

LAKE MATAHINA FIELD TRIP - 22 AUGUST 2009

W.B. Shaw

A group of seven (William Shaw, Sarah Beadel, Graeme Jane, Gael Donaghy, John Hobbs, Paul Cashmore & Chris Ecroyd) gathered at the boat ramp next to the dam on a beautiful, if somewhat chilly, winter morning. We proceeded, in two boats skippered by WS and JH, to systematically explore the shoreline, starting at the ramp and proceeding up the eastern shoreline.

An early observation of note was pohutukawa (*Metrosideros excelsa*) high on the ignimbrite cliffs above the Otahanga Stream. We stopped at many locations up the eastern side of the lake, which were very weedy, and heavily grazed in places, with species such as barberry (*Berberis glaucocarpa*), buddleia (*Buddleja davidii*), pampas (*Cortaderia selloana*), strawberry dogwood (*Dendrobenthamia capitata*), brush wattle (*Paraserianthes lophantha*), and Chinese privet (*Ligustrum sinense*). A few heavily possum-browsed mamaku (*Cyathea medullaris*) were present. The upper slopes were clothed with pine (*Pinus radiata*) forest, which was producing vast amounts of pollen. I have previously seen extensive pollen clouds rising from plantation forest, such as Kaingaroa, and it is an impressive sight, but this is the first time I had seen individual trees producing explosive releases of pollen, possibly related to small wind gusts that were blowing up the lake. We were able to see, and photograph, these impressive releases from individual trees.

Lake Matahina appears to have a stable shoreline with relatively little fluctuation of lake levels. In places, terrestrial woody vegetation occurs to within 1 m of the water level. Below this, on “hard” shorelines (excluding the ignimbrite cliffs), there is a moss-covered rocky band 0.5-1 m wide. On shallow sheltered shorelines, hornwort (*Ceratophyllum demersum*) occurs to within 0.5-1 m of the water’s surface, indicating a relatively stable operating regime, within a limited range. There are local patches of shallow water turfs dominated by *Glossostigma elatinooides*, with one patch of kupungawha (lake clubrush; *Schoenoplectus tabernaemontani*) at the mouth of the Otahanga Stream (in the northern part of the lake, near the boat ramp).

There were various finds of interest on the eastern shoreline, such as *Lobelia perpusilla* (formerly *Pratia perpusilla*), but the first site of real interest was the cliffs on the southern side of the single unnamed island. This island is relatively large and has a cover of pine forest (it is reputed to be used by marijuana growers). The southern cliffs had many wilding pines, and a very good suite of indigenous species. Further up the lake, on both sides, there are reasonably extensive and good quality patches of tawa (*Beilschmiedia tawa*)-dominant forest, generally confined to very steep slopes, often south-facing, and these stands probably only remain due to lack of suitability of the sites for farming or plantation forestry. Some smaller remnants of tawa-dominant forest and kamahi (*Weinmannia racemosa*)-dominant forest also extend to the edge of the lake.

Ti ngahere (bush cabbage tree; *Cordyline banksii*), mapou (*Myrsine australis*), *Coprosma lucida*, and kiekie (*Freycinetia banksii*) were present adjacent to lake margins.

Streams draining eastern catchments (in pine forest) enter the lake at various points. We stopped and botanised at two of these in remnant tawa forest, and good finds were made at both locations. The second stream, close to the upper limit of safe boating for propeller-powered boats (just below the bridge over the Rangitaiki River on the road to Murupara) was a great place with a reasonably large picturesque waterfall and damp habitats for *Arthropteris tenella*, *Adiantum diaphanum*, *Trichomanes endlicherianum*, and *Peperomia urvilleana*.

There is a short section of steep-sided gorge in the upper reaches of the lake, with local kamahi forest and kanuka, with wilding pines on the gorge walls. Wharariki was also common, with local gorse, mingimingi (*Leucopogon fasciculatus*), and karamu. Apart from the wilding pines and gorse, this was a very good example of ignimbrite gorge wall vegetation.

