



## **PLAN OF MANAGEMENT**



**HUNDRED ACRES RESERVE**  
**2019 - 2029**

DRAFT

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# 1 Introduction

## 1.1 Reserve Description

Hundred Acres Reserve covers an area of 22.24 hectares and is located on the south-western corner of Norfolk Island, behind Rocky Point (Figure 1). The Reserve includes approximately 1,500 metres of coast line.

The reserve contains a substantial area of coastal forest, in fact the largest remaining on the island. Some of this is planted Norfolk Island Pine (*Araucaria heterophylla*) where the native understorey (established through revegetation and natural regeneration) is developing into a forest similar to the original forest. The Reserve also contains a stand of specimen trees planted along its eastern boundary.

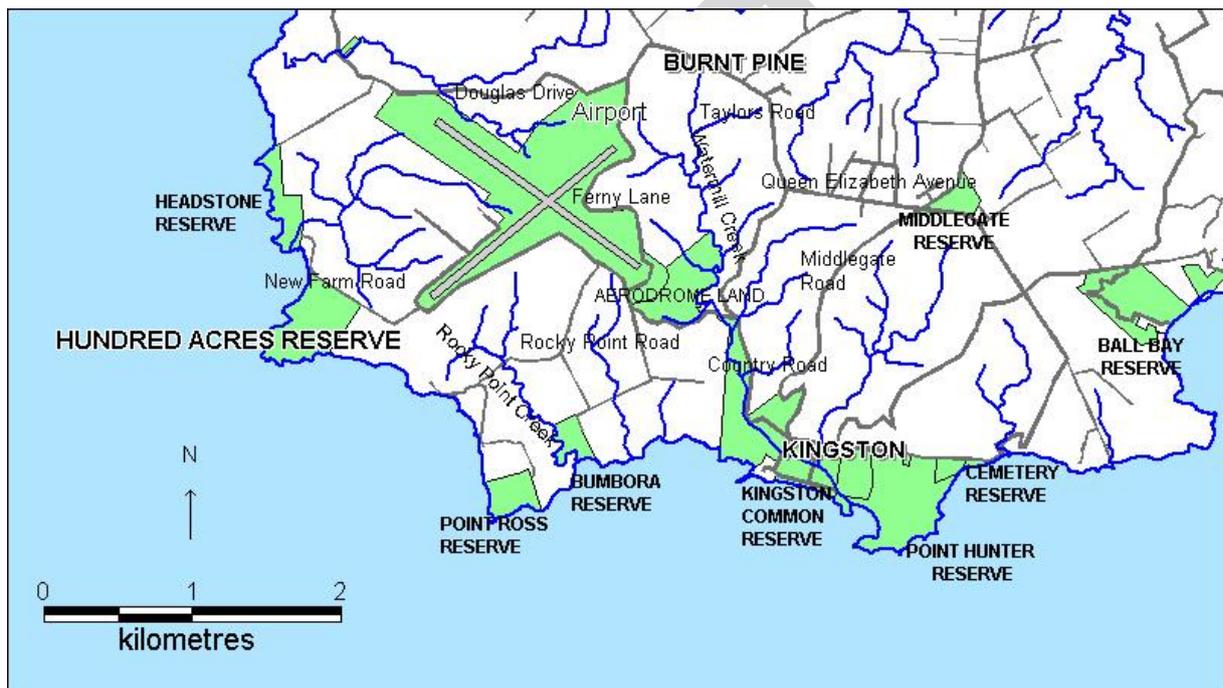


Figure 1: Hundred Acres Reserve Location

## 1.2 Public Consultation and Planning Framework

Re-named Hundred Acres Reserve to reflect the most common local name for the area, “Rocky Point” Reserve<sup>1</sup> was declared a reserve for forestry purposes under the Commons and Public Reserves Law 1913 on 4 February 1937. However, the area was most likely proclaimed a reserve during the late 1890’s as it is first shown as a reserve on the 1904 map of Norfolk Island.

The boundaries, landform and tracks of Hundred Acres Reserve are shown in Figure 2. Hundred Acres Reserve is bordered by cliffs, New Farm Road, and private property. The seaward boundary of the Reserve extends to the high water mark.

In 2000, the southern boundary of Headstone Reserve was extended to include 1.005 ha of vacant Crown Land portion 85b(pt), thus joining Headstone and Hundred Acres Reserves at New Farm Road.

<sup>1</sup> “Rocky Point Reserve” was renamed “Hundred Acres Reserve” on 28 August 1998: Gazette No. 39, 5 September 1998.

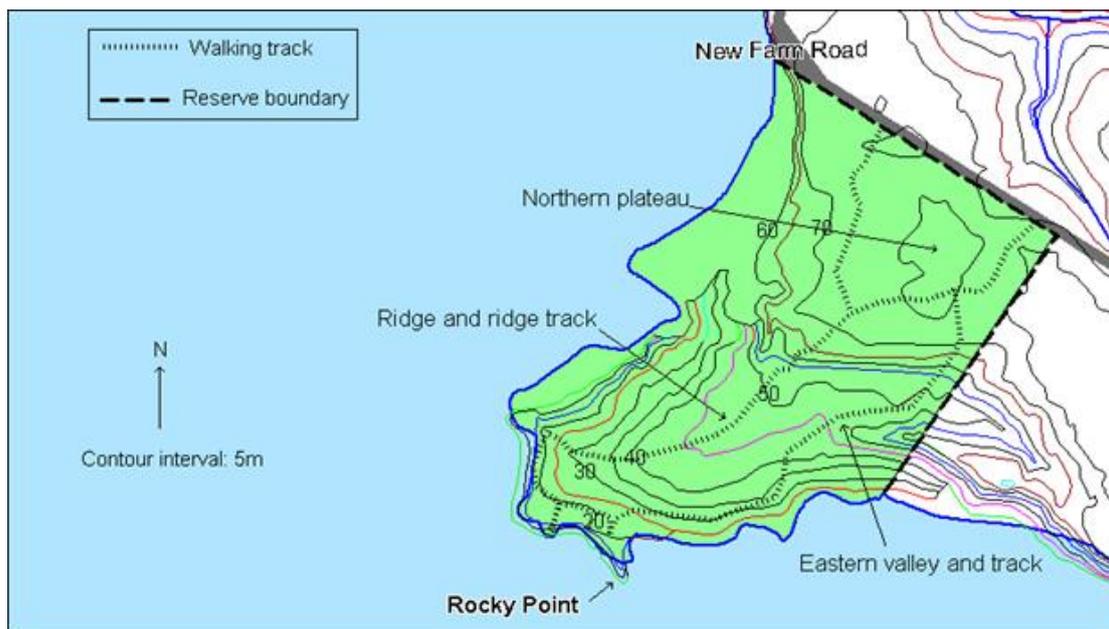


Figure 2: Hundred Acres Reserve boundaries, landform and tracks.

The *Norfolk Island Plan 2002* states:

*'The intent of the Conservation Zone is to:*

- (a) provide a very limited range of low intensity and low impact use or development opportunities in the areas under this zone that are considered to have very high natural and/or heritage conservation values;*
- (b) ensure that the areas within the Conservation Zone that have very high natural conservation values continue to provide the aesthetic backdrop for Norfolk Island and continue to provide the open space and wilderness habitat that is vital to life systems on the Island;*
- (c) include land between the Top of Cliff as shown on the Official Survey of Norfolk Island and the Mean High Water Mark. The areas under this zone are considered to have high natural conservation values; and*
- (d) ensure that the areas within the coastal portion of the Conservation Zone, to which the Coastal Environment Provisions apply in accordance with clause 9A, will be quarantined from built forms of use or development to ensure safety and to maintain cliff and foreshore stability.*

The *Norfolk Island Plan 2002* also states:

*'The intent of the Open Space Zone is to:*

- a) provide a limited range of low intensity and low impact use or development opportunities within areas that have natural, cultural and heritage values that should be maintained;*
- b) provide the open space and wilderness habitat that is vital to life systems on Norfolk Island; and*
- c) provide land that may buffer certain incompatible uses.'*

The *Public Reserves Act 1997* states that each of the Norfolk Island Public Reserves will have a plan of management. The plans must promote the objects of the Act which are 'to protect and conserve public reserves so as to —

- (a) promote the conservation of the natural environment and landscape beauty of Norfolk Island;

- (b) promote the conservation of the heritage of Norfolk Island; and
- (c) preserve the way of life and the quality of life of the people of Norfolk Island.'

The first Plan of Management for Hundred Acres Reserve was prepared in 2003. In 2017, the original Plans of Management for Norfolk Island Reserves were placed on public display, with an invitation to provide feedback to assist with the update of the plans of management.

The following feedback was received specifically in relation to Hundred Acres Reserve:

- (The reserve is) Well managed.

The following comments were received from multiple respondents with regard to the Reserves in general:

- No expansion of cattle grazing in the reserves. Protect current and proposed rehabilitated areas from cattle grazing. Native replanting is needed.
- Better management of waterways, including work to desilt the drainage channels in Kingston area to prevent coral deaths.

As part of the 2017 consultation process, the Public Reserves Advisory Committee, also undertook a survey on Cats on Norfolk Island. The information gathered from this survey is outlined in Section 3.3 of this Plan of Management.

The Federal *Environmental Protection and Biodiversity Conservation Act 1999 (Cth)* applies to Norfolk Island and is relevant in several ways to the management of the public reserves. In particular, the Act recognises many native and endemic plants and animals as threatened species. These species are afforded protection under the Act, and are the subject of the Norfolk Island Region Threatened Species Recovery Plan. Hundred Acres Reserve is home to many threatened species recognised under the Act, and the management of the reserve needs to align with the Threatened Species Recovery Plan.

### **1.3 Heritage Listing**

Hundred Acres Reserve was listed (as "Rocky Point Reserve") on the Register of the National Estate (RNE) on 21 October 1980.

The RNE was replaced on 1 January 2004 by a National Heritage List, which recognises and protects places of outstanding heritage to the nation, and the Commonwealth Heritage List, which includes Commonwealth owned or leased places of significant heritage value.<sup>2</sup>

Hundred Acres Reserve was included on the Norfolk Island Heritage List in 2002 and the Commonwealth Heritage list on 22 June 2004.

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<sup>2</sup> <http://www.environment.gov.au/heritage/places/rne/index.html>

## 2 Significance of Hundred Acres Reserve

The natural diversity within Hundred Acres Reserve, including its park-like northern section, diverse native forest, fern-filled eastern valley, breeding seabirds and coastal scenery, make it a popular destination for locals and visitors to Norfolk Island. The Reserve has a secluded character, and is an excellent place to stroll and be close to nature, providing a unique and significant cultural experience.

A map showing the location of some of the vegetation types and other features of the Reserve is provided in Figure 3.



Figure 3: Hundred Acres Reserve vegetation communities and other features.

The Reserve has significant conservation values, in particular relatively weed-free native coastal forest of an extent and type that is not found in other reserves on Norfolk Island. This forest supports native, including endemic, and threatened species of flora and fauna, and is a primary nesting site for the White-capped (Black) Noddy (*Anous minutus minutus*) and the Ghost Bird or Wedge-tailed Shearwater (*Ardenna pacifica*). The south-eastern valley contains a large variety of native and endemic ferns and is the only example of this environment on the Island.

## 2.1 Geology and Landform

The rocks at Hundred Acres Reserve are entirely the product of successive volcanic eruptions. The massive basalt lava flows underlying the Reserve are exposed around the cliffs and, at Rocky Point, a relatively small volcanic ash (tuff) eruption is evidenced by a layer of yellow volcanic ash about one metre thick between some of the upper basalt flows.

East of Rocky Point itself is a small point that forms the southern-most part of the Reserve. The flat surface of this point is actually the top of a basalt lava flow, which was covered soon after by an ash eruption. As a result, ripples and flat pancake formations that solidified on the surface of the flow as it cooled and that were protected by the ash eruption are now visible – especially where some yellow ash remains to outline the ripples (Figure 4).



*Figure 4: Surface of lava flow at Rocky Point.*

On the southern and south-eastern side of the Reserve, the cliffs are only about a third of the height of most of the cliffs around Norfolk Island. The landform of most of the Reserve is perhaps a little less steep, but still typical of the deep valleys and rounded hillsides of much of Norfolk Island that were formed by stream erosion of deeply weathered underlying strata. A gently sloping ridge extends generally south-westwards from the flat plateau that forms the northern part of the Reserve. A series of short gullies run to the cliff to the west of this ridge, while on the east the ridge is paralleled by a relatively gently sloping valley that ends at the cliff to the east of Rocky Point. There are no permanent streams in the Reserve.

