

Standing Committee on Public Administration - Inquiry into Recreational Hunting Systems

The Sporting Shooters' Association of Australia (SSAA National), Australia's largest sport shooting and hunting organisation, would like to provide a submission to the above inquiry in conjunction with our state branch, the Sporting Shooters' Association of Australia (WA) Inc.

SSAA National represents more than 160,000 individuals nationally and many of these individuals have a keen interest in recreational hunting, both on private and public lands.

Our submission will be presented in several sections: regulated recreational hunting systems; environmental benefits; economic benefits; cultural benefits; recreational benefits; and public misperceptions and safety concerns.

Regulated recreational hunting systems

The majority of Australian states have some form of managed recreational hunting. Many states have a hunting permit system in place to help fund the management of recreational hunting within those states. Permits are usually required for the taking of 'game species' (ie, Tas, Vic, SA, NT and NSW), and in some states, a permit is required for the taking of 'feral species' (ie, SA and NT).

We use 'game species' to refer to those species that are under management regimes (sustainable or regulated harvest conditions and seasons) set by specific state wildlife authorities. These species include both native and non-native species such as wild ducks, quail, macropods and wild deer. We use 'feral species' to refer to those species that are unmanaged and normally identified as non-native animals or species given pest status under legislation.

The collection of permit fees is generally supported by hunters when those funds are used for:

1. managing a hunting resource
2. providing access to land, and
3. conservation purposes.

There are a number of different recreational hunting systems across Australia. For the purposes of this submission, we will focus on recommending a system that we believe will suit the expectations of both Western Australian hunters and the general community at large.

Different states allow varying levels of management and hunting access on public land. In summary, some states have allowed open access into public land hunting areas such as National Parks and State Forests for many years (Vic). Others have introduced more sophisticated online booking systems as part of the access process (NSW), and some also engage the services of volunteer recreational shooters to undertake coordinated culling programs (SA, WA, Vic, Qld, NT).

The SSAA has been involved in coordinated culling programs since the 1990s. One of our keystone projects is the successful 'Bounce Back' project in South Australia's Flinders Ranges. This project has enabled the restoration of native habitat and animals in areas formerly almost completely destroyed by grazing pest animals and predators.

The most important part of any hunting system is to have commonsense regulations and a management structure which provides access to public land to undertake legal hunting activities in an orderly and safe manner.

Regulations surrounding recreational hunting systems should focus on Codes of Practice (covering safety, animal welfare and firearms legislation), hunter training (once again incorporating the previous elements), and individuals having membership to hunting organisations (providing ongoing education, control structure and insurance cover).

The general community expectation (and one we expect too) would be that activities conducted on public land be conducted in a regulated and safe manner. Codes of Practice and education programs are common instruments used widely across many fields and activities to meet such expectations. These elements would be the cornerstone of any chosen recreational hunting system.

Recreational hunting 'on foot' is the standard system used in public land hunting across the country. This type of hunting is low risk and there is evidence to support this. In a study spanning a ten-year period by the Victorian Institute of Forensic Medicine¹ (2010), it was reported that no deaths involving other users of public land were caused by hunting anywhere in Australia. Since the beginning of public land (State Forest) hunting in NSW, there have been no reported incidents of firearm-related death or injury under their 'hunting on foot' system. These facts dispel the common myths, that hunting is a risk to other users, spread by various 'anti-hunting/shooting groups' for purely political reasons.

A regulated recreational hunting system that the Western Australia Government should consider is one that provides access to suitable public land, regulates activities in an orderly and safe way, and ensures the expectations of the community and hunters are met. In this context, Western Australia doesn't need a sophisticated online booking system such as the one managed by the Department of Primary Industries NSW. The Victorian system, which allows the hunting of pest animals in State Forests and other unoccupied Crown Land (with the ability to apply conditions and site specific restrictions) seems a sensible approach to consider.

¹ http://www.ssaa.org.au/hunting/educational-resources/2010-08_australian-external-cause-deaths-engaged-hunting-activities.pdf

The Western Australian Government should declare suitable public land available for recreational hunting for pest control. Politically and environmentally 'sensitive' areas such as National Parks should be managed under coordinated and regulated programs, where specific shooters, such as SSAA Conservation & Wildlife Management groups, work with government agencies to assist with on-ground pest control activities. Our SSAA Conservation & Wildlife Management members have undergone specific accreditation and operate under a prescribed supervisory structure.

We believe the following categories of public land are generally suitable to be made available for recreational hunting to assist with pest control:

- State Forest
- Vacant Crown Land
- Unallocated Crown Land
- Timber Reserves, and
- Pastoral Leases that are under State Government management.

Obviously, there would be specific areas within the above categories that would be excluded for one reason or another.

Our SSAA Conservation & Wildlife Management branch is available to assist the Department of Parks and Wildlife and other government agencies with coordinated pest control programs in:

- National Parks
- State Forests, and
- Any other category of government estate as required.

The following section outlines the benefits that a system of recreational hunting on public land would provide the community of Western Australia.

Environmental benefits to the community

Recreational hunting systems interstate have resulted in the following environmental benefits:

- Protection of native species from predation (removal of foxes, feral cats, etc)
- Protection of native habitat and animals from habitat loss (removal of grazing pests such as feral goats, feral pigs, rabbits, etc)
- Reducing the impacts of pest animals moving from public land to private land (reducing crop damage and loss of livestock)
- Providing a target-specific management option (unlike some other methods, a pest animal removed by this method is identified and quantified)
- Establish a form of pest control that complements others methods and allows limited resources to be spread further to achieve greater outcomes, and
- Raise environmental awareness to pest animal issues within the community.

Economic benefits to the community

Recreational hunting provides a number of economic benefits to the community, particularly in the regional community and specifically areas that are on the way to or located around land available for hunting.

Cost benefit analysis of public land hunting has been assessed for a number of years in NSW. Assessment and reporting from Game Council NSW² (now DPI NSW) indicates that the public land hunting economic impact in regional NSW is estimated to be:

- Direct and indirect income of \$31.6 million
- Direct and indirect value add (or Gross Regional Product) of \$58.9 million, and
- Direct and indirect employment of 1,180 people.

The University of Queensland Australian Hunter Survey (Finch, Murray, Hoy, Baxter 2013) also provides the latest examination of the economic benefits of hunting in Australia. The survey and resultant study investigated questions about hunters, their hunting patterns, expenditure and motivations to hunt.

Initial results from this study suggest that the average Australian hunter directly spends \$1,835 per year and indirectly spends \$2,168 per year. This equates to a total average hunting expenditure of \$4,003 per hunter per year.

SSAA internal surveys indicate that approximately 80% of our members undertake hunting activities. If this percentage is similar to the percentage of hunters among Western Australian firearm owners as a whole, then the economic benefit of hunting (average hunter expenditure) in Western Australia could be in the vicinity of \$275.4 million (80% of WA licence holders x \$4,003) per year.

This figure represents the expenditure that WA hunters may spend on pest control activities. It is also important to acknowledge that The University of Queensland Australian Hunters Survey indicated that they found more than 99% of respondents would be willing to be involved in pest management.

This represents a significant amount of money that is currently not identified or acknowledged as dollars spent conducting pest control by individual members of our community. These are activities that not only benefit them (recreation/food gathering), but the community itself through removing pest animals from the landscape.

Cultural benefits to the community

The cultural benefits of recreational hunting to the community include:

- Hunting is Australia's oldest land use (more than 40,000 years) and it enables people to conduct activities that have always been part of Australia's 'way of life'
- Hunting is part of the cultural heritage of many ethnic backgrounds and allows people to conduct activities that their families have done for many generations here and overseas

² <http://www.ssaansw.org.au/images/GC%20Public%20Benefit%20Assessment.pdf>

- It allows people with certain skill sets and motivations to participate in volunteer programs, raise awareness to environmental issues and conduct activities that result in community good
- Hunting provides an opportunity to mentor people by teaching new skills and passing on knowledge
- Hunting enables families of all ages to connect and provides opportunities for parent-child bonding, and
- Hunting results in an attachment or bond to the bush that leads to establishing higher conservation values in regards to the impacts of pest animals.

Recreational benefits to the community

The recreational benefits of recreational hunting to the community include:

- An activity similar to bushwalking and hiking, which provides exercise and the associated health benefits of having an active lifestyle
- Hunting can be conducted individually or in a group to provide an opportunity to achieve different levels of recreational value
- Hunting can be both physically and mentally demanding, but is also rewarding where harvesting healthy, organic wild food is one of the end results, and
- Hunting is a land use that can be managed safely with a variety of other recreational uses on multiuse public land assets.

Public misperceptions and safety concerns

It can be seen from complex risk assessments in other states, such as the one done by the Forestry Corporation of NSW³, that any safety concerns can simply be addressed by administrative actions (good regulations and processes).

Below are a few responses to what we feel would be common concerns raised by user groups that are not familiar with recreational hunting systems found in Australia, which have demonstrated time and again that hunting is a low safety risk to other users.

1. People already hunt illegally, some with dogs and cars, creating a high-risk environment.

We see the introduction of regulated hunting as a way to reducing illegal hunting. Legal hunters will certainly report illegal activities (Bush Watch Programs) and the small minority of people who do the wrong thing will cease activities in areas where the chances of getting caught increases.

The hunting system that we suggest does not include hunting with dogs and vehicles. We also certainly don't suggest hunting activities be permitted at night, where campers near hunting areas could feel frightened or intimidated by night-time activities.

³ www.forestrycorporation.com.au/__data/assets/pdf_file/0019/501661/risk-analysis-permitted-hunting.pdf

2. Hunters cause other users to have bad or negative experiences.

Regulated hunting by licensed individuals, where the outcome is providing a community benefit such as pest control/removal, should not necessarily result in bad or negative experiences to other users. If promoted in a positive way, the majority of people would support the activities of people volunteering time and effort to undertake a form of specialised environmental work. We do accept the fact that people with 'animal rights' ideology will not accept any form of fatal pest control and these groups tend to be very vocal about any activity that involves the death or use of an animal.

If there is concern in regards to negative or adverse effects on other user's experiences by hearing a firearm intermittently discharge in the distance, this may warrant a discussion on the use of sound moderators to reduce such concerns. Sound moderators are used in many countries for various reasons, including OHS, animal welfare and to reduce sound carry and disturbance to others.

3. Hunters don't share the same values or culture of other users in regards to the environment.

Some groups may say hunters have diametrically opposed values to them in regards to the environment, which could conceivably lead to a volatile situation. Nothing can be further from the truth. If you take out the 'rogue' element (the 1% in any group who don't do the right thing), hunter groups, like fishing groups, are full of people who love the environment and love being out part of it.

This care of the environment is one of the key reasons why we want to be out on public lands, helping tackle pest animals that create environmental damage.

4. Hunters will deliberately release pest animals to maintain animals to hunt.

Opening public land for hunting will not favour those people who currently illegally release pest animals. These people have no regard to the laws, and there are laws already in place that makes this practice a crime.

If regulated hunting was introduced into areas where illegal releases may have occurred, licensed hunters would be able to reduce the impact of these released pest animals. This may in fact remove the incentive for someone acting illegal to continue this behaviour; ie, it is no longer their own 'private' hunting area.

5. Hunting endangers and frightens other users.

Regulated hunting in Australia is conducted in a safe manner. All hunters in our suggested public land hunting system would need to be licensed. This means a person would have undertaken compulsory safety courses as part of the requirement to obtain a firearms licence. Skills learned in such courses enable people to be familiar with safe firearm handling and hunting techniques.

Since 2006, regulated hunting on public land in NSW has occurred across almost 90,000 (87,586) hunting days with no major safety incidents. We note that many groups opposed to hunting try to use the safety record of overseas countries to create 'fear' that is certainly not applicable in the Australian context. We see such conduct as extremely misleading and deceptive, but we do understand the desperation that some organisations feel that then leads them to use whatever means possible to prevent user access to the environment.

6. Hunting may encroach areas used by others such as walking tracks, campsites, etc.

Hunters do not want to be in close proximity to bushwalkers or families enjoying the great outdoors when hunting. Hunters require a quiet environment, where they need to get as close as possible to a pest animal to ensure a safe and effective shot is taken.

If there were bushwalkers, mountain bikers, four-wheel drive groups, etc, regularly in an area, most pest animals would move away from areas with local noise. This situation by default would create a buffer zone between hunters hunting and other users of areas designated for hunting.

We see no reason why public land hunting areas cannot have specified exclusion or buffer zones. Current handheld GPS technology enables the downloading of maps, which, if required, can be produced for areas available to hunting that need specific buffer zones.

7. Hunting is cruel

Animal rights groups always claim that hunting (and other activities such as fishing, farming, etc) is cruel. It is very easy to call an activity 'cruel' based on ideology and misinformation, but it is harder to prove it actually exists.

Cruelty itself by definition is when no effort is made to minimise the potential of pain and suffering. Farmers (and other industries) follow Codes of Practice to ensure they minimise the potential of pain and suffering to an animal during their human/animal interactions, and hunters do the same. Across the country, other states have Codes of Practice which include animal welfare in their recreational hunting systems. Hunting organisations such as the SSAA also provide educational material to promote and maintain ethical hunting practices.

The model for assessing the relative humaneness of pest animal control methods, developed in conjunction with the RSPCA, highlights shooting to have the lowest overall welfare impact when compared to other pest animal management tools (Sharp & Saunders, 2008⁴). Not only is shooting a relatively humane method from an individual animal perspective, it is extremely target specific. Ethical hunting, as promoted by the SSAA, ensures that only head and heart/chest shots are taken to minimise the potential for unnecessary pain and suffering.

Summary

Across the world, hunting is seen as a cornerstone to modern wildlife management. You only need to reflect on the position statements of The Wildlife Society to see how one of the largest conservation groups in the world views the importance of hunting and hunters. In North America, for example, without hunters, there would be no continuing source of funding for wildlife management, no acquisition of land for conservation, and limited management of public lands.

Although hunting in Australia does not follow the modern and successful systems found around the world, we do have opportunities to make changes at state levels to tackle pest animal issues and the conservation and sustainability of native species.

⁴ http://www.ssa.org.au/research/2008/2008_assessing-relative-humaneness-pest-animal-control-methods.pdf

The Western Australian Government has the opportunity to allow access to certain public lands for recreational hunting to provide land managers with another tool to manage pest animals. We have previously discussed having two regimes of recreational hunting, where we have relatively open access on certain public lands and more coordinated activities in partnership with government agencies and land managers in sensitive areas.

The Western Australian Government should not be afraid to provide appropriate opportunities for public land hunting access to individuals that have been assessed as 'fit and proper' persons.

The Western Australian Government should seek to increase hunter participation in pest control across land tenures, while encouraging the development of education programs that emphasise hunter ethics and responsibilities to the community. This will go a long way towards the delivery of a regulated and safe system of recreational hunting that is acceptable to both the general community and hunters.

By teaming up with shooting and hunting organisations such as the SSAA, the Western Australian Government can develop a recreational hunting system for Western Australia that will gain the trust and support of hunters across the state and be sure to deliver participation levels that will provide many of the benefits outlined previously in this document.

A handwritten signature in black ink, appearing to be 'RB' with a flourish extending to the right.

Ron Bryant
State President
Sporting Shooters Association of Australia WA (Inc)

22 March 2014



**Game
Council**

**2012-13
Public Benefit Assessment**

June 2013

Document Control

Contact: Dr Andrew Moriarty
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Phone: (02) 6360 5131
Document Name: 2013 GC Public Benefit Assessment Final
Last Saved: 28/06/2013 11:07:00 AM

Version	Date	Reviewed	Approved
Draft Report v1.0	19/6/2013	AS	SS
Final Report	28/6/2013	AS	SS

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Executive Summary

BACKGROUND

The Game Council NSW ('Game Council') was established in 2002 under the *Game and Feral Animal Control Act 2002* (the 'Act') as a NSW statutory authority, subject to the control and direction of the Minister for Primary Industries. Its aim is to provide for the effective management of introduced species of game animals, as well as promoting responsible and orderly hunting of those game animals on public and private land and of certain pest animals on public land.

The Act specifies a range of functions for the Game Council centred on administering the NSW game hunting licensing system, representing the interests of game hunters, making recommendations and providing advice to the Minister on game and feral animal control, liaising with other stakeholders in managing game and feral animals, promoting and funding research into game and feral animal control issues and engaging in such other activities relating to the objects of the Act as are prescribed by the Regulations.

During 2008, AECgroup conducted a Public Benefit Assessment (PBA) of the Game Council. The PBA has been updated annually since then, most recently in May 2012 for the 2011-12 financial year.

PURPOSE OF THE STUDY

This study represents an update of the PBA of the Game Council NSW for the 2012-13 financial year. The purpose of the PBA is to identify the nature and incidence of all relevant economic, social and environmental benefits and costs to individuals and groups of individuals in the community of the Game Council and the game hunting licensing system in NSW to determine whether the public benefits exceed the costs. In doing this, the study also assesses the opportunity cost to the NSW Government if the Game Council were not to undertake its relevant activities and other arrangements were pursued to achieve Government policy objectives. The assessment concludes by identifying strategies to enhance the public benefits of the Game Council, including the opportunities for, and synergies of, the Game Council working with other public sector agencies on identified public benefit activities.

OVERVIEW OF THE GAME COUNCIL'S PUBLIC BENEFIT

The Game Council's role in administering game hunting licences in NSW and facilitating wider opportunities for Volunteer Conservation Hunting as a cost-effective technique for game and feral animal control contributes positively to a range of economic, social and environmental outcomes in NSW, including a number of the key goals and directions in the 2021: *A Plan to Make NSW Number One*.

