PLAN OF MANAGEMENT
PART B
SECTION SEVENTEEN

POINT HUNTER RESERVE

2003

AS APPROVED BY THE NORFOLK ISLAND LEGISLATIVE ASSEMBLY ON 21 MAY 2003

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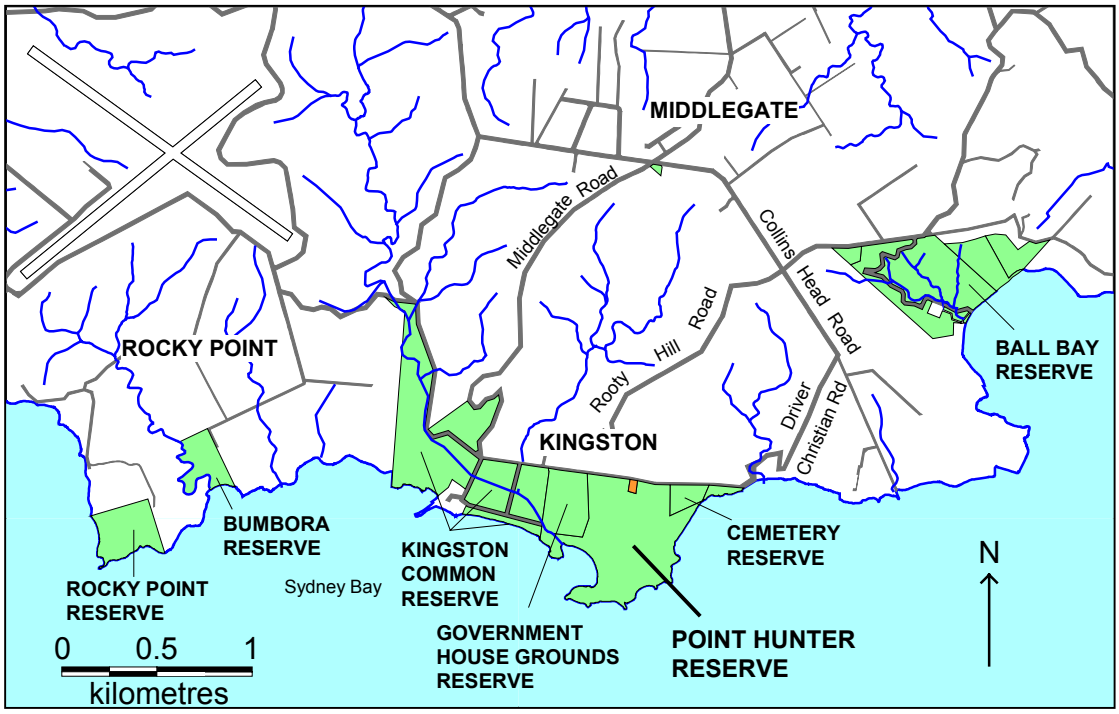
17.1 Introduction

This Part B Plan of Management applies to Point Hunter Reserve.

Point Hunter Reserve is located within the Kingston and Arthur's Vale Historic Area on the southern coast of Norfolk Island and has an area of 30.91 hectares (Map 1). Prior to European settlement, there was a Polynesian village on the dunes behind Emily Bay. This area was a centre of activity in both the First and Second convict settlements, with industrial activities reflected in the ruins of a windmill, salt house, and lime kilns. The hard labour of convicts working the stone quarries at Point Hunter and Cemetery Beach is a world away from the activities dominating the reserve today. Emily Bay is the Island's most popular beach and almost half of the reserve is used as the Island's golf course.



Map 1: Location of Point Hunter Reserve

Point Hunter Reserve was proclaimed a public reserve under the *Commons and Public Reserves Act 1936* for recreation purposes on 17 October 1940.

17.1.1 Previous Plans

This is the first plan of management for Point Hunter Reserve.

17.1.2 Boundaries

The reserve's coastal boundaries extend to the high water mark.

The boundary between Point Hunter and Government House Grounds reserves will be adjusted to incorporate the southern section of Government House Grounds Reserve that is outside the grounds of Government House itself into Point Hunter Reserve. This land is used for the golf course, picnicking, and camping.

17.1.3 Register of the National Estate

Point Hunter Reserve was listed on the Register of the National Estate on 21 October 1980.

17.1.4 Kingston and Arthur's Vale Historic Area (KAVHA)

The Kingston and Arthur's Vale Historic Area was established in 1980 when it was entered in the Register of the National Estate. The KAVHA was officially established by agreement between the governments of Norfolk Island and Commonwealth of Australia in 1989[1]. The agreement established a board to coordinate funding and recommend management policies to ensure the conservation and restoration of the heritage fabric in the Kingston area. The KAVHA Board has played an invaluable role in conserving Kingston as a living monument.

The Kingston and Arthur's Vale Historic Area Conservation Management Plan (CMP), agreed to by the KAVHA Board and the Legislative Assembly of Norfolk Island in 1988, is the guiding document for heritage preservation, conservation, and management of Point Hunter Reserve.

Adoption of any part of the CMP into these Plans of Management shall be in accordance with section 16 of the *Public Reserves Act 1997*, but shall in each case be subject to public consultation in accordance with section 11 of the Act.

The CMP (1988) contains descriptions of the heritage fabric in KAVHA. The *Landscape Management and Conservation Plan*[2] provides detailed descriptions of the landscape and scenery of the reserve and provides some guidance on the conservation and management of Point Hunter Reserve.

Where there is any inconsistency between the intent of this plan of management and the intent of the approved KHAVA CMP, the intent of the approved KAVHA CMP shall prevail.

17.1.5 Burra Charter

Point Hunter Reserve has considerable cultural significance. The Australia ICOMOS Burra Charter 1999[3], is a guiding document for conserving and managing places of cultural significance. Where applicable, the principles of the Burra Charter will guide management philosophies for Point Hunter Reserve.

17.1.6 IUCN Category

Point Hunter Reserve does not fit any IUCN Category[4].

17.2 Conservation Significance[5]

Point Hunter Reserve contains many of Norfolk Island's important historic sites. The remains of a Polynesian settlement have been found under the Norfolk Island Pine plantation towards the western end of Emily Bay and the first European burial ground was located nearby. The Watermill Creek drainage channel was constructed in 1789 and the ruins of the Windmill, Salt House, and Lime Kilns are important relics of the Second Settlement. The foreshore at Point Hunter and Cemetery Beach contain evidence of Second Settlement stone quarrying. Much of a high sand berm constructed across the reserve to Cemetery Beach during the Second Settlement to prevent drifting sand dunes from encroaching onto agricultural lands also remains.

[1] Memorandum of Understanding between Norfolk Island and Commonwealth governments: 1989, revised 1994.
[2] Tropman and Tropman, *Landscape Management and Conservation Plan*, 1994.
[3] The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance 1999.
[4] International Union for the Conservation of Nature.
[5] A Statement of Significance may be found in the CMP and the RNE Place Report.

Some of the mature Norfolk Island Pines near Emily Bay pre-date European settlement. One of these pines, the 'Lone Pine' at Point Hunter is shown as a large tree in 1790's sketches of the area. Important palaeontological deposits underlie the modern dunes from Emily Bay to Cemetery Beach.

The reserve has been important in the life of the Third Settlement, including the building and launching of the trading vessel 'Resolution' at Emily Bay in the 1920's. Today the reserve is one of the Island's most valued public recreation areas, particularly for walking, golfing, beach recreation and access to other seaside activities such as swimming, fishing and boating.

17.3 Description

17.3.1 Geology and Landform

During the last ice age, sea level was as much as 109m (almost 360ft) lower than present. As sea levels rose about 15,000 years ago, advancing coastal sand dunes prevented the Watermill and Town Creek catchment from draining directly into the sea. An extensive coastal swamp or swamps formed behind those advancing dunes, as evidenced by the peaty layer containing large Norfolk Island Pine logs, branches, and other plant material beneath both Cemetery Beach and Slaughter Bay beach[6]. By about 6,000 years ago, some of that coastal swamp had been overrun by the advancing sand dunes that now form the reefs and rocky coastal aeolinitic outcrops at Kingston. The elevated rocky outcrops of Point Hunter, 'Chinamans' around to Cemetery Beach, the reefs, Salt House point, Lime Kiln, and Slaughter Bay foreshore, are all remnant aeolianitic calcarenite sand dunes.

Subsequently, much of the area between Emily Bay and Cemetery Beach was covered by sand dunes. The prehistoric dunes include modern pumice-rich layers that are rich in vertebrate (mainly seabird) and invertebrate fossil remains[7]. During the past two hundred years, vegetation clearing and limestone quarrying at Cemetery Beach and Emily Bay destabilised the dunes, which again became mobile.

Prior to European settlement, Town Creek[8] originally flowed directly into the swamp at the foot of the coastal hills, where it joined the waters from Watermill Creek. The swamp had no direct outlet to the sea and was contained by a calcarenite ridge that ran from the knoll on which Government House is sited, through Chimney Hill, and along the Slaughter Bay foreshore.

