'Splendid spars': a Norfolk Island forest history

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Key words*: settlement, exotic plants, Aruacaria heterophylla, Lane Poole, Pinney, seeds, presesrvation, forest management*

Norfolk Island bubbled up out of the sea three million years ago as a result of volcanic activity. It was eroded by the sea to its current size of 35 square kilometres (3529 ha) and was colonised by organisms that could fly, swim or float to it. The flora and fauna evolved sufficiently distinct characteristics to be considered as separate species endemic to Norfolk Island. There are 178 plants indigenous to the island, 42 of which are regarded as endangered (Environment Australia 2000, 4). Some are like the Norfolk Island pine (*Araucaria heterophylla*) which has Gondwanic relatives to the north *(A. columnaris)* and on the Australian mainland—hoop pine (*A. cunninghamii*) and bunya pine (*A. bidwillii*). The latter are features of outstanding universal value in the Central Eastern Rainforests Reserves of Australia World Heritage property.

The island's ecosystems are highly vulnerable as a result of disturbance and 6 out of 15 bird species have become extinct since European settlement. This colonisation of Norfolk Island by flora and fauna is paralleled by its human occupation. During the early 13th century A.D. there was a little known occupation of Emily Bay by Polynesian people, who presumably moved on to the land of the long white cloud, New Zealand (Anderson and White 2001). Five centuries later, following enthusiastic reports about the island's resources from mariners, British colonial outposts and penal settlements were established in 1788 and again in 1825. Then in 1856 the Pitcairn Islanders were transferred to Norfolk Island forming the modern community which was much increased after the Second World War II (Lennon 2003).

The human population is less diverse than the plants which make up the current vegetation of the island and whose exotic names give evidence of their origins: African olive and box thorn; Chinese wood-oil tree; English oak; Hawaiian holly; Illawarra flame tree; Japanese honeysuckle; Jersey cud weed; Lombardy poplar; Lord Howe Island blackbutt; Madeira vine; Mexican poppy; Moreton Bay fig; New Zealand Christmas bush and pittosporum; Queensland black bean and umbrella tree. They vary from sturdy tree invaders to shrubs, flowers, grasses and creepers.

Norfolk Island was brought to the attention of Europeans when Captain James Cook RN in command of HMS *Resolution* sighted it on his second world voyage on 10 October 1774. Next day he and a party landed, claiming the island for the British Crown:

> …the chief produce of the isle is Spruce Pines which grow here in vast abundance and to a vast size, from two to three feet in diameter and upwards, it is of a different sort to those in New Caledonia and also to those in New Zealand and for Masts, Yards & Ct superior to both…My carpenter tells me that the wood is exactly of the same nature as the Quebeck Pines. Here is another Isle where Masts for the largest Ships may be had (Beaglehole 1961, 565-6).

Cook's report to the Admiralty and publication of his book *A Voyage to the South Pole* in London in 1777 gave Norfolk its first publicity (Hoare 1999, 5).

Lt Philip Gidley King established the first convict settlement on Norfolk Island on 6 March 1788, one month after Governor Phillip had established Sydney Cove (Hoare 1999, 10-12). By October 1796, 619 hectares of land had been cleared of timber which was used by sawyers for construction purposes, and in 1798 the 25 tonne decked boat *Norfolk* was built of local pine; this

boat was sailed by Matthew Flinders in his circumnavigation of Van Diemen's Land in 1799. However, the planned widespread use by the Admiralty of Norfolk Island pine did not eventuate and the cleared land was given over to agriculture. Maize, wheat, potatoes, sugar cane, bananas, guava, lemons, apples and coffee were all successfully grown. The settlement was abandoned in 1814 (Hoare 1999, 25-7).

The second convict settlement occurred in 1825 and the sawpits were re-opened and a lumber yard was established in Kingston by 1831. The peak convict population of 1,872 occurred in 1840. By 1856 when the last convicts had sailed for Hobart, the island had been cleared of 40 per cent of its vegetation, and woody weeds were already a problem—limes, lemons and apple-fruited guavas had already over-run much of the formerly cultivated land and the native forest (Nobbs 1991, 161).

