

# Restoration planting in Taranaki

## A guide to the North Taranaki Ecological District





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# PART ONE: *Getting started*

## Introduction

The Taranaki region intersects three Ecological Regions and five Ecological Districts. Each of these areas has slightly different landforms, climate, soils, human history and land use. The native vegetation of each ecological district has uniquely evolved with the differing conditions.

Before human settlement native forest covered almost the entire region, but extensive clearance, logging and development of land for settlement and farming has led to the loss of large areas of indigenous vegetation over the ring plain and coastal terraces. The few remaining fragments and tracts of indigenous vegetation have suffered heavily from the introduction of pest plants and animals. Protecting, enhancing, and creating new areas of indigenous vegetation will ensure the long term sustainability of Taranaki's biodiversity.

*Restoration planting in Taranaki: A guide to the North Taranaki Ecological District* provides information on restoring and enhancing the indigenous vegetation cover which has been lost from Taranaki. It is the second of a planned series about each of the ecological districts. *A Restoration Guide for Egmont Ecological District* was published in 2013. The guides enable landowners, community groups and practitioners to restore ecosystems by planting native species.

Your project will require time, effort, money and patience but the rewards are immeasurable!

Native plants provide shelter and food especially for native birds, bats, fish, lizards and insects and other invertebrates. Each site that is revegetated becomes a stepping stone in the greater Taranaki landscape, eventually reconnecting an essential network for

wildlife. Providing a seed source for the area increases the potential for the spread of native plants across a wide swathe of countryside. These plants will protect the soil and water on your land. Best of all, what you plant will become your legacy to the future. At some distant time, not only your children, but their children may stand beneath the trees that are small seedlings now, and thank you for your efforts and foresight.



*Karaka-kohekohe-tawa forest*

CAOTHERINE KIRBY

# Ecological Regions and Districts of Taranaki

As defined in McEwen, WM (1987 *Ecological Regions and Districts of New Zealand*) Taranaki is intersected by three Ecological Regions and five Ecological Districts.

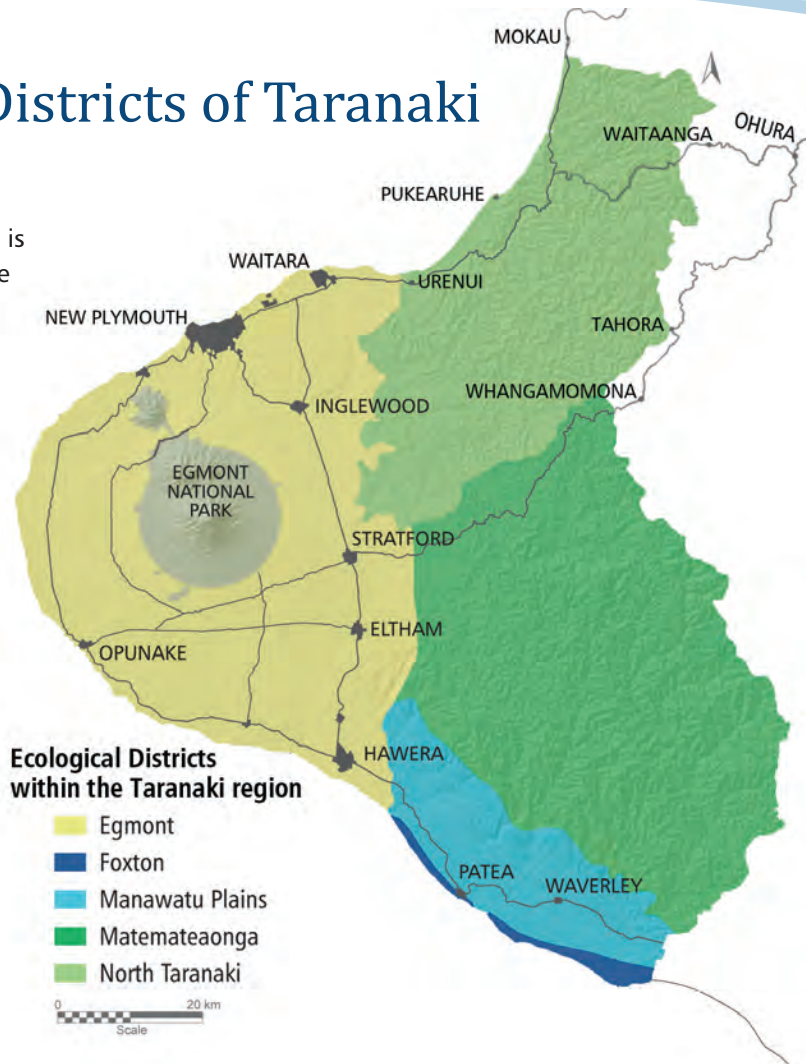
## Taranaki Ecological Region

**North Taranaki Ecological District** (166,300 ha, 65% within Taranaki) is hill country that was once almost completely forested. It has a great variety of forest types as well as non-forested coastal communities, estuaries, and freshwater wetlands. It is the southern limit for a number of important plant species such as pohutukawa and karo.

**Matemateaonga Ecological District** (223,400 ha, 43% within Taranaki) is the largest ecological district in the North Island. It is steep and hilly with deeply cut rivers, and extensive tracts of lowland forest. It is sparsely settled with few roads and no large urban areas. The rainforest in Matemateaonga district is nationally important for species of native wildlife that require extensive lowland forests. The Whanganui National Park and its river are particularly outstanding.

## Egmont Ecological Region

**Egmont Ecological District** (270,300 ha, 100% within Taranaki) includes the mountain, its ring plain, and all the land west of a north-south line from a little west of Urenui in the north to the Tangahoe River east of Hawera in the south. It includes Inglewood, Stratford, Eltham and Hawera as well as Waitara, New Plymouth and Opunake. This district is dominated by Mount Taranaki, the Pouakai and Kaitake Ranges, and the Sugar Loaf Islands. Fertile soils are derived from volcanic material originating from Mount Taranaki. Thirteen percent of the district is inside the Egmont National Park and reserves. Much of the district is devoted to pastoral farming, especially dairying.



## Manawatu Ecological Region

**Foxton Ecological District** (5,500 ha, 5% within Taranaki) is sand country. Its landforms are the result of sand movement, especially in the past. Today sand movement continues but is more restricted by human intervention. Few natural areas now remain. Foxton Ecological District has a long history of major modification and now contains mostly farmland, exotic pine plantations and urban areas.

**Manawatu Plains Ecological District** (56,000 ha, 18% within Taranaki) is distinguished by flat-surfaced flood plains and terraces. Its original forests and wetlands have been largely displaced by farming and urban centres including Palmerston North, Wanganui, Feilding, Marton, Bulls, Waverley and Patea.



# Plan of action

*“Restoration of an ecosystem is an ongoing process, and key forest types cannot be re-created with one initial planting. They are dynamic systems that require enrichment with mid- and late-successional species as they develop.”*

—Professor Bruce Clarkson, Waikato University (2014)

You are about to set out on a journey that may take a number of years. Before you begin, it will be helpful to plan what you intend to do. Think about your site.

What is it like now?

What is your target outcome for this site?

- at the end of this season?
- at the end of next season?
- a couple of years from now?
- 50 years from now?

Look around your neighbourhood, you may see established sites that will give you ideas.

Get maps and aerial photos of the site off Taranaki Regional Xplorer  
[www.trc.govt.nz/taranaki-regional-xplorer](http://www.trc.govt.nz/taranaki-regional-xplorer).

It may help to make a sketch. Mark boundaries, fences, streams, banks or gullies, mature trees, remnant vegetation and other points of interest. Identify and mark characteristic vegetation zones—there may be a number of different kinds within your site.

You may want to make an overlay sketch to show your planned plantings as well as walkways and other features.

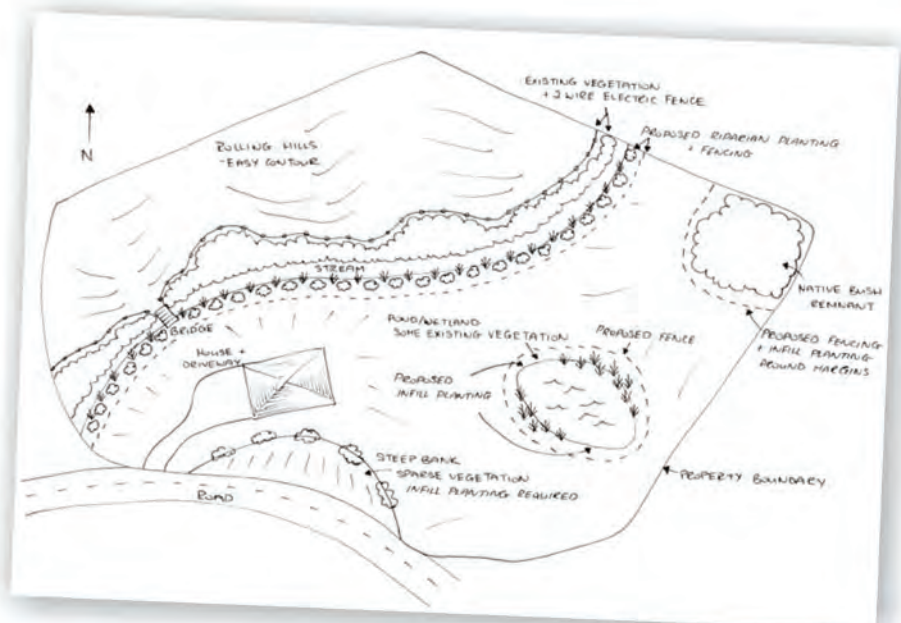
In addition, note:

- What direction does your site face?
- What are the moisture levels? Some parts may be wet or damp, while others are dry.
- Is it exposed to wind/ frost/ salt?
- What parts are sunny? What parts are shady?
- Is it flat or steep? Does it have difficult slopes?
- What kind of soil does it have (such as rocky, stony, silty, clay or peat)?
- Any other information that may be important, such as whether it has been burned or grazed.
- Are there areas of vegetation such as weeds or plantation forests that need to be removed, and when?

## Planting plan

Make a list of plant species for each distinct area choosing the right species for the right place and purpose.

Take into account the habit and requirements of the different species as well as those already on site.



Make a sketch of your site



Divide the list into plants that will go in during your first phase of planting and those that will be better planted when protection has been established. Keep your ambitions modest until you know how much you will be able to achieve, and how much time and money it will cost.

Massed and random groups of plants (e.g. groups of three as a minimum) create refuges for wildlife as well as visual interest, and screening if needed. Group plantings also aid pollination.

- Ensure a mix of male and female plants (if applicable).
- A closed canopy will help to exclude weeds.
- Don't forget to allow space for your larger specimens to expand.
- Think carefully about where you plant trees. You don't want them to cause future hazards.
- Food plants for birds will have an added benefit once established because they spread seeds on your behalf.

## Where to get plants?

Find a local native plant nursery to supply your plants. You may need to order some species including rare or threatened plants two years in advance because seed or cuttings have to be collected and the plants grown.

Plants from your own ecological district (eco-sourced) will do better and will continue to preserve the biodiversity of your area. Ask the nursery where the plants came from. A list of potential nurseries is found on page 41.

To learn more about New Zealand flora there are several courses available. A two week block course 'Flora of Aotearoa/New Zealand' is available at the University of Waikato. You could also attend local plant propagation demonstrations at places like the Taranaki Regional Gardens or events run by the Taranaki Environment Centre.

*You could grow your own plants from locally-collected cuttings or seed, or collect and transplant unwanted seedlings such as those that have established along roadsides. Always ask the permission of the landowner, and do not take from reserves or public conservation land.*

## What is eco-sourcing?

Eco-sourcing means getting your plants from seed and cuttings obtained from within, rather than outside, your region. These plants are better adapted to local conditions and are more likely to thrive.

When plants are sourced from different regions, 'genetic pollution' is likely to occur, leading to species loss and a decrease in biodiversity.

It is recommended that you buy plants from nurseries that follow eco-sourcing principles. You not only support the locals but there's less handling, and less cost to you and to the environment.

- Place low ground cover alongside paths.
- Leave selected spaces to look through.
- Plants that are attractive to bees can improve pollination and seed production.





## Preparation

- Fence the area to exclude grazing stock.
- Commence pest animal control e.g. possums, feral goats, pigs, deer, rabbits and hares.
- Identify pest plants and prioritise their control.
- Clear growth for about half a metre radius for each plant, either by hand or by spraying with herbicide\*. The better you prepare the planting site, the greater your success will be. Allow a maximum of two metres between plants to establish a reasonably dense cover.

