

Norfolk Island Regional Council

Pest Management Plan

(NIRCPMP)

2021-2026



Vision: Reduce the impact of terrestrial pest plants, animals and pathogens on Norfolk Island to protect and enhance the condition of our unique Island biodiversity, increase agricultural production and improve quality of life.

Front cover: Free roaming cat walking through a colony of nesting Sooty Terns (Image © Norfolk Island National Park)

The *Australian Pest Animal Strategy 2017 to 2027* (Invasive Plants and Animals Committee, 2016) was used as a guide to the format of the Norfolk Island Pest Plant and Animal Management Plan.

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1. Introduction

Many plants, animals and pathogens introduced to Norfolk Island have since become pests.

Effective pest plant and animal management involves a combination of preventing the entry of pests to Norfolk Island wherever possible, eradicating those that do enter (eradicating incursions) when feasible, and managing the negative impacts of those that are already established.

Pest plants, animals and pathogens are species that occur beyond their natural range and have the potential to cause significant adverse economic, environmental, and social impacts.

Weeds invade natural vegetation communities and can replace native plants, degrade important habitat for flora and fauna and significantly change ecosystems.

Pest animals and pathogens can have a major impact on native plants and animals through predation, competition for food and other resources (e.g. hollows for nesting) and by damaging ecosystems.

1.1 The purpose of the Norfolk Island Regional Council Pest Management Plan
The purpose of Norfolk Island Regional Council Pest Management Plan (NIRCPMP) is to provide guidance on best practice management of terrestrial pests on Norfolk Island. The NIRCPMP does not cover the management of aquatic or marine pests (other than introduced freshwater aquatic plants).

The Plan strives towards the vision of protecting Norfolk Island's economy, environment, and social wellbeing from the impact of pest plants and animals and other pests. It details pest plant, animal and pathogen management principles and sets goals and priorities that will help improve Norfolk Island's overall ability to prevent and respond to new pest plant and animal incursions and manage the negative impacts of established pest plants and animals and other pests.

The Plan provides the foundations to guide and inform the actions of stakeholders, including landholders, the community and government agencies.

The Plan highlights areas that require collaboration to drive the development of consistent and coordinated approaches and provides clarity around priorities.

The Plan aims to:

- Recognise the significant challenges and negative impacts that pest plants and animals and other pests create for Norfolk Island.
 - It is well known that pest plants and animals and other pests are not a challenge that can be resolved after one treatment.
 - Managing pest plants and animals and other pests is an ongoing task that requires a proactive approach, continuous investment and strategic action by a wide range of stakeholders for the benefit of the economy, the environment and the community.
- Facilitate and encourage coordination and leadership.
 - To be effective, pest plant and animal prevention and management needs to be a shared responsibility, with an understanding that financial incentives for private land managers will be required to ensure the success of cross tenure pest control programs.
- highlight the importance of a strategic approach to the management of pest plants and animals and other pests.

1.2 The impact of pest plants and animals and other pests on Norfolk Island

Environmental impacts

Pest plants and animals and other pests are having a devastating impact on the environment of Norfolk Island. Weed invasions decrease the habitat value and quality of unique native vegetation communities and make areas of native vegetation less productive for native fauna, and more suitable for introduced species.

Pest plants and animals and other pests have a direct impact on the flora and fauna of Norfolk Island (including many threatened/EPBC listed species) by predation and competition for resources such as habitat, food and breeding sites.

Norfolk Island contains almost 400 introduced plants (Appendix A), many of which have become weeds, and many high threat pest animals (Appendix B).

Predation by introduced pest animals is recognised as a major cause of extinction of native plant, invertebrate and vertebrate species on Islands. The native species on Norfolk Island are particularly at risk from predation because their already small populations have been significantly reduced by habitat destruction and degradation.

Biosecurity measures are critical to prevent new weeds, predators, competitors and pathogens from entering Norfolk Island if we are to maintain the natural values of the Island.

Financial impacts

Information on the financial impact of pest plants and animals and other pests on the Norfolk Island economy is limited. It is difficult to measure the financial impact of pest plants and animals and other pests on agricultural production and through the cost of pest plant and animal control programs across Norfolk Island, but there is no doubt that the cost of direct losses (through damage to crops and home vegetable gardens by feral chickens, for example) is significant. There is also a large cost involved in pest plant and animal control programs on agricultural land, private land (including private housing and tourism premises) and across the Norfolk Island National Park, Public Reserves and other public land.

Ecotourism potential

In many ways, the experience of Lord Howe Island indicates the potential value of well-planned (and funded) ecological, conservation and tourism management programs. Like Norfolk Island, Lord Howe Island has a high proportion of endemic species and is a unique island ecosystem.

For a long period of time, Lord Howe Island have invested in well-planned threatened species recovery programs (e.g. Lord Howe Island woodhen, Balls Pyramid stick insect), successful feral goat, pig, cat and rat eradication programs, and a 30-year program to eliminate weeds on the Island.

As part of the huge amount of funding and resources that have gone into improving the environment on Lord Howe Island, a strong volunteer/eco-tourism program has been established where 775 volunteers contributed 23,000 person-hours (worth about \$805,000) of weed control effort between 1995 - 2011, plus significant income (estimated at \$3.4M) to the Island's tourism industry.

There is huge potential to improve eco-tourism opportunities by investing in threatened species recovery programs and pest plant and animal control and habitat rehabilitation programs on Norfolk Island and promoting the Island as an eco-tourism destination.

Promotion of the unique natural values of the Island, and increased opportunities for volunteers to assist with the rehabilitation of the Island's ecosystem, has the potential to open up new opportunities for local eco-tourism operators and lead to increased income for the tourism industry on Norfolk Island.

Social impacts

Pest plants and animals and other pests have considerable negative social impacts. The predation of seabirds by cats, for example, can have significant social and psychological effects on the community. In addition, weeds are a nuisance, damaging or invading home gardens, vegetable gardens and damaging culturally important sites across the Island.

Pest animals such as rodents can also cause significant disruption to domestic occupation.

2. Pest animals on Norfolk Island

It is recognised that pest animals have an impact on biodiversity (including threatened species), agriculture, tourism and domestic occupation on Norfolk Island.

The ongoing cost of pest animal control programs is significant, and it is important to strategically plan and target pest animal control programs across all land tenures to ensure best value for money.

It is recognised that in some cases, total eradication of a pest animal species is a cheaper option over time than funding ongoing control. The recent (seemingly successful) rodent eradication program on Lord Howe Island is a good example of this.

Rats

Eradication of the Black Rat from several New Zealand off-shore islands and other islands around the world, and the recovery of flora and fauna populations following these eradication programs, has demonstrated that this introduced species has had a devastating effect on native flora and fauna on islands.

In recognition of the devastating effect of introduced rats on native and endemic biota on islands, predation by exotic rats on Australian offshore islands of less than 1000 km² (100,000 ha) has been listed as a key threatening process under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

The Polynesian Rat (*Rattus exulans*) was introduced to Norfolk Island by Polynesian settlers approximately 800 years ago and the Ship Rat or Black Rat (*Rattus rattus*) by Europeans, reportedly from the wreck of the *MV Ronaki* on Kingston reef during World War II.

It is likely that rats were a major cause of the extinction of many of the endemic terrestrial land snail species on Norfolk Island and perhaps in conjunction with cats, the two species of lizard that formerly occurred on Norfolk and are now only found on off-shore islets and Phillip Island.

The Black Rat has had a significant impact on Norfolk's biota, including the post-war extinction of the Black and White Sparrow and Guava Bird, and serious decline in other birds such as the Green Parrot, Norfolk Island Morepork, Pacific Robin and the White-breasted Silvereye, and the extinction of both species of bat (Gould's Wattled Bat and the Norfolk Island Free-tail Bat).

Rats have also had a significant impact on the Island's flora by interrupting the dispersal and germination of seeds. For example, prior to the rat baiting program in the National Park, the

endemic Bastard Oak (*Ungeria floribunda*) was reduced to widely scattered mature individuals, with few if any seedlings or young trees. However, a few years after rat baiting commenced, the germination of Bastard Oak seeds significantly increased in the vicinity of mature trees, suggesting that this species had been seriously affected by rats.

A well designed and funded rat control program is underway within the Norfolk Island National Park. Some targeted rat control currently occurs within Public Reserves on Norfolk Island, although funding is limited and rat bait stations are not re-baited as often as they should be and are empty for the majority of time. Rat control on private land is limited, patchy and uncoordinated.

A recent island wide rodent eradication project on Lord Howe Island appears to have been successful, and the feasibility of undertaking an island wide rodent eradication project on Norfolk Island could be explored in the future.

Cats

Feral and free roaming domestic cats, which feed predominantly on vertebrate prey, are established and breeding in remnant native forest and weed infested areas throughout the Island.

Birds in fragmented habitats and ground nesting seabirds are particularly vulnerable to cat predation. In addition to taking a range of terrestrial birds, cats kill a significant number of breeding seabirds and their young, particularly burrow-nesting Ghostbirds, which are taken at night outside their burrows. Cats also have a large impact on vulnerable tree-nesting White-Capped Noddies and White Terns.

Partly due to the presence of cats on Norfolk Island, the Scarlet Robin and Golden Whistler, which were once both quite common in gardens, are now largely restricted to the National Park (including the eucalypt forest), some public reserves and some native forest remnants on private land.

Norfolk Island National Park are currently implementing a cat trapping program in the National Park and are working on a project to accurately estimate the population of feral and free-roaming cats across Norfolk Island using camera trap surveys. Recent analysis of the data collected as part of the camera trap surveys suggest a feral and free roaming cat population of around 100 individuals.

Norfolk Island Regional Council do occasionally/spasmodically trap cats within public reserves on Norfolk Island. Cats traps are available to private landholders, although this trap loan scheme has not been promoted widely in the past. The Norfolk Island Flora and Fauna Society have a cat trap loan program and do assist with trapping on private land, and Norfolk Island Regional Council recently purchased another 25 cat traps.

Feral chickens

Feral chickens occur in most habitat types across Norfolk Island and are having a dramatic impact on the environment. Observations over many years suggest that feral chickens are changing the soil moisture regime through extensive disturbance of litter, reducing germination, disturbing seedling roots of native plants, and reducing the number of some invertebrates - including critically endangered land snails.

The culling of feral chickens in Norfolk Island public reserves does occur, although culling is currently prohibited for a one-month period between December and January due to school holidays and tourism, and the feral chicken population does increase slightly during this time.

The population of feral chickens on Norfolk Island does fluctuate due to environmental factors, and it is uncertain if there has been any attempt in the past to estimate the population of feral chickens on the Island.

A targeted Feral Chicken eradication program in some Norfolk Island Public Reserves in late 2019 and early 2020 resulted in a noticeable reduction in feral chickens within targeted areas. A total of 728 feral chickens were culled from July 2019 and March 2020. Within days feral chickens from surrounding land moved back into reserves where targeted control was carried out, highlighting the need for continued feral chicken control across all land tenures on Norfolk Island.

Red parrot (Crimson Rosella)

The Red Parrot (Crimson Rosella) (*Platycercus elegans*) was introduced to Norfolk Island as a cage bird and is now widespread across the Island. The Crimson Rosella is in direct competition with native bird species such as the Norfolk Island Green Parrot and the Norfolk Island Morepork for territory and nesting sites (tree hollows).

The Crimson Rosella also eats similar foods to the Green Parrot, has similar nesting requirements and has also been known to break eggs and eject chicks from Green Parrot nests.

Although no research has been done to measure the impact of Red Parrots on endemic birds on Norfolk Island, it is highly likely that they are having a significant impact on the breeding success of species like the critically endangered Green Parrot and Norfolk Island Morepork.

It is not known if there has been any attempt to accurately estimate the population of Red Parrots on Norfolk Island.

Some targeted Red parrot control has been undertaken around known breeding sites for the Norfolk Island Morepork, but this has been occasional and spasmodic.

Tarler Bird (Australasian Swamphen)

A population of Australasian Swamphen (Tarler birds) (*Porphyrio melanotus*) has become established on Norfolk and Phillip Islands. The presence of the Tarler Birds is believed to be impacting upon the breeding cycle of seabirds as a result of the swamphens destroying and eating eggs and killing young chicks.

Norfolk Island Regional Council and Norfolk Island National Park have permits for the control of 500 Tarler Birds over a five-year period across public and private land on Norfolk Island and on Phillip Island.

It is not known if there has been any attempt in the past to accurately estimate the population of Tarler Birds on Norfolk Island, but the current population on Norfolk and Phillip Islands is likely to be more than 500.

Norfolk Island National Park carry out regular planned control programs on Phillip Island and Norfolk Island Regional Council have assisted occasionally by undertaking Tarler Bird control on Norfolk Island, although this work could be better planned, resourced and coordinated.

Other introduced birds

Introduced or self-introduced exotic birds have successfully established populations on Norfolk Island because they favour and are able to exploit the open grassland and mixed vegetation habitats

created by human activities. Some, such as the Grey-breasted Silvereve and Blackbird are also at home in the forest.

The European Goldfinch plays a role in the dispersal of introduced thistles and other agricultural weeds and the Grey-breasted Silvereve is a pest in gardens and orchards and spreads the seeds of invasive weeds such as Privet, Lantana and Hawaiian Holly.

Most exotic birds are generalists readily moving between gardens, open pasture, weed thickets and native forest dispersing seeds such as Hawaiian Holly, Guava and Olive deep into forest habitat.

The self-introduced Australian Kestrel benefits from new open space and pastures. Although its diet consists largely of insects (predominantly introduced dung beetles) and occasionally small mammals, such as mice and rats, there has been some concern that the Kestrel could have a significant impact on some seabird populations on Phillip Island, particularly the Grey Ternlet. Kestrels have also been known to take White Tern chicks from trees (Margaret Christian pers. comm).

Californian Quail can have an impact on vegetable seedlings in home vegetable patches and could potentially damage native plant seedlings and alter soil biota.

There have been no known planned or coordinated control programs for other introduced birds on Norfolk Island and it is perhaps unlikely that control programs would be supported financially.

Army Grub

The insect that has the most obvious effect on Kikuyu pastures and lawns across Norfolk Island is the introduced Army Grub (Worm).

The Army Grub is a Noctuid moth of the genus *Spodoptera* and the name Army Grub is a reference to the larvae that emerge in huge numbers, consuming swathes of crops or pasture in their path.

Army grubs emerge in pastures and lawns on Norfolk Island during late summer and autumn, especially after rain. Larger swarms occur in some years when conditions are favourable and can have a dramatic impact on Kikuyu pastures across the Island, causing short term damage to pastures, lawns and fairways on the golf course.

Argentine Ants

In early 2010, colonies of the invasive exotic Argentine Ant were located in Ball Bay, Headstone and Hundred Acres Reserves. It is believed that the infestations in Headstone and Hundred Acres Reserves originated in mulch transported from the waste management centre in 2006 and that the infestation in Ball Bay Reserve originated in tree stumps transported to that reserve from Hundred Acres Reserve in 2007.

Reserves and Forestry staff initiated intensive control baiting in Hundred Acres Reserve in 2010 and subsequent control and monitoring has been carried out as part of the Island-wide Argentine Ant control program funded by the Commonwealth Government.

The presence of Argentine Ants in any native forest or cliffs poses a significant threat to biodiversity. This species of ant forms large colonies that completely eradicate other ants and many other invertebrates. Argentine Ants also swarm on nestlings and nesting adults, putting all birds in an ant infested area at risk. They also can have significant effects on seed production and recruitment of seedlings through interrupting the life cycle of dispersal species. Argentine Ants also have the potential to have a serious impact on tourism accommodation on Norfolk Island.

As colonies will move if disturbed, control/eradication strategies are based on killing the whole colony and especially the queen, *in situ*.

