

The native bush reserves of Torbay, Auckland

Romily Atkinson and Mike Wilcox

Introduction

The Torbay native bush reserves discussed in this article are fragments of a once continuous forest in this part of Auckland (Myers 2005). They comprise remnants of the original primary forest which have survived in gullies and various stages of gumland scrub and fire-induced regenerating second-growth forest of kanuka (*Kunzea ericoides*), kahikatea (*Dacrycarpus dacrydioides*), tanekaha (*Phyllocladus trichomanoides*) and kauri (*Agathis australis*). Torbay lies within the Hibiscus and Bays Local Board area of Auckland City.

The Awaruku Stream runs through the area over a distance of 4.1 km, with a contributing catchment of about 300 ha. It flows from south-west to north-east and discharges into Long Bay Marine Reserve at the lower eastern end. The undulating lowland hills comprise ridges and gullies that contain small tributaries of the stream, with vegetation covering 19% (56 ha) of the Awaruku Stream catchment. The soils are mainly Waitemata series soils with the downstream flood plains composed of undifferentiated alluvium.

Gumland scrub vegetation is characterised by manuka (*Leptospermum scoparium*) and kanuka associations that have regenerated on land once burned or cleared of kauri forest, which grew on soil of low fertility. The gum was harvested from the impoverished ground. The podsolised soils, depleted in nutrients, formed as a grey layer beneath very acidic humus from the deposit of the resinous leaves and branches of the kauri. These soils are hard and impervious to water and nutrients but maintain a specialised flora.

The Auckland Botanical Society held a field trip to the area on 8 October 2011, surveying the flora of the Torbay Heights and Awaruku Reserves (Fig. 1). The authors also studied these bush reserves and others in Torbay on 1 December 2010 and 9 December 2011. Those attending the Bot Soc field trip were: *Tony Aldridge, Romily Atkinson (leader), Colleen Brewer, Warren Brewer, Stacey Byers, Janeen Collings, Leslie Haines, Peter Hutton, Helen Preston Jones, Philip Moll, Sharon Osman, Juliet Richmond, Lance Salt, Joshua Salter, Claire Stevens, Harold Waite, Alison Wesley, Mike Wilcox, and Maureen Young.*