*\* A herbicide caution!  
Glyphosate will damage any green tissue it touches, especially when wetting agent is used. A lot of damage can occur if Glyphosate is used in release clearing within the first 4-6 years when plant stems are often still green. Glyphosate is also very toxic to aquatic organisms.*

## Planting

- Plant coastal and lowland sites in May or June so plants establish over winter before the summer dry. Plant upland areas in early spring when plants are dormant and have been hardened off by frost. Leave frost-susceptible species as late as possible — until September or October.
- Ensure that your plant is well watered before you begin.
- Dig a hole at least twice the size of the container and break up the soil in the bottom to make a soft bed. Plant more deeply or more shallowly depending on the wetness or dryness of your site.
- Remove your plant from its container and carefully loosen or prune off any entangled roots, keeping disturbance to a minimum. Place it in the hole.
- Depending on the soil, you may want to add a New Zealand-made slow-release fertiliser tablet. Know the fertiliser history of the planting site as some species such as rewarewa and toro can be severely stunted or even killed by soluble phosphates. In very free-draining soils, nutrients placed below the root ball can be lost by soil water movement. In these situations it may be better to place the fertiliser about 10 cm away from the root ball on the uphill side if planting on a slope. This will ensure that soil water movement will move the dissolved nutrients past the plants' roots as part of natural soil drainage.
- At sites where the soils are well drained and exposed, such as coastal sands, plants can be planted deep so that the top of the rootball is at twice its original depth. This ensures more stability and access to moisture over a longer period in dry weather.
- Replace the soil and pull the seedling up about 5 cm.
- Taller plants may require staking, especially if they are in an exposed location.
- If your site is exposed, create a barrier to protect plants on the edges from wind or salt
- Mulch with bark chips, newspaper, woollen mats, sheep manure, cut grass, old hay or other biodegradable material. Be careful with animal manure because it can bring in weeds. Mulching preserves moisture, slows drying and also retards the advance of weeds. Always consider on-site mulch resources first as they are cheap, on-hand and don't require cartage.
- A bamboo stick or 25 mm x 25 mm stake, flag or marker beside each plant will help you locate your plants at a later date, especially if grasses have taken over! Try painting the top with fluoro paint.



Many nurseries sell New Zealand-made slow-release fertiliser tablets containing nitrogen, phosphorus, magnesium, potassium, sulphur, calcium and trace elements. The tablets slowly release nutrients over two to three years.

You place one in the hole, cover it with a little earth and insert your plant.

They can be obtained from many suppliers including farm supply stores, nurseries and garden centres.

forested area, feral goats, pigs and deer. In their different ways, they will damage your plants by removing flowers, fruit, palatable foliage, and bark.

Consider ways to protect young plants from pukeko if they are present in your planting area.

Planting the right species at the right time will allow good root growth before summer dry conditions. However if it is exceptionally dry over summer you may need to water your plants, especially in the first year.

## After planting

Weed control is essential, especially during the first three years. Plants that are kept clear of weeds will reward you with greater growth and vigour. Release in late spring, summer and autumn if required. Release clearing can either be done by hand or by spraying with a herbicide selected specifically for the job.

You may need to control animal pests such as possums, rabbits and hares or, if you are near a larger

Monitor your site. A yearly photograph taken from a constant vantage point will become a valuable historical record and a source of great satisfaction as your project develops. A count of successes and failures, and reasons for these, will assist future decision making.

In the following and subsequent seasons, replace failed plants. Once your first plantings are established (3–5 years), middle and late-stage plants which need some degree of protection can be added.



1. Plant in sites that have been hand-cleared or prepared with knockdown herbicide. Make the planting hole at least twice the size of the container. Add fertiliser if appropriate. Place the seedling in the hole.



2. Replace the soil around the roots and gently pull the seedling up. This will straighten any roots that are twisted or caught up.



3. Firm the soil around the seedling using your hands or the toe of your boot. Take care not to over-compress the soil. Leave a small depression to help retain moisture.



## What's in a name?

Most plants have at least three names!

In the first instance they have a two-part scientific name that is recognised internationally and only allocated to a single species.

Next they have a common name which often relates to some characteristic of the plant. Different species can have the same common name. Some plants have more than one common name.

Sometimes the common name is also a Maori name — but some plants have both a common name and a Maori name.

To complicate matters, lesser-known plants often only have a scientific name.

This book uses common names in the first instance and scientific names if the plant does not have a common name. All names are given in the main plant lists on page 30.



# PART TWO: *target ecosystems*

The North Taranaki Ecological District contains two main land systems: a narrow strip of uplifted marine terraces along the coast (Coastal), and steep, sharply dissected sedimentary hill country over the remainder (Semi-coastal and Lowland).

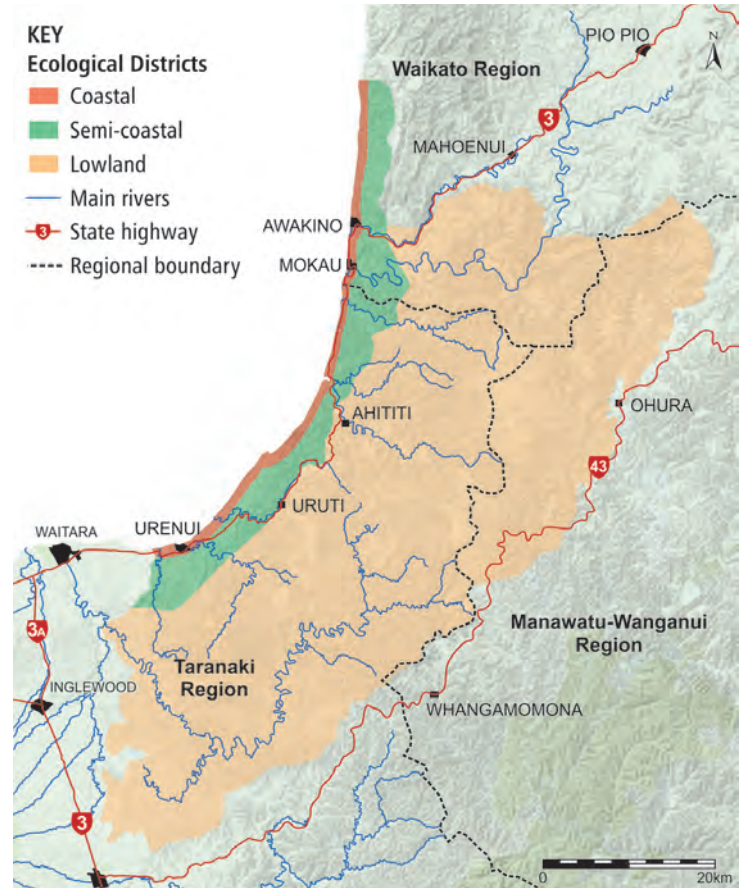
The coastal terraces are generally flat to gently undulating and are overlaid with thick terrestrial soils and sand. There are cliffs from three to 60 m high, with sand buildup where streams and rivers meet the sea and form estuaries, sand spits, sand flats and dune systems.

The hill country is a pattern of alternating beds of broken and uneven sandstones, mudstones and minor limestones, all tilting in a south west direction. The hills gradually rise inland from around 230 metres to 500 metres above sea level, reaching their highest around Tatu trig (606 m) in the Waitaanga Forest. Some of the hills are sharply razor-backed while others are gentle and easy-rolling. Often, the softer mudstone has eroded, leaving sandstone outcrops lining valley sides and capping the steepest hill crests and ridge lines. Soil and nutrients are continually washed from ridges and upper hill slopes to enrich valleys and lowland basins below.

## Vegetation patterns

The vegetation cover in North Taranaki is a result of the land form plus the amount and type of available nutrients, soil depth, climate, moisture, elevation and past land use. Much of the steep, remote hill country forest has never been touched whereas more accessible valley basins, coastal and river terraces and plateaus have often been cleared or selectively logged in the past.

North Taranaki contains a number of distinct plant communities, including coastal herbfield, lowland broadleaf forest and shrubland communities on coastal and inland cliffs. The most distinctive are hard beech forest communities which are not present elsewhere in the Taranaki Region.

