

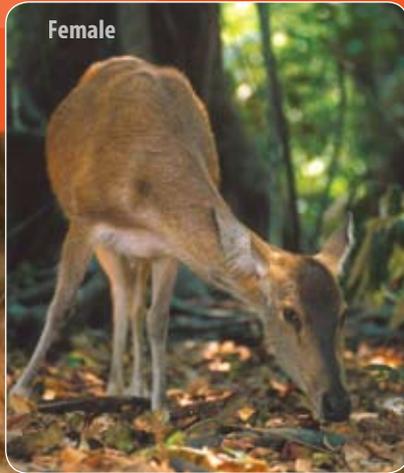


Animal Pest Alert

Rusa Deer

The Rusa Deer (*Cervus timorensis*) is also known as the Timor Deer, Sunda Sambar, Javan Rusa and Moluccan Rusa Deer. It is not native to Australia, but has established populations here as well as in other countries. The Rusa Deer has significant potential to spread further in Australia and become a pest.

NOT NATIVE



Female



Male

PHOTOS: ROD MORRIS



Male

Red Deer

PHOTO: PAUL BROUGH / ALAMY



Male

Sambar Deer

PHOTO: CHRIS WALLACE / ALAMY



Male

Fallow Deer

PHOTO: IMAGES GMBH / ALAMY



Female

PHOTO: ARCO IMAGES GMBH / ALAMY



Female

PHOTO: BLICKWINNEL / ALAMY



Female

PHOTO: BLICKWINNEL / ALAMY

NOT NATIVE

Please report Rusa Deer when seen in new areas (see map) – Freecall 1800 084 881

Rusa Deer

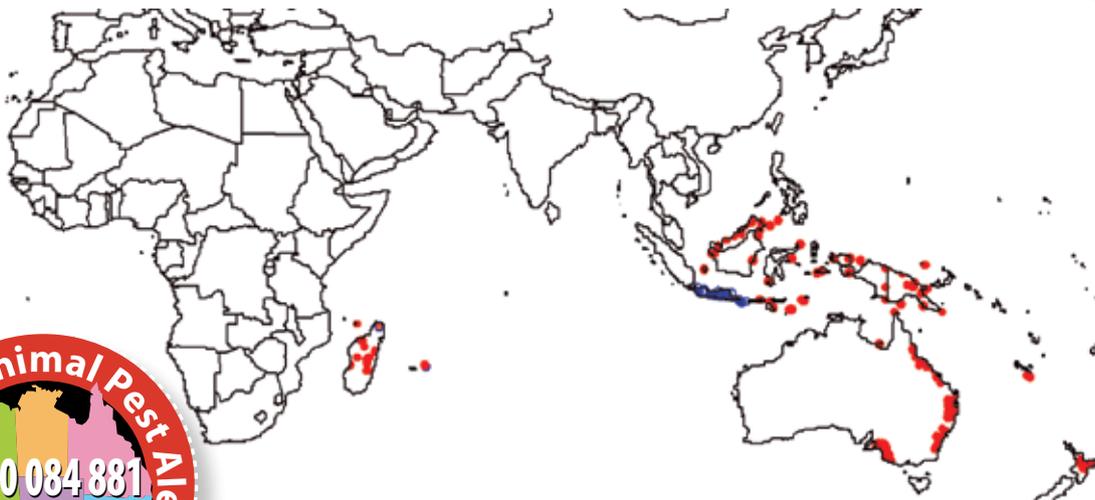


Figure 1. The distribution of the Rusa Deer including natural (blue) and introduced (red) populations.



Description

The Rusa Deer has a head and body length of 142 to 185 cm; a shoulder height of 83 to 109 cm; a tail length of about 20 cm and a weight of 50 to 115 kg. Males are larger than females. The summer coat is sparse and reddish-brown, darker on the rump, lighter on the chest and white around the chin and throat area. In winter the coat becomes greyer in colour and thicker. Rusa calves do not have spots and are reddish-tan in colour with white underparts. Stags (mature breeding males) develop a dark, heavy mane (Figure 5). They have lyre-shaped, three-pointed antlers, 12 to 69 cm along the main antler beam (Figure 2). The antlers of immature males are mere bumps or spikes.

Mistaken identity

In addition to Rusa Deer, five other deer species are established in the wild in Australia: Red, Sambar, Fallow, Hog and Chital. These deer are found in varying numbers around the country. Red and Fallow Deer are the most widely distributed and Sambar Deer are found in the highest densities.

