Waikato Botanical Society Inc.

NEWSLETTER

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Editors note

There have been some great field trips so far this year with a lot of variety and some great ones to look forward to still. A highlight for me was the trip to Lake Koraha in January, as it is such a spectacular place and a bit of an adventure to get to. Field trips coming up can be viewed on the event calendar http://waikatobotsoc.org.nz/?page_id=6

Susan

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Presidents' AGM address 1 May 2014

By Paula Reeves

Thanks everyone for coming along tonight. We have had another busy year and I'm very grateful to the committee for all that they have done to bring us the exciting events we've had this year. Our current membership stands at 91 which includes 18 new members. This is 10 more members than last year so we appear to be a growing society.

Fieldtrips

This year we have run 11 fieldtrips, two of which were joint with the Rotorua Botanical Society. Highlights included a wonderful trip Thomas Emmitt led to Lake Koraha - a beautiful karst lake near Hauturu. There is no track to the lake so it's visited by very few people and consequently is in excellent condition and surrounded by a manuka-sphagnum bog. The lake itself was full of native macrophytes although no-one was game enough to dive in and check these out. A major accomplishment was Kerry Jones finally leading a trip to Mt Karioi to search for Pittosporum kirkii – the trip having been cancelled three times before due to bad weather. Alas it was reportedly like hunting for a needle in a haystack and no-one could find the needle. Our most recent trip to Port Waikato, led by Catherine Beard, was well attended with 15 people taking part, including two people from the Port Waikato Beach care group who are tacking the immense job of restoring this system. If anyone feels like visiting this amazing place and seeing the restoration work – you're in luck as they are running a planting day this weekend and would love as many people to come as possible. I'd like to thank all the people who have lead trips this year, Thomas, Kerry, Liz, Catherine, Chris and Peter Cave and especially to those who have written up trip reports for the newsletter. Usually the trip leader is writing up the report. It would be good if we could endeavour to have someone else besides the trip leader write up the report so the trip leader can concentrate on leading the trip. So please don't be surprised if you get asked to do this next time you indicate you're coming on a trip.

Lecture series

Cynthia Roberts organised another wonderful series of lectures over the last year. She'll talk a little more about these later on. As some of you may know Cynthia is leaving us. We are extremely grateful for all the work she had done cajoling people into giving talks and then organising the evenings. She will be missed!

Awards

We give out two awards every year to botany students. The Undergraduate Flora of New Zealand prize winner was Meg Gaddum and the Graduate Plant Ecology / Plant Function prize winner was Kris Kramer-Walter. Both students receive a cash prize and free membership to the Waikato Botanical Society.

We have also been talking with Rob Graham a lecturer at Wintec Horticulture Education Centre and will shortly set up a student prize with them. We hope by doing this we will attract more horticulture students to the society.

Committee

Lastly I wanted to thank the committee who keep the society ticking over. Mike Clearwater keeps the accounts and the website running and does a great job of both. Our website was recently hacked this year – an interesting story

that perhaps you can quiz him about later. Kerry Jones – our secretary who tries to keep us organised but who I suspect would rather be out somewhere looking at plants. He is also one of our most frequent trip leaders outdone only in trip leadership by Thomas Emmitt. Big thanks to both of you for that. Susan Emmitt has taken on the newsletter editor role this year and is doing a great job. Liz Overdyk and Jackson Efford have both lead the development of the threatened plant garden which has had a bit of a hard time in the last few years with two droughts. Neither are here tonight but we thank them for their efforts. Catherine Beard also deserves thanks for keeping us posted about BotSoc events. And lastly but not least – thanks to Lucy and Kerry who organised the drinks tonight.

2014 AGM meeting minutes

Meeting opened 18:23
Paula Reeves in the chair
Kerry Jones: minute taker

Present

Kiri Cutting, Brain Cutting, Mike Paviour, Wiea van der Zwan, John Rowe, BevWoolley, Katheryn Mercer, Dell Hood, Monica Peters, Antoinette van der Weerden, Lucy Roberts, Chris Lusk, Glyn Morgan, Kelly Newell, Jeff Seymour, Kathryn Row, Mike Clearwater, Catherine Beard, Peter J. de Lange, Yanbin Deng, Thomas Emmitt, Antonia Vincent, Kris Kramer-Walter, Daniel Laughlin, Wayne Bennett, Cynthia Roberts, Betty Seddon, Stella Rowe, Shay Dean, Wyne Johns, Tony Templer, Kerry Jones, Paula Reeves.

Apologies

Jackson Efford, Jan Butcher, Virginia Shaw, Liz Grove, Norm Mason, Susan Emmitt

Previous Minutes

The minutes from the 2013 AGM were circulated and Kerry Jones moved that they be accepted. Wyne Johns seconded this. There were no matters arising from the previous AGM

Presidents Report

Paula Reeves presented the presidents report and a gift to Cynthia Roberts in recognition of all the effort she has put into bringing us monthly talks over the last 3 years.

Treasures Report

Mike Clearwater presented the financial statement.
There was a brief discussion regarding options for spending the money we have accrued. Wyne asked about what had happened to the Waikato Wetland Field Guide project that was started several years ago by the Waikato Botanical Society. Paula replied that this had been discussed at some length by the committee in 2012. As the publication still required a great deal of work and that it was unlikely that the time required could be found within the society to complete this, it was decided to 'park' this project. There was also the feeling that other publications had since come out that contained many Waikato wetland species such as 'Common Sedges, Rushes and Grasses' by Champion *et al.* 2012 and that there perhaps wasn't the need for such a guide anymore.

Peter de Lange mentioned that some work was about to start on a regional plant list similar to the Bay of Plenty plant checklist authored by the Rotorua Botanical Society. Peter suggested that it might be a better idea to put our energies and possibly some finance into this project. Shannon Patterson from DOC is due to start looking at this in August 2014. Wyne Johns offered to help out with work in this area.

Threatened Plant Garden

There was a brief update on the threatened plant garden. Working bees in the last year have concentrated on weeding. Unsuprisingly the *Sporadanthus* died in the drought. Angela Simpson has offered to help with the management of the garden with Liz Overdyck. Angela and Liz will need to see whether the remaining *Carmichaelia williamsii* plants need repotting and a decision will need to be made about what to do with them. Paula reminded the Waikato Botanical Society that the long-term plan for the threatened plant garden is to see whether one could be established at the Hamilton City Gardens.

Website

Mike Clearwater reported that the website is running well and continues to attract new members. The website continues to attract new members. There is now an option for members to make brief reports on the newly added blog page.

Future Activities

Paula has produced a small folded brochure with details of trips for the rest of the year. This was handed out and upcoming trips were discussed.

General Business

Wyne Johns mentioned that Peter Buchanan required some assistance to search for *Ganoderma* 'awaroa' a bracket fungus. Wyne is going to look at organising a trip. Peter de Lange thought that the fungus was most likely to be found in small stands of pukatea in farmland on the floor of the Awaroa Valley.

Monthly talks

Cynthia is in the process of moving to Christchurch. She wanted someone to take over from her position as the organiser of the monthly talks. No-one has volunteered to do this so she suggested that we try and organise it collectively like we do for field trips with one person responsible for organising each talk. This process will be taken up by the incoming committee.

Election of Officers

Paula Reeves was nominated for President by Cynthia Roberts and seconded by Catherine Beard. No objections. Kerry Jones was nominated for Secretary by Mike Clearwater and seconded by Catherine Beard. No objections. Mike Clearwater was nominated for Treasurer by Thomas Emmitt and seconded by Paula Reeves. No objections. Volunteers for the committee were called for and the following people were accepted: Thomas Emmitt, Lucy Roberts, Catherine Beard, Angela Simpson, Mike Paviour, Wyne Johns and Antonia Vincent. Paula Reeves moved that the new committee be accepted and this was seconded by Cynthia RobertsThomas indicated that Susan Emmitt was willing to continue in her role as newsletter editor.

Meeting closed at 19:08.
Peter de Lange then presented a wonderful talk on the Flora of Sardinia.

Waikato Botanical Society Incorporated Statement of Income and Expenditure for the Year Ended 28 February 2014

$22,735.02	OPENING BALANCE	$24,466.50

Previous Year	INCOME	This Year
755.00	Subscriptions	740.00
752.67	Interest	1,114.15
675.00	Book Sales	465.00
16.00	Handling / Postage	5.00
505.00	Donations	5.00
500.00	Threatened Plant Garden	-
$3,203.67	Total income	$2,329.15

Previous Year	EXPENSES	This Year
-	Advertising / Website	372.90
-	Bank Fees	-
-	Postage / Stationary	-
182.69	Meeting Costs	263.68
450.00	Scholarships / Memberships	560.00
839.50	Threatened Plant Garden	-
$1,472.19	Total expenses	$1,196.58

$24,466.50	CLOSING BALANCE	$25,599.07

Represented by:

Previous Year	ACCOUNT	This Year
1,966.50	Westpac Cheque	3,099.07
10,000	Westpac Term Deposit 02	10,000
5,000	Westpac Term Deposit 03	5,000
7,500	Westpac Term Deposit 04	7,500
$24,466.50	Closing Balance	$25,599.07

Previous Year	ASSETS	This Year
707	Number of unsold Books @ 15.94 ea.	676
$11,269.58	Approximate Value	$10,775.44

Talks/Seminars 2011-2014 – Report to AGM

By Cynthia Roberts

Purpose

- **Educate ourselves** by increasing our knowledge and understanding firstly of our local botany and what is of interest nationally and internationally
- Keep up to date with current research
- See botanys' role in understanding the bigger picture and the importance of the **wider context, such** as the impacts of climate change on species and ecosystems, setting priorities for conservation, and RMA issues etc
- **Get to know each other and share ideas within the group build our own resources**

Topics covered a diverse range such as:

- Restoration and threatened plant research
- Pollination, seed establishment, and epiphyte behaviour
- Botany/History of Chatham Islands, Kermadecs, Raoul Island, Aotea Heads, Tongariro, New Caledonia, Hauturu and Sardina
- Invertebrate – plant interactions; gardening for wildlife (particularly Monarch Butterflies)
- The Northern Freshwater Lakes
- Latest research on kauri dieback
- Mangroves and their ecological contribution and the impact/implications of removing them
- Prioritising our species and ecosystems
- The RMA and is mitigation working?
- Great contributions from members at the "End of Year' round up of botanical highlights

Future

- Haven't found a replacement to do the organising of these talks- it is quite a commitment: book rooms, computer/projector; find speakers, advertise, food and drink, thank you bottle of wine
- Could it be broken down into components so no one takes on the whole job like we do with leading field trips?
- Could a committee member book the room for every 1st Monday in the month (if this is the right day and time
- Offers from both non committee members and committee members could take responsibility for each month to find a speaker

Action

- Any volunteers to do this here tonight? Yes from Lucy Roberts, Chris Lusk, Mike Clearwater, there were about 5 hands but I think they were all committee members!!!

