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Safari Hunting of Australian Exotic Wild Game

**A report for the Rural Industries Research
and Development Corporation**

by G.McL. Dryden and S.J. Craig-Smith

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Foreword

Safari hunting is a form of recreation in which animals are hunted and some form of trophy is taken. The animal species involved are usually those which have a certain cachet, as exemplified by the "Big Five" of southern Africa, or the "South Pacific 15". The nature of the trophy varies, but it is the "outdoors experience" which is claimed to be the key element, and the taking of an animal is not always a necessary part of the activity.

Australia has a variety of exotic wild large animals (camels, deer, buffalo, etc.) and smaller game (e.g. rabbits, hares, and foxes) which are not classified in any list of endangered or threatened animals. This pool of animals is available for commercial or recreational hunting.

The purpose of this Report is to describe the existing Australian commercial safari hunting industry, to explore the social, legislative and biological environments in which it operates, and to describe international examples of successful commercial hunting industries. This information helps to identify constraints to sustainability and profitability which the industry faces and to formulate appropriate policies for the industry.

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Executive Summary

Tourism can be seen as a new rural industry providing employment and income in its own right and it can be seen as a supplementary industry adding additional employment and income to traditional rural industries such as farming and forestry. Hunting of feral animals should be seen as one component of the growing area of rural tourism. There is a variety of tourism types which would be potentially interested in non consumptive hunting and could be looked at seriously when examining potential links between hunting and tourism. There are many potential advantages in attracting hunting tourists. Hunters generally are prepared to spend considerable amounts of money in pursuit of their interests and this is a potentially very lucrative market segment. For hunting tourism to succeed both in the non- consumptive and consumptive forms close co-operation will be necessary between the two types of operation, namely the tourism industry and the hunting industry.

Issues central to the debate on the sustainable use of wildlife are animal rights and welfare, which species could be used and how, and is sustainable use possible? There is a continuum of opinion about the acceptability of wildlife use. At one extreme virtually no use of wildlife is acceptable, while at the other extreme all uses are. For most people there is uncertainty about where the acceptable becomes the unacceptable. By identifying the boundaries of this unclear area, wildlife professionals and policy makers can gauge the acceptability of wildlife management practices. By using the continuum as a tool in wildlife management, wildlife professionals can take a proactive approach to influencing public attitudes.

The international prototypes which are discussed in this Report illustrate aspects of the use of recreational and commercial hunting to control wild animal populations, and the types of government policy which are used in other countries to support lucrative hunting industries. The South African central and provincial governments regard commercial hunting and game ranching as agricultural pursuits and give them the same research and extension backup that conventional forms of agriculture receive. There are training opportunities for those who wish to become hunting professionals, and there are several industry associations for professional wildlife hunters. There is an informed dialogue between hunters and conservationists.

Most of the animals hunted in North America are native. Hunting ethicists reiterate the need for respect for the quarry and the environment. Connections are consciously made between hunting and the conservation and control of wild animal populations. Hunting is regulated to protect the wild animal populations, while allowing access to this form of recreation. Licensing schemes are used to provide this control and they generate substantial revenues for state wildlife agencies which are used to maintain national parks and for similar uses.

Introduced large wild animals form the basis of a “big game” hunting industry in New Zealand. Many members of the public regard exotic wild animals as pests, but commercial and recreational hunters oppose government policies to eradicate species like deer, wallabies, thar and chamois. Recreational and commercial hunting is used by the Department of Conservation to manage pest animal populations, especially of thar and deer. The commercial safari industry is profitable, and wild deer have formed the basis of a very successful deer farming industry. Connections between these two industries parallel the development of game ranching in South Africa.

The clients of commercial safari hunting companies may contribute \$5 million annually to Australian rural tourism. International clients prefer to hunt deer, pigs, goats, buffalo and cattle (including banteng cattle). European visitors prefer pigs and buffalo. North American hunters prefer buffalo, pigs and deer. Companies may have to decline international hunters’ requests for a particular species; most commonly because Australian law prevents the hunting of that species. Safari companies claim that their industry’s development would be enhanced by more uniform firearms regulations throughout Australia, fewer legal restrictions on hunting, more affordable insurance, and more positive and informed attitudes towards hunting by governments and the community.

The laws of each Australian jurisdiction are described so that the similarities and differences are apparent. There is a need to further harmonise state laws about hunting and to simplify laws about importing firearms.

A successful commercial safari hunting industry will:

- Be conducted in a way which is acceptable to the majority of the Australian public.
- Provide clients with a genuine “hunting experience”.
- Meet (international) client expectations about trophy qualities, accommodation and other infrastructure.
- Seek ways of utilising tourism investment and infrastructure to the benefit of safari hunting.
- Ensure that tourism agencies and other tourism personnel are well-informed, sympathetic and professional in their approach to all aspects of hunting and associated tourism.
- Appropriately share the use of exotic wild animals with traditional landowners and recreational hunters.
- Not impinge on the use of grazing lands by farmers and graziers.
- Not over-use the hunted resource, and maintain its quality.
- Co-operate with conservation authorities to manage wild exotic animals.
- Operate under uniform laws about hunting and firearms use.

Seventeen recommendations are made which will assist in achieving these aims.

1. Introduction

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Safari hunting in Australia

Safari hunting is a form of recreation in which animals are hunted and some form of trophy is taken. The animal species involved are usually those which have a certain cachet, as exemplified by the "Big Five" of southern Africa, or the "South Pacific 15". The nature of the trophy varies. Some hunters simply want to obtain a representative of the species, others nominate certain attributes such as horn score (often using one of the international scoring systems). In other cases, the aims of the hunt are considered to be fulfilled if the animal is darted with a tranquillising agent and then photographed or measured. In other cases again, a camera replaces the gun. In all variants of hunting, it is the "outdoors experience" which is generally claimed to be the key element, and the taking of an animal is not always a necessary part of the activity.

What is "safari hunting based on Australian exotic wild game"?

Australia has a variety of exotic wild large animals (camels, deer, buffalo, etc.) and smaller game (e.g. rabbits, hares, and foxes) which are not classified in any list of endangered or threatened animals. Many of these species are classified as vertebrate pests. This pool of animals is available for commercial or recreational hunting.

Exotic animals are those which are not indigenous to Australia. More succinctly, they are animals introduced to Australia since European settlement. There is a fine distinction between "wild" and "feral". For the purposes of this Report, a "wild" animal is one which has existed in the wild for at least two generations (i.e. may be descended from a domesticated animal which was released or escaped from confinement, but is not the animal which had escaped or been released) and which has not been subjected to the management normally given to domestic animals. A "feral" animal is one which has escaped or been released from confinement. "Game" simply means an animal which is hunted.

The purpose of this Report is to consider the use of commercial safari hunting of Australian *exotic* wild game. We purposely exclude native animals from this discussion. The legal framework, ethics, community expectations, the likelihood of commercial benefit, and the biological sustainability of hunting Australian *native* game have been comprehensively discussed by Wilson, *et al* (1992) with particular reference to the commercial use of native animals by Aboriginal communities, Ramsay (1994) and in Grigg, *et al* (1995), and the report of the Senate Rural and Regional Affairs and Transport References Committee (1998).

Consumptive v. non-consumptive use of game

“Consumptive” use involves “permanently removing organisms or their products from the population or ecosystem concerned” (Department of Environment, Sport and Territories 1998). It includes the slaughter of animals for products like trophies, hides, and meat. Trophies may include photographs or videos, but more conventionally are a set of horns or antlers, a head, or a mount of the whole body.

“Non-consumptive” use is activities which do not directly affect the animal. These uses include photography or viewing the animal in its environment and do not involve slaughter. “Darting safaris” mentioned above are probably consumptive in that the animal is directly affected.

Consumptive and non-consumptive uses are clearly quite different. Their practitioners may have different ethical attitudes towards the taking of animal life, and different eco-touristic purposes (although all would probably share a desire to experience nature). It has been suggested that these differences are so profound that game lodges or hunting estates should provide separate facilities for these different clients (ABSA 2003).

Hunting and tourism

There are many links between hunting and certain aspects of tourism: both involve activity in the wild, both see animals as a resource and both activities can involve travel from one’s home environment for a period in excess of 24 hours. Much tourism infrastructure already exists either in the rural environment of Australia or at least serving the rural environment of Australia, and this can be utilised to the mutual benefit of both interests. Various aspects of hunting can be utilised to further develop rural tourism. Rural tourists can be accurately informed on the benefits of hunting as a means of rural environmental management which could work towards greater understanding and support for hunting. Current (2003) political interest is focused on developing rural tourism as a means of injecting money into the rural economy and future investment can be directed towards both activities.

The economic benefits of safari hunting industries in other countries

Safari hunting (for trophies and photography) is a well established, billion-dollar business in many parts of the world. Prices for trophy animals range from USD3,000 to 100,000, plus revenue from the sale of hunting licenses (e.g. USD250 per season in parts of the USA) and accommodation and outfitting. In North America, and other regions, government revenue is used for wildlife restoration and management projects, law enforcement, research and education. Hunting is a valuable additional revenue stream for South African and US ranchers.

Types of commercial hunting

“Commercial” hunting includes both private recreational hunting and safari hunting. Private hunting can be commercial when, although it is done by private individuals without the assistance of a guide or outfitter, the hunter pays for access to the hunting area and/or to the animal being hunted. In some cases, especially if the recreational hunters do not know of suitable places to hunt, they may use the services of an outfitter to locate the hunting venue and/or arrange access to the quarry. “Safari” hunting is a more organised form of recreational hunting in which hunters are assisted by a guide, with or without the services of an outfitter, and there is a more complete touristic experience than just the hunt itself. Safari hunts typically include the provision of serviced accommodation and may be associated with more conventional tourism like visiting national parks or other tourist attractions.

Occupations involved in commercial hunting

Commercial hunting involves a range of occupations. Two of these are centrally important:

1. The outfitter: this is the person or organisation who advertises the availability of hunting, receives enquiries from potential clients, arranges hunts by matching the client with a guide and a venue, may reserve accommodation or provide accommodation facilities and infrastructure (e.g. employ cooks, drivers, camp rouseabouts), organises charter aircraft or boats, arranges for taxidermy, etc.
2. The guide or professional hunter: these terms are interchangeable; the usage in southern Africa is “professional hunter” while the same services are provided in Australia by the “guide”. The guide’s primary responsibility is to meet the client’s expectations or contractual arrangements about the quality and number of animals taken, and to be responsible for the safety and ethics of the hunt. Thus a “guided hunt” is one in which the client is helped to find and take an animal by an experienced hunter who provides this service for payment. The guide may take charge of local arrangements at the camp site.

Hunting methods

“Free-range” hunting is the hunting of animals which are free to move throughout their natural range. Animals are stalked, and selected animals may be shot or photographed. There is no attempt to manage the animal resource although strategic feed supplements may be used to assist animals through droughts or hard winters, and the hunter may select for or against certain animal characteristics and so implement a form of *de facto* culling.

Free-range (or “fair chase”) hunting is conducted under conditions where the hunter must expend considerable effort to find, stalk his quarry, and where the animal has a reasonable chance of not being found or of not being killed. A fundamental concept of free range hunting is that the area hunted over is large – often several thousand hectares. An Australian example is hunting in Arnhem Land in the Northern Territory (Australian Buffalo Hunters undated) where the outfitter offers hunting over large tracts of unfenced country. A New Zealand example is given by G.D. O’Rourke and Sons Ltd (undated) whose hunts are conducted in the foothills of the Southern Alps. The client is taken to the hunting site by 4-wheel drive vehicle or helicopter and then stalks the quarry on foot. This outfitter warns that climbing is involved in alpine country up to 2000 m above sea level, that snow may be encountered, and that clients need to be reasonably fit.

“Estate” or “game park” hunting involves breeding and management programs which vary in their intensity. In some cases, the estate approximates a fauna park with many species of animal which may or may not be native to that region. Breeding programs are used to replace animals taken, or to preserve numbers of endangered species, or to develop strains of animal which may have greater appeal to hunters and so improve the profitability of the estate. In other cases, the estate is less intensively managed with hunters having access to those animals which are naturally present on the property and where there is little management of them.

The boundaries between free range and estate hunting can be indistinct. Although the important features of true free range hunting are the size of the area, the difficulty of the terrain, and the less than 100% probability of finding a trophy animal, it is quite possible for a large hunting estate to offer the same characteristics as genuine free range hunting.

The hunting industry is sometimes embarrassed and angered by reports of “canned” hunts. These are where animals are confined within a small area and the “hunter” is given every chance to kill them. This is like “shooting fish in a barrel” and the practice is opposed by conservation and hunting organisations. Some critics of estate hunting liken it to canned hunting, and argue that it is possible to confine an animal by fences even if the enclosed area is several thousand hectares large.

Hunting and conservation

Benefits to conservation from commercial hunting include revenues from government charges as these can be used to offset the costs of maintaining public lands and of hunting law enforcement. Hunting can be used to control the numbers of nuisance animals and to reduce the pressure that excessive animal populations put on their environment (e.g. the white-tailed deer is reaching pest proportions in the USA, Brown 1999). The following expressions of principle, one each from the USA, South Africa and Australia, help to illustrate the hunters' case for relating hunting and conservation:

- “The disquieting thing in the modern picture is the trophy hunter who never grows up, ... who consumes but never creates outdoor satisfactions.” (Aldo Leopold, cited in Miller and Marchinton 1995).
- “In a world based on predation,” (i.e. the world of free-living wild animals) “fee-paying hunters not only do a much-needed job, but also contribute to conservation. This job, which naturally is not to everybody's liking, ought to be done in an ethical and selective way.” ABSA (2003).
- “The aim is to turn shooters into hunters and hunters into conservationists.” (RIDGE Inc; C. McGhie, personal communication).

The contrary view, that hunting is morally wrong, has been put by several conservation groups. “The concept of ecologically sustainable use of wildlife has been criticised ... as a ‘utopian dream pursued at the expense of our natural heritage’, an ‘unrealistic nightmare’, and a ‘polite, non-confrontationist theory’ which is ‘tragic in effect’.” (from Senate Rural and Regional Affairs and Transport References Committee 1988, p.3).

Many hunters and conservationists argue that hunting can be used to control the size of pest animal populations, and to improve trophy quality. The highly-developed game industry in southern Africa is credited with restoring some populations of endangered animals.

When game parks also function as nature conservancies this may improve the chances of rescuing endangered species from extinction. The Arabian oryx is an example. It is considered that this species is endangered in its native environment (IUCN 2002) but it is bred and used as a trophy animal on the 777 Ranch. Freese (1998) comments: “... pressures on wild species and natural ecosystems are becoming increasingly severe. We are reaching a point at which traditional means of conservation, in the familiar guise of protected areas and endangered species recovery programs, are no longer adequate.” The World Wildlife Fund supports commercial consumptive utilisation of wildlife if this will have a conservation benefit (Freese 1998). A Senate enquiry into the commercial utilisation of Australian wildlife recommended that hunting “... has considerable potential to assist with conservation objectives...” (Senate Rural and Regional Affairs and Transport References Committee 1998).

While the commercial safari industry may be less developed in Australia than in some other countries, this is not the case with respect to the industry's involvement in conservation and game management. A recent and valuable development is a management model, implemented by the Tasmanian Government's Game Management Unit, which allows property owners and hunters to coexist to their mutual benefit (property-based game management; Murphy 1995). The Australian chapter of the Safari Club International funds a professional wildlife biologist to represent the Club in international conservation forums (J. Woods, personal communication). The Australian Deer Research Foundation (funded by the Australian Deer Association, a recreational deer hunters' association) and RIDGE Inc. investigate problems relevant to the maintenance of vigorous wild deer populations.

The approaches used in this Report

The aim of this Report is to describe the biological, business, legal, financial and social environments in which the industry operates, and to identify constraints to sustainability and profitability which the industry faces. There are several well-established international examples (or prototypes) of commercial safari hunting. These are described, because they illustrate aspects of hunting which help to inform possible Australian initiatives in wild animal conservation, the relationships between commercial hunting and some forms of animal farming, and the infrastructure and government support needed to underpin a successful commercial industry.

This information will help the industry and government to formulate appropriate policies for the industry.

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2. Tourism and Safari Hunting of Australian Exotic Wild Game

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An important element of any analysis of the viability of safari hunting of Australian feral game must take into consideration the vital role tourism can play in supporting its economic logistics. From a tourism perspective, safari hunting of any kind presents considerable opportunities but with it are concomitant risks. Given that the majority of tourists originate from urban areas it is not surprising to find that many of them have only a limited understanding of rural issues and almost no understanding of the role hunting can play in rural management. One need look no further than to the current political controversy surrounding hunting in the United Kingdom to appreciate the passion such issues engender or to urban middle class support for the political platforms of such organizations as animal rights groups. Notwithstanding these very real issues feral animals can be seen to have touristic interest and lie within the domain of rural tourism which is enjoying increasing interest, both here in Australia, and in many other parts of the world.

Tourism and the rural environment

Before looking in detail at how tourism can specifically help future development of Australian safari hunting it is appropriate that some contextual comments are made on rural tourism first. There are many reasons why rural tourism is a popular and growing pastime. As stated above most tourists originate from urban areas, partly because in the primary tourism generating countries of the world, and that includes Australia, the majority of the population are urban based and partly because it is easier for urban based people to leave their home environment for prolonged periods of days or even weeks. Many rural based people are tied to the land especially when animals have to be cared for on a daily basis. For many urban based people, the rural environment holds particular attraction as something very different from their every day lives and as a sentimental reminder of earlier life styles or ethnic roots. Tourism is also seen by rural communities as a means of financial income and therefore is actively promoted in many cases. Tourism can be seen as a new rural industry providing employment and income in its own right and it can be seen as a supplementary industry adding additional employment and income to traditional rural industries such as farming and forestry. Home hosting, farm tourism and rural bed and breakfasting are just some of the tourism pursuits actively promoted by rural communities. It would be short sighted indeed if Australian safari hunting did not take cognisance of this rapidly growing phenomenon.

Tourism has long been seen as a means of supporting rural communities and of redistributing wealth, earned in urban and industrial areas, to more peripheral regions. 2002, designated the Year of the Outback, and the creation of heritage trails across Queensland in recent years are testimony to political recognition of the benefits tourism can bring to rural and isolated communities. Drivers of rural tourism development have taken place at the Commonwealth, state and territory, and at the local level for many pressing reasons:

- To counter the problem of rural depopulation, especially the population drift to urban centres and to certain coastal belts usually within easy access of major metropolitan centres
- To help alleviate some of the strains placed on the rural economy as a result of globalisation
- To attempt to offset the economic impacts resulting from the vagaries of the Australian environment and in particular the recent droughts declared over much of Australia
- To bring additional income to the rural community, stem the decline of rural services and inject new life into struggling settlements
- To encourage governments and the private sector to improve, upgrade and increase the supply of infrastructure and services to non urban communities.

Recent tourism growth in rural Australia is expected to continue for many years to come. International travellers are showing increased interest in rural and Out Back Australia and are attracted to the continent because of its safe, clean and environmentally friendly reputation. Rural tourism and ecotourism are growing sectors of international travel and Australia is benefiting from strong overseas demand. At the domestic level the natural environment is also a strong attractor both for annual vacations and for longer term travel by the recently retired who like to travel around Australia for periods of many months.

The continued growth of leisure time augers well for the future of tourism. Whilst there has been some reduction in the amount of free time available to people who are in full time employment over recent years, in the life time of a person today, the total amount of free time continues to increase because of earlier retirement and a longer life expectancy. As the population grows and ages there is more potential for tourism than ever before.

Recent growth in four wheel drive off road vehicles and in camper vans provides for further growth in rural tourism. Although many of Australia's four wheel drive vehicle fleet never leave the urban areas let alone metalled roads there are sufficient numbers to spread rural travel geographically further than has traditionally been the case to date.

As governments encourage tourism they invariably improve road access, and road quality has steadily improved in rural and Out Back Australia over the last decade. Increasing segments of road are being up graded and surfaced which encourages more tourism. Heritage trails, way marking and themed routes are encouraging more urban based tourists to venture further into hitherto remote and isolated areas.

Hunting of feral animals should be seen as one component of the growing area of rural tourism. In terms of tourism there are two aspects of feral animal hunting, namely:

- Non-consumptive hunting which can involve observation, photography, lectures, guided visits, and an understanding of ecosystems and nature, and
- Consumptive hunting which involves the actual shooting of animals for trophy hunting, for food or for nature conservation albeit a controversial form of nature conservation to many urban based people.

Hunting with a camera rather than a gun has wide popular support particularly in the area of tourism attraction and requires less discussion than the second form of hunting. Hunting with a gun, is in itself however a long established and in certain places and communities long cherished tradition and can be proved to support nature conservation and control. It is acknowledged that this form of hunting enjoys less popular support with potential urban based tourists but there is potential for further development if carefully handled. Just as there has been growth in the nexus between the wine industry and the tourism industry in the form of Wine Tourism so there is potential between the hunting industry and the tourism industry in the form of Hunting Tourism.

Non-consumptive hunting

Non-consumptive hunting is a popular pursuit which has for many years been within the main stream of leisure and tourism activities. With a recent and steady growth of ecotourism, wilderness tourism and nature based tourism non consumptive hunting has grown steadily in popularity and frequency. A central plank in ecotourism is the tracking and recording of wild animals and birds and whilst indigenous flora and fauna are often the centre of attraction exotic species are not neglected. A greater understanding of ecological concepts is closely related to much ecotourism activity and the role exotic and feral animals plays is an important part. This form of hunting plays no part in population control and perhaps contributes less revenue per tourist but it is relatively non controversial and is a growing tourism sector.

Ecotourism is broadly defined as tourism which has almost negligible adverse impact on the environment and is sustainable in the long run. It tends to attract relatively affluent professional participants who have a strong conservation ethic and are keen to learn about the people and environment of the area visited. They are relatively demanding visitors who are prepared to pay high prices for services but expect the very best service available. Informed guides and lecturers are regularly used and the tourists are often prepared to take an active part in practical conservation. A detailed interest in exotic wild life and an understanding of the interaction between exotic and native fauna and flora would be a topic of potential interest to many in this group. Whilst an understanding of population control fits perfectly within the sphere of interest of this type of tourist the actual killing of animals would not be. Although this might at first sight appear a little illogical it must be remembered that these tourist generally come from urban areas and have a sentimental view of wildlife and population control. It may be alright if one level of the food chain consumes another level of the food chain but it is quite another thing for humans to go out trapping and/or hunting with guns. The vast majority of this type of tourist would not appreciate having any part in hunting and should be kept well away from hunting participants. Emphasis with this tourist type should be focused on the provision of informed information and the provision of opportunities to study wildlife first hand in the field with note book and camera.

Nature based tourism can be considered as a form of tourism focused on natural things but the participants are perhaps less conservation minded and are less interested in actual conservation participation. This group of tourists has some potential interest in feral animals but again the interest relates to cameras rather than traps or guns. This group has a larger following than the true ecotourist.

Adventure tourism is the third group of tourists who would be interested in non consumptive hunting and might in some circumstances be interested in consumptive hunting as well. This group tend to be relatively young and are prepared to pay considerable sums for adventure experiences. Hunting exotic animals is of potential interest but most adventure with this group revolves around sports and outdoor recreational activities such as white water rafting or bungee jumping. This group would not be content to just learn about conservation and population control but would want to be out in the wilds actually doing something.

Clearly there are a variety of tourism types which would be potentially interested in non consumptive hunting and could be looked at seriously when examining potential links between hunting and tourism. Emphasis would have to be on lectures, talks, projects, photography and learning and not on hunting as such. The three groups above can be considered as forming a continuum from the most antagonistic towards consumptive hunting to the least antagonistic with the last group possibly falling over the line towards consumptive activities in some cases. There is potential to put forward responsible hunting philosophies to these groups with a view to educating them on the wisdom of population control via consumptive hunting methods.

Consumptive hunting

Consumptive hunting and tourism have considerable potential with specific groups. It is highly unlikely that most tourists will become hunters but it is easy to turn most hunters into tourists and it is from this angle that tourism and consumptive hunting should be viewed. In many ways a considerable numbers of hunters can already be viewed as tourists albeit that they are not called that very often. Anyone who embarks on a journey away from home base for a period of twenty four hours or more is actually a tourist and many hunting trips involve times of greater than one day. The tourism industry has been slow to capitalise on this potentially lucrative market possibly for fear of putting off tourists likely to take offence at consumptive hunting.

There are many potential advantages in attracting hunting tourists. Hunters generally are prepared to spend considerable amounts of money in pursuit of their interests and this is a potentially very lucrative market segment. Hunters are often looking for specific animal types or hunting environments and are prepared to travel considerable distances to satisfy their needs. The Australian hunting environment therefore cannot be replicated in say North America or South Africa and therefore there is a potential world market to be tapped. Hunting can be used as a very cost effective method of population control whereby the tourist covers much of the control costs in exchange for the hunting experience.

For many tourism organisations to become involved with consumptive tourism however certain safeguards must be strictly enforced. Just as a tourist killing by a crocodile can be very costly to the industry so could a hunting accident or publicity around any thing even remotely conceived as bordering on animal cruelty. Any tourist organisation or company involved in consumptive hunting will have to ensure no adverse publicity eventuates and it may be necessary to segregate both the management and operation of consumptive hunting tourism from other forms of tourism. Segregation of tourist types is not unusual however, because mass tourists and ecotourists are generally incompatible. Segregation can be achieved in one of two ways. Either there is a temporal segregation whereby hunting tourists may use an area at particular times of day week or season and other types of tourist use the same area at other times or specific areas can be set aside for hunting tourists and other areas for other types of tourist. A combination of the two strategies can be adopted where appropriate.

For hunting tourism to succeed both in the non consumptive and consumptive forms close co-operation will be necessary between the two types of operation, namely the tourism industry and the hunting industry. Examples of such co operation can be gained from an examination of the wine industry and the tourism industry. The tourism industry should be able to provide the marketing and distribution networks and the hunting industry should be able to provide possible markets and knowledge on conservation and population control.

For tourism to be able to support feral hunting, closer working relationships need to be developed between the two industries and appropriate areas need to be identified where feral animal hunting can be carried out to the advantage of the hunters, to the advantage of population control and conservation management and to the advantage of tourism industry operators. Serious consideration should be given to setting up a working party comprising all relevant interests to explore future directions for hunting tourism in Australia.

3. The Hunting and Conservation Debate

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Abstract

The sustainable use of wildlife has been advocated as a conservation method able to protect habitats where existing protection methods cannot. Although supported by the World Conservation Union (IUCN) and some conservation scientists, and non-government organisations, it is opposed by animal rights groups, and some animal welfare and conservation groups.

Groups and individuals differ in their interpretations of key terms like “wildlife” and “conservation”. These differences of definitions are responsible for some of the controversy in the debate.

Issues central to the debate on the sustainable use of wildlife are animal rights and welfare, which species could be used and how, and is sustainable use possible? Some who are philosophically opposed to the use of wildlife see indigenous people as having different rights to other humans. Opponents of the use of wildlife see intrinsic values and commodity values as being mutually exclusive in western culture, whereas proponents of wildlife use see the two value systems as being intimately linked.

There is a continuum of opinion about the acceptability of wildlife use. At one extreme virtually no use of wildlife is acceptable, while at the other extreme all uses are. For most people there is uncertainty about where the acceptable becomes the unacceptable. By identifying the boundaries of this unclear area, wildlife professionals and policy makers can gauge the acceptability of wildlife management practices. Human variables will ultimately have more effect on wildlife management than other factors which managers can influence. By using the continuum as a tool in wildlife management, wildlife professionals can take a proactive approach to influencing public attitudes.

Introduction

Humans have relied on natural ecosystems and wildlife for their survival for most of human history (Hudson 1989). This reliance has declined for most humans with the domestication of animal and plant species (Luxmoore 1989). In the last decade, however, there has been a strong push by some conservationists to re-establish more use of wildlife by humans. Worldwide governments, scientists, conservation organisations, animal rights groups and others interested in wildlife management are debating current policies and practices relating to wildlife use.

Labelled as “sustainable use of wildlife” by many, this new direction was described by Hoyt (1994) as the “conservation battle of the decade”. Campbell (1998) describes the current state of play: “Sustainable use of wildlife resources and community based conservation are two themes recurrent in contemporary statements of wildlife conservation policy, and their use is in response to a perceived ‘deep conservation crisis’ which has, in part, arisen from exclusionary and restrictive conservation practices.”

In 1990 the General Assembly of the World Conservation Union (IUCN) noted that the “ethical, wise and sustainable use of some wildlife can provide an alternative or supplementary means of productive land use, and can be consistent with and encourage conservation, where such use is in accordance with adequate safeguards” (Grigg, *et al* 1995). Prior to 1990, conservation equalled protectionism both in Australia and overseas (Webb 1997b).

The protectionist attitude arose largely when conservation organisations and governments responded to overexploitation of wild populations. For example, the conservation movement in the United States grew from sport hunters concerned about overexploitation of wild resources (Benson 1992; Harvey Payne 1989). Doupe (1997) stated “The wildlife conservation movement grew from a concern, often from the exploiters themselves, that wild animals were being over exploited and required management.” The basic tenets of the conservation movement persist even after a century of change. Benson (1992) observed “exploitative activities by the private sector to acquire and manage lands during the 1800s formed indelible images of destruction that are slow to change among wildlife managers and within society.”

Some conservation organisations, government bodies (mostly outside Australia) and scientific groups, have adopted the position of the IUCN that sustainable use of wildlife can be part of conservation strategies and policy. This has been described as a “growing maturity in our approach to conservation” (Grigg, *et al* 1995). “To some this seems like a desperate compromise, but to others it represents a welcomed maturation of the conservation movement” (Hudson, 1989).

The concept of sustainable use may appear to be contrary to traditional protectionist conservation. The World Wide Fund for Nature (WWF 1999) explains that “to use wildlife readily comes to seem ‘to exploit’ it, with all the attendant negative implications”. This is in contrast to a protectionist attitude “which holds that nature should never be interfered with in any way” (WWF 1999). A report of the Senate Rural and Regional Affairs and Transport References Committee (SRRATRC) points out “There is increasing concern that ‘protectionist’ conservation practices are not working particularly well and have become expensive to support while covering only a small proportion of land” (SRRATRC 1998). The differing views on wildlife conservation have been represented in a wealth of literature in the last ten years. SRRATRC (1998) indicates the importance of the issue to the Federal government of Australia. This chapter reviews much of that literature and draws heavily from the findings of the SRRATRC report.

Much of the literature relating to the debate on sustainable use of wildlife focuses on individual animal species. This chapter, although using some examples of individual wildlife species to highlight a point, is focused on the debate itself. Each group in the debate has a particular view based on philosophical ideals, financial situation, ecological knowledge and cultural background. The following questions are explored in this chapter: what are the issues and why are they so controversial, who are the stakeholders and what are their positions? Much of the disagreement between parties in this debate stems from irreconcilable viewpoints making this perspective increasingly important.

This chapter will present first a ten-year retrospective of important Australian conferences and publications related to the debate. The key terms used in the debate are then explored, before the key players and their positions are presented. The main issues identified in the literature are discussed and a continuum of acceptability is proposed as a tool for investigating the reasons behind the controversy. Finally, the discussion section of this chapter presents a proactive approach to the debate that wildlife managers might adopt to address the controversy surrounding the sustainable use of wildlife.

The fundamentals – sources and definitions

Important conferences and publications

Since the 1990 IUCN resolution there have been several conferences and much lively debate within Australia on the issue of ‘sustainable use of wildlife’. The following is a list of some of the important conferences and publications relating to the debate:

- 1991: The Centre for Conservation Biology held its first conference “Conservation Biology in Australia and Oceania”. As part of the conference a workshop “Commercial Use of Wildlife for Conservation” addressed the issue of sustainable use of wildlife. (Pople and Grigg 1994).
- 1994: The Centre for Conservation Biology held a 3 day conference on “Conservation Through Sustainable Use of Wildlife” (Grigg, *et al* 1995).
- 1994: The Bureau of Resource Sciences, identifying a need to provide a national perspective on the opportunities for and impediments to wild animal industries, published *Commercial Use of Wild Animals in Australia* (Ramsay 1994).
- 1995: The Nature Conservation Council of NSW held a conference on the “Sustainable Use of Wildlife: Utopian Dream or Unrealistic Nightmare?”
- 1996: The Australian Institute of Biology held a public symposium “Exploiting our Native Fauna – Culling, Harvesting, Farming?”
- 1996: Publication of *Sustainable Use of Wildlife by Aboriginal Peoples and Torres Strait Islanders*, a Bureau of Resource Science publication.
- 1997: Establishment of the Co-operative Research Centre for Sustainable Tourism, headquartered at the Gold Coast campus of Griffith University. The Centre involves 13 Australian universities, and tourism departments of most of the Australian states. The Centre has published numerous reports on environmental tourism, e.g. Birtles, *et al* (2001), Green and Higginbottom (2001), and Higginbotham, *et al* (2001).
- 1998: The Senate Rural and Regional Affairs and Transport References Committee produced a report to the Parliament of the Commonwealth of Australia, the result of an inquiry into “Commercial Utilisation of Australian Native Wildlife” (SRRATRC 1998).
- 2000: The Royal Zoological Society of Australia held a conference at the Australian Museum on “A Zoological Revolution – Using Native Fauna to Assist in Its Own Survival”.

Other publications are listed in SRRATRC (1998). It can be seen from this list that the debate has been an important issue to the scientific and conservation communities and to the Australian government.

Key terms used in the debate

Words can mean different things to different people. When issues such as the sustainable use of wildlife are debated the concepts represented by a word can become quite fluid. It would appear important that the key words used in a debate are defined so that all parties are debating the same issue. No attempt is made here to narrow down any one word to a specific concept. Rather it is seen as central to an investigation of the controversy surrounding this debate to present the range of concepts represented by the terms. The following definitions explore the range of concepts represented by key words in this literature review.

“Conservation” is defined by the Macquarie Dictionary (Delbridge, *et al* 1991) as: “the preservation of areas which are significant, culturally or scientifically, in their natural state”; “the management of the natural environment to ensure that it is not destroyed in the process of development”; “the preservation or conserving of natural resources”. According to Webb (1997a), a strong advocate of sustainable use, “conservation is the sum total of actions taken to preserve and maintain items to which we attribute a

positive use or value". To many people however, humans are responsible for environmental damage and species loss and therefore conservation means no interference from humans.

Many groups identify themselves as conservation groups, but there is a range of views and goals represented by these groups. SRRATRC (1998) noted what it labelled a "disparity among conservation groups". In the words of Webb (1997b), "The public has come to see conservation, animal rights and animal welfare as the same issue".

The concepts represented by the term "wildlife" may not appear, at first glance, to be hard to define. However, to establish one meaning appropriate to the whole debate is far from simple and, it can be argued, is partly the cause of the disagreement between groups. It is noteworthy that in the literature covering this debate, plants receive very little attention compared with animals. The term "animals" in any biological sense would encompass all living things in the animal kingdom (Dorit, *et al* 1991). Again, the literature covering this debate concentrates most attention on only one phylum, the vertebrates (those animals with a backbone), and virtually ignores the other 20 or so phyla of animals. According to Grigg (1995) "for most people, wildlife is vertebrate and furry or feathery and in need of preservation". However, wildlife encompasses far more than this narrow definition, especially when governments and other institutions are charged with the responsibility of managing wildlife.

Three central questions can be identified in the literature:

- Does wildlife constitute all living things not domesticated, and therefore include animals and plants?
- If a species is husbanded, does it cease to be wildlife? For example, is a farmed emu or crocodile still wildlife?
- Are feral species wildlife, or does the term wildlife refer to native species only? (This should further be explored to examine the role of endemic v. non-endemic but as this question does not appear to be addressed in the literature it will not be discussed here).

These three questions are crucial to understanding much of the controversy surrounding this debate, and therefore further exploration of these concepts is warranted.

The Macquarie Dictionary (Delbridge, *et al* 1991) defines wildlife as "animals living in their natural habitat". Much of the opposition to the sustainable or commercial use of wildlife comes from groups claiming to represent animal rights (Webb 1995; SRRATRC 1998). It is reasonable to infer that these groups define wildlife as animals only. Of interest at this point is that there are no such groups claiming to represent plant rights. AWMS (2000) uses the following definition: "wildlife is used to encompass undomesticated native animals and uncultivated native plants".

In a broader sense then, the term "wildlife" can encompass all animals and plants in a wild state. Certainly some government Acts, such as the South Australian National Parks and Wildlife Act 1972 consider wildlife to include both plants and animals. Although the Federal Wildlife Protection (Regulation of Exports and Imports) Act 1982 does not define the term wildlife, in practice the Act applies in the broader sense to encompass both plants and animals (SRRATRC 1998). The IUCN does not explicitly define wildlife. However its references to wildlife imply that the term means "any native organism that is wild" (Prescott-Allen and Prescott-Allen 1992, cited in Jeffreys 1995). Much of the government and non-government policy on wildlife use is referring to plants and animals while the majority of the opposition to wildlife use is based on animal use only.

Most definitions are quite clear on the distinction between a wild organism and a domesticated one. "Domestication should be reserved for the process which results in genetic adaptation of animals controlled by man" (Hudson, 1989). The question here is what happens when a wild organism is domesticated or a domesticated organism goes wild (or feral as they are often called). According to Dr John Wamsley, founder of Earth Sanctuaries "I do not believe that an animal can be called wildlife once it has been put in a cage" (SRRATRC 1998).

In their discussion on wildlife use Aslin and Norton (1995) note “there are many perspectives in addition to the utilitarian ones usually discussed by biologists, ecologists and resource managers”. Hudson (1989) sees commercial production of wildlife as an acceptable agricultural strategy. Preuss and Rodgers (1995) however believe “wildlife cannot be owned and therefore farmed because the very act of bringing these things under human control immediately removes their wildness”. These views are diametrically opposed and represent the extremes of western perceptions of wildlife.

Are wild animals intrinsically different to domestic animals? SRRATRC (1998) includes many submissions that argued that the use of domestic animals for food was acceptable but the use of wildlife for food was not. Many groups consider wild animals to be sacrosanct and therefore not to be used. According to Hudson (1989) some of the strongest opposition to use of wildlife is generated from the philosophical position that the essence of wildlife is exactly that; wild, and must remain so.

The defining line between wildlife and domestic animals is not clear in law, or in the literature. SRRATRC (1998) found this issue to be important because wildlife, under the Wildlife Protection (Regulation of Exports and Imports) Act 1982, can not be exported live, while domestic animals can be. The report found that the question “When does wildlife become domestic stock?” should be addressed if more wildlife like crocodiles and emus are to be farmed.

There is a lack of clarity about whether wildlife in Australia can be introduced or must be indigenous. The Australasian Wildlife Management Society (2000) defines wildlife as native species only. However many of the research papers published in *Wildlife Research* (journal published by AWMS) deal with introduced species. It would seem fair to assume that the Bureau of Resource Sciences considers wildlife to include both native and introduced species, as their publication examines five industries based on native animal species, and eleven based on introduced species (Ramsay 1994).

A distinction between native and introduced species may relate to the acceptability of using or managing the species. Wilson, *et al* (1992) recognised that sectors within the community thought that native and feral animals should be treated differently. However they concluded, “providing killing methods are acceptable, we can see no reason why native and overseas species should be treated differently”. According to SRRATRC (1998) “because they are exotic animals, feral species are often considered to be inferior to native species and most conservation groups support their eradication”. Notwithstanding this, there can be strong opposition to the commercial use of feral animals. This opposition is based on the view that commercial use creates an incentive to maintain feral species when eradication is desired (Allen, *et al* 1995).

The use of wildlife

All aspects of human interactions with wildlife can be considered to be use of wildlife. Bennett (1995) discusses a range of “non-use uses” of wildlife by Aboriginal Australians. Non-indigenous Australians can have similar non-use uses of wildlife as well. Leaving nature free from human intervention provides value to those in society who believe wildlife should exist for its intrinsic worth alone. This in itself is a use of wildlife.

Use can be viewed as being: commercial v. non-commercial, and consumptive v. non-consumptive. This chapter is concerned mainly with the sustainable use of wildlife, therefore a definition of sustainable use is warranted. In its submission to the Senate enquiry (SRRATRC 1998) the Commonwealth Department of Environment, Sport and Territories suggested two definitions. The first is that sustainable use is “An activity by which human beings derive benefit without reducing the future use potential, or impairing the long term viability, of either the species being used or other species; and is compatible with maintenance of the long term viability of the supporting or dependent ecosystems. It can be applied to both non-consumptive uses such as wildlife watching and tourism as well as consumptive use (subsistence use or commercial harvesting)”. The second definition (citing the IUNS) is that “Use of a population or ecosystem at a rate within its capacity for renewal and in a manner compatible with the conservation of the diversity and long-term viability of the resource and

its associated ecosystems". Webb (1997a) gives a less complex definition, i.e. "To sustain anything is to keep it going. Sustainable use of wildlife is a use of wildlife that is kept going. Conservation is sustainable use."

"Consumptive" and "non-consumptive" use are concepts that for the most part seem to be used unambiguously. Good definitions are given by the Commonwealth Department of Environment, Sport and Territories (SRRATRC 1998): "Consumptive use: An activity by which humans derive benefit from a population or ecosystem by permanently removing organisms or their products from the population or ecosystem concerned." "Non-consumptive use: An activity by which humans derive benefit from a population or ecosystem without permanently removing organisms or their products from the population or ecosystem concerned."

The WWF identifies three types of consumptive use (SRRATRC 1998, p.12):

- Industrial or mechanised large-scale use of wildlife and wildlife products (mainly fisheries and forestry).
- Small-scale, semi-traditional and opportunistic consumption (localised around a particular species or ecosystem and not highly mechanised).
- Subsistence and non-commercial use.

Much of the opposition to sustainable use of wildlife is opposition to consumptive use (mainly of animals) because of the many examples of overexploitation of wildlife or animal welfare issues (Hoyt 1994; Pittcock 1995; Preuss 1995; ACF 1996).

"Non-consumptive use" and "ecotourism" are often used interchangeably in the literature. Hoyt (1994) describes ecotourism to be truly sustainable use of wildlife. One difference Hoyt (1994) claims between consumptive use and ecotourism is that revenue earned by consumptive use does not stay in the local community, whereas that earned by ecotourism does. Goodwin (1995, cited in Croft 2000) refutes this, claiming that in some cases 80 to 90% of ecotourism revenue goes elsewhere. Both agree that if not carefully controlled, ecotourism can have negative impacts.

Woodside (1995) states "ecotourism by definition is sustainable use of wildlife but by application is often a disaster" and "there are already far too many examples where poorly managed tourism has destroyed wildlife populations, their habitats and the human settlements that depended on them". A submission to SRRATRC (1998, p.11) by the Chief Executive Trustee of the African Gamebird Research Education and Development Trust claimed there is no difference between consumptive or non-consumptive use. "All forms of use are correct provided that they are sustainable." What is clear is that both consumptive and non-consumptive uses can have negative impacts on wildlife populations and become unsustainable, especially when they are commercial in nature.

SRRATRC (1998, p. xiv) defines commercial utilisation of wildlife as that which "encompasses a spectrum of activities, ranging from high intensity use such as farming of animals and the manufacture of products from those animals, to low intensity, supportive management of wild populations for benign purposes such as ecotourism". The report lists the following commercial uses: hunting, harvesting, ranching, farming, ecotourism, floriculture and horticulture, aviculture, mariculture and aquaculture, and subsistence use. The report also makes the point that "generally intensive farming makes the least contribution to wildlife conservation and maintenance of biodiversity and harvesting, ranching and hunting the most, if they result in habitat retention".

It has been the commercial incentive that has driven many wildlife users to over-use the resource, such as the over-harvesting of old-growth forests and the collapse of some fisheries. Economic, rather than biological, factors caused whaling in Australia end (Lander, *et al* 1994, cited in Croft 2000). Woodside (1995) claims that it has also been the commercial drive behind many ecotourism enterprises that has caused problems for wildlife. On the other hand, it is the commercial aspect of

sustainable use that proponents argue provides the incentive for landholders to conserve wildlife on their properties. Hale and Lamb (1997) recognised that the reserve system in Australia will at best only ever represent a small proportion of the total landmass. If there is to be any conservation of wildlife outside of the reserve system there needs to be a commercial incentive for this to occur.

There is opposition to some non-commercial uses of wildlife. Conservation groups generally oppose recreational hunting (Jeffreys 1995), often on animal rights or animal welfare grounds.

Key players

Governing bodies

These institutions are the ones that make policies and law affecting wildlife use. They regulate what may be done legally within countries and around the world. They are also the groups responsible for the policing of regulations both internationally and nationally.

The World Conservation Union (IUCN) is the world's largest group of environmental scientists and is the chief scientific adviser to CITES (Pearce 1997). Much of the literature relating to the conservation and sustainable use debate states that the IUCN's 1990 resolution was instrumental in changing the direction of the debate (Bridgewater 1995; Grigg, *et al* 1995).

The Washington Convention on International Trade in Endangered Species of Flora and Fauna (CITES) was set up in 1973 to protect endangered species and to control trade in these species. Most nations are signatories and are responsible for enforcement of the CITES provisions in their jurisdictions.

The Australian Commonwealth Government has no constitutional power to control the use of wildlife within Australia (Section 92 Australian Constitution). However, the Wildlife Protection (Regulation of Exports and Imports) Act 1982 gives the Government power to control the import and export of wildlife and wildlife products. Because of this power the Government has an overriding influence on any wildlife use that is dependent on exports. The Australian Customs Service is responsible for the enforcing the Wildlife Protection (Regulation of Exports and Imports) Act 1982 with the assistance of the Australian Federal Police.

There are three national strategies, endorsed by all Australian governments, which influence the use of wildlife in Australia. The first is the National Strategy on Ecologically Sustainable Development, which derives from the 1987 World Commission on Environment and Development. Ecologically sustainable development "means using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained and quality of life for both present and future generations is increased. It requires changes in the nature of production and consumption so that they can better satisfy human needs while using fewer raw materials and producing less waste." (Department of the Environment and Heritage 2002). In the National Strategy for the Conservation of Australia's Biological Diversity (Department of the Environment, Sport and Territories 1996) it is noted that "Some exotic grazing species pose a continuing threat to rangelands biological diversity. Pastoral activities, particularly the increase in watering points, and pastoral modification have increased the suitability of pastoral lands for some pests (feral goats, rabbits and horses) as well as increased the populations of some kangaroo and wallaby species. The uncontrolled increase in the number of grazing animals will have significant impacts on present and future biological diversity." The National Principles and Guidelines for Rangeland Management (ANZECC/ARMCANZ 1999) were announced in 1999. While not mentioning exotic wild animals *per se*, the Report notes the degradation of Australia's rangelands. The presence and effects of some exotic species contribute to this.

Australian state and territory governments are directly responsible for legislation controlling most wildlife use in each state. This is usually implemented through state National Parks and Wildlife Services or state departments responsible for primary industries or natural resources.

Other groups involved in the debate

There are, of course, many other groups involved in the debate. Non-government conservation groups are powerful players in the debate on sustainable use of wildlife (Jeffreys 1995). They influence government policies and public opinion both globally and at a national level. Much of their power is based on their ability to sway the voting public's opinion through media campaigns. They range in size from large, international, well-funded and well-known groups such as the World Wide Fund for Nature (WWF), to local groups with a handful of members such as Australians Against Commercialisation of Wildlife. Some receive financial support from government, e.g. the Royal Society for the Prevention of Cruelty to Animals (RSPCA). Table 3.1 provides a short list of some of the more prominent players and their position in the debate.

Indigenous people are a significant group who are discussed in a subsequent section. No less important, but not discussed further in this chapter, are the commercial operators involved in wildlife use, birdwatchers, fishers, recreational hunters, bushwalkers, and the general public. All people in Australia influence the use of wildlife even if they are not actively involved in the debate. The food we eat and the goods we produce all impact either directly or indirectly on wildlife. This is one aspect of the debate not covered in the literature.

Table 3.1. A short list of non-government organisations involved in the sustainable use of wildlife debate.

