

Phillip Island Nature Parks Integrated Pest Mammal Strategy 2013-2018

Summary

On Phillip Island the introduced red fox is the greatest land based threat to the faunal biodiversity of the island. Eradication of introduced foxes is a very high priority for Phillip Island Nature Parks (the Nature Parks) (Phillip Island Nature Parks Strategic Plan 2012-17 Actions: 2.2.3, 2.1.4, Environment Plan Actions: 67, 68, 76, 125, 182 and 197).

Red foxes were introduced to the island in 1907 for recreational hunting and attempts to control them began in 1918 when it was realised they were killing native bird species, including the little penguin and short-tailed shearwater. Red foxes are the only fox species on the island.

Other introduced pests such as feral cats, European rabbits, black rats and house-mice also negatively impact on native flora and fauna. Further analysis and strategy development to manage these pests is still required. It is recommended that partnerships with local key stakeholders are developed including formation of detailed action plans clearly specifying the roles and responsibilities of stakeholders, the density and distribution of these pests and integrated pest control methods. An education program on best practice pest control for key stakeholders and partners is an essential part of the development and implementation of the other pest action plans, especially in regard to rabbit management on Phillip Island.

Red fox numbers on Phillip Island (PI), an area of 100 Km², have varied, with 400-600 in the late 1970s to between 68 and 80 in 2005. The fox population was held below carrying capacity for more than 20 years without preventing population-threatening predation on penguins and other ground-nesting seabirds. Successful control came following implementation of island-wide baiting four times per year commencing in 2005/06. Fox numbers have declined to the lowest ever estimate of 11 foxes as of the end of June 2012 (Rout et al. in review 2012). The first indications of success were a strong recovery in little penguin numbers, coinciding with no penguin mortalities attributed to foxes on the Summerland Peninsula. Moreover, increases in the densities and distribution of swamp wallabies, masked lapwing, Cape Barren geese, brush tailed possums and shearwaters were recorded.

Challenges in achieving fox eradication

Detecting foxes

Foxes on Phillip Island demonstrate highly neophobic (abnormal fear of anything new) and anthropophobic (fear of people) behaviours, making detection very difficult and extremely time and labour intensive. The current methods used by the fox team to detect fox presence are not accurate enough to reliably detect foxes in rural and especially urban areas. Therefore, the current detection methods are not able to confirm fox eradication.

Eradicating foxes

Given the intensity of the eradication program over the last few years, residual foxes will have a tendency of being neophobic and/or anthropophobic, making them difficult to locate and kill using conventional methods. As a result foxes are avoiding current bait types and bait sites making it difficult and time consuming for staff to confirm the presence of foxes in baited areas. In addition, when fox numbers are very low the conventional methods of trapping, spotlight shooting, fox drives and den fumigation are very time expensive for little gain in the number foxes killed.

Not all foxes on the island are exposed to the eradication techniques. Baits cannot be used in urban areas. The density and distribution of urban fox populations are unknown. Thus urban foxes are a constraint on achieving eradication.

Immigration of foxes

Immigration can occur via the vehicular bridge to the island and/or foxes could swim the channel between the island and the mainland. Research indicates a possible immigration rate of one fox over a three year period. An effective and affordable method for reducing the chance of immigration and detecting immigrants on Phillip Island is required.

Community perceptions

- The Nature Parks is not aware of the public opinion, values and perceptions of the fox eradication program or other Nature Parks' pest management activities and native species.
- The Nature Parks may not be getting the support for its program(s) that is available from the communities of Phillip Island, San Remo, Bass Coast and Victoria.
- There are likely misconceptions amongst the community, private landholders on Phillip Island and the adjoining mainland regarding the relative benefits of fox and rabbit baiting programs.
- Community and government support of native species becoming more abundant, and the opportunity for planned reintroductions of rare and/or iconic species to Phillip Island, are not well understood.

Recommendations for the eradication of foxes

Detecting foxes

- Purchase two fox detection dogs to be used with trained handler(s) for scent tracking and/or scat locating. These dogs are crucial for monitoring and eradicating foxes at low densities and thus improving the likelihood of eradication, especially in urban areas.
- Currently Tasmania has a team of ten fox detection dogs. It is recommended that the Nature Parks maintain a working relationship with the Tasmanian dog program to share information and to conduct an island-wide fox census on an annual or biannual basis.
- Spotlight counts of fox numbers should be continued as a method to obtain an index of presence/absence. Additionally, spotlight transects should be extended to cover urban areas and the adjoining Anderson Peninsula as regular surveys.
- Use camera monitoring techniques to detect presence/absence of foxes, especially in urban areas. Engage expertise to configure the camera monitoring program.
- Continue the DNA analysis of scats located by the dogs to determine individual relationships and distribution across the Island.
- Put in place a fox reporting program (i.e. Help a penguin/shearwater - Dob in a Fox) targeted to key periods of the fox life cycle including denning and post-emergence of cubs.
- Seek funding and expertise for new experimental methods for detecting urban foxes and the purchase of special technology (e.g. high grade night vision equipment and the use of drones with infra-red cameras).