Generally, most of the slopes are east, south or west-facing. Much of the valley to the east of the ridge is sheltered, while the slopes to the west of the ridge are exposed to westerly and south-westerly winds. Thick stands of wind and salt-pruned White Oak (*Lagunaria patersonia*) shelter the forest in the south of the Reserve from strong southerly winds.

## 2.2 Flora

The Reserve has the largest area of coastal Norfolk Island Pine (*Araucaria heterophylla*)/White Oak (*Lagunaria patersonia*) forest remaining on Norfolk Island. The majority of this forest has resulted from planting and management for timber production together with natural regeneration during the past hundred years or so, before which much of the Reserve was cleared and grazed.

Importantly, there are currently no significant stands of the highly invasive introduced woody weeds, African Olive (*Olea europea* subsp. *cuspidata*), Hawaiian Holly (*Schinus terebinthefolius*) and Porpieh (Cherry Guava) (*Psidium cattleianum* var. *cattleianum*) in the Reserve.

### 2.2.1 Past clearing and revegetation

The extent to which the Reserve was cleared during the First and Second Colonial Settlements is uncertain. The presence of a variety of terrestrial molluscs (land snails) in the southern part of the Reserve tends to support the view that at least some of the southern parts of the Reserve have not been subjected to major environmental changes, such as would be associated with clearing. The southern fringes of the Reserve are almost completely free of woody weeds, which also suggests that there has been very little, if any, disturbance. The majority of trees, mainly White Oak and Norfolk Island Pine, in the southern parts of the Reserve appear to be relatively young, probably less than 100 years, and of much the same age.

In the 1860s the area became increasingly used for grazing and was not enclosed by fences. In 1914, Robert Laing wrote<sup>3</sup>:

“...at Hundred Acres there is a reserve of some 50 acres which has been enclosed for several years. In another four or five years it will be impenetrable to man without a bill-hook. It shows how quickly the bush would reclothe the island if stock were removed. Here the weeds are fewer than in other parts of the island, and, apart from occasional plants of Citrus, Cassia, and Solanum, the bush is chiefly of indigenous growth. This....area had been run through by stock for fifty years before its enclosure, and also been searched for timber.”

For much of the 20th century, the Reserve was used for experimental forestry plantings and a nursery was established for propagating forestry and native plants. A concrete tank and base, used as a tool shed, was erected in the Reserve to store water pumped by a hydraulic ram from Headstone Creek, approximately 600 m to the north-west, for watering the nursery and gardens in the Reserve. Some of the exotic plant species that were planted within the Reserve during this period are listed in Table 1.

Table 1. Some of the exotic species planted within the Reserve during the 20<sup>th</sup> Century

Silky Oak ( <i>Grevillea robusta</i> )	Lombardy Poplar ( <i>Populus nigra italica</i> )
Illawarra Flame Tree ( <i>Brachychiton acerifolius</i> )	Three-veined Cryptocarya ( <i>Cryptocarya triplinervis</i> )
White Cedar (or Lilac) ( <i>Melia azedarach</i> )	Queensland Black Bean ( <i>Castanospermum australe</i> )
English Oak ( <i>Quercus robur</i> ) <sup>4</sup>	Brush Box ( <i>Lophostemon confertus</i> )
Cork Oak ( <i>Quercus suber</i> )	China Wood-oil Tree (Tung Oil) ( <i>Aleurites fordii</i> )
Pencil Pine ( <i>Cupressus lusitanica</i> )	Mandarine ( <i>Citrus reticulata</i> )
Silver Poplar ( <i>Populus alba</i> )	Lemon ( <i>Citrus jambhiri</i> )
Mulberry ( <i>Morus</i> sp.)	Avocado ( <i>Persea americana</i> )
Peach ( <i>Prunus persica</i> )	Coffee ( <i>Coffea arabica</i> )
Red Cedar ( <i>Toona ciliata</i> )	

<sup>3</sup> Laing, R. M., 1914. *A Revised List of the Norfolk Island Flora, with Some Notes on the Species*. Transactions of the New Zealand Institute, article 1, p.2.

<sup>4</sup> The last English Oak and Lombardy Poplars died during the late 1990s.

Ornamental species such as Moreton Bay Fig (*Ficus macrophylla* subsp. *macrophylla*), Jacaranda (*Jacaranda mimosaeifolia*), Japanese Honeysuckle (*Lonicera japonica*), Wisteria (*Wisteria sinensis*), and Monstera (*Monstera deliciosa*) were also planted in the Reserve. A few specimens of some of these exotic species remain, giving the northern part of the Reserve some of the character of a traditional botanic gardens. The spectacular Moreton Bay Figs along New Farm Road (Figure 5) and in the northwest corner of the reserve are a tourist attraction.



*Figure 5: Spectacular Fig trees along New Farm Road.*

In the 1960's, plantations of eucalypts, mainly Tallowwood (*Eucalyptus microcorys*), Blackbutt (*Eucalyptus pilularis*) and Flooded Gum (*Eucalyptus grandis*), were established along parts of the eastern valley, the western slopes of the north-south ridge, and on the northern, flatter part of the Reserve. Many of these trees were tall, but of small diameter, and thus not particularly valuable for timber. There was little regeneration of native species under the eucalypt canopy and the accumulation of fallen bark, leaves and branches was a potential fire hazard in dry conditions. The eucalypts were rarely used as nest sites by White Tern (*Gygis alba royana*) or White-capped Noddy (*Anous minutus minutus*).

All of the eucalypts in the eastern valley and on the western slopes of the north-south ridge were removed between 1995 and 1998 and have been replaced with native species, particularly Norfolk Island Pine (*Araucaria heterophylla*) and White Oak (*Lagunaria Patersonia*). Further stands of eucalypts in the northern part of the Reserve were replaced in the early 2000s with plantings of native species. There are still a small number of eucalypts scattered through the Reserve.

### 2.2.2 Current vegetation within the Reserve

The western and southern parts of the reserve now support a modified dry coastal forest, dominated by Norfolk Island Pine (*Araucaria heterophylla*) and White Oak (*Lagunaria Patersonia*), with a major valley where many plantings have been undertaken and the forest is much moister. Several fern species occur within these moister areas, and many of the island's rainforest trees have been planted, some of which are now naturally regenerating.

Mills (2017) suggests that the forest habitat towards the coast in the south may be suitable for the planting of the endangered Norfolk Island Euphorbia (*Euphorbia norfolkiana*), as the habitat here is similar to Bumbora Reserve where natural plants occurred, and the successful planting site near Cooks in the Norfolk Island National Park.

Common species in the valley, some planted, include Beech (*Myrsine ralstoniae*), Oleander (*Pittosporum bracteolatum*), Norfolk Island Tree Fern (*Cyathea brownii*), Ti (*Cordyline obtecta*), and tall Norfolk Island Pine and White Oak.

The drier coastal forest has a very open understory (Figure 6), with a few typical species such as Native Spinach (*Tetragonia implexicoma*), Forget-me-not (*Commelina cyanea*) and occasional small trees of Melky Tree (*Excoecaria agallocha*), with the weed Coral Berry (*Rivina humilis*) abundant in places.



Figure 6: Exposed Pine-Oak Coastal Forest with a minimum of understory characterises much of the reserve (Mills 2017)



Figure 7: High quality coastal grassland on Rocky Point (Mills 2017)

The north-eastern part of the reserve supports Norfolk Island Pine plantations of varying ages, with much the eastern area supporting a well-developed understory of hardwood trees and other native species; the understory in the other plantation is mown grass.

The main valley is developing a good rainforest, where planted and natural species are regenerating well. There are several 'light gaps' within the forest that harbor dense weeds, and a weed control and revegetation program in these areas would be beneficial.

Some of the tallest endemic Norfolk Island Tree Ferns on the Island occur along the eastern valley where one has been measured at almost 25m tall. A single Mountain Rush remains near the western entrance to the Reserve, an evidence of the Reserve's former floristic diversity.

Rocky Point and the shoreline support typical and good quality coastal vegetation, particularly Salt Couch (*Sporobolus virginicus*) grassland and stunted White Oak (Figure 7). Other species are Pigface (*Carpobrotus glaucescens*), Chaff-flower (*Achyranthes asepra*), Lobelia (*Lobelia anceps*), Coastal Fern (*Asplenium difforme*) (Figure 8) and the vulnerable Yellow Daisy (*Senecio australis*).



Figure 8: Coastal Fern (*Asplenium difforme*) ?



Figure 9: King's Brakefern (*Pteris kingiana*)

Slashing/mowing currently occurs throughout the grassed areas of the Reserve to maintain these popular visitor use areas. Regular slashing also occurs between the rows of more recently planted Norfolk Island Pines (Figure 10), but the reason for this is not clear. This slashing appears to be having an impact on the natural regeneration of native vegetation within these areas and should be restricted to tracks and open spaces only.



Figure 10: Regular slashing occurs under the more recently planted stands of Pines within the Reserve.

### 2.2.3 Significant Plant Species

In his 2017 targeted search of Hundred Acres Reserve for threatened species, Mills recorded several threatened and significant plant species, which are listed in Tables 2 and 3.

Norfolk Island Regional Council has a responsibility under the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* to appropriately manage flora and fauna species listed under the EPBC Act within Norfolk Island Public Reserves and other areas of Council managed land.

Table 2. Threatened plant species recorded within the Reserve by Mills (2017) and their conservation status and abundance.

Name	Habit	Significant due to EPBC <sup>5</sup> listing	Number of Plants (counted)
Broad-leaved Meryta ( <i>Meryta latifolia</i> )	Tree	Critically Endangered	51
Popwood ( <i>Myoporum obscurum</i> )	Tree	Critically Endangered	1
Soft Wood, Chaff-tree ( <i>Achyranthes arborescens</i> )	Tree	Critically Endangered	2
Bastard Ironwood ( <i>Planchonella costata</i> )	Tree	Endangered	1
King's Brakefern ( <i>Pteris kingiana</i> ) (Figure 9)	Fern	Endangered	50
Beech ( <i>Myrsine ralstoniae</i> )	Tree	Vulnerable	547
Oleander ( <i>Pittosporum bracteolatum</i> )	Tree	Vulnerable	208
Ti Tree ( <i>Cordyline obtecta</i> )	Tree	Vulnerable	86
Whiteywood ( <i>Melicactus ramiflorus oblongifolius</i> )	Tree	Vulnerable	1
Yellow daisy ( <i>Senecio australis</i> )	Herb	Vulnerable	26

Table 3. Significant plant species recorded within the Reserve by Mills (2017).

Name	Habit	Otherwise considered significant on Norfolk Island	Number of Plants (counted)
Melky Tree ( <i>Excoecaria agallocha</i> )	Tree	Yes	29
Ground Fern ( <i>Hypolepis tenuifolia</i> )	Fern	Yes	14
Wai-wai ( <i>Pisonia brunonianus</i> )	Tree	Yes	86

### 2.3 Fauna

During the summer months, breeding seabirds are the most visible fauna in Hundred Acres Reserve. The White Tern (*Gygis alba royana*) and White-capped Noddy (*Anous minutus minutus*) both nest colonially in the Norfolk Island Pines (*Araucaria heterophylla*) and White Oaks (*Lagunaria patersonia*), particularly in the southern parts of the Reserve. The White-capped Noddy colony is the largest remaining on the Island and is the only one within a protected area. The Reserve also contains the largest Wedge-tailed Shearwater (Ghostbird) (*Ardenna pacifica*) breeding area on the Island, and a few pairs of Red-tailed Tropicbirds (*Phaethon rubricauda roseotincta*) nest on or near the cliffs of the Reserve.

The Ghostbirds breed in burrows in the coastal fringe of the Reserve between October and May. Their breeding area is along the cliff tops, under wind-pruned White Oaks around the coast and through the

<sup>5</sup> Environmental Protection and Biodiversity Conservation Act 1999 (Cth)

forest on the western slopes to about 120 m inland from the coast. Nestlings remain in the burrow while adult Ghostbirds feed on fish, squid and crustacea at sea during the day, returning at dusk to feed their young.

Small numbers of Masked Booby (*Sula dactylatra fullagari*) nested on the cliff top at Rocky Point some thirty or forty years ago, however this species no longer breeds in Hundred Acres Reserve, potentially because of past human disturbance. Unfortunately, only a few Masked Boobies still breed on Norfolk Island, along the north coast. With careful habitat management and community education, this species may be encouraged to again breed in the Reserve.

There are 33 species of terrestrial birds resident on Norfolk Island. Of these, about 22 regularly occur, or are likely to occur, in Hundred Acres Reserve. Seventeen species of terrestrial birds were recorded at Hundred Acres Reserve during the December 1978 bird census by members of the Royal Australasian Ornithologists Union<sup>6</sup> and local naturalists.<sup>7</sup> Of these, five were endemic species or sub-species, three were self-introduced and considered to be native, and nine were introduced.