Organisation	Comment
World Wide Fund for Nature (WWF)	World's largest independent conservation organisation. Conditionally agrees with commercial consumptive use of wildlife (SRRATRC 1998; WWF 1999).
Humane Society	One of the world's largest animal protection organisations. Against any consumptive use of wildlife (Kennedy 1995).
Animal Liberation	Australian state branches are independent but have similar policies. The Victorian branch's statement of purposes includes: to abolish the property status of animals; to abolish, and not merely regulate, institutionalised animal exploitation; to abolish human's speciesist attitudes and practices (Animal Liberation Victoria undated).
Australian Conservation Foundation (ACF)	Opposed to commercial consumptive wildlife utilisation (ACF 1996).
Wildlife Preservation Society of Australia	Conditionally agrees with commercial consumptive use of wildlife (SRRATRC 1998).
Wildlife Preservation Society of Queensland	Opposed to commercial consumptive wildlife utilisation (SRRATRC 1998).
Wildlife Protection Association of Australia Inc. (WPAA)	Opposed to consumptive use of animals (WPAA 2000).
Nature Conservation Council of NSW	Conditionally agrees with commercial consumptive use of plants and animals except mammals, birds, reptiles and amphibians; accepts culling of kangaroos but not export of kangaroo products (SRRATRC 1998).
Royal Society for the Prevention of Cruelty to Animals (RSPCA)	Primarily concerned with welfare issues; does not oppose control of native species provided conditions are met (RSPCA 2002).

The scientific community

Members of this group usually work in conservation or wildlife research. Their influence is through publication and presentation of their work. Government agencies and non-government organisations employ many members of the scientific community either directly or as consultants. Many represent universities, museums, zoos or private companies. Two science-based societies active in the debate are the international "Wildlife Society" and the "Australian Wildlife Management Society".

Issues relevant to the sustainable use debate

Animal rights?

This is a crucial factor in the debate. Animal rights groups have become key players in this debate. They have been successful in influencing the public and this success has ensured that the animal use debate remains on the public agenda.

For those who are philosophically opposed to any use of animals by human beings then the debate stops right here. If no use of an animal is acceptable, including non-consumptive uses like keeping pets (Animal Liberation 1999) then consumptive uses are clearly out of the question. Singer (1995) considers use of non-human species as “speciesism, a moral failing that is parallel to racism, because it attempts to put a morally crucial divide in a place that is not justified on any basis other than a preference for ‘us’ over ‘them’.” SRRATRC (1998, p.21) received submissions from eight groups basing their objection to consumptive use primarily on the basis of animal rights. Many of the opponents of consumptive use (for commercial or non-commercial reasons) base their argument on the principle that animals are sentient beings and humans do not have a right to deprive them of their existence. “It is unclear how rights equal to that of humans can be projected onto large animals, how can they apply to other life forms” (Hudson 1989). SRRATRC (1998, p.16) points out that “it is difficult to sustain an ethical argument based on a graduation in the intrinsic worth of a species. At its crudest it seems to be an argument about which species is more cuddly.”

Many who object to the sustainable use of wildlife cite cruelty as a reason, e.g. Australian Conservation Foundation policy no. 61, section 2.10 (although this part of the policy refers to native animals only; ACF 1996). Many opponents to the use of wildlife such as the International Wildlife Coalition (Newman 1992) link animal welfare and conservation. The following excerpt from a letter to Nature Australia (winter 2000) is indicative of many peoples’ opinions: “Harvesting kangaroos, just like the harvesting of any species on this planet, never is ecologically sustainable. The species harvested is always a victim of suffering and abuse, and becomes endangered if not extinct thanks to human greed.” These opinions are raised in public forums such as radio talk back shows and letters to newspapers and magazines. The Wildlife Protection Association of Australia issues *pro forma* letters of this type for its members to send to management agencies and members of government (WPAA 2000).

The RSPCA, Australia’s leading animal welfare group, is opposed to the slaughter of native species because of the potential for cruelty. However, their policy does not exclude the use of Australian native species as long as a list of conditions is met, including the proviso that “any management practices and any methods of killing utilised are humane and appropriate” (RSPCA 2002). RSPCA acknowledges that shooting by commercial hunters may be a humane method of killing wild animals (RSPCA 2002). The Nature Conservation Council of NSW policy on feral animals states “unnecessary cruelty should be avoided but all killing includes some pain and this must not be used as an excuse to discontinue the control of problem species” (NCC 2002). Despite this, many object to the commercial hunting of animals. According to Grigg (1997) “The philosophical divide between those who find shooting acceptable and those who do not is irreconcilable”.

As long as there is a demand for animal products in Australia, wild and domestic animals will be used and many will be killed. Most animal industries in Australia, including those which use wildlife, have codes of practice that acknowledge animal welfare issues (Ramsay, 1994). According to SRRATRC (1998) “The concept of ‘animal welfare’ recognises that utilisation of animals occurs and seeks to minimise cruelty towards them and thereby prevent pain and suffering”.

Can sustainable use have a positive conservation benefit?

Many of the proponents of sustainable use of wildlife point to the possible conservation benefits that can and do occur when wildlife use competes with traditional land uses in a self-funding way. The opponents however discredit the claimed benefits because of the consequences of a worst-case scenario. Willers (1994), for example, states “while there is a lot of rhetoric in the debate on sustainable use, there should be no illusions. Exploiting wildlife solely for profit will carry the risk of extinction, even under the guise of conservation”.

SRRATRC (1998, pp.xiii-xiv) lists the following benefits that can arise from sustainable use of wildlife:

- Conservation of the species under use
- Provision of incentives for private landholders to retain and rehabilitate natural habitats.
- Providing alternatives to illegal trade in wildlife.
- Increasing amount of information gathered about the commercialised species.
- Providing financial returns from wildlife industries which may be used to assist other conservation objectives.
- Returning ownership of wildlife to the people who own the land, which may result in social and cultural benefits.
- Providing opportunities to broaden the income base of rural businesses.

Much of the discussion among the proponents of sustainable use centres on what species are suitable for consideration. The ecological reality is that virtually any species can be used sustainably, even in a consumptive way, if harvest rates are below natural increase rates (Caughley and Sinclair 1994). According to Bomford and Caughley (1996) “the critical issue for wildlife conservation is managing the rate of use”. A sustainable use approach to commercial operations attempts to ensure a profitable return within the ecological limits of the species. There is an increasing amount of scientific data on the safe limits for use of wildlife (Caughley and Sinclair 1994).

The rights of indigenous users

For indigenous peoples there are economic, nutritional, religious and cultural reasons to use wildlife. It is not debated that indigenous people have used wildlife for thousands of years, and where their culture continues, still do so (Wilson, *et al* 1992; Cleary 1995; Bomford and Caughley 1996). What is debated is whether indigenous use of wildlife should continue. At present many laws limit the extent of aboriginal hunting and gathering in Australia (Cleary 1995). Many conservation groups believe Aboriginal Australians should not use threatened species (Bennett, 1995). There is also an opinion that harvesting by Aboriginal people should not involve the use of modern technology such as rifles, motor vehicles, etc. However as Bomford and Caughley (1996) point out, in conservation terms it does not matter how an animal is killed but how many are killed.

What is important is the benefit to indigenous people of a sustainable use policy. Many aboriginal people live in remote areas where access to conventional employment opportunities is limited. These people may have access to abundant wildlife resources (Altman, *et al* 1996). The Commonwealth Government is committed to improve the economic wellbeing of Aboriginal people in Australia. For these reasons sustainable use of wildlife for both subsistence needs and commercial activities will remain a key policy issue in environmental management (Altman, *et al* 1996).

Is sustainable use possible?

Many of the arguments against sustainable use claim that no consumptive use of wildlife is sustainable. According to the Humane Society “The biggest problem with consumptive sustainable use, simply put, is that it is not sustainable – after a while, you begin to run out of animals to use” (Hoyt 1994). Pittock (1995) is not opposed to sustainable use on a global scale but believes that Australian governments are not “mature enough” to manage new wildlife industries given the history of over-exploitation in the fishing and timber industries in Australia. The ACF (1996; section 2.4) claims that “No existing commercial use of a wild stock, in particularly those harvested for export, can be demonstrated to be ecologically sustainable. Market demands create unacceptable pressure to exceed the ecologically sustainable yield of harvested species.”

The proponents of sustainable use would argue that it is about creating conservation benefits (Webb 1995). This is achieved by attributing to wildlife an economic value so that natural habitats may compete on an equal basis with other land uses that already have a clear economic value (SRRATRC 1998). The difference between sustainable use and the over-exploitation of natural resources is that sustainable use complies with ecologically sustainable development principles. As such, sustainability of the resource is of prime consideration and prevents over-exploitation (Lunney 1995).

There are many examples in the literature where proponents claim that sustainable use is not only possible but is occurring. There are some examples of the sustainable use of high-profile, native Australian vertebrates. These include kangaroo harvesting (Alexander 1997), crocodile ranching (Webb, *et al* 1996; Webb 1997a), recreational hunting (Cause 1995; King 1995; McGhie and Watson 1995; Murphy 1995), muttonbirding in Tasmania (Skira 1996), and emu farming (Ramsay 1994; Langdon 1997).

Many of the papers dealing with the debate on sustainable use assume that wildlife has an intrinsic value different to that of domestic species. Intrinsic value can be defined as something good or desirable in itself (Singer 1995), while instrumental values are those valued as a means to another purpose. SRRATRC (1998) found that there is strong support in Australia to protect wildlife for its intrinsic value because it was perceived to be morally correct. There is a view that if we put a monetary value on wildlife it will lose its intrinsic value. Pruess and Rogers (1995) argue that to put human control on wild life is to take away its wildness. Webb (1995) counters this argument with the point that use and value are intimately linked. What is of intrinsic value to some will not be of intrinsic value to all. For this reason he suggests that in a world where tolerance of different cultures and values exist, intrinsic values alone will not alter the instrumental values held by others.

The continuum of acceptability

There are many inconsistencies within community attitudes towards the use of wildlife. Wilson, *et al* (1992) observed that it was widely acceptable to harvest abundant populations of marine vertebrates but far from acceptable to harvest abundant populations of terrestrial vertebrates. There is a “continuum of acceptability” (Fig. 3.1). At one extreme are uses of wildlife which may be considered to be apparently non-consumptive and non-intrusive, and at the other are uses which are held to be consumptive and possibly detrimental to the species.

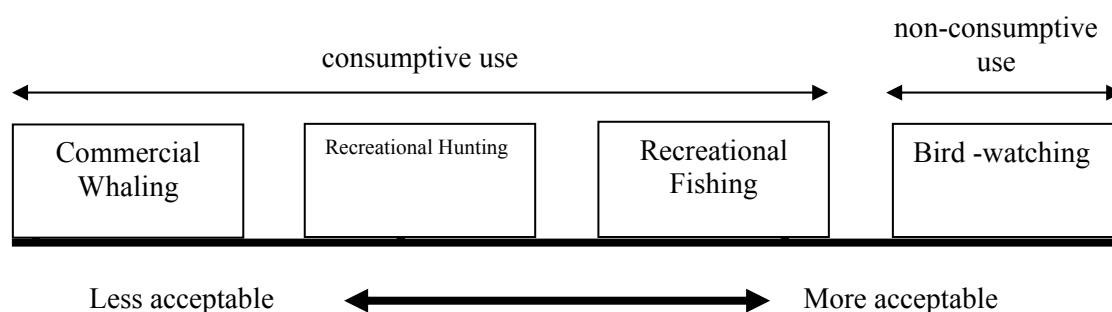


Fig. 3.1. Continuum of acceptability.

Most groups or individuals seem to have examples of uses which, to them, are clearly acceptable or clearly unacceptable. Some participants in the debate suggest there must be a conservation benefit for a consumptive use to be acceptable (Grigg 1995). Some state that only non-consumptive uses such as ecotourism are acceptable (Hoyt 1994). If the outer limits of this unclear area could be defined, policy makers and wildlife managers could better gauge the acceptability of their policies and actions. Aslin and Norton (1995) outlined ways that Australian attitudes to wildlife can be studied, but noted that there had been limited work carried out in Australia to date. One survey on the acceptability of unconventional meats helps to clarify what is acceptable and what is not (Table 3.2).

One would expect each group or individual to be able to define a particular use as determining the limits of what, to them, is acceptable or not. However, there is often not so much a point of acceptability, as an area where most groups and individuals will struggle to place a particular use as acceptable or not. As suggested by the Australasian Wildlife Management Society (2000), it is probably necessary to discuss wildlife use case by case.

Table 3.2. Percentages of a national sample of 517 Australians expressing strong or moderate disapproval of the production and sale of meat from particular animals (Freeman and Kellert unpublished, cited by Aslin and Norton 1995).

Source of meat	Proportion of the Australian public expressing strong or moderate disapproval (%)
Kangaroo	48
Wildfowl	49
Deer	50
Horse	72
Seal	89
Whale	93

The reasons for this lack of clarity are touched upon throughout the literature. The public's familiarity with, and its emotional response to, an animal species may influence public attitudes towards wildlife use. "There is clearly a hierarchy of intrinsic worth for wildlife in Australia – the 'warm cuddly' syndrome where mammals, and particularly the most attractive mammals to humans, are deemed to be of greater intrinsic worth than, say, reptiles or frogs." (evidence to SRRATRC 1998, p.3). The distance between an increasingly urban population and the ecological impacts of that existence also appear to play a role. Hudson (1989) states "Popular support for the conservation movement comes largely from those whose survival needs are fully met and whose contacts with nature are mainly recreational".

The continuum of acceptability highlights the obstacles facing those charged with conserving ecosystems and habitats. For example, the culling of an introduced mammal to preserve habitat: control of rabbits is widely acceptable, the control of introduced koalas on Kangaroo Island is very unacceptable. Harvesting of kangaroos is very controversial with much opposition, while farming of emus is far less controversial despite some opposition. Hudson (1989) noted that the four main types of consumptive uses of ungulates: hunting, herding, ranching and farming, lie in a continuum from those that impact on ecosystems (and therefore biodiversity) lightly, e.g. hunting, to those that impact greatly, such as farming. In some societies (possibly including the Australian) the continuum of acceptability runs in the opposite direction. That is to say, of the consumptive uses of large animals, those with the least impact on habitats are the most publicly unacceptable and *vice versa*.

Discussion

There may be few ecological reasons not to use wildlife sustainably, but the impacts of any wildlife use need to be managed to optimise the ecological outcome. Although the literature is full of examples where an exploitative policy has failed to deliver a positive conservation outcome, the literature is also full of examples where a protectionist conservation policy has failed to deliver a positive conservation outcome. More than any other factor it is the human dimension of wildlife management that has been a barrier to the desired outcomes for policy makers and managers, and for the wildlife.

Much of wildlife management is reactive to public opinion. For example, in 1996 the number of koalas on Kangaroo Island (an introduced species to the island) greatly exceeded the carrying capacity of the available habitat. The Australian Institute of Biology Inc. provided an ecologically workable solution to this problem that included reduction of the population through culling. Culling, however, was unpopular with many in the community and was rejected by the South Australian government (see Davies 1996). The Koala Management Task Force was faced not only with the problem of managing the habitat or wildlife on the island, but also of managing the public reaction to any management procedures. Failure to act on control of introduced animals in Australia will pose a serious threat to habitat management and biodiversity. Wildlife managers need get this message across to the public as

effectively as the animal rights message is being conveyed. Not to do so is to reduce the available management options in years to come, to the detriment of habitats and species.

In essence we are all consumptive users of wildlife. Our very existence as human beings requires that we deny other living things a place to live so that we may have shelter. The production of most of our goods and foods impacts in negative ways on wildlife. To overlook this fact while attempting to influence wildlife management policies borders on hypocrisy.

Hoyt (1994) believes “promoting reverence and respect for animals is incompatible with regarding them as sources of revenue, to be killed and sold”. Opponents to the use of wildlife appear to share this view. It is perhaps a view that comes from being disconnected and insulated from the natural world that supports us as a species. As an example, Aboriginal peoples have a totemic relationship with native animals, but also use these for subsistence (SRRATRC 1998, ch. 20 *loc. cit.*). This plurality of perspective is not confined to indigenous people. Aldo Leopold, co-founder of The Wilderness Society, father of the “Land Ethic” and a forester and passionate hunter argued that respect for animals and sustainable use can be intimately linked.

Human variables will ultimately have more of an effect upon conservation policy than will anything else (Ludwig, *et al* 1993, cited in Webb 1995). It is for good reason that Millar and Marchinton (1995) quote the axiom “Wildlife management is people management”. Wildlife and conservation professionals in Australia need to develop a system of managing public opinion as an integral part of conservation.

The logical first step would be to monitor public opinion (and the opinions of those within the conservation industry) about the current positions of forms of wildlife use on the continuum of acceptability. Beyond simply monitoring public opinion and responding in a reactive way however, there is a need for wildlife managers to take a proactive approach to influencing public opinion. Aslin and Norton (1995) consider that most people understand very little about ecological relationships and interdependencies. SRRATRC (1998) noted that there was a lack of informed debate into sustainable use of wildlife. This more proactive approach to wildlife management is not widespread in Australia but does have its proponents. Burke (1993, as cited in Aslin and Norton 1995) for example states “A massive campaign to enhance ecological awareness in Australia is called for, along the scale and intensity of the QUIT or AIDS campaigns”. The message required is far broader than just presenting the plight of “cute and cuddly” animals like the bilby. A full appreciation about the realities of ecological interactions is needed, including the unpleasant ones. This is not to suggest that cruelty to animals be promoted as a necessary feature of wildlife management. However, it is important for the public to appreciate that the needs of a habitat should override those of individual animals in conservation decisions.

There are several issues which should be addressed when integrated policies for conservation in this country are considered:

- The focus of the debate on sustainable use should be centred on habitats and shifted away from high-profile vertebrate species. The concept of wildlife should encompass far more than those few species which generate an emotional response in humans. Conservation law, policy, management and the public perception should reflect this. By promoting this broader perception of wildlife, many of the inconsistencies resulting from a species-by-species policy approach should be avoided.
- A possible commonality between intrinsic and resource values should be further examined. Wildlife managers should promote the duality of valuing wildlife and using it as a resource, as not only possible in the broader community but vital to the conservation of habitats in private ownership.
- The Australian community readily accepts the use of domestic species for the bulk of our food and fibre requirements. The production of these commodities is in many instances detrimental to wildlife. This hidden side to the debate on wildlife use should be exposed. A community that is aware of their indirect impacts on wildlife may be less critical of wildlife managers using direct

intervention techniques (like sustainable use or pest management) as part of conservation management.

So much of the popular concept of conservation is based on emotional images like the saving of whales and rainforests. These things are valuable because they stimulate public sentiment and get people thinking about “the environment”. However, they represent a fraction of the issues that need our attention if we are serious about conserving biodiversity. The challenge for wildlife managers in the next decade is to expand the public concept of wildlife and their role as managers in the system.

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4. International Prototypes

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South Africa – a developed game hunting industry

South Africa has an incredible variety of game – some 300 different species of mammals (ABSA 2003) – and this forms the basis of a valuable tourism industry. Wild game is found on both public and private land. Those on public lands are managed by national or provincial government agencies; of particular importance is the national government agency, South African National Parks (R. Markham, personal communication). There are also several community programs, such as the Lebatlane Community Game Management Program in South Africa and the well-known CAMPfire program in Zimbabwe, which involve indigenous communities in wildlife management (CEP undated).

The wildlife touristic experience has several different forms. There is non-consumptive eco-tourism, and consumptive uses which include conventional hunting for trophies and a new form of “hunting” in which the animal is chemically immobilised with a dart gun and remains restrained while the hunters are photographed with their “trophy” (Bartels 2001); also called “green hunting” (L. Radder, personal communication). While most wild species are used for hunting, particular attention is paid to the “big five”, i.e. leopard, buffalo, lion, rhinoceros, and elephant.

Commercial hunting

“The South African hunting industry dates back to 1945 when the first game-proof fence was erected on private land in the Dwaalboom area (Anonymous 1996). Paid-for hunting only started in 1960 when hunters started paying for the opportunity to shoot game (Anonymous 1999). Before 1960 no economic value was hence attached to game, and family and friends were invited to ranches for free hunting trips. Hunting was considered merely as a recreational activity to be enjoyed by anyone who had the time and the inclination to hunt (Van Niekerk 2002), so our industry is therefore still fairly young and is only really now starting to develop commercially.” (L. Radder; personal communication):

Commercial hunting is done under the aegis of safari hunting companies, and many clients are international visitors who wish to take trophy or representative animals. Big game hunting supports those who work as professional hunters and outfitters, and also people who work in associated industries like taxidermy and the hospitality industry. It provides some farmers with a useful income stream, to the extent that in some regions game ranching has replaced cattle and sheep farming as the more profitable agricultural activity. The major activities of game ranches are hunting and ecotourism, as well as the breeding and sale of game animals, and they may be associated with animal refuges or zoos. These enterprises are carried out under a number of national laws and regulations, which are designed to minimise the impact of the enterprise on the local environment and to maximise animal welfare and productivity.

The value of game ranching and its associated hunting and meat production activities is about R840 million annually. Of this, game capturers earn R40 million, professional hunters (i.e. the people who guide hunters and organise the hunt generally) earn R50 million, and meat production is worth R10 million (Eloff 2001). Hunters spend about R100 million annually on daily fees and R220 million on trophy charges (H. Olivier, personal communication). There is additional expenditure on airfares (70% of international hunters use South African Airway; H. Oliver, personal communication), taxidermy, shopping, additional touring, taxes, etc.

According to H. Olivier (personal communication), about 3500 foreign hunters purchased safari hunts in South Africa in 2000. The 150 active South African hunting operators catered for an average of 23 foreign hunters annually, and most sold between 50 and 149 actual days hunting. Most hunters (1318) came from the USA, followed by France, Germany, Spain and Norway. Eighteen Australians purchased South African safari hunts in 2000. Each of these hunters was, on average, accompanied by another, non-hunting tourist, and 47% of the hunters participated in tourism experiences additional to their hunting trips. The daily rates charged by the professional hunters were approximately USD325 per day. Additional trophy fees averaged US\$899, at an average of seven trophies per hunter.

Game farming and game ranching

Commercial safari hunting often takes place on privately owned hunting estates, where game species are managed more-or-less intensively on an enclosed area of land. Other enterprises, which overlap with the hunting estate classification, are game ranches and game farms. As well as offering hunting opportunities, these enterprises breed animals to replenish hunting reserves, and produce game meat for export markets. Game farming is the more intensive activity of the two and resembles the deer farming industry in Australia (J. Skinner, personal communication). Game ranches “are large fenced or unfenced, privately owned or communal areas on which game is extensively managed for direct utilization of wildlife products, such as by hunting, live game sales and tourism, and for indirect utilization”; a game farm is a “small fenced area on which wild animals are managed intensively for the production and harvesting of marketable products” (Du Toit 2002).

Commercial hunting is thus supported by a sophisticated infrastructure of tourism facilities, replenishment of stock on hunting estates from purposely-bred game animals, techniques for the translocation and management (feeding, fencing, veterinary treatment, etc.) of the animals, and research and training programs to provide the intellectual backing for these activities.

The game ranching industry is intimately connected with the commercial safari hunting industry, through its provision of (ABSA 2003 guided hunts and the associated accommodation, hospitality and outfitting activities, and the breeding, sale and translocation of live animals to stock game parks. Game ranches and farms are also involved in “venison” production and its domestic and international sale (note that “venison” in the South African context means meat produced from native ungulates generally; it is not confined to meat from cervids).

In 2000 there were 5061 game ranches (Eloff 2001) and another 4000 farms where game and conventional livestock are farmed in different areas of the same farm (ABSA 2003). Eighty percent of game ranches are privately owned (R. Meyer, *pers. comm*), and about half are owned by professional people who run them on a part-time basis (ABSA (2003). Half of all game ranches are located in the north of the country (Limpopo Province, Eloff 2001). The main game areas are in Limpopo, North West, Mpumalanga, Free State, and Eastern Cape Provinces, the Karoo, the Kalahari in the Northern Cape Province, and the thorn scrub of KwaZulu-Natal Province (South Africa Yearbook 2002/03 2002b). Game farms and ranches cover some 13% of the total land area (over 10 million ha, Eloff 2001), compared with 6% for all officially declared conservation areas, and 3% for national parks (ABSA 2003). The number of game ranches and farms has increased by 20% per year between 1990 and 2000 (R. Meyer, *pers. comm*). In economic terms the rate of expansion has been about 5% over this period (ABSA 2003). Growth in the industry has largely been in response to increasing demand for trophies and meat (Ministry for Agriculture and Land Affairs 1998). Average auction prices for game animals have increased in each of at least five years of the decade 1990-2000 (Eloff 2001).

Game ranch planning and management are governed in South Africa by three important Acts: the Development Facilitation Act 1995, the Environmental Management Act 1998 and the Environment Conservation Act 1989 (Conroy, *et al* 2001). The main legislation is the Environmental Management Act 1998 (South Africa Yearbook 2002/03 2002a). National legislation gives over-arching control of land and animal resource use, but each province may make its own laws dealing with hunting, fishing and the protection of fauna and flora.

However, the Act requires that national and provincial departments must compile Environmental Implementation Plans and Environmental Management Plans. These provide a legal framework for environmental development. CITES regulations are enforced by the National Department of Environmental Affairs and Tourism and the relevant provincial authorities.

The ownership and use for private gain of game animals in South Africa are subject to the provisions of the Game Theft Act 1991. The Act deals with situations where game is lured away or otherwise removed from its lawful owner. Wildlife which is not mentioned in the Act is held to be *res nullius*, i.e. not owned by anyone unless controlled by an individual with the intention of taking ownership (Department of Environmental Affairs and Tourism 1997).

A comprehensive discussion of the complex legal situation regarding the ownership and use of South African wildlife is given by Bürgener, *et al* (2001), and of the law relating to animal welfare by Shroyer (2001).

Game farming is classed as an agricultural activity. Farms and ranches are established under a commercial licence which allows the owner to operate the ranch in a fully commercial manner (R. Markham, personal communication). This includes permission to take animals over the whole year, in contrast to non-exempted properties where animals can be killed only between April and October, outside the breeding season (H. Olivier, personal communication). Such properties are “exempted”, a status conferred after inspection by provincial authorities (Eloff 2001). Intending game ranchers must conform to an application procedure which involves developing a scoping report which is put out for public comment and/or objections, and is used to develop an environmental impact assessment (R. Markham, personal communication). Baseline cadastral, biotic, abiotic, anthropological, and historical data for the proposed development are required (Conroy, *et al* 2001). Factors which may be considered by the authority issuing the exemption licence include: access to the ranch, the geological and soil characteristics of the proposed lodge site (e.g. the stability of the soil and the possible presence of economic minerals resources), the types of flora and fauna at the proposed ranch site, the nature of human land use in the surrounding region, and the effects of possible generation of smells, noise and visual impacts of the lodge site. Zoning is also considered, e.g. hunting or game drive zone. Other factors include siting of rest camps and roads, and fencing to secure the perimeter of the ranch. Details of the permit process are given by Conroy, *et al* (2001). Game ranches are subject to some inspection by provincial agencies (R Markham, personal communication), especially if non-local game species are to be imported, when there is an assessment of the suitability of the ranch for that species.

Productivity, profitability and the biological sustainability of game ranching

Game ranches and farms are viewed as “conventional” agricultural enterprises by financial institutions and there is no bias against providing financial support for these provided that they can meet normal prudential requirements (H. Olivier, personal communication). According to the South Africa Yearbook 2002/03 (2002b) the six major sources of credit for game farmers are: banks (37%), agricultural co-operatives and agribusinesses (15%), the Land Bank (32%), private creditors (7%), other creditors and financial institutions (6%) and the State (3%).

As stated earlier, many game ranches/farms are mixed enterprises where game and conventional livestock ranching are carried on conjointly. In the study of Radder, *et al* (2000) of kudu hunting in the Eastern Cape, only 55% of farmers who were involved in game ranching made much attempt to manage their animals. On average, farmers obtained less than 50% of their income from game and most of this was from guiding parties of biltong hunters (people who hunt for meat for their own use). Farmers’ attitudes towards their game animals were often affective rather than financial – the most common reason for having game was that “It is nice to have game on the farm”. More generally, South African game farmers and ranchers obtain their income from trophy and venison hunting (60 to

65%, ABSA 2003; or 80%, R. Meyer, personal communication), ecotourism (5 to 10%) and the remainder from live animal sales.

The profitability of these enterprises varies. Many properties are quite small (ABSA 2003) and are not economically or biologically viable. However, the profitability of some enterprises can be impressive. Detailed costings for game ranches of different carrying capacities have been provided by ABSA (2003). These show that profitability increases with size, and that returns on capital invested increase from 5.9 to 10.3% per annum as ranch size increases from 150 to 1000 LSU. (An LSU or “large stock unit” is a mature beef cow weighing 450 kg; the unit is used to compare the feed requirements of wild herbivores with a standard domestic animal, and thus the number of wild animals a farm may be able to support.) Profitability varies with region, from 3.0 to 10.3% (ABSA 2003). Game ranches are more profitable than beef or sheep farming, as returns on capital for those enterprises in comparable regions of South Africa vary from 0.9 to 7.2% (ABSA 2003). Roth and Merz (1997) cite an internal rate of return from a game viewing lodge in Botswana of 17.5%, compared with internal rates of return of 12 and 6% for real estate and beef cattle production. Even on dedicated game ranches, there is a mixture of commercial activities, including trophy and non-trophy recreational hunting, meat production and possibly live animal sales. Berry (1986) noted that trophy hunting gave the highest net return of all of these.

On average (although this is somewhat misleading because of the variability in pasture and soil quality throughout the game ranching regions) one LSU requires 4 ha of forage resource to sustain it throughout the year. Thus a 150 LSU operation will need to be about 600 ha in size. The ABSA (2003) data suggest that half the game ranches in South Africa are less than 500 ha, so that “roughly half of all game ranches are unprofitable operations”. The economies of scale needed to resolve this dilemma can be obtained by forming conservancies. This increases the area available for wild animals to move in (allows natural migration), may improve the gene pool, reduces fencing costs and the visual and social impacts of fences. As described by ABSA (2003) “a conservancy can be defined as a group of adjoining private commercial farms operating under a co-operative management agreement based on a shared common goal, such as to conserve and enhance the biodiversity of the ecosystem and to realise its full economic potential on a sustainable basis. ... Today some 3 million hectares of wildlife areas operate successfully as conservancies in South Africa.”

There is contradictory data on the conservation value of game ranching. Some species are rare, and thus valuable from a hunting perspective. When these have been successfully bred on game ranches the danger of extinction is reduced. These animals may reappear in areas from where they had previously been lost (Eloff 2001). It is claimed that the number of rhinoceros has increased as a result of game ranching. Other examples of successful breeding programs are those for the roan and sable antelopes, and disease-free buffalo (ABSA 2003). In Namibia, the gemsbok population has increased by 30% and other species by 10 to 20% between 1972 and 1997 (J. de Jager, personal communication). These increases are attributed to the farming of game animals for meat production and hunting.

It is argued that game animals have a more desirable impact on soils, vegetation and the environment generally than cattle (Parsons, *et al* 1997; Barnard and Newby 1999), and that game farms can carry more LSU from wild animals than from cattle alone because of the variety of feeds used by game (e.g. Hofmann 1985) in comparison to the almost sole use of grass by cattle (Eloff 2001).

On the other hand, there may be a tendency for ranchers to overstock their properties, which leads to soil and pasture degradation. Good wildlife management is based on veld and habitat management which takes due consideration of the effects of rainfall, etc. on veld condition, and game management which optimises herd size, structure and harvesting rates (Conroy, *et al* 2001). ABSA (2003) warns that “Sentimentality in game ranching may be misplaced; hesitation about removing surplus animals will result in a deterioration of the veld and therefore a steep decline towards low population numbers and perhaps even the local extinction of certain species.” The populations of some species can grow

rapidly (see Table 4.1). As an example (Furstenburg 2001) a herd of kudu with a calving rate of 84% and a survival rate of 62%, would have a potential rate of increase of about 25% per year.

There are conflicting opinions about the effects of hunting on the gene pool. Anecdotal evidence suggests that elephants in the Addo National Park now have smaller tusks, and that springbok have very small horns, as a result of trophy hunting (J. Skinner, *pers. comm*). T. Eloff (personal communication) suggests otherwise, on the grounds that trophy quality animals are older than the general population and so have less effect on breeding. Trophy quality is highly correlated with animal age: $R^2 = 0.97$ for gemsbok, kudu and springbok (J. de Jager, personal communication). Hunting these species over more than 20 years in Namibia has apparently not had any adverse effect on trophy quality as more than 52% exceed the minimum Namibian trophy standard. However, the issue is not resolved.

Trophy hunting

As well as the hunter, there are three parties to a typical safari hunt undertaken by an international client in South Africa: the outfitter (who must be registered), the professional hunter, and the game rancher. These categories may overlap. All outfitters have qualified as professional hunters, and the game rancher and outfitter/professional hunter may be the same entity. All professional hunters must work with a registered outfitter and they are only involved with international clients (G. Davies, personal communication). Domestic hunters may hunt with the permission of a game rancher (and pay the fees levied by that person).

Outfitters are people who organise the hunting experience. They book the accommodation, provide the infrastructure (firearms if necessary, vehicles, safari staff, etc.), and hire a professional hunter to act as a guide. The professional hunter's role is to locate the target animal, and help the client to successfully complete the hunt. They are responsible (and on the job) for the success of the hunting experience and the general welfare and comfort of the client for 24 hours a day (H. Olivier, personal communication). Outfitters have completed a 10 day professional hunter course which covers tracking, ordinance and catering, and then complete an extra course to qualify as an outfitter (H. Olivier, personal communication). There are four or five schools offering professional hunter training, and the course costs about R5,000. Registration helps to ensure that the quality of the hunting experience enjoyed by international visitors is maintained at a high standard.

As described by T. Eloff (personal communication), trophy hunting by international visitors is highly organised. The client approaches a professional hunter or safari hunting company, and organises a hunt. The client may complete a questionnaire to describe his/her preferences before arriving in South Africa. The client orders an animal of a specific quality, and pays the appropriate trophy price (if the animal eventually taken is not of this quality, the fee may be waived). The professional hunter then buys the animal (or is assured that it is available) from a game ranch. The final price to the client is the trophy fee, plus daily costs. Daily costs vary according to the client's individual requirements, but may be about R3,000 (USD300) per day, all inclusive. The game rancher may be paid R200 to R400 for each client daily (Radder, *et al* 2000; T. Eloff, personal communication). Professional hunters are paid up to R500 per day. The other members of the team (trackers, skimmers, kitchen staff and waiters, mechanics, administration staff) earn from R50 to R300/day (H. Olivier, personal communication).

Trophy prices are related to the auction prices paid for similar animals which are to be used for breeding or hunting (Pretorius 1998, cited by Radder, *et al* 2000; T. Eloff personal communication), although animals which are in demand may command substantially higher prices. The average auction price for a kudu in 1997 was R1,738, resulting in the price of a kudu bull hunted for meat in 1998 being R1,995, while a trophy bull cost R4,500 (Radder, *et al* 2000). Similarly, although the average auction price of a lion is about R35,000 (ABSA 2003), the trophy price charged to foreign hunters may exceed USD15,000 (or some R150,000). The total net income from a lion hunt – including accommodation and outfitter's services – can be as much as R200,000 per animal. Black rhino have been sold for R180,000 (P.Jessen, personal communication). Auction prices for ranch-bred game animals vary with factors like the inherent difficulty of capturing and transporting the species, the disease status of individual animals, the reputation of the breeder, and other factors which are described in ABSA (2003). A list of auction prices for common game animals, bred on game ranches, is given in Table 4.1. The interested reader is referred to Eloff (2001) for a detailed account of changes over the last decade in auction prices for individual animal species.

Good quality, disease-free buffalo will cost around R160,000 (J. Skinner, personal communication) or USD12,000 each (ABSA 2003). At least part of this cost is explained by the complicated method of rearing these animals (C. Mostert, personal communication). The original stock are captured in the wild by darting from a helicopter, then are transported to a holding facility and tested for brucellosis, tuberculosis, and temperament, and treated for ticks. Animals which are free of these diseases become the parents of calves which will eventually be sold as disease-free. The parent stock will carry foot

and mouth disease (FMD) or tick-borne diseases. Their calves are removed from their dams (tranquillised by darting) and fostered to Jersey cows at 10 days of age (two or three per cow, with supplementary forage and concentrates) and are tested to determine that they are free of FMD.

While trophy fees are related to auction prices, they will vary according to the quality and rarity of the animal, and also the type of hunter who usually hunts that species. For example, most buffalo are hunted by international rather than domestic clients (ABSA 2003). Overall, the prices for hunted animals set by farmers reflect current economic conditions, the prices set by competitors and the cost of stocking their properties (Radder, *et al* 2000).

Table 4.1. Auction prices of selected game animals (from ABSA 2003).

Animal species	Auction price (R)	Sex ratio (females/male)	Minimum social herd size	Population growth (% / year)	LSU equivalent ¹
Buffalo	3000	5	15	20	1.07
Buffalo (disease-free)	3000	5	15	20	1.07
Cheetah	3000		5	50	-
Duiker	300		6	20	0.09
Eland (common)	500	5	12	20	1.08
Elephant	5000		12	7	8.00
Giraffe	3000		8	15	1.58
Hartebeest (red)	200	0	12	20	0.37
Hippopotamus	5000		5	10	2.24
Hyena (spotted)	2000		5	15	-
Impala	50	0	15	35	0.19
Kudu	300		12	20	0.54
Leopard	5000		5	15	-
Lion	5000		5	50	-
Nyala	300	0	12	20	0.23
Rhinoceros (black)	75000		5	6	1.65
Rhinoceros (white)	70000		5	10	2.75
Roan antelope	36000	0	12	20	0.64
Sable antelope	7000	2	12	20	0.60
Springbok	30	5	15	40	0.15

¹ The number of 450 kg liveweight steers which have a feed requirement equivalent to one individual of that game animal species

Caring for the client – identifying and meeting hunters' expectations

About 6,000 international hunters visit South Africa each year. Most come from the USA, followed by South America, Germany and Spain. According to ABSA (2003) foreign hunters stay for about 10 days, and undertake hunting trips of seven to 10 days duration. They take on average, nine animals and spend about USD5,000 plus the trophy prices. Thus the total cost is likely to exceed USD50,000 if the hunter takes the whole “big five”.

Hunters' expectations and/or requirements differ according to their origins. Hunters from Spain and Germany prefer to take a representative animal of the species and want the “hunting experience”, American hunters emphasise trophy quality, while local South Africans who hunt for meat (“biltong hunters”) take several different types of animal (H. Olivier, personal communication; T. Eloff, personal communication; R. Markham personal communication). According to the game ranchers questioned by Radder, *et al* (2000), international trophy hunters are middle-aged or older, wealthy, professional Americans or Spaniards who are well organised and equipped. They are demanding and expect professional service, and an abundance of game. They are friendly, honest and relaxed, with variable hunting skills. According to H. Olivier (personal communication) American hunters may be better shots, while Europeans use more shooting aids. They are ethical – they will generally not participate in “canned hunts”. Hunters' expectations about costs are similar to those of game farmers, but they greatly dislike hidden costs or changes from agreed conditions.

There may be an inconsistency between the aspirations of hunters and the facilities which are provided for them. Hunters generally want to experience “nature”. According to H. Olivier (personal communication), the “African experience” involves an element of roughing it – i.e. tent living and being close to nature. However, 95% of hunting lodges offer 5-star accommodation and are expensive.

Hunting is as much a life experience as an opportunity to get a trophy. As Radder, *et al* (2000) point out: “The hunting experience consists of products, services, facilities and sensations which include accommodation, transportation, slaughtering and cooling facilities, food, tracking services, game, shooting opportunities, and even the weather. This combination can be seen as a bundle of tangible and intangible components perceived by the client (hunter) as a total experience that, to a great extent, consists of ideas, expectations and a hope for fulfillment.”

Hunting and wildlife management organisations

There are 40 to 50 organisations which are concerned with wildlife issues in South Africa (D. Lindsay, personal communication). These cover such areas of wildlife welfare and use as prevention of cruelty, hunting lodges, photography, hunters, fish, plants, etc. There is some animal welfare activity, but welfare organisations appear to be less active or vocal than the animal welfare/rights organisations in Australia.

A list of organisation relevant to safari hunting and game ranching in South Africa is given in SAGRA (2003). The South African Game Ranchers Association (SAGRA, based at Pietermaritzburg) takes on some of the functions of an industry “peak body”. SAGRA works with individual game ranchers and the Professional Hunters' Association of South Africa (PHASA) to encourage care for the environment, and to develop codes of practice relating to hunting and animal translocation.

PHASA represents professional hunters, i.e. those people who act as guides for international hunting clients, and also acts as a peak body through its representations on behalf of the industry to government (G. Davies, personal communication). It promotes commercial hunting by encouraging

its members to hunt according to the Association's code of ethics, and to provide high-quality service to their clients. It has formal ties with overseas hunting organisations, and has offered (via its chief executive director) to make a similar arrangement in Australia. In 1999, PHASA established a Wildlife Conservation Fund "to promote and maintain the wise consumptive use of the natural resources of South Africa." (PHASA undated).

Among the many other organisations dealing with game ranching and hunting in South Africa are:

- The Chamber of Wildlife – a public relations organisation to "promote the sustainable use of South African natural resources (plant and animal) for the benefit of the people". Nineteen of the 40 to 50 wildlife organisations in South Africa are affiliated with the Chamber. These affiliates include PHASA, green groups, etc. (D. Lindsay, personal communication).
- The Southern African Wildlife Management Association – an independent, non-profit making organisation founded in 1970 "dedicated to the conservation and wise management of the wildlife resources of southern Africa" (SAWMA undated). This organisation supports wildlife research and provides a technical reference service for its members.
- The Wildlife Translocation Association, based in Onderstepoort – a non-profit making organisation which has established a code of practice for companies and individuals engaged in animal translocation.
- The Game Rangers Association of Africa – the Association represents the interests of game rangers and nature conservation generally.

Research and education

Game ranching is classed as an agricultural activity in South Africa (Conroy, *et al* 2001) and it receives the same research, veterinary and extension support as more conventional farming (Ministry for Agriculture and Land Affairs 1998).

Organisations which are involved in wildlife education and research include the Centre for Wildlife Management within the Department of Animal and Wildlife Sciences at the University of Pretoria. The Eugène Marais Chair of Wildlife Management, established in 1970, is situated within the Department. The University offers a BSc(Hons) in Wildlife, continuing the focus on wildlife management which began in 1965. Other university departments which deal with wildlife include the Department of Animal and Wildlife and Grassland Sciences at the University of the Free State. The Port Elizabeth Technikon has a research niche area (funded largely by the National Research Foundation) where all research is focused on various aspects of the wildlife and game industry, both from social sciences and natural sciences perspectives (L. Radder, personal communication). The Southern African Wildlife Management Association supports wildlife research generally, and specifically through the publication of a scientific journal, the South African Journal of Wildlife Research.

The Pretoria Technikon offers tertiary diploma and undergraduate degree courses in game ranch management. Technikons are institutions which occupy an educational niche midway between a polytechnic and a university. The diploma is a three-year course (two years theory, one year practical) with streams in ecotourism, game farming and nature conservation. After a fourth year of study, students graduate with a BTech in game ranch management. The Port Elizabeth Technikon also offers a diploma in game ranch management.

Private companies offer advice on establishing and managing game ranches, and may act as brokers for the sale of these properties. An indicative list is given by SAGRO (2003). As well as the professional hunter courses mentioned previously, some companies provide other practical training. For example, the Southern African Wildlife College at Hoedspruit offers certificate and diploma courses (SAWC 2002). The Game Capture School in Pretoria, Game Ranching Africa, and WildlifeDecisionSupport.com offer courses in the theoretical and practical aspects of capture, handling, and translocation of wildlife (Game Capture School 2003; Game Ranching Africa 2003;

WildlifeDecisionSupport.com undated). Training is also provided by provincial game management associations and hunting organisations.

The United States of America – deer hunting and conservation

The deer population, especially of white tailed deer (*Odocoileus virginianus*), has increased markedly in the eastern USA. As examples, the population in Ohio has increased from nearly zero in the 1940s to over 550,000 in 2000 (Iverson 2002) and the 1.2 million white tailed deer in Georgia require a harvesting rate of 40% to prevent the population from increasing (B. Murphy, pers. com.). This population “explosion” has had undesirable consequences, which have been discussed by Warren (1997).

Throughout the US, and especially in the eastern states, deer impact adversely on the human population (for examples see Northeastern Regional Association of State Agricultural Experiment Station Directors 2001) through vehicle accidents (there are some 1 to 1.5 million collisions between deer and vehicles each year, about 4% of these result in human injury), damage to gardens and forests, and infection of humans by Lyme disease (through ticks carried by deer). Wild deer may also be a reservoir of animal diseases like chronic wasting disease (CWD), haemorrhagic disease, anthrax, rabies and tuberculosis.

Hunting is used by US state governments as a way of controlling the deer population. This is mostly by private hunters, although professional hunters and USDA agencies may control deer in urban areas and airports. Public attitudes to hunting are mixed (Brown 1999). Some people do not favour hunting because they consider that indigenous deer have a special place in North American culture. This view is opposed by organisations like Safari Clubs International which lobby to protect the “right to hunt”.

Hunters comprise 8% of the population of the USA. Nearly 11 million “big game” hunters spent an average of 14 days hunting in 2001 (US Department of the Interior, Fish and Wildlife Service, *et al* 2001). The “typical” American deer hunter is more likely to be male, older than younger, earning more than the national median wage, living in a rural area, and will almost certainly (95%) be white and male (Aiken 1999; US Fish and Wildlife Service 2002). However, as Brown (1999) has pointed out, Americans are becoming increasingly urbanized, and the proportion of non-white persons is increasing. These people are less likely to hunt than white Americans. Further, the large variety of outdoor activities now available to American youth diverts attention away from hunting as an outdoor recreation. Participation in hunting increased in line with the general increase in population between 1980 and 1990, but there has been an 8% decline in the number of people hunting between 1990 and 1995 (Aiken 1999). This change has been particularly noticeable in the Northeastern US where there were 18% fewer hunters in 1995 than in 1980, while the number increased by 3% in the Midwest, which also has the highest participation rate of 10%. Notwithstanding this general decline, deer hunting remains an integral part of the culture of North American rural areas, to the extent that supermarkets sell hunting equipment, guns and ammunition, and supplement feeds and blocks for use with wild deer.

Hunting with firearms and bow are considered “traditional” and are the methods of harvesting wild animals most favoured by the general public. There remains some reluctance to accept non-traditional harvesting methods such as the use of dogs and traps. Although some chemical contraception methods may be possible under closely controlled situations (i.e. intensive management), effective contraception for wild deer is not expected to be available for some years.

Hunter-shot game meat can not be sold, as it is not possible to distinguish between meat from wild and captive animals. However, hunters are able to sell hides and some other products. Notwithstanding this, some hunting organisations make use of hunter-shot meat as a public relations tool. Most notably, the Hunters For The Hungry organisation distributes game meat to the urban poor. This type of program is seen as providing good publicity for those organisations involved. It is noteworthy that,

for example, the Alabama state “Hunters Helping the Hungry” program is cosponsored by Philip Morris Co. and the National Rifle Association.

American state governments have active, and well-funded, wildlife conservation programs. The Pittman-Robertson Wildlife Restoration Act (1937 and as subsequently amended) provides for federal funds raised from an 11% excise levied on the sale of firearms and ammunition, etc. to be used to assist states in their wildlife conservation efforts. The funds are used for all sorts of wildlife restoration projects, including supporting wildlife management areas, law enforcement, research and educational efforts. The Act is described by the University of New Mexico’s Centre for Wildlife Law (1997). An example of the types of control of hunting by states is given by the Nevada Division of Wildlife (2002). Hunting licenses can be bought through state government agency websites (e.g. Pennsylvania Game Commission 2003) or by phone. States provide special programs for disabled hunters, and for archery hunting, and hunting with non-conventional firearms like muzzle loading guns.

States and hunting organisations and companies may conduct deer hunting auctions. These raise significant sums, e.g. bids of up to USD100,000 have been made for white tailed deer. State agencies sell hunting licenses, “tags” (i.e. permits to take) for particular species which are either in high demand or in limited supply, may provide guided hunts, and sell a wide range of consumer items related to wildlife conservation. Hunters pay an 11% excise tax on firearms and ammunition, and that is distributed to the states based on their hunting license sales. It is estimated that each USD19 hunting license issued in Texas raises an additional USD138 for the state fish and wildlife agency (R.D. Brown, personal communication).

