Mr Ted Rowley and Ms Jo Roberts 20 October 2018

To: The Environment and Communications Reference Committee.
Submission on feral deer.

Reference Committee Criteria and Questions Response

a. the current and potential occurrence of feral deer across Australia;

Six deer species have established feral populations in NSW. On our cattle property in the south east region of NSW we have mainly fallow deer with some sambar. The NSW Game and Feral Animal Control Act (2002) classified feral deer as a game animal and protection measures were created to ensure existing deer populations persisted. Feral deer thrived and now cover at least 17% of NSW up from 9% in 2009 with no sign of their spread abating and a prediction by CSIRO that 95% of the Australian landmass is capable of sustaining one or more species of deer. In 2017 with our four neighbours, we culled over 1,600[1] fallow deer. To mid-October 2018, with our four neighbours, we have culled over 1300 deer. Despite this, we still have plague numbers of deer. The deer are getting smarter and more difficult to cull by ground shooting in all forms. They are very adaptable and ground shooting is now an ineffective control method.

b. the likely and potential biosecurity risks and impacts of feral deer, pigs and goats on the environment, agriculture, community safety and other values;

"Deer have halved my stocking rate".

"The hunting industry does not incur the costs of maintaining the deer resource – how can you argue that hunting brings benefits that exceed impacts and potential impacts on agriculture, biosecurity, environment and community safety"?

The cost of having the deer resource available for Saturday hobby shooters is incurred by:

Agriculture – Economic Impact:

a. *Reduced carrying capacity:* Graziers can expect a reduction in stocking capacity of up to 50%, based on experience from our district. We have on our farm an estimated 200 Fallow deer per night, despite intensive ground shooting over many years. If you take a Dry Sheep Equivalent (DSE) as 60 kg live weight that means we have 20 additional breeding cow equivalents of deer on our small property at least. We estimate our costs from deer impact and management are around $25,000 a year.
b. *Biosecurity risk increased:* There are over 15 diseases common to deer and sheep/cattle including virulent footrot, foot and mouth and Bovine Johne's disease. Feral deer co-graze with our cattle.
c. *Limited control measures:* The most recent research shows deer are particularly challenging to bait. Goats and pigs are susceptible for wide scale baiting; however, deer are just too sensitive and feral to be enticed at this point.

Community Impact:

a. Around a third of vehicle crash repairs in our district are reportedly from collisions with deer on alpine and other south eastern NSW roads, while road deaths associated with deer collisions have been recorded recently closer to the coast.
b. Deer are present in the urban and peri urban areas of our larger towns, such as Jindabyne and Wollongong, where they are reportedly damaging gardens and household infrastructure.

Environmental Impact:

[1] Actual bodies counted.

a. Feral deer are having a major impact on vegetation regeneration and recruitment in natural and planted areas, including significant areas of publicly funded Landcare plantings. Having plants survive rabbits and hares only to be demolished by deer after eight years establishment is heart breaking.
b. Waterway erosion and low and mid storey vegetation habitat removal is also impacting small native fauna survival.

c. the effectiveness of current state and national laws, policies and practices in limiting spread and mitigating impacts of feral deer, pigs and goats;

Deer are spreading rapidly now their core populations have reached critical mass. Even though the NSW Natural Resources Commission 2015-16 Review into Pest Animal Management recommended deer be removed from protection under the Game Act, the Government of NSW could not implement this recommendation. Policies continue to exist that continue to protect deer and convey a sense that they are a protected and valued species.

Usual avenues of focussing research, extension and biosecurity advocacy resources are truncated because of Game Act responsibilities of some relevant state and territory agencies. An associated political impotence of all major political parties and lobby groups because of the balance of political power in some states and territories being held by an identity political party derived from hunting interests is also restricting changes in feral deer protection policy.

d. the efficacy and welfare implications of currently available control and containment tools and methods, and the potential for new control and containment tools and methods;

"Our experience and that of our neighbours is that ground shooting utilising professional shooters and recreational hunters together with our own intensive shooting efforts is failing to control feral deer populations to a level where impacts are acceptable to our business and environmental sustainability".

