FERAL PIG MANAGEMENT PLAN 2019 - 2023

Rockhampton Regional Council

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SUMMARY

Feral pigs are known to have adverse impacts on economic, social, environmental and agricultural values in the Rockhampton Region. Landholders have a responsibility to control feral pigs on their land. Feral pig territories typically occur over numerous properties, and are therefore difficult to effectively control on a single property basis. A coordinated approach to feral pig management is required and there is a community expectation that Council will facilitate this.

Under the *Biosecurity Act 2014*, local governments must have a biosecurity plan for invasive biosecurity matter in their local government area. Biosecurity matter includes feral pig (Sus scrofa). The difficulty in managing an adaptable, mobile animal has led to Council taking a nil tenure approach of working with a number of stakeholders on appropriate management solutions.

This plan integrates pest management principals, legal obligations, community expectations, scientific knowledge and animal welfare considerations to provide a framework for the control of feral pigs by landholders, Council and other key stakeholders.

This plan forms a sub plan under the Council's Biosecurity Plan 2017-2021.

BACKGROUND

Pigs were introduced to Australia by the first early settlers, as settlement spread, pigs were taken into new areas and subsequently, turned out to fend for themselves or escaped from enclosures.

Feral pigs are widespread in all habitats throughout Queensland including urban and peri-urban areas. Feral pigs tend to be smaller, leaner and more muscular than domestic pigs with well-developed shoulders, necks and smaller, shorter hindquarters. An adult female feral pig usually weighs 60-75kgs and males 90-110kgs.

Feral pigs are omnivorous, opportunistic feeders and thrive in a variety of habitats. They prefer dense cover to avoid direct sunlight and high temperatures. Because pigs have few sweat glands. They tend to drink more often, and wallow in water or mud to cool off in high temperatures.

Feral pigs have a higher reproductive potential than other large mammals in Australia, in good seasons, breeding may occur all year round. However, many piglets are lost to dingoes and wild dogs, starvation and loss of contact with their mother.

Feral pigs live in a variety of social structures, which is based on a matriarchal society. The most common group (sounder) consists of related sows and their young. Bachelor groups (usually siblings) form when sexually mature males leave or a chased from the group. Older males operate alone or in pairs and join female groups for mating purposes. Group sizes varies from solitary animals to 100 or more.

Feral pigs have a defined home range and habitually make use of trails, shelter areas, feeding and watering areas, rubbing and tusking trees and wallows. Feral pigs tend not to be territorial. The size of the home range depends on a number of factors including gender, resources and seasons.

IMPACTS

Feral pigs can impact almost all crops from sowing to harvest, starting with the uprooting of seeds and seedlings to feeding on or trampling mature crops.

Feral pigs will feed on seed, sugar cane and grain crops (except safflower), fruit and vegetable crops. They destroy pastures by grazing and rooting.

Feral pigs can target, and take lambs. They may also predate on native fauna including marsupials, reptiles, insects and ground nesting birds and their eggs.

Wallowing pigs damage and foul water in tanks and bore drains and silt up troughs. Feral pig activity degrades water quality which is a habitat for small terrestrial and aquatic animals. They destroy the vegetation that prevents erosion and provides food and nesting sites for native wildlife around the edges of watercourses ad swamps.

They can damage fences and dam walls. Feral pigs can spread invasive plant species and ground disturbance by pigs may result in weed seeds germinating rapidly in the disturbed soils.

Feral pigs are known to cause extensive damage of Council assets, including parks, and open spaces. They are attracted to revegetation projects and tracks around Mt Archer.

Feral pigs carry infectious diseases and internal and external parasites. Many of the diseases can spread to domestic pigs, other livestock and humans.

PURPOSE

The purpose of this plan is to set the overarching framework for the management of feral pigs within the Rockhampton Region. The plan will be supported by the subsequent development of underlying associated documents including action plans, work instructions and strategies.