The Game Council's hunting licences significantly broaden the range of hunting opportunities in NSW to include game and feral animals on public land and game animals on private land. This in turn significantly increases the amount of Volunteer Conservation Hunting in regional and rural NSW, generating the following public and private benefits:

- **Government:** The Game Council and its licensed hunters provide a cost-effective means of game and feral animal control compared with other public programs. The Game Council also provides important and informed policy advice to the Minister for Primary Industries on hunting and game and feral animal control issues. Reporting on the incidence of disease in harvested wild animals by hunters through the Game Council provides the Government with an important early warning system for diseases that may damage livestock industries.
- **Business:** The Game Council and its licensed hunters record a significant amount of expenditure in regional and rural NSW, contributing positively to the growth of regional tourism and the long-term sustainability of regional economies.
- **Carbon:** Although not quantified in this assessment the benefit to the atmosphere of reduced methane emissions from harvested animals also needs to be considered.
- **Hunters:** The Game Council's hunting licences significantly broaden the range of hunting opportunities in NSW, benefiting the utility of licensed hunters. The Game

Council promotes a culture of compliance amongst hunters, providing the necessary training, education, compliance and enforcement which assists with the reduction in illegal hunting and the number of hunting accidents and fatalities.

- **Private Landholders:** The Game Council's facilitation of Volunteer Conservation Hunting allows for savings on game and feral animal control costs and improves agricultural production yields and financial returns.
- **Community:** The Game Council's targeted Volunteer Conservation Hunting programs play a role in reducing the number of road accidents and fatalities associated with game and feral animals. These same programs also reduce the environmental impacts of game and feral animals on biodiversity and land degradation in NSW for the benefit of the community and landholders.

Importantly, the Game Council makes a positive contribution to a number of major goals contained in *NSW 2021: A Plan to Make NSW Number One*, a 10-year strategic business plan for the NSW Government. These include:

Rebuild the Economy

3: Drive Economic Growth in Regional NSW

Increase the share of jobs in Regional NSW

Protect strategic agricultural land and improve agricultural productivity

The Game Council is headquartered in Orange in regional NSW and is active in all regional areas throughout NSW playing a role in promoting employment opportunities. The Game Council employs approximately 20 staff in Regional NSW. Volunteer Conservation Hunters presents a niche tourism market for regional and rural NSW which facilitates employment opportunities

Volunteer Conservation Hunting is an avenue for land holders to reduce production losses and costs associated with game and feral animal control, which improves production yields and agricultural productivity.

4: Increase the Competitiveness of Doing Business in NSW

Reduce red tape

The Game Council has a strong focus to increase access to hunting opportunities through cutting red tape associated with the regulatory and policy environment. Game Council has also worked hard to improve licence and written permission processing using appropriate technology. This helps to facilitate business opportunities relating the hunting in NSW including tourism and other services.

Strengthen our Local Environment and Communities

22: Protect our natural environment

Protect and restore priority land, vegetation and water habitats

The Game Council facilitates game and feral animal control programs across NSW. These programs have environmental benefits of managing game and feral animals and their impacts on biodiversity and land degradation.

23: Increase opportunities for people to look after their own neighbourhoods and environments

Increase the devolution of decision making, funding and control to groups and individuals for local environmental and community activities

The Game Council facilitates a Volunteer Conservation resource to participate in game and feral animal control programs across NSW by bringing together government, hunters and landholders, including other NSW Government agencies at minimal cost.

24: Make it easier for people to be involved in their communities

Increase volunteering

Increase community participation

Improve our sense of community

Hunting is a traditional, natural activity evolving over millions of years. Many of the reasons people undertake hunting are tied to family, cultural values and beliefs. The Game Council actively encourages community participation in Volunteer Conservation Hunting and also works in bringing the community together to address environmental problems caused by game and feral animals.

26: Fostering opportunity and partnership with Aboriginal people

Support Aboriginal culture, country and identity

Hunting is a very important component of Aboriginal culture and indeed there are certain licensing exemptions for Aboriginal people hunting on native title or Aboriginal Land Council areas. Nevertheless, the Game Council has a role in educational and social outcomes for Aboriginal people in regard to hunting.

27: Enhance Cultural, Creative, Sporting and Recreational Opportunities

Increase participation in sport, recreation, arts and cultural activities in rural and regional NSW

Hunting is a popular recreational activity undertaken in rural and regional NSW with almost 20,000 licence holders. Game Council helps facilitate hunting groups in the community so hunters can connect with each other.

28: Ensure NSW is ready to deal with major emergencies and natural disasters

Maintain preparedness to deal with biosecurity threats

Pests and disease outbreaks threaten the productivity and competitiveness of industries in NSW and impact on communities. Reporting on the incidence of disease in harvested wild animals by hunters through the Game Council provides the Government with an important early warning system for diseases that may damage livestock industries.

Restore Accountability to Government

30: Restore trust in State and Local Government as a service provider

Increase customer satisfaction with Government services

The Game Council provides a high quality service to licensed hunters. The *2013 Game Council Licence Holder Survey* measured high satisfaction with the core services of licensing, booking hunts, access to public land and Conservation Hunting.

Impacts on Game Council stakeholder groups and the game hunting licensing system are outlined in Table E.1.

Table E.1: Summary of All Benefits and Costs of Game Council and Game Hunting Licensing System

Stakeholder	Impact	Description	Benefit / Cost
ECONOMIC			
Government	Game and Feral Animal Control	Costs saved/avoided on game and feral animal control on public land	Benefit
Business	Business Profits	Higher profits generated from hunting goods and services expenditure	Benefit
Government	Government Taxes	Higher GST collections generated from hunting goods and services expenditure	Benefit
Private Landholders	Game and Feral Animal Control	Costs saved/avoided on game and feral animal control on private land	Benefit
Private Landholders	Agricultural Production	Higher agricultural production yields	Benefit
Government	Government Funding	Funding commitment to operate the Game Council	Cost
Hunters	Licensing Costs	Hunter expenditure on game hunting licensing processes	Cost
Government	Disease surveillance	Hunters providing an early warning system for stock and wildlife diseases	Benefit
SOCIAL			
Government	Statistical Data	Provision of statistical data regarding animal populations	Benefit
Government	Policy Advice	Provision of formalised policy advice regarding hunting	Benefit
Government	Partnerships	Participation in community-based and state agency partnerships in game and feral animal control	Benefit
Community	Employment	Employment of Game Council staff	Benefit
Community	Criminal Behaviour	Lower incidence of illegal and reckless hunting behaviour	Benefit
Community	Public Safety	Lower incidence of hunting accidents and impact on public safety	Benefit
Community	Vehicle Accidents	Lower number of vehicle accident rates involving game and feral animals	Benefit
Hunters	Hunter Utility	Higher consumer surplus from more hunting opportunities and experiences	Benefit
Hunters	Hunting Promotion	Higher awareness and acceptance of conservation hunting	Benefit
Hunters	Hunter Education	Greater education and training programs for hunters	Benefit
Hunters	Conservation Organisations	Facilitation of conservation hunting organisations	Benefit
Hunters	Hunting Accidents	Lower incidence of hunting accidents	Benefit
Hunters	Representation	Stronger representation of hunting industry	Benefit
Hunters	Hunting Research	Research into hunting and game and feral animal control	Benefit
Government	Animal Welfare	Increased political pressure from animal welfare lobby groups	Cost
ENVIRONMENTAL			
Community	Biodiversity	Lower predation of and disease amongst native flora and fauna	Benefit
Community	Land Degradation	Less land degradation and damage to soil structures	Benefit
Community	Lead Pellets	Higher number of lead pellets in natural environment	Cost

Source: AECgroup

ESTIMATED CHANGE TO HUNTING TRENDS WITHOUT THE GAME COUNCIL

To assess the Game Council's public benefit, it is firstly important to understand the potential changes in the amount and type of hunting activity of licence holders if the Game Council did not exist to issue game hunting licences in NSW. Based on the legislation, if Game Council licenses were not available, there would be three major changes in hunting opportunities and activity for NSW Game Council licence holders:

- Would not be able to legally hunt Class A animals (deer, California quail, pheasant, partridge, peafowl and turkey) or Class B animals (pigs, dogs, cats, goats, rabbits, hares and foxes) on public land.
- Access and opportunities to hunt Class A animals (deer, California quail, pheasant, partridge, peafowl and turkey) and hunting of pigs, dogs, cats, goats, rabbits, hares and foxes, for which a game hunting licence is not required on private land, would be lessened without Game Council involvement and facilitation of Conservation Hunting Programs.
- Access and opportunities to hunt ducks on the rice crops on private land in the Murray Irrigation Area as part of the Office of Environment and Heritage (OEH) Game Bird Management Program would be lessened without Game Council involvement and facilitation of Conservation Hunting Programs (a Game Council game hunting licence is also a prerequisite to obtain a OEH General Licence (Game Birds)).

Based on analysis of hunting activity on public and private land for the different classes of game and feral animals, this would result in the following estimated changes to the amount and nature of hunting undertaken by licence holders (see Table E.2):

- Hunting days by G licence holders on private land would reduce by 38.3%.
- Hunting days by R licence holders on private land would reduce by 8.8%.
- Hunting days by R licence holders on public land would reduce by 100.0%.
- Total hunting days would reduce by 13.6% overall.

Table E.2: Estimated Change to Amount and Nature of Hunting With and Without the Game Council

Licence Type	Scenario With Game Council Licences			Scenario Without Game Council Licences			% Change Total
	Public Land	Private Land	Total	Public Land	Private Land	Total	
G Licence Holders	0	44,470	44,470	0	27,430	27,430	-38.3%
R Licence Holders	15,350	214,990	230,340	0	210,090	210,090	-8.8%
Total	15,350	259,460	274,810	0	237,520	237,520	-13.6%

Source: Game Council Licence Database, 2013 Game Council Licence Holder Survey, AECgroup

QUANTITATIVE ASSESSMENT OF THE GAME COUNCIL'S PUBLIC BENEFIT

In quantitative terms for impacts that could be readily determined, the total net public benefit of the Game Council is estimated at \$4.210 million in 2012-13, with the total gross public benefit of \$6.775 million, far outweighing costs of \$2.565 million. This equates to a Benefit-Cost Ratio of 2.64 (i.e. every \$1 invested in Game Council returns \$2.64). By 2016-17, the net public benefit is projected to increase to between \$5.475 million and \$13.245 million, or higher benefit-cost ratios of 3.13 and 6.16.

The gross public benefit increased by almost 25% from 2011-12 due to an increase in the number of animals, in particular rabbits, foxes and pigs, taken on both public and private land (see Table E.3).

It should be clearly noted that many public benefits generated by the Game Council could not be quantified, including the potentially significant social benefits arising from a reduction in hunting and vehicle accidents involving game and feral animals and fatalities due to the Game Council's administration and enforcement of hunting licences (which could alone be as high as \$21 million per individual fatality). Therefore, the quantitative analysis should be considered in partnership with the qualitative analysis of the Game Council's public benefit.

Table E.3: Assessment of the Net Public Benefit of the Game Council

Impact	Stakeholder	Current	Projected 2016-17	
		2012-13	Business As Usual	Licence Opportunities
ECONOMIC				
Benefits				
Reduced Game and Feral Animal Control Costs	Government	\$1,265,000	\$1,501,000	\$2,952,000
Reduced Game and Feral Animal Control Costs	Private Land Mgrs	\$400,000	\$475,000	\$933,000
Increased Profits from Interstate Hunter Expenditure	Business	\$449,000	\$533,000	\$1,048,000
Increased Taxes from Interstate Hunter Expenditure	Government	\$300,000	\$356,000	\$700,000
Increased Profits from NSW Resident Hunter Expenditure	Business	\$171,000	\$203,000	\$399,000
Increased Taxes from NSW Resident Hunter Expenditure	Government	\$114,000	\$135,000	\$266,000
Reduced Impacts on Agricultural Production Yields	Private Land Mgrs	\$1,157,000	\$1,373,000	\$2,700,000
Total Economic Benefits		\$3,856,000	\$4,576,000	\$8,998,000
Costs				
Increased Government Expenditure	Government	\$2,565,000	\$2,565,000	\$2,565,000
Total Economic Costs		\$2,565,000	\$2,565,000	\$2,565,000
SOCIAL				
Benefits				
Improved Hunter Consumer Utility	Hunters	\$1,650,000	\$1,958,000	\$3,851,000
Total Social Benefits		\$1,650,000	\$1,958,000	\$3,851,000
ENVIRONMENTAL				
Benefits				
Reduced Biodiversity/Land Impacts	Community	\$1,268,872	\$1,506,000	\$2,961,000
Total Environmental Benefits		\$1,268,872	\$1,506,000	\$2,961,000
TOTAL NET BENEFIT		\$4,209,872	\$5,475,000	\$13,245,000
TOTAL GROSS BENEFIT		\$6,774,872	\$8,040,000	\$15,810,000
BENEFIT-COST RATIO		2.64	3.13	6.16

Note: All figures in 2012-13 dollars.
Source: AECgroup

REGIONAL ECONOMIC IMPACT OF HUNTING EXPENDITURE

The spending by hunters in regional areas contributes positively to regional economies, particularly the tourism industry. Hunters are generally prepared to spend considerable amounts of money in pursuit of their interest and is a potentially very lucrative market segment for regional businesses.

In terms of the regional distribution of the economic benefits derived to NSW from hunting expenditure, a significant proportion (74% or \$65.4 million) occurs in regional NSW. The Game Council therefore contributes centrally to the *NSW 2021 Plan's* goals regarding growing prosperity in regional areas.

The economic impact in regional NSW is estimated at (see Table E.4):

- Direct and indirect income of \$31.6 million.
- Direct and indirect value add (or Gross Regional Product) of \$58.9 million.
- Direct and indirect employment of 1,180 people.

Table E.4: Regional NSW Economic Impact Due to Game Council Licensed Hunter Expenditure

Impact	Regional NSW	Total NSW
Direct Expenditure	\$65.4	\$88.2
Income		
Direct	\$17.1	\$23.0
Indirect	\$14.5	\$19.6
Total	\$31.6	\$42.6
Value Add		
Direct	\$31.6	\$42.8
Indirect	\$27.3	\$36.8
Total	\$58.9	\$79.6
Employment		
Direct	630	860
Indirect	550	740
Total	1,180	1,590

Source: Game Council Licence Database, 2013 Game Council Licence Holder Survey, AECgroup

QUALITATIVE ASSESSMENT OF THE GAME COUNCIL'S PUBLIC BENEFIT

To make a full and complete assessment of the Game Council's public benefit including those factors that could not be quantified, a qualitative assessment is completed of all triple bottom line costs and benefits within a likelihood-consequence framework. The analysis works on the principle of assessing the impacts (costs and benefits) on key stakeholder groups of moving from the current state (the Game Council in its current form) to alternative arrangement(s), including a no game hunting licensing system.

Base Case: No Game Council and No Game Hunting Licensing System (Net Cost)

For the base case, this approach assesses what the impacts would be on stakeholder groups of moving from the base case to a situation where there is no Game Council and no hunting licensing system. The assessment indicates this move would result in a significant **public cost** with a **triple bottom line impact score of -38**, in turn representing the significant public benefit of the Game Council. There would be significant social impacts for hunters including fewer hunting opportunities and non-existent or weaker hunting representation, promotion, compliance and research, resulting in increased hunting incidents and criminal behaviour. Environmentally, there would be no Conservation Hunting as a cost-effective method of game and feral animal control.

The impacts of a move to alternative arrangements are assessed as:

Alternative 1: Game Council Self-Sufficiency (Net Cost)

It is the long-term intention of the Game Council to close the funding gap between expenses and revenue to improve its self-sufficiency. However, it is unclear if it is possible or, on what revenue basis, this would be achievable without impacting the capacity of the Game Council to deliver on its functions for the larger hunting population. If assuming a mature revenue stream of \$2.0 million, this would represent a more than 50% reduction to the current operational budget of the Game Council.

The Game Council's ability to deliver on all of the functions of the Act and its objectives is likely to be seriously compromised on such a budget. The **public cost** of this move is considered high with a **triple bottom line impact score of -9**. This is mainly due to social impacts relating to significant reductions in capacity to undertake necessary education, training, compliance, enforcement and research and actively contribute to Conservation Hunting programs. At the same time, there would be an increased number of hunters to deliver these services and roles to. This larger number of hunters would produce economic and environmental benefits, though the magnitude of the environment benefits would be linked to the ability of the Game Council to maintain its efforts in facilitating targeted Conservation Hunting programs.

Alternative 2: Another Agency Administers Licensing System (Net Cost)

Moving to a situation where the game hunting licensing system was administered by another agency would also result in a **public cost** with a **triple bottom line impact score of -9**. Hunting is clearly not the core business of other NSW Government agencies and there would be negative social impacts of such a move, mainly associated with reduced focus on informed policy advice and dedicated hunting representation, education, training and promotion, with resulting impacts for responsible hunting. It is unclear whether there would be efficiency gains in another agency implementing the Act and the game hunting licensing system. While there may be some economies of scale, it is likely to be to the detriment of the hunting industry. There is likely to be no change to the environmental benefits provided for by the current arrangement.

SUMMARY

The Game Council provides a community service benefiting a number of stakeholders in NSW. In particular, the Game Council facilitates the licensing of hunters to undertake responsible and orderly Volunteer Conservation Hunting to assist government to meet its State-wide goals for game and feral animal control and natural resource management and growth of regional and rural economies through tourism and hunting expenditure.

The public benefits of the Game Council at an estimated \$6.77 million, exceed net government funding of \$2.565 million in 2012-13, indicating the Game Council provides a net public benefit of \$4.45 million. Therefore, it is considered the NSW Government should continue to provide appropriate funding to allow the Game Council to continue to provide (and over time enhance) these public benefits.

The Government's recurrent funding is a community service obligation and a cost-effective method of achieving its natural resource management objectives, specifically game and feral animal control.

As previously discussed, this report represents an update from the PBA prepared for the Game Council for 2007-08 to 2011-12. The net public benefit of \$4.45 is considerably higher than the net public benefit of \$2.98 million for 2011-12, \$2.77 million in 2010-11 and \$2.06 million in 2009-10. The increase is largely driven by an annual growth in licence holders of 15-20%, with a strong increase of approximately 70% in the number of animals taken on public and private land over the past year.

