

The Secretary
Legislative Council Inquiry into Wild Fallow Deer
Parliament of Tasmania
Parliament House HOBART TAS 7000

Submission from Professors Christopher Johnson, Ted Lefroy and David Bowman, University of Tasmania.

Predation is the only precision instrument known to deer management
Aldo Leopold 1947

Summary

For most of the 180 years since fallow deer were introduced to Tasmania they existed in several isolated populations in and around the Midlands. Over the last 30-40 years those populations have merged, their numbers have increased and deer have spread beyond their traditional range, partly due to natural increase and partly to escapes from deer farms. Increased herd size in the Midlands and evidence of deer across the Central Highlands, the East Coast and into the SW Wilderness World Heritage Area suggests that the current management regime is not capable of managing the size of the fallow deer population or its distribution. A clue to the ineffectiveness of the current regime may well be contained in its name: Quality Deer Management. Its focus is on quality, on guaranteeing a supply of trophy animals, not on managing the size and range of Tasmania's fallow deer. Quality Deer Management has been very successful in achieving its primary objective so it is entirely understandable that hunters are reluctant to tamper with the status quo. But if we are to avoid further damage to areas of high natural value, minimize competition for pasture with livestock and avoid the risk of disease transmission to livestock we need a management regime with multiple objectives: a reliable supply of animals for hunting, a managed population size and a restricted range. Aldo Leopold's quote is particularly pertinent for Tasmania. Since the extinction of the Thylacine, hunting is the only form of predation at our disposal. Hunting will be a vital part of any solution, and a management regime with multiple objectives will need to have the support of all the major stakeholders, be regularly monitored and be flexible and adaptable. Experience with management of other introduced species in Australia and the rest of the world suggests the chance of success would be improved if a revised management regime was developed by land management agencies in partnership with hunters, private land owners and the conservation sector.

1. The current situation

- ∞ Since the 1970s, the estimated size of Tasmania's fallow deer population has more than tripled to between 20,000 and 30,000 while the area they occupy has increased five-fold to some 2 million hectares.(1) If anything, the estimate of current population size is likely to be a substantial underestimate.
- ∞ Modelling using a conservative estimate of growth rate suggests that the population could increase by a further 40% in the next 10 years (2014-2023) and exceed one million by mid-century. (2)
- ∞ Livestock production will suffer from increased grazing competition and is at risk of exposure to diseases such as Johnne's Disease, recently detected in Australian cattle exported to Japan, which deer are known to carry on the mainland. Deer can also carry foot and mouth disease (FMD). Six species of introduced wild deer now occur from northern Queensland to southern Tasmania, representing a major threat to Australia's livestock industries if FMD entered Australia from Indonesia or Papua New Guinea. In almost all cases, populations of deer are increasing.

∞ As deer spread, the Tasmanian SW Wilderness World Heritage Area is likely to experience more damage from overgrazing, browsing, trampling, ring-barking, antler-rubbing, weed dispersal, creation of trails and damage to wetlands and streams.

2. Impacts of deer on agriculture and the environment

Worldwide, deer are the most abundant of all invasive mammals (3). Because of their large size, ecological versatility, and potential to reach high population densities in the absence of natural predators, deer can have large impacts on natural ecosystems, forestry and agriculture (4). Outside Australia, invasive deer have transformed natural vegetation, causing loss of diversity and habitat structure (5) and threatening native wildlife (6). The potential costs incurred by disease transmission between deer and livestock are huge: a recent Australian Bureau of Agricultural and Resource Economics and Sciences study estimated the present value of total direct economic losses over 10 years for a large multi-state foot and mouth disease (FMD) outbreak in Australia at \$A52 billion (7). Browsing by fallow deer is the most significant factor preventing restoration of native vegetation on farmland in Tasmania (8). There are increasingly strong perceptions of significant impacts on forestry, agriculture and livestock production (9,10). Impacts on agriculture include both competition with livestock for pasture and risks of disease transmission, which are high because of the similarity of deer to ungulate livestock (11). For example, the last major outbreak of FMD in the USA was maintained by wild deer, and deer-to-cattle transmission has evidently been important in other outbreaks (12). Deer are also likely to be reservoirs of endemic diseases that affect livestock.