By this stage, the day was well-advanced so we proceeded back down the western side of the lake, stopping at relatively few sites apart from a large alluvial flat, where feral pig (*Sus scrofa*) sign was very abundant, including the spore of a very

large animal! Vegetation cover on the alluvial flat includes scattered crack willow (*Salix fragilis*) over tall fescue (*Schedonorus arundinaceus*), creeping buttercup (*Ranunculus repens*) and *Cyperus ustulatus* with occasional pampas (*Cortaderia selloana*) and manuka (*Leptospermum scoparium*). One walnut (*Juglans* sp.) and ti kouka (cabbage tree; *Cordyline australis*) were also present at this site.

It was relatively late in the day when we arrived at the extensive band of ignimbrite cliffs that extend down the western side of the lower third or so of the lake, to the dam. These cliffs are a botanical (and geological) highlight, with species such as karaka (*Corynocarpus laevigatus*), pohutukawa (*Metrosideros excelsa*), pohutukawa-northern rata (*Metrosideros robusta*) hybrids, and *Cheilanthes sieberi*. *Scandia rosaefolia* (classified as 'At Risk-Declining', de Lange *et al.* 2009) was a very interesting find. Other species here were scattered wilding pines, koromiko (*Hebe stricta* var. *stricta*), karamu (*Coprosma robusta*), wharariki (mountain flax; *Phormium cookianum*), *Earina autumnalis*, akeake (*Dodonaea viscosa*), kanuka (*Kunzea ericoides*), kowharawhara (*Astelia solandri*), Spanish heath (*Erica lusitanica*), rata vine (*Metrosideros diffusa*), *Poa anceps* var. *anceps*, *Senecio quadridentatus*, and *Dichelachne crinita*. Karaka (*Corynocarpus laevigatus*) was also present.

A small ecological highlight, for me at least, is tucked away on a small south-facing steep slope just above the dam. This small remnant includes totara (*Podocarpus totara*), *Pittosporum ralphii*, *Arthropodium cirratum*, kawakawa (*Macropiper excelsum* var. *excelsum*), rangiora (*Brachyglottis repanda*), *Leptecophylla juniperina*, and *Helichrysum lanceolatum*.

The following water birds were recorded during the site visit: little shag (*Phalacrocorax melanoleucos brevirostris*), black shag (*Phalacrocorax carbo novaehollandiae*), mallard (*Anas platyrhynchos*), scaup (*Aythya novaeseelandiae*) and welcome swallow (*Hirundo tabitica neoxena*). The main species were little shag (12-20), black shag (4-6), and scaup (7). Toutouwai (North Island robin; *Petroica australis longipes*), popokatea (whitehead; *Moboua albicilla*), and piwakawaka (fantail; *Rhipidura fuliginosa*) were recorded in adjacent terrestrial habitats.

This was not my first botanical foray to Lake Matahina and interesting habitats and species records continue to be found. Overall, it is a highly-modified environment, with the hydro-electricity dam, an old quarry in the ignimbrite cliffs on the western side, an operational quarry on the eastern side, and with extensive exotic plantation forest on both sides of the lake (the eastern side was previously farmed before conversion to pines). Nevertheless, there are habitats of interest associated with the inflowing streams, tawa forest remnants, the riverine upper gorge, cliffs on the southern side of the island, the extensive ignimbrite cliffs on the north-western side of the lake (a very special feature), and the tiny remnant of indigenous forest on a south-facing slope adjacent to the dam. Further visits to Lake Matahina are warranted.

**INDIGENOUS VASCULAR PLANTS OBSERVED ON
THE MARGINS OF LAKE MATAHINA**

Sarah Beadel, William Shaw, and
Rotorua Botanical Society Members
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INDIGENOUS SPECIES

Gymnosperms

<i>Dacrycarpus dacrydioides</i>	kahikatea
<i>Dacrydium cupressinum</i>	rimu
<i>Phyllocladus trichomanoides</i>	tanekaha
<i>Podocarpus hallii</i>	Hall's totara
<i>Podocarpus totara</i> var. <i>totara</i>	totara
<i>Prumnopitys ferruginea</i>	

Monocot. trees and shrubs

<i>Cordyline australis</i>	ti kouka, cabbage tree
<i>Cordyline banksii</i>	ti ngahere, forest cabbage tree
<i>Rhopalostylis sapida</i>	nikau

