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## The Facts about Hog Deer

**Hog deer: What are they, where are they found; why are they here?** Hog deer (*Axis porcinus*) are small deer standing around 60-65cm at the shoulder and weighing about 35-45kgs. There are two subspecies of *A. porcinus*: *A. porcinus porcinus* and *A. annamiticus*. They are herbivores and will browse shoots, buds, and leaves from young native plants and trees thereby threatening plant species and competing with wallabies for food (Davis, Coulson & Forsyth, 2008) and can cause serious damage to the habitat of native animals such as the threatened long-footed potoroo and southern brown bandicoot (Adam, 2004). The subspecies *Axis porcinus porcinus* were introduced to Australia, including Victoria, in the late 1860s from India and Sri Lanka and subsequently released into the wild. The subspecies is now widespread throughout the southeastern coastal regions of Victoria where they are estimated to be in their thousands (DSE, 2008). Although they have been declared a pest species by the Australian Government (West, 2008; Vertebrate Pests Committee, 2007) they remain protected in Victoria under the Wildlife Act 1975 and are declared to be 'game' by a Governor in Council Order published in the Government Gazette (DSE, 2008). The continuing protection of hog deer for hunting in Victoria is seen by many, including Government scientists, as a very serious threat to our environment and biodiversity (Threatened Species Scientific Committee, 2008; ref dpi Victorian Resources Online, 2008).

**The Australian government encourages greater community awareness of the impacts of hog deer and participation in the management process.** The National Strategy for the Conservation of Australia's Biological Diversity (1996, section 1.2.1) calls for providing mechanisms for genuine community participation and proper assessment and monitoring processes. The Australian Pest Animal Management Strategy (Vertebrate Pests Committee, 2007) has as an objective 'To improve public awareness of pest animals, research coordination and support for pest management' (P. 8, objective 1.3). Furthermore, it has become clear to the FoGL Committee that many people are unaware of hog deer and their impacts on the environment; thus this information paper has been prepared.

**Government declarations of hog deer as pest animals.** The Commonwealth, South Australian and New South Wales Governments all acknowledge that hog deer are pest animals that threaten, or may threaten, native species and biodiversity (West, 2008; Brown, 2008; Adam, 2004; Vertebrate Pests Committee, 2007). Victoria continues to protect hog deer under the Wildlife Act 1975.

**The Australian Government advocates consistent management approaches between Commonwealth, State and Local governments for the conservation of biodiversity, including pest species management** (National Strategy for the Conservation of Australia's Biological Diversity, 1996). It is recognized that Australia's biodiversity and threats to that biodiversity, including pest species such as hog deer, do not respect political boundaries. An integrated approach to pest species in Australia is clearly warranted.

**Hog deer in areas of National, International and Local Significance for biodiversity.** Hog deer are found throughout Gippsland and East Gippsland, including Wilsons Promontory NP, Providence Ponds Flora & Fauna Reserve, Dowdes Morass, The Lakes National Park, Gippsland Lakes Coastal Park, Boole Poole Peninsula. These areas are of national, international and local significance for biodiversity and many of the areas in which hog deer are found are protected under a variety of state, national and international conservation agreements, including the International Ramsar Wetlands agreement. It has been acknowledged by Commonwealth and Victorian Government scientists that extensive grazing, browsing and trampling by deer leads to destruction of sensitive ridges and wetlands (ref dpi Victorian Resources Online, 2008) and threatens critically endangered ecological communities (Threatened Species Scientific Committee, 2008).

For example, littoral rainforest and coastal vine thickets are listed as Critically Endangered by the Department of the Environment, Water, Heritage and the Arts. The Approved Conservation Advice for these areas, as developed under section s266B of the Environmental Protection & Biodiversity Conservation Act (EPBCAct 1999), highlights the threats of trampling, grazing and browsing by deer and lists the following actions, among others, as *highest priority*: On the regional level, development of a management plan for the control and eradication of feral deer, including hog deer; and on the local level, manage known sites in reserves and on private property to exclude feral deer, including hog deer (Threatened Species Scientific Committee, 2008)

**Biodiversity as National Heritage.** Australia's biodiversity is distinctive and many of our ecological communities have a low resistance to external pressures, particularly from invasive species and introduced grazers (State of the Environment 2006, Indicator LD-20 Total grazing pressure). In addition, the Commonwealth Government acknowledges that Australians value Australia's biodiversity both as part of their national heritage and for its own sake (Beeton et al, 2006; Australia State of the Environment 2006, section 5. Biodiversity). In spite of this growth in environmental awareness in recent decades, it is recognized that much of this country's biodiversity faces continual threats from introduced pest species such as hog deer (National Strategy for the Conservation of Australia's Biological Diversity, 1996). We have matured as a nation since deer were protected in Victoria in 1975. It is within this context that we call for the management and protection of this pest species to be reconsidered.

