

Invasive plants and animals

## Dingoes in Queensland

- distribution and ecology

**DECLARED CLASS 2**



The dingo (*Canis lupus dingo*) is a primitive canid related to wolves and coyote. The dingo was not a part of the ancestral fauna of Australia. Though its origins are not clear, it is thought to have arrived in Australia 3 500–4 000 years ago.

It is the largest mammalian carnivore remaining in mainland Australia, and as such fills an important ecological niche. Females weigh about 12 kg and males 15 kg.

The dingo has been regarded as a serious predator of domestic stock since early European settlement in Australia. Early research emphasis was on control, indeed eradication of the dingo. No attempt was made to study the animal, measure predation, or to understand why the problem existed.

Under the *Land Protection (Pest and Stock Route Management) Act 2002* the dingo/wild dog is a declared animal, and it is the responsibility of landholders to reduce the number of dingoes/wild dogs on their property.

## Description

Red, ginger and sandy-yellow are the dominant coat colours, though dingoes can also be pure white, black and tan or solid black.

It is not difficult to distinguish between most dingoes and hybrids. The presence of domestic genes is suggested by broken colours eg. brindling and patchiness in the normally pure white feet and chest patch and sable colouration (black hairs along the back and sides).

Dingoes have a more heavily boned skull and larger teeth (especially the canine) than domestic dogs of similar size.

## Distribution

Dingo numbers are believed to be higher today than in pre-European times. This is thought to be due to increased food availability via the introduced rabbit and cattle carcasses, and the development of permanent waters in arid areas of the state.

Dingoes/wild dogs are now present in all parts of the State.

The distribution of the wild dog in relation to purebred dingoes varies throughout the state. In far western areas, most dingoes sighted appear to be 'pure', with characteristic white points and broad head. Closer to settled areas a greater number of feral domestic dogs produce a generally hybrid population. It has been estimated that dingoes are 50% pure in south-east Queensland and 90–95% pure in south-west and central Queensland.

## Reproduction

Dingoes have only one breeding season per year (usually April to June), whereas domestic bitches have two or more oestrus cycles per year. However, unless seasons are particularly favourable or human source of food is intentionally or inadvertently provided, feral domestic dogs are unlikely to successfully rear two litters per year. After a nine week gestation, the pups (usually four to six) are born in a hollow log or cave den. Bitches tend to use the same den each year.

Pups are suckled four to six weeks and generally weaned at four months. When large enough to travel, pups are taken from the den to kills, and other dens may be used. The range of pups is increased as they are moved from den to den. In this way the pups are gradually moved around the home range of the bitch.

Independence may occur as early as 6 months of age when parents abandon them, but this results in high juvenile mortality.

Pups that become independent around 12 months appear to disperse voluntarily. Being larger and more experienced, mortality is then usually low.

Where dingoes live alone or in small groups (most pastoral and semi-settled areas), mature females will breed successfully each year.

By contrast, dominant female infanticide results in only one litter being successfully raised each year within groups containing several adult females (eg. undisturbed areas such as the Simpson Desert). The dominant (alpha) female will kill all pups of the other females, and then use subordinate females to suckle and rear her litter.

## Home range

Radio tracking studies show dingoes occupy a discrete area known as a 'home range'. The dingo visits the edge of this district frequently.

The home range can vary in size according to the productivity of the country; from 9 km<sup>2</sup> in rainforest areas to 300 km<sup>2</sup> on the Nullabor plain.

The edge of the home range is commonly associated with a major topographic feature, e.g. an escarpment, a major ridge or stream.

The home range is not used uniformly. Activity is centred on areas with highest food density.

Hunting movement is slow and exploratory, in contrast to frequent rapid movement around the home range boundary.

Pads follow well defined paths and are most likely associated with sociality and home range boundary maintenance. Activity is highest at dusk and dawn.

## Social organisation

Dingoes in an undisturbed area generally belong to discrete packs (3–12 members) which occupy long term, non-overlapping territories. The group rarely moves as a pack, rather members meet and separate again throughout the day. Dingoes are most gregarious during the breeding season.

There is overlap of home ranges within a group. In contrast, boundaries between groups are more rigid, actively defended, and infrequently crossed.

Olfactory communication (smell) is important in dingo social organisation. Dingo droppings are deposited along pads in specific areas where other dingoes will encounter them (creek crossings, intersections of roads and fences).

These 'scent-posts' appear to delineate the home range boundary and act as a warning to neighbouring groups and individuals.

This strong site attachment of dingoes is contrary to the notion commonly held by property owners that dingoes will travel large distances to kill stock.

## Diet

Dietary research entailing stomach content and faecal scat examination has shown dingoes are opportunistic predators.

Medium size animals such as kangaroos, wallabies, rabbits and possums consistently form the major part of their diet.

Such dietary studies could suggest dingo predation of domestic stock is low. There is however a need for caution in using such studies to assess dingo impact on stock.

Studies by the Western Australia Agriculture Protection Board show dingoes in undisturbed refuge areas killed and ate kangaroos strictly according to need.

On grazing country however 'dingoes harassed, bit or killed sheep in large numbers, often without eating any'. The consumption of these sheep carcasses was the exception rather than the rule. Even kangaroos in these areas were sometimes killed in "play" type behaviour rather than for food.

Grouping increases foraging efficiency and appears necessary to exploit larger prey. Dingoes co-operating in groups are more successful in hunting kangaroos than lone dingoes. Whilst lone dingoes can easily kill sheep it is less likely a solitary dingo would successfully attack a calf in the presence of a defending cow.

## **Disease threat**

Dingoes are vectors of canid diseases (e.g. distemper, parvovirus) and parasites. The hydatid parasite *Echinococcus granulosus* is a major problem of dogs and domestic stock, and can cause illness and occasionally death in humans.

The dingo could pose a serious risk if the exotic disease rabies was introduced to Australia.

## **Beneficial considerations**

The establishment of watering points post-European settlement has resulted in a huge increase in the kangaroo population, with consequent strong pasture competition with domestic livestock.

Though it is widely accepted that sheep production is near impossible in the presence of dingoes, many cattle producers will tolerate dingoes because of their believed suppression of kangaroo numbers. Research has shown that not only does the dingo have the potential to mitigate population growth of native species during abundant seasons, it could also be an important limiting factor for many feral animal populations e.g. feral pigs and goats.

Destruction of the dingo could cause increases in other pests to the grazing industry and result in widespread degradation of environmentally sensitive areas. However, this has not been proven.

## **Further information**

Further information is available from animal control/environmental staff at your local government, or if your council does not have animal control staff, from your local Department of Primary Industries and Fisheries Land Protection Officer: contact details available through 13 25 23.