Whitsunday Shire

Feral Pig Management

Trapping Accreditation Manual

Natural Heritage Trust
Helping Communities Helping Australia
An Australian Government Initiative

Queensland Government
Natural Resources, Mines and Energy

Queensland Government
Environmental Protection Agency
Queensland Parks and Wildlife Service

Created by Whitsunday Shire Council 2004

Introduction:

Feral pigs in the Whitsunday Shire cause significant impact to all aspects of the community. They impact upon the economical sector by feeding on sugar cane. Economical loss associated with the feral pig damage in the cane can become rather substantial. They also enter grazing and small crop areas and cause significant damage to stock, produce and the soil. Feral pigs also cause considerable damage to natural ecosystems inside and outside of National Parks and State Forests. They also enter residential areas and destroy lawns, gardens and areas of small fruit orchards.

To maximise the effectiveness of feral pig control in the Whitsundays, appropriately accredited pig trappers will be available to assist, Federal, State and Local Government as well as other stakeholders and the general community in all aspects of feral pig control.

The federal Governments $2.7 Billion Natural Heritage Trust is Australia's largest ever environmental rescue package. Under the trust a large number of traps (approx. 20) have been funded for strategic and coordinated feral pig trapping within Whitsunday Shire. Traps will be kept by Whitsunday Shire Council. A trap register will be produced and trappers will have access to use these traps.

Other than the use of the trap, the accredited trappers will not receive any financial support or incentive from any of the stakeholders. Stakeholders will not receive any financial incentives from the trappers. All pigs trapped are to be disposed of at the discretion of the trapper and in accordance with relevant legislation.

Objectives:

The main objectives of the feral pig strategy and accreditation process are:

1. To provide formal training and accreditation to local pig trappers.
2. To utilise these trappers in areas throughout the shire when complaints regarding feral pigs have been received.
3. To assist landholders adjacent to or near National Park and State Forest Boundaries to control feral pigs.
4. To reduce the environmental, social and economical impacts feral pigs are causing within the Whitsunday Shire.
5. To tabulate feral pig capture data including:
    - Number of pigs caught
    - Sex and age. (E.g. sucker, adult male, young sow etc.).
    - Type of trap used.
    - Bait used
    - Pre-feeding time frames
    - General condition and health of pigs. (I.e. parasites, abnormalities etc).

Stakeholders / Agencies:

Whitsunday Shire Council	WSC
Environmental Protection Agency	EPA
Department of Natural Resources and Mines	DNRM
Sugar Services Proserpine	SSP
Canegrower's	CG
Agforce	AF
Accredited Trappers	AT

Background:

Under the *Land Protection (Pest and Stock Route Management) Act 2002* the feral pig (*Sus scrofa*) is a declared class 2 pest. This Classification signifies that it is established in Queensland and has or could have a significant adverse economic, environmental or social impact. Section 77 of the act requires all landholders to take reasonable steps to keep their land free of feral pigs.

The *Environmental Protection and Biodiversity Conservation Act 1999* lists the "Predation, habitat degradation, competition and disease transmission by feral pigs" as a key threatening process to the integrity of natural ecosystems.

Feral Pig Biology:

Feral pigs are non-ruminant mammals that are primarily omnivorous. They have a single stomach and are unable to feed solely on roughage due to the stomachs poor ability to digest cellulose. They are opportunistic feeders with a strong preference towards succulent green vegetation, fruits, grains and a variety of animal and plant material rich in starch.

Feral pigs have a high protein requirement, particularly sows for the successful feeding and raising of the young piglets. If the crude protein levels of their diet were to drop below 15% lactation can cease and their brood of piglets may perish. The seasonal need for high energy or high protein food is often the reason for their impact on agricultural crops. It is also a weakness in their ecology that can be exploited for management purposes.