Plant Profile: Swamp Helmet Orchid (Corybas carsei)
Threat Classification: Nationally Critical

By Lucy Roberts

I have a lovely story to share with you about *Corybas casei*. One of my colleagues at DOC was intrigued with this orchid. He was new to DOC and had heard us talking about this amazing orchid. So he joined the Whangamarino Rangers on a visit to the wetland to count how many orchids were at the site. Following an hour's vehicle journey and another hour trudging through the wetland he arrived at the orchid site where he was surprised to find his colleagues getting down on their knees to count!! He had expected to see a tall flamboyant sub tropical sized orchid but instead was faced by with an orchid smaller than his thumb!!

Photo by Craig Purvis (DOC)

Corybas casei is 10-30 mm tall at flowering. This orchid maybe small in stature but is an absolute treasure. Its beautiful red / maroon / pink solitary flower with contrasting green leaf makes sketching it in pencil almost a crime!

Corybas casei would have been found in the North Island, from near Kaitaia south to Moanatuatua. It is currently found only at one site, in New Zealand, at the Whangamarino wetland, in the northern Waikato, growing in open *Schoenus*/ *Empodisma* sedge/wirerush vegetation.

The orchid depends on the ground around it being disturbed by events like fire in order for it to flourish. For the past few years, DOC has been undertaking controlled burns around the orchids to simulate those natural fires and try to spark the orchid's resurgence.

DOC also hopes to learn more about how the orchids are pollinated, when they flower and when they produce seed, and exactly what time of year these events occur.
During the Easter break I decided I was going to set myself the challenge of drawing a plant and I chose the Corybas carsei (Swamp Helmet Orchid). Here it is so far (needless to say not quite finished!).

Corybas carsei was one of the orchids featured recently in a wonderful in New Zealand Geographic article Orchidelirium written by Dave Hansford (Issue 124 Nov / Dec 2013).

For more information about ***Corybas carsei* Swamp Helmet Orchid:**
http://www.nzpcn.org.nz/flora_details.aspx?ID=3

Threatened plant garden update

By Liz Overdyck

Thanks to the handful of people who turned out for the successful May working bee. Unfortunately we have lost all the *Sporadanthus ferrugineus* to drought this summer and will need to look at relocating more plants from the old garden site at the next working bee. We will need to improve the water storage capacity of the soil for these plants with more peat, mulch and possibly water storage granules, given the very dry conditions experienced for the last two summers. All of the shrubs and trees are doing well and we gave several a pruning to allow more light in for the prostrate species such as *Pimelea villosa,* which have grown a bit straggly in the shade. The Cook's scurvy grass (*Lepidium oleraceum*) is also looking a bit spindly and we hope that this and the *Myosotis petiolata* var. *pansa* will self-seed again. We hope to get some smaller ground cover plants and shrubs cultivated for the garden this year and will look at purchasing some small metal species labels for each plant.

News on the *Dactylanthus taylorii* in the old garden site is that it seems to have flowered again this year. Although flowering effort may have again been affected by further drought conditions this year, this is a good sign that the *Dactylanthus* itself is still surviving.

Field trip reports

Karamu Bush Reserve and Swamp maire covenant, Te Pahu Saturday 12th October 2013

By Liz Overdyck

Our visit to Karamu Bush was unfortunately limited on the day by very high water levels in the adjacent stream. But still, a hardy few turned out, disregarding thunderstorms over Hamilton, and the rain did hold off while we went botanising. We were only able to access the fenced reserve edge and the higher ground of a small peninsula within a stream bend. The canopy within the reserve consists mainly of totara, including some very large multi-stemmed individuals, intermingled with kahikatea, ribbonwood, kowhai, tanekaha, pokaka, miro and matai. A subcanopy is formed by mahoe, cabbage trees, lacebark, swamp mahoe and pigeonwood. A single large black maire tree remains leaning over the stream, and was unfortunately inaccessible on this visit. Interestingly, on the high ground we found a diversity of native understorey species, while in contrast it has been noted on other visits that the flooded areas are predominantly covered in a thick carpet of *Tradescantia flumenensis.*

Some introduced hawthorn, Jerusalem cherry and native karamu have grown through the *Tradescantia* ~0.5m thick mat, but little else has established on the floodplain, which in flood becomes inundated up to nearly 2m deep in places. The higher ground was thick with predominantly native understorey shrubs, including mahoe, mapou, kawakawa, *Leucopogon fasciculatus*, several small-leaved *Coprosma* species and *Melicope simplex.* A few native sedges (*Carex*) and grasses were found and the native vines pohuehue and *Parsonsia,* some large specimens of the latter grow up into the canopy. Epiphytes are present, particularly in the large totara, although the wet conditions were not ideal for canopy survey. Some epiphytic *Drymoanthus* orchids growing on the reserve edge provided some

photographic interest growing amongst ferns, *Astelia* and *Collospermum*.

Totara with epiphytes on the north-facing reserve edge, floodwaters visible below. (Photo by L.iz Overdyck).

Close up of the tiny Drymoanthus adversus orchid in flower (Photo by Liz Overdyck)

We discussed a strategy for weed control, which could be to work outwards from the high ground, rolling back *Tradescantia* and allowing native seedlings to establish from the existing understorey. The hawthorn subcanopy trees on the floodplain could be removed along with several privet shrubs and the Jerusalem cherry on the high ground.

The second part of our trip took us up the slopes of Mt Pirongia to a private property with a QEII covenant surrounded by farmland a little below the Forest Park tree line. Here a remnant stand of mature swamp maire (*Syzygium maire*) has been fenced off. The stand is on a terrace next to a stream in a steep-sided gully. Water seepages at the base of the slope create wet conditions underfoot, particularly after rain as when we visited. Amongst the stand were a mix of lowland native tree, shrub and fern species including hinau, kamahi, mahoe, kohekohe, mangeao, fuchsia, *Olearia rani*, pukatea, wheki and mamaku. There were also some sedges, rushes and herbs of wetter habitat, including *Elaeocharis acuta*, *Machaerina rubiginosa, Juncus edgariae* and introduced *Ranunculus flammula*. A few introduced weedy species were present, including Himalayan honeysuckle (*Leycesteria formosa*), grey willow (*Salix cinerea*), blackberry (*Rubus fruticosus*) and gorse (*Ulex europaeus*). The swamp maire trees were in good health and swamp maire seedlings were found growing in shallow pools.

Thank you to Hugh and Cathy Redfern for allowing us to visit this precious swamp maire stand.

Species List for Karamu Bush Reserve

Trees, shrubs and vines

Alectryon excelsus	titoki
Berberis sp.*	barberry
Coprosma arborea	mamangi
Coprosma areolata	
Coprosma rigida	
Coprosma robusta	karamu
Coprosma tenucaulis	
Cordyline australis	ti kouka, cabbage tree
Dacrycarpus dacrydioides	kahikatea
Elaeocarpus hookerianus	pokaka
Hedycarya arborea	porokaiwhiri, pigeonwood
Hoheria populnea	houhere, lacebark
Kunzea ericoides	kanuka
Leucopogon fasciculatus	mingimingi
Ligustrum lucida*	tree privet
Ligustrum sinense*	Chinese privet
Lonicera japonica*	Japanese honeysuckle
Macropiper excelsum	kawakawa
Melicope simplex	poataniwha
Melicytus micranthus	swamp mahoe
Melicytus ramiflorus	mahoe
Muehlenbeckia australis	pohuehue
Myrsine australis	mapou, red matipo
Nestegis cunninghamii	black maire
Parsonsia heterophylla	native jasmine
Phyllocladus trichomanoides	tanekaha, celery pine
Pittosporum eugenioides	tarata, lemonwood
Plagianthus regius	manatu, ribbonwood
Podocarpus totara	totara
Prumnopitys ferruginea	miro
Prumnopitys taxifolia	matai
Rubus fruticosa*	blackberry
Sophora microphylla	kowhai

Herbs, sedges and grasses

Carex secta	
Carex virgata	
Microlaena stipoides	
Solanum pseudocapsicum*	Jerusalem cherry
Tradescantia flumenensis*	wandering willie

Epiphytes

Anarthropteris lanceolata	
Asplenium flaccidum	hanging spleenwort
Astelia solandri	perching lily
Collospermum hastatum	
Drymoanthus adversus	
Earina mucronata	bamboo orchid
Microsorum pustulatum	hounds tongue
Pyrrosia eleagnifolia	leather-leaf fern

*Denotes non-native species

Hauhangatahi Trip 1st December 2013

By Kerry Jones

Hauhangatahi is one of those hills that you always see as you head south into National Park Village. It's a peak that had a gentle rise from both sides. Sometimes it has a bit of snow on it. The locals call it Baldy.

The trip was meant to run on the Saturday. The weather didn't look good and only Paul turned up so we went and walked from the Chateau and down the Mangahuia Stream Track. Thomas and Susan Emmitt turned up on Sunday and John Jordan drove up from Taranaki.

Various websites describe a track up there from Erua Village. Two days earlier I had recced the track and had got a bit lost until I came out on the track about 30 minutes after starting off in the wrong place. For the record the track entrance is at GPS point 180 6966 E 565 4876 N.

We set off armed with Graeme Jane's and Gael Donaghy's 2006 Hauhangatahi Forest species list.

The track starts right beside the railway line at 750 metres asl. We headed up through a thick lot of flax (*Phormium tenax).* Then we got into short manuka *Leptospermum scoparium* and broom (*Cytisus scoparius*) in which we found *Pterostylis banksii* in flower and a *Thelymitra*.

It didn't take long until we got into the forest proper at 800 metres. There was kamahi (*Weinmannia racemosa)* and rimu *(Dacrycarpus cupressinum)* overhead, with *Coprosma tenuifolia,* silver fern *(Cyathea dealbata), Cyathea smithii, Melicope simplex* and five finger (*Pseudopanax arboreus)* in the understory, with *Astelia fragrans* and kiokio (*Blechnum novae-zelandiae)* on the ground. A long tailed cuckoo (*Eudynamys taitensis*) was heard.

Up at 830 metres we encountered large matai (*Prumnopitys taxifolia)* with *Blechnum discolor Hymenophyllum malingii* and hen and chicken fern *Asplenium buliferum* on the ground.

Hymenophyllum malingii

At 900 metres we started to see kaikomako (*Pennantia corymbosa)* and putaputaweta *(Carpodetus serratus)* amongst the kamahi, with *Blechnum fluviatile* and *Blechnum chambersii,* bush lawyer *(Rubus cissoides)* and nettle (*Urtica incisa).*

At 920 metres we came across our first mountain cabbage tree (*Cordyline indivisa).*

At 950 metres amongst the kamahi we saw toro (*Myrsine salicina).*

At 980 metres we came across a grove of dead looking Hall's totara *(Podocarpus hallii).* It looked like that they had succumbed to possum damage.

