

FERAL PIGS ON FLINDERS ISLAND

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(with one table and one text-figure)

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A survey of feral pigs on Flinders Island showed that three areas, the north and east coast lagoon areas, Strzelecki National Park and Darling Range have resident pig populations, with a total number of about 1 000 individuals. There is minimal damage to agricultural areas, or to the east coast lagoons but the National Park is being seriously damaged by pig activity.

Key Words: Feral pigs, Tasmania, Flinders Island.

INTRODUCTION

Feral pigs are now considered to be the most important mammalian pest of Australian agriculture (Pavlov 1983). They occur in most climatic regions of Australia but are limited in local distribution by the availability of food, access to water and reasonably undisturbed shelter. They are opportunistic omnivores, grazing on pasture and crops and eating any available carrion including dead pigs. In some areas feral pigs will kill and eat young lambs (Pavlov *et al.* 1981). As well as causing significant agricultural damage they provide a reservoir for potentially devastating diseases like foot and mouth should these occur in Australia.

Tasmania is fortunate in that its feral pig population is limited to Flinders Island although some early writers recorded their presence on mainland Tasmania (Plomley 1966).

As an aid to planning feral pig control and a guide to determining the feasibility of conducting a large-scale pig eradication campaign, a survey was carried out in May 1986. This consisted of an initial aerial survey of the east coast swamp lands followed by four days of ground inspections to determine pig densities and damage caused in the infested areas.

HISTORY

The origin of the Flinders Island feral pig population is not well documented. Some may have been released by early visitors to ensure a meat supply for themselves or they may have escaped following shipwrecks.

At least one of the introductions of pigs to Flinders Island also introduced a parasitic lung-worm *Metastrongylus salmi* which is still found in

some of the island's pigs (Gregory *pers. comm.* and this survey). This parasite does not occur in either the feral pig population of New South Wales (Giles 1980) or Australian domestic pigs (Seddon 1967). Unfortunately it cannot be used to trace the origin of the pigs as *Metastrongylus salmi* occurs in North and South America, South East Asia, China and Zaire (Soulsby 1982) and pigs from any of these areas could have introduced it.

One common story is that pigs of Asiatic origin were released when the ship *City of Foo Chow* went ashore on the northeast coast of Flinders Island in March 1877. Any pigs which had been on the boat could have been saved, as the crew had 30 hours to salvage material directly onto the beach. Unfortunately for the story, it was most unlikely that the *City of Foo Chow* had Asiatic pigs on board as it had sailed from London to Sydney with general cargo, then moved to Newcastle and loaded coal for Calcutta (Anon 1877). Any pigs which may have been on the ship would most likely have originated in New South Wales.

Early settlement occurred on many of the smaller islands in the Furneaux Group. Records of these early settlements show that many of the settlers kept pigs. The deliberate introduction of pigs into previously pig-free areas seems to have been a popular activity. As recently as the early 1970's, pigs were introduced to Babel Island, off the east coast of Flinders Island. These pigs were eradicated by Department of Agriculture staff with local assistance.

There are unconfirmed reports to suggest that domestic pigs have been released on some occasions either to help "upgrade" the feral popu-

lation, or when the owners decided not to keep pigs any longer.

A problem as interesting as the origin of Flinders Island pigs is the absence of feral pigs anywhere else in Tasmania. The first recorded release of pigs was made by Cook at Adventure Bay, Bruny Island in 1777 as part of his policy of introducing animals and plants to new lands. He "carried them (a boar and sow) about a mile within the woods at the head of the bay and there left them by the side of a fresh water brook" (Beaglehole 1967). This was in an attempt to hide the animals from the local natives who might have eaten them.

It is probable that his fears were not groundless, as no reference is made to pigs in the report of the Baudin expedition of 1802 (Plomley 1983), despite the presence of five zoologists who collected and observed on Bruny Island and mainland Tasmania for a period of ten days.

A reference to the presence of feral pigs was made by Robinson who noted "numerous traces of wild pigs" near Oatlands in November 1831 (Plomley 1966). It is possible that Robinson mistook the activities of a native animal for those of pigs, but there is a good pig habitat in that district, and many other parts of Tasmania to support a feral pig population and escapes must have occurred from some of the early pig keepers.

