

# New Zealand **Tree Grower**

*Promoting the wise use of trees for  
profit, amenity, sustainability and the environment*



New Zealand Farm Forestry Association | Oranga Rākau Aotearoa

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## Why land owners over-pay for native planting

**Bronwyn Douglas**

I recently attended Mystery Creek as part of the team from Balanced Forestry, a business which provides low-cost native seedlings and consultancy services to land owners. The crowds were good and interest in native planting is higher than it has ever been.

Two key themes emerged repeatedly in conversation. First, there is significant passion and interest in establishing native plants and there is widespread confusion about the cost and complexity of doing so. The passion speaks for itself, and is due to a sense of stewardship of the land and an obligation to future generations to leave healthy and diverse ecosystems. That said, there are a lot of common misconceptions about the cost and risks of planting native trees. For those of you who are planning to undertake such work, I would like to present some fundamental principles which should help you for less money.

### Indicative cost

Let us consider overall budgeting for typical afforestation projects such as retirement of marginal grazing land, shoring up erosion-prone hillsides or replanting woodlots which are coming out of a pine rotation. It is not uncommon to see costs of \$25,000 to \$30,000 a hectare being mentioned.

There are some circumstances where such costs might be justified. However, for most native planting projects, you should be spending no more than \$5,000 to \$10,000 a hectare. This is an all-inclusive figure which incorporates the cost of plants, weed and pest control as well as a planting.

The reason that costs blow out on some projects is not because land owners are being ripped off. It is because they are doing something that we call trading money for time. In other words, they are over paying to produce results on an accelerated timeframe, instead of working with nature to produce the same results a bit more gradually. This plays out in the costly choices people make about species mix, plant size and plant spacing.

### Species mix

Different plants play different roles in their ecosystems. One role is known as pioneer or coloniser species. These are plants which readily establish themselves in areas with poor soils or where there has been recent disruption such as in the aftermath of a bush fire or slip. These pioneer species include manuka and kanuka and are exceptionally hardy and have adapted to grow readily and rapidly in open ground on lowlands and hill country throughout the country.

Manuka and kanuka provide a hospitable, sheltered environment in which the seed from larger, longer-lived species can germinate and develop. In other words, pioneer species are the foundation from which mixed native bush will emerge. Fortunately, manuka and kanuka are also the cheapest native plants to buy. For most sites we therefore recommend that 70 per cent or more of the total trees planted are these low cost, adaptable and resilient species.

The remainder of the species mix can consist of larger, longer-lived species which are suitable for the local area and which meet the land owner's requirements in terms of visual amenity and biodiversity. Many species are also useful for attracting native bird life. Establishing pockets of these trees among manuka and kanuka will provide a ready seed source for other seedlings to germinate and grow. Planting using this method mimics natural processes and is a low cost method of establishing mixed native bush.

On sites which adjoin existing stands of mixed native bush it should not be necessary to interplant with species other than manuka or kanuka. With trees in the vicinity, birds and the wind are effective at spreading seeds. A well-considered planting plan will take such factors into account. In instances where manuka is used



in isolation, establishment costs usually fall below \$5,000 a hectare.

Using this method does come with a trade-off in terms of the time required for a diverse native bush to emerge. If land owners want to see a broad range of species throughout a planting area within a couple of years, they can have that. But the costs will increase significantly and is what we mean by trading dollars for time. However, those willing to wait a few years and let nature take its course can get the same result for a much lower cost. For those considering registering native bush in the Emissions Trading Scheme, it is worth noting that manuka and kanuka are both qualifying species.

There are a few situations where the recommended species mix will change. For example, control of erosion along streams may call for use of plants such as cabbage tree, flax and sedge to shore up the banks. The aim is to work with experts who will produce a planting plan which considers the entirety of your requirements and who understand how to keep costs low.

### Plant size

Sometimes the assumption is made that bigger is better when it comes to planting native seedlings. In reality, there are few circumstances where this is the case,

particularly when price is a priority. Experience has shown that healthy and robust native seedlings of many species will establish more reliably and grow more vigorously when they are planted at normal size.