Populations of terrestrial birds within the Reserve appear to be declining. The Golden Whistler (Tamey) (*Pachycephala pectoralis xanthoprocta*) currently occurs in small numbers and may be declining, and small flocks of Long-billed White-eye (Grinnel) (*Zosterops tenuirostris*) also occur in the Reserve periodically, although sightings have become less frequent, and Grey Fantail (*Rhipidura fuliginosa pelzelni*) numbers also appear to be in decline. The Pacific Robin (Scarlet Robin) (*Petroica multicolor multicolor*) was not recorded in the Reserve in the 1978 census and now occurs rarely. Norfolk Island Green Parrots (*Cyanoramphus novaehollandiae cookii*) have only been observed in the Reserve occasionally, possibly due to a lack of old hollow bearing trees. Some of these bird populations may recover in the Reserve with improved management and increasing forest diversity and habitat. The lack of forested habitat corridors linking the Reserve to other forest areas is also probably a factor influencing low bird diversity.

Seven species of land snail were found in a 1997 survey of Hundred Acres Reserve,<sup>8</sup> including *Mathewsoconcha belli*, an endangered endemic species that otherwise was only found in small numbers in the National Park and on Phillip Island. Reasonable numbers of live *M. belli* were found in leaf litter and decaying bark in parts of the Reserve dominated by White Oak and Norfolk Island Pine with no understorey and few other species. Scattered shells, but no live *M. belli* were found by Norfolk Island Reserves and Forestry staff in areas infested with Coral Berry, a low evergreen weed that has spread through much of the Reserve. The continued survival of this species depends on the viability of populations in places like Hundred Acres Reserve.

The Little Nipper Land Crab (*Geograpsus greyi*) was formerly common in the Reserve, especially in old, rotten pine logs along coastal slopes facing Headstone, but is now rare.

## 2.4 Cultural Heritage

No evidence of early Polynesian use of the Reserve area has been found; however it is likely that Polynesian people would have at least visited the area during the long period they inhabited Norfolk Island. The earliest known use of the Reserve area was when it was farmed by Europeans early in the First Colonial Settlement (1788-1814).

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<sup>6</sup> Now "Birdlife Australia"

<sup>7</sup> Schodde, R., P. Fullagar and N. Hermes, 1983. *A Review of Norfolk Island Birds: Past and Present*. Australian National Parks and Wildlife Service: Special Publication No. 8.

<sup>8</sup> Varman, R., 1997. Survey of the Terrestrial Molluscs of Norfolk Island, October - November 1997. Informal report.

The northern end of the present Reserve was part of what was known by 1791 as the “West Point Run”. Lot 78 (60 acres [24.3 hectares]), the south-eastern corner of which covered the northeast corner of the present Reserve, was granted to John Folley on 28 November 1791. The southernmost part of another grant (Lot 79, also 60 acres), which covered the western half of the present Reserve at the northern end, was taken up by Elias Bishop on 13 December 1794, and later sold to Henry Hathaway on 13 October 1795. On 7 May 1799, Hathaway sold half of Lot 79 to John Boyle for £55, suggesting that improvements, perhaps buildings, had added to the value of the land. The valley to the north of what is now New Farm Road formed the northern boundary of Lots 78 and 79 and was known as West Point Stream.<sup>9</sup>

The area was uninhabited for about 11 years after Norfolk Island was abandoned in 1814. During the Second Colonial Settlement (1825 - 1856), the northern part of the present Reserve formed part of a property called “One Hundred Acre Farm”. The 1840 ‘Arrowsmith’ map (Figure 11) prepared by Major George Barney<sup>10</sup> shows that the mid-northern end of the present Reserve had been cleared, while the southern end appears to have remained largely undeveloped.

The 1840 ‘Arrowsmith’ map shows two tracks, one from the northeast and the other from the north-west, leading to a central track, which could be the existing ridge track. However, the 1904 map<sup>11</sup> shows a track from Lot 93, east of the Reserve, along the eastern valley. This track appears to be the track from the north-east shown on the 1840 map. In any case, it is likely that some or all of the main tracks in the Reserve have been in existence since the Second Colonial Settlement, if not earlier. The name “One Hundred Acre” was passed on to the Pitcairners in 1856 and the area became locally known as “Hundred Acres”.

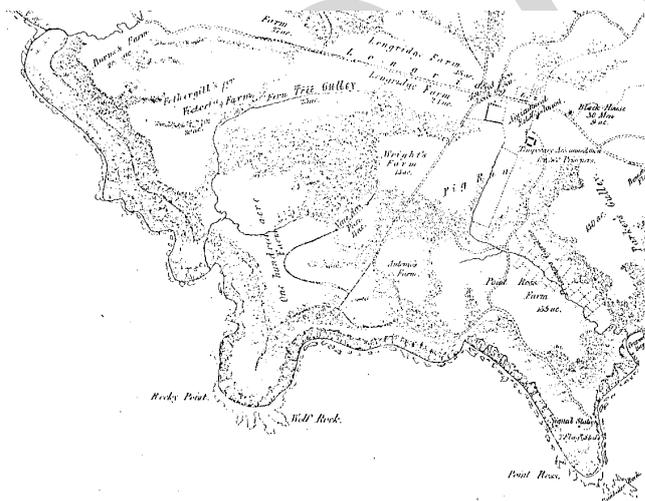


Figure 11: 1840 Survey Plan of Norfolk Island: Rocky Point, One Hundred Acre Farm

The level area in the northern part of the Reserve is the only area where remains of early European settlement might be found.

In 1866, ten years after the arrival of the Pitcairners on Norfolk Island, the Melanesian Mission bought 1,032 acres (418 hectares) from the British government and moved its headquarters from New Zealand to Norfolk Island. The Mission’s land commenced on the northern side of New Farm Road, opposite the Reserve, and ran northwards to Anson Bay. St Barnabas Chapel (consecrated in 1880) was at the centre of the Mission, which provided young Melanesian boys from islands to the north of Norfolk Island with religious instruction and some agricultural

<sup>9</sup> Dr Robert Varman, 1998. Personal communication: Historical information relating to the First and Second Colonial Settlements (1788 - 1814 and 1825 - 1856). Also, from map and list of *Settlers lots on Norfolk Island 1791 - 1804*, unknown source.

<sup>10</sup> Often referred to as the “Arrowsmith” map, 1840. However, John Arrowsmith was the lithographer who copied the map prepared or drawn by Major Barney, Royal Engineers Corp. The map was printed by James and Luke J. Hansard on an order of the House of Commons dated 15 June 1841.

<sup>11</sup> *Map of Norfolk Island Shewing Grants and Subdivisions*. Signed by Murphy, Government Surveyor, 8 February 1904.

skills. The Pitcairner community also benefited from the agricultural skills developed at the Mission.

Basalt boulders which have been inscribed, usually with initials and dates and sometimes names, can be found at various locations on Norfolk Island. The dates on these stones are usually late 19th Century, indicating that people clearing land or working gardens may have scratched the inscriptions in the weathered surface of the boulders. One such boulder inscribed with the date 1894 and a Melanesian name has been located in Hundred Acres Reserve.

In the late 1800s, Ben 'Father Ben' Nobbs, who owned land at the end of Rocky Point Road, about 500 m to the east, took a particular interest in "dar reserve". 'Father Ben' was involved in cricket matches between Norfolk Island and Lord Howe Island teams and it is thought that several exotic species were planted in the Reserve by him at that time, including Lord Howe Island Blackbutt.

During World War II, an observation post was established at Rocky Point. Small dugouts and trenches were dug on the seaward slopes and along the eastern valley of the Reserve. Built by N Force, this observation post was part of a network of defensive positions around the Island, which was strategically important in the Pacific theatre for ferrying newly constructed aircraft to be deployed in the islands to the north.

During the war, the then Administrator (1937 - 1945), Major-General Sir Charles Rosenthal, had a garden established in the Reserve (by 'Father Ben' Nobbs' son Richard 'Dick Ben' Nobbs) to provide flowers, vegetables, and other produce for Government House and defence personnel stationed on the Island at the time. Local families could buy potatoes and other produce from this garden. The garden was improved under the guidance of the next Administrator (1946 - 1952), Alexander Wilson, who had been a farmer in the Wimmera district of western Victoria. A variety of plants were grown, including Woohoo or Poor-man's Bean and different types of passionfruit. In dry times, even until the late 1960s, some families also utilised the water pumped for the garden from Headstone Creek to launder their clothes and linen, often combining this chore with a picnic.

Experimentation with forestry and agriculture increased following a report by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) in 1954 and the appointment of Ernie Friend as agricultural officer (1955 - 1960). During this period, bean seed production was the basis of Norfolk Island's economy and the experimental farm, which comprised about two hectares of the flattest land in Hundred Acres Reserve, was used to trial new bean cultivars. The fertile soil and the isolation provided by the surrounding pine forest made the area ideal for growing disease-free bean seed. This period also saw the introduction to the Island of the commercial coffee variety Arabica, which was planted in the Reserve experimentally. These horticultural and agricultural endeavours led to the Reserve being referred to as "dar nursery" by some Norfolk Islanders.

A forestry nursery and depot were established in the Reserve by the forester, George 'Kik Kik' Quintal during the 1960s and 1970s. The nursery and forestry depot were transferred to Anson Bay Road in 1986.

### 3 Management Issues

#### 3.1 Cultural Heritage Management, Education and Interpretation

The natural diversity within the Reserve, including its park-like northern section, diverse native forest, fern-filled eastern valley, breeding seabirds and coastal scenery set it apart from other Norfolk Island Reserves. Historical and contemporary elements associated with past forestry, horticulture and fishing together with the quiet, secluded character of the Reserve as a place to stroll and be close to nature provide a unique and significant cultural experience.

The gun pits and other fortifications that were established on some of the exposed coastal positions around the Island during WWII are significant. Although there are no visible remains of the observation post at Rocky Point, the interpretation of this site would provide a link with that period of history and enhance appreciation of the Island's strategic position in the south-west Pacific. Some of the gun/observation pits and or tent sites that were established in the Reserve during WWII are still visible on the eastern valley and western coastal slopes.

There are numerous opportunities in Hundred Acres Reserve for interpreting natural features and processes and most of the Reserve is easily accessible to the public. The Reserve provides a unique opportunity for the public to observe nesting seabirds (especially the White-capped Noddy (*Anous minutus minutus*)) at relatively close quarters while walking through native forest to Norfolk's rugged coast. The variety of exotic trees planted in the northern section of the Reserve as ornamental and forestry specimens provides an opportunity for interpreting early use of the area, together with forestry activities on Norfolk Island.

#### 3.2 Weeds

Because a Norfolk Island Pine (*Araucaria heterophylla*) canopy was established following the exclusion of cattle in the late 1800s or early 1900s, the Reserve is not heavily infested with African Olive (*Olea europea* subsp. *cuspidata*), Hawaiian Holly (*Schinus terebinthifolius*) or Porpieh (Cherry Guava) (*Psidium cattleianum* var. *cattleianum*) like other areas of the Island.

In 2010, a strategic program to eradicate the relatively small numbers of African Olive (*Olea europea* subsp. *cuspidata*), Castor Oil Plant (*Ricinus communis*), Hawaiian Holly (*Schinus terebinthifolius*), Japanese Honeysuckle (*Lonicera japonica*), Porpieh (Cherry Guava) (*Psidium cattleianum* var. *cattleianum*), Wild Tobacco (*Solanum mauritianum*), White Cedar (Lilac) (*Melia azedarach*) and Yellow Guava (*Psidium guajava*) in the Reserve resulted in few of these woody weeds remaining by mid-2012. At the time, this weed control program also removed about 70% of the small number of Lantana (*Lantana camara*), a Weed of National Significance (WON), thickets in the Reserve and virtually eradicated African Boxthorn (*Lycium ferocissimum*) (also a WON) from the accessible parts of the Reserve to the south and east of the main ridge track and coastal walkway. African Boxthorn has now unfortunately reestablished in a large part of the Reserve, with thickets clearly present from the Headstone Reserve along the entire cliff line.

Since first being found in the Reserve in the late 1990s, Queensland Umbrella Tree (*Schefflera actinophylla*) slowly increased throughout the Reserve, with seedlings spreading especially in wetter years, such as in 2011. Small Umbrella Trees are easily pulled up by hand, and members of the Norfolk Island Flora and Fauna Society removed a significant proportion of this species by hand weeding in September 2009. This species is not readily killed by basal bark spraying, so regular monitoring and hand-pulling is the best method of control.

Although the woody weed situation in Hundred Acres Reserve is far less significant than in most other reserves, due to a long history of ongoing management, there are some important weeds present. The early eradication or control of these weeds to stop their spread is crucial to maintain the condition of the forest habitat within the Reserve. These weeds include Silky Oak (*Grevillea robusta*), Red Cedar (*Toona ciliata*), Three-veined Cryptocarya (*Cryptocarya triplinervis*) and the WON African Box-thorn (*Lycium ferocissimum*).

