1. Supporting information

1.1. Appendix A – eSurvey

Research Project: "Multi-stakeholders' preferences for the control of invasive terrestrial mammals on Minjerribah (North Stradbroke Island)".

As you are aware, I (Hernan Caceres, PhD Candidate at The University of Queensland) am conducting an analysis of terrestrial invasive species' (i.e. foxes and cats) management on Minjerribah (North Stradbroke Island) as part of my PhD thesis. During this process you have been identified as a key stakeholder/expert on this topic.

In the following questionnaire, we would like to get your thoughts on some of the key characteristics of Minjerribah (North Stradbroke Island) and the impacts that foxes and cats have on the ecological, social and economic values of the Island. Also, we would like to get your opinion about certain aspects of the proposed management strategies to control foxes and cats on Minjerribah (North Stradbroke Island).

Our project aims to identify and incorporate the various perspectives of the stakeholders' participating in the Straddie Pest Management Group and associated community organisations and members to assist in informing a control plan for foxes and feral cats on Minjerribah (North Stradbroke Island), including: time preferences, costs, probability of success of the proposed actions, probability of failure of the proposed actions, perceptions of environmental problems that may arise from this control plan, and any other comments relevant for improving the management actions to control foxes and cats on the Island.

With this, we expect to reduce the gaps regarding the expected outcomes of the management actions, timeframes, costs and other questions that may arise during management works, supporting the development of a unified management plan for these two invasive terrestrial mammal species.

This project is part of the Threatened Species Recovery Hub, Theme 4.2: Saving Species on Australian Islands (National Environmental Science Programme), which is funded through the Australian Government.

In implementing this activity I would like to acknowledge the Traditional Custodians of the Islands, waters and seas surrounding Minjerribah and pay my respects to Elders, past, present and future and hope this work is of benefit to the aspirations of the Quandamooka people.

* Required

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

Threatened Species Recovery Hub
National Environmental Science Programme

Participant Information Sheet

You have been invited to take part in this study because you have been identified as a stakeholder with regards to fox and feral cat control (invasive alien species) on Minjerribah (North Stradbroke Island).

This research study has been classified as "low risk" by the University of Queensland Research and Innovation (UQR&I) (approval number: 2016001001), your participation is VOLUNTARY.

This form explains the purpose of the research and its procedures. It also describes what information about you will be obtained, how the information will be used and with whom it will be shared. Knowing what is involved will help you decide if you want to take part in the research.

Please read this information carefully, and ask questions about anything that you do not understand or wish to know more about, before deciding whether or not to take part in this survey. If you do not wish to take part, you do not have to.
If you wish to take part in the research project, you will be asked to sign the Participant Consent From. By signing it, you are telling us that you:

- Understand what you have read.
- Consent to take part in the research project.
- Consent to participate in the survey and the group meeting at your convenience.
- Consent for your personal information to be used as described.

*If you wish, you will be given/or sent at your convenience, a signed and dated copy of this Participant Information Sheet and Participant Consent Form to keep.

1. Purpose of the Study:
The purpose of this study is to inform and evaluate management plans and activities to control foxes and feral cats on North Stradbroke Island – Minjerribah.

2. Study Procedures:
To proceed with this study, please complete the survey online.
After we finish our research project, we will send you a second invitation to participate in a group meeting,

where we will present the results of the survey and incorporate any changes that participants think appropriate.

The survey is ANONYMOUS (please see the Anonymity Coding System, in section 4, for details on how your details will remain anonymous). We will use the Anonymity Coding System to follow up on updates or withdrawals from the study.
This survey is expected to take you between 15 and 20 minutes to complete, it contains 11 questions that will later be used in an analysis to assess the cost-effectiveness of fox and cat control.

3. Voluntary Participation/Right to Refuse or Withdraw:
There is no obligation for you to be involved in this study. If you do decide to participate:
i. And later feel you no longer wish to be part of it, you may withdraw from the study at any time, without prejudice to any current or future involvement.
ii. And later you wish to change your answers you can do it at any time, without prejudice to any current or future involvement.
iii. No data will be stored if you decide to withdraw from the study.
iv. You may exit the survey by closing the browser; no data will be recorded if you do this.

4. Confidentiality:
Your records relating to this study and any other information received will be kept strictly confidential. However staff participating in the survey, or other agencies authorised by law, may inspect the records related to the study.
Your identity will not be revealed and your confidentiality will be protected in any reviews and reports of this study which may be published.
Researchers participating in the project will be notified of your participation in this study and of any relevant information in the conduct of the project.

5. Termination of the Study:
This research project may be stopped for a variety of reasons. These may include the following: decisions made in the project's best interest, participants are not available or any other reason that may directly affect the researchers, or the participants.

6. Investigators Benefits:
The Principal Researcher (PI) is not being remunerated to conduct this study. He will not allow a conflict of interest to compromise his position or this research study.

7. New Information Arising During the Project
During the research project, new information may become known to the researchers. If this occurs, you will be told about this new information. This new information may mean that you can no longer participate in this research. If this occurs, the person supervising the research will stop your participation. In all cases, you will be told by the person supervising the research, and he will inform about any changes and the implications for the data collected before that time.

8. Results of Project
Participants will be informed of the results when the research project is completed, by any of these three means, depending on the participant's preferences:
i. Presentation to the Straddie Pest Management Group.
ii. Executive summary with the results of the study.
iii. Individual presentation.