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1 Introduction

1.1 Background

The Game Council NSW ('Game Council') was established in 2002 under the *Game and Feral Animal Control Act 2002* (the 'Act') as a NSW statutory, subject to the control and direction of the Minister for Primary Industries. Its aim is to provide for the effective management of introduced species of game animals, as well as promoting responsible and orderly hunting of those game animals on public and private land and of certain pest animals on public land.

The Act specifies a range of functions for the Game Council centred on administering the NSW Game Hunting Licensing System, representing the interests of game hunters, making recommendations and providing advice to the Minister on game and feral animal control, liaising with other stakeholders in managing game and feral animals, promoting and funding research into game and feral animal control issues and engaging in such other activities relating to the objects of the Act as are prescribed by the Regulations.

During 2008, AECgroup conducted a Public Benefit Assessment (PBA) of the Game Council. The PBA has been updated annually since then with the most recent update in May 2012 for the 2011-12 financial year.

1.2 Purpose of the Study

This study represents an update of the PBA of the Game Council NSW for the 2012-13 financial year. The purpose of the PBA is to identify the nature and incidence of all relevant economic, social and environmental benefits and costs to individuals and groups of individuals in the community of the Game Council and the game hunting licensing system in NSW to determine whether the public benefits exceed the costs.

In doing this, the study also assesses the opportunity cost to Government if the Game Council were not to undertake its relevant activities and other arrangements were pursued to achieve Government policy objectives.

The assessment concludes by identifying strategies to enhance the public benefits of the Game Council, including the opportunities for, and synergies of, the Game Council working with other public sector agencies on identified public benefit activities.

2 Methodology

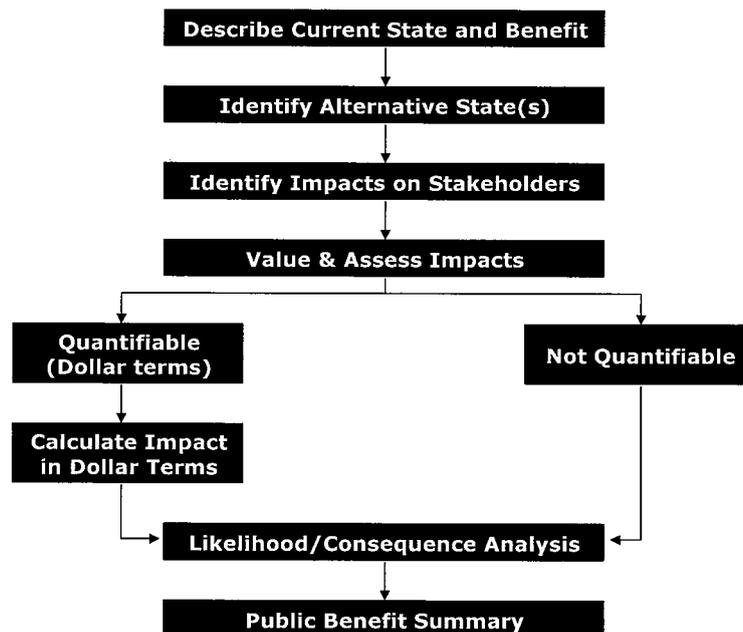
2.1 Public Benefit Assessment

In the absence of public benefit test guidelines in NSW, this study modifies the approach outlined by Queensland Treasury's *Public Benefit Test Guidelines*.

The major steps in undertaking a PBA are (see Figure 2.1):

1. Base case assessment of the public benefit of the Game Council ('current state'):
 - a. Identify and describe the Game Council and its relevant activities and its consistency with policy objectives.
 - b. Assess the economic, social and environmental costs and benefits of the Game Council compared with the situation of there being no Game Council and game hunting licensing system.
2. Assessment of the public benefit of moving from the current state to alternative arrangement(s) by Government to pursue its policy objectives:
 - a. Identify and describe viable alternative arrangements and their consistency with policy objectives.
 - b. Identify the economic, social and environmental impacts of moving from the current state to alternative state(s) on affected stakeholders and describe the type and direction of those impacts for each alternative.
 - c. Value and assess the impacts on affected stakeholder groups in quantitative (where possible) and qualitative terms describing the likelihood and consequence of those impacts for each alternative.

Figure 2.1: Public Benefit Assessment Methodology



Source: AECgroup

2.2 Stakeholder Groups

A number of different stakeholder groups directly and indirectly related to the Game Council need to be considered in the PBA.

For the purposes of the PBA, the following stakeholder groups are defined:

- **Public** stakeholders:
 - **Government:** comprising NSW Government agencies, statutory authorities, public land managers, Land Councils and local government, including the Minister for Primary Industries, NSW Department of Trade & Investment, Regional Infrastructure & Services, Primary Industries, Forests NSW, Office of Environment and Heritage (OEH), NSW Police, NSW Treasury, Tourism NSW and Livestock Health and Pest Authority (LHPAs).
 - **Community:** comprising the general public and Game Council employees.
- **Private** stakeholders:
 - **Hunters:** comprising game hunting licence holders, Approved Hunting Organisations (AHOs), other hunting organisations and the hunting community generally.
 - **Business:** comprising all suppliers of hunting goods and services and tourism-related businesses.
 - **Private Landholders:** including farmers and private land managers.

2.3 Quantitative Assessment

Where possible, the triple bottom line impacts on affected stakeholder groups from moving from the current state to an alternative state(s) are quantified in monetary terms to allow for the calculation of a net public benefit/cost in monetary terms.

The quantitative assessment presented in this study makes use of analysis from a number of different data sources, including:

- Game Council financial information regarding operational revenue and expenses.
- Results of the *2013 Game Council Licence Holder Survey* regarding hunting activity and expenditure.
- Databases of licence holders and hunt returns maintained by the Game Council.
- Research reports on the agricultural impact of game, feral and pest animals
- Research reports on the environmental impact of game, feral and pest animals.
- Research reports on the economic impacts of Volunteer Conservation Hunting.

All quantified costs and benefits represent fiscal performance relating to the demand for products and services. The costs and benefits apply to 2012-13 only (they are not the present value of future projected benefits and costs).

This report was completed in June 2013 with data available from 1 July 2012 to 30 April 2013. Data for the period 1 May 2013 to 30 June 2013 has been forecast to allow for estimated data for the 2012-13 financial year.

2.4 Qualitative Assessment

Risk-based impact assessment frameworks are recognised as an appropriate approach for assessing economic, social and environmental impacts under different scenarios. This study undertakes a triple bottom line qualitative assessment using a likelihood-consequence framework to analyse all impacts, not just those that can be quantified.

The framework involves identifying the possible impacts (cost or benefit) resulting from a move from the current state to an alternative state, followed by an assessment of the likelihood of the impact occurring and the anticipated consequences of the impact should it occur (see Table 2.1 and Table 2.2). The combination of the likelihood and consequence of each impact identifies the associated risk and impact (see Table 2.3).

The sum of the costs once subtracted from the sum of the benefits identifies the total net benefit. The number of benefits and costs does not directly impact the derivation of the

total net benefit. It is the combination of the number and magnitude of each individual cost and benefit that determines the outcome e.g. a large number of low scoring costs may still be outweighed by a low number of high scoring benefits, or vice versa.

Table 2.1: Qualitative Measure of Likelihood

Level	Descriptor	Description
1	Almost certain	It is expected to occur in most circumstances
2	Likely	It will probably occur in most circumstances
3	Possible	Might occur at some time
4	Unlikely	Could occur but not expected
5	Rare	May only occur in very exceptional circumstances
6	Remote	Never heard of, but not impossible

Source: Modified from Crawford (2003) and Fletcher et al. (2004)

Table 2.2: Qualitative Measure of Consequence

Level	Descriptor	Description: Benefits	Description: Costs
1	Negligible	Very insignificant impacts. Unlikely to be measurable against benchmarks.	Very insignificant impacts. Unlikely to be measurable against benchmarks.
2	Minor	Possibly detectable impacts but minimal changes to the established structure and function. The impact and its magnitude are small relative to the wider context of the population/area being impacted. Benefits maintained over the short term without extended management and/or works.	Possibly detectable impacts but minimal changes to the established structure and function. The impact and its magnitude are small relative to the wider context of the population/area being impacted. Return to pre-impact levels achievable and expected to occur over the short term once management initiatives are implemented.
3	Moderate	Detectable impacts, characterised by significant changes in structure, composition and function. The benefit is maintained over the medium term with minimal management and/or works.	Detectable impacts, characterised by significant changes in structure, composition and function. Recovery from impacts is achievable over the medium term once management initiatives are implemented.
4	Major/Severe	Wider and longer term impacts occurring and likely to result in a highly changed structure, composition and function. The benefit is maintained over the longer term with minimal management and/or works.	Wider and longer term impacts occurring and likely to result in a highly changed structure, composition and function. Recovery from impacts possible with sustained effort over the long term.
5	Outstanding/Catastrophic	Wider and longer term impacts occurring and likely to result in a highly changed structure, composition and function. The benefit is maintained over the longer term without management and/or works.	Wider and longer term impacts occurring and likely to result in a highly changed structure, composition and function. Return to pre impact levels unlikely to occur even with mitigation and intervention.

Source: Modified from Crawford (2003) and Fletcher et al. (2004)

Table 2.3: Qualitative Impact Assessment Matrix

Likelihood	Consequence				
	Negligible	Minor	Moderate	Major/Severe	Outstanding/Catastrophic
Remote	Very Low	Very Low	Very Low	Low	Medium
Rare	Very Low	Very Low	Low	Medium	Medium
Unlikely	Very Low	Low	Low	Medium	High
Possible	Very Low	Low	Medium	High	High
Likely	Low	Medium	Medium	High	Very High
Almost certain	Low	Medium	High	Very High	Very High

Source: Modified from Crawford (2003) and Fletcher et al. (2004)

3 Overview of the Game Council

3.1 Regulatory Environment

The Game Council was established in 2002 under the *Game and Feral Animal Control Act 2002* (the 'Act') as a NSW statutory authority, subject to the control and direction of the Minister for Primary Industries. Under the Act, the Game Council's objectives are:

1. *To provide for the effective management of introduced species of game animals, and*
2. *To promote responsible and orderly hunting of those game animals on public and private land and of certain pest animals on public land.*

Under the Act, the Game Council's functions are:

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

The *Game and Animal Feral Control Regulation 2012* (the 'Regulation') provides for various matters under the Act.

Compared to other game hunting authorities and jurisdictions in Australia and overseas, the Game Council NSW operates within a highly regulated environment with a number of restrictive arrangements, including:

- NSW is the only jurisdiction that requires hunters to obtain written permission each time prior to hunting on public land.
- NSW is the only game hunting licence in the world to contain public liability insurance.
- NSW is the only jurisdiction that requires accreditation to hunt on public land.
- NSW is one of only four States and Territories, along with Western Australia, ACT and Queensland, which do not permit game bird hunting seasons.
- NSW and Western Australia, are the only States/Territories in Australia to prohibit private game parks.
- Whilst NSW is the only jurisdiction to acknowledge blackpowder, it does not licence crossbows, hound hunting for deer or ferreting that are available in other jurisdictions.

3.2 Legislative changes in 2012-13

In 2012 both the Game and Feral Animal Control Amendment Act 2012 and the Game and Feral Animal Control Further Amendment Act 2012 were passed by both houses of the NSW Parliament. The changes to the Game and Feral Animal Control Act (the Act) through the provisions in these two amendment Acts will have a profound impact on Game Councils operating environment.

The Game and Feral Animal Control Amendment Act 2012 makes provisions for the declaration of national park estate for the purposes of hunting. The Game and Feral Animal Control Further Amendment Act 2012 makes provision for the hunting of game birds for sustainable agricultural management purposes under a Game Council administered system.

It is envisaged that the new provisions in the Act will commence within the first 6 months of 2013 with operational aspects of these changes likely to take effect in the last 6 months of 2013.

3.3 Vision & Mission

The vision of the Game Council is:

"The leading promoter, educator and advocate of Volunteer Conservation Hunting."

The Game Council's mission is:

"To efficiently and effectively manage responsible and orderly Volunteer Conservation Hunting in a manner that advances the importance to all stakeholders of the intrinsic value of hunting as a part of our cultural, economic, social and land use heritage."

3.4 Roles & Functions

The Game Council fulfils a number of functions in relation to hunting and game and feral animal control, as prescribed by the Act. The Game Council has made outstanding progress since its establishment in 2002. It has developed a world-class hunter education system and implemented the most comprehensive and accountable system in the southern hemisphere for managing hunting on public land. It has made quantum leaps in compliance capability by providing NSW Police and Forests NSW with 'real time' access to information on public land hunting activity around the State. The NSW game hunting licence is also the only licence in the world that includes public liability insurance. A summary of the Game Council's activities within each of these functions is provided below:

a) *represent the interests of licensed game hunters in matters arising under this Act.*

The Game Council represents the interests of licensed game hunters in matters arising under the Act. The Council undertakes a range of promotional activities and educational programs to raise the awareness and acceptance of the benefits of culturally driven Volunteer Conservation Hunting in NSW and participation in such activity as a healthy cultural pursuit. These activities include attendance at public meetings, field days, conferences and trade shows, media releases, hunter awareness campaigns, quarterly newsletters, targeted advertising in hunting industry magazines, production and distribution of public awareness materials, the Hunt NSW quarterly newsletter and the Bush Alert program. The Game Council also has in place a \$20 million public liability insurance policy covering licence holders for the purposes of hunting on public and private land.

b) *to administer the licensing system under this Act for game hunters (including the granting of licences and the enforcement of the Act) and to engage agents for that purpose.*

The Game Council administers the game hunting licensing system in NSW under the Act. The Council grants two types of licences (Restricted game hunting licence (R-licence) for hunting on public and private land for prescribed game animals and General Game Hunting Licence (G-licence) for hunting on private land only for prescribed game animals) and enforces responsible and orderly hunting as prescribed under the Act. The first General game hunting licences were issued in August 2004 and the first Restricted game hunting licences were issued in October 2005. There were 19,740 current NSW game hunting licences as at 30 April 2013. The Council has developed a world-class online licensing system to administer licences, along with a fully integrated online booking and monitoring system for hunting activity on public land. The Council partners with the OEH in the administration of a dual licensing system for its Game Bird Management Program. The Council engages Game Managers to undertake enforcement and compliance activities across all of NSW, in partnership with NSW Police and Forests NSW, who have access to

all information concerning game hunting activity on public land in NSW. The Game Managers, NSW Police and Forests NSW monitor the activities of licensed Volunteer Conservation Hunters and illegal hunting activity on declared public lands.

c) to make recommendations to relevant Ministers for the purposes of section 20 (Declaration of public lands available for hunting game),

The Game Council makes recommendations to relevant Ministers for the purposes of declaring public lands available for hunting game. The first declaration of public land for hunting occurred in February 2006. The Game Council has been successful in the declaration of 460 State Forest and two Crown Land areas hunting.

d) to provide advice to the Minister on game and feral animal control (whether at the request of the Minister or on its own initiative).

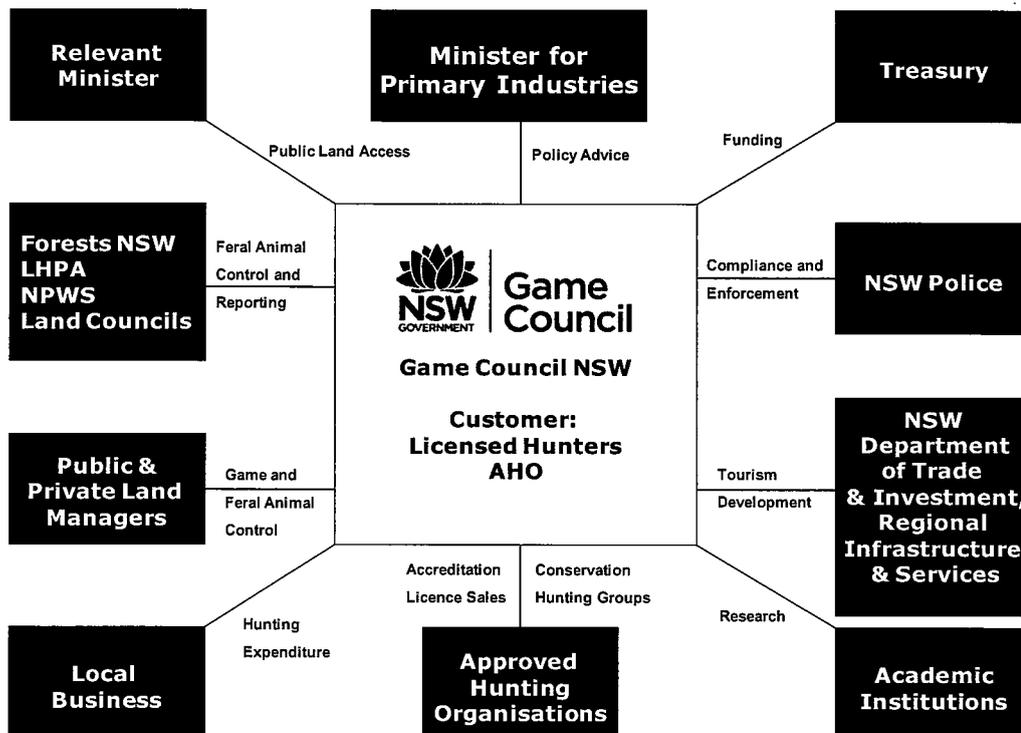
The Game Council provides advice to the Minister for Primary Industries on game and feral animal control both at the request of the Minister or on its own initiative.

e) to liaise with the Pest Animal Council, Livestock Health and Pest Authorities and other relevant bodies in connection with their respective functions.

The Volunteer Conservation Hunters enabled by a Game Council hunting licence play a central role in the control of game and feral animals in NSW. The creation of the Game Council has paved the way for greater Voluntary Hunter participation in game and feral animal control programs across NSW by bringing together government, hunters and landholders. Hunters licensed by the Game Council are assisting public land managers (State and Local Government) with game and feral animal control on State forest and Crown land areas as part of integrated or hunter-specific game and feral animal control programs. The Council liaises with NSW Government agencies such as the Livestock Health and Pest Authorities, OEH, Forests NSW and Primary Industries in the undertaking of game and feral animal control programs. The Game Council assists government in meeting its State-wide goals for natural resource management as outlined in the NSW 2021 Plan. The Game Council also participates in community-based game and feral animal control programs and works with private landholders to provide cost-effective management of game and feral animals on their land, according to their needs. The Game Council has so far facilitated the establishment of 28 dedicated Conservation Hunting Groups in NSW based on the Game Council Approved Hunting Organisation model.

