Lower Cost Native Restoration of Farmland

Timata Method Fact Sheet

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Tīmata Method – Lower Cost Planting Method

The Tīmata Method, which in Māori translates to begin, start, kick-off or commence, initiates the natural processes commonly seen by the appearance of seedling mānuka or kānuka that farmers classically have called scrub, which in time (50–100+ years) is known to evolve into fully restored ngahere (native forest). The fundamental principles of the Tīmata Method are use of easily propagated and planted nursery crop species, cultivation of plants in small-size (approx. 120ml) root trainers known as "forestry-grade" and fewer trees per hectare than conventional guidelines. Deployed as a whole, the Tīmata Method lowers the cost of planting and makes more efficient use of time and labour resources.

The Tīmata method is particularly suitable for broadscale retirement of steep pastoral land but also riparian and wetland margins using professional forestry preparation and planting methods.

It may be advisable to use higher-grade plants on more challenging sites such as cut-over pine and kikuyu pasture.

Species Mix

The type of nursery crop species should reflect not only what is common for the location but also where plants are likely to perform best according to the topography of the site.

A typical Tīmata planting mix for a dry site might be 50% kānuka, 20% mānuka and 30% bird-loving species, whereas cooler and/or wetter sites would change to around 50% mānuka and 20% kānuka. Up to 100% mānuka or kānuka should be considered on sites where there is a high risk of browsing damage to the more palatable leafy plants listed below, which could be introduced in small groves later.

Bird-loving coloniser plants will vary according to the site but are likely to include species such as karamu, mahoe, makomako, whauwhaupaku, tarata, kohuhu, koromiko, ti kouka and harakeke. Strategic planting of tree lucerne (tagasaste) could also be considered.

Eco-sourcing of plant seed is encouraged to maintain local flora characteristics and assist plant establishment and performance.

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Plant Spacing

The Tīmata Method recommends that plants are set no closer than 2m x 2m apart (2,500 stems per ha). Whilst 2m spacings are recommended on most sites, 3m spacings could be contemplated on fertile, easy contour sites which may adjoin a critical source area or wetland. Well-managed planting at these densities can be expected to achieve canopy closure within 4–8 years of planting.

Typical Forestry Grade Plant Specifications

- Minimum above ground seedling height of 30cm
- Root collar diameter of 3mm
- Seedlings grown in Lannen 64FD container trays or equivalent
- Root density such that plugs hold together during lifting, transport and handling for planting
- Seedlings packed and delivered in corrugated cardboard or returnable plastic boxes at 75–100 seedlings per carton
- Experienced planters are able to plant up to 1,000 stems per day

Weed and Animal Pest Control

Specific details on different weeds and animal pests and their treatment is a specialized area that requires professional advice and assistance.

Comprehensive weed and pest control measures should be undertaken over the site and peripheral areas ***prior to planting*** – weed and animal pest control treatment may be required for up to 2 years before planting. This, along with ongoing weed & pest management should apply ***irrespective of the planting regime***.

Control of browsing animal pests such as deer, goats, wallabies, hares, and rabbits should ideally be carried out by professional hunters. Regular surveillance is also required to identify potential recursion as even one or two deer can cause significant damage to young plants in a short space of time. Landowners should consider plant guards or spray-on repellants at planting in high-risk pest areas.

Introduction of Succession Trees

It is possible that the planting of a well-managed nursery crop using the Tīmata method will eventually lead to the establishment of mature ngahere without the need for planting of broadleaf, podocarp and conifer tree succession trees; particularly if it is adjoining or near an existing native forest which can provide the seed source for dispersal. Species such as puriri, kohekohe, totara and ferns can spread from quite some distance, however others such as kauri, beech and kowhai require a close seed source.

It is recommended that introduction of succession broadleaf, podocarp and conifer trees is deferred until the nursery crop is well established (3–5 years+) and they are planted in strategic groves (at 100 to 200 trees per hectare). Delay of their planting which will encourage good tree form and provide shelter and friendly fungi for the taller trees (rakau) to thrive.

Planning & Process Guidelines

Calendar Years >>>>>>>	Year 1				Year 2				Year 3				Year 4				Year 5+			
Action	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Initial Planning & Advice																				
Organising funding																				
Weed control																				
Animal pest control																				
Ordering of plants																				
Arranging contractors																				
Fencing & earthworks including tracking																				
Pre-plant spot spray																				
Planting																				
Release																				
Blanking																				
Succession Tree Planting																				
Weed Monitoring																				
Animal Pest Monitoring																				

Comparative Native Planting Costs (2022 pricing)					
			Timata Forestry Grade 3m	Timata Forestry Grade 2m	High Density PB3
Plant Spacing:					
- Metres Between Plants			3.0	2.0	1.5
- Metres Between Rows			3.0	2.0	1.5
Plants per ha			1,111	2,500	4,444
Blanking %			15%	10%	0%
Blanking Plants			167	250	-
Total Plants			**1,278**	**2,750**	**4,444**
Planting Cost Metrics					
Preplant Spot Spray*		$ Per plant	$ 0.50	$ 0.50	$ 0.50
Plant		$ Per plant	$ 1.00	$ 1.00	$ 3.80
Planting		$ Per plant	$ 0.70	$ 0.70	$ 2.50
Total		**$ Per plant**	**$ 2.20**	**$ 2.20**	**$ 6.80**
Total Planting Cost per Hectare			**$ 2,811**	**$ 6,050**	**$ 30,222**
Release		$ Per plant	$ 0.50	$ 0.50	$ 0.50
		Cost per ha	$ 639	$ 1,375	$ 2,222
Succession Trees		Trees per ha	150	150	150
** Including Planting Labour		$ Per Tree**	$ 10.00	$ 10.00	$ 10.00
		Cost per ha	$ 1,500	$ 1,500	$ 1,500
Estimated:					
Weed Control		Cost per ha	$ 1,500	$ 1,000	$ 500
Animal Pest Control		Cost per ha	$ 1,000	$ 1,000	$ 1,000
Fencing		Cost per ha	$ 2,000	$ 2,000	$ 2,000
Earthworks			$ 500	$ 500	$ 500
TOTAL COST PER HECTARE			**$ 9,950**	**$ 13,425**	**$ 37,944**
* Ground based (Helicopter desiccation another option)					

For more information please go to the full report, and video here:

https://ourlandandwater.nz/news/the-timata-method-for-low-cost-native-forest/