

A Brief Overview of the History of New Zealand Flora and Associated Plant Propagation Techniques Used at Taupo Native Plant Nursery[©]

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INTRODUCTION

My name is Juliette Curry and I have the great pleasure of being hosted in Japan through the IPPS New Zealand/Japan exchange programme.

I will be talking about the unique flora of New Zealand and about the company I work for and the role we play in conserving our native flora.

HISTORY OF NEW ZEALAND FLORA AND ICONIC TREES OF NEW ZEALAND

New Zealand has some of the most varied and unique flora on earth due to its long isolation from other continental land masses since our land mass broke away from Gondwanaland over 80 million years ago.

The history, climate, and geology of New Zealand have created a great deal of diversity in New Zealand's vegetation types. New Zealand has over 2300 species of plants with a large percentage of those being endemic to our country.

One estimate indicates that New Zealand is home to more tree species than the whole of Europe even though it has less than 3% of the land area.

A distinctive feature of New Zealand forests is they are comprised mostly of evergreen trees and shrubs, in comparison with other similar temperate areas of the Northern Hemisphere.

The two main types of forest in New Zealand are podocarp and southern beech (*Nothofagus*) forests.

Podocarp forests include such species as totara (*Podocarpus totara*), rimu (*Dacrydium cupressinum*), matai (*Prumnopitys taxifolia*), miro (*Prumnopitys ferruginea*), and kahikatea (*Dacrycarpus dacrydioides*). Southern beech forests include five species of the genus *Nothofagus*.

New Zealand is also home to one endemic species of the Araucariaceae family, the largest and best known *Agathis*, the New Zealand kauri, *Agathis australis*.

Kauri forests historically covered much of the northern half of the North Island of New Zealand until extensive logging drove them almost to extinction.

Early Maori used the timber of the kauri and totara trees to build canoes, some entirely built from a single log. The kauri tree was also prized for its gum, which had many uses including fuel for lighting fires, chewing gum, and as a pigment in Maori traditional tattooing.

Some of New Zealand's most iconic trees were used for everything from rope making and weaving, to medicines, and building materials.

New Zealand flax was, and is still today, used extensively for rope making and weaving due to the exceptional strength of its fibres.

Cabbage trees (*Cordyline*) were historically used by Maori and early European settlers for food. The pith and inner roots of young trees were dried and used to make a kind of porridge.

Today the cabbage tree is recognised all over the world and widely used in landscaping for its striking structure and form.

The nikau palm (*Rhopalostylis sapida*) is the most southern naturally growing palm in the world. It grows along the coastline of the North Island and into the northern parts of the South Island. The large leaves were used to line the walls and roofs of huts for early Maori. The hard seeds were used as ammunition for shooting birds and the inner leaves were eaten raw or cooked.

Our pohutukawa (*Metrosideros excelsa*) and rata (several different species are referred to by this name) trees from the genus *Metrosideros* are commonly associated with the arrival of summer and Christmas. Their stunning show of red flowers in December along our coastline is a typical image of the New Zealand landscape.

The kowhai trees (trees in the genus *Sophora*) with vibrant yellow flowers are one of the most colourful trees of New Zealand. Its early flowering marks the beginning of spring for us, and the nectar is a favourite of our native bird, the tui.

TAUPO NATIVE PLANT NURSERY

The Taupo Native Plant Nursery, <http://www.tauponativeplant.co.nz/>, was established 50 years ago by the Government. Its purpose was to grow and supply, native plants for the restoration of their scenic reserves, national parks, and forests.

Today the nursery is privately owned and has two branches in the North Island, in Taupo and Auckland, and one branch on the West Coast of the South Island.

The nursery is the largest in New Zealand producing over 3 million plants annually.

The main focus of our business is to source, propagate, and grow eco-sourced native plants from a range of habitats stretching from the mountains to the sea.

Eco-sourcing plants involves the collection of seed and/or vegetative material from the different regions of New Zealand. Collecting propagating material from the wild ensures the regional diversity of each species is considered when using it in restoration plantings around the country. This helps to preserve the natural biodiversity of each area as much as possible. Depending on climate and soil type the same species can vary in growth habit and tolerance from one region to another. They can be expressed morphologically (variations in leaf size, shape or colour) or physiologically (tolerance, plant growth, and susceptibility to disease).

Our trained staffs travel the country collecting seed during the summer and autumn months to be processed and propagated at our Taupo and West Coast sites.

Seed collection begins at the end of December and goes through to around June. Each ecological region is visited up to four times in a collection season to ensure the full range of species is collected at the best time.

Seed is processed at our Taupo base using a range of techniques to replicate as much as possible the natural processes each species will go through prior to germination. These techniques include soaking seed in either hot or cold water, drying seed, and in some cases using acid to penetrate the outer seed coat. Some seeds are sown fresh and some require stratification for periods of up to 6 months.

In some cases vegetative material is collected from the wild if seed is scarce or difficult to propagate. This is kept to a minimum however to reduce the impact on the natural populations of each species.

Taupo Native Plant Nursery also produces many cultivated species of native plants for landscaping purposes and these are propagated by either cuttings or tissue culture.