

Plants of Ambury Regional Park Manukau Harbour, Auckland

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Introduction

Ambury Park is part of the network of Auckland's regional parks. It is located in Manukau City beside the Manukau Harbour in the suburb of Mangere Bridge. The total area of Ambury Park is 134 ha, comprising predominantly farm pastureland, and with a narrow coastal fringe of salt marsh vegetation. It includes land leased to the Ambury Park Centre for Riding Therapy and the Mangere Pony Club. It is a windy, exposed place and has several distinctive vegetation types.



Figure 1. Aerial view of Ambury Regional Park (Photo: Alastair Jamieson)

Farm pastureland

Most of Ambury Park is grass pasture used for grazing sheep and cattle, and horses. Birds such as the South Island pied oystercatcher use these pastures for roosting, and there is a big population of pukeko which also feed in the pastures. The land has been in pasture for over 100 years, from the time it was the property of the Ambury Milk Company. It became a regional park in 1975.

The pastures at Ambury Park are variously dominated by rough-stalked meadow grass (*Poa trivialis*), annual poa (*Poa annua*), perennial ryegrass (*Lolium perenne*), browntop (*Agrostis capillaris*), Kikuyu grass (*Pennisetum clandestinum*) and crested dogstail (*Cynosurus cristatus*) together with a varied suite of clover species, including white clover (*Trifolium repens*), sub clover (*Trifolium subterraneum*) and suckling clover (*Trifolium dubium*). Kikuyu grass is mainly found in the rough pasture of the northern coastal fringe, commonly accompanied by coarse, unpalatable tufts of ratstail (*Sporobolus africanus*). Annual grasses such as sweet vernal (*Anthoxanthum odoratum*), shivery grass (*Briza minor*), soft brome (*Bromus hordeaceus*) and vulpia hair grass (*Vulpia myuros* var. *megalura*) make a comparatively brief appearance in spring and early summer. Other pasture herbs here are lawn daisy (*Bellis perennis*), mouse-ear chickweed (*Cerastium fontanum*), thyme-leaved speedwell (*Veronica serpyllifolia*), creeping mallow

(*Modiola caroliniana*), narrow-leaved plantain (*Plantago lanceolata*), scotch thistle (*Cirsium vulgare*), broad-leaved dock (*Rumex obtusifolius*), clustered dock (*Rumex conglomeratus*), slender winged thistle (*Carduus pycnocephalus*), pale flax (*Linum bienne*), creeping buttercup (*Ranunculus repens*), hairy buttercup (*Ranunculus sardous*), and bulbous buttercup (*Ranunculus bulbosus*).

On drier, more infertile sites with thinner soil, the dominant grasses are danthonia (*Rytidosperma racemosum*), meadow rice grass (*Microlaena stipoides*), ratstail (*Sporobolus africanus*), annual ryegrass (*Lolium rigidum*), and much more locally, wheatgrass (*Elymus rectisetus*) and bay grass (*Eragrostis brownii*). The clovers are represented by clustered clover (*Trifolium glomeratum*), reversed clover (*Trifolium resupinatum*), and sea clover (*Trifolium squamosum*). Damp, saline fringes of the pasture are often dominated by the introduced drooping sedge (*Carex divisa*), which is very conspicuous in flower in September and October, and covers large areas in pure stands. It is palatable, and grazed by sheep, especially in autumn and winter.



Figure 2. Pasture Scene in Ambury Park

Herbs associated with the enriched soil of stockyards are stinging nettle (*Urtica urens*), hedge mustard (*Sisymbrium officinale*), inkweed (*Phytolacca octandra*), nettle-leaved fathen (*Chenopodium murale*), purple amaranth (*Amaranthus lividus*), stinking mayweed (*Anthemis cotula*), hemlock (*Conium maculatum*), and French mallow (*Malva nicaeensis*), the latter very unpalatable to stock and forming some extensive colonies.

Flora of road verges

The gravelly edges of roads support a number of prostrate or decumbent plants, some typical species being Cape crassula (*Crassula decumbens*), native stonecrop (*Crassula sieberiana*), soldier's button (*Cotula australis*), parsley piert (*Aphanes inexpectata*),

Onehunga weed (*Soliva sessilis*), annual mouse-ear chickweed (*Cerastium glomeratum*), pearlwort (*Sagina apetala*), allseed (*Polycarpon tetraphyllum*), sand spurrey, (*Spergularia rubra*), catchfly (*Silene vulgaris*), field speedwell (*Veronica arvensis*), scrambling speedwell (*Veronica persica*), creeping mallow (*Modiola caroliniana*), field madder (*Sherardia arvensis*), scarlet pimpernel (*Anagallis arvensis*), annual poa (*Poa annua*), narrow-leaved plantain (*Plantago lanceolata*), white clover, spotted bur medick (*Medicago arabica*), bur medick (*Medicago nigra*), suckling clover (*Trifolium dubium*) [often reddish in colour], hairy birdsfoot trefoil (*Lotus suaveolens*), native oxalis (*Oxalis exilis*), horned oxalis (*Oxalis corniculata*), purple cudweed (*Gamochaeta coarctata*), Japanese cudweed (*Euchiton sphaericus*), and cudweed (*Gamochaeta purpurea*). Cracks between cobblestones at the Visitor Centre have *Hydrocotyle moschata*, *Poa annua* and *Sagina procumbens*. There is a population of fluellen (*Kickxia elatine*) beside the road entrance from Kiwi Esplanade. The terrestrial blue-green alga (Cyanobacteria) *Nostoc commune*, comprising yellowish-brown gelatinous colonies, can be found amongst the vegetation on damp ground.

Exotic trees

The farmland in the park proper is bare of trees, but on the land leased to the Ambury Park Centre for Riding Therapy and the Mangere Pony club there are some tall gum trees (*Eucalyptus botryoides*, *E. bicostata*, and a lone *E. globulus*), two macrocarpa trees (*Cupressus macrocarpa*), a small belt of lawsoniana (*Chamaecyparis lawsoniana*), some radiata pine (*Pinus radiata*), pin oak (*Quercus palustris*), claret ash (*Fraxinus angustifolia* subsp. *oxycarpa* 'Raywood', and a few hybrid poplars (*Populus Xcanadensis*). At the Park headquarters are some specimens of exotic trees, including avocado (*Persea americana*), Indian bead tree (*Melia azedarach*, flaky juniper (*Juniperus squamata*), Chinese juniper (*Juniperus chinensis*), brushbox (*Lophostemon confertus*), Norfolk Island hibiscus (*Lagunaria patersonia*), and white bottlebrush (*Callistemon salignus*).



Figure 3. A road verge

Native copses

A number of shelter belts and copses of native trees and shrubs were established in 1980 by the ARC landscape team, augmented by public participation on Arbor Day. Most of these were subsequently fenced off from grazing, though some are used as a shelter for sheep during the spring lambing season. Pukekos use the copses in spring for nesting.