A summary of the Game Council's role and relationships with key external stakeholders is provided in Figure 3.1. The Game Council, in the undertaking of its functions, interacts with and benefits a number of stakeholders in varying capacities in ensuring responsible and orderly Volunteer Conservation Hunting in NSW by its licensed hunters and increased awareness and acceptance of and participation in such activities amongst the community. Importantly, the Game Council facilitates licensed hunters to assist public and private land managers with natural resource management and game and feral animal control programs, resulting in economic, social and environmental benefits for NSW.

Figure 3.1: Stakeholder Relationships with Game Council NSW



Source: AECgroup

f) to promote or fund research into game and feral animal control issues.

The Game Council funds and promotes technical research into game and feral animal control issues. The Game Council compiles and reports animal take statistics to other government agencies. In terms of education, the Council has developed a leading Hunter Education Book as part of its Hunter Education Program to promote ethical, responsible and orderly hunting. The Game Council and its Game Managers also implement a range of educational programs to raise the awareness and understanding of safe and effective hunting practices and Volunteer Conservation Hunting in NSW and its environmental benefits.

f1) to promote, fund, develop or deliver educational courses regarding game animals and animals that interact with game animals.

The Game Council also develops and delivers a range of hunter education courses with Approved Hunting Organisations. These courses range from weekend long workshops to short courses and cover topics involving hunter safety, field craft, hunting techniques and biology of game and non-game animals.

f2) to promote or fund research into issues regarding animals that interact with game animals.

Game Council also promotes and funds research into non game animals to assist in our understanding of how game and feral animals interact with and impact on both stock and native animals.

g) to engage in such other activities relating to the objectives of this Act as are prescribed by the regulations.

The Game Council also engages in other activities relating to the objectives of the Act as are prescribed by the regulations, such as hunting insurance.

3.5 Sale of Hunting Licences

There are two classes of hunting licences administered by the Game Council:

- **G-licence:** Authorises the licence holder to hunt game animals on private land (deer, California quail, pheasant, partridge, peafowl and turkey).
- **R-licence:** Authorises the holder of the licence to hunt game and feral animals on public land (deer, California quail, pheasant, partridge, peafowl, turkey, pigs, dogs, cats, goats, rabbits, hares and foxes) as well as hunt game animals on private land (deer, California quail, pheasant, partridge, peafowl and turkey).

A game hunting licence is not required to hunt pigs, dogs, cats, goats, rabbits, hares and foxes on private land. A NSW game hunting licence (R or G) is required as a pre-requisite before applying a NSW Game Bird Licence to hunt ducks on the rice crops in NSW from the OEH.

The Game Council issued its first game hunting licence in August 2004, with the first public land declared for hunting in March 2005. The total number of current licence holders increased by over 14% from 30 April 2012 to 19,740 at 30 April 2013 (see Table 3.1). Both R-Licences and the number of G-Licences have continued to trend higher in 2012-13, recording annual growth of 15.1% and 11.1% respectively.

Overall, the Game Council has issued game hunting licences to approximately 10% of the 199,380 persons with a NSW firearm licence and 14% of the 140,000 identified hunters. These market penetration rates are currently relatively low, though have increased significantly in recent years. This achievement reflects the high quality of the Game Council's systems, hunter education program and marketing and public relations work.

Table 3.1: Number of Game Hunting Licences in NSW

Licence Type	30 June 2006	30 June 2007	1 April 2008	30 June 2009	30 April 2010	30 April 2011	30 April 2012	30 April 2013
G Licence								
1 Year	741	1477	1,131	963	1,028	1,587	1,806	1,887
3 Year	1,047	1,210	784	626	683	778	936	1,146
5 Year	456	477	535	567	359	383	459	555
Hunting Guide	4	4	3	5	3	6	10	4
Commercial Hunter	8	7	12	21	38	38	29	25
Total	2,256	3,175	2,465	2,182	2,111	2,792	3,240	3,617
R Licence								
1 Year	255	2,241	2,596	3,814	4,611	5,327	6,111	6,701
3 Year	452	1,084	1,480	2,577	3,209	3,950	4,699	5,385
5 Year	248	579	858	1,622	2,084	2,652	3,182	4,029
Hunting Guide	3	7	6	2	6	4	9	7
Commercial Hunter	0	2	2	2	2	2	1	1
Total	958	3,913	4,942	8,017	9,912	11,935	14,002	16,123
Visitors	1	6	9	11	3	19	17	0
Total	3,215	7,094	7,416	10,210	12,026	14,743	17,259	19,740

Source: Game Council Licence Database

3.6 Hunting Activity

The Volunteer Conservation Hunting activity of licensed hunters in NSW on public and private land has been considerable in the past 12 months, evidenced by hunting statistics extrapolated from the 2013 Game Council Licence Holder Survey results and the number of licensed hunters in April 2013.

There were approximately 274,800 hunting days by licence holders in the 12 months to April 2013, equating to an average of 13.9 days per hunter (see Table 3.2). This was almost 20% higher than the 230,450 hunting days in 2011-12 due to a significant increase by R-licence holders on both private and public land. The hunting days on public and private land by R-Licence holders accounted for 84% of total hunting days, up from 81% in 2011-12 and 83% in 2010-11. To undertake this hunting, licence holders travelled an estimated 40.6 million kilometres during the 12 months to April 2013, or 2,060 kilometres per licensed hunter.

Table 3.2: Number of Hunting Days by Game Hunting Licence Holders

	Public Land		Private Land		Total
	R Licence	G Licence	R Licence	Total Private	
Average Days	1.0	12.3	13.3	13.1	13.9
Total Days	15,348	44,470	214,989	259,459	274,807
% of total	6%	16%	78%	94%	100%

Source: Game Council Licence Database, 2013 Game Council Licence Holder Survey

The average expenditure on hunting goods and services by licensed hunters was estimated at \$6,114 (for G-Licence) and \$5,701 (for R-Licence) based on the results of the 2013 Game Council Licence Holder Survey (see Table 3.3). While the estimated expenditure incurred by a G-Licence holder in 2012-13 was almost 10% higher than the estimated corresponding average of \$5,562 from the 2012 Game Council Licence Holder Survey, the estimated average expenditure for a R-Licence holder remained largely steady. When multiplying these numbers by the number of licensed hunters, this equates to a total of \$114.03 million in expenditure, of which hunting equipment (\$21.37 million), vehicles and accessories (\$18.41 million) and fuel (\$16.34 million) are the largest expenditure categories. The estimates do not include purchase costs of vehicles, only modifications and accessories for hunting. This is 16.3% higher than the \$98.06 million in expenditure estimated during 2011-12 and is attributable to the increase in licence holders.

Table 3.3: Hunting Expenditure by Game Hunting Licence Holders

	\$/Hunter		\$m Last 12 Months All Hunters		Total
	G Licence	R Licence	G Licence	R Licence	
Hunting Clubs					
Membership Fee(s)	\$172	\$187	\$0.62	\$3.02	\$3.64
Hunting Equipment					
Hunting Equipment	\$1,073	\$1,085	\$3.88	\$17.49	\$21.37
Camping Equipment	\$573	\$555	\$2.07	\$8.96	\$11.03
Clothing	\$353	\$339	\$1.28	\$5.46	\$6.74
Vehicles & Accessories	\$923	\$935	\$3.34	\$15.08	\$18.41
Other	\$673	\$501	\$2.44	\$8.07	\$10.51
Hunting on Private Land					
Fee to Landowner	\$167	\$117	\$0.60	\$1.88	\$2.49
Hunting Consumables					
Ammunition	\$495	\$371	\$1.79	\$5.99	\$7.77
Airfares	\$105	\$80	\$0.38	\$1.30	\$1.68
Fuel	\$767	\$842	\$2.77	\$13.57	\$16.34
Helicopter	\$0	\$34	\$0.00	\$0.54	\$0.54
Other Travel Expenses	\$460	\$323	\$1.66	\$5.20	\$6.86
Education/Training	\$108	\$108	\$0.39	\$1.74	\$2.13
Other	\$210	\$153	\$0.76	\$2.46	\$3.22
Tour Guides					
Tour Guide Fees	\$36	\$72	\$0.13	\$1.16	\$1.29
Total	\$6,114	\$5,701	\$22.11	\$91.91	\$114.03

Source: Game Council Licence Database, 2013 Game Council Licence Holder Survey

3.7 Pest Animal Control

The Volunteer Conservation Hunting enabled by a Game Council licence is beginning to play an increasingly significant role in the control of game and feral animals in NSW. The establishment of the Game Council has paved the way for greater hunter participation in game and feral animal control programs across NSW by bringing together government, hunters and landholders.

Conservation hunters removed approximately 21,380 game and feral animals from public land during the 12 months to 30 April 2013. This represented a 36.5% increase from 2011-12 due largely to an increase in the number of rabbits, foxes and pigs taken. Based on the results of the *2013 Game Council Licence Holder Survey* extrapolated for the entire licensed hunter population, it is estimated licensed hunters took 1,230,100 game and feral animals on public and private land during the 12 months to 30 April 2013, contributing significantly to the management of these game and feral animal populations in key target areas (see Table 3.4). This represented a 67.2% increase from 2011-12 and reflects the trend of significantly more rabbits, foxes and pigs taken during the year.

Table 3.4: Estimated Animals Taken by Licence Holders during 12 Months to 30 April 2013

Animal	Public Land		Private Land		Total
	R-Licence	R-Licence	G-Licence	Total	
Cat	290	14,510	5,430	19,940	20,230
Deer	620	20,960	2,170	23,130	23,750
Dog	920	4,840	0	4,840	5,760
Fox	1,830	101,570	44,490	146,060	147,890
Goat	4,190	85,450	10,490	95,940	100,130
Hare	510	45,140	16,640	61,780	62,290
Pig	4,260	169,290	13,020	182,310	186,570
Rabbit	8,760	498,200	176,510	674,710	683,470
Total	21,380	939,960	268,750	1,208,710	1,230,090

Source: Game Council Licence Database, 2013 Game Council Licence Holder Survey

The Game Council's ongoing contribution to Volunteer Conservation Hunting includes:

- Facilitating licensed, ethical hunters to assist public land managers with game and feral control as part of integrated or hunter-specific control programs.
- Compiling and reporting game and feral animal statistics, including kills and sightings, to other government agencies to improve the management of animal populations.
- Participating in community-based game and feral animal control programs through a number of community groups that bring together government agencies, private landholders, licensed hunters and community. Current projects include: Nullica State Forest Project; Bendemeer Pest Control Project; Mid-North Coast Conservation Hunting Group; NSW Game Bird Management Program – Murray-Riverina; Mid-North Coast Deer Working Group; Illawarra Conservation Hunting Group and Ecological Deer Management Project; Maragle Ecological Deer Management Project; and Bouddi Deer Management Group.
- Working with private landholders to assist in the management of game and feral animals on their land according to their needs.
- Providing more educated and skillful hunters for game and feral animal control programs on public and private land.

Using Volunteer Conservation Hunting to control game and feral animal populations is a cost effective approach when compared with other control means. For example:

- Forests NSW spent \$1.5 million on pest animal and weed control during 2011-12.
- NSW Government allocated \$71 million on pest animal and weed control and fire management in National Parks in 2012-13.
- The LHPA received over \$1 million in external funding for pest control programs and recorded total expenditure for all of its programs of \$5.1 million in 2011-12.

3.8 Finances & Operations

The Game Council employs 20 full time equivalent staff with a central office at Orange. The Game Council operates 5 regional offices servicing stakeholders throughout regional and rural NSW, southern Queensland and Victoria. Regional offices and staffing are:

- Northern NSW – Tamworth (1 Game Manager).
- Central NSW:
 - Sydney Metro - St Marys (1 Game Manager, 1 Part-time Customer Service Officer).
 - Bathurst (1 Game Manager, 1 REACH Officer).
- Southern NSW:
 - Tocomwal (1 Game Manager, 1 Part-time Customer Service Officer).
 - Tumut (2 Game Managers).

The Game Council's primary operating revenue source (excluding government grants) is the sale of game hunting licences. Its major expenses are associated with providing compliance and enforcement services and public liability insurance, administering the licensing process and information technology services such as the website, mapping and online booking systems, and maintaining public relations and partnering in game and feral animal control programs.

For 2012-13, the Game Council projected operating revenue of \$1.56 million compared with operational budget of \$4.125 million. This equated to a funding shortfall of \$2.565 million which was met by NSW Government funding.

3.9 NSW 2021

The role and function of the Game Council is closely aligned with major goals contained in *NSW 2021: A Plan to Make NSW Number One*, a 10-year strategic business plan for the NSW Government. These include:

Rebuild the Economy

3: Drive Economic Growth in Regional NSW

Increase the share of jobs in Regional NSW

Protect strategic agricultural land and improve agricultural productivity

The Game Council is headquartered in Orange in regional NSW and is active in all regional areas throughout NSW playing a role in promoting employment opportunities. The Game Council employs approximately 20 staff in Regional NSW. Volunteer Conservation Hunters presents a niche tourism market for regional and rural NSW which facilitates employment opportunities

Volunteer Conservation Hunting is an avenue for land holders to reduce production losses and costs associated with game and feral animal control, which improves production yields and agricultural productivity.

4: Increase the Competitiveness of Doing Business in NSW

Reduce red tape

The Game Council has a strong focus to increase access to hunting opportunities through cutting red tape associated with the regulatory and policy environment. Game Council has also worked hard to improve licence and written permission processing using appropriate technology. This helps to facilitate business opportunities relating the hunting in NSW including tourism and other services.

Strengthen our Local Environment and Communities

22: Protect our natural environment

Protect and restore priority land, vegetation and water habitats

The Game Council facilitates game and feral animal control programs across NSW. These programs have environmental benefits of managing game and feral animals and their impacts on biodiversity and land degradation.

23: Increase opportunities for people to look after their own neighbourhoods and environments

Increase the devolution of decision making, funding and control to groups and individuals for local environmental and community activities

The Game Council facilitates a Volunteer Conservation resource to participate in game and feral animal control programs across NSW by bringing together government, hunters and landholders, including other NSW Government agencies at minimal cost.

24: Make it easier for people to be involved in their communities

Increase volunteering

Increase community participation

Improve our sense of community

Hunting is a traditional, natural activity evolving over millions of years. Many of the reasons people undertake hunting are tied to family, cultural values and beliefs. The Game Council actively encourages active community participation in Volunteer Conservation Hunting and also works in bringing the community together to address environmental problems caused by game and feral animals.

26: Fostering opportunity and partnership with Aboriginal people

Support Aboriginal culture, country and identity

Hunting is a very important component of Aboriginal culture and indeed there are certain licensing exemptions for Aboriginal people hunting on native title or Aboriginal Land Council areas. Nevertheless, the Game Council has a role in educational and social outcomes for Aboriginal people in regard to hunting.

27: Enhance Cultural, Creative, Sporting and Recreational Opportunities

Increase participation in sport, recreation, arts and cultural activities in rural and regional NSW

Hunting is a popular recreational activity undertaken in rural and regional NSW with almost 20,000 licence holders. Game Council helps facilitate hunting groups in the community so hunters can connect with each other.

28: Ensure NSW is ready to deal with major emergencies and natural disasters

Maintain preparedness to deal with biosecurity threats

Pests and disease outbreaks threaten the productivity and competitiveness of industries in NSW and impact on communities. Reporting on the incidence of disease in harvested wild animals by hunters through the Game Council provides the Government with an important early warning system for diseases that may damage livestock industries.

Restore Accountability to Government

30: Restore trust in State and Local Government as a service provider

Increase customer satisfaction with Government services

The Game Council provides a high quality service to licensed hunters. The *2013 Game Council Licence Holder Survey* measured high satisfaction with the core services of licensing, booking hunts, access to public land and Conservation Hunting.

4 Assessment of Current State

This section provides the base case assessment of the public benefits and costs of the Game Council and game hunting licensing system. The measurement is the same as considering the public benefits and costs of moving to a situation of there being no Game Council and game hunting licensing system.

4.1 Identification of Impacts on Stakeholders

The identified impacts on stakeholder groups of the Game Council and the game hunting licensing system are listed in Table 4.1.

Table 4.1: Benefits and Costs of Game Council and Hunting Licensing System

Stakeholder	Impact	Description	Benefit/Cost
ECONOMIC			
Government	Game and Feral Animal Control	Costs saved/avoided on game and feral animal control on public land	Benefit
Business	Business Profits	Higher profits generated from hunting goods and services expenditure	Benefit
Government	Government Taxes	Higher GST collections generated from hunting goods and services expenditure	Benefit
Private Landholders	Game and Feral Animal Control	Costs saved/avoided on game and feral animal control on private land	Benefit
Private Landholders	Agricultural Production	Higher agricultural production yields	Benefit
Government	Government Funding	Funding commitment to operate the Game Council	Cost
Hunters	Licensing Costs	Hunter expenditure on game hunting licensing processes	Cost
Government	Disease surveillance	Hunters providing an early warning system for stock and wildlife diseases	Benefit
SOCIAL			
Government	Statistical Data	Provision of statistical data regarding animal populations	Benefit
Government	Policy Advice	Provision of formalised policy advice regarding hunting	Benefit
Government	Partnerships	Participation in community-based and state agency partnerships in game and feral animal control	Benefit
Community	Employment	Employment of Game Council staff	Benefit
Community	Criminal Behaviour	Lower incidence of illegal and reckless hunting behaviour	Benefit
Community	Public Safety	Lower incidence of hunting accidents and impact on public safety	Benefit
Community	Vehicle Accidents	Lower number of vehicle accident rates	Benefit
Hunters	Hunter Utility	Higher consumer surplus from more hunting opportunities and experiences	Benefit
Hunters	Hunting Promotion	Higher awareness and acceptance of conservation hunting	Benefit
Hunters	Hunter Education	Greater education and training programs for hunters	Benefit
Hunters	Conservation Organisations	Facilitation of conservation hunting organisations	Benefit
Hunters	Hunting Accidents	Lower incidence of hunting accidents	Benefit
Hunters	Representation	Stronger representation of hunting industry	Benefit
Hunters	Hunting Research	Research into hunting and game and feral animal control	Benefit
Government	Animal Welfare	Increased political pressure from animal welfare lobby groups	Cost
ENVIRONMENTAL			
Community	Biodiversity	Lower predation of and disease amongst native flora and fauna	Benefit
Community	Land Degradation	Less land degradation and damage to soil structures	Benefit
Community	Lead Pellets	Higher number of lead pellets in natural environment	Cost

Source: AECgroup

4.2 Quantitative Assessment of Impacts on Stakeholders

This section quantitatively assesses the public benefit of the Game Council. It should be noted that the assessment only includes benefits and costs that could be quantified and can therefore not be considered an exhaustive assessment of the public benefit of the Game Council which must consider the many factors that could not be quantified. A qualitative assessment to do this is provided in the following section. Of particular note, the quantitative assessment does not include the potential cost savings associated with the Game Council and its licensed hunters' reduction of the number of hunting fatalities and road accidents caused by feral and game animals.