Dicot. trees and shrubs

<i>Alectryon excelsus</i> subsp. <i>excelsus</i>	titoki
<i>Alseuosmia macrophylla</i>	toropapa
<i>Aristotelia serrata</i>	makomako, wineberry
<i>Beilschmiedia tawa</i>	tawa
<i>Brachylottis repanda</i>	rangiora
<i>Carpodetus serratus</i>	putaputaweta
<i>Coprosma grandifolia</i>	kanono
<i>Coprosma lucida</i>	karamu, glossy karamu
<i>Coprosma rhamnoides</i>	
<i>Coprosma robusta</i>	karamu
<i>Coriaria arborea</i> var. <i>arborea</i>	tutu
<i>Corynocarpus laevigatus</i>	karaka
<i>Dodonaea viscosa</i>	akeake
<i>Elaeocarpus dentatus</i>	hinau
<i>Fuchsia excorticata</i>	kotukutuku
<i>Gaultheria antipoda</i>	tawiniwini
<i>Geniostoma ligustrifolium</i> var. <i>ligustrifolium</i>	hangehange
<i>Griselinia lucida</i>	puka
<i>Hebe stricta</i> var. <i>stricta</i>	koromiko
<i>Hedycarya arborea</i>	porokaiwhiri
<i>Helichrysum lanceolatum</i>	niniaio
<i>Hoheria sexstylosa</i>	houhere, lacebark
<i>Knightia excelsa</i>	rewarewa

<i>Kunzea ericoides</i>	kanuka
<i>Laurelia novae-zelandiae</i>	
<i>Leptocophylla juniperina</i> var. <i>juniperina</i>	prickly mingimingi
<i>Leptospermum scoparium</i> agg.	manuka
<i>Leucopogon fasciculatus</i>	mingimingi
<i>Leucopogon fraseri</i>	patotara
<i>Litsea calicaris</i>	mangeao
<i>Macropiper excelsum</i> subsp. <i>excelsum</i>	kawakawa
<i>Melicope simplex</i>	poataniwha
<i>Melicytus ramiflorus</i> subsp. <i>ramiflorus</i>	mahoe
<i>Metrosideros excelsa</i>	pohutukawa
<i>Metrosideros robusta</i>	northern rata
<i>Metrosideros excelsa</i> × <i>M. robusta</i>	
<i>Myrsine australis</i>	mapou
<i>Olearia furfuracea</i>	akepiro
<i>Olearia rani</i> var. <i>colorata</i>	heketara
<i>Pittosporum eugenioides</i>	tarata
<i>Pittosporum ralphii</i>	
<i>Pittosporum tenuifolium</i>	kohuhu
<i>Pomaderris amoena</i>	
<i>Pseudopanax arboreus</i>	whauwhaupaku, five finger
<i>Pseudopanax crassifolius</i>	horoeaka, lancewood
<i>Scandia rosifolia</i>	kohepiro
<i>Schefflera digitata</i>	pate
<i>Sophora tetraptera</i>	kowhai
<i>Streblus heterophyllus</i>	turepo
<i>Weinmannia racemosa</i>	kamaha

Monocot. lianes

<i>Freycinetia banksii</i>	kiekie
<i>Ripogonum scandens</i>	supplejack, kareao

Dicot. lianes

<i>Clematis cunninghamii</i>	ngakau-kiore
<i>Clematis forsteri</i>	poananga
<i>Clematis paniculata</i>	puawananga
<i>Metrosideros colensoi</i>	rata
<i>Metrosideros diffusa</i>	rata
<i>Metrosideros fulgens</i>	rata
<i>Metrosideros perforata</i>	aka
<i>Muehlenbeckia australis</i>	puka
<i>Parsonsia capsularis</i>	akakiore
<i>Parsonsia heterophylla</i>	
<i>Passiflora tetrandra</i>	

