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Native Vegetation for North Marlborough

A PLANTING & RESTORATION GUIDE

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INTRODUCTION

This guide is a companion to "Native Vegetation for South Marlborough" which was published by the Marlborough District Council (MDC) in 2004. Ecological surveys commissioned by MDC throughout North Marlborough (that is, north of the Wairau River) since then have stimulated interest in a matching guide. Many people are interested in enhancing their land with restoration planting. This has often been a suggestion for the management of the significant natural areas identified in the ecological surveys. Providing refuges for special North Marlborough plants is another reason for planting.

North Marlborough is typified by the labyrinthine system of waterways, fertile valleys and rugged hills. It has a benign climate that favours plant growth: reliable rainfall and a relatively mild temperature range. In its primeval state it would have been cloaked in forest from the coast to the tops, including the alluvial valley floors. It would have abounded with native creatures: flying birds, flightless birds, bats, lizards, frogs and a wealth of invertebrates such as giant land snails, weta and stick insects. Localised forest clearance occurred in the centuries prior to European settlement, but widespread clearance happened subsequently, in the quest for timber and farmland. Loss of habitat and predation by introduced mammals are responsible for the decimation of the native fauna.

Except in unusual places such as the ultramafic zone (Mineral Belt) in the NW of the region, forest quickly grows back on formerly cleared land, so long as farm stock and feral animals are in low numbers, fires are prevented and overbearing weeds such as wattles and wilding pines are eliminated. The power of natural regeneration to restore the bush cover, whether the clearance was done by people or was the result of severe winds, is probably as great as anywhere in New Zealand. Nevertheless there is plenty of scope to stimulate and supplement naturally regenerating vegetation with native plantings.

North Marlborough has an array of rare, threatened and unusual plants to rival those of South Marlborough. They include species that are unique to Cook Strait shores, endemic to the ultramafic zone, found only in very localised high-altitude sites or widespread but at risk nationally. Many lend themselves to propagation and planting. Some, such as Cook Strait kowhai and fierce lancewood, are better known in cultivation than in the wild. Others, such as large-leaved milk tree, will only be saved from regional extinction by propagation and planting in sites where they are secure.

1| PLANTING AND RESTORATION PURPOSE

WHY NATIVE VEGETATION?

By planting native plants or restoring areas of existing native vegetation you are helping to preserve the natural character and tremendous natural diversity of North Marlborough. Also, if species that grow naturally on the site are selected, correctly planted and cared for they should require only minimal maintenance, once established. In turn, they will attract native birds and insects, enriching Marlborough's ecosystems.

New Zealand supports over 50,000 native invertebrate species including insects and soil fauna, many associated with particular native plants/ecosystems. Some are specific to certain plant species, so if we do not provide 'their' habitats, they may be lost.

For a native planting to thrive with a minimum of fuss, the grower needs to put in some initial research, starting with identifying its purpose. The next step is to observe (or find out) what originally grew on the site, having adapted to suit the conditions. Only then, should species be selected.

Broadly, indigenous plantings tend to be motivated by a combination of conservation, aesthetic and practical purposes. The following description of some purposes for planting should help you clarify your own aims and objectives.

CONSERVATION/RESTORATION

Planting native species offers the satisfaction and enjoyment of enhancing natural biodiversity or reconstructing habitats based on natural patterns. It can be as simple as creating a pocket of native trees in the corner of a paddock, restoring native vegetation beside a stream or pond, or providing a buffer on an exposed bush edge. Plants can also be planted within successional scrub or low forest such as gorse, bracken, tauhinu, manuka and kanuka, to speed up the natural successional process. Species that can be used for this include beeches, podocarps (rimu, matai, kahikatea and totara) and broadleaved trees (such as kohekohe and tawa) and will eventually form tall forest. Species can also be chosen for their value to native birds, lizards and insects. Other potential benefits lie in the improvement of native fish habitat, water quality and erosion control.

The selection of which species to plant requires care, to maintain the natural character of North Marlborough. Not only should naturally occurring species be used, but if possible these should be ecosourced, to protect the genetic makeup of the original local plants.

Forest, wetland and streamside remnants and coastal scarps are among sites in North Marlborough being protected and enhanced by private landowners who value the district's ecological heritage. The highest priority for conservation is protection of remaining areas of primary native vegetation (e.g. unlogged forest). However, there is also value to natural ecology and native biodiversity in secondary native vegetation (e.g. manuka scrub, kanuka forest, tree fern forest, regenerating forests of kamahi or beech). In North Marlborough there are normally plentiful nearby seed sources to fuel the regeneration process, but management and planting can add valuable diversity and speed the transition.