Diets of feral pigs vary throughout Australia from region to region but include:

- Fruits and Seeds:- Figs, palms, pandanus, cycads, a wide range of orchard fruit, grasses, pumpkins, watermelons, bananas, peanuts, corn, wheat, oats, sorghum and other cereals.
- Foliage and stems:- Small palms, pandanus, sugarcane, ferns, forbs, grasses, legumes, clovers, Lucerne and young wheat.

- Rhizomes, bulbs and tubers:- Lillies, grasses, sedges, rushes, bracken, thistles, yams and other tropical rootstock.
- Fungi
- Animal Material:- Earthworms, snails, arthropods, crustaceans, shellfish, frogs, fish, reptiles, eggs, birds, mice, young rabbits, small mammals and carrion.

Locally pre-feeding generally consists of:-

- Seasoned fruit such as bananas or mangoes
- Fermented grain wheat.
- Vegetables such as pumpkins

Under the *Stock Regulation 1988*, pigs may have access to, or be fed rendered animal meals such as, meat and bone or blood meal, provided all reasonable efforts are made to deny access to such meals by ruminant or cud chewing animals. Under the *Stock Regulation 1988*, carcasses and offal cannot be used in pig traps unless they are used as a scent lure only and the pigs do not have access to, or are able to feed on such materials.

Movement:

Feral pigs are capable of migrating considerable distances, although they tend to have home ranges where watering points and the abundance of food regulate their activities. Pigs have a low number of sweat glands, so high temperatures force them to drink more often and wallow in water or mud to cool off. Thick cover from trees and shrubs is their preferred habitat, providing protection from the sun and predators such as wild dogs and man.

Sows and piglets tend to live in small family groups with a home range of 2-20 km². Adult males or boars are primarily solitary, with a home range from 8 to 50 km². The size of these home ranges varies with seasons, suitable habitat, food availability and the level of disturbances. The majority of pigs stay within their home range, even when subjected to disturbances such as intermittent hunting by people and dogs. More frequent disturbances will eventually force the pigs to move out of their home range.

Feral pigs are mostly nocturnal, spending daylight hours sheltered under the cover of dense vegetation. They are shy animals and will avoid human contact where possible. This shyness makes estimating pig population on sightings inaccurate. It also makes their presence difficult to determine. Pigs generally travel along well marked and familiar trails to feeding and watering areas.

Life Cycle:

Feral pigs have a reproductive capability more similar to rabbits than to other large mammals. In favourable conditions feral pig breeding may occur year round and populations may increase five fold in a 12 month period.

Adult females have an oestrus cycle of 21 days and gestation period 113 days, producing a litter of 4-10 piglets depending on the female's age, weight and the abundance of food and water.

Sows can make nests from available vegetation usually just before farrowing. Nests can be up to 3 metres long, 1.5 metres wide and 1 metre high. The nest is usually constructed less than 2 kilometres from water and the piglets may remain in this nest for 1 – 5 days. The sow does not venture far from the nest during this time.

After farrowing the next fertile mating can occur after 2-3 months. Sexual maturity is reached when the sow weighs around 25kg, which is usually around 6 months of age.

The mortality rate of infants is high if the mother's dietary protein intake is low. Adult mortality does not vary as much with seasonal fluctuations, most animals die before they are 5 years old.

Population Estimates:

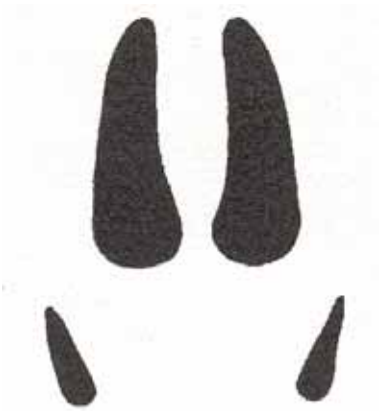
Sightings are the least reliable guide to feral pig presence. Careful and educated observation of the signs of pig activity will allow an experienced observer to estimate population densities. A novice may see little indication of density.

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) indicates recent pig activity, but area affected gives little indication of numbers as large areas can be dug by a small number of pigs.

Foraging marks left by feral pigs

Tracks and faeces on and off pads.