When Lieutenant Phillip Gidley King arrived in 1788, the swamp was heavily vegetated. It is likely that during periods of high rainfall, the area now known as 'Kingston Common' would have become a small lake. In 1789, King ordered that a drain be constructed to enable Watermill and Town Creeks to flow into the western end of Emily Bay, making much of the Common arable land[9].

Point Hunter Reserve is gently undulating, sloping from an elevation of about 10m above sea level at Quality Row to the shore at Cemetery and Emily bays. A low calcarenite ridge that rises to an elevation of about 7m dominates the southern shore of the reserve between Cemetery Beach and Emily Bay. The golf course rises up the northern slope of this ridge, but on the southern side, the sea

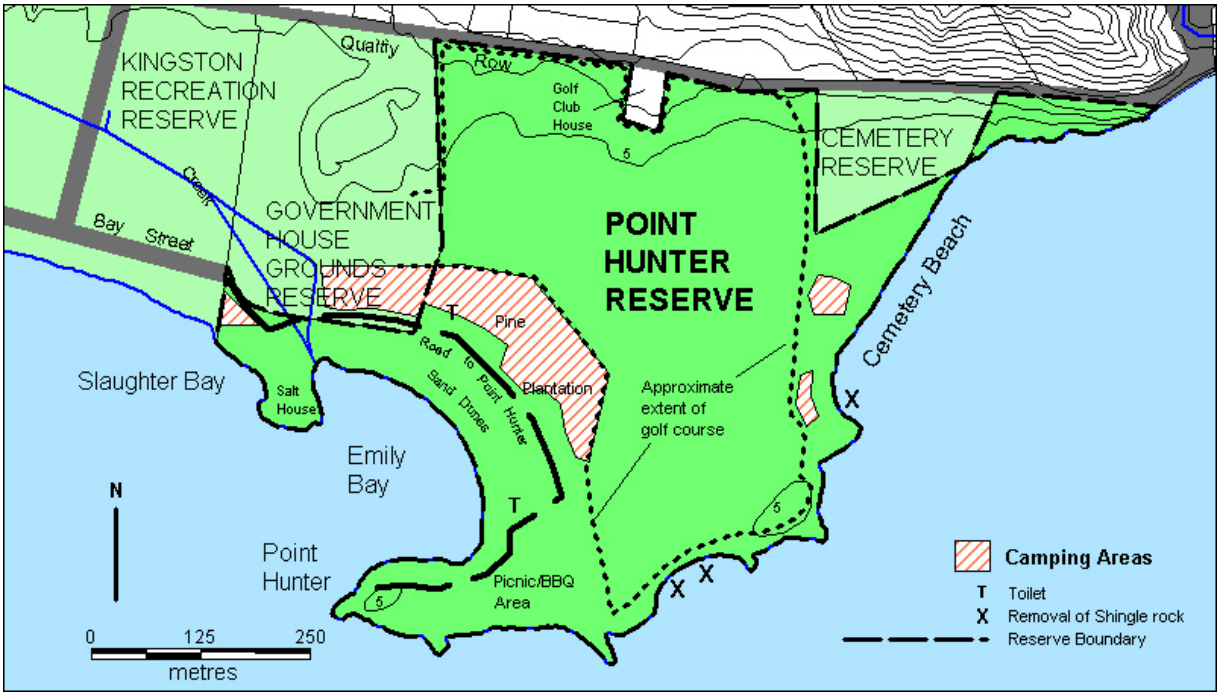
[6] Two of the logs have been dated: 6,870 ± 230 years BP and 4,400 ± 90 years BP: in Rich, P., G van Tets, K, Orth, C. Meredith and P. Davidson. 1983. *Prehistory of the Norfolk Island Biota*. In "A Review of Norfolk Island Birds: Past and Present" R. Schodde *et al.* Australian National Parks and Wildlife Service Special Publication No. 8. 1983.

[7] Charcoal from the fossiliferous layers has been dated at 840 ± 160 to 715 ± 75 years BP. Fossil material included Polynesian Rat *Rattus exulans*. Rich, P., G van Tets, K, Orth, C. Meredith and P. Davidson. 1983. *Prehistory of the Norfolk Island Biota*. In "A Review of Norfolk Island Birds: Past and Present" R. Schodde *et al.* Australian National Parks and Wildlife Service Special Publication No. 8. 1983. p17.

[8] The Town Creek catchment (about 125ha) and Watermill Creek catchment together form the second largest catchment on Norfolk Island after Cascade Creek.

[9] *The Swamp Creek and Serpentine Area Conservation Study and Interpretive Design*. Report prepared for Australian Construction Services on behalf of the KAVHA Management Board.

(and perhaps Second Settlement quarrying) has eroded the ridge to form vertical cliffs. A wide intertidal rock platform fringes the southern shoreline.



Map 2: Landform and features of Point Hunter Reserve

17.3.2 Vegetation

The original native vegetation that would have covered the Point Hunter Reserve swamp is not well documented. However, it is likely that the wetter parts of the swamp were vegetated with sedges and rushes, with fringing Melky Tree, Tree Fern, Birdcatcher, Coastal Coprosma, Norfolk Island Hibiscus and perhaps Mountain Rush. White Oak and Norfolk Island Pines do not thrive in swampy conditions and do not survive extended inundation. It is likely that these species were restricted to the higher parts of the coastal dunes and calcarenite ridge, the Government House knoll and the foothills to the north, along with native hardwoods such as Ironwood, Maple, and Beech in more sheltered locations. The dunes were probably vegetated with Native Flax and Moo-oo, especially close to the edge of the swamp, and by native coastal herbaceous plants such as Mile-a-Minute, Coastal Native Spinach, Pigface, and Strand Morning Glory.

Most of the original native vegetation along the foreshore and surrounding ridges and foothills within the reserve was cleared during the First Settlement. The forested hillsides were also cleared of large pines and other trees. By 1829, a relatively large area inland from Emily Bay is shown as "Sandy Flat", presumably mobile sand dune[10]. This sandy area, which covered approximately 6ha, appears to have stretched almost halfway from the Emily Bay shore to Quality Row and from the Government House 'stock yard' in the west to within 150m of the southern end of Cemetery Beach. It would appear that this sandy area was largely devoid of vegetation: a few scattered trees are depicted near the edges of this sandy area; a single pine is shown in the middle of the western third; and pines and other trees are shown on the eastern side of the channel that had been dug around the northern side of Chimney Hill.

Wakefield's map also depicts clumps of trees other than pines at the western end of Emily Bay and southern end of Chimney Hill, with three pines towards the southern end of Salt House point. Two

[10] *Plan of the Settlement and Garrison Farm, Norfolk Island.* Captain Wakefield. May 1829. In *Kingston Cemetery Study and Management Plan*. Vol.1. Tropman and Tropman Architects. For Australian Construction Services. 1994.

clumps of trees other than pines are shown near the southern end of Cemetery Beach and a relatively extensive copse of trees and bush is shown in the north-east corner of the reserve, near Cemetery Reserve. It is likely that most of the trees and bush shown on the Wakefield map are indicative, rather than a precise mapping of individual specimens. However, the single large pine shown on the northern side of Point Hunter is quite possibly the pine that remains there today, known as "Lone Pine".

The northern two thirds of the reserve is marked "Garrison Farm", with the third closest to Quality Row hachured in a manner that probably denotes cropping of some form. Approximately 1ha close to the western entrance to Government House and the Garrison barracks is shown as "Soldiers Gardens".

The Marram grass that covers the dunes at Cemetery Beach and Emily Bay was introduced to stabilise sand dunes at Emily Bay prior to 1902[11]. The native coastal grass *Sporobolus virginicus* covers the dune between the graveyard fence and Cemetery Beach and also parts of the rocky calcarenite coastal ridge between Cemetery Beach and Point Hunter. Native Couch Grass, Pig Face, some Native Flax, and Mile-a-Minute occur along the foreshore, particularly along the calcarenite ridge. The golf course fairways and rough, which comprise approximately 55% of the reserve, are predominantly Kikuyu Grass. Norfolk Island Pines, White Oaks, and Pohutukawa have been planted along some fairways. A small (2.4ha) plantation of Norfolk Island Pine was established in the 1950's to stabilise the then mobile sand dunes to the north and northeast of Emily Bay. A small number of self-sown White Oak and Ironwood have established under the pines in this plantation.

The "Lone Pine" at Point Hunter, five tall mature Norfolk Island Pines at the western end of Emily Bay, the large pine near the Watermill Creek channel and two on the Salt House point are probably the only trees in the reserve that pre-date European settlement. The two large Norfolk Island Pines near Cemetery Beach may have been present as small trees at that time but are not shown on Wakefield's map. The two medium-sized White Oaks at the Lime Kiln probably established after the kiln fell into disuse.

Other native trees, mainly Norfolk Island Pines, have been planted at various times in the vicinity of the Lime Kiln and Salt House, the foreshore of Emily Bay and in the picnic area at Point Hunter ('Chinamans'). There are also small numbers of self-sown White Oaks in the Emily Bay dunes and near the mouth of Watermill Creek.