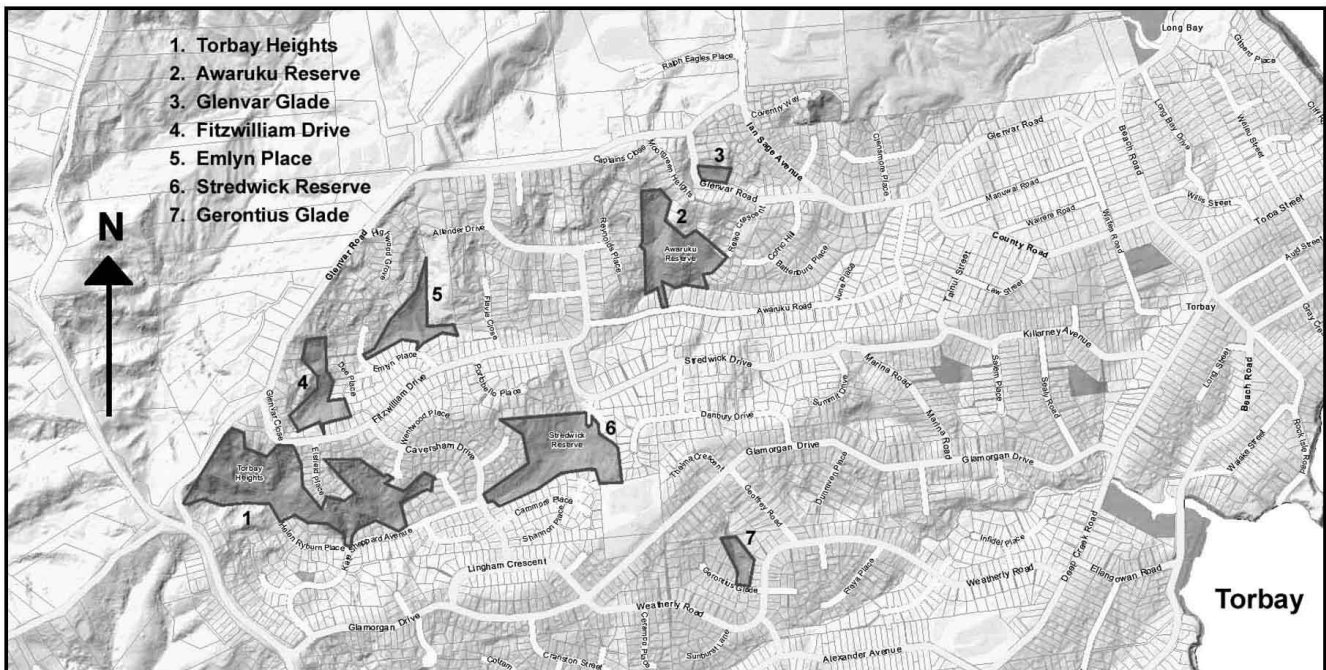


Fig. 1. Map showing the location of the seven Torbay bush reserves described in this article (from an Auckland City Council map, modified by Mei Nee Lee and Joshua Salter).

Torbay Heights Reserve (8.8 ha)

Torbay Heights Reserve is a diverse indigenous forest remnant comprising a wide variety of native vegetation (see Appendix for the native plant species list for this reserve). It is bisected by the Awaruku Creek watercourse. We met at the intersection of Helen Ryburn Place and Kate Sheppard Ave from which this reserve can be accessed, and assembled at the lower southern end of the reserve. Despite an initial short burst of rain, the weather remained fine throughout our trip. We proceeded more or less in single file up the narrow, fairly steep, though well-formed track, through mostly kanuka forest at first, which included kahikatea and tanekaha, with much ponga (*Cyathea dealbata*), hangehange (*Geniostoma ligustrifolium*) and mapou (*Myrsine australis*) in the understorey. We noted the ferns *Pteris saxatilis* and *P. macilenta* growing beside the track, and also carpets of the moss *Fissidens taxifolius* (Fig. 2).



Fig. 2. *Fissidens taxifolius* beside the track, Torbay Heights Reserve. Photo: Philip Moll, 8 Oct 2011.

The vegetation changed abruptly from the tall kanuka forest to low gumland scrub as we approached the first ridgeline. Some characteristic species were mingimingi (*Leucopogon fasciculatus*), heketara (*Olearia ranii*), akepiro (*Olearia furfuracea*), kauri grass (*Astelia trinervia*), manuka, kumarahou (*Pomaderris kumeraho*), tauhinu (*Pomaderris amoena*), *Schoenus apogon*, *Schoenus tendo*, *Lepidosperma australe*, *Drosera auriculata*, and *Pterostylis graminea*. Tanekaha saplings were also prominent. As we proceeded around the winding narrow path, we encountered an increasing number of *Alseuosmia macrophylla* and another, smaller-leaved form, still with a few white/pale green/pink flowers. We considered this to be *Alseuosmia quercifolia*. Bush lawyer (*Rubus cissoides*) was evident by its thick trunk as it climbed high into a lacebark (*Hoheria populnea*). In the distant valley we spotted *Clematis paniculata* in full flower. The upper side of the track took us past swathes of tangle fern (*Gleichenia microphylla*). Weed species of note were honeysuckle (*Lonicera japonica*), monkey apple

(*Syzygium smithii*), and prickly hakea (*Hakea sericea*), with some large trees of the latter having been recently cut down, possibly by Fritz Glasson who oversees the weeding in the reserve. Some old Monterey pines (*Pinus radiata*) had also been felled here some years ago.