The Red Deer is larger than the Rusa, with a weight of 136 to 158 kg. The summer coat is reddish and in winter greyish-brown, and there is a distinctive light-coloured patch on the rump. Fawns are brown with white spots, but this coat becomes uniform dull brown as they grow. Mature adult males have multi-pointed antlers (usually 6 to 8 points and less frequently 10 to 12).

The Sambar Deer is the largest species in Australia, similar in size to a small cow, with a weight up to 300 kg. The coat is dark brown and the ears are large, rounded and about half the length of the head. The tail is bushy, longer than the tails of Rusa and Red Deer, and is carried raised over the back when the animal is disturbed. Mature males have three-pointed antlers, slightly longer than those of Rusa Deer.

The Fallow Deer is similar in size to a large domestic goat, with a weight of 50 to 110 kg. The coat varies widely in colour, but the most common are fawn or black, with large

white spots. It also has distinctive white markings on the tail and buttocks. Like the Sambar Deer, its tail is raised over its back if the animal is disturbed. Mature males have multi-pointed, palm-like antlers that look very different to those of other species.

Distribution

The Rusa Deer is uncommon in its natural range, which is considered to be the Indonesian islands of Java and Bali (Figure 1).

Introduced populations also occur in Indonesia, on the Lesser Sunda Islands, the Moluccas, Sulawesi, Kalimantan, West Timor, Flores, Obi, Ambon and Irian Jaya. Elsewhere feral herds occur on East Timor, Papua New Guinea (including the island of New Britain), New Caledonia, Madagascar (possibly now extinct), Mauritius, the Comoro Islands, and New Zealand.



Figure 2. Rusa Deer stag on Peucang Island (western tip of Java, Indonesia) showing the lyre-shaped antlers (photo: Rod Morris).

Please report Rusa Deer when seen in new



Figure 3. Rusa Deer are adaptable mixed feeders (photo: Rod Morris).

In Australia the Rusa Deer is established in the wild on islands and the mainland. It is found on Horsburgh Island in the Cocos (Keeling) group, Groote Eylandt in the Northern Territory and islands in the Torres Strait. On the mainland it has a patchy distribution along the eastern and southern seaboard, ranging from the central coast of Queensland to Adelaide in South Australia. Some feral animals have also been reported in the south-west of Western Australia. The best known feral herd is in Royal National Park, New South Wales, where around 3 000 animals are present.

Habitat

The Rusa Deer occupies a range of habitats including light forests, woodlands, parklands, plantations, open plains, swamps and grasslands that are subject to flooding. Favoured habitat is grassy plains surrounded by dense bush or woodland that provides protection and a refuge close to feeding areas. In Royal National Park, the species lives in open areas of grassland and in adjoining semi-suburban parts of southern Sydney.

Reproduction, food and behaviour

Rusa Deer can breed throughout the year, but in Australia mating usually occurs from June to August (later in the Torres Strait), with usually a single calf born the following March to May. To intimidate rivals during the breeding season (or rut), Rusa stags entangle bundles of vegetation in their antlers or thrash the antlers through trees and shrubs. During the rut, temporary mixed-sex groups occur, but at other times male Rusa Deer live alone or in small all-male groups.

The Rusa Deer is semi-nocturnal, preferring to remain under cover during the day. However, it also spends time sunning itself on ridge clearings. It has been reported to swim occasionally in the sea, and to eat certain seaweeds. Vocalisations include an alarm bark, and stags make a shrill roaring.

Being an adaptable mixed feeder, Rusa Deer can graze and browse a wide range of plants depending on the season and

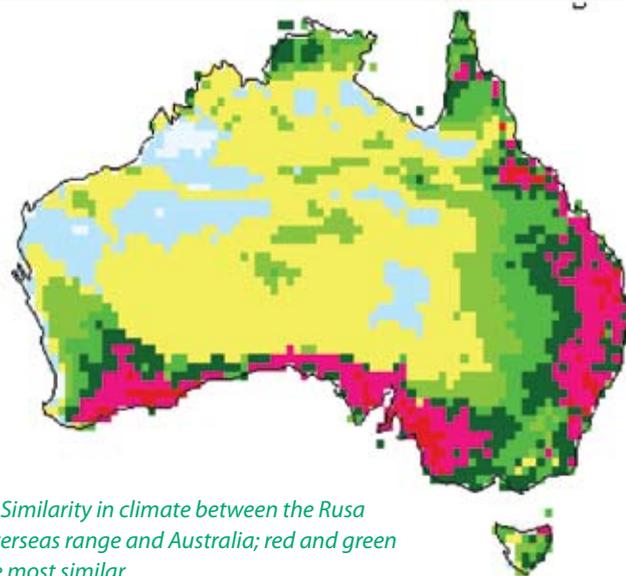


Figure 4. Similarity in climate between the Rusa Deer's overseas range and Australia; red and green areas are most similar.

food availability (Figure 3). The diet includes grass, shrubs, herbs, leaves, young shoots (including sugar cane), tips of bracken fern, flax, clover and the new growth of stinging nettles. Farm pasture is consumed as well as root crops such as carrot and swede.