17.3.2.1 Significant Species

Small numbers of the rare coastal native *Euphorbia obliqua*, and the endemic *Senecio hooglandii* occur in the reserve.

17.3.2.2 Weeds

The reserve is almost completely free of woody weeds. However there is a small number of Lantana, Hawaiian Holly, Porpieh, Yellow Guava, and Wild Tobacco.

17.3.3 Fauna

17.3.3.1 Freshwater Fauna

Freshwater habitat in Point Hunter Reserve is limited to the last 50m of the Watermill Creek channels, before it reaches Emily Bay. If the Watermill Creek mouth is not blocked by sand, these sections of channel are subject to seawater ingress at high tides, especially when there is little fresh water flow.

[11] Green, P.S. (1994), *Flora of Australia*, Volume 49, Oceanic Islands 1. Ed. A.J.G Wilson, Australian Government Publishing Service, Canberra.

The Short-finned Eel, Long-finned Eel, and both species of freshwater shrimp have been observed in the Watermill creek system.

Introduced Mosquito fish (probably the eastern mosquito fish *Gambusia holbrookii*) (also known as Gambusia, Plague Minnow) which are native to south-eastern USA, are common in Watermill Creek and other drainage channels. Originally introduced to the Sydney Botanic Gardens in 1925[12] and New Zealand in the 1930's, it is likely that this species was subsequently introduced to Norfolk Island.

17.3.3.2 Army worm

The insect that has the most obvious effect on the reserve is the introduced Army Worm. The Army Worm is a Noctuid moth of the genus *Spodoptera*, some of which are the most destructive agricultural pests in the world. The name Army Worm is a reference to the larvae that emerge in vast numbers, consuming swathes of crops or pasture in its path. Swarms of Army Worm emerge in the pastures of the reserve during late summer and autumn, especially after rain. The swarms leave little of the Kikuyu on the golf course and surrounding areas.

17.3.3.3 Land Snails

Norfolk Island has a diverse land snail fauna, with a number of endemic species[13]. The range of many species has declined as a result of clearing of native forest, predation by introduced rats, and competition with introduced snails. Many species have become extinct since 1788, but there is also evidence in the fossil layer at Kingston of prehistoric extinctions[14].

Land snails have very specific habitat requirements. They are therefore excellent indicators of changes in the environment and a valuable tool for palaeontology and archaeology. Varman found "many specimens of shells from a range of indigenous snail species" in a "rich loamy calcareous sandy soil" underlying early First Settlement construction deposits. The diversity of the land snail fauna at Kingston has declined significantly since 1788. In 1997, Varman found nine species of land snail at Kingston. One un-named species was listed as "a very rare live population at Kingston only confined to a rocky outcrop". Whether this or other rare land snail species occur in the reserve is not known.

17.3.3.4 Seabirds

During the summer months, Wedge-tailed Shearwaters (Ghostbirds) breed in burrows along the coast and under wind-pruned White Oaks and Norfolk Island Pines in the Emily Bay and Cemetery Bay area. Ghostbirds breed on Norfolk Island between October and May and nestlings remain in the burrow when adult ghost birds feed on small fish at sea during the day, returning at dusk to feed their young. Little Shearwaters may also nest in the reserve.

17.3.3.5 Terrestrial birds

There are thirty-three species of terrestrial birds resident on Norfolk Island. Of these, about 19 regularly occur, or are likely to occur, in Point Hunter Reserve. Ten species of terrestrial birds were recorded in Point Hunter Reserve during the December 1978 bird census by members of the Royal Australasian Ornithologists Union[15] and local naturalists[16].

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[12] NSW National Parks and Wildlife Service (2002). Predation by *Gambusia holbrookii* – The Plague Minnow. Draft Threat Abatement Plan. NPWS. Hurstville, NSW.

[13] Dr Robert Varman has listed a total of about 79 species of endemic or native land snails on Norfolk and Phillip islands, including species found only in prehistoric fossil deposits: Varman R.V.J.P. *Norfolk Island Snail List*. www.geocities.com/Paris/LeftBank/6559/scc38.htm

[14] Varman, R.V.J.P., (undated), Conchological Study of Norfolk Island Terrestrial Mollusca from Fossiliferous and Live Populations. Unedited draft posted on the Internet at www.geocities.com/Paris/LeftBank/6559/scc38.htm

[15] Named 'Birds Australia'.

[16] 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.

Prior to European settlement, the habitats in the reserve would have been swamp, forest, coastal dune, and foreshore. All of these habitats have changed significantly, however the greatest change has been the complete loss of swamp (wetland) and forest. Those habitats have been replaced by manicured open grassland. Open grassland favours introduced species such as the Mallard, Feral Fowl, Domestic Goose, Australian Kestrel and Common Starling. However, it also provides habitat for some native birds such as the White-faced Heron, Sacred Kingfisher and migratory waders such as Ruddy Turnstone, Pacific Golden Plover, Bar-tailed Godwit and, occasionally, Sharp-tailed Sandpiper. During the summer months, the sandy foreshore habitat of Cemetery Beach and Emily Bay attract one or two Tattlers and an occasional Red Knot, two species of migratory waders.

17.3.4 Cultural Heritage

The bananas found by King along the stream running through Arthur's Vale were clear evidence of previous Polynesian visits or habitation. Stone tools found in various parts of the Island also provided evidence that Polynesian peoples at least regularly visited the island. The discovery of the remains of a Polynesian settlement under the dunes at the western end of Emily Bay in 1997 confirmed that the Island was occupied for about 700 years from perhaps as early as 750AD[17]. However, by 1788 there was no evidence of the Polynesian village at Emily Bay.

Following the arrival of King and his party in 1788, buildings were established on the slope from the landing area (now the Kingston Pier) and on the low ridge of sand dunes and calcarenite outcrops along the foreshore to the eastern end of Slaughter Bay and Chimney Hill. In April 1788, a flagstaff was erected on Mt George (later Flagstaff Hill) to signal ships, and in May, a road was cut to Cascade. In October that year, a track was cut to Anson Bay.

To drain the swampy ground in the vicinity of the settlement, a six foot deep channel 330 yards long was dug through Arthurs Vale and a second channel was cut in March 1789 from the eastern margin of the swamp through a low saddle on the northern side of Chimney Hill to Emily Bay. The former swampland was turned to agriculture to provide food for the fledgling colony.

The settlement's first burial ground was established at the north-western end of Emily Bay, in the vicinity of the former Polynesian settlement. A new burial ground was established at the present cemetery in the 1790's. The First Settlement buildings were destroyed when the colony was abandoned in 1814. All livestock were removed or destroyed, but dogs were left to "get ravenous and eat any of the pigs that were left": Lieutenant Thomas Crane RN.

In 1825, the Second Settlement was established at Kingston and the roads to Cascade and Ball Bay were re-cut. During the decade that Norfolk Island had been unoccupied, the channel into Emily Bay became blocked and the Common once more became swampy. In 1829, the channel that had been cut in 1790 to drain the swamp around the northern end of Chimney Hill to Emily bay was re-opened. The swampy ground was converted to prisoners' gardens and in 1832, the Garrison was moved into newly completed barracks on Quality Row[18,19]. At the same time, the soldiers gardens that had been established behind the Garrison stockade were removed to the top of Rooty Hill and military officers gardens were established near the Parade Ground (now the Pound Paddock). The "Garrison Farm" was established on the low land between Government House and Cemetery Bay, with 40 acres (16ha) cultivated with wheat and maize.

[17] Anderson, A., (undated), *Prehistoric Human Colonisation of Norfolk Island*. First Interim Report to Australian Heritage Commission. Unpublished report, Division of Archaeology and Natural History, Research School of Pacific Studies, Australian National University.

[18] The "Old Military Barracks": now the Norfolk Island Legislative Assembly building and court.

[19] Quality Row is shown as 'Military Road' on the *Plan of the Settlement, Norfolk Island 1848*.

Parts of the northern half of the reserve must still have been swampy and unused and are marked as 'swampy ground' on the 1840 map[20], and shifting sand dunes covered much of the southern half.

On 8 May 1834, flooding caused part of the drain to Emily Bay to collapse. In 1835, the Commandant, Major Joseph Anderson, had a new section of channel constructed through a tunnel driven under Chimney Hill and the old channel to the north of the hill was closed. The section of First Settlement channel from Chimney Hill to Emily Bay is still in use today.

In 1836, Major Anderson had a series of 'causeways' or 'bunkers' constructed from Emily Bay to Cemetery Bay to arrest the advance of the sand dunes from Emily Bay. Parts of this embankment still form a small ridge running east-west across the northern third of the golf course[21]. It would appear that at least parts of the embankment were built on top of a 'loose stone wall' shown on the 1829 Wakefield map[22].

A 'wet quarry'[23] was established at Cemetery Beach by December 1825, to provide "dripstone"[24]. The New Gaol gateway and the Commissariat Store steps were constructed with stone from this quarry. Limestone quarries were established during the 1830's and 40's at the northwestern end of Emily Bay (in the vicinity of the Lime Kiln and Chimney Hill) and at Point Hunter and along the coastal ridge towards Cemetery Bay. A quarry was opened near the southwestern side of Government House grounds in the 1850's and was used to provide stone for a road from Emily Bay in 1860. This quarry was also used to provide crushed rock for the airfield runways constructed in WWII[25].

