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Waikato Botanical Society Inc

NEWSLETTER

No. 39, April 2015

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Editor's note

Recently I spent a few days at Pureora Forest Park where I learned about the NZ Tree Project, a project to capture a large rimu tree with digital media and print; similar to that done for the Giant Sequoia of California. There is a very interesting article about this project in this newsletter explaining how it was done, and there are some amazing photos of Myriophyllum robustum by Catherine Beard, as well as an interesting report about the trip to Te Reti scenic reserve and more. Happy reading!

Susan

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Plant profile: Myriophyllum robustum - Stout water milfoil

By Lucy Roberts

Current Conservation Status: 2012 - At Risk – Declining

Having just attended the Ramsar Wetland Symposium in Hamilton, organised by the Department of Conservation and The Wetland Trust of New Zealand it is quite timely that we are profiling a native perennial aquatic herb *Myriophyllum robustum* - Stout water milfoil.

Myriophyllum robustum - Stout water milfoil: *Myriophyllum* meaning many leaves and *robustum* meaning sturdy. This delicate but robust plant can be aquatic or semi aquatic, growing naturally in shallow peaty lakes, slow flowing streams and flooded alluvial swamp forest. It is endemic to the North and South Island. Now found in the North Island known now only from Northland to Taranaki and the northern Rangitikei and in the South Island only known from North West Nelson, the West Coast and Fiordland.

I was first introduced to *Myriophyllum robustum* at Whangamarino wetland, a New Zealand Ramsar wetland site. However it was down on the West Coast of the South Island at Ships Creek, Haast where I was easily able to view the plant. At Ship Creek, there are a couple of wonderful short walks, for wetland enthusiasts, which wind their way through ancient kahikatea swamp forest, dense wind – shorn coastal forest and the dune lake system. The board walk through the Kahikatea forest allowing me to look at the *Myriophyllum robustum* in relative comfort, without even getting wet and muddy!!

Lying on the board walk, I was able to observe the whorls of leaves which diminish in size towards the top of the plant (surface of the water). The edge of emergent leaves are tinged with red. The leaves of *Myriophyllum robustum* are pointed in outline, distinguishing this species from the introduced parrot's feather (*Myriophyllum aquaticum*) which has leaves that are rounded at the tip.

Myriophyllum robustum - Stout water milfoil carpeting the alluvial forest floor at Ships Creek, Haast, West Coast. Photo by Lucy Roberts

The *Myriophyllum robustum* created a miniature canopy of its own, carpeting the alluvial kahikatea forest floor at Ships Creek. Needless to say the walk which should have taken 40 minutes took 2-3 hours, including being entertained by three Hector's Dolphin!!

For more Information on *Myriophyllum robustum* - Stout water milfoil and Ships Creek, Haast see the links below:

http://www.nzpcn.org.nz/flora_details.aspx?ID=183
http://www.doc.govt.nz/parks-and-recreation/places-to-go/west-coast/places/haast-paringa-and-moeraki-rivers-area/ship-creek-area/

Photos of Myriophyllum robustum by Catherine Beard showing flowers (above) and developing fruit (left).

MEDIA RELEASE New app makes identifying plants easier

By Caroline King, Communication Advisor at Landcare Research

Identifying plants is complex when there are dozens, hundreds and in some cases even thousands of species, many with similar features. But Landcare Research is making this easier.

The Crown research institute, which focuses on environmental science, recently developed a free app for smart phones and tablets to identify native coprosma plants. Native coprosmas are a common and diverse genus of trees, shrubs and ground-hugging plants.

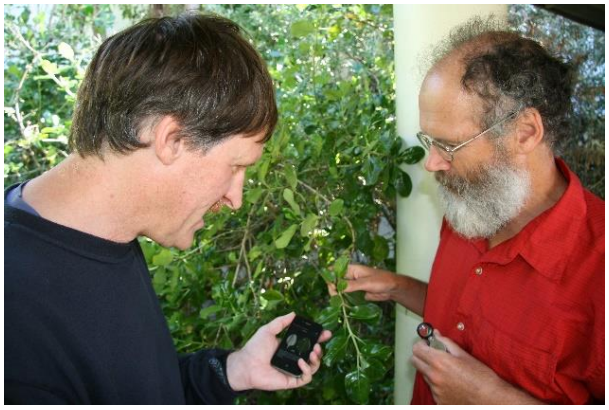
The app, called the NZ Coprosma Key, allows users to identify their plant specimen by selecting from a series of features to narrow down the range of 53 possible species. These features include leaf size, branch colour, leaf hairs and many others.

The app was adapted from a computer-based Coprosma identification tool and is the first of more to come.

Landcare Research scientist David Glenny, the lead author of the app, said it was created to help identify plants during ecological survey work and would be of particular benefit to Department of Conservation staff. However, it would also be useful to students, researchers, and others in the New Zealand botanical community, he said.

