Action Plan for the Eradication of Feral Pigs from Kangaroo Island

Disaster Rebuilding and Resilience Program for Kangaroo Island

Government of South Australia
Department of Primary Industries and Regions

Kangaroo Island Feral Pig Eradication Action Plan

Information current as of 21/12/2020

Disclaimer

All Enquiries

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KI Feral Pig Eradication Action Plan

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Introduction

Feral pigs on Kangaroo Island (KI) cause severe impacts to primary producers through damage to agricultural pastures, fences, grain and potato crops as well as killing and eating lambs. In the period between 2015-17, feral pigs cost KI farmers an estimated $1.16 million.

Feral pigs also kill and eat native wildlife and plants, damage natural habitats and spread weeds and muddy streams. They are vectors of diseases that impact livestock and native wildlife and spread the root-rot fungus *Phytophthora.*

The 2019-20 bushfires devastated the western end of KI, burning most of the areas used by feral pigs and aggregating the remaining feral pigs in small unburnt areas where there is limited food and cover, putting additional pressure on the recovering habitats and wildlife. The feral pig population pre-bushfire was estimated to be around 5,000. The population is now thought to have been dramatically reduced.

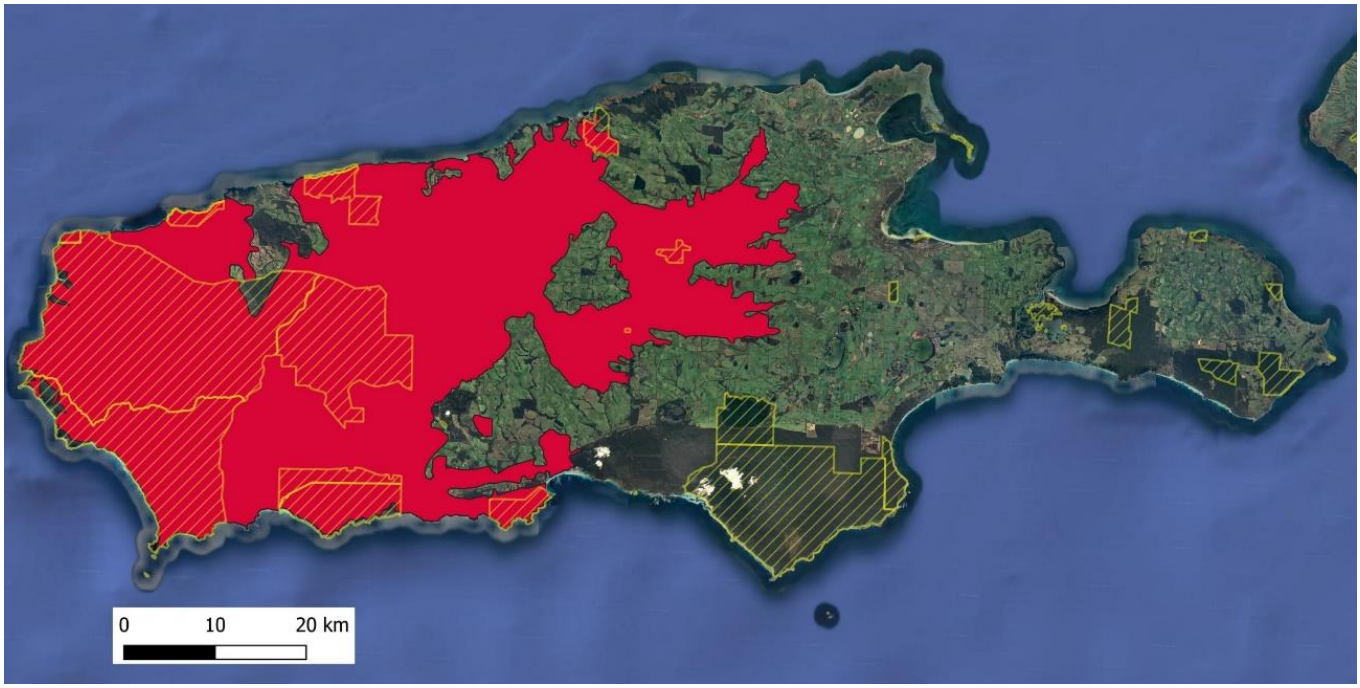
A silver lining in this tragedy is an opportunity to eradicate feral pigs from KI, while their numbers are low and the dense vegetation across the western end is recovering.

This Action Plan has been developed in partnership by the KI Feral Pig Steering Committee, the Department of Primary Industries and Regions, and the KI Landscape Board. It has been written to ensure that the program;

- Allocates resources in the most efficient way possible.
- Undertakes all control measures strategically, humanely and legally.
- Aims for eradication, not ongoing management.

The Action Plan will be reviewed every 12 months to tailor activities.