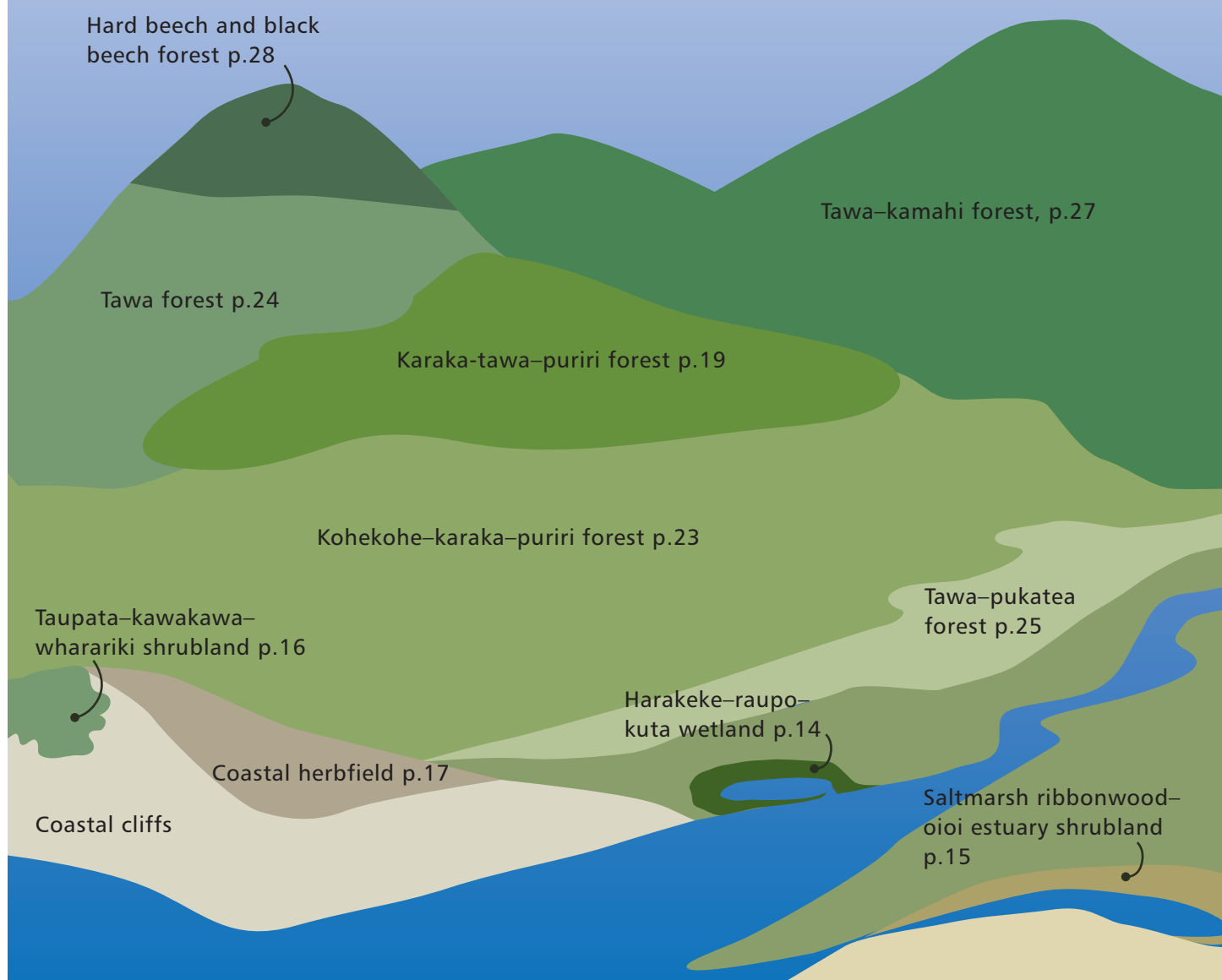


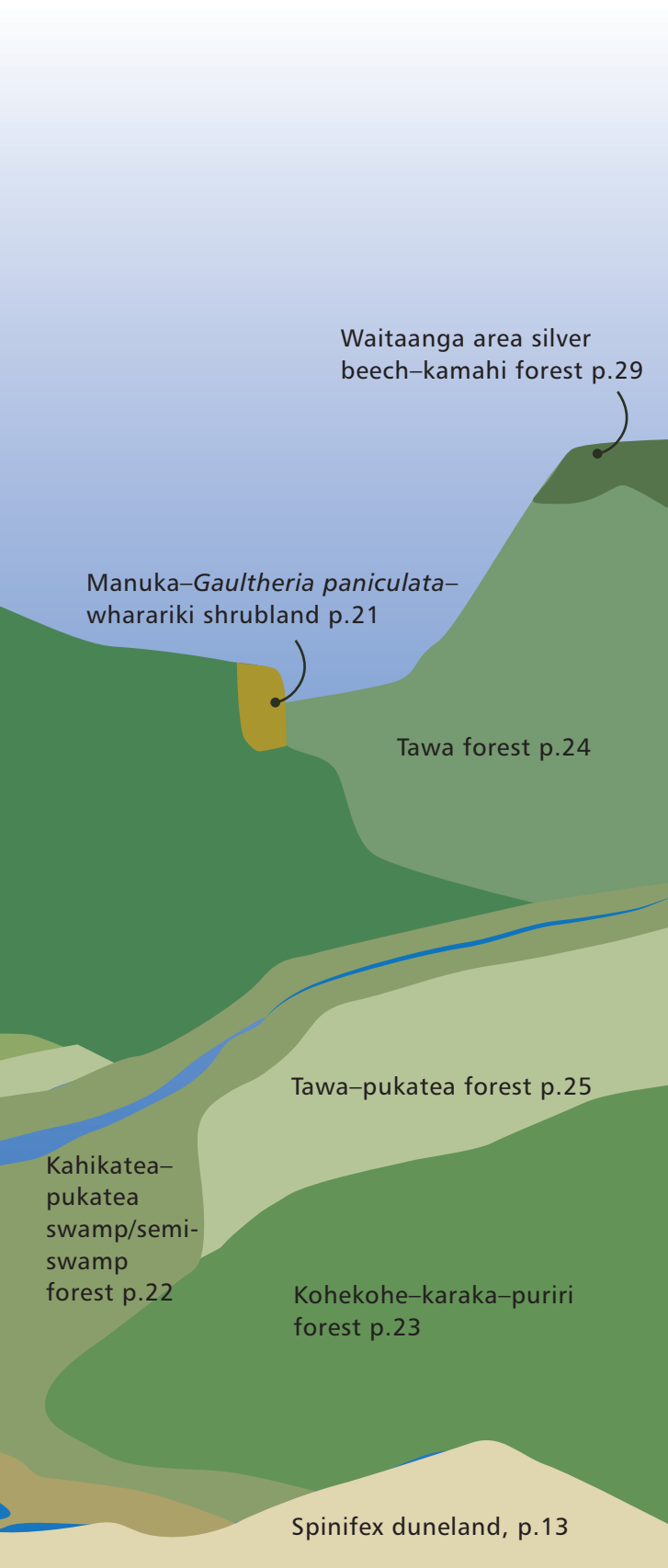
Janet Hunt

The North Taranaki Ecological District is the southern limit of many native plant species, including pohutukawa, karo, mangeao, neinei and toatoa. The district also hosts a number of nationally threatened species such as king fern, titirangi and tainui.



# Generalised landscape and vegetation types in the North Taranaki Ecological District





## What to plant where

What you plant will be determined by  
1) the lay of the land 2) elevation 3) drainage  
and 4) bioclimatic zone.

**BIOCLIMATIC ZONES** are areas where effects of climate, drainage, topography and soil are broadly similar. There are three of these zones in the North Taranaki Ecological District: the coastal zone, the semi-coastal zone and the lowland zone (see map, p.9). There are also some intermediate areas where two target ecosystems, such as tawa forest and tawa-pukatea forest, overlap.

The **coastal zone** is generally within 1 km of the sea. Vegetation is exposed to salt laden winds and the year-round climate is mild. Coastal vegetation communities include taupata shrubland, harakeke/wharariki flaxland and low herbfields, as well as estuarine communities such as saltmarsh ribbonwood-oioi shrublands associated with rivers.

The **semi-coastal zone** extends inland from the coastal zone for approximately 10 km. Tall coastal and semi-coastal forest thrives in sheltered locations up to 5 km from the ocean. Kohekohe, karaka and puriri important species. Rich alluvial basins and valley bottoms are dominated by kahikatea and pukatea while kohekohe, karaka and puriri are more frequent on well-drained hill slopes. Isolated pockets of semi-coastal forest can be found further inland in the lowland zone.

The **lowland zone** lies inland beyond the semi-coastal zone and is the largest bioclimatic zone in North Taranaki. Tawa is the dominant canopy tree and indicates the lower limits of lowland forest, along with kamahi, the other principal broadleaf species. They are accompanied by a mix of rewarewa, totara and hinau on upper hillslopes or by rimu, miro, matai and occasionally emergent northern rata on lower levels.

Hard beech and black beech forest is found on many of the thin-soiled, infertile sandstone ridgelines in the inland lowland zone, while the conifers kahikatea and rimu dominate valley basins, river flats and terraces in company with frequent pukatea and swamp maire. Black maire and narrow-leaved maire are also present, particularly on the richest alluvial sites.



Pingao and spinifex dunes, Waipingao area



## Spinifex duneland

Coastal sand dunes support a range of native plants and animals and act as a protective buffer between the land and sea. In a native state, active foredunes support species such as spinifex, pingao, and native ice plant, while sand coprosma, wiwi, small-leaved pohuehue, tauhinu, and pinatoro are more suited to sheltered foredunes.

Other duneland plants that may occasionally be present include shore bindweed, shore spurge, sand sedge, native and New Zealand spinach and Glen Murray tussock or 'trip-me-up'. Consolidated backdunes are capable of supporting a mix of taupata, karo, rangiora, karamu, coastal tree daisy and ngaio. The most extensive and well developed dune system in the district is just north of the Awakino River mouth.

### SEQUENCE

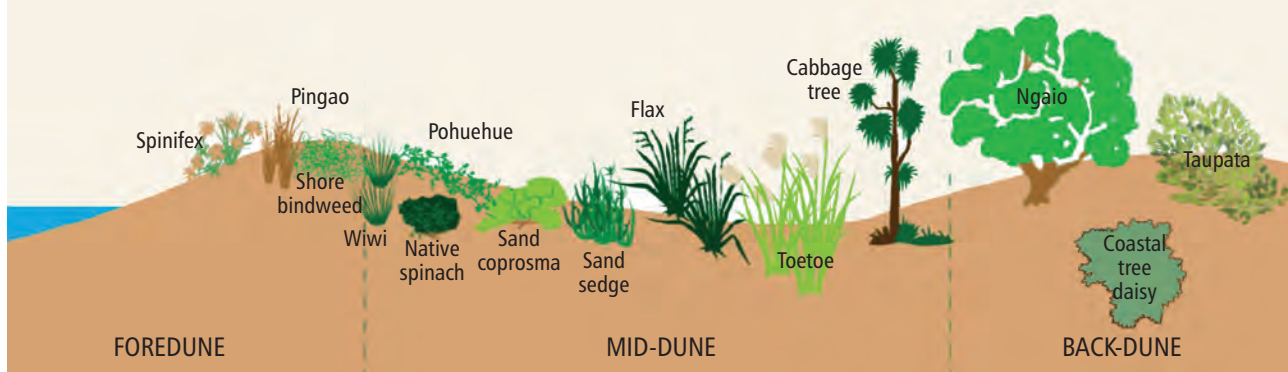
All of the characteristic species in the spinifex duneland are hardy and suitable for inclusion in the initial planting. On the fore and mid dunes, they should remain in the long term due to periodic rejuvenation by active sand movement.

Once the tree and shrub species are well established in the consolidated back dunes, favourable locations with adequate soil development and drainage may potentially be under-planted to form a later successional coastal karaka-kohekohe forest.

### WE RECOMMEND

TREES	Cabbage tree✓, ngaio✓, coastal tree daisy✓ karo✓
SHRUBS	Rangiora✓, sand coprosma, taupata✓, karamu✓, korokio✓, hangehange, koromiko✓, tauhinu, pinatoro
GRASSES	Spinifex, toetoe✓
SEDGES	Sand sedge, wiwi, pingao, Glenmurray tussock
HERBS	Native ice plant✓, shore spurge

✓ Taranaki stock that is most likely to be available locally. Unmarked species may be more difficult to obtain and need to be propagated by arrangement with a local nursery.





## Harakeke–raupo–kuta wetland

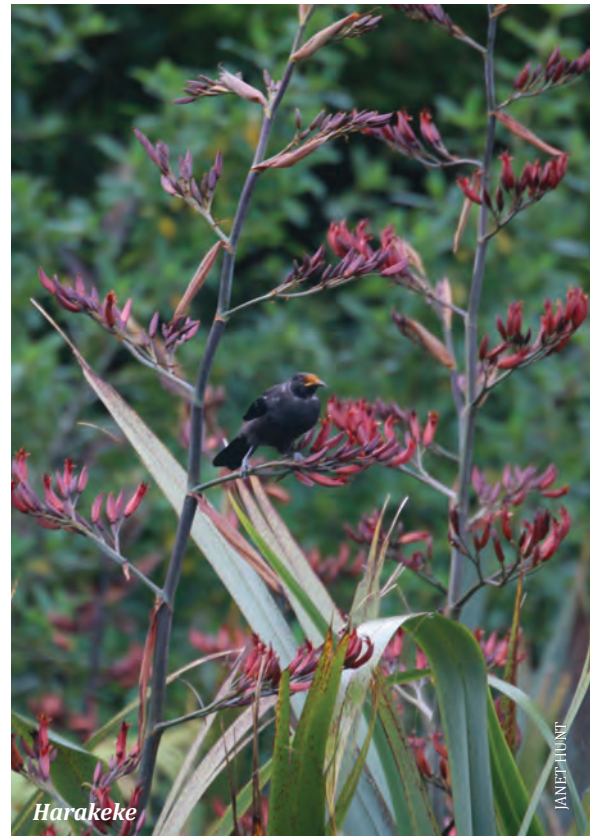
This wetland type usually follows the clearance or degradation of a wetland forest such as kahikatea–pukatea swamp forest. It occurs on poorly drained margins of stream channels, fertile swamps and ponds throughout the district, from the coast through to the lowland zone. Harakeke, raupo and kuta are the dominant plants growing in association with species such as karamu, swamp coprosma, cabbage tree, *Carex* spp., baumea (*Machaerina* spp.) and toetoe.

One of the last remaining freshwater wetlands within the coastal zone of North Taranaki occurs on an alluvial flat within the Awakino Scenic Reserve. Other good examples of native wetland vegetation are in the Mohakatino Conservation Area and Uruti Conservation Area.

### SEQUENCE

This wetland type changes very little after first planting. Once established, it will maintain itself indefinitely. Directly plant the characteristic species listed below, planning for your end composition from the outset.

Successful revegetation may bring about better drainage especially at the wetland margins, providing the opportunity to develop pukatea or kahikatea forest through secondary planting of later successional tree species.



### WE RECOMMEND

TREES	Cabbage tree ✓
SHRUBS	Karamu ✓, swamp coprosma ✓
GRASSES	Swamp millet, toetoe
SEDGES	Pukio ✓, swamp sedge, sharp spike sedge, kuta, baumea ( <i>Machaerina rubiginosa</i> , <i>Machaerina tenax</i> , <i>Machaerina articulata</i> ), kuawa, giant umbrella sedge
HERBS	Harakeke ✓, raupo
SCRAMBLERS	Small-leaved pohuehue
RUSHES	Giant rush, grass-leaved rush
FERN	Swamp kiokio

✓ Taranaki stock that is most likely to be available locally. Unmarked species may be more difficult to obtain and need to be propagated by arrangement with a local nursery.

## Saltmarsh ribbonwood–oioi estuary shrubland

Native estuarine vegetation in the North Taranaki Ecological District occupies the estuaries of the Mohakatino, Mokau and Awakino rivers, as well as a number of smaller streams that also have mudflats. Here, small areas are dominated by saltmarsh ribbonwood, oioi, sea rush, coastal tree daisy, raupo and kuawa, with occasional taupata, cabbage tree, koromiko, karamu, toetoe and harakeke.

A good example of an estuarine and terrestrial vegetation sequence occurs along the northern bank of the Awakino River and the adjoining tidal lagoon.

### SEQUENCE

Inundation by seawater and the salinity of the soil determines which species will be most successful in this ecosystem. The characteristic species listed below could form the initial planting and final target composition, with the exception of saltmarsh ribbonwood which benefits from the shelter of earlier planted species before it is introduced.

Oioi, sea rush and saltmarsh ribbonwood are the main salt-tolerant species, while harakeke and raupo require freshwater, and koromiko, coastal tree daisy and taupata require dry land. Generally, the estuarine environment will prevent this shrubland from developing further, although in less saline sites, the margins could grade into harakeke–raupo–kuta wetland, taupata–harakeke shrubland or pukatea forest. Coastal kowhai is often a feature on river banks associated with these plant communities.