Native deer may be in one of three conditions: wild (i.e. in their native state, unconfined), captive (i.e. enclosed within fences) or farmed (which is a more intensified form of captivity). There are few constraints to the use of exotic game species. Wildlife agencies consider them to be a “nuisance”, and they are classed as livestock in most US states.

Particularly in Texas, access to private lands is leased by the acre to hunting groups. Current rates (2002) are USD5 to 12/ha (USD5 to 20/acre). A large minority (about 17%, US Fish and Wildlife Service 2002) of hunters pay for access (including day hunts) to hunting land. This proportion may be as high as 50% of hunters in the southern US states. This is a significant income source for landholders. Further, the presence of authorised hunters helps to protect these lands from poaching and other unauthorised access, and this may be of as much value as the income from paid hunting. There is a public relations value as well – the public appreciates the probability that hunting conducted under these conditions is likely to be carried out ethically. Wealthy city people buy up properties as hunting estates. These vary in size from 1 to 200 ha (2 to 400 ac), with about 80% being less than 150 ha (300 ac). Some authorities consider this to be a potential time bomb. The properties remain unused for the greater part of the year, with no or little management of vegetation and animal pests, and often there may be insufficient harvesting of females. As noted by R.D. Brown (personal communication) “many timber companies like to lease their land to hunting clubs. The club ... has the responsibility for keeping out poachers and maintaining the cleanliness of the property. ... This technique ... prevents timber theft as well as poaching, fires from recreationists, and trash dumping.”

Case study 1 – the Quality Deer Management Association and property-based wildlife management

The increasing prevalence of white tailed deer in eastern USA, with the undesirable consequences of this, has made it necessary to manage wildlife so that numbers can be controlled. Along with this is an opportunity to selectively cull animals so as to improve the trophy quality of the wild herd. Although state instrumentalities differ in their support for the management of wild deer populations, most, if not all, provide educational experiences relevant to hunting and conservation, as well as requiring participation in a hunter education program as a prerequisite for the issuing of a hunting license.

Interest in managing the populations of hunted animals so as to limit their impact on farming and other human activities, or to improve trophy quality, is not uniformly found among US hunting organisations. It is claimed that Buckmasters (which has some 200,000 members) is primarily interested in promoting its members' hunting activities, while White Tails Unlimited (some 60,000 members) gives general support to the concept of management, and the QDMA (about 20,000 members) is closely involved in developing and implementing quality management procedures. Surveys show that herd management has the support of 50 to 80% of the general community (most of the information in this section has been provided by B. Murphy, *pers. comm*).

The Quality Deer Management Association (QDMA) is an example of those organisations which take a proactive approach to game management. QDMA is headquartered in Watkinsville, GA, and has representatives in Wisconsin, Arkansas and New England states. It was founded in 1988 by biologists who wished to provide a conduit for the extension of scientific research on wildlife into the general community. QDMA has about 18,000 members, 76% of whom are college educated, and 37% have incomes above USD100,000 per year. Some 700 members are professionally involved in wildlife research and/or management. The Association employs 15 staff. QDMA is a non-profit-making organisation, completely funded from private sources. It has an annual budget of USD2 million and raises this money (in approximately equal proportions) from members subscriptions (USD25/year), banquets, donations and commercial activities.

The QDMA provides education about hunting by means of meetings, seminars, and demonstrations, and through the production of educational books, videos, and a quarterly journal. It “promotes and financially support deer research and management projects relating to white-tailed deer management and/or recreational hunting”, and makes some contributions to the formulation of public policy (at both federal and state levels). As state laws may not protect those landholders who charge hunting fees against liability for injury and/or damage, the QDMA has organised insurance cover for these people.

The Association aims “to enhance the public image of deer hunters and deer hunting by providing a code of ethics for members to follow”. Ethics in hunting are considered to be very important. In particular, QDMA members should obey the rules of hunting, respect their quarry, and report any mistakes they make. A Code of Conduct (Quality Deer Management Association undated) is binding on members, such that:

- Members should know and obey all hunting rules and regulations. Any conviction for the willful violation of a game law will result in expulsion from the QDMA.
- Members should learn as much as possible about wildlife management, recreational hunting, and hunting ethics.
- Members should act in a manner which brings credit to deer hunting and the QDMA.
- Members should present a positive image to the public by setting examples as responsible hunters.
- Members should participate in hunter education and safety courses and encourage other hunters to do the same.
- Members should respect the activities and beliefs of other hunters, landowners, and the public.
- Members should support the objectives of the QDMA.
- Members should adopt this Code of Conduct.

The game management objective of the QDMA is “to improve the quality of deer herds and hunting experiences through sound deer management” (Quality Deer Management Association undated). Quality deer management aims to develop a deer population which is sustainable within the limits of the available habitat, and of high quality, i.e. where herds reach their genetic potential for breeding rate, age and sex structure, bodyweight and antler development. The QDMA asserts that management for “quality” does not necessarily equate with management for “trophy quality”.

The vehicle used to achieve these objectives is property-based wildlife management (PBWM). PBWM is the control of wildlife and animal pests through the management of hunting within a given

property. The aim is to balance outcomes for both the hunter and the landholder. Hunters are used to reduce pest species, to control the sex ratio of deer populations, and to remove cull animals. Access to desirable animals is used to achieve these goals.

The desired outcomes quality deer management are illustrated in Fig. 4.1. Historically, 70% of the bucks harvested were 1 to 1.5 years old, and less than 5% survived beyond 3 years. It is claimed that through the efforts of organisations like the QDMA and others, the proportion of young bucks taken has now been reduced to about 50 to 60%.

An important aim of QDMA is to allow bucks to grow to maturity so as to exhibit their trophy potential. This is at least 4.5 years of age, when a buck has reached more than 80% of its trophy potential. Survival to maturity is greatly influenced by the environment, including the size of the range allowed each buck. Some 15% of each age class is lost each year – from natural mortality, dispersal and poaching. The home range of a white tailed buck is some 900 ha (2000 ac). This is much greater than many fenced properties. For example, in Georgia, the minimum area which may be enclosed for hunting is only 136 ha (300 ac). It is suggested that some of these losses can be reduced by increasing the size of the range allowed a buck, as this allows bucks to “hide”.

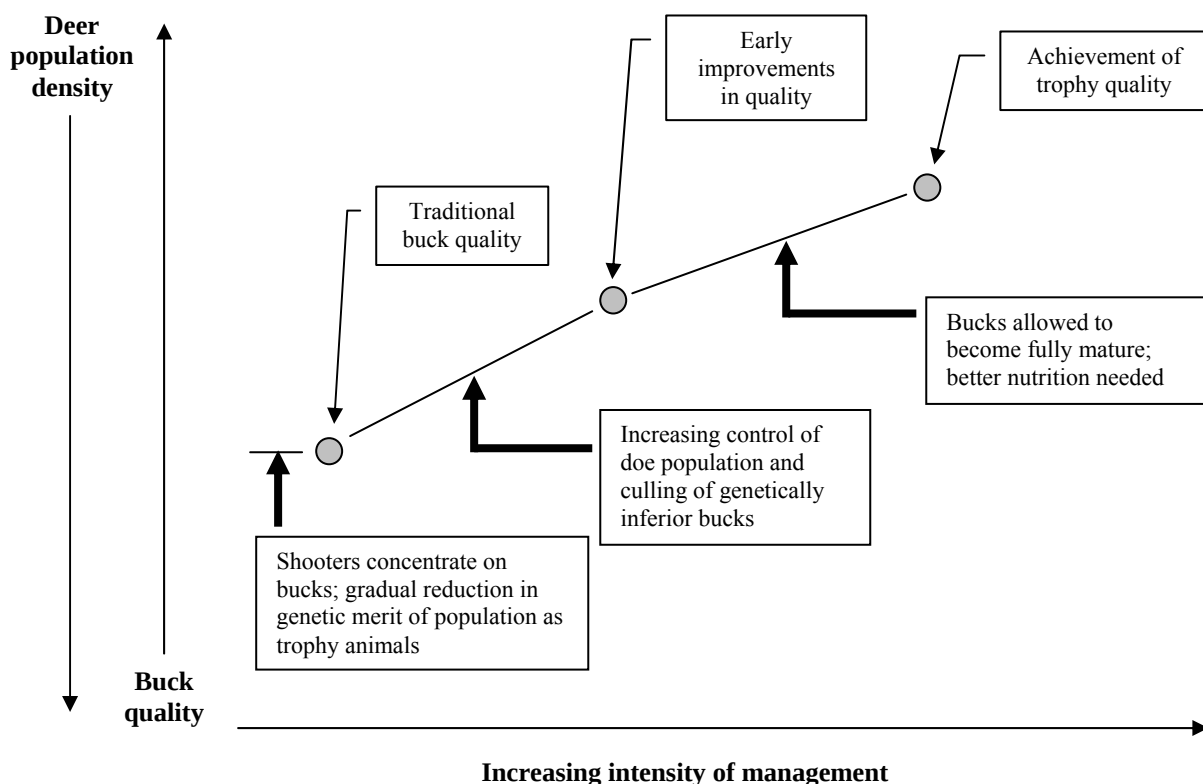


Fig. 4.1. Desired outcomes of Quality Deer Management (from B. Murphy, personal communication)

Case study 2 – Texas wild deer management

Texas differs from other states in the USA in that 97 % of land is privately owned. There is little public hunting in Texas, and the management of wildlife is thus in the hands of private landowners. However, the state technically “owns” the wildlife and sets hunting and management regulations (Brown 1999). The scope of these regulations is indicated in the preamble to the summary of the 2002-2003 hunting regulations (Texas Parks and Wildlife Department 2002).

“A hunting license is required of any person, regardless of age, who hunts any animal or bird in this state,”

In 2003, the cost of a resident general hunting license is USD19. This allows the holder to hunt all animals and birds except alligators.

The regulations about hunting are very detailed. *Inter alia*, they provide for:

- Personal identification to be carried while hunting.
- Open and closed seasons, and legal hours of hunting.
- Dealing with killed game – use of edible parts of the carcass, and measures to avoid the waste of game.
- Hunting on private land – no-one may hunt on private land without permission (this includes attempting to retrieve wounded animals).
- Hunting means and methods – hunting with traps and dogs is prohibited, the regulations define permitted types of firearms and archery equipment.
- Bag limits, and the powers of inspectors in relation to these – bag limits for white tailed deer are 3 or fewer buck and a total of 5 animals per year, and for mule deer are 1 or fewer buck and a total of 2 animals per year. Hunters must attach a tag to each carcass (hunters are issued with 6 tags, of which 2 are exclusively for use with antlerless deer, i.e. deer which have no hardened antler protruding through the skin) and complete a record of the types of deer taken.
- A prohibition on the sale of meat from game animals (but there is a large industry for processing game meat for the hunter’s own consumption).
- Criminal liability and civil proceedings to recover the value of animals taken outside permitted numbers/types, in the case of an offence against these regulations.

In Texas, the management of wild deer for hunting, as distinct from the regulation of hunting, is controlled by the Texas Parks and Wildlife Department (TPWD) through a sequence of plans and permits which begin with the property Wildlife Management Plan (WMP). Permits are issued only to landowners, who then authorise individual hunters according to the permit conditions. Once a WMP, which specifies a harvest quota for antlerless deer or both buck and antlerless deer, has been approved, the landowner may obtain a Managed Lands Deer (MLD) permit. The type of MLD permit which is issued depends on the amount of deer census and harvest data supporting the application, and the landowner’s undertakings in relation to recommended habitat management practices. Different permits authorise different numbers and types of deer which may be harvested by individual hunters.

The TPWD may also issue Antlerless/Spike-Buck Deer Control or Landowner Assisted Management Permit System permits to allow landowners to remove excess animals. Again, these permits are issued according to the provisions of an approved WMP, or are based on acreage, habitat, population, and harvest data supplied by the landowner.

The number of animals covered by the issuing of permits is related to the assumed carrying capacity of the land. These estimates are based on surveys made by TPWD officials to determine the population size and the age/sex structure.

Landowners may further develop the hunting capacity of their properties by breeding deer from wild (i.e. state-owned) parent animals. A Deer Management Permit allows a landholder to confine wild deer for breeding. Wild animals (the parent generation) remain the property of the state and must be returned to the wild after a stipulated period – often 10 months. The F1 generation belongs to the trapper/breeder. Allied to this process is the use of artificial insemination and special feeding programs, both of which are aimed to improve the trophy quality of the offspring. Deer Management Permits are only issued if a Wildlife Management Plan (WMP) has previously been approved by a TPWD biologist. WMPs must address issues such as methods of capture, sizes of proposed pens, availability of natural vegetation used by deer for concealment, and feeding and watering arrangements.

TTT (trap, transport and transplant) Permits allow wild deer to be captured and removed to a designated release site, which must be first approved under a process similar to a WMP. There are several criteria for approval, including a maximum stocking density of 1.2 deer/100 ha (1 deer/200 ac), effect on other game at the trapping or release sites. In some cases, the proposed activities must be consistent with an existing MLD permit.

There are current controversies about the effects of enclosing properties with high fences on land fragmentation, the increasing cost of hunting, lack of regulation of exotic wild animals, importation of deer from other parts of the US (with concerns about the spread of chronic wasting disease), the definition of “fair chase” hunting, and the privatisation of what may be considered to be a public resource (R.D. Brown, personal communication).

Case study 3 – hunting and charity

There are several organisations which channel venison or other American “big game” meat to feed people who are below defined income levels. Some of these are “Hunters for the Hungry”, “Hunters Feeding the Hungry”, “Farmers and Hunters Feeding the Hungry”, and the Safari Clubs International’s “Sportsmen Against Hunger” initiative.

The Pennsylvania “Hunters Sharing the Harvest” (HSH) venison donation program established in 1991, is an example. This program provides some 40 tonnes of venison each year to local food banks and soup kitchens. The program was initiated by the organisation “Pennsylvanians for the Responsible Use of Animals” in cooperation with the Pennsylvania Game Commission, the Pennsylvania Department of Agriculture and the Pennsylvania Association of Regional Food Banks.

While these programs are widespread and apparently effective, they suffer from a lack of funding. Many rely on contributions from processors to prepare edible meat products from the carcasses which hunters supply, and donations from sponsors. For example, the Pennsylvania program is sponsored by a wide (29 of them) range of hunting, media, church, farmers’ and commercial organisations or companies (Pennsylvanians for the Responsible Use of Animals 2002). Some organisations fund processing by commercial ventures of their own, such as hunting trip auctions (Phillips 2002). Nevertheless, some meat can not be accepted for processing because of financial constraints.

Some state legislatures are now considering legislative platforms for funding. In April, 2002, the Maryland state senate passed a law which provided for a USD 1 levy on hunting licenses to fund the cost of processing donated venison (Winand 2002). The Director of the Maryland Department of Natural Resources, Wildlife and Heritage Service commented that:

“This bill will result in nearly \$100,000 available for venison donation efforts in Maryland; while eliminating a major roadblock for hunters who want to take additional antlerless deer. We believe it sets a standard for other states with burgeoning deer populations. Hunters are providing a free public service, our deer populations will be reduced, venison donation butchers are being paid for their service and the hungry are being fed.” (Peditto 2002).

A similar initiative has been made at the federal level. A Bill “to amend the Emergency Food Assistance Act of 1983 to permit States to use administrative funds to pay costs relating to the processing, transporting, and distributing to eligible recipient agencies of donated wild game” was introduced in 2003. It is presently being considered by the House of Representatives Committee on Agriculture.

Case study 4 – Estate hunting at the 777 Ranch, Texas

The 777 Ranch, near San Antonio, Texas is an example of estate hunting. The ranch is 6,800 ha, of mostly flat to low rolling terrain mostly covered with dense mesquite and acacia shrubs, with some 4000 animals (all ungulate species; see Table 4.2). They are mostly non-native (from Africa, India, Europe, the Middle East and Asia) and are descendants of animals which were introduced to the USA about 30 years ago (information from 777 Ranch publications and personal observation). Some of these are rare or endangered species, e.g. Arabian oryx and the Dama gazelle which are in the IUCN Red List (IUCN 2002). The ranch offers bird hunting, and has bred a black x largemouth bass hybrid which clients may fish on a catch-and-release basis. The estate has accommodation, restaurant and related facilities, and provides taxidermy and other services. Details of charges are in Table 4.2. The State of Texas charges licence fees of USD25 to 35 per day.

Table 4.2. Species available for hunting at the 777 Ranch, Texas.

Service/trophy	Charges ¹ (USD)
Accommodation	200 to 300 per day per person
Deer (10 species)	1500 to 6500 per head
Antelope gazelle/oryx (15 species)	1500 to 10,000 per head
Ibex/goat (4 species)	600 to 12,500 per head
Sheep (7 species)	600 to 5,000 per head
Boar (2 species)	600 per head
Bovids (3 species)	2000 to 7,500 per head
Turkey	600 per bird

¹ the trophy fee depends on the rarity of the species and the quality of the individual animal

Québec Province, Canada – deer and moose hunting and conservation

Much of the information in this section is from Société de la Faune et des Parcs du Québec (2002). Recreational hunting in Québec is managed under the aegis of the Société de la Faune et des Parcs du Québec which establishes regulations for hunting in areas managed by the Government, zecs (see below) and on private reserves leased or owned by an “outfitter”. (Note that “outfitter” in the Québécois sense has a meaning similar to the term “professional hunter” used elsewhere in this Report, and that “commercial hunting” in Québec is the harvesting of wild animals for meat and does mean the business of providing recreational hunting; G. Lamontagne, personal communication).

The possession and use of firearms in general is controlled by the federal Firearms Act. The Société has established additional regulations about the use of firearms and bows in hunting areas. For example there are different seasons (about 1 to 2 weeks each) for hunting with bows and crossbows, conventional firearms, and muzzle loading guns, and specifications for bows and rifle/gun calibres. The regulations provide that each hunter must have an appropriate hunting license. This can only be issued if the applicant has previously attended a training course for the type of weapon to be used and obtained a hunting certificate. There are age limits, hunters must wear hunter (blaze) orange, and not hunt at night or from roads or hunt certain species with dogs. The black bear (*Ursus americanus*) and wolf (*Canis lupus*) are listed in the CITES convention and must not be exported from Canada without an appropriate permit. The sale of meat from a wild animal is not permitted (G. Lamontagne, personal communication).

Québec is divided into 24 hunting zones, based on the species found in these areas. Different types of hunting are allowed in different zones, and sometimes within a zone. Hunting is allowed, but under strict conditions, in wildlife reserves and sanctuaries, and regional parks. Indian Nations may also impose rules about hunting on the lands which they administer. Hunting is prohibited in certain areas, including provincial and federal parks, ecological reserves and scientific study areas, and some other regions.

Bag types and limits are set for each zone, and vary according to the species hunted. Bag limits are set so as to conserve animal populations. In general, annual limits per hunter are 1 white tailed deer, 1 black bear, and up to 6 caribou. Moose limits are generally 1 per hunting group (2 or 3 people). Females may be hunted only in each alternate year. Moose were nearly extinct at the end of the 19th century after uncontrolled hunting but have recovered as progressively stricter regulations were introduced over the last 150 years. Modern control of moose hunting is based on the registration of killed animals (all white tailed deer, black bear, caribou and moose must be presented to Société agents or registration stations for registration after they have been killed), aerial surveys of animal numbers, and population sex and age structures, and socioeconomic surveys of hunters (Courtois and Lamontagne 1997). Ten indices of moose population are calculated: total harvest, harvest/10 km², total non-hunting deaths, % bulls, mean ages of bulls and cows, % yearlings, calves/100 cows, % lactating cows, sex ratio of calves. These are compared with historical data and changes in the population size, its age and sex structures, and reproductive success can be estimated. Presently, licenses to take cows are not issued in most hunting zones.

In 1978, fishing and hunting clubs (which leased exclusive rights on certain public lands) were abolished and replaced by state controlled Zones d'Exploitation Contrôlée (zecs). Zecs encompass regions where easily accessible areas of valuable wildlife are managed to optimise the conservation and hunting demands of that area (Ministère de l'Environnement et de la Faune 1994). Zecs are managed by non-government, non-profit organisations which are incorporated under the Companies Act. Although many zecs are managed by hunters and fishermen, representatives from city councils, tourism associations, etc. may seek to be included because these organisations see that proper wildlife management contributes to the economic welfare of the whole community. The managing organisations' obligations are stipulated in separate memoranda of agreement for each zec. However, the four main requirements are (Ministère de l'Environnement et de la Faune 1994):

“

1. to prevent any occurrence, action or practice that might negatively affect wildlife conservation or the legislative and regulatory provisions that apply thereto;
2. to ensure equal access to the wildlife resources available in the zone;
3. to encourage, within a democratic framework, the participation of those interested in wildlife management;
4. to target self-financing of operations related to zec management.”

Additionally, each zec Board of Management must develop and implement approved wildlife management and protection plans, maintain the zec’s facilities, and obtain liability and property insurance. These responsibilities carry a financial obligation so zec Boards are authorised to provide commercial services like, renting campsites, selling hunting licenses, etc. However, they are not allowed to provide professional hunter services.

The Québec government promotes and regulates commercial hunting through its “outfitter” program. An outfitter is (Société de la Faune et des Parcs 1999) “a person who commercially provides lodging and services related to the practice of hunting and fishing activities.” Provision of accommodation is an essential part of outfitting and the quality of accommodation must be attested to by a government agency. Professional hunting (“outfitting” in Québec terminology) is facilitated through outfitter establishment permits. These allow individuals to set up a commercial hunting operation on either public or private land. There are presently more than 700 outfitters, operating either exclusive or non-exclusive permits. At present, exclusive hunting rights have been issued to 200 outfitters (G. Lamontagne, personal communication), and give these outfitters exclusive hunting rights over the leased land. More commonly, outfitters are licensed to conduct a professional hunting enterprise on either public or private land, but “public” hunters continue to have the right to hunt there as well. Outfitter permits can not be issued for zecs, wildlife sanctuaries or on areas where hunting is prohibited. Hunting and fishing on wildlife reserves are offered by a state-owned enterprise (G. Lamontagne, personal communication). Access to some activities is limited to Québec citizens and is allocated by lottery.

New Zealand – wild animal hunting and nature conservation

Mammals, other than three native bat species, and the Polynesian rat and dog introduced by the Māori, are all post-European introductions to New Zealand. Although public attitudes vary, many New Zealanders think that it is important to conserve native plants and birds. Large mammals are often viewed as threatening the survival of plant species, and having deleterious effects on land forms (e.g. erosion) and on bird habitats. Secondly, large mammals, especially deer, damage agricultural crops and planted forests. Thirdly, some wild mammals are reservoirs for important diseases such as tuberculosis. Fourthly, there is little of the “bambi syndrome” in the attitudes of New Zealanders towards wild large mammals. These factors support a public attitude which, in many cases, neither actively supports the maintenance of wild large animal populations nor is against the hunting of wild large mammals.

Conservation and the large wild animal problem

“Large wild” animals in New Zealand are deer (*Cervus elaphus*, *C. elaphus nelsonii*, *C. nippon*, *C. unicolor*, *C. timorensis russa*, *Dama dama*, *Odocoileus virginianus*, *Alces alces*), Himalayan thar (*Hemitragus jemlahicus*), chamois (*Rupicapra rupicapra*), wallabies (*Macropus rufogriseus*, *M. uegenii*, *M. parma*, *Petrogale penicillata*, *Wallabia bicolor*), brushtailed possums (*Trichosurus vulpecula*), feral goats (*Capra hircus*) and feral pigs (*Sus scrofa*) (Fraser, *et al* 1996), and also feral sheep and cattle. These animals have existed in New Zealand for a sufficiently long time for them to have established “natural ranges”. Red deer are the most widely distributed large wild animal, and are found throughout the mountain lands and hill country of both islands (Fraser, *et al* 1996). They may perhaps be the most damaging large wild animal. It is suggested that the effects of deer on native vegetation may last for many decades or be permanent (Department of Conservation 2001).

The Department of Conservation (DOC) is charged with the control of wild animals. DOC's "first and over-riding concern is the protection of New Zealand's unique indigenous biodiversity" (Department of Conservation 2001). This takes precedence over recreational and commercial considerations in the Department's attitude towards wild animals. DOC attempts to control the numbers and ranges of large wild animals by its own control and eradication activities and through the regulation of recreational and commercial hunting. The legislative basis for this approach is in the Wild Animal Control Act 1977 and the Conservation Act 1987. The Conservation Act provides *inter alia*:

"To the extent that the use of any natural or historic resource for recreation or tourism is not inconsistent with its conservation, to foster the use of natural and historic resources for recreation, and to allow their use for tourism".

The Wild Animal Control Act allows for "concerted action" (i.e. control of wild animals generally, and local eradication where necessary and practicable) "against the damaging effects of wild animals on vegetation, soils, waters, and wildlife;", "co-ordination of hunting measures;" and "the regulation of recreational hunting, commercial hunting, wild animal recovery operations, ...". The Wild Animal Control Act also provides that land (generally conservation areas / stewardship land / forest parks) on which wild animals are present may be declared to be a recreational hunting area. In these areas, recreational hunting is used to control the numbers of wild animals, although it may be supplemented by other measures including DOC control activities if recreational hunting proves ineffective.

Animal control through recreational hunting may not be completely successful, partly because deer densities which are acceptable to hunters will still cause damage to native forests (K. Broome, personal communication). Further, there are substantial differences between community groups in their attitudes towards the presence of large wild animals and efforts to eradicate or control them. DOC surveyed public attitudes to wild deer in 1997 (Department of Conservation 2001). Attitudes were summarised thus:

"Most of the Conservation Boards, Regional Councils, environmental, tramping and botanical organisations expressed the view that wild deer are a pest which threaten New Zealand's native vegetation and ecosystems and should therefore be eradicated or controlled wherever possible.

Hunting organisations and most farming organisations expressed the view that eradication of deer is neither possible nor desirable and their impacts on native ecosystems can be minimised by managing deer as a game resource."

Pests, i.e. introduced weeds, fish and mammals (particularly possums, deer and rats) are the most serious conservation issues in New Zealand because of their adverse effects on biodiversity. This has become a more important issue than loss of habitat (K. Broome, personal communication; A. Fairweather, personal communication). Procedures to deal with animal pests vary between species. DOC has accepted that it is generally impractical to attempt to eradicate wild deer and attempts to limit numbers and control the ranges in which these animals occur (S. Goddard, personal communication). Work is underway to control wild deer in the Murchison Mountains to protect takahe habitats and in one area of the North Island to allow the regeneration of mountain beech forest (S. Goddard, personal communication). There is an agreement between DOC, private landowners and the Sambar Deer Management Foundation Inc. to manage sambar deer in the Manawatu through recreational hunting, but other than that no control occurs in this herd (A. Fairweather, personal communication). DOC employs hunters to control goat numbers – these people are employed in specific, targeted areas (K. Broome, personal communication). Possum control is done by using sodium fluoracetate (1080) applied by aerial baiting. Possums are the most important vector for tuberculosis (K. Broome, A. Fairweather, personal communication), although there are fears that wild deer may reinfect areas from which the disease has been eradicated. There are community objections to the use of 1080. Deer hunters are concerned about deer being killed by 1080, i.e. losing their hunting resource, hunters and members of the general public are concerned about other non-target deaths (principally pet dogs), and there are public concerns about contamination of waterways and

water supplies (S. Goddard, personal communication; A. Fairweather, personal communication). DOC informs hunters, game meat harvesters and others about the whereabouts of poisoned areas, trying to get this information to target groups in the most efficient ways possible. Methods include public notifications, visits, letters, and signage at areas where the poison has been used (K. Broome, A. Fairweather, personal communication).

Intensive hunting during the 1970s and 1980s has effectively controlled the thar range in the South Island (Fraser, *et al* 1996; S. Goddard, personal communication). Aerial recovery of deer has had a large impact on deer numbers in the open habitats above the tree line in the South Island, but there is little evidence that hunting has had much effect on the populations of most large wild animals in forest habitats (A. Fairweather, personal communication). Nevertheless, DOC “will continue to encourage both commercial and recreational hunting ... where this is consistent with management for conservation.” (Department of Conservation 2001). The Department recognises that commercial helicopter hunting may provide effective control in unforested areas (K. Broome, personal communication). This is called “wild animal recovery” and these operations are authorised by a DOC concession to capture or kill animals by or with an aircraft (S. Goddard, personal communication). These animals are processed for game meat.

There is concern about the appearance of new wild animal populations. In addition to old populations which date from the turn of the 20th century, 264 new populations were discovered by 1995 (Fraser, *et al* 1996). Twentyseven percent of the new populations had occurred through deliberate releases, and a further 38% from escapes from deer and goat farms. The deliberate release of wild animals is illegal (Wild Animal Control Act 1977). Some new populations of wallabies and deer (sika, fallow and red) appear to have been due to releases by private hunters, and it is known that hunters have bought farmed deer to stock new hunting areas. There have also been illegal releases of pigs, possums and goats (K. Broome, personal communication). Disease spread is a major concern. Tuberculosis may infect one third of the new deer populations (Fraser, *et al* 1996).

The use of wild animals for recreation

The recreational use (as distinct from control) of wild animals in New Zealand (including deer farms and safari parks) is also regulated by the Wild Animal Control Act 1977. Also relevant are the Noxious Animals in Captivity Regulations, the Wildlife Act 1953 (which declares certain large and small mammals to be either unprotected or noxious) and the Biosecurity Act 1993 (in relation to pest management and identification of ownership of animals which occur in both the wild and on farms).

Given the attitudes described above towards wild large animals, it is not surprising that there are few restrictions to large animal hunting. Commercial hunting (i.e. safari hunting) companies must have a concession to conduct their operations on crown land, or permission from private landowners, but there are no restraints on recreational hunting other than those imposed by the firearms and trespass laws. Hunting is prohibited in wildlife refuges, wildlife sanctuaries, wildlife management reserves, and hunters must have permission from private landowners or DOC to enter or shoot over private land or lands administered by the Department (Wild Animal Control Act 1977). Wild animals are the property of the Crown until they are lawfully taken or killed, when they become the property of the hunter. Although some landowners charge hunters access fees, this law may prevent landowners from charging trophy fees for animals harvested on land outside safari parks.

Notwithstanding the above, all of DOC-administered lands (which are 30% of the total area of New Zealand) are potentially available for recreational hunting, provided that a permit to hunt has been issued (S. Goddard, personal communication). Permits are issued for hunting on stated areas and for stated times – the present trend is to issue longer-term, wider range, permits except for specific areas, e.g. ballots for hunting sambar deer in the Manawatu, wapiti in Fiordland National Park, and fallow deer in the Blue Mountains (A. Fairweather, personal communication; S. Goddard, personal communication). Hunting in other areas is not controlled, although DOC provides information on where poison baiting (including the use of 1080) has been carried out. DOC’s policy is that deer are

pests and there is no reason to control “pest” hunting (K. Broome, personal communication). The Department is considering dispensing with permits, but this will need a change to the law (it is estimated that there is only 50% compliance with the existing law).

Commercial (guided and game meat) hunting is permitted on DOC land as long as it doesn’t conflict with conservation policies (A. Fairweather, personal communication). Recreational hunting areas (8) were set up without consideration of conservation issues and are now a point of conflict (K. Broome, personal communication).

Safari parks (which hold deer and other species for hunting) are regulated by the Wild Animal Control Act 1977. Safari parks must be inside the feral range of the species, on land which is not susceptible to erosion, and effectively fenced. Operators must have obtained a permit from DOC and operate the park in accordance with the conditions of the permit.

The safari parks industry is represented by the New Zealand Association of Game Estates (NZAGE). This, with the Deer Farmers’ Association, the Safari Clubs International (New Zealand chapter), the Deerstalkers’ Association and the New Zealand Professional Hunting Guides’ Association form the peak body, the Game and Forest Association (Game and Forest Foundation undated). The NZAGE and the Deer Farmers’ Association support “appropriate management” of wild large animals, and with the other parties to the Game and Forest Association want these animals to be recognised as a national resource. Both attitudes differ from the legislative requirements for environmental management administered by DOC. However, over the last 10 years DOC policy has moved to favour the use of commercial and recreational hunting to assist in the control of wild deer (Conservation Waikato 2001).

At the present time, government involvement in the safari park industry is to set conditions under which the industry is allowed to operate. The NZAGE would prefer that industry-agreed operating standards are written into law so that there is some government support which could be used to bolster the industry (McKinnon 2001). The Association fears that the lack of such support may leave the New Zealand industry open to non-tariff trade barriers from its international competitors, or susceptible to attack on animal welfare issues.

The NZAGE emphasises ethical conduct, extending to a ban on “canned” hunts (McKinnon 2001). The NZAGE espouses the “five freedoms” (UK Farm Animal Welfare Council 2002) (freedom from pain, from hunger and disease, to express natural behaviours and to obtain shelter) and holds that these can only be provided under free range hunting conditions. They claim that safari parks are large enough to ensure that the five freedoms can be achieved, while hunting developed from deer farms may not. There may be an ethical issue in using of cast-for-age velvet stags as trophy animals as these animals are semi-domesticated. However, it has been stated that the behaviour of previously-farmed deer reverts to the behaviour expected of wild animals very soon after the animals are released into the safari parks (D. Bennett, personal communication).

The Animal Welfare Act 1999 provides that hunted animals must not be subjected to unnecessary pain. Animal rights/welfare lobbies do not appear to be much involved in wild animal control issues, but rather concentrate their attention on vivisection and farming issues (A. Fairweather, personal communication). The attitude of some conservation groups is that they would rather return to a pre-European situation regarding New Zealand’s native fauna and flora (D. Bennett, personal communication), and are therefore not much interested in issues relating to wild animals. The New Zealand Deerstalkers’ Association (2002) and the New Zealand Chapter of SCI (2002) have comprehensive codes of practice, and several commercial hunting companies advertise their commitments to safe and responsible hunting. There is a Code of Practice for game estates, which includes a requirement for a minimum area for hunting, and that bow hunters are backed by a colleague equipped with a firearm (D. Bennett, personal communication).

Because of its presumed value in maintaining and improving the trophy quality of stags on public lands, some New Zealand hunters have argued for a QDM approach. The New Zealand Deerstalkers’

Association (2002) maintains a list of prize herds and discourages when possible “the indiscriminate shooting of such prize herds and/or the commercial exploitation of same ...”. The DOC has no QDM policy and will not manage wild animals for trophy quality (S. Goddard, personal communication). Their view is that deer are pests and are therefore not to be managed except for the purposes of control. Some hunting clubs have adopted areas and try to remove possums (i.e. an approach which is similar to Tasmanian property-based game management) but they have apparently not been very effective (K. Broome, personal communication) in the New Zealand native forest environment.

Relationships between recreational hunting and other industries

There is an increasing connection between the deer farming and safari park industries. Velvet stags cast for age at about 7 or 8 years may have a significant residual value as superior stags make very valuable trophy animals. Deer farmers are now breeding stags to be sold to safari parks as trophy animals. These may have superior velvet (immature antler harvested and used in Chinese traditional medicine) genotypes based on recently imported central European or superior English bloodlines. Cast-for-age red stags may fetch up to NZD 1500 to 4,700 each (B. Middleton, personal communication; D. Bennett, personal communication; note: meat value at 2002 prices was about NZD 400 to 900 per animal). Stags sold for trophy hunting must meet the SCI gold standard (B. Middleton, personal communication; D. Bennett, personal communication). Breeding priorities for the velvet and trophy hunting industries are not incompatible, although the high prices paid for trophy stags has reversed a recent trend towards breeding for shorter antlers in velvet stags (D. Bennett, personal communication).

Some farmers use sophisticated breeding techniques to produce velvet/trophy animals. Hinds which have been selected for superior velvet characteristics (in their male offspring) are superovulated, artificially inseminated with semen from a superior sire, and the resulting embryos are removed and implanted into recipient hinds which are known to be good mothers (B. Middleton, personal communication). These techniques will maximise velvet production and also maximise the trophy quality of these animals when they are eventually sold as aged animals.

There is a national scheme in which sires with superior genotypes for growth and velvet production can be identified and used in breeding programs. As yet there is no national trophy breeding recording scheme but some individual breeders have developed their own (D. Bennett, personal communication).

Safari parks generally restock their properties each year (D. Bennett, personal communication), just before the hunting season which begins in autumn and ends in September (note that there is no government-controlled hunting season; these dates are related to the antler growth and casting cycle of red deer). Safari parks may be completely destocked in the 6 months of antler growth between October and February. Restocking is with trophy stags purchased from breeders (perhaps at auction), as described above. For this reason, quality deer management (QDM) as it is practised in North America or Tasmania is irrelevant to hunting on New Zealand safari parks.

New Zealand produces both game and farmed venison. Game venison is obtained from animals shot in the wild, often by helicopter shooting. There is apparently no conflict between these two types, as both have large markets. Game venison is identified by the absence of an earmark or holes in the animal's ear (both indicate a farmed animal as a hole is made when an ear tag is inserted). Both game meat and recreational (trophy) hunting occur on the same areas. This can lead to conflict between game meat and recreational hunters because of competition for resources. Game meat hunting is used by DOC to control wild animal populations, and this can reduce the numbers of desirable trophy animals in certain areas.

Commercial safari hunting

Most (95%) international hunters are Americans, and others come from the Middle East and Europe (D. Bennett, personal communication). These hunters employ the services of professional guides and may hunt on safari parks (in contrast to domestic recreational hunters who generally hunt on crown land or private land with permission, and without guides). In many cases, hunters are flown in to the hunting area by helicopter. Trophy size is an important consideration. European hunters use the CIC system (CIC undated), while Americans prefer the SCI scoring system, or alternatively the Boone and Crockett system (Boone and Crockett Club 2002). It should be noted that the Douglas system is widely used by Australian and New Zealand hunters. Red deer are the preferred trophy animal for American visitors, with Himalayan thar and chamois added to the package (D. Bennett, personal communication). Some hunters try for the South Pacific 15: red, fallow, wapiti, hog, rusa, sambar, chital, white tailed, and sika deer, thar, chamois, banteng cattle, wild pig, wild goat, and buffalo (P. Luhrs, personal communication). Of these, only hog and chital deer, buffalo, and banteng cattle are not available in New Zealand. Thar, chamois, wapiti (free range), and white tailed deer are available only in New Zealand.

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5. The Regulatory Environment

(1) Australian Hunting Law

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Scope of the discussion

This section summarises the Australian legislation which regulates the hunting of exotic feral animals. These species include: hog, deer, wild pig, wild goats, buffalo, banteng cattle, camels, wild horses, donkeys, wild cattle, foxes, rabbits and hares. Except in passing, we are not concerned with birds or fish.

In general, hunting is permitted within Australia, subject to the restrictions set by wildlife protection and animal cruelty legislation (Sharman 2002, p 4; *NSW Legislative Council Hansard*, 27 June 2002, pp 3959-3960). This section summarises these statutes and regulations.

Several boundaries to this topic should be drawn, though the discussion will sometimes cross these boundaries. Firstly, this section does not deal with native animals. Secondly, it does not deal with protected species.

Thirdly, this section deals with exotic species that are already present within the jurisdiction. It does not deal with the legal restrictions upon the introduction of exotic species. See eg NSW, *Non-Indigenous Animals Act* 1987, s 10; NT, *Territory Parks and Wildlife Conservation Act* 1976, s 52; Qld, *Nature Conservation Act* 1992, s 91; Qld, *Nature Conservation Regulation* 1994, reg 137; Tas, *Nature Conservation Act* 2002, s 32.

Fourthly, this section does not discuss the firearms legislation with which hunters must comply. See ACT, *Firearms Act* 1996; NSW, *Firearms Act* 1996; NT, *Firearms Act* 1997; Qld, *Weapons Act* 1990; SA, *Firearms Act* 1977; Tas, *Firearms Act* 1996; Vic, *Firearms Act* 1996; WA, *Firearms Act* 1973.

Fifthly, this section does not discuss liability for hunting accidents. Such liability may arise in tort or under criminal law. The law of torts is exhaustively covered in Fleming 1998 and Balkin & Davis 2003. Hunting accidents may also result in criminal liability. For example, in *R v Osip* (2000) a deer hunter claimed that he believed that he was shooting a deer. In fact, he shot and killed a man. The Victorian Court of Appeal upheld his conviction for negligent manslaughter.

Sixthly, this section does not discuss general criminal law provisions regarding the killing of animals. See *Halsbury's Laws of Australia* (1998, para 20-195).

The relevant law for each jurisdiction will be examined separately.

Laws in Australian jurisdictions

Commonwealth

Hunting is regulated by State and Territory legislation. However, federal Parliamentarians have occasionally expressed an interest in enacting federal regulation. For example, the *National Animal Welfare Bill* 2003 was introduced by a Senator as a Private Members Bill (*Senate Hansard*, 11 August 2003, p 12986). This Bill was not enacted.

The Bill contained many provisions which have counterparts in most of the State and Territory animal cruelty prevention statutes. These duplicated provisions included the following:

- the offence of animal cruelty (cl 64);
- the offence of releasing an animal to be injured or killed by a dog (cl 69);
- use or possession of prohibited traps (cl 71-72);
- laying of harmful or poisonous baits (cl 73(4));
- unlawfully allowing an animal to injure or kill another animal (cl 74);
- and various prohibited events (eg a canned hunt, releasing an animal from captivity to be hunted by a person or another animal) (cl 81-83).

Under the Commonwealth Constitution, where there is an inconsistency (ie conflict) between federal and State law, the federal law prevails (s 109). So as not to unnecessarily displace State and Territory laws, the Bill provided that where the federal Minister deemed those laws to be more stringent than federal law, the State and Territory laws would continue to apply (cl 6(2)).

Over the years Senators have also proposed resolutions calling for restrictions upon hunting. In 1998 the Senate passed a motion calling on State and Territory governments to prohibit duck hunting (*Senate Hansard*, 25 March 1998, p 1288). Such a motion has no legislative effect. Responses to this resolution were received from two State Premiers and a Territory Minister (*Senate Hansard*, 13 May 1998, p 2733).

In 1997 a Senator presented a motion calling for the prohibition of recreational hunting. The motion was not adopted (*Senate Hansard*, 2 December 1997, p 10041; 4 December 1997, p 10399). In 1989 a proposed motion deploring the duck hunting season in Western Australia was not adopted (*Senate Hansard*, 14 December 1989, p 4502).

Australian Capital Territory

The Territory wildlife protection statute is the *Nature Conservation Act* 1980. Several sections prohibit killing or taking native animals (ss 25 and 26). However, a licence may be granted to take native animals (ss 61-64). The Act does not appear to prohibit the killing of non-indigenous animals. Royalties are payable only for native animals (s 75).

The definition of 'native animal' excludes a 'pest animal' (Dictionary), which are thus not included within the prohibition upon the killing of native animals. Under the *Land (Planning and Environment) Act* 1991 the Minister is empowered to declare that a type of animal is a pest animal (s 254). A Ministerial order may provide for the control of such animals (s 256). Such an order is the equivalent of a licence under the wildlife protection legislation (s 256A).

The Territory animal cruelty prevention statute is the *Animal Welfare Act* 1992. Several provisions are relevant to hunting. Some of these provisions protect an 'animal'. The provisions apply to both native and non-native species because the definition of 'animal' does not make that distinction (Dictionary). The Act prohibits acts of cruelty against an animal (s 7) and causing an animal unnecessary pain (s 8). The Act also prohibits game parks, where animals are confined so that they may be hunted for sport or

recreation (s 18). Unlike most of the animal welfare offences, compliance with an approved code of practice will not render a game park lawful (s 20(2)).

Some provisions of the Act protect only domestic or native animals. These provisions relate to the administration or laying of poison (s 12, 12A). The Act does not define a 'domestic animal', other than to say that it includes a captive animal (Dictionary). However, a native animal is not a domestic animal (Dictionary). A native animal is not a pest animal (*Nature Conservation Act 1980*, Dictionary).

These provisions relating to domestic or native animals do not relate to feral animals. The definition of 'feral animal' excludes domestic and native animals (Dictionary).

Apart from the game park offence, compliance with an approved code of practice is a defence to these animal welfare offences (s 20). Codes of practice may deal with the control of feral animals and various hunting methods eg aerial shooting, trapping and snaring (s 21).

The Act prohibits the use of a steel-jawed trap to catch an animal (s 60). Other specific types of trap may be prohibited by the regulations (s 63). The Act prohibits the setting of a trap to catch an animal (s 62). However, this prohibition does not apply to an occupier of premises who sets a non-prohibited trap on those premises (s 62(2)). In addition, permits may be issued for trapping using non-prohibited traps (s 61). These permits are of two types: commercial trapping permits (for commercial purposes), and private trapping permits (for private or domestic purposes) (s 64).

New South Wales

New South Wales is the only jurisdiction where a separate statute regulates game hunting. This statute is the *Game and Feral Animal Control Act 2002*. In summary, the Act provides for the hunting of game animals on both public and private land and pest animals on private land (s 3).

The Act provides that there are two classes of game animal. The first class includes the deer (s 5(1)). The second class comprises: the pig, dog, cat, goat, rabbit, hare, and fox (s 5(2)). Both classes of game animal must be living in the wild.

A number of animals are excluded from the definition of game animal. The definition excludes dingoes, threatened species and protected fauna (s 5(2), (3)).

The definition of 'hunt' includes using a firearm, bow or other hunting device. The definition excludes the use of poison (s 4).

The licensing system is administered by a Game Council (s 9). The Council grants licences for the hunting of game animals (s 21(1)). There are two classes of licence: general and restricted (s 14).

A general licence authorises its holder to hunt game animals on private land (s 15(1)). A restricted licence authorises its holder to hunt game animals on both public and private land (s 15(2)). A restricted licence may only be issued to persons who are members of an approved hunting organisation and who have satisfied the Council that they have undertaken adequate training (s 19).

There are a number of restrictions upon the types of land which are open to hunters. A licence does not authorise the holder to enter land that they would not otherwise have authority to enter (s 15(3)). So far as private land is concerned, it is an offence to hunt on private land without the permission of the owner (*Summary Offences Act 1988*, s 28J).

So far as public land is concerned, hunting may not take place on public land unless it has been declared open to hunting (ss 18, 20). The areas of public land which may be declared available for hunting are Crown land and State forest (s 4).

Hunters may not hunt on national park estate land, because such land is specifically excluded from the definition of public land (s 4). In his Second Reading Speech the Minister stated that ‘casting the [Act] in this way ensures that an amendment to the Act would be required to provide licensed game hunters with access to the national park estate’ (*Legislative Assembly Hansard*, 19 March 2002, p 703).

It is an offence to hunt a game animal on either private or public land without a licence (s 16). However, it is not necessary to obtain a licence for certain types of hunting. For example, a licence is not required for: hunting wild pigs, dogs, cats, goats, rabbits, hares and foxes on private land; hunting on your own land; hunting wild animals under the *Rural Lands Protection Act* 1998 or the *Wild Dog Destruction Act* 1921; and hunting as a professional game hunter (s 17).

A Code of Practice for licensed game hunters will be prepared, and is subject to ministerial approval. The Minister stated that this code ‘will address ... acceptable standards of behaviour in ... animal welfare, firearms safety, access to private and public land and recognition of target species’ (*Legislative Council Hansard*, 27 June 2002, p 3959). Some Code provisions will be identified as mandatory (s 24(2)). It is an offence to contravene these mandatory provisions (s 23). Contravention of these provisions is also a ground for suspension or cancellation of a licence (s 29).

The Act provides that licences may be suspended or cancelled (ss 29, 30). Among the grounds for such action are breach of a mandatory Code provision, committing an offence of animal cruelty, or committing the offence of releasing game animals into the wild for the purpose of hunting (s 55).

Royalties are payable only in respect of native animals (s 142; *National Parks and Wildlife Regulations* 2002, reg 52).

The *Game Act* expressly provides that its provisions do not affect the operation of the State animal cruelty legislation (s 6). The Minister described the *Game Act* as ‘subordinate’ to the animal cruelty statute (*Legislative Council Hansard*, 27 June 2002, p 3959). The Act also provides that a licence does not authorise a hunter to contravene prohibitions imposed by any statute or regulation (s 15(4)).

The State animal cruelty statute is the *Prevention of Cruelty to Animals Act* 1979. The Act prohibits game parks, which are premises in which animals are confined for sport or recreational hunting (s 19A). The *Game Act* does not authorise the creation of game parks (*Legislative Council Hansard*, 27 June 2002, p 3959).

The animal cruelty statute also prohibits the setting of steel-jawed traps (s 23(2)). Certain other traps (identified by trade name) are prohibited in specified areas of the State (s 23(1); *Prevention of Cruelty to Animals (General) Regulations* 1996, reg 17). The Act’s prohibition upon the administration of poisons applies only to domestic animals (s 15(2)).