As we headed towards the next ridge, further species on the lower side to the left included *Gahnia xanthocarpa*, *Gahnia setifolia*, *Gahnia lacera*, five-finger (*Pseudopanax arboreus*) and lancewood (*Pseudopanax crassifolius*), while on the drier right-hand side of the track we saw *Gonocarpus incanus*, *Nertera dichondrifolia*, *Dianella nigra*, *Lycopodium deuterodensum* and bracken fern (*Pteridium esculentum*) with occasional *Pterostylis graminea* again. Maureen pointed out that this orchid is smaller than *Pterostylis banksii* and has shiny olive-green leaves. The junction with the next area of gumland scrub was marked by *Gahnia pauciflora*, *Cordyline banksii* and a large mairehau (*Leionema nudum*) tree. We had reached the highest point of the reserve featuring numerous large *Dracophyllum sinclairii* and the occasional *Corokia buddleioides*. From here we looked across the lush valley below, and decided that we could hold off having lunch until we had returned to the picnic seat by the cars.

The downhill walk took us past spectacular amounts of *Metrosideros fulgens*, covering fallen tree trunks and climbing high into the canopy trees. We passed two very large kauri, patches of *Blechnum fraseri*, mature tanekaha and a large miro (*Prumnopitys ferruginea*), as we entered the old, relatively unmodified kahikatea-broadleaf forest with plentiful tree ferns and nikau (*Rhopalostylis sapida*). The lowland coastal nature was also exemplified by the many species of broadleaved trees, namely towai (*Weinmannia silvicola*), titoki (*Alectryon excelsus*), puriri (*Vitex lucens*), kohekohe (*Dysoxylum spectabile*), karaka (*Corynocarpus laevigatus*), taraire (*Beilschmiedia tarairi*), tawa (*B. tawa*), rewarewa (*Knightia excelsa*), white maire (*Nestegis lanceolata*), and toro (*Myrsine salicina*), together with plentiful ground ferns and tangles of supplejack (*Ripogonum scandens*). A giant old puriri tree housed a dense array of epiphytes, mainly large *Collospermum hastatum*, within all the forks of its branches.

The end of this path came out at the lower part of the reserve, a stream gully, where a small tributary connecting with the Awaruku Creek ran through the reserve. In this freshwater area stood a large group of tall kahikatea, surrounded by a locally rare putaputaweta (*Carpodetus serratus*) / cabbage tree (*Cordyline australis*) / flax (*Phormium tenax*) wetland. The small rush, *Juncus planifolius*, grew in the wet ground along the edge of the path. We came out onto the street around the corner from the entrance to the reserve and at this point most of the group made a quick exit to have lunch while a head-count was done



Fig. 3. The old kahikatea tree in Awaruku Reserve. Photo: Mike Wilcox, 8 Oct 2011.

to include the slower photographers bringing up the rear. Following this trip we also surveyed the Awaruku Bush Reserve in the afternoon.

Awaruku Reserve (3.0 ha)

The main entrance is on Awaruku Rd with two minor entrances from adjacent side streets. Over time, extensive track work (Willis 1980, 2011) and additional plantings have modified parts of the reserve with some detrimental effects. When subdivision began in 1970, the Awaruku Bush Society (formerly the Glenvar Bush Preservation Society) was formed and with the help of the Royal NZ Forest and Bird Protection Society and Professor Laurie Millener, they persuaded the Council to purchase part of the 8 ha bush for a reserve. Awaruku Reserve was described as representing a fragment of mixed podocarp hardwood rainforest that was very different from other forest areas on the North Shore, for example, Kauri Glen, Orewa and Smith's Bush.

The vegetation and flora were comprehensively described 30 years ago by Scott (1981). Notable features of this predominantly kahikatea-broadleaf forest are the old quarry, a very old puriri tree replete with *Collosporum hastatum*, a 600 year old kahikatea tree (Fig. 3), and an area of gumland scrub with a canopy of kanuka and manuka.

