

Species List (additional to those recorded in Wilcox *et al.* 2004).

* = exotic species

Ferns & fern allies

Anarthropteris lanceolata
Lastreopsis hispida
Lastreopsis microsora
Tmesipteris elongata
Tmesipteris lanceolata
Tmesipteris sigmatifolia

Dicot trees, shrubs & climbers

*Acacia mearnsii**
Entelea arborescens
Eucalyptus tereticornis (cult.)*
Griselinia lucida
Hebe stricta

Litsea calicularis

Passiflora tetrandra
*Ulex europaeus**

Dicot herbs

*Callitriche stagnalis**
Epilobium nerteroides
*Leucanthemum maximum**
Myosotis laxa
*Nicotiana tabacum**
Ranunculus acaulis
*Scrophularia auriculata**
*Vicia disperma**

Monocots

*Aloe saponaria**
Baumea articulata
Deyeuxia quadriseta
Dichelachne crinita
Echinopogon ovatus
*Hedychium gardnerianum**
Ichthyostomum pygmaeum
Isolepis prolifera
Juncus sarophorus
Potamogeton cheesemanii
Winika cunninghamii

Plants of Mangere Mountain

Mike Wilcox & Peter Maddison

Introduction

Mangere Mountain (alt. 104 m), in Mangere Bridge, Manukau City, is one of Auckland's 48 small volcanoes, and among the best preserved. It erupted 18 000 years ago, to form a scoria cone, and with basaltic lava flows stretching down to the Manukau Harbour (Cameron *et al.* 1997). It is thought that Mangere Mountain was once home to about 3000 people, making it one of the largest pre-colonial Maori settlements.



Fig. 1. Mangere Mountain viewed from Hillsborough.

The mountain is a Manukau City Reserve, and is mostly open pastures that are grazed by cattle, but also includes sports fields, and the Mangere Mountain Education Centre on the site of a former quarry. Grassland dominates, with some planted exotic and native trees.

Grassland

The upper slopes and ridges, where the soil is sometimes thin, comparatively infertile, and prone to summer drought are clothed in mixed grassland vegetation. Dominant species are sweet vernal

(*Anthoxanthum odoratum*), danthonia (*Rytidosperma racemosum*), cocksfoot (*Dactylis glomerata*), ratstail (*Sporobolus africanus*), Yorkshire fog (*Holcus lanatus*), meadow grass (*Poa trivialis*), annual rye grass (*Lolium rigidum*), perennial rye grass (*Lolium perenne*), brown top (*Agrostis capillaris*), grey sedge (*Carex divulsa*), white clover (*Trifolium repens*), sub clover (*Trifolium subterraneum*), narrow-leaved plantain (*Plantago lanceolata*), catsear (*Hypochoeris radicata*), hawksbeard (*Crepis capillaris*), pale flax (*Linum bienne*), spreading hedge-parsley (*Torilis arvensis*) and wild carrot (*Daucus carota*). Grey sedge and spreading hedge-parsley are very prominent plants on Mangere Mountain, both on open sites, and on slopes shaded by trees. A very characteristic grass of shaded sites beneath trees is barley grass (*Critesion murinum*). The driest ridge tops support populations of clustered clover (*Trifolium glomeratum*).

The damper, lower slopes and crater valleys have kikuyu grass (*Pennisetum clandestinum*) and prominent populations of hairy buttercup (*Ranunculus sardous*). Arum lily (*Arum italicum*), which the cattle avoid, is fairly common throughout the lower slopes. Small-leaved wireweed (*Polygonum arenastrum*) is a characteristic "track weed" of pathways.

Rock outcrops and bluffs

Some interesting plants can be found clinging to rocks or at the base of bluffs. Prominent herbs of this habitat include Paterson's curse (*Echium plantagineum*), small herb Robert (*Geranium pupureum*), yellow flax (*Linum trigynum*), tolpis (*Tolpis barbata*) [Wilcox 2003], catchfly (*Silene gallica*), allseed (*Polycarpon tetraphyllum*), scarlet pimpernel (*Anagallis arvensis*), centaury (*Centaureum erythraea*), mouse-ear chickweed (*Cerastium fontanum*), sorrel

(*Rumex acetosella*), and narrow-leaved plantain. These are accompanied by grasses, notably danthonia, hair grass (*Aira caryophyllea*), vulpia hair grass (*Vulpia bromoides*), and shivery grass (*Briza minor*).



Fig. 2. Tholoid within the main crater.



Fig. 3. Outdoor ecology lesson conducted by the Mangere Mountain Education Centre.

The native grass *Poa anceps* occurs on one rocky outcrop near the old quarry, and *Microlaena stipoides* is plentiful on both shaded and open sites. Several ferns occur in protected crevices out of cattle reach—*Adiantum hispidulum*, *Asplenium flabellifolium*, *Doodia australis*, *Cheilanthes distans*, and *Pellaea falcata*. *Doodia australis* forms colourful red rings encircling rock outcrops.