2019-20 bushfire fire scar



Project management and delivery

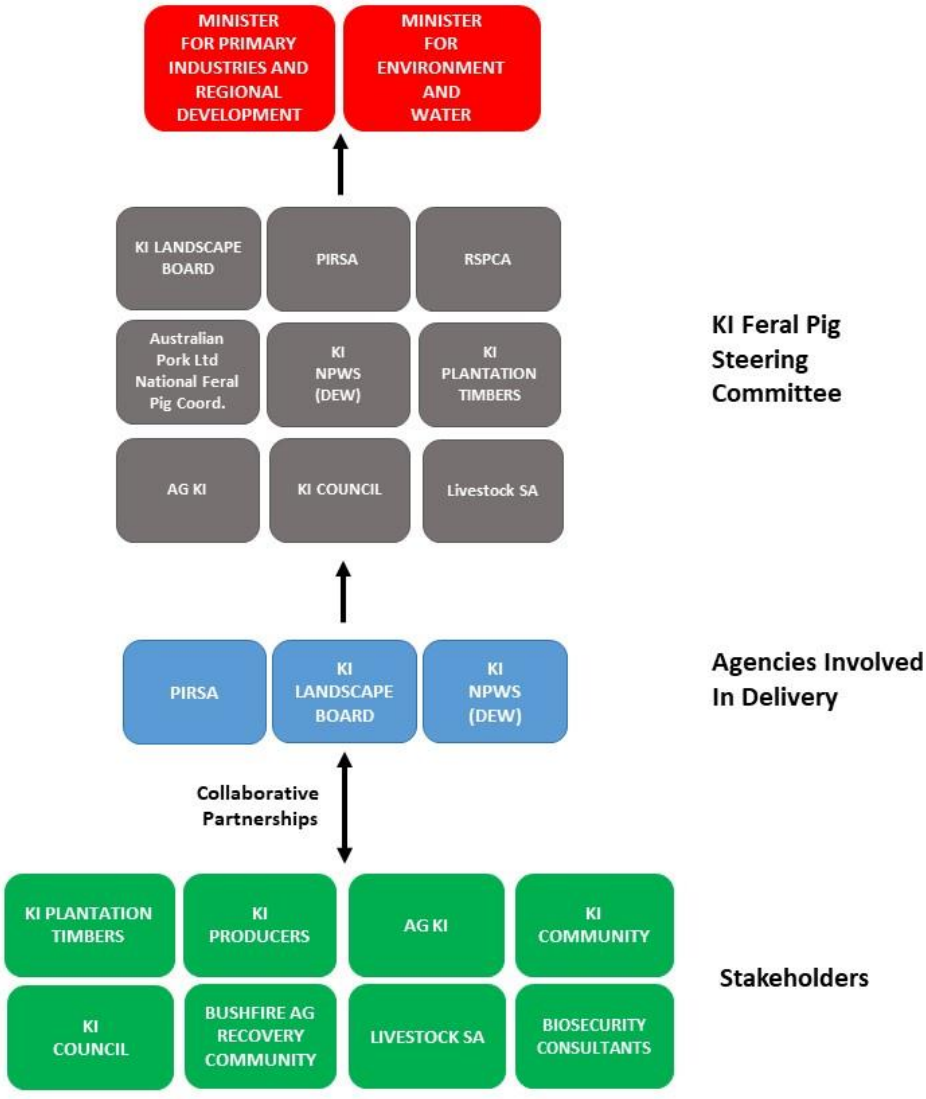
The Project is overseen by the Kangaroo Island Feral Pig Eradication Steering Committee, with member organisations representing farmers, land managers and other stakeholders.

The Committee advises the project sponsor (Executive Director, PIRSA Biosecurity SA), who oversees reports on the eradication program to the Minister for Primary Industries and Regional Development and the Minister for Environment and Water.

The objectives of the Committee are copied below from the Terms of Reference:

1. Provide strategic direction for the program to eradicate feral pigs by June 2023.
2. Develop the Kangaroo Island Feral Pig Action Plan.
3. Maximise stakeholder understanding of the Action Plan and engagement with it.
4. Monitor the implementation of the Action Plan.
5. Ensure poor welfare outcomes for feral pigs, wildlife and other animals are minimised.

Project management structure and stakeholder partnerships



Budget

The project has been funded for three years with a total budget of $2.66 million, with funds directed by the steering committee.

Activity	Total Cost	Cost 2020-21	Cost 2021-22	Cost 2022-23
Project Coordination and Operational Support	$333,669	$109,023	$111,211	$113,435
KI Feral Pig Action Plan *Development and implementation*	$98,102	$98,102	$0	$0
KI Landscape Board *Operational feral pig control*	$660,000	$220,000	$220,000	$220,000
Program Delivery *Trapping, shooting, baiting, logistics and materials*	$1,138,229	$341,229	$331,000	$466,000
Bushfire Recovery *Communications and media*	$15,000	$5,000	$5,000	$5,000
Bushfire Recovery *Program management*	$420,788	$140,263	$140,263	$140,263
Total	$2,665,788	$913,617	$807,474	$944,698

The 'Project Coordination and Operational Support' includes the salary of the *Kangaroo Island Feral Pig Coordinator* for 3 years. This role coordinates all aspects of the project.

The KI Feral Pig Action Plan allocation includes the salary of the *Biosecurity Planning Officer – Feral Pigs* for 1 year. This role supports project planning and operational capacity.

The allocation to the KI Landscape Board covers the salary costs of two *Animal Control Officers* for 3 years. These roles perform the on-ground trapping, baiting and shooting works.

The Program Delivery component covers on-ground operations, such as trapping, shooting, baiting and all associated materials, consumables and contractors.

Funding allocated to the Bushfire Recovery components of the project will cover the costs of management of the Bushfire Recovery effort, as well as media and communications costs associated with promoting the project.

Timeline

The project will run until June 2023. The window of opportunity provided by the bushfires is very narrow.

Operations commenced in the summer of 2020-21, when vegetation cover was minimal, and food resources for pigs were depleted. There is a 12-month window before vegetation is an impediment.

Control operations will vary seasonally. Feral pigs are more likely to move in the open during winter and spring, and pig signs are more visible as they are more actively rooting in pastures. In summer and autumn feral pigs have less access to food, and so are more susceptible to baiting and trapping. In summer and autumn, they are also likely to be aggregated near fresh water and seeking shade and cover. The best control methods and tools will change accordingly.

Monitoring and community engagement will take place year-round. This will include monitoring by project staff, using camera traps as well as reporting by the KI community and visitors. Regular community engagement events will be held throughout the project, to give information on progress and to train landholders on the use of control tools and reporting, including FeralScan, a free pest reporting and mapping mobile phone App.

Evaluation will take place specifically to inform control activities.

	2020-21				2021-22				2022-23			
	Spring	Summer	Autumn	Winter	Spring	Summer	Autumn	Winter	Spring	Summer	Autumn	Winter
Assessment phase Planning and procurement												
Eradication phase 1*												
Community monitoring, reporting and engagement												
Eradication phase 2												
Evaluation phase												
Eradication phase 3												

