of native species recovery.

The table below is one of the many "informed" bits of material I steal from time-to-time from the Invasive Species Council's website. I use it to demonstrate that we need to work together on feral animal issues because they are too important to ignore.

Top Threats Table

Threatened species	Threatened ecosystems	Riparian zones	Important wetlands in Australia
Feral animals	Grazing pressure	Grazing pressure	Grazing pressure
Changed fire regimes	Feral animals	Exotic weeds	Exotic weeds
Grazing pressure	Exotic weeds	Feral animals	Feral animals

Source: Modified from Invasive Species Council (2009)

ATTACHMENT 2: Terms of Reference of the Review of the NSW Game Council

The terms of reference of the Review are to:

1. Review the services currently provided by Game Council NSW and ensure that the statutory requirements of the Game and Feral Animal Control Act 2002 (the Act) are being met.

2. Examine the performance and delivery of both statutory and non-statutory functions and services provided by Game Council NSW, and determine whether these services are being provided effectively and efficiently and in line with NSW Government and Department of Premier and Cabinet regulations and policies.

3. Examine the governance structure of Game Council NSW and determine whether this is the most effective or appropriate model to enable the management and staff of Game Council NSW to deliver on the objectives of the Act.

4. Examine Game Council NSW's operational capacity, including staff skills and capabilities, to undertake and effectively implement its statutory functions.

5. Examine Game Council NSW's organisational, financial and administrative management and determine whether it is appropriately skilled and resourced to oversight Game Council NSW's operations.

6. Make recommendations in respect of any aspect of Game Council NSW's governance, management, administration, organisation and operations that will enhance Game Council NSW's service delivery and capacity to deliver on its statutory functions.

OTHER ATTACHMENTS

The following documents are also attached as separate files:

ATT 3. **Conservation Through Hunting: An environmental paradigm change in NSW** by Bauer and English 2011, published by NSW Game Council

ATT 4. **Extract from 2009-10 Annual Report of the NSW Ombudsman**, page 91, with reference to complaint against NSW Game Council.

ATT 5. **Fact sheet on hunting in Victoria** by Victorian National Parks Association, June 2012

ATT 6. **A review of hunting options used to assess competence in other countries** by Gore 2008 for Deer Commission of Scotland.

ATT 7. **Hunting in Sweden**, from the Handbook of Hunting in Europe, 1995

ATT 8. **Is Hunting Conservation**, a critique by Invasive Species Council, 2009

ATT 9. **Fact Sheet: Recreational hunting in NSW: facts vs claims**, by Invasive Species Council 2012

ATTACHMENT 3

Conservation through Hunting

AN ENVIRONMENTAL PARADIGM CHANGE IN NSW

Vol 1: Framing the Game

Johannes Bauer and Anthony English

NSW GOVERNMENT
GAME COUNCIL
New South Wales

ATTACHMENT 3

Conservation through Hunting

AN ENVIRONMENTAL PARADIGM CHANGE IN NSW

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ATTACHMENT 3

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Chapter 1

Introduction

What are the global challenges for hunting? They are not as ambitious as fighting the greenhouse effect or saving the tropical rainforests, at least at a first glance. The first challenge for hunting is simply to survive in a modern society. However, considering the importance of hunting for 250 million indigenous people and the importance of hunting to cultural diversity or to rural industries or traditions, this challenge becomes bigger. To us the challenge of hunting in the modern world will be to prove itself as a major force for conservation and cultural survival for minorities and for the survival of a way to secure an important part of our protein demand which is not restricted to the clearing of tropical rainforests to ranch cattle for McDonald's hamburgers and for the replacement of the world's wild marine and freshwater fish stocks by fish farms.

Bauer and Giles, 2002

Recreational and Sport Hunting

"What is sport?" For unnumbered centuries physical combat between men was economic fact. Battle was part and parcel of the daily struggle to get, or to keep a place in the sun. As the economic need for battle became more and more occasional, it was delegated to specialists. But the instinctive zest for physical combat did not disappear hence athletic sports and games. Physical combat between men and beasts was likewise an economic fact. Since first the flight of years began, it was part and parcel of the daily business of getting something to eat. Gradually agriculture and commerce supplied other and better means of subsistence. But the hunting instinct, the love of weapons, the zest in their skilful use, did not disappear with their displacement by economic substitutes. Hence sport with rod and gun. Socially speaking, these surviving sports are an improvement over their economic antecedents. Football requires the same backbone as battle, but avoids some of its moral and physical retrogression. Hunting for sport is an improvement over hunting for food in that there has been added to the test of skill an ethical code, which the hunter formulates for himself, and must live up to without the moral support of bystanders. That the code of one hunter is more advanced than that of another is merely proof that the process of sublimation, in this as in other atavism, is still advancing.

Aldo Leopold, 1933

ATTACHMENT 3

Contents

THE MODERN PREDATORY WAY

Rethinking the Global Meat Industry

It is easy to forget how meat is made… consider what goes into producing meat and other animal products… In the United States, 70 percent of the corn harvest is fed to livestock… worldwide nearly 80 percent of all soybeans are used for animal feed… about a third of the total marine fish catch is used for fish meal, two-thirds of which goes to chicken, pigs and other animals. This is part of the reason that fisheries all over the world are being fished out, threatening the lives and livelihoods of millions of people. Livestock are also eating each other… livestock… are still fed the ground-up bits and pieces of other animals… producers… give cattle cow's blood, chicken, chicken manure, feather meal, pigs and even sawdust… producing just 0.2 kilograms of [grainfed] beef can use 25,000 litres of water… [for] slaughtering and processing… [another] 15,000 litres of water are used per live-weight ton of slaughtered animals in the United States… in the United States, livestock produce more than 600 million tonnes of waste annually on factory farms… Mad cow disease, foot-and-mouth disease and other less exotic but no less dangerous foodborne illnesses are also linked to factory farming practices. Mad cow disease was likely caused by feeding ruminants to other ruminants… The practice of using antibiotics. Industrial systems today generate 74 percent of the world's poultry products, 50 percent of all pork, 43 percent of beef and 68 percent of eggs…

Today only four producers control 81 percent of the US beef market… and as environmental and labor regulations in the European Union and the United States become stronger and more prohibitive large agribusinesses are moving their animal production operations… From China and Brazil to India and the Soviet Union, meat is now a globalized product controlled by a handful of multinational companies… hazardous working conditions, unsanitary processing methods, and environmental contamination, still exist. Many have worsened. The billions of tons of manure that pollute our water and air are creating mini agricultural 'Chernobyls', with the potential of even more widespread destruction. Meanwhile the economics of confined animal operations hurt workers, local communities, and independent farmers.

D. Nierenberg, 2006

Modern Means of Production

The modern meat production industry has been described by many as a near-suicidal system. One might also conclude that an urban population — which condemns Conservation Hunting as inhumane or cruel while quietly ignoring/endorsing the above practices and the origin of its own meat supplies — is hypocritical in the extreme. (Conservation Hunting is defined as the ethical and humane harvesting of animal species in their natural environment by individual hunters for the utilisation of their meat, skins, or for environmental purposes.) Under this definition, any Conservation Hunter who kills an animal as fair game, skins and butchers it, and enjoys these activities, is engaged in an activity that is infinitely more humane than the modern means of meat production. The food production system described by Nierenberg is fuelling the world's eating habits, which a World Bank adviser has described as "devastating" to human health. One has to ask how such a situation arose with public concern and the empirical scientific evidence so damning. While governments continue to endorse the above practices, change is happening within both western and non-western societies. This is occurring amongst women in particular, many of whom have become vegetarians not because they dislike meat, but because of documentaries on the practices Nierenberg describes.

Other women however have taken another approach. In Germany during the past 10 years, some 40,000 women have taken up hunting (women represented only one per cent of Germany's hunters in 1991 but now represent 10 per cent). These women have done this to be active, to engage in conservation, and to obtain healthy meat. In Australia, hunting for food is not an outlived Aboriginal legacy but an urgent need for many remote Aboriginal communities who have been all but forgotten by white western society.

Note: The health benefits of hunting are prescribed for many Aboriginal peoples (Wilson et al, 2010). If these benefits are acknowledged for indigenous Australians, then why not for all Australians?

1 INTRODUCTION

1.1 The Study

The Australian grey kangaroo (*Macropus giganteus*) is one of the most globally revered animals. Near Australian cities, they are caught, sterilised and released at huge taxpayer expense due to "overpopulation". Further west, they are shot as an agricultural pest and left to rot by the thousands. In the far west, they are commercially harvested by the millions, mostly for pet food. One might conclude that — for this species — a "conflict of values" exists.

The grey kangaroo is not the only species in NSW that attracts such widely differing sentiments. They are also expressed for exotic species: the rabbit and hare, the wild deer, the feral goat, the fox, and the feral cat, and for some native duck species. For each of these species, there are pest management plans which talk of "overabundance" or "conflict" with agriculture or the environment. For some stakeholders, they are "pests" and for others "resources". In this rather confused world of "game" and "pest", "resource" and "adoration", it is difficult to find approaches acceptable to all. Some approaches are conflict laden, others ineffective.

Many are controversial and most are costly. In this scenario, there are serious constraints for management outcomes that satisfy different value systems and needs.

This study has been commissioned by Game Council NSW to identify the constraints on Conservation Hunters in New South Wales in order to develop strategies to overcome these constraints. This project has attempted to identify and discuss the potential opportunities that Conservation Hunting might provide. These benefits would be not only for Conservation Hunters, but also for society, industry, and rural and aboriginal communities, which all experience and deal with wildlife on a daily basis.

For the purpose of this report, the authors have defined a constraint as anything that prevents Conservation Hunting from becoming a land-use that is widely recognised and accepted. Conservation Hunting must also satisfy the six pillars of environmental policy — human rights, equity, participation and sustainability, causality, and precaution.

An opportunity is defined as the potential to improve a situation and thereby spread the benefits to society. We believe that many of the problems faced by Conservation Hunting in Australia, and particularly in NSW, are not just a matter of poor policies or legislation. Many of these problems are the result of a poor understanding by the public of what hunting is, why people do it, and the benefits that it can offer our society.

In the following report, we have tried to address these issues. This is a continuation of the work that the report's authors have been involved in during much of their professional lives. We hope that this work has given us some "wisdom" to approach issues which are so divisive and counterproductive in contemporary Australian society.

However, firstly we must set the context for this project.

1.2 Background

The formation of the Game Council in 2002 provided a quantum leap for hunting, with NSW becoming the first State in Australia to regulate Conservation Hunting with its own statutory authority. This was an important step towards shedding another colonial legacy — the shadowy existence between an urban populace who mostly knew and cared little about what went on in "the bush" — and a rural population who jealously guarded one of the last vestiges of colonial freedom: the right to own firearms and to hunt.

The Game Council is now well-established throughout the State. The agency is part of a new plurality recognising that there is more than one way to manage the environment or conserve species and that there is more than one reason to go hunting. It is a world in which over the past 15 years Government has tried to reinvent its roles and institutions in the management of natural resources among declining and, at times, shattered rural economies. It is a world in which environmental problems and a perceived lack of Government action claimed its highest political victim, the former Coalition Prime Minister John Howard. It is a world that is looking for a new and more balanced engagement of cities with their surrounding rural space. It is a world which is dominated by the threat of climate change but also in which much of conventional pastoralism in Australia and beyond has become all but unfeasible with farmers starting to walk off their land.

This is because the ability of the degraded lands and rivers to cope with a lack of rain has finally caught up with society. In this new world of reorientation, redirection, and change, the old and tried is in warfare with the new and unproven, a world in which constraints abound, as do opportunities.

This search for the new also applies to the reinvention of modern Conservation Hunting which is as much constrained by old points of view, rules and legislation as by agriculture and fisheries. Most of all it is affected by environmental management, conservation, and views on the environment from the cities. In this new world, a balance has to be reached.

The six principles and pillars governing environmental policies — human rights, sustainability, impact management, intergenerational equity, participation of the public in decision-making, and precaution — have to be not only applied to climate change, but also, perhaps even more so, to land-uses. These land-uses are: agriculture, forestry, tourism and conservation, and of course, to the oldest of land-uses: fishing and Conservation Hunting. The report's authors are two scientists; one is a veterinarian with a long involvement with aboriginal people, Conservation Hunters, wildlife and Government institutions. The other is a wildlife conservation ecologist and environmental scientist originally from Europe who has been living on a farm for the past 18 years and who has had extensive experience with hunting, fishing, and traditional societies in 10 countries.

We will attempt to put forward some strategies which could make it easier for hunters to define their future and perhaps find a new place in the world. We also want to provide a new perspective to our colleagues who have little land-use experience and a city-based view on hunting. We are aware that many readers could be highly critical of land-use for hunting and the way that it is sometimes conducted. We also believe that many hunters could find some "uncomfortable truths" in the report.

We hope, however, that the kaleidoscope of views that we have tried to present in this report will provide some new perspectives.

We also hope to show how the negation of Conservation Hunting by modern Australian society is in contempt of the Aborigines whose "sustainable" land-use it was for many millennia. For far from being an anachronism that we have outgrown — hunting along with the other two major uses of wildlife, fishing and gathering — may remain part of our heritage for as long as we remain human. If this report will make readers think about these issues, then it will have addressed some of the major constraints to Conservation Hunting in NSW and Australia.

Just as importantly it might allow policy makers, Conservation Hunters, and the wider community to consider seriously the opportunities that Conservation Hunting presents to the rural population, to aboriginal communities, and for the conservation of native species.

Such a re-evaluation of hunting, after many years of condemnation is not restricted to Australia. Australia is only now catching up with a large part of the world from Europe to North America and Africa to China where hunting in its various forms is re-finding its rightful place as a legitimate land-use and a powerful conservation tool. To negate Conservation Hunting and the people engaged in it is to negate a future sustainable, pluralistic, and equitable world.

1.3 Legitimacy and Objectives of This Study

1.3.1 Hunting as Legitimate Natural Resource Use

The contribution of Conservation Hunting to indigenous, rural, local, regional, even national economies is now undisputed (see Frith, 1973; Caughley and Sinclair, 1994; Bauer and Giles, 2002, Bauer and Herr, 2004). Hunting's often controversial role in Australia remains, however, poorly assessed and appreciated by the wider community despite the fact that it constituted the original and relatively 'sustainable' land-use of Australian indigenous people (for instance, Altmann, 2001; Bauer and Giles, 2002) for more than 40,000 years. There are also regulatory circumstances, absence of market mechanisms, and incentives and characteristics of the Conservation Hunting community itself that are hardly ideal to the development of sustainable Conservation Hunting models such as those that abound in Europe, North America, South America and parts of Africa.

However there is accumulating evidence that only multi-dimensional thinking and management, including hunting and fishing, can serve to address the increasing problems in biodiversity protection and sustainable land management (Bauer and Giles, 2002). Future solutions to many wildlife conservation problems need to include hunting. In Australia and, in particular NSW, hunting faces a number of constraints.

Therefore, in order to improve the current and potential contribution of hunting to (rural, traditional, indigenous) economies and to environmental management (feral animal control, habitat improvement, population rehabilitation) one must start with an assessment of the current impediments that hinder the development of a sustainable Conservation Hunting culture in NSW. This needs to be followed by a closer look at the opportunities which have arisen, for instance, through more balanced, informed and objective attitudes of policy makers informed by science.

All of this requires new efforts in education and research, science, and management that incorporate a diversity of approaches. These are the objectives of this study. This project will also review and assess the status of species which are currently hunted/harvested/controlled or are potentially suitable for that in NSW (such as crested pigeon, waterfowl, macropod sp.) by either recreational, commercial, or State driven operations. The criteria on which our assessments for this will be based are taken from the six pillars of environmental policy as described by Sharon Beder (Beder, 2008):

1. Human Rights
2. Intergeneration Equity
3. Right to Participate
4. Environmental Impacts
5. Sustainability
6. Precaution

1.3.2 Conservation Hunting as a Legitimate Conservation Force

The very significant benefits of Conservation Hunting to conservation have been recorded in many parts of Europe, Africa, and North America in numerous studies. There are also emerging examples of these benefits for Australia but currently many remain disputed or unknown.

In this report, we will also attempt to:

- assess the current regulatory framework of Conservation Hunting in NSW;
- identify the actual and potential role for specific management issues of Conservation Hunters;
- examine the current constraints they face in order to carry out a legitimate land-use.
- explore the contribution of Conservation Hunting (carried out according to sustainable and conservation principles) to sustainable Australian landscapes.

The last objective will be examined, in particular, through an increased role of hunters in the management of exotic species but also in the rehabilitation of native species once considered game yet now either vulnerable (such as Australian bustard) or endangered (the Malleefowl). This change has come about, as none other than Professor Michael Archer suggests, because Australians have lost interest in hunting these species.

With a continuing and rather ominous absence of any other successful (and sustainable) attempts to rehabilitate such species by the conservation community (such as NP&WS, zoos, NGOs, etc.) this choice not only seems legitimate but very much in the interests of conservation.

1.3.3 Hunting as the Overlooked Land-Use

It is astonishing how much the concept, indeed the very word, "hunting" has been removed from the worlds of scientists and Government agencies in Australia over the past 30 years. One could argue that while the word "fishing" remains a widespread concept and accepted term in official documents, these same documents have been "sanitised" of the term "hunting". This trend is not only evident from the many Acts, Regulations and bills in Federal and State agencies. It is also glaringly obvious from reading Australia's State of the Environment Reports (SoE, 1996, 2001, 2006) and the rather astonishing fact that neither the States nor the Commonwealth have any bodies that collect and analyse hunting statistics on a regular basis. This is all the more surprising if one realises that the only national attempt to do so (Ramsay, 1994) was never repeated. Although demonstrating a clear case that this data should be collected — allowing for the size of the industry and the paucity of reliable information — one cannot help but think that the abandonment of the single effort 15 years ago to collect this data was partly due to an increasingly urbanised society's urge to forget about something which it understood less and less.

1.3.4 Conservation Hunting as a New-Age Concept

We have approached this review not merely as scientists; Conservation Hunting and the role of Conservation Hunters goes far beyond these domains and even of other land-uses. We have therefore made extensive use of the internet and have included many excerpts and quotes from initiatives and websites, policies, and events happening around the world. How could we not do this as so many of our activities have not only established their own presence in cyberspace but have been moved into cyberspace altogether.

There is hardly anything one cannot find on the world wide web concerning Conservation Hunting but there is also information overload. If one knows where to look however, how to relate, and how to present that information, and, not unimportantly, in what context to present it, a new picture of Conservation Hunting emerges from the world's frantic search for sustainability.

In this age of the new environmental principles of equity, participation, human rights, sustainability, polluter-pays, and precaution (in a deeply consumer driven society) Conservation Hunting not only performed much better in most of these criteria in the past but also shows great potential for the future.

Far from being an atavism or, as Aldo Leopold warned, an "urge we would hope to outgrow" once we are truly "civilised", Conservation Hunting might remain with us as one of the most urgent reminders of a commodified world where such things as McDonald's, fast food grown in the Amazon rainforest, genetically modifed pigs, and increasing video violence, have all started to compromise the health and future of the next generation. While we choose to ignore all of these trends with breathtaking indifference, we never stop moralising about "hunters enjoying killing".

It is a disturbing symptom of our times that our society has chosen to overlook and accept such trends which are destructive on such vast scales, while focusing on and distorting something that, like fishing, might well remain as one of the saner aspects of modern society.

1.3.5 The Conservation Hunter's Urges in a World of Carbon Credits

The authors of this report believe that there is some urgency in establishing the Conservation Hunter's contribution to conservation. An increasing number of documents, internationally and in Australia, suggest that amidst all the global warming frenzy and other environmental causes, wildlife "is falling between the cracks".

Wildlife, in its modern tragedy, cannot be sequestered for profit. It has to find other ways to persist outside of an economy which ignores the value of anything that cannot be calculated in dollar signs. One author has attempted to describe this paradox in considerable detail in a forthcoming book, *Wildlife, the Environmental Crisis and the Asymmetric Society* in which the word "asymmetry" stands for all the countless ways we perversely, grotesquely, and wrong-headedly, attempt to manage an increasingly-bizarre global market economy which is little more than a travesty of our favourite word: "sustainability".

Conservation Hunting and how we feel about it is a disturbing aspect of that asymmetry. In our attempts to save the planet symmetrically, Conservation Hunting has an important role to play. It will have to, since, in many parts of the rural world, corporate and industrial agriculture, along with many governments have created conditions that are currently falling apart for 2.5 billion farmers. This has been shown by two of the world's foremost agriculturalists, Mazoyer and Roudart (2006) in their latest book *A History of the Worlds Agriculture* and by an increasing number of writers who, like Carolyn Steel in *The Hungry City: How food shapes our lives* (Chatto and Windus, 2008) and Paul Roberts in *The End of Food: The Coming Crisis in the World Food Industry* (Bloomsbury, 2008), describe food realities and food futures.

In Australia, the number of unsuccessful and "unsustainable" efforts to save let alone return our many ailing populations and ecosystems far outweighs the few successful projects we have to show. This state of affairs is not only highlighted by some critical scientists but stares us in the face on every page of the third State of the Environment Report 2006 our Federal Government has produced, no matter how nicely and politically correct, framed and worded, this fact is.

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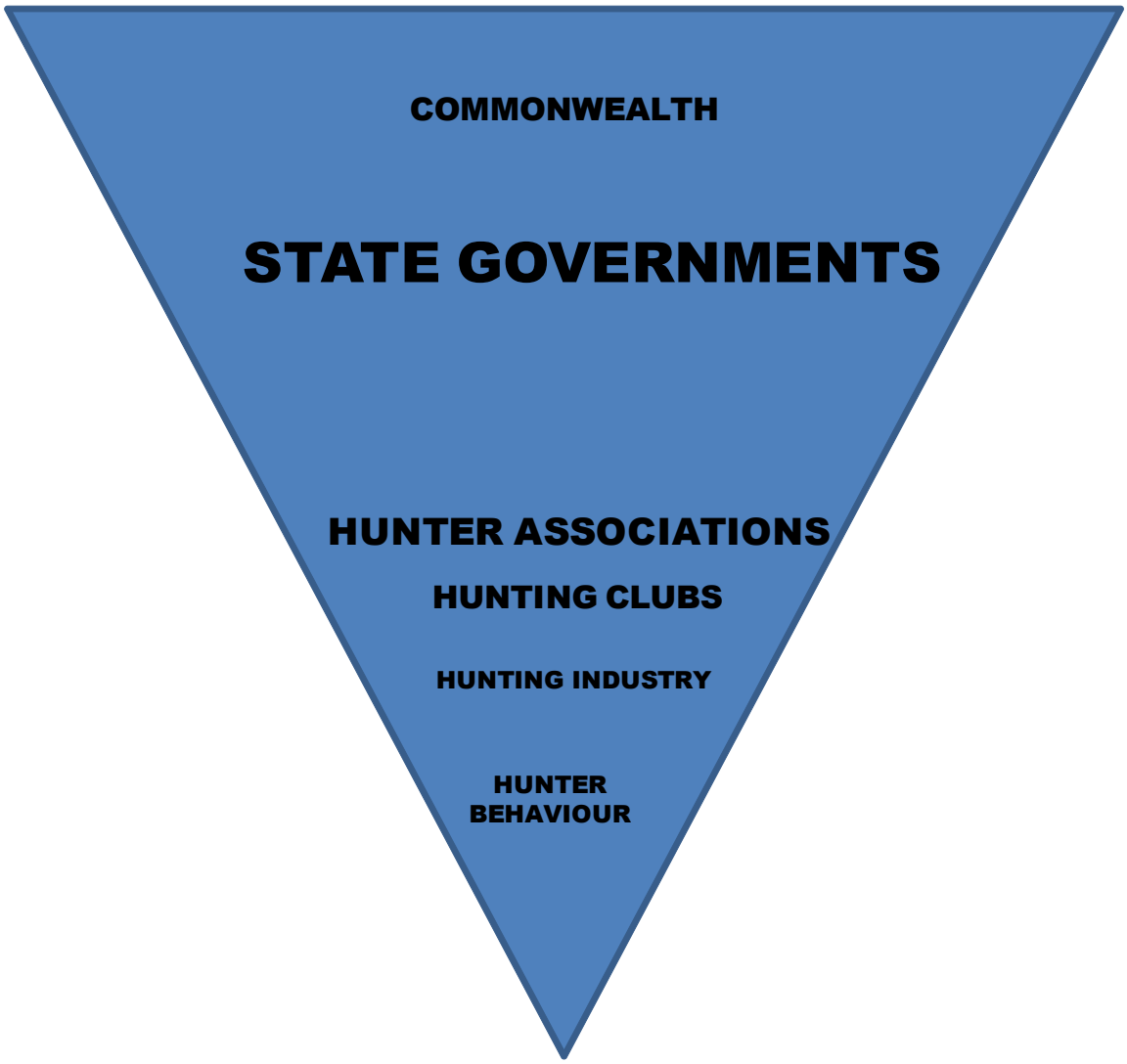
Chapter 2

Review of Legislation Relevant to Hunting in NSW

ATTACHMENT 3

Contents

ATTACHMENT 3



Our legislators decree game conservation; our sportsmen and nature-lovers resolve we shall have it, but our land owners do not practice it, nor are they yet offered any inducement or motive other than altruism for so doing. At the same time the public expects the free run of their lands, and of such game as may actually persist thereon. Such is our present impasse.

Aldo Leopold, 1931

2.1 INTRODUCTION

Regulating a land-use such as Conservation Hunting is not restricted to legislation and Government policy. However, it is also rarely a product of voluntary self-regulation. Therefore — in modern democratic societies — regulating land-use requires a balancing act between governance and self-regulation. This dynamic is informed by, influenced with, and dependant upon many groups in a pluralistic modern society who all develop their own policies and attempt to promote these to legislation level through pressure, public relations, and lobbying.

As a natural resource-use activity, hunting in Australia is bound by the framework of Commonwealth and State legislation which is often developed for other purposes. At times we find that this legislation does not even mention hunting, although this is the activity with which it deals.

In an Australian context, the governance framework for hunting on its highest level is framed by the International Treaty System by which we consent to the rules set by international conventions and bodies (for example, for protected areas, RAMSAR Sites, CBD, Agenda 21). As these rules are non-binding, individual nations often address them via strategies, policies, or even guidelines. At the Commonwealth level, governance of Conservation Hunting is not explicitly addressed by National Hunting Laws (as is common in Europe), but is laid out as undefined "strategic planning". Among the States, only one so far, New South Wales, has enshrined Conservation Hunting under its own Act.

Conservation Hunting in NSW is affected by three levels of legislative governance: Federal, State and, to some degree, international agreements. In tandem, these three levels provide the legislative framework within which hunting may occur. This activity is supported by a raft of policies which cover either items not legislated for or which complement current legislation.

The following Acts and policies in this section are all available on the internet.

International

- Convention on Biological Diversity (CBD)
- CITES policies and guidelines
- IUCN policies and guidelines

Federal

- Environment Protection and Biodiversity Conservation Act 1999

State

- Stock Diseases Act 1923 (reprinted 1982)
- Forestry Act 1956
- National Parks and Wildlife Act 1974
- Pesticides Act 1978
- Prevention of Cruelty to Animals Act 1979
- Aboriginal Land Rights Act 1983
- Non-Indigenous Animals Act 1987
- Acts in Forestry as applied to hunting on State forest land
- Crown Lands Act 1989
- Firearms Act 1996
- Weapons Prohibition Act 1998
- Rural Lands Protection Act 1998 and Rural Lands Protection (General) Regulation 2001
- Game and Feral Animal Control Act 2002 and Regulation 2004
- Deer Act 2006

2.2 INTERNATIONAL CONVENTIONS

> As a wealthy, scientifically-literate country with unusually high biodiversity, Australia arguably has both the responsibility of protecting its own biological heritage and the capacity to assist other countries to protect theirs… and Australia has been an active participant in international flora and agreements in the environment area; however in some cases, there has been legislative expression of commitments under agreements… in most cases, fulfilment is pursued under policy initiatives.
>
> Williams et. al. 2001, *State of the Environment Report*, p 183

2.2.1 Between Responsibility and Capacity

Australia is party to a number of international conventions which have been predominantly designed to protect species. The Convention on Biological Diversity is by far the most important. This convention explicitly states that the sustainable use of natural resources, including species hunted, is the obligation of every member State.

The major International Agreements which are relevant to hunting are:

Australia Entry	Title of Agreement	Date of Agreement	Place of Agreement	Remarks
1946	International Convention for the Regulation of Whaling	1946	Washington	In Australia, covered under fishing laws
Different NGOs, Gov. Agencies at various times	World Conservation Union IUCN	1948		In Australia, covered under fishing laws
1975	Convention on Wetlands of International Importance Especially as Waterfowl habitat	1971	Ramsar	Affects the hunting of waterfowl on wetlands
1975	Convention for the protection of World Cultural and Natural Heritage	1972	Paris	Does not affect hunting on World Heritage Sites explicitly protected by law
1975	Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	1973	Washington	Affects national hunting by, for instance, restricting the export of hunting trophies
1946	Convention on the Conservation of Migratory Species of Wild Animals	1979	Bonn	In particular, for migratory species of waterbirds
1993	Convention on biodiversity	1992	Rio de Janeiro	General framework on the interaction with biodiversity, including for wildlife and game. CBD emphasises "sustainable use" as this strengthens the will of communities to protect and safeguard Natural Resources.

2.2.2 The World Conservation Union (IUCN)

The International Union for Conservation of Nature and Natural Resources (IUCN) is one of the world's most significant, inclusive, and comprehensive conservation bodies. It is also playing an increasing role in conservation policy development and legislation by helping dozens of developing countries to establish environmental and conservation strategies. When invited to become a UN Observer organisation, it described itself in these terms:

> **IUCN mission**
>
> ... to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable...

IUCN's platform

For the voice of conservation to be heard, we must develop our capacity to work together. As a union of the conservation community, IUCN provides an ideal platform to influence and assist societies in their search for a more sustainable development path.

Achim Steiner, IUCN Director-General, www.iucn.org

What Steiner calls the "IUCN platform" consists of about 1063 members including 84 States, 114 government agencies, 82 International NGOs and 749 National NGOs. It also draws on more than 10,000 internationally recognised scientists and experts volunteering their services to six global commissions and employs some 1000 staff around the world working on some 500 projects. For more than 50 years "this green web of partnerships has generated environmental conventions, global standards, scientific knowledge and innovative leadership." (www.iucn.org)

The IUCN describes the four functions of its Green Web as:

Web of Partnerships :	Made between institutions and people to manage and restore ecosystems and protect threatened species.
Web of Knowledge:	Providing society with the information and tools it needs to secure a sustainable future.
Web of Innovations:	Harnessing economic incentives and social power for sustainable development.
Web of Action:	To promote the sharing of costs and benefits of conservation and sustainable use of nature and natural resources.

IUCN Commissions

IUCN commissions are defined as: "Principal sources of guidance on conservation knowledge, (that) provide technical advice and are implementers of the programme. The commissions are networks of expert volunteers entrusted to develop and advance the institutional knowledge and expertise and objectives of IUCN."

Within the International Conservation Network, the Green Web of IUCN stands out as a network of outstanding reference with access to information and communication links to other networks including a world specialist pool of more than 10,000 renowned scientists.

	Membership	Tasks	Website
Species Survival Commission	>7000	Advises on technical aspects of species conservation and mobilises action.	www.iucn.org
World Commission on Protected Areas	1300	Promotes the establishment and effective management of the world's protected area network.	www.iucn.org
Commission on Environmental Law	800	Advances environmental law through new concepts and instruments.	www.iucn.org
Commission on Education and Communication	600	Promotes the strategic use of communication and education.	www.iucn.org
Commission on Environmental, Economic and Social Policy	500	Provides a source of expertise that affect Natural Resource and BF Management.	www.iucn.org
Commission on Ecosystem Management	400	Provides expert guidance on integrated ecosystem management.	www.iucn.org

The IUCN's membership in Australia includes:

IUCN Members in Australia

National NGO (18 out of 765 total)		
#	Country	Member
1.	Australia	Australian Centre for Environmental Law
2.	Australia	Australian Conservation Foundation
3.	Australia	Australian Marine Conservation Society
4.	Australia	Australian Rainforest Conservation Society
5.	Australia	Conservation Volunteers Australia
6.	Australia	Environment Institute of Australia and New Zealand
7.	Australia	Institute of Foresters of Australia
8.	Australia	Macquarie University Centre for Environmental Law
9.	Australia	National Environmental Law Association
10.	Australia	National Parks Association of New South Wales
11.	Australia	National Parks Australia Council
12.	Australia	Nature Conservation Council of New South Wales
13.	Australia	Project Jonah Australia
14.	Australia	Queensland Conservation Council
15.	Australia	The Environment Centre N.T. Inc.
16.	Australia	The Wilderness Society
17.	Australia	University of Canberra, School of Resource, Environmental and Heritage Sciences
18.	Australia	World Wide Fund For Nature — Australia
International NGO (0 out of 83 total)		
Affiliate (2 out of 33 total)		
#	Country	Member
1.	Australia	Earthwatch Institute (Australia)
2.	Australia	New South Wales Department of Primary Industries
State (1 out of 84 total)		
#	Country	Member
1.	Australia	Department of the Environment, Water, Heritage and the Arts

Government Agency with State Member (8 out of 84 total)		
#	Country	Member
1.	Australia	Department of Conservation and Land Management, Western Australia
2.	Australia	Department of Sustainability and Environment
3.	Australia	Great Barrier Reef Marine Park Authority, Queensland
4.	Australia	National Parks and Wildlife Service of New South Wales
5.	Australia	Parks and Wildlife Commission of the Northern Territory
6.	Australia	Queensland Parks and Wildlife Service
7.	Australia	South Australian Department for Environment and Heritage
8.	Australia	Wet Tropics Management Authority
Government Agency without State Member (0 out of 26 total)		

2.2.3 IUCN and Conservation Hunters

The significance of IUCN for Conservation Hunters is its mature and long-term endorsement of the sustainable use of wildlife through Conservation Hunting and its willingness/interest to accept hunters as IUCN members (Both CIC and FACE are IUCN members). For this valid and sustainable utilisation of wildlife (conservation hunting, fishing, and gathering); it has formed its own Commission. This Commission (see Chapter 6) has developed its own comprehensive set of guidelines and policies for hunting and trophy-hunting. (Hunting is endorsed on the proviso that it also aids conservation and rural/indigenous communities.)

2.2.4 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

CITES was established to control the trade in endangered species. This trade is regulated by three Appendices which classify species according to their status.

Appendix I — All species threatened with extinction which are or may be affected by trade.

Appendix II — All species which, although not necessarily now threatened with extinction, may become so unless trade in specimens of such species is subject to strict regulation in order to avoid utilisation incompatible with their survival.

Appendix III — Species which are nominated by member signatory countries where the cooperation of other countries in regulating trade is needed.

As a signatory, Australia is bound by these international obligations. With many species restricted to its national boundaries, Australia is in a unique position to regulate this trade through its export restrictions.

2.2.5 The Convention on Biological Diversity 1992

The most recent convention agreed to by Australia for harvesting wild species was in 1993 with the Convention on Biodiversity. This Convention is of particular interest as it requires parties not only to conserve — but also to sustainably-use (if possible) — biodiversity.

Article six of the Convention requires parties to:

1. Develop national strategies for the conservation and sustainable use of biodiversity (author's emphasis) or adapt for this purpose existing strategies, plans or programs which shall reflect, inter alia, the measures set out in this convention relevant to the contracting parties concerned.
2. Integrate, as far as possible and as appropriate, the conservation and sustainable use of biodiversity into relevant sectorial and cross-sectorial plans, programs and policies.

National frameworks are complemented by international treaties which are clearly-defined and regulated; such as the trade in animal trophies, which influences the demand for trophies itself, as well as international treaties such as the *Ramsar Convention*. This convention concerns the conservation of wetlands and water birds and the development of the world's protected area systems. Conventions of this type directly and indirectly determine the accessibility of regions and ecosystems for hunting.

2.3 COMMONWEALTH REGULATORY FRAMEWORK

Hunting in Australia is regulated generally by State and Territory legislation. A major feature of these laws is a framework of older Acts — starting with the Quarantine Act of 1908 — and later complemented by the Federal *Environmental Protection and Biodiversity Conservation Act 1999* and some national strategies and policies.

2.3.1 The Commonwealth Acts

Commonwealth Acts relevant for Hunting

Relevant Act	As applied in hunting	Source
Quarantine Act 1908	Commonwealth Consolidated Acts	www.austlii.edu.au
Wildlife Protection (Regulation of Imports and Exports) Act 1982	Commonwealth Consolidated Acts	www.austlii.edu.au
Aboriginal Land Rights Act 1983 (ALR Act)	Commonwealth Consolidated Acts	www.austlii.edu.au
Federal Environmental Protection and Biodiversity Conservation Act 1999	Commonwealth Consolidated Acts	www.austlii.edu.au
Animal Welfare Bill 2003	The Bill was not enacted	www.austlii.edu.au

2.3.1.1 Regulation of Imports and Exports Act 1982 (repealed/ ceased)

Wildlife Protection (Regulation of Exports and Imports) Amendment Act 1991 No. 133 of 1991

An Act to further the protection and conservation of wildlife by regulating the export and import of certain animals, plants and goods, and for related purposes

This Act regulates the trade with animals in Australia and fulfils its obligations to CITES membership. (www.austlii.edu.au)

2.3.1.2 Federal EBEC Environmental Protection and Biodiversity Conservation Act 1999

Chapter 1	Preliminary (1–10)
Chapter 2	Protecting the environment (11–43B)
Chapter 3	Bilateral agreements(44–65A)
Chapter 4	Environmental assessments and approvals (66–170C)
Chapter 5	Conservation of biodiversity and heritage (170d–390j)
Chapter 5A	The List of Overseas Places of Historic Significance (390K–390R)
Chapter 6	Administration (391–516B)
Chapter 7	Miscellaneous (517–522A)
Chapter 8	Definitions (523–528)

(http://www.austlii.edu.au)

This comprehensive Act, a Federal response seeking a better understanding of the environment and international agreements, contains eight chapters with a total of 525 Items. Chapters 2, 4 and 5 are all relevant for Conservation Hunting as they regulate environment, environment assessment and approval, and the conservation of biodiversity. Chapter 4 relates to Bilateral agreements of which provisions 51A – 54, in particular, are of importance.

This Act is described in http://www.findlaw.com.au/article/2108.htm and highlights the importance of the States to achieving meaningful outcomes.

2.3.2 National Strategies

National Strategies generally reflect the Australian response to membership of International Conventions and Treaties such as those on Ecologically Sustainable Development and the Convention on Biological Diversity. Others, however, reflect the importance of particular ecosystems for Australia.

Relevant Strategy	Year	Website
National Strategy on Ecologically Sustainable Development		http://www.environment.gov.au/about/esd/index.html
National Strategy for the Conservation of Biodiversity	1996	http://www.environment.gov.au/biodiversity/publications/strategy/cover.html
Principles and Guidelines for Rangeland Management		http://www.daff.gov.au/__data/assets/pdf_file/0003/29226/armcanz-may28.pdf

2.3.2.1 National Strategy on Ecologically Sustainable Development 1992

Role of the NSESD

The National Strategy on Ecologically Sustainable Development (NSESD) provides broad strategic directions and a framework for governments to direct policy and decision-making. This Strategy facilitates a coordinated and co-operative approach to ecologically sustainable development (ESD) and encourages long-term benefits for Australia.

Links to Agenda 21

The NSESD addresses many key areas for action identified in Agenda 21. These include issues across sectors such as manufacturing, agriculture, and mining; and also cover broader inter-sectoral issues such as gender, native vegetation, pricing and taxation, coastal zone management, education and training. To ensure the goals and values of all Australians were included, the Strategy was developed in consultation with the community, industries, interested groups, scientific organisations, governments and individuals. Although it primarily guides the decisions of governments, the strategy is also useful for community, industry and business groups.

The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

To date more than 300 proposed actions have been referred under the EPBC Act to determine whether they constitute a controlled action. One third of these relate to mining and energy projects. Approximately one quarter of all referrals have been declared "controlled actions" but only nine approvals have been issued. By far the most used trigger has been the Federal Government's powers relating to the protection of threatened and migratory species. To date, only Tasmania have entered into a bilateral agreement for environment impact assessment (EIA) process. Negotiations with other States and Territories are understood to be well advanced, however, South Australia has indicated that it is unlikely to enter into a bilateral agreement in the short term.

Three applications have been made under the EPBC Act's open injunction processes. The first was the case of Booth v Boswell in which conservationists sought an injunction to stop the use of electrified overhead wires to protect a lychee crop in Kennedy, North Queensland. While the application for an interim injunction application was refused on the grounds that the lychee harvesting season was soon to end, a hearing to determine whether a prohibitory injunction should be granted was held in July 2001. The decision on this matter is still pending. Two applications for an interim injunction was made, unsuccessfully, in the cases of Schneiders v Queensland and Jones v Queensland, in an attempt to stop the culling of dingoes on Fraser Island by State authorities after a fatal attack on a child. Although both applications were refused, the cases indicate that where significant public concern is associated with issues of national environmental significance, third party interests will be able to bring the matter before the Federal Court for consideration. The EPBC Act was recently tightened through amendments that provide for:

- a power to make regulations that can be used to specify actions or classes of action which, if taken, will trigger the national environmental significance provisions for EIA contained in Division 1 Part 3 of the EPBC Act
- the Minister to issue an evidentiary certificate which, on the face of it, is evidence that a person has, or is likely to, contravene a civil penalty provision in relation to a matter of national environmental significance
- the Minister, after a period of consultation with the proponent, to unilaterally refer an action for a decision as to whether or not an approval under the EPBC Act is required.

The Federal Government has proposed the inclusion of a "greenhouse trigger" into the EPBC Act and when enacted, the Environment and Heritage Legislation Amendment Bill will introduce a "heritage trigger" into the EPBC Act. One year on, no serious problems have been exposed in the EPBC Act. Over this period the Federal Government has demonstrated a policy of continuous review and amendment, as shown by consideration of a greenhouse trigger, further wildlife protection measures and other changes to the EPBC Act in its first year. However, without bilateral agreements in place in the major States, and with several major projects still being assessed under the old legislative regime under the two-year transitional arrangements, it is perhaps premature to offer any concluded view on the overall effect the EPBC Act may have on environmental impact assessment throughout Australia.

Tony Van Merwyk of Freehills

Australia's Adoption of the NSESD

The NSESD was adopted by all levels of Australian Government in 1992. Since then, the pursuit of ecologically-sustainable development has been increasingly incorporated into the policies and programs of Australian governments as a significant policy objective. For example, the Australian Government's Environment Protection and Biodiversity Conservation Act.

This NSESD facilitates a coordinated and cooperative approach and addresses many key areas of Agenda 21.

National Strategy for Ecologically Sustainable Development
Prepared by the Ecologically Sustainable Development Steering Committee
Endorsed by the Council of Australian Governments December, 1992

Contents

Water Resource Management

Waste Minimisation and Management

Pricing and Taxation

Industry, Trade and Environment Policy

Aboriginal and Torres Strait Islander Peoples

Gender Issues

Public Health

Occupational Health and Safety

Education and Training

Employment and Adjustment

Australia's International Cooperation and Overseas Development Assistance Policy

Population Issues

Research, Development and Demonstration

Part Four — Future Development of ESD in Australia

Conflict Management

Community Awareness, Education and Participation

Monitoring and Review

Appendices

Summary of the Intergovernmental Agreement on the Environment

The Rio Declaration on Environment and Development

A Guide to Agenda 21

List of Acronyms

On reading the strtegy (http://www.environment.gov.au/about/esd/index.html) one is surprised that the term "hunting" is never used with the utilisation of Australia's wildlife resources addressed only indirectly and in circumspect terms. While one could argue for hunting to be addressed in the Strategy's tourism sector under "ecotourism", this is not the case as Conservation Hunting would be unacceptable to most tourism bodies! Hunting as an issue is not even addressed in strategies defined for Aboriginal and Torres Strait Islander peoples.

Aboriginal and Torres Strait Islander Peoples

Part 3 Intersectoral Issues — Chapter 22

Challenge

To ensure full participation by Aboriginal and Torres Strait Islander (ATSI) peoples in community progress towards ESD.

Strategic Approach

Actions will focus on incorporating Aboriginal and Torres Strait Islander (ATSI) land, heritage, economic and cultural development and employment concerns in resource allocation decisions, and strengthening consultative arrangements and the involvement of ATSI people in relevant decision-making processes related to ESD.

Objective 22.1

To ensure effective mechanisms are put in place to represent ATSI land, heritage, economic and cultural development concerns in resource allocation processes, Governments will:

- have regard to the traditional dependence by ATSI people on the management of renewable resources and ecosystems;
- encourage greater recognition of ATSI peoples' values, traditional knowledge and resource management practices relevant to ESD continue efforts to address ATSI employment concerns in natural resource based industries which impact on their communities;
- undertake further work to examine the impacts of tourism on indigenous communities, and seek to increase their involvement in this industry promote better relations between mining, Aboriginal and government interests through a new committee, which has been established by the National Council for Aboriginal Reconciliation and includes representatives from each of these groups;
- ensure ATSI representation on the National Mining Roundtable (established by ANZMEC) consider the Commonwealth proposal to negotiate cooperatively the development of intergovernmental agreements on the assessment of Aboriginal heritage concerns related to development projects.

Objective 22.2

To strengthen the active participation of ATSI peoples in the formulation of Ecologically-Sustainable Development (ESD)-related policies and programs, Governments will:

- support the Council for Aboriginal Reconciliation as a forum for the discussion and formulation of ATSI positions relating to ESD;
- seek to develop and strengthen national dispute-resolution arrangements in relation to settlement of land and resource-management concerns;
- examine the relative representation of ATSI people on decision-making and advisory bodies relevant to their interests in resource allocation and ESD-related issues
- at the Commonwealth level, ensure any ESD-related initiatives in this area are consistent with the Government's objectives for the International Year for the World's Indigenous People

While hunting and fishing as a land-use are not mentioned in the National Strategy for Ecologically Sustainable Development, there is one sector under Part 3 'Land-use Planning and Decision Making' which spells out the need for arrangements in the future that MUST include hunting as a legitimate land-use of aboriginal and non-aboriginal Australians. We have reproduced this sector below and highlighted these strategies.

Land-use Planning and Decision Making

Part 3 Intersectoral Issues — Chapter 13

Challenge

To ensure land-use decisionmaking processes and land-use allocations at all levels of Government meet the overall goal of ESD and are based on a consideration of all land values and uses, while avoiding fragmentation, duplication, conflict and unnecessary delays.

Strategic Approach

This can best be achieved through development of methods to enable land-use planners and decision-makers to place risk-weighted values on goods and services; further development of mechanisms to incorporate non-economic and economic considerations into decision making processes; adopting multiple and sequential land-use planning management; and streamlining planning and decision making processes while ensuring effective public input.

Objective 13.1

To encourage environmental and economic land-use decision making which takes full account of all relevant land and resource values and to establish and operate systems of land-use decision making and dispute resolution, Governments will:

- continue efforts to clarify, rationalise and publicise policies and legislation for access to land, including the nation's conservation estate and heritage estate at the State and Territory level, finalise current reviews of land-use planning and decision-making processes within their jurisdiction
- seek to adopt multiple and sequential land-use planning management
- continue to develop cooperative and consultative arrangements between jurisdictions modelled on approaches taken in the Cape York Peninsula Land-use Strategy, the Murray-Darling Basin Commission, the Great Barrier Reef Marine Park Authority and the Australian Alps National Parks Memorandum of Understanding;
- continue efforts to improve levels of understanding of Australia's natural resource base, and work towards land-use planning and decision making processes which take those resource values into account.

Objective 13.2

To achieve clarity, certainty, and accountability in the processes used to clarify access to land and to determine change of use Governments will:

- ensure the agreements and mechanisms for cooperative action outlined under Schedule 2 of the IGAE are adhered to by all jurisdiction
- review Schedule 2 of the IGAE with a view to incorporating any relevant findings of the ESD process.

In undertaking this review, further consideration will be given to:

- encouraging further consideration of the use of biophysical, geological, and ecological regions in decision making;
- examining options for improving terrestrial and marine area planning arrangements, including establishment of common principles for both terrestrial and marine areas; and
- working towards establishment of joint arrangements between Ministerial Councils to facilitate discussion of issues affecting land-use planning and decision making.

2.3.2.2 National Strategy for the Conservation of Biodiversity 1996

National Strategy for the Conservation of Australia's Biological Diversity

Department of the Environment, Sport and Territories, 1996

Contents

Foreword

Introduction

Goal

Principles

1. Conservation of biological diversity across Australia
2. Integrating biological diversity conservation and natural resource management
3. Managing threatening processes
4. Improving our knowledge
5. Involving the community
6. Australia's international role
7. Implementation

(http://www.environment.gov.au/biodiversity/publications/strategy/cover.html)

Conservation of Biological Diversity is a foundation of ecologically sustainable development and is one of the three core objectives of the National Strategy for Ecologically Sustainable Development. Biological resources provide all our food and many medicines and industrial products. Biological diversity underpins human well-being through the provision of ecological services such as those that are essential for the maintenance of soil fertility and clean, fresh water and air. It also provides recreational opportunities and is a source of inspiration and cultural identity. The Convention on Biological Diversity, ratified by Australia on 18 June 1993, deals at a global level with the full range of biological diversity conservation, its sustainable use, and the fair and equitable sharing of the benefits arising from this use.

This National Strategy for the Conservation of Australia's Biological Diversity aims to bridge the gap between current activities and the effective identification, conservation and management of Australia's biological diversity. The Strategy's primary focus is Australia's indigenous biological diversity. Implementation of the Strategy will require actions affecting virtually all of Australia's land and sea, most of which will continue to be subject to a multiplicity of uses, either in

parallel or in sequence. Governments, community groups, the private sector and individuals are engaged in numerous activities aimed at the conservation of biological diversity in Australia, but much remains to be done. There are deficiencies in resourcing and coordination, in the adequacy of the protected area system, and in the knowledge upon which we base our decisions.

There is also scope to improve resource management and conservation outside protected areas and to coordinate this with the protected area system. Greater consistency in approaches between governments and improved information flows between all sectors of the community are also necessary. The Strategy was prepared by the Australian and New Zealand Environment and Conservation Council, in consultation with the Agriculture and Resources Management Council of Australia and New Zealand, the Australian Forestry Council, the Australian and New Zealand Fisheries and Aquaculture Council, the Australian and New Zealand Minerals and Energy Council, and the Industry, Technology and Regional Development Council. The views of business, industry and the conservation movement were also sought and the provisions of the Convention on Biological Diversity and the draft national strategy prepared by the Biological Diversity Advisory Committee, were taken into account.

The Strategy is a product of the spirit of cooperation engendered by the Inter-Governmental Agreement on the Environment. It meets the requirements of the National Strategy for Ecologically Sustainable Development and complements the National Forest Policy Statement, the National Greenhouse Response Strategy and the draft strategy entitled Conservation of Australian Species and Ecological Communities Threatened with Extinction — a National Strategy. All Australians are affected by loss of biological diversity and stand to benefit from the implementation of this Strategy. We commit our respective governments to implement this Strategy as a matter of urgency. Implementation of the Strategy by our respective governments will be subject to budgetary priorities and constraints in individual jurisdictions.

Goal

This Strategy recognises that:

- The conservation of biological diversity provides significant cultural, economic, educational, environmental, scientific, and social benefits for all Australians.
- There is a need for more knowledge and better understanding of Australia's biological diversity.
- There is a pressing need to strengthen current activities and improve policies, practices, and attitudes to achieve conservation and the sustainable-use of biological diversity.
- We share the earth with many other life forms that have intrinsic value and warrant our respect, whether or not they are of benefit to us.

The Strategy also acknowledges the core objectives of the National Strategy for Ecologically Sustainable Development to:

- enhance individual and community wellbeing and welfare by following a path of economic development that safeguards the welfare of future generations;

- provide for equity within and between generations;
- protect biological diversity and maintain essential ecological processes and life-support systems.

It also accepts the guiding principles of the National Strategy for Ecologically Sustainable Development:

- Decision-making processes should effectively integrate both long and short-term economic, environmental, social, and equity considerations.
- Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
- The global dimension of environmental impacts of actions and policies should be recognised and considered.
- The need to develop a strong, growing, and diversified economy which can enhance the capacity for environmental protection should be recognised.
- The need to maintain and enhance international competitiveness in an environmentally- sound manner should be recognised.
- Cost-effective and flexible policy instruments should be adopted, such as improved valuation, pricing, and incentive mechanisms.
- Decisions and actions should provide for broad community involvement on issues which affect them.
- The goal is to protect biological diversity and maintain ecological processes and systems.

Principles

The following principles have been adopted as a basis for the Strategy's objectives and actions and should be used as a guide for implementation:

Biological diversity is best conserved in-situ.

- Although all levels of Government have clear responsibility, **the cooperation of conservation groups, resource-users, indigenous peoples, and the community in general, is critical to the conservation of biological diversity.**
- It is vital to anticipate, prevent and attack at-source, the causes of significant reduction or loss of biological diversity.
- Processes for and decisions about the allocation and use of Australia's resources should be efficient, equitable, and transparent.
- Lack of full knowledge should not be an excuse for postponing action to conserve biological diversity.
- **The conservation of Australia's biological diversity is affected by international activities and requires actions extending beyond Australia's national jurisdiction.**
- **Australians operating beyond our national jurisdiction should respect the principles of conservation and ecologically sustainable use of biological diversity and act in accordance with any relevant national or international laws.**
- Central to the conservation of Australia's biological diversity is the establishment of a comprehensive, representative, and adequate system of ecologically viable protected areas integrated with the sympathetic management of all other areas, including agricultural and other resource production systems.
- **The close, traditional association of Australia's indigenous peoples**

with components of biological diversity should be recognised, as should the desirability of sharing equitably benefits arising from the innovative use of traditional knowledge of biological diversity.

(*Author's emphasis)

It seems clear therefore that Conservation Hunting, while not explicitly stated, is an important tool for on-site conservation and that Australia has accepted its international obligations (which include a framework on sustainable use of wildlife). It also seems clear, however, that Australia has problems in defining those tools. This is also rather implicit in section 2.7 of that strategy which reads as follows:

2.7 Utilisation of wildlife

Objective 2.7

Achieve the conservation of biological diversity through the adoption of other ecologically- sustainable wildlife management practices.

Harvesting wildlife

At present, a number of smaller industries are based on the harvest of native species. Some of these have grown from culling programs and some (for example, tree fern harvesting) are by-products of other industries. Not all of these industries are operating with a management plan, and for some of the species harvested (for example, Lawyer Vine) there is inadequate biological knowledge of the species and of whether the current industry is ecologically-sustainable. Any harvesting of native species should take place in accordance with a management plan, incorporating provisions for continuing research, monitoring and public scrutiny.

2.3.2.3 (Draft) National Strategy For Rangeland Management 1996

The development of a national strategy for rangeland management has been preceded by the formulation of National Principles and Guidelines for Rangeland Management set down by both the Australian & New Zealand Environment Conservation Council (ANZECC) and Agriculture & Resource Management Council of Australia & New Zealand (ARMCANZ).

Preface to National Principles and Guidelines for Rangeland Management

In 1992 a national approach to rangeland management was proposed at a meeting of Australia's arid land administrators. As a result, the South Australian Government put proposals to the two ministerial councils with responsibility for the rangelands: the Australian and New Zealand Environment and Conservation Council (ANZECC), and the Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ). The Councils jointly established a Working Group to develop a national framework for managing Australia's rangelands – the National Principles and Guidelines for Rangeland Management. The Rangeland Working Group comprised representatives from State and Commonwealth Governments, and non-government organisations. Governments represented were New

South Wales, Queensland, Western Australia, South Australia, the Northern Territory and the Commonwealth (including CSIRO). The non-government representatives on the Working Group initially included; the National Farmers' Federation, Aboriginal and Torres Strait Islander Commission, Arid Lands Coalition and the National Landcare Advisory Committee. The Indigenous Lands Corporation replaced the Aboriginal and Torres Strait Islander Commission during 1996. The Working Group was subsequently increased with the addition of representatives from the Australian Local Government Association, Minerals Council of Australia and Tourism Council Australia to reflect the need to address local government views, and tourism and mining industry perspectives in the Principles and Guidelines.

The public consultation process commenced in February 1994 with the release of the Rangelands Issues Paper. It addressed topics concerning use of the rangelands, ecological sustainability, information systems and monitoring, as well as institutional responsibilities. Submissions were invited and a series of 30 workshops were held around Australia to extend the public consultation process. The 182 responses to the Issues Paper were collated and analysed as a key input into the development of a draft policy which was released for public comment in July 1996. The National Principles and Guidelines for Rangeland Management were developed with input from all rangeland stakeholders, both government and non-government. Endorsement by the ANZECC and ARMCANZ Ministers reflects this extensive consultation and a national collaborative approach to rangeland management.

The Executive Summary of this study concludes:

Australia's rangelands have important ecological significance, are an important economic resource, and have significant cultural and heritage values for indigenous and non-indigenous Australians. The management of the rangelands, now and into the future, is therefore of great interest and consequence to the whole Australian community. Past management practices have led to significant areas of the rangelands being degraded calling into question their long-term sustainability under current uses. The National Principles and Guidelines will establish a framework for those with interests in the rangelands to develop strategies and actions to manage change and ensure a viable legacy for future generations. The challenge is to balance the diverse economic, cultural and social needs of rangeland residents and users with the need to maintain its natural resources and conserve our biological and cultural heritage.

The report identifies a 25-year vision for Australia's rangelands:

The Australian community is committed to achieving ecologically sustainable rangeland management, supporting diverse social, cultural and economic activities, and a number of goals which must be met to attain the vision

Goal 1:	Conservation and management of the natural environment
Goal 2:	Sustainable economic activity
Goal 3:	Recognition and support for social, aesthetic, cultural and heritage values, diversity and development

Suggested objectives and actions have been identified under each Goal. These, in turn, help identify the roles and responsibilities of the various stakeholders involved in rangeland management. They cover:

- Ecologically Sustainable Rangeland Management.
- Social Issues.
- Conservation of the Natural Environment.
- National and Regional Strategies.
- Research and Development.

In its overview chapter, this document outlines some rangeland figures which are of significance to Aboriginal, rural, and Conservation Hunting communities around Australia.

The Rangelands — An Important National Resource

Nearly-three quarters of Australia is rangeland. Rangelands comprise the low rainfall and variable climate arid and semi-arid areas and, north of the Tropic of Capricorn, some seasonally high rainfall areas. The main ecosystem types are native grasslands, shrublands, woodlands and the tropical savanna woodlands.

The rangelands also include the slopes and plains of northern New South Wales and southern Queensland. There is no clearly-defined boundary to the rangelands. Boundaries move according to climatic conditions. Many areas adjacent to rangelands should be managed in similar ways and indeed many of the ecological, economic and social issues of these adjacent areas are similar to those of the rangelands. The rangelands are a strong element in Australian culture, historical discourse, social imagery, and social history, and have significant cultural and heritage value for both indigenous and non-indigenous peoples.

The rangelands also support diverse cultures and social structures at the individual and community level, as well as a diverse range of business and economic interests. Recent figures on contributions are: mining (including petroleum) $12 billion (in 1993–94);tourism $1.7 billion (in 1992–93); and meat and wool production just under $1 billion(in 1993–94). **Emerging and other small industries contributed around $200 million in 1992–93,of which three quarter was from wild animal products. These contributions to the economy do not include the traditional hunting and gathering activities of indigenous people and the value of the wider services sector.**

The rangelands are also ecologically important because of the significant number of endemic species, high species diversity, areas of ecological and geomorphological integrity, unique ecosystems and habitat for rare, threatened and endangered species. With the benefit of hindsight there is now an appreciation that past management practices and some current ones have, in many areas, proved inappropriate to the rangelands. These practices have resulted in accelerated soil erosion, increased numbers and distribution of weeds and feral animals, reduced water quality, soil salinity, the decline of

> and changes to native plant communities, and decreased biodiversity. This has led to significant areas of the rangelands being degraded, calling into question their long term sustainability under current uses.

Of particular significance, this document has the following to say about social issues on rangelands:

> Rangeland communities face a range of challenges in relation to their social and cultural needs and aspirations. Withdrawal or downgrading of Government and non-Government services impact on the quality of life of rangeland residents, often precipitating a downward spiral in the population, morale and income base of communities, as well as providing more narrowly defined role models for young people in these communities. Indigenous peoples account for 18 per cent of rangeland residents and are significant rangeland users.
>
> They have a deep attachment to the rangelands and have much to offer in regard to rangeland management, drawn from generations of experience. They have specific cultural values and aspirations and also face particular economic hardships and social disadvantage which must be included in the consideration of the social issues facing rangeland communities.

2.3.2.4 The Wetlands Policy of the Commonwealth Government of Australia 1997

The Wetlands Policy of the Commonwealth Government of Australia (Environment Australia 1997) provides strategies to ensure that the activities of the Commonwealth Government promote the conservation, ecologically sustainable use and enhancement, where possible, of wetlands functions. The Policy forms an essential platform for the development of a national framework of wetland policies and strategies.

The foreword for this document (reproduced below) outlines its history and rationale. Significantly, the document is a national policy response to membership of international conventions. In this case, it discusses the RAMSAR Convention and Agenda 21:

> **Foreword to the Wetlands Policy of the Commonwealth Government of Australia**
>
> Over the past twenty years, the world has come to appreciate that wetlands are not wastelands. Studies showing the many values of wetlands have resulted in an appreciation that we need to take greater care with how we manage our water resources. The efforts of the Convention on Wetlands of International Importance, otherwise known as the Ramsar Convention, have also been instrumental in this newfound international appreciation of wetlands. Australia was the first country to join the Ramsar Convention when the Gorton Government signed the Convention in 1971. In March 1996, 123 countries were represented at the Sixth Ramsar Conference in Brisbane, where the global agenda for wetlands conservation and management was set for the next six years. **The Conference was notable because it endorsed the preparation of several more tools designed to show how we can manage our wetlands to maintain them in good condition while continuing to benefit from the many special functions wetlands**

> **perform. This is what Ramsar calls 'wise use' — using, but protecting, our wetlands.** The Wetlands Policy of the Commonwealth Government of Australia, and the strategies it details, seek to ensure that the activities of the Commonwealth Government promote the conservation, ecologically sustainable use and where possible, enhancement of wetland functions. The development of this Policy was inspired by the Ramsar Convention promoting the wise use principle and developing guidelines for its application, and in response to the Government's responsibilities under Agenda 21. The Policy demonstrates that Australia's Commonwealth Government recognises the special role of wetlands in the well-being of present and future generations of Australians and is committed to the management of wetland resources for the enjoyment and benefit of all. The Commonwealth Government is committed to the implementation of this Policy as an important first step towards the development of a national framework of wetland policies and strategies. The Government acknowledges that development of a detailed Implementation Plan will underpin the achievement of the goals and objectives of the Policy.

While this Commonwealth policy document neither mentions, endorses, nor condemns Conservation Hunting of waterbirds as a sustainable use, this use is an acknowledged part of management for many wetlands around the world, including for Ramsar Sites. An Implementation Plan for the Commonwealth Wetlands Policy (Environment Australia, 1999) was developed to ensure that any actions prescribed are addressed in an effective manner and within appropriate timeframes.

2.3.2.5 The Australian Pest Animal Strategy 2007

As all game animals in NSW are introduced species, they fall under the framework of the Australian Pest Animal Strategy. This Strategy was developed by the Vertebrate Pest Committee of the Natural Resource Management Ministerial Council in 2007.

> The vision for the Australian Pest Animal Strategy is that: Australia's biodiversity, agricultural assets and social values are secure from the impacts of vertebrate pest animals. The focus of the Strategy is to address the undesirable impacts caused by exotic vertebrate animals (mammals, birds, reptiles, amphibians, and fish) that have become pests in Australia, and to prevent the establishment of new exotic vertebrate pests. In Australia, pest animals have major economic, environmental and social impacts.

> Many pest animals cause significant damage to crops and seriously affect Australia's livestock industries by preying on stock and competing for pasture. Pest animals also cause severe land degradation by promoting soil erosion, stream turbidity and the spread of weeds. Competition, habitat destruction and predation by pest animals threaten the survival of many of Australia's native plants and animals. Australian private and public landowners and users spend considerable time and money addressing the impacts of pest animals. For example, it has been estimated that eleven of Australia's major pest animals (wild populations of foxes, pigs, rabbits, mice, goats, carp, dogs, cane toads, camels, cats and horses) have negative impacts in Australia valued at over $720 million per annum (McLeod, 2004).The Australian Pest Animal Strategy is a vital part of Australia's integrated approach to national biosecurity under the

Australian Biosecurity System for Primary Production and the Environment (AusBIOSEC). It complements existing and new strategies, covering weeds, marine pests and animal welfare. The Australian Pest Animal Strategy is based on 12 key principles:

1. Pest animal management is an integral part of the sustainable management of natural resources for the benefit of the economy, the environment, human health and amenity.
2. Combating pest animal problems is a shared responsibility that requires all parties to have a clear understanding of their roles and responsibilities.
3. The development, monitoring and review of integrated pest animal management strategies need to be underpinned by good science.
4. Setting priorities for, and investment in, pest animal management must be informed by a risk management approach.
5. Prevention and early intervention are the most cost-effective techniques for managing pest animals.
6. Pest animal management requires coordination among all levels of government in partnership with industry, land and water managers and the community, regardless of land tenure.
7. Effective pest animal management requires capacity-building across government, industry, land and water managers and the community.
8. Management of established pests should aim to address actual rather than perceived problems, and to reduce impacts rather than simply pest animal numbers.
9. Management should be strategic in terms of determining where management should occur, timing of management, being proactive and using appropriate techniques.
10. Where there is a choice of methods, there needs to be a balance between efficacy, humaneness, community perception, feasibility and emergency needs.
11. The benefits of management should exceed the costs of implementing control.
12. As part of an integrated pest animal management program, commercial harvesting may offset management costs.

While this document contains a clear and logical framework for the management of introduced animals, it is also quite non-specific in regards to the role of hunters in general and Conservation Hunters in particular. It provides, however, an opportunity for Conservation Hunters to link nationally and also to better define their own role within this over-arching set of goals and long-term aims. This document, though, does not address the divided utilisation of many animal species which are "pests" for some people, a "socio-economic resource" for others, and a "recreational and cultural pursuit" for a third. Therefore, its objectives are destined to remain largely unfulfilled.

2.2.3 Federal Motions to Restrict Hunting

There have been several attempts by the Federal Parliament to enact Commonwealth regulation to restrict hunting; most recently with the Animal Welfare Bill of 2003. However, this Bill was never enacted. This was probably

partly because its provisions had: "counterparts in most State and Territory animal cruelty prevention statutes".

Significantly, there has also been at least three calls by Senators for restrictions on hunting:

- In 1989 a motion was proposed deploring duck hunting in Western Australia (Senate Hansard, 14 December 1989,p 4502);
- In 1998 the Senate proposed a motion calling on State and Territory governments to prohibit duck hunting (Senate Hansard, 25. March 1998, p 1288);
- A third motion called for the outright prohibition of recreational hunting (Senate Hansard, 2 December 1997, p 10399).

2.4 REGULATING CONSERVATION HUNTING IN NSW

Conservation Hunting in NSW is regulated by two levels of Australian legislation (Federal and State) and also at an international level. This includes membership of conventions which are open to interpretation by Australian authorities or which are binding once international action occurs (for instance, export of hunting trophies is regulated by CITES). Before the introduction of the *Game and Feral Animal Control Act 2002*, there was no specific legislation on hunting in Australia which also touched other areas of:

- public safety (Firearms Act 1996),
- interactions with animals (Prevention of Cruelty to Animals Act 1974);
- land (National Parks & Wildlife Acts 1974, Forestry Act 1916);
- species hunted (National Parks & Wildlife Act 1974, Non-Indigenous Animals Act 1987, Deer Act 2006);
- environmental protection (wildlife diseases, environmental impacts).

Since the enactment of the Game and Feral Animal Control Act in 2002, more specific provisions have been made. As is the role of evolving legislation and policy, there is continuing discussion on provisions and adjustments.

There are also new Acts such as the Deer Act which, after adjustment over four years, has been enacted in 2006. Federally, these Acts must comply with the Environment Protection and Biodiversity Conservation Act 1999. This Act's requirements include State of the Environment (SoE) reporting, first carried out in 1996, as a response to its membership (since 1994) of the Convention on Biodiversity (CBD).

One of the State and local implications of this Act is the development of local and regional feral animal control reporting procedures on a Shire and/or Catchment Management Area basis. As catchment management areas are a relatively new approach to regulate and promote sustainable land-use across NSW, these will also involve evolving principles, interactive patterns, and legislative arrangements which will overlap in various jurisdictions. It remains to be hoped that these evolving procedures remain in place and will not be abandoned again with governmental changes.

The following section will endeavour to offer a systematic review of this rather complex framework of legislation. This includes particular types of land

(public/private/protected/non-protected); hunting activities (firearms hunting, bowhunting); and environmental relationships and impacts (grazing impacts of deer, disease risks). The relevant sections in each of these legislation, if combined, could form a comprehensive body on hunting as is the case in some countries of Europe such as Germany with its "Bundesjagdgesetz" (Federal Hunting Law). The end of this chapter assesses how these sections of law affect the development of a sustainable hunting environment in NSW.

NSW STATE LEGISLATION (as of January 2009)

Relevant Act	Relevance to hunting
Forestry Act 1916	Forestry Commission, State Forests, Timber and Flora reserves, Licences, Animals
Prevention of Cruelty to Animals Act 1974	Traps, Game Parks
National Parks & Wildlife Act 1974	Care, Control and Management of all Categories of Protected Areas
NSW Aboriginal Land Rights Act 1983	Special arrangements
Non-Indigenous Animals act 1987	Release and Escape of Animals, Imports, Licences, Permits
Threatened Species Conservation Act 1995	Game species viewed as Key Threatening Processes
Firearms Act 1996	Types of Firearms
Weapons Prohibition Act 1998	Permits for Prohibited Weapons, seizure etc.
Rural Lands Protection Act 1998	Livestock Health and Pest Districts, Responsibilities, Council.
Game and Feral Animal Control Act 2002	Licensing and Control of Hunting for Game Animals
Deer Act of NSW 2006	Deer Hunting, Game Parks, Dispersal of Deer

2.4.1 Forestry Act 1916

This Act deals with the Forestry Commission and its Powers and Duties (Part1); State Forests, Timber Reserves and Flora Reserves (Part 2); Provisions Relating to the Taking of Timber, Products and Forest Materials (Part 3); Permits and Forest Leases (Part 4); and General and Supplemental (Part 5), outlining licences, their forfeiture and offences. Sections 32A-G in Part 4 are of relevance to hunting as they define animals (32A), offences relating to hunting, the use of firearms (32B), seizure and disposal of Firearms (32D and E). The Forestry Act also deals with the hunting of introduced game and feral animals as permitted in State forests and the provision through negotiations between Game Council NSW and Forests NSW for special arrangements for Conservation Hunting — written permission, harvest returns, coordination, safety, data collection, supervision, compliance — in selected forests.

2.4.2 Prevention of Cruelty to Animals Act 1979

The *Prevention of Cruelty to Animals Act 1979* sets out offences for the mistreatment of animals, five of which (5,6,19,19A, 23) are of relevance to hunting:

5. Cruelty to animals

(1) A person shall not commit an act of cruelty upon an animal.

(2) A person in charge of an animal shall not authorise the commission of an act of cruelty upon the animal.

(3) A person in charge of an animal shall not fail at any time:

(a) to exercise reasonable care, control or supervision of an animal to prevent the commission of an act of cruelty upon the animal,

(b) where pain is being inflicted upon the animal, to take such reasonable steps as are necessary to alleviate the pain, or

(c) where it is necessary for the animal to be provided with veterinary treatment, whether or not over a period of time, to provide it with that treatment.

6. Aggravated cruelty to animals

(1) A person shall not commit an act of aggravated cruelty upon an animal.

19. Trap-shooting prohibited

A person shall not advertise, promote or take part in a match, competition or other activity in which an animal is released from confinement for the purpose of that person, or any other person, shooting at it.

19A Game parks prohibited

(a) aninals are confined and

(b) the taking or killing of those animals as a sport or recreation is permitted by virtue of the payment of an admission fee or the giving of other consideration.

"take", in relation to any animal, includes hunt, shoot, poison, net, snare, spear, pursue, capture and injure the animal.

23. Certain traps not to be set

(1) A person shall not, in a prescribed part of New South Wales, set a trap of a prescribed type.

(2) A person must not:

(a) in any part of New South Wales, set a steel-jawed trap, or

(b) possess a steel-jawed trap with the intention of using it to trap an aninmal.

It is important to note that offset and padded steel-jawed traps, as developed and approved by Technical Committee, 191 on Humane Trapping of ISO are exempt from the Act. Standards for humane trapping however remain highly controversial and any legislation can only ever be very generalised, This issue reflects problems which go far beyond cruel acts towards animals alone. (See Committee, 191 on 'Humane Trapping' by the International Standardisation Organisation in 1988.)

Case Study: Setting "humane" standards for trapping

Technical Committee 191 of the International Standardisation Organisation (ISO) was set up in response to a Canadian Initiative to counteract the elimination of the fur trade. This trade accounted for around one per cent of Canada's GDP but also employed (part-time) 400,000 people, 100,000 of these Indigenous (Bauer, 1991). Round-table meetings were held annually and included scientists, engineers, trappers, indigenous people, veterinarians and animal rights group representatives. Proposed standards were controversial but a consensus was reached in many cases

supported by all members. For the author it was an early and impressive example of how natural resource use conflicts can be resolved.