OBJECTIVE AND OUTCOMES

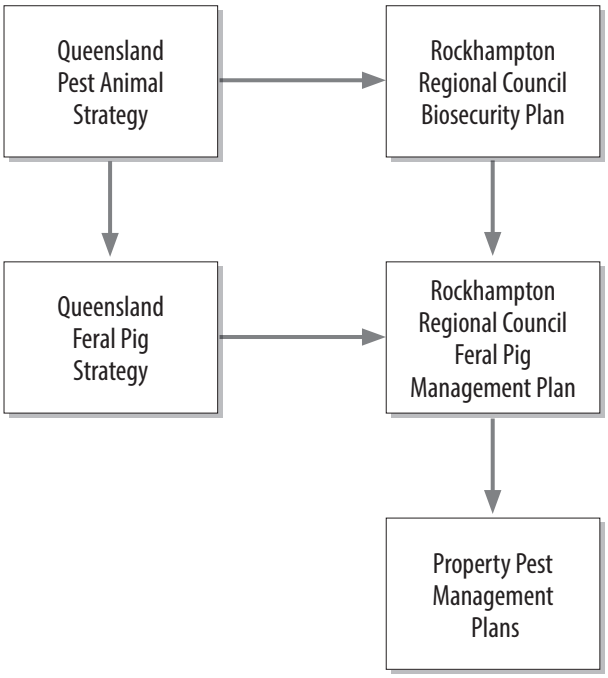
The actions for feral pig management in the Rockhampton Region will be delivered based on five desired outcomes and related objectives.

OBJECTIVE				
To achieve effective control of feral pigs across all tenures	To reduce feral pig impacts in rural areas through community action	To reduce feral pig impacts in urban and peri-urban areas	To develop and implement a communication and education program to ensure landholders and stakeholders are aware of their responsibility	To develop and implement surveillance programs of feral pigs
OUTCOME				
Feral pigs are managed within the Rockhampton Regional Council area	Feral pig impacts in rural areas are reduced	Feral pig impacts in urban and peri-urban areas are reduced	The community has greater knowledge of feral pigs and feral pig management	Council has an increased knowledge of feral pig activity and behaviour within the region

An action plan to achieve the priority objectives is outlined in Appendix 1

INTEGRATION

This management plan is designed to be consistent with plans from surrounding local government areas and other Rockhampton Regional Council plans (eg wild dog plan). This ensures effective integration across all levels of government. This relationship is illustrated below.



STAKEHOLDERS

A number of stakeholders have interest in feral pig management within the Rockhampton Regional Council area. Effective engagement of all relevant parties is critical to the success of feral pig management programs. Stakeholders include:

- Department of Agriculture and Fisheries (including Biosecurity Queensland)
- Department of Environment and Science (including former National Parks, Sport and Racing)
- Department of Natural Resources, Mines and Energy
- Local Government
- Landholders/ managers
- Industry groups; and
- Natural resources management (NRM) groups.

LEGISLATION

Under the *Biosecurity Act 2014* feral pigs (Sus scrofa) are restricted invasive animals. A feral pig must not be moved, given away, sold, fed or released to the environment without a permit.

The Act requires everyone to take all reasonable and practicable steps to minimise the risks associated with invasive plants and animals under their control, including feral pigs.

The *Biosecurity Act 2014* requires local governments to have a biosecurity plan in place to manage pest animal impacts in their local government area. Council's Biosecurity Plan 2017-2021 has been adopted by Council. This plan forms a sub plan under the Biosecurity Plan.

Under the *Health (Drugs and Poisons) Regulation 1996*, the toxins 1080 and strychnine are classified as Schedule 7 poisons. Biosecurity Queensland is responsible for the provision of 1080 in association with Queensland Health. Council officers will inject baits with poison in accordance with the legislation.

Queensland Health can issue landholders with a permit for strychnine for their own land only.

In order to become an authorised 1080 or strychnine operator, an applicant including a local government employee, must undergo a Biosecurity Queensland training course and pass a Queensland Health examination. Queensland Health, may at any time, conduct an inspection for compliance with the persons licence conditions.