In the manuka gumland scrub in the northern open part of the reserve, species we recorded included kanuka, mapou, hangehange, lancewood, koromiko

(*Hebe stricta*), manuka, mingimingi, tanekaha, akepiro, shining karamu (*Coprosma lucida*), *Coprosma rhamnoides*, *Coprosma areolata*, *Coprosma propinqua* × *C. robusta*, *Alseuosmia quercifolia*, *Pittosporum tenuifolium*, *Cordyline pumilio*, *Lobelia anceps*, cabbage tree, *Dianella nigra*, *Gahnia lacera*, *Gahnia setifolia*, *Lepidosperma australe*, *Poa anceps*, *Rytidosperma gracile*, bracken fern (*Pteridium esculentum*), *Asplenium oblongifolium*, *Adiantum cunninghamii*, and a rimu (*Dacrydium cupressinum*) which we suspect may have been planted.

On the dripping wet rock faces of the old quarry were carpets of bryophytes, the dominant ones being the mosses *Fissidens taxifolius* and *Cryphaea tasmanica*, and the liverwort *Reboulia hemisphaerica*. Beneath the quarry is a pond, which together with water from other seepages, runs into a stream flowing through the reserve and into the Awaruku Stream. *Callitriche muelleri* can be seen along the stream edge.

Overall in this reserve, there is an abundance of kahikatea, *Coprosma areolata*, plentiful sedges along the tracks (*Uncinia uncinata*, *Carex dissita*, *C. lambertiana*), tangles of supplejack in the gullies, and good specimens of kohekohe, puriri, and taraire. *Blechnum membranaceum* is common on the banks.

There are numerous exotic weed species and these include wandering jew (*Tradescantia fluminensis*), climbing asparagus (*Asparagus scandens*), *Selaginella kraussiana*, Mexican daisy (*Erigeron karvinskianus*), *Aristea ecklonii*, monkey apple, gorse, ginger, honeysuckle, *Carex divulsa*, *Cyperus eragrostis*, *Hakea sericea*, *Fatsia japonica*, and a tree of *Elaeocarpus reticulatus* in flower and fruit (9 December 2011). *Adiantum raddianum*, a naturalised maidenhair fern, can be seen on the damp rock face of the quarry area. Two fine specimens of pin oak (*Quercus palustris*) had been planted on the main path along with natives *Corokia* × *cheesemanii*, *Libocedrus plumosa*, pohutukawa (*Metrosideros excelsa*), *Pisonia brunoniana*, and variegated lemonwood (*Pittosporum eugenioides*). For a list of the native plant species see Appendix.

Glenvar Glade Reserve (0.3 ha)

This small reserve is situated beside Glenvar Road and is cut off from the Awaruku Reserve as a result of development and roading. It is a very fine remnant of kahikatea secondary forest with few large trees other than the occasional puriri, rewarewa, karaka and cabbage tree. The understory has an impressive amount of *Coprosma areolata*, forming a thicket. Other species present are nikau, *Parsonsia heterophyllus*, mahoe (*Meliclytus ramiflorus*), kohekohe, putaputaweta, hangehange, lancewood, white maire, *Coprosma robusta*, mapou, *Oplismenus hirtellus*, and *Gahnia lacera*, with *Collosporum hastatum* as the only epiphyte. In the wet area below the level of the road can be seen *Carex lessoniana*,

Isolepis inundatus, *Carex lambertiana*, and *Schoenus tendo*.

There is significant weed infestation throughout, particularly in the wet area. The main weeds are wandering jew, montbretia (*Crocasmia x crocosmiiflora*), honeysuckle, climbing asparagus, ginger and Chinese privet (*Ligustrum sinense*).

Fitzwilliam Drive Reserve (1.5 ha)

This reserve has access tracks off Fitzwilliam Drive, Emlyn Place and Glenvar Road. It is a remnant of indigenous forest and scrub on a steep hill slope, and is bisected by the Awaruku Creek. As with all the reserves in this area, there is a significant encroachment of weeds from the adjacent residential properties.

The dominant species of this secondary forest is 20 m tall kanuka. There are few other tall trees except kahikatea and the occasional puriri and karaka. Typical understorey species include manuka, mahoe, mapou, pigeonwood (*Hedycarya arborea*), *Coprosma areolata*, *C. lucida*, *C. macrocarpa*, hangehange, nikau, supplejack, and ponga as well as some white maire, *Carmichaelia australis*, *Parsonsia heterophyllus* and *Streblus heterophyllus*. The main weed present is wandering jew.

