

# Inquiry into the wild fallow deer population in Tasmania

Submission to the Legislative Council (deer@parliament.tas.gov.au)
Tasmanian Land Conservancy
29/06/2016
www.tasland.org.au

The TLC is pleased to provide this submission to the Legislative Council and sincerely thanks them for the opportunity to be involved. If more information is needed please contact:

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#### Introduction

The Tasmanian Land Conservancy (TLC) is a not-for-profit, a-political, registered environmental organisation that owns and manages land of high conservation value in Tasmania (<a href="www.tasland.org">www.tasland.org</a>, ABN 88 743 606 934). Since establishing in 2001, the TLC is now one of the largest private landholder in the State with our conservation lands extending over 32,000ha. TLC properties are managed for conservation purposes according to a conservation covenant adhered to their land title under the *Nature Conservation Act 2002*. Our private lands are part of the National Reserve System and some, such as our Skullbone Plains Reserve, Gordonvale Reserve and Liffey Reserve, have World Heritage status. We currently employ twenty staff of which seven are dedicated specifically to on-ground conservation works, and we also contract out additional land management services when required.

#### **TLC Recommendations**

- Immediate de-listing of fallow deer as a partly protected species under the Wildlife Regulations 2010.
- Acknowledgement of the rights of landholders to freely reduce fallow deer on their property provided approved humane methods are used.
- A re-assessment of fallow deer population size and distribution to help inform a cohesive and professionally managed cull to immediately and significantly reduce fallow deer numbers in Tasmania.
- The Government to align with other states and territories in its recognition of fallow deer as a feral pest species in Tasmania.

# Addressing the Terms of Reference

# Environmental impacts on private land

The TLC owns a number of properties on which fallow deer occur (Table 1). These properties cover over 25,300 ha and are widely distributed from King Island, Cradle Mountain, the Central Highlands, Freycinet Peninsula and south to Hobart and including Bruny Island. In 2016 the TLC identified fallow deer on two more of its properties for the first time. Fallow deer were seen on our Vale of Belvoir Reserve near Cradle Mountain where the previous landholders reported never having seen deer in this landscape before, and deer were seen on our Lutregala Marsh Reserve on Bruny Island where they escaped onto the island in 2013/4 and have yet to be removed.

Table 1 also shows the reserves on which we facilitate either recreational deer hunting (RH) or culling of fallow deer for crop protection purposes (CP). If neither of these deer reduction activities occurs it is usually

because the reserve is either in a remote location, difficult to access, or in a peri-urban area making deer shooting problematic.

It is well known that in places where deer are not a native species they can have a significant impact on ecosystem structure and act as a keystone species in many forest systems. Deer browsing strongly alters vegetation structure by reducing canopy cover and shrub layer foliage density. High density deer populations have altered the understory of forests so that the recovering vegetation is less biodiverse and dominated by browse resistant or unpalatable species (Jesser 2005, Locke 2007, Invasive Species Council 2010, Potts et al. 2015). These changes in forest structure can have a cascade effect on other plant and animal species. For example significantly fewer ground and understorey foraging bird species occur in areas of high deer density (Holt et al. 2011). It is highly likely that these ecosystem changes are already occurring in some Tasmanian forest ecosystems due to the presence of fallow deer in this landscape.

Table 1 TLC owned land on which wild fallow deer populations occur

TLC reserves with fallow deer (nearest town)	Reserve Size ha	Estimate of Deer Density	Deer Control, Rec. Hunters RH / Crop Protection CP
Lutregala Marsh (Bruny Island)	42	Low	No – Peri-urban
Flat Rock Reserve (Bagdad)	455	Low	No - Peri -urban
Sheene (Bagdad)	170	Low	No - Peri-urban
Vale of Belvoir Reserve (Cradle M'tn)	474	Low	No
Bluemans Run (Swansea)	1,537	Med	No
Green Tier Creek (Swansea)	860	Med	No
Lilla Villa (Bicheno)	97	Med	No
London Marshes (Bronte)	556	High	No
Hollow Tree (Bothwell)	300	Med	No – Peri-urban
Skullbone Plains Reserve (Bronte)	1,618	Med	No
Five Rivers Reserve (Bronte)	9,280	High	RH / CP
The Big Punchbowl Reserve (Coles Bay)	242	Low	No – Peri-urban
Epping Forest (Cressy)	680	High	RH / CP
Silver Plains (Interlaken)	6,000	High	RH / CP
Soldiers Marsh (Bothwell)	491	High	RH / CP
Jinks Tier (Bothwell)	1,350	High	RH
Towns (Nunamarra)	698	Med	No
Ben Nevis North (Blessington)	121	Low-Med	No - remote
Sea Elephant (King Island)	375	Low	No
TOTAL 19 conservation properties	25,346 ha		