The stone steps to the Watermill Creek channel close to Emily Bay were constructed on Major Anderson's orders in 1835 to give access to fresh water for work gangs. At about the same time, Anderson had a weatherboard Gentlemen's Bathing Shed constructed on the foreshore, about halfway around Emily Bay. A similar Ladies Bathing Shed was constructed towards the Point Hunter end of the bay. These were removed under Childs' command in the 1840's.

Captain Alexander Maconochie's work program included the construction of a windmill in 1842 – 44 on the coastal ridge about halfway between Point Hunter and Cemetery Bay[26]. The windmill was a 'post mill' design in which the whole superstructure rotated around central pier buttressed at top and base by eight stays. The superstructure supported four weatherboard vanes and was supported by a stabilising wheel with access ladder. The wheel ran in a large circular enclosure. The windmill proved unstable and a stone base and rollers was added in 1849. The windmill and adjacent miller's quarters and privy were burned in the Third Settlement, but the stone base and circular enclosure still remains. Some parts of a convict built road that ran from the northwestern end of Emily Bay across the middle of the reserve to the Cemetery Beach wet quarry and to the windmill remain below the present ground surface.

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[20] *Plan of Norfolk Island Shewing the General Nature of the Ground.* 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 accompanied a letter dated 20 February 1840 from Major Barney to the Colonial Secretary and was printed by James and Luke J. Hansard on an order of the House of Commons dated 15 June 1841.

[21] Breached in the early 1900's to provide for a horse racing track.

[22] *Plan of the Settlement and Garrison Farm, Norfolk Island.* Captain Wakefield. May 1829. In *Kingston Cemetery Study and Management Plan*. Vol.1. Tropman and Tropman Architects. For Australian Construction Services. 1994.

[23] Rock was quarried from the shore and reef by prisoners working in gangs of six, at times working in water up to their waists.

[24] There was a "sizeable trade in dripstones" (water filters) between Norfolk Island and Sydney during the 1830's. Kingston and Arthur's Vale Historic Area Management Plan. April 1980. Department of Home Affairs and Environment. Australian Government Publishing Service, Canberra. 1981. p94.

[25] The Point Hunter quarry was used as a rubbish dump from 1977 to 1983, when it was closed and covered with clean spoil.

[26] Captain Alexander Maconochie RN, Commandant March 1840 – February 1844.

Lime[27] was an important raw material in the construction of buildings and roads. The Lime Kilns were possibly the harshest working environments for the convicts. A small section of the first Lime Kiln (constructed in 1802) remains in Kingston Common Reserve, on the western face of Chimney Hill at the end of Slaughter Bay beach. The second was constructed nearby in the 1830's, but has since been eroded away. The third Lime Kiln, which is located in Point Hunter Reserve close to Slaughter Bay, was constructed by Childs in 1845, at which time all three kilns were operating. Childs' Lime Kiln was still being used spasmodically until the 1940's[28].

Another important industrial activity located in Point Hunter Reserve was the production of salt, which was primarily used as a preservative. The stone salt house built on the seaward side of the New Gaol in the late 1820's had become dilapidated by the mid-1840's. Consequently, a new Salt House was constructed on the northwestern side of Emily Bay in 1848. Two large tanks were cut into the rock platform near the new Salt House and although the exact process that was employed is not recorded, partially evaporated seawater collected in the rock tanks was then boiled in the Salt House to produce salt.

The Second Settlement was notorious for its harsh treatment of convicts and 'mutiny' was not uncommon. A mutiny in 1846 saw twelve of the perpetrators executed and their remains buried in an old (1825) saw pit outside the eastern boundary of the cemetery, towards the northern end of Cemetery Beach. That mass grave is visible today and is known as "Murderers' Mound".

Many of the Island's homes constructed during the late 1800's and early 1900's incorporated stone from Second Settlement structures at Kingston. This practice was encouraged by the Commonwealth, and the Administrator was still selling rights to remove stone from buildings and ruins at Kingston in the late 1960's.

A course for horse racing was constructed on the low land between Emily Bay and Cemetery Beach some time in the early 1900's. The Second Settlement 'causeway' was breached at that time to allow for the track. The Norfolk Island Golf Club established the golf course in 1927.

The construction and launching of the "Resolution" at the southern end of Emily Bay in 1925 marked an attempt by the Pitcairner community to improve their ability to export their produce and thus their economic fortunes.

[27] Lime was produced by burning limestone (in this case calcarenite) to convert calcium carbonate $CaCO_3$ to carbon dioxide CO_2 and lime CaO.

[28] Kingston and Arthur's Vale Historic Area Management Plan. April 1980. Department of Home Affairs and Environment. Australian Government Publishing Service, Canberra. 1981. p136.

17.4 Issues

17.4.1 Public Use

In addition to the use of about half of Point Hunter Reserve as the Island's golf course, the Reserve is a popular venue for picnics and barbecues, walking, kite flying, site seeing, bird watching and school science excursions. The small Emily Bay pine plantation is the Island's most popular seasonal camping location and Emily and Cemetery bays, which are accessed through the Reserve, are the main venues for swimming, snorkelling, glass bottom boating and other water activities. Emily Bay is also used for the annual school swimming carnival and the Rotary beach carnival. The tidal rock platform from Cemetery Beach to Emily Bay is also popular for fishing and "gwen rumma"[29] at low tide.

17.4.1.1 Camping

Camping during the summer months under the Norfolk Island Pine plantation at Emily Bay and under the Norfolk Island Pines at Cemetery Bay is a recent "traditional" use of Point Hunter Reserve. After WWII when most of the Pitcairner families had moved out of the houses at Kingston, a number of families regularly spent a week or so 'camping' in unoccupied buildings, such as the Royal Engineers Office, as a summer holiday. Others camped along the Slaughter Bay foreshore, in the Blacksmith's compound, and especially in the New Gaol and Prisoners Compound. Visitors to the Island were also allowed to camp at Kingston, including foreshore sites such as near the Salt House.

In September 1971, the Administrator decided on the advice of the Norfolk Island Advisory Council that no further permits would be issued for camping in public reserves. This policy appears to have been generally adhered to until 1983, especially with respect to visitors to the island. In December 1985, a Notice was published in the Norfolk Islander advising that those wishing to camp under the pines at Emily Bay should apply for a permit.

Camping in Point Hunter Reserve has been permitted each summer since 1985. In Point Hunter Reserve there are three camp sites near Cemetery Beach and another nine in the Emily Bay pine plantation. The number of people wishing to camp at Kingston has increased over recent years and the number of campsites has consequently been increased. The camping period has also been extended.

There is some demand to open the pine plantation for camping at other times of the year, especially at Easter and during the other school holidays, although there have also been requests to camp at other times. Some members of the community have complained that the camping season is already too long and the number of campers too great. There have also been some complaints that the visibility of some camps from the golf course and other significant locations such as Queen Elizabeth Lookout on Rooty Hill Road detracts from the area's aesthetic quality and heritage values.

There are significant impacts on the ground surface in and around campsites, however there is fairly rapid recovery after the camping season. Tree roots and trees can also suffer some damage from camping, however no significant long-term adverse effects have been observed, probably largely due to the long non-camping recovery period.

Vehicles are driven to the camping sites in Emily Bay pine plantation to facilitate setting up and dismantling of each camp. With increasing numbers of campers, even this amount of vehicle traffic can cause considerable wear. Because none of the campsites are far from the Emily Bay road, it would be practical for most campers to carry gear to their campsite by hand. However, many campers

[29] "gwen rumma" = Collecting Hi hi, a common small intertidal marine mollusc that is considered a delicacy by many Norfolk Islanders.

have a considerable amount of heavy gear and some campers may not have the physical capacity to carry camping gear to their site. Other vehicle activity in the pine plantations can damage plants and erode the sand dunes. Therefore vehicles may not be driven to or parked at Emily Bay pine plantation sites at other times.

Vehicles are driven to and parked at the Cemetery Bay campsites because of their distance from a formal road. The informal vehicle track is on good ground and is well grassed near the southern sites.

17.4.1.2 Golf Course

The Norfolk Island Golf Club[30] has progressively developed the golf course since 1927, spending considerable funds on its maintenance. The club has established new tees and greens, upgraded the fairways and traps, planted trees and shrubs, and installed a bore and water reticulation system. The course is maintained by a full-time greenkeeper under the supervision of the Club's course Director.

Since March 1972, the Golf Club has been required to obtain specific approval prior to:

- erecting posts, fences, or structures whether permanent or temporary; and
- any action to 're-structure' the surface of the reserve, in particular the relocation of tees and greens.

The Golf Club has also been responsible for keeping the course tidy and free of rubbish (attributed to golfers). In addition, the Golf Club has been required to ensure that tees or greens near the golf club house were sited so as to not cause unnecessary inconvenience to horse races.