Figure 4. A native copse

The dominant species in the copses, which are now 8-10 m tall, are taupata (*Coprosma repens*), karo (*Pittosporum crassifolium*), houpara (*Pseudopanax lessonii*), broadleaf (*Griselinia littoralis*), pohutukawa (*Metrosideros excelsa*), ngaio (*Myoporum laetum*), cabbage tree (*Cordyline australis*), and manuka (*Leptospermum scoparium*). Australian ngaio (*Myoporum insulare*) has also been planted in the copses and has grown well. Taupata and karo are notable in being the only species to have regenerated prolifically from self-sown seedlings on the margins and in gaps. In one copse there has also been some localised seedling regeneration of wharangi, and mapou has occasionally set seedlings. Although not native to coastal Auckland, broadleaf has grown particularly well. Other species present are lacebark (*Hoheria populnea*), lemonwood (*Pittosporum eugenoides*), kohuhu (*Pittosporum tenuifolium*), akeake (*Dodonaea viscosa*), karaka (*Corynocarpus laevigata*), kanuka (*Kunzea ericoides*), kowhai (*Sophora microphylla*), tawapou (*Pouteria costata*), coastal twiggy coprosma (*Coprosma crassifolia*), puriri (*Vitex lucens*) and Chatham Island tree daisy (*Olearia traversii*).

There has been no natural development of a native understorey or herb and fern ground cover, and the copses still have an artificial "planted" look. Some plants favouring the copses are veld grass (*Ehrharta erecta*), cocksfoot (*Dactylis glomerata*), ripgut brome (*Bromus diandrus*), prairie grass (*Bromus willdenowii*), meadow rice grass (*Microlaena stipoides*), grey sedge (*Carex divulsa*), smilax (*Asparagus asparagoides*), cut-leaved cranesbill (*Geranium dissectum*) and doves-foot cranesbill (*Geranium molle*), storksbill (*Erodium*

cicutarium), Mercury Bay weed (*Dichondra repens*), puha (*Sonchus oleraceus*), Indian strawberry (*Duchesnea indica*), spreading hedge parsley (*Torilis arvensis*), and extensively, Italian arum (*Arum italicum*). Open disturbed areas have an abundance of ox-tongue (*Helminthotheca echioides*).

On 5 May 2004 the Chinese Conservation Education Trust planted 1700 native trees, mostly in a newly fenced off site in the southern wetland area. Species were kowhai, mapou, kanuka, karamu, koromiko, titoki, lacebark, akeake, kahikatea, karaka, whau, and also three species not otherwise recorded in copses at Ambury Park – pukatea (*Laurelia novae-zelandiae*), taraire (*Beilschmiedia tarairi*), and ribbonwood (*Plagianthus regius*) – but their survival seems doubtful in such a windy, exposed situation.

The only native tree species which seems fully natural in Ambury Park is karo, represented by a few trees near the coast, including two on a rocky islet, amongst *Phormium tenax*. There are two large pohutukawa, and some old, gnarled taupata, but it is thought these were planted many years ago (the taupata are in rows!).

Freshwater wetlands

There are two ponds, which usually dry out completely in summer, and other small, damp, low-lying areas, the dominant tall plant in which is hollow rush (*Juncus australis*). Another tall native rush – the shiny green *Juncus edgariae* – is also present. Other plants of these damp places are penny royal (*Mentha pulegium*) which is abundant and noticeable by its strong minty smell, milfoil (*Myriophyllum propinquum*), starwort (*Callitriche stagnalis*), purple loosestrife (*Lythrum hyssopifolia*), toad rush (*Juncus bufonius*), creeping buttercup (*Ranunculus repens*), celery-leaved buttercup (*Ranunculus sceleratus*), clustered dock (*Rumex conglomeratus*), and marsh bedstraw (*Galium palustre*). The ponds sometimes have marginal colonies of watercress (*Nasturtium officinale*), dense swards of water paspalum (*Paspalum distichum*), and fringes of semi-aquatic Bermuda grass (*Cynodon dactylon*) and creeping bent (*Agrostis stolonifera*). Water speedwell (*Veronica anagallis-aquatica*), is conspicuous in October with its attractive racemes of mauve flowers. Duckweed (*Lemna minor*) may be found on the surface of shallow ponds and slow-flowing ditches, and *Isolepis sepulcralis* at the edges of ditches.

Mangroves, salt meadows and basaltic lava flows

Mangroves (*Avicennia marina* subsp. *australasica*) occur only sporadically in Ambury Park in sheltered, muddy bays in between the black basaltic lava rocks. They are much more abundant in other parts of the Manukau Harbour (Chapman & Ronaldson 1958).

Salt meadows are an attractive feature of the Ambury Park foreshore. The plant covering the largest area in the salt marshes is New Zealand glasswort (*Sarcocornia quinqueflora*). This succulent occurs in distinctive clonal patches, commonly glaucous, bright green, or purplish. Also very common are sea primrose or maakoako (*Samolus repens*), with attractive white flowers in January, and sea plantain (*Plantago coronopus*) which forms extensive colonies of rosettes. Orache (*Atriplex prostrata*) is an introduced weed of prostrate habit from Eurasia and N. Africa. It is common in New Zealand near the coast on shingle banks, fringing mud flats, and occurs all along the fringes of Kiwi Esplanade and commonly all around the Manukau Harbour shores. Less common are remuremu (*Selliera radicans*), slender clubrush (*Isolepis cernua*), sea spurrey (*Spergularia media*), sea blite (*Suaeda novae-zelandiae*), and bachelor's button (*Cotula coronopifolia*). The dominant monocotyledons are shore tussock or needle tussock (*Austrostipa stipoides*) and salt-marsh rush (*Juncus kraussii* var. *australiensis*) and salt marsh carex. Oioi (*Apodasmia similis*) occurs only sporadically.



Figure 5. Stand of hollow rush (*Juncus australis*)

Salt grass (*Puccinellia stricta*) can be found growing amongst glasswort during the spring and summer. It seems to be perennial and is often quite conspicuous, growing on hummocks of shell with a peaty soil, with glasswort and sea plantain. Ambury Park is the main site in Auckland for this grass. It also occurs in the Onehunga-Te Papapa coastal fringe, but not apparently at all in the Waitemata Harbour.

The introduced annual beard grass (*Polypogon monspeliensis*), barley grass (*Critesion murinum*) and the barb grasses (*Parapholis recurva* and *P. strigosa*) are conspicuous at the ecotone between pasture and salt marsh. On one site adjoining a freshwater outlet off Kiwi Esplanade are colonies of arrow-grass (*Triglochin striata*), but it has not been seen in Ambury Park itself.



Figure 6. Mangroves and salt meadow



Figure 7: Salt grass (*Puccinellia stricta*) growing amongst glasswort (*Sarcocornia quinqueflora*)

A man-made rock wall amongst mangroves supports an impressive population of the native succulent *Crassula sieberiana*, together with a robust and luxuriant form of the foliose lichen *Ramalina celastri*.