The management of feral pigs is also regulated by the:

- *Animal Care and Protection Act 2001*
- *Biosecurity Act 2014*
- *Civil Aviation Regulation 1988*
- *Health (Drugs and Poisons) Regulation*
- *Nature Conservation Act 1992*
- *Nature Conservation Regulation 1994*
- *Weapons Act 1990*
- *Work Health and Safety Act 2011*

PRINCIPALS OF PEST MANAGEMENT

The development and implementation of this plan is based on the management principles for invasive plants and animals being:

- Public awareness
- Commitment
- Consultation and partnership
- Planning
- Prevention and early intervention
- Best practice
- Improvement (research, monitoring, evaluation).

The principles are a common basis for management throughout Queensland. The consideration of all these principles is critical to the success of any management activity.

CONTROL
CONTROL OPERATIONS

The aim of control is to minimise the impacts of feral pigs across the Rockhampton Region.

Effective control requires an integrated, collaborative approach. A nil tenure approach, where a range of control methods are applied across all tenures by all stakeholders in a cooperative and coordinated manner can achieve this.

Ultimately though, it is the responsibility of landholders to determine and implement control measures on their individual land holdings.

CONTROL METHODS

Control methods employed are based on an understanding of feral pig behaviour, social structure, habitats and food preferences. Control methods are also influenced by concerns for animal welfare and non-target impacts, public safety, occupational health and safety issues, and by the legislative and practical restrictions on applying some techniques.

Effective control requires an assessment of each individual situation and circumstances surrounding each problem. There is no single 'quick and easy' method that will solve all problems. Best results are achieved through a suite of complementary control methods.

An overview of the main methods for controlling feral pigs, along with their relative efficacy, cost-effectiveness, target specificity and humaneness acceptability is outlined in Appendix 2. Council considers these when determining control measures used.

CHALLENGES FOR MANAGING FERAL PIGS

The predominant challenges for managing feral pigs in the Rockhampton Region include:

- Difficulties of control in peri-urban and urban areas
- Proximity of protected areas (national parks) to peri-urban and urban areas
- Mobility of feral pigs
- Changing land use and social demographics
- Absentee landholders
- Difficulty in attracting feral pigs to baits or traps, significant free-feeding is required
- Most activity is nocturnal so travelled paths are hard to determine and harbourage of animals can occur many kilometres from where damage is occurring
- Lack of control by landholders only slightly affected but still providing harbourage or unknowingly providing harbourage to pigs
- Concerns over non-target impacts of control methods
- Animal welfare obligations to be acknowledged or accepted which may limit the use of some control methods
- Insufficient resources.

INTERVENTION IN RURAL AREAS

As feral pigs home range may extend over several properties, broad scale baiting is the most effective and efficient means of controlling feral pigs in rural areas, but may not be suitable for all situations.

When baiting, appropriate selection and presentation of bait material must be considered. The baits must be detectable and palatable to feral pigs. Easily found and target specific baits mean more baits will be available to pigs, thereby reducing the quantity required to implement effective control. Consider the local diet preference when baiting.

Free-feeding of non-toxic baits may be required prior to baiting to ensure that the pigs are attracted to the baits being used. This may also reduce the risk of poisoning non target animals.

Council offers rural landholders the opportunity to participate in 1080 baiting programs to control invasive species on their properties in the Rockhampton Region. These are proactive programs to prevent the build-up of feral pig populations and associated impacts. Programs incorporate a number of neighbouring landholders baiting at the same time to ensure maximum results. Reactive programs may be run after stock losses, agriculture or infrastructure damage are incurred in an area if feral pig activity is seen to approach high levels or when there are safety concerns.

Other options may include trapping, shooting and fencing, including aerial shooting in open country.

Fencing is an expensive option, but may be useful for control on high value crops over small areas. Research has demonstrated that the most successful pig proof fences are also the most expensive.

INTERVENTION IN PERI-URBAN AND URBAN AREAS

Feral pig home ranges can include areas of high human activity including townships and parks. Feral pigs home range typically occur over numerous properties in peri-urban and urban areas and therefore are difficult to effectively control on single property basis.