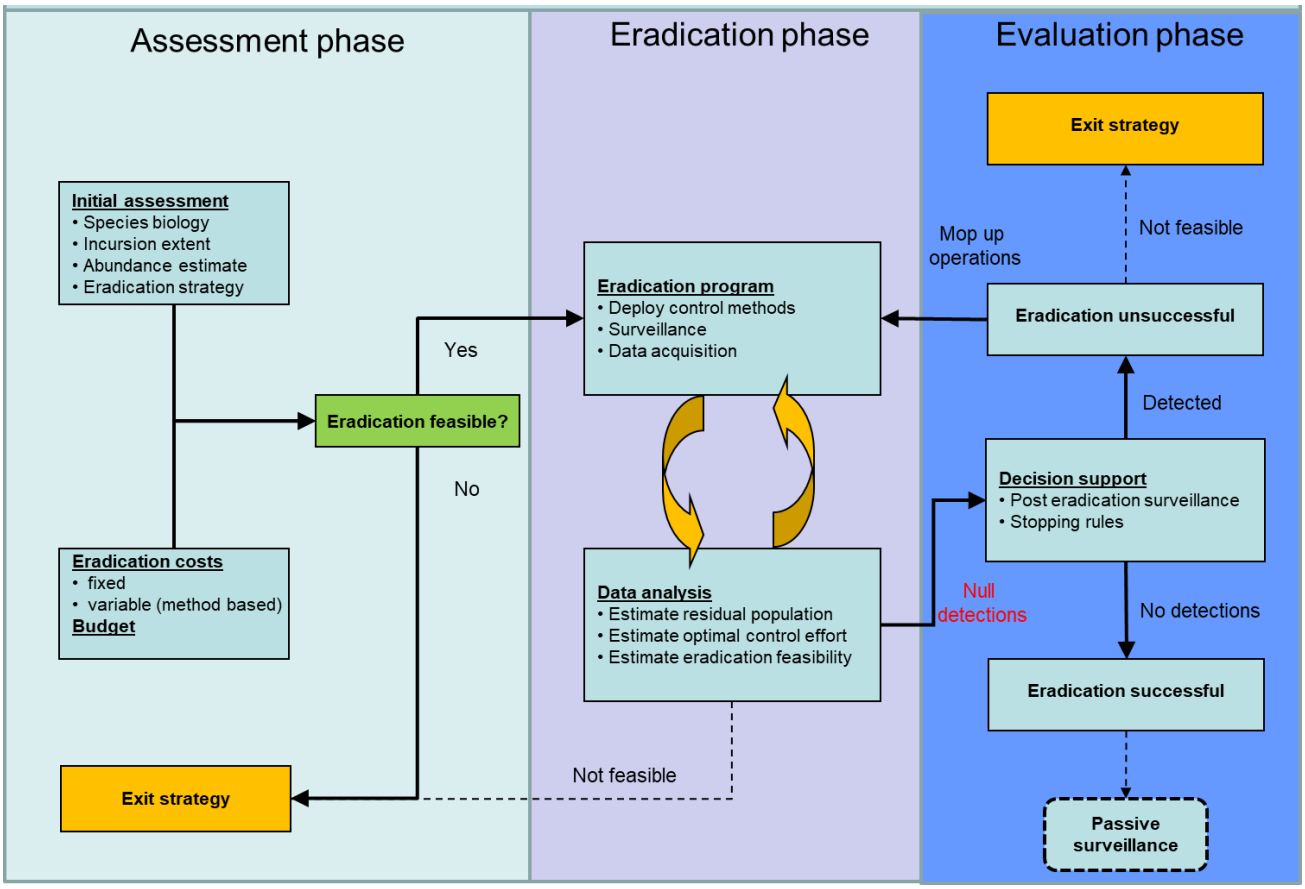
***Eradication phases**: Dark Blue = dry season methods, Light Blue = wet season methods

Eradication planning

The **Eradication Framework** software will be used to plan control activities. The software was developed by Arthur Rylah Institute through a Centre for Invasive Species Solutions project.

The Eradication Framework uses data on pig distribution and abundance (before and after control efforts), in eradication and mop-up phases, as well as time and costs of control and detection methods. With these data, the tool predicts the amount of effort and time required to remove remaining animals, and amount of search effort needed.

The software will be used to inform all stages of the project, from initial planning, culling operations and the assessment of proof of freedom.