8. Consent
Your study supervisor is required to provide you with all information regarding the nature and purpose of the research study, risks/benefits and the alternatives to undertake this study, and you should be given the opportunity to discuss these. It must be stated that you are free to:
- Withdraw anytime from the study.
- Withdraw your answers from the study at any time.
- If you do not participate you will not suffer any prejudice.

9. Advice and Information
Mr. Heman Caceres on h.caceres@uq.edu.au or 0403579345 (DVM | PhD candidate at The University of Queensland)
This study adheres to the Guidelines of the ethical review process of The University of Queensland and the National Statement on Ethical Conduct in Human Research. Whilst you are free to discuss your participation in this study with project staff (contactable on h.caceres@uq.edu.au or (+61) 04 0357 9345, if you would like to speak to an officer of the University not involved in the study, you may contact the Ethics Coordinator on 3365 3924.

10. Anonymity Coding System
The Anonymity Coding System will help us to track changes in case you wish to change your responses or withdraw after you submit the survey. The Anonymity Coding System will use the 2 first letters of the participant's mother's maiden name (e.g. Maria would be "MA") and the last 2 digits of the participant's birthday year (e.g. 1985 would be "85"), resulting in a code that looks like this: MA85.

1. **I hereby declare:** *
Mark only one oval.

- ◯ I acknowledge I have read and understood the contents of this form
- ◯ I have NOT read and/or understood the contents of this form *Skip to question 1.*

I hereby voluntarily consent to my involvement in the research project. I acknowledge that the nature, purpose and risks of the research project and alternatives to participation have been fully explained to my satisfaction by Mr. Hernan Caceres.
I have read the participant information sheet and I hereby consent to participate as part of the research project, understanding the details of the research aim, and survey procedure proposed and the anticipated length of time it will take, the frequency with which the procedure will be performed and an indication of any discomfort that may be expected have been explained to me.

- I freely agree to participate in this research project according to the conditions in the Participant Information Sheet which I confirm has been provided to me.
- I understand that my involvement in this study may not be of any direct benefit to me.
- I have been told that no information will be divulged to unauthorised third parties and the results will not be published so as to reveal my identity.
- I understand that I am free to withdraw from the study at any stage without prejudice to future participation. If I decide to withdraw from the study, I agree that the information collected about me up to the point when I withdraw may continue to be processed, unless I indicate something different.
- I am 18 years of age or over.
- I declare that all my questions have been answered to my satisfaction.
- I am aware that I may ask any further questions about the research study at any time.
- I have read, or have had read to me in a language in which I am fluent, and I understand the Participant Information Sheet, version 2, dated 21/08/2016.

Declaration by researcher*:
Name of Researcher: Hernan Caceres.
An explanation of the research project, its procedures and outcomes has been given to the participant and I believe that the participant has all the information necessary to understand this research project.

2. **I hereby declare:** *
   Mark only one oval.

   ◯ I consent to participate in this research study, and I voluntarily agree to give permission to the researchers to use my responses in their research project. *Skip to question 3.*

   ◯ I don't want to participate in this research study *Skip to question 2.*

Anonymity Coding System

To ensure an anonymous study we will use an Anonymity Coding System. This will help us to track changes in case you wish to change your responses or withdraw after you submit the survey. The Anonymity Coding System will use the 2 first letters of the participant's mother's maiden name (e.g. Maria would be "MA") and the last 2 digits of the participant's birthday year (e.g. 1985 would be "85"), resulting in a code that looks like this: MA85.

3. **Please write your Participant's Anonymity Code** *
   (e.g. Maria would be "MA") and the last 2 digits of the participant's birthday year (e.g. 1985 would be "85"), resulting in a code that looks like this: MA85.

   _____

4. **Which of the following sectors best identifies you?** *
   Mark only one oval.

   ◯ Community Group and/or Non-Governmental Organization (NGO)
   ◯ Government agency
   ◯ Private sector (e.g. industry, businesses)
   ◯ Education (e.g. academia)
   ◯ Other: _____

5. **If you chose OTHER, which sector is the one that best identifies you?**

   _____

6. **How many years of experience do you have working with Invasive Species** *
Please remember, this is an anonymous survey, no data will be shared, this question just aims to assess your own perception.
Mark only one oval.

- ◯ Less than 1
- ◯ Between 1 and 3
- ◯ Between 3 and 5
- ◯ More than 5

7. **How would you rate your knowledge regarding invasive species management?** *
Please remember, this is an anonymous survey, no data will be shared, this question just aims to assess your own perception.
Mark only one oval.

	1	2	3	4	5	
Comprehensive	◯	◯	◯	◯	◯	Uncomprehensive

8. **What is the most important reason to be involved in feral animal management on Minjerribah (North Stradbroke Island)?**
Mark only one oval.

- ◯ Statutory obligation or legal obligation
- ◯ Protection of biodiversity
- ◯ Economic loss
- ◯ Traditional owners values
- ◯ Other: _____

9. **If you chose OTHER, which is your most important reason to be involved in feral animal management on Minjerribah (North Stradbroke Island)?**

_____

Minjerribah (North Stradbroke Island): Background

In order to standardise the information available for the survey, here we present some general information about the Island and its ecosystems.

Minjerribah, or North Stradbroke Island (NSI), is located ~30 km Southeast of Brisbane (Queensland, Australia). It is the second largest sand island in the world, and part of a larger group of sand islands that form Moreton Bay (27°30'S, 153°28'E), NSI forms part of the Eastern boundary of Moreton Bay. The Northernmost point is ~29 km from the mainland, while the Southernmost point is just 5 km away from Mainland. It is 32 km long and 11 km wide, with a total area of ~27,500 ha (or 285 km2).