Figure 8. The native stonecrop (*Crassula sieberiana*) is commonly found on sea walls and gravelly road verges

A shrub which is well established at Ambury Park on the rocky sea shore is African boxthorn (*Lycium ferocissimum*). It is a spiny evergreen shrub from South Africa, and thrives on coastal sites. Other

introduced shrubs here are gorse (*Ulex europaeus*), and occasionally, thornapple or apple of Sodom (*Solanum linnaeanum*). Growing amongst rocks in these scrubby areas is pohuehue (*Muehlenbeckia axillaris*) and smilax. A small rocky islet has a patch of New Zealand spinach (*Tetragonia tetragonioides*), and there are just a few plants of native celery (*Apium prostratum*) growing on islets amongst lava rocks. Shore ribbonwood (*Plagianthus divaricatus*) is very rare in Ambury Park.



Figure 9. Sea celery (*Apium prostratum*)



Figure 10. New Zealand spinach (*Tetragonia tetragonioides*)

Algae

A number of algae can be found on the black lava rocks in the mid and upper tidal zone. A short brownish-coloured alga growing colonially in short, soft clumps is *Caloglossa leprieurii*. This seaweed can also be found on the pneumatophores of mangroves. Green algae of this zone are the filamentous *Rhizoclonium implexum*, growing in greenish wefts that may be bleached by the sun, a type of sea lettuce, *Monostroma latissimum*, and *Enteromorpha compressa*. The red seaweed *Gracilaria chilensis* is abundant as a free-living seaweed on muddy backwaters, and washes up on mass.

Lichens and bryophytes

Lecanora subcoarctata is a crustose lichen found on coastal rocks near high tide limit. It forms grey-white patches that are areolate-cracked. Below this and often under water at high tide, the dominant lichen is the very common yellow species, *Xanthoria ligulata* – one of the most prominent features of the rocky shore, and inland from it, grey lichens. Grey lichens on the reefs and rock walls which are a feature of Ambury Park and the Mangere Bridge area are *Canoparmelia cineracens*, *Rimelia reticulata*, *Dirinaria applanata*, *Heterodermia speciosa*, *Flavoparmelia soredians*, *Physcia poncinsii* and the powdery *Lepraria incana*. Yellow lichens found on the bark of trees and on twigs are *Xanthoria parietina* and *Teloschistes chrysophthalmus*, and perhaps the commonest grey lichen on the bark of trees such as pohutukawa is *Heterodermia speciosa*.

Common mosses on and around protruding boulders in the pastures are *Hypnum cupressiforme*, *Triquetrella papillata*, *Campylopus clavatus*, *Tortula princeps*, and *Bryum campylothecium*, and white feather moss (*Brachythecium albicans*), *Thuidium furfurosum* and *Kindbergia praelonga* can be found in damp pasture.



Figure 11. The yellow lichen *Xanthoria ligulata*

Accompanying the mosses are several small annual flowering plants, also found on dry road edges, namely vulpia hair grass (*Vulpia bromoides*), annual poa (*Poa annua*), Cape crassula (*Crassula decumbens*), native stonecrop (*Crassula sieberiana*), creeping oxalis (*Oxalis exilis*), pearlwort (*Sagina apetala*), allseed (*Polycarpon tetraphyllum*), and also slender bedstraw (*Galium divaricatum*). Nearby Mangere Mountain has a similar

References

- Beever, J. E. 1983. The saxicolous mosses of Mangere Mountain. *Auckland Botanical Society Newsletter* 38(1):15-16.
Chapman, V. J.; Ronaldson, J. W. 1958: *The mangrove and salt-marsh flats of the Auckland Isthmus*. Bulletin No. 125, DSIR.
Esler, A. E. 1988. *Naturalisation of plants in urban Auckland*. DSIR Publishing, Wellington.
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saxicolous moss flora (Beever 1983). *Tortula muralis*, *Bryum argenteum* and *Grimmia pulvinata* can be found on exposed stone walls.



Figure 12. The moss *Grimmia pulvinata* on a stone wall

Mountain moss (*Racomitrium lanuginosum*) used to be present on the lava flows but it seems to have disappeared in recent years. The moss *Ceratodon purpureus* occurs on compact, bare soil on road edges. Shaded stone walls support green mats of the moss *Racomitrium convolutaceum* and felts of the liverworts *Frullania solanderiana* and *Chiloscyphus semiteres*.

Summary and conclusions

This study of the plants found in Ambury Park has brought to light a surprising biodiversity, considering there is no natural native bush, the environment is highly modified, and the park is heavily stocked with sheep. The wild native flora is very restricted, yet there are healthy populations of some lesser known species such as *Crassula sieberiana* and *Puccinellia stricta*, and wild plants of two native vegetables, New Zealand spinach and native celery. The 24-year-old planted native copses usefully demonstrate the capabilities of various species to thrive in this windy, coastal environment, with *Pittosporum crassifolium*, *Myoporum laetum*, *M. insulare*, *Coprosma repens* and *Coprosma crassifolia* being particularly good performers. Ambury Park has a good representation of Auckland's naturalised plants (Esler 1988, 2004), and a few unusual or rare ones such as the Australian grass *Elymus rectisetus* and the European herb *Kickxia elatine*.

Species List

(# = wild native; * = wild exotic; § = cultivated native; *§ = cultivated exotic)

Algae	
<i>Caloglossa leprieurii</i> (Mont.) J. Agardh	coastal rocks and mangroves
<i>Enteromorpha compressa</i> (L.) Nees	coastal rocks
<i>Gracilaria chilensis</i> Bird, McLachlan & Oliveira	mud flats
<i>Monostroma latissimum</i> Wittr.	coastal rocks
<i>Nostoc commune</i> Vaucher	damp road margins
<i>Rhizoclonium implexum</i> (Dillwyn) Kuetz.	coastal rocks
Lichens	
<i>Canoparmelia cinerascens</i> (Lyngé) Elix & Hale	coastal rocks
<i>Chrysothrix candelaris</i> (L.) Laundon	on bark, a green "paint"
<i>Cladonia ramulosa</i> (With.) J.R. Laundon	inside old macrocarpa stumps
<i>Dirinaria applanata</i> (Feé) Awasthi	bark of trees
<i>Flavoparmelia soledians</i> (Nyl.) Hale	coastal rocks
<i>Heterodermia speciosa</i> (Wulfen) Trevis	on scoria walls
<i>Lecanora subcoarctata</i> (C. Knight) Hertel	rocks and walls
<i>Lepraria incarna</i> (L.) Ach.	powdery grey-green crust on walls
<i>Parmotrema chinense</i> (Osbeck) Hale & Ahti	rock walls
<i>Phycia poncinsii</i> Hue	rock walls
<i>Ramalina celastri</i> (Spreng.) Krog & Swinscow	on tree branches
<i>Rimelia reticulata</i> (Taylor) Hale & A. Fletcher	stone walls
<i>Teloschistes chrysophthalmus</i> (L.) Th. Fr.	on kanuka twigs
<i>Usnea rubicunda</i> Stirton	stone wall
<i>Xanthoparmelia scabrosa</i> (Taylor) Hale	on tar seal
<i>Xanthoria ligulata</i> (Körber) P. James	yellow "paint" on coastal rocks
<i>Xanthoria parietina</i> (L.) Th. Fr.	on tree trunks, palings and bark
Liverworts	
<i>Chiloscyphus semiteres</i> (Lehm.) Lehm. & Lindenb.	on damp rock wall, Park HQ
<i>Frullania solanderiana</i> Col.	rock wall, Centre for Riding Therapy
Mosses	
<i>Brachythecium albicans</i> (Hedw.) Schimp.	pasture, mangere pony club area
<i>Bryum argenteum</i> Hedw.	top of stone wall, Park HQ.
<i>Bryum campylothecium</i> Tayl.	on stone walls and rock outcrops
<i>Bryum capillare</i> Hedw.	
<i>Campylopus clavatus</i> (R.Br.) Wils.	rock outcrops
<i>Campylopus introflexus</i> (Hedw.) Brid.	top of stone wall, Park HQ; in old hollow macrocarpa stumps.
<i>Ceratodon purpureus</i> (Hedw.) Brid.	compact bare soil on road edges
<i>Fissidens taxifolius</i> Hedw.	patches on shaded ground, Park HQ
<i>Grimmia pulvinata</i> (Hedw.) Sm. ex Sm. & Sowerby	stone walls
<i>Hypnum cupressiforme</i> Hedw. var. <i>cupressiforme</i>	base of rocky outcrops
<i>Kindbergia praelonga</i> (Hedw.) Ochyra	grassy areas near Park HQ
<i>Racopilum convolutaceum</i> (C. Muell.) Reichdt.	shaded rock outcrops and walls
<i>Thuidium furfurosum</i> (Hook.f. & Wils.) Reichdt.	grassy area
<i>Tortula muralis</i> Hedw.	stone walls
<i>Tortula papillosa</i> Wils.	
<i>Tortula princeps</i> De Not.	rocky outcrops
<i>Triquetrella papillata</i> (Hook.f. & Wils.) Broth.	on rock outcrops
Ferns	
§ <i>Dicksonia squarrosa</i> (Forst.f.) Swartz	common punga
# <i>Hypolepis distans</i> Hook.	
* <i>Nephrolepis cordifolia</i> (L.) Presl	ladder fern, fishbone fern
# <i>Pteris tremula</i> R. Br.	shaking brake, turawera
# <i>Pyrrhosia eleagnifolia</i> (Bory) Hovenkamp	leather-leaf fern