Also present within the Reserve is Madeira Vine (*Anredera cordifolia*) (a WON), which extends over much of the north-western section of the Reserve and is now encroaching into the southern section of the Reserve. Castor Oil Plant (*Ricinus communis*), Black Bean (*Castanospermum australe*), Lilac (*Melia azedarach*), Coffee Tree (*Coffea Arabica*), Red Guava (*Psidium cattleianum*) and Karo (*Pittosporum crassifolium*) are also present.

Wild Tobacco (*Solanum mauritianum*), Castor Oil Plant (*Ricinus communis*) and Morning Glory (*Ipomoea indica*) occur mainly on the edge of the native forest remnants or where the canopy has been disturbed. Coral Berry (*Rivina humilis*) (Figure 12) is a serious ground cover weed and is widespread throughout the reserve. Coral Berry control is difficult, and there is a need to trial some different, low impact, control methods within the Reserve and follow up with revegetation with native species.

Three other species may be considered 'sleeper weeds' that could suddenly become a major issue - Brazilian Cherry (*Eugenia unifolia*), Camphor Laurel (*Cinnamomum camphora*) and Climbing Asparagus (*Asparagus plumosus*).

Mills (2017) recommends that a strategy be developed to eradicate or control the woody weeds within the Reserve (including those mentioned above) that are not common on Norfolk Island to ensure they do not spread within the Reserve and to other parts of the Island.



Figure 12: Coral Berry is widespread throughout the Reserve.

### 3.3 Pest Animals

The Polynesian Rat (*Rattus exulans*) and the Black Rat (*Rattus rattus*) occur within Hundred Acres Reserve. Both species of rat feed on the seeds and fruits of a variety of native and introduced plants, and predate on terrestrial fauna, including snails, land crabs, bird eggs and nestlings.

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 a devastating effect on native flora and fauna.

The Black Rat has had and continues to have a significant impact on Norfolk's biota, including contributing to the post-war extinction of bird species such as the Black and White Sparrow (*Lalage leucopygia leucopygia*), White-breasted White-eye (*Zosterops albogularis*) and Guava Bird (*Turdus poliocephalus poliocephalus*); and the extinction of both species of bat (Gould's Wattled Bat (*Chalinolobus gouldii*) and the Norfolk Island Free-tail Bat (*Tadarida norfolkensis*).

Feral Cats are established and breeding in the Reserve. Nesting seabirds are particularly vulnerable to predation by Cats, with adult and young Ghostbirds (*Ardenna pacifica*), White Terns (*Gygis alba royana*) and Black Noddies (*Anous minutus minutus*) frequently found killed by cats during the breeding season.

In 2017, a public survey on Norfolk Island was used to ask the 182 respondents who voluntarily responded, which of the following three options they supported with regard to the management of cats on Norfolk Island: (1) Do nothing; (2) Ban cats from Norfolk Island; or (3) Allow continued cat ownership under controlled conditions. 69% of respondents supported continued ownership under controlled conditions. The vast majority of respondents also made written comments and one of the

most common comments was that private people were actively trapping cats, and that feral cats were a big problem on Norfolk. This shows the high level of community support for Feral Cat control.

Feral chickens occur within Hundred Acres Reserve and can have a dramatic impact on the environment by scratching and displacing native seedlings and dispersing noxious weed seeds. Feral chickens also feed upon invertebrates such as endemic land snails and dung beetles, which play a vital role in the Reserve. Landowners from neighboring properties have complained about feral chickens entering their private land from Hundred Acres Reserve in the past. The culling of feral chickens in Norfolk Island Public Reserves does occur, although culling is currently prohibited between October and April and the feral chicken population increases during this time as a result.

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

Argentine Ants were once present within the Reserve, after they were found in mulched garden areas in 2010. This infestation has been baited a number of times since with apparent success as part of the Island-wide Argentine Ant control program.<sup>12</sup>, and Argentine Ants have not been observed within the Reserve in recent years.

A significant proportion of the Norfolk Island Pines in the Reserve are infested with wood borer<sup>13</sup> and are showing significant signs of stress, with thin foliage and patches of dying or dead bark. This extensive infestation was first noticed in 2011. It is speculated that the Pines, which are relatively even-aged and moderately to closely spaced, became significantly stressed by the drier conditions experienced during the 2000s<sup>14</sup> and especially the record dry summers of 2009/10 and 2010/11, making them vulnerable to wood borer infestation.

It is possible that a high proportion of the trees that are showing signs of heavy borer infestation will die over time, resulting in potentially significant (but not necessarily negative) structural changes to the Reserve's forest ecosystem. Other plant species in the Reserve do not appear to be similarly infested with wood borer.

### 3.4 Stock grazing

Cattle do not currently have access to Hundred Acres Reserve. Because the Reserve has long been free of cattle and other significant causes of habitat destruction and disturbance for decades, the habitat within the Reserve is generally good and provides important refuge for two of the most significant breeding colonies of White-capped Noddy (*Anous minutus minutus*) and Ghostbird (*Ardenna pacifica*) on the island, as well as a safe haven for the nesting Red-tailed Tropic Bird (*Phaethon rubricauda roseotincta*).

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<sup>12</sup> First two bait applications funded by NI Reserves and Forestry resources; subsequent applications and monitoring funded by Commonwealth Caring for Our Country grants.

<sup>13</sup> Believed to be the smaller of two species of Longicorn beetle that commonly occur on Norfolk Island: family Cerambycidae .Longicorn Beetles are also known as Long-horned Beetles. See also:

[http://www.pir.sa.gov.au/data/assets/pdf\\_file/0020/32924/Number\\_17\\_Longhorn\\_beetles\\_1.pdf](http://www.pir.sa.gov.au/data/assets/pdf_file/0020/32924/Number_17_Longhorn_beetles_1.pdf)

<sup>14</sup> See Part A Plan of Management, Section 5.8

### 3.5 Recreation

Recreational walking is the main public use of Hundred Acres Reserve. Locals and visitors can walk to Rocky Point using the eastern valley/north-south ridge loop track. The return walk to Rocky Point takes about an hour at a leisurely pace, and a number of tour operators have provided walking tours in the Reserve for visitors to Norfolk Island. Other common activities include picnicking, bird watching, fishing and photography.

Hundred Acres Reserve provides a unique experience, with its open landscape (Figure 13) and plantings of a wide variety of native species and introduced specimen plants in the northern, flatter section of the Reserve. It is an easy walk through native forest containing the breeding colony of Black Noddy (*Anous minutus minutus*) (in the warmer months) to the coast and the valley fern-forest to the east. Two informal viewing areas at Rocky Point provide views of the rugged coast, ocean, and Phillip Island.



*Figure 13: Open grassed areas of the Reserve are popular with visitors.*

Rocky Point is a popular rock fishing location. Access to the rocks is via an informal cable or rope down the cliff on the western side of the Point. Access to cliffs in this fashion is a cultural activity and is highly valued by local residents, although it can be hazardous. Private persons placed the cable (and any other aids) for descending and ascending the cliff. These climbing aids are not maintained or monitored by Norfolk Island Regional Council.

The current low-level public recreational use of the Reserve is compatible with the protection and conservation of Hundred Acres Reserve's unique flora and fauna communities.

### 3.6 Access and facilities

Only authorized management or emergency services vehicles are permitted in the Reserve. The eastern entrance to the Reserve enables access by emergency vehicles, and in dry weather authorised vehicles can access Rocky Point via the eastern valley track. All tracks on the steeper slopes are impassable to vehicles in wet weather.

The Reserve is well served by walking tracks (See Figure 2, Section 1.2), and walkers can enter the Reserve through a swing gate or stile at the two entrances on New Farm Road (Figure 14). A rustic timber post and rail fence forms the New Farm Road forms an attractive boundary of the Reserve (Figure 15).



Figure 14: Visitor access to the Reserve is via two access points from New Farm Road.



Figure 15: The timber post and rail boundary fence on new Farm Road.

There is currently no designated wheelchair access into the Reserve, however the Conservator of Public Reserves can arrange for wheelchair access to the Reserve via locked gates if requested by Reserve visitors.

Some sections of the walking track are boggy and slippery when wet. Steps have been constructed on steeper sections of the ridge track that are slippery and prone to erosion. Walking off the formed paths to avoid obstacles can result in trampling of endangered endemic land snails and destruction of their habitat. It can also cause damage to sensitive vegetation such as ferns, lead to the formation of informal paths, and generally degrade the forest habitat within the Reserve.

Ghostbird (*Ardenna pacifica*) burrows occur along some sections of walking track, and there is a risk of burrows being collapsed by walkers venturing off formed tracks, resulting in damage to eggs, and death or injury of juveniles and adults. A timber walkway was erected to protect numerous Ghostbird burrows along a 40 m section of the Rocky Point walking track in 2009.

In some locations tree roots and Ghostbird burrows make the track uneven. Persons walking in the Reserve should therefore exercise care and wear appropriate shoes. Some steeper sections of track are unsuited for visitors with impaired vision or mobility. Warning signs have been erected at both entrances to the Reserve (Figure 16).

A picnic table (Figure 17) and two bench viewing seats have been installed in the Reserve. These facilities are only used occasionally and users of the Reserve have not indicated any need or desire for any increased recreation/visitor facilities in the Reserve.

Some interpretive signage is provided at key locations within the Reserve (Figure 18).



Figure 16: A warning sign at one of the entrances to the Reserve



Figure 17: A picnic table is provided for visitors to the Reserve

### 3.7 Breeding Seabird Habitat

Prior to European settlement, the White-capped Noddy (*Anous minutus minutus*) and Ghostbird (*Ardenna pacifica*) would have bred extensively around the Island's coasts and in suitable sheltered forested valleys.

Breeding opportunities for these and other seabird species have been significantly reduced by habitat destruction and disturbance. The current distribution of remaining breeding colonies suggests that the White-capped Noddy and Ghostbird have been both adversely affected by disturbance.



Figure 18: Some interpretive signage is provided at key locations.

Nesting Black Noddies in Hundred Acres Reserve react to loud noises and other disturbances during their breeding season, and are particularly sensitive early in the season, from early August.

In addition to disturbance, breeding seabirds in the Reserve are adversely affected by predation by Rats and Cats.

### 3.8 Forestry

Hundred Acres Reserve was used for forestry purposes from the early 20th Century. Most of the Reserve was planted with Norfolk Island Pine (*Araucaria heterophylla*); however, some areas were planted with eucalypt species in the late 1950s - early 1960s. Eucalypts were harvested between 1997

and 1999 in the eastern valley and on the western slopes of the main north-south ridge, and the remaining small areas of eucalypts on the flatter northern section of the Reserve were removed in the early 2000s.

A native forest dominated by Norfolk Island Pine (*Araucaria heterophylla*) and White Oak (*Lagunaria patersonia*) is now established on most of the steeper slopes, and a diverse hardwood understorey is developing in more sheltered areas. A unique floristic association with a variety of native fern species has developed in the eastern valley. This forest now supports the largest White-capped Noddy (*Anous minutus minutus*) and Ghostbird (*Ardenna pacifica*) breeding colonies on the Island.

Forestry is no longer appropriate within Hundred Acres Reserve due to the presence of a large number of threatened flora and fauna species, including many listed under the EPBC Act, and the importance of the native vegetation within the Reserve as habitat for seabirds and threatened terrestrial birds such as the Norfolk Island Green Parrot (*Cyanoramphus novaezelandiae cookii*). Felling and removing trees on the steeper slopes of the Reserve would cause significant damage to important native forest habitat, and creating open areas in other areas of the forest through harvesting would promote weed invasion, which would lead to an overall significant decrease in habitat quality within the Reserve.

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## 4 Management Strategy

*Management Vision: To protect and enhance the condition of the existing Norfolk Island Pine and White Oak forest present in Hundred Acres Reserve in order to conserve the diversity of native flora and fauna habitat, while providing for the current level of low impact visitor use.*

### 4.1 Cultural Heritage

*Strategic Objective: To maintain and enhance the scenic quality of the Reserve, and to promote an enhanced understanding of the history of the Reserve and role in the development of Norfolk Island.*

All management strategies and actions will be consistent with retaining the quiet, secluded character of the Reserve.

The low-use park-like character of the northern section of the Reserve, with gardens of mixed native plantings, specimens of exotic forestry and horticulture species and the large (0.4ha) flat open grassed area, will be retained as a major cultural feature of the Reserve.

Existing exotic specimen trees planted in the Reserve as ornamental and forestry specimens and shrubs on the flatter, northern section of the Reserve, especially in the vicinity of the concrete tank stand, will be retained. Interpretation of the Reserve's close association with the development of forestry and agriculture on Norfolk Island will be focused in this area.