### WE RECOMMEND

TREES	Cabbage tree✓, coastal tree daisy✓, coastal kowhai
SHRUBS	Taupata✓, karamu✓, koromiko✓, saltmarsh ribbonwood,
GRASSES	Toetoe✓ ( <i>Austroderia fulvida</i> , <i>Austroderia toetoe</i> ), swamp millet
SEDGES	Kuawa, giant umbrella sedge
HERBS	Harakeke✓, raupo
RUSHES	Oioi✓, wiwi✓, fan flowered rush, sea rush



Coastal tree daisy

DEAN CASKEY



## Taupata–kawakawa–wharariki shrubland

This shrubland type occurs on the steep coastal cliffs of the Taranaki coastline. The canopy is predominantly harakeke, wharariki, kawakawa, koromiko and taupata with occasional hangehange, cabbage tree, mahoe, karo, manuka, ngaio and korokio. Coastal spleenwort may be present in exposed positions and in some locations karaka may occasionally be emergent over the shrubland species. The nationally vulnerable titirangi can also be present, particularly on cliffs near Mokau. Both harakeke and wharariki may occur together but wharariki is more stress tolerant and occurs more frequently on steep banks, particularly on soft mudstone and siltstone cliffs and outcrops.

### SEQUENCE

In this shrubland the characteristic species, taupata and wharariki, could form the initial planting, along with lesser amounts of karo, cabbage tree, korokio, ngaio and small leaved pohuehue. Once successfully established, later successional species such as karaka, kawakawa, hangehange, mahoe, shore spurge and ferns could be introduced to the site, although the latter frequently self-establish.

### WE RECOMMEND

TREES	Cabbage tree✓, karaka✓, mahoe✓, ngaio✓, manuka✓, karo✓
SHRUBS	Kawakawa✓, taupata✓, karamu✓, korokio✓, hangehange, tauhinu, pinatoro, titirangi, koromiko✓ ( <i>Hebe stricta</i> var. <i>macroura</i> ✓)
HERBS	Wharariki, shore spurge
SCRAMBLERS	Small-leaved pohuehue
FERNS	Coastal spleenwort, shore hard fern



*Totahiapuri stream, Paraninihi*

JANET HUNT

## Coastal herbfield

Coastal herbfields occur on exposed coastal cliffs or terraces that are unable to support shrubs. Coastal herbfields are dominated by species such as sea primrose, New Zealand celery, small-leaved pohuehue, coastal spleenwort, shore hard fern, New Zealand spinach, native ice plant, shore spurge, remuremu and Mercury Bay weed.

Examples of this type of herbfield occur at the mouths of the Wai Pingau Stream and Mohakatino River.

### SEQUENCE

Coastal herbfield species are not generally readily available for purchase, so an alternative restoration approach is required. Consult the Department of Conservation or the Taranaki Regional Council for specialist advice (see pp. 42–43 for contact details).



*Shore spurge*

BILL CLARKSON

### WE RECOMMEND

**HERBS** Sea primrose, New Zealand celery, native ice plant ✓, shore spurge, Mercury Bay weed, coastal cress, remuremu

**SCRAMBLERS** Small-leaved pohuehue

**LIANES** Shore bindweed, New Zealand spinach

**FERNS** Coastal spleenwort, shore hard fern

## Tainui forest

Tainui forest was once found in numerous scattered sites between Kawhia Harbour and Mohakatino on the western North Island. Currently, it is only known from two sites in the Northern Taranaki Ecological District, Mokau and at the Mohakatino River mouth. Here, tainui forms low canopy, single species pure stands with kawakawa and hangehange in the understorey. The ground is often bare, with scattered patches of slender rice grass.

### SEQUENCE

The key species, tainui, is extremely wind hardy and favours exposed or recently disturbed sites with low nutrient soils. Scalping or spraying of pasture species provides the best substrate, and tainui seed will germinate and establish best under this scenario. Consequently, tainui should be planted at the beginning of the restoration process to form the primary cover. Following the formation of a low canopy, secondary planting with kawakawa, hangehange and slender rice grass should occur.

### WE RECOMMEND

SHRUBS	Tainui, hangehange, kawakawa ✓
GRASSES	Slender rice grass



Tainui

HALLEMA JAMESON



## Karaka–tawa–puriri forest

Well-drained coastal and semi-coastal hillslopes in North Taranaki can support a varied mix of karaka, puriri and tawa forest. These stands are predominantly secondary growth or advanced secondary forest which has recovered following logging. Mahoe, lacebark, pigeonwood, mamaku, nikau and emergent rewarewa are also found in the canopy, while understorey species such as kawakawa, mahoe, supplejack, rangiora, pigeonwood, kanono, karamu and tree ferns are also common. Ground cover includes numerous fern species, hook sedge, bush rice grass, *Oplismenus hirtellus* subsp. *imbecillis* and tree seedlings.

Examples occur at the Mokau Scenic Reserve and adjoining the Tongaporutu River and the Pou Tehia Scenic Reserve.

### SEQUENCE

The dominant species of this forest need to be planted under a well-established canopy of earlier hardy species such as karamu, *Coprosma rhamnoides*, rangiora, kohuhu, mahoe, karo, rewarewa, lancewood, lacebark, kanuka and wheki. Puriri can be included in the initial planting in sheltered locations. Karaka and tawa are shade tolerant and must be planted under an existing canopy along with shrubs such as kawakawa, pigeonwood and kanono. Epiphytes and lianes can be added once trees are capable of supporting their weight, although those with light, wind dispersed spores or seeds tend to arrive independently.



Juvenile tawa

JAMIE HUNT

### WE RECOMMEND

TREES	Tawa ✓, karaka ✓, karo ✓, puriri ✓, lacebark ✓, rangiora ✓, pigeonwood ✓, pukatea ✓, mahoe ✓, nikau ✓, kanuka ✓, rewarewa ✓, lancewood ✓, kohuhu
TREE FERNS	Mamaku ✓, wheki ✓, silver fern ✓
SHRUBS	Kanono ✓, hangehange, karamu ✓, kawakawa ✓, <i>Coprosma rhamnoides</i>
GRASSES	Bush rice grass, <i>Oplismenus hirtellus</i> subsp. <i>imbecillis</i>
SEDGES	Pukio ✓, hook sedge
HERBS	Kakaha
SCRAMBLERS & LIANES	Kiekie ✓, supplejack
FERNS	Pikopiko
EPIPHYTES	Perching lily, kahakaha

✓ Taranaki stock that is most likely to be available locally. Unmarked species may be more difficult to obtain and need to be propagated by arrangement with a local nursery.



Paritaniwha in kahikatea-pukatea swamp/semi-forest



## Kahikatea–pukatea swamp/semi-swamp forest

Swamp and semi-swamp forest is widespread on poorly-drained flats and terraces in the semi-coastal zone, as well as in areas of easy terrain and high water tables in lowland hill country. The vegetation is predominantly secondary forest. Examples can be seen at Mokau Scenic Reserve and the Hutiwai wetland, about 15 km south east of Mokau.

The canopy is made up of combinations of kahikatea, pukatea and/or swamp maire and sometimes also ramarama. Less common tree species include pigeonwood, putaputaweta, mahoe, wheki and emergent northern rata. Black maire and narrow-leaved maire are found on the richest inland alluvial sites. The understorey often includes climbing supplejack, kiekie and the small trees and shrubs kanono, nikau, hangehange, mahoe, swamp coprosma, *Coprosma areolata* and turepo, as well as occasional rimu and kahikatea saplings. Ground cover includes ferns, *Astelia* spp., bush rice grass, *Oplismenus hirtellus* subsp. *imbecillus* and hooked sedges.

### SEQUENCE

First plant species such as harakeke, sedges, cabbage tree, swamp coprosma, swamp astelia and kahikatea. Once shelter has been established plant swamp maire and rimu in light wells and pukatea and hangehange beneath the canopy along with tawa, rimu and hinau as long as it is not too wet. Pukatea, kahikatea and swamp maire do better on mounds rather than in slushy hollows, while kohekohe, tawa and mahoe require better drained sites. Leave kiekie and supplejack until established trees are capable of supporting their weight. Add ferns, epiphytes and lianes later, although those with wind dispersed spores or seeds often establish themselves independently.

### WE RECOMMEND

TREES	Tawa ✓, kahikatea ✓, rimu ✓, hinau, pigeonwood ✓, pukatea ✓, mahoe ✓, swamp maire ✓, nikau ✓, putaputaweta, black maire, narrow-leaved maire, turepo, ramarama, cabbage tree ✓, kohekohe ✓
SHRUBS	<i>Coprosma areolata</i> , kanono ✓, swamp coprosma ✓, hangehange, turepo
GRASSES	<i>Oplismenus hirtellus</i> subsp. <i>imbecillus</i> , slender rice grass
SEDGES	Pukio ✓, hook sedge
HERBS	Kakaha, swamp astelia ✓, harakeke ✓
RUSHES	Giant rush, grass-leaved rush
SCRAMBLERS & LIANES	Kiekie, supplejack
FERNS	Pikopiko, swamp kiokio

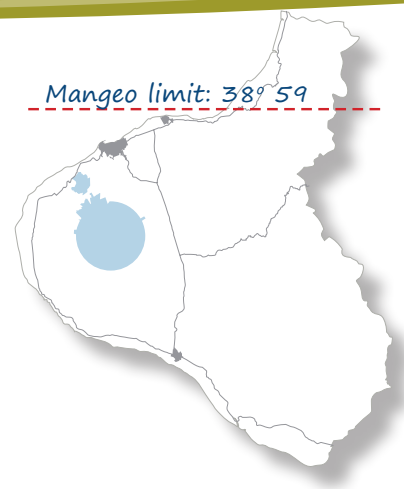
✓ Taranaki stock that is most likely to be available locally. Unmarked species may be more difficult to obtain and need to be propagated by arrangement with a local nursery.



## Kohekohe–karaka–puriri forest

Well-drained coastal and semi-coastal areas (particularly hillslopes) can support various mixes of karaka, kohekohe and puriri-dominated forest along with lesser amounts of tawa, titoki, mahoe, wharangi, pukatea, nikau and, north of 38° 59', near Mokau, mangeao. Emergent rewarewa are frequent along ridges. Understorey species commonly include kawakawa, hangehange, mahoe, supplejack, rangiora, pigeonwood, kanono, karamu and tree ferns. Ground cover is provided by numerous ferns, bush rice grass, cutty sedge and tree seedlings.

An example of can be seen on the cliff face at Urenui River mouth.



### SEQUENCE

The dominant species of this forest type need to be planted under a well-established canopy of earlier successional, hardy species such as karamu, *Coprosma rhamnoides*, rangiora, kohuhu, mahoe, karo, rewarewa, lancewood, lacebark, kanuka and wheki. Titoki and puriri can also be included in the initial planting. Kohekohe, tawa and pigeonwood require shade and must be planted under an existing canopy. Wharangi may be planted in the open with care because it is frost tender. Shrubs such as kawakawa and kanono are best planted under a canopy, and epiphytes and lianes can be added once trees are capable of supporting their weight, although those with light wind dispersed spores or seeds tend to arrive independently.

### WE RECOMMEND

TREES	Titoki ✓, tawa ✓, karaka ✓, kohekohe ✓, lacebark ✓, pigeonwood ✓, kowhai ✓, kanuka ✓, rewarewa ✓, pukatea ✓, mangeao, mahoe ✓, wharangi, karo, kohuhu, lancewood ✓, nikau ✓, puriri ✓
TREE FERNS	Mamaku ✓, wheki ✓, silver fern ✓
SHRUBS	Toropapa, rangiora ✓, kanono ✓, karamu ✓, hangehange, kawakawa ✓ <i>Coprosma rhamnoides</i>
GRASSES	Bush rice grass, <i>Oplismenus hirtellus</i> subsp. <i>imbecillis</i>
SEDGES	Pukio ✓, hook sedge
HERBS	Kakaha
SCRAMBLERS & LIANES	Kiekie, supplejack, white rata and climbing rata
FERNS	Pikopiko, shining spleenwort, nini, thread fern, silver fern ✓, mamaku ✓, wheki ✓, smooth shield fern, fragrant fern
EPIPHYTES	Perching lily, kahakaha



## Manuka–gaultheria–wharariki shrubland

Inland cliff vegetation occurs within the semi-coastal and lowland zones and is mainly shrubland with abundant wharariki, depending on the substrate, slope and the stability of the site. The steepest slopes are largely bare with a sparse covering of baumea, wharariki, kiokio and *Gaultheria paniculata*. Denser shrub–flaxland occurs on less extreme sites, and baumea, whakariki and kiokio are intermixed with emergent manuka, *Olearia townsonii*, koromiko, tutu and totorowhiti. Rock outcrops with damp seepages can also host areas of kiekie and parataniwha.

### SEQUENCE

Characteristic species in this shrubland are hardy and would be suitable for use in the initial planting. Parataniwha, however, requires earlier planting to provide shade. Oversowing with manuka seed may be appropriate where the site is extremely steep and rocky.

### WE RECOMMEND

TREES	Manuka ✓, tutu
SHRUBS	Koromiko ✓, <i>Olearia townsonii</i> , totorowhiti, <i>Gaultheria paniculata</i>
SEDGES	Baumea
HERBS	Wharariki, parataniwha
SCRAMBLERS	Kiekie
FERNS	Kiokio

✓ Taranaki stock that is most likely to be available locally. Unmarked species may be more difficult to obtain and need to be propagated by arrangement with a local nursery.