The inadvertent introduction of this environmental pest on Norfolk Island underscores the need to ensure the development and adoption of appropriately high quarantine standards to the importation of any material onto Norfolk Island

The implementation of the Argentine Ant Eradication Program is underway with funding from the Australian Government. The Program is (and will continue to be) guided by the CSIRO Argentine Ant Eradication Strategy and implemented by Norfolk Island Regional Council, and for this reason the control and eradication of Argentine Ants will not be covered in the NIRCPMP. Results through 2019-20 have been very encouraging, and eradication efforts are currently on track.

Asian House Gecko

The introduced Asian House Gecko has been recorded at three sites within Burnt Pine on Norfolk Island and is implicated in the decline of some native gecko species in other parts of its introduced range.

The Asian House Gecko is currently absent from Phillip Island but has the potential to severely impact upon the important Lord Howe Island Gecko and Lord Howe Island Skink populations should it be introduced. Strong biosecurity measures to stop the Asian House Gecko reaching Phillip Island are critical.

There have been no known strategic attempts to contain, control or eradicate Asian House Gecko populations on Norfolk Island.

Other pest animals

Close to 1,200 invertebrate taxa have been recorded on Norfolk Island, including 421 species that had not been recorded prior to 2014. It is not clear how many of these invertebrates are exotic or invasive and their potential impacts are also unknown.

A new arrival on Norfolk Island is the Palm Seed Borer (*Coccotrypes dactyliperda*), an invasive 1.5-2.5 millimetre long beetle that breeds in palm seeds, compromising plant reproduction. The Palm Seed Borer could potentially impact on the island's Kentia Palm industry, but the likely impacts on Norfolk's one native palm species *Rhopalostylis bauerii* are unknown.

Colonies of the feral European Honeybee frequently occupy tree hollows that might otherwise be used by native nesting birds, but the impact of feral honeybees on breeding success is unknown and unlikely to be significant in comparison to the Red Parrot.

The Banana Weevil is native to Malaysia and Indonesia and was introduced to Australia in 1900. Banana Weevils were detected on Norfolk Island in 2018 and it was determined through the consultative committee on emergency plant pests that the Banana Weevil is not an emergency plant pest. The Banana Weevil does have the potential to impact on agricultural production on Norfolk Island and there are control measures that can be put in place to reduce the likelihood of impact.

3. Weeds on Norfolk Island

Weeds on Norfolk Island are generally fast growing and require ongoing control due to the favourable climate. Without ongoing control, weed growth has the potential to significantly impact upon the natural values of the island through competition with native species, altering of microclimates, changing vegetation structure, and reducing habitat quality.

Sleeper Weeds are plants that appear benign for many years but may suddenly spread rapidly following certain natural events such as flood, fire, drought, climate change, or change in land or water management. Sleeper weeds are not always recognised as a significant problem, even though the potential threat they pose to industry, people or the environment may be extreme. There are many potential sleeper weeds on Norfolk Island, and it is important to identify, monitor and eradicate or control these before they spread and become difficult and expensive to manage.

There are almost twice as many introduced plants as native plants on Norfolk Island (Figure 1), and some introduced plants have become serious weeds. A list of introduced plant species compiled in 2010 (Mills 2010) is provided in Appendix A.

With a few notable exceptions, much of the land outside of the National Park and some public reserves has been cleared of native forest. Unless this land is managed effectively it often becomes dominated by woody weed species including Hawaiian Holly, Red Guava and African Olive.

<i>Summary of the Norfolk Island Flora in terms of status and growth habit</i>				
Group	Indigenous (%)		Naturalised (%)	
Trees	31	(17%)	37	(10%)
Shrubs	17	(9%)	42	(11%)
Vines/Creepers	19	(10%)	17	(5%)
Forbs	31	(17%)	206	(55%)
Grasses	15	(8%)	55	(15%)
Orchids	11	(6%)	-	-
Ferns	45	(25%)	6	(2%)
Sedges/Rushes	12	(7%)	12	(3%)
Total	181	(100%)¹	375	(100%)¹

1. Varies due to rounding.

Figure 1. Breakdown of native and introduced (or naturalised) flora on Norfolk Island (Mills 2010)

Historical clearing of a large proportion of the native habitat on Norfolk Island has made the protection of remnant areas and the restoration of remnant vegetation critical. Unfortunately, native forest remnants have been severely degraded by changes in physical structure and the replacement of native species by exotic weeds. The pre-1750 and current (2020) native vegetation communities on Norfolk Island were recently mapped, and this important information will be used to prioritise weed control works across the Island. Stage 2 of the native vegetation mapping project is underway, with fact sheets and other extension materials expected by the end of 2020-21.

The Island has had a history of episodic rural development with native forests being cleared for agriculture and then abandoned: closure of the colonial penal settlements; unprofitable agricultural enterprises; decline in population during the world wars and periods of economic recession. In many areas, native forests have been replaced by extensive monocultures of woody trees and shrubs.

Invasive woody weeds such as African Olive, Porpieh or Red Guava, Hawaiian Holly and Hakea, often grow in dense, virtually impenetrable stands and exclude native plants. These stands provide a source of seed, which are then widely dispersed by both native and introduced birds, rats and cattle, making control difficult and expensive. Much of the land invaded by woody weeds is too steep for agriculture and is extremely difficult to manage and rehabilitate.

Introduced plants are also known to have an impact on natural evapotranspiration cycles, which can have an impact on water availability.

It is also recognised that woody weeds have a significant impact on the aesthetics, or the “rural village atmosphere” of Norfolk Island, which is a major tourism drawcard for Norfolk Island.

Introduced weeds are a major threat to native flora and fauna on Norfolk Island. Plants that are not native to the Island degrade important and rare native vegetation communities and fauna habitat and compete with native species. They are a source of weed seeds and shelter weed seedlings that may then go unnoticed until they are too large to remove easily.

There are significant direct and indirect economic costs of ongoing weed control. It is difficult to accurately estimate the annual cost of weed control on public and private land across the Island, but there is no doubt that the cost would be substantial. The impact on vegetation communities and habitat quality, and the impact on agricultural and horticultural productivity is also significant.

The Norfolk Island Regional Council roadside weed control program has targeted weeds such as Hawaiian Holly, Cascade Curse, African Olive, Lantana and Cascade Onion in the past. This ongoing program to control weeds on roadsides has been successful for some targeted woody weeds in some areas, although some weed control programs using foliar spray applications have been unsuccessful. It is questionable whether the control of weeds on roadsides is a good use of limited resources when higher priority areas containing threatened endemic flora and fauna species within Reserves have been totally neglected. A roadside management and grazing plan would help prioritise weed control and revegetation programs on roadsides on Norfolk Island.

It is recognized that weeds do currently play a role in soil stabilisation (especially on steep slopes), and it is crucial that weed control programs are strategically planned and funded, and that follow up control and revegetation with appropriate native species (according to Norfolk Island native vegetation mapping) occurs as part of weed control programs to limit the possibility of increasing the potential for erosion.

4. Pathogens, diseases and other pests

Pathogens of native plants and animals on Norfolk Island are generally poorly known. Two pathogens are known to have had a significant impact on the natural environment of Norfolk Island - psittacine circovirus disease (PCD), commonly known as ‘parrot beak and feather disease’, and the root rot fungus *Phellinus noxius*. These pathogens do occur naturally on Norfolk Island, as they do in Australia, but dispersal of these threats on Norfolk Island is exacerbated by environmental factors.

PCD was listed as a key threatening process under the EPBC Act in 2001 and the Threat abatement plan for beak and feather disease affecting endangered psittacine species was released in 2005 (DEH 2005). The threat abatement plan identifies the Norfolk Island Green Parrot as being adversely affected by PCD. A previous study of 50 Norfolk Island Green Parrots suggested that an estimated 8% of the population on Norfolk Island is affected by the disease.

The root rot fungus *Phellinus noxius* has been identified as being the principal pathogen causing dieback of Norfolk Island Pine. The fungus is a natural component of rainforests in many countries, but its impacts are exacerbated by low levels of soil phosphorous, highlighting the link between seabirds and the island's ecosystems.

Myrtle Rust (*Puccinia psidii*) is a serious fungal disease of plants in the Myrtaceae family and has recently arrived on Norfolk Island. Whilst there are no native plants in the Myrtaceae family on Norfolk Island, there is a potential that several threatened plant species may be at risk. The critically endangered Kurrajong (*Wikstroemia australis*) is one species that is known to be particularly susceptible to disease, and Myrtle Rust has been identified as a risk to this species. It is unclear as to whether the Red Guava, one of Norfolk Island's principal weed species and a member of the Myrtaceae family, will be negatively affected by Myrtle Rust.

5. The Norfolk Island Regional Council Pest Management Plan (NIRCPMP)

The NIRCPMP embodies six principles that underpin effective pest plant and animal management.

1. Prevention and early intervention to avoid the establishment of new pest plant, animal and pathogens is more cost-effective than ongoing management of established populations. Biosecurity is extremely important on Norfolk Island.
2. Pest plant, animal and pathogen management is a shared responsibility between landholders, the community and other stakeholders. It is recognised, however, that private land holders will need support through financial incentives for pest management programs to be successful on Norfolk Island.
3. Management of pest plants and animals and other pests requires a coordinated approach across a range of scales and land tenures.
4. Management of established pest plants and animals and other pests should generally focus on the protection of high priority areas and high priority assets and requires a 'buffer' management area around the asset to account for pest animal mobility and the spread of weeds.
5. Best practice pest plant and animal management balances efficacy, target specificity, safety, humaneness, community perceptions, efficiency, logistics and emergency needs.
6. Best practice pest plant and animal management integrates a range of control techniques, considers interactions between species (such as cats and rats) and accounts for seasonal conditions (for example, to take advantage of pest animal congregations at water sources during drought) and animal welfare.

These principles will be incorporated into pest plant and animal prevention, eradication and management strategies, plans and actions across public and private land on Norfolk Island.

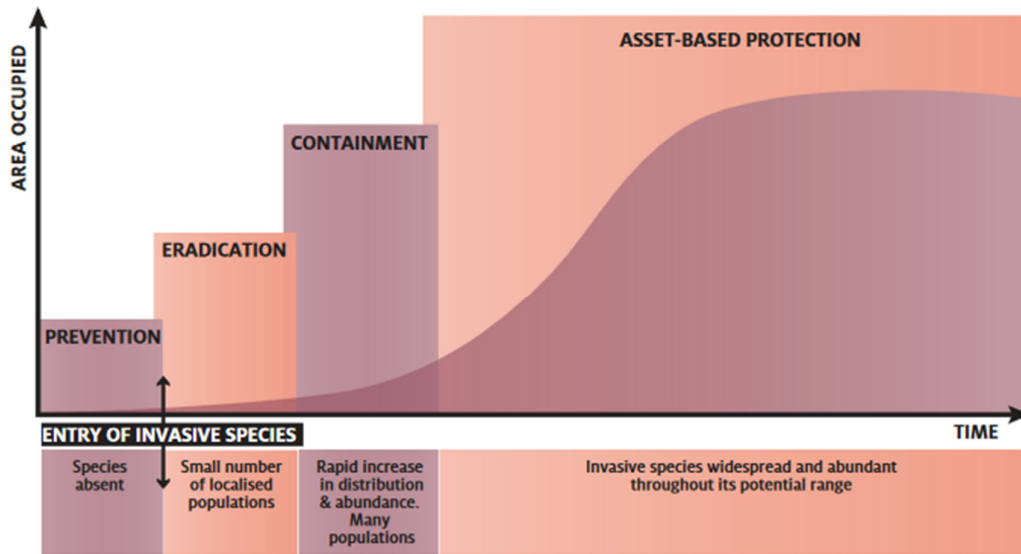
5.1 Stages of pest plant and animal management

A pest plant and animal incursion occurs in a series of sequential phases (Figure 2).

The most cost-effective management actions vary along the generalised invasion curve. When a pest plant or animal enters Norfolk Island and becomes established, it is generally as a small number of localised populations that then increase in abundance and distribution, and the amount of damage caused and the cost of that damage increases.

As a pest animal or weed species spreads, the cost of controlling them to eliminate the problem increases. The greatest return on investment is usually achieved through investing in prevention and early intervention, compared to asset-based protection, which takes place once pest plants and animals and other pests are established and widespread.

For most of the major pest plants and animals and other pests on Norfolk Island this opportunity has passed. A pest management activity may not always have a positive benefit. For example, if the costs of using a control tool to manage a pest plant or animal exceeds the benefits of managing that pest plant or animal then the control activity should not be undertaken.



Source: Victorian Government (2010) Invasive Plants and Animals Policy Framework, DPI Victoria, Melbourne.

Figure 2. Invasion curve for pest plant and animal incursions.

5.2 Strategic Directions and Priorities

The NIRCPMP has four strategic directions, each with priorities that aim to focus action, coordination and investment (Table 1).

Table 1. NIRCPMP Strategic Directions

Strategic Direction 1	Prevent the establishment of new pest plants and animals and other pests
Strategic Direction 2	Reduce the impacts of existing pest plants and animals and other pests
Strategic Direction 3	Improve leadership and coordination for the management of pest plants and animals and other pests
Strategic Direction 4	Use best practice techniques and ensure value for money.

Strategic Direction 1 - Prevent the establishment of new pest plants and animals and other pests

Norfolk Island's favourable biosecurity status as an Island that remains free from many pests, weeds and diseases that affect agriculture, natural and built environments, and people in other parts of the world confers significant economic, environmental and community benefits.

To maintain this status, we will act to reduce the likelihood of exotic pests and diseases that have the potential to cause significant harm from entering, becoming established or spreading on Norfolk Island.

Developing and continuously improving approaches that prevent new pest plants and animals and other pests from entering and establishing on Norfolk Island is in the public interest.

This encompasses two key areas of pest animal prevention and management:

- Prevention through pre-border and border activities
- Eradication approaches for pest plant and animal species when technically feasible.

As demonstrated by the generalised invasion curve (Figure 2), the best value for pest plant and animal management programs is usually obtained from preventing new pest plant and animal incursions through early detection and intervention. There is value in identifying and continuously improving actions that support pre-border and border activities as well as eradication approaches.

Prevention and eradication are areas where Norfolk Island Regional Council and other stakeholders are best placed to concentrate coordinated effort and investment.

This goal has two priorities:

Priority 1.1 Commit to and continuously strengthen pre border and border biosecurity

There is a need for continued investment into and support of Norfolk Island's risk assessment and biosecurity processes. Encouraging investment and supporting early intervention is a priority as it provides greater return on investment and will reduce pest plant and animal management costs in the longer term.

Priority 1.2 Improve early detection and response approaches for high risk pest plants and animals and other pests

Governments play an important role in responding to pest plant and animal risks in the prevention and eradication stages. However, for Norfolk Island to successfully minimise the risk of new pest animal and weed invasions, all stakeholders (including the community) need to work together. They need to have the capacity to detect and report potential problems and work with other stakeholders to implement management actions.

Strategic Direction 2 - Reduce the impacts of existing pest plants and animals and other pests

Pest plants and animals and other pests on Norfolk Island cause significant negative social, environmental and economic impacts.

This goal focuses on promoting and facilitating collaborative, consistent and coordinated approaches to minimise the impact of established pest plants and animals and other pests.

The two priorities identified and outlined in this section focus on facilitating, planning, encouraging and improving best practice, and encouraging greater participation in the coordinated management of pest plants and animals and other pests.

Priority 2.1 Develop and implement island wide coordination and implementation plans for high threat pest plants and animals and other pests.

As efforts to control and manage established pest plants and animals and other pests can be costly, a strategic approach is required to determine the best use of limited resources to first control high priority pest plants and animals and other pests in identified high priority areas.

This prioritisation will be based on a risk assessment that considers the potential impact of pest plants and animals and other pests and the feasibility of control and management

Annual implementation plans will be prepared for all high priority pest plant and animal and other pest eradication and control programs.

Priority 2.2 Increase participation in coordinated management approaches across a range of land tenures

This priority recognises the importance of the management of pest plants and animals and other pests across all land tenures on Norfolk Island and the importance of increased involvement of all key stakeholders, including the community.