In other states such as New South Wales, the impacts of feral deer have been extensively studied and in conservation areas include overgrazing, browsing, trampling, ring-barking, antler rubbing, dispersal of weeds, creation of trails, concentration of nutrients, exposing soils to erosion/accelerating erosion and subsequent degradation of water quality in creek and river systems. As a consequence they have been listed as a key threatening process in NSW (Jesser 2005, Invasive Species Council 2010) and in 2009 six deer species including fallow deer were included in a nomination to the Commonwealth Government for listing of feral deer as a key threatening process under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC). The Australian Government has now identified that feral deer can have major impacts on conservation values (<a href="http://www.environment.gov.au/resource/feral-deer">http://www.environment.gov.au/resource/feral-deer</a>) by:

- · destroying native vegetation
- trampling plants, grazing, and ring-barking young trees
- · fouling waterholes
- causing soil erosion
- spreading weeds
- increasing potential for transmitting diseases such as foot-and-mouth disease.

As a private landholder committed to managing land for conservation purposes, the TLC is seriously concerned at the level of environmental damage that is being caused by this introduced species not only on our properties but also more widely across the Tasmanian environment.

# Any impact on commercial activities on private land

In Tasmania, several examples of the impact of fallow deer on commercial activities have been published. Cameron (2010a, 2010b) has provided a comprehensive overview of the impacts caused by fallow deer on all aspects of a commercial farming enterprise located in the Midlands in a high density deer area. Six years ago Cameron found the costs incurred were \$20,000 to \$40,000 per year depending on the density of deer on the property in any one season. This was a conservative estimate around a loss of primary production from deer browsing, damage to infrastructure caused by deer movement and human damage caused by poaching and illegal access and collectively their implications on sustainable management and conservation values.

Greening Australia has provided estimates of the impact of fallow deer to regeneration projects during a four year Midlands Restoration Program (Bailey et al. 2014, Greening Australia 2015). They estimated 30% of their \$6 Million budget was allocated towards deer control and mitigation due to deer impacts from rubbing and ringbarking of trees, the need for deer proof perimeter fences for protection, damage to fences and increased monitoring costs (every 2 weeks with deer compared to once a month without deer, N. Davidson

Sept 2015 pers. com.). This represents a total cost from deer impact on conservation efforts of approximately \$450,000 per year for the life of the project.

Table 2 shows the level of recreational shooting permitted on TLC land and the number of fallow deer reportedly shot in the last five seasons. TLC charges recreational shooters a fee for accessing TLC properties to shoot deer and the revenue generated from this is typically less than \$8,000 in any one season. On average over the previous five seasons, 62 recreational hunters have shot on average 60 fallow deer per season and generated \$7,500 of income to this organisation. In 2016 the revenue generated was \$7,128.

Table 2. Number of shooters and fallow deer shot on TLC properties from 2011 to 2016

Property Name	No. of hunters (deer reportedly shot)				
	2012	2013	2014	2015	2016
Jinks Tier	1 (0)	1 (0)	2 (0)	2 (0)	1 (3)
Soldiers Marsh	6 (4)	4 (6)	4 (6)	4 (5)	7 (TBC)
Silver Plains (South)	23 (20)	22 (18)	22 (25)	22 (27)	22 (TBC)
Silver Plains (North)	20 (15)	17 (25)	17 (27)	17 (36)	6 (TBC)
Five Rivers	19 (13)	15 (8)	15 (3)	15 (9)	15 (TBC
Epping Forest	2 (1)	2 (2)	2 (1)	3 (7)	3 (TBC)
Total hunters (deer shot)	71 (56)	61 (59)	62 (62)	63 (73)	54 (TBC)
Total income^	\$7,560	\$7320	\$7440	\$8316	\$7128

<sup>^</sup> TLC hunters not charged fees in 2011 or 2012 TBC to be collected

Table 3 summarises the costs incurred by the TLC to manage fallow deer on our land. These costs relate to staff time to administer recreational hunters (i.e. issuing keys, associated paperwork, managing access, distributing cull tags, meetings etc.), the staff time and operational costs required to inspect, replace or repair damage to infrastructure caused by illegal access and deer poachers, and the loss of revenue to our carbon stocks due to deer browsing and damage. This table does not include the costs for which we are yet to calculate, on for example OH&S risk to staff, time lost from more important management functions and costs to native species from displacement and resource competition especially in times of drought.