Foot print of Feral Pig (Trigg's, 1996)

Faeces of feral Pig (Trigg's, 1996)

- Faeces size, shape and consistency vary with age and diet, but are typically 3-6cm wide, 7-22cm long and well formed. Close inspection can enable diet to be established. (Trigg's, 1996)
- Mud or hair at holes in fences where pigs have pushed through.
- Wallows distinctive oval depressions in mud.
- Tusk marking and mud rubs on trees and fence posts give an indication of pig size.
- Nests in vegetation made by sows should only be approached with caution.
- Spotlighting, aerial survey, and use of dogs can be used for actual pig counts.

Trapping:

There are four basic feral pig control techniques:- trapping, hunting, fencing and poisoning. Each method has advantages and disadvantages.

Trapping is becoming more widely accepted and in some circumstances is the only control technique landowners and managers will allow or governed by legislation are allowed to utilise on their properties.

Advantages of Trapping

- Safest form of control, can be easily undertaken around human population.
- It is flexible and can be incorporated into routine property management activities.
- Carcasses can be disposed safely.
- Traps are reusable and removable, good trapping takes advantage of opportunities as they arise.
- Selling trapped pigs can offset cost of trapping.
- Does not alter normal pig behaviour, so allows greater numbers of pigs to be removed from the overall population.
- More humane to pigs and non-target species.

Disadvantages of Trapping

- Can become time consuming and expensive to construct and maintain traps.
- Must be checked regularly.
- Not practical for rapid, large-scale control.
- Pigs may become “Trap Shy:”

Key Steps to Improve Trapping Success

The key elements to catching whole family groups of pigs at once and reducing non-target species in traps are: proper and appropriate trap design, free feeding, suitable locations for traps, regular maintenance of the door mechanism and regular inspection once the trap is set.

Additional recommendations for a successful trapping campaign are:

1. Stop all activities that may disturb the pigs normal feeding and behavioural habits. E.g. Do not undertake any shooting or dogging.
2. Set the trap in a shady area with as much natural vegetation as possible. Traps should also be set close to areas where pigs have been feeding. Vehicle access is recommended as carrying large amounts of bait to a trap will soon become a chore.
3. It is best to lay a number of traps in a circuit to make daily checking easier. Checking of traps could also be integrated into other daily routines.
4. Pre-feeding should be carried out at several sites prior to placement of a trap. Once the trap is set, place fresh bait inside and outside of the trap to keep the pigs feeding at the site. Once the pigs settle down and become used to feeding at the site regularly put fresh bait inside the trap only. Continue feeding inside the trap for a few nights before setting the trap. It is important to ensure all pigs in the group are feeding inside the trap before it is set.
5. The bait used in the initial stages should be whatever the pigs are naturally eating. Pigs feeding on a single food source (e.g. Sugarcane) are more than likely not going to be persuaded to take an alternative food source such as bananas. However experimenting with different baits can produce results. Bait should be readily available at low or no cost as large quantities will be required. Where bananas, mangoes or other waste fruit are available these can produce good results.

   General Rules of Thumb.
   - Use bait with a strong attractive smell.
   - Lay large amounts of bait in the trap.
   - Lay additional bait material on top of previous bait.

6. Set the trap every night and check each day. If the trap cannot be checked daily, shade and water must be supplied.
7. Do not be deterred if pigs are hesitant to enter traps, as time and patience should overcome this. Some ideas for enticing shy pigs are:
   - Disturb the ground inside the trap with a hoe.
   - Use aromatic attractants such as vanilla essence, aniseed, creosote or fish oil.
   - Lay a fresh bait trail from the pad or fresh diggings to the trap.

