

Feral fallow deer

Dama dama



Originally introduced in the 19th century from Europe and Asia as game animals by European settlers, Australia is now home to six species of deer; fallow, red, chital, hog, rusa and sambar. Queensland is home to four of the six species; fallow, red, chital and rusa.

While deer continue to be farmed for venison, the wild populations are causing significant environmental damage. They can damage crops, pastures and forestry plantations and compete with livestock for pasture. Feral deer can alter the structure and composition of endangered ecological communities, cause erosion and spread weed seeds. They stray onto roads becoming traffic hazards and may cause motor vehicle accidents in rural and urban areas.

Legal requirements

Feral fallow deer is a restricted invasive animal under the *Biosecurity Act 2014*. It must not be moved, fed, given away, sold, or released into the environment without a permit.

The Act requires everyone to take all reasonable and practical steps to minimise the risks associated with invasive plants and animals under their control. This is called a general biosecurity obligation (GBO). This fact sheet gives examples of how you can meet your GBO.



At a local level, each local government must have a biosecurity plan that covers invasive plants and animals in its area. This plan may include actions to be taken on certain species. Some of these actions may be required under local laws. Contact your local government for more information.

An animal ceases being considered an invasive restricted animal (feral) if a person is keeping it in a deer proof enclosure and has become a registerable biosecurity entity (RBE) to keep that designated animal. Feral fallow deer can be considered as designated animals if a person keeps them. Generally the minimum escape proof enclosure for farmed deer or an exclusion fence for feral deer is a well maintained high netting fence or equivalent. An example of an effective deer fence is one that is 2.1 m high, has strainers and posts made of heavy duty material such as hardwood or metal that are set deeply into the ground and no more than 9 m apart.

The netting would be 17/190/15 or 13/190/30 for red deer, supported by well strained top, bottom and belly wires and pegged securely to the ground. Gates would be of similar standard and the same height. Fence lines should preferably be cleared to minimise trees falling on the fence. Note that this is an example only and fence construction should be appropriate for the individual circumstances.

Description

Fallow deer come in four colour varieties ranging from white to black. Their most common colour is tan or fawn with white spotting on the flanks and a white rump patch outlined with a black horseshoe pattern.

Adult bucks stand up to 90 cm at the shoulder, does around 80 cm. Adult bucks weigh around 90 kg, does around 45 kg.

Male antlers are flattened and palmate with numerous points, and up to 70 cm long.

Life cycle

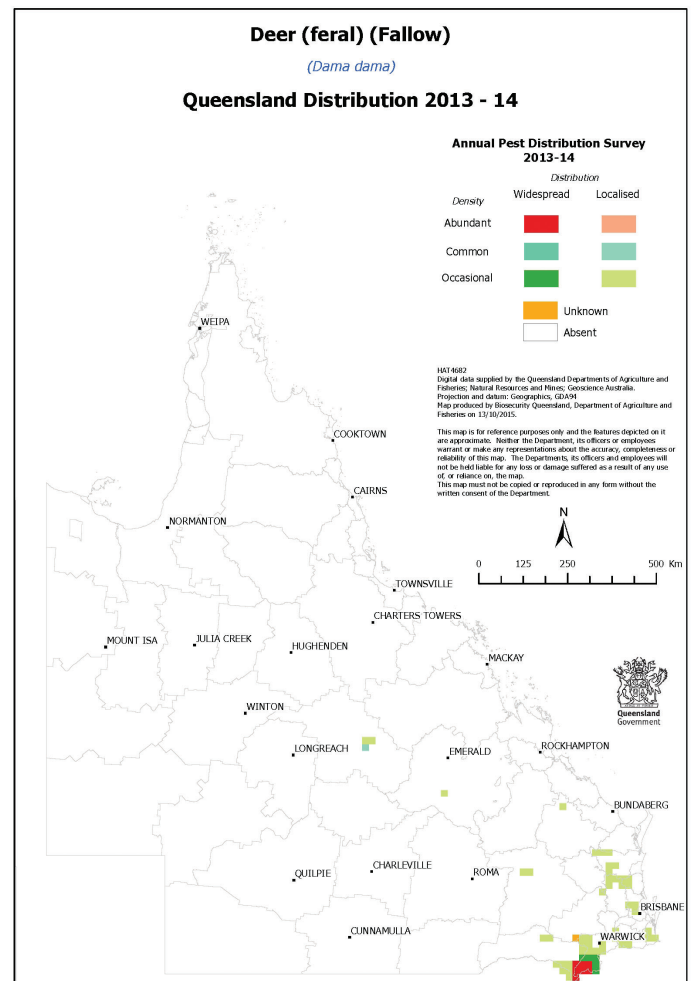
Mature bucks live apart from the does until the start of the rut. The breeding season usually begins in April and lasts six to eight weeks, with males remaining aggressive until early August. The gestation period is about 230 days and females usually produce a single fawn.