Eradicating foxes

- Apply a more intensive and targeted eradication program based on fox presence being confirmed by fox detection dogs (e.g. targeting baiting zones and demonstrate localised success following baiting as well as detecting den sites and demonstrate success following treatment of dens).
- In year one, or until the dogs are working effectively, island-wide fox baiting should continue three times per year (12 week periods) on Phillip Island and a similar baiting regime should commence on the Anderson Peninsula in year one.
- Targeted hot spot baiting based on evidence found by detection dogs.
- Changes in island-wide baiting frequency based on detection of localised signs.

- Seek the use of a broader range of bait types; included eggs, fish based baits, chicken wings, and other meat types (not currently registered but may be able to obtain a permit for off label usage)
- Pursue the use of alternative lethal toxins (PAPP®) and bait delivery systems (M44) that lessen the risk to domestic animals without compromising the efficiency of the program.
- In urban areas investigate the use of sedative baits.
- Work with local police and obtain a populous place shooting permit for urban areas.

Immigration of foxes

- Establish a buffer zone covering at least two fox territories (~10 km²) from the entrance of the bridge to Phillip Island. This should reduce the fox populations in San Remo area by creating an effective population sink and thus decreasing the probability of foxes immigrating to Phillip Island
- Investigate method to stop/reduce bridge access by foxes (e.g. fencing northern approach to the bridge, construct fox limiting grids, remove vegetation on northern abutment and incorporate pedestrian gates).
- Establish camera traps on or about the bridge/ Newhaven to enable early detection of immigrants and a routine program to detect immigrating foxes.
- Spotlight transects extended to cover the San Remo buffer zone area to help determine if the population changes are reducing the potential for immigration.
- Public education and fox reporting program to be extended to San Remo

Informing and educating the community

- Develop a community based survey targeting key groups and including the broader community. Use the results from the opinions and values survey to fine tune a communication strategy.
- Consider the commitment of additional resources to the ongoing implementation of a community (Phillip Island and San Remo/Anderson Peninsular) communication strategy aimed at getting, maintaining and improving community agreement and support for the Nature Parks pest programs.
- Market the success of the fox eradication program. Seek monetary support from state and federal governments to bolster the fox eradication program; the reintroduction of native species to Phillip Island and promote the unique native habitat and wildlife values of Phillip Island.
- Develop community information program to promote the benefits of PAPP® fox bait and the continued use of other registered baits.

Key recommendations for managing other pest animals

Rabbits

1. Develop a practical integrated European rabbit management action plan involving all major stakeholders integrating control techniques that specifically target rabbits in a tenure-blind approach.
2. Survey rabbit warren systems, map and identify key harbouring areas of rabbits using a tenure-blind approach across the entire island.
3. Investigate rabbit impacts on the Philip Island environment and seek funding to compliment current program to reduce impacts to help maintain or increase biodiversity.
4. Develop and design program to reduce rabbit impacts using long term control measures based around warren destruction.

Feral cats

1. Develop a practical integrated cat management action plan involving all major stakeholders.
2. Co-ordinated enforcement of the Victorian State Government's Domestic (*Feral & Nuisance*) *Animals Act* 1994 by the local council - Bass Coast Shire Council.
3. Seek an interpretations of *Domestic (Feral & Nuisance) Animals Act* 1994 to allow Nature Parks rangers to be authorised officers under the Act.
4. Initiate discussions with the Victorian state government and Bureau of Animal Welfare (BAW) to develop workable interpretations of the *Prevention of Cruelty of Animals Act* 1986 to enable effective cat management.
5. The Nature Parks with other stakeholders co-ordinate surveys (i.e. spotlighting / camera traps) to help determine cat distribution and density across Phillip Island.
6. Discuss with Bass Coast Shire Council the need for actively leading a community based education program to manage domestic and feral cats and the coordination of effective enforcement of the *Domestic Feral & Nuisance Animals Act* 1994.
7. The Nature Parks with major stakeholders implements an integrated cat management program involving broad scale cat baiting program (N.B. Approved registered cat baiting toxin available).

Black rats and house mice

1. Seek funding to determine the densities and impact of black rats and house mice on Phillip Island native fauna and flora.
2. Consult with the Australian federal government, with reference to the Department of Environment Heritage and the Arts' Threat Abatement Plan' to reduce the impacts of exotic rodents on biodiversity on Australian offshore islands of less than 100 000 hectares, to obtain funding to institute strategic control works.