At 1000 metres the forest composition was kamahi *(Weinmannia racemosa)*, Hall's totara (*Podocarpus hallii),* miro *(Prumnopitys ferruginea),* toro *(Myrsine salicina)* and pokaka *(Eleocarpus hookerianus).* The shrubs were *Coprosma tenuifolia, Coprosma foetidissima, Pseudopanax colensoi* with *Leptopteris hymenophylloides* and bush rice grass (*Microlaena avenacea*) at ground level.

At 1010 metres the first kaikawaka *Libocedrus bidwillii* appeared and we also saw *Hymenophyllum pulcherrimum*.

At 1020 metres we saw *Blechnum procerum , Luzuriaga parviflora and Libertia micrantha* and at 1040 metres we saw *Dicksonia lanata.*

At 1060 metres more new plant species appeared. These were *Gaultheria antipida,* pink pine (*Halocarpus biformis),* Mountain toatoa (*Phyllocladus alpinus), Cyathea colensoi* and *Clematis paniculata.*

At 1100 metres we stopped to look at the *Hymenophyllum malingii* growing on a dead kaikawaka. At this point we also found *Coprosma pseudocuneata*.

Here is a brief species list at the 1100 metres line: *Phyllocladus alpinus, Podocarpus hallii, Prumnopitys ferruginea, Coprosma foetidissima,Coprosma tenuifolia, Pseudopanax colensoi, Clematis sp. Asplenium flaccidum, Leptopteris superba, Polystichum vestitum, Blechnum fluviatile, Blechnum novae-zelandiae, Blechnum procerum, Hymenophyllum rarum. Hymenophyllum sanguinolentum, Notogrammatis sp., Microlaena avenacea, Uncinia sp.* A grey warbler (*Gerygone igata*) was heard.

At 1110 metres *Gahnia procera* was encountered.

At 1130 metres the track flattened out and got wetter. Here we found *Sphagnum* moss and *Dracophyllum longifolium*. At 1140 metres we were getting close to the bush edge. It was here that we saw a hebe – not sure what species it was though – either *Hebe venustula* or *odora?* We should have checked to see if it had a sinus.

Hebe sp.

Our lunch stop

Then at 1150 metres we popped out of the bush into the open. We had made it to the tree line. We stopped and had lunch next to a tarn.

Whilst having lunch I did a brief species list of the immediate vicinity (1150 metres): Snow totara (*Podocarpus nivalis*), Mountain toatoa (Phyllocladus alpinus), *Celmisia incana* ,*Celmisia spectabilis, Dracophyllum longifolium*, *Gleichenia dicarpa,Myrsine divaricate, Olearia virgata, Ozothamnus leptophyllus, Pittosporum anomalum*, *Pimelea microphylla*, *Pseudopanax colensoi,* Flax*, (Phormium cookianum)*, *Blechnum procerum,* Wire rush (*Empodisma minus*), *Carex demissa,* red tussock (*Chionochloa rubra).*

We quickly finished lunch as we had another 400 metres to climb. The original track was no longer marked so it was just a matter of heading for the top. At this stage we changed to Graeme Janes' 2006 Hauhangatahi Tussock Track species list.

At 1200 metres we saw *Brachyglottis bidwilli* and *Astelia nervosa.*

At 1230 metres I stopped and did another brief species list: Snow totara (*Podocarpus nivalis*), *Ozothamnus leptophyllus*, *Gleichenia dicarpa*, Red tussock *(Chionochloa rubra)*, Wire rush (*Empodisma minus).*

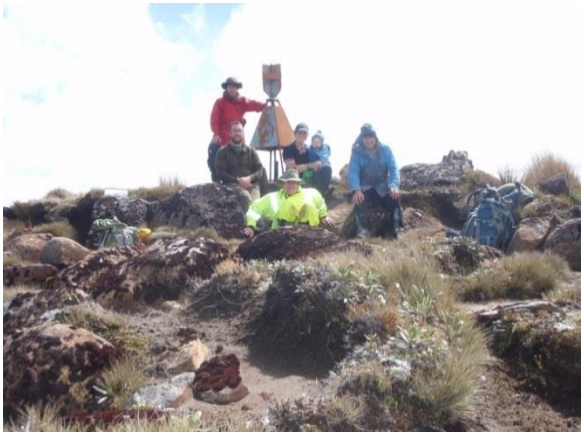
At 1260 metres we stopped for a rest and saw *Drosera pygmaea, Pentachondra pumilla*, pygmy pine (*Lepidothamnus laxifolius)* and heather *Calluna vulgaris* (not on Graeme's list).

At 1300 metres we saw *Drosera acturi (*not on Graeme's list) and at 1380 metres we saw *Hierochloe redolens.*

From here it was the final climb to the top where we were rewarded with 360° views including the three mountains. It was getting late so it was a case of "*no botanising on the way home"*. Thanks everyone for being flexible around the weather. It was a great day out. And quite a long drive home as well.

Thomas added two other species to Graeme's species list: Dracophyllum recurvum and Coprosma tayloriae.

Celmisia incana



Hauhangatahi Trig

Pittosporum anomalum

Pimelea microphylla

Brachyglottis bidwillii

Carex demissa

Lake Koraha Bot Soc Trip 18 January 2014 – In search of New Zealands first rich fen

By Thomas Emmitt

On an amazing summer day in January a group of us set out on a trek to see Lake Koraha; one of the most pristine lakes in the Waikato. The walk to the lake was to take about two hours. Luckily we were able to follow an old farm track most of the way to the lake.

The start of the walk took us past the remains of an old homestead marked by several fruit trees including figs and two very grand old trees a *Magnolia grandiflora* and a Lawson's cypress (*Hamaecyparis lawsoniana*).The land surrounding the track had at some point been cleared and was a mix of regenerating manuka (*Leptospermum scoparium*) with an understorey of *Coprosma rhamnoides,* and gullies filled with mamaku (*Cyathea medullaris*). The sundew *Drosera sphacealata* and an orchid *Orthoceras novae-zeelandiae* were noted along the exposed clay areas along the track.

Sampling the peat

Once we had made it to the end of the track it was time for some bush bashing. So close yet so far! Down the ridge and across a beautiful remnant of Pukatea/swamp maire forest, unfortunately with a tangle of supplejack to negotiate. While negotiating our way through this maze we stumbled across a *Brachglottis kirkii* seedling and a very nice specimen of *Hymenophyllum flexuosum*.

Situated amongst limestone country, Lake Koraha is about one hectare in size, with an estimated depth of around 9 metres, and is surrounded by a mixed podocarp/ broadleaf forest. The edges of the lake support sphagnum in places, and kanuka forest with large patches of *Eleocharis sphacealata* around the edge. The water quality is high is the lake supports a healthy macrophyte community. The lake has very few weed issues and *Osmunda regalis* is controlled there annually. None was seen on this trip.

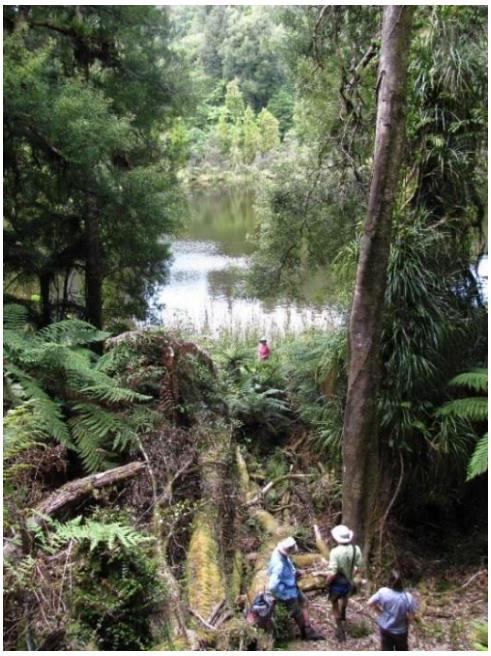
Lake Koraha from the northern end

After lunch near the lake edge Bev and Scott from Landcare Research (who had lugged a peat corer the whole way) set about sampling the peat to see if Lake Koraha is New Zealand's first rich fen. Rich fens occur in areas of limestone, and a zebra stripe pattern is formed from overlapping layers of limestone and organic matters. As yet this rare ecosystem has not yet been found in New Zealand.

While the rest of the party set out to circumnavigate the lake, peat cores were taken, but alas very little peat was found in the cores let alone any zebra stripes, so unfortunately the hunt continues.

Even though it was an amazing day no one was keen for a swim so we set out for home, back through the supplejack which was worse than on the way through because the leader thought he might see if there was a better way across. There wasn't. Back over the hill and along the track. On the way back we got some stunning views of several limestones peaks, home of the endemic *Hebe scopulorum* which we would be visiting in May.

All in all a great day out to a lake that many people don't get to visit.



Circumvavigating the lake

Mount Karioi Pittosporum kirkii hunt - 22nd February 2014

This was the third time that I had tried to run this trip. On the previous two occasions I had cancelled because of weather. This time the weather forecast didn't look that great but I wasn't going to cancel again.

Five keen botanists turned out on the day and there was a light shower as we drove around to the south side of the mountain.

As we approached the mountain from the south side Bruce pointed out some swamp maire (Syzgium maire) standing alone down in a gully on farm land. They were recognisable by their pale trunks.

We parked at the track entrance at the end of Swan Road and headed up the farm track. I suppose it was because we were all talking that we missed the turn off the farm track that went up the ridge to the bush edge, so we had to do a slight detour across country back on to the ridge. Along the way Peter spotted rimu (*Dacrycarpus cupressinum*) fruiting heavily and stopped to do some seed collection for the nursery.

We continued up the ridge towards the bush edge. Right on the bush edge there were some straggly shrubs of flowering *Metrosideros perforata* and on one of the shrubs was a common copper butterfly (*Lycaena salustius*).

Copper butterfly

The bush edge was at about 400 metres. As we entered the bush we encountered *Dicksonia squarrosa*, rimu (*Dacrycarpus cupressinum*) overhead with *Coprosma* rhamnoides shrubs and *Pneumatopteris pennigera* and *Blechnum fluviatile* in the understorey.

Also on the bush edge was a cohort of young rewarewa (Knightia excelsa).

At 420 metres we found ramarama (*Lophomyrtus bullata*) and pigeon wood (*Hedycarya arborea*) with many seeds on the ground.

