

WANGANUI PLANT LIST NO.80
Vascular Plants of Lake Waiau, Waverley

Colin Ogle
 Department of Conservation, Wanganui
 With assistance of members of Wanganui Botanical Group
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Updated by CCO on visit 2 Aug. 2000, with P de Lange, G La Cock, J Campbell

Last update: 26.12.08, including records from Bussell (1988)

* denotes adventive species

Abundance

a = abundant

c = common

o = occasional

u = uncommon

l = local (common in restricted areas)

I = restricted to island in swamp at southern end of lake

I+ = on island and elsewhere on lake fringes

Dicot trees and shrubs

Brachyglottis repanda	rangiora	lc,I+
Carmichaelia australis var. (C. flagelliformis)	NZ broom	lc,I+
Coprosma robusta	karamu	c,I+
C. tenuicaulis	swamp coprosma	o
Geniostoma rupestre ssp. ligustrifolium	hangehange	o,I+
Hebe stricta var. stricta	koromiko	o
Melicytus ramiflorus	mahoe	o, (I+,la)
Myrsine australis	mapou	u,I
Olearia solandri	a shrub daisy	o
O. virgata ssp. virgata	a shrub daisy	u
Pennantia corymbosa	kaikomako	u (1)I
Pseudopanax crassifolius	lancewood, horoeka	u,I
* P. crassifolius x P. lessonii	CHR	u (1),I
* Salix fragilis	crack willow	l
* Sambucus nigra	elderberry	I(1)
Solanum laciniatum ¹	poroporo	u,I+
* Ulex europaeus	gorse	la,I+

Monocot tree

Cordyline australis	cabbage tree	c,I+
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¹ Bussell (1988) listed *S. aviculare*, but NOT *S. laciniatum*; he probably mis-identified it.

Dicot lianes

Clematis forsteri		o,I
Muehlenbeckia australis ²	pohuehue	u
Parsonsia heterophylla	NZ jasmine	u,I

Dicot herbs

* Bellis perennis	daisy	o
* Bidens sp. (Bussell 1988)	beggar's ticks	o
* Callitriche stagnalis	starwort	o
Centella uniflora		o
* Cerastium glomeratum	annual mouse-ear chickweed	o
* Cirsium vulgare	Scotch thistle	o
* Conium maculatum	hemlock	u,I
* Conyza sumatrensis ³	fleabane	u,I
Cotula coronopifolia	bachelor's button	u
* Crepis capillaris	hawksbeard	u
Drosera binata	forked sundew	lc
Epilobium chionanthum	willowherb	lc
* E. ciliatum	willowherb	u
E. insulare	willowherb	o
E. nerteroides	willowherb	u
E. nummulariifolium	willowherb	u
E. pallidiflorum	willowherb	lc
* Eupatorium cannabinum	hemp agrimony	u
* Galium aparine	cleavers	o,I
Glossostigma elatinoides		u?
Gnaphalium involucratum	cudweed	o
G. limosum	cudweed	o
Gonocarpus micranthus		lc
Haloragis erecta		u,I
Hydrocotyle moschata	hairy pennywort	u
H. novaezeelandiae		c
H. pterocarpa		o
Hypericum japonicum agg.		o
* Hypochoeris radicata	catsear	u
* Leontodon taraxacoides	hawkbit	o
* Lotus pedunculatus	lotus	o
* Myosotis laxa	water forget-me-not	c
Myriophyllum propinquum	water milfoil	l
M. triphyllum	water milfoil	la
Oxalis exilis	creeping oxalis	u,I
* Parentucellia viscosa	tarweed	c
* Phytolacca octandra (Bussell 1988)	inkweed	o
* Polygonum hydropiper	water pepper	c

² Bussell (1988) listed *M. complexa*, but NOT *M. australis*. *M. complexa* is known in swamps in the district and it is possible that both species are (or were) at L Waiau.