Many land owners who have planted native seedlings supplied in larger planter bags have noticed that in the first year after planting, the tree is essentially dormant, with growth resuming later. This means that a larger seedling which has spent 18 months in the nursery, as opposed to eight months in the case of a forestry-grade seedling, will probably not be any bigger after a year in the ground. In our experience, younger seedlings tend to start their growth as soon as temperatures begin to rise in spring.

The bigger problem with larger plants is their significantly higher cost. Larger plants require more time in the nursery, and they use more planting medium, more water and more costly trays and containers. They are larger and heavier and therefore more expensive to ship to planting sites. In addition, they are far less efficient to move around site and get in the ground.

The name forestry grade is derived from the seedlings used in commercial forestry applications. As such, they are designed for maximum speed and efficiency of establishment. Experienced planters can

plant up to 1,000 seedlings each day. The seedlings can also be taken to the site in cardboard boxes with compostable liners which means that there is no plastic waste to be dealt with on site.

### Plant spacing

We frequently work with land owners who have been advised to plant at very close spacing, down to one metre between plants. In the majority of cases this means that money is being spent for no enduring benefit. The reality is that two-and-a-half or even three metre spacing between plants will produce good results and dramatically reduce costs.

Wider spacing between plants provides room for air and light circulation and offers plenty of room for root networks to develop. With most species, canopy closure can be reached in four to five years' time and this will keep weeds at bay. As discussed above, the aim of our planting method is to create an environment which is suitable for large tree species such as kahikatea and totara to emerge and eventually to dominate.

The calculation is simple. A spacing of two-and-a-half metres will require 1,600 plants a hectare, whereas one-and-a-half metre spacing will require over 4,400 seedlings to cover the same area. The latter will produce bush with higher visual density in the first few years after planting but will, of course, add substantially to project costs.

### Reliability and plant survival

In addition to the widespread perception that establishment of native trees is quite costly, there is also a view that the likelihood of success is low and that plant



Native trees should not be planted too close together

mortality rates of 50 per cent or more can be expected. By keeping to a few guidelines survival rates should be much higher and roughly equivalent to planting pines.

The planting plan should consider the specific site conditions in terms of topography, climate, and soil conditions. Each native species has a general range of conditions in which it will thrive, as well as particular requirements in terms of frost tolerance, drought resilience and other problems. Planting sites may range from windy, slip-prone ridgelines to steep gullies with soils ranging from rocky and dry to waterlogged clay. The aim is to consider each area in turn and match the species to the conditions.

It is also important to choose plant varieties which are adapted to the site. For example, different manuka strains may vary considerably, with some lending themselves to seaside dunelands while others prefer hill country. Eco-sourcing should produce seedlings which are geographically matched to a site and more likely to survive.

It is also crucial to have a well-designed plan for pest and weed control. Usually this will involve spot spraying a few weeks before planting and at least one spray after planting although the need for this depends on the local conditions. Similarly, fencing, along with trapping and



Planting sites can be quite varied

shooting grazing pests is critical to give newly planted seedlings an opportunity to take hold.

Success depends on advance planning and thorough preparation. An experienced adviser or plant provider should be able to give a thorough and individualised programme based on your circumstances and requirements. Our advice is to check referees and the track record of projects which are similar to yours. This will go a long way towards ensuring that you are in good hands.

### Pooling local resources

As you consider getting under way with a native planting project, you should also find local resources which might help you save money. Contact your district and regional councils to find out about funding that might be available. This can include erosion control schemes, biodiversity planting programmes and wilding

pine control in the case of planting in recently-felled pine forest. While these programmes can require some time and effort to produce results, many of you may be able to cover at least a portion of your overall costs.

It is also worthwhile talking to your neighbours. Catchment groups are an ideal way to build scale, which can reduce costs by aggregating larger overall plant orders and even jointly contracting for planting crews. These communal efforts also bring landowners together for a common purpose.

Land use decisions made today will have an effect which lasts for generations. We hear time and again from land owners whose pride in their farms and rural blocks has increased as they see native bush start to grow. With a bit of forethought and sound guidance, we are confident that you will be able to achieve cost effective and reliable results.

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