Rusa Deer can live as long as 15 years in the wild and up to 21 years in captivity.

Damage by the Rusa Deer

Like other deer species, the Rusa Deer causes agricultural damage. It damages crops, cultivated plants and native flora in New Caledonia, and is reported to damage a wide variety of crops and pastures in Australia. It also harasses and competes with grazing livestock.

In several countries the Rusa Deer is considered an environmental pest, causing damage to forests, grasslands and swamplands through grazing of native flora and soil compaction. This damage results in changes to vegetation type and has a negative impact on native species such as ground-nesting birds.



Figure 5. Fully mature male Rusa Deer develop dark, heavy manes like this stag with two females (photo: Rod Morris).

Rusa Deer



Some conservation reserves are damaged by introduced populations of Rusa Deer through overgrazing, browsing, trampling, ring-barking, antler rubbing and dispersal of weed seeds (such as Senegal Tea). Other damage occurs when the deer create trails through reserves or when exposed soils become subject to erosion, with subsequent degradation of water quality in creek and river systems.

In Royal National Park 155 species of native plants including trees, shrubs, creepers, ferns, orchids and sedges are grazed by Rusa Deer. As a result two endangered and nine vulnerable plant species are under threat in the park. Native animals are also affected by the presence of deer in some areas. For example wallabies and the deer compete for grazing resources, with one Rusa equivalent to about four wallabies.

Rusa Deer can spread the exotic blood parasite *Trypanosoma evansi* that causes Surra, a disease of cattle, deer, sheep and goats, and which is also often fatal to dogs, cats, horses, donkeys and mules. The parasite is common in Asia and it could have disastrous impacts on our extensive grazing industries if introduced into Australia. Recent laboratory studies have found that kangaroos and wallabies are also highly susceptible to this disease.

Motor vehicle collisions with feral Rusa Deer in the Sydney area have resulted in the death of one person and serious injury to others.

Control programs for feral deer including Rusa are carried out in Queensland, the Northern Territory and New South Wales. These programs aim to remove and/or decrease the numbers of deer in the wild and to minimise the damage they cause. In Western Australia, South Australia and Victoria feral deer are sometimes removed by shooters (licences are required in some states).

Potential to be a pest in Australia

The Rusa Deer is rated as being highly likely to establish further populations in Australia and to become a greater pest of agriculture, the environment and public amenity.

A scientific risk assessment conducted by the Department of Agriculture and Food in Western Australia and endorsed by the national Vertebrate Pests Committee indicates that the Rusa Deer poses an extreme threat (the highest of four categories) to Australia. Part of the assessment showed that the climates of this deer's overseas range and Australia are similar (Figure 4).

Further Rusa populations could threaten biodiversity in Australia including grazing marsupials, ground-nesting birds

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and swampland plants. Agricultural crops that could be at risk include oilseeds, grains, sugar cane, vegetables and other horticultural crops. The species could also compete further with livestock, and become a greater hazard to road traffic and, hence, to people.

Deer in the wild

The Rusa Deer is prohibited in Tasmania, a declared feral species in the Northern Territory, a declared pest in Western Australia, and is likely to be declared a Class 2 pest in Queensland outside its historical range. In New South Wales it is classed as a game animal as well as a 'key threatening species' and control programs are carried out to reduce numbers. In South Australia the release of Rusa Deer is prohibited and control of animals in the wild is required. The Rusa Deer is not known in the wild in Victoria but is classed as 'protected wildlife' and a game species.

In addition to being considered a trophy or game animal, in some jurisdictions the species is managed as a livestock animal in what is sometimes a fluctuating market. As a result, Rusa Deer often escape and/or are deliberately released into the wild or translocated to other areas. The most recent reports of feral Rusa Deer have been from the south-west of Western Australia and the Wet Tropics Bioregion in Queensland.

Risk management

To help prevent Rusa Deer from establishing new populations in the wild and spreading in Australia, it is essential that they are maintained in secure enclosures. Unwanted animals should not be released. Any seen in the wild outside their current distribution in New South Wales, Queensland and the Australian Capital Territory (see Figure 1), and anywhere in Western Australia, South Australia, Victoria, Tasmania and the Northern Territory should be reported to the nearest relevant government department or wildlife authority so that appropriate action can be taken.

Acknowledgments

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Department of
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