The WWII concrete tank stand will be inspected to assess whether it requires any restoration or maintenance, and the remains of WWII gun and observation pits and other historical remains will be retained. Interpretive signage should be considered for these historic sites and all sites will be appropriately documented.

#### 4.1.1 Management Actions: Cultural Heritage

- (a) The Primary landscape elements of the Reserve will be preserved (High Priority).
- (b) The WWII concrete tank stand will be inspected periodically to ensure it does not require restoration or maintenance (Low Priority).
- (c) Retain the remains of WWII gun and observation pits (High Priority).
- (d) Consider providing interpretive signage for key cultural heritage sites within the Reserve (Low Priority).
- (e) All cultural sites will be photographed and documented (High Priority).

### 4.2 Ecological Restoration

*Strategic Objective: To improve the condition and increase the extent of native vegetation within the Reserve to improve habitat for fauna and support the recovery of threatened species in the reserve.*

A strategy for the removal of the more "uncommon" competitive weed species from the Reserve will be developed. This will help to promote the natural regeneration of native plant species. Where necessary, appropriate native species will be planted to increase the density and diversity of the native forest. Coastal cliff vegetation, which provides important breeding habitat for seabirds, will be enhanced by the selective removal and ongoing control of weed species.

African Box-thorn (*Lycium ferocissimum*), in particular, is spreading further east along the foreshore. Control of the main infestation in the northwest and scattered plants along the south-western and

southern foreshores will be undertaken to halt its further spread in these areas. Madeira Vine (*Anredera cordifolia*) is also spreading rapidly and the control of this species will be a priority.

The grass under the more recently planted Norfolk Island Pine (*Araucaria heterophylla*) and White Oak (*Lagunaria Patersonia*) is currently slashed as part of the maintenance of the Reserve, and this is having an impact on the natural regeneration of native species in these areas. Slashing in any area other than the designated grassed areas used by Reserve visitors will cease. This will improve the chances of the natural regeneration of native species in these areas, resulting in a denser native understorey and assisting with the suppression of weeds such as Coral Berry through shading. Revegetation with appropriate native species will be undertaken within these areas if necessary.

There are several “light gaps” within the forest that harbour dense weeds, including Coral Berry. Weed control will be undertaken in these areas and revegetation with appropriate species will follow to create shade and suppress the re-growth of weeds.

Where possible, native seedlings used in rehabilitation will be propagated from plants growing in the Reserve, and native seed will be spread by hand to enhance the native vegetation of the cliffs.

Threatened species in the reserve such as the Critically Endangered Broad-leaved Meryta (*Meryta latifolia*) will be regularly monitored, and an ongoing Rat control program designed to reduce damage to the seeds and seedlings of this and other native plant species will be implemented.

There are areas within the Reserve that may be suitable for the planting of the Critically Endangered Norfolk Island Euphorbia (*Euphorbia norfolkiana*). This species will be reintroduced into suitable areas within the Reserve.

Wherever practical and appropriate aesthetically, woody weeds that can be expected to decompose and disintegrate within a couple of years will be left *in situ* to minimise disturbance. Woody weeds that are not expected to decompose within a couple of years (such as African Olive) will be removed where possible if they are visually prominent.

Community groups will be encouraged to assist with the management of Hundred Acres Reserve (in line with this Plan of Management), and research and monitoring projects that improve scientific knowledge of the natural environment or that may lead to improved management of the Reserve will be encouraged with permission from the Conservator of Public Reserves.

Parts of the Reserve may be suitable feeding and breeding habitat for the Norfolk Island Green Parrot (*Cyanoramphus novaezelandiae cookii*). The provision of artificial nest hollows will be investigated. Green Parrot nest hollows will not be placed in the Reserve without appropriate monitoring and pest control, and will be coordinated with advice from the Park Manager, Norfolk Island National Park and Botanic Gardens. A Crimson Rosella eradication program will be implemented if this work proceeds.

Reserve visitors can have an impact on flora and fauna habitat when they venture off walking tracks, and appropriate signage to instruct visitors to stay on walking tracks will be considered.

Forestry within the Reserve will cease to ensure the protection of important flora and fauna habitat.

#### **4.2.1 Management Actions: Ecological Restoration**

- (a) Develop and implement a strategy for the eradication or control of the more “uncommon” weed species and revegetation with appropriate native species within the Reserve. Leave woody weeds in place to decompose where possible to minimise disturbance (High Priority).
- (b) Undertake the control of Weeds of National Significance, African Box-thorn (*Lycium ferocissimum*) and Madeira Vine (*Anredera cordifolia*), to halt their spread of these weeds into other areas (High Priority).
- (c) Cease slashing in all “forested” areas of the Reserve to allow and promote the natural regeneration of native species, and undertake revegetation with appropriate native species where required (High Priority).
- (d) Undertake weed control in areas of the forest with an open canopy where dense weed infestations occur, and revegetate with appropriate native species (High Priority).
- (e) Investigate options for the supply of appropriate native plants and seed for revegetation within Norfolk Island Reserves (High Priority).
- (f) Monitor populations of native plant species within the Reserve, and investigate the possibility of propagating and replanting these in other suitable areas within the Reserve. (Ongoing/High Priority).
- (g) Carry out ongoing Rat control to reduce damage to the seeds and seedlings of native plants and to nesting seabird populations within the Reserve (Ongoing).
- (h) Reintroduce Norfolk Island Euphorbia (*Euphorbia norfolkiana*) in suitable areas within the Reserve (High Priority).
- (i) Seek external or other funding to undertake annual weed control and habitat restoration in key areas within the reserve (High Priority).
- (j) Encourage and support community participation in Reserve management, and encourage and support relevant scientific research and monitoring projects with the Reserve. (Ongoing).
- (k) Investigate the value of installing nest boxes for Norfolk Island Green Parrots and other hollow dependent native species within the Reserve with advice from the Park Manager, Norfolk Island National Park and Botanic Gardens, and undertake Crimson Rosella control if this work proceeds (High).
- (l) Cease forestry within the Reserve to ensure the protection of important flora and fauna habitat (High).
- (m) Consider the provision of signage instructing Reserve visitors to stay on walking tracks (High).

#### **4.3 Pest Animal Management**

*Strategic Objective: To reduce the negative impacts of pest animals within the reserve*

A seasonal rat-baiting program will be implemented within the Reserve to protect vulnerable flora species, breeding seabird colonies and other native birds that may occur in the reserve.

Live trapping will be used to control cats in the reserve, particularly prior to and during bird breeding seasons.

A feral chicken control program will be implemented to reduce the feral chicken population and protect invertebrates such as endemic land snails and dung beetles

Argentine Ants were once present within the Reserve, but treatment appears to have been successful and they have not been observed within the Reserve in recent years. There are current processes in place through the Norfolk Island Argentine Ant Eradication Strategy to stop the spread of Argentine

Ants around the Island, and appropriate precautions should be taken to ensure Argentine Ants do not re-establish within the Reserve.

#### **4.3.1 Management Actions: Pest Animal Management**

- (a) Establish a seasonal coordinated Rat control program with a target of reducing rat numbers in areas with vulnerable flora and fauna, and reducing predation pressure on birds (High Priority).
- (b) Carry out targeted Cat trapping and humane euthanasia, with a focus on reducing Cat numbers prior to and during the seabird breeding season (High priority).
- (c) Carry out feral chicken control within the Reserve and encourage neighboring landholders to control feral chickens on their properties (High Priority).
- (d) Ensure appropriate precautions are taken to ensure Argentine Ants do not re-establish within the Reserve (High Priority).

#### **4.4 Stock Management**

*Strategic Objective: To continue the current exclusion of stock from the Reserve*

Cattle have been excluded from Hundred Acres Reserve for a long period of time. Populations of native plants have increased in the reserve since the exclusion of Cattle grazing, which has led to an improvement in flora and fauna habitat within the Reserve. Cattle will continue to be excluded from the Reserve.

##### **4.4.1 Management Actions: Stock Management**

- (a) Cattle will continue to be excluded from Hundred Acres Reserve to protect native plant species (including a number threatened endemic species) and fauna habitat and reduce the potential for erosion (High Priority).

#### **4.5 Recreation Management**

*Strategic Objective: To facilitate and encourage sustainable recreation in Hundred Acres Reserve, and to manage impacts associated with public use of the Reserve.*

The current low level public recreational use of the Reserve will continue. Current pedestrian access points, walking tracks, signage and other facilities will be maintained to ensure the safety of Reserve Visitors. The Conservator of Public Reserves will ensure any maintenance and/or upgrades to current infrastructure will be carried out in a way that ensures the protection of important habitat.

Access to the rocks for rock fishing is aided by an informal cable or rope, placed by members of the community, down the cliff on the western side of the Point. Access to cliffs in this fashion is a cultural activity but may be hazardous. Norfolk Island Regional Council (NIRC) will not maintain these climbing aids, and their condition is not monitored. NIRC do not recommend using these facilities, and Reserve visitors use them at their own risk.

Walkers can cause damage to flora and fauna habitat, and signs educating Reserve visitors about the potential impact of venturing off designated walking tracks will be considered in sensitive areas.

##### **4.5.1 Management Actions: Recreation Management**

- (a) Continue to promote and allow the current low level recreational activities within Hundred Acres Reserve (High Priority).

- (b) The Conservator of Public Reserves will ensure important habitat is protected and other Reserve values are considered when planning or issuing a permit for any maintenance and/or upgrades to current infrastructure with the Reserve (Ongoing).
- (c) Norfolk Island Regional Council will not encourage the use of the informal climbing aids to gain access to areas for rock fishing, and visitors to the Reserve use these at their own risk (High Priority). Signage?
- (d) Consider the provision of signs educating Reserve visitors about the potential impact of venturing off designated walking tracks in dangerous and/or sensitive areas (High priority).

#### **4.6 Access and Facilities**

*Strategic Objective: To meet the requirements for access and infrastructure in Hundred Acres Reserve without compromising the natural and cultural values of the reserve.*

The picnic table and bench seats in the grassed area of the Reserve are generally adequate for present levels of recreational use, and these will be maintained to ensure they are safe and usable.

The number and location of facilities within the Reserve will be reviewed periodically by the Conservator of Public Reserves.

Rubbish bins are not provided in the Reserve and there is currently little rubbish left in the Reserve by visitors. It is not intended to provide rubbish bins in the Reserve and visitors will be expected to continue to take all rubbish out of the Reserve with them. The need to provide rubbish bins will be reviewed periodically by the Conservator of Public Reserves.

There are no public toilet facilities in the Reserve, and it is not currently intended to provide toilet facilities.

The current arrangement for vehicle access via locked gates for management vehicles and emergency services will be maintained, and maintenance to vehicle access tracks

Current walking tracks will be maintained to ensure the safety of Reserve visitors, and to limit the possibility of accidental damage to native vegetation and habitat (including Ghostbird burrows) within the Reserve, resulting from walkers straying from the semi-formal walking tracks.

The timber walkway that was erected in 2009 to protect Ghostbird burrows along Rocky Point walking track will be maintained to ensure it is safe.

Some signage within the Reserve is dated or in disrepair and should be repaired or replaced. There is also scope for more interpretive signage within the Reserve, especially covering flora and fauna, historical use of the Reserve during World War II and the role of the Reserve in the development of agriculture, horticulture and forestry on the Island. The provision of more signs should be considered.

##### **4.6.1 Management Actions: Access and Facilities**

- (a) Maintain existing appropriate access through the Reserve for emergency services and authorised maintenance vehicles, while considering the potential impact of maintenance and/or upgrades (Ongoing).
- (b) Maintain safe pedestrian access through the Reserve, while considering the potential impact of maintenance and/or upgrades (Ongoing).
- (c) Maintain the current visitor facilities within the Reserve (Ongoing)

- (d) Periodically review the number and location of visitor facilities (including rubbish bins and toilets) (Low Priority).
- (e) Upgrade or replace signage that is in disrepair and consider providing further interpretive signage. (Medium Priority).

#### **4.7 Planning for Efficient Reserve Management**

*Strategic Objective: To deliver the best possible outcomes by efficiently allocating management resources across the Norfolk Island Public Reserves*

The Norfolk Island Public Reserves network currently consists of 12 reserves<sup>15</sup>, each of which has a Plan of Management. Within each plan there are a many actions, and Council needs a method to determine which actions are funded first. These management actions have been prioritised as high, medium or low (or ongoing), which will help in determining which actions to fund first. However, there are many reserves and Council must determine which actions from which reserves are to be funded in each successive annual budget. To do this, the high, medium and low priority actions for one reserve need to then be compared against the high, medium and low value actions for all other reserves.