The old quarry is weedy, with boneseed (*Chrysanthemoides monolifera*) being particularly abundant – and subject to intensive chemical poisoning by the Manukau City Council.

Lava rubble in crater floor

The deepest crater is covered in large lava boulders, and a vegetation comprising tangles of the native geranium (*Geranium homeanum*) and pohuehue (*Muehlenbeckia complexa*), small herb Robert, a patch of the native bush lawyer (*Rubus cissoides*), native fireweed (*Senecio hispidulus*), bracken fern (*Pteridium*

esculentum), and a few wild plants of taupata (*Coprosma repens*).



Fig. 4. Bonnie Wilcox amongst Paterson's curse (*Echium plantagineum*), a feature plant of Mangere Mountain.



Fig. 5. Rocky bluffs – the habitat of several native ferns.

Exotic trees and shrubs

There are few wild trees on Mangere Mountain, with just thickets of Chinese privet (*Ligustrum sinense*), tree privet (*L. lucidum*) and olive (*Olea europaea*), a few boxthorn (*Lycium ferocissimum*), and plentiful apple of Sodom (*Solanum linnaeanum*). The prominent planted exotic trees of Mangere Mountain are macrocarpa (*Cupressus macrocarpa*), Norfolk pine (*Araucaria heterophylla*), coral tree (*Erythrina x sykesii*), lilly pilly (*Acmena smithii*), and a notably fine specimen of Port Jackson fig (*Ficus rubiginosa*).

Native trees and shrubs

The only native woody plants found wild on Mangere Mountain are pohuehue (*Muehlenbeckia complexa*), bush lawyer, a dozen bushes of taupata in one crater, and the occasional young pohutukawa (*Metrosideros*

excelsa) struggling to get established on rocky bluffs, out of reach from browsing cattle.



Fig. 6. *Doodia australis* ringing a rock outcrop.



Fig. 7. A slope covered in bushes of *Ligustrum sinense* and *L. lucidum*.

There is a substantial planted native tree copse on the eastern edge of the sports fields, above the old quarry. The trees are 6-7 m tall, the dominants being taupata, karamu (*Coprosma robusta*), lacebark (*Hoheria populnea*), karo (*Pittosporum crassifolium*), kohuhu (*Pittosporum tenuifolium*), broadleaf (*Griselinia littoralis*), mahoe (*Melicytus ramiflorus*), totara (*Podocarpus totara*), kanuka (*Kunzea ericoides*), manuka (*Leptospermum scoparium*) and ngaio (*Myoporum laetum*). There are a few larger planted native trees on the mountain slopes and western margins, the main species being totara, pohutukawa, Kermadec pohutukawa (*Metrosideros kermadecensis*), kohekohe (*Dysoxylum spectabile*), puriri (*Vitex lucens*) and titoki (*Alectryon excelsum*).

At the Mangere Mountain Education Centre are numerous natives plants used in landscaping, some prominent examples being Chatham Island akeake (*Olearia traversii*), creeping iris (*Libertia peregrinans*), *Carex secta*, *C. virgata*, *Juncus pallidus*, *Pratia angulata*, *Dianella nigra*, *Fuchsia procumbens*, *Hebe speciosa*, *Hebe macrocarpa* var. *latisejala*, *Blechnum*

discolor, *Blechnum novae-zelandiae*, *Coprosma acerosa*, *Meryta sinclairii*, *Pseudopanax laetus*, *Arthropodium bifurcatum*, *Arthropodium cirratum*, *Phormium tenax* and *Phormium colensoi*.

Native wild flowering plants

In summary, the native wild angiosperm flora on Mangere Mountain is quite meagre with just 16 species: Dicots: *Acaena novae-zelandiae*, *Calystegia tuguriorum*, *Coprosma repens*, *Crassula sieberiana*, *Dichondra repens*, *Geranium homeanum*, *Metrosideros excelsa*, *Muehlenbeckia complexa*, *Oxalis exilis*, *Oxalis rubens*, *Rubus cissoides*, *Solanum americanum* and *Senecio hispidulus*; Monocots - *Carex inversa*, *Microlaena stipoides*, *Microtis unifolia*, and *Poa anceps*.

Mosses, liverworts and lichens

A botanically interesting feature of Mangere Mountain is the saxicolous moss flora of the rocky outcrops (Beever 1983), together with a few liverworts and several conspicuous lichens



Fig. 8. The thallose liverwort *Reboulia hemisphaerica*, common on rocky ledges.

which adorn the rocks. The commonest moss by far is *Hypnum cupressiforme* which forms soft carpets on ledges and at the base of rocks. Associated with it may be found *Campylopus introflexus*, *Thuidium furfurosum*, *Triquetrella papillata*, and several cushion-forming species, notably *Weissia patula*, *Syntrichia princeps* and *Bryum campylothecium*. A thallose liverwort occurring amongst the mosses on steep ledges is *Reboulia hemisphaerica* (Fig. 8.), while the leafy liverworts *Chiloscyphus subporosus* and *Frullania solanderiana* commonly form a green coating on shaded rocks.

