

**Lake Pauri, Wanganui**  
**Wanganui Plant List No 156**

C C Ogle, with help of members of Wanganui Museum Botanical group, Wanganui  
5 April 2003; lake recovery group 4 Sept 03; community planting 7 Aug 04.

Species listed by Kelly (1978), and actual sightings (C&W) by Champion & Wells (2003) (P Champion pers. comm. to CCO 11.6.04) are indicated separately.

**Last updated 10 Aug 2004**

**Species with a national conservation status (de Lange et al. 2004):**

*Potamogeton pectinatus* (fennel-leaved pondweed): **national status = chronically threatened – gradual decline.** Recorded in 7 of the 95 lakes of the Horizons Regional Council area surveyed by Champion and Wells (2003), mostly based on pre-2004 records.

*Crassula ruamahanga* (a tiny mat-forming succulent) – **status = “at risk – sparse”.**

Rare at Lake Pauri (east end), on the bases of willow trees in or close to the water. Also known at L. Wiritoa, including shore of “Scoutlands”, and L Kaitoke. These 3 locations are the only known ones in Wanganui Conservancy and, until a recent (2000) find in the Waikato, the furthest north in NZ (next nearest to Lakes Wiritoa, Pauri and Kaitoke is the type locality, near Carterton).

**Regionally uncommon or declining species** of the wetlands include *Isachne globosa* (swamp millet), *Pratia perpusilla*, *Centipeda elatinoides*, *Hydrocotyle hydrophila*, *H. sulcata*, *H. pterocarpa*, *Leptinella tenella?*, *Rorippa palustris* (yellow marsh cress), *Isolepis distigmata*, *Bolboschoenus fluviatilis* (kukuraho), *Potamogeton ochreatus* (blunt pondweed), *Ruppia polycarpa* (horse's mane weed).

**Plants listed were all in water or on swampy fringes, unless marked 'D' (Dryland species)<sup>1</sup>**  
**Planted species from Aug 2004 onwards indicated by P (if already present naturally as well, planted specimens indicated as P+)**

**Abundance Ratings**

a = abundant; c = common; o = occasional; u = uncommon

l = local (species in small area, but can be common or abundant there)

x = present, but abundance not assessed

\* denotes adventive species

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<sup>1</sup> Several indigenous plants and woody weeds of dryland were listed only from a steep slope and bank above the extreme north-east corner of the lake

Formal name	Common name	Abundance	Kelly 1978	C&W 2003
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### Gymnosperm tree

\**Pinus muricata* Bishop pine u<sup>2</sup> D

### Dicot trees, shrubs and lianes

\**Acer negundo* box elder l + juv  
*Alectryon excelsus* titoki u D  
 (\*?)*Calystegia sepium* agg. convolvulus o  
 \**Chamaecytisus palmensis* tree lucerne, tagasaste P  
*Coprosma propinqua* lc; DP+  
*Coprosma rigida?* P  
*Coprosma robusta* karamu l; DP+  
*Coprosma propinqua* X *C. robusta* u  
*Coriaria arborea* tutu u  
*Corynocarpus laevigatus* karaka u  
 \**Crataegus monogyna* hawthorn l D  
*Hebe stricta* koromiko P  
*Melicytus ramiflorus* mahoe u ; D P+  
*Muehlenbeckia complexa* small-leaved pohuehue u  
*Myoporum laetum* ngaio P  
*Olearia solandri* a shrub daisy P  
*Olearia virgata* a shrub daisy P  
 \**Rhamnus alaternus*<sup>3</sup> evergreen buckthorn u D  
 \**Rubus fruticosus* agg. lc  
 \**Salix babylonica* weeping willow la  
 \**Salix fragilis* crack willow lc  
 \* *Salix cinerea* grey willow<sup>4</sup> c  
 \**Ulex europaeus* gorse o