HABITATS:

Even though it consists almost entirely of sand, the island exhibits a wide range of HABITATS, which support a variety of flora and fauna. The eastern -or ocean-side consists of open beaches, frontal dunes and the Eighteen Mile Swamp, which is the largest wetland (~32.7km2) on the island, and located in the lowland area, between two large sand formations. The western side -Moreton Bay- is characterised by mangroves and tidal wetlands. Much of Minjerribah is formed by a series of dunes with north-westerly ridges, which rise to a maximum level of 219m (mount Hardgrave).

FAUNA:

Minjerribah is a biologically diverse and geologically complex ecosystem where many species of plants and animals coexist. It has a rich biodiversity which is specialised to the conditions on the Island. About 18 species of native mammals occur on the Island, these include 3 species of macropods (the swamp wallaby (Wallabia bicolor), the grey kangaroo (Macropus giganteus) and the rare agile wallaby (Macropus agilis). The echidna (Tachyglossus aculeatus) and koalas (Phascolarctos cirereus) are widely distributed but are uncommon, while the grey-headed flying fox(Pteropus poliocephalus) seasonally concentrates on flowering trees and fruit.

The Koala population on NSI, which is a species of social and cultural significance for the Quandamooka People, is considered a unique population, due to its separation from the mainland population for an estimated of 8000 years. Other species that inhabit the island are the Northern Brown Bandicoots, Agile Wallabies, and the Water Mouse, which are at risk of predation by foxes (foxes generally target terrestrial species between 35 and 5,000 grams), they can also prey on ground-nesting and -feeding bird species, lizards and frogs, including the endemic Acid frogs, which inhabit lakes and swamps. Foxes also attack ocean dwelling species, and can regularly predate on the nests of endangered Loggerhead and Green

Turtles summer months.

The impacts on the Island's biodiversity are also felt due to the pressure that feral cats have on the environment: when hunting, cats generally target species between 35 and 5,500 grams, and can also feed on gliders and birds nesting in trees and tree hollows.

VEGETATION:

The habitats on the Island are dominated by a mix of forest types. Extensive areas of the Island are covered by smaller banksias and acacias, ranging down to low heathlands with large ancient eucalypt forests and rainforest communities also being located in different areas.. The inland swamps are dominated by paper-barks. The Moreton Bay side of the Island has large areas of sand and intertidal flats, which support communities of seagrass and saltmarsh.

WATER BODIES:

Several freshwater water bodies exist throughout the Island, with some well-known lakes and lagoons being the Brown and Blue Lakes, Blakesley, Black Snake, Ibis, and Native Companion Lagoons, and Freshwater Creek (in the Eighteen mile Swamp). The waters of these freshwater bodies are often acidic, and support highly specialised animal life. There is also internationally significant groundwater values associated with Minjerribah's extensive aquifers that underpin much of the Islands hydrology as well as forming a key component of the South East Queensland Water Grid.

Questionnaire

This survey will ask for your opinion about different fox and cat control scenarios on Minjerribah (North Stradbroke Island). To complete the questionnaire you will need between 15 and 20 minutes. Your responses will be used to assess invasive species management on the island. The results of this survey will be discussed with you at a meeting that will be planned after all responses have been collected. In case you are unable to attend, you can request an individual meeting and a summary with the results.

*Please answer the questions based on your opinion as an expert/stakeholder, there are no "correct" or "incorrect" answers, your opinion will help us to assess the proposed management scenarios.
*Please note the browser bar at the bottom of some of the questions.

We appreciate your participation in this questionnaire, thank you very much.

10. **Q1. What is the significance of Minjerribah (North Stradbroke Island) to you?** *
    This significance should encompass environmental, social and economic values, to the extent that they are relevant. It can include public and private values for the island. A number of examples are given for each response
    Mark only one oval.

    ◯ International significance (e.g. Great Barrier Reef, Kakadu, Lord Howe Island, Tasmanian wilderness).

    ◯ National significance (e.g. The Gippsland Lakes, Ningaloo Reef, Great Ocean Road hinterland, The Coorong Wetlands)

    ◯ Very high state significance (e.g. Fitzgerald River National Park, Western Port Bay, Wilsons Promontory, Gunbower Island)

    ◯ High state significance (e.g. Ramsar wetland, national endangered species, regional valued ecosystems)

    ◯ Moderate state significance (e.g. A highly valued estuary, whole rivers (e.g. Loddon)

    ◯ Regional (catchment) significance (e.g. Important river, regional threatened species, significant wetland)

    ◯ Local significance (e.g. A locally valued wetland or creek)

11. **Please describe the reasons for your response to Question 1.**

    _____

    _____

    _____

12. **Q2. What do you think is the probability of eradicating foxes under:** *
Mark only one oval per row.

	Very high	High	Medium	Low	Very low
Scenario 1	◯	◯	◯	◯	◯
Scenario 2	◯	◯	◯	◯	◯
Scenario 3	◯	◯	◯	◯	◯

13. **Q3. What do you think is the probability of eradicating of foxes and cats under scenarios 4 to 6 (joint management of foxes and cats)** *
(Note that Scenarios 4 - 6 are the same as Scenarios 1 - 3, but with cat control)
Mark only one oval per row.

	Very high	High	Medium	Low	Very low
Scenario 4	◯	◯	◯	◯	◯
Scenario 5	◯	◯	◯	◯	◯
Scenario 6	◯	◯	◯	◯	◯

In this question, we would like you to think about how many years it would take to observe the benefits of each scenario. Please refer to Table 1 above.