The most abundant and conspicuous lichen on the bark of trees such as pohutukawa and lilly pilly is *Heterodermia speciosa*. This lichen is also found on rock outcrops, together with the very common grey lichen *Rimelia reticulata*. The large foliose lichen *Pseuocyphellaria crocata* can sometimes be found on

the bank above the track on the western slopes leading to the summit.



Fig. 9. *Heterodermia speciosa* on the bark of lilly pilly (*Acmena smithii*).

References

- Beever, J. E. 1983. The saxicolous mosses of Mangere Mountain. *Auckland Botanical Society Newsletter* 38(1):15-16.
 Cameron Ewen, Hayward Bruce, Murdoch Graeme 1997. A Field Guide to Auckland – Exploring the Region's Natural and Historic Heritage, Godwit Publishing Ltd., Auckland.
 Wilcox, M. D. 2003. *Tolpis barbata* (Asteraceae: Lactuceae). *Auckland Botanical Society Journal* 58(1):33-34.

Acknowledgements

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List of plant species recorded on Mangere Mountain

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

Lichens

<i>Chrysothrix candelaris</i> (L.) Laundon	on bark - a green "paint"
<i>Cladonia anomoea</i> (Ach.) Ahti & P. James	soil on steep banks
<i>Heterodermia speciosa</i> (Wulfen) Trevis	on rocks, and bark of pohutukawa, lilly pilly and macrocarpa trees
<i>Pseudocyphellaria crocata</i> (L.) Vainio	base of rocks amongst grass, open slopes
<i>Rimelia reticulata</i> (Taylor) Hale & A.Fletcher	abundant grey lichen on rock outcrops and bark of pohutukawa
<i>Stereocaulon ramulosum</i> (Sw.) Räsuschel	on rock faces
<i>Xanthoria parietina</i> (L.) Th.Fr.	on tree trunks and rocks

Liverworts

<i>Chiloscyphus subporosus</i> (Mitt.) J.J.Engel & R.M.Schust.	scoria rocks, northern crater floor
<i>Frullania solanderiana</i> Col.	scoria rocks, northern crater floor
<i>Reboulia hemisphaerica</i> (L.) Raddi	base of rock outcrops and banks

Mosses

<i>Bryum argenteum</i> Hedw.	on rocks
<i>Bryum campylotheceum</i> Tayl.	on rock outcrops
<i>Campylopus introflexus</i> (Hedw.) Brid.	shaded side of rocks
<i>Grimmia pulvinata</i> (Hedw.) Sm. ex Sm. & Sowerby	rocks
<i>Hypnum cupressiforme</i> Hedw. var. <i>cupressiforme</i>	base of rocky outcrops
<i>Hypopterygium rotulatum</i> (Hedw.) Brid.	shaded crevices, crater
<i>Racopilum cuspidigerum</i> var. <i>convolutaceum</i> (Müll. Hal.) Zanten & Dijkstra	shaded rock outcrops and walls
<i>Syntrichia princeps</i> (De Not.) Mitt. (syn. <i>Tortula princeps</i> De Not.)	rocky outcrops
<i>Thuidium furfurosum</i> (Hook.f. & Wils.) Reichdt.	grassy area near rock
<i>Weissia patula</i> (Knight) Fife	base of rocks.
<i>Triquetrella papillata</i> (Hook.f. & Wils.) Broth.	base of rock outcrops

Ferns

# <i>Adiantum hispidulum</i> Swartz	rosy maidenhair
# <i>Adiantum viridescens</i> Col.	maidenhair fern
# <i>Asplenium flabellifolium</i> Cav.	necklace fern
§ <i>Blechnum discolor</i> (Forst.f.) Keys	crown fern
§ <i>Blechnum novae-zelandiae</i> T.C.Chambers & P.A.Farrant	kiokio
# <i>Cheilanthes distans</i> (R.Br.) Mett.	woolly cloak fern
# <i>Doodia australis</i> (R.Br.) B.S.Parris	rasp fern
# <i>Microsorium pustulatum</i> (G.Forst.) Copel.	hound's tongue
* <i>Nephrolepis cordifolia</i> (L.) Presl	sword fern
# <i>Pellaea falcata</i> (R.Br.) Fée	sickle fern
# <i>Pellaea rotundifolia</i> (Forst.f.) Hook.	tarawera
# <i>Pteridium esculentum</i> (Forst.f.) Cockayne	bracken
# <i>Pteris tremula</i> R.Br.	shaking brake
# <i>Pyrrosia eleagnifolia</i> (Bory) Hovenkamp	leather-leaf fern

Gymnosperms

*§ <i>Araucaria heterophylla</i> (Salisb.) Franco	Norfolk Island pine
*§ X <i>Cupressocyparis leylandii</i> (Dallim. & A.B.Jackson) Dallim. (= <i>Cupressus macrocarpa</i> x <i>Chamaecyparis nootkatensis</i>)	Leyland cypress 'Leighton Green'
*§ <i>Cupressus lusitanica</i> Mill.	lusitanica, Mexican cypress
*§ <i>Cupressus macrocarpa</i> Hartw. ex Gord.	macrocarpa, Monterey cypress
*§ <i>Ginkgo biloba</i> L.	maidenhair tree
§ <i>Podocarpus hallii</i> Kirk	Hall's totara
§ <i>Podocarpus totara</i> G.Benn. ex D.Don var. <i>totara</i>	totara