The document "Trapped by Bad Science – The myths behind international humane trapping standards – A scientific review" and published by the International Fund for Animal Welfare and Eurogroup for Animal Welfare said:

> The proposed Directive aims to introduce humane trapping standards for nineteen mammal species trapped across Europe and North America. It intends to ban the use of 'inhumane' traps used to capture those species but also "*aims to play an essential role in the protection* and conservation of species of wild fauna by providing a sufficient level of protection of the welfare of trapped animals". The directive includes setting standards for traps that kill the captured animal (killing traps) and traps that restrain the animal prior to killing by some other method (restraining traps).
>
> At the present time there is considerable debate about the scientific basis for the definitions of humaneness outlined in this directive. However, if the protection, conservation and welfare of wild mammals are to be pivotal aims, the proposed Directive appears to bear major flaws.
>
> Prof. Stephen Harris, Carl Soulsbury & Graziella Iossa, 2005

The IFAW wildly exaggerates the self-evident flaws that were the product of the compromise reached in the Committee's recommendations (of which this author was a member). Humane standards are not about science or, in this case, "bad science"; they are about reconciling different opinions and livelihoods. These opinions must be reconciled in a pluralistic society; especially in regards to the traditions of indigenous people. Some 100,000 people affected by the ban on sealing were native American Indians and Inuit whose only viable land-use was hunting and fishing. These groups lost their land-use, their culture, and their identity after Western animal right groups deemed their livelihood as "cruel".

2.4.3 National Parks and Wildlife Act 1974 and Regulation

State legislation in NSW on protected areas and wildlife consists of two items, the Act itself which was created in 1974 and the NPW regulation which more specifically governs explicit activities.

National Parks and Wildlife Act 1974 No 80

> **2 Commencement**
>
> (1) This section and section 1 shall commence on the date of assent to this Act.
>
> (2) Except as provided in subsection (1), this Act shall commence on such day as may be appointed by the Governor in respect thereof and as may be notified by proclamation published in the Gazette
>
> Under the National Parks and Wildlife Act, the Director-General of the NPWS is responsible for the care, control and management of all national parks, historic sites, nature reserves, reserves, Aboriginal areas and state game reserves. State conservation areas, karst conservation reserves (caves) and regional parks are also administered under the Act.

The Director-General is also responsible under this legislation for the protection and care of native fauna and flora, and Aboriginal places and objects throughout NSW.

Game in this Act is defined as follows under Section 5: Definitions:

"game animal" means any of the following animals that is not husbanded in the manner of a farmed animal and is killed in the field:

(a) any goat, kid, swine, deer, rabbit, hare, camel, donkey, horse or bird,

(b) any fauna permitted to be harmed for the purposes of sale in accordance with a licence under this Act.

"game bird" means a **wild** duck, **wild** goose or **wild** quail, or a **bird** of any other **species** that the Governor, by order, declares to be a **species** of **game bird** for the purposes of this Act. "harm" an **animal** (including an animal of a **threatened species, population or ecological community** includes hunt, shoot, poison, net, snare, spear, pursue, capture, trap, injure or kill, but does not include **harm** by changing the habitat of an **animal**. (author's emphasis)

Of particular interest in this section is the sanitisation of the terms "hunting" and "killing" with the euphemistic "harm".

National Parks and Wildlife Regulation

This regulation governs activities under the National Parks and Wildlife Act including:

- the regulation of the use of national parks and other areas administered by the NPWS (Part 2)
- the preservation of public health in Kosciuszko National Park (Part 3)
- licences and certificates (Part 4)
- the protection of fauna (Part 5)
- the exemption of Aboriginal people from the restrictions imposed by various sections of the Act on the hunting of certain animals and the gathering of certain plants (Part 6)
- boards of management and plans of management in relation to Aboriginal land (Part 7)
- advisory committees constituted under section 24 of the National Parks and Wildlife Act.

This regulation replaced the former National Parks and Wildlife (Land Management) Regulation 1995, the National Parks and Wildlife (Administration) Regulation 1995 and the National Parks and Wildlife (Fauna Protection) Regulation 2001. Significantly, this last regulation better defined and enshrined the rights of Aboriginal people to their own indigenous land-use — hunting, gathering and fishing.

2.4.4 Non-Indigenous Animals Act 1987

The object of this Act is: "to control and regulate the introduction into the State of certain species of animals and the movement and keeping of those animals within the State".

Part 1 — Preliminary

1. Name of Act
2. Commencement
3. Definitions
4. Application of Act
5. Exemptions
6. Classification of animals

6A. Basis of animal classification

Part 2 — The Non-Indigenous Animals Advisory Committee

7. The advisory committee
8. Principal functions of the advisory committee
9. Staff of the advisory committee

Part 3 — Offences Concerning Non-Indigenous Animals

10. Importation of animals
11. Keeping of animals
12. Movement of animals
13. Release or escape of animals

Part 4 – Licences and Permits

14. Application for licence
15. Grant and renewal of licences
16. Duration of licences
17. Licence conditions
18. Cancellation of licences
19. Permits
20. Applications for review by Administrative Decisions Tribunal

Part 5 — General

21. Licensees' returns
22. (Repealed)
23. Powers of authorised officers
24. Search warrant
25. Seizure of animals
26. Obstruction of authorised officer
27. Proceedings for offences

27A. Penalty notices

28. Service of notices
29. Regulations

29A. Delegation

29B. Savings and transitional provisions

30, 31. (Repealed)

Schedule 1

Schedule 2

Schedule 3

It is significant that in Part 1, section 4 it is decreed that: "Nothing in this Act affects the operation of any of the following Acts":

- Rural Lands Protection Act 1998.
- Fisheries Management Act 1994.
- National Parks and Wildlife Act 1974.
- Prevention of Cruelty to Animals Act 1979
- Threatened Species Conservation Act 1995.

2.4.5 Threatened Species Conservation Act 1995

Part 1 Preliminary

1. Name of Act

This Act is the Threatened Species Conservation Act 1995.

2. Commencement

3. Objects of Act

The objects of this Act are:

(a) to conserve biological diversity and promote ecologically-sustainable development, and

(b) to prevent the extinction and promote the recovery of threatened species, populations and ecological communities, and

(c) to protect the critical habitat of those threatened species, populations and ecological communities that are endangered, and

(d) to eliminate or manage certain processes that threaten the survival or evolutionary development of threatened species, populations and ecological communities, and

(e) to ensure that the impact of any action affecting threatened species, populations and ecological communities is properly assessed, and

(f) to encourage the conservation of threatened species, populations and ecological communities by the adoption of measures involving co-operative management.

4 Definitions

(1) In this Act:

animal means any animal-life that is indigenous to New South Wales or is known to periodically or occasionally migrate to New South Wales, whether vertebrate or invertebrate and in any stage of biological development, but does not include:

(a) humans, or

(b) fish within the meaning of Part 7A of the Fisheries Management Act 1994.

Note.

Some types of fish may be included in the definition of **animal**. See section 5A.

BDAC means the Biological Diversity Advisory Council established under Part 9A.

biodiversity values has the meaning given by section 4A.

biological diversity means the diversity of life and is made up of the following three components:

(a) genetic diversity — the variety of genes (or units of heredity) in any population,

(b) species diversity — the variety of species,

(c) ecosystem diversity — the variety of communities or ecosystems.

catchment action plan or **CAP** means a catchment action plan approved under Part 4 of the Catchment Management Authorities Act 2003.

council has the same meaning as in the Local Government Act 1993.

critical habitat means habitat declared to be critical habitat under Part 3.

critically endangered ecological community means an ecological community specified in Part 2 of Schedule 1A.

critically endangered species means a species specified in Part 1 of Schedule 1A.

critically endangered species and ecological communities means species and ecological communities specified in Schedule 1A and **critically endangered species or ecological community** means a species or ecological community respectively specified in that Schedule.

Department means the Department of Environment and Conservation.

Director-General means the Director-General of the Department.

ecological community means an assemblage of species occupying a particular area.

ecologically sustainable development has the same meaning as under section 6 (2) of the Protection of the Environment Administration Act 1991.

endangered ecological community means an ecological community specified in Part 3 of Schedule 1.

endangered population means a population specified in Part 2 of Schedule 1.

endangered species means a species specified in Part 1 of Schedule 1.

endangered species, populations and ecological communities means species, populations and ecological communities specified in Schedule 1 and **endangered species, population or ecological community** means a species, population or ecological community respectively specified in that Schedule.

environmental planning instrument or **EPI** means an environmental planning instrument under the Environmental Planning and Assessment Act 1979.

exercise a function includes perform a duty.

Fisheries Scientific Committee means the Fisheries Scientific Committee constituted under Part 7A of the Fisheries Management Act 1994.

function includes a power, authority or duty.

habitat means an area or areas occupied, or periodically or occasionally occupied, by a species, population or ecological community and includes any biotic or abiotic component.

harm has the same meaning as in the National Parks and Wildlife Act 1974.

joint management agreement means an agreement entered into under Division 2 of Part 7.

key threatening process means a threatening process specified in Schedule 3.

land includes:

(a) buildings and other structures permanently fixed to land, and

(b) land covered with water, and

(c) the sea or an arm of the sea, and

(d) a bay, inlet, lagoon, lake or body of water, whether inland or not and whether tidal or not, and

(e) a river, stream or watercourse, whether tidal or not.

landholder of land means a person who owns land or who, whether by reason of ownership or otherwise, is in lawful occupation or possession, or has lawful management or control, of land.

list means a list set out in Schedule 1, 1A, 2 or 3 and includes a list in one or more of those Schedules that does not contain any entries.

NPW Act means the National Parks and Wildlife Act 1974.

NRC means the Natural Resources Commission established under the Natural Resources Commission Act 2003.

pick has the same meaning as in the National Parks and Wildlife Act 1974.

plant means any plant-life that is indigenous to New South Wales, whether vascular or non-vascular and in any stage of biological development, and includes fungi and lichens, but does not include marine vegetation within the meaning of Part 7A of the Fisheries Management Act 1994.

Note.

Some types of marine vegetation may be included in the definition of **plant**. See Section 5A

population means a group of organisms, all of the same species, occupying a particular area.

Priorities Action Statement means a Threatened Species Priorities Action Statement under Part 5A.

public authority means any public or local authority constituted by or under an Act, a government department, a statutory body representing the Crown, or a State owned corporation, and includes a person exercising any function on behalf of the authority, department, body or corporation and any person prescribed by the regulations to be a public authority.

recovery plan means a plan prepared and approved under Part 4.

region means, for the purposes of the provision in which it is used, a bioregion defined in a national system of bioregionalisation that is determined (by the Director-General under subsection (4)) to be appropriate for those purposes. If the bioregion occurs partly within and partly outside New South Wales, the region consists only of so much of the bioregion as occurs within New South Wales.

Scientific Committee means the Scientific Committee constituted under Part 8.

SEAC means the Social and Economic Advisory Council established under Part 9A.

species of animal or plant includes any defined sub-species and taxon below a sub-species and any recognisable variant of a sub-species or taxon.

species impact statement means a statement referred to in Division 2 of Part 6 and includes an environmental impact statement, prepared under the Environmental Planning and Assessment Act 1979, that contains a species impact statement.

species presumed extinct means a species specified in Part 4 of Schedule 1.

Strategy means the Biological Diversity Strategy referred to in section 140.

threat abatement plan means a plan prepared and approved under Part 5.

threatened ecological community means an ecological community specified in Part 3 of Schedule 1, Part 2 of Schedule 1A or Part 2 of Schedule 2.

threatened species means a species specified in Part 1 or 4 of Schedule 1, Part 1 of Schedule 1A or Part 1 of Schedule 2.

threatened species, populations and ecological communities means species, populations and ecological communities specified in Schedules 1, 1A and 2 and **threatened species, population or ecological community** means a species, population or ecological community specified in any of those Schedules.

Note. In some cases vulnerable ecological communities are excluded from this expression. See subsection (5).

threatening process means a process that threatens, or may have the capability to threaten, the survival or evolutionary development of species, populations or ecological communities.

vulnerable ecological community means an ecological community specified in Part 2 of Schedule 2.

vulnerable species means a species specified in Part 1 of Schedule 2.

(2) A reference in this Act to animal-life or plant-life indigenous to New South Wales is a reference to animal-life or plant-life of a species that was established in New South Wales before European settlement.

(3) A reference in this Act to New South Wales includes a reference to the coastal waters of the State.

Note. Coastal waters of the State are defined in section 58 of the Interpretation Act 1987.

(4) For the purposes of the definition of **region** in subsection (1), a determination of bioregions is to be made by the Director-General by order published in the Gazette. The Director-General is to consult the Director of NSW Fisheries before making any such order and is to obtain the concurrence of that Director with respect to areas occupied by fish or marine vegetation.

(5) In Parts 6 and 7, a reference to **threatened species, populations and ecological communities** or **threatened species, population or ecological community** (however expressed) does not include a reference to any vulnerable ecological community. However, this subsection does not affect the application of those Parts to any threatened species or endangered populations that may form part of a vulnerable ecological community.

Note. Vulnerable ecological communities are excluded from the licensing provisions of this Act and from related offences under the National Parks

and Wildlife Act 1974. However, the Director-General may prepare a recovery plan in respect of a vulnerable ecological community and that plan and the provisions of Division 2 of Part 4 of this Act apply in respect of the implementation of that plan.

4A Biodiversity values — meaning

(1) For the purposes of this Act, biodiversity values includes the composition, structure and function of ecosystems, and includes (but is not limited to) threatened species, populations and ecological communities, and their habitats.

(2) However, a reference in this Act to biodiversity values does not extend to biodiversity values as they relate to fish, or marine vegetation, within the meaning of Part 7A of the Fisheries Management Act 1994, other than those that are considered to be animals or plants because of an order made under section 5A of this Act.

5 Notes in text

Introductory notes to Parts and other notes do not form part of this Act.

5A Relationship between this Act and Part 7A of the Fisheries Management Act 1994

(1) The Minister may, by order made with the concurrence of the Minister administering the Fisheries Management Act 1994:

(a) declare a species of fish to be a species of animal for the purposes of this Act if it is an invertebrate and it is a species that may inhabit a terrestrial environment at some stage of its biological development, or

(b) declare a species of marine vegetation to be a species of plant for the purposes of this Act if it is a species that may inhabit freshwater or a terrestrial environment at some stage of its biological development.

(2) Any species of fish or marine vegetation that is the subject of an order in force under this section is taken to be a species of an animal or plant for the purposes of this Act, in accordance with the terms of the order.

(3) The Minister and the Minister administering the Fisheries Management Act 1994 may at any time consult with each other for the purpose of determining whether an order under this section should be made and the terms of the order.

(4) The Ministers may also consult with the Chairperson of the Scientific Committee, the Chairperson of the Fisheries Scientific Committee and any other person or body before making an order under this section.

(5) If the Ministers are unable to resolve any dispute between them as to the making or the terms of an order under this section, the matter is to be referred to the Premier for resolution. The decision of the Premier in relation to the matter is to be given effect to by the Ministers.

(6) An order under this section is to be published in the Gazette.

(7) For avoidance of doubt, an order under this section does not require the species concerned to be listed under Part 2 of this Act.

(8) In this section:

fish means any fish (within the meaning of the Fisheries Management Act 1994) that is indigenous to New South Wales.

freshwater has the same meaning as in the Fisheries Management Act 1994.

marine vegetation means any marine vegetation (within the meaning of the Fisheries Management Act 1994) that is indigenous to New South Wales.

As we can see from this Act we have included in whole, there are many sections which are of great relevance for Conservation Hunting. Most importantly, species defined as game species, above all deer, are also listed as Key Threatening Process. We have called this dichotomy of values 'The Antipodean Dilemma" and discuss it in detail later.

2.4.6 Firearms Act 1996

The *Firearms Act 1996* (New South Wales) is a comprehensive piece of legislation covering the licensing, acquiring, registering, possessing or selling and dealing of firearms. The Act covers the following:

Table of Provision**s**

An Act to provide for the regulation, control and registration of firearms; to repeal the Firearms Act 1989; to amend the Prohibited Weapons Act 1989 ; and for related purposes.

It consists of nine parts which cover 93 items.

Part 1 — Preliminary

Part 2 — Licences and Permits

Division 1 — Requirement for licence or permit

Division 2 — Licensing scheme (8-27 items)

Division 3 — Permits

Part 3 — Registration of Firearms 3

Division 1 — Registration scheme

Division 2 — Offences relating to registration

Part 4 — Safekeeping of Firearms

Part 5 — Firearms Dealers

Part 6 — Miscellaneous Offences (50–72 items)

Part 6A — (Repealed)

Part 7 — Firearms Prohibition Orders

Part 8 — Applications to Administrative Decisions Tribunal

Part 9 — Miscellaneous Provisions (79–93)

Note: The Firearms Act is also concerned with the misuse, prohibition, licence suspension and use of firearms in offences. As hunters generally use firearms, the entire act covers their gun related activities.

2.4.7 Weapons Prohibition Act 1998

The Weapons Prohibition Act 1998's only impact for hunting is with issues like the use of sound moderators for firearms. The vast majority of the Act is concerned with the criminal use of firearms.

2.4.8 Rural Lands Protection Act 1998

The pest animal provisions of the Rural Lands Protection Act 1998 (RLP Act) set out the conditions under which animals, birds and insects can become "declared" pests. It also provides for the control of these pest species. Gazettal of pest species occurs through Pest Control Orders which allow the Minister for Agriculture to specify which species are pests, either on a statewide or local basis and the conditions that apply to the control of each pest. Rabbits, wild dogs, and feral pigs have all been declared pest animals throughout NSW.

The RLP Act binds the Crown to control pest animals declared under the Act. Public land managers (the NP&WS and State Forests) are therefore required to "eradicate" (suppress and destroy) pest animals: "…to the extent necessary to minimise the risk of the pest causing damage to any land" using any lawful method or by methods specified under Orders. The Pest Control Order for wild dogs (2001) requires the destruction of wild dogs in lands listed in Schedule 2 of the Order through a wild dog management plan. This plan must address both control and conservation objectives and be approved by the local RLP Board. Schedule 2 also lists 254 reserves considered to contain "high quality dingo habitat" on lands managed by the NP&WS; NSW Forests; Sydney Catchment Authority; and unoccupied Crown land managed by the Department of Land and Water Conservation.

2.4.9 Game and Feral Animal Control Act 2002

The Game and Feral Animal Control Act 2002 regulates the orderly and responsible hunting of game and feral animals in NSW on public and private land.

Table of Provisions

An Act to manage and regulate the hunting of game; to establish a Game Council; and for other purposes.

The Game and Feral Animal Control Act 2002 set out, for the first time in NSW, to establish a regulatory framework for licensed hunting. It also set out to develop a system of hunting licensing and control for various lands (public, private). It also formed The Game Council to oversee the process with the power to regulate, investigate, and prosecute offences with significant fines for rule breaches. The Act allows Conservation Hunters to hunt on public land through a Game Hunting Licence system. Licensed Conservation Hunters must pass an accreditation based on the NSW Hunter Education Handbook.

The Act also stipulates defined hunting seasons for some game species. Significantly, this offers protection during parts of the year for species once considered an exotic pest. This protection, while still controversial, mostly reflects animal welfare issues and the socio-economic value of species which had been either not there in the past, or which had developed because of rising numbers and distribution.

2.4.10 Deer Act 2006 – Sect 41

The central importance of deer as a game species is demonstrated by the Deer Act 2006.

Part 1 — Preliminary

1. Name of Act
2. Commencement
3. Definitions
4. Ownership of deer
5. Regulations may specify how deer are to be held captive
6. Offence of releasing deer
7. Operation of certain legislation not affected

Part 2 — Deer Control Orders

8. Orders requiring deer to be controlled
9. Consultation and approval before making deer control order
10. Occupier of land must comply with deer control order
11. Commencement of deer control order
12. Notification of making deer control order

Part 3 — Compliance Directions

13. Compliance directions by authorised officers
14. Costs of complying with a compliance direction
15. How compliance direction is to be given
16. Review by Administrative Decisions Tribunal

Part 4 — Authorised Officers

17. Appointment of authorised officers
18. Functions of authorised officers
19. Purposes for which functions under Part may be exercised
20. Power of entry
21. Search warrant
22. Powers of authorised officers on premises
23. Notice of entry
24. Use of force
25. Notification of use of force or urgent entry
26. Care to be taken
27. Compensation
28. Authorised officer may request assistance
29. Obstruction of authorised officers

Part 5 — Miscellaneous

30. Onus of proof regarding reasonable excuse

31. Offences by corporations
32. Nature of proceedings for offences
33. Penalty notices
34. Delegation
35. Disputes between Minister and public authority
36. Act to bind Crown
37. Description of land
38. Regulations
39. Savings, transitional and other provisions
40. Amendment of Acts
41. Review of Act

The three main purposes of the Act are to define deer ownership; define how deer have to be kept; and make it a legal offence to release them. Deer Control Orders are central to the Act and specify:

8 Orders requiring deer to be controlled

(1) The Minister may, by order published in the Gazette (a "deer control order"), require that the occupier of the land specified in the order do either or both of the following:

(a) ensure that deer on the land (other than deer held in captivity) are controlled in a manner and in the circumstances specified in the order and within the time specified in the order,

(b) notify the Minister, in the manner specified in the order, as soon as practicable after becoming aware of the presence of deer on the land (other than deer held in captivity).

Note: The Minister may amend or repeal an order made under this section. See section 43 of the Interpretation Act 1987 .

(2) A deer control order applies to the land specified in the order and has effect (unless sooner revoked) for the period (not exceeding 5 years) specified in the order.

(3) Nothing in this section authorises a person to contravene any other Act or law.

(4) Despite subsection (3), the holder of a game hunting licence under the Game and Feral Animal Control Act 2002 does not contravene conditions of that licence relating to the manner of hunting deer if the holder hunts deer on land to which a deer control order applies and the manner of hunting is specified in that order.

Note: A person is not required to hold a game hunting licence under the Game and Feral Animal Control Act 2002 if the person is hunting deer in accordance with a duty imposed on the person or the person's employer (or on any corporation of which the person is an officer) because of a deer control order (see section 17 (1) (d1) of that Act).

(5) A deer control order may apply to any land and may apply generally or may be limited in any way specified in the order.

(6) A deer control order must not specify the use of lethal poison as a manner in which deer are to be controlled.

41 Review of Act

(1) The Minister is to review this Act to determine whether the policy objectives of the Act remain valid and whether the terms of the Act remain appropriate for securing those objectives.

(2) The review is to be undertaken as soon as possible after the period of 5 years from the date of assent to this Act.

(3) A report on the outcome of the review is to be tabled in each House of Parliament within 12 months after the end of the period of 5 years.

As this Act needs to be viewed in the context of deer having been declared a Key Threatening Process

2.4.11 Codes of Conduct

Parliamentary acts and regulations are often supported and defined by ancillary Codes of Conduct which are also called guidelines. Such Codes have been defined in NSW for the taking of particular species of game -and feral pests are defined in documents available on DPIs website. These Codes of Conduct refer to the humane and safe control of various species of pest animals such as:

DEE001 GROUND SHOOTING OF FERAL DEER

This document, prepared by Trudy Sharp & Glen Saunders, NSW Department of Primary Industries can be viewed at: http://www.environment.gov.au/biodiversity/invasive/publications/pubs/dee001-ground-shooting-feral-deer.pdf.

There is also a Code of Conduct for Hunters in NSW issued by the Game Council whose role in regulation is described on its website as follows:

> "Two immediate priorities for the Game Council are to create a licensing system and a code of conduct for hunters," said former Chairman of the NSW Game Council, Robert Brown.
>
> "This licensing system will form the backbone of the Council, and licence terms and fees will be finalized and rolled out over the next several months," he said.
>
> "Funds raised through the licensing system will be used to help educate hunters on how they can contribute to conservation management. Many of the hunting clubs and associations have codes of conduct in place, but the Council will create formal, state-wide guidelines to better promote responsible hunting. Many countries worldwide now regulate game hunting in this manner and we look forward to utilising their experience to create the best system in NSW," said Robert.
>
> www.gamecouncil.nsw.gov.au

The code of Conduct is enshrined as the Mandatory provisions of code of practice in the Game and Feral Animal Control Regulation 2004. This code of practice is attached as condition to every game Hunting Licence granted by the Game Council of NSW.

Schedule 2 Manda (Clause 18)

Note. This Schedule contains the mandatory provisions of the code of practice for holders of game hunting licences under section 24 of the Act. The mandatory provisions only apply to the holders of game hunting licences.

1 Awareness of relevant legislation

It is the responsibility of the holder of a game hunting licence to be aware of and comply with all relevant provisions of legislation relating to hunting, animal welfare and the use of firearms.

2 Safe handling of firearms

Where firearms are used, the rules for safe handling set out in the NSW Firearms Safety Awareness Handbook published by or under the authority of the Commissioner of Police must be complied with at all times.

3 Permission required to enter land

A game hunting licence does not automatically authorise the holder of the licence to hunt on any land. The holder of a game hunting licence must not hunt on any land without the express authority of the occupier of the land.

4 Target identification and safety

A game animal must not be fired at unless it can be clearly seen and identified, and the shot when taken poses no discernible risk of injury to any person or significant damage to any property.

5 Obligation to avoid suffering

An animal being hunted must not be inflicted with unnecessary pain. To achieve the aim of delivering a humane death to the hunted animal:

(a) it must be targeted so that a humane kill is likely, and

(b) it must be shot within the reasonably accepted killing range of the firearm and ammunition or bow being used, and

(c) the firearm and ammunition, bow and arrow, or other thing used must be such as can reasonably be expected to humanely kill an animal of the target species.

6 Lactating females with dependent young

If a lactating female is killed, every reasonable effort must be made to locate and humanely kill any dependent young.

7 Wounded animals

If an animal is wounded, the hunter must take all reasonable steps to locate it, so that it can be killed quickly and humanely.

8 Use of dogs

Dogs and other animals may be used to assist hunters but only if:

(a) their use is not in contravention of the Prevention of Cruelty to Animals Act 1979, and

(b) their use is with the permission of the occupier of the land concerned.

This Code of Conduct is e.g. one of the guiding principles of Game Council's Hunter Education Guidelines.

2.5 INDIGENOUS ISSUES FOR CONSERVATION HUNTING REGULATION

Any legislation or policy in Australia or NSW that is concerned with Conservation Hunting and fishing should keep in mind that these two activities were the major land-use for indigenous Australians for more than 40,000 years. This uninterrupted cultural history of hunting and fishing has been replaced in most parts of the world with agriculture. This history offers an almost unique cultural legitimacy but also places a heavy responsibility on both governments and hunters to respect, learn from, and support this history. This link between hunters and indigenous people — rarely explored or discussed — provides both a responsibility and opportunity for non-indigenous hunters to keep this ancient land-use alive. The Commonwealth Native Title Act 1993 has it genesis in the Aboriginal Land Rights Act 1983.

2.5.1 Commonwealth Native Title Act 1993

2.5.2 Aboriginal Land Rights Act 1983 (ALR Act)

The background to land rights under the Act may be found at: http://www.alc.org.au/media/46733/lcc2010background%20(2).pdf.

The NSW expression for the ALR is found under the:

2.5.3 NSW Aboriginal Land Rights Act 1983

> The Commonwealth Government administers native Title. If you would like more information about native title, please contact the National Native Title Tribunal at www.nntt.gov.au/ or T: 1800 640 501 free call.
>
> **Aboriginal land claims**
>
> Through the NSW Aboriginal Land Rights Act 1983, vacant Crown land not required for an essential purpose or for residential land, is returned to Aboriginal people. Aboriginal land rights aim to redress past injustices when Aboriginal people were dispossessed of their land by colonisation. This dispossession led to many social, economic and physical problems for Aboriginal people.

The Department of Lands investigates and assesses Aboriginal Land Claims across the State which starts with the following preamble:

> Land in the State of New South Wales was traditionally owned and occupied by Aborigines. Land is of spiritual, social, cultural and economic importance to Aborigines. It is fitting to acknowledge the importance which land has for Aborigines and the need of Aborigines for land. It is accepted that as a result of past Government decisions the amount of land set aside for Aborigines has been progressively reduced without compensation.

There have been a number of amendments to the Act since it was first introduced (www. austlii.edu.au).

As the State's peak representative body for Aboriginal affairs, the New South Wales Aboriginal Land Council aims to protect the interests and further the aspirations of its members and the broader Aboriginal community. NSW has Australia's largest Indigenous population, estimated at more than 100,000 members. Its Aboriginal communities are diverse, ranging from urban to rural and remote and culturally from modern to traditional in their beliefs and practices. The NSW Aboriginal Land Council is intended to ensure a better future for Aboriginal people by:

- working for the return of culturally significant and economically viable land;
- pursuing cultural, social and economic independence for its people;
- being politically pro-active and voicing the position of Aboriginal people on issues that affect them.

Relevance of this Act with regards to hunting and fishing rights

Part 4 Hunting, fishing and gathering

47. Agreements to permit hunting, fishing or gathering

Subject to the provisions of any other Act and any rule, by-law, regulation, ordinance or like instrument, a Local Aboriginal Land Council may negotiate agreements with the owner, occupier or person in control of any land to permit any specified Aborigines or group of Aborigines to have access to the land for the purpose of hunting, fishing or gathering on the land.

48. Access permits may be issued by the Court

(1) Where a Local Aboriginal Land Council:

(a) desires to obtain rights of access for any specified Aborigines or group of Aborigines for the purpose of hunting or fishing for, or the gathering of, traditional foods for domestic purposes, being access to land traditionally used for those purposes or to land giving access to any land so used, and

(b) has been unable to negotiate an agreement to obtain those rights, the Council may apply to the Court for a permit conferring those rights.

(2) An application under subsection (1) shall be:

(a) made as prescribed, and

(b) lodged with the Registrar.

(3) The Registrar shall refer an application lodged with the Registrar under subsection (2) to the Court together with a statement as to who appears to the Registrar to be the owner, occupier or person in control of the land to which the application relates.

(4) The Court shall:

(a) give notice of any application referred to it under subsection (3) to any person who, in its opinion, is likely to be directly affected by the issue of the permit applied for, or to the public generally if it considers it appropriate, and

(b) by that notice, provide that objections against the application may be lodged within the time specified in that notice.

(5) The Court shall consider:

(a) any application referred to it under subsection (3), and

(b) any objections lodged against the application,

and, subject to subsection (6), shall either:

(c) issue a permit conferring such rights of access as it specifies in the permit on Aborigines or any group of Aborigines so specified, or

(d) refuse to issue the permit.

(6) The Court shall issue a permit under subsection (5) in pursuance of an application under subsection (1) only if it is satisfied that the rights applied for are rights of a kind referred to in subsection (1).

(7) A permit issued under subsection (5) (c):

(a) shall be subject to the provisions of any other Act and any rule, by-law, regulation, ordinance or like instrument, and

(b) may be subject to such terms and conditions as the Court thinks fit and are specified in the permit.

(8) Any person who fails to allow access to any person in accordance with a permit issued under this section shall be guilty of an offence against this Act.

Maximum penalty: 10 penalty units.

(9) The Court may, on the application of any person and on reasonable cause being shown, revoke a permit issued under this section.

Aboriginal rights on hunting fishing and gathering in protected areas

Over the past decades Australian states have reinstated a number of aboriginal rights which related to the use of wildlife by hunting, fishing and gathering. In NSW these rights were stated in December 1996 when NSW Parliament passed the *National Parks and Wildlife Amendment (Aboriginal Ownership) Act 1996*.

2.5.4 Review of Aboriginal ownership provisions of the National Parks and Wildlife Act 1974

This Act is concerned with the Aboriginal ownership provisions under Part 4A. The Minister for the Environment identified the aims of the legislation in the second reading speech of the Bill on 20 November 1996:

> … to protect and preserve the rights and interests of Aboriginal people with cultural, historical and traditional association with national parks, through the negotiation of lease-back arrangements which enable title to land on which national parks are situated to be transferred to Aboriginal owners, subject to the lease of the area to the relevant State authority on payment of rent to the Aboriginal owners and the encouragement of joint management between identified and acknowledged representatives of Aboriginal people and the relevant State agency.

The Bill also amended the National Parks and Wildlife Act (NPW Act) and the Aboriginal Land Rights Act to provide for the following:

- **The return of ownership of land** reserved or dedicated under the NPW Act that are
- recognised for their significance to Aboriginal owners;
- **Co-operative management arrangements** for parks and reserves between Aboriginal owners and the National Parks and Wildlife Service (NPWS);

- **The return of ownership of Aboriginal cultural property** to Aboriginal people;
- **A means to reconcile certain outstanding Aboriginal land claims**;
- **The establishment of a register of Aboriginal owners.**

The Part 4A provisions also specified that the Minister was to: "review the operation of this part to determine whether the policy objectives of the Part remain valid and whether the terms of the Part remain appropriate for securing those objectives". The provisions stipulated that a report on the outcome of the review was to be tabled in both Houses of Parliament within 12 months after the end of five years of operation of the Part. It is also pointed out that: "DEC will be consulting key stakeholders on the report".

This is an ongoing process which will return land (as deemed appropriate) which has been decided by land claims. The variety of stakeholders and negotiations is noteworthy:

In 1998 the then Minister commissioned a review by Mr Tim Moore of the Part 4A provisions. The review involved a series of workshops conducted over several months in1999–2000 with representatives of the NSW Aboriginal Land Council (NSW ALC), Nature Conservation Council, the National Parks Association and the Colong Foundation for Wilderness. In acknowledging the broad community support for the objectives of Aboriginal ownership and joint management of those areas of the national parks estate that have high Aboriginal cultural value, the 1999–2000 workshop participants focussed on identifying a range of technical and policy changes to improve the operation of Part 4A.This review report is based primarily on the outcomes of these workshops.

Consultation

Consideration of the recommendations from the 1999 workshops and NPWS experience in implementing Aboriginal co-management arrangements formed the basis for identifying a series of preliminary draft recommendations. NPWS has sought comments on the draft recommendations from:

- NSW Department of Aboriginal Affairs (DAA);
- Office of the Registrar of the Aboriginal Land Rights Act 1983;
- NSW Aboriginal Land Council (NSW ALC);
- NSW Native Title Services Limited;
- Mutawintji Board of Management;
- Nature Conservation Council*;
- National Parks Association*;
- Total Environment Centre*;
- Colong Foundation for Wilderness*;
- Environmental Defender's Office.

(*Note that these stakeholders are collectively referred to as the "environment groups" throughout this report as a combined response was submitted). The

> initial consultation has highlighted the complexity of the issues and stakeholders have indicated that more time is needed to fully determine the implications of each proposal. In particular, the NSW ALC considers that a period of six months is needed for the land council to fully consult with all LALCs. Native Title Services has also expressed the view that a longer consultation period is needed for Aboriginal peoples to contribute in a meaningful way. To ensure a comprehensive consultation with relevant Aboriginal people, the NPWS will also be consulting with Aboriginal owners currently preparing for Part 4A negotiations.

In particular, this Act provided provisions for the Director-General of the NPWS to consult with Aboriginal people as to the management of threatened species. This provision is stipulated by the section:

> It should also be noted that as the 'park authority' for the Part 4A lands under the National Parks and Wildlife Regulation 2002, the Part 4A Board of Management must consent to a range of activities relating to the trapping, hunting and taking of animals, and the gathering, picking or introduction of vegetation, or the person carrying out the activity has committed an offence.

2.6 CONSERVATION HUNTING AND LOCAL GOVERNMENT

Having previously examined International, National and State regulation of Conservation Hunting in Australia and NSW, this work will now consider the role of wider society in this issue.

And what of local government? What role does the third tier of Government, with its increasing areas of responsibility, play in the regulation of Conservation Hunting?

2.7 REGULATION BY CIVIL SOCIETY

The role of government in regulating civil society is supported by a range of non-governmental activities, bodies and institutions. That support can be complementary. It may also be at times both challenging and contradictory. At least five major groupings of civil society can be identified which are of relevance to Conservation Hunting:

- Animal Welfare, Rights and Liberation Charities
- Conservation and Environmental Charities
- Independant Advisory bodies (generally from Science but also as a society cross-section)
- Professional Bodies (the Australian Veterinary Association)
- Self-Regulatory (Hunting Clubs and Associations, Hunting Industry Associations)

We will describe these groups and their roles.

2.7.1 Animal Welfare, Rights and Liberation Charities

With well-documented use and abuse of animals for research, the livestock industry, wildlife harvest operations, and the increasingly-bizarre pet market, it is essential that bodies and laws are established to prevent cruelty towards animals. This has been done in every State and Territory legislation in Australia through the various prevention of cruelty to animals acts. These acts have been supported by national and international group movements such as the RSPCA and WIRES. These groups have become so well-organised and competent that they have become part of the regulation, oversight, and enforcement of the various Acts. In this way, these groups have started to collaborate closely with governments and support them in their regulatory functions.

Sometimes however, members of these groups have held views which are considered by the great majority of citizens to be "extreme". This problem is well-known in the United Kingdom where extreme factions of animal liberationists have resorted to violence to achieve their increasingly-grotesque objectives.

These views have often evolved from their opinions on the harvesting of wildlife and of fishing and hunting in particular. In the following chapter we offer a brief glimpse into these groups: PETA, RSPCA, AR&WO, and the Australian groups WIRES. We will describe their missions, give an overview of their activities, and also explain what they have to say about Conservation Hunting.

2.7.1.1 Royal Society for the Prevention of Cruelty to Animals (RSPCA)

The **Royal Society for the Prevention of Cruelty to Animals (**RSPCA) Australia was an offshoot of the RSPCA (UK) founded in 1824 by a number of public figures (including William Wilberforce) to abolish cruelty towards farm animals. The Australian organisation has as its mission:

> To prevent cruelty to animals by actively promoting their care and protection.
>
> **Vision**
>
> *To be the leading authority in animal care and protection*
>
> The RSPCA is governed by a National Council and describes itself as: "the federal body of the eight autonomous State and Territory RSPCAs in Australia". It establishes national policies and positions on animal welfare and liaises with government and industry on national animal welfare issues.
>
> **Charter of RSPCA**
>
> RSPCA Australia believes that man must treat animals humanely. Where man makes use of animals or interferes with their habitat, he should bestow a level of care befitting man's own dignity as a rational, intelligent, compassionate being, and a level of care merited by the nature of the animal as a sentient creature capable of responding to man's care and attention. Such care should be marked by sympathy, consideration, compassion and tenderness towards animals.
>
> RSPCA Australia believes that national and international adoption of set

minimum standards of treatment and husbandry, and the observance of the following points, will enable all species of animals to live according to their behavioural needs as provided by a compassionate and responsible community:

1. Animals have an intrinsic value of their own and, accordingly must be considered to possess the right to live in a way which enables them to have a positive life and to develop and enjoy their inherent qualities.

2. No animal should be used for the production of food or fibre, either by farming practice, transportation, or method of slaughter which in any way may cause suffering, injury or distress.

3. No animal should be used for sport or the entertainment of man when such use may increase the risk of injury, suffering or distress to the animals, or is contrary to its nature.

4. Animals should not be used in direct combat, either one against the other or in warfare.

5. Animals should not be used in experiments which inflict pain or suffering upon them and which are not essential for the benefit of man or animals. The use of animals should be replaced by reliable alternative techniques immediately they become available.

6. No animal should be used in excessive breeding programs or programs which produce deformed or weak offspring.

7. Domestic animals must be effectively protected from adverse weather conditions, predators and disease.

8. Domestic animals must be kept in such a way which will enable them to socialise, move freely, stretch, lie down, and have access to clean water, a suitable balanced food supply, and to prophylactic and correctiv

9. Native animals and birds shall be maintained safely in their natural environment and shall be free from hunting, trapping and captivity. Culling may occur, but only when proven necessary for the preservation and benefit of the species. Culling must only be carried out under proper supervision and control.

10. Any animal suffering from disease, injury, or debilitation, must be given first aid or appropriate veterinary attention quickly. If the affliction cannot be cured, or if it involves permanent and serious disability, the animal must be humanely destroyed.

11. The State shall enact and enforce laws, regulations and codes for protecting animals from exploitation, and for ensuring that their basic individual needs are maintained at all times and that their environment is kept free from illegal or irresponsible intrusion.

12. The State shall also develop and implement suitable educational programs or ensure that man's responsibility towards animals is taught in all schools and in the wider community.

Man has an obligation to protect the interests of animals at all times. He should be encouraged to willingly accept this obligation. But, if he does not do so, then the force of the law should be used to ensure that all animals are treated humanely.

Points Three and Nine of this Charter are in direct conflict with Conservation Hunting for Sport (3) and for Native Animals (9). This puts the organisation in direct conflict with Conservation Hunting as a land-use and as a right of Aboriginal people (who have the right to hunt native animals). The RSPCA does make concessions to the "necessity of culling".

Although the RSPCA has been reasonably measured in addressing Conservation Hunting as an issue, the following media release from January 2004 on safari hunting of crocodiles states:

> **RSPCA OPPOSES NT PLANS FOR SAFARI HUNTING OF CROCODILES**
>
> The safari hunting of native crocodiles by rich international tourists could become a reality if a proposal by the Northern Territory Government is allowed to go ahead. The proposal, contained in the Draft Management Plan for Saltwater Crocodiles in the Northern Territory is currently awaiting approval under the Environment Protection and Biodiversity Act 1999. Federal Environment Minister David Kemp is under considerable pressure to overturn existing government policy to allow trophy hunting of these animals. The crocodiles destined as the safari hunter's prey will be the icons of the outback – mature adults more than 4 metres long. The NT National Parks and Wildlife Service is justifying its proposal by saying that it will bring new income to traditional landholders and the trophy animals would be killed as part of a quota of 600 crocodiles destined for harvesting under the draft management plan. The National President of RSPCA Australia, Dr Hugh Wirth stated "**There is no justification for killing animals for sport. If the culling of saltwater crocodiles is indeed deemed necessary, it should be firmly in the hands of trained professionals, not rich overseas tourists whose only aim is to bag another trophy to show-off back home**. The only factor driving this decision is the dollar. Yet again, animals will suffer because people want to make money out of them."RSPCA Australia has long opposed the hunting of animals for sport, because of the potential for cruelty and the extreme difficulty in enforcing animal welfare legislation in remote areas. Currently safari hunting is allowed in the NT for some introduced animals such as buffalo and banteng, but there is no monitoring of the welfare of these animals or active policing of animal welfare legislation within the industry."The RSPCA's long experience in preventing cruelty to animals shows that, unfortunately, people need strong incentives to treat animals humanely, especially ones they are intent on killing. An amateur shooter who has paid thousands of dollars to bag a crocodile has little incentive to ensure the animals they are trying to capture and kill do not suffer in the process. (Author's emphasis)

The conflicts between Conservation Hunting and Points 3 and 9 are specified in this press release with both discriminating against Aboriginal Australians for reasons that we examine in in Chapter 4–5 and Volume II.

2.7.1.2 People for the Ethical Treatment of Animals (PETA)

PETA is a United States-based animal rights charity mostly known for its glamorous and inventive publicity stunts about animal cruelty. A quick scan of its website in November 2008 shows its emphasis:

> **WHAT'S NEW AND THE PETA FILES**
>
> Shocking Video Shows Puppy Thrown From Cliff
>
> Love Seals—Don't Club Them
>
> Poll: Which Anti-Fur Video Is the Most Compelling?
>
> Tell Lowe's to Stop Selling Glue Traps!
>
> Shocking New Kosher Slaughter Investigation
>
> The PETA Files
>
> End the UnBEARable Cruelty in Canada
>
> Pleather Yourself With Jenna Jameson
>
> Primate Torture Compared to Abu Ghraib
>
> Brought to You by Christine
>
> Abusing the weak
>
> Dogfighting Now a Felony in 50 States!

PETA claims to be the largest organisation of its kind in the world and focusses on the areas of the "most intensive suffering" of animals. It also has sections which concern Conservation Hunting. In particular the "pest" part rings a bell for Australia.

> PETA's Mission Statement
>
> People for the Ethical Treatment of Animals (PETA), with more than 1.8 million members and supporters, is the largest animal rights organization in the world. PETA focuses its attention on the four areas in which the largest numbers of animals suffer the most intensely for the longest periods of time: on factory farms, in laboratories, in the clothing trade, and in the entertainment industry. We also work on a variety of other issues, including the cruel killing of beavers, birds and other "pests," and the abuse of backyard dogs. PETA works through public education, cruelty investigations, research, animal rescue, legislation, special events, celebrity involvement, and protest campaigns.
>
> http://www.peta.org/about/index.asp

PETA's website promotes many issues of genuine concern which many non-PETA members and Conservation Hunters would fully support. Some of the examples shown on its "PETA Milestones" site are reminiscent of horror movies. From its first year (1981), they document outrageous abuses of animals in scientific laboratories and the livestock industry. PETA has had a number of successes in their campaigns of significance to American society. They stopped the abuse of animals in the testing of high-velocity ammunition by the military; in crash tests by the car industry; and in cosmetics research.

Its campaign against the importation of leather from China and India ("produced" under horrific conditions) went overseas. In 2001, their campaign "Murder King" (against Burger King's chicken battery practices) went to a national audience.

Mirroring these highlights however were demands for a ban of leather balls for the Woman's National Basketball Association, to be followed in 2003 by its "Meet your Meat" campaign against the caging of 10 billion animals for slaughter in the United States.

In 2005 PETA forced retailer FOREVER 21 to ban sales of fur. If one adds up these 25 years of campaigning of the United State's most successful animal rights organisation, they stopped the abuse of animals in laboratories including by the military and the car industry.

These PETA highlights give little information on PETA's stand towards hunting. There was however one news item on the practice of bear baiting and shooting which offers a glimpse of the power of campaigns on the internet. The following letter was posted on the PETA website:

March 10, 2008

The Right Honourable Stephen Harper

Prime Minister of Canada

80 Wellington St.

Ottawa, ON K1A 0A2

Canada

Dear Mr. Prime Minister:

On behalf of People for the Ethical Treatment of Animals (PETA) and our more than 1.8 million members and supporters worldwide, I am writing to respectfully request that you support a ban on the cruel practice of "baiting and shooting" black bears. I am enclosing recent video footage taken by a PETA representative that shows how bears are lured to a bait site and then shot—even when their cubs are present. As you can see from the video footage, some bears are mothers who leave behind orphaned cubs. The cubs surely cannot survive on their own. In addition, many bears who escape the hunters are wounded and face a slow death from blood loss, gangrene or other infections, dehydration, or starvation. There is no defence for this cruel and unsportsmanlike practice. The baiting of other big game, such as deer and moose, is banned for ethical reasons; the baiting of migratory waterfowl is also prohibited. Baiting bears is wrong, and 77 percent of Canadians do not agree with the practice. Please end this cruelty by working to ban bear baiting in Canada. Thank you for your time and consideration. I look forward to your response.

Sincerely yours,

Ingrid E. Newkirk

President

Enclosure: "Canadian Black Bear Baiting Investigation" DVD

PETA and Conservation Hunting

From this brief investigation of PETA's website, one could come to the conclusion that PETA and Conservation Hunters have a lot in common, despite some obvious differences. As do most Conservation Hunters, PETA abhors poor intensive livestock practices and the treatment of laboratory animals. Once PETA however enters opinions on wildlife, its position becomes one of urban dominance, ignorance and indifference towards rural and indigenous people with views that are greatly at odds with the reality. Even here though there could be common ground in PETA's kangaroo campaign described in the essay: "Between Kangaroo Slaughter and Kangaroo Protection".

In this work both Conservation Hunters and PETA are not so much opposed to killing animals humanely for good reasons, but against the methods used in modern society. This should offer common ground with an opportunity which could be addressed by PETA Australia and Conservation Hunters through dialogue. Basically, is PETA truly an organisation for the ethical treatment of animals or just another radical fringe minority animal rights group?

2.7.2 International Conservation and Environmental Organisations

There are now national and international conservation and environmental organisations across the world that have become important players in Australia and NSW. Some can support that role with multi-million dollar budgets (The American-based conservation charity Nature Conservancy has an annual operational budget of about US$800 million with several billion dollars in assets) and have become increasingly involved in the development of national and international policies and politics.

Significantly, all of these larger organisations — the World Wildlife Fund, Conservation International, Nature Conservancy, World Conservation Union (IUCN) — have started to conditionally support the sustainable use of wildlife and the legitimate role of hunting.

Conditions imposed for this support include: sustainability and community and environmental benefits. The IUCN has developed its own comprehensive Guidelines on Sustainable Hunting. Having been developed within the IUCN's vast pool of leading world scientists, these Guidelines more or less represent current scientific opinion on hunting.

2.7.2.1 Developing International Sets of Guidelines on Sustainable Hunting

Each of the larger non-government agencies have developed their own policies on the sustainable use of wildlife for hunting and fishing. Included here is the most authoritative of these, the *Guidelines on Sustainable Hunting in Europe (IUCN-ESUSG WISPER September 2006)*. These principles, adapted from Austria, have been developed by a mixed group of: "*a*cademics who research and teach wildlife and forestry management, those working as administrators and managers for conservation, forestry, hunting and animal welfare bodies." These guidelines therefore may be considered as an example of collaboration between groups which, in Australia and NSW, has so far remained unattainable.

Guidelines on Sustainable Hunting in Europe IUCN-ESUSG WISPER September 2006

Introduction

Purpose

These guidelines have been prepared by the Wild Species Resources Working Group (WISPER) of the IUCN-SSC European Sustainable Use Specialist Group(ESUSG). They aim to apply wider international principles and guidelines for the sustainable use of wild living resources at the European regional level. The focus is on recreational hunting involving the shooting of birds and mammals. However, much of what is put forward should be applicable in other contexts, such as subsistence or commercial hunting or hunting with hounds or falcons.

Evolution

WISPER is one of five thematic groups within ESUSG, which is the European constituent of the Sustainable Use Specialist Group, itself a group of voluntary experts within the Species Survival Commission of IUCN, the World Conservation Union. WISPER has some 50 members from 23 countries. Among them are academics who research and teach wildlife and forestry management, those working as administrators and managers for conservation, forestry, hunting and animal welfare bodies. At a personal level some are hunters while others are not. All are committed to the mission of IUCN. At a meeting of WISPER hosted by the Research Institute of Wildlife Ecology(FIWI) of the Vienna Veterinary University in October 2002 the Austrian example of a set of principles and criteria for sustainable wildlife management was presented by Friedrich REIMOSER: 'Criteria and Indicators for Sustainable Hunting' 2001 (in German and English; www.biodiv.at/chm/jagd). This presentation formed the spur for the development of the Guidelines presented here. The members of WISPER decided that it would be desirable to build on the Austrian experience in order to develop a shorter and more general document, focussing on guidelines that would be applicable all over Europe. They also agreed that the final product of the WISPER group should subsequently be submitted for testing and further refinement to other members of the conservation community, not belonging to WISPER. Since the Vienna meeting the present document has been elaborated by correspondence and by two further meetings in Brussels (2003) and Hanover (2005).

International policies

In the year 2000, as a culmination of some two decades of debate and analysis within the conservation community, IUCN's 2nd World Conservation Congress, meeting in Amman, Jordan, adopted a Policy Statement on the Sustainable Use of Wild Living Resources. This declared, inter alia, that 'Use, if sustainable, can serve human needs on an ongoing basis, while contributing to the conservation of biological diversity' and 'Use of wild living resources, if sustainable, is an important conservation tool because the social and economic benefits derived from such use provide incentives for people to conserve them. The need for criteria and principles to analyse the sustainability of the 'use' became a prerequisite in this context. Meanwhile the Convention on Biological Diversity (CBD), signed in 1992 at the Rio Earth

Summit, made sustainable use of the components of biological diversity one of its' three main objectives (Article 1). Sustainable use was defined in Article 2 of the Convention and was elaborated in Article 10. In 2000 a process to articulate practical principles and guidelines for sustainable use was started. Following regional thematic workshops and a synthesis workshop in Ethiopia in 2003, the 7th CBD Conference of the Parties meeting in Kuala Lumpur, Malaysia in 2004 adopted in decision VII/12 the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity. The key elements of the14 inter-dependent Principles and accompanying Guidelines for enhancing the sustainable use of biodiversity may be summarised as:

- Supportive & linked governance at all levels
- Empowerment & accountability of local users
- Adaptive management using science, local knowledge, monitoring & timely feedbacks
- Equitable sharing of benefits for local people
- Transparency & international co-operation
- Public awareness of the benefits.

General remarks

The aim of the document is to provide a (non-binding) set of guidelines for the sustainable hunting of wild bird and mammal species, generally classified as "game" and subject to regulated hunting in Europe. The aspect "sustainability" is addressed here mainly from an ecological point of view. In addition, this paper makes a first analysis of certain (combined) socio-economic considerations. There can be little doubt however that it would also be useful to develop further the tools to asses the economic and socio-cultural sustainability of hunting. In case of conflicting interests between these three aspects, resolution of that conflict should be based on the best available science, or otherwise on professional management experience. It should however be clear that ecological guidelines should prevail – in other words, if hunting is ecologically unsustainable, this cannot be "compensated" by economic and / or socio-cultural sustainability. These guidelines should be considered and applied at the scale of the "entity of use" – e.g. hunting territory, management unit or estate, being under private management or that of a public authority. The guidelines should be seen as an instrument to facilitate the identification of those aspects of the current hunting management and practices which may be improved and in this way contribute to halting the decline of biodiversity — the"2010 target" – or even to its conservation. The evaluation of current hunting management and practices has to be undertaken bearing in mind the possible interactions between on the one hand hunting and other human activities (farming, tourism, traffic, etc.) and on the other hand hunted species as well as biological communities.

II. Principles, Targets en Guidelines

I.A Principles

The two main ecological principles that need to be respected are:

A. Hunting should not adversely affect the long-term conservation status

of the hunted species (Category "A") across its natural range.

B. Hunting should not adversely affect the long-term conservation status of the biological community — fauna and flora — (Category "B") to which the hunted species belongs.

A possible definition of "Conservation status" can be found in the European Commission's Guidance document on hunting: The term conservation status of a species is defined in Article 1 i) of Council Directive 92/43/EEC as "the sum of influences acting on the species concerned that may affect the long-term distribution and abundance of its populations …." It is considered to be favourable when "population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitat, and the natural range of the species is neither being reduced nor is likely to be reduced in the foreseeable future, and there is, and will continue to be, a sufficiently large habitat to maintain its population on a long-term basis."

II.B Targets

To ensure the respect of these principles, hunting of wild "game" species (and the associated hunting management) should focus on the following ecological targets: As far as the "game" species (A) is concerned:

a) to maintain population abundance, distribution, structure and behaviour compatible with its conservation;

b) to maintain genetic diversity compatible with its conservation, e.g. by encouraging maintenance of sub-populations;

c) in case the species / population is in an unfavourable conservation status, to contribute to the improvement of its status.

As far as the biological community (B) to which the hunted species belongs is concerned:

a) to uphold or improve species diversity;

b) to uphold or improve habitat diversity.

II.C Guidelines

The above targets are most likely to be met if the hunting of wild "game" species (and the associated hunting management) adopts the following guidelines of best practice. Their order does not necessarily reflect any priority. They should further always be applied "as far as possible / feasible / practical". As is the case for the Addis Principles, these guidelines are not intended to be prescriptive but to be applied to the degree relevant to a particular case. As far as the ecology of the "game" species (A) is concerned, hunting (and hunting related activities) should:

A.1 Take fully into account, and where possible mitigate, the negative consequences of other human activities on the survival of wild species or on their natural behaviour (such as their diurnal activity pattern) in so far as this would have a significant impact on the conservation status of the population concerned.

A.2 In order to conserve the genetic diversity present in the population, avoid focusing exclusively on external phenotypical or behavioural characteristics as criteria for selection.

A.3 For species of which the annual activity range of individual animals exceeds the scale of the management area, encourage co-ordination with neighbouring management areas, if necessary even at international level.

A.4 Take into account seasonal fluctuations in the availability of habitat elements (such as cover, food, etc.) and in climatic conditions, as well as the reproduction, feeding and resting patterns of the species.

A.5 Take fully into account, and where possible mitigate (e.g. by efforts to restore important habitat elements), the negative consequences of habitat degradation, fragmentation and loss due to other human activities.

A.6 Accept the natural re-colonisation (and establishment) of species belonging to the original native species (*).

A.7 Only reintroduce game species belonging to the list of native species in accordance with the IUCN guidelines on reintroduction of species (*).

A.8 Not introduce or encourage non-native (alien) species (*).

A.9 Be based on recorded management planning (including at least management objectives and measures for each species / group of species).

A.10 Encourage bag-recording (where useful, subdivided into sexes and age classes, and possibly with other relevant data) in order to better understand population dynamics and to facilitate the monitoring, evaluation and, if required, revision of management planning (cf. adaptive management).(*) Several guidelines require the existence of scientifically based lists of native and alien species, including the conservation status of these species.

As far as the ecology of the biological community (B) to which the hunted species belongs is concerned, hunting (and hunting related activities) should in general have no significant negative impact on the biological community the hunted species belongs to, and in particular:

B.1 Take into consideration the international, national and regional conservation status of fauna and flora, inter alia the presence of rare or endangered species.

B.2 Only undertake habitat restoration or afforestation with plant material of local provenance (assuming the existence of material certified as such).

B.3 When regulating predators, to consider the long-term conservation status of the hunted prey species as well as of the predator and of the biological community to which they belong, including the interaction between the predator species and other species.

B.4 Aim for an abundance, distribution and behaviour of hunted species that

are compatible with maintaining the biological community to which the exploited species belongs.

As far as the social and economic (C) context is concerned, hunting (and

hunting related activities) should aim at:

C.1 Maintaining or regulating hunted species so that their abundance, distribution and / or behaviour are compatible with the interests of other socio-economic sectors, including farming, forestry, fisheries, traffic, public health, etc.

C.2 Using local employment and services.

C.3 A fair return (in kind or in cash) for the providers of hunting opportunities e.g. landowners or -users, local communities.

C.4 Including participation of local hunters.

C.5 Taking into account access to, and use, of land by other users (including recreational users).

C.6 Optimising utilisation of meat and other (by-) products from game.

C.7 Informing the public about hunting (values, organisation, methods, etc.) and hunting management (objectives, hunting planning, etc.), inter alia in order to demonstrate the contribution of sustainable hunting to the conservation of biodiversity and to rural development.

C.8 Considering the views and feelings of the public, in particular of local people.

C.9 Preserving the cultural, historical and artistic values related to hunting and to wildlife.

C.10 Including appropriate facilities for tracking and retrieving wounded/killed specimens, and in general taking all reasonable precautions to eliminate avoidable suffering of wild animals

If one applies these guidelines to the Australian context, it is clear that they would be relevant to the sustainable use of native animals. It becomes difficult to reconcile these guidelines however with the aims of "pest control through sustainable use". They would also be at odds with the views of some Conservation Hunters on non-native animals (IIC A7-8).

2.7.3 INDEPENDENT ADVISORY BODIES

For specific expertise not currently available, Governments sometimes form Statutory Review Panels such as the body established to review the allocation of fishing rights in Australia. Ideally, the Government should play no role in the panel's decision yet be obliged to take notice, reflect upon, and be accountable to these panels.

Statutory Fishing Rights Allocation Review Panel (SFRARP)

The Statutory Fishing Rights Allocation Review Panel (SFRARP) was established under Section 124 of the Fisheries Management Act 1991. SFRARP is an independent, specialist body that reviews decisions by the Australian Fisheries Management Authority (AFMA) or a Joint Authority (that is managed by the Australian Government on a day-to-day basis) relating to the provisional allocation of Statutory Fishing Rights (SFRs), under a plan of management (except when the SFRs have been allocated as a result of an

auction or tender).The SFRARP Registry resides in the Australian Government Department of Agriculture, Fisheries and Forestry and provides administrative support to the SFRARP. The Government plays no role in SFRARP's decision-making activities.

2.8 SELF-REGULATION OF CONSERVATION HUNTERS

For the past 30 years, self-regulation has been the mantra of the modern free market economy. With the Global Financial Crisis of 2008, the International Monetary Fund more or less admitted the failure of this approach, a fact shown by many prior studies (Beder, 2006).

Conservation Hunters in some European countries however are a notable exception to this common trend. They have developed systems of self-regulation which have become so efficient, that the relevant government leaves the regulation (including the issue of compliance) to these hunting bodies. There are also hunting non-government organisations which have either become international (the US-based Safari Club International), or which have been, from their beginning, set-up as international hunting education and advocacy groups (The International Council for Game and Wildlife Conservation — CIC). For more details, see Volume II, Chapter 6.

2.8.1 User Group Strategies and Policies

For conservation hunting, as in any other recreational activity, the range of practices run from excellent; good; bad; very bad; and greatly-abused! Society puts mechanisms in place which aim to secure compliance through specific Codes of Practice (CoPs). In this field, these are sometimes called Best Environmental Management Practices (BEST). In other activities they are referred to as Standard Procedures of Operational Practice (SPOP) or "Certification". Over the past decade, certification practices have become more common and have been adopted by the Forest Stewardship Council (forestryiIndustry). A general observation is that, as soon as a group recognises itself as such, their practices are examined, compared, regulated, and improved. If one looks at Conservation Hunters as a group, they are consistently active in forming associations with many of these developing their own codes of practice. In brief, they regulate themselves!

This is the case in Germany where hunting associations were formed along the ascending line of administrative districts (the equivalents of shire, state, nation). In these associations, lower-level groups are answerable to those higher-up. Based on Federal hunting laws, these groups are capable of dealing with most rules, interpretations, and violations. One of the benefits of this structure is that this intensive self-regulation provides a support structure for the Executive (Police) and Legislature (Jurisdiction). These structures provide the expertise and greatly alleviate the workload, for example, in the case of traffic accidents with deer. Several hundred thousand of these occur every year and are reportable; but are generally solved by the hunting lease-owner to whom the person involved in the accident is generally referred to once he/she rings the police.

Such self-regulation of hunters in close collaboration with governance works very well in some places in the world. An example is many countries of Europe where hunters have formed similar regional, state, and national associations. With the merging of Europe though this has been notched up one further European Union level where more than seven million hunters are now represented by and overseen by the European Hunting Associations (FACE).

While it could be argued that Australian and NSW Conservation Hunters are far from this lofty ideal, this is because our society never allowed them to obtain this degree of self-empowerment and responsibility which is required for this system to work. There is however the beginning of a structure of associations and clubs which have started to do this on a small scale.

2.8.2 Hunting Associations in Hunter Self-Regulation

2.8.2.1 Some Figures on Australian Recreational Hunting Clubs

Dryden and Craig-Smith (2004) in their survey of Australian Hunting clubs suggest that there are more than 50 hunting clubs/associations in Australia. The three largest are the Sporting Shooters Association of Australia (SSAA); the Victorian-based Field and Game Australia (F&G); and the Australian Deer Association (ADA). Most of the other clubs are relatively small (85 per cent have less than 500 members with some 22 per cent having less than 100 members). **Also, significantly nearly 80 per cent of the smaller clubs are in NSW.**

The website: http://www.aushunt.com.au/directory/index.php?id=35&page=2 lists 104 such associations and clubs (including rifle and clay target shooting clubs).

Regulation as a major club aim

Dryden and Craig-Smith found the aims of these clubs were to:

- Promote recreational hunting as a legitimate and lawful activity,
- Promote ethical hunting practices,
- Protect shooters' rights,
- Provide a forum for hunters to meet and interact,
- Promote safe and responsible hunting activities,
- Educate hunters (in humane hunting methods, animal behaviour etc).

These comments suggest that clubs have some ambition for self-regulation. Some groups have also developed their own framework for sustainable and responsible hunting (see Chapter 6).

2.8.2.2 From Clubs to Associations

Three larger clubs have made the step from clubs to associations; the SSAA, F&G and ADA. These have their own websites, their own education programs, they support research, and they collaborate and (at times) even challenge Government positions. In Victoria, F&G carried out their own study on duck hunting which contradicts the Government's stand. These associations they have become significant national self-regulators of Conservation Hunters.

Case Study 1: Sporting Shooters Association of Australia (SSAA)

> The SSAA is the largest and most exciting shooting body within the state of New South Wales and has a branch and a range at a location close to you. We are making it easier for you to become a part of one of Australia's most exciting and challenging sports. We have qualified instructors and range staff that can make your introduction to the shooting sports a pleasurable one, and once you have qualified and been issued with a firearm licence we can advise you in the selection of a suitable sporting firearm that will enable you to participate in your chosen competition. Whether it is with rifle, shotgun or pistol the SSAA can assist you to become involved in the shooting sports.

Hunting in NSW

There are a number of ways of gaining access to hunting in NSW and these are briefly explained below:

1. Permission of a land owner to hunt on his/her land,
2. Membership of a hunting club, such as the SSAA Hunting & Conservation Section,
3. Access to properties owned by the SSAA (you must be an SSAA member), e.g. Tilterweira, and/or
4. A Game Licence issued by the Game Council of NSW.

Sporting Shooters Association Australia (New South Wales) Inc.

SSAA NSW Hunting and Conservation program providing accredited hunters to assist property owners with feral pest management.

(Authority Letter for Landowner)

Dear Landowner

New national firearms legislation requires sporting shooters who hunt on public or private property to obtain written permission to do so from the land owner or land manager. Before granting permission to hunt, the Sporting Shooters Association recommends that you ask to see the member's membership card to ensure that he/she is a financial member of the Association. Members of the Sporting Shooters Association agree to abide by a strict code of ethics and are covered by the Association's Public Liability insurance policy. The indemnity limit of this policy is $10,000,000 and protects members for legal negligence while on private or public property anywhere in Australia.

Since its formation in 1948, the Sporting Shooters Association of Australia has continuously promoted responsible firearm ownership and ethical hunting. For further information about the Association or details about your nearest branch, please contact Roy Smith, The Exceutive Officer S.S.A.A. (NSW) Inc*

*Does not include professional hunting activities

The second part of this letter of Authority for Hunting /Vermin Control contains contact details of the hunter and the landowner. Hunting has become a clear transaction. This form has also been approved for use by the NSW Police Firearms Registry.

This letter is designed to allow a landowner to choose a Conservation Hunter for his property who will not only aid in vermin control but will also help him police the area and keep at bay trespassers and criminals who may have previously entered, shot at, and threatened him with a firearm. As one landowner described his experiences: "These individuals were not hunters or romantically-described "poachers but just plain ordinary selfish law-breakers."

Case Study 2: Field & Game Australia

Field and Game Australia has gone a step further with its website containing the following information and statements:

Mission Statement

Field & Game Australia is a voluntary organisation formed by hunters. We partner with government and the community in the management and sustainable utilisation of Australia's wetlands for future generations by protecting game habitats through conservation. We promote responsible firearm ownership, ethical hunting and clay target shooting.

History

Field and Game Australia (formerly the Victorian Field & Game Association) was pioneered by recreational Waterfowl Hunters who recognised that development of farmland after the Second World War was seriously encroaching on important wetlands, causing a rapid decline in waterfowl populations through the state of Victoria. The first Field and Game branch was established as a direct response to these concerns.

The History of Field & Game Australia

The Victorian Field and Game Association was established in 1958 at Sale. The name comes from "field sportsmen" and "game management' abbreviated to "Field and Game'. Field and Game was formed by hunters who were concerned at the loss of wetland habitat for the game birds they loved to observe and hunt. At its first meeting the Association adopted the following motto which, up until recent times, appeared on all its letterheads:

"The wildlife of today is not ours to dispose of as we please. We must account for it to those who come after".

King George Vl

Other resolutions adopted at that first meeting in 1958 were:

1. To develop Victorian facilities for game bird hunting by the promotion of game bird conservation and management projects.
2. To develop a greater public appreciation of the pleasures and values of game bird hunting.
3. To organise a deputation to the Chief Secretary seeking the establishment of a shooter's licence to fund game conservation.

Growth

Initially the Association concentrated its efforts on three wetlands of significance. These were Winton Swamp near Benalla (now Lake Mokoan). Tower Hill in Western Victoria and Jack Smith's Lake in Gippsland. In those early days this Association appeared as radical in its aims as many contemporary conservation groups do today. This was because hunters placed a value on swampland, which because of its unsuitability for agriculture was otherwise regarded as being useless. For example, in the 1950's the idea that regulated water from irrigation systems should be available to wetlands was deemed

ludicrous. During 1998 the Association became a truly National Organisation with a new constitution and name change. Now known as Field & Game Australia Inc., our more modern Constitution and Aims and Objectives better prepare our Association for the future. With 60 Branches Australia wide and continuing growth, we have both the resources, financial and manpower to fulfil our Mission Statement.

Patrons

The late Sir Henry Bolte became a patron during his term as Premier of Victoria. Other patrons include former Victorian Governor the late Sir Rohan Delacombe, former Prime Minister the Hon. Malcolm Fraser and more recently the Hon. Tom Austin and renowned wildlife scientist Dr Grahame Webb. Under Sir Henry Bolte's watchful eye, the sought after Shooter's Licence was quickly established in 1959 and the first ever funds became available for game and wildlife management. Important areas of waterfowl habitat were purchased and the Game Research Station at Serindip near Lara was established — now a popular wetland education centre. Many of the wetland reserves in Victoria owe their existence to the shooters licence, which today raises over $4 million annually. A new Game Licence introduced in 1990 raises another $1.25 million annually. In addition to licence revenue the Association undertakes voluntary conservation projects using its own financial and human resources. These projects may involve building and maintenance of water control structures, revegetation works, pest animal control, waterfowl monitoring, construction and installation of duck nesting boxes and research. Recognition of these efforts came in 1978 when the Association won the Conservation Council of Victoria's prestigious prize for the organisation that had contributed the most to conservation over a 5-year period.

The Hunter's Role

As hunters we have an obligation to continue playing an active role in the management of habitat and wildlife resources. Wildlife is a renewable resource but it is one that can be destroyed without proper management. Through careful control of habitat we can ensure the long-term survival of those species dependent on wetland environments. Some doubt, that hunting and conservation are compatible. However, history has shown that when populations are culled under controlled hunting, the intense interest of hunters in the welfare of the target species virtually ensures their survival.

Target Shooting

The Association established clay target shooting as a way for hunters to improve their marksmanship and train juniors in safe firearm handling. The activity has grown and there is now in excess of 50 clay target shooting ranges operating regularly in across Australia.

Summary

Field and Game Australia has been a very active organisation throughout its history. In addition to its work on wetlands habitat, and developing the sport of simulated field shooting, it has been active in firearms safety training, defending the privilege of members to own and use firearms and to hunt recognised game species. Our members are also active in hunting of pest species such as rabbit, fox and pig that are a devastation on our native flora and

fauna. It is unusual for an organisation to have such a broad range of activities. We believe we serve our members well in all these areas and we will continue to work hard at achieving our stated aims and objectives.

Statement of Purposes

The purposes for which the Association is formed is to specifically sustain, enhance and nurture responsible activities of members and to:

- Encourage, promote and practice the active conservation of game and habitat and to undertake education and training of members to achieve that goal.
- Cooperate with government agencies and landholders in the promotion of game hunting in an orderly and accepted manner and to respect the privilege of gun ownership.
- Promote public understanding and acceptance of our activities and to cooperate with other bodies which may have similar objectives, and
- Unite field sportsmen in the respect of game and habitat, to promote good sportsmanship through supervised shooting ranges, target shooting and where appropriate to conduct local, state and national events to encourage the sport and stimulate participants to excel in their chosen pastime.

2008 Victorian Duck Season Cancelled

The Victorian Minister for Environment Gavin Jennings has announced the cancellation of the 2008 Victorian Duck Season. The Minister's decision was made on advice from the department which was heavily weighted by the results of the Eastern Australia Aerial Count conducted by Dr Richard Kingsford. The decision is disappointing, particularly as conditions had improved since last year and many areas along the eastern seaboard and southern Victoria experienced flood events during the year. The recent November waterfowl count conducted by FGA volunteers and DSE regional staff showed that there had been extensive breeding in Southern Victoria. The Victorian Hunting Advisory Committee, after presentations by FGA & DSE, made a recommendation for a modified season.

Game Regulations & Licensing

As with firearm licensing, game regulations and licensing vary from state to state. For information relevant to your state, please follow the links below. Anyone wishing to hunt game must hold a current permit. This can include duck, deer, pig, kangaroo, quail, pheasants and partridges. A range of licence types are available, depending on the requirements of the individual hunter and the state requirements.

As this website shows, F&G has become an effective Conservation Hunter advocacy group which questions State Government decisions (as it did for the last closure of the duck hunting season when it challenged the arguments of the scientists and Conservation Hunters who advised the State Government). It also educates, informs, and regulates its own members.

Case Study 3: The Australian Deer Association (ADA)

> The Australian Deer Association was formed specifically to better the deer's status and to ensure its perpetuity as a free roaming game animal. We believe that this Association represents the widest possible range of deer interest. Its members comprise the most experienced deer hunters and deer conservationists in Australia. It welcomes the expression of opinions by any person or group with a genuine interest in deer. It is not sufficient to have preconceived ideas on management, for in these critical and formative years, problems which are peculiar to the Australian scene must be solved by the application of experience. Scientific study, the basis of all sound deer management is dependent upon skills and finance which are not immediately available. This fundamental problem will be solved, but in the meantime this Association is carrying out work of the utmost importance. Since its formation in 1969 the A.D.A. [to use the accepted abbreviation] has sought to include in its membership all aspects of deer interest, stalkers, houndmen, bowhunters, wildlife photographers, management enthusiasts, deer breeders, in fact anyone with a realistic involvement. All these people have one common interest — the deer. This is the paramount factor and acknowledging this enables us to overcome widely diverse views, and work towards the ultimate objective — the deer established in its rightful place as the game animal of Australia, accepted and managed as such at government level, thus ensuring its place among Australia's wildlife. THIS OBJECTIVE CANNOT BE ACHIEVED UNLESS WE WORK TOGETHER. So if you have the all-important interest in our deer and are wondering what you can do to improve the situation, and at the same time widen your own appreciation of the matters involved, you cannot do better than join the AUSTRALIAN DEER ASSOCIATION.
>
>

From their website it is clear that deer introduced into Australia have become of much greater value than a pest to deer enthusiasts. As a recent study in Queensland indicated, many Queensland farmers share this view. The ADA has 4000 members and branch offices in all States except the Northern Territory and Western Australia with the following benefits:

Advantages of Membership

- The Association produces the prestigious journal Australian Deer keeping you factually informed on the Australian deer-hunting scene.
- Meet interesting guest speakers at Branch Meetings.
- Branches produce newsletters providing you with up to the minute information on local events.
- You have the opportunity to make local, interstate and overseas contacts.
- By talking to other members at meetings you can obtain leads on where it is best to hunt and when.
- You have the opportunity to voice your opinion and be heard at regular meetings.
- Trophies can be entered in competitions and the internationally recognised

Australian Antlered Trophy Register.