Feral pigs are known to inhabit the outskirts of the City of Rockhampton particularly in the Frenchville Road, and Mt Archer areas where residential land adjoins national park. They are also prevalent in recreational areas such as 'First Turkey'.

Certain situations require intervention where problem feral pigs are identified and removed in order to minimise risk to public health and safety or the environment. Council's hierarchy of control of feral pigs is outlined in Appendix 3.

Trapping and baiting options will require pre-feeding to attract the pigs to the food source. Traps may be set up permanently, only activating the gates when significant pig activity is evident.

STRATEGY IMPLEMENTATION REVIEW AND PERFORMANCE REPORTING

Operational actions will assessed against performance indicators regularly.

Appropriate reporting frameworks will be put in place to ensure management can monitor performance and adjust operational effort according to circumstances.

A mid-plan review half way through the duration of the plan will be undertaken to ensure that it identifies and reflects changing priorities, operational capacity and the legislative framework has been afforded adequate financial and staffing resources.

DEFINITIONS

ACCEPTABLE METHODS - control methods that are humane when used correctly.

CONDITIONALLY ACCEPTABLE METHODS - control methods that, by the nature of the technique, may not be consistently humane. There may be a period of poor welfare before death.

FERAL PIG - A pig that has all of the following morphological features:

- An elongated snout
- Long coarse hair
- Sloping hindquarters

HUMANENESS - the overall impact that a control method has on an individual animal's welfare.

NIL TENURE - an approach where all tenures are at a 'landscape' (rather than 'property') level.

NIL TENURE PLANNING PROCESS - an approach where a range of control methods are applied across all tenures by all stakeholders at a 'landscape' (rather than 'property') level in a cooperative and coordinated manner. This approach focuses on mapping and information gathering from landholders to identify areas of feral pig habitat, movement corridors, historical and recent damage and current control. Replacing the boundaries on the map following the information collection process clearly identifies the responsibilities of each stakeholder with regard to feral pig management in the area.

NOT ACCEPTABLE - methods that are considered to be inhumane. The welfare of the animal is very poor before death, often for a prolonged period.

PERI-URBAN - landscape that combines urban and rural activities. These areas commonly contain a mixture of land usages including suburban pockets, rural residential lots and small-to-medium agricultural holdings.

REFERENCES

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APPENDIX 1 - ACTION PLAN

Desired Outcome 1: Manage feral pigs within the Rockhampton Region

Objective 1.1 – To achieve effective control of feral pigs across all tenures

KEY ACTIONS	WHEN	SUCCESS INDICATOR
Participate in coordinated nil tenure planning processes	Ongoing	Participation undertaken
Implement agreed control measures as part of a nil tenure and integrated coordinated approach	Ongoing	Control methods implemented
Review exiting control techniques and identify gaps in control technology and areas for improvement in existing technology in terms of effectiveness, efficiency and humaneness.	June 2019	Review undertaken
Develop work instructions to support the Feral Pig Management Plan	June 2019	Work Instructions developed
Enforce compliance when landowners do not take reasonable steps to control feral pigs.	As appropriate	Compliance gained, including using Biosecurity Orders if required.
Incorporate feral pig management into other related planning and management programs	Ongoing	Feral pig management plan incorporated in other released planning and management programs
Secure adequate resources to carry out the actions in this plan	Ongoing	Adequate resources are secured to undertake actions
Ensure staff responsible for feral pig control activities are appropriately trained and licensed	Ongoing	Staff area appropriately trained and licensed for the duties they undertake
Build and maintain working partnerships between key stakeholders, to generate a holistic approach to feral pig management including a sense of community ownership of the problem	Ongoing	Working partnerships maintained

APPENDIX 1 - ACTION PLAN

Desired Outcome 2: To reduce feral pig impacts in rural areas through community action

