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Waikato Botanical Society Inc.

NEWSLETTER

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Editors Ramble

This is a newsletter that I have been trying to get out since late December!!. It's a busy time of the year. I led a trip up to Broken Hills the first weekend of December. A select group turned up and pitched their tents. Broken Hills is one of those great places that you can just get away from it all. In March we have a trip up to Galaxy Road in the Mamakus and a Dactylanthus seed collection trip to Pureora. Also our AGM is at the end of April. As I write this I am in the middle of packing up to go and do some weed surveillance out on the Mercury Islands. I hear also that Cynthia is doing a stint down at the Chathams. Good news in September was the teachers caught abseiling at Waireinga / Bridal Veil Falls were prosecuted (see story below).

Kerry.

From the Waikato Times 28th September 2012

Teachers abseiled in protected area

Two teachers have been prosecuted for illegally erecting abseiling apparatus on the Bridal Veil Falls Scenic Reserve near Raglan.

The pair, from Howick College in Auckland, led a group of outdoor education students over barricade fences to go abseiling and had purposely covered a sign that clearly stated abseiling was prohibited because of the presence of threatened plants.

The senior teacher was also convicted of unlawfully interfering with a sign on the reserve and ordered to pay $500 in costs to the Conservation Department.

The junior teacher, who was acting on instructions from his colleague, was discharged without conviction but ordered to pay $500 in costs to DOC and he also offered to make a $500 donation to the Waikato Botanical Society.

DOC Waikato community support manager Rachel Kelleher said DOC was pleased with the judge's decision and the penalties handed down in Hamilton District Court.

"The case highlights the importance of protecting New Zealand's indigenous flora and adhering to signs on public conservation land."

The judge noted the senior teacher through his actions had led students to break the law as well.

He also noted this was a serious offence in terms of protection of the flora and fauna at the falls.

Abseiling in the area was prohibited because of the damage it had previously caused.

Monthly Meetings, Field Trips and Events

Saturday 9th March – Dactylanthus trip - Pureora

A trip to visit a population of the rare root parasite *Dactylanthus taylorii* in Pureora Forest Park. We are timing this trip to be able to collect pollen from flowering Dactylanthus in Pureora, the pollen will then be transferred to female flowers in the threatened plant garden back in Hamilton. This will hopefully increase the chances of seed set for the threatened plant garden Dactylanthus, which last year produced only female flowers.
Please note the date for this trip is dependent on flowering time and may be subject to change, the trip will be confirmed by email notice closer to the time.

Please contact Liz or Thomas below for queries or to register your interest.

Leaders: Liz Overdyck eg3@waikato.ac.nz ph. 07 825 9743 or 021 155 3622 and
Thomas Emmitt temmitt@doc.govt.nz ph. 07 878 1055 (work) or 021 152 3030.
Meet: Pureora village 10.30am (appx. 2 hour drive from Hamilton), carpooling and/or accomodation in DoC cabins at Pureora village for Friday night can be arranged.
Grade: Easy

Sunday 10th March – Galaxy Rd North Wetland (Combined with Waikato Botanical Society)

A walk through this extensive wetland/mire – beech forest complex on the mamaku plateau. This wetland and forest complex has an interesting history having being used for forest research by FRI in past and more recently acquired by the nature heritage fund and now managed by DOC. We will see *Gahnia rigida* near its northern limits, a range of tomos and wetland vegetation typical of mires in this northern part of the mamaku plateau.

Leader : Paul Cashmore 07 348 4421 (hm), 07 349 7432 (wk) pcashmore@doc.govt.nz
Meet : The carpark Rotorua 8:30am or end of SH 5–Galaxy Rd junction 9am
Grade : Medium
Bring: Gumboots

Saturday 20th April - Mt Karioi *Pittosporum kirkii* hunt.

Craig Purvis reported *Pittosporum kirkii* growing epiphytically on the Southern Side of Mt Karioi a few years ago with a team of track cutters. Unfortunately one of the track cutters cut it off. This was the only record of *Pittosporum kirkii* on Mt Karioi. I'd like to go and take a bit more of a look in the area to see if we can find any more. Bring binoculars if you have them. We will be doing quite a bit of looking up into the canopy.

Leader : Kerry Jones km8j1s@gmail.com / 07 855 9700 (home) / 027 747 0733.
Meet : 8:00 AM Countdown Super Market, Whatawhata Road, Dinsdale
8:30 AM Te Mata School.
Grade: Medium / Hard

Monday 22nd April - Annual General Meeting

Venue : University of Waikato – S Block. Room S.G.03
Time : 5:30 PM

Catherine Beard will give a talk on her recent trip to the Chatham Islands.

Saturday 4th May – Raglan Restoration Project

Peter Cave is currently working on a restoration project at a 60 acre property at Raglan. Part of the project involves running a nursery. Peter will give us a guided tour of the nursery and followed by a walk through the restoration area.

Leader : Peter Cave Phone : 027 443 3067 / 07 825 6559 / petercave@slingshot.co.nz
Meet : 9:00 AM Countdown Super Market, Whatawhata Road, Dinsdale
10:00 AM 456 Wainui Road (Peters Place)
Grade: Medium.

Saturday 11th May - Threatened Plant collection working bee

A working bee in the new threatened plant garden. Please bring gloves, old clothes and boots for weeding, planting and propagating activities.

Meet: 10am at Waikato University Gate 8, Hillcrest Rd, outside Science and Engineering main entrance (E-F link stairway).

Contact: Liz Overdyck ph 07 825 9743 eg3@waikato.ac.nz

Saturday 31st August - Threatened Plant collection working bee

A working bee in the new threatened plant garden. Please bring gloves, old clothes and boots for weeding, planting and propagating activities.