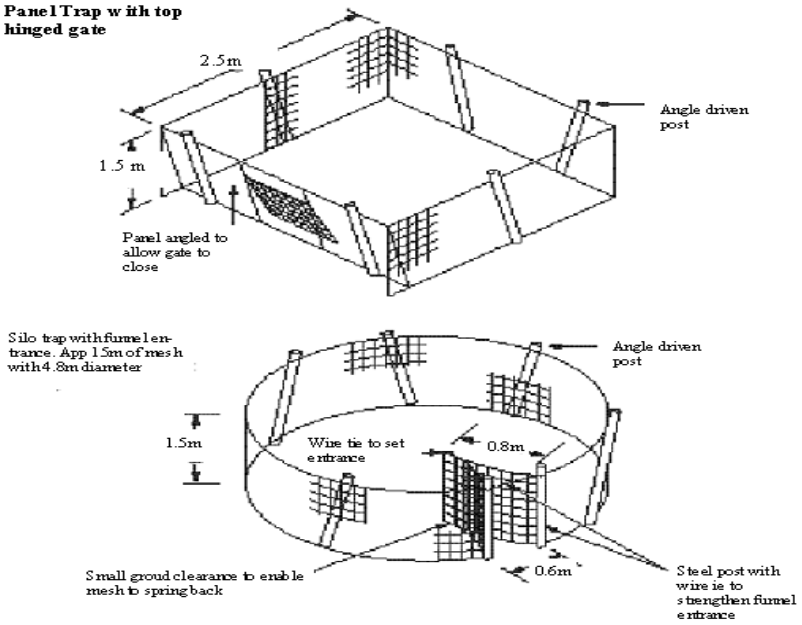
8. While pigs are being caught in one trap site continue pre-feeding other sites so the trap may be moved rapidly and continue to catch pigs when the first site is exhausted.
9. Keep activity in the trapping area to an absolute minimum. Don't leave unnecessary human scent near the trap site, that is urinating, smoking etc.
10. Do not use dogs or hunting techniques on the entire property if possible. Repetitive disturbances by these actions can cause pigs to become trap shy.
11. Destroy and remove pigs from the trap as quickly and humanely as possible.
12. Trapping when agricultural feed is in short supply (e.g. after the cane harvest) often produces good results.
13. Continue to trap until no more pigs are caught. A change of bait can be tried. Again feed for one or two nights before setting the trap.

Trap Design

There are a lot of trap designs, but all are essentially an enclosed area with one way gates. The trap can be almost any size or shape and built from a variety of materials. The best material is steel mesh with a grid of no more than 100 x 100mm. The height needs to be at least 1.5m, although if a roof is used the walls may be shorter.

Box traps are designed to be easily moved on a standard trailer or Ute and placed directly into position. Silo traps (a roll of mesh staked to the ground in a circle) and panel traps (rigid panel sides that lock together) are built on site.

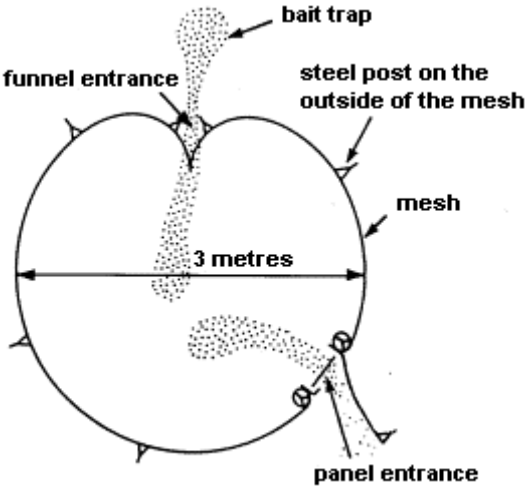
For silo traps, star pickets need to be placed no more than 1.5m apart and driven far enough into the ground to ensure that adult pigs can not push them over or lift them and the attached mesh off the ground. In soft or sandy soils the pickets need to be put in on an angle. For box and panel traps a rough guide is to use one picket for each side of the trap.