Objective 2.1 – Feral pig impacts in rural areas are reduced

KEY ACTIONS	WHEN	SUCCESS INDICATOR
Facilitate the coordination of regional area 1080 baiting programs	Ongoing	1080 baiting programs undertaken
Promote 1080 baiting programs to engage absentee and non participating landholders	Ongoing	New landholders participate in 1080 baiting programs
Investigate the interest in a feral pig working group, similar to the established wild dog working group	April 2019	Expressions of interest called by Council
Support mechanisms to landholders to undertake feral pig control	Ongoing	Support provided
Ensure landholders using Council provided feral pig control services adhere to best practice	As baiting occurs	Landholders adhere to best practice – no justified complaints received

Desired Outcome 3: To reduce feral pig impacts in urban and peri-urban areas

Objective 3.1 – Feral pig impacts in urban and peri-urban areas are reduced.

KEY ACTIONS	WHEN	SUCCESS INDICATOR
Partner with other Council Units, Parks and Wildlife Services and Biosecurity Queensland in the management of feral pigs, focusing on the Mt Archer area.	As appropriate	Coordinated management of feral pigs in this area occurs
Partner with Parks and Wildlife Services, Biosecurity Queensland and bordering Councils of Livingstone, Gladstone, Central Highlands and Banana where cross border feral pig activity is occurring.	As appropriate	Coordinated management of feral pigs in this area occurs
Implement agreed control methods on all lands a part of a nil tenure coordinated and integrated program	Ongoing	Agreed control measures implemented
Support mechanisms to landholders to undertake feral pig control	Ongoing	Support provided
Develop and implement targeted education tools for peri-urban and urban landholders	June 2020	Tools developed and implemented
Increase the communities awareness of methods to minimise feral pig encroachment and impact in urban and peri urban areas.	September 2019	Information provided to residents boarding areas where feral pigs are known to inhabit

APPENDIX 1 - ACTION PLAN

Desired Outcome 4: To develop and implement a communication and education program to ensure landholders and stakeholders are aware of their responsibility

Objective 4.1 – The community has greater knowledge of feral pigs and feral pig management.

KEY ACTIONS	WHEN	SUCCESS INDICATOR
Liaise with stakeholders to provided adequate promotion	As appropriate	Liaison undertaken
Conduct field days and other education activities aimed at increasing the awareness of feral pigs, in conjunction with other invasive species.	Biennial	Field days undertaken every 2 years
Develop targeted education tools	June 2020	Tools developed
Prepare media releases and associated messaging for social media	As appropriate	Media releases made

Desired Outcome 5: To develop and implement surveillance programs of feral pigs.

Objective 5.1 – Council has in increased knowledge of feral pig activity and behaviour within the region.

KEY ACTIONS	WHEN	SUCCESS INDICATOR
Investigate the purchase of monitoring equipment to track feral pig and understand their behaviour	April 2019	Investigation occurred
Support field evaluations of new control practices	As appropriate	Field evaluations undertaken
Contribute to research on the management of feral pigs	As appropriate	Contribution to research undertaken
Investigate collaboration with universities to undertake projects on feral pig management	June 2020	Investigation undertaken
Investigate the purchase of traps with remote cameras for use in both semi-permanent and temporary instances	April 2019	Investigation occurred and planned for purchase