Meet: 10am at Waikato University Gate 8, Hillcrest Rd, outside Science and Engineering main entrance (E-F link stairway).

Contact: Liz Overdyck ph 07 825 9743 eg3@waikato.ac.nz

Saturday 7 September–Kaingaroa Frost Flats - Rangitaiki Bog Pine forest (Combined with Waikato Botanical Society)

Leader : Sarah Beadel 07 345 5912 or 021-924-476; Sarah@wildlands.co.nz
Meet : The carpark, Rotorua at 8.30 a.m.
Grade : Medium

An expedition to an area of bog pine forest in the heart of Kaingaroa Forest. Advance information of vehicle registration number, make, and model, and a photocopy of drivers licence, is required, in order to get permits to enter the forest. Please email me details a week in advance. 4WD required. There will be spare seats available if you do not have 4WD, but booking is advisable to secure your space!

Saturday 21st September - Taupiri Scientific Reserve Wetland.

Leader : Kerry Jones km8j1s@gmail.com / 07 855 9700 (home) / 027 747 0733.
Meet : 10:00 on State Highway 1 just south of the Taupiri Roundabout
Grade: Medium
Bring: Gumboots

Saturday 16th November - Threatened Plant collection working bee

A working bee in the new threatened plant garden. Please bring gloves, old clothes and boots for weeding, planting and propagating activities.

Meet: 10am at Waikato University Gate 8, Hillcrest Rd, outside Science and Engineering main entrance (E-F link stairway).

Contact: Liz Overdyck ph 07 825 9743 eg3@waikato.ac.nz

Saturday 30th November –Sunday 1st December
Hauhungatahi, Tongariro National Park
(Combined Rotorua and Waikato Botanical Society trip)

Leader: Kerry Jones : km8j1s@gmail.com / 07 855 9700 (home) 027 747 0733 (mobile).
Meet : National Park Petrol Station 9 am on the Saturday
Grade Hard (the track is not maintained)
Accommodation: Tents if you want to stay overnight.
Bring : Camping gear for DOC campsite.

We will be staying at the Mangahuia Campsite on SH 47 (6 km from National Park) on Saturday night and some of us may stay there on Friday night.
Saturday starting at Erua we will climb up to Hauhangatahi and then head back down to the Mangahuia Campsite. The track climbs through beech, kamahi and rimu. Further up there is some kaikawaka forest. On the Sunday we will do another walk area possibly Tongariro forest. Please contact Kerry if you wish to come on the trip.

Silvesters Bush – Te Miro - 28th July – Kerry.

It was a nice day when about 12 botanists turned up at the Silvesters Place at Te Miro.
The piece of bush is about 11 hectares in size and has recently been the recipient of a grant from Waikato Regional Council to undertake rat control using the Goodnature A24 rat traps.

We started off at the top of the reserve at the back of the Silvester's house and generally headed in a downhill direction. Before we got to the bush edge we stopped and had a look at some flowering *Metrosideros fulgens* and some planted kauri (*Agathis australis*). There was a bit of blackberry growing right on the edge of the bush. We then headed into the bush. On the ground was growing *Blechnum filiforme* and *Uncinia uncinata.* The tree species were titoki (*Alectyron excelsus*), mapou (*Myrsine australis)* and Pukatea (*Laurelia novae-zelandiae*) with many seedlings. There were thick tangles of supplejack (Ripogonum scandens) in places along with *Parsonia heterophylla* and *Passiflora tetandra*. Further in we came across large mamaku (*Cyathea medularis)*, rimu (*Dacrycarpus dacrydioides*), tawa (*Beilschmiedia tawa)* and the odd wineberry (*Aristotelia serrata).* We then got on to an old overgrown road so we used this to head back out to the bush edge. Growing on the side of this old road were the ferns *Pneumatopteris pennigera*, *Paesia scaberula* and *Deparia petersenii*. As we approached the bush edge Graeme pointed out *Schoenus maschalinus* growing in a damp patch. Back down in the gully we started to come across nikau (*Rhopalostylis sapida*) and turepo (*Streblus heterophyllus*). As we scrambled out of the gully Mike found some *Icthyostomum pygmaeum* of which he took a sample to do some analysis to see if this species uses CAM (Crassulacean acid metaloism) photosynthesis.

Up on the ridge we stopped for lunch after seeing a few miro (Prumnopitys ferruginea) and kohekohe (*Dysoxylum spectabile*). The kohekohe was is reasonable condition indicating that there weren't many possums around. Down at the bottom of the ridge near the bush edge the undergrowth really thinned out and Thomas spotted some deer sign. There are some fallow deer in the area. We walked back up the eastern side of the bush edge and saw tanekaha (*Phyllocladus trichomanoides*) and lancewood (Pseudopanax crassifolius). Mike managed to get a sample of *Drymoanthus adversus* also for some CAM analysis.

The main comment I have to make about this piece of bush is that was surprisingly weed free. There were a few weeds around the edges(blackberry, barberry, ink weed, thistles, aluminium plant, green goddess iris) but they hadn't been able to make their way in the bush at all.

Icthyostomum pygmaeum (was Bulbophyllum pygmaeum)

Thanks Graeme for keeping track of the species list.