Dicot trees, shrubs and climbers

*§ <i>Acacia floribunda</i> (Vent.) Willd.	white sally
*§ <i>Acacia longifolia</i> (Andrews) Willd.	Sydney golden wattle
*§ <i>Acmena smithii</i> (Poiret) Merr. & Perry	lilly pilly, monkey apple
*§ <i>Agonis flexuosa</i> (Sprengel) Schauer	Western Australian peppermint
§ <i>Alectryon excelsus</i> Gaertner	titoki
* <i>Anredera cordifolia</i> (Ten.) Steenis	Madeira vine
* <i>Araujia sericifera</i> Brot.	moth plant
*§ <i>Castanea sativa</i> L.	sweet chestnut
* <i>Chrysanthemoides monilifera</i> (L.) Norlindh	bone-seed
§ <i>Coprosma acerosa</i> A.Cunn.	sand coprosma
§ <i>Coprosma lucida</i> J.R. & G.Forst.	karamu
#§ <i>Coprosma repens</i> A.Rich.	taupata
§ <i>Coprosma robusta</i> Raoul	karamu
*§ <i>Corymbia ficifolia</i> (F.Muell.) K.D.Hill & L.A.S. Johnson	red-flowering gum
§ <i>Corynocarpus laevigatus</i> J.R. & G.Forst.	karaka
* <i>Cotoneaster lacteus</i> W.Smith	cotoneaster
*§ <i>Crataegus monogyna</i> Jacq.	hawthorn
§ <i>Dodonaea viscosa</i> Jacq.	akeake
§ <i>Dysoxylum spectabile</i> (Forst.f.) Hook.f.	kohekohe
§ <i>Entelea arborescens</i> R.Br.	whau
*§ <i>Eriobotrya japonica</i> (Thunb.) Lindl.	loquat
*§ <i>Erythrina Xsykesii</i> Barneby & Krukoff	coral tree
*§ <i>Eucalyptus bicostata</i> Maiden, Blakely & J.Simmonds	Victorian blue gum
*§ <i>Euonymus japonicus</i> Thunb.	Japanese spindle tree
*§ <i>Fatsia japonica</i> (Thunb.) Decaisne & Planchon	fatsia
*§ <i>Ficus rubiginosa</i> Desf. ex Vent.	Port Jackson fig
§ <i>Griselinia littoralis</i> Raoul	broadleaf
§ <i>Griselinia lucida</i> Forst.f.	puka
§ <i>Hebe macrocarpa</i> var. <i>latisejala</i> (Kirk) Ckn. & Allan	blue koromiko
§ <i>Hebe stricta</i> (Benth.) L.Moore	koromiko
§ <i>Hebe speciosa</i> (A.Cunn.) Ckn. & Allan	titirangi
*§ <i>Hedera helix</i> ssp. <i>canariensis</i> (Willd.) Cout.	Canary ivy
* <i>Hedera helix</i> L. subsp. <i>helix</i>	ivy
§ <i>Hoheria populnea</i> A.Cunn.	lacebark

