

TARAWERA FALLS CONSERVATION WEEK FIELD TRIP

Sarah Beadel

About 20 people attended the 2009 Conservation Week field trip to Tarawera Falls, more than half of whom were guests of the Rotorua Botanical Society. The walk up to the falls from the carpark was focused on looking at some of the more common species, including lancewood (*Pseudopanax crassifolius*), ponga (silverfern; *Cyathea dealbata*), and titoki (*Alectryon excelsus*). Stopping beside the river, we admired the amazing depth of colour in the water. Unfortunately, though, we found hornwort (*Ceratophyllum demersum*) washed up on the shores here, and there were also beds of egeria (*Egeria densa*) within the river.

Beside the river were large pohutukawa (*Metrosideros excelsa*) which supported a wide range of orchids - *Earina mucronata*, *Earina autumnalis*, and *Winika cunninghamii* - and other epiphytes such as *Astelia solandri* and *Collospermum hastatum*. We spent lunch mesmerised by the spectacle of the water emerging from fissures in the cliffs. The volume of water emerging was apparently relatively large, as when the water volume is lower, over the summer, the fissures higher up the cliff do not have water descending from them.

We admired the luxuriant beds of filmy ferns - *Hymenophyllum demissum* and *H. dilatatum* - on the forest floor, and also the wider range of species of filmy ferns on the large slabs of ignimbrite alongside the track. Other species found during the day included *H. sanguinolentum*, *H. rarum*, *H. revolutum*, and *Trichomanes endlicherianum*.

Walking on up the track to the top of the falls we saw a few clumps of *Pterostylis alobula* in flower, although most of the flowers were past their best. In this area there are magnificent stands of pohutukawa-northern rata (*Metrosideros robusta*) hybrids. This forest is quite different from any other in the vicinity. As well as the hybrids, there is 'true' pohutukawa and 'true' northern rata and the area is very beautiful when these trees are in flower.

We wandered slowly along the track and marvelled at the various viewing points along the track where the river disappeared into holes in the ground (before flowing through cracks in the ignimbrite and emerging as the Tarawera Falls). This is a particularly fascinating and spectacular walk. Further on up the river there is also a magnificent swimming hole, but the air (and water) temperature did not encourage swimming. However, we did find a small population of *Isolepis cernua* here. We continued up the track and relocated the site of a large *Pimelea tomentosa* shrub. The large plant was no longer present - a solitary dead stem was all that remained - but we did find two seedlings.

A patch of manuka shrubland was inspected and a couple of prickly hakea were found, although they proved too big for Paul's small handsaw (one seedling was pulled out). Paul had driven to the top of the track at the Tarawera Outlet and had walked down the track to meet us. On his way down he found a small population of yellow flag (*Iris pseudacorus*) on the opposite side of the river from the track (the true right). We stopped to confirm the identity, with a bit of debate.

Moving on, we stopped at a few places beside the river where there were low turfs of *Limosella lineata*, *Glossostigma elatinooides*, *Lilaeopsis novae-zelandiae*, and *Callitriche stagnalis*. Good views of Mt Tarawera were available during these forays down to the river. The river is quite wide for 1 km or so below the outlet, and there are local patches of lake sedge *Schoenoplectus tabernaemontani* and raupo (*Typha orientalis*). *Carex virgata* is scattered along the river margins.

We reached the top of the track at about 3.00 p.m. and whilst Paul ran the drivers down to pick up their cars, we explored the small manuka-baumea wetlands near the outlet, on the true right side of the river, and found two plants of the invasive exotic royal fern (*Osmunda regalis*). The DOC weed team is going to be sent in to deal with those, along with the small population of yellow flag near the outlet, and also the low numbers of grey willow (*Salix cinerea*) and crack willow (*S. fragilis*) that

are present. The presence of akeake (*Dodonaea viscosa*) at the outlet was the subject of some discussion. It occurs locally around the shoreline of Lake Tarawera.

A good day out was had by all, and some of our guests expressed an interest in coming on other Botanical Society trips later in the year.

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TARAWERA FALLS VASCULAR PLANT SPECIES LIST

Sarah Beadel¹

INDIGENOUS SPECIES

Gymnosperms

<i>Dacrydium cupressinum</i>	rimu
<i>Podocarpus hallii</i>	Hall's totara
<i>Podocarpus totara</i> var. <i>totara</i>	totara

Monocotyledonous trees and shrubs

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

Dicotyledonous trees and shrubs

<i>Alectryon excelsus</i> subsp. <i>excelsus</i>	titoki
<i>Aristotelia serrata</i>	makomako, wineberry
<i>Beilschmiedia tawa</i>	tawa
<i>Brachyglottis repanda</i>	rangiora
<i>Carmichaelia australis</i>	makaka, maukoro
<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>Dracophyllum strictum</i>	totorowhiti
<i>Dracophyllum subulatum</i>	monoao
<i>Dysoxylum spectabile</i>	kohekohe
<i>Elaeocarpus dentatus</i>	hinau
<i>Fuchsia excorticata</i>	kotukutuku

¹ Thanks to Rotorua Botanical Society members for assistance with the list.