4.2.1 Hunting Trends

A summary of the hunting trends of licensed hunters was provided in section 3.6 and section 3.7. It is important to understand the potential changes in the amount and type of hunting activity of licensed holders if the Game Council did not exist to issue game hunting licences in NSW.

To do this, it is first necessary to clearly understand the implications for hunting opportunities on public and private land with and without a Game Council licence (see Table 4.2). A game hunting licence enables hunters to legally access conservation hunting opportunities on public land for Class A and Class B animals and private land for Class A animals. A licence to hunt Class B animals on private land is not required.

If the Game Council licences were not available, there would be three major changes in hunting opportunities and activity for NSW Game Council licence holders:

- Would not be able to legally hunt Class A animals (deer, California quail, pheasant, partridge, peafowl and turkey) or Class B animals (pigs, dogs, cats, goats, rabbits, hares and foxes) on public land.
- Access and opportunities to hunt Class A animals (deer, California quail, pheasant, partridge, peafowl and turkey) and hunting of pigs, dogs, cats, goats, rabbits, hares and foxes, for which a game hunting licence is not required on private land, would be lessened without Game Council involvement and facilitation of Conservation Hunting Programs.
- Access and opportunities to game birds on private land as part of the NSW OEH's Game Bird Management Program would be lessened without Game Council involvement and facilitation of Conservation Hunting Programs (a Game Council game hunting licence is also a prerequisite to obtain an OEH General Licence).

Table 4.2: Differences in Hunting Opportunities With and Without the Game Council

Licence Type	Scenario With Game Council Licences		Scenario Without Game Council Licences	
	Public Land	Private Land	Public Land	Private Land
G Licence Holders	<ul style="list-style-type: none"> • No legal hunting 	<ul style="list-style-type: none"> • Legal hunting of Class A animals (deer, California quail, pheasant, partridge, peafowl and turkey) • Legal hunting of Class B animals (pigs, dogs, cats, goats, rabbits, hares and foxes) • Legal hunting of Game Birds as part of the NPWS's Game Bird Management Program 	<ul style="list-style-type: none"> • No or very limited legal hunting 	<ul style="list-style-type: none"> • Legal hunting of only Class B animals (pigs, dogs, cats, goats, rabbits, hares and foxes)

Licence Type	Scenario With Game Council Licences		Scenario Without Game Council Licences	
	Public Land	Private Land	Public Land	Private Land
R Licence Holders	<ul style="list-style-type: none"> Legal hunting of Class A animals (deer, California quail, pheasant, partridge, peafowl and turkey) Legal hunting of Class B animals (pigs, dogs, cats, goats, rabbits, hares and foxes) 	<ul style="list-style-type: none"> Legal hunting of Class A animals (deer, California quail, pheasant, partridge, peafowl and turkey) Legal hunting of Class B animals (pigs, dogs, cats, goats, rabbits, hares and foxes) 	<ul style="list-style-type: none"> No or very limited legal hunting 	<ul style="list-style-type: none"> Legal hunting of only Class B animals (pigs, dogs, cats, goats, rabbits, hares and foxes)

Source: Game and Feral Animal Control Act 2002

As described earlier, there were approximately 274,800 hunting days by licence holders during the 12 months to 30 April 2013, equating to an average of 13.9 days per hunter. Hunting days on public land by R-Licence holders accounted for 6% of total hunting days. If the Game Council licences were not available, there would be the following estimated changes to the amount and nature of hunting by licence holders (see Table 4.3):

- Hunting days by G licence holders on private land would reduce by 38.3%.
- Hunting days by R licence holders on private land would reduce by 8.8%.
- Hunting days by R licence holders on public land would reduce by 100.0%.
- Total hunting days would reduce by 13.6% overall.

The estimated reduction in hunting activity on private land associated with Class A animals has been based on the percentage share of Class A animals of all animals taken on private land by G and R licence holders according to the *2013 Game Council Licence Holder Survey* and assuming 75% of G licence holders licensed for Game Birds (50% of the total) with the OEH would not continue to hunt on private land in NSW.

Essentially, if there were no Game Council and no game hunting licences, then the amount of hunting from licensed hunters would decrease by around 13.6% due to no hunting on public land and decreased hunting of Class A game animals on private land. This was lower than the estimate in 2010-11 and 2011-12 due to R licence holders spending a higher proportion of their time hunting on private land. The assessment does not consider transfers of hunting activity to illegal hunting, nor any transfer of public land hunting to private land hunting.

Table 4.3: Estimated Change to Amount and Nature of Hunting With and Without the Game Council

Licence Type	Scenario With Game Council Licences			Scenario Without Game Council Licences			% Change
	Public Land	Private Land	Total	Public Land	Private Land	Total	Total
G Licence Holders	0	44,470	44,470	0	27,430	27,430	-38.3%
R Licence Holders	15,350	214,990	230,340	0	210,090	210,090	-8.8%
Total	15,350	259,460	274,810	0	237,520	237,520	-13.6%

Source: Game Council Licence Database, 2013 Game Council Licence Holder Survey, AECgroup

4.2.2 Benefits

4.2.2.1 Game and Feral Animal Control Costs Saved/Avoided by Government

There is an economic benefit to the government in terms of cost savings/avoidance on game and feral animal control on public land due to the Game Council and its hunting licensing system. The objectives of the Act and the efforts of the Game Council are carefully directed at the effective management of introduced species of game animals and the hunting of those game animals and of certain pest animals on public land. Without the Game Council, the government would naturally need to increase its investment in other public land management agencies responsible for game and feral animal control on public land.

It should be noted that the Volunteer Conservation Hunting for the purposes of game and feral animal control facilitated by the Game Council is significantly more cost-effective

when compared with the other NSW Government agencies involved in game and feral animal control on public land. Assessment of a deer management program in Royal National Park administered by the OEH (see Case Study below) recorded a ground shooting cost (salaries of shooters) per deer killed of \$368. Under the Game Council, this cost would effectively be zero given the use of Volunteer Conservation Hunters.

Case Study: Deer Management Program for Royal National Park

The NSW Office of Environment and Heritage administers a Deer Management Plan for the Royal National Park (RNP). A number of research programs over the past 10 years have indicated that large numbers of deer are impacting on vegetation within the RNP. The Management Plan aims to reduce deer numbers and improve community understanding of the impacts of deer.

The Annual Report for the Management Plan indicates in 2008-09, operational expenditure on deer management shooting program was \$25,000. The figure excludes the salary cost of OEH staff and Deer Working group members.

The Annual Report indicates the program costing \$25,000 in 2008-09 resulted in 81 animals removed, equating to a cost per animal of \$308. In 2003, this cost was \$490 per animal and, in 2004, \$478 per animal. These costs significantly exceed the costs associated with community-based plans facilitated by the Game Council and the use of Volunteer Conservation Hunters. Using Volunteer Conservation Hunters removes the requirement to pay salaries to night-time shooters and also provides highly skilled and ethical hunters. In the period 2004-2011 licensed conservation hunters have taken over 2000 rusa deer in peri-urban environments in the Illawarra area at a cost of less than \$1 per deer when salaries are also excluded.

Based on current hunt return information, in the 12 months to 30 April 2013 it is estimated licensed hunters took 21,382 animals on public land (see Table 4.4). This includes 8,763 rabbits, 4,263 pigs, 4,190 goats, 1,828 foxes, 924 dogs, 618 deer, 505 hares and 291 cats. Assuming government investment of an average of \$368 was required for each deer taken, this would equate to an additional investment of \$227,000 alone if the Game Council hunting licensing system did not exist. Assuming a very conservative \$50 in costs for each other pest animal taken (excluding Class A game animals), the cost equates to an additional \$1,038,000. Overall, the additional game and feral animal control costs for government are estimated in this analysis at around **\$1,265,000**. This represents significant growth of 35.0% compared to the estimated game and feral animal control costs for government of **\$937,000** in 2011-12

It is estimated that the three NSW Government agencies of Forests NSW, OEH and Livestock Health and Pest Authorities recorded approximately \$35 million in total expenditure in 2011-12 on pest animal and weed control programs. The additional \$937,000 in control costs if the Game Council were not to undertake its activities would represent a 3% expenditure increase in these programs.

Table 4.4: Estimated Game and Feral Animal Costs on Public Land Saved by Government

Animal	Animals Taken on Public Land	Assumed Cost per Animal	Total Costs
Cat	291	\$50	\$15,000
Deer	618	\$368	\$227,000
Dog	924	\$50	\$46,000
Fox	1,828	\$50	\$91,000
Goat	4,190	\$50	\$210,000
Hare	505	\$50	\$25,000
Pig	4,263	\$50	\$213,000
Rabbit	8,763	\$50	\$438,000
Total	21,382		\$1,265,000

Source: Game Council Licence Database, 2013 Game Council Licence Holder Survey, AECgroup

4.2.2.2 Game and Feral Animal Control Costs Saved/Avoided by Private Landholders

There is also an economic benefit to private landholders in terms of cost savings/avoidance on game and feral animal control on private land due to the Game Council and the hunting licensing system. There are a number of private landholders participating in and benefiting from the Game Council's Conservation Hunting programs and community based working groups. Without the Game Council, these private landholders would need to increase their investment commensurately in game and feral animal management on their land.

Volunteer Conservation Hunting for the purposes of game and feral animal control facilitated by the Game Council is significantly more cost effective when compared with private landholders employing professional shooters at commercial rates. Based on current hunt return information, in the 12 months to 30 April 2013 it is estimated licensed hunters took 940,000 game and feral animals on private land over 259,460 hunting days. This included 498,200 rabbits, 169,300 pigs, 101,600 foxes, 85,450 goats and 21,000 deer. It should be noted that a game hunting licence is not required to hunt Class B non indigenous animals (cats, dogs, foxes, goats, hare, pigs and rabbits) on private land. Therefore, a large proportion of these culls would occur even if the Game Council did not exist and there was no licensing system.

The benefit of the Game Council is its ability to initiate community-based working groups to undertake organised Volunteer Conservation Hunting for private landholders, as is occurring through a number of programs across NSW. Without these groups, the relationships between hunters and private land managers would not have been formed and benefits not accrued to private land holders.

Based on the results of these programs, it is estimated 2,000 deer have been taken along with thousands of pest animals. Assuming a commercial cost of \$150 per deer to harvest, half the cost to the OEH for the Royal National Park Deer Management Program, this equates to \$300,000 alone. Assuming conservatively a rate of \$50 per feral animal culled for 2,000 feral animals, this adds a further \$100,000, bringing the total to **\$400,000**.

4.2.2.3 Sale of Hunting Goods and Services by Businesses and Tax Revenue to Government

The 2013 Game Council Licence Holder Survey indicated the average annual spend by licensed hunters on hunting is approximately \$6,114 for G-Licence holders and \$5,701 for R-Licence holders. While the former was above the previous estimate from the 2012 Game Council Licence Holder Survey of \$5,562 for G-Licence holders, the latter was marginally below the \$5,710 for R-Licence holders respectively.

To provide a point of comparison, hunting expenditure in the United States was estimated at US\$20.6 billion in 2001 from total hunt days of 228 million. In Europe, 1.7% of the population are hunters and annual expenditure totals up to 10 billion pounds. The 1997 Draft National Policy for Recreational Hunting (National Hunting Policy Working Group) stated that the purchase of equipment and vehicles, hunting access fees and licences as well as related employment generated in excess of AU\$1 billion annually. For deer hunting alone, previous studies (Cause, 1995) have estimated hunters will spend AU\$100 million or more on hunting.

Based on the current number of licences, this equates to approximate annual expenditure of \$114.03 million on hunting goods and services. Of this total, an estimated \$88.18 million (or 77.3%) is estimated to be expended in NSW based on an assessment of the residential location of licensed hunters and the share of their hunting activity occurring in NSW (see Table 4.5). This is 16.3% higher than the \$98.06 million estimated during 2011-12.

Table 4.5: Estimated Hunting Expenditure by Licence Holders in NSW, \$ million

Expenditure Type	NSW Resident Hunters			Interstate Hunters			Total		
	G-licence	R-licence	Total	G-licence	R-licence	Total	G-licence	R-licence	Total
Club Membership Fees	\$0.11	\$2.38	\$2.49	\$0.13	\$0.32	\$0.45	\$0.24	\$2.70	\$2.94
Hunting Equipment	\$2.38	\$43.35	\$45.73	\$2.66	\$2.93	\$5.58	\$5.04	\$46.27	\$51.31
Hunting on Private Land	\$0.11	\$1.48	\$1.59	\$0.25	\$0.20	\$0.45	\$0.36	\$1.68	\$2.04
Hunting Consumables	\$1.35	\$23.03	\$24.38	\$3.17	\$3.27	\$6.44	\$4.52	\$26.31	\$30.82
Tour Guides	\$0.02	\$0.87	\$0.89	\$0.05	\$0.12	\$0.18	\$0.08	\$1.00	\$1.07
Total	\$3.98	\$71.11	\$75.09	\$6.25	\$6.85	\$13.10	\$10.23	\$77.95	\$88.18

Source: Game Council Licence Database, 2013 Game Council Licence Holder Survey, AECgroup

In terms of the economic benefit derived to NSW due to the hunting expenditure of Game Council licence holders, it consists of two specific factors:

- **Increased NSW business profits and government taxes derived from hunter expenditure from interstate and overseas hunters.**

There is an economic benefit derived by NSW businesses retailing goods and services to hunters (through higher business profits) and Government (through higher GST collections assumed to be transferred back to NSW from the Commonwealth) from the attraction of expenditure from interstate and overseas hunters.

Of the total number of NSW game hunting licence holders, 82% of G-Licence and 21% of R-Licence holders, respectively, reside interstate, mostly in Victoria. In particular, many Victorian hunters travel across the NSW border into the southern Riverina and Murray regions to hunt Game Birds in rice growing regions.

These interstate hunters expend a proportion of their annual hunting budgets in NSW, thereby importing hunting expenditure for NSW businesses and taxation for the NSW Government. This proportion across both G and R-licence holders is estimated at 36%, or \$13.10 million (see Table 4.6), based on the split of expenditure between equipment (larger proportion spent interstate) and consumables (larger proportion spent in NSW).

Based on an assumed percentage reduction in relative hunting activity in NSW from interstate hunters without a Game Council licensing system, it is estimated there would be a \$3.00 million decrease in hunting expenditure in NSW through import substitution. Therefore, the benefit to businesses through higher profits (assumed to be at a rate of 15.0% on sales) and government (assumed to be at a GST rate of 10%) through higher taxes is estimated at **\$0.45 million** and **\$0.30 million**, respectively.

Table 4.6: Estimated Additional Profits/Taxes from Interstate Hunters Due to Game Council

	G-Licence	R-Licence	Total
Number of Interstate Hunters	2,954	3,429	6,383
Average Expenditure per Hunter (\$)	\$6,114	\$5,701	\$5,776
Total Expenditure by Interstate Hunters (\$m)	\$18.06	\$19.55	\$36.87
Estimated % Share of Expenditure in NSW	35%	35%	36%
Estimated \$m of Expenditure in NSW	\$6.25	\$6.85	\$13.10
Estimated % Decrease Without Game Council Licences	62%	91%	77%
Estimated \$m Decrease Without Game Council Licences	\$2.39	\$0.60	\$3.00
Estimated \$m Decrease in Business Profits w/o Game Council Licences	\$0.36	\$0.09	\$0.45
Estimated \$m Decrease in GST Collections w/o Game Council Licences	\$0.24	\$0.06	\$0.30

Source: Game Council Licence Database, 2013 Game Council Licence Holder Survey, AECgroup

- **Increased NSW business profits and government taxes derived from hunter expenditure from NSW resident hunters not travelling elsewhere to hunt.**

There is also an economic benefit derived by NSW businesses retailing goods and services to hunters (through higher profits) and Government (higher GST collections assumed to be transferred back to NSW from the Commonwealth) from the reduced leakage of hunting expenditure from NSW resident hunters to inter-State and overseas locations given they can access desired hunting opportunities within NSW.

Of all game hunting licence holders hunting in NSW, 18.3% of G-licence and 81.7% of R-licence holders, respectively, reside in NSW. The Game Council and its licensing system minimises the number of hunters travelling interstate and overseas to access hunting opportunities, therefore benefiting the NSW and regional NSW economies.

Based on the estimated percentage reduction in relative hunting activity in NSW from inter-State hunters without a Game Council licensing system, it is estimated there would be a \$1.14 million (see Table 4.7) transfer of hunting expenditure to areas outside of NSW from NSW resident licensed hunters. Therefore, the benefit to businesses through higher profits (assumed to be at a rate of 15.0% on sales) and government (assumed to be at a GST rate of 10%) is estimated at **\$0.17 million** and **\$0.11 million**, respectively.