Alternative Trap Entrances

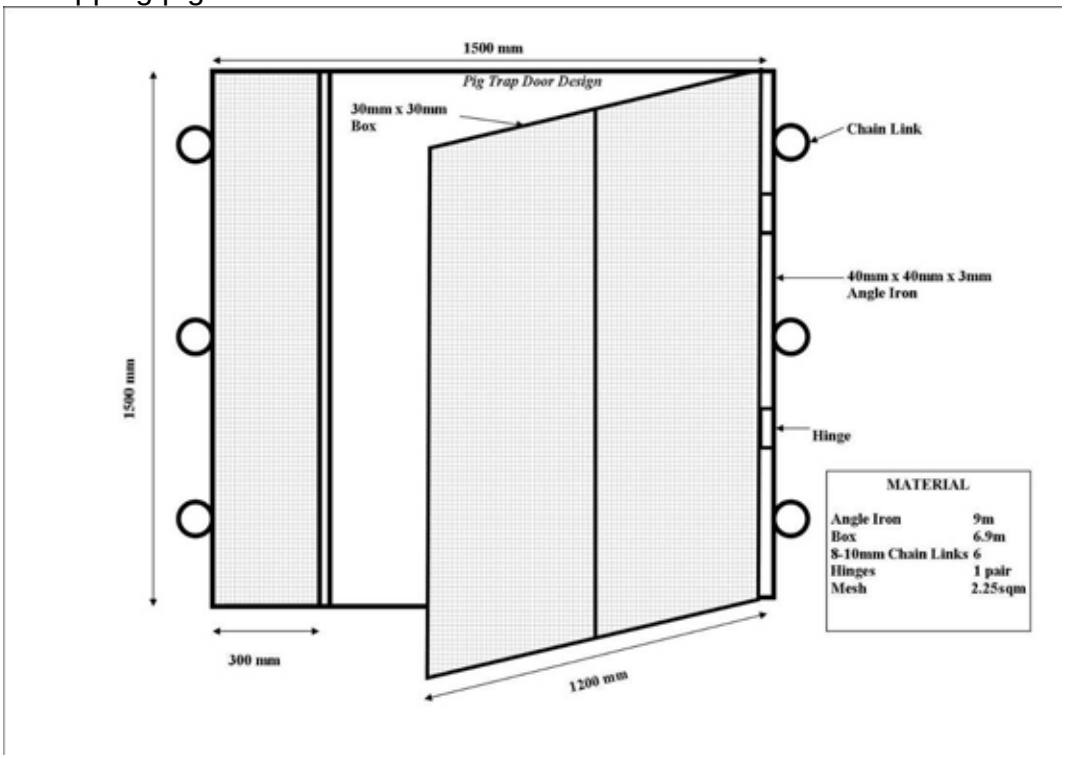
Funnel Entrance

Formed by the two ends of the mesh forming a funnel, the ends are tied together at the top with wire or rope. The pig moves through the funnel forcing the bottom of the mesh ends apart and once it is in the trap the ends spring back together.



Tripped Gate Entrance

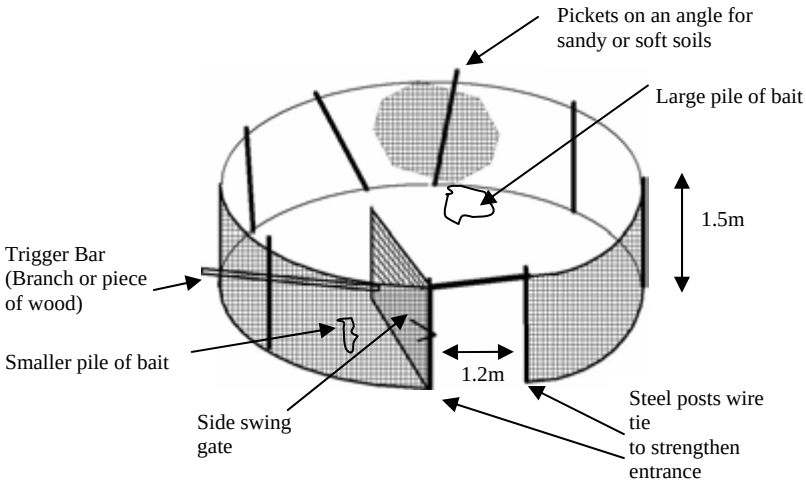
A side hinged gate that is pulled shut by springs and is held open by many trigger mechanisms that can be tripped to allow the gate to swing shut. Trip wires are often used, though many other systems have been tried. Most of these are not pig specific and can be set off by any non-target species attracted to the bait. Once triggered the trap is no longer effective in trapping pigs.