Silvester's Bush

Map: T14 Grid Ref: 27352 63711

Author: G Jane **Visit Date:** 28/07/2012 **Re Visits:**

Ferns and allies

Asplenium bulbiferum	hen and chickens fern; moku
Asplenium flaccidum	hanging spleenwort; makawe
Asplenium oblongifolium	shining spleenwort
Asplenium polyodon	sickle spleenwort; petako
Blechnum chambersii	nini; lance fern
Blechnum discolor	crown fern; piupiu; petipeti
Blechnum fluviatile	kiwakiwa; kiwikiwi
Blechnum novae-zelandiae	kiokio
Cyathea cunninghamii	slender tree fern; gully tree fern
Cyathea dealbata	ponga; silver fern
Cyathea medullaris	mamaku; korau; black tree fern
Deparia petersenii ssp. congrua	
Dicksonia squarrosa	wheki; harsh tree fern
Diplazium australe	
Histiopteris incisa	water fern
Huperzia varia	hanging clubmoss; iwituna
Hymenophyllum demissum	piripiri; irirangi
Hymenophyllum dilatatum	lop-sided filmy fern
Hymenophyllum flabellatum	fan fern
Hymenophyllum revolutum	
Lastreopsis glabella	felted fern
Leptopteris hymenophylloides	single crepe fern; heruheru
Loxogramme dictyopteris	
Lygodium articulatum	mangemange; bushmans mattress
Microsorum pustulatum ssp. pustulatum	hounds tongue; kowaowao
Microsorum scandens	mokimoki; fragrant fern
Paesia scaberula	scented fern; matata; ring fern
Pneumatopteris pennigera	gully fern; pakau; pakauroharoha
Pteris macilenta	sweet fern
Pteris saxatilis	
Pyrrosia eleagnifolia	leather-leaf fern
Tmesipteris elongata	
Trichomanes venosum	veined bristle fern

Trees, shubs & creepers

	Alectryon excelsus ssp. excelsus	titoki
	Aristotelia serrata	wineberry; makomako
	Beilschmiedia tawa	tawa
*	*Berberis glaucocarpa*	barberry
	Carpodetus serratus	putaputaweta; marbleleaf
	Clematis paniculata	clematis; puawhananga
	Coprosma grandifolia	raurekau; kanono; mamono
	Coprosma robusta	karamu
	Dacrycarpus dacrydioides	kahikatea, white pine
	Dacrydium cupressinum	rimu, red pine
	Dysoxylum spectabile	kohekohe
	Freycinetia banksii	kiekie
	Fuchsia excorticata	fuchsia; kotukutuku
	Geniostoma ligustrifolium var. ligustrifolium	hangehange; privet
	Griselinia lucida	puka

	Knightia excelsa	rewarewa; NZ honeysuckle
	Laurelia novae-zelandiae	pukatea
*	*Leycesteria formosa*	himalayan honeysuckle
	Litsea calicaris	mangeo
	Macropiper excelsum ssp. excelsum	kawakawa; pepper tree
	Melicytus ramiflorus	mahoe
	Metrosideros diffusa	white climbing rata; akatea
	Metrosideros fulgens	scarlet rata; winter rata
	Metrosideros perforata	aka; small white rata; torotoro
	Muehlenbeckia australis	poheuheu
	Myrsine australis	red matipo; mapou
	Olearia rani var. colorata	heketara
	Parsonsia heterophylla	maori jasmine; kaihu; kaiwhiria
	Phyllocladus trichomanoides	tanekaha; celery pine
	Pittosporum tenuifolium	black matipo; kohuhu
	Prumnopitys ferruginea	miro; brown pine
	Pseudopanax arboreus	five finger; puhou; whaupaku
	Pseudopanax crassifolius	lancewood; horoeka
	Rhopalostylis sapida	nikau
	Ripogonum scandens	supplejack; kareao
	Rubus cissoides	bush lawyer; tataramoa
*	*Rubus fruticosus*	blackberry
	Schefflera digitata	pate; patae; kotete
	Solanum laciniatum	poroporo
	Streblus heterophyllus	turepo; milk tree
*	*Ulex europaeus*	gorse

Herbs

	Acaena anserinifolia	bidibid
*	*Acanthus mollis*	bear's breeches
	Astelia solandri	kowharawhara
*	*Cirsium vulgare*	Scotch thistle
	Collospermum microspermum	
*	*Conyza sumatrensis*	
*	*Digitalis purpurea*	foxglove
	Drymoanthus adversus	
	Earina autumnalis	Easter orchid; raupeka
	Earina mucronata	spring orchid; peka-a-waka
*	*Galium aparine*	cleavers
*	*Geranium robertianum*	herb Robert
	Haloragis erecta ssp. erecta	toatoa
*	*Hypochaeris radicata*	catsear
	Ichthyostomum pygmaeum	
*	*Jacobaea vulgaris*	ragwort
*	*Lotus pedunculatus*	lotus major
*	*Mycelis muralis*	wall lettuce
*	*Phytolacca octandra*	inkweed
*	*Plantago lanceolata*	ribwort; narrow-leaved plantain
*	*Prunella vulgaris*	selfheal
*	*Solanum nigrum*	black nightshade

Grasses & similar plants

	Carex geminata	
*	*Cortaderia selloana*	pampas
*	*Dactylis glomerata*	cocksfoot
	Gahnia setifolia	
*	*Holcus lanatus*	Yorkshire fog
*	*Juncus effusus var. effusus*	soft rush
	Microlaena stipoides	forest rice grass
	Oplismenus hirtellus ssp. imbecillis	oat grass
	Schoenus maschalinus	
	Uncinia uncinata	watu

Bridal Veil/ Waireinga Falls Orchid trip

Waikato Botanical Society field trip 9th September 2012.
Report for Botanical Society and DOC Waikato Area Office

Cynthia Roberts, Science Advisor Ecology, Terrestrial and Ecosystems Unit, DOC

Background

Waireinga Falls is one of the most visited scenic reserves in the Waikato with around 50,000 visitors each year. Abseiling alongside the waterfall (Figure 1) is now banned from the reserve due to damage to fragile vegetation at the base of the waterfall. A visit to inspect an alternative site within the reserve for abseiling was conducted in 2011 by DOC staff and following that visit it was determined that more information was needed on species within the reserve; whether an alternative site for the translocation of locally known threatened *Nematoceras* "Veil" was appropriate, and to determine if any plants of significance were present on the proposed abseil site.