§ <i>Hoheria populnea</i> A.Cunn. cv. 'Purpurea'	purple lacebark
* <i>Homalanthus populifolius</i> Graham	Queensland poplar
* <i>Impatiens sodenii</i> Engl.	shrub balsam
* <i>Jasminum polyanthum</i> Franchet	climbing jasmine
§ <i>Knightia excelsa</i> R.Br.	rewarewa
* <i>Lantana camara</i> L.	lantana
§ <i>Leptospermum scoparium</i> J. R. & G.Forst.	manuka
* <i>Ligustrum lucidum</i> Ait. f.	tree privet
* <i>Ligustrum sinense</i> Lour.	Chinese privet
* <i>Lycium ferocissimum</i> Miers	boxthorn
§ <i>Macropiper excelsum</i> Forst.f. Miq. subsp. <i>excelsum</i>	kawakawa
§ <i>Macropiper excelsum</i> subsp. <i>peltatum</i> R. Gardner	island kawakawa
*§ <i>Magnolia grandiflora</i> L.	evergreen magnolia
§ <i>Melicope ternata</i> J.R. & G.Forst.	wharangi
§ <i>Meryta sinclairii</i> (Hook.f.) Seem.	puka
§ <i>Melicytus ramiflorus</i> J.R. & G.Forst.	mahoe
#§ <i>Metrosideros excelsa</i> Sol. ex Gaertner	pohutukawa
§ <i>Metrosideros kermadecensis</i> W.R.B. Oliver	Kermadec pohutukawa
# <i>Muehlenbeckia complexa</i> (A.Cunn.) Meissn.	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>Olea europaea</i> L.	olive
§ <i>Olearia traversii</i> (F.Muell.) Hook.f.	Chatham Is. Tree daisy
*§ <i>Paraserianthes lophantha</i> (Willd.) Nielsen subsp. <i>lophantha</i>	brush wattle
§ <i>Pittosporum colensoi</i> Hook. f.	
§ <i>Pittosporum crassifolium</i> Banks & Sol. ex A.Cunn.	karo
§ <i>Pittosporum eugenioides</i> A.Cunn.	lemonwood
§ <i>Pittosporum tenuifolium</i> Sol. ex Gaertner	kohuhu
*§ <i>Populus nigra</i> L. var. <i>italica</i> (Moench) Koehne	Lombardy poplar
*§ <i>Populus Xcanadensis</i> Moench 'Flevo'	Flevo poplar
*§ <i>Populus yunnanensis</i> Dode	Yunnan poplar
*§ <i>Prunus serrulata</i> Lindl.	ornamental cherry
§ <i>Pseudopanax arboreus</i> (Murray) Philipson	five-finger
§ <i>Pseudopanax laetus</i> (Kirk) Philipson	Coromandel five-finger
*§ <i>Quercus palustris</i> Muenchh.	pin oak
*§ <i>Quercus robur</i> L.	pedunculate oak
* <i>Ricinus communis</i> L.	castor oil plant
# <i>Rubus cissoides</i> A.Cunn.	bush lawyer
* <i>Rubus fruticosus</i> L.	blackberry
* <i>Solanum linnaeanum</i> Hepper & P.-M.Jaeger	apple of Sodom
* <i>Solanum mauritianum</i> Scop.	tobacco weed
* <i>Solanum marginatum</i> L.f.	white-edged nightshade
* <i>Ulex europaeus</i> L.	gorse
§ <i>Vitex lucens</i> Kirk	puriri

Dicot herbs

# <i>Acaena novae-zelandiae</i> Kirk	bidi bidi
* <i>Amaranthus deflexus</i> L.	prostrate amaranth
* <i>Amaranthus powellii</i> S.Watson	redroot
* <i>Anagallis arvensis</i> L. ssp. <i>arvensis</i> var. <i>arvensis</i>	scarlet pimpernel
* <i>Anthemis cotula</i> L.	stinking mayweed
* <i>Aphanes inexpectata</i> Lippert	parsley piert
* <i>Arctium minus</i> (Hill.) Bernh.	burdock
* <i>Arctotheca calendula</i> (L.) Levyns	Cape weed
* <i>Bellis perennis</i> L.	lawn daisy
*§ <i>Benincasa hispida</i> (Thunb.) Cogn.	wax gourd
* <i>Calystegia sepium</i> (L.) R.Br.	pink bindweed
* <i>Calystegia silvatica</i> (Kit.) Griseb.	great bindweed
# <i>Calystegia tuguriorum</i> (Forst.f.) Hook.f.	native bindweed
* <i>Capsella bursa-pastoris</i> (L.) Medikus	shepherd's purse