Further up at 450 metres we found hangehange (*Geniostoma ligustrifolium* var. *ligustrifolium*), kiekie (*Freycinetia banksii*), mahoe (*Melicytus ramiflorus*), pate (*Schefflera digitata*), rangiora (*Brachyglottis repanda*), silver fern (*Cyathea smithii*) and nikau (*Rhapalostylis sapida*)

At 460 metres we were well away from the bush edge and many new species were evident. These were : heketara (*Olearia rani*), *Coprosma grandifolia*, silver fern (*Cyathea dealbata*), pate (*Schefflera digitata*), bush rice grass (*Microlaena avenacea*), *Microsorum pustulatum, Schizaea dichotoma*, kohekohe (*Dysoxylum spectabile*), pukatea (*Laurelia novae-zelandiae*), *Hymenophyllum dilatatum* and *Rumohra adiantiformis*.

At 480 metres we spotted the first kamahi Weinmannia racemosa and the Coprosma grandifolia was well in fruit

At 500 metres there was an understorey of *Blechnum discolour*, bush rice grass (*Microlaena avenacea*) and *Muehlenbeckia australis.* The shrubs were hangehange (*Geniostoma ligustrifolium* var. *ligustrifolium*) and heketara (*Olearia rani*). The trees were rewrewa (*Knightia excelsa*), pigeon wood (*Hedycarya arborea*), lancewood *Coprosma grandifolia,* (*Pseudopanax crassifolius*) and nikau (*Rhapalostylis sapida*)

Coprosma grandifolia in fruit

At 520 metres we came across our first horopito (*Pseudowintera axilaris*).

At 540 metres *Hymenophyllum franklinii* was noticed.

At 600 metres quintinia (*Quintina serrata*) and toro (*Myrsine salicina*) started to appear along with *Coprosma foetidissima* and *Coprosma colensoi* in fruit.

Coprosma colensoi

At 610 metres we came across the two orange triangles on a tree denoting the *Pittosporum kirkii* site where Craig Purvis had last seen *Pittosporum kirkii.*

We dropped our packs and started to have a good look around. The ridge was probably about 50 metres wide at this point and then it dropped off steeply on both sides. We searched around for about half an hour before

giving up. If the weather had been better I think we would have been a bit more enthusiastic but we were getting cold so decided to head off up the track.

The site where Pittosporum kirkii had been found previously.

At 670 metres we came across *Blechnum procerum.*

At 700 metres we found Halls totara *(Podocarpus hallii), Dracophyllum traversii* , *Sticherus cunninghamii* and *Libertia pulchella.*

A little further up at 710 metres we were amongst solid quintinia (*Quintina serrata)* with some kamahi (*Weinmannia racemosa)* and an *Alseuosmia macrophylla* in fruit along with several clumps of *Astelia trinervia.*

We finally popped out on the top but we were in the clouds and couldn't see a thing. It was a good place to have lunch. The altitude was 750 m with *Phormium cookianum* (mountain flax), *Grisilinea littoralis*, *Dracophyllum traversii*, *Gaultheria antipida* with stunted *Weinmannia racemosa* (kamahi), stunted *Quintina serrate* and *Lycopoidum scariosum* scrambling over the ground.

From here we headed back down and had another look around the *Pittosporum kirkii* site. On the way down at 550 metres Bruce pointed out some *Asplenium lamprophyllum.*

Down at 480 metres the cicadas were quite noisy and shortly after at 470 metres *Mida salicifolia* was seen.

As we exited the bush the day had improved and we were rewarded with a great view of Aotea Harbour and the sea out to the west.

Thanks to Bruce, Bev, Virginia and Peter for turning out on a bit of a wet day. Thanks to Peter for pointing out that we had missed the track up the ridge. We didn't find the mystical *Pittosporum kirkii* but it must be still up there somewhere.

Brief Species List

Taken from the bush edge at 400 metres to the summit at 750 metres on the Wairake Track.

Gymnosperm Trees and shrubs

Dacrycarpus cupressinum
Podocarpus hallii

Monocotyledonous trees and shrubs

Rhapalostylis sapida

Dicotyledonous trees and shrubs

Alseuosmia macrophylla
Brachyglottis repanda

Carpodetus serratus
Coprosma colensoi
Coprosma foetidissima

Coprosma grandifolia
Coprosma rhamnoides
Dracophyllum traversii
Dysoxylum spectabile
Gaultheria antipida
Geniostoma ligustrifolium var. ligustrifolium
Grisilinea littoralis
Hedycarya arborea
Knightia excels
Laurelia novae-zelandiae
Lophomyrtus bullata
Melicytus ramiflorus
Metrosideros perforata
Muehlenbeckia australis
Mida salicifolia
Myrsine salicina
Pseudopanax crassifolius
Pseudowintera axilaris
Quintina serrata
Raukawa simplex
Schefflera digitata
Weinmannia racemosa

Monocotyledonous lianes

Freycinetia banksii

Dicotyledonous lianes and related trailing plants

Parsonsia sp. (not sure which one)
Rubus australis

Lycopods

Lycopoidum scariosum

Ferns

Asplenium flaccidum
Asplenium lamprophyllum
Blechnum discolor
Blechnum fluviatile
Blechnum procerum
Dicksonia squarrosa
Cyathea smithii
Hymenophyllum dilatatum
Hymenophyllum franklinii
Loxogramme dictyopteris
Pneumatopteris pennigera
Schizaea dichotoma
Sticherus cunninghamii

Grasses

Microlaena avenacea

Remaining Monocotyledonous herbs

Astelia trinervia

Rotopiko (Lake Serpentine) East field trip 8 March 2014

By Paula Reeves

Eight of us gathered on a warm Saturday morning in March to compile a species list for Rotopiko East to help out the National Wetland Trust (NWT) who have big plans for this very special peat lake. Part of the plan was immediately apparent as entry to Rotopiko East is through the double sliding door of a predator-proof fence. Most of the larger bodied pests have now been removed with only mice and rats remaining.

Rotopiko East is one of three small lakes collectively known as Lake Rotopiko or Serpentine. These lakes have some of the best water quality and submerged plant communities of shallow lakes in the Waikato Region and provide habitat for a range of threatened bird species including bittern, NZ dabchick and spotless crake. Vegetation within the predator proof fence is made up of several different types including several re-vegetation areas, a swamp forest remnant and a fringe of wetland plants surrounding the lake.

Our first stop was an area of planted kahikatea (*Dacrydium dacrydioides*) and totara (*Podocarpus totara*), which was densely planted, so contained few species in the understorey due to low light levels. There were however a few gaps in the canopy where mainly introduced grasses and weeds were found, including Chinese privet (*Ligustrum sinense*) and inkweed (*Phytolacca octandra*). The eagle eye of John Dodgson convinced us that there were in fact two species of *Phytollaca* present, the second species having flowers and berries borne on relatively longer stalks than the very short stalks typical of inkweed. Trevor James subsequently visited the site and confirmed that the second species was pokeweed (*Phytolacca americana*), an interesting find because it hadn't been recorded in the Waikato before.

Following this find we crossed a small drain to access the swamp forest remnant that is dominated by tall mature kahikatea trees, thought to be about 100 years old, although there were several individuals that were evidently far older. We were struck by the copious amount of fruit on many of the kahikatea trees and concluded that it was probably a masting year.

There was a variety of species in the understorey that were a mix of naturally occurring and planted species. These included kaikomako (*Pennantia corymbosa*), cabbage tree (*Cordyline australis*), poataniwha (*Melicope simplex*), *Coprosma rotundifolia*, swamp coprosma (*Coprosma tenuicaulis*), pate (*Schefflera digitata*), kiekie (*Freycinetia banksii*), pigenwood (*Hedycarya arborea*), mamaku (*Cyathea medullaris*) and silverfern (*Cyathea dealbata*). Several sedges were present including *Carex dipsacea* and the weedy *Carex divulsa*.

We emerged from the swamp forest remnant at the site of a restiad re-vegetation trial and admired the vigorous patch of *Sporadanthus ferrugineus* while eating lunch. After lunch we looked for wirerush (*Empodisma robustum*) which had also been part of the re-vegetation trial but it appeared to have been out-competed by *Sporadanthus ferrugineus.* From here we moved to the lake edge to admire the healthy sphagnum moss beds interlaced with the bright red tendrils of the carnivorous *Drosera binata* and the

dark pink fruit of *Lobelia angulata.* Within the lake the most prevalent species was kuta (*Eleocharis sphacelata*), New Zealand's deepest growing emergent macrophyte. It formed large beds that fringed the lake edge. Other species present on the lake margin included swamp millet (*Isachne globosa*), *Carex secta, C. virgata, C. demissa, Macherina rubiginosa, M. teretifolia, Schoenus maschilinus,* and manuka.

We ended the trip by walking along the grass track next to the perimeter fence and admiring its construction. We look forward to returning again when all animal pests have been removed.

Rotopiko East Species List

Compiled on 8 March 2014 by Paula Reeves, Susan Emmitt, Thomas Emmitt, Peter Maddison, John Dodson (Waikato Botanical Society).

*** Introduced species**

Gymnosperms

Dacrycarpus dacrydioides	kahikatea
Podocarpus totara var. *totara*	totara
Prumnopitys taxifolia	mataī

Monocot. trees and shrubs

Cordyline australis	tī kōuka, cabbage tree
Rhopalostylis sapida	nīkau

Dicot. trees and shrubs

Alectryon excelsus subsp. *excelsus*	tītoki
Beilschmiedia tawa	tawa
*Berberis glaucocarpa**	barberry
Coprosma ×*cunninghamii* (*Coprosma propinqua* × *C. robusta*)	
Coprosma lucida	karamū
Coprosma propinqua var. *propinqua*	mingimingi
Coprosma robusta	karamū,
Coprosma rotundifolia	
Coprosma tenuicaulis	hukihuki, swamp coprosma
Corynocarpus laevigatus	karaka
*Crataegus monogyna**	hawthorn
*Datura ferox**	long-spined thorn apple
Entelea arborescens	whau
*Fraxinus excelsior**	ash
Hebe stricta var. *stricta*	koromiko
Hedycarya arborea	porokaiwhiri; pigeonwood
Hoheria sp.	houhere, lacebark
Kunzea aff. *ericoides* (b)	kānuka
Laurelia novae-zelandiae	pukatea
Leptospermum scoparium agg.	mānuka
*Leycesteria formosa**	Himalayan honeysuckle
*Ligustrum sinense**	Chinese privet
Macropiper excelsum subsp. *excelsum*	kawakawa
Melicope simplex	poataniwha
Melicytus ramiflorus subsp. *ramiflorus*	māhoe
Myrsine australis	māpou
Pennantia corymbosa	kaikōmako
Pittosporum crassifolium	karo
Pittosporum eugenioides	tarata; lemonwood
Pittosporum umbellatum	haekaro
Plagianthus regius subsp. *regius*	ribbonwood, mānatu
Pseudopanax crassifolius	horoeka, lancewood
*Salix cinerea**	grey willow
Schefflera digitata	patē
Syzygium maire	maire tawake, swamp maire