Conifers

§ <i>Agathis australis</i> (D. Don) Lindley	kauri
*§ <i>Chamaecyparis lawsoniana</i> (A. Murr.) Parl.	lawsoniana, Port Orford cedar, Lawson's cypress
*§ <i>Cryptomeria japonica</i> (L. f.) D. Don	Japanese cedar, sugi
*§ <i>Cupressus macrocarpa</i> Hartw. ex Gord.	macrocarpa, Monterey cypress
§ <i>Dacrycarpus dacrydioides</i> (A. Rich.) de Laub.	kahikatea, white pine
*§ <i>Juniperus chinensis</i> L.	Chinese juniper (variegated cultivar)
*§ <i>Juniperus squamata</i> Buch.-Ham. ex D. Don	flaky juniper
*§ <i>Pinus radiata</i> D. Don	Monterey pine, radiata pine
§ <i>Podocarpus totara</i> G. Benn. ex D. Don var. <i>totara</i>	totara

Dicot trees, shrubs and climbers

*§ <i>Acmena smithii</i> (Poiret) Merr. & Perry	lilly pilly
§ <i>Alectryon excelsus</i> Gaertner	titoki
* <i>Anredera cordifolia</i> (Ten.) Steenis	Madeira vine or mignonette vine
* <i>Araujia sericifera</i> Brot.	moth plant
# <i>Avicennia marina</i> subsp. <i>australasica</i> (Walp.) J. Everett	mangrove, manawa
*§ <i>Berberis glaucocarpa</i> Stapf	common barberry
§ <i>Brachyglottis greyi</i> (Hook. f.) Nordenstam	Grey's shrub daisy
*§ <i>Buddleja salviifolia</i> (L.) Lam.	sagewood, wild sage
*§ <i>Callistemon salignus</i> (Smith) Sweet	white or willow bottlebrush
*§ <i>Camellia reticulata</i> Lindley	Camellia
§ <i>Carpodetus serratus</i> J. R. & G. Forst.	putaputaweta, marbleleaf
*§ <i>Casuarina cunninghamiana</i> Miq.	common river sheoak
* <i>Cinnamomum camphora</i> (L.) J. S. Presl	camphor tree
*§ <i>Citrus Xparadisi</i> Macfad.	grapefruit
§ <i>Coprosma crassifolia</i> Col.	coastal twiggy coprosma
§ <i>Coprosma Xcunninghamii</i> Hook. f. (<i>C. robusta</i> x <i>C. propinqua</i>)	hybrid coprosma
§ <i>Coprosma Xkirkii</i> Cheesem. (<i>C. repens</i> x <i>C. acerosa</i>)	hybrid coprosma
§ <i>Coprosma repens</i> A. Rich.	taupata
§ <i>Coprosma robusta</i> Raoul	karamu
§ <i>Corokia buddleioides</i> A. Cunn.	korokia
§ <i>Corokia Xvirgata</i> Turrill (<i>C. buddleioides</i> x <i>C. cotoneaster</i>)	hybrid korokia
§ <i>Corynocarpus laevigatus</i> J. R. & G. Forst.	karaka
§ <i>Dodonaea viscosa</i> (L.) Jacq. subsp. <i>viscosa</i>	akeake
§ <i>Entelea arborescens</i> R. Br.	whau
*§ <i>Eucalyptus bicostata</i> Maiden, Blakely & J. Simmonds	Victorian blue gum
*§ <i>Eucalyptus botryoides</i> Sm.	southern mahogany, bangalay
*§ <i>Eucalyptus globulus</i> Labill.	blue gum
*§ <i>Euryops abrotanifolius</i> (L.) DC.	Paris daisy
*§ <i>Ficus benjamina</i> L.	weeping fig
§ <i>Fraxinus angustifolia</i> subsp. <i>oxycarpa</i> (Bieb. ex Willd.) Franco & Rocha Afonso cv. 'Raywood'	Caucasian ash, claret ash
§ <i>Griselinia littoralis</i> Raoul	broadleaf, papaumu
§ <i>Hebe parviflora</i> (Vahl) Ckn. & Allan	hebe
§ <i>Hebe stricta</i> (Benth.) L. B. Moore	common koromiko
* <i>Hedera helix</i> L.	ivy
*§ <i>Hibiscus rosa-sinensis</i> L.	hibiscus
§ <i>Hoheria populnea</i> A. Cunn.	lacebark, houhere
* <i>Impatiens sodenii</i> Engl.	shrub balsam
* <i>Jasminum polyanthum</i> Franchet	jasmine
*§ <i>Juglans regia</i> L.	European walnut
§ <i>Kunzea ericoides</i> (A. Rich.) J. Thompson	Kanuka
*§ <i>Lagunaria patersonia</i> (Andrews) G. Don subsp. <i>patersonia</i>	Norfolk Island hibiscus
§ <i>Laurelia novae-zelandiae</i> A. Cunn.	pukatea
*§ <i>Lavandula dentata</i> L.	toothed lavender
§ <i>Leptospermum scoparium</i> J. R. & G. Forst.	tea tree, manuka
* <i>Ligustrum sinense</i> Lour.	Chinese privet
* <i>Lonicera japonica</i> Thunb.	Japanese honeysuckle