- You can test your skills by competing in photographic competitions.
- You can participate in conservation and research and management projects in your area, which will help ensure the future of your hunting.
- But most importantly, you can be satisfied that you are contributing to the future of deer and deer hunting in Australia
- Member Insurance
- ADA has $10 million public liability insurance that protects its members from legal liability that may arise out of any activity endorsed by ADA including hunting on public or private land anywhere in Australia. Members are also covered by personal accident (voluntary workers) insurance at functions such as meetings, working bees and target shooting events on recognised firearm ranges.

Few if any of these associations have taken up the organisation and regulation of hunting as occurs in many European countries. While Conservation Hunters in Australia and NSW tend to be organised in clubs, most of these are small and have no influence beyond their locality. Although there are several large associations with a joint membership of more than 150,000 Conservation Hunters, there is no national body that could claim to represent the Conservation Hunters of Australia.

2.9 GAME COUNCIL NSW — A NEW STATUTORY APPROACH

2.9.1 The Game Council and the Game and Feral Animal Control Act 2002

The Game Council NSW is a statutory authority which was established when the Game and Feral Animal Control Act 2002 came into force in the State. The objects of this Act are:

- To provide for the effective management of introduced species of game animals;
- To promote responsible and orderly hunting of those game animals on private and public land and of certain feral animals on public land.
- The Council has the responsibility for establishing programs and setting standards for hunting in NSW that will be successful in fulfilling the objectives of the Act. Membership of the Game Council NSW is prescribed in the Act , consisting of 16 councillors, being one from each of eight hunting clubs, one each from Forests NSW, Department of Lands and the Rural Lands Protection Board, one from the Australian Veterinary Association, two wildlife scientists, and one indigenous person from the NSW Aboriginal Land Council. Under this Act, deer are gazetted as game animals, as are 5 introduced bird species- peafowl, partridge, California quail, pheasant and turkey.

Anthony English, 2008

2.9.2 The NSW Hunting Revolution: From Hunting to Conservation Hunting

The Game Council of NSW, established in 2002, has been charged with regulating Conservation Hunting in that State. This Australian first for a statutory authority on Conservation Hunting regulates who goes Conservation Hunting; what is being hunted; and where Conservation Hunters can hunt. More significantly, the Game Council with members from other Government departments; hunter representatives; and independent scientists; is developing a vision for NSW Conservation Hunters (and the Government and society as a whole) that establishes processes and programs which promote Conservation Hunting as an ideal.

In line with international trends evident in hunting (for example within FACE, the European association of hunters), the Game Council has moved hunting from being termed a 'sport'. This is an unacceptable term to the RSPCA, for example, but is just as unacceptable for many European and non-European hunters (for whom hunting remains a traditional land-use) to now becoming "Conservation Hunting".

The Game Council defines "Conservation Hunting" as:

> Conservation hunting is hunting undertaken to enhance overall environmental outcomes by managing the impact of game species and lessening the populations of feral animals on our natural and agricultural environments.
>
> The concept and practice of conservation hunting has always been close to the hearts of responsible hunters. Until the establishment of the Game Council, New South Wales had not taken full advantage of the capabilities of private hunters on both public and private land, in an organised, regulated way. Hunting is an important and legitimate tool in nature conservation management, particularly as it relates to over-populations of introduced species.

This mission statement defines this new role that hunters, under the guidance of the Game Council, can play. While recreational, it also promises sustainable management (land-use) of "game animals" and a contribution to the reduction of what we consider "exotic pests".

Links on its home page such as for Forests NSW, the Department of Lands, and the NSW Firearms Registry, show its regulatory function. Most importantly, *t*he Game and Feral Animal Control Act 2002 stipulates responsibilities of hunters in five parts. As we discussed in a previous section, this structure regulates licensing and the enforcement of the Act. Importantly, the Act does not affect native title and makes it an offence to release a game animal for the purpose of hunting:

> 54. Native title rights and interests
>
> This Act does not affect the operation of the *Native Title Act 1993* of the Commonwealth or the *Native Title (New South Wales) Act 1994* in respect of the recognition of native title rights and interests within the meaning of the Commonwealth Act or in any other respect.

55. Offence of releasing animals for the purpose of hunting

A person must not release a game animal into the wild for the purpose of hunting the animal or its descendants. Maximum penalty: 50 penalty units.

2.9.3 The Introduction of Licensing Requirements for Hunting in NSW

Of central importance to the regulation of hunting in NSW is the licensing system discussed below:

2.9.3.1 The R-Licence

The Restricted NSW Game Hunting Licence or R-Licence and written permission are required by law for hunting game and feral animals on declared State forests and Crown Land areas in NSW (this does not include National Parks). The R-Licence also incorporates the General NSW Game Hunting Licence (G-Licence), required by law for hunting wild deer, ducks and game birds on private land in NSW.

R-Licence categories: Bows, Firearms, Dogs, Black Powder. R-Licence Types: Standard ($60/yr), Commercial ($250/yr), Hunting Guide ($150/yr) and Overseas Visitors ($100/yr).

Significantly, this game hunting licence introduces a regulation for hunting, something which, while having been loosely defined in other Acts, has essentially gone on unheeded and ignored by legislators. As applies to legal procedure, compliance cannot be ensured, however it is now unambiguously regulated. This is a major step for governance and towards the contribution of NSW to the Commonwealth's national and international obligations (conventions and guidelines, strategies and policies as defined in Chapter 2.3.)

2.9.4 Organising Conservation Hunters in NSW

Having acknowledged that hunting clubs and organisations are major self-regulatory bodies of hunters, Game Council has extended what it calls "an invitation" to them.

Approved Hunting Organisations (AHOs)

An invitation to hunting clubs, organisations and associations

Under new legislation — the Game and Feral Animal Control Act — persons wishing to hunt game and feral species on declared public land in NSW now require a Restricted NSW Game Hunting Licence (R-Licence) from the Game Council of NSW. To qualify for this licence, applicants must be members of Game Council Approved Hunting Organisations (AHOs) and must be accredited for the use of Firearms, Dogs, Bows or Black Powder. Game Council invites hunting clubs, organisations and associations to apply for Game Council 'approved' status (as an Approved Hunting Organisation), as well as consider the educational options available to fulfil 'adequate' training requirements for the R-Licence. By offering the R-Licence to your members,

Game Council will pay a 10% commission for each successful new licence application originating from your organisation. With your organisation's permission, we will also register your details on our website for your members, and non-hunting club members, to access. Should you have any questions in relation to this process, please do not hesitate to contact Game Council NSW on (02) 6360 5100 or visit our website: www.gamecouncil.nsw.gov.au

Click here to download a copy of the information package and AHO application forms.

Current List of Approved Hunting Organisations

Most Importantly Game Council has started to provide the Framework and Guidance to organise Conservation Hunters to:

- become an Approved Hunting Organisation (AHO)
- form a Hunting Club

Forming a Hunting Club

- Constitution & Rules
- Game Council encourages potential hunting clubs to download a copy of this Model Hunting Club Constitution & Rules, under the Associations Incorporation Act 1984 (NSW), for use as a guide. It features information on membership, duties of office bearers, property rights and register of members etc. To download the model Constitution as a Word document, click here
- To download this document as a PDF, click here. Game Council also strongly recommends incorporating our Code of Practice into your Club Constitution.

In this way, a first step to "co-regulation" of NSW has been undertaken. One of the first actions of the newly-formed Game Council was the development of the *NSW Hunter Education Handbook* with its first edition printed in November 2005. This book was produced by the Education Ethics and Training Committee of the Game Council and was chaired by one of the authors of this report (A. English). A comparison of the *NSW Hunter Education Handbook* to other hunter education publications shows it to be an excellent starter. However, this work needs to be followed-up with a range of formal and informal activities. Examples of these include in hunting clubs. This includes Para Parks Game Reserve on Sunday Island. The F&G, ADA and SSAA have a range of their own activities that test and improve proficiency of hunters, including junior hunting programs.

Education, Proficiency and Licensing

The Game Council has undertaken the first step to improve a situation that, if compared to European countries, shows a deplorable lack of training requirements for hunters to obtain licences.

By doing this, the Game Council has also acknowledged that many hunting clubs (the SSAA and F&G) have already started on this path. As discussed in the next section, the Game Council has made a significant move to improve this

situation. Its licensing system has not only become an essential regulatory tool, it also ensures a required minimum standard of knowledge and introduces incentives and means for further education.

2.10 KEY FINDINGS, CONCLUSIONS AND SUMMARY

2.10.1 A Confusing Regulatory Environment

Hunting in Australia and NSW is controlled in a variety of legal acts and regulations with, at first glance, limited relevance to Conservation Hunting. What is particularly noticeable, (compared, for instance, with the Hungarian Hunting Law), is that this relevance is not very explicit in terms of actions. While this situation has been partly-addressed by the Game and Feral Animal Control Act, it sits uneasily with many other Acts which aim to achieve the same result, albeit with differing aims and means. Nor is it enough to define and protect Conservation Hunting from the many other movements and policy expressions to which it is subject from the wider society. This will be dealt with in some detail in Chapter 5 as here lies many of the constraints to enshrining Conservation Hunting as a legitimate and sustainable land-use.

The reader may be bewildered by the huge number of rules and regulations, strategies and laws, policies and Guidelines, Codes of Conducts, Best Management Practices, and Certifications, which affect Conservation Hunting. While this complexity of rules is certainly not restricted to Conservation Hunting and is common in all natural resource-use sectors, it is not conductive to the development of harmonised and rational strategies. There is also a societal dimension to Conservation Hunting which, unlike most other land-uses, affects all aspects of this activity. And this dimension is not always for the most objective and best of reasons. While one can conduct mining and forestry, agriculture and even fishing on a non-emotional, detached level, this cannot be done for Conservation Hunting.

We can conclude the following on the regulation of Conservation Hunting in Australia and, in particular, in NSW:

1. That Australian hunting legislation is very widely distributed in Acts and Regulations, especially in the States.
2. That hunting legislation and policy differ greatly between the States.
3. That the Federal Government has a very "hands-off" approach to hunting and gives few guidelines as to a national strategy. There is not even a national policy on hunting.
4. That Commonwealth guidance in Ecologically-Sustainable Development as compliance to membership of the International Convention has excluded hunting (more or less) while being quite explicit on fishing.
5. That this lack of guidance seems to be non-compliant with Australia's obligations to CBD, which demands more control and guidance.
6. That the interpretation of what hunting should be varies dramatically between States and makes compliance difficult. For instance, the federal obligations to control hunting tourism.
7. That NSW, despite the activities of the Game Council NSW, has

invested a lot of the control of hunting in other departments and agencies with seemingly contravening viewpoints.

8. That hunters themselves have so far put surprisingly little thought and effort into the development of a National Hunters Association which could more effectively represent the aims and legitimate interest of Australian hunters at the Federal, State and civic level. This has very recently and successfully been achieved in Spain. Such an organisation could also become an effective regulatory body for hunting, as is the case in many European countries.

While this summary is not overly-positive, it does present a huge range of opportunities and strategies which can be applied to improve Conservation Hunting in NSW and across Australia to ensure its rightful place as humanities most legitimate and oldest land-use.

It is also clear that the Game Council has made a significant start to address issues of Education, Organisation and Discipline and has sped up the evolution of Conservation Hunters in NSW. This process will ensure that NSW hunters do become Conservation Hunters who make contributions to natural resource management — as achieved in other countries.

While it could be argued that the Game Council was established because of political pressure and lobbying by hunters, after several years of operation and (in view of the diffused and unstructured regulation of that land-use) it has already achieved the alignment of Australian natural resource management approaches with other countries.

Regulating a land-use, such as Conservation Hunting, is not restricted to legislation and Government policy. It is also rarely voluntary or by self-regulation. In modern democratic societies, it is a balancing act between governance and self-regulation — informed and influenced by (and dependant upon) many bodies of a democratic civil society which can develop their own policies. They can then promote these (or attempt to do so) through legislation by pressure and lobbying.

As a natural resource-use activity, hunting is bound by the framework of Commonwealth and State legislation in Australia that is often developed for something else and, at times, does not even mention hunting, although this is the activity with which it deals.

In the Australian context, the governance framework for hunting is threefold. On its highest level, it is framed by the International Community of Nations which, by membership, consents to follow the rules set by International Conventions and Bodies. (For example for protected areas, Ramsar Sites, CBD, Agenda 21 etc.). As these rules are non-binding, nations often address them in strategies and policies, and sometimes only guidelines. On the Commonwealth level, governance of hunting is not explicitly-addressed in National Hunting Laws (as is common in Europe), but is laid out as very undefined, even 'unmentioned' strategic planning framework, while in the States themselves, only one so far, NSW has enshrined it in its own Act.

As to State legislation itself, Conservation Hunting in NSW is affected by three levels of legislative governance. That is, Federal and State and, to some degree, international agreements, (although these are mostly at a policy level and interpreted

in a national context making responses rather flexible). In tandem however, these three levels provide the legislative framework within which Conservation Hunting may occur and these levels are supported by a raft of policies which cover either those items not legislated or that complement legislation. Each of the Acts is available on the internet at the respective Government websites.

Significantly, this review has also shown that self-regulation of Conservation Hunters in Australia, crucially important in many European countries (where federally-organised State hunting organisations regulate hunting very successfully on behalf of the state) is in its infancy here. This is a colonial relic from England with its history of poor regulation of hunting by Government. The collection of hunting statistics in Great Britain, for instance, as a crucial evidence of governance was only initiated in the 1980s when it joined the European Group of the Collection for Game Statistics. This is a very recent advance if one considers that Finland has done this for 500 years. In England, governance of hunting by the public sector ("The Game Conservancy") has now greatly-complemented if not taken over the role of the State; a position which is very rudimentary compared to other countries.

With the formation of the Game Council, Government has dramatically improved its governance of hunting. The continuing progress of this new Act of governance will be determined ultimately by this body being complemented by improved self-regulation.

2.10.2 A Change of Culture: Hunting Regulation in NSW in the Spotlight

With the establishment of the Game Council, hunting is now regulated by a statutory body. This has also raised its profile in the public where in the past it was a mostly ignored issue "somewhere out there in the bush". Now however, Conservation Hunting, its advocates and its opponents, have all "come out of the bush" to voice their concerns or support as befits a democratic and regulated pluralistic society. Let us conclude with a brief demonstration of the dialectic of that new exchange where society and other agencies are coming to terms with this new player. While presumably long and painful, this dialectic is long overdue and ultimately to the benefit of NSW.

2.10.3 A Potential Role for Local Government?

Valerie Brown in her paper "Back to the Future" presented at the Fourth National Conference on Local Government Community Development in Perth in the 1990s [available as a compilation of essays on "Managing for Local Sustainability — Policy, Problem-solving, Practice and Place (Brown, 2004:194)] has suggested that, while local governments in Australia have always managed the environment "on behalf of the community" they now have to manage an increasing population with less resources. She also refers in this paper to a "national survey on elected members and staff of local government" who were quizzed on "their needs in managing environmental change". Perhaps more significantly, she suggested that local government has to manage many new "items" that they were previously not even aware of!

In this study, conflict management and coordination of information have emerged as the two most significant needs.

In conflict management, councils often have to compromise between the community they represent and the State and Federal Government agencies they serve. In the environmental arena, such pressures and conflicts are increasing by the week and she suggests that "Developers, conservationists, community services, economists, scientists and ratepayers all have something to say on almost every issue" (Brown, 2004: 194-195). Significantly, these agencies also have something to say about hunting. For example, if it should be allowed on public owned land such as State forests?

Quite predictably, many of them think not. Because this means that they think that there will suddenly be "armed" people in State forests who may shoot at them!

On the other hand, if one lives in the country, this objection seems somewhat at odds with what is going on in State forests and Crown Lands. (For example teams carrying-out fauna surveys in State forests over months in the western regions of NSW find — as one of the authors has done — the disconcerting and at times threatening experience of being woken-up many nights by people who think it is fun to drive around in four-wheel-drives shooting at everything which moves. These practices are carried out by people who have nothing to do with Conservation Hunting — they are simply criminals indiscriminately killing wildlife.

There is also no realistic means in place to check those activities and, if one meets armed people on one's own land (as one of the authors occasionally does), one can do very little about it even if one is threatened.

Conservation Hunters, on the other hand, have an R-licence and written permission to hunt a particular State forest. They also spend a lot of money on and act according to their own voluntary codes of practices which ideally contain many important benefits to the wider community (pest control, disease monitoring, reduction of traffic accidents). These are the people who are motivated and capable to help police such environments.

These licensed hunters also help stop such illegal practices in just about every country where they can carry out their land-use legally. So why not in NSW? And why have this not mediated and facilitated by local governments? It is only reasonable to expect that Conservation Hunters in possession of an R-licence and permission to hunt on State forests start their own policing function as they have over most of Europe for many decades.

This will not make forests less safe, but safer, because they will police State forests for the first time. This is hardly something that should be stopped by "the community" but fully-supported.

Let us also not forget that Conservation Hunters themselves are respected members of their local community.

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ATTACHMENT 3

Chapter 3

Wildlife and Game, Ferals and Pests

A review of current and potential game/pest species in NSW

ATTACHMENT 3

Contents

3.1 INTRODUCTION — PEST OR GAME ANIMAL HARVEST?

This chapter reviews the current status of "game" in NSW. For exotic species, we are guided by a 2007 study by the former Department of Primary Industries of NSW (DPI, renamed Department of Industry and Investment in 2009) by West and Saunders. This assessment, a first of its kind, provided a status assessment and benchmark, covering the entire State and was based on a full landholder questionnaire survey. This study also made what might be termed a first assessment of the role of Conservation Hunting in the control of exotic pests. This chapter will seek to identify opportunities and constraints of species of game, feral and native animals that may or could be hunted in NSW.

In this we will examine research undertaken by West and Saunders in 2007; an industry assessment by Ramsay in 1994; as well as author assessments (Lunney et al. 2007, Moriarty, 2004). In Chapters 5 and 6, we will review some of the findings as they are relevant for defining future approaches and strategies in developing the role of Conservation Hunting for the benefit of NSW.

NSW has an abundant resource of **exotic game**: goats, pigs, foxes, rabbits and hare, and six species of deer. The State also has an equally abundant resource of **native game**, including four species of macropods, which are sometimes treated as either pests or a commercial resource but are off limits for Conservation Hunters and farmers. There are also many other species of birds and mammals, hunted extensively in the past but are now fully protected, often because of severe population declines. Only one group of native species, some six species of ducks, can be harvested by Conservation Hunters and only if they are declared pests by specific rice farmers. Permission to hunt them must first be obtained from the NSW National Parks and Wildlife Service. With the decline of rice farming over the past seven years (from 1.7 million tonnes in 2001 to 27,000 tonnes in 2007), the future of this harvest is now uncertain.

Game in NSW has an unusual status. Unlike any other place on earth, every game species in NSW is an exotic animal. This is with the partial exception of some native duck species, which fall into the pest category in rice fields and thus become "game" for Conservation Hunters. This controversial categorisation of game species in NSW confronts the land-use of Conservation Hunting and we will discuss this in Chapter 5 under "The Antepodean Dilemma".

Firstly we will discuss the game species that can currently be hunted in NSW (and which *could* be hunted) with appropriate policy and legislative changes. As each of these species is also classified as a "pest", Conservation Hunting will firstly have

to comply with overall strategies to control and reduce these species. The harvest of the restricted list of game currently regulated by the Game Council has been defined under the Game and Feral Animal Control Act 2002. The Game Council administers the issuing of Game Hunting Licences; arranges with landowners to harvest game animals; develops educational strategies and material; and engages with other stakeholders in game and feral animal control.

Currently, the Game Council only regulates the hunting of:

1. Certain exotic species of mammals and birds (including six species of deer, pheasants, Californian quail, partridges, turkeys and peafowl).
2. Rabbits, hare, foxes, feral cats, wild dogs (not dingos), feral pigs, and feral goats.

Game Council is not involved in the administrated "regulation" of the harvest of four native species of macropods (Eastern Grey Kangaroo, Western Grey Kangaroo, Red Kangaroo, Wallaroo). These are either commercially harvested (see Kangaroo Industry Association of Australia (KIAA), controlled as a pest mitigation measure (outside of the Commercial Harvesting Zone), or are subjected to fertility treatment, translocation or euthanasia in large city catchments (Sydney, Canberra).

Conservation Hunters are currently not involved in any of these strategies. However, groups of licensed hunters and individuals may be utilised by individual landholders under the national parks permit system to remove excessive numbers of kangaroos from some properties.

In this Conservation Hunting role, the Game Council is guided by policies, guidelines, Codes of Conduct and research. Over the past decades, the Department of Primary Industries, federal agencies and universities have carried out a large body of research, survey and management of pest species in NSW. For the control and management of these species, Conservation Hunting is making a so far unquantified contribution. As pest mitigation is the overriding theme of Conservation Hunting in NSW, this assessment will start with West and Saunders (2007). We should first briefly condense Australia's State of the Environment (SoE) Reports.

3.2 AUSTRALIA'S EXOTIC VERTERBRATE PESTS — THE NATIONAL CONTEXT

The introduction of exotic animals in Australia has been described as "the largest ecological experiment ever conducted" with a great deal of research carried out on the impact of these species on the native ecosystems. After more than a century of evidence, their impact has been condensed in Australia's past two State of the Environment reports. In the *Australia State of the Environment Report 2001,* Williams (2001) discussed the strategies employed by the Federal Government:

> **For the Conservation of Australia's Biodiversity**
>
> One of the objectives of the National Strategy for the Conservation of Australia's Biodiversity was to implement effective controls for at least one introduced mammal and at least three introduced plant species by the year 2000… About 20 species of mammals, 25 species of birds, several amphibians

> and 19 species of freshwater fish make up the pest populations of Australia. TAPs have been prepared under the National Feral Animal Control Program for four of these species: the European fox, cat, rabbit and goat. These plans focus on strategic approaches to reducing, to an acceptable level, the effects and processes that threaten the long-term survival of native species and communities.
>
> Williams 2001, *Australia State of the Environment Report 2001, p* 106

In 2006, *the SoE Report 2006* has the following to say about feral animals:

> The current research that has been compiled on each of these species shows the following.
>
> **Rabbits:** Rabbits have contributed to the decline in a number of other native plants and animals. There is *some evidence* that they *may have caused* the extinction of several small ground-dwelling mammals of Australia's arid lands.
>
> **Foxes:** Foxes *may have played* a role in the decline of some species. There *does not appear to be any evidence* that they have caused or contributed to the extinction of any Australian species.
>
> **Cats**: Convincing evidence that feral cats exert a significant effect on native wildlife on the mainland, or in Tasmania, *is scarce*. There is *no evidence* of feral cats causing extinctions in mainland Australia or Tasmania.
>
> **Goats:** Feral goats *may be responsible* for a variety of impacts on native flora and fauna. Destruction of vegetation is also thought to cause soil erosion. There *does not appear to be any evidence* that they have caused or contributed to the extinction of any Australian species.
>
> **Pigs:** There are *few quantitative data* on actual environmental impacts of feral pigs. The relationship between feral pig density and level of environmental damage *is also unknown*. *There does not appear to be any evidence* that they have caused or contributed to the extinction of any Australian species.

This careful wording of "impacts" however is not so much evident at the NSW State level. With the Threatened Species and Conservation Act 1995 (see Chapter 2) the impact of exotic species has been more closely defined as Key Threatening Processes.

3.3 HUNTERS AND KEY THREATENING PROCESSES

Nowhere else is the dichotomy of "values" and proposed or imagined "remedies" for environmental decline in Australia or NSW so graphically displayed as in the listings of exotic game species as Key Threatening Processes for native endangered species, communities or ecosystems.

A key threatening process is defined in the Threatened Species Conservation Act 1995 as a process that threatens, or could threaten, the survival or evolutionary development of species, populations or ecological communities.

Something can be a threatening process if it:

- adversely affects two or more threatened species, populations or ecological communities; or
- could cause species, populations or ecological communities that are not currently threatened to become threatened.

The Relationship of Conservation Hunting to Key Priority Areas for Conservation

Conservation Hunting is connected in various ways to what have been identified in NSW as "Key Threatening Processes". These processes pose risks to either native plants, animals, communities, or ecosystems. Conservation Hunting can help reduce these processes but the relationship is not a straightforward one

A Priorities Action Statement (PAS) has been prepared by the Department of Environment and Conservation in order to: "promote the recovery of threatened species and the abatement of Key Threatening Processes in New South Wales". The PAS identifies broad strategies to help threatened plants and animals recover in New South Wales with each of these strategies containing more specific priority actions. A total of 20 strategies and 793 priority actions have been identified in PAS and they can be accessed at: http://www.threatenedspecies.environment.nsw.gov.au/index.aspx.

Hunting relates to six of these processes in both positive ones and in negative perspectives. A total of 11 threat-abatement strategies have been identified to help tackle these key threatening processes. Each of these strategies has a number of priority actions within them (see Table 3.1).

Managing exotic species on a geographical basis

Some of these strategies have been developed on an area and location basis. These strategies offer a geographical focus to priority areas and aim to combine management for the various species in that area.

Priority actions are matched to three types of "geographic areas" in the Priorities Action Statement. The Catchment Management Authorities's (CMA) interactive map (www.cma.nsw.gov.au) shows all catchment management authority (CMA) regions. Selecting a catchment management authority region on the interactive map shows priority actions that apply to the region.

Important notes:

- A number of actions have been assigned to only one type of "geographic area", especially when the action applies to a specific land manager.
- Other actions may occur across the full range of a species and be recorded in both "geographic areas".
- Some actions have not been assigned a "geographic area" because they are generic to a species rather than a specific location. Similarly, some actions for Key Threatening Processes apply across all of NSW and have not been allocated a "geographic area".

Table 3.1: Key Threatening Process

Name of threatening process	Type of threatening process
Invasion and establishment of **exotic vines and scramblers**	Weed
Invasion of native plant communities by **bitou bush** and **boneseed**	Weed
Invasion of native plant communities by **exotic perennial grasses**	Weed
Invasion, establishment and spread of *Lantana camara*	Weed
Competition and grazing by the **feral European rabbit**	Pest animal
Competition and habitat degradation by **feral goats** (*Capra hircus*)	Pest animal
Competition from **feral honeybees**	Pest animal
Herbivory and environmental degradation caused by **feral deer**	Pest animal
Importation of **red imported fire ants** into NSW	Pest animal
Introduction of the **large earth bumblebee** (*Bombus terrestris*)	Pest animal
Invasion and establishment of the **Cane Toad**	Pest animal
Invasion of the **yellow crazy ant** (*Anoplolepis gracilipes*)	Pest animal
Predation by **feral cats**	Pest animal
Predation by the **European Red Fox**	Pest animal
Predation by the **Plague Minnow** (*Gambusia holbrooki*)	Pest animal
Predation by the **ship rat (***Rattus rattus***) on Lord Howe Island**	Pest animal
Predation, habitat degradation, competition and disease transmission by **feral pigs** (*Sus scrofa*)	Pest animal
Alteration of habitat following **subsidence due to long-wall mining**	Habitat loss/change
Alteration to the natural flow regimes of rivers, streams, floodplains & wetlands.	Habitat loss/change
Bushrock Removal	Habitat loss/change
Clearing of native vegetation	Habitat loss/change
Name of threatening process	**Type of threatening process**
Ecological consequences of **high frequency fires**	Habitat loss/change
Human-caused **Climate Change**	Habitat loss/change
Loss and/or degradation of **sites used for hill-topping by butterflies**	Habitat loss/change
Removal of **dead wood and dead trees**	Habitat loss/change
Infection by **Psittacine circoviral (beak & feather) disease** affecting endangered psittacine species	Disease
Infection of frogs by amphibian chytrid fungus causing the disease chytridiomycosis	Disease
Infection of native plants by *Phytophthora cinnamomi*	Disease
Death or injury to marine species following capture in **shark control programs on ocean beaches**	Other threat
Entanglement in, or ingestion of **anthropogenic debris in marine and estuarine environments**	

Table 3.2: Herbivory and environmental degradation caused by feral deer — Priority Actions

Description of priority action	Priority
Threat abatement strategy: Community and land-holder liaison/awareness and/or education	
Develop and implement community-based education and management program	Medium
Threat abatement strategy: Develop and implement protocols and guidelines	
Implement best practice guidelines for deer management in Royal National Park	High
Threat abatement strategy: Establish management agreements with public authorities, CMAs and land owners	
Develop and implement community-based education and management program; develop agreement between land managers and the Game Council	Medium
Threat abatement strategy: measure response to control	
Measure deer and vegetation response to management programs such as the Deer Plan for the Royal National Park	High
Threat abatement strategy: Prepare Statement of Intent	
Prepare statement of intent explaining how feral deer will be managed by 2007	Low
Threat abatement strategy: Prioritise control actions	
Prioritise deer control based on social and biodiversity impacts	High
Threat abatement strategy: Research	
Explore options for deer management across land tenures.	High
Eastblish monitoring programs examining deer impact on biodiversity as a function of deer density	Medium
Threat abatement strategy: Review and amend or adopt existing legislation and policies	
Develop specific legislation for deer management	High
Threat abatement strategy: Review evidence of impacts	
Identify biodiversity at risk from herbivory and environmental degradation caused by feral deer	High
Threat abatement strategy: Survey/Mapping and habitat assessment	
Survey distribution and abundance of deer	High
Threat abatement strategy: Undertake control actions	
Continue control program at Royal NP and other priority areas; manage new populations	Medium

The strategies developed in the Key Threatening Processes policies make wildlife management sense and provide a framework to integrate management and resources. As the term "Key Threatening Process" is a highly-divisive term for species which are also game, "wildlife management" might be a better phrase.

3.4 The Status of Pest Animals in NSW

Pest Animal Survey 2004–2006 (published May 2007)

This document is part of a larger publication. The remaining parts and full version of the publication can be found at:

http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0011/138674/Pest-animal-survey-full.pdf

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EXECUTIVE SUMMARY

The environmental, economic, and social impacts of invasive pest animals in Australia cost in-excess of $700 million annually (Mcleod 2004). Invasive pest animals inhabit all regions of the State, and are well-recognised as causing significant losses to primary production, damaging environmental assets, threatening native species and communities, and impacting on social values. Effective management of pests and their adverse impacts often requires a coordinated approach between government, regional organisations and landholders. All groups have a shared responsibility to ensure the sustainable management of natural resources and to address the damage caused by pest animals throughout NSW. Information contained in this report represents the findings of one approach in monitoring and reporting aimed at presenting information on the distribution, abundance, impacts and control of pest species throughout NSW. The species addressed in this survey are *feral pigs, feral goats, wild deer, foxes, rabbits, wild dogs and dingoes, feral cats, European starlings, European carp and cane toads*.

In the years preceding this survey, widespread drought was thought to have caused significant reductions in the extent and associated impacts of many pest species. While localised reductions in abundance, accompanied by reductions in impacts, were observed during this period, broad-scale reductions in animal populations were not apparent. Most species were perceived to have endured the drought conditions throughout much of their range. Some species even marginally increased their range. Reluctance or an inability of many landholders to undertake control activities may have lead to some pest populations increasing during this period. Activities such as illegal transportation and release of some species were also implicated as contributing to these trends.

Of particular concern is that the range of wild deer (comprising 6 species in NSW) has increased considerably in recent years. Wild deer have been reported from an additional 30 separate locations throughout the State (equating to over 8000km^2). This trend raises a concern that without development and implementation of cost-effective control strategies; adequate resourcing for control; and on-going surveillance for emergent populations, wild deer may spread further throughout the State and may become prohibitively costly to control.

Increases in pest abundance do not always directly translate to increases

in pest impacts. While there were anecdotal accounts of reductions in pest impacts, the types of impacts observed throughout NSW were very similar to those reported during 2002. This report presents changes in the perceived impacts of pest animals between 2002 and 2004/05 as a benchmark for assessing future trends in impacts throughout the State. Measuring and reporting spatial and temporal trends in the impacts of pest animals, particularly in response to control or changes in control practices, is vital for the development of cost-effective management programs. *This survey also indicates that the impacts of most species (and control measures implemented to counteract those impacts) were highly varied between Divisions of the State.* These findings support *a need for region-specific management plans and control strategies, and an equal need for monitoring programs* to complement those plans.

There are a wide variety of control techniques used to counter-act the impacts of pest animals throughout NSW. *Commonly used techniques include, trapping, aerial shooting, poison baiting and the use of livestock guarding animals.* For some species, *commercial harvesting also remains an important control technique*, and can be used to rapidly reduce populations and simultaneously provide an income. *Recreational hunting is also widely used for several pest species, however, careful planning and regulation are required to ensure activities are targeted to maximise their effectiveness at reducing the impacts of pest animals.* In short, *mechanical control techniques were most commonly used for all species*, followed by chemical control, and biological control techniques.

The development of management plans and monitoring strategies is critical in the process of controlling pest animals and their impacts. There are a wide variety of tools and techniques available for pest control, and planning an integrated approach (using a range of techniques) is considered the best way to reduce the long-term impacts of pest animals. Furthermore, adopting best-practice management principles through problem definition, identifying the pest species of concern and their geographic range, developing and implementing collaborative management strategies, and monitoring outcomes are also crucial steps in pest animal management planning (Braysher and Saunders, 2007). In recent years, management authorities and land managers have been encouraged to adopt best-practice principles and develop management plans through PESTPLAN (Braysher and Saunders, 2003) which provides a valuable tool to assist land managers develop regional management plans and strategies tailored specifically to their regional circumstances.

Monitoring the success of management strategies using appropriate methods is essential to maximise cost-effectiveness. This can be achieved by carefully assessing the extent and impacts of pest animals in response to control. Monitoring is also important for identifying priorities for management planning and resourcing; evaluating previous management activities; and raising awareness and education of issues, problems and opportunities. Relief from the long-term impacts of pests can only be achieved if these principles are applied. Commonly used techniques for monitoring pest populations include spotlight counts, aerial surveys, counts of animal sign, trapping techniques and various measurements of animal damage (Mitchell and Balogh, 2007).

It is important that meaningful information on pest animals is made available to stakeholders during the planning of control programs. *This report provides state-wide representation of pest animal extent, impacts and control to provide a platform for regional pest animal planning, and a benchmark for ongoing monitoring and reporting activities.*

3.5 THE ROLE OF CONSERVATION HUNTING IN FERAL ANIMAL CONTROL IN NSW

The control of vertebrate pests in NSW — as our reference study by West and Saunders (2007) shows — relies on some 12 control methods applied differently for varying pest species (deer contains six species). One might observe that toxic baits are the major means for the control of Canids (Red Fox, Feral Dog, Dingo), while hunting (which includes ground-hunting, aerial-shooting, mustering, and trapping) are the most universally-applied means of control for the remainder of the species. This is particularly important for pigs and, as Fig 3.1. below shows, almost the exclusive control method for the six species of deer. One could say that 'shooting' (or expressed in another word 'hunting') remains the most universally-applied and — with the exception of canids — the most effective way of controlling vertebrate pests in NSW.

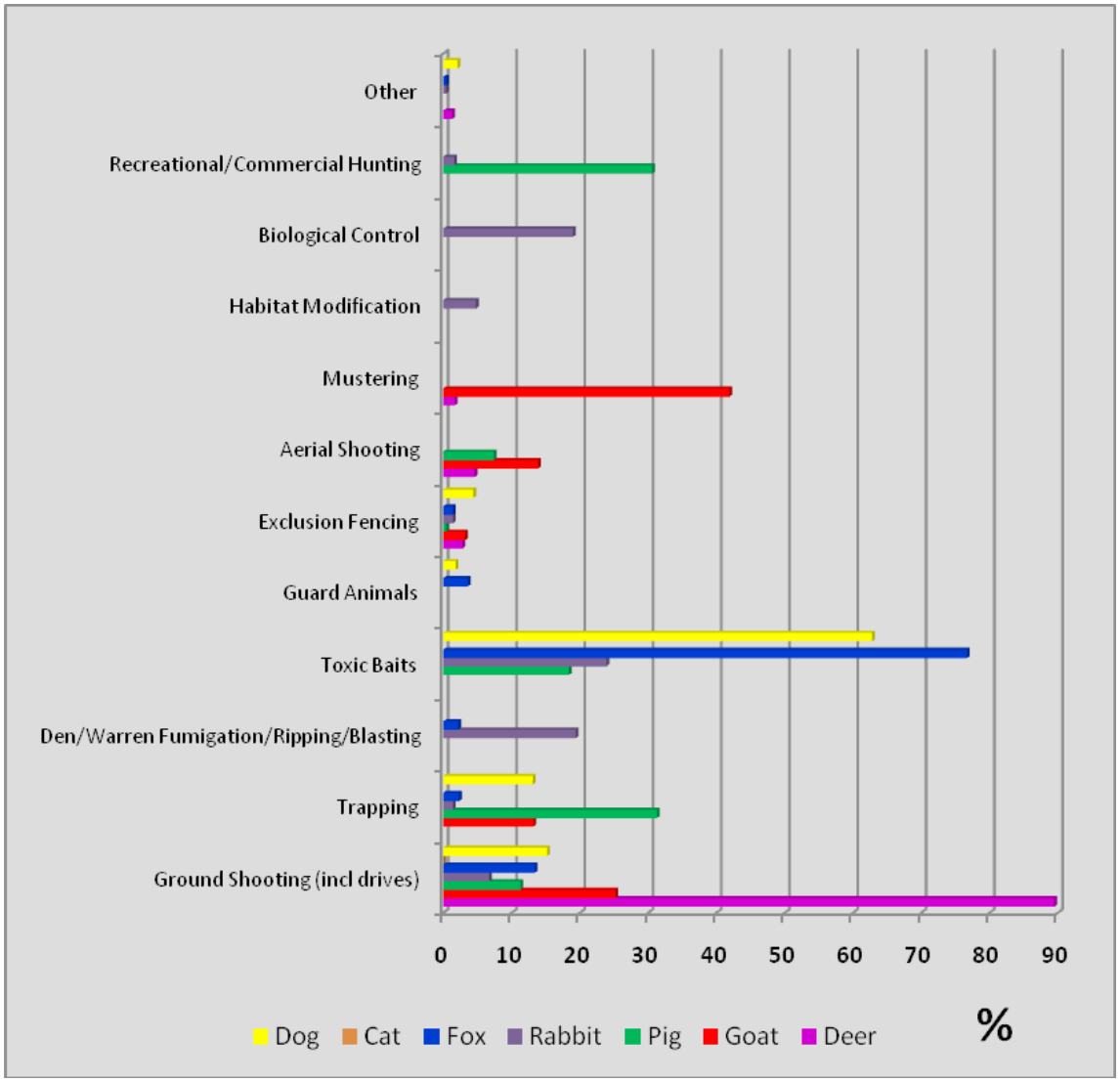


Fig 3.1 Control Methods applied for the major vertebrate pests in NSW *(after a survey by DPI from West and Saunders, 2007)*

This review by these DPI scientists suggests that *Conservation Hunters already play an important, if essentially unquantified, un-researched and, therefore, unacknowledged role in the management of feral pests, and in particular pigs.* With these figures alone,

Conservation Hunting must therefore be accepted as a major and indispensible control method for feral pests in NSW. This control is a free service provided to our society but which also generates substantial benefits and income. Recreational pig hunting on its own is known to generate many millions of dollars for the NSW economy (see Chapter 4). The same is true for deer hunting. Once this fact is accepted, as it is many other countries, the role of Conservation Hunting can be maximised. In the following chapter, we will discuss this role, specifically for the control of exotic pest and native species.

3.6 A REVIEW OF EXOTIC GAME SPECIES IN NSW

Animals in NSW and in Australia are classified along a dichotomous divide — the "native" species that Europeans found when they entered Australia and the "exotic" species that they brought with them and released. There are some species which challenge this simplified system. The dingo, actually an outsider in Australia in a taxonomy sense, arrived many thousands of years ago with the Aboriginal people. But there are also now doubts about the cat, believed to have arrived in northern Australia before that magic date when Europeans first stepped ashore. Some scientists even suspect the pig to have arrived earlier, possibly thousands of years ago (see Ramsay, 1994). There is now anthropological research by Heinsohn (2003) which found overwhelming evidence of active and widespread fauna transportation-trade between the islands to Australia's north (and presumably the Australian continent) as early as 23,000 years ago.

This controversy is not of scientific interest only. It is also of crucial importance because it has been used to define, rank, evaluate, and prioritise the impact of animals on the Australian environment. These impacts become much harder to justify to ecologists (and policy makers) when it is believed that they were caused by an "exotic" species. One of the outcomes of this is to define a wildlife management system which we have called in this report dichotomous. For Conservation Hunting, that dichotomy and its outcomes are discussed in Chapter 5, which we have called the 'Antepodean Dilemma'.

A detailed assessment exists now for NSW in which West and Saunders (2007) have attempted to review the status of vertebrate pests in NSW through a comprehensive questionnaire survey. In the following sections, we examine this review from a Conservation Hunting context and supplements it with other relevant information (Ramsay, 1994). The purpose of this review is to better identify and examine the role of Conservation Hunting in the control of exotic pests. We will do this by critically examining the "official" assessments of particular pests (based on West and Saunders, 2007).

3.6.1 Conservation Hunting the Ubiquitous Four

Hunting in post-colonial Australia and NSW starts with the rabbit, the fox and, to a lesser degree, the cat and the hare. If one excludes livestock such as sheep and cattle, the former three have become the dominant predators and small herbivores of Australia as well as the penultimate examples as to what exotic species can do to an unadapted and fragile environment that they were released into.

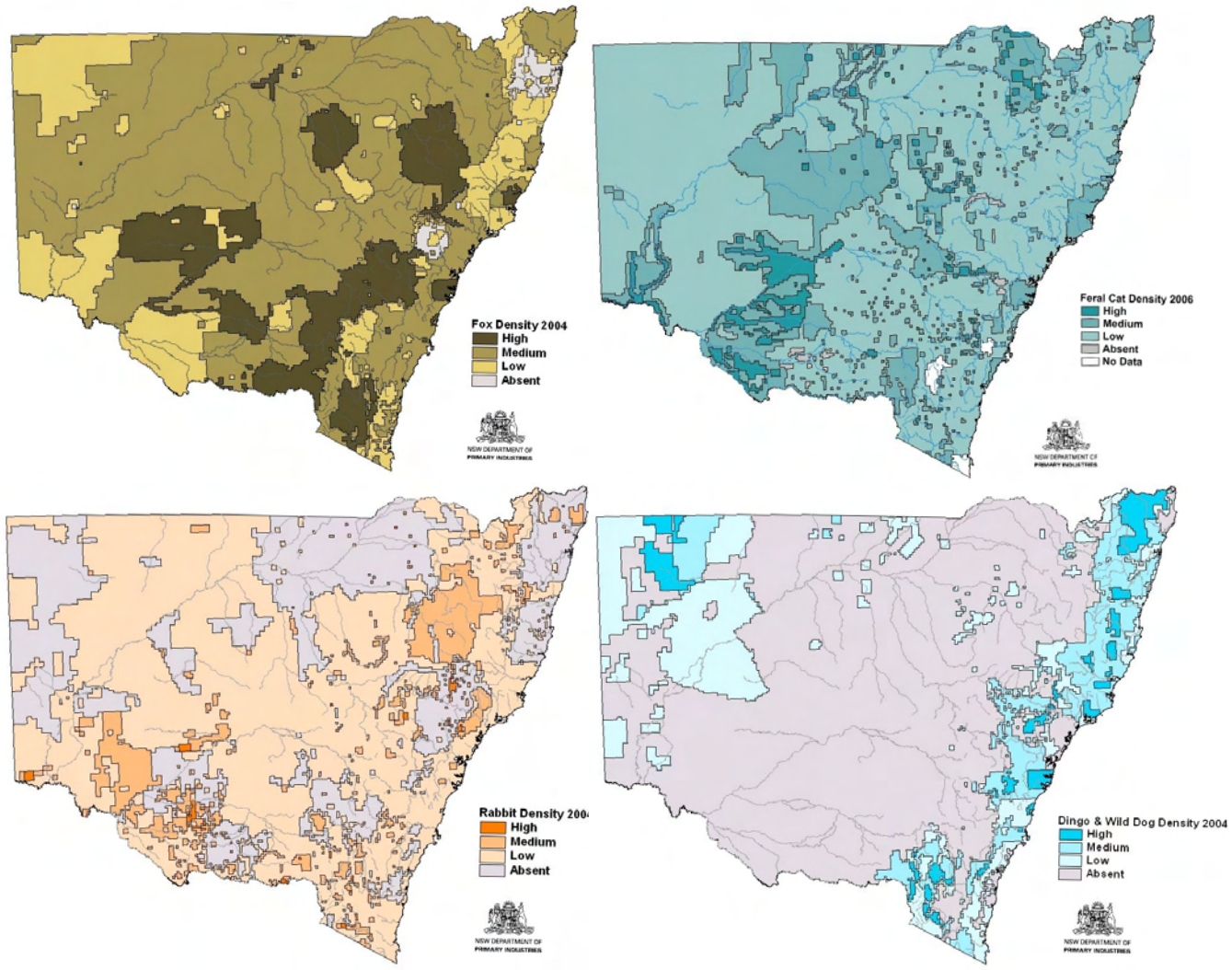


Fig. 3.2 Distribution of medium sized predators and the rabbit in NSW. Top left shows red fox distribution; top right shows feral cat distribution, bottom left shows rabbit distribution; and bottom right shows wild dog and dingo (from West and Saunders, 2007)

If one looks at the distribution of the three main predators in NSW, the red fox, the feral cat, and wild dog (native and feral) it is evident that there is considerable overlap between foxes and rabbits, their major prey, while dogs have their centres of distribution along the coast and adjacent mountain ranges with a rather isolated hotspot in the very northwest of NSW.

3.6.1.1 Rabbits: Declining Control and Significant Hunting Resource

West and Saunders (2007) have the following to say about rabbits in NSW:

> Rabbits were introduced to mainland Australian in 1858 from England (Myers 1995). The distribution of wild rabbits in Australia now encompasses all States and Territories. They inhabit dry arid and semi-arid landscapes through to alpine tundra (Williams et al. 1995). Historically, rabbits have been considered an agricultural pest mainly to graziers because they compete with livestock for pasture. Rabbits are also a major environmental pest as they compete with

> native grazing animals, cause damage to native vegetation communities, cause and accelerate soil erosion, and are implicated in long-term land degradation (Williams et al. 1995) … Rabbits … are a declared pest animal under the Rural Lands Protection Act (1998), and competition and grazing by rabbits has been listed as a *Key Threatening Process under the NSW Threatened Species Conservation Act (1995)*… In NSW, rabbits are widely distributed throughout all Districts (figure 24). Most of NSW is… characterised by widespread low-density populations combined with numerous fragmented medium-high density populations… Since 2002, rabbits have slightly increased their total range throughout NSW, and currently occupy approximately 569,000km^2 (70.9 per cent) of the State… This trend is consistent with a gradual recovery of rabbits throughout Australia following the widespread release of rabbit calicivirus disease a decade ago. Conversely, the total area reported as containing high and medium density populations has declined, while areas reported as low has increased, suggesting a decline in abundance. Widespread drought conditions may have caused this perceived trend… According to the survey participants, the highest impacts of rabbits in NSW during 2004 were competition for pasture, followed by soil erosion and land degradation, and prevention of native vegetation regeneration (figure 25). Other impacts were competition with native wildlife (primarily for food), spread of weeds… and exotic disease threat…

The surveys conducted by these authors showed that *a typical feature of rabbit control in NSW was the variability of means used.* Although almost 10 per cent of rabbits are taken (controlled) by ground-shooting and trapping, recreational shooting is of minor importance in rabbit control, which mostly relies on toxic bait. The major unquantifiable "control" of rabbits however occurs through the continuing pathogen-rabbit interaction (Myxoma and Calici viruses) affecting populations. Despite these large and well-documented ecological impacts however, there is a historical resource perspective for rabbits. Before 1950 and the release of the myxoma virus: "the trade in rabbit products (mostly taken by shooting) was a major domestic and export industry in Australia providing significant employment and income for the rural sector" (Ramsay, 1994:122). In 1948, for instance, 50 million wild rabbits generated a market value of GBP4.1 million, equal to all the exports of mutton and lamb for that year. According to this author, the market had declined to 2–3 million animals in the early 1990s, and these mostly for domestic supply. About hunting Ramsay says:

> Wild Rabbits are… a significant resource for subsistence and sport hunters. Many Aboriginals living in Central Australia actively hunt wild rabbits for food… [or]… may… sell rabbits to their community store or to commercial processors.
>
> Ramsay, 1994:122

Hunting and Harvesting Rabbits

Ramsay suggests that the rabbit industry consists of shooters and field agents (field-based) and processors and wholesalers (city-based). For the former, the hunting and sale of rabbits is an opportunistic industry dependant on rabbit abundance and prices with an "an experienced shooter being able to harvest over 200 rabbits

per night." Ramsay also suggests that: "because there are no restrictions on rabbit shooting, the number of shooters working has a strong influence on the number of rabbits harvested."

He further suggests, however, that because of increasingly effective and integrated control techniques (as West and Saunders found in their survey) the supply to the rabbit industry might further decrease. This forecast is borne out by the West and Saunders survey which suggests that, most regions in NSW (excepting 5–6 small hotspots) have become unsuitable for intensive rabbit harvest. For recreational hunters, however, rabbits remain an abundant and important hunting resource, even if the challenges to hunt them have increased. There is however uncertainty in this; as the post-Calici and Myxoma eruptions taking place in New Zealand shows.

The hunter targeting rabbits is difficult to categorise. Terms such as recreation-professional-commercial-control are interchangeable for the rabbit hunter as a population segment and as an individual. This all depends on opportunity, rabbit numbers, and a rural economy to which 'hunters' adaptively-respond in various fashions. Rather than trying to categorise hunters into artificial segments, we should think of people who hunt rabbits for a variety of forever-changing purposes. This fact even applies to Aboriginal people for whom rabbits have become an important source of food for subsistence but who also derive commercial benefits from them by supplying local and regional markets. This might well make rabbit hunting a feature which adds economical resilience to Australia's rural economy.

3.6.1.2 Fox Control in NSW — A Role for Conservation Hunters?

> Foxes were first introduced to Victoria for sport hunting in the 1870s are now widely distributed throughout NSW and Australia. They are a well recognised environmental and agricultural pest, causing significant impacts to native wildlife conservation, and agricultural livestock production. Foxes are opportunistic predators and scavengers and inhabit a wide range of habitats (Saunders et al. 1995), including urban/residential areas where resources and shelter are plentiful. Their national distribution largely resembles that of rabbits, and they are often found in low numbers where dingoes are abundant (Saunders et al. 1995)… Importantly, foxes may carry and transmit infectious diseases such as rabies. Predation by foxes is listed as a *Key Threatening Process under the Threatened Species Conservation Act (1999)* and in *Australia under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)*. Foxes are also listed as a *declared pest animal under the Rural Lands Protection Act (1998)*.
>
> (West and Saunders, 2007: 41)

The DPI survey for NSW suggests that trapping and shooting still constitutes almost 16 per cent of fox control techniques employed by farmers. West and Saunders (2007) also suggest, in their most recent assessment, that *the most important strategy for effective fox control is coordination between landholders, integrated techniques (including shooting) and consistency*. Currently the official control response for foxes is focussed on baiting

with 1080. However, there have been a number of new concerns for that approach which include:

1. Renewed and magnified concerns *about baiting impacts on non-target species* (Glen and Dickman, 2003) and
2. Claims about *non-humane effects of 1080* by new studies (used by RSPCA to lobby for the phasing out of 1080 as a toxin).
3. The continuing emphasis on the use toxic baits — despite welfare concerns — and the downplaying of Conservation Hunting (which has arguably greater scope for improvement than baiting) is of concern.

> The States' drought assistance program in western *NSW almost exclusively involved provision of poison baits to landholders*, perhaps explaining the marginal increase in baiting throughout the State. Poison baiting with 1080 represents the primary control technique being used throughout NSW (figure 3.2). There were no Divisions of NSW where poison baiting represented the only technique used, however other techniques rarely represented more than 18 per cent of overall technique use. Ground shooting was the second-most commonly used technique, being used in all Divisions.
>
> West and Saunders (2007)

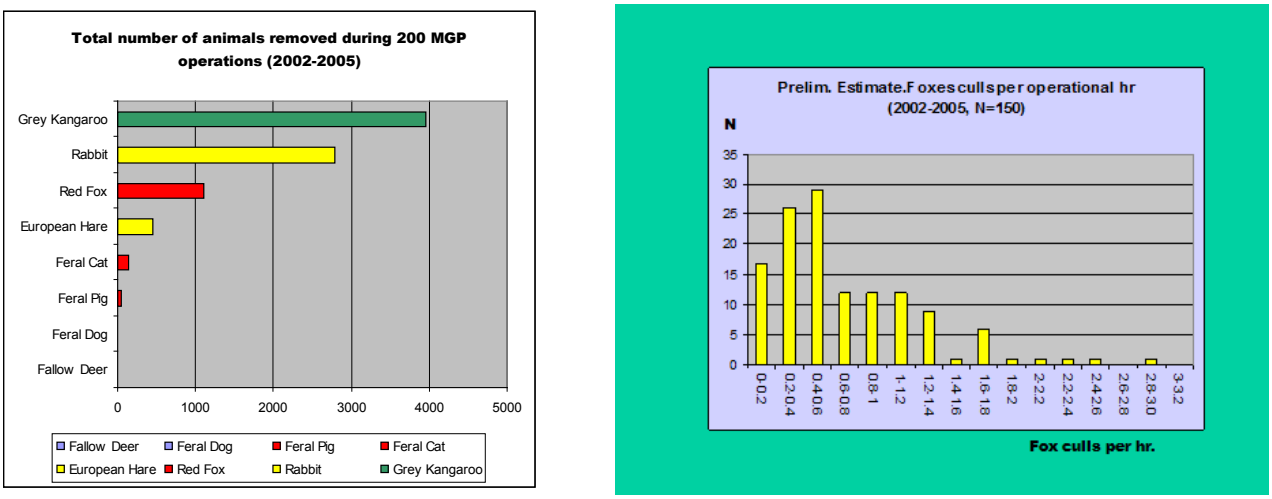


Fig 3.3 Effectiveness of Hunting of Red Fox by a highly experienced fox specialist who combines marksmanship with an in-depth understanding and use of fox behaviour.

The above example highlights and effectiveness of hunting (by either farmers, hunters, or "professionals") for the control of these species. In this report McLeod et al (2007) compared the effectiveness of toxic baits and shooting, which they divided into "recreational" and "professional" for no apparent reason.

Some of their conclusions are remarkable and will be investigated in Chapter 6 as they suggest a new role and appreciation for shooting (hunting) foxes. Here, we will only briefly record some of their major conclusions on effectiveness and associated costs.

> Drawing cost-effectiveness comparisons between baiting and shooting is difficult. Not only is there a difficulty in defining a measurable outcome that can be compared, it is also difficult to measure the actual outcomes. This study

> attempted to compare the cost-effectiveness of the two methods using the cost per fox killed as the measurable outcome, Unfortunately, although this is easily ascertained for shooting… it is not so straight forward for baiting. Death from consuming a 1080 bait does not occur instantaneously, so carcasses can be difficult to detect… General assumptions on the type of baiting program were made… The cost of a typical 1080 baiting program was calculated to around $5 per fox. This contrasted with the cost of using recreational shooters of around $40 per fox. The low cost of the baiting was largely due to the assumed efficiency of the program. If the efficiency of baiting was reduced to below 10 per cent (i.e. less than one fox in ten was killed) then the cost per fox of this method became comparable to that of shooting. Therefore, although 1080 baiting… there would be some circumstances when shooting is the more cost-effective method... Although generally not as cost-efficient as 1080 baiting in terms of the cost per fox killed, shooting by both recreational and professional shooters, is an important fox management tool.
>
> McLeod, L., G. Saunders, S. McLeod and M Walter, 2007

Judging from this conclusion by the State's foremost vertebrate pest research group, it seems official that Conservation Hunting is an "important fox management tool especially when we take into consideration that the cost is to the Conservation Hunter not the landowner or land manager." This however understates the real state of affairs as "costs" are not just financial ones, but the ecological costs of baiting and the social costs of using a method which even the RSPCA has started to question.

This brief description of the issues around shooting and baiting offers room for thought. They also suggest nothing less than a total re-evaluation of the two methods. As this re-evaluation may well present a major opportunity for Conservation Hunting, we will investigate this issue in more detail in Chapter 6.

Experiences of the authors with one professional feral pest control firm suggests (see Fig. 3.3) that skill may play a large and greatly underestimated role in the success of fox hunting. This concept is poorly understood and efforts should therefore be made by Conservation Hunters to document, enhance, and popularise-extrapolate, these considerable skills.

3.6.1.3 The Contribution of Conservation Hunting in the Management of Cats in NSW

There is now general agreement that domestic cats were introduced to Australia prior to European settlement. This problem, however, has been greatly enhanced with countless releases of unwanted pets to control rabbits, and domestic escapees. Today, cats may be found in almost every habitat of Australia where they prey on a wide range of native species. Because of this, feral cats have been listed as a Key Threatening Process in NSW under the Threatened Species Conservation Act 1995 and the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). West and Saunders survey has the following to say about cats in NSW.

> A number of areas were reported as containing no feral cats, possibly asociated with high numbers of other large predators (eg foxes, dingoes and wild dogs), or possibly associated with control activities for other species. *While the abundance of feral cats has been reported as low throughout most of western NSW,*

> *anecdotal evidence suggests many areas in this region contain very few if any feral cats.* However, without rigorous field surveys and sampling, it was not possible to verify if areas marked as 'absent' were realistic. *Feral cats are notoriously difficult to locate* and particularly difficult to map. For these reasons, combined with their highly mobile, elusive and cryptic behaviour, caution is required interpreting the abundance information presented for NSW… Anecdotal evidence also suggests *feral cat numbers fluctuate in the western regions of the State* more drastically than in higher rainfall regions where prey resources are more stable. No previous information is available to assess change in feral cat distribution and abundance. It is hoped information contained in this survey can form the basis of future assessments of feral cat distribution and abundance… *The management of feral cats is difficult because there are no formalised control techniques* currently available for widespread application, and because feral cats are wide ranging through NSW. Apart from ground shooting, *there are few alternative techniques to control feral cats that are target-specific, effective and readily available to land holders.* Exclusion fencing can be applied to small areas (at considerable cost); trapping can be labour-intensive and may be of limited success; and there are currently no registered chemical control techniques for feral cats.
>
> West and Saunders, 2007

The highlighted sections in the West and Saunders (2007) report suggest that Conservation Hunting is the most important control agents for cats. Also, as the largest impact of cats is on native fauna, the control of cat numbers could be especially important in areas which are known to contain endangered small species vulnerable to cat predation or where efforts are being made to re-establish native species.

This work is notoriously difficult and mostly impossible in unfenced conditions. This problem is even found in fenced locations where it is often impossible to keep cats out. For example in Western Plains Zoo Fauna and Flora Sanctuary near Dubbo (only 150 ha) it is impossible to keep cats out despite a Jurrassic Park-type electric fence greatly exceeding what is generally needed for predator exclusion.

However, local and perhaps regional control or, at least, temporary significant reductions of cat populations is possible by hunting. This must be based on a good understanding of cat behaviour (and patience).

3.6.1.4 Hare — Pest or Undervalued Game Resource?

The European hare is a native of northern Africa which expanded across Europe as far as China and is one of Europe's premier species of game. Because of its quality as hunting quarry and venison, it has been introduced into many other countries. The European hare, introduced into Australia several times since 1837 has, after an initial population eruption, remained a "minor exotic pest". The European hare in NSW is hardly mentioned in West and Saunders's (2007) assessment of feral animal pests, while four and a half pages are dedicated to it — compared to two pages for six species of deer then — by Ramsay (1994) in his national assessment of the commercial use of wild animals.

Several historical studies, reported in Ramsay (1994) and West and Saunders (2007) suggest that hare populations in NSW declined once rabbits and foxes

increased. In 1994, the commercial sale of hare meat was estimated at only A$200,000 (Ramsay, 1994). Field shooting was the most effective means to reduce populations for vegetation re-establishment. Hare are generally shot as part of a multi-species harvest, particularly fox control. As discussed in Chapter 6, hare-hunting in NSW provides an unexplored hunting opportunity with none of the controversy characterising hunting of other species.

3.6.2 Major Pest and Major Resource: Goats in NSW

Feral goats damage vegetation, soils and native fauna over large areas of pastoral land that are overgrazed. Populations can increase by 75 per cent annually. Australia has an estimated 2.6 million feral goats.

West and Saunders (2007) describe goats as follows:

> Feral goats in Australia are descendents of various breeds of domestic stock introduced in1788 by European settlers and on many subsequent occasions (DEH 2004b, Henzell 1995). They are currently found in all States and Territories of Australia and many offshore islands, with the exception of the Northern Territory (Parkes et al., 1996). Feral goat populations have established from escaped or released domestic animals, and more recently from animals released to control weeds (McLeod, 2004). Feral goats are generalist herbivores that graze and browse a variety of food types including pastures, foliage, twigs, bark and fruit (NSW Scientific Committee 2004b). They can withstand long periods of drought, and move large distances between food and water resources. Feral goats usually form herds, but males and females live separately for much of the year. Breeding is dependent on food availability, and females can breed twice per year allowing populations to increase quickly when resources are abundant. Feral goats are found in many areas of NSW, including arid and semi-arid rangelands, as well as higher rainfall and agricultural areas of eastern NSW. They have benefited from sheep grazing practices and the provision of artificial water points throughout the dryer regions of NSW. In 2002, feral goats inhabited 37 per cent of NSW and the ACT (West and Saunders, 2003). Although the majority of feral goats exist throughout western NSW, many isolated populations also occur throughout the northern and southern tablelands (Parkes et al., 1996, West and Saunders, 2003).The impacts of feral goats include losses to agricultural production, damage to the environment, and impacts on society. Competition and land degradation by feral goats has been listed as a Key Threatening Process in Australia under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act), and in NSW under the Threatened Species Conservation Act (1995). The damage caused by feral goats to pasture costs Australian producers an estimated $20 million annually, and there are also sizable costs associated with the control of feral goats (McLeod, 2004). Estimates for control costs would be substantially higher if the costs of commercial harvesting operations were included. Feral goats are also often found in close association with domestic sheep, raising concern that they may transmit or maintain contagious diseases such as foot-and-mouth disease. Although feral goats are a pest species, they are also commercially harvested in many regions of NSW and represent a valuable commodity when game meat prices are high.

The distribution of goats in NSW is concentrated in the dry western regions with an expanding number of hotspots along the Slopes and Tablelands. In 1991–1992, 960,000 goats were processed in abattoirs in Australia with goat meat exports worth A$20.4 million. This makes goats an important rural industry although they do have — like sheep — large environmental impacts at high densities.

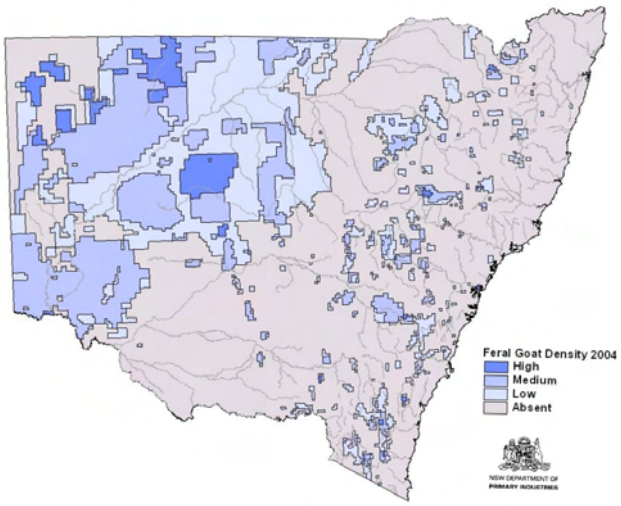


Figure 3.4 Density of feral goats throughout NSW and the ACT during 2004 (From West and Saunders, 2007)

Conservation Hunting and Feral Goats

Feral goats, due to their highly gregarious nature and preference for open and arid regions, are very susceptible to hunting. Ground hunting has been the most effective method to control and sometimes even exterminate goat populations on a number of Pacific islands over the past 30 years. Similarly, aerial shooting as applied by the NPWS in Protected Areas and also as pest control over vast land areas in Western Australia has also proven highly effective, especially if supported by the Judas-Goat methodology (a goat wearing a radio-transmitter seeking out goat groups). If combined with trapping and mustering (two further effective options), goats are both, *a major environmental threat and a relatively easily-accessible and easy to regulate wildlife-hunting resource.*

The role of Conservation Hunters in all this is unclear. Ramsay's national assessment suggested in 1990 that: "Ground shooting by recreational hunters and professional shooters supplying the game meat trade is significant, but the impact of recreational hunters is poorly quantified." (1994:107). He also suggests that "the number of goats killed for pest control would vary widely between years, depending on the commercial value of goats, the size of goat populations, and on the resources available to pest control agencies and landowners." (1994:107).

In NSW, according to West and Saunders, almost 40 per cent of goats are shot (25 per cent on the ground), with another 40–60 per cent being mustered, constituting an important resource to landholders. Significantly Ramsay suggests that more cost effective commercial harvesting of goats is more effective in goat control but needs to be integrated with control programs.

As many goat populations inhabit relatively open country, they can be controlled effectively if returns are high or sufficient funds for pest control exist. The role of Conservation Hunters in this scenario can be maximised as feral goats

have acquired a trophy value sought by many Conservation Hunters. Many ethnic minority groups also value goat meat highly for use in traditional dishes.

In Volume II, Chapter 6, we will examine case studies in Victoria and South Australia where Conservation Hunters have made a major contribution to controlling goats in "direct species" conservation programs. Goat hunting is popular for at least six reasons:

1. They can be easily hunted (large, gregarious, open habitat, low flight distance);
2. Their meat is highly desirable, especially for hunters with southern European and Middle Eastern backgrounds;
3. They can have high market value;
4. They have large, attractive and increasingly sought-after horns as trophies;
5. They are quite accessible on farms in the State's west where farmers are more likely to tolerate hunters;
6. They attract hunters to relatively cheap hunting properties in the State's west (the SSAA hunting property at Tilterweira Station)

With the Government buy-out scheme for many farms in the western parts of NSW, a costly problem has arisen for goat control. We will briefly explore the potential role of Conservation Hunters in the control and utilisation of these goat populations in Volume 2.

3.6.3 Feral Pigs in Australia and NSW — Australia's New Defining Mammal?

The literature on pig management in Australia makes huge assumptions with no clear understanding of pig impacts and populations and an ad-hoc approach to their management. The reality of feral pig dynamics in Australia requires the understanding of four main points:

- Feral pigs in Australia are, after several species of deer in the Northern Hemisphere, the world's most abundant and prized terrestrial wildlife resource.
- This "resource" has increasingly started to negatively affect farming in developing countries because of declines in predator numbers, the spread of agriculture, protection of the species and regions, and legislation which has made hunting illegal.
- Pig hunting is increasingly popular. In Australian alone, some half a dozen hunting journals are now dedicated to hunting pigs. Hunter numbers were estimated at 100,000–200,000 more than 25 years ago.
- Feral pigs' mostly unknown impacts, in particular around wetlands and/or high rainfall systems, where they affect the recruitment of species ranging from marine and freshwater turtles to the degradation of waterways.

Feral Pigs: A National Problem

Predation, habitat degradation, competition and disease transmission by feral pigs is listed as a key threatening process under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act). Under the EPBC Act the Australian Government in consultation with the states and territories has developed the Threat Abatement Plan for Predation, Habitat Degradation, Competition and Disease Transmission by Feral Pigs. The threat abatement plan aims to reduce the impacts of feral pigs on native wildlife and habitats by:

- preventing feral pigs from becoming established in areas where they do not yet occur and where they are likely to pose a threat to nationally listed threatened species and ecological communities
- quantifying the impact that feral pigs have on nationally listed threatened species and ecological communities
- increasing awareness and understanding of the damage that feral pigs can cause and what can be done about it
- promoting a cooperative and integrated approach to managing the damage that feral pigs cause
- mproving the effectiveness and humaneness of techniques and strategies for managing the damage caused by feral pigs.

Feral pig control programs also need to be coordinated with other activities that may be taking place, including the on-ground protection of threatened plants and animals and control of other invasive species such as feral goats and rabbits. The threat abatement plan provides a framework that will enable the best use of the resources available for feral pig management. The Australian Government works with the states and territories to deal with this national problem.

www.environment.gov.au/biodiversity/invasive/publications/pubs/pig.pdf

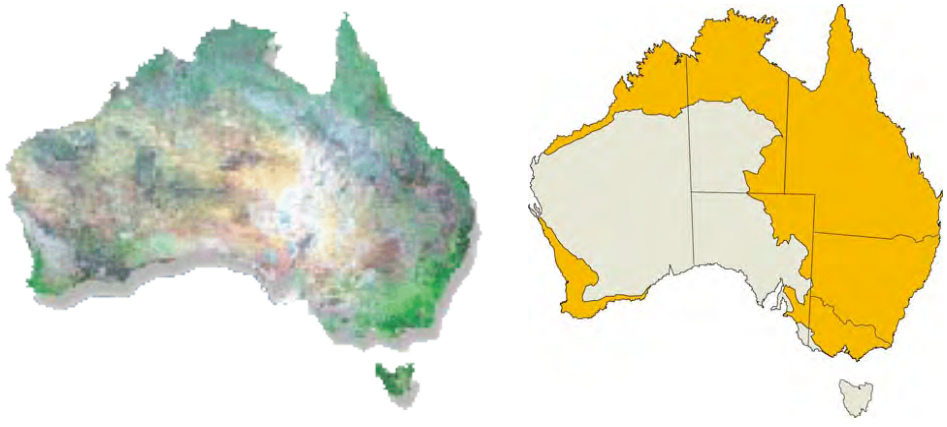


Fig. 3.5 Two images from the Australian continent. The left image shows in its various shades of green the distribution of forest and woodland and dense vegetation (savannah). The right image shows the distribution of feral pigs. Comparing these images shows pig distribution overlaying the vegetative green with the distribution of humans on both maps also fitting this pattern.

Feral Pigs in NSW: The Pest

- The feral pig population is estimated at about 23 million in Australia and they destroy the vegetation that prevents erosion and provides food and nesting sites for native wildlife.
- In some areas, feral pigs kill and eat 40 per cent of newborn lambs.
- Feral pigs can have up to two litters every 12-15 months and they can produce 10 piglets in each litter.

www.gamecouncil.nsw.gov.au/portal.asp?p=Ferals1

Feral pigs in Australia are descendents of domestic pigs introduced to mainland Australia during European settlement. Feral pigs currently inhabit approximately 38 per cent of the continent (Choquenot et al., 1996).They occupy a wide range of habitats, but are often found in close proximity to watercourses, and floodplain environments in inland and seasonally dry regions. Because of their low heat tolerance, the availability of water and adequate shelter are important resources for feral pigs (Choquenot et al., 1996). A number of characteristics have allowed feral pigs to be successful colonists of mainland Australia. They usually breed seasonally, but may breed all year round depending of resource availability. Females can breed twice per year and produce between five and six offspring, allowing populations to increase rapidly when conditions are favourable. They are a mobile species that respond to changes in food and water availability. Feral pigs are also opportunistic omnivores that have a varied diet ranging from carrion, tubers, roots, seeds, fruit and invertebrate prey. These characteristics enable feral pigs to survive in many different habitats, including tropical savannah, semi-arid rangelands and sub-alpine tundra. Conditions that influence the density of feral pigs throughout their range include the carrying capacity of landscapes, recent climatic conditions, land management practices, as well as current and previous levels of control.

West and Saunders, 2007

West and Saunders describe their Pest status (impacts) as follows:

Feral pigs cause a wide range of adverse impacts to the environment, agricultural industries, society and the economy. They are a declared pest animal under the Rural Lands Protection Act (1998), and predation, habitat degradation, competition and disease transmission by feral pigs has resulted in the species being listed as a key threatening process for biological diversity conservation under the NSW Threatened Species Conservation Act (1995) and the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). Feral pigs also spread weeds, prey on wildlife (Pavlov, 1995), damage sensitive wetlands, and threaten the survival and abundance of native species and communities (DEH 2004). In the agricultural sector, feral pigs prey on new-born lambs, foul valuable water sources, carry and spread parasites and disease and damage fences. Importantly, they are often found close to livestock, scavenge on refuse and carcasses, and have to ability to move long distances over a relatively short time. These attributes imply that feral pigs may be as a wildlife species of high potential risk in the event of exotic animal disease incursions, such as foot-and-mouth disease. Feral pigs may also act as

reservoirs for wildlife disease that can affect humans, such as Trichinellosis, Brucellosis, and Leptospirosis (McLeod, 2004).It is difficult to accurately estimate the total economic costs of damage caused by feral pigs throughout Australia, however, damage may exceed $100 million annually (Choquenot et al., 1996, McLeod, 2004). Their long-term adverse impacts of feral pigs on land degradation also remain largely un-estimated. The direct costs of control in response to their impacts on agriculture and the environment are also substantial. The control of feral pigs is generally expensive and labour intensive. Bomford and Hart (2002) estimate that the management costs associated with feral pig control cost an estimated $5 million annually throughout Australia, however, there are no definitive estimates available for NSW. Although the impacts of feral pigs remain largely unquantified, understanding relationships between feral pig density and damage has been the focus of some research modelling

Controlling Feral Pigs

One of the most significant needs for feral pig control is coordination.

A significant move towards coordinated group control occurred from 1978 onwards in New South Wales with the formation of the north-west New South Wales pilot feral pig control program. The stated aim of this program was to stimulate coordinated interest in feral pig control (Benson, 1980). It consisted of 13 Rural Lands Protection Boards in which 74 groups were formed. A total of 739 properties conducted 1298 poisoning operations. The importance of group control has been stressed in extension literature in New South Wales since 1973. In 1989, New South Wales developed model feral pig control plans for Rural Lands Protection Boards to adopt. The group approach is written into the model state control plan for Rural Lands Protection Boards (Circular No. PPB 89/53, 13 June 1989) as a strategy of the highest order.