"Deer being very mobile can only be controlled through landscape scale action where ALL the land managers in an area get together and cull cooperatively across boundaries. Of course a farmer needs a Game License to shoot on other farmers land EVEN with the neighbour's permission and with some Game Act restrictions lifted".

"Intense and sustained ground shooting has failed completely to control deer populations here – they continue to grow exponentially".

"The harder you cull the harder they become to cull; ground culling is not working at all".

"Why should I have to go through red tape and pay a license fee to hunt deer, I do not for pigs, goats, rabbits, foxes – how is that helping hunting or people manage deer?"

When feral deer populations are moving along the steep part of the pest animal invasion curve the primary method of management prospectively, would be multiple aerial culling events to crash populations followed up with persistent ground culling. Barrier or exclusion fencing for both protection of improved pastures/ horticultural/ other assets and improved shooting efficiency is another option, but may have perverse impacts on movement of native fauna.

One of the most prospectively effective means of managing deer at low numbers across a landscape is likely to be with a game or deer drive where land managers work across a landscape, concurrently as a group after multiple aerial culls have crashed the population.

e. priority research questions;

We recommend that *Australian Government research investment is substantially increased into;*

a. *Monitoring feral deer distribution and density by species and regions.*
b. *Understanding feral deer home territories, movements for breeding and feeding and spread.*
c. *Quantifying and qualifying impacts of feral deer on; community safety and amenity; environmental assets; agricultural production and sustainability; tourist experiences; and* ***biosecurity.***
d. *Feral deer control methods including baiting, use of attractants, aerial culling, trapping, barrier and exclusion fencing, commercial utilisation and ground culling technology.*
e. *Supporting regional Natural Resource Management and similar land manager groups in nil tenure (cross boundary) landscape deer management actions. This would include coordinating public sector and private land managers deer control projects across landscapes and subsidised aerial culling.*

f. the benefits of developing and fully implementing national threat abatement plans for feral deer, pigs and goats; We recommend that:

a. *The Australian Government use the Coalition of Australian Governments forum to progress a discussion on treating feral deer as national pest animals with recognition of environmental, agricultural, biosecurity and community safety hazards and support cross state research into impacts and control.*
b. *Feral deer be listed as a 'threatening process' under the EPBC Act of the Australian Government.*
c. *Biosecurity control arrangements are established to ensure* ***all*** *land managers are made aware of their obligation to manage feral deer as 'threatening process' pest animals across Australia.*
d. *Funds derived from hunting fees on public lands be utilised to support feral deer control measures on public lands.*

g. any other related matters.

Summary of submission

This paper documents our story, about our attempt to influence pest animal and feral deer management policy in NSW. It is a story about a 'wicked policy problem':

- where policy and practice implemented under different parts of the NSW Government are in apparent conflict;
- where policy caters to one minority single issue political party that has a veto on the parliamentary process; and
- where the lived experience of private land managers has been ignored by agencies responsible.

Six deer species have established feral populations in NSW. On our cattle property in the south east region of NSW we have mainly fallow deer with some sambar. The NSW Game and Feral Animal Control Act (2002) classified feral deer as a game animal and protection measures were created to ensure existing deer populations persisted. Amendments were made in years after that, including ones that restricted private land manager control options. These were politically expedient deals where the logic for deer protection was that recreational hunting would manage deer population distribution and density. These assumptions have proved false in land managers experiences and research results from monitoring recreational hunting in state forests. Victoria and Tasmania experience is similar. Feral deer thrived and now cover at least 17% of NSW with no sign of their spread abating and a prediction by CSIRO that 95% of the Australian landmass is capable of sustaining one or more species of deer.

In 2017 with our four neighbours, we have culled over 1,600[2] fallow deer. To mid-October 2018, with our four neighbours, we have culled over 1300 deer. Despite this, we still have plague numbers of deer. The deer are getting smarter and more difficult to cull by ground shooting in all forms. They are very adaptable.
Consistent with our neighbours, our experience is that ground shooting utilising occasional professional and commercial shooters and recreational hunters, together with our own very intensive shooting efforts, is failing to control feral deer populations to a level where impacts are acceptable to our business and environmental sustainability. The Victorian experience also shows that recreational hunting has not stopped feral deer increasing in distribution and density.