Coordinated cross-tenure management promotes awareness of the problem and potential solutions within the community while enabling management over a larger portion of the Island.

When management practices are coordinated the benefits rise as the number of participants increases.

This priority is not about creating new techniques or ideas to battle pests - a coordinated cross tenure approach and the provision of incentive programs for private landholders will result in more effective management and better value for money.

Strategic Direction 3 - Improve leadership and coordination for the management of pest plants and animals and other pests.

Effective pest plant and animal prevention and management depends on the coordinated and committed action of all key stakeholders.

This goal identifies three priorities to further improve the coordination of actions across all stages of pest plant and animal invasion: prevention, eradication, containment and asset protection.

Priority 3.1 Develop the knowledge, capacity and commitment of stakeholders to take responsibility for pest plants and animals and other pests

The management of pest plants and animals and other pests is a shared responsibility.

To achieve this priority there needs to be:

- Good science-based information on pest plants and animals and other pests
- Information that is accessible to all stakeholders, including the community.
- Evidence of the impact of pest plants and animals and other pests that can be observed or demonstrated.
- The ability to understand and adapt pest plant and animal and other pest risk mitigation and control options for individual circumstances.
- Availability of training and information to develop skills in pest plant and animal and other pest control.
- Access and availability of financial incentives for landholders to actively participate in coordinated pest plant and animal and other pest control programs.

Some pest control actions require the development and implementation of education and training for different stakeholders. This requires identifying people with the understanding and capacity to train others and making training accessible to staff and other stakeholders who need it.

This priority recognises the need to strengthen training capability and availability. Risks to effective pest plant and animal and other pest management practices resulting from lack of training should be identified and managed.

Priority 3.2 Improve information collection and sharing mechanisms to support effective pest plant and animal and other pest management

Accurate knowledge and information on pest plants and animals and other pests, their location and impacts are critical to plan effective pest plant and animal management.

Local data is important to inform local management planning and actions. Best available data on the impacts, distribution and abundance of established pest plants and animals and other pests will assist with achieving the goal of minimising impacts.

Where eradication is thought to be achievable, it is important to have good information about the current situation and the boundaries of where a pest plant or animal or other pest is impacting, how it might spread and the goals of the containment or eradication program.

Mapping to collect baseline data and a cost-effective monitoring and evaluation programs are crucial to support effective containment approaches.

Priority 3.3 Development of local extension capacity and capability through education and training

Science, knowledge, new techniques, management options, tools and their accessibility for pest plant and animal and other pest prevention and management are critical.

This priority aims to keep research targeted and focused in areas that can strengthen the risk-based approaches adopted to humanely, cost effectively and feasibly respond to pest plants and animal and other pest management challenges.

Research, development and extension also help to develop and update best practice, and to customise best practice for different stakeholders and/or species.

New pest plant and animal and other pest control methods often take years to develop and require specialist scientific skills and capabilities. To deliver new control methods it is important that research, development and extension activities (and associated long term funding arrangements) are established and maintained.

Strategic Direction 4 - Use best practice techniques and ensure value for money.

Best practice pest plant and animal and other pest management integrates a range of control techniques, considers interactions between species (such as cats and rats) and accounts for seasonal conditions (for example, to take advantage of pest animal congregations to water sources during dry conditions) and animal welfare.

Pest plant and animal and other pest management must be based on ecologically and socially responsible practices that protect the environment while minimising impacts on the community. It should balance feasibility, cost-effectiveness, sustainability, humaneness, community perceptions, emergency needs and public safety.

Priority 4.1 Continue to develop and improve best practice management methods and increase overall adoption of these practices among all key stakeholders

This priority recognises the importance of best practice pest plant and animal and other pest management on Norfolk Island, as well as the need for continuous improvement.

Best practice management approaches for individual and/or multi-pest plant and animal and other pest management programs should be developed, recognised and promoted for adoption by all key stakeholders on Norfolk Island.

Inclusion of best management practices within all pest plant and animal and other pest management and implementation programs will play an important role.

Priority 4.2 Trial techniques that are new to Norfolk Island to control pest plants and animals and other pests

This priority recognises the potential benefit of trialling new techniques to control pest plants and animals and other pests on Norfolk Island.

Although there are currently a range of options available to control most pest plants and animals on Norfolk Island, there is a need to trial new techniques for some species to improve eradication rates.

For example, the management of free-roaming feral cats during sea bird breeding is currently very difficult on Norfolk Island due to an increase in easily accessible prey (sea bird chicks), which results in less likelihood of cats entering cage traps.

Priority 4.3 Monitor the pest plant and animal management approach and identify and improve areas of weakness

Further work is required to monitor the overall approach to pest plant and animal and other pest management on Norfolk Island and identify areas that require improvement.

Pest control is costly and there is a need to ensure that all stakeholders are investing in a way that maximises return for investment.

Demonstrating the success of investment can encourage more stakeholders to invest and participate in coordinated programs, and well planned, successful pest plant and animal control programs are more likely to attract ongoing funding from investors.

6. Getting it done

It is important that public and private land managers work together in a coordinated way to effectively manage threatened ecological communities and native vegetation across the entire landscape. There have been some informal coordinated feral animal control programs on Norfolk Island in the past, including Tarler Bird control on Phillip Island and Norfolk Island, but there is room for improvement in many areas.

Delivery of the priority actions in the NIRCPMP will require cooperation and collaboration between agencies, the community and other stakeholders. This will occur through the “corner stone” of The NIRCPMP – the establishment of the Norfolk Island Conservation Management Network (NI CMN).

CMN’s have been used successfully for some time in Australia to bring together the social and scientific side of biodiversity conservation and to help drive the cross-tenure management of pest animals, weeds and biodiversity.

The establishment of the Norfolk Island Conservation Management Network (NI CMN) will ensure a tenure blind approach to the management of public and private land on Norfolk Island and will lead to a decrease in pest plants and animals and other pests, an increase in the condition and extent of threatened vegetation communities, an increase in populations of native flora and fauna species (including threatened species) and increased agricultural production.

CMN’s operate on both public and private land to increase the level of protection afforded to important biodiversity assets, and to help key stakeholders work closely together to achieve improved results across a landscape.

The biodiversity objectives of CMN’s are:

- To optimise conservation of the biological diversity of ecological communities across the landscape.
- To maintain or enhance viable remnants of the ecological communities throughout their distribution on public and private land.
- To protect, restore and re-establish threatened ecological communities.
- To contribute to the maintenance of ecological processes and the dynamics of the ecological community across the landscape.
- To increase the protection status of sites within the area covered by the CMN, in particular for those with threatened ecological communities that are under-represented in the public reserve system.
- To promote sustainable land management that protects biodiversity.

The social objectives of CMN’s are:

- To enhance community ownership and encourage ownership of the local environment.
- To provide a network for all land managers and to bring together other managers and stakeholders.
- To integrate conservation into management by empowerment with knowledge and resources.
- To share knowledge between landholders, scientists and conservation planners and managers.
- To encourage consistent and/or complementary management across sites.
- To reduce the economic costs of pests on Norfolk Island
- To enhance the distinctive amenity and profile of the island’s landscapes.

The NI CMN will include representatives from public land managers and other key stakeholders on Norfolk Island, including (but not limited to):

- Norfolk Island Regional Council (as a Public Land Manager)
- Parks Australia (as a Public Land Manager)
- Marine Parks Australia
- Department of Infrastructure, Transport, Regional Development and Communications (as a Public Land Manager)
- Department of Agriculture, Water and the Environment - Border Controls Branch (Biosecurity Operations Division)
- Invasive Species Council
- Flora and Fauna Society (community group)
- Norfolk Island Cattle Owners Association (Incorporated entity)
- Private land manager/s
- Beekeepers
- Tourism industry business owners
- Norfolk Island Tourism
- Other identified stakeholders

The key to the success of the NIRCPMP is to ensure sufficient funding is allocated towards the employment of a Conservation Management Network Coordinator to facilitate and manage coordinated pest plant and animal management programs and remnant vegetation protection and enhancement projects on public and private land across the Island. This role could be undertaken as part of an existing Environmental Officer Position at NIRC, or it could be done as a separate role on a part time basis.

The CMN Coordinator would also be responsible for organising and running monthly NI CMN Steering Committee meetings, managing budgets and preparing progress reports to funding providers.

The employment of a Conservation Management Network Coordinator will ensure on-ground weed control works are carried out, ongoing maintenance and revegetation programs are successful, and pest animal control programs are implemented in identified priority areas on public land. For coordinated pest control programs to be successful, it is crucial that financial incentives are provided to private landholders to allow them to effectively participate.

The employment of Conservation Network Coordinator will also ensure that high threat pest animals in are targeted within priority areas across public and private land to maximise the impact of the pest control programs. A key role of the Conservation management Network Coordinator will be to work one-on-one with private landholders to facilitate community engagement programs, incentive based coordinated trapping and baiting programs and native revegetation programs across private land in priority areas.

A “Land for Wildlife” type scheme for private land could be considered as part of CMN projects and activities, and other potential projects could include field days, weed control demonstration days and public presentations from pest control experts.

Table 2 summarises the Strategic directions and the priorities of the Norfolk Island Pest Plant and Animal Management Plan, and briefly describes the tactics we will use to achieve the targets set within the plan.

Table 2. Summary of the NIRCPMP Strategic Directions, Priorities and Tactics.

Strategic Direction	Priorities	Tactics (How will we get there?)
1. Prevent the establishment of new pest plants and animals and other pests.	<p>1.1 Commit to and continually strengthen border and pre-border security.</p> <p>1.2 Improve early detection and response approaches for high-risk pest plants and animals and other pests.</p>	<ul style="list-style-type: none"> Allocating funding towards the establishment of the Norfolk Island Conservation Management Network (NI CMN) to strengthen relationships between key stakeholders. Implementation of education programs. Supporting and working closely the Department of Agriculture, Water and the Environment. Supporting and working closely with local businesses to prevent new pest plants and animals and other pests arriving. Establishing Norfolk Island pest management email group. Subsidising and supporting the growing of native plants. Promoting the use of native plants in home gardens. Ensuring a strategic approach to weed management.
2. Reduce the impacts of existing pest plants and animals and other pests.	<p>2.1 Develop and implement Island wide coordination and implementation plans for high threat pest plant and animal species in high priority areas.</p> <p>2.2 Increase participation in coordinated management approaches across a range of land tenures</p>	<ul style="list-style-type: none"> Allocating funding towards the establishment of the Norfolk Island Conservation Management Network (NI CMN) to strengthen relationships between key stakeholders. Implementing strategic well-planned and well-funded ongoing pest plant and animal control programs. Taking a “tenure blind” approach to pest plant and animal control. Supporting the community with expert advice, support and financial incentives for pest plant and animal control. Actively encouraging and facilitating volunteer groups to assist with pest plant and animal control work. Ensuring all weed control work is followed up with the reestablishment of native vegetation and ongoing maintenance is carried out.
3. Improve leadership and coordination for the management of pest plants and animals and other pests.	<p>3.1 Develop the knowledge, capacity and commitment of stakeholders to take responsibility for pest plant and animal management</p> <p>3.2 Improve information collection and sharing mechanisms to support effective pest plant and animal management</p> <p>3.3 Development of local extension capacity and capability through education and skill development programs</p>	<ul style="list-style-type: none"> Allocating funding towards the establishment of the Norfolk Island Conservation Management Network (NI CMN) to strengthen relationships between key stakeholders. Continuing management of the Argentine Ant Eradication Program in line with the Argentine Ant Eradication Strategy (and through funding from the Commonwealth Government). Subsidising pest plant and animal management for private landholders participating in coordinated programs. Working closely with all key stakeholders. Providing financial support and expert advice to community groups. Targeting education and engagement programs towards private landholders and Council staff and contractors. Establishing Norfolk Island pest management email group.
4. Use best practice techniques and ensure value for money.	<p>4.1 Continue to develop, improve and adopt best practice management methods and increase overall adoption of these practices among all key stakeholders</p> <p>4.2 Trial new techniques to control pest plants and animals and other pests</p> <p>4.3 Monitor the pest plant and animal management approach and identify and improve areas of weakness</p>	<ul style="list-style-type: none"> Identifying priority conservation areas to guide management. Mapping selected priority weeds to guide management. Taking a strategic approach to planning pest animal and weed control. Encouraging and supporting research into the impact of pest plants and animals and other pests on natural values and pest animal and weed control techniques. Monitoring the impact of pest plant and animal control programs and make improvements where necessary. Updating the Norfolk Island Noxious Weeds Act schedules Improving and update current legislation. Supporting the establishment of a Research Hub on Norfolk Island. Considering the feasibility of an island wide rodent eradication program.

7. Management Actions

The NIRCPMP has been prepared as a guide to plan and implement strategic programs to manage the impact of pest plants and animals and other pests in accordance with legislative and other requirements over a five-year period (2021 – 2026)

The NIRCPMP will be used a basis for future funding applications.

It is recognised that there is a large amount of work that needs to be done, and it may not be possible to do everything in five years if funding is not sufficient. Instead this plan will assist to set up strategies and processes to ensure pest plant and animal and other pest control programs are well planned and coordinated to ensure value for money, to protect high value assets, and so the positive impact of this important work is measurable.

An action table is provided at the end of each section and each action has been prioritised as Critical, High, Medium or Low as summarised in Table 3, and an indicative budget is provided in Section 6 (Page 38).

Table 3. Key to Management Action Priorities

Priority Description	Priority Rank	Timeframe
Management Action is of the highest priority and should be commenced within 1 year of Council adoption of the Norfolk Island Regional Council Pest Management Plan	Critical	Commence within 1 year
Management Action is a high priority and should be commenced within 1-2 years of Council adoption of the Norfolk Island Regional Council Pest Management Plan	High	Commence within 2 years
Management Action is a medium priority and should be commenced within 1-2 years of Council adoption of the Norfolk Island Regional Council Pest Management Plan	Medium	Commence within 2-3 years
Management Action is a low priority and should be commenced within 5 years of Council adoption of the Norfolk Island Regional Council Pest Management Plan if all higher priority actions are implemented and funding is available.	Low	Commence within 4 years

Management Actions - Strategic Direction 1: Preventing the establishment of new pest plants and animals and other pests.

The introduction of more pest plants and animals and other pests onto Norfolk Island presents a real threat to the protection and conservation of the island's biodiversity.

Appropriate quarantine strategies and protocols will be developed and implemented where possible to minimise opportunities for the introduction of plant (including fungi), animal (invertebrate or vertebrate) or pathogen pests into Norfolk Island.

The status of pest plants and animals and other pests on Norfolk Island will be monitored and quarantine and pest research and control agencies will be engaged to develop and implement strategies that will facilitate the implementation of rapid and effective control and or eradication of significant invasive pests that are found on the Island.

Table 4 details the Actions that will be undertaken to help prevent the establishment of new pest plants and animals and other pests on Norfolk Island in order of priority.