Pig Specific Trigger

By far the simplest and most effective trigger mechanism has the gate held open by a bar (often a branch or piece of wood), which is hooked over the wire on the gate on one end, with the other end hooked onto the inside of the panels. Pigs rooting for food in the trap lift the bar allowing the gate to swing shut. Ensure that the slot on the door end of the bar is wide enough to allow for easy release and that the other end of the bar is tied to the trap wall. When the trap is set the area behind the bar should be no more than 60cm wide. The bar should be set 20-30cm above the ground. The feeding habits of pigs ensure that they are the only animals that lift the trigger bar.

The gate may be latched to prevent pigs from opening the door once triggered, however this will prevent other pigs from pushing their way through the closed door and entering the trap. When trapping a group of pigs with tripped gate or pig specific triggers, put more bait at the back of the trap and a little bait under or behind the trigger. The majority of pigs will feed on the large pile of bait and one will find the small pile. It only takes one pig to release the trigger.



Silo trap with swinging gate

Humane Destruction:

The following has been obtained from the Australian Model Codes of Practice for the Welfare of Animals prepared for the Standing Committee on Agriculture and Resource Management (SCRAM). Both the Pigs 1998 and Feral Livestock animals – Destruction or Capture, Handling and Marketing Codes (1996) have been endorsed as the national codes by the Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ).

The code of practice for the welfare of animals emphasises that, whatever the form of husbandry, managers and others responsible for the day to day needs of pigs have a responsibility to care for animals under their control.

Welfare Problems Associated With Culling

Culling of animals in management programs should be carried out with due regard for the welfare of the animals involved. Personnel responsible for the control of feral animals should be aware of their responsibilities to limit the amount of suffering of target animals and avoid suffering of non-target animals. The methods used should involve the lowest level of suffering consistent with effective control. The method of slaughter should be effective and cause a sudden and painless death for the animal. It is important that the animal be handled quietly beforehand to ensure it is not unnecessarily distressed or alarmed.

In practice, a variety of methods may be used with shooting as a humane endpoint. E.g. trapping using feed and water.
The following methods are unacceptable on animal welfare grounds.

- Poisoning using unregistered poisons which cause severe and prolonged pain.
- Denial of water without provision of alternative sources as a means of killing animals.
- Wounding of animals so that they will die away from the shooting area.
- Trapping without prompt destruction or removal of captured animals.

Shooting within traps, if carried out properly is the most effective for humanely destroying pigs.

Shooting of feral animals should only be carried out:-

- By experienced and conscientious shooters.
- By personal who have a current firearms licence and comply in every respect with the provisions of the *Weapons Act 1990.*
- By using a firearm capable of killing the target animal with a single round.
- When the animal is cleanly sighted.

The effectiveness of shooting is dependant upon the destruction of major centres at the back of the brain near the spinal cord. A common mistake is to aim to low and damage frontal areas of the brain. Partial recovery may occur in this instance. (Australian Agriculture Council, Sub-Committee on Animal Welfare 1996).

Safety:

The following aspects of firearm safety should be kept in mind:-

- For smaller pigs (less than 40kg) and ground shooting, .243 calibre rifles with 80 or 100 grain soft nose projectiles are suitable. In competent hands smaller calibre rifles such as .222, .223 may be acceptable.