Lycopods and psilopsids

Huperzia varia

Tmesipteris elongata

Tmesipteris tannensis

Lycopodium volubile

Whiri-o-Raukatauri

Ferns

Adiantum cunninghamii

Adiantum diaphanum

Adiantum hispidulum

Arthropteris tenella

Asplenium bulbiferum

Asplenium flabellifolium

Asplenium flaccidum

Asplenium oblongifolium

Asplenium oblongifolium × *A. polyodon*

Asplenium polyodon

Blechnum chambersii

Blechnum discolor

Blechnum filiforme

Blechnum fluviatile

Blechnum novae-zelandiae

Blechnum vulcanicum

Cardiomanes reniforme

Cheilanthes sieberi

Ctenopteris heterophylla

Cyathea dealbata

Cyathea medullaris

Deparia petersenii subsp. *congrua*

Dicksonia fibrosa

Dicksonia squarrosa

Diplazium australe

Doodia australis

Grammitis sp.

Histiopteris incisa

Hymenophyllum demissum

Hymenophyllum flexuosum

Hymenophyllum multifidum

Hymenophyllum rarum

Hymenophyllum sanguinolentum

Hypolepis ambigua

Lastreopsis glabella

Lastreopsis microsora ssp. *pentangularis*

Leptopteris hymenophylloides

Loxogramme dictyopteris

Microsorium pustulatum

huruhuru tapairu, maidenhair fern

huruhuru tapairu, maidenhair fern

huruhuru tapairu, maidenhair fern

mouku, hen and chicken fern

necklace fern

makawe

huruhuruwhenua

petako

rereti

petipeti, crown fern

panako

kiwikiwi

kiokio

korokio

ponga, silver fern

wheki-ponga

wheki

pukupuku

irirangi, filmy fern

mauku, filmy fern

piripiri, filmy fern

heruheru

kowaowao, hounds tongue fern

<i>Microsorium scandens</i>	mokimoki
<i>Pellaea rotundifolia</i>	tarawera, button fern
<i>Pneumatopteris pennigera</i>	pakau
<i>Polystichum wawranum</i>	
<i>Pteridium esculentum</i>	rarahu, bracken
<i>Pteris macilenta</i>	sweet fern
<i>Pteris tremula</i>	turawera, shaking brake
<i>Pyrrosia eleagnifolia</i>	leather-leaf fern
<i>Rumohra adiantiformis</i>	
<i>Trichomanes endlicherianum</i>	
<i>Trichomanes venosum</i>	

Orchids

<i>Acianthus sinclairii</i>	
<i>Drymoanthus adversus</i>	
<i>Earina autumnalis</i>	raupeka
<i>Earina mucronata</i>	peka-a-waka
<i>Thelymitra longifolia</i>	maikuku
<i>Winika cunninghamii</i>	

Grasses

<i>Cortaderia fulvida</i>	toetoe
<i>Deyeuxia avenoides</i>	
<i>Dichelachne crinita</i>	patiti, plume grass
<i>Elymus</i> sp.	
<i>Microlaena avenacea</i>	bush rice grass
<i>Microlaena stipoides</i>	patiti, meadow rice grass
<i>Oplismenus hirtellus</i> subsp. <i>imbecillis</i>	
<i>Poa anceps</i> agg.	
<i>Rytidosperma gracile</i>	

Sedges

<i>Carex breviculmis</i>	
<i>Carex dissita</i>	
<i>Carex geminata</i> agg.	rautahi
<i>Carex maorica</i>	
<i>Carex secta</i>	purei
<i>Carex virgata</i>	purei
<i>Cyperus ustulatus</i> f. <i>ustulatus</i>	toetoe, upokotangata
<i>Gabnia pauciflora</i>	takahikahi
<i>Gabnia setifolia</i>	mapere
<i>Isolepis proliferata</i>	
<i>Isolepis reticularis</i>	
<i>Morelotia affinis</i>	
<i>Schoenoplectus tabernaemontani</i>	kapungawha
<i>Schoenus maschalinus</i>	

<i>Schoenus tendo</i>	wiwi
<i>Uncinia ferruginea</i>	
<i>Uncinia scabra</i>	matau
<i>Uncinia uncinata</i>	kamu matau a Maui

Rushes

<i>Juncus edgariae</i>	wi
<i>Luzula picta</i> var. <i>picta</i>	

Monocot. herbs (other than orchids, grasses, sedges, and rushes)