Hunting benefits for having deer free range across private and public lands on NSW are described as a significant contribution to regional economies, however, NO research has been conducted by NSW State Authorities on the cost and impact of hosting feral deer on agriculture production and sustainability, community safety (transport collisions), environmental assets or biosecurity (deer carry 15 diseases common to domestic livestock). Our experience and that of our neighbours is that ground shooting utilising professional shooters and recreational hunters together with our own intensive shooting efforts is failing to control feral deer populations to a level where impacts are acceptable to our business and environmental sustainability.

As part of a group of concerned and affected private land managers, we have invested time and energy in advocacy at regional and state levels to change NSW Government policy from one that protects feral deer to one of management and containment, the same as other pest animals. To support our commitment to advocacy we have established a compendium of impact evidence from citizen science activities and regional or district level land managers groups. Much of the impact evidence is qualitative. We have also contributed to developing more meaningful pest animal management strategies at state and regional level.

Some contextual quotes:
"Deer are highly mobile animals, the deer that eat my best pastures do not live on my farm, they live on the 20% of land owned by people who do not farm and who think deer are protected (Which they are by the Government of NSW). I can cull deer on my land only".

"Deer have halved my stocking rate".

"The hunting industry does not incur the costs of maintaining the deer resource – how can you argue that hunting brings benefits that exceed impacts and potential impacts on agriculture, biosecurity, environment and community safety"?

"Deer being very mobile can only be controlled through landscape scale action where ALL the land managers in an area get together and cull cooperatively across boundaries. Of course a farmer needs a Game License to shoot on other farmers land EVEN with the neighbour's permission and with some Game Act restrictions lifted".

"Intense and sustained ground shooting has failed completely to control deer populations here – they continue to grow exponentially".

"The harder you cull the harder they become to cull; ground culling is not working at all".

"Why should I have to go through red tape and pay a license fee to hunt deer, I do not for pigs, goats, rabbits, foxes – how is that helping hunting or people manage deer?"

[2] Actual bodies counted.

"There are nearly 17,000 police officers in NSW who administer the Firearms Act and control illegal hunting – why do we need a publicly funded Game Compliance Unit?"

"Multiple aerial culls, maybe five rapid events, could be effective and may be the only way developed populations of deer can be 'crashed' to levels where ground culling might hold numbers at low levels".

"Hunting deer is fun, I love hunting deer, let's not pretend it is anything else".

Compendium of evidence of feral deer impact

With the help of other land managers in the south east and other regions in NSW, we have been collating evidence of feral deer adverse impacts for several years as observations and investigations have been conducted (mostly by community organisations) across various regions.

Feral deer are creating serious and persistent biosecurity risks, agricultural production losses, and environmental degradation of reserves, parks and remnant vegetation and pose safety hazards for urban, peri urban residents and transport users.

The following points provide a snapshot of evidence of the current situation with this major pest animal:

- **The NSW deer distribution map** compiled by the NSW DPI shows a dramatic spatial expansion of deer from 2009 (8% of state) to 2016 (17% of state). According to this mapped data feral deer are distributed across at least 140,000 square kilometers of NSW. However, the survey method, by necessity, was qualitative and Local Land Services regional reports indicate a distribution of around 40% of NSW is likely to be closer to the true picture.
- **All eleven Local Land Services** regions across NSW have identified deer as a priority pest in their Regional Pest Management Plans. Eight regions identified current significant community, environmental and agricultural/horticultural impacts; All NSW regions have high levels of concern over current deer management arrangements and are beginning to plan and implement major control activities.
- **A police service report** from the Wollongong and Lake Illawarra area (local police command) NSW, in the twelve year period 2005 to 2017 in relation to collisions involving deer shows:
  - one fatality
  - 28 other collisions involving injuries (unclear if more than one person for each collision) and
  - 95 of 109 collisions classed a 'major traffic crash'.