Northern Territory

The Territory wildlife protection statute is the *Territory Parks and Wildlife Conservation Act* 1976. All wildlife in a park, reserve, sanctuary, wilderness zone or area of essential habitat is protected wildlife (s 43). All indigenous vertebrates are protected wildlife (s 43). The Minister may declare that it is lawful to kill a particular species of protected wildlife (s 45). The Minister may not authorise hunting in a park, reserve, sanctuary or wilderness zone (s 45(3)). It is an offence to take protected wildlife without authorisation (s 66). The Act provides for the issue of permits for the taking of protected wildlife (s 55). The written approval of the Minister is required for the issue of a permit for the taking of threatened wildlife (s 56). It is an offence to take unprotected wildlife for commercial purposes without authorisation (s 67). A permit does not authorise entry onto land without the owner’s consent (s 60).

The Act provides for the control of non-indigenous feral animals (ss 47-49). It also provides for the destruction of feral animals in a park, reserve, area of essential habitat or sanctuary (s 113). Royalties are payable for wildlife which is the property of the Territory (s 116).

The Territory animal cruelty statute is the *Animal Welfare Act* 1999. It is an offence to commit an act of cruelty upon an animal. An act of cruelty includes an act that causes unnecessary suffering, an act that causes suffering and that is unreasonable in the circumstances, and treatment that is inhumane in the circumstances (s 6). The Act also prohibits the laying of poison without authorisation (s 17(2)). Unless an authorisation is given, it is illegal to set a metaljawed trap in which the jaws close against each other (s 18).

Queensland

The State wildlife protection statute is the *Nature Conservation Act* 1992. Subject to certain exceptions, the Act prohibits the taking of protected animals (s 88), which are defined as animals that have been prescribed as threatened, rare or common wildlife (Dictionary). The Act also prohibits the taking of native wildlife in specified areas, subject to certain exceptions (s 97).

The State animal cruelty statute is the *Animal Care and Protection Act* 2001. Cruelty to animals is prohibited (s 18(1)). Animal cruelty includes causing an animal pain that is unjustifiable, unnecessary or unreasonable in the circumstances (s 18(2)). It also includes killing an animal in a way that is inhumane, slow or causes unreasonable pain (s 18(2)). The Act also prohibits events in which an animal is released from captivity for hunting, with no acclimatisation period for reduction of the animal's stress (ss 20, 21).

A number of provisions relate to hunting methods. The Act proscribes the use of prohibited traps, the details of which are left to the regulations (s 35). It is an offence to lay a harmful or poisonous bait (s 36(2)).

However, all of these animal cruelty offences are subject to an exemption for the control of feral animals (s 42). The exemption applies where feral animal control is carried out in a way that causes as little pain as possible and in compliance with any conditions prescribed by regulation (s 42(2)). A feral animal is an animal which is ordinarily domesticated but which is living in the wild. The Act gives buffalo, donkeys, goats, horses and pigs as examples (s 42(3)). The effect of this exemption is there is no criminal liability for acts which would otherwise constitute an animal cruelty offence (s 38(2)). The exemption does not excuse the use of a prohibited trap (s 42(1)).

The *Land Protection (Pest and Stock Management) Act* 2002 provides for the management of pest species. Class 1 declared pests are not commonly present in Queensland, while Class 2 declared pests are established in Queensland (s 38(2)).

The *Land Protection (Pest and Stock Route Management) Regulations* 2003 specifies which animals fall within each category. All non-indigenous mammals, reptiles and amphibians are Class 1 pests, subject to a large number of specific exclusions (reg 4; Sch 1, Item 2). The following species are among those specifically excluded from the category of Class 1 pest: Bali cattle, bison, camel, chital deer, donkey, fallow deer, European hare, hog deer, horse, mule, red deer, rusa deer, sambar deer, wapiti deer, water buffalo and white-tail deer (Sch 1, Item 3). These animals are thus not Class 1 pests. The following animals are among those declared to be Class 2 pests: dingo, wild dogs, European fox, European rabbit, feral pig and the wild goat (Sch 2, Part 2, Div 1).

Under the Act landowners must take reasonable steps to keep their land free of Class 1 and Class 2 pests (s 77(1)). A person who does an act authorised by this Act that would otherwise constitute an offence under the *Nature Conservation Act* does not commit an offence (s 6(2)). However, the application of the *Nature Conservation Act* is not affected in any other respect (s 6(1)).

South Australia

The State wildlife protection statute is the *National Parks and Wildlife Act 1972*. It is illegal to take any animal within a sanctuary without a permit (ss 5, 45). The owner of sanctuary land does not need a permit to take unprotected animals (s 45(3)).

The Minister may declare an open season for any protected animal (defined in s 5). During the open season hunting of animals of that species is permitted. An open season may not be declared for an endangered animal (s 52).

A person must not hunt without a permit (s 68A(1)). However, a landowner does not need a permit to destroy unprotected animals which are damaging crops, stock or other property on their own land (s 68A(5)). It is illegal to hunt on land without the permission of the landowner (s 68B). The Governor may declare that a royalty must be paid for an animal (s 61).

The *National Parks and Wildlife (Hunting) Regulations 1996* prohibit a hunter from damaging a tree, burrow or nest while hunting an indigenous vertebrate animal (reg 7). During an open season a hunter may not hunt from a boat which is under way (reg 9). A hunter may not use a noisy device to rouse protected game (reg 9). A hunter may not entice protected game into an area for the purpose of hunting (reg 9). Protected game may only be taken by shooting (reg 9).

The State animal cruelty statute is the *Prevention of Cruelty to Animals Act 1985*. It is an offence to ill treat an animal (s 13(1)). Examples of ill treatment include deliberately or unreasonably causing an animal unnecessary pain, causing an animal to be killed or injured by another animal, injuring an animal and failing to alleviate its pain, killing an animal in a manner causing unnecessary pain, and killing a conscious animal by a method which does not cause death as quickly as possible (s 13(2)).

The Act empowers the Governor to make regulations restricting animal trapping (s 44). The *Prevention of Cruelty to Animals Regulations (No 2) 2000* provide that ill treatment of an animal includes trapping it in a small steel jaw trap (regs 6, 11(1)). A rabbit trap is given as an example of such a trap (reg 11(1)). Steel jaw traps of other kinds may only be used where the jaws are bound with cloth soaked in strychnine (reg 11(2)).

Tasmania

The State wildlife protection statute is the *Nature Conservation Act 2002*. This law is intended as an interim measure, allowing a rearrangement of the administrative responsibility for wildlife. In the Second Reading Speech, the Minister foreshadowed that the Act would be reviewed, since it 'falls short of being comprehensive nature conservation legislation' (*House of Assembly Hansard*, 21 November 2002).

The regulations may prohibit or control the taking of wildlife and the use of hunting equipment (s 26(1)). Wildlife means any living creature, subject to certain exclusions (s 3(1)). For example, domestic stock are not wildlife (s 3(1)). Domestic stock includes the donkey, horse, pig, camel, alpaca, llama, goat, and the European rabbit (*Wildlife Regulations 1999*, Sch 7).

The Minister may declare an open season for partly protected wildlife (s 30). The regulations specify which species are 'partly protected wildlife'. These partly protected species are game species (s 3(1)). The European fallow deer is partly protected wildlife (*Wildlife Regulations 1999*, Sch 4). The regulations may provide that royalties must be paid for any form of wildlife (s 26(2)).

Under the *Nature Conservation Act* an area of land may be declared as a game reserve. Such a reserve must have important natural values relating to game species. It must be reserved for the purpose of conservation of these natural values, conservation of the biodiversity of the land and ecologically

sustainable hunting of game species (s 16(4); Sch 1, Item 4, Column 3). The management objectives of a game reserve include: 'to provide for the taking, on an ecologically sustainable basis, of ... game species for commercial or private purposes' and 'to encourage appropriate tourism, recreational use and enjoyment, particularly sustainable recreational hunting' (*National Parks and Reserves Management Act 2002*, Sch 1, Column 2, Item 4(e), (f)).

Most of the provisions regarding licences appear in the regulations. The *Nature Conservation Act* itself provides that a licence or permit does not authorise its holder to enter land which they would otherwise have no authority to enter (s 31). The *Wildlife Regulations 1999* provide that a licence authorises its holder to take animals of a particular species during an open season for that species (reg 6). There are several categories of licence. For our purposes we need only note the deer licence (Sch 9, Part 4). A permit may authorise the taking of wildlife if that is necessary to prevent injury to stock or crops (reg 13).

As was stated above, an open season may be declared for partly protected wildlife. It is illegal to take partly protected wildlife without a licence or permit (reg 17(1)). It is illegal to take partly protected wildlife outside the open season without a permit authorising that taking (reg 17(2)).

It is illegal to take specially protected wildlife without a permit (reg 15). The species within this category are all indigenous (Sch 1). It is illegal to take protected wildlife without a permit (reg 16). Again, the species within this category are all indigenous (Sch 2). The bag limits specified by the regulations relate only to birds (reg 26).

The Regulations also proscribe certain hunting methods. Smoking out is prohibited (reg 28(1)). It is illegal to use a spear, bow, arrow, explosive, poison, stupefying substance, chemical compound or a solid-jacketed military bullet (reg 28(6)). It is illegal to arrange or take part in an organised shoot without a permit (s 30(1)). An organised shoot is a gathering of at least 15 persons carrying firearms for the purpose of hunting (reg 30(4)). It is illegal to use a dog to take a deer (reg 33(1)). A rifle of not less than a specified calibre must be used to kill a deer (reg 33(2)).

The new *National Parks and Reserves Management Act 2002* simply provides (with little elaboration) that the Governor may make regulations for the purposes of the Act (s 91). This is a very broad power. The former *National Parks and Wildlife Act 1970* provided, *inter alia*, that regulations under the Act could prohibit or control the taking of wildlife (s 32(1)). In *Bayly-Stark v Reilly* (1993) a regulation which prohibited rousing or disturbing duck was held to be within this regulation making power since it controlled the taking of wildlife.

The State animal cruelty statute is the *Animal Welfare Act 1993*. It is illegal to do any act which causes unreasonable and unjustifiable pain and suffering to an animal (s 8(1)). If that act results in the death or disablement of an animal, the offence is one of aggravated cruelty (s 9). It is illegal to take part in a match in which an animal is released from captivity for the purpose of being killed (s 10(2)).

These three offences do not apply to hunting practices carried out in a usual and reasonable manner without causing excess suffering, provided that these practices are otherwise legal (s 4(1)). In introducing the Bill, the Minister stated that the Act 'will not interfere with hunting ... activities carried out in a usual and reasonable manner and which are at present acceptable to the broad community' (*House of Assembly Hansard*, 19 May 1993, p 2657).

It is illegal to lay a leghold trap or snare (s 12(1)). This prohibition does not apply to the use of a mist net by a permit holder or the use of a box trap or cage trap(s 12(4)). The Minister may authorise a person to use a trap or snare (s 12(2)).

Victoria

The State wildlife protection statute is the *Wildlife Act 1975*. 'Wildlife' means all indigenous vertebrates, deer and animals declared as such. All wildlife are protected wildlife, with the exceptions of pest animals and animals declared as unprotected (s 3(1)).

Where a species of protected wildlife is causing damage to crops, animals or property, that species may be declared to be unprotected wildlife in a particular area (s 7A). An authorisation for the taking of wildlife may be also granted in a number of circumstances (s 28A).

A wildlife licence authorises a person to take or destroy wildlife (s 22). A game licence authorises a person to hunt game (s 22A). 'Game' are those species declared as such (s 3(1)). Licences may be cancelled if a licence condition is breached or the holder commits an offence under the Act (s 25D).

It is illegal to hunt endangered wildlife (s 41), notable wildlife (s 42) or other protected wildlife without a licence or authorisation (s 43). In each of these instances, holding a licence or authorisation permitting such hunting will mean that no offence is committed.

Game species may not be taken during the close season (s 44(1)). It is illegal to take game during an open season without a licence (s 44(3),(4)). Licence holders may hunt game during an open season for that species. The regulations may provide for the payment of royalties for wildlife (s 87(1)(ag)).

An owner of a dog commits an offence if their dog attacks or chases wildlife on public land (s 48(1)). However, this prohibition does not apply to dogs pursuing sambar deer (s 48(2)). It is illegal to use a snare, trap, net or gun to hunt wildlife in a lake, swamp, marsh, sanctuary or State Wildlife Reserve. However, the Secretary may authorise such use (s 53). It is illegal to kill wildlife by means of poison (s 54). The use of punt guns for hunting is prohibited (s 56).

In several cases the courts have upheld the validity of restrictions upon entry to hunting areas. In 1997 the High Court examined the constitutional validity of a Victorian regulation which prohibited the entry into hunting areas of persons who did not hold a game licence. A protester against hunting argued that this regulation violated an implied freedom of communication which arose under the federal or state constitutions. The Court held that the regulation was constitutionally valid since it was reasonably appropriate and adapted to the protection of public safety (Levy 1997). In *Coalition Against Duck Shooting v Victoria* (1993) the Supreme Court held that this regulation was authorised by the statutory power to make regulations for preserving good order amongst hunters (s 87(1)).

The regulation at issue in these cases has now been repealed (Levy 1997, p 615). However, the Act as amended now provides that it is an offence for persons who do not possess a game licence to enter hunting areas during the open season for duck (s 58C). It is also illegal to hinder or obstruct a hunter (s 58E). In her Second Reading Speech the Minister stated that '[b]y moving the provisions from regulations to the act, police and authorised officers will be able to actually remove offenders from the wetlands, thus removing the potential for conflict between hunters and protesters.' (*Legislative Assembly Hansard*, 18 September 1997, p 197).

The Minister is empowered to issue closure notices (s 86) or emergency closure notices for an area (s 86A). The use of State Game Reserves is regulated by the *Wildlife (State Game Reserve) Regulations 1994*.

The Victorian Hunting Guide (2003, Part 12) provides a useful summary of which lands are open or closed to hunting. Hunting is permitted at these locations and times:

- Hunting game species in state forests and other unoccupied Crown land during the open season
- Hunting pest animals in state forest and unoccupied Crown land at any time

- Hunting game species on state game reserves during the open season
- Hunting pest animals in sanctuaries
- Hunting game species on private land during the open season, and
- Hunting pest animals on private land, with the owner's permission.

Hunting is prohibited at these locations and times:

- Hunting pest species at any time in state game reserves without authorisation
- Hunting game species in sanctuaries at any time
- Hunting in Wilderness, National Parks, State Parks, Coastal Parks, forest parks, flora reserves, fauna reserves, and nature conservation reserves at any time.

Under the *Wildlife (Game) Regulations* 2001 if game is still alive when recovered, a hunter must immediately kill the animal (reg 38). Various hunting methods and devices are regulated. It is illegal to use a bait, lure, decoy or live animal to attract game (reg 29). The use of spotlights and recorded sounds is prohibited (reg 33). Use of a deer call is permitted (reg 29). It is illegal to hunt game from an aircraft or motor vehicle (reg 34). The regulations set out the open and close season for deer (regs 23-24; Sch 2, Part 1; Sch 3, Part 1). There are no bag limits for fallow, sambar and red deer. However, there is a bag limit for hog deer (reg 25, Sch 4).

As was stated above, pest animals are not protected under the *Wildlife Act*. The Governor in Council may declare an animal to be a pest animal under the *Catchment and Land Protection Act* 1994, s 58. Endangered or notable wildlife may not be declared as pest animals (s 59(3)). Animals kept as domestic, pet or farm animals cannot be declared as pest animals, but feral animals of these types may be declared as pest animals.

An 'established pest animal' is established in the wild within the State and poses a serious threat to primary production, Crown land, the environment or community health (s 67). Directions may be given to land owners to eradicate established pest animals (s 73). The import of pest animals is prohibited (s 75). Animals declared as pest animals include: rabbits, hares, foxes, feral dogs, feral goats and feral pigs (Victorian Hunting Guide 2003, Part 11).

The State animal cruelty statute is the *Prevention of Cruelty to Animals Act* 1986. This Act does not apply to hunting carried out in accordance with a Code of Practice (s 6(1)(b)). The relevant code is the Code of Practice for the Welfare of Animals in Hunting, approved by the Governor in Council on 20 March 1990 (AG0974). For example, the Code permits fox hunting with hounds and horses by members of approved organisations (Harrop & Harrop 2001, p 252).

If hunting is not carried out in accordance with the Code, the prohibitions of the Act will apply. For example, it is a prohibited act of cruelty to lay a harmful bait or poison (s 9(1)(j)). However, actions taken in accordance with various other statutes are excluded from this prohibition.

The Act and Regulations prohibit the use of large leghold traps with hinges of 12 cm or wider, except in specified counties of the state (s 15(2); *Prevention of Cruelty to Animals Regulations* 1997, reg 6(1)). It is illegal to use a small leghold trap on Crown land (s 15(3)). The hinge of such a trap is less than 12 cm (reg 6(2)). Use of small leghold traps on other lands is also limited (s 15(3)).

Western Australia

The State wildlife protection statute is the *Wildlife Conservation Act* 1950. All fauna is wholly protected throughout the State at all times, but the Minister may issue a notice authorising the taking of fauna (s 14(1)).

Fauna is defined as any indigenous animal, an animal which periodically migrates to Australia and any animal declared to be fauna by the Minister. However, a prescribed animal is not fauna (s 6(1), (2)).

The Minister may declare that any fauna is not protected and may declare an open season or close season for that fauna (s 14(2)(a)). Fauna may be taken during the open season, but may not be taken during the close season (s 6(1)). However, an open season for sport or recreational hunting may not be declared for duck, geese or quail (s 15A).

It is an offence to take fauna while protected (s 16). However, taking of protected fauna may be authorised by a licence (s 15) or authority (ss 17(2)(c), 23). Royalties may be payable on the skins of fauna (s 18).

The Act prohibits the use of an illegal means or device for hunting (s 17(3)). An illegal means or device is one declared as such by the regulations (s 6(1)).

The effect of the statute's protection of all fauna at all times was examined in *West Australian Field & Game Association Inc v Minister for Conservation and Land Management and Environment* (1992). In that case the Minister had indicated that he would not declare an open season for duck, though at that time the Act allowed him to do so, under the now repealed s 17B.

The Western Australian Supreme Court held that the Minister was not under a duty to consider whether to declare an open season (p 87). A government policy that duck should be protected from sport or recreational hunting was consistent with the Act, which provided that all fauna was protected at all times (p 87). The Minister was empowered to remove this protected status as he or she thought fit (p 86).

As was stated above, a subsequent amendment to the Act provides that an open season may not be declared for duck, geese or quail (s 15A, inserted by the *Acts Amendment (Game Birds Protection) Act* 1992)). When he introduced the amendment, the Minister stated: 'The principle on which this legislation is based is that our native wildlife should be protected, admired and respected, not shot for pleasure' (Western Australia, *Parliamentary Debates*, vol 297, 28 April 1992, p 1291).

The state animal cruelty statute is the *Animal Welfare Act* 2002. It is illegal to be cruel to an animal (s 19(1)). Such cruelty includes various forms of ill-treatment, using an inhumane device, poisoning, and otherwise causing an animal unnecessary harm (s 19(2)).

A metal-jawed leghold trap may be used for wild dog or fox control. Where used for wild dog control, the jaws must be bound with strychnine soaked cloth. Where used for fox control, the jaws must be padded or modified so that any animal which is caught will be unlikely to suffer significant injury (*Animal Welfare (General) Regulations* 2003, reg 8). Finally, it is illegal to release an animal so that it may be hunted by a person (s 32).

(2) International Laws and Codes

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Introduction

Commercial and recreational hunting in Australia occurs in a legislative environment which derives from Australian federal and state statutes and regulations, foreign treaties, and self-imposed industry ethical codes. There are also community expectations about animal welfare and the ethics of taking animal life for recreation or commercial gain. While most hunters would subscribe to some, but not all, “animal rights” philosophies, they are nevertheless influenced by the broad spectrum of public opinion because this affects access to hunting resources and the type of legislation passed by Australian and overseas jurisdictions.

Australian governments have responded to community and international attitudes by formulating laws which control how hunters may take wild animals. These laws apply to the hunting of exotic game as well as native game. They encompass laws designed to conserve the environment and (in some cases) the hunted animal species, to protect the community from dangerous or anti-social hunting practices, to enforce animal welfare considerations, and to meet Australia’s obligations under international treaties.

International laws and codes of practice

Tourism codes of practice

Because commercial safari companies and their staff are part of the tourism industry, they should be aware of the industry’s codes of practice. In 1999 the World Tourism Organisation established a Global Code of Ethics for Tourism (World Tourism Organisation 2003). Australia is not a member state of the World Tourism Organisation but Australian tourism companies could use the principles of the Code as benchmarks for their own activities. The principles refer to abstaining from conduct felt to be injurious or offensive (Article 1), the careful use and protection of natural resources, especially the preservation of endangered species of wildlife (Article 3), care for clients and their safety (Article 6), and adequate training of staff (Article 9). In Article 3, the Code recognises that nature tourism and ecotourism may enhance the standing of tourism if tourism operators respect natural heritage.

Trade in endangered species

Many clients of Australian safari companies live in North and South America, and Europe. These jurisdictions have enacted legislation which controls the import and export of endangered animals or trophies from these animals. Thus the clients of Australian safari companies may be prohibited from importing into their own countries some trophies which may be potentially obtained from hunting in Australia.

The two important lists of endangered and threatened animal species are the IUCN Red List of Threatened Species (IUCN 2002) and the Appendices to the Convention on International Trade in Endangered Species of Wild Fauna and Flora 1973 (CITES) (Environmental Treaties and Resource Indicators, ENTRI, Query Service 1996).

The IUCN Red List has nine categories (IUCN 2002): (i) extinct, (ii) extinct in the wild, (iii) critically endangered, (iv) endangered, (v) vulnerable, (vi) near threatened, (vii) least concern, (viii) data deficient, and (ix) not evaluated. A species is listed as threatened if it falls in the critically endangered, endangered or vulnerable categories.

CITES has three Appendices (Environmental Treaties and Resource Indicators, ENTRI, Query Service 1996). In Appendix I are “all species threatened with extinction which are or may be affected by trade” and Appendix II contains “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 utilization incompatible with their survival”. Appendix III includes species which are nominated by member signatory countries where the co-operation of other countries in regulating trade is needed.

United States law (Title 16, Chapter 35 Sections 1531 and 1533; United States Code 2002) acknowledges that the country is a signatory to CITES and defines that a species may be endangered or threatened because of “any of the following factors:

- (A) the present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) overutilization for commercial, recreational, scientific, or educational purposes;
- (C) disease or predation;
- (D) the inadequacy of existing regulatory mechanisms; or
- (E) other natural or manmade factors affecting its continued existence.”

Section 1538 then specifies that it is illegal to import these species into the United States. US law provides sanctions against trade in endangered species, even if this occurs outside the jurisdiction of the United States. Section 1978 appears to allow the President to “prohibit the bringing or the importation into the United States of any products from the offending country” for a period determined by the President, if nationals of that country engage in “trade or taking which diminishes the effectiveness of any international program for endangered or threatened species.” Thus activities carried out in Australia may threaten Australian-US trade in other commodities.

The European Union has had legislation to control the importation of endangered or threatened animal species, or of products from these animals, since 1984. These laws were comprehensively revised in 1997 (CITES Sector, European Commission 2002). Member states of the EU apply the provisions of the Regulation as stated, or may apply more stringent laws within their own jurisdictions. General overviews of the European law relating to trade in endangered animal species have been published by European Commission, Directorate-General for the Environment (2002; undated).

The EU has been a member of CITES since 1983 (European Commission, Directorate-General for the Environment 2002) and the EU regulations about trade in endangered animals are framed around the provisions of the Convention. Council Regulation (EC) No 338/97 (“of 9 December 1996 on the protection of species of wild fauna and flora by regulating trade therein”) provides for controls over the importation of animals or products of these animals according to their level of endangerment as described in the CITES Appendices, but with some additions (Table 5.1; UNEP-WCMC 2002). Details of the animal species listed in the Annexes to Regulation No 338/97 (as subsequently amended) are given in the Reference Guide to the EU wildlife trade legislation (Europa 2003), and UNEP-WCMC (2002) provides a searchable database. Detailed rules for the implementation of Regulation (EC) 338/97 are in Commission Regulation (EC) No 1808/2001 of 30 August 2001.

Table 5.1. Annexes to Council Regulation no. 338/97, listing the levels of protection for various animal species.

Annex	Includes
Annex A	All CITES Appendix I species Some CITES Appendix II and III species, for which the EU has adopted stricter domestic measures. Some non-CITES species
Annex B	All other CITES Appendix II species Some CITES Appendix III species Some non-CITES species
Annex C	All other CITES Appendix III species
Annex D	Some CITES Appendix III species for which the EU holds a reservation Some non-CITES species

Possible application of European and American legislation to the importation of Australian hunting trophies

The species of Australian exotic wild animals which are considered in this report are: the fox (*Vulpes vulpes*), rabbit (*Oryctolagus cuniculus*), European brown hare (*Lepus capensis*), feral donkey (*Equus asinus*), feral horse (*Equus caballus*), Asian buffalo (*Bubalus bubalis*), feral cattle (*Bos taurus* and *B. indicus*), banteng cattle (*B. javanicus*), feral pig (*Sus scrofa*), feral goat (*Capra hircus*), deer (*Cervus elaphus*, *C. timorensis*, *C. unicolor*, *Axis axis*, *A. porcinus*, *Dama dama*), camel (*Camelus dromedarius*), feral cat (*Felis catus*) and feral dog (*Canis familiaris*). None of these species appear in the CITES Appendices (UNEP-WCMC 2003). Thus, it can be expected that trophies obtained from hunting these animals would not be prohibited imports into the European Union or the United States of America.

Banteng cattle and the Asian buffalo are classed in the IUCN Red List as “endangered” with populations that are trending downwards (IUCN 2002). According to the Red List, there are less than 2500 adult banteng cattle and Asian buffalo, and these species face a “very high risk of extinction in the wild”. Contributing factors are said to include a decline in habitat quality (both species), and potential exploitation, and fragmentation of the banteng population. However, the Australian populations of neither species are specifically mentioned, and the Australian experience, especially with the Asian buffalo, suggest that the CITES view is the more correct.

Prohibition by Australian law of the export of CITES species

The *Commonwealth Wildlife Protection (Regulation of Exports and Imports) Act* 1982 prohibits the export of specimens or animals of the species listed in the CITES Appendices.

References and abbreviations

cl – clause.
reg – regulation.
s – section.
Sch – Schedule.
ss – sections.

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6. The Australian Hunting Industry

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Exotic wild animals in Australia

Introduction

Populations of exotic wild animals in Australia have developed from intentional introductions of these animals over the 200 years of European settlement. The more important of these (from their effects on agricultural enterprises and/or native fauna and flora, or in terms of their capacity to support the safari hunting industry) are the fox (*Vulpes vulpes*), rabbit (*Oryctolagus cuniculus*), European brown hare (*Lepus capensis*), donkey (*Equus asinus*), horse (*Equus caballus*), swamp buffalo (*Bubalus bubalis*), cattle (*Bos* spp.), pig (*Sus scrofa*), goat (*Capra hircus*), deer (*Cervus* spp., *Axis axis*, *Dama dama*), camel (*Camelus dromedarius*), “domestic” cat (*Felis catus*) and “domestic” dog (*Canis familiaris*).

As wild animal populations have increased, they have had greater impacts on agriculture and the public generally. The nature of these impacts, and their severity, has been assessed by, for example, Joyce (1985), O’Brien (1987) and Balogh (2000).

Pigs

Wild pigs are found in all states, but the main concentrations are in Queensland, New South Wales and the Northern Territory (Ramsay 1994). O’Brien (1987) has commented that wild pigs “... pose a management dilemma because they are simultaneously an agricultural pest, endemic and exotic disease hazard, environmental liability, export commodity and recreational resource”. Their relationship to disease is a major concern. Wild pigs have been implicated in, or suggested as possible agents for, the transmission of foot and mouth disease (FMD), tuberculosis (McInerney, *et al* 1995), leptospirosis (Mason, *et al* 1998), hydatids (Thompson, *et al* 1988), Q-fever (Wong, *et al* 2001) and brucellosis (P.J. Murray, *pers. comm.*). It was estimated by (Hone and Pech 1990) that up to 3000 or so cases of FMD might occur before the disease was detected in wild pig populations, and that the disease might spread at a rate of up to 2.8 km/day in the Namadgi National Park in the Australian Capital Territory (Pech and McIlroy 1990). In addition to these threats to the health of domestic animals, wild pigs also predate lambs, etc. (Choquenot, *et al* 1997).

Home range sizes vary according to the locality, but ranges varying between 10.7 and 35 km² have been reported by Saunders and McLeod (1999). Dexter (1999) examined the home ranges of sows and boars during a drought in the Nocoleche Nature Reserve, in a semi-arid area of northwestern New South Wales. Boars had home ranges of 7.9-11.6 km² while sows range was substantially smaller at 4.2-8.0 km². This difference between sexes has been observed repeatedly. The size of the sows’ range changes with season (i.e. food availability). Population densities of 1.6 pigs km² were reported in the Kosciusko National Park (Saunders 1993), and 2/km² on agricultural land in eastern Australia throughout winter and spring (Saunders, *et al* 1990). Caley (1993) reported 0.8 pigs km² in a tropical woodland; this varied with season and increased fourfold in the presence of a cereal crop. Densities between 2 and 3 /km² are summarised by Saunders and McLeod (1999).

Wild sows in the Kosciusko National Park produce about 0.8 litters annually (Saunders 1993) but post-natal mortality was as high as 85%. Constraints to population growth include high temperatures (Dexter 1998, 1999) and predation by dingos (Newsome, *et al* 1983), although Corbett (1995) has suggested that control of pigs in the northern Australian wet tropics requires the dual effects of dingos as direct predators and buffalo as competitors for food.

There have been several studies of the damage done by wild pigs to vegetation. Pigs favour wetter areas, and may change their habitat between seasons, generally favouring the wetter locations (e.g. Alexiou 1983; Bowman and McDonough 1991; Lurance and Harrington 1997). Estimates of the degree of damage vary from 4% of locations studied in the wet tropics of North Queensland (Mitchell and Mayer 1995), 10% of monsoon rainforest in the Northern Territory (Russell-Smith and Bowman 1992). Types of damage include the complete removal of vegetation (Hone 2002) and disturbed and trampled soil (Bowman and Panton 1991). Pigs have been implicated in the dispersal of some Northern Australian woody weeds, including chinese apple (*Ziziphus mauritiana*, Grice 1996) mesquite (*Prosopis pallida*, Lynes and Campbell 2000) and pond apple (*Annona glabra*; Setter, *et al* 2002).

Control measures attempted in Australia against wild pigs include hunting (including recreational hunting with firearms and dogs, harvesting for game meat and helicopter shooting), poisoning, trapping, fumigation, ripping, and habitat and refuge destruction (Saunders, *et al* 1990; Korn, *et al* 1992; Fleming, *et al* 2000). The cost of an effective pig control program (i.e. management to limit population growth but not to attempt eradication) with warfarin in the Namadgi National Park was about AUD60/km² in 1985/6 (about AUD90/km² in 2003). Braysher (1991) has suggested guidelines for effective control programs against vertebrate pests, including wild pigs.

Buffalo and cattle

Buffalo were introduced into the Northern Territory in 1843, and in 1985 there were some 341,000 or 1.5 buffalo/km² in the Top End and they were present in all major habitats (Bayliss and Yeomans 1989). These authors also estimated that there were 356,000 wild cattle at 1.6/km² (but these figures could have included domestic animals), in habitats which overlapped those of the buffalo. The presence of wild buffalo and cattle (wild “domestic” cattle) increases the difficulty of containing potential outbreaks of diseases such as FMD, and they are a reservoir for brucellosis and tuberculosis. The numbers of feral bovines in the Northern Territory has decreased following the extensive culling in the 1980s undertaken to reduce the risk of these diseases (see comments in Boulton and Freeland 1991). Bayliss and Yeomans (1989) counted 33% fewer buffalo and 24% less cattle in a second survey in 1986.

Buffalo do cause habitat destruction. Cameron and Lemcke (1999) describe how the very high densities (up to 0.4 buffalo/ha) on the coastal floodplains of the Northern Territory in the 1960s led to overgrazing with the loss of some preferred pasture species, and the deaths of numerous animals from starvation in dry seasons. On the other hand, buffalo may help to reduce the severity of fires through removing fuel by grazing (Russell-Smith, *et al* 1997).

Control of wild buffalo in northern Australia will probably not result in the extinction of the herd (see modelling by Boulton and Freeland 1991) unless there is a large expenditure of effort and money. On the other hand, some wild buffalo have been contained on farms, tested for tuberculosis and retained as the nuclei of domesticated herds.

Banteng cattle (*Bos javanicus*) are found in the monsoon forests of the Cobourg Peninsular, at densities of about 70/km². Bowman and Panting (1991) have suggested that these animals “have remained near their point of introduction over the last 140 years, possibly because of the rarity of grassland abutting monsoon forest.”

Horses and donkeys

Dobbie, *et al* (1993) suggest that there are about 350,000 wild horses in the whole of Australia, based on surveys made from the 1970s to the 1990s. Most of these are in Queensland (about 100,000) and the Northern Territory (about 200,000). Bayliss and Yeomans (1989) estimated populations of 72,000 wild horses (0.3/km²) and 29,000 donkeys (0.1/km²) in their 1985 survey of the Top End of the

Northern Territory. Choquenot (1990) and Garrott (1991) have suggested that the potential growth rates of populations of wild horses and donkeys are 15 to 20%/year and 23 to 28%/year, respectively.

In the Northern territory, horses are found in woodlands and floodplains, and donkeys in dry woodland (Bayliss and Yeomans 1989). Horses compete with other grazing animals for pasture, and have been implicated in the spread of weeds, damage to fences and watering points, and as a reservoir for diseases (P.J. Murray, *pers. comm.*). They are controlled, mainly by shooting or trapping at water points, only when herds are perceived to have become too competitive with domestic animals for food resources (Dobbie, *et al* 1993).

Goats

There are about 4 to 5 million wild goats in Australia (P.J. Murray, *pers. comm.*), occurring in all states except the Northern Territory (Parkes, *et al* 1996). They may occupy very large home ranges. In Western Australia, King (1992) observed bucks' home ranges of 139 to 588 km² and does' ranges of 15 to 190 km². These are much larger than other reported ranges, e.g. 1.5 (bucks) and 1 (does) km² on Moreton Island in Queensland (see Parkes, *et al* 1996). Potentially, wild goat populations may increase by 42%/year (Mahood 1985, cited by McCloy and Rowe 2000).

Wild goats compete with domestic and native animals for food resources. Their over-grazing may cause significant damage to pastures and other vegetation, encourage or allow the growth of undesirable plant species, and damage soils. Documented instances include removal of perennial grasses and soil changes which contributed to the instability of sand dunes in semi-arid woodlands (Greene, *et al* (1998)). They may adversely affect other vertebrates by removing food reserves which would otherwise be available to native birds (e.g. Benshemesh 1999), although their preferred diet does not overlap with that of the euro (Dawson and Ellis 1996). Goats consume both grass and browse, according to the seasonal conditions. They compete for fodder reserves with sheep, and there is a substantial dietary overlap between goats and sheep (Harrington 1986; Dawson and Ellis 1996).

Wild goats are implicated as reservoirs for diseases. These include caprine arthritis-encephalitis (Surman, *et al* 1988), caseous lymphadenitis (Batey, *et al* 1986), coccidiosis (O'Callaghan 1989; Main and Creeper 1999).

Parkes, *et al* (1996) consider that the breeding prolificacy of wild goats (they can conceive while lactating, bear twins or triplets, and become sexually mature at a young age), and their ability to withstand drought by adapting their feeding habits, make them a potentially serious pest if uncontrolled. Control efforts have included aerial shooting (Pople, *et al* 1998; Bayne, *et al* 2000). Other control methods, such as ground shooting, commercial mustering, and trapping at watering points are described by Parkes, *et al* (1996). These techniques are expensive, e.g. helicopter shooting may cost up to AUD61 per goat killed (Bayne, *et al* 2000), and are only partially effective. Reported harvesting rates vary from 21 to 31% (Bayne, *et al* 2000), to 49 to 75% (Pople, *et al* 1998), and 30 to 80% (Parkes, *et al* 1996).

Deer

There are some 60,000 wild deer in Australia. Most of the wild populations are descended from introductions made by various acclimatisation societies during the mid 1980s. Not all of the introduced species survived. Those which ultimately formed substantial populations of wild deer include hog (*Axis porcinus*), red (*Cervus elaphus*), sambar (*Cervus unicolor*) and fallow (*Dama dama*) deer in Victoria (Bentley 1998); chital (*Axis axis*), red and fallow deer in Queensland (Roff 1960); fallow deer in Tasmania (Murphy 1995); rusa, fallow, and sambar in New South Wales (Bentley 1998); and red and fallow deer in South Australia (Bentley 1998).

The sizes of these wild populations and their home ranges are poorly documented. Hog deer are concentrated on the coastal areas of south and east Gippsland in Victoria. In the late 1960s the population was estimated at about 4000 (data cited by Taylor 1971) and were thought to be increasing. Bentley (1989) has questioned these figures and Cause (1990) has suggested that the natural range of these animals may be contracting due to alternative land uses such as housing. There are 15,000 to 18,000 wild fallow deer in Tasmania (Murphy 1995) occupying about 30% of the state (20,000 km²) and between 16,000 and 20,000 wild red deer in Queensland (C.J. McGhie, pers. comm.), in an area of about 15,000 km². The density of red deer is about 1.4/km² although most animals are confined in a smaller area giving a maximum density of about 2.7/km² (McGhie and Watson 1995). In a recent study, 85% of hinds were pregnant in March/April, and calf survival to one year was estimated to be 70% (Dryden and Finch 2002). These data, plus the generally good nutritional condition of these hinds, suggests that the Brisbane and Mary valleys of southeast Queensland offer a good habitat for red deer. The population may have increased in the last decade but hunting (700 to 1500 animals annually, McGhie and Watson 1995), and predation by dingos and wedge-tailed eagles, is thought to restrict the growth of this population. The NSW National Parks and Wildlife Service (2002) estimated that there were about 3000 rusa deer in the Royal National Park. This is the main concentration of wild rusa deer in mainland Australia. The reproduction rate is about 75%, with 50% of calves surviving to one year of age (and presumably to more mature ages). Cause (1990) has suggested that the wild populations of chital (Queensland), fallow (all eastern states) and red (Victoria) deer are static, while those of sambar deer are expanding.

Deer are thought to have adverse effects on plant diversity and abundance (e.g. in the Royal National Park, National Parks and Wildlife Service 2002), and through damage to gardens and crops. Deer may compete for food with cattle and other domestic and native animals. There is 15 to 50% diet overlap with swamp wallaby (*Wallabia bicolor*) in the Royal National Park. Red deer in Queensland eat browse and grasses, with browse being a greater part of the diet in winter. Thus there is more overlap between the diets of red deer and beef cattle in summer than winter. According to Taylor (1971) Victorian hog deer have seasonal changes in diets which are similar to those of Queensland red deer. At the time of that study there was little overlap between the diets of hog deer and of swamp wallabies, but there was potential for competition with the western grey kangaroo (*Macropus fuliginosus*) if the densities of hog deer increased.

The disease status of Australian wild deer is not well known. Some graziers are concerned about the possible transmission of cattle tick (*Boophilus microplus*) from ticky areas to clean areas in southeast Queensland. Finch (1999) assessed the tick burdens of red deer in the Brisbane Valley of Queensland and showed that deer carried the cattle tick as well as small numbers of paralysis and scrub ticks (*Haemaphysalis longicornis*, *Ixodes holocyclus*). No studies of cattle tick burdens in other deer species have been published, except for one showing that rusa deer (*Cervus timorensis*) in Papua New Guinea are poorer hosts for cattle ticks than cattle (Owen 1977) and do not transmit *Babesia bovis* or *Anaplasma marginale* (Owen 1985).

The infectious disease status of wild deer has not been well described. Although there are data from studies of farmed deer, these may not be a good model for free-ranging wild animals as they are kept under much more intensive conditions. Tasmania is free of bovine tuberculosis (Lloyd-Webb, *et al* 1995), so the fallow deer of that state *per se* will not act as a reservoir for possible infections of cattle. Robinson, *et al* (1989) reported an outbreak of tuberculosis in farmed deer in South Australia. There was no evidence, in a survey made in 1982, of tuberculosis in Queensland farmed deer, or of brucellosis or infectious bovine rhinotracheitis (QDPI 1983). Several viral and other infectious diseases have been reported in deer. Weir, *et al* (1997) reported epizootic haemorrhagic disease of deer in cattle in the Northern Territory. McKenzie, *et al* (1985) found evidence for leptospirosis, bovine ephemeral fever, epizootic haemorrhagic disease, akabane virus and bluetongue group antigen infections in farmed deer.

McKenzie, *et al* (1985) published a list of parasites in farmed deer in Queensland. These included: *Orthocoelium* (*Ceylonocotyle*) *streptocoelium*, *Fasciola hepatica*, *Echinococcus granulosus*,

Capillaria sp., *Cooperia* sp., *Dictyocaulus viviparus*, *Haemonchus placei*, *Oesophagostomum venulosum*, *Spiculoptera* *asymmetrica*, and *S. boehmi* (*spiculoptera*) but they concluded that these infestations did not pose serious health risks. Presidente (1984a,b) has given a complete description of the parasites which infect Australian deer.

Wild deer are conceivably at risk from diseases carried by domestic or other wild animals. Malignant catarrhal fever is a rapid, fatal disease caused by a virus carried by sheep, rabbits, and possibly goats. Red and rusa deer are susceptible, while fallow deer seem to be more resistant. An occurrence of malignant catarrhal fever in rusa deer in Queensland was described by Tomkins, *et al* (1997). Slee and Skilbeck (1992) have shown that *Yersinia* infections in sheep are due to species/serotypes which are identical to those in cattle, goats and deer. Yersiniosis is found in farmed deer in southern Australia but the question remains as to whether sheep are at risk of infection from wild deer or vice versa.

Camels

Australia has the world's only large populations of feral camels (Dörge, *et al* 1992). Camels were first imported in 1840, and many of the extant wild herds have developed from releases in the 1920s from camel studs/farms (Williams 1999). The Australian population of wild camels is about 200,000 (Northern Territory Conservation Commission, cited by Ellard and Seidel 2000) and has grown to this figure from about 20,000 animals in 1966. Half of these are in the pastoral and desert areas of Western Australia, 20 to 25% are in the northern part of South Australia and western Queensland, and the remaining 25 to 30% are in the southern regions of the Northern Territory (data of Short, *et al* 1988, cited by Ellard and Seidel 2000).

A telemetry study by Edwards, *et al* (2001) showed that the home ranges of female camels varied from 449 to 4933 km² and increased with increasing aridity. Heucke, *et al* (1992) reported densities of 0.05 to 0.15/km², with summer-season home ranges of about 10 km², although these changed from time to time. They noted that camels may travel 20 to 25 km per day or more in winter. Wild camel populations may grow at 7 to 12%/year in good conditions (Dörge and Heucke 1989, cited McCloy and Rowe 2000). Females live and are reproductively active until 30 years of age, and neonatal mortality is relatively low, at about 28% (Heucke, *et al* 1992).

Camels rank very low as a vertebrate pest species in the pastoral regions Australia (McCloy and Rowe 2000). They are a declared pest in Western Australia on the basis of the damage that they may do to fencing, water troughs, etc., their supposed deleterious effects on vegetation and competition with domestic stock, and a possible risk that they may pose as reservoirs of exotic disease.

Wild camels have little impact on vegetation when they are found in their natural population densities (Heucke, *et al* 1992). When congregated at 3/km² under experimental conditions they had severe effects. Camels are essentially (but not obligate) browsers. According to Heucke, *et al* (1992), grasses comprise only 2.5% of the diet of camels, and these are mostly eaten immediately after rainfall. The preferred habitats are bush country and sand plains as these are where camels find the shrubs that they prefer to browse (Heucke, *et al* (1992). However, they use 80% of the species present in central Australia with about half their diet coming from trees and shrubs (Heucke, *et al* (1992). They may have an adverse effect on plant abundance only if a species is actively selected for browsing (White 1997), or if it is rare in the area, or located near salt pans where camels tend to congregate (Ellard and Seidel 2000). Graziers in the Northern Territory suggest that cattle do better in droughts if they graze in the same areas as camels, and that there is no adverse effect on cattle performance in good seasons. Reasons may be that camels tend to control woody weeds, and there may be some transfer of digestive bacteria between camels and cattle.

Camels may actually or potentially carry FMD, papilloma virus infections, sarcoptic mange, *Corynebacterium pyogenese*, whipworm, dermatophytosis (*Trichophyton* spp.), clostridial infections (Ellard and Seidel 2000). Camels in Western Australia appear to be free of tuberculosis, brucellosis, Johnes disease, vibriosis, trichomoniasis, and liver fluke.

Predation by dingos and possibly crows is thought to be an important population control factor (SCARM 1997). Camels are also susceptible to some poisonous plants and to sodium deficiency. In Western Australia, wild camel populations are generally controlled by shooting (Ellard and Seidel 2000), and are considered to be easy to kill by aerial shooting (McCloy and Rowe 2000). A proportion of the wild herd is taken by game meat hunters (about 100,000 carcasses were sold for domestic consumption in Australia in 1997) and recreational hunters (Ellard and Seidel 2000). There have been some live exports to the Middle East. Animals for live export or for domestication are collected by trapping and conventional mustering with horses, helicopters or vehicles (SCARM 1997).

Exotic wild animal management

The Tasmanian example

There is a long history of hunting in Tasmania. Twelve fallow deer were introduced into Tasmania in the 1836. This introduction has grown into a herd of 15,000 to 20,000 wild deer (Murphy 1995; G. Hall, personal communication). In the 1980s an increase in deer numbers was accompanied by an increase in “common man” hunting, with an intention to eradicate the wild deer. Hunters’ attention was focussed on bucks, and over-hunting caused a decline in the general quality of bucks.

In 2000, a review of the Tasmanian Department of Primary Industries, Water and Energy (DPIWE) resulted in the formation of the Tasmanian Game Management Unit and the establishment of Game Management Liaison Committees (G. Hall, personal communication). These have a minimum of eight members, and may include three from the Tasmanian Farmers and Graziers Association, one from Forestry Tasmania, four hunters and four landowners.

Property-Based Game Management (PBGM) plans are a key component of the Game Management Unit’s control of the numbers of wild deer, and of other pest species. These plans are described by (Murphy 1995). They use quality deer management (see Chapter 3) as the strategy to control deer numbers and improve the trophy quality of deer. Presently (2001) Property-Based Game Management (PBGM) plans cover hunting on 911,000 ha (300 properties); the scheme having grown from covering only 15 properties on 100,000 ha in 1997 (G. Hall, personal communication). It is estimated that 30% of Tasmanian hunters are covered by these agreements.

The scheme is self-funding, with about 3000 licences sold each year (at AUD48 each). Licenses to cull deer are issued by the DPIWE. At present, each licence authorises a hunter to take one buck plus one doe per year. Permits to cull wallabies, possums and additional does may also be issued. The number of permits issued in each year is based on an assessment by the Tasmanian Game Management Unit of the numbers of pest species in each area, using an algorithm developed by the Unit to predict the culling effects. These assessments are made on the basis of wildlife counts and/or hunter records. Permits to take 10% of the counted number are issued.

Contained within the PBGM plans are controls on other nuisance species, including wallabies and possums. This control is implemented by requiring licensed hunters to take specified numbers of male and female deer, and of other pest species, including wallabies and possums.

A case study: Connorville Station

The property-based game management plan in place at Connorville Station requires hunters to obtain a Tasmanian hunting licence, to be members of the local hunting association, and to pay a AUD120/year property access fee (note: throughout Tasmania, property access fees range from nil to AUD200/year). Authorised hunters are issued with property access permits, and must wear, while hunting, a blaze orange vest which carries the permit number.

