

Appendix 17H - Pararekau Island Planting Guidelines

Purpose

These planting guidelines pertain to the Pararekau Island Countryside Living Zone, which applies to Pararekau Island and an access roading area within Kopuahingahinga Island and two causeways that link both Islands to the mainland, as shown on the Planning Maps,

The Pararekau Island Countryside Living Zone provisions set out in Part 17.3 rely strongly on achieving the vision for Pararekau Island that is shown on the Pararekau Island Landscape Concept Plan in Appendix 17F in order to achieve the environmental outcomes sought in the Objectives and Policies relevant to this zone. In brief, the environmental outcomes may be summarised as seeking to protect the natural character of the coastal environment from inappropriate subdivision and development, and to avoid adverse effects on the landscape character and rural amenity values of this rural zone.

The rules and assessment criteria for subdivision and development within the Pararekau Island Countryside Living Zone seek to achieve the environmental outcomes sought by the Objectives and Policies for the Pararekau Island Countryside Living zone by requiring that subdivision and development demonstrates consistency with the Pararekau Island Landscape Concept Plan of Appendix 17F and the planting guidelines contained in this Appendix as follows:

- Rule 17.3.3.4 Subdivision Standards require that landscaping be provided for each of the management areas identified within the Pararekau Island Concept Plan (Appendix 17F) and in a manner and to an extent that is consistent with the Pararekau Island Concept Plan (Appendix 17F) and this Planting Guideline (Appendix 17H);
- Rule 17.3.3.4 Subdivision Standards also require that any application for subdivision within the Pararekau Island Countryside Living Zone provides a "Pararekau and Kopuahingahinga Islands Landscape Plan" which must include a plant species schedule detailing plant species and mix grades at the time of planting, with comment on the degree of consistency with the Planting Guideline (Appendix 17H) and explanation for any variance with this guideline;
- 17.3.3.7 Assessment Criteria for applications for controlled resource consent for subdivision within the Pararekau Island Countryside Living Zone will be assessed in terms of matters that include: the extent to which the proposed Pararekau and Kopuahingahinga Islands Landscape Plan including the landscaping concept design plan, implementation plan and management plan will assist in ensuring a cohesive landscaping theme consistent with the concept in the Pararekau Island Concept Plan (Appendix 17F) and Planting Guideline (Appendix 17H), of a parkland with larger free species and the integrated management of open space whether within the Countryside living allotments that will be privately and individually owned or areas intended for common ownership.

Structure of Appendix 17H

- (i) Creating habitats for native lizards;
- (ii) Plant species and size guidelines for the management areas shown on the Pararekau Island Concept Plan (Appendix 17F);
 - Esplanade strip;
 - Recreation and Drainage Areas;

- Access Area;
- Countryside Living Allotments:

(iii) Revegetation Implementation Technique;

(iv) Monitoring and Maintenance.

Creating Habitats for Native Lizards

Native Lizards are known to be present within Pararekau and Kopuahingahinga Islands, and planting should seek to provide suitable habitats for lizards. Information provided by the Department of conservation's "Gardening for Ornate Skinks" factsheet includes that:

- Ornate skinks inhabit forest or open areas with deep leaf litter, or stable cover such as deep rock piles or thick vegetation.
- Ornate skinks prefer damp, humid conditions, and the species is very secretive.
- Protection from predators, including pet cats can be partly achieved by creating a thick and diverse garden that has plenty of cover.
- Treed areas or tall scrublands should have a layer of shade tolerant ground vegetation. Ferns, swamp musk. renga renga or creeping fuchsia are a good option because they will also help maintain a high humidity.

This information should be taken account of when providing planting, in order to provide suitable habitats for native lizards.

PLANT SPECIES RECOMMENDATIONS

ESPLANADE RESERVE

The esplanade area revegetation will consist of a mix of hardy native species suited to a coastal environment. Reference has been made, for plant species selection, to the “Hingaia Ecology Report – Concepts and Guidelines” prepared by Dr Andrea Julian, August 2004.