Emlyn Place Reserve (1.5 ha)

This classic North Shore remnant can be accessed from Emlyn Place. About half of the reserve is a remnant of the indigenous forest which once covered the Awaruku area, and it encompasses two stream gullies where the reserve intersects with the Awaruku Creek and tributaries. The other part comprises grassy recreational areas. There is a pleasant and well-formed track throughout. Various weed species are prevalent throughout particularly along the stream margins.

The canopy consists of tall kanuka with a few tall kahikatea, and a notable feature is a good stand of about 40 kauri rickers. Good broadleaved forest includes taraire, puriri, rewarewa, karaka, *Alseuosmia macrophylla* and *Alseuosmia quercifolia*, putaputaweta, *Coprosma grandifolia*, *C. areolata*, mahoe, mapou, lancewood, pigeonwood, heketara, rangiora (*Brachyglottis repanda*), *Ripogonum scandens*, *Rubus cissoides*, *Gahnia lacera*, cabbage trees and a lush area of nikau around the stream. There is also one very big pine tree. Ferns include *Lygodium articulatum*, *Lastreopsis glabella*, *Asplenium polyodon*, *Blechnum fraseri*, *Cyathea dealbata* and *C. medullaris*.

Stredwick Reserve (4.4 ha)

Stredwick Reserve is situated to the east of Torbay Heights Reserve and can be accessed from Stredwick Drive. This area is ecologically significant as it formed

the headwaters of the Awaruku catchment area that runs through Awaruku Reserve and out to Long Bay. It comprises an area of gumland manuka scrub, a freshwater man-made wetland, and a grassy recreational area.

The wetland habitat, which contains mainly raupo (*Typha orientalis*), is designated as a Protected Natural Area. It was made from the stormwater ponds when the adjacent subdivision was developed. It is flanked on the margins by cabbage trees, flax, mahoe, tree ferns (*Cyathea dealbata* and *C. medullaris*) and other characteristic species.

On one side of the wetland is a remnant section of manuka scrub, rarely seen in developed areas. Manuka, 6 – 8 m tall, forms the canopy, with the understorey vegetation comprising characteristic gumland species. These can be observed from the well-used path leading through this area. Shrub species include mingimingi, karamu (*Coprosma robusta*), shining karamu and hangehange. These are interspersed with typical ferns: bracken, pig fern (*Paesia scaberula*), tangle fern (*Gleichenia microphylla*), *Blechnum novae-zelandiae*, and ponga, as well as the larger cutty grasses *Gahnia setifolia* and *G. xanthocarpa*. Other species seen here include *Dianella nigra*, *Schoenus tendo*, *Uncinia uncinata* and of noteworthy interest, *Lycopodiella cernua*. Unfortunately there is a heavy infestation of weeds particularly on the side of the path bordering the adjacent properties.

On the opposite side of the wetland the vegetation consists of broadleaf scrub with a canopy of kanuka. From the path could be seen putaputaweta smothered in creamy-white flowers, and some small kauri and tanekaha. In the fairly sparse understorey some ferns were present, *Blechnum novae-zelandiae*, *Doodia australis* and *Lastreopsis glabella*. Of interest was the small sedge *Isolepis inundatus* growing on the side of the path.

Gerontius Reserve (0.6 ha)

This small remnant gully is accessed off Gerontius Glade, to the south of the Awaruku Reserve. Its ecological significance lies in the fact that it is a remnant of original forest, evidenced by two very large old kahikatea and two big puriri trees alongside the stream. This reserve is one of only four examples of kahikatea-broadleaved forest on undulating hills in the East Coast Bays area. The broad-leaf species comprise putaputaweta, mahoe, mapou, pigeonwood, tree ferns (mamaku and ponga) and nikau. The climbers noted were kiekie, supplejack, and a large bush lawyer vine with the ferns *Blechnum filiforme* and *Pneumatopteris pennigera* present also. The sedges noted were *Carex virgata*, *C. dissita*, and *C. lambertiana*. There is some weed infestation including montbretia and ginger.