The Pitcairn Island community was relocated to Norfolk Island in June 1856. Shore based whaling and subsistence agriculture remained the main activities during the nineteenth century, although there are references to constructing small boats from pine logs (Hoare 1999, 97). In 1895 the New South Wales government took over the responsibility for Norfolk Island and in 1896 the population was over 800 of whom about one-third belonged to the Melanesian Mission (Hoare 1999, 107). From about 1910 Burns Philp commenced their Norfolk Island trade as part of their Pacific Trading enterprise.

Norfolk Island was 'placed under the authority of the Commonwealth of Australia' under the terms of Act No.15 of 1913 of the Parliament of Australia; a resident Administrator was appointed who, among other duties, regulated the disposal of Crown land. The main exports were lemon juice, passion fruit pulp, coffee, lemon seeds, potatoes, onions, wool, arrowroot, and frozen and smoked fish (Hoare 1999, 122). There was a 'banana boom' in the late 1920s due to the demand for disease-free fruit in Australia and New Zealand. New settlers arrived to grow bananas, causing the population to peak at 1231 in 1933 (Hoare 1999, 126-7).

Tourism was seen as a possible means of developing the local economy as early as 1919 and in 1926 the golf course was developed, foreshadowing the importance of recreational facilities in supplementing the island's natural beauty. In 1927 preservation of the historic buildings and repair of the ruins was mooted. In 1933 a tourist brochure referred to Norfolk as 'The Madeira of the Pacific'. The guest house *Dewville* at the eastern end of Quality Row developed in the 1930s but after the Second World War II, the Paradise Hotel was developed on this site, and tourism increased again by 1949 (OC 2002, 80-1).

Utilisation of local timber had been for domestic purposes aside from the construction during 1923-5 of the schooner *Resolution* which was to trade between Norfolk and New Zealand, but her first cargo of fresh fruit spoilt and in 1927 Burns Philp purchased her for the New Hebridean, Fijian and Tongan trade (Hoare 1999, 124-5).

Interest in forest conservation increased with the intervention of the new Commonwealth authorities, in the person of the Inspector General of Forests, C.E. Lane Poole. He first visited in 1925 and made recommendations regarding timber reserves, training, timber royalties, reforestation etc. However, by 1931 the Administrator, Colonel Bennett, merely sought his advice on technical matters. On 16 June 1931, he asked for advice on transplanting seedlings from the forest. Lane Poole replied to the Secretary of the Department of Home Affairs:

> I do not recommend the transplanting of seedlings from the forest to new country on account of the difficulty which exists in distinguishing between seedlings suitable for planting out and those which to all outward appearance are of seedling growth but which are dominated trees and not suitable for transplanting. If planting on a large scale is contemplated, more satisfactory results will follow if trees are raised in a nursery, and on reaching the age of two years, transplanted into their permanent sites… With regard to the spacing of trees I should advise planting in rows about eight feet apart, and the same distance between the plants, if planting for commercial purposes is carried out. This spacing gives 680 trees to the acre.

He elaborated on 23 June 1931:

> The transplanting of seedlings from the forest is usually attended by serious risk of failure, the reasons being that the seedlings, though quite small, may be many years old and be suppressed by the canopy and the roots of old trees of the forest. It has been demonstrated with trees whose annual growth rings are discernible with a microscope, that apparent seedlings 1-3 feet high were in reality 20-50 years old. It was customary in Queensland some 15 years ago to attempt planting by transplanting seedlings of hoop pine (this is a sister of the Norfolk Island pine), and the failures, which reached 85%, caused the department to resort to the sounder practice of raising the seedlings in a nursery.