*§ <i>Lophostemon confertus</i> (R.Br.) P.G. Wilson & J.T. Waterhouse	brushbox
* <i>Lycium ferocissimum</i> Miers	African boxthorn
§ <i>Macropiper excelsum</i> (Forst.f.) Miq. subsp. <i>excelsum</i>	kawakawa
*§ <i>Melia azedarach</i> L.	Persian lilac
§ <i>Melicope ternata</i> J.R. & G. Forst.	wharangi
§ <i>Melicytus ramiflorus</i> J.R. & G. Forst. subsp. <i>ramiflorus</i>	mahoe, whiteywood
§ <i>Metrosideros excelsa</i> Sol. Ex Gaertner	pohutukawa
# <i>Muehlenbeckia complexa</i> (A.Cunn.) Meisn.	wire vine, beach pohuehue
*§ <i>Myoporum insulare</i> R.Br.	Australian ngaio
§ <i>Myoporum laetum</i> Forst.f.	ngaio
§ <i>Myrsine australis</i> (A. Rich.) Allan	mapou
§ <i>Olearia paniculata</i> (J.R. & G. Forst.) Druce	akiraho
§ <i>Olearia traversii</i> (F. Muell.) Hook.f.	akeake, Chatham Is. tree daisy
*§ <i>Paraserianthes lophantha</i> (Willd.) Nielsen subsp. <i>lophantha</i>	brush wattle, crested wattle, stinkbean
*§ <i>Paulownia tomentosa</i> (Thunb.) Steud	hairy paulownia, princess tree
*§ <i>Persea americana</i> Mill.	avocado
§ <i>Pittosporum colensoi</i> Hook.f.	montane kohuhu
§ <i>Pittosporum crassifolium</i> Banks & Sol. ex A.Cunn.	karo (wild and cult.)
§ <i>Pittosporum eugenioides</i> A.Cunn.	lemonwood, tarata
§ <i>Pittosporum tenuifolium</i> Sol. ex Gaertner	kohuhu
§ <i>Pittosporum umbellatum</i> Banks & Sol. ex Gaertner	haekaro
# <i>Plagianthus divaricatus</i> J.R. & G. Forst.	shore ribbonwood
*§ <i>Populus Xcanadensis</i> Moench	hybrid poplar (cultivar of <i>Populus nigra</i> x <i>Populus deltoides</i>)
§ <i>Pouteria costata</i> (Endl.) Baehni	tawapou
* <i>Prunus persica</i> (L.) Batsch	peach
§ <i>Pseudopanax crassifolius</i> (Sol. ex A.Cunn.) C. Koch	lancewood
§ <i>Pseudopanax lessonii</i> (DC.) C. Koch	houpara, coastal five-finger
§ <i>Quercus palustris</i> Muench.	pin oak
* <i>Rhamnus alaternus</i> L.	evergreen buckthorn
* <i>Rubus fruticosus</i> L.	blackberry
*§ <i>Salix cinerea</i> L.	grey willow, sallow
*§ <i>Salvia</i>	sage (red-flowered aromatic shrub)
* <i>Solanum linnaeanum</i> Hepper & P.M. Jaeger	apple of Sodom, devil apple.
* <i>Solanum mauritianum</i> Scop.	woolly nightshade, tobacco weed.
§ <i>Sophora microphylla</i> Ait.	kowhai
*§ <i>Spiraea cantoniensis</i> Lour.	spiraea
* <i>Ulex europaeus</i> L.	gorse
§ <i>Vitex lucens</i> Kirk	puriri
*§ <i>Wisteria sinensis</i> (Sims) Sweet	Chinese wisteria

Dicot herbs

* <i>Acanthus mollis</i> L.	bear's britches
* <i>Amaranthus lividus</i> L.	purple amaranth
* <i>Anagallis arvensis</i> L. subsp. <i>arvensis</i> var. <i>arvensis</i>	scarlet pimpernel
* <i>Anagallis arvensis</i> subsp. <i>parviflora</i> (Hoffsgg. & Link) Arcang.	blue pimpernel
* <i>Anthemis cotula</i> L.	stinking mayweed
* <i>Aphanes inexpectata</i> Lippert	parsley piert
* <i>Apium nodiflorum</i> (L.) Lagasca	water celery
# <i>Apium prostratum</i> Vent.	native celery
* <i>Arctium minus</i> (Hill.) Bernh.	common burdock
* <i>Arctotheca calendula</i> (L.) Levyns	Cape weed
* <i>Atriplex prostrata</i> DC.	orache
* <i>Bellis perennis</i> L.	lawn daisy
*§ <i>Calendula officinalis</i> L.	marigold
* <i>Callitriche stagnalis</i> Scop.	starwort
* <i>Calystegia sepium</i> (L.) R.Br.	pink bindweed
# <i>Calystegia soldanella</i> (L.) R.Br.	shore bindweed
* <i>Capsella bursa-pastoris</i> (L.) Medikus	shepherd's purse
* <i>Cardamine hirsuta</i> L.	bitter cress