Choquenot, D., McIlroy, J. and Korn, T. (1996) *Managing Vertebrate Pests: Feral Pigs*. Australian Government Publishing Service, Canberra. p 149

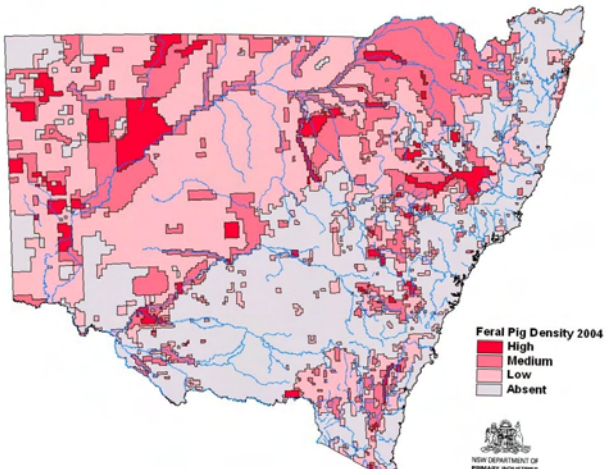


Figure 3.6 Density of feral goats throughout NSW and the ACT during 2004 (from West and Saunders, 2007)

With feral pig population estimates exceeding 20 million and reproduction rates far beyond anything expected for large ungulates or macropods, feral pigs in Australia are our largest terrestrial wildlife resource. They might also challenge the term "exotic" as "the origin of the Australian wild boar population is not known

with certainty… [and]there is a possibility that wild boar were present in Australia before European settlement."

This is based on speculations by Cassels (1983) who suggested that wild boars "may have migrated to northern Australia from Papua New Guinea in Prehistoric times and receives more support from more recent findings by Heinsohn (2003) who documented extensive translocations of many species across the island regions of northern Australia/PNG/Indonesia as long ago as 23,000 years. It is certain however that many domestic pigs added to that hypothetical pre-colonial pig population (Ramsay suggests that these were not deliberate but formed from domestic pig escapees). This population has been supplemented with recreational pig hunters utlising deliberate (and illegal) translocations. Ramsay's conclusion is that "commercial harvesting plays a major role, but largely unrecognised role in reducing wild boar population density and hence reducing the density they cause." (Ramsay, 1994:92)

The Role of Conservation Hunting in the Control of Pigs

Shooting from the air is effective, but can be expensive. Ground-based feral pig hunting is considered by many to be good sport and can be a useful control measure provided the shooting is carried out by experienced hunters. There are considerable safety concerns for the shooters and their dogs when hunting on the ground.

http://www.animalcontrol.com.au/pig.htm

Some may call them feral pigs, but to me, I regard them as a warrior. Everything about this creature draws me to them as my number one animal to hunt. Take a look at a mature boar in prime condition, definitely an awesome display of game. The wild boar is an animal that deserves respect.

From the Editorial by Vic Attard, *Wild Boar* Australia, Issue 8

About 22 per cent of feral pig control initiatives undertaken in agricultural areas involve conservation hunters. A further eight per cent involve commercial hunters. One study has estimated that private hunting delivers over $3.5 million in savings to landholders affected by feral pigs.

from http://www.gamecouncil.nsw.gov.au/portal.asp?p=Ferals1

C. Tisdell, a leading Australian environmental economist was intrigued by the dichotomous nature of wild pigs in Australia in his 1982 book *Wild Pigs: Environmental Pest or Economic Resource?* (Pergamon Press, Sydney). In this book he

suggested that, any recreational activity which engaged 100,000–200,000 people annually (either occasionally or during well-organised trophy hunting programs) was significant at a national level.

Like O'Brien in 1987, he concluded that wild boar which was both a major pest and rural resource, should be subject to *multiple-use management.* The fluid nature of what this means to hunt commercial-recreational in Australia is evident in Ramsay (1994): "Wild boar carcasses are supplied to the game meat industry by part-time hunters who shoot and sell boar opportunistically to defray hunting costs; by professional kangaroo shooters who shoot boar to supplement their income; and by professional shooters who hunt boar on a full-time basis".

The Australian Game Meat Producers Association has produced a *Code of Practice for the Humane Shooting* for feral pigs. Ramsay's assessment was that the highest harvest for pigs was in 1992 when 271,133 wild boar were processed mostly for the European market (Germany, France and Italy). While Ramsay claimed "that Australia is now one of the few places in the world where large quantities of wild boar can be produced from pigs that live in the wild." in Germany, 531,887 wild boar were harvested in 2001/2002.

Significantly, 12 years later, West and Saunders (2007) acknowledged the important role for recreational hunters in the control of feral pigs in NSW.

> Best-practice pest animal management encourages the use of a wide range of control techniques within a strategic framework. Given *private recreational hunting and commercial harvesting constitute over 30 per cent of control technique use throughout NSW, it seems appropriate to integrate these techniques within a well-organised control framework administered by regional pest animal managers.* Selecting the most suitable control techniques to minimise the impacts of feral pigs is a priority for land managers. Equally important is the need *to determine the response of feral pigs to levels of control, as well as monitor the success of control programs* using appropriate monitoring techniques. Common monitoring techniques for feral pigs include dung counts, aerial surveys, and measuring the abundance of sign such as ripping. The success of control programs for feral pigs (and all pest species) in areas where populations are widespread, abundant and mobile r*elies almost entirely on a collaborative and simultaneous effort involving many landholders.* Relief from the long-term impacts of feral pigs can only be achieved if a strategic and collaborative on-going control program is adequately resourced, coordinated and monitored.

3.6.4 Deer in NSW: Game Resource, Threatening Process and Rural Opportunity

> In most places deer have always been hunted by local landholders and sportsmen. Those involved were often uncertain of their legal status, and, as some deer populations were located in National Parks, or expanding from them, the sport was widely publicized on the mainland. In Tasmania the position is clear: deer are game and are hunted as such in legal open seasons. In New South Wales and Victoria hunters, perhaps frustrated by limited opportunities for hunting other mammals have increasingly turned to deer. By their own efforts in the last 20 years they have established most of the data that are available on the populations and have actively publicised the animals and sought recognition of their sport.
>
> Harry Frith 1979

There can be little doubt that deer is what Australian hunters are currently most interested in; perhaps partly for the reason Frith suggested: *"frustrated by limited opportunities for hunting other mammals"*. Two species (fallow deer and red deer) have become a major attraction in NSW State forests. One species (rusa deer) is a hunting resource in the south of Sydney and, insofar as the Royal National Park, a *Key Threatening Process*. Sambar deer, by stealth, are slowly colonising the Great Dividing Range from the south with the edge of this colonisation now in the Blue Mountains west of Sydney.

With the *Deer Act 2006,* the State Government made the decision to try and define the ownership and keeping of deer. It has put out some regulation and brought an issue into the open which concerns our society. As we shall see, however, this reality is complex and can hardly be resolved by a Deer Act which so far focuses only on *ownership of deer,* on *unauthorised releases of deer* and (in Part 2) on *Deer Control Orders,* that is, the responsibility of landowners to "control" deer.

In the following Chapter, we find that deer are many different things to many people and they cannot be simply shrugged off as a *Key Threatening Process* only. Like sheep, deer have created their own economic and social reality that, to some extent, immunises them from extermination alone, even if that was an option.

Hog deer are one of six species of deer which have become acclimatised in Australia and have become the number one target for Australian, and increasingly overseas hunters. For at least two, possibly three species, Australia has become a safe haven for deer which are increasingly endangered in their Asian homelands. At the same time, conservationists view the dispersal and spread of several species across NSW with increasing alarm.

3.6.4.1 The Reality of Deer Dispersal in NSW

The liberation, distribution, abundance and management of wild deer in Australia

> Deer species (fallow, red, sambar, chital, rusa and hog deer) have formed wild populations in Australian habitats ranging from arid woodland to rainforest and are a growing management issue. Data were obtained via an Australia-wide land manager survey that collected information on the liberation, distribution, abundance and management of wild deer in Australia. It is estimated that there are 218 wild deer herds in Australia with 7 per cent of these herds originating from acclimatisation society releases, 35 per cent from deer farm escapes/releases and 58 per cent from translocations (deliberate releases). On average, herds released by acclimatisation societies are estimated to be 107 years old, herds that have escaped from (or been released from) deer farms are 9 years old, and transplanted herds are 6 years old. It is estimated that Australia currently has 200.000 wild deer, with 85 per cent of these deer originally released by acclimatisation societies, 6 per cent through escapes/ releases from deer farms and 9 per cent by translocation. Poor knowledge of the impacts of wild deer by land managers and the absence of consistent legislation governing the management of farmed and wild deer are factors that have exacerbated deliberate releases of deer and the escape of deer from farms. Management strategies for wild deer in Australia need to be developed by land managers to address the escape and release of deer from farms, the illegal translocation of deer into the wild and the management of existing wild deer herds.
>
> Andrew Moriarty, Wildlife Research 31(3) 291–299

Six species of deer were introduced into Australia in the 19th century. After a long period of ecological dormancy, they emerged as a major resource and target for Conservation Hunters in NSW. Deer have now entered a new phase of colonisation which has suddenly "put them on the map".

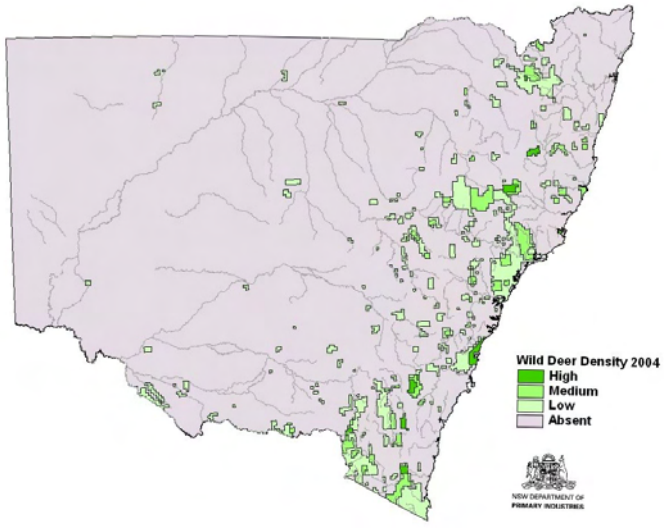
There is now a discussion (Moriarty, 2004) on whether these six species pose a new threat to vegetation and, in particular, for endangered plant species. Another question is what role hunters have played in this new dispersal? Is Australia now entering a "deer war" as described by Graeme Caughley in the context of New Zealand. No matter where one stands in this debate (whether as a Conservation Hunter, a farmer, a conservation agency, scientist, or an animal rights or welfare protagonist), deer have a special "status" in human and Australian society.

As discussed in Chapter 4, deer has become an important target for Australian and NSW Conservation Hunters and an important socio-economic factor for rural societies. Therefore, as would be the case with sheep, one cannot simply reduce their status to that of a "pest animal".

The other fact is a matter of ecological sense. That is, they are now here to stay. Anybody doubting this fact simply has to compare a distribution map produced by DPI (West and Saunders 2007). From these maps, it is clear that, Key Threatening Process or not, deer continue to disperse and establish populations across NSW. Some farmers and many ecologists however consider them as lower-impact exotics than feral pigs, goats, foxes, and rabbits. However, the same sentiment prevailed for cane toads 40 years ago (Cane toads were considered rather benign and harmless as late as 1979 by none other than Harry Frith).

So what should we do with deer? Treat them the same as cane toads, poison them (and possibly lots of native species), call them "pests" and keep their value down, or optimise their considerable value to hunters for farmers?

Deer hunting, (some of the species of which are threatened over most of their homeland range) was already an $80 million hunting industry 20 years ago. We can look at Tasmania and Para Park Game Cooperative in Victoria where Conservation Hunters, utilising game management and hunting templates, effectively regulates the species and manages large islands and many farms for conservation *at no cost to the public.*



This distribution map for deer shows that a large part of Eastern NSW now contains low–medium density deer populations (West and Saunders, 2007).

There are three major groups in NSW who have definite views and policies on deer. The Pest Animal Section of the Department of Industry and Investment (DII), the National Parks and Wildlife Service (in particular with regards to Rusa deer in RNP), and the Game Council.

3.6.4.2 The Position of DPI

Domestic deer were initially introduced to Australia during European settlement and thereafter for the purposes of farming, local aesthetics and sport (Bentley 1998, Moriarty 2004). Escaped or released deer established wild populations and have now become a nuisance in many areas. Wild deer, also commonly referred to as "feral deer", are found in all States and Territories of Australia. In NSW, wild deer include six species: fallow (Dama dama), red (Cervus elaphus), sambar (Cervus unicolour), rusa (Cervus timorensis), chital (Axis axis) and hog (Axis porcinus). Although records of these individual species were collected in this survey, all species have been combined in this report to depict the distribution and abundance of all wild deer in NSW, primarily because their management is not currently species-specific. Where species level information may be important for wild deer management, *it is recommended that mapping individual species should be undertaken wherever possible.* Wild deer have long been known to inhabit the *eastern districts of NSW in largely isolated populations, and mainly concentrated in the south-east and north-east of the State* (Strahan 1995). However, the detection and reporting of wild deer from many other regions in recent years has determined that wild deer inhabit substantially larger areas than was once thought (West and Saunders 2007). Although translocation of wild deer accounted for the dispersal of wild deer into remote areas during the early 1900s, the deliberate release and accidental escape of farmed deer apparently account for more recent introductions of domestic deer into the wild throughout NSW (Moriarty 2004). *During 2002, the area inhabited by wild deer species accounted for approximately 40,700km2 (5 per cent) of NSW* (West and Saunders 2003). Evidence and anecdotal reports at the time of the 2002 survey suggested that their range, abundance and associated impacts were increasing throughout NSW. Although very little is known about their impacts, spread of livestock disease; competition for pasture; crop damage; and damage caused to motor vehicles on the road were reported during 2002. *Wild deer are also known to ring-bark trees, accelerate soil erosion and foul water holes. In NSW, herbivory and environmental degradation caused by feral deer has been listed as a key threatening process under the Threatened Species Conservation Act 1995.* While the adverse impacts of wild deer are numerous, they are also *valued as a recreational hunting resource*.....Wild deer are distributed widely throughout the Coast and Tablelands Divisions of NSW, and less common throughout the Slopes and Western Divisions (figure 14). According to survey participants, wild deer occur mainly in moderately sized disconnected populations throughout the Great Dividing Range and along the coastal fringe of the State. *Throughout the Slopes of NSW, their distribution is mainly restricted to small populations; however there are many areas where wild deer were reputedly increasing* (appendix 3). Wild deer have increased in numerous areas throughout the northern, central and southern slopes districts, and in many areas in the coastal districts of NSW (appendix 3). Their range extends into far-western NSW, but numbers are reportedly very low. In eastern NSW, wild deer occasionally occur in very large herds (Moriarty pers. comm.). Between 2002 and 2004/05, changes in the abundance of wild deer were

> reported from approximately 17,400 km^2 of the State (appendix 3). In most cases these changes represent increases in animal abundance and reports from 30 new locations throughout NSW (equating to an increase in total range by over 8000 km2 – see table 6). *These figures suggest that the abundance and range of wild deer has increased more than any other pest species.* During 2004/05, wild deer were reported as occurring mainly at low densities in NSW, however areas classified as high density had increased substantially since 2002 (table 6). The control of wild deer in most Districts has been in response to damage, or applied in conjunction with other control programs. *Illegal activities, such as the deliberate release and translocation of domestic deer have allegedly contributed to increases in wild deer numbers and new records throughout many regions.* A rise in general awareness of wild deer may also contribute to such observed trends.
>
> West and Saunders, 2007

With relevance to this report the assessment of deer also includes:

> Despite reports of recreational deer hunting throughout many regions of NSW (Brian Boyle pers. comm. 2005), hunting per se was reported as a technique used to control wild deer from only one Division of NSW, namely the Northern Tablelands (figure 18). Poor awareness of recreational hunting activities may explain this trend. *Recreational hunting (if planned, implemented and regulated very carefully) represents a valuable opportunity for the management of wild deer in NSW.* However, *caution is required to avoid the possibility of wild deer populations being treated as a sustainable recreational hunting resource.*"
>
> West and Saunders, 2007

The two sections describe the dilemma of the legislators and policy-makers with regards to deer. Yet, in dealing with the six species of deer in NSW, any legislator and policy maker will have to acknowledge that deer are different than other introduced species; not only for Conservation Hunters but for all of society. They are a group of species which the Western psyche has endowed with qualities that define "wildness" — noble and lovable and tempered with Walt Disney's "Bambi" character.

3.6.4.3 The Position of the NPWS

For wildlife conservation authorities such as the NSW National Parks and Wildlife Service; deer are a group of exotic species which have started to not only invade, but also explode in numbers, into protected areas. For that reason alone, they must be of considerable concern. Deer compete with local species, perhaps even "out-compete them over the long run" (A study in the United States showed that, in a confined environment, the introduced Sika deer outcompeted native white-tailed deer after 10 years).

Deer also pose a risk to native vegetation whose composition they alter through grazing, trampling and over-use. They may also affect rare species of plants which, if highly palatable, might be sought by them and be further reduced in numbers. None of these claims is unjustified. However, what is unjustified is the application of the status of Key Threateneing Process by the NSW Scientific

Committee for *all* deer species in all of NSW, based on the research of one species (Rusa) in one location (Royal National Park). The NPWS has to react to a potential threat to lands that it is charged to protect.

Case Study 3.1: Rusa Deer in the Royal National Park

How should deer be managed in NSW and, particularly, in protected areas? Starting with a range of studies in the Royal National Park in Sydney by the NPWS, this has become a contentious management issue. One of the most important questions to be asked is: whether hunters *can* and *will* play a role in the management of populations? This question was broached from the perspective of the NPWS in their "Deer Management Plan2005–2008 for Royal National Park and NPWS Parks and Reserves in the Sydney South Region". (www.environment.nsw.gov.au/resources/parks/RoyalNPDeerManagementPlan2005Approved.pdf)

The position of the NPWS towards this group of exotic herbivores was made clear by Tony Fleming, the Head of the NPWS:

> The Royal National Park deer management program commenced in February 2002 and has been successfully implemented over the past three years. The program has removed over 500 deer from sensitive environments within the park, developed and implemented a number of 'best practice' deer management techniques', and trained over 50 staff from five agencies in animal handling techniques. The fundamental reason for conducting deer management in Royal National Park is to ensure that the National Parks and Wildlife Service meets its legislative obligation to protect the conservation values of parks and reserves, such as Royal National Park, from the negative impacts of pest species. The implementation of the program resulted from research which indicated that deer have a variety of negative impacts on the conservation values of Royal National Park, notably upon certain key ecological communities such as littoral rainforest, coastal heathland and freshwater wetlands. The recent listing of deer as a key threatening process under the Threatened Species Conservation Act 1995, highlights the growing awareness of the environmental threat posed by deer. Support for the continuation of research and monitoring on the impacts of deer remains an important priority for the Deer Management Program. The deer management program has operated under the auspices of a Deer Management Plan. The Plan was approved for an initial three-year period. Both the original Plan and this revision have been prepared with the assistance of the Royal National Park Deer Working Group. The Working Group includes representatives from the National Parks Association of NSW, Nature Conservation Council, RSPCA, NSW Animal Welfare League, Sutherland Shire Council, Wollongong City Council, Moss Vale Rural Lands Protection Board, University of Sydney, Australian Deer Association and NPWS. This revision of the Plan has now been endorsed by the Royal National Park Deer Working Group and approved for the next phase of deer management operations over the period September 2005-December 2008. This next phase of the deer management program aims to build on the program undertaken over of the last three years through ongoing refinement of deer management techniques. This has been achieved as a result of an improved understanding and operational focus on those environments, which are the most sensitive to the presence of deer. During this next phase there will also be exploration of complementary deer control techniques to further improve the efficiency of the program. I would like to especially thank

> the Royal National Park Deer Working Group for their *tireless commitment to conservation and for the contribution of their time and expertise in the development and review of this Plan. (2005).*

A Deer Management Plan was developed for the Royal National and other reserves in September 2005:

> Rusa deer from Indonesia were introduced into Royal National Park approximately 100 years ago. The current population is having significant impacts on the park. The bushfire in late December 2001 burnt more than 50 per cent of the park and this has accentuated the impacts and increased the urgency of the need to reduce deer numbers. In 2002 a deer management plan was prepared by the Royal National Park Deer Working Group in conjunction with the National Parks and Wildlife Service (NPWS). Membership of the working group includes representatives from conservation organisations, animal welfare organisations, local government and the NPWS. The NPWS has committed to a further three years of deer control in Royal National Park, under a revised management plan. The purpose of the plan is to manage deer populations in the park to minimise adverse impacts on biodiversity and minimise socio-economic impacts on the community. Under the plan, the number of deer will be reduced by a ground-shooting program undertaken by appropriately trained shooters. The proposed shooting program will follow an approved animal welfare and safety protocol and is supported by all members of the Deer Working Group. Animal welfare organisations will audit the shooting program. The 2002 plan was adopted after extensive community consultation. More than 200 people attended workshops at Audley and Corrimal to discuss the plan. The NPWS also received public submissions, which were considered in the finalisation of the plan.
>
> www.environment.nsw.gov.au/pestsweeds/RoyalDeerManagementPlan.htm

The emphasis of NPWS lies on:

> the number of deer will be reduced by a ground-shooting program undertaken by appropriately trained shooters. The proposed shooting program will follow an approved animal welfare and safety protocol and is supported by all members of the Deer Working Group. Animal welfare organisations will audit the shooting program.

It is telling that the Conservation Hunters represented by the Game Council, one of the most professional bodies of Australian hunters, have not been included in this approach and also in the Deer Working Group itself. This exclusion does not bode well for future management. The question remains, how can one manage an issue when the Government body representing the major interest group remains excluded?

3.6.4.4 Conservation Hunters and the Game Council

We have suggested before that deer represent a unique game for Conservation Hunters. In Chapter 4 we will show that the socio-economics of deer hunting in Australia have become sufficiently important that they cannot be ignored as an opportunity for farmers. It seems clear that this fact has been acknowledged by the *Deer Act 2006* which, while conceding that it is an economic reality, also attempts to contain further dispersal and population increases.

Case Study 3.2: Some Lessons from Hog Deer Hunting and Management in Victoria

The Department of Sustainability and Environment in Victoria published *A Guide to Hunting Hog Deer in Victoria 2007.* This document reviews a considerable body of management and research by hunters (in particular, on Sunday Island) into an exotic ungulate which is exceptional in Australia. Hog deer in this document is viewed as a resource. Its hunting is prescribed as "sustainable" and there is not any question of eradication. That this eradication is not only difficult but impossible is evidenced by Snake Island National Park which is inhabited by large numbers of hog deer, despite many past eradication attempts. While this species is subject to intense hunting pressure on the island (by poachers) this is of no benefit to society. It does not support the considerable hunting industry on the mainland (where farmers can benefit) nor does it inspire groups of hunters to develop exemplary models of community-based land management as was adopted on Sunday Island.

3.6.4.5 Deer and the Farmer

There is a long history of attempts by Australian farmers to develop deer farming in Australia. While supported in various ways by governments, these attempts have not been very successful. The reasons for this are described by McRae et al (2006):

> **Constraints**
>
> An extensive literature review, combined with in-depth interviews with industry participants, revealed that the Australian venison industry is currently in an extended slump, characterised by a lack of viability within the industry. This lack of viability is due to many factors including, a decline in the number of large scale producers, reduced slaughter and production levels, historically low farm gate returns and very low demand for venison in the domestic market. A significant decline in export demand for venison has also affected the viability of the Australian industry.
>
> McRae, TB, RJ Cox and GK Watson, 2006

In New Zealand with its longer and more successful history of deer farming, problems have been similar. However the industry there has been stronger and more sophisticated to cope with these conditions. One of the strategies New Zealand deer farmers have been able to develop are value-adding features for that industry which combined the production of deer products (venison, velvet, glands, leather, bones, sinuses) in typical-agricultural settings with forms of tourism. They found that deer work well in farm-stay tourism.

They also learnt, however, that deer can generate even more value if they can be sold for hunting tourists. The subsequent development of hunting tourism, mostly from Australia, North America, and Europe has now become a significant income source for the New Zealand rural sector where large farms have swapped from free-range sheep running over large acreages to deer. While it might be debatable whether this new livestock species has higher environmental impacts as sheep per livestock unit, it is clear that densities of deer are generally much lower and value created by animals much higher.

Case Study 3.3: Deer and Farmers in Queensland

A recent study by Finch and Baxter in Queensland demonstrates the special status deer enjoys amongst farmers.

> Four species of deer can be found in well established wild populations in Queensland. This paper reports on a survey of the attitudes of landholders towards deer on their properties. A total of 2621 surveys were mailed to landowners and managers in regions known to support wild deer in Queensland. Of the 28.3 per cent of surveys returned over 75 per cent of respondents conducted some form of primary production on their land and 65 per cent of these had deer on their properties at least some of the time. Responses to questions were mostly uniform throughout the state with *over 50 per cent of respondents wanting the deer population to stay at current levels or increase. Only 5 per cent of respondents supported poisoning as a management strategy with 17 per cent supporting trapping. Recreational hunting and game meat harvesting were favoured management options with 42 per cent and 51 per cent support respectively*. Only 25 per cent of respondents thought wild deer caused environmental or agricultural damage with most associating wild deer as a less significant pest than those species already declared under State legislation. Fifty six percent of those surveyed agreed with the statement *"It is important to maintain wild deer populations for future generations to enjoy"*. The results of this survey have many implications for the effectiveness of any future management of wild deer in Queensland based on state legislation.
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> Neal Finch A and G.S. Baxter B, 'Oh deer, what can the matter be? Landholder attitudes to deer management in Queensland.' University of Queensland

One of the implications of this is the feasibility of actions in a State where most of the land is held by farmers. NSW farmers have almost exclusive rights to this land and quite like deer aesthetically and as a potential resource.

In New Zealand, previous governments attempted for nearly 50 years to unsuccessfully eradicate red deer at great cost. Deer in Australia are a rural reality whose eradication is as economically unfeasible as it is impossible. Once that reality is acknowledged, it becomes possible to move on. Management plans can be developed and harvesting schemes implemented which allow the use of its high socio-economic value while reducing its environmental impacts. This strategy would include the development of special control and reduction activities on protected land through hunting which, from a socio-economic point of view, could include Conservation Hunters — disciplined, trained, and *paying*.

3.7 A REVIEW OF OFF-LIMITS NATIVE HUNTING RESOURCES IN NSW

3.7.1 Defining Australian Game

Australia's native environment and species were so different from anything else the early settlers from Europe encountered. One of the outcomes of this was the obsession to introduce the game species they were familiar with and change the Australian continent to suit European tastes.

In the previous Chapter, we discussed the effect of two centuries of this policy. A great range of exotic species have found a new home, expanded, and taken over from native animals, especially on land cleared for agriculture. At the same time, native species were slaughtered in great numbers, sometimes for food but more often as competitors to agriculture or for their fur. Due to this, but mostly because of the great changes in the environment (clearing) and some introduced new predators, native wildlife responded. Many species, especially medium-sized mammals (also called "Critical Weight Range" species) declined dramatically with five disappearing altogether, while some, the largest ones, increased in numbers. While this happened, the few Aboriginal people who remained adapted their hunting habits. They changed from native game to exotic and, with the disappearance of the medium-sized species, they were able to supplement their diet with rabbits and even cats.

In this greatly changed environment, the question is, should native game just be protected with some concessions grudgingly granted to Aboriginal communities, or should it be acknowledged as a truly indigenous and valuable part of Australia — not just for tourists to gawk at but for an interaction which includes hunting.

3.7.2 A Review of Selected Australian Native Game

Native Australians, as a hunting-gathering culture, collected everything which provided protein, and was edible, and/or not poisonous. This "bush-tucker" constituted a wide diversity of foods ranging from invertebrates and fish to amphibians, reptiles, birds, and mammals. As the cost-benefits of hunting generally increased with size and abundance, it was the large animals in each of those groups which were most prized: goannas and crocodiles, emus and bustard, kangaroo and wallabies. Aboriginal dreamtime is all about the interactions between Aboriginal people and the animal world. There was no separation, all was interchangeable. Humans changed to animals as those became humans. Even new species were included and the cat has entered and been accepted in the dreamtime of many groups.

3.7.2.1 The Reptile Continent

Reptiles, not considered game in Europe (England has only six small species), are some of the great species in Australia, occurring at an abundance and diversity few places on Earth can match. For this reason, they always played a dominant role in Aboriginal hunting and the large species include various species of monitors (with Australia containing some 60 per cent of the world's species), two species of crocodiles, large snakes including pythons and large to medium-sized turtles all constituted important prey. With the exception of crocodiles (which, because of their precious leather, their abundance, large size, and ferocity, were promptly almost driven to extinction) and marine turtles, no other reptiles attracted the settlers' attention in any measure. With the exception of the goanna (which was shot as a potential sheep threat) they were relatively "safe" from European attention as hunting quarry for recreation, food, or commerce.

This was not enough however to stop their decline, as they were as susceptible as the mammals and the birds to habitat change and the introduced new predators. This has changed now. In NSW where there are no crocodilians, all species of

reptile are protected and Aboriginal people are allowed to hunt and forage for them with little impact. For these species, however, reptiles are important "game" and communities hunt them for food and as recreation.

3.7.2.2 The Australian Game Birds

Australia has, with the exception of Papua New Guinea and other unique islands, the world's most unique bird fauna. There were some species of quail and ducks and pigeons which occurred at great abundance and diversity. The latter were shot in great numbers (Frith, 1979). Other groups were highly attractive as game birds, for example the Australian bustard and the brush turkey or mallee fowl which resembled grouse. And there was the emu which did not fit in. All of them however, including parrots and some of the larger songbirds (for example the blue-faced honeyeater or grey wattlebird) were hunted avidly. For very few species has hunting, in spite of being carried out with little regard to sustainability, affected their abundance although Australia's mammals and reptiles declined for other reasons. Now (with the exception of the macropods) they are off limits. For now it could hardly be justified to hunt what little there is. For other reasons, bird hunting has become irrelevant in the age of Kentucky Fried Chicken and hen batteries.

This does not apply to Aboriginal people. For them the emu, the megapods, the Australian bustard, pigeons, swans, and ducks are a lost hunting resource. In the future they may like to have their game birds back for recreational hunting. They might even like to share this resource in order to derive financial benefits from traditional land-use.

3.7.2.3 The Emu: Protected and Destroyed

Searching for the word "emu" on google, provides 22.3 million hits (12 April 2008) mostly for derivatives, acronyms and place names, with "Emu description (the bird)" under Wikipedia as hit No. 1 which states the following about "conservation" and "economic value".

> **Conservation status**
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> Emus were used as a source of food by indigenous Australians and early European settlers. Aborigines used a variety of techniques to catch the bird, including spearing them while they drank at waterholes, poisoning waterholes, catching mmus in nets, and attracting Emus by imitating their calls or with a ball of feathers and rags dangled from a tree. Europeans killed Emus to provide food and to remove them if they interfered with farming or invaded settlements in search of water during drought. An extreme example of this was the Emu War in Western Australia in 1932, when Emus that flocked to Campion during a hot summer scared the town's inhabitants and an unsuccessful attempt to drive them off was mounted. In John Gould's *Handbook to the Birds of Australia*, first published in 1865, he laments the loss of the Emu from Tasmania, where it had become rare and has since become extinct; he notes that Emus were no longer common in the vicinity of Sydney and proposes that the species be given protected status. Wild Emus are formally protected in Australia under the *Environment Protection and Biodiversity Conservation Act 1999*. Although the population of Emus on mainland Australia is thought to be higher now than before European settlement, some wild populations are at risk of local extinction due to small population size. Threats to small populations include

the clearance and fragmentation of areas of habitat; deliberate slaughter; collisions with vehicles; and predation of the young and eggs by foxes, feral and domestic dogs, and feral pigs. The isolated Emu population of the New South Wales North Coast Bioregion and Port Stephens is listed as endangered by the New South Wales Government.

Economic value

The Emu was an important source of meat to the Aborigines in the areas to which it was endemic. Emu fat was used as bush medicine, and was rubbed on the skin. It also served as a valuable lubricant. It was mixed with ochre to make the traditional paint for ceremonial body adornment, as well as to oil wooden tools and utensils… Commercial Emu farming started in Western Australia in 1987 and the first slaughtering occurred in 1990. In Australia, the commercial industry is based on stock bred in captivity and all states except Tasmania have licensing requirements to protect wild Emus. Outside Australia, Emus are farmed on a large scale in North America, with about 1 million birds in the US, Peru and China, and to a lesser extent in some other countries. Emus breed well in captivity, and are kept in large open pens to avoid leg and digestive problems that arise with inactivity. They are typically fed on grain supplemented by grazing, and are slaughtered at 50–70 weeks of age. …Emu meat is a low-fat, low-cholesterol meat (85 mg/100 g); despite being avian, it is considered a red meat because of its red colour and pH value. The best cuts come from the thigh and the larger muscles of the drum or lower leg. Emu fat is rendered to produce oil for cosmetics, dietary supplements and therapeutic products. There is some evidence that the oil has anti-inflammatory properties… Emu leather has a distinctive patterned surface [and] is used in such small items as wallets and shoes, often in combination with other leathers. The feathers and eggs are used in decorative arts and crafts.

http://en.wikipedia.org/wiki/Emu

Emu Farming

Emu farming took off in Australia in 1988 when the West Australian government permitted the Aboriginal owners of Willuna Station to sell emu chicks to the public. (Emus are protected and no one is allowed to take birds from the wild.) With a legal supply of chicks, both Aboriginal and non-Aboriginal people began to develop emu farms and find markets for emu products. In the early 1990s the industry boomed but high set up costs and limited market outlets have since cut the industry back to a much smaller size. There are around 160 emu farms in Australia, with a total of about 32,000 emus… Emu farmer, Kip Venn, says 5,000 to 7,000 emus makes a reasonable sized farm. Also, Kip says that with a stocking rate about 5 emus/acre, they are so easy on the land you can't see where they've been. Some farms like Kip's are free range — the emus are allowed room to roam. He puts 20 emus per 4 acre pen, and lets them choose their own mate. Initially some farms farmed more intensively and force paired birds but high food and labour costs have lead to a more open range approach… On the Venn's farm about 80-90 per cent of eggs successfully hatch. Rather than the male sitting on the eggs, many farms incubate the eggs and rear the chicks separately. Foxes and other pests can be a problem if eggs are left in open. Emu products include meat,

> oil, leather and feathers. Most Australian states have at least one specialist emu abattoir. White settlers in Australia used to hunt emus for their meat and their oil, which they used in lamps. Outback housewives made omelettes from their eggs, which they first broke into a basin and let stand overnight so they could skim off the oil which rose to the top. The eggs weigh about 650 grams — over half a kilo. There are an average of about 500,000 emus in the wild in Australia, but this varies highly depending on the season. Numbers can rise towards a million, and fall to about 200,000. Even then the population seems to be able to bounce back quickly, probably because the females can produce 3 clutches of eggs in good years. Emu numbers never reach the 6 million like kangaroos. Kangaroos can time their reproduction much more precisely to fit in with the climate variations.
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> **Wheat Farmers v Emus:**
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> Wheat trampling by emus is a problem. When wheat is ripe it's less flexible. Western Australia has a 1,100 km emu proof fence stretching from around Esperance in the south to north of Geraldton which keeps them out of the wheat belt. It was built in 1901 and occasionally when emus move out of the pastoral areas south westward in winter they mass along the fence. As many as 70,000 emus have been known to die at the fence! Once in 1932 the army was also sent out with machine guns to decimate the numbers. In the past, Queensland emus were thought to aid the spread of prickly pear and many were shot there too.
>
> http://www.abc.net.au/science

One might conclude from this that emus are not only a bird which continues to do very well in the wild but which, during good rainfall years, could constitute a large and harvestable wildlife resource for struggling farmers in the wheat-sheep belt. Perhaps it could be an alternative for these activities. Harvesting could occur for its produce (meat, skin, oil, feathers) and for Conservation Hunters, in particular from overseas, thereby contributing to rural economies.

As this has not occurred, one could conclude that this is yet another problem for the current regulatory model to come to terms with; a native species that has failed to conveniently decline in agricultural areas as have so many other smaller species. The issue here is, not whether it can be justified to refer to all the many and irrelevant arguments which have been used in the past to justify the current dichotomy, (pest and protected species) but whether this attitude can any longer be maintained since Australia has joined international conventions and acquired new and better ability to manage such a "controversial" native pest resource?

3.7.2.4 Flying Foxes: An Indigenous Politically Incorrect Hunting Resource

In a paper entitled "Pests, pestilence, pollen and pot-roasts: the need for community-based management of flying foxes in Australia", Christopher Tidemann and Michael Vardon (1997) explored the management of a group of animals in Australia which represent, as they express it "very different things to different people". Flying foxes are hunted as traditional food by Aboriginal people

while in the cities of the east they used to be kept as pets. Now they have been found to carry a lethal virus and their nesting habits and smell have made them very unpopular in cities. As if that would not be enough, they are also known as essential pollinators of tropical rainforests, as fruit pests in mango and other plantations, and as a potential food to South East Asia and Pacific islands where they are delicacies. Polynesian societies have hunted their own species to almost or full extinction.

Conservation Hunters in Australia just about seem to be the only group that have not discovered a use/taste for them. Indigenous hunters, however, continue to prize flying foxes as food. As the above authors have suggested, there is also a potential that "private landowners could be encouraged to protect habitats through financial incentives". This could be done by allowing strictly regulated harvests for local consumption or export. This could relieve pressure on rare Pacific Island flying foxes. They point out that "landowners are unlikely to conserve flying foxes on their own land or at their own expense, particularly if they are a nuisance or a pest to others".

Although some Conservation Hunters might suggest that this has nothing to do with hunting, many might find it distasteful to their European traditions and prejudices. In Chapter 6 we will explore why this attitude is a mistake and why flying foxes might well present a unique opportunity for Conservation Hunters and the Game Council to take on an Aboriginal hunting issue and explore it with Aboriginal communities. For instance an integrated system, as suggested by Tidemann and Vardon, could be developed in which landowners could cater for the needs of Aboriginal and non-aboriginal hunters.

Tidemann and Vardon (1997) suggest in their website information for Northern Australia (see http://sres-associated.anu.edu.au/batatlas/batharvest.html) however it might also be suitable for some coastal communities in NSW:

> It is widely known by Australian Aborigines, Torres Strait Islanders and most indigenous people of the Pacific, South-East Asia, China and Africa, that flying-foxes feed on fruit and flowers of the forest and that their strength and goodness are transferred to consumers of their meat. Flying-fox is highly regarded as a traditional food by indigenous people of these areas (microbes are destroyed by cooking) and expatriates are often prepared to pay high prices to obtain it, particularly for ceremonial occasions. But it has become difficult to obtain flying-fox in most intensively settled areas because stocks have been depleted by loss of habitat and unregulated hunting. Consequently, there is a large unsatisfied demand for flying-fox in all countries, including Australia. Northern Australia has extensive flying-fox stocks and there is an opportunity for Aboriginal and Torres Strait Islander communities to satisfy this unmet demand by ranching. Such an enterprise would have major social and environmental benefits. It would generate significant income and culturally acceptable employment for indigenous communities in remote areas — a recent estimate of likely income (from the Rural Industries Research and Development Corporation) was AU$8 million per annum, but processing before distribution to niche markets is likely to add significant value to this figure. Flying-fox is a non-timber forest product that can be harvested sustainably, but in most areas, management of these ecologically important animals is presently chaotic. Ranching of flying-foxes in northern Australia would provide an important precedent for introducing order into a world that is striving to use its natural resources sustainably.

While flying foxes are unlikely candidates for Conservation Hunters in NSW, they are important to Aboriginal communities in the north where they could be hunted for sustenance, traditional land-use, recreation, commercial, and as pests.

3.7.2.5 Wetlands and Development, Ducks and Hunters in NSW

The most recent study on wetlands and ducks on the east coast of Australia has also become one of the environmental benchmarks for Australia's latest "State of the Environment (SoE) report for 2006 (Kingsford, Jenkins and Porter 2004). These two leading waterbird specialists conclude that populations of waterbirds have declined dramatically since 1984. They suggest:

1. That much of that decline could be directly linked to massive wetland loss and development, exacerbated by low rainfall years.
2. That this decline has been consistent for most species and waterbird guilds (feeding group).
3. That these numbers have fluctuated very much between years and localities making it difficult to interpret data.
4. That hunting had generally nothing to do with the decline, which has happened if there was hunting or not or where it had stopped (in NSW in 1993).

Below is a brief excerpt on some of the key findings in these studies:

Trends in abundance and distribution of waterbirds

Total numbers of waterbirds in eastern Australia

Waterbird numbers across eastern Australia have exhibited a decline since 1983 (Fig. 2a). The most significant decline occurred between 1984 to 1986, with further declines after 1991 (see Fig.2a). The annual average number of birds during the first three years of the survey was about 1,100,000; from 1986 to 1995 about 405,000 and from 1996 to 2004 about 238,000. The distribution of this decline varied between different parts of the continent (Fig. 2). Estimates of waterbirds in the northern four survey bands (bands 710, see Fig. 1) were highest in 1983 and 1984 but subsequently there has been little trend in the numbers of waterbirds between 1985 and 2004 (Fig. 2b). In contrast, estimates of waterbirds in the central survey bands (bands 46) and southern survey bands (bands 13) have shown downward trends (Fig. 2c, d), similar to the trend in total numbers of waterbirds.

Kingsford and Porter 2006

This is what SoE 2006 has to say about waterbirds on the east coast and on the above survey:

The project aims to estimate the abundance of waterbirds within 10 aerial survey bands across eastern Australia, for the time period 1983–2004. The aerial survey provides information on up to 50 waterbird species, including several threatened species. Many of Australia's major river systems flow into large estuaries or floodplains. These floodplain areas provide habitat for many species of waterbirds and other dependent aquatic organisms. For this reason,

> aerial surveys of waterbirds across eastern Australia provide a longterm data set on the health and biodiversity of river and wetland environments. Such data have shown some waterbird populations are in decline (e.g Macquarie Marshes and Lowbidgee wetlands). Such analysis can be combined with detailed longterm data on river flows and climate to determine long term impacts of river regulation (dams, diversions, floodplain levees) on some wetland sites (see case studies in this paper). Aerial survey data of waterbirds are also used for the management of duck shooting seasons in Queensland, South Australia and Victoria.
>
> *Ibid*

Kingsford and Porter (2006) describe what happens in more detail for six regions (case studies). This detailed look at these regions shows overwhelming links to waterbirds between the removal of water for agriculture and hydro-development. This connection is dramatic for The Lowbidgee floodplain — the Murrumbidgee River's major wetland in south-eastern Australia. Once more than 300,000ha in size (early 1900s); at least 76.5 per cent was destroyed (58 per cent), or degraded (18 per cent) by dams (26 major storages). Subsequent diversions and floodplain development (Kingsford and Thomas 2004). Kingsford et al (2006) showed that over 19 years (1983–2001), waterbird numbers estimated during annual aerial surveys collapsed in that area by 90 per cent, from an average of 139,939 (1983–1986) to 14,170 (1998–2001). Numbers of species also declined significantly by 21 per cent. Kingsford and Porter call this "an example of the ecological consequences of major water resource development". Similar devastating were the effects of the development of floodplain lakes (instead of changing water regimes) which reduced abundance and diversity by 90 and 50 per cent.

While the Duck Ban in NSW might make sense in view of this devastating picture (although duck hunting was NOT implicated in the dramatic decline of waterbirds) and while Victorian and South Australia hunters have abstained from duck hunting over the past year (as German hunters did for declining hare and partridge), the question arises. Was this abstinence and ban necessarily in the interest of ducks, wetlands, and rural communities in rice-producing country? We will show in Chapter 6 that this is not the case and pose the question, if NSW ducks can, in their current precarious state, do without hunters.

3.7.2.6 Native Pigeons as an Off-Limits Native Hunting Resource

> Australia has few gallinaceous birds [grouse, quail, pheasant — after all these were the 'old world' groups] but it does have a large number of pigeons. Among the twenty-three native species there are several that are startingly similar to the quails, partridges and sand grouse of other countries. Perhaps the place of these groups in Australia, is taken by pigeons…
>
> H Frith (1979)

Pigeons are another group of native birds, once present in vast numbers, and one of Australia's great terrestrial food sources, that are now no longer game. Native pigeons are another truly indigenous and unique Australian group of birds which, due to their large size and former great abundance, used to be a very significant hunting resource for Aboriginal people and early settlers. The following table explains what Harry Frith and the *Complete Book of Australian Birds* had to say about pigeons.

Species Name	Scientific Name (pseudonyms)	Status quotes from HI Frith, 1979 225-226 and "Complete Book of Australian Birds" (1997)	Importance as Hunting Quarry after H Frith, 1979	Suggestions for Management by H Frith
Red-crowned Pigeon Rose Cronwed Fruit Dove)	Ptilinopus. regina	Nth coastal NSW. Little tree-dwelling usually live in small groups. Nomadic forests following fruiting		
Wompoo Pigeon Fruit Dove)	Megaloprepia magnifica (Ptilinopus magnificus)	Lives entirely in densely foliated trees, never comes to ground		
Topknot pigeon	Lopholaimus antarcticus	Topknot pigeon occurred in immense numbers...an important source of food	Vast areas of rainforest have been cleared and most of its food destroyed, so the bird has decreased very greatly in numbers and the decline is continuing	
White-headed pigeon	Colomba leucomela	In the pioneer days was Common in the rainforest, but following the clearing between 1860 and 1900 it became very rare...however the introduced camphor laurel [cow shelter] [in the] early 1940s...the number of birds in [the Richmond River District] increased very greatly to the point where it must be considered common....By the late 1950 it had also learnt to feed... on fallen grain.	It withstands heavy shooting, when it is in the open.. It needs camphor laurel berries ort a harvested cornfield and a clump of trees with dense foliage.	The gradual adaptation of the species suggests that a positive policy of management, based on a thorough study of the birds biology could restore it to something like its former abundance
Bar-shouldered dove Pandanus or Mangrove Pigeon	Geopelia humeralis	Exclusive ground feeders. Favours edge, swamps and creeks Competition with Spotted Turtledove (introduced)		
Peaceful dove	G. striata			
Brown pigeon	Macrophygia amboinensis	Restricted to the east coast....reaches its greatest abundance on the edges.... readily adapts to partly cleared country that is overgrown with weeds. It increases in local numbers greatly when rainforest is being cleared and before the weed-growth stage of succession has been overcome.	Although it has suffered an overall reduction in range, owing to the clearing of the rainforest, and is more frequently shot by illegal hunters than any other coastal pigeon, it remains common	Should there be a serious attempt to management this will no doubt involve the deliberate creation of the wild-tobacco-raspberry stage of forest regeneration

Species Name	Scientific Name (pseudonyms)	Status quotes from HI Frith, 1979 225-226 and "Complete Book of Australian Birds" (1997)	Importance as Hunting Quarry after H Frith, 1979	Suggestions for Management by H Frith
Diamond Dove	G. cuneata	Particularly common in dry open savanna. Essentially a bird of the arid zone, ground feeders (seeds). Nomadic movements in large numbers		
Green-winged	Chalcophaps indica	Solitary bird of forest floors (wet sclerophyll and coastal heaths)		
Common Bronzewing	P. chalcoptera	Declined in some places but remained common in most of their range, Waste of wheat grain important as food source.		
Brush Bronzewing	P. elegans	Decline in numbers due to clearing and predation by fox and cat (ground nesting)		
Crested Pigeon	Ocyphaps lophotes	Has benefitted from clearing and extended their range towards coast		
Plumed Pigeon	Lophophaps plumifera			
Squatter Pigeon	Geophaps stricta	Shooting, introduced predators and the effects of stock on grasslands "sheep grazing as the main cause"		
Flock Pigeon (Bronzewing)	Phaps histrionica	"In the early days of settlement ...flocks were enormous (countless multitudes: "Roar of their wings sounding like heavy surf". "Coming of sheep to the inland plains finished all that". Survive best in north where droughts were less severe and cattle graze		Frequents all kinds of regrowth and lantana overgrown country. Frequent visitor of farms and town gardens
Wonga Pigeon	Leucosarcia melanoleuca			
Feral Pigeon	Columba livia	Found living in many towns and have spread in many rural areas. Retain cliff dwelling habits (building pests) supported by human scaprs. Great numbers in wheat belt		
Spotted Turtle-Dove		Introduced now to most of the East Coast. Out-competes native Barr-shouldered Dove.		

This resource has now become off-limits to Conservation Hunters. Also, they were never effectively managed and have thereby almost disappeared; at least for non-indigenous Australians.

Pigeons are a very interesting groups of animals in their interaction between hunting and conservation. In Europe, (Germany), as in Australia, they have defied the general game bird trend to decline in numbers most likely because they are relatively immune to fox predation as most are not ground-breeders. For this reason, in Germany (with its good hunting records) we can see that pigeons have been by far the most consistent hunting bird resource; in fact the only one which is currently surviving the onslaught of meso-predators and are shot in increasing numbers (880,796 in the hunting year 2003/2004).

Looking at this long list of ecology, trends, and predictions, which was developed for pigeons by one of Australia's foremost wildlife ecologists and comparing it with today, one is struck by the fact that, while a good number of pigeons have undergone severe population decreases, mostly by clearing of rainforest, many of them have adapted and are recovering, partly aided by the exploitation of new food and habitat sources like camphor laurel and lantana, both considered some of the worst coastal and rainforest exotic plant pests.

What is also striking is that the provision of a range of fruiting plants plays a key role in driving that recovery. For any conservation biologist and game manager, this is exciting news. It suggests that, contrary to what we can expect from most types, pigeons might be amenable to simple, low-cost recovery efforts. There is no reason why Conservation Hunters could not play a more active role in this recovery. Hunters could also collaborate with Aboriginal communities for abundant and diverse pigeon faunas to re-establish "bush tucker" which they could and/or sell to non-indigenous hunters.

Kangaroos (Australian macropods) are made up of a large number of species belonging to five different families of animals. In terms of animal radiation and diversity, if not size, they are only comparable to African antelopes which, like macropods and on a larger scale, have learnt to adapt to an entire continent.

These provided important hunting for Aboriginal people and early European settlers alike, many of them severely, but Calaby and Grigg (1989) never suggested hunting as a major reason for their extinction (five species with an additional three on mainland Australia). In the following table, we have added some data to that rather dated study and have only included species present in NSW. For example Calaby's and Griggs (1989) assessment still shows that pest destruction has been carried out for the BT Rock Wallaby which now — some 20 years later — has disappeared from most of its former range in NSW. This is in all likelihood from a combination of increased fox predation and competition from goats. We have also added where and if the species are targeted by recreational hunting.

Table 1: NSW Macropodoidea, their conservation status, likely change since white settlement and suggested reasons for the change (reduced, adapted and modified From Calaby and Grigg, 1989)

Family Potoroidae (Potoroos, Bettongs and Rat-kangaroos)

Scientific Name	Common Name	Status	Pest Destruction Sometimes?	Commercial Use	Change Since Settlement	Suggested Reasons
Hypsiprymnodon moschatus	Musky Rat-Kangaroo	Common, limited	—	—	Range reduced	Rainforest clearing in North Qld.
Potorous tridactylus	Long-nosed Potoroo	Common, limited	—	—	Range reduced	Clearing of east coast forests
Potorous platyops	Broad-faced Potoroo	Extinct	—	—	Extinction	Unknown
Potorous longipes	Long-footed Potoroo	Rare, endangered	—	—	Unknown	Habitat possibly threatened by wood pulp industry
Bettongia penicillata	Brush-tailed Bettong	Rare, endangered (1)	—	—	Range reduced severely	Land clearing and impact of grazing animals, foxes ?
Bettongia tropica	Tropical Bettong	Limited, vulnerable	—	—	Range reduced	—
Bettongia gaimardi	Tasmanian Bettong	Common, limited	—	—	Extinction on mainland, common in Tasmania	Fox predation on mainland, habitat change
Bettongia lesueur	Burrowing Bettong	Limited vulnerable (WA islands)	—	—	Extinction on mainland	Rabbits, foxes, cats
Aepyprymnus rufescens	Rufous Bettong (or Rat-Kangaroo)	Common	—	—	Range reduced	Land clearing, grazing, foxes
Caloprymnus compestris	Desert Rat-Kangaroo	Presumed extinct	—	—	Extinction?	Unknown

Family Macropodoidea (Kangaroos and Wallabies)

Hare-Wallabies

Scientific Name	Common Name	Status	Pest Destruction Sometimes?	Commercial Use	Change Since Settlement	Suggested Reasons
Lagorchestes leporides	Eastern Hare-Wallaby	Extinct	—	—	Extinction	Grazing
Lagorchestes conspicillatus	Spectacled Hare-Wallaby	Common (Qld) elsewhere common to rare, abundant Barrow Island	—	—	Decline on mainland	Grazing

Lagorchestes hirsutus	Rufous Hare-Wallaby	Rare, vulnerable	—	—	Range severely reduced	Grazing, changed wildfire regime
Lagorchestes asomatus	Central Hare-Wallaby	Extinct	—	—	Extinction	
Lagostrophus fasciatus	Banded Hare-Wallaby	Vulnerable, limited to two WA islands	—	—	Extinction on mainland	

Nailtail Wallabies

Scientific Name	Common Name	Status	Pest Destruction Sometimes?	Commercial Use ?	Change Since Settlement	Suggested Reasons
Onychogalea unguifera	Northern Nailtail	Common	—	—	Local reductions in numbers	Grazing
Onychogalea fraenata	Bridled Nailtail	Endangered	Yes	—	Range severely reduced	pastoral industry, clearing of habitat
Onychogalea lunata	Crescent Nailtail	Presumed extinct	—	—	Decline to extinction	—

Rock-Wallabies

Scientific Name	Common Name	Status	Pest Destruction Sometimes?	Commercial Use	Change Since Settlement	Suggested Reasons
Petrogale lateralis	Black-Footed Rock-Wallaby	Vulnerable, scattered	—	—	Range reduction	Foxes, farming
Petrogale penicillata	Brush-Tailed Rock-Wallaby	Common	Yes	—	Range reduction Continuing and now gone from most of central and south NSW	Foxes
Scientific Name	**Common Name**	**Status**	**Pest Destruction Sometimes?**	**Commercial Use**	**Change Since Settlement**	**Suggested Reasons**
Petrogale inornata	Unadorned Rock-Wallaby	Common	—	—	Unknown	
Petrogale godmani	Godman's Rock-Wallaby	Vulnerable	—	—	Unknown	
Petrogale rothschildi	Rothschild's Rock-Wallaby	Common, limited	—	—	Unknown	

Petrogale xanthopus	Yellow-Footed Rock-Wallaby	Vulnerable, limited	—	Little in 19th century	Range considerably reduced. Ongoing however one successful project (Operation Bounceback in SA with support from hunters	Land clearing, goats, grazing
Petrogale persephone	Proserpine Rock-Wallaby	Rare, endangered	—	—	Unknown	May be threatened by 'natural'
Petrogale brachyotis	Short-Eared Rock-Wallaby	Common	—	—	Probably little change	
Petrogale burbidgei	Warabi	Common, limited	—	—	Little or none	
Petrogale concinna	Nabarlek, Little Rock-Wallaby	Common in restricted area of occurrence	—	—	Little or none	

Note: extinction of rock-wallabies (*P.lateralis*) on some offshore islands by hunting and foxes.

Pademelons

Scientific Name	Common Name	Status	Pest Destruction Sometimes?	Commercial Use	Change Since Settlement	Suggested Reasons
Thylogale stigmatica	Red-Legged Pademelon	Common	—	—	Range reduction	Clearing of rainforest
Thylogale billardierii	Tasmanian Pademelon	Abundant	Yes	Yes	Extinction on mainland, prob. Increase in Tasmania	Unknown, clearing for agriculture adjacent to forest
Thylogale thetis	Red-Necked Pademelon	Common	Yes (but not legally)	No	Local eruptions	Clearing for agriculture adjacent to forest

Typical Wallabies and Kangaroos

Scientific Name	Common Name	Status	Pest Destruction Sometimes?	Commercial Use	Change Since Settlement	Suggested Reasons
Macropus parma	Parma Wallaby	Secure, scattered	—	—	Range reduction	Vulnerable to forest clearing
Macropus eugenii	Tammar Wallaby	Common, limited	Sometimes on Kangaroo Island	Yes (2)	Range severely reduced	Land clearing for wheat, foxes
Macropus greyi	Toolache Wallaby	Extinct	Yes? Scalp bounty	—	Extinction	Hunting, foxes. Used for coursing
Macropus irma	Western Brush Wallaby	Common	—	—	Population decline	Land clearing, foxes

Macropus parryi	Whiptail Wallaby	Common	Yes	Yes (Qld)	Local eruptions	Grazer, benefited from grassland increase
Macropus dorsalis	Black-Striped Wallaby	Common	Yes (Qld)	Yes (Qld) (2)	Range reduction, but local eruptions (Qld)	Agriculture, grazing
Macropus rufogriseus	Red-Necked or Bennett's Wallaby	Common	Yes	Yes (Tas & Qld (2))	Little change, local eruptions	Agriculture
Macropus agilis	Agile Wallaby	Abundant	Yes (Qld)	No	Little change or increase	Pastoral industry
Macropus giganteus	Eastern Grey Kangaroo	Abundant	Yes	Yes	Increase in numbers and possibly range	Pastoral industry, land clearing and dingo destruction
Macropus fuliginosus	Western Grey Kangaroo	Abundant	Yes	Yes	Increase in numbers and possibly range	Pastoral industry
Macropus robustus	Common Wallaroo	Abundant	Yes	Yes	Little change or increase	Pastoral industry
Macropus antilopinus	Antilopine Wallaroo	Common	—	—	Little change or increase	Pastoral industry
Macropus bernardus	Black Wallaroo	Restricted	—	—	Little change	
Macropus rufus	Red Kangaroo	Abundant	Yes	Yes	Increase in numbers and possibly range	Pastoral industry incl. Dingo destruction and provision of water

*Commercial harvesting discontinued

Anomalous Wallabies

Scientific Name	Common Name	Status	Pest Destruction Sometimes?	Commercial Use	Change Since Settlement	Suggested Reasons
Setonix brachyurus	Quokka	Vulnerable, limited	—	—	Range reduced	—
Wallabia bicolor	Swamp Wallaby	Common	Yes (Qld)	Yes (Qld) (2)	Little change, local eruptions	

1. The 1996 Action Plan for Australian Marsupials and Monotremes lists *Bettongia penicillata* under the IUCN Red List category of "Lower Risk" (conservation dependant).
2. Commercial harvesting has been discontinued.

Several important observations may be made in that list:

1. Calaby and Grigg never suggest for any species that hunting was implicated in their extinction.
2. Only small-sized macropods have become extinct.
3. A surprisingly large number of macropods have expanded their range and abundance and are destroyed as "Pests".

Kangaroo — the Largest Remaining Native Terrestrial Wildlife Resource

Few of these species have remained as hunting quarry but some, almost exclusively the largest species, have profited from land-use changes and are now considered at higher abundance than in pre-European times. This explosion in numbers matches four species of deer in the Northern Hemisphere (roe deer, white-tailed deer, red deer, moose). This phenomena is a response to intensive forestry and the removal of large predators. Kangaroos are now the world's largest terrestrial wildlife resources. There is one major difference however. That is, while the harvest of deer species in North America and Europe is entirely carried out by so-called recreational hunting and worth many billions of dollars on each continent, for kangaroos, 3.6 million are harvested commercially with the value of that non-value adding industry worth a mere A$140 million

Kangaroos as a group are one of the largest populations and resources of terrestrial wildlife. Over the past 30 years, they have been harvested for sustenance and cultural purposes (by Aboriginal people), as wildlife resource (by the so-called kangaroo industry), or by Conservation Hunters. This resource is large and ubiquitous enough that it has warranted a Federal framework on kangaroo harvesting which goes as follows:

The Australian Government's Role in Kangaroo Harvesting Commercial Kangaroo and Wallaby Harvest Quotas

Background Information

The Australian Government's role in kangaroo and wallaby harvesting. While Australia's laws concerning wildlife trade are some of the most stringent in the world, they are not intended to obstruct the sustainable activities of legitimate organisations and individuals. Instead they have been designed to demonstrate that, when managed effectively, wildlife trade contributes to and is entirely compatible with the objectives of wildlife conservation. Under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act),the Commonwealth has responsibility for providing for the protection of the environment, promoting ecologically sustainable development and the conservation of biodiversity.

Under the EPBC Act, the Australian Government has approved management plans for the harvest of six kangaroo and wallaby species in five states (Queensland (Qld), New South Wales (NSW), South Australia (SA), Western Australia (WA) and Tasmania (Tas)).

The management plans include the requirement for an annual quota. Each state monitors the population numbers of the commercially harvested species and set sustainable quotas.

Status of kangaroos and wallabies in Australia

There are 55 species of kangaroos and wallabies in Australia today, only six of which will be commercially harvested for export in 2007. Under the EPBC Act, the Australian Government is required to approve the kangaroo and wallaby management plans prepared by each state. At present five states have approved management plans for kangaroos or wallabies. Before approving

any management plans that allow for the commercial harvest and export of kangaroo and wallaby products, the Australian Government carefully considers factors such as the biology, population size and trends and conservation status of the species. Management plans must demonstrate that they do not have a detrimental impact either on the harvested species or their ecosystems. The principal aim of these plans is to ensure the conservation of kangaroos and wallabies over their entire range. They describe how the activities of shooters and dealers are regulated, how the size of the population is monitored, the regulations and checks which detect illegal harvesting or over-harvesting and any other measures to ensure conservation of the species. The species harvested for commercial export for 2007 are:

- red kangaroo (Macropus rufus), areas harvested Qld, NSW, SA,WA
- eastern grey kangaroo (M. giganteus), areas harvested Qld, NSW
- western grey kangaroo (M. fuliginosus), areas harvested NSW, SA, WA
- common wallaroo or Euro (M. robustus), areas harvested Qld, NSW, SA
- Bennett's Wallaby (M. rufogriseus rufogriseus), areas harvested Flinders and King Islands, Tasmania.
- Tasmanian Pademelon (a species of wallaby) (Thylogale billardierii), areas harvested Flinders Island, Tasmania.

The red kangaroo, eastern grey kangaroo and western grey kangaroo are the most abundant species and make up approximately 90 per cent of the commercial harvest. Their combined population size has fluctuated between 15 and 50 million animals over the past 25years, depending on seasonal conditions. These estimates only include the harvested areas of Australia and are considered to be very conservative. All the species that are subject to commercial harvesting are common and are not endangered species. Commercial harvest of kangaroos and wallabies Tasmania is the only state involved in the commercial harvest of wallabies for export purposes. The harvest is approved only for Flinders and King Islands. The harvest of wallabies for the export market is a developing industry. There is a potential market for the export of meat, furs and perhaps skins. Four other states (NSW, Qld, SA, and WA) are involved in the commercial harvest of kangaroos for export purposes. Products derived from kangaroos and wallabies include meat for human consumption and skins for leather products. Some skin and meat is used domestically, with the remainder exported to more than 55 countries. Both the Australian Government and state governments have a role in the conservation of kangaroo and wallaby populations, including ensuring that any commercial use of kangaroos is managed in an ecologically sustainable way. The states have further responsibilities in terms of regulating the harvest and processing industry, while the Australian Government controls the export of kangaroo and wallaby products through the approval of kangaroo and wallaby management programs and the granting of export permits. The commercial kangaroo and wallaby harvest industry in Australia is one of the world's best wild harvest operations because management goals are based firmly on principles of sustainability.

Quota setting

All quotas are set on an annual basis. ... Quotas are a scientifically estimated sustained yield. Quotas represent an upper harvest limit independent of

industry demand. To ensure there is no detriment to any species in any region, each state is divided into zones for monitoring and quota-setting. Commercial harvest (cull) figures for a year rarely amount to the approved quota as these are directly linked to market demand, and the capacity of the industry to harvest the quota level. State-wide quotas are rarely met although they may be met for a particular zone. Over the last 5 years (2001–2005), the numbers of kangaroos harvested have been on average 63 per cent of the annual quotas. Each state provides the Australian Government with a submission outlining their proposed kangaroo or wallaby harvest quota. In preparing their submission, each state considers a range of factors. These generally include:

- current population trends;
- review of previous harvest;
- climatic conditions;
- the non-commercial harvest and its significance;
- the proportion of the population not subject to harvesting;
- information on other forms of mortality apart from harvesting; and
- reports of damage to primary production.

Once the quota has been set, each state is required to report to the Department on the numbers of kangaroos or wallabies harvested. The quotas for mainland kangaroos are set at a proportion of estimated populations, established by the individual states. Survey methods vary between and within states depending on the geography of the survey site and are outlined in the state management plans. Survey methods and frequency also vary between species. Wallabies are monitored on Flinders and King Islands (Tasmania) using annual spotlight surveys carried out along the roadsides. Since population densities further away from the road differ from those near the road, densities estimated by roads idesurveys cannot be extrapolated into an estimate of absolute population size. An estimate of absolute population size is not essential as quotas are not based on a calculated proportion of the population, but rather on population trends and historical harvest levels. Additional information on monitoring and quota setting is outlined in the Flinders and King Island management plans. The 2007 commercial kangaroo harvest quota (mainland states)The 2007 sustainable harvest quotas for kangaroos commercially harvested on the mainland, have been set at around 3.6 million. This is a decrease of around 115,000 animals from the quota approved in 2006. This decrease in quota is related to the drop in kangaroo populations associated with widespread drought in eastern Australia over recent years. In addition to the sustainable harvest quotas, New South Wales and South Australia also have a 'special quota'. Special quotas are only used when a management zone's commercial quota has been completely utilised and a continuing pasture damage mitigation need has been demonstrated. Its purpose is to ensure that kangaroos that would have been shot by landowners under non-commercial licences and left in the field are now utilised by the industry. The total special quota for South Australia (all three harvested species) is 8000. The New South Wales special quota is 89,711. The actual number killed under a special quotas is actually much lower and in many years not utilised. The 2007 sustainable harvest quota represents about 15.3 per cent (ranging from 14 per cent to 20 per cent depending on species and state) of estimated populations of the four kangaroo species that

are commercially harvested on the mainland. The scientific community and state management agencies consider that annual harvest levels in the order of15 per cent of the populations for Grey kangaroos and Wallaroos, and 20 per cent of Red kangaroo populations, are sustainable. Australia has undergone severe drought in recent years, and because the primary driver of kangaroo populations is rainfall, overall kangaroo numbers in Australia have declined as a result. Population of kangaroos has increased in South Australia from 4–9 per cent depending on the species. Populations of Red kangaroos in NSW have decreased by nearly 3 per cent while the Eastern and Western Grey kangaroos have increased by around 9 per cent. Populations of Red kangaroos in Queensland have increased by nearly 12 per cent while populations of Eastern Grey and Wallaroo have decreased by around 9 per cent or 28 per cent respectively. In Western Australia populations of Red kangaroos have declined by around 28 per cent while Western Grey kangaroos have decreased by 4 per cent.During the 25 years in which kangaroos have been harvested and monitored, kangaroo populations in Australia have demonstrated a strong capacity to recover from the regular occurrence of drought. For example, the drought of 1981–83 drove kangaroo populations in harvested areas down to almost half of the estimated pre drought population, from which they recovered to exceed pre-drought figures within seven years. In response to the drought of the early 1990s in Queensland, kangaroo populations also went through a period of decline, before recovering following good rainfall. Throughout this period, kangaroos in Queensland were harvested at rates close to 20 per cent, demonstrating that the harvest did not impede the kangaroos' natural ability to recover quickly following drought. It is anticipated that kangaroo numbers will increase again following the end to drought conditions across much of Australia. Harvesting may depress populations further than if they were not harvested during drought, however historical data clearly demonstrates that this does not impact on the long-term viability of kangaroo populations within the harvested areas of Australia. The 2006-07 commercial wallaby harvest quota (Flinders and King Islands) as required under the management plans the Australian Minister for the Environment and Heritage, Senator Ian Campbell, approved commercial wallaby harvesting quotas for 2006–07. The Minister approved a commercial quota of 27,000 based on a maximum harvest quota of 73,750 for both islands. The maximum harvest includes the non-commercial quota. The management plans and quota applications include a provision for varying the commercial quota provided the non-commercial quota is adjusted and the maximum harvest limit is not exceeded.

Humane harvesting practices

Animal welfare considerations are a priority of the EPBC Act. The Act allows the government to ensure proposals for the sustainable use of wildlife observe strict welfare requirements. Kangaroos and wallabies are harvested by being shot by skilled professional shooters. A Code of Practice for the Humane Shooting of Kangaroos is in effect and was prepared cooperatively by all government wildlife authorities in Australia. Compliance with the Code is a license condition for commercial shooters in all states. This Code is subject to periodic revision to ensure it continues to deliver best practice animal welfare outcomes. A review is currently underway and a revised Code is expected in 2006.In Tasmania, all wallabies must be taken under a commercial wallaby hunting permit. This permit includes a condition that requires compliance with the Tasmanian Animal Welfare Standards and additional conditions that

make the animal welfare requirements very similar to the National Code. Furthermore, all states and territories have legislation concerning animal welfare matters and are able to prosecute offenders.

The divisiveness of this approach is best demonstrated by the website of the kangaroo protection coalition or PETA (Viva)

From: http://www.kangaroo-protection-coalition.com/index.html. accessed 27.4.2008

About the National Kangaroo Protection Coalition!

The National Kangaroo Protection Coalition is an alliance of Australian and overseas Wildlife and Animal Protection groups, who are committed to closing down the commercial and non-commercial kangaroo kill. Currently 30 Australian and several overseas groups make up the Coalition.

Question: Why do we need the Kangaroo Protection Coalition to protect kangaroos? Why doesn't the Government protect them?

Answer: Australia's unique heritage of indigenous animals has been treated with contempt and brutality since white man arrived. Australia is a nation led by soul-less politicians whose only concern is money, power and the ability to destroy this continent's ecology behind a protective wall of propaganda and extraordinary irresponsible legislation, which guarantees extinction. The first thing that needs to be said about the betrayal of the kangaroo is that the sell out has not been confined to government, industry, politicians, media and some scientists…the kangaroo has also been sold out by the environmental movement both nationally and internationally. Over the years, millions of dollars were raised overseas to help the kangaroo. Millions and millions, money that never came back to Australia so that desperately needed legal action could be taken, or professional campaigns funded. In spite of the mountains of evidence that the kangaroo industry is robbing Australia of a critical component of its wildlife heritage, the major Australian conservation groups have by and large ignored the plight of the kangaroo. The kangaroo is a symbol of Australia. The bloody symbol of a nation whose leaders turned away from their moral, social and environmental responsibility. The kangaroo's fate will also be shared by the remaining unique wildlife in this great continent. Deliberate, politically induced extinction so that a few may gain from the death of a species. A survey of tourists arriving in Australia showed that the two most favoured tourism icons anywhere in the World were the Statue of Liberty, followed by the Kangaroo! Another survey taken when tourists were leaving Australia showed many were disappointed they didn't see any wild kangaroos!

3.7.3 The Macropods — Only a Commercial Pest?

NSW has four native species of macropods which are commercially-harvested. All of these were important game species for Aboriginal people and white settlers. However, changes in their status and in attitudes towards them have resulted in all of them being protected from Conservation Hunters in this State. All of these species however are open for commercial harvesting by the "kangaroo industry" and for damage control. This situation differs markedly from South Australia, Queensland, and Tasmania, where some species are game and Conservation Hunters can acquire licences for harvesting. Most importantly, kangaroos are not allowed to be a resource for farmers and for Conservation Hunters in NSW.

The implications of this will be discussed in Chapter 5 and Volume 2 as it touches principles of equity and participation for two groups of pursuing legitimate activities with benefits for society.

3.8 SUMMARY AND CONCLUSIONS

The examination of exotic and native game in NSW confronts one with a confusing picture involving complex interactions of colonial history; European traditions and preferences; as well as a ubiquitous decline of many native species after European invasion. This has led to a variety of responses; mostly aimed at the conservation of small native species; a war on exotics; and the development of a commercial utilisation scheme for a unique group of native species. The largest four macropods in Australia and NSW have also increased in numbers. Deer have emerged as a group of species with a special status. In general it appears that a majority of farmers in Queensland and NSW do not consider them as pests. The same may be said for feral goats which have become an alternative to sheep for many farmers in western NSW.

Chapter 3 has also shown that Conservation Hunting has remained the most universal, consistent, and environmentally sound means to reduce exotic species. The problem is that scientists and policy makers have shown themselves reluctant in acknowledging this.

Maintaining a role in the management and use of these many game species, both native and exotic, has to be the vision of a pluralistic society.

In the modern management environment — which is more aware and susceptible to diversity and adaptive, collaborative and community-based arrangements — there are a whole range of new models and opportunities which may be pursued by modern hunters. In fact, experience from overseas shows that, where Conservation Hunting is properly-regulated, Conservation Hunters are a crucially-important element for the conservation of many species with surprisingly-large economic benefits. In Chapter Four, we will investigate the socio-economic aspects of Conservation Hunting in NSW.

Hunting of native species has more or less been eliminated in NSW, unless it is carried out by Aboriginal people or if it aims to "*harm*" ducks in rice fields by special pest permits. The four largest species of native game (mammals) may not be hunted by Conservation Hunters. They can only be 'harvested' by "professional shooters" or destroyed as an agricultural pest. The logic behind this is yet another revealing feature of the "Anything but Hunting!" dilemma.

3.8.1 Towards the Rational Management of Wildlife in NSW

There seems to be considerable uncertainty as to the impact of any species on environmental, agricutural or community values Australia-wide and in NSW. The reasons for this uncertainty are complex, but three stand out in above evaluation:

- It seems difficult to establish clear links between the actions (herbivory, predation) of exotic species and the responses of native ecosystems and species. This is particularly the case once long timeframes are considered and/or ecosystems/ regions compared. This is also particularly relevant with regards to competition.

- There has been surprisingly little consistent long-term research on these questions. Most research is too specific, short-term, and locality-affected to be extrapolated.
- Research results tend to be contradictory and do not support either scenarios (black or white). This disagreement amongst the scientific community has also had a negative impact on 'management' and action.

In the introduction to this Chapter we have suggested that a dichotomous wildlife management system exists in Australia which, by dividing wildlife into exotics and natives has proven arbitrary at best, divisive and dysfunctional at worst.