3. Quality Deer Management

The current deer management policy in Tasmania is Quality Deer Management. It was adopted from the USA where it was originally developed to manage white tailed deer for hunting in Texas. Unlike the USA, Tasmania has no natural predators of deer leaving hunting as the only method of population control. Quality Deer Management has been very successful in achieving its primary objective, ensuring hunters have access to suitable size and age classes of deer. For this reason it is understandable that hunters are reluctant to tamper with the status quo. The problem with the current regime based on Quality Deer Management is not that deer have protected status, but that restrictions to the length of season, the class of animal that can be taken at any one time and the eligibility of permit holders limit the effectiveness of hunting as the only means at our disposal of controlling the size of the population. While the current restrictions may in principle appear to be sufficiently flexible to allow control where ever deer are considered to be getting out of hand, the growing evidence that they are spreading indicates that in practice the current management regime is not working. The absence of a robust system for monitoring deer abundance and distribution also means that changes cannot be detected until they are well advanced. Our current management regime is, therefore, ill suited to the task of averting future impacts of deer on the Tasmanian economy and ecosystem.

4. Why issuing more permits won't work

Game Management Branch within the Department of Primary Industries, Parks, Water and Environment, the entity responsible for administering deer hunting regulations, reports that they are not getting full uptake of the 13,500 permits they are already issuing each year for hunting and crop protection. This is interpreted as evidence that deer do not constitute a serious problem. However a major limiting factor with the current management regime is that hunting and crop protection permits are allocated only to landholders, requiring hunters to establish a relationship with a landholder to gain access to the deer.

This means that the current permitting system does not allow landholders to respond effectively to the problems posed by deer. An alternative would be a permit-free management regime for some land tenures and some parts of the State. Two possible options are that landholders manage wild deer as they see fit on their own land (reducing them as much as possible to avoid unwanted impacts, maintaining them as a hunting resource, or tolerating them), or they could adhere to management targets agreed with government regulators. These targets could be set to avoid eradicating deer, instead holding populations at levels that do not cause significant conflict with other objectives of land management.

A major factor limiting clarity in this debate at present is lack of information. There has never been a systematic survey of Tasmania's fallow deer population. Published estimates of the current population range from 20,000 to 30,000 but are considered by many to be too low. The population growth rate in Tasmania is unknown. Elsewhere, populations of fallow deer are capable of growing at rates of around 50% per year in the absence of effective controls (2). Without precise knowledge of the potential growth rate of the Tasmanian population we can't be sure how long it could be before we have a million or so deer to contend with. However, modelling suggested that even if we assume a population growth rate at the low end of the range of estimates made elsewhere, the current rate of removal of deer by hunters will not prevent further growth (2). The annual increase in the population is likely to accelerate unless management keeps pace, something that is made difficult by the current system. Growth of the deer population could be especially fast if more good deer habitat became available, such as through increased wild fires opening up forests.

Agriculture and tourism are two of the biggest export earners on the island. An exploding deer population has the potential to damage both industries. Investing in better knowledge would represent a small expense given these risks. Better data will not change everyone's attitudes to deer or their place in Tasmania, but it would go a long way to shedding light on what is currently an unresolved debate.

5. Managing for multiple objectives: recreational hunting, population control and range restriction

Hunting is a vital part of any solution, and a management regime with multiple objectives will need to have the support of the major stakeholders, be monitored regularly and be sufficiently flexible and adaptable to be revised in the light of new information. An effective monitoring program should have two elements: capacity for early detection of expansion of deer range, especially into areas of high natural value and sensitivity, such as in the WWHA; and measurement of trends in abundance in established populations. For the former, a simple and low-cost system of surveillance using methods such as remote cameras, augmented by systematic collation of sighting data and (perhaps) targeted aerial survey could be effective. For the latter, a possible approach could be to establish a network of monitoring sites at which dung pellets are recorded using standard methods, following protocols developed by deer managers in New Zealand.

Experience with the management of other introduced animals in Australia and elsewhere suggests the chance of achieving an effective management regime would be greatly improved if it were developed by land management agencies in collaboration with hunters, private landowners and the conservation sectors.

6. References

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From: Christopher Johnson <c.n.johnson@utas.edu.au>
Sent: Thursday, 30 June 2016 10:35 AM
To: DEER
Cc: David Bowman; Ted Lefroy
Subject: submission to Legislative Council Inquiry into wild fallow deer
Attachments: Legislative Council deer submission.pdf

Dear Ms Mannering

I attach a submission to the LC fallow deer inquiry, prepared by myself, Prof David Bowman and Prof Ted Lefroy.

I hope this is of use to the inquiry.

With best wishes

Chris

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