* <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>Chamaesyce maculata</i> (L.) Small	spotted spurge, spotted sandmat
* <i>Chenopodium album</i> L.	fat-hen
* <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>Crassula sieberiana</i> (Schultes & Schultes.f.) Druce	native stonecrop
* <i>Crepis capillaris</i> (L.) Wallrich	hawksbeard
* <i>Cymbalaria muralis</i> Gaertner.f.	Kenilworth ivy
* <i>Daucus carota</i> L.	Queen Anne's lace, wild carrot
# <i>Dichondra repens</i> J.R.Forst. & G.Forst.	native Mercury Bay weed
* <i>Duchesnea indica</i> (Andrews) Focke	Indian strawberry
* <i>Echium plantagineum</i> L.	Paterson's curse
* <i>Epilobium ciliatum</i> Raf.	tall willow-herb
* <i>Erigeron karvinskianus</i> DC.	Mexican daisy
* <i>Erodium moschatum</i> (L.) L'Hér.	musky storksbill
* <i>Euphorbia peplus</i> L.	milkweed
* <i>Foeniculum vulgare</i> Miller var. <i>azoricum</i> (Miller) Thell.	fennel
§ <i>Fuchsia procumbens</i> R.Cunn. ex A.Cunn.	creeping fuchsia
* <i>Fumaria muralis</i> Koch	scrambling fumitory
* <i>Galium aparine</i> L.	cleavers
* <i>Galium divaricatum</i> Lam.	slender bedstraw
* <i>Gamochaeta coarctata</i> (Willd.) Kerguelen	purple cudweed
* <i>Geranium dissectum</i> L.	cut-leaved cranesbill
# <i>Geranium homeanum</i> Turcz	native geranium
* <i>Geranium purpureum</i> Villars	small herb Robert
* <i>Geranium molle</i> L.	dove's-foot cranesbill
* <i>Helminthotheca echioides</i> (L.) Holub	ox-tongue
* <i>Hypericum androsaemum</i> L.	tutsan
* <i>Hypochaeris radicata</i> L.	catsear
*§ <i>Ipomoea batatas</i> (L.) Lam.	kumara
* <i>Kickxia elatine</i> (L.) Dumort.	fluellen
* <i>Lactuca serriola</i> L.	prickly lettuce
* <i>Lamium purpureum</i> L.	red dead nettle
* <i>Lapsana communis</i> L.	nipplewort
* <i>Leontodon taraxioides</i> (Villars) Mérat	hawkbit
* <i>Lepidium squamatum</i> Forskal	wart cress
* <i>Linum bienne</i> Miller	pale flax
* <i>Linum trigynum</i> L.	yellow flax
* <i>Lotus angustissimus</i> L.	slender birdsfoot trefoil
* <i>Lotus pedunculatus</i> Cav.	lotus
* <i>Lotus suaveolens</i> Pers.	hairy birdsfoot trefoil
* <i>Lythrum hyssopifolia</i> L.	hyssop loosestrife
* <i>Malva neglecta</i> Wallr.	dwarf mallow
* <i>Malva nicaeensis</i> All.	French mallow
* <i>Matricaria dioscoidea</i> DC.	rayless chamomile
* <i>Medicago arabica</i> (L.) Hudson	spotted bur medick
* <i>Medicago nigra</i> (L.) Krockner	bur medick
* <i>Mentha pulegium</i> L.	penny royal
* <i>Modiola caroliniana</i> (L.) G.Don	creeping mallow
* <i>Myosotis arvensis</i> (L.) Hill	field forget-me-not
* <i>Myosotis sylvatica</i> Hoffm.	garden forget-me-not
* <i>Nicandra physalodes</i> (L.) Gaertn.	apple of Peru
* <i>Orobanche minor</i> Smith	broom rape
* <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 latifolia</i> Kunth	fishtail oxalis
* <i>Oxalis pes-caprae</i> L.	Bermuda buttercup
# <i>Oxalis rubens</i> Haw.	native horned oxalis
* <i>Parentucellia viscosa</i> (L.) Caruel	tar weed
* <i>Pericallis xhybrida</i> R. Nordenstam	cineraria
* <i>Phacelia tanacetifolia</i> Benth.	purple tansey, fiddleneck.
* <i>Physalis peruviana</i> L.	cape gooseberry
* <i>Phytolacca octandra</i> L.	inkweed
* <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>Polycarpon tetraphyllum</i> (L.) L.	allseed
* <i>Polygonum arenastrum</i> Boreau	small-leaved wireweed
* <i>Polygonum persicaria</i> L.	willow weed
* <i>Portulaca oleracea</i> L.	purslane
* <i>Potentilla reptans</i> L.	creeping cinquefoil
§ <i>Pratia angulata</i> (Forst.f.) Hook.f.	panakenake
* <i>Pratia puberula</i> Benth.	trailing pratia
* <i>Prunella vulgaris</i> L.	selfheal
# <i>Pseudognaphalium luteoalbum</i> (L.) Hilliard & B.L.Burrt	Jersey cudweed
* <i>Ranunculus parviflorus</i> L.	small-flowered buttercup
* <i>Ranunculus repens</i> L.	creeping buttercup
* <i>Ranunculus sardous</i> Crantz	hairy buttercup
* <i>Raphanus raphanistrum</i> L. ssp. <i>raphanistrum</i>	wild radish
* <i>Rumex acetosella</i> L.	sheep's sorrel
* <i>Rumex conglomeratus</i> Murray	clustered dock
* <i>Rumex obtusifolius</i> L.	broad-leaved dock
* <i>Rumex pulcher</i> L.	fiddle dock
* <i>Sagina apetala</i> Ard.	pearlwort
* <i>Senecio bipinnatisectus</i> Belcher	Australian fireweed
# <i>Senecio hispidulus</i> A.Rich.	fireweed
* <i>Senecio jacobaea</i> L.	ragwort
* <i>Senecio skirrhodon</i> DC.	gravel groundsel
* <i>Senecio vulgaris</i> L.	groundsel
* <i>Sherardia arvensis</i> L.	field madder
* <i>Silene gallica</i> L.	catchfly
* <i>Sisymbrium officinale</i> L.	hedge mustard
* <i>Solanum chenopodioides</i> Lam.	velvety nightshade
# <i>Solanum americanum</i> Miller	small-flowered nightshade
* <i>Solanum nigrum</i> L.	black nightshade
* <i>Solanum tuberosum</i> L.	potato
* <i>Soliva sessilis</i> Ruiz & Pavón	Onehunga weed
* <i>Sonchus asper</i> (L.) Hill	prickly sow thistle
* <i>Sonchus oleraceus</i> L.	sow thistle, puha
* <i>Spergularia rubra</i> (L.) Presl & C.Presl	sand spurrey
* <i>Stachys arvensis</i> (L.) L.	staggerweed
* <i>Stellaria media</i> (L.) Cirillo	common stitchwort, chickweed
* <i>Taraxacum officinale</i> G.Weber	dandelion
* <i>Tolpis barbata</i> (L.) Gaertner ssp. <i>barbata</i>	tolpis
* <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 subterraneum</i> L.	subterranean clover, sub clover
* <i>Verbascum blattaria</i> L.	moth mullein
* <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 disperma</i> DC.	small French tare
* <i>Vicia hirsuta</i> (L.) Gray	hairy vetch
* <i>Viola hederacea</i> Labill.	Australian violet
* <i>Viola odorata</i> L.	violet
* <i>Viola tricolor</i> L.	heartsease
* <i>Xanthium spinosum</i> L.	clotbur, Bathurst bur