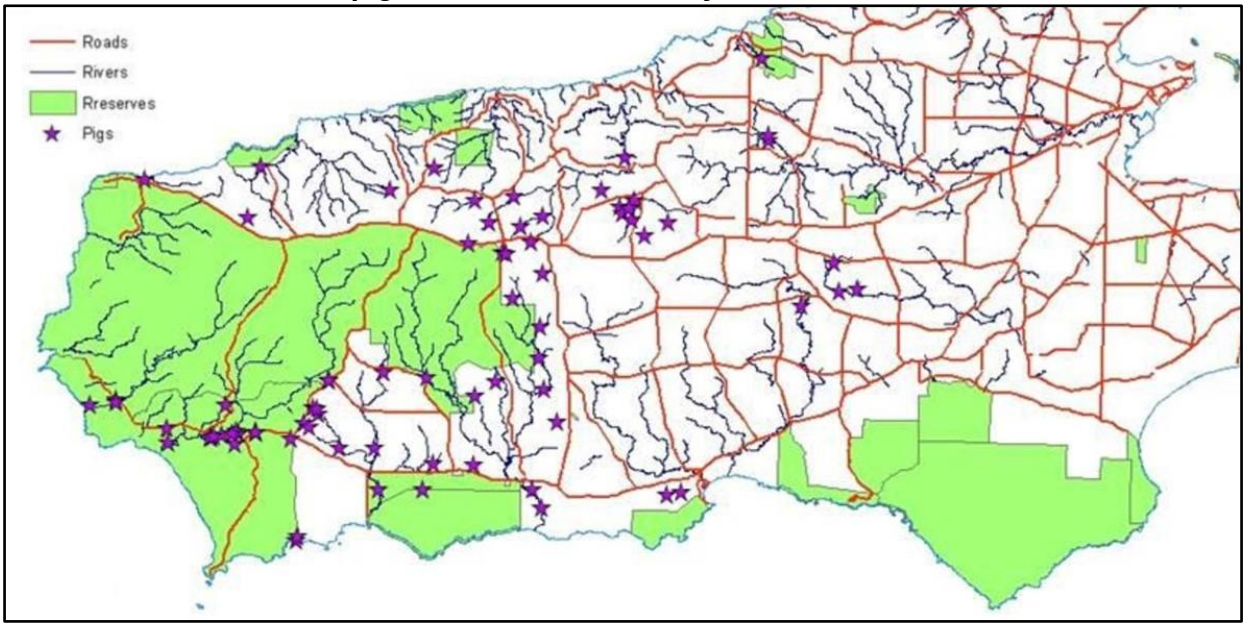


Operations

Distribution and abundance of feral pigs and control efforts

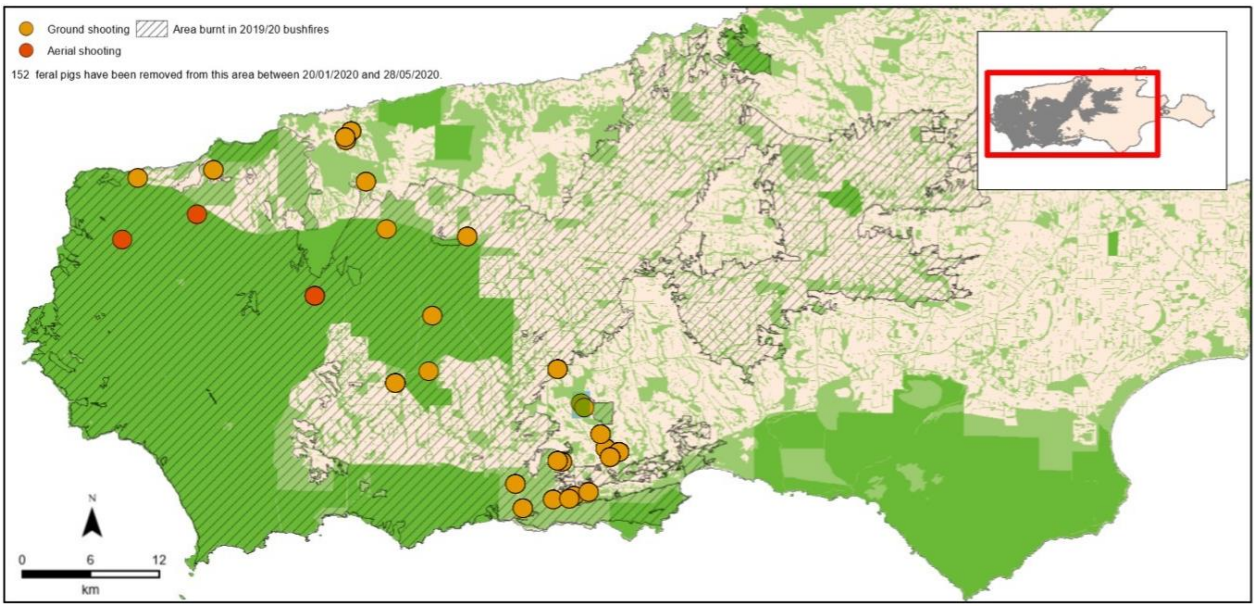
The *SA Declared Animal Policy Feral Pig (Sus scrofa)* indicates that prior to the 2019/20 fires, there were about 5,000 feral pigs in the western end of the island, with hot spots located in Flinders Chase National Park.

2009 distribution of feral pigs based on dam surveys



Post fire, the remaining feral pigs are moving out of the fire scar. It is difficult to estimate how many pigs are remaining. Feral pig control efforts by the Landscape Board removed 152 pigs between January and May 2020, with another 100 pigs removed by landholders.