“Although the app is easy to use, I don’t regard it as a key for beginners as you actually have to know already that you’ve got a coprosma. New Zealand has a lot of plants that look quite similar to coprosma. So I created the key mainly for people doing survey work who already know the flora reasonably well but who need help with what’s quite a difficult group,” he said.

One benefit of the app is that unlike traditional methods of identifying plants it is fully portable. It eliminates the need for those in a remote area to cut a sample of an unknown plant to later identify with a book or computer, Glenny said.



Landcare Research scientists Murray Dawson, left, and David Glenny using the app to identify a coprosma.

Another benefit is that the app is “self-contained” and does not require internet access or cell phone reception in the field.

“It’s better than I imagined,” Glenny said.

Many coprosmas are most easily identified when in fruit, which only occurs at certain times of the year. However, the app overcomes this challenge, he said.

“Every pre-existing key used fruit colour, which is quite diagnostic. If you have ripe fruit that’s fantastic but fruit is typically only available in autumn. Ecologists tell me that in places like the West Coast forest’s they never see ripe fruit no matter what month they visit. So part of the point of that original computer key was to provide an ID tool that didn’t just rely on fruit colour.”

Landcare Research scientist Murray Dawson led the development of the LucidMobile coprosma app. Dawson is also developing apps to identify New Zealand grasses, native orchids, flowering plants and weeds. The development of the grasses and native orchid apps are nearly completed, Dawson said. The flowering plants and weed apps are due out later this year.

"These apps are very easy to use and self-explanatory. They are powerful and able to accommodate hundreds of images," he said.

The development of the apps has been funded by the *Terrestrial and Freshwater Biodiversity Information System* (*TFBIS*) Programme. TFBIS supports the conservation of New Zealand's indigenous biodiversity by increasing awareness of and access to fundamental data and information about terrestrial and freshwater biota and biodiversity.

The NZ Coprosma Key can be downloaded via the Landcare Research website, Apple App Store or Android Google Play Store.

For further information contact:
Caroline King
Communication Adviser--+
Landcare Research
Ph. 027 277 618

The New Zealand Tree Project

By Jennifer Sanger

The New Zealand Tree Project is a unique collaboration between canopy scientists, tree climbers, professional photographers and filmmakers aimed at sharing the wonders of New Zealand's forest from unique perspectives.

For the last month, the NZ Tree Project Team has been working tirelessly in the beautiful mixed podocarp forests of Pureora. They have thoroughly enjoyed the misty morning skies full of kōkako and kākā calls, the ancient rimu, tōtara and kahikatea towering up through the undergrowth, the giant canopy branches laden with flowering orchids and drooping ferns, and the delicate life of the forest floor.

The aim of the NZ Tree Project is to capture the beauty of these forests through a series of photos, film and documentaries and share it with the world. This forest imagery will not only be captured from the ground; a viewpoint that the everyday visitor to a forest can enjoy, but will also share the wonder of the forest from the tree tops. The canopies of forests have been described as the last biological frontier, a wondrous place full of life that we very rarely get to experience. The canopies of New Zealand's mixed broadleaf podocarp forests are particularly interesting and important because of their exceptionally high diversity of vascular epiphytes.

The centrepiece of the New Zealand Tree Project is a tree portrait of an ancient and beautiful rimu. A custom made camera rig that ran the entire 40m vertical height of the rimu was painstaking installed by suspending a platform from two adjacent trees. This allowed for the camera rig containing two Canon 5D MkIII cameras to be slowly lowered with a series of photos taken every 50cm. The photos are then stitched together using Photoshop to produce an image from a level viewpoint without distortion. This method allows for a super high resolution image that captures the true glory of the tree, rather than a distorted and incomplete view that is so common when we are limited to photography from the forest floor.

Other exciting aspects of the project include the innovative mediums which we have used to capture imagery of the forest. A 50m long cable camera was designed by our team to capture video and time-lapse footage of the forest. The cable camera not only captured interesting footage along the forest floor, but it was also suspended high among the tree tops. It took three days to install the cable camera from the canopy of one giant emergent rimu to another with the cable tracks suspended 35m above the ground to capture footage from a bird's eye view. Drones were also used to capture video of the forest from high above.

The New Zealand Tree Project is not only about sharing the unique present-day view of this forest ecosystem, it is also about portraying the emotional, historical and scientific perspectives of Pureora. The team were lucky enough to interview a range of people including local iwi, some of New Zealand's leading scientists and former forestry workers for documentary that will tell both the human and ecological history of this area.

We hope that the unique imagery and perspectives of this project will inspire and educate a broad audience about the beauty and importance of New Zealand's podocarp forests while motivating them to protect and restore these wondrous places. We are in the process of developing the content into an exhibition which will travel around various museums in New Zealand. We are also aiming to have a small project launch in the Waikato region in late 2015.