References

- Myers, S. (compiler) 2005: *North Shore City ecological survey. A survey of sites of ecological significance in Tamaki and Rodney Ecological Districts*. Auckland Regional Council and North Shore City Council.
- Scott, L. 1981: The vegetation of Awaruku Scenic Reserve. *Auckland Botanical Society Newsletter* 36:15-20.
- Willis, H. 1980: *A guidebook to the Awaruku Bush Reserve*. Awaruku Bush Society, Torbay.
- Willis, H. 2011: *Superb walks in Albany and the East Coast Bays*. 2nd edition, revised. Published by the author.

Appendix: Native plant species list for Torbay Heights Reserve and Awaruku Reserve

	Torbay Heights	Awaruku Reserve		
Lycophytes			Conifers	
<i>Lycopodium deuterodensum</i>	✓		<i>Agathis australis</i>	✓
Ferns			<i>Dacrycarpus dacrydioides</i>	✓
<i>Adiantum bulbiferum</i>		✓	<i>Dacrydium cupressinum</i>	✓
<i>Adiantum cunninghamii</i>		✓	<i>Podocarpus totara</i>	✓
<i>Adiantum fulvum</i>	✓		<i>Phyllocladus trichomanoides</i>	✓
<i>Asplenium flaccidum</i>	✓	✓	<i>Prumnopitys ferruginea</i>	✓
<i>Asplenium oblongifolium</i>	✓	✓	Dicot trees, shrubs and woody climbers	
<i>Asplenium polyodon</i>	✓	✓	<i>Alseuosmia macrophylla</i>	✓
<i>Blechnum chambersii</i>		✓	<i>Alseuosmia quercifolia</i>	✓
<i>Blechnum discolor</i>	✓		<i>Beilschmiedia tarairi</i>	✓
<i>Blechnum filiforme</i>	✓	✓	<i>Beilschmiedia tawa</i>	✓
<i>Blechnum fraseri</i>	✓		<i>Brachyglottis repanda</i>	✓
<i>Blechnum membranaceum</i>	✓	✓	<i>Carmichaelia australis</i>	✓
<i>Blechnum novae-zelandiae</i>	✓	✓	<i>Carpodetus serratus</i>	✓
<i>Cyathea dealbata</i>	✓	✓	<i>Clematis paniculata</i>	✓
<i>Cyathea medullaris</i>	✓	✓	<i>Coprosma areolata</i>	✓
<i>Deparia petersenii</i>		✓	<i>Coprosma grandifolia</i>	✓
<i>Dicksonia squarrosa</i>	✓		<i>Coprosma lucida</i>	✓
<i>Doodia australis</i>		✓	<i>Coprosma macrocarpa</i>	✓
<i>Gleichenia microphylla</i>	✓		<i>Coprosma rhamnoides</i>	✓
<i>Lastreopsis hispida</i>	✓		<i>Coprosma robusta</i>	✓
<i>Lygodium articulatum</i>	✓		<i>Coprosma robusta</i>	✓
<i>Microsorium pustulatum</i>	✓	✓	<i>Corokia buddleioides</i>	✓
<i>Microsorium scandens</i>	✓	✓	<i>Corynocarpus laevigatus</i>	✓
<i>Pneumatopteris pennigera</i>	✓	✓	<i>Dracophyllum sinclairii</i>	✓
<i>Pteridium esculentum</i>	✓	✓	<i>Dysoxylum spectabile</i>	✓
<i>Pteris macilentia</i>	✓		<i>Geniostoma ligustrifolium</i>	✓
<i>Pteris saxatilis</i>	✓		<i>Hebe stricta</i>	✓
<i>Pteris tremula</i>	✓		<i>Hedycarya arborea</i>	✓
<i>Pyrrosia eleagnifolia</i>	✓		<i>Hoheria populnea</i>	✓
<i>Schizaea fistulosa</i>	✓		<i>Knightia excelsa</i>	✓
<i>Tmesipteris elongata</i>	✓	✓	<i>Kunzea ericoides</i>	✓
<i>Tmesipteris lanceolata</i>	✓		<i>Leptospermum scoparium</i>	✓
			<i>Leucopogon fasciculatus</i>	✓