### Monocot tree

*Cordyline australis* cabbage tree, ti kouka o; P+

### Dicot herbs

\* *Amaranthus lividus* purple amaranth la  
 \* *Bidens frondosa* beggar's ticks u  
*Callitriche petriei* native starwort l  
 \* *Callitriche stagnalis* starwort u  
*Centella uniflora* o  
*Centipeda elatinoides*<sup>5</sup> sneezewort o  
 \* *Ceratophyllum demersum* hornwort x<sup>6</sup>  
*Cotula coronopifolia* bachelor's button u  
*Crassula ruamahanga* la

<sup>2</sup> Presumed to have been planted

<sup>3</sup> Removed 2003 – none seen in same area Aug/04

<sup>4</sup> Aerially sprayed early 2004

<sup>5</sup> Decumbent, some rooting at nodes; flower head with peduncle; fruits not thickened at tip but hairy on angles (see Walsh 2001).

<sup>6</sup> This and several other aquatic species were found only in drift on the shore – abundance in the water unknown

Formal name	Common name	Abundance	Kelly 1978	C&W 2003
<i>Epilobium nummulariifolium</i>	creeping willow-herb	l D		
* <i>Galium palustre</i>	marsh bedstraw	c		
<i>Glossostigma elatinoides</i>		lc		
* <i>Gamochaeta (Gnaphalium) sp.</i> (unidentified)	cudweed	u		
<i>Hydrocotyle hydrophila</i>		lc		
<i>Hydrocotyle novaeseelandiae</i>		lc		
<i>Hydrocotyle pterocarpa</i>		lc		
<i>Hydrocotyle sulcata</i>		u		
<i>Leptinella tenella?</i>	button daisy	u		
<i>Lilaeopsis ruthiana?</i>	tape-measure plant	o & lc	K	
* <i>Ludwigia palustris</i>		a	K	
* <i>Mentha pulegium</i>	pennyroyal	o		
* <i>Myosotis laxa</i>	water forget-me-not	u		
<i>Myriophyllum propinquum</i>	water milfoil	c		
<i>Myriophyllum triphyllum</i> (K, as <i>M. elatinoides</i> )				K
<i>Nymphaea alba</i>	water-lily	la	K	
* <i>Polygonum hydropiper</i> (K, as <i>P. spp.</i> )	water pepper	c	K	
* <i>Polygonum persicaria</i>		u		
<i>Polygonum salicifolium</i>	native willow-weed	o		
<i>Potentilla anserinoides</i>	silver-weed	u		
<i>Pratia perpusilla</i>		u		
<i>Pseudognaphalium luteo-album</i> agg.	cudweed	u		
<i>Ranunculus amphitrichus</i>	waoriki	u		
* <i>Ranunculus sceleratus</i>	celery-leaved buttercup	o		
* <i>Ranunculus flammula</i>	spearwort	u		
* <i>Ranunculus trichophyllus</i>	water buttercup	x <sup>3</sup>	K	
* <i>Rorippa nasturtium-aquaticum</i> (K, as <i>Nasturtium officinale</i> )	two-row watercress		K	
* <i>R. microphylla</i>	one-row watercress			
<i>Rorippa palustris</i>	yellow marsh cress	c		
* <i>Rumex crispus</i>	curled dock	o		
* <i>Senecio bipinnatisectus</i>	fireweed	u		
* <i>Stellaria graminea</i>	stitchwort	u		
<b>Monocot herbs</b>				
<i>Baumea rubiginosa</i>		la		
<i>Bolboschoenus fluviatilis</i>	kukuraho	u		
<i>Carex breviculmis</i>		u?; D		
<i>Carex comans?</i>		P		
<i>Carex flagellifera</i>		P		
<i>Carex lessoniana</i>	cutty-grass	l		
<i>Carex maorica</i>		u		
<i>Carex secta</i>	purei	o & lc;		