Monocot. Lianes

Freycinetia banksii	kiekie
Ripogonum scandens	supplejack, kareao

Dicot. Lianes

Calystegia sepium subsp. *roseata*	pōhue
Metrosideros diffusa	rātā
Metrosideros perforata	aka
Muehlenbeckia australis	puka
*Rubus fruticosus** agg.	blackberry

Ferns

Asplenium oblongifolium	huruhuru whenua
Asplenium polyodon	petako
*Azolla pinnata**	ferny azolla
Blechnum filiforme	pānako
Blechnum minus	swamp kiokio
Cyathea dealbata	ponga, silver fern
Cyathea medullaris	mamaku
Cyathea smithii	kātote, soft tree fern
Deparia petersenii subsp. *congrua*	

Dicksonia squarrosa whekī
Diplazium australe
Doodia australis pukupuku
Hypolepis ambigua
Hypolepis distans
Microsorum scandens mokimoki
Pteridium esculentum rārahu, bracken
Pteris tremula turawera, shaking brake
Pyrrosia eleagnifolia leather-leaf fern

Grasses

*Anthoxanthum odoratum** sweet vernal
Austroderia fulvida toetoe
*Dactylis glomerata** cocksfoot
*Echinochloa crus-galli** barnyard grass
*Holcus lanatus** Yorkshire fog
Isachne globosa swamp millet
Lachnagrostis filiformis
*Lolium perenne** rye grass
Microlaena stipoides pātītī, meadow rice grass
*Paspalum dilatatum** paspalum

Sedges

*Carex demissa** yellow sedge
Carex dipsacea
*Carex divulsa** grey sedge
Carex secta pūrei,
Carex virgata pūrei
Cyperus ustulatus f. *ustulatus* toetoe upoko-tangata
Eleocharis acuta spike sedge
Eleocharis sphacelata giant spike sedge, ngāwhā, kuta
Isolepis cernua
Machaerina articulata
Machaerina rubiginosa
Machaerina tenax
Machaerina teretifolia
Schoenus maschalinus

Rushes

*Juncus effusus** soft rush
Juncus planifolius
Juncus prismatocarpus
Sporadanthus ferrugineus giant cane rush

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

Astelia fragrans kakaha
*Iris foetidissima** stinking iris
Phormium tenax harakeke, flax
Typha orientalis raupō
*Zantedeschia aethiopica** arum lily

Composite herbs

*Bidens frondosa** beggars'tics
*Cirsium vulgare** Scotch thistle
*Conyza sumatrensis** broad-leaved fleabane
*Crepis capillaris** hawksbeard
*Erechtites hieraciifolia** American fireweed
*Helminthotheca echioides** oxtongue
*Jacobaea vulgaris** ragwort
*Lactuca serriola** prickly lettuce
*Lapsana communis** nipplewort
*Leontodon taraxacoides** hawkbit
*Mycelis muralis** wall lettuce
*Senecio bipinnatisectus** Australian fireweed
*Sonchus asper** prickly puha
*Sonchus oleraceus** puha, sow thistle
*Taraxacum officinale** dandelion

Dicot. herbs (other than composites)

Centella uniflora
*Chenopodium album** fathen
Drosera binata sundew, wahu
*Galium palustre** marsh bedstraw
Hydrocotyle pterocarpa
Lobelia angulata pānakenake
*Lotus pedunculatus** lotus
*Lycopus europaeus** gypsy wort
Mentha pulegium penny royal
Myosotis laxa subsp. *caespitosa** water forget-me-not
*Myosotis sylvatica** garden forget-me-not
Nertera sp.
*Persicaria hydropiper** water pepper
*Phytolacca americana** pokeweed
*Phytolacca octandra** inkweed
*Plantago australis** swamp plantain
*Plantago lanceolata** narrow-leaved plantain
*Prunella vulgaris** selfheal
*Ranunculus flammula** water buttercup
*Ranunculus repens** spearwort
*Ranunculus sardous** hairy buttercup
*Rumex acetosella** sheep's sorrel
*Rumex obtusifolius** broad-leaved dock
Solanum nodiflorum Small Flowered nightshade

*Solanum pseudocapsicum**	Jerusaleum cherry	**Non-vascular species**	
*Trifolium pratense**	red clover		
*Trifolium repens**	white clover	*Chrysothrix candelaris*	gold dust lichen
		Sphagnum cristatum	

Port Waikato field trip 12 April 2014

By Paula Reeves

Thirteen botanical society members and two from the Port Waikato Beach Care group gathered at Port Waikato to botanize the dunes at the mouth of the Waikato River. Port Waikato is known for its long sweeping surf beach, acres of sand dunes and calm estuary waters surrounding the wide mouth of the Waikato River. The large sandspit and vegetated dunes form part of one of only a few fairly intact coastal dune systems in the Waikato Region, unfortunately original examples of this type of ecosystem are now very rare.

Spinifex dominating the dunes at the far end of the sandspit.

We started botanizing at the far end of the dunes as they are more recent and consequently have fewer exotic species. The dunes at this end were dominated by the very hardy native sand grass, spinifex (*Spinifex sericeus*). Tauhinu (*Ozothamnus leptophyllus*), sand wind grass (*Lachnagrostis billardierei* subsp. *billardierei*) and knobby clubrush (*Ficinia nodosa*) were also present amongst the spinifex dunes.

As we headed towards the estuary we encountered a greater diversity of species although many were exotic grasses and annuals such as pampas (*Cortaderia selloana*), harestail (*Lagarus ovatus*) and marram (*Ammophila arenaria*). Out came the hand lenses as we tried to see the forked hairs that differentiate hawkbit (*Leontodon taraxicoides*) from catsear (*Hypocheris radicata*) and hawksbeard (*Crepis capillaris*). After lunch we walked along the estuarine edge before heading further inland into the older, more established dunes

We stopped for lunch on the estuarine edge of the dunes and combined a spot of birdwatching with lunch. The sandspit is known for its birdlife and Karen Opie from Port Waikato Beach Care filled us in on the birds that frequent the dunes and the work they have been doing to protect them. One of the most exciting recent events for them was a visit from several fairy tern whose current population is as few as 40 birds in New Zealand. The local beachcare group is very active at Port Waikato; regularly involved in planting and clean-up days to restore the biodiversity and natural character of the dunes and sandspit. These dunes are far more modified, suffering from the triple threats of weeds, vehicles and fire. Pampas, marram, lupin (*Lupinus*

arboreus) and fennel (*Foeniculum vulgare*) were all common along with scattered pines (*Pinus radiata* and *P. pinaster*). There were also several dune slacks in this area and these were notably hard hit by vehicle tracks. Oioi (*Apodasmia similis*), sea rush (*Juncus krausii* var. *australiensis*) and remuremu (*Sellieria radicans*) were common in the dune slacks along with the highly invasive saltwater paspalum (*Paspalum vaginatum*).

Two threatened species were encountered during the day, saltbush (*Atriplex australasica*) and pingao (*Ficinia spiralis*). Both species are classified as 'At Risk'.

Our group heading out for the day. Karen Opie from Port Waikato Beach Care is on the far right.

Species list

INDIGENOUS SPECIES

Dicot. trees and shrubs

Myrsine australis	mapou
Ozothamnus leptophyllus	tauhinu
Pseudopanax lessonii	houpara

Dicot. Lianes

Calystegia soldanella	panahi, shore bindweed
Calystegia sepium subsp. *roseata*	pohue
Muehlenbeckia complexa	pohuehue

Grasses

Lachnagrostis billardierei	perehia; sand wind grass
Spinifex sericeus	kowhangatara, spinifex

Sedges

Carex pumila	
Ficinia nodosa	wiwi
Ficinia spiralis	ping **At risk – Declining**

Rushes

Apodasmia similis	oioi
Juncus kraussii var. *australiensis*	wi, sea rush

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

Phormium tenax	harakeke, flax

Dicot. herbs (other than composites)

Atriplex australasica	saltbush **At risk – Naturally uncommon**
Sarcocornia quinqueflora subsp. *quinqueflora*	glasswort
Samolus repens var. *repens*	sea primrose
Selliera radicans	remuremu

NATURALISED AND EXOTIC SPECIES

Gymnosperms

Pinus pinaster	cluster pine
Pinus radiata	radiata pine

Dicot. trees and shrubs

Banskia integrifolia	
Lupinus arboreus	lupin

Monocot lianes

Asparagus asparagoides	smilax

Dicot. Lianes

Ipomoea indica	blue morning glory

Lonicera japonica	Japanese honeysuckle

Grasses

Ammophila arenaria	marram
Cenchrus clandestinus	kikuyu grass
Cortaderia selloana	pampas
Cynodon dactylon	Indian doab
Holcus lanatus	Yorkshire fog
Lagurus ovatus	harestail
Lolium perenne	rye grass
Paspalum vaginatum	saltwater paspalum
Stenotaphrum secundatum	buffalo grass

Sedges

Cyperus congestus	purple umbrella sedge

Rushes

Juncus articulatus	jointed rush

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

Agapanthus praecox subsp. *orientalis*	agapanthus
Lilium formosanum	Formosan lily
Zantedeschia aethiopica cv. 'green goddess'	green goddess

Composite herbs

Conyza sumatrensis	broad-leaved fleabane
Crepis capillaris	hawksbeard
Gamochaeta coarctata	purple cudweed
Hypochaeris radicata	catsear
Leontodon taraxacoides	hawkbit
Senecio skirrhodon	gravel groundsel

Dicot. herbs (other than composites)

Alternanthera philoxeroides	alligator weed
Anagallis arvensis	scarleT pimpernel
Centaurium erythraea	centaury
Foeniculum vulgare	fennel
Gazania rigens	gazania
Lotus pedunculatus	lotus
Lotus suaveolens	hairy BirdsfooT trefoil
Lycopus europaeus	gypsy wort
Parentucellia viscosa	tarweed
Trifolium repens	white clover

Rock Peak Bot Soc Trip 10th May 2014 – The Endemic Hebe scopulorum

Having chosen yet another brilliant day of weather it was time to set off on another intrepid journey to visit Rock Peak, home of the endemic Hebe scopulorum and an area that does not get visited much by people outside of the Department of Conservation.

Hebe scopulorum is endemic to the Awaroa valley and is restricted to several limetone outcrops in the area. Only two of these sites are protected on public conservation land, and one of those sites is Rock Peak.

Hebe scopulorum

After a quick debate on the value of species lists we started our walk, the first half of which was across farmland, where we watched a dabchick sitting close by on a dam by the farm track.

At the start of our walk we started level with the top of rock peak and could see it in the distance. The walk through the farmland took us to the bottom of the hill before we had to start the climb to the top of Rock Peak.