He further gave instructions for nursery practice, tilth, weeding and shading. The Administrator ignored his earlier advice and, not one to be ignored, Lane Poole persisted with his attempts to have sound forest policy adopted on Norfolk Island. When the Administrator objected to his interference in setting the royalty for cutting pine on leasehold land, Lane Poole wrote a long reply to the Secretary of the Department of Home Affairs on the need for a forest policy for Norfolk Island, dated 24 June 1931:

> I am prepared to admit that the Administrator is in a better position than I to gauge the price the agriculturalist can afford to pay for the pine trees he cuts down. My fear is that in his desire to cultivate as much land as possible, trees may be felled on sites which will not be retained permanently for agriculture. This is what has occurred in all the States of Australia and in most other lands. I should like to see the price of the timber –the Crown's property – raised to something approaching what it will cost to grow it, so that instead of making it very easy for settlers to destroy an asset they will be forced to consider very carefully the relative value of land and timber before applying for a permit…
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> The policy of planting three trees to replace one cut down is a very interesting revival of a law which has been tried in many lands, both old and new, and which has had to be abandoned for certain reasons, the most cogent of which are as follows:
>
> 1. It takes a number of trees, usually more than three, to supply one sound mature mill tree.
> 2. The trees must be correctly placed apart when planted.
> 3. They must be in sufficient numbers to form a little wood otherwise the necessary 'forest condition' will not become established.
> 4. They must be thinned at intervals so as to assure the maximum development of timber of the right size and form.
> 5. The area on which they are growing must be reserved or otherwise set aside for the production of timber and this reservation must be maintained for at any rate the duration of the life of the species making up the wood, which may be as long as 60 or 100 years.
> 6. The wood must be protected from small and great stock, from vermin, from fire, and from man during the whole period of its life.

The practical impossibility of securing such a continuity of policy as is required for forestry from private owners soon rendered the laws regarding replacement of trees inoperative and they became a dead letter or were repealed.

> …Norfolk Island held under lease hold tenure…select on each lease, an area which in the opinion of all, is less valuable for agriculture, fence it, and reserve it definitely for forestry purposes for all time. In this 'wood lot' to use the American farmer's term, the trees to replace those cut would be planted. Here again, I would rather if it is possible, get the lessee to plant a definite area annually than the number three per tree felled. Were he to plant a square chain annually with trees 6 feet apart, or 144 a year, he would in the course of 30 years have a valuable little wood of 3 acres. A reserve of 3 acres on each lease may be too small or too great, and 144 may not be an appropriate number; these matters would be decided by the Administrator. The principle should hold good, viz., the dedication of a definite percentage of land on each lease to forestry and a continuity of planting annual and equal areas, till the wood lot is complete. The final result will be the establishment by the

> efforts of the lessees of a number of forestry reserves which in the aggregate would make up a satisfactory percentage of the total area of the island. The objections still remain, and only by including in the lease documents stringent conditions will it be possible to maintain a continuity of planting and of protection, and to enforce the [silvi]cultural operations which from time to time are necessary.
>
> Even with these aids I am not very sanguine that the object desired will be attained and I certainly consider a better and a less expensive way in the end to all concerned would be achieved by concentrating on the existing Government Forestry Reserves and applying sound forestry practice to them…If the whole of the policy is not translated into action by the lessee, at any rate a number will it is hoped see the value of the proposal, and there may also develop in the minds of the inhabitants in general that somewhat rare civic attribute—a 'forest conscience.'…
>
> I am sorry that the term 'neglect' used by me in connection with Mt Pitt timber reserve is resented. I submit, however, that the fact that the reserve is not enclosed is sufficient evidence of neglect. So long as stock can enter the reserve its improvement is not possible and it can only be labeled 'neglected.'...
>
> In the matter of the comparison with Phillip Island, there is certainly one other destructive agent necessary to reduce Norfolk Island to the same barren condition, and that is the rabbit…The stages on the road to desolation are so gradual as to be hard to distinguish but they are always progressive. Many an ancient civilisation has boasted that the immutable laws regarding denudation might hold good for other lands, but not for them; and those civilisations and their cities have become deserts and wildernesses.
>
> In conclusion, I must say that the Forestry Bureau is most desirous of assisting the Administrator to establish a forest policy that will be enduring…. (NAA, A2430 1931 POL13, pp.11-15).