Ideally, threatened plants are best protected in the wild where they occur. This is not always practical or adequate though. Fierce lancewood *(Pseudopanax ferox)*, for example, is extremely rare in North Marlborough, so seeds from remaining wild plants have been collected and the resulting seedlings have been distributed to landowners who are within the natural range of fierce lancewood and have protected sites for planting. It is hoped that this will help the species to survive and flourish into the

Pygmy button daisy *(Leptinella nana)* is a threatened plant that occurs on flood-prone riverbanks in the Pelorus catchment.

future. The Department of Conservation offers information on threatened plants and is happy to advise and assist landowners wanting to establish or protect such plants on their properties.

ENHANCING WATER QUALITY

Wetlands

Natural wetlands, full of life, once occurred throughout North Marlborough on valley floors and coastal flats. Most have been drained for farming, but quite a few remain. Restoration can begin with exclusion of domestic stock and weed control if necessary, followed by planting of appropriate species such as flax, cabbage tree, toetoe, tussock sedges, kahikatea, ribbonwood and pukatea. Swamp maire *(Syzygium maire)*, now rare in North Marlborough, could also be established in sites not prone to frost or drying out.

Ideally, a wetland site will include a mix of open water and swampy or dry land to encourage birds. Sloping edges rather than steep sides, provide access in and out of the water and unplanted areas allow for bird 'standing room'. Irregularly shaped edges provide shelter from a range of wind directions and islands can be predator-free nesting sites. Any modification or mechanical disturbance to a wetland, even if it is ultimately for restoration purposes, may require resource consent. Advice should be sought from the Marlborough District Council.

Wetlands can have a number of benefits including;

- purifying water by stripping nutrients such as nitrogen through bacterial
- acting as a giant sponge to control water flow
- trapping sediment and minimising silt entry to waterways and harbours
- providing habitat and a food source for fish, birds, insects and other animals

If you would like to know more about wetland restoration, the Marlborough District Council, Fish & Game New Zealand, the Department of Conservation and the Landcare Trust may be able to help with advice and, in some cases, financial assistance for protecting wetlands.

Paul and Muff Newton farm at "Kaituna Hills" near Havelock. In 2005 they decided to restore a one hectare remnant area of wetland on the flats near the Kaituna River. The site was relatively weed free and so the first job was to fence the area from stock to protect the few native plants that were still there and allow for more restoration planting. From an original base of only one remaining kahikatea tree and some rushes and sedges, the Newtons have added more kahikatea, flaxes, ribbonwoods and cabbage trees and five years later the wetland is starting to add natural character and habitat value to the flats. Because the flats are flooded by the Kaituna River from time to time willow invasion is an ongoing issue, as bits get left after a flood and become established within the fenced area.

The Newton wetland fenced and newly planted in 2006 (left).
Four years later the wetland is starting to add natural character to the flats (right).

Riparian Strips

A mosaic of diverse riparian forest that provided abundant habitat for native fauna once grew alongside rivers and streams of North Marlborough. Restoration of waterway margins by removing weeds and planting native species improves local biodiversity and has a number of other benefits including:

- shading and cooling of water to promote freshwater life
- providing habitat and food for plants and animals
- providing a seed dispersal corridor for native birds
- improving water quality by filtering some faecal matter, sediment and nutrients from surface run-off
- uptake of some nitrogen and phosphates by plant roots, which also protect against bank erosion
- aesthetic value, shade and shelter for stock on the other side of the fence and recreational opportunities.

Species suitable for riparian sites are listed in a separate column in the plant lists in Chapter 4. Planting should generally include low, overhanging species along wet stream margins (such as tussock sedges, toetoe and harakeke) and taller species (such as kowhai, cabbage trees, kanuka, lowland ribbonwood and narrow-leaved lacebark), planted back from the water's edge.

The Rai Falls on the Rai River near Pelorus Bridge

The Rai Valley Area School has been actively involved in native planting and restoration in their local area for a number of years. Environmental studies are woven into the school curriculum and the children have been involved in stream life studies and helping to restore the riparian areas along the rivers and streams. The school has its own propagating nursery where they grow a variety of native plants from local seed. Some of the species include kowhai, kanuka and cabbage trees. Once the plants are approximately two years old the school provides them to local farming families to plant along stream edges to help stabilise the banks and shade the waterways in the area.

PROVIDING A NATIVE BIRD, INSECT AND LIZARD HABITAT

Our forests are quieter and less full of life than they used to be. Native bird populations continue to decline, due to loss of habitat and predation by introduced pests. Native invertebrates (insects, spiders, etc.) and lizards are declining too, for the same reasons.