2020 post fire feral pig control efforts

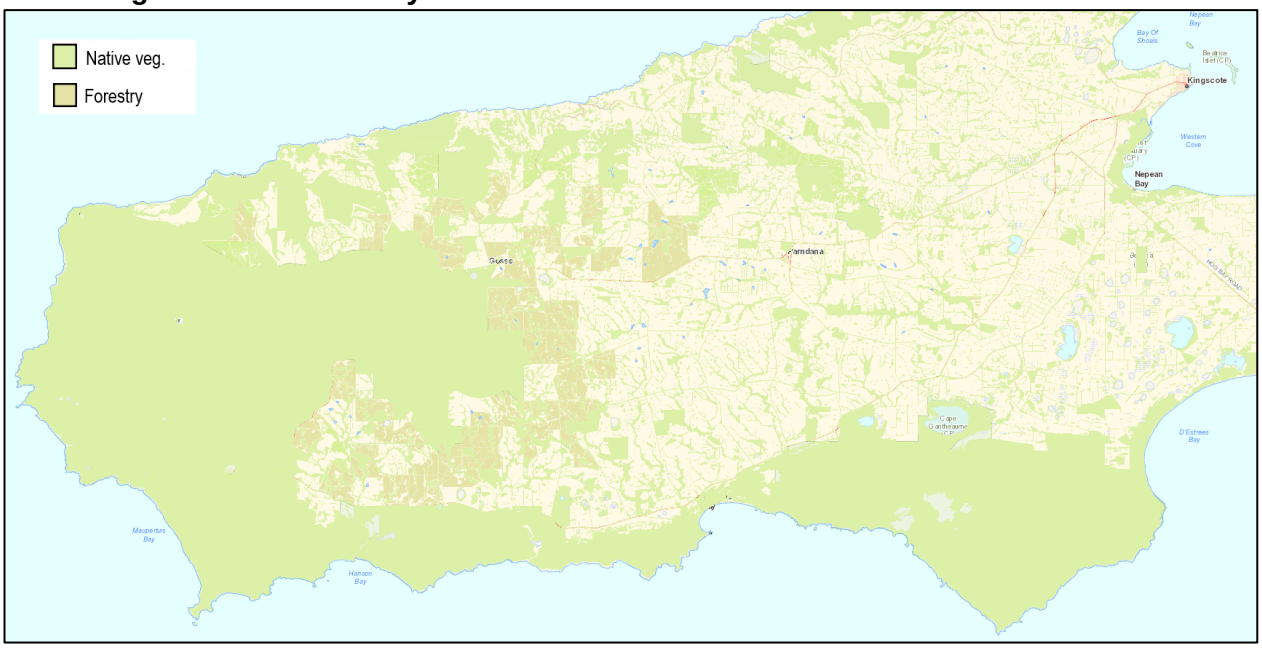


Vegetation, land use and waterways

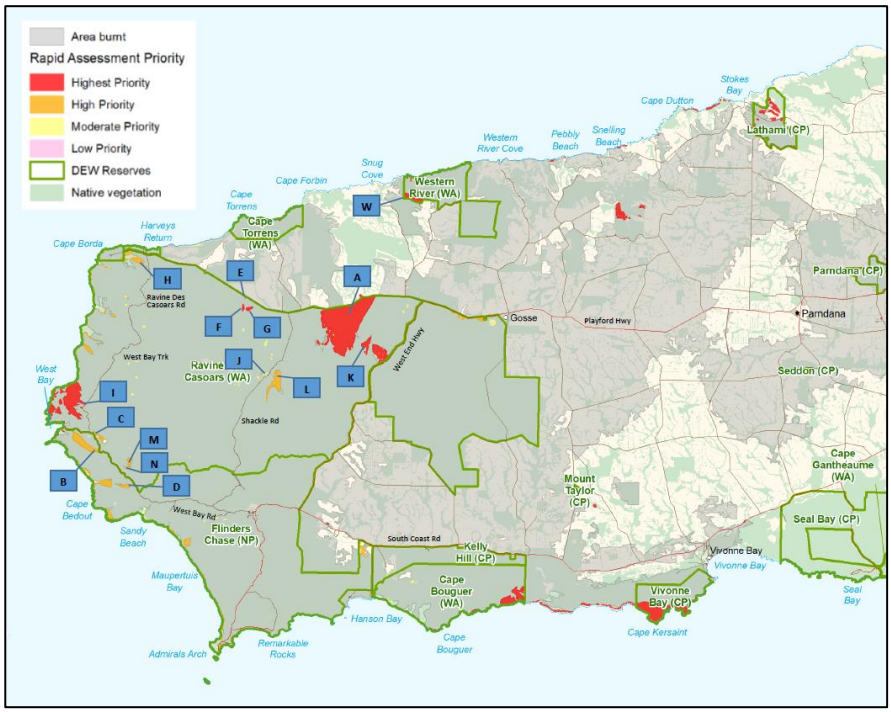
Feral pig distribution and control activities will be influenced by land cover, land use and surface water availability.

The three dominant land use types on the western end of KI are: native vegetation, forestry and pasture. The largest land use is native vegetation, with the biggest landholder being National Parks, and then many smaller, privately owned areas of vegetation. The next largest land use on western KI is forestry, the major landholder of which is KI Plantation Timbers.

Native vegetation and forestry extent



Priority patches of unburnt vegetation

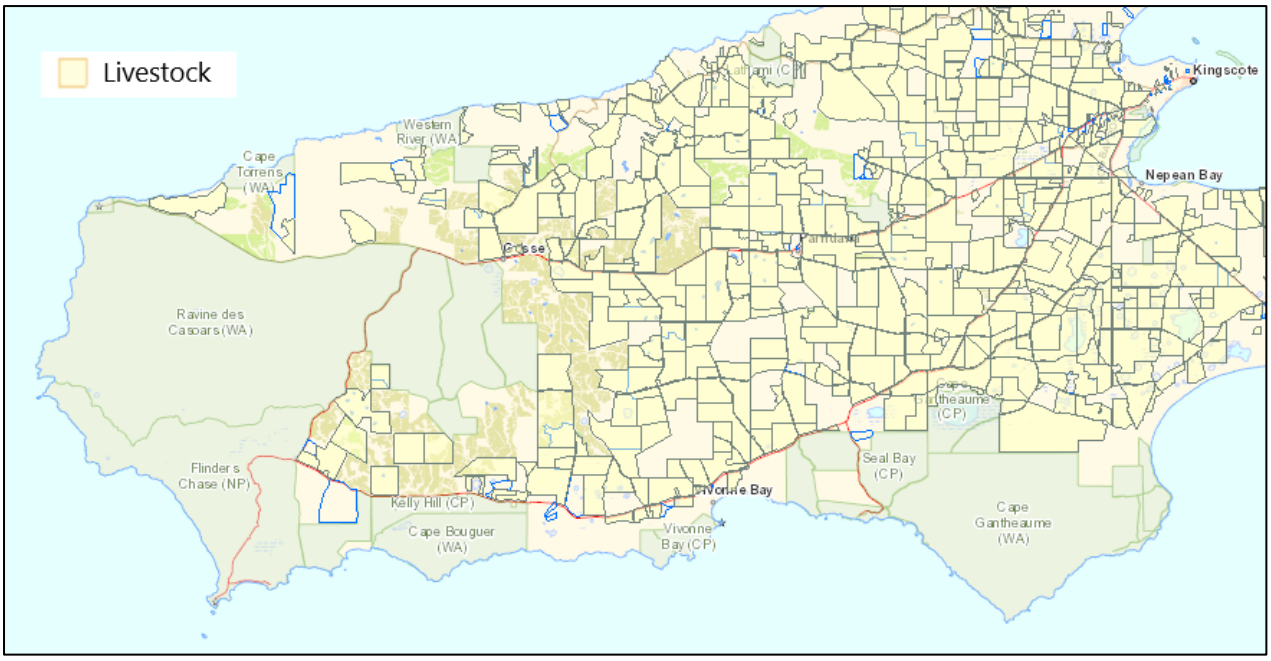


Feral pigs seeking cover in summer months are likely to aggregate in unburnt patches, influencing eradication operations.

The Department for Environment and Water identified these patches as high priorities for conservation of threatened species.

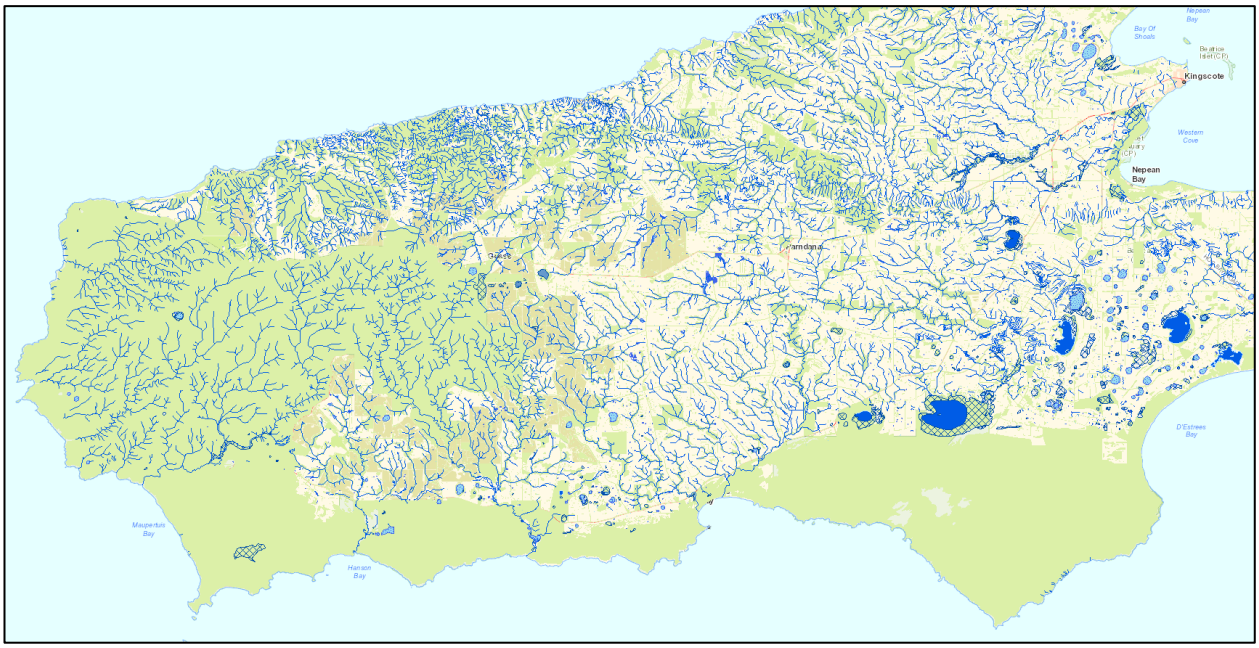
In addition to native vegetation and forestry, the third major land use on western KI is agricultural, with livestock, (both cattle and sheep) in surrounding areas. Many of these properties have heritage vegetation, and vegetated waterways.