If you wish to follow our progress you can like us on Facebook, or sign up for our newsletter on our website (www.nztreeproject.com). If you would like to support the NZ Tree Project, secure donations can be made on our website.

Epiphyte ecologist Catherine Kirby explores the diverse canopy ecosystem.

NatureWatch project established at the University of Waikato

NatureWatch is a website established in 2010 for people to share observations of wildlife, flora and fauna in New Zealand. The intention is to provide an accessible hub for learning, sharing, and potential citizen science research projects about New Zealand's amazing natural history.

Observations can include descriptions, photos, and location information. Anyone can upload an observation, once registered with NatureWatch (which is free). One of the great features of NatureWatch NZ is its 'ID Please' feature. You can upload a photo, or photos, of a species you don't know, tag your observation as 'ID Please', and other NatureWatch NZ users will suggest identifications. If you disagree with any of the identifications made on any observations on NatureWatch NZ, you can sign in and suggest another ID.

I have set up a project on NatureWatch NZ called "University of Waikato flora and fauna". This is only the second university project to be established. I welcome you to join NatureWatch and upload photos and descriptions of flora and fauna seen on the campus grounds to this page. It provides a pooled record of observations at the university, so we can share what is being seen around the campus and learn more about some of these neat species. To find the site go to naturewatch.org.nz then select the project tab on the top left, and search for the project "University of Waikato flora and fauna", or go direct to http://naturewatch.org.nz/projects/university-of-waikato-flora-and-fauna.

native forest
restoration trust

You are invited to:

The opening of the Ed Hillary Hope Reserve

11.30 am on Saturday, 23 May 2015
732 Old Mountain Road, Waitetuna, Raglan

Guests of Honour: Peter and Sarah Hillary

Come along and celebrate with us the opening of our latest acquisition, the Ed Hillary Hope Reserve. Named in recognition of our long-serving first Patron, Sir Edmund Hillary, and the Hope family who protected the bush and farmed this land for well over 70 years. This new reserve has approximately 180ha of established forest and over 280ha of farmland well suited for restoration. It lies on the Hamilton–Raglan Road, adjoining the Four Brothers Scenic Reserve. The project will result in the largest area of native bush within 20km of Hamilton and will be a major link in Waikato Regional Council's Halo Project.