Males take possession of a territory and mark the boundaries by thrashing vegetation and making shallow scrapes with their forefeet. They utter a hoarse rattling sound to call females in oestrus to the territory.

Habitat and distribution

Fallow deer are native to Iran and Iraq but were introduced to Europe in Roman times. They are the common park deer of England. Fallow deer were the first species of deer to become established in Australia.

Map 1. Distribution of feral fallow deer in Queensland



In Queensland, fallow deer were successfully released at Westbrook and Warwick on the Darling Downs between 1870 and 1872. The Pikedale population, south-west of Warwick, is now the major wild fallow deer herd in Queensland. The herd numbers around 2800 and is broadly contiguous with larger numbers of fallow deer on the New England Tableland in New South Wales.

In recent years, five other fallow populations in Queensland have been identified, three originating from deer farm escapes (two in southern Queensland and one near Rockhampton) and two from translocations (one in southern Queensland and one in the Wide Bay area). These herds are all estimated to number fewer than 100 animals.

Southern Queensland is close to the northern limit of suitable habitat for fallow deer in Australia. However, the species could expand its range in southern border areas if translocations continue.

Fallow deer are normally found in groups of three or four in quite dense habitat, but large groups occur in open country. They are most active at dawn and dusk. When alarmed, they display a bouncy gait.

Predominately grazers with a preference for improved pasture, fallow deer will browse acacia, blackberry and the tips of rushes and bracken. They prefer open, grassy glades in forest, with dense understorey a favoured retreat.

Impacts

Production losses

Feral deer are opportunistic and highly adaptable feeders that both graze and browse. Their diet is largely determined by what is locally available, but because they require a diet twice as high in protein content than cattle—and with significantly higher quantities of digestible vegetable matter—they will normally feed selectively on the highest quality plants in a pasture. Because of this, deer can impose substantial costs on primary producers.

Feral deer have been reported to cause damage to a wide variety of agricultural crops, pastures and forestry plantations through competition with cattle and other livestock for pasture.

Other impacts on rural enterprises include damage to fences, spreading of weeds and fouling of water holes.

Parasites and diseases

Feral deer are susceptible to exotic livestock diseases including foot-and-mouth disease, rinderpest, vesicular stomatitis, rabies and blue tongue. Unchecked, wild herds could play a major role in the spread of infection and act as a reservoir if these diseases are introduced to Australia.

Feral deer are also susceptible to a number of diseases and parasites currently in Australia including cattle tick, leptospirosis and ovine and bovine Johne's disease.

The main concern is the cost in lost livestock production or the spread of disease to free areas (e.g. bovine Johne's disease). However, some of the diseases and parasites also have significant implications for human health.

Environmental impacts

Because deer are large animals they are capable of damaging native vegetation by browsing and trampling understorey and seedling plants, and ring-barking young trees.

Deer are also selective feeders. Over time, their browsing will influence the variety and abundance of native plant species. A significantly lower diversity and abundance of plant species is evident in environments where deer densities are high.