Monocots

* <i>Agrostis capillaris</i> L.	browntop
* <i>Aira caryophyllea</i> L. ssp. <i>caryophyllea</i>	silvery hair grass
* <i>Allium triquetrum</i> L.	onion weed
* <i>Alocasia brisbanensis</i> (F.M.Bailey) Domin	elephant's ear, cunjevoi, spoon lily
* <i>Anthoxanthum odoratum</i> Lagasca	sweet vernal
* <i>Arrhenatherum elatius</i> (L.) P.Beauv. ex J.S.Presl & C.Presl subsp. <i>elatius</i>	tall oat grass
§ <i>Arthropodium bifurcatum</i> Heenan e	'Matapouri Bay'
§ <i>Arthropodium cirratum</i> (Forst.f.) R.Br.	rengarenga, rock lily
* <i>Arum italicum</i> Miller	Italian arum
* <i>Asparagus asparagoides</i> L.	florist's smilax
* <i>Briza minor</i> L.	shivery grass
* <i>Bromus diandrus</i> Roth	rippgut brome, great brome
* <i>Bromus hordeaceus</i> L.	soft brome
* <i>Bromus lithobius</i> Trin.	Chilean brome
* <i>Bromus willdenowii</i> Kunth	prairie grass
*§ <i>Colocasia esculenta</i> (L.) Schott	taro
* <i>Carex divulsa</i> Stokes	grey sedge
# <i>Carex inversa</i> R.Br.	creeping lawn sedge
§ <i>Carex secta</i> Boot	swamp tussock sedge
§ <i>Carex virgata</i> Sol. ex Boot	tussock sedge
* <i>Chasmanthe bicolor</i> (Gasp.) N.E.Brown	corn flag
§ <i>Cordyline australis</i> (Forst.f.) Endl.	cabbage tree, ti rākau, ti kouka
* <i>Cortaderia selloana</i> (Schult.) Asch. & Graeb.	pampas grass
* <i>Critesion murinum</i> (L.) ssp. <i>murinum</i>	wild barley, wall barley, barley grass
* <i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass, couch grass
* <i>Cynosurus cristatus</i> L.	crested dogstail
* <i>Cyperus congestus</i> Vahl	brown umbrella sedge
* <i>Cyperus eragrostis</i> Lam.	umbrella sedge
* <i>Dactylis glomerata</i> L.	cocksfoot
§ <i>Dianella nigra</i> Col.	New Zealand blue-berry
* <i>Digitaria sanguinalis</i> (L.) Scop.	summer grass, crab grass
* <i>Echinochloa crus-galli</i> (L.) Beauv.	barnyard grass
* <i>Ehrharta erecta</i> Lam.	panic veldtgrass
* <i>Eleusine indica</i> (L.) Gaertn.	crows foot grass, goose grass
* <i>Elytrigia repens</i> (L.) Nevski	twitch
* <i>Holcus lanatus</i> L.	Yorkshire fog
* <i>Juncus bufonius</i> L.	toad rush
§ <i>Juncus pallidus</i> R.Br.	tall rush
§ <i>Libertia peregrinans</i> Ckn. & Allan	creeping native iris
* <i>Lolium perenne</i> L.	perennial ryegrass
* <i>Lolium rigidum</i> Gaudin	annual ryegrass
# <i>Microlaena stipoides</i> (Labill.) R.Br.	meadow rice grass, patiti
# <i>Microtis unifolia</i> (Forst.f.) Reichb.f.	onion orchid
* <i>Monstera deliciosa</i> Liebm.	fruit salad plant
* <i>Panicum dichotomiflorum</i> Michx.	smooth witch grass
* <i>Pennisetum clandestinum</i> Hochst. ex Chiov.	kikuyu grass
* <i>Paspalum dilatatum</i> Poir.	paspalum
* <i>Phalaris minor</i> Retz.	small canary grass
* <i>Phoenix canariensis</i> Hort.	phoenix palm
§ <i>Phormium cookianum</i> ssp. <i>hookeri</i> (Gunn ex Hook.f.) Wardle	coastal flax