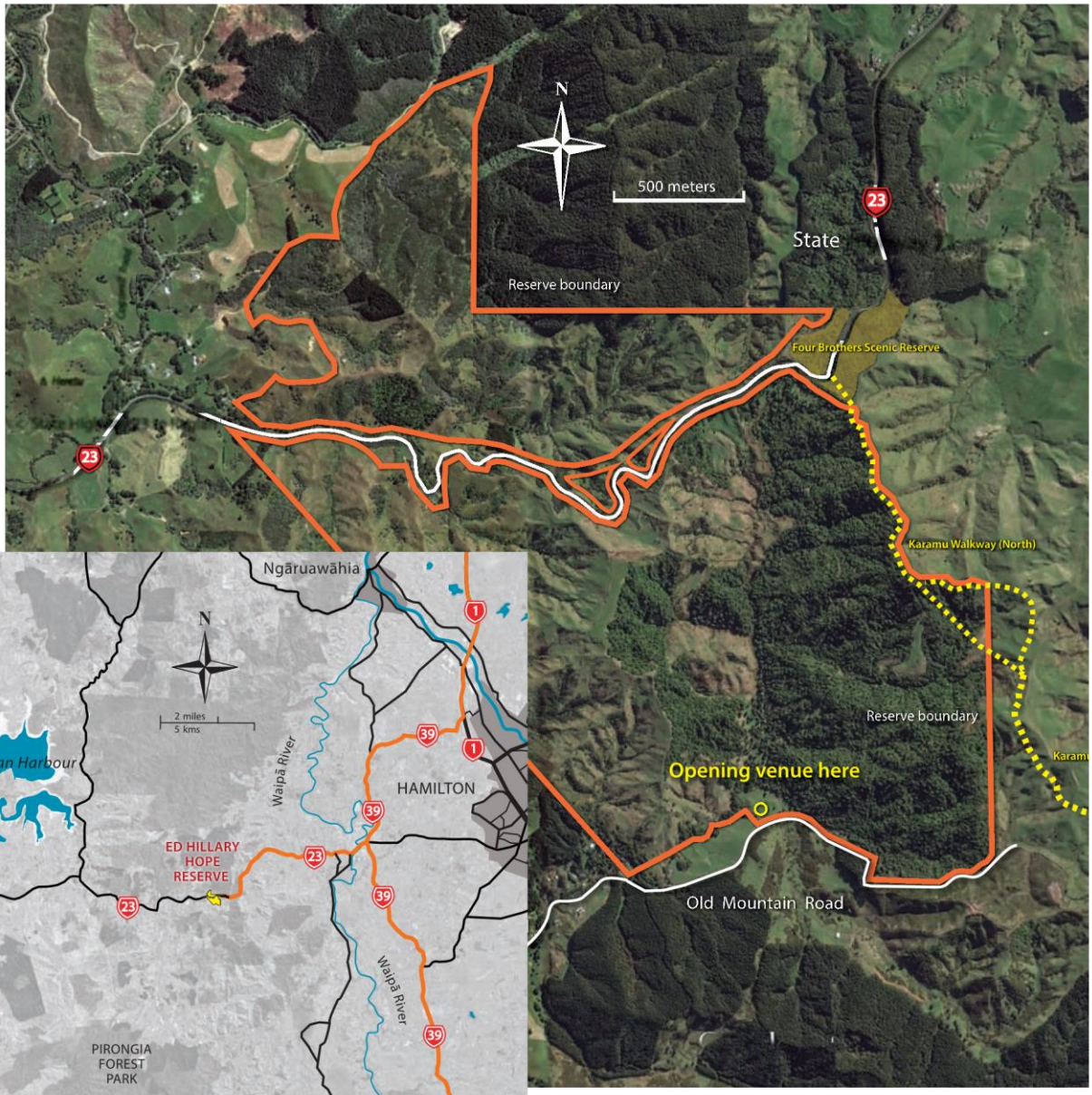
Proposed Programme

11:15am – 11:45am	Park at the signposted Reserve car park
12:00pm	Guest speakers: Colleen Newton - Chairperson, NFRT Geoff Davidson - Founding Trustee, NFRT Peter Hillary - mountaineer and expedition leader Paula Southgate - Chairperson, Waikato Regional Council Alan Saunders - Team Leader, Natural Heritage, Waikato Regional Council Gordon Stephenson - Inspirational environmentalist and former Waikato dairy farmer
12:45pm	Lunch - BBQ venison sausages and billy tea
1:45pm	Guided walk through the Reserve
3:00pm	Event ends but guests are welcome to stay on and explore the Reserve

Please RSVP by 16 May 2015

RSVP by emailing Sandy Crichton (sandy@nznfrt.org.nz)

We encourage you to circulate this invitation widely

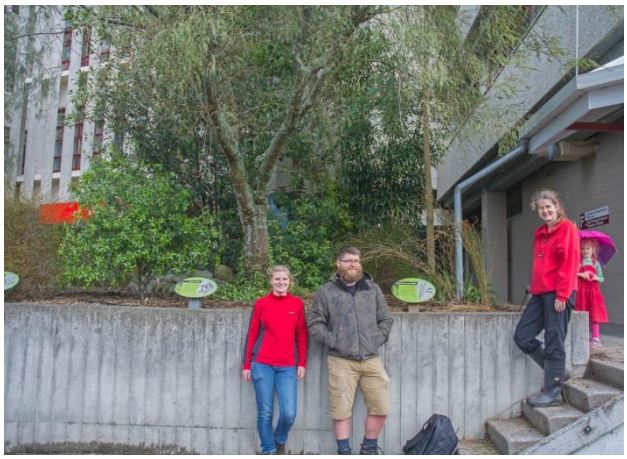

N
500 meters
State
Reserve boundary
Four Brothers Scenic Reserve
Karamu Walkway (North)
Reserve boundary
Opening venue here
Old Mountain Road
Ngāruawāhia
N
2 miles
5 kms
Raglan Harbour
Waipā River
HAMILTON
ED HILLARY
HOPE
RESERVE
Waipā River
PIRONGIA
FOREST
PARK