Thus the skills and knowledge of Waikato Botanical Society were called on to assist with these aims and a field trip was planned for early spring when the *Corybas* had in previous years flowered.

Field trip notes

Prior to the proposed date of 19th August, it had been a very wet and cold for months. I was concerned that the orchids might be late flowering this year. When I visited the site a few days before the scheduled trip these thoughts were confirmed and so the alternate planned date of 9th September was chosen.

The weather forecast was once again dire but apart from torrential rain on the drive out we escaped with only an occasional sprinkle much to everyone's delight.

Following a round of introductions and an outline of the plan for the day, Craig Purvis (now WRC) and Mike Paviour (DOC Waikato Area Office) gave some background to the history of the Scenic Reserve (Figure 2.). Bridal Veil/Waireinga Falls is a significant spiritual and natural feature for the ancestral hapü that affiliate to the Motakotako marae. In 1952 Bridal Veil Falls was designated as a scenic reserve and administered by a local board. In 1977 Lands and Survey took control and then DOC when that department was formed in 1987. DOC over the years has made a number of significant improvements through the installation of toilets, tracks, predator control and more recently interpretation panels and viewing platforms. However, much of the understory is badly affected by goats which have access through an unfenced adjoining farm. In addition the water quality remains poor due to run off from farms in the catchment and adjoining the river.

52 new species added to existing records for Bridal Veil/Waireinga Reserve
Botanising began immediately (Figure 3) with a small detour to look at self-setting predator traps. New species (including *Callitriche muelleri* – Figure 4 and Appendix 1) were soon added to the four known species lists (the earliest on DOC databank is Gudex's 1962 list).

Corybas* aff. *rivularis
Waireinga is known as one of the best sites for orchids near Hamilton. Found only here in this region is ***Corybas* aff. *rivularis* (AK 251833; *Kaitarakihi*)** formerly known as *Nematoceras* "Veil" which has a threat classification of Nationally Critical (but still is taxonomically indeterminate). Note *Corybas* will now be used for most of the *Nematoceras* orchids 'Threatened and uncommon plants of New Zealand (2012 revision)" www.doc.govt.nz . The *Corybas* grows in the microclimate spray zone provided by the falls. The main population of this orchid is found on the rock face near the foot of the falls. As the area is extremely fragile and the public is excluded from the area it was agreed that only Craig and Sarah should navigate their way around the pool. They reported back that there were plenty of the *Corybas* in flower.

However, this wasn't the only opportunity to see this orchid as we had spotted a couple of specimens near a bend in the steps on the way down to the lower viewing platform (Figures 5 and 6). The most prolific orchid on the day was *Corybas trilobus* (Figure 7). Also found flowering were *Corybas acuminatus* and a plentiful supply of *Acianthus sinclairii* (Figure 8) were found when we went cross country after clambering up behind the shelter in search of the yet to be officially named new *Pterostylis* sp. ('pygmy'). This sadly was not yet in flower.

Identifying a potential translocation site and checking out abseil route
Other aims for the day included inspecting the rock face to the right (when looking up from the lower viewing platform) as a potential translocation site for *Corybas* (given the concern that it only has one main population in the reserve). This area had been occasionally used by abseilers and was where a suggestion had been made as a possible site for a new route.

Abseiling is now completely banned from the reserve and the botanists in discussion over lunch supported this. Damage to the fragile vegetation around the cliff faces is very hard to prevent. Our group inspecting the lower area had to be extremely careful not to dislodge plants (Figure 9). The route along the bottom and up the side of the cliff would easily turn into a mud slide as had happened at the bottom of the waterfall endangering the habit of *C.* aff. *rivularis*

A number of new species e.g. repehina-papa (*Arthropodium candidum*) were added to the species list at the abseil site (Photo in Figure 10 and 11 are taken from the top of the route) as well as providing a habitat for a number of orchids. It was clear that like the area adjoining the falls this was an extremely fragile terrain easily disturbed and at the base of the cliff an excellent orchid habitat.

Translocation site

This cliff area was not considered to be the best location for a translocation of *C.* aff. *rivularis*. While the area would remain moist year round, it would not have the additional benefit of the spray zone effect. As mentioned above, alongside the steps leading down to the lower viewing platform there are several *C.* aff. *rivularis* plants growing. This is on the same altitude as the cliff population. It is considered that this area would have the most success for a translocation. It is within the waterfall spray zone but away from potential landslides and extreme weather events that could wipe out the population adjoining the waterfall.

Participants: Wayne and Sue Bennet, Craig Purvis, Catherine Rowe, Catherine Beard, Mike Paviour, Kerry Smith, Ursula Brandes, Marjie and Michael Slater-Kaplan, Sarah Beadel, Angela Simpson, Shay Dean.

Acknowledgements:

Special thanks to **Sarah Beadel** (Wildlands Consultants) for producing the final species list in **Appendix 1**

Figure 1. Waireinga/Bridal Veil Falls (Photo: Cynthia Roberts).

Figure 2. Introduction to the history of the reserve being given by Craig Purvis (Photo: Cynthia Roberts).

Figure 3. Spotting some new records for the species list (Photo: Cynthia Roberts).

Figure 4. *Callitriche muelleri* (Photo: Cynthia Roberts)

Figure 5. *Corybas* aff. *rivularis* (formerly *Nematoceras* 'veil) (Photo: Cynthia Roberts)

Figure 6. *Corybas* aff. *rivularis* (formerly *Nematoceras* ‘veil).
(Photo:Ursula Brandes)

Figure 7. *Corybas trilobus* (Photo: Cynthia Roberts)

Figure 8. *Acianthus sinclairii* (Photo: Ursula Brandes).