Note: tutu is poisonous. Choose your site carefully.



## Tawa forest

Tawa forest is found on hills, ridges, in river valleys and on river terraces in the semi-coastal and lowland zones. It includes kamahi, miro, hinau, rewarewa, pukatea and mamaku, and nearer the coast, mahoe, mangaeo and pigeonwood. It is largely primary forest although some areas have been selectively logged especially on less steep areas such as between the lower Awakino and Mokau rivers. The understorey may include ponga, soft tree fern, petipeti, hangehange, rangiora, kanono and young tawa, with mangaeo and kawakawa in semi-coastal locations and toro, mountain horopito and tawheowheo on lowland plateaus and river terraces. Ground cover is ferns, hooked sedges and tree seedlings.

### SEQUENCE

Apart from northern rata and kamahi, the dominant tree species of tawa forest need the shelter of a well-established canopy of earlier hardy species such as karamu, kanuka, rangiora, lacebark, kohuhu, rewarewa, horoeka and wheki. Tutu boosts nitrogen levels but may not be needed if land has been previously farmed. Rimu needs to be planted in canopy gaps and northern rata normally establishes in the canopy once there are plenty of nest epiphytes. Small trees and shrubs such as mahoe, pigeonwood, hangehange, kanono and kawakawa are best under existing canopy. Ferns, along with epiphytes and lianes can be added where required, although they often tend to arrive independently.

### WE RECOMMEND

TREES	Tawa ✓, kamahi ✓, northern rata ✓, hinau, rimu ✓, matai ✓, totara, titoki ✓, karaka ✓, kohekohe ✓, pigeonwood ✓, white maire, kanuka ✓, rewarewa ✓, pukatea ✓, mangaeo, mahoe ✓, wharangī, karo ✓, kohuhu, nikau ✓, puriri ✓, lacebark ✓, rewarewa ✓, horoeka, tutu
TREE FERNS	Wheki ✓
SHRUBS	Toropapa, rangiora ✓, kanono ✓, karamu ✓, hangehange, kawakawa ✓
GRASSES	Bush rice grass, <i>Oplismenus hirtellus</i> subsp. <i>imbecillis</i>
SEDGES	Hook sedge
HERBS	Kakaha
RUSHES	Giant rush, grass-leaved rush
SCRAMBLERS & LIANES	Kiekie, supplejack, white rata ✓
FERNS	Petipeti, pikopiko, shining spleenwort, nini, thread fern, smooth shield fern, hairy fern
EPIPHYTES	Perching lily, <i>Astelia hastata</i>

## Tawa-pukatea forest

Tawa-pukatea forest occurs in both the semi-coastal and lowland zones on hill slopes, in the debris and sediments at the base of slopes, stream and river terraces and between rivers. Tawa and pukatea share the canopy, with pukatea increasingly dominant on poorly drained sites. Other species found in the canopy, depending on soil drainage, are mamaku, wheki, nikau and mahoe. Rewarewa, pigeonwood and hinau are also occasionally present. Where forest has not been logged, mangeao and emergent rimu and northern rata may also be present.

The understorey comprises a mix of young canopy trees, tree ferns and shrub species such as kanono, hangehange and tangles of supplejack. In semi-coastal localities kohekohe and kawakawa are also common. The ground cover usually consists of scattered pikopiko, *Astelia* spp. and hook sedges (*Uncinia* spp.)



*Pukatea and kiekie*

ERIC CLARSON

### SEQUENCE

This forest requires the use of early, facilitating species in its first stages with enrichment planting once shelter is established. Pukatea is best planted in sheltered gaps between previously established species such as mahoe, harakeke, rewarewa and kanuka. Once a closed canopy is established, later successional species such as tawa, pigeonwood and nikau can be under-planted.

### WE RECOMMEND

TREES	Tawa ✓, kahikatea ✓, pigeonwood ✓, pukatea ✓, rewarewa ✓, kanuka ✓, mahoe ✓, nikau ✓, waiwaka, kamahi ✓, hinau, rimu ✓, mangeao, northern rata ✓
TREE FERNS	Mamaku ✓, wheki ✓
SHRUBS	Hangehange, pate ✓, kanono, kawakawa,
SEDGES	Pukio ✓, swamp sedge, hook sedge
HERBS	Swamp astelia ✓, kakaha, harakeke ✓
SCRAMBLERS & LIANES	Kiekie, supplejack
FERNS	Pikopiko, mamaku, wheki ✓
EPIPHYTES	Perching lily, kahakaha

✓ Taranaki stock that is most likely to be available locally. Unmarked species may be more difficult to obtain and need to be propagated by arrangement with a local nursery.



Mature tawa forest



## Tawa–kamahi forest

Tawa and kamahi are the principal broadleaved species in the Northern Taranaki lowland zone. Variants of tawa–kamahi forest are abundant over most of the district, especially on hill slopes. Tawa usually dominates but kamahi is hardier and more prevalent on drier, steeper, or more exposed sites. Other frequent canopy species include hinau, rewarewa, pukatea and mamaku. Mahoe, pigeonwood and mangeao are occasionally present, as are emergent rimu, northern rata and miro. The understorey is varied with mahoe, kanono, supplejack, kiekie, pigeonwood, wheki and young tawa. Kawakawa, kohekohe and mangeao may also be present near the coast. The ground cover is dominated by ferns, hooked sedges, climbing ratas and tree seedlings.

### SEQUENCE

Tawa, the dominant tree species of this forest type needs the shelter of a well-established canopy of hardy species such as kamahi, karamu, kanono, northern rata and wheki. Tutu boosts nitrogen levels and can assist in establishing canopy but may not be needed if land has been previously farmed. Rimu needs to be planted under canopy in light wells and northern rata, although capable of growing from the ground in open sites, normally establishes in the canopy once nest epiphytes are abundant and grows downwards. Small trees and shrubs such as mahoe, pigeonwood and kanono do best under an existing canopy. Ferns, along with epiphytes and lianes can be added where required, although those with light wind-dispersed spores or seeds tend to arrive independently.

### WE RECOMMEND

TREES	Tawa ✓, rimu ✓, hinau, kanono ✓, pigeonwood ✓, rewarewa ✓, mahoe ✓, northern rata ✓, white maire, totara, matai ✓, pate ✓, kamahi ✓, tutu
TREE FERNS	Mamaku ✓, wheki ✓
SHRUBS	Hangehange, raurekau, karamu ✓, kawakawa
GRASSES	Bush rice grass
SEDGES	Hook sedge
HERBS	Swamp astelia ✓, kakaha, harakeke ✓
SCRAMBLERS	Kiekie
LIANES	Supplejack, white rata
FERNS	Shining spleenwort, nini, petipeti, thread fern, hairy fern, fragrant fern, sweet fern
EPIPHYTES	Perching lily, kahakaha, fragrant fern

✓ Taranaki stock that is most likely to be available locally. Unmarked species may be more difficult to obtain and need to be propagated by arrangement with a local nursery.



## Hard beech and black beech forest

Hard beech and black beech forests are widespread but mainly confined to multiple small areas along infertile sandstone ridges and bluffs in the district's rugged hill country. Both black and hard beech are found as far as 39° south, but hard beech is more common, while black beech dominates south of 39°. Hybrid trees occur in stands with both species. Kamahi, tawheowheo, rewarewa, miro and rimu are found in the canopies of both. In the north of the district, tanekaha, and less commonly toatoa, may also be present. Common shrub and small tree species include tawheowheo, tall mingimingi and ponga as well as neinei in the north of the district. Occasionally heketara, prickly mingimingi and young tanekaha are present in the understorey. Numerous ferns, kiekie and climbing rata species plus occasional turutu and kauri grass are common on the ground.



### SEQUENCE

The characteristic tree species in this forest (hard beech, black beech, kamahi, tawheowheo and rewarewa) are generally hardy and can be planted from the outset. Understorey and ground layer species which can also be included are tall mingimingi, prickly mingimingi, ponga, neinei and kauri grass. On extreme and exposed sites with poor or thin soils, however, manuka should be planted as a nurse species and once cover is established, the species listed above can be planted in light wells with less hardy species such as miro and rimu in shadier sites, along with kiekie, perching lilies, turutu, ferns and climbing rata species.

### WE RECOMMEND

TREES	Tawa✓, black beech, hard beech, karo✓, rimu✓, neinei, pokaka, rewarewa✓, prickly mingimingi, tall mingimingi, silver beech, mahoe✓, toro, totara, tanekaha, miro, tawheowheo, kamahi, manuka✓
TREE FERNS	Mamaku✓, wheki✓, ponga
SHRUBS	Toropapa, karamu✓, rohutu, karo✓, mountain horopito, <i>Raukaua anomalous</i>
GRASSES	Bush rice grass
SEDGES	Hook sedge
HERBS	Turutu, hairy forest nertera, kauri grass
SCRAMBLERS & LIANES	Kiekie, supplejack, white rata, climbing rata
FERNS	Pikopiko, shining spleenwort, thread fern, smooth shield fern, gully fern
EPIPHYTES	Perching lily, kahakaha, fragrant fern

## Waitaanga area silver beech–kamahi forest

Silver beech–kamahi forest was once more widespread in the Taranaki region but is currently confined to poorly-drained alluvial terraces and areas between rivers along the Waitaanga Stream (the head of the Tangarakau River), where it was once subject to logging. Silver beech dominates the canopy with kamahi and occasional-to-frequent emergent rimu and kahikatea. Young tawa, kamahi and silver beech, wheki, toro, miro and occasional toropapa and mountain horopito are common understorey species. The divaricate shrubs *Raukaua anomalous*, rohutu and juvenile pokaka may also be found in low numbers. Ground cover includes bush rice grass, *Astelia* spp. and thread fern.



### SEQUENCE

The dominant tree species of this forest, silver beech and kamahi, are hardy: they can be planted from the start and may remain dominant indefinitely. Other hardy species that could be included are manuka, swamp coprosma, wheki, mountain horopito, karamu and *Astelia* species. By contrast, many characteristic understorey species in this forest type require shelter and protection before they are introduced; following the establishment of a low a canopy, enrichment planting of toro, miro, toropapa and divaricate shrubs (*Raukaua anomalous*, rohutu and juvenile pokaka) can commence. Ground cover grasses and ferns could also be introduced, although these may arrive naturally.

### WE RECOMMEND

TREES	Silver beech, mountain horopito, kamahi ✓, karo ✓, mahoe ✓, manuka ✓, miro, pokaka, pigeonwood ✓, toro, tawa ✓
TREE FERNS	Mamaku ✓, wheki ✓
SHRUBS	Toropapa, kanono ✓, karamu ✓, thin-leaved coprosma, swamp coprosma ✓, hangehange, rohutu, <i>Raukaua anomalous</i>
GRASSES	Bush rice grass
SEDGES	Hook sedge
HERBS	Swamp astelia ✓, kakaha, <i>Astelia microsperma</i>
SCRAMBLERS	Kiekie
LIANES	Supplejack
FERNS	Pikopiko, shining spleenwort, thread fern, smooth shield fern, gully fern, sweet fern
EPIPHYTES	Fragrant fern

✓ Taranaki stock that is most likely to be available locally. Unmarked species may be more difficult to obtain and need to be propagated by arrangement with a local nursery.



# PART THREE: *reference information*

## Plant list

Plants in this list in a pale yellow cell are mentioned in Part 2 or are rare or threatened plants in Taranaki. They are suitable for planting in North Taranaki Ecological District. The plants in the white cells are also found in the district and can also be considered in appropriate conditions. Plants are organised according to type (tree,

shrub, grass etc) with a key to show how tall each plant will grow, and a column to describe the conditions that will suit it best. If you are having difficulty obtaining any of the plant species listed please contact the Biodiversity Section of the Taranaki Regional Council.