While it is not our intention to downplay the impact of exotic animals, we suggest that this division between native and exotics has not been very helpful in their management. It has in fact magnified management barriers through the "institutionalisation" of what we have called the "Antipodean Dilemma". That is, the ongoing and very-Australian controversy about what is native or what is exotic, pest or resource, key threatening process or game, threatened or not. This endless exchange amongst scientists, policy-makers, bureaucrats, politicians, and the public has all but paralysed an approach to rational wildlife management which is not determined by the category an animal might fall into (at a particular time or space), but by the management needs and options it creates. By definition, an animal which is a resource cannot be a pest, even if it has that status for a particular land-use. Pest means not 'overabundant' but in need of harvest.

This review of actual and potential, native and exotic 'game species' has revealed a rather bewildering picture of inconsistent, 'irrational' and ultimately-harmful attitudes towards their management. Many management approaches have pursued what some scientists or agencies thought "ought to be right", than recognising the reality of the rural space. Much of the debate has focused on "What ought to be done" for "ecological reasons", than "what can be done" in realistic terms. Worse than this, a lot of the actions were based on "scientific evidence" which was not there or was plain wrong! This problem has been explicitly analysed and demonstrated for red deer in New Zealand by Graeme Caughley in his book *The Deer Wars* (1983) and his arguments are just as true for Australia and for New South Wales. This is when endless processions of dysfunctional policies and approaches towards exotics have done little to repair the damage (also to native species), while wasting large resources and dividing parts of society.

One of the lessons of all this could be the realisation that, the management of a species, does not depend on whether it is exotic or not, but whether its place in the ecology has been understood and is being properly-addressed. A poignant example of the truth of this statement is the issue of the eradication of feral cats on Macquarie Island and the subsequent explosion of rabbit numbers. While Hugh Possingham from the University of Queensland, accurately suggested in *New Scientist* that some simple population modelling would have shown that rabbits — once their major predator was removed — would 'explode" ravishing the island once again, the ecological reality goes much deeper. In reality, rabbits and cats had become indispensible parts of the NEW local ecology whose large-scale removal, much rather than setting things right, just added yet another disturbance, weakening an already weakened system which had, somewhat, managed to establish a new equilibrium. In short, the eradication of cats on Macquarie Island did not solve the problem. It only created a bigger one.

Managing the cats (for example around the hotspots where they could do much damage), while leaving them where they could do good (prey on rabbits), would have been a better result. It would also have been much cheaper. Yet it would have required a consistent management effort (how the Chinese are currently saving a score of their endangered species including the Giant Panda) than yet another 1–3 year Government grant. A consistent management effort on that island, could well be an institutionalised Voluntary Conservation Hunting program and bird tourism (hunters LOVE magnificent wildlife in exotic or remote and challenging localities or situations) where rabbit management is undertaken every year to generate income for the island. Is there anything wrong with that approach?

3.8.2 Moving Beyond Uncertainty: From KTP to 'Wildlife Management'

While the development of the Key Threatening Process Terminology and Categorisation is clearly an attempt by Governments to improve the management (reduction) of exotic species, the question remains. To what extent can this aim be realised if uncertainty remains and if sections of society (many landowners, thousands of pig and deer hunters) do not share these values? This dichotomy of values follows throughout the discussion of various game species which are also under the Act "Key Threatening Processes". We suggest that — while the content and approach in the KTP categorisation is a right step towards a better management of exotic species — this has to be adopted with resource value in mind and based on clear science, not opinions.

Species		Distribution Characteristics	Threats	Farmers	Hunters	Industry
Feral goat		West NSW, widespread	P			
Feral pig		widespread	P,E,D			
Feral cat		widespread	P			
Red fox		widespread	P,D			
Rabbit		widespread	H,E			
European hare		Widespread, low abundance	C?			
Red deer		Increase widespread, dispersing	H			
Fallow deer		Widespread (E), dispersing	H			
Rusa deer		Royal NP restricted	H			
Sambar deer		GDR, spreading north	H			
Chital		Isolated populations	H			
Feral cattle		Isolated	H,E			
Feral horse		Isolated	H,E			
Feral dogs		Isolated- east, GDR	P,C			

P = Predation; E = Erosion; H = Herbivory; C = Competition; D = Wildlife Disease

From an objective point of view, these aims are not unsurmountable. In fact, we have been achieving these outcomes for sheep and for cattle for many years.

3.8.3 Kangaroo Harvest: Anything but Hunting

Arid-zone kangaroos — pest or resource? This question was asked by DK Cunningham in 1981 in a book edited by R Kitching and R. Jones: The Ecology of Pests: Some Australian Case Studies. In 1987 Gorden Grigg from The University of Queensland suggested that a "New Approach" was needed for Kangaroo harvesting (Grigg, 1987). Eight years later, he reiterated that call by showing that kangaroo harvesting was not just a way to generate rural income, but necessary for 'conservation of rangelands" (Grigg, 1995). Another seven years (Grigg, 2002) later he reiterated that call in a "Strategy for the Third Millennium", yet another milestone publication that was edited by Dan Lunney from NSW National Parks and Wildlife Service and Chris Dickman from the University of Sydney. In this he called it: "A Zoological Revolution: Using native fauna to assist in its own survival" (Lunney and Dickmann, 2002).

Four years later, Thomsen and Davies (2006) ask again the question raised by Cunningham a quarter of a century earlier. Pest or Resource? In this case contemplating the "prospects of financial returns to landholders from commercial kangaroo harvest".

Most recently in 2007 yet another milestone of paradigm shift came with "Pest or Guest: The Zoology of Overabundance", again published by Lunney et al (2007). There are three contributions on the 'sociology' of kangaroo harvesting: one on managing kangaroos in the ACT by Fletcher, another on 'exploding kangaroos' by Coulson, with third a group of scientists led by Dan Lunney and including Chris Dickman. These point out that ethical behaviour in the management of Australian wildlife. That is, if we cannot stomach "killing" as the only feasible way to manage a species, we are leading to the demise of Australia's native animals while ignoring the sanitised slaughterhouses as described by Daniel Nierenberg in Chapter 1.

This must surely be one of the most circular, ritualised and unproductive arguments in the history of wildlife management anywhere — 30 years later not much has changed. While several million kangaroos are harvested annually across Australia, 70 percent of the harvest is for dog meat, nowadays called 'pet food' (Thomsen and Davies,2006) and the authors are still, in their title, pre-occupied with the question as to whether kangaroos are pests or a resource.

The kangaroo harvest is also increasingly contested by Animal Rights groups — for example VIVA in Great Britain and even by Japan where it is likened to their whale harvest. Yet some arguments have changed during almost 30 years. While it was clear enough in 1981 that kangaroos were NOT A PEST but a considerable resource, it became very clear in the next decade that harvesting was necessary for the recovery of greatly-damaged rangelands caused by excessive densities of hoofed animals. Thomsen and Davies (2006) have once again pointed out in considerable and revealing detail how farmers and landholders could benefit more from the commercial kangaroo harvest. We also have known for many years that kangaroo meat is very healthy (see CSIRO study "Kangaroo meat — health secret revealed". Online:http://www.csiro.au/index.asp?type=mediaRelease&id=kangaroofat&stylesheet=media).

There are, however some interesting shifts in those arguments, which go beyond rumination and to whether property rights are relevant. It is a question of

why landholders remain excluded from the benefits of harvesting kangaroos. The REAL question asked by increasing numbers of scientists during the past 30 years is not so much, whether kangaroos are a pest or harvesting is good for rangelands. The question is why Australian policy-makers and legislators have resisted this call for 30 years and have, despite of all the scientific sustainable management plans, never really addressed the problem:

> The perpetuation of a culture of landholder exclusion, the perpetuation of a low-value approach to kangaroo meat with little and insufficient support by governments to better market, domestically and internationally, kangaroo meat. Or the inexplicable reluctance in NSW, to exclude responsible hunters from developing a kangaroo harvest culture instead of driving them towards deer (which they have now identified – and not really helpful either- as a KEY THREATENING PROCESS).

3.8.4 Conservation Hunting: A Land-Use which Pays for the Privilege

Another important lesson from this review of game species in NSW is that Conservation Hunting is not "free" any longer. It has ceased to be something to "get away with", but is starting to entail a whole set of social and environmental responsibilities which are not only associated with but which will become the very essence of Conservation Hunting. This will represent a transition for NSW hunters and one that has been made by many hunters in western countries, even some Australian States, with significant benefits to wider society. The will and overall vision for this approach has been outlined by the former Chairman of the Game Council and we have looked at that vision in Chapter 2:

> to promote responsible and orderly hunting in this State. .... ensure the future of 'responsible' hunting, based on international best-practice. ... lift the standard and ethics of hunting ..... introduce a more skilled, more knowledgeable and environmentally friendly hunting fraternity to ensure a strong international tradition and culture continues for our future generations to enjoy.
>
> Robert Borsak, Game Council NSW, November 2005

Clearly, the game species that we have looked at: past, present and perhaps future, are of a dichotomous nature. Some of these species should not, according to the current thinking, seek sustainability as defined in Game Management. The very opposite is the case: Pests should be contained and reduced. One could say that for these species hunting SHOULD be unsustainable. And there is another group which might never be hunted again but for which one could claim that Conservation Hunters have a historical and special responsibility in assisting their recovery; perhaps as a future resource, if only for Aboriginal people. Perhaps in the typical dichotomous nature of our game species, we can learn from Aboriginal communities which have, as anthropological research shows, never made that distinction. And what does it mean if pigs have naturally-invaded Australia in prehistoric times, or were introduced, or probably both? All this suggests is that we now have to "move on" as the language of science has started to suggest for some time.

Species Group	Current Indigenous Management	Current Management Regime for Recreational Hunting	Current Scheme for Commercial Operations	Current Scheme for Pest Management
Large Macropods	Allowed on Aboriginal land	Off Limits	Large Commercial operation	East of the Commercial Zone "Mitigation Kills" under special permits
Remaining Native Mammal Fauna	A remaining Resource (subject to protection and at times with special permits. Allowed on Aboriginal land	Off-Limit	None	Generally None, Translocation such as Lismore Shire for Flying Foxes.
Australian Bird Fauna	A remaining Resource (subject to protection and at times with special permits. Allowed on Aboriginal land	Off-Limits, partial exception duck pests	The Muttonbird Industry in Tasmania None in NSW	
Exotic Mammal Pests	Allowed on Aboriginal land	Before the establishment of GC more or less unregulated	For most species (rabbit, fox, goat, pig there is a commercial aspect	
Exotic Deer	Allowed on Aboriginal land	Now regulation is sought for State Forests and Crown Land	None, however opportunities are sought for Game Farms	On private land and in some National Parks under NPWS (Rusa Deer in RNP)
Exotic Birds	Allowed on Aboriginal land	Depends on landholder arrangements		Pest control for Feral Pigeon or Starling and Indian Myrna

3.8.5 Conservation Hunting as a Cultural Heritage in Australia: Not Only for Native Australians?

Game animals in Australia are hunted for many different reasons. For pest control and for skill; for a challenge; for fur; for conservation and for meat; as well as a cultural expression. Conservation Hunters hunt their quarry with a range of methods, many of them requiring particular skills in working with animals (dogs and ferrets), shooting (shotgun, rifle, bow) and hunter applications (whistles, behavioural). With the exception of the Dingo, the hunting situation for rabbits and fox, hare and cat is relatively uncomplicated in the country. They are ubiquitous and every farmer and many other landowners pursue them with rifle and shotgun, toxic bait and trap, machinery (rabbit warren ripping) and fumes (fumigation). All four species and, in particular feral cats, have become readily-accepted by Aboriginal communities. Desert cats have even become culinary treats (in fact they taste very similar to hare), and probably have been for centuries. They even crop up in 'the Dreamtime' amongst some Aboriginal communities.

As the number one target of economic and ecological losses, opinion about them is rather undivided. Hunters are seen as one means, but a relatively unimportant one, in reducing their numbers and impacts. As game species the rabbit and the fox have the distinction of being both widespread and abundant. There are many places that offer rabbit and fox hunting (along with other game) on farms, hundreds of websites and many good tips on how to do it. If one Googles "Rabbit Hunting + Australia" one receives about 434,000 hits (and finds many tips where and how to go rabbit hunting. We have copied below from Aushunt (www.aushunt.com.au) an example which describes one way of hunting rabbits in Australia.

The art of ferreting

Fromhttp://www.aushunt.com.au/main/mainarticle2.
php?articleid=0f62896668 accessed 13.4.2008

Ferrets have been used to hunt and flush rabbits for hundreds of years, the humble ferret have been domesticated for some 2000 odd years. Basically the ferrets are used to enter a warren and flush the rabbits from their otherwise secure homes, where they are then dispatched by the hunter.

There are several ways of going about ferreting

1. The use of purse nets to catch the fleeing rabbit at the warren entrances

2. the use of dogs to catch the fleeing rabbits from the warren

3. the use of shotguns to kill the rabbit as it flees it home

4. the use of other nets

The use of purse nets requires a few pieces of equipment, basically all you need is the nets themselves which are basically 3-5 foot long nets with a draw cord which runs on the outside of them and through 2 metals rings. As the rabbit hits the net the drawcord pulls tight and creates a bag unto which the rabbit is then caught and you must get to it and then humanely dispatch the rabbit. The use of dogs basically requires a dog that knows what the score is, one that will "mark" a warren which is basically through body language telling you there is a rabbit at home(eg pointing) is a invaluable trait for a ferreting dog to posses, sure saves you a lot of time ferreting warrens where coney is not home! Obviously you can combine the purse nets with the dogs, any that slip nets can be picked up by the dog, plus they have a better set of ears and eyes, they can hear what's happening underground a lot better then us mere humans ever can. The use of shotguns is self explanatory, ferrets in, rabbits out. If you are a good shot you should account for a good percentage of rabbits. The other nets are basically long nets type setup, which don't seem to be used a great deal here in Australia, I know they are used. Basically they are a long net a bit like a drag net, and what happens is the rabbits hit the net and as the net is baggy they quickly become tangled in the net. You must get to them quickly as they can kick themselves out, or chew through the net leaving holes and ruining the net. This method is handy if you are ferreting a large warren, or know where the rabbits are going to bolt to, you can set the one net rather then 30 or 40 purse nets and sit back and wait. A dog can be used here to, but must be "net smart" and not hit the rabbit in the net, potentially causing it to bounce out or worse damage the dog. Ferreting is mostly done in the early mornings or later afternoon, however in winter times you can spend longer out in the field as it does not get so hot. Ferrets don't handle the heat to well here in Australia and over 30 degrees they can die from heatstroke, they basically become very inactive and limp. Different ferrets have different styles of hunting, you soon pick up the way they work, and with practice the ferrets develop their own way of working a warren. For example my Jill(female ferrets are called this) tends to go into a warren and check each part of it, popping in and out to each entrance, if there is a rabbit home she will stay in until she comes across them, then by scratching the rabbit or biting it try and persuade it to bolt. If they don't bolt she will kill the rabbit. If there are not rabbits home she will go in, her whole attitude is totally different, she will muck around a bit, I can generally tell if nothing is home in the first one or two sightings of the ferret.

This is where the locating collars are handy, a small transmitter is attached to a collar on the ferret and a locator box used to find the location of the ferret underground. Being somewhat expensive to purchase over here ($450) I would not think too many people are using them. Once the ferret is located and you know it's not going anywhere you can dig down to them, retrieving the rabbit and the ferret after what is hopefully a quick dig. I to date have dug 3 times, the first time we found the ferret had moved the rabbit deeper into the warren, right under a big tree, the second time we got about 2 foot down and the ferrets came out and finally the third time after a quick dig I broke through to the ferret scratching the back end of a rabbit, pulled the rabbit out and then caught another mid air as it too bolted from where that rabbit was, I did not get a good grip on it however and it got away, but then got caught in a net in another entrance. You will know when the ferret is onto a rabbit as you will hear the rumbling underground, they sound like mini trains as the rabbits fly through the warren, then all of a sudden the rabbit comes out of one of the holes at a fast rate, hitting the net and are caught. Not all rabbits are scared of the ferrets, and they sometimes are reluctant to bolt and will give the ferrets the run around. This is why it is important to be quiet when you are setting the nets or whatever so they are not as aware of your presence. Ferrets are easy to care for, and if handled regularly are not the biting savages most people think they are. They come in over 40 colours, no colour is better then another. The males are generally bigger then the females, weighing up to 2.5 kilos where the females generally are from 500gm to a kilo. The males also have a lot stronger smell about them, and if frightened both have glands that will let go a pungent smell (like a skunk but no where near as bad). They require a protein based diet with some fat, they do not absorb foods such as vegetables, the best diet is a natural diet supplemented with cat biscuits. You need to provide a decent brand of cat biscuit as the cheaper brands do not contain the digestible meat protein in high enough percentages. I use Iams Kitten biscuits, ferrets up to several years of age need to be given kitten biscuits instead of cat biscuits because they have different nutritional needs. Ferrets are also becoming more popular with people as house pets, in this case they are fed frozen chicks or mice, which is all good and well but personally I like to have the ferrets catch their own food, as they have since time began. All in all they are a great way to spend a morning, you never stop learning and you and the ferrets are doing something that comes natural.

Happy hunting

St4ghound

This description of rabbit hunting with tame ferrets not only suggests considerable skill is involved but also, for the initiated, quite a lot of effort, good fun, and a good meal afterwards. This is also a good way to reduce a small population of rabbits which fathers and sons have been doing together for a long time. More than anything else, however, it describes a very interesting human-animal relationship between the hunter and the ferret which is an old cultural heritage. If described by the able voice of David Attenborough for some distant tribe, it would attract a fascinated audience. Such highly-skilled and interactive Conservation Hunting methods can also be applied for Conservation Hunting on European hare or red fox.

It is also clear that not all is black and white — not even in the Parliament of NSW where in May 30 2008 this fascinating subject came up, introduced by a speaker not part of 'The Hunting Lobby", but by a member of the Greens, who had 'stumbled across that connection' and had commonsense enough to recognise it for what it was. We will discuss this interesting Parliamentary debate in Chapter Six when we show how the fur trade is currently re-emerging across Europe providing opportunities in fox control and hunting alike.

3.8.6 Redefining Wildlife Management in Australia

Australia is the only of Earth's five continents on which indigenous people had not developed something which could be described by the European invaders as "agriculture". While this omission also happened in other parts of the world (for example in the Amazon rainforest where a highly- sophisticated indigenous form of agriculture was also not attributed as such because it differed so much from the simple and seasonal forms Europeans had developed. The extent of the misdiagnosis in Australia might well be more extensive and is currently, at least 'addressed' partially with the 'bushtucker trend' at least and mostly for species of plants.

One could even say that the ongoing disregard of hunting as the oldest and most legitimate land-use of native Australian's is on par with the disastrous principle of "Terra Nullius". One of the consequences of that omission was a degrading view of Aboriginal people, of hunting and of Australian species, which were hunted. Aboriginal 'activities' were not considered land management, 'hunting' was considered barbaric and Indigenous while "Game" so rarely qualified in size, shape and taste, that it was also considered inferior. While Australian society and European- Aboriginal relationships are still reeling from that particular arrogance, we suggest that it is less recognised and acknowledged that this form of contempt has also had a lot to do with why Australian species are 'off-limits' to Conservation hunting and why hunting has become such a shunned land-use in a country where it might well have had its longest and undiminished standing.

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Chapter 4

The Hunting Socio-Economy in NSW

ATTACHMENT 3

Contents

The hunter is part of the countries' social and economic framework. The sport provides his recreation. His activities create demands for industry to produce his equipment and to provide his transport and accommodation in the field. Hunting is a legitimate occupation provided the animal populations are properly managed to ensure that they are not depleted, that the sportsmen follows the strict ethics that the sport demands and that he helps pay for his privilege. Most hunters are prepared to meet these requirements.

H.J Frith, 1977

ATTACHMENT 3

This chapter discusses how socio-economic value is added to Conservation Hunting as it proceeds along the "Hunting Ladder". As hunting advances from its least 'value-active' form (commercial hunting) to Conservation Hunting and then hunting tourism, value is added, both in monetary terms and in non-monetary values. This non-monetary value is very significant in many countries of Europe, North America, New Zealand, South America and Africa. Significantly, much of this value centres around conservation and rural and indigenous communities.

4.1 INTRODUCTION: THE ABC OF HUNTING EQUIPMENT

The "ABC of hunting equipment" as described in the directory of AusHunt (www.aushunt.com.au) may serve as an introduction to the socio-economics of hunting in Australia.

Archery Equipment	Camping Equipment
Clothing	Clubs and Associations
Communications	Cooking Equipment
Disposal Stores	Dog Supplies
Game Meat	Guns and Ammunition
Gun Safes	Hunting dvds
Hunting Publications	Knives
Navigation Equipment	Refrigeration
Safaris and Outfitters	Safety Equipment
Scopes and Optics	Taxidermy
Vehicles	Listing Examples

If one adds to that list the number of up to 900,000 people (or 4.5. million if one includes fishers) and the expenditure known to be spent by them, one can clearly see that Conservation Hunting is a major outdoor economic sector in Australia, serving and employing a considerable number of people and indirectly supporting a rather large and diverse set of industries.

Such simple economic dimensions however are not everything. There are many benefits of Conservation Hunting in Australian society that exceed simple monetary indices. For example, the fact that hunting has been and remains the legitimate land-use of Aboriginal culture which has sustained their existence over some 40,000 years. It is also an indisputable fact, reiterated in many reports by

anthropologists, that hunting remains the major (and preferred) means of survival for many Australian Aboriginal communities, often supplementing badly served store food.

These facts suggest that the socio-economics of hunting must be sacrosanct as an Aboriginal heritage and a human right. That is, it cannot be abused and outlawed by a vocal minority in cities who have become so disconnected from their origins (and where their food comes from) that they have started to confuse legitimate concerns for animal welfare with basic human rights. The rights include the right to equity and participation (never mind "sustainability") which represent four of our six pillars of environmental principles. And the fact that hunting, across the world and also in Australia, is starting to regain a role as a land-use and a means for achieving conservation objectives (conservation economics) is very significant.

In this Chapter, we offer a glimpse of some of the socio-economic dimensions of this sector for Australian society and, in particular, for NSW. We have however not termed it an "industry". This term diminishes its importance and focuses on financial aspects that may be least significant. We have rather, attempted to show that there is a progression in value-adding of wildlife depending on the way that we hunt which makes Conservation Hunting a very special land-use. Unlike commercial use which, as is evident in the sustainable commercial harvest of kangaroos, does not only produce mostly pet food, but adds in many diverse ways to the socio-economic fabric of a country.

4.2 DEFINING THE PROGRESSIVE SOCIO-ECONOMICS OF HUNTING

The 1997 Draft National Policy for Recreational Hunting was prepared by the National Hunting Policy Working Group (since abandoned) which comprised members from the major national hunting organisations. This policy stated that recreational hunting or cultural hunting was practiced by over one million Australians. This figure may have declined in subsequent years but there are presently 1.2 million licensed shooters in Australia, plus a growing number of bow-hunters. In comparison, there were, in 1997, 4.5 million recreational fishers and 700,000 golfers. This Draft National Policy further suggested that, in simple economic terms, recreational hunters generated in excess of $1 billion dollars annually, through the purchase of vehicles and equipment, hunting access fees and licences and downstream related employment activity. An estimated $325 million of this flowed to regional communities.

The socio-economics of Conservation Hunting looks at the value that hunting (subsistence, Conservation Hunting, commercial, tourism) generates for society as a whole, to communities and to various sectors of the industry and not just in monetary terms. For the purpose of this report, we have divided these activities into the following natural resource sectors and sub-chapters. Socio-economic aspects of Conservation Hunting in NSW may be conveniently separated into four distinct market sectors, which, while linked in various ways, utilise Australian wildlife in distinct fashions. These sectors start from subsistence to various forms of trading and commerce.

Each of these sectors adds value to society but in different ways. One must

examine each of the four sections (4.3–4.7) in an international context as data on Australia and NSW is often lacking. This is because Australia has a general disregard of hunting as a land-use and has made surprisingly little efforts to collect economic data on this (apart from a rather crude Federal assessment by Ramsey in 1994). The last two sections will focus on Australia and NSW as they are reflected and perform in their wider context. This can only be a selective snapshot of a rather vast and ignored and under-researched research field in Australia. This snapshot will suffice however to demonstrate the major principles in the socio-economics of Conservation Hunting in contemporary Australia and NSW.

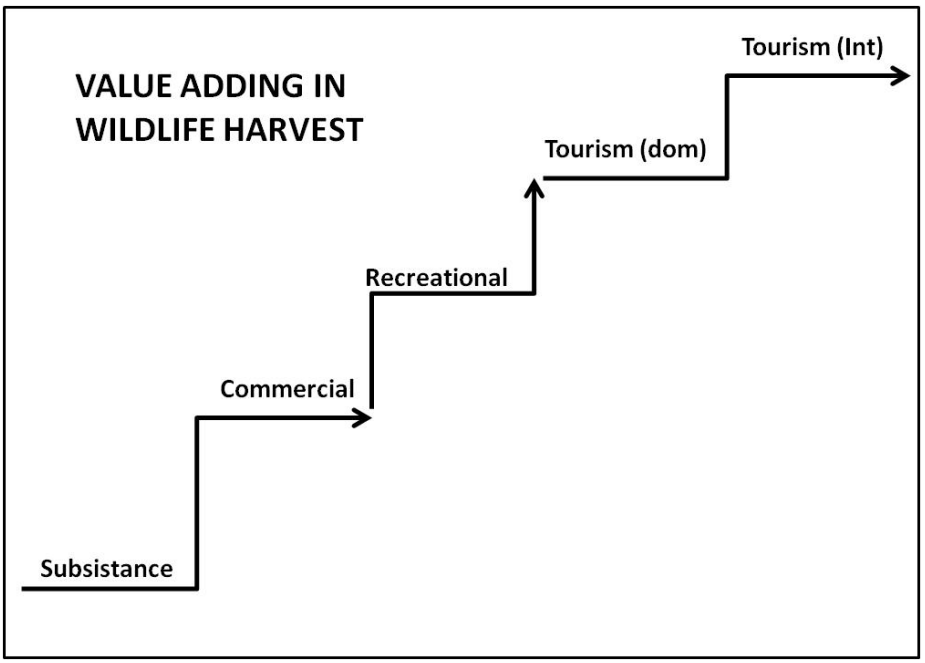

Fig. 4.1 The Hunting Ladder: Value-adding in the harvest of wildlife. The progression of this ladder goes from simple material values (first two stages) to the Recreational (which may include conservation and other values) to tourism defined as "an activity which involves all kinds of other sectors of society, many of which are not related to hunting (or fishing for that matter) yet are 'triggered' by that activity."

4.3 AUSTRALIAN WILDLIFE AS THE ABORIGINAL ECONOMY

Hunting, gathering and fishing have not only been the indigenous land-use for our first Australians but is central to their culture, religious content and art, Dreamtime and identity. This claim is substantiated by more than 40,000 years of hunting and fishing in Australia with practices and methods which have remained outside of urban condemnation until today. It is surprising that this simple fact has never applied to endorse hunting as a land-use for all Australians. For this very reason, anybody condemning hunting as an outgrown land-use is, indirectly and directly, making a statement on indigenous culture which is in direct contravention to many Aboriginal Acts and policies but also in contempt of their culture and in violation of their human rights. Condemning or even diminishing the role of hunting in Australia is diminishing Aboriginal culture.

There have been few studies on the socio-economic role of Aboriginal hunting in Australia and, what is available, is often relatively outdated (Bomford and Caughley, 1996, Altmann, 2001). Probably the only landmark study is Bomford and Caughleys compilation of case studies. There are however newer examples which attempt, with Federal support, to revive Aboriginal hunting culture. It remains the fact that, in many remote Aboriginal communities, Hunting and Wildlife remain an essential means of survival, not just an economy (Dr Jim Birckhead, pers. Communication). The present-day reality of many remote Aboriginal communities, according to an anthropologist who has worked with them for several decades, is close to a subsistence level economy where Western food complements Conservation Hunting, not the other way round. That the food derived from hunting, fishing and gathering, is superior to what our society offers Aboriginal communities, is conceded by the Government of Queensland in its *Eat Well Be Active* guide that it issues for Aboriginal people:

> Traditional hunting is a great way to get active. Try hand spear fishing and diving for crayfish or go out and hunt turkey or kangaroo.
>
> (http://www.your30.qld.gov.au/Portals/0/Your30/docs/FactSheets/active_tips_for_aboriginal.pdf)

Hunting and fishing are not only important for Aboriginal people because they are part of their ancient heritage or important for sustenance, it is also good for their health. The Government of Queensland has recognised that hunting and fishing might well be key health activities for Aboriginal people, whose life expectancy is almost 20 years lower than that of white Australians. This is only partly because of the impacts of unhealthy western convenience foods and alcohol. We would suggest therefore, that it would be a divided society indeed, if what is good for Aboriginal people, as suggested by the Government of Queensland, does not do for white Australians.

These are only two simple and practical existential reasons why hunting remains an essential part of the Aboriginal socio-economy. There is also recreational Aboriginal hunting because Aboriginal people hunt for a variety of reasons including money and recreation. Recreational hunting of city-based Aboriginal people is a crucial connection to their heritage and land-use.

There is also a stark message to non-Aboriginal and non-hunting Australians — condemning hunting, fishing and gathering not only condemns Aboriginal culture but also threatens reconciliation. White Australians should gracefully accept and practice something important for Aboriginal people, making it part of our common Australian heritage and society thereby not locking it away in museums as a cute (and rather disgusting) part of Aboriginal Dreaming.

4.4 WILDLIFE HARVEST AS A COMMERCIAL RESOURCE

4.4.1 The Value of Australian Wildlife

The Australian wildlife resource is dichotomous and this dichotomy is responsible for many seemingly-nonsensical regulations. The divisions run straight down a line

which divides what is considered "native" and what is considered "exotic". This not only divides Aboriginal and white Australian society, it also divides wildlife. This would be an easy divide if native wildlife would be beneficial and a resource, exotic wildlife just harmful and no resource.

Australia now has a combination of many exotic, large animal species that have grown to large populations along with a range of native species which are also both large and valuable (several kangaroo species, two species of crocodile, and the emu). Wildlife as a commercial resource in Australia (to be hunted and traded) was assessed in its entirety for the first and last time by Ramsay in 1994 in a publication 'Commercial Use of Wild Animals in Australia' by the Bureau of Resource Sciences of the Department of Primary Industries and Energy.

In the year of that assessment (1991) the "value" of the trade with wild animals in Australia amounted to $A132–156 million. The kangaroo industry employed some 1600 shooters and "hundreds of people in meat and skin processing". In particular, the wild boar industry generated more income than the domestic pork industry. While some four species of native Kangaroos were still the major commercial wildlife resource, five exotic species had already eclipsed them.

Table 4.1 Estimated annual wholesale value of trade in wild animals and their products in Australia in 1991 (after Ramsay and English, 1991)

Species	Status	Value $ million 1991	Trend 1991	Status 2006
Kangaroo and Wallaby	Native	50–60	+	
Saltwater Crocodile	Native	2–3	+	
Feral Goat **	Exotic	27–28	+	
Feral Horse **	Exotic	22–25	+/-	
Feral Pig (Wild Boar)	Exotic	15–20	+	
European Rabbit	Exotic	8–9	+	
Feral Water Buffalo	Exotic	6–15	-	
Red Fox	Exotic	1–2	-	
Others *		2–3		
TOTAL		132–156		

* includes brushtail possum, hare, cane toad, deer, feral camel, cat, feral donkey
** includes wild and domestic animals

Some 10 years later, The State of the Environment Report of 2001 attempts to continued with that economic valuation. Its valuation is based on 1997 figures and has since been greatly expanded in scope (for example in SoE 2006), but has started to lack in detail. It is clear that since Ramsay's assessment and despite of the recommendations of the '1998 Senate Inquiry on the Sustainable Use of Wildlife', little effort has been made to expand our knowledge on wildlife based industries. "Wildlife Tourism" has been included as a large wildlife resource (and knowing that the "value" of koala for the Australian tourism industry exceeds A$1 billion a year). The hunting industry based around deer and other exotic species all likelihood is close to the value of koalas has been omitted in this report. Despite the fact that it was already estimated at close to A$100 million more than 15 years ago.

There is a discrepancy between the over-rated wildlife tourism industry in Australia with very modest or generally greatly overstated contributions to

conservation (for more information, see the Wildlife Tourism Report series with 24 reports published by www.crctourism.com.au). Recreational hunting and fishing as pointed out by Bauer and Giles (2002) has only been reluctantly accepted as a form of wildlife tourism by that industry, despite the fact that the "science" of non-consumptive tourism is in its infancy while the science of wildlife and even conservation (then called "Game Management") goes back to hunting (Leopold, 1933).

Table 4.2: "Value" of Native Wildlife (State of the Environment Report 2006)

Economic Sector	Industries (million)	Value (A$ million)	Potential	Source
Commercial Fisheries	Oyster farming (200)	**1800**	May be greatly expanded into native fishes	SoE Report, 2001
Forests and Fodder	Woodchips mostly	**590**	Low value product (some 10$/ ton), indirectly subsidised and highly controversial from native (old growth forest)	SoE Report, 2001
Growing and Harvesting Native Plant Species	Some 1600 species Bush-food ($16), Wildflower exports ($30)	**169**	Wildflowers, Bushfood (expected to grow to $100 million in 2001)	ABS, 1999 quoted in SoE Report, 2001
Native Animal Species (meat, skin, hides)		**280**	Kangaroo Industry (4000 jobs, $245 million); mutton bird harvest, Emu Industry	SoE Report, 2001
Live Animal species	Earth Sanctuaries has put an economic value of A$3.8 on its animals		ES has remained controversial, animal shares have collapsed and to company has collapsed in 2006. Not necessarily because the model was bad, but of operational mistakes	SoE Report, 2001
Tourism	Whale watching ($200), penguin parade ($96)	**1800**	Wildlife is an important element of the Australian tourism industry. There is currently a continuing expansion of that industry and improvement	SoE Report, 2001
TOTAL		4639		

It is clear that while conventional industries (commercial fishing, harvest of native terrestrial species, forestry) have limited growth potential or are struggling, there is growth potential in the harvest of native and exotic plant and animal species and tourism — but only through value-adding. While this might, however, apply to some species; for example the Saltwater crocodile (and not so much for "commercial harvest", which, after all had almost driven it to extinction). Others, such as the muttonbird, is an important wildlife resource for Aboriginal people in Tasmania and for a marginal group of "mutton-birders", who continued to derive a hard living from this resource.

Case Study 4.1: Vanishing Wildlife Harvest: Muttonbird Harvest in Australia

One very Australian wildlife industry is the harvest of the short-tailed shearwater (Puffinus tenuirostris) or Tasmanian muttonbird that breeds on shorelines and islands of the southern coastlines of Australia. Populations for 1987 were estimated at around 9.3 million breeding pairs on at least 167 colonies. Commercial Harvest of muttonbird chickens (27 March – 30 April) started with the arrival of European settlers in 1803, exceeding at times one million animals yet is reported not to have affected populations (MSY was estimated at some 1.63 million chicks, yet annual harvest does not usually exceed 45,000 birds). This industry was of particular importance to Aboriginal people who represented at the time of Ramsay's 1994 report most of the participants. Markets for the birds were Tasmanian with the remainder sold to NZ. At that time muttonbird meat (described as "very oily and strong flavour") mostly appealed to older consumers and Aboriginal people. Annual harvest of some 350,000 to 400,000 birds in the 1980s had declined to some 200 animals in 1990 (Ramsay and English, 1991). While the decline of this "industry" has been celebrated by some it is nothing less then the deplorable loss of yet another part of Aboriginal culture which had managed to outlive — and be sustainable — by being adopted by some marginal Tasmanian people (who carried Aboriginal genes), long after the Tasmanians had been driven to extinction. The unlamented , even celebrated loss of this Aboriginal culture, has been documented by a film from the 1980s "The Birders" which was used by lecturers (including one of the authors) as a case study to teach the science of sustainable wildlife management to university students (After Ramsay 1994).

In Australia employment and other contributions to the national economy from hunting are not readily available in Australian Government databases. It would appear however that these contributions are largest in the tourism sector. However, it is difficult in this sector to directly "attribute" income to wildlife. An exception to this is the kangaroo Industry which, while highly-contentious in the way it is conducted (commercial aspects of the harvest has polarised animal welfare groups and the industry) makes it easy to collect economic information. We have provided some excerpts from "The Kangaroo Industry Association of Australia" which has managed successfully to protect its exclusive industry interests at the expense of landowners and farmers, indigenous people, and Conservation Hunters.

4.4.2 The Value of Commercial Kangaroo Harvesting

Four species of macropods, the eastern grey kangaroo (*Macropus giganteus*), the western grey kangaroo (*Macropus fuliginosus*), the Red kangaroo (*Macropus rufus*) and the wallaroo or Euro (*Macropus robustus*) form the basis of the commercial kangaroo harvesting Industry in Australia. Australia-wide, this industry represented by the Kangaroo Industries Association of Australia (KIAA) describes the following:

> Whilst the sustainability of pastoral activities in much of the Australian arid rangelands is under constant investigation, the fact remains that they are currently supporting a large population of kangaroos which, if uncontrolled, would seriously threaten the economic viability of the pastoral industry and the environmental sustainability of huge tracks of land (Caughley 1998). These are extremely fragile areas which can support a limited number of grazing animals. Allowing the grazing pressure from all animals to increase is one

of the most serious environmental hazards in the rangelands. The kangaroo Management Plan is the only tool currently available to exercise control over the kangaroo contribution to grazing pressure. Furthermore, the kangaroo population represents a resource. There is extensive ethical debate concerning the morality of utilising wildlife as a resource. This debate however, rarely examines the moral imperative for nations to utilise their resources to the best effect in supplying the world with the food and commodities it needs. Over the past 30 years a significant industry has developed which utilises the kangaroo resource. Initially its focus was largely on pest control for the pastoral industries. However over the last decade there has been a growing realisation that the kangaroo industry has significant economic and environmental benefits. The kangaroo industry currently generates in excess of $200 million per year in income and employs over 4,000 people. The vast bulk of these jobs are in remote rural communities, many of which would not exist without the industry. This document examines the scientific evidence indicating the kangaroo harvest is sustainable and the controls in place to protect the animals it utilises.

John Kelly, B. Ru Sci. (Hons), Kangaroo Industries Association of Australia. July 2002

http://www.kangaroo-industry.asn.au/morinfo/BACKGR1.HTM

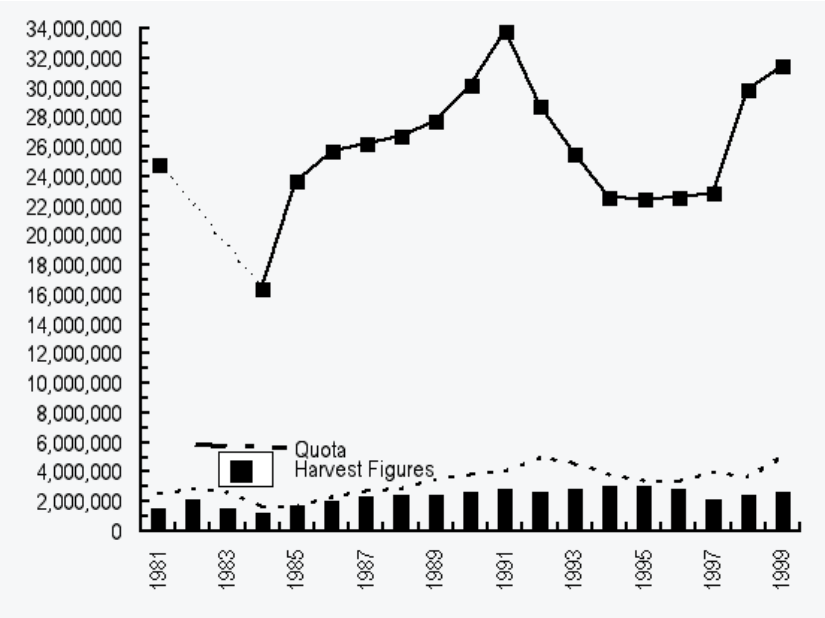

Figure 4.2 Harvest quotas fluctuate with population independently of demand. Population, quota, and harvest levels for red and grey kangaroos only (Pople and Grigg, 2001)

http://www.kangaroo-industry.asn.au/morinfo/BACKGR1.HTM

For most of the States, including NSW, Government departments have monitored this industry to keep it sustainable (and maintain access to the United States export market) and have progressively lifted its standards. An assessment of this industry by RIRDC suggests that it is a well-supported industry which, through good marketing, has slowly made kangaroo meat more palatable to Australians and maintained its export quota.

KIAA is the representative body for commercial kangaroo hunting and is a well-regulated organisation (both by Federal and State as well as self-regulation) for

a sustainable wildlife industry. Whether this industry should be the exclusive (and best) way to harvest wildlife is questionable. Is this the best way to add value to the Australian kangaroo resource and to make kangaroo hunting less controversial. We will further expand this theme in Chapters 5 and 6.

4.5 CONSERVATION HUNTING AS THE LAND-USE PAR EXCELLENCE

4.5.1 Paying for Land-Use

Unlike any other activity in natural resource extraction; people who go hunting or fishing pay for the privilege. Unlike agriculture, Conservation Hunting and fishing is being done for RECREATION. This simple fact should make any economist reconsider the last example he used on value-adding and come to the conclusion that abolishing hunting would be an absurd economic action.

Conservation Hunters and fishers are prepared to pay for getting wildlife for themselves making these activities some of the world's largest recreational enterprises. This has spawned an industry in its own right whose size not so much depends on the animals and the size of their trophies as on the "packaging" of that experience and on the "multiplier effect" for other parts of the economy.

No complete figures are available for Australia or NSW for this industry but, in the places where they have been collected, they demonstrate how hunting is integrated into national economies who value and regulate it as a land-use. It also provides many significant benefits for the whole of a society. These overseas studies also show that commercial hunting is effectively giving away most of its value (ignoring all its other benefits). We have chosen Germany as an example to demonstrate that the German Hunting Association (DJV) in collaboration with State and Federal government has been collecting this information for many years.

4.5.2 The Value-Adding Hunting Sector in an Advanced Economy: Germany as a Case Study

In Germany, the resource value of venison alone is a poor indicator of the importance of the industry. While German hunters generated some 200 million Euro in venison (in analogue to livestock farming or, if harvested commercially, as is the case for kangaroo in Australia and NSW), they paid almost four times that value to participate in hunting! (In 1991, some 950 million DM). According to the DJV Handbook (1991), this money adds value as follows.

Table 4.3 Contributions of Hunting to the German Economy

Cost Sector	1979 million DM	1990 million DM	2004 million Euro
Hunting Licences	20	23.5	18
Hunting Insurance	17	16.0	16
Hunting Tax	34.8	57.7	66
Hunting Leases	348	384.8	**366.8**
Habitat Improvement for Game and Wildlife	200	160.0	**96**
Hunting Protection (Diseases e.g.)		48.0	**32**
Damage Compensation and "Infrastructure"		80.0	62
Equipment and Education		136.0	61
Hunting Dogs	30	40.0	36
TOTAL	649.8	946.0	753.8

As this table shows, hunting, apart from generating 38,000 tonnes of prime meat in one of the most densely populated and industrialised countries in the world, also generates some 100 million Euro in taxes. There is also more than 400 million Euros income for landowners (many of them farmers), contributions of up to 100 million Euro for direct conservation, and another 100 million for the industry. This does not count the intrinsic value of the "recreation" to its participants as well as one of the most advanced; effective; and cheapest environmental monitoring and wildlife disease monitoring systems anywhere in the world. Chapter 6 describes some details of this system. Hunters also carry out an important role in "policing" the German landscape (including assisting the police handle several hundred thousand wildlife-related car collisions) while reducing these collisions (by reducing overabundant animals such as roe deer).

Additionally, farmers reduce forestry destruction from ungulates (roe deer, red deer, moufflon, chamois, valued at several billion Deutschmark in the 1980s) as well as give compensation to farmers for agricultural damage (mostly wild boar). Above everything else, it is a land-use that is not exclusive of others but is carried out on land used for other purposes including forestry and agriculture. This not only value-adds but is a very advanced form of environmental management.

While no such figures can be generated for Australia which neither values recreational hunting (in contrast to fishing) nor regulates, let alone supports or annually accounts for it. There are however some examples around deer which should offer economists and conservationists pause for thought. This group of animals however is now classified as a "Key Threatening Process" in NSW. This is also the case in Victoria which has regulated deer hunting effectively for over a quarter of a century. Deer provide not only indisputable evidence of a large socio-economy around their hunting, but also a significant potential for this industry in conservation (see the Sunday Island Para Park Game Cooperative Case Study). This value has to do with many different factors but mostly because hunters value deer above everything else. Deer around the world are a significant socio-economic resource (Scotland alone for example carries some 350,000 or more red deer of which some 100,000 are harvested annually). Perhaps, most importantly, hunters go to great lengths to support and value add to deer hunting. See section 4.7.4 on the economics around deer hunting conservation economics.

4.5.3 The Expanding Socio-Economic Value of Recreational Hunting in Australia

For Australia, Cause (1990) conducted in 1990 'A survey of economic values of recreational deer hunting in Australia' which suggested a value of some A$86 million and which was likely to generate another A$36.1 million for the hypothetical case of doubling deer numbers. (Cause, 1990: 296). We know now that this prognosis (with the reported deer increases in mind (Moriarty, 2004, West and Saunders, 2007) has been met and exceeded.

Deer have not just doubled but (at least) increased fourfold from 48,200 (in Cribb, 1991) to more than 200,000 (in Moriarty, 2004). In fact, with the increase in deer activity over the past 20 years along with inflation it seems likely that the current economic value of deer hunting in Australia exceeds A$200 million, which is the value of the entire kangaroo industry. And this is for deer alone whose population numbers have been estimated at a mere 200,000 animals. If one adds to this recreational hunting targeting other species (for example an estimated 2.3 million feral goats and up to 30 million feral pigs), a A$1 billion label for the economic value of hunting in Australia does not seem out of question. One could therefore suggest that the breakdown of that industry, for example through legislation by outlawing hunting, would be a major assault on a large sector of Australian society and in particular the rural space. The reality of fully accounting those socio-economic patterns is more difficult than travel cost/contingency evaluation models in Cause (1990) would suggest.

Hunting and fishing cover so many dimensions of Australia's society that any analysis of its size and extent would be a very complex undertaking that it has never been done (except superficially for deer almost 20 years ago). Also, even that accounting of the commercial sector ceased after Ramsay's report in 1994. But this neither diminishes its size nor its importance; it simply highlights an omission by State and Federal governments.

4.5.4 The Socio-Economic Value of Recreational Hunting in NSW

Recreational hunting in NSW (before the formation of the Game Council) was not supported by State Government. Contrary to Tasmania where a special game section was established in its National Parks Office and to Victoria where the Victoria-based Field and Game has been very active, recreational hunting in NSW was more or less a hidden economy.

This hidden economy is in the open now. It started to emerge with the Game Council (G-Licence and R-Licence) and, while only about 12,000 hunters have received that licence (requiring accreditation), the Game Council is trying hard to get hunters and hunting clubs onside. This has allowed a progressively expanding database on Conservation Hunters who are "registered" users of wildlife. It also makes them more accountable which will eventually allow the estimation of the socio-economic value of hunting in NSW.

Without stricter regulation and more powers to the regulatory body, there will be, for a considerable length of time, a double hunting economy in NSW: the open one, accessible through registered Conservation Hunters and the hidden one, consisting of other hunters who do not have the licence.

4.6 FROM RECREATIONAL HUNTING TO HUNTING TOURISM MARKETS

There is more to recreational hunting however in the modern global economy than meets the eye. As with almost everything else, Conservation Hunters and Conservation Hunting has become a global activity and hunters have started to organise themselves accordingly. Even industries have developed around this and been defined as a form of Wildlife Tourism (Bauer and Giles, 2002) as well as an industry sector (Hofer, 2002, Bauer and Herr, 2004).

4.6.1 Hunting and Fishing Tourism as the Largest Wildlife Tourism Sector

As road networks and industrial agriculture expand, and people become more affluent, wildlife resources are diminishing, forcing hunters and fishers to travel further for their quarry, whether it is to the next lake or forest, or to the other side of the globe. The increasing urbanisation of society, combined with the extensive range of quarry, has created a demand and supply situation in which various strategies have been pursued to provide the client with their desired experience, and to derive profit for the Fishing and Hunting Industry. The main target species for hunting tourism include larger ungulates (mostly cervids and bovids), rodents (rabbits, marmosets), and waterfowl (ducks, geese), but also incorporate carnivorous species such as bears, wolves, felids (wild felines), mustelids (weasels), and crocodiles. Fishing focuses on a wide range of marine/estuarine fish, molluscs, crustaceans, and a variety of freshwater species in rivers and lakes. Not all hunting/fishing falls under tourism, but much of it incorporates the following defining elements of tourism:

- Travel to and from a particular destination;
- The presence of a tourism service industry (outfitters, tour guides, hunting farms);
- The exchange of money for above services
- Overnight, to several months, stay at destinations;
- A service industry; and
- Aspects of leisure and recreation.

There is a wide range of products available, varying between over US$100,000 for a hunting trip to a few dollars for a fishing license in Australia. How important is the industry worldwide, how many people engage in it and what is the total economic value of the hunting market? We analysed a number of websites, accessed through Google for parts of this chapter. This was conducted in order to gain at least a coarse measure of tourism related hunting and fishing activities. If one assumes that particular tourism sectors, including wildlife tourism, are represented equally, and in proportion to the size of the actual industry, on the web, then it is possible to gain an understanding of their relative size. Hunting and fishing account for 29 per cent of all the websites connected with tourism (a total of approximately six million hits). In almost one third of cases, the concept of being immersed in nature was associated with hunting or fishing.

Bauer and Herr, 2004, 'Hunting and Fishing Tourism' In: K. Higginbottom (ed). *Wildlife Tourism – Impacts, Management and Planning*. Common Ground, UK

In the market situation (as described in Bauer and Herr's (2004) assessment of the hunting and fishing tourism industry around the world), it has become clear that both activities can neither be separated from general wildlife based tourism. Unlike most wildlife tourism sectors however this study also found that benefits of all kinds (for communities, for conservation, and for others) generally far outclasses those derived from wildlife tourism (with exceptions such as Gorilla tourism in Ruanda or the potential in China for Giant Panda Tourism. One of the many reasons for this, is the generally much better regulatory environment for hunting (as opposed to drive, dive or fly around wildlife), but most importantly the much greater ability and willingness of hunters to pay for their experience.

If these two simple facts are combined with innovation and value-adding as is so typical for many tourism sectors, a situation arises which makes hunting and fishing tourism one of the most sustainable and income-generating forms of tourism. In this industry, "recreation" is being captured in innovative ways. While it requires good and effective regulation (which really applies to all sectors) it can make very significant contributions to conservation and regional economies. One example of this is found in Stuttgart (Arkansas), the rice capital of the United States, where a very significant rice harvest-duck hunting industry complex is the basis of a national and much celebrated Hunting Tourism Industry (with a Duck Festival). This festival is worth millions to the local economy and more than compensates for rice losses from duck species. We will compare this situation with NSW in Chapter 6 where duck hunting is restricted to rice fields yet not as a valuing-adding tourism industry but as tedious, unpleasant, unwilling and contested collaboration between hunters and rice farmers.

There are some places in the world which have excelled in that value-adding strategy around hunting. For example in Hungary hunting comes with a special and rather unique experience of the Hungarian Steppe and which makes Hungary one of the worlds largest exporters of venison, or the southern States of Africa (Namibia, South Africa), where hunting, fishing, bird-watching and nature have all been incorporated into farm tourism hospitality.

Sophisticated industries of this type are generally in their infancy in Australia and form part of the constraints in the development of hunting of Australian wildlife (exotic and native). These constraints include the generally low sophistication and lack of value-adding elements. For the discerning and educated international hunting tourist from America or Europe, NSW with its wild goats, foxes and pigs is hardly enough to travel across the world for. If that experience, however, is added to Australian Nature and Fishing and Conservation (which might not only include pest control but native species) along with the unique and remote lifestyle of farmers, this is a very different thing. This could become, (like South Africa), an experience they might want to share with their family (a multiplier effect). In order to make this happen, however, there will have to be a regulatory environment which supports such strategies.

Hunting and fishing tourism is a relatively new form of industry based on cheap air transport and readily accessible destinations which have invested in hunting. In Europe alone, seven million or 1.7 per cent of the populace are hunters with the number of fishermen exceeding this figure several-fold. Hofer in her traffic study estimates the annual expenditure of this hunting industry at around 10 billion Euro with an estimated 131 million Euro spent on hunting expenditure

abroad (Hofer, 2002). Hunting and fishing expenditure in the United States is estimated at a staggering US$70 billion. (Nobel Prize Winner John Steinbeck wrote a beautiful essay comparing the American hunters' need and obsession for expensive equipment while for a French hunter a bamboo fishing rod and line is by far the preferred item.) Even in Australia with only 22 million people hunters spend in excess of A$1 billion. In order to develop this industry however, one has to understand its structure and inner workings.

4.6.2 The Hunting–Fishing Industry Complex

The hunting and fishing industry constitutes a complex arrangement with a considerable number of stakeholders and auxiliary industries. As is generally the case, it slowly evolved from a multitude of interactions. It is now an organised flow from client to organiser via middlemen or agencies which is increasingly optimising cost-benefit ratios in order to remain sustainable and is continuously on the look-out for new markets, new clients, and new destinations.

The Client

The hunting/fishing tourist generally transfers a high personal and emotional value in the hunting trip. The more valuable the hunt, the more contact, confidence, negotiation (Hofer, 2002), and safety will be expected. Lechner, one of the main hunting agency owners in Europe compares the hunt to trading with antiques (Hofer, 2002).

The Intermediary — Hunting/Fishing Agencies

Fishing and hunting tourism have grown over the past 30 years or so into a multi-billion dollar industry which is driven by demand (mostly from rich industrialised countries) and supply which, in Europe, has been traditionally filled by Eastern European countries, Canada, and Africa. Transactions between these two elements are generally carried out by specialised agencies that offer hunting trips, safari hunts, charter-boat fishing trips, or all combined either through advertisements in a large number of hunting and fishing journals at hunting fairs, at large international events, and, increasingly on the Internet. According to Hofer (2002) about 100 such agencies advertise in the lucrative German market in Europe, about 40 in Italy, however only about 20–30 larger agencies prevail. To classify agents, Hofer's (2002) three categories have been expanded by two more and contain:

- Professional Agencies offering a wide spectrum of worldwide hunting/fishing trips;
- Professional agencies specialising in certain destinations;
- Professional Individuals acting as agents;
- Individuals acting as agents as a part-time job;
- Private Hunting Guides who market directly in brochures and via internet.

As is the case for small businesses in tourism (McKercher, 1998) it is mainly the large which prevail and firms such as Lechner in Germany dominate the market. The consumer increasingly feels safest amongst these providers (Hofer, 2002).

The Hunting/Fishing Organiser

The organisers and operators of hunting/fishing tourism experiences are at the centre of the industry and, in order to be competitive, have to satisfy their clients; comply with the demands of regulators; liaise with indigenous communities; deal with agencies; and, ideally, also be involved in the management of the target species. Operators perform differently at these multiple levels and, in the long run, the only firms survive score highly on these criteria. In the Yukon area of Canada, after successful land claims by indigenous people, it was only the outfitters with good relations with indigenous communities that managed to survive. In northern Australia, the biggest impediment in the development of the safari and fishing tourism industry is the unsatisfactory arrangements with often disgruntled communities which see little returns for what they feel are impingements on their hunting rights.

The Host Community

Hunting and fishing is undertaken mostly in either rural or natural areas with many of these areas inhabited by indigenous and traditional societies. For fishing, which in Australia is allowed in protected areas, the nation's wildlife services host fishermen who pursue their interest within the framework of National or State legislation generally administered by the host agency. Ideally, communities hosting hunters and fishermen have a say in how tourists conduct themselves, derive profits from their accommodation, and for guidance.

In large parts of Australia, Canada, the US, and New Zealand, indigenous societies now have more say and have recovered ownership of much land in the past through land claims. This has influenced significantly their relationship with hunting tour operators who, in the case of Canada's vast Yukon hunting territory (its prime hunting grounds), now can only continue to operate if outfitters have good relationships with Indian communities.

The Auxiliary Industry

As in any other tourism industry, transport, accommodation, food and insurance providers dominate a large portion of the industry. Almost equally important however are the manufacturing industries. ranging from Zeiss Binoculars (which in the past mostly developed and designed for the needs of the military) to fish bait in street shops along the coast. In the US, an estimated US$14 billion is spent on fishing and hunting equipment.

Design of Hunting and Fishing Tourism Products

Any tourism product is only successful if it manages to approximate as close as possible the aspirations, motivations, financial means, and preferences of its target groups (see also Weaver and Oppermann, 2000). A comprehensive review on wildlife tourism in Australia concluded that generally these components are very poorly addressed by the tourism operators in Australia who have rarely attempted to define what their clients actually want. For this reason, many wildlife tourists remain dissatisfied with their experience, while the majority of wildlife tourism operators make a poor profit.

Hunting and fishing tourism are exceptions to this general picture. It is easier to define success in this type of tourism and, most importantly, probably the clients have generally a much better idea what to expect and what to get out of their arrangements. They want to bag an animal, take a kudu bull trophy back home, or have a range of pictures of themselves fighting the black marlin from the seat of power in the back of a chartered boat. This expectation is generally well-known among operators. It is also well understood by both sides that pursuit of this goal is associated with special hardships, inconveniences, and even danger. Simply, hunters and fishermen are more knowledgeable of what they expect to get out of their tourism experience.

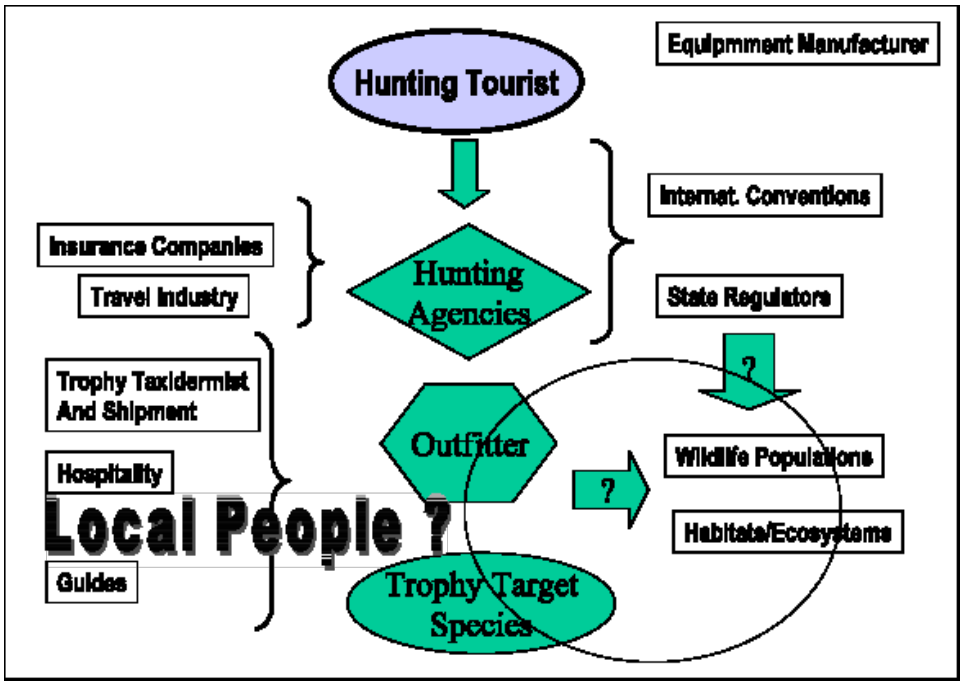

Fig. 4.3 The Hunting/Fishing Industry Complex

(modified after Hofer, 2002)

4.6.3 Hunting Geography — Demand and Supply Countries

In most western countries, with the exception of Canada, Australia and New Zealand, the demand for hunting and fishing generally far outstrips supply. In centres of Europe, this has led to fishing clubs with closed membership and stringent criteria to membership. In central (and increasingly) parts of Eastern Europe the Hunting District System means many hunters without districts choose to go overseas.

Some areas standout in the importance of internet use for hunting and fishing. On the world map above, a website analysis of the use of the word "hunting" for advertisements has been made. "Circle" diameters indicate number of website hits for tourism/hunting/trophy. The importance of North America for this industry stands out. The circle size for Canada and Mexico represents a supply excess for these countries.

Figure 4.4 Proportional representation of websites containing the word tourism in association with hunting

(After Bauer and Herr, 2004)

Case Study 4.2: International Hunting Tourism in Europe

Europe is the world's most diverse and complex legislative and regulatory hunting and fishing environments. Unlike in most parts of the world where European expansion destroyed endemic systems, it still contains many traditional and indigenous elements but has transformed them in a great diversity of customs and systems which combine the old with the new and the practical with the almost absurd. Nothing expresses this better than the situation of the songbirds in Europe, which are looked after with tender care and observed by millions of Northern Europeans while in its southern parts an estimated 200 million robins, swallows and songlarks are harvested as part of tradition.

In its entirety, Europe, with its 18 countries (including Malta, Switzerland and Norway) constitutes the world's second largest hunting block (after the US) with almost 6.5 million active and registered hunters or almost 2 per cent of its population (FACE, 2009). Hunting commitment of these 6.5 million hunters is somewhat incomparable with its US counterparts in its intensity and commitment, partly because much of it is connected with landownership and rural identity.

During the past 20 years, however, much has changed. Many of the demands of these hunters are not being met any longer within Europe and in particular in Germany and Austria with its district system there are several hundred thousand hunters without land who have to travel for the hunting experience, which might be cheaper, more diverse and more exciting in exotic countries other than in Germany itself. Pinet (1995) estimates that about 30 per cent of Europeans now travel abroad for hunting and it is surprising how well this industry is documented in more than 50 hunting journals, while very little is known about the industry itself and its impacts in host countries. Characteristics of the European market for hunting tourism have been examined by Hofer (2002) and Bauer and Giles (2002).Preferences of these hunters seem to vary between countries as Hofer (2002) noted by comparing data provided by Rocco; Herrero and Blanco (1999) and van Krunkelsveen (1999). These studies found interesting geographical

preferences within which document Europe's diversity. With German hunters preferring Eastern Europe, Italian huntersreamining within Europe or choosing South America and Cuba, Spanish preferring North America and Benelux hunters with a prefermce for Africa. If, for instance, the European share of trophy imports is compared with the US, one can see that this change is still happening and will continue to catch up with the dominant market share of the US. The majority of European trophy hunters prefer to hunt in their home territory where they are familiar with the terrain and have an intimate knowledge of the local animals and their behaviour. An increasing number of hunters, however, seek the exceptional experience. This experience may include hunts for large game in remote and wild regions of the world. The pattern of this industry is revealed by the frequency of species, destinations and country characteristics in advertisements of hunting trips by the outfitter industry in Germany. Advertisements in Germany are representative of a powerful, highly organised and economically viable group of hunters who make annual hunting trips for which they pay up to 100,000 DM per year to supplement their experiences with their domestic and highly regulated hunting territories. The analysis assumes a close relationship between countries and species advertised and the destination, and hunter's choice of species. Actual preferences could only be determined by contrasting advertisements with actual hunting selections.

Outbound Destinations

In a 1999 edition of 'Die Pirsch', a German hunting journal, 40 per cent of the outbound destinations for 437 advertisements offer hunting trips to the former Eastern bloc.

Country Destinations

A frequency distribution of country destinations shows the predominat position of a small number of countries, in particular Russia, Canada, Hungary and Poland. In Russia and Canada, it is the attraction of large bear and large cervids which draws the hunter's interest, while the remaining countries attract interest for a whole range of species. The experience of an exotic country is at least as important. It is notable that Australia, although it offers a wide range of game species, occupies the last place of 25 major destinations, possible due to its isolation geographically.

4.6.3.1 Size of the Industry

The size of the international hunting industry is large by any standards. The economics of hunting and fishing tourism are obviously complex and determined by a great number of factors, stakeholders, markets, and key industries (see Table 4.4). As expected, North America and Europe, have a very large industry involving more than 20 million hunters and in excess of 60–70 million fishers who spend in excess of 100 billion Euro annually.

Table 4.4. Approximate value of the Hunting Industry in Various Regions

Demand and Market Zone	No Estimated Hunters (Million)	No estimated Fishermen	Annual expenditure Hunting (Million Euro)	Annual Expenditure Fishing (Million Euro)	Total Expenditure Consumptive Industry (million)
Europe	6. 4367	> 30	10,000		
US	13	34.1	33,000	33 000	
Australia and NZ	Around 1	3-6	500-1000		
Victoria (Australia) Sambar Deer	40–50,000	na	45	na	(˜ ˜ (>) 200)

4.6.3.2 Numbers and Expenditure

Hunter numbers in many countries of Europe continued to increase up to the 1970s but have remained stable from the 1980s onwards. This trend is also reflected in the United States where sportspeople (fisher and hunter combined) fell from 40 million in 1991 to 37.8 million in 2001. However the expenditure of the smaller number of hunters and fishers has risen.

4.6.4 Australia as a Hunting Tourism Destination

4.6.4.1 Australia as a National and International Tourism and Hunting Destination

Trophy hunting as a form of tourism has been treated in some detail previously (Bauer, 1993, Bauer and Giles, 2002, Bauer and Herr, 2004). It targets body characteristics such as antlers, tusks or horns of various game species and features very prominently in connection with tourism for Canada, the United States, and Australia.

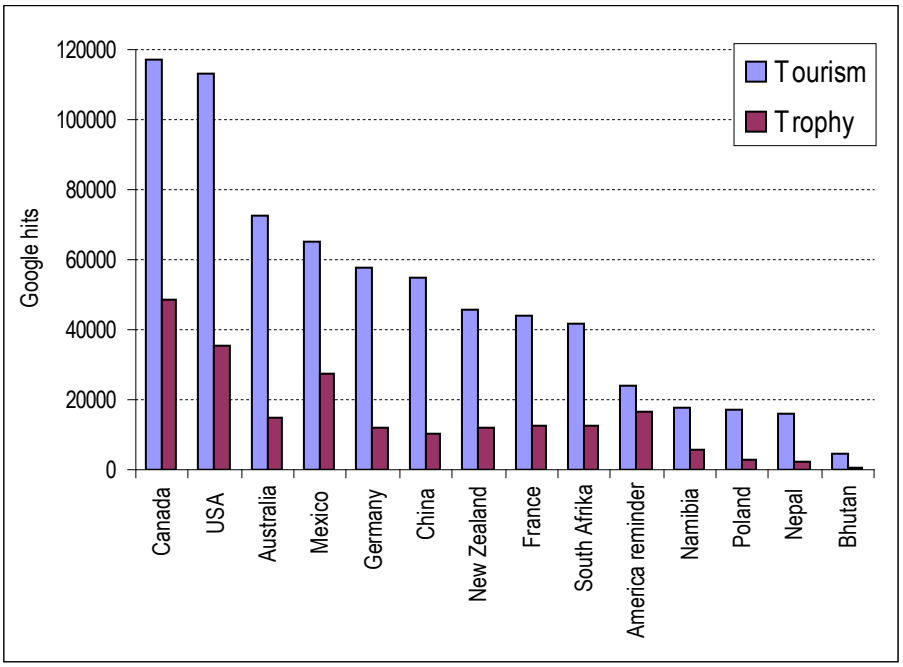

Figure 4.5 Number of websites containing the words tourism and trophy in association

4.6.4.2 Pricing of Hunting and Fishing Trips in Australia

There is a wide range of hunting experiences available ranging from more than US$100,000 to little more than a few dollars for a fishing licence in a National Park in Australia.

Table 4.5 Average price per trip for guided trophy hunting in Australia

Area	Average cost $US
Arnhemland	1037.6
Australia (several areas)	2933.3
NQ	466.2
NT	1636.6
QLD	532.4
VIC	820.0

4.6.4.3 Safari Hunting in Australia as a National Attempt to Attract Hunting Tourism

The Rural Industries Research and Development Corporation (RIRDC) report 'Safari Hunting of Australian Exotic Wild Game' by Dryden and Craig-Smith (2004), was the outcome of a RIRDC research project with The University of Queensland. The aims of that report were "to describe the existing commercial safari hunting industry [and] to explore the social, legislative and biological environments in which it operates [and] "to describe international examples of successful commercial hunting industries". (Simon Hearn, Managing Director of RIRDC in his foreword).

The study was undertaken "to help identify constraints to sustainability and profitability which the industry faces and to formulate appropriate policies for the industry." As a document of the Federal Government, it focused on all of Australia and had invited four overseas specialists to document the status of this industry (which it calls "international prototypes") in four world locations which are known for the advanced status of that industry (South Africa, The United States, Quebec in Canada and New Zealand). For Australia, the project separated the industry into three components.

1. The game meat industry
2. Australian commercial and recreational hunting
3. Commercial safari hunting.

The three targets of that specific inquiry were investigated through a postal survey (186 mail-outs) of the following five stakeholders:

1. Individual commercial safari operators
2. Recreational hunting clubs and societies
3. Organisations representing animal production industries and landowners
4. Game meat exporters
5. Financial houses.

The response rates for the above stakeholders of what were comprehensive and time-consuming questionnaires was interesting by defining "the industries". From 39 questionaries mailed out to commercial safari hunters, 26 (67 per

cent) were returned, while none of the financial institutions responded (0/23). Recreational hunting clubs had a response rate of 21 per cent, for farmers that dropped to 11 per cent while few game meat exporters (3/38) bothered to reply. The pattern is clear. The safari industry, with its very high response rate, was the only respondent group which could be analysed. With the highest stakes in that survey, it showed the highest interest.

4.6.4.4 Profiling the Safari Industry in NSW and Australia

Case Study 4.3: Industry Example: Greg Pennicott Safaris

Customised safaris to suit your requirements

All prices for hunts include airport transfers, accommodation, meals and guides.'Free range' and 'Estate hunts" are conducted. New hunting grounds — 7000 square kilometres in Arnhem Lands available: New camp, lots of animals, remote hunt. The first hunt Greg has to offer is on our Watervalley Station situated 3 hours drive south-east of Adelaide in South Australia. The station has around 100,000 acres of enclosed deer fencing where there are Elk, Fallow, Axis, Red, Moluccan Rusa, Javan Rusa and Sambar Deer, Water Buffalo and Feral Goat. The best time to hunt Watervalley is April - July. Accommodation is a comfortable cottage on the station with home-cooked meals. Hog Deer are available from other game ranches.

www.gregpennicottsafaris.com

The hunter from overseas and the non-hunter in Australia might ask: What is the safari hunting industry in Australia like? Some answers to this question might be found if one checks them on the internet for example on Hunt Australia Safaris

Case Study 4.4: Industry Example: Hunt Australia Safaris

Welcome to Hunt Australia Safaris

For over 23 years HUNT AUSTRALIA has been the leading big game safari hunting company in the South Pacific region, with operations throughout Australia, New Zealand and in New Caledonia. Australia is a vast country, as large as continental USA. We are the only country in the world that has never had a civil war. We are clean and disease free. Australia is a safe place to visit and we welcome international travellers .Australia is quite famous for its picturesque, golden beaches, the magical coral reefs of the Great Barrier Reef, Sydney's unusual architectural structures such as the Sydney Opera House, our rich ochre deserts and of course, the 2000 Olympics. Australia is not so well known for its hunting safaris and being a fantastic destination for adventurous tourists who want to hunt, fish and explore our unique country. We have some of the best big game hunting and fishing in the world today. We hunt the coastal ranges for free roaming Deer, the real outback (way outback) for Feral Game and the tropical forests and coastal swamps for dangerous game, such as Asiatic Buffalo, Feral Boar and Feral Cattle. Fishing for 1000 pound Marlin and other hard fighting big game fish is carried out just off the Great Barrier Reef, while sportfishing for Barramundi, hard fighting Saratoga and other Estuarine species is carried out in the tropical coastal regions, often right from our hunting camps

About Hunt Australia

Hunt Australia is a family owned and run business. We regard our clients as close friends, who's needs are important. Therefore, they are personally catered for with warm, professional quality service that is applied at all times. Bob and Kay Penfold established Hunt Australia in 1980, with the idea of building a business to cater exclusively for international hunters and sportspersons, wishing to experience high quality adventures in the South Pacific. In late 2005, Matt Graham, a professional safari operator with 12 years of experience took over the company operations . Matt brings to the business youthful enthusiasm, a strong drive to keep Hunt Australia at the top of the market - and to continue the good traditions and management that Bob and Kay established. Bob is now semi-retired retired but still employed by the company as a consultant. Hunt Australia operates throughout Australia, New Zealand and New Caledonia and employs only the most experienced trained guides and field staff. In New Zealand we co-op the services of Kiwi Safaris New Zealand and some of our professional guides work for 'Kiwi Safaris' before the season starts in Australia, in late May. All of these hunts utilise only the best available hunting areas, guides, conditions and facilities and offer the best hunting available for South Pacific big game species. Individual custom prepared packages are our speciality....Hunt Australia offers a wide variety of custom designed hunting packages for you to chose from. We hunt every big game animal in each area of Australia, New Zealand and New Caledonia. We specialise in individual custom itineraries for small groups, family groups or large groups. We can take up to 20 hunters at a time, over our different camps, in safety and comfort. Please follow the links below to more information about our exciting hunting safaris and if you have any questions please don't hesitate to contact us.

Species	Where	
Asiatic buffalo	NT	
Banteng	NT	
Goats	NT	Unpop Island
Wild Boar	NT	
Sambar Deer	Vic alpine forests, NZ	Game Ranch (SA)
Hog deer	Vic	Family Farm
Rusa deer	N Caledonia South Australia -Motel	Farmland hotel stay
Axis deer	Cattle Ranch QL, Game Farm SA	Farmer Homestead in QL. In SA motel
Blackbuck	?	
Scrub bull	NT	
Game ranch hunting	SA	
Fishing		

(www.huntaust.com.au)

There are also other sections on that website which tell United States customers something about the drivers of this industry: excitement, high-adventure even, danger, and remoteness. The latter is a rapidly-diminishing resource which is in great demand around the world; and advertised as such by this particular outfitter.