Formal name	Common name	Abundance	Kelly 1978	C&W 2003
		P+?		
<i>Carex virgata</i>		o		
<i>Cortaderia fulvida</i>	dryland toetoe	P		
<i>Cortaderia toetoe</i>	wetland toetoe	u		
<i>Cyperus ustulatus</i>	mariscus	o		
* <i>Egeria densa</i>		x <sup>3</sup>		C&W
* <i>Elodea canadensis</i>	Canadian pondweed			C&W
<i>Eleocharis acuta</i>	sharp spike-sedge	o	K	
<i>Isachne globosa</i>	swamp millet	lc		
<i>Isolepis distigmata</i>		u		
<i>Isolepis reticularis</i>		u		
* <i>Juncus bufonius</i>	toad rush	u		
<i>Juncus edgariae</i> (ex- <i>J. gregiflorus</i> )		lc		
* <i>Juncus effusus</i>	soft rush	o		
<i>Juncus pallidus</i>		u		
<i>Juncus sarophorus</i>		lc		
<i>Lemna</i> sp. ( <i>L. minor</i> of NZ authors)	duckweed	l	K	
* <i>Paspalum distichum</i>	Mercer grass	la		
<i>Phormium tenax</i>	harakeke, NZ flax	lc; P+	K	
<i>Poa anceps</i>		l D		
<i>Potamogeton cheesemanii</i>	pondweed		K	
* <i>Potamogeton crispus</i>	curled pondweed		K	C&W
<i>Potamogeton ochreatus</i>	blunt pondweed	x <sup>3</sup>	K	
<i>Potamogeton pectinatus</i>	fennel-leaved pondweed		K	
<i>Ruppia polycarpa</i> <sup>7</sup>	horse's mane weed		K	
<i>Schoenus maschalinus</i>		u		
* <i>Spirodela punctata</i>	purple-backed duckweed		K	
<i>Triglochin striatum</i>	arrowgrass	u		
<i>Typha orientalis</i>	raupo	a	K	
<b>Ferns</b>				
<i>Adiantum cunninghamii</i>	maidenhair fern	u D		
<i>Asplenium polyodon</i>	sickle spleenwort	u		
<i>Azolla filiculoides</i> ssp. <i>rubra</i>	Pacific azolla	lc	K	
<i>Blechnum minus</i>	swamp kiokio	o		
<i>Cyathea medullaris</i>	mamaku	u		
<i>Dicksonia squarrosa</i>	wheki	u		
<i>Histiopteris incisa</i>	water fern	u		
<i>Hypolepis ambigua</i>		lc		
<i>Microsorium pustulatum</i>	hound's tongue fern	u		
<i>Polystichum neozelandica</i> ssp. <i>zerophyllum</i>	shield fern	u D		

<sup>7</sup> Note that Kelly recorded *P. megacarpa*, C&W recorded *R. polycarpa* and believe (P Champion pers. comm. June 2004) that *P. megacarpa* was an error.

Formal name	Common name	Abundance	Kelly 1978	C&W 2003
<i>Pteridium esculentum</i>	bracken	u		
<i>Pyrrosia eleagnifolia</i>	leather-leaf fern	u		
<b>Liverwort</b>				
<i>Ricciocarpus natans</i>		lc		
<b>Characean algae</b>				
<i>Chara australis</i>				C&W
<i>C. corallina</i>			K	
<i>Nitella hookeri</i>			K	C&W

## REFERENCES

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- Kelly, D. 1978. A plant distribution survey of twelve coastal lakes. In "Sand country lakes eutrophication study". Rangitikei-Wanganui Catchment Board and Regional Water Board, Marton.
- Champion, P D & Wells, R D S 2003. The aquatic vegetation of the Manawatu-Wanganui Region: status and management. *NIWA Client Report: HAM2003-109*. NIWA, Hamilton.
- Ravine, D.A 1992. Foxton Ecological District. *Protected Natural Areas survey report No. 19*. DOC Wanganui: pp 136-138
- Walsh, N G 2001. A revision of *Centipeda* (Asteraceae). *Muelleria* 15: 33 – 64.