Table 4. Strategic Direction 1 - Management Action Table: Preventing the establishment of new pest plants and animals and other pests on Norfolk Island

Action Number	Actions to prevent the establishment of new pest plants, animals and pathogens on Norfolk Island	Priority
1.1	Provide financial support for the establishment of the Norfolk Island Conservation Management Network (NI CMN) and the employment of a Conservation Management Network Coordinator to assist with the coordinated planning and implementation of pest plant and animal control programs across all land tenures.	Critical
1.2	Seek financial support from other relevant stakeholders for co-funding of the NI CMN (e.g. Parks Australia, DITCRD, NICA), and include a representative from the Department of Agriculture and Water Resources.	Critical
1.3	Ensure rapid action to stop the spread of new pest animals, weeds and pathogens is taken as soon as possible following detection.	Critical
1.4	Plan, implement, support, and encourage targeted education programs around the importance of biosecurity to Norfolk Island.	Critical
1.5	Support and assist the Department of Agriculture and Water Resources where possible to prevent new pest plants, animals, and pathogens from arriving on Norfolk Island.	Critical
1.6	Provide education and support to local nurseries, stockfeed importers, and other potential sources of seeds/plants to prevent new weeds arriving.	Critical
1.7	Ensure potential weed species are not introduced as garden plants.	Critical
1.8	Establish a pest management email distribution group to alert key stakeholders and the community to new potential threats to biosecurity on Norfolk Island and to keep key stakeholders up to date with relevant legislation and information.	Critical
1.9	Prepare regular media release and social media posts to raise awareness in the community about the importance of biosecurity on Norfolk Island.	Critical
1.10	Prepare regular media releases about specific potential "sleeper weeds" (including garden escapes) to raise awareness in the community about the potential of these to become problem weeds in the future.	High
1.11	Provide ongoing support to the Norfolk Island National Park Nursery to ensure they can supply native plants to the community and consider offering subsidies to private land holders to encourage them to plant native plants rather than introduced plants that may become weeds.	High
1.12	Use funding from the NIRC tree removal offset policy to establish and maintain native vegetation on land where weed control programs are complete to limit the possibility of weeds re-establishing.	High
1.13	Promote the use of native plants in home gardens through open private gardens or "demonstration" sites on public/council land.	Medium

1.14	Encourage Norfolk Island residents to report plants and animals they suspect are “new arrivals” and provide a simple means for them to report suspected new plants and animals.	Medium
1.15	Consider the establishment of a Norfolk Island Conservation Management Network social media page.	Medium

Management Actions - Strategic Direction 2: Reducing the impacts of existing pest plants and animals and other pests.

Through the Norfolk Island Conservation Management Network, existing high threat pest plants and animals and other pests across all land tenures on Norfolk Island will be controlled (or eradicated where feasible) to protect threatened flora and fauna and native vegetation communities, and to reduce the impact on agricultural production and on private land.

Pest animals and other pests

Pest animal and other pest control programs will be well planned and targeted to ensure the highest possible impact on target species and protection of native species, and value for money.

Key stakeholders (importantly including the community) will work together in a coordinated fashion to effectively control existing pest animals across all land tenures.

Rat/rodent control Very High Priority

Through the NI CMN, coordinated rat control (baiting) programs will be planned, promoted and implemented across all land tenures in priority areas.

Ideally rat control should be undertaken across all land tenures on Norfolk Island and sources for sufficient funding to allow this to happen will be explored.

In the meantime, rat and rodent control programs will be targeted to identified high priority areas where value for money will be best.

Rat bait stations and rat baits will be provided to private land holders in priority areas to encourage their participation.

Priority will be given to controlling rats at and surrounding breeding seabird colonies and endemic terrestrial birds during the breeding season and where threatened plant species occur, especially during flowering and seed development.

Consideration will be given to removing prolific food sources, such as guavas, that are present in high priority biodiversity and rat control areas.

Appropriately spaced and located bait stations will be regularly baited by public and private land managers (with assistance from the NI CMN where required) with appropriate rodenticides that are formulated to minimise the likelihood of secondary poisoning of non-target species and are relatively safe to handle.

Bait resistance will be minimised by rotating bait types where possible in accordance with rodent control best practice.

Rodent control programs have been carried out successfully on a large number of islands around the world, and a recent program to eradicate rats on Lord Howe Island appears to have been successful. Island-wide eradication of all rodents is the most cost-effective rat control course in the long-term and the feasibility of undertaking Island-wide eradication of rodents on Norfolk Island will be investigated.

Other rodent control methods are available, including some that are being trialled within the Norfolk Island National Park, and all options will be explored and assessed for their use on Norfolk Island.

Free roaming cat control Very High Priority

Through the NI CMN, the focus of the 5-year plan for cat control on Norfolk Island will be on strategic targeted control of feral and free roaming cats in high priority areas across public and private land, the improvements of current regulations, legislation and policies around cat ownership, and through community awareness raising campaigns.

Feral and free roaming cats will be controlled by live trapping in priority areas across all land tenures.

Currently, there is a requirement that all cats that are trapped should be scanned to check for microchips and returned to owners through the Norfolk Island Veterinary Centre where a microchip is detected. NIRC have invested in a high-quality microchip scanner, and this should be used during every cat trapping program.

Cats are also taken to the Norfolk Island Veterinary Centre if there is any indication that they are domestic rather than feral.

The establishment of a pound and a fee (or fine) for the return of domestic cats trapped through cat trapping programs or found roaming on public land will be explored as a critical priority.

A compulsory cat registration program will be implemented, and micro-chipping and de-sexing programs will be supported through significant discounts to cat registration charges for de-sexed and microchipped cats. One-off lifetime cat registration will be offered at a heavily discounted rate for residents that de-sex and microchip their cat/s.

Initially cat control programs will be targeted to areas that support significant populations of breeding seabirds and other endemic birds and high conservation value native vegetation communities.

Cat control will be extended to other areas (including high priority private land) according to the level of available funding and the willingness of community members to participate in cat control programs.

Other cat population control options will be investigated and supported, including the continued promotion of responsible cat ownership, a cat curfew, improved importation regulations (including banning the importation of certain breeds) and other Island-wide legislative controls.

A free cat trap loan program and/or a private land cat trapping service will be offered to community members in priority areas.

Incentives for the provision of cat containment areas will be investigated and considered.

Other methods to control cats, including baiting and alternative trapping, will be investigated and implemented in priority areas where feasible and possible.

Feral chicken control Very High Priority

Through the NI CMN, an ongoing, targeted, coordinated feral chicken control program will be planned, promoted and implemented across public and private land on Norfolk Island.

Feral chickens will be controlled by shooting, trapping and through the use of “Bird Control Paste” or a similar approved/legal product.

The provision of a feral chicken bounty program for private landholders (or another form of financial incentive) will be investigated and implemented in priority areas if deemed feasible.

Other control methods will be trialled, including searching for roosting areas within public reserves during the day and carrying out targeted eradication programs within these areas during the night.

Red Parrot control Very High Priority

Through the NI CMN, an ongoing, targeted, coordinated Red Parrot control program will be planned, promoted and implemented across public and private land on Norfolk Island.

Known or potential Norfolk Island Morepork and Green Parrot habitat areas will be targeted during nesting and breeding season as a priority.

Nest boxes and natural hollows will be regularly monitored during breeding season and targeted control will occur where Red parrots are found to be using nest boxes or natural hollows.

Red Parrots will be controlled by shooting, and other potential control methods (including trapping) will be considered.

The provision of a Red Parrot bounty program for private landholders (or another form of financial incentive) will be investigated and implemented in priority areas if deemed feasible and economic.

Tarler Bird (Australasian Swamphen) control High Priority

Through the NI CMN and in partnership with Norfolk Island National Park, an ongoing, targeted, coordinated Tarler Bird control program will be planned, promoted and implemented across public and private land on Norfolk Island and on Phillip Island.

Tarler Birds will be controlled by shooting, and other potential control methods (including the use of “Bird Control Paste” or a similar approved product) will be considered.

The provision of a Tarler Bird bounty program for private landholders (or another form of financial incentive) will be investigated and implemented in priority areas if deemed feasible.

Army Grub control Low Priority

Army Grub control will be undertaken if there is a potential for Army Grubs to have an impact on native flora species or native vegetation communities.

Army Grub control on private land for private benefit is the responsibility of the landholder.

Education and awareness raising campaigns about Army Grub control will be considered if a need is identified.

The control of Army Grub may not be appropriate in some areas as there is the potential for off target impacts to other insects (and to the food chain) as a result of Army Grub control programs. Research into the impact of Army Grub control on off target species will be encouraged and supported.

Argentine Ant eradication or control Very High Priority

The Argentine Ants Eradication Program on Norfolk Island will continue according to the Norfolk Island Argentine Ant Eradication Strategy through funding from the Commonwealth Government.

Awareness raising campaigns will continue to educate the community about methods of spread, and these will be funded through the Argentine Ant Eradication Program (AAEP).

Banana Weevil Medium Priority

The Banana Weevil does have the potential to impact on agricultural production on Norfolk Island and there are control measures that can be put in place to reduce the likelihood of impact.

Control measures recommended by New South Wales, Western Australia and Queensland include:

- Monitoring during periods of March/April and September/October
- Appropriate plantation hygiene methods; and
- Biological and chemical treatments.

The current extent and impact of Banana Weevils on Norfolk Island is currently not known.

Root rot, pathogens and diseases Medium priority

Methods to stop the spread of existing pathogens and diseases on Norfolk Island will be investigated if there is a potential for these to have an impact on native flora or fauna species or vegetation communities.

Research projects looking at the impact of root rot, pathogens and other diseases on Norfolk Island, and methods to control or limit the spread of these will be encouraged.

Awareness raising campaigns will be considered if the need arises.

Other pest animal control Medium priority

Through the NI CMN, coordinated control programs for other pest animals (e.g. Californian Quail, Starling) will be considered and implemented where there is the potential for impact on native flora and fauna and/or native vegetation communities and control is feasible.

The Californian Quail Population will be monitored as part of rat and cat control programs to ensure a reduction in the number of cats and rats does not lead to an increase in the Quail population,

Awareness raising campaigns will be considered if the need arises.

Table 5 details the Management Actions that will be undertaken to reduce the impacts of existing pest animals on Norfolk Island in order of priority.

Table 5: Strategic Direction 2 - Management Action Table: Reducing the impact of existing pest animals, pathogens and diseases on Norfolk Island.

Action Number	Action to reduce the impact of existing pest animals and pathogens on Norfolk Island	Priority
A2.1	Plan, coordinate, promote and implement strategic pest animal control programs across all land tenures on Norfolk Island through the Norfolk Island Conservation Management Network (NI CMN).	Critical
A2.2	Ensure a sufficient level of ongoing funding is provided to plan and implement effective coordinated pest animal control programs.	Critical
A2.3	Map priority areas for pest animal control programs (based on threatened species habitat, location of nesting sea birds, local knowledge etc.) to assist with planning.	Critical
A2.4	Plan and implement pest animal control programs targeting identified high priority geographic areas that will achieve the highest level of impact on the breeding success of	Critical

	threatened native flora and fauna species and the protection of high conservation value native vegetation communities.	
A2.5	Plan and implement control programs for priority pest animal species in high priority reserves in line with Appendix D.	Critical
A2.6	Ensure rat baits used in rodent baiting programs do not contain poisons that cause secondary poisoning in native species.	Critical
A2.7	Plan and implement coordinated cross tenure pest animal control programs and provide financial incentives for private landholders to participate.	Critical
A2.8	Ensure cat and rat management programs are run at the same time to limit the possibility of an increase in rodents because of a decreased cat population.	Critical
A2.9	Investigate the feasibility of Island wide rodent eradication in the future, using the Lord Howe Island project as a potential model.	Critical
A2.10	Provide ongoing administrative support to the current free roaming cat de-sexing and microchipping program run by Parks Australia.	Critical
A2.11	Ensure the control of Tarler Birds is undertaken in a coordinated fashion on Norfolk and Phillip Islands.	Critical
A2.12	Increase community awareness raising campaigns around responsible pet ownership.	Critical
A2.13	Support the continuation of the implementation of the Norfolk Island Argentine Ant Eradication Program.	Critical
A2.14	Continue awareness raising campaigns around the movement of organic materials around the Island to limit the spread of Argentine Ants	Critical
A2.15	Consider the establishment of a pound and a fee (or fine) for the return of domestic cats trapped through cat trapping programs or otherwise found wandering in public areas.	Critical
A2.16	Develop a domestic animal policy to ensure responsible pet ownership and management and consider cat registration with heavily discounted one-off lifetime registration for de-sexed and microchipped cats.	Critical
A2.17	Consider the introduction of a "Cat Curfew" on Norfolk Island	Critical
A2.18	Strengthen policies around the importation of cats and other pets into Norfolk Island to ensure larger more potentially damaging breeds cannot be imported.	Critical
A2.19	Ensure Norfolk Island Regional Council staff and contractors are trained in best practice pest plant and animal control techniques.	Critical
A2.20	Update current regulations (and legislation where necessary) around the importation cats and other pets.	High
A2.21	Support the Flora and Fauna Society cat trap loan program and consider expanding this to provide more traps and a cat trapping service on private land if funding allows.	High
A2.22	Encourage and support research into the impact of Army Grub control and the potential for off target impacts to other insects (and to the food chain), and consider restricting the use of pesticides in high priority areas.	High
A2.23	Encourage and support research into the impact of root rot, pathogens and other diseases on Norfolk Island, and methods to control or limit the spread of these.	High
A2.24	Consider the removal of introduced plant species that provide a source of food for rats (e.g. Guava) from areas that are being targeted as part of rat control programs.	Medium
A2.25	Monitor the extent and impact of Banana Weevils on Norfolk Island and develop control measures if deemed necessary.	Medium
A2.26	Consider the establishment of a Norfolk Island Conservation Management Network social media page to raise awareness in the community about the impact of pest animals and to promote NI CMN incentives and activities.	Medium
A2.27	Consider providing incentives to landholders for cat containment areas in homes.	Low
A2.28	Monitor the impact of existing pathogens, diseases and other pests on Norfolk Island, and investigate potential control methods if there is a risk of damage to high priority assets.	Low

Pest Plants

It is important to note that existing specimens of some of the pest plants listed in Appendix A have cultural significance, and this needs to be considered before removal of mature plants occurs.

Black Bean and Rose Apple, for example, are two species that were identified through the community consultation process as having some mature specimens on Norfolk Island with cultural significance. The mature Black Bean in Hundred Acres Reserve is a good example of this – the tree has cultural significance and removal of this would obviously not be considered as part of any future pest plant control program.

High threat weeds species on Norfolk Island are listed in order of priority in Appendix A.

Through the NI CMN, coordinated pest plant control programs targeting priority weeds in priority areas will be planned, promoted and implemented across Norfolk Island. Incentives for targeted cross tenure pest plant management will be provided to private landholders to improve the effectiveness of pest plant management programs.

It is critical that all weed control work is followed up with revegetation programs to re-establish native vegetation. Ongoing maintenance is also critical to ensure areas where weed control is carried out remain weed-free and that native vegetation can re-establish to reduce the likelihood of reinvasion by weeds and/or erosion.

Through the NI CMN, funding sources will be identified and funding submissions will be prepared to source funding for the planning, promotion and implementation of effective pest plant control programs.

To guide management, very high priority pest plants and selected high priority pest plants will be mapped to determine location and spread, identify target areas, and to measure the progress of control or eradication programs.

Weed control programs will be well planned and targeted to ensure high priority biodiversity assets and native vegetation communities are protected from invasion by pest plants and habitat quality is protected and/or enhanced.

High priority pest plants in the most threatened native vegetation communities, as identified in Norfolk Island Native Vegetation Mapping, will be targeted first.

High Priority pest plants within Norfolk Island public reserves will be targeted based on the priority list for public reserves on Norfolk Island (Appendix D).

Coordinated pest plant control programs (across all land tenures) will be designed to target high priority pest plants in areas identified as high priority through mapping of priority areas for pest plant control programs on Norfolk Island.

High priority areas will include private land surrounding the National Park and public reserves, and private land containing intact “patches” of native vegetation or threatened species.

Incentive programs for the control of high priority pest plants on private land in high priority areas across Norfolk Island will be developed, promoted and implemented.

A range of awareness raising and education campaigns (including through social media) will be planned and implemented.

Current Norfolk Island noxious weed (pest plant) legislation and regulations will be updated.

Through the Norfolk Island Conservation Management Network (NI CMN), volunteer groups will be encouraged to visit the island through an eco-volunteer program to work on coordinated weed control programs. Other volunteer programs involving Norfolk Island residents will also be planned and implemented.

A pest management email distribution group will be established to keep key stakeholders up to date with relevant information about NI CMN targeted pest plant control programs and methods to control pest plants.

