Fact sheet

DECLARED CLASS 2 PEST ANIMAL

Feral pigs in Queensland

Distribution, ecology and impact

Domestic pigs (*Sus scrofa*) were introduced to Australia by early settlers. Subsequent accidental and deliberate releases resulted in the wild (feral) population establishing throughout Australia.

Feral pigs damage crops, stock and property, spread weeds and transmit diseases such as leptospirosis and foot-and-mouth. They also cause environmental damage, digging up large areas of native vegetation and spreading weeds.

Declaration details

Feral pigs are declared Class 2 pests under the *Land Protection (Pest and Stock Route Management) Act 2002*. Declaration requires landholders to control declared pests on land under their control. A local government may serve a notice upon a landholder requiring control of declared pests.

For information on feral pig control, see Biosecurity Queensland's fact sheet *Control of feral pigs* (www.biosecurity.qld.gov.au).

Description and general information

Australian feral pigs have more in common with their Eurasian cousins than with domestic pigs. They are smaller, leaner and more muscular than domestic pigs, with well-developed shoulders and necks and smaller, shorter hindquarters. Their hair is sparse and longer and coarser than domestic pigs. Feral pigs also have longer, larger snouts and tusks, straight tails, smaller mostly pricked ears and much narrower backs.

Colouring is predominantly black, buff-coloured or spotted black and white. Some are agouti-patterned (dark hair with a lighter tip). Juveniles may be striped. Colours vary between and within areas.

Growth potential is similar to domestic pigs, although harsh environmental conditions tend to stunt development. Adult female feral pigs usually weigh 50–60 kg, while males usually weigh 80–100 kg. Exceptional animals have reached 260 kg.

Older boars (razorbacks) have massive heads and shoulders and a raised and prominent back bone that slopes steeply down to small hams and short hind legs. A keratinous plaque or shield up to three centimetres thick usually develops on their shoulders and flanks.

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This provides some protection from serious injury during fights with other boars. Some boars develop a crest or mane of stiff bristles extending from their neck down the middle of their back, which stands straight on end when the animal is enraged.

Habitat and distribution

Feral pigs inhabit about 40% of Australia from subalpine grasslands to monsoonal floodplains and are found in all habitat types in Queensland (see Figure 1).

Estimations of feral pig numbers in Australia range up to 24 million. The greatest concentrations of feral pigs are on the larger drainage basins and swamp areas of the coast and inland.

Biology and behaviour

Feral pigs are capable of migrating considerable distances, but tend to stay within home ranges. Watering points are the focus of activity, particularly during hot weather. Pigs have few sweat glands, so high temperatures require them to drink more often and wallow in water or mud to cool off. Dense cover is the preferred habitat, providing protection from the sun and their main predator—humans.

Female and juvenile pigs usually live in small family groups with a home range of 2–20 km^2. Adult males are typically solitary, with a home range of 8–50 km^2. Range size varies with season, habitat, food availability and disturbance. Herds of 400 pigs have been recorded in Cape York.

Most pigs remain in their home ranges, even when subject to some disturbance such as infrequent hunting by people and dogs. Regular disturbance will drive them on.

Feral pigs are generally nocturnal, spending daylight hours sheltering in dense cover. They are shy animals and will avoid humans, making it easy to miss their presence or to drastically underestimate their numbers.

Pigs are omnivorous, eating plants and animals. They are extremely opportunistic feeders, exploiting any temporarily abundant food. They prefer green feed and will eat grains, sugarcane and other crops, fruit and vegetables. They root extensively for tubers, worms and soil invertebrates. Small animals are preyed upon. Stock losses occur primarily with lambs but occasionally with newborn calves. Carrion (dead and rotting flesh) is also consumed.

Feral pigs have relatively high energy and protein requirements, particularly during pregnancy and lactation. These requirements are not available all year in all areas, so pigs often have to move to other parts of their home range during pregnancy.

This seasonal need for either more food, or high-energy or protein-rich food, is often the reason for their impact on agricultural crops. It is also the weakness in their ecology that can be exploited for management purposes.