In 2001, 900 hunters were licensed to operate on Connorville Station. Each hunter was authorised to take one buck plus one doe, or two does. Bucks are hunted in March, and does for generally the last two weeks in March, and the last two weeks of May and the first two weeks of June. Outside these deer hunting seasons, hunters must visit the property five times over the year, and take specified numbers of pest species: wallabies (Bennetts or rufus), brush-tailed possums, rabbits. The property owner provides each hunter with 2 trailer-loads of firewood which hunters may collect in April, May and June from fallen trees only.

The nature of the relationship between the hunters (members in this case of the Connorville Deer Hunters Inc.) and the property owner is indicated by this memo from the Secretary to members:

“I have had a request ... asking hunters to concentrate their hunting around Near Stable and Big Bullock Run. Plantations are going to be established (and) game numbers to be kept down over the next couple of months.”

The hunters' association monitors the annual take, in association with the Tasmanian Game Management Unit. Some 600 to 800 records of individual kills are received annually. The association penalises its members if they do not comply with rules relating to declaration of numbers and types of animals killed. Penalties imposed by Connorville Deer Hunters' Inc. are outlined in Table 6.1.

Authorised hunters also perform a regulatory function. They patrol the property (while hunting) to deter and possibly identify, unauthorised hunters. This information is passed onto the Police, or to the Tasmanian Parks and Wildlife Service. Tasmanian law (Tasmanian Police Offences Act) allows a property owner to deputise authorised hunters as his agents.

Table 6.1. Penalties imposed by Connorville Deer Hunters' Inc. for infringements of hunting rules.

late return of jawbone – first offence	hunting ban for 1 week
late return of jawbone – second offence	hunting ban for 1 season
taking under-sized buck (< 16 points, i.e. a 2-yearold or younger) – first offence	hunting ban for 1 week
taking under-sized buck – second offence	hunting ban for 1 season
carrying a firearm after taking a buck	hunting ban for 1 weekend
antlers not provided for inspection at the annual barbeque (a social <i>cum</i> regulatory event)	hunting ban for 1 week
failing to declare the taking of a deer	forfeit of property access permit

The effects of property-based management of hunting

PBGM plans have improved the quality of bucks, and have controlled the male:female ratio and the age structure of the wild herd (G. Hall, personal communication; Figs. 6.1, 6.2). At Connorville, the average Douglas trophy score of bucks taken is now 199, i.e. these animals are nearly of trophy quality, which requires a minimum score of 200 (G. Hall, personal communication). Seven percent of bucks taken in 1994 had scores over 200; this proportion had increased to 29 % in 2000 (G. Hall, personal communication). While this may not be of great concern to most people, or even to the landowners, the improvement in buck quality is a major reason why hunters are prepared to comply with the restrictions and cost of PBGM plan hunting, and to play some part in monitoring and deterring unauthorised hunting. International visitors may be attracted to hunt in areas where trophy quality animals can be secured, and this could boost local economies.

PBGM plans help landowners to maintain pest animal densities (and thus impact on the food reserve) which are acceptable to the landowner. The Tasmanian Game Management Unit considers that wallabies and possums impose a grazing burden equivalent to 0.4 and 0.15 dry stock equivalents (DSE; 1 DSE = 1 non-lactating mature sheep). One fallow deer is equivalent to about 1 DSE.

The use of poison baiting to control feral animals in Tasmania has been reduced by the effect of controlled hunting. It is expected that the use of 1080 (sodium fluoroacetate) will be halved by 2005, and completely eliminated by 2015 (G. Hall, personal communication). This will clearly reduce the impact of poisoning on non-target species.

The Tasmanian Game Management Unit has been invited to other Australian states and has enrolled graziers on 239,000 ha in NSW, 15,000 ha in South Australia, and in Queensland into similar schemes (G. Hall, personal communication).

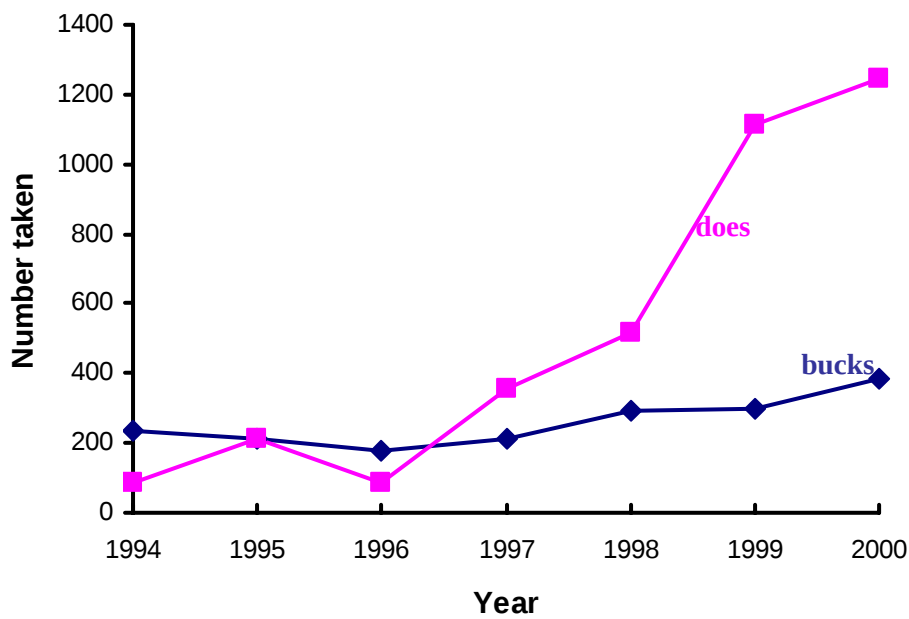


Fig. 6.1. Numbers of fallow deer reported taken between 1994 and 2000 (data courtesy of G. Hall. personal communication).

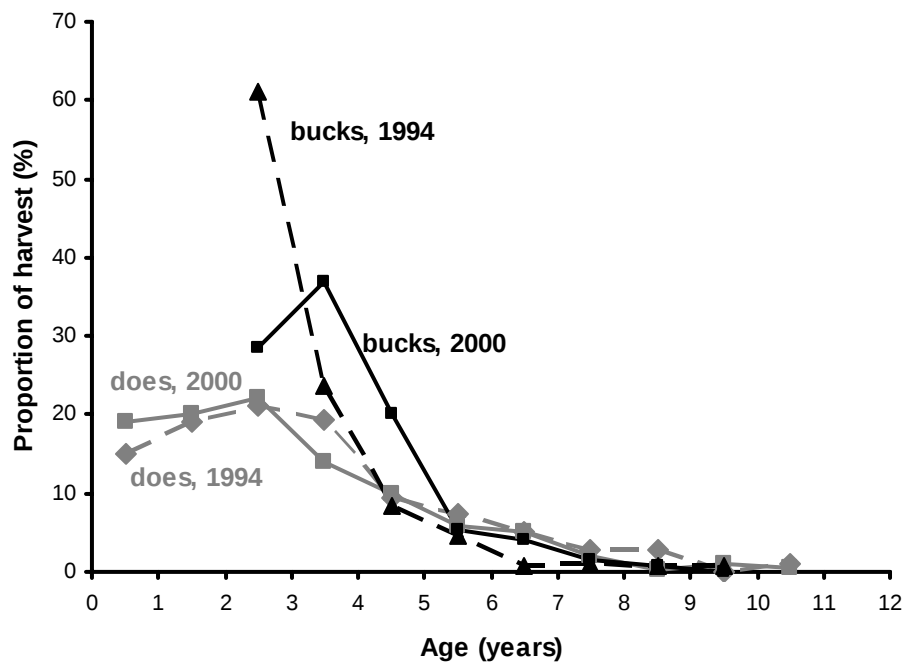


Fig. 6.2. Proportions of does and bucks of different ages in the reported kills in 1994 and 2000 (data courtesy of G. Hall. personal communication).

Management practices in other Australian states

The management of exotic wild animals in other parts of Australia varies from region to region. In some states, hunting groups have adopted PBGM plans or have participated in vertebrate pest control. The South East branch of the Australian Deer Association (ADA) participated with local landholders, and the South Australian Department for Environment and Heritage (acting as a “landholder”), and local animal and plant control boards collaborated to control red deer in the Gum Lagoon Conservation Park and the area generally. Fallow deer are naturalised in the region and are not considered to cause much problem. However, there are increasing numbers of red, chital and sambar deer (possibly escapees from deer farms) and these are considered to be a potential or actual nuisance. The aim of the exercise was to reduce numbers of fallow deer and eliminate the other species from the area. Once shooting was chosen as the preferred control method, over poisoning and trapping, the ADA was chosen because its members had hunting skills, operated according to a code of practice, and are a generally well-managed organisation (M. Williams, personal communication). ADA members who participated had appropriate licenses and permits and were supervised by ADA co-ordinators (ADA undated).

The Sporting Shooters Association of Australia Hunting and Conservation branch in SA has an ongoing project, in association with National Parks and Wildlife South Australia, to cull wild goats and other pest species in five South Australian national parks, and certain privately-owned land. The project aim is to reduce pressure on forage resources and to thus restore populations of native animals which are threatened in those areas (SSAA Hunting and Conservation 2003). Hunting is done on foot, and national parks are closed to the public during the hunt (R. Fisher, personal communication). There are similar Hunting and Conservation branches in Queensland and NSW.

RIDGE Inc. was formed in southeast Queensland by a group of graziers and hunters to promote and protect the wild deer herds of Queensland through sustainable use practices based on sound scientific research and co-operation with landowners” (RIDGE 1999). PBGM plans have been progressively implemented on RIDGE members’ properties over the last decade, especially in the Brisbane and Mary River valleys, with significant assistance from Dr. Graeme Hall of the Tasmanian Game Management Unit (C. McGhie, personal communication). Also in Queensland, PBGM plans are operated on three properties near Stanthorpe, with a potential to expand to cover over 250,000 ha (P. Luhrs, personal communication). Both RIDGE Inc. and the various ADA branches in Queensland have monitored the ages and trophy scores of deer taken in Queensland over the last decade or more.

Exotic wild animal management in Victoria can be divided into two types: the first is facilitation of the control of “pest” species like pigs, rabbits, hares and foxes; the second focuses mainly on managing the state’s deer as a hunting resource, and to maintain stocks of the threatened hog deer. Regulations relating to the hunting of pests deal mainly with matters of access to private and public lands, and firearms regulations. The Victorian Game Management Unit (within the Department of Sustainability and Environment) manages the state’s deer populations.

Victoria has sambar, fallow, hog and red deer. The Game Management Unit advises policy relating to deer hunting and monitors the deer populations (M. Sverns, personal communication). A Hunting Advisory Committee which includes recreational hunters also advises the minister on similar matters. Deer management policies inform the hunting rules which are summarised in the Victorian Hunting Guide. Policy is framed to maintain adequate but not excessive stocks of deer as a recreational resource, to take account of animal welfare (e.g. not killing lactating hinds, and to reduce the danger of heat exhaustion in hunting dogs), and to protect the general public from hunting accidents at times of the year when public recreational areas are in high use.

Regulations about bag limits and hunting seasons for hog deer are based on population dynamics information. Hog deer have a special place in Victorian wildlife because this species is threatened in its own endemic areas. The Victorian hog deer population is one of the world’s largest remaining

populations. Hunters of hog deer must obtain a hunting licence and are issued two tags (one for a male and one for a female). The tags must be returned at the end of the season with a completed hunting record form. Hog deer in the Blond Bay state game reserve are managed by a committee which includes representatives from the Department of Sustainability and Environment, Parks Victoria, and the ADA (M. Sverns, personal communication). A privately-owned herd of hog deer is maintained on Sunday Island by the Para Park Co-operative Game Reserve Ltd. The Co-operative maintains the herd at an optimum size according to forage reserves by adjusting the annual quota (Para Park Co-operative 1999). Although the herd is privately owned, state rules about hog deer hunting apply to this herd.

There is a small number of red deer in western Victoria, mainly in the Grampians National Park. The South West Victoria Deer Advisory Group monitors the size and density, and age and sex structures (SWVDAG 2002) of this population, and represents the interests of red deer hunters in that region to the state government.

Research

At least five organisations more-or-less actively fund private research programs. Most of these deal with deer conservation issues, or the interactions between deer and farming or the general environment. The ADA has a subsidiary, the Australian Deer Research Foundation. The Foundation was established in 1978 “to promote research into the biology, ecology and management of wild deer in Australia, and to publish the results of that research” (ADRF undated). The ADRF is the ADA’s publishing imprint. It is self-funding and raises revenue from the publishing and sale of books and other material about wild deer and deer hunting. The ADRF has supported the development of PBGM plans in Tasmania

The Para Park Co-Operative Game Reserve Limited has sponsored a PhD thesis on hog deer (Taylor 1977), and other parasite and mineral status studies on animals taken during annual hunts (Para Park Co-operative 2002).

The South West Victoria Deer Advisory Group monitors the red deer of the Grampians National Park and surrounding areas. It has reported data on the size and movements of hind groups and stags, the total herd size, sex and age structures, and the number of hunters in the area (SWVDAG 1996).

RIDGE Inc., a deer research and hunting group established by graziers and deer hunters in southeast Queensland, has funded a variety of research programs. A RIDGE Inc. member contributed a paper to the 1994 conference on the sustainable use of Australian wildlife (McGhie and Watson 1995). Following expressions of concern from beef cattle producers in southeast Queensland, RIDGE Inc. funded an investigation into the possible role of red deer as carriers of cattle ticks (*Boophilus microplus*) in 1999. This project (Finch 1999) was a collaborative effort between RIDGE Inc., Griffith University and The University of Queensland. The Qld. state branch of the ADA offered to support a continuation of this project. After the 1999 work, there was a major study of the condition and performance of the southeast Queensland red deer herd (Finch 2000; Dryden and Finch 2002). In this study, measurements were made of the sizes of the whole population and of individual breeding groups, age and sex structures, reproduction success, nutritional status at two times of the year, and diet selection by these animals. The investigation has since been followed by ongoing monitoring of the herd

SSAA Hunting and Conservation Branch SA monitors the ages of goats killed during their pest animals culls, and changes in the flora and fauna (e.g. ingress of exotic species like donkeys, and changes in the abundance of native animals). Members supply cats and fox gut content samples for monitoring by National Parks and/or university personnel. Members of SSAA Hunting and Conservation Branch together with other interested parties formed the Yellowfoot Rock Wallaby Preservation Association and own the Bunkers Conservation Park. The park was formed to protect the endangered yellowfoot rock wallaby and other threatened flora and fauna.

The game meat industry

The game meat industry will not be discussed in any detail in this Report, but some comment is warranted because of the connections between the game meat and the commercial hunting industries. Clearly, one outcome of hunting is an animal carcass. This could be sold on the game meat market provided that the rules about hygiene and processing the carcass are followed, and the guide has the necessary permits. Relevant Australian Standards which deal specifically with game meat production include:

- *Hygienic Production of Game Meat for Human Consumption* (Australian Standard 4464: 1997) which requires licensed operators and personnel responsible for the harvesting of game animals and the inspection of game meat and meat products to have a range of knowledge and skills; and
- *The Australian Standard for the Transportation of Meat for Human Consumption* (Australian Standard 4461:1997).

Each state has its own rules about the harvesting and processing of game meat. For example, the Queensland rules include requirements for HACCP-based quality assurance procedures and periodic audits (Safe Food Queensland 2002). The NSW government specifies methods of construction and use of vehicles used to transport game meat (SafeFood NSW 2001).

Readers who are interested in game meat production should consult O'Brien, *et al* (1990), Ramsay (1994) and relevant references in the first section of this chapter for more information. In particular, Ramsay (1990) provides data on the species used for game meat production and gives a guide to the amounts harvested.

Australian commercial and recreational hunting

Hunting organisations in Australia

The main (in terms of membership) recreational hunting associations in Australia are the Australian Deer Association (ADA), the Sporting Shooters Association of Australia (SSAA), and the Safari Club International Downunder Chapter (SCI). There is also an Australian branch of the US Buckmasters Club. There are ADA state organisations in all states and territories except Western Australia, and there are subsidiary branches in most states. The SSAA is represented in all states and territories. Although primarily a shooting association, it has a Hunting and Conservation Branch in South Australia and other similar branches are presently being established in other states. The SCI is an American organisation, and is one of the world's premier big game hunting clubs. Like the ADA and the SSAA, it has adopted a variety of conservation, hunter education, and philanthropic activities. Although there is no peak body for recreational hunters in any formal sense, these organisations have adopted that role and lobby Australian governments and overseas organisations (e.g. the SCI has funded a professional wildlife biologist to represent the Club in international conservation forums; J. Woods, personal communication. Some of the smaller recreational hunting *cum* conservation groups also actively lobby their local governments.

As well as these large organisations, there are some 55 unaffiliated recreational hunting clubs; almost all of these (80 %) are based in NSW. Some of these are single-interest clubs, but many are interested in hunting more than one type of animal, and some combine hunting and fishing.

There are about 70 companies and individuals who advertise commercial hunting throughout Australia. (Note: "company" is used loosely here to include entities, including individuals, which operate commercially but which may not be formally incorporated as a company. Subsequently in this chapter, the term "outfitter" will be used to denote a company which arranges commercial guided hunting or balloted hunts; see Chapter 1 for definitions). There is at least one company which acts as an agent: the company has a register of landholders who wish to sell access to their properties for

hunting, but does not provide guides, or the range of ancillary services which would be expected from an outfitter. This type of company is called an “agent”.

Most (more than 80 %) of those companies which advertise for clients are headquartered or located in Victoria (22 %), Queensland (41 %), and NSW (16 %). Only 10 % of outfitters are located in the Northern Territory, but these are important because the safari hunting provided by these eight companies is probably the closest that Australia can provide to the big game hunting experience available in southern Africa.

The outfitters discussed in the previous paragraph do not include landowners who offer access to hunting for a fee. According to the *Western Hunting Information Guide*, which is a comprehensive source of information on the availability of hunting on private property, there are at least another 80 or so individuals in this category. When other properties which are hunted through agreements with agents (e.g. Inland Hunting Properties) are included, the total number of properties involved in commercial hunting is much more than this. Of landowners who advertise in the *Guide*, 33 and 48 % respectively, are in Queensland and NSW (Western Hunting 2002/2003). These distributions probably reflect the location and activities of the *Guide*'s publishers. However, the activities of recreational hunting clubs, which usually have co-operative arrangements with landowners for both access for hunting and possibly pest animal or plant control, and the widespread use of PBGM plans in Tasmania, may reduce the demand for access to the facilities provided by outfitters or landowners.

There is at present no Australian association for professional hunting guides (professional hunters), although Australians may apply to join the International Professional Hunters Association. Similarly, there is no peak body for the Australian outfitting industry.

Codes of practice, hunting ethics, safety, and hunter education

Most Australian hunters, certainly those who are members of the major Australian recreational hunting organisations, subscribe to an ethical code. These are designed to inform members and the public about the philosophy of hunting, and to reassure the public that hunting is done humanely and with respect for the quarry and the environment.

Codes of practice relating to hunting have been published by the Commonwealth and Victorian governments. The Victorian code (Bureau of Animal Welfare 2001) was developed in 1990 to cater specifically for hunting. The code “aims to prevent cruelty and encourage the considerate treatment of animals that are hunted and to protect the welfare of other animals where hunting occurs.” The Code promotes membership of reputable hunting organisations, conservation of the environment, safety, and expertise among hunters.

Three Commonwealth codes deal with the shooting of feral wild animals. These are the “Code of Practice for the Humane Shooting of Kangaroos” (Environment Australia 1990), the “Model Code of Practice for the Welfare of Animals: Feral Livestock Animals – Destruction or Capture, Handling and Marketing” (SCA 1991), and the “Australian Standard for Production of Game Meat for Human Consumption” (SCARM 1997). While none of these codes refers specifically to commercial safari hunting for wild exotic animals, they all deal with aspects of the killing of wild animals and how this may be accomplished with minimum cruelty. For this reason, and until jurisdictions other than Victoria develop codes of practice for hunting *per se*, it is probably wise for commercial safari hunters to use their recommendations as guides to acceptable procedures. The SCA (1991) recommendations deal specifically with pigs, donkeys, horses, goats, cattle, swamp buffalo, Arabian camels, and deer. They recommend “best practice” in relation to the target (i.e. that animals be killed by shots to the head or heart/lungs), and types of firearms (telescopic sights and rifles of preferably 0.308 calibre, with 170 grain for large animals, 150 grain for deer, and 80 or 150 grain ammunition for pigs and goats). In relation to hunting ethics, both Environment Australia (1990) and SCA (1991) emphasise the importance of a “clean kill”. Environment Australia (1990) notes that “the primary objective must be to achieve instantaneous loss of consciousness and rapid death without regaining consciousness.

For the purposes of this Code, this is regarded as a sudden and painless death.” SCA (1991) makes the point that while shooting is an acceptable method of killing feral animals, it can become unacceptable if the animal is likely to be wounded rather than killed. Both Codes specify that shooting must not be attempted if it is doubtful that an instantaneous kill would be obtained, i.e. if the animal can not be seen clearly or is not within range. If they are to conform to these Codes, safari guides or professional hunters should be prepared and able to humanely and promptly despatch a wounded animal. They should test the marksmanship of potential clients and discourage those who lack expertise, clients who wish to use a firearm of too small calibre or bow of too weak a pull, or who want to shoot from vehicles or boats.

Australian recreational hunting organisations all have codes of ethical behaviour. Although the emphases of different organisations differ, their codes of practice (e.g. Field and Game Australia Inc. 2002; Australian Deer Association 2003; Sporting Shooters’ Association of Australia undated; Nepean Hunters Club undated; Inner West Hunters Club undated) generally stipulate how the organisations’ members should behave in relation to trespass and other interactions with landowners and the public, dealing with wounded game, safety with firearms, conservation of game and the environment, and proficiency in marksmanship. The Australian Deer Association (2003) recommends that where there are no legally stipulated bag limits that hunters take no more than one animal per hunting day, and that hunters must not release deer outside the feral range of that species. The NSW Inner West Hunters Club (undated) stipulates that all hunting should be “fair chase” and emphasises that hunters should develop their skills in bush craft and marksmanship to maximise the humane killing of game.

The Australian Deer Association has a comprehensive set of rules for disciplining members if their rules are breached. Penalties which the Association may impose vary from a short-term suspension of membership (e.g. 1 year) to expulsion from the organisation (Australian Deer Association 2003).

All those who use the environment should attempt to reduce their impact on it. The recommendations of the Confederation of Bushwalking Clubs NSW (2003) make a satisfactory set of guidelines, both for care of the environment and for the safety of the individual, for those who use the outdoors for recreation.

The major recreational hunting organisations all have hunter education programs. The ADA offers periodic training schools on selected properties throughout the country. RIDGE Inc. also provides hunter training at their properties in Queensland. The SSAA offers training in firearm use and safety, and opportunities (compulsory in some cases) for hunters to practice marksmanship before undertaking a hunt.

Benefits of hunting to the Australian economy

The Australian Bureau of Statistics does not collect data on the economic aspects of recreational or commercial hunting. We can get estimates of participation from memberships of hunting clubs, and other sources. The most comprehensive compilation of economic and participation data, which refers to recreational rather than commercial hunting, is the survey published of deer hunters by Cause (1995). He estimated that there were 10,000 deer hunters in Victoria, 4,000 in Tasmania, 1,400 in Queensland, and 17,500 over the whole of Australia. Based on a survey of Victorian deer hunters, he estimated that Australian hunters made between 3 and 11 hunting trips each year, spent AUD58.44 million annually in hunting-related costs. This is equivalent to about AUD82 million at 2003 prices.

Cause’s (1995) survey did not include expenditure on club subscriptions, entry into hunting ballots (where a club chooses by lot those hunters who will participate in a hunt,) or the cost of hunting permits and licenses. His estimate of the numbers of Victorian deer hunters (10,000 in 1990) is very much less than the total number of hunters (of all species of game) in 2003. About 30,000 hunting licences were issued in Victoria in 2002. As each of these cost at least AUD40, the revenue from these was more than AUD1.2 million. Balloted hunting for hog deer in East Gippsland raises about

AUD10,000 each year. ADA ordinary membership is presently AUD60 per year, so the approximately 4,000 members spend AUD240,000 each year on subscriptions.

In the absence of collected data, it is very difficult to gauge the economic value of commercial hunting. One commercial hunter in Tasmania estimates that his operation adds about AUD500,000 to the local economy through direct hunting charges, with additional amounts paid for accommodation in local bed and breakfast houses, hire of vehicles, etc. Indications of the value to local economies of other hunting operations can be gained from the hunting fees and trophy charges described below.

Commercial safari hunting in Australia

Types of commercial hunting in Australia

There are essentially three types of legal hunting:

- Guided, commercial safaris, where the client employs an outfitter or guide to ensure the success of the hunt and the whole touristic experience. The guide is a person who is knowledgeable about the area, hunting procedures, and the nature of the animals being hunted
- Unguided hunting, but where fees are paid by the hunter to obtain access to a property and sometimes to obtain a trophy animal
- Hunting on land where the landholder does not charge access or trophy fees.

If hunters do not own land they must, in all cases, have the permission of the landholder before they may enter a property. To fail to do this, i.e. to enter land and take animals (especially deer or other big game) without permission constitutes poaching. This is one of the worst forms of misbehaviour found in hunting, because it involves trespass and can be associated with damage to property. Individual landholders cite varying experiences of poaching. One commercial hunter commented that the new gun laws appear to have reduced the number of “riff raff”.

Arrangements can be made privately between the hunter and the landholder, and some landholders advertise the availability of hunting on their property. Alternatively, the guide or outfitter will arrange access to a property. If a guide or outfitter is involved, they will take responsibility for the financial and other arrangements made with the landholder. In other cases the final responsibility for arrangements about the conditions of access for hunting rests with the hunter(s) and the landholder.

In cases where a desirable type of animal or access to hunting land are in short supply, it is common for the organisation which controls that facility to hold a ballot. Hunters pay a small fee (e.g. AUD10) to enter the ballot, and if successful, they pay normal access and trophy fees as well. Examples of balloted hunting are the annual ballots for hog deer hunting in the Blond Bay and Boole Poole Peninsula areas of East Gippsland, and for access to RIDGE Inc. red deer properties in southeast Queensland.

Hunted species and types of hunt

Hunted animals include all those exotic wild animals listed earlier in this chapter, plus blackbuck antelope (*Antelope cervicapra*) which are available in some hunting estates. In almost every case, these animals are wild, i.e. have not been released or escaped from farms. The particular species hunted depends on the location of the hunting area. Many properties in western NSW, Victoria and Queensland offer pigs and goats (although access to goat hunting is declining due to the commercial value of live feral goats), and also foxes, rabbits, hares, wild dogs, and wild cats.

We can make a useful distinction between pest species and “big game” animals. Pests are those animals listed in the previous paragraph, excluding blackbuck. Big game animals are those discussed previously in this chapter. It is these latter species which constitute the basis of Australian commercial

safari hunting. Some hunters visit Australia to take specific species. These may include the “South Pacific 15”, i.e. nine species of deer (white tailed and sika deer, and the seven species listed below), thar, chamois, wild pig, wild goat, banteng cattle and buffalo. International hunters may have quite specific requirements. Americans often seek “Gold Medal” trophies (this is the highest SCI trophy category). Australian wild exotic species are of high trophy quality – current SCI all-time records are held by Australian examples of blackbuck, banteng, water buffalo, and these deer species: chital, Javan and Moluccan rusa, and sambar. European hunters may prefer a representative example of the species and value deformities or old injuries as signs of maturity with its accompanying struggles with the vicissitudes of life.

Deer are a prized species, partly because of their inherent attractiveness and partly because they are an Australian “big game” animal. Hog deer are particularly attractive to American hunters, because of their scarcity outside Australia. Sambar deer in Victoria and red deer in Queensland enjoy a particular cachet in those states. Of the nine deer species in the “South Pacific 15”, seven are found in Australia, i.e. hog, chital, sambar, rusa, wapiti, red, and fallow. Red, fallow, rusa and chital deer are hunted in Queensland, sambar, hog, fallow and some wapiti in Victoria, fallow in Tasmania, and sambar and rusa in the Northern Territory. Several companies have branches or reciprocal arrangements with hunters in other countries, especially New Zealand and New Caledonia, but also in southern Africa and North America. This expands the range of species available.

“Big game” hunting in the Northern Territory is based on banteng cattle, buffalo, and scrub bulls. Donkeys and camels may also be taken. There is an increasing enquiry for scrub bulls in Queensland and the Northern Territory.

Australian recreational hunters prefer “fair chase” hunting, i.e. hunting over large areas where the quarry is unconstrained by high fences. Almost all outfitters offer large-area hunting, on properties which may have little fencing, or at least have paddocks some hundreds or thousands of hectares in size. There are several hunting estates in Australia, in the Northern Territory, Victoria and Queensland. These estates may offer species, e.g. blackbuck and hog deer, which are not generally available outside estates. The outfitters associated with these estates generally offer good quality (although not five-star) accommodation and access to non-hunting tourism. Hunting on private sheep and cattle properties can be in paddocks of several hundred to several thousand hectares.

At least one company offers hunts specially designed for disabled hunters.

Not all hunting is done with firearms. Some commercial hunters guide bowhunting groups. The guide may require certain minimum hunting standards, e.g. for buffalo the bow must have a minimum pull of 38.6 kg (85 lb), no shot can be taken at a range greater than 40 m, and the bowhunter is always backed up by a guide armed with a rifle. This guide will not allow the hunter to claim the trophy if the animal has not been killed cleanly with the arrow. In another case, the guide requires the bowhunter to abide by the Australian Bowhunting Association rules. A third guide, who specialises in deer hunting, requires a minimum pull of 29.5 kg (65 lb) and backs the bowhunter up with a rifle. A fourth guide will not take bowhunters because in his opinion they lose arrows, and don’t make clean kills. Commercial hunters may offer pig hunting with hounds, and may couple the hunting experience with training of young dogs.

Fees for hunting

In the commercial hunting industry, the outfitter or guide charges a fee to arrange the hunt. The charge covers:

- The guide’s fee, which pays for that person’s expertise, local knowledge, and general care and consideration
- A fee for access to the land being hunted over, which may also include a payment for any animals taken during the hunt (even when the animal is simply present on the property, i.e. has not been bred for the purposes of hunting)

- A trophy fee which reflects the scarcity and quality of the animal taken
- Incidental costs, which may include vehicle and/or boat hire, hire of firearms (in many cases these would be provided without extra charge but the fee structure provides for wear and tear on this type of equipment), costs of meals and cooking, etc
- Wages of ancillary staff, which will often include a camp rouseabout, and possibly a cook and drivers.

Safari fees vary according to the type of animal hunted, the location and the general nature of the touristic experience. Access fees for unguided hunts on properties in western NSW, Queensland and Victoria, and where pests (foxes, wild dogs, pigs, goats, rabbits) are the main species taken, range from AUD40 to 65 per night. The higher fee is charged on properties where accommodation is in shearers' quarters or similar, and meals (and perhaps the use of a phone or other facilities) are provided. Depending on whether an agent is involved, payment is made directly to the landholder or the agent.

Outfitters and guides operating in NSW and Queensland may charge AUD350 to 385 per person per day for a fully guided hunt. Some guides may charge less for groups. This charge covers the guide's fee, a fee for access to the property, food and accommodation, transport during the hunt, and hire of firearms. If deer (e.g. fallow, red and sambar) are hunted, a trophy fee is also charged. In some cases, the trophy fee for the first big game animal is included in the daily charge. Trophy fees range from AUD500 per animal. One outfitter charges trophy fees (inclusive of GST) of AUD550 for red deer, AUD550 to 1,100 for chital, and up to AUD1,500 for rusa deer (these last are genuine wild animals, i.e. not recent escapees). In one case, the trophy fee for a scrub bull is AUD750, of which AUD550 is paid to the landholder.

Big game outfitters in the Northern Territory charge daily per person fees from AUD450 (plus an AUD1,500 trophy fee) for sambar hunts, AUD6,000 for buffalo, AUD6,500 for banteng cattle, to AUD17,200 for an eight-day safari in which banteng cattle and buffalo are hunted. This last fee includes the trophy fee for the first animal taken, meals, vehicle hire (but not the cost of an air charter flight to reach the hunting camp).

The property access fees paid by outfitters and guides vary throughout Australia. One hunter pays AUD150 per group of clients, to each property owner. In Aboriginal lands, the access fee is paid on the basis of the number of animals taken. The fee for a buffalo is about AUD1,000.

The corollary of charging fees is that the outfitter or guide delivers the agreed product. Trophy quality is important for international clients, as is some guarantee that the client will be able to take the desired animal. Some outfitters ask potential clients to complete a questionnaire about the types of animals and trophy they want when they enquire about the availability of a safari. Outfitters may advertise typical trophies on the internet, and some provide photographs of the trophy types available before the hunt is booked.

Safety, hunting ethics and licences

If an outfitter, guide or agent is involved, they may introduce rules for good behaviour. These are enforced by the guides. Rules set by agents are obviously not enforceable by the agent; in this case it is the landholder who must, in the final resort, enforce any rules. Typically, landowners may make rules about permitting dogs (hounds) on the property, which parts of the property may be hunted on, and what types of animal may be taken. In central and western NSW, for example, sheep farmers may not permit hunting with dogs, and landholders may put restrictions on the number of goats which can be taken or prohibit the taking of these at all. Some landholders specifically discourage or ban alcohol.

Landholders, agents and guides have indicated that there is very little trouble with bad behaviour. One agent indicated that there were only four instances in over two and a half years where a hunting group

was banned from participating in hunts arranged by that organisation. It is considered that the new firearms laws have discouraged riff-raff.

Trophy registries generally do not record animals which have escaped (or have been released) into the wild from captive breeding. There are populations of rusa deer in Queensland, and chital, red and wapiti in Victoria, for example, which appear to have escaped from deer farms. These animals should not be offered for trophy registration. On the other hand, there are genuinely wild populations of rusa and chital deer in northern Australia which do qualify for trophy registration.

Even though trophy hunters are generally experienced and capable marksmen, professional guides require their clients to sight-in their firearms at targets before they begin the hunt. While backup is always provided during guided hunts, this target practice gives the guide an opportunity to judge each client's competency and to decide what degree of backup is likely to be needed, for example to kill a wounded animal. Wounded animals are always tracked and are generally found and killed.

Rules about hunting behaviour and the use of firearms are important because these help to prevent accidents and may protect the guide from legal liability. The client may be given a "rules sheet" before they book the hunt. In some cases, the guide will explain additional "camp rules" before the hunt actually begins. Most guides do not allow their clients to carry firearms with rounds in the breach. This, and other firearm handling rules, are discussed with the client before the hunt and are enforced. Most hunters will accept these rules. Individual guides vary in how they deal with any refusal to co-operate, but most will return the fees and cancel the hunt. Some guides provide a lockable firearms container for storage between hunting excursions.

Some commercial guides and/or companies require the client to sign an indemnity form. This is backed up, in most cases, by insurance against liability. Some operators (typically landholders who charge a hunting access fee and regard commercial hunting as a sideline to their normal farming business) may rely on a conventional public liability insurance policy, but some use insurance cover designed especially for commercial hunting. Premiums vary, but all are expensive. Quoted rates vary from AUD2,500 to 40,000 per year.

Hunters, including international clients, must have the appropriate permits and licences. Domestic hunters must have a current firearms licence, and this requires the person to whom the licence is issued to have a "genuine reason" for owning the firearm. A genuine reason may be membership of a gun club, or for recreational hunting. In some jurisdictions the licence is issued only after completion of a firearms training course. Further information is in Chapter 5. International hunters who wish to use firearms in Australia must have a permit, e.g. the Northern Territory Temporary Licence, or the NSW Overseas Visitors Safari Tour/Hunting Permit. This type of permit is issued with a B709A Certificate which allows the person to import firearms and ammunition into the country.

Permits may be required to hunt on particular types of land, such as Aboriginal land, national parks, etc.

Staffing

Professional guides are key personnel. These people are experienced hunters, although the range of species in which this experience has been obtained may be restricted to only a few species. Some guides have extensive international experience (most often found in Northern Territory outfitters). There is a general reluctance among guides to hunt species with which they are not familiar. Often an outfitter will employ (or the company will consist of) several guides who operate in their own localities and thus with species they feel competent with. Outfitters may set high standards for the guides they employ. For example, one Northern Territory outfitter requires its guides to be members of the SSAA, and they may have been range safety officers. All must be experienced hunters. In general, a guided party will consist of no more than three clients, and in many cases the ratio is 1:1 or 1:2. Overseas clients generally require a 1:1 guide to client ratio.

Professional guides and outfitters often express concern about the professionalism of the industry. A Northern Territory “guide” is reputed to have allowed clients to shoot crocodiles, which is illegal in itself and the client is not able to export the skins. This puts the guide and the client at risk of prosecution, and the guide is unable to meet the terms of the contract made between the parties. Some commercial hunters feel that formal training in guiding, and the existence of an Australian professional hunters’ association, would improve matters. Australian guides are eligible to join the International Professional Hunters’ Association. The standards for entry to this organisation are said to be very high.

Companies vary in their employment of other staff. Some provide meals and serviced accommodation, and thus employ cooks and other staff. Most companies employ a rouseabout who drives vehicles, prepares the trophies, etc.

Accommodation and other ancillary services

Only a few commercial hunters provide hunting lodge accommodation – most is in shearers’ quarters or similar, or in tented camps (either permanent or temporary), or sometimes accommodation is provided in private houses in a type of homestay situation. While this appears to be acceptable to domestic clients, it may not always meet the requirements of international hunters. It is said that it is possible for an international client to be put in a ute and given a swag on the ground as sleeping accommodation. This is not likely to encourage the client to return, unless they enjoy it as part of a genuine Australian outback wilderness experience.

A variety of ancillary services and activities is provided. Outfitters and guides may add fishing, and hunting for pest species, to a big game hunting package. These are “recreational” activities used to fill up spare moments. Some companies give their clients a day or so to relax both before and after the actual hunt. One guide commented that this reduced the risk of vehicle accidents as the hunters were less tired when they drove home.

International clients in the Northern Territory may be offered an “Aboriginal experience” and at least one outfitter always employs an Aboriginal person to accompany the hunting party.

Taxidermy is often arranged for the client. The outfitter prepares the trophy and/or skin and packs these as needed, completes the necessary paperwork needed to export the trophies and skins, and sends the material to a taxidermist. This service is used by all international clients and about 10 % of Australian clients.

Advertising

Advertising is often done by word of mouth, or through recreational hunting organisations. Some landholders and companies advertise in popular hunting and gun journals. The internet is increasingly used for advertising. Some larger outfitters, especially if they advertise overseas, employ an advertising agent. International hunting shows, such as the SCI conventions in the United States and Australia, attract thousands of visitors. Attendance at these is costly and time-consuming but is considered essential by those companies which want to attract international clients.

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7. Commercial Safari Hunting in Australia

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Summary

Postal questionnaires were sent to commercial safari hunters, recreational hunting clubs, graziers'/landowners' organisations, game meat exporters and finance houses to survey attitudes towards the expansion of the Australian commercial safari industry. Response rates were: commercial safari hunters, 67%; recreational hunting clubs, 21%; graziers'/landowners' organisations, 11%, and game meat exporters, 8%. No financial institution replied.

Fifty-two percent of the safari companies in this survey have headquarters in Queensland, and 20% in NSW. Most companies host between 11 and 30 domestic clients and less than five international clients (mainly from the USA, Germany and New Zealand) each year. Trophy charges (per animal) vary from less than AUD100 to AUD2700. Daily access or guiding fees range from less than AUD100 to AUD650. More than 75% of international clients spend time on general tourism activities other than hunting while they are in Australia. The domestic and international clients of the safari companies which responded to this survey may spend about AUD5 million annually.

International clients prefer to hunt deer, pigs, goats, buffalo and cattle (including banteng cattle). European visitors prefer pigs and buffalo. North American hunters prefer buffalo, pigs and deer. Companies may have to decline international hunters' requests for a particular species; most commonly because Australian law prevents the hunting of that species. Several companies suggested that the laws relating to crocodile and kangaroo hunting should be relaxed. Safari companies and recreational hunting clubs both favour retaining the populations of most wild exotic animals, but with controls on population sizes and possibly some interventions (like controlling the herd sex structure) to improve trophy quality. These attitudes are similar to those expressed by game meat harvesters.

The survey gave ambiguous information about the views of safari companies and recreational hunting clubs about each others' activities. Recreational clubs suggested that more commercial hunting would increase competition and so restrict access, but may also encourage changes in laws and policies which would improve hunting access. Fourteen percent of recreational hunting clubs and 37% of safari companies agreed that there is competition between commercial and recreational hunting in accessing properties or animals for hunting. Commercial safari companies operate almost exclusively on their own or leased land. Both safari companies and recreational hunting club members take deer, pigs and goats; recreational club members are more likely than safari company clients to hunt small vertebrates (e.g. cats, foxes). Game meat harvesters were concerned that an expansion of safari hunting may reduce their access to game meat.

Half of the safari operators who provided information have no public liability insurance. Eight of 14 recreational hunting clubs carry public liability insurance for their members. Both landowner

organisations recommend that their members require hunters to provide indemnities against injury and/or damage, and have appropriate public liability insurance.

Australian recreational hunting clubs and commercial safari operators, graziers' / landowners' organisations, and the game harvesting industry, all strongly support ethical hunting and high standards of hunting behaviour.

Safari companies claim that their industry's development would be enhanced by more uniform firearms regulations throughout Australia, fewer legal restrictions on hunting, more affordable insurance, and more positive and informed attitudes towards hunting by governments.

Introduction

The future development of Australian commercial safari hunting along the lines suggested in this Report may depend on how acceptable the consequences of this development are to the various stakeholders. Commercial safari operators may need to accept a possibly increased regulation of their industry, and increased competition from other commercial hunters in an expanded industry. The consequences for recreational hunters may include an increased regulation of hunting, and increased competition with commercial safari hunters for possibly limited stocks of target animals, while game meat processors may find increased competition for access to wild exotic animals. Members of other animal production industries and landowners (who may not be involved as recreational or commercial hunters themselves) would have to accept the increased presence of hunters on their land, and the retention of feral animal populations. Financial houses may find an increased demand for financial support to establish commercial safari operations.

The structure of the Australian safari hunting industry has not been described previously. The constraints to its further development, and the way that the consequences of this development are viewed by stakeholders, are largely unknown. Hence the purpose of the investigation reported here was to:

1. describe the location, size, and operations of Australian safari hunting companies, and
2. investigate the attitudes of stakeholders to factors relevant to the expansion of commercial safari hunting in Australia, and to identify factors which members of these groups think might restrict the further expansion of the industry.

Methods

Type of survey, sources of respondents and ethical considerations

A postal survey was used to investigate the attitudes of (1) individual commercial safari operators, (2) recreational hunting clubs and societies, (3) organisations representing animal production industries and landowners, (4) game meat exporters, and (5) financial houses. A postal survey was chosen over other possible survey types because of the large number and wide geographical distribution of the subjects, the relatively large amount of information which was to be collected from each respondent, and The University of Queensland's requirement that respondent anonymity was to be guaranteed.

Respondents were selected from lists of organisations and individuals obtained from telephone directories, internet sites, and the Western Hunting Information Guide (2002). Separate questionnaires were developed for each of the five respondent groups (see Appendix). These were mailed with a covering letter (which was part of the questionnaire booklet) and a reply paid envelope.

The investigation was approved by The University of Queensland Behavioural and Social Sciences Ethical Review Committee (approval number 2003000204).

Statistical methods

One organisation which was sent a commercial safari questionnaire indicated that they did not participate in consumptive use, and answered no other questions. Accordingly we have classed this case as "not valid" and excluded it from the statistical analysis, leaving 25 valid responses.

In all of the surveys there were questions which were not answered by all of the respondents. In these cases, we have expressed the responses as proportions of those respondents which answered the question. In Questions 8 and 19 (safari companies survey) and 15 (recreational hunting clubs survey) we asked for estimates of the time clients/members spent hunting. Respondents could indicate in a "proportion of clients/ members" $\times$ "time period" matrix. The numbers of respondents which selected each cell of the matrix were used to calculate a weighted proportion of clients/members for each time period. Because the estimates did not necessarily sum to 100% for each respondent, we then standardised these proportions so that for each category (club members, and international clients and domestic clients of safari companies) the percentages summed to 100. Question 25 of the commercial safari hunters' survey began by asking for a yes/no response to the question "Are there any difficulties which your company/organisation faces in accessing properties or animals for hunting?", followed by a set of detailed responses which could be selected if the answer to the preliminary question was positive. Some of the valid respondents did not answer the preliminary question but selected one or more of the detailed responses. Question 36 of this questionnaire had five responses which were intended to be exclusive, but some respondents chose more than one response. In both questions we expressed the proportions of respondents which selected particular responses as proportions of the 25 valid safari company respondents.

Comparisons between recreational hunters, and clients (domestic and international) of safari companies, or between recreational hunting clubs and safari companies were made by goodness-of-fit χ^2 test. The test was against the mean of the groups being compared (i.e. the test assumed that the score for each group was an estimate of the mean score).

Comments on survey methodology

Response rates

Response rates varied between 0% (financial institutions) and 67% (commercial safari hunters). Data are in Table 7.1.

Table 7.1. Questionnaires mailed and response rates.

Interest group	Surveys sent	Replies	
		No.	%
Commercial safari hunters	39	26	67
Recreational hunters' organisations	67	14	21
Farmer/grazier organisations	19	2	11
Game meat exporters	38	3	8
Financial institutions	23	0	0

Response rates obtained from “cold” postal surveys are expected to be low (Frazer and Lawley 2000), and can be 20% or less. We did not attempt to increase the response rate by reminders. We did not know which respondents had replied, and in any case continued reminders would have been annoying and could be construed as harassment.

The complete absence of response from financial institutions was partly because of the great difficulty we experienced in obtaining the postal addresses of senior staff. However, we assume that some questionnaires arrived at their intended destinations. If this was so, then subject matter of the questionnaire was considered to be of so little relevance to these institutions that it did not warrant a reply. This apparent attitude contrasts markedly with that of South African bankers. This may reflect the small size of the Australian safari hunting industry, perhaps a perceived high financial risk, and possibly an ethical reluctance to be associated with this type of industry.

Responses from game meat exporters and grazier/landowner organisations were also small, and the low actual number of responses does not allow much weight to be given to the information collected. However, one grazier organisation wrote a covering, signed letter and invited us to ask for additional information.

Recreational hunters' organisations did not respond in large numbers. We have previously had some informal contact with recreational hunting clubs, and we understand that some are reluctant to discuss their activities. We have preserved the anonymity of these people and organisations. However, this experience does show that some recreational hunting organisations may not have replied because of perceptions that they should keep their activities private. We contend that the 21% of organisations which replied have given information which can be used to derive ideas about the attitudes of Australian recreational hunting organisations towards an expanded safari industry, and the requirements of recreational hunters for access to animals, etc.

If response rates indicate interest in the survey and its importance to the respondent group, then safari hunters are greatly interested in this project and its outcomes. This view is supported by the telephone contacts with the authors of this report which were made by some safari (and recreational) hunters once word of the project spread through the hunting community.

Validity of deductions made from the questionnaires

In most questions, the respondents were asked about established policies, actual numbers, present practices, etc. These questions addressed behaviours which were current or had occurred in the recent past, and so conclusions drawn from them are likely to be valid (Lewins 1992). Some of the questions asked about attitudes, or addressed issues on which the respondent organisation may not have had a formulated policy. Questions which deal with affective issues can be quite difficult to answer because this relies on the organisation's representative making correct assumptions about the attitudes held by the majority of the organisation's members. This type of question is less likely to give reliable information. Nevertheless, they were included because they address issues which will arise in the formulation of government policy on feral animal control and/or eradication, and on hunters' access to target animals. In at least one case, a respondent acknowledged that a question had brought forward an issue which they had not previously considered.

We designed the questionnaire so that as much as possible, questions could be answered by ticking a box. This introduced the possibility of asking leading or loaded questions, or forcing an incomplete response. However, in most cases, respondents could amplify their answer by writing in additional information immediately below the tabulated question. Most respondents took advantage of these opportunities.

As Lewins (1992) has pointed out, the answer to a question is influenced by the way the question is asked. This is more likely to occur if the question addresses attitudes, rather than asking for facts. In some cases, we asked different questions about the same attitudes, and have compared these answers to improve the validity of our conclusions.