Table 4.7: Estimated Additional Profits/Hunters from NSW Resident Hunters Due to Game Council

	G-Licence	R-Licence	Total
Number of NSW Hunters	663	12,694	13,357
Average Expenditure per Hunter (\$)	\$6,114	\$5,701	\$5,776
Total Expenditure by Interstate Hunters (\$m)	\$4.05	\$72.36	\$77.15
Estimated % Share of Expenditure in NSW	98%	98%	98%
Estimated \$m of Expenditure in NSW	\$3.98	\$71.11	\$75.09
Estimated % Decrease Without Game Council Licences	38.3%	8.8%	10.4%
Estimated \$m Decrease Without Game Council Licences	\$1.52	\$6.25	\$7.78
Estimated % Spent Outside NSW Without Game Council Licences	20%	13%	15%
Estimated \$m Spent Outside NSW Without Game Council Licences	\$0.31	\$0.83	\$1.14
Estimated \$m Decrease in Business Profits w/o Game Council Licences	\$0.05	\$0.12	\$0.17
Estimated \$m Decrease in GST Collections w/o Game Council Licences	\$0.03	\$0.08	\$0.11

Source: Game Council Licence Database, 2013 Game Council Licence Holder Survey, AECgroup

Regional Economic Benefits of Hunter Expenditure in NSW

The spending by hunters in regional areas contributes positively to regional economies, particularly the tourism industry. Hunters are generally prepared to spend considerable amounts of money in pursuit of their interests and this is a potentially very lucrative market segment for regional businesses.

In terms of the regional distribution of the economic benefits derived to NSW from hunting expenditure, a significant proportion (74% or \$65.4 million) occurs in regional NSW. The Game Council therefore contributes centrally to the NSW 2021 Plan's goals regarding growing prosperity in regional areas.

The economic impact in regional NSW is estimated at (see Table 4.8):

- Direct and indirect income of \$31.6 million.
- Direct and indirect value add (or Gross Regional Product) of \$58.9 million.
- Direct and indirect employment of 1,180 people.

Table 4.8: Regional NSW Economic Impact Due to Game Council Licensed Hunter Expenditure

	Regional NSW	Total NSW
Direct Expenditure	\$65.4	\$88.2
Income		
Direct	\$17.1	\$23.0
Indirect	\$14.5	\$19.6
Total	\$31.6	\$42.6
Value Add		
Direct	\$31.6	\$42.8
Indirect	\$27.3	\$36.8
Total	\$58.9	\$79.6
Employment		
Direct	630	860
Indirect	550	740
Total	1,180	1,590

Source: Game Council Licence Database, 2013 Game Council Licence Holder Survey, AECgroup

4.2.2.4 Improved Agricultural Production Yields for Private Landholders

There is an economic benefit to private landholders in terms of improved production yields from agricultural enterprises due to the Game Council and the game hunting licensing system. In the agricultural sector, adverse impacts of pest animals include loss of productivity, increase in livestock mortality rates and increases in control and

administration costs. The estimated impacts of feral animals on agricultural production in Australia are summarised from McLeod (2004) in the table below and are described as:

- **Foxes:** The sheep industry suffers economic loss through fox predation, with the key economic loss being the predation of lambs. The fox population is also estimated to consume 190 million birds annually.
- **Feral Goats:** Feral goats compete with sheep in semi-arid areas for feed, with the extent of this overlap varying between habitats. Feral goat populations can increase by 75% annually. The estimated annual costs are \$4.2 million.
- **Feral Pigs:** Feral pigs inflict direct losses on the agricultural sector through predation of newborn animals, reduce grain and cane yields by devouring and destroying crops, compete with livestock for pasture land, and damage infrastructure such as fences. Feral pigs eat up to 40% of newborn lambs. The damage bill caused to agricultural production is conservatively estimated to be at least \$9 million per annum.
- **Rabbits:** Competition by rabbits results in the carrying of less livestock, lower wool production per animal, reduced lambing percentages, lessened wool quality and higher stock mortality during periods of feed scarcity – such as during droughts. Rabbits also decrease the carrying capacity of beef farms. The estimated annual costs are \$206 million.
- **Wild Dogs:** Wild dogs cause substantial losses in the agricultural and grazing sectors, even though cattle and other livestock may constitute only a small proportion of wild dogs' diet. The estimated annual costs are \$48.5 million.

McLeod's (2004) research into the impact on agriculture of a range of relevant pest animals estimates a total impact of \$252.5 million, with pigs (\$100.0 million) and rabbits (\$82.5 million) accounting for the major share of the impacts (see Table 4.9).

Table 4.9: Impact of Game and Feral Animals on Agricultural Productivity, Australia

Animal	Sheep Grazing (\$m)	Cattle Grazing (\$m)	Crops (\$m)	Total Loss (\$m)	\$/Animal
Fox	\$21.15			\$21.15	\$2.94
Goat	\$1.85	\$2.39		\$4.24	\$1.63
Pig	\$3.32		\$5.86	\$9.18	\$0.68
Rabbit	\$44.97	\$161.05		\$206.02	\$0.69
Dog	\$21.85	\$26.68		\$48.53	\$21.85

Source: McLeod (2004), Gong (2009)

A game hunting licence is not required to hunt feral animals (cats, dogs, foxes, goats, hare, pigs and rabbits) on private land. Therefore, a large proportion of these culls would occur even if the Game Council did not exist and there was no licensing system. The impact on agricultural production overall from the Game Council is considered immaterial and not included in the assessment. However, if considering the economic impact on agricultural production of the estimated 23,130 deer culled on private land by licensed hunters and an average impact of \$50 per deer based on international literature, this equates to an economic benefit of **\$1,156,500**.

4.2.2.5 Increased Utility to Hunters from Better Hunting Opportunities and Experiences

There is a social benefit derived to hunters in terms of improved hunting opportunities and experiences due to the Game Council and the game hunting licensing system. Most hunting is an example of a non-market recreational resource as opposed to a market good. The value of hunting is essentially what someone is willing to pay to do it. Hunters not only spend money on their hunting but there is a consumer surplus value for hunters, particularly deer hunters, under a range of hunting situations.

Consumer surplus measures a hunter's maximum willingness to pay over and above his existing costs for the same recreation experience. Consumer surplus values are important as they may be used as direct economic inputs into processes of rational decision-making about resource use and can be used to assess social benefits and costs. Cause (1995) estimated the annual consumer surplus of deer hunting in Australia at \$15.67 million from approximately 17,500 deer hunters, equating to approximately \$900 per hunter per annum. The research demonstrated the consumer surplus more than doubled if there was an assumed doubling of the deer population and better hunting opportunities.

This concept of consumer surplus and utility to the hunter can be considered in this assessment over and above what is paid to undertake hunting. In this regard, the Game Council expands the hunting opportunities available to hunters from just game and feral animals on private land to also include broad-scale access to Conservation Hunting of game and feral animals on public land. The Game Council has opened up 2.2 million ha of public land for game hunting. Importantly, many hunters who did not have the contacts to hunt on private land have been able to benefit on public land.

The total consumer surplus derived by licensed hunters from Game Council licences and associated access to hunting opportunities for Class A and B animals on public land and Class A animals on private land is estimated at \$1.65 million (see Table 4.10). This assumes an \$895 consumer surplus per hunter from the Cause (1995) study, the percentage of hunting activity (or surplus) derived in NSW for each hunter and the percentage share of this surplus that would be reduced without the Game Council.

Table 4.10: Estimated Consumer Surplus to Licensed Hunters from Game Council Licences

	G-Licence	R-Licence	Total
Average consumer surplus per hunter	3,617	16,123	19,740
Total Consumer Surplus from hunters (\$m)	\$3.24	\$14.44	\$17.68
Estimated % Share of Surplus Derived in NSW	46%	85%	78%
Estimated \$m of Surplus Derived in NSW	\$1.5	\$12.2	\$13.7
Estimated % Decrease Without Game Council Licences	38%	9%	12%
Estimated \$m Decrease Without Game Council Licences	\$0.57	\$1.08	\$1.65

Source: Cause (1995), 2013 Game Council Licence Holder Survey, AECgroup

4.2.2.6 Reduced Costs of Biodiversity and Land Degradation on the Community

There is an environmental benefit of managing game and feral animals and their impacts on biodiversity and land degradation due to the Game Council and its licensing.

Invasive pest animals inflict many kinds of damage on the environment, including:

- Degradation of land.
- Reduction in services from water resources.
- Threats to native flora and fauna.

McLeod (2004) investigated the costs of environmental impacts of invasive animals, making the following comments for relevant species:

- **Foxes:** The fox is threatening the survival of many Australian mammals and birds. Most commentators agree that the introduction of exotic predators, such as the European Red Fox, has contributed to the decline of many species of reptiles, mammals and birds in Australia. The total annual environmental cost of foxes was estimated at \$190.0 million.
- **Feral Cats:** Feral cats generally eat small mammals, but can also eat birds, reptiles and insects. In pastoral regions in Australia, young rabbits make up the majority of their diet. Determining the impact of feral cats on native wildlife on the Australian mainland is more difficult. It is complicated by other factors such as introduced herbivores like rabbits competing with native animals for food and shelter, and habitat loss caused by clearing, grazing animals and urban development. The total annual environmental cost of foxes was estimated at \$144.0 million.
- **Rabbits:** Rabbits compete with native wildlife for pastures, and in some cases are destroying native plants. In addition, overgrazing by rabbits removes plant cover and contributes to soil erosion. Native fauna, such as the Bilby, has been displaced following the spread of the rabbit. Rabbits are implicated in the local extinction of some native species through competition for food and burrows. They have major impacts on the regeneration of native vegetation, particularly in the rangelands. Vegetation losses caused by rabbits can lead to severe erosion of Australia's relatively infertile soils and reduce biodiversity. In addition to having direct effects on native mammal species through competition, rabbits also contribute to the impact feral foxes have on native prey by maintaining higher densities of this predator. There are a number of indirect costs of rabbits which include disease transmission and degradation of rangelands leading to higher soilage of wool.

- **Feral Pigs:** Feral pigs, due to their fecundity and omnivorous habits, are commonly regarded as a serious environmental threat. Although not considered a substantial predator, feral pigs affect the survival of native fauna by causing damage to their habitat and through feed competition. Native vegetation is also affected by trampling damage and the spread of rootrot fungus and dieback disease. Despite feral pigs' apparent destructive potential, the actual impacts are often unknown because of intervention of other relevant factors. Feral pigs can also act as vectors for a number of wildlife diseases that affect both livestock and humans. Of particular concern, pigs can transmit leptospirosis, brucellosis, melioidosis, tuberculosis, porcine parvovirus, sparganosis and other arbovirus. Feral pigs can also transmit and act as reservoirs for exotic diseases such as Foot and Mouth Disease and Japanese encephalitis.
- **Feral Goats:** Feral goats damage vegetation, soils, and native fauna in the large areas of pastoral land that are overgrazed. Feral goats contribute to land degradation through damaging soil structure and exposing it to erosion. They deplete the soil's protective cover of vegetation and break-up the soil crust with their hooves.
- **Wild Dogs:** There appears to be no firm consensus view on the biodiversity and environmental impact of wild dogs. Unlike other introduced species of wild animals, dingoes have been integrated into established predator-prey relationships and may play a constructive ecological role of regulating the population of certain native faunas. The controlling influence of wild dogs on marsupial and emu numbers is demonstrated by the difference in their prevalence across the two sides of the barrier fencing. Nevertheless, predation by wild dogs is believed to pose threats to remnant populations of endangered fauna, but likely to have only limited effect on more established species.

The two quantified environmental impacts for relevant species of game and feral animals from McLeod (2004) are outlined in Table 4.11.

Table 4.11: Environmental Impact of Feral Animals

Species	Total Loss (\$M)	\$/Animal
Fox	\$190.0	\$26.4
Feral Cats	\$144.0	\$8.0

Source: McLeod (2004)

Some types of game or feral animal inhabit 95% of NSW and Voluntary Conservation Hunting is an effective tool in managing game and feral animals as part of integrated control programs. Research indicates around 13% of fox control actions in NSW are undertaken by shooters and 22% of the feral pig population is culled by hunters.

It should be noted that a game hunting licence is not required to hunt pest animals (feral cats, wild dogs, foxes, feral goats, hare, feral pigs and rabbits) on private land. Therefore, a large proportion of these culls would occur even if the Game Council did not exist and there was no licensing system. The impact on the environment from the Game Council therefore only includes broadscale legitimate public land hunting and game animals on private land. Outside of the impacts of foxes and feral cats, data is weak on this issue.

Taking account of the environmental costs of foxes and feral cats culled on public land, the environment benefits of the Game Council are estimated at around \$81,467 per annum. Adding a further \$50 impact per deer culled on private and public land, this equates to a further \$1,187,405 increasing the total environmental benefit to **\$1,268,872**.

4.2.2.7 *Reduced Costs Associated with Road and Hunting Fatalities and Accidents*

There is a social benefit (with an economic value) derived from fewer hunting and road accidents and fatalities due to the Game Council's operations. With the Game Council undertaking targeted control of game and feral animals near road crossings, there is a lower risk of fatal road accidents. Further, the probable increase in illegal hunting behaviour and lack of appropriate education, training and compliance if the Game Council was not to exist would likely result in an increase in the incidence of hunting accidents, potentially fatal, representing a major/severe impact.

The analysis of the potential costs of road and hunting fatalities relates specifically to the capacity of the Game Council to promote conservation hunting and undertake necessary enforcement and compliance procedures. The question the Government may ask is how much should government or community spend to save a human life? The statistical value of a human life is an important parameter used in a number of valuation assessments where public policy has implications for fatality risks. Various studies place the statistical value of a life anywhere between \$0.5 million and \$21 million, with some studies focussing the estimate on US\$5.5-\$7.5 million. This value is generally derived around the deceased's productivity, or the human capital method. Other approaches are based on willingness to pay and contingent valuation techniques. A single fatality saved by the appropriate funding and efforts of the Game Council in a single year could therefore equate to as high as \$21 million, but more reasonably in the AUD \$6-8 million range.

Evidence suggests that deer are also causing negative impacts. For example, Conover, Pitt, Kessler, DuBow, and Sandborn (1995) estimated that more than one million deer-vehicle collisions occur annually in the United States, costing over US\$1.1 billion in repair costs and resulting in 29,000 human injuries and 211 human fatalities. Nationwide, deer have been recognized to cause more damage to agricultural crops than any other vertebrate wildlife species (Conover & Decker, 1991), costing farmers more than an estimated US\$100 million each year (Conover, 1997; Conover, 1998).

This factor has not been quantified in this assessment due to difficulties in accurately assessing the Game Council's probability in reducing a fatality or accident.

4.2.3 Costs

4.2.3.1 Net Expenditure (or Funding) by Government

There is an economic cost to government (after deducting revenue from licence fees paid by hunters) of the Game Council's operations associated with its funding from Consolidated Revenue. In 2012-13, there was a projected budgeted operating shortfall of \$2.565 million which was met by a government grant.

4.2.4 Summary

In quantitative terms for impacts that could be readily determined the total net public benefit of the Game Council is estimated at \$4.210 million in 2012-13, with the total gross public benefit of \$6.775 million, far outweighing costs of \$2.565 million. This equates to a Benefit-Cost Ratio of 2.64. By 2016-17, the net public benefit is projected to increase to between \$5.475 million and \$13.245 million, or higher benefit-cost ratios of 3.13 and 6.16.

The gross public benefit increased by almost 25% from 2011-12 due to an increase in the number of animals, in particular rabbits, foxes and pigs, taken on both public and private land (see Table 4.12).

It should be clearly noted that many public benefits generated by the Game Council could not be quantified, including the potentially significant social benefits arising from a reduction in hunting and vehicle accidents and fatalities due to the Game Council's administration and enforcement of hunting licences (which could alone be as high as \$21 million per individual fatality) as well as the cost benefit of early detection of an exotic disease by a Game Council licenced hunter. Therefore, the quantitative analysis should be considered in partnership with the qualitative analysis of the Game Council's public benefit.

Table 4.12: Assessment of the Net Public Benefit of the Game Council

Impact	Stakeholder	Current	Projected 2016-17	
		2012-13	Business As Usual	Licence Opportunities
ECONOMIC				
Benefits				
Reduced Game and Feral Animal Control Costs	Government	\$1,265,000	\$1,501,000	\$2,952,000
Reduced Game and Feral Animal Control Costs	Private Land Mgrs	\$400,000	\$475,000	\$933,000
Increased Profits from Interstate Hunter Expenditure	Business	\$449,000	\$533,000	\$1,048,000
Increased Taxes from Interstate Hunter Expenditure	Government	\$300,000	\$356,000	\$700,000
Increased Profits from NSW Resident Hunter Expenditure	Business	\$171,000	\$203,000	\$399,000
Increased Taxes from NSW Resident Hunter Expenditure	Government	\$114,000	\$135,000	\$266,000
Reduced Impacts on Agricultural Production Yields	Private Land Mgrs	\$1,157,000	\$1,373,000	\$2,700,000
Total Economic Benefits		\$3,856,000	\$4,576,000	\$8,998,000
Costs				
Increased Government Expenditure	Government	\$2,565,000	\$2,565,000	\$2,565,000
Total Economic Costs		\$2,565,000	\$2,565,000	\$2,565,000
SOCIAL				
Benefits				
Improved Hunter Consumer Utility	Hunters	\$1,650,000	\$1,958,000	\$3,851,000
Total Social Benefits		\$1,650,000	\$1,958,000	\$3,851,000
ENVIRONMENTAL				
Benefits				
Reduced Biodiversity/Land Impacts	Community	\$1,268,872	\$1,506,000	\$2,961,000
Total Environmental Benefits		\$1,268,872	\$1,506,000	\$2,961,000
TOTAL NET BENEFIT		\$4,209,872	\$5,475,000	\$13,245,000
TOTAL GROSS BENEFIT		\$6,774,872	\$8,040,000	\$15,810,000
BENEFIT-COST RATIO		2.64	3.13	6.16

Note: All figures in 2012-13 dollars
Source: AECgroup

4.3 Qualitative Assessment of Impacts on Stakeholders

Chapter 5 of this report assesses the public benefits of the Game Council based by assessing the impacts (costs and benefits) on key stakeholder groups of moving from the current state (the Game Council in its current form) to alternative arrangement(s). This approach can also be adopted in the qualitative assessment of the base case by assessing what the impacts would be on stakeholder groups of moving from the base case to a situation where there is no Game Council and no hunting licensing system.

