

Restoring Native Forest on the Wairau Plain

Margaret Peace for the Marlborough District Councils' Tui to Town Project– June 2008

Thirty years ago I came to Marlborough and bought a small piece of flat land at Tuamarina. Like much of the Wairau Plain at that time this was pasture with no trees except for a single walnut tree and a barberry hedge along the road frontage. The only wildlife consisted of a few sparrows and a lot of grass grubs.

This one acre of land now carries a small native forest (1,000 square metres) of broadleaf, beech and podocarp trees up to 12 metres tall with an under storey of ferns and lianas. Seven species of native birds are regularly breeding here, together with nine species of introduced birds. Since 2005 I have been involved with a local landcare group in restoring a further 2 hectares of public land alongside my property. Pioneer native species are now well established on this site.



Margaret Peace propagating native plants at her home



Three year old native plantings at Blind Creek, Tuamarina

Size of area required - Obviously the larger the area the better! About 1,000 square metres is a reasonable area which can easily be cared for until establishment is complete.

Species to be planted - It is important to plant only those species which are natural to the region. Avoid the many horticultural cultivars offered for sale. If possible they should be grown from seed collected within this ecological region as this keeps the local plant genetics going and also means the plants are better adapted to the particular conditions we experience here in Marlborough. The most economic size of plants is in root trainers. In the case of podocarps my experience is that it is best to transfer these to polythene bags and grown them on for a year before planting out.

A variety of “pioneer” species are available, which grow fast, and will provide shelter for slower, more delicate species. The ones I used at Tuamarina were:

Coprosma robusta (karamu) and *C. propinqua*,
Pittosporum tenuifolium (kohuhu) and *P. eugenoides*
(lemonwood),
Pseudopanax crassifolius (lancewood) and
P. arboreus (five finger),
Griselinia littoralis (broadleaf),
Olearia solandri (coastal shrub daisy),
Kunzea ericoides (kanuka),
Leptospermum scoparium (manuka),

Phormium tenax (harakeke – flax),
Carpodetus serratus (marbleleaf),
Plagianthus regius (lowland ribbonwood),
Hoheria angustifolia (narrow leaved lacebark),
Myrsine australis (red matipo),
Melicactus ramiflorus (mahoe),
Dodonaea viscosa (akeake),
Fuchsia excorticata (tree fuchsia).

Even though all of these species are reasonably hardy some have requirements for light so need to be planted on the edges and on the north side of other plants (kanuka and manuka, flax and coastal shrub daisy). Others like mahoe, five finger, akeake and tree fuchsia are frost tender so need to be sheltered overhead initially or planted under something else (tree lucerne/*Chamaecytisus palmensis* is good for this – it grows fast and provides good shelter and bird feed and dies naturally or can be removed after 15 or so years).

Once the pioneer species are established and are creating a more sheltered microclimate (2 - 4 years), other species including podocarps, tree ferns and so on can be planted.

Dacrycarpus dacrydiodes (kahikatea),
Prumnopiys taxifolia (matai),
Dacrydium cupressinum (rimu),

Alectryon excelsus (titoki),
Macropiper excelsum (kawakawa),
Metrosideros umbellata (southern rata),

The frost tender species mentioned above (mahoe, akeake, five finger and tree fuchsia), could also be planted now if providing initial shelter isn't possible.

Most of the species mentioned above can be planted 1.5 - 2 metres apart. Close spacing results in the kind of tree density that is natural in native forests, and provides the most suitable habitat for birds. Trees that are destined to grow very large and last for centuries, such as beech and podocarp species need to be planted 3 metres apart.

Refer to the "Wairau Plain Landscape Concept Guidelines" for more detail on plant species.

Weed control

Small native seedlings cannot compete with tall grass and weeds, which block out sunlight and rob soil moisture. In smaller areas the best method is to sheet mulch the area with several layers of overlapping newspaper, held down by a covering of wood chips or slices of baled straw. This kills all weed growth beneath it. Where this is not practical, individual plants may be mulched. In my experience, because the Wairau plain is such a dry area, mulches that block moisture from getting into the ground (commercial plastic covers, carpet squares etc), are best avoided as it is important to capture any light rainfall that is available.

If herbicide is used to control weeds once plants are in, the utmost care must be taken to avoid any possibility of spray drift, since natives are especially sensitive to herbicide. A weed eater is only recommended if the operator is skilled and the plants are well marked - tall bamboo stakes are recommended for marking the position of each plant. These can be colour coded to record which year plants were established which can be useful for larger plantings.

Microclimate considerations

Before planting find out how exposed the site is to frosts. It may be necessary to avoid planting frost-tender species until more frost-tolerant species are established to reduce the worst effects of frost, or plant a few temporary exotic species like tree lucerne to provide shelter. After four years the close-planted pioneer species should be forming a closed canopy, so that no more weeding is needed and ferns can be planted under the trees.

Also consider moisture, most plants do better with some moisture although some need free draining soil at the same time and cannot tolerate "wet feet". Ideally plantings will be watered for the first 3 years although most will survive if well mulched to retain and capture any available water, and the season is not too harsh. If watering is done a good watering occasionally is better than little and often. One to two buckets of water per plant is recommended or stand with a hose for at least 1 minute.

Plants for bird food

Most trees and shrubs will provide habitat for a range of native insects which are part of the diet of many native birds. Birds such as tui and bellbird also need access to nectar-producing flowers all the year round. Kowhai and harakeke are favourites on spring and other nectar produces are the Pittosporums and Pseudopanaxes. However some of the most valuable plants for nectar during the autumn and winter are Australian species such as Banksias, Grevilleas and some Eucalyptus species. These are best planted in a separate area from the New Zealand natives as they require different conditions (lots of open space and light). Podocarp trees (totara, kahikatea etc) will eventually produce tons of fruit suitable for native pigeons and parrots, but this will not happen until they are about 30 years old. In the short term many of the broadleaf species, especially Coprosmas, will produce berries for smaller birds (silver eyes and shining cuckoos) within 3 years.

Establishing a native ecosystem, even on a small scale, is infinitely rewarding. It provides a source of interest and education for people of all ages - not to mention healthy outdoor exercise!

Many small efforts will undoubtedly make a vast difference to our collective enjoyment of the environment of the future.