The walk to the top took us through some very nice recovering forest. In places where ten years ago you could walk unimpeded along ridge tops you now have to push through regenerating quintina (*Quintinia serrata*) and Hall's totara (*Podocarpus cunninghamii*). The base of Rock Peak once consisted of large grassy areas that are now dominated by *Macherina sinclarii*, *Phormium cookianum* and *Libertia perigrinans*. Ongoing goat control in the region has allowed the undergrowth to flourish.

Once at the top we had a good explore around the base of Rock Peak and some of the more adventurous climbed right to the top and were rewarded with views of Kawhia harbour and Pirongia in the distance. Plants found at the top of Rock Peak that were missing on our way up included *Psedopanax laetus* and *Pittosporum huttoniatum*. Notably missing were the ferns usually associated with limestone in this area such as *Asplenium lyallii*.

A break at the top of Rock Peak

Plenty of *Hebe scopulorum* was noted around the outcrop and was looking very healthy.

Cuttings were taken in an attempt to grow them in the threatened plant garden at Waikato University.

1. Rock Peak (Hauturu East SR) from Otutaki Stream junction fence and
2. Rock Peak

Author(s): G Jane & G Donaghy **Date:** 10/5/2014

Psilopsids, Lycopods & Quillworts

_x		*Lycopodium volubile*	waewae-koukou; climbing clubmoss
_x		*Phlegmariurus varius (Huperzia, Lycopodium)*	hanging clubmoss; iwituna

Gymnosperm trees and shrubs

_x		*Dacrydium cupressinum*	rimu, red pine
xx		*Podocarpus cunninghamii (P. hallii)*	Hall's totara; thin bark totara
_x		*Prumnopitys ferruginea (Podocarpus ferrugineus, Stachypitys)*	miro; brown pine

Monocotyledonous trees and shrubs

xx		*Cordyline banksii*	forest cabbage tree; ti ngahere

Dicotyledonous trees and shrubs

_x		*Alseuosmia macrophylla*	toropapa; shrubby honeysuckle
_x		*Aristotelia serrata*	wineberry; makomako
_x		*Beilschmiedia tawa*	tawa
xx		*Brachyglottis repanda*	rangiora; bushmans friend
_x		*Carpodetus serratus*	putaputaweta; marbleleaf
xx		*Coprosma grandifolia (C. australis)*	raurekau; kanono; mamono
_x		*Coprosma lucida*	karamu; shining karamu
_x		*Coprosma rhamnoides agg (C. polymorpha)*	thorny coprosma
xx		*Coprosma robusta*	karamu
_x		*Elaeocarpus dentatus*	hinau
_x	*	*Erica lusitanica*	Spanish heath
_x		*Fuchsia excorticata*	fuchsia; kotukutuku
xx		*Geniostoma ligustrifolium var. ligustrifolium (G. rupestre)*	hangehange; privet
xx		*Griselinia littoralis*	broadleaf; kapuka
xx		*Griselinia lucida*	puka
xx		*Hebe corriganii*	purple-flowered hebe
x_	s	*Hebe scopulorum*	
xx		*Hebe stricta var. stricta ss*	koromiko
xx		*Hedycarya arborea*	pigeonwood; porokaiwhiri
xx		*Knightia excelsa*	rewarewa; NZ honeysuckle

_x	*Laurelia novae-zelandiae*	pukatea
_x	*Leptospermum scoparium var. scoparium*	manuka; red teatree
xx	*Leucopogon fasciculatus (Styphelia; Cyathodes fasciculata)*	mingimingi; kaikaitau
_x	*Litsea calicaris*	mangeo
xx	*Melicytus ramiflorus*	mahoe
xx	*Myrsine australis*	red matipo; mapou
_x	*Olearia rani var. colorata*	heketara
x_	*Pittosporum huttonianum*	
_x	*Pseudopanax arboreus agg. (Neopanax arboreum, N. kermadecensis)*	five finger; puhou; whaupaku
xx	Pseudopanax crassifolius	lancewood; horoeka
x_	*Pseudopanax laetus (Neopanax laetum)*	
_x	*Pseudowintera axillaris*	horopito
xx	*Quintinia serrata agg (Q. acutifolia; Q. elliptica)*	Westland quintinia; tawheowheo
_x	*Raukaua edgerleyi (Pseudopanax)*	raukawa
xx	*Rhabdothamnus solandri*	taurepo; waiutua; kaikai aruhe
_x	Schefflera digitata	pate; patae; kotete
_x	*Weinmannia racemosa*	kamahi; towai; tawhero

Monocotyledonous lianes

xx	*Freycinetia banksii (F. baueriana var.)*	kiekie

Dicotyledonous lianes and related trailing plants

xx	*Clematis paniculata*	clematis; puawhananga
_x	*Metrosideros colensoi*	
_x	*Metrosideros diffusa*	white climbing rata; akatea
xx	*Metrosideros fulgens*	scarlet rata; winter rata
xx	*Metrosideros perforata*	aka; small white rata; torotoro
_x	*Parsonsia heterophylla*	maori jasmine; kaihu; kaiwhiria
xx	*Rubus cissoides*	bush lawyer; tataramoa

Psilopsids, Lycopods & Quillworts

_x	*Lycopodium volubile*	waewae-koukou; climbing clubmoss

Ferns

xx	*Adiantum cunninghamii*	maiden hair fern
_x	*Asplenium bulbiferum*	hen and chickens fern; moku
_x	*Asplenium flaccidum ss*	hanging spleenwort; makawe

_x	*Asplenium lamprophyllum*	
xx	*Asplenium lyallii (A. anomodum)*	
_x	*Asplenium oblongifolium (A. lucidum)*	shining spleenwort
_x	*Asplenium polyodon (A. falcatum)*	sickle spleenwort; petako
xx	*Blechnum chambersii (B. lanceolatum)*	nini; lance fern
xx	*Blechnum colensoi (B. patersonii)*	peretao; paretao
xx	*Blechnum discolor*	crown fern; piupiu; petipeti
_x	*Blechnum filiforme*	Climbing hard fern; thread fern
_x	*Blechnum fluviatile*	kiwakiwa; kiwikiwi
xx	*Blechnum novae-zelandiae (pp B. capense; "black spot lowland")*	kiokio
xx	*Cardiomanes reniforme (Trichomanes, Hymenopyhllum nephrophyllum)*	kidney fern; raurenga
_x	*Cyathea dealbata (Alsophila tricolor)*	ponga; silver fern
_x	*Cyathea medullaris (Sphaeropteris)*	mamaku; korau; black tree fern
_x	*Cyathea smithii (Alsophila)*	soft-leaved tree fern; katote
_x	*Dicksonia squarrosa*	wheki; harsh tree fern
_x	*Hymenophyllum demissum (Mecodium)*	piripiri; irirangi
xx	*Hymenophyllum dilatatum (Mecodium)*	lop-sided filmy fern
_x	*Hymenophyllum flabellatum (Mecodium)*	fan fern
_x	*Hymenophyllum flexuosum (Mecodium)*	
_x	*Hymenophyllum frankliniae (H. ferrugineum)*	
xx	*Hymenophyllum multifidum (Meringium)*	
_x	*Hymenophyllum rarum (Mecodium)*	wire-stemmed filmy fern
_x	*Hymenophyllum revolutum*	
_x	*Hymenophyllum sanguinolentum*	blood-scented filmy fern
_x	*Lastreopsis glabella (Ctenitis)*	felted fern
_x	*Lastreopsis hispida (Rumohra)*	hairy fern, hairy legs
_x	*Leptopteris hymenophylloides (Todea)*	single crepe fern; heruheru
_x	*Lygodium articulatum*	mangemange; bushmans mattress
xx	*Microsorum pustulatum ssp. pustulatum (Phymatosorus M. diversifolium)*	hounds tongue; kowaowao
xx	*Microsorum scandens (Phymatosorus, Phymatodes)*	mokimoki; fragrant fern
_x	*Notogrammitis billardierei (Grammitis)*	common strap fern
xx	*Notogrammitis heterophylla (Ctenopteris heterophylla)*	
xx	*Paesia scaberula*	scented fern; matata; ring fern
xx	*Pneumatopteris pennigera (Thelypteris; Cyclosorus)*	gully fern; pakau; pakauroharoha
xx	*Pteridium esculentum (P. aquilinum var. esculentum)*	bracken; rauaruhe
xx	*Pteris macilenta*	sweet fern
_x	*Pyrrosia eleagnifolia (P. serpens)*	leather-leaf fern
_x	*Rumohra adiantiformis*	butcher's fern
xx	*Sticherus cunninghamii (Gleichenia)*	umbrella fern; kotuku; tapuwae
xx	*Tmesipteris elongata (pp T. tannensis)*	
_x	*Tmesipteris lanceolata (pp T. tannensis)*	
_x	*Tmesipteris tannensis*	chain fern; fork fern
_x	*Trichomanes elongatum (Selenodesmium)*	bristle fern

_x		*Trichomanes venosum*	veined bristle fern

Orchids

xx		*Earina autumnalis*	Easter orchid; raupeka
xx		*Earina mucronata*	spring orchid; peka-a-waka
_x		*Nematoceras trilobum*	
_x		*Winika cunninghamii (Dendrobium)*	bamboo orchid

Grasses

_x	*	*Agrostis capillaris (A. tenuis)*	browntop
_x	*	*Anthoxanthum odoratum*	sweet vernal
xx	*	*Holcus lanatus*	Yorkshire fog
_x		*Microlaena avenacea (Ehrharta diplax)*	bush rice grass; oat grass
_x		*Poa anceps ssp. anceps*	coastal poa
_x		*Rytidosperma gracile (Notodanthonia semiannularis var; Danthonia)*	forest fairy grass
xx	*	*Rytidosperma racemosum (Notodanthonia)*	
_x	*	*Schedonorus arundinaceus (S. phoenix, Festuca)*	tall fescue

Sedges

xx		*Carex flagellifera (C. lucida)*	
_x		*Gahnia setifolia*	
xx		*Machaerina sinclairii (Vincentia)*	broad-leaved sedge
_x		*Uncinia uncinata*	watu
_x		*Uncinia zotovii*	

Remaining Monocotyledonous herbs

_x		*Astelia solandri*	kowharawhara
xx		*Astelia trinervia*	
_x		*Collospermum hastatum*	kahakaha
_x		*Collospermum microspermum*	
_x		*Dianella nigra*	blueberry; turutu
xx		*Libertia ixioides*	mikoikoi; native iris
xx		*Phormium cookianum ssp. cookianum (P. colensoi)*	mountain flax; whaririki