³ Listed originally as *C. albida*, it is probably also what Bussell (1988) called *Erigeron canadensis*

<i>P. salicifolium</i>	willow-weed		o
* <i>Prunella vulgaris</i>	self-heal		o
<i>Ranunculus amphitrichus</i>	waoriki		o
<i>R. macropus</i>			o
* <i>R. repens</i>	creeping buttercup		c
* <i>R. sceleratus</i>	celery-leaved buttercup		o
* <i>Rorippa microphyllum</i>	watercress		o
* <i>Rumex crispus</i>	curled dock		u
* <i>Sagina procumbens</i>	pearlwort		o
* <i>Senecio bipinnatisectus</i>	fireweed		u
* <i>S. jacobaea</i>	ragwort		u,I
<i>S. minimus</i>	NZ fireweed		u,I
<i>Solanum americanum</i> ⁴	nightshade	u,I	
* <i>Sonchus oleraceus</i>	puwaha		u,I
* <i>Stellaria alsine</i>	bog stitchwort		o
<i>S. decipiens</i>	NZ chickweed		u,I
* <i>S. media</i>	chickweed		u,I
* <i>Trifolium dubium</i>	suckling clover		o
* <i>T. repens</i>	white clover		o
* <i>Veronica anagallis-aquatica</i>	water speedwell		la
* <i>V. serpyllifolia</i>	turf speedwell		o

Monocot herbs

Sedges

<i>Baumea articulata</i>	bamboo sedge		la
<i>B. rubiginosa</i> ⁵			c
<i>Carex flagellifera</i>			u,I
<i>C. geminata</i> agg. "large species"			u
<i>C. lessoniana</i> ⁶			lc
<i>C. maorica</i>			c
<i>C. raoulii</i>			a,I
<i>C. secta</i> var. <i>secta</i>			c
<i>C. virgata</i>			u
<i>Cyperus ustulatus</i>	mariscus		o
<i>Eleocharis acuta</i>	spike sedge		o
<i>E. gracilis</i>	slender spike sedge		c
<i>E. sphacelata</i>	bamboo spike sedge		u(1)
<i>Isolepis prolifer</i>			lc
<i>Schoenoplectus tabernaemontani</i>	kapungawha		lc
<i>Schoenus maschalinus</i>			u?

Grasses

* <i>Agrostis capillaris</i> ?	browntop		u,I
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⁴ Including *S. nodiflorum*, listed by Bussell (1988)

⁵ Bussell (1988) listed *B. teretifolia* but NOT *B. rubiginosa* - I believe he mis-identified his material: CCO.

⁶ Bussell (1988) listed *Carex coriacea* but NOT *C. lessoniana*, the most likely species which he may have confused with *C. coriacea*

* Anthoxanthum odoratum	sweet vernal	c
Cortaderia toetoe	toetoe	o
* Cynosurus cristatus	crested dogstail	c
* Dactylis glomerata	cocksfoot	u,I
* Festuca arundinacea	tall fescue	o
* Glyceria declinata	floating sweetgrass	a
* Holcus lanatus	Yorkshire fog	c,(I+u)
Poa anceps ssp. anceps		u
* P. annua?	annual poa	u,I
* P. pratensis	Kentucky bluegrass	o

Rushes⁷

* Juncus articulatus	jointed-leaved rush	a
* J. bufonius	toad rush	c
* J. effusus	soft rush	o
J gregiflorus		o
J. planifolius		o

Orchids

Microtis unifolia	onion-leaved orchid	c
Prasophyllum colensoi	onion-leaved orchid	u
Thelymitra pauciflora	blue sun orchid	u(1)

Monocots other than sedges, grasses, rushes and orchids

Lemna sp [L. minor of NZ authors]	duckweed	c
Phormium tenax	harakeke, NZ flax	a
Potamogeton ochreatus		u?
Ruppia polycarpa (?)	horse's mane weed	u?
Sparganium subglobosum	bur-reed	lc
* Spirodela punctata	purple-backed duckweed	u
Triglochin striatum	arrow grass	u
Typha orientalis	raupo	lc
* Zantedeschia aethiopica	arum lily	lc,I