<i>Arthropodium cirratum</i>	rengarenga
<i>Astelia solandri</i>	kowharawhara
<i>Collospermum hastatum</i>	kahakaha
<i>Collospermum microspermum</i>	
<i>Dianella nigra</i>	turutu
<i>Lemna minor</i>	karearea
<i>Libertia grandiflora</i>	mikoikoi
<i>Phormium cookianum</i> subsp. <i>hookeri</i>	wharariki, mountain flax
<i>Phormium tenax</i>	harakeke, flax
<i>Typha orientalis</i>	raupo

Composite herbs

<i>Senecio</i> sp.	
<i>Senecio quadridentatus</i>	cotton fireweed, pekapeka

Dicot. herbs (other than composites)

<i>Acaena anserinifolia</i>	piripiri
<i>Acaena novae-zeelandiae</i>	piripiri
<i>Callitriche stagnalis</i>	starwort
<i>Cardamine debilis</i> agg.	panapana
<i>Epilobium nummulariifolium</i>	
<i>Epilobium pedunculare</i>	
<i>Epilobium rotundifolium</i>	
<i>Galium propinquum</i>	mawe
<i>Galium</i> sp.	
<i>Geranium homeanum</i>	pinakitere
<i>Glossostigma</i> sp.	
<i>Haloragis erecta</i> subsp. <i>erecta</i>	toatoa
<i>Hydrocotyle elongata</i>	
<i>Hydrocotyle heteromeria</i>	
<i>Hydrocotyle microphylla</i>	
<i>Hydrocotyle moschata</i>	
<i>Hydrocotyle novae-zeelandiae</i> var. <i>novae-zeelandiae</i>	
<i>Lobelia angulata</i>	panakenake
<i>Lobelia perpusilla</i>	
<i>Myriophyllum triphyllum</i>	

<i>Nertera depressa</i>	
<i>Peperomia urvilleana</i>	
<i>Ranunculus reflexus</i>	
<i>Solanum americanum</i>	
<i>Stellaria parviflora</i>	kohukohu
<i>Urtica incisa</i>	ongaonga, tree nettle
<i>Wahlenbergia violacea</i>	rimuroa

NATURALISED SPECIES

Gymnosperms

<i>Cupressus macrocarpa</i>	macrocarpa
<i>Pinus radiata</i>	radiata pine

Dicot. trees and shrubs

<i>Acacia longifolia</i>	Sydney golden wattle
<i>Berberis glaucocarpa</i>	barberry
<i>Buddleja davidii</i>	buddleia
<i>Cotoneaster glaucophyllus</i>	cotoneaster
<i>Dendrobenthamia capitata</i>	strawberry dogwood
<i>Erica lusitanica</i>	Spanish heath
<i>Ligustrum sinense</i>	Chinese privet
<i>Lupinus arboreus</i>	lupin
<i>Paraserianthes lophantha</i>	brush wattle
<i>Populus nigra</i> 'Italica'	Lombardy poplar
<i>Populus</i> sp.	poplar
<i>Robinia pseudoacacia</i>	false acacia
<i>Rubus phoenicolasius</i>	Japanese wineberry
<i>Rubus</i> sp. (<i>R. fruticosus</i> agg.)	blackberry
<i>Salix fragilis</i>	crack willow
<i>Ulex europaeus</i>	gorse

Dicot. lianes

<i>Ipomoea indica</i>	blue morning glory
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Lycopods and psilopsids

<i>Selaginella kraussiana</i>	creeping clubmoss, selaginella
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Ferns

<i>Azolla pinnata</i>	ferny azolla
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Grasses

<i>Agrostis capillaris</i>	browntop
<i>Agrostis stolonifera</i>	creeping bent
<i>Anthoxanthum odoratum</i>	sweet vernal
<i>Bromus willdenowii</i>	prairie grass