Daisy-like herbs

_x	*	*Cirsium palustre*	marsh thistle
xx	*	*Cirsium vulgare (C. lanceolatum)*	Scotch thistle
xx	*	*Conyza sumatrensis (C. albida, C. floribunda; C. canadensis auct.; Erigeron)*	

xx	*	*Crepis capillaris*	hawkesbeard
_x		*Euchiton involucratus*	creeping cudweed
xx	*	*Gamochaeta coarctata (G. spicata, Gnaphalium)*	
xx	*	*Hypochaeris radicata (Hypochoeris)*	catsear
_x		*Lagenifera pumila (Lagenifera)*	
xx	*	*Mycelis muralis*	wall lettuce
xx		*Pseudognaphalium luteoalbum agg (G. luteoalbum var; P. "ordinary")*	Jersey cudweed
_x		*Senecio minimus (Erechtites minima)*	fireweed
_x	*	*Sonchus oleraceus*	sow thistle; puha; puka

Dicotyledonous herbs other than Daisies

x_		*Acaena anserinifolia agg (A. pusilla; A. viridior)*	bidibid
xx	*	*Centaurium erythraea (C. umbellatum)*	centary
xx		*Centella uniflora*	
xx		*Elatostema rugosum*	parataniwha
xx		*Galium propinquum*	
xx	*	*Geranium robertianum*	herb Robert
_x		*Hydrocotyle moschata var. moschata (H. sibthorpioides; H. "small leaves")*	
xx		*Lobelia angulata (Pratia)*	panakenake
_x	*	*Lotus pedunculatus (L. major; L. uliginosus)*	lotus major
xx		*Nertera depressa agg (N. cunninghamii; Coprosma)*	common nertera
xx	*	*Plantago australis (P. media auct.; P. hirtella)*	swamp plantain
xx	*	*Plantago lanceolata*	ribwort; narrow-leaved plantain
_x	*	*Prunella vulgaris*	selfheal
xx		*Ranunculus reflexus (pp R. hirtus)*	maruru; hairy buttercup

first column rock itself from the base upwards
second column route to the rock
* adventive
() signify and older name perhaps used in the Flora vols 1-4 or other sources since 1961
s threat category: naturally uncommon, sparse

Wairere Falls Trip – 16th June 2014

By Kerry Jones

It was a fine day when ten of us we met up on the Western side of the Kaimais, at the end of Goodwin Road. We were planning to mainly concentrate on fern species on our climb up to the top of Wairere Falls. The falls are a spectacular site falling 153 metres from what appears to be the top of the range. The car park is at 40 metres in altitude. We set off with Graeme Jane's species list.

Not far up the track we stopped off to look at the hymenophyllums growing on a sunny rock *Hymenophyllum dilatatum* and *Hymenophyllum scabrum*. Most of the first part of the walk was under a canopy of totara (*Podcarpus totara*). Other ferns encountered on this first section were *Loxogramme dictyopteris, Microsorum pustulatum, Microsorum scandens, Asplenium bulbiferum, Asplenium lamprophyllum*, silver fern (*Cyathea dealbata*), *Arthropteris tenella, Pallaea rotundifolia* and *Lygodium articulatum*. We also saw a colony of earth star fungus.

We passed over the 80 metre altitude mark and started to encounter more tawa (*Beilschmiedia tawa*) amongst the totara canopy. Just before we crossed the bridge we stopped to look at the wharangi (*Melicope simplex*) and ramarama (*Lophomyrtus bullata*). Out on the bridge we could see large lemon wood (*Pittosporum eugenioides*) on the stream edge. Into the bush again we came across *Alseuosmia macrophylla* and some flowering *Pterostylis alobula.*

A bit further along we stopped at an overhanging bank to look at *Hymenophyllum sanguinolentum*.

At the 100 metre altitude line we started to see rimu (*Dacrycarpus cupressinum*) in amongst the totara canopy. The track then passed through a small cleared area next to the fence line. Along the side of this clearing we saw the ferns kiokio (*Blechnum novae-zelandiae*) and rasp fern *(Doodia australis*). There was also ink berry (*Dianella nigra*) with some akeake (*Dodonaea viscosa*), *Rhabdothamnus solandri* and kamahi (*Weinmannia racemosa*) There were also some weeds along the bush edge here: blackberry (*Rubus fruticosus agg*.) and Spanish heath (*Erica lusitanica*)

Earth star fungus (Geastrum sp)

Pterostylis alobula

At the 150 metre altitude line the canopy forest was comprised of kanuka (*Kunzea ericoides*) and totara with some silver fern. The ferns at this point were ring fern (*Paesia scaberula), Pneumatopteris pennigera,* maidenhair fern (*Adiantum cunninghamii)* and *Laestreoptis glabella*.

Further along there was a small waterfall in a damp gully. Here we found pate (*Schefflera digitata*) and *Blechnum chambersii*.

At one point on the true right had side of the stream we came up against a rock wall where

we saw *Perperomia urvilleana* and *Earina autumnalis* growing.

We crossed the river again before coming to the steps. At the top of the steps in a sunny spot we saw poroporo (*Solanum aviculare*)
We stopped for a short break break at the lookout.

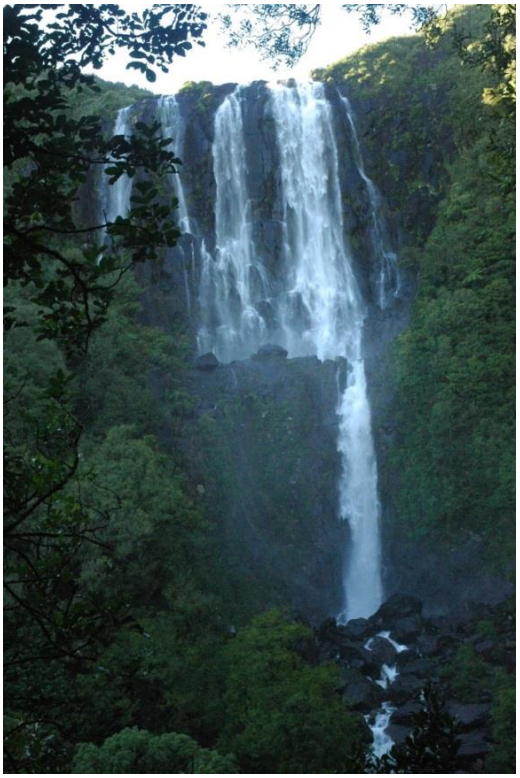
Around the 300m altitude line kohekohe (*Dysoxylum spectabile*) was became the dominant canopy species. The ferns here were *Leptopteris hymenophylloides* and *Blechnum fluviatile*. We also saw here the weed Himalayan fairy grass (*Miscanthus nepalensis*).

At about 350 metres altitude we saw *Brachyglottis kirkii*.

About an hour after leaving the lookout we reached the summit (420 metres). We were now in tawa forest (*Beilschmiedia tawa*). The ferns around here were *Blechnum discolour*, *Rumohra adiantiformis*, *Tmesipteris lanceolata* (on mamaku*)*, gully fern (*Cyathea cunninghamii)* and bristle fern (*Trichomanes elongatum*).

Further down we came out on the Wairere Stream where we found a young plum tree. Obviously the result of a discarded plum stone from someone's lunch. From here the track followed the stream until it disappeared off the cliff. From the top there were great views of Matamata, Maungatautari, Te Tapui, Pirongia, Karioi and the Hakarimata Range.

On the short track to the falls we saw *Coprosma lucida,* kanano *(Coprosma grandifolia),* mahoe (*Melicytus ramiflorus*), wineberry (*Aristotelia serrata*), kiokio *Blechnum novae-zelandiae,* rangiora (*Brachyglottis repanda*), flax (*Phormium tenax*), pate (*Schefflera digitata*) and *Dracophyllum latifoilum.*


Wairere Falls – 153 metres high.


Dracophyllum latifoilum

After lunch we still had a bit of time up our sleeves so we headed further east. The track quality wasn't as good as before. Some of the party got hung up on bush lawyer (*Rubus cissiodes*).
The forest here was tawa with some rimu, miro (*Prumnopitys ferruginea*), Halls totara (*Podocarpus hallii*) and tawari (*Ixerba brexioides*). New fern species started to appear - these were *Histiopteris incisa , Hymenophyllum rarum* and *Bechnum fraseri.*

We also saw Dawsonia superba – the world's largest moss.

It was then that we had the find of the day. A debate started on a small hymenophyllum. It turned out to be *Hymenophyllum minimum* with toothed lamina and terminal sori. This wasn't on Graeme's species list.

Hymenophyllum minimum site

With the hymenophyllum identification agreed on we decided it was time to head back down. It was about 3:45 by the time we got down to the carpark. A good time to be getting out of the bush in the middle of winter.

Just by the car park on the track to the toilet we spotted some Jerusalem cherry (*Solanum pseudocapsicum*). This plant has bright orange / red round fruits which are poisonous.

Solanum pseudocapsicum

Thanks to those that turn up to make the day a success, especially Tony who came all the way from Taupo. Thanks to Yanbin who gave me her photos from the day. I normally have the camera going all the time but this day I came home with only a few photos.

Species list for Wairere Falls

Author(G Jane 3/09/2000
Updated 21.4.04, 20.3.10

Ferns

Adiantum cunninghamiima	maiden hair fern
Adiantum fulvum	
Adiantum viridescens	
Arthropteris tenella	jointed fern
Asplenium bulbiferum	hen and chickens fern; moku
Asplenium flaccidum	hanging spleenwort; makawe
Asplenium lamprophyllum	
Asplenium oblongifolium	shining spleenwort
Asplenium polyodon	sickle spleenwort; petako
Blechnum chambersii	
Blechnum discolor	crown fern; piupiu; petipeti
Blechnum filiforme	Climbing hard fern; thread fern
Blechnum fluviatile	kiwakiwa; kiwikiwi
Blechnum fraseri	
Blechnum nigrum	black fern
Blechnum novae-zelandiae	kiokio
Cardiomanes reniforme	kidney fern; raurenga
Cyathea cunninghamii	slender tree fern; gully tree fern
Cyathea dealbata	ponga; silver fern
Cyathea medullaris	mamaku; korau; black tree fern
Cyathea smithii	soft-leaved tree fern; katote
Deparia petersenii ssp. congrua	
Dicksonia lanata var. lanata	tuokura; stumpy tree fern