The use of native plants in home gardens will be promoted through awareness raising campaigns and flyers or fact sheets, open gardens or “demonstration” sites on public/council land and a subsidy will be considered for private landholders purchasing native plants rather than introduced plants for use on their properties.

Through the NI CMN and in partnership with key stakeholders, risk assessments will be developed to reduce the risk of new problem plants, animals and pathogens arriving on Norfolk Island.

Table 6 details the Actions that will be undertaken to reduce the impact of existing pest plants on Norfolk Island.

Table 6: Management Action Table: Reducing the impact of existing pest plants on Norfolk Island

Action Number	Actions to reduce the impact of existing pest plants on Norfolk Island	Priority
W2.1	Plan, coordinate, promote and implement strategic pest plant control programs involving all key stakeholders across all land tenures on Norfolk Island through the Norfolk Island Conservation Management Network (NI CMN).	Critical
W2.2	Ensure a sufficient level of ongoing funding is provided to plan and implement effective pest plant control programs across all land tenures, including financial incentives for weed control on private land.	Critical
W2.3	Ensure areas where weed control is carried out are revegetated with native species to limit the possibility of erosion and reinfestation with weeds.	Critical
W2.4	Ensure adequate funding is allocated to the ongoing maintenance of areas where weed control has been carried out to ensure they are not reinfested.	
W2.5	Map populations of very high and high priority pest plants to assist with the planning of targeted coordinated pest plant control programs and to help to measure progress of pest plant control programs.	Critical
W2.6	Map priority areas for targeted pest plant control programs using Norfolk Island Native Vegetation Mapping, threatened species locations/habitat, the location of the National Park (as a core habitat area) and priority reserves and local knowledge as a guide for management.	Critical
W2.7	Plan and implement coordinated pest plant control programs for very high and high priority weeds (Appendix A) in high priority reserves (Appendix D) and other identified high priority areas (including private land), giving priority to those that pose the greatest threat to native flora and fauna species. Consider the cultural significance of mature specimens before considering removal as part of this process.	Critical
W2.8	Design coordinated weed control programs (across all land tenures) to target high priority weeds in areas identified as high priority through mapping of priority areas for pest plant control on Norfolk Island.	Critical
W2.9	Plan and implement weed control programs for high threat/sleeper weeds/garden escapes that are not yet widespread and/or problematic on Norfolk Island.	Critical
W2.10	Provide incentives for the control of high and very high priority weeds on identified high priority private land.	Critical
W2.11	Ensure Norfolk Island Regional Council staff and contractors are trained in best practice pest plant and animal control techniques.	Critical

W2.12	Consider the preparation of a roadside weed management and revegetation plan for Norfolk Island to ensure roadside weed control programs are targeted and revegetation with native species can be carried out in identified high priority areas.	Critical
W2.13	Update the Noxious Weeds Act 1916 (and the list of high threat weeds within the Act) to allow the responsible organisation (NIRC) to determine which weeds are of the highest priority on Norfolk Island.	High
W2.14	Work with DAWR to develop risk assessments to reduce the risk of problem plants, animals and pathogens arriving on Norfolk Island.	High
W2.15	Through the Conservation Management Network, actively encourage and facilitate volunteer groups to visit the island through an eco-volunteer program to work on coordinated weed control programs.	High
W2.16	Promote the use of native plants in home gardens through open gardens or “demonstration” sites on public/council land and consider a subsidy for private landholders purchasing native plants rather than introduced plants for use on their properties.	Medium
W2.17	Consider the establishment of a NI CMN social media page to raise awareness in the community about the impact of pest plants and to promote NI CMN incentives and activities.	Medium
W2.18	Establish a pest management email distribution group to keep key stakeholders up to date with relevant information about NI CMN targeted pest plant control programs and methods to control pest plants.	Medium
W2.19	Prepare regular media releases and social media posts to raise awareness in the community about the damage caused by pest plants on Norfolk Island.	Medium
W2.20	Prepare media releases about specific potential “sleeper weeds” and garden escapes to raise awareness in the community about the potential of these to become widespread problem weeds in the future.	Medium
W2.21	Consider developing a school education package covering the impact and management of pest plants on Norfolk Island	Low
W2.22	Consider the establishment of groups of local and/or visiting school students to undertake weed control in specific areas on Norfolk Island.	Low

Management Actions - Strategic Direction 3: Improve leadership and coordination for more effective management of pest plants and animals and other pests.

Through the NI CMN, coordinated pest plant and animal control programs targeting priority species in priority areas will be planned, promoted and implemented across Norfolk Island.

Toon Trust funding will be distributed to private landholders through an EOI process for habitat restoration and revegetation on private land to restore land following coordinated pest plant and animal control programs.

A variety of private land incentive programs and engagement programs will be planned, promoted and targeted to landholders in high priority areas.

Opportunities for community groups to source funding through the NI CMN for pest plant and animal control programs will be provided.

A range of targeted awareness raising and education campaigns (including through social media) will be planned and implemented.

Through the Conservation Management Network, volunteer groups will be encouraged to visit the island through an eco-volunteer program to work on coordinated weed control programs and to assist with other NI CMN projects.

Table 7 details the Actions that will be undertaken to ensure all key stakeholders (including the community) work together across all land tenures to control pest plants and animals and other pests on Norfolk Island.

Table 7: Management Action Table: Improve leadership and coordination for more effective management of pest plants, animals and pathogens.

Action Number	Actions to ensure better leadership and to assist stakeholders to work together to more effectively manage pest plants, animals and pathogens.	Priority
3.1	Provide financial support for the establishment of the Norfolk Island Conservation Management Network (NI CMN) and the employment of a Conservation Management Network Coordinator to provide leadership and to assist and encourage all stakeholders (including the community) to work together to effectively manage pest plants and animals and other pests on Norfolk Island.	Critical
3.2	Continue to implement the Argentine Ant Eradication Program according to the Argentine Ant Eradication Strategy and continue to educate the community about Argentine Ants and how to stop/limit their spread.	Critical
3.3	Plan, promote and implement coordinated cross tenure pest plant and animal control programs in high priority reserves (Appendix D) and other high priority areas (including private land) identified through mapping, giving priority to those that pose the greatest threat to native flora and fauna species, important native vegetation communities and agricultural production.	Critical
3.4	Consider the establishment of a “cat trap loan program” or consider providing a cat trapping service on private land if funding allows.	Critical
3.5	Work closely with Parks Australia to assist with the provision of subsidies for the cost of de-sexing and microchipping cats.	Critical
3.6	Work closely with key stakeholders and the community to help them plan and source funding (including Toon Trust funding) for effective complementary pest control programs.	Critical
3.7	Distribute Toon Trust funding to the community (through an EOI process) for pest plant and animal control and habitat restoration on private land.	Critical
3.8	Provide regular information about the progress of pest plant and animal control programs to the community through reports, media releases and social media posts.	High

3.9	Consider the establishment of a “Land for Wildlife” scheme on Norfolk Island.	High
3.10	Provide funding and expert advice for pest plant and animal control programs to community groups where possible.	High
3.11	Educate the community about the importance of pest plant and animal control programs through media releases and social media posts.	High
3.12	Develop a weed control booklet with comparative images of native plants and high threat weeds/introduced weed species to reduce the possibility of off target damage to native plants.	High
3.13	Through the Norfolk Island Conservation Management Network, actively encourage and facilitate volunteer groups to visit the island through an eco-volunteer program to work on coordinated weed control programs.	High
3.14	Consider the establishment of a “bounty” system for Feral Chickens, Red Parrots and other high threat pest animals.	High
3.15	Provide financial and administrative support to community groups interested in implementing pest plant and animal control programs.	High
3.16	Work closely with the Norfolk Island Flora and Fauna Society to continue and expand on the Formosa Lily collection program.	High
3.17	Consider the establishment of a Norfolk Island Conservation Management Network social media page to raise awareness in the community about pest plants and animal, and the importance of a coordinated approach.	Medium
3.18	Establish a pest management email distribution group to keep key stakeholders up to date with relevant information about NI CMN targeted pest plant and animal control programs and methods to control pest plants and animals and other pests.	Medium
3.19	Promote and assist with the establishment of “Friends of” groups to undertake works within Norfolk Island Public Reserves.	Medium
3.20	Prepare regular media release and social media posts to raise awareness in the community about the damage caused by pest plants and animals and other pests on Norfolk Island, and the importance of a coordinated approach.	Medium

Management Actions - Strategic Direction 4: Using best practice techniques and ensuring value for money.

Through the NI CMN, targeted projects and awareness raising campaigns will be planned, promoted and implemented to ensure best practice techniques are used and pest plant and animal control programs are well planned and strategic.

Norfolk Island Native Vegetation Mapping, other appropriate data sets and local knowledge will be used to assist in the identification of priority conservation areas to guide the management of pest plants and animals and other pests on Norfolk Island.

Infestations of very high and high priority pest plants will be mapped to guide the strategic management of pest plants on Norfolk Island.

The feasibility and cost of island wide rodent eradication before 2030 will be investigated.

The use of baiting and other potential methods to control free roaming cats will be investigated on Norfolk Island, and these methods will be trialled if deemed feasible.

The annual Norfolk Island Regional Council operational plan will be linked to the Norfolk Island Pest Plant and Animal Management Plan, Plans of Management for Public Reserves and the Norfolk Island Environment Strategy.

Through the Norfolk Island Conservation Management Network, research into the impact of pest plants and animals and other pests on natural values and new methods for control will be encouraged and supported.

Potential biological control methods for pest plant and animal control on Norfolk Island will be investigated and considered, and the use of a drone to assist in the control of pest plants and animals on Norfolk Island will be investigated if low impact biological or organic control methods are identified.

Relevant policies and regulations (and legislation where necessary) regarding pest plant and animal control will be updated.

Table 8 details the Actions that will be undertaken to ensure best practice techniques are used to manage pest plants and animals and other pests on Norfolk Island and to ensure value for money.

Table 8: Management Action Table: Using best practice techniques and ensuring value for money

Action Number	Actions to ensure best practice techniques are used and to ensure value for money	Priority
4.4	Provide financial support for the establishment of the Norfolk Island Conservation Management Network (NI CMN) and the employment of a Conservation Management Network Coordinator to ensure best practice techniques are used and pest plant and animal control programs are well planned and strategic.	Critical
4.2	Use Norfolk Island Native Vegetation Mapping, other appropriate data sets and local knowledge to assist in the identification of priority conservation areas to guide the management of pest plants and animals and other pests on Norfolk Island.	Critical
4.3	Map infestations of very high and high priority weeds to guide the strategic management of pest plants on Norfolk Island.	Critical
4.4	Investigate the feasibility of Island wide rodent eradication before 2030.	Critical
4.5	Investigate the use of baiting and other potential methods to control free roaming cats on Norfolk Island.	Critical

4.6	Link the annual Norfolk Island Regional Council operational plan to the NIRCPMP, Plans of Management for Public Reserves and the Norfolk Island Environment Strategy.	Critical
4.7	Through the Norfolk Island Conservation Management Network, encourage and support research into the impact of pest plants and animals and other pests on natural values and new methods for control. The establishment of a Research Hub is an important first step in this Action.	Critical
4.8	Consider and investigate the use of a drone to control pest plants and animals on Norfolk Island if biological or organic control methods are identified (see 4.9 below).	High
4.9	Support research into the use of biological control methods for pest plants and animals and other pests on Norfolk Island where possible – for example Hawaiian Holly.	High
4.10	Consider updating relevant policies and regulations (and legislation where necessary) regarding pest plants and animals and other pests.	Medium

8. Measuring success

Tables 9 – 12 detail the measures, output targets and intended outcomes for each of the four strategic directions.

Table 9. Measures and Targets for Strategic Direction 1: Preventing the establishment of new pest plants and animals and other pests.

Strategic Direction 1: Preventing the establishment of new pest plants and animals and other pests			
<p>How will we know when we have achieved this? The introduction and establishment of new invasive species is prevented through increased collaboration, increased awareness, and the implementation of effective barriers.</p> <p>How will we measure our achievement? The number of new invasive species established that have a potential to impact on the environmental, economic, and social assets of Norfolk Island. Increased participation and engagement by key stakeholders (including the community) in preventative initiatives. Increased awareness in the community about the potential impact of new pest plants and animals and other pests being introduced to Norfolk Island.</p>			
Output/measure	Annual target/s	Target 2026	Intended outcome
Norfolk Island Conservation Management Network (NICMN) established and key stakeholders regularly attend (including Department of Agriculture/biosecurity) monthly meetings.	NI CMN established. Attendance at the majority of NI CMN monthly meetings by key stakeholders.	NICMN established and functional/effective, majority of key stakeholders attend annual meetings	NICMN effective and financially self-sufficient and prepares successful funding applications for ongoing pest plant and animal control programs on Norfolk Island.
New introduced pests discovered and eradicated before becoming established.	All new introduced pests discovered and eradicated before becoming established.	All new introduced pests discovered and eradicated before becoming established.	All new pests are discovered and eradicated as soon as possible, and no new introduced pests become established.
Media releases regarding the identification and management of new pest plants and animals and other pests. Case studies covering the importance of biosecurity and the role of the community in biosecurity.	12 relevant media releases and/or social media posts.	60 media releases and/or social media posts.	The Norfolk Island community is engaged, well informed and aware of potential impact of new pest plants and animals and other pests.
NI CMN Social media (Facebook, Twitter and/or Instagram) page/s created.	NI CMN social media pages created by June 2021.	Social media page/s are active with 250 followers. Others are posting relevant information.	The Norfolk Island community is engaged, well informed and aware of potential impact of new pest plants and animals and other pests.
Relevant Norfolk Island Biosecurity Case Studies developed	Creation and distribution of 1 relevant Case Study.	5 case studies created and distributed through all media channels.	The Norfolk Island community are engaged, well informed and aware of potential impact of new pest plants and animals and other pests.

Table 10. Measures and Targets for Strategic Direction 2: Reducing the impact of existing pest plants and animals and other pests

Strategic Direction 2: Reducing the impact of existing pests			
<p>How will we know when we have achieved this? By 2026 the all pest plant and animal management programs on Norfolk Island are targeted to where the benefits to native vegetation communities, native flora and fauna and agricultural production will be greatest.</p> <p>How will we measure our achievement? The number and area (in hectares) of targeted pest plant and animal management programs that have been successfully implemented against high threat/high priority pest plant and animal species at priority sites/in priority areas. Increase in condition of native vegetation communities and habitat. Increase in populations of threatened species. Decrease in damage to agricultural crops and an increase in agricultural production.</p>			
Output/measure	Annual target/s	Target 2026	Intended outcome
Area of infestations of high priority weeds controlled in high priority areas and revegetation with native species (in hectares).	5 hectares targeted priority weed control and revegetation in priority areas/vegetation communities per year.	25 hectares of priority weeds controlled and revegetation across public and private land.	Very High and High Priority weeds eradicated and revegetation in identified priority areas/native vegetation communities, leading to an increase in habitat condition and condition and extent of native vegetation communities.
Number of free roaming cats eradicated from high priority areas through targeted cat trapping programs.	150 feral cats eradicated from priority areas each year.	750 Feral Cats eradicated from public and private land	Reduction in cat numbers resulting in improved breeding success of sea birds and other native fauna.
Number of Rat bait stations and baits used in rat bait stations	250 rat bait stations deployed in priority areas on public and private land annually and rebaited regularly/as required.	1,500 rat bait stations deployed in priority areas on public and private land outside of National Park in year 1 and rebaited regularly/as required.	Reduction in rat numbers, resulting in improved breeding success of native birds, an increase in native vegetation condition and extent and a reduction in the spread of weeds. Reduction in damage to agricultural crops.
Feral Chickens eradicated from public and private land	1,000 feral chickens eradicated from public and private land each year.	5,000 Feral Chickens eradicated from public and private land outside of National Park.	Reduction in feral chicken numbers, resulting in a reduction in predation of endemic snails and other important soil fauna, an increase in native vegetation condition and extent and a reduction in the spread of weeds. Reduction in damage to agricultural crops.
Red Parrots controlled in high priority areas on public and private land	250 Red Parrots removed from high priority areas on public and private land each year.	1,250 Red Parrots removed from high priority areas on public and private land each year.	Reduction in Red Parrot numbers leading to an increase in breeding success of Norfolk Island Morepork, Green Parrot, Nuffka and other native birds. Reduction in damage to agricultural crops.
Tarler Birds eradicated from high priority areas on public land and private land across the Island	50 Tarler Birds eradicated from high priority areas on public and private land on Norfolk Island each year.	250 Tarler Birds eradicated from high priority areas on public and private land each year.	Reduction in Tarler Bird numbers leading to an increase in breeding success of seabirds and endemic snails and other important soil fauna. Reduction in damage to agricultural fruit crops.