Results and discussion

A. Commercial safari companies

Location, staffing, clientele, and regions of operation

Over half (59%) of the 22 safari companies which answered this question have their headquarters in Queensland, 23% in NSW, and one company (4.5%) in each of Western Australia, the Northern Territory, Tasmania and Victoria. Australian safari companies are generally quite small. Nearly half (48%) employ no full-time staff additional to the principals, and most of the others (40%) employ between one and five full-time, salaried employees, although 8% employ more than six full-time staff.

These companies operate in all states except Western Australia (Fig. 7.1) and 44% operate within Australia only. The other 13 companies conduct business in a wide variety of international arenas (Fig. 7.2).

Clients – numbers, origins, and hunting preferences

The clients of Australian safari companies are both international and domestic (Fig. 7.3), with two companies reporting more than 100 domestic clients annually. Most companies host between 11 and 30 domestic, and less than five international, clients each year. A large majority (80%) have some international clients. These are mainly from the USA, Germany and New Zealand (Fig. 7.4).

Safari company clients tend to hunt for periods of one to two weeks, but rarely longer than this (Fig. 7.5). Domestic clients spend less time than international clients. A small proportion of international clients spend more than two weeks.

Regarding general tourism, it seems that international hunters fall into two classes. Some (possibly not more than 20%) visit Australia only to hunt. One respondent described a client whose only purpose was to take species to qualify for a hunting award. She moved from site to site (and between countries) as soon as her purpose was achieved. However, most safari companies estimate that more than 75% of their clients spend time on general tourism activities (i.e. other than hunting) while they are in Australia.

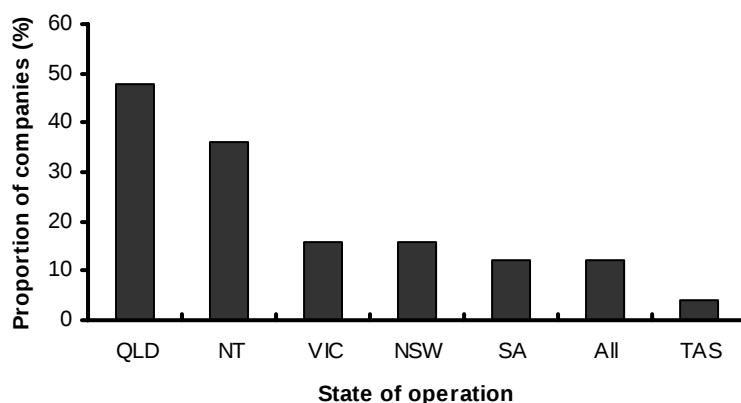


Fig. 7.1. Areas of operation of the safari companies which responded to the survey.

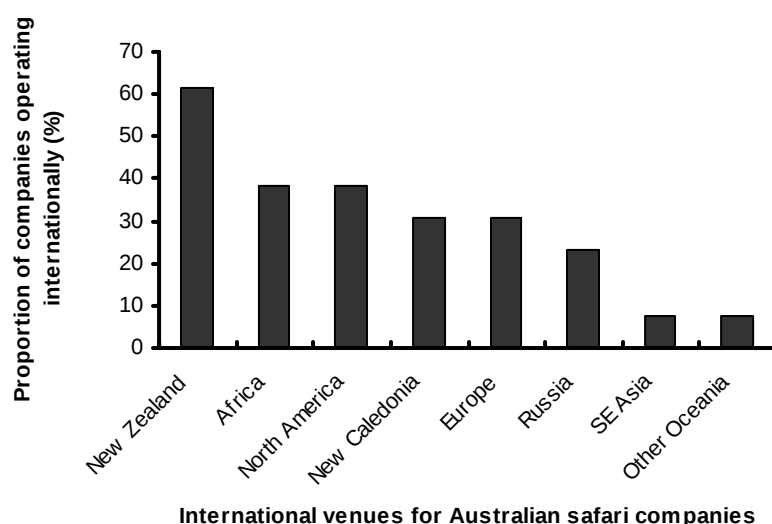


Fig. 7.2. International venues of the thirteen companies which conduct safari hunting overseas.

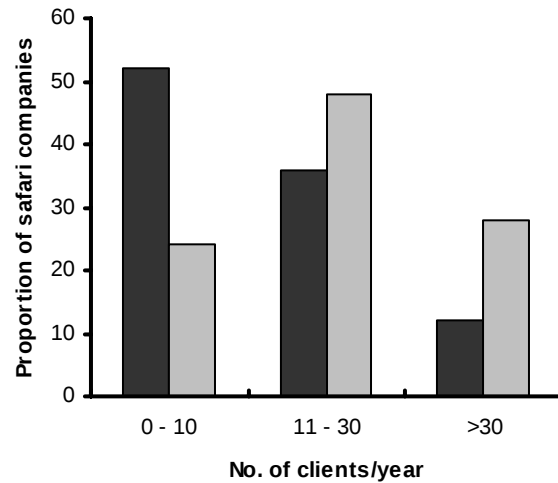


Fig. 7.3. Client numbers and origins reported by Australian commercial safari companies (international clients ■; domestic clients □).

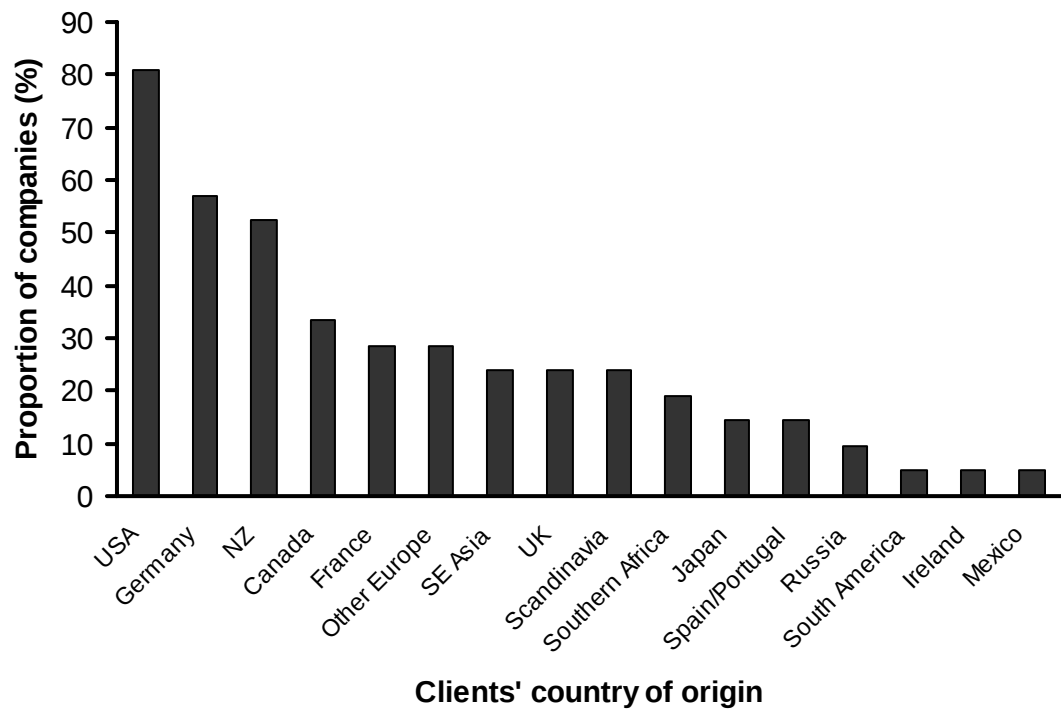
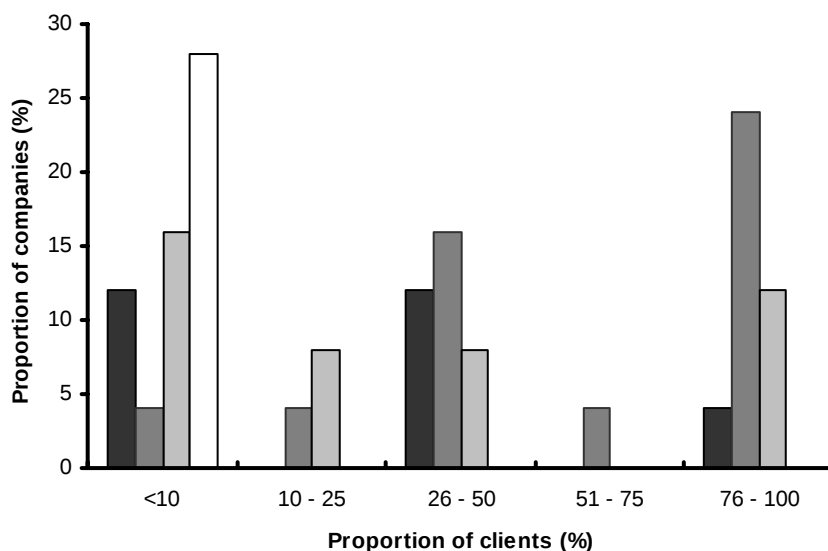
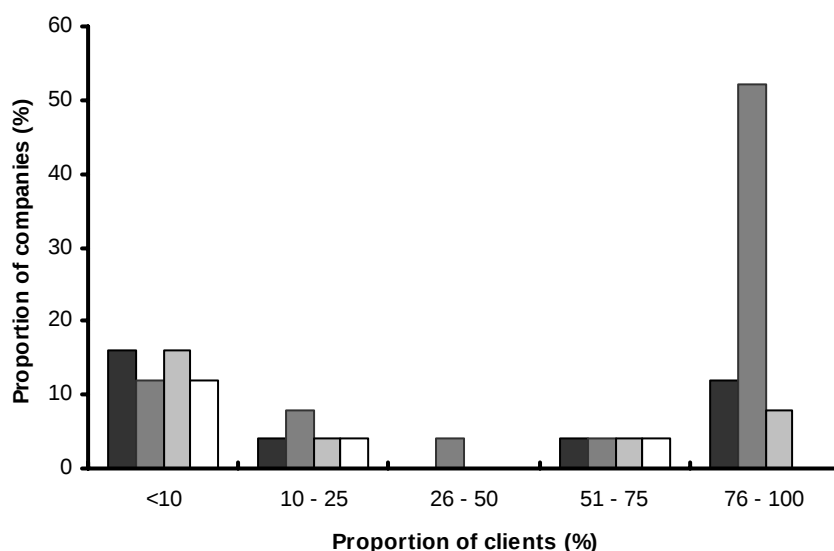


Fig. 7.4. Proportions of the 15 companies with international clientele which have clients from the listed countries.



(a) International clients of commercial safari companies



(b) Domestic clients of commercial safari companies

Fig. 7.5. Length of hunting trips (days per year) conducted by commercial safari companies for international and domestic clients (<2 days ■ ; 2 to 7 days ■ ; 8 to 14 days ■ ; >14 days □).

Fees and services

We have information on the fees charged by 16 companies. Safari companies levy a wide range of charges and it seems that the industry divides fairly evenly into those which provide “budget” and “luxury” hunting. Some simply offer access to hunting for a daily fee, e.g. graziers who supplement their income with fees for commercial hunting. The two companies who stated that they charge no trophy fees are probably members of this group. Another company charges AUD1000 per day (for two hunters) and allows unlimited kills, which average about six per day. The remainder charge

trophy fees varying from less than AUD100 (6% of companies) to more than AUD750 per animal (41%). One company charges AUD1500 per head for trophy buffalo; another charges AUD2700 for a buffalo and AUD350 for a boar. Fees can vary substantially depending on the animal species, or may be levied only to cover taxidermy expenses. Similarly, daily access (or guiding) fees range from less than AUD100 per person daily (25%) to more than AUD200 per person daily (67%; including one company which charges AUD650 per day). Those which charge the lower amount may charge as little as AUD25 per person daily for unguided access to hare, rabbit and fox hunting on grazing properties (Western Hunting Information Guide 2002). Fees may be charged in US currency to American hunters and in Australian currency to domestic clients.

Most companies (88% of 24 respondents) provide guided hunts; those which do not belong to the group of graziers and others who just “sell” access to their properties, and perhaps provide (often basic) accommodation. Most of the companies provide other services as well as guiding. These include outfitting, accommodation (including meals), natural history education, hire of firearms, accommodation before and after the safari, airport pickups, meals, off-road vehicles, dog training, fishing, travel and insurance. The proportions of companies which provide the basic services (guided hunts, outfitting and accommodation) are given in Fig. 7.6.

There is a bimodal distribution of domestic clients’ expenditure – 24 companies provided information: 42% reported that their clients spend about AUD1000 to AUD5000 per year, while 33% estimate that their clients spend more than AUD10,000 annually. Only 17% and 8% thought that their clients spend less than AUD1000/year or between AUD5000 and AUD10,000/year, respectively.

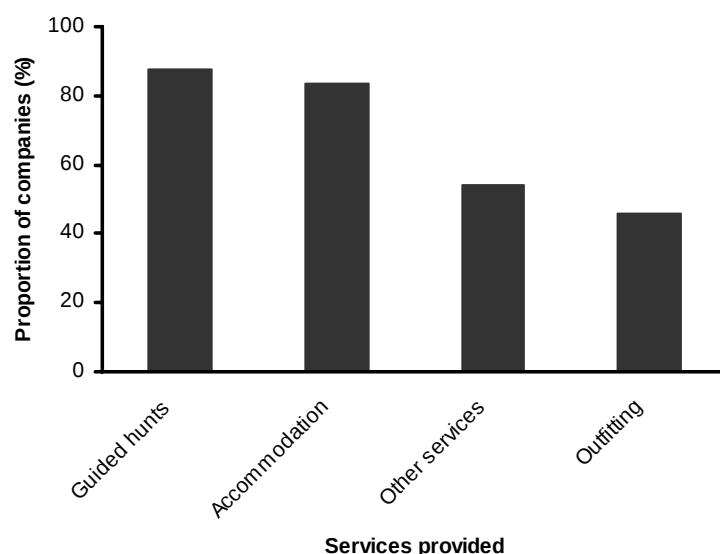


Fig. 7.6. Provision of basic safari services by Australian commercial safari companies.

Safari hunting – preferred styles of hunting

Twenty-one and 25 companies, respectively, provided information on the weapons used by international and domestic clients. The weapon of choice for most hunters is a firearm – 86 and 84% of companies reported that more than three-quarters of their international and domestic clients, respectively, use these. Bows are used by 50 to 55% of the international clients of 9% of companies, although 38% of companies reported that none of their clients used bows, and 24% noted that only 5% of their customers used them. Bows are used by similar numbers of domestic customers. Sixty percent of companies reported that some of their clients use bows, but the highest proportion of clients using them is 40 to 50%, reported by only 8% of companies. Only 19 and 24% of companies reported

that some international and domestic hunters use other weapons, mainly knives and dogs, so the wild pig hunting indicated in Fig. 7.7 is done mainly with firearms.

The species preferred by international hunters (Fig. 7.7) are deer, pigs, goats, buffalo and cattle (including banteng cattle); the clients of more than 60% of the 21 companies answering this question hunt these species. Pigs are highly preferred (86% of companies' clients hunt them), possibly because they are rare or unavailable for commercial hunting in many other countries.

It has been suggested that hunters of different national origins have characteristic differences in the types of animals they prefer to hunt. This view is not strongly supported by the data as only half of the 20 companies which offered an opinion think that there are consistent differences between different nationalities. Only 10 companies suggested actual preferences. From this information, it seems that European visitors prefer to hunt pigs (90% of companies suggested this) and buffalo (70%). Only 22% of these 10 companies suggest that Europeans wish to hunt deer. North American clients apparently prefer buffalo (70%), pigs (60%) and banteng cattle and deer (both 50%).

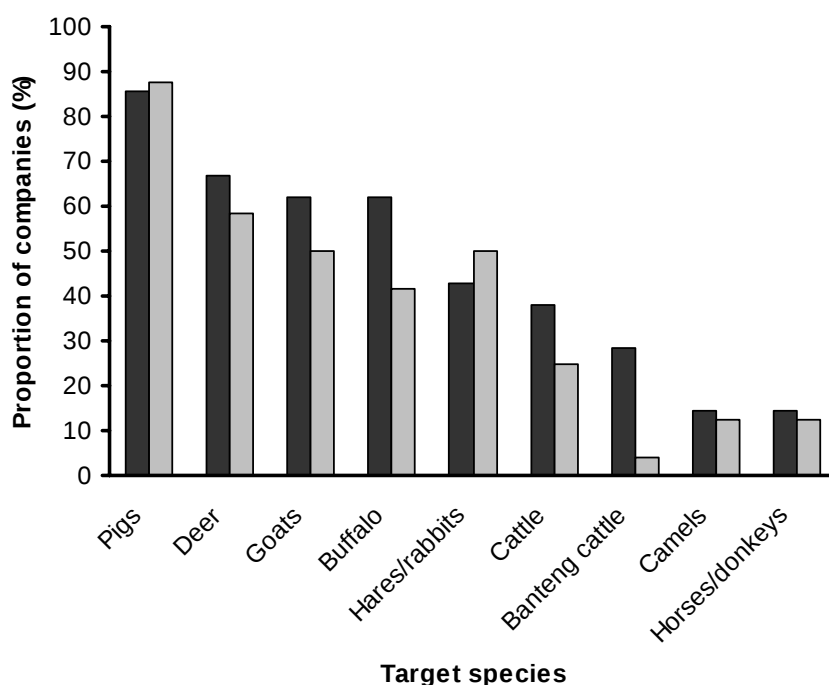


Fig. 7.7. Species preferred by international (■) and domestic (□) clients of safari companies.

Nineteen companies reported having to decline requests from international hunters to take particular types of animal. Thirty-seven percent of these companies nominated CITES listing as a reason for declining a species (Fig. 7.8). This can not refer to any Australian wild exotic species, but six companies nominated crocodiles and three listed native animals (including wombats, kangaroos and wallabies) and it is clear that, from time to time, hunters have wanted to take Australian native species. In Question 12 the categories “This species is not found in the area in which your company hunts” and “This species is not hunted by your company” very probably ask the same question, although some companies do specialise in certain target species even though others are present in the regions hunted by that company. “Other species” declined include the chital deer which is largely confined to central Queensland, and buffalo and banteng cattle which are found mainly or exclusively in the Northern Territory. Companies probably declined to provide these species because they were unable to access them. Seasonal access to hunting was indicated to be a relatively minor problem, and this suggests that international hunters are well aware (or are made aware) of the seasonal availability of exotic

species in Australia. This seasonality is related to access to areas of northern Australia in summer, and to the seasonal growth and maturity of deer antlers.

The most commonly reported reason (79%) for declining a request is that Australian law prevents the hunting of that species. In Question 25, 67% of respondents again claimed state laws are too restrictive. One respondent said that one-quarter of all requests for non-exotic game was for crocodiles. Several respondents suggested that the law relating to crocodile and kangaroo hunting should be relaxed.

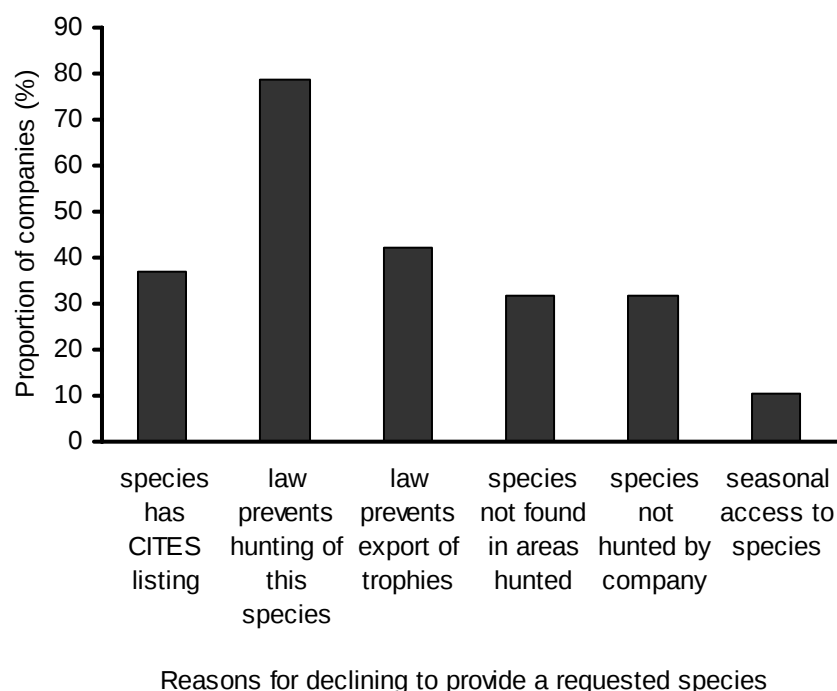


Fig. 7.8. Proportions of companies reporting various reasons for declining requests from international hunters to hunt particular animal types.

Trophies (antlers, horns, etc.) and taxidermy are the main products taken by international hunters. Of the 20 companies with international clients which answered the question, 10 reported that all their clients took trophies, and seven (35%) said all took taxidermy. Four and seven other companies, respectively, indicated that at least half of their clients took these products. The SCI (the American-based Safari Clubs International), Rowland Ward (English origin but used principally for African game) and Douglas (New Zealand) trophy scoring systems are preferred by both international and domestic clients. In the event, the trophy system chosen by a hunter will be determined by their familiarity with the system, or the requirements of a trophy competition (e.g. wanting to acquire an SCI gold medal trophy). One company noted that the quality of the hunt was more important than trophy quality, or at least trophy scoring. Seven companies indicated that international hunters have rather specific requirements about the type of trophy they want. European hunters show a slight preference for older animals, while North Americans may prefer large trophies and big animals, and are more likely to want shoulder or full-body taxidermy mounts.

The domestic clients of safari companies are just as likely as international clients to take trophies or taxidermy products. However, 40% of companies indicated that half or more of their domestic clients use some of the meat from the killed animal, while only 20% of these companies reported that none of their clients used this product. The comparable figures for international hunters (reported by 20 companies) are 10 and 60%.

Access to hunting resources and links with other industries

Only one company (4%) of 23 safari companies hunts on land which it neither owns nor leases. Almost all operate on their own land (53%) or on land which they lease (57%); these categories are not exclusive – some companies hunt on both types of land. Notwithstanding the large proportion which hunts on leased or owned land, 55% of 22 companies indicated that they have experienced difficulties in accessing animals or properties for hunting. Most of these are related to relationships with landowners or other hunters, or to legislation which is considered to restrict hunting (Table 7.2).

Table 7.2. Reasons why safari companies have difficulty in accessing suitable animals or locations for hunting.

Nature of difficulty	Proportion of respondents (%; n=25)
Animal location:	
found in areas which are too inaccessible	8
found in areas which are too remote from accommodation	16
Landowners:	
do not want hunters	32
have had adverse experiences of hunters/hunting	28
charge too much for access	12
Competition with:	
recreational hunters	36
game meat harvesters	32
State laws are too restrictive	36

Several respondents reiterated that recreational club members expect free access to hunting and object to exclusive arrangements between landowners and commercial safari operators. One company noted “some recreational hunters do not like me paying property owners for exclusive access and fees for animals taken”. This comment encapsulates much of the tensions between commercial and recreational hunters, and mirrors the concerns voiced by recreational hunters.

There is some support from the safari industry for closer linkages with the game meat industry, and 35% would like to see better use made of carcasses, while one company is also an accredited wildlife harvester. Three think that the requirements of the two industries are incompatible. This is a reasonable point, as many hunters want trophies and so use a chest/heart shot to despatch the animal leaving the head intact. On the other hand, game meat harvesters try to kill with a head shot to avoid damaging the carcass. One respondent commented that an ability to sell carcasses to game meat exporters may increase kill rates, and implied that this would be wasteful, another suggested that large-scale game meat harvesting reduces the number of trophy animals. There are opportunities to merge the activities of trophy animal hunting and game animal farming, as is done in New Zealand and southern Africa. This occurs in Australia to some extent, but only 26% of the 22 commercial safari hunters answering this question indicated that they had such links, in these cases with the deer and goat industries.

Although a sizeable minority indicated that they have some difficulties with landowners, these are not apparent when the companies describe the arrangements they have been able to make. Of the 20 companies which provided information on this topic, 80% pay some form of fee for access or for trophies; this proportion includes 35% who pay a trophy fee. These fees vary, and little quantitative

information was given. One company pays half the trophy fee to the landowner, another provides free meat or performs services like culling pests, a third pays a set fee. Few restrictions are imposed by landowners on the number and /or type of animals which can be taken. Ten of 20 respondents indicated that there were restrictions, while it seems that other companies may determine animal numbers and types for themselves. One company limits buffalo and banteng hunting by charging a higher trophy fee for a second animal. Slightly less than half (42%) restrict their hunting to daylight hours only, and seasons of hunting apply only when state laws impose them (e.g. for hog deer), or the animals undergo seasonal changes in their trophy value (e.g. deer generally). Two companies hunt only in the northern dry season.

Only one company mentioned insurance as something which causes difficulty in securing adequate hunting opportunities. One respondent said that they accept responsibility, and two said that they can't afford insurance. Only two companies require clients to sign an indemnity/waiver form. Some companies use the Sporting Shooters' Association of Australia insurance. We think that this is a matter for real concern as, in total, 50% appear to have no insurance to cover personal injuries or property damage.

Many safari hunters complain about the restrictions imposed by some state conservation laws, and this implies that these people understand the law applying to this important aspect of their industry. In fact, 70% of 23 respondents think that the legal situation about the hunting of wild exotic animals is sufficiently clear, and only one respondent admitted that they did not know what laws applied in this area.

Hunting ethics and conservation

Twenty-one respondents provided written comments on the question of the ethics of fair-chase v. confined-area hunting; 81% indicated that they will only engage in fair-chase hunting, while 19% said they would provide confined or otherwise tailored hunts if clients wanted them. We assume that those companies which did not indicate a policy may also be prepared to provide confined hunting. Some respondents acknowledged that fair-chase hunting was possible on game estates provided that the areas were large enough. When we asked a second question about this topic, only 50% of 24 respondents indicated that they use fair-chase hunting on public land, 54% engage in large-scale estate hunting and 17% use confined estate hunting. Either 26% of 23 respondents or 14% of 22 companies (depending on how the question was asked) hunt animals bred for the purpose, including one company which releases specially-bred coloured rams onto 10,000 ha blocks. Another 18% are prepared to use captive-bred animals but do not do so presently, 45% are not in favour of their use, and 23% have no position on the question.

Poaching and trespassing are generally considered to be important problems. Almost all companies (91% of 23 respondents) have procedures to control these behaviours. Some companies take severe action against clients who transgress, this includes immediate termination of the safari, refusal of repeat business and possibly notification of names to other safari operators. Many operators commented that it is difficult to control trespassing and poaching, and many indicated that they refer names and vehicle identifications to the police.

We asked safari operators to indicate their ethical concerns about hunting. Rather surprisingly, five companies did not answer this question, and we are unable to say if they have no ethical concerns about the act of hunting, or if they simply haven't given this aspect of their business much consideration. Several respondents mentioned the importance of a humane kill. The ethical concerns held by safari operators are listed below:

- Clean, quick kills (one shot), use of firearms of adequate calibre, wounded animals always followed and despatched
- No behaviour which demeans the animal
- Use of all by-products

- Safe hunting practices
- Take only pest animals, manage but do not over-exploit the population, conserve breeding stock
- Concerns about hunting confined animals, and hunting with dart guns
- Clean photographs.

Most (73% of 22 respondents) have a position on possible links between hunting and conservation. Sixteen of the respondents offered a comment: eight of these stated that hunting will help to control the size of exotic wild animal populations, six stated that hunting will help to protect native animals and the environment (e.g. from effect of buffalo), and two said something like “hunting is conservation”. Three companies noted that while they support non-consumptive uses, they do not actively seek clients for that type of experience. One company encourages clients to take adult animals, but to photograph immature animals.

Most (77% of 22) respondents’ attitudes towards the use of animals are not influenced by the species of animal or whether it is native or not. Most did not elaborate on this point, although two suggested that native animals like kangaroos could be hunted sustainably. When asked whether their attitude towards the hunting of a particular species was influenced by its level of endangerment, 40% of the 20 safari companies which stated a position were concerned about both the perceived level of endangerment and the CITES classification of the species (Fig. 7.9). We acknowledge that this is a “what if” type of question, because at present all safari companies hunt only exotic wild animals, and none of these are endangered or listed by CITES.

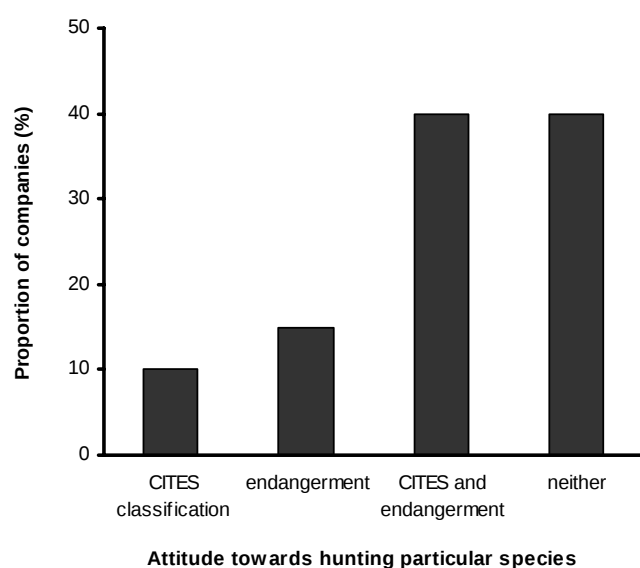


Fig. 7.9. Factors which influence safari companies’ attitudes towards the hunting of possibly endangered species.

There is no consensus among commercial safari operators about the eradication or retention of exotic wild animal populations. Two companies (8% of the 25 respondents) recommend the total eradication of these animals even though their hunting business is based on their continued exploitation, 20% had no opinion, while more understandably 36% favour the retention of all exotic wild animal populations. Seven respondents (28%) recommend the eradication of certain species, particularly foxes, feral cats, rabbits and pigs. However, 40% recommend that populations of foxes, pigs, goats, deer, banteng cattle, camels and buffalo be retained. Together with these recommendations, 70% of 23 respondents support the idea of managing exotic wild animal populations, but only 30% would like to see this achieved by the removal of selected numbers of males and females; 9% do not support any control.

Trophy quality is an important issue for safari hunters. To achieve better quality trophies, a small majority (61% of 23 respondents) would support the use of controlled hunting (perhaps similar to that used in property-based game management, see Chapter 6), and a large minority (48%) would support the use of game animal breeding.

Constraints to the development of safari companies' businesses

We explored constraints to carrying out a safari business in Australia by asking questions about companies' access to finance, land for hunting, and various services.

Few companies have difficulties about taxidermy, accommodation, and the services of professional hunters (guides) – 95, 95 and 100% of 22 respondents indicated that they were satisfied with the availability of these services. There is less satisfaction about the laws governing hunting and the export of trophies – 36 and 23% of respondents find that these laws constrain their business. We have earlier referred to recommendations from safari companies for liberalisation of these laws, especially in regard to crocodiles and kangaroos. There is even less satisfaction about firearms laws. A large majority (82%) felt that these constrain their business, and one respondent described a case where different laws between Australian jurisdictions greatly complicated a particular client's visit. Several respondents compared Australian firearms laws unfavourably with those in New Zealand and New Caledonia (these countries are major competitors for international clients). Only 14% were concerned about the availability of bank finance. Many Australian safari companies are essentially one-family concerns and may not need access to large amounts of finance.

In spite of these dissatisfactions, a majority of safari companies (58% of 24 respondents) do not attempt to negotiate with governments to remedy these difficulties. There is no peak body for Australian commercial safari hunting so we asked if these companies would like to have their interests formally represented by one of the other tourism organisations. Twenty-two companies replied to this question, and another respondent reminded us that the Northern Territory Tourist Commission does promote safari hunting. Almost all (96%) agree that government tourism agencies should also promote the commercial safari industry. Many respondents asked that hunting receive its *pro rata* share of promotional funding with other outdoor or sporting tourism. Some suggested that safari hunting is a niche industry, and that expenditure to increase the trade would be best if it was carefully directed towards the potential clientele.

Several companies suggested that it is important to educate the public about:

- The role of hunting in conservation and the control of exotic wild animal populations
- The potential for safari hunting to be an important earner of foreign exchange by attracting large numbers of international hunters – Australian safaris are cheaper than in many other countries, and clients can contact a wide range of species.

However, some respondents sounded cautions: they noted that it is very important that safari hunting is dissociated from any “redneck” image. While most companies see the effect of greater government support in very positive terms, three companies suggested that the general public has such a negative attitude towards hunting that government and mainstream tourism industry agencies would be reluctant to promote it.

Constraints that may hinder the further development of the commercial safari industry were identified by 21 respondents. Factors nominated include (in approximate order of importance):

- Different and complex firearms regulations in different Australian jurisdictions
- “Negative and uninformed” attitudes towards hunting by governments
- “Uninformed and biased” reporting by the media, and opposition by the animal welfare/rights lobbies
- Availability of affordable insurance

- Legal restrictions on the hunting of Australian native animals and hunting in national parks
- Lack of experience and training by some guides/operators.

Twenty respondents suggested factors that would encourage the further development of the industry. These include:

- Promotion of the industry, the establishment of links with the rest of the Australian tourism industry, and education of the public that hunting is a legitimate use of wild exotic animals and a legitimate sport
- The relationship between ascribing a monetary value to wildlife and the preservation of those species and their habitat
- Realisation that hunting provides financial support for some Aboriginal communities,
- The “sanctioning” by governments of safari hunting and government support for the industry
- Permits to take crocodiles and allow commercial safari hunting in national parks.

B. Characteristics of Australian recreational hunting clubs

Membership, location, expenditure on hunting

There are more than 50 recreational hunting clubs in Australia. The largest clubs (the Sporting Shooters’ Association of Australia, Field and Game Australia, and the Australian Deer Association) have Australia-wide membership and operations. Nearly 80% of the smaller clubs are in NSW, and 17% in Victoria. The largest club, the Sporting Shooters’ Association of Australia, has over 110,000 members and 95% of these hunt (R. Smith, personal communication). The two largest clubs which answered the questionnaire declared memberships of over 5000 each, but the modal membership size of all the recreational hunting clubs which provided information is 100 to 300, with six clubs (43%) having this number of members (Fig. 7.10). Taking the mid-point values within the ranges, the total number of hunters represented by the 14 respondent clubs is approximately 30,000 people. This probably underestimates the number of hunters represented by the respondents to this survey.

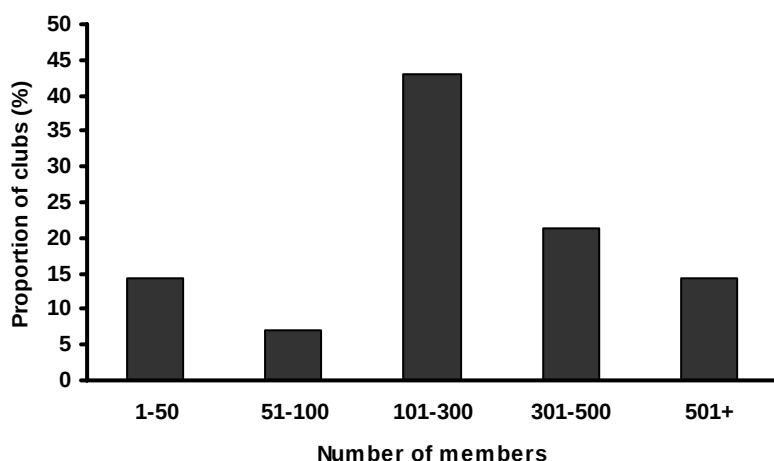


Fig. 7.10. Size of recreational hunting clubs.

Each of the 14 recreational hunting clubs which responded to the questionnaire gave somewhat different aims, but these can be summarised as “To promote recreational hunting as a legitimate and lawful activity and promote ethical hunting practices, to protect shooters’ rights, to provide a forum for hunters to meet and interact.” Other clubs mentioned the promotion of “ethical hunting”, “safe and responsible hunting activities”, and several alluded to education (in humane hunting methods and

knowledge of animal behaviour). Some clubs wanted to sustain particular target populations, often deer, but in one case the club's activities were directed to the "removal of feral animal pressure on native flora and fauna".

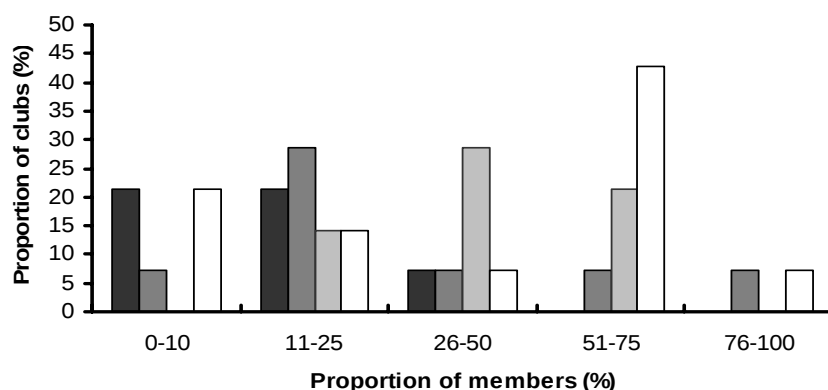


Fig. 7.11. Estimated time (days/year) spent hunting by members of recreational hunting clubs (<2 days ■; 2 to 7 days ■; 8 to 14 days ■; >14 days □).

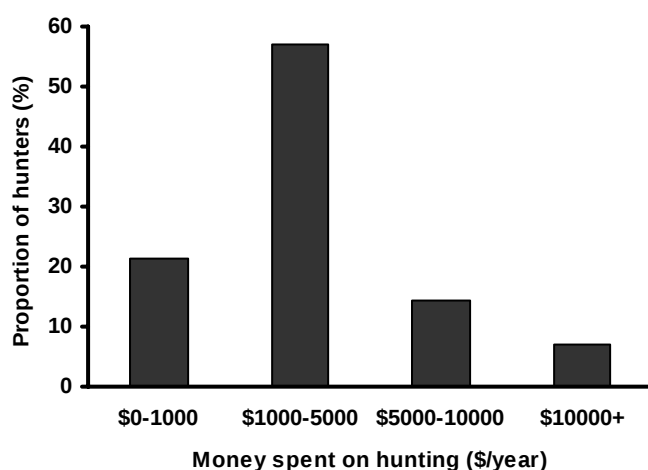


Fig. 7.12. Amount of money spent annually by the “average” recreational hunting club member.

Many recreational hunters spend more than 14 days hunting each year (Fig. 7.11), and spend between \$1000 and \$5000 each year on hunting (Fig. 7.12). Australian recreational hunters generally hunt within Australia. More than half of responding clubs have fewer than 5% of their members who hunt overseas (Fig. 7.13). These people hunt in Africa (Zimbabwe, Mozambique, South Africa, Tanzania, The Cameroons, The Central African Republic) and in New Zealand.

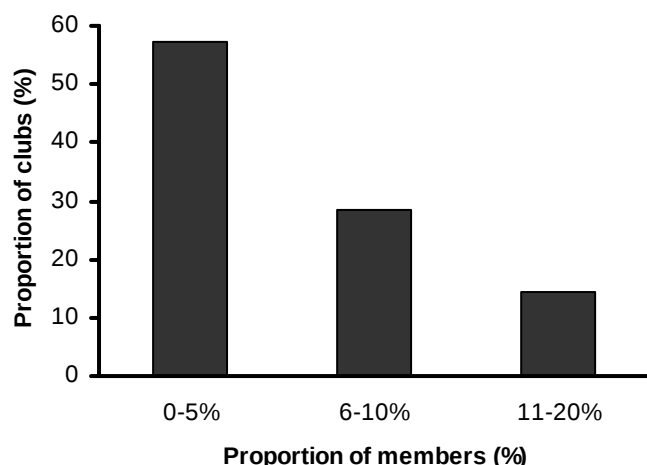


Fig. 7.13. Members of recreational hunting clubs who hunt overseas.

Recreational hunting clubs – styles of hunting

Clubs estimated that 90 to 100% of their members hunt with rifles and/or guns, 50% of clubs have no members who hunt with bows, but in the remaining clubs approximately 5 to 20% are bowhunters.

Club members take several products and/or outcomes from hunting. These include trophies (e.g. antlers, horns) and taxidermy products, and some hunt for the pleasure of seeing the target animal and the outcome is photography or simply sighting the animal. The data reported in Table 7.3 give a somewhat limited view of the activities of club members. In most cases, estimates varied widely, and in all product categories some clubs estimated that all their members took that product or outcome.

Table 7.3. Products and outcomes of hunting taken by members of recreational hunting clubs.

Product or outcome	Modal proportion of members estimated to take this product or outcome (%)
Trophies (antlers, horns, etc.)	100
Taxidermy products	0, 5, 20, 100 *
Meat	50
Photography and sighting	10

* no mode; these estimates were made by two clubs in each case.

Types of hunting, access to hunting, fees and insurance

In Australia, recreational hunting is mostly done on land privately owned by persons other than the hunter (93%), or owned by the hunter (64%), on public land (e.g. state forests where this is permitted by state policy; 64%), and on private land owned or leased by the club (14%). Note that these categories are not exclusive.

Most clubs (86%) claimed to experience difficulties in accessing game. That some game species exist in remote areas is not an important consideration; few clubs claimed that some species were in areas too inaccessible (2 clubs; 14%) or too far from acceptable accommodation (1 club; 7%).

Relatively few clubs complained about legislation or the way it is implemented. Only one club considered that state laws are too restrictive. The NSW Prevention of Cruelty to Animals Act 1979 was mentioned in relation to its prohibition of game ranching and it was suggested that this

constrained efforts to “manage” exotic wild animal populations. Other clubs decried the loss of access to public lands in Victoria and NSW.

Apparently, the major factor restricting access is the attitude of landowners. Many clubs (64%) reported that (some) landowners did not want hunters on their land. Problems of high fees for access (three clubs, 21%), competition between recreational and safari hunters (two clubs, 14%) and between hunters and game meat harvesters (1 club, 7%) were mentioned but are apparently less important. This result suggests strongly that there are commonly adverse interactions between landowners and hunters, and that the efforts of recreational hunting clubs to educate their members in hunting ethics should be maintained and increased. One club specifically mentioned adverse interactions between landowners and safari hunters.

Some of the respondent clubs provide their members with up to \$10 million public liability cover (other clubs mentioned “full insurance cover”, “public liability” insurance or insurance organised by the club’s insurance brokers). In one case, access to this cover is contingent on the hunter having the property owner’s written permission to hunt. Three clubs indicated that they did not provide insurance cover, in one case because it was too expensive. One respondent stated that “State law (NSW) requires hunting clubs to hold full insurance.” We note that the *NSW Associations Incorporation Act 1984* was amended in May 2002 to remove the requirement that incorporated associations hold public liability insurance. However, this “... does not affect the liabilities or rights of the association with respect to injuries or damage to property. In particular, it does not mean that associations may not be subject to public liability claims.” (NSW Office of Fair Trading 2003). The requirement of the *NSW Firearms (General) Regulation 1997* for approved clubs to “maintain adequate public liability and member insurance” may still apply. Another respondent said “Nil. The state government cover public liability”. We do not know which state this club operates in.

Access to target species is restricted by state legislation which determines the dates of open and closed seasons. In-season hunting is not restricted by time of day although property owners may make individual arrangements. In some states, and for some animal species, legislation also controls bag limits, but additional restrictions may be negotiated with landowners. In one case at least the club expects that hunters will not take more animals than “meets their personal needs”.

There are variable arrangements about the payment of commissions or fees to landowners. Six respondent clubs indicated that members paid fees, either by individual arrangement or following arrangements negotiated by the club. In one case, the fee varied from AUD5 to AUD50 per day. Five clubs stated that no fees were paid.

Slightly more than half (57%) of respondents to questions about the legal ownership of farmed and wild exotic game species thought that the situation in their jurisdiction was clear. Owing to the anonymity requirements we can not identify the states in which the other respondents (43%) consider that the law regarding the ownership of exotic game animals is unclear, however, the ownership of escaped deer in NSW was specifically mentioned. One respondent claimed that “the rules in relation to the hunting of deer of various species are too vague” but we can not identify the jurisdiction to which this comment refers. The issue of ownership does not apply in any important sense to species which are declared pests.

Preferred animal species and attitudes to wild exotic game

Recreational hunters take deer (100% of clubs), pigs, goats and hares/rabbits (each 86% of clubs), and members of smaller numbers of clubs hunt buffalo and camels (21% each), horses/donkeys (14%) and cattle (7%). Other species hunted include foxes and feral cats.

Only eight clubs nominated a preferred trophy quality assessment system, with 75% of these preferring the Douglas system. The low response to this question suggests that recreational hunters are much more interested in the “hunting experience” than in trophy hunting *per se*, as all clubs indicated that their members hunt deer, and all scoring systems can be used to describe deer trophy quality.

Somewhat surprisingly, 36% of clubs have no policy on the eradication of wild exotic animals. Four clubs favour retaining all exotic wild animal species. Two clubs want to eradicate all exotic wild animals. Other suggestions were to retain only deer, buffalo, pigs, hares and blackbuck, and to eradicate foxes, cats and rabbits.

A majority (86%) support the control of wild exotic animal populations, mainly to control population sizes and to maintain or enhance trophy quality (Fig. 7.14).

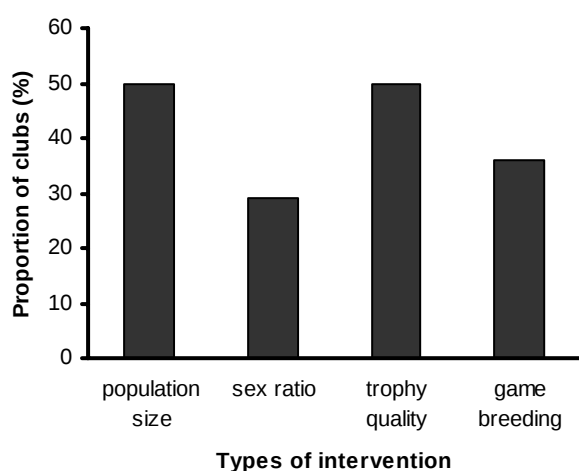


Fig. 7.14. Reasons why recreational hunters would want to control exotic wild animal populations.

Half of the clubs hold a position on the possible links between hunting and conservation. These positions include:

- Clubs should fund conservation initiatives on private land
- Hunters should take only what they require and make their own (conscience-based) decisions about the sexes and ages of animals taken
- Sustainably manage wild deer herds (for and by hunting) – these herds are considered to be generally not a threat to the environment
- Recreational hunting can control exotic animals
- Exotic animal populations are a rural resource which should be managed (by hunting).

A large minority of clubs (36%) indicated that the CITES classification of a species, or its perceived level of endangerment, would influence their attitude towards hunting that species. In fairness to the other clubs, it should be noted that there are no CITES listed exotic wild animals presently in Australia.

Only two clubs indicated a position about the non-consumptive use of game. One of these commented that “non-consumptive use is no substitute for consumptive use of exotics as conservation outcomes are not the same”. This is an important point. A major issue in the control of populations of wild exotic animals (especially those which are declared pests) is that some of the population must be removed to reduce the breeding potential of the population.

Attitudes towards commercial safari hunting

Depending on the way in which the question was asked, between two (14%) and seven (50%) clubs see a conflict between recreational and commercial safari hunting. The main concern held by recreational hunters was of being priced out of the market – hunting land being closed up by landholders who want to be paid for providing access for hunting. Respondents gave these other reasons for concern about the further expansion of safari hunting:

- Unethical practices (including canned hunts and helicopter hunting)
- A possible decline in trophy quality because of pressure on the better animals,
- The entry of “unethical professionals” into the safari hunting industry
- Political interference (possibly as a result of hunting becoming more visible within the community).

Most clubs (79%) identified several issues which would restrict the further development of commercial safari hunting in Australia. In many instances, this list of concerns repeats those previously raised in connection with access to hunting by recreational hunters. Access to public land is a major concern, together with the activities of “green” and animal welfare/rights organisations, and restrictions (especially on international visitors) imposed by current firearms laws.

Opinion on the benefits to recreational hunting from an expansion of commercial safari hunting is evenly divided. Six clubs (43%) saw a possible benefit, and suggested these positive outcomes from expanded safari hunting:

- Encourage a relaxation of the current prohibition in NSW of game parks, and thus allow better management of game species
- Promote a greater acceptance of the legitimacy of hunting by the general community and governments
- Promote a greater awareness of the value (of deer) as an economic resource, leading to better management, increased tourism and jobs in rural areas.