Threatened Native Plant Garden Update

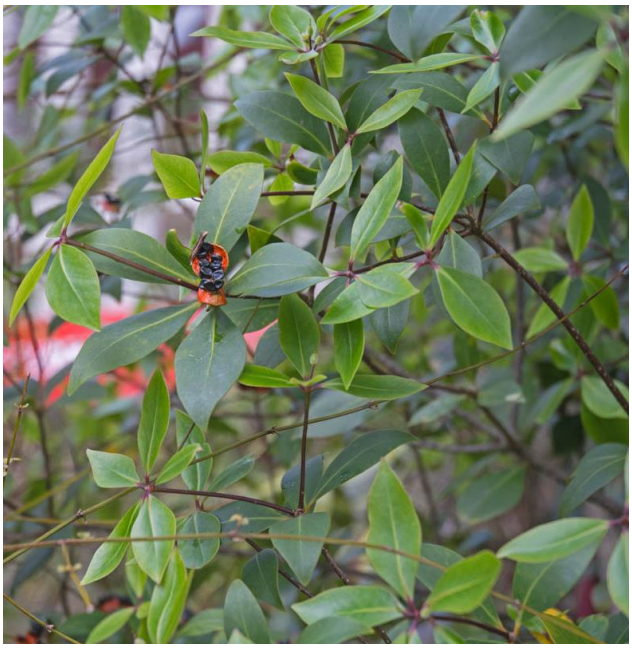
By Angela Simpson

On 20 September 2014, a group of keen botanists braved the blustery weather to do some freshening up of the garden, ahead of the coming summer. We removed the large *Muehlenbeckia astonii* from the corner nearest the carpark. This is "nationally endangered" and now known in the wild from several locations in the South Island. Despite this *M. astonii* is a popular garden/hedge shrub in the Waikato, although most horticultural stock is female. This removal made way for the "at risk" *Pittosporum kirkii* to be transplanted to a site where it will hopefully enjoy having a lot more sunlight. We also transplanted *Sporadanthus ferrugineus* from the old garden by the glass houses to replace the *S. ferrugineus* that unfortunately succumbed to the drought last summer. We added a large container of peat to the soil here to help maintain moisture over this summer. Hopefully it will survive this summer if we ensure that it has sufficient moisture. The morning was finished off with some weeding and we all got away just before the rain started. We are still in the process of getting new labels for the plants are lacking them. Thank you to those who could attend.

Over the past few months there have been exciting changes to observe in the garden. The giant flowered broom (*Carmichaelia williamsii*) has flowered and is now setting seed. The left over *C. williamsii* plants that were collected from Coromandel unfortunately got a severe infestation of scale insects. So the DOC officers did not want them to go back into the wild and they have been donated to Catherine Beard for her garden. The *Pittosporum cornifolium* fruit capsules have opened to reveal their bright orange pith and black seeds. The new *Sporadanthus ferrugineus* has plentiful seed heads and the *Pimelea villosa* is flowering.



Rebecca, Kris, Liz and Hana after replacing the Sporadanthus.



Pittosporum cornifolium with open fruit capsules

Before (above) and after (below) working bee

Te Reti field trip 13 July 2014

By Paula Reeves

A small group of botanical society members gathered at Te Reti Scenic Reserve on a rather overcast Sunday morning. The Te Reti Scenic Reserve is a large (30 ha) forest fragment, approximately 2.5 km south-west of Maungatautari. Access is at the end of Te Reti Road down one of the few metal roads in the Waipa District. Also at the end of the road is a shooting range which provided background noise for the trip, so much for a relaxing Sunday morning walk!

Mike Clearwater at the top of the Te Reti Scenic Reserve, looking down the valley that bisects the reserve.

We started our trip at the western end of the reserve, crossing a small tributary of the Korakonui Stream which drains to the Waipa River via Te Awamutu. The small tributary dissects the centre of the reserve and runs along the southern margin. Some typical riparian species were found along the stream margin including tree fuchsia (*Fuchsia excorticata*), supplejack (*Ripogonum scandens*) and parataniwha (*Elatostema rugosum*).

From the stream we headed up towards the top of the reserve picking a path through the supplejack and identifying a reasonable range of ferns beneath a canopy of tawa (*Beilschmiedia tawa*) and kamahi (*Weinmannia racemosa*). We also noted many seedlings of titoki (*Alectryon excelsus* subsp. *Excelsus*) and nikau (*Rhopalostylis sapida*) as we went.

The reserve is fenced and pest control has been undertaken on the reserve by the Department of Conservation. It makes a great 'stepping stone' forest fragment with Maungatautari so close. Kereru were clearly benefiting from the pest control and proximity to Maungatautari, being frequently observed throughout the trip.

As we reached the top of the reserve kawakawa (*Macropiper excelsum* subsp. *excelsum*) and nikau became more common in the understorey beneath towering tawa. We also found the epiphytic orchids *Drymoanthus adversus* and *Earina mucronata* on the upper slopes. We lunched out in the open with a great view of the back of Maungatautari.

Lunch was cut short by a soft drizzle of rain so we packed up and headed down through the valley in the middle of the reserve. It was quite hard going as the forest was dense and supplejack problematic. We eventually made our way out by following the stream emerging onto a small track that leads to the carpark at the eastern end of the reserve.

We then followed the road back to our cars which overlooked a narrow gully wetland. We were keen to get into the wetland but couldn't find a way through the dense wall of blackberry that separated the road from the wetland. The wetland contained quite large areas of harakeke (*Phormium tenax*), *Carex* and *Macherina*. However grey willow (*Salix cinerea*) was scattered throughout.

The management of the reserve has now changed hands with Ngati Koroki Kahukura and Waipa District Council taking up the reins. Hopefully they will continue to undertake pest control and maybe tackle some of the roadside weeds.