Figure 9. Craig Purvis and Sarah Beadel inspecting lower section of the proposed abseil track (Photo: Cynthia Roberts)

Figure 10. Top of the proposed abseil route Cynthia Roberts (foreground), left to right Craig Purvis, Mike Paviour, Catherine Rowe, Angela Simpson, Shay Dean and Ursula Brandes. (Photo: Kerry Jones).

Figure 11. Top of the abseil route. Craig Purvis , Sarah Beadle and Cynthia Roberts. (Photo: Kerry Jones).

Appendix 1

CHECKLIST OF VASCULAR PLANTS FOR
BRIDAL VEIL FALLS SCENICE RESERVE SPECIES LIST

Sarah Beadel
9 September 2012

Key

* Not previously recorded from the reserve, in either Clarkson and Clarkson 1983 or Gudex 1962)

INDIGENOUS SPECIES

Gymnosperms

Dacrycarpus dacrydioides	kahikatea
Dacrydium cupressinum	rimu
Phyllocladus trichomanoides	tānekaha
Podocarpus hallii	Hall's totara
Podocarpus totara var. *totara*(Clarkson and Clarkson 1983)	totara
Prumnopitys ferruginea	miro

Monocot. trees and shrubs

Cordyline australis	tī kōuka, cabbage tree
Cordyline banksii	tī ngahere, forest cabbage tree
Rhopalostylis sapida	nīkau

Dicot. trees and shrubs

Alectryon excelsus subsp. *excelsus*	tītoki
Alseuosmia macrophylla	toropapa, karapapa, matukuroimata
Aristotelia serrata	makomako, wineberry
Beilschmiedia tawa	tawa
Brachyglottis kirkii var. *kirkii*	kohurangi, tapairu, orooro
Brachyglottis repanda	rangiora
Carpodetus serratus	putaputawētā
Coprosma arborea	tree coprosma, māmāngi
Coprosma areolata	
Coprosma dumosa (Clarkson and Clarkson 1983)	
Coprosma grandifolia	kanono, raurēkau, raurākau, manono
Coprosma robusta	karamū, kāramuramu
Coprosma rotundifolia	
Coprosma spathulata subsp. *spathulata* (Clarkson and Clarkson 1983)	
Coprosma tenuicaulis	
Coriaria arborea var. *arborea*	tutu
Dysoxylum spectabile	kohekohe
Elaeocarpus dentatus	hīnau, whīnau

Fuchsia ×colensoi (Clarkson and Clarkson 1983)	
Fuchsia excorticata	kōtukutuku, kōnini
Griselinia lucida	puka
Hebe stricta var. *stricta*	koromiko, kōkōmuka
Hedycarya arborea	porokaiwhiri; pigeonwood
Hoheria sexstylosa	houhere, lacebark
Ixerba brexioides (Gudex 1962)	tawari
Knightia excelsa	rewarewa
Kunzeaericoides	kānuka
Laurelia novae-zelandiae	pukatea
Leptecophylla juniperina var. *juniperina*	prickly mingimingi
Leptospermum scoparium agg.	mānuka
Leucopogon fasciculatus	mingimingi
Litsea calicaris	mangeao
Lophomyrtus bullata	ramarama
Macropiper excelsum subsp. *excelsum*	kawakawa
Melicytus ramiflorus subsp. *ramiflorus*	māhoe
Metrosideros excelsa	pōhutukawa
Metrosideros robusta	northern rātā
Mida salicifolia (Clarkson and Clarkson 1983)	willow-leaved maire
Myrsine australis	māpou, matipou, māpau
Myrsine salicina	toro
Nestegis lanceolata	white maire, maire rauriki
Olearia furfuracea	akepiro, tanguru
Olearia rani var. *colorata*	heketara
Parsonsia heterophylla	akakaikiore
Pennantia corymbosa	kaikōmako
Pittosporum colensoi	rautāwhiri, rautāhiri
Pittosporum cornifolium(Clarkson and Clarkson 1983)	tāwhiri karo, wharewhareatua
Pittosporum tenuifolium	kōhūhū, rautāhiri, rautāwhiri
Pseudopanax arboreus	whauwhaupaku, puahou, five finger
Pseudopanax crassifolius	horoeka, lancewood
Quintinia serrata (Clarkson and Clarkson 1983)	tāwheowheo
Raukaua edgerleyi(Clarkson and Clarkson 1983)	raukawa
Rhabdothamnus solandri	taurepo
Schefflera digitata	patē
Solanum aviculare var. *aviculare* (Clarkson and Clarkson 1983)	poroporo
Streblus heterophyllus	tūrepo
Syzygium maire	maire tawake, swamp maire
Weinmannia racemosa	kāmahi

Monocot. lianes

Freycinetia banksii	kiekie
Ripogonum scandens	supplejack, kareao

Dicot. lianes

Clematis forsteri	poananga, puawānanga
Clematis paniculata	puawānanga

Metrosideros carminea	akakura
Metrosideros diffusa	rātā
Metrosideros fulgens	rātā
Metrosideros perforata	aka
Muehlenbeckia australis	puka
Parsonsia capsularis	akakiore
Passiflora tetrandra	kohia; native passionfruit
Rubus australis(Clarkson and Clarkson 1983)	tātarāmoa
Rubus cissoides agg.	tātarāmoa, tātaraheke , bush lawyer
Rubus schmidelioides var. *schmidelioides**	tātarāmoa, bush lawyer

Lycopods and psilopsids

Huperzia varia	whiri-o-Raukatauri
Lycopodium volubile	waewaekoukou
Tmesipteris elongata	
*Tmesipteris lanceolata**	