All recreational hunting clubs stated that they had no policy to commercialise their operations (i.e. to operate in competition with established commercial safari hunting companies), and the policies of three clubs specifically prevent such commercialisation. The general attitude appears to be that hunting should be available to all, at minimum cost.

Hunting ethics

Poaching, trespassing and other anti-social behaviour are a widespread source of concern for reputable hunters and hunting organisations. Most clubs (86%) have rules intended to discourage such behaviour; surprisingly 14% do not. Six clubs (43%) stated that this behaviour resulted in suspension or expulsion from the club. Three other clubs referred us to their code of conduct. We can not identify which codes these are, but most codes provide for suspension or exclusion in the case of serious breaches. Exclusion from a hunting club is a serious penalty because in some jurisdictions it also results in the loss of that person’s firearms licence.

A sizeable minority (43%) have a policy in favour of “fair-chase” v. confined-area hunting. Many trophy registers will not accept animals taken on game estates, and this point was made by most of the respondents who indicated a position on this question. However, only three clubs (21%) stated that they would not accept anything but fair-chase hunting under all circumstances.

Included in the ethics of hunting is the question of what to do with the animal once it has been killed. Eight respondents (57%) indicated that hunters should take the edible meat and the hides, but to use these products for themselves. One respondent commented that some of their club’s members were pensioners and that the meat obtained from recreational hunting could be a useful addition to the household. Although the question included the taking of trophies as part of the consumptive use of

animals, trophies were not mentioned by these respondents. This illustrates again that it is the hunting experience which is important for recreational hunters.

All clubs listed their ethical concerns about hunting. Five clubs referred to their code of ethics/conduct, and inferred that adherence to these would result in ethical hunting practice. Four mentioned the importance of humanely killing animals, and three noted concerns about the safety of hunting (to both hunters and non-target animals). Other concerns included illegal hunting practices (e.g. spotlighting), the problems which can be caused by untrained or inexperienced hunters (mis-identification of animals, poor shooting ability), and the need to hunt in an environmentally friendly way.

C. Game meat exporters

The three companies who responded to this survey operate in all states and territories except the ACT. Queensland, NSW, South Australia and Western Australia are the main areas of operation.

These companies use a restricted range of species. All harvest wild goats, and two use deer, while only one company harvests wild pigs. Although camels and buffalo are harvested for game meat export and/or domestic consumption, none of these companies use these species.

Two of the three companies favour the retention of all exotic wild animal populations in Australia, but surprisingly given that all companies harvest wild goats, one company supports the eradication of all wild exotic animal populations, especially camels and buffalo. Species that were mentioned as being desirable to retain were deer, ducks, quail and hares. This list suggests that the respondent may have been thinking of the recreational value of these species, rather than their meat export value. One respondent favours the control of wild animal populations, through positive action to modify the sex ratio, and controlled hunting measures to improve trophy quality, and breeding of game animals.

No respondent felt that there was any conflict between the aims of game meat exporters and commercial safari hunters. One company thought that an expansion of safari hunting would open up an opportunity for the supply of trophy animals. On the other hand, another company suggested that an expanded safari hunting industry could attract “negative animal welfare public relations” unless the industry was “properly resourced”. However, when respondents were asked if an expanded safari hunting industry would reduce access to properties for game meat harvesting, two companies thought that it would, and one suggested that this might make game meat harvesting (economically) unviable.

Two game meat exporters suggested that their activities might conflict with those of recreational hunters. Two respondents were concerned that game meat harvesting might deplete the availability of game for hunters, while one suggested that recreational hunters claim a prior right to the available game. Only one company has a policy about the purchase of game meat from either safari or recreational hunters, and emphasised the need to have animals correctly slaughtered so that hygiene requirements are met. It can be noted that many recreational hunters use a heart shot, which may destroy some of the carcase meat quality, whereas game meat harvesters use a head shot, which destroys the trophy value.

Access to properties for game meat harvesting is apparently not a general problem, although one respondent noted that property based game management plans may restrict access by game meat harvesters. The question of maintaining good relationships with property owners by attempting to regulate hunting practices was addressed by only one respondent, who commented “We only deal with reputable harvesters. If they don’t do the job properly owners don’t let them back”. On the more general question of hunting ethics, all respondents agreed on the importance of a humane, quick kill, without suffering.

No respondent indicated any lack of clarity about the ownership of farmed or wild exotic game.

D. Graziers' and landowners' organisations

Members of the two graziers'/landowners' organisations which replied to the questionnaire are involved in extensive and intensive grazing and lot feeding of sheep, beef cattle, deer and goats, and broad-acre and intensive cropping. One organisation has members who produce dairy products, pig meat, oysters and poultry products. Both organisations are located in southern Australia.

One organisation states no policy on the consumptive use of animals, except implicitly because it represents members who obtain their livelihoods from the sale of animal products (which is a consumptive use). The other notes that the deer industry (which is not the only industry represented by this group) "produces animals for all commercial purposes" which includes the sale of products derived from the carcase, velvet antler, and the sale of trophy stags for commercial (safari) hunting. Neither respondent indicated a policy about the non-consumptive use of animals.

One respondent considers that commercial safari hunting can be very profitable, while the other is unsure, but neither has a policy about encouraging (or discouraging) the commercialisation of hunting on members' own land. One organisation would support recreational hunting (in general, not necessarily on members' land) and non-consumptive uses only if they became issues of concern to a sufficient number of members for a policy formulation process to succeed. In other words, this organisation sees the development of such a policy as being member-driven, rather than something which the executive would recommend to members. The other organisation would support such activities subject to animal welfare considerations and "safety issues, state regulations, licensing of hunters, indemnity for farmers, and protection against the 'dumping' of product into existing markets". This latter point may refer to possible competition between farmed and game venison for access to European markets. One organisation supports the export of meat and other products from game animals, while the other has no policy on this question. Game meat exports might potentially adversely affect the export of farmed game meat and so all exports must meet quality and safety requirements.

Both organisations identified similar issues in relation to the access by hunters (for recreation, commercial safari and game meat harvesting) to members' land. These include:

- Acceptable arrangements about public liability insurance: these must be in place before hunting begins
- Membership of a recognised hunting organisation, and/or satisfactory assessment of personal probity
- Agreement on species, class of animal, and number of animals to be taken
- Appropriate financial return to the landowner
- Government policy/legal issues: these include public liability and land tenure
- No alcohol.

One organisation recommends that its members require that the hunter has sufficient and appropriate insurance, and must agree to indemnify the landowner against all risks, including injuries or deaths of animals not included in the agreement. Both organisations identified the importance of humane killing methods and animal welfare considerations.

The problem of poaching, i.e. the unauthorised (although not necessarily illegal) shooting of wild exotic animals, is often raised by members of recreational hunting clubs and landowners. Inherent in poaching are the acts of trespassing on privately owned land, and the "stealing" of a resource which might have an economic value. Poaching is difficult to define, especially in those jurisdictions where wild exotic animals have no lawful owner, or are classed as animal pests. The two respondents asked for more restrictive laws on trespass, and for their strict enforcement. One called for the ability of police to issue on-the-spot fines for unlawful entry. The issue of ownership of both wild and farmed

exotic species was claimed to be unclear by one respondent because of between-state variations in laws.

Neither organisation has a policy on the eradication of exotic wild animal populations. This is consistent with their statements about the commercialisation of hunting on members' land. It seems, if these two are representative of all Australian grazier and landowner organisations, that exotic wild animals are seen as part of the background to Australian life, and are accepted without much thought about their benefits or otherwise, and especially of their conservation or their improvement for hunting or other uses. The only comment made in answer to questions about the conservation of wild animals was that their populations should not be allowed to expand so that they become a pest.

E. Comparisons of attitudes to hunting and hunting practices

Commitment to hunting – time and money spent by safari and recreational hunting club members

The total amounts spent on hunting, by Australian hunters, are substantial. We have estimated that the clubs represented by this survey have at least 30,000 members. These people may spend AUD54 million annually on direct hunting costs. The domestic and international clients of the safari companies which responded to this survey may spend another AUD5 million annually. Cause (1995) estimated that Australian deer hunters made between 3 and 11 hunting trips each year, and spend (in 2003 values) AUD82 million annually in hunting-related costs.

As might be expected, some Australian hunters who patronise safari companies spend larger annual sums on hunting than the amounts that members of recreational hunting clubs spend on their own self-directed activities (Table 7.4). However, we acknowledge that when an individual hunter spends more than AUD10,000 in a year this might be a once-in-a-lifetime experience. Further, the generally lower average annual expenditure of club members includes the effect of the low expenditures of inactive members. Nearly 30% of recreational hunting club members hunt on only one day each year, or perhaps not at all (Table 7.5).

More than 60% of recreational hunting club members hunt for 8 or more days/year (Figs. 7.11 and 7.15, Table 7.5). In contrast, most safari company clients hunt for two to 14 days. This may reflect the cost of safari hunting, or the special nature of hunting to collect trophies, or the time that individuals are prepared to spend on holiday.

Table 7.4. Expenditure on hunting by domestic clients of safari companies and by members of recreational hunting clubs.

Expenditure range	Proportion of companies/clubs (%)		P=
	Domestic clients of safari companies	Recreational hunting club members	
<AUD1000/year	16.7	21.4	0.446
AUD1001-AUD5000/year	41.7	57.1	0.121
AUD5001-AUD10,000/year	8.3	14.3	0.207
>AUD10,000/year	33.3	7.1	0.00004

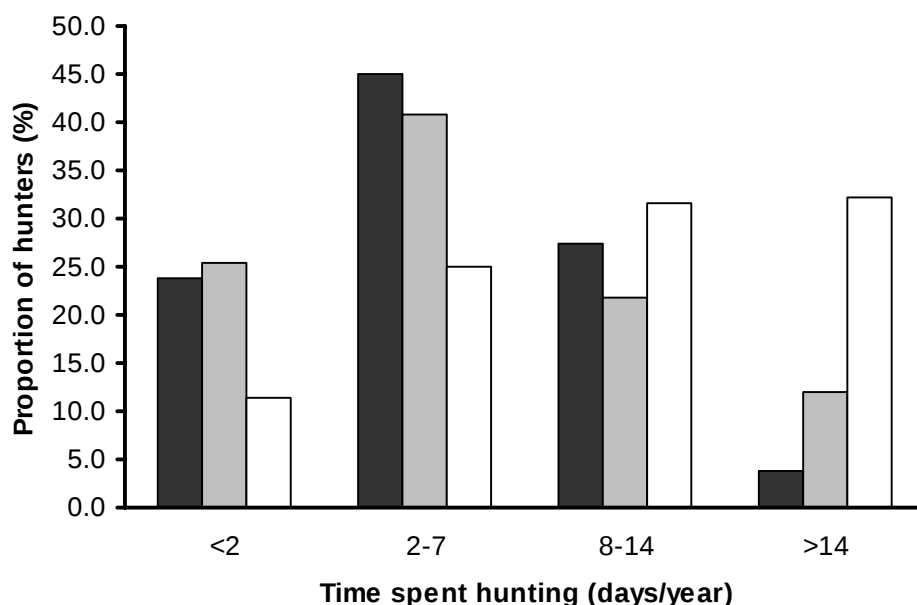


Fig. 7.15. Time (days/year; weighted proportions) spent hunting by international clients of safari companies (■), domestic clients of safari companies (■), and members of recreational hunting clubs (□).

Table 7.5. Time spent hunting (days per year; standardised weighted proportions) by safari company clients and members of recreational hunting clubs.

Time spent hunting	Proportion of clients/members (%)			P=
	International safari clients	Domestic safari clients	Recreational club members	
<2 days/year	23.7	25.5	11.4	0.054
2-7 days/year	45.0	40.7	24.9	0.048
8-14 days/year	27.5	21.7	31.5	0.404
>14 days/year	3.8	12.0	32.2	0.000

Hunting characteristics – preferred species, style of hunting, use of products

Deer, pigs and goats are the preferred target species for all hunters (Table 7.6). Other species which are taken by all classes of hunter include blackbuck antelope, foxes and cats. There are some interesting differences between hunting club members and the clients of safari companies. Members of hunting clubs are much more likely to take deer than are safari club clients. Some of the recreational hunting clubs were formed as deer hunting associations, and this is reflected in the high likelihood that members will hunt these animals.

Access to banteng cattle is restricted to those companies which operate in the Northern Territory, and which have appropriate arrangements for entry to Aboriginal lands. This, and the remote location of these animals, probably explains why hunting club members are not likely to take these animals. On the other hand, domestic clients and hunting club members have relatively easy access to properties in western NSW and Queensland where goats, hares and rabbits are available, while it is unlikely that an international visitor would want to spend much time hunting hares and rabbits.

Table 7.6. Animal species preferred by the international and domestic clients of safari companies, and by members of recreational hunting clubs.

Species	Proportion of companies/clubs (%)			P=
	International clients	Domestic clients	Recreational club members	
Deer	54.2	54.2	100.0	0.002
Pigs	70.8	83.3	85.7	0.988
Goats	50.0	50.0	85.7	0.007
Buffalo	50.0	37.5	21.4	0.0001
Cattle (banteng)	16.7	4.1	0.0	0.0000
Cattle (other)	33.3	25.0	7.1	0.0001
Camels	12.5	12.5	21.4	0.253
Horses/donkeys	12.5	12.5	14.3	0.924
Hares/rabbits	37.5	50.0	85.7	0.0001

Table 7.7. Proportions of companies and clubs reporting that half or more of their clients/members take trophies, taxidermy and/or meat products from their hunting.

Item	Proportion of companies/clubs (%)			P=
	International safari clients	Domestic safari clients	Recreational club members	
Trophies	70.0	60.0	64.3	0.606
Taxidermy	70.0	56.0	35.7	0.004
Meat	10.0	40.0	71.4	0.0001

There is essentially no difference in the attitudes of the international and domestic clients of safari companies, and recreational club members ($P>0.05$) towards the collecting of trophies (Table 7.7). International and domestic safari company clients are both as likely to take taxidermy products, but recreational club members generally do not take this hunting product. In contrast to international hunters, many Australian hunters appear to want to use as much of the killed animal as possible. In this regard, it's noteworthy that recreational club respondents consistently expressed attitudes similar to "members should endeavour to make good use of the animals they shoot", and "all usable meat to be removed for consumption", and "all parts of the animals should be used".

Attitudes to conservation and the management of exotic wild animal populations

Even though Australia's wild exotic species are not endangered, commercial safari company operators are concerned about the CITES classifications and/or the level of endangerment of their target animal populations. In these attitudes they differ from recreational club members (Table 7.8).

Table 7.8. Attitudes of commercial safari companies and recreational hunting clubs to the CITES classifications and level of endangerment of populations of hunted animals.

Concerns	Proportion of companies/clubs (%)		P=
	Recreational hunting clubs	Safari companies	
CITES classification	7.1	9.5	0.556
Level of endangerment	14.3	9.5	0.325
CITES and endangerment	14.3	38.1	0.001
No concerns	64.3	38.1	0.010

There is no statistical difference between safari companies and recreational hunting clubs in their attitudes towards the management of Australia's wild exotic animal populations. Both groups tend to favour the control of population sizes rather than the eradication of these animals, and the degree of support for the management methods which we suggested (Table 7.9) is the same in both groups. No recreational hunting club supported a completely *laissez faire* approach, i.e. applying no control whatever, while a small proportion of safari companies would support this approach. These attitudes are similar to those expressed by the game meat harvesters.

Table 7.9. Preferred methods of managing or controlling populations of wild exotic animals in Australia.

Management method	Proportion of companies/clubs (%)		P=
	Safari companies	Recreational hunting clubs	
Eradicate all these populations	8.0	14.3	0.182
Control the size of these population	69.6	50.0	0.073
Influence the sex ratio	30.4	29.0	0.856
Manage to improve trophy quality	60.9	50.0	0.301
Use purpose-bred exotic animals	47.8	36.0	0.197
Exert no control on these populations	8.7	0	0.003

Constraints to hunting

The comparisons in Table 7.10 show very clearly the quite different ways in which recreational hunting club members and commercial safari companies experience the Australian hunting environment. The only characteristic shared by these two groups is that they are both prepared to go to wherever the target species is found. This result is consistent with the views of South African domestic hunters who value the "outdoor experience" of hunting (Radder, *et al* 2000). The two groups differ in every other attribute, and these differences seem to us to encapsulate the attitudes of club members and safari companies.

Recreational club members are not concerned about accommodation. Safari companies, no doubt as part of their concern to provide a good touristic experience, need to be able to provide suitable accommodation, not too far from their target animals. However, this comparison just failed to achieve significance, and we should be cautious in drawing too firm a conclusion on this matter.

Recreational hunting club members encounter landowner opposition much more often than safari company operators. In part, this is because most safari companies operate on land owned or leased by the company. Some issues relevant to relationships between landowners and hunters are discussed below.

Club members find the fees charged by landowners to be high – again, one of the commonly-voiced credos of recreational club members is that "hunting should be free for everyone". On the other hand,

safari operators acknowledge the inevitability (or perhaps desirability) of paying for access to target animals. Of course, safari operators may have greater financial capacities to pay these fees. It seems that club members are more tolerant of state game and conservation legislation than safari operators. Indeed, a common theme in the safari company survey is that game management laws are too restrictive. No recreational hunting club suggested that members should have access to crocodiles, but several safari companies recommended this, as well as access to kangaroos.

We find the quantitative data which indicates an apparent lack of concern of recreational hunting clubs about safari companies' activities to be surprising, because several respondents commented on the possibility of the over-use of target populations, and a deterioration in trophy quality, resulting from the activities of commercial safari hunters. Safari operators did not indicate throughout the survey that they found competition from recreational hunters to be important. Game meat harvesters were concerned that an expansion of safari hunting may reduce their access to game meat. There may be opportunities for the game meat and safari industries to collaborate in meat harvesting, but as we have pointed out previously, the two industries use different ways of killing the animal and the hygiene requirements of game meat harvesting may preclude the use of safari-shot meat. One of the grazer organisations was concerned about competition between farmed and wild-shot game meat exports. While this is not particularly a hunting issue, it emphasises the importance of quality control and hygiene in the game meat industry.

Table 7.10. Comparison of safari companies' and recreational hunting club members' experience of constraints to hunting.

Nature of constraint	Proportion of companies/clubs (%)		P=
	Safari companies	Recreational hunting clubs	
Animal are in inaccessible areas	8.0	14.3	0.182
Animals are remote from accommodation	16.0	7.1	0.064
Landowners don't want hunters on their land	32.0	64.3	0.001
Landowners have had adverse experiences	28.0	64.3	0.0002
Landowners charge too much for access	12.0	78.6	0.0001
State laws are too restrictive	40.0	7.1	0.0001
Competition between safari and recreational club hunting	36.0	14.3	0.002
Competition with game meat harvesting	36.0	7.1	0.0001

Hunting ethics – style of hunting and animal welfare

Most Australian hunters claim to support “fair-chase” hunting and avoid hunting animals which have been released into small areas. It is not easy to get unequivocal attitudes towards fair-chase v. confined-area hunting because of the imprecise definition of “confined area”. In the extreme, this could mean “canned hunts” where trapped or farm-bred animals are released into a very small, confined area and shot. As one recreational club respondent noted: “penned and confined animals are easy to shoot and hardly any talent is required”. At the other end of the scale, confined areas can be several thousand hectares large, and include rugged terrain. Under these conditions, confined-area hunting is little different from fair chase hunting, although the animals may come from quite different gene pools.

Only 50% of safari companies and 43% of recreational hunting clubs appear to use exclusively or have a policy in favour of “fair-chase” v. confined-area hunting. Altogether 54% of safari operators engage in large-scale estate hunting and 17% use confined estate hunting, but this latter group did not indicate how large these areas are. We suggest that safari operators are much more likely than recreational hunting club members to use large hunting estates. Possibly, much of the opposition to confined-area hunting stated by recreational club respondents is aimed at canned hunts. In saying this, we do not wish to imply that canned hunts occur in this country.

Many trophy registers will not include animals which have been taken on hunting estates, and this point was made by most of the recreational club respondents who indicated a position on this question. However, only three clubs (21%) stated that they would not accept anything but fair-chase hunting under all circumstances.

All of the groups surveyed emphasised the importance of dealing respectfully with the target animal, and of a quick, clean kill.

Relationships with landowners – trespassing, poaching and insurance

The two landowners’ organisations which responded to the survey are concerned about trespassing, poaching, and indemnity against injury or damage. These are likely to be important sources of friction between landowners and hunters, and may be the reason why 64% of recreational hunting clubs find that landowners don’t want hunters on their land or have had adverse experiences with hunters. Safari companies and recreational hunting clubs vigorously oppose trespassing and poaching. Almost all safari operators (95%) police rules about these behaviours and indicated severe consequences for those who transgress. Most (86%) recreational hunting clubs have codes of conduct which prohibit these behaviours and apply consequences of differing severity.

We also suggest that safari hunting is likely to be both known to the landowner and well controlled, while it is difficult for landowners to distinguish between poachers/ trespassers who are not a member of any club, and a law-abiding club member.

Insurance is an issue with potential for considerable negative impact. Half of the safari operators who gave us information on this indicated that they have no public liability insurance. The recreational hunting clubs appear to be better organised, as we conclude that eight of 14 respondent clubs carry public liability insurance for their members. However, this leaves 43% of clubs whose members need to arrange their own insurance. Both landowner organisations recommend that their members require hunters to provide indemnities against injury and/or damage, and have appropriate public liability insurance. The insurance issue remains important, and is presently unresolved.

Conclusions

The commercial safari industry earns directly about AUD5 million annually, and attracts international and domestic tourists to rural and remote areas of Australia, and to general tourist activities in Australia. The industry is small compared to the South African industry, but there may be large room for growth.

The survey gave ambiguous information on the views of safari companies and recreational hunting clubs about each other's activities. Significantly different proportions of recreational hunting clubs (14%) and safari companies (36%) agreed with the question "Is there competition between commercial and recreational hunting in accessing properties or animals for hunting?". Overall, the recreational clubs' responses suggest that more commercial hunting would increase competition and so restrict access, or conversely that it might cause changes in laws and policies which would improve access. Many recreational hunting clubs hold that access to hunting should be free to all who want it. Commercial safari companies could interfere with this by offering money to landowners, and by increasing the pressure on the hunting resource (both land and animals). However, this may not occur in practice because commercial hunters operate almost exclusively on their own or leased land, while most recreational club hunters hunt on privately-owned land, in many cases their own. Again, while all hunters take deer, pigs and goats, small vertebrates (e.g. cats, foxes) are hunted more by recreational club members and less by safari companies' international clients.

There is probably little scope for synergy between the safari hunting and game meat harvesting industries. They use different, and largely incompatible, methods to kill the target animals. In contrast, commercial hunting may offer graziers a supplement to their conventional income stream, and this opportunity has been taken up by some. If this trend develops, grazier/landowner organisations will have to offer policy support. Some graziers who presently offer hunting access may not have considered the risks and requirements of the industry completely enough.

All hunters profess an ethical approach to hunting, and respect for their quarry. The only difference between safari hunters and recreational hunting clubs is that the companies are more likely to tolerate and provide confined-area hunting. This should not be interpreted as support for canned hunts, but rather for large-scale hunting on game estates or private properties.

The safari industry has identified several factors which would promote its development. It would like to see less complex and more uniform firearms regulations throughout Australia, fewer legal restrictions on hunting (although the industry does not want completely untrammelled access), more affordable insurance, and more positive and informed attitudes towards hunting by governments. Apart from the Northern Territory Tourist Commission, safari hunting is not actively promoted by tourist agencies. While some safari companies think that their industry is too different from mainstream tourism to be understood and effectively promoted, others think that it is important to establish links with the rest of the Australian tourism industry, and to educate the public that hunting is a legitimate use of wild exotic animals and a legitimate sport.

Acknowledgements

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8. Conclusions – Recommendations for the Australian Safari Industry

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Safari hunting – models for management

The international prototypes which are discussed in this Report illustrate aspects of the use of recreational and commercial hunting to control wild animal populations, and the types of government policy which are used in other countries to support lucrative hunting industries. The models of hunting management provided by these countries are summarised here.

South Africa

Hunting is used to generate foreign exchange, to obtain meat for family use, and to finance the conservation of potentially endangered animal species.

The long history of South African safari hunting time has lead to the development of a modern industry which is profitable for many, which is supported by the infrastructure needed to attract wealthy international hunters, and has the government support needed to ensure a successful industry. The South African central and provincial governments regard commercial hunting and game ranching as agricultural pursuits and give them the same research and extension backup that other (to Australian eyes, conventional) forms of agriculture receive. There are training opportunities for those who wish to become hunting professionals, and there are several industry associations for professional wildlife hunters. There is an informed dialogue between hunters and conservationists.

The industry has surveyed, and therefore knows, the requirements of international and domestic clients for types of animal, trophy quality and accommodation.

Wild animals in South Africa are *res nullius*, or owned by no-one until ownership is proved by the actions of capturing or killing the animal. This may be a useful model for Australian legislators. On the other hand, it seems that South African law relating to the details of wild animal hunting and conservation is fragmented because different jurisdictions have different regulations. Further, we have a warning that not all of the industry (in the wildlife ranching sector) is profitable.

North America

There is also a long history of hunting in North America. Many Canadians and Americans participate in recreational hunting, mainly for the sport, but also to maintain a tradition, or to obtain food.

Most of the animals hunted in North America are native. These species are held in public esteem, and there is a view held by some that American native animals are sacrosanct (the “charismatic megafauna” attitude). On the other hand, there is concern among wildlife managers that the populations of some native species, especially the white tailed deer, may reach plague proportions in certain areas. There is also a need to protect peri-urban dwellers against the depredations of deer and other wild animals.

Hunting ethicists reiterate the need for respect for the quarry and the environment. Connections are consciously made between hunting and the conservation and control of wild animal populations. This connection is maintained by both public and private groups, although not always for similar reasons. For example, government conservationists emphasise maintenance and control of wild animals populations, Quality Deer Management (QDM) is an essentially private program to improve the trophy quality of animals. This is done by managing the hunting process so as to obtain a *de facto* breeding program in wild animals. In some cases, QDM is backed up by property-based game management plans which take a wider approach by trying to control pest species. There is an increasingly widespread program of using the by-product of hunting, i.e. the meat, for the public good. This may be an attempt by the hunting community to counter concerns in other sections of the community about the morality of hunting.

Hunting is regulated to protect the wild animal populations, while allowing access to this form of recreation. Somewhat complicated licensing schemes are used to provide this control. They also generate substantial revenues for state wildlife agencies. These are used to maintain national parks and for similar uses. The Texan regulations provide for both the recreational and commercial use of wild animals. Again, the concept of *res nullius* appears to apply, but there are constraints on the use and movement of captured wild animals.

New Zealand

Introduced large wild animals form the basis of a “big game” hunting industry in this country. Many members of the public regard exotic wild animals as pests, but commercial and recreational hunters oppose government policies to eradicate species like deer, wallabies, thar and chamois. There are some introduced animals (like the possum and the stoat) which are universally considered to be pests and efforts to eradicate and/or control these are supported by the community in general. Recreational and commercial hunting is used by the Department of Conservation to manage pest animal populations, especially of thar and deer. Some recreational hunting groups have tried approaches like property-based game management in certain forests, but with limited success.

The commercial safari industry is profitable, and wild deer have formed the basis of a very successful deer farming industry. Connections between these two industries parallel the development of game ranching in South Africa.

Exotic wild animals in New Zealand are *res nullius*, in a way that is very similar to that in South Africa and Texas. New Zealand law limits the establishment of game hunting estates by prohibiting them in areas outside the “natural range” of each particular species.

A conceptual framework for the commercial utilisation of feral game animals in Australia

A successful commercial safari hunting industry will:

- Be conducted in a way which is acceptable to the majority of the Australian public.
- Provide clients with a genuine “hunting experience”.
- Meet (international) client expectations about trophy qualities, accommodation and other infrastructure.
- Work with rural tourism rather than competing with it.
- Seek ways of utilising tourism investment and infrastructure to the benefit of safari hunting.
- Ensure that tourism guides and other tourism personnel are well informed, ethical and professional in their approach to all aspects of hunting and associated tourism.
- Appropriately share the use of exotic wild animals with traditional landowners and recreational hunters.
- Not impinge on the use of grazing lands by farmers and graziers.
- Not over-use the hunted resource, and maintain its quality.
- Co-operate with conservation authorities to manage wild exotic animals.
- Operate under uniform laws about hunting, and the ownership of wild exotic animals.

Commercial hunting must be conducted in a way which is acceptable to the majority of the Australian public. Hunters should recognise that a proportion of Australians think that hunting for recreation is unacceptable, and they should take all possible steps to make their preferred recreation more publicly acceptable. There is anecdotal evidence that some who work in the commercial hunting industry operate unethically, incompetently, in ignorance of laws about the export of trophies from CITES listed animals and of quarantine laws, or provide a substandard tourism experience. A professional hunters’ (or guides’) association is needed. If the Québécois and South African models are used, this would involve setting up formal training courses, and government licensing of guides and/or outfitters. Training may be a prerequisite for licensing. Many commercial safari companies have their own codes of conduct. Like those adopted by most Australian recreational hunting clubs, these codes address animal welfare, respect for the environment, and the property rights of landholders. Some go further to define the liability of clients and the company for wounded animals. A uniform code would add to the reputation of the industry, especially if it was imposed by law in response to a request from the industry. This has been argued in New Zealand as a way to counteract possible negative international opinion about hunting.

The further development of the Australian commercial hunting industry will broaden the types of tourist destinations in this country and help to buffer the tourism industry against the downturns which it has recently experienced. Tourist infrastructure, and in particular accommodation, in many rural areas tends to be of low or average standard or non-existent, partly because existing tourism use precludes an adequate rate of return on initial investment. If hunters and tourists use the same facilities, higher demand will lead to greater supply and accommodation can be provided at a higher standard than at present. Australia is currently not well endowed with luxury accommodation in rural areas and a lack of such stock could be a hindrance to the expansion of high-spending hunters in the future. We should not assume that hunters are satisfied with tented or cabin-type accommodation, or that “roughing it” is necessarily acceptable to either domestic or international clients. Packaging the touristic experience so that it meets the needs of international tourists will be important in the development of the industry because it is these people who are prepared to pay large hunting and trophy fees. International hunters may be increasingly interested in Australian game because of Australia’s reputation as a safe country to visit. We should capitalise on this.

There may be a problem of product differentiation. Australian safari operators advertise “big game” and mean buffalo, cattle, deer and the like, whereas “big game” in Africa is lions, rhinoceros, elephants, buffalo and leopards. Some Australian species like the hog deer and buffalo are potentially

attractive because of their rarity or uniqueness. These attributes should be further developed, perhaps by game ranching or developing the types of connections between the deer farming industry and commercial hunting as are found in New Zealand.

There is lack of clarity about the legal status of some exotic species in some states, and this may encourage poaching. Poaching is a continuing concern of many who are involved in commercial and recreational hunting. It involves trespass, and can be associated with property damage. It may interfere with contracts between hunters and landholders about access to particular animals or hunting areas. The concept of *res nullius* as it is applied in the countries surveyed could be useful. But however the matter is resolved, the interests of landholders who increasingly regard the payment of access or trophy fees as part of their normal income, and of deer farmers who wish to prevent poaching of their domestic stock, should be safeguarded.

In North America and New Zealand, hunting is used to augment government efforts to control vertebrate pests, both by direct assistance and in providing revenue. The Tasmanian property-based game management plan is a useful model of how individuals may help government efforts to remove pest animals. This approach reduces any tendency to over-use the populations of desired animals, and helps to maintain their quality.

Fig. 8.1 summarises the elements which appear to be needed in a successful Australian commercial safari hunting industry. These issues are addressed in recommendations about the ways in which the industry may improve its sustainability, profitability and social acceptability. Adequate support from the financial, insurance, and tourism sectors, and provision of appropriate legal frameworks will be needed to achieve some of these aims.

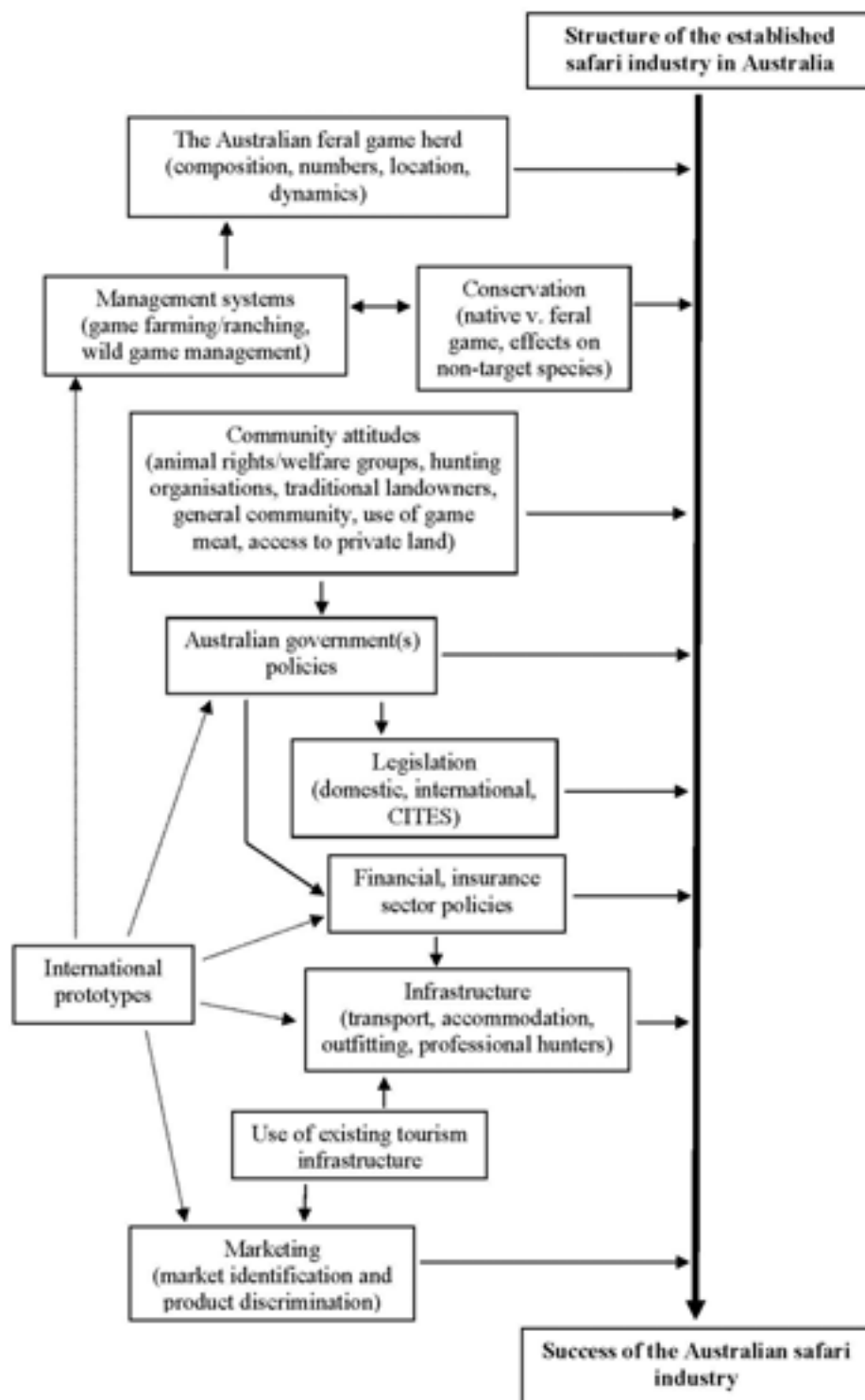


Figure 8.1. A conceptual framework for the commercial utilisation of feral game animals in Australia.

Recommendations

Providing a genuine “hunting experience”

The industry should:

1. Survey the international hunting scene to compare the types and qualities of animals and trophies required by international visitors, their requirements for accommodation and other services, and their expectations about the “nature experience”.
2. Differentiate the Australian product from that obtainable in Southern Africa, Europe and North America, by finding ways to improve access to banteng cattle, wild pigs and buffalo, and by using game ranching to make hog deer hunting more widely available. Professional guides should be proficient in all the important trophy scoring methods, including the SCI and Rowland Ward, as well as the Douglas, methods.

An acceptable and ethical hunting industry

Commercial hunting must be conducted in a way which is acceptable to the majority of the Australian public by:

3. Establishing a professional hunters’ (or guides’) association, supported by suitable training courses and perhaps government registration of guides and outfitters. This association should develop and enforce a code of conduct.
4. Establishing a peak commercial hunting body in Australia as soon as is practicable. In its absence, the various state and territory tourism bodies should address those issues raised in this report which are relevant to them.
5. Establishing a trust fund administered by the industry to meet the costs of proven claims of default or unsatisfactory performance, so as to avoid the negative impact of complaints (and indeed legal actions) by dissatisfied clients.
6. Ensuring that professional guides and outfitters, and sellers of hunting access on private lands, have suitable insurance.
7. Where possible, recovering and using the meat from hunted animals, either by the hunters themselves, be selling it on the game meat market, or by donating it to charity.

Equitable and legal use of the resource

Equitable use of the resource should be ensured by:

8. Appropriately sharing the use of exotic wild animals with traditional landowners and recreational hunters through adequate consultation and obtaining necessary permissions from land owners and custodians before embarking in any hunting activities.
9. Avoiding interference with the use of land by farmers and graziers through consultation and agreements about how exotic wild animals present on their land can be used.

Work with rural tourism

The industry should maximise the synergy between commercial hunting and rural tourism by:

10. Involving Aboriginal people in commercial hunting as much as possible, and by offering clients exposure to Aboriginal culture and heritage.
11. Seeking ways of utilising tourism investment and infrastructure to the benefit of safari hunting.
12. Ensuring that tourism agencies and other tourism personnel are well-informed, sympathetic, and professional in all their dealings with hunting clients.
13. Providing either spatial or temporal segregation between ecotourists on the one hand and consumptive hunters on the other so both activities and users have access to the resource without conflict with each other.

Use hunting to control pest animals

Governments could raise extra revenue for conservation, and use hunting to help control pest animals by:

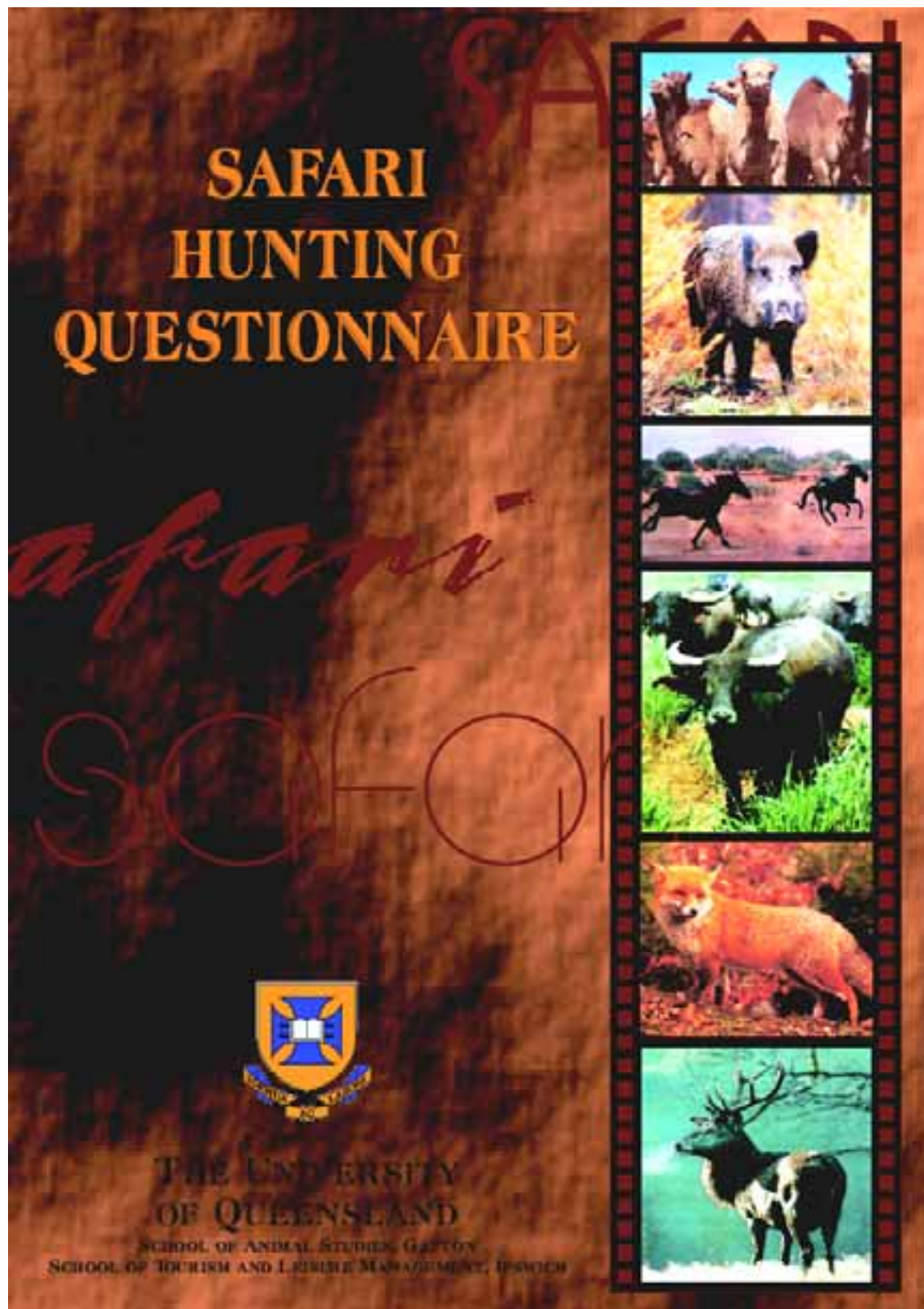
14. Supporting (by legislation as necessary) property-based game management plans, as are used in Tasmania and some other regions of Australia.
15. Increasing funding for research into the population sizes, reproduction rates, and natural ranges of exotic wild animals, and their effects on surrounding conventional grazing industries.

Operate under uniform laws

Further harmonisation of laws relating to hunting could include:

16. Introducing a legally enforceable code of practice for the commercial hunting industry. The code should address the welfare of hunted animals, respect for the environment and the property rights of landholders.
17. Harmonising and simplifying firearms laws, especially for the importation of firearms by visiting international hunters.

Appendix – The Questionnaires





THE UNIVERSITY OF QUEENSLAND

SCHOOL OF ANIMAL STUDIES, GATTON
SCHOOL OF TOURISM AND LEISURE MANAGEMENT, IPSWICH

29 April, 2003

To the Chief Executive Officer or nominee:

Commercial safari hunting of Australian exotic game - the present state of the industry.

The purpose of this study, and the benefits from your participation:

This questionnaire is part of a research project to describe the current state of the Australian commercial safari hunting industry. The aim is to describe the biological, legal, financial and social environments in which the industry operates, and to identify constraints to sustainability and profitability which the industry faces. This information will help the industry and governments to formulate appropriate policies for the industry.

How to be involved in this survey

Participation in this survey is completely voluntary.

If you choose to participate, please answer the questions in the accompanying questionnaire. We have designed the questionnaire to be as easy as possible to answer. In most cases you can satisfactorily answer the question by ticking a box. However, if you wish to add extra information, please do so.

The project team has visited some people and institutions who are involved in safari hunting, both in Australia and overseas. We need to supplement this information with the data that we can get from this survey.

How we will maintain your privacy, and maintain the security of the data:

We will send this questionnaire to more than 100 potential respondents. We have not marked or otherwise identified the survey forms, and apart from knowing that a form pertains to a particular type of organisation, we will not be able to identify the individual company or organisation which has completed any individual questionnaire. Please do not put any identifying marks on this form. Persons who are not associated with the project will not have access to any information which is contained in individual completed questionnaires. The information you give us will be kept confidential, and individual completed questionnaires will be destroyed under secure conditions once the data has been collated.

(continued over page...)

1 of 2

Sofori



Who is making the survey and who you can get more information from:

The project is undertaken by staff of the University of Queensland's Schools of Animal Studies, and Tourism and Leisure Management. If you have any further questions concerning your participation in the project, please contact

Dr. Gordon Dryden,
School of Animal Studies, The University of Queensland, Gatton Qld 4343.
(phone: 07-5460 1255; email gmd@sas.uq.edu.au).

or

Assoc. Prof. Steve Craig-Smith,
School of Tourism and Leisure Management, The University of Queensland, Ipswich Qld 4305.
(phone: 07-3381 1007; email s.craigsmith@mailbox.uq.edu.au).

This study adheres to the Guidelines of the ethical review process of The University of Queensland. Whilst you are free to discuss your participation in this study with project staff (see above), if you would like to speak to an officer of the University not involved in the study, you may contact the Ethics Officer on 07-3365 3924.

How to get the results of the completed study:

The study is funded by the Rural Industries Research and Development Council, and will be published as a report of that organisation. Summaries of these reports are available for download from the internet (rirdc.gov.au) and the whole report can be obtained from RIRDC in Canberra.

Some additional information before you complete the questionnaire:

Terms used in this questionnaire may need to be defined. A "professional hunter" is a person who organises the hunting activity and is responsible for finding the animals, ensuring that the hunt is properly conducted, and may supply accommodation and food, and organise taxidermy or the reclamation of the carcass. An "outfitter" is a person or company who sells rifles and other accoutrements needed or used by hunters.

The survey deals **only** with the consumptive and non-consumptive uses of **exotic wild** animals. These are animal species which have been introduced into Australia from other countries and which have developed wild (feral) populations. Examples include goats, pigs, camels, buffalo and deer. Consumptive use includes the slaughter of animals for products like trophies, hides, and meat. Non-consumptive use includes photography or viewing the animal in its environment and does not involve slaughter. The questionnaire specifically excludes any consideration of the hunting or other use of Australian native animals.

Your assistance will be of great benefit. Thank you for completing this questionnaire.

Regards,

Gordon Dryden.

2 of 2

Safari

THE UNIVERSITY OF QUEENSLAND



SAFARI HUNTING QUESTIONNAIRE Safari hunting companies/organisations

This questionnaire seeks information on your views on the potential of commercial safari hunting in Australia. All responses will be confidential and no respondents, nor their organisation, will be able to be identified. Enquiries about this study should be directed to Dr Gordon Dryden, School of Animal Studies, The University of Queensland, Gatton, Qld 4343. (phone 07-5460 1255; email gmd@sas.uq.edu.au).