The TLC draws an income from the sale of carbon credits from several of the properties impacted by high densities of fallow deer. Information on our carbon credit project has been provided in Fig 1 (<a href="http://tasland.org.au/about-the-tlc/newsletters-and-annual-reports/">http://tasland.org.au/about-the-tlc/newsletters-and-annual-reports/</a>). In terms of grazing pressure - an adult female fallow deer's average energy requirement is 2.1 Dry Sheep Equivalents (DSE) and an adult male is 3.1 DSE (Tuckwell 2003). The carrying capacity in optimal habitat in Tasmania is estimated at 50 deer per square kilometre, thus equating to 1 to 1.5 DSE per ha per year (Johnson and Potts 2014).

The diet of fallow deer comprises approximately 80% grasses, herbs and other material (plants not counted in the carbon project i.e. non-carbon stock) and 20% browsing on foliage (i.e. TLC's carbon stocks) (Duncan in the carbon project i.e. non-carbon stock) and 20% browsing on foliage (i.e. TLC's carbon stocks) (Duncan in the carbon project i.e. non-carbon stock) and 20% browsing on foliage (i.e. TLC's carbon stocks) (Duncan in the carbon project i.e. non-carbon stock) and 20% browsing on foliage (i.e. TLC's carbon stocks) (Duncan in the carbon project i.e. non-carbon stock) and 20% browsing on foliage (i.e.

(1992). The TLC estimates that 3 of the 9 strata comprising our carbon project contain dense young regeneration (strata no 4, 6, 7) and that up to 20% of the regrowth of these strata are potentially lost each year due to browsing and damage caused by fallow deer. These strata contribute approximately one third of the income of our carbon project which generates \$183,000 per annum to the organisation, therefore 20% of this one third equates to a potential loss of \$12,000 per year attributable to deer browsing.

Table 3 Cost to the TLC caused by fallow deer on our land in 2015/2016.

TLC Component	Item	Costing	Total 2015/16
Reserve Manager	20 days per year to administer	\$1,000 per	\$20,000
	(includes DPIPWE, after hours,	day	
	meetings, weekends, travel,		
	inspections etc)		
Administrative staff	4 days enquiries, issuing of letters,	\$400 per day	\$1,600
	property key pickup etc		
Repair and replacement of locks	5 gates and 6 locks per year due to	\$65 per lock	\$7,500
and gates	deer poaching and illegal access	and general	
-	experienced just prior or during the	replacement	
	deer season	or repair of	
		gates	
Staff time to survey damage, order	1 field staff x 10 days plus vehicle	\$650 per day	\$6,500
new equipment, repair and replace	costs	į	
Calculated loss to carbon stocks	20% annual loss of 3 of 9 strata in	\$12,000	\$12,000
from deer browsing of 3 strata	carbon project from deer damage		
(seedlings and saplings)	not native species browsing		
Ecosystem alteration, OH&S risk,		No estimate	No estimate
displacement and competition to		available	available
native species, lost productivity			
TOTAL			\$47,800

In 2015/16 the financial cost/benefit to the TLC from having fallow deer on our land equates to the revenue generated to the organization from recreational hunting (\$7,128) minus the costs incurred by the organisation to manage the species and sustain its impact (\$47,800).

In 2015/6 this equates to a net loss to the TLC of \$40,672.



Eucolypt formate at Fire Rivers Reserve. Photes Andy Townsend

When the Tasmanian Land Conservancy bought 28,000 hectares of native forest in 2010, a new vein of business possibilities was opened.

This large tract of native forest, partly logged but largely biologically intact, offered the TLC great potential for a sustainable income. This coincided with the evolution of a carbon market both domestically and internationally, and while the development of the system was not always straightforward, the TLC stuck with the process and doggedly pursued its goal of entering the carbon market.

The New Leaf Carbon Project is now in place across 12,130 hectares, including Five Rivers Reserve. Using the "logged to protected forests" methodology, verified Carbon Units (VCUs, or tonnes of Co2 not emitted) were generated and traded on the international voluntary market using a registered trade exchange.

Traded in vintages, the TLC sold 73,711 units from 2011 and 2012 to Virgin Australia. so travellers who choose to offset their fare are contributing to the management of TLC's reserves and the protection of threatened species habitat. Those units offset the equivalent pollution of driving nearly 3 million kilometres in a mid-sized car, or 3391 car trips between Melbourne and Sydney.