Major agricultural land use type, livestock



Feral pig distribution is linked with surface water. Feral pigs must drink and wallow in fresh water every day in summer. They use streams, rivers, lakes, wetlands and dams on agricultural properties.

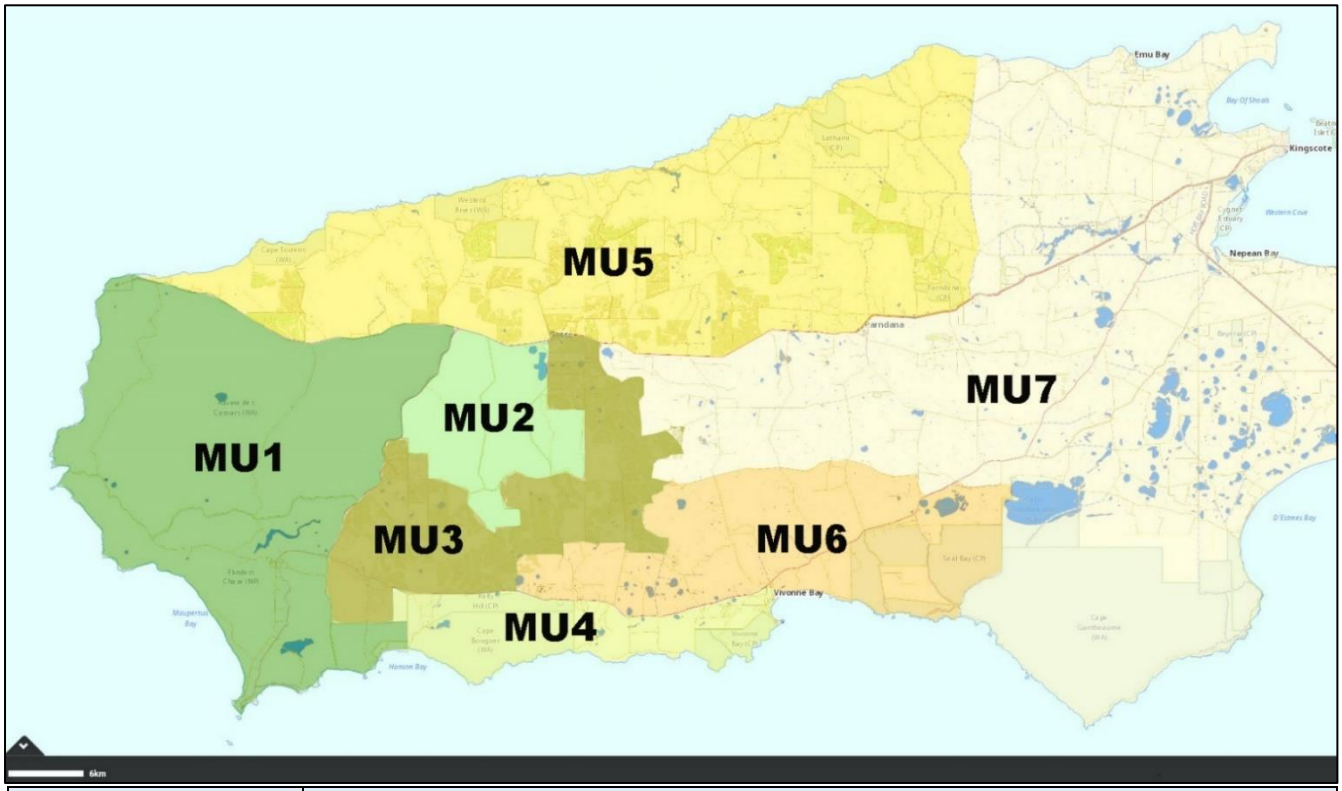
Surface water courses and water bodies



Management units

The program will be implemented in discrete management units, which are based on dominant land use, landholders, and bounded by road boundaries and pest-proof fencing. These units may change as operational staff gain new information.

Control tools and methods may be applied differently across these management units, depending on local abundance of feral pigs, land use, terrain, accessibility and landholder preferences. The project team and Steering Committee will work with landholders to implement the best control methods.



Management Units	
MU1	Flinders Chase National Park. The Casoars (MU1) and Gosselands (MU2) areas are separated by the West End Highway. The dominant landholder is DEW NPWS. Control will consider the inaccessible nature of these areas.
MU2	
MU3	Dominated by plantation timber. Major landholder is KI Plantation Timbers.
MU4	A mix of Parks and private land. Mostly native vegetation. This MU is bounded on the northern side by extensive pest-proof fencing along the South Coast Road.
MU5	A mix of Parks, private land and forestry. Bounded on the southern side by pest-proof fencing along the Playford Highway, making an excellent MU boundary. Largely open country (efficient control over large areas).
MU6	A mix of Parks and private land. Bounded on southern side by South Coast Road pest-proof fencing. Largely open country (efficient control).
MU7	Contains no established populations of feral pigs. The primary activity in this management unit will be monitoring and surveillance for feral pig incursions.