Feral deer can significantly impact ecologically fragile areas and have the potential to eliminate threatened plant species from an area.

Other environmental damage attributable to wild deer is the fouling of waterholes, the spreading of weeds, overgrazing causing erosion (and the subsequent degradation of water quality in creek and river systems).

Social impacts

Fallow deer occur in both rural and peri-urban areas of south-east Queensland. Grazing deer may damage parks, residential gardens and fences in outer urban areas. In some areas, orchards and other horticultural enterprises may suffer considerable damage. Where close to major roads, wandering deer represent a serious traffic hazard and may cause motor vehicle accidents.

There is also the potential threat to human health of rutting stags, particularly in peri-urban areas where deer may become habituated to people.

Beneficial considerations

Fallow deer can be trapped for the wild venison trade in accordance with Food Safety Standards. Trapping deer to use as foundation stock for a farmed herd is less viable due to the animal welfare and human safety aspects of handling feral deer.

Recreational deer hunting

The cost of deer control may be minimised by enlisting or utilising commercial or recreational hunters to assist in the control. Landholders wishing to engage a third party to assist in deer control on their property should carefully consider a number of points before allowing access to their property, including conditions of access, public liability insurance, and references.

Control

Manging feral fallow deer

The GBO requires a person to take reasonable and practical steps to minimise the risks posed by feral fallow deer. This fact sheet provides information and some options for controlling feral fallow deer.

In many case, deer control is best done as a joint exercise, involving all land managers in the district. Local governments and landcare groups can assist coordinating efforts.

Prevention and early detection

The first and most effective step to managing the impacts of deer in Queensland must be to prevent more deer entering the wild.

Thirty-five per cent of all current feral deer populations have resulted from deer farm escapes or releases, with a significant percentage of the remaining populations resulting from the deliberate translocation of deer.

Under Queensland legislation, the release or translocation of feral fallow deer is prohibited. Farmed deer and deer in game parks must be contained in deer-proof fences and it is the responsibility of the owner to ensure that deer are contained. Failure to do so is a breach of the Act.

Shooting

Shooting must be carried out by trained personnel with appropriated firearms licenses. Shooters must possess the necessary skill and judgment to kill deer with a single shot. Lactating females should not be shot, but, if they are inadvertently shot, efforts should be made to find the young and euthanase them.

Ground shooting

Although time consuming and labour intensive, ground shooting is considered to be the most effective and humane technique currently available for reducing wild deer populations. Such shooting is usually done at night from a vehicle, with the aid of spotlights.

Helicopter shooting

Helicopter shooting is effective in inaccessible areas such as broadacre crops, swamps and marshes. However, most new deer populations in Queensland are at comparatively low densities and in areas of thick cover and therefore helicopter shooting is unlikely to be an economic option. This form of control also risks disturbing and dispersing the deer population.

Fencing

Generally the minimum escape proof enclosure for farmed deer or an exclusion fence for feral deer is a well maintained high netting fence or equivalent. An example of an effective deer fence is one that is 2.1 m high, has strainers and posts made of heavy duty material such as hardwood or metal that are set deeply into the ground and no more than 9 m apart.

The netting would be 17/190/15 or 13/190/30 for feral fallow deer, supported by well strained top, bottom and belly wires and pegged securely to the ground. Gates would be of similar standard and the same height. Fence lines should preferably be cleared to minimise trees falling on the fence.

Note that this is an example only and fence construction should be appropriate for the individual circumstances.



Trapping

Trapping may be an option for deer control in some circumstances. The simplest form of trapping for deer involves a self-mustering trap. Deer may also be trapped in clover traps.

Traps must be monitored closely and deer should be promptly tranquilised or euthanased after trapping. Deer mortalities of 3–7 per cent post-trapping have been recorded in US studies and animal welfare issues must be considered in using this method.