Table 4.13 assesses that this move would result in significant costs to the public. The economic benefits and costs would broadly offset each other through income transfers between hunters, government, business and private landholders. However, there would be significant social impacts for hunters including removed hunting opportunities and experiences and totally removed or weaker hunting representation, promotion, compliance and research, resulting in increased hunting incidents and criminal behaviour. From an environmental perspective, there would be no conservation hunting as a cost-effective method of game and feral animal control, and no ability for conservation hunting to contribute to the goals of the NSW 2021 Plan.

Table 4.13: Qualitative Assessment of Moving to No Game Hunting Licensing System

Impact	Stakeholder	Analysis	Likelihood	Consequence	Impact	Score
ECONOMIC						
Benefits						
Reduced Government Funding	Government	The Government will not be required to fund the Game Council, saving approximately \$3 million per annum in funding from consolidated revenue. The funding commitment is minor compared with the State Government's total budget.	Almost certain	Minor	Medium	2
Reduced Licensing Costs	Hunters	Hunters will not need to pay a game hunting licence fee of \$75 per annum and other associated costs to obtain a licence, particularly an R-Licence. This cost, however, represents only a negligible share of total hunting expenditure by hunters each year.	Almost certain	Negligible	Low	1
<i>Total Economic Benefits</i>			<i>Almost Certain</i>	<i>Minor</i>	<i>Medium</i>	3
Costs						
Increased Game and Feral Animal Control Costs	Government	Without the Game Council, the government would need to increase its investment in other public land management agencies responsible for game and feral animal control on public land, including the NPWS, RLPBs and Forests NSW. The likelihood of government increasing this investment is considered only possible, with the additional costs of less than \$1 million considered negligible when compared with Government's total budget.	Possible	Negligible	Very Low	0
Reduced Business Profits/Taxes from Lower Hunting Expenditure	Business	A significant proportion of the hunting expenditure of hunters occurs in regional areas of NSW where hunting opportunities are most prevalent. The profits and taxes associated with hunting on public land and for game on private land are enabled by the Game Council. The impact is only minor considered total business turnover in regional NSW.	Almost certain	Minor	Medium	-2
Increased Game and Feral Animal Control Costs	Private Landholders	Without the Game Council, private landholders may need to increase their investment in game and feral animal management on their land, although no licence is required to hunt game and feral animals on private land. It is only possible that private landholders will increase investment and the cost impact is negligible when considered against private land management costs in NSW. Only a small number of landholders would be affected.	Possible	Negligible	Very Low	0
Lower Agricultural Production Yields	Private Landholders	A large proportion of the culls of game and feral animals on private land benefiting agricultural yields would occur even if the Game Council did not exist. The impact on agricultural production overall from the Game Council is considered immaterial when considered against the total value of agricultural production in NSW.	Possible	Negligible	Very Low	0
<i>Total Economic Costs</i>			<i>Likely</i>	<i>Negligible</i>	<i>Low</i>	-2
Net Economic Position						1

Impact	Stakeholder	Analysis	Likelihood	Consequence	Impact	Score
SOCIAL						
Benefits						
Increased Pressure Regarding Animal Welfare	Government	The removal of the hunting licensing system and Volunteer Conservation Hunting on public land would ease public pressure from animal rights groups regarding hunting.	Almost certain	Moderate	High	3
<i>Total Social Benefits</i>			<i>Almost Certain</i>	<i>Moderate</i>	<i>High</i>	<i>3</i>
Costs						
Loss of Statistical Data Capabilities	Government	The Game Council's requirements for the completion of hunt returns after hunting on public land provides important information for the monitoring of game and feral animal populations and is shared with other State government agencies and partners. This information would be foregone without a licensing system and is one of the few sources of this information maintained by Government in NSW.	Almost certain	Minor	Medium	-2
Loss of Policy Advice Channels	Government	The removal of the Game Council and a licensing system would remove the formalised channel for policy advice to the Minister for Primary Industries regarding hunting and game and feral animal control issues.	Almost certain	Moderate	High	-3
Inability to Partner in Public Agency Partnerships	Government	The Game Council would not exist to facilitate partnerships with public sector agencies to undertake necessary game and feral animals control management programs and would no longer actively contribute to the conservation goals set by government.	Almost certain	Moderate	High	-3
Loss of Employment of Game Council staff	Government	The closure of the Game Council would result in 15 Game Council administration, management and operational employees being made redundant.	Almost certain	Negligible	Low	-1
Higher Incidence of Criminal Behaviour	Community	There would be an almost certain increase in illegal hunting on public land and for game animals on private land.	Almost certain	Moderate	High	-3
Higher Risk to Public Safety	Community	The increased amount of illegal and reckless hunting behaviour on public and private land would heighten risks for public safety.	Possible	Major/severe	High	-3
Higher Number of Vehicle Accidents	Community	With the Game Council undertaking targeted control of game and feral animals near road crossings, there is the potential for increases to fatal road accidents.	Possible	Major/severe	High	-3
Poorer Hunting Experiences and Opportunities	Community	The lack of a game hunting licensing system immediately reduces legal hunting opportunities for hunters on public land and for game management on private land, significantly reducing their utility (or consumer surplus) generated from hunting.	Almost certain	Major/severe	Very High	-4
Loss of Hunting Promotion	Hunters	There would be no promotion of Conservation Hunting and its benefits amongst the hunting community or the general public.	Almost certain	Moderate	High	-3
Loss of Hunter Education	Hunters	There would be no requirement for formal accreditation for hunters, reducing hunting skills and standards and safety culture.	Almost certain	Minor	Medium	-2
Redundancy of Conservation Hunting Organisations	Hunters	After working hard to facilitate the establishment of 11 conservation hunting organisations in NSW, these organisations would become defunct.	Almost certain	Moderate	High	-3
Higher Number of Hunting Accidents	Hunters	The probable increase in illegal hunting behaviour and lack of appropriate education, training and compliance are likely to result in an increase in the incidence of hunting accidents, potentially fatal, representing a major/severe impact.	Possible	Major/severe	High	-3

Impact	Stakeholder	Analysis	Likelihood	Consequence	Impact	Score
Weaker Representation of Hunters	Hunters	There would be no formal representation of the hunting industry, reducing the awareness and acceptance of the benefits of Conservation Hunting, and the representation of hunting interests in NSW.	Almost certain	Minor	Medium	-2
Loss of Hunting and Game and Feral Animal Control Research	Hunters	The Game Council is the only organisation with a core interest in the research of conservation hunting for game and feral animal control purposes. Only a small amount of research is presently undertaken so the consequence would be small.	Almost certain	Negligible	Low	-1
Decreased disease surveillance	Government/Community	Game Council hunters actively report any diseased animals harvested when hunting. A section on their hunter return form allows for this and in 2012-13 over 30 cases were reported and provided to Animal Health Australia for further investigation. In many of these cases hunters assisted in these further investigations. With the increasing number of licence holders and increased harvest of game and feral animals this disease surveillance capability will only increase. Losing this resource on public land will significantly decrease wild animal disease surveillance activities in NSW.	Almost certain	Moderate	High	-3
<i>Total Social Costs</i>			<i>Almost Certain</i>	<i>Moderate</i>	<i>High</i>	<i>-39</i>
Net Social Position						-36
ENVIRONMENT						
Benefits						
Lower Numbers of Lead Pellets in Natural Environment	Community	There would be a negligible reduction in lead pellets in sensitive environments given there would only be a minor net reduction in hunting activity (increase in illegal behaviour). The issue is minor in terms of environmental issues.	Likely	Negligible	Low	1
<i>Total Environmental Benefits</i>			<i>Likely</i>	<i>Negligible</i>	<i>Low</i>	<i>1</i>
Costs						
Increased Threats to Native Flora and Fauna	Community	The increased number of game and feral animals resulting from a reduction in targeted Volunteer Conservation Hunting operations would increase predator threats to native flora and fauna and heighten the incidence of wildlife disease.	Likely	Moderate	Medium	-2
Increased Impacts on Land Degradation	Community	An increase in game and feral animals due to reduced Conservation Hunting would increase the incidence of land degradation and soil impacts, though this impact would be minor.	Likely	Minor	Medium	-2
<i>Total Environmental Costs</i>			<i>Likely</i>	<i>Moderate</i>	<i>Medium</i>	<i>-4</i>
Net Environmental Position						-3
OVERALL RATING						-38

Source: AECgroup

4.4 Summary

The Game Council's role in administering game hunting licences in NSW and facilitating Volunteer Conservation Hunting as a cost-effective technique for game and feral animal control contributes positively to a range of economic, social and environmental outcomes in NSW and a number of the key goals and directions in the NSW 2021: *A Plan to Make NSW Number One*.

The Game Council's hunting licences significantly broaden the range of hunting opportunities in NSW to include game and feral animals on public land and game animals on private land. This in turn significantly increases the Game Council's facilitation of Volunteer Conservation Hunting in regional and rural NSW, generating the following public and private benefits:

- **Government:** The Game Council and its licensed hunters provide a cost-effective technique of game and feral animal control compared with all other public programs. The Game Council also provides important and informed policy advice to the Minister for Primary Industries on hunting and game and feral animal control issues. Reporting on the incidence of disease in harvested wild animals by hunters through the Game Council provides the Government with an important early warning system for diseases that may damage livestock industries.
- **Carbon:** Although not quantified in this assessment the benefit to the atmosphere of reduced methane emissions from harvested animals also needs to be considered.
- **Business:** The Game Council and its licensed hunters record a significant amount of expenditure in regional and rural NSW, contributing positively to the growth of tourism and long-term sustainability of regional economies.
- **Hunters:** The Game Council's hunting licences significantly broadens the range of hunting opportunities in NSW, benefiting the utility of these hunters. The Game Council promotes a culture of compliance amongst hunters in NSW, providing the necessary training, education, compliance and enforcement. This assists with the reduction in the number of hunting accidents/fatalities.
- **Private Landholders:** The Game Council's facilitation of Volunteer Conservation Hunting allows for cost savings on game and feral animal control costs and improves agricultural production yields.
- **Community:** The Game Council's facilitation of targeted Volunteer Conservation Hunting plays a role in reducing the number of road accidents and fatalities associated with game and feral animals. These same programs also reduce the environmental impacts of game and feral animals on biodiversity and land degradation in NSW for the benefit of the community and landholders.

5 Assessment of Alternative States

5.1 Definition of Alternative States

The public benefit of the Game Council is also determined by qualitatively assessing the impacts (costs and benefits) on key stakeholder groups of moving from the current state (the Game Council in its current form) to alternative arrangements.

This section of the report identifies and describes viable alternative states. For each alternative state, the analysis:

- Describes the proposed change.
- Discusses the proposed change and consistency with policy objectives.
- Discusses the viability of the alternative and its inclusion in the PBA.

Unless the alternative(s) can be realistically applied in practice, they cannot be considered viable alternatives on which to conduct a public benefit test.

The identification of realistic alternative arrangements for investigation has been based on previously enacted or considered regulatory and administrative arrangements and review of arrangements in other hunting jurisdictions.

5.1.1 Alternative 1: Game Council Self-sufficiency Model

When the establishment of a Game Council was first conceived in 1998, it was envisaged it would be created as a self-funding organisation. To achieve this, a simple game hunting licence and registration scheme was proposed including allowable hunting of a range of duck and quail species to be administered by the then NSW Agriculture. NSW Agriculture was to provide supporting infrastructure and services, including offices, administration, statutory audit requirements, information technology and management of correspondence, media issues and public relations.

A review of other game hunting authorities and licensing systems domestically and overseas indicate revenue does not cover necessary administration, operational and compliance costs and are generally budgeted as community service overheads. It should be noted that these jurisdictions do not operate within the same highly regulated environment experienced by Game Council NSW. Nor are many of these authorities established as independent statutory authorities within government. Further, many of these authorities have been in place for a far longer period of time and have developed more mature revenue streams.

In 2012-13, operational revenue for the Game Council was projected to be \$1.56 million compared with operational expenditure of \$4.125 million. A \$1.56 million budget would only allow the Game Council to meet its function of administering the licensing system. Therefore, the Game Council's ability to undertake its full suite of functions and achieve the objectives of the Act would be seriously compromised if it were to operate on this budget. Further, the Game Council's ability to grow its revenue stream and pursue market opportunities may be limited. Therefore, this arrangement is not considered a viable alternative state.

It is the long-term intention of the Game Council to close the funding gap between expenses and revenue to improve its self-sufficiency. However, it is unclear if it is possible or on what revenue basis this would be achievable without impacting the capacity of the Game Council to deliver on its functions for the larger hunting population. To consider a more mature revenue stream for the Game Council and the implications of operating as a self-funding business with this revenue stream, this analysis assumes a mature revenue stream of \$2.00 million, 28% above the existing revenue stream.

Moving to a self-funding model on a revenue stream of \$2.00 million would again be difficult without the associated capacity and resources to actually pursue revenue opportunities and grow the business. This revenue would equate to the equivalent of 26,660 1-year licence holders. The situation would mean the Game Council servicing a significant increase in licensed hunters with a more than 50% reduction to its existing budget. The extent to which this situation compromises the ability of the Game Council to administer the Act and undertake its functions is assessed as one of the alternative

arrangements in the PBA. While there would be an increase in the number of licensed hunters, there may not necessarily be the same benefits arising from Volunteer Conservation Hunting given the reduced capacity of the Game Council to facilitate such efforts.

5.1.2 Alternative 2: Another Agency Administers the Licensing System

It was initially envisaged NSW Agriculture would administer the game hunting licensing system. In some other States and Territories (excluding Victoria) there has not been a dedicated Game Council established to implement the game hunting licensing system, manage public land hunting, undertake education and organise hunting. Instead, the system has been managed under the umbrella of larger government agencies and departments.

There are other State government agencies in NSW administering licensing systems that could potentially administer and enforce the game hunting licensing system. Appropriate agencies could include OEH (which currently administer other licensing systems such as for kangaroos), Livestock Health and Pest Authority, the Department of Industry and Investment (which administers licensing systems for fishing), or NSW Police (which administers firearm licences in NSW).

Under this arrangement, the assumed responsibility and functions of these agencies would be the same as for the Game Council, with responsibilities for the licensing scheme and providing supporting infrastructure and services, including office accommodation, administration, statutory audit requirements, information technology and management of correspondence, media issues and public relations.

It is unclear whether there would be efficiency gains in another agency implementing the Act and the game hunting licensing system. While there may be economies of scale by shifting the system within a larger organisation, it is likely to be to the detriment of the hunting industry. Hunting is not a core business for other State government agencies and there would be a reduced focus on hunter representation, Conservation Hunting, education, training and promotion, with impacts for responsible and orderly hunting.

5.1.3 Summary of Anticipated Changes to Hunting Activity

The table below summarises the anticipated and assumed changes to hunting activity in NSW for each alternative state. The following is described:

- Moving to a Game Council self-sufficiency model on revenue of \$2.00 million would equate to an increase in equivalent 1-year sales to around 26,660 but result in only a moderate increase in Conservation Hunting given the significantly reduced capacity of the Game Council to facilitate conservation hunting and participate in game and feral animal control programs. Overall hunting activity would increase moderately given the increased opportunities to hunt on public land and for game on private land. Reduced capacity to undertake necessary education, training and enforcement may increase hunting incidents and accidents. It should be noted that on a budget of \$2.00 million, the Game Council would not have the capacity to undertake the necessary promotion to increase licence sales to this revenue equivalent.
- Moving to another agency administering the licensing scheme, there may be no change in hunting activity in general, although there may be a reduction in targeted and organised Conservation Hunting programs due to less focus on conservation hunting. There is no assumed change to the rate of hunting incidents.

It is important to note that while the game hunting licences issued by the Game Council facilitate Volunteer Conservation Hunting, the benefits from this hunting are increased through the Game Council's facilitation of Volunteer Conservation Hunting programs and organisations.