Ferns

Adiantum cunninghamii	huruhuru tapairu, maidenhair fern
Adiantum diaphanum	huruhuru tapairu, maidenhair fern
Adiantum fulvum	huruhuru tapairu, maidenhair fern
Asplenium bulbiferum	mouku, hen and chicken fern
Asplenium flaccidum	makawe, ngā makawe o Raukatauri
*Asplenium gracillimum**	
*Asplenium lamprophyllum**	
Asplenium oblongifolium	huruhuru whenua
Asplenium polyodon	petako
Blechnum chambersii	rereti, nini
Blechnum colensoi	peretao
Blechnum discolor	piupiu, crown fern
Blechnum filiforme	pānako
Blechnum fluviatile	kiwikiwi, kiwakiwa
Blechnum fraseri	maukurangi
Blechnum membranaceum	
Blechnum minus	swamp kiokio
Blechnum nigrum (Clarkson and Clarkson 1983)	
Blechnum novae-zelandiae	kiokio
Cardiomanes reniforme	kidney fern, konehuraurenga,kopakopa
Ctenopteris heterophylla	
Cyathea cunninghamii (Clarkson and Clarkson 1983)	slender tree fern, gully tree fern
Cyathea dealbata	ponga, silver fern
Cyathea medullaris	mamaku
Cyathea smithii	kātote, soft tree fern
Deparia petersenii subsp. *congrua*	
Dicksonia fibrosa	wheki-ponga, kuripaka
Dicksonia squarrosa	whekī
Diplazium australe	
Grammitis billardieri (Clarkson and Clarkson 1983)	paretao
Hymenophyllum demissum	irirangi, piripiri, filmy fern

Hymenophyllum dilatatum	matua mauku, filmy fern
Hymenophyllum flabellatum	mauku, filmy fern
*Hymenophyllum flexuosum**	mauku, filmy fern
Hymenophyllum frankliniae	mauku, filmy fern
Hymenophyllum multifidum	mauku, filmy fern
Hymenophyllum pulcherrimum (Clarkson and Clarkson 1983)	mauku, filmy fern
Hymenophyllum rarum	mauku, filmy fern
Hymenophyllum revolutum	mauku, filmy fern
Hymenophyllum sanguinolentum	piripiri, filmy fern
Hymenophyllum scabrum	mauku, filmy fern
Hypolepis distans (Clarkson and Clarkson 1983)	
Lastreopsis glabella	
Lastreopsis hispida	tuakura
Leptopteris hymenophylloides	heruheru
Lindsaea trichomanoides (Clarkson and Clarkson 1983)	
Loxogramme dictyopteris	
Lygodium articulatum	mangemange
Microsorum pustulatum	kōwaowao, pāraharaha, hound's tongue fern
Microsorum scandens	mokimoki
Paesia scaberula	mātātā
Pneumatopteris pennigera	pākau
Polystichum sp.	pikopiko, shield fern
Pteridium esculentum	rārahu, bracken
Pteris macilenta	titipo, sweet fern
Ptisanasalicina (Craig Purvis pers. comm.; Clarkson and Clarkson 1983)	king fern, para, horseshoe fern
Pyrrosia eleagnifolia	leather-leaf fern
Rumohra adiantiformis	karuwhai
Trichomanes venosum	

Orchids

Acianthus sinclairii	
*Diplodium alobulum**	
Drymoanthus adversus(Clarkson and Clarkson 1983)	
Earina autumnalis	raupeka
Earina mucronata	peka-a-waka
Ichthyostomum pygmaeum (Clarkson and Clarkson 1983)	piripiri
Microtis unifolia agg.	
Nematoceras acuminatus	
Nematoceras macranthum	
*Nematoceras orbiculatum**	
Nematoceras rivulare	
Nematoceras trilobum agg.	
Nemotoceras aff. *rivularis* (AK 251833; Kaitarakihi)	
Pterostylis banksii	tutukiwi
Pterostylis sp.	

Simpliglottis cornuta (Craig Purvis pers. comm. 2011; Clarkson and Clarkson 1983)	
Singularybas oblongus	
Thelymitra longifolia	
Winika cunninghamii	

Grasses

*Deyeuxia avenoides**	
Dichelachne crinita	plume grass
Microlaena avenacea	bush rice grass
Microlaena stipoides	pātītī, meadow rice grass
Oplismenus hirtellus subsp. *imbecillis*	
Poa anceps agg.	
Rytidosperma gracile	

Sedges

*Carex dipsacea**	
Carex dissita	
Carex geminata agg.	rautahi
*Carex sinclairii**	
Carex solandri	
Carex virgata	pūrei
Eleocharis acuta	spike sedge
*Eleocharis gracilis**	
Gahnia pauciflora	takahikahi
Gahnia setifolia	māpere
Gahnia xanthocarpa (Clarkson and Clarkson 1983)	tupari-maunga
Isolepis inundata (Clarkson and Clarkson 1983)	
Isolepis sp.	
Morelotia affinis	
Schoenus maschalinus	
Uncinia clavata(Clarkson and Clarkson 1983)	
Uncinia ferruginea(Clarkson and Clarkson 1983)	matau
Uncinia uncinata	kamu matau a Maui, kamu

Rushes

Juncus edgariae	wi, wīwī
Juncus planifolius	
Juncus prismatocarpus	
Luzula picta var. *picta**	

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

*Arthropodium candidum**	repehina-papa
Astelia solandri	kōwharawhara
Collospermum hastatum	kahakaha
*Collospermum microspermum**	
Dianella nigra	tūrutu

Libertiagrandiflora	mīkoikoi, mānga-a-Huripapa, tūkāuki
*Phormium tenax**	harakeke, flax
Potamogeton suboblongus	rerewai
Typha orientalis	raupo