Further information

Further information is available from your local government office, or by contacting Biosecurity Queensland on 13 25 23 or visit biosecurity.qld.gov.au.



This fact sheet is developed with funding support from the Land Protection Fund.

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Feral red deer

Cervus elaphus



Originally introduced in the 19th century from Europe and Asia as game animals by European settlers, Australia is now home to six species of deer; fallow, red, chital, hog, rusa and sambar. Queensland is home to four of the six species; fallow, red, chital and rusa.

While deer continue to be farmed for venison, the wild populations are causing significant environmental damage. They can damage crops, pastures and forestry plantations and compete with livestock for pasture.

Feral red deer can alter the structure and composition of endangered ecological communities, cause erosion and spread weed seeds. They stray onto roads becoming traffic hazards and may cause motor vehicle accidents in rural and urban areas.



Legal requirements

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Description

Feral red deer have a glossy reddish-brown to brown summer coat, while mature red deer show a straw-coloured rump patch.

Adult stags stand up to 120 cm at the shoulder, while adult hinds stand up to 100 cm at the shoulder. Stags weigh up to 220 kg, hinds up to 100 kg. Stags develop a mane during winter and the best trophy stags have antlers with six or more points on each side.

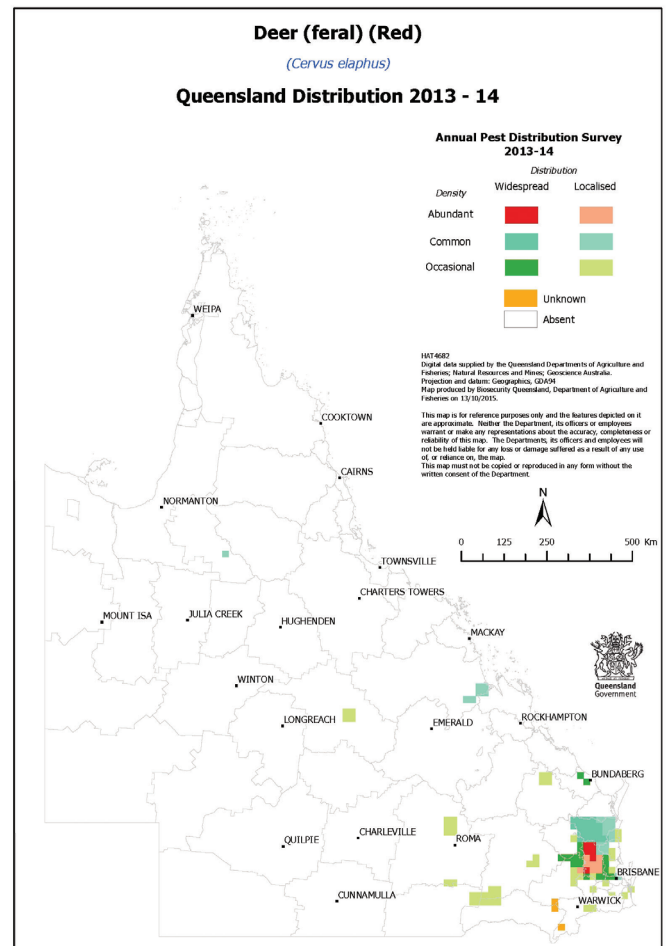
Life cycle

Mature stags live apart from the hinds until the start of the rut. They are most active at dawn and dusk. Their preferred habitat is open, grassy glades in forests.

The mating season (the rut) is from March to April. Mature males compete to gather harems of females and hold them against rivals.

Calves are born from late November to December. The gestation period is about 233 days, and the females usually give birth to a single calf. At birth the coats of calves are reddish brown with distinct white spots.

Map 1. Distribution of feral red deer in Queensland



The white spots gradually fade and disappear in about three months.