The Golf Club has expressed concern that it does not have any guarantee of continued use of the reserve and does not have control over the use of the golf course by others. The 'traditional' horse racing days (usually New Year's Day and Easter Monday) have concerned the Golf Club in recent years, primarily because of damage that may be caused to fairways. The organisers of the race days[31] have been required to obtain a permit for each race meeting. That permit required the race day organisers to clean up all rubbish, and to leave the reserve and all fences, fittings, and other fixtures in good order and repair.

The Golf Club has sought to:

- have the golf course "designated primarily as a golf course" (75 years of occupancy);
- be able to charge fees for use of facilities;
- not have race days on Saturdays or Wednesdays, which are Golf Club competition days;
- have all tees and greens be 'out of bounds' on race days;
- have Race Day organisers required to repair the course to pre-race condition or post a substantial bond to enable this to be done; and
- not have any gymkhana type activities.

It is appropriate that the part of Point Hunter Reserve that is used as a not-for-profit community golf course continues to be used for that purpose.

17.4.1.3 Walking

Walking, often accompanied by the family dog(s), is a very popular public activity in Point Hunter Reserve, particularly around the foreshore between the cemetery and Emily Bay. Some walkers also cross the golf course itself. The Norfolk Island Golf Club has made representations that non-golfers should be prevented from walking on the course. Most of the informal walking track around the foreshore is adjacent to, but outside the golf course. Walkers have complained that the golf course has

[30] Norfolk Island Golf Club Incorporated is a non-profit community club.

[31] Usually the Returned Services League, Norfolk Island Sub-Branch in cooperation with the Pony Club and the Adult Riders Club.

been extended in places to the seaward edge of the coastal ridge, leaving no alternative except to traverse the course.

17.4.2 Access and Facilities

Quality Row forms much of the northern boundary of the reserve and Bay Street provides vehicular access to the southern part of the reserve. A timber post and rail fence and low timber vehicle control barriers exclude vehicles from the Emily Bay pine plantation, Salt House, and most of the foreshore dunes. A low timber vehicle control barrier parallel to Cemetery Beach and another between the Emily Bay pine plantation and the coastal ridge near the Point Hunter picnic area prevent unauthorised vehicles from being driven onto the golf course.

Vehicle parking is provided between the Lime Kiln and the Watermill Creek channel, in a number of informal parking areas along the sealed road around Emily Bay and at the Point Hunter end of the Bay.

Vehicles occasionally park on the dunes adjacent to the access to Emily Bay that has been provided for glass-bottom boat tour operators. This parking is unauthorised[32] and causes significant disturbance to the dune system. There are no timber barriers to prevent vehicles being driven along the top of the foredune, a practice that has become more common in recent years.

Glass-bottom boat tour operators park on a large, grassed informal parking area on the northern side of the road around Emily Bay. This area is low lying and becomes muddy and partly flooded during periods of heavy rainfall.

Vehicles are not restricted from driving into the picnic/barbecue area at the southeastern end of Emily Bay ("Lone Pine" or "Chinaman's"). In recent years, this large grassed area has been a favourite location for doing 'wheelies' or 'donuts'. As a result, the grass has been significantly damaged and much of the area is covered with wheel ruts. Logs were placed along the base of the coastal ridge many years ago to prevent vehicular access to the ridge. These logs are regularly pulled aside, presumably by 4WD vehicles. As a result, tracks have formed on parts of the ridge, with significant areas of surface wear and erosion. Part of the coastal ridge near Lone Pine is undermined on the seaward side by a large cave.

Vehicular access to Cemetery Beach was prevented for many years by a locked gate adjacent to the southwestern corner of the graveyard. In recent years, that gate has not been locked and parts of the Cemetery Beach dune is becoming worn. This gateway provides access to camping sites and is used by a small number of bathers and persons who fish on the rock platform.

Public toilet facilities are provided at both ends of Emily Bay. The facilities at the northern end of Emily Bay were extended in 2002 to cater for increased demand. Toilet facilities are also provided at Cemetery Bay. The public toilets in the reserve are in good condition.

There are two barbecues in the Lone Pine/Chinaman's picnic area at the southeastern end of Emily Bay and three barbecues at the Lime Kiln.

The picnic areas and structures in the reserve are maintained by the KAVHA Restoration Team.

17.4.2.1 Commercial activities

A mobile food vending bus has operated at the grassed picnic area between the road and the Emily Bay shore for many years. The bus is removed from the reserve at the end of each day and is parked

[32] A "No Parking" sign has been in place at this location for many years, but is generally ignored.

on different areas to prevent undue wear to the grass. Rubbish bins are placed nearby and the vendor provides picnic tables and chairs and keeps the area clean and tidy.

Establishing a permanent kiosk in the Emily Bay area has been considered from time to time. Such a proposal raises a number of issues including increased water usage and activity, parking facilities, appropriate siting, visual intrusion and that a permanent fixture would affect the nature of the place and limit the current flexibility of the area, have been raised[33]. A permanent facility is not presently warranted.

The use of the golf course by the Norfolk Island Golf Club Incorporated is a commercial activity under the *Public Reserves Act 1997*, although the Club operates on a not-for-profit basis. The use of the course by the club is discussed above (section 17.4.1.2).

There are currently three glass bottom boat tour operators that park their boats and tractors in the reserve and access Emily Bay foreshore though the reserve. Parking glass-bottom boats and tractors in the reserve has not been considered to be a commercial activity, however this equipment is part of a commercial activity carried on by each glass-bottom boat operator. Furthermore, the tours are advertised and customers gather at the locations at which the boats are parked.

17.4.3 Heritage Conservation

The use of Kingston for government administration and public recreation is an important feature of Norfolk Island. The Island's cultural heritage is strengthened by continuing these uses at Kingston, as is the conservation of heritage structures and places, including those of the Second Settlement.

The flight of stone steps in the Watermill Creek channel near Emily Bay, the Lime Kiln, Salt House and Windmill are important Second Settlement structures. The early European burial ground at the northwestern end of Emily Bay and Murderer's Mound outside the eastern boundary of the graveyard are important convict era sites.

17.4.3.1 First and Second Settlement Structures

The First and Second Settlement structures in the reserve have been restored or stabilised and are in moderate to good condition. The Salt House, Lime Kiln, and Windmill have been rendered to protect their stonework from further weathering. The Emily Bay burial ground, Murderer's Mound and the 'causeway' or 'bunker' are stable and not under any immediate threat.

17.4.3.2 Landscape

One of the most important cultural heritage features of the reserve is the open landscape of the golf course. Maintaining open vistas across the golf course to Cemetery Beach, the windmill, and Nepean Island is an essential element in retaining the heritage value of this landscape.

The tall Norfolk Island Pines at Emily Bay (including the "Lone Pine") that remain of the forest that originally covered this area, are a highly valued landscape feature. Unfortunately, the pines at the northwestern end of Emily Bay are reaching senescence and a number have had to be removed in recent years. It is likely that most of these trees will need to be removed within the next ten years.

Large trees that are too close to structures can cause damage through root heave. The trees themselves may also directly endanger the structures and people. While there is significant aesthetic, visual, and heritage value in retaining individual trees, it is accepted that at times trees have to be removed to ensure public safety and to protect heritage structures.

[33] A number of these are discussed in the Norfolk Island, Kingston and Arthur's Vale Historic Area "Recreation Management Plan." Prepared for Australian Construction Services by Gary Prosser and Jill Lang of Southern Cross University, Lismore NSW. 1995.

17.4.3.3 Monuments and Memorials

Occasionally there are requests by descendants of the First, Second or Third Settlement persons to erect memorials of various kinds to their forebears. There is also a general desire to recognise particular events (such as the wreck of the Sirius) in an official or semi-official manner. The recently discovered Polynesian settlement on the island, the arrival of the Pitcairners, and the lives and activities of Norfolk Islanders over the past one hundred and fifty years, are all worthy of celebration and recognition.

A number of special memorials in the form of timber seats, brass plaques, and tree plantings have been placed in the reserve during the past twenty years. The potential demand for more is great. Each request to erect a memorial or plaque or plant a tree has been considered on an *ad hoc* basis, without the benefit of an overall strategy or plan. The number of seats, plaques, trees, and other memorials or monuments are starting to detract from the landscape and setting of the site.

The most appropriate way to commemorate people and events in the reserve is through interpretation in the museums, by walking tours, through documents, and on site signs that have been developed as part of an integrated interpretation strategy. It is important that the community, including private individuals, historical interest groups, corporations, and benefactors, contribute to and participate in the development of the interpretation strategy and material.

17.4.4 Habitat Rehabilitation and Development

The mature pines at Emily Bay and Cemetery Beach are all that remain of the original forest that covered this part of the Island. The formal/man-made landscape of the reserve is appropriate to its heritage values and present use. However, native habitat conservation, rehabilitation, and development is appropriate along the foreshores in the Reserve, provided the vegetation is adapted to that environment and low in height so as not to obscure significant views.

The foredunes at Cemetery Beach and Emily Bay are vegetated with introduced Marram Grass, together with native ground covers including Couch Grass, Pigface, and Mile-a-minute. The Marram Grass has stabilised the dunes, providing habitat for nesting Ghostbirds.