LETHAL	EFFICACY	COST-EFFECTIVENESS	TARGET SPECIFICITY	HUMANENESS ACCEPTABILITY	COMMENT

APPENDIX 2 - OVERVIEW OF CONTROL MEASURES

Ground baiting with 1080	Effective	Very cost effective	Moderate	Conditionally acceptable	The most cost effective technique available. Poison baits are made from grain, fruit, vegetables and meat or manufactured baits are used. Free-feeding prior to baiting is required to ensure that the pigs are attracted to the bait.
Aerial baiting with 1080	Effective	Very cost effective	Moderate	Conditionally acceptable	Effective for broad scale control in remote and inaccessible areas to complement strategic ground baiting. Higher possibility of targeting non pig species than ground baiting.
Phosphorous based poison (CSSP)	Effective	Cost Effective	Moderate	Not acceptable	It is toxic to non target species including birds and other animals, and is slow acting. Does not break down readily in the environment. Is considered inhumane and is being phased out in all states and territories.
Ground Shooting	Not efficient for broad scale problem	Cost Effective	Very High	Acceptable	Can be useful for clean-up after another control method has been implemented.
Aerial Shooting	Effective in specific situations	Cost effective	Very High	Conditionally Acceptable	May be suitable in broad acre situations where pig numbers are high
Shooting to euthanise trapped feral pigs	Effective	Cost Effective	High	Acceptable	Must be conducted in conjunction with trapping

NON-LETHAL	EFFICACY	COST-EFFECTIVENESS	TARGET SPECIFICITY	HUMANENESS ACCEPTABILITY	COMMENT

APPENDIX 2 - OVERVIEW OF CONTROL MEASURES

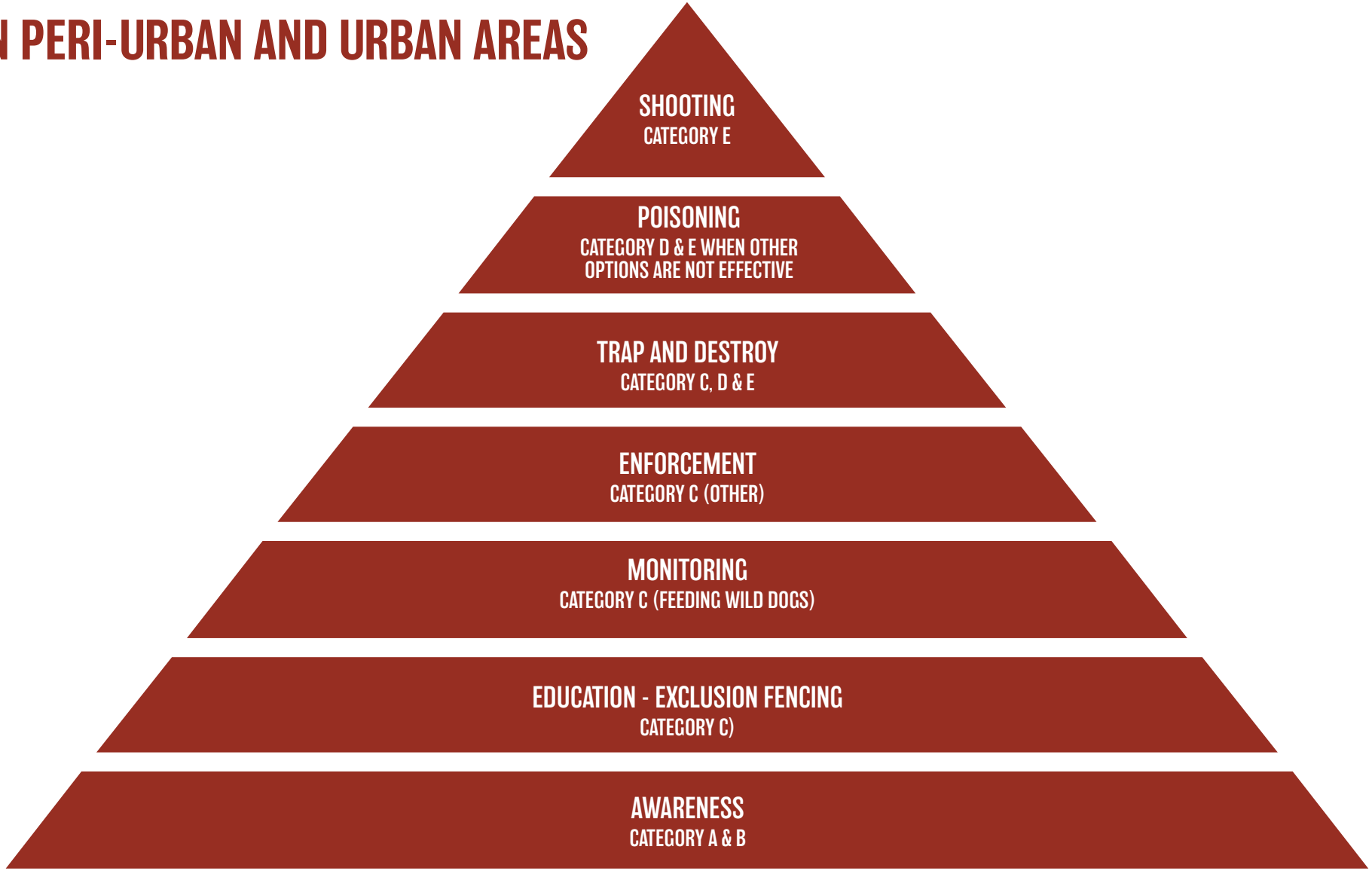
Exclusion Fencing	Effective in suitable areas	Low cost effectiveness	High	Acceptable	May be useful in small situations or individual fields. The higher the cost of the fence the more effective it has found to be
Pig dogging	Limited efficacy	Cost Effective	High	Not acceptable	Using trained dogs to locate and capture feral pigs. Pigs are either flushed out of cover or bailed up and then subsequently shot or stabbed by hunters.
Judas Pig	Unknown	Low cost effectiveness	High	Acceptable	This method can be used for tracking prior to other lethal control measures being undertaken
Electric Fence	Limited efficiency	Low cost effectiveness	Moderate	Conditionally Acceptable	
Box trap*	Effective on small or individual groups only	Cost Effective	High	Conditionally Acceptable	Portable and designed to fit on the back of the 4WD. Easily relocated. More suited to individual or small groups only.
Panel/ cage trap*	Effective	Cost - Effective	Medium	Conditionally Acceptable	Series of weldmesh panels wired together and supported with steel posts at the corners and panel centres. Panel traps are relatively easy to set up and transported.
Silo trap*	Effective	Cost Effective	Medium	Conditionally Acceptable	Built from continuous mesh, stronger than a panel trap while being flexible to prevent pigs from climbing out or breaking mesh More suitable to semi-permanent trap sites