**Gippsland Lakes Coastal Park (GLCP) and the Lakes National Park (LNP) are reserved and managed under the National Park Act.** Park management aims include 'Protect and conserve the natural environment; Maintain biodiversity; Eradicate, or otherwise control, introduced plants, animals and diseases; Protect water catchments and streams' (The LNP & GLCP Management Plan, 1998, p. 3). Contained in the same document is the acknowledgement that 'Management of either Hog Deer habitat or of populations for sustainable hunting is not consistent with management objectives' (p.30)

**There are massive contradictions in purporting to protect the environment and biodiversity on the one hand and failing to control hog deer.** There is substantial evidence that deer damage the environment (Schmidli & Schmidli, 2008; Ellard & Ellard, 2008; EPBCAct 1999; McPherson, 2008; Stephens, 2008; Threatened Species Scientific Committee, 2008; ). There is *no* evidence that they do *not* damage the environment. It appears that little or no Government research has been done on the impact of hog deer despite recognition that proper studies need to be conducted by impartial research organizations on the impact of pest animals, including wild deer, on the environment and their associated social and economic costs to society (McLeod, 2004; Bureau of Rural Sciences, 2008). Both The National Pest Animal Strategy and the Invasive Animals Cooperative Research Centre advocate more research to increase our understanding of the costs of negative environmental impact of pest species (Vertebrate Pests Committee, 2007; West, 2008)

While DSE acknowledge the potential for adverse environmental impacts including grazing and browsing pressure, competing with native wildlife and damaging the environment through antler rubbing (DSE, 2008, p 7) they have failed to conduct any proper studies of the environmental impacts of deer. Why haven't these studies been done? Is it because the studies, if done properly by independent and unbiased researchers, would likely provide strong evidence of the serious damage deer are doing to the environment and biodiversity?

**Grazing/browsing pressure on a fragile environment.** Grazing pressure is a complex issue and it is one of the principal ways in which introduced species can impact on fragile land. Grazing removes groundcover, shrubs and nutrients from the land, and fouls waterholes, with associated loss of biodiversity (Beeton et al, 2006; Australia State of the Environment 2006, Section 5. Biodiversity). The Australian government acknowledges that: *Grazing by introduced herbivores can cause widespread damage through trampling and fouling of waterholes, selective indiscriminate or close grazing of vegetation . . .* (State of the Environment 2006, Indicator LD-20 Total grazing pressure, p.5) and that as grazing pressure increases, the simplification of ecosystems can lead to a decline in species and genetic variability, thereby reducing the overall diversity and resilience of the ecosystem (ibid). Deer hunters would have the public believe that it is kangaroos that cause grazing pressure; however, there is no evidence to support this and some evidence to refute it (Clarke et al, 2000).

**Evidence that deer cause more grazing and browsing damage than do kangaroos.** There is scientific evidence that kangaroos cause much less grazing damage than do introduced species, (State of the Environment 2006. Indicator LD-20 Total grazing pressure, p.3). Furthermore, there are comprehensive, long-term case studies documenting the preferential grazing and browsing that hog deer do on Boole Poole Peninsula compared with kangaroos and wallabies (Ellard & Ellard, 2008; Schmidli & Schmidli 2008) as well as rigorous evidence that browsing pressure from deer in Blond Bay Game Reserve threatens rare plant communities, such as the metallic sun orchid (McPherson 2008).

**Protecting the environment while research on impacts is being conducted: The Precautionary Principle.** The EPBC Act (1999) states that where damage is being done, protective measures should be put into place and pest species controlled while rigorous research is conducted. Furthermore, it is noted that 'lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation'(p. 5) but rather, scientific studies should be launched concurrently with taking protective measures for the environment. The Precautionary Principle is cited *explicitly* in the following legislation:

- Environmental Protection and Biodiversity Conservation Act 1991
- Environmental Protection and Biodiversity Conservation Regulations 2000
- Environmental Planning and Assessment Regulations 2000

**Inappropriateness of spreading deer into areas not previously inhabited.** The Australian Pest Animal Management Strategy (2007) clearly states that it is inappropriate and potentially extremely damaging to the environment and biodiversity to allow pest species into previously pest-free environments. This includes the deliberate stocking of deer for hunting and managing private land to attract deer. There is a proposed plan in Victoria to do just that – manage private land to attract hog deer (DSE, 2008). See Brown (2008) for a detailed analysis of the costs of such a program.

**Recreational shooting is an ineffective management tool to contain pest species, particularly deer.** There is substantial scientific evidence that using recreational shooters to contain deer populations is ineffective. This is for a variety of reasons, including that most hunters will only take a trophy – a stag. This research is rigorously reviewed and critiqued in A Deer Mistake (Brown, 2008). Also, the Department of Sustainability & Environment, in its draft deer management strategy (2008), admits this is a problem resulting in very unbalanced populations of deer with ratios of 6 females to 1 male.

**Hog deer in their native lands.** Some people are under the impression that because hog deer have recently been declared endangered in some of their native lands we therefore need to maintain them here in Australia. This is a view perpetrated by those with vested interests in keeping viable populations of hog deer for hunting in Victoria and it is a view that does not stand up to close examination.

There has been restocking of porcinus porcinus in Jaldapara Wildlife Sanctuary since 1996 (Bahuguna, N.C. & Mallick, J.K., 2000). The protected area network in Kaziranga National Park, Assam, India holds healthy populations of porcinus porcinus (Dept of Environment & Forests, Assam 2008). As well, they have been discovered in Cambodia, are abundant in Nepal and healthy populations exist in Pakistan and Sri Lanka (DSE, 2008).

According to the IUCN Redlist, there are ever-increasing populations of hog deer in their native lands in well-secured protected areas such as Kaziranga. And future declines in the total of animals (A3 and A4) are unlikely to be at rates in the next three generations sufficient for Endangered. . . Currently the areas of occupancy is far too high for listing as Endangered on this criterion, or even, probably, as Vulnerable (Timmins et al 2012).

**Repatriation of pest species to their native lands.** Both the WWF (2007) and the Australian Government (EPBC Act, 1999) have a commitment to offer to relocate pest species to their native countries before eradication here in Australia. We should be asking our politicians to make a concerted effort to implement this strategy and protect our Australian environment and biodiversity from damage by this pest species. It would be a win-win for all countries involved.

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