Table 1. Description of the control Scenarios

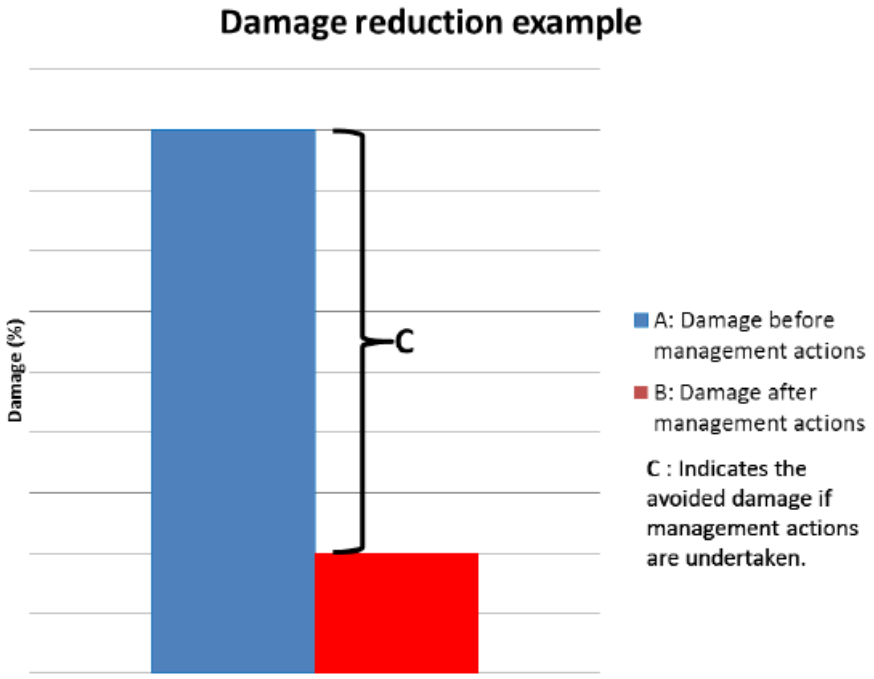
Proposed control scenarios						
Actions/Scenarios	**Scenario 1**	**Scenario 2**	**Scenario 3**	**Scenario 4**	**Scenario 5**	**Scenario 6**
Target species	Only foxes			Joint management of foxes and cats		
Level of investment	Current	Moderate increase	Large increase	Current	Moderate increase	Large Increase
Management objective	Eradication					
Baiting campaigns (4 weeks each)	1 campaign p.a.	2 campaigns p.a.	3 campaigns p.a.	1 campaign p.a.	2 campaigns p.a.	3 campaigns p.a.
Bait density (baits/km²)	1.9	5	10	1.9	5 for foxes; 50 for cats*	10 for foxes; 100 for cats*
Distance between baiting stations	1 station every 500 metres of tracks					
Fumigation	Dens					
Shooting + Spotlighting	Present					
***For the same level of effectiveness, cat baiting campaigns require 10 times more baits than what is needed for fox control**						

14. **Q4. How many years would it take to observe the benefits of each scenario described in Table 1?** *
Mark only one oval per row.

	Less than 1 year	Between 1 and 3 years	Between 3 and 5 years	Between 5 and 7 years	More than 10 years	More than 20 years	Never
Scenario 1	◯	◯	◯	◯	◯	◯	◯
Scenario 2	◯	◯	◯	◯	◯	◯	◯
Scenario 3	◯	◯	◯	◯	◯	◯	◯
Scenario 4	◯	◯	◯	◯	◯	◯	◯
Scenario 5	◯	◯	◯	◯	◯	◯	◯
Scenario 6	◯	◯	◯	◯	◯	◯	◯

Damage caused by invasive alien species

The damages caused by foxes and feral cats are grouped into environmental, economic and social aspects. Environmental impacts are the direct (e.g. predation) or indirect (e.g. competition for resources) impacts that the invasive species have on native wildlife; includes the effects on entire ecological communities (e.g. invasional meltdown), and changes in habitats and landscapes. Economic impacts are related to productivity losses (e.g. agricultural losses), the redirection of resources from other activities, and the costs of treating diseases (such as sarcoptic mange) carried by invasive species. Social impacts are related to distress (e.g. dead animals), diseases transmitted to humans and animals, decreased recreational values (e.g. it becomes hard to see native wildlife or changes in the landscape), invasive species can also prey upon domestic pets (e.g. aviary birds).



15. **Q5. If the works and actions specific to each scenario were implemented, in overall, how much damage (loss to environmental, social and/or economic values) would be avoided in Minjerribah (North Stradbroke Island)? Please refer to the example above when considering your response.** *

*Please note the browser bar at the bottom of the alternatives
Mark only one oval per row.

	Complete (100%)	Extremely high (91-99%)	Very high (81-90%)	Moderately high (71-80%)	Slightly high (61-70%)	Medium (41-60%)	Slightly Low (31 - 40%)	Moderately low (21 - 30%)	Very low (11 - 20%)	Extremely low (1-10%)	Null (0%)
Scenario 1											
Scenario 2											
Scenario 3											
Scenario 4											
Scenario 5											
Scenario 6											

16. **Q6. What do you think is the probability that eradication would not occur because of technical difficulties under the different scenarios?** *

Here, we would like you to think about the likelihood that technical difficulties, for example problems with the baits (e.g. baits get wet inside the storehouse), distribution (e.g. vehicle problems), and administration of baits (e.g. problems with baiting stations); and unforeseen events (e.g. weather) will prevent eradication from being achieved.
Mark only one oval per row.