<i>Macropiper excelsum</i>	✓	✓	<i>Carex lambertiana</i>		✓
<i>Melicytus ramiflorus</i>	✓	✓	<i>Carex lessoniana</i>	✓	
<i>Metrosideros excelsa</i>	✓		<i>Carex virgata</i>	✓	✓
<i>Metrosideros fulgens</i>	✓		<i>Collospermum hastatum</i>	✓	✓
<i>Metrosideros perforata</i>	✓	✓	<i>Cordyline australis</i>	✓	✓
<i>Muehlenbeckia australis</i>		✓	<i>Cordyline banksii</i>	✓	
<i>Myrsine australis</i>	✓	✓	<i>Cordyline pumilio</i>	✓	✓
<i>Myrsine salicina</i>	✓		<i>Cyperus ustulatus</i>		✓
<i>Nestegis lanceolata</i>	✓	✓	<i>Dianella nigra</i>	✓	✓
<i>Olearia furfuracea</i>	✓	✓	<i>Earina mucronata</i>	✓	
<i>Olearia rani</i>	✓		<i>Freycinetia banksii</i>	✓	✓
<i>Parsonsia heterophylla</i>	✓	✓	<i>Gahnia lacera</i>	✓	✓
<i>Pittosporum tenuifolium</i>	✓	✓	<i>Gahnia pauciflora</i>	✓	
<i>Pomaderris amoena</i>	✓		<i>Gahnia setifolia</i>	✓	✓
<i>Pomaderris kumeraho</i>	✓		<i>Gahnia xanthocarpa</i>	✓	
<i>Pseudopanax arboreus</i>	✓		<i>Isolepis inundatus</i>		✓
<i>Pseudopanax crassifolius</i>	✓	✓	<i>Juncus planifolius</i>	✓	
<i>Pseudopanax lessonii</i>	✓	✓	<i>Lepidosperma australe</i>	✓	✓
<i>Pseudopanax crassifolius</i>	✓	✓	<i>Microlaena stipoides</i>	✓	
<i>Rubus cissoides</i>	✓		<i>Morelotia affinis</i>	✓	
<i>Schefflera digitata</i>	✓	✓	<i>Oplismenus hirtellus</i>	✓	✓
<i>Sophora chathamica</i>		✓	<i>Poa anceps</i>		✓
<i>Streblus heterophyllus</i>		✓	<i>Phormium tenax</i>	✓	
<i>Vitex lucens</i>	✓	✓	<i>Pterostylis banksii</i>	✓	
<i>Weinmannia silvicola</i>	✓		<i>Pterostylis graminea</i>	✓	
Dicot herbs			<i>Rhopalostylis sapida</i>	✓	✓
<i>Callitriche muelleri</i>		✓	<i>Ripogonum scandens</i>	✓	✓
<i>Centella uniflora</i>	✓		<i>Rytidosperma gracile</i>		✓
<i>Dichondra repens</i>		✓	<i>Schoenus apogon</i>	✓	
<i>Drosera auriculata</i>	✓		<i>Schoenus maschalinus</i>	✓	
<i>Gonocarpus incanus</i>	✓		<i>Schoenus tendo</i>	✓	✓
<i>Haloragis erecta</i>	✓		<i>Typha orientalis</i>	✓	
<i>Lobelia anceps</i>	✓	✓	<i>Uncinia banksii</i>	✓	
<i>Nertera dichondrifolia</i>	✓		<i>Uncinia uncinata</i>	✓	✓
Monocots					
<i>Astelia trinervia</i>	✓				
<i>Carex dissita</i>		✓			