<i>Cortaderia selloana</i>	pampas grass
<i>Cynodon dactylon</i>	Indian doab
<i>Cynosurus cristatus</i>	crested dogstail
<i>Dactylis glomerata</i>	cocksfoot
<i>Glyceria fluitans</i>	floating sweetgrass
<i>Holcus lanatus</i>	Yorkshire fog
<i>Miscanthus nepalensis</i>	Himalaya fairy grass
<i>Paspalum dilatatum</i>	paspalum
<i>Paspalum distichum</i>	Mercer grass
<i>Phyllostachys aurea</i>	walking stick bamboo
<i>Poa annua</i>	annual poa
<i>Schedonorus arundinaceus</i>	tall fescue
<i>Sporobolus africanus</i>	ratstail
<i>Vulpia myuros</i> var. <i>myuros</i>	vulpia hair grass

Sedges

<i>Carex divulsa</i>	grey edge
<i>Cyperus congestus</i>	purple umbrella sedge
<i>Cyperus eragrostis</i>	umbrella sedge

Rushes

<i>Juncus acuminatus</i>	sharp-fruited rush
<i>Juncus articulatus</i>	jointed rush
<i>Juncus effusus</i> var. <i>effusus</i>	soft rush, leafless rush
<i>Juncus microcephalus</i>	South American rush
<i>Juncus tenuis</i> var. <i>tenuis</i>	track rush

Monocot. herbs (other than orchids, grasses, sedges, and rushes)

<i>Aristea ecklonii</i>	aristea
<i>Egeria densa</i>	egeria
<i>Elodea canadensis</i>	Canadian pondweed
<i>Iris</i> sp.	
<i>Leontodon taraxacoides</i>	hawkbit
<i>Tradescantia fluminensis</i>	tradescantia

Composite herbs

<i>Achillea millefolium</i>	yarrow
<i>Cirsium arvense</i>	California thistle
<i>Cirsium vulgare</i>	Scotch thistle
<i>Conyza sumatrensis</i>	broad-leaved fleabane
<i>Crepis capillaris</i>	hawksbeard
<i>Gamochaeta coarctata</i>	purple cudweed
<i>Hypochoeris radicata</i>	catsear
<i>Jacobaea vulgaris</i>	ragwort
<i>Lactuca serriola</i>	prickly lettuce
<i>Mycelis muralis</i>	wall lettuce

<i>Senecio bipinnatisectus</i>	Australian fireweed
<i>Senecio vulgaris</i>	groundsel
<i>Sonchus oleraceus</i>	puha, sow thistle
<i>Taraxacum officinale</i>	dandelion

Dicot. herbs (other than composites)

<i>Cardamine hirsuta</i>	bitter cress
<i>Centaureum erythraea</i>	centaury
<i>Cerastium fontanum</i> subsp. <i>vulgare</i>	mouse-ear chickweed
<i>Cerastium glomeratum</i>	annual mouse-ear chickweed
<i>Ceratophyllum demersum</i>	hornwort
<i>Digitalis purpurea</i>	foxglove
<i>Euphorbia peplus</i>	milkweed
<i>Galium divaricatum</i>	slender bedstraw
<i>Galium palustre</i>	marsh bedstraw
<i>Geranium molle</i>	dovesfoot cranesbill
<i>Lotus pedunculatus</i>	lotus
<i>Ludwigia palustris</i>	water purslane
<i>Lycopus europaeus</i>	gypsy wort
<i>Mentha pulegium</i>	penny royal
<i>Mentha</i> sp.	
<i>Myosotis</i> sp.	forget-me-not
<i>Nasturtium officinale</i>	watercress
<i>Orobancha minor</i>	broomrape
<i>Phytolacca americana</i>	pokeweed
<i>Plantago lanceolata</i>	narrow-leaved plantain
<i>Plantago major</i>	broad-leaved plantain
<i>Prunella vulgaris</i>	selfheal
<i>Ranunculus flammula</i>	spearwort
<i>Ranunculus repens</i>	creeping buttercup
<i>Ranunculus sceleratus</i>	celery-leaved buttercup
<i>Rumex acetosella</i>	sheep's sorrel
<i>Rumex obtusifolius</i>	broad-leaved dock
<i>Sagina procumbens</i>	pearlwort
<i>Solanum nigrum</i>	black nightshade
<i>Stellaria media</i>	chickweed
<i>Verbascum virgatum</i>	moth mullein
<i>Verbena bonariensis</i>	purple-top
<i>Veronica anagallis-aquatica</i>	water speedwell