	0-5% Very low probability	6-10%	11-15%	16-20%	21-100% High probability	Other
Scenario 1	◯	◯	◯	◯	◯	◯
Scenario 2	◯	◯	◯	◯	◯	◯
Scenario 3	◯	◯	◯	◯	◯	◯
Scenario 4	◯	◯	◯	◯	◯	◯
Scenario 5	◯	◯	◯	◯	◯	◯
Scenario 6	◯	◯	◯	◯	◯	◯

17. **If you chose OTHER in Question 6 for any of the management scenarios, what do you think is the probability that technical difficulties prevent the scenario from achieving eradication? (please specify which scenario you are referring to)**

_____

_____

_____

_____

_____

18. **Q7. Overall, how would you assess the information available for fox management on Minjerribah (North Stradbroke Island)?** *

Consider for example: Available information regarding fox density, fox movement on the Island, distribution of foxes, efficacy of control actions undertaken in the past, costs, methods, and any other information you believe important to develop management plans to manage, or eradicate foxes from Minjerribah (North Stradbroke Island)
Mark only one oval.

	1	2	3	4	5	
Sufficient	◯	◯	◯	◯	◯	Insuficient

19. **If you think the information available is not sufficient, what are the key gaps that need to be addressed?**

_____

_____

_____

_____

_____

20. **Q8. Overall, how would you assess the information available for cat management on Minjerribah (North Stradbroke Island)?** *

Consider for example: Information available regarding feral cat density, feral cat movement on the Island, distribution of feral cats, efficacy of control actions undertaken in the past, costs, methods, and any other information you believe important to develop a proper management plan to manage, or eradicate feral cats from Minjerribah (North Stradbroke Island)
Mark only one oval.

	1	2	3	4	5	
Sufficient	◯	◯	◯	◯	◯	Insufficient

21. **If you think the information available is not sufficient, what are the key gaps that need to be addressed?**

22. **Q9. Overall, how would you asses the information available about combined fox and feral cat control on Minjerribah-NSI?** *

Consider: Information available regarding species density, movement on the Island, distribution, efficacy of control actions undertaken in the past, costs, methods, and any other information you believe important to develop a proper management plan to manage or eradicate foxes and cats from Minjerribah (North Stradbroke Island)
Mark only one oval.

	1	2	3	4	5	
Sufficient	◯	◯	◯	◯	◯	Insufficient

23. **If you think the information available is not sufficient, what are the key gaps that need to be addressed?**

Table 1: Proposed Control Scenarios

Proposed control scenarios						
Actions/Scenarios	**Scenario 1**	**Scenario 2**	**Scenario 3**	**Scenario 4**	**Scenario 5**	**Scenario 6**
Target species	**Only foxes**			**Joint management of foxes and cats**		
Level of investment	Current	Moderate increase	Large increase	Current	Moderate increase	Large Increase
Management objective	Eradication					
Baiting campaigns (4 weeks each)	1 campaign p.a.	2 campaigns p.a.	3 campaigns p.a.	1 campaign p.a.	2 campaigns p.a.	3 campaigns p.a.
Bait density (baits/km²)	1.9	5	10	1.9	5 for foxes; 50 for cats*	10 for foxes; 100 for cats*
Distance between baiting stations	1 station every 500 metres of tracks					
Fumigation	Dens					
Shooting + Spotlighting	Present					
***For the same level of effectiveness, cat baiting campaigns require 10 times more baits than what is needed for fox control**						

24. **Q10. What do you think is the chance that one of the social or political situations described below will prevent eradication from being achieved?** *

In this question, we would like you to think about the reliance of a successful eradication on i. Cooperation by other organisations responsible for natural resource management. ii. Social, administrative, or political support; iii. Policy changes that support the actions.
Mark only one oval per row.

	0-5% Very low risk	6-25%	26-50%	51-75%	76-100% Very high risk	Other
Scenario 1	◯	◯	◯	◯	◯	◯
Scenario 2	◯	◯	◯	◯	◯	◯
Scenario 3	◯	◯	◯	◯	◯	◯
Scenario 4	◯	◯	◯	◯	◯	◯
Scenario 5	◯	◯	◯	◯	◯	◯
Scenario 6	◯	◯	◯	◯	◯	◯

25. **If you chose OTHER in Q10, what do you think is the risk that the scenarios will fail to achieve the management objective? (please specify which scenario are you referring to)**

26. **Q11. How many years would this project require funding (e.g. baiting or monitoring) to achieve eradication under each scenario? See Table 1 above** *

*Please note the browser bar at the bottom of the alternatives
Mark only one oval per row.

	1 year	2 years	3 years	4 years	5 years	7 years	10 years	More than 10 years	More than 15 years	More than 20 years	It would never happen
Scenario 1											
Scenario 2											
Scenario 3											
Scenario 4											
Scenario 5											
Scenario 6											

27. **Please describe the reasons for your responses to Q11?**

Thank you very much for completing this survey.

Participants will be informed of the results when the research project is completed, by any of these three means, depending on the participant's preferences:

i. Straddie Pest Management Group presentation.
ii. Executive summary with the results of the study.
iii. Individual presentation.