To enable management actions to be compared against one another across the entire reserve network, the reserves themselves need to be prioritised. All of the reserves are intrinsically valuable, for many different reasons including conservation, recreation and heritage values. Spatial prioritisation of land for conservation and land management is a well-established science that allows land managers to direct funding to where it is most needed (Moilanen *et. al.* 2009). It is recognised that this is a complex process, and one which is generally performed by computer modelling software. Therefore, a full prioritisation project is recommended. In the interim, a draft prioritisation of the reserves has been prepared during the management planning process, and is presented in Appendix 2.

It is recommended that all actions from all management plans be pooled, and sorted into high, medium, low or ongoing status. This list of actions then needs to be further filtered using the priority assigned to each reserve. High priority actions in high priority reserves would generally be considered for funding before low priority actions in lower priority reserves. The highest priority actions would then be considered for funding in the annual Council operational plan. Obviously, this is only a starting point as Council's annual budget will need to consider a broad range of other factors and other projects competing for funding.

##### **4.7.1 Management Actions: Planning for Efficient Reserve Management**

- (a) Determine the priority of each reserve in the Public Reserves network for budget and resource allocation purposes. Amongst other things, this prioritisation should consider the objects of the *Public Reserves Act 1997 (NI)*, the zoning and gazetted purpose of the reserve and on ground observations. Priorities will change over time, so this is a dynamic process. In the interim, draft priorities have been assigned to each reserve in Appendix 2 of this Plan of Management. (High priority)
- (b) Combine the management action priority (e.g. high, medium or low) with the reserve priority to determine which actions across the entire reserve network are funded in each successive Council annual Operational Plan. (High priority)
- (c) Track the progress of each of the actions in the annual Operational Plan as a measure of the success of the Plan of Management. (Medium priority)

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<sup>15</sup> Potentially subject to change, as per Appendix 3

## SUMMARY TABLE OF MANAGEMENT ACTIONS FOR HUNDRED ACRES RESERVE 2018 - 2028

*Management Vision: To protect and enhance the condition of the existing Norfolk Island Pine/White Oak forest present in Hundred Acres Reserve in order to conserve and increase the diversity of native flora and fauna habitat, while providing for the current level of visitor use.*

Theme	Strategic Objectives	Actions (How will we get there?)	Priority
4.1 Cultural Heritage	To maintain and enhance the scenic quality of the Reserve and promote an enhanced understanding of its history and role in the development of Norfolk Island.	4.1.1 (a) Manage the Reserve in a way that will ensure the preservation of the primary landscape elements.	High
		4.1.1 (b) Inspect the WWII concrete tank stand periodically to ensure it is appropriately preserved and is safe.	Medium
		4.1.1 (c) Retain the remains of WWII gun and observation pits.	High
		4.1.1 (d) Consider providing interpretive signage for key cultural heritage sites within the Reserve.	Low
		4.1.1 (e) All cultural sites will be photographed and documented.	High
4.2 Ecological Restoration	To improve the condition and increase the extent of native vegetation within the Reserve to improve habitat for fauna and support the recovery of threatened species in the reserve	4.2.1 (a) Develop and implement a strategy for the eradication or control of the more “uncommon” weed species and revegetation with appropriate native species within the Reserve. Leave woody weeds in place to decompose where possible to minimise disturbance	High
		4.2.1 (b) Undertake the control of Weeds of National Significance, African Box-thorn ( <i>Lycium ferocissimum</i> ) and Madeira Vine ( <i>Anredera cordifolia</i> ), to halt their spread of these weeds into other areas	High
		4.2.1 (c) Cease slashing in all “forested” areas of the Reserve to allow and promote the natural regeneration of native species, and undertake revegetation with appropriate native species where required	High
		4.2.1 (d) Undertake weed control in areas of the forest with an open canopy where dense weed infestations occur, and revegetate with appropriate native species	High
		4.2.1 (e) Investigate options for the supply of appropriate native plants and seed for revegetation within Norfolk Island Reserves	High
		4.2.1 (f) Monitor populations of native plant species within the Reserve, and investigate the possibility of propagating and replanting these in other suitable areas within the Reserve.	Ongoing/High

Theme	Strategic Objectives	Actions (How will we get there?)	Priority
		4.2.1 (g) Carry out ongoing rat control to reduce damage to the seeds and seedlings of native plants and to nesting seabird populations within the Reserve.	Ongoing/High
		4.2.1 (h) Reintroduce of Norfolk Island Euphorbia ( <i>Euphorbia norfolkiana</i> ) in suitable areas within the Reserve.	High
		4.2.1 (i) Seek external or other funding to undertake annual weed control and habitat restoration in key areas within the Reserve.	High
		4.2.1 (j) Encourage and support community participation in Reserve management, and encourage and support relevant research and monitoring projects with the Reserve.	Ongoing
		4.2.1 (k) Investigate the value of installing nest boxes for Norfolk Island Green Parrots and other hollow dependent native species within the Reserve with advice from the Park Manager, Norfolk Island National Park and Botanic Gardens, and undertake Crimson Rosella control if this work proceeds.	High
		4.2.1 (l) Cease forestry within the Reserve to ensure the protection of important flora and fauna habitat.	High
		4.2.1 (m) Consider the provision of signage instructing Reserve visitors to stay on walking tracks.	High
4.3 Pest Animal Management	To reduce the negative impacts of pest animals within the reserve	4.3.1 (a) Establish a seasonal coordinated rat control program with a target of reducing rat numbers in areas with Vulnerable flora and fauna, and reducing predation pressure on birds.	Ongoing/High
		4.3.1 (b) Carry out targeted cat trapping and humane euthanasia, with a focus on reducing cat numbers prior to the seabird breeding season.	Ongoing/High
		4.3.1 (c) Carry out feral chicken control within the Reserve and encourage neighboring landholders to control feral chickens on their properties.	High
		4.3.1 (d) Ensure appropriate precautions are taken to ensure Argentine Ants do not re-establish within the Reserve	High
4.4 Stock Management	To continue the current exclusion of stock from the Reserve	4.4.1 (a) Continue to exclude Cattle from Hundred Acres Reserve to protect native plant species (including a number threatened endemic species) and fauna habitat and reduce the potential for erosion (High Priority).	High

Theme	Strategic Objectives	Actions (How will we get there?)	Priority
4.5 Recreation Management	To facilitate and encourage sustainable recreation in Hundred Acres Reserve, and to manage impacts associated with public use of the Reserve.	4.5.1 (a) Continue to promote and allow the current low level recreational activities within Hundred Acres Reserve.	High
		4.4.1 (b) Ensure important habitat is protected and other Reserve values are considered when planning or issuing a permit for any maintenance and/or upgrades to current infrastructure.	Ongoing
		4.5.1 (c) Do not encourage the use of the informal climbing aids to gain access to areas for rock fishing, and consider signage alerting visitors that the climbing aids are to be used at their own risk.	High
		4.5.1 (d) Consider the provision of signs educating Reserve Visitors about the potential impact of venturing off designated walking tracks in dangerous and/or sensitive areas.	High
4.6 Access, and Facilities	To meet the requirements for access and infrastructure in Hundred Acres Reserve without compromising the natural and cultural values of the reserve.	4.6.1 (a) Maintain existing access through the Reserve for emergency services and authorised maintenance vehicles, while considering the potential impact of maintenance and/or upgrades.	Ongoing
		4.6.1 (b) Maintain safe pedestrian access through the Reserve, while considering the potential impact of maintenance and/or upgrades.	Ongoing
		4.6.1 (c) Maintain the current visitor facilities within the Reserve.	Ongoing
		4.6.1 (d) Periodically review the number and location of visitor facilities.	Low
		4.6.1 (e) Upgrade or replace signage that is in disrepair, and consider providing further interpretive signage.	Medium
4.7 Planning for Efficient Reserve Management	To deliver the best possible outcomes by efficiently allocating management resources across the Norfolk Island Public Reserves	4.7.1 (a) Determine the priority of each reserve in the Public Reserves network for budget and resource allocation purposes. Amongst other things, this prioritisation should consider the objects of the Public Reserves Act 1997 (NI), the zoning and gazetted purpose of the reserve and on ground observations. Priorities will change over time, so this is a dynamic process. In the interim, draft priorities have been assigned to each reserve in Appendix 2 of this Plan of Management.	High
		4.7.1 (b) Combine the management action priority (e.g. high, medium or low) with the reserve priority to determine which actions across the entire reserve network are funded in each successive Council annual Operational Plan.	High
		4.7.1 (c) Track the progress of each of the actions in the annual Operational Plan as a measure of the success of the Plan of Management.	Medium

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## Appendix 1: Controlled Activities

Some activities are only permitted in the public reserves by obtaining a permit as per Part V of the *Public Reserves Act 1997*. These activities are known as controlled activities, and the permit must be either:

- specified by a plan of management; or
- by notice published in the Gazette by the Conservator of Public Reserves; or
- by a permit granted to an individual by the Conservator of Public Reserves.

Should a proposed activity be inconsistent with a plan of management, a permit is required. All activities undertaken in a reserve must be consistent with the objects of the *Public Reserves Act 1997*, regardless of whether a permit is required or not. The objects of the *Public Reserves Act 1997* are 'to protect and conserve public reserves so as to –

- (a) promote the conservation of the natural environment and landscape beauty of Norfolk Island;
- (b) promote the conservation of the heritage of Norfolk Island; and
- (c) preserve the way of life and the quality of life of the people of Norfolk Island'

*Table 4. Controlled Activities specific to Hundred Acres Reserve*

The following controlled activities are published in this Plan of Management, as they are specific to Hundred Acres Reserve. Should activities inconsistent with those outlined in Table 1 be undertaken in Hundred Acres Reserve; (i) they must be consistent with the objects of the *Public Reserves Act 1997*; and (ii) they must be undertaken as per the conditions of a permit from the Conservator of Public Reserves.

Activity Type	Details of Controlled Activity and Permit Requirements for Ball Bay Reserve
Camping	Camping shall not be permitted in Hundred Acres Reserve.
Commercial Activities	Commercial activities shall not be permitted in the Reserve unless the Conservator of Public Reserves is satisfied that such activities are in the interests of the conservation and management of the Reserve, or essential to the interpretive and education aims of this plan.

Table 5. Controlled Activities in all Norfolk Island Public Reserves

The table below outlines controlled activities in all public reserves on Norfolk Island, outlining what activities do not require formal approval, and providing guidance where a permit is required. Those activities that might be relevant to Hundred Acres Reserve include: 1 (Hazardous Activities), 12 (Pine Seed Collection) and others, depending on the situation. Should activities inconsistent with those outlined in Table 2 be undertaken in Hundred Acres Reserve, (i) they must be consistent with the objects of the *Public Reserves Act 1997*; and (ii) they must be undertaken as per the conditions of a permit from the Conservator of Public Reserves.

Activity Type	Details of Controlled Activity and Permit Requirements for ALL Public reserves
1. Hazardous Activities	<p>No person shall undertake any activity within a Reserve that may reasonably be expected to expose them or any other person to injury or death. Any other activity that may reasonably be expected to pose some hazard or nuisance to any person or to nuisance to the Reserve or adjoining land or sea may not be undertaken in a Reserve without a permit.</p> <p>The Conservator of Public Reserves may only grant such a permit if he or she is satisfied that reasonable measures can and will be taken by the person proposing the activity to ensure that the hazard or nuisance is minimised and likely to be reduced to an acceptable level.</p>
2. Firearms, other Weapons, Traps and Snares	<p>No member of the public shall possess, carry or use within a Reserve any form of:</p> <ul style="list-style-type: none"> <li>• firearm, hunting bow, spear, slingshot, or any other weapon;</li> <li>• any type of trap, net, or snare, other than would reasonably be used and is intended to be used in rock fishing without a permit.</li> </ul> <p>The Conservator of Public Reserves may only grant such a permit if it is in the interests of the conservation and management of the Reserve to do so.</p>
3. Explosive Devices	<p>No person shall possess, carry or use within a Reserve any form of explosive device, including pyrotechnic devices such as fireworks of any kind, without a permit.</p> <p>The Conservator of Public Reserves may only grant such a permit if it is in the interests of the conservation and management of the Reserve to do so. A permit can only be granted if the proposed activity:</p> <ul style="list-style-type: none"> <li>• is an integral and important part of a community celebration that has been agreed by the Norfolk Island Regional Council;</li> <li>• is to be conducted by a properly licensed person; and</li> <li>• meets the safety standards for that activity that would have to be met in an Australian State or Territory.</li> </ul> <p>Any person proposing to possess, carry or use any explosive device within a Reserve when applying for a permit shall provide the Conservator of Public Reserves with written details and plans of the proposed activity, proof of licences, a copy of appropriate standards and any other relevant technical details.</p>