**Extract (with one added sentence about *Leptinella tenella*) from:**

**WANGANUI MUSEUM BOTANICAL GROUP Newsletter 35/2 (May 2003 )**

**Lake Pauri: Sat 5 April.** Recent rain seemed to suggest that our record drought might be at an end, but for the 12 of us on the trip, the lake margins could hardly have been easier to explore. The landowner had said the lake was at a record low level, and we were able to walk the normally submerged or swampy shores. A downside was that cattle had also penetrated further into the swamps than probably happens most summers. The morning was mild and cloudy but looming rain clouds chased the last of us home about 2 pm. In fact, we covered only the eastern and south-eastern shores of the lake, such was the variety of native and exotic wetland plants, many in flower or fruit. In a sheltered 'bay', drying mud had cracked into polygons leading Bob to speculate about what controls their shapes and sizes. Tops of the polygons supported mat plants; bachelor's button, *Ludwigia palustris*, *Centipeda elatinoides*, *Amaranthus lividus*, to name a few. We could even walk across water lilies without getting our feet wet. The lake shore was variously silty, sandy or even gravelly and gave a range of habitats for more mat plants, including the native *Glossostigma elatinoides*, *Hydrocotyle hydrophila*, *Lilaeopsis* sp. and, more rarely, *Pratia perpusilla*, *Callitriche petriei* and *H. sulcata*. There was one small patch of what is probably *Leptinella tenella* in only its second known site in the region, the other being on the coast at Kakaramea near Patea. Grey willows grew throughout the marginal swamps, but sparse enough to have beds of harakeke and *Carex secta* and, sometimes, *Baumea rubiginosa*, with scattered shrubs of *Coprosma propinqua*. These swamps had some of the region's rarer plants that the cattle tracks made for easier finding; swamp millet (*Isachne globosa*), *Hydrocotyle pterocarpa* and *Crassula*

*ruamahanga*, this last growing on willow tree bases. Only a minority of the region's chain of dune lakes have some kind of reserve status. The lakes share a range of native species, but most have some that are not found or are rare around the others. Managing all the lakes to retain their collectively diverse native flora is a challenge for landowners and management agencies.  
*Colin Ogle*

**From:** robcol.ogle [mailto:robcol.ogle@xtra.co.nz]  
**Sent:** Friday, 23 May 2003 10:36 a.m.  
**To:** Dijkgraaf, Astrid Wanganui CO & AO  
**Cc:** Bob & Rachael Hays; Ian Bell; Lacock, Graeme Wanganui CO & AO  
**Subject:** Lake Pauri plant list 156

Dear Astrid

I brought home and grew several bits of plants from L Pauri, including a tiny bit from the only plant I saw of a button daisy in the genus *Leptinella*. In the field I called it *L. squalida*, the only common species in the this region. Now my potted plant has grown, I can see that it's not that species, but almost certainly *L. tenella* (which David Lloyd's 1972 revision called *Cotula membranacea*\*). *L. squalida* is dioecious and has its leaf pinnae with teeth only on the 'front' edges and the leaves always have some red-brown colouring; *L. tenella* is monoecious and has teeth right around each leaf pinna with no red colour at all. I'll bring the pot to the next Bot Group meeting. Lloyd's maps show *L. tenella* only around the shores of Cook Strait and in the Bay of Plenty and Auckland regions. However, many years ago I found it at Kakaramea north of Patea (and David Lloyd confirmed this identity for me - before he became ill).

SO.....**please replace on the list "L. squalida" by "L. tenella (?)"**. The reason for my slight doubt about the ID still is that there's a remote chance that it is a very robust plant of *L. dispersa* subsp. *dispersa*. The only way to settle this will be if it flowers. *L. dispersa* ssp. *dispersa* has a very scattered distribution, with the nearest records to Wanganui being inland Hawkes Bay, Mohakatino near Tongaporutu and the Kapiti area. We have *L. dispersa* ssp. *rupestris* on coastal cliffs at Castlecliff and west to Hawera.

Cheers  
Colin

\*Cunningham (1839) called it *Soliva tenella*, but by the time these daisies were moved into *Cotula*, the name *Cotula tenella* was occupied by some other species (not a NZ one)! However, with the move of most NZ *Cotula* to a new genus, *Leptinella*, the species name 'tenella' became available again, and the rules of priority in fact mean that 'tenella' has precedence over 'membranacea', hence *Leptinella tenella*).