  During this period there was professional deer control along the major highway through the area, yet the collisions were still occurring. The assumption is that other police area commands in the eastern part of NSW could provide similar statistics.
- **A recent Liverpool plains survey** of 247 land managers by telephone and online survey showed about 90% indicated that they had deer on their properties. Well over half of the respondents reported either negative or very negative emotional responses to feral deer on their properties. Only 30% indicated that they had most, or all, of the knowledge and skills needed to manage deer on their properties. An evaluation of possible deer control strategies (based on respondents' views about the effectiveness, acceptability, likelihood of adoption, and current penetration level) identified coordinated control plans and aerial/ground shooting by professionals as the most promising strategies. Overall, respondents indicated that the costs of having deer on their properties far outweighed the benefits, with 87% believing that deer should be declared as a pest in NSW.
- **An Upper Murrumbidgee Landcare online deer survey** with 669 respondents, from the Grampians to Townsville, found that deer numbers are increasing across the South-East of Australia and viewed them as

pest species. Half of participants attempted to control deer regularly on their property through shooting. Approximately 7000 deer were culled by survey participants in the last year, with almost a third of these culled in the Monaro area. Three quarters of respondents had concerns about the effectiveness of current deer management methods. Estimated loss value by respondents totalled over $1 million annually. Hunters identified that when they go hunting they only shoot a couple of animals. Their objective is to fill the freezer, not control deer numbers.

- Willow Tree Deer Research project: The North West Local Land Services Region, NSW have conducted two aerial control programs in the Willow Tree area, the first in June 2018 and the second in August 2018. These activities came on the back of an aerial survey program being conducted by DPI NSW across the Liverpool Plains Local Government Area. In an area of around 40,000 hectares, two aerial culling operations were conducted and based on the most likely population estimate and the known number of deer killed (5,313). It is estimated that the two aerial shooting operations probably removed about 38% of the deer in the shooting area. Land managers in the area actively ground shoot and this area has a number of active recreational hunting groups.
- National Parks and Wildlife Services aerial shooting of deer in their reserves in the Southern Ranges found they have been culling between three and six deer for every pig or goat. In early 2018 three aerial shoots culled 321 deer out of a total of 423 pest animals (Goats, Dogs, and Pigs). This is significant data;
- Thredbo Alpine Resort tourism operators are becoming increasingly concerned about skiers and mountain biker's collisions with deer.
- Nine Local Government Areas in NSW have had some Game Act restrictions lifted by the NSW Department of Primary Industries. The lifting of some Game Act restrictions across some local government areas is a lame political response and not effective in conveying a message that deer are pest animals to all land managers. However, of concern is the continued listing of deer as game animals because this supports land managers who do not utilise their properties for commercial activities and who continue to think deer are protected – which they are! – and have no obligation to deal with deer as pests, in fact often provide safe harbour. Additionally, land managers who see deer as a pest are constrained from shooting across their boundary into a neighbour's property (with the neighbour's permission) whilst chasing herds of deer – you need a game license under the Game Act of NSW!

Impact Costs:

Recreational hunters incur no risks. They have no skin in the game! The deer distribution and population in NSW that sustains hunting enthusiasts has large costs, which are borne by the agricultural industry, and contribute to reduced environmental services, reduced community safety and amenity, and reduced biosecurity of livestock industries and our natural ecological systems. These are economic, social and environmental costs that hunters do not bear.

The cost of having the deer resource available for Saturday shooters is incurred by:

Agriculture – Economic Impact:

a. *Reduced carrying capacity:* For cropping, sheep and cattle enterprises, as deer spread and build in numbers, graziers can expect a reduction in stocking capacity of up to 50%, based on experience from our district. We have on our farm an estimated 200 Fallow deer per night, despite intensive ground shooting over many years. If you take a Dry Sheep Equivalent (DSE) as 60 kg live weight that means we have 20 additional breeding cow equivalents of deer on our small property alone. We estimate our costs from deer impact and management are around $25,000 a year. Neighbours to the south who have properties several times our size multiply this figure by five or six times and are suffering huge losses in grazing not to mention biosecurity risks, environmental damage, water quality impacts and public safety.

b. *Biosecurity risk increased:* There are over 15 diseases common to deer and sheep/cattle including virulent footrot, foot and mouth and Bovine Johne's disease. Economic analysis of achieving successful control for exotic disease outbreaks needs to factor in a large and mobile feral deer population.
c. *Limited control measures:* The most recent research shows deer are particularly challenging to bait. Whilst 1080 is effective it not currently registered for deer. Further getting 1080 into the deer and without collateral species damage is a major challenge. Goats and pigs are susceptible for wide scale baiting; however, deer are just too sensitive and feral to be enticed at this point.