After 2012, the Australian system became the Emissions Reduction Fund and the tradable commodity of tonnes of CO2 not emitted became the Australian Carbon Credit Unit (ACCU).

The TLC is trading their ACCUs into the secondary, voluntary carbon market. Like other commodity markets, the price per unit is set between the buyer and the vendor, and can vary according to market conditions.

Other entities trading in the secondary carbon market include airlines, banks, and manufacturers who want to show their clients that they think this is a serious issue, such as Origin Energy and Bendigo Bank. The TLC is one of just a few environment organisations using the carbon market to fund conservation activities. As well as mitigating the effects of climate change, the generated income supports the management of TLC properties for the protection of endangered Tasmanian devils, Clarence galaxias fish and centuries-old forests that exist on the reserves.

The income from carbon credits enables our continuing work on establishing permanent photo-monitoring sites in the landscape designed to track our wildlife.

The TLC's carbon ventures are off to a good start and look set to continue into the future. As long as humans keep emitting, the TLC will be there to be part of the carbon cloud's silver lining.

Stephenie Cahalan Media and Communications

5

Fig 1 TLC's carbon credit program (TLC Newsletter No 47 - Autumn 2016 - page 5)

# Partly-protected status of fallow deer under the Wildlife Regulations 2010

Cameron (2010a, 2010b) provides a comprehensive overview of the impost the regulations pose to his commercial farming enterprise. He details the onerous legal requirements imposed on the landholder to manage fallow deer due to its partly-protected status including paper work, bureaucracy, reporting, site inspections, issuing of tags, game management plans, enforcement, and so on. The TLC supports these views.

TLC has additional concerns. To date the Tasmanian Government has worked directly with the Tasmanian Deer Advisory Committee and the Tasmanian Farmers and Graziers Association, through the Game Management Liaison Committee to manage fallow deer (Wildlife Management Branch 2011) and in 2016 declared that "...all parties have agreed that fallow deer should remain scheduled under the Wildlife (General) Regulations 2010 as partly protected wildlife" (Game Tracks 2016). TDAC does not represent the wider Tasmanian community nor does it have specific representation from the environmental sector. As a significant private landholder in this state there is no opportunity for the TLC to contribute to current management practices or raise serious concerns about this species significant impact on the environmental.

As a private land owner the TLC is responsible for managing its land according to the legal requirements of the statutory conservation covenant applied to its title under the *Nature Conservation Act 2002*. Due to the partly-protected status of fallow deer our covenant conditions state that we as "The landowner must keep fallow deer numbers on the land at a level that minimises their impact on the natural values." Even though increasing damage is caused to the environmental values of our land we are expected to accept this damage and bear the cost of management without any compensation.

Despite its partly-protected status there has been no systematic survey of fallow deer in Tasmania since Locke's work in 2007. In the early 2000's the fallow deer population was estimated to be 20,000 to 40,000 deer spread across 2.1 million ha (Locke 2007, Potts et al 2015). Based on this estimate and current government management practices (DPIPWE 2011a) the prediction is that the deer population will reach one million by mid-century (Potts et al (2015). The ramifications of this are alarming and warrant serious government action. Information on fallow deer distribution, rate of spread, current and projected population size and regular and systematic monitoring are essential to any wildlife management program and yet are lacking for this species.

Fallow deer have now reached a population size and range in Tasmania where they are no longer under any effective control from either recreational hunting or crop protection efforts and have established self-sustaining populations in the wild. Clearly the Department's management of this species has not achieved its aim (DPIPWE 2011a). The Tasmanian Government risk analysis found that fallow deer pose an 'Extreme Risk of becoming a pest species if they become established in this state (DPIPWE 2011b), which now they clearly are. Retaining their partly protected status on the Wildlife Regulations is in direct contradiction to the present situation and hence this status should be removed and the species reclassified as an introduced pest.

# Commercial opportunities for the use of wild population stocks

At this stage the TLC has no intention of developing long term commercial opportunities for use of wild deer population stocks, as our preference is to remove all deer from our land due to their impact on the natural values. However, the TLC recognises that some private land holders may wish to maintain wild populations of deer on their land in order to generate potential commercial opportunities and in this regard we make no case to prevent them from doing so. But the TLC believes that no landowner should be compelled to hold or protect wild population stocks of fallow deer for the benefit of neighbouring landholders or recreational user groups.

Currently the potential to exploit commercial opportunities is being significantly diminished due to the increasing supply from wild population stocks outstripping demand from recreational shooters and users of deer products.