The major effort at this time was directed at collecting seed for distribution elsewhere in Australia. In October 1931 Lane Poole advised that the request from the Western Australian Conservator of Forests for 2 cwt of seed of Norfolk Island pine could not be filled as the 'seed ripens in June and rapidly deteriorates in quality after maturing.' The prospects for next year were good as the Administrator had reported that 'the number of cones now forming would indicate a good seed crop.'

However, in July 1932 the Queensland Forestry Board was informed that supplies of fertile Norfolk Island pine seed were unavailable. There was also a request from the South Australia Forests Department for seed. On 5 July 1932, John R. Logan of *Edrom*, Eden, NSW wrote to Lane Poole regarding collecting seed from his Norfolk Island pine: '1 cwt gathered after a gale and more to come; tree planted by B. Boyd in 1847 and is 85 feet 5 inches high and nine feet around the butt.' He queried obtaining 20 shillings per pound for the seed. Lane Poole replied on 13 July that twenty shillings was possible from nurserymen and seed merchants with direct supplies to other States.

In July 1932 Captain Charles Pinney was appointed as the new Administrator of Norfolk Island, and on 22 August 1932 he reported on forest condition:

> …inspection of the Mt Pitt Forest Reserve…deplorable condition. Apparently hardwood can be obtained only in the most inaccessible corners. The northern slopes of Mt Pitt are almost bare of marketable pine and the tracks cut through the undergrowth by various logging parties only serve as tracks for straying cattle who devour every young pine in sight …difficulty in obtaining hardwood fence posts…one settler has utilized concrete posts… (NAA, A2430 1932 POL13, p.34).

Pinney wanted to plant 100 acres of hardwoods and requested seed. In October funds were granted to complete the fencing of Mt Pitt reserve and the Administrator was advised on 29 October 1932 that Lane Poole had sent 3 parcels (each about ½ pound) of seed for planting in Mt Pitt Timber Reserve: tallowwood (*Eucalyptus microcorys*), (requested from L.Hudson, Forest office, Taree –'same gathering as we sowed at Coopernook'), turpentine (*Syncarpia laurifolia*), and grey

ironbark (*E. paniculata*); the latter was collected in November 1930 by Andrew Murphy ('botanical seed collector of Australia', Woy Woy, NSW) at a cost of 25 shillings per pound. (NAA, A2430 1932 POL13, pp. 21-33).

Lane Poole also advised the Secretary of the Department of the Interior, on the training (wages, board, fares, conditions) of Master E.V. Stephenson, the local lad selected to be a forester:

> ...1½-2 years…under my direction as Acting Principal of the Australian Forestry School…training in nursery, clearing and planting…Yarralumla nursery…some two months at a Queensland nursery tending and raising hoop pine…5 year bond… 'because this country would have its attractions for a young islander' (NAA, A2430 1932 POL13, pp.11-12).

The new Administrator requested a visit from the Inspector General of Forests to advise on afforestation matters. He sailed on SS *Morinda* from Sydney on 19 January 1933 and later reported:

> Apart from Rocky Point Reserve which was already fenced in 1925, I can report no improvement in the conditions. On the contrary, thanks to the rapid commercial development of the island, the number of pine trees on the island has been greatly reduced and no steps taken to replace them. Standing on Mt Pitt and overlooking the whole island, I was astounded at the change. While much of the timber has been sawn up and utilized…a good number of trees have been destroyed in the process of cultivating the land for bananas and other crops…in 1925, 'there were two mills…combined out put of 12,500 cubic feet (150,000 super ft) a year-just enough to supply the little needs of the population in case wood and building timber, and to provide a tiny export to Vila and Lord Howe of second class case wood', today there are five mills and the export of fruit alone takes 84, 000 cases a year. In addition there has been a large increase in buildings. Now settlers have erected homes and out-houses, and boarding houses and cottages to let by the sea have sprung up…major part of mill logs have come from private property…it is clear that the trees on private property will not be replaced and the same applies to leasehold, so that as time goes on such lands will become treeless.
>
> …gratifying to know that the period of forest apathy is past and that the present Administrator has taken the first steps towards establishing a forest policy for the island. Headstone Reserve is now enclosed and the closing of the Mt Pitt Reserve will be effected very shortly.
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> The very satisfactory growth of the self-sown pines on Rocky Point Reserve shows what would have occurred on the other reserves had they been also closed against stock…
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> Mt Pitt…further areas without any old pines to act as seed trees. The planting up of these blanks with nursery raised stock is the most certain solution, though the Administrator's proposal to 'spot sow' them with the aid of the boy scouts and girl guides is an interesting one and may prove economical if successful.
>
> …grey ironbark and tallowwood seeds …raising them in tubes…nursery site chosen…old bowling green, surrounded by tall pines…fair soils…As an experiment I recommend that the whole of the old bowling green be fenced in and the ground cultivated. This will show the possibilities of raising pine trees naturally around the old trees in Kingston which must be replaced as they die out. It is important that the cultivation be deep so as to sever the tree roots or the young pines will die during summer drought through root competition.
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> In my 1925 report I recommended an increase of 485 acres in the area of forest reserves…adjoining Mt Pitt Reserve. In 1927 the Minister approved 400 acres …being set aside for reforestation, but in September 1927 Col. Bennett recommended leasing for agricultural purposes of 263 acres…a serious blunder…now Capt Pinney has re-reserved 172 acres.
>
> Chopping and changing in any government policy leads to dissatisfaction. In forestry, changes of policy result as a rule in alienation of forest land and destruction of a government asset.

> It is to be hoped…that the boundaries of forest reserves in Norfolk Island will not again be interfered with but will remain intact as an area dedicated to the growing of the Island's future requirements in timber…Unfortunately there is no change for the better and all but Rocky Point Reserve may be said to be growing a minimum of timber in a maximum of time.
>
> I wish to emphasise…that Norfolk Island has definitely progressed along the lines of commercialization…The subdivision of the Melanesian Mission lands has resulted in the advent of settlers from the mainland who have initiated progressive methods of farming and have built up a fine export trade in bananas, potatoes, beans and passion fruit. There are 100 cars on the Island including heavy lorries. There has been a general rise in the standard of living, and the descendants of the Pitcairn settlers, known locally as 'Islanders' have been forced to follow the lead of the 'Mainlanders', as both Australian and New Zealand settlers are called…
>
> At present the upward tendency of the curve of progress is flattened by economic forces beyond the control of the population; I feel sure, however, that with the restoration of stable economic world conditions the advance of the Island will continue.
>
> …the need of a sound forest policy, important as it was in the old lotus-eating days, is now a fundamental necessity if the Island is to be a self-supporting unit of the Empire. There are many things which the Island must import and these will increase in kind and in number as the Island progresses. It should be able to attain a sound balance of trade; the possibility of this objective being frustrated by its having to import timber must be avoided. Again, a people who have progressed to the point now reached, can no longer be regarded as a primitive race but should be subject to laws differing in no essential from to those in force in Australia. The cutting of timber must be carefully regulated and the inhabitants must submit to laws and regulations which will minimise waste in utilization on one hand and on the other prevent forest destruction by stock of young trees growing up in forest reserves. They must be prepared to pay a fair price for the trees, that is a price that will pay the cost of growing the forest again. (Lane Poole, 21.February 1933, A2430 1933 POL13 Pt 2).

During the remainder of the year, correspondence shows that pine seed was dispatched from the Island to the Trade Agency section, Department of Treasury, in Sydney via SS *Mataram* for distribution and rendering of accounts and Mt Pitt was finally enclosed. In August 1933 Lane Poole argued for the reservation of Phillip Island as a forest reserve with a photograph which illustrates 'worst case of erosion that has come to my notice in the three continents where I have worked as a forester' (Lane Poole, 4 August 1933 to Prime Minister's Department, A2430 1933 POL13 Pt 2, p. 74-5). It was to be another 50 years until this erosion was seriously tackled.