SURVEY RESULTS

Aerial Survey

A Cessna 172 was used in an attempt to count pigs in the east coast lagoon areas. Tree cover prevented any aerial survey of either the Darling Range or Strzelecki National Park. The survey was flown at 150 m altitude and 100 knots airspeed from 1100-1320 on 12 May 1986 with observers on both sides of the plane.

Only the major lagoon systems were surveyed, on the two to three hours of observation, and no attempt was made to cover systematically the whole of the north and east coast areas known to harbour feral pigs.

A total of only eight pigs were seen from the air, and in all cases they were moving rapidly from the edges of wet swamps towards scrub cover. It is probable that some pigs would have been missed if they had been stationary, and others would have moved into cover before they were seen. Extensive areas of pig damage were also noted from the air, which could be used to help define current pig distribution, but would be of little use in determining density as it was not possible to determine the age of the damage from the air. The low number

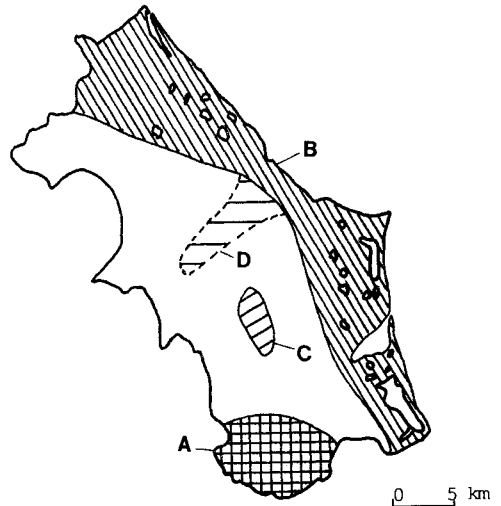


FIG. 1 — The distribution of feral pigs on Flinders Island. A. density medium to high; B. density medium; C. density low; D. pigs seen occasionally on farms.

of pigs seen during this survey is not atypical. During a feral pig control exercise in New South Wales, initial helicopter survey of both creeks and fixed grid counting indicated that only about 250 pigs were present in a defined area. Later, over 1000 pigs were shot and it was estimated that at least 15% still remained (Bryant *pers. comm.*)

A systematic survey of the pig affected areas of Flinders Island would probably have resulted in a larger number of pigs being sighted. This type of aerial survey however was found to be of little use in defining actual pig distribution or assessing the numbers present. It could at best be used to determine presence or absence of feral pigs in an area from either pig or damage sightings.

Ground Survey

A ground survey was conducted on foot and by vehicle in the four days (13-16 May) following the aerial survey. The areas examined were the major lagoon systems, plus the northeastern area of the Strzelecki National Park (Bob Smiths Gully, Big Hollow, Fannings Creek). Signs of pig activity and the presence of faeces were noted, plus any pig sightings. An attempt was made to estimate the age of damage signs from the colour and hardness of faeces and effects of recent rain and germination of seeds in disturbed areas. Pigs were recorded as

TABLE 1
Approximate size of affected areas and pig numbers.

Area	Size (km ²)	Density (no./km ²)*	Estimated Number
East coast Strzelecki	400	medium (1.5)	600
National Park	120	medium (3.0)	360
Darling Range	30	low (0.5)	15
Total	550		975

* Estimated using categories of Mitchell *et al.* (1982).

being present if fresh signs were noted. It was evident from this survey that feral pigs cause only minor damage in most areas. If however they find an attractive food source the area is revisited each night for several nights, sometimes causing enough pasture damage to necessitate levelling and resowing. The ground survey was used to assess relative densities to allow an estimate of the number of feral pigs present.

DISTRIBUTION

Feral pig distribution (fig. 1) was plotted from data gathered by Department of Agriculture staff and National Parks and Wildlife Service rangers stationed on Flinders Island. The original data were from personal observations of pig damage, pig sightings and investigations of farmer reports.