> We offer the best Buffalo hunting for "BIG" trophy buffalo in Australia today. These buffalo are much bigger in body size than African buffalo, tougher than their African cousins and are notoriously difficult to kill, even with the largest big game calibre rifles. Our buffalo hunting area is very remote. There are no roads into the area for most of the year. There are no people, no fences, no cattle or any commercial enterprises in the area. Only us… and the buffalo. Our current buffalo hunting area offers our clients the best quality buffalo hunting opportunity, that we have had in Australia for the past 23 years. This area is full of big bulls, some even dying of old age with huge horns and large bulky bodies. There has been no commercial harvesting or government-sponsored eradication in this area.....We land right on the island and hunt directly from the aircraft. The island is generally flat and sandy. There are simply thousands of Goats on the island. There is a Suziki 4WD on the island.
>
> (www.huntaust.com.au)

Of the 22 safari firms which answered Dryden and Craig-Smith's 2004 questionnaires, 59 per cent were based in Queensland, **23 per cent in NSW**. Almost 50 per cent of the companies operated in Queensland, some 35 per cent in the NT, less than 20 per cent in NSW. The great majority of clients come from the United States, Germany and New Zealand. Most of the companies are quite small. Prey preferences seem to be in descending order:

Pigs > deer > goats > buffalo > hares/rabbits > Banteng > Camels > Horse/donkeys

Safari Hunting in Australia, according to Dryden and Craig-Smith questionnaire's, is affected by four constraints: animal location; land access; competition with other industries; and State laws. Roughly a third of the companies interviewed have problems accessing suitable land and landowners, are in adverse competition with recreational hunters and the meat industry, or are affected by State laws they consider too restrictive (36 per cent).

Significantly, 67 per cent of the respondents claimed that State laws were too restrictive for Safari hunting. The content of above advertisement agrees with one of the findings of Dryden and Craig-Smith's that more than 75 per cent of safari clients "spend time on general tourism activities" other than hunting. This is the multiplier effect we have mentioned earlier and which has been poorly- explored in NSW.

4.6.4.5 Indigenous Interests in the Safari Hunting Industry

We showed earlier that hunting/gathering/fishing remains the major economy of choice by many Aboriginal communities who try to live a traditional lifestyle. For a number of such indigenous communities, the only way to participate and develop in the modern economy as well as maintain their culture, is to develop their land-use for hunting and fishing. This would provide two options for them; they could hunt and sell their quarry with little income as well as over-exploitation of resources. They can also start to share their culture including hunting and fishing to an appreciative sector of wildlife hunters and fishers who are prepared to pay heavily for that experience.

Case Study 4.5: Hunting Tourism and Indigenous Communities Compared

> In the Yukon area of Canada, after successful land claims by indigenous people, only the outfitters with good indigenous relations managed to survive (Hoefs, 1999). In northern Australia, the biggest impediment in the development of the safari and fishing tourism industry have been unsatisfactory arrangements with often disgruntled communities, which see little returns for what they feel are infringements on their own hunting rights (Palmer, 2002). The situation in southern and eastern Africa is similar (Baker, 1997a,b; Lewis et al., 1990). Significantly HOWEVER, in large parts of Australia, Canada, the US, and New Zealand, indigenous societies now have a greater say, and, in fact, have recovered ownership of much of land they lost in the past, so they are now a significant stakeholder in the hunting/fishing tourism industry. In Africa, led by Tanzania, there is now an increasing number of very positive examples of host community involvement in hunting, and its derived benefits (Baker, 1997 a,b; Lewis and Alpert, 1997; Baskin, 1994; Child, 1993).
>
> Bauer and Herr, 2004. Hunting and Fishing Tourism In. K. Higginbottom (ed)

Hunting and fishing offers Aboriginal communities the potential to participate in the national economy of Australia in ways they can with few other activities. Such indigenous hunting provides a major income source for Canadian Inuit people who had the choice to either fill their polar bear annual quota with own hunting or with the sale of this licence to hunting tourists — guiding these hunters who then shoot the polar bear for some US$20,000. No similar arrangements have ever been made in Australia for example with large crocodiles. Although there is involvement of Aboriginal people in hunting ventures, Lisa Palmer (2002) looking at the indigenous interests in safari hunting and fishing tourism in the Northern Territory, concluded that: "indigenous interests in fishing and hunting tourism at the Top End of the Northern Territory are locally significant and have the potential to translate into more active industries in some communities as part of a mixed use rural enterprise approach". She pointed out however that a number of obstacles and opportunities in what she called 'niche industries' need to be addressed. A word of caution was issued for communities: "to ensure that there is a legislative basis to protect their interests if they enter any commercial activity or develop arrangements with safari tour operators."

In December 2008, one of this reports' authors was invited by the Laynhapuy Homelands Association in Gove, Arnhemland, to inspect their land with regards to feral pig and feral buffalo control. Interviews with several Aboriginal community representatives found that two safari hunting outfitters operated in this area who, despite large incomes from their enterprises, contributed little to the community and showed no accountability. As the Northern Land Council (NLC) is however renegotiating these hunting concessions currently with boundaries and clear obligations, this situation is likely to improve in the future.

NSW has few if any Aboriginal communities with such wide-ranging and controlling interests in land that are sufficiently traditional to develop hunting tourism. There are, however, in northern NSW, Aboriginal communities that have successfully regained land and are keen to develop options of hunting tourism. In order to do so, however, they would need to be supported by projects which

facilitate these interests into commercial activities. NSW hunter and the Game Council support of these communities could provide an important opportunity to demonstrate interest, support, and capacity in native title and Aboriginal affairs.

4.6.4.6 Developing Deer Industries In Australia — Between Opportunity and Threat

Ramsay (1994), when assessing the "Commercial Use of Wild Animals in Australia", dedicated his 20th (and last) chapter to deer; after the cane toad which was then not declared as pest in any State or Territory of Australia (Ramsay, 1994:166) because of "the present lack of convincing evidence of the impact of cane toads" (Ramsay, 1994:166) and because "present data suggest the effect may be nil or small" (Ramsay, 1994: 167). Economically, they were considered insignificant with a market value (as skins, as biological specimens, for bufotoxin and for toad leather and stuffed tourist items) "likely to be less than $150,000 a year (Ramsey, 1994: 167).

The deer industry was then assessed with regards to farmed and hunted deer. For the latter, Ramsay stated:

> The legal status of wild deer is inconsistent, with Victoria and Tasmania affording them protection under wildlife legislation, and other states classifying wild deer as feral animals".

He then cites Cribb (1991) who estimated deer numbers "roughly" at 48,200 animals. For farmed deer (initially dependant on the capture of wild deer, he suggests numbers of around 130,000 which, with a deer industry in New Zealand 10 times larger, has trouble competing.

Things have changed since with the cane toad now considered one of Australias major terrestrial vertebrate pests (West and Saunders, 2007).

Things have also changed for deer. Like cane toads, they have also dispersed (Moriarty, 2004) yet unlike them, their ecological status remains uncertain. While some suggest that they are a "Key Threatening Process" for the Environment (NSW and now Victoria), others are not so sure. Conversely, they have established themselves, like sheep, as a significant economic factor for many regions, particularly in Victoria.

There are now three type of deer industry in Australia which derive significant income from Australia's six (seven) deer species:

1. The Deer Farming Industry
2. Deer Ranching
3. Free Range Deer Hunting

The three industry approaches are not only very different, but also generate very different benefits. None of the them suggests that farming deer is the best, or even most humane approach.

The Deer Farming Industry

This industry started in the 1980s and targeted deer products, mostly venison for export in Europe and antler velvet for the Asian market (Ramsay and English, 1991). The success of that industry over the past 20 years remains modest and is affected by fluctuations in the international deer market as well as internal development problems including overwhelming competition from the much larger deer industry in New Zealand. In Australia, the Industry is represented by the Deer Industry Association of Australia (DIAA) which has co-management arrangements with Government Agencies and describes itself as follows:

> The Deer Industry Association of Australia represents farmers, processors, transporters, breed organisations and any other party involved in the deer industry. As the national deer organisation the DIAA is the focus point for the industry. It negotiates with Government agencies on many topics vital to the deer industry, including the use of levy funds and development of protocols for the export of venison and velvet. The more deer farmers it represents, the more effective the DIAA becomes.
>
> Membership of the Association offers many advantages:
>
> - Unites the deer industry to common goals and objectives, locally and nationally.
> - Provides a national contact point for industry, government, media, international deer associations etc.
> - Provides the opportunity to influence the national development of the industry, eg use of levy funds and the development of export protocols for venison and velvet.
> - Access to Zone and Branch meetings with committee representatives and other local deer farmers, providing the opportunity to raise and discuss problems, access the latest information and generally participate in the direction and benefits of the industry locally and nationally.
> - Provides direct Canberra representation on all relevant policy issues.
> - Provides access to Rural Industry Research & Development Corporation (RIRDC) through Advisory and Policy forming committees, influencing levy expenditure. The development of the Five Year Research & Development Plan was a joint RIRDC/DIAA achievement.
> - Industry owned and operated Australian Deer Horn & Co-products Pty. Ltd. which provides a centralised collection and sale of velvet antler.
> - Establishment and administration of the National Velvet Accreditation Scheme. The formation of the NVAS has been instrumental in allowing velveting to continue in Australia.
> - Free membership of the National Velvet Accreditation Scheme (NVAS).
> - Participation in the National Residue Testing Scheme (NRS) that ensures access to overseas markets.
> - Implementation of a national 'Quality Assurance' program.
> - Production of the quarterly "Australian Deer Farming" Journal with regular contributions from the DIAA President and each State Branch in addition to the latest scientific and research information available.
> - Is an alliance partner to Wesfarmers Federation Insurance. WFI is one of Australia's leading rural insurance companies
> - Access to Branch and General Meetings, with full voting rights.

DIAA issues its bi-monthly *Deer Farming Journal* as a membership, communication, and education, outlet. It is also actively involved in research furthering the industry around farmed (domesticated) deer. This industry has few links to the industry around wild deer, where deer products are secondary to the hunting experience and 'trophy'. It also has been, so it seems eclipsed in its importance by the economics around wild deer, which were described by Cause (1990) as follows:

> **Deer Ranching**
>
> This industry runs deer on large free range areas. Deer ranches are derived from the South African and American approach to develop hunting experiences around farms which might have hunting as an additional income branch (often the case in South Africa) or have been established/deve Range Huntloped around hunting. As in the US, especially in Texas (Texotics) these farms have been supplemented with mostly exotic species with some of them priding themselves to have established 'near-natural', if composite ecosystems. Others (typically in South Africa) offer native game large and exciting enough that it does not need to be supplemented. In Australian States, other than NSW, and in particular Victoria, South Australia, and the Northern T erritory, such approaches have been developed.

Watervalley Game Ranch demonstrates the principles, psychology, and income structure which have developed around such venues.

Case Study 4.6: Industry Example: Watervalley Game Ranch

(www.sambardeer.com/gameranch.htm)

> **Virtual Free Range Hunting**
>
> Watervalley or Ninga Ninga (as this area was known to the Aborigines) is a privately owned Game Ranch comprising more than 300,000 acres. The size of this ranch is continually increasing as adjoining properties are acquired and the perimeter fence extended. In fact it is so vast that at times a GPS must be used to ensure that one does not become temporarily misplaced when darkness falls. To gain some indication of the vastness of Watervalley, consider that it is 65 kilometres around the Rusa enclosure. Twenty years ago chital, elk, fallow, red, rusa and sambar deer were released onto the property and today several thousand deer can be seen in the course of a days hunting. In fact the number and variety of deer seen is so amazing that Watervalley has become known as "Australia's Serengeti for deer hunters". The deer and Asiatic water buffalo roam freely with the kangaroos, wallabies and emus and are virtually free-ranging for they are not at all contained or restricted by internal cattle and sheep fencing. Just as importantly the popularity of Watervalley as an international hunting destination has conditioned the deer to be wild and elusive and bringing them to bag requires hunting in the true sense of the word. The ranch encompasses a variety of topography. Some areas consist of rolling undulating hills and valleys covered with a mosaic of eucalypt scrub and grasslands. Other parts are vast swamplands covered by heath and surrounded by eucalypt scrub interspersed with grasslands.

Hunting Style

The hunting style is similar to that used for African plains game. Hunting commences at first light and continues throughout the day. Bush tracks are driven in a 4WD hunting vehicle and game is spotted using binoculars and trophy quality assessed with a spotting scope before stalking on foot. The easy going, undulating country ensures that stalking is not too demanding for physically challenged hunters.

Trophy Quality

The region where Watervalley is located is known as the Limestone Coast due to its limestone rich soil which no doubt contributes to the outstanding trophies taken. Many Gold Medal stags have been taken at Watervalley. Usually these older animals are very cagey and a sit and wait ambush at dusk or dawn is required to bring them to bag. Red Stags with more than 31 long points and some scoring in excess of 400 Douglas Score have been taken. Fallow Bucks scoring in excess of 220 Douglas points are regularly taken. Chital Stags measuring more than 32 inches are seen but are difficult to bag. Rusa Stags up to 36 inches have been taken. Asiatic Water Buffalo scoring over 65SCI points.

Duck Hunting

As its name suggests, Watervalley has expansive wetlands which provide excellent duck shooting from February to June inclusive and organised shoots are conducted throughout the season.

While in game ranches of this kind it is not possible to argue that many direct conservation benefits might accrue to the game species (which are exotic with the exception of ducks), the degree of (legitimate and normal) natural habitat conversion to farmland (improved pasture) is much less and many native species also profit from that venture. As a ranch such as Watervalley has a perimeter fence, it also has much more effective meso-predator control which benefits native species significantly.

Free Range Deer Hunting

Deer Hunting in Europe and North America is the backbone of the vast hunting industry of both economic blocks and accounts for many multi-billion dollar benefits for these societies. In Australia, where none of these benefits are documented on a regular basis, there are only few surveys available which allow a glimpse of the extent of these industries.

Cause (1990) said, after having conducted in 1990, 'A survey of economic values of recreational deer hunting in Australia' by travel-cost (and expenditure) analysis and contingent valuation, concluded that this socio-economic activity alone was carried out by at least 17,500 people. It also generated A$70 million in expenditure on trip costs and equipment in Australia alone. He further suggested that this direct activity generated A$15.7 million in "consumer surplus values" and was likely to generate another A$36.1 million "for the hypothetical case of double deer numbers" (Cause, 1990:296).

This type of hunting utilises wild deer often on non-protected public land. That is, the industry does not own the land as with deer farming. It more or less

facilitates access to free range animals and capitalises on the experience and local knowledge of the guides who are true hunting specialists.

Case Study 4.7: Industry Example: Errol Mason's Sambar Shikars

Errol Masons Sambar Shikars (Shikar is an Indian term for Hunting Guide) to demonstrate this livelihood from hunting which relies on statements such as the one printed on its website of a satisfied customer:

> Possessing intimate knowledge of Sambar Deer behaviour and the areas he hunts, Errol walked me into a carefully selected remote location where, alone, I waited in ambush for this magnificent Sambar Stag. Using a Browning Safari Grade 30/06 fitted with a bright Swarovski 2.5 to 10 x 56 scope hired to me by Errol, I was able to kill the stag cleanly despite the very low light, with a single shot to the neck from 24 paces.
>
> Charlie Mitchell, Western Australia
>
> http://www.sambardeer.com/photogallery/photogallery.htm (accessed July 2008)

It seems clear to us that both game ranching and free range guiding for deer targets what we have defined as "hunting tourism" (Bauer and Herr, 2004) as it implies travelling and the use of accommodation and other arrangements. Both are value-added hunting and nature experiences which are based on Australia's natural environment and acclimatised deer. They have strong "multiplier potential" and both are, if carried out professionally, well renumerated land-use activities, for both landholders and non-landholders capitalising on their experience (the guides). Both of the activities have direct and indirect conservation benefits, which, if tweaked in the right direction, can be very significant. This is neither an assumption by the authors nor an unverified claim of others as there are two Australian ventures around exotic deer (Fallow Deer Hunting on Property-Based Game Management farms, the other on the Para Park Game Cooperative on Sunday Island in Victoria) as an exemplary self-regulatory hunter initiative. They not only generate a range of significant and indisputable benefits for communities and conservation, they are also difficult to match by other approaches.

4.7 CONCLUSIONS

We have shown how socio-economic value is added to hunting as it proceeds along the "**Hunting Ladder**". As hunting advances from its crudest and least 'value-active' form of commercial hunting to recreational hunting and hunting tourism, value is added, both in monetary terms and in non-monetary values. This non-monetary value can be developed and is very significant in many countries of Europe, North America, New Zealand, South America and Africa. Significantly, much of that value centres around conservation and rural and indigenous communities.

We believe we have made an unassailable case of the socio-economic importance of hunting in Australia and NSW. We suggest that the failure to interpret and record the benefits of a major socio-economy is one of the outcomes of a regulatory environment where urban attitudes are applied to the rural space

and where the word 'hunting' has been all but abolished in the official jargon. We also suggest that an obsession with 'commercialisation', (the larger the better, as in kangaroo harvest) and corporatisation has greatly-disadvantaged farmers and Conservation Hunters in the development of a diverse and sustainable hunting culture for the good of Australian society (healthy meat) and a value-added socio-economy for rural areas. While the Game Council has started to address this imbalance and challenge those attitudes, six major steps could improve the situation:

4.7.1 Acknowledging Conservation Hunting as a Significant Rural Socio-Economic Activity

In a society which has become dominated by accounting and economical assessment, it comes as a surprise that so little effort has been made to account for something which is such a widespread, popular, value-adding, intensive, and conservation-active land-use activity. This situation has recently been addressed on an international level where wildlife tourism, including hunting and fishing, were analysed and compared to other forms of conservation (Bauer and Giles, 2002; Bauer and Herr, 2004). There would seem to be a great need to develop an appropriate State-wide accounting system for recreational hunting and fishing.

4.7.2 Start Accounting the Many Contributions of Hunting to Society

Considering the breadth and diversity of hunting (and fishing) contributions to many sectors of society, there is some urgency to develop these industries. While this is being addressed by the Game Council to an extent, there is a great need to identify those almost-unrecorded dimensions and develop research programs to collect, analyse, and evaluate the information. We explore some examples of the potential contribution of hunters to society in Chapter 6.

4.7.3 Identifying the Conservation Economics of Hunting

The conservation economics of hunting are undisputed and impressive in the United States, Europe, Zambia, South Africa, and Namibia. This recognition can only be achieved once hunter's activities are accounted and become accountable. This is being done by the Game Council and needs to be furthered through joint projects

4.7.4 Tilting the Conservation Economics of Hunting Towards Native Species

In order to maximise contributions of hunting to conservation, native species have to be included as game. This might be particularly appropriate on Native Title Land where Aboriginal communities could develop sustainable hunting ventures on suitable native species but also on farms where farmers can do the same. A discussion of the options is in Chapter 6.

4.7.5 Developing Hunting in NSW as an Alternative or Complementary Land-Use

Hunting can be pursued as a value-adding land-use option to conventional agriculture as is the case in many European countries. It can also be developed as an alternative land-use option as for the United States or even the United Kingdom where farmers have started to protect and restore heathlands for the lucrative Red Grouse hunting. Hunting can also become a major agricultural industry as in South Africa where farmers have switched from cattle or sheep to wild African species (King, Higginbottom and Bauer, 2007).

For Australia and NSW, the development of hunting industries may be separated into six distinct market sectors, which, while linked in various ways utilise Australian wildlife in a distinct fashion.

1. **Safari Hunting Tourism**: The Facilitation of Hunting on public and Private Land (not land-based), but dependant on arrangements between specialised hunting guides with landholders (public and private land).
2. **Opportunistic Farmstay Hunting**: The Combination of Farm-stays with hunting and fishing as a component of that experience. The tourist stays on the farm, while the farmer facilitates hunting and fishing outside of his/her property.
3. **Exclusive Farm Hunting**: The development of hunting and fishing tourism (along with farm-stays) on farms with a property specific potential for that. This involves natural wetlands and the development of wetlands on farms or farms with fallow deer in Tasmania. Property-Based Game Management as can be done in some States of Australia.
4. **Native Species Based Game Farms:** Farms which develop their habitats around specific native species (Salmon fishing properties in Scotland, red grouse and deer in the UK) which are generally very highly-prized game animals.
5. **Exotic Game Based Farms:** Such farms develop their hunting activities around exotic, species (Ring-necked pheasant) which are managed (including bred, reared and released prior to specific hunts). This is a common activity in the United Kingdom and the United States and is possible in some Australian States; also in New Zealand with pheasants and Chukar (the Himalayan Partridge established in the Central Otago Highlands).
6. **Game Ranches**: The development of sometimes very large (up to and beyond 130,000 hectares) farms into wildlife ranches which might be entirely fenced-off (as in Texas or South Africa) and contain carefully-managed wild populations of exotic animals (Texotics in Texas, deer hunting game estates in New Zealand)

4.7.6 Hunting and Landownership

The options that we outlined in section 4.7.5 show that only option (number one) does not require landownership as it utilises land not owned by the operator. This type of hunting by people called "outfitters" in Canada, depends on expertise and connections. Expertise in wildlife biology and hunting, as well as connections to landowners (sometimes indigenous as in the Yukon in Canada). All the other options depend on land and may require transformation of that land (restoration) for native game instead of clearing for sheep grazing. This type of hunting has the highest potential conservation benefits, especially if it could include the rehabilitation of native species.

The development and ultimate success of any such venture depends on sympathetic legislation and policies. It also depends on support from Government departments which have not been developed for the land-use of hunting but are often opposed to it. This may be for example the largest restrictive factor for that in parts of Australia, including NSW. It is also clear that the development of such industries would require expertise which often does not exist and capital which is currently rare in the rural space. On a Federal level, this approach has been suggested and explored by RIRDC, however much more would need to happen to make such a realistic option.

And then of course, there are the prevailing attitudes of the wider public and particular groups towards such "new" land-uses. We will explore those constraints in more detail in Chapter 5.

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ATTACHMENT 3

Chapter 5

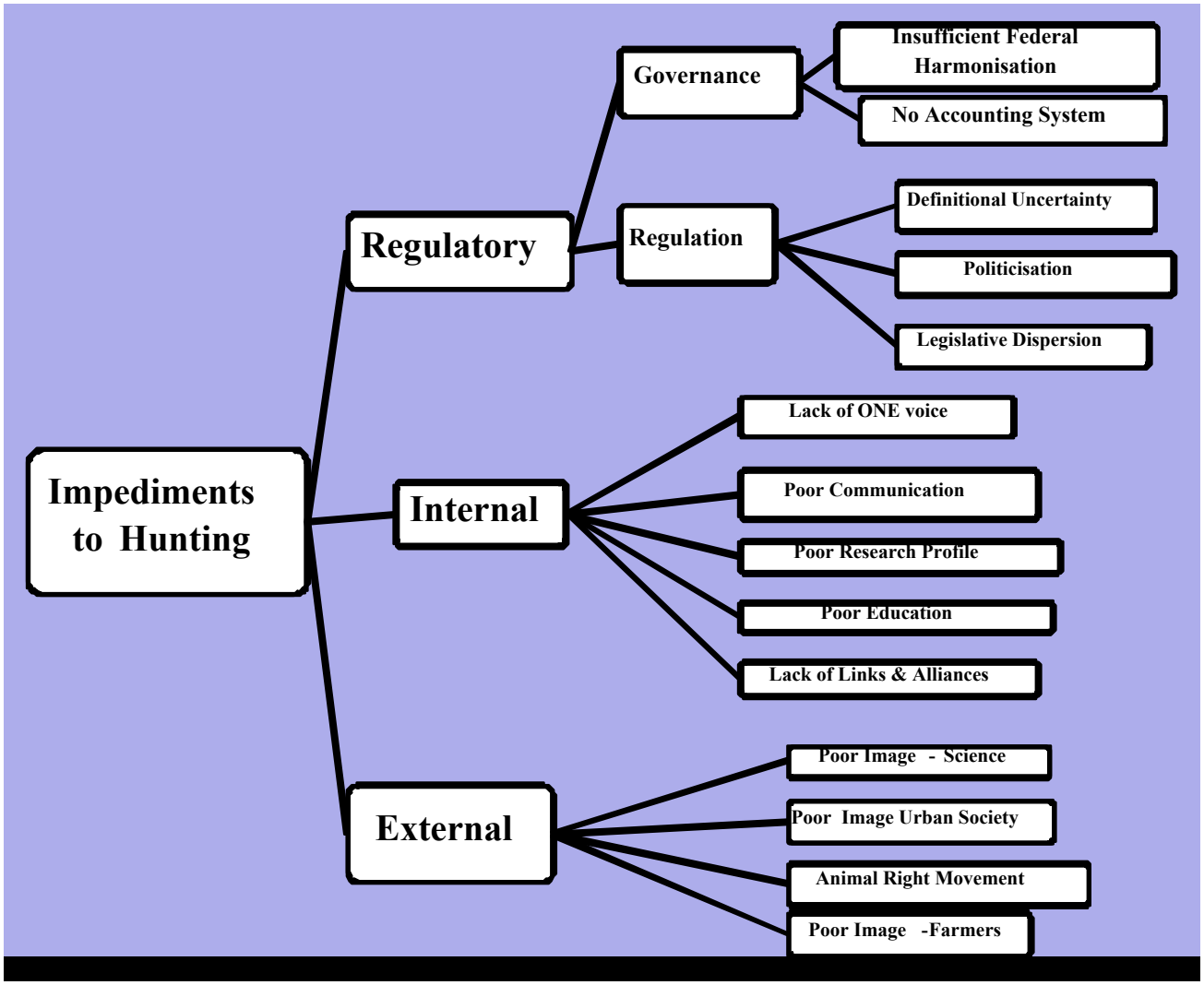
Impediments and Issues for the Development of Sustainable Conservation Hunting in NSW

ATTACHMENT 3

Contents

Introduction

What can we conclude from our exploration of Conservation Hunting in NSW and Australia? We examined its regulation (Chapter 2); the game species it targets (Chapter 3); and the contribution it could make to the State's socio-economy (Chapter 4). In this chapter, we will discuss the major impediments to the development of Conservation Hunting. The impediments are in three classes. Some of them come from the regulatory environment, others are "external" from wider society, while a third group is internal and rests amongst the Conservation Hunters themselves.



Addressing these impediments requires a range of responses ranging from "simple" policy changes to the development of more complex and long-term strategies and attitudinal changes not just confined to Conservation Hunters. Some of these impediments can be internalised to hunting while others rest in a much wider environmental and conservation context which cannot be addressed by Conservation Hunters alone. To ensure that hunting in Australia can make the same contribution to conservation as it has in other countries, to allow Australia to better meet its international obligations, and to ensure that participation, equity, human rights, polluter pays and precaution and sustainability apply to all sectors of a pluralistic society (including indigenous people, farmers and hunters), we suggest that at least 21 different impediments need to be addressed.

Many of these impediments are already targeted by the Game Council but there seems a major need for Conservation Hunters to self-organise like the fishers of Australia; to develop a National Policy and representative body; and to connect Australian hunters to the international community (in particular from Europe) which is eager to expand its model. There is a further need and an opportunity in Australia to better align Conservation Hunters with a community of scientists which, as recent comments expressed in Lunney et al (2007) suggests, the management of Australian wildlife, whether it be exotic or native, is "ripe for change". Too much of the old has not worked and too many of the dearly-held beliefs have not stood up to long-term scrutiny.

We must first demonstrate the inappropriateness (and social and economic expenses) of the old value system for Australia.

KANGAROO DIVISIONS

An allegorical impediment to the development of a sustainable hunting culture in Australia

Kangaroo Tales From Australia

Kangaroo cull mooted for Canberra

Thousands of kangaroos could be shot by professional shooters in and around Canberra's north after populations have been deemed to be out of control. A Defence spokeswoman has confirmed Belconnen Naval Transmission station and the Majura Training area have a serious over-population of eastern grey kangaroos. The 6500 animals are facing starvation because of the drought and are causing permanent damage to the sites. Defence has been trialling a project to reduce the fertility of local kangaroos but ecology consultants have said that will not solve the problem. Defence has now applied to the ACT Government for permission to use professional shooters to cull up to half the kangaroos. Acting Environment Minister John Hargreaves says a licence has not been granted yet and there is no firm start date.

ABC News Online, Sunday, March 13, 2007

Kangaroo cull snub for celebrities

Environment Minister Peter Garrett has dismissed a plea by Sir Paul McCartney and other international celebrities for an end to kangaroo culling in Australia. British-based Vegetarians International Voice for Animals (Viva!) has launched an online petition against the "barbaric" killing of kangaroos.

Viva's celebrity supporters include Sir Paul, Joanna Lumley and singer Chrissie Hynde.

"There is an urgent need for action to protect kangaroos from a barbaric industry which slaughters them for meat and leather," McCartney said in a statement on the group's website. "Please do all you can to help Viva! end this shameful massacre." The Viva! website also includes comments from the late Steve Irwin. "Every person can make a massive difference to global conservation. Simply never purchase wildlife — including kangaroo — products!" the Australian conservationist is quoted as saying.

Viva! is up in arms about plans to cull about 500 kangaroos on defence land in Canberra. They will be sedated then given lethal injections. Mr Garrett said culling was sometimes necessary. "Australians care a great deal about their environment and about their wildlife. But when there are significant imbalances and the possibility that you"ll have conditions which don"t benefit the environment and wildlife in the long-term, then programs like this — humanely and properly administered — are sometimes necessary." The Canberra cull is being carried out to protect rare grasslands and the threatened perunga grasshopper, golden sun moth and ginninderra peppercress. Greens leader Bob Brown said the Federal Government should protect Australia's international reputation by having the kangaroos relocated, instead of killed. "Kevin Rudd could begin by saving those kangaroos and making sure they are transported to a safe haven in NSW rather than be given a deadly injection and left as a heap on the ground," he said. The Herald Sun's website was yesterday swamped with comments from readers about the kangaroo culling plan. Almost all of the comments were critical of McCartney and the Viva! campaign.

Herald Sun, Peter Jean, March 13, 2008

PM denies hypocrisy over kangaroo cull

Prime Minister Kevin Rudd has shrugged off claims the Federal Government is being hypocritical by planning a kangaroo cull in Canberra while criticising Japanese whaling. About 70 people are blockading a former defence site in Canberra's north where the Government plans to kill more than 400 eastern grey kangaroos. Japanese television and radio have focused on the protest against the kangaroo slaughter and linked it to Australia's stance on whaling. Japanese network TV reporter Hiroki Iijima told News Ltd that Japanese people viewed the kangaroo cull as hypocritical. Mr Rudd on Sunday defended Australia's position on whaling but refused to go into the specifics of the kangaroo cull. "Our attitude on whaling goes to the whole nature of the international whaling commission and relevant international convention, which is an agreement between many states, and it goes to whether or not what is occurring is scientific whaling or not," Mr Rudd told reporters in Canberra. "The reason we have commissioned activity during the course of the year to determine precisely what is going on in the Southern Ocean has been to establish whether or not that claim is true."

Canberra News, March 16, 2008

Kangaroo cull plan sparks anger

Culls of kangaroos have proved controversial in the past. Plans to cull more than 3000 kangaroos roaming near the Australian capital Canberra have

been labelled cruel and violent by animal rights groups. Defence officials say the animals are near starvation. They have asked the local authorities for permission to cull almost half the area's population. Campaigners claim there is no evidence of starvation, and have pledged to protest if the cull is approved. Canberra's local government is deciding whether to grant a shooting licence. "Our concerns are for the welfare of the animals and the potential for a starvation event," city official Russell Watkinson told ABC Radio. The Defence Department already runs a pilot scheme using food laced with contraceptives to try to thin the kangaroo population in the area. But military officials say the problem near their Majura training area is so severe that they cannot wait for the scheme to take effect. They want to shoot 3200 common grey kangaroos by July. Mary Hayes, of local campaign group Animal Liberation, said a cull would burden the Australian Capital Territory (ACT) with a worldwide reputation for cruelty. "It is a very cruel, violent way to treat animals — on a par to just treating them as if they were weeds to be mown or pulled out," she said. And Pat O"Brien, another wildlife campaigner, said the cull plan was "just an excuse to kill them". "If they go ahead with it, they are going to be sorry. We will do whatever it takes to stop this," he said. According to the ACT Government, the Canberra area contains the densest populations of kangaroos ever recorded.

BBC News, May 14, 2007

Australian officials plan kangaroo cull

Australia (AP) — Authorities said Monday they want to shoot more than 3000 kangaroos on the fringes of Australia's capital, noting the animals were growing in population and eating through the grassy habitats of endangered species. The Defense Department wants to hire professional shooters to cull the kangaroos at two of its properties on the outskirts of Canberra, which counts 1100 kangaroos per square mile in the Australian Capital Territory — the densest kangaroo population ever measured in the region. With a population of about 333,000 according to the latest census figures, there are 367 people per square mile in the territory, which includes Canberra. That means that kangaroos outnumber people in the territory by a 3-to-1 margin. Canberra's local government is expected to decide this week whether to approve the cull, Government spokeswoman Yersheena Nichols said.

USA Today, May 14, 2007

Canberra Times bedwetting over kangaroo cull

Idiot media hysteria comes no better than the Canberra Times devoting three stories to a proposed roo cull on defence land in the ACT. Firstly we lament 'three days of death', the girls follow it up with 'Action an attempt to drive eastern greys to extinction', and then we have, finally, a more measured 'Shooting plan being considered'. Take a deep breath. It's a plan to halve the population in one area, of a verminously common kangaroo species. The real question is what environmental atrocity are they planning to ram through while the activists are out on Majura Range dressed as skippy? Last time we went through this saga they bulldozed O'Connor ridge while moronic activists staked out Googong.

(comment by) johnboy, the-riotact.com/?p=4898, May 13, 2007

KANGAROO TALES CONTINUED

Driving to work from the farm, some 96 km one way, one author passes one large-sized town, two want-to-be villages, some 30–40 farm houses, some 50 cars (outside of town) and between 2–10 dead kangaroos, wallaroos and swamp wallabies (our three most common local species). The kangaroos might lie in the middle of the road, or on the edge. There might be a crow or two on them, they all look bloody and mutilated and no car stops. Not even the one which hits them. The driver is just generally very happy to have a "roo bar", an oversized bumper many country people have attached to their cars. It does not stop kangaroos from being run over, killed or injured. But it helps keep the blood and dents off the car.

This story is repeated all over Australia, every day, up the road and down the road, thousands and thousands of kangaroos every day; in Canberra also. A breathtaking example of urban hypocrisy, of utter indifference; unless tweaked by the world news or what a Hollywood actress might have had to say about it.

This situation has been going on in Australia for more than a generation. There is a ritual attached to it. The Government departments with their commercial and (of course) "sustainable" harvesting plans, scientific and all, on the one side and uncertain about their "role" in that conflict. On the other side of the divide, the animal rights people, like the campaigner Pat O'Brian, who respond with: "If they go ahead with it, they are going to be sorry. We will do whatever it takes to stop them."

And of course there is the Japanese television and radio [which] have focused on the protest against the kangaroo slaughter and linked it to Australia's international stance on whaling. Japanese network TV reporter Hiroki Iijima told News Ltd that Japanese people viewed the kangaroo cull as "hypocritical".

So what does that say about the much celebrated "sustainable commercial harvest of kangaroos"? To us it suggests that "ecologically sustainable kangaroo harvest" is perhaps not quite enough and socially divisive, even if it makes kangaroo meat acceptable for the American petfood market. This becomes especially clear if one contrasts that situation with Europe, North America or Russia where deer hunting is not a "sustainable commercial harvest" but carried out by some 30 million participants deriving socio-economic value far in access of what commercial kangaroo harvesting produces (70 per cent pet food). It is also not socially divisive and cannot be targeted by Animal Rights activists in the same manner as it involves so many participants including many disadvantaged rural and indigenous people. That is, it is "owned by society".

5.1 AN IMPEDIMENT OF SORTS: REDEFINING GAME IN AUSTRALIA

> Perhaps the overall outlook for wildlife conservation would be improved by a deliberate effort to attract hunters's interests to native animals.
>
> HJ Frith, 1979:198

Any outsider looking at game legislation in NSW would notice one very distinctive element. Native wildlife in NSW has gone "off limits" to the Australian hunter

as Harry Frith, the long-time director of Australia's most prestigious wildlife organisation, CSIRO Wildlife, had noticed even in 1979. Because of this, hunters in NSW — and in Australia — have focused their attention on exotic pests. This focus has occasionally resulted in the dispersal of exotic animals. Another outcome of this confusion has been the reduction in the value and the availability of many native species which can or could be harvested sustainably. This, to the naive observer in the cities, might be a desirable outcome. After all there are many who argue that we have "outgrown hunting" and that it is unworthy of civilised man (never mind indigenous people) — the reality is not quite as straightforward as that. This approach comes with indirect costs to wildlife, conservation and rural communities. It also violates the human rights, the right to equity and participation, of a large proportion of society.

While the Acts and rules of legislation to protect wildlife in Australia and NSW are honest and clear enough in their intent — the protection of native species — many of which were in dire shape at the time that the legislation was passed. The outcome however was not necessarily in the interests of the wildlife for a host of reasons. For example, Conservation Hunters with their very significant and potential contributions to the survival of such species, have been effectively removed as players. Perhaps even less desirable, they have been forced to focus their attention on exotic game. And last but not least, because landowners continue to be denied the use and the value adding potential of an abundant native terrestrial wildlife resource while outsiders can access that resource without having to pay for it. They just remove a pest for which the farmer should be grateful for as the philosophy of commercial kangaroo harvest goes. This overall impediment to the development of the potential Conservation Hunting in Australia offers to hunters, landowners and indigenous people, was already in place 30 years ago (see below) and has in all likelihood become more pronounced:

> In Australia the legitimate hunter has few opportunities to practice his sport and these are decreasing. The number of people who seek this type of recreation increases, but social attitudes towards the principle of hunting, increasing legislation that reflects these social attitudes, and a decreasing availability of places in which to hunt, as well as declining populations of some game animals, all operate against the hunter. In a new country with a novel fauna, even when it had been populated by people from Europe, with their own traditions, one might expect that a native tradition in game and hunting would develop to use fully the products of the new land. In the very early days this did happen and a great number of native animals were hunted, though the populations of some could not stand it. But even then there was a move to bring in deer and other familiar animals".
>
> H.J. Frith, *Wildlife Conservation*, 1979, p 197

5.2 REGULATORY IMPEDIMENTS

The review of the hunting legislation of Australia and NSW (Chapter 2) shows that hunting has been a sector in the primary industry that has been scarcely legislated; is treated very generically; and is not endowed with a great many policies or a Federal framework. This has led to interpretive difficulties and uncertainties with regard to the ownership of animals on land, the "rights" of what is called

"commercial" here, or which might be considered "indigenous rights", or "farmers rights". Although some of that is now being addressed by the Game Council and for deer by the Deer Act (which defines ownership for this group of animals and the responsibilities which go with that), there is a need for a binding Federal legislative framework for hunting (not just dispersed strategies on pest management, wetland management, rangeland management, or biodiversity and sustainability Acts). This framework would need to accept hunting as a land-use and makes provision for the development of complex arrangements in this sector (Conservation Hunting, hunting tourism, wildlife hunting tourism enterprises). Only if this happens, can Conservation Hunting add the many values other countries are able to derive from it. One can note here that only if the above happens, can farmers derive more benefits such as from the harvest of kangaroos.

If we attempt to classify the observations we have made about the regulation of hunting into Regulatory Impediments for Conservation Hunting in Australia, we can identify four major impediments which might apply to Government and self-regulation.

1. A lack of regulation
2. Too much regulation
3. Too dispersed and confusing regulation
4. Wrong regulation

Some examples of regulatory deficiencies

Regulation Deficiency	Government Regulation	Self-Regulation
Lack of Regulation	Commonwealth Act?	Few Codes of Conduct?
Too much regulation	Native species prohibition from hunting?	Probably rarely
Too dispersed and confusing	State Acts, Regulations, Policies and Guidelines	No National Standards
Wrong Regulation	Licence vs. Property-based Conservation Hunting	Not applicable — often

While it exceeds the scope of this report and the expertise of the authors to carry out a detailed analysis of the regulatory environment for hunting in Australia (beyond the review in Chapter 2), we have come up with the following list of impediments which affect the ability of the land-use "Conservation Hunting" to maximise its potential in NSW.

Impediment 1: Dispersed Legislative and Policy Environment

In our review of the regulatory environment of Conservation Hunting in NSW (Chapter 2), we identified seven major areas which govern the land-use of hunting and whose legislation affects how it is being conducted, how it is affected by landownership and its governance, and how it interrelates with other sectors of public, civic and criminal legislation. Unlike European countries such as Denmark, Hungary, or Germany, which all have their own Federal Hunting Laws (*Bundesjagdgesetz* in Germany) there is no national Act legislated by parliament in Australia on Conservation Hunting itself. Rather, Conservation Hunting is governed and affected by a range of other legislation which covers other land-uses (forestry or fishing), landownership, relationships towards animals (Prevention of

Cruelty to Animals Act), public safety (Firearms Act, Weapons Prohibition Act) or the environment. Some of this legislation is also of Federal origin, others of State. Little if any of it is specific towards hunting. A considerable range of acts of governance are at the policy level or are called simply strategies (even "guidelines" in the case of rangelands) with which in particular the Federal regulatory environment suggests ways ahead.

Significantly, there are Codes of Practice or Standard Operational Procedures as set out by the former Department of Primary Industries of NSW. These apply to all primary industry sectors dealing with wildlife including Conservation Hunters. Yet they are poorly accessible and exist in a governance environment few Conservation Hunters would or could access. One of the outcomes of this wide dispersion and unspecified nature is a great deal of replication and confusion. It also sets various Government agencies (and, as a follow-up, the stakeholders themselves) at odds with each other. There is a great potential for differences in interpretation which make technical acts legal acts rather than technical and scientific acts. Any lawyer who has to deal with this matter will be unable to make the ecological sense of it that is required. Perhaps, most importantly, few of these acts are specific enough that they mention "hunting" or even "Conservation Hunting". In fact one gets the impression that these terms are avoided deliberately. This result is neither in the interests of a sustainable land-use nor does it give a very large part of the community the ability to participate. "Hunting" does not get less controversial if it is suddenly called "commercial harvesting", "culling", "removing" or at its most appalling, "harming". Yet, while we might get away with calling a slaughterhouse an abattoir, a refusal to call the act of hunting "hunting", has much wider reaching repercussions.

Impediment 2: Insufficient Guidance and Harmonisation by the Commonwealth

Apart from the 1998 Senate Inquiry on Sustainable Utilisation of Wildlife and the Commercial Harvest of Kangaroo, the Federal Government of Australia has so far shown little leadership to develop a nationwide framework for hunting (A National Hunting Policy). While the 1998 Senate Inquiry has been a significant document, fully in support of harvesting animals, it has, not necessarily been interpreted very well as it relates to Aboriginal hunting. It has also avoided dealing with Conservation Hunting as the major value-adding and inclusive aspect of it. Again, there is that telling reluctance to use the word "hunting", replacing it with "'sustainable, preferably commercial wildlife harvest. Hunting within Australia, (with the notable exception of the commercial kangaroo harvest where the Commonwealth has developed the framework within which States have to operate and comply) is not federally regulated by an overarching framework legislation for the States (such as the *Bundesjagdgesetz* in Germany, the Hungarian Hunting Law or the Danish Hunting Law) within which they have some ability (but also restrictions) to move. In fact, on the Federal level in Australia, we have seen, there is hardly anything except some general strategies and policies. There was the Animal Welfare Bill of 2003, which remained un-enacted, because it did little else than repeat what the States had covered in their Acts of Cruelty against Animals. There was also the Senate Inquiry (1998) which, while emphatically endorsing sustainable use, remained almost unanswered by the States and failed to address the

many issues connected to Aboriginal hunting, including hunting itself. Like many scientists, it tried to hide behind that more politically correct term of "commercial harvesting". This has led across Australia to hunting legislation and practices which differ as much between States than is the case between many continental European countries. Currently, the regulatory environment for hunting, federally and in most States in Australia, is not conductive to a rational, scientific and sustainable approach to the sustainable harvest of wildlife. It is also not able to support the many value-adding and multiplying strategies which are so successfully employed in many other countries, especially the US, Europe and Africa. Perhaps most importantly, it is socially divisive. There can be no harmonisation or effective collaboration between States (when Victoria introduced a fox bounty, NSW did not).

Impediment 3: The Disjointed and Contradictory Nature of the Regulatory Environment

If one wants to go hunting in NSW, the regulatory environment can be confusing. Different Departments with their Acts, Regulations and policies are at times in direct contradiction with others. Most game is not just a pest but worse: A Key Threatening Process, and as such hunting and wildlife utilisation remains anathema. While the history of all this is well documented and even understandable, it has created a situation which does not allow for the optimal implementation of any strategy. There will always be constraints and, while this might work for democracy, it does nothing for a rational approach to wildlife management. If one looks at deer hunting in New Zealand (which as we have shown has "moved on" after many years of fruitless experimentation as described by Graeme Caughley in his book *The Deer Wars*). On the internet, one finds all kinds of interesting and magnificent places to go to. If one does the same for NSW, one finds the Game Council, Acts and Regulations and more and more of them.

An Evaluation of the Current Licensing System In NSW

Licensing Hunting in Australia

Australia, including NSW, has adopted a licensing system to regulate Conservation Hunting. Over the past 15 years, there have been many attempts by various State Government agencies to regulate hunting through licensing. If one wants to regulate Conservation Hunting in this way, the following aims apply:

- What Conservation Hunters should be allowed to hunt.
- Where they can hunt their quarry.
- Who is allowed to hunt.
- How Conservation Hunting is being conducted.
- How Conservation Hunting relates to other land-uses.
- What species may be hunted at what time and where.
- Which Conservation Hunting methods are applicable for particular species.

As these questions show, regulating Conservation Hunting versus licences (as opposed to systems which make it a land right) makes it disconnected from land (requiring special arrangements).

Experiences on Hunting on Public Land in NSW

One might observe that the opening of State forests for hunters has been rather unpopular amongst sections of the wider community. Farmers and landowners on adjacent land feared hordes of hunters invading State forests and spilling over to their farms, horse-riders using State forests were afraid of being shot at, or even losing their horses, with forestry personnel sometimes sharing some of these views. The experience so far is rather less dramatic. Looking at the numbers of Conservation Hunters using public forests, it is evident that most public forests receive very low levels of visitation. Knowing that shooting on State forests by "unauthorised community members" (not Conservation Hunters) has been a common and entirely unregulated procedure, one can only welcome this step. Any Conservation Hunter who enters this scheme has not only demonstrated that he/she has a certain minimum standard and Codes of Practice, he/she has also indicated by that compliance that they accept that regulation and are willing to share the responsibility of policing it. In this way, and judging from experiences overseas, that policy step has made State forests safer. Talking with Game Managers of the Game Council, one gets the impression that community and NSW Forest resistance has died down as they start to realise that this has been an important step to accept the reality of hunting (widespread in State forests before) and also the responsibility to regulate it. This experience and attitude shift will further improve once another important initiative of the Game Council — law enforcement and compliance operations on declared public land are implemented.

Experiences on Hunting on Private Land in NSW

Hunting on Private Property in NSW: Overview

What can I hunt?

Under the Game and Feral Animal Control Act 2002 and in accordance to the set Regulations, people require a NSW Game Hunting Licence (General), or G-Licence, to hunt the following game species on private property:

- Deer: sambar, red, hog, rusa, fallow, wapiti, chital
- California quail
- Pheasant
- Partridge
- Peafowl
- Turkey
- Waterfowl, managed by the National Parks and Wildlife Services under the Game Bird Management Program

No hunting without permission

A Game Hunting Licence does not authorise the holder of the licence to enter any land unless permission is given by the landowner/manager.

Why do I need a licence to hunt these game animals on private land?

These game species are included as it is expected populations may expand beyond current levels in the future. Game Council NSW has been charged with the responsibility of managing these game animals and hunters under the Act. Wild

deer can potentially be another source of income for both property owners and hunters, therefore these species will be the focus of Property Based Management Plans in the future.

Who requires a G-Licence?

Persons wishing to hunt the game animals listed above on private land, with permission. Licence types include Commercial Hunter, Hunting Guide, Standard and Visitors and are available for terms of one, three and five years.

Who is exempt from holding a G-Licence?

Farmers, their families and household members, as well as their employees when hunting deer and game birds on the landholder's property. Government agency personnel and professional shooters engaged in hunting game animals as part of their employment. An Aboriginal person who is hunting on native title land, or a registered native claim; an Aboriginal person who is a member (or in the company of a member) of a Local Aboriginal Land Council and undertaking traditional cultural hunting.

How can I hunt these animals?

These animals must be hunted only in accordance with the Game and Feral Animal Regulation 2004 which also contains a Code of Practice, using the following hunting tools:

- Bows
- Firearms
- Dogs

How and When can I obtain a G-Licence?

These licences are now available on application to the Game Council and subject to approval by a delegated officer. There is no test required. Application forms are available by telephoning Game Council's Licence Processing Unit on (02) 6360 5111 or email lpu@gamecouncil.nsw.gov.au or from the Game Council website at www.gamecouncil.nsw.gov.au.

The Application Process as Impediment

Hunting in NSW depends on whether one has a licence, not whether one is a NSW resident. If one is a non-resident or not a citizen the process to apply for a licence differs. For that process, a list of documents are necessary. A hunter can simply go into the Game Council website where he/she follows the keys to find out specific requirements. In particular this involves a link to the NSW Police which will either have (for NSW residents) or require appropriate documents such as firearms licences, hunting licences, and police checks.

Citizenship Status	Identification	Firearms Licence	Hunting Public Land	Hunting Private Land	Membership AHO
NSW Resident	Drivers Licence	Registered in NSW	Registered in NSW R-Licence	Registered in NSW G- Licence	Australia
Australian Resident (not NSW)	Drivers Licence	Registered in Australia	R- Licence	G- Licence	Australia
Foreign Resident	Passport	Hunting (Firearms Licence from Acceptable country	Visitors Hunting Licence and must accompany R-Licence holder	Visitors Hunting Licence and must accompany R or G-Licence holder	Needs to be verified and can in case of European hunters be followed with FACE and CIC

Application Process for Foreigners are often and ideally handled by outfitters, hunting guides (Aushunt).

Impediment 4: No State/National Accounting System for Hunting Expenditure

During a meeting of African leaders in March 2008 at the UN's Food and Agricultural Organisation (FAO) in Karthoum (Sudan), outright condemnation was expressed for an agricultural accounting system introduced by FAO which did not include wildlife. Such lack of accounting also characterises Australia (which inherited this prejudice from the United Kingdom where no official hunting statistics are kept). In Australia, one attempt at this recording was made in 1996 by the Bureau of Rural Resources. Hunting (and recreational fishing) still remain outside of this with a dichotomy of protection on one side and use on the other. In a previous review on hunting (Bauer and Giles, 2002), a general picture of a very diverse tradition and industry of hunting across the world emerged with significant socio-economic benefits and challenges for modern and developing societies (see also Chapter 4). The relationship between hunting and tourism was only tentatively explored and did not explicitly focus on this aspect of hunting. Looking at the diverse and vast tourism market which have developed around hunting and fishing, it became clear that these industries, often related demanded a detailed investigation. This investigation covered hunting as a social phenomena; its volume globally; and its regulation. A particular case of fishing tourism: charter boat fishing analogous to safari hunting, provided some preliminary insight into a much less-explored but rapidly-growing industry along many coastlines of the world. As an outcome, this lack of accounting led to a general underestimation of the benefits of hunting to Australian society. As demanded in Africa, it is high-time that the Federal and State Governments started counting Conservation Hunting expenditure and benefits, which, as we estimated in the Chapter 4 study on deer, probably exceeds $200 million every year.

Impediment 5: Disconnection of Wildlife from Land and Ownership

Wildlife in Australia has become as disconnected from the land and landownership as many of the people. This has been explored by Graeme Caughley (1983) in considerable detail but, we will try to reiterate the general conclusion. One version of that phenomena known as "The Tragedy of the Commons" has reverberated around the use of one type of wildlife: fish, for a very long time, characterised universally by a dramatic decline of resources. A decline because nobody feels responsible for it, because nobody would invest in its good, because others would benefit! This is one example of the "Tragedy of the Commons" described in many books and scientific studies on the decline of fish populations around the world.

Another type of tragedy is "The tragedy of owned land", which has occurred in Australia and many other countries in the wake of Anglo-Saxon legislation. This tragedy is characterised by the transferral of wildlife, as in China, into the public hand. At its extremes, the land itself has become fully protected from "use" as protected areas or National Parks. At its lesser extreme, the land stays in the hands of the landowner while the wildlife has gone to the State. This has happened generally with good reason as wildlife was mostly in the way of development; it ate domestic livestock or children; or competed with cattle. It has also happened very often because one could sell its meat or fur and therefore — as the theory went — people started to overexploit it. As it was "wild", ownership was difficult to bestow and therefore it was not looked after. And also, because it was moving around freely, there was always that highly undesirable possibility that the neighbour would get it first. In other words, wildlife had become, again, a tragedy of the commons, only this time on owned land. In Australia, with its unresolved pest dialogue, this has had unintended consequences which have started to compromise the initially beneficial outcomes of that system. Wildlife in contemporary Australia has ceased to matter as a land-use, unless it can be called a pest! There is nothing in it, no income can be derived from it and, in a worst case scenario, one cannot use one's land any longer because a rare and endangered species lives there. In other words: wildlife has become disconnected from the land and its "owner", it either does not matter, is off-limits, or is a liability. In this world, landowners have no other interest than pure altruism to invest in it and must focus all their efforts on exotic species such as wheat and sheep. There is no incentive to make plans for the future or develop sustainable systems and, if one wants to make a living as a farmer, one has little choice but to continue what one has almost always done; invest in sheep and wheat; with the consequences we nowadays call " global change", better expressed as "global decay". In this world, landowners cannot benefit from Conservation Hunting. If one has too many kangaroos, one cannot sell them, let alone manage them as a sustainable land resource and a source of prime meat. The best one can hope for is that a benevolent Government department arranges for some "permits" which allow other people to come and "do away" with the pest by "harming them". If the native animal happens to be a malleefowl, the situation is even worse because another Government department will put constraints on one's land-use. In this world, there are no incentives for farmers to protect and rehabilitate native endangered species nor manage them for sustainable yield (like sheep). There are also no incentives for Conservation Hunting or fishing to invest in it. This forms an impediment, not only for Conservation Hunting, but also for ecosystem restoration

or for the reintroduction of native species and for legitimate search of sustainable use. It is a world which is "unsustainable" because it has replaced essential natural productivity with meaningless concepts and policies generally containing the adverb "sustainable" but in a meaningless sense and disconnected from the reality it tries to address.

Impediment 6: Definitional Uncertainty of Wildlife and "Hunting" — Neither Pests nor Guests

The long-lasting negation of Aboriginal values, along with a celebration of everything rural that was English (sheep and wheat) has brought upon the Australian rural space a dichotomy of values which, even long after it has been recognised, reverberates around our attitudes and beliefs, legislation and policies, action and management. One of the outcomes of this dichotomy is a very unnatural und unproductive separation of "production" and "conservation", and also a "deadlock" in the rural space which allows rural landholders very little flexibility in moving towards the sustainable utilisation of native Australian resources — one of the great new policy shifts outlined in the State of the Environment reports. On the other hand, a raft of old and seemingly colonial legislation prevents such moves. This is very similar to what happened in the United States and was lamented by Aldo Leopold. We have put in place a raft of attitudes, policies, and legislation that makes it now almost impossible for landowners to move on to alternative land-uses, environmental services, biodiversity, and carbon sequestration.

As Harry Frith said: "It has put native wildlife off-limits for hunters and we might add, farmers also."

None of these extremes sit easily with the natural world, its many ecosystems and species, the many processes and functions these perform, and above all, the many changes and new dynamics that developed under this regime. While it would be easy for many of the declared Greens to call everything exotic a "pest" and every native a "protected species", the real world has become far more complex. There are the wild pigs, some say 30 million, which would make them one of the world's largest wildlife resources. They are a prized Aboriginal prey on Cape York Peninsula; valued modern hunting target of 100,000–200,000 hunters, a great (if mostly unused) commercial meat resource, as well as ecologically threatening process, a threat to agriculture, and a vector of human disease. Let us also not forget our new preoccupation with "Key Threatening Processes", of which our continuing unsustainable approaches to agriculture, forestry, fisheries, and terrestrial wildlife is one of the most dangerous.

Few of these distinctions make much sense. Many of them are arbitrary at best, misguided, and in blatant negation of reality, at worst. Meanwhile, the policy-makers and legislators have to wade through and make sense of a morass of rules and values which have their origins in old prejudices or sheer misinformation.

In hunting, this situation has been greatly aggravated by the poor governance of this sector which was one of the characteristics of English society. In Australia, as in parts of Africa, this has promoted the distinction between production and conservation (as is the English conservationist's way), while it has prevented the development of sustainable utilisation and appreciation of native animals. This is not so much the case in the United States whose modern system had its origins in a

combination of a very traditional German (Aldo Leopold) and typically American (science dominated) approach. This is the reason why the developing world has been struggling over the past 20 years to modify, if not abolish, the Anglo-Saxon National Park system. It is also the reason why hunting, the oldest and most sustainable land-use, has been outlawed; often with disastrous consequences for indigenous societies, wildlife and ecosystems alike.

Impediment 7: A State-Exclusive Approach to Use (and Protection) of Native Wildlife

The exclusive ownership and use of wildlife by the State has its corollary in the previously described disconnection of wildlife from the land. Hunting in many societies around the world, tended to become exclusive and a privilege of the aristocracy (Bauer and Giles, 2002). Later on, and often precipitated with the decline of the aristocracy (or their sudden demise in the French Revolution), the right to hunt has been confiscated by the State along with the right to own wildlife. While this has often been a response to protect species, it has also often become a hindrance not only to utilise wildlife sustainably, but even to protect it. This is now the case in all States in Australia.

The repercussions of this exclusivity are twofold. Firstly, they disempower landowners and communities from making a contribution to wildlife conservation and, as a corollary, they prevent them from deriving benefits from it. Secondly and worse, this exclusivity has not only excluded wildlife as a resource, but put much further reaching restraints on the landholders. For example, a landholder in the current policy environment in NSW who holds a rare species or a rare habitat has not an asset, but a land-use constraint. This situation has been lamented by an entire generation of scientists and policy makers such as Peter Bridgewater, the head of ANCA in the early 1990s (Bridgewater, 1994) but it has still remained essentially unchanged. Policymakers have simply not trusted any landowner or group to look after the interests of a rare or game species. With so much emerging (and widely celebrated) evidence that community control is better than centralised and remote State control; with evidence that incentives work much better than disincentives;, hunters, along with farmers, landowners and Aboriginal communities (and wildlife and nature-based tourism), must join together to remove something which has become one of Australia's major impediments to utilising, protecting, and rehabilitating wildlife. Ironically, this vested Government control of wildlife not only prevents the development of innovation, but is in stark contrast to its obsession with privatisation of assets and free-trade economics including health, education and water. Surely if that philosophy works so well with water, even universities, ambulances, prison systems or detention centres, it could also do for wildlife — and perhaps with less unaccounted costs to society.

5.3 INTERNAL IMPEDIMENTS (FROM HUNTERS THEMSELVES)

Hunting is a highly individualistic activity which, by its very nature, encourages isolation. Many hunters, if asked why they hunt, will reply because they want "to get away from it all", because they want to experience some form — or illusion as

the case may be — of self-sufficiency, and because they like wild places. None of this is conductive to collaboration, the forming of associations, group action, and communication. On the other hand, however, there are many examples around the world and in Australia where hunters have acted together very successfully being driven by a strong community spirit and an intensity of purpose, single-mindedness and motivation generally only known from sports fanatics. In Australia where hunters are and often feel shunned, they are reluctant to come out into the open, lack confidence to develop their own programs (in research, education or extension), and remain at the periphery of society. Although there are exceptions to that (for example the successful Field and Game NGO with its 14,000 plus members) with examples of groups emerging from almost "splendid isolation", there are at least nine internal impediments which prevent hunters and hunting becoming more accepted, more effective, and more disciplined.

Impediment 8: Lack of National Representation and Collaboration

While many Australian hunters are organised in clubs and association with some of these quite large in the States and nationally (such as the SSAA), there is no national representative hunting body as the umbrella organisation which represents the interests of all Australian hunters. This lack of a national body has made discussion between hunters and Federal Government departments difficult as they cannot talk as equals. This might be partly responsible for the lack of Federal guidance on hunting and the limited use of the term "hunting" in official documents. The lack of a national hunting organisation has also prevented the emergence of the development of a National Hunting Policy which, as for fishers, would provide a platform of discussion with NGOs, governments, government departments and organisations outside Australia. The lack of a national body for hunting has hindered Australian hunters from communicating and allying with international hunting and conservation organisations as has happened in Europe where FACE and CIC have become IUCN members.

Impediment 9: Poor Communication

Hunters tend to be poor communicators. They do not communicate well between states, they communicate poorly with other hunters outside of Australia (except Safari Club International; hardly representative of the world). They also communicate poorly with environmental and conservation NGOs and, most significantly of all, they communicate poorly with scientists. The repercussions of this lack of communication are many. Some of these repercussions include:

1. Lack of exchange of information
2. Missing out on funding opportunities
3. Missing out on alliances and support from IUCN
4. The price of "splendid isolation"
5. Continued lack of understanding of the potential role and contribution of Conservation Hunting

We consider these impediments to be so grave that we have given them a section of their own.

Impediment 10: Lack of Association and Cooperation with Conservation Bodies

Hunting in the Anglo-Saxon world model has had a poor, often confrontational relationship with conservation and the environmental movement (see Bauer and Giles, 2002). During the past 15 years, however, a number of significant modifications in attitudes, alliances, and legislative changes, have occurred which has brought some movement into the hunting-conservation relationship. This now has the potential to become less confronting and more cooperative. In the early 1990s, the International Council for Game and Wildlife Conservation (CIC), a 65-year-old international hunting organisation based in Europe and for many years a last retreat for old aristocracy, has become a member of the World Conservation Union (IUCN). A German State Hunting Organisation (LJV Baden Wuerttemberg) was accepted as a Conservation Organisation around this time and, in 2003, NSW has become the first State to establish an institutionary new body, Game Council NSW, which administers and promotes the rights and responsibilities of Conservation Hunters. FACE, the European hunting organisation with seven million members, has become a firm player in the development of environmental policy in Europe and beyond, while even Safari Club International (SCI), a hunting organisation tainted with the pursuit of trophies by rich people, has developed significant conservation credentials and even a social program (SafariCare). These moves are reflected in other countries. Hunters have now become part of a diverse group of agencies and organisations with a distinct and financially supported conservation agenda. These institutions will be the driving forces in the development of standards for hunting.

Impediment 11: Few Links with Fishing and Wildlife Tourism Industry

Hunting and fishing have much in common and are often one and the same thing. The US Federal Agency which regulates fishing and wildlife is a model for many other countries. This also applies to tourism where Bauer and Herr (2004), in an international assessment of the hunting and fishing tourism industry concluded that hunting and fishing were the only form of wildlife tourism with some scientific and other claims to sustainability. The experiences of one of the authors with wildlife tourism demonstrate this. During the development of the highly successful wildlife tourism program of the Sustainable Tourism CRC (STCRC), hunting was only included because of the insistence of one of the authors who initiated that program. Other wildlife tourist specialists from whale watching to bird tourism or diving tourism had generally negative attitudes to hunting inclusion. Nor was there any serious attempt by the hunters and the hunting industry to better engage with wildlife tourism, one of the fastest growing tourism industries (Bauer and Giles, 2002; Bauer and Herr, 2004). Wildlife tourism may directly compete with hunting and fishing as a land-use as well as a form of wildlife tourism in its own right. Instead of hunters starting to engage with the tourism industry and supporting it, they remain unaware, let alone responsive to, its many activities.

Impediment 12: Insufficient Links with Farmer Groups and Associations

Farmers in Australia generally have good reasons to stay away from "hunters". Most of them have had encounters with people with firearms on their property which violated not only trespassing rights, but sometimes damaged property. It will be difficult for hunters in NSW to disassociate themselves from such "black sheep" who are not really "hunters" at all, but are criminals with rifles killing animals. Only patience, good examples, and, above all, cooperation with farmers against those people will change that attitude. Game Council has undertaken steps to encourage and support the reporting of such offences and has, in close collaboration with the police and its own Game Managers, the power of investigation and conviction. Only time will show how successful this approach is but it will take time to change the ingrained attitudes of illegal hunting and shooting practices in regional areas of NSW. The Tasmanian-based approach to reconnect hunting with property (Property-based Game Management) is one step towards this but it needs to be supported by governments.

Impediment 13: Insufficient Investment in Research

Research and science have become the universally acclaimed driving force for most parts of society including the management of natural resources. While much has been written about this interaction of theory and management, science and the world, there are also now an increasing number of genuine examples. This engagement, for example has become strong in international conservation NGOs which, like the US-based NGO Conservation International, employ more than 50 scientists in their scientific departments. The power of science has been most successfully employed with the US-based "Ducks Unlimited", a hunter organisation which has become one of the world's leading waterfowl and wetland research and conservation organisations. In Australia, this engagement is in its infancy and has been neglected by hunters for many decades; no doubt partly due to a lack of regulation. While there have been mutually beneficial engagement between Conservation Hunters and scientists during some conferences there has also been few follow-ups of such joint activities. Nor have Conservation Hunters as a group generally shown much interest in supporting workshops and conferences. An exception to this lack of research and support by Conservation Hunters is the Australian Deer Association (ADA) which has sponsored some of Australia's best research on deer and the very successful Para Park Game Cooperative which has produced the world's best research on the hog deer species.

This lack of research interest by Conservation Hunters has also played an important role in the almost unchallenged emergence of misconceptions and scientific fairy tales.

One of the controversial elements of Conservation Hunters and game in Australia is the belief and conviction that once one considers something "game" it ceases to be a pest and will not be pursued as such. Implicit in that reasoning is that, once that happens, control becomes less effective and the impacts of such species increases. This paradigm has ruled supreme and almost unchallenged for several decades in Australia. In some States, (Victoria) it has had its counterweight in the protection of native and declining species where it assumed that a species,

once it has acquired a financial value,is not "protected as such any longer" but joins the realm of economics. Much of this "reasoning" belongs more into the realms of myth than of science and, once one analyses and evaluates such information this becomes clear very soon. It also becomes evident that that very attitude and adherence to a philosophy of "eradication" seems to have rarely if ever worked.

Amongst the potential impacts of introduced herbivores in new environments (the impact on plant species, competition with native species, erosion and wetland impacts, disease), there can be little doubt that disease is the most serious. Many other impacts, including predation and competition, are hard to determine. Nowhere is this more obvious than in the determination of the browsing impacts of ungulates. We will briefly evaluate the determination of these impacts, not by drawing on studies in Australia where they are few and far between, but from overseas where they have been studied for close to a century. As we shall see, there are some lessons in that which, to us, seem to be of considerable relevance for Australia.

Case Study 5.1: Evaluating the Impact of Exotic Species. Under-Researched and Misunderstood?

Grazing and Browsing Impacts of Deer

Browsing impacts of deer in northern and temperate environments are recorded for many forest types in Europe, North America and Asia. Impact studies on deer in the southern hemisphere have been studied in detail in New Zealand (in particular by Peter Wardle in the 1970s). For Australia, there is surprisingly little information available on dispersal, habitat preferences, feeding ecology, and population dynamics of most species and populations of deer (Frith, 1973; Low, 1999). What has been done (by Moriarty, 2004) on the impact of Rusa Deer in the Royal National Park, is inconclusive. As we shall demonstrate below, much of this comes from our problems in interpreting these impacts.

Impacts of Ungulates and Deer on Vegetation and How to Interpret Them

Impacts of deer on vegetation and other species are documented and extensively researched in Europe and North America within its former distributional range. Deer are believed to have changed many forest structures worldwide. Research in New Zealand (Caughley, 1983) confirms, not unexpectedly, that they deer have changed new ecosystems. Despite all of this research however, few unambiguous answers have emerged. This is the case even for European forest systems which are, compared to Australia, simplified and often subject to very-high deer densities (Bauer, 1990) which are as high as 100 roe deer/100ha (Bauer and Strohhaecker, 1989). Studies have shown that deer, as for any other large ungulate, can have very significant effects on forests, their recruitment, the diversity of ground vegetation, and, presumably other animal species through competition at high-densities. It is, however much less clear, if introduced or overabundant species cause plant species to become extinct or to cause excessive erosions as postulated for the New Zealand Southern Alps (challenged by none other than Graeme Caughley, 1983). Least clear is the effect of moderately abundant species including deer on other species. In fact it would appear that the detection of clear impacts on vegetation is confined to deer eruptions and excessive densities over prolonged periods. In other situations where other ecological factors act (such as natural erosion in New Zealand, fire and

drought in Australia), the situation becomes much less clear. To substantiate this claim, I will look at New Zealand in more detail.

Impact of Deer in New Zealand — Myth or Reality?

There is good evidence that deer, once introduced into previously mammal-free environments such as New Zealand, can dramatically change the structure of forests and the distribution of particular species of plants. Even in New Zealand however, the impacts of past burning by Maoris and a diverse moa fauna overshadow deer browsing impacts in all likelihood (Caughley, 1983). In Australia, where many extinct and extant mammal communities have effected past and present plant communities greatly, herbivore impacts including those of deer are much less clear cut. On a larger scale, they are very difficult to assess. One of the few and recent studies on the investigation of sambar deer as a potential vector for the spread of Himalayan Honeysuckle (Leycesteria Formosa) on Mount Buffalo (Eyles, 2002) has demonstrated this. Although sambar deer are clearly a vector in the spread of this plant, it is also an important predator of it. It is also only one of many species interacting with it (blackbirds and some native birds also distribute it). Similarly, the listing of plant species threatened by deer browsing/grazing in the Royal National Park (Hamilton1981), based on one or few studies on rumen sampling, is unwarranted if looked at in a wider context, as is extrapolation of Moriarty's (2004) results over one or two years in several small locations. Much more intensive, long-term and comprehensive studies conducted by Bauer (1991) and many others have shown that the prediction of such impacts and a generalised assessment is virtually impossible (Bauer, 1991). We include a brief excerpt of what the late Graeme Caughley (*The Deer Wars, The Story of Deer in New Zealand*, 1983) had to say about the impact of deer in New Zealand where they have been a much studied obsession (G Caughley, pers. comm.) for a number of Government Departments which, following the early speculations of a renowned botanist (Cockayne, 1919) started from a number of wrong premises:

> In Cockayne's time almost all botanists had a psychological quirk that still afflicts a proportion of botanists today. It is the belief that the true nature of a plant community manifests only when that community is protected from animals. Grazing and browsing are seen as pathological influences that decently should not occur in a properly ordered botanical world. That attitude towards animals… is held almost as strongly towards indigenous herbivores that are an integral and co-evolved component of the ecosystem as it is towards introduced animals.
>
> Caughley, 1983, p. 69

He goes further on saying:

> Riney's (an American renowned wildlife ecologist working in NZ between 1950–1958) greatest contribution to solving the deer problem was his discovery that although deer modify vegetation, as everyone well knew, that process does not go on indefinitely. An equilibrium is achieved after about forty years, the vegetation and the deer reaching an accommodation with each other. Cockayne's notion that forests are modified to destruction was false.
>
> Caughley, 1983, p. 71

Caughley also cites Jack Holloway, New Zealand's earliest and still unequalled forester (*Forests and Climate in the South Island of New Zealand*, 1954) who showed that:

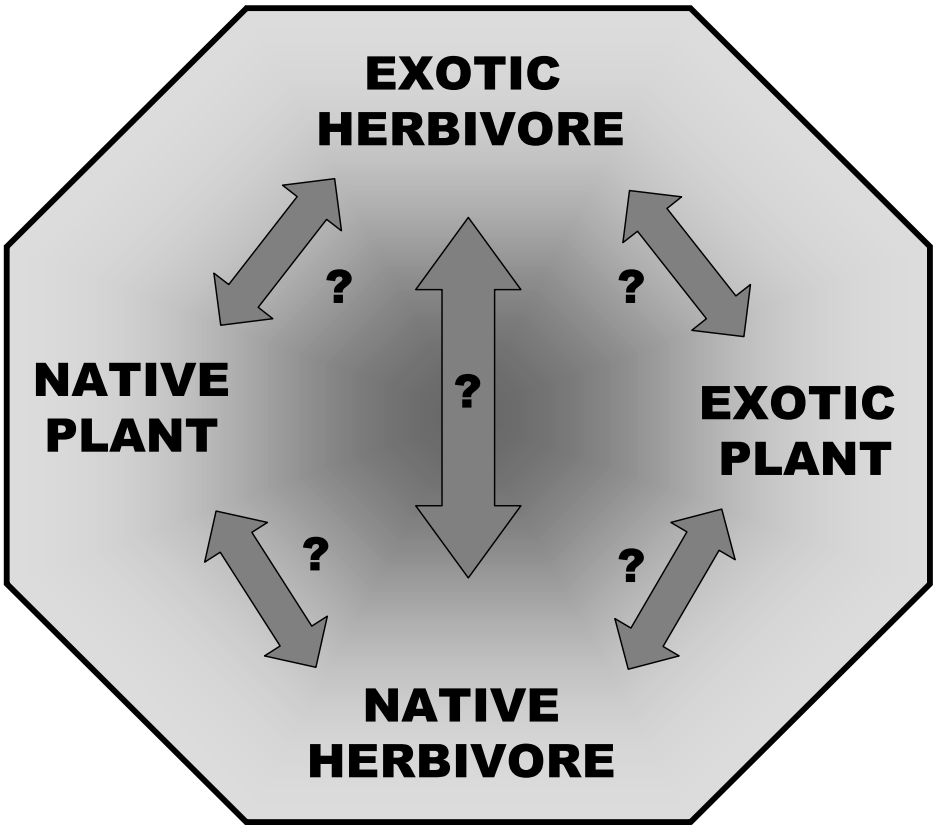
> The distribution of the plant communities… was not at equilibrium with today's climate but was still actively adjusting to a climatic change several 100 years ago. He showed further… that Polynesian fires had determined the present day vegetation of many areas.
>
> Caughley, 1983, p. 71

Caughley concludes this section in the book by stating on erosion (the major and most often cited impact of deer) that:

> The major determinant of erosion rate in mountain country is simply the rainfall. Against that, average basin elevation, catchment area, channel length, slope, rock type and plant cover have an effect so slight as to be virtually unmeasurable.
>
> Caughley, 1983, p. 76

If that assessment for New Zealand by Graeme Caughley is applied to Australia, where indigenous land-use, 200 years of excessive sheep and cattle grazing, and countless fires and droughts have affected plant communities, the selection of just one herbivore which mostly occurs at relatively low-densities, is not only unwarranted, but simply ludicrous.