The dunes at Emily Bay are highly susceptible to disturbance and movement. Hardwood log barricades/revetments have been constructed at the northeastern end of Cemetery Beach in Point Hunter Reserve in an attempt to arrest erosion of the shore by the sea. Log walls have also been constructed towards the southern end of Emily Bay to protect the dunes adjacent to the boat access that was cut through the dune and to protect the car parking area and toilet at the southern end of the beach. A section of these log walls had to be replaced after it was washed away during heavy seas in June 2002.

The Norfolk Island Pine plantation near Emily Bay has an open understorey making it a suitable location for camping and habitat for breeding Ghostbirds. A dense understorey of shrubs and small trees would interfere with camping and increase root disturbance of underlying archaeological strata. It would also interfere with breeding Ghostbirds.

17.4.5 Breeding Seabird Habitat

Ghostbirds breed in the Emily Bay pine plantation and in some locations around the foreshore of Emily and Cemetery bays. In some locations, these birds may be subjected to disturbance by people and dogs. No other parts of the reserve provide suitable breeding habitat for seabirds.

17.4.6 Pest Species

17.4.6.1 Weeds

Weeds are not a significant problem in Point Hunter Reserve provided they are controlled where required.

17.4.6.2 Feral Birds

The number of introduced Mallard ducks on the foreshore of Emily Bay and at picnic areas in the reserve has increased during the 1990's, initiated by some glass bottom boat operators attracting fish with bread. Once ducks discovered that there was likely to be a free feed at Emily Bay at low tides, when the glass-bottom boat operators were feeding fish, the number of ducks frequenting the beach and picnic areas grew. Inevitably, visitors and some locals also fed the ducks, resulting in their regular presence at Emily Bay and frequent harassment of picnickers.

Feral ducks can be a considerable nuisance at picnic areas and pose public health and safety risks to both picnickers and swimmers, especially children[34]. Mallards directly compete and interbreed with the native Pacific Black Duck and are a hazard to aircraft.

The Domestic Geese in the reserve originate from a small flock belonging to a neighbouring landowner. The owner collected goose eggs laid on the Common, thus keeping the number of geese to approximately half a dozen. Eggs have not been collected since the owner moved to another property and the number of geese has increased to about twenty. Some members of the community deliberately feed the fowl and geese, as do many visitors to the island.

Feral Pigeons roost on the cliffs of Nepean Island, flying to Norfolk to feed. The number of Feral Pigeons on the Island and in the reserve has steadily increased in recent years.

Many visitors and some locals consider introduced feral birds an attractive addition to the Kingston scene. Unfortunately, these birds compete for food and space with native species such as the Tarler bird and some migratory waders.

17.4.7 Former Rubbish dump

The picnic area at the southern end of Emily Bay was a quarry in the 1840's and was also used to supply rock during construction of the airport in WWII. This disused quarry was used as a garbage landfill site[35] from 1977 to 20 February 1983.

The surface of the former landfill was progressively filled with clean spoil, eventually providing a large flat grassed surface suitable for public recreation. Unfortunately, car bodies make poor landfill material because of the large voids that are created. Overlying fill can migrate into these voids for decades after the landfill has been closed and as a result, holes can unpredictably open up on the surface.

17.4.8 Erosion

The dunes in the reserve are vulnerable to disturbance, especially from vehicles. The rocky landward slopes of the coastal ridge is also susceptible to surface wear and erosion resulting from vehicular traffic.

[34] Waterfowl can carry pathogens such as *Salmonella*, which can be transmitted to humans through faeces deposited on grass on which children play and adults sit, on picnic tables, and in water in which people swim.

[35] Initially for car bodies "…to clear such wrecks from the public gaze and to help fill the area and so restore it to its original appearance." From Administration press release of 22 March 1983 for publication in the Norfolk Islander.

The Emily Bay and Cemetery Bay dunes and Slaughter Bay foreshore are also susceptible to erosion by heavy seas.

The coastal cliffs between Cemetery Beach and Point Hunter are protected to some extent by a relatively extensive tidal rock platform, however large waves can reach the foot of the cliff in heavy seas. Some parts of the cliff are unstable and undermined.

Barriers and warning signs have been erected on part of the golf course cliff to prevent pedestrian access to unstable areas.

17.4.9 Water Quality

The quality of freshwaters entering Emily Bay via Watermill Creek has a significant impact on amenity, public health and on the inshore marine environment of Emily and Slaughter bays.

Minimising sediment, nutrient, and pathogen loads in Watermill Creek depends on the implementation of good water catchment management and stream practices[36] upstream from the Reserve. Maintaining and protecting the wetlands in Kingston Common, Kingston Recreation and Government House Grounds reserves is particularly important in this regard.

During periods of moderate to low flow, Watermill Creek is often blocked by sand deposited in the mouth of the creek by wave action. This sand barrier acts as a final filter, preventing gross material, and sediment from entering the Bay. During floods, the sand barrier is washed into the Bay, being later deposited along the beach and back into the creek mouth by waves.

During periods of low flow in the creek, the water surface may appear iridescent and shiny. This resembles an oily slick and is often mistaken by members of the public as such. This is in fact an ultra thin film of mixed ferric oxide and ferrous iron precipitates. These precipitates are derived from carbon-rich deposits with trace amounts of other minerals including iron oxides that dissolve readily in water under the conditions created by organic-rich environments. Soluble ferrous iron is oxidised at the water surface and rapidly precipitates to form a thin film. Iron bacteria may also reduce the iron compounds to iron oxides at the water-air interface. The mixed oxidation states reflect sunlight in a manner that produces iridescent colours. A red or red-brown scum may also appear on the water surface, or be left as a residue on the stream bank or on sand.

17.4.10 Sand Removal

Sand is an important resource for the building and construction industry. There is a limited amount of sand on Norfolk Island and there are few locations where it could be mined without significantly damaging the environment. The sand on Norfolk Island is comprised of rounded grains of calcarenite, coral, and shells. As it is mainly calcium carbonate it is not as chemically stable as the sands derived from granite (mainly quartz sand) and other continental rocks that are most suitable for use by the construction industry. Crushed basalt dust is a suitable substitute for most uses of calcarenite sand on Norfolk Island. In recent years, up to $100m^3$ of calcarenite sand has been removed from the sand pits in Cemetery Reserve or Point Hunter Reserve annually.

Large amounts of sand have been removed from Emily Bay beach and from the lower reaches of Watermill Creek for a variety of domestic and commercial purposes. In time this practice could be expected to deplete the reservoir of sand available for the beach and nearby shore, perhaps leading to increased beach and dune erosion, flooding of low areas inland from the beach and a more frequently rocky shore.

[36] *Kingston and Arthurs Vale Historic Area Water Quality Management Plan*. February 1997. Report to Works Australia on behalf of the KAVHA Management Board, Peter Davidson Pty Ltd, Norfolk Island.

The sand pit in Point Hunter Reserve has been closed and a new pit has been opened in Cemetery Reserve.

Sand mining in Point Hunter Reserve is not within the objects of the *Public Reserves Act 1997*. Sand mining will not be permitted in Point Hunter Reserve unless the removal of sand is in the interests of the conservation and management of the reserve.

17.5 Management Objectives

Vision: To conserve and enhance the cultural and natural heritage values of the reserve and ensure continued use of the reserve for the enjoyment of current and future generations of Norfolk Islanders and visitors.

17.5.1 Cultural Heritage Management

Aim: To conserve the cultural heritage fabric of the reserve, including its essential landscape elements, and provide for the continuing use of Point Hunter Reserve for public recreation.

Objectives:

- Maintain and conserve the cultural heritage fabric of the reserve, including the remains of the Windmill, Salt House, Lime Kiln, 'causeway', road pavements, and other structures.
- Maintain and conserve the drainage channels into Emily Bay and associated walls, steps and other structures.
- Protect archaeological deposits and remains.
- Preserve the essential landscape elements of the reserve.
- Provide for continued public use of the reserve.

17.5.2 Natural Heritage Management

Aim: To conserve native habitat and species diversity in the reserve to the extent compatible with preserving the landscape of the reserve and its use for public recreation.

Objectives:

- Protect and enhance coastal native vegetation.
- Protect foreshores and fore dunes.
- Protect breeding seabirds and their habitat.
- Protect fossil deposits and remains.

17.5.3 Pest Species Management

Aim: To reduce the negative impact of pest species in the reserve.

Objectives:

- Control invasive introduced weeds throughout the reserve.
- Control feral birds in the reserve.

17.5.4 Recreation Management

Aim: To provide for appropriate public recreation and commercial use.

Objectives:

- Provide and maintain appropriate picnic facilities and amenities.
- Provide for continued use of part of the reserve as a golf course.
- Provide for continued use of the pine plantation for seasonal camping.
- Provide for continued public use of the reserve for other appropriate recreation.
- Manage impacts associated with public use of the reserve.

17.5.5 Education and Interpretation

Aim: To promote knowledge and understanding of Norfolk Island's cultural and natural history, and issues related to conserving and managing Point Hunter Reserve.