<i>Gaultheria antipoda</i>	tawiniwini
<i>Gaultheria oppositifolia</i>	kama
<i>Geniostoma ligustrifolium</i> var. <i>ligustrifolium</i>	hangehange
<i>Griselinia littoralis</i>	kapuka
<i>Griselinia lucida</i>	puka
<i>Hebe parviflora</i>	koromiko taranga
<i>Hedycarya arborea</i>	porokaiwhiri
<i>Hoheria sexstylosa</i>	houhere, lacebark
<i>Knightia excelsa</i>	rewarewa
<i>Kunzea ericoides</i>	kanuka
<i>Laurelia novae-zelandiae</i>	pukatea
<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>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>Pimelea tomentosa</i>	
<i>Pittosporum colensoi</i>	rautawhiri
<i>Pittosporum eugenioides</i>	tarata
<i>Pittosporum tenuifolium</i>	kohuhu
<i>Pomaderris amoena</i>	tauhinu
<i>Pseudopanax arboreus</i>	whauwhaupaku, five finger
<i>Pseudopanax crassifolius</i>	horoeka, lancewood
<i>Schefflera digitata</i>	pate
<i>Weinmannia racemosa</i>	kamahi

Monocotyledonous lianes

<i>Ripogonum scandens</i>	supplejack, kareao
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Dicotyledonous lianes

<i>Calystegia sepium</i> subsp. <i>roseata</i>	pohue
<i>Clematis cunninghamii</i>	ngakau-kiore
<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

Muehlenbeckia complexa
Parsonsia capsularis
Rubus cissoides agg.
Rubus schmidelioides var. *schmidelioides*

pohuehue
akakiore
tataramoa, bush lawyer
akatataramoa, bush lawyer

Lycopods and psilopsids

Huperzia varia
Isoetes kirkii
Lycopodium volubile
Tmesipteris elongata

Whiri-o-Raukatauri
quillwort
waewaekoukou

Ferns

Adiantum cunninghamii
Adiantum diaphanum
Asplenium bulbiferum
Asplenium flaccidum
Asplenium oblongifolium
Asplenium polyodon
Blechnum chambersii
Blechnum colensoi
Blechnum discolor
Blechnum filiforme
Blechnum fluviatile
Blechnum membranaceum
Blechnum minus
Blechnum novae-zelandiae
Blechnum vulcanicum
Cardiomanes reniforme
Ctenopteris heterophylla
Cyathea cunninghamii
Cyathea dealbata
Cyathea medullaris
Cyathea smithii
Deparia petersenii subsp. *congrua*
Dicksonia fibrosa
Dicksonia squarrosa
Diplazium australe
Doodia australis
Grammitis billardierei
Grammitis ciliata
Histiopteris incisa
Hymenophyllum bivalve
Hymenophyllum demissum
Hymenophyllum dilatatum
Hymenophyllum flabellatum
Hymenophyllum flexuosum

huruhuru tapairu, maidenhair fern
huruhuru tapairu, maidenhair fern
mouku, hen and chicken fern
makawe
huruhuruwhenua
petako
rereti
peretao
petipeti, crown fern
panako
kiwikiwi

swamp kiokio
kiokio
korokio
kidney fern, konehu

punui, gully tree fern
ponga, silver fern

katote, soft tree fern

wheki-ponga
wheki

pukupuku

matata, water fern
mauku, filmy fern
irirangi, filmy fern
matua mauku, filmy fern
mauku, filmy fern
mauku, filmy fern

<i>Hymenophyllum multifidum</i>	mauku, filmy fern
<i>Hymenophyllum rarum</i>	mauku, filmy fern
<i>Hymenophyllum revolutum</i>	mauku, filmy fern
<i>Hymenophyllum sanguinolentum</i>	piripiri, filmy fern
<i>Hymenophyllum scabrum</i>	mauku, filmy fern
<i>Hypolepis ambigua</i>	
<i>Lastreopsis glabella</i>	
<i>Lastreopsis hispida</i>	
<i>Lastreopsis microsora</i> subsp. <i>pentangularis</i>	
<i>Leptopteris hymenophylloides</i>	heruheru
<i>Microsorium pustulatum</i>	kowaowao, hounds tongue fern
<i>Microsorium scandens</i>	mokimoki
<i>Paesia scaberula</i>	matata
<i>Pellaea rotundifolia</i>	tarawera, button fern
<i>Pneumatopteris pennigera</i>	pakau
<i>Polystichum vestitum</i>	puniu, prickly shield fern
<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>Diplodium alobulum</i>	
<i>Drymoanthus adversus</i>	
<i>Earina autumnalis</i>	raupeka
<i>Earina mucronata</i>	peka-a-waka
<i>Ichthyostomum pygmaeum</i>	piripiri
<i>Microtis unifolia</i> agg.	maikaika
<i>Orthoceras novae-zeelandiae</i>	maikaika
<i>Petalochilus</i> sp.	
<i>Thelymitra longifolia</i>	maikuku
<i>Thelymitra pauciflora</i>	slender sun orchid
<i>Winika cunninghamii</i>	