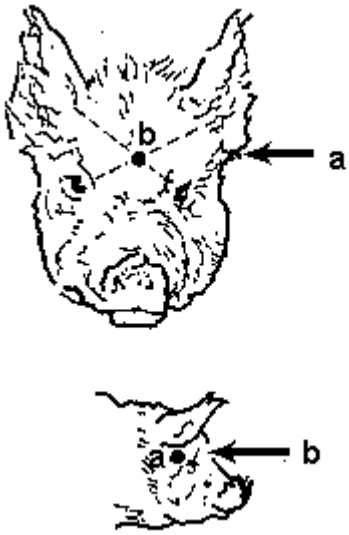
- Persons other than the marksman and an animal handler should be cleared from the area and stand well behind the marksman.
- Never fire while the animal is moving its head, wait patiently for a quiet interval before firing.
- To provide maximum impact and the least possibility of misdirection the range should be as close as circumstances permit.
- While the humane killer pistol and the captive-bolt pistol are designed to be pressed firmly on the head prior to being discharged, It is not safe to do this with a standard rifle or pistol.

(Australian Agriculture Council, Sub-Committee on Animal Welfare 1996).

Methods

Temporal Method
The pig is shot from the side of the head so that the bullet enters the skull at a point midway between the eyes and the base of the ear on the same side. This method is preferred for adult pigs because of the heavier bone structure of the front of the skull.

Frontal Method
The firearm should be aimed horizontally into the skull at a point midway across the forehead and for adult pigs about 2cms above the level of the eye.
(Australian Agriculture Council, Sub-Committee on Animal Welfare 1996).



Humane Destruction of Pigs

a. Indicates recommended position for temporal method (suitable for firearm only)
b. Indicates recommended position for frontal method (suitable for firearm or captive bolt method).

(Australian Agriculture Council, Sub-Committee on Animal Welfare 1996).

Poll Method
Aim behind the head at a point midway along a line drawn from the base of each ear.

Stunning by Clubbing

A hammer or other blunt heavy object may be used to make a blow to the skull to render unconscious small, easily controlled piglets. The blow should be aimed at the centre of the forehead in the position indicated for shooting in the frontal method. The unconscious piglet should be immediately bled out to ensure death.
(Australian Agriculture Council, Sub-Committee on Animal Welfare 1996).

Equipment

- All equipment to which pigs have access should be designed and maintained so as to avoid both injury and pain.
- The release of any pig after capture is not permitted.
- Any native wildlife captured is to be released immediately unless injured. Advice must be sought from the Environmental Protection Agency as soon as possible on actions to take in cases of injured native wildlife.
- Traps are to be placed in areas where ample shade is available throughout the day.
- Set traps are to be checked daily.
- When traps are not in use for free feeding or trapping, either the trap door must be maintained in the open position or the trap must be removed from the trap site.

SAFETY

Feral pigs are known to carry many diseases that can affect other livestock (not just pigs) and be transmitted to humans.

Those most likely to affect humans are:

Sparganosis
A parasite that affects the muscles of humans.

Leptospirosis
A serious illness that causes very high temperatures, kidney problems and jaundice.

Q Fever
This disease occurs in all animals. It can cause very high temperatures and result in severe heart problems.

Q fever and Leptospirosis cause symptoms similar to Ross River Fever and can be contracted through contact with blood, meat and urine through broken skin, intake of urine contaminated food or water and inhalation of infection air-borne organisms. Both can be fatal. Owing to these possibilities it is advisable to avoid excess handling of feral pigs.

Risk and Indemnity:

- The accredited trapper will be liable for loss or damage (including injury whether or not resulting in death) arising from the unlawful or negligent acts or omissions of the accredited trapper, their employees or agents, in the course of conducting (or attempted or purported conducting) of trapping activities.
- The accredited trapper releases and indemnifies all stakeholders and their associated officers, servants and agents from and against all actions whatsoever and howsoever arising which may be brought or made against any of them by any person including the accredited trapper , arising from:
    - Any wilful or negligent act or omission of the accredited trapper or any person for whose conduct the accredited trapper is liable.
    - Any unlawful or negligent act or omission of the visitors or invitees of the accredited trapper.
    - Death, injury, loss or damage suffered by the accredited trapper, it's employees, agents, or any visitors or invitees except where the death, injury or loss is caused the negligence or other wrongful act or omission of the stakeholders, or their relevant officers, servants or agents.
- Accredited trappers are under no circumstances to enter a trap when live feral pigs are enclosed within the trap.