Narrow gully wetland on the margin of the Te Reti Scenic Reserve

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INDIGENOUS SPECIES

Gymnosperms

Dacrycarpus dacrydioides	kahikatea
Dacrydium cupressinum	rimu
Prumnopitys ferruginea	miro

Monocot. trees and shrubs

Cordyline australis	tī kōuka, cabbage tree
Rhopalostylis sapida	nīkau

Dicot. trees and shrubs

Alectryon excelsus subsp. *excelsus*	tītoki
Aristotelia serrata	makomako, wineberry
Beilschmiedia tawa	tawa
Brachyglottis repanda	rangiora
**Buddleja davidii*	buddleia
Coprosma grandifolia	kanono, raurēkau, raurākau,
Coprosma robusta	karamū, kāramuramu
Corynocarpus laevigatus	karaka
Elaeocarpus dentatus	hīnau, whīnau
**Erica lusitanica*	Spanish heath
Fuchsia excorticata	kōtukutuku, kōnini
Geniostoma ligustrifolium var. *ligustrifolium*	hangehange
Hebe stricta var. *stricta*	koromiko, kōkōmuka
Hedycarya arborea	porokaiwhiri; pigeonwood
Knightia excelsa	rewarewa
Laurelia novae-zelandiae	pukatea
Leptospermum scoparium agg.	mānuka
Leucopogon fasciculatus	mingimingi
Litsea calicaris	mangeao
Macropiper excelsum subsp. *excelsum*	kawakawa
Melicytus ramiflorus subsp. *ramiflorus*	māhoe
Myrsine australis	māpou, matipou, māpau
Pittosporum eugenioides	tarata; lemonwood
Pseudopanax arboreus	whauwhaupaku, puahou, five finger
**Rubus* sp. (*R. fruticosus* agg.)	blackberry
**Salix cinerea*	grey willow
Schefflera digitata	patē
Solanum laciniatum	poroporo
Streblus heterophyllus	tūrepo
Weinmannia racemosa	kāmahi

Monocot. lianes

Freycinetia banksii	kiekie
Ripogonum scandens	supplejack, kareao

Dicot. lianes

Clematis paniculata	puawānanga
Metrosideros diffusa	rātā
Metrosideros fulgens	rātā
Metrosideros perforata	aka
Parsonsia heterophylla	akakaikiore
Passiflora tetrandra	kohia; native passionfruit
Rubus cissoides agg.	tātarāmoa, tātaraheke , bush lawyer

Lycopods and psilopsids

Tmesipteris elongata	

Ferns

Adiantum cunninghamii	maidenhair fern
Asplenium bulbiferum	hen and chicken fern
Asplenium flaccidum	huruhuru whenua
Blechnum chambersii	rereti, nini
Blechnum discolor	piupiu, crown fern
Blechnum filiforme	pānako
Blechnum fluviatile	kiwikiwi, kiwakiwa
Blechnum minus	swamp kiokio
Blechnum novae-zelandiae	kiokio
Cardiomanes reniforme	kidney fern,
Cyathea dealbata	ponga, silver fern
Cyathea medullaris	mamaku
Deparia petersenii subsp. *congrua*	
Dicksonia squarrosa	whekī
Diplazium australe	
Hymenophyllum demissum	filmy fern
Hymenophyllum rarum	filmy fern
Lastreopsis hispida	tuakura
Leptopteris hymenophylloides	heruheru
Microsorum pustulatum	hound's tongue fern
Microsorum scandens	mokimoki
Paesia scaberula	mātātā
Pneumatopteris pennigera	pākau
Pteridium esculentum	rārahu, bracken
Pteris macilenta	titipo, sweet fern
Pteris tremula	turawera, shaking brake
Pyrrosia eleagnifolia	leather-leaf fern
Trichomanes venosum	

Orchids

Drymoanthus adversus	
Earina mucronata	peka-a-waka

Grasses

Austroderia fulvida	toetoe
**Cortaderia selloana*	pampas

Sedges

Carex geminata agg.	rautahi
Carex secta	pūrei, makura, pūreirei, pūrekireki, pūkio
Carex virgata	pūrei
Machaerina rubiginosa	
Uncinia laxiflora	
Uncinia uncinata	kamu matau a Maui, kamu

Rushes

Juncus edgariae	wi, wīwī
**Juncus effusus* var. *effusus*	soft rush, leafless rush

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

Astelia solandri	kōwharawhara
Collospermum hastatum	kahakaha
Dianella nigra	tūrutu
Phormium tenax	harakeke, flax
**Tradescantia fluminensis*	tradescantia
Typha orientalis	raupo

Dicot. herbs

**Cirsium arvense*	California thistle
**Cirsium vulgare*	Scotch thistle
Elatostema rugosum	parataniwha

**Galium aparine*	cleavers
Haloragis erecta subsp. *erecta*	toatoa
Hydrocotyle moschata	
**Jacobaea vulgaris*	ragwort
**Leucanthemum vulgare*	oxeye daisy
**Lotus pedunculatus*	lotus
**Phytolacca octandra*	inkweed
**Ranunculus repens*	creeping buttercup
**Trifolium repens*	white clover

Trip programme 2015 – January 2016

****Please note:** We would like intending participants to give the leader a call during the week before the trip. This will give the leader an idea of the party, and enable them to give you any last minute information. If the leader is not available contact Paula Reeves ph. 021 267 5802.