* <i>Carduus pycnocephalus</i> L.	slender winged thistle
* <i>Centaureum erythraea</i> Rafn.	centaury
* <i>Cerastium fontanum</i> Baumg.	mouse-ear chickweed
* <i>Cerastium glomeratum</i> Thuill.	annual mouse-ear chickweed
* <i>Chenopodium murale</i> L.	nettle-leaved fat-hen
* <i>Chenopodium pumilio</i> R.Br.	clammy goosefoot.
* <i>Cirsium arvense</i> (L.) Scop.	Californian thistle
* <i>Cirsium vulgare</i> (Savi) Ten.	Scotch thistle
* <i>Conium maculatum</i> L.	hemlock
* <i>Conyza albida</i> Sprengel	broad-leaved fleabane
* <i>Coronopus didymus</i> (L.) Smith	twin cress
# <i>Cotula australis</i> (Sprengel) Hook.f.	soldier's button
* <i>Cotula coronopifolia</i> L.	bachelor's button
* <i>Crassula decumbens</i> Thunb.	Cape crassula
# <i>Crassula sieberiana</i> (Schultes & Schultes f.) G.C.Druce	native stonecrop
* <i>Crepis capillaris</i> (L.) Wallr.	hawksbeard
* <i>Datura stramonium</i> L.	thornapple, jimson weed
* <i>Daucus carota</i> L.	wild carrot, Queen Anne's lace
* <i>Delairea odorata</i> Lem. (syn. <i>Senecio mikanioides</i> Otto ex Walp.)	Cape ivy, German ivy
# <i>Dichondra repens</i> J.R.Forst. & G.Forst.	native Mercury Bay weed
* <i>Duchesnea indica</i> (Andrews) Focke	Indian strawberry
* <i>Erigeron karvinskianus</i> DC.	Mexican daisy
* <i>Erodium cicutarium</i> (L.) L'Hér.	storksbill
* <i>Euchiton sphaericus</i> (Willd.) Anderb. (syn. <i>Gnaphalium sphaericum</i> Willd.)	Japanese cudweed
*§ <i>Euphorbia lathyris</i> L.	caper spurge
* <i>Euphorbia peplus</i> L.	milkweed
* <i>Foeniculum vulgare</i> var. <i>azoricum</i> (Miller) Thell.	fennel
* <i>Fumaria capreolata</i> L.	rampant fumitory
* <i>Fumaria muralis</i> Koch	scrambling fumitory
* <i>Galium aparine</i> L.	cleavers
* <i>Galium divaricatum</i> Lam.	slender bedstraw
* <i>Galium palustre</i> L.	marsh bedstraw
* <i>Gamochaeta coarctata</i> (Willd.) Kerguelen (syn. <i>Gnaphalium coarctatum</i> Willd.)	purple cudweed
* <i>Gamochaeta purpurea</i> (L.) Cabrera	cudweed
* <i>Geranium dissectum</i> L.	cut-leaved cranesbill
* <i>Geranium purpureum</i> Villars	small herb robert
* <i>Geranium molle</i> L.	dove's-foot cranesbill
# <i>Geranium solanderi</i> Carolin	coastal cranesbill
# <i>Geranium</i> aff. <i>solanderi</i> "coarse hairs"	coastal cranesbill
# <i>Haloragis erecta</i> (Banks ex Murray) Oken subsp. <i>erecta</i>	shrubby haloragis, toatoa
* <i>Helianthus tuberosus</i> L.	Jerusalem artichoke
* <i>Helminthotheca echioides</i> (L.) Holub (syn. <i>Picris echioides</i> L.)	ox-tongue
# <i>Hydrocotyle moschata</i> Forst.f.	hydrocotyle
* <i>Hypochaeris radicata</i> L.	catsear
* <i>Kickxia elatine</i> (L.) Dumort.	fluellen
* <i>Lamium pupureum</i> L.	red dead nettle
* <i>Lapsana communis</i> L.	nipplewort
* <i>Lavatera cretica</i> L.	cretan mallow
* <i>Leontodon taraxicoides</i> (Villars) Mérat	hawkbit
* <i>Linum bienne</i> Miller	pale flax
* <i>Lotus pedunculatus</i> Cav. (syn. <i>Lotus uliginosus</i> Schk.)	lotus
* <i>Lotus suaveolens</i> Pers.	hairy birdsfoot trefoil
* <i>Lythrum hyssopifolia</i> L.	hyssop loosestrife
* <i>Malva nicaeensis</i> All.	French mallow
* <i>Malva parviflora</i> L.	mallow
* <i>Medicago arabica</i> (L.) Hudson	spotted bur medick
* <i>Medicago lupulina</i> L.	black medick
* <i>Medicago nigra</i> (L.) Krocke	bur medick
* <i>Melilotus indicus</i> (L.) All.	King Island melilot

* <i>Mentha pulegium</i> L.	penny royal
* <i>Mentha spicata</i> L.	spearmint
* <i>Mentha suaveolens</i> Ehrh.	apple mint
* <i>Modiola caroliniana</i> (L.) G. Don	creeping mallow.
* <i>Myosotis arvensis</i> (L.) Hill	field forget-me-not
# <i>Myriophyllum propinquum</i> Cunn.	native milfoil
* <i>Nasturtium officinale</i> R.Br. (syn. <i>Rorippa nasturtium-aquaticum</i> (L.) Hayek.)	watercress
* <i>Orobanche minor</i> Smith	broomrape
* <i>Osteospermum fruticosum</i> (L.) Norlindh	dimorphotheca, sailor-boy daisy
* <i>Oxalis corniculata</i> L.	horned oxalis, wood sorrel
# <i>Oxalis exilis</i> Cunn.	creeping oxalis
* <i>Oxalis incarnata</i> L.	lilac oxalis
* <i>Oxalis pes-caprae</i> L.	Bermuda buttercup
* <i>Pericallis Xhybrida</i> R. Nordenstam	chneraria
* <i>Plantago coronopus</i> L.	buck's horn plantain
* <i>Plantago lanceolata</i> L.	ribwort, narrow-leaved plantain
* <i>Plantago major</i> L.	broad-leaved plantain
* <i>Phytolacca octandra</i> L.	inkweed
* <i>Polycarpon tetraphyllum</i> (L.) L.	allseed
* <i>Polygonum arenastrum</i> Boreau	small-leaved wireweed
* <i>Polygonum aviculare</i> L.	wire-weed
# <i>Polygonum salicifolium</i> Willd.	swamp willow weed
* <i>Prunella vulgaris</i> L.	selfheal
* <i>Ranunculus bulbosus</i> L.	bulbous buttercup
* <i>Ranunculus muricatus</i> L.	spiny buttercup
* <i>Ranunculus parviflorus</i> L.	small-flowered buttercup
* <i>Ranunculus repens</i> L.	creeping buttercup
* <i>Ranunculus sardous</i> Crantz	hairy buttercup
* <i>Ranunculus sceleratus</i> L.	celery-leaved buttercup
* <i>Raphanus raphanistrum</i> L. subsp. <i>raphanistrum</i>	wild radish
* <i>Rumex conglomeratus</i> Murray	clustered dock
* <i>Rumex crispus</i> L.	curled dock
* <i>Rumex obtusifolius</i> L.	broad-leaved dock
* <i>Rumex pulcher</i> L.	fiddle dock
* <i>Rumex sagittatus</i> Thunb.	climbing dock
* <i>Sagina apetala</i> Ard.	pearlwort
* <i>Sagina procumbens</i> L.	procumbent pearlwort
# <i>Samolus repens</i> (Forst. & Forst.f.) Pers.	sea primrose, maakoako
# <i>Sarcocornia quinqueflora</i> (Bunge ex Ung.-Sternb.) A.J.Scott (syn. <i>Salicornia australis</i> Sol. ex Benth.)	New zealand glasswort
# <i>Selliera radicans</i> Cav.	remuremu
* <i>Senecio esleri</i> Webb	Esler's fireweed, hairy legs
* <i>Senecio jacobaea</i> L.	groundsel
* <i>Senecio skirrodon</i> DC.	ragwort
* <i>Senecio vulgaris</i> L.	gravel groundsel
* <i>Sherardia arvensis</i> L.	groundsel
* <i>Silene gallica</i> L.	field madder
* <i>Sisymbrium officinale</i> L.	catchfly
# <i>Solanum americanum</i> Miller	hedge mustard
* <i>Solanum chenopodioides</i> Lam.	small-flowered nightshade
* <i>Solanum nigrum</i> L.	velvety nightshade
* <i>Solanum tuberosum</i> L.	black nightshade
* <i>Soliva sessilis</i> Ruiz & Pavón	potato
* <i>Sonchus oleraceus</i> L.	Onehunga weed
* <i>Spergularia media</i> L.	sow thistle, milk thistle, puha
* <i>Spergularia rubra</i> (L.) J.Presl & C.Presl	sea spurrey
* <i>Stachys arvensis</i> (L.) L.	sand spurrey
* <i>Stellaria media</i> (L.) Cirillo	stagger weed, field woundwort
# <i>Suaeda novaezelandiae</i> Allan	common stitchwort, chickweed
	native seablite