Activity Type	Details of Controlled Activity and Permit Requirements for ALL Public reserves
	A permit to conduct these activities shall not be granted unless the applicant holds a valid public risk liability insurance policy for at least \$20 million and meets the requirements in relation to certificates of currency and indemnity forms set out in this table at 20. Commercial Activities.
4. Artefacts	<p>A person shall not interfere with any artefact in a Reserve without a permit. An 'artefact' is any man-made object, thing or item and includes but is not restricted to any object, thing or item that in some way has been protected or that may be capable of being protected under any other legislation. 'Artefact' includes any man-made object, thing or item that can reasonably be construed to be or to have been the property of a person or persons unknown.</p> <p>The Conservator of Public Reserves may only grant such a permit if it is in the interests of the conservation and management of the Reserve to do so.</p>
5. Metal Detecting	<p>No person shall use a metal detecting device in any public Reserve without a permit.</p> <p>The Conservator of Public Reserves may only grant such a permit if it is in the interests of the conservation and management of the Reserve to do so.</p>
6. Native and Other Animals	<p>No member of the public shall:</p> <ul style="list-style-type: none"> <li>• have in their possession, interfere with, damage, injure or destroy an animal whether alive or dead in a Reserve;</li> <li>• feed any animal in a Reserve; or</li> <li>• take an animal into, leave an animal in or knowingly permit an animal to enter a Reserve without a permit.</li> </ul> <p>The Conservator of Public Reserves may only grant such a permit if it is in the interests of the conservation and management of the Reserve to do so, or essential to the interpretive and education aims of the plan of management.</p>
7. Protection of Individuals of All Species	<p>No member of the public shall:</p> <ul style="list-style-type: none"> <li>• take an individual of any species in a Reserve; or</li> <li>• remove an individual of any species from a Reserve without a permit.</li> </ul> <p>The Conservator of Public Reserves may only grant such a permit if it is in the interests of the conservation and management of the Reserve to do so, or essential to the interpretive and education aims of the plan of management.</p> <p>Despite anything in this paragraph, plants or parts of plants may be picked or removed in accordance with Sections 10 (Exotic Fruit), 11 (Traditional Craft Materials), 12 (Pine Seed Collection), and 13 (Firewood) of this table.</p>
8. Dogs	<p>Except as otherwise provided here, or provided in the <i>Dogs Registration Act 1936</i> and the <i>Dogs Registration Regulations 1994</i>, a person shall not take a dog into a Reserve unless that dog is under the control of and is in the company of that person. A dog that is accompanied by and is under the control of a person is permitted in:</p> <ul style="list-style-type: none"> <li>• those areas in public Reserves to which cattle normally have access for grazing;</li> </ul>

Activity Type	Details of Controlled Activity and Permit Requirements for ALL Public reserves
	<ul style="list-style-type: none"> <li>• all of Point Hunter, Kingston Common and Kingston Recreation Reserves except for those parts of those Reserves between the seaward side of Bay Street and high water mark and between the seaward side of the road around Emily Bay and high water mark; and</li> <li>• those parts of Government House Domain Reserve generally to the south of the wall on the south and south east of Government House grounds and driveway to which the public normally have access.</li> </ul> <p>A person shall not permit any dog over which they could reasonably be expected to exercise control to go onto a tee, green or bunker that is part of Government House Domain Reserve or Point Hunter Reserve that is maintained and used by the Norfolk Island Golf Club as part of the golf course. A person shall not permit any dog over which they could reasonably be expected to exercise control to enter the graveyard in Cemetery Reserve. A person shall not permit any dog over which they could reasonably be expected to exercise control to interfere with any native animal or the habitat of any native animal. A person who could reasonably be expected to be responsible for exercising control over a dog in a Reserve must carry means for removing and disposing of dog faeces. If a dog over which a person could reasonably be expected to be exercise control defecates in a Reserve that person must remove the faeces from the Reserve. A person shall not feed a dog in a Reserve.</p>
9. Plants	<p>No member of the public shall:</p> <ul style="list-style-type: none"> <li>• have in their possession, interfere with, damage, injure or destroy any plant whether alive or dead in a Reserve; or</li> <li>• take a plant into or leave a plant in a Reserve without a permit.</li> </ul> <p>Despite anything in this paragraph, plants or parts of plants may be picked or removed in accordance with Sections 10 (Exotic Fruit), 11 (Traditional Craft Materials), 12 (Pine Seed Collection), and 13 (Firewood) of this table.</p>
10. Exotic Fruit	Hand picking of fruits from exotic plants, such as peach, guava and lemon, for personal consumption is permitted in all public Reserves.
11. Traditional Craft Materials	Picking and removing by hand of foliage of <i>Typha orientalis</i> (Flags, Drain Flax, Bulrush) within Headstone Reserve, Kingston Recreation Reserve, Kingston Common Reserve and Bumbora Reserve for making traditional handicrafts is permitted. Picking and removing by hand of foliage of <i>Cyperus lucidus</i> (Moo-oo) and <i>Phormium tenax</i> (Flax) within all public Reserves for making traditional handicrafts is permitted. 'Traditional handicrafts' does not include items made for sale. Persons must ensure that they do not cause damage to any other plants when picking and removing the foliage of <i>Typha orientalis</i> (Flags, Drain Flags, Bulrush), <i>Cyperus lucidus</i> (Moo-oo) and <i>Phormium tenax</i> (Flax).
12. Pine Seed Collection	<p>Pine seed collection is not permitted in the Reserves without a permit</p> <p>The Conservator of Public Reserves may grant a permit for the collection of pine seed or cones from:</p> <ul style="list-style-type: none"> <li>• unfenced areas in public Reserves to which cattle normally have access; and</li> <li>• picnic areas in public Reserves;</li> </ul> <p>only if it is in the interests of the conservation and management of a public Reserve to do so.</p>
13. Firewood Collection	Firewood collection is not permitted in the Reserves without a permit.

Activity Type	Details of Controlled Activity and Permit Requirements for ALL Public reserves
	The Conservator of Public Reserves may permit the collection of firewood only if it is in the interests of the conservation and management of a public Reserve to do so.
14. Monuments and Memorials	<p>A person shall not erect or place a monument, memorial or commemorative marker of any kind in a public Reserve without approval from the Conservator of Public Reserves.</p> <p>The Conservator of Public Reserves may grant approval for a person to erect or place a monument, memorial or commemorative marker only if the proposed monument, memorial or commemorative marker:</p> <ul style="list-style-type: none"> <li>• is of a style and structure appropriate to the local setting in the Reserve;</li> <li>• is a reminder of a person who, or a group or organisation which, made a major contribution to conserving the area or its biodiversity;</li> <li>• reflects cultural associations with the area by individuals or groups; and</li> <li>• marks a significant event in the history of the Reserve.</li> </ul> <p>A proposal to erect or place a monument, memorial or commemorative marker in memory of a deceased person may only be approved if the deceased had a strong, long-standing involvement with conserving the area or its biodiversity. In considering a proposal to erect or place a monument, memorial or commemorative marker, the Conservator of Public Reserves shall also have regard to:</p> <ul style="list-style-type: none"> <li>• potential impacts on the amenity of the Reserve including but not limited to visual obtrusiveness taking into account materials, size, design and content; and</li> <li>• satisfactory maintenance arrangements or commitments, including costs, by the proponent.</li> </ul> <p>The Conservator of Public Reserves may only grant such a permit if it is in the interests of the conservation and management of the Reserve to do so.</p>
15. Research	<p>A person shall not undertake any research for an archaeological, scientific or any other purpose or take, measure or in any other way mark or tag any samples of air, water, soil, rock or take, measure or in any other way mark or tag any biological item, organism or material within a Reserve without a permit.</p> <p>The Conservator of Public Reserves may only grant such a permit if it is in the interests of the conservation and management of the Reserve to do so, or essential to the interpretive and education aims of the plan of management. Unless a formal agreement has been reached that ensures that the Norfolk Island community will share appropriately in any profits or other benefits from the proposed access to biological resources, permits granted for scientific research purposes will not convey to the permit holder or any other person, institution or corporation any rights whatsoever to any benefits that may flow from intellectual property obtained by the permit holder as a result of the permit holder's activities. In such cases, every permit granted for scientific research purposes shall include the following condition:</p> <p><i>This permit is issued for scientific research and educational purposes only and does not convey to the permit holder or any other person, institution or corporation any rights whatsoever to any benefits that may flow from intellectual property obtained by the permit holder as a result of the permit holder's activities pursuant to this permit, such intellectual property and benefits remaining vested in the Norfolk Island Regional Council and or the Commonwealth of Australia as the case may be.</i></p>

Activity Type	Details of Controlled Activity and Permit Requirements for ALL Public reserves
16. Horse-riding	Horses may be ridden in those areas in public Reserves to which cattle normally have access for grazing.
17. Motor Vehicles	<p>A person shall not use or leave a motor vehicle in a Reserve except in or on an area approved for the purpose. Motorised wheelchairs or mobility aids may be used to convey disabled persons in public Reserves. Motor vehicles required for emergency services response purposes, or for conservation and management will be permitted in a Reserve. Conservator of Public Reserves must be informed by the responding emergency service coordinator as soon as practicable of any entry of an emergency service response vehicle to a Reserve.</p> <p>The Conservator of Public Reserves may permit commercial plant and equipment in the Reserve only if it is in the interests of the conservation and management of the Reserve.</p>
18. Lighting Fires	<p>As per the <i>Public Reserves Act 1997</i>, a person shall not light, use or maintain a fire in a Reserve except in –</p> <ul style="list-style-type: none"> <li>(a) a fireplace approved for the purpose; or</li> <li>(b) a portable barbeque, or portable stove in which heat is provided by the burning of liquefied petroleum gas</li> </ul> <p>The Conservator of Public Reserves may approve the lighting of a fire or fires in a Reserve if it is in the interests of the conservation and management of the Reserve to do so.</p>
19. Non-commercial Sporting and Other Community Events	<p>Unless otherwise specifically approved in a plan of management, non-commercial sporting and other community events shall not occur in a Reserve without a permit.</p> <p>A permit shall not be granted for any non-commercial sporting or other community events unless the Conservator of Public Reserves is satisfied that such event will not adversely affect the amenity of the Reserve for other users and will not damage the Reserve.</p>
20. Commercial Activities	<p>As per the <i>Public Reserves Act 1997</i>, a person shall not undertake a commercial activity in a Reserve except in accordance with an approval for the activity. A permit to conduct a commercial activity in a Reserve shall not be granted unless the applicant provides a certificate of currency showing that he or she holds a valid public risk liability insurance policy for at least \$20 million. The certificate shall have endorsed upon it the Norfolk Island Regional Council's interest in granting the permit and shall specifically refer to the activities intended to be conducted pursuant to the permit. It will be presumed that in issuing the certificate of currency the insurer has been advised of the activities to be conducted and that those activities are not the subject of any exclusion under the policy held. The permit to conduct these activities will cease to be valid immediately if the permit holder's public risk liability insurance lapses for any reason during the period for which the permit has been issued or if a certificate of currency appears to be defective in any manner.</p> <p>A permit shall not be granted for any commercial activity unless the Conservator of Public Reserves is satisfied that such activity will not adversely affect the amenity of the Reserve for other users and will not damage the Reserve. Filming and photography of any kind other than for private purposes and the use of any part of a public Reserve for promotions of any kind are considered to be commercial activities. Wedding ceremonies are detailed in part 21 of</p>

Activity Type	Details of Controlled Activity and Permit Requirements for ALL Public reserves
	<p>this table. A permit shall not be granted for commercial activities, other than bus tours, off-road vehicle tours, walking tours, horse rides or picnics in a Reserve unless the Conservator of Public Reserves is satisfied that such activities are in the interests of the conservation and management of the Reserve, or are essential to the interpretive and education aims outlined in a plan of management. Commercial tour operators shall in all cases:</p> <ul style="list-style-type: none"> <li>• provide sufficient cooking equipment, tables and seating to cater for all of the persons on their tour; and</li> <li>• remove all rubbish and other wastes, including used cooking oil, generated by their activities.</li> </ul>
21. Weddings	<p>Weddings are not permitted in Cemetery Reserve, Government House Domain Reserve and War Memorial Reserve without a permit.</p> <p>A wedding ceremony may be conducted, including by a wedding celebrant in the course of a business, trade, profession or calling, without a permit in a public Reserve other than Cemetery Reserve, Government House Domain Reserve and War Memorial Reserve, provided</p> <ul style="list-style-type: none"> <li>• confetti or rice is not thrown;</li> <li>• hire equipment of any description is not used;</li> <li>• wedding parties use their own catering supplies: no commercial catering;</li> <li>• catering supplies are limited finger food and to non-alcoholic drinks;</li> <li>• no gazebos, marquees or other structures are erected;</li> <li>• there are no 'lanterns' and/or candles (or similar paraphernalia) with naked flames and no lighting of fires outside of a designated fireplace, or during a fire danger period declared under s21 of the Fire Control Act 2000;</li> <li>• no balloons or other non-biodegradable materials or paraphernalia are released into or left in the environment;</li> <li>• generators, electrical lighting and public broadcast equipment is not used;</li> <li>• the site and any facilities used are left clean and rubbish is removed prior to leaving the site;</li> <li>• the event does not conflict with the use or enjoyment of the Reserve by others; and</li> <li>• if the ceremony is conducted by a wedding celebrant in the course of a business, trade, profession or calling, that celebrant holds a valid public risk liability insurance policy in accordance with section 20 of this table</li> </ul>
22. Camping	<p>As per the <i>Public Reserves Act 1997</i>, a person shall not camp overnight in a Reserve except in an area approved for the purpose. Camping will not be permitted in any Reserve except Government House Domain Reserve other than on or in the immediate vicinity of the Polynesian settlement site and Point Hunter Reserve in the pines between Emily Bay and the golf course.</p> <p>Camping shall be permitted in Government House Domain Reserve and Point Hunter Reserve at times between 1 December and 1 March as specified in the Gazette. Camping in Government House Domain Reserve and Point Hunter Reserve at other times may be permitted only if the Conservator of Public Reserves is satisfied that it is in the interests of the conservation and management of the Reserve, or essential to the interpretive and education aims of the plan of management to do so.</p>
23. Structures	A person shall not erect, place or leave a structure in a Reserve except in accordance with an approval.