In concluding this section, we might add that similar assessments are justified for the impacts of deer elsewhere. No matter how many more research projects we could carry out, in Australia (where vegetation has been and continues to be massively modified by livestock, fire, degradation and droughts), we will never reach clear conclusions with regards to what vegetation was there, why it was there, and if present day (adapted) vegetation should be any worse than past ones (This is the conclusion of Tyndale-Biscoe (2005). For instance, what evaluation has been made on the impacts of possum (*Trichosurus vulpecular*) and the effectiveness of spending NZ$34 million annually for its "control" in New Zealand? That does not say we should not carry out research on this matter, it is just that we might be able to learn from experiences overseas and not continuously reinvent the wheel.



Impact of Deer on Vegetation in Australia

We have seen for New Zealand that, even in the case of an island which did not have any native herbivores (except the extinct Moa with probably very different feeding habits), it is difficult if not impossible to differentiate browsing and grazing impacts from the background noise (natural erosion) (Caughley, 1983). In Australia and North America where exotic wild herbivores often share pastures or forest with livestock and with native herbivores, this situation is even more difficult. If we should want to study these situations however, they would have to be long-term. This will be compounded by nutritional differences and, more than anything else, they will be (as a multitude on studies of roe deer feeding habits in Germany showed), different between each locality and year. Other factors include climate fluctuations (harsh winters or dry summers) as well as frequent impacts of fire. For all practicality (and costs) the great majority of impact studies of exotic herbivores are inconclusive and ignore the diversity and inconsistency of environments which are also affected by many other species. This holds in particular in our present age of "climate change" which, as many studies have started to suggest, has added a new (and even worse) variable to turn everything upside down.

Such points of criticism have also been evident in a recent PhD study on rusa deer in Royal National Park (Moriarty, 2004). This study, amongst population dynamics, attempted to identify rusa deer impacts on vegetation and rare species in Royal National Park south of Sydney. It concluded that, rusa deer-induced changes which "are likely to include the extinction of native plant species which are not browse tolerant… and the cessation of recruitment of some types of plants." We suggest that this conclusion was not warranted from the data and followed the general trend of over-extrapolating local and inconclusive results. There is a bewildering variety of studies on the impacts of ungulates on vegetation and, with

the possible exception of the impacts on elephants on woody vegetation in parts of Africa, none of them is conclusive. These are little more than brief glimpses in time and space of a system which remain much too complex, unpredictable, and stochastic to make any sense. This is particularly true for feeding overlap studies. Most species overlap in food and this overlap always varies spatially and temporarily. What it means for the long-term survival of species (for example, if swamp wallabies could be out-competed by an exotic species), nobody knows. This is a very important question in Australia, and one which can possibly be answered for sheep in some completely cleared regions. A long-term monitoring system for this question seems to be important, but we would not quite know where to start. The right questions would need to be formulated and we would also have some "indicator species", which is another can of worms. Although there is one study from North America which showed that introduced sika deer seemed to out-compete white-tailed deer, that happened in an enclosure under zoo-like conditions on a few hectares of fenced pasture. There is no evidence of this in the wild and, if it does happen, it will not be over one decade (as in that study) but over centuries and millennia. Not to mention that these are two closely related species. How competition between exotic and native herbivores will unfold in the future, nobody knows. The continuing (over)abundance of several species of macropods, despite their being shot excessively and despite competing with sheep, would suggest that large Australian native herbivores are able to compete quite well with exotic ones.

This situation is even more pronounced on native animals. This is not surprising as most of them are off-limits. This situation which is almost tragic if one considers that, in North America and increasingly in Europe (Game Conservancy in the UK or Office Nationale de la Chasse (ONC) in France) a substantial part of the research is either supported by hunters or carried out by agencies working on that land-use.

With recent developments and a trend towards more integration of natural resource management, the development of a game management course at the University of Queensland now offers opportunities for the engagement of hunters in research.

Impediment 14: Insufficient Hunter Education

What does one have to know in order to go hunting or fishing? How does this knowledge base have to change once one claims to do it for conservation? And what can be expected from hunters who fall into the categories of indigenous, traditional, commercial, recreational, or tourism? As we all know, everybody can go fishing or hunting in Australia. In fishing, one just has to buy a licence (in the past not even that was required). If one wants to hunt on public land in NSW, one has to get a Game Council Game Licence requiring accreditation (an important start, but still well-short of the education standards of well-governed hunting locations). But if one wants to "shoot" on private land, one does not even have to do this. With such minimum expectations from wider society, hunters are not able to live up to many of the claims they make. It is also clear, however, that hunters have a considerable motivation and capacity to "educate themselves". This is being done in hunting journals (in Germany such as '*Wild und Hund*' offer a balanced mix of hunting stories, wildlife biology and self-regulation), while new Australian hunting

journals such as 'Wild Boar' are little more than hunting stories and pictures of men sitting with their rifle on monstrous pigs.

Conversely Tasmania has a good mix of support by Government offices and a dedicated group of hunters engaged on a program of self-education with a magazine dedicated to these aims.

Impediment 15: Poor Standards

Standards, Codes of Practice, and interactions with the public have been identified as one of the major strategies by the Game Council in improving hunting in NSW. With the development of the Hunter Education Handbook, the Game Council has started to address this deficiency. Experiences and research, however, for example in the tourism industry, show that raising the standards of members is a long, tedious process requiring a number of regulatory and voluntary acts which are either imposed on or adopted by the industry. Game Council, as the regulator, has the capacity to impose standards and Codes of Practice. The Conservation Hunters themselves and their associations need to support such regulatory actions with self-regulation and voluntary mechanisms such as incentives. This is done to various degrees by Field and Game and SSAA but needs to be driven in a more deliberate and nation-wide fashion. Standards are of particular importance for Conservation Hunting and for fishing tourism. While a look at some websites suggests a relatively high standard of some operators, these standards need to be adopted across the board for the development of a credible Conservation Hunting industry. In NSW where hunting mostly or exclusively targets exotic "pests", sustainability of hunting is inappropriate. Conservation Hunters are required to demonstrate, even in the case of deer, that they make a contribution to the control, reduction and (at times) eradication of exotic pests. It is clear that this question needs to be addressed and the development of a Conservation Hunters formula standards needs to be undertaken.

Impediment 16: Lack of Resources

Conservation Hunters are often prepared to spend thousands of dollars annually on equipment and hunting trips while only begrudgingly paying licence fees or club membership. They are even more reluctant to invest in research and long-term aims. This attitude is not restricted to Conservation Hunters. In fact it is the common response of most resource users, with the partial exception of Australian farmers who have become world leaders mostly because of significant amounts of money invested in R&D. This problem is not restricted to Australian hunters, however, with the notable exception of the United States where hunters have an exemplary record in funding research (and generally greatly benefitting from that scientific collaboration). While hunting R&D is not as straightforward as that for agriculture, there is still a great need for research. There are also many potential avenues which can generate funds for this research. In order to access funds, develop projects, and receive benefits from this newly-emerging integration with scientists, hunting research will have to be improved and promoted (see Chapter 6).

Impediment 17: Lack of Communication with International Hunter Organisations

Conservation Hunters, as with other natural resource user-groups and indigenous people (many dependant on hunting and fishing), have started to become internationally-organised. We discuss in Chapter 6 how more than seven million hunters in 19 European countries have joined forces into an organisation (FACE). FACE aims to influence environmental policy in individual countries (see the Case Study on the Madrid Demonstration against New Biodiversity Laws). Also, a range of American organisations such as Ducks Unlimited and Safari Club International have developed international agendas and programs, while the Europe-based CIC has played an important and expanding role for more than 40 years on the development of national hunting policies in countries as diverse as Morocco and Mexico. There are now many hunter research groups (Prof Fritz Reimoser in Vienna is one whose group developed European (and IUCN) standards and strategies) whose work is very relevant for Australia with interests in joint research and policy development. As these groups already work closely with international conservation organisations, Australian Conservation Hunters could leap the queue and get involved.

5.4 EXTERNAL IMPEDIMENTS (FROM WIDER SOCIETY)

We have described external impediments as those which are image related. For one author who grew up in Germany and came to Australia almost 20 years ago, it is still astonishing how negatively the "hunter" is perceived by the Australian public, especially amongst the urban population with a default leaning towards "animal rights" and "lock it up" protectionist policies for natural resources. These views were revealed once some State forests were "opened" up for Conservation Hunting with this resentment also from "professional" scientists, wildlife ecologists, and land-use experts. The overwhelming perceptions one notices are:

1. That the wider public in generally poorly informed about Conservation Hunters and Conservation Hunting as a land-use.
2. That "hunters" cannot be trusted.
3. That hunters "like" killing and wasting animals.
4. That hunters are disrespectful of landownership and boundaries.
5. That hunters own rifles and as such are "potentially" dangerous.

For the purpose of this study, we have explored four groups of people: wider society, Green-leaning groups, landowners (farmers), and scientists who provide advice and staff Government agencies.

Impediment 18: Poor Image of Hunters in Urban Society

Hunting pig hunters in southern NSW

The NSW National Parks and Wildlife Service (NPWS) and Police have embarked on what they say will be an ongoing campaign targeting the illegal activities of pig hunters who are being observed in increasing numbers in national parks east of Canberra. Over recent weeks the two agencies have conducted joint night patrols in parts of Deua, Tallaganda and Gourock national parks looking for pig hunters carrying out illegal activities.

Both agencies have good reason to be targeting pig hunters. Queanbeyan's Detective Senior Constable, Phil McCloskey, said today that the aim of police will be to curb a trend of illegal activity associated with pig hunting. "Unfortunately there has been a rise in illegal activities in rural areas in the region often associated with pig hunting and I'm talking about offences which at times involve firearms, drink driving, drugs, trespassing and theft. "We want to get the message across that anyone committing such offences in the act of hunting pigs will have a increased risk of being caught because of our campaign of night patrols in the region," he said. The NPWS has other reasons for working closely with police. NPWS Far South Coast Regional Manager, Tim Shepherd, said today that pigs are a feral animal and the NPWS invests considerable time and money trying to eliminate pigs within its reserves, something that pig hunters don't want to see happen. "Our experience has been that pig hunters have proved a major obstacle towards getting rid of feral pigs. They have destroyed, stolen or vandalised many of the pig traps we have installed in numerous parks in the region. Similarly their activities often undermine our pig control programs by dispersing pigs in areas where we are trying to get them to gather so that we can get as many pigs as we can at once. Pig hunting also often involves the use and possession of firearms and dogs both of which are illegal within national parks. We have received information suggesting that pig hunters have been entering national parks east of Canberra and to counter their activities we joined with police from Queanbeyan to carry out a series of night patrols with the specific aim of catching pig hunters red handed," Mr Shepherd said.

Recently NPWS officers and police conducted joint patrols south of Braidwood and east of Jerangle between the Snowball — Cooma Road and the Numeralla — Captains Flat Road. A number of people were approached during the operation but no breaches of the National Parks and Wildlife Act were recorded although some were charged with other offences by police. Police and the NPWS warn that these patrols will continue so that pig hunters realise that this area will not become a haven for their activities.

Media release July 9, 2002, www.environment.nsw.gov.au

Conservation Hunting and Conservation Hunters in Australia have an uncertain provenance and an uneasy relationship with modern society. Conservation Hunters and Conservation Hunting are such a poorly defined group and activity; neither linked to land-use nor to landownership, barely recorded and evaluated, and typically linked in Australia to "trespassing" and other illegal activities as the media release above demonstrates. The perception in the above release is that "… pig hunters have proved a major obstacle towards getting rid of feral pigs… They have

destroyed, stolen or vandalised many of the pig traps we have installed in numerous parks in the region."

No matter who carries out such criminal offences, whether these are endorsed by "hunters" or not or if it is actually valid to call them "hunters", the image it creates is very negative. This image runs with an unwillingness and inability of the regulatory sector to prosecute such offences or even consider them as serious. The wider public sees mostly only the unruly and illegal behaviour of criminals (hunters) and is unable to see what this really is: An inability of the regulatory sector to prescribe, let alone regulate an industry. While the formation of the Game Council is a first and major remedy to this state of affairs, the improvement of this rather deplorable situation is not a matter of years but of decades.

Impediment 19: Poor Image of Hunters amongst the Greens and Environmentalists

> Recreational game hunters have been given permission to hunt in our State Forests! They can now get access to the majority of our publically owned forests for the purpose of feral animal control – also known as Big Game Shooting! The only type of land they can"t access yet is National Parks. This is allowed under the new Game and Feral Animal Control Act 2002 and is supposed to allow for feral animal control by the community. This new act claims to be protecting the environment but it has nothing to do with science or conservation. It will not protect the environment – it will promote game hunting which is in conflict with co-ordinated pest management and eradication strategies and it is in conflict with sustainable pest animal management. There are no genuine independent monitors, regulators or authorities to ensure that hunters do not abuse the extensive powers provided by this new law. Shooters largely police themselves. The Game Council is controlled by hunters and appoints inspectors. National Parks and Wildlife Service staff no longer has the ability to monitor or prosecute for harm to some protected animals. The responsibility of other agencies such as State Forests and the Department of Land and Water Conservation has also been undermined. It is in the interest of hunters to increase the numbers and types of potential game animals in hunting areas, rather than effectively solve the problems caused by feral animals in the bush. For example: Deer have been released into national parks, state forests, catchment lands and other secluded places for the purpose of hunting and according to research published 2004, 127 of Australia's 218 feral deer populations have arisen because of hunting. In addition, hunting dogs escape to create future feral animal problems in conservation areas and hunting may impact on threatened species, with the likelihood of mistaken shootings. As Lee Rhiannon from the Greens has said, "We certainly need to control feral animals, but it needs to be left in the hands of professionals. Hunting in state forests is not about controlling feral animals, it's about delivering an electoral outcome for the Labor Party. This Labor government has become obsessed with tying up the gun lobby vote. Putting hunters into state forests is bad news. it's bad for the environment, for animal welfare and for public safety."
>
> Nature Conservation Council of NSW, www. nccnsw.org.au

Concerns held by the NCC include:

1. poor consultation in this process, including failing to consult neighbouring landholders
2. the impact on access by the general public to these areas
3. lack of proper control of feral animals
4. lack of independent regulation and monitoring of this hunting
5. the possibility that hunting dogs will escape and become feral.
6. the impact on native animals killed or injured by hunters or their dogs
7. the impact of this on sensitive environments and threatened species
8. possible risk to public safety
9. the Game and Feral Animal Control Act 2002 is largely focused on the facilitation and control of hunting, rather than the eradication of feral animals for conservation.
10. The Greens have conducted a campaign to repeal the laws since their inception.

These "concerns" are those of the conservation community at large which has prevented any collaboration between hunters and conservation organisations. Conservation Hunters need to take these views seriously as most of them are not entirely unfounded.

Impediment 20: Poor Image of Hunters amongst Farmers

One of this report's authors has been living on a farm on the Tablelands of NSW for the past 17 years. His attitude towards some so-called "hunters" is "firsthand" and rather representative of farmers. That is, he has to listen to illegal shooting on his land during a number of nights each year. Also, he continues to find signs of "hunters" cutting gates and, more often than not, finds empty beer cans and other evidence of jollity! When he caught two "hunters" on his property; he was threatened with a rifle and he knows that these groups regularly enter his property in search of wild pigs, but also for valuable yellow-box trees. These trees are cut down, sawn-up for fence posts and firewood, and then removed. The latter is called "theft" and can be convicted, however the "hunting" and illegal taking of game (exotic species but also grey kangaroo and other species) is so common that one can hardly call it "poaching". This "hunting" is often carried out by "hunters" who are neither in possession of a valid firearms licence, let alone a hunting licence. Landowners are, in effect, powerless. People who do this are sometimes called "young blokes" and other times "hunters", something they certainly are not. Tragically, for the many hunters who want to do the right thing, this failure of the regulatory sector condemns them unfairly.

Impediment 21: Poor Image of Hunters amongst Wildlife and Ecological Scientists

Conservation Hunters have mostly been treated with great caution by wildlife biologists, wildlife scientists, conservation biologists, and ecologists in Australia. While the scientists have closely collaborated with or worked from within Government agencies, most of these were concerned with either pest control efforts

or commercial hunting. Even Graeme Caughley, himself a professional "product" of Government control efforts in New Zealand, has given scant scientific attention to hunters although he accepted, even endorsed recreational deer hunting in New Zealand as part of the "national psyche". This background of professional ecologists in Australia and in New Zealand could not be more different than that in the United States, where the science of game management was developed and defined by none other than Aldo Leopold. Forester though he was, he considered himself more than anything else a "hunter". This is also similar to Europe where hunting derived its acceptance from being a traditional land-use much more than a scientific land-wildlife management discipline.

While this view might explain why Australian wildlife biologists have little experience with and tend to underestimate the role and importance of recreational hunting, it does not explain their aversion. This aversion or, at best, indifference, has rarely been breached by them with the notable example of Gorden Grigg and Dan Lunney (1996) who allocated a whole section of their book to recreational hunting. It seems to us that since the time of Harry Frith, who was a recreational hunter himself, an Australian Leopold archetype of sorts — the recreational hunter's image and perception amongst scientists, has further deteriorated. While this state of affairs can be interpreted in all kinds of ways, one of the main causes lies in the lack of communication between the two groups. Perhaps even more so, the dominance of Government agencies in research and research grants and land management has tended to lead to the avoidance of the term "hunting". If it is used at all, it is to describe the illegal activities as described above. Because of the politicised environment which defines most natural resource agencies in Australia, the concerns of more vocal anti-hunting groups (most of them Greens) have priority. The outcome of this unfortunate synergy of various conditions is that city-based anti-hunting movements are carried out more or less without any opposition by scientists and often with their explicit or implicit support.

Conclusions: Anything but Hunting?

Looking at these 21 impediments to Conservation Hunting in NSW it becomes clear that there is no such thing as a "land-use" of Conservation Hunting in Australia or in NSW. If something has to be hunted, the Australian and the authorities feel much more at ease if it can be called "commercial harvest", "culling", "pest control" by "professionals" or at least "euthanasia". Anything, anything, but hunting.

While this is a remarkable state of affairs by any standard, it becomes even more so if we consider that hunting and fishing were the indigenous land-uses of Australia up until 200 years ago.

Throughout this report, we have tried to explain how such an extraordinary situation arose in Australia. The list of 21 impediments we have come up with more or less speaks for themselves. The contempt that Australian society feels for its fraternity of hunters has emerged from a combination of ignorance; anti-hunting, anti-firearms, and animal rights dogmas; a failure of the regulatory environment; and an inability of Conservation Hunters to make a better case for their legitimate land-use.

Impediment 1	Dispersed Legislative and Policy Environment
Impediment 2	Insufficient Guidance and Harmonisation by the Commonwealth
Impediment 3	The Disjointed Nature of the Regulatory Environment
Impediment 4	No State/National Accounting System for Hunting Expenditure
Impediment 5	Disconnection of Wildlife from Land
Impediment 6	Definitional Uncertainty of Wildlife and "Hunting"
Impediment 7	A State-Exclusive Approach to the Use (and Protection) of Native Wildlife
Impediment 8	Lack of National Representation and Collaboration
Impediment 9	Poor Communication
Impediment 10	Lack of Association and Cooperation with Conservation Bodies
Impediment 11	Few Links with Fishing and Wildlife Tourism Industry
Impediment 12	Insufficient Links with Farmer Groups and Associations
Impediment 13	Insufficient Investment in Research
Impediment 14	Insufficient Hunter Education
Impediment 15	Poor Standards
Impediment 16	Lack of Resources
Impediment 17	Lack of Communication with International Hunter Organisations
Impediment 18	Poor Image of Hunters in Urban Society
Impediment 19	Poor Image of Hunters amongst the Greens and Environmentalists
Impediment 20	Poor Image of Hunters amongst Farmers
Impediment 21	Poor Image of Hunters amongst Wildlife and Ecological Scientists

While we will try to find out how these impediments can be addressed (Chapter 6) there is something even more serious at work than mere impediments. That is, there are trends within Australian and in global societies which have far-reaching consequences and are not easily addressed. We have called these "issues" and have selected three major ones. As we shall see in section 5.5, these issues are really major trends in modern society (with the non-Western societies increasingly accepting views and policies from the dominant nations) which are increasingly affecting our relationship and management approaches to the natural world, for hunters, conservationists, wildlife managers, farmers, foresters, and fishers. Western society has been responsible for a global trend, which was once described during a national scientific conference — along with habitat loss — as the most devastating cause affecting wildlife conservation: The Animal Rights Movement.

As early as 1987 this movement was considered in the United States by wildlife managers along with habitat loss as the "most ominous threats" to wildlife (see also Lunney et al, 2007)

5.5 MAJOR ISSUES AFFECTING CONSERVATION HUNTING IN NSW

No investigation of impediments and constraints, problems and opportunities, is replete without "issues". We hesitate to call these poorly defined events or processes "problems" but they seem to confront us with every step. Issues have an aspect of being "unresolved" and "lingering", difficult to address, and long-term. They

present many poorly defined targets and have a tendency to grow into something larger, even climate change eventually. We have chosen five issues which confront Conservation Hunting overall but increasingly so in Australia.

One of these, our changing food habits, alienation from nature, commoditisation and urbanisation, are trends across the world with devastating impacts on not only our health and environment, but also on hunting and fishing. They also affect our attitudes to Conservation Hunting. For these issues, we consider Conservation Hunting as a canary bird to warn us from the deadly gas because it might well be our most sensitive barometer of change.

There is another trend (our second "issue") which has come as a response to the first. That is, that creatures and, in particular warm-blooded animals, might not only be our responsibility, but also have their own set of rights. The third isssue is "The Great Bioshift" which is not just confined to exotic species that happened to be introduced somewhere, but to species which are part of a much bigger and global picture of accelerating change (deer comes to mind). The group of animals which have followed humans generally and are of European descent came in a second wave following sheep and cattle, pigs and cats. Also these animals are as close to us in some ways as our pets and livestock and which we are quite unwilling to treat as pests. None of these wider issues can be addressed by Conservation Hunters. But as we shall see in Volume II, they might well provide rallying points for a sane future which includes Conservation Hunters.

Issue 1: Urbanisation, Food Habits and Nature Alienation

> Almost one-quarter of natures resources are being gobbled up by a single species, and it's not difficult to guess which one. Based on figures for the year 2000, the most recent available, humans appropriate 24 percent of the Earths production capacity that would otherwise have gone to nature. That is the message from Helmut Haberl of Klagenfurt University in Vienna. Haberl and colleagues analysed UN Food and Agriculture Organisation data on agricultural land use in 161 countries covering 97.4 per cent of farmland…. [They} found that humans use some 15.6 trillion kilograms of carbon annually. Haberl says that the Earth can just about cope if we meet future needs by producing food more efficiently….on roughly the same amount of land as we use now.
>
> A. Coghlan, 2007

In the world described by Haberl and colleagues, wildlife is either displaced (and replaced by livestock) or, to some minor degree, restricted to some protected area (where by common scientific consensus, many species will not be able to survive). Also by common scientific consensus, wildlife on farmland is not doing very well or is considered a "pest" in the western world or "competitor" in the non-western world. Farmland is increasingly homogenised (monocultures, GM crops) and penetrated by the many tentacles of urban sprawl. The current and much lamented outcome by most analysts of the human condition is one of increasingly unhealthy food habits, alienation from nature, and the corporatisation of most natural resources with the destruction of livelihood systems for some 2.5 billion farmers around the world. Roudart and Mazoyer (2006), two of the world's foremost

agricultural scientists, have estimated: "It is more than unfortunate that many members of the environmental and conservation movement still fail to recognise that hunters and fishers from whatever vocation are one of their most important allies."

Issue 2: Powerful and User-Unfriendly Animal Rights Groups

> Animal rights groups do not hold the monopoly on caring for animals, nor do they hold the moral high ground on arguing a need to reduce animal killing. Indeed the motivation for the Forum was all about better ways to control animal pest impact, not better ways to kill pests, a point obviously lost on these zealots... the animal rights zealots diverted any real opportunity for detailed scientific discussion towards a moral debate... Australia's biodiversity cannot afford the consequences of such extremism should land managers and ecologists to succumb to single-minded, ill-informed pressure groups.
>
> Banks, P.B., 2007

A second almost universal trend (which has now reached China) and is most notable in western-Anglo-Saxon societies, is the emergence of animal rights groups (as a further extension of animal welfare groups). These now operate around the world and have responded to extreme abuses of animals common in medicinal and agricultural research and practices with their own extreme positions. In this world of "animal rights zealots" as some scientists call them, the middle ground occupied by traditional farming practices and hunting and fishing, including that carried out by indigenous people, is in danger of disappearing. It is probably fair to say that this trend, so far most dominant in the United Kingdom where hunting as a land-use is already severely curtailed or even banned (foxes, for example) has been exported by the western (Anglo-Saxon) conservation movement and has become firmly entrenched in many country's legislation. Because of this, many of the shifts towards sustainable use which have happened in conservation NGOs have great difficulties being re-translated into legislation and regaining a foothold as a legitimate land-use. This is why trophy hunting in nature reserves in China is being kept more or less under wraps while other countries such as Bhutan have even outlawed wild boar hunting, an act which is threatening the livelihood of many of its farmers (Bauer and Giles, 2002). This is also the major reason why Kruger National Park in South Africa is being progressively degraded by 12,000 African elephants as animal rights opinion prevents authorities and communities from regulating the populations let alone utilising their valuable meat.

Australia, for many of the reasons outlined throughout this report, has become a bastion of these beliefs. The destructiveness of this belief system for wildlife, human, rural, and indigenous communities, was played out in the Pest or Guest Conference discussed earlier with Banks (2007) saying it was "taken over" by "animal rights zealots who "diverted any real opportunity for detailed scientific discussion towards a moral debate" (Banks, 2007: 249).

Issue 3: The Antipodean Dilemma

> Consider the Australian Bustard *Ardeotis australis*. In the 19th Century, large flocks were regularly seen across a wide area of the continent. It was a very abundant bird. The early colonists soon learned from Aborigines, who sustainably harvested them, that they were in fact quite delicious… Banks commented that, "it was as large as a good turkey [in fact he had shot one weighing eight kilograms] and far the best we had eaten since England." ... But while the early colonists appreciated bustards, that soon changed. As the land was cleared and replaced by monocultures of introduced grazing species and predatory foxes and cats… bustard numbers fell… As a result they became listed as threatened by New South Wales National Parks and Wildlife Service. Despite these trials and tribulations there is still no recovery plan for the species… Given the colonists awareness of the palatability of the bustard, why did Australians begin to lose interest in the bustard and refocus instead on importing American turkeys? Why didn't they build an industry around sustainably harvesting, and in the process conserving, a valued Australian bird? My guess is that native food was increasingly seen as "poor man's tucker" and as such were gradually removed from Australia's cookbooks.
>
> Archer, M. and B. Beatie, 2007

Australia's native fauna was strange for European's conservative culinary tastes with introduced exotic species also not commonly consumed. For this reason, much of the surviving old and dispersing new fauna of Australia did not lend itself to "sustainable yield". Australia has rather taken the path of declaring native species "protected" while classifying exotics as "pests". This classification has often nothing to do with reality and has led to what we call the "Antipodean Dilemma", that highly unproductive deadlock, where we continue to insist that it is all black and white, while in the real world it has faded into many different shades of grey.

Playing Devil's Advocate for Australia's Exotic Fauna

How many feral pigs are there in Australia, or in NSW, or the Northern Territory? The answer to this says a lot about Australia and its ability to count, let alone manage exotic "pests". Somewhere between 1, 7, 13 or 30 million, if one asks the "experts". According to international 'standards" one could argue that this wildlife, an environmental pest which is no doubt changing Australia (but a prized species of game for some 200,000 "followers"), is now one of the greatest modern terrestrial wildlife resources in the world. The fantastic reproduction potential (among large mammals) unique to pigs allows a "sustainable" harvest of possibly up to 10 million pigs (at 40kg each), and some 400,000 tonnes of wild pork (the entire ocean harvest of marine fish is around 80 million tonnes) every year. For a relatively small, dry, and infertile continent such as Australia, this is a remarkable figure, especially with some 20 more species of exotics, some of them in larger numbers (rabbits) while large native animals still manage to thrive as well. There are also about one million camels in Australian deserts which, according to recent studies, are also a huge meat potential for export. Australia is a true wildlife continent; albeit a "changed" one.

If one combines this sheer resource value with the impact of these new arrivals, as a Key Threatening Process; as competitors to conventional farming; as new and often appreciated food source for Aboriginal communities; and as hunting

quarry for a million or so Conservation Hunters; it could be fair to say that, overall, not enough has been done so far to try to better understand these conflicting values, let alone come to terms with them. Playing devil's advocate, one could argue that from a land-use equity point of view, what is acceptable for agriculture (relying completely on exotic species), should also be acceptable for hunting. If Australian society has chosen sheep as a major agricultural target, knowing well that this species has been and continues to be responsible for much of the land degradation, one might well argue that the same could be said for deer and for pigs. One could even argue that it is counterproductive and hypocritical and, ultimately divisive, to tally the damage of one exotic species (red deer) while ignoring the vast impacts of another (sheep).

While we are not arguing to do away with sheep, we want to make the point that, once we accept exotic animals as a resource as we do with sheep, we have to accept some of their impacts. On another example, the sentiments of wider society have badly compromised duck conservation and rural economic potential in parts of southern NSW. Much of this goes back to the very typical Anglo-Saxon culinary tastes (as well as the poor hunting legislation of England). This has led to many inconsistencies and value systems which, ecologically, are sheer nonsense. This becomes more so when we look "beyond the terrestrial fence", Australia's freshwater systems.

A look "beyond the "terrestrial fence": Carp for Christmas

One of the problems Australia has with the management of an exotic fish species, the carp, is that it was settled by Anglo-Saxon people and continues to be dominated by Anglo-Saxon values. These demand that carp is a "valueless fish" which one cannot eat. Most of Europe and Asia would disagree. Hungarians and many Germans would point out that carp is good enough to be caught, kept in a bathtub in one's house for a week (to remove the at times "muddy taste") and served as a Christmas dinner instead of turkey. This Anglo-Saxon refusal to consider edible what most other nations cherish has been responsible in Australia not only for a nation-wide defiance of an indigenous meat resource which remains perfectly plentiful, the kangaroo, but has also been the cause of legislations and policies which have consistently worked against native wildlife.

It is possibly why in rural Australia, if one mentions eating kangaroo, one generally gets a "look" or at best a polite answer that it was surprisingly "nice" (only once though). One sticks to lamb, beef, chicken, or pork. This attitude is strange to many non-Anglo-Saxon newcomers to Australia but has hardly changed over the past decade. One still mostly eats either lamb or beef or at most rabbit — but only for the poor. Wild boar, a delicacy in Europe even more so than deer, has almost no domestic market in Australia after being exterminated in Great Britain for centuries. More to the point however, it cannot be overestimated what and how these attitudes have affected natural resource management, pest control, and, ultimately, conservation. There is also that British class-based attitude to hunting which, while not prevailing in Australia, has affected the attitude of the public towards hunting.

The Trout and the Deer

Trout and deer were "luckier" than carp. The trout and the deer, both natives of the northern hemisphere, have not only been cherished by the English aristocracy and Scottish alike, they have also been moved around the world along with the British colonists. The trout has been introduced into the highlands of Sri Lanka, the great Himalayan rivers draining into Nepal and India, Patagonia, Chile, Lake Titicaca in Peru, New Zealand and South-Eastern Australia. In all of these rivers, it has been an exotic species, an alien, highly efficient predator which replaced native species in what must have been great underwater extinction waves. In Lake Titicaca, it replaced the native giant frog, has all but eliminated the galaxies in many New Zealand, Australian, and Chilean rivers. Yet despite all this, it thrives, is bred in hatcheries, and released in the millions and revered across the world. Perversely so, this goes on especially in National Parks, with the oldest trout hatchery in Australia at Lake Jindabyne breeding and releasing millions every year into the rivers of Kosciusko National Park. While we do not want to condemn this practice, one might be tempted to point out that we seem to have one standard for trout and another for deer, a terrestrially more benevolent hunting equivalent. This of course must lead us to the conclusion that science and natural resource management has very little to do with how we treat a pest. It is all about values and emotions, culinary tastes, class hang-ups, nationalities, gun laws, land and ownership. These are often contrary to what we know we should do. It is also the thankless task of the policy makers to get it right and their great dilemma that they never will.

One of the most telling examples of the failure of policy makers to come to terms with the dichotomous nature of Australian "pests" are deer, which are the backbone of a rural industry worth millions of dollars, but a Key Threatening Process in some States including NSW.

Case Study 5.2: The Deer Wars

The Deer and the Hunters

This report shows that, with the eruption of some species of exotic deer across NSW over the past decade and classified as a Key Threatening Process by conservation agencies and yet emerging as an important game species for hunters, a dichotomy of values has emerged. If one either ignores this conflict of interest or develops yet another act or policy about it, there can be little doubt that deer, as in New Zealand, has found its place in the psyche of many Australians, for not just hunters but for farmers as well, as the study by Finch and Baxter (2007) in Queensland confirmed. The deer are here to stay, most people including farmers do not view them as pests and, like sheep, they are starting to become a valuable natural resource. They also present significant alternatives for farmers managing them on properties for hunters as in Tasmania. What many hunters in England and Europe have in common is a preoccupation with trophies and the ultimate trophy host is deer. This is unpalatable to many, condemned by some, but which smells of hypocrisy when applied to our slaughterhouses. There is not really so much difference in being obsessed with hunting trophies than with the Australian obsession with sport.

> The collection of hunting trophies is an expensive pursuit of a considerable number of hunters, especially in North America and Europe. Trophy hunting's performance is measured by the Index value (derived by specific

> formulas) of length, width and circumference measurements of either teeth (canids, elephant) or head protuberances (rhino horn, antlers and horns). Hunters have gone into considerable intellectual and statistical time to produce formulas, guidelines and books to classify these trophies into bronze, silver and gold medals. In the past and present, trophy hunting has aroused many emotions and led to many conflicts between the hunting and anti-hunting factions of society. Generally for the majority of people, the Olympic chase for milliseconds, millimetres and points is the name of the game, while it borders on perversion, not for a few of them, to apply this principle to trophies.
>
> Bauer, 1993

Deer has found its place in New Zealand; as described by Graeme Caughley in his book, *The Deer Wars* (1983). One could easily claim that deer followed Anglo-Saxon colonisers around the world for this very reason. Deer, some 10 species, now in large populations in Argentina, Chile, Australia, Papua New Guinea, Mauritius, and New Zealand, has almost become as widely distributed as humans and their sheep. There is also that special relationship, similar to the one which characterises the Anglo-Saxon farmer and his sheep. George Schaller in his classic, *The Deer and the Tiger* (1967) convincingly showed that tigers evolved around their major prey, deer. Modern hunters have continued that predator-prey relationship once the tiger was removed. It is now, especially so in the Antipodes: The deer and the hunter. As deer is an ungulate which, as many ecological studies have shown, is especially prone to "wildlife eruptions", this is just as well. With the tiger gone or not there, we might as well have hunters. This is now the case across Europe and North America where many millions of deer are regulated by 20 million hunters within a large economy generating, mostly for rural people, some US$ 50 billion each year.

> **Deer hunters slam sambar pest listing**
>
> Gippsland deer hunters have slammed the Victorian Government's decision to list sambar deer as a threat to biodiversity. the decision came after Environment Minister Gavin Jennings accepted the recommendations of the independent scientific advisory committee. The committee recommended sambar deer as threat under the Flora and Fauna Guarantee Act. Local deer hunter Reg Gordon, who has hunted deer in Gippsland for more than 30 years, said the decision was puzzling to deer hunters. "I really don't know where it has come from. I've never seen any of these so called experts in the bush," he said. "But I suppose it comes down to biodiversity and the fact that the government has for a long time been trying to kill off the deer." Mr Gordon said damage to the environment in areas where there is sambar deer hunting was basically non-existent. "Sambar browse on a variety of vegetation at different times of a season so the plants can regenerate. It is unfounded to singularly target the sambar deer as the main culprit in the degradation of plant life. There are many other animal species doing much more damage." mr Gordon said recent bushfires had severely reduced the number of sambar deer in Gippsland. "Fires have probably wiped out up to 80 per cent of local deer populations. The only place deer numbers may be high is around water catchment areas and fringes of National Parks and private land. In areas where no hunting is permitted sambar can become a real problem. Where hunting is allowed, the sambar population is sustainable and kept under control." Environment Minister

> Gavin Jennings said sambar deer feeding and behaviour habits pose a threat to native plants and animals. Sambar deer control programs could include the use of 1080 baiting, a measure that concerns Mr Gordon. "the last thing we want is a 1080 baiting program that poses a danger to other animals and the environment in general," he said. "Using 1080 on the sambar will affect other native animals and also cause secondary strikes and toxic contamination in waterways."

Case Study 5.3: Waterbird Hunting and Conservation in Australia

NSW, in a world-wide and urbanisation related trend, gained the dubious distinction of being the first state/nation to make waterfowl hunting illegal. The duck hunting ban was not because scientific research showed that it affected waterfowl populations, but because of RSPCA claims that the use of shotguns was cruel. While the general public in NSW, including many people in the country supported that ban, its implications are not so straightforward.

Unintended Consequences in a Complex World

In a land and time where shortage of water looms large and where farmers and waterbirds are caught in a corrosive cycle of drying-up wetlands and irrigation channels, both are in need of protection. The ban of the hunting of waterbirds, installed in NSW as a political response to overwhelming pressure from the RSPCA and its lobbying partners for reasons of "cruelty", would seem to have been a visionary act if we consider the deeply disturbing results of waterbird counts along Australia's east coast by Kingsford (2006). Once we look at the reasons for that decline, (not hunting or our beloved "climate change") but simply the destruction of wetlands, this "visionary act" becomes one of ecological short-sightedness because we know from countless studies around the world that hunters play a crucially important role in the conservation of waterbirds. There is now a rather overwhelming logic which would suggest that the impacts of hunting (which has, according to these surveys, little or no impact) would be more than compensated for by hunters' efforts and contributions in wetland conservation. Let us not forget that French duck hunters saved the Camargue, one of the world's most magnificent wetlands, and that the United States prototype of "duckstamps" has been considered as one of the most successful conservation schemes of all times (setting aside 18,000 sq km for waterbirds). Ducks Unlimited in 2007 secured another 53,000 sq km of wetlands for duck hunting and water dependant species.

Even if duck hunting was reinstated in NSW, it would not and should not be "business as usual". Another emerging message from Kingsford's long-term studies is the variability of trends between wetlands, where rainfall events may well be overshadowed by development impacts. This calls for differentiated management and targeted hunting schemes within the State. Close coordination between trend counts and hunting is needed but also incentives to allow landowners to develop wetlands on their properties for duck hunting. Duck hunting should not be free any longer. It should become an expensive, exclusive pursuit of a reduced number of hunters as it is in the United States and Europe. Importantly it will become a recreational hunting activity which, as abundant evidence from North America and Europe shows, will plough many millions of dollars into the restoration and creation of wetlands around NSW to offset development losses. Concordant with

duck ecology and the variability of wetlands and duck populations, this plan calls for regional and local control (wetland schemes can greatly enhance local populations) and regulations. This is not an elusive and unrealistic aim. It works in countless areas and relies on the reinvestment of local control into land management.

New alliances, clubs, and communities can all do this. As we will show in Chapter 6, it almost borders on the grotesque to relegate duck hunting in rice fields to a despised act of "harming ducks for pest control" (ducks as rice pests) while over in the United States, in Stuttgart, Arkansas, the rice capital of the world, the income generated from duck hunting (for which it is equally famous) rivals the income generated from the production of rice.

All this is possible in NSW. Schemes in South Australia and Victoria have shown that hunters are able to handle such projects within hunting associations — clubs which have the ability to raise large amounts of money from wetland creation schemes. These associations also have the ability to determine and negotiate hunting approaches (for example temporary bans) with landowners, government agencies, and scientists.

Issue 4: Intrusion of the Judiciary into the Governance of Hunting

> At bottom…the primary reason for the large scale intrusion of the Judiciary into the governance of our society has been an inability or unwillingness of the first two branches of government — both State and Federal— to fashion solutions for significant societal, environmental and economic problems in America…"
>
> Judge James M. Burns, State of Nevada as cited in A. Savory (1988)

Judge Burns came to this verdict in the United States in refusing to pass a judgement in a disputed case which was, in his eyes, a technical matter to be resolved by technical not judicial expertise. This is synonymous with decisions of governance made for political reasons and has been addressed by Kevin Rudd (April 2008), when he claimed he would reverse the trend in Federal Government by re-establishing the independence of the public offices.

If this aim is replicated in State governments, it is to be hoped that decisions about hunting and the Game Council, currently based on political rather than technical questions (and gains), becomes in favour of technical and scientific merits. In such an environment, questions of wildlife governance are not so much determined on the political constituency and lobbying, but on ecological and rural/indigenous sense.

5.6 Conclusions

The reader might be forgiven if she or he thinks now that with all these impediments and issues confronting Conservation Hunting in Australia is a lost cause. There are so many examples around the developed world where Conservation Hunters have become organised, educated, disciplined, and interactive that this is also an option in Australia. There are significant changes in many environmental and conservation NGOs which now accept if not embrace

hunting as a legitimate and conservation intensive land-use. We have seen in this chapter that there are three major groups of impediments which affect hunting and which need to be addressed. Many of these are currently targeted with activities by the Game Council. However, there remains a major and more strategic need for Conservation Hunters to self-organise like the fishers, to develop their own National Hunting Policy, and to open themselves up to the international community in particular from Europe. There is also a great need and opportunity in Australia to better align Conservation Hunters with a community of scientists which has expressed its recent re-thinking in Lunney's et al's conference.

The management of wildlife in Australia and in NSW is ripe for change. Too much of the old has not worked and too many of our dearly held beliefs have not stood up to long-term scrutiny. It is time for change.

In the last chapter of this exploration of hunting in NSW, we will show that the Conservation Hunting environment in Australia abounds with opportunities. In order to seize them, however, a degree of "moving on" is required. The development of an open-mindedness to different and, at times changing, views is essential. Reading these chapters, Conservation Hunters will realise that they are not alone with an increasing number of scientists starting to question the old ways and are now more open to a constructive dialogue. To have that, however, new avenues have to be created as currently few exist.

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Nature Conservation Council of NSW, www. nccnsw.org.au

ATTACHMENT 3

NSW GOVERNMENT

GAME COUNCIL
New South Wales

ISBN 978-0-9807598-1-5

Investigating public interest issues

We also investigate issues – such as ongoing problems with school heaters – on our own initiative if we identify a matter of significant public interest. There has been considerable community debate about the appropriateness of using unflued gas heaters in schools. Our concerns about heating in schools date back to 1989 when we conducted a formal investigation into the issue.

That investigation established that the Department of Education and Training (DET) had been aware of health concerns about unflued gas heaters since 1988, after a study of a number of schools was completed by AGL.

Levels of nitrogen dioxide found in sample schools had ranged from acceptable to unusually high. A three phase study was conducted as a consequence of these results. The department advised us at that time that, in response to the reports, they were spending $4 million on a program of leak detection and inspecting every unflued gas heater in state schools. Sub-odour leaks were eliminated and heaters beyond economical repair were disconnected and replaced with newly designed low NOx burners. Low NOx heaters were installed in schools in very cold climates.

Our final investigation report identified the need to set a safe indoor upper limit for nitrogen dioxide. Although the National Health and Medical Research Council was considering the issue at that time, they had not set a standard – but had identified this as a priority area for further research. Such research apparently did not take place and further action to establish a safe indoor limit does not appear to have been taken until early 2009, when DET and NSW Health agreed to jointly sponsor an application to the research council.

We have made the department aware of our concern that some twenty years after they first became aware of the significance of this issue, they have yet to develop a long-term evidence-based strategy for heating in schools. We will be closely monitoring their response to the recent research results with the expectation that a considered and robust strategy is developed to make sure heating in schools is both appropriate and safe.

Promoting better communication

Clear and accurate communication with members of the public is essential. For agencies with complex responsibilities, it is particularly important that they are able to explain complicated requirements in simple terms. For example, inquiries to us suggest that many people find correspondence from the RTA hard to understand and its website difficult to navigate. We have given this feedback to the RTA, along with some specific examples of problems that people have experienced (see case study 43).

CS 43: Confusion about registering vehicles

We received several complaints from pensioners and other concession holders – who do not have to pay registration fees – saying that RTA information about registering their vehicles was confusing and misleading. The information on the registration renewal papers gave concession holders the impression that their vehicles were registered after they had completed online payments for green and pink slips. However, they later found out they had been driving unregistered cars as they had failed to complete a necessary validation step. In one instance, the concession holder drove unregistered for five months until she was stopped by the police. Her insurance was also invalid because her car was unregistered, despite the fact she had paid for green slip third party liability insurance.

We found that the information on the registration labels was indeed confusing and open to misunderstanding. The labels contained advice that pensioners claiming a concession must ensure they receive a receipt number from the RTA for the Certificate of Registration. However the label also stated that no receipt was required when registration was renewed online.

The RTA has modified the message on the labels to state in bigger font that pensioners must obtain a receipt number. However, as the message is still potentially unclear, we have suggested a number of ways in which further clarification could be given to concession holders about what they need to do to register their vehicles. The RTA has agreed to consider these suggestions.

Websites are a useful and important way for agencies to provide easily accessible and up-to-date information. However, it is important that the same rigour is applied to the quality and accuracy of this information as any other government communication. Unfortunately, this is not always the case (see case study 44).

CS 44: Inappropriate website content

We found that the Game Council had published inappropriate material on their website, including a paper that misquoted and misrepresented the work of a conservation advocacy group.

We wrote to the Director General of the Department of Industry and Investment, the super department responsible for the Game Council, about our concerns that:

- the Game Council had not corrected the quote voluntarily when asked to do so
- the content and tone of other articles on the website was inappropriate for a statutory authority
- the advocacy role played by the Game Council might potentially conflict with their regulatory function of administering the licensing system for game hunters
- the Game Council's complaint-handling policy was inadequate.

The Director General expressed his disappointment that the Game Council had not voluntarily amended the quote and agreed some of the media releases on their website appeared to be inconsistent with what would normally be associated with a government department. He said he believed the Game Council could undertake an advocacy role as well as a regulatory function, but advised that in the future the super department's media unit will check all material before it goes on the Game Council's website. Game Council staff will also be given clear information about the super department's policies and procedures, including those to do with complaint-handling.

Highlighting 35 years

In the last 35 years, there have been five Ombudsman:

1975 – Mr Ken Smithers

1981 – Mr George Masterman QC

1988 – Mr David Landa

1995 – Ms Irene Moss AO

2000 – Mr Bruce Barbour

ATTACHMENT 5

VICTORIAN NATIONAL PARKS ASSOCIATION
Be part of nature

PUBLISHED: 20 June 2012

PEST CONTROL & SHOOTING IN VICTORIAN PARKS

Pest animals such as deer, pigs, rabbits and goats do enormous damage to the state's natural areas: they create wallows in wetlands, damage waterways, chomp threatened plants and trample valuable habitat. They are increasing in numbers and spreading far and wide.

Opening up national parks to volunteer shooters has done nothing to stem the flow; rather it appears to entrench a potentially dangerous sport which creates a further hazard to wildlife, campers and walkers seeking to enjoy areas set aside for conservation: our magnificent system of national parks and conservation reserves.

Successful pest control in parks and reserves is a very difficult exercise, and has to be undertaken by experienced operators, in a strategic manner, acting under the best advice.

Recent moves to open up NSW national parks for hunting on the basis that it would improve pest management are misguided, and Victoria's experience demonstrates that.

There are two quite distinct ways in which amateur or recreational hunters already have access to areas within a small number of national parks and conservation reserves in Victoria.

1. Recreational hunting.

2. Targeted hunting for strategic pest control.

Program 1: Recreational hunting

A recreational approach to managing feral animals doesn't work, and the way feral deer are managed in Victoria is the most striking example of this.

While Sambar Deer numbers in Victoria are very difficult to estimate, there are two indicators of growing numbers:

- Sambar are normally secretive, largely solitary animals, but are increasingly seen in groups and found on roadsides etc.
- Their range is expanding, and now occupies most of the forested eastern area of Victoria to the Croajingolong coast.

Estimates of numbers in Victoria vary from 200,000 to possibly 1,000,000 and growing. It would also appear that their density is increasing, despite an annual seasonal harvest in Victoria in excess of 8,500 animals.

According to the FFG draft Action Statement, Sambar "now occupy a wide range of habitats in Victoria, including tall open-forest, sub-alpine vegetation, wetlands, rainforest gullies and lowland river flats (Downes 1983, Peel et al. 2005)."

The Draft Action Statement points out that the "key objective of recreational hunters has not been to reduce Sambar populations and their impact upon biodiversity".

FACT SHEET

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PH: 03 9347 5188 | FAX: 03 9347 5199 | EMAIL: vnpa@vnpa.org.au | WEB: www.vnpa.org.au | ABN 34 217 717 593

ATTACHMENT 5

PEST CONTROL & SHOOTING IN VICTORIAN PARKS

PUBLISHED: 20 June 2012

Shaded zones depict the possible area in Victoria in which Sambar (Cervus unicolor) may be distributed. Points represent confirmed records of Sambar (pink points from Parks Victoria Environmental Information System [2008]; red circles from DSE Atlas of Victorian Wildlife [2008]). (Draft FFG Action Statement)

In fact recreational hunting for Sambar Deer has shown no capacity at all to reduce the numbers of this animal, even though there is now no bag limit on Sambar:

- Recreational hunters are primarily motivated to 'farm' Sambar, making sure there remains a sustainable, or preferably increasing, population.
- The frequent and random disturbance of Sambar (or other target species) results in more wary animals that are more difficult to control in the future.
- Hunters tend to avoid areas where the probability of finding their target is low, thus leaving a population able to expand again.

According to the DPI website, as of June 2006 "there were 32,832 hunters licensed to hunt game in Victoria, consisting of 22,800 duck hunters, 24,922 potential quail hunters (although only over 8,900 were active) and 14,553 deer hunters. Some hunters are licensed to hunt in more than one category."

The hunting of feral deer (Red, Hog, Fallow, Chital, Rusa and Sambar Deer) in Victoria is open to hunters with current firearms and gaming licences, and other certificates as appropriate.

The legal status of Sambar Deer in Victoria is confused. Deer are listed under the Wildlife Act as a protected game species, and management has primarily focussed on maintaining numbers in the wild. This continues even though Sambar Deer (by the far the moist numerous and widespread species) are now also listed as a Potentially Threatening Process (the highest possible threat listing) under Victoria's Flora and Fauna Guarantee Act.

There are 123 parks and reserves listed under Victoria's National Parks Act, including 45 National Parks, 25 State Parks, 3 Wilderness Parks and 5 Coastal Parks, and hunting is excluded from most of them.

Recreational hunting, mainly for Sambar Deer, is allowed in sections of the following 10 parks (4 National, 1 Wilderness, 3 Coastal and 2 Regional parks) in Victoria.

Alpine National Park and Avon Wilderness Park: Sambar Deer may be hunted by stalking only in parts of the Alpine National Park and in the whole of the Avon Wilderness Park from 15 February to 15 December. The use of dogs to hunt Sambar Deer is not permitted in these parks. Pest animals and other species must not be hunted in these parks.

Baw Baw National Park: Sambar Deer may be hunted by stalking only in the area east of Thomson Valley Road from 1 May to 25 October each year. The use of dogs to hunt Sambar Deer is not permitted in this park. Pest animals and other species must not be hunted in this park.

Cape Conran Coastal Park: On Sydenham Inlet in the park, game duck may be hunted during the open season. Dogs are allowed for the flushing or retrieval of ducks during the open season.

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Gippsland Lakes Coastal Park: In certain sections, game duck, Stubble Quail and Hog Deer may be hunted in season. Dogs are allowed for the flushing or retrieval of game ducks during the duck season. Check with Parks Victoria for details. Pest animals and other species must not be hunted in this park. Hunters must have a permit from Parks Victoria to erect a hide or to cut vegetation or a hide in the Gippsland Lakes Coastal Park.

Lake Albacutya Park: The hunting of pest animals (rabbits, foxes or cats) is allowed, as is the hunting of game duck during the open season. Dogs are allowed for retrieval of game ducks during the duck open season. Hunting is not permitted in part of the park at the Western Beach visitor facilities, including near the boat ramp.

Lake Eildon National Park: In certain sections in the south-east of the park, Sambar Deer may be hunted from the first Saturday after Easter, being 14 April, until 30 November 2012. The use of dogs to hunt deer is not permitted in this park. Pest animals and other species must not be hunted in this park.

Mitchell River National Park: Sambar Deer hunting by stalking is permitted east of the Mitchell River and south of Hortons and Calvi Tracks from 15 February to 15 December. The use of dogs to hunt deer is not permitted in this park. Pest animals and other species must not be hunted in this park.

Tara Range Park Deer: Hunting (not in the close season) by stalking is permitted in this park from 15 February to 15 December. The use of dogs to hunt deer is not permitted in this park. Pest animals and other species must not be hunted in this park.

Nooramunga Marine and Coastal Park: Hunting for Hog Deer and game duck is permitted in certain sections in season. Pest animals and other species must not be hunted in this park.

There is, however, extensive access to other public land for recreational hunting, such as State Forest areas.

Note: Dogs are not permitted in national parks and many other conservation reserves because of the disturbance that they cause to native wildlife. History shows that hunting dogs may become lost or abandoned by their owners and thus contribute to the feral dog population.

Program 2: Targeted hunting for strategic pest control

Pest animals in national parks and other conservation reserves are (in a limited number of programs) dealt with in a targeted, systematic way. Threats are assessed, achievable programs planned and implemented, and appropriate follow-up processes implemented.

A number of strategies are implemented, from targeted baiting (eg for foxes), ripping and fumigating of burrows (rabbits), and shooting.

Generally, professional hunters are used strategically to shoot feral goats, pigs, dogs and other animals in many national parks and reserves. For example, skilled hunters were recently brought in from New Zealand, where they were employed to target goats in a remote region of Snowy River National Park. Notably, they were specially licensed for that program to employ guns equipped with silencers, which enabled them to kill animals without dispersing the herd.

In 2003, as an extension to such management programs, Parks Victoria negotiated a 'Memorandum of Co-operation' with the Sporting Shooters Association.

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ATTACHMENT 5

PEST CONTROL & SHOOTING IN VICTORIAN PARKS

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This was to allow Parks Victoria to set up programs where a limited number of 'professional standard' sporting shooters could be licensed to assist with specific, strategically planned, pest control programs in a number of national parks and reserves.

Some important points from that 'Memorandum of Co-operation' (which is currently under review) are:

- Control of pest animals through a planned and coordinated effort based on a variety of eradication methods has proven to be the most effective method.
- Control programs will be subject to all normal Parks Victoria policy, procedure and guidelines.
- Pest animal control programs implemented under the Memorandum are well planned, conducted safely and comply with Parks Victoria's environmental policy and procedure.
- Programs will be for a specific period of time, at specific locations, and for a specific maximum number of people.
- permits will include operations plans, communications plans, tactical plans, safety plans and emergency response plans ("Relevant Plans") prepared by Parks Victoria.
- Parks Victoria will ensure that the public is advised of the programs and necessary warning signs and traffic controls are in place.
- Control of pest animals will comply with the Australian model Code of Practice for the Welfare of Animals.
- All participants in the specific pest control program will have their authorisation cancelled upon completion of that program.
- Volunteer shooters in the program will be covered by Parks Victoria's Public Liability Insurance policy.

In short, Parks Victoria effectively contracts 'professional' skilled volunteers for a specific job, in much the same way as they contract professional hunters. The programs take considerable staff management time, and therefore have to be budgeted for.

The original program has proved effective in a goat control program in Murray-Sunset National Park, that has been going now since 2003, but it has involved only about 10-20 accredited volunteers at any given time.

Since that time, about 20-30 similar programs have been in operation across the state, and while some have worked well, some have been less successful, and others ineffective. They have involved considerably less than 1% of licensed game hunters in Victoria.

In summary, pest control programs using accredited volunteer hunters in parks in Victoria:

- Operate as specific strategic programs, with specific objectives aligned with the park management plan.
- Are under the control of Parks Victoria staff.
- Involve considerable staff time in planning and supervision, and therefore require considerable budget allocations.
- Operate with a very small number of volunteers, less than 1% of licensed game hunters in Victoria.
- Have achieved varying levels of success.

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ATTACHMENT 6

Commissioned by the Deer Commission for Scotland

Output: A review of options used to assess competence in other countries

Author: Smiths Gore

1 Background:

In 2005 the DCS asked whether deer hunters should 'demonstrate a degree of competency'. The response to this question in the Close Seasons consultation was 'general agreement that competence should be demonstrated' in order to enable the public to have confidence in hunters' handling of issues of public safety, deer welfare and food safety. However there was divergence on what competence meant and how it should be assessed.

In this report competence means that an individual has "sufficient skills and knowledge to carry out their job to an acceptable standard"[1]. In the case of deer hunting, competence encompasses a range of skills including ensuring public and hunter safety, deer welfare, food safety and hygiene and an understanding of deer biology and habitat. At present the existing systems that assess competence in Scotland, through the Fit and Competent Register and the Deer Stalking Certificates, have gaps in who is assessed and what skills are assessed[2].

The objective of this report is to report on existing and new ideas and measures[3] used in different countries to assess deer hunters' competence.

2 Method:

Representatives of hunting organisations from twenty countries[4] were surveyed by phone and written questionnaire between October and December 2007. They were questioned on how hunters in their countries are tested or assessed. The ten European countries selected were mainly northern and central European and so had some similarities with Scotland in terms of hunting history, culture or ethics. The six American states and four Canadian provinces were selected as they all had relatively high numbers of deer hunters. The survey results are presented below and in the table in the Annex.

All of the countries surveyed require people to pass a test or assessment to be allowed to hunt with a firearm[5]. The countries surveyed have very different methods of assessing competence. This is due to the purpose of the assessment. In America and Canada the primary issue that lead to hunters being assessed was safety and many tests still focus on safety. In contrast, European assessments tend to cover a wider range of issues associated with competence, reflecting wider concerns in the countries about animal welfare, food safety and hygiene and also issues like hunting ethics.

Although some of the tests had been introduced a long time ago (for example1964 in Alberta and 1978 in Belgium), a common characteristic of all of them is that they are regularly reviewed. Some countries consider the contents of their tests annually and others less frequently.

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1 Findlay, J. A draft definition of competence including the scope, standard and measures required. Undated. Reference: Competence C2.1.1

2 Daniels, M and Findlay, J. A report on the limitations and costs of current systems and identify needs in terms of testing competence for welfare and safety. Undated. Reference: Competence C1.1.1

3 The term measure is taken to mean a way of judging something.

4 The term 'country' is used to include countries, American states and Canadian provinces.

5 This is in addition to any firearms test, licence or hunting ground permit they may also need.

Many of the tests are one part or measure of a wider assessment of hunters' competence, which is often agreed and implemented jointly by national governments or authorities, local authorities and hunting organisations. Also, although all the tests are compulsory, the joint implementation recognises the importance of having stakeholder involvement in deciding how competence is measured and assessed. For example, the Hunters' Test was introduced in Sweden in 1985 after a three year trial. In Ontario, it is reported that some hunters would like an assessment of shooting accuracy to be added to the test.

All of the tests include hunter safety and most included public safety, deer welfare, and deer biology and management. Most of the European tests also included food safety and hygiene. Many of the American and Canadian tests were primarily introduced to improve hunter and public safety but now the majority of countries also include training and assessment on deer welfare, biology and management. Training on food safety and hygiene is now provided in most countries but particularly those where the shot deer might enter the food chain. The Danes require only hunters who sell meat to take a hygiene test- a good example of a light touch approach based on need. A number of the European countries, for example France, Denmark and Sweden, consider hunting ethics and ethos as an important element of training competent hunters. In France, an underlying principle of the hunting organisation and the test is that if hunters are more responsible, they will be given more rights. Tests therefore vary between countries and test elements of competence that are relevant to the country.

Who assesses hunters' ability? National or regional authorities were responsible for setting the tests in most countries. Quite often responsibility for running or administering was devolved to local authorities and hunters' associations. In Canada, the tests were often run by not-for-profit or private organisations but set by provincial authorities. Despite this joint approach in setting and administering tests, there was often little joint work in monitoring competence, which is usually the responsibility of government bodies. Some countries do link assessment with monitoring and then feedback findings from the monitoring programmes to improve the assessment system. For example the Danish assessment system is annually reviewed, based partially on data from monitoring.

All of the countries require hunters to pass a formal test or assessment rather than use other assessment methods, such as self-certification. All 20 countries carried out a theoretical written test with five European countries having an oral test as well. The written tests vary greatly, from a short national test of 21 questions in France to 90 questions in Belgium. Quite often different tests are set for different types and standards of hunting. The Danish theoretical test of 40 questions must be passed before the practical test can be taken. If this is passed, a hunter can hunt with a shotgun. Rifle hunting requires additional training and a firearm shooting test to be taken. This type of hierarchical system has the advantage of reducing the testing burden on hunters – someone who only intends to hunt with a shotgun does not need to take the additional rifle training and shooting test.

Most countries also require hunters to pass practical tests on quarry identification, safety and handling of a firearm. About half of the countries included distance estimation tests, with the aim of reducing wounding, with others considering their introduction. A detailed case study of how wounding of geese has been reduced in Denmark is presented in the Next Steps 7 and 8 reports; the Danish approach was to carry out detailed scientific research to assess wounding incidence in geese and then agree an action plan to reduce wounding, which was endorsed by hunting organisations and the Government. The plan relied on hunters voluntarily complying with the maximum 25 metre shooting distance for geese with the threat of reducing hunting opportunities and ultimately protection for geese if the voluntary approach did not work within an agreed period.

Although many training materials are now on-line or available for home study, most tests require a hunter to go to an assessment centre. This was identified as an issue in some countries (most notably in Belgium) due to the distance a hunter has to travel for assessment. It may be possible to avoid candidates travelling to assessment centres by using modern communication and employing techniques used by correspondence courses.

It was also clear that some tests were set up to assess the core competency of hunters with more specialist skills assessed by separate tests or training, for example for hunting with bows or with dogs.

In Norway and Hungary, a shooting proficiency test must be passed annually to hunt big game, such as deer, and a number of other countries were also considering introducing this (Denmark, Hungary, New York and Ontario). Failure to test the accuracy of a hunters' shooting was seen as a weakness by some respondents. A number of countries monitored shooting accuracy and shot placement through wounding monitoring, which was often done through game dealers and veterinarians rejecting carcasses. However, there are a number of dangers with this. Firstly, a hunter who presents a 'badly shot' deer is not necessarily incompetent. Secondly, poorly shot deer may not be presented if hunters know that their competence is being assessed on them. Therefore this approach is unlikely to provide an accurate measure of shooting accuracy and shot placement across the whole population of deer killed or the hunting population.

Most countries exempted people who currently hunt from having to pass the test; this was often termed granting 'grandfather rights' to them. Granting such rights makes introducing an assessment system more acceptable to existing hunters. However this approach does have the weakness that a significant proportion of hunters may not have been assessed; this concern is reduced if there is a suitable monitoring system in place that allows key areas relating to competence to be accurately measured and remedied by training or education if necessary. In some countries hunters are requested to provide information to allow deer numbers and welfare to be monitored.

A number of countries, most notably those with public shooting grounds, require hunters to hold a permit that shows that they have passed a competence test and a permit to hunt, which often specifies the area and species that can be hunted. Other permits, for using rifles or other weapons, may also be required.

Links between assessment and monitoring of hunters' competence. From the survey, there appears to be less monitoring carried out than assessment of competence. Few countries attempt to formally monitor deer welfare or food safety and hygiene and link it to the tests of hunters' competence. The Danish system for assessing and monitoring competence is one of the most detailed. The assessment test is annually reviewed and is likely to be updated to utilise on-line and home study training materials, so that the training materials are as widely used as possible. Deer populations are managed based on information received from hunters who voluntarily submit annual shooting reports. About 60% of hunters provide the reports. Deer welfare is assessed through wounding rates, which are calculated by the Forest and Nature Agency, who shoot a number of deer with identifiable ammunition and then X-ray the carcass to look for shot or bullets from wounding incidents. Therefore the Danish approach relies on a mixture of hunter and government co-operation, and scientific research.

The most useful systems appear to have close links between assessment and monitoring. In Norway, the monitoring system is one of the most comprehensive. Dedicated officers monitor hunting safety. Deer welfare is actively monitored through anonymous questionnaires completed by hunters, and people must pass an annual shooting proficiency test before they can shoot large game. Deer biology, behaviour and habitat is

also monitored based on compulsory submission of annual hunting reports, which 90-94% of hunters provide. The Norwegian hunters' organisation noted that this system relies on trust and co-operation between the hunting authority and hunters. It is assumed that hunters provide accurate information on their game bags. This is a major strength of the system as, because they provide some of the data, hunters have greater trust and acceptance of it.

How much does it cost a hunter to take the test or assessment? The cost of taking the test was typically over €100 (£70) in Europe if it included training. Tests are mostly free or less than €25 (£18) in America and Canada to encourage testing and retesting at regular intervals. In Canada and America, most training was delivered and hunters assessed by volunteers. This has the attraction of reducing the cost of tests but many areas reported practical difficulties in finding enough trainers in the right place at the right time.

In almost all cases, passing the test granted hunters the right to hunt indefinitely. In France and Lichtenstein, hunters must apply annually for their permits but renewal is almost automatic. The advantage of this is that it allows the number and characteristics of active hunters to be monitored and it is also income generating.

The international portability of tests. Most countries allowed hunters who had passed a test in another country or state to hunt. There is therefore a widespread acceptance or portability of tests around the countries surveyed, particularly if they conform to International Hunter Education Association standards (which are currently being revised and are likely to be raised) or an equivalent. However, some countries did note that there was not perfect portability of tests. Foreign hunters are generally allowed to hunt overseas but some countries impose restrictions such as Sweden, which only recognises the tests taken in Germany, Austria and other Scandinavian countries. The tests in these countries were the only ones cited by respondents as exemplars or as the 'gold standard'. As hunting is an international pastime and an important economic activity in Scotland, if a system is introduced, it should be accepted in all other countries and tests of a suitable standard passed in other countries be accepted in Scotland.

Strengths and weaknesses of testing systems. The most commonly cited strength was having a comprehensive or standardised system, which was often linked to reducing hunting accidents and reducing wounding of quarry. Some countries have also been making training materials available on-line or for home study, improving the visibility, convenience and use of training. Other strengths are making the training and assessment easily accessible and requiring regular testing of shooting proficiency using firearms shooting tests.

The main weaknesses cited by respondents are no regular testing of shooting proficiency as the hunting test is a one-off and needing to add new subjects to the curriculum.

Weaknesses in systems were also reviewed by seeing what changes are being proposed to them. There is a culture of continuous improvement of tests as about half of the countries were anticipating changes being made to their testing systems. The changes varied according to what was currently included in the test with the main changes being making training more accessible through on-line and home study training materials. In Norway, the assessment system is continually being updated to reflect changes in society, such as internet-based modules and exams. This use of technology makes the test more accessible to hunters and probably more fun to study for and take. A number of countries were also considering regular testing of shooting proficiency using firearm shooting tests.

3 Implications and options:

All countries surveyed had a test or assessment which hunters had to pass to demonstrate their competence and be allowed to hunt. Some common subjects were included in all tests and some tests are more demanding than others. A number of respondents suggested that any test should comply with International Hunter Education Association standards to reduce restrictions between countries.

A key finding and question for any Scottish assessment system is that the type and scope of tests should be tailored to the purpose of the assessment. For example, if the purpose of assessing hunters' competence is to reduce hunting accidents, a Canadian or American style approach has the strength of using short courses (typically 8-16 hours long) provided locally by volunteers who are hunters. The Manitoba Hunter Education Programme is 8 hours long and half the time is spent on safety. The province considers the programme to be successful as hunting accident rates are as low as in other areas with longer courses.

Other tests have broader purposes, such as improving deer welfare, food safety and ethics and ethos. This type of assessment requires more lengthy training (e.g., one year in Germany) and has higher costs. There are also more countries using (and introducing) practical tests on distance estimation and firearm shooting, mainly to reducing wounding incidence.

In many countries the reasons why hunters' competence is being assessed is clearly defined to ensure that a suitable type of assessment system is being used.

ATTACHMENT 6

4 Annex: Data from survey of hunter organisations

Study of tests or assessments for people who hunt ungulates (deer, moose and wild boar)

	EUROPE										NORTH AMERICA						CANADA			
	Belgium	Czech Rep	Denmark	France	Germany	Holland	Hungary	Liechtenstein	Norway	Sweden	Michegan	New York	Ohio	Pennsylvania	Texas	Wisconsin	Alberta	Manitoba	Ontario	Saskatchewan
1 Do people need to pass a test or assessment to be allowed to hunt with a firearm in your country? (Yes/No/Don't know)	●1	●	●	●	●	●	●2	●	●3	●4	●	●	●5	●	●	●	●6	●7	●8	●9
2 If yes, does the test or assessment include the following subjects?																				
Hunter safety	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●1	●	●
Public safety	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●
Food safety / hygiene	●	1	2	●	●	●		●	●	●	●	●	●			3	●	●	●	●
Deer welfare	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●
Deer biology and management	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Other subjects	●1	●		●2	●3	●		●4	●5					●	●6		●7		●	
3 Who assesses their ability?																				
National authority	●		●1	●	●	●		●2												
Regional / state / provincial authority		●			●						●	●	●	●	●	●	●1	●	●	
Local authority				●					●						●					●
Hunter organisation	●1			●		●2	●3			●										
Other (e.g., private and not-for-profit organisations)											●			●1	●1		●	●	●	●
4 Does the test or assessment include any of the following?																				
Theoretical test (oral)	●	●			●		●	●				●1								
Theoretical test (written)	●1	●	●2	●3	●	●	●4	●	●	●5	●	●	●	●	●	●	●	●6	●	●
Practical test (quarry identification)	●	●	●	●	●	●	●	●	●	●		●			●			●1	●	●
Practical test (safety and handling a firearm)	●	●	●	●1	●	●	●	●	●	●		●	●	●	●	●	●	●2	●1	●
Practical test (distance estimation)	●		●1	●		●	●		●	●		●	2	●3	●	4	●			
Practical test (firearm shooting)	●	●	●	●	●	●	●1	●	●	●2		●	3	●4	●	5	●		6	●
Other		●			●	●											●	●1		●
5 When the test or assessment was introduced in your country was there an exemption for hunters with a hunting permit from having to pass the test? (Yes/No/Don't know)	●	DK	●1		●	●	DK	●	●	●	●2	●	●	●	●	●		●3	●	
6 How much does it cost a hunter to take the test or assessment?																				
0 euros											●1	●	●	●						
less than 25 euros				●1											●	●				
25-50 euros			●1				●											●2		●
50 – 100 euros		●								●1							●1			
more than 100 euros	●				●1	●2		●	●										●3	
Don't know																				
7 How long is the certificate of passing the test or assessment valid for?																				
1 year				●1			●2	●3	●4											
1 to 5 years																				
5 to 10 years	●																			
more than 10 years																				
indefinite / lifetime 1		●	●	●2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●3	●
Other																				
8 If a hunter from your country passes a test or assessment in another country, is he allowed to hunt in your country? (Yes/No/Don't know)	●	●	●1	●2	●	●3	●	●		DK	●	●	●	●	●4	●		●	●	●
9 If a hunter from another country passes a test or assessment in another country, is he allowed to hunt in your country? (Yes/No/Don't know)	●	●	●	●1	●	●2	●	●3	●	●4	●5	●	●	●	●6	●	●	●	●7	●
10 What are the strengths of the method used to assess hunters' ability in your country?																				
Comprehensive / standardised system	●	●		●	●	●	●		●			●		●	●			●	●	
Tests have improved competence (notably accidents, wounding)			●	●	●						●	●						●	●	●
More rules respected, the more rights hunters will be given				●																
Course is free / reasonable cost so hunters often retrain													●						●	●
On-line / home study training has improved accessibility									●						●		●	●		●
Mentoring scheme to build hunters' networks																	●		●	
Good tagging system / security system		●						●												
Direct communication between hunters and government / hunting organisations								●							●					
Strong public support (including from police)																●				
11 What are the weaknesses of the method used to assess hunters' ability in your country?																				
Other subjects should be assessed (e.g., shooting ability, habitat management)			●				●				●	●			●			●	●	
Government role / bureaucracy could be improved	●	●		●	●												●			
No regular testing of shooting ability as test in one-off assessment			●		●	●	●					●			●	●		●	●	
Poor deer population management (e.g., only stags shot)		●						●												
Tests not easily accessible for some (due to frequency of testing, cost, location)	●				●					●										
Self-policing / lack of independent monitoring of hunters carried out					●															
Tests run by volunteers, of variable quality / availability												●	●	●						●
12 Are changes to the current system of testing or assessing hunters' ability in your country foreseen? (Yes/No/Don't know) 1		DK	●2				●3		●4		●5	●6	●7	●	●8		●9	●10	11	12

Key: ● = yes; blank = no ; DK = don't know

ATTACHMENT 6

NOTES

1 Do people need to pass a test or assessment to be allowed to hunt with a firearm in your country? (Yes/No/Don't know)

1 Since 1978; 2 National Hunting Exam; 3 Hunting Proficiency Test; 4 Hunter's Test introduced 1985 after three year trial; 5 Since 1979; 6 Since 1964; 7 Two tests required to hunt and hold an unrestricted firearm; 8 Hunters Education Course combines federal licensing of weapons and hunter education; 9 Since 1981.

2 If yes, does the test or assessment including the following subjects?

Hunter safety

1 Safety accounts for 50% (4 hours) of Hunter Education Programme; course has been criticised as too short at 8 hours but safety statistics are good compared to provinces with longer courses.