Table 11. Measures and Targets for Strategic Direction 3: Improve leadership and coordination for more effective management of pest plants and animals and other pests.

Strategic Direction 3: Improve leadership and coordination for more effective management of pest plants and animals and other pests			
How will we know when we have achieved this?			
By 2026 all key stakeholders (including the community) are working together in a more coordinated manner to strategically control pest plants and animals and other pests.			
How will we measure our achievement?			
The level of participation from all key stakeholders in the Conservation Management Network.			
The level of participation from key stakeholders in coordinated pest plant and animal management programs on Norfolk Island.			
Output/measure	Annual target/s	Target 2026	Intended outcome
Regular participation in NI CMN meetings by key stakeholders.	NI CMN established. Attendance at the majority of NI CMN monthly meetings by key stakeholders.	NI CMN established. Attendance at the majority of NI CMN monthly meetings by key stakeholders.	NICMN effective and financially self-sufficient and funding ongoing pest plant and animal control programs on Norfolk Island.
Participation in NI CMN projects and activities by key stakeholders and the community.	All key stakeholders participate in coordinated pest control programs and other NI CMN activities.	All key stakeholders participate in coordinated pest control programs.	More coordinated cross-tenure pest control programs on Norfolk Island. Better value for money.
Number of community participants in targeted pest plant and animal private land incentive programs.	20 Participants year 1, increasing by 10 annually.	60 participants	More effective and strategic targeted pest plant and animal control programs across all land tenures. Better value for money.
Number of cat owners participating in cat desexing and microchipping program	30 participants annually	150 participants	Reduction in cat breeding leading to a reduction in free roaming cats on Norfolk Island and a reduction in predation of native species.
Media releases, reports or social media posts regarding progress and effectiveness of coordinated pest plant and animal control programs.	12 media releases, reports or social media posts annually	60 media releases, reports or social media posts	The Norfolk Island community are aware of the progress and effectiveness of coordinated pest plant and animal control programs and the value of working together.
Number of volunteers involved in pest plant and animal control programs	20 volunteers annually	100 volunteers	An engaged community and increased community involvement.
Production and distribution of weed control booklet	1 weed control booklet developed and distributed	1 weed control booklet developed and distributed	The Norfolk Island community are engaged and well informed, and less likely to unintentionally damage native vegetation through off target weed control.
Number of community groups supported through provision of financial incentives or expert advice.	2 community groups supported annually	10 community groups supported	An engaged Norfolk Island community and increased community involvement. Strengthened relationships.

Table 12. Measures and Targets for Strategic Direction 4: Using best practice techniques and ensuring value for money.

Strategic Direction 4: Using best practice techniques and ensuring value for money.			
<p>How will we know when we have achieved this? By 2026 current best practice management techniques are used in all pest plant and animal control programs on Norfolk Island, and the management and control of pest plants and animals and other pests is targeted to where the benefits of investment will be greatest.</p> <p>How will we measure our achievement? The number of pest plant and animal control programs that use current best practice management techniques and that are carried out in a strategic manner to ensure best value for money. The number of participants in targeted private land pest plant and animal control incentive programs. The number of awareness raising activities undertaken to improve knowledge in the community about best practice techniques. The number of media releases and social media posts promoting coordinated pest plant and animal control programs and private land incentive programs.</p>			
Output/measure	Annual target/s	Target 2026	Intended outcome
Number of followers for NI CMN social media pages, and regular promotion of best management techniques via social media.	50 social media followers	250 social media followers	Increased knowledge about best practice techniques to control pests in the community. Increased community participation in coordinated pest control programs
Number of participants in the NI CMN pest management email group, and regular promotion of best management techniques via this group	1 email group 20 members 12 articles sent via email	1 email group 100 members 60 articles sent via email	Increased knowledge about best practice techniques to control pests in the community. Increased community participation in coordinate pest control programs.
Number of media releases promoting best practice techniques for pest plant and animal control.	12 media releases	60 media releases	Increased knowledge about best practice techniques to control pests in the community.
Number of pest plant and animal control programs that use current best practice management techniques.	All NI CMN programs use current best management techniques	All NI CMN programs use current best management techniques	More effective and strategic targeted pest control programs. Better value for money.
Number of pest plant and animal control programs that are carried out in a strategic manner to ensure best value for money	All NI CMN programs strategically planned and implemented.	All NI CMN programs strategically planned and implemented.	More effective and strategic targeted pest control programs. Better value for money.
Number of pest plant and animal programs using integrated pest management techniques	All NI CMN programs use integrated pest management techniques where possible.	All NI CMN programs use integrated pest management techniques where possible.	More effective and strategic targeted pest plant and animal control programs. Better value for money.
Number of participants in targeted pest plant and animal private land incentive programs.	20 Participants year 1, increasing by 10 annually.	60 participants	More effective and strategic targeted pest plant and animal control programs across all land tenures. Better value for money.

9. Budget

A draft indicative budget (as of February 2021) for the establishment of the NI CMN and the implementation of key High Priority actions from the Norfolk Island Regional Council Pest Management Plan is detailed in Table 13. Other High Priority Actions will be implemented as part of the NI CMN Coordinator role

Note that the required budget for pest plant and animal control programs within public reserves is not included within this budget. The funding required to implement and maintain pest plant and animal control programs and revegetation programs within public reserves is detailed within the **Norfolk Island Public Reserves Implementation and Maintenance Plan**.

Table 13. Budget for establishment of the NI CMN and the Implementation of key actions from the Norfolk Island Pest Management Plan 2021-2026

Item detail	Outcome	Annual cost	Total cost 2021-2026
Project Management and Administration (NIRC)		\$ 20,000.00	\$ 100,000.00
NI CMN Coordinator (0.8 FTE)	Coordination of pest plant and animal control programs across public and private land, field days and education	\$ 80,000.00	\$ 400,000.00
Incentives for targeted private land weed control in priority areas (5 hectares @ \$10,000/ha/yr).	25 hectares of woody weeds controlled in high priority areas	\$ 50,000.00	\$ 250,000.00
Incentives for private land revegetation in priority areas (5 hectares @ \$10,000/ha/yr).	25 hectares of native vegetation re-established	\$ 50,000.00	\$ 250,000.00
Free roaming cat control - public and private land. Includes targeted trapping and management and implementation of trap load program.	Reduction in feral and free roaming cats on public and private land on Norfolk Island and reduction in	\$ 35,000.00	\$ 175,000.00
Rodent control - coordinated control across public and private land in high priority areas. Includes targeted baiting management and implementation of trap load program and provision of bait stations	Reduction in rodents in high priority public and private land areas and in increase in native flora and fauna species populations.	\$ 40,000.00	\$ 200,000.00
Feral chicken, Red Parrot and Tarrler Bird Control - public and private land. Includes funding for trial of a feral bird bounty scheme.	Reduction in feral birds in high priority public and private land areas and in increase in native flora and fauna	\$ 20,000.00	\$ 100,000.00
Weed control handbook	Handbook with details of major weed species on Norfolk Island and techniques for management (one-off)	\$ 15,000.00	\$ 15,000.00

Total cost	<u>\$ 1,490,000.00</u>
Annual cost	<u>\$ 298,000.00</u>

Appendix A – Priority Pest Plants on Norfolk Island

Table 14. Prioritisation table for the major woody weed (tree or shrub) species on Norfolk Island.

Common Name	Priority	Current distribution	Type *	Control tactic/management action
African Boxthorn	VH	Limited	HT	Eradicate
Rose Apple+	VH	Limited	HT	Eradicate
Umbrella Tree	VH	Limited	S	Strategic eradication Priority areas, monitor
Black Bean+	VH	Limited	S	Strategic eradication Priority areas, monitor
Coffee Tree	VH	Limited	S	Strategic eradication Priority areas, monitor
Large-leaved Privet	VH	Limited	S	Strategic eradication Priority areas, monitor
Small-leaved Privet	VH	Limited	S	Strategic eradication Priority areas, monitor
White Cedar	VH	Limited	S	Strategic eradication Priority areas, monitor
Cotoneaster	VH	Limited	S	Strategic eradication Priority areas, monitor
Hawaiian Holly	VH	Widespread	HT	Asset protection
Red Guava	VH	Widespread	HT	Asset protection
African Olive	VH	Widespread	HT	Asset protection
Lantana	VH	Widespread	HT	Asset protection
Three-veined Cryptocarya	H	Widespread	S	Contain/asset protection, monitor
Wild Tobacco	H	Widespread	S	Asset protection
Sweet Pittosporum	H	Widespread	HT	Asset protection
Willow-leaved Hakea	H	Widespread	HT	Asset protection
Kermadec Pohutukawa	H	Widespread	HT	Asset protection
Coral Berry	H	Widespread	HT	Asset protection
Castor Oil Plant	M	Limited	S	Asset protection
Apple of Sodom	M	Limited	S	Asset protection
Blackberry	M	Limited	S	Monitor and reassess if spreading
Mickey Mouse Plant	M	Limited	S	Asset protection
Silky Oak	L	Limited	S	Monitor and reassess if spreading

*HT = High Threat, S = Sleeper

+ The cultural significance of existing specimens of these species (and all existing specimens that could have cultural significance) should be considered before the removal of mature trees occurs. For example, the mature Black Bean in Hundred Acres Reserve should not be removed. The spread of these species does need to be monitored.

Table 15. Prioritisation table for herb and fern weed species on Norfolk Island.

Common Name	Priority	Distribution	Type *	Control tactic/management action
Asparagus	VH	Limited	S	Map, monitor and reassess if spreading, strategic eradication from priority areas
Water Hyacinth	VH	Limited	S	Map, monitor and reassess if spreading, strategic eradication from priority areas
Salvinia	VH	Limited	S	Map, monitor and reassess if spreading, strategic eradication from priority areas
Mist Flower (William Taylor)	H	Widespread	HT	Strategic control, asset protection
Cascade Onion	H	Widespread	HT	Strategic control, asset protection
Formosa Lily	H	Widespread	HT	Strategic control, asset protection
Cobblers Pegs	M	Limited	S	Monitor and reassess if spreading
Running Bean	M	Limited	S	Monitor and reassess if spreading
Inkweed	M	Limited	S	Monitor and reassess if spreading

Common Thornapple	M	Limited	S	Monitor and reassess if spreading
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*HT = High Threat, S = Sleeper

Table 16. Prioritisation table for major creeper/vine weed species on Norfolk Island.

Common Name	Priority	Distribution	Type *	Control tactic/management action
Madeira Vine	VH	Limited	HT	Eradicate
Climbing Asparagus	VH	Limited	S	Map, monitor, strategic eradication from priority areas
Mysore Thorn	VH	Limited	S	Map, monitor, strategic eradication from priority areas
Honeysuckle	H	Widespread	HT	Strategic control, asset protection, revegetation
Morning Glory (2 species)	H	Widespread	HT	Strategic control, asset protection, revegetation
White Morning Glory	H	Widespread	HT	Strategic control, asset protection, revegetation
White Passionfruit	M	Limited	S	Monitor and reassess if spreading
Small Balloon Vine	M	Limited	S	Monitor and reassess if spreading

*HT = High Threat, S = Sleeper

Table 17. Prioritisation table for grass weed species on Norfolk Island

Common Name	Priority	Distribution	Type *	Control tactic/management action
Kikuyu +	VH	Widespread	HT	Strategic control and replacement with native species in remnant native vegetation/seabird habitat

*HT = High Threat, S = Sleeper

+ It is recognised that kikuyu is not a weed in all situations. In some situations, it does cause issues and requires targeted selective control over time and replacement with native species.

Appendix B – Introduced plant species on Norfolk Island.

(From Mills 2010)

<i>Species</i>	<i>Common Name</i>	<i>Habit</i>
CONIFERS		
CUPRESSACEAE		
<i>Cupressus lusitanica</i>	Mexican cypress	Tree
PTERIDOPHYTA (FERNS)		
DENNSTAEDTIACEAE		
<i>Hypolepis distans</i>	Scrambling Ground Fern	Fern
DRYOPTERIDACEAE		
<i>Cyrtomium falcatum</i>	Holly Fern	Fern
NEPHROLEPIDACEAE		
<i>Nephrolepis cordifolia</i>	Fishbone Fern	Fern
POLYPODIACEAE		
<i>Platycterium bifurcatum</i>	Elkhorn	Fern
PTERIDACEAE		
<i>Pteris vittata</i>	Chinese Brake	Fern
SALVINIACEAE		
<i>Salvinia molesta</i>	Salvinia	Fern
SELAGINELLACEAE		
<i>Selaginella kraussiana</i>	Selaginella	Fern ally
ANGIOSPERMS - DICOTYLEDONS		
ACANTHACEAE		
<i>Hypoestes phyllostachya</i>	Polker-dot Plant	Herb
<i>Ruellia ciliosa</i>	Wild Petunia	Herb
AIZOACEAE		
<i>Carpobrotus edulis</i>	Hottentot Fig	Herb
AMARANTHACEAE		
<i>Alternanthera</i> sp. aff. <i>sessilis</i>	Sessile Joyweed	Herb
<i>Amaranthus blitum</i>	Wild Amaranth	Herb
<i>Amaranthus hybridus</i>	Slim Amaranth	Herb
<i>Amaranthus viridis</i>	Green Amaranth	Herb
ANACARDIACEAE		
<i>Schinus terebinthifolius</i>	Hawaiian Holly/Broad-leaved Pepper	Shrub
APIACEAE		
<i>Apium graveolens</i>	Celery	Herb
<i>Apium prostratum</i>	Sea Celery	Herb
<i>Centella asiatica</i>	Indian Pennywort	Herb
<i>Ciclospermum leptophyllum</i>	Slender Celery	Herb
<i>Coriandrum sativum</i>	Coriander	Herb
<i>Daucus glochidiatus</i>	Native Carrot	Herb