Activity Type	Details of Controlled Activity and Permit Requirements for ALL Public reserves
	The Conservator of Public Reserves may only grant such a permit if it is in the interests of the conservation and management of the Reserve to do so.
24. Chemicals	<p>No chemical pesticide, herbicide or toxic or noxious substance shall be used, left or deposited in a Reserve without a permit from the Conservator of Public Reserves.</p> <p>The Conservator of Public Reserves may only grant such a permit if it is in the interests of the conservation and management of the Reserve to do so.</p>
25. Quarrying and Mining	<p>Quarrying and or mining in any form, other than for sand, shall not be permitted in any Reserve.</p> <p>Sand mining in Cemetery Reserve will be permitted by the Conservator of Public Reserves provided the sand is for an essential building or construction purpose, specifically;</p> <ul style="list-style-type: none"> <li>• plastering;</li> <li>• block and brick laying;</li> <li>• installation of water storage tanks; and</li> <li>• tiling for bathrooms, toilets and kitchens;</li> </ul> <p>Each removal of sand must be from within an area specified by the Conservator of Public Reserves, and in accordance with any conditions that the Conservator of Public Reserves may set from time to time; and an appropriate fee must be paid.</p> <p>In granting each permit for the removal of sand, the Conservator of Public Reserves shall have regard to archaeological advice, the advice of the KAVHA Site Manager, the KAVHA Conservation Plan of management and, in the case of requests for significant amounts of sand, any recommendation of the Norfolk Island Regional Council. A permit for the removal of sand for other than an essential building or construction purpose shall only be granted if it is in the overriding public interest to do so. Sand may not be removed elsewhere from within Cemetery Reserve or from within any other public Reserve.</p>
26. Spoil Stockpiles	<p>The dumping and or stockpiling of soil, spoil or fill shall not be permitted in a Reserve unless that stockpile is in accordance with a plan of management, or in the opinion of the Conservator of Public Reserves, is essential to undertaking or completing works in a public Reserve to:</p> <ul style="list-style-type: none"> <li>• ensure public safety; and or</li> <li>• conserve the environment.</li> </ul>

**Definitions for Controlled Activities**

‘Animal’ means:

- (a) any invertebrate or vertebrate individual, organism or biological specimen alive or dead that is not a member of the plant kingdom or fungi kingdom, other than a domestic female bovine of the genus *Bos* to which a pasturage right<sup>16</sup> applies or its dependent calf up to 6 months old; or a registered<sup>17</sup> domestic dog of the genus *Canis*; or
- (b) any part of such an individual, organism or biological specimen; or
- (c) embryos, eggs or any other part of the reproductive cycle of such an individual, organism or biological specimen.

**'Commercial activity'** has the same meaning as 'commercial activity' in section 46 of the Public Reserves Act 1997, which states:

*'commercial activity' means –*

- (a) supplying, or offering to supply, goods or services; or*
- (b) producing goods;*

*in the course of a business, trade, profession or calling.*

**'Interfere'** has the same meaning as 'interfere' in section 42 of the *Public Reserves Act 1997*, which states 'interfere' includes remove, move, damage, deface, obscure and tamper.

**'Nuisance'** includes noise, or environmental harm to the Reserve or potentially to adjoining land or sea.

**'Plant'** means a member of a 'species' as defined here of the plant kingdom or the fungi kingdom.

**'Species'** means a group of biological entities that:

- (a) interbreed to produce fertile offspring; or
- (b) possess common characteristics derived from a common gene pool; and includes:
- (c) a sub-species.

**'Take'** means take, catch, capture or keep and includes, in relation to a live individual of any species, kill or injure (whether or not for the purpose of taking)

### ***Permit Application and Standard Indemnity***

A person seeking to undertake a controlled activity in a public reserve is required to use the permit application forms available from the Norfolk Island Regional Council. In signing the application form, the applicant is undertaking to indemnify the Commonwealth and the Norfolk Island Regional Council in the terms of the indemnity on the form. Every permit granted for a controlled activity shall include the following condition:

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<sup>16</sup> In accordance with the *Pasturage and Enclosure Act 1949*.

<sup>17</sup> In accordance with the *Dogs Registration Act 1936*.

'The permit holder, in accordance with the indemnity provided on the application for the permit, fully and irrevocably indemnifies and saves harmless the Conservator of Public Reserves, all rangers, the Norfolk Island Regional Council together with all employees servants and agents thereof, the Administrator of Norfolk Island, the Crown and the Commonwealth of Australia jointly and severally from any and all liability and claims whatsoever arising in any way out of or in connection with or as a result of any activities carried out or conducted or proposed to be carried out or conducted under the permit or the involvement of any person firm or corporation in any way in regard to any activity carried out or to be carried out under the permit; and the footnote:

*The Norfolk Island Regional Council expressly denies any liability for any injury occurring to any person who may conduct any activity pursuant to this permit.'*

The holder of a permit who has contravened a condition to which that permit is subject but who seeks to renew that permit or have a new permit granted will be required by the Conservator of Public Reserves to show cause why such permit should be renewed or granted.

In so showing cause, the permit holder will have to:

- provide evidence that fully explains the circumstances surrounding the contravention of the permit condition; and
- demonstrate the measures that the permit holder will take to ensure that the conditions to which a future permit would be subject will be complied with.

The Conservator of Public Reserves may, by notice in the Gazette, revoke or amend in any manner the approval or other regulation of any activity approved or otherwise controlled in a Plan of Management.

## Appendix 2: Preliminary Reserve Prioritisation for Resource Allocation

Table 4 presents the draft prioritisation of the reserves. In prioritising the reserves against one another, the draft prioritisation considered the criteria in Table 3. Note that this is a preliminary prioritisation only one of the high priority management actions from this plan is to formally prioritise the reserves using solid scientific methodology.

Table 6. Criteria for determining the priority of reserves for budget allocation

Criteria	Notes on Assessing the Reserves using Criteria
The objects of the <i>Public Reserves Act 1997 (NI)</i>	The objects of the Public Reserves Act 1997 (NI) are 'to protect and conserve public reserves so as to- a. promote the conservation of the natural environment and landscape beauty of Norfolk Island; b. promote the conservation of the heritage of Norfolk Island; and c. preserve the way of life and the quality of life of the people of Norfolk Island.' The reserves have been compared against the objects of the Act. Those reserves with greater environmental or heritage values have been assigned a higher priority than those with lower values.
On ground observations and survey results	Field values may include the presence of threatened species, amount of remnant vegetation cover, level of weed invasion, habitat for native fauna, presence of pest animals, etc. The reserve may also have heritage values such as evidence of Polynesian use, Pitcairn heritage use or European convict heritage.
Land zoning and overlay maps applicable under the NI Plan 2002; Reserve purpose when originally gazetted	Is the land in the open space, conservation or another zone? The more protected the land zoning, the higher the conservation potential of the land. Consideration should also be given to the Norfolk Island Strategic Plan Map (e.g. is the land in the High Rural/Conservation Value area?) and the Norfolk Island Heritage Overlay Map. The purpose of the reserve when it was first gazetted is also important. For example, was the reserve gazette for the conservation of flora and fauna, forestry, watering stock, common, or some other purpose?
Land use in adjoining allotments	Does the land adjoin areas with high conservation values, such as the National Park, or is it surrounded by small, heavily modified allotments? This will increase or reduce the conservation value of the land respectively.

Table 7. Draft prioritisation of Norfolk Island Public Reserves for allocation of management resources

<b>Reserve Name</b>	<b>Priority</b> (1 =Low to 10 = High priority)
Selwyn Reserve	9
Hundred Acres Reserve	9
Bumbora Reserve	8
Nepean Island Reserve	8
Two Chimneys Reserve	7.5
Anson Bay Reserve	6
Ball Bay Reserve	6
Cascade Reserve	5
Headstone Reserve	5
Point Ross Reserve	4
Midleridge Reserve	3
Stock Reserve	1

### Appendix 3: Transitional Reserve Management Arrangements Following Changes to the *Norfolk Island Act 1979* in 2016

The first plans of management were prepared for most of the Reserves in 2003. At this time there were 18 reserves managed by the former Administration of Norfolk Island. Each reserve had a plan of management including the 6 reserves located in KAVHA (i.e. Cemetery Reserve, Government House Domain Reserve, Kingston Common Reserve, Kingston Recreation Reserve, Point Hunter Reserve and War Memorial Reserve). There was also a separate overarching KAVHA Conservation Plan of management, which took precedence over the Public Reserves Plan of managements in the case of any inconsistencies.

Between 1978 and 2016, Norfolk Island had a form of internal self-government under the *Norfolk Island Act 1979 (Cth)*. The Norfolk Island Legislative Assembly was responsible for governing the island and managing the reserves. In 2015 – 2016 however, changes were made under the Act to remove internal self-government and it was determined that many services would be delivered by a newly elected Regional Council, including management of the Public Reserves. There were also changes to the ownership of a number of the public reserves as shown in Table 5.

Table 8. Changes to ownership and management of Norfolk Island Public Reserves

1. Reserves transferred from the Commonwealth to the Norfolk Island Regional Council <sup>18</sup>	2. Interests yet to be transferred from the Commonwealth of Australia to the Norfolk Island Regional Council	3. Interests to be retained by the Commonwealth of Australia <sup>19</sup>
<ul style="list-style-type: none"> <li>• Anson Bay Reserve</li> <li>• Ball Bay Reserve</li> <li>• Bumbora Reserve</li> <li>• The portion of Cascade Reserve previously known as the Quarantine Reserve</li> <li>• Headstone Reserve</li> <li>• Hundred Acres Reserve</li> <li>• Middleridge Reserve</li> <li>• Point Ross Reserve</li> <li>• Stock Reserve</li> <li>• Two Chimneys Reserve</li> </ul>	<ul style="list-style-type: none"> <li>• Nepean Island</li> <li>• Selwyn Reserve</li> <li>• The remainder of Cascade Reserve not previously known as the Quarantine Reserve (includes Philipsburg Cemetery)</li> </ul>	<ul style="list-style-type: none"> <li>• All KAVHA reserves including: Cemetery Reserve</li> <li>• Government House Domain Reserve</li> <li>• Kingston Common Reserve</li> <li>• Kingston Recreation Reserve</li> <li>• Point Hunter Reserve</li> <li>• War Memorial Reserve</li> </ul>

During 2017-2018, updated Public Reserve Plan of managements were prepared for the 10 reserves in Column 1 (includes part of Cascade Reserve) plus the reserves in Column 2 (includes the remainder of Cascade Reserve). The KAVHA reserves in Column 3 will be managed under a new arrangement with the KAVHA Heritage Plan of management 2016 still guiding the overall heritage management of the area. Instead of having individual public reserve plan of managements for the KAVHA reserves, it is anticipated that a Memorandum of understanding or a similar will be used to specify the management of the significant natural values of the reserves. Day to day operational work including mowing, issuing of camping permits and dog restriction enforcement will also need to be captured in this arrangement, as it is assumed that such works will be the responsibility of Council.

<sup>18</sup> As per the *Norfolk Island Land Transfer Ordinance 2016 (Cth)*

<sup>19</sup> As per advice from the Commonwealth Department of Infrastructure and Regional Development, 2016