The planting of even a single native tree such as a kowhai in a garden can attract native birds. Plant or protect a larger area – from a garden to a hillside forest or wetland – and a whole range of bird, lizard and invertebrate species will benefit from the production of fruit, seeds, nectar and foliage. Even leaf litter and topsoil beneath native vegetation is valuable habitat for many species.

Locally-occurring plant species that are particularly bird, insect and lizard-friendly include harakeke, cabbage tree, five-finger, tree fuchsia, manuka, kanuka, kahikatea, totara, kowhai, lancewood, narrow-leaved lacebark and a range of small-leaved shrubs that produce numerous fleshy fruit.

Preventing extinctions and increasing the populations of native plants and animals may require eradicating or controlling pests such as possums, ferrets, stoats, feral cats, rats, hedgehogs, pigs, goats and deer.

A rare yellow form of the manuka gecko *(Naultinus manukanus)*, found on Arapawa Island. This species (which is also known as the Marlborough green gecko) is endemic to North Marlborough and is on the list of nationally threatened fauna.

Long-tailed Bats at Pelorus Bridge

At Pelorus Bridge Scenic Reserve between Canvastown and Rai Valley a small population of long-tailed bats roost in the large forest around the bridge and camp site. On warm summer evenings, bats can sometimes be seen in the twilight, circling high in the forest canopy, flying along the river or foraging for moths above the street lights on the SH 6 bridge.

Bats are the only land based mammal species in New Zealand and fossil records show that before humans arrived three bat species were widespread and abundant. Now one of these (the greater short-tailed bat) is extinct and the other two (short-tailed and long-tailed bat), are declining rapidly and rarely seen.

Forest and Bird, along with local iwi Ngati Kuia and the rural community, have initiated a project to study and protect the few long-tailed bats living at Pelorus Bridge. Detector devices which pick up the sonar signals from bats have been used and bats have been detected on d'Urville island as well as in the Pelorus/Rai/Wakamarina area. Bats are threatened by both loss of habitat (they need good mature lowland podocarp forest), and introduced pests including possums, rats, stoats and wasps.

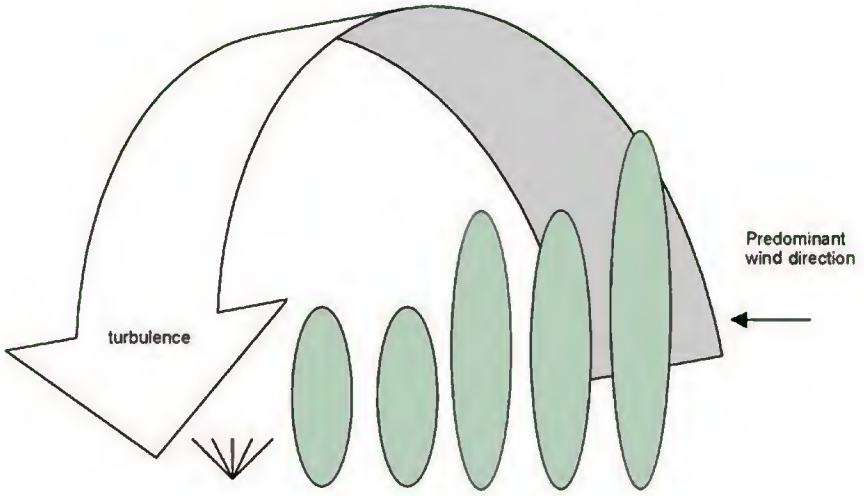
PRACTICAL PLANTINGS

Native plants can be used for various practical purposes. They include:

- shelter and shade (for buildings, gardens, farm animals, etc)
- landscaping
- filling unproductive areas
- protection from fire
- timber production
- honey production
- carbon sequestration

Shelter and shade

Native plants can provide effective shelter and shade for a range of settings, from the bach to the farm or vineyard. Aesthetically, native shelter plantings are low-key yet attractive. Providing appropriate species are selected and become well established, they should thrive with little maintenance.



A four-tier planting, with the tallest trees protecting smaller plants from the prodominant wind.

Exotic shelter species such as pines, macrocarpa, poplars, willows, gums and pampas grass are popular because they grow fast. However, on the downside, many, like the gorse, broom, elderberry, hawthorn and pines planted in our pioneering past and more recently pampas, wattles, sycamore and cotoneaster, have become weeds and do not provide optimum habitat for native wildlife.