Table 5.1: Anticipated/Assumed Changes to Hunting Activity by Alternative States

Alternative State	Licence Numbers	Hunting Activity/Expenditure	Conservation Hunting	Compliance & Hunting Incidents
Alternative 1: Game Council Self-Funding Model	Increase to 26,660 1-year licences to generate \$2.0 million revenue at \$75/licence.	Moderate increase due to more hunters having access to public land hunting opportunities	Moderate increase given increase in licensed hunting population though reduced capacity for targeted Conservation Hunting	Reduced capacity to undertake necessary compliance and enforcement, increasing licence breaches and hunting incidents
Alternative 2: Another Agency Administering Licensing	Unchanged	Unchanged	Unchanged	Unchanged

Source: AECgroup

5.2 Identification of Impacts on Stakeholders

5.2.1 Alternative 1: Game Council Self-sufficiency Model

Table 5.2: Potential Costs and Benefits of Moving to Game Council Self-Funding Model

Stakeholder	Impact	Description	Benefit/Cost	Quantifiable
ECONOMIC				
Government	Government Funding	Reduced funding commitment to operate the Game Council	Benefit	Yes
Government	Game and Feral Animal Control	Reduced expenditure on game and feral animal control on public land	Benefit	Yes
Business	Hunting Sales	Increased sales of hunting goods and services	Benefit	Yes
Private Landholders	Game and Feral Animal Control	Reduced expenditure on game and feral animal control on private land	Benefit	Yes
Private Landholders	Agricultural Production	Increased agricultural production yields	Benefit	Yes
Hunters	Licensing Costs	Increased hunter expenditure on game hunting licences	Cost	Yes
SOCIAL				
Government	Partnerships	Reduced capacity for community-based and state agency partnerships	Cost	No
Community	Employment	Redundancy of some Game Council employees	Cost	No
Community	Criminal Behaviour	Increased incidences of illegal and reckless hunting behaviour	Cost	No
Community	Public Safety	Increased incidence of hunting accidents and public safety impacts	Cost	No
Hunters	Hunting Promotion	Reduced awareness and acceptance of conservation hunting	Cost	No
Hunters	Hunter Education	Reduced capacity to deliver education and training programs	Cost	No
Hunters	Hunting Accidents	Increased incidence of hunting accidents/incidents	Cost	No
Hunters	Licence Breaches	Increased incidence of breaches of licence conditions	Cost	No
Hunters	Representation	Weaker representation of hunting industry	Cost	No
Hunters	Hunting Research	Reduced research into Volunteer Conservation Hunting	Cost	No
ENVIRONMENTAL				
Community	Biodiversity	Reduced predation and disease of native flora and fauna	Benefit	No
Community	Land Degradation	Reduced land degradation and damage to soil structures	Benefit	No

Source: AECgroup

5.2.2 Alternative 2: Another Agency Administering Licensing

Table 5.3: Potential Costs and Benefits of Moving to Another Agency Administering Hunting Licensing

Stakeholder	Impact	Description	Benefit/Cost	Quantifiable
SOCIAL				
Government	Policy Advice	Reduced focus on providing informed policy advice regarding hunting	Cost	No
Hunters	Hunting Promotion	Reduced awareness and acceptance of Conservation Hunting	Cost	No
Hunters	Hunter Education	Removal of formal education and training programs for hunters	Cost	No
Hunters	Representation	Weaker representation of hunting industry	Cost	No
Hunters	Hunting Research	Reduced research into Volunteer Conservation Hunting	Cost	No

5.3 Qualitative Assessment of Impacts on Stakeholders

5.3.1 Alternative 1: Game Council Self-sufficiency Model

Table 5.4: Qualitative Assessment of Moving to Game Council Self-Funding Model

Impact	Stakeholder	Analysis	Likelihood	Consequence	Impact	Score
ECONOMIC						
Economics Benefits						
Reduced Government Funding	Government	A self-funding model on \$2.0 million would reduce the Game Council's funding commitment.	Almost certain	Minor	Medium	2
Reduced Game and Feral Animal Control Costs on Public Land	Government	The increased numbers of Volunteer Conservation Hunters would result in an unlikely and negligible change to the Government's other investments in game and feral animal control programs.	Unlikely	Minor	Low	1
Increased Business Profits/Taxes from Higher Hunting Expenditure	Business	There is a possible likelihood and minor consequence of hunting expenditure increasing due to increased conservation hunting and travel to public land hunting opportunities.	Almost certain	Minor	Medium	2
Reduced Game and Feral Animal Control Costs on Private Land	Private Landholders	The increase in Volunteer Conservation Hunting would result in a possible decrease in the game and feral animal control costs of private landholders, though this impact would be minor. There would be less capacity to facilitate and promote these opportunities.	Possible	Negligible	Very Low	0
Increased Agricultural Production Yields	Private Landholders	The possibility of an increased population of conservation hunters undertaking game and feral animal control on private land would have some negligible benefits for agricultural production yields.	Possible	Negligible	Very Low	0
<i>Total Economic Benefits</i>			<i>Likely</i>	<i>Minor</i>	<i>Medium</i>	<i>5</i>
Net Economic Position						5
SOCIAL						
Social Costs						
Inability to Partner in Public Agency Partnerships	Government	The Game Council would have less capacity to proactively facilitate game and feral animal control programs with community-based groups and partner with state government agencies for Voluntary Conservation Hunters in programs on public land.	Likely	Minor	Medium	-2
Loss of Employment of Game Council staff	Community	The reduced budget of the Game Council would likely result in reductions to staff numbers.	Likely	Negligible	Low	-1
Higher Incidence of Criminal Behaviour	Community	The reduced capacity to undertake necessary enforcement and compliance would result in increases in criminal behaviour and illegal hunting.	Likely	Minor	Medium	-2
Weaker Hunting Promotion	Hunters	There would be weaker promotion of conservation hunting and its benefits. As an indication, the proposed budget for 2011-12 would be significantly reduced. The capacity for the Game Council to continue growing its revenue stream would be jeopardised by fewer resources.	Likely	Moderate	Medium	-2

Impact	Stakeholder	Analysis	Likelihood	Consequence	Impact	Score
Weaker Hunter Education	Hunters	There would be no requirement for formal training and education accreditation courses, reducing hunting skills and standards and safety culture. This would only be a minor impact given existing licence holders are already accredited and there is little take-up of the Hunter Education Program.	Likely	Minor	Medium	-2
Higher Number of Hunting Accidents	Hunters	The probable increase in illegal hunting behaviour and lack of appropriate education, training and compliance are likely to result in an increase in the incidence of hunting accidents, potentially fatal, representing a major/severe impact.	Unlikely	Major/Severe	Medium	-2
Higher Number of Licence Breaches	Hunters	There would be a significant increase in the number of licence breaches given the tighter regulations on all hunters and a continuation of illegal hunting behaviours.	Likely	Minor	Medium	-2
Weaker Representation of Hunters	Hunters	There would be weaker representation of the hunting industry, reducing the awareness and acceptance of the benefits of conservation hunting, and the representation of hunting interests.	Unlikely	Minor	Low	-1
Loss of Hunting and Game and Feral Animal Control Research	Hunters	The Game Council would not have the capacity to undertake research functions, although the most important research investment for the Hunter Education Program has been completed.	Likely	Negligible	Low	-1
<i>Total Social Costs</i>			<i>Likely</i>	<i>Minor</i>	<i>Medium</i>	<i>-15</i>
Net Social Position						-15
ENVIRONMENT						
Environmental Benefits						
Reduced Threats to Native Flora and Fauna	Community	The reduced number of game and feral animals resulting from an increase in Volunteer Conservation Hunters would reduce predation threats to native flora and fauna and the incidence of wildlife disease.	Possible	Minor	Low	1
Reduced Impacts on Land Degradation	Community	A resulting decrease in game and feral animals due to more conservation hunting would reduce the incidence of land degradation and soil impacts, though this impact would be minor.	Possible	Negligible	Very Low	0
<i>Total Environmental Benefits</i>						<i>1</i>
Environmental Costs						
Higher Numbers of Lead Pellets in Natural Environment	Community	There would be a negligible increase in lead pellets in sensitive environments given there would only be a minor net reduction in hunting activity (increase in illegal behaviour).	Possible	Negligible	Very Low	0
<i>Total Environmental Costs</i>			<i>Possible</i>	<i>Negligible</i>	<i>Very Low</i>	<i>0</i>
Net Environmental Position						1
OVERALL RATING						-9

Source: AECgroup

5.3.2 Alternative 2: Another Agency Administering Licensing

Table 5.5: Qualitative Assessment of Moving to Another Agency Administering Licensing

Impact	Stakeholder	Analysis	Likelihood	Consequence	Impact	Score
SOCIAL						
Social Costs						
Weaker Policy Advice	Government	The administration of the game hunting licensing system moving to another administering body where it is not a core business nor with the same technical knowledge of hunting risks the integrity and frequency of policy advice to the Minister for Primary Industries on hunting and game and feral animal control.	Almost certain	Moderate	High	-3
Reduced Hunting Promotion	Government	There would be a possible reduction in promotion of conservation hunting and its benefits given there would not be the same focussed attention of the Game Council.	Possible	Moderate	Medium	-2
Less Hunter Education	Government	There would be a reduced focus on the development of hunter education materials and delivery of courses, with a potential reduction in hunting skills and standards and safety culture.	Possible	Minor	Low	-1
Weaker Representation of Hunters	Government	There would be weaker formal representation of the hunting industry, reducing the awareness and acceptance of the benefits of conservation hunting, and the representation of hunting interests in NSW. The organisation would likely become an administration body only.	Likely	Moderate	Medium	-2
Less Research into Hunting and Game and Feral Animal Control	Government	The Game Council is the only organisation with a core interest in the research of Conservation Hunting and its scientific benefits for game and feral animal control. Only minimal research is presently overseen by the Game Council and given the Hunter Education Handbook has already been produced the impact would be small.	Likely	Negligible	Low	-1
<i>Total Social Costs</i>			<i>Likely</i>	<i>Minor</i>	<i>Medium</i>	<i>-9</i>
Net Social Position						
						-9
OVERALL RATING						
						-9

Source: AECgroup

5.4 Summary

5.4.1 Alternative 1: Game Council Self-sufficiency Model

It is the long-term intention of the Game Council to close the funding gap between expenses and revenue to improve its self-sufficiency. However, it is unclear if it is possible or on what revenue basis this would be achievable without impacting the capacity of the Game Council to deliver on its functions for the larger hunting population. If assuming a mature revenue stream of \$2.0 million, this would represent a more than 50% reduction to the current operational budget of the Game Council.

A budget of \$2.0 million is likely to compromise the delivery of all functions and objectives of the Act. The public cost of this move is considered high with a **triple bottom line impact score of -9** (see Table 5.6). This is mainly due to social impacts relating to significant reductions in capacity to undertake necessary education, training, compliance, enforcement and research and actively contribute to Conservation Hunting Programs. At the same time, there would be an increased number of hunters to deliver these services and roles to. This larger number of hunters would produce economic and environmental benefits, though the magnitude of the environmental benefits would be linked to the ability of the Game Council to maintain its efforts in facilitating targeted Conservation Hunting programs.

Table 5.6: PBA Summary of Moving to Game Council Self-sufficiency Model

TBL Aspect	Average Likelihood	Average Consequence	Average Impact	Number of Impacts	Total Score
ECONOMIC					
Benefits	Likely	Minor	Medium	5	5
Costs	N/a	N/a	N/a	0	0
Net Position					5
SOCIAL					
Benefits	N/a	N/a	N/a	0	0
Costs	Likely	Minor	Medium	9	-15
Net Position					-15
ENVIRONMENTAL					
Benefits	Possible	Minor	Low	2	1
Costs	Possible	Negligible	Very Low	1	0
Net Position					1
Overall Rating					-9

Source: AECgroup

5.4.2 Alternative 2: Another Agency Administering Licensing

Moving to a situation where the game hunting licensing system was administered by another agency would also result in a high public cost with a **triple bottom line impact score of -9** (see Table 5.7). Hunting is clearly not the core business of other State Government agencies and there would be negative social impacts of such a move, mainly associated with reduced focus on informed policy advice and dedicated hunting representation, education, training and promotion, with resulting impacts for responsible hunting. It is unclear whether there would be efficiency gains in another agency implementing the Act and the game hunting licensing system. While there may be some economies of scale, it is likely to be to the detriment of the hunting industry. There is likely to be no change to the environmental benefits provided for by the current arrangement.

Table 5.7: PBA Summary of Moving to Another Agency Administering Licensing

TBL Aspect	Average Likelihood	Average Consequence	Average Impact	Number of Impacts	Total Score
ECONOMIC					
Benefits	N/a	N/a	N/a	0	0
Costs	N/a	N/a	N/a	0	0
Net Position					0
SOCIAL					
Benefits	N/a	N/a	N/a	0	0
Costs	Likely	Minor	Medium	5	-9
Net Position					-9
ENVIRONMENTAL					
Benefits	N/a	N/a	N/a	0	0
Costs	N/a	N/a	N/a	0	0
Net Position					0
Overall Rating					-9

Source: AECgroup

6 Strategies to Enhance Public Benefits

The Game Council has made significant progress toward its legislative objectives but is still in the early stages of its development. There are a number of opportunities for the Game Council to enhance its public benefit to NSW.

Investigating the individual economic, social and environmental outcomes that the Game Council contributes positively to, and the magnitude of these outcomes, provides the basis for identifying the areas where the Game Council can enhance its public benefit.

The three overarching techniques to enhance public benefit outcomes and ensure the Game Council contributes positively to achieving the goals of NSW 2021: *A Plan to Make NSW Number One*.

- **Increase the sale of game hunting licences:** Increased sales of game hunting licences and the market penetration of firearm licence holders would provide increased revenue for the Game Council to undertake its functions and more widely promote the role of Conservation Hunting in NSW. Importantly, it reduces the funding commitment of Government and presents the prospect of a more self-sufficient business. Further, more licensed hunters will generate increased consumer surplus for hunters arising from enhanced hunting opportunities on public and private land, associated increases in hunting expenditure in regional NSW and a larger, more skilled population of hunters participating in Volunteer Conservation Hunting and feral animal control.
- **Increase Volunteer Conservation Hunting programs:** Facilitating the expansion of Conservation Hunting programs coordinated with private and public land managers and through community-based partnerships provides the opportunity for the Game Council to increase its already positive contribution to the cost-effective management of game and feral animals in NSW. Alignment of the Game Council's targets with the NSW 2021 Plan would also enable clearer direction toward these goals. In addition an increase in the number of reputable hunters may displace and reduce the incidence of illegal hunting and it may also provide increased disease detection capabilities throughout NSW.
- **Ensure adequate funding and resources:** Ensuring adequate resources for the Game Council as it expands and grows its business to undertake necessary education, training, compliance and enforcement of game hunting is paramount to the success of the Game Council and the licensing system. Importantly it manages potential costs arising to the public from the risk of hunting incidents and illegal behaviour on public safety and the public perception of the hunting community and government policy. Informed strategic and business planning and sufficient funding from the government will ensure the Game Council can adequately meet its objectives and functions prescribed by the Act.
- **Capitalise on recent legislative changes that will allow the declaration of some national park estate open for hunting and a shift in the management of game birds in NSW to the Game Council.**

Strategies to enhance the public benefit of the Game Council are contained in Table 6.1.

Table 6.1: Strategies to Enhance the Public Benefit of the Game Council

Stakeholder(s)	Benefit	Potential	Strategies to Enhance Public Benefit
ECONOMIC			
Government	Game and Feral Animal Control	Significant	<ul style="list-style-type: none"> Facilitate Volunteer Conservation Hunters to assist public land managers with game and feral animal control as part of integrated and hunter-specific control programs. Continue facilitating and participating in community-based game and feral animal control programs. Continue to facilitate disease detection by hunters in harvested animals
Private Land Holders	Game and Feral Animal Control	Significant	<ul style="list-style-type: none"> Continue to identify opportunities to form community-based working groups to increase awareness of Volunteer Conservation Hunting amongst private landholders and reduce the impact of invasive animals. This hunting benefits landholders by reducing their investment in game and feral animal control. Work with private landholders as needed to assist in their control of game and feral animals. This would require increased promotion of Volunteer Conservation Hunting and its benefits amongst landholders. Continue facilitating and participating in community-based game and feral animal control programs. Continue to facilitate disease detection by hunters in harvested animals
Business	Business Sales	Moderate	<ul style="list-style-type: none"> Increase the number of licence sales and hunting activity through promotional campaigns highlighting hunting opportunities across NSW to all hunters.
SOCIAL			
Community	Criminal Behaviour	Moderate	<ul style="list-style-type: none"> Continue to partner with NSW Police in the enforcement of hunting on public and private land as per the Act. This successful partnership already involves the sharing of written permission and online hunt information with Police for enforcement purposes.
Community	Vehicle Accidents	Moderate	<ul style="list-style-type: none"> Continue to identify trouble spots for the road cross of game and feral animals and undertake Conservation Hunting to remove these animals and the potential for vehicle accidents.
Hunters	Hunter Utility	Significant	<ul style="list-style-type: none"> Proactively work with all stakeholders to improve the regulatory and policy environment to remove barriers to the sale of game hunting licences. Establish clear targets for additional land access and for permission to hunt a wider range of species and other strategies to improve the hunting product and experience for hunters.
Hunters	Hunting Promotion	Significant	<ul style="list-style-type: none"> Develop a range of promotional and marketing materials and strategies. Continue to promote conservation hunting to increase awareness and participation amongst both the hunting community and the general public. Undertake targeted promotional campaigns to increase licence sales and establish clear targets and timing for market penetration of each permissible hunting method. Develop a program of advocacy and promotion for the Game Council to all stakeholders.
Hunters	Hunter Education	Significant	<ul style="list-style-type: none"> Continue to ensure adequate training and education is provided to licensed hunters to promote a culture of compliance and provide skilled hunters for conservation hunting purposes. Produce interactive CD and DVD education products, develop Internet training videos, provide additional resources to Game Managers, use specialist trainers, and develop Volunteer Conservation Hunting special events that include significant education elements.
Hunters	Conservation Organisations	Significant	<ul style="list-style-type: none"> Continue to foster the development of Conservation Hunting organizations in NSW. There are presently 11 organisations across NSW working on a number of specific projects.

Stakeholder(s)	Benefit	Potential	Strategies to Enhance Public Benefit
Hunters	Hunting Accidents	Moderate	<ul style="list-style-type: none"> Continue to promote a culture of compliance amongst licensed hunters as a self-policing technique to increase responsible behaviour and community confidence in hunters. Continue to support the establishment of a network of Game Managers whilst at the same time supplementing them with a program of trained volunteers. Encourage licensed hunters to report inappropriate behaviour and illegal hunting.
Hunters	Hunter Representation	Moderate	<ul style="list-style-type: none"> Continue to represent the hunting industry and promote the role of Conservation Hunting to the community and Government, including lobbying for appropriate regulatory change.
Hunters	Hunting Research	Moderate	<ul style="list-style-type: none"> Undertake additional research into the effectiveness of Conservation Hunting and the opportunities to increase its reach in NSW.
ENVIRONMENTAL			
Community	Biodiversity/Land Degradation	Significant	<ul style="list-style-type: none"> Continue to promote Volunteer Conservation Hunting as a cost-effective method of managing game and feral animal populations and their impacts on biodiversity and land degradation. Align the Game Council's targets for game and feral animal control with the new direction for NSW to deliver better outcomes for biodiversity, including the recovery of threatened species and an increase in the number of sustainable populations in a range of fauna species. Seek a relaxation of existing regulatory settings to enable conservation hunting to play a more active role in habitat rehabilitation and sustainable environmental management in the private sector by viewing Volunteer Conservation Hunting as an alternative source of land management.

Source: AECgroup

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