Habitat and distribution

Red deer are native to Eurasia—the traditional continents of Europe and Asia. They were released in 1873 and 1874 by the Queensland Acclimatisation Society with the consent of the Queensland Government. The original animals were a gift from Queen Victoria to provide ‘... additional food and sport’ for the people of the state. The initial release of six hinds and three stags occurred at Cressbrook near Esk.

Red deer are concentrated throughout the upper reaches of the Brisbane River valley and into the headwaters of the Mary and Burnett rivers. It is estimated that there are around 10 000 to 15 000 red deer in this area of south-east Queensland. Regular sightings suggest that the species is expanding its range into environments contiguous with the core red deer area, including into the outer suburbs of Brisbane.

Two other red deer populations in Queensland have been established by translocations—one (with a population of fewer than 100 animals) in the Rockhampton region and another (with a population between 100 and 500) in the Roma–Injune–Mitchell area.

A large part of southern Queensland appears to offer suitable habitat for red deer. In the past, it was considered that agricultural activity on the boundaries of the

traditional red deer range formed an effective barrier to further expansion. However, the recent assisted dispersal of red deer sounds a note of caution.

Impacts

Production losses

Feral deer are opportunistic and highly adaptable feeders that both graze and browse. Their diet is largely determined by what is locally available, but because they require a diet twice as high in protein content as cattle—and with significantly higher quantities of digestible vegetable matter—they will normally feed selectively on the highest quality plants in a pasture. Because of this, deer can impose substantial costs on primary producers.

Feral deer have been reported to cause damage to a wide variety of agricultural crops, pastures and forestry plantations through competition with cattle and other livestock for pasture.

Other impacts on rural enterprises include damage to fences, spreading of weeds and fouling of water holes.

Parasites and diseases

Feral deer are susceptible to exotic livestock diseases including foot-and-mouth disease, rinderpest, vesicular stomatitis, rabies and blue tongue. Unchecked, wild herds could play a major role in the spread of infection and act as a reservoir if these diseases are introduced to Australia.

Wild deer are also susceptible to a number of diseases and parasites currently in Australia including cattle tick, leptospirosis and ovine and bovine Johne's disease.

The main concern is the cost in lost livestock production or the spread of disease to free areas (e.g. bovine Johne's disease). However, some of the diseases and parasites also have significant implications for human health.

Environmental impacts

Because deer are large animals, they are capable of damaging native vegetation by browsing and trampling understorey and seedling plants, and ring-barking young trees.

Deer are also selective feeders. Over time, their browsing will influence the variety and abundance of native plant species. A significantly lower diversity and abundance of plant species is evident in environments where deer densities are high.

Feral deer can significantly impact ecologically fragile areas and have the potential to eliminate threatened plant species from an area.

Other environmental damage attributable to wild deer is the fouling of waterholes, the spreading of weeds, overgrazing causing erosion (and the subsequent degradation of water quality in creek and river systems).

Social impacts

Red deer occur in both rural and peri-urban areas of south-east Queensland. Grazing deer may damage parks, residential gardens and fences in outer urban areas. Where

close to major roads, wandering deer represent a serious traffic hazard and may cause motor vehicle accidents.

There is also the potential threat to human health of rutting stags, particularly in peri-urban areas where deer may become habituated to people.

Beneficial considerations

Red deer can be trapped for the wild venison trade in accordance with Food Safety Standards. Trapping deer to use as foundation stock for a farmed herd is less viable due to the animal welfare and human safety aspects of handling feral deer.

Recreational deer hunting

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Control

Managing feral red deer

The GBO requires a person to take reasonable and practical steps to minimise the risks posed by feral red deer. This fact sheet provides information and some options for controlling feral red deer.

In many cases, deer control is best done as a joint exercise, involving all land managers in the district. Local governments and landcare groups can assist coordinating efforts.

Prevention and early detection

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Thirty-five percent of all current wild deer populations have resulted from deer farm escapes or releases, with a significant percentage of the remaining populations resulting from the deliberate translocation of deer.