1. WHAT ARE THE AIMS OF YOUR COMPANY/ORGANISATION? _____

2. IN WHICH CITY/TOWN IS THIS COMPANY/ORGANISATION'S HEAD OFFICE? _____

3. WHERE IN AUSTRALIA DO YOU CONDUCT THE MAJORITY OF YOUR BUSINESS?
(TICK AS MANY BOXES AS YOU NEED)

All states/territories _____ ☐ 1	Aust. Capital Territory _____ ☐ 4	South Australia _____ ☐ 7
Queensland _____ ☐ 2	Tasmania _____ ☐ 5	Western Australia _____ ☐ 8
New South Wales _____ ☐ 3	Victoria _____ ☐ 6	Northern Territory _____ ☐ 9

4. WHERE IN REGIONS OUTSIDE AUSTRALIA DO YOU CONDUCT BUSINESS?
(TICK AS MANY BOXES AS YOU NEED)

New Caledonia _____ ☐ 1	Africa _____ ☐ 4	Other Oceania _____ ☐ 7
New Zealand _____ ☐ 2	North America _____ ☐ 5	Other regions _____ ☐ 8
Indonesia _____ ☐ 3	Southeast Asia _____ ☐ 6	No business _____ ☐ 9
		outside Australia

IF OTHER REGIONS, PLEASE INDICATE _____

5. HOW MANY PAID, PERMANENT STAFF DOES YOUR COMPANY/ORGANISATION HAVE?

None _____ ☐ 1	Between 6-10 _____ ☐ 4
Less than 2 _____ ☐ 2	More than 11 _____ ☐ 5
Between 3-5 _____ ☐ 3	

6. ESTIMATE THE NUMBER PER YEAR OF INTERNATIONAL HUNTERS
WHO USE YOUR ORGANISATION/COMPANY'S SERVICES.

None _____ ☐ 1	Between 11-15 _____ ☐ 4	Between 21-30 _____ ☐ 6
Less than 5 _____ ☐ 2	Between 16-20 _____ ☐ 5	More than 30 _____ ☐ 7
Between 6-10 _____ ☐ 3		

If you have no international clients/members,
please go to question 17.

safari



7. INDICATE THE PROPORTION OF YOUR INTERNATIONAL CLIENTS WHO ARE FROM,

France	1 _____%	Other Africa	9 _____%
Germany	2 _____%	Southeast Asia	10 _____%
United Kingdom	3 _____%	Japan	11 _____%
Spain and Portugal	4 _____%	Canada	12 _____%
Scandinavia	5 _____%	United States	13 _____%
Other Europe	6 _____%	South America	14 _____%
New Zealand	7 _____%	Other	15 _____%
Southern Africa*	8 _____%		

* South Africa, Namibia, Kenya, Zimbabwe, Botswana

If Other, please list the countries _____

8. ESTIMATE THE AMOUNT OF TIME PER YEAR SPENT BY INTERNATIONAL HUNTERS WHO USE YOUR ORGANISATION'S/COMPANY'S SERVICES. THE PROPORTION WHO SPEND;

A. < 2 days	B. 2 - 7 days	C. 8 - 14 days	D. > 14 days
< 10% _____ ☐ 1	< 10% _____ ☐ 1	< 10% _____ ☐ 1	< 10% _____ ☐ 1
10-25% _____ ☐ 2	10-25% _____ ☐ 2	10-25% _____ ☐ 2	10-25% _____ ☐ 2
25-50% _____ ☐ 3	25-50% _____ ☐ 3	25-50% _____ ☐ 3	25-50% _____ ☐ 3
51-75% _____ ☐ 4	51-75% _____ ☐ 4	51-75% _____ ☐ 4	51-75% _____ ☐ 4
76-100% _____ ☐ 5	76-100% _____ ☐ 5	76-100% _____ ☐ 5	76-100% _____ ☐ 5

9. FROM YOUR COMPANY/ORGANISATION'S GENERAL KNOWLEDGE, ESTIMATE THE PROPORTION OF INTERNATIONAL HUNTERS WHO SPEND TIME ON GENERAL TOURISM ACTIVITIES (OTHER THAN HUNTING) WHILE IN AUSTRALIA

< 25% _____ ☐1 26 - 50% _____ ☐2 51 - 75% _____ ☐3 76 - 100% _____ ☐4

10. WHAT EXOTIC ANIMAL SPECIES DO YOUR INTERNATIONAL CLIENTS/MEMBERS PREFER TO HUNT? (TICK AS MANY BOXES AS YOU NEED)

Deer _____ ☐ 1	Buffalo _____ ☐ 4	Horses/donkeys _____ ☐ 7
Pigs _____ ☐ 2	Cattle _____ ☐ 5	Hares/rabbits _____ ☐ 8
Goats _____ ☐ 3	Carnets _____ ☐ 6	Other _____ ☐ 9

If Others, please list them _____

11. ARE THERE CONSISTENT DIFFERENCES BETWEEN HUNTERS FROM EUROPE, NORTH AMERICA AND OTHER COUNTRIES IN THE SPECIES OF ANIMAL THEY PREFER?

Yes _____ ☐1 No _____ ☐2

IF YES, PLEASE INDICATE THE PREFERRED SPECIES

- A. European hunters _____
- B. North American hunters _____
- C. Other hunters _____

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12. DOES YOUR COMPANY/ORGANISATION HAVE TO DECLINE SPECIFIC REQUESTS FROM INTERNATIONAL CLIENTS/MEMBERS FOR PARTICULAR ANIMAL TYPES?
(TICK AS MANY BOXES AS YOU NEED)

Yes _____ ☐ 1 No _____ ☐ 2

IF YES, IS THIS BECAUSE:

- The species is listed under the CITES convention _____ ☐ 3
 Australian law prevents the hunting of this species _____ ☐ 4
 Australian law prevents the export of (trophies or hides) from this animal _____ ☐ 5
 This species is not found in the areas which your company hunts _____ ☐ 6
 This species is not hunted by your company _____ ☐ 7
 Access to this species is governed by seasonal considerations _____ ☐ 8
 Other reasons _____ ☐ 9

If Other reasons, please list these: _____

Please list those species which you decline to provide for clients: _____

13. INDICATE THE PERCENTAGE OF YOUR INTERNATIONAL CLIENTS/MEMBERS WHO WILL TAKE THESE PRODUCTS/OUTCOMES OF HUNTING?

- Trophies (e.g. antlers, horns) _____ %
 Taxidermy products (e.g. hides, heads for mounting) _____ %
 Meat _____ %
 Photography and/or sighting the animal only (i.e. do not kill) _____ %
 Other _____ %

If Other please indicate _____

14. ARE THERE CONSISTENT DIFFERENCES BETWEEN HUNTERS FROM EUROPE, NORTH AMERICA AND OTHER COUNTRIES IN THE TYPES OF TROPHY THEY PREFER?

Yes _____ ☐ 1 No _____ ☐ 2

IF YES, PLEASE INDICATE THE PREFERRED TYPES

- A. European hunters _____
 B. North American hunters _____
 C. Other hunters _____

15. IF RELEVANT, PLEASE INDICATE THE TROPHY QUALITY ASSESSMENT SYSTEM WHICH IS PREFERRED BY YOUR INTERNATIONAL CLIENTS

- SCI _____ ☐ 1 Buckmasters _____ ☐ 4
 Boone & Crockett _____ ☐ 2 Others _____ ☐ 5
 Douglas _____ ☐ 3

If Others, please list them _____

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Rifles/guns	1 _____%
Bows	2 _____%
Other	3 _____%

17. ESTIMATE THE NUMBER PER YEAR OF DOMESTIC HUNTERS WHO USE YOUR ORGANISATION/COMPANY'S SERVICES.

Less than 10 _____ ☐ 1 Between 51-100 _____ ☐ 4
Between 11-30 _____ ☐ 2 More than 100 _____ ☐ 5
Between 31-50 _____ ☐ 3

Deer _____ ☐ 1 Buffalo _____ ☐ 4 Horses/donkeys _____ ☐ 7
Pigs _____ ☐ 2 Cattle _____ ☐ 5 Hares/rabbits _____ ☐ 8
Goats _____ ☐ 3 Camels _____ ☐ 6 Other _____ ☐ 9

19. ESTIMATE THE AMOUNT OF TIME PER YEAR SPENT BY DOMESTIC HUNTERS WHO USE YOUR ORGANISATION'S/COMPANY'S SERVICES.

A. < 2 days	B. 2 - 7 days	C. 8 - 14 days	D. > 14 days
< 10% _____ ☐ 1	< 10% _____ ☐ 1	< 10% _____ ☐ 1	< 10% _____ ☐ 1
10-25% _____ ☐ 2	10-25% _____ ☐ 2	10-25% _____ ☐ 2	10-25% _____ ☐ 2
25-50% _____ ☐ 3	25-50% _____ ☐ 3	25-50% _____ ☐ 3	25-50% _____ ☐ 3
51-75% _____ ☐ 4	51-75% _____ ☐ 4	51-75% _____ ☐ 4	51-75% _____ ☐ 4
76-100% _____ ☐ 5	76-100% _____ ☐ 5	76-100% _____ ☐ 5	76-100% _____ ☐ 5

< \$1000 ____ ☐1 \$1001 to ____ ☐2 \$5001 to ____ ☐3 > \$10000 ____ ☐4
\$5000 \$10000

Trophies (e.g. antlers, horns)	_____	_____ %
Taxidermy products (e.g. hides, heads for mounting)	_____	_____ %
Meat	_____	_____ %
Photography and/or sighting the animal only (i.e. do not kill)	_____	_____ %
Other	_____	_____ %

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22. IF RELEVANT, PLEASE INDICATE THE TROPHY QUALITY ASSESSMENT SYSTEM WHICH IS PREFERRED BY YOUR DOMESTIC CLIENTS

SCI _____ ☐ 1 Buckmasters _____ ☐ 4
Boone & Crockett _____ ☐ 2 Others _____ ☐ 5
Douglas _____ ☐ 3

If Others, please list them _____

23. WHAT PROPORTION OF YOUR DOMESTIC CLIENTS HUNT WITH THESE WEAPONS?

Rifles/guns 1 _____ %
Bows 2 _____ %
Other 3 _____ %

If Other, please describe the types of weapons(s) _____

24. DOES YOUR COMPANY/ORGANISATION HUNT ON LAND OWNED OR LEASED BY THE COMPANY/ORGANISATION?

Owned _____ ☐ 1 Leased _____ ☐ 2

25. ARE THERE ANY DIFFICULTIES WHICH YOUR COMPANY/ORGANISATION FACES IN ACCESSING PROPERTIES OR ANIMALS FOR HUNTING?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, please identify these difficulties: (tick as many boxes as you need)

Some species are found in areas which are too inaccessible _____ ☐ 3
Some species are found in areas too remote from acceptable accommodation _____ ☐ 4
Landowners do not want hunters on their land _____ ☐ 5
Landowners have had adverse experiences of hunters/hunting _____ ☐ 6
Landowners charge too much for access to animals/land _____ ☐ 7
State laws are too restrictive _____ ☐ 8
There is competition between commercial and recreational hunting _____ ☐ 9
There is competition between commercial hunting and game meat harvesting _____ ☐ 10
Other _____ ☐ 11

If Other, please indicate below: _____

26. ON AVERAGE, WHAT FEES DOES YOUR COMPANY/ORGANISATION CHARGE?

A. Trophy fees

Less than \$100 per trophy _____ ☐ 1
Between \$101-\$200 per trophy _____ ☐ 2
Between \$201-\$300 per trophy _____ ☐ 3
Between \$301-\$500 per trophy _____ ☐ 4
Between \$500-\$750 per trophy _____ ☐ 5
More than \$750 per trophy _____ ☐ 6

B. Daily fees (per person)

Less than \$100 per day _____ ☐ 7
Between \$101-\$150 per day _____ ☐ 8
Between \$151-\$200 per day _____ ☐ 9
More than \$200 per day _____ ☐ 10

Please add comments here _____

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27. WHAT ARRANGEMENTS DOES YOUR COMPANY/ORGANISATION MAKE WITH LANDOWNERS TO OBTAIN ACCESS TO EXOTIC GAME SPECIES IN TERMS OF:

A. Insurance against accident/injury and/or damage to property _____

B. Time of day when hunting is permitted _____

C. Seasons when access is permitted _____

D. Limits on numbers and types of animals taken _____

E. Payment to landowners for access and commission on trophies or animals _____

28. WHAT SERVICES DO YOUR COMPANY/ORGANISATION PROVIDE TO YOUR CLIENTS/MEMBERS? (TICK AS MANY BOXES AS YOU NEED)

Outfitting _____ ☐ 1 Accommodation _____ ☐ 2 Guided hunts _____ ☐ 3 Other _____ ☐ 4 services

If Other services, please list them _____

29. DOES YOUR ORGANISATION/COMPANY HAVE A POSITION ON "FAIR CHASE" HUNTING VERSUS HUNTING IN CONFINED AREAS?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, what is this position? _____

30. WHAT FORMS OF HUNTING DOES YOUR COMPANY/ORGANISATION ENGAGE IN? (TICK AS MANY BOXES AS YOU NEED)

A. Area hunted over:

"Fair-chase" hunting on public land _____ ☐ 1

Large-scale estate hunting _____ ☐ 2

Confined estate hunting _____ ☐ 3

All types of hunting _____ ☐ 4

B. Source of animals:

Feral animals _____ ☐ 5

Game animals bred for the purpose _____ ☐ 6

Add comments here _____

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31. WHAT FACTORS MAKE IT DIFFICULT FOR YOUR ORGANISATION/COMPANY TO CARRY OUT ITS BUSINESS? (TICK AS MANY BOXES AS YOU NEED)

- Access to faddernmy _____ ☐ 1
 Provision of suitable accommodation _____ ☐ 2
 Professional hunters with adequate local knowledge _____ ☐ 3
 Laws about the export/import of trophies _____ ☐ 4
 Laws about conservation and the environment _____ ☐ 5
 Australian firearms laws _____ ☐ 6
 Obtaining bank finance _____ ☐ 7
 Other _____ ☐ 8

If Other, please indicate what factors _____

32. IS THE LEGAL SITUATION REGARDING THE OWNERSHIP OF FARMED EXOTIC GAME ANIMALS SUFFICIENTLY CLEAR?

Yes _____ ☐ 1 No _____ ☐ 2

If NO, what are the areas that are not clear? _____

33. DOES YOUR COMPANY/ORGANISATION HAVE A POSITION ON THE USE OF ANIMALS BRED IN ZOOS OR GAME FARMS, ETC. FOR HUNTING VS. THOSE WHICH HAVE BRED IN THE WILD?

- | | |
|---|---|
| In favour, & presently use | Not in favour of using |
| captive-bred animals _____ ☐ 1 | captive-bred animals _____ ☐ 3 |
| In favour, although not used presently _____ ☐ 2 | No position _____ ☐ 4 |

34. DOES YOUR COMPANY/ORGANISATION HAVE RULES TO CONTROL ANTI-SOCIAL BEHAVIOUR SUCH AS POACHING OR TRESPASSING?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, how are these enforced? _____

35. DOES YOUR COMPANY/ORGANISATION NEGOTIATE WITH GOVERNMENT AND/OR OTHER POLICY-FORMING BODIES ON INDUSTRY-RELATED MATTERS?

Yes _____ ☐ 1 No _____ ☐ 2

36. DOES YOUR COMPANY/ ORGANISATION HAVE A POSITION ON THE ERADICATION OF THE POPULATIONS OF EXOTIC WILD ANIMALS IN AUSTRALIA?

- | | |
|---|--|
| Favour eradicating all exotic wild animal populations _____ ☐ 1 | Please list those populations you would wish to eradicate or retain. |
| Favour retaining all exotic wild animal populations _____ ☐ 2 | |
| Favour eradicating the exotic wild animal populations listed below _____ ☐ 3 | |
| Favour retaining the exotic wild animal populations listed below _____ ☐ 4 | |
| No position _____ ☐ 5 | |

Eradicate: _____

Retain: _____

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37. IN GENERAL, DOES YOUR COMPANY/ORGANISATION HAVE A POSITION ON CONTROL OF THE SIZE AND COMPOSITION OF THE POPULATIONS OF EXOTIC WILD ANIMALS IN AUSTRALIA? (TICK AS MANY BOXES AS YOU NEED)

Support action to control the size of these populations _____ ☐ 1
 Support control of the proportion of males and females in these populations _____ ☐ 2
 Support controlled hunting measures to improve the trophy quality of these populations _____ ☐ 3
 Support game animal breeding to improve the trophy quality of these populations _____ ☐ 4
 Do not support any control of these populations _____ ☐ 5

Please add any comments _____

38. IS THERE ANY CONFLICT WHICH MIGHT EXIST BETWEEN THE AIMS OF YOUR COMPANY/ORGANISATION AND RECREATIONAL HUNTING ORGANISATIONS OR INDIVIDUAL RECREATIONAL HUNTERS?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, please identify these conflicts _____

39. IS THE LEGAL SITUATION REGARDING THE HUNTING OF WILD EXOTIC ANIMALS SUFFICIENTLY CLEAR?

Yes _____ ☐ 1 No _____ ☐ 2

If NO, what are the areas that are not clear? _____

40. DOES YOUR ORGANISATION/COMPANY HAVE A POSITION ON THE NON-CONSUMPTIVE (E.G. PHOTOGRAPHY, ZOOS) USE OF ANIMALS?

Yes _____ ☐ 1 No _____ ☐ 2

If YES what is this position? _____

41. DOES YOUR COMPANY/ORGANISATION HAVE A POSITION ON THE POSSIBLE LINKS BETWEEN HUNTING AND CONSERVATION OF THE POPULATIONS OF WILD EXOTIC ANIMALS IN AUSTRALIA?

Yes _____ ☐ 1 No _____ ☐ 2

If YES what is this position? _____

42. WHAT ETHICAL CONCERNS RELEVANT TO HUNTING ARE HELD BY THIS COMPANY/ORGANISATION?

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43. DOES YOUR COMPANY/ORGANISATION HOLD DIFFERENT VIEWS ABOUT THE CONSUMPTIVE USE OF EXOTIC WILD GAME ANIMALS VERSUS AUSTRALIAN NATIVE ANIMALS?

Yes ☐ 1 No ☐ 2

If YES, what are these concerns? _____

44. IS YOUR COMPANY/ORGANISATION'S ATTITUDE TOWARDS RECREATIONAL HUNTING INFLUENCED BY THE CITES CLASSIFICATION OR PERCEIVED LEVEL OF ENDANGERMENT OF THE SPECIES?

CITES classification ☐ 1 Both ☐ 3
Perceived level of endangerment ☐ 2 Neither ☐ 4

45. DOES YOUR COMPANY/ORGANISATION HAVE A POSITION ON POSSIBLE LINKAGES BETWEEN COMMERCIAL SAFARI HUNTING AND THE AUSTRALIAN GAME MEAT EXPORT INDUSTRY?

Yes ☐ 1 No ☐ 2

If YES, what is this position? _____

46. DOES YOUR COMPANY/ORGANISATION HAVE ANY LINKS (FORMAL OR OTHERWISE) WITH THE AUSTRALIAN GAME FARMING INDUSTRIES (E.G. DEER, OSTRICHES, FERAL PIGMEAT)?

Yes ☐ 1 No ☐ 2

If YES, what are these links? _____

47. HOW DOES THIS COMPANY/ORGANISATION VIEW THE POSSIBLE FORMATION OF FORMAL LINKS BETWEEN COMMERCIAL SAFARI HUNTING AND THE REST OF THE AUSTRALIAN TOURISM INDUSTRY?

48. DOES THIS COMPANY/ORGANISATION CONSIDER THAT GOVERNMENT AGENCIES RESPONSIBLE FOR PROMOTING TOURISM SHOULD ALSO PROMOTE THE AUSTRALIAN COMMERCIAL SAFARI INDUSTRY?

Yes ☐ 1 No ☐ 2

If YES, what in what way should the industry be promoted? _____

49. CAN YOU IDENTIFY ANY CONSTRAINTS WHICH MAY HINDER THE FURTHER DEVELOPMENT OF THE COMMERCIAL SAFARI HUNTING INDUSTRY IN THIS COUNTRY?

Yes ☐ 1 No ☐ 2

If YES, please identify these constraints _____

50. CAN YOU IDENTIFY ANY FACTORS WHICH MAY ENCOURAGE THE FURTHER DEVELOPMENT OF THE COMMERCIAL SAFARI HUNTING INDUSTRY IN THIS COUNTRY?

Yes ☐ 1 No ☐ 2

If YES, please identify these factors _____

Thank you for your contribution to this survey

If you wish to make any additional comments, please type them on an extra sheet

Questionnaire – game meat exporters

THE UNIVERSITY OF QUEENSLAND



SAFARI HUNTING QUESTIONNAIRE Game Meat Exporters

This questionnaire seeks information on your views on the potential of commercial safari hunting in Australia. All responses will be confidential and no respondents, nor their organisation, will be able to be identified. Enquiries about this study should be directed to Dr Gordon Dryden, School of Animal Studies, The University of Queensland, Gatton, Qld 4343. (phone 07-5460 1255; email gmd@sas.uq.edu.au).

1. IN WHICH CITY/TOWN IS THIS COMPANY/ORGANISATION'S HEAD OFFICE?

2. WHERE IN AUSTRALIA DO YOU CONDUCT THE MAJORITY OF YOUR BUSINESS?
(TICK AS MANY BOXES AS YOU NEED)

All states/territories _____	☐ 1	Victoria _____	☐ 6
Queensland _____	☐ 2	South Australia _____	☐ 7
New South Wales _____	☐ 3	Western Australia _____	☐ 8
Aust. Capital Territory _____	☐ 4	Northern Territory _____	☐ 9
Tasmania _____	☐ 5		

3. DO ANY CONFLICTS EXIST BETWEEN THE AIMS OF GAME MEAT EXPORTERS AND COMMERCIAL SAFARI HUNTERS?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, what are these conflicts? _____

4. DO ANY CONFLICTS EXIST BETWEEN THE AIMS OF GAME MEAT EXPORTERS AND RECREATIONAL HUNTING?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, what are these conflicts? _____

5. DOES YOUR ORGANISATION HAVE A POSITION ON THE POSSIBLE PURCHASE OF GAME MEAT FROM COMMERCIAL SAFARI HUNTERS?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, what is this position? _____

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6. DOES YOUR ORGANISATION HAVE A POSITION ON THE POSSIBLE PURCHASE OF GAME MEAT FROM RECREATIONAL HUNTERS?

Yes ☐ 1 No ☐ 2

If YES, what is this position? _____

7. WOULD THERE BE ADVANTAGES TO YOUR ORGANISATION'S ACTIVITIES IF THERE WAS A FURTHER DEVELOPMENT OF COMMERCIAL SAFARI HUNTING IN AUSTRALIA?

Yes ☐ 1 No ☐ 2

If YES, what are these advantages? _____

8. WOULD THERE BE DISADVANTAGES TO YOUR ORGANISATION'S ACTIVITIES IF THERE WAS A FURTHER DEVELOPMENT OF COMMERCIAL SAFARI HUNTING IN AUSTRALIA?

Yes ☐ 1 No ☐ 2

If YES, what are these disadvantages? _____

9. DOES YOUR ORGANISATION HAVE DIFFICULTY ACCESSING PROPERTIES OR ANIMALS FOR GAME MEAT HARVESTING?

Yes ☐ 1 No ☐ 2

If YES, what are these difficulties? _____

10. DOES YOUR ORGANISATION THINK THAT A FURTHER DEVELOPMENT OF COMMERCIAL SAFARI HUNTING WOULD REDUCE ACCESS TO PROPERTIES OR ANIMALS FOR GAME MEAT HARVESTING?

Yes ☐ 1 No ☐ 2

If YES, what are these reductions? _____

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11. DOES YOUR ORGANISATION ATTEMPT TO CONTROL THE ACTIVITIES OF ITS SUPPLIERS/HUNTERS, ESPECIALLY IN REGARD TO ISSUES SUCH AS TRESPASS AND POACHING?

Yes ☐ 1 No ☐ 2

If YES, in what way(s)? _____

12. WHICH ARE YOUR ORGANISATION'S PREFERRED EXOTIC GAME MEAT SPECIES?
(TICK AS MANY BOXES AS YOU NEED)

Pigs ☐ 1	Horses ☐ 5
Deer ☐ 2	Buffalo ☐ 6
Goats ☐ 3	Other ☐ 7
Camels ☐ 4	

If OTHER, please list them _____

13. DOES YOUR COMPANY/ORGANISATION HAVE A POSITION ON THE ERADICATION OF THE POPULATIONS OF EXOTIC WILD ANIMALS IN AUSTRALIA?

Favour eradicating all exotic wild animal populations ☐ 1

Favour retaining all exotic wild animal populations ☐ 2

Favour eradicating the exotic wild animal populations listed below ☐ 3

Favour retaining the exotic wild animal populations listed below ☐ 4

No position ☐ 5

Please list those populations you would wish to eradicate or retain.

Eradicate: _____

Retain: _____

14. DOES YOUR ORGANISATION HAVE A POSITION ON CONTROL OF THE SIZE AND COMPOSITION OF THE POPULATIONS OF EXOTIC WILD ANIMALS IN AUSTRALIA? (TICK AS MANY BOXES AS YOU NEED)

Support action to control the size of these populations ☐ 1

Support control of the proportion of males and females in these populations ☐ 2

Support controlled hunting measures to improve the trophy quality of these populations ☐ 3

Support game animal breeding to improve the trophy quality of these populations ☐ 4

Do not support any control of these populations ☐ 5

Please add any comments _____

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15. IS THE LEGAL SITUATION REGARDING THE OWNERSHIP OF FARMED EXOTIC GAME ANIMALS SUFFICIENTLY CLEAR?

Yes _____ ☐ 1 No _____ ☐ 2

If NO, what are the areas that are not clear? _____

16. IS THE LEGAL SITUATION REGARDING THE HUNTING OF WILD EXOTIC ANIMALS SUFFICIENTLY CLEAR?

Yes _____ ☐ 1 No _____ ☐ 2

If NO, what are the areas that are not clear? _____

17. WHAT ETHICAL CONCERNS RELEVANT TO HUNTING ARE HELD BY THIS COMPANY/ORGANISATION?

Thank you for your contribution to this survey

If you wish to make any additional comments,
 please type them on an extra sheet

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THE UNIVERSITY OF QUEENSLAND



SAFARI HUNTING QUESTIONNAIRE Recreational hunting organisations

This questionnaire seeks information on your views on the potential of commercial safari hunting in Australia. All responses will be confidential and no respondents, nor their organisation, will be able to be identified. Enquiries about this study should be directed to Dr Gordon Dryden, School of Animal Studies, The University of Queensland, Gatton, Qld 4343. (phone 07-5460 1255; email gmd@sas.uq.edu.au).

1. WHAT ARE THE AIMS OF YOUR COMPANY/ORGANISATION?

2. HOW MANY MEMBERS DOES YOUR ORGANISATION HAVE?

Less than 50 _____ ☐ 1 Between 301 - 500 _____ ☐ 4
Between 51 - 100 _____ ☐ 2 More than 501 _____ ☐ 5
Between 101 - 300 _____ ☐ 3

3. IS THERE ANY CONFLICT WHICH MIGHT EXIST BETWEEN THE AIMS OF YOUR ORGANISATION AND COMMERCIAL SAFARI HUNTING?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, please identify these conflicts

4. ON WHAT LAND DO YOUR MEMBERS HUNT? (TICK AS MANY BOXES AS YOU NEED)

Land owned or leased by the organisation _____ ☐ 1 Hunters' own land _____ ☐ 4
Land leased by the organisation _____ ☐ 2 Other _____ ☐ 5
Land owned privately _____ ☐ 3

If OTHER, please describe

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5. ARE THERE ANY DIFFICULTIES WHICH YOUR ORGANISATION/MEMBERS FACE IN ACCESSING PROPERTIES OR ANIMALS FOR HUNTING?

Yes _____ ☐ 1 No _____ ☐ 2

IF YES, PLEASE IDENTIFY THESE DIFFICULTIES (TICK AS MANY BOXES AS YOU NEED)

- Some species are found in areas which are too inaccessible _____ ☐ 3
 Some species are found in areas too remote from acceptable accommodation _____ ☐ 4
 Landowners do not want hunters on their land _____ ☐ 5
 Landowners have had adverse experiences of hunters/hunting _____ ☐ 6
 Landowners charge too much for access to animals/land _____ ☐ 7
 State laws are too restrictive _____ ☐ 8
 There is competition between commercial and recreational hunting _____ ☐ 9
 There is competition between commercial hunting and game meat harvesting _____ ☐ 10
 Other _____ ☐ 11

If OTHER, please indicate below _____

6. DOES YOUR ORGANISATION HAVE A POLICY ABOUT COMMERCIALISING ITS OWN HUNTING ACTIVITIES (EG. CONDUCTING COMMERCIAL SAFARI HUNTING ON LAND OWNED OR LEASED BY YOUR ORGANISATION)?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, please state the policy below _____

7. ARE THERE ADVANTAGES TO YOUR ORGANISATION'S ACTIVITIES IF COMMERCIAL SAFARI HUNTING WAS FURTHER DEVELOPED IN AUSTRALIA?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, please list the advantages below _____

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8. WHAT ARRANGEMENTS DOES YOUR COMPANY/ORGANISATION MAKE WITH LANDOWNERS TO OBTAIN ACCESS TO EXOTIC GAME SPECIES IN TERMS OF:

A. Insurance against accident/injury and/or damage to property _____

B. Time of day when hunting is permitted _____

C. Seasons when access is permitted _____

D. Limits on numbers and types of animals taken _____

E. Payment to landowners for access and commission on trophies or animals _____

9. ARE THERE DISADVANTAGES TO YOUR ORGANISATION'S ACTIVITIES IF COMMERCIAL SAFARI HUNTING WAS FURTHER DEVELOPED IN AUSTRALIA?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, please list the disadvantages below _____

10. ARE THERE ANY CONSTRAINTS WHICH MAY HINDER THE FURTHER DEVELOPMENT OF THE COMMERCIAL SAFARI HUNTING INDUSTRY IN THIS COUNTRY?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, please identify these constraints _____

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11. DO YOU THINK THAT THE FURTHER DEVELOPMENT OF COMMERCIAL SAFARI HUNTING WOULD LIMIT ACCESS TO RECREATIONAL HUNTING BY YOUR MEMBERS?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, please identify these concerns _____

12. ESTIMATE THE PROPORTION OF MEMBERS FROM YOUR ORGANISATION WHO TRAVEL OVERSEAS TO HUNT.

Less than 5% _____ ☐ 1 Between 11-20% _____ ☐ 3
Between 6-10% _____ ☐ 2 More than 20% _____ ☐ 4

13. WHAT EXOTIC ANIMAL SPECIES DO YOUR MEMBERS PREFER TO HUNT?
(TICK AS MANY BOXES AS YOU NEED)

Deer _____ ☐ 1	Buffalo _____ ☐ 4	Horses/donkeys _____ ☐ 7
Pigs _____ ☐ 2	Cattle _____ ☐ 5	Hares/rabbits _____ ☐ 8
Goats _____ ☐ 3	Camels _____ ☐ 6	Other _____ ☐ 9

If Others, please list them _____

14. IF RELEVANT, PLEASE INDICATE THE TROPHY QUALITY ASSESSMENT SYSTEM WHICH IS PREFERRED BY YOUR ORGANISATION?

SCI _____ ☐ 1	Buckmasters _____ ☐ 4
Boone & Crockett _____ ☐ 2	CIC _____ ☐ 5
Douglas _____ ☐ 3	Other _____ ☐ 6

If Others, please list them _____

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15. ESTIMATE THE AMOUNT OF TIME PER YEAR SPENT IN RECREATIONAL HUNTING BY YOUR MEMBERS

A. < 2 days	B. 2 - 7 days	C. 8 - 14 days	D. > 14 days
< 10% _____ ☐ 1	< 10% _____ ☐ 1	< 10% _____ ☐ 1	< 10% _____ ☐ 1
10-25% _____ ☐ 2	10-25% _____ ☐ 2	10-25% _____ ☐ 2	10-25% _____ ☐ 2
25-50% _____ ☐ 3	25-50% _____ ☐ 3	25-50% _____ ☐ 3	25-50% _____ ☐ 3
51-75% _____ ☐ 4	51-75% _____ ☐ 4	51-75% _____ ☐ 4	51-75% _____ ☐ 4
76-100% _____ ☐ 5	76-100% _____ ☐ 5	76-100% _____ ☐ 5	76-100% _____ ☐ 5

16. ESTIMATE THE AMOUNT OF MONEY PER YEAR SPENT BY EACH OF MEMBERS IN RECREATIONAL HUNTING.

< \$1000 _____ ☐ 1	\$1001 to _____ ☐ 2	\$5001 to _____ ☐ 3	> \$10000 _____ ☐ 4
	\$5000	\$10000	

17. INDICATE THE PERCENTAGE OF YOUR MEMBERS WHO WILL TAKE THESE PRODUCTS/OUTCOMES OF HUNTING? (THESE CATEGORIES MAY OVERLAP)

Trophies (e.g. antlers, horns) _____	_____ %
Taxidermy products (e.g. hides, heads for mounting) _____	_____ %
Meat _____	_____ %
Photography and/or sighting the animal only (i.e. do not kill) _____	_____ %
Other _____	_____ %

If Other please indicate _____

18. WHAT PROPORTION OF YOUR MEMBER HUNT WITH THESE WEAPONS?

Rifles/guns	1 _____ %
Bows	2 _____ %
Other	3 _____ %

If Other, please describe the types of weapons(s) _____

19. DOES YOUR ORGANISATION HAVE A POSITION ON THE ERADICATION OF THE POPULATIONS OF EXOTIC WILD ANIMALS IN AUSTRALIA?

Favour eradicating all exotic wild animal populations _____	☐ 1	Please list those populations you would wish to eradicate or retain.
Favour retaining all exotic wild animal populations _____	☐ 2	
Favour eradicating the exotic wild animal populations listed below _____	☐ 3	
Favour retaining the exotic wild animal populations listed below _____	☐ 4	
No position _____	☐ 5	

Eradicate: _____

Retain: _____

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20. DOES YOUR ORGANISATION HAVE A POSITION ON CONTROL OF THE SIZE AND COMPOSITION OF THE POPULATIONS OF EXOTIC WILD ANIMALS IN AUSTRALIA?
(TICK AS MANY BOXES AS YOU NEED)

Support action to control the size of these populations _____ ☐ 1
 Support control of the proportion of males and females in these populations _____ ☐ 2
 Support controlled hunting measures to improve the trophy quality of these populations _____ ☐ 3
 Support game animal breeding to improve the trophy quality of these populations _____ ☐ 4
 Do not support any control of these populations _____ ☐ 5

Please add any comments _____

21. DOES YOUR ORGANISATION'S RULES HAVE PROVISIONS TO CONTROL ANTI-SOCIAL BEHAVIOUR SUCH AS POACHING AND TRESPASSING?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, how are these enforced? _____

22. DOES YOUR ORGANISATION/COMPANY HAVE A POSITION ON "FAIR CHASE" HUNTING VERSUS HUNTING IN CONFINED AREAS?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, what is this position? _____

23. IS THE LEGAL SITUATION REGARDING THE OWNERSHIP OF FARMED EXOTIC GAME ANIMALS SUFFICIENTLY CLEAR?

Yes _____ ☐ 1 No _____ ☐ 2

If NO, what are the areas that are not clear? _____

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**24. IS THE LEGAL SITUATION REGARDING THE HUNTING OF WILD EXOTIC ANIMALS
SUFFICIENTLY CLEAR?**

Yes _____ ☐ 1 No _____ ☐ 2

If NO, what are the areas that are not clear? _____

**25. DOES YOUR ORGANISATION HAVE A POSITION ON THE POSSIBLE LINKS BETWEEN HUNTING
AND CONSERVATION OF WILD EXOTIC ANIMAL POPULATIONS IN AUSTRALIA?**

Yes _____ ☐ 1 No _____ ☐ 2

If YES, what is this position? _____

**26. DOES YOUR ORGANISATION HAVE A POSITION ON THE CONSUMPTIVE (EG. SLAUGHTER AND
USE OF MEAT AND HIDES OR TROPHIES) USE OF ANIMALS?**

Yes _____ ☐ 1 No _____ ☐ 2

If YES, what is this position? _____

**27. DOES YOUR ORGANISATION HAVE A POSITION ON THE NON-CONSUMPTIVE (EG. PHOTOGRAPHY,
ZOO'S) USE OF ANIMALS?**

Yes _____ ☐ 1 No _____ ☐ 2

If YES, what is this position? _____

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28. DOES YOUR ORGANISATION SEE ANY DIFFERENCE BETWEEN THE CONSUMPTIVE USE OF FERAL GAME ANIMALS VERSUS AUSTRALIAN NATIVE ANIMALS?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, what is this difference? _____

29. WHAT ETHICAL CONCERNS RELEVANT TO HUNTING ARE HELD BY THIS ORGANISATION?

30. IS YOUR ORGANISATION'S ATTITUDE TOWARDS RECREATIONAL HUNTING INFLUENCED BY THE CITES CLASSIFICATION OR PERCEIVED LEVEL OF ENDANGERMENT OF THE SPECIES?

CITES classification _____ ☐ 1

Perceived level of endangerment _____ ☐ 2

Both _____ ☐ 3

Neither _____ ☐ 4

Thank you for your contribution to this survey

If you wish to make any additional comments,
please type them on an extra sheet

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THE UNIVERSITY OF QUEENSLAND



SAFARI HUNTING QUESTIONNAIRE Financial Institutions

This questionnaire seeks information on your views on the potential of commercial safari hunting in Australia. All responses will be confidential and no respondents, nor their organisation, will be able to be identified. Enquiries about this study should be directed to Dr Gordon Dryden, School of Animal Studies, The University of Queensland, Gatton, Qld 4343. (phone 07-5460 1255; email gmd@sas.uq.edu.au).

1. DOES YOUR INSTITUTION HAVE POLICIES WHICH HAVE BEEN DEVELOPED FOR FINANCING COMMERCIAL SAFARI HUNTING COMPANIES (IE. HUNTING FOR CONSUMPTIVE USE)?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, please identify these policies _____

2. DOES YOUR INSTITUTION HAVE POLICIES FOR FINANCING COMMERCIAL ECO-TOURISM RELATED TO WILD ANIMALS (IE. NON-CONSUMPTIVE USE)?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, please identify these policies _____

3. TO WHAT EXTENT DOES YOUR INSTITUTION THINK THAT A COMMERCIAL SAFARI HUNTING COMPANY CAN BE PROFITABLE?

Very profitable _____ ☐ 1 Potentially _____ ☐ 4
Profitable _____ ☐ 2 Not profitable _____ ☐ 5
Unsure _____ ☐ 3

4. WHAT IS THE PRESENT PROFITABILITY OF OTHER COMMERCIAL ECO-TOURISM ENTERPRISES IN AUSTRALIA?

Very profitable _____ ☐ 1 Potentially _____ ☐ 4
Profitable _____ ☐ 2 Not profitable _____ ☐ 5
Unsure _____ ☐ 3

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5. WHAT ARE YOUR INSTITUTION'S VIEWS ON THE PROBABLE SUSTAINABILITY OF COMMERCIAL SAFARI HUNTING IN AUSTRALIA?

- Very sustainable _____ ☐ 1 Possibly sustainable _____ ☐ 4
Sustainable _____ ☐ 2 Not sustainable _____ ☐ 5
Unsure _____ ☐ 3

Please add comments below _____

6. ARE THERE ANY SIGNIFICANT LEGAL ISSUES WHICH WOULD LIMIT YOUR INSTITUTION'S INTEREST OR ABILITY IN FINANCING COMMERCIAL SAFARI HUNTING?

- Yes _____ ☐ 1 No _____ ☐ 2

If YES, please identify them _____

7. TO WHAT EXTENT WOULD YOUR FINANCING DECISIONS BE INFLUENCED BY POSSIBLE ADVERSE PUBLIC OPINION ABOUT COMMERCIAL SAFARI HUNTING

8. WHAT IS THE LIKELY INTERNAL RATE OF RETURN ON SAFARI HUNTING IN AUSTRALIA?

- More than 20% _____ ☐ 1
Between 15 & 20% _____ ☐ 2
Between 10 & 15% _____ ☐ 3
Between 5 & 10% _____ ☐ 4
Less than 5% _____ ☐ 5
Uncertain _____ ☐ 6

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9. PLEASE IDENTIFY KEY FACTORY WHICH YOUR INSTITUTION WOULD CONSIDER WHEN ASSESSING APPLICATIONS FOR FINANCE FROM:

- a) Professional hunters _____

- b) Outfitters _____

- c) Accommodation providers _____

10. WHAT EVIDENCE IS REQUIRED FROM THE APPLICANT SAFARI HUNTING COMPANY THAT WOULD GIVE CONFIDENCE ABOUT ITS PROBABLE ABILITY TO REPAY A LOAN?

11. ARE THERE ANY OTHER CRITERIA OR CONSIDERATIONS WHICH YOUR INSTITUTION WOULD CONSIDER WHEN DECIDING ABOUT MAKING A LOAN TO A COMMERCIAL SAFARI HUNTING COMPANY?

12. DO YOU HAVE ANY FURTHER GENERAL COMMENTS?

Thank you for your contribution to this survey

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If you wish to make any additional comments, please type them on an extra sheet

THE UNIVERSITY OF QUEENSLAND



SAFARI HUNTING QUESTIONNAIRE Graziers'/Landowners Organisations

This questionnaire seeks information on your views on the potential of commercial safari hunting in Australia. All responses will be confidential and no respondents, nor their organisation, will be able to be identified. Enquiries about this study should be directed to Dr Gordon Dryden, School of Animal Studies, The University of Queensland, Gatton, Qld 4343. (phone 07-5460 1255; email gmd@sas.uq.edu.au).

1. WHAT ARE THE AIMS OF YOUR COMPANY/ORGANISATION?

2. HOW MANY MEMBERS DOES YOUR ORGANISATION HAVE?

- | | |
|---|---|
| Less than 100 _____ ☐ 1 | Between 1500 - 5000 _____ ☐ 4 |
| Between 101 - 500 _____ ☐ 2 | Between 5000 - 10000 _____ ☐ 5 |
| Between 501 - 1500 _____ ☐ 3 | More than 10000 _____ ☐ 6 |

3. WHAT INDUSTRIES ARE YOUR MEMBERS ENGAGED IN? (TICK AS MANY BOXES AS YOU NEED)

A. Production type

- | | |
|--|--|
| Extensive grazing _____ ☐ 1 | Broad-acre cropping _____ ☐ 4 |
| Intensive grazing _____ ☐ 2 | Intensive cropping _____ ☐ 5 |
| Lot feeding _____ ☐ 3 | Other _____ ☐ 6 |

If OTHER, please list them here _____

B. Animal species

- | | |
|---|---|
| Sheep _____ ☐ 7 | Deer _____ ☐ 10 |
| Dairy cattle _____ ☐ 8 | Goats _____ ☐ 11 |
| Beef cattle _____ ☐ 9 | Other _____ ☐ 12 |

If OTHER, please list them here _____

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4. WHERE IN AUSTRALIA DO THE MAJORITY OF YOUR MEMBERS CONDUCT THEIR BUSINESS? (TICK AS MANY BOXES AS YOU NEED)

All states/territories _____	☐ 1	Victoria _____	☐ 6
Queensland _____	☐ 2	South Australia _____	☐ 7
New South Wales _____	☐ 3	Western Australia _____	☐ 8
Aust. Capital Territory _____	☐ 4	Northern Territory _____	☐ 9
Tasmania _____	☐ 5		

5. DOES YOUR ORGANISATION HAVE A POSITION ON THE CONSUMPTIVE (EG. SLAUGHTER AND USE OF MEAT AND HIDES OR TROPHIES) USE OF ANIMALS?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, what is this position? _____

6. DOES YOUR ORGANISATION HAVE A POSITION ON THE NON-CONSUMPTIVE (EG. PHOTOGRAPHY, ZOOS) USE OF ANIMALS?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, what is this position? _____

7. TO WHAT EXTENT DO YOU THINK THAT COMMERCIAL SAFARI HUNTING OF WILD ANIMALS IN AUSTRALIA CAN BE PROFITABLE?

Very profitable _____	☐ 1	Potentially _____	☐ 4
Profitable _____	☐ 2	Not profitable _____	☐ 5
Unsure _____	☐ 3		

8. DOES YOUR ORGANISATION RECOMMEND THAT ITS MEMBERS ALLOW FOR HUNTING OF EXOTIC WILD ANIMALS ON THEIR PROPERTIES?

Yes, for all species, and for the whole year _____ ☐ 1
 Yes, for all species, but only in certain seasons _____ ☐ 2
 Yes, but only for pest species, over the whole year _____ ☐ 3
 Yes, but only for pest species, in certain seasons _____ ☐ 4
 No _____ ☐ 5
 Makes no recommendations _____ ☐ 6

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9. IDENTIFY THE FACTORS WHICH YOUR ORGANISATION WOULD RECOMMEND ITS MEMBERS CONSIDER WHEN THEY ASSESS APPLICATIONS FOR ACCESS TO A PROPERTY FROM:

A. Professional (ie commercial safari) hunters _____

B. Individual recreational hunters _____

C. Game meat harvesting companies _____

10. DOES YOUR ORGANISATION HAVE A POSITION ON RESPONSIBILITIES FOR INJURIES CAUSED TO, OR DAMAGE TO PROPERTY OR INJURY TO PERSONS CAUSED BY HUNTERS PERMITTED TO HUNT ON MEMBERS' PROPERTIES?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, what is this position? _____

11. DOES YOUR ORGANISATION HAVE A POSITION ON COMMERCIALISING HUNTING ACTIVITIES (EG. COMMERCIAL SAFARI HUNTING) ON YOUR MEMBERS' OWN LAND?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, what is this position? _____

12. WHAT CONTROLS WOULD YOUR ORGANISATION'S MEMBERS WISH TO HAVE OVER ISSUES SUCH AS TRESPASSING AND POACHING BY RECREATIONAL OR COMMERCIAL HUNTERS?

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13. IS THE LEGAL SITUATION REGARDING THE OWNERSHIP OF FARMED EXOTIC GAME ANIMALS SUFFICIENTLY CLEAR?

Yes _____ ☐ 1 No _____ ☐ 2

If NO, what are the areas that are not clear? _____

14. IS THE LEGAL SITUATION REGARDING THE HUNTING OF WILD EXOTIC ANIMALS SUFFICIENTLY CLEAR?

Yes _____ ☐ 1 No _____ ☐ 2

If NO, what are the areas that are not clear? _____

15. ARE THERE ANY OTHER SIGNIFICANT LEGAL ISSUES REGARDING COMMERCIAL SAFARI HUNTING ON YOUR MEMBERS' PROPERTIES?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, please identify them _____

16. DESCRIBE YOUR ORGANISATION'S POSITION ON THE EXPORTING OF GAME MEAT.

In favour _____ ☐ 1
 Not in favour _____ ☐ 2
 Uncertain or no position _____ ☐ 3

Please add any comments here _____

17. DESCRIBE YOUR ORGANISATION'S POSITION ON THE EXPORTING OF NON-MEAT PRODUCTS FROM GAME ANIMALS.

In favour _____ ☐ 1
 Not in favour _____ ☐ 2
 Uncertain or no position _____ ☐ 3

Please add any comments here _____

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18. ARE THERE ANY CONFLICTS WHICH MIGHT EXIST BETWEEN THE AIMS OF GAME MEAT EXPORTERS AND THE EXPORT OF MEAT PRODUCED BY YOUR ORGANISATION'S MEMBERS?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, identify these conflicts _____

19. DO YOUR MEMBERS BREED GAME ANIMALS TO BE USED IN HUNTING?

Yes _____ ☐ 1 No _____ ☐ 2

If YES, add any comments here _____

20. UNDER WHAT CONDITIONS WOULD YOUR ORGANISATION SUPPORT (OR AT LEAST NOT ACTIVELY CAMPAIGN AGAINST) CONSUMPTIVE RECREATIONAL USES OF EXOTIC WILD ANIMALS (EG. HUNTING FOR MEAT OR TROPHIES)?

21. UNDER WHAT CONDITIONS WOULD YOUR ORGANISATION SUPPORT (OR AT LEAST NOT ACTIVELY CAMPAIGN AGAINST) NON-CONSUMPTIVE RECREATIONAL USES OF EXOTIC WILD ANIMALS (EG. CONFINEMENT IN ZOOS, PHOTOGRAPHIC ECOTOURISM)?

22. IS YOUR ORGANISATION'S ATTITUDE TOWARDS RECREATIONAL HUNTING INFLUENCED BY THE CITES CLASSIFICATION OR PERCEIVED LEVEL OF ENDANGERMENT OF THE SPECIES?

CITES classification _____ ☐ 1
 Perceived level of endangerment _____ ☐ 2
 Both _____ ☐ 3
 Neither _____ ☐ 4

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23. DOES YOUR ORGANISATION SEE ANY DIFFERENCE BETWEEN THE CONSUMPTIVE USE OF WILD EXOTIC GAME ANIMALS VERSUS AUSTRALIAN NATIVE ANIMALS?

Yes ☐ 1 No ☐ 2

If YES, what is this difference? _____

24. DOES YOUR ORGANISATION HAVE A POSITION ON THE ERADICATION OF EXOTIC WILD ANIMAL POPULATIONS IN AUSTRALIA?

Yes ☐ 1 No ☐ 2

If YES, what is this position? _____

25. DOES YOUR ORGANISATION HAVE A POSITION ON THE CONTROL OF THE SIZE OF THE POPULATIONS OF EXOTIC WILD ANIMALS IN AUSTRALIA?

Yes ☐ 1 No ☐ 2

If YES, what is this position? _____

26. DOES YOUR ORGANISATION HAVE A POSITION ON THE POSSIBLE LINKS BETWEEN HUNTING AND CONSERVATION OF THE POPULATIONS OF EXOTIC WILD ANIMALS IN AUSTRALIA?

Yes ☐ 1 No ☐ 2

If YES, what is this position? _____

27. WHAT ETHICAL CONSIDERATIONS RELEVANT TO HUNTING DOES YOUR ORGANISATION HOLD?

Thank you for your contribution to this survey

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If you wish to make any additional comments, please type them on an extra sheet