Control tools and methods

Three methods of control will be used in this eradication program: **shooting**, **trapping**, and **baiting**. Different tools are appropriate in different seasons and terrain types. All tools are most effective when used in combination with other control methods.

Control methods and tools, with breakdown of non-target impacts and humaneness.

Control Method	Control Tool - Type	Potential for non-target impacts	Humaneness
Shooting	Ground shooting	Nil	Most humane (head shots)
	Ground shooting – *with pig tracking dog*	Nil	Humane (head shots) – Dogs MUST NOT harm pigs
	Aerial Shooting	Nil	Relatively humane
Trapping	Modular panel traps	Moderate	Relatively humane
	Manufactured traps	Moderate	Relatively humane
Baiting	PIG-OUT(1080), Ground laid	High	Less humane than Hog-Gone
	HOG-GONE, with Bait-Box	Minimal	More humane than other baits
	Mixed baits (1080 grain/oats/meat)	High	Less humane than Hog-Gone
	1080 baits in Hog-Hoppers/Feeders	Minimal	Less humane than Hog-Gone

Ground and aerial **shooting** programs must be intensive and consistent to achieve eradication. Shooting as a control tool is considered ineffective when used alone. For the management of feral pigs at a landscape scale, shooting is costly and time intensive. Pig tracking dogs may be used to find and flush out feral pigs but must not harm them. They are most effective when pig numbers are low.

Trapping can be an effective tool for catching large numbers of feral pigs. It works best when pigs are hungry because baits are attractive. Trapping is a passive control tool, with less potential off target impacts than baiting, but requires a substantial time investment.

Baiting has rarely been used on KI. Baiting is the cheapest and most effective landscape scale method for the control of feral pigs. However, it has potential for non-target impacts if not undertaken properly.

Standard operating procedures for all control tools

Standard operating procedures for feral pig control are available on the PestSmart website. These procedures will guide the control operations of the eradication program. The Standard operating procedures are nationally endorsed, having been reviewed for safety, efficacy and humaneness.

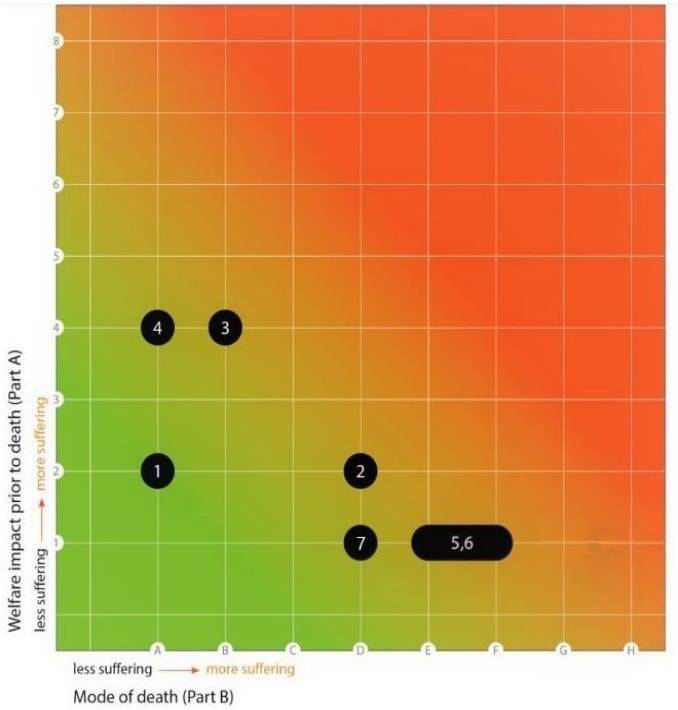
PestSmart Standard Operating Procedures for control tools	
Shooting	*Aerial shooting of feral pigs.* https://pestsmart.org.au/toolkit-resource/aerial-shooting-of-feral-pigs *Ground shooting of feral pigs.* https://pestsmart.org.au/toolkit-resource/ground-shooting-of-feral-pigs
Trapping	*Trapping of feral pigs.* https://pestsmart.org.au/toolkit-resource/trapping-of-feral-pigs
Baiting	*Poisoning of feral pigs with sodium fluroacetate (1080).* https://pestsmart.org.au/toolkit-resource/poisoning-of-feral-pigs-with-sodium-fluroacetate-1080 *Poisoning of feral pigs with sodium nitrite (HOGGONE).* https://pestsmart.org.au/toolkit-resource/poisoning-of-feral-pigs-with-sodium-nitrite-hoggone

Humaneness of Control Methods

The relative humaneness of each control tool is compared in this figure. On the vertical axis the welfare impact prior to death is rated. On the horizontal axis the welfare impact of the mode of death is rated. Both axes assess the level of suffering before death. Green is more humane and red is less humane.

The numbers in each circle represent the following control tools, but do not rank relative humaneness;

1. Ground Shooting (head shot)
2. Ground Shooting (chest shot)
3. Aerial shooting (chest shot)
4. Trapping
5. 1080
6. 1080 – PIGOUT
7. Sodium nitrite – HOGGONE



Humaneness of feral pig control methods

Anyone involved in the feral pig eradication should read the '*Model code of practice for the humane control of feral pigs'* is available on the PestSmart website: https://pestsmart.org.au/toolkit-resource/code-of-practice-feral-pigs

Community detection, reporting and monitoring

The support and assistance of the KI community will be critical to the success of this project. Project staff and steering committee members will engage the KI community through events, online and print media to engage community support and participation in the project.

Landholders in each management unit will be assisted to participate in community driven detection, reporting and monitoring of feral pigs across the western end of the island, in order to allocate control tools.

Community reporting program

Project staff and steering committee members will encourage KI residents and tourists to report sightings of feral pigs, either by phoning or emailing one of the project team, or through the FeralScan App.

This will be advertised on fridge magnets, in *The Islander,* and in other media across the island.

Feral Scan – The Feral Pig Scan App

Project staff and steering committee members encourage members of the KI community to use the Feral Scan App - a free pest reporting and mapping App.

The App uploads information to a shared map, allowing anyone to;

- Understand feral pig activity.
- Alert the project team and neighbours to feral pigs.
- Develop maps for planning.
- Work together with neighbours.
- Monitor feral pig activity after control.