Botanical Name	Common Name	Size at Planting
Coprosma repens	taupata	
Coprosma robusta	karamu	PB ¾ - 3
Cordyline Australis	cabbage tree	PB ¾ - 3
Cortaderia flavicans	toetoe	PB ¾ - 3
Corynocarpus laevigatus	karaka	PB ¾ - 3
Cyathpoides junipera	mingimingi	PB ¾ - 3
Entelia arborescens	whau	PB ¾ - 3
Geniostoma rupestre	hangehnage	PB ¾ - 3
Hebe strica	koromiko	PB ¾ - 3
Leptospermum scoparium	manuka	PB ¾ - 3
Metrosideros excelsa	pohutukawa	PB ¾ - 3
Myrsine australis	mapou	PB ¾ - 3
Olearia furfuracea	akepiro	PB ¾ - 3
Phormium tenax	harakeke	PB ¾ - 3
Pseudopanax lessonii	houpara	PB ¾ - 3
Sophora microphylla	kowhai	PB ¾ - 3

SALTMARSH		
Botanical Name	Common Name	Size at Planting
Apodasmia similis	oioi/Jointed wire rush	PB ¾ - 3
Baumea juncea		PB ¾ - 3
Juncus maritimus var australiensis	Sea rush	PB ¾
Plagianthus divaricatus	Maakaka/salt marsh ribbonwood	PB ¾

RECREATION AND DRAINAGE AREAS

RIPARIAN		
Botanical Name	Common Name	Size at Planting
Coprosma robusta	karamu	PB ¾ - 2
Cordyline australis	cabbage tree	PB ¾ - 3
Entelia arborescens	whau	PB ¾ - 2
Hebe strica	koromiko	PB ¾ - 3
Leptospermum scoparium	manuka	PB ¾ - 2
Myrsine australis	mapou	PB ¾ - 2
Phormium tenax	harakeke	PB ¾ - 3
Sophora microphylla	Kowhai	PB ¾ - 2
WETLAND		
Botanical Name	Common Name	Size at Planting
Carex secta	pukio	PB ¾ - 2
Carex virgata		PB ¾ - 2
Cordyline australis	cabbage tree	PB ¾ - 2
Cyperus ustulatus	giant umbrella sedge	PB ¾ - 2
Leptospermum scoparium	manuka	PB ¾ - 2
Phormium tenax	harakeke	PB ¾ - 2
Schoenoplectus validus	kuta	PB ¾ - 2
Typha orientalis	raupo	PB ¾ - 2

ACCESS AREA

AMENITY		
Botanical Name	Common Name	Size at Planting
Chionochioa flavicans		PB 3
Fagus sylvatica var. purpurea	copper beech	PB 40 – 150
Phormium cookianum	mountain flax	PB 3 – 5
Quercus palastrus	pin oak	PB 40 – 150

COUNTRYSIDE LIVING ALLOTMENTS

Design Concept

As part of the overall concept for Pararekau Island, it is important that the structural landscaping be provided for each of the countryside living allotments at the time of subdivision and at the same time as the balance of the planting (within the Access Area, Recreation and Drainage Area and Esplanade Strip. This is to ensure that the planting achieves a consistent landscape character for the Island of a 'parkland' with large areas of open space.

Planting for the Countryside Living Allotments shall be designed to:

- Be consistent with the Pararekau Island Concept Plan (Appendix 17F); and
- Include native and exotic trees that at the time of planting are at least 1.8m tall and that will grow to such as height as to provide a relatively open 'framework' for each lot and contribute to the intended parkland character of the Island; and
- Provide a native understorey to create habitats for birds and lizards and provide ecological corridors between the ecological restoration areas (including the Recreation and Drainage Areas); and
- Integrate with the Planting schedules contained in this Guideline for each lot the Access Area Recreation and Drainage Area and Esplanade Strip; and
- Avoid lineal planted edges along lot boundaries so that privacy for each lot identified on the Pararekau and Kopuahingahinga Islands Structure Plan (Appendix 17E) can be ensured; and
- Contribute to the mitigation of potential adverse effects of household units and accessory buildings on the natural character of the coastal environment and the landscape character and amenity values of the Island.