COMMON/MAORI NAME	BOTANICAL NAME	Final height (m)	Wind	Frost hardy	Salt tolerant	Well-drained soil	Poorly-drained soil	Sun	Partial shade	Shade	Bee-friendly	Bird-friendly
<b>TREES &amp; SHRUBS</b>												
-	<i>Coprosma rhamnoides</i>	1.5	•	•	•	•		☀️☀️	☀️☁️			•
-	<i>Olearia townsonii</i>	5	•		•	•		☀️				
-	<i>Pittosporum colensoi</i>	10		•		•		☀️☁️				
Akeake	<i>Dodonaea viscosa</i>	12	•		•	•		☀️☀️	☀️☁️		•	
Beech, black	<i>Fuscopora solandri var. solandri</i>	15		•				☀️☀️	☀️☁️			
Beech, hard	<i>Fuscopora truncata</i>	20		•				☀️☀️	☀️☁️			
Beech, silver	<i>Lophozonia menziesii</i>	15		•		•		☀️☀️	☀️☁️			
Broadleaf / kapuka	<i>Griselinia littoralis</i>	10	•	•	•	•	•	☀️☀️	☀️☁️			•
Broom, common	<i>Carmichaelia australis*</i>	2.5	•			•	•	☀️☀️	☀️☁️		•	
Bush snowberry	<i>Gaultheria antipoda</i>	1	•	•		•		☀️☀️	☀️☁️			•
Cabbage tree, forest / ti ngahere	<i>Cordyline banksii</i>	4		•				☀️☁️	☁️☁️			•
Cabbage tree, ti kouka	<i>Cordyline australis</i>	10	•	•	•	•	•	☀️☀️	☀️☁️		•	•
Coprosma, round-leaved	<i>Coprosma rotundifolia</i>	5				•	•	☀️☁️	☁️☁️			•
Coprosma, sand	<i>Coprosma acerosa</i>	1	•		•	•		☀️				•
Coprosma, swamp	<i>Coprosma tenuicaulis</i>	3		•		•	•	☀️☀️	☀️☁️			•
Coprosma, thin-leaved	<i>Coprosma areolata</i>	5				•		☀️☀️	☀️☁️			•
Coprosma, thin-leaved	<i>Coprosma tenuifolia</i>	5		•		•		☁️				•
Daphne, NZ	<i>Pimelea prostrata subsp. prostrata</i>	0.2	•		•	•		☀️				
Five finger / whauwhaupaku	<i>Pseudopanax arboreus</i>	10		•				☀️☁️				•
Five finger, broad-leaved	<i>Pseudopanax laetus</i>	5		•		•		☀️☁️				
Gaultheria	<i>Gaultheria paniculata</i>	1	•	•		•		☀️☀️	☀️☁️			
Hangehange	<i>Geniostoma ligustrifolium var. ligustrifolium</i>	4			•	•		☀️☁️				
Hebe	<i>Hebe macrocarpa</i>											
Heketara	<i>Olearia rani</i>	8				•		☀️☁️				

COMMON/MAORI NAME	BOTANICAL NAME	Final height (m)	Wind	Frost hardy	Salt tolerant	Well-drained soil	Poorly-drained soil	Sun Partial shade Shade	Bee-friendly	Bird-friendly
Helichrysum	<i>Helichrysum lanceolatum</i>	1.5	•			•		☀️☀️☀️		
Hinau	<i>Elaeocarpus dentatus</i>	20	•	•		•		☀️☀️☀️	•	•
Horoeka / lancewood	<i>Pseudopanax crassifolius</i>	15	•	•		•	•	☀️☀️☀️	•	•
Horopito, lowland	<i>Pseudowintera axillaris</i>	7				•		☀️☁️☁️		
Horopito, mountain	<i>Pseudowintera colorata</i>	3.5		•		•		☀️☁️		
Houpara	<i>Pseudopanax lessonii</i>	6	•		•	•		☀️☀️☀️		•
Kahikatea / white pine	<i>Dacrycarpus dacrydioides</i>	25+	•	•			•	☀️☀️☀️		•
Kaikomako	<i>Pennantia corymbosa</i>	6	•			•	•	☀️☀️☀️		
Kamaha	<i>Weinmannia racemosa</i>	25	•	•		•	•	☀️☀️☀️	•	•
Kanono	<i>Coprosma grandifolia</i>	6				•	•	☀️☁️☁️		•
Kanuka	<i>Kunzea ericoides</i>	10	•	•	•	•		☀️☀️☀️	•	
Karaka	<i>Corynocarpus laevigatus</i>	15	•		•	•		☀️☀️☀️		•
Karamu	<i>Coprosma robusta</i>	6	•	•	•	•	•	☀️☀️☀️		•
Karamu, shining	<i>Coprosma lucida</i>	4	•	•		•	•	☀️☀️☀️☁️		•
Karo	<i>Pittosporum crassifolium</i>	8	•	•	•	•		☀️☀️☀️		•
Kawakawa	<i>Piper excelsum</i>	5	•		•	•		☀️☁️☁️		•
Kohekohe	<i>Dysoxylum spectabile</i>	15	•		•	•	•	☀️☁️☁️		•
Kohuhu / kohukohu	<i>Pittosporum tenuifolium</i>	10	•	•	•	•		☀️☁️		
Korokio	<i>Corokia cotoneaster</i> var. "Paritutu"	1	•	•	•	•		☀️		•
Koromiko	<i>Hebe stricta</i> var. <i>macroura</i>	4	•	•	•	•		☀️☀️☀️	•	•
Koromiko	<i>Hebe stricta</i> var. <i>stricta</i>	4	•	•	•	•		☀️☀️☀️	•	•
Kotukutuku / tree fuchsia	<i>Fuchsia excorticata</i>	15		•		•	•	☀️☁️☁️	•	•
Kowhai, coastal	<i>Sophora chathamica</i>	20	•			•		☀️		•
Lacebark / houhere	<i>Hoheria sexstylosa</i>	15	•	•		•		☀️	•	
Mahoe, whitey wood	<i>Melictyus ramiflorus</i>	10	•		•	•	•	☀️☀️☀️☁️	•	•
Maire, black	<i>Nestegis cunninghamii</i>	25	•	•				☀️☁️		•
Maire, narrow-leaved	<i>Nestegis montana</i>	15		•		•		☀️☁️		•
Maire, swamp / waiwaka / maire tawake	<i>Syzygium maire</i>	15				•	•	☀️☀️☀️		•
Maire, white	<i>Nestegis lanceolata</i>	20	•	•		•		☀️☀️☀️		•
Maire, willow-leaved	<i>Mida salicifolia</i>	6				•		☀️☁️☁️		
Makomako / wineberry	<i>Aristotelia serrata</i>	10				•		☀️☁️☁️		•
Mangeao	<i>Litsea calicaris</i>	18				•		☀️☀️☀️		•
Manuka	<i>Leptospermum scoparium</i>	5	•	•	•	•	•	☀️	•	
Mapau, black / ruatawhiri	<i>Pimelea urvilleana</i> subsp. <i>urvilleana</i>	0.3	•		•	•		☀️		
Mapau / mapou / red matipo	<i>Myrsine australis</i>	6	•	•		•		☀️☀️☀️		•
Matai / black pine	<i>Prumnopitys taxifolia</i>	25		•		•	•	☀️☀️☀️		•
Mingimingi	<i>Coprosma propinqua</i>	6		•		•	•	☀️☀️☀️		•



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Mingimingi, prickly	<i>Leptecophylla juniperina</i>	2	•	•		•		☀️☀️☀️	☀️☁️		•	•
Mingimingi, tall	<i>Leucopogon fasciculatus</i>	2	•	•		•		☀️☀️☀️	☀️☁️		•	
Mingimingi, dwarf / patotara	<i>Leucopogon fraseri</i>	0.1	•	•				☀️				•
Miro / brown pine	<i>Prumnopitys ferruginea</i>	25		•		•	•	☁️				•
Neinei	<i>Dracophyllum latifolium</i>	10	•	•		•		☀️☁️				
Ngaio	<i>Myoporum laetum</i>	10	•		•	•		☀️			•	•
Nikau palm	<i>Rhopalostylis sapida</i>	10				•	•	☀️☁️			•	•
Olearia	<i>Olearia albida</i>	8	•		•	•		☀️				
Ongaonga / tree nettle	<i>Urtica ferox</i>	2		•				☀️☀️☀️	☀️☁️			
Pate / seven finger	<i>Schefflera digitata</i>	8				•	•	☀️☁️				•
Pigeonwood / porokaiwhiri	<i>Hedycarya arborea</i>	12	•			•		☀️☁️				•
Pinatoro	<i>Pimelea carnososa</i>	0.1	•	•	•	•		☀️				
Poataniwha	<i>Melicope simplex</i>	2	•	•				☀️☁️				
Pohutukawa	<i>Metrosideros excelsa</i>	25	•		•	•		☀️			•	•
Pokaka	<i>Elaeocarpus hookerianus</i>	8		•				☀️☁️				
Poroporo	<i>Solanum aviculare</i>	4				•		☀️				•
Puka	<i>Griselinia lucida</i>	10	•	•	•	•		☀️☀️☀️	☀️☁️			•
Pukatea	<i>Laurelia novae-zelandiae</i>	25					•	☀️☀️☀️	☀️☁️			
Puriri	<i>Vitex lucens</i>	20	•		•	•		☀️☀️☀️	☀️☁️		•	•
Putaputaweta / marbleleaf	<i>Carpodetus serratus</i>	10		•		•	•	☀️☀️☀️	☀️☁️			•
Ramarama	<i>Lophomyrtus bullata</i>	7		•		•	•	☀️☀️☀️☀️	☀️☁️		•	
Rangiora	<i>Brachyglottis repanda</i>	5				•		☀️☀️☀️	☀️☁️			
Rata, Northern	<i>Metrosideros robusta</i>	25+		•		•	•	☀️☀️☀️	☀️☁️		•	•
Raukawa	<i>Raukaua anomalus</i>	3		•		•		☀️				
Raukawa	<i>Raukaua edgerleyi</i>	12	•	•		•	•	☀️☀️☀️	☀️☁️			•
Rewarewa / NZ honeysuckle	<i>Knightia excelsa</i>	25+	•	•		•		☀️☀️☀️	☀️☁️		•	•
Rimu / red pine	<i>Dacrydium cupressinum</i>	25+	•	•		•	•	☀️☀️☀️	☀️☁️			•
Rohutu	<i>Neomyrtus pedunculata</i>	5		•		•	•	☀️☀️☀️	☀️☁️			•
Rohutu / NZ myrtle	<i>Lophomyrtus obcordata</i>	6		•				☁️			•	
Salt marsh ribbonwood	<i>Plagianthus divaricatus</i>	2	•	•	•		•	☀️☀️☀️	☀️☁️			
Tainui	<i>Pomaderris apetala</i> subsp. <i>maritima</i>	4	•		•	•		☀️				
Tanekaha	<i>Phyllocladus trichomanoides</i>	25		•		•		☀️☁️				
Tarata / lemonwood	<i>Pittosporum eugenioides</i>	12	•	•	•	•		☀️☀️☀️	☀️☁️		•	
Tauhinu	<i>Ozothamnus leptophyllus</i>	2	•	•	•	•	•	☀️				
Taupata	<i>Coprosma repens</i>	8	•		•	•		☀️				•

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Taurepo / NZ gloxinia	<i>Rhabdothamnus solandri</i>	4				•				•
Tawa	<i>Beilschmiedia tawa</i>	25				•	•			•
Tawheowheo	<i>Quintinia serrata</i>	12	•	•		•				
Titirangi / napuka	<i>Hebe speciosa</i>									
Titoki	<i>Alectryon excelsus</i>	10	•			•				•
Toatoa	<i>Phyllocladus toatoa</i>	20	•	•		•				
Toro	<i>Myrsine salicina</i>	10		•		•	•			•
Toropapa / karapapa	<i>Alseuosmia macrophylla</i>	2		•		•	•			•
Totara	<i>Podocarpus totara</i>	25+	•	•		•				•
Totara, mountain / Hall's	<i>Podocarpus cunninghamii</i>	20	•	•		•				•
Totorowhiti	<i>Dracophyllum strictum</i>	2.5	•	•		•				
Tree daisy, coastal	<i>Olearia solandri</i>	5	•		•	•				
Turepo / small-leaved milk tree	<i>Streblus heterophyllus</i>	6	•			•				
Tutu	<i>Coriaria arborea</i>	6	•	•		•				•
Wharangī	<i>Melicope ternata</i>	5	•		•	•				•
Whau	<i>Entelea arborescens</i>	8	•		•	•				
<b>LIANES &amp; SCRAMBLERS</b>										
Bindweed, pink	<i>Calystegia sepium</i>	3	•		•	•				•
Bindweed, shore / rauparaha	<i>Calystegia soldanella</i>	0.1			•	•				
Bindweed, New Zealand	<i>Calystegia tuguriorum</i>	0.5	•	•	•	•				•
Clematis	<i>Clematis cunninghamii</i>	3	•	•						•
Clematis	<i>Clematis foetida</i>	6	•	•						•
Clematis	<i>Clematis forsteri</i>	5	•	•						•
Clematis, white / puawananga	<i>Clematis paniculata</i>	6	•	•						•
fern, jointed	<i>Arthropteris tenella</i>	0.4				•	•			
Jasmine, small-flowered	<i>Parsonsia capsularis</i>	10	•							•
Jasmine, New Zealand	<i>Parsonsia heterophylla</i>	10	•		•					•
Kiekie	<i>Freycinetia banksii</i>	15	•							•
Kohia / NZ passionfruit	<i>Passiflora tetrandra</i>	20	•							•
Kotukutuku / fuchsia	<i>Fuchsia perscandens</i>	5	•							•
Lawyer, swamp	<i>Rubus australis</i>	6	•							•
Lawyer, bush	<i>Rubus cissoides</i>	10	•							•
Lawyer, white-leaved	<i>Rubus schmidelioides</i>	10	•							•
Muehlenbeckia, large-leaved	<i>Muehlenbeckia australis</i>	10	•		•	•				
Pohuehue, creeping	<i>Muehlenbeckia axillaris</i>	0.1	•		•	•				