Composite herbs

Anaphalioides trinervis	puatea
Centipeda minima subsp. *minima* (Clarkson and Clarkson 1983)	sneezeweed
Euchiton audax	
*Euchiton involucratus**	
*Euchiton japonicus**	
*Lagenifera pumila**	papataniwhaniwha
Pseudognaphalium luteoalbum agg.*	pukatea
*Senecio glomeratus**	pukatea
Senecio minimus	

Dicot. herbs (other than composites)

Acaena anserinifolia	piripiri, hutiwai
Acaena novae-zelandiae	piripiri
*Callitriche muelleri**	
*Callitriche stagnalis**	starwort
Cardamine debilis agg.	panapana
Centella uniflora	
Elatostema rugosum	parataniwha
Epilobium nerteroides	
*Epilobium nummulariifolium**	
Epilobium pubens	
Epilobium rotundifolium	
Galium propinquum	mawe
Geranium homeanum	pinakitere
Haloragis erecta subsp. *erecta*	toatoa
Hydrocotyle dissecta	
Hydrocotyle heteromeria	
Hydrocotyle moschata	
*Jovellana sinclairii**	
Lobelia anceps	punakura
Lobelia angulata	pānakenake
Nertera depressa	
Nertera dichondrifolia	
Oxalis exilis	
Oxalis magellanica	tūtae-kāhu
Peperomia urvilleana	wharanui
Plantago raoulii	kopakopa
Ranunculus reflexus	maruru
Stellaria parviflora	kohukohu
Urtica incisa	ongaonga, tree nettle
Wahlenbergia violacea	rimuroa

NATURALISED AND EXOTIC SPECIES

Dicot. trees and shrubs

Leycesteria formosa	Himalayan honeysuckle
Rubus sp. (*R. fruticosus* agg.)*	blackberry
*Ulex europaeus**	gorse

Lycopods and psilopsids

*Selaginella kraussiana**	creeping clubmoss, selaginella

Grasses

*Agrostis capillaris**	browntop
Anthoxanthum odoratum	sweet vernal
*Cortaderia selloana**	pampas
*Dactylis glomerata**	cocksfoot
Glyceria sp.*	
Holcus lanatus	Yorkshire fog
*Lolium perenne**	rye grass
Poa annua	annual poa
*Schedonorus arundinaceus**	tall fescue
*Sporobolus africanus**	ratstail

Sedges

*Carex flacca**	carnation sedge
Isolepis sepulcralis (Clarkson and Clarkson 1983)	

Rushes

*Juncus acuminatus**	sharp-fruited rush
*Juncus articulatus**	jointed rush
Juncus effusus var. *effusus**	soft rush, leafless rush
Juncus tenuis var. *tenuis*	track rush

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

Aristea ecklonii	
*Crocosmia ×crocosmiiflora**	montbretia
*Ixia maculata**	ixia

Composite herbs

*Bellis perennis**	lawn daisy
*Cirsium vulgare**	Scotch thistle
Conyza sumatrensis	broad-leaved fleabane
*Crepis capillaris**	hawksbeard
*Hypochaeris radicata**	catsear

*Leontodon taraxacoides**	hawkbit
Leucanthemum vulgare	oxeye daisy
Mycelis muralis	wall lettuce
Sonchus asper	prickly puha

Dicot. herbs (other than composites)

*Apium nodiflorum**	water celery
*Cardamine hirsuta**	bitter cress
Centaurium erythraea	centaury
Cerastium fontanum subsp. *vulgare*	mouse-ear chickweed
Fumaria muralis	scrambling fumitory
Galium aparine	cleavers
*Galium palustre**	marsh bedstraw
Linum catharticum	purging flax
*Lotus pedunculatus**	lotus
Ludwigia palustris	water purslane
Myosotis laxa	water forget-me-not
*Nasturtium officinale**	watercress
Oxalis corniculata (Clarkson and Clarkson 1983)	horned oxalis
Parentucellia viscosa	tarweed
Phytolacca octandra	inkweed
Plantago lanceolata	narrow-leaved plantain
Prunella vulgaris	selfheal
*Ranunculus flammula**	spearwort
Ranunculus repens	creeping buttercup
*Stellaria alsine**	bog stitchwort

REFERENCES

Clarkson B.D. and Clarkson B.R. 1983: Bridal Veil Falls Scenic Reserve. *Unpublished report*. 9 pp.

Gudex M.C. 1962: The native flora of the Bridal Veil Falls Scenic Reserve. *Transactions of the Royal Society of New Zealand 1*: 323-326.

Broken Hills trip 1st – 2nd December 2012 – Kerry Jones

Peter and I drove over to Broken Hills on Friday night and we met up with Mike, Paula and the kids who already had the tent up.
Broken Hills was an area of extensive mining from 1893 to 1929.
Saturday morning we decided that we would do the tunnel loop for a start and then head up the ridge to Paton's dam if we felt like it

As we entered the track we immediately noticed kumerahou *(Pomaderris kumerahou*) and towai (*Weinmannia silvicola)* – 2 species that we don't normally see in the Central Waikato
There was gorse (*Ulex europaeus*), manuka (*Leptospermum scoparium*) regenerating on the side of the track. In the sunny clearings along the track was growing Himalaya fairy grass (*Miscanthus nepalensis*), *Aristea eckonii* with blue flowers, *Drossera binata* and in the undergrowth we spotted some *Loxsoma cunninghamii* which grows north of Thames . Further on 2 more weedy species were encountered : creeping clubmoss *(Selaginella kraussina)* and prickly hakea *(Hakea sericea*). A lone grey warbler was heard.
We left the creek and started heading up the ridge to the water race tunnels. Growing on the ridge were needle leaved neinei *(Dracophyllum latifolium*), *Brachyglottis kirkii* in flower and toru (*Toronia toru)*. Ferns in this area were *Lindsaea linearis*, *Lycopodium deuterodensum*, bristle fern *(Arodictyum elongatum* was *Trichomanes elongatum*) and umbrella fern *(Sticherus cunninghamii*).