Objectives:

- Define and develop interpretation/education resource material specific to the reserve.
- Encourage appropriate scientific and educational activities in the reserve.

17.6 Management Strategies and Actions

17.6.1 Cultural Heritage Management

The reserve's major cultural attributes are:

- continuing use of the reserve for recreation;
- continuing use of the golf course for playing golf;
- the fabric of First and Second Settlement structures, in particular the Windmill, Salt House, Lime Kiln, 'causeway' and road pavements;
- archaeological deposits and remains, including evidence of quarrying;
- views of the coast and Nepean Island from Quality Row; and
- the open landscape setting.

Activities that are likely to adversely affect any of these cultural attributes to a significant extent, other than in a manner or for a purpose envisaged in this Plan will not be permitted.

The fabric of First and Second Settlement structures in the reserve, in particular the Windmill, Salt House and Lime Kiln will be maintained, restored and conserved in accordance with appropriate conservation techniques, under the supervision of the KAVHA Conservation Services Coordinator and the KAVHA Project Manager.

17.6.1.1 Polynesian Settlement

This is one of the most important heritage sites on Norfolk Island. The remains of the Polynesian Settlement are protected by over 1m of sand. Continued public use of the area for walking and seasonal camping will not adversely affect the remains of the Polynesian Settlement.

Seasonal camping will continue to be allowed in the reserve on the ground above the Polynesian Settlement site.

A strategy for managing the Norfolk Island Pines that have been planted on the site will be developed with archaeological and heritage advice and in consultation with the community.

17.6.1.2 New Structures

No new buildings or other permanent structures are permitted in the reserve. However, temporary structures may be permitted provided the erection and use of such structures is not likely to significantly detract from the heritage values of the reserve or permanently harm the heritage values of the site or the reserve as a whole.

The temporary erection of marquees and tents may be permitted by the Conservator of Public Reserves, provided to do so is in the public interest and that the enjoyment and use of the reserve by the public is not interfered with.

17.6.1.3 Excavations

No new buildings or other permanent structures are permitted in the reserve, however minor works, such as laying electricity or communications cables that require new excavations may be required from time to time.

An archaeological sensitivity plan will be developed that will provide guidance for managing excavations. No excavation will be permitted without consideration of the likely archaeological impact. Where appropriate, archaeological investigations will precede excavation. All excavations will be carried out under the supervision of the Project Manager (KAVHA) and or the Conservator of Public Reserves.

17.6.1.4 Monuments and Memorials

An interpretation strategy that encompasses the celebration and recognition of individuals and events shall be developed with the involvement of the community.

Existing monuments and memorials will remain, but may at some time in the future be replaced by documentation or other interpretation material.

No further monuments or memorials will be permitted in the reserve, unless they are specifically provided for in the interpretation strategy.

17.6.1.5 Landscape

The predominant landscape elements of the reserve are the scenic vistas, coastal views, and open landscape. New and replacement plantings will be designed so as not to interfere with these elements.

The relatively open vistas across the golf course to the coast, Windmill and Nepean Island; and from Point Hunter to the Windmill and to Emily and Slaughter bays will be maintained. Where practical, smaller growing species will be planted in preference to large trees.

Trees that obstruct significant views, become a threat to public safety or are likely to damage important heritage structures may be removed. In determining the appropriate management action, the natural and cultural heritage value of every such tree shall be taken into account and alternative arboricultural management options considered.

17.6.1.6 Golf Course

The golf course has been established for over 75 years. It is an important recreational asset and landscape attribute with significant cultural heritage. Management strategies and actions for the golf course in the reserve are set out in Section 17.6.4.1 below.

17.6.2 Natural Heritage Management

17.6.2.1 Habitat Rehabilitation

The original native habitats in the reserve have been replaced by a man-made landscape. This landscape has great cultural heritage significance and will be conserved. However, some native dune and coastal strand vegetation remains on the Cemetery Beach and Emily Bay dunes and the coastal ridge between Cemetery Beach and Point Hunter. These habitats do not occur elsewhere on the island and should be conserved and enhanced.

Many of the plants that are adapted to the coastal environment are primary colonisers and capable of withstanding harsh conditions. However, most are susceptible to damage from vehicle traffic. Barriers will be erected to restrict vehicle access to the Cemetery Bay and Emily Bay dunes and to the coastal ridge. Habitat rehabilitation will be achieved mainly through natural regeneration and minimum maintenance, primarily directed at progressive hand removal of the few patches of Lantana and other aggressive introduced weeds.

Natural regeneration of native species such as Native Flax, Moo-oo, and Coprosma will be encouraged on the foreshore dunes and parts of the coastal ridge. A small number of Norfolk Island Pines and White Oaks will be planted on the fore dune at Emily Bay to increase dune stability.

A small number of White Oak and Ironwood have self-sown in the Emily Bay pine plantation. These native trees will be retained; however, a dense understorey of shrubs and small trees in the plantation would interfere with camping and could increase root disturbance of underlying archaeological strata. A dense understorey would also interfere with breeding Ghostbirds. It is therefore not intended to allow a dense understorey to develop under the pine plantation, and self-sown trees and shrubs will be removed if necessary. However, native trees and shrubs will be retained along the golf course side of the plantation to provide a windbreak and visual screen.

17.6.3 Pest Species Management

17.6.3.1 Weed Control

Weeds in the reserve will primarily be controlled through hand weeding and mowing. Where necessary, basal bark treatment will be used to control woody weeds. Specialised techniques may be employed on the golf course to maintain tees and fairways.

17.6.3.2 Feral Bird Control

Shooting, live trapping and if necessary approved control chemicals will be used to control feral fowl, geese, and ducks in the reserve.

17.6.3.3 Fungus Control

The incidence and effect of *Phellinus noxius* in the reserve will be monitored. Disturbance and damage to tree butts and roots will be minimised.

17.6.4 Recreation Management

Public recreation is appropriate throughout the reserve.

17.6.4.1 Golf Course

Continued use of part of Point Hunter Reserve as a not-for-profit community golf course will be in accordance with an annual permit granted by the Conservator of Public Reserves. Renewal of that permit will be subject to compliance with the conditions determined in that permit. The Conservator of Public Reserves may vary the conditions in the annual permit, but the minimum conditions that shall apply are set out at Appendix 1.

The permit holder (Norfolk Island Golf Club Incorporated) shall not have any proprietary or exclusive rights over that part of the reserve that is used as a golf course. However, the permit holder (Norfolk Island Golf Club Incorporated) may charge persons an appropriate fee or fees for the use of golf course facilities but may not charge any fee or attempt to control or restrict in any way legitimate public use of the course for purposes other than playing golf[37]. The permit holder shall not charge any fee unless that fee has the prior written approval of the Conservator of Public Reserves.

The Conservator of Public Reserves shall consult with the permit holder (Norfolk Island Golf Club Incorporated) prior to granting a permit to any other person for any activity on that part of Point Hunter and Government House Grounds reserves that is used as a golf course.

[37] Legitimate public use of the course does not include using or leaving a motor vehicle on the course, other than in accordance with the provisions of the *Public Reserves Act 1997*, section 11.15 of the Part A Plan of Management, or section 17.8.3 of this Plan of Management.

17.6.4.2 Picnic and BBQ Facilities

Picnic and barbecue facilities will be provided and maintained at Lone Pine/Chinaman's and at the Lime Kiln. The number and location of picnic and barbecue facilities will be reviewed periodically by the Conservator of Public Reserves.

The ground surface at the Lone Pine/Chinaman's picnic area will be monitored regularly to detect holes that appear as a result of loss of topsoil into subsurface voids in this former waste site. All holes will be marked and filled with clean soil as soon as practical.

17.6.4.3 Public Toilets

Public toilets are provided at the eastern end of Emily Bay and in the Emily Bay pine plantation.

The eastern toilet includes basic changing rooms and is in good condition and adequate for current use. The toilet facilities in the pine plantation were extended and renovated during 2002. Changing rooms have been included in this facility, which is in excellent condition.

17.6.4.4 Walking Tracks

There are no formal walking tracks in the reserve, however many people walk around the foreshore between Emily Bay and the Cemetery. There are also informal tracks through the Emily Bay pines and the dunes.

A section of the coastal ridge track towards Point Hunter is undermined by a large sea cave. Barriers and warning signs will be erected to deter pedestrian access to this part of the ridge. The diversion of the walking track around this area will be undertaken in consultation with walkers and the community at large.

17.6.4.5 Vehicles

Public vehicle access to Cemetery Beach will be restricted by keeping the gate adjacent to the Cemetery locked. Campers will be allowed reasonable vehicular access to their camping sites at Cemetery Beach, as determined by the Conservator of Public Reserves. The Conservator of Public Reserves may limit the vehicles to which such access is granted and may vary or withdraw approval for such vehicle access if the conditions of approval are breached or if damage is being caused.

Timber vehicle barriers will be erected to prevent vehicle access to the Emily Bay dunes. In particular, timber barriers will be erected along both sides of the boat access to Emily Bay.