Regular feedback will be given to users of the App who upload pig sightings, highlighting the value and results of reporting through this channel.

Project outreach

Presentations will be given at community meetings, information sessions and stalls at the agricultural shows.

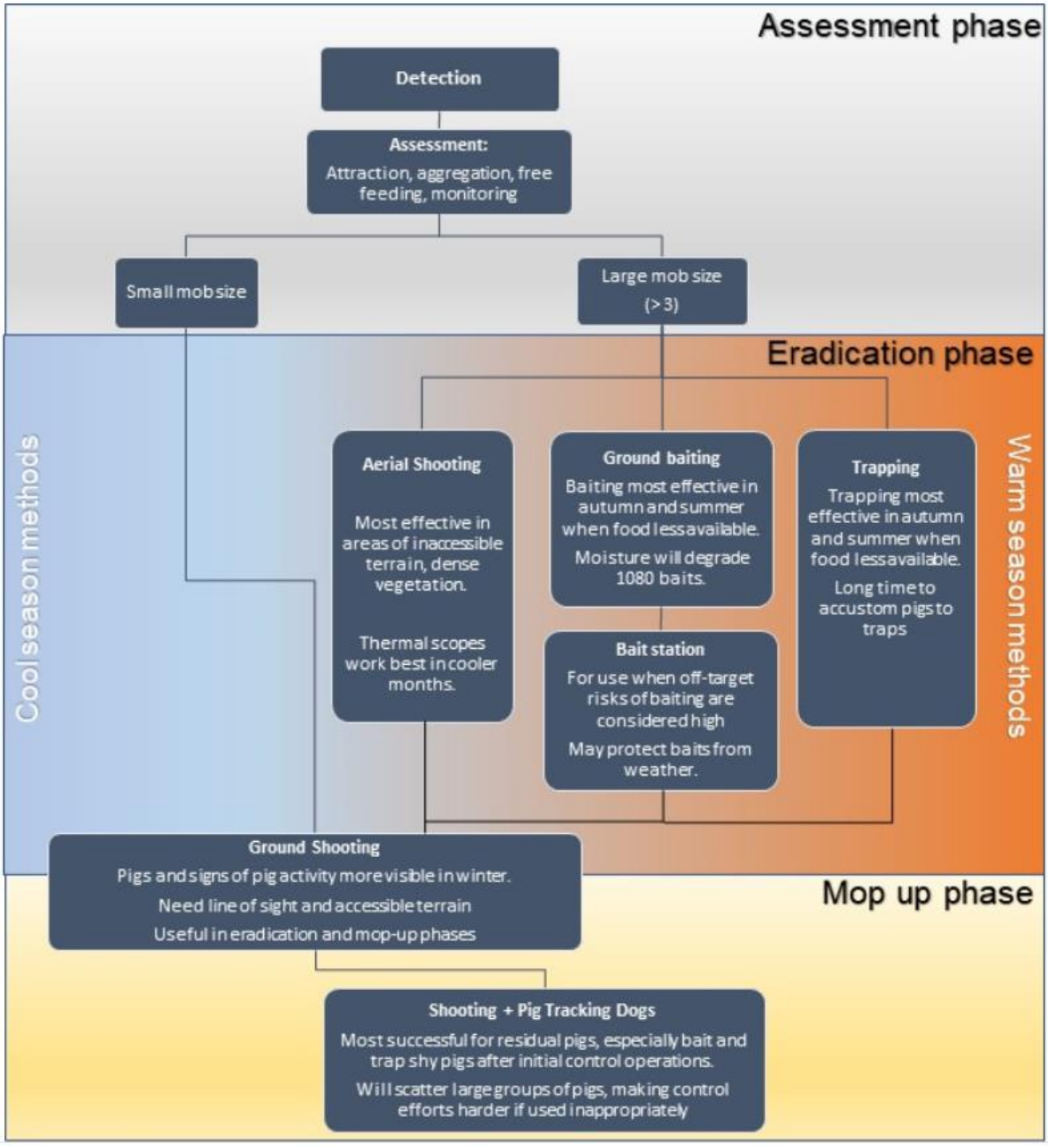
These community engagement events will enable training in the use of traps and baits, as well as training and information about Feral Pig Scan App and the community reporting program.

Decision support tool to determine control methods

Once feral pigs have been detected through the community monitoring program, or by project staff, a decision support tool will be used to determine the most appropriate control methods.

Information about feral pig numbers, as well as land use type, available freshwater and seasonal information will be considered in the decision-making process, along with the advantages and disadvantages of different control tools and methods.

Feral pig control decision support tool



Hunting of feral pigs

Recreational hunters with competent shooting skills can provide valuable support to the program. However, poor hunting practices will disrupt feral pig control operations, including trapping, shooting and baiting, making future control less effective.

If feral pigs escape or are frightened, they can become wary and shy of traps, baits or humans. Feral pigs will become more difficult to control.

The project team will work with the Kangaroo Island hunting community throughout this project to raise awareness and encourage support for feral pig eradication.

Under the *Animal Welfare Act 1985,* it is illegal to use pig hunting dogs to physically harm a feral pig. Serious penalties, including gaol time, can apply.

Legislation – feral pigs

It is important that all parties involved in the feral pig eradication program are aware of relevant legislation.

Landscape South Australia Act 2019

https://www.legislation.sa.gov.au/LZ/C/A/LANDSCAPE%20SOUTH%20AUSTRALIA%20ACT%202019.aspx

- Feral pigs are declared for destruction - all land managers must cull all feral pigs on their properties.
- People must not keep, move or release feral pigs.

Animal Welfare Act 1985

https://www.legislation.sa.gov.au/lz/c/a/animal%20welfare%20act%201985.aspx

Some pig hunting practices are illegal in South Australia;

- Dogs cannot be used to bite/hold feral pigs.
- Ears cannot be cut from feral pigs, so they are less susceptible to being re-caught.
- Knives cannot be used for hunting and ‘sticking’ feral pigs.

National Parks and Wildlife Act 1972

https://www.legislation.sa.gov.au/LZ/C/A/NATIONAL%20PARKS%20AND%20WILDLIFE%20ACT%201972.aspx

- Hunting permits and written permission are required to hunt feral pigs (unless you are hunting on your family property or a property where you are employed).

Government of South Australia

Department of Primary Industries and Regions