Th Second World War had a major impact on island conditions and construction of the airstrip in 1942 entailed cutting down the convict planted landmark, the Avenue of Pines (Hoare 1999, 130). The demand for timber exploded during the war years and production increased to 65,000 super feet per month causing severe depletion of the Island's timber reserves—cutting out all accessible hardwoods and making heavy inroads into stocks of local pine (Norfolk Island Parks and Forestry Service 2003, 21). In 1943 Lane Poole reported again on Norfolk Island forestry and he retired in 1945.

An influx of settlers especially from New Zealand occurred in the mid-1960s and led to locals forming the Norfolk Island flora and fauna society in 1967 due to their concerns about destruction of native trees. In 1968 the Australian Conservation Foundation published Professor John Turner's report on *The Conservation of Norfolk Island* in which reservation of Mt Pitt as a national park was recommended as well as flora reserves along the cliffs and islets, reservation of Philip Island as a bird sanctuary, and conservation of the historic Kingston landscape.

In 1975 the local council chose the name 'Norfolk Island Nature Reserve' for the Mt Pitt area which had been re-fenced at the Australian government's expense again at this time and the national park and botanic garden were finally gazetted in 1985. Prior to this, both areas had been public reserves declared under the *Commons and Public Reserves Ordinance 1936*. The Kingston and

Arthurs Vale Historic Area was designated in 1981 and development was restricted there (Hoare 1999, 146-7). These areas were subsequently also proclaimed as Commonwealth reserves on 30 January 1986 under the *National Parks and Wildlife Conservation Act 1975* following a request from the Norfolk Island Legislative Assembly.

Norfolk Island National Park currently forms 14 per cent of the total land area of Norfolk Island. Prior to the Second World War, the Old Mountain track was the main access to Mount Pitt. The track is now used by walkers as a direct route from the park entrance to the summit. Much of the area was infested with introduced trees and shrubs which eventually became unwelcome weeds. These are gradually being removed and replaced with native species as part of a rehabilitation program.

The area comprising the Forestry Zone was cleared for banana plantations during the 1930s but after the collapse of the banana industry developed into a dense thicket of African Olive. This area was included in the Mt Pitt Reserve as an area reserved for forestry purposes in 1955 although it includes several small areas of remnant native vegetation.