Under Queensland legislation, the release or translocation of wild red deer is prohibited. Farmed deer and deer in game parks must be contained in deer-proof fences and it is the responsibility of the owner to ensure that deer are contained. Failure to do so is a breach of the legislation.

Shooting

Shooting must be carried out by trained personnel with appropriated firearms licenses. Shooters must possess the necessary skill and judgment to kill deer with a single shot. Lactating females should not be shot, but, if they are inadvertently shot, efforts should be made to find the young and euthanase them.

Ground shooting

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humane technique currently available for reducing feral deer populations. Such shooting is usually done at night from a vehicle, with the aid of spotlights.

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Fencing

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Trapping

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Traps must be monitored closely and deer should be promptly euthanased after trapping. Deer mortalities of 3–7 per cent post-trapping have been recorded in United States studies and animal welfare issues must be considered in using this method.

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Feral rusa deer

Cervus timorensis



Originally introduced in the 19th century from Europe and Asia as game animals by European settlers, Australia is now home to six species of deer; fallow, red, chital, hog, rusa and sambar. Queensland is home to four of the six species; fallow, red, chital and rusa.

While deer continue to be farmed for venison, the wild populations are causing significant environmental damage. They can damage crops, pastures and forestry plantations and compete with livestock for pasture. Feral deer can alter the structure and composition of endangered ecological communities, cause erosion and spread weed seeds. They stray onto roads becoming traffic hazards and may cause motor vehicle accidents in rural and urban areas.

Legal requirements

Feral rusa deer is a restricted invasive animal under the *Biosecurity Act 2014*. It must not be moved, fed, given away, sold, or released into the environment without a permit. The Act requires everyone to take all reasonable and practical steps to minimise the risks associated with invasive plants and animals under their control. This is called a general biosecurity obligation (GBO). This fact sheet gives examples of how you can meet your GBO.



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The netting would be 17/190/15 or 13/190/30 for red deer, supported by well strained top, bottom and belly wires and pegged securely to the ground. Gates would be of similar standard and the same height. Fence lines should preferably be cleared to minimise trees falling on the fence. Note that this is an example only and fence construction should be appropriate for the individual circumstances.

Description

Rusa deer have a greyish to yellowish or reddish-brown coat, which is darker brown on their hindquarters and thighs. Their body hair is coarse and stags develop a mane during winter.

Stags stand up to 110 cm, hinds up to 95 cm. Stags weigh about 120 kg, hinds up to 80 kg.

Stags have three tined antlers with the beams forming a characteristic lyre shape.

Life cycle

During the rut, rusa stags 'plough' vegetation and amass bundles of greenery on their antlers.

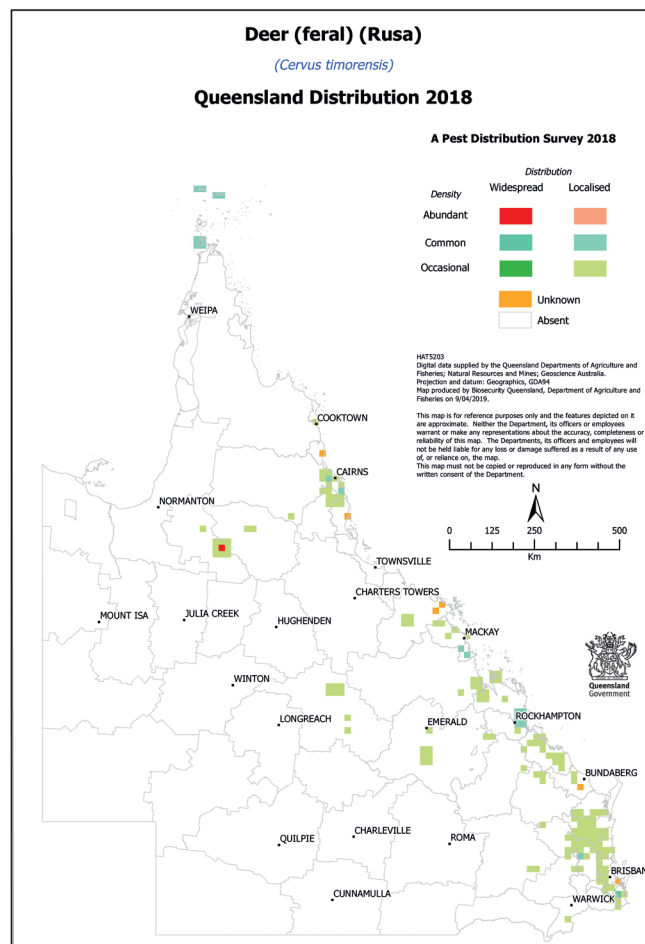
Rutting may take place at any time but the tendency is for breeding from June to October. Most fawns are born in March and April. In good seasonal conditions hinds may produce three calves in two years.