Public safety

Food safety / hygiene

1 Handling of game acknowledged as could be improved; 2 To sell meat to butchers, which is not common, a hygiene course must be taken; 3 Optional training can be provided.

Deer welfare

Deer biology and management

Other subjects

1 Regional shooting laws and gun laws; 2 Ethos and ethics of shooting, notably hunting for eating, and hunting with dogs; 3 Hide building, dog handling, animal diseases, agricultural and game crops and law; 4 Plant ecology, butchery and 'hunters' language'; 5 History of hunting and how society views it; 6 Emergency preparedness, wilderness survival, law, public image, ethics, wounding reduction, use of vehicles; 7 Role of the hunter and wilderness survival.

3 Who assesses their ability?

National authority

1 Organised by state examination board ; 2 Small country and hunting area so the Government 'knows' all hunters.

Regional / state / provincial authority

1 Practical / in-field assessment by Fish and Wildlife Service.

Local authority

Hunter organisation

1 Tests organised by the Belgium shooting organisations, and supervised and checked by a government body; 2 Tests are delegated to the Dutch Hunters' Association and monitored by national government; 3 Tests are delegated to the Chamber of Hunters.

Other (e.g., private and not-for-profit organisations)

1 Standard curriculum set by state which is taught and assessed by local volunteers.

4 Does the test or assessment include any of the following?

Theoretical test (oral)

1 Oral test available for people with reading difficulties.

Theoretical test (written)

1 90 questions, including 20 about meat handling and hygiene, and 20 slides; 2 40 questions requiring 88% correct answers. Theoretical test must be passed before practical test, which includes 6 distance estimation questions. If this is passed, can hunt with a shotgun. Rifle hunting requires additional weapon handling and firearm shooting tests to be passed; 3 National test of 21 questions set by national authority and hunter organisations, with the tests run at 'departement' level; 4 50 questions and oral exam; 5 70 questions requiring 86% corect answers; 6 50 multiple choice questions requiring 96% correct answers.

Practical test (quarry identification)

1 Optional.

Practical test (safety and handling a firearm)

1 Automatic fail if safety questions answered incorrectly; 2 Optional.

Practical test (distance estimation)

1 Practical test has reduced deer wounding (and public concerns); 2 Considering introducing Advanced Hunter Clinics with firearm shooting; 3 Added to new curriculum; 4 Optional Advanced Hunter Education Programme but taken by less than 1% of hunters.

Practical test (firearm shooting)

1 Firing test to assess accuracy and safe gun handling; 2 Three separate practical gun tests combined in 2005. Hunters are encouraged to take an annual shooting proficiency test and some landowners require it to reduce wounding; 3 Considering introducing Advanced Hunter Clinics with firearm shooting; 4 Added to new curriculum; 5 Optional Advanced Hunter Education Programme but taken by less than 1% of hunters; 6 Some hunters would like shooting proficiency test for big game.

Other

1 An optional extended hunting programme is also offered which @ 10% of hunters take. It covers live firing, distance estimation and shot placement.

5 When the test or assessment was introduced in your country was there an exemption for hunters with a hunting permit from having to pass the test? (Yes/No/Don't know)

1 Existing hunters exempted unless hunting on state land, so many have taken test; 2 Hunters born before 1960 exempted; 3 Introduced in 1964 and made mandatory in 1969 for over 12s but hunters with a previous licence 'grandfathered' in.

ATTACHMENT 6

6 How much does it cost a hunter to take the test or assessment?

0 euros

1 Test free but Hunter Safety Course is charged for.

less than 25 euros

1 €16 for the permit (incrive) plus variable price stamp depending on where and what is hunted.

25-50 euros

1 €33 and €17 for rifle test; 2 Test part funded by course fee plus provincial government funding.

50 – 100 euros

1 €84-106; 2 Two tests required to hunt ($70) and hold an unrestricted firearm ($65).

more than 100 euros

1 Costs €1,500-1,800 for normal test including training or €3,500-6,000 for two week full-time fast track course and test. The test must be passed before a hunter can buy a licence which certifies eligibility to hunt (annually renewed, costs €80); 2 @ €2,000; 3 €100-300 ($150-500).

Don't know

7 How long is the certificate of passing the test or assessment valid for?

1 year

1 Renewal is almost automatic but hunters must be a member of a hunter organisation; 2 Introducing annual shooting proficiency test for big game; 3 Annual certificate required but no retest required; 4 Shooting proficiency test required each year for big game.

1 to 5 years

5 to 10 years

more than 10 years

indefinite / lifetime 1

1 Most certificates are indefinite / lifetime unless a criminal or serious hunting offence is commited; 2 Renewal is almost automatic but hunters must be a member of a hunter organisation; 3 Once test is passed, an outdoors card is purchased (valid for three years) and used to purchase licences to hunt.

Other

8 If a hunter from your country passes a test or assessment in another country, is he allowed to hunt in your country? (Yes/No/Don't know)

1 Foreign hunter can be required to pass practical firearm shooting test if their national test does not include one; 2 Only for 9 days; 3 A Dutch person can pass the German or Danish test and hunt in Holland; 4 Hunters from countries approved by the International Hunter Education Association.

9 If a hunter from another country passes a test or assessment in another country, is he allowed to hunt in your country? (Yes/No/Don't know)

1 Only for 9 days; 2 Foreign hunters can apply for a permit to hunt for 3 days at a time but can apply for multiple permits; 3 Foreign hunters do not need guest licence if accompanied by a local hunter and if he has passed his country's test; 4 Only from Germany, Austria and other Scandinavian countries; 5 An experienced foreign hunter can sit the test without taking the Hunter Safety Course; 6 Hunters from countries approved by the International Hunter Education Association; 7 Hunters allowed from countries not approved by the International Hunter Education Association.

10 What are the strengths of the method used to assess hunters ability in your country?

11 What are the weaknesses of the method used to assess hunters ability in your country?

12 Are changes to the current system of testing or assessing hunters' ability in your country foreseen? (Yes/No/Don't know)

1 The International Hunter Education Association is currently revising its standards and testing standards are likely to be raised; 2 Test is 30 years old but annually updated. Acknowledged as requiring further changes, particularly on technological improvements and nature / wildlife. Considering introducing five-yearly accuracy and safety testing; 3 Planning to introduce an annual Scandanavian-style shooting proficieny test, where licences to shoot big game are renewed annually following a shooting test on a moving target. But not implemented due to lack of capacity at shooting ranges to carry out this type of test; 4 Test is changed to reflect changes in society, such as internet-based modules and exams; 5 New text book developed; 6 Live firing test mandatory from Jan 2008; 7 Considering introducing Advanced Hunter Clinics with firearm shooting; 8 On-line training material has increased visibility, use and convenience of training opportunities; 9 Continual improvement and recent introduction of on-line hunters' exam; 10 Home study version of theoretical test is being developed to allow contact time with instructor to concentrate on gun handling; 11 Some hunters would like shooting proficiency test for big game; 12 On-line training materials

End

Hunting in SWEDEN

SURFACE AREA	
Total surface area	449,964 km²
Woodlands	62 %
Farming area	9 %
Huntable area	n.a.
average huntable area	n.a.

HUNTER/POPULATION	
Population	9,000,000
Number of Hunters	290,000
% Hunters	3.2 %
Hunters / Inhabitants	1:31
Population density inhabitants/km²	22

Source: http:www.jagareforbundet.se, 2005
Handbook of Hunting in Europe, FACE, 1995

HUNTING SYSTEM

Competent authorities

The Parliament has overall responsibility for legislation. The Government - the *Ministry of Agriculture* - is responsible for questions concerning hunting. The *Swedish Environmental Protection Agency* is responsible for supervision and monitoring developments in hunting and game management. The County Administrations are responsible for hunting and game management questions on the county level, and are advised by County Game Committees - *länsviltnämnd* - with representatives of forestry, agriculture, hunting, recreational and environmental protection interests.

Ministry of Agriculture (*Jordbruksdepartementet*)
S-10333 Stockholm
Phone +46 (0) 8 405 10 00 - Fax +46 (0)8 20 64 96

Swedish Environmental Protection Agency (*Naturvårdsverket*)
SE-106 48 Stockholm
Phone +46 (0)8 698 10 00 - Fax +46 (0)8 20 29 25

Hunters' associations

Hunting is a popular sport in Sweden. There are some 290.000 hunters, of whom almost 195.000 are affiliated to the *Swedish Association for Hunting and Wildlife Management* (Svenska Jägareförbundet). The association is a voluntary body whose main task is to look after the interests of hunting and hunters. The Parliament has delegated responsibility SAHWM for, among other things, practical game management work. The association, with about 195,000 members, is organised in nine regions. Each region covers a number of county hunting management societies - *länsjaktvårdsförening* - with a total of 24 societies in Sweden. Each county hunting management society is divided into hunting management clubs - *jaktvårdskretsar* - altogether totalling 379 in Sweden. The SAHWM employs about 100 full-time experts on hunting and game management, communication, education and administration.

Swedish hunters, altogether about 290,000, pay an annual hunting fee - a state hunting management fee - *jaktvårdsavgift*. This fee is paid regardless whether the hunting is done on one's own land, as an invited guest, or in any other situation. The *Game Management Fund*, to which the fees are paid, receives about 60 million SEK (7 million EURO) per year in this way.

The fund then provides grants for, *inter alia*, the activities of the *Swedish Association for Hunting and Wildlife Management*. This Association is a non-profit making organization to which the Government has delegated responsibility to deal with information and advice with regard to hunting and game management. In addition, certain contributions are made to nature conservation organizations and to Swedish game research, which is also financed by the fees which the hunters must pay for hunting moose.

Swedish Association for Hunting and Wildlife Management (SAHWM)

SVENSKA JÄGAREFÖRBUNDET
Öster-Malma - 611 91 Nyköping
Tel +46-155-24 62 00 / Fax +46-155-24 62 50 / Fax Reception +46-155-24 62 55
www.jagareforbundet.se / owe.wiktorin@jagareforbundet.se

Other non-profitmaking organizations:

Swedish Society for Protection of Nature (*Naturskyddsföreningen)*
Box 4625, SE-116 91 Stockholm
Phone +46 (0)8 702 65 00, Fax +46 (0)8 702 08 55

Swedish Ornithological Society *(Sveriges Ornitologiska Förening)*
Ekhagsvägen 3
SE-104 05 Stockholm
Phone +46 (0)8 612 25 30, Fax +46 (0)8 612 25 36

WWF
Ulriksdals slott
SE-170 81 Solna
Phone +46 (0)8 624 74 00, Fax +46 (0)8 600 10 77

LEGAL PROVISIONS

Hunting system

Hunting and hunting conditions in Sweden have been regulated since the earliest statutes dating back to the mid-13th century. These regulations suggest that hunting rights were already considered to belong to the landowner - a fundamental principle of today's legislation.

During the 19th century and early 20th century there was a comprehensive revision of hunting legislation. In 1938, this resulted in the first modern and farsighted hunting legislation in Sweden. Subsequently, numerous important modifications and reforms have been introduced. A completely new system has applied since 1988, the three basic elements of which are the Hunting statutes, Hunting Regulations and Hunting Administrative Provisions.

The Hunting Statutes - *Jaktlagen* - are established by Parliament and set the overall legislative framework. They state that the Government has the right to establish different regulations or to delegate this right. These regulations take the form of Hunting Regulations - *Jaktförordningen*. The *Swedish Environmental Protection Agency* uses the Hunting Administrative Provisions - *Jaktföreskriften* - to establish a comprehensive list of directives covering moose hunting, firearms, ammunition and other means of hunting. There are also a large number of other laws/regulations influencing hunting conditions in Sweden as well as several international conventions ratified by Sweden.

Authorised hunting methods

Means and methods of hunting which are not specifically mentioned in Swedish hunting legislation are not permitted. For example, hunting with live birds of prey (falconry), with hounds (the chase) and with a bow are forbidden in Sweden.

Fixed light sources on roads or buildings may be used in hunting for certain predators as well as Rabbits and Wild boar. Torches may be used in certain types of hunting for Badgers, hunting underground (earths or burrows) and when traps are emptied. Lures, decoys and shell decoys (on pegs), etc. may be used in hunting. The same also applies to walkie-talkies, high seats and camouflage netting.

Motorized transportation is, in principle, banned in connection with all hunting. Motorized transport thus may not be “used to search for, track, chase or intercept game, to prevent game from escaping, or to distract the attention of game from the hunter”. When firearms are carried in motorized means of transport, cartridges must be neither in the breech, nor in the magazine.

Hunting from motor-boats is not permitted, unless at least one minute has passed after the engine has been switched off and before the hunting starts.

TRAPPING

Hunting with traps has a long tradition in Sweden. This is due to the fact that the sun in northern Sweden does not rise above the horizon for long periods of the year, and that snow depth in large parts of the country during the late autumn and winter frequently prevents conventional hunting. Traps are tested by the National Veterinary Institute and approved by the Environmental Protection Agency in consultation with the Animal Welfare Agency. The fundamental requirement in this respect is consideration to the animals. Special training is required for the use of certain types of traps.

Trap servicing regulations are rigorous. Certain traps must be continuously monitored, others must be emptied morning and evening, whereas the rest of the traps for live catches must be emptied once a day.

Hunting territory

The hunting rights belong to the landowner who can lease them to another person for shorter or longer periods. Hunting must be conducted in such a manner that the game is not exposed to unnecessary suffering and that people and property are not exposed to danger.

About half the land in Sweden is owned by the state and large companies, particularly in the northern and central regions. On the greater part of this land the hunting rights are leased out to individuals or hunting associations.

In the areas where the available land is limited, co-operation is necessary to ensure viable hunting. Owners of hunting rights in various areas therefore often pool their rights to make larger hunting areas. Co-operation is particularly necessary for moose hunting to ensure conservation of the stock.

SHOOTING EXAMINATION, HUNTING PERMIT

Examination

Since 1985 all newcomers to hunting have had to pass an examination comprising five separate parts, both theoretical and practical. Passing this examination is an essential condition for possession of firearms.

THE HUNTER'S PROFICIENCY TEST

Already in 1970, the Swedish Association for Hunting and Wildlife Management proposed that general education of hunters should be introduced in Sweden, mainly intended for new hunters. The question of a proficiency test was duly deliberated by a government committee, a Bill was approved by Parliament and the Government decided that the test - *Jägarexamen* - should be introduced throughout the country as of January 1, 1985. The proficiency test, comprising a theoretical and a practical part, must be taken by people who:

1. apply for the first time for a permission to possess hunting firearms.
2. Apply for permission to possess firearms of a different type than that/those they already own.

The *Swedish Environmental Protection Agency* became the supervisory authority for the proficiency test and today prepares regulations on the activity, whereas the hunters' organizations are responsible for the practical accomplishment of the test.
In each county there are several shooting ranges, each with a number of supervisors appointed by the police. The supervisor issues a certificate to those who pass the test. Approved tests are registered by the Environmental Protection Agency. The Hunter's certificate (photocopy), with a photograph of the holder, is included with the application submitted to the police authorities for a permit to possess hunting firearms.

Since the proficiency test was introduced, about one million successfully taken proficiency tests have been stored in the database at the Swedish Association for Hunting and Wildlife Management. An additional 50.000 entries are added each year. Not everyone who passes the exam takes up hunting.

The proficiency test is not only taken by hunters. The study material and the education given, both theoretical and practical, is considered to be of such high class that the hunter's proficiency test is also taken by people with a general interest in nature who do not always intend to start hunting.

A complete proficiency test consists of two theoretical and three practical tests. The theoretical tests are the basic test and the big game test, the practical tests are the shot-gun test, the basic test/rifle and the big game test/rifle.

Swedish Environmental Protection Agency
(*Statens Naturvårdsverk*)
SE-106 48 Stockholm
Tel +46 (0)8 698 10 00 – Fax +46 (0)8 20 29 25

Source: http:www.jagareforbundet.se, 2005
Handbook of Hunting in Europe, FACE, 1995

ÖSTER-MALMA GAME MANAGEMENT SCHOOL

For the last twenty years, the *Swedish Association for Hunting and Wildlife Management* has conducted a comprehensive education programme, with emphasis on practical experience. Examples of practical subjects are, for example, game shooting, training of tracking dogs and retrievers, habitat management, game rearing and trapping.

Some of the activities are based on the Association's game Management School at Öster-Malma in the south of Stockholm. Corresponding education is also arranged by the regional and local organizations of the Swedish Association for Hunting and Wildlife Management.

For these purpose, study material is produced in the form of course books and video films suitable for both private studies and for study circles. In 1992-93, a total of 85,000 study hours were reported by the study organization. About 20,000 people annually participate in courses in hunting and game management.

In addition, comprehensive trial and study activities are being conducted at the school, sometimes at university level, within the subjects of game management and game biology.

The Association's headquarters is also situated at Öster-Malma.

Öster-Malma Game Management School
S-61191 Nyköping
Tel +46 (0) 0155 24 62 00 - Fax +46 (0) 1555 24 62 50

Hunting permits

Everyone who goes hunting in Sweden must pay an annual hunting conservation fee. The fee is valid for one year, from 1 July to 30 June the following year. For 2003/2004 the annual fee is 200 SEK. The fee can be paid at all Post Offices. When the fee is paid the receipt is attached to the hunting permit, which must be carried at all times when hunting.

Delivery of Visitors hunting permits

As almost all hunting land is already accounted for, there are few opportunities to lease shooting rights in Sweden. However, many foreign hunters are invited to enjoy "exchange hunting" in Sweden. Under this scheme a foreign hunter can invite a Swedish hunter to hunt in his own country and is invited, in return, to hunt in Sweden. Another increasingly popular option is to go hunting in Sweden as a "paying guest", and more and more landowners and hunting co-operatives offer this opportunity to both Swedish and foreign visitors.

Moose-hunting tests

Foreign hunters who want to go hunting for moose in Sweden should arrange through their host to visit a moose-hunting training range before the hunt. Many landowners and hunting hosts makes it a requirement that moose hunters must have passed a recognised test at the bronze level before they take part in the hunt. During the test, hunters shoot at a life-size figure of a moose at a distance of 80 metres. The test involves shooting at the figure both while it is stationary and when it is "running".

Insurance

If foreign visitors do not have comprehensive insurance cover which is valid in Sweden they should take out a special hunting insurance policy which covers both personal accidents and third party liability. This insurance cover is available to those who join the Swedish Hunters" Association for one year. Membership costs about 300 SEK, including insurance but excluding the association"s magazine. Both the hunting permit and insurance can be arranged through the Swedish hunting host.

FIREARMS, CALIBRE & AMMUNITION

Only rifles can be used for certain game, including moose, red deer and bear. For ammunition the following requirements apply. Bullets which weigh at least 10 grams (154 grains) must have an impact energy of at least 2.000 joules at 100 metres from the muzzle. Bullets, which weigh between 9 and 10 grams (139-154 grains) must have an impact energy of at least 2.700 joules 100 metres from the muzzle. Such ammunition is classified as Class 1.

Similar requirements also apply to hunting for fallow deer and wild boar. However, these game species can also be hunted with shotguns loaded with slug-ammunition. Only single-barrel shotguns can be used in this connection.

Beavers are also among the species, which can be hunted only with rifles. For roe deer hunting shotguns are allowed only between 1 October and 31 January. At other times rifles must be used. The minimum ammunition requirement for hunting beaver and roe deer is: bullet weight at least 3.2 grams (50 grains); impact energy of at least 800 joules 100 metres from the muzzle.

Fully jacketed bullets cannot be used for hunting any of the above species.

Shotguns, which can be loaded with more than three cartridges, may not be used. The largest permitted calibre is 12. Calibres smaller than 20 - with certain exceptions - cannot be used for hunting.

The biggest shot size allowed is number US 1 (4 mm).

Travel to Sweden with firearms

Visitors from Denmark, Finland or Norway with permanent permission from proper authority to own and use firearms for private use in these countries may, without any special import permit or fee, to Sweden import these firearms and ammunition belonging to them. The firearms and ammunition may be used in Sweden for a period of maximum three months. The permit of the weapon should be brought along or - regarding Denmark and Finland - the permit of the weapon or the European Firearms Pass. Visitors from the Nordic countries should also register their import of a firearm on the website of the customs.

Foreign visitors from other countries planning to take their own firearms on a hunting trip to Sweden must start planning in good time and in co-operation with their Swedish host. As a rule it is best for the host to make an application on behalf of the guest.

Permission for the import and export is given by the police authority at the point where the firearms will be brought in to the country. The police have special application forms for this purpose.

Applications must be made in good time, at least one month in advance. The permit to import firearms must be shown to Customs at the point of entry into Sweden. Hunters from other EU countries must also, when arriving in Sweden, have the import permit inserted / transferred into the original of their EU Firearms Pass. In some cases the police lodge the permit with Customs and it is picked up by the guest when he arrives in the country.

Note! *It is very important that the application is sent to the police authority at the point where the firearms will be brought in to the country!*

The following information is needed on the application form:

1. The applicants name, date of birth, address and telephone number.
2. Type of firearm : manufacture, model, calibre and serial number.
3. Quantity and type of ammunition.
4. Name, address and telephone number of the Swedish hunting host.
5. Name and location of the hunting ground.
6. The period of time the weapon will be in Sweden.
7. Place and date of arrival in Sweden.

The following documents must be attached to the application :

1. A photocopy of the applicants permit for the weapon in his / her own country (or other documents that support the right to own and use the weapon for hunting).

2. A photocopy of the applicants EU Firearms Pass (only EU citizens).

3. A written invitation from the Swedish host or hunting-tour operator.

The fee for a permit to import firearms is 500 SEK, regardless of how many weapons are imported. The fee must be paid at the time of application.

Borrowing firearms

It is possible for foreign guests to borrow firearms from a Swedish hunter. If the owner of the weapon is always together with the person who has borrowed the weapon within a few metres - the only requirements are that the foreign hunter must be at least 15 years of age and be in possession of a Swedish hunting permit.

If the foreign hunter wants to borrow a weapon for his own use he must be at least 18 years old and be permitted to use the same type of weapon in his own country. The Swedish owner of the weapon must draw up a loan certificate, which can be written, on a photocopy of his permit for the weapon. On the photocopy must be stated the name of the guest hunter, his home address and address in Sweden, as well as the purpose and duration of the loan, which cannot be longer than 14 days. The information about the guest hunter and his loan of the weapon must be signed by the Swedish owner of the weapon.

GAME & HUNTING SEASON

A Swedish Hunting year starts at 1 July and ends at 30 June following year.

1998/99

Species	Season	Annual bag
Moose	South: 2nd Monday of October North: 1st Monday of September Hunting season until end of January	Estimated 103 000
Red deer	Within Red dear management area: 16/08 -31/01 (16/08 – 2nd Monday of October only stalking of female and calf) Outside registered Red dear management areas: Calf: 16/08 – 2nd Monday of October (only stalking) 1/01-31/01	estimated 2 300
Fallow deer	Male: 01/09 – 30/09 01/10 – 20/10 16/11 – 28(29)/02 Female: 01/10 – 20/10 16/01 – 28(29)/02	estimated 13000
Roe deer	Male: 01/05 - 15/06 (only in some parts of eastern Sweden) 16/08 - 30/09 01/10 - 31/01 (south) 01/10 - 31/12 (north) Kid: 01/09 - 30/09 01/10 - 31/01 (south) 01/10 - 31/12 (north) Female: 01/10 – 31/01 (south) 01/10 - 31/12 (north)	Estimated 162 000
Wild boar	01/07 -30/06 All 16/04-15/02 only one year olds Sows with piglets are protected	Estimated 17 000
Blue hare	01/10 - 15/02 (Malmöhus county) 01/09 - 15/02 (south) 01/09 - 28(29)/02 (middle and north)	Estimated 30 000
Brown hare	01/10 - 31/12 (Malmöhus county)	Estimated 30 000

Source: http:www.jagareforbundet.se, 2005
Handbook of Hunting in Europe, FACE, 1995

	01/09 - 15/02 (south) 01/09 - 28(29)/02.(middle and north)	
Rabbit	01/07 - 30/06	Estimated 16 000
Beaver	01/10 – 10/05 South 01/10 - 15/05 North	Estimated 6 000
Muskrat	Whole year	500
Brown bear (Permit)	Yearly permit	Estimated 100
Red fox	01/08 - 15/04 north 01/08 - 31/03 middle 01/08 - 15/03 south 01/08 - 28(29)/02 (most south Sweden)	Estimated 72 800
American mink	01/07 - 31/06	Estimated 21 000
Polecat	01/09 - 28(29)/02	Estimated 13 000
Pine marten	01/09 - 31/03 (middle and north) 01/11 - 28(29)/02 (south)	8 800
Badger	01/08 - 15/02	Estimated 35 000
Canada goose	11/08 - 31/12 (south) 25/08 - 31/12 (north)	Estimated 34 000
Greylag goose	11/08 - 31/10 20/07- 15/09 Gotland only	Estimated 9 500
Bean goose	01/10-31/12 Blekinge and SKåne only	Estimated 3 500
White-fronted goose	01/10 - 31/12 (only Skåne)	
Mallard	25/08 - 30/11 (north) 21/08 - 30/11 (south) 21/08 - 31/12 (most part of the south)	Estimated 103 000
Teal	25/08 - 30/11 (north) 21/08 - 30/11 (south) 21/08 - 31/12 (most part of the south)	Estimated 10 000
Widgeon	25/08 - 30/11 (north) 21/08 - 30/11 (south) 21/08 - 31/12 (most part of the south)	1 000
Tufted duck	21/08 - 31/01 (some differences between regions)	3 000
Eider	21/08 - 31/01 (some differences between regions)	3 200
Velvet scoter	21/08 - 31/12	< 100

Source: http:www.jagareforbundet.se, 2005
Handbook of Hunting in Europe, FACE, 1995

Red breasted merganser	21/08 - 31/12	
Long-tailed duck	21/08 - 31/01	1 000
Common scoter	21/08 - 31/01	
Goldeneye	21/08 - 31/01	6 700
Goosander	21/08 - 31/01	3 500
Willow grouse	25/08 - 15/03 (15/11)	63 000
Ptarmigan	25/08 - 15/03 (15/11)	19 000
Capercaillie	25/08 - 15/11 (north) 25/08 - 30/08 (south) male : 16/11 - 31/01 (north, males only) 01/01 - 31/01 (south, males only) 01/09 - 15/09 (Skåne)	21 500
Black grouse	25/08 - 15/11 (north) 25/08 - 30/09 (south) _: 16/11 - 31/01 (north, males only) 01/01 - 31/01 (south, males only) 01/09 -15/09 (Skåne)	25 300
Hazel grouse	25/08 - 15/11 (north) 25/08 - 30/09 (south)	9 200
Partridge	16/09 - 31/10 (south)	3 300
Pheasant	01/10 - 31/01	52 500
Woodcock	21/08 - 31/10 (north) 21/08 - 30/11 (south)	1 300
Woodpigeon	01/08 - 31/12 (31/10) 16/08 - 28/02 (most part of the south)	49 000
Rook	01/08 - 28(29)/02 (only Skåne and Halland)	14 000
Jay	16/07 - 31/03	26 100
Magpie	01/07 - 30/04	123 000
Jackdaw	01/07 - 30/04	65 000
Hooded crow	01/07 - 30/04	149 000
Herring, Common, Black headed gull	01/08 - 31/03	17 000

Source: http:www.jagareforbundet.se, 2005
Handbook of Hunting in Europe, FACE, 1995

The hunting seasons in Sweden cover mainly the autumn and winter (August-February). The start and duration of the season for a particular species can vary considerably between one part of Sweden and another. It is therefore necessary for foreign hunters to find out through their host what dates apply to the area where they plan to hunt.

Moose hunting in southern and central Sweden starts at the beginning of October and continues for about two months. In northern Sweden the season for moose starts at the beginning of September and is divided into two parts with a break during the rutting season towards the end of September and beginning of October.

In the smallest hunting areas moose hunting is allowed for only a few days.

The season for roe deer is longer. It starts on 16 August with hunting for bucks. In southern and central Sweden hunting for kids is allowed from 1 September, and all roe deer can be taken from 1 October. In northern Sweden roe-deer hunting finishes on 31 December and in the rest of Sweden on 31 January. Certain provinces also permit hunting for bucks between 1 May and 15 June.

For hazel hen, black grouse and capercaillie hunting is permitted from 25 August, except in Skåne and on Gotland.

Red grouse and ptarmigan occur only in northern Sweden, where the hunting season starts on 25 August.

Beaver are found in parts of central and northern Sweden and hunting is permitted fr o m 1 October to 10 or 15 May. The best season for beaver is normally the latter part of April and the beginning of May.

Hunting seasons in Sweden are reviewed by the government every third year. Please note also that owners of hunting rights may limit the normal seasons for certain species for example, by starting the season later than normal, or closing the season before the usual date.

What time of day?

Moose can be hunted from one hour before sunrise until sunset. Certain species, including roe deer, fallow deer and red deer can be hunted from one hour before sunrise until one hour after sunset. After sunset only stalking or sitting up are allowed. For other species, 24-hour hunting is permitted, provided it is during the lawful season.

Wounded animals

The Swedish hunting laws are very strict, particularly regarding wounded animals. When hunting ungulates it is a requirement that a specially trained tracker dog can be available within two hours. For certain bird species it is a requirement that a dog is present during the shoot.

It is a duty of the Swedish hunter to ensure that these requirements are observed. If game is injured during hunting, regardless of species, it is the absolute obligation of the hunter to take all necessary measures to track the animal and dispatch it. When hunting ungulates a dog specially trained to track injured animals must be available within a maximum of two hours after the shooting. The holder of the hunting rights and the land-owner, as well as each individual person in other respects, are obliged to report to the police if an animal classed as State game has been taken in charge or found.

Source: http:www.jagareforbundet.se, 2005
Handbook of Hunting in Europe, FACE, 1995

GUNDOGS

Regulations on dogs are rigorous. During the period March 1 - August 20 dogs may not, in principle, be off the leash in areas where game is present. Dogs other than hunting dogs must not be allowed to drive or chase game at any time of the year. As regards dogs used in hunting, they are divided into a number of different groups with regard to their field of use. Some may be used throughout the entire year - retrievers and tracker dogs for wounded game - whereas others may only be used for a certain restricted time.

With regard to the very difficult climatic conditions that may occur during the late autumn and winter, the Country Administrations have been given the right to decide in such cases that dogs may not be used for certain types of hunting.

TRAVELLING WITH DOGS

Conditions:

Please contact the Swedish Board of Agriculture on +46 (0) 36 155 000 for exact information.

Statens Jordbruksverk
Vallgatan 8, SE-551 82 JÖNKÖPING
Phone + 46-36-15 50 00

http://www.sjv.se/

CULTURE

Hunting Museums

None

Hunting Press

Swedish hunters are continuously informed about events in the hunting and game management sector, mainly by means of six Swedish hunting journals with a total edition of about 350,000 copies per month. The largest is *Svensk Jakt* (Swedish Hunting) published by the Swedish Association for Hunting and Wildlife Management with a monthly print run of about 176,000. Most of the county branches of the Swedish Hunters' Association produce their own membership publications covering availability of game and regulations concerning hunting and game management. During recent years, the two hunters' organizations have turned their attention to young people, through voluntary participation in schools and study circles and by providing interested young people with an opportunity to participate in practical game management.

Svensk Jakt
(Journal of Swedish Association for Hunting and Wildlife Management)
Skedhults Säteri, SE-576 96 Eksjö
Tel +46 (0)381 371 80 – Fax +46 (0)381 371 85

Source: http:www.jagareforbundet.se, 2005
Handbook of Hunting in Europe, FACE, 1995

Jakt och Jägre
(Journal of National Association for Huntsmen)
Saltsjög 15, S-151 71 Södertälje
Tel +46 (0)55 033659 - Fax +46 (0)55 0651 77

Jaktmarker och Fiskevatten
Västra Torggatan 18
652 24 Karlstad
Tel +46(0)54 775 25 00 – Fax +46 (0)54 10 09 83

Jakthunden
Västra Torgatan 18, SE-652 24 Karlstad
Tel. +46 (0)54 10 03 70 - Fax +46 (0)54 10 09 83

Jaktjournalen
Box 10184, SE-434 22 Kungsbacka
Tel +46 (0)300 700 75 - Fax +46 (0)300 163 10

Allt om Jakt & Vapen
Box 49, SE-830 30 Lit
Tel +46 (0)642 106 65 - Fax +46 (0)642 111 18

CONSERVATION PROJECTS run by hunters

Please use the two Swedish projects described in the FACE publication "*Hunting, an added value for biodiversity*".

Source: http:www.jagareforbundet.se, 2005
Handbook of Hunting in Europe, FACE, 1995

ISC CRITIQUE

ISC Invasive Species Council AUSTRALIA

26 March 2009 Web: www.invasives.org.au/home.html Email: isc@invasives.org.au

Is Hunting Conservation?

A critique by ISC policy officer Dr Carol Booth of 'Recreational hunting and its place within Australia', an issue of the *Australian Shooters Journal*.

Introduction

Recreational hunters are trying to claim the high conservation ground because they kill feral animals. In recent advertisements promoting deer hunting, the NSW Game Council used the slogan 'Hunters – First in Conservation'[1]. The latest issue (Volume 11, Issue 1)[2] of the Australian Shooters Journal (ASJ), published as "the political voice" of the Sporting Shooters Association of Australia (SSAA), claims to substantiate the claims that recreational hunting is of great conservation benefit, with the SSAA president, Bob Green, stating in the introduction:

> *The following research piece provides a snapshot of the history of sustainable hunting and the way hunters were and continue to be at the forefront of conservation well before it became 'fashionable' to mainstream society. Hunters lobby for the better and 'wiser' use of land. They cull pest animals and manage other species - something that has aided native animal populations much more than the 'protectionist' or 'lockout' viewpoint of people who do not support hunting or are not aware of its benefits.*

The relevant claims of the Sporting Shooters Association in this issue of their journal can be summed up as:

> (1) There is "an abundance" of scientific evidence that recreational hunting is effective for feral animal control and highly beneficial for conservation;
>
> (2) Recreational hunters offer a "free" or "low cost" service that governments should use to control feral animals on public lands; and
>
> (3) The motivations of hunters are aligned to conservation, and provide the most effective basis for conservation.

Bob Green claims that it is only "minority groups" with "extreme ideologies" who oppose recreational hunting for feral animal control (p. 3). In fact, no mainstream conservation NGOs have supported their claims, and the opening up of state forests and national parks for recreational hunting has sparked widespread community opposition for reasons including compromised public safety and enjoyment of public lands, and impacts on animal welfare and conservation.

The "Hunt deer this year" ad campaign has been running in newspapers such as Melbourne's *The Age*. The *Australian Shooters Journal* (left) is published as "the political voice" of the Sporting Shooters Association of Australia and distributed to 120,000 members nationally.

Of all conservation NGOs, the Invasive Species Council has the strongest potential reasons to support recreational hunting on public lands, for it campaigns for more effective control of feral animals. But the council opposes recent moves to open up state forests and national parks to recreational hunters because evidence shows that recreational hunting usually does not provide effective feral animal control and creates a serious risk of worsening feral animal problems. Here, we provide a critique of the three sets of claims about recreational hunting and feral animal control made in the Australian Shooters Journal.

Footnotes:

[1] The full-cover advertisements appeared in many newspapers in NSW and Victoria on 28 February to promote the start of the NSW deer season on 1 March. They were headlined 'Hunt deer this year', and included the claim that "Removing game and feral animals protects our State forests.'

[2] Sporting Shooters Association Australia (2009).

Claim 1: There is "an abundance" of scientific evidence that recreational hunting is effective for feral animal control and highly beneficial for conservation

Relevant quotes from the ASJ about recreational hunting as a feral animal control strategy include:

> *Conservation hunting is a valuable pest management strategy where many thousands of volunteer hunters can get involved.*
>
> *The use of low-cost volunteer conservation hunters ... is one way to assure the success of a [feral animal control] program, as well as resulting in additional social, environmental and economic benefits.*

Relevant quotes from ASJ about the claimed environmental benefits include:

> *For many years, hunters have undertaken this activity knowing that each pest animal they take is one less to harm the environment and in doing so will reduce the pest animal's economic cost to society.*
>
> *Although it is rewarding in some cases to bring back some food for the table, it is certainly also rewarding to know that the hunter has prevented environmental damage caused by these pest animals.*

Relevant quotes from the ASJ about there being a wealth of scientific evidence to justify their claims include:

> *To prohibit something based on extreme ideology is just plainly not fair and when there's a wealth of scientific research to support hunting, then it would be just plain stupid.*
>
> *... there is an abundance of scientific evidence to suggest that recreational hunting provides many benefits.*

Despite rhetoric about the "abundance" of evidence, no scientific publications are referenced to support the ASJ's claims about the efficacy of recreational hunting for feral animal control and conservation. Their main reference is a polemic essay by David Carter, a vertebrate ecologist, on a website called the Global Gun Site, from which much of the text for the ASJ articles has come.[3] Carter's essay also does not provide evidence of the claimed benefits for feral animal control, other than to cite one instance of recreational hunters working successfully with South Australian wildlife authorities to control goats.

The flaw in the hunters' position is revealed in the claims made about ducks. In seeking to justify duck hunting, the ASJ states that hunters do not reduce duck populations, but instead kill "surplus" ducks: the "millions of birds ... [that] die naturally through starvation, predation, disease, exposure and injury" (p. 8). It cannot logically be argued that every feral animal killed by hunters "is one less to harm the environment" but that hunting makes no difference to waterbird populations (whose populations are in decline, unlike those of feral animals).

Controlling feral animal populations is very difficult, and in many cases futile, because feral animals are highly mobile and highly fecund, and able in most cases to quickly replace those killed. There is typically a large "doomed surplus", some of which are more likely to survive when hunters kill others.[4] Unless hunters kill more feral animals than can be replaced by migration or survival of those that would otherwise die, they do not reduce populations. For many feral animals, this requires up to half or more of a population to be killed annually.

Table 1 shows the number of feral animals killed by hunters over the past two years in NSW state forests, according to the Game Council's annual reports. The numbers killed amount to less than two feral animals (half of them rabbits) on average per licenced hunter, and less than one animal killed per hunting day in 2007-2008.[5] The table highlights the trivial numbers of feral animals killed by recreational hunters, probably not even 1 per cent of the populations targeted, far less than is needed to either reduce feral animal populations or their environmental impacts.

The futility of the recreational hunting effort can be exemplified by considering the situation for foxes and deer.

Victoria had a fox bounty in 2002-03 that resulted in 170,00 dead foxes, but was abandoned because it didn't work. A 2005 review of the scheme by DPI biologists Fairbridge and Marks found that it reduced fox abundance in less than 4 per cent of the state, and that numbers would quickly bounce back or climb even higher as a consequence of hunting.[7] Biologists had estimated that a 65 per cent annual reduction in fox populations was needed to make any difference. The area of NSW

Footnotes:

[3] Carter (2008).
[4] Eg. Fairbridge and Marks (2005) regarding foxes.
[5] Game Council NSW (2007); Game Council NSW (2008). The 2006-07 annual report states there were 3861 licences issued for hunting in state forests, so the ratio is 1.4 animals killed/licence issued. The 2007-08 annual report states there were 7645 written permissions covering a total of 8600 hunting days, without specifying the exact number of 'R-licences'. Assuming there were at least 4000 licences issued the ratio is less than 2 animals killed/licence. The ratio of animals killed/hunting day is 0.9.
[6] Game Council NSW (2007); Game Council NSW (2008). Sources for population numbers are (a) deer: Moriarty (2004); (b) foxes: Commonwealth of Australia (2007b); goats: Commonwealth of Australia (2007c); pigs: Commonwealth of Australia (2005); cats: Commonwealth of Australia (2007d); Rabbits: Invasive Animals CRC (2007).
[7] Fairbridge and Marks (2005).
[8] Sharp & Saunders (2004). They explain that "Young, inexperienced foxes, which are easily lured into the shooters range, are more likely to be killed by shooting. To compensate for this bias, the breeding and survival of remain-

Feral animals killed	2007-08	2006-07	Total (average/year)	Estimated Australian population
Deer	410	291	701 (350)	>200,000
Foxes	724	519	1243 (622)	7.2 million
Goats	1037	1039	2076 (1038)	>2.6 million
Pigs	1081	983	2064 (1032)	3.5-23.5 million
Cats	136	143	279 (139)	18 million
Dogs	55	51	106 (53)	
Rabbits	4076	2078	6154 (3077)	Many millions (10 billion in 1926)
Hares	242	244	486 (243)	
Total	**7761**	**5348**	**13,109 (6554)**	

Table 1: Feral animals killed in NSW state forests by recreational hunters.[6]

state forests open to recreational hunting is about 10 per cent of the area of Victoria, but the numbers of foxes killed annually by recreational hunters in the forests have amounted to less than 1 per cent (0.3 per cent) of the level achieved under the failed Victorian bounty. In the NSW Department of Primary Industries' standard operating procedure for fox control, Sharp and Saunders note that shooting "is ineffective in significantly reducing fox populations, particularly over the longer-term."[8]

In the past two years, recreational hunters have killed on average 350 deer a year in NSW state forests. This is only a few more than the 300 rusa deer that need to be killed annually in one relatively small national park in New South Wales (Royal National Park) to achieve slight population reductions (0.4 per cent), according to estimates by the NSW Department of Environment and Conservation.[9] Aerial shooting by a skilled professional can be much more effective than ground shooting by recreational hunters. In South Australia, for example, one helicopter marksman shot more than four times as many deer in four hours as 65 recreational hunters did in four days in a conservation reserve.[10]

Recreational hunting for feral animal control in NSW state forests is contrary to recommendations by government experts and does not meet basic standards expected of professional programs. According to the authors of numerous standard operating procedures for feral animal control, Sharp and Saunders, "There are three essential requirements for a pest control technique – necessity, effectiveness and humaneness."[11] They recommend in general that ground shooting "should only be used in a strategic manner as part of a co-ordinated program designed to achieve sustained effective control."[12] At best, a small proportion of the more skilled recreational hunters may be able to contribute to professional feral animal control programs where ground shooting is needed to supplement other, usually more effective, methods in a management program with defined goals. But recreational hunting is not occurring as part of integrated control programs in NSW state forests.

A recent federal government report by the Pest Animal Control CRC on the management of feral animals (in the rangelands) provides the following guidance.[13] Programs need to "be carefully planned and co-ordinated", based on an understanding of the impacts of the target feral animals, with clear, realistic goals and assessment of all possible solutions, and they need to be monitored. The goals "should be set in terms of biodiversity benefits, not numbers of pests killed". A complimentary suite of the "most effective and humane" techniques should be used in an integrated approach. Codes of practice and standard operating procedures should be adhered to "to ensure safety, humaneness and effectiveness." Plans need to be integrated for effectiveness and to prevent harmful consequences such as the proliferation of rabbits when foxes and cats are controlled or the targeting of vulnerable native mammals by feral predators when rabbits are controlled.

The only way recreational hunting can satisfy these conditions is if it is part of a professional program with defined environmental goals, if on-ground shooting is effective, if only highly skilled and responsible hunters are permitted to participate, and if the program's effectiveness is monitored. Control programs should not

ing animals is enhanced. Also, dispersal of foxes from the area decreases whilst the rate of fox immigration from other areas increases."

[9] NSW Department of Environment and Conservation (2005).

[10] Anonymous (2004); Peacock (2008).

[11] Sharp and Saunders (2007c).

[12] See various standard operating procedures at http://www.dpi.nsw.gov.au/agriculture/pests-weeds/vertebrate-pests/codes/humane-pest-animal-control.

[13] Norris et al. (2005).

Feral animal	Efficacy of ground shooting (by skilled shooters)
Rabbits	"not an effective means of reducing rabbit populations"; "may have limited use in controlling light … infestations, but … ineffective in significantly reducing populations or even maintaining them at low levels".
Foxes	"ineffective in significantly reducing fox populations, particularly over the longer-term"
Pigs	"except in exceptional circumstances...not considered to be an effective technique for control"; "can be counter-productive to other techniques in that it can disperse pigs or make them more wary"
Goats	"only suitable for smaller scale operations" or "if used in conjunction with other control methods such as mustering or trapping"
Deer	"considered to be the most effective technique currently available" (however, aerial shooting can achieve much greater effectiveness); "To keep stress to a minimum, shooting operations should occur on moonless nights with the aid of spotlights"; "Silenced rifles may also reduce animal disturbance and facilitate accurate shooting."
Dogs	"not effective"; "not appropriate for reducing populations over extensive areas."
Cats	"limited effectiveness"; "best suited to smaller isolated areas such as islands".

Table 2: Efficacy of ground shooting for feral animal control.[17]

start from the premise that recreational hunting will be used, but should only include it if it meets the goals and conditions for effectiveness, necessity and humaneness. One success in using volunteer shooters was with control of feral goats for operation Bounceback 2000 in South Australia, where shooting was used in conjunction with other methods. However, the situation is not comparable with the Game Council 'program' because the success was only achieved by "having well-defined objectives and coordinating the volunteers to maximize efficiency and efficacy"[14], which does not occur in NSW state forests.

As outlined in **Table 2**, ground shooting is not considered effective for control of most feral animals; it may be useful as a supplement to other methods but only in some circumstances when carried out by skilled shooters. Shooting by spotlight at night is typically more effective for deer, foxes and cats than shooting during the day, but this is not allowed for recreational hunters in state forests.[15] Shooting of pigs, particularly with dogs, can be counterproductive because it disperses them or makes them more wary.[16]

Variable levels of hunting skill undermine animal welfare as well as control of feral animals. As Sharp and Saunders say in standard operating procedures, "Shooting is a humane method ... when it is carried out by experienced, skilled and responsible shooters." They note that although deer are comparatively large, "the vital areas targeted for clean killing are small." They recommend that shooters should "be able to consistently shoot a group of not less than 3 shots within a 10cm target at 100 metres" and be able to "accurately judge distance, wind direction and speed and have thorough knowledge of the firearm and ammunition being used." These are not standards that recreational hunters are required to meet when issued a licence.

Claim 2: Recreational hunters offer a "free" or "low cost" service that governments should use to control feral animals on public lands

Relevant quotes from the ASJ about the cost-effectiveness of recreational hunting include:

> *It would certainly seem odd for governments not to utilise the 'free' resource that the conservation hunter across Australia can provide.*
>
> *The use of low-cost volunteer conservation hunters, who freely offer their time and services, is one way to assure the success of a program ...*

Footnotes:

[14] Commonwealth of Australia (2007c).
[15] Game Council NSW (2006), except "under special circumstances", which are not defined.
[16] Commonwealth of Australia (2005).
[17] Sources are (a) rabbits: Commonwealth of Australia (2007a); (b) foxes: Sharp and Saunders (2007a); (c) pigs: Commonwealth of Australia (2005); (d) goats: Sharp and Saunders (2007b); Commonwealth of Australia (2007c); (e) deer: Sharp and Saunders (2004); (f) dogs: Sharp and Saunders (2007c); cats: 18 NSW Auditor General (2006) notes that "The Treasurer also approved the Council requesting a TCorp loan not exceeding $1.0 million in 2006-07 with the expectation that the Council should become self-funding from 2007-08."
[19] Minister for Agriculture (2006).
[20] Advertised in The Weekly Times, 19 November 2008: "Property Based Game Management in Victoria". The advertisement said in part, "As a landowner or manager, does the prospect of receiving a monetary or in-kind payment for providing access to hunters to hunt game species on your property interest you?".
[21] For example: $5 million, 1998-2001, for NSW shooting clubs; $600,000, 1991-2006, for the NSW Shooting Association to conduct testing and licens-

The key results of the establishment of the Game Council are: increased opportunities for recreational hunters to hunt; the outsourcing of pest management to a low cost alternative (volunteers) to reduce costs to taxpayers; and the reduction of pest animal populations that negatively have an impact on native fauna and flora.

When feral animal control is not effective, it cannot be cost-effective, even if the service is provided for free. However, leaving aside ineffectiveness, the "outsourcing" of control to recreational hunters is far from free. In recent years, very large sums of taxpayers' money have been paid to support recreational hunting in NSW and Victoria, money that could have achieved effective feral animal control if it funded professional control programs.

As **Table 3** shows, direct government funding for the NSW Game Council has totalled $9.4 million over 6 years of operation, about $12 million when licence fees paid by hunters are included. Although the NSW Government expected the Game Council to be self-funding from 2007-08 (according to the NSW Auditor-General's audit report of 2005)[18], its funding for the body has been increasing. The government has provided an average $3.2 million per year for the past two financial years (2007-09), close to $4 million a year if licence fees are included. The difference between revenue from licence fees (about $0.5 million a year) and operating expenses has ranged from about $1.5 - 1.8 million over the past three financial years (to June 2008), with no sign of a capacity for self-funding.

In Victoria, the Department of Sustainability and Environment funds a Game Management Unit, the total funding for which is unknown. In 2006, the government announced an extra $2.5 million funding over five years for three government gaming officers.[19] The government is also proposing a scheme to promote hunting of deer and native birds on private property.[20]

Fox carcases strung on a fence near Echuca. Photo: Zoe Phillips, The Weekly Times.

State governments also support shooting organizations with grants totalling hundreds of thousands of dollars a year.[21] In addition there are indirect forms of financial assistance, one of the most lucrative of which may be the NSW firearms licensing scheme, which allows shooting groups to earn large sums of money by conducting and charging for mandatory firearms safety awareness tests.[22]

Year	NSW Government funding	Licence fee revenues ($'000)	Expenditure ($'000)
2003-04	$750,000	-	$723,000
2004-05	-	$426,000	$1,495,000
2005-06	$2,000,000	$379,000	$1,862,000
2006-07	$250,000	$467,000	$2,229,000
2007-08	$3,516,000	$546,000	$2,040,000
2008-09	$2,884,000	NA	NA
Total	**$9,400,000**	**$1,818,000**	**$8,349,000**

Table 3: NSW Game Council: Revenue and Funding, 2003-09.[23]

ing; $450,000 for gun clubs in 2007-08; $540,000 funding for gun clubs in 2008-09; An intended $5 million grant for the Hilltop shooting complex (as well as the excise of 1000 ha from the Bargo State Conservation area); $226,690, 2007-11, for Sporting Shooters Association of Australia, Victoria.

[22] Eg. See http://www.parliament.nsw.gov.au/prod/PARLMENT/hansArt.nsf/V3Key/LC20051108060

[23] Funding information came from the Game Council's annual reports, available at http://www.gamecouncil.nsw.gov.au/portal.asp?p=Reports.

	2007-08	2006-07	Total (average/year)
Total feral animals killed in state forests	7761	5348	13,109 (6554/year)
NSW government payment to Game Council	$3,516,462	$250,000	$3,766,462 ($1,883,231/year)
Direct taxpayer funding/animal killed	$453	$47	$287
Total admin expenses of Game Council	$2,040,000	$2,192,000	$4,232,000 ($2,116,000/year)
Expenditure/animal killed	$263	$410	$323
Hunting days approved	8600	NA	
Animals killed/hunting day	0.9	NA	

Table 4: NSW Game Council costs per feral animal killed.[28]

As **Table 4** shows, for the past two financial years through direct government funding for the NSW Game Council, taxpayers have paid $287 per feral animal killed in state forests, and $323 has been spent by the Game Council for each feral animal killed in the forests.[24]

If spent on professional feral animal control programs, the millions of dollars of government funds directed to ineffective recreational hunting could have achieved substantial outcomes for conservation.

Effective fox control is very expensive, but the average $3.2 million granted annually to the Game Council for the past two years could have paid for fox control over 40 times the area of state forests 'controlled' by hunters.[25] The $3.2 million is about 30 times that spent on rabbit control by the NSW government ($108,000 in 2001-02).[26] The cost of controlling goats by aerial shooting or by mustering, the most effective methods, are also regarded as expensive, but the NSW government funding per feral animal killed through the Game Council is 10-22 times as expensive.[27]

Claim 3: The motivations of recreational hunters are aligned to conservation, and provide the most effective basis for conservation

Relevant quotes from the ASJ about the conservation virtues of hunters include:

> *...it is the hunter who still understands the relationship between the environment and ourselves.*
>
> *Hunters have a very proud history of maintaining sustainable populations of game species that they wish to utilise, as well as protecting other species from exotic animals.*
>
> *Hunters also know that game species are better managed within an open season arrangement that guarantees the utilisation of a sustainable resource year after year when conditions allow.*
>
> *They [hunters] cull pest animals and manage other species – something that has aided native animal populations much more than the 'protectionist' or 'lockout' viewpoint of people who do not support hunting or are not aware of its benefits.*

The ASJ's claims about the value of hunters to conservation in Australia, including that they have a "proud history" of protecting native wildlife from exotic species, are outlandish. In fact, recreational hunters have been one of the greatest contributers to feral animal problems in Australia. Foxes and rabbits were introduced into Australia for hunting, and hunters more recently have moved pigs, deer and other feral animals into many new areas. This is occurring at an alarming rate. The major concern of the Invasive Species Council is that by opening up state forests and national parks to hunters, state governments will create incentives for maverick hunters to move feral animals into these areas and build up their prey numbers. The articles in the ASJ claim that hunters are motivated to maintain "sustainable" populations of 'game' animals. When the game animals are feral ani-

Footnotes:

[24] This does not include feral animals killed on private land by hunters, but arrangements between landholders and hunters occurred prior to the existence of the Game Council.
[25] Commonwealth of Australia (2007e) notes that the estimated cost of fox control is about $1.3 million for control over about 35 000 square km per year.
[26] Commonwealth of Australia (2007a), citing English and Chapple (2002), note that funding for operational programs for rabbit control in NSW was $84,000 in 2000-2001 and $108,000 in 2001-02.
[27] Commonwealth of Australia (2007c) notes that aerial shooting costs $13-30 per goat, and mustering $20-21/goat.
[28] Game Council NSW (2007); Game Council NSW (2008).
[29] Pavlov (1995).
[30] Commonwealth of Australia (2005).
[31] Spencer and Hampton (2005).
[32] Nowlan (2008).
[33] Moriarty (2004).
[34] West and Saunders (2007): Some may be due to greater awareness of deer, some due to escapes from deer farms, but many or most have prob-

mals this motivation undermines conservation.

According to Pavlov, writing about pigs in the Australian Museum's 'Mammals of Australia', a rapid increase in distribution from the 1970s in NSW and Queensland was due to "deliberate release of piglets and juveniles by unscrupulous hunters."[29] The federal threat abatement plan for feral pigs notes that "continued release of feral pigs for hunting, either in new areas or in areas that they do not currently occupy is a major threat to effective management of feral pigs and their damage."[30] This problem was confirmed by evidence from a recent genetics study by Spencer and Hampton in southwest Australia, where feral pig populations are expanding and increasing, which found intermixing of pigs from different areas that could not have occurred naturally.[31] The researchers concluded that feral pigs were being "deliberately and illegally translocated to supplement recreational hunting stocks".

Hunters may also compromise professional control programs. A Parks Victoria Pest Animal Officer who traps pigs and dogs in the Eastern Alps in Victoria, found that pig hunters "do a lot more harm than good, chasing pigs into new areas and making them wary and hard to catch." The government's pig traps have been vandalised and stolen, and trapped pigs "let loose for future hunting."[32]

More than half of the 218 feral deer herds in Australia identified in 2000 appear to have derived from illegally translocated deer, presumably to create more hunting opportunities (there is no other likely explanation).[33] There has been a dramatic increase in this practice in recent years, and many deer have been shifted into national parks and state forests. Thirty new locations for feral deer in NSW were observed between 2002 and 2004, probably most due to hunters.[34] Deer can be bought cheaply from failing or struggling deer farms.[35] In NSW national parks and state forests, deer with ear tags from deer farms located far away have been found, suggesting that hunters have bought the deer in one location and seeded them in another.[36] Three men were recently fined in South Australia for releasing 30 fallow deer onto a property for hunting, but it is usually impossible to detect such illegal activity.[37]

The conflict between hunters' motivations and conservation is made explicit by the goals and actions of the Australian Deer Association. The association's vision is for deer to be managed as a 'valuable public resource', and 'for the benefit of the deer themselves.'[38] The association took the Victorian Government to court to try to stop the declaration of sambar deer as a threat to biodiversity under the Flora and Fauna Guarantee Act.[39]

It is a matter of concern that the Game Council of New South Wales has a mandate to manage Californian quail, pheasant, chukhar partridge, peafowl and turkey for hunting even though none of these species yet occur in the wild on mainland Australia.[40] All of these birds have formed feral populations elsewhere in Australia or overseas. Conservationists fear this will lead to their release for hunting.

Commercial hunting properties are also a major environmental concern because proponents have a direct financial incentive to build up populations of feral animals. On Cape York Peninsula, buffalo, deer and blackbuck Antelope were recently freed on two unfenced properties to create opportunities for hunting.[41]

Recreational hunters have variable levels of skill. A New Zealand assessment found that fewer than 5 per cent of recreational hunters shot more than half the deer killed.[42] When skill levels are low, not only are fewer feral animals shot, but animal welfare and human safety are put at risk.

Problems also occur when hunters use hunting dogs, which sometimes become lost or escape. Escaped pig-hunting dogs are a serious concern for some sheep and cattle farmers – "The biggest problem we face are the dogs which are either abandoned or lost by pig hunters"[43] – and the federal threat abatement plan notes concerns that the dogs may take non-target wildlife "as it is not possible for hunters to continuously control their dogs during hunting forays".[44]

Other damage occurs when some hunters fail to exercise care for their environment: if they dump rubbish, drive off-road, damage fences, leave carcasses or shoot native species. (One reason why hunters are seeking increased access to state lands is that disillusioned private landholders are increasingly denying access.) Deer hunters have been leaving several hundred tonnes of sambar deer remains in Victorian forests because they only want the trophy antlers.[45] These remains bolster populations of feral predators, such as pigs, dogs and foxes, and increase their impacts on native species.

ably been moved to establish populations for hunting.

[35] According to Jesser (2005), the sale of live deer for stocking new areas has become an important source of revenue for deer farmers.

[36] NSW government officer (personal communication).

[37] SA Department of Water Land and Biodiversity Conservation (2008).

[38] Australian Deer Association (2006).

[39] In a media release about their unsuccessful legal action, the Australian Deer Association (2008) stated: "The ADA Constitution obliges us to protect and better the status of deer and to ensure its perpetuity as a free roaming game animal. We had to fight this listing to the very end as it will, in layman's terms at least, categorise deer as a pest"

[40] Norris et al. (2005).

[41] Norris et al. (2005).

[42] Orueta and Aranda (1998), citing Nugent (1988).

[43] Anonymous (2009).

[44] Commonwealth of Australia (2005).

[45] Peel et al. (2005).

In contrast to the claimed alignment with conservation, hunting groups have also strenuously opposed important conservation initiatives, including the creation of national parks, the listing of deer as threatening processes and the eradication or control of feral deer populations. Although some hunters strive to take good care of the environment, such anti-conservation attitudes suggest that others do not.

Conclusion

Feral animal control is being used as a justification by some state governments to open up public lands to recreational hunters. The NSW Primary Industries Minister Senator Ian MacDonald, for example, told parliament that "after habitat loss, invasive species are the single greatest threat to Australia's unique and treasured biodiversity," and that recreational hunting was a "sensible option" to "help to eradicate feral animals".[46]

The Invasive Species Council agrees that feral animal control is very important, but concludes that there is no evidence to support the claims that recreational hunting is an effective or low cost option. "Outsourcing" control of feral animals to ineffective recreational hunters will see populations increase, particularly if governments use it as an excuse to not fund professional control efforts. There is also the very serious risk that governments are unwittingly creating incentives for maverick hunters to move feral animals into new areas and worsen feral animal problems.

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Invasive animals, particularly foxes, cats, rabbits and rats, have caused most of Australia's animal extinctions and imperil many more species. Hard-hoofed feral herbivores like goats and deer damage wildlife habitats and threaten many rare plants.

How to control feral animals effectively and humanely to protect native species and ecosystems is one of the greatest challenges of conservation management. There is a role for volunteer shooters but only where it contributes to beneficial outcomes for the environment (or agriculture).

Requirements of feral animal control

"There are three essential requirements for a pest control technique – necessity, effectiveness and humaneness."

Trudy Sharp & Glen Saunders, NSW Government[1]

Government protocols for feral animal control programs require that they be carefully planned and coordinated to meet defined objectives of desired environmental or economic outcomes.[2] They should adhere to standard operating procedures, using effective and humane methods. If shooting is used, it should be carried out by skilled operators. Programs should be monitored to assess whether objectives are met. Effective programs should reduce "the need to cull large numbers of animals on a regular basis".[3]

Ad hoc recreational hunting such as that practiced in NSW state forests breaches feral animal control protocols in virtually every way. There are no defined objectives, no assessment of whether ground shooting is an effective and appropriate method for the purpose, no integration with other programs, no quality control, no monitoring.

The difficulty of achieving population reduction

Most young animals do not survive, for there are not enough resources for all that are born. Of feral pigs studied in Kosciuszko National Park, about 15% survived one year.[4] Just 1-10% of rabbits usually survive their first year[5] and only 20% of foxes may do so.[6] The rest (the 'doomed surplus') are killed by starvation, predators or disease.

So, a hunter who kills a fox is unlikely to have any impact on a fox population, either because the fox would died anyway or because its death allows another fox to survive due to reduced competition for food and territories. Most foxes killed by recreational hunters are the less wary juveniles, with low prospects of survival.[7]

Unless hunters kill more feral animals than can be replaced each year, they do not reduce their populations. This fact is well recognised by feral animal experts, who have learned from past failures about the high levels of control need to achieve population reductions.

The thresholds for population reduction vary between species, regions and seasons, but the figures in Table 1 give some idea of how difficult it is to achieve, particularly of the most fecund species such as rabbits. It means that large numbers of feral animals can be killed for no environmental (or agricultural) benefit.

Compare the southern right whale (*Eubalaena australis*) with the black rat (*Rattus rattus*). The whales don't reproduce until they're nine years old and under ideal conditions can increase their population by just 7% a year. Killing more than 6% a year would cause extinction. Black rats start reproducing when they're only three months old, and can more than triple their population in a year. More than 90% may have to be killed annually to reduce populations. For sambar that figure is 40% and for cats close to 60%.

Table 1. Estimated proportions that need to be killed annually to achieve population reduction

Invasive animal	Maximum annual rate of population growth	Threshold to halt max. population growth
Brown rat (*Rattus norvegicus*)[8]	471%	95%
Black rat (*Rattus rattus*)[9]	357%	91%
House mouse (*Mus domesticus*)[10]	341%	97%
Rabbit (*Oryctolagus cuniculus*)[11]	206%	87%
Fox (*Vulpes vulpes*)[12]	105%	65%
Cat (*Felis catus*)[13]	99%	57%
Hog deer (*Axis porcinus*)[14]	85%	53%
Chital (*Axis axis*)[15]	76%	49%
Rusa deer (*Cervus timorensis*)[16]	70%	46%
Pig (*Sus scrofa*)[17]	69-78%	~70%
Sambar (*Cervus unicolor*)[18]	55%	40%
Goat (*Capra hircus*)[19]	53%	35%
Fallow deer (*Dama dama*)[20]	45%	34%

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Such figures explain why feral animal control generally can't be achieved by ad hoc hunting. They explain why a 2002-03 hunting bounty on foxes in Victoria did not work despite an apparently huge tally of 170,000 dead foxes. A review by government biologists found that the bounty would have reduced fox abundance in less than 4% of the state, that there was a mismatch between hunting effort and where fox control was most needed, and that numbers would quickly bounce back or climb even higher as a consequence of hunting.[21] (The area of NSW state forests open to recreational hunting is about 10% of the area of Victoria, but the numbers of foxes killed in 2010-11 by recreational hunters in the forests was less than 1% of the level achieved under the failed Victorian bounty.) The fox bounty joined the long list of failed bounty attempts in Australia, which have typically reduced targeted animal numbers by only 2-10 per cent, far too little to reduce populations.[22]

Ground shooting

One reason that hunting is ineffective is that ground shooting, particularly by day, is generally not efficient, except in small areas and when used in conjunction with other methods. Hunters also have highly variable skill levels (no skills tests are conducted for licensing).

The goals of recreational hunting and feral animal control are different. Hunters are often motivated to maintain feral animal populations for future hunting, and leave the young and females. "Hunters have a very proud history of maintaining sustainable populations of game species that they wish to utilize," says the Sporting Shooters Association.[23]

Hunter often prefer to kill large trophy males (with antlers), which does not assist with population control in polygamous species such as deer, pigs and goats because the remaining males can inseminate all the females. The NSW Game Council's licensing system deliberately spreads hunters out over NSW forests (at most 1 hunter/400 ha) limiting their capacity to exert pressure in any one area.

When recreational hunting can be effective

Skilled recreational shooters *can* contribute to feral animal control in the following circumstances:

- when they participate in professional control programs – skilled recreational shooters have been used to supplement aerial shooting and baiting in Operation Bounceback in South Australia, for example; or
- when they exert sufficient sustained pressure over small accessible areas, such as may occur on farms.

Table 2. Efficacy of ground shooting (by skilled shooters) for feral animal control

Feral animal	Assessment of efficacy of ground shooting in government documents	Numbers killed by recreational hunters in state forests, 2010-11	Estimated Australian population
Rabbits[24]	"not an effective means of reducing rabbit populations"; "may have limited use in controlling light … infestations, but … ineffective in significantly reducing populations or even maintaining them at low levels".	6621	Many million (10 billion in 1926)[25]
Foxes[26]	"ineffective in significantly reducing fox populations, particularly over the longer-term"	1325	7 million [27]
Pigs[28]	"except in exceptional circumstances...not considered to be an effective technique for control"; "can be counterproductive to other techniques in that it can disperse pigs or make them more wary"	2296	4-24 million[29]
Goats[30]	"only suitable for smaller scale operations" or "if used in conjunction with other control methods such as mustering or trapping"	2647	3 million[31]
Deer[32]	"considered to be the most effective technique currently available" [however, aerial shooting can achieve much greater effectiveness]; "To keep stress to a minimum, shooting operations should occur on moonless nights with the aid of spotlights"; "Silenced rifles may also reduce animal disturbance and facilitate accurate shooting."	512	
Dogs[33]	"not effective"; "not appropriate for reducing populations over extensive areas"; "suited to control of small populations or problem individuals"	72	
Cats[34]	"limited effectiveness"; "best suited to smaller isolated areas such as islands".	167	18 million[35]

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Table 3. Game Council performance statistics, NSW state forests, 2007-2011[36]

	2007-08	2008-09	2009-10	2010-11
Feral animals killed (rabbits, foxes, goats, pigs, dogs, hares, deer)	7761	11,197	15,232	14,161
Rabbits killed (% of total animals killed)	4076 (53%)	5453 (49%)	8335 (55%)	6621 (47%)
Area state forest for hunting (ha)	1.8 million	2.2 million	2.2 million	2.2 million
Feral animals killed / area	1 per ~230 ha	1 per 196 ha	1 per 144 ha	1 per 155 ha
Hunting days in state forests (assuming each Game Council 'permission' is for 1 day)	8600	12,733	20,761	21,354
Feral animal killed / hunting day	0.9	0.9	0.7	0.7
State government funding of Game Council	$3.52 million	$2.88 million	$2.53 million	$2.56 million
Government funding / feral animal killed	$453	$257	$166	$180

Outcomes in NSW State forests

The NSW Game Council claims that recreational hunters are providing a cost-effective conservation service across close to 2 million hectares of state forest. They base their claim on the biologically bogus premise that whenever hunters kill a feral animal they reduce the population and thereby reduce environmental harm. They conduct no monitoring to substantiate claimed environmental benefits, simply referring to numbers of feral animals killed. But it is clear from the small numbers killed (compared to likely populations) that they cannot achieve the claimed benefits (see Table 3).

Recreational hunters (12,000 were licensed to shoot in state forests in 2010-11) have killed no more than 15,000 feral animals a year across close to 2 million hectares of state forest. About half the animals killed have been rabbits, for which shooting is ineffectual, and the overall average has been one feral animal killed per 150 hectares of state forest per year.

Skill and animal welfare

Some recreational hunters are highly skilled but many are not, and there are no shooting competency tests to acquire a Game Council licence (just a written exam). It is apparent from the overall performance – an average 0.7 feral animals killed per hunting day in 2010-11 (mostly rabbits) – that many hunters are not skilled. A New Zealand assessment found that fewer than 5 per cent of recreational hunters shot more than half the deer killed.[37] Even the former chairman of the Game Council, Robert Borsak, wasn't impressed by hunter performance, commenting on a blog site:[38]

> "From the Hunt Returns that are coming in (there is no reason to believe that they are not fair dinkum), for the 4 months to end October, 12,824 animals have been sighted & 2,035 (16%) of all kinds, have been killed. Not a great success rate."

The lack of skill has major animal welfare (and human safety) implications. According to NSW government codes of practice for humane control of feral animals, shooting can be humane when it is carried out by "experienced, skilled shooters". For deer, it is recommended that hunters "be able to consistently shoot a group of not less than 3 shots within a 10cm target at 100 metres". The Game Council relies on a mandatory code of practice as the basis for claims that licenced hunters hunt humanely but a code does not make hunters skilled.

Also according to the NSW government codes of practice, humaneness requires that shooting of feral animals "should only be used in a strategic manner as part of a co-ordinated program designed to achieve sustained effective control." Because recreational hunting in state forests does not achieve effective feral animal control, it breaches welfare standards by promoting killing that provides no benefit other than recreational pleasure for hunters.

The 'free service' that costs taxpayers a fortune

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The Game Council claims that hunters offer a free or cost-effective hunting service for the benefit of the public. If it is not effective, recreational hunting cannot be cost-effective, even if it was done for free. It is far from free: $14.5 million of public funding has been granted to the Game Council from 2003 to 2011 (see Table 4). The cost to the public has been an average $264 per animal killed on public lands from 2007-11.[39]

Table 4. NSW Game Council funding, 2003-11[40]

Year	NSW Government funding	License fee revenue
2003-04	$750,000	-
2004-05	-	$426,000
2005-06	$2,000,000	$379,000
2006-07	$250,000	$467,000
2007-08	$3,517,000	$546,000
2008-09	$2,884,000	$730,000
2009-10	$2,527,000	$920,000
2010-11	$2,556,000	$974,000
Total	$14,484,000	$4,442,000

If spent on professional feral animal control programs, the $15 million spent on the Game Council could have achieved substantial outcomes for conservation. The $2.5 million granted last year could have paid for effective fox control over a much larger area than the state forests.[41]

Originally, it was intended the Game Council would become self-funding, but there seems no prospect of this, as licence fees from hunters account for less than one-third of Game Council revenue 8 years after establishing the licensing system.

Summary: Why recreational hunting is generally not effective

Feral animals are typically highly fecund and many populations are saturated with a large 'doomed surplus' (who would normally die due to lack of resources), which enables them to quickly replace animals killed by hunters.

- Ground shooting (even using skilled shooters) is not an effective means of primary control for most feral animals and according to government standards should only be used as part of co-ordinated programs, usually as a supplement to other methods.
- Hunting in NSW state forests is ad hoc with no specific environmental goals, planning or monitoring. The licensing system deliberately spreads hunters out (at most 1 hunter/400 ha).
- Hunters often prefer to kill large trophy males, which makes little contribution to control because in polygamous species such as deer, pigs and goats the remaining males can inseminate all the females.
- Hunters are often motivated to maintain feral animal populations for future hunting, leaving young and females.
- Hunters have highly variable skill levels (no skills tests are conducted for licensing) – in 2010-11, each hunting day in state forests resulted on average in 0.7 feral animals killed.

Potential adverse outcomes

Hunters have exacerbated feral animal problems by undermining feral animal control and through the actions of maverick hunters in spreading feral animals. The Invasive Species Council is particularly concerned by the growing influence of the hunting lobby over feral animal policy.

Deer are probably Australia's worst emerging feral animal threat,[42] set to rival "feral pigs and feral goats in distribution, abundance and impacts in the near future."[43] Populations are expanding and spreading into new areas.[44] Herbivory and degradation by feral deer are listed as a key threatening process in NSW. Yet deer are largely protected for hunters in NSW (and Victoria and Tasmania). Unlike other feral animals recognised as threats to biodiversity and agriculture, there are restrictions on deer control on private land. Other than landholders, their household and employees, anyone shooting deer has to be licensed by the Game Council and cannot shoot deer at night or with spotlights, which is more effective than day shooting.

The hunting lobby periodically denies that deer cause environmental problems and has opposed declarations of feral deer as pests or threats. In Victoria, the Australian Deer Association took the government to court to try to stop the declaration of sambar as a threatening process. In NSW, the Game Council has declared its opposition to any pest declaration for deer.[45]

Much of the deer problem Australia faces is due to hunters shifting them into new areas. A survey in 2000 found that 58% of populations had probably established due to illegal translocation.[46] Feral deer were observed in 30 new locations in NSW between 2002 and 2004.[47]

Hunters have also illegally shifted pigs into new areas, as substantiated by genetic evidence.[48] The national threat abatement plan for feral pigs notes that "continued release of feral pigs for hunting, either in new areas or in areas that they do not currently occupy is a major threat to effective management of feral pigs and their damage."[49] It also notes concerns that the dogs may take non-target wildlife "as it is not possible for hunters to continuously control their dogs during hunting forays".[50] Escaped hunting dogs are a major environmental and agricultural problem.

Recreational hunting can make professional control more difficult and expensive by altering the behaviour of targeted animals.[51] Animals subject to shooting disturbance are likely to become more wary – pigs and some deer species, for example, forage more at night than during the day – and may inhabit more secure areas within their range or move elsewhere.[52]

First in conservation?

The Game Council has run advertisements with the tagline 'Hunters – First in Conservation'. This can be taken to mean that hunters are either the foremost conservationists or that they were the earliest conservationists. The conservation record of early white hunters includes the first, and possibly the second, extinction in Australia after European settlement (dwarf emu species on Kangaroo Island and King Island) and numerous extinctions following the introduction of foxes and rabbits for hunting. It might be fair to say that hunters are 'first in extinctions' in Australia.

The main hunting lobbies have demonstrated an anti-conservation agenda by opposing national park declarations and proposing to release new exotic animals. The *Game and Feral Animal Control Act Amendment Bill 2009*, introduced by the Shooters Party but rejected by the NSW Government, would have made it legal to release exotic game bird species that have been assessed by the Australian Vertebrate Pests Committee as posing a serious or extreme pest threat to Australia.

Endnotes

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