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## The fallow deer (*Dama* spp.); endangered or not?



### Damhirsche (*Dama* spp.), bedroht oder unbedroht?

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### Abstract

In less than a century, the fallow deer (*Dama* spp.) has moved from almost becoming extinct to becoming one of the most widespread ungulate species in the world. Successful translocations and introductions of the species to novel regions date back to, at least, Phoenician sailors who introduced the fallow deer to locations around the Mediterranean. Since that time, the fallow deer has spread to all continents, accumulating much interest on the impacts of their introduction on other species and vegetation. Whilst the fallow deer is still considered extinct or endangered in its native original habitat, in most areas the species has thrived and adapted successfully, playing an important role in food security and sustainability. On the other hand, the fallow deer is raising environmental concerns in many countries as an invasive species to native cervids and vegetative bio-diversity. A thorough understanding of this is needed in order to establish proper conservation and management recommendations and ensure the fallow deer flourishes within manageable ecosystems. This review reports on the different roles of the fallow deer as an ornamental, hunting and meat producing animal and points out management practises that are missing today to help ensure the species is fully utilised.

**Keywords:** Fallow deer; Endangered species; Game meat; Conservation; Organic meat

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## Introduction

The existence of the fallow deer (*Dama* spp.) can be traced back to at least two millennia (Ludwig et al., 2012). Successful global distribution and adaptation of this species is mainly a result of human involvement and environmental conditions (Maseti, Pecchioli, & Vernesi, 2008). However, major global occurrence of the wild fallow deer is still restricted to southwestern Turkey, and Iran where it is protected (Saltz, 1998; Miller et al., 2014). Protection of the fallow deer in these areas is a result of exploitation by humans, habitat loss and environmental threats in some parts of the world (Masters & Murray, 2015). Currently, only two breeding populations have been identified in the native homeland of the fallow deer and no self-sustaining population has been established as yet according to recent literature (Heidemann, 2010; Miller et al., 2014).

In other parts of the world, the fallow deer has become an important species in game hunting and farming (Kjellander et al., 2012). An estimated five million is the current global statistics of the farmed fallow deer with New Zealand accounting for over half of the global farmed population (Daszkiewicz et al., 2015). In Europe intensive farming of the fallow deer is important as it significantly contributes to the meat industry (Forsyth et al., 2011; Ward et al., 2014). Its journey and entrance into some African countries like South Africa dates back to the 1900's from feral populations that escaped from introductions. Today, its importance and relevance in South Africa is witnessed by the growth in trophy hunting, and more recently game harvesting (Hoffman & Cawthorn, 2013).

Despite the significant economic role the fallow deer plays in many countries, concerns about their impact on vegetative bio diversity has been increasing (Tanentzap, Kirby, & Goldberg, 2012). Some researchers argues that the presence of the fallow deer threatens the existence of vegetative bio-diversity, as they give way to the presence of invading tree forms and erodes rangelands as a result of competing with livestock farming for the same rangelands (Martin, Arcese, & Scheeder, 2011). This review summarizes the origins of the fallow deer, conservation strategies and reports on the role and importance of the species in relation to the ecosystem with relevance to bio-diversity, disease occurrence and transmission between this species and livestock animals.

## Endangered species

An endangered animal species is a term that is commonly used in conservation circles to refer to an animal that is at the brink or at risk of becoming extinct within a defined space or rangeland (Jachowski et al., 2015). Wildlife extinction has often been referred to have been as a result of human expansion and exploitation (Saltz, 1995). Habitat loss due to climate change and competition for food amongst species within an ecosystem, and illegal wildlife hunting are some of the factors that promote species endangerment and extinction (Karsten, 2011; Lacher & Wilkerson, 2013; Cawthorn & Hoffman, 2015). Hunting activities can affect biodiversity through modification of game behaviour, distribution and alteration in prey base of wild carnivores (Mccarthy & Fletcher, 2015). This creates an imbalance and leads to disturbance in species composition. In the case of the fallow deer found in Turkey,

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