The gestation period is about 252 days and females usually give birth to a single calf, occasionally twins. Rusa calves do not have spots and are reddish-tan in colour with white underparts.

Habitat and distribution

Rusa deer are native to Asia. Indonesian rusa deer were introduced to Friday Island in the Torres Strait in 1912. The deer later swam or were transported to other islands including Prince of Wales Island which now supports the major population. The original Torres Strait population is estimated to be at least 500 animals but may be substantially higher.

Map 1. Distribution of feral rusa deer in Queensland



In recent years, at least six other rusa populations established by translocations have been identified. Three of these are in areas around Townsville and Rockhampton, and three are in southern Queensland, including a population located near Stanthorpe. The Rockhampton and Stanthorpe populations are estimated at between 100 and 500 animals. The remaining populations are estimated to number fewer than 100 animals. However, populations in more remote areas may exceed these estimates.

Rusa have been translocated to the traditional chital deer range around Charters Towers. There are also anecdotal reports of 600 rusa being released into a flood plain environment in the Gulf. Given the suitability of the environment, observed reproduction rates suggest that such a herd could number 3000 within five years.

Because rusa is a tropical species, much of coastal Queensland and adjacent areas would be suitable rusa habitat.

They prefer grassy plains bordered by dense brush or woodlands to which they can retire during daylight hours. They are preferential grazers of grass, but also browse depending on season and availability of food.

Rusa are gregarious and form herds. They are seminocturnal, preferring to remain under cover during the day. However, they also spend time sunning themselves on ridge clearings. They have been reported to occasionally swim in the sea, and to eat certain seaweeds.

Impacts

Production losses

Feral deer are opportunistic and highly adaptable feeders that both graze and browse. Their diet is largely determined by what is locally available, but because they require a diet twice as high in protein content as cattle—and with significantly higher quantities of digestible vegetable matter—they will normally feed selectively on the highest quality plants in a pasture. Because of this, deer can impose substantial costs on primary producers.

Feral deer have been reported to cause damage to a wide variety of agricultural crops, pastures and forestry plantations through competition with cattle and other livestock for pasture.

Other impacts on rural enterprises include damage to fences, spreading of weeds and fouling of water holes.

Parasites and diseases

Feral deer are susceptible to exotic livestock diseases including foot-and-mouth disease, rinderpest, vesicular stomatitis, rabies and blue tongue. Unchecked, wild herds could play a major role in the spread of infection and act as a reservoir if these diseases are introduced to Australia.

Of particular concern is the potential for rusa deer in the Torres Strait to spread the exotic blood parasite *Trypanosoma evansi* that causes surra—a disease causing acute, often fatal, illness in livestock. Surra occurs widely in South-East Asia and has probably already reached Irian Jaya as a result of livestock movements within Indonesia. There is a significant risk of surra reaching Australia in the same way as screw-worm fly—through the Torres Strait, assisted by rusa (and pigs) on the Torres Strait islands and in the Gulf.

Feral deer are also susceptible to a number of diseases and parasites currently in Australia including cattle tick, leptospirosis and ovine and bovine Johne's disease.