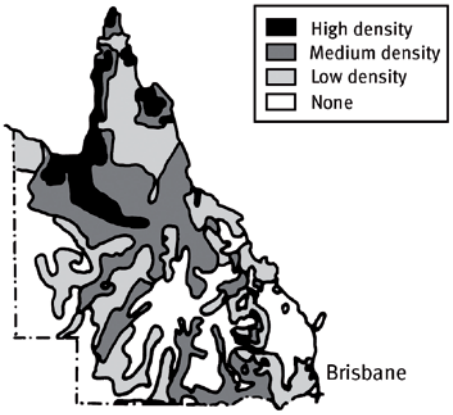

Figure 1. Distribution of feral pigs in Queensland

Life cycle

The reproductive potential of feral pigs is more similar to rabbits than other large mammals in Australia. In good conditions, feral pig populations may increase fivefold in a 12-month period.

Under favourable conditions, breeding occurs all year. Adult females have a 21–day oestrus cycle, with a gestation period of about 113 days, producing a litter of 4–10 piglets, depending on the sow's age, weight and food supply.

Sows can make nests of available vegetation just before farrowing. Nests can be 3 m long by 1.5 m wide and up to 1 m high, with a domed roof. Nests are usually less than 2 km from available water. Piglets normally spend the first 1–5 days of life inside the nest, with the sow inside or close by.

The next fertile mating can occur after 2–3 months of farrowing, allowing sows to produce two litters per year if good seasonal conditions prevail.

Weaning occurs after 2–3 months. Sexual maturity is reached when sows weigh about 25 kg, usually around six months of age.

Mortality of juveniles is high if the mother's dietary protein intake is low (up to 100% mortality in dry seasons). Adult mortality does not vary as much with seasonal conditions, but few animals live more than five years.

Estimating populations

Sightings are the least reliable guide to feral pig presence. Careful observation of the signs of pig activity will allow an experienced observer to estimate population densities. Inexperienced observers, however, may see nothing.

The following is a list of common pig signs that may be used to establish relative numbers and sizes:

- fresh digging or rooting of ground (causing a ploughed appearance). This indicates recent pig activity, but the area affected gives little indication of numbers as large areas can be dug by a small number of pigs
- tracks and faeces on and off pads. Faeces size, shape and consistency vary with age and diet, but is typically 3–6 cm wide, 7–22 cm long and well formed. Close inspection can help determine diet (e.g. plant matter and seeds, egg shell and bone fragments, wool and marsupial hair)
- mud or hair at holes in fences where pigs have pushed through
- wallows. Pigs leave distinctive oval depressions in mud
- tusk marking and mud rubs on trees and fence posts. These give an indication of pig size
- nests in vegetation made by sows before farrowing. Be sure to approach these with caution.

Spotlighting, aerial survey, and use of dogs can be used for actual pig counts.

Human and environmental impacts

Feral pigs wide habitat range, omnivorous diet and potential for rapid population growth in good seasons mean that few agricultural pursuits are unaffected by these pest animals. Damage is estimated at $100 million annually.

Economic impact is of three types:

1. value of the direct losses to agricultural production
2. value of the continuing expenditure on pig control
3. value of lost opportunities (i.e. control expenditure reduces opportunity to profit from alternative investments).

Examples of direct agricultural losses are listed below.

Crops

Pigs can damage almost all crops from sowing to harvest, starting with uprooting seed and seedlings to feeding on or trampling mature crop.

They feed on seed and grain crops (except safflower), fruit (especially banana, mango, papaw, macadamia and lychee) and vegetable crops.

Most damage to sugarcane occurs during the dry season. Older cane with a high sugar content is preferred. Because sufficient moisture can be obtained from the cane, pigs can 'camp' in a paddock for several weeks (causing substantial damage).

Livestock

Predation on livestock is basically limited to lambs. Research has shown feral pigs can take up to 40% of lambs. This not only reduces income from the sale of lambs, but also reduces the opportunity for herd improvement by limiting selection for optimum wool traits.

Pasture

Pastures are damaged by grazing and rooting. Pigs can also transport weeds; their diggings provide ideal conditions for weed establishment.

Fences and watering points

Wallowing pigs damage and foul the water in tanks and bore drains and silt up troughs. Rooting can weaken dam walls. Being large, powerful animals, pigs can breach fences, providing passage for other pest animals.

Environmental concerns

Pig activity has a dramatic effect on creeks and lakes. In many areas concentrated rooting 'ploughs' up to 20 m around the waterline.