Grasses

<i>Cortaderia fulvida</i>	toetoe
<i>Deyeuxia avenoides</i>	
<i>Dichelachne crinita</i>	patiti, plume grass
<i>Isachne globosa</i>	swamp millet
<i>Microlaena avenacea</i>	bush rice grass
<i>Microlaena stipoides</i>	patiti, meadow rice grass
<i>Oplismenus hirtellus</i> subsp. <i>imbecillis</i>	

Poa anceps agg.
Rytidosperma gracile

Sedges

Baumea articulata
Baumea rubiginosa
Baumea tenax
Baumea teretifolia
Carex breviculmis
Carex flagellifera manaia
Carex geminata agg. rautahi
Carex maorica
Carex secta purei
Carex solandri
Carex virgata purei
Cyperus ustulatus f. *ustulatus* toetoe, upokotangata
Eleocharis acuta
Gabnia pauciflora takahikahi
Isolepis cernua
Lepidosperma australe
Morelotia affinis
Schoenoplectus tabernaemontani kapungawha
Schoenus maschalinus
Schoenus tendo wiwi
Uncinia uncinata kamu matau a Maui

Rushes

Juncus edgariae wi
Juncus pallidus wi
Juncus planifolius
Luzula picta var. *picta*

Monocotyledonous herbs (other than orchids, grasses, sedges, and rushes)

Astelia fragrans kakaha
Astelia solandri kowharawhara
Collospermum hastatum kahakaha
Collospermum microspermum
Dianella nigra turutu
Lemna minor karearea
Libertia grandiflora mikoikoi
Phormium tenax harakeke, flax
Triglochin striata arrow grass
Typha orientalis raupo

Composite herbs

Euchiton audax
Lagenifera pumila papataniwhaniwha

Pseudognaphalium luteoalbum agg. pukatea

Dicotyledonous herbs (other than composites)

Acaena anserinifolia piripiri
Acaena novae-zeelandiae piripiri
Callitriche stagnalis starwort
Cardamine debilis agg. panapana
Centella uniflora
Epilobium nerteroides
Epilobium nummulariifolium
Epilobium pedunculare
Epilobium rotundifolium
Galium propinquum mawe
Geranium microphyllum
Glossostigma elatinoides
Gonocarpus micranthus piripiri
Haloragis erecta subsp. *erecta* toatoa
Hydrocotyle dissecta
Hydrocotyle heteromeria
Hydrocotyle microphylla
Hydrocotyle moschata
Hydrocotyle novae-zeelandiae var. *novae-zeelandiae*
Lilaeopsis ruthiana
Limosella lineata mudwort
Lobelia angulata panakenake
Myriophyllum propinquum
Nertera depressa
Ranunculus amphitrichus kawariki
Ranunculus reflexus maruru
Solanum americanum raupeti
Stellaria parviflora kohukohu
Urtica incisa ongaonga, tree nettle
Wahlenbergia violacea rimuroa

NATURALISED SPECIES

Dicotyledonous trees and shrubs

Buddleja davidii buddleia
Erica lusitanica Spanish heath
Genista monspessulana Montpellier broom
Hakea salicifolia willow-leaved hakea
Hakea sericea prickly hakea
Lupinus arboreus lupin
Rosa rubiginosa sweet briar
Rubus sp. blackberry
Salix cinerea grey willow
Salix fragilis crack willow

Ferns

Osmunda regalis royal fern

Grasses

Agrostis capillaris browntop
Anthoxanthum odoratum sweet vernal
Axonopus fissifolius narrow-leaved carpet grass
Miscanthus nepalensis Himalaya fairy grass
Sporobolus africanus ratstail

Rushes

Juncus articulatus jointed rush
Juncus bufonius var. *bufonius* toad rush
Juncus tenuis var. *tenuis* track rush

Monocotyledonous herbs (other than orchids, grasses, sedges, and rushes)

Egeria densa egeria
Iris pseudacorus yellow flag
Lagarosiphon major lagarosiphon

Composite herbs

Bellis perennis lawn daisy
Cirsium arvense California thistle
Cirsium vulgare Scotch thistle
Conyza sumatrensis broad-leaved fleabane
Crepis capillaris hawksbeard
Gamochaeta coarctata purple cudweed
Jacobaea vulgaris ragwort
Mycelis muralis wall lettuce
Sonchus oleraceus puha, sow thistle
Taraxacum officinale dandelion

Dicotyledonous herbs (other than composites)

Anagallis arvensis scarlet pimpernel
Centaurium erythraea centaury
Digitalis purpurea foxglove
Lotus pedunculatus lotus
Mentha sp. mint
Nasturtium officinale watercress
Phytolacca octandra inkweed
Plantago australis swamp plantain
Plantago lanceolata narrow-leaved plantain
Prunella vulgaris selfheal
Rumex acetosella sheep's sorrel
Sagina procumbens pearlwort