Fern ally

Tmesipteris elongata		u?
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Ferns

Adiantum cunninghamii	maidenhair fern	o,I
Asplenium gracillimum		la,I
A. flaccidum	hanging spleenwort	u
A. oblongifolium	shining spleenwort	o,I

⁷ Bussell (1988) listed *Juncus australis*, marking it as an adventive. However, *J. australis* is a NZ native and he probably confused it with one of the species listed under 'rushes'

Blechnum chambersii		u,I
B. fluviatile		u
B. minus	swamp kiokio	c
B. novae-zelandiae	kiokio	o
Dicksonia squarrosa	wheki	o
Diplazium australe (Bussell 1988)		o
Histiopteris incisa	water fern, mata	u
Hypolepis ambigua		u
H. distans		l
Lastreopsis sp. (Bussell 1988)		
Paesia scaberula	ring fern	u
Microsorium pustulatum	hound's tongue	lc,I
Polystichum richardii		u,I
Pteridium esculentum	bracken	c
Pteris pendula [P. macilenta of NZ authors]		u
Pyrosia eleagnifolius	leather-leaf fern	u,I

Total of indigenous species of wetland = 72
Total of adventive species of wetland = 36
Indigenous species confined to island = 20
Adventive species confined to island = 11

Totals of indigenous species = 92
Totals of adventive species = 47

Vegetation

The lake contains several native submerged aquatic species, of which *Myriophyllum elatinoides* was seen to form submerged patches offshore, with emergent leafy shoots. Other submerged aquatic plants were found only as drift on the lakeshore.

Two main areas of swamp occur, at opposite ends of the lake. These swamps are dominated by flax, with *Carex secta*, karamu, toetoe as common components. At the swamp/lake ecotone, *Baumea articulata* is the dominant emergent reed in many parts, with raupo and kapungawha in places.

The "island" in the southern areas of swamp is dominated by mahoe forest with a dense ground cover of ferns, especially *Asplenium gracillimum*, and tussocks of *Carex raoulii*.

Notable occurrences

1. Indigenous Species

We have few records in Wanganui Conservancy of several of the species in Lake Waiau including *Baumea articulata*, *Sparganium subglobosum*, *Ranunculus macropus*, *Myriophyllum triphyllum*, *Ruppia polycarpa* and *Hypolepis distans*. *Coprosma tenuicaulis*, *Epilobium pallidiflorum*, *E. chionanthum*, *Thelymitra pauciflora*, *Carex raoulii*, *Potamogeton ochreatus* and *Hydrocotyle pterocarpa* are also patchily distributed.

The occurrence of *Tmesipteris* on bases of *Carex secta* is seemingly unrecorded before, except at the nearby Ihupuku Swamp. It was found also on the base of one harakeke plant (PdL, JC; 2000). This phenomenon warrants further study. An undated Wildlife Service report on L. Waiau mentions the presence of manuka and *Eleocharis sphacelata*. These were almost certainly errors for *Olearia solandri* and *Baumea articulata*, respectively. However, one clump of *E. sphacelata* was found between the "island" and the road in August 2000 (PdL, JC; 2000).

2. Adventive Species

Up to the 1994 survey of L Waiau, *Eupatorium cannabinum* (hemp agrimony) has only two previous records in New Zealand, viz. a swamp near Hawera in 1975, and Ihupuku Swamp in 1993, and one more recent one at Waipipi (Waverley - Whenuakura coast).

The most pressing need for weed control is elderberry, which occurs as one(?) tree on the island. Its threat is through its potential to spread by bird-carried seed and to over-shade native trees on the island. This tree was not found in August 2000 visit, and may have been removed by DoC staff. Consideration should be given to gorse control. The lake seems to lack serious adventive water weeds (*Lagarosiphon*, *Ceratophyllum* and other such species); the low level of power boat use is probably one reason for this.

Reference

Bussell, M.R. 1988. Mid and late Holocene pollen diagrams and Polynesian deforestation, Wanganui district, New Zealand. *NZ J. Botany* 26: 431-451.