<i>Foeniculum vulgare</i>	Fennel	Herb
<i>Petroselinum crispum</i>	Parsley	Herb
<i>Torilis nodosa</i>	Knotted Hedge-parsley	Herb
APOCYNACEAE		
<i>Vinca major</i>	Periwinkle	Creepers
ARALIACEAE		
<i>Delarbrea paradoxa</i> (indigenous?)	Delarbrea	Tree
<i>Hedera helix</i>	English Ivy	Creepers
<i>Schefflera actinophylla</i>	Umbrella Tree	Tree
<i>Tetrapanax papyrifer</i>	Rice-paper Plant	Shrub
ASCLEPIADACEAE		
<i>Gomphocarpus physocarpus</i>	Balloon Cotton Bush	Herb
ASTERACEAE		
<i>Ageratina riparia</i>	Mistflower/William Taylor	Herb
<i>Ageratum conyzoides</i>	Goatweed	Herb
<i>Arctotheca calendula</i>	Capeweed	Herb
<i>Argyranthemum frutescens</i>	Paris Daisy	Herb
<i>Aster subulatus</i> Bushy	Starwort	Herb
<i>Bidens pilosa</i>	Cobbler's Pegs	Herb
<i>Calendula officinalis</i>	Common Marigold	Herb
<i>Carduus pycnocephalus</i>	Slender Thistle	Herb
<i>Carduus tenuiflorus</i>	Winged Slender Thistle	Herb
<i>Centaurea melitensis</i>	Cockspur Thistle	Herb
<i>Cirsium vulgare</i>	Spear Thistle	Herb
<i>Conyza bonariensis</i>	Tall Fleabane	Herb
<i>Conyza sumatrensis</i>	Sumatran Fleabane	Herb
<i>Crassocephalum crepidioides</i>	Thickhead	Herb
<i>Erechtites hieraciifolia</i>	Burnweed	Herb
<i>Erechtites valerianifolia</i>	Brazilian Fireweed	Herb
<i>Erigeron karvinskianus</i>	Bony-tip Fleabane	Herb
<i>Euryops chrysanthemoides</i>	Daisy Bush	Shrub
<i>Facelis retusa</i>	Annual Trampweed	Herb
<i>Galinsoga parviflora</i>	Gallant Soldier	Herb
<i>Gamochaeta calviceps</i>	Cudweed	Herb
<i>Gamochaeta coarctata</i>	Cudweed	Herb
<i>Gamochaeta purpurea</i>	Spiked Cudweed	Herb
<i>Gazania rigens</i>	Gazania	Herb
<i>Hypochaeris glabra</i>	Smooth Flatweed	Herb
<i>Hypochaeris radicata</i>	Flatweed	Herb
<i>Lapsana communis</i>	Nipplewort	Herb
<i>Montanoa hibiscifolia</i>	Montanoa	Herb
<i>Picris burbidgeae</i>	Hawkweed Picris	Herb
<i>Sigesbeckia orientalis</i>	Indian Weed	Herb
<i>Silybum marianum</i>	Variegated Thistle	Herb
<i>Solidago</i> sp.	Golden Rod	Herb
<i>Soliva pterosperma</i>	Burweed	Herb
<i>Sonchus oleraceus</i>	Common Sow-thistle	Herb
<i>Tagetes minuta</i>	Stinking Roger	Herb
<i>Tagetes patula</i>	French Marigold	Herb
<i>Taraxacum officinale</i>	Dandelion	Herb
<i>Tragopogon porrifolius</i>	Salsify	Herb

BALSAMINACEAE		
<i>Impatiens ? walleriana</i>	Busy Lizzie	Herb
BASELLACEAE		
<i>Anredera cordifolia</i>	Madeira Vine	Creeper
BIGNONIACEAE		
<i>Tecomaria capensis</i>	Cape Honeysuckle	Shrub
BORAGINACEAE		
<i>Cynoglossum australe</i>	Australian Hound's-tongue	Herb
<i>Echium plantagineum</i>	Paterson's Curse	Herb
BRASSICACEAE		
<i>Brassica juncea</i>	Indian Mustard	Herb
<i>Brassica napus</i>	Rape	Herb
<i>Cakile endentula</i>	Sea Rocket	Herb
<i>Capsella bursa-pastoris</i>	Shepherd's Purse	Herb
<i>Cardamine hirsuta</i>	Common Bittercress	Herb
<i>Coronopus didymus</i>	Lesser Swinecress	Herb
<i>Lepidium bonariense</i>	Peppercress	Herb
<i>Lobularia maritima</i>	Sweet Alyssum	Herb
<i>Matthiola incana</i>	Stock	Herb
<i>Rapistrum rugosum</i>	Turnip Weed, Giant Mustard	Herb
<i>Rorippa nasturtium-aquaticum</i>	Watercress	Herb
<i>Sisymbrium officinale</i>	Hedge Mustard	Herb
<i>Sisymbrium orientale</i>	Indian Hedge Mustard	Herb
CAMPANULACEAE		
<i>Pratia purpurascens</i>	Lobelia Pratia	Herb
<i>Wahlenbergia violacea</i>	Blue Bell	Herb
CAPRIFOLIACEAE		
<i>Lonicera japonica</i>	Honeysuckle	Creeper
CARYOPHYLLACEAE		
<i>Cerastium fontanum</i> subsp. <i>vulgare</i>	Common Chickweed	Herb
<i>Cerastium glomeratum</i>	Mouse-eared Chickweed	Herb
<i>Paronychia brasiliiana</i>	Brazilian Whitlow	Herb
<i>Petrorhagia velutina</i>	Velvet Pink	Herb
<i>Polycarpon tetraphyllum</i>	Four-leaved Allseed	Herb
<i>Sagina apetala</i>	Annual Pearlwort	Herb
<i>Silene gallica</i>	Common Catchfly	Herb
<i>Stellaria media</i>	Common Chickweed	Herb
CASUARINACEAE		
<i>Casuarina glauca</i>	Swamp Oak	Tree
CHENOPODIACEAE		
<i>Atriplex cinerea</i>	Grey Saltbush	Shrub
<i>Atriplex semibaccata</i>	Creeping Saltbush	Herb
<i>Chenopodium album</i>	Fat Hen	Herb
<i>Chenopodium ambrosioides</i>	Mexican Tea	Herb
<i>Chenopodium murale</i>	Nettle-leaf Goosefoot	Herb

CONVOLVULACEAE		
<i>Dichondra micrantha</i>	Kidney Weed	Herb
<i>Ipomoea alba</i>	White Morning Glory	Creeper
<i>Ipomoea indica</i>	Morning Glory	Creeper
CORYNOCARPACEDE		
<i>Corynocarpus laevigatus</i>	Karaka	Tree
CRASSULACEAE		
<i>Bryophyllum delagoense</i>	Mother-of-millions	Herb
<i>Bryophyllum pinnatum</i>	Live Plant	Herb
<i>Crassula multicava</i>	Fairy Crassula	Herb
CUCURBITACEAE		
<i>Cucumis anguria</i>	West Indian Gherkin	Creeper
EUPHORBIACEAE		
<i>Acalypha wilkesiana</i>	Fijian Fire Plant	Shrub
<i>Breynia disticha</i>	Snow Bush	Shrub
<i>Chamaesyce prostrata</i>	Red Caustic Weed	Herb
<i>Euphorbia cyathophora</i>	Painted Spurge	Herb
<i>Euphorbia peplus</i>	Petty Spurge	Herb
<i>Homalanthus populifolius</i>	Bleeding Heart	Tree
<i>Phyllanthus tenellus</i>	Hen and Chicken	Herb
<i>Ricinus communis</i>	Castor Oil Plant	Shrub
FABACEAE		
<i>Acacia dealbata</i>	Silver Wattle	Tree
<i>Acacia paramattensis</i>	Parramatta Wattle	Tree
<i>Caesalpinia decapetala</i>	Mysore thorn/Thorny Poinciana	Vine
<i>Caesalpinia major</i>	Yellow Nicker Bean	Vine
<i>Castanospermum australe</i>	Black Bean	Tree
<i>Chamaecrista rotundifolia</i>	Round-leaved Cassia	Herb
<i>Chamaecytisus palmensis</i>	Tree Lucerne	Tree
<i>Crotalaria agatiflora</i>	Bird Flower	Shrub
<i>Desmodium incanum</i>	Running Bean	Herb
<i>Desmodium tortuosum</i>	Florida Beggarweed	Herb
<i>Dipogon lignosus</i>	Dolichos Pea	Creeper
<i>Erythrina caffra</i>	Kaffir Bean	Tree
<i>Erythrina crista-galli</i>	Cockspur Coral Tree	Tree
<i>Erythrina speciosa</i>	Coral Tree	Shrub
<i>Genista monspessulana</i>	Montpellier Broom	Shrub
<i>Glycine microphylla</i>	Small-leaved Glycine	Creeper
<i>Indigofera suffruticosa</i>	Antil Indigo	Shrub
<i>Lablab purpureus</i>	Indian Bean	Herb
<i>Lotus angustissimus</i>	Slender Birds-foot Trefoil	Herb
<i>Lupinus cosentinii</i>	Sandplain Lupin	Herb
<i>Macroptilium atropurpureum</i>	Siratro	Herb
<i>Medicago lupulina</i>	Black Medic	Herb
<i>Medicago polymorpha</i>	Burr Medic	Herb
<i>Medicago sativa</i>	Lucerne	Herb
<i>Melilotus indicus</i>	Melilot	Herb
<i>Neontonia wightii</i>	Soybean	Herb
<i>Paraserianthes lophantha</i>	Crested Wattle	Tree

<i>Pueraria lobata</i>	Kudzu	Herb
<i>Senna septemtrionalis</i>	Arsenic Bush	Shrub
<i>Trifolium campestre</i>	Hop Clover	Herb
<i>Trifolium dubium</i>	Yellow Suckling Clover	Herb
<i>Trifolium glomeratum</i>	Clustered Clover	Herb
<i>Trifolium pratense</i>	Red Clover	Herb
<i>Trifolium repens</i>	White Clover	Herb
<i>Trifolium suffocatum</i>	Suffocated Clover	Herb
<i>Vicia hirsuta</i>	Hairy Vetch	Herb
<i>Vicia sativa</i> subsp. <i>nigra</i>	Vetch	Herb
<i>Vicia tetrasperma</i>	Slender Vetch	Herb
FRANKENIACEAE		
<i>Frankenia pulverulenta</i>	European Seaheath	Herb
FUMARIACEAE		
<i>Fumaria muralis</i>	Wall Fumitory	Herb
GENTIANACEAE		
<i>Centaurium tenuiflorum</i>	Centaury	Herb
GERANIACEAE		
<i>Erodium moschatum</i>	Musky Storksbill	Herb
<i>Geranium dissectum</i>	Geranium Her	
<i>Geranium gardneri</i>	Gardner's Geranium	Herb
<i>Pelargonium australe</i>	Native Stork's-Bill	Herb
<i>Pelargonium panduriforme</i>	Stork's Bill	Herb
LAMIACEAE		
<i>Lavandula dentata</i>	Toothed Lavender	Shrub
<i>Marrubium vulgare</i>	Horehound	Herb
<i>Mentha x piperita</i>	Peppermint	Herb
<i>Mentha spicata</i>	Spearmint	Herb
<i>Salvia coccinea</i>	Scarlet Sage	Herb
<i>Salvia verbenaca</i>	Wild Sage	Herb
<i>Stachys arvensis</i>	Stagger Weed	Herb
LAURACEAE		
<i>Cinnamomum camphora</i>	Camphor Laurel	Tree
<i>Cryptocarya triplinervis</i>	Three-veined Cryptocarya	Tree
<i>Persea americana</i>	Avocado	Tree
LINACEAE		
<i>Linum marginale</i>	Wild Flax	Herb
<i>Linum trigynum</i>	French Flax	Herb
LYTHRACEAE		
<i>Lythrum hyssopifolia</i>	Hyssop Loosestrife	Herb
MALVACEAE		
<i>Abutilon grandifolium</i>	Hairy Abutilon	Shrub
<i>Hibiscus pedunculatus</i>	Wild Hibiscus	Shrub
<i>Malva parviflora</i>	Mallow	Herb
<i>Malvastrum coromandelianum</i>	Prickly Malvastrum	Herb
<i>Modiola caroliniana</i>	Red-flowered Mallow	Herb

<i>Pavonia hastata</i>	Pink Pavonia	Shrub
<i>Sida carpinifolia</i>	Broom Weed	Shrub
<i>Sida rhombifolia</i>	Paddy's Lucerne	Shrub
MELIACEAE		
<i>Melia azedarach</i>	White Cedar	Tree
MORACEAE		
<i>Ficus carica</i>	Fig	Tree
MYRTACEAE		
<i>Eucalyptus botryoides</i>	Bangalay	Tree
<i>Eucalyptus fibrosa</i>	Red Ironbark	Tree
<i>Eugenia uniflora</i>	Brazilian Cherry	Tree
<i>Metrosideros excelsa</i>	New Zealand Christmas Tree	Tree
<i>Metrosideros kermadecensis</i>	Kermadec Pohutukawa	Shrub
<i>Psidium cattleianum</i> var. <i>cattleianum</i>	Cherry Guava	Tree
<i>Psidium cattleianum</i> var. <i>littorale</i>	Yellow Strawberry Guava	Tree
<i>Psidium guajava</i>	Yellow Guava	Shrub
<i>Syzygium jambos</i>	Rose Apple	Tree
NYCTAGINACEAE		
<i>Mirabilis jalapa</i>	Four O'clock Plant	Herb
OCHNACEAE		
<i>Ochna serrulata</i>	Mickey Mouse Plant	Shrub
OLEACEAE		
<i>Ligustrum lucidum</i>	Large-leaved Privet	Tree
<i>Ligustrum sinense</i>	Small-leaved Privet	Shrub
<i>Olea europaea</i> subsp. <i>cuspidata</i>	African Olive	Tree
ONAGRACEAE		
<i>Oenothera affinis</i>	Evening Primrose	Herb
<i>Oenothera rosea</i>	Evening Primrose	Herb
<i>Oenothera stricta</i> subsp. <i>stricta</i>	Evening Primrose	Herb
<i>Oenothera tetraptera</i>	Evening Primrose	Herb
OROBANCHACEAE		
<i>Orobanche minor</i>	Lesser Broom-rape	Herb
OXALIDACEAE		
<i>Oxalis corniculata</i>	Yellow Wood-sorrel	Herb
<i>Oxalis chnoodes</i>	Wood Sorrel	Herb
<i>Oxalis debilis</i>	Wood Sorrel	Herb
<i>Oxalis radicata</i>	Wood Sorrel	Herb
PAPAVERACEAE		
<i>Argemone subfusiformis</i>	American Poppy	Herb
<i>Papaver somniferum</i>	Opium Poppy	Herb
PASSIFLORACEAE		
<i>Passiflora edulis</i>	Common Passionfruit	Vine
<i>Passiflora subpeltata</i>	White Passionfruit	Vine

PHYTOLACCACEAE		
<i>Phytolacca octandra</i>	Inkweed	Herb
<i>Rivina humilis</i>	Coral Berry	Shrub
PITTOSPORACEAE		
<i>Pittosporum crassifolium</i>	Karo	Shrub
<i>Pittosporum undulatum</i>	Sweet Pittosporum	Tree
PLANTAGINACEAE		
<i>Plantago debilis</i>	Slender Plantain	Herb
<i>Plantago lanceolata</i>	Ribbed Plantain	Herb
<i>Plantago major</i>	Large Plantain	Herb
PLUMBAGINACEAE		
<i>Plumbago auriculata</i>	Plumbago	Shrub
POLYGALACEAE		
<i>Polygala myrtifolia</i>	Cascade Curse	Shrub
POLYGONACEAE		
<i>Fallopia convolvulus</i>	Black Bindweed	Creeper
<i>Rumex brownii</i>	Swamp Dock	Herb
<i>Rumex conglomeratus</i>	Clustered Dock	Herb
PORTULACACEAE		
<i>Portulaca oleracea</i>	Purslane	Herb
PRIMULACEAE		
<i>Anagallis arvensis</i>	Blue Pimpernel	Herb
PROTEACEAE		
<i>Grevillea robusta</i>	Silky Oak	Tree
<i>Hakea salicifolia</i>	Willow-leaved Hakea	Shrub
<i>Hakea sericea</i>	Silky Hakea	Shrub
<i>Macadamia tetraphylla</i>	Macadamia Nut	Tree
RANUNCULACEAE		
<i>Ranunculus muricatus</i>	Sharp Buttercup	Herb
<i>Ranunculus parviflorus</i>	Buttercup	Herb
<i>Ranunculus repens</i>	Creeping Buttercup	Herb
<i>Ranunculus sessiliflorus</i>	Annual Buttercup	Herb
ROSACEAE		
<i>Cotoneaster glaucophyllus</i>	Cotoneaster	Shrub
<i>Duchesnea indica</i>	Indian Strawberry	Herb
<i>Eriobotrya japonica</i>	Loquat	Tree
<i>Prunus persica</i>	Peach	Tree
<i>Rhaphiolepis umbellata</i>	Japanese Hawthorn	Shrub
<i>Rubus fruticosus</i>	Blackberry	Shrub
RUBIACEAE		
<i>Coffea arabica</i>	Coffee Tree	Tree
<i>Pentas lanceolata</i>	Egyptian Star Cluster	Shrub
<i>Sherardia arvensis</i>	Field Madder	Herb