28. **We would appreciate any feedback or comments you have on this survey, please let us know your thoughts, thank you (*this is optional).**

1.2. Appendix B – Species of interest: Threatened species, Culturally relevant species, and invasive species from Minjerribah

Threatened species of Minjerribah					
Scientific Name	**Common Name**	**NCA**	**EPBC**	**End.**	**WS**
Sousa sahulensis	Australian humpback dolphin	V		QAI	I
Balaenoptera musculus	blue whale	C	E	QAI	
Megaptera novaeangliae	humpback whale	V	V	QAI	
Eubalaena australis	southern right whale	C	E	QAI	
Dugong dugon	dugong	V		QAI	I
Xeromys myoides	water mouse	V	V	QAI	I
Pteropus poliocephalus	grey-headed flying-fox	C	V	QA	
Phascolarctos cinereus	koala	V	V	QA	
Lathamus discolor	swift parrot	E	CE	QA	
Calyptorhynchus lathami lathami	glossy black-cockatoo (eastern)	V		QA	
Calidris canutus	red knot	E	E	QAI	I
Calidris ferruginea	curlew sandpiper	E	CE	QAI	I
Calidris tenuirostris	great knot	E	CE	QAI	I
Limosa lapponica baueri	Western Alaskan bar-tailed godwit	V	V	QAI	I
Numenius madagascariensis	eastern curlew	E	CE	QAI	I
Charadrius leschenaultii	greater sand plover	V	V	QAI	I
Charadrius mongolus	lesser sand plover	E	E	QAI	I
Thinornis cucullatus	hooded plover	C	V	VA	
Esacus magnirostris	beach stone-curlew	V		QAI	
Ardenna pacifica	wedge-tailed shearwater	V		QAI	
Halobaena caerulea	blue petrel	C	V	VU	
Macronectes giganteus	southern giant-petrel	E	E	QAI	
Macronectes halli	northern giant-petrel	V	V	VU	
Pterodroma leucoptera leucoptera	Gould's petrel (Australian subspecies)	C	E	QAI	
Pterodroma neglecta	Kermadec petrel	C	V	QAI	
Diomedea exulans	wandering albatross	V	V	QAI	
Phoebetria fusca	sooty albatross	V	V	VU	
Thalassarche bulleri	Buller's albatross	V	V	VU	
Thalassarche carteri	Indian yellow-nosed albatross	V	V	QAI	
Thalassarche cauta	shy albatross	V	V	QAI	
Thalassarche chrysostoma	grey-headed albatross	V	E	VU	
Thalassarche melanophris	black-browed albatross	SL	V	QAI	
Phaethon rubricauda	red-tailed tropicbird	V		QAI	
Acanthophis antarcticus	common death adder	V		QA	
Dermochelys coriacea	leatherback turtle	E	E	QAI	
Caretta caretta	loggerhead turtle	E	E	QAI	
Chelonia mydas	green turtle	V	V	QAI	
Eretmochelys imbricata	hawksbill turtle	E	V	QAI	

Natator depressus	flatback turtle	V	V	QAI	
Litoria cooloolensis	Cooloola sedgefrog	NT		Q	I
Litoria freycineti	wallum rocketfrog	V		QA	
Litoria olongburensis	wallum sedgefrog	V	V	QA	I
Litoria sp. cf. cooloolensis (North Stradbroke Is population)	*N.A.*	NT		Q	
Crinia tinnula	wallum froglet	V		QA	I
Nannoperca oxleyana	Oxleyan pygmy perch	V	E	QA	D
Acrodipsas illidgei	Illidge's ant-blue	V		QA	
Ornithoptera richmondia	Richmond birdwing	V		QA	

Legend

NCA (**Status under the Nature Conservation Act 1992**)
PE: Extinct in the wild
E: Endangered
V: Vulnerable
NT: Near threatened
C: Least concern
SL: Special least concern
P: Prohibited

EPBC (**Status under the Environment Protection and Biodiversity Conservation Act 1999**)
EX: Extinct
XW: Extinct in the wild
CE: Critically endangered
E: Endangered
V: Vulnerable
CD: Conservation dependent

End. (**Endemicity**)
Q: Queensland endemic - naturally occurs in Queensland
QA: Intranational - naturally occurs in Queensland and interstate
QAI: Not endemic to Australia - naturally occurs in Queensland, interstate and overseas
QI: Regional endemic - naturally occurs in Queensland and overseas
VA: Vagrant (Intranational) - normally occurs interstate
VI: Vagrant (International) - normally occurs overseas
VU: Vagrant (Unknown)
IA: Introduced (Intranational) - naturalised from interstate
II: Introduced (International) - naturalised from overseas
IU: Introduced - unknown origin
U: Unknown endemicity - native