* <i>Symphytum Xuplandicum</i> Nyman	Russian comfrey
* <i>Taraxacum officinale</i> G. Weber	dandelion
# <i>Tetragonia tetragonioides</i> (Pall.) O. Kuntze	kokihi, New Zealand spinach
* <i>Torilis arvensis</i> (Hudson) Link	spreading hedge-parsley
* <i>Trifolium dubium</i> Sibth.	suckling clover
* <i>Trifolium glomeratum</i> L.	clustered clover
* <i>Trifolium micranthum</i> Viv.	lesser suckling clover
* <i>Trifolium pratense</i> L.	red clover
* <i>Trifolium repens</i> L.	white clover
* <i>Trifolium resupinatum</i> L.	persian clover, reversed clover
* <i>Trifolium squamosum</i> L.	sea clover
* <i>Trifolium subterraneum</i> L.	subterranean clover, sub clover
* <i>Tropaeolum majus</i> L.	garden nasturtium, indian cress
* <i>Urtica urens</i> L.	nettle
* <i>Verbena bonariensis</i> L.	purple-top
* <i>Veronica anagallis-aquatica</i> L.	water speedwell
* <i>Veronica arvensis</i> L.	field speedwell, wall speedwell
* <i>Veronica persica</i> Poiret	scrambling speedwell
* <i>Veronica serpyllifolia</i> L.	thyme-leaved speedwell
* <i>Vicia sativa</i> L.	common vetch
* <i>Vinca major</i> L.	periwinkle
* <i>Viola odorata</i> L.	violet
* <i>Xanthium spinosum</i> L.	clotbur, bathhurst bur

Monocots

*§ <i>Agapanthus praecox</i> subsp. <i>orientalis</i> (Hoffmanns.) H.R.Wehrh (syn. <i>A. orientalis</i> F.M.Leight.)	agapanthus
* <i>Agrostis capillaris</i> L. (syn. <i>Agrostis tenuis</i> Sibth.)	browntop
* <i>Agrostis stolonifera</i> L.	creeping bent
* <i>Aira caryophyllea</i> L. subsp. <i>caryophyllea</i>	silvery hair grass
* <i>Allium triquetrum</i> L.	three-cornered garlic, onion weed
*§ <i>Aloe ciliaris</i> Haw.	climbing aloe
* <i>Anthoxanthum odoratum</i> Lagasca	sweet vernal
# <i>Apodasmia similis</i> (Edgar) B. G. Briggs & L. A. S. Johnson (syn. <i>Leptocarpus similis</i> Edgar)	oioi, jointed wire rush
* <i>Arum italicum</i> Miller	Italian arum
* <i>Asparagus asparagoides</i> L. (syn. <i>Myrsiphyllum scandens</i> (Thunb.) Oberm.)	florist's smilax
# <i>Austrostipa stipoides</i> (Hook.f.) Jacobs & Everett (syn. <i>Stipa stipoides</i> (Hook.f.) Veldkamp, syn. <i>Stipa teretifolia</i> Steud.)	shore tussock, needle tussock, coastal immortality grass
* <i>Briza minor</i> L.	shivery grass
* <i>Bromus diandrus</i> Roth	ripgut brome, great brome
* <i>Bromus hordeaceus</i> L. (syn. <i>Bromus mollis</i> L.)	soft brome
* <i>Bromus lithobius</i> Trin.	Chilean brome
* <i>Bromus willdenowii</i> Kunth	praire grass
* <i>Canna indica</i> L.	Indian shot
§ <i>Carex comans</i> Berggr.	
* <i>Carex divisa</i> Huds.	drooping sedge
* <i>Carex divulsa</i> Stokes	grey sedge
# <i>Carex flagellifera</i> Col.	trip-me-up
§ <i>Carex testacea</i> Sol. ex Boott	
* <i>Catapodium rigidum</i> (L.) C.E.Hubb. (syn. <i>Desmazeria rigida</i> (L.) Tutin).	fern grass, hard grass
§ <i>Cordylina australis</i> (Forst.f.) Endl.	cabbage tree, ti rakau
* <i>Cortaderia selloana</i> (Schult.) Asch. & Graeb.	pampas grass
§ <i>Cortaderia splendens</i> Connor	coastal toetoe
* <i>Critesion murinum</i> (L.) Á. Löve subsp. <i>murinum</i> (syn. <i>Hordeum</i> <i>murinum</i> L. subsp. <i>murinum</i>).	wild barley, wall barley, barley grass
* <i>Crocsmia Xcrocsmiiflora</i> (Nicholson) N.E.Brown	Montbretia
* <i>Cyperus congestus</i> Vahl	brown umbrella sedge
# <i>Cyperus ustulatus</i> A. Rich.	giant umbrella sedge, toetoe