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Pohuehue, small-leaved	<i>Muehlenbeckia complexa</i> var. <i>complexa</i>	2	•	•	•	•		☀️				
Rata, carmine	<i>Metrosideros carminea</i>	15	•			•					•	
Rata, climbing	<i>Metrosideros colensoi</i>	15	•			•					•	
Rata, climbing	<i>Metrosideros diffusa</i>	20	•								•	
Rata, climbing	<i>Metrosideros fulgens</i>	20	•								•	
Rata, white	<i>Metrosideros perforata</i>	20	•								•	
Spinach, native	<i>Tetragonia implexicoma</i>	0.3	•		•	•		☀️☀️				
Spinach, NZ	<i>Tetragonia tetragonoides</i>	0.3	•		•	•		☀️☀️				
Supplejack / kareao	<i>Ripogonum scandens</i>	20						☀️			•	•
<b>TREE FERNS</b>												
Fern, silver / ponga	<i>Cyathea dealbata</i>	10				•		☀️☀️☁️				
Tree fern, black / mamaku	<i>Cyathea medullaris</i>	20				•	•	☀️☀️				
Tree fern, gully / slender	<i>Cyathea cunninghamii</i>	20					•	☀️☀️				
Tree fern, rough / mountain	<i>Cyathea colensoi</i>	1		•		•	•	☀️☀️				
Tree fern, soft / katote	<i>Cyathea smithii</i>	8		•		•	•	☀️☀️				
Wheki	<i>Dicksonia squarrosa</i>	8	•	•		•	•	☀️☀️				
Wheki-ponga	<i>Dicksonia fibrosa</i>	10				•	•	☀️☀️				
<b>FERNS AND FERN ALLIES</b>												
Fern, gully	<i>Pneumatopteris pennigera</i>	1.5		•			•	☀️☁️				
Fern, hairy	<i>Lastreopsis hispida</i>	0.5		•		•		☀️☁️				
Fern, leather-leaf	<i>Pyrrosia eleagnifolia</i>	0.1	•	•	•	•		☀️☀️				
Fern, smooth shield	<i>Lastreopsis glabella</i>	0.4		•			•	☀️☁️				
Fern, sweet	<i>Pteris macilenta</i>	1.4			•	•		☀️☁️				
Filmy fern, drooping	<i>Hymenophyllum demissum</i>	0.1		•			•	☁️				
Filmy fern, much-divided	<i>Hymenophyllum multifidum</i>	0.1		•			•	☁️				
Filmy fern, rough	<i>Hymenophyllum scabrum</i>	0.2		•		•	•	☁️				
Hard fern, Colenso's / peretao / petako	<i>Blechnum colensoi</i>	0.9		•			•	☁️				
Hard fern, shore	<i>Blechnum blechnoides</i>	0.2				•		☁️				
Hen & chicken fern	<i>Asplenium gracillimum</i>	0.8		•		•		☀️☁️				
Heruheru / Prince of Wales feathers	<i>Leptopteris superba</i>	1.2		•			•	☁️				
Hounds tongue / kowaowao / paraharaha	<i>Microsorium pustulatum</i>	0.4	•	•	•	•		☀️☁️				
Kiokio / horokio	<i>Blechnum novae-zelandiae</i>	2	•	•		•		☀️☀️				
Kiokio, swamp	<i>Blechnum minus</i>	1		•			•	☀️☁️				
Kiwikiwi / kiwakiwa / creek fern	<i>Blechnum fluviatile</i>	0.5		•		•	•	☀️☁️				
Lindsaea	<i>Lindsaea trichomanoides</i>											

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Lindsaea	<i>Lindsaea viridis</i>	0.5		•			•					
Maidenhair, common	<i>Adiantum cunninghamii</i>	0.4		•								
Nini / rereti / lance fern	<i>Blechnum chambersii</i>	0.2		•		•	•					
Petipeti / piupiu / crown fern	<i>Blechnum discolor</i>	1.5		•		•	•					
Pikopiko, hen & chicken fern	<i>Asplenium bulbiferum</i>	0.8		•		•		☀️☁️				
Spleenwort, coastal	<i>Asplenium appendiculatum</i> subsp. <i>maritimum</i> (u)	0.5	•		•	•		☀️☀️				
Spleenwort, hanging	<i>Asplenium flaccidum</i>	0.8		•		•			☁️			
Spleenwort, Hooker's	<i>Asplenium hookerianum</i>	0.2						☀️☁️				
Spleenwort, shining	<i>Asplenium oblongifolium</i>	0.5		•		•		☀️☁️				
Spleenwort, sickle	<i>Asplenium polyodon</i>	0.5										
Thread fern / climbing hard fern	<i>Blechnum filiforme</i>	0.4					•		☁️			
<b>GRASSES</b>												
Couch, prickly	<i>Zoysia minima</i>	mat	•	•	•	•		☀️				
Grass, basket	<i>Oplismenus hirtellus</i> subsp. <i>imbecillis</i>	0.2	•	•		•	•	☁️☀️				
Millet, swamp	<i>Isachne globosa</i>	1	•		•		•	☀️☀️				
Rice grass, bush	<i>Microlaena avenacea</i>	0.5		•		•	•	☀️☁️				
Rice grass, slender	<i>Microlaena stipoides</i>	0.6		•		•		☀️				
Spinifex / kowhangatara	<i>Spinifex sericeus</i>	0.5	•	•	•	•		☀️				
toetoe	<i>Austroderia fulvida</i>	3.5	•	•	•	•	•	☀️				
toetoe	<i>Austroderia toetoe</i>	4	•	•	•	•	•	☀️				
Water brome	<i>Amphibromus fluitans</i>	0.4			•		•	☀️				
<b>SEDGES</b>												
Baumea	<i>Machaerina arthophylla</i>	1.3		•			•	☀️☀️				
Baumea	<i>Machaerina articulata</i>	2			•		•	☀️				
Baumea	<i>Machaerina juncea</i>	1.5						☀️				
Baumea	<i>Machaerina rubiginosa</i>	1.5	•	•			•	☀️				
Baumea	<i>Machaerina sinclairii</i>	1.2		•	•	•	•	☀️☀️☁️				
Baumea	<i>Machaerina teretifolia</i>	1.1	•	•			•	☀️				
Bog rush	<i>Schoenus pauciflorus</i>	1		•			•	☀️☀️☁️				
Bog rush, dwarf	<i>Schoenus maschalinus</i>	0.4		•			•	☀️☀️☁️				
Clubrush, knobby	<i>Ficinia nodosa</i>	1.5	•	•	•	•	•	☀️				
Grass, Maori	<i>Carex maorica</i>	1			•		•	☀️☀️				
Grass, purua	<i>Bolboschoenus fluviatilis</i>	2.5			•		•	☀️☀️				
Grass, purua	<i>Bolboschoenus medianus</i>	1.5			•		•	☀️				
Isolepis	<i>Isolepis distigmata</i>	0.2						☀️				



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Isolepis	<i>Isolepis inundata</i>	0.5					•	☀				
Isolepis	<i>Isolepis reticularis</i>	0.4	•		•		•	☀				
Kuawa	<i>Schoenoplectus tabernaemontani</i>	2			•	•	•	☀				
Kuta	<i>Eleocharis sphacelata</i>	1.5			•		•	☀				
Mapere	<i>Gahnia setifolia</i>	3	•	•			•	☀☀☀				
Mapere	<i>Gahnia xanthocarpa</i>	3.5	•	•		•	•	☀				
Pukio	<i>Carex secta</i>	2	•				•	☀☀☀				
Pukio	<i>Carex virgata</i>	2		•		•	•	☀☀				
Rautahi	<i>Carex coriacea</i>	1.2		•	•		•	☀				
Rautahi	<i>Carex geminata</i>	1.2					•	☀☀☀				
Rautahi	<i>Carex lessoniana</i>	1.5			•		•	☀☀☀				
Schoenus, bog	<i>Schoenus brevifolius</i>	1					•	☀☀☀				
Sedge, cutty	<i>Gahnia lacera</i>	0.7	•				•	☀☀☀				
Sedge, giant umbrella	<i>Cyperus ustulatus</i>	2	•		•		•	☀☀				
Sedge, golden sand / pingao	<i>Ficinia spiralis</i>	0.7	•	•	•	•		☀				
Sedge, hook	<i>Uncinia uncinata</i>	0.5	•	•		•	•	☀☀				
Sedge, kauri	<i>Schoenus tendo</i>	1	•			•		☀☀				
Sedge, sand	<i>Carex pumila</i>	0.3	•		•	•		☀				
Sedge, sand spike	<i>Eleocharis neozelandica</i>	0.6	•		•			☀				
Sedge, sharp spike	<i>Eleocharis acuta</i>	1	•	•			•	☀				
Sedge, slender spike	<i>Eleocharis gracilis</i>	0.4	•	•	•	•	•	☀				
Sedge, square	<i>Lepidosperma australe</i>	1	•	•		•	•	☀☀☀				
Tussock, Glen Murray	<i>Carex flagellifera</i>	0.9		•	•	•		☀☀☀				
<b>RUSHES</b>												
Oioi	<i>Apodasmia similis</i>	1			•		•	☀				
Leafless rush / wiwi	<i>Juncus australis</i>	1.2		•			•	☀				
Rush, grass leaved	<i>Juncus caespiticus</i>											
Wiwi	<i>Juncus edgariae</i>	2	•	•			•	☀				
Rush, sea	<i>Juncus kraussii var. australiensis</i>	1.2	•		•	•		☀				
Rush, giant	<i>Juncus pallidus</i>	2					•	☀				
Rush, grass-leaved	<i>Juncus planifolius</i>	0.1	•	•			•	☀				
Rush, dwarf	<i>Juncus pusillus</i>	2	•	•	•		•	☀				
Rush, fan-flowered	<i>Juncus sarophorus</i>	1.5	•	•			•	☀☀☀				
Triglochin	<i>Triglochin striata</i>	0.4			•		•	☀☀☀☀☀				

COMMON/MAORI NAME	BOTANICAL NAME	Final height (m)	Wind	Frost hardy	Salt tolerant	Well-drained soil	Poorly-drained soil	Sun ☀️	Partial shade ☀️☁️	Shade ☁️	Bee-friendly	Bird-friendly
<b>HERBS</b>												
Astelia, swamp	<i>Astelia grandis</i>	2		•			•	☀️☀️				
Astelia	<i>Astelia microsperma</i>	1.5	•	•			•	☀️☀️				
Batchelor's buttons	<i>Cotula coronopifolia</i>	0.4	•		•		•	☀️				
Celery, NZ	<i>Apium prostratum</i> subsp. <i>prostratum</i> var. <i>filiforme</i>	0.3	•		•	•	•	☀️☀️				
Flax	<i>Phormium tenax</i>	3	•	•	•	•	•	☀️☀️			•	•
Flax, mountain / wharariki	<i>Phormium cookianum</i> subsp. <i>hookeri</i>	2	•	•	•	•		☀️☀️			•	•
Grass, kauri	<i>Astelia trinervia</i>	0.6	•			•		☁️☀️				
Kakaha / bush lily	<i>Astelia fragrans</i>	1	•	•		•	•	☀️☁️				
Lobelia, shore	<i>Lobelia anceps</i>	0.1	•		•	•	•	☀️☀️				
Mercury Bay weed	<i>Dichondra repens</i>	0.1			•			☀️				
Native ice plant	<i>Disphyma australe</i>	mat	•		•	•		☀️				
Nertera, hairy forest	<i>Nertera villosa</i>	0.1				•		☁️				
Parataniwha	<i>Elatostema rugosum</i>	0.5		•		•		☀️				
Puha, shore	<i>Sonchus kirkii</i>	0.5	•		•		•	☀️☀️			•	
Raupo / bullrush	<i>Typha orientalis</i>	3			•		•	☀️				
Remuremu	<i>Selliera radicans</i>	mat	•		•			☀️				
Sea primrose	<i>Samolus repens</i> var. <i>repens</i>	0.1	•		•			☀️				
Spurge, shore	<i>Euphorbia glauca</i>	1	•		•		•	☀️				
Sundew, forked	<i>Drosera binata</i>	0.3					•	☀️☀️				
Turutu	<i>Dianella nigra</i>	0.5		•		•	•	☀️☀️☁️				
<b>EPIPHYTES</b>												
Fern, fragrant / mokimoki	<i>Microsorium scandens</i>	0.4		•			•	☀️☁️				
Fern, lance	<i>Loxogramme dictyopteris</i>	0.3				•		☀️☀️				
Fern, rusty filmy	<i>Hymenophyllum frankliniae</i>	0.1		•		•		☀️☀️				
Kahakaha	<i>Astelia hastata</i>	1	•	•	•	•		☀️☀️				
Kirk's kohuhu	<i>Pittosporum kirkii</i>	1	•			•		☀️☀️				
Kohurangi / Kirk's daisy	<i>Brachyglottis kirkii</i>	1.5	•			•		☀️☀️				
Kowharawhara / perching lily	<i>Astelia solandri</i>	1	•	•	•	•		☀️☀️				
Mistletoe, scarlet	<i>Peraxilla colensoi</i>	2				•		☀️☀️				
Mistletoe, red / pikirangi	<i>Peraxilla tetrapetala</i>	2				•		☀️☀️				
Puka	<i>Griselinia lucida</i>	10	•	•	•	•		☀️☀️				•
Spleenwort, sickle	<i>Asplenium polyodon</i>	0.6	•		•	•		☀️☁️				
Tawhirikaro	<i>Pittosporum cornifolium</i>	2.5	•		•	•		☀️☀️				•



## Nationally threatened, at risk and regionally distinctive indigenous vascular plants

If you are interested in planting any species which are threatened, at risk nationally or regionally distinctive, contact the Department of Conservation or the Biodiversity section of the Taranaki Regional Council. Information in the following tables has been sourced from the websites of the New Zealand Plant Conservation Network, the Department of Conservation and the Taranaki Flora Group. It represents a selection of the rare and threatened plants, such as the swamp maire pictured below, found in the North Taranaki Ecological District.