Growing near the water race tunnel was *Metrosideros perforata* and a single *Singularybas oblongus* orchid.
From here we headed up to the Collins Drive tunnel. Along the way we spotted alseuosmia, mairehau *(Leionema nudum* was *Phebalium nudum*), a white thelymitra orchid and *Pseudopanax discolor*.
We then started getting into bigger trees,
kohekohe *(Dysoxylum spectabile*),
nikau *(Rhopalostylis sapida)*,
miro (*Prumnopitys ferruginea*),
hinau *(Elaeocarpus dennatus*),
karaka (*Corynocarpus laevigatus*)

We stopped off at an old mine entrance and went inside to check out the local weta population. In this area we found hounds tooth *(Microsorum pustulatum*), crown fern *(Blechnum discolor*) and yellow flowering *Earina mucronata.*
It was then time to get out our torches and head through the 500 metre Collins Drive there were a few side tunnels to explore along the way.

The Western end of the tunnel came out in a gully and it was cooler. The gully had some tree ferns and *Weinmannia silvicola* (towai) growing in it. From here it was a short clim up ti the ridge and track junction where Mike and Paula and the kids headed back to the camp and Peter and I kept going up the ridge towards Patons Dam.

We were now getting into kauri (*Agathis australis*) country. *Asplenium flaccidum* and C*ollaspermum hastatum* were spotted in trees. We saw our first mapou (*Mysine australis*) and rewarewa (*Knightia excelsa*) with flowers on the ground. Growing on the side of the track was kiokio (*Blechnum novae zelandiae)* hangehange *(Geniostoma rupestre*), *Oplismenus hirtellus subsp. imbecillus*, gahnia, *Dianella nigra* and some uncinia.

Further along we saw a mida (*Mida salicifolia)* which wasn't on Graeme's list and *Rumohra adiantiformis* which also wasn't on Graeme's list. Eventually we came out at a high point where Peter pointed out to me some *Cordyline pumilo*

Further up on the ridge there was a great view of the Pinnacles. We saw our first tawari (*Ixerba brexioides)* with *Blechnum fraserii* and *Rubus australis* growing in the understorey.

We turned off to head down to Patons Dam. From here we came across some new plants – raukawa (*Raukawa edgerleyi*), *Corokia buddleioides,* quitinia (*Quintina serrata),* ramarama (*Lophomyrtus bullata).*

Down at the dam we spotted some *Brachyglottis myrianthos* growing amongst some rangiora (*Brachyglottis repanda*). It had been a while since I had been to the dam (probably 15+ years) and a lot of the timbers had collapsed since my last visit. From there we headed back to the camp and arrived some time after 5. It had been a long day.

Day 2.

We all packed up our tents. Paula and Mike headed off to Auckland and Peter and I headed up to the top of the Kopu Hikuai hill to the entrance to the Kaitarakihi and Devcich Kauri Track. It was one of those tracks that I had been driving past for 40 years and now was the big day.

The sign said 1 hour to the Devich Kauri. It was quite windy and overcast as Peter and I set off up the ridge.

The track started off with a canopy of tawa (*Beilschmedia tawa*) , kohekohe (*Dysoxylum spectabile*), nikau (*Rhapalostylis sapida*), mahoe (*Melycitus ramiflorus*) with an under story of soft tree ferns (*Cyathea smithii*) and kawakawa (*Macropiper excelsum*) and pate (*Schefflera digitata).* Closer to the ground was bush rice grass (*Oplismenus hirtellus* subsp. *imbecillis)*, kiokio (*Blechnum novae zelandiae),* lance fern (*Blechnum chambersii)*, feather fern (*Pneumatopteris pennigera*) and hen and chicken fern (*Asplenium bulbiferum*)

A bit further on we noticed our first pukatea (*Laurelia novae-zelandiae*) along with heketara (*Olearia rani*) and pigeonwood (*Hedycarya arborea*). It was here that we figured out the masses of flowers on the ground was pigeonwood

We stopped to have a look at epiphytes and observed *Hymenophyllum dilatatum*, *Hymenophyllum flabellatum*, *Hymenopyllum franklinii*, *Asplenium flaccidum Huperzia varia and Cardiomanes reniforme.*

The next point of interest was a large tree fall with a clearing where plenty of light could get in. There was numerous mahoe, *Histiopteris incisa* and *Cordyline australis* and on the ground some flowering pterostylis

Then we came across Blechnum vulcanicum. I was really suprised to see this as it was a plant I associated with down Taupo way but it was on John Simth-Dodsworth's list

Eventually we came to the sign that pointed down the ridge to the Devcich Kauri (after about 75 minutes). The main trees in this area were lancewood (*Pseudopanax discolor*), , pigeon wood (*Hedycarya arborea*), rimu (*Dacrycarpus dacrydioides*), mapou (*Myrsine australis)* , tawa (*Beilschmiedia tawa*) and tawari (*Ixerba brexioides*).

The ridge got steeper as we approached the Devich kauri. It was drier underfoot and we started noticing toatoa (*Phylloclades toatoa*), *Lycopodium volubile* and *Blechnum fraserii*
drier under foot.

We got to the Kauri and sat down and had lunch. The kauri had lost quite a bit of its upper crown. Some trampers we had met on the track said that it was a lot healthier 20 years ago.

We were just about to leave when Peter spotted a *Pittosporum cornifolium* growing on the ground. For me this was find of the day. Something that you don't often see

It was time to head back to the car. Back up on the main ridge the peak of Kaitarakihi beckoned but we'll have to leave that for another day.