A timber vehicle barrier will be erected along the foot of the coastal ridge from the golf course to Point Hunter. This barrier will replace the logs that have been used to prevent vehicle access to the ridge, but have proved generally ineffective.

The condition of the Lone Pine/Chinaman's grassed picnic area will be monitored. It may be necessary to erect a vehicle barrier close to the Point Hunter road to prevent vehicular damage and improve public safety. In that circumstance, the community will be consulted specifically on the erection of such a barrier.

Surface drainage of the low-lying grassed area that is used for parking glass-bottom boats and tractors will be reviewed. It may be appropriate to undertake work to improve the surface drainage of this area, depending on cost and provided that any works do not increase flooding of the Point Hunter road pavement and provided any re-shaping of the area enables a good grass cover to be re-established. At times, it may be necessary for glass-bottom boats and tractors to be temporarily parked in alternative location(s) in the reserve, or removed from the reserve.

17.6.4.6 Rubbish

The number, type, and location of rubbish bins in the reserve will be reviewed periodically by the Conservator of Public Reserves.

17.6.5 Education and Interpretation

Point Hunter Reserve contains cultural heritage features of national significance. It also contains important fossil deposits, geological formations, and coastal strand vegetation. The reserve is adjacent to the Island's only coral reefs and most accessible tidal rock platforms.

17.6.5.1 Interpretation Strategy

An Interpretation Strategy and interpretive material for Point Hunter Reserve will be developed as resources become available. The principal interpretation and education themes in the reserve will be:

- cultural heritage; and
- conservation, land management and the environment, including the adjacent inshore marine environment.

Community involvement in the development and delivery of the Interpretation Strategy is encouraged.

17.6.5.2 Signs

Interpretive signs and warning signs, including signs that relate to the inshore marine environment adjacent to the reserve, will be erected in appropriate locations in the reserve. Signs will be designed and erected in appropriate locations and in accordance with the interpretation strategy.

17.6.5.3 School Visits

The Norfolk Island Parks and Forestry Service will encourage, and where possible assist with, appropriate school visits to the reserve that are designed to provide an understanding of Norfolk's natural and cultural heritage and aimed at encouraging students to participate in environmental protection, research and rehabilitation.

17.6.5.4 Walking Tours

The Norfolk Island Museums and the Norfolk Island Parks and Forestry Service will encourage, and where possible assist with, appropriate walking tours in the reserve that are designed to provide visitors with an understanding of Norfolk's natural and cultural heritage.

17.6.5.5 Community Involvement

Community involvement in the development and implementation of management programs in Point Hunter Reserve will be encouraged in association with the Norfolk Island Museum, Historic Society, and the KAVHA Management Board and Restoration Team.

17.6.6 Forestry

Forestry is not an appropriate activity in the reserve. However, trees that are removed in accordance with this Plan may be used for timber.

17.6.7 Sand Mining

Removal of sand from Point Hunter Reserve close to the Cemetery will be permitted by the Conservator of Public Reserves only if it is in the interests of the conservation and management of the reserve and subject to the conditions provided in Public Reserves Plans of Management Part A.

17.7 Research and Monitoring

A strategy for conducting research and for monitoring the effectiveness of management programs in the reserve will be developed in conjunction with the KAVHA Management Board.

17.8 Controlled Activities

This Section shall be read in conjunction with Section 11 of the Plan of Management (Part A) and the *Public Reserves Act 1997*.

Section 11 of the Plan of Management (Part A):

- approves specific controlled activities, with respect to all public reserves;
- provides general guidelines in respect of granting approvals and permits for controlled activities, with respect to all public reserves;
- specifies activities[38] in accordance with section 47(2) of the *Public Reserves Act 1997* that shall not be undertaken in any public reserve without a permit; and
- provides general guidelines in respect of granting permits for activities specified in accordance with section 47(2) of the Act.

This section of the Plan of Management (Part B) specifies controlled activities in accordance with Section 47 of the *Public Reserves Act 1997* in relation to the use of Point Hunter Reserve.

17.8.1 Camping

Camping shall be permitted in Point Hunter Reserve in the locations and at the times specified in the Gazette. Camping in 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 management plan to do so.

17.8.2 Vehicles

Private and commercial motor vehicles, other than plant and equipment, may be driven on and temporarily parked beside the roadway between Bay Street and Point Hunter.

Private and commercial motor vehicles, other than plant and equipment, may be driven on and temporarily parked on the picnic area adjacent to the Lime Kiln as defined by vehicle control barriers.

Private motor vehicles may be temporarily parked on the grass area between the Point Hunter roadway and the barbecues and picnic area to the south of that road, as defined by logs or other vehicle barriers placed along the foot of the coastal ridge.

Private motor vehicles may be driven in the areas in which camping is permitted in order to carry camping equipment for the setting up or taking down of camps that have been approved by the Conservator of Public Reserves.

Vehicles, plant and equipment that are necessary for the maintenance of the reserve may be driven on and temporarily left in the reserve only with the permission of the Project Manager (KAVHA Restoration Team) or the Conservator of Public Reserves.

Vehicles, plant and equipment required for the maintenance of the golf course may be driven on those parts of the reserve that are designated golf course only with the permission of the Norfolk Island Golf Club or the Conservator of Public Reserves. Golf buggies and other motor vehicles that are used for conveying golfers or their equipment may be driven on those parts of the reserve that are designated golf course only with the permission of the Norfolk Island Golf Club or the Conservator of Public Reserves.

[38] The activities specified are additional to the Controlled Activities prescribed in Part V of the *Public Reserves Act 1997*.

Glass-bottom boats or other commercial plant or equipment shall not be parked in the reserve except in accordance with a permit.

APPENDIX 1: MINIMUM GOLF COURSE PERMIT CONDITIONS

TO use for the purposes of playing golf that part of Point Hunter Reserve which is shown as a golf course on the attached plan **AND TO undertake normal golf course maintenance activities (including the mowing of grass, driving of vehicles approved by the Golf Club and minor changes to the landform of greens and tees)** on that part Point Hunter Reserve that is shown as a golf course on the attached plan during the period……**to**……**20**…, inclusive, subject to the following conditions:

1. the permit holder shall sign the attached indemnity form which will have effect for the duration of the permit;
2. the permit holder shall maintain a public risk liability insurance policy in the sum of at least $5 million, covering activities pursuant to the permit and shall have noted or endorsed on the policy the Administration of Norfolk Island's interest by specifically referring to the activities intended to be conducted pursuant to the permit;
3. the permit holder shall not sell food or liquor or allow food or liquor to be sold in the reserve without having all relevant licences and permits and the specific prior approval of the Conservator of Public Reserves;
4. the permit holder shall remove from the reserve all rubbish and other wastes associated with the activities conducted pursuant to this permit;
5. the permit holder shall maintain all fences, fittings and other fixtures in good order and repair;
6. the permit holder shall obtain the approval of the Conservator of Public Reserves prior to carrying out any works other than those approved by this permit;
7. the permit holder shall not plant any plant or interfere in any way with any plant, other than the mowing of grass in the course of maintaining tees and fairways, without the specific prior approval of the Conservator of Public Reserves;
8. within one month of the date of commencement of this permit the permit holder shall provide to the Conservator of Public Reserves a schedule of all chemicals (including out-of-bounds marking, herbicides, pesticides and fertilisers) intended to be used on the golf course within the duration of this permit. That schedule shall include the:
   - name(s) of the target species;
   - name and type of each chemical;
   - quantity and location of each chemical stored at the golf course; and
   - rate, frequency, method and location of application of each chemical.
9. the permit holder shall not use, or allow the use of, any chemical on the golf course unless that chemical and its use is in accordance with the schedule specified in Condition 8 of this permit as approved by the Conservator of Public Reserves;
10. within one month of the date of commencement of this permit the permit holder shall provide to the Conservator of Public Reserves a copy of the manufacturer's Material Safety Data Sheet for every chemical intended to be used on the golf course within the duration of this permit;

11. the permit holder shall place appropriate temporary signs warning users of the golf course and the general public that insecticides or other potentially hazardous chemicals are in use and indicating areas that have been sprayed;

12. the permit holder shall not interfere with any structure or natural feature, except in accordance with this permit, or a specific prior approval of the Conservator of Public Reserves, and shall ensure that all structures are treated in a manner consistent with their heritage status;

13. the permit holder shall not extend the area of the golf course (by mowing or other means) beyond that part of Point Hunter Reserve that is used and maintained as a golf course at the date of commencement of this permit;

14. the permit holder shall take all reasonable measures to ensure that only those motor vehicles that are approved by the permit holder for the purposes of maintaining or using the golf course have access to the golf course;

15. the permit holder shall not interfere with the enjoyment of Point Hunter Reserve by other members of the public and in particular shall not cause any obstruction or hindrance to persons walking across or around the golf course; and

16. the permit holder shall ensure that its activities, and those of its members and guests, do not interfere with other activities (such as the New Year's Day Races) that may within the duration of this permit be approved by the Conservator of Public Reserves on that part of Government House Grounds Reserve that is used as a golf course and shall cease its activities during the course of those other approved activities if so directed by the Conservator of Public Reserves.