RUTACEAE		
<i>Citrus x taitensis</i>	Wild Lemon	Shrub
SAPINDACEAE		
<i>Cardiospermum halicacabum</i>	Small Balloon Vine	Vine
SCROPHULARIACEAE		
<i>Calceolaria tripartita</i>	Lady's Slipper	Herb
<i>Misopates orontium</i>	Lesser Snapdragon	Herb
<i>Russelia equisetiformis</i>	Coral Plant	Shrub
<i>Verbascum thapsus</i>	Blanket Weed	Herb
<i>Verbascum virgatum</i>	Twiggy Mullein	Herb
<i>Veronica arvensis</i>	Wall Speedwell	Herb
<i>Veronica persica</i>	Creeping Speedwell	Herb
<i>Veronica plebeia</i>	Trailing Speedwell	Herb
SOLANACEAE		
<i>Brugmansia suaveolens</i>	Angel Trumpet	Shrub
<i>Datura stramonium</i>	Common Thornapple	Herb
<i>Lycium ferocissimum</i>	African Boxthorn	Shrub
<i>Lycopersicon esculentum</i>	Tomato	Herb
<i>Nicandra physalodes</i>	Apple-of-Peru	Herb
<i>Nicotiana tabacum</i>	Tobacco	Herb
<i>Petunia x hybrida</i>	Petunia	Herb
<i>Physalis peruviana</i>	Cape Gooseberry	Herb
<i>Solanandra maxima</i>	Trumpet Cup	Shrub
<i>Solanum americanum</i> subsp. <i>nutans</i>	Glossy Nightshade	Herb
<i>Solanum linneanum</i>	Apple of Sodom	Shrub
<i>Solanum mauritianum</i>	Wild Tobacco	Tree
TILIACEAE		
<i>Triumfetta rhomboidea</i>	Chinese Burr	Shrub
TROPAEOLACEAE		
<i>Tropaeolum majus</i>	Nasturtium	Herb
URTICACEAE		
<i>Boehmeria nivea</i>	Ramie	Shrub
<i>Pilea microphylla</i>	Artillery Plant	Herb
<i>Urtica urens</i>	Small Nettle	Herb
VERBENACEAE		
<i>Duranta erecta</i>	Golden Dewdrop	Shrub
<i>Lantana camara</i>	Lantana	Shrub
<i>Verbena bonariensis</i>	Purpletop	Herb
<i>Verbena litoralis</i>	Verbena	Herb
VIOLACEAE		
<i>Viola hederacea</i>	Ivy-leaved Violet	Herb
<i>Viola tricolor</i>	Heartsease	Herb
ZINGIBERACEAE		
<i>Alpinia calcarata</i>	Indian Ginger	Herb

ANGIOSPERMS - MONOCOTYLEDONS

AGAVACEAE

<i>Agave americana</i>	Century Plant	Herb
<i>Furcraea foetida</i>	Giant Cabuya	Herb

ALLIACEAE

<i>Nothoscordum borbonicum</i>	Onion Weed	Herb
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ARACEAE

<i>Colocasia esculenta</i>	Taro	Herb
<i>Monstera deliciosa</i>	Monstera	Herb
<i>Xanthosoma sagittifolium</i>	Elephant's Ears	Herb
<i>Zantedeschia aethiopica</i>	Arum Lily, Pig Lily	Herb

ARECACEAE

<i>Howea forsteriana</i>	Kentia Palm	Tree
<i>Livistona</i> sp.	Palm	Tree
<i>Phoenix canariensis</i>	Canary Island Palm	Tree

ALSTROEMERIACEAE

<i>Alstroemeria pulchella</i>	Parrot Alstroemeria	Herb
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ASPARAGACEAE

<i>Asparagus aethiopicus</i>	Asparagus Fern	Herb
<i>Asparagus plumosus</i>	Climbing Asparagus Fern	Creepers

ASPHODELACEAE

<i>Aloe maculata</i>	Aloe	Herb
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CANNACEAE

<i>Canna indica</i>	Canna	Herb
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COLCHICACEAE

<i>Gloriosa superba</i>	Gloriosa Lily	Creepers
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COMMELINACEAE

<i>Tradescantia zebrina</i>	Silvery Inch Plant	Herb
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CYPERACEAE

<i>Cyperus albobstriatus</i>	Dwarf Umbrella Sedge	Sedge
<i>Cyperus brevifolius</i>	Mullumbimbi Couch	Sedge
<i>Cyperus gracilis</i>	Slender Flat-sedge	Sedge
<i>Cyperus involucreatus</i>	Umbrella Plant	Sedge
<i>Cyperus rotundus</i> L.	Nutgrass	Sedge
<i>Pycnus polystachyos</i> (Rottb.) P.Beauv.	Sedge	Sedge

HYDROCHARITACEAE

<i>Egeria densa</i>	Dense waterweed	Herb
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IRIDACEAE

<i>Anomatheca laxa</i>	Red Flame Lily	Herb
<i>Ferraria crispa</i>	Black Iris	Herb
<i>Gladiolus x hortulanus</i>	Gladioli	Herb
<i>Homeria flaccida</i>	One-leaved Cape Tulip/Cascade Onion	Herb
<i>Sisyrinchium micranthum</i>	Scourweed	Herb
<i>Tritonia lineata</i>	Lined Tritonia	Herb

<i>Tritonia crocata</i>	Prince of Orange	Herb
JUNACEAE		
<i>Juncus articulatus</i>	Cushion Rush	Rush
<i>Juncus australis</i>	a rush	Rush
<i>Juncus bufonius</i>	Toad Rush	Rush
<i>Juncus kraussii</i>	Sea Rush	Rush
<i>Juncus pallidus</i>	Pale Rush	Rush
<i>Juncus usitatus</i> Common	Rush	Rush
LILIACEAE		
<i>Lilium formosanum</i>	Formosa Lily	Herb
LIMNOCHARITACEAE		
<i>Hydrocleys nymphoides</i>	Water Poppy	Herb
POTAMOGETONACEAE		
<i>Potamogeton tricarinatus</i>	Floating Pondweed	Herb
POACEAE		
<i>Aira cupaniana</i>	Silvery Hairgrass	Grass
<i>Ammophila arenaria</i>	Marram Grass	Grass
<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass	Grass
<i>Arundo donax</i>	Giant Reed	Grass
<i>Avena fatua</i>	Wild Oats	Grass
<i>Avena sativa</i>	Oats	Grass
<i>Axonopus fissifolius</i>	Narrow-leaf Carpet	Grass
<i>Bambusa sp.</i>	Bamboo	Grass
<i>Bothriochloa macra</i>	Red-leg Grass	Grass
<i>Briza maxima</i>	Large Quaking Grass	Grass
<i>Briza minor</i>	Lesser Quaking Grass	Grass
<i>Bromus arenarius</i>	Sand Brome	Grass
<i>Bromus diandrus</i>	Great Brome	Grass
<i>Bromus hordeaceus</i>	Soft Brome	Grass
<i>Bromus scoparius</i>	Broom Brome	Grass
<i>Bromus willdenowii</i>	Prairie Grass	Grass
<i>Catapodium rigidum</i>	Rigid Fescue	Grass
<i>Chloris gayana</i>	Rhodes Grass	Grass
<i>Cortaderia selloana</i>	Pampas Grass	Grass
<i>Cynodon dactylon</i>	Couch Grass	Grass
<i>Dactylis glomerata</i>	Cocksfoot	Grass
<i>Digitaria ciliaris</i>	Summer Grass	Grass
<i>Echinochloa crus-galli</i>	Barnyard Grass	Grass
<i>Ehrharta erecta</i>	Panic Veldt Grass	Grass
<i>Eleusine indica</i>	Crowsfoot Grass	Grass
<i>Elymus scaber</i>	Wheatgrass	Grass
<i>Eragrostis brownii</i>	Common Love-grass	Grass
<i>Hordeum murinum</i> subsp. <i>glaucum</i>	Sea Barley Grass	Grass
<i>Hordeum murinum</i> subsp. <i>leporinum</i>	Sea Barley Grass	Grass
<i>Lagurus ovatus</i>	Hare's Tail Grass	Grass
<i>Lolium perenne</i>	Perennial Ryegrass	Grass
<i>Lolium rigidum</i> var. <i>rigidum</i>	Wimmera Ryegrass	Grass
<i>Lolium rigidum</i> var. <i>rottboellioides</i> .	Ryegrass	Grass
<i>Melinis minutiflora</i>	Molasses Grass	Grass
<i>Melinis repens</i>	Red Natal Grass	Grass

<i>Panicum maximum</i>	Guinea Grass	Grass
<i>Paspalum dilatatum</i>	Paspalum	Grass
<i>Paspalum distichum</i>	Water Couch	Grass
<i>Pennisetum clandestinum</i>	Kikuyu Grass	Grass
<i>Pennisetum purpureum</i>	Elephant Grass	Grass
<i>Phalaris minor</i>	Lesser Canary Grass	Grass
<i>Poa annua</i>	Winter Grass	Grass
<i>Poa pratensis</i>	Kentucky Bluegrass	Grass
<i>Rostraria cristata</i>	Annual Cat's Tail	Grass
<i>Setaria palmifolia</i>	Palm Grass	Grass
<i>Setaria pumila</i> subsp. <i>pallidifusca</i>	Pale Pigeon Grass	Grass
<i>Setaria verticillata</i>	Whorled Pigeon Grass	Grass
<i>Sorghum bicolor</i> ssp. <i>arundinaceum</i>	Sorgham	Grass
<i>Spinifex sericeus</i>	Hairy Spinifex	Grass
<i>Sporobolus africanus</i>	Parramatta Grass	Grass
<i>Sporobolus fertilis</i>	Giant Parramatta Grass	Grass
<i>Stenotaphrum secundatum</i>	Buffalo Grass	Grass
<i>Urochloa</i> sp. (?)		Grass
<i>Vulpia bromoides</i>	Squirrel Tail Fescue	Grass
<i>Vulpia myuros</i> forma <i>megalura</i>	Rat's Tail Fescue	Grass
PONTEDERIACEAE		
<i>Eichhornia crassipes</i>	Water Hyacinth	Herb
ZINGIBERACEAE		
<i>Alpinia calcarata</i>	Indian Ginger	Herb

Appendix C – Significant Introduced animal species on Norfolk Island

INVERTEBRATES

Argentine Ant

Linepithema humile

BIRDS

California Quail

Callipepla californica

Common Starling

Sturnus vulgaris

Crimson Rosella

Red Parrot

Platycercus elegans

European Blackbird

Turdus merula

European Goldfinch

Carduelis carduelis

European Songthrush

Turdus philomelos

Feral Fowl

Feral Chicken

Gallus gallus

Feral Pigeon

Columba livia

House Sparrow

Passer domesticus

Masked Woodswallow

Artamus personatus

Purple Swamphen

Tarler Bird

Porphyrio porphyrio melanotus

MAMMALS

Black Rat

Rattus rattus

Feral cat

Felis domesticus

House Mouse

Mus musculus

Polynesian Rat

Rattus exulans

Reptiles

Asian House Gecko

Hemidactylus frenatus

Appendix D – Priority list of Public Reserves on Norfolk Island

Table 18 lists the Public Reserves on Norfolk Island in order of priority to assist with the allocation resources for pest plant and animal control.

Table 18. Prioritisation of Norfolk Island Public Reserves for allocation of pest plant and animal control resources (from Plans of Management for Public Reserves on Norfolk Island).

Reserve Name	Score (1 =Low to 10 = High priority)	Priority
Selwyn Reserve	9	VH
Hundred Acres Reserve	9	VH
Bumbora Reserve	8	VH
Nepean Island Reserve	8	VH
Two Chimneys Reserve	7.5	VH
Anson Bay Reserve	6	H
Ball Bay Reserve	6	H
Cascade Reserve	5	M
Headstone Reserve	5	M
Point Ross Reserve	4	M
Middleridge Reserve	3	L
Stock Reserve	1	L

Appendix E - Current Legislation and Policy

NSW laws apply to Norfolk Island under section 18A of the Norfolk Island Act 1979 (CTH) unless suspended from application by an Ordinance made under section 19B of the Norfolk Island Act. At the time of drafting this plan, the Norfolk Island Applied Laws Ordinance 2016 (CTH) made under section 19B of the Norfolk Island Act 1979 (CTH) has suspended the application of all NSW laws to Norfolk Island until 1 July 2018. This is with the exception of 5 laws that are not relevant to this plan.

Legal advice at the time of the preparation of the plan was to develop policies on the basis that all NSW laws will apply (with Commonwealth amendments to fit section 122 of the Commonwealth Constitution) from 1 July 2018 unless expressly advised otherwise beforehand. Therefore, this plan has been developed in accordance with the assumption that Norfolk Island is not part of NSW, but that NSW law does apply to it, and so too does Federal Law and a range of Local Norfolk Island laws.

Table 19: Policy Framework: Local, State and Federal

Local	State	Federal
<ul style="list-style-type: none"> • Noxious Weeds Act 1916 (NI) • Plant Fruit Diseases Act • NIRC 17-18 Operational Plan • Biosecurity (Prohibited and Conditionally Non-prohibited Goods – Norfolk Island) Determination 2016 • Animals (Importation) Act 1983 (NI); Animals (Importation) Regulations 1985 (NI); Animals (Importation of Certain Dog Breeds) Regulations 2004 (NI) • Public Reserves (Animals) Act 1983 (NI) • Stock Diseases Act 1936 (NI) • Pasturage and Enclosure Act 1949 (NI) • Export Control (Plant and Plant Products – Norfolk Island) Order 2016 (CTH) • Norfolk Island National Park and Norfolk Island Botanic Garden Act 1984 (NI) • Migratory Birds Act 1980 (NI) • Prevention of Cruelty to Animals Act 1913 (NI) • Health Act 1913 (NI) • Public Health Act 1996 (NI) • Trees Act 1997 (NI) 	<ul style="list-style-type: none"> • NSW Local Government Act currently applies to Norfolk • NSW Biosecurity Act 2015 – Legal advice is that we should just assume this will apply to Norfolk • and Biosecurity Strategy 2013 – 2021- does this apply? 	<ul style="list-style-type: none"> • Biosecurity Act Australian Weeds Strategy (NRMMC 2007) • Commonwealth EPBC Act

References

- Brooke, M. de L, Hilton, G. & Martins, T.L.F. (2007). Prioritising the world's islands for vertebrate eradication programmes. *Anim. Conserv.*, 10: 380-390.
- Christian, M (2020). Personal Communication.
- Christian, N and Mills, K (2020). Draft Norfolk Island Native Vegetation Mapping. Invasive Species Council.
- Invasive Plants and Animals Committee (2016), *Australian Pest Animal Strategy 2017 to 2027*, Australian Government Department of Agriculture and Water Resources, Canberra.
- Mills, K. (2010). The Flora of Norfolk Island. 10. A Complete List of Native and Naturalised Species for the Island Group. The Author, Jamberoo, New South Wales, April.
- Mills, K. (2009). The Vegetation of Phillip Island, Norfolk Island Group. *Envirofund 2007/08*, The Author, Jamberoo, NSW, April.
- Mills, K. (2010). Defining native plants: some problematic species from Norfolk Island. *Cunninghamia* 11 (4): 407-412.
- Mills, K. (2017). – series of reports on all Public Reserves.
- Norfolk Island Regional Council (2020). Series of plans of management for public reserves on Norfolk Island.
- Norfolk Island Regional Council (2018). Norfolk Island Environment Strategy 2018–2023.