WS **(Wetland Status)**
I: Wetland indicator species

Culturally and Local relevant species of Minjerribah*		
Scientific name	**Common name**	**Group**
Phascolartcos cinereus	Koala	Mammalia
Macropus giganteus	Eartern grey kangaroo	Mammalia
Pteropus poliocephalus	Grey-headed flying fox	Mammalia
Xeromys myoides	Water mouse	Mammalia
Tachyglossus aculeatus	Short-beaked echidna	Mammalia
Isoodon macrourus	Northern brown bandicoot	Mammalia
Megaptera novaeangliae	Humpback whale	Mammalia
Balaenoptera musculus	blue whale	Mammalia
Dugong dugon	Dugongs	Mammalia
Tursiops aduncus	Indo-Pacific Bottlenose dolphin	Mammalia
Sousa sahulensis	Australian Humpback dolphin	Mammalia
Haliastur indus	Brahminy kite	Aves
Haliaeetus leucogaster	White-bellied sea eagle	Aves
Calyptorhynchus lathami	Glossy black cockatoo	Aves
Trichoglossus moluccanus	Rainbow lorikeet	Aves
Esacus magnirostris	Beach stone-curlew	Aves
Burhinus grallarius	Stone-curlews	Aves
Ninox boobook	Southern boobook	Aves
Podargus strigoides	Tawny frogmouth	Aves
Aegotheles cristatus	Australian Owlet-Nightjar	Aves
Hirundapus caudacutus	White-thoated needletail	Aves
Dacelo novaeguineae	Laughing kookaburra	Aves
Todiramphus macleayii	Forest kingfisher	Aves
Todiramphus sanctus	Sacred kingfisher	Aves
Caretta caretta	Loggerhead turtle	Reptilia
Chelonia mydas	Green turtle	Reptilia
Varunus varius	Lace monitor	Reptilia
Morelia spilota	Carpet python	Reptilia
Dendrelaphis puntulata	Green tree snake	Reptilia
Aconthophis antarcticus	Death Adder	Reptilia
Pseudechis porphyriacus	Red-bellies black snake	Reptilia
Chelodina longicollis	Eastern long-necked turtle	Reptilia
Chelonia expansa	Broad-shelled river turtle	Reptilia
Crinia tinnula	Wallum froglet	Amphibia
Litoria olongburensis	Wallum sedgefrog	Amphibia
Litoria fallax	Eastern sedgefrog	Amphibia
Litoria freycineti	Wallum rocketfrog	Amphibia
Litoria cooloolensis	Cooloola sedgefrog	Amphibia

Invasive species of Minjerribah			
Scientific name	**Common name**	**Status**	**Group**
Felis catus	Domestic cat	Confirmed	Mammalia
Canis familiaris	Domestic dog	Confirmed	Mammalia
Vulpes vulpes	Red fox	Confirmed	Mammalia
Lepus capensis	Cape Hare	Confirmed	Mammalia
Mus musculus	House Mouse	Confirmed	Mammalia
Rattus rattus	Black rat	Confirmed	Mammalia
Sus scrofa	Wild Boar/Pig	Suspected	Mammalia
Acridotheres tristis	Common Myna	Confirmed	Aves
Anas platyrhynchos	Mallard	Confirmed	Aves
Carduelis carduelis	European Goldfinch	Confirmed	Aves
Columba livia	Rock Dove	Confirmed	Aves
Passer domesticus	House Sparrow	Confirmed	Aves
Sturnus vulgaris	Common Starling	Confirmed	Aves
Hemidactylus frenatus	Common House Gecko	Confirmed	Reptilia
Bufo marinus	Cane toad	Confirmed	Amphibia

1.3. Appendix C – Detailed description of scenarios

Detailed portfolio of actions						
	Scenarios					
Actions	**1**	**2**	**3**	**4**	**5**	**6**
Target species	Red fox (*Vulpes vulpes*)			Red fox (*Vulpes vulpes*) and Feral cats (*Felis catus*)		
Investment level	Low	Medium	High	Low	Medium	High
Intensity	Low	Medium	High	Low	Medium	High
Campaigns (4 weeks/campaign)	1 p.a.	2 p.a.	3 p.a.	1 p.a.	2 p.a.	3 p.a.
Bait density (baits/km2)[1]	2	5	10	20	50	100
Inter-station distance	1 station every 500 meters of tracks (or 1 station/km2)					
Den search	Fumigation (CO)					
Spotlighting and shooting	Present					
Trapping	Present					
Management objective	Eradication					
Total cost (AU$m)[2]	$3.48	$4.08	$5.33	$4.03	$5.84	$7.76

[1] Feral cat baiting programmes require ten times more baits than those that target European red foxes in order to maintain the same level of effectiveness
[2] The total cost includes the fixes and marginal costs of the 4 phases of the project (i.e. planning, implementation, monitoring, and long-term monitoring)

1.4. Appendix D Cost estimates report

Species management stage										
	Planning (AU$)			Implementation (AU$)			Monitoring (AU$)			
	Fixed	Marginal		Fixed	Marginal		Fixed	Marginal		
Scenarios	Capital assets	Labour	Consumables	Capital assets	Labour	Consumables	Capital assets	Labour	Consumables	Total (AU$)
1	$100,474.95	$724,173.08	$110,996.44	$1,987.50	$740,076.92	$79,221.62	$1,325.00	$319,538.46	$34,465.37	**$2,112,259.34**
2	$126,699.90	$922,576.92	$136,828.10	$20,475.00	$889,846.15	$169,846.17	$2,650.00	$406,403.85	$36,938.81	**$2,712,264.90**
3	$138,674.85	$1,437,192.31	$191,831.37	$5,962.50	$1,442,538.46	$374,360.05	$3,975.00	$610,153.85	$41,381.14	**$4,246,069.51**
4	$119,724.95	$922,576.92	$137,552.74	$1,987.50	$889,846.15	$148,090.61	$1,325.00	$406,403.85	$39,560.51	**$2,667,068.23**
5	$140,199.90	$1,437,192.31	$220,091.60	$87,475.00	$1,442,538.46	$486,672.44	$2,650.00	$610,153.85	$44,137.21	**$4,471,110.76**
6	$174,924.85	$1,942,865.38	$330,482.97	$105,962.50	$1,978,500.00	$1,000,817.80	$3,975.00	$808,230.77	$45,782.53	**$6,391,541.79**
All values are expressed in Australian dollars (AU$) (checked in January 2018)										