The meeting place for most trips, unless otherwise stated, is the carpark at Landcare Research, Gate 10 Silverdale Rd. We will carpool with a donation for petrol expenses for cars/boats to drivers please.

Reminder to trip leaders
Please remember to take a first aid kit. You are also responsible for delegating the writing up of the trip report or writing it yourself and getting it to the editor within 4 weeks of the trip. A very brief report is much better than no report! Please send to Susan Emmitt: susan.carrodus@gmail.com.

Saturday 18 April - Nikau Loop ridge - Schofield Route Ridge - Pirongia Forest Park

Leader : Kerry Jones ph. 07 855 9700 or 027 747 0733, km8j1s@gmail.com
Meet: Kaniwhaniwha Car Park (Karamu Limeworks Road) at 9:00 or Kaniwhaniwha Camp Site at 10:00.
Grade: Medium Hard
The quickest way to get the the Kaniwhaniwha Camp Site is by Bicycle (20 minutes from Carpark) otherwise it's a 45 minute walk from the Car Park. The ridge that we will follow heads off from the Southern End of the Nikau Walk. For those with bikes we will hide them here in the bush. The ridge is not marked but reasonably easy to follow. If we have time we will come back down the old Schofield route otherwise we will return the way we came. We aim to get out of the bush by 4:30.

Wednesday 6 May - Annual General Meeting and Speaker

Venue: University of Waikato, Room S.103
Time: 6 pm
Wine, juice, cheese and nibbles will be provided.
Following the Paul Cashmore will give a talk on his recent trip to Mangere Island in the Chathams Group

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Paul will talk a bit about the history of the island, the flora and fauna present and the current work DOC is undertaking on the island to protect its unique values.

Sunday 10 May – Locate threatened Fungus - Ganoderma sp. 'Awaroa' in Pukatea remnants near Mt Pirongia.

Leader: Peter Buchanan ph. 09 574 4166 or 0274 341 832
Meet: Landcare Research carpark at 10am.
Grade: Easy
Among several fungi on DOC's Nationally Critical threat list is a large (to 40 cm), undescribed bracket fungus known as *Ganoderma* sp. "Awaroa" - documented by just 3 dried specimens, all collected 1969 to 1972 (spring to autumn) on Pukatea near Mt Pirongia. DOC, Scion, and Landcare Research have failed to locate further specimens which are needed to fully describe and name this fungus as new. We are invited to join Peter Buchanan from Landcare Research to help search for this species.

Saturday 6th June – Native threatened plant garden working bee

Please bring gloves, tools and boots for weeding, planting and propagating activities.
Meet: 10am at Waikato University Gate 8, Hillcrest Rd, outside Science and Engineering E-F link stairway.
Contact: Liz Overdyck ph 07 825 9743 eg3@students.waikato.ac.nz

Saturday 13 June – Walter Scott Reserve, South of Te Awamutu

Leader: Mike Clearwater ph. 07 854 7259 or 021 203 2902, mclearw@waikato.ac.nz
Meet: Landcare Research carpark at 9 am.
Grade: Easy
The Walter Scott Reserve was gifted to the Waikato Branch of Forest and Bird in 1963 by Lilian Valder and her sister, who farmed on the slopes of Pirongia. The vegetation in the reserve consists of tawa-kamahi forest with pukatea, miro, king ferns and the occasional hinau. There is a large kahikatea in the streambed of the Pekanui Stream which is estimated to be around 600 years old and some impressive pukatea on Valder walk. Birdlife in the area has flourished due to ongoing pest control & planting projects undertaken by the Waikato branch.

Sunday 16 August - Koroki Kahukura ki Hinuera Scenic Reserve

Leader: Paula Reeves ph. 07 8547259 or 021 267 5802, pnreeves42@gmail.com
Meet: Landcare Research carpark at 9 am or at 9.45am at the SH1 end of Horahora Bridge.
Grade: Medium
Koroki Kahukura ki Hinuera Scenic Reserve, previously known as the Horahora Gorge Scenic Reserve before its return to Ngati Koroki Kahukura last year, overlooks the southern end of Lake Karapiro. There are no tracks through the reserve so we will be picking our way through the bush starting from Rick Barnabys' who has been slowly restoring the area close to his property near the top of the reserve off Tirau Road.