The main concern is the cost in lost livestock production or the spread of disease to free areas (e.g. bovine Johne's disease). However, some of the diseases and parasites also have significant human health issues.

Environmental impacts

Deer are comparatively large animals capable of damaging native vegetation by browsing and trampling understorey and seedling plants, and ring-barking young trees.

Deer are also selective feeders. Over time, their browsing will influence the variety and abundance of native plant species. A significantly lower diversity and abundance of plant species is evident in environments where deer densities are high.

Feral deer can significantly impact ecologically fragile areas and have the potential to eliminate threatened plant species from an area.

Other environmental damage attributable to wild deer is the fouling of waterholes, the spreading of weeds, overgrazing causing erosion (and the subsequent degradation of water quality in creek and river systems).

Social impacts

Rusa deer are established in both rural and peri-urban areas of Queensland. Grazing deer may damage parks, residential gardens and fences in outer urban areas. Where close to major roads, wandering deer represent a serious traffic hazard and may cause motor vehicle accidents.

There is also the potential threat to human health of rutting stags, particularly in peri-urban areas where deer may become habituated to people.

Beneficial considerations

Rusa deer can be trapped for the wild venison trade in accordance with Food Safety Standards. Trapping deer to use as foundation stock for a farmed herd is less viable due to the animal welfare and human safety aspects of handling feral deer.

Recreational deer hunting

The cost of deer control may be minimised by enlisting or utilising commercial or recreational hunters to assist in control. Landholders wishing to engage a third party to assist in deer control on their property should carefully consider a number of points before allowing access to their property, including conditions of access, public liability insurance and references

Control

Managing feral rusa deer

The GBO requires a person to take reasonable and practical steps to minimise the risks posed by feral rusa deer. This fact sheet provides information and some options for controlling rusa.

In many cases, deer control is best done as a joint exercise, involving all land managers in the district. Local governments and landcare groups can assist coordinating efforts.

Prevention and early detection

The first and most effective step to managing the impacts of deer in Queensland must be to prevent more deer entering the wild.

Thirty-five per cent of all current feral deer populations have resulted from deer farm escapes or releases, with a significant percentage of the remaining populations resulting from the deliberate translocation of deer.

Under Queensland legislation, the release or translocation of feral rusa deer is prohibited. Farmed deer and deer in game parks must be contained in deer-proof fences and it is the responsibility of the owner to ensure that deer are contained. Failure to do so is a breach of legislation.

Shooting

Shooting must be carried out by trained personnel with appropriated firearms licenses. Shooters must possess the necessary skill and judgment to kill deer with a single shot. Lactating females should not be shot, but if they are inadvertently shot, efforts should be made to find the young and euthanase them.

Ground shooting

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Helicopter shooting

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Generally the minimum escape proof enclosure for farmed deer or an exclusion fence for feral deer is a well maintained high netting fence or equivalent. An example of an effective deer fence is one that is 2.1 m high, has strainers and posts made of heavy duty material such as hardwood or metal that are set deeply into the ground and no more than 9 m apart.

The netting would be 17/190/15 or 13/190/30 for rusa deer, supported by well strained top, bottom and belly wires and pegged securely to the ground. Gates would be of similar standard and the same height. Fence lines should preferably be cleared to minimise trees falling on the fence.

Note that this is an example only and fence construction should be appropriate for the individual circumstances.

Trapping

Trapping may be an option for deer control in some circumstances. The simplest form of trapping for deer involves a self-mustering trap. Deer may also be trapped in clover traps.

Traps must be monitored closely and deer should be promptly tranquilised or euthanased after trapping. Deer mortalities of 3–7% post-trapping have been recorded in US studies and animal welfare issues must be considered in using this method.

Further information

Further information is available from your local government office, or by contacting Biosecurity Queensland on 13 25 23 or visit biosecurity.qld.gov.au.



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