Such disturbance of the soil and natural vegetation degrades water quality and the habitat for small terrestrial and aquatic animals. It also creates erosion and allows exotic weeds to establish.

Predation of native fauna does occur and examination of faeces has shown remains of marsupials, reptiles, insects, and ground-nesting birds and their eggs.

Diseases and parasites

Feral pigs can carry many infectious diseases and internal and external parasites. Some are endemic (already present), while others are still exotic to Australia.

Many of the diseases can spread to domestic pigs, other livestock and humans. Diseases naturally transmitted from animal to man are called 'zoonoses'.

Zoonoses currently in Australian feral pigs

- **sparganosis** – a parasite that can infest the muscles of humans, forming encyst lumps. Common in pigs from swampy areas. Contracted by ingesting raw meat
- **melioidosis** – a serious bacterial disease that causes abscesses
- **leptospirosis** – a serious bacterial disease; in humans called Weil's disease, causing very high temperatures, kidney trouble and jaundice; can be fatal. It is found in up to 20% of feral pigs in Queensland
- **Q fever** – occurs in all animals and is well known by meat workers. It can cause very high temperature and result in heart problems; can be fatal
- **tuberculosis** (TB) – a serious disease of the lungs. Once common but now rare, it is contracted by eating inadequately cooked flesh of infected animals

- **brucellosis (porcine and bovine)** – a bacterial disease causing severe long-term illness, undulant fever and possible infertility, both strains are contracted by handling raw meat. Porcine brucellosis is rare in Queensland.

Feral pigs were blamed for the spread of TB and bovine brucellosis among cattle but both diseases have been eradicated from Queensland without directly targeting feral pigs.

Leptospirosis and Q fever infection can occur through contact with blood, meat and urine through broken skin, intake of urine-contaminated food or water, and inhalation of infectious airborne organisms.

Brucellosis, leptospirosis and Q fever cause flu-like symptoms similar to Ross River fever. Leptospirosis and Q fever can be fatal.

To prevent contracting these diseases it is advisable to avoid handling feral pigs. Slaughtering and butchering should be undertaken only at licensed premises where there is a full-time meat inspector on duty to ensure that animals are free of the above diseases.

If you must handle feral pig meat, use suitable protective clothing (mask, goggles, strong rubber gloves and plastic apron and boots) to minimise contamination with blood, urine and faeces.

Rare or undercooked meat should not be eaten; thoroughly cook meat to avoid contracting pathogens.

Exotic livestock diseases

A major concern with feral pigs is their potential to harbour or spread exotic livestock diseases. The cost to the Australian community if foot-and-mouth disease were introduced to Australia is estimated at $3 billion in lost export trade, even if the outbreak were eradicated immediately.

This would result in major social upheaval in rural Australia.

Other exotic diseases of concern:

- **swine vesicular disease** – viral disease affecting only pigs
- **Aujeszky's disease** – highly contagious herpes viral disease affecting several animal species, killing up to 100% of affected piglets
- **African swine fever** – highly contagious viral disease affecting only pigs; mortality rate is high
- **classical swine fever** (CSF) – also called hog cholera. This highly contagious viral disease of pigs kills up to 90% of infected animals in its acute form.

For more information on animal diseases contact your local Biosecurity Queensland veterinarian.

Exotic zoonotic diseases and parasites

- **Japanese encephalitis** – a virus spread from pigs to humans by mosquitoes, causing acute severe problems of the nervous system (pain, sleepiness and coma)
- **rabies** – a serious disease affecting the brain; can be fatal
- **screw-worm fly** – maggots from this fly can attack healthy flesh; if untreated can cause massive wounds to animals and humans
- **trichinosis** – a helminth (roundworm). All mammals are susceptible, with humans infected by eating improperly cooked meat.

North Queensland's popularity as a tourist destination is increasing. Many international visitors have travelled through countries infected with exotic diseases before entering Australia. Feral pigs are known to frequent rubbish tips around tourist lodges and scavenge human waste.

There is a real danger that an exotic disease could enter Australia via this contact and remain undetected for some time. Such a time lapse could allow the disease to become widespread, making eradication difficult or even impossible.

Further information

Further information is available from your local government office, or by contacting Biosecurity Queensland (call 13 25 23 or visit our website at www.biosecurity.qld.gov.au).

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