Many landowners opt to plant both native and exotic species together, to suit particular sites or fulfil specific purposes (such as provision of autumn colour, fruit, nuts, etc). Exotic species are also used to provide shelter for interplanting or underplanting with native species. Tree lucerne (tagasaste) is frequently used like that, having the benefit of flowering through winter and spring when nectar and nutritious plant matter are scarce; bellbirds, tui and kereru are the prime beneficiaries. The tree lucerne can be progressively removed as the native plants grow up, or it can be left to die out (it is rapid-growing but fairly short-lived).

Landscaping

There is a growing trend towards using native plants in landscaping, as New Zealanders increasingly seek to express their identity through low-maintenance native plantings. The landscapes of North Marlborough have a lot of native vegetation, forming the setting for most baches, houses and farms, also amenity areas. It doesn't take much in such a setting to soften the outlines of buildings or facilities and make them blend into the landscape; for instance some lancewoods or tree ferns against a house, a few cabbage trees near the stock yards, or the use of flaxes to define and shelter a picnic spot. The scope beyond that is endless.

As for any plantings, the selection of appropriate species for the site, correct planting and follow-up maintenance will significantly contribute to the success of the planting.

Filling unproductive areas

Farm management has long trended towards fencing off areas that are not good for pastoral production and planting them in trees. In the past, exotic timber species have been planted as a rule. Increasingly though, awkward corners, very steep land, boggy sites, bony faces and coastal scarps are being retired from pastoral farming and either allowed to regenerate or planted in natives (or both). This is happening on a substantial scale on some properties, the landowners recognising the economic value of enhancing the natural character of their farm environments.

The benefits are in improved stock management, protection of native vegetation and enhancement of native biodiversity. There may also be harvests of high quality native timber (e.g. totara and rewarewa) or honey (e.g. manuka and kanuka).

Protection from fire

If planting close to a house or building, especially where the property is vulnerable to grass or scrub fires, avoid species that carry fire such as manuka and kanuka. Most other native trees and shrubs, also flaxes, are fire resistant. Many will recover after fire, including cabbage tree, kowhai, mahoe/whiteywood, broadleaf and ngaio.

Flammable vegetation, such as manuka scrub, bracken, pine trees or gorse, can similarly be given a measure of protection from fire by planting a margin of fire-resistant native plants. As natural regeneration progresses in North Marlborough, the vegetation becomes increasingly less vulnerable to fire; the same is true if native fire-resistant species are planted within the flammable vegetation.

Timber production

Many native tree species provide timber with various properties, however commercial forestry in New Zealand has focused primarily on exotic species. Farmers interested in native trees for timber have been establishing plantations in the last few decades. The NZ Farm Forestry Association has an Indigenous Forest Section and is a network for sharing information on establishment techniques and follow-up maintenance. The former NZ Forest Research Institute (now SCION), has put out a very useful book on growing totara for wood (Bergin 2003) and another on native trees for wood (Bergin & Gea 2005).

Totara is the obvious native timber tree for North Marlborough. It is hardy and relatively quick-growing. Other species that could be considered are rewarewa,

kahikatea, black beech, red beech, silver beech, pukatea, kohekohe, tanekaha and black maire. It would be wise to seek advice on matching species to sites, planting densities and management. Some species may need to be planted within the shelter of other vegetation.

Honey production and medicinal uses

Manuka and kanuka are probably the mainstays amongst native species of the honey industry. The nectar from their prolific flowers makes honey that is marketed as "manuka honey". Also important in North Marlborough are kamahi and honeydew from black beech. Rewarewa and southern rata also produce good honey. All of these native plant species could be planted for honey production, as well as for other reasons.

Many common native plants have medicinal value, some scientifically verified and some known mostly through traditional Maori knowledge.

Carbon sequestration

With the Emissions Trading Scheme (ETS) and the Permanent Forest Sink Initiative (PFSI) now in place, there is the option to plant native trees or manage existing regenerating native vegetation to capture atmospheric carbon (carbon dioxide) and earn carbon credits that can be sold or used to offset emissions. A number of Marlborough landowners are already taking advantage of these opportunities.

While native plants may be slower growing than some exotic species they provide additional biodiversity benefits. In North Marlborough natural regeneration rates are probably as high as anywhere in the country, effectively sequestering more and more carbon as the complexity and stature of the regenerating forests increase over time. Whether planted or naturally regenerating, areas set aside for "carbon farming" will accumulate more carbon if browsing animals are excluded or controlled to low levels. Landowners should contact the local MAF office (details listed in the Appendices), or forestry consultants for more information on opportunities available to them through the Emissions Trading Scheme and the Permanent Forest Sink Initiative.