## Any matters of incidental thereto.

- 1. Out-of-date information. The DPIPWE distribution map for fallow deer shows the species is concentrated around three main areas of the state; west of the Midlands highly between Oatlands, Bothwell, Steppes and Cressy (Interlaken area), east of the Midland Highway and south of Avoca (Ross/Campbell Town area), and east of the Midlands Highway and north of Avoca (Deddington/Blessington area) DPIPWE, 2011a,b). This information is out-of-date and does show the recent spread of the species westward including the central highlands and Cradle Mountain area, nor to the south into Geeveston, Southport etc. or onto Bruny Island.
- 2. Lack of action. Over the last decade the Tasmanian Government has reported an increasing trend in fallow deer numbers and rate of spread across the Tasmanian landscape and have published a risk assessment stating that fallow deer represent an 'Extreme Risk' of becoming a pest species in Tasmania. The lack of action by the Tasmanian Government to redress this issue has led to increasing impact on the Tasmanian natural environment, increasing financial cost to the majority of private landholders, placed the Tasmanian community under increasing safety risk and continues to damage our clean green brand.
- 3. Social costs. With increasing deer populations the likelihood of human-deer interaction increases and therefor social costs imposed by the existence of deer increases (Jesser 2004). In other parts of the world deer-related traffic accidents can have serious impacts with human related injuries even death (White et al 2003). In February 2016, one near miss was recorded by TLC staff travelling on the road at night. One human injury reported by the Meander Valley Council "Deer are becoming an increasing problem in Westbury and have recently caused a motor vehicle accident on Osmaston Road, resulting in damage to a motor vehicle, hospitalisation of the driver due to life changing spinal and other injuries, and a fire resulting in property damage", more recently has increased to three motor accidents (Meander Valley

City Council 2016). The potential risk to TLC staff and supporters working on our properties during the recreational shooting season is of serious concern to this organisation.

## **Summary of our Key Issues**

- The presence of wild fallow deer on TLC properties and their rate of spread are of significant conservation concern to this organisation. The environmental impact caused by this species through browsing, loss of seedlings, trampling and change to vegetation structure directly competes with the native species our private reserves are legislatively mandated to protect.
- The staff time and operational cost to the TLC to manage this feral species on our land equates to over \$40,000 per year. The damage caused by poachers to infrastructure through breaches to our lock and gate systems is a financial burden to this organisation and requires ongoing staff time to address. Unless the current situation is addressed this financial impost is likely to grow.
- The number of deer shot annually on our land is unlikely to play any role in reducing the overall
  population size of this species and therefore fails to address the growing problem. Our preference is to
  have this species permanently removed from our land.
- The length and duration of the recreational deer season in Tasmania exposes TLC staff and supporters to
  potential safety risk during a five month period when legal and illegal poaching is rife. This is of serious
  concern to us.
- The growing risk to personal safety and vehicle damage from fallow deer on the road at night is of increasing concern to TLC staff. One near-miss has already been reported during this 2016 season.
- The partly-protected status of this species in Tasmania is in direct conflict with known scientific evidence and contradicts other states where deer species have been identified as causing environmental harm justifying their nomination and listing as a pest species under other state and national legislations.
- Regulation and protection of this species contradicts the Department's own assessment and declaration of it being at 'High Risk' of becoming a pest species once established in the state, which it clearly is.
- The lack of public consultation and capacity for stakeholders to have input into the regulation and management of this species in Tasmania demonstrates a lack of transparency and that the Department is out-of-touch with public concern.
- Protecting a feral species that occurs on public and private reserved land including areas with world heritage status is contrary to other legislations locally, nationally and internationally.
- The Tasmanian government's data on deer distribution and rate of spread is out-of-date and not informed by robust systematic monitoring.
- The recent and projected increase in fallow deer numbers in Tasmania makes this issue one of environmental significance to the Tasmanian Government and Tasmanian community.

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## **Allison Waddington**

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Sent:

Wednesday, 29 June 2016 12:04 PM

To:

DEER

Cc:

Jane Hutchinson

Subject:

fallow deer submission Legislative Council Inquiry

Attachments:

TLC submission Fallow Deer.pdf

## Dear Inquiry Secretary / Jenny Mannering

Please find attached our submission for the Legislative Council Inquiry into the wild fallow deer population in Tasmania. If you need any further information please don't hesitate to contact us.

Thanks so much for the opportunity to be involved.

Kind Regards

Sally Bryant

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