Dicksonia squarrosa	wheki; harsh tree fern
Diplazium australe	
Doodia australis	pukupuku; rasp fern
Histiopteris incisa	water fern
Hymenophyllum atrovirens	
Hymenophyllum demissum	piripiri; irirangi
Hymenophyllum dilatatum	lop-sided filmy fern
Hymenophyllum flabellatum	fan fern
Hymenophyllum flexuosum	
Hymenophyllum frankliniae	
Hymenophyllum multifidum	
Hymenophyllum rarum	wire-stemmed filmy fern
Hymenophyllum revolutum	
Hymenophyllum sanguinolentum	blood-scented filmy fern
Hymenophyllum scabrum	coarse-haired filmy fern
Hymenophyllum villosum	droop tipped filmy fern
Hypolepis ambigua	
Lastreopsis glabella	felted fern
Lastreopsis hispida	hairy fern, hairy legs
Leptopteris hymenophylloides	single crepe fern; heruheru
Lindsaea trichomanoides	
Loxogramme dictyopteris	sexy fern
Lygodium articulatum	mangemange; bushmans mattress
Microsorum pustulatum ssp. pustulatum	hounds tongue; kowaowao
Microsorum scandens	mokimoki; fragrant fern
Notogrammitis heterophylla	
Paesia scaberula	scented fern; matata; ring fern
Pellaea rotundifolia	tarawera; button fern
Pneumatopteris pennigera	gully fern; pakau; pakauroharoha
Polystichum wawranum	common shield fern; pikopiko

	Pteridium esculentum	
	Pteris macilenta	sweet fern
	Pteris tremula	turawera
	Pyrrosia eleagnifolia	leather-leaf fern
	Rumohra adiantiformis	butcher's fern
	Sticherus cunninghamii	umbrella fern; kotuku; tapuwae
	Tmesipteris elongata	
	Tmesipteris lanceolata	
	Trichomanes endlicherianum	rock mat fern
	Trichomanes venosum	veined bristle fern

Gymno sperm trees and shrubs

	Dacrycarpus dacrydioides	kahikatea, white pine
	Dacrydium cupressinum	rimu, red pine
*	Pinus pinaster	maritime pine
*	Pinus radiata	Monterey pine; radiata
	Podocarpus cunninghamii	
	Podocarpus totara var. totara	totara
	Prumnopitys ferruginea	miro; brown pine
	Prumnopitys taxifolia	matai; black pine

Psilopsids, Lycopods & Quillworts

	Lycopodium deuterodensum	puakarimu
	Lycopodium volubile	waewae-koukou; climbing clubmoss

Dicotyledonous trees and shrubs

*	Acacia dealbata	silver wattle
	Alectryon excelsus ssp. excelsus	titoki
	Alseuosmia macrophylla	toropapa; shrubby honeysuckle
	Aristotelia serrata	wineberry; makomako
	Beilschmiedia tawa	tawa
*	Berberis glaucocarpa	barberry
	Brachyglottis kirkii var. kirkii	Kirks daisy
	Brachyglottis repanda	rangiora; bushmans friend
	Carpodetus serratus	putaputaweta; marbleleaf
	Coprosma areolata	thin leaved coprosma
	Coprosma grandifolia	raurekau; kanono; mamono
	Coprosma lucida	karamu; shining karamu
	Coprosma robusta	karamu
	Coprosma rotundifolia	round-leaved coprosma
	Corynocarpus laevigatus	karaka; kopi
	Dracophyllum traversii	neinei
	Dysoxylum spectabile	kohekohe
	Elaeocarpus dentatus	hinau
*	Erica lusitanica	Spanish heath
	Fuchsia excorticata	fuchsia; kotukutuku
	Gaultheria antipoda	snowberry; tawiniwini
	Geniostoma ligustrifolium var. ligustrifolium	hangehange; privet
	Griselinia lucida	puka
*	Hakea salicifolia	willow-leaved hakea
	Hebe stricta var. stricta	koromiko
	Hedycarya arborea	pigeonwood; porokaiwhiri
	Ixerba brexioides	tawari

	Knightia excelsa	rewarewa; NZ honeysuckle
	Kunzea ericoides var. ericoides	kanuka; white teatree
	Laurelia novae-zelandiae	pukatea
	Leucopogon fasciculatus	mingimingi; kaikaitau
*	Leycesteria formosa	himalayan honeysuckle
*	Ligustrum sinense	Chinese privet
	Litsea calicaris	mangeo
	Lophomyrtus bullata	ramarama
	Melicope mantellii X	
	Melicope simplex	poataniwha
	Melicope ternata	wharangi
	Melicytus ramiflorus	mahoe
	Mida salicifolia	willow-leaved maire
	Myrsine australis	
		red matipo; mapou
	Nestegis cunninghamii	black maire
	Olearia rani var. colorata	heketara
	Pimelea longifolia	taranga; long-leaved pimelia
	Piper excelsum ssp excelsum	
	Pittosporum eugenioides	lemonwood; tarata
	Pseudopanax arboreus	five finger; puhou; whaupaku
	Pseudopanax crassifolius	lancewood; horoeka
	Pseudowintera axillaris	horopito
	Pseudowintera colorata	pepperwood; mountain horopito
	Quintinia serrata	Westland quintinia; tawheowheo
	Raukaua anomalus	whauwhaupaku
	Raukaua edgerleyi	raukawa
	Raukaua simplex	haumakoroa
	Rhabdothamnus solandri	taurepo; waiutua; kaikai aruhe
	Schefflera digitata	pate; patae; kotete

	Solanum aviculare f. aviculare	poroporo
	Solanum laciniatum	poroporo
*	Solanum pseudocapsicum	Jerusalem cherry
	Streblus heterophyllus	turepo; milk tree
	Weinmannia racemosa	kamahi; towai; tawhero
Dicot yledonous lianes and related trailing plants		
	Clematis cunninghamii	
	Clematis paniculata	clematis; puawhananga
*	Lonicera japonica	Japanese honeysuckle
	Metrosideros diffusa	white climbing rata; akatea
	Metrosideros fulgens	scarlet rata; winter rata
	Metrosideros perforata	aka; small white rata; torotoro
	Muehlenbeckia australis	poheuheu
	Muehlenbeckia complexa	pohuehue; wire vine
	Parsonsia heterophylla	maori jasmine; kaihu; kaiwhiria
	Rubus cissoides	bush lawyer; tataramoa
*	Rubus fruticosus	blackberry
Daisy like herbs		
	Anaphalioides trinervis	puatea
*	Bellis perennis	lawn daisy
*	Bidens frondosa	beggar's ticks
*	Cirsium vulgare	Scotch thistle
*	Conyza sumatrensis	broad-leaved fleabane
*	Crepis capillaris	
*	Erigeron karvinskianus	Mexican daisy
	Euchiton audax	

	Euchiton involucratus	creeping cudweed
	Gamochaeta coarctata	purple cudweed
*	Hypochaeris radicata	catsear
	Lagenifera petiolata	papataniwhaniwha
	Lagenifera pumila	
*	Leontodon taraxacoides	
*	Leucanthemum vulgare	oxeye daisy
*	Mycelis muralis	wall lettuce
	Pseudognaphalium luteoalbum	Jersey cudweed
*	Senecio bipinnatisectus	
*	Soliva sessilis	Onehunga weed
*	Taraxacum officinale	dandelion
Dicotyledonous herbs other than Composits		
	Acaena anserinifolia	bidibid
*	Aphanes inexspectata	parsley piert
*	Centaurium erythraea	centary
	Centella uniflora	
*	Cerastium fontanum ssp. vulgare	mouse-eared chickweed
	Dichondra repens	Mercury Bay weed
	Elatostema rugosum	parataniwha
	Epilobium pubens	
*	Genista monspessulana	
	Geranium microphyllum	small-leaved crane's bill
*	Geranium robertianum	herb Robert
	Haloragis erecta ssp. erecta	toatoa
	Hydrocotyle dissecta	
	Hydrocotyle microphylla	hydrocotyle
	Hydrocotyle moschata var. moschata	

	Jovellana repens	
	Lobelia angulata	panakenake
*	Lotus pedunculatus	lotus major
	Nertera depressa	common nertera
	Nertera dichondrifolia	hairy nertera
	Nertera villosa	
	Oxalis magellanica	white oxalis
	Peperomia urvilleana	wharanui
*	Phytolacca octandra	inkweed
*	Plantago lanceolata	ribwort; narrow-leaved plantain
*	Prunella vulgaris	selfheal
*	Ranunculus flammula	spearwort
	Ranunculus reflexus	maruru; hairy buttercup
*	Ranunculus repens	creeping buttercup
*	Solanum nigrum	black nightshade
	Solanum nodiflorum	
	Stellaria parviflora	
	Viola filicaulis	forest violet
	Wahlenbergia violacea	blue harebell; rimu-roa

Monocotyledonous trees and shrubs

	Cordyline australis	cabbage tree; ti-kouka
	Cordyline banksii	forest cabbage tree; ti ngahere
	Rhopalostylis sapida	nikau

Monocotyledonous lianes

	Freycinetia banksii	kiekie
	Ripogonum scandens	supplejack; kareao

Sedges

	Carex dissita	
*	Carex divulsa	
	Carex secta	niggerhead; pukio
	Carex solandri	
	Gahnia pauciflora	
	Gahnia setifolia	
	Isolepis reticularis	
	Machaerina sinclairii	broad-leaved sedge
	Machaerina teretifolia	
	Morelotia affinis	
	Schoenus apogon	
	Schoenus maschalinus	
	Schoenus tendo	
	Uncinia banksii	
	Uncinia clavata	fish-hooks
	Uncinia distans	
	Uncinia laxiflora	
	Uncinia scabra	
	Uncinia uncinata	watu

Rushes and allied plants

*	Juncus effusus var. effusus	soft rush
	Juncus prismatocarpus	
*	Juncus tenuis ssp. tenuis	track rush
	Luzula picta var. picta	

Grasses

*	Agrostis capillaris	browntop
	Austroderia fulvida	
*	Dactylis glomerata	cocksfoot
	Deyeuxia avenoides	mountain oatgrass
*	Holcus lanatus	Yorkshire fog
*	Lolium perenne	
	Microlaena avenacea	bush rice grass; oat grass
	Microlaena stipoides	forest rice grass
*	Miscanthus nepalensis	Himalayan fairy grass
	Oplismenus hirtellus ssp. imbecillis	oat grass
*	Poa annua	annual poa
	Rytidosperma gracile	forest fairy grass
	Rytidosperma unarede	cliff fairy grass

Remaining Monocotyledonous herbs

	Astelia solandri	kowharawhara
	Astelia trinervia	
	Collospermum hastatum	kahakaha
	Dianella nigra	blueberry; turutu
	Libertia grandiflora	

Libertia micrantha	
Phormium cookianum ssp. cookianum	mountain flax; whaririki
Phormium tenax	flax

Orchids

Diplodium alobulum	
Earina autumnalis	Easter orchid; raupeka
Earina mucronata	spring orchid; peka-a-waka
Microtis unifolia	onion orchid
Nematoceras "Kaimai"	
Nematoceras acuminatum	spider orchid
Pterostylis banksii	tutukiwi
Simpliglottis cornuta	
Thelymitra longifolia	white sun orchid
Thelymitra pauciflora	
Winika cunninghamii	bamboo orchid