- § *Phormium tenax* J.R. & G.Forst.
- * *Piptatherum miliaceum* (L.) Cosson
- # *Poa anceps* Forst.f.
- * *Poa annua* L.
- * *Poa trivialis* L.
- * *Rytidosperma racemosum* (R.Br.) Connor & Edgar
- * *Setaria gracilis* Kunth
- * *Setaria parviflora* (Poir.) Kerguelen
- * *Setaria pumila* (Poir.) Roem. & Schult.
- * *Sporobolus africanus* (Poir.) Robyns & Tournay
- * *Tradescantia fluminensis* Velloso
- * *Vulpia bromoides* (L.) S.F.Gray
- * *Vulpia myuros* var. *megalura* (Nutt.) Auquier

- New Zealand flax, harakeke
- bamboo grass, rice millet
- annual poa
- rough-stalked meadow grass
- danthonia
- knot-root bristle grass
- Malesian bristle grass
- yellow bristle grass
- ratstail, Parramatta grass
- wandering jew
- vulpia hair grass, squirrel-tail fescue
- vulpia hair grass

Yellow-wort (*Blackstonia perfoliata*) (Gentianaceae) hitchhikes south?

Ewen K Cameron

Introduction

Yellow-wort (*Blackstonia perfoliata*) (Gentianaceae) is a glaucous annual herb, erect with yellow flowers, native to Europe and the Mediterranean area. In New Zealand flowering plants range from 6-55(-63.5) cm tall with simple stems or branched above, with flowers in terminal cymes, 1-many flowered. In Europe four subspecies are recognised. The New Zealand material can be referred to the type subspecies (Webb *et al.* 1988), which is the most widespread one in Europe, although rare in the southern part of the species range (Tutin *et al.* 1972). In Britain it occurs in calcareous grassland, bare chalk and dunes, being rather common in central and southern England extending north to Northumberland and to County Sligo in Ireland (Chapham *et al.* 1987, Stace 1991). In Europe it extends north to Holland and Germany (Tutin *et al.* 1972). It appears to be expanding its range in recent years in northern England due to its inclusion in commercial wildflower mixtures on roadside verges and other landscaped sites (University of Hull 2005). It has naturalised in Australia: South Australia and Victoria (single collection) (Adams 1996, Walsh & Entwistle 1999); and in New Zealand.

History and naturalisation in New Zealand

The first wild collection of yellow-wort in New Zealand was by W.R.B. Oliver in November 1916 from manuka scrub at Parengarenga, North Cape district (herbarium voucher: AK 91492) and published by Cheeseman (1919) as *Chlora perfoliata*. Allan (1940) confirmed that yellow-wort still existed at this locality, but added no new localities (see Fig. 1 & Appendix 1 which show the second wild collection in New Zealand was in 1948). Sykes (1981) extended the distribution to "N Auckland, especially Mangonui County" and then seven years later included "south to Whangarei area ... has only recently spread southwards" (Sykes in Webb *et al.* 1988).

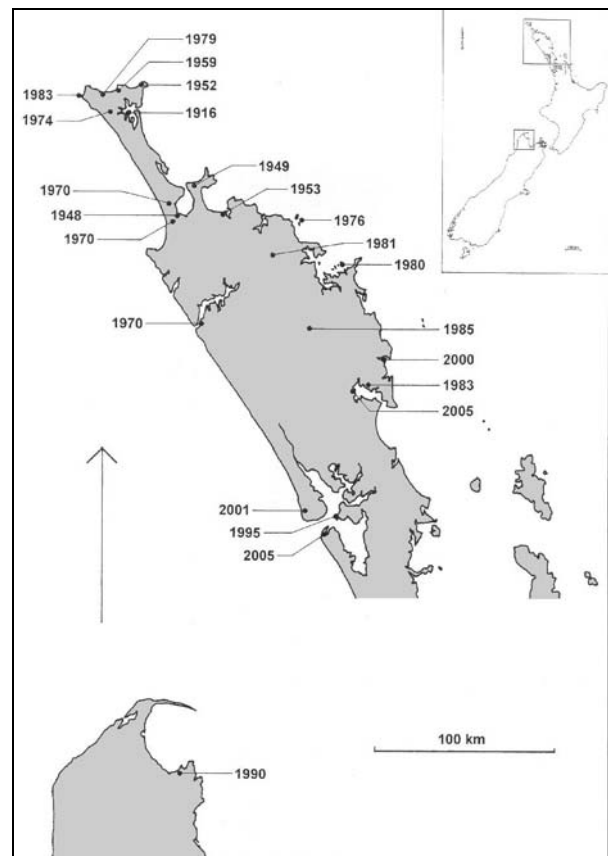


Fig. 1. Distribution map of yellow-wort in New Zealand showing the first year of collection for each general locality; based on a selection of the 58 specimens held in New Zealand herbaria.

In August 1995 when Anthony Wright and I collected yellow-wort in dune slacks at Okahukura Peninsula in the Kaipara Harbour (AK 223773) during an Auckland Bot Soc field trip I suspected that it was a new southern limit for this species in New Zealand. On checking other New Zealand herbaria records I was surprised to learn that it had been collected from the top of the South Island in January 1990 by Peter Johnson around the cement wharf at Tarkohe, east of Takaka (CHR 465133).