* The effectiveness and target specificity of all traps is increased with the ability to have cameras and remote triggers. Remote triggers allows an officer from a location that is different from the trap to remotely engage the door. This reduces the cost of officer time of having to regulatory check the trap, the risk of capturing non target species and to be able to engage the door when the most targeted animals are present in the trapped area.

CATEGORY	ACCESSIBILITY	ASSET DAMAGE	NUMBERS	MANAGEMENT ACTIONS

APPENDIX 3 - HIERACHY OF CONTROL

IN PERI-URBAN AND URBAN AREAS



APPENDIX 3 - HIERACHY OF CONTROL

Category A	Limited accessibility	No Damage (passing through)	Low – Medium	**Complete** feral pig sighting and observation spreadsheet **Public awareness**
Category B	Limited accessibility	No damage (passing through)	High	**Complete** feral pig sighting and observation spreadsheet **Public awareness** and education of people **Monitor** activity - If regular sighting install camera to track
Category C	May be accessible at times	Digging in gardens, minor soil removal	Low – Medium	**Complete** feral pig sighting and observation sheet **Monitor** activity and behaviour **Educate** people about feral pigs and exclusion fencing **Control** using traps if suitable
		Wallowing/rooting in essential infrastructure	Low	
Category D	May be accessible at times	Wallowing/rooting in essential infrastructure (parks) or on a broad scale	Medium – High	**Intense monitoring** and documentation of damage Monitoring cameras installed and identify potential sites for trapping **Control** If suitable site found, place trap and free- feed if able **Public Notification** through signage of feral pig sightings in the area
		Digging in gardens, minor soil removal	High	
Category E	May be accessible at times	Wallowing/rooting in environmentally significant areas and high value riparian areas	Low – High	**Intense monitoring** and documentation of behaviour **Public notification** through relevant media **Control** using taps, poison or shoot.

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