Rule 17.3.3.4 requires that at the time of subdivision the Countryside Living Allotments (excluding the Access Area, Esplanade Strip, and Recreation and Drainage Areas) will be planted and maintained in native and exotic trees and shrubs and underplanting in a manner and to an extent that is consistent with the Pararekau Island Landscape Concept Plan and Access Area Plans (Appendix 17F) and the Pararekau Island Planting Guidelines (Appendix 17H)

REVEGETATION IMPLEMENTATION TECHNIQUE

Sourcing

All plant material shall be eco-sourced.

Once the contract and planting program is confirmed the Landscape Contractor shall source all plant material to ensure that the best hardy nursery stock available is secured.

All plants shall be best nursery stock, healthy and vigorous, with well-developed root systems, free of disease, pests and physical damage. Plants shall be well branched and symmetrically shaped and a normal habit for their particular species.

Planting Methodology

Layout and plant densities shall be at 1.4 metre spacing (5000 stems/Hectare). This is a general overall density guide only and is dependent on species combinations and growth form.

All planting shall be undertaken based on established revegetation techniques in relation to matching species with site conditions, soil type, soil/moisture conditions, aspect, exposure and recognition of individual species relationships and growth habit.

Cell and tube grades and open ground material shall be planted with a double spade cut to shatter soil structure to allow rapid root formation and nutrient uptake.

Larger grade plants and PB sizes shall be planted in hand dug holes. The base of the planting hole is to be broken up/roughened with double spade cut to shatter soil structure to allow rapid root formation and nutrient uptake,

All plant species shall be planted with a controlled release (2 plus year) general fertilizer (such as 'Nutricote' or 'Osmocote Plus') and rain crystals. Both the fertilizer and rain crystals shall be applied according to the manufacturer's recommendations for the plant size.

The rain crystals shall be distributed through the base of the hole amongst the shattered soil. If the plant is on a slope then the fertilizer shall be placed dominantly on the upper hillside.

All plants shall have an identification stake placed in close proximity to it. This will allow rapid identification of plants at the maintenance stage and greatly assist the monitoring process for the detection and control of plant mortality and success rates.

Monitoring/Maintenance

Regular monitoring shall be undertaken at 1 monthly intervals, dependent on prevailing weather conditions. Monthly monitoring shall be effective for the first 3 years of each planting stage then half yearly monitoring will take place thereafter.

Hand and/or herbicide spray (Roundup or Fusilade W6) releasing of plant material shall be undertaken in spring and autumn as necessary.

Follow-up maintenance to include replacement of losses over 10% in winter season following maintenance visits.

Maintenance period

- Initial 3 years rigorous regime
- Ongoing thereafter

No watering is required as plant material is chosen for specific aspect/slope/soil/type/moisture regime. Crystal rain and fertilizer shall be used at time of planting.

Pest Control

Rabbit and possum eradication/control area generally the landowners responsibility.

Possum and rabbit control shall be undertaken to decrease pest numbers prior to planting commencing. Ongoing control shall be undertaken by way of poisoning.

Poisoning methods are different for rabbits and possums and are outlined below:

- Rabbits: Pindone cereal pellets should be hidden in short lengths of terracotta or plastic pipe during dry weather.
- Possums: Pindone could also be used for the eradication of possums however bait stations including: brodifacoum or cholecalciferol pellet baits could be used.

Monitoring of planting for damage shall be undertaken post-planting in spring/autumn and control methods executed as necessary

Watering

No watering will be necessary, as the plant species have been selected to tolerate on-site conditions.