Swamp maire/ waiwaka

BILL JACKSON



## Some plant species that are nationally threatened and at risk



HALEMA JAMIESON

### Tainui

TREE

*Pomaderris apetala* subsp. *maritima*

Coastal low spreading tree that is currently known from two sites, at Mokau and at the Mohakatino River mouth. It can form a dominant canopy on exposed or recently disturbed sites. It is a single species.

**Threatened—nationally critical.** Threatened by habitat loss due to land development, weed invasion, browsing, and recruitment failure.



BILL CLARKSON

### Titirangi

COASTAL CLIFF SHRUB

*Hebe speciosa*

In the North Island this species only occurs along the west coast, with populations previously occurring along the North Taranaki coastline, from Pukearuhe to Mokau.

**Threatened—nationally vulnerable.** Threatened by weed invasion, browsing and genetic pollution through planting of other hebe species and cultivars in the vicinity of wild populations. It is therefore vital that these be eco-sourced.



BILL CLARKSON

### Shore spurge

PERENNIAL HERB

*Euphorbia glauca*

Found in sand dunes, predominantly mid dunes.

**At risk—declining.** Threatened by browsing and trampling by cattle, sheep, pigs and possums, weed invasion and coastal development. Competition from taller vegetation is significant at many sites, particularly once dunes become fully consolidated and support taller vegetation



BILL CLARKSON

### Kirk's kohuhu

SHRUB EPIPHYTE

*Pittosporum kirkii*

Grows in established forest as a shrub epiphyte, often in nest epiphyte clumps. Could be introduced to upland forest at a late successional stage.

**At Risk – Declining.** Browsed by possums and threatened by forest clearance.



JANET HUNT

### King fern, para, tawhiti para

FERN

*Ptisana salicina*

Restricted to the northwestern half of the North Island from inland Whanganui north, where it is a late successional species found in cave entrances, dark gullies and stream edges, often with supplejack and parataniwha.

**At Risk – Declining.** Feral and domestic stock, wild pig and goat browse are threats. Collection by people has also caused some local extinctions.



PETER DE LANGE, NZPCN

### Lindsaea viridis

FERN

Fern often found in the flood zone of steep-sided streams, rivers and deep gorges. It usually grows with its roots immersed in moving water, or in damp seepages, or permanently damp moss-lined cliffs. Could be introduced to hard beech forest on damp and shady cliffs.

**At Risk – Naturally Uncommon.** Sparsely distributed and often over-collected.



### Brachyglottis turneri

CLIFF-DWELLING DAISY

Has a very local distribution with the largest populations in the North Taranaki District. It is generally found growing on the crests or faces of damp cliffs or overhanging stream and river banks. This could be introduced to inland cliff vegetation with damp seepages.

**Threatened – Nationally Endangered.**



## Plant species that are considered regionally distinctive to North Taranaki



DEAN CASKEY

### Hard beech, Tawhairaunui

TREE

*Fuscospora truncata*

In north Taranaki hard beech occupies much of the rugged sandstone country, forming almost pure stands. The predominance of hard beech distinguishes the North Taranaki Ecological District from the neighbouring Matemateaonga Ecological District where black beech dominates.



HALEWA JAMESON

### Forget-me-not

HERB

*Myosotis petiolata* var *pansa*

This native forget-me-not is endemic to the west coast of the north Island from Muriwai Beach down to its southern limit at Whitecliffs in north Taranaki. It is found in semi-shaded coastal forest, scrub or flax land.

It is Nationally Endangered due to loss of habitat, goat and pig impacts and competition from exotic weeds.



DEAN CASKEY

### Wharangi

SHRUB

*Melicope ternata*

Wharangi is uncommon in Taranaki but can be found in coastal and semi-coastal locations. Could be introduced to kohekohe–karaka–puriri forest or to karaka–tawa–puriri forest.



BILL CLARISON

### Tawhirikaro

EPIPHYTE

*Pittosporum cornifolium*

Tawhirikaro is uncommon in Taranaki. It is most commonly a late successional epiphyte in lowland forest. It could be introduced to kahikatea–pukatea swamp and semi-swamp forest, tawa forest and tawa–kamahi forest. Tawhirikaro has an uncommon growth form, as a shrub epiphyte.



BILL CLARISON

### Swamp maire, waiwaka

TREE

*Syzygium maire*

Waiwaka is not threatened; however, some populations may be in slow terminal decline. It is a mid-successional species that is found in coastal and lowland forest in waterlogged ground and on the margins of swamps and streams. Could be introduced to swamp forest and semi-swamp forest.



PHIL BENDLE

### Coromandel tree daisy

SMALL TREE–SHRUB

*Olearia townsonii*

*Olearia townsonii* is generally only found on sedimentary hill country cliffs and banks amongst shrub land vegetation. The most significant populations, other than those in the Coromandel, occur in the Taranaki Region. Could be introduced to manuka–*Gaultheria paniculata*–wharariki shrubland.



DEAN CASKEY

### Coastal tree daisy

SMALL TREE–SHRUB

*Olearia solandri*

Primarily a coastal species found on coastal hills and rocky cliffs near the sea, in estuarine vegetation and the margins of coastal lagoons. Could be introduced to consolidated backdune vegetation and saltmarsh ribbonwood–oioi estuary shrubland.

**Regionally distinctive** as this species is fairly uncommon in the Taranaki Region.

# PART FOUR: *further information*

## Taranaki nurseries that eco-source their stock

### **Atawhai Nursery**

765 Carrington Road, RD 1, New Plymouth 4371  
Phone: 06 753 3306

### **Huatoki Native Plant Nursery**

4 Camden Street, New Plymouth 4310  
Phone: 06 753 5811

### **Kii Tahī Nursery and Land Care**

Lower Kaharoa Road, Patea 4597  
Phone: 06 273 6000/ 027 247 9723  
[www.kiitahi.co.nz](http://www.kiitahi.co.nz)

### **Landscape Essentials**

15 Albert Street, Hawera 4610  
Phone: 06 278 8261

### **Moturoa Primary School**

Pioneer Road, New Plymouth 4310  
Phone: 06 751 0392

### **New Life Nursery**

183 Tasman Street, Opunake 4616  
Phone: 06 761 8067

### **Te Kahuri Nurseries**

510 Eltham Road, Mangatoki 4391  
Phone: 06 764 5020 [www.tekahurinurseries.co.nz](http://www.tekahurinurseries.co.nz)

### **St Josephs Primary School**

Whitcombe Road, Opunake 4616  
Phone: 06 761 8388

### **Taranaki Regional Council Nursery**

c/o The Land Management Section,  
Taranaki Regional Council,  
Private Bag 713, Stratford 4352  
Phone: 06 765 7127

### **Woodleigh Nursery**

300 Mountain Road, RD 3,  
New Plymouth 4373  
Phone: 06 752 0830 / 021 072 7394  
[www.woodleigh.co.nz](http://www.woodleigh.co.nz)

*You will need to order less common, threatened or rare plants up to two years in advance because seed or cuttings have to be collected, and the plants grown.*



## Sources of further information

### Department of Conservation



The Taranaki Area Office  
55A Rimu Street  
PO Box 462, New Plymouth 4340  
06 759 0350  
taranakiao@doc.govt.nz.  
[www.doc.govt.nz](http://www.doc.govt.nz)

### Dune Restoration Trust of New Zealand



Advice on dune planting.  
Manners Street  
PO Box 11302  
Wellington 6142  
04 889 2337  
[info@dunetrust.org.nz](mailto:info@dunetrust.org.nz)

### Landcare Research Manaaki Whenua



Detailed information on New Zealand flora including:  
ethnobotany, plant systematics, pollination and weeds.  
[www.landcareresearch.co.nz](http://www.landcareresearch.co.nz)

### New Zealand Fish & Game



Taranaki Senior Field Officer: Allen Standcliff  
PO Box 662  
New Plymouth 4340  
06 757 9676  
[taranaki@fishandgame.org.nz](mailto:taranaki@fishandgame.org.nz)

### New Zealand Plant Conservation Network



Comprehensive information about New Zealand plants.  
[www.nzpcn.org.nz](http://www.nzpcn.org.nz)



## QE II National Trust



Taranaki Regional Representative:  
Neil Phillips 06 753 6433  
[www.openspace.org.nz](http://www.openspace.org.nz)

## National Wetland Trust of New Zealand



Information on the protection and restoration of wetlands.  
<http://www.wetlandtrust.org.nz>

## Royal Forest & Bird Protection Society of New Zealand



North Taranaki: Chairperson, Janet Hunt  
[Northtaranaki.branch@forestandbird.org.nz](mailto:Northtaranaki.branch@forestandbird.org.nz) | 06 756 9165  
South Taranaki: Chairperson, Dave Digby  
[Southtaranaki.branch@forestandbird.org.nz](mailto:Southtaranaki.branch@forestandbird.org.nz) | 06 765 7482  
[www.forestandbird.org.nz](http://www.forestandbird.org.nz)

## Taranaki Flora



Aims to be a one-stop shop for accessible information on the flora and vegetation of the Taranaki region.  
[www.taranakiflora.co.nz](http://www.taranakiflora.co.nz)

## Taranaki Regional Council



47 Cloten Road, Private Bag 713, Stratford 4352  
06 765 7127  
[www.trc.govt.nz](http://www.trc.govt.nz)  
The TRC provides information on biodiversity and sustainable land management.

## Taranaki Biodiversity Trust



The trust was established in 2015 by 19 organisations involved in the protection of native plants, animals and ecosystems in Taranaki. [www.wildfortaranaki.nz](http://www.wildfortaranaki.nz)

## Weedbusters



Comprehensive and detailed information about weeds in New Zealand, including how to control them.  
[www.weedbusters.org.nz](http://www.weedbusters.org.nz)



## The Taranaki Tree Trust

The Taranaki Tree Trust was a charitable trust dedicated to the protection and enhancement of the region's ecosystems and landscapes. It was in operation for 23 years, from 1992 until 2015. The work of the trust was supported by Taranaki Regional Council and the Honda NZ Tree Fund. During its lifetime the trust provided financial support to hundreds of planting projects around the region.

The Karl Reipen Trust has also been a major supporter of the project, donating \$10,000 for the planting of native plants.

As a result thousands of native plants were planted for the benefit of our community and the environment on both private and public land. The trust facilitated numerous community projects; Herekawe Stream Walkway restoration, Living Legends Rugby World Cup 2011, Hutiwai Whitebait Habitat protection, and community planting days.

In 2012 the trust, with the assistance of the University of Waikato, began publication of a series of Restoration Guides which cover the five Ecological Districts in Taranaki. This is the second volume in the series.

## Thanks

The Taranaki Tree Trust thanks the many people who have contributed to this booklet: Professor Bruce Clarkson and Rebecca Bylsma, Catherine L. Kirby from the Environmental Research Institute, University of Waikato, Donna Worthy and Jim Clarkson from DOC Nga Motu office, Bill Clarkson and Barbara Hammonds from the Taranaki Flora group, Janet Hunt, Leigh Honnor, Halema Jamieson and Taranaki Regional Council staff.

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Taranaki  
Tree Trust



## Photo credits

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Individual photographs are also credited in situ on the bottom right hand corner.