* <i>Cynodon dactylon</i> (L.) Pers.	upoko-tangatu
* <i>Cynosurus cristatus</i> L.	Bermuda grass, couch grass
* <i>Dactylis glomerata</i> L.	crested dog's tail
* <i>Digitaria sanguinalis</i> (L.) Scop.	Cocksfoot
* <i>Echinochloa crus-galli</i> (L.) Beauv.	summer grass, crab grass
* <i>Ehrharta erecta</i> Lam.	barnyard grass
* <i>Eleusine indica</i> (L.) Gaertn.	veld grass
* <i>Elymus rectisetus</i> (Nees) Á.Löve & Connor	crows foot grass, goose grass
* <i>Elytrigia pycnantha</i> (Godr.) Á.Löve	wheatgrass
* <i>Eragrostis brownii</i> (Kunth) Wight	sea couch
# <i>Ficinia nodosa</i> (Rottb.) Goetgh., Muasya & D.A.Simpson (formerly <i>Isolepis nodosa</i> (Rottb.) R.Br., <i>Scirpus nodosus</i> and <i>Scirpoides nodosa</i> (Rottb.) Soják.)	bay grass
* <i>Glyceria declinata</i> Bréb.	knobby clubrush
* <i>Holcus lanatus</i> L.	glaucous sweet grass
# <i>Isolepis cernua</i> (Vahl) Roem. & Schult.	Yorkshire fog
# <i>Isolepis sepulcralis</i> Steud.	slender club-rush
* <i>Juncus articulatus</i> L.	weeping club-rush
# <i>Juncus australis</i> Hook.f.	jointed rush
* <i>Juncus bufonius</i> L.	wiwi, hollow rush
# <i>Juncus edgariae</i> L.A.S. Johnson & K.L.Wilson	toad rush
# <i>Juncus kraussii</i> Hochstr. Var. <i>australiensis</i> (Buchenau) Snogerup (formerly <i>Juncus maritimus</i> Lam. var. <i>australiensis</i> Buch.)	wiwi, rush
*§ <i>Kniphofia uvaria</i> (L.) Hook.f.	sea rush, salt-marsh rush
# <i>Lachnagrostis filliformis</i> (G.Forst.) Trin.	red hot poker
# <i>Lemna minor</i> L.	New Zealand wind grass
* <i>Lolium multiflorum</i> Lam.	duckweed
* <i>Lolium perenne</i> L.	Italian ryegrass
* <i>Lolium rigidum</i> Gaudin	perennial ryegrass
# <i>Microlaena stipoides</i> (Labill.) R.Br. var. <i>stipoides</i>	annual ryegrass
*§ <i>Narcissus pseudonarcissus</i> L.	meadow rice grass, patiti
* <i>Parapholis incurva</i> (L.) C.E.Hubb.	daffodil
* <i>Parapholis strigosa</i> (Dumort.) C.E.Hubb.	coast barb grass, sickle grass
* <i>Paspalum dilatatum</i> Poir.	sea hard grass, slender barb grass
* <i>Paspalum distichum</i> L.	paspalum
*§ <i>Pelargonium Xhortorum</i> L. Bailey	Mercer grass, water couch grass
* <i>Pennisetum clandestinum</i> Hochst. ex Chiov.	zonal pelargonium
* <i>Phalaris aquatica</i> L.	Kikuyu grass
#§ <i>Phormium cookianum</i> subsp. <i>hookeri</i> (Gunn ex Hook.f.) Wardle	phalaris
§ <i>Phormium tenax</i> J.R. & G.Forst.	wharariki
* <i>Poa annua</i> L.	New Zealand flax, harakeke
* <i>Poa trivialis</i> L.	annual poa
* <i>Polypogon fugax</i> Nees ex Steud.	rough-stalked meadow grass
* <i>Polypogon monspeliensis</i> (L.) Desf.	perennial beard grass
* <i>Polypogon viridis</i> (Gouan) Breist.	annual beard grass
# <i>Puccinellia stricta</i> (Hook.f.) C.H.Blom	water bent
* <i>Rytidosperma racemosum</i> (R.Br.) Connor & Edgar	salt grass
* <i>Schedonorus phoenix</i> (Scop.) Holub (syn. <i>Festuca elatior</i> L., <i>Festuca arundinacea</i> Schreb.)	danthonia
* <i>Setaria gracilis</i> Kunth (syn. <i>Setaria geniculata</i> (Poir.) Kunth).	tall fescue
* <i>Setaria palmifolia</i> (König) Stapf	knot-root bristle grass
* <i>Sporobolus africanus</i> (Poir.) Robyns & Tournay (syn. <i>Sporobolus indicus</i> var. <i>capensis</i> (P. Beauv.) Engl.)	palm grass
* <i>Stenotaphrum secundatum</i> (Walt.) Kuntze	ratstail, Parramatta grass
* <i>Tradescantia fluminensis</i> Vell. Conc.	buffalo grass, St Augustine grass
# <i>Triglochin striatum</i> Ruiz & Pavón	wandering Jew
	arrow-grass
* <i>Vulpia bromoides</i> (L.) S.F.Gray	vulpia hair grass, squirrel-tail
	fescue
* <i>Vulpia myuros</i> var. <i>megalura</i> (Nutt.) Auquier	vulpia hair grass

Lake Wainamu – A small freshwater lake at Te Henga

Anthony Keen and Keith Thompson

Following the talk on global wetlands given by our November speaker, 2004, to the society, we visited the Te Henga wetlands and Lake Wainamu. We have compiled a brief report on the sand dune and unique lake system. Maori named the surrounding area Te Henga for the way the sand dunes formed, like the upturned hull of a canoe. Lake Wainamu is a small freshwater lake and wetland complex situated in the Te Henga valley system, on the western side of the Waitakere ranges, just north of Anawhata and south of Muriwai. A significant feature, which helps create the lake, is the large, mainly unvegetated sand-dune system which spans a small valley running north into the main Te Henga valley and wetland ecosystem. The dune probably developed in the mid to late Holocene and was left stranded as sea levels receded slightly to the present day level.

To the west of the dune, coastal manuka scrubland grows on another old dune where emergent pohutukawa/broadleaf forest begins to regenerate. On the eastern side of the valley the landscape is heavily modified for farming and lifestyle blocks.

An interesting feature of this dune system is the small ventifacts of volcanic rock near the summit of the dune. There are more spectacular ventifacts in places like the Antarctic dry valleys, but these shiny little sand-blasted pebbles from Te Henga show early signs of wind sculpture and also demonstrate that the dune is quite stable, otherwise these rocks would not accumulate at the surface. Any guesses as to how long it takes to make a ventifact?

The sand dune acts a dam, maintaining the height of the lake. A healthy photic zone in the lake once supported submergents such as *Chara australis* (formerly *C. corallina*) to a depth of 4.5 m and *Potamogeton ochreatus*, which grew in shallower water (Paul Champion, pers. comm.). Found floating on the surface that day was a piece of *Egeria densa*, the exotic oxygen weed. Paul Champion recalled that in 1991 this weed was restricted to the outlet only, and by 1995 it had displaced everything, growing down to 5.5m. In early 2000 the *Egeria* beds collapsed and have so far not re-established, though the plant is still present. What we did not see that day was the exotic bladderwort, *Utricularia gibba* that Paul records as having also invaded this water body. Along with these plant

introductions, people have also liberated rudd, perch and catfish into Wainamu.

From our walk around parts of the lake we encountered an obvious band of emergent and marginal wetland plant communities existing between the valley side and the lake edge. There appeared to be two major zonations in the vegetation, which was comprised of both introduced and native species. Free floating islands of the emergent South American native (and very invasive) parrot feather, *Myriophyllum aquaticum* grew close to the lake's vegetated edge, and in open areas *Ludwigia peploides*. Thick mats of *Typha orientalis*, *Baumea articulata* and *Eleocharis sphacelata* grew as a band of emergent vegetation out approximately 5-7 metres into the lake. Closer to shore, with a soil / water surface other rushes and sedges became more common including *Schoenoplectus tabernemontana*, *Carex secta*, *C. virgata*, *C. geminata*, *Cyperus ustulatus* and *Bolboschoenus fluviatile* interlaced with the native swamp millet *Isachne globosa*. Kikuyu (*Pennisetum clandestinum*) grew out onto this community in places. At the foot of the hill, the conditions were becoming more terrestrialised with the water tolerant toetoe (*Cortaderia fulvida*) and *Phormium tenax* commonly encountered. Amongst the toetoe and flax were the common woody swamp shrubs, *Leptospermum scoparium*, *Coprosma robusta*, *Hebe stricta*, and *Geniostoma ligustrifolium*, which mixed with more kikuyu, tall fescue (*Schedonorus phoenix*) and the odd bit of gorse (*Ulex europaeus*). *B. articulata* grew in places along the stream flowing from the lake with the exotic parrot feather holding to the stream bank in places. Further down-stream we encountered the short, stout *Eleocharis gracilis*, growing with a noticeably shorter *Schoenoplectus*, but was this a short *S. tabernaemontana*?. People have been planting flax along the stream edge in parts and some more established native plantings were seen on adjacent properties. A large stand of brush wattle, *Paraserianthes lophantha* was seen growing happily on a private property adjacent to the stream. Freshwater vegetation along the stream edge was noticeably replaced with the coastal club rush, *Ficinia (Isolepis) nodosa* as we moved into the tidal zone. Certainly this area needs a visit from the society, to investigate in more detail its unique botany.