Saturday 12 September – Lake Arapuni, Waikato River

Leader: Willie Shaw 07 345 5912 (hm) 021 757522
Email: willie.shaw@wildlands.co.nz
Meet: The carpark Landcare Research, Gate 10 Silverdale Rd at 08:30 am or the ramp at Jones Landing at the end of Lake Arapuni Road - Jones Landing Road at 09:30am. The lake is more than 25km long, with indigenous forest and wetlands in the upper reaches. This is a boat trip so you must tell the trip leader that you are coming by prior Thursday. He also needs to know whether you are coming so that he can let you know, if necessary, if the weather is not suitable on the day. It is also possible that the meeting place for this trip may change.
Grade: Easy **Cost:** Donation for boat fuel.

Saturday 17 October – Opuatia Wetland, Churchill Rd

Leader: Catherine Beard ph. (07) 858 1034 (wk.) or 027 337 4337
Meet: Landcare Research carpark at 9 am
Grade: Medium
Opuatia Wetland is always a great place for botanising and we'll be going there during peak orchid time. Expect to see several types of greenhood orchids including the nationally critical *Pterostlyis micromega*. If we have time we will also explore the small peat lake within the wetland.

Saturday 14 November - Mangapu Kahikatea Remnants

Leader: Thomas Emmitt ph. 07 878 1055 (work) or 021 152 3030
temmitt@doc.govt.nz
Meet: Landcare Research carpark at 8 am or 9am corner of Oparure Rd & SH3.
Grade: Easy
Come visit 40ha of the best remaining stands of lowland kahikatea forest in the Waikato. Protected under QEII covenants and partly owned by the Native Forest Restoration Trust the remnants are home to populations of black mudfish and *Myriophyllum robustum*. The grade will be easy but wet so come prepared for a day of getting muddy.

Saturday 5 – Sunday 6 December – Mt Urchin and Tree Trunk Gorge, Kaimanawa Forest Park (Combined with Waikato Botanical Society)

Leader: Kerry Jones ph. 07 855 9700 or 027 747 0733 Email: km8j1s@gmail.com
Meet: Saturday at 10:00am at the DOC campground located about 5kms up Kaimanawa Road. Kaimanawa Road is about 16kms south of Turangi. Some of us are going to be staying at the DOC campsite overnight.
Bring: Warm clothes, tents, sleeping bags, cooking gear etc. if camping.

Saturday: Urchin Trig Track - climbs from 800 metres to 1400 metres. **Grade: Medium**
The track climbs steadily up through beech forest and above the bush line to the Urchin Trig (1391 m). The upper section of the track has an interesting array of alpine plants and a wide vista of Lake Taupō and the volcanoes of the Tongariro National Park. Stay at the above DOC campsite overnight.

Sunday: **Tree Trunk Gorge Track**
Meet: For those coming for the day meet at 10:00am at the DOC campground located about 5kms up Kaimanawa Road. Kaimanawa Road is about 16kms south of Turangi. Some of us are going to be staying at the campsite overnight.
Grade: Easy
This track follows the line of an old road associated with the Tongariro Power Scheme. Red beech surrounds the track for most of the way but close to the Tree Trunk Gorge end an open ridge provides good views out to Tongariro National Park. There are several small streams to cross and one larger one 15 minutes from the southern exit/entrance.

Saturday 16 January – Sunday 17 January 2016 – Mt Whareorino & Waikawau Beach Headland

Leader: Thomas Emmitt ph. 07 878 1055 (work) or 021 152 3030
temmitt@doc.govt.nz
Meet: Outside the Waikawau school on Waikawau Rd at 10am
Grade: Easy
Mt Whareorino sits at 649 metres above sea level and represents some of the oldest exposed rocks of its type in the Waikato. The summit is dominated by *Dracophyllum traversii, quintinia* and kamahi with the surrounding slopes being a mix of coastal broadleaf species such as kohekohe and puriri. Gully tree fern *Cyathea cunninghammi* appears to be the dominant species of tree fern in the area. We will be accessing the mountain through Nukuhakari Station to maximise our time, seeing as it is such a long way to get out there.

For those that wish we will be staying overnight at the campground by the Waikawau tunnel and exploring Ngarupupu point on the Sunday, home to the threatened forget-me-not *Myosotis pansa var. praeceps.*

Bring: Lots of water, tent, good footwear, dinner & breakfast & a fishing rod if you want to have a go surfcasting off the beach.

SUGGESTED EQUIPMENT FOR DAY TRIPS

Lunch, drink, waterproof parka, warm hat, sturdy shoes or boots, sunblock, hand lens, note book, pen & pencil, first aid kit*, compass, GPS, map, whistle, aerial photos, plant species lists, money for drivers petrol expenses.
(* Ensure that there is at least one in your group.)