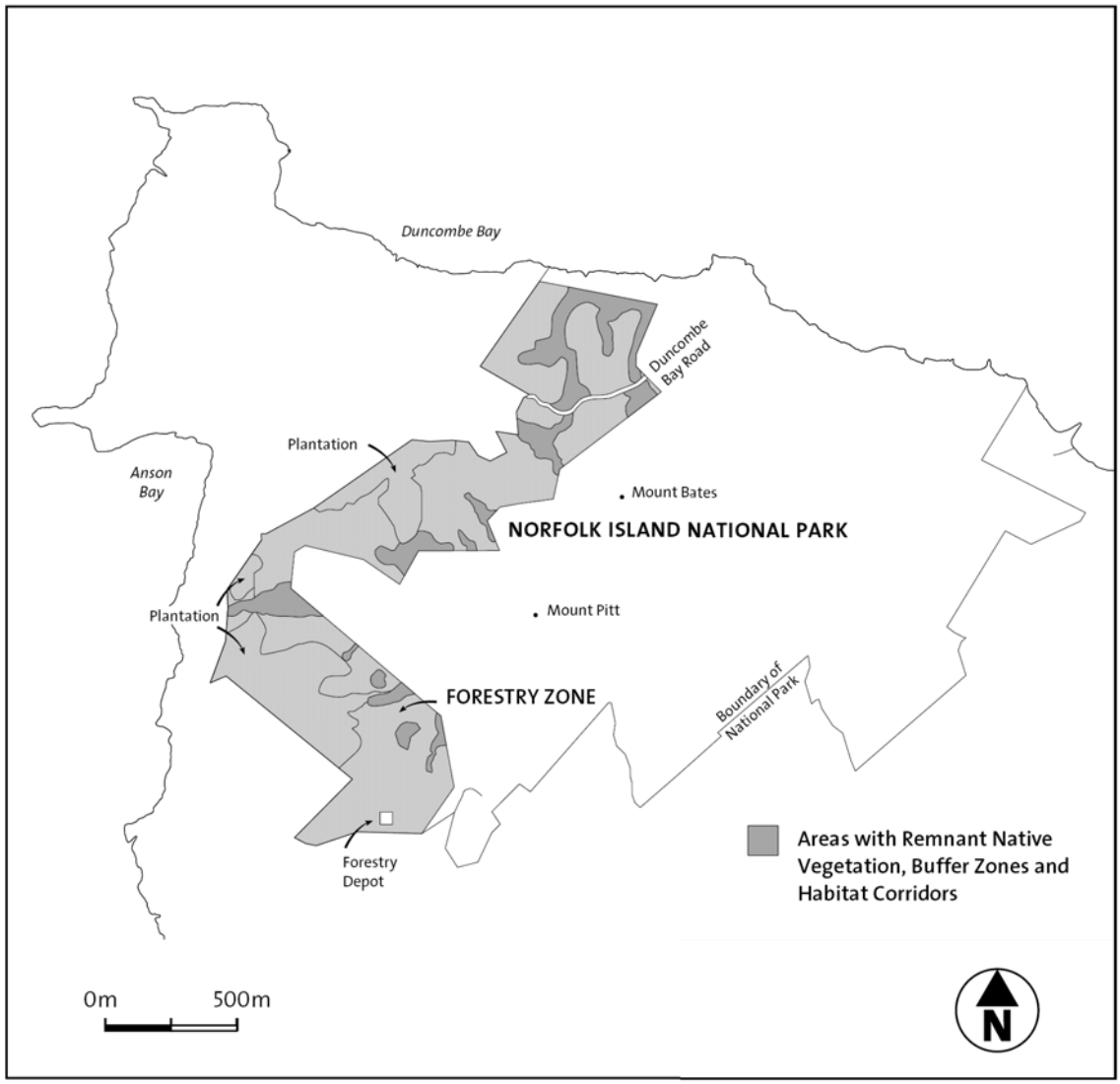

Figure 1: Norfolk Island Forestry Zone
Source: Environment Australia 2000. *Norfolk Island National Park and Norfolk Island Botanic Garden: Plans of Management*. http://www.deh.gov.au/parks/publications/pubs/norfolk_plan.pdf

Some sections adjacent to the western boundary were cleared of olives, and eucalypt plantations were established. Management of the plantations within the zone is the responsibility of the Norfolk Island Parks and Forestry Service and is based on the Forestry Working Plan (Benson 1985). Planting of approximately 4 hectares per year of Norfolk Island pine has continued. The small areas of remnant native vegetation in the Forestry Zone have been surveyed and recommended for preservation due to their high nature conservation values. No non-native species will be planted in the Forestry Zone with the exception of eucalypts which may be planted for a second rotation as existing eucalypts are harvested for local use.

A reliable source of seedlings for forestry operations within the Forestry Zone and for rehabilitation and endangered flora recovery programs in other areas of the National Park was required. This led to a nursery being jointly established within the Forestry Zone of the Park, staffed and maintained by the Island's Parks and Forestry Service (Environment Australia 2000, 69-70).

The Norfolk Island government passed the *Trees Act 1997,* to preserve and manage the taking (i.e, felling, ring barking, removing, destroying, etc.) of protected trees and to control the exploitation of the forestry resources of Norfolk Island. All 36 tree species native to Norfolk are protected under this Act, and permits are required to take any of them. Some are not protected, however, until they reach a specified height (e.g. *Araucaria heterophylla* at 4.5 metres in height); this takes account of the abundance and vulnerability of each species (pers. comm., P. Davidson). Trees Act permits apply equally to Crown or lease, but not to public reserves or national park, where other legislation protects all plants. Trees may be taken from public reserves for timber, by the Administration, provided to do so is within the Plan of Management and has the approval of the Conservator. Royalty now only applies to trees on unleased Crown land (Norfolk Island Parks and Forestry Service 2005). In addition, the *Trees Act* aims to promote and protect the conservation of the natural environment and landscape beauty of the island; and to encourage the cultivation of plantation timbers as a renewable resource. There has been significant planting of pines and other native trees and shrubs on the Island during the past 15 - 20 years.

Table 1: Norfolk Island, recent forestry activity

Year	Volume of timber treated by tanalith plant (cubic metres)	No. of tree permits issued
2000/01		136
2001/02	836	110
2002/03	610	125
2003/04	267	163

Source: Conservator of Forests, Norfolk Island, July 2005.

There are three mills operating on Island: Howard Christian's Mill, Rocky Point Mill, and a bush (mobile or Canadian) mill operated by the Norfolk Island Parks and Forestry Service. Most structural timber is imported, despite Lane Poole's policy of sustainable consumption, the reason for establishing Eucalypt plantations. However, Norfolk Pine is susceptible to borer and most pine is treated at the tanalith plant. Some eucalypt is cut annually by Parks and Forestry Service, mainly for posts and rails, also some flooring orders and large beams. There are several cabinet makers on the Island and some souvenir makers. The timber for the museum's new whaleboat came from two pines cut down near the Anson Bay lookout.

The utility of *Araucaria heterophylla* has spread far and wide across the Pacific. It has been widely planted in Hawaii with positive impacts (Hawaii Forestry Trees 2005) and studied at the Institute of

Tropical Forestry, Puerto Rico (Walters and Francis n.d.). However, in some parts of coastal New South Wales it is now regarded as a weed because of its landscape impact (Indigenous Landscape Design Australia 2005) and its 'splendid spars' are no longer valued. But on Norfolk, Lane Poole's hope of developing a 'forest conscience' has occurred with reservation of the national park and public reserves, extensive replanting, and a sustainable annual cut of timber from freehold land.

References

Anderson, Atholl and White, Peter 2001. Prehistoric settlement on Norfolk Island and its Oceanic Context, *Records of the Australian Museum* 27, 135-141.

Australian Biological Resources Study 1994. *Flora of Australia, vol.49, Norfolk and Lord Howe Islands*, Canberra: ABRS.

Beaglehole, J.C. (ed.) 1961. *The journals of Captain James Cook. Vol. 2, The voyage of the Resolution and Adventure, 1772-1775*. London: Halkuyt Society.

Benson, M.L. 1985. *Forestry Working Plan Norfolk Island*, Canberra: Forestry and Timber Bureau.

Davidson, Peter. Conservator of Forests, Norfolk Island Administration, Personal communication, July 2005.

Environment Australia 2000. *Norfolk Island National Park and Norfolk Island Botanic Gardens Plans of Management*. Canberra: Environment Australia.

Hawaii Forestry Trees 2005. www.ctahr.hawaii.edu/forestry/Data/trees.asp accessed 12 October 2005.

Hoare, Merval 1999. *Norfolk Island, a Revised and Enlarged History 1774-1998*. Rockhampton: Central Queensland University Press.

Indigenous Landscape Design Australia 2005. Environmental Weeds, www.ilda.com.au/page/weeds.html accessed 12 October 2005.

Lennon, Jane L. 2003. Norfolk's Past – the Key to its Future, keynote address, Australian Society for Historical Archaeology conference, Norfolk Island, October 2003.

Nobbs, Raymond 1991. *Norfolk Island and its Second Settlement 1825-1855*. Sydney: Library of Australian History.

Norfolk Island Parks and Forestry Service 2003. *Plans of Management for Norfolk Island Public Reserves, Part A*

Norfolk Island Parks and Forestry Service 2005. www.info.gov.nf/legislation/Numbered Acts/1997/Trees Act 1997.doc.

(OC) Otto Cserhalmi and Partners Pty Ltd., February 2002. *Draft Kingston and Arthurs Vale Historic Area Conservation Management Plan.*

Turner, J.S, Smithers, C.N., and Hoogland, R.D. 1968. *The Conservation of Norfolk Island.* Eastwood, Vic: Australian Conservation Foundation Inc. (Special Publication No.1).

Walters, Gerald A. and Francis, John K. n.d. Araucaria Juss. Wwwntsl.fs.fed.us/wpsm/Araucaria.pdf. accessed 12 October 2005.