Community - Impact:

a. Around a third of vehicle crash repairs in our district are reportedly from collisions with deer on alpine and other south eastern NSW roads, while road deaths associated with deer collisions have been recorded recently closer to the coast.
b. Deer are present in the urban and peri urban areas of our larger towns, such as Jindabyne and Wollongong, where they are reportedly damaging gardens and household infrastructure.

Environmental Impact:

a. Feral deer are having a major impact on vegetation regeneration and recruitment in natural and planted areas, including significant areas of publicly funded Landcare plantings. Having plants survive rabbits and hares only to be demolished by deer after eight years establishment is heart breaking.
b. Waterway erosion and low and mid storey vegetation habitat removal is also impacting small native fauna survival.

In short, we have a major challenge on our hands. Deer are spreading rapidly now their core populations have reached critical mass, current control methods are inadequate and ground shooting is failing.

We have a wicked policy challenge on our hands!

- *Deer are spreading rapidly now their core populations have reached critical mass;*
- *Current control methods have failed and are continuing to fail;*
- *Ground shooting in all forms is failing to reduce deer populations;*
- *Even though the NSW Natural Resources Commission 2015-16 Review into Pest Animal Management recommended deer be removed from protection under the Game Act, the Government of NSW could not implement this recommendation.*
- *Policies continue to exist that continue to protect deer and convey a sense that they are a protected and valued species;*
- *A minor single issue political party favouring hunting vetoes the NSW parliamentary opportunity to remove deer from the Game Act;*
- *Usual avenues of focussing research, extension and biosecurity advocacy resources are truncated because of Game Act responsibilities of agencies and associated political impotence of all political parties and lobby groups; and*
- *Impact costs of feral deer continue to be ill defined because the relevant research agencies are constrained by their Game Act roles and responsibilities.*

What Deer Control Approaches are working?

Every NSW regional Local Land Services Pest Animal Management Plan developed in 2018 identified feral deer as a major pest species - needing eradication where in isolated or new incursions, containment where possible and management to protect assets where feral deer are widespread in significant numbers.

When feral deer populations are moving along the steep part of the pest animal invasion curve the primary method of management prospectively, would be multiple aerial culling events to crash populations followed up

with persistent ground culling. Barrier or exclusion fencing for both protection of improved pastures/ horticultural/ other assets and improved shooting efficiency is another option. However, barrier fencing is expensive and placement needs to consider movement of non pest animals, such as emus, through the broader landscape.

A recent meeting with a group of land managers from the south east of NSW discussed their successes and failures with deer control. At this stage the group's experience is all failure except for attempts at exclusion fencing for protection of high value agricultural assets, such as lucerne pastures.
One of the most prospectively effective means of managing deer at low numbers across a landscape is likely to be with a game or deer drive where land managers work across a landscape, concurrently as a group after multiple aerial culls have crashed the population.
Note: Recreational shooting in land manager's experience does not work as a control technique; however, as part of a targeted integrated approach to maintain feral deer at low populations it may contribute.

What needs to be done to control deer?

We recommend that *Australian Government research investment is substantially increased into;*

a. *Monitoring feral deer distribution and density by species and regions.*
b. *Understanding feral deer home territories, movements for breeding and feeding and spread.*
c. *Quantifying and qualifying impacts of feral deer on; community safety and amenity; environmental assets; agricultural production and sustainability; tourist experiences; and biosecurity.*
d. *Feral deer control methods including baiting, use of attractants, aerial culling, trapping, barrier and exclusion fencing, commercial utilisation and ground culling technology.*
e. *Supporting regional Natural Resource Management and similar land manager groups in nil tenure landscape deer management actions. This would include coordinating public sector and private land managers deer control projects across landscapes and subsidised aerial culling.*

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