There are three areas on Flinders Island where pigs occur regularly: the east coast, Darling Range, and Strzelecki National Park. The east coast is generally low lying (<20 m a.s.l.) with both permanent and intermittent swamps. Vegetation varies from tussock grasslands (*Poa* spp.) through sedges and heaths to woodlands and open forest. Low lying swampy ground supports species such as *Melaleuca ericifolia*, which can occur in pure stands up to about 12 m. The low lying areas between lagoons carry eucalypts to about 15 m. *Eucalyptus globulus* where conditions are favourable and *E. nitida* under harsher conditions). Dryer elevated areas carry tea-tree species, mainly *Leptospermum laevigatum* and *L. glaucescens*. *Banksia marginata* is widespread. The vegetation provides good cover for pigs as it is very dense at ground level. The northern part of this area contains some higher points (Mt Killiecrankie — 316 m, Mt Boyes — 274 m), the vegetation being dominated by *Casuarina monilifera* and *Eucalyptus nitida* on

acid soils, and *Casuarina stricta* on limestone. It contains fewer swamps and more farmland. The density of pigs in the east coast areas fluctuates with the amount of water in the swamps, with pigs preferring wetter areas.

The second area where pigs occur is the Darling Range in the centre of the island. This is an area of dry sclerophyll forest with wet sclerophyll species in the gullies. The habitat in the Darling Range would generally not favour pigs, the area being generally drier, with very few permanent watercourses and generally harder, woody ground plants. Reports of more than occasional pig damage in this range have only become common in the last two years and pigs may have moved into the Darling Range following extensive fires on the east coast in the summer of 1982-1983.

The third major population of pigs occurs in the Strzelecki National Park where they range from sea level to the peak tops (756 m). The Strzelecki Range vegetation consists of dry sclerophyll forest at low levels and wet sclerophyll forest higher up with areas of mixed forest in between. The area has many deep sheltered gullies carrying lush vegetation of the higher rainfall type including tree ferns (*Cyathea australis* and *Dicksonia antarctica*) to about 8 m. The gullies carry *Eucalyptus globulus* and *E. viminalis* to about 40 m, and other species of restricted distribution such as sassafras (*Atherospermum moschatum*), blackwood (*Acacia melanoxylon*) and musk (*Olearia argophylla*). Undershubs include mountain pepper (*Tasmannia lanceolata*), cheesewood (*Pittosporum bicolor*) and lemon bottlebrush (*Callistemon pallidus*). The gullies are the areas in which pigs are most active and where visible pig damage is quite extensive.

Feral pigs are occasionally seen on farms in the central north of the island (fig. 1, area 1A),

presumably as a result of the animals following drainage lines.

PIG DENSITY

Pig densities were estimated for the three areas using the criteria developed by Mitchell *et al.* (1982).

Pig sightings could not be used as a criterion for density estimation in the National Park due to the thickness of vegetation which both limited visibility and made penetration noisy, with pigs moving before they were sighted. There was an extensive network of pig runways throughout the Park and signs of pigs were abundant in many areas. The areas affected by pigs and estimated numbers are shown in table 1.

FERAL PIG DAMAGE AND CONTROL

Feral pigs usually invade agricultural areas adjacent to the National Park and east coast swamps in winter. Damage is considered by farmers to be minor as it is restricted to rooting in pasture adjacent to bush edges. The animals are apparently digging dock (*Rumex*) and thistle roots or rolling turf to expose grubs. The annual total pasture area damaged is estimated to be less than 50 ha. Feral pigs are reported to visit paddocks where ewes are lambing but there are no reports of lambs being killed, although pigs will take any carcasses left near the bush. It is possible that the population is low enough for individuals to satisfy their appetite without killing lambs.

In non-agricultural areas there appears to be little long-term damage done in the low lying east coast lagoon country, but the Strzelecki National Park is being severely damaged. Extensive pig rooting in the moist rich gullies of the Park leads to water erosion and loss of regenerating forest plants. Bracken fern (*Pteridium esculentum*) flourishes in this pig-disturbed environment and takes over large areas forming pure impenetrable stands to about 4 m, and preventing light reaching the forest floor.

Control of feral pigs in agricultural areas is by shooting. There are enough hunters interested in pig shooting to effect sufficient control to satisfy farmers demands. There is also a moderate hunting pressure on pigs along the east and north coasts. No pig shooting has occurred in the National Park, although if this was done under permit, pig populations in some parts of the Park would be significantly reduced.

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