Long-term monitoring scheme (LTMSc) - Long-term funding for 15 years of monitoring			
Fixed (AU$)	Marginal (AU$)		(AU$)
Capital assets	Labour	Consumables	Total (p.a.)
$795.00	$81,153.85	$9,137.64	**$91,086.49**
All values are expressed in Australian dollars (AU$) (checked in January 2018)			

1.5. Appendix E – Detailed INFFER BCR analysis

	Value (V)	Impact of works (W)	Technical feasibility (F)	Adoption (A)	Adverse adoption (B)	Socio-political risks (P)	Long-term funding (G)	Time-lag (L)	Discount factor (DFb)	Up-front cost (C)	Maintenance cost (M)	Present value of M (PV)	Benefit:Cost Ratio	Internal ranking	Overall ranking
Scenarios	**V (0-100)**	**W (0-1)**	**F (0-1)**	**A (0-1)**	**B (0-1)**	**P (0-1)**	**G (0-1)**	**L (years)**	**DFb (eq)**	**C (AUD$Million)**	**M (AUD$Million/year)**	**PV (AUD$Million)**	**BCR (index)**	**(index)**	**(index)**
Fox Low investment	1	0.21	0.95	1	0.95	0.85	0.70	7	0.71	$2.11	$0.09	$0.97	0.52	3	3
Fox Medium investment	1	0.41	0.95	1	0.95	0.88	0.70	7	0.71	$2.71	$0.09	$0.97	0.88	2	2
Fox High investment	1	0.61	0.95	1	0.95	0.85	0.70	3	0.86	$3.96	$0.09	$0.97	**1.15**	**1**	1
Joint Low investment	1	0.21	0.95	1	0.7	0.85	0.50	30	0.23	$2.67	$0.09	$0.97	0.08	3	6
Joint Medium investment	1	0.61	0.95	1	0.7	0.85	0.50	10	0.61	$4.47	$0.09	$0.97	**0.39**	**1**	4
Joint High investment	1	0.61	0.95	1	0.7	0.85	0.50	10	0.61	$6.39	$0.09	$0.97	0.29	2	5

	Value (V)	Impact of works (W)	Technical feasibility (F)	Adoption (A)	Adverse adoption (B)	Socio-political risks (P)	Long-term funding (G)	Time-lag (L)	Discount factor (DFb)	Up-front cost (C)	Maintenance cost (M)	Present value of M (PV)	Benefit:Cost Ratio	Internal ranking	Overall ranking
Scenarios	**V (0-100)**	**W (0-1)**	**F (0-1)**	**A (0-1)**	**B (0-1)**	**P (0-1)**	**G (0-1)**	**L (years)**	**DFb (eq)**	**C (AUD$Million)**	**M (AUD$Million/year)**	**PV (AUD$Million)**	**BCR (index)**	**(index)**	**(index)**
Fox Low investment	50	0.21	0.95	1	0.95	0.85	0.70	7	0.71	$2.11	$0.09	$0.97	25.96	3	3
Fox Medium investment	50	0.41	0.95	1	0.95	0.88	0.70	7	0.71	$2.71	$0.09	$0.97	43.94	2	2
Fox High investment	50	0.61	0.95	1	0.95	0.85	0.70	3	0.86	$3.96	$0.09	$0.97	**57.28**	**1**	1
Joint Low investment	50	0.21	0.95	1	0.7	0.85	0.50	30	0.23	$2.67	$0.09	$0.97	3.77	3	6
Joint Medium investment	50	0.61	0.95	1	0.7	0.85	0.50	10	0.61	$4.47	$0.09	$0.97	**19.44**	**1**	4
Joint High investment	50	0.61	0.95	1	0.7	0.85	0.50	10	0.61	$6.39	$0.09	$0.97	14.37	2	5

	Value (V)	Impact of works (W)	Technical feasibility (F)	Adoption (A)	Adverse adoption (B)	Socio-political risks (P)	Long-term funding (G)	Time-lag (L)	Discount factor (DFb)	Up-front cost (C)	Maintenance cost (M)	Present value of M (PV)	Benefit:Cost Ratio	Internal ranking	Overall ranking
Scenarios	**V (0-100)**	**W (0-1)**	**F (0-1)**	**A (0-1)**	**B (0-1)**	**P (0-1)**	**G (0-1)**	**L (years)**	**DFb (eq)**	**C (AUD$Million)**	**M (AUD$Million/year)**	**PV (AUD$Million)**	**BCR (index)**	**(index)**	**(index)**
Fox Low investment	15	0.21	0.95	1	0.95	0.85	0.70	7	0.71	$2.11	$0.09	$0.97	7.79	3	3
Fox Medium investment	15	0.41	0.95	1	0.95	0.88	0.70	7	0.71	$2.71	$0.09	$0.97	13.18	2	2
Fox High investment	15	0.61	0.95	1	0.95	0.85	0.70	3	0.86	$3.96	$0.09	$0.97	**17.19**	**1**	1
Joint Low investment	15	0.21	0.95	1	0.7	0.85	0.50	30	0.23	$2.67	$0.09	$0.97	1.13	3	6
Joint Medium investment	15	0.61	0.95	1	0.7	0.85	0.50	10	0.61	$4.47	$0.09	$0.97	**5.83**	**1**	4
Joint High investment	15	0.61	0.95	1	0.7	0.85	0.50	10	0.61	$6.39	$0.09	$0.97	4.31	2	5