Employment or representing the involved Stakeholders

- The accredited trapper does not become an employee or agent of any of the stakeholders by virtue of the accreditation.
- The accredited trapper shall not in the exercise of activities under this accreditation represent themselves or allow themselves to be represented as an employee or agent of the stakeholders involved.

Data Record Sheet

Name of Accredited Trapper……

Date:.....

Trap Location:.....

Trap Type:.....

Bait Used:.....

No. of days pre-feeding:.....

Trapping Date				
No. of Adult Females				
No. of Adult Males				
TOTAL				
No. of piglet Females				
No. of Piglet Males				
TOTAL				
Estimated weight of each adult or piglet.				
No. Suckers (if sow)				
No. pregnant sows				
General condition and Health of pigs,				
Features, abnormalities (parasites, lice etc.).				
Other notes				

INDEMNITY

In consideration of the Whitsunday Shire Council or Stakeholder involved in the Whitsunday Shire Feral Pig Management Strategy lending a .....(type) Feral Pig Trap to ……. (the accredited trapper) for a period of ……..……
……., the accredited trapper agrees to comply with all laws concerning the capturing of feral animals and to deal with all animals captured in a humane manner and to indemnity the Whitsunday Shire Council or Stakeholder involved in the Whitsunday Shire Feral Pig Management Strategy against all losses, costs, damages and expenses arising out of any actions, suits, proceedings, claims or demands resulting in any way whatsoever from the Whitsunday Shire Council or Stakeholder involved in the Whitsunday Shire Feral Pig Management Strategy lending the .....(type) Feral Pig Trap to the accredited trapper or the use of the .....(type) Feral Pig Trap by the accredited trapper whether in respect of loss of life, personal injury or damage to property and the accredited trapper hereby releases and discharges the Whitsunday Shire Council or Stakeholder involved in the Whitsunday Shire Feral Pig Management Strategy from any liability arising out of any act or omission of the Whitsunday Shire Council or Stakeholder involved in the Whitsunday Shire Feral Pig Management Strategy in any way whatsoever relating to such lending or use of the .....(type) Feral Pig Trap and agrees not to make any claims on or institute any proceedings against the Whitsunday Shire Council or Stakeholder involved in the Whitsunday Shire Feral Pig Management Strategy with respect to such lending or use of the .....(type) Feral Pig Trap.

SIGNED SEALED AND DELIVERED by
(Print name)……
(Signature).....
This day of …… 200….. In the presence of

WITNESS

(Print name)……
(Signature).....
(Date).....

LANDHOLDER INDEMNITY

In consideration of ……(accredited trapper) being invited to utilise a Feral Pig Trap on ……(property/address) for a period of ……, the accredited trapper agrees to comply with all laws concerning the capturing of feral animals and to deal with all animals captured in a humane manner. The owner/occupier whether in respect of loss of life, personal injury or damage to property, hereby releases and discharges the trapper from any liability arising out of any act or omission of the trapper in any way whatsoever relating to such use of the Feral Pig Trap and agrees not to make any claims on or institute any proceedings against the trapper with respect to such use of the Feral Pig Trap.

The landholder hereby agrees that ……(accredited trapper) may access ……(property name/address) described as.....(lot/plan) for all aspects of responsibility in regard to the establishment, monitoring and control of the Feral Pig Trap.

Conditions of entry include:
……
……
……
……
……
……
Pre-feeding costs are to be the responsibility of…….....…

In urban/semi-urban areas the local police are to be notified prior to shots being taken.

SIGNED SEALED AND DELIVERED by …… (accredited trapper) and …….....(owner/occupier)
This day of …….....in the presence of

……
WITNESS