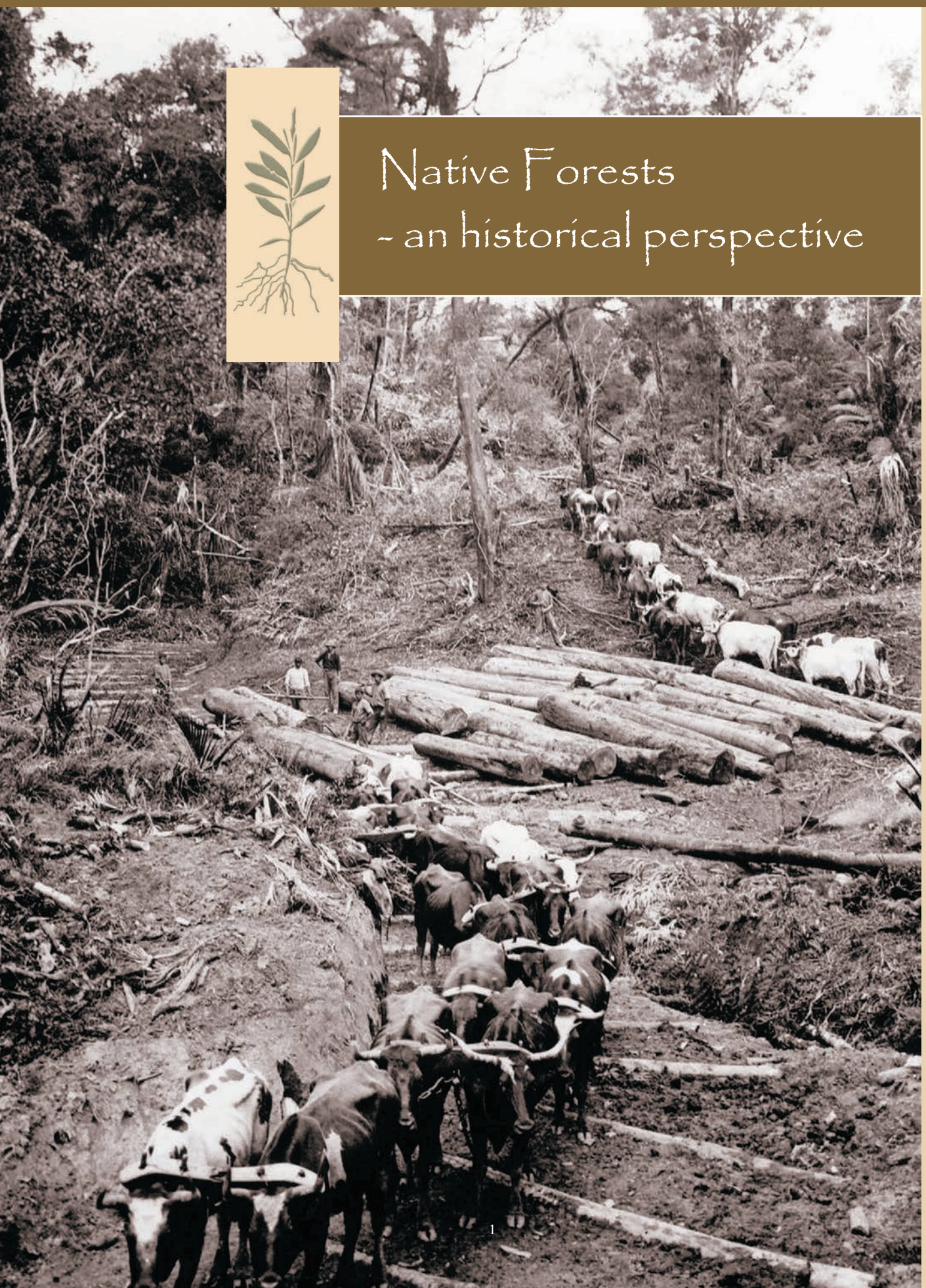
Native Forests - an historical perspective



EARLY SETTLERS

The forest's place in New Zealand's earliest historical writing has usually been limited to accounts of its removal by saw and fire to make way for settlement. The governments of those early days gave greater priority to settlement promotion than to protection of the forests, and their policies reflected this situation. Thus the timber industry was often reduced to assisting with the clearance of land by cutting the trees prior to settlement, or was directed to land not considered suitable for agriculture as farming was accorded privileged status as the prime land use.

The first use of New Zealand's native timbers by Europeans was for the commercial mast and spar trade, firstly to support the demands of the British Royal navy but later to supply timber to Australian merchants and the growing local ship building industry. Speculative trading voyages in the late 1700s gave way to commercial shore-based spar and timber stations by the 1820s and 1830s, as the expanding communities of New South Wales and Victoria also required large quantities of commercial construction and domestic building timber.

The forests, while usually of great abundance, were not a free resource. Traders had to purchase their trees from Maori and such transactions were often hampered by divergent cultural attitudes towards exchange and ownership. Most accessible forest had been removed during earlier periods of Maori settlement so extensive planning to shift logs to ship-side was required, and collections were more regularly from the less inhabited areas such as the west coast harbours of Hokianga and Kaipara.

For this early trade kauri *(Agathis australis)* was by far the most preferred species although some other species such as kahikatea *(Dacrycarpus dacrydioides)* and tanekaha *(Phyllocladus trichomanoides)* were also being cut and either used locally or exported for secondary uses. In 1840, after the declaration of British sovereignty and signing of the Treaty of Waitangi, naval timbers were more regularly cut under licence from Crown reserves or purchased at prices fixed by the Surveyor of the Admiralty, located in New Zealand.

Missionary activity over the same period focused on encouraging the Maori population to participate in the wood trade as a means of both providing sustainable enterprise, and lifting the social and economic well being of the people.

DEVELOPING TIMBER INDUSTRY

Over the period from 1840 to 1880 the timber industry continued to develop. This development was based partly on the demand for wood in Australia and further afield, but also to support the rapidly growing domestic demand for timber to supply housing, fencing, firewood and later railway sleepers in the fledgling colony. The State also came to play a greater role in this development, firstly by attempting to facilitate efficient use of wood from Crown owned lands through various systems of licensing. However, by the 1870s, the wasteful use of privately owned forest and the overall rate of deforestation was causing some concern, and some cases of soil erosion were also being noted for the first time.

The location of the industry was determined by the patterns of settlement. Auckland, Canterbury and Otago had significant sawmilling operations running during this period. Because there was little inter-regional trade, the species cut was determined by what was available locally.

End-use was guided by local Maori knowledge and experience, although this quickly expanded to meet the wider domestic and commercial requirements of the new settlers. Furniture production was being promoted as early as the late 1840s and, from about this time, exports of sawn timber exceeded that of masts and spars, topping 1 million board feet by 1847. Board feet (sometimes called super-feet - superficial feet), is a unit of measure for the volume of timber. One board foot is the volume of a one-foot length of sawn timber one foot wide and one inch thick, approximately equivalent to 30 cm x 30 cm x 2.5 cm.

Wood products were New Zealand's major export item, a situation that continued for many years until the pastoral farming industry surpassed it. Much of the export activity was from Auckland and Northland as kauri was still the internationally recognised species.

Elsewhere species such as rimu *(Dacrydium cupressinum)* and matai *(Prumnopitys taxifolia)* were being cut for housing and furnishings, but very little of this was being sent offshore.

The industry initially relied upon manual labour to square and pit saw timber. By the 1840s, sawmills driven by water wheels were in use and a decade or so later steam driven plants were cutting 2-3 million board feet of timber annually. Scale and mechanisation meant that logs of good size and shape were required for sawing, and in significant quantities. The less common species were frequently ignored during felling or were cut and left to rot while the species present in commercial quantities were extracted from the forest.

SAWMILLER'S INVENTORY

A typical sawmiller's inventory would have included several native tree species, with availability dependent upon locality (Table 1). Maori uses for the major timber trees are also described by Clifton 1990 and various other references. In addition to native trees, a wide variety of other native plants from shrubs to grasses were utilised by Maori (refer to Section 3.1 in this Handbook).

Table 1: Locations, wood properties and end uses of native timbers.

Species	Locations where cut	Recognised wood properties	End uses
Kauri *Agathis australis*	Auckland, Northland, Coromandel, Great Barrier Island	Size, straightness, light, moderately durable,easy to cut and work, finishes well	Poles, masts and spars, vats and tanks, large beams for construction, panels and finishing timber, furniture
Rimu *Dacrydium cupressinum*	Throughout most of NZ	Size, straight, light, moderately durable, easy to cut and very decorative, finishes well but hard to nail when dry	Construction, joinery, weatherboards, flooring, panels and furniture
Hard beech *Nothofagus truncata*	Northern South Island and some higher altitude areas in the North Island	Tough, strong and dense, but hard to cut and work	Pit props for mining
Red beech *Nothofagus fusca*	As for hard beech	Very stable but difficult to dry, light, strong and finishes well	Brush blocks, dowels, furniture and finishing timber
Silver beech *Nothofagus menziesii*	As for red beech but more extensive in South Island	Pale, light, strong, finishes well, bends readily when steamed	Interior joinery and furniture
Kahikatea *Dacrycarpus dacrydioides*	Throughout most of NZ on wetter sites	Pale, light, easily dried and worked but non-durable timber, odourless and tasteless	Favoured for cheese and butter boxes, fascia and weatherboards, boat building and kitchen ware
Kohekohe *Dysoxylum spectabile*	North Island lowland forests and Marlborough Sounds	Soft light brow wood which takes a high polish, easily worked	"NZ Mahogany", furniture, boat trim, crafts
Mangeao *Litsea calicaris*	Northern half of the North Island	Ash-like strength and toughness	Timber jacks, bullock yokes, sports goods, boat frames
Matai *Prumnopitys taxifolia*	Much of NZ but less abundant in the far north	Strong, light, excellent finishing, hard wearing, polishes well, dry timber splits when nailed	Door and window sills, flooring, finishing, furniture
Tawa *Beilschmiedia tawa*	North Island and upper South Island lowland forest	Light coloured, easily dried hardwood, moderately stable, works and finishes well	Furniture, interior fittings, good turning timber, wooden rollers, clothes pegs, wooden tools and instruments
Totara *Podocarpus totara*	Throughout NZ	Very durable, available in long straight lengths, splits readily, light, easily shaped and worked	Fence posts and battens, house piles, exterior joinery, crafts
Pohutukawa *Metrosideros excelsa,* Northern rata *Metrosideros robusta,* Southern rata *Metrosideros umbellata,* Puriri *Vitex lucens*	Various parts of NZ Pohutukawa and puriri - northern half of the North Island; rata spp. throughout NZ	Heavy, strong, dense, hard wearing, good durability	Blocks, piles, bridge and truck decks, doorsills, tools, furnishings, crafts

DEVELOPING INDUSTRY

The nature of the forest industry continued to develop in tandem with settlement of the country. Secondary processing of sawn timber (cabinet making, sashes and doors, and furniture) sprang up as communities become more consolidated. The basis for this industry was still the native timber cut in the same general locality, however coastal shipping permitted products such as silver beech furniture to be sold in Auckland, and kauri timber was regularly available in Wellington and the South Island.

From the early 1870s onwards pressure grew for a better accounting for the harvest from New Zealand's forests, particularly in relation to expected future national wood supply and demand. Attempts to establish a government agency to address these issues initially received little support, although in 1896 a forestry division was established in the Lands Department. The Forestry Division immediately began trials with a range of introduced tree species designed to meet New Zealand's future wood needs, and to provide a range of wood products. Experimentation with these foreign ("exotic") species was largely due to the widespread view that any serious attempt to manage lowland native forest for timber production would be both difficult and uneconomic.

NATIVE FORESTRY IN THE 1900s

Meanwhile the native timber sawmilling industry was reaching its zenith, cutting 433 million super feet of lumber in 1907, a level of production not achieved again until 1949 when the harvest from exotic plantations was well under way. Much of this volume was destined for export, providing valuable foreign exchange while rapidly depleting the remaining forests as cutting shifted into new regions to enable production levels to be maintained. Most domestic wood consumption was still in the housing and commercial construction industry, although a range of mouldings, weatherboards, and panels were cut for the finishing, cabinet making and furniture industries. Almost this entire product was consumed locally, the exception being the kahikatea box industry that was stretched to produce enough packaging material for rapidly increasing butter and cheese exports.

NEW ZEALAND FOREST SERVICE

By the early 1920s the newly formed NZ Forest Service was expressing its concerns about the "mining" of the native forest resource, and was seeking to impose controls to conserve both the forest and its longer-term wood producing capability. Leading by example it was also implementing extensive planting programmes with exotic species to fill projected gaps in the country's future wood supply. The advent of the economic recession of the late 1920s and early 1930s, and the government's need to find employment for those put out of work, resulted in a tree-planting boom that exceeded the targets the Forest Service had recommended. Nevertheless, pressure to cut the native forests continued, with the Second World War generating accelerated harvesting activity for "essential defence purposes" such as small boat construction, and packaging for exports to Northern Hemisphere allies.

After the war a flurry of economic expansion and house building placed even more pressure on the native forests. The exotic forests planted during the dark days of the depression were still quietly growing but the community had become so accustomed to building with high-quality native species that anything else was regarded as inferior. The government was also reluctant to remove its price controls on native timbers, a situation which favoured their continued use but irked the Forest Service who were strong champions of conservation through market pricing as well as other means. Consequently indigenous timber production did not slacken until 1953.

CONSERVATION OF NATIVE FORESTS

Before the first Maori settlers arrived about 1000 years ago, over 75% of New Zealand's 27 million hectares were covered in natural forest. The rest of the land was unsuitable for forest growth, being too wet, too high or too dry. By the time European settlement got fully under way in the 1840s, the forest cover had fallen to 53% and it continued to decline throughout the colonisation period.

There is now strong commitment to conservation of native forests, which are recognised as unique and distinctly different from northern hemisphere forests. New Zealand's native plants have evolved over millennia in relative isolation and the native tree species exhibit a range of form and colour that is unique to this country.

Some of our protected native trees also have special cultural significance, such as some of the remaining large trees in our once extensive kauri forests. Kauri grows to be one of the largest tree species worldwide. The famous Tane Mahuta, in the Waipoua Forest, has a girth of 14 m and is 51 m tall and 1,200 years old. Considerably larger kauri have been recorded.

As pressure has grown to preserve native forests, the government has introduced increasingly restrictive laws regarding native logging. Prior to 1975, it was legal to convert native forest to other land uses. From 1975-84, this activity was restricted on Crown land to selective logging only. Since 1984, all native logging ceased on Crown land in the North Island and in 2000 in the South Island, with the exception of a few permitted areas.

THE RESOURCE TODAY

Today, 23% of New Zealand remains under natural forest. These forests include:

- Largely unaltered natural forest in lowland and upland areas;
- Natural forest that has the general character and appearance of the original but has been modified by human activity; and
- Native forest which is being managed for commercial wood production.

There are some 6.3 million hectares of natural forests today of which 1 million hectares are privately owned (Table 1). About one quarter of the privately owned land is under Maori freehold title. The desire to conserve this remaining resource has led to increased interest in renewable plantation forestry with native trees. Many native species are slow growing and not amendable to plantation forestry. However, there are exceptions such as totara *(Podocarpus totara)*, which is now grown in plantation on a small scale. Totara is culturally very important to Maori and has superb wood properties and finish.

The timbers cut from many other native trees also have excellent wood properties, plus unique and desirable grain and colour. Plantation forestry offers a means of growing a sustainable resource that can be used for high value products in the future. Research and experimentation into the silviculture of native species is important to developing the potential of this promising resource.

Table 1: The resource of natural (native) forest in New Zealand in public and private ownership.

Natural Forest Resource	(000 ha)	Percentage of Total Forest Area
Public Natural Forest		
National and Conservation Parks, DoC administered	4952	77
Other Crown, etc	297	5
Local Authorities	45	1
Total Public Forest	**5294**	**83**
Private Natural Forest		
Maori owned	227	4
Other Private Natural Forest*	852	13
Total Private Natural Forest	**1079**	**17**
Overall Total	**6373**	**100**

** Approved Sustainable Forest Management Plans stand at c. 50,000 hectares with an approved sustainable harvest (standing volume) of 80,000m^3. (www.maf.govt.nz/forestry/forestry-in-nz/indigenous forestry).*

Reference:

Clifton, N.C., 1990: *New Zealand Timbers. The complete guide to exotic and indigenous woods.* G. P. Publications Ltd., Wellington. 170p.

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Tãne's Tree Trust
Native Trees for the Future

Tãne's Tree Trust promotes